



Engineering Solutions & Electromagnetic Compatibility Services

**Certification Application Report  
FCC Part 15.247 & Industry Canada RSS-247**

|                                                                                                                                                                                                       |                                                                                                                                                                                                                          |                                                                                                                                                         |                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
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| <b>FCC/IC ID</b>                                                                                                                                                                                      | IPH-03436<br>1792A-03436                                                                                                                                                                                                 | <b>Test Report Date</b>                                                                                                                                 | April 16, 2018             |
| <b>Platform</b>                                                                                                                                                                                       | N/A                                                                                                                                                                                                                      | <b>RTL Work Order #</b>                                                                                                                                 | 2017240                    |
| <b>Model/HVIN</b>                                                                                                                                                                                     | A03436                                                                                                                                                                                                                   | <b>RTL Quote #</b>                                                                                                                                      | QRRTL17-240A               |
| <b>American National Standard Institute:</b>                                                                                                                                                          | ANSI C63.10-2013 American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices                                                                                                          |                                                                                                                                                         |                            |
| <b>FCC Classification:</b>                                                                                                                                                                            | DTS – Part 15 Digital Transmission System (Wi-Fi, ANT+, BLE portion)                                                                                                                                                     |                                                                                                                                                         |                            |
|                                                                                                                                                                                                       | DSS - Part 15 Spread Spectrum Transmitter                                                                                                                                                                                |                                                                                                                                                         |                            |
| <b>FCC Rule Part(s):</b>                                                                                                                                                                              | Part 15.247: Operation within the bands 920-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz (10/01/17)                                                                                                                        |                                                                                                                                                         |                            |
| <b>Industry Canada:</b>                                                                                                                                                                               | RSS-247 Issue 2: Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices<br>RSS-Gen Issue 4: General Requirements for Compliance of Radio Apparatus |                                                                                                                                                         |                            |
| <b>Digital Interface Information</b>                                                                                                                                                                  | Digital Interface was found to be compliant                                                                                                                                                                              |                                                                                                                                                         |                            |
| <b>Frequency Range (MHz)</b>                                                                                                                                                                          | <b>Output Power (W)</b>                                                                                                                                                                                                  | <b>Frequency Tolerance</b>                                                                                                                              | <b>Emission Designator</b> |
| 2412-2462 (Wi-Fi)                                                                                                                                                                                     | 0.219                                                                                                                                                                                                                    | N/A                                                                                                                                                     | 17M8F1D                    |
| 2402-2480 (Bluetooth)                                                                                                                                                                                 | 0.006                                                                                                                                                                                                                    | N/A                                                                                                                                                     | 989KF1D                    |
| 2402-2480 (ANT+)                                                                                                                                                                                      | 0.012                                                                                                                                                                                                                    | N/A                                                                                                                                                     | 1M01F1D                    |
| 2402-2480 (BLE)                                                                                                                                                                                       | 0.010                                                                                                                                                                                                                    | N/A                                                                                                                                                     | 1M13F1D                    |

I, the undersigned, hereby declare that the equipment tested and referenced in this report conforms to the identified standard(s) as described in this test report. No modifications were made to the equipment during testing in order to achieve compliance with these standards. Furthermore, there was no deviation from, additions to, or exclusions from, the applicable parts of FCC Part 2, FCC Part 15, ANSI C63.10, and Industry Canada RSS-247 and RSS-Gen.

Signature: 

Date: April 16, 2018

Typed/Printed Name: Desmond A. Fraser

Position: President

*These tests are accredited and meet the requirements of ISO/IEC 17025 as verified by ANAB.  
Refer to certificate and scope of accreditation AT-1445.*

*This report may not be reproduced, except in full, without the written approval of Rhein Tech Laboratories, Inc. and Garmin International Inc. The test results relate only to the item(s) tested.*

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## 1 General Information

### 1.1 Scope

Applicable Standards:

FCC Rules Part 15.247: Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz.

Industry Canada RSS-247: Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSS) and Licence-Exempt Local Area Network (LE-LAN) Devices

### 1.2 Description of EUT

|                             |                                                                                                                      |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>Equipment Under Test</b> | Body-worn transmitter                                                                                                |
| <b>Model/HVIN</b>           | A03436                                                                                                               |
| <b>Power Supply</b>         | Battery operated                                                                                                     |
| <b>Modulation Type</b>      | Wi-Fi: CCK, DBPSK; DQPSK; BPSK; QPSK; 16-QAM; 64-QAM<br>ANT+: GFSK<br>BLE: GMSK PRB29, OxOF, Ox55<br>Bluetooth: GFSK |
| <b>Frequency Range</b>      | Wi-Fi: 2412–2462 MHz<br>ANT+, BLE and Bluetooth: 2402-2480 MHz                                                       |
| <b>Antenna Connector</b>    | Internal                                                                                                             |

### 1.3 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located at 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170. This site has been fully described in a report and approved by the Federal Communications Commission to perform AC line conducted and radiated emissions testing (ANSI C63.10 2013).

### 1.4 Related Submittal(s)/Grant(s)

This is an original certification application for Garmin International Inc. Model/HVIN: A03436, FCC ID: IPH-03436, IC: 1792A-03436.

### 1.5 Modifications

No modifications were required for compliance.

## 2 Test Information

### 2.1 Description of Test Modes

In accordance with FCC 15.31(m), and because the EUT utilizes an operating band greater than 10 MHz, the following frequencies were tested.

**Table 2-1: Channels Tested for Wi-Fi – 802.11b (11 Mbps); 802.11g (54 Mbps); 802.11n (65 Mbps)**

| Channel | Frequency (MHz) |
|---------|-----------------|
| 1       | 2412            |
| 6       | 2437            |
| 11      | 2462            |

**Table 2-2: Channels Tested for ANT+**

| Channel | Frequency (MHz) |
|---------|-----------------|
| Low     | 2402            |
| Mid     | 2441            |
| High    | 2480            |

**Table 2-3: Channels Tested for BLE**

| Channel | Frequency (MHz) |
|---------|-----------------|
| 0       | 2402            |
| 19      | 2440            |
| 39      | 2480            |

**Table 2-4: Channels Tested for Bluetooth**

| Channel | Frequency (MHz) |
|---------|-----------------|
| 2       | 2402            |
| 40      | 2440            |
| 80      | 2480            |

### 2.2 Exercising the EUT

The EUT was tested in all three orthogonal planes in order to determine worst-case emissions. The EUT was provided with software to continuously transmit during testing. The carrier was also checked to verify that information was being transmitted, and all modes were investigated and the worst-case mode was used for final testing. There were no deviations from the test standard(s) and/or methods. The test results reported relate only to the item tested.



### 2.3 Test Result Summary

**Table 2-5: Test Result Summary – FCC Part 15, Subpart C (Section 15.247)**

| Standard         | Test                                 | Pass/Fail or N/A |
|------------------|--------------------------------------|------------------|
| FCC 15.209       | Radiated Emissions                   | Pass             |
| FCC 15.247(a)(2) | 6 dB Bandwidth                       | Pass             |
| FCC 15.247(a)(1) | 20 dB Bandwidth                      | Pass             |
| FCC 15.247(a)(1) | Hopping Characteristics              | Pass             |
| FCC 15.247(a)(1) | Average Time of Occupancy            | Pass             |
| FCC 15.247(b)    | Maximum Peak Power Output            | Pass             |
| FCC 15.247(d)    | Antenna Conducted Spurious Emissions | Pass             |
| FCC 15.247(e)    | Power Spectral Density               | Pass             |
| FCC 15.247(d)    | Band Edge Measurement                | Pass             |

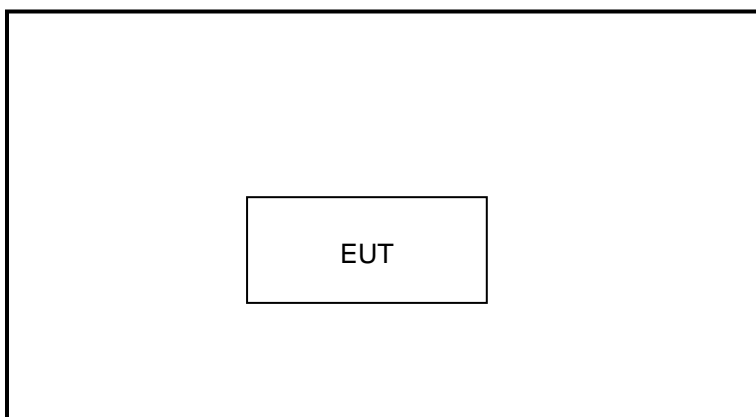
### 2.4 Test System Details

The test sample was received on February 12, 2018. The FCC identifiers for all applicable equipment, plus descriptions of all cables used in the tested system, are identified in the following tables.

**Table 2-6: Equipment Under Test**

| Part                                      | Manufacturer              | Model/HVIN | Serial Number | FCC ID    | Cable Description | RTL Bar Code |
|-------------------------------------------|---------------------------|------------|---------------|-----------|-------------------|--------------|
| Body-worn transmitter (radiated testing)  | Garmin International Inc. | A03436     | 963336094     | IPH-03436 | N/A               | 22737        |
| Body-worn transmitter (conducted testing) | Garmin International Inc. | A03436     | 963336112     | IPH-03436 | N/A               | 22738        |

### 2.5 Configuration of Tested System



**Figure 2-1: Configuration of System Under Test**

### 3 Peak Output Power – FCC 15.247(b); RSS-247 5.4

#### 3.1 Power Output Test Procedure

A conducted power measurement of the EUT was taken using an Agilent N9010A EXA Signal Analyzer with a 50 ohm attenuator.

**Table 3-1: Power Output Test Equipment**

| RTL Asset # | Manufacturer          | Model             | Part Type                            | Serial Number | Calibration Due Date |
|-------------|-----------------------|-------------------|--------------------------------------|---------------|----------------------|
| 901583      | Agilent Technologies  | N9010A            | EXA Signal Analyzer (10 Hz-26.5 GHz) | MY51250846    | 2/6/20               |
| 900948      | Weinschel Corporation | 47-10-43 DC-18GHz | Attenuator, 50W 10dB                 | BH1487        | 9/1/18               |

#### 3.2 Power Output Test Data

**Table 3-2: Power Output Test Data – Bluetooth**

| Channel | Frequency (MHz) | Peak Power Conducted Output (dBm) |
|---------|-----------------|-----------------------------------|
| 2       | 2402            | 7.6                               |
| 40      | 2440            | 6.6                               |
| 80      | 2480            | 7.2                               |

**Table 3-3: Power Output Test Data – ANT+**

| Channel | Frequency (MHz) | Peak Power Conducted Output (dBm) |
|---------|-----------------|-----------------------------------|
| Low     | 2402            | 9.5                               |
| Mid     | 2441            | 10.6                              |
| High    | 2480            | 7.5                               |

**Table 3-4: Power Output Test Data – BLE**

| Channel | Frequency (MHz) | Peak Power Conducted Output (dBm) |
|---------|-----------------|-----------------------------------|
| 0       | 2402            | 8.9                               |
| 19      | 2440            | 9.9                               |
| 39      | 2480            | 6.5                               |

**Table 3-5: Power Output Test Data – 802.11b (11 Mbps)**

| Channel | Frequency (MHz) | Peak Power Conducted Output (dBm) |
|---------|-----------------|-----------------------------------|
| 1       | 2412            | 22.7                              |
| 6       | 2437            | 21.5                              |
| 11      | 2462            | 22.8                              |

**Table 3-6: Power Output Test Data – 802.11g (54 Mbps)**

| Channel | Frequency (MHz) | Peak Power Conducted Output (dBm) |
|---------|-----------------|-----------------------------------|
| 1       | 2412            | 23.3                              |
| 6       | 2437            | 22.8                              |
| 11      | 2462            | 23.4                              |

**Table 3-7: Power Output Test Data – 802.11n (65 Mbps)**

| Channel | Frequency (MHz) | Peak Power Conducted Output (dBm) |
|---------|-----------------|-----------------------------------|
| 1       | 2412            | 23.4                              |
| 6       | 2437            | 21.8                              |
| 11      | 2462            | 23.4                              |

Measurement uncertainties shown for these tests are expanded Gaussian uncertainties expressed at 95% confidence level using a coverage factor  $k = 1.96$ . Measurement uncertainty = 0.5 dB.

