

**FCC 47 CFR PART 15 SUBPART C**

**CERTIFICATION TEST REPORT**

*For*

Tablet PC

Model No.: TM890W515L, TM890W525L, TM890W530L, TM890W535L,  
TM890W555L, TM890W545L, TM890W550L, DPA8901, DPW8901,  
DPA8908, DPW8908, D8901, M8901, D8906, M8906, NB89, NB8910,  
NB8909, NB8905

FCC ID: 2AAP6M8902

Trademark: NOBIS, DOPO, TMAX, DAGE, APEX, NUVISION

REPORT NO.: ES150922015E

ISSUE DATE: October 10, 2015

*Prepared for*

SHENZHEN ZOWEE TECHNOLOGY CO., LTD

Science&Technology Industrial Park of Privately Owned Enterprises, Pingshan,  
Xili, Nanshan District, Shenzhen, China518055

*Prepared by*

SHENZHEN EMTEK CO., LTD.

Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen,  
Guangdong, China  
TEL: 86-755-26954280  
FAX: 86-755-26954282

## Table of Contents

|     |   |    |
|-----|---|----|
| 1   | TEST RESULT CERTIFICATION .....                   | 3  |
| 2   | EUT TECHNICAL DESCRIPTION.....                    | 4  |
| 3   | SUMMARY OF TEST RESULT .....                      | 6  |
| 4   | TEST METHODOLOGY .....                            | 7  |
| 4.1 | GENERAL DESCRIPTION OF APPLIED STANDARDS .....    | 7  |
| 4.2 | MEASUREMENT EQUIPMENT USED .....                  | 7  |
| 4.3 | DESCRIPTION OF TEST MODES .....                   | 8  |
| 5   | FACILITIES AND ACCREDITATIONS.....                | 9  |
| 5.1 | FACILITIES .....                                  | 9  |
| 5.2 | LABORATORY ACCREDITATIONS AND LISTINGS.....       | 9  |
| 6   | TEST SYSTEM UNCERTAINTY .....                     | 10 |
| 7   | SETUP OF EQUIPMENT UNDER TEST.....                | 11 |
| 7.1 | RADIO FREQUENCY TEST SETUP 1 .....                | 11 |
| 7.2 | RADIO FREQUENCY TEST SETUP 2 .....                | 11 |
| 7.3 | CONDUCTED EMISSION TEST SETUP .....               | 13 |
| 7.4 | BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM .....  | 13 |
| 7.5 | SUPPORT EQUIPMENT .....                           | 13 |
| 8   | FREQUENCY HOPPING SYSTEM REQUIREMENTS .....       | 14 |
| 8.1 | STANDARD APPLICABLE .....                         | 14 |
| 8.2 | EUT PSEUDORANDOM FREQUENCY HOPPING SEQUENCE ..... | 14 |
| 8.3 | EQUAL HOPPING FREQUENCY USE .....                 | 15 |
| 8.4 | FREQUENCY HOPPING SYSTEM.....                     | 15 |
| 9   | TEST REQUIREMENTS .....                           | 16 |
| 9.1 | 20DB BANDWIDTH .....                              | 16 |
| 9.2 | CARRIER FREQUENCY SEPARATION.....                 | 22 |
| 9.3 | NUMBER OF HOPPING FREQUENCIES .....               | 28 |
| 9.4 | AVERAGE TIME OF OCCUPANCY (DWELL TIME).....       | 30 |
| 9.5 | MAXIMUM PEAK CONDUCTED OUTPUT POWER .....         | 33 |
| 9.6 | CONDUCTED SPURIOUS EMISSION .....                 | 39 |
| 9.7 | RADIATED SPURIOUS EMISSION.....                   | 46 |
| 9.8 | CONDUCTED EMISSION TEST.....                      | 61 |
| 9.9 | ANTENNA APPLICATION.....                          | 66 |

## 1 TEST RESULT CERTIFICATION

|                      |  |
|----------------------|--|
| Applicant:           | SHENZHEN ZOWEE TECHNOLOGY CO., LTD<br>Science&Technology Industrial Park of Privately Owned Enterprises, Pingshan, Xili, Nanshan District, Shenzhen, China518055   |
| Manufacturer:        | SHENZHEN ZOWEE TECHNOLOGY CO., LTD<br>Science&Technology Industrial Park of Privately Owned Enterprises, Pingshan, Xili, Nanshan District, Shenzhen, China518055   |
| Product Description: | Tablet PC  |
| Model Number:        | TM890W515L, TM890W525L, TM890W530L, TM890W535L, TM890W555L, TM890W545L, TM890W550L, DPA8901, DPW8901, DPA8908,DPW8908, D8901,M8901,D8906,M8906, NB89, NB8910, NB8909, NB8905<br>(Note: These models are identical in circuitry and electrical, mechanical and physical construction; the only differences are the silk-screen, color and model no. for trading purpose. We prepare TM890W515L for test.) |
| File Number:         | ES150922015E   |
| Date of Test:        | September 22, 2015 to October 10, 2015   |

Measurement Procedure Used:

| APPLICABLE STANDARDS               |             |
|------------------------------------|-------------|
| STANDARD                           | TEST RESULT |
| FCC 47 CFR Part 2, Subpart J:2014  | PASS        |
| FCC 47 CFR Part 15, Subpart C:2014 |             |

The above equipment was tested by SHENZHEN EMTEK CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 2 and Part 15.247

The test results of this report relate only to the tested sample identified in this report

Date of Test : September 22, 2015 to October 10, 2015

Prepared by :

Jack Li/Editor

Reviewer :

Joe Xia/Supervisor

Approve & Authorized Signer :

Lisa Wang/Manager

## 2 EUT TECHNICAL DESCRIPTION

| Characteristics               | Description   |
|-------------------------------|---|
| Device Type:                  | Portable Device   |
| Data Rate:                    | 1Mbps for BT v2.0/v2.1/v3.0 BR GFSK modulation<br>2Mbps for BT v2.0/v2.1/v3.0 EDR pi/4-DQPSK modulation<br>3Mbps for BT v2.0/v2.1/v3.0 EDR 8DPSK modulation   |
| Modulation:                   | GFSK modulation for BT v2.0/v2.1/v3.0 BR(1Mbps)<br>pi/4-DQPSK modulation for BT v2.0/v2.1/v3.0 EDR(2Mbps)<br>8DPSK modulation for BT v2.0/v2.1/v3.0 EDR (3Mbps)   |
| Operating Frequency Range(s): | 2402-2480MHz for BT v2.0 BR /2.0+EDR;<br>2402-2480MHz for BT v2.1 BR /2.1+EDR;<br>2402-2480MHz for BT v3.0 BR /3.0+ EDR;  |
| Number of Channels:           | 79 channels for BT v2.0/v2.1/v3.0 BR;<br>79 channels for BT v2.0/v2.1/v3.0 EDR;   |
| Transmit Power Max:           | 4.113dBm for BT v2.0/v2.1/v3.0 EDR;<br>2.753dBm for BT v2.0/v2.1/v3.0 BR;   |
| Antenna Type:                 | PIFA Antenna  |
| Antenna Gain:                 | 2dBi  |
| Power supply:                 | <input checked="" type="checkbox"/> DC supply:<br>DC 3.7V internal rechargeable lithium battery or DC 5V from AC Adapter<br><br><input checked="" type="checkbox"/> Adapter supply:<br>Model: LPL-C010050200Z<br>Input: AC 100-240V 50/60Hz 300mA Max<br>Output: DC 5V 2000mA |
| Temperature Range:            | 0°C ~ +40°C   |
| RF power setting in TEST SW:  | Maximum power   |

Note: for more details, please refer to the User's manual of the EUT.

## **Modified Information**

### 3 SUMMARY OF TEST RESULT

| FCC Part Clause             | Test Parameter                         | Verdict | Remark |
|-----------------------------|--|---------|--------|
| 15.247(a)(1)                | 20 dB Bandwidth                        | PASS    |        |
| 15.247(a)(1)                | Carrier Frequency Separation           | PASS    |        |
| 15.247(a)(1)                | Number of Hopping Frequencies          | PASS    |        |
| 15.247(a)(1)                | Average Time of Occupancy (Dwell Time) | PASS    |        |
| 15.247(b)(1)                | Maximum Peak Conducted Output Power    | PASS    |        |
| 15.247(c)                   | Conducted Spurious Emissions           | PASS    |        |
| 15.247(d)<br>15.209         | Radiated Spurious Emissions            | PASS    |        |
| 15.207                      | Conducted Emission                     | PASS    |        |
| 15.247(b)                   | Antenna Application                    | PASS    |        |
| NOTE1: N/A (Not Applicable) |  |         |        |

#### RELATED SUBMITTAL(S) / GRANT(S):

This submittal(s) (test report) is intended for FCC ID: 2AAP6M8902 filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

The combined system is compliance with Subpart B is authorized under a DOC procedure

## 4 TEST METHODOLOGY

### 4.1 GENERAL DESCRIPTION OF APPLIED STANDARDS

According to its specifications, the EUT must comply with the requirements of the following standards:  
FCC 47 CFR Part 2, Subpart J  
FCC 47 CFR Part 15, Subpart C  
DA 00-705

### 4.2 MEASUREMENT EQUIPMENT USED

#### 4.2.1 Conducted Emission Test Equipment

| EQUIPMENT TYPE     | MFR             | MODEL NUMBER | SERIAL NUMBER | LAST CAL.  |
|--------------------|-----------------|--------------|---------------|------------|
| Test Receiver      | Rohde & Schwarz | ESCS30       | 828985/018    | 05/16/2015 |
| L.I.S.N.           | Schwarzbeck     | NNLK8129     | 8129203       | 05/16/2015 |
| 50Ω Coaxial Switch | Anritsu         | MP59B        | M20531        | N/A        |
| Pulse Limiter      | Rohde & Schwarz | ESH3-Z2      | 100006        | 05/16/2015 |
| Voltage Probe      | Rohde & Schwarz | TK9416       | N/A           | 05/16/2015 |
| I.S.N              | Rohde & Schwarz | ENY22        | 1109.9508.02  | 05/16/2015 |

#### 4.2.2 Radiated Emission Test Equipment

| EQUIPMENT TYPE    | MFR             | MODEL NUMBER | SERIAL NUMBER | LAST CAL.  |
|-------------------|-----------------|--------------|---------------|------------|
| EMI Test Receiver | Rohde & Schwarz | ESU          | 1302.6005.26  | 05/16/2015 |
| Pre-Amplifier     | HP              | 8447D        | 2944A07999    | 05/16/2015 |
| Bilog Antenna     | Schwarzbeck     | VULB9163     | 142           | 05/16/2015 |
| Loop Antenna      | ARA             | PLA-1030/B   | 1029          | 05/16/2015 |
| Horn Antenna      | Schwarzbeck     | BBHA 9170    | BBHA9170399   | 05/16/2015 |
| Horn Antenna      | Schwarzbeck     | BBHA 9120    | D143          | 05/16/2015 |
| Cable             | Schwarzbeck     | AK9513       | ACRX1         | 05/16/2015 |
| Cable             | Rosenberger     | N/A          | FP2RX2        | 05/16/2015 |
| Cable             | Schwarzbeck     | AK9513       | CRPX1         | 05/16/2015 |
| Cable             | Schwarzbeck     | AK9513       | CRRX2         | 05/16/2015 |

#### 4.2.3 Radio Frequency Test Equipment

| EQUIPMENT TYPE    | MFR             | MODEL NUMBER | SERIAL NUMBER | LAST CAL.  |
|-------------------|-----------------|--------------|---------------|------------|
| Spectrum Analyzer | Agilent         | E4407B       | 88156318      | 05/16/2015 |
| Power meter       | Anritsu         | ML2495A      | 0824006       | 05/16/2015 |
| Power sensor      | Anritsu         | MA2411B      | 0738172       | 05/16/2015 |
| Signal Analyzer   | Agilent         | N9010A       | My53470879    | 05/16/2015 |
| EMI Test Receiver | Rohde & Schwarz | FSV30        | 103040        | 05/16/2015 |

Remark: Each piece of equipment is scheduled for calibration once a year.

#### 4.3 DESCRIPTION OF TEST MODES

The EUT has been tested under its typical operating condition.

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Those data rates (1Mbps for Bluetooth v2.0 /v2.1/v3.0 BR GFSK modulation; 2Mbps for Bluetooth v2.0/v2.1 /v3.0 EDR pi/4-DQPSK modulation; 3Mbps for Bluetooth v2.0/v2.1 /v3.0 EDR 8DPSK modulation ) were used for all test.

Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Frequency and Channel list for Bluetooth v2.0 /v2.1/v3.0:

| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|---------|-----------------|
| 0       | 2402            | 39      | 2441            | ...     | ...             |
| 1       | 2403            | 40      | 2442            | 76      | 2478            |
| 2       | 2404            | 41      | 2443            | 77      | 2479            |
| ...     | ...             | ...     | ...             | 78      | 2480            |

Note: fc=2402MHz+k×1MHz k=0 to 78

Test Frequency and channel for Bluetooth v2.0 /v2.1/v3.0:

| Lowest Frequency |                 | Middle Frequency |                 | Highest Frequency |                 |
|------------------|-----------------|------------------|-----------------|-------------------|-----------------|
| Channel          | Frequency (MHz) | Channel          | Frequency (MHz) | Channel           | Frequency (MHz) |
| 0                | 2402            | 39               | 2441            | 78                | 2480            |

## 5 FACILITIES AND ACCREDITATIONS

### 5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at  
Bldg 69, Majialong Industry Zone District, Nanshan District, Shenzhen, China  
The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR Publication 22.

