


|  |   |   |                             |  |
|--|---|---|-----------------------------|--|
| <b>Prüfbericht-Nr.:</b><br><i>Test Report No.:</i>   | <b>50055096 001</b>   | <b>Auftrags-Nr.:</b><br><i>Order No.:</i>   | <b>154169604</b>            | <b>Seite 1 von 82</b><br><i>Page 1 of 82</i>     |
| <b>Kunden-Referenz-Nr.:</b><br><i>Client Reference No.:</i>  | <b>643112</b>   | <b>Auftragsdatum:</b><br><i>Order date:</i>   | <b>2016.05.23</b>           |  |
| <b>Auftraggeber:</b><br><i>Client:</i>   | <b>Jiangsu Derhino Intelligent Technology Co., Ltd.</b><br>5F Building 23, Science&Technology, Software Park, No. 100, Jinxi Rd. Binhu District, Wuxi, Jiangsu, China   |   |                             |  |
| <b>Prüfgegenstand:</b><br><i>Test item:</i>  | <b>55 Inch LCD Digital Signage</b>  |   |                             |  |
| <b>Bezeichnung / Typ-Nr.:</b><br><i>Identification / Type No.:</i>   | <b>55LVF01</b><br><b>FCC ID: 2AIT7-55LVF01</b>  |   |                             |  |
| <b>Auftrags-Inhalt:</b><br><i>Order content:</i>   | <b>Complete test</b>  |   |                             |  |
| <b>Prüfgrundlage:</b><br><i>Test specification:</i>  | FCC CFR47 Part 15, Subpart C Section 15.247<br>FCC CFR47 Part 15, Subpart C Section 15.207<br>FCC CFR47 Part 15, Subpart C Section 15.209<br>ANSI C63.10: 2013<br>ANSI C63.4: 2014<br>KDB 558074 D01 DTS Meas Guidance v03r05 |   |                             |  |
| <b>Wareneingangsdatum:</b><br><i>Date of receipt:</i>  | <b>2016.05.23</b>   |        |                             |  |
| <b>Prüfmuster-Nr.:</b><br><i>Test sample No.:</i>  | <b>A000360374-001</b>   |   |                             |  |
| <b>Prüfzeitraum:</b><br><i>Testing period:</i>   | <b>2016.05.31 to 2016.08.26</b>   |   |                             |  |
| <b>Ort der Prüfung:</b><br><i>Place of testing:</i>  | <b>MRT Technology(Suzhou) Co., Ltd.</b>   |   |                             |  |
| <b>Prüflaboratorium:</b><br><i>Testing laboratory:</i>   | <b>TÜV Rheinland (Shanghai) Co., Ltd.</b>   |   |                             |  |
| <b>Prüfergebnis*:</b><br><i>Test result*:</i>  | <b>Pass</b>   |   |                             |  |
| <b>geprüft von / tested by:</b>  |   | <b>kontrolliert von / reviewed by:</b>  |                             |  |
| 2016.08.31   | Tino Pan / Project Engineer   | 2016.08.31  | Li Shi / Section Manager    |  |
| <b>Datum</b><br><i>Date</i>  | <b>Name / Stellung</b><br><i>Name / Position</i>  | <b>Unterschrift</b><br><i>Signature</i>   | <b>Datum</b><br><i>Date</i> | <b>Name / Stellung</b><br><i>Name / Position</i> |
|  |   |   |                             | <b>Unterschrift</b><br><i>Signature</i>          |
| <b>Sonstiges / Other</b>   |   |   |                             |  |
| <b>Zustand des Prüfgegenstandes bei Anlieferung:</b><br><i>Condition of the test item at delivery:</i>   |   | <b>Prüfmuster vollständig und unbeschädigt</b><br><i>Test item complete and undamaged</i> |                             |  |
| * Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft<br>P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet<br>Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor<br>P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested                          |   |   |                             |  |
| <b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b><br><i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i> |   |   |                             |  |

## TEST SUMMARY

**5.1.1 ANTENNA REQUIREMENT**

RESULT: Pass

**5.1.2 PEAK OUTPUT POWER**

RESULT: Pass

**5.1.3 20dB BANDWIDTH / 6dB BANDWIDTH AND 99% BANDWIDTH**

RESULT: Pass

**5.1.4 CONDUCTED SPURIOUS EMISSIONS MEASURED**

RESULT: Pass

**5.1.5 POWER SPECTRAL DENSITY**

RESULT: Pass

**5.1.6 SPURIOUS EMISSION**

RESULT: Pass

**5.1.7 FREQUENCY SEPARATION**

RESULT: Pass

**5.1.8 NUMBER OF HOPPING FREQUENCY**

RESULT: Pass

**5.1.9 TIME OF OCCUPANCY**

RESULT: Pass

**5.1.10 CONDUCTED EMISSIONS**

RESULT: Pass

**5.1.11 RADIATED EMISSIONS**

RESULT: Pass

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## 1. General Remarks

### 1.1 Complementary Materials

None.

## 2. Test Sites

### 2.1 Test Facilities

MRT Technology (Suzhou) Co., Ltd.

D8 Building, Youxin Industrial Park, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China

The used test equipment is in accordance with CISPR 16 for measurement of radio interference.

The Federal Communications Commission has reviewed the technical characteristics of the radiated and conducted emission facility, and has found these test facilities to be in compliance with the requirements of section 2.948 of the FCC rules. The description of the test facility is listed under FCC registration number 809388.

The Industry Canada has reviewed the technical characteristics of the radiated and conducted emission facility, and has found these test facilities to be in compliance. The description of the test facility is listed under chambers filing number 11384A.

## 2.2 List of Test and Measurement Instruments

**Table 1: List of Test and Measurement Equipment**

### Conducted Emissions

| Instrument                 | Manufacturer | Type No. | Cali. Interval | Cali. Due Date |
|----------------------------|--------------|----------|----------------|----------------|
| EMI Test Receiver          | R&S          | ESR7     | 1 year         | 2016.11.03     |
| Two-Line V-Network         | R&S          | ENV216   | 1 year         | 2016.11.03     |
| Two-Line V-Network         | R&S          | ENV216   | 1 year         | 2016.11.03     |
| Temperature/Humidity Meter | Ouleinuo     | N/A      | 1 year         | 2016.11.20     |

### Radiated Emissions

| Instrument                 | Manufacturer | Type No.  | Cali. Interval | Cali. Due Date |
|----------------------------|--------------|-----------|----------------|----------------|
| Spectrum Analyzer          | Agilent      | E4447A    | 1 year         | 2016.12.08     |
| EMI Test Receiver          | R&S          | ESR7      | 1 year         | 2016.11.03     |
| Preamplifier               | Agilent      | 83017A    | 1 year         | 2017.03.29     |
| Preamplifier               | Schwarzbeck  | BBV9721   | 1 year         | 2017.04.16     |
| Loop Antenna               | Schwarzbeck  | FMZB1519  | 1 year         | 2016.11.07     |
| TRILOG Antenna             | Schwarzbeck  | VULB9162  | 1 year         | 2016.11.07     |
| Broad-Band Horn Antenna    | Schwarzbeck  | BBHA9120D | 1 year         | 2016.11.07     |
| Broadband Horn Antenna     | Schwarzbeck  | BBHA9170  | 1 year         | 2017.01.05     |
| Temperature/Humidity Meter | Ouleinuo     | N/A       | 1 year         | 2016.11.20     |

### Conducted Test Equipment

| Instrument                 | Manufacturer | Type No. | Cali. Interval | Cali. Due Date |
|----------------------------|--------------|----------|----------------|----------------|
| Spectrum Analyzer          | Agilent      | N9020A   | 1 year         | 2016.05.08     |
| USB Wideband Power Sensor  | Boonton      | 55006    | 1 year         | 2016.05.08     |
| Temperature/Humidity Meter | Ouleinuo     | N/A      | 1 year         | 2016.11.20     |

## 2.3 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

## 2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

## 2.5 Measurement Uncertainty

**Table 2: Measurement Uncertainty**

| Measurement Type                | Frequency    | Uncertainty |
|---------------------------------|--------------|-------------|
| Antenna Port Conducted Emission | < 1GHz       | ±0.39dB     |
|                                 | > 1GHz       | ±0.68dB     |
| Radiated Emission               | 30MHz - 1GHz | ±5.34dB     |
|                                 | > 1GHz       | ±5.40dB     |

### 3. General Product Information

#### 3.1 Product Function and Intended Use

The EUT (Equipment Under Test) is a 55 Inch LCD Digital Signage which supports both Bluetooth Classic and Low Energy, version 4.0.

For details refer to the User Manual and Circuit Diagram.

#### 3.2 Ratings and System Details

|                           |  |
|---------------------------|--|
| Kind of Equipment         | 55 Inch LCD Digital Signage                      |
| Type Designation          | 55LVF01  |
| Bluetooth version         | 4.0 dual mode                                    |
| Operating Frequency band  | 2402 – 2480MHz                                   |
| Channel separation        | BDR/EDR: 1MHz<br>BLE: 2MHz                       |
| Modulation                | BDR/EDR: GFSK, 8DPSK, $\pi/4$ DQPSK<br>BLE: GFSK |
| Antenna Type              | External Antenna                                 |
| Antenna Gain              | 6 dBi  |
| Extreme Temperature Range | -10~+45°C  |
| Operation Voltage         | AC 100-240V                                      |

### 3.3 Independent Operation Modes

The basic operation modes are:

- A. On
  - 1. Bluetooth mode (Classic mode)
    - a. Transmitting
      - i. Low Channel
      - ii. Middle Channel
      - iii. High Channel
    - b. Receiving
  - 2. Bluetooth mode (BLE mode)
    - a. Transmitting
      - i. Low Channel
      - ii. Middle Channel
      - iii. High Channel
    - b. Receiving
- B. Standby
- C. Off

### 3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

### 3.5 Submitted Documents

- |                    |                      |
|--------------------|----------------------|
| - Bill of Material | - Circuit Diagram    |
| - PCB Layout       | - Instruction Manual |
| - Photo Document   | - Rating Label       |



## 4. Test Set-up and Operation Modes

### 4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level. The test modes were adapted accordingly in reference to the instructions for use.

### 4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.10: 2013.

### 4.3 Special Accessories and Auxiliary Equipment

The EUT was tested together with the following accessories:

| Description | Manufacturer | Part No. | S/N          |
|-------------|--------------|----------|--------------|
| Laptop      | DELL         | PP11L    | QDS-BRCM1017 |

### 4.4 Countermeasures to achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

## 4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test

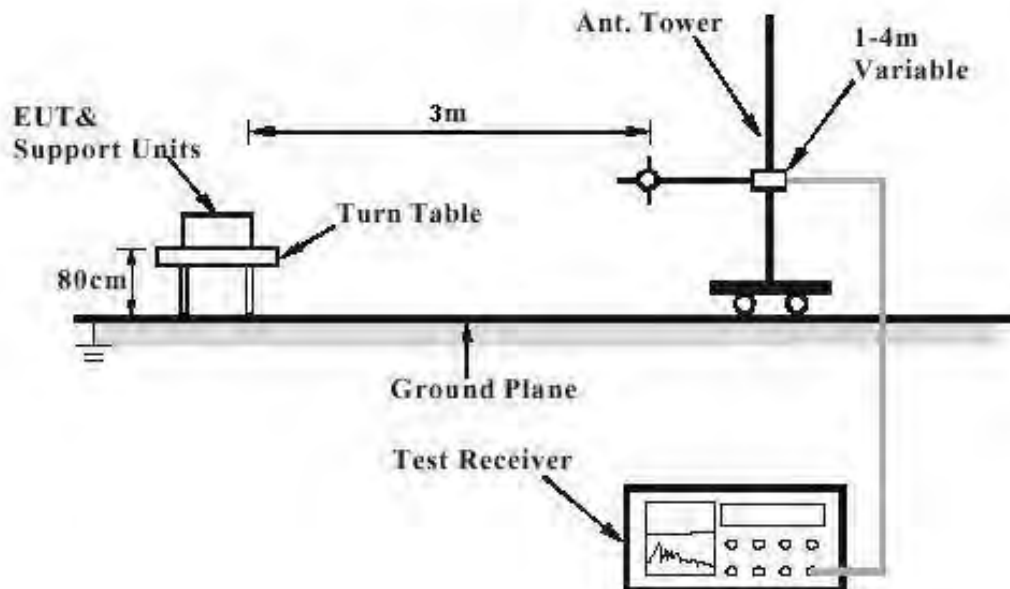
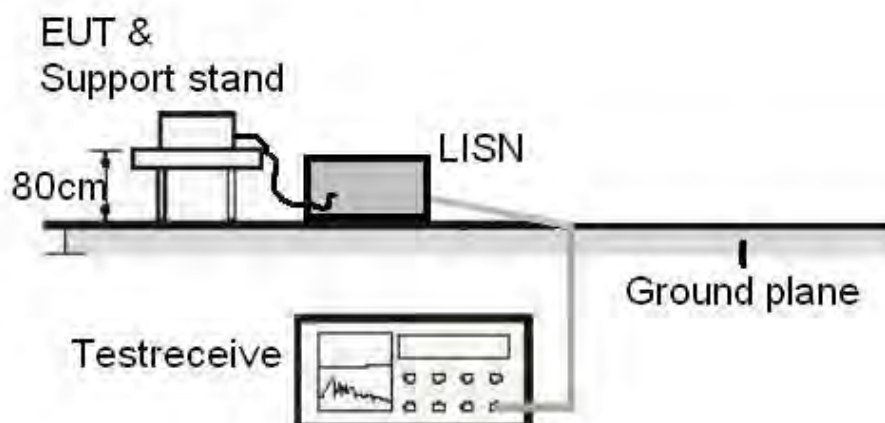
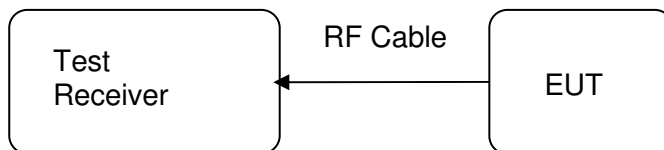


Diagram of Measurement Equipment Configuration for Conduction Measurement



**Diagram of Measurement Equipment Configuration for Transmitter Measurement**



## 5. Test Results

### 5.1 Transmitter Requirement & Test Suites

#### 5.1.1 Antenna Requirement

**RESULT:**
**Pass**

Test standard : FCC Part 15.247(b)(4) and Part 15.203

Limit The use of antennas with directional gains that do not exceed 6dBi

According to the manufacturer declared, the EUT has one external antenna, the directional gain of antenna is 6 dBi and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

**Table 3: Antenna Requirement**

| FCC 15.203 – Antenna Requirement 1 |   |                           |
|------------------------------------|---|---------------------------|
| Requirement:                       | No antenna other than that furnished by the responsible party shall be used with the device.<br><input type="checkbox"/> Use of a permanently attached antenna, or<br><input checked="" type="checkbox"/> Use an antenna that uses a unique coupling to the intentional radiator. |                           |
| Results:                           | Antenna type:<br>Antenna connect type:  | External Antenna<br>I-PEX |
| Verdict:                           | PASS  |                           |

| FCC 15.204 – Antenna Requirement 2 |  |  |
|------------------------------------|--|--|
| Requirement:                       | An intentional radiator may be operated only with the antenna with which it is authorized. If an antenna is marketed with the intentional radiator, it shall be of a type which is authorized with the intentional radiator. |  |
| Results:                           | Only one type antenna can be used  |  |
| Verdict:                           | PASS   |  |

## 5.1.2 Peak Output Power

**RESULT:**
**Pass**

Test date : 2016-08-22  
 Test standard : FCC Part 15.247(b)(1)  
 FCC Part 15.247(b)(3)  
 Basic standard : ANSI C63.10: 2013  
 Clause 9.1 of KDB 558074 D01 v03r05  
 Limit : 125mW, 1W  
 Kind of test site : Shielded room

**Test setup**

Test Channel : Low/ Middle/ High  
 Operation Mode : A.1.a, A.2.a  
 Ambient temperature : 25°C  
 Relative humidity : 52%  
 Atmospheric pressure : 101kPa

**Table 4: Test result of Peak Output Power of Classic Bluetooth (Hopping-DH5 )**

| Channel        | Channel Frequency (MHz) | Peak Output Power (dBm) | Limit (dBm) |
|----------------|-------------------------|-------------------------|-------------|
| Low Channel    | 2402                    | 4.608                   | 21          |
| Middle Channel | 2441                    | 4.899                   | 21          |
| High Channel   | 2480                    | 4.591                   | 21          |

**Table 5: Test result of Peak Output Power of Classic Bluetooth (Hopping-2DH5)**

| Channel        | Channel Frequency (MHz) | Peak Output Power (dBm) | Limit (dBm) |
|----------------|-------------------------|-------------------------|-------------|
| Low Channel    | 2402                    | 4.246                   | 21          |
| Middle Channel | 2441                    | 4.851                   | 21          |
| High Channel   | 2480                    | 4.551                   | 21          |

**Table 6: Test result of Peak Output Power of Classic Bluetooth (Hopping-3DH5)**

| Channel        | Channel Frequency (MHz) | Peak Output Power (dBm) | Limit (dBm) |
|----------------|-------------------------|-------------------------|-------------|
| Low Channel    | 2402                    | 4.781                   | 21          |
| Middle Channel | <b>2441</b>             | <b>5.117</b>            | 21          |
| High Channel   | 2480                    | 4.808                   | 21          |

**Prüfbericht - Nr.: 50055096 001***Test Report No.***Seite 14 von 82***Page 14 of 82***Table 7: Test result of Peak Output Power of Bluetooth 4.0 (BLE mode)**

| Channel        | Channel Frequency<br>(MHz) | Peak Output Power<br>(dBm) | Limit<br>(dBm) |
|----------------|----------------------------|----------------------------|----------------|
| Low Channel    | 2402                       | 4.33                       | 30             |
| Middle Channel | 2441                       | 3.52                       | 30             |
| High Channel   | 2480                       | 3.17                       | 30             |

| Channel      | Channel Frequency (MHz) | 20dB Bandwidth (MHz) | 99% Bandwidth (MHz) |
|--------------|-------------------------|----------------------|---------------------|
| Low Channel  | 2402                    | 1.255                | 1.1801              |
| Mid Channel  | 2441                    | 1.257                | 1.1772              |
| High Channel | 2480                    | 1.255                | 1.1771              |

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**Table 11: Test result of 6dB Bandwidth (BLE)**

| Channel      | Channel Frequency (MHz) | 6 dB Bandwidth (kHz) | 99% Bandwidth (MHz) |
|--------------|-------------------------|----------------------|---------------------|
| Low Channel  | 2402                    | 698.7                | 1.0468              |
| Mid Channel  | 2441                    | 700.6                | 1.0464              |
| High Channel | 2480                    | 703.9                | 1.0462              |

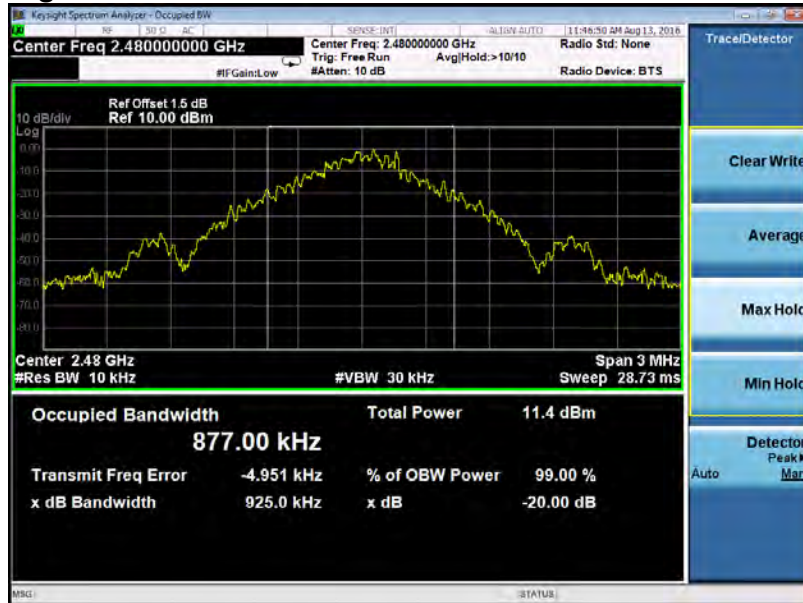
For details refer to following test plot.



**Test Plot of Bandwidth measured 20dB Bandwidth (DH5)**
**Low Channel**

**Middle Channel**


### High Channel



### Test Plot of Bandwidth measured 20dB Bandwidth (2DH5)

### Low Channel



### Middle Channel



### High Channel



## Test Plot of Bandwidth measured 20dB Bandwidth (3DH5)

### Low Channel



### Middle Channel





## High Channel



## Test Plot of Bandwidth measured 6 dB Bandwidth (BLE)

## Low Channel



### Middle Channel



### High Channel



### 5.1.4 Conducted Spurious Emissions measured

**RESULT:****Pass**

|                   |   |   |
|-------------------|---|---|
| Date of testing   | : | 2016-08-24  |
| Test standard     | : | FCC part 15.247(d)  |
| Basic standard    | : | ANSI C63.10: 2013<br>Clause 11&12 of KDB 558074 D01 v03r05  |
| Limit             | : | 20dB (below that in the 100kHz bandwidth within<br>the band that contains the highest level of the<br>desired power); |
| Kind of test site | : | Shield room   |

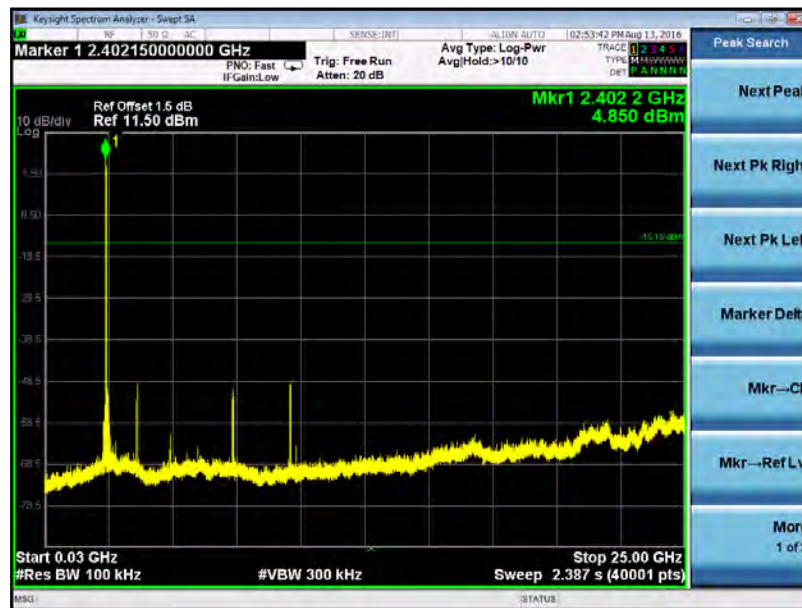
**Test setup**

|                      |   |                   |
|----------------------|---|-------------------|
| Test Channel         | : | Low/ Middle/ High |
| Operation mode       | : | A.1.a, A.2.a      |
| Ambient temperature  | : | 25°C              |
| Relative humidity    | : | 52%               |
| Atmospheric pressure | : | 101kPa            |

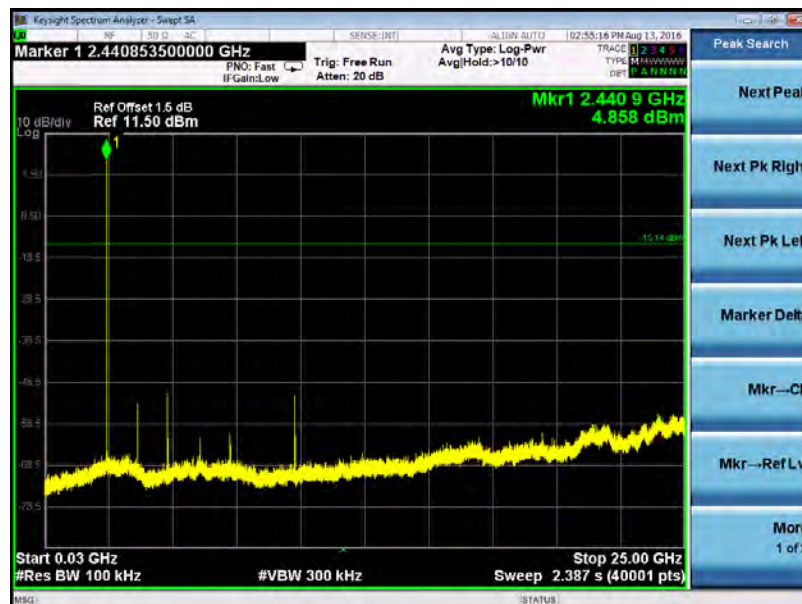
For details refer to following test plot.