**PASS**

**Test Personnel:**

|                    |                                                                                    |                   |
|--------------------|------------------------------------------------------------------------------------|-------------------|
| Daniel W. Baltzell |  | February 21, 2018 |
| Test Engineer      | Signature                                                                          | Date of Test      |

#### 4 Compliance with the Band Edge – FCC 15.247(d); RSS-247 2.2

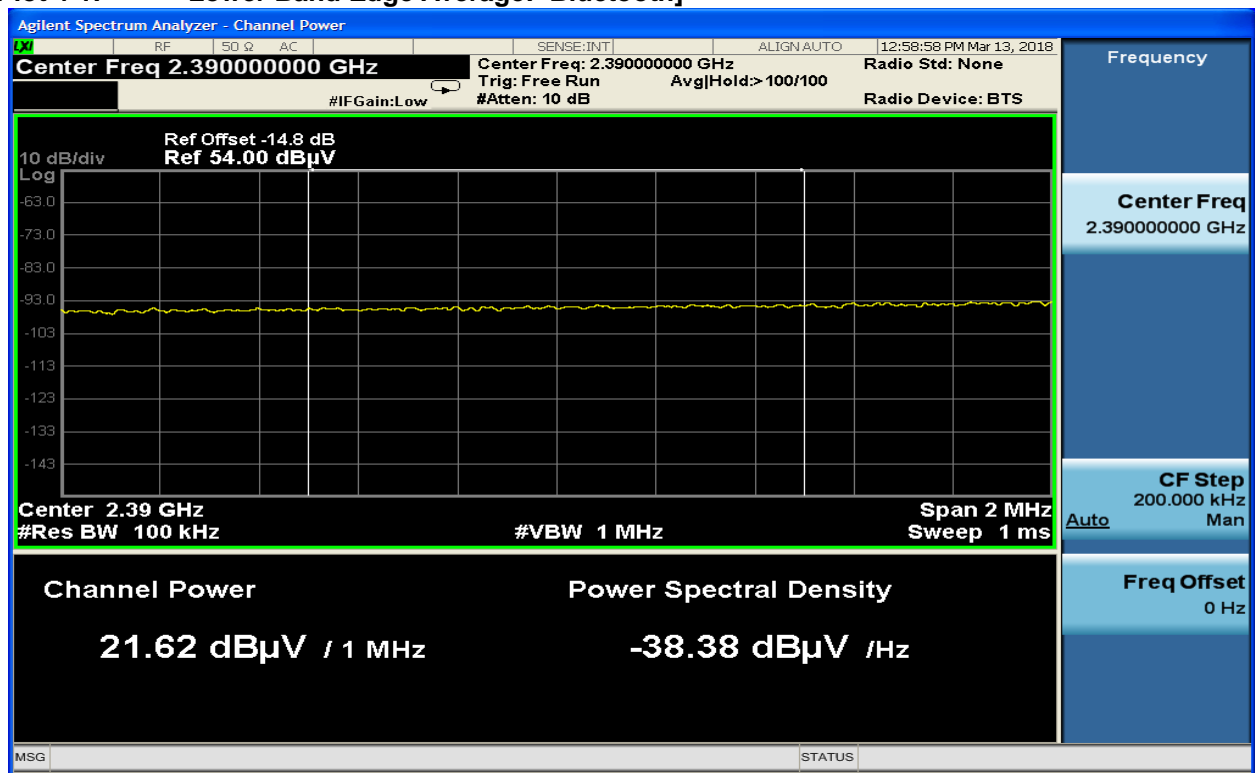
##### 4.1 Band Edge Test Procedure

The transmitter output was connected to its appropriate antenna. 1 MHz integrated peak (100 kHz RBW/1 MHz VBW) and 1 MHz integrated average (100 MHz RBW/1 MHz VBW) corrected measurements were taken within the restricted band to show compliance.

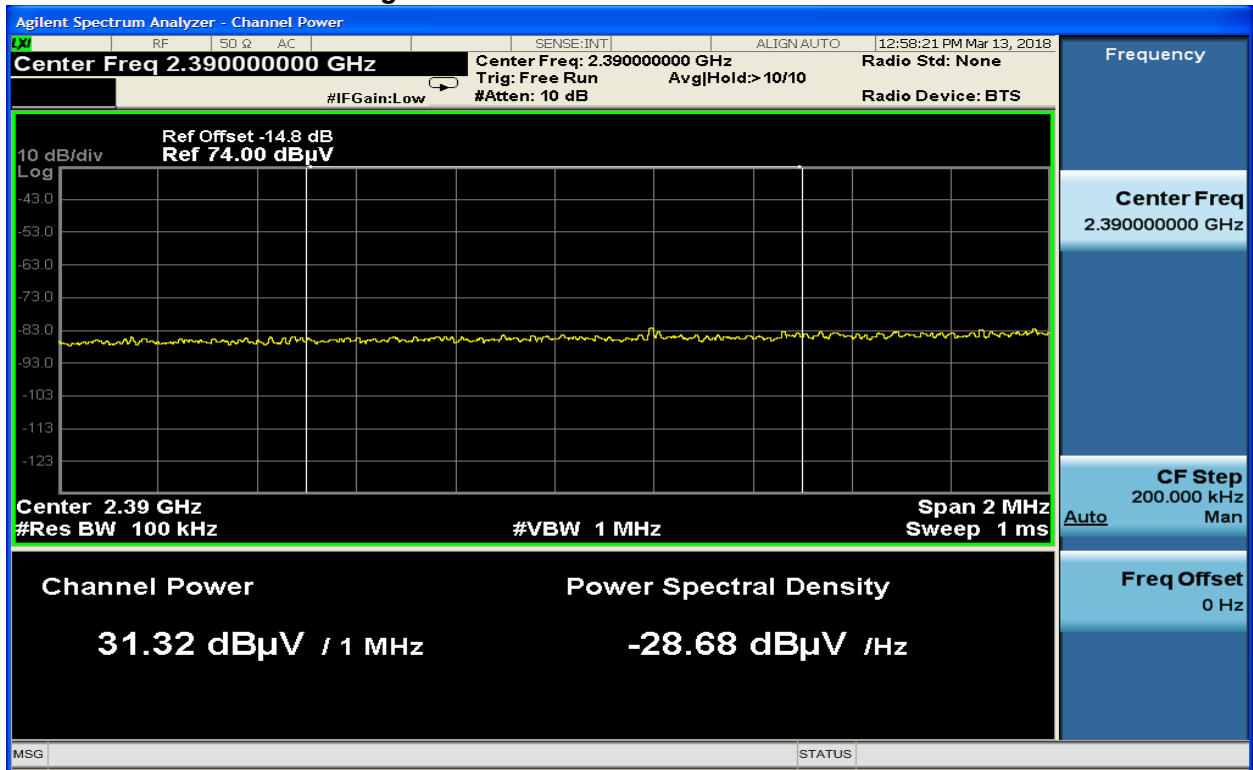
##### 4.2 Restricted Band Edge Test Results

###### 4.2.1 Lower Band Edge

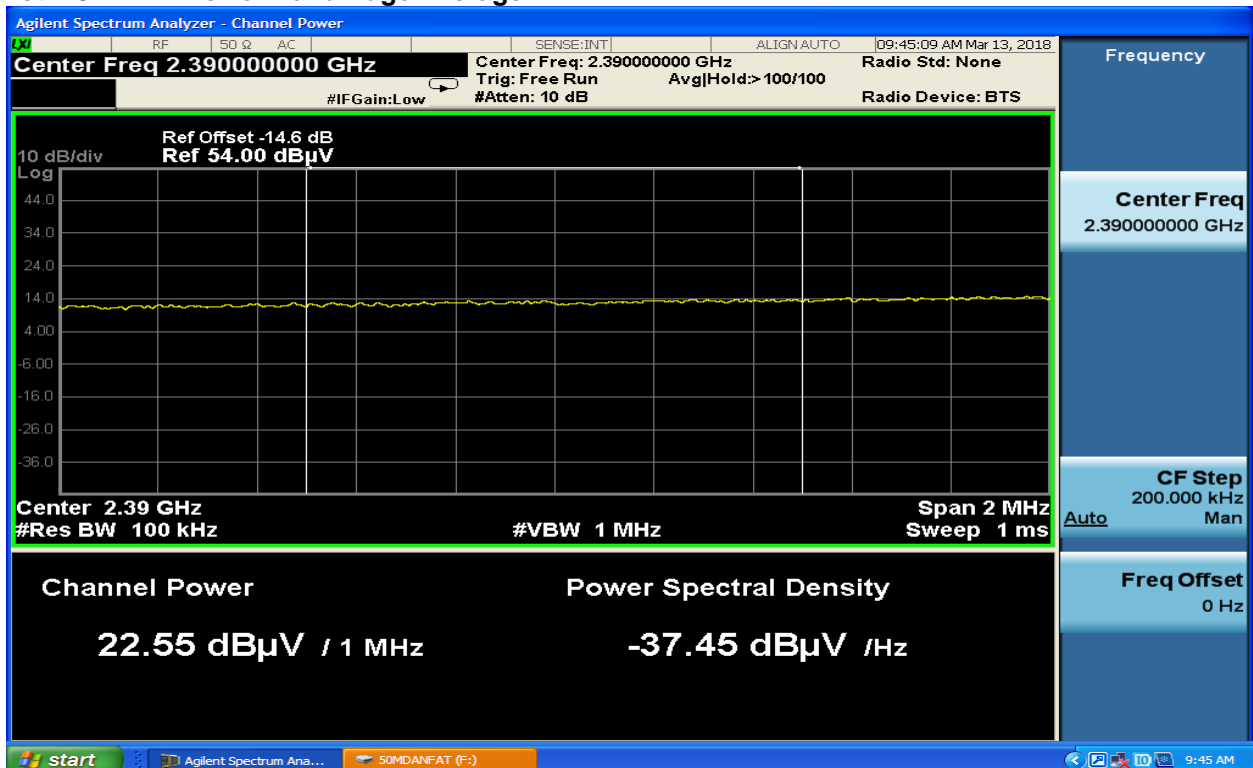
Plot 4-1: Lower Band Edge Average: Bluetooth]