### 5.2 LABORATORY ACCREDITATIONS AND LISTINGS

#### Site Description

- EMC Lab. : Accredited by CNAS, 2013.10.29  
The certificate is valid until 2016.10.28  
The Laboratory has been assessed and proved to be in compliance with CNAS-CL01: 2006(identical to ISO/IEC17025: 2005)  
The Certificate Registration Number is L2291
- : Accredited by TUV Rheinland Shenzhen, 2010.5.25  
The Laboratory has been assessed according to the requirements ISO/IEC 17025.
- : Accredited by FCC, October 28, 2010  
The Certificate Registration Number is 406365.
- : Accredited by FCC, February 28, 2013  
The Certificate Registration Number is 709623.
- : Accredited by Industry Canada, May 24, 2008  
The Certificate Registration Number is 4480A-2

## 6 TEST SYSTEM UNCERTAINTY

The following measurement uncertainty levels have been estimated for tests performed on the apparatus:

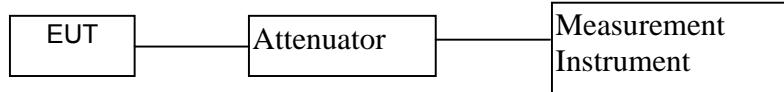
| Parameter                      | Uncertainty             |
|--------------------------------|-------------------------|
| Radio Frequency                | $\pm 1 \times 10^{-5}$  |
| Maximum Peak Output Power Test | $\pm 1.0 \text{dB}$     |
| Conducted Emissions Test       | $\pm 2.0 \text{dB}$     |
| Radiated Emission Test         | $\pm 2.0 \text{dB}$     |
| Occupied Bandwidth Test        | $\pm 1.0 \text{dB}$     |
| Band Edge Test                 | $\pm 3 \text{dB}$       |
| All emission, radiated         | $\pm 3 \text{dB}$       |
| Antenna Port Emission          | $\pm 3 \text{dB}$       |
| Temperature                    | $\pm 0.5^\circ\text{C}$ |
| Humidity                       | $\pm 3\%$               |

Measurement Uncertainty for a level of Confidence of 95%

## 7 SETUP OF EQUIPMENT UNDER TEST

### 7.1 RADIO FREQUENCY TEST SETUP 1

The Bluetooth v2.0 /v2.1/v3.0 component's antenna port(s) of the EUT are connected to the measurement instrument per an appropriate attenuator. The EUT is controlled by PC/software to emit the specified signals for the purpose of measurements.



### 7.2 RADIO FREQUENCY TEST SETUP 2

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10-2013. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 and CAN/CSA-CEI/IEC CISPR 22.

The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

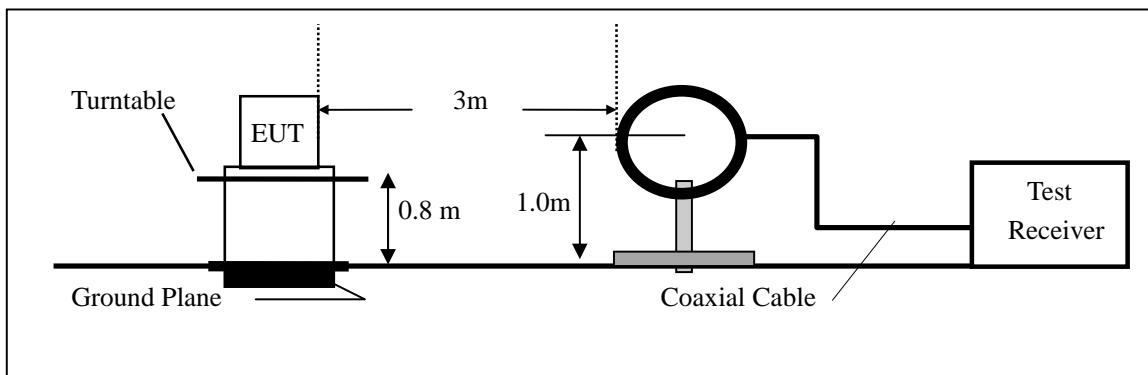
Below 1000MHz:

The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna (loop antenna). The Antenna should be positioned with its plane vertical at the specified distance from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. The center of the loop shall be 1 m above the ground. For certain applications, the loop antenna plane may also need to be positioned horizontally at the specified distance from the EUT.

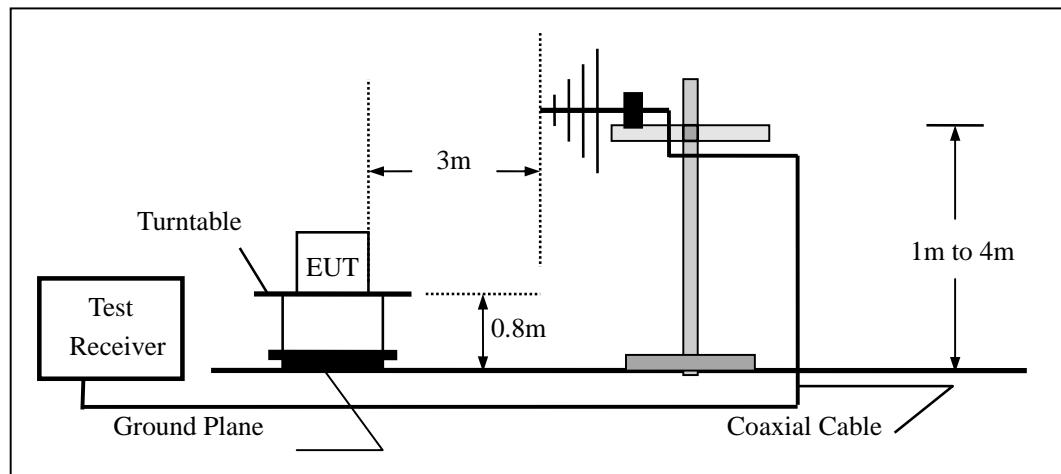
Above 1000MHz:

The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

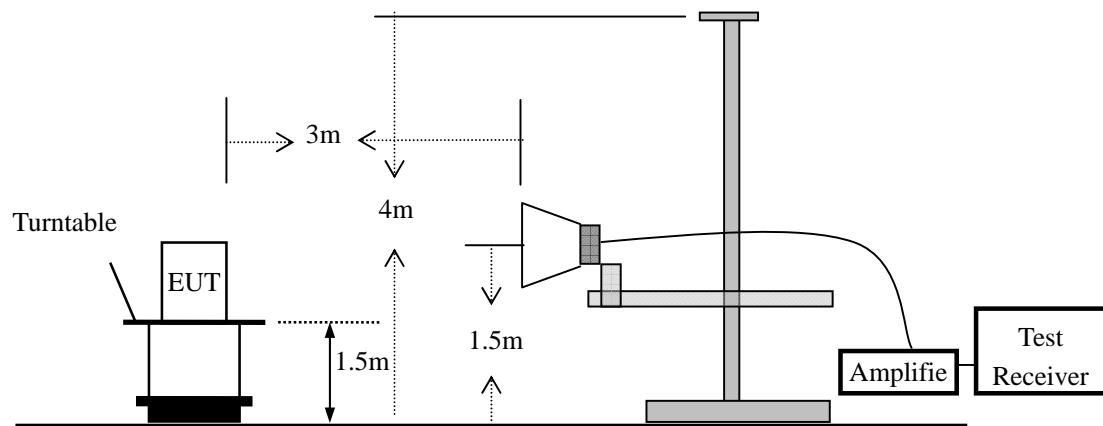
(a) Radiated Emission Test Set-Up, Frequency Below 30MHz



(b) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(c) Radiated Emission Test Set-Up, Frequency above 1000MHz

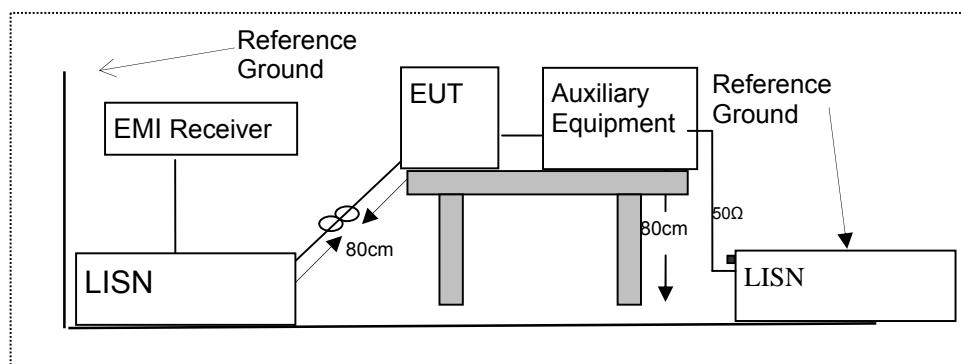


### 7.3 CONDUCTED EMISSION TEST SETUP

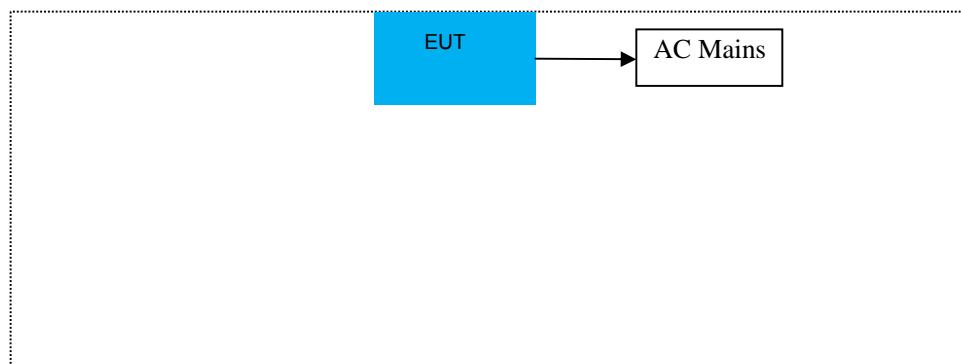
The mains cable of the EUT(Tablet PC) must be connected to LISN. The LISN shall be placed 0.8 m from the boundary of EUT and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance is between the closest points of the LISN and the EUT. All other units of the EUT and associated equipment shall be at least 0.8m from the LISN.

Ground connections, where required for safety purposes, shall be connected to the reference ground point of the LISN and, where not otherwise provided or specified by the manufacturer, shall be of same length as the mains cable and run parallel to the mains connection at a separation distance of not more than 0.1 m.

According to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode.



### 7.4 BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM



### 7.5 SUPPORT EQUIPMENT

| Item | Equipment | Mfr/Brand                               | Model/Type No. | FCC ID     | Note |
|------|-----------|---|----------------|------------|------|
| 1.   | Tablet PC | NOBIS, DOPO, TMAX, DAGE, APEX, NUVISION | TM890W515L     | 2AAP6M8902 | EUT  |
|      |           |   |                |            |      |
|      |           |   |                |            |      |

#### Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

## 8 FREQUENCY HOPPING SYSTEM REQUIREMENTS

### 8.1 Standard Applicable

According to FCC Part 15.247(a)(1), The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

(g) Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. However, the system, consisting of both the transmitter and the receiver, must be designed to comply with all of the regulations in this section should the transmitter be presented with a continuous data (or information) stream. In addition, a system employing short transmission bursts must comply with the definition of a frequency hopping system and must distribute its transmissions over the minimum number of hopping channels specified in this section.

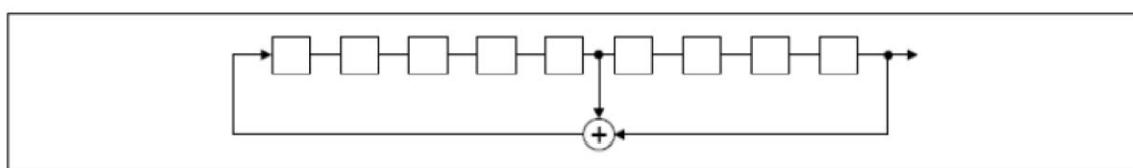
(h) The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hopsets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

### 8.2 EUT Pseudorandom Frequency Hopping Sequence

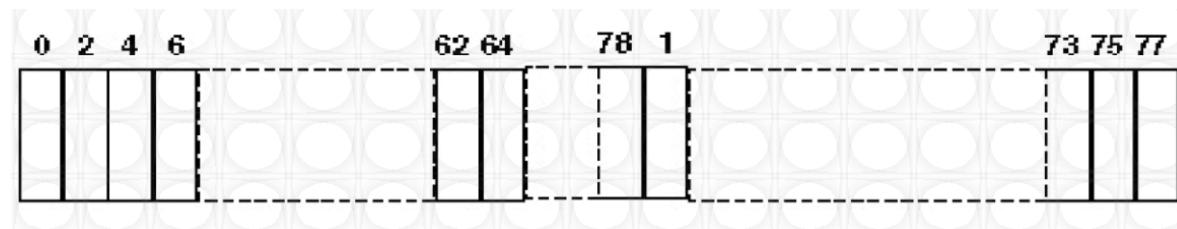
The pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage, and the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONEs; i.e. the shift register is initialized with nine ones. Number of shift register stages: 9

Length of pseudo-random sequence:  $2^9 - 1 = 499$  bits

Longest sequence of zeros: 8 (non-inverted signal)



*Linear Feedback Shift Register for Generation of the PRBS sequence*



Each frequency used equally on the average by each transmitter.

The system receiver have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

### **8.3 Equal Hopping Frequency Use**

All Bluetooth units participating in the piconet are time and hop-synchronized to the channel.