**Test Plot of Conducted spurious emissions measured in 100kHz Bandwidth of Classic Bluetooth (DH5)**

**Low Channel**

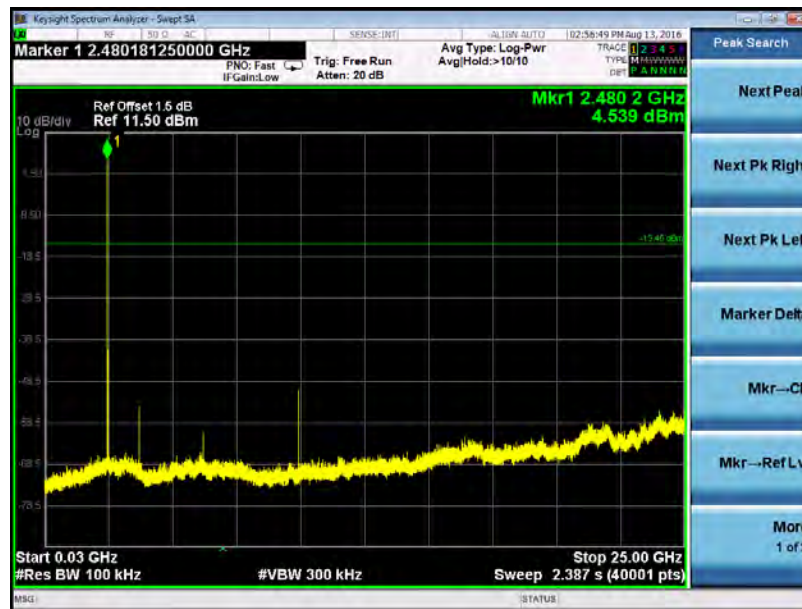


**Middle Channel**

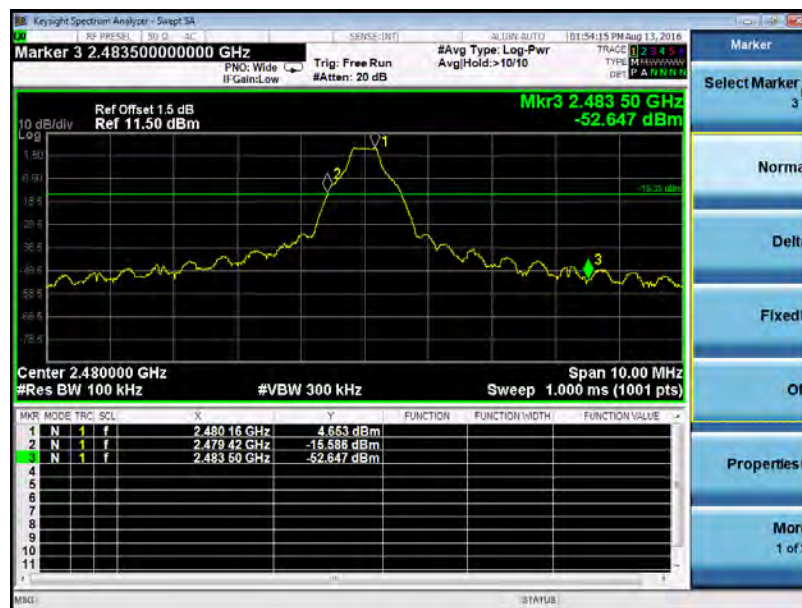




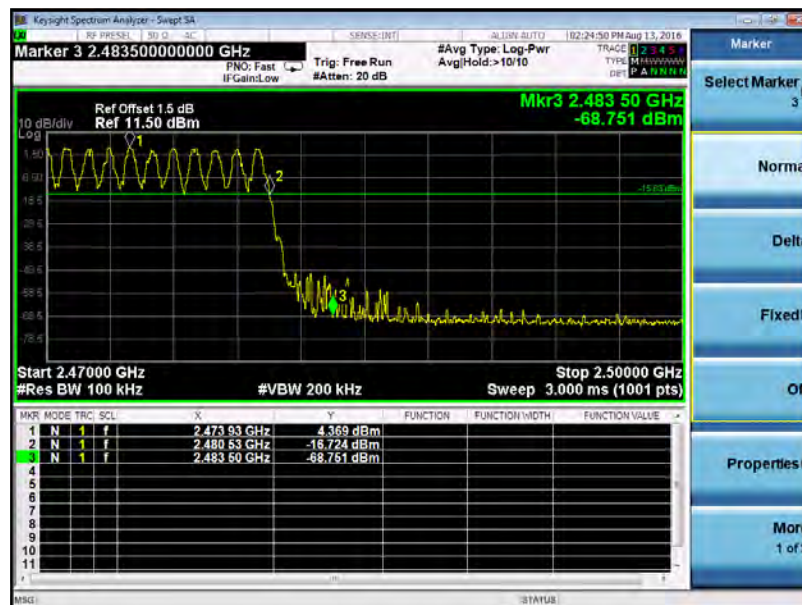
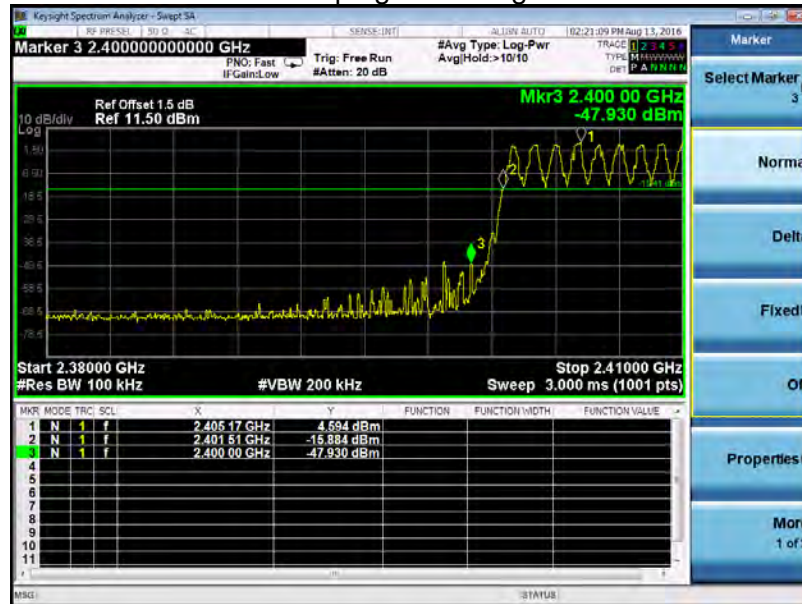
## High Channel



### Band Edge

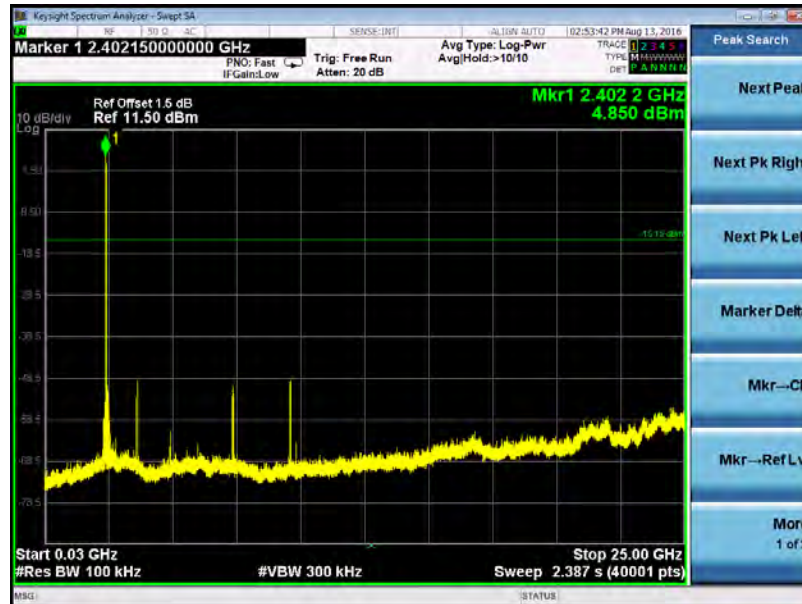


### Hooping Band Edge

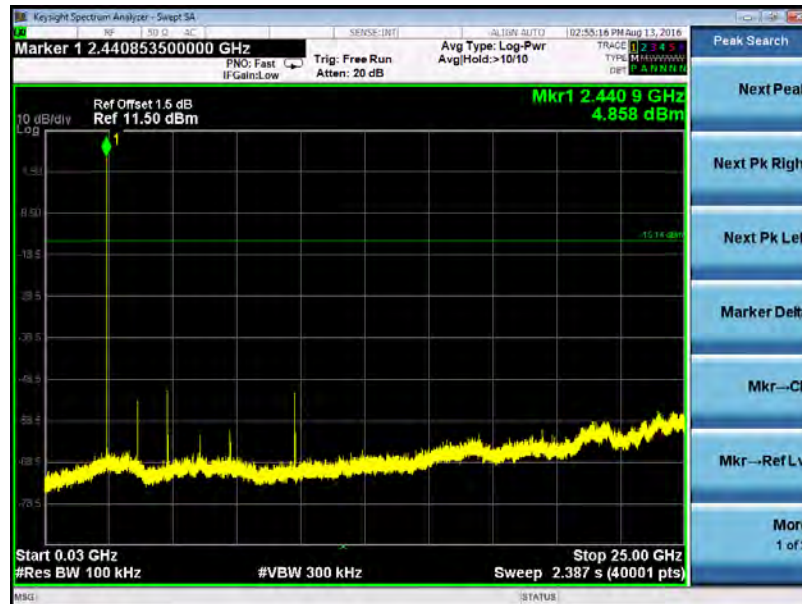


**Test Plot of Conducted spurious emissions measured in 100kHz Bandwidth of Classic Bluetooth (2DH5)**

**Low Channel**

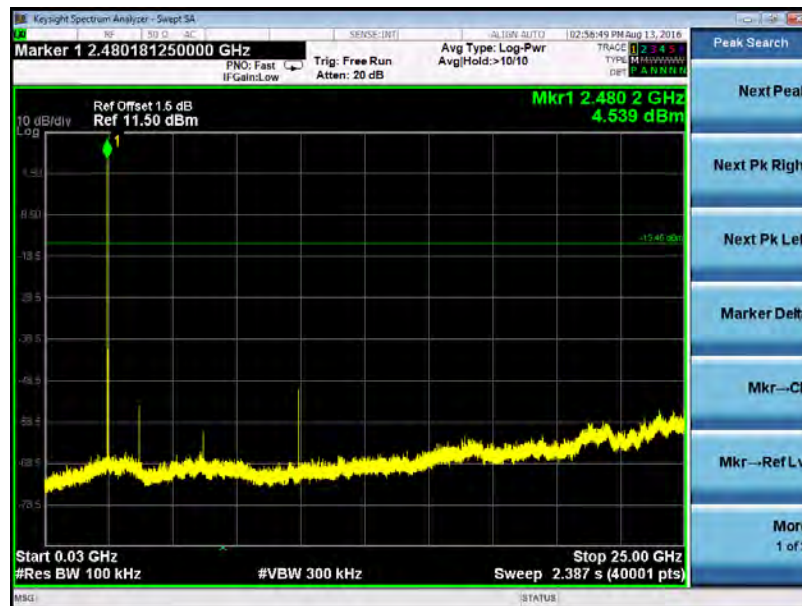


**Middle Channel**



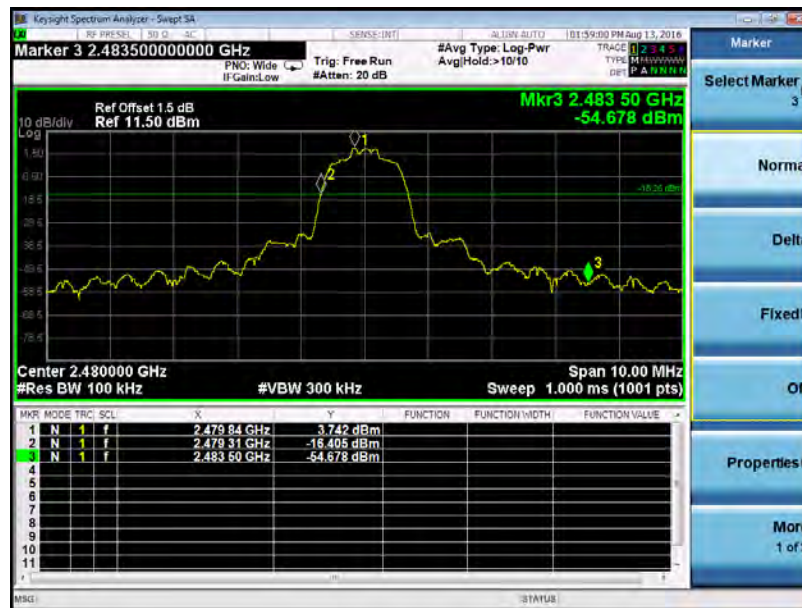


## High Channel

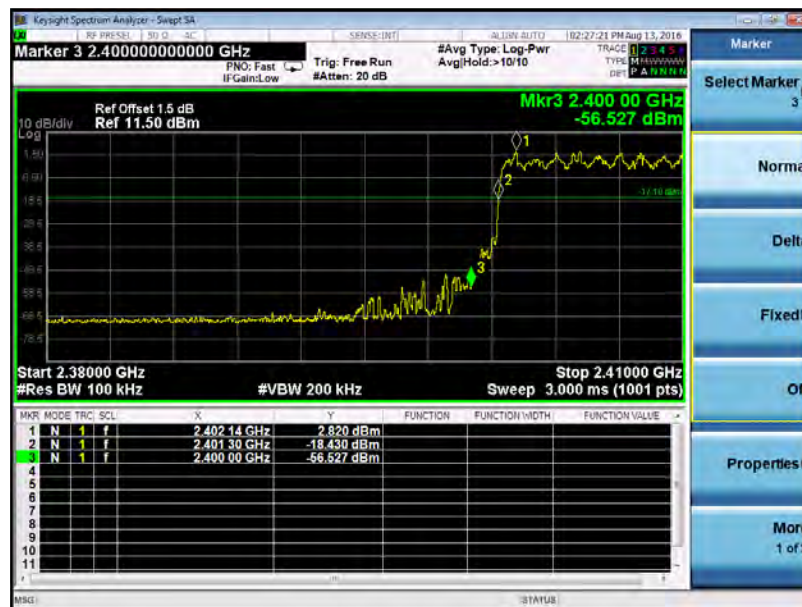


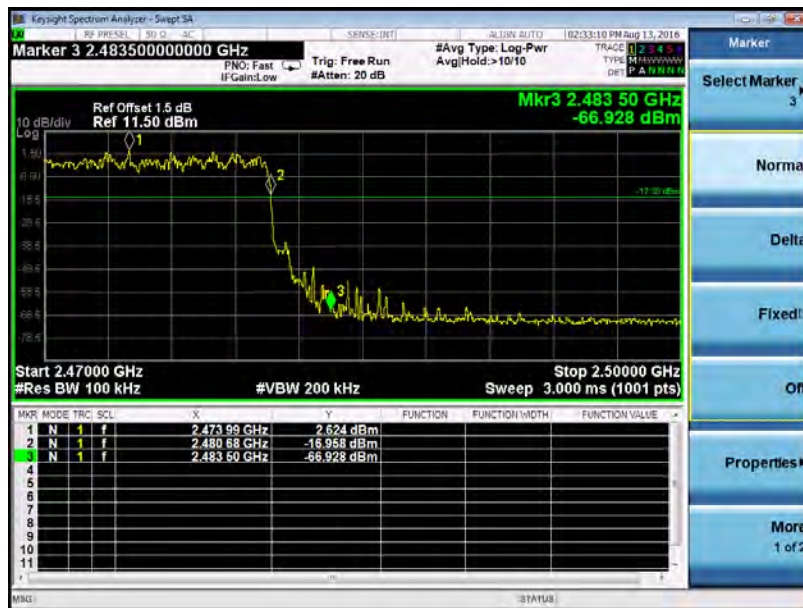
## Band Edge





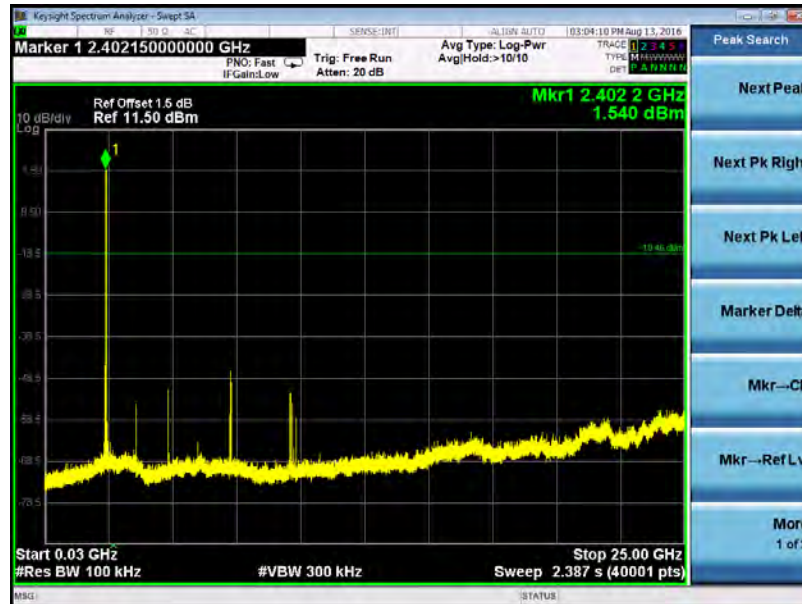
Hooping Band Edge



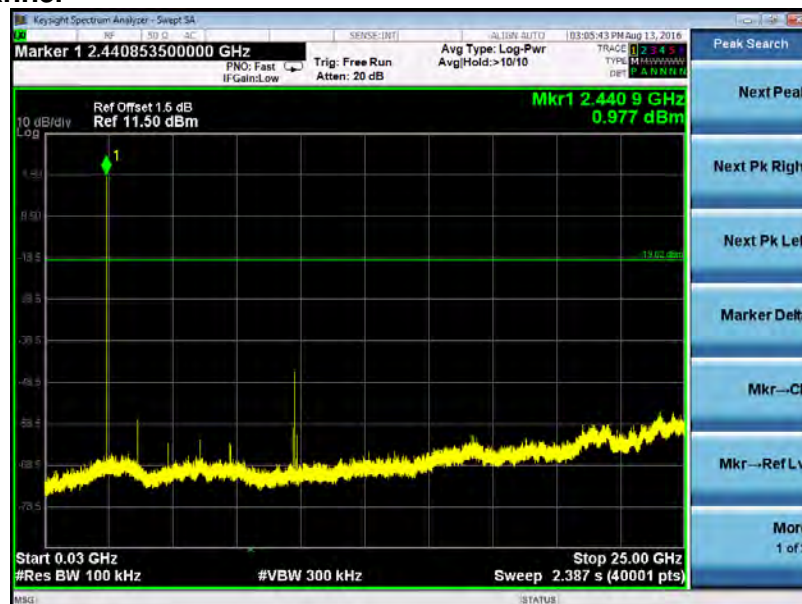


## Test Plot of Conducted spurious emissions measured in 100kHz Bandwidth of Classic Bluetooth (3DH5)

### Low Channel

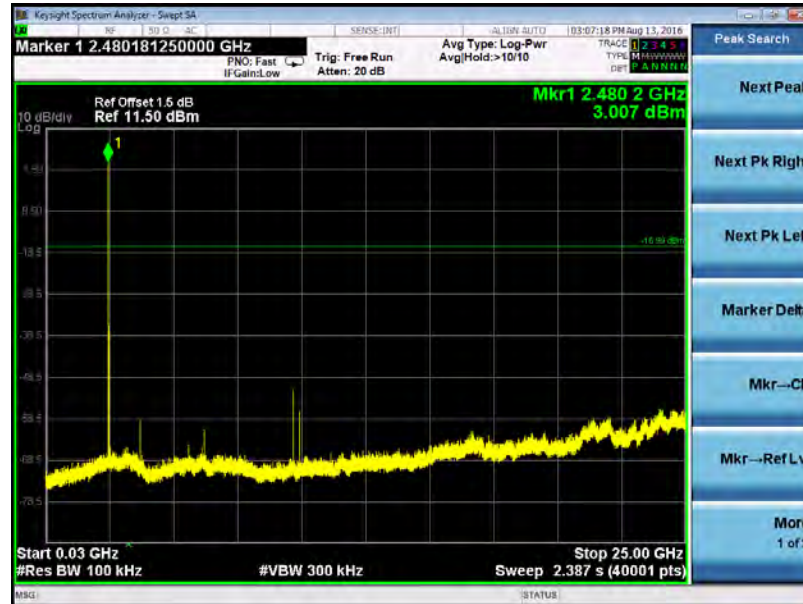


### Middle Channel

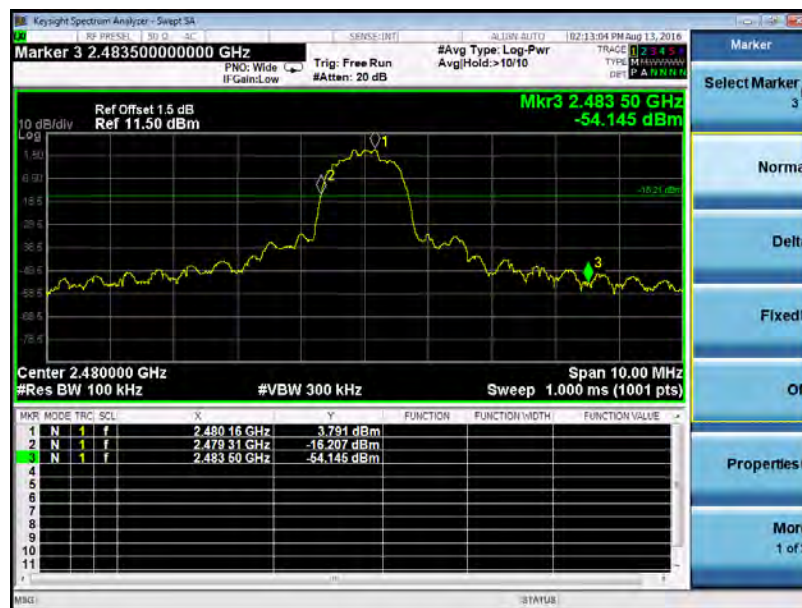




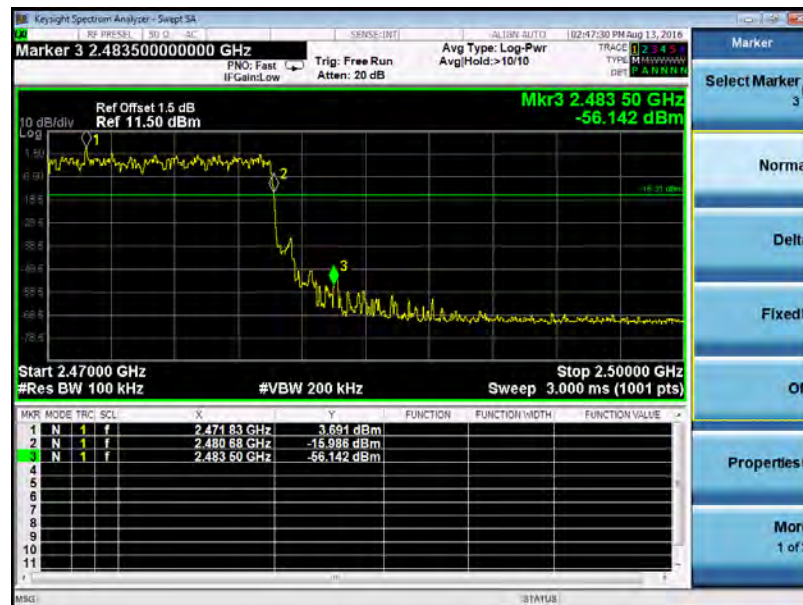
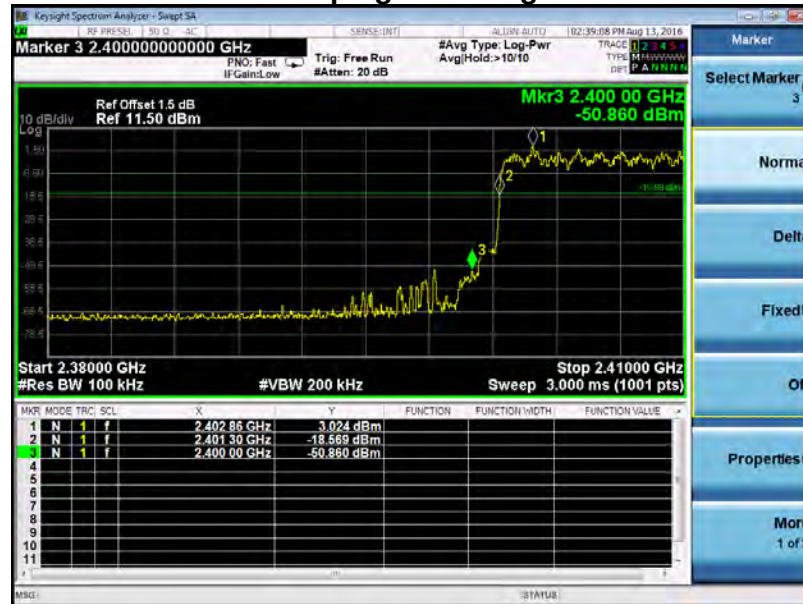
### High Channel