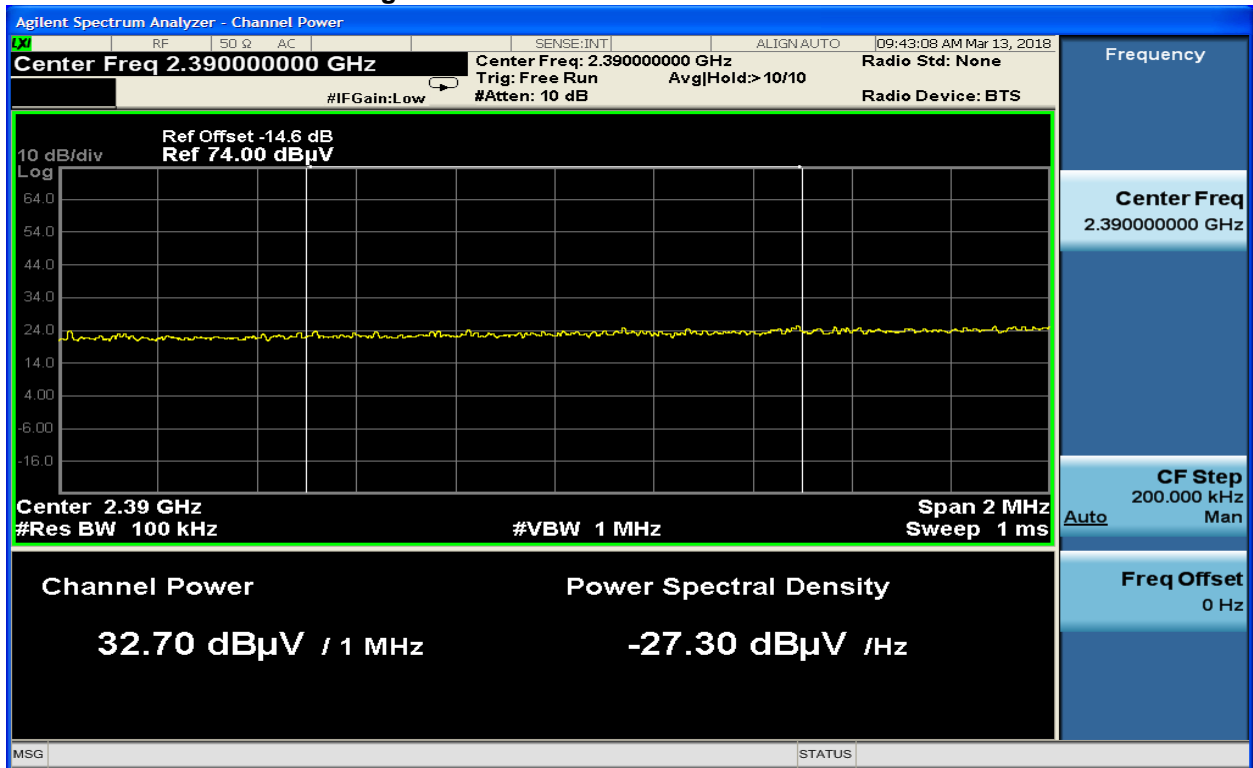
**Plot 4-2: Lower Band Edge Peak: Bluetooth**



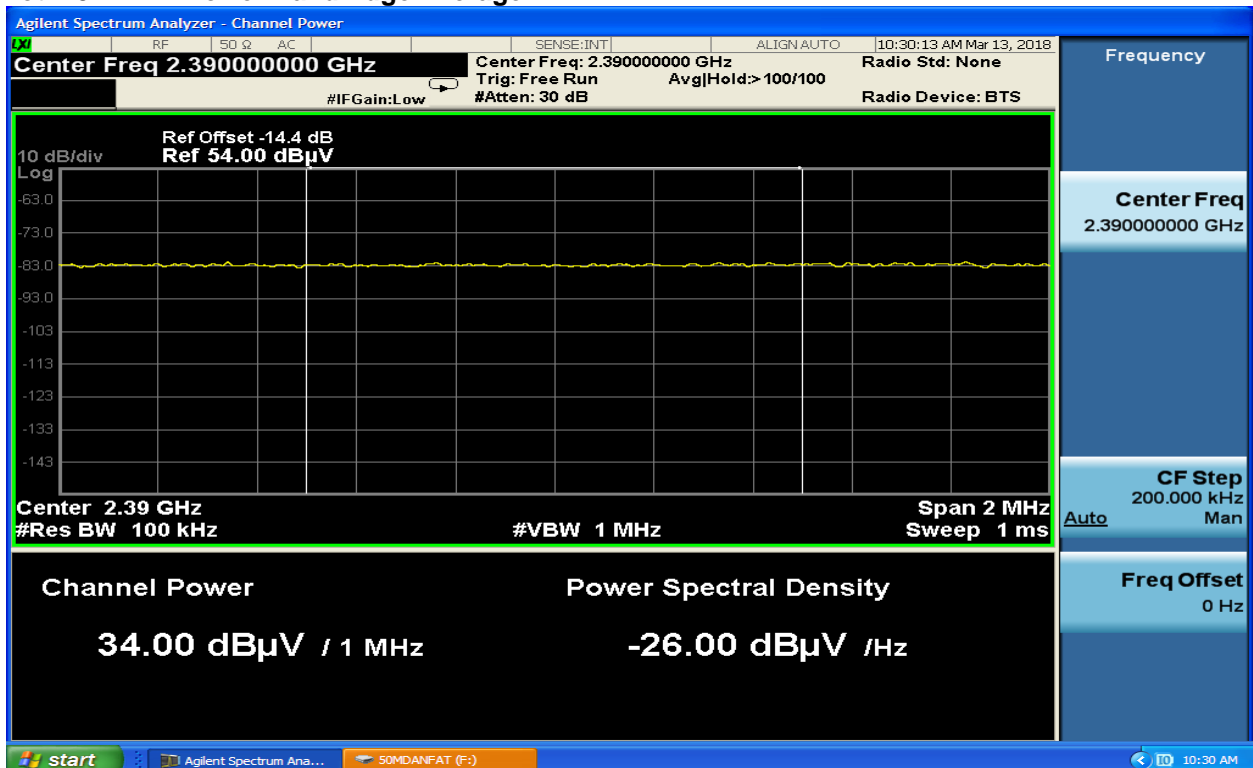
**Plot 4-3: Lower Band Edge Average: ANT+**



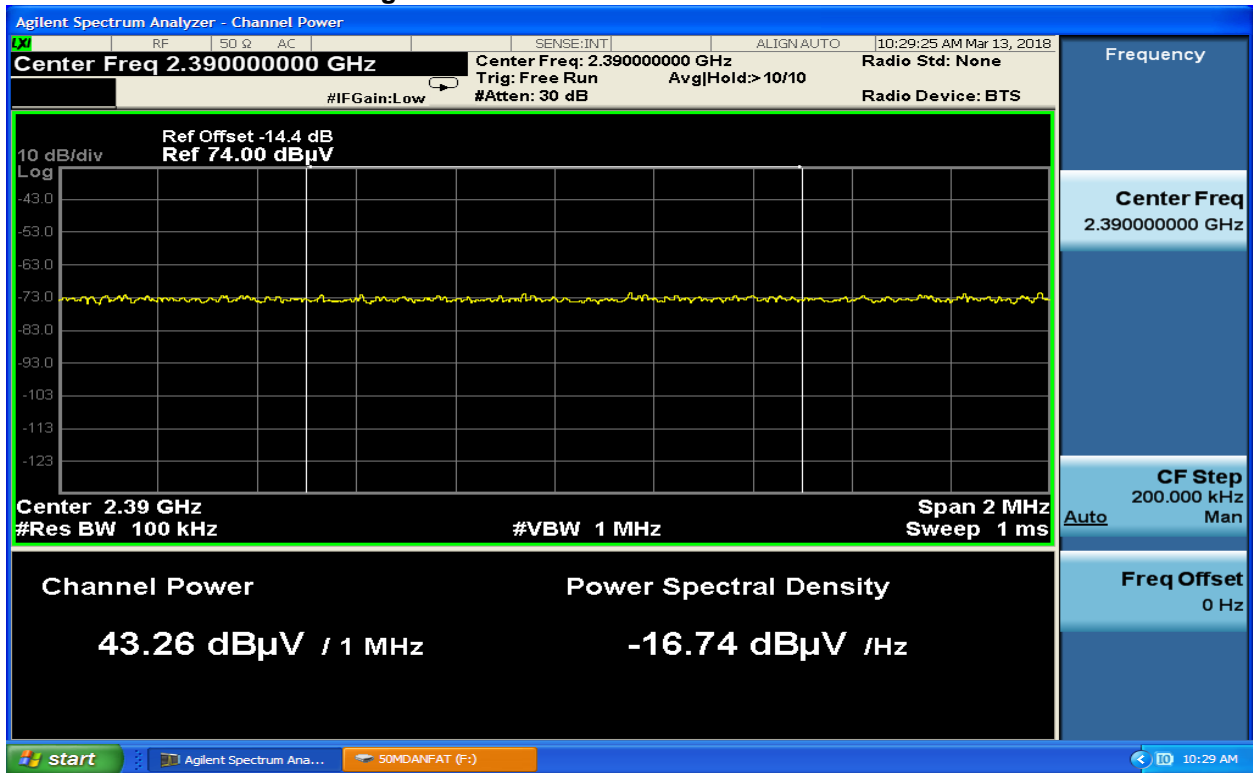
**Plot 4-4: Lower Band Edge Peak: ANT+**



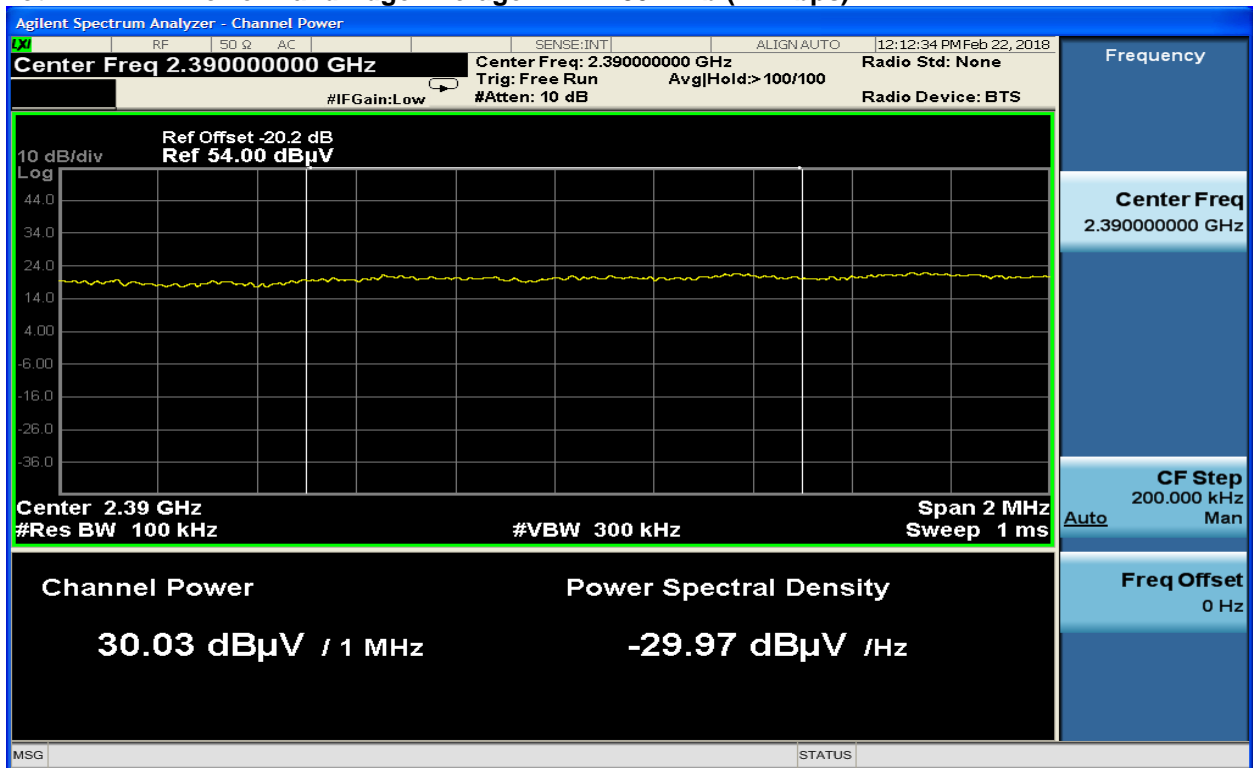
**Plot 4-5: Lower Band Edge Average: BLE**