Example of a 79 hopping sequence in data mode:

40, 14, 44, 8, 27, 53, 46, 55, 48, 33, 63, 35, 50, 65, 54, 67, 56, 37, 60, 39, 58, 69, 62, 71, 64, 25, 68, 26, 66, 57, 70, 59, 72, 29, 76, 31, 74, 61, 78, 3, 1, 41, 5, 43, 2, 73, 7, 75, 09, 45, 13, 47, 11, 77, 15, 00, 4, 49, 56, 23,

18, 02, 7, 6, 10, 21, 32, 5, 12, 48, 34, 20, 28, 52, 38, 17, 22, 30, 42, 16, 51, 36, 21, 19, 24

Each Frequency used equally on the average by each transmitter

### **8.4 Frequency Hopping System**

This transmitter device is frequency hopping device, and complies with FCC part 15.247 rule.

This device uses Bluetooth radio which operates in 2400-2483.5MHz band. Bluetooth uses a radio technology called frequency-hopping spread spectrum, which chops up the data being sent and transmits chunks of it on up to 79 bands (1 MHz each; centred from 2402 to 2480 MHz) in the range 2,400-2,483.5 MHz. The transmitter switches hop frequencies 1,600 times per second to assure a high degree of data security. All Bluetooth devices participating in a given piconet are synchronized to the frequency-hopping channel for the piconet. The frequency hopping sequence is determined by the master's device address and the phase of the hopping sequence (the frequency to hop at a specific time) is determined by the master's internal clock. Therefore, all slaves in a piconet must know the master's device address and must synchronize their clocks with the master's clock.

Adaptive Frequency Hopping (AFH) was introduced in the Bluetooth specification to provide an effective way for a Bluetooth radio to counteract normal interference. AFH identifies "bad" channels, where either other wireless devices are interfering with the Bluetooth signal or the Bluetooth signal is interfering with another device. The AFH- enabled Bluetooth device will then communicate with other devices within its piconet to share details of any identified bad channels. The devices will then switch to alternative available "good" channels, away from the areas of interference, thus having no impact on the bandwidth used.

## 9 TEST REQUIREMENTS

### 9.1 20DB BANDWIDTH

#### 9.1.1 Applicable Standard

According to FCC Part 15.247(a)(1) and DA 00-705

#### 9.1.2 Conformance Limit

No limit requirement.

#### 9.1.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

#### 9.1.4 Test Procedure

The EUT was operating in Bluetooth v2.0 /v2.1/v3.0 mode and controlled its channel. Printed out the test result from the spectrum by hard copy function.

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously

Set RBW = 30 kHz.

Set the video bandwidth (VBW) =100 kHz.

Set Span= approximately 2 to 3 times the 20 dB bandwidth

Set Detector = Peak.

Set Trace mode = max hold.

Set Sweep = auto couple.

The EUT should be transmitting at its maximum data rate. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 20 dB down one side of the emission. Reset the markerdelta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 20 dB bandwidth of the emission.

If this value varies with different modes of operation (e.g., data rate, modulation format, etc.), repeat this test for each variation.

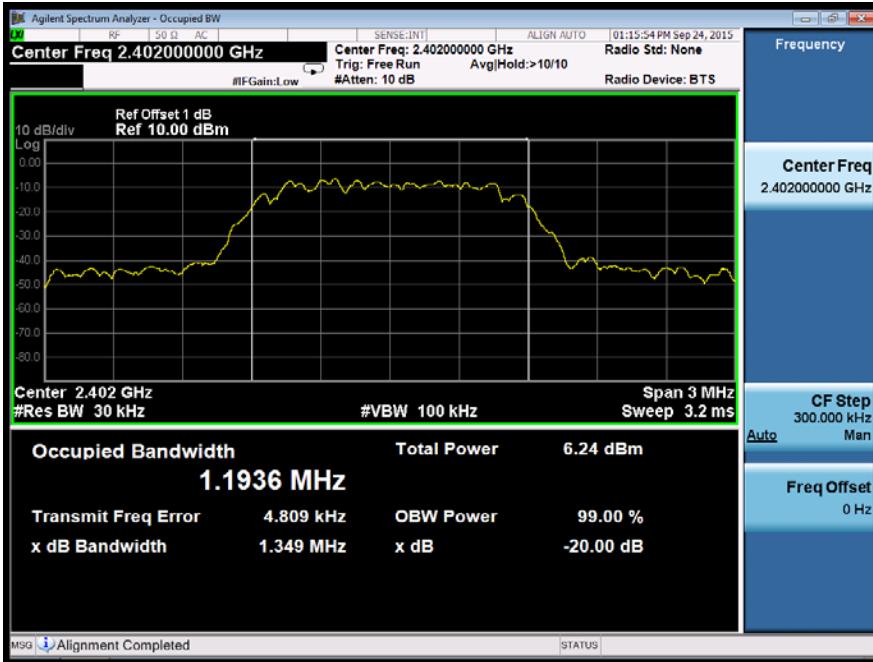
Measure and record the results in the test report.

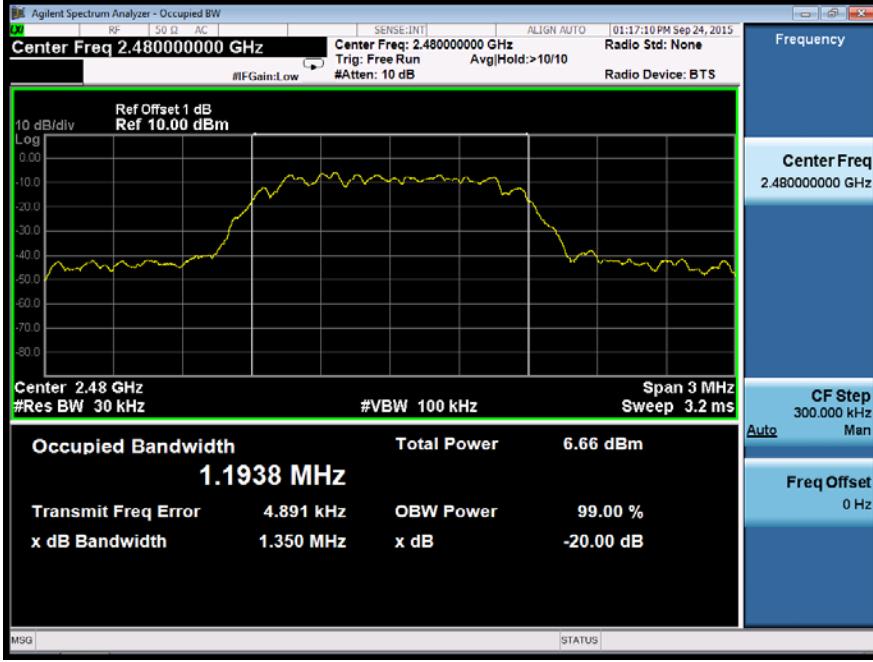
### Test Results

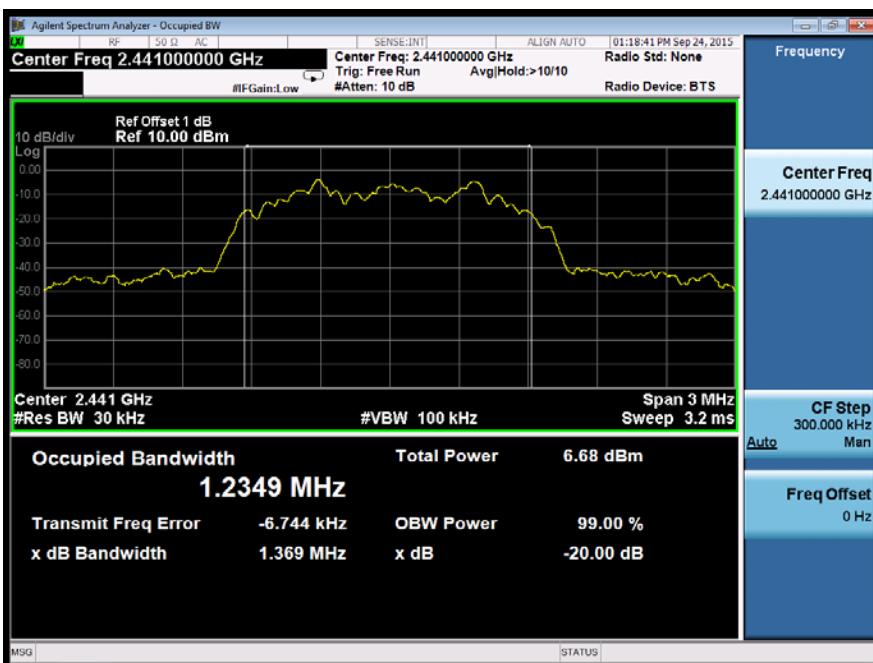
|              |      |            |                    |
|--------------|------|------------|--------------------|
| Temperature: | 24°C | Test Date: | September 24, 2015 |
| Humidity:    | 53 % | Test By:   | KING KONG          |

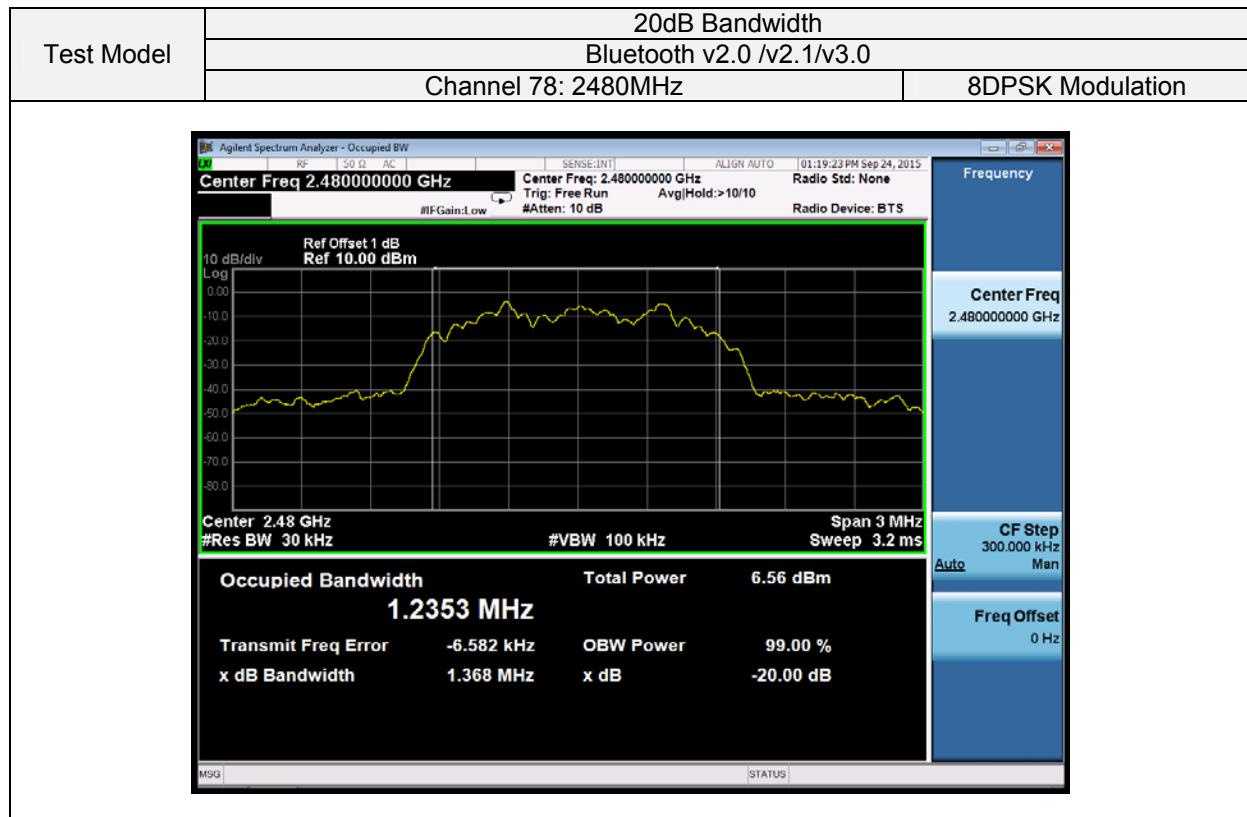
| Modulation Mode            | Channel Number | Channel Frequency (MHz) | Measurement Bandwidth (kHz) | Limit (kHz) | Verdict |
|----------------------------|----------------|-------------------------|-----------------------------|-------------|---------|
| GFSK                       | 00             | 2402                    | 1042.00                     | N/A         | PASS    |
|                            | 39             | 2441                    | 1044.00                     | N/A         | PASS    |
|                            | 78             | 2480                    | 1043.00                     | N/A         | PASS    |
| pi/4-DQPSK                 | 00             | 2402                    | 1349.00                     | N/A         | PASS    |
|                            | 39             | 2441                    | 1348.00                     | N/A         | PASS    |
|                            | 78             | 2480                    | 1350.00                     | N/A         | PASS    |
| 8DPSK                      | 00             | 2402                    | 1367.00                     | N/A         | PASS    |
|                            | 39             | 2441                    | 1369.00                     | N/A         | PASS    |
|                            | 78             | 2480                    | 1368.00                     | N/A         | PASS    |
| Note: N/A (Not Applicable) |                |                         |                             |             |         |

|            |  |                 |
|------------|--|-----------------|
| Test Model | 20dB Bandwidth   |                 |
|            | Bluetooth v2.0 /v2.1/v3.0  |                 |
|            | Channel 0: 2402MHz   | GFSK Modulation |
|            |   |                 |
| Test Model | 20dB Bandwidth   |                 |
|            | Bluetooth v2.0 /v2.1/v3.0  |                 |
|            | Channel 39: 2441MHz  | GFSK Modulation |
|            |  |                 |