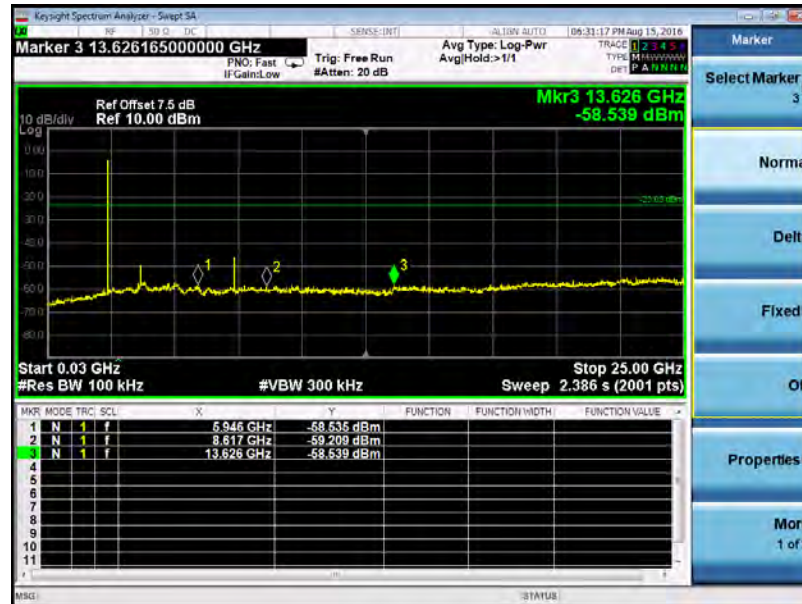
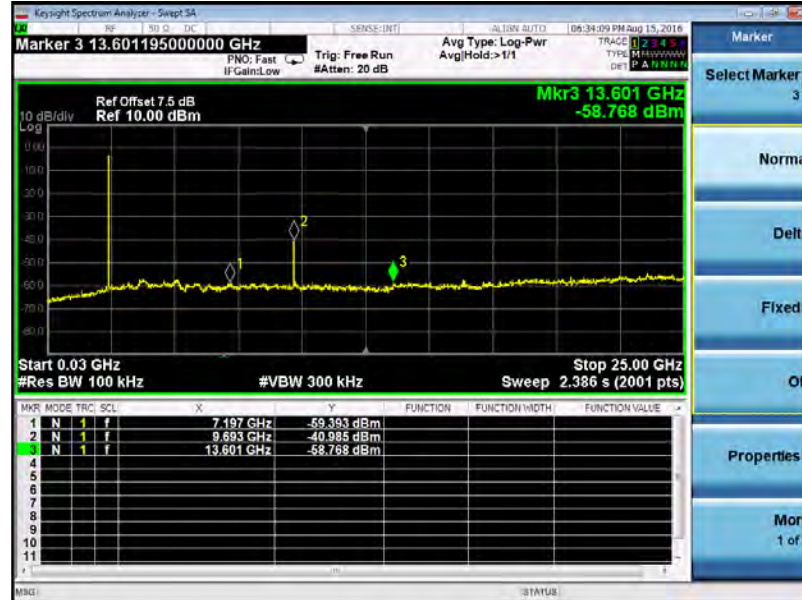


### Band Edge



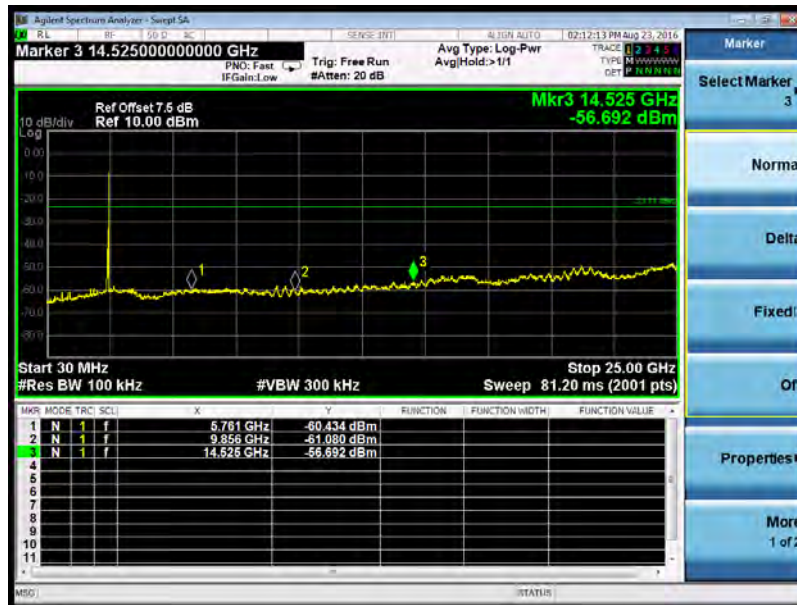
### Hooping Band Edge



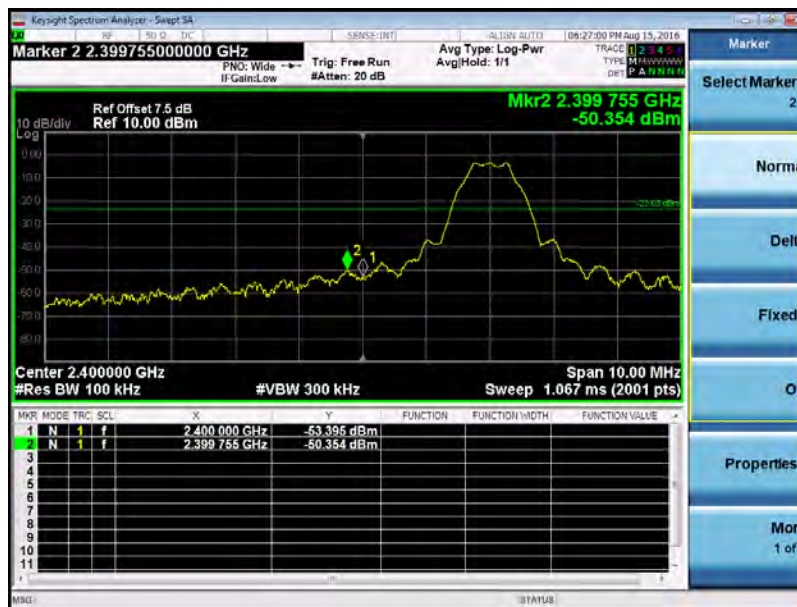
**Test Plot of Conducted spurious emissions measured in 100kHz  
 Bandwidth of Bluetooth 4.0 (BLE)**
**Low Channel**

**Middle Channel**


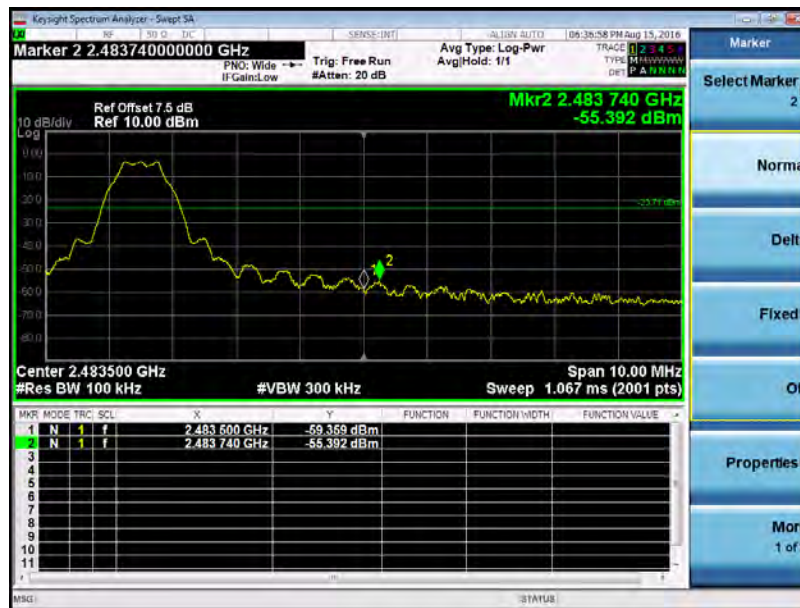


### High Channel



### Band Edge





### 5.1.5 Power spectral density

**RESULT:**
**Pass**

Date of testing : 2016-08-25  
 Test standard : FCC part 15.247(e)  
 Test : ANSI C63.10: 2013  
 Clause 10 of KDB 558074 D01 v03r05  
 Limit : 8dBm/3kHz  
 Kind of test site : Shielded room

**Test setup**

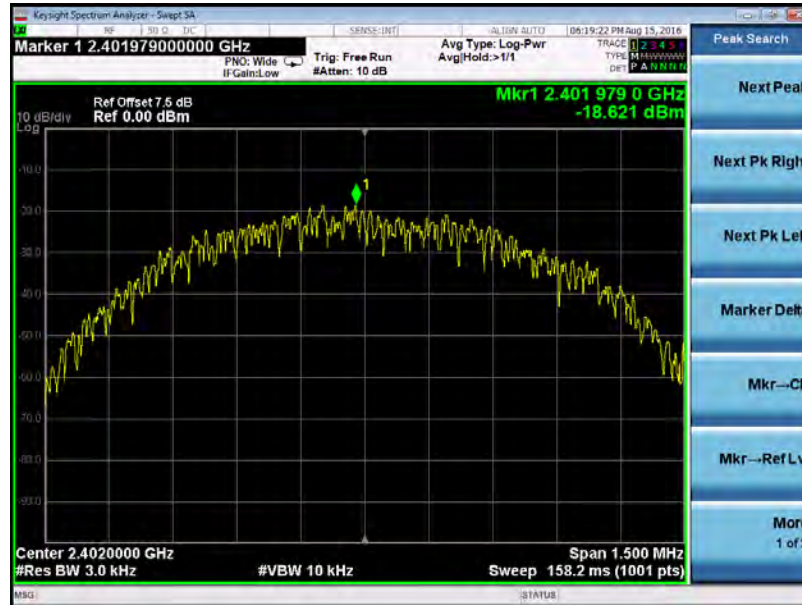
Test Channel : Low/ Middle/ High  
 Operation mode : A.2.a  
 Ambient temperature : 25°C  
 Relative humidity : 52%  
 Atmospheric pressure : 101kPa

**Table 12: Test result of power spectral density:**

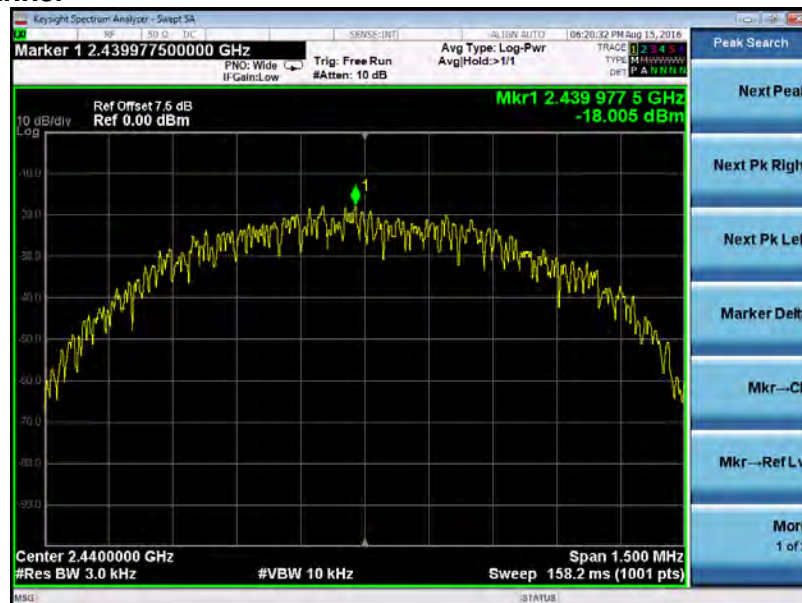
| Mode | Channel (MHz) | Result (dBm/3kHz) | Limit (dBm/3kHz) | Conclusion |
|------|---------------|-------------------|------------------|------------|
| BLE  | 2402          | -18.621           | 8                | Pass       |
|      | 2440          | -18.005           | 8                | Pass       |
|      | 2480          | -18.302           | 8                | Pass       |

For details refer to following test plot.

## Test Plot of Power spectral density measured in 3kHz Bandwidth of BLE mode Low Channel

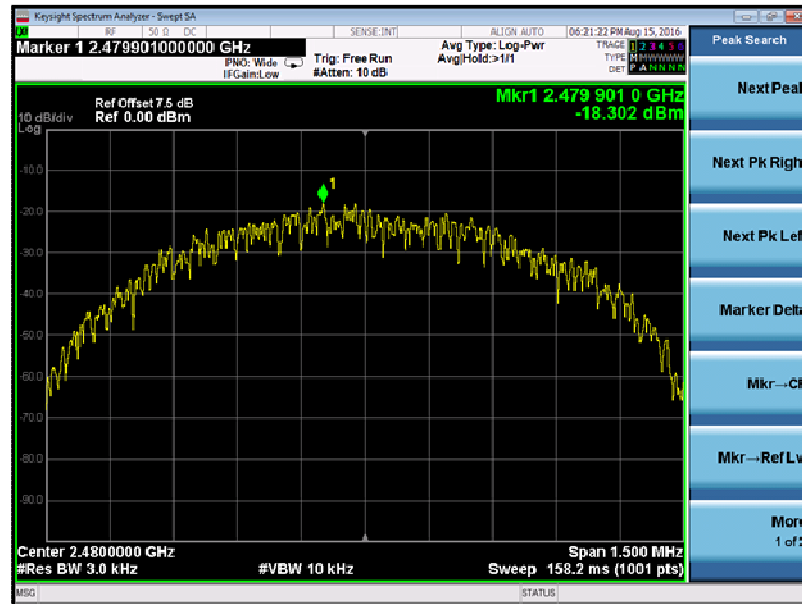


## Middle Channel





## High Channel



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**5.1.6 Spurious Emission****RESULT:****Pass**

Date of testing : 2016-08-26  
Test standard : FCC part 15.247(d)  
Test procedure : ANSI C63.10: 2013  
Clause 11&12 of KDB 558074 D01 v03r05  
Limits : FCC part 15.209(a)  
Kind of test site : 3m Semi-Anechoic Chamber

**Test setup**

Test Channel : Low/ Middle/ High  
Operation mode : A.1, A.2  
Ambient temperature : 25°C  
Relative humidity : 52%  
Atmospheric pressure : 101kPa

**Table 13: Test result of Spurious Emission of transmitting of Bluetooth (DH5)**

| Channel | Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Polar |
|---------|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|-------|
| Low     | 625.095     | 32.606                       | 12.227               | -13.394     | 46.000               | 20.379              | H     |
|         | 875.355     | 33.789                       | 9.847                | -12.211     | 46.000               | 23.942              |       |
|         | 4587.000    | 40.361                       | 38.250               | -33.639     | 74.000               | 2.111               |       |
|         | 5071.500    | 40.794                       | 37.733               | -33.206     | 74.000               | 3.061               |       |
|         | 9270.500    | 46.854                       | 33.913               | -27.146     | 74.000               | 12.941              |       |
|         | 9925.000    | 47.757                       | 34.426               | -26.243     | 74.000               | 13.331              |       |
|         | 33.395      | 32.280                       | 19.633               | -7.720      | 40.000               | 12.647              | V     |
|         | 43.580      | 37.167                       | 22.612               | -2.833      | 40.000               | 14.555              |       |
|         | 4808.000    | 44.118                       | 41.459               | -29.882     | 74.000               | 2.660               |       |
|         | 5148.000    | 45.960                       | 42.886               | -28.040     | 74.000               | 3.075               |       |
|         | 7018.000    | 44.791                       | 35.321               | -29.209     | 74.000               | 9.470               |       |
|         | 9882.500    | 47.946                       | 34.658               | -26.054     | 74.000               | 13.288              |       |
| Middle  | 525.185     | 31.186                       | 12.483               | -14.814     | 46.000               | 18.703              | H     |
|         | 875.355     | 33.778                       | 9.836                | -12.222     | 46.000               | 23.942              |       |
|         | 4587.000    | 40.194                       | 38.083               | -33.806     | 74.000               | 2.111               |       |
|         | 7341.000    | 45.131                       | 34.387               | -28.869     | 74.000               | 10.745              |       |
|         | 8956.000    | 46.530                       | 34.964               | -27.470     | 74.000               | 11.567              |       |
|         | 9840.000    | 48.657                       | 35.174               | -25.343     | 74.000               | 13.483              |       |
|         | 43.580      | 37.185                       | 22.630               | -2.815      | 40.000               | 14.555              | V     |
|         | 480.080     | 31.983                       | 13.986               | -14.017     | 46.000               | 17.997              |       |
|         | 3660.500    | 40.231                       | 41.122               | -33.769     | 74.000               | -0.892              |       |
|         | 4927.000    | 44.990                       | 42.358               | -29.010     | 74.000               | 2.632               |       |
|         | 7196.500    | 44.651                       | 34.105               | -29.349     | 74.000               | 10.546              |       |
|         | 7970.000    | 45.801                       | 35.027               | -28.199     | 74.000               | 10.773              |       |
| High    | 525.185     | 31.123                       | 12.420               | -14.877     | 46.000               | 18.703              | H     |
|         | 875.355     | 34.581                       | 10.639               | -11.419     | 46.000               | 23.942              |       |
|         | 4595.500    | 39.416                       | 37.232               | -34.584     | 74.000               | 2.183               |       |
|         | 5122.500    | 40.471                       | 37.297               | -33.529     | 74.000               | 3.174               |       |
|         | 7137.000    | 44.449                       | 34.000               | -29.551     | 74.000               | 10.448              |       |
|         | 9763.500    | 47.611                       | 34.783               | -26.389     | 74.000               | 12.828              |       |
|         | 33.880      | 32.077                       | 19.337               | -7.923      | 40.000               | 12.740              | V     |
|         | 43.500      | 37.313                       | 22.775               | -2.687      | 40.000               | 14.537              |       |
|         | 4961.000    | 45.813                       | 43.142               | -28.187     | 74.000               | 2.671               |       |
|         | 5148.000    | 46.408                       | 43.334               | -27.592     | 74.000               | 3.075               |       |
|         | 8021.000    | 46.087                       | 35.259               | -27.913     | 74.000               | 10.828              |       |
|         | 9653.000    | 48.029                       | 35.516               | -25.971     | 74.000               | 12.512              |       |

**Notes:**

1. For 9 kHz ~ 30 MHz, the amplitude of spurious emissions that are attenuated by more than 20dB below the permissible. The value has no need to be reported.
2. Due to the peak measure values also meet the average limit (54dBm), the average measurement is not tested based on technical judgment.

**Table 14: Test result of Spurious Emission of transmitting of Buletooth (2DH5)**

| Channel | Freq.<br>(MHz) | Measure<br>Level<br>(dB $\mu$<br>V/m) | Reading<br>(dB $\mu$ V) | Margin<br>(dB) | Limit<br>(dB $\mu$<br>V/m) | Correct<br>Factor<br>(dB) | Detector | Polar |
|---------|----------------|---------------------------------------|-------------------------|----------------|----------------------------|---------------------------|----------|-------|
| Low     | 525.185        | 31.502                                | 12.799                  | -14.498        | 46.000                     | 18.703                    | PEAK     | H     |
|         | 875.355        | 34.836                                | 10.894                  | -11.164        | 46.000                     | 23.942                    | PEAK     |       |
|         | 3660.500       | 40.283                                | 41.174                  | -33.717        | 74.000                     | -0.892                    | PEAK     |       |
|         | 4604.000       | 39.831                                | 37.613                  | -34.169        | 74.000                     | 2.218                     | PEAK     |       |
|         | 5666.500       | 40.893                                | 37.248                  | -33.107        | 74.000                     | 3.645                     | PEAK     |       |
|         | 6304.000       | 42.295                                | 36.025                  | -31.705        | 74.000                     | 6.270                     | PEAK     |       |
|         | 33.395         | 31.590                                | 18.943                  | -8.410         | 40.000                     | 12.647                    | PEAK     | V     |
|         | 43.580         | 37.141                                | 22.586                  | -2.859         | 40.000                     | 14.555                    | PEAK     |       |
|         | 3626.500       | 44.064                                | 45.127                  | -29.936        | 74.000                     | -1.063                    | PEAK     |       |
|         | 5097.000       | 41.300                                | 38.166                  | -32.700        | 74.000                     | 3.134                     | PEAK     |       |
|         | 7196.500       | 44.991                                | 34.445                  | -29.009        | 74.000                     | 10.546                    | PEAK     |       |
|         | 10503.000      | 50.099                                | 35.142                  | -23.901        | 74.000                     | 14.957                    | PEAK     |       |
| Middle  | 525.185        | 30.438                                | 11.735                  | -15.562        | 46.000                     | 18.703                    | PEAK     | H     |
|         | 875.355        | 34.923                                | 10.981                  | -11.077        | 46.000                     | 23.942                    | PEAK     |       |
|         | 4646.500       | 40.015                                | 37.486                  | -33.985        | 74.000                     | 2.529                     | PEAK     |       |
|         | 5029.000       | 41.207                                | 38.355                  | -32.793        | 74.000                     | 2.852                     | PEAK     |       |
|         | 6508.000       | 43.486                                | 36.185                  | -30.514        | 74.000                     | 7.301                     | PEAK     |       |
|         | 7944.500       | 45.915                                | 35.198                  | -28.085        | 74.000                     | 10.718                    | PEAK     |       |
|         | 33.395         | 32.791                                | 20.144                  | -7.209         | 40.000                     | 12.647                    | PEAK     | V     |
|         | 43.580         | 36.655                                | 22.100                  | -3.345         | 40.000                     | 14.555                    | PEAK     |       |
|         | 3660.500       | 38.836                                | 39.727                  | -35.164        | 74.000                     | -0.892                    | PEAK     |       |
|         | 4884.500       | 40.570                                | 37.885                  | -33.430        | 74.000                     | 2.685                     | PEAK     |       |
|         | 5139.500       | 46.322                                | 43.226                  | -27.678        | 74.000                     | 3.096                     | PEAK     |       |
|         | 7205.000       | 44.510                                | 33.996                  | -29.490        | 74.000                     | 10.513                    | PEAK     |       |
| High    | 359.800        | 31.067                                | 15.058                  | -14.933        | 46.000                     | 16.009                    | PEAK     | H     |
|         | 875.355        | 36.472                                | 12.530                  | -9.528         | 46.000                     | 23.942                    | PEAK     |       |
|         | 3635.000       | 42.812                                | 43.870                  | -31.188        | 74.000                     | -1.058                    | PEAK     |       |
|         | 4884.500       | 40.958                                | 38.273                  | -33.042        | 74.000                     | 2.685                     | PEAK     |       |
|         | 6465.500       | 40.874                                | 33.892                  | -33.126        | 74.000                     | 6.981                     | PEAK     |       |
|         | 9211.000       | 47.440                                | 34.482                  | -26.560        | 74.000                     | 12.958                    | PEAK     |       |
|         | 33.395         | 32.241                                | 19.594                  | -7.759         | 40.000                     | 12.647                    | PEAK     | V     |
|         | 43.580         | 37.141                                | 22.586                  | -2.859         | 40.000                     | 14.555                    | PEAK     |       |
|         | 3881.500       | 39.697                                | 40.270                  | -34.303        | 74.000                     | -0.574                    | PEAK     |       |
|         | 5139.500       | 41.966                                | 38.870                  | -32.034        | 74.000                     | 3.096                     | PEAK     |       |
|         | 6542.000       | 42.208                                | 34.843                  | -31.792        | 74.000                     | 7.365                     | PEAK     |       |
|         | 8641.500       | 45.766                                | 34.646                  | -28.234        | 74.000                     | 11.120                    | PEAK     |       |

**Notes:**

1. For 9 kHz ~ 30 MHz, the amplitude of spurious emissions that are attenuated by more than 20dB below the permissible. The value has no need to be reported.
2. Due to the peak measure values also meet the average limit (54dBm), the average measurement is not tested based on technical judgment.