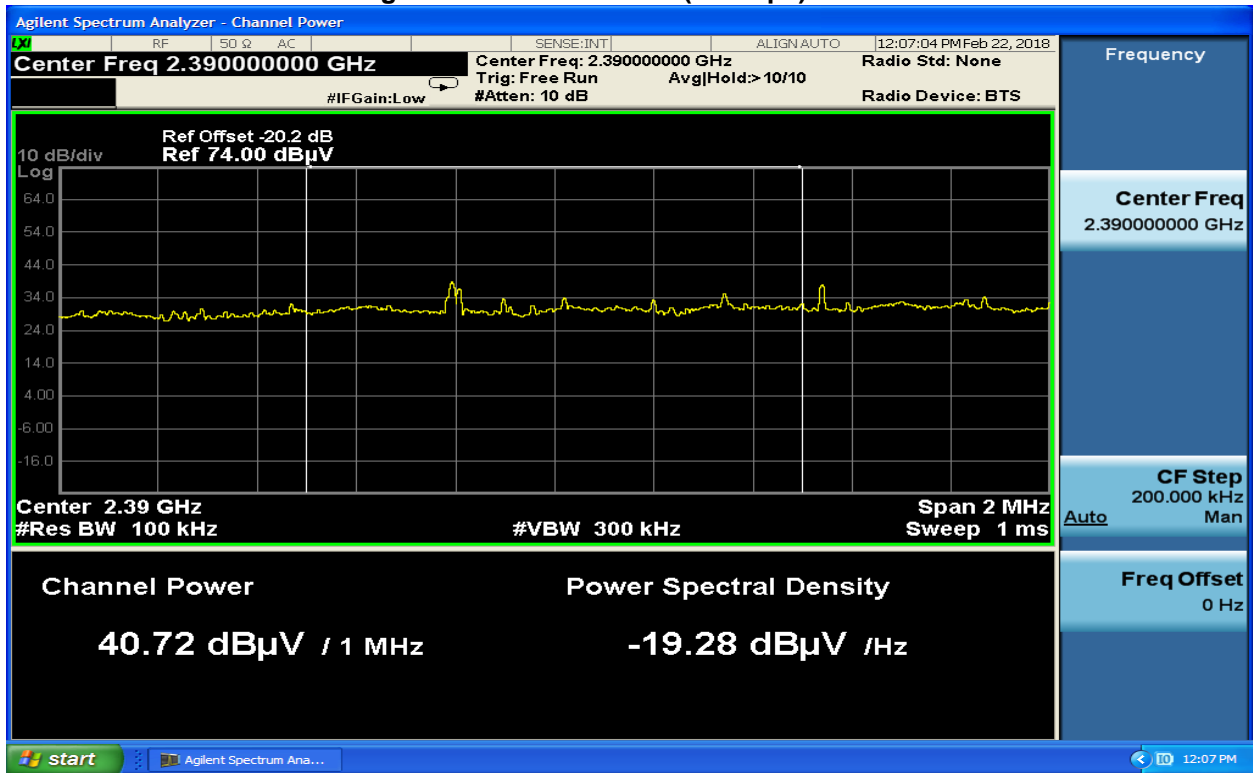
**Plot 4-6: Lower Band Edge Peak: BLE**



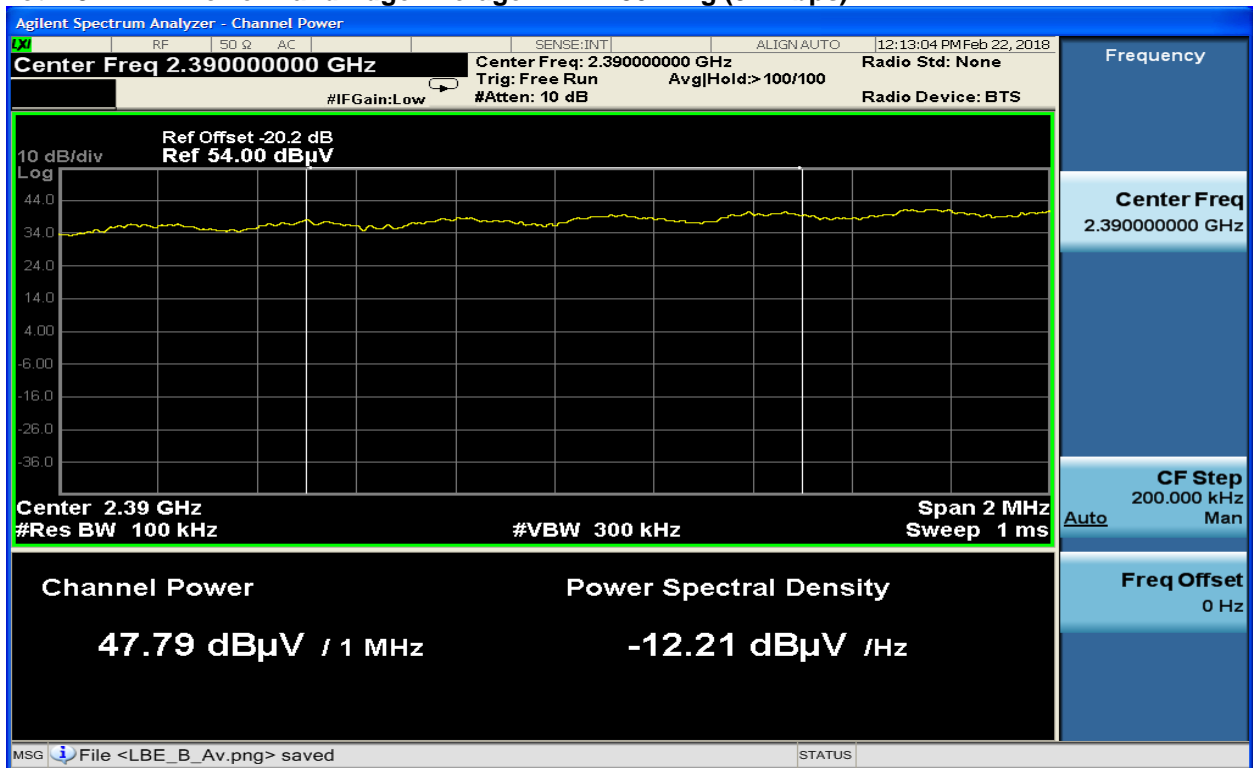
**Plot 4-7: Lower Band Edge Average: Wi-Fi 802.11b (11 Mbps)**