|  |                           |  |
|--|---------------------------|--|
| Test Model   | 20dB Bandwidth            |  |
|  | Bluetooth v2.0 /v2.1/v3.0 |  |
|  | Channel 78: 2480MHz       |  |
| GFSK Modulation  |                           |  |
|  <p>The screenshot shows the Agilent Spectrum Analyzer interface with the following parameters:</p> <ul style="list-style-type: none"> <li><b>RF</b>: SENSE:INT, ALIGN AUTO, 01:15:11 PM Sep 24, 2015</li> <li><b>Center Freq</b>: 2.480000000 GHz</li> <li><b>Trig</b>: FreeRun, Avg Hold:&gt;10/10</li> <li><b>Radio Std</b>: None</li> <li><b>Radio Device</b>: BTS</li> <li><b>IFGain</b>: Low</li> <li><b>#Atten</b>: 10 dB</li> <li><b>Frequency</b>: Center Freq 2.480000000 GHz</li> <li><b>CF Step</b>: 300.000 kHz (Auto)</li> <li><b>Freq Offset</b>: 0 Hz</li> </ul> <p><b>Occupied Bandwidth</b>: 928.06 kHz</p> <p><b>Total Power</b>: 7.45 dBm</p> <p><b>Transmit Freq Error</b>: 8.612 kHz</p> <p><b>x dB Bandwidth</b>: 1.043 MHz</p> <p><b>OBW Power</b>: 99.00 %</p> <p><b>x dB</b>: -20.00 dB</p> <p><b>Sweep</b>: 3.2 ms</p> <p><b>Span</b>: 3 MHz</p> <p><b>#VBW</b>: 100 kHz</p> <p><b>Center</b>: 2.48 GHz</p> <p><b>#Res BW</b>: 30 kHz</p> <p><b>MSG</b>: Alignment Completed</p>   |                           |  |
| Test Model   | 20dB Bandwidth            |  |
|  | Bluetooth v2.0 /v2.1/v3.0 |  |
|  | Channel 0: 2402MHz        |  |
| pi/4-DQPSK Modulation  |                           |  |
|  <p>The screenshot shows the Agilent Spectrum Analyzer interface with the following parameters:</p> <ul style="list-style-type: none"> <li><b>RF</b>: SENSE:INT, ALIGN AUTO, 01:15:54 PM Sep 24, 2015</li> <li><b>Center Freq</b>: 2.402000000 GHz</li> <li><b>Trig</b>: FreeRun, Avg Hold:&gt;10/10</li> <li><b>Radio Std</b>: None</li> <li><b>Radio Device</b>: BTS</li> <li><b>IFGain</b>: Low</li> <li><b>#Atten</b>: 10 dB</li> <li><b>Frequency</b>: Center Freq 2.402000000 GHz</li> <li><b>CF Step</b>: 300.000 kHz (Auto)</li> <li><b>Freq Offset</b>: 0 Hz</li> </ul> <p><b>Occupied Bandwidth</b>: 1.1936 MHz</p> <p><b>Total Power</b>: 6.24 dBm</p> <p><b>Transmit Freq Error</b>: 4.809 kHz</p> <p><b>x dB Bandwidth</b>: 1.349 MHz</p> <p><b>OBW Power</b>: 99.00 %</p> <p><b>x dB</b>: -20.00 dB</p> <p><b>Sweep</b>: 3.2 ms</p> <p><b>Span</b>: 3 MHz</p> <p><b>#VBW</b>: 100 kHz</p> <p><b>Center</b>: 2.402 GHz</p> <p><b>#Res BW</b>: 30 kHz</p> <p><b>MSG</b>: Alignment Completed</p> |                           |  |

|  |                           |                       |  |            |                |  |  |  |                           |  |  |  |                     |                       |  |
|--|---------------------------|-----------------------|--|------------|----------------|--|--|--|---------------------------|--|--|--|---------------------|-----------------------|--|
| Test Model   | 20dB Bandwidth            |                       |  |            |                |  |  |  |                           |  |  |  |                     |                       |  |
|  | Bluetooth v2.0 /v2.1/v3.0 |                       |  |            |                |  |  |  |                           |  |  |  |                     |                       |  |
|  | Channel 39: 2441MHz       | pi/4-DQPSK Modulation |  |            |                |  |  |  |                           |  |  |  |                     |                       |  |
|  <p>The screenshot shows the Agilent Spectrum Analyzer interface. The main window displays a power spectrum plot with a yellow line representing the signal. The plot has a logarithmic scale from -80.0 to 10.0 dB. The center frequency is set to 2.441000000 GHz. The occupied bandwidth is 1.1935 MHz, and the total power is 6.76 dBm. The transmit frequency error is 4.914 kHz, and the x dB bandwidth is 1.348 MHz. The plot parameters are: Center 2.441 GHz, #Res BW 30 kHz, #VBW 100 kHz, Span 3 MHz, Sweep 3.2 ms.</p>  |                           |                       |  |            |                |  |  |  |                           |  |  |  |                     |                       |  |
| <table border="1"> <tr> <td>Test Model</td> <td colspan="3">20dB Bandwidth</td></tr> <tr> <td></td><td colspan="3">Bluetooth v2.0 /v2.1/v3.0</td></tr> <tr> <td></td><td>Channel 78: 2480MHz</td><td>pi/4-DQPSK Modulation</td><td></td></tr> </table>  <p>The screenshot shows the Agilent Spectrum Analyzer interface. The main window displays a power spectrum plot with a yellow line representing the signal. The plot has a logarithmic scale from -80.0 to 10.0 dB. The center frequency is set to 2.480000000 GHz. The occupied bandwidth is 1.1938 MHz, and the total power is 6.66 dBm. The transmit frequency error is 4.891 kHz, and the x dB bandwidth is 1.350 MHz. The plot parameters are: Center 2.48 GHz, #Res BW 30 kHz, #VBW 100 kHz, Span 3 MHz, Sweep 3.2 ms.</p> |                           |                       |  | Test Model | 20dB Bandwidth |  |  |  | Bluetooth v2.0 /v2.1/v3.0 |  |  |  | Channel 78: 2480MHz | pi/4-DQPSK Modulation |  |
| Test Model   | 20dB Bandwidth            |                       |  |            |                |  |  |  |                           |  |  |  |                     |                       |  |
|  | Bluetooth v2.0 /v2.1/v3.0 |                       |  |            |                |  |  |  |                           |  |  |  |                     |                       |  |
|  | Channel 78: 2480MHz       | pi/4-DQPSK Modulation |  |            |                |  |  |  |                           |  |  |  |                     |                       |  |

|  |                           |                  |           |                    |             |          |                   |  |  |                     |            |           |         |                |           |      |           |
|--|---------------------------|------------------|-----------|--------------------|-------------|----------|-------------------|--|--|---------------------|------------|-----------|---------|----------------|-----------|------|-----------|
| Test Model   | 20dB Bandwidth            |                  |           |                    |             |          |                   |  |  |                     |            |           |         |                |           |      |           |
|  | Bluetooth v2.0 /v2.1/v3.0 |                  |           |                    |             |          |                   |  |  |                     |            |           |         |                |           |      |           |
|  | Channel 0: 2402MHz        | 8DPSK Modulation |           |                    |             |          |                   |  |  |                     |            |           |         |                |           |      |           |
|  <p>The screenshot shows a spectrum analysis plot with a yellow line representing the signal power. The x-axis is labeled "Center 2.402 GHz" and "Span 3 MHz". The y-axis is labeled "Ref Offset 1 dB" and "Ref 10.00 dBm". The plot shows a peak around -10 dBm with noise floor around -40 dBm. Below the plot, the following parameters are displayed:</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>6.16 dBm</td> </tr> <tr> <td><b>1.2343 MHz</b></td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>-6.794 kHz</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>x dB Bandwidth</td> <td>1.367 MHz</td> <td>x dB</td> <td>-20.00 dB</td> </tr> </table>  |                           |                  |           | Occupied Bandwidth | Total Power | 6.16 dBm | <b>1.2343 MHz</b> |  |  | Transmit Freq Error | -6.794 kHz | OBW Power | 99.00 % | x dB Bandwidth | 1.367 MHz | x dB | -20.00 dB |
| Occupied Bandwidth   | Total Power               | 6.16 dBm         |           |                    |             |          |                   |  |  |                     |            |           |         |                |           |      |           |
| <b>1.2343 MHz</b>  |                           |                  |           |                    |             |          |                   |  |  |                     |            |           |         |                |           |      |           |
| Transmit Freq Error  | -6.794 kHz                | OBW Power        | 99.00 %   |                    |             |          |                   |  |  |                     |            |           |         |                |           |      |           |
| x dB Bandwidth   | 1.367 MHz                 | x dB             | -20.00 dB |                    |             |          |                   |  |  |                     |            |           |         |                |           |      |           |
|  <p>The screenshot shows a spectrum analysis plot with a yellow line representing the signal power. The x-axis is labeled "Center 2.441 GHz" and "Span 3 MHz". The y-axis is labeled "Ref Offset 1 dB" and "Ref 10.00 dBm". The plot shows a peak around -10 dBm with noise floor around -40 dBm. Below the plot, the following parameters are displayed:</p> <table border="1"> <tr> <td>Occupied Bandwidth</td> <td>Total Power</td> <td>6.68 dBm</td> </tr> <tr> <td><b>1.2349 MHz</b></td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>-6.744 kHz</td> <td>OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>x dB Bandwidth</td> <td>1.369 MHz</td> <td>x dB</td> <td>-20.00 dB</td> </tr> </table> |                           |                  |           | Occupied Bandwidth | Total Power | 6.68 dBm | <b>1.2349 MHz</b> |  |  | Transmit Freq Error | -6.744 kHz | OBW Power | 99.00 % | x dB Bandwidth | 1.369 MHz | x dB | -20.00 dB |
| Occupied Bandwidth   | Total Power               | 6.68 dBm         |           |                    |             |          |                   |  |  |                     |            |           |         |                |           |      |           |
| <b>1.2349 MHz</b>  |                           |                  |           |                    |             |          |                   |  |  |                     |            |           |         |                |           |      |           |
| Transmit Freq Error  | -6.744 kHz                | OBW Power        | 99.00 %   |                    |             |          |                   |  |  |                     |            |           |         |                |           |      |           |
| x dB Bandwidth   | 1.369 MHz                 | x dB             | -20.00 dB |                    |             |          |                   |  |  |                     |            |           |         |                |           |      |           |



## 9.2 CARRIER FREQUENCY SEPARATION

### 9.2.1 Applicable Standard

According to FCC Part 15.247(a)(1) and DA 00-705

### 9.2.2 Conformance Limit

Frequency hopping systems operating in the 2400-2483.5MHz band shall have hopping channel carrier frequencies separated by a minimum of 25kHz or the 20dB bandwidth of the hopping channel, whichever is greater.

In case of an output power less than 125mW, the frequency hopping system may have channels separated by a minimum of 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater.

### 9.2.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

### 9.2.4 Test Procedure

- According to FCC Part15.247(a)(1)

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

Set the RBW =100kHz.

Set VBW =300kHz.

Set the span = wide enough to capture the peaks of two adjacent channels

Set Sweep time = auto couple.

Set Detector = peak.

Set Trace mode = max hold.

Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section. Submit this plot.

## Test Results

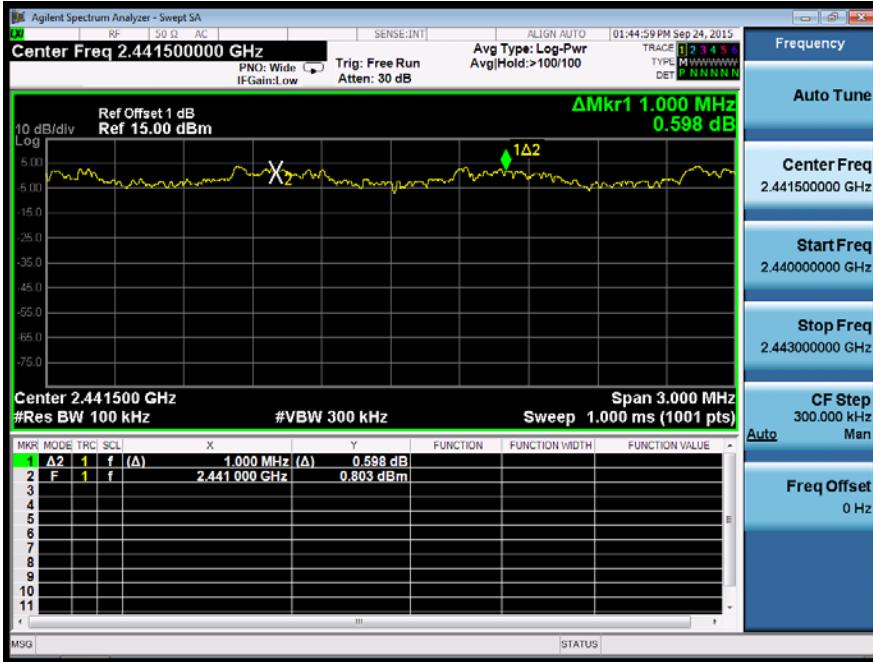
|              |      |            |                    |
|--------------|------|------------|--------------------|
| Temperature: | 24°C | Test Date: | September 24, 2015 |
| Humidity:    | 53 % | Test By:   | KING KONG          |

| Modulation Mode | Channel Number | Channel Frequency (MHz) | Measurement Bandwidth (kHz) | Limit (kHz) | Verdict |
|-----------------|----------------|-------------------------|-----------------------------|-------------|---------|
| GFSK            | 0              | 2402                    | 839.00                      | >694.667    | PASS    |
|                 | 39             | 2441                    | 1000.00                     | >696.000    | PASS    |
|                 | 78             | 2480                    | 1000.00                     | >695.333    | PASS    |
| pi/4-DQPSK      | 0              | 2402                    | 1000.00                     | >899.333    | PASS    |
|                 | 39             | 2441                    | 1000.00                     | >898.667    | PASS    |
|                 | 78             | 2480                    | 1000.00                     | >900.000    | PASS    |
| 8DPSK           | 0              | 2402                    | 1000.00                     | >911.333    | PASS    |
|                 | 39             | 2441                    | 1000.00                     | >912.667    | PASS    |
|                 | 78             | 2480                    | 1000.00                     | >912.000    | PASS    |