**Table 15: Test result of Spurious Emission of transmitting of Buletooth (3DH5)**

| Channel | Freq.<br>(MHz) | Measure<br>Level<br>(dB $\mu$<br>V/m) | Reading<br>(dB $\mu$ V) | Margin<br>(dB) | Limit<br>(dB $\mu$<br>V/m) | Correct<br>Factor<br>(dB) | Polar |
|---------|----------------|---------------------------------------|-------------------------|----------------|----------------------------|---------------------------|-------|
| Low     | 525.185        | 31.536                                | 12.833                  | -14.464        | 46.000                     | 18.703                    | H     |
|         | 875.355        | 37.353                                | 13.411                  | -8.647         | 46.000                     | 23.942                    |       |
|         | 3728.500       | 39.665                                | 40.463                  | -34.335        | 74.000                     | -0.798                    |       |
|         | 4595.500       | 40.306                                | 38.122                  | -33.694        | 74.000                     | 2.183                     |       |
|         | 7145.500       | 44.954                                | 34.494                  | -29.046        | 74.000                     | 10.460                    |       |
|         | 10248.000      | 48.653                                | 34.345                  | -25.347        | 74.000                     | 14.309                    |       |
|         | 32.910         | 32.479                                | 19.925                  | -7.521         | 40.000                     | 12.554                    | V     |
|         | 43.580         | 36.533                                | 21.978                  | -3.467         | 40.000                     | 14.555                    |       |
|         | 3694.500       | 45.431                                | 46.323                  | -28.569        | 74.000                     | -0.892                    |       |
|         | 4723.000       | 40.307                                | 37.537                  | -33.693        | 74.000                     | 2.770                     |       |
|         | 6440.000       | 42.973                                | 36.183                  | -31.027        | 74.000                     | 6.791                     |       |
|         | 10375.500      | 48.941                                | 34.025                  | -25.059        | 74.000                     | 14.916                    |       |
| Middle  | 525.185        | 32.016                                | 13.313                  | -13.984        | 46.000                     | 18.703                    | H     |
|         | 875.355        | 35.961                                | 12.019                  | -10.039        | 46.000                     | 23.942                    |       |
|         | 3856.000       | 38.798                                | 39.348                  | -35.202        | 74.000                     | -0.551                    |       |
|         | 4944.000       | 40.877                                | 38.172                  | -33.123        | 74.000                     | 2.704                     |       |
|         | 5913.000       | 42.460                                | 37.290                  | -31.540        | 74.000                     | 5.170                     |       |
|         | 7944.500       | 45.917                                | 35.200                  | -28.083        | 74.000                     | 10.718                    |       |
|         | 32.910         | 30.996                                | 18.442                  | -9.004         | 40.000                     | 12.554                    | V     |
|         | 43.580         | 36.158                                | 21.603                  | -3.842         | 40.000                     | 14.555                    |       |
|         | 3660.500       | 39.606                                | 40.497                  | -34.394        | 74.000                     | -0.892                    |       |
|         | 5148.000       | 46.829                                | 43.755                  | -27.171        | 74.000                     | 3.075                     |       |
|         | 6499.500       | 41.269                                | 34.027                  | -32.731        | 74.000                     | 7.242                     |       |
|         | 9202.500       | 46.392                                | 33.607                  | -27.608        | 74.000                     | 12.785                    |       |
| High    | 525.185        | 31.260                                | 12.557                  | -14.740        | 46.000                     | 18.703                    | H     |
|         | 875.355        | 36.451                                | 12.509                  | -9.549         | 46.000                     | 23.942                    |       |
|         | 4306.500       | 39.015                                | 38.025                  | -34.985        | 74.000                     | 0.990                     |       |
|         | 4927.000       | 42.856                                | 40.224                  | -31.144        | 74.000                     | 2.632                     |       |
|         | 5887.500       | 41.726                                | 36.626                  | -32.274        | 74.000                     | 5.100                     |       |
|         | 7953.000       | 46.394                                | 35.671                  | -27.606        | 74.000                     | 10.724                    |       |
|         | 32.425         | 31.862                                | 19.395                  | -8.138         | 40.000                     | 12.467                    | V     |
|         | 43.580         | 36.625                                | 22.070                  | -3.375         | 40.000                     | 14.555                    |       |
|         | 4298.000       | 42.936                                | 41.952                  | -31.064        | 74.000                     | 0.984                     |       |
|         | 4961.000       | 43.608                                | 40.937                  | -30.392        | 74.000                     | 2.671                     |       |
|         | 5156.500       | 46.207                                | 43.161                  | -27.793        | 74.000                     | 3.046                     |       |
|         | 7239.000       | 44.424                                | 33.781                  | -29.576        | 74.000                     | 10.644                    |       |

**Notes:**

1. For 9 kHz ~ 30 MHz, the amplitude of spurious emissions that are attenuated by more than 20dB below the permissible. The value has no need to be reported.
2. Due to the peak measure values also meet the average limit (54dBm), the average measurement is not tested based on technical judgment.

**Table 16: Test result of Spurious Emission of transmitting of Buletooth (BLE mode)**

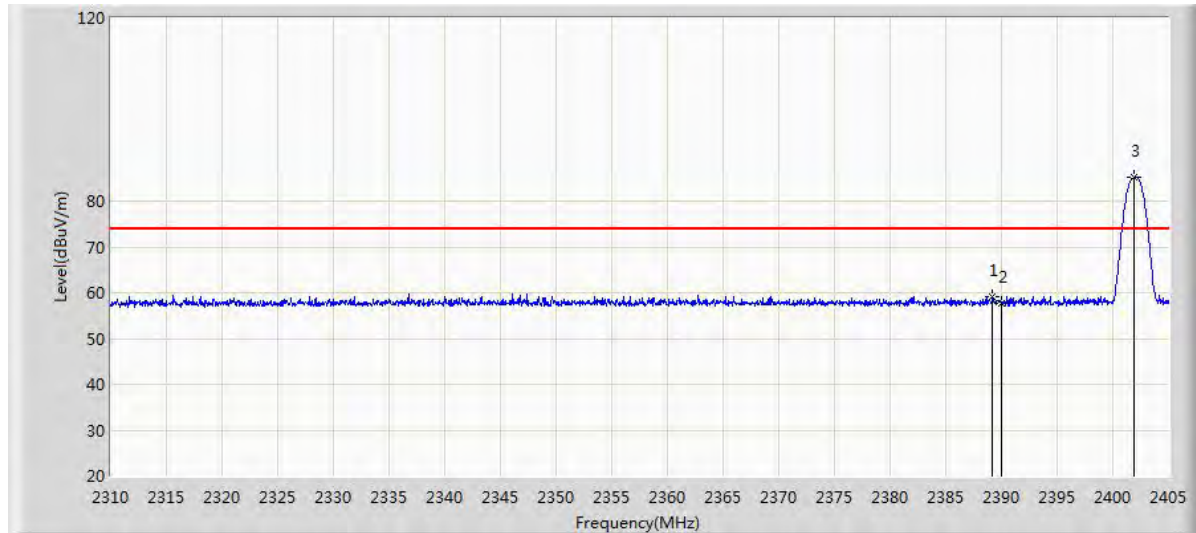
| Channel | Freq.<br>(MHz) | Measure<br>Level<br>(dB $\mu$<br>V/m) | Reading<br>(dB $\mu$ V) | Margin<br>(dB) | Limit<br>(dB $\mu$<br>V/m) | Correct<br>Factor<br>(dB) | Polar |
|---------|----------------|---------------------------------------|-------------------------|----------------|----------------------------|---------------------------|-------|
| Low     | 395.800        | 31.977                                | 15.318                  | -14.023        | 46.000                     | 16.660                    | H     |
|         | 875.355        | 36.522                                | 12.580                  | -9.478         | 46.000                     | 23.942                    |       |
|         | 3694.500       | 40.214                                | 41.106                  | -33.786        | 74.000                     | -0.892                    |       |
|         | 5114.000       | 40.584                                | 37.428                  | -33.416        | 74.000                     | 3.156                     |       |
|         | 6499.500       | 43.306                                | 36.064                  | -30.694        | 74.000                     | 7.242                     |       |
|         | 7086.000       | 44.518                                | 34.552                  | -29.482        | 74.000                     | 9.966                     |       |
|         | 33.880         | 31.790                                | 19.050                  | -8.210         | 40.000                     | 12.740                    | V     |
|         | 43.580         | 37.266                                | 22.711                  | -2.734         | 40.000                     | 14.555                    |       |
|         | 4748.500       | 40.291                                | 37.373                  | -33.709        | 74.000                     | 2.919                     |       |
|         | 5148.000       | 46.008                                | 42.934                  | -27.992        | 74.000                     | 3.075                     |       |
|         | 6593.000       | 42.352                                | 34.847                  | -31.648        | 74.000                     | 7.504                     |       |
|         | 7213.500       | 44.704                                | 34.082                  | -29.296        | 74.000                     | 10.622                    |       |
| Middle  | 525.185        | 31.468                                | 12.765                  | -14.532        | 46.000                     | 18.703                    | H     |
|         | 875.355        | 36.604                                | 12.662                  | -9.396         | 46.000                     | 23.942                    |       |
|         | 3796.500       | 37.986                                | 38.573                  | -36.014        | 74.000                     | -0.588                    |       |
|         | 4595.500       | 39.556                                | 37.372                  | -34.444        | 74.000                     | 2.183                     |       |
|         | 5071.500       | 40.907                                | 37.846                  | -33.093        | 74.000                     | 3.061                     |       |
|         | 10486.000      | 49.955                                | 35.244                  | -24.045        | 74.000                     | 14.710                    |       |
|         | 33.395         | 32.645                                | 19.998                  | -7.355         | 40.000                     | 12.647                    | V     |
|         | 43.580         | 37.099                                | 22.544                  | -2.901         | 40.000                     | 14.555                    |       |
|         | 2870.000       | 39.971                                | 42.809                  | -34.029        | 74.000                     | -2.838                    |       |
|         | 3822.000       | 38.981                                | 39.589                  | -35.019        | 74.000                     | -0.608                    |       |
|         | 5156.500       | 42.386                                | 39.340                  | -31.614        | 74.000                     | 3.046                     |       |
|         | 10418.000      | 49.525                                | 34.585                  | -24.475        | 74.000                     | 14.940                    |       |
| High    | 525.185        | 31.574                                | 12.871                  | -14.426        | 46.000                     | 18.703                    | H     |
|         | 875.355        | 36.549                                | 12.607                  | -9.451         | 46.000                     | 23.942                    |       |
|         | 3830.500       | 39.011                                | 39.615                  | -34.989        | 74.000                     | -0.604                    |       |
|         | 4765.500       | 40.808                                | 37.916                  | -33.192        | 74.000                     | 2.892                     |       |
|         | 6015.000       | 41.871                                | 36.502                  | -32.129        | 74.000                     | 5.369                     |       |
|         | 7205.000       | 45.418                                | 34.904                  | -28.582        | 74.000                     | 10.513                    |       |
|         | 33.880         | 31.993                                | 19.253                  | -8.007         | 40.000                     | 12.740                    | V     |
|         | 43.580         | 37.280                                | 22.725                  | -2.720         | 40.000                     | 14.555                    |       |
|         | 3915.500       | 41.403                                | 41.966                  | -32.597        | 74.000                     | -0.564                    |       |
|         | 5148.000       | 47.074                                | 44.000                  | -26.926        | 74.000                     | 3.075                     |       |
|         | 6015.000       | 41.871                                | 36.502                  | -32.129        | 74.000                     | 5.369                     |       |
|         | 7205.000       | 45.418                                | 34.904                  | -28.582        | 74.000                     | 10.513                    |       |

**Notes:**

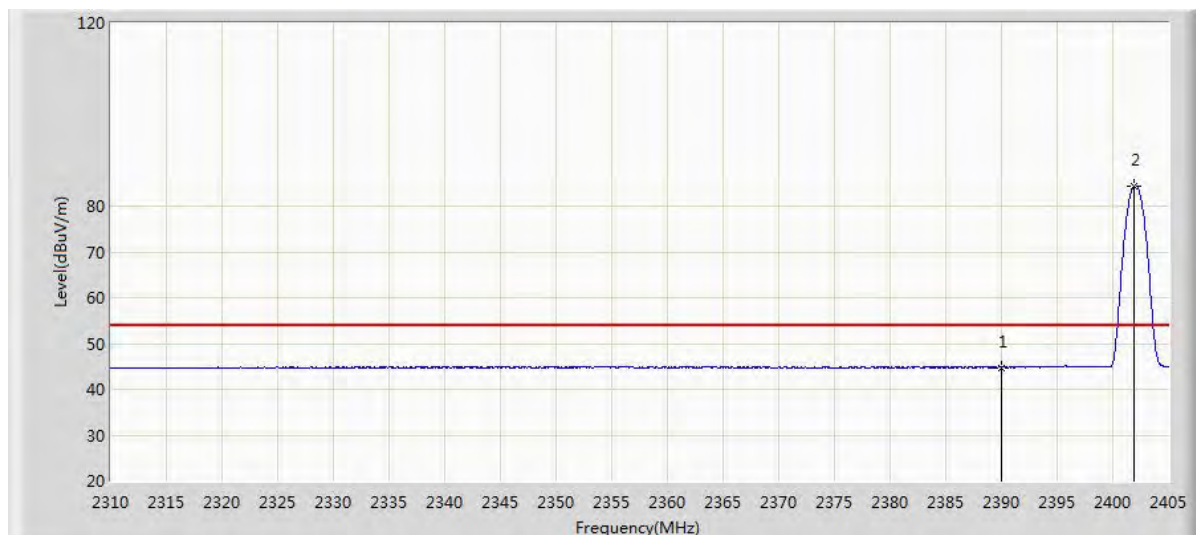
1. For 9 kHz ~ 30 MHz, the amplitude of spurious emissions that are attenuated by more than 20dB below the permissible. The value has no need to be reported.
2. Due to the peak measure values also meet the average limit (54dBm), the average measurement is not tested based on technical judgment.

## Test Plot of Frequency Band Edge of Bluetooth (DH5)

### Low Channel

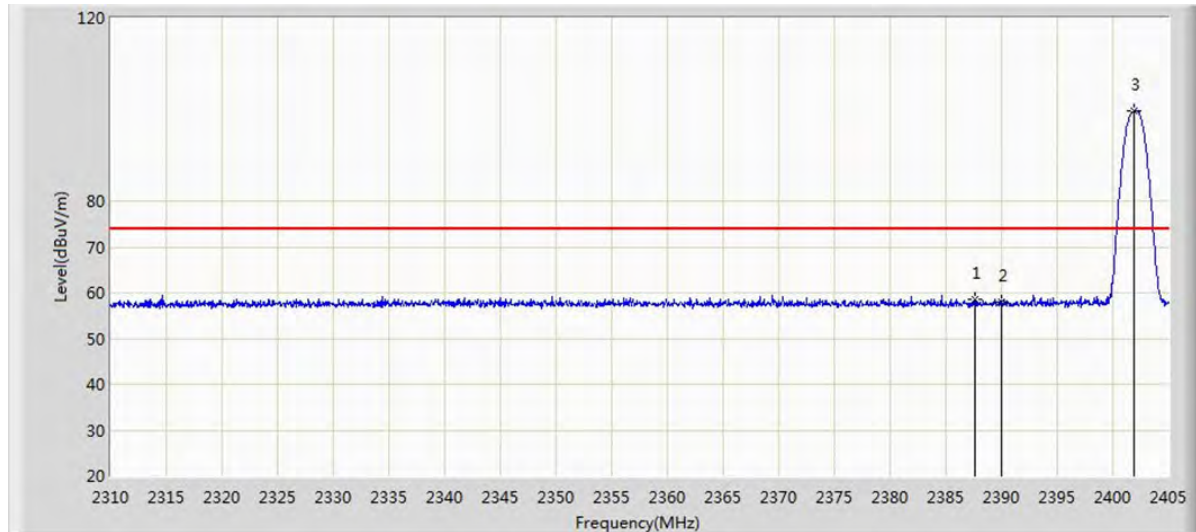


| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2389.183    | 59.226                       | 26.952               | -14.774     | 74.000               | 32.274              | PK       | H     |
| 2390.000    | 57.769                       | 25.491               | -16.231     | 74.000               | 32.278              | PK       |       |
| 2401.865    | 85.118                       | 52.844               | N/A         | N/A                  | 32.274              | PK       |       |

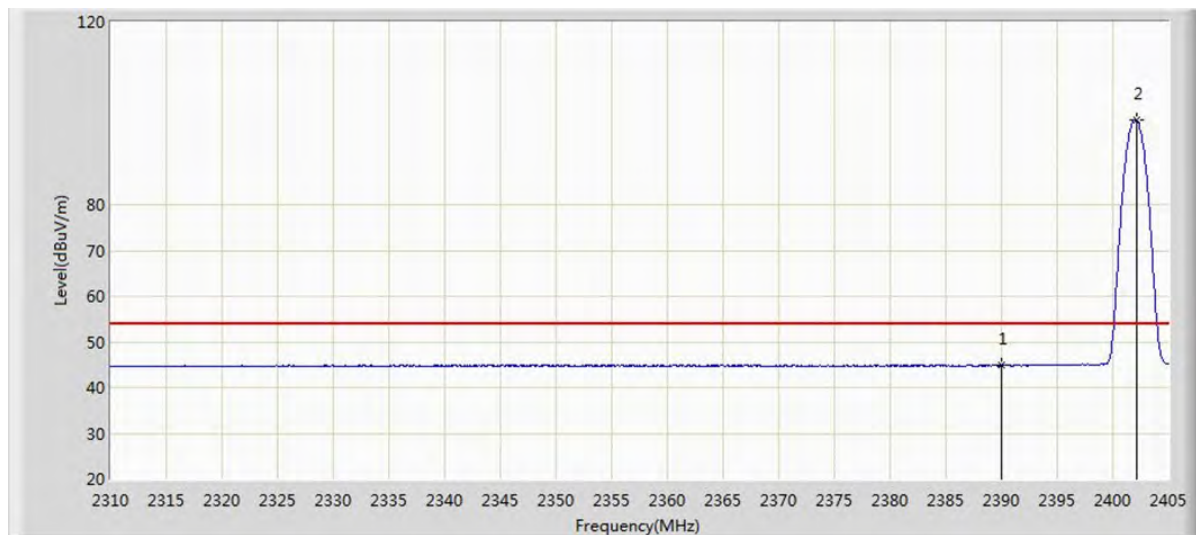


| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2390.000    | 44.766                       | 12.488               | -9.234      | 54.000               | 32.278              | 2390.000 | H     |
| 2401.960    | 84.486                       | 52.212               | N/A         | N/A                  | 32.274              | 2401.960 |       |



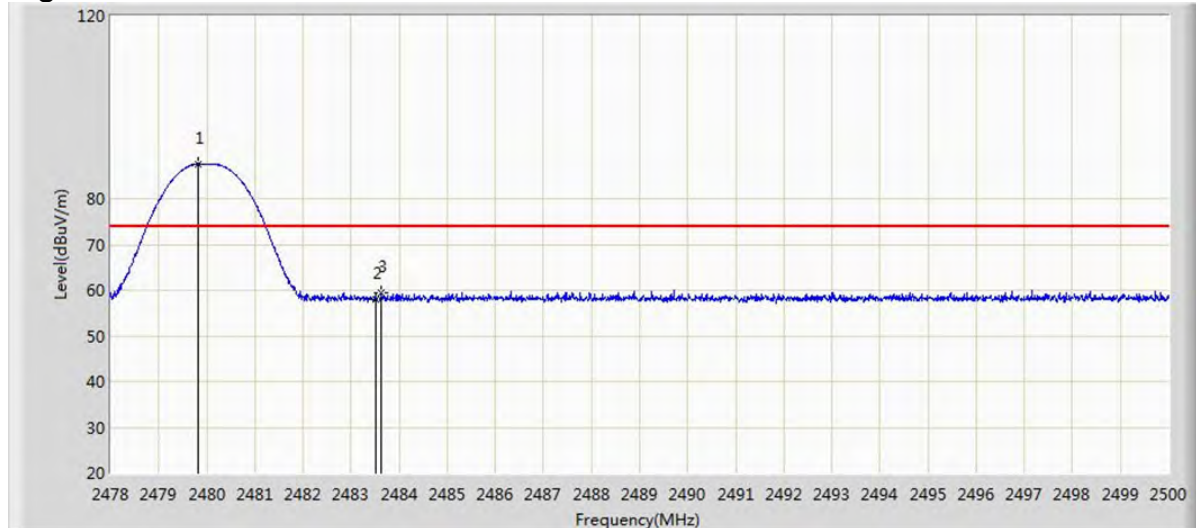


| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2387.615    | 58.600                       | 26.335               | -15.400     | 74.000               | 32.265              | PK       | V     |
| 2390.000    | 57.828                       | 25.550               | -16.172     | 74.000               | 32.278              | PK       |       |
| 2401.865    | 99.607                       | 67.333               | N/A         | N/A                  | 32.274              | PK       |       |



| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2390.000    | 44.855                       | 12.577               | -9.145      | 54.000               | 32.278              | AV       | V     |
| 2402.150    | 98.578                       | 66.305               | N/A         | N/A                  | 32.273              | AV       |       |

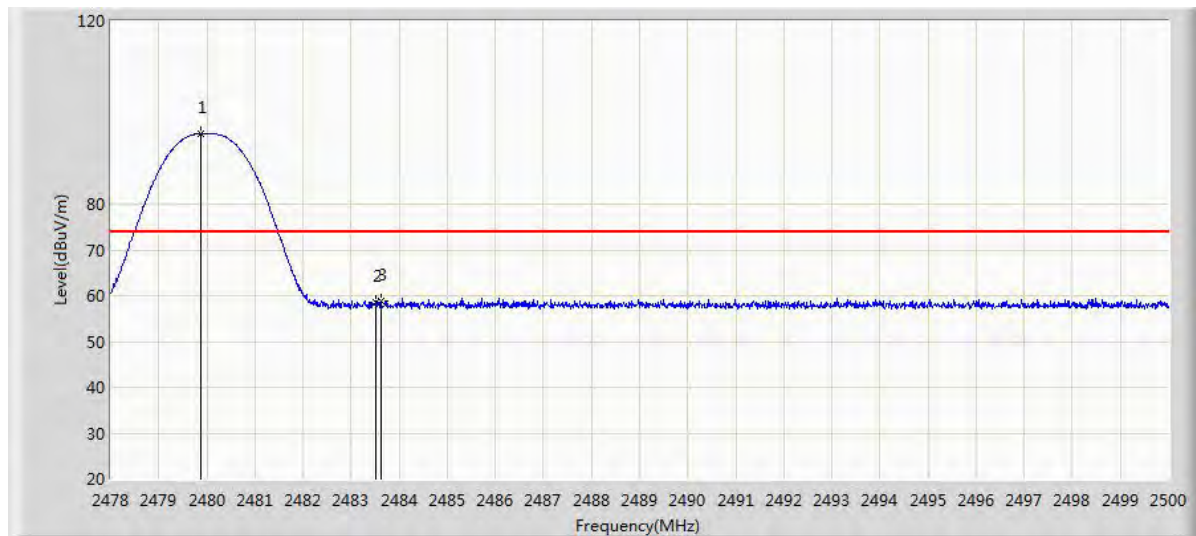


**High Channel**


| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2479.815    | 87.590                       | 55.322               | N/A         | N/A                  | 32.269              | PK       | H     |
| 2483.500    | 58.106                       | 25.825               | -15.894     | 74.000               | 32.282              | PK       |       |
| 2483.632    | 59.503                       | 27.221               | -14.497     | 74.000               | 32.282              | PK       |       |