**Plot 4-8: Lower Band Edge Peak: Wi-Fi 802.11b (11 Mbps)**

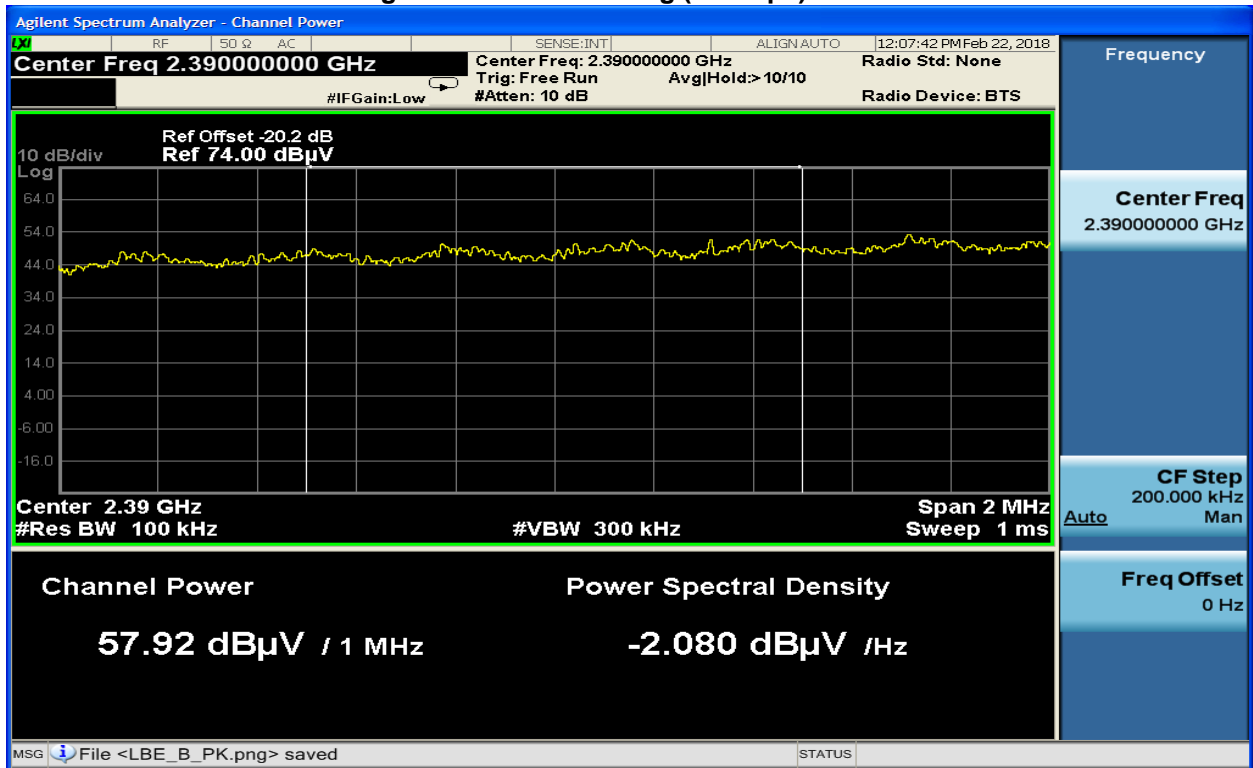


**Plot 4-9: Lower Band Edge Average: Wi Fi 802.11g (54 Mbps)**

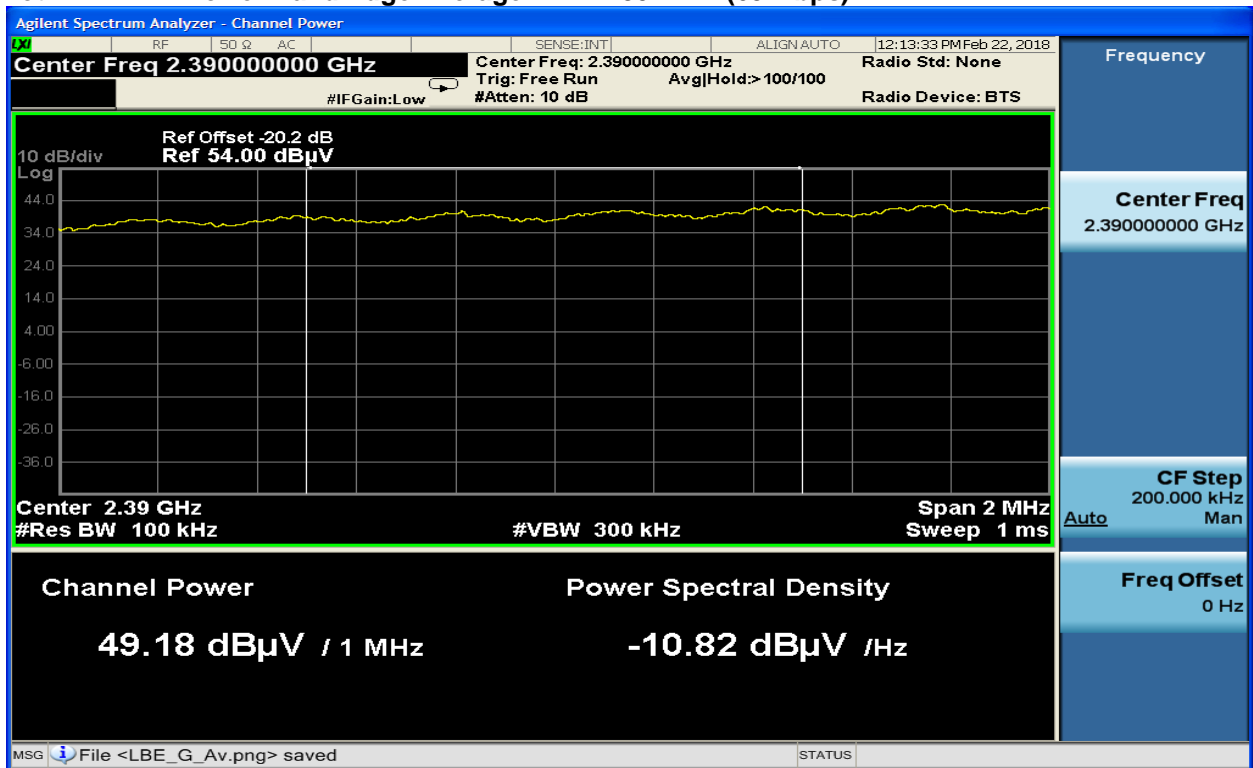




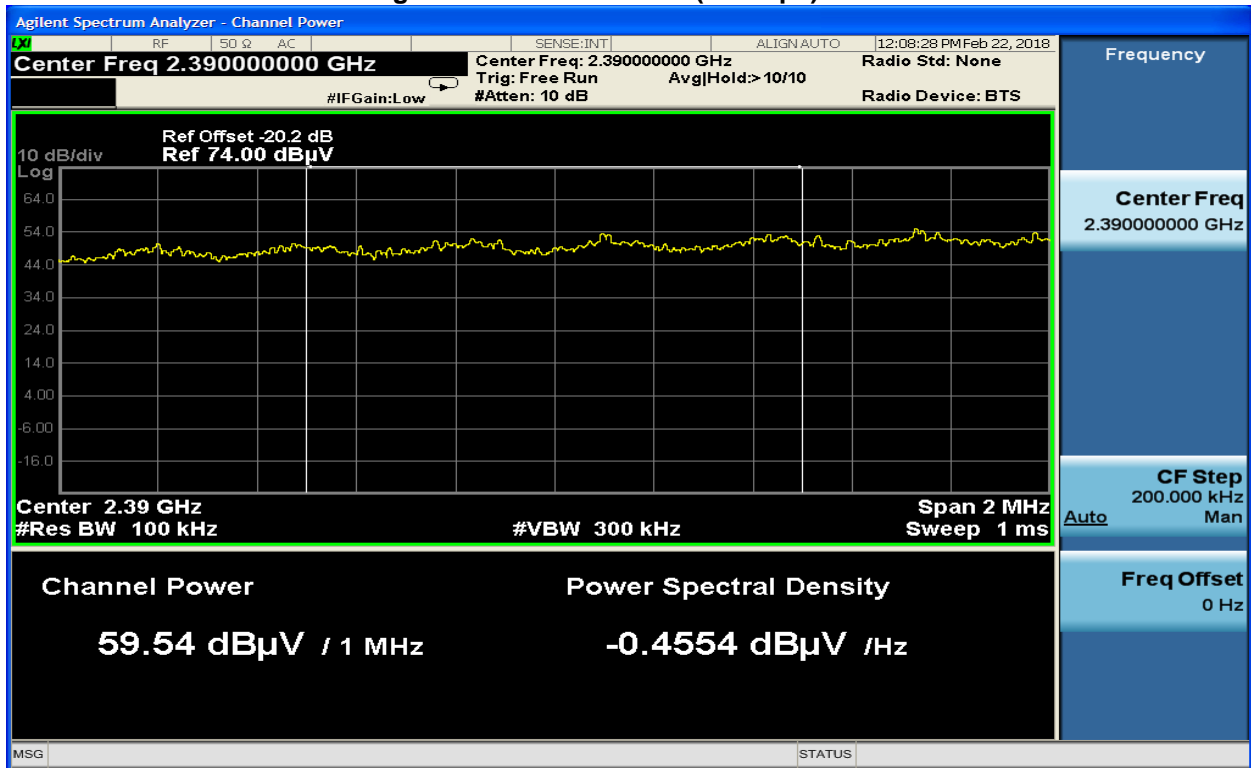
**Plot 4-10: Lower Band Edge Peak: Wi-Fi 802.11g (54 Mbps)**