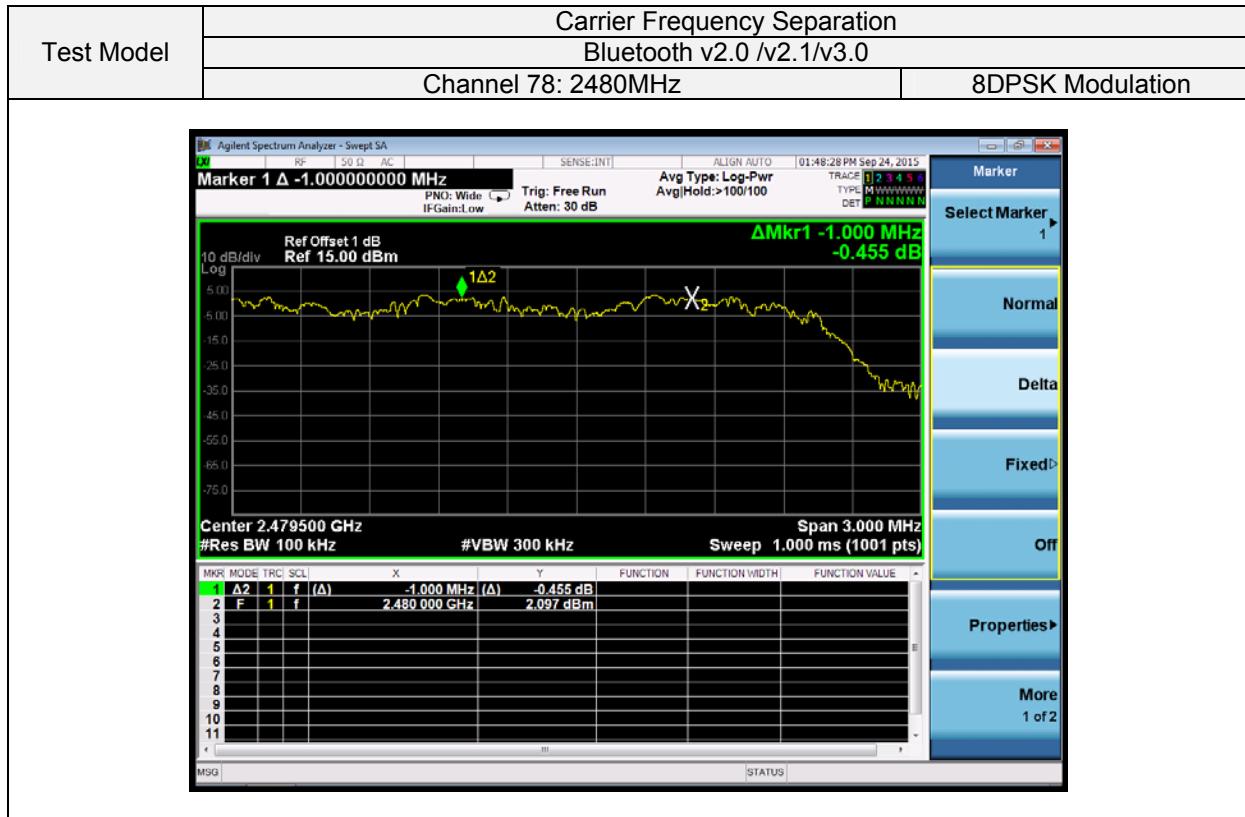
Note: Limit = 20dB bandwidth\*2/3 for GFSK & $\pi/4$ -DQPSK &8DPSK Modulation, if it is greater than 25kHz and the output power is less than 125mW (21dBm).

|   |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
|---|------------------------------|-----------------|------------------|----------------|----------------|----------|----------------|----------------|--------------|---------------|-----------|--|--|--|---------|---------------|-----------|--|--|--|---|--|--|--|--|--|---|--|--|--|--|--|---|--|--|--|--|--|---|--|--|--|--|--|---|--|--|--|--|--|---|--|--|--|--|--|---|--|--|--|--|--|----|--|--|--|--|--|----|--|--|--|--|--|
| Test Model  | Carrier Frequency Separation |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
|   | Bluetooth v2.0 /v2.1/v3.0    |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
|   | Channel 0: 2402MHz           | GFSK Modulation |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
|  <p>The screenshot shows the Agilent Spectrum Analyzer interface. The main window displays a spectrum plot with a yellow line representing the signal. A green arrow labeled '1Δ2' points to a peak at approximately 2.4025 GHz. The plot includes labels for 'Ref Offset 1 dB' and 'Ref 15.00 dBm'. The status bar at the bottom right shows 'Sweep 1.000 ms (1001 pts)'. To the right of the plot is a vertical stack of control panels for frequency, auto tune, center freq, start freq, stop freq, cf step, and freq offset.</p>  |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| <table border="1"> <tr> <td>MKR MODE TRC SCL</td> <td>X</td> <td>Y</td> <td>FUNCTION</td> <td>FUNCTION WIDTH</td> <td>FUNCTION VALUE</td> </tr> <tr> <td>1 A2 1 f (Δ)</td> <td>839 kHz (Δ)</td> <td>0.357 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2 F 1 f</td> <td>2.402 000 GHz</td> <td>2.648 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>9</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>10</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>11</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>    |                              |                 | MKR MODE TRC SCL | X              | Y              | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE | 1 A2 1 f (Δ) | 839 kHz (Δ)   | 0.357 dB  |  |  |  | 2 F 1 f | 2.402 000 GHz | 2.648 dBm |  |  |  | 3 |  |  |  |  |  | 4 |  |  |  |  |  | 5 |  |  |  |  |  | 6 |  |  |  |  |  | 7 |  |  |  |  |  | 8 |  |  |  |  |  | 9 |  |  |  |  |  | 10 |  |  |  |  |  | 11 |  |  |  |  |  |
| MKR MODE TRC SCL  | X                            | Y               | FUNCTION         | FUNCTION WIDTH | FUNCTION VALUE |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 1 A2 1 f (Δ)  | 839 kHz (Δ)                  | 0.357 dB        |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 2 F 1 f   | 2.402 000 GHz                | 2.648 dBm       |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 3   |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 4   |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 5   |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 6   |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 7   |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 8   |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 9   |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 10  |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 11  |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| <table border="1"> <tr> <td>MKR MODE TRC SCL</td> <td>X</td> <td>Y</td> <td>FUNCTION</td> <td>FUNCTION WIDTH</td> <td>FUNCTION VALUE</td> </tr> <tr> <td>1 A2 1 f (Δ)</td> <td>1.000 MHz (Δ)</td> <td>-0.372 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2 F 1 f</td> <td>2.441 000 GHz</td> <td>2.401 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>9</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>10</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>11</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> |                              |                 | MKR MODE TRC SCL | X              | Y              | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE | 1 A2 1 f (Δ) | 1.000 MHz (Δ) | -0.372 dB |  |  |  | 2 F 1 f | 2.441 000 GHz | 2.401 dBm |  |  |  | 3 |  |  |  |  |  | 4 |  |  |  |  |  | 5 |  |  |  |  |  | 6 |  |  |  |  |  | 7 |  |  |  |  |  | 8 |  |  |  |  |  | 9 |  |  |  |  |  | 10 |  |  |  |  |  | 11 |  |  |  |  |  |
| MKR MODE TRC SCL  | X                            | Y               | FUNCTION         | FUNCTION WIDTH | FUNCTION VALUE |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 1 A2 1 f (Δ)  | 1.000 MHz (Δ)                | -0.372 dB       |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 2 F 1 f   | 2.441 000 GHz                | 2.401 dBm       |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 3   |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 4   |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 5   |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 6   |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 7   |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 8   |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 9   |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 10  |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 11  |                              |                 |                  |                |                |          |                |                |              |               |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |

|            |                              |  |                       |
|------------|------------------------------|--|-----------------------|
| Test Model | Carrier Frequency Separation |  |                       |
|            | Bluetooth v2.0 /v2.1/v3.0    |  |                       |
|            | Channel 78: 2480MHz          |  | GFSK Modulation       |
|            |                              |  |                       |
| Test Model | Carrier Frequency Separation |  |                       |
|            | Bluetooth v2.0 /v2.1/v3.0    |  |                       |
|            | Channel 0: 2402MHz           |  | pi/4-DQPSK Modulation |
|            |                              |  |                       |

| Test Model   | Carrier Frequency Separation |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
|--|------------------------------|-----------------------|------------------|----------------|----------------|----------|----------------|----------------|--------------|----------------|-----------|--|--|--|---------|---------------|-----------|--|--|--|---|--|--|--|--|--|---|--|--|--|--|--|---|--|--|--|--|--|---|--|--|--|--|--|---|--|--|--|--|--|---|--|--|--|--|--|---|--|--|--|--|--|----|--|--|--|--|--|----|--|--|--|--|--|
|  | Bluetooth v2.0 /v2.1/v3.0    |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
|  | Channel 39: 2441MHz          | pi/4-DQPSK Modulation |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
|  <p>The screenshot shows the Agilent Spectrum Analyzer interface. The main window displays a spectrum plot with a center frequency of 2.441500000 GHz. A green arrow labeled '1Δ2' points to a secondary peak at approximately 2.441000000 GHz. The plot has a logarithmic scale from -75.0 to 5.0 dB. The status bar indicates 'Center 2.441500 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.000 ms (1001 pts)'.</p> <table border="1"> <thead> <tr> <th>MKR MODE TRC SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1 A2 1 f (Δ)</td> <td>1.000 MHz (Δ)</td> <td>0.598 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2 F 1 f</td> <td>2.441 000 GHz</td> <td>0.803 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>9</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>10</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>11</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>    |                              |                       | MKR MODE TRC SCL | X              | Y              | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE | 1 A2 1 f (Δ) | 1.000 MHz (Δ)  | 0.598 dB  |  |  |  | 2 F 1 f | 2.441 000 GHz | 0.803 dBm |  |  |  | 3 |  |  |  |  |  | 4 |  |  |  |  |  | 5 |  |  |  |  |  | 6 |  |  |  |  |  | 7 |  |  |  |  |  | 8 |  |  |  |  |  | 9 |  |  |  |  |  | 10 |  |  |  |  |  | 11 |  |  |  |  |  |
| MKR MODE TRC SCL   | X                            | Y                     | FUNCTION         | FUNCTION WIDTH | FUNCTION VALUE |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 1 A2 1 f (Δ)   | 1.000 MHz (Δ)                | 0.598 dB              |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 2 F 1 f  | 2.441 000 GHz                | 0.803 dBm             |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 3  |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 4  |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 5  |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 6  |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 7  |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 8  |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 9  |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 10   |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 11   |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| <p>Carrier Frequency Separation</p> <p>Bluetooth v2.0 /v2.1/v3.0</p> <p>Channel 78: 2480MHz</p> <p>pi/4-DQPSK Modulation</p>   |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
|  <p>The screenshot shows the Agilent Spectrum Analyzer interface. The main window displays a spectrum plot with a center frequency of 2.479500000 GHz. A green arrow labeled '1Δ2' points to a secondary peak at approximately 2.479500000 GHz. The plot has a logarithmic scale from -75.0 to 5.0 dB. The status bar indicates 'Center 2.479500 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.000 ms (1001 pts)'.</p> <table border="1"> <thead> <tr> <th>MKR MODE TRC SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1 A2 1 f (Δ)</td> <td>-1.000 MHz (Δ)</td> <td>-0.030 dB</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2 F 1 f</td> <td>2.480 000 GHz</td> <td>1.343 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>9</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>10</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>11</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> |                              |                       | MKR MODE TRC SCL | X              | Y              | FUNCTION | FUNCTION WIDTH | FUNCTION VALUE | 1 A2 1 f (Δ) | -1.000 MHz (Δ) | -0.030 dB |  |  |  | 2 F 1 f | 2.480 000 GHz | 1.343 dBm |  |  |  | 3 |  |  |  |  |  | 4 |  |  |  |  |  | 5 |  |  |  |  |  | 6 |  |  |  |  |  | 7 |  |  |  |  |  | 8 |  |  |  |  |  | 9 |  |  |  |  |  | 10 |  |  |  |  |  | 11 |  |  |  |  |  |
| MKR MODE TRC SCL   | X                            | Y                     | FUNCTION         | FUNCTION WIDTH | FUNCTION VALUE |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 1 A2 1 f (Δ)   | -1.000 MHz (Δ)               | -0.030 dB             |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 2 F 1 f  | 2.480 000 GHz                | 1.343 dBm             |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 3  |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 4  |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 5  |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 6  |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 7  |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 8  |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 9  |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 10   |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |
| 11   |                              |                       |                  |                |                |          |                |                |              |                |           |  |  |  |         |               |           |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |   |  |  |  |  |  |    |  |  |  |  |  |    |  |  |  |  |  |

|   |                              |                  |  |
|---|------------------------------|------------------|--|
| Test Model  | Carrier Frequency Separation |                  |  |
|   | Bluetooth v2.0 /v2.1/v3.0    |                  |  |
|   | Channel 0: 2402MHz           | 8DPSK Modulation |  |
|  <p>The screenshot shows the Agilent Spectrum Analyzer interface. The main window displays a spectrum plot with a central peak at 2.4025 GHz and a side lobe labeled <math>\Delta f</math>. The plot has a logarithmic scale from -75.0 to 5.0 dB. The status bar indicates "Center 2.402500 GHz #VBW 300 kHz Sweep 1.000 ms (1001 pts)". The right panel shows the following parameters:</p> <ul style="list-style-type: none"> <li>Frequency: Auto Tune</li> <li>Center Freq: 2.40250000 GHz</li> <li>Start Freq: 2.40100000 GHz</li> <li>Stop Freq: 2.40400000 GHz</li> <li>CF Step: 300.000 kHz Man</li> <li>Freq Offset: 0 Hz</li> </ul>  |                              |                  |  |
| Test Model  | Carrier Frequency Separation |                  |  |
|   | Bluetooth v2.0 /v2.1/v3.0    |                  |  |
|   | Channel 39: 2441MHz          | 8DPSK Modulation |  |
|  <p>The screenshot shows the Agilent Spectrum Analyzer interface. The main window displays a spectrum plot with a central peak at 2.4415 GHz and a side lobe labeled <math>\Delta f</math>. The plot has a logarithmic scale from -75.0 to 5.0 dB. The status bar indicates "Center 2.441500 GHz #VBW 300 kHz Sweep 1.000 ms (1001 pts)". The right panel shows the following parameters:</p> <ul style="list-style-type: none"> <li>Frequency: Auto Tune</li> <li>Center Freq: 2.44150000 GHz</li> <li>Start Freq: 2.44000000 GHz</li> <li>Stop Freq: 2.44300000 GHz</li> <li>CF Step: 300.000 kHz Man</li> <li>Freq Offset: 0 Hz</li> </ul> |                              |                  |  |