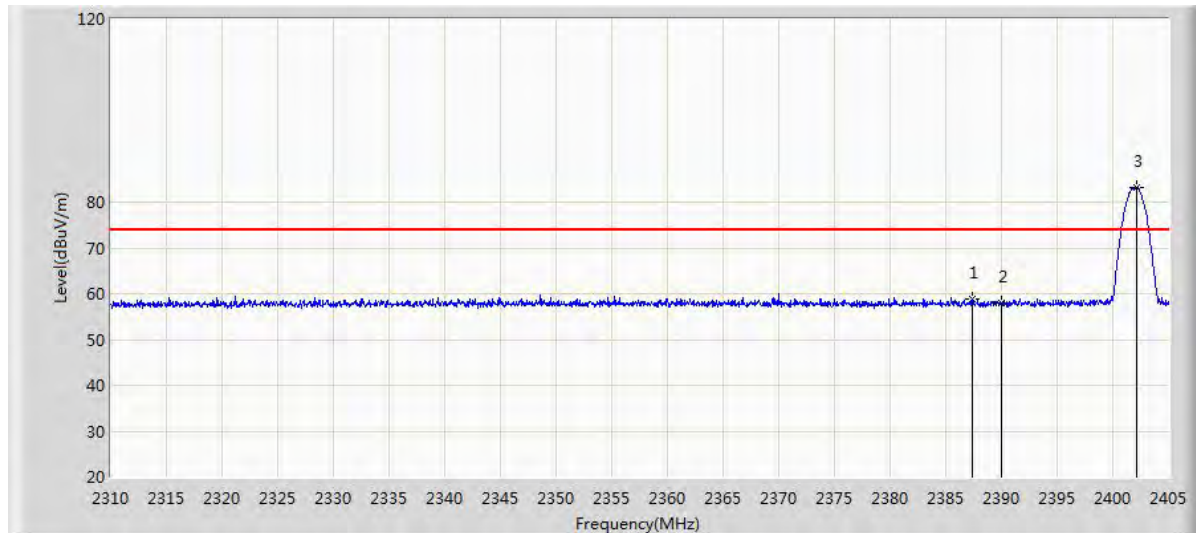
| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2480.046    | 86.922                       | 54.653               | N/A         | N/A                  | 32.269              | AV       | H     |
| 2483.500    | 45.322                       | 13.041               | -8.678      | 54.000               | 32.282              | AV       |       |



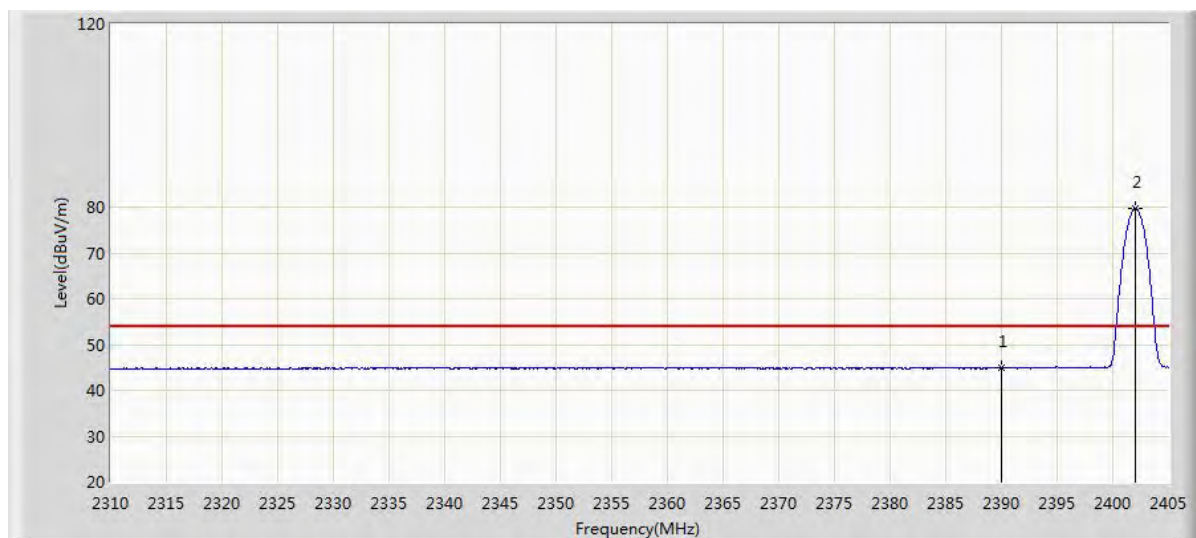
| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2479.870    | 95.327                       | 63.058               | N/A         | N/A                  | 32.269              | PK       | V     |
| 2483.500    | 58.452                       | 26.171               | -15.548     | 74.000               | 32.282              | PK       |       |
| 2483.621    | 58.925                       | 26.643               | -15.075     | 74.000               | 32.282              | PK       |       |



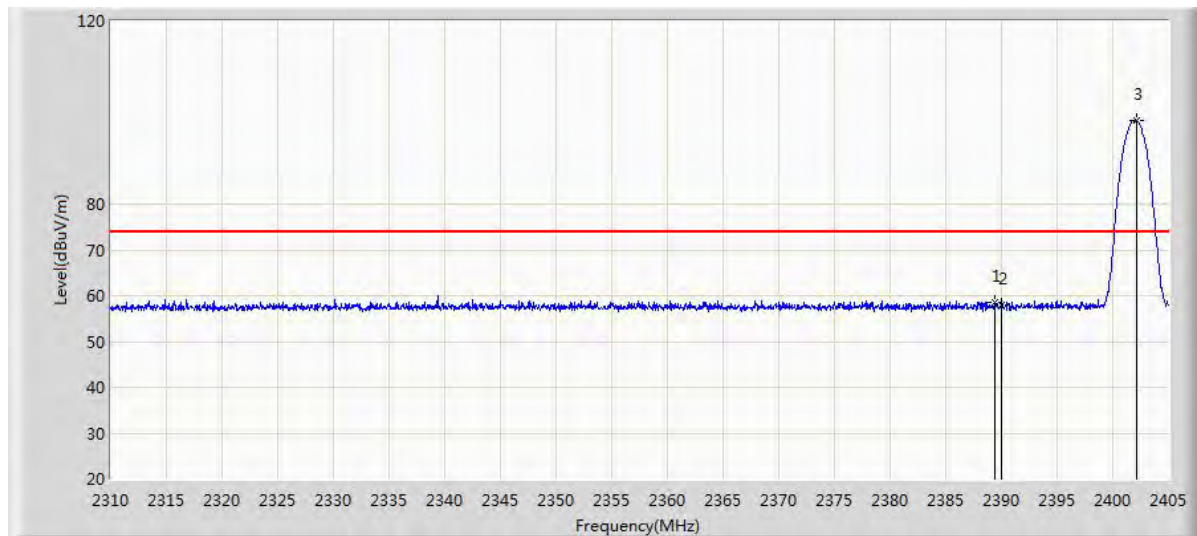
| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2480.079    | 94.898                       | 62.629               | N/A         | N/A                  | 32.269              | AV       | V     |
| 2483.500    | 45.395                       | 13.114               | -8.605      | 54.000               | 32.282              | AV       |       |

**Test Plot of Frequency Band Edge of Bluetooth (2DH5)**  
**Low Channel**


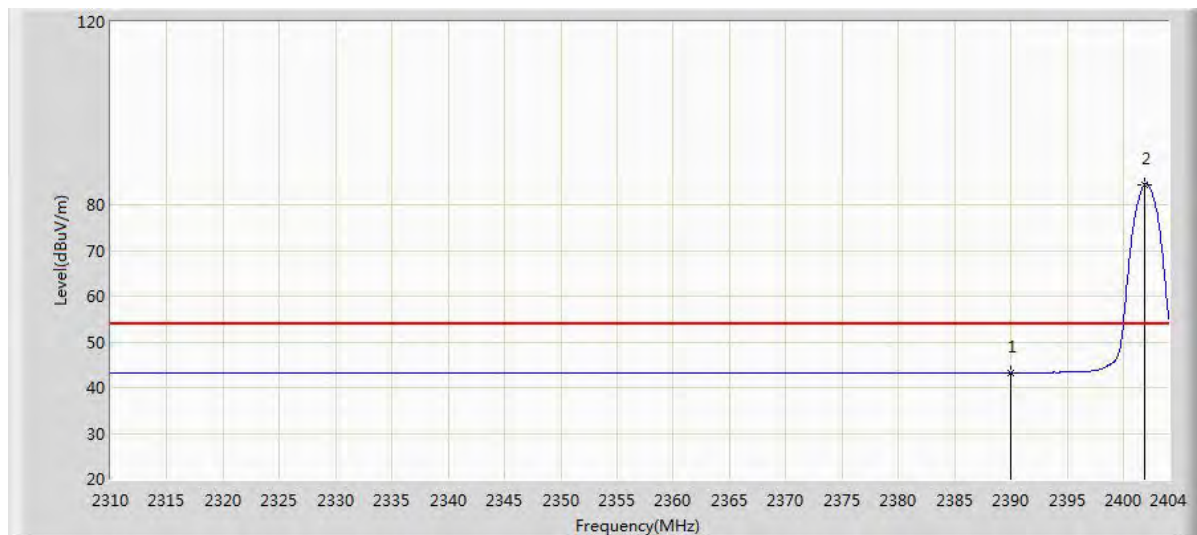
| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2387.425    | 58.703                       | 26.439               | -15.297     | 74.000               | 32.263              | PK       | H     |
| 2390.000    | 58.037                       | 25.759               | -15.963     | 74.000               | 32.278              | PK       |       |
| 2402.150    | 83.274                       | 51.001               | N/A         | N/A                  | 32.273              | PK       |       |



| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2390.000    | 44.870                       | 12.592               | -9.130      | 54.000               | 32.278              | AV       | H     |
| 2402.008    | 79.821                       | 47.547               | N/A         | N/A                  | 32.274              | AV       |       |

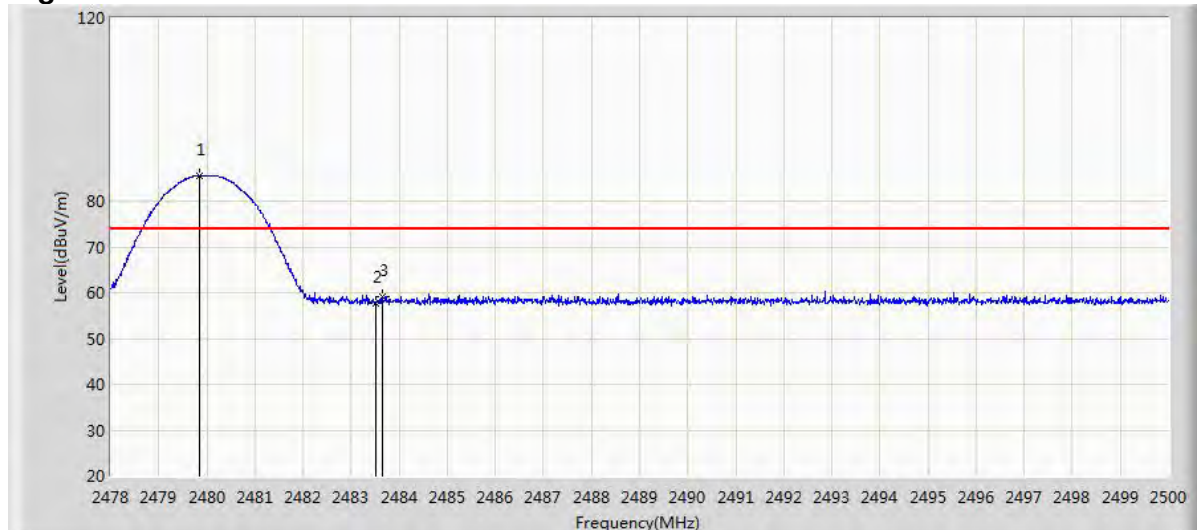


| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2389.420    | 58.541                       | 26.266               | -15.459     | 74.000               | 32.275              | PK       | V     |
| 2390.000    | 58.036                       | 25.758               | -15.964     | 74.000               | 32.278              | PK       |       |
| 2402.150    | 98.199                       | 65.926               | N/A         | N/A                  | 32.273              | PK       |       |



| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2390.000    | 44.870                       | 12.592               | -9.130      | 54.000               | 32.278              | AV       | V     |
| 2402.150    | 94.740                       | 62.467               | N/A         | N/A                  | 32.273              | AV       |       |

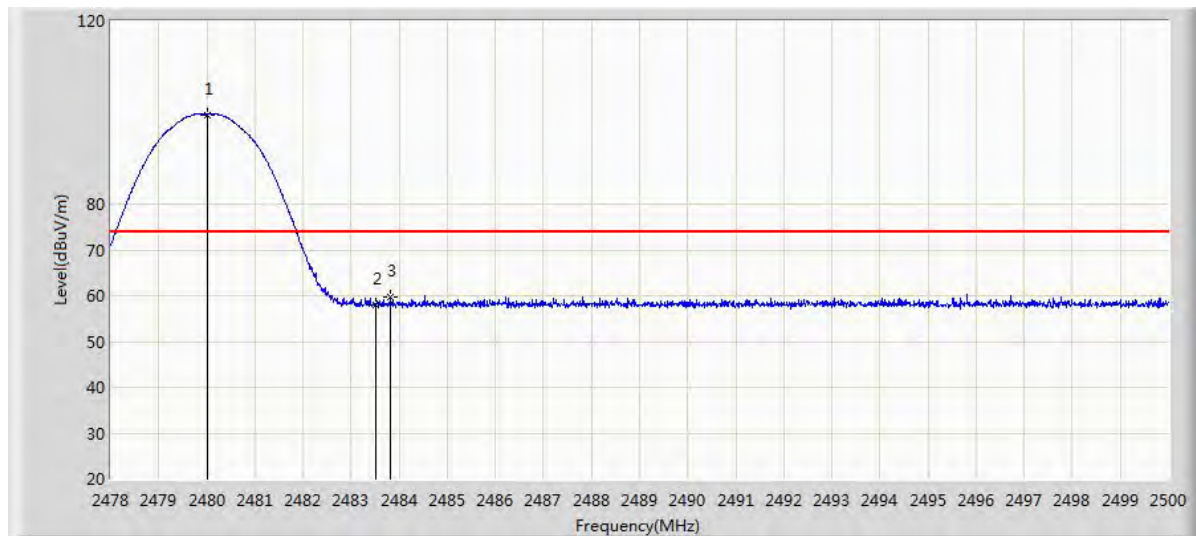


**High Channel**


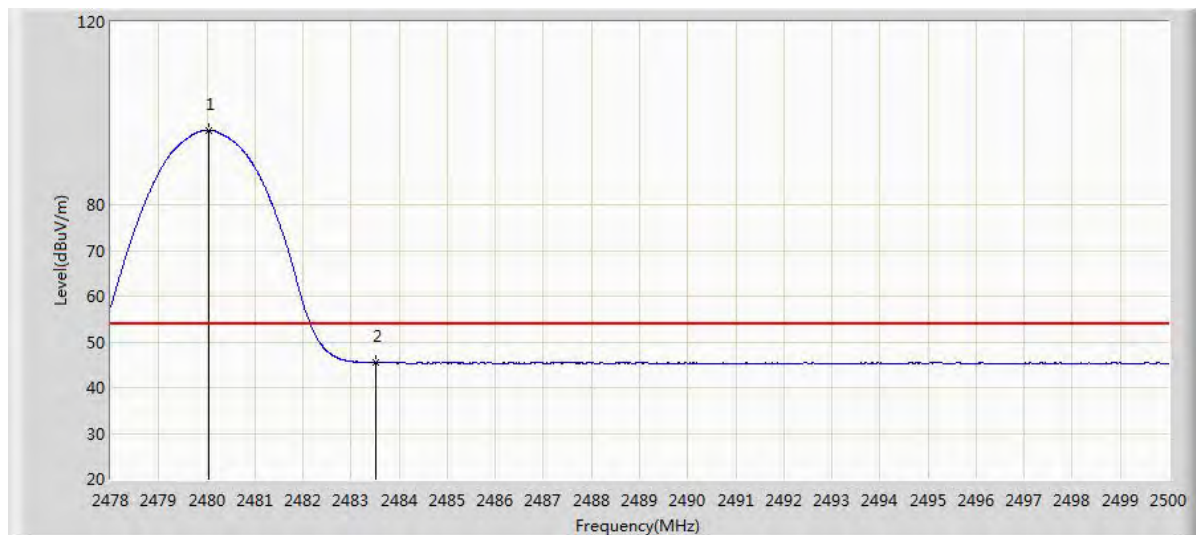
| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2479.837    | 85.508                       | 53.239               | N/A         | N/A                  | 32.269              | PK       | H     |
| 2483.500    | 57.747                       | 25.466               | -16.253     | 74.000               | 32.282              | PK       |       |
| 2483.665    | 59.131                       | 26.849               | -14.869     | 74.000               | 32.282              | PK       |       |



| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2480.079    | 82.100                       | 49.831               | N/A         | N/A                  | 32.269              | AV       | H     |
| 2483.500    | 45.300                       | 13.019               | -8.700      | 54.000               | 32.282              | AV       |       |

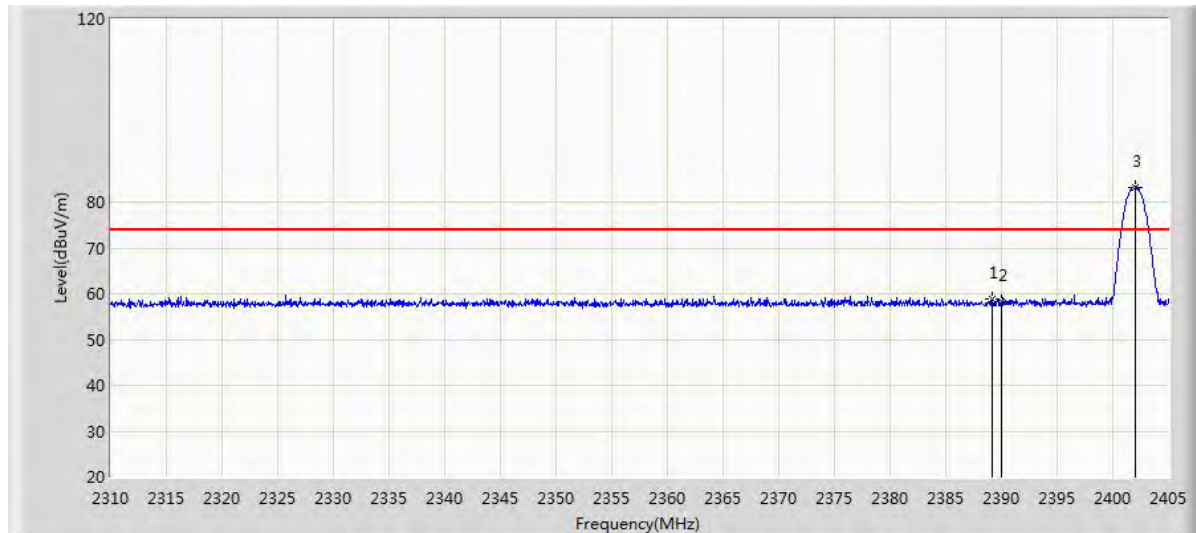


| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2480.002    | 99.559                       | 67.290               | N/A         | N/A                  | 32.269              | PK       | V     |
| 2483.500    | 57.882                       | 25.601               | -16.118     | 74.000               | 32.282              | PK       |       |
| 2483.819    | 59.688                       | 27.406               | -14.312     | 74.000               | 32.282              | PK       |       |

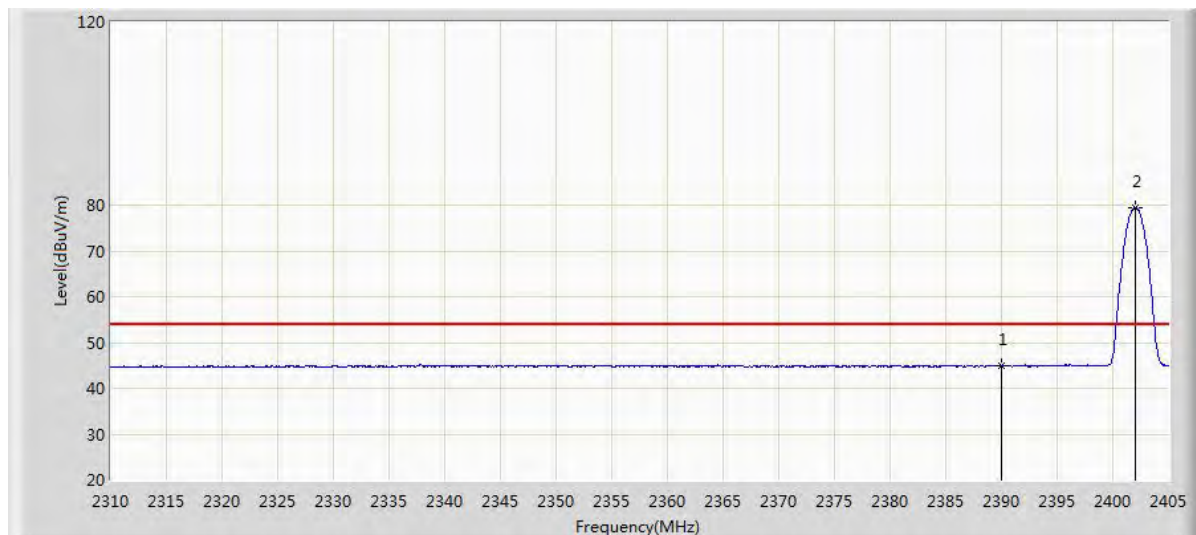


| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2480.046    | 96.292                       | 64.023               | N/A         | N/A                  | 32.269              | AV       | V     |
| 2483.500    | 45.490                       | 13.209               | -8.510      | 54.000               | 32.282              | AV       |       |

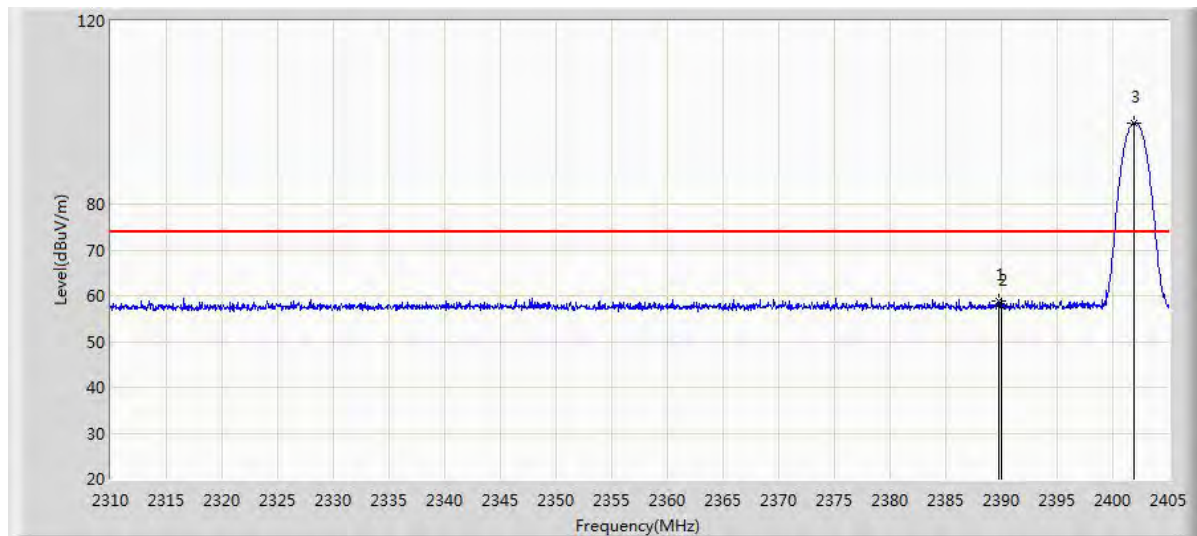


**Test Plot of Frequency Band Edge of Bluetooth (3DH5)**  
**Low Channel**


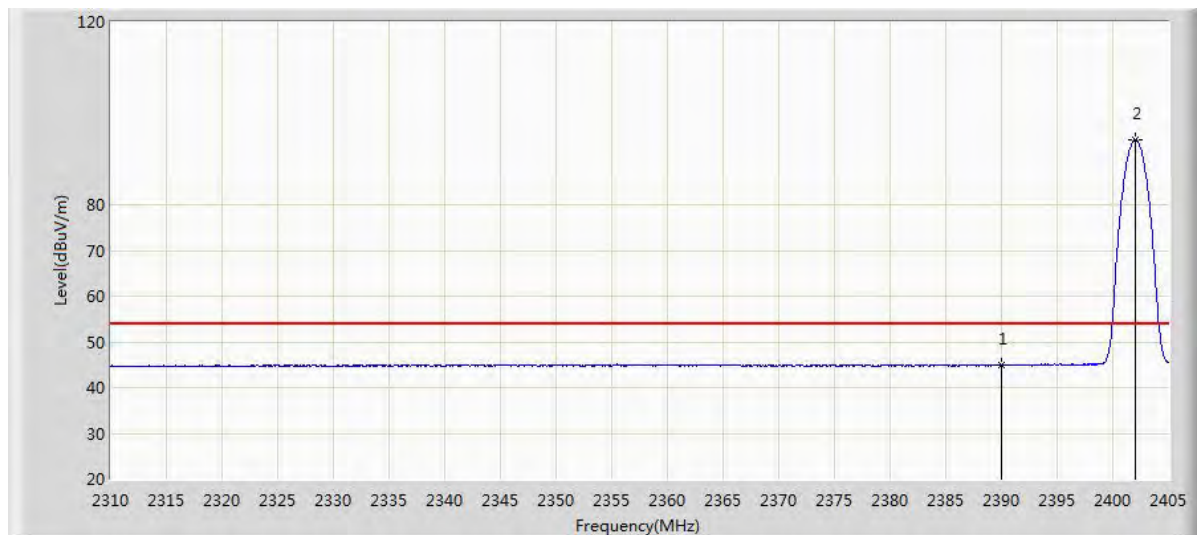
| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2389.183    | 58.903                       | 26.629               | -15.097     | 74.000               | 32.274              | PK       | H     |
| 2390.000    | 58.146                       | 25.868               | -15.854     | 74.000               | 32.278              | PK       |       |
| 2402.008    | 83.321                       | 51.047               | N/A         | N/A                  | 32.274              | PK       |       |