**Plot 4-11: Lower Band Edge Average: Wi-Fi 802.11n (65 Mbps)**

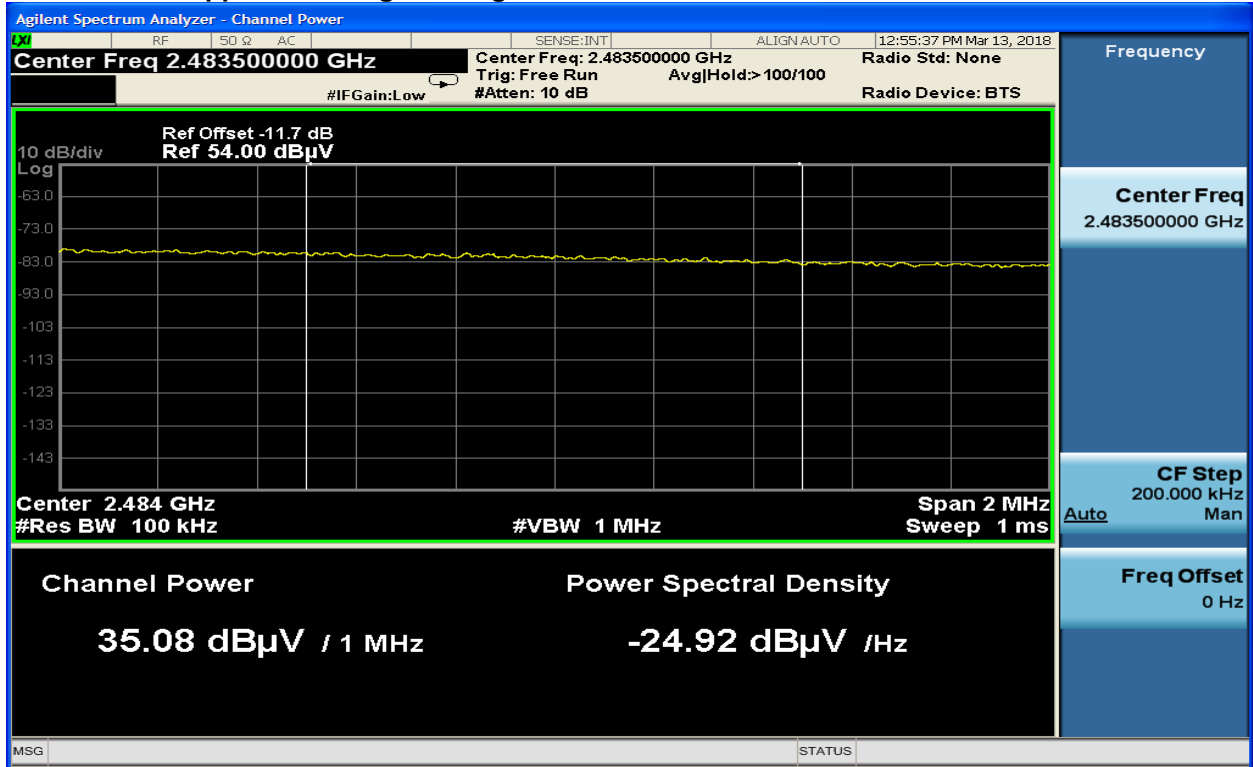


**Plot 4-12: Lower Band Edge Peak: Wi-Fi 802.11n (65 Mbps)**

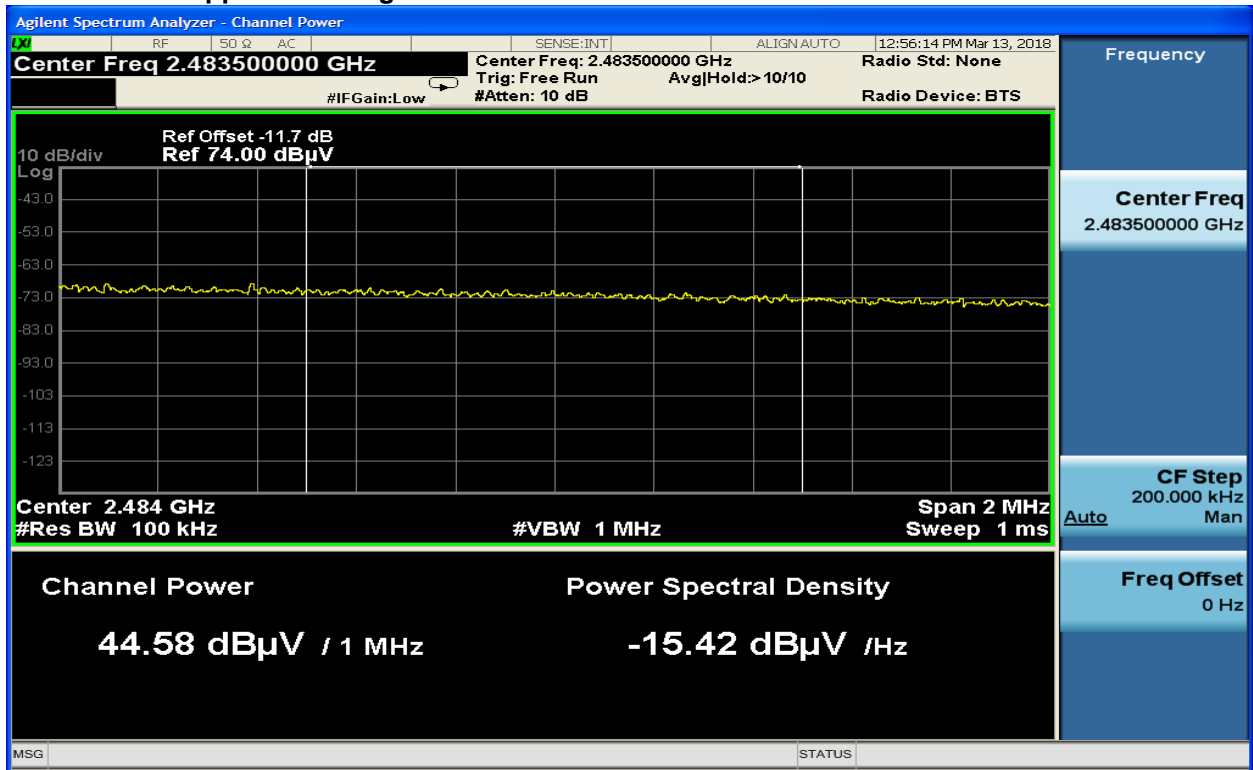


#### 4.2.2 Upper Band Edge

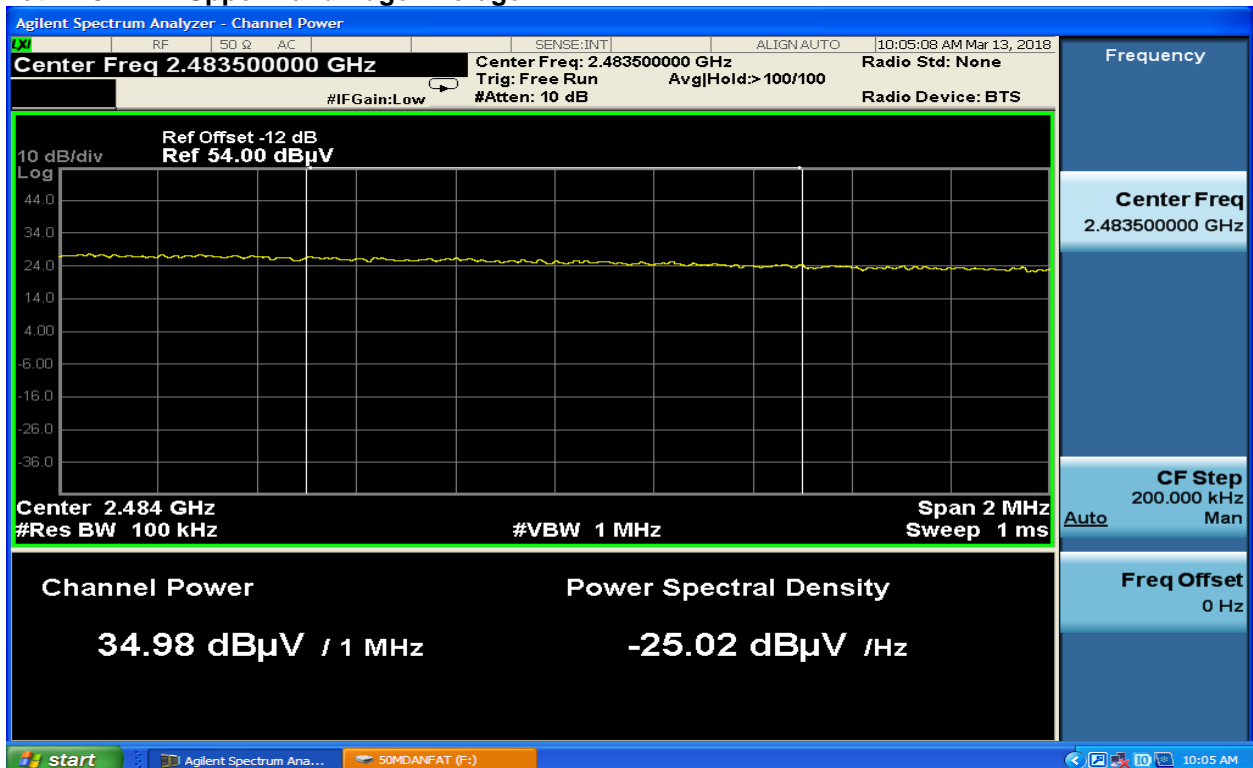
Plot 4-13: Upper Band Edge Average: Bluetooth



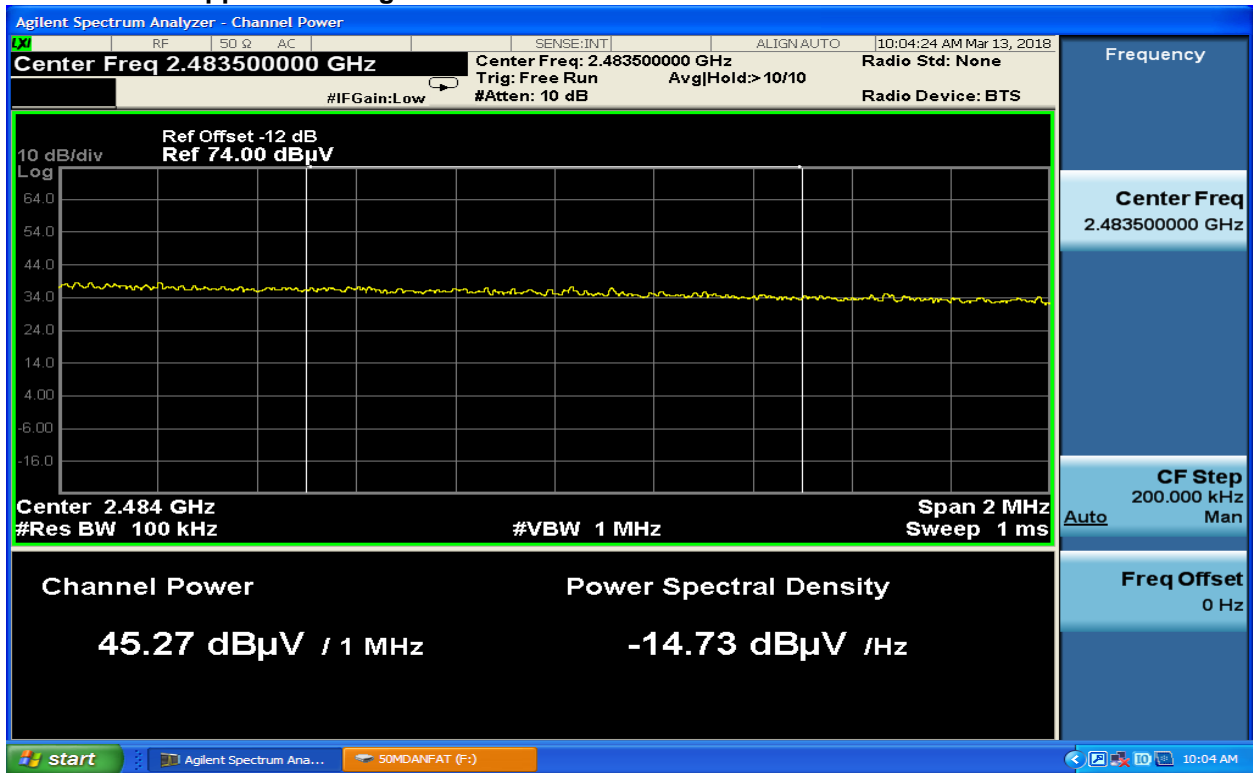
**Plot 4-14: Upper Band Edge Peak: Bluetooth**



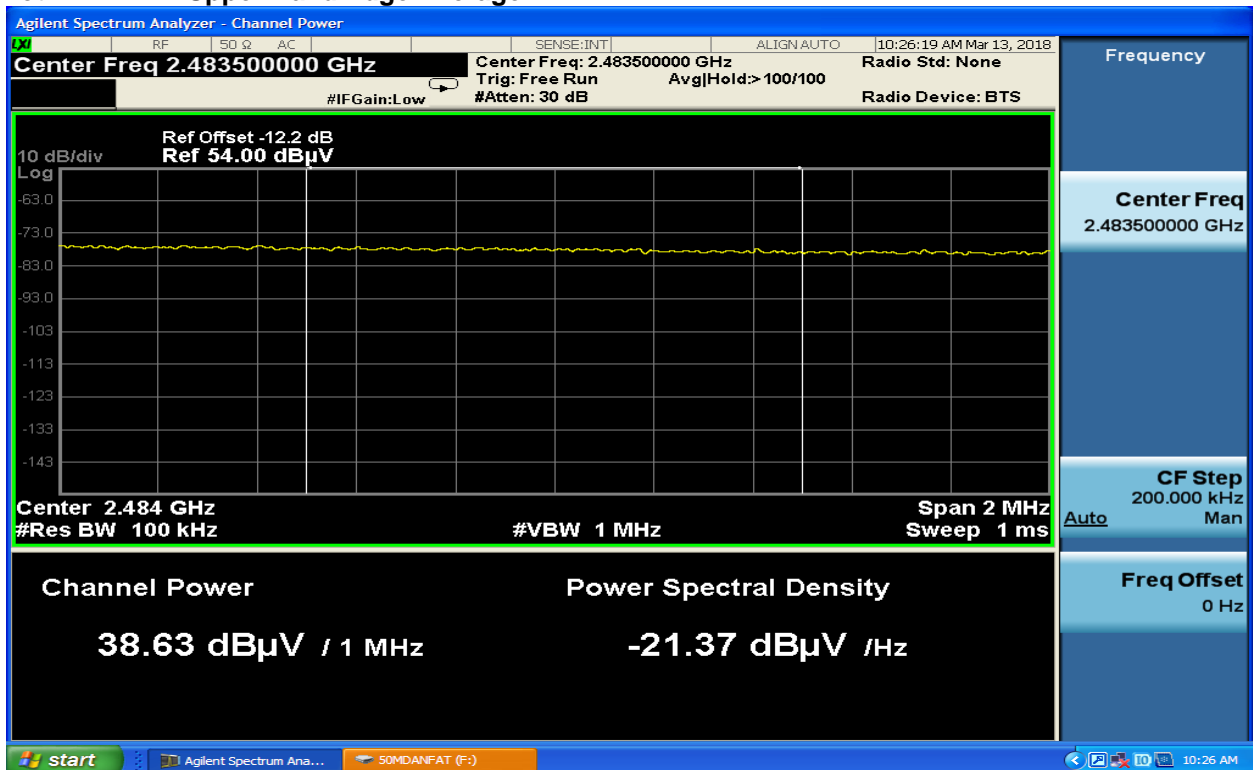
**Plot 4-15: Upper Band Edge Average: ANT+**