### 9.3 NUMBER OF HOPPING FREQUENCIES

#### 9.3.1 Applicable Standard

According to FCC Part 15.247(a)(1) (iii)and DA 00-705

#### 9.3.2 Conformance Limit

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

#### 9.3.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

#### 9.3.4 Test Procedure

- According to FCC Part15.247(a)(1)(iii)

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

Span = the frequency band of operation (2390-2440MHz) and(2440-2490MHz)

RBW  $\geq 1\%$  of the span

VBW  $\geq$  RBW

Sweep = auto

Detector function = peak

Trace = max hold

Allow the trace to stabilize. It may prove necessary to break the span up to sections, in order to clearly show all of the hopping frequencies.

#### Test Results

|                    |           |               |                    |
|--------------------|-----------|---------------|--------------------|
| Spectrum Detector: | PK        | Test Date :   | September 24, 2015 |
| Test By:           | KING KONG | Temperature : | 24°C               |
| Test Result:       | PASS      | Humidity :    | 53 %               |

| Hopping Channel Frequency Range (MHz) | Quantity of Hopping Channel | Quantity of Hopping Channel limit |
|---------------------------------------|-----------------------------|-----------------------------------|
| 2400-2483.5                           | 79                          | $\geq 15$                         |

| Test Model   | Number Of Hopping Frequencies |  |
|--|-------------------------------|--|
|  | Bluetooth v2.0 /v2.1/v3.0     |  |
|  | Span: 2390-2440MHz            |  |
|  <p>Marker 1 2.431100000000 GHz<br/>     Ref Offset 1 dB<br/>     Ref 15.00 dBm<br/>     Avg Type: Log-Pwr<br/>     Avg Hold:&gt;100/100<br/>     TRACE 1 2 3 4 5 6<br/>     TYPE MWWWWWW<br/>     DET PNNNNNN<br/>     PNO: Fast IFGain:Low Trig: Free Run Atten: 30 dB</p> <p>Mkr1 2.431 10 GHz<br/>     4.665 dBm</p> <p>Start 2.39000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 2.44000 GHz Sweep 1.000 ms (1001 pts)</p> <p>MSG STATUS</p> <p>Peak Search<br/>     Next Peak<br/>     Next Pk Right<br/>     Next Pk Left<br/>     Marker Delta<br/>     Mkr→CF<br/>     Mkr→Ref Lvl<br/>     More 1 of 2</p>  |                               |  |
| Test Model   | Number Of Hopping Frequencies |  |
|  | Bluetooth v2.0 /v2.1/v3.0     |  |
|  | Span: 2440-2490MHz            |  |
|  <p>Marker 1 2.461100000000 GHz<br/>     Ref Offset 1 dB<br/>     Ref 15.00 dBm<br/>     Avg Type: Log-Pwr<br/>     Avg Hold:&gt;100/100<br/>     TRACE 1 2 3 4 5 6<br/>     TYPE MWWWWWW<br/>     DET PNNNNNN<br/>     PNO: Fast IFGain:Low Trig: Free Run Atten: 30 dB</p> <p>Mkr1 2.461 10 GHz<br/>     4.757 dBm</p> <p>Start 2.44000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 2.49000 GHz Sweep 1.000 ms (1001 pts)</p> <p>MSG STATUS</p> <p>Peak Search<br/>     Next Peak<br/>     Next Pk Right<br/>     Next Pk Left<br/>     Marker Delta<br/>     Mkr→CF<br/>     Mkr→Ref Lvl<br/>     More 1 of 2</p> |                               |  |

## 9.4 AVERAGE TIME OF OCCUPANCY (DWELL TIME)

### 9.4.1 Applicable Standard

According to FCC Part 15.247(a)(1)(iii) and DA 00-705

### 9.4.2 Conformance Limit

For frequency hopping systems operating in the 2400-2483.5MHz band, the average time of occupancy on any channel shall not be greater than 0.4s within a period of 0.4s multiplied by the number of hopping channels employed.

### 9.4.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

### 9.4.4 Test Procedure

- According to FCC Part15.247(a)(1)(iii)

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

Span = zero span, centered on a hopping channel

RBW = 1 MHz

VBW  $\geq$  RBW

Sweep = as necessary to capture the entire dwell time per hopping channel

Detector function = peak

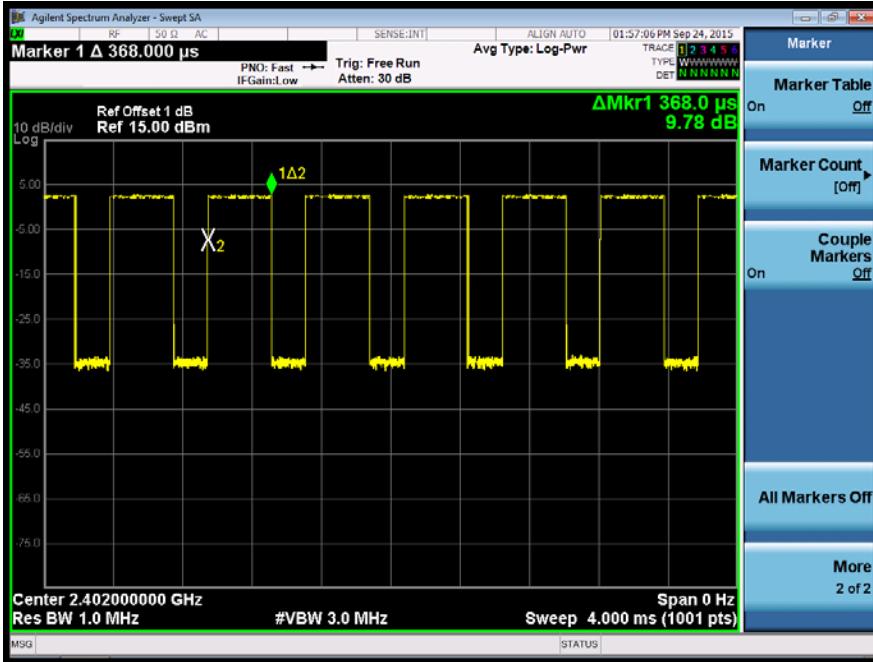
Trace = max hold

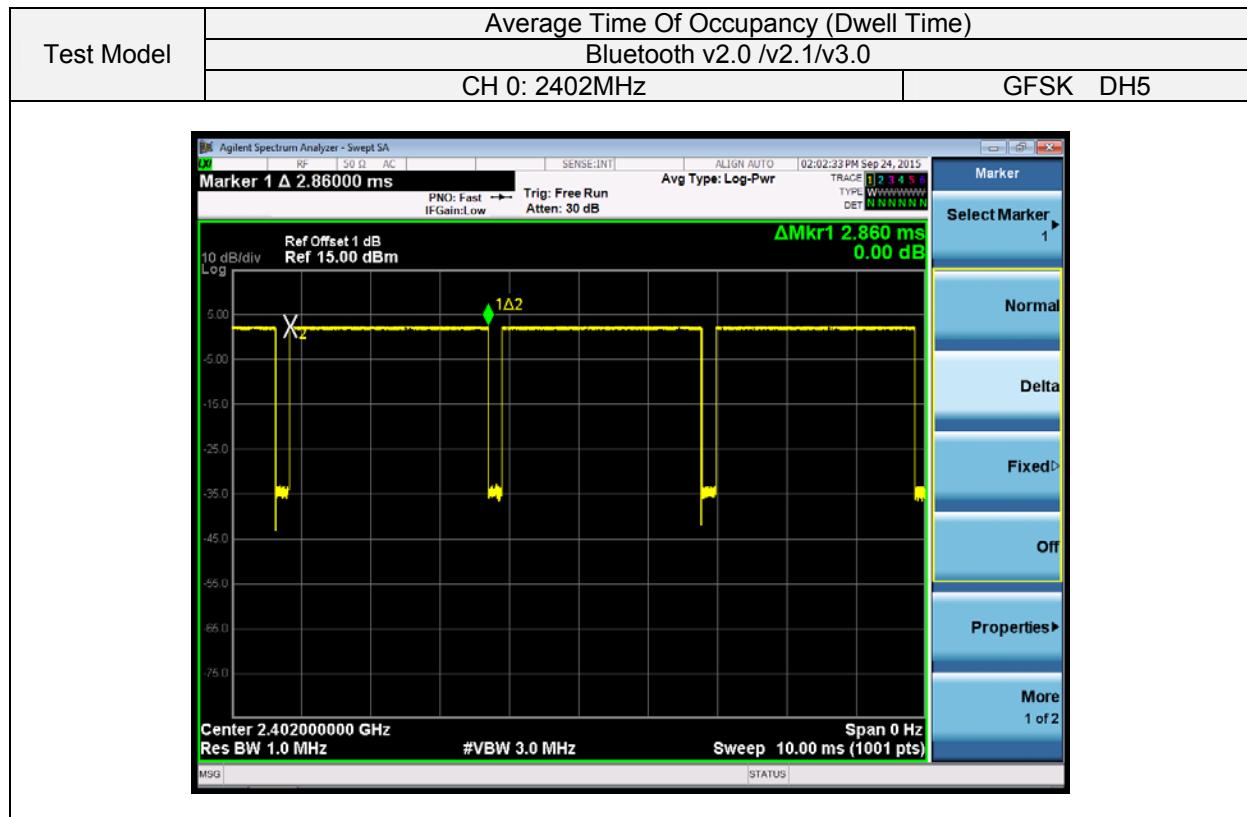
If possible, use the marker-delta function to determine the dwell time. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.), repeat this test for each variation. The limit is specified in one of the subparagraphs of this Section.

### 9.4.5 Test Results

|              |      |            |                    |
|--------------|------|------------|--------------------|
| Temperature: | 24°C | Test Date: | September 24, 2015 |
| Humidity:    | 53 % | Test By:   | KING KONG          |

| Modulation Mode | Channel Number | Packet type | Pluse width (ms) | Number per channel in 31.6s ( 79 Hopping*0.4) | dwell time (ms) | Limit (ms) | Verdict |
|-----------------|----------------|-------------|------------------|---|-----------------|------------|---------|
| GFSK            | 0              | DH1         | 0.368            | $1600/(2*79) \times 31.6 = 320$               | 117.76          | <400       | PASS    |
|                 | 0              | DH3         | 1.603            | $1600/(4*79) \times 31.6 = 160$               | 256.48          | <400       | PASS    |
|                 | 0              | DH5         | 2.860            | $1600/(6*79) \times 31.6 = 106.67$            | 305.08          | <400       | PASS    |
| Note:           |                |             |                  |   |                 |            |         |

|   |  |      |     |
|---|--|------|-----|
| Test Model  | Average Time Of Occupancy (Dwell Time) |      |     |
|   | Bluetooth v2.0 /v2.1/v3.0              |      |     |
|   | CH 0: 2402MHz                          | GFSK | DH1 |
|  <p>The screenshot shows a spectrum analysis plot with a center frequency of 2.40200000 GHz and a resolution bandwidth of 1.0 MHz. The dwell time is measured as 368.000 μs. The plot displays several vertical spikes representing transmitted pulses. A green marker labeled '1Δ2' indicates the dwell time interval between two consecutive pulses. The right side of the screen shows a 'Marker' configuration menu.</p>         |  |      |     |
| Test Model  | Average Time Of Occupancy (Dwell Time) |      |     |
|   | Bluetooth v2.0 /v2.1/v3.0              |      |     |
|   | CH 0: 2402MHz                          | GFSK | DH3 |
|  <p>The screenshot shows a spectrum analysis plot with a center frequency of 2.40200000 GHz and a resolution bandwidth of 1.0 MHz. The dwell time is measured as 1.60300 ms. The plot displays several vertical spikes representing transmitted pulses. A green marker labeled '1Δ2' indicates the dwell time interval between two consecutive pulses. The right side of the screen shows a 'Select Marker' configuration menu.</p> |  |      |     |



## 9.5 MAXIMUM PEAK CONDUCTED OUTPUT POWER

### 9.5.1 Applicable Standard

According to FCC Part 15.247(b)(1) and DA 00-705

### 9.5.2 Conformance Limit

The max For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

### 9.5.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

### 9.5.4 Test Procedure

- According to FCC Part15.247(b)(1)

As an alternative to a peak power measurement, compliance with the limit can be based on a measurement of the maximum conducted output power.