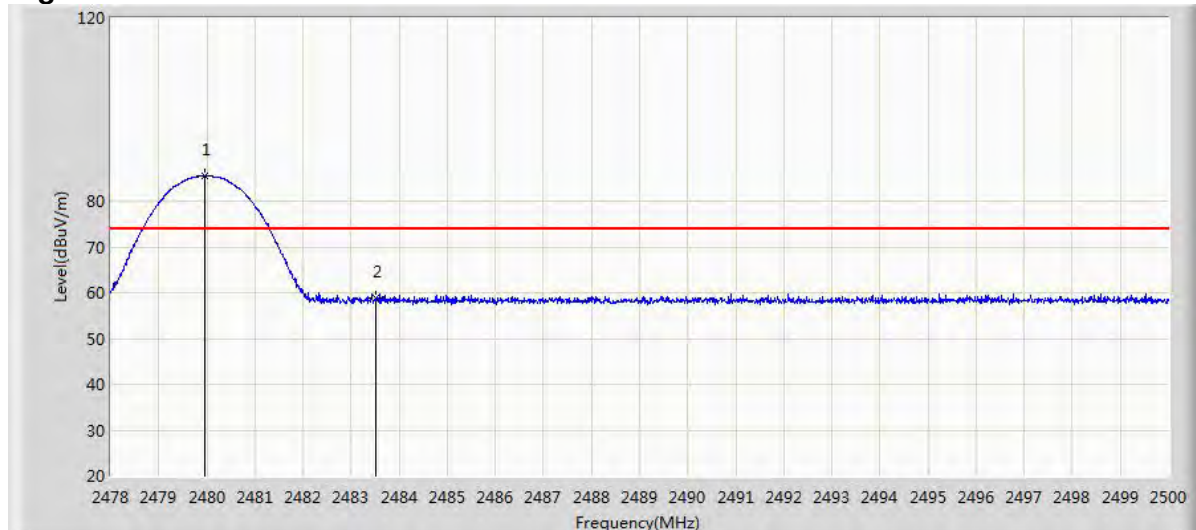
| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2390.000    | 44.870                       | 12.592               | -9.130      | 54.000               | 32.278              | AV       | H     |
| 2402.055    | 79.502                       | 47.228               | N/A         | N/A                  | 32.273              | AV       |       |



| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2389.800    | 58.804                       | 26.527               | -15.196     | 74.000               | 32.277              | PK       | V     |
| 2390.000    | 57.728                       | 25.450               | -16.272     | 74.000               | 32.278              | PK       |       |
| 2401.865    | 97.663                       | 65.389               | N/A         | N/A                  | 32.274              | PK       |       |



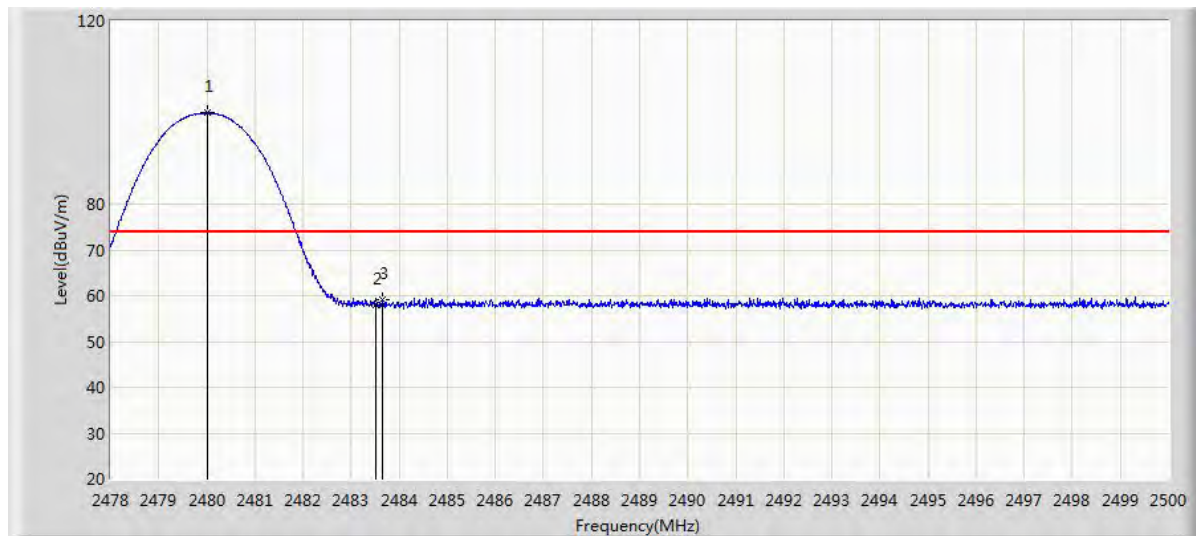
| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2390.000    | 44.829                       | 12.551               | -9.171      | 54.000               | 32.278              | AV       | V     |
| 2402.008    | 94.123                       | 61.849               | N/A         | N/A                  | 32.274              | AV       |       |

**High Channel**


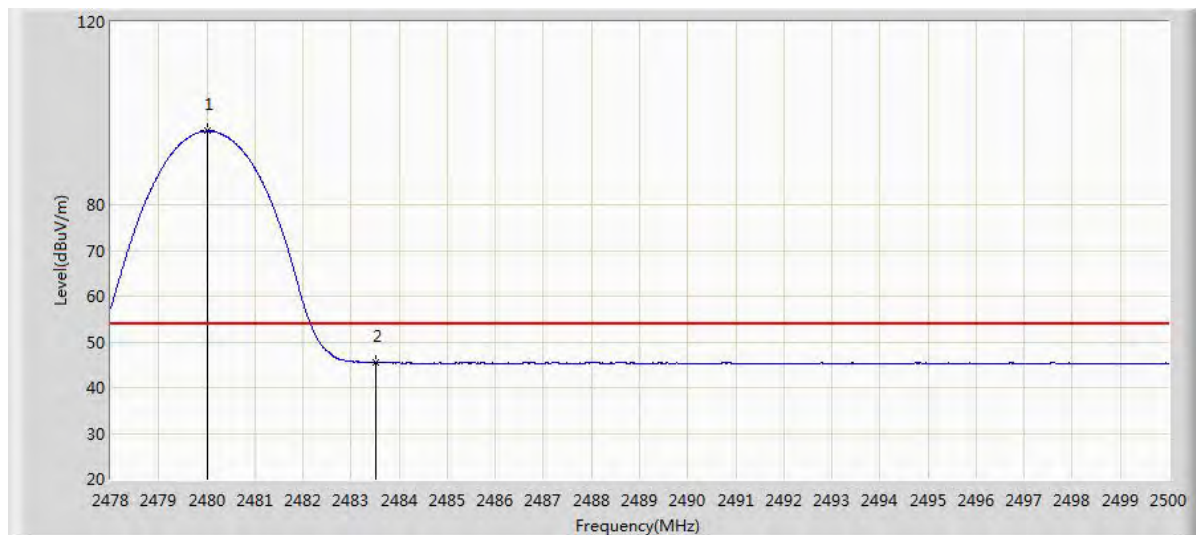
| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2479.969    | 85.518                       | 53.249               | N/A         | N/A                  | 32.269              | PK       | H     |
| 2483.500    | 58.810                       | 26.529               | -15.190     | 74.000               | 32.282              | PK       |       |



| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2479.991    | 81.649                       | 49.380               | N/A         | N/A                  | 32.269              | AV       | H     |
| 2483.500    | 45.277                       | 12.996               | -8.723      | 54.000               | 32.282              | AV       |       |

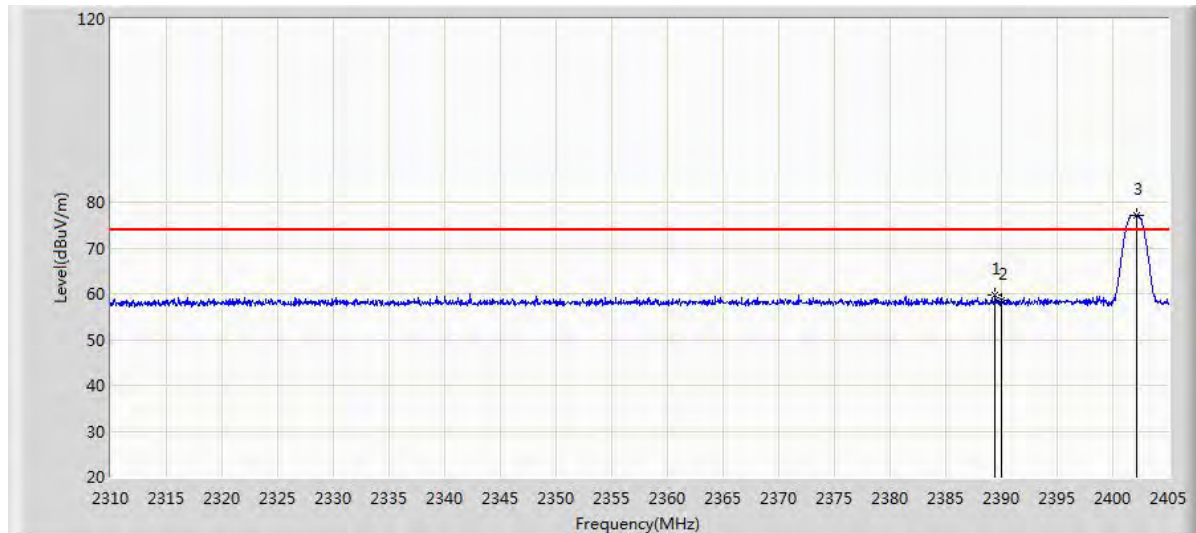


| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2480.002    | 99.913                       | 67.644               | N/A         | N/A                  | 32.269              | PK       | V     |
| 2483.500    | 57.963                       | 25.682               | -16.037     | 74.000               | 32.282              | PK       |       |
| 2483.665    | 59.010                       | 26.728               | -14.990     | 74.000               | 32.282              | PK       |       |

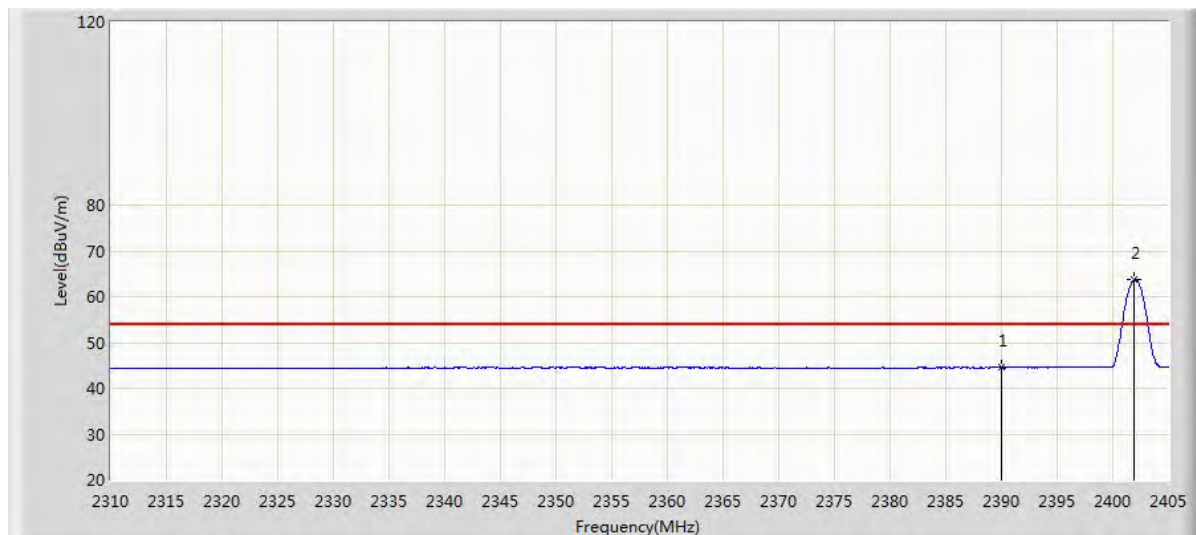


| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2480.002    | 96.097                       | 63.828               | N/A         | N/A                  | 32.269              | AV       | V     |
| 2483.500    | 45.441                       | 13.160               | -8.559      | 54.000               | 32.282              | AV       |       |

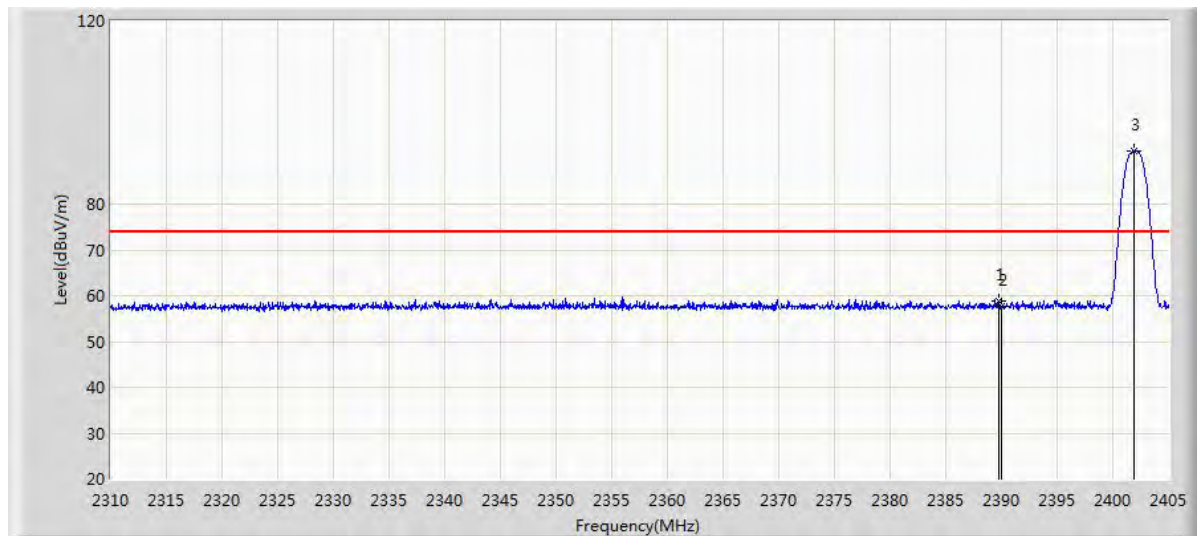


**Test Plot of Frequency Band Edge of Bluetooth BLE mode**  
**Low Channel**


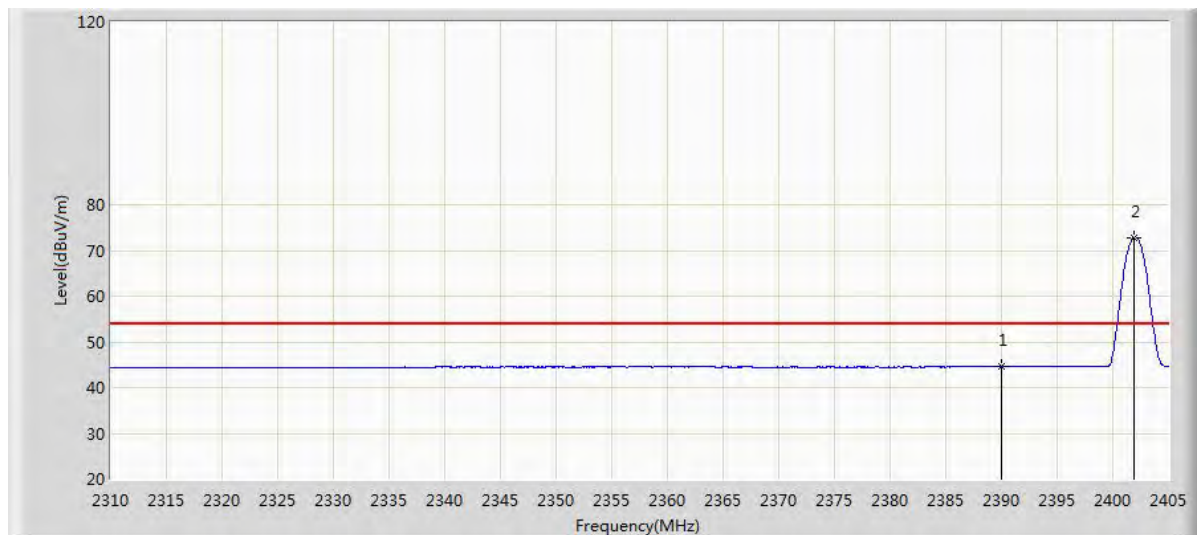
| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2389.420    | 59.630                       | 27.355               | -14.370     | 74.000               | 32.275              | PK       | H     |
| 2390.000    | 58.537                       | 26.259               | -15.463     | 74.000               | 32.278              | PK       |       |
| 2402.150    | 77.084                       | 44.811               | N/A         | N/A                  | 32.273              | PK       |       |



| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2390.000    | 44.503                       | 12.225               | -9.497      | 54.000               | 32.278              | AV       | H     |
| 2401.960    | 63.675                       | 31.401               | N/A         | N/A                  | 32.274              | AV       |       |

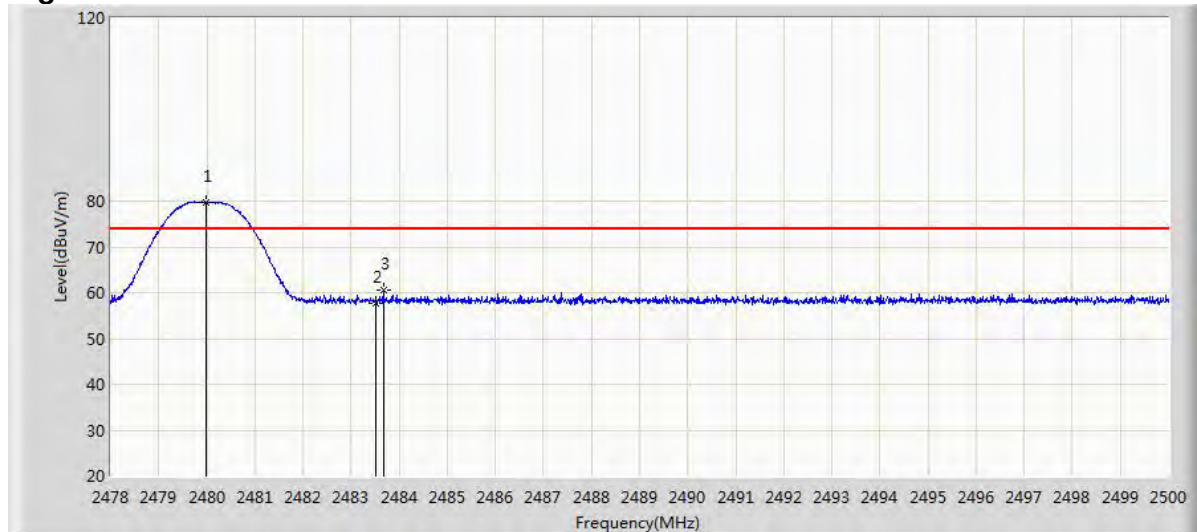


| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2389.752    | 58.864                       | 26.587               | -15.136     | 74.000               | 32.276              | PK       | V     |
| 2390.000    | 57.590                       | 25.312               | -16.410     | 74.000               | 32.278              | PK       |       |
| 2401.865    | 91.458                       | 59.184               | N/A         | N/A                  | 32.274              | PK       |       |

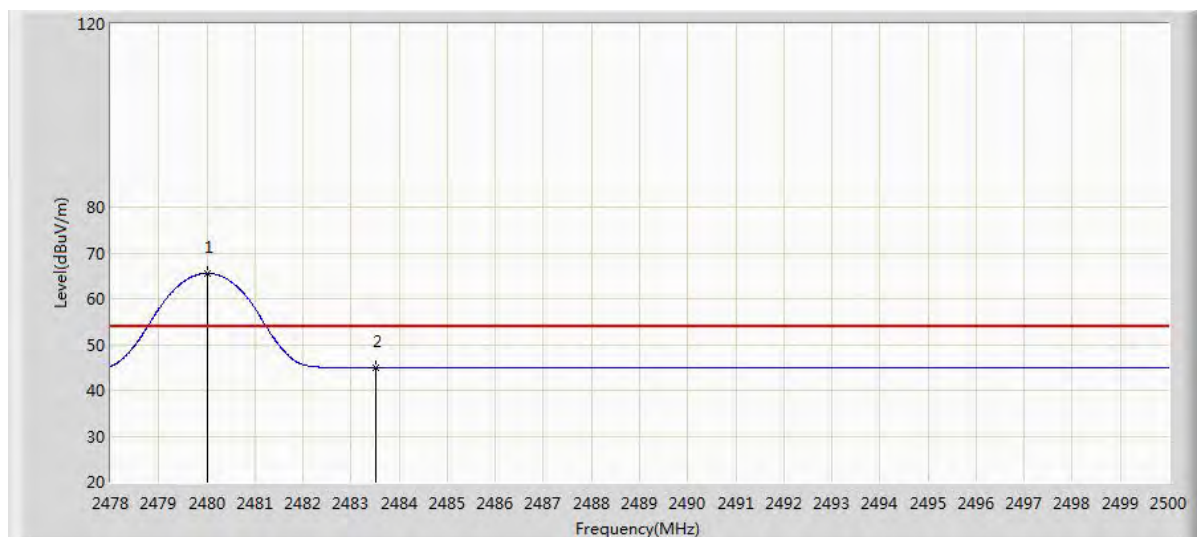


| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2390.000    | 44.526                       | 12.248               | -9.474      | 54.000               | 32.278              | AV       | V     |
| 2401.865    | 72.793                       | 40.519               | N/A         | N/A                  | 32.274              | AV       |       |