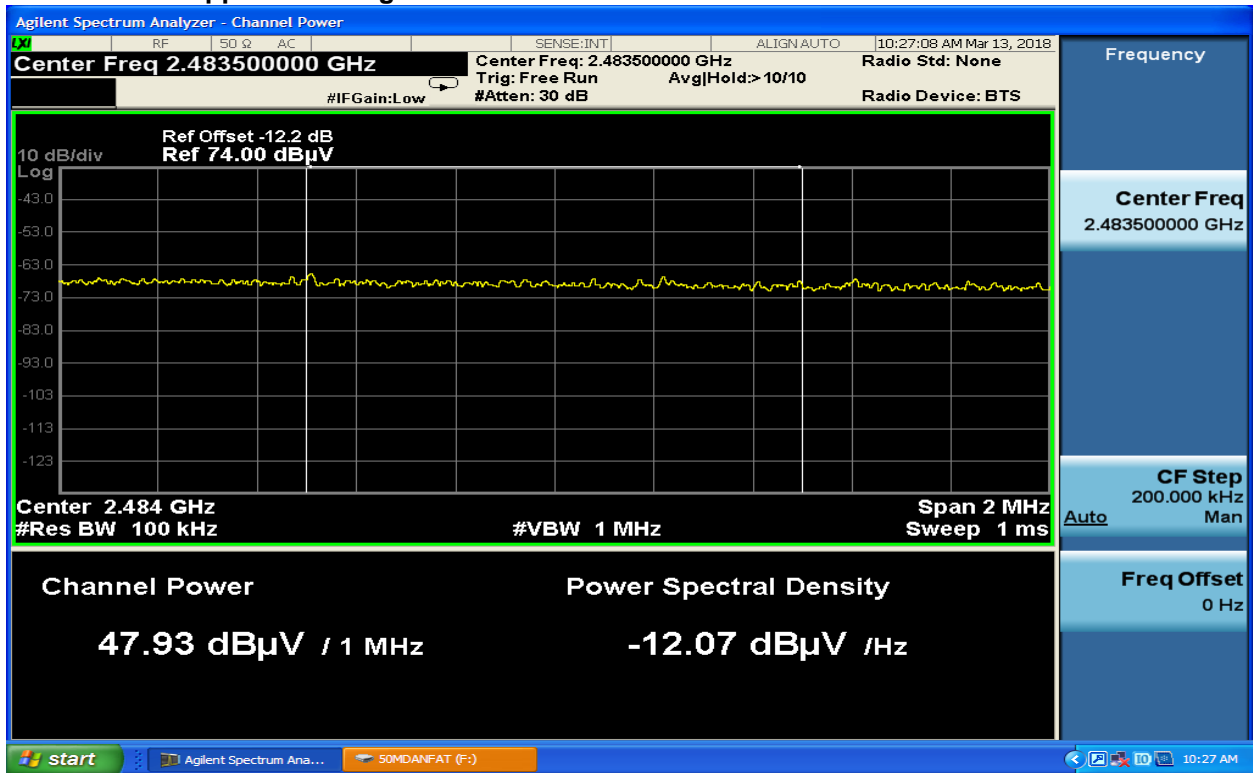
**Plot 4-16: Upper Band Edge Peak: ANT+**



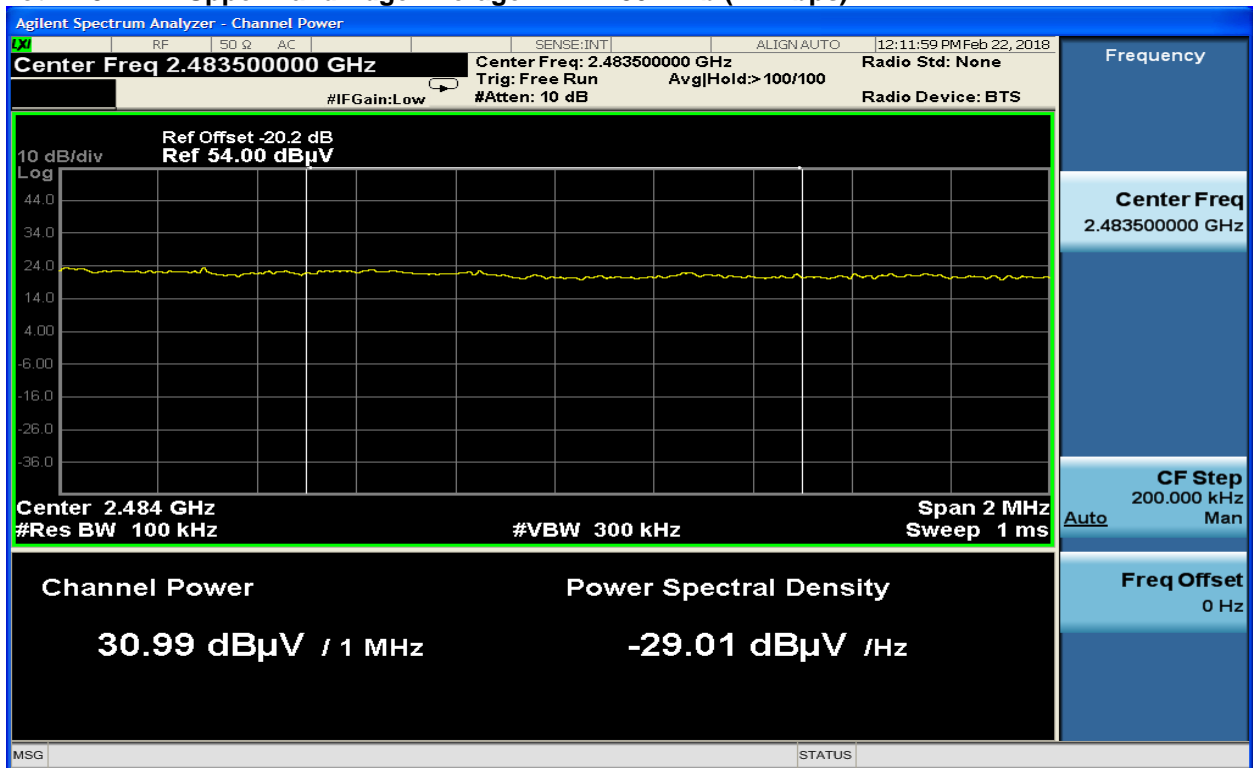
**Plot 4-17: Upper Band Edge Average: BLE**



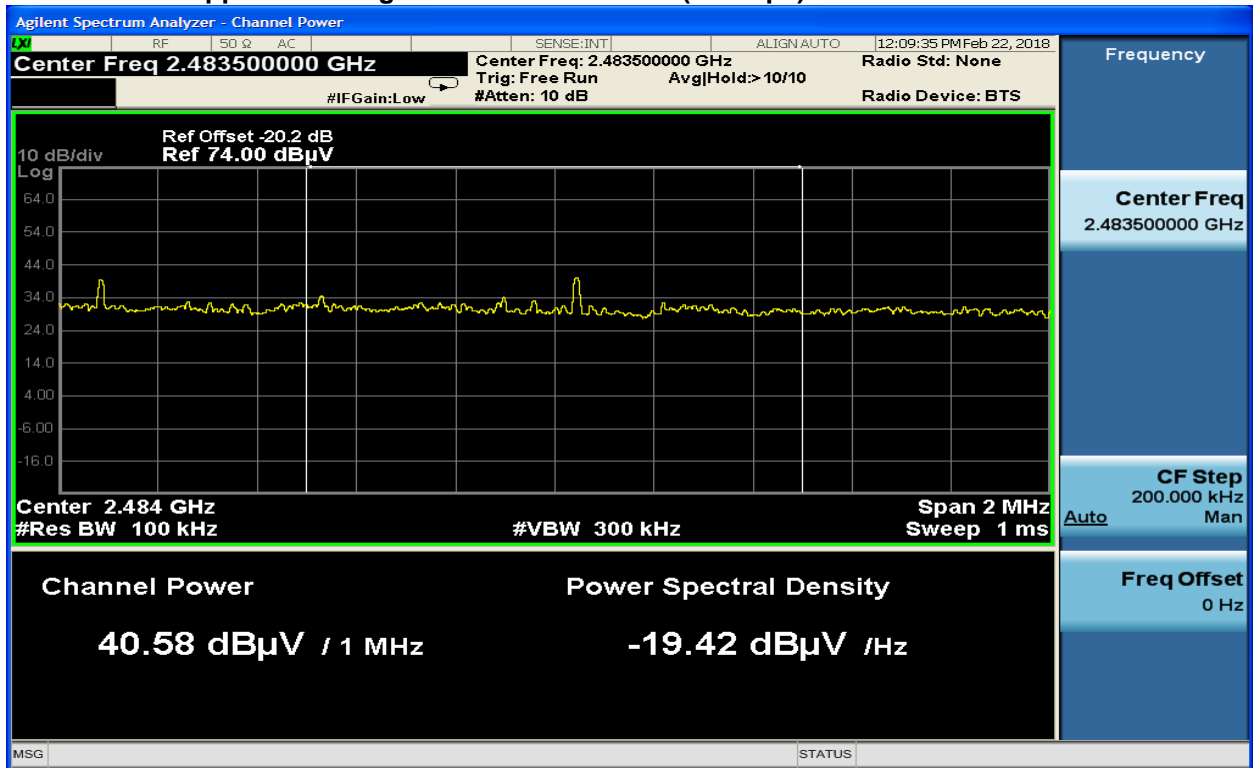
**Plot 4-18: Upper Band Edge Peak: BLE**



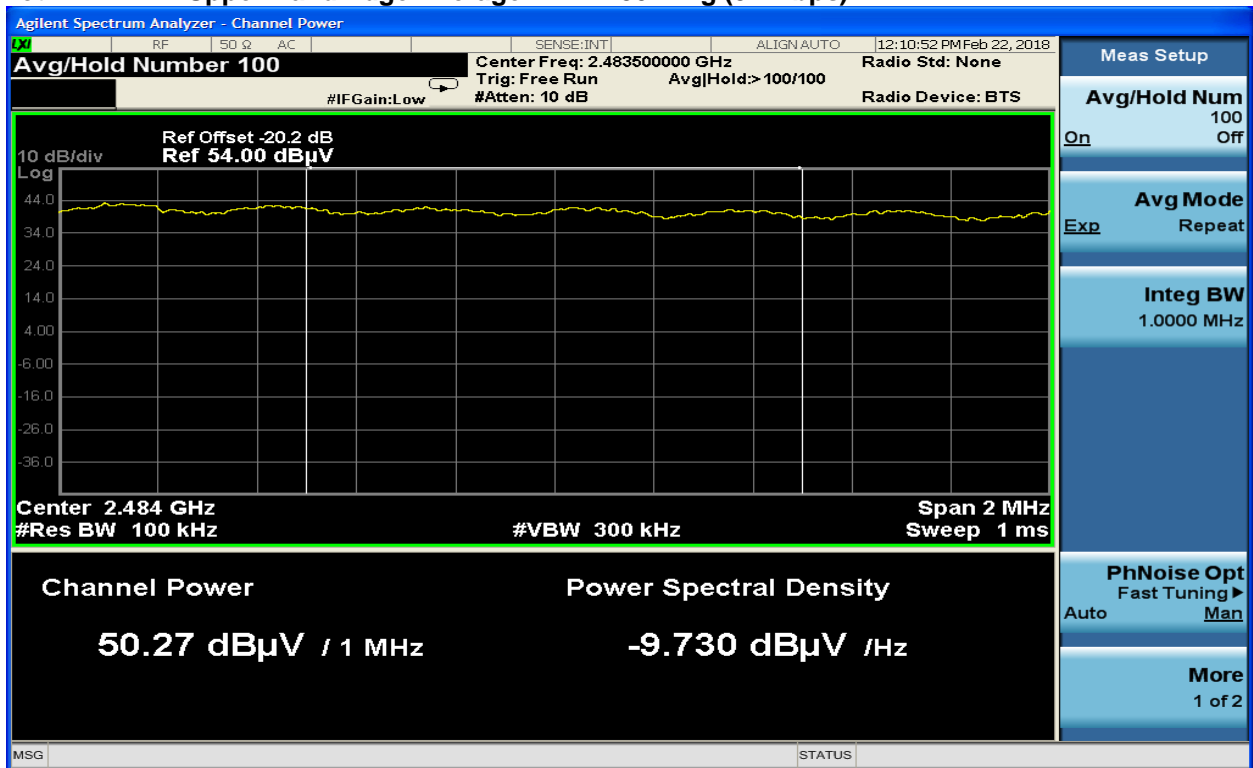
**Plot 4-19: Upper Band Edge Average: Wi-Fi 802.11b (11 Mbps)**