Use the following spectrum analyzer settings:

Set Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel (about 10MHz)

Set RBW > the 20 dB bandwidth of the emission being measured (about 3MHz)

Set VBW  $\geq$  RBW

Set Sweep = auto

Set Detector function = peak

Set Trace = max hold

Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission to determine the peak amplitude level.

## Test Results

|              |      |            |                    |
|--------------|------|------------|--------------------|
| Temperature: | 24°C | Test Date: | September 24, 2015 |
| Humidity:    | 53 % | Test By:   | KING KONG          |

| Operation Mode | Channel Number | Channel Frequency (MHz) | Measurement Level (dBm) | Limit (dBm) | Verdict |
|----------------|----------------|-------------------------|-------------------------|-------------|---------|
| GFSK           | 0              | 2402                    | 2.283                   | 21          | PASS    |
|                | 39             | 2441                    | 2.753                   | 21          | PASS    |
|                | 78             | 2480                    | 2.702                   | 21          | PASS    |
| pi/4-DQPSK     | 0              | 2402                    | 3.573                   | 21          | PASS    |
|                | 39             | 2441                    | 4.008                   | 21          | PASS    |
|                | 78             | 2480                    | 3.863                   | 21          | PASS    |
| 8DPSK          | 0              | 2402                    | 3.692                   | 21          | PASS    |
|                | 39             | 2441                    | <b>4.113</b>            | 21          | PASS    |
|                | 78             | 2480                    | 3.391                   | 21          | PASS    |
| Note: N/A      |                |                         |                         |             |         |

|   |                                     |  |      |
|---|-------------------------------------|--|------|
| Test Model  | Maximum Peak Conducted Output Power |  |      |
|   | Bluetooth v2.0 /v2.1/v3.0           |  |      |
|   | Channel 0: 2402MHz                  |  | GFSK |
|  <p>The screenshot shows a spectrum analysis plot with a central peak at 2.4019 GHz. The Y-axis ranges from -75.0 to 5.0 dBm. The X-axis shows a 10 MHz span centered at 2.402000 GHz. A green marker labeled 'Mkr1' indicates a power level of 2.283 dBm.</p>   |                                     |  |      |
| Test Model  | Maximum Peak Conducted Output Power |  |      |
|   | Bluetooth v2.0 /v2.1/v3.0           |  |      |
|   | Channel 39: 2441MHz                 |  | GFSK |
|  <p>The screenshot shows a spectrum analysis plot with a central peak at 2.44088 GHz. The Y-axis ranges from -75.0 to 5.0 dBm. The X-axis shows a 10 MHz span centered at 2.441000 GHz. A green marker labeled 'Mkr1' indicates a power level of 2.753 dBm.</p> |                                     |  |      |

|   |                                     |  |            |
|---|-------------------------------------|--|------------|
| Test Model  | Maximum Peak Conducted Output Power |  |            |
|   | Bluetooth v2.0 /v2.1/v3.0           |  |            |
|   | Channel 78: 2480MHz                 |  | GFSK       |
|  <p>The screenshot shows a spectrum analysis plot with a yellow curve. A green marker labeled '1' is positioned at the peak of the curve. The plot parameters are: Center 2.480000 GHz, Span 10.00 MHz, Sweep 1.000 ms (1001 pts), VBW 50 MHz, and #Res BW 3.0 MHz. The Y-axis ranges from -75.0 to 5.0 dB. The X-axis shows frequency from approximately 2.479 GHz to 2.481 GHz. The right side of the screen displays a vertical menu for 'Peak Search' with options: Next Peak, Next Pk Right, Next Pk Left, Marker Delta, Mkr→CF, Mkr→Ref Lvl, and More 1 of 2.</p>  |                                     |  |            |
| Test Model  | Maximum Peak Conducted Output Power |  |            |
|   | Bluetooth v2.0 /v2.1/v3.0           |  |            |
|   | Channel 0: 2402MHz                  |  | pi/4-DQPSK |
|  <p>The screenshot shows a spectrum analysis plot with a yellow curve. A green marker labeled '1' is positioned at the peak of the curve. The plot parameters are: Center 2.402000 GHz, Span 10.00 MHz, Sweep 1.000 ms (1001 pts), VBW 50 MHz, and #Res BW 3.0 MHz. The Y-axis ranges from -75.0 to 5.0 dB. The X-axis shows frequency from approximately 2.401 GHz to 2.403 GHz. The right side of the screen displays a vertical menu for 'Peak Search' with options: Next Peak, Next Pk Right, Next Pk Left, Marker Delta, Mkr→CF, Mkr→Ref Lvl, and More 1 of 2.</p> |                                     |  |            |

|  |                                     |  |            |
|--|-------------------------------------|--|------------|
| Test Model   | Maximum Peak Conducted Output Power |  |            |
|  | Bluetooth v2.0 /v2.1/v3.0           |  |            |
|  | Channel 39: 2441MHz                 |  | pi/4-DQPSK |
|  <p>The screenshot shows a spectrum analysis plot with a central peak labeled 'Mkr1 2.440 78 GHz' at 4.008 dBm. The plot includes a yellow curve, a green marker, and a blue vertical line. The x-axis is labeled 'Center 2.441000 GHz' and 'Span 10.00 MHz'. The y-axis ranges from -75.0 to 5.00 dB.</p>  |                                     |  |            |
| Test Model   | Maximum Peak Conducted Output Power |  |            |
|  | Bluetooth v2.0 /v2.1/v3.0           |  |            |
|  | Channel 78: 2480MHz                 |  | pi/4-DQPSK |
|  <p>The screenshot shows a spectrum analysis plot with a central peak labeled 'Mkr1 2.479 76 GHz' at 3.863 dBm. The plot includes a yellow curve, a green marker, and a blue vertical line. The x-axis is labeled 'Center 2.480000 GHz' and 'Span 10.00 MHz'. The y-axis ranges from -75.0 to 5.00 dB.</p> |                                     |  |            |

|  |                                     |  |       |
|--|-------------------------------------|--|-------|
| Test Model   | Maximum Peak Conducted Output Power |  |       |
|  | Bluetooth v2.0 /v2.1/v3.0           |  |       |
|  | Channel 0: 2402MHz                  |  | 8DPSK |
|  <p>The screenshot shows an Agilent Spectrum Analyzer window. The main display is a log scale plot of signal power versus frequency. A yellow marker is positioned at 2.402 GHz, labeled 'Mkr1 2.402 01 GHz' with a value of '3.692 dBm'. The plot includes a reference line at 15.00 dBm. The center frequency is set to 2.402000 GHz, with a resolution bandwidth of 3.0 MHz and a video bandwidth of 50 MHz. The span is 10.00 MHz, and the sweep time is 1.000 ms (1001 pts). The right side of the screen features a vertical menu titled 'Peak Search' with options: Next Peak, Next Pk Right, Next Pk Left, Marker Delta, Mkr→CF, Mkr→Ref Lvl, and More 1 of 2.</p>                            |                                     |  |       |
| Test Model   | Maximum Peak Conducted Output Power |  |       |
|  | Bluetooth v2.0 /v2.1/v3.0           |  |       |
|  | Channel 39: 2441MHz                 |  | 8DPSK |
|  <p>The screenshot shows an Agilent Spectrum Analyzer window, similar to the one above. The main display is a log scale plot of signal power versus frequency. A yellow marker is positioned at 2.441 GHz, labeled 'Mkr1 2.441 13 GHz' with a value of '4.113 dBm'. The plot includes a reference line at 15.00 dBm. The center frequency is set to 2.441000 GHz, with a resolution bandwidth of 3.0 MHz and a video bandwidth of 50 MHz. The span is 10.00 MHz, and the sweep time is 1.000 ms (1001 pts). The right side of the screen features a vertical menu titled 'Peak Search' with options: Next Peak, Next Pk Right, Next Pk Left, Marker Delta, Mkr→CF, Mkr→Ref Lvl, and More 1 of 2.</p> |                                     |  |       |

| Test Model  | Maximum Peak Conducted Output Power |       |
|---|-------------------------------------|-------|
|   | Bluetooth v2.0 /v2.1/v3.0           |       |
|   | Channel 78: 2480MHz                 | 8DPSK |
|  <p>The screenshot shows the Agilent Spectrum Analyzer interface. The main window displays a spectrum plot with a single prominent peak at 2.480 GHz. The peak is labeled 'Mkr1 2.480 15 GHz' with a value of '3.931 dBm'. The plot has a logarithmic scale from -75.0 to 5.0 dB. The center frequency is set to 2.480000 GHz, and the span is 10.00 MHz. The right side of the screen features a vertical menu titled 'Peak Search' with options: Next Peak, Next Pk Right, Next Pk Left, Marker Delta, Mkr--&gt;CF, Mkr--&gt;Ref Lvl, and More 1 of 2.</p> |                                     |       |

## 9.6 CONDUCTED SUPRIOUS EMISSION

### 9.6.1 Applicable Standard

According to FCC Part 15.247(d) and DA 00-705

### 9.6.2 Conformance Limit

According to FCC Part 15.247(d):

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted, provided the transmitter demonstrates compliance with the peak conducted power limits.

### 9.6.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

### 9.6.4 Test Procedure

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

#### ■ Reference level measurement

Establish a reference level by using the following procedure:

Set instrument center frequency to DSS channel center frequency.

Set Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel.

Set the RBW = 100 kHz. Set the VBW  $\geq$  3 x RBW.

Set Detector = peak. Set Sweep time = auto couple.

Set Trace mode = max hold. Allow trace to fully stabilize.

Use the peak marker function to determine the maximum Maximum conducted level.

Note that the channel found to contain the maximum conducted level can be used to establish the reference level.

#### ■ Band-edge Compliance of RF Conducted Emissions

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the emission operating on the channel closest to the band-edge, as well as any modulation products which fall outside of the authorized band of operation

Set RBW  $\geq$  1% of the span=100kHz Set VBW  $\geq$  RBW

Set Sweep = auto Set Detector function = peak Set Trace = max hold

Allow the trace to stabilize. Set the marker on the emission at the bandedge, or on the highest modulation product outside of the band, if this level is greater than that at the bandedge. Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band emission.

The marker-delta value now displayed must comply with the limit specified in this Section.

Now, using the same instrument settings, enable the hopping function of the EUT. Allow the trace to stabilize. Follow the same procedure listed above to determine if any spurious emissions caused by the hopping function also comply with the specified limit.

#### ■ Conducted Spurious RF Conducted Emission

Use the following spectrum analyzer settings:

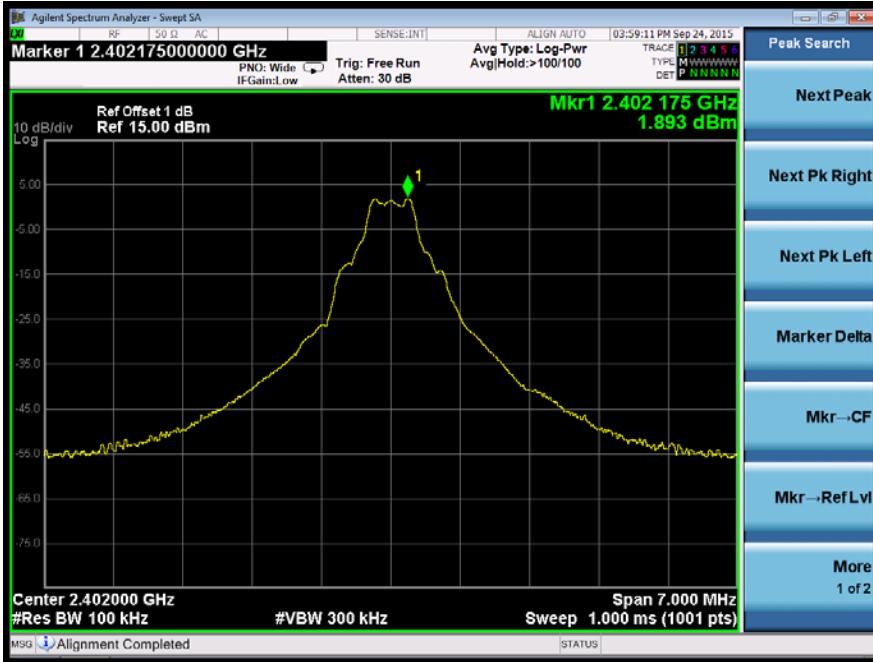
Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic.(30MHz to 25GHz). Set RBW = 100 kHz Set VBW  $\geq$  RBW

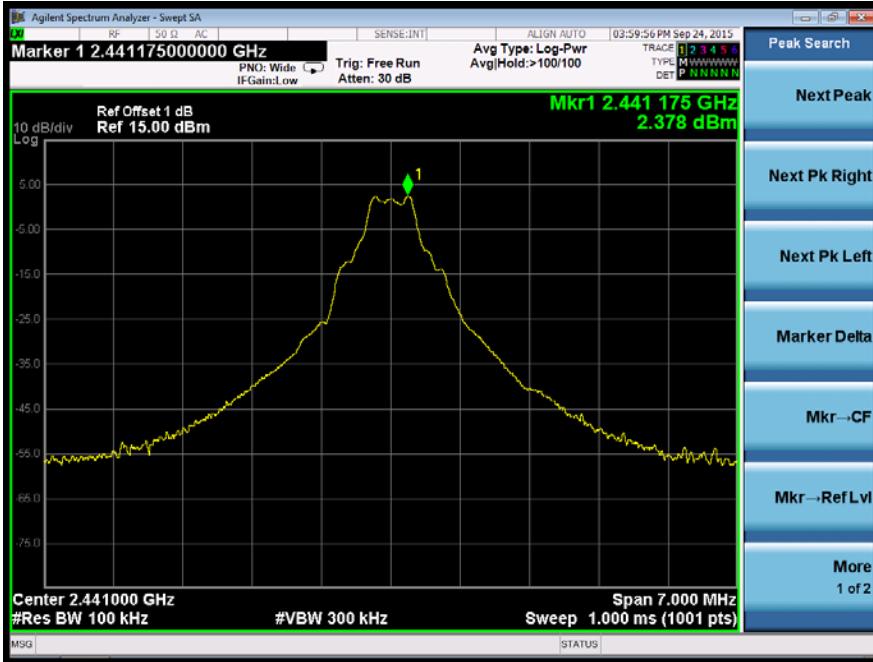
Set Sweep = auto Set Detector function = peak Set Trace = max hold