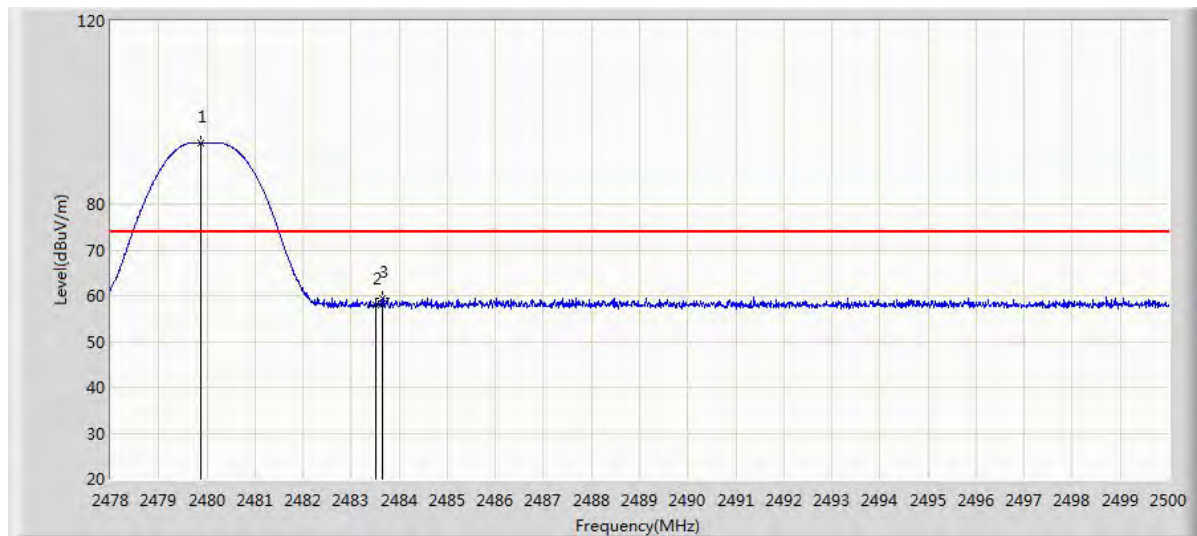


**High Channel**


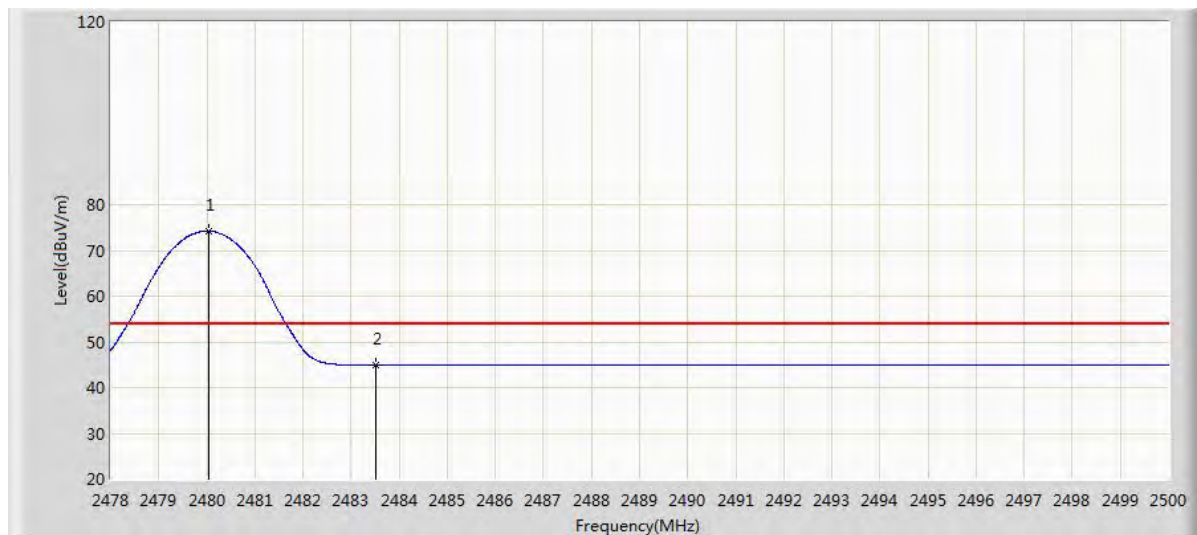
| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2479.980    | 79.801                       | 47.532               | N/A         | N/A                  | 32.269              | PK       | H     |
| 2483.500    | 57.696                       | 25.415               | -16.304     | 74.000               | 32.282              | PK       |       |
| 2483.676    | 60.448                       | 28.166               | -13.552     | 74.000               | 32.282              | PK       |       |



| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2480.002    | 65.524                       | 33.255               | N/A         | N/A                  | 32.269              | AV       | H     |
| 2483.500    | 44.922                       | 12.641               | -9.078      | 54.000               | 32.282              | AV       |       |



| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2479.870    | 93.460                       | 61.191               | N/A         | N/A                  | 32.269              | PK       | V     |
| 2483.500    | 58.080                       | 25.799               | -15.920     | 74.000               | 32.282              | PK       |       |
| 2483.643    | 59.282                       | 27.000               | -14.718     | 74.000               | 32.282              | PK       |       |



| Freq. (MHz) | Measure Level (dB $\mu$ V/m) | Reading (dB $\mu$ V) | Margin (dB) | Limit (dB $\mu$ V/m) | Correct Factor (dB) | Detector | Polar |
|-------------|------------------------------|----------------------|-------------|----------------------|---------------------|----------|-------|
| 2480.046    | 74.220                       | 41.951               | N/A         | N/A                  | 32.269              | AV       | V     |
| 2483.500    | 44.959                       | 12.678               | -9.041      | 54.000               | 32.282              | AV       |       |

### 5.1.7 Frequency Separation

**RESULT:**
**Pass**

Date of testing : 2016-08-29  
 Test standard : FCC part 15.247(a)(1)  
  
 Basic standard : ANSI C63.4: 2009  
 Limit :  $\geq 25\text{kHz}$  or two-thirds of 20dB bandwidth, whichever is greater  
 Kind of test site : Shielded room

**Test setup**

Test Channel : Low/ Middle/ High  
 Operation Mode : A.1.a  
 Ambient temperature : 25°C  
 Relative humidity : 52%  
 Atmospheric pressure : 101kPa

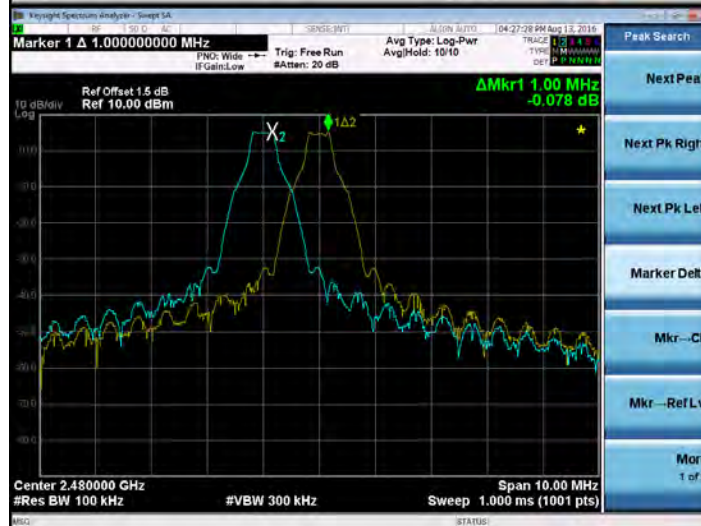
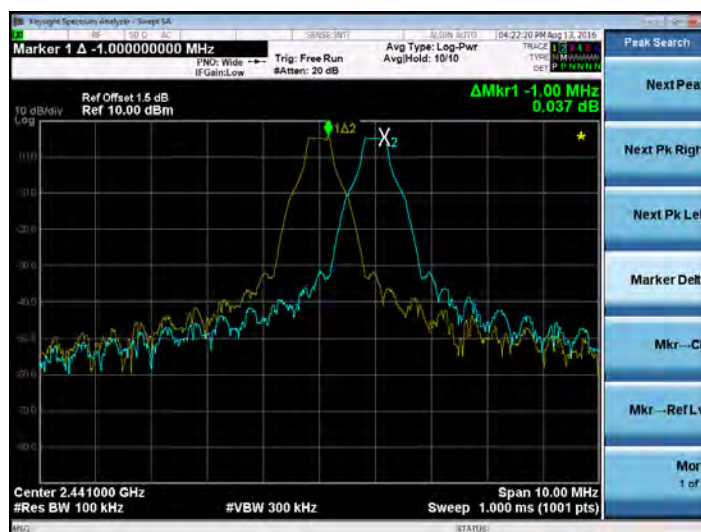
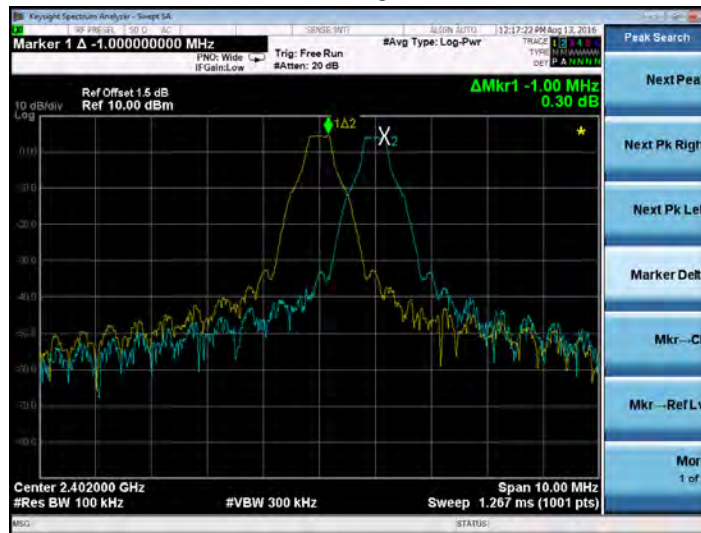
**Table 17: Test result of Frequency Separation(DH5/2DH5/3DH5)**

| Channel           | Channel Frequency (MHz) | Measured Channel Separation (MHz) | Limit (kHz)   | Result |
|-------------------|-------------------------|-----------------------------------|---|--------|
| Low Channel       | 2402                    | 1.000                             | $\geq 25\text{kHz}$ or two-thirds of 20dB bandwidth | Pass   |
| Adjacency Channel | 2403                    |                                   |   |        |
| Mid Channel       | 2441                    | 1.000                             | $\geq 25\text{kHz}$ or two-thirds of 20dB bandwidth | Pass   |
| Adjacency Channel | 2442                    |                                   |   |        |
| High Channel      | 2479                    | 1.000                             | $\geq 25\text{kHz}$ or two-thirds of 20dB bandwidth | Pass   |
| Adjacency Channel | 2480                    |                                   |   |        |

For details refer to following test plot.

## Test Plot of Frequency Separation

DH5





**2DH5**


### 3DH5





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Test Report No.**Seite 67 von 82**  
Page 67 of 82**5.1.8 Number of hopping frequency****RESULT:****Pass**

Date of testing : 2016-08-24  
Test standard : FCC part 15.247(a)(1)(iii)  
Test procedure : ANSI C63.10: 2013  
Clause 11&12 of KDB 558074 D01 v03r05  
Limits :  $\geq 15$  non-overlapping channels  
Kind of test site : Shield room

**Test setup**

Test Channel : 79  
Operation Mode : A.1.a  
Ambient temperature : 25°C  
Relative humidity : 52%  
Atmospheric pressure : 101kPa

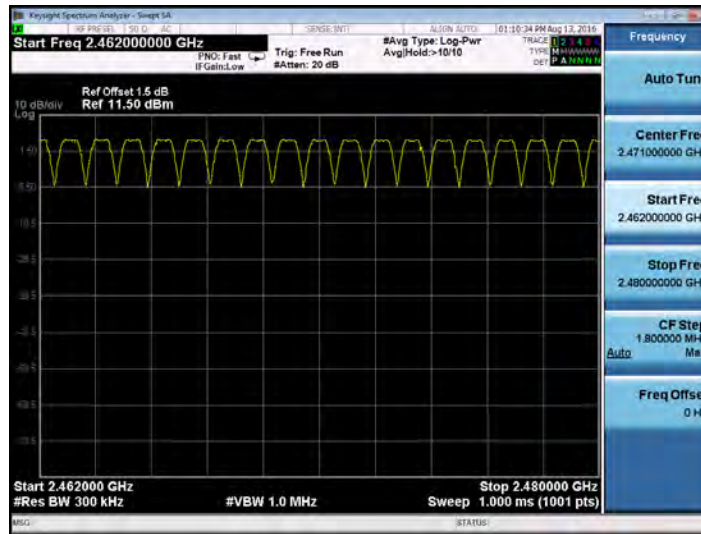
**Table 18: Test result of Number of hopping frequency**

| Frequency Range | Measured Quantity of Hopping Channel | Limit     | Result |
|-----------------|--------------------------------------|-----------|--------|
| 2402 to 2480MHz | 79                                   | $\geq 15$ | Pass   |

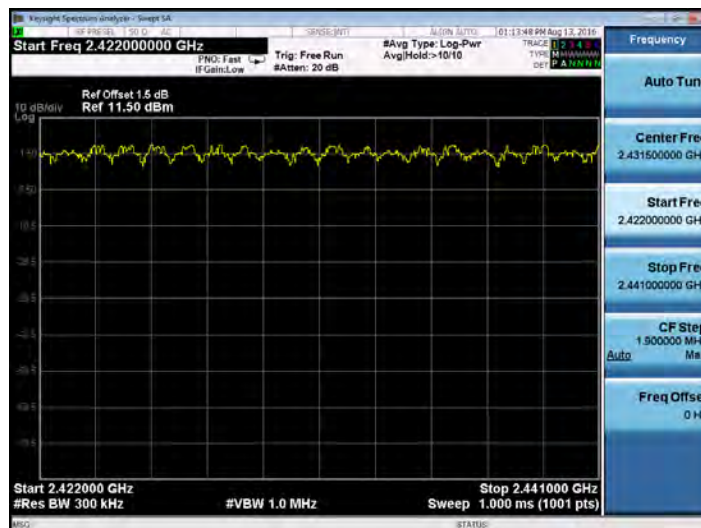
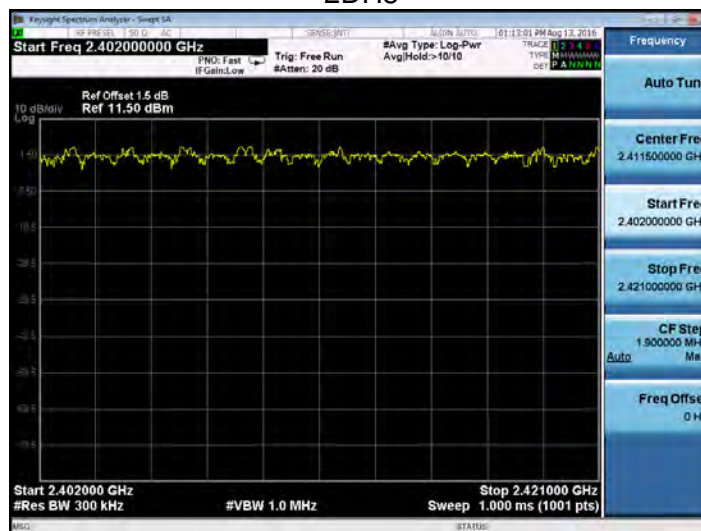
For details refer to following test plot.

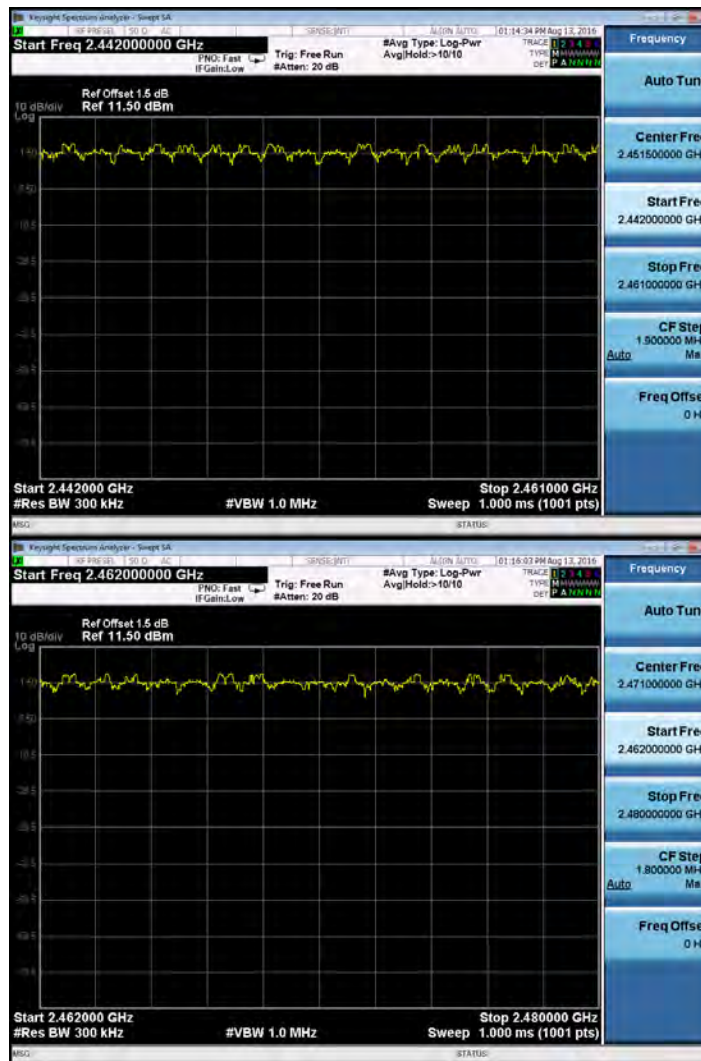
## Test Plot of Number of hopping frequency



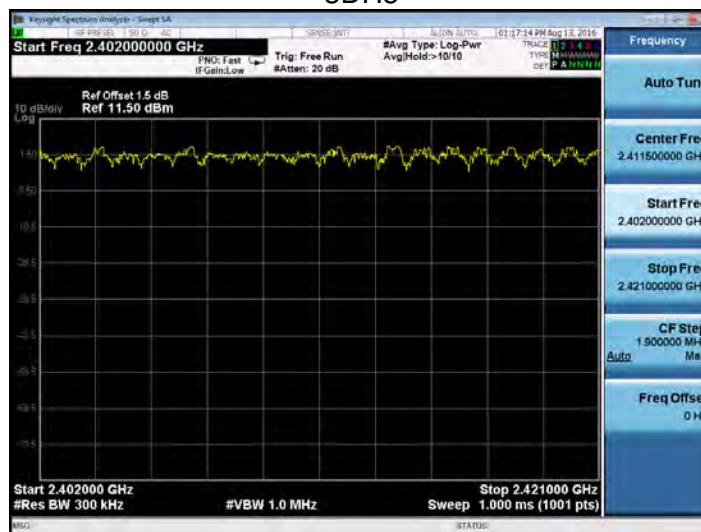


2DH5

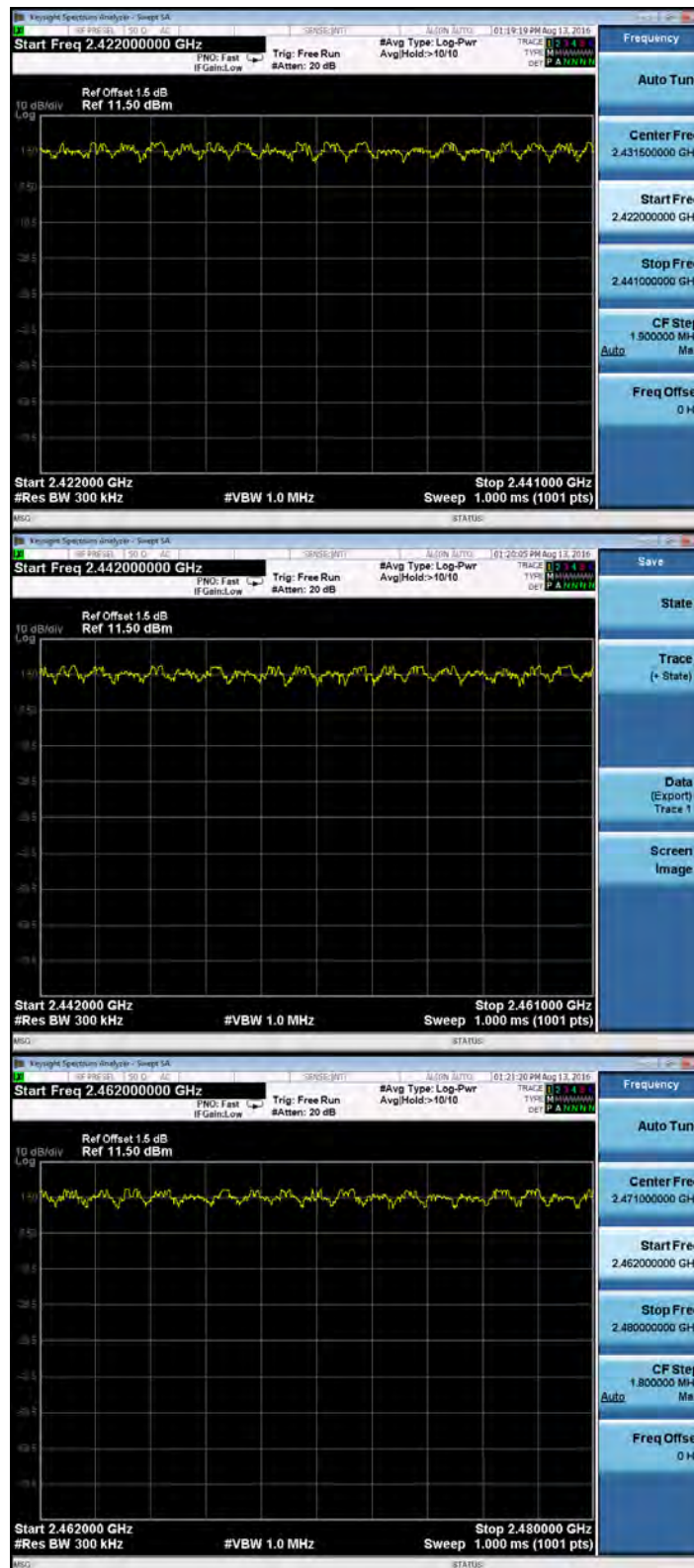




3DH5







### 5.1.9 Time of Occupancy

**RESULT:****Pass**

Date of testing : 2016-08-24  
Test standard : FCC part 15.247(a)(1)(iii)  
Test procedure : ANSI C63.10: 2013  
Clause 11&12 of KDB 558074 D01 v03r05  
Limits : 0.4s  
Kind of test site : Shielded room

**Test setup**

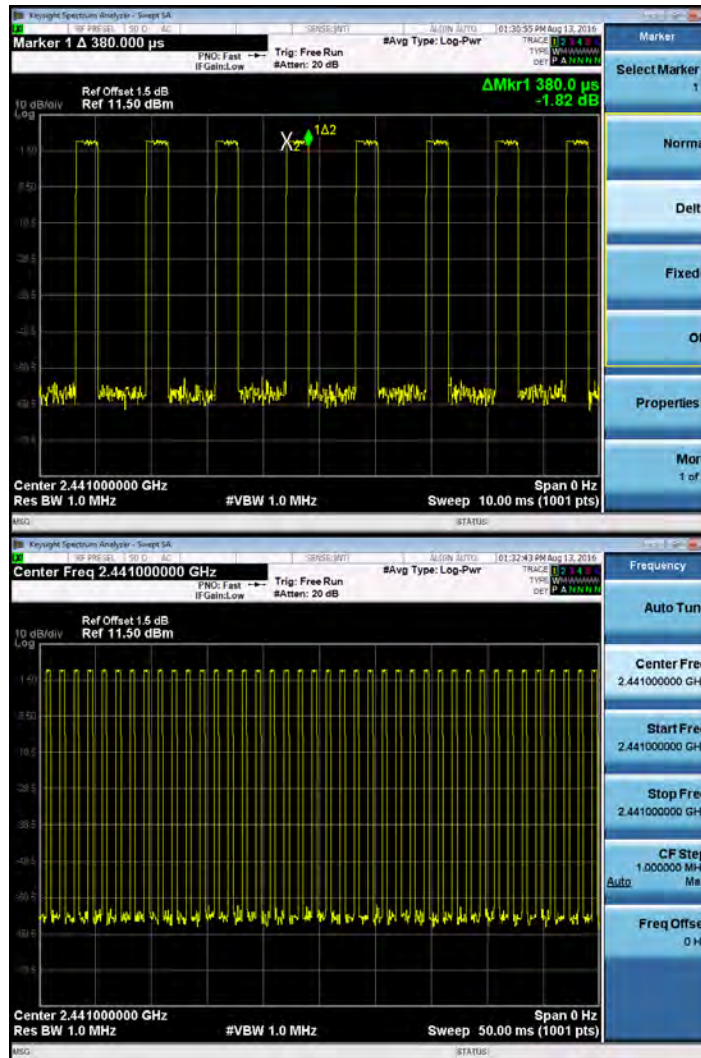
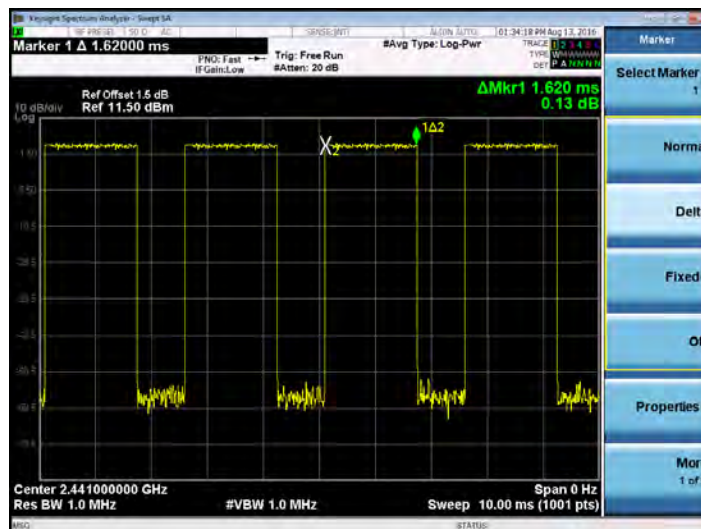
Test Channel : Middle  
Operation Mode : A.1.a  
Ambient temperature : 25°C  
Relative humidity : 52%  
Atmospheric pressure : 101kPa

**Table 19: Test result of Time of Occupancy**

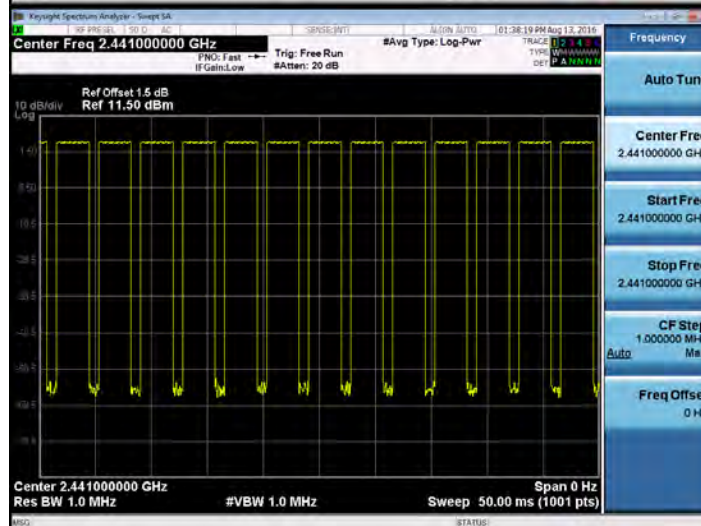
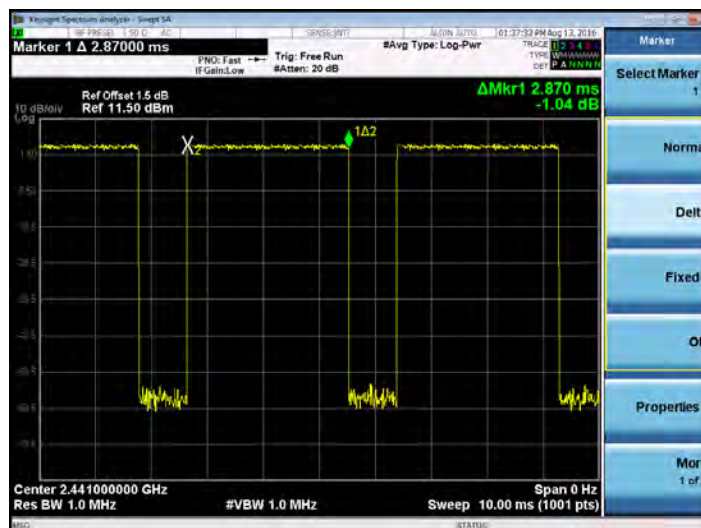
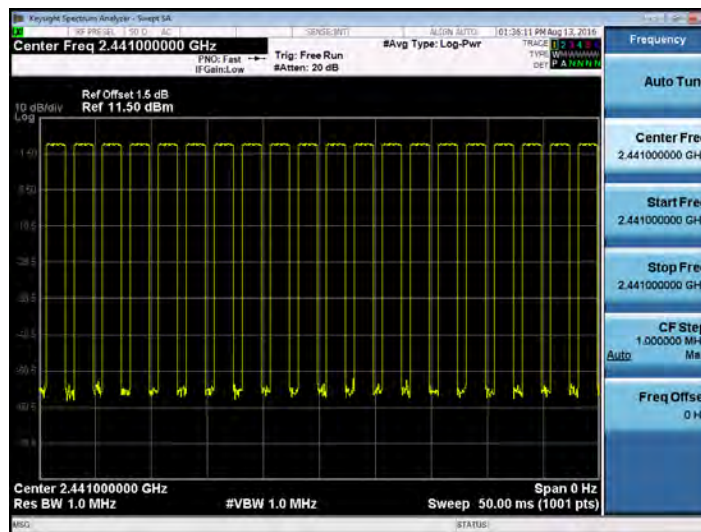
| Mode       | Packet Type | Channel Frequency (MHz) | Packet Duration [ms] | Number of Hops per Channel | Dwell Time (ms) | Limit (ms) |
|------------|-------------|-------------------------|----------------------|----------------------------|-----------------|------------|
| Classic BT | DH1         | 2441                    | 0.38                 | 39                         | 14.82           | 400        |
|            | DH3         | 2441                    | 1.62                 | 20                         | 32.4            | 400        |
|            | DH5         | 2441                    | 2.870                | 13                         | 37.31           | 400        |

For details refer to following test plot.



**Test Plot of Number of hopping frequency**  
**DH1**

**DH3**


DH5



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*Test Report No.***Seite 75 von 82**  
*Page 75 of 82***5.1.10 Conducted emissions****RESULT:****Pass**

Date of testing : 2016-08-29  
Test standard : FCC Part 15.207  
  
Basic standard : ANSI C63.4: 2014  
Frequency range : 0.15 – 30MHz  
Limits : FCC Part 15.207  
Kind of test site : Shielded room

**Test setup**

Input Voltage : AC 120V, 60Hz  
Operation Mode : A.1, A.2  
Ambient temperature : 25°C  
Relative humidity : 52%  
Atmospheric pressure : 101kPa

**Table 20: Test result of Conducted Emission of Buletooth & WLAN**
**L Phase**

| Frequency (MHz) | Measure Level (dBuV) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV) | Factor | Type | Comment |
|-----------------|----------------------|----------------------|-----------------|--------------|--------|------|---------|
| 0.378           | 45.362               | 35.295               | -33.638         | 79.000       | 10.067 | QP   | PASS    |
| 0.378           | 30.751               | 20.684               | -35.249         | 66.000       | 10.067 | AV   | PASS    |
| 0.498           | 39.568               | 29.411               | -39.432         | 79.000       | 10.157 | QP   | PASS    |
| 0.498           | 23.122               | 12.965               | -42.878         | 66.000       | 10.157 | AV   | PASS    |
| 1.962           | 28.000               | 18.128               | -45.000         | 73.000       | 9.872  | QP   | PASS    |
| 1.962           | 17.971               | 8.099                | -42.029         | 60.000       | 9.872  | AV   | PASS    |
| 4.526           | 45.548               | 35.556               | -27.452         | 73.000       | 9.992  | QP   | PASS    |
| 4.526           | 40.165               | 30.173               | -19.835         | 60.000       | 9.992  | AV   | PASS    |
| 9.182           | 55.822               | 45.657               | -17.178         | 73.000       | 10.165 | QP   | PASS    |
| 9.182           | 47.707               | 37.541               | -12.293         | 60.000       | 10.165 | AV   | PASS    |
| 10.522          | 53.881               | 43.758               | -19.119         | 73.000       | 10.123 | QP   | PASS    |
| 10.522          | 46.437               | 36.314               | -13.563         | 60.000       | 10.123 | AV   | PASS    |

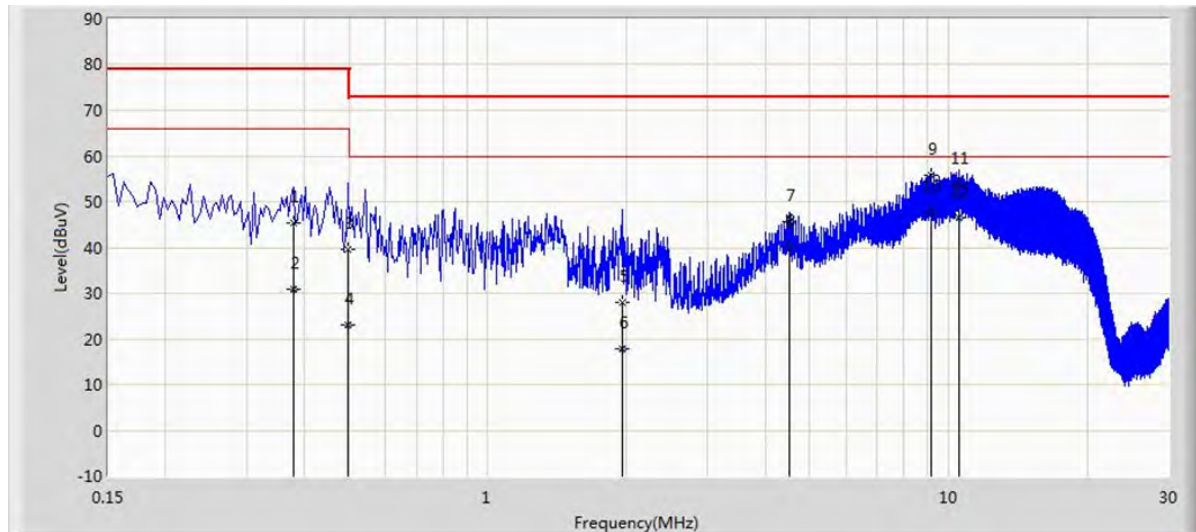
**N Phase**

| Frequency (MHz) | Measure Level (dBuV) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV) | Factor | Type | Comment |
|-----------------|----------------------|----------------------|-----------------|--------------|--------|------|---------|
| 0.242           | 39.689               | 29.694               | -39.311         | 79.000       | 9.995  | QP   | PASS    |
| 0.242           | 22.672               | 12.677               | -43.328         | 66.000       | 9.995  | AV   | PASS    |
| 0.498           | 39.522               | 29.344               | -39.478         | 79.000       | 10.178 | QP   | PASS    |
| 0.498           | 22.710               | 12.532               | -43.290         | 66.000       | 10.178 | AV   | PASS    |
| 0.778           | 28.429               | 18.398               | -44.571         | 73.000       | 10.032 | QP   | PASS    |
| 0.778           | 22.499               | 12.468               | -37.501         | 60.000       | 10.032 | AV   | PASS    |
| 1.498           | 28.350               | 18.459               | -44.650         | 73.000       | 9.890  | QP   | PASS    |
| 1.498           | 15.593               | 5.703                | -44.407         | 60.000       | 9.890  | AV   | PASS    |
| 4.526           | 44.179               | 34.178               | -28.821         | 73.000       | 10.001 | QP   | PASS    |
| 4.526           | 38.187               | 28.186               | -21.813         | 60.000       | 10.001 | AV   | PASS    |
| 9.054           | 57.246               | 47.069               | -15.754         | 73.000       | 10.177 | QP   | PASS    |
| 9.054           | 49.299               | 39.123               | -10.701         | 60.000       | 10.177 | AV   | PASS    |

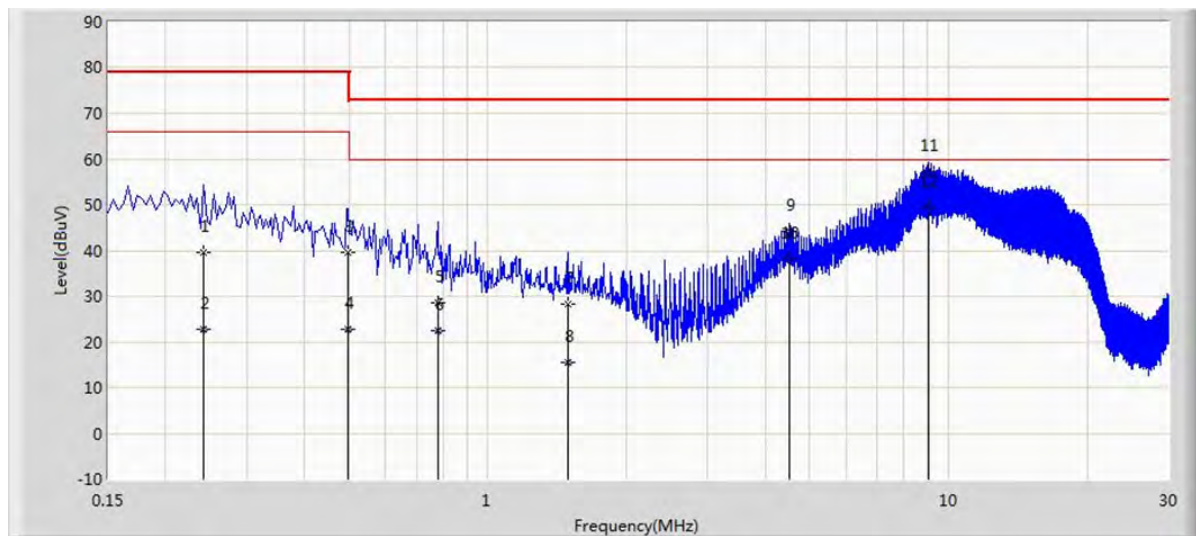
**Note: All modes are tested, and we just show the worst data as above.**

## Test Plot of Conducted Emission

### L Phase



### N Phase





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**5.1.11 Radiated emissions****RESULT:****Pass**

Date of testing : 2016-08-29  
Test standard : FCC Part 15.209  
  
Test Procedure : ANSI C63.4: 2014  
Frequency range : 30MHz – 1GHz  
Limits : FCC Part 15.209  
Kind of test site : Shielded room

**Test setup**

Input Voltage : AC 120V, 60Hz  
Operation Mode : A.1, A.2  
Ambient temperature : 25°C  
Relative humidity : 52%  
Atmospheric pressure : 101kPa

**Table 21: Test result of Radiated Emission of Buletooth &WLAN**
**Horizontal**

| Frequency (MHz) | Measure Level (dBuV) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV) | Factor | Type | Comment |
|-----------------|----------------------|----------------------|-----------------|--------------|--------|------|---------|
| 31.445          | 27.087               | 13.418               | -21.913         | 49.000       | 13.669 | QP   | PASS    |
| 43.071          | 25.940               | 11.626               | -23.060         | 49.000       | 14.314 | QP   | PASS    |
| 59.047          | 25.985               | 12.560               | -23.015         | 49.000       | 13.426 | QP   | PASS    |
| 149.290         | 32.633               | 17.524               | -20.867         | 53.500       | 15.109 | QP   | PASS    |
| 223.661         | 35.669               | 23.547               | -20.731         | 56.400       | 12.122 | QP   | PASS    |
| 307.302         | 34.371               | 19.887               | -22.029         | 56.400       | 14.484 | QP   | PASS    |
| 1872.000        | 35.815               | 42.295               | -43.685         | 79.500       | -6.480 | PK   | PASS    |
| 1872.500        | 23.749               | 30.226               | -35.751         | 59.500       | -6.477 | AV   | PASS    |
| 3152.000        | 37.846               | 39.373               | -41.654         | 79.500       | -1.527 | PK   | PASS    |
| 3152.240        | 27.916               | 29.442               | -31.584         | 59.500       | -1.526 | AV   | PASS    |
| 4760.000        | 40.129               | 37.537               | -39.371         | 79.500       | 2.593  | PK   | PASS    |
| 4760.748        | 29.452               | 26.857               | -30.048         | 59.500       | 2.595  | AV   | PASS    |

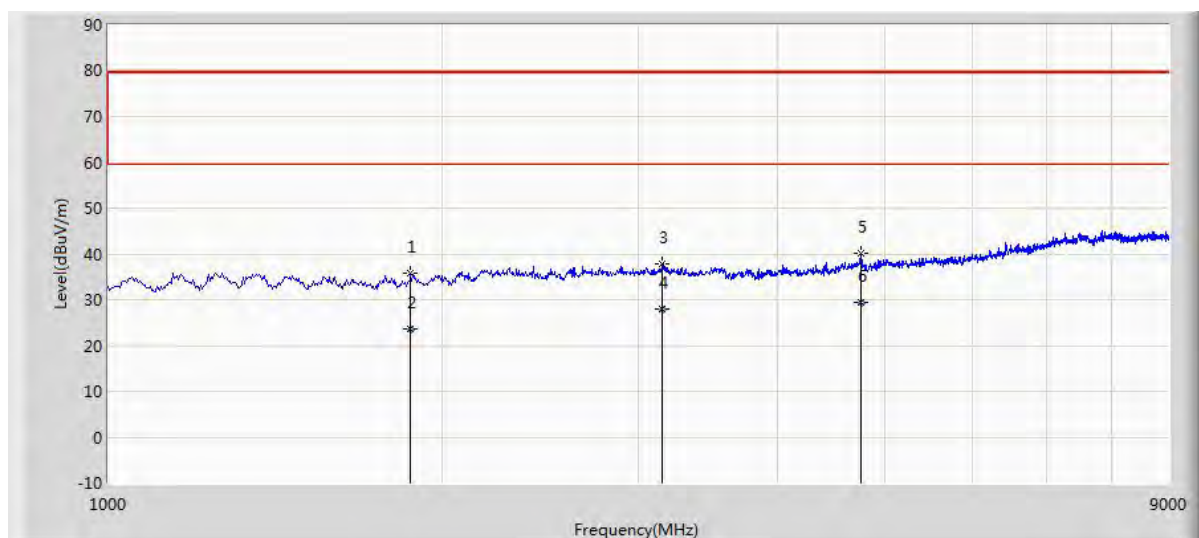
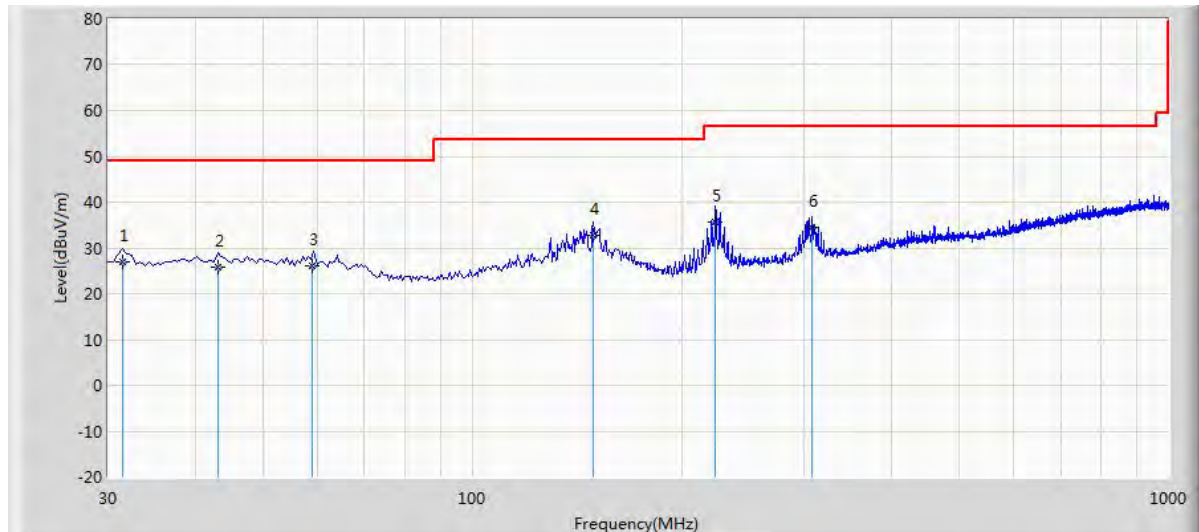
**Vertical**

| Frequency (MHz) | Measure Level (dBuV) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV) | Factor | Type | Comment |
|-----------------|----------------------|----------------------|-----------------|--------------|--------|------|---------|
| 0.242           | 39.689               | 29.694               | -39.311         | 79.000       | 9.995  | QP   | PASS    |
| 31.445          | 35.772               | 22.103               | -13.228         | 49.000       | 13.669 | QP   | PASS    |
| 38.245          | 31.541               | 17.241               | -17.459         | 49.000       | 14.301 | QP   | PASS    |
| 59.052          | 30.273               | 16.848               | -18.727         | 49.000       | 13.425 | QP   | PASS    |
| 100.310         | 27.271               | 16.274               | -26.229         | 53.500       | 10.997 | QP   | PASS    |
| 124.030         | 29.700               | 16.309               | -23.800         | 53.500       | 13.391 | QP   | PASS    |
| 128.680         | 29.425               | 15.778               | -24.075         | 53.500       | 13.647 | QP   | PASS    |
| 1432.000        | 35.324               | 43.201               | -44.176         | 79.500       | -7.877 | PK   | PASS    |
| 1432.855        | 23.873               | 31.748               | -35.627         | 59.500       | -7.875 | AV   | PASS    |
| 3164.000        | 37.900               | 39.439               | -41.600         | 79.500       | -1.538 | PK   | PASS    |
| 3164.554        | 25.344               | 26.884               | -34.156         | 59.500       | -1.540 | AV   | PASS    |
| 4772.000        | 38.471               | 35.834               | -41.029         | 79.500       | 2.637  | PK   | PASS    |
| 4772.632        | 28.271               | 25.632               | -31.229         | 59.500       | 2.640  | AV   | PASS    |

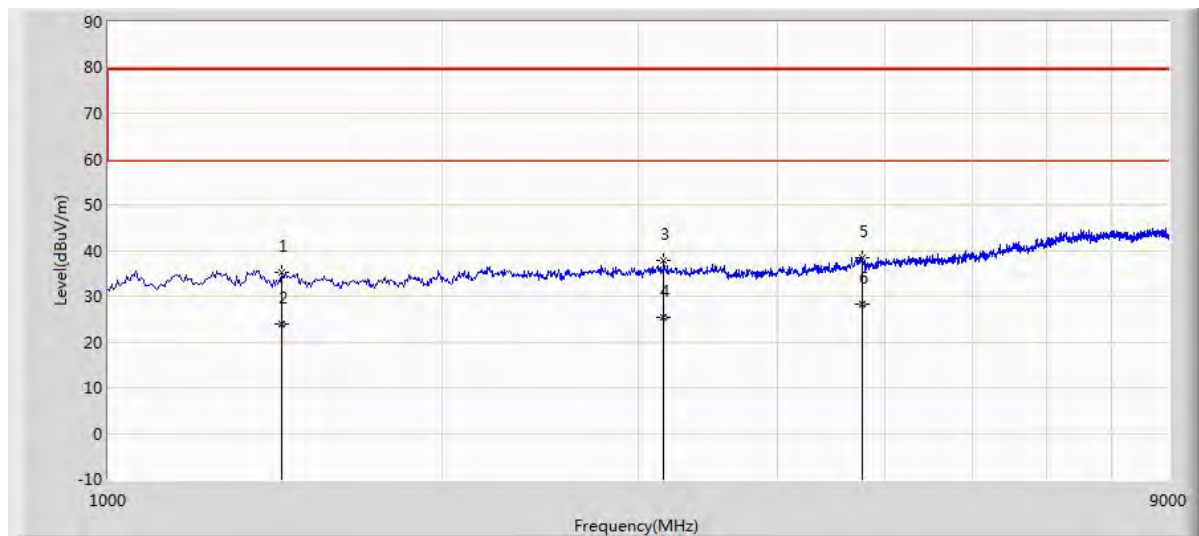
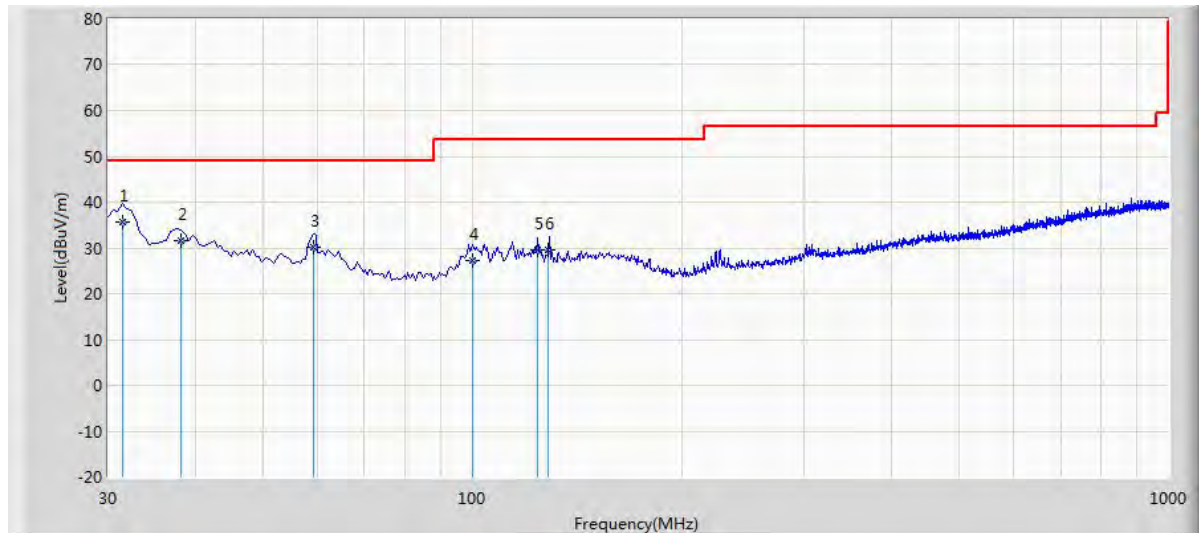
**Note: All modes are tested, and we just show the worst data as above.**

## Test Plot of Conducted Emission

### Horizontal



## Vertical



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