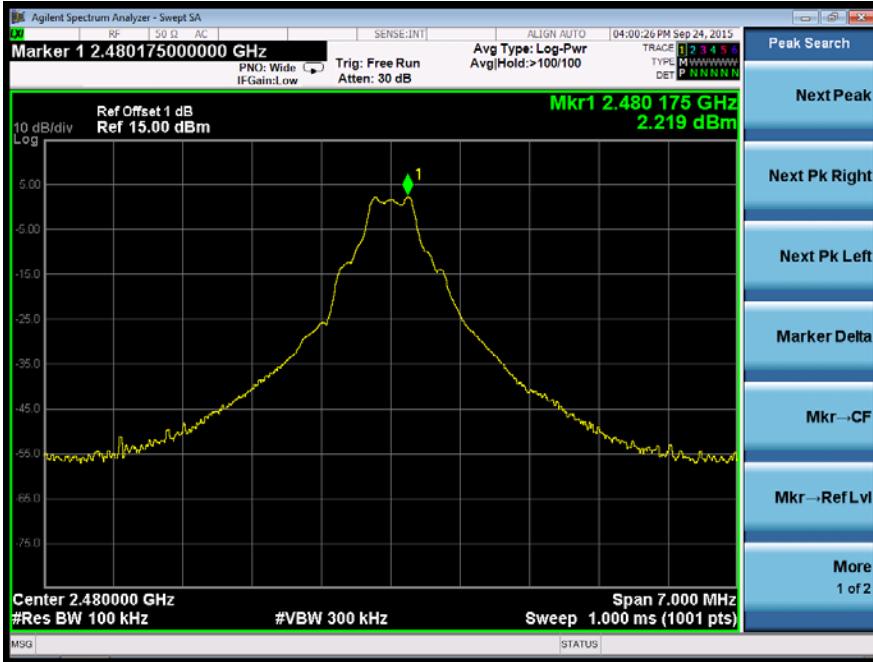
Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded. The level displayed must comply with the limit specified in this Section.

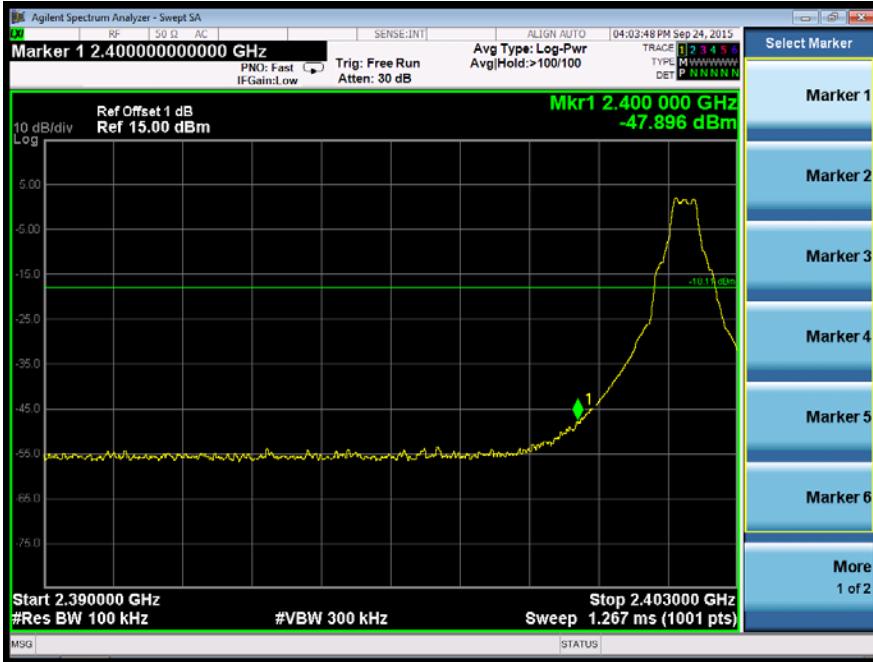
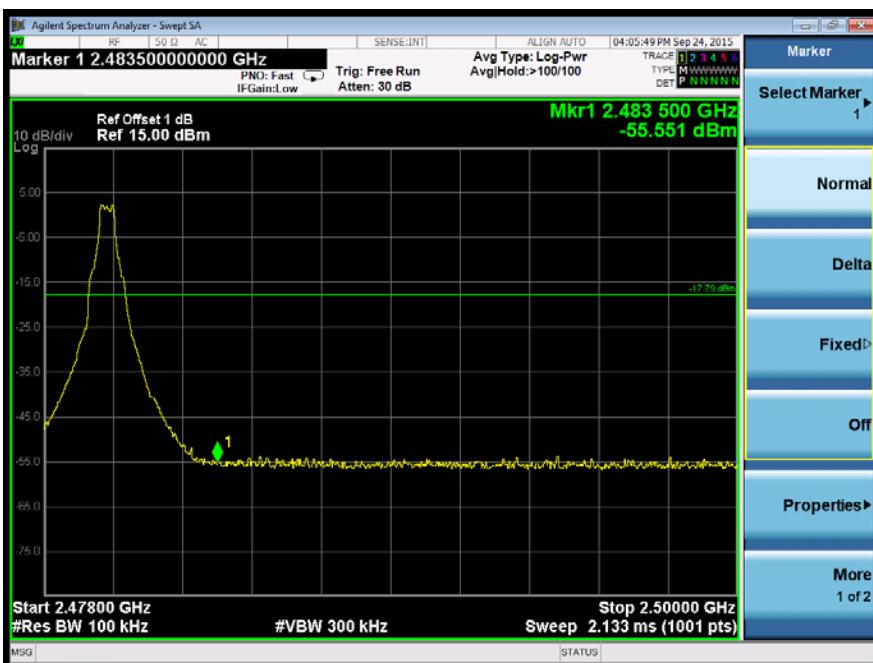
### 9.6.5 Test Results

Bluetooth (GFSK, pi/4-DQPSK, 8DPSK) mode have been tested, and the worst result(GFSK) was report as below:

|  |  |  |      |
|--|--|--|------|
| Test Model   | Maximum Conducted Level RBW=100kHz       |  |      |
|  | Bluetooth v2.0 /v2.1/v3.0                |  |      |
|  | Channel 0: 2402MHz                       |  | GFSK |
|  <p>The screenshot shows a spectrum analysis plot with a yellow trace. A marker labeled '1' indicates a peak at 2.402175 GHz with a power of 1.893 dBm. The plot has a logarithmic scale from -75.0 to 5.0 dB. The center frequency is set to 2.402000 GHz, and the span is 7.000 MHz. The resolution bandwidth is 100 kHz.</p>   |  |  |      |
| Test Model   | Conducted Spurious RF Conducted Emission |  |      |
|  | Bluetooth v2.0 /v2.1/v3.0                |  |      |
|  | Channel 0: 2402MHz                       |  | GFSK |
|  <p>The screenshot shows a spectrum analysis plot with a yellow trace. A marker labeled '1' indicates a spurious emission at 24.8820 GHz with a power of -40.003 dBm. The plot has a logarithmic scale from -75.0 to 5.0 dB. The start frequency is 30.000000 MHz, and the stop frequency is 25.000000000 GHz. The resolution bandwidth is 100 kHz, and the sweep time is 2.387 s (25000 pts).</p> |  |  |      |

|  |  |  |      |
|--|--|--|------|
| Test Model   | Maximum Conducted Level RBW=100kHz       |  |      |
|  | Bluetooth v2.0 /v2.1/v3.0                |  |      |
|  | Channel 39: 2441MHz                      |  | GFSK |
|  <p>The screenshot shows a spectrum analysis plot with a yellow trace. A marker is positioned at 2.441175 GHz with a power of 2.378 dBm. The x-axis is labeled 'Center 2.441000 GHz' and 'Span 7.000 MHz'. The y-axis ranges from -75.0 to 5.0 dB. The plot area has a grid. The right side of the screen displays a vertical stack of control buttons for the spectrum analyzer.</p>   |  |  |      |
| Test Model   | Conducted Spurious RF Conducted Emission |  |      |
|  | Bluetooth v2.0 /v2.1/v3.0                |  |      |
|  | Channel 39: 2441MHz                      |  | GFSK |
|  <p>The screenshot shows a spectrum analysis plot with a yellow trace. A marker is positioned at 24.9021 GHz with a power of -39.589 dBm. The x-axis is labeled 'Start 30.000000 MHz' and 'Stop 25.00 GHz'. The y-axis ranges from -75.0 to 5.0 dB. The plot area has a grid. The right side of the screen displays a vertical stack of control buttons for the spectrum analyzer.</p> |  |  |      |

|   |  |  |      |
|---|--|--|------|
| Test Model  | Maximum Conducted Level RBW=100kHz       |  |      |
|   | Bluetooth v2.0 /v2.1/v3.0                |  |      |
|   | Channel 78: 2480MHz                      |  | GFSK |
|  <p>The screenshot shows a spectrum analysis plot with a single prominent peak. The center frequency is 2.480000 GHz, and the peak is labeled Mkr1 at 2.480175 GHz with a power of 2.219 dBm. The plot has a logarithmic scale from -75.0 to 5.0 dB. The x-axis spans 7.000 MHz with a center at 2.480000 GHz, and the sweep time is 1.000 ms (1001 pts). The y-axis is labeled 'Log' and ranges from -75.0 to 5.0 dB. The plot area shows a noisy baseline with a sharp peak at the specified frequency.</p>  |  |  |      |
| Test Model  | Conducted Spurious RF Conducted Emission |  |      |
|   | Bluetooth v2.0 /v2.1/v3.0                |  |      |
|   | Channel 78: 2480MHz                      |  | GFSK |
|  <p>The screenshot shows a spectrum analysis plot with a single spurious emission peak. The center frequency is 24.842882480279 GHz, and the peak is labeled Mkr1 at 24.8429 GHz with a power of -39.568 dBm. The plot has a logarithmic scale from -75.0 to 5.0 dB. The x-axis spans 25.00 GHz with a start at 30 MHz and a stop at 25.00 GHz, and the sweep time is 2.387 s (25000 pts). The y-axis is labeled 'Log' and ranges from -75.0 to 5.0 dB. A green horizontal reference line is drawn at -17.79 dBm. The plot shows a noisy baseline with a single sharp spurious emission peak at the measured frequency.</p> |  |  |      |

|  |                               |  |      |
|--|-------------------------------|--|------|
| Test Model   | Band-edge Conducted Emissions |  |      |
|  | Bluetooth v2.0 /v2.1/v3.0     |  |      |
|  | Channel 0: 2402MHz            |  | GFSK |
|   |                               |  |      |
| Test Model   | Band-edge Conducted Emissions |  |      |
|  | Bluetooth v2.0 /v2.1/v3.0     |  |      |
|  | Channel 78: 2480MHz           |  | GFSK |
|  |                               |  |      |

|            |  |  |      |
|------------|--|--|------|
| Test Model | Maximum Conducted Level RBW=100kHz       |  |      |
|            | Bluetooth v2.0 /v2.1/v3.0                |  |      |
|            | Hopping                                  |  | GFSK |
|            |  |  |      |
| Test Model | Conducted Spurious RF Conducted Emission |  |      |
|            | Bluetooth v2.0 /v2.1/v3.0                |  |      |
|            | Hopping                                  |  | GFSK |
|            |  |  |      |

|                               |   |   |      |
|-------------------------------|---|---|------|
| Test Model                    | Band-edge Conducted Emissions   |   |      |
|                               | Bluetooth v2.0 /v2.1/v3.0   |   |      |
|                               | Hopping   |   | GFSK |
|                               | <p>Marker 1 2.400000000000 GHz<br/>Ref Offset 1 dB<br/>Ref 15.00 dBm<br/>Start 2.39000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.41000 GHz Sweep 2.000 ms (10001 pts)</p> | <ul style="list-style-type: none"> <li>Peak Search</li> <li>Next Peak</li> <li>Next Pk Right</li> <li>Next Pk Left</li> <li>Marker Delta</li> <li>Mkr→CF</li> <li>Mkr→Ref Lvl</li> <li>More 1 of 2</li> </ul> |      |
| Band-edge Conducted Emissions |   |   |      |
| Bluetooth v2.0 /v2.1/v3.0     |   |   |      |
| Hopping                       |   |   | GFSK |
|                               | <p>Marker 1 2.483500000000 GHz<br/>Ref Offset 1 dB<br/>Ref 15.00 dBm<br/>Start 2.47000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.50000 GHz Sweep 3.333 ms (10001 pts)</p> | <ul style="list-style-type: none"> <li>Peak Search</li> <li>Next Peak</li> <li>Next Pk Right</li> <li>Next Pk Left</li> <li>Marker Delta</li> <li>Mkr→CF</li> <li>Mkr→Ref Lvl</li> <li>More 1 of 2</li> </ul> |      |