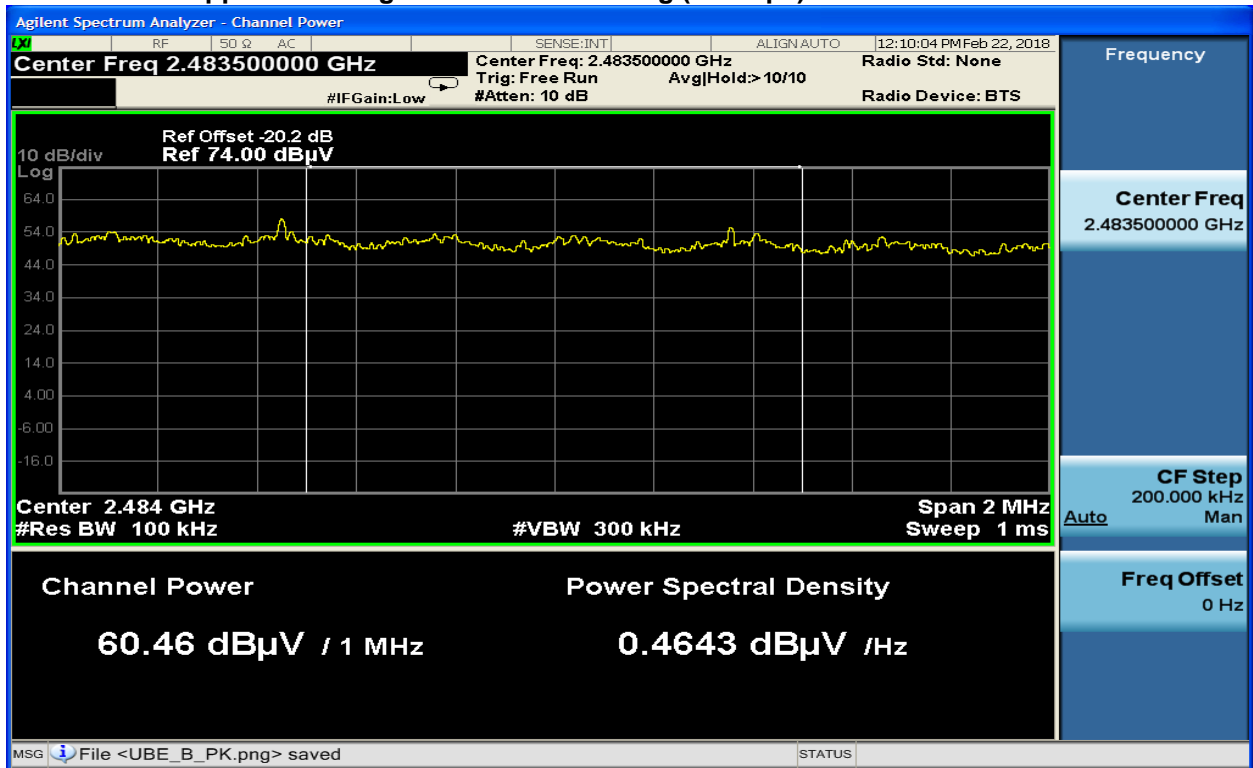
**Plot 4-20: Upper Band Edge Peak: Wi-Fi 802.11b (11 Mbps)**



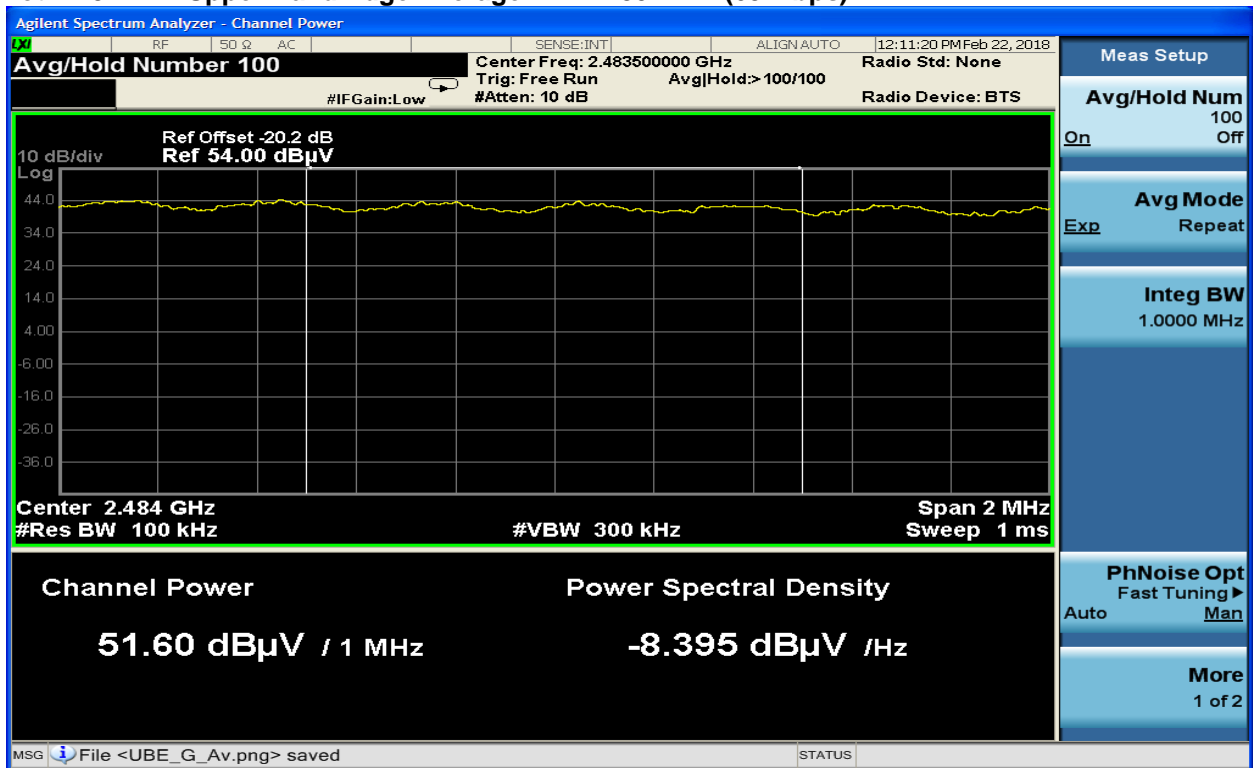
**Plot 4-21: Upper Band Edge Average: Wi-Fi 802.11g (54 Mbps)**



**Plot 4-22: Upper Band Edge Peak: Wi-Fi 802.11g (54 Mbps)**

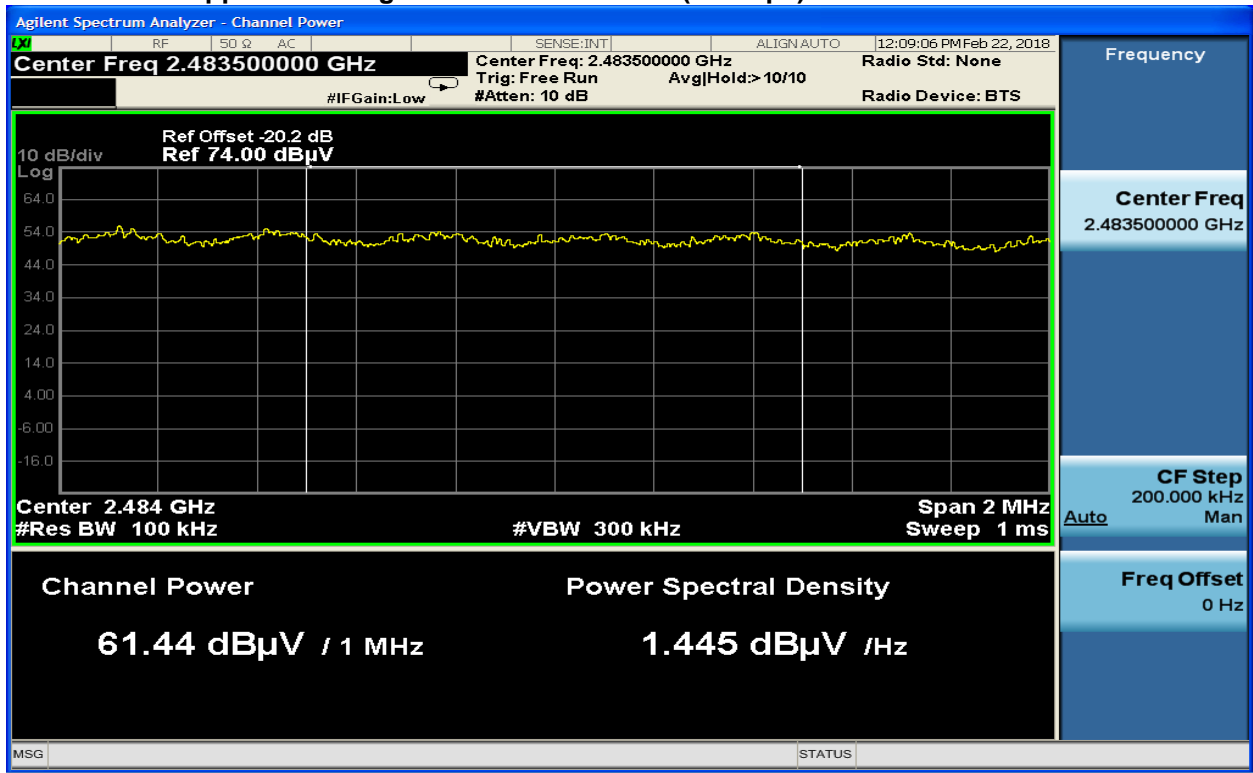


**Plot 4-23: Upper Band Edge Average: Wi-Fi 802.11n (65 Mbps)**





**Plot 4-24: Upper Band Edge Peak: Wi-Fi 802.11n (65 Mbps)**



Measurement uncertainty:  $\pm 1.4\%$ . This measurement uncertainty is an expanded uncertainty for 95.45% confidence level received with a coverage factor  $k=2$ .

**Table 4-1: Band Edge Test Equipment**

| RTL Asset # | Manufacturer         | Model  | Part Type                            | Serial Number | Calibration Due Date |
|-------------|----------------------|--------|--------------------------------------|---------------|----------------------|
| 901583      | Agilent Technologies | N9010A | EXA Signal Analyzer (10 Hz-26.5 GHz) | MY51250846    | 2/6/20               |

**PASS**

**Test Personnel:**

|                                     |                                                                                                  |                                   |
|-------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------|
| Daniel W. Baltzell<br>Test Engineer | <br>Signature | February 22, 2018<br>Date of Test |
|-------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------|

## 5 Antenna Conducted Spurious Emissions – FCC 15.247(d); RSS-Gen

### 5.1 Antenna Conducted Spurious Emissions Test Procedures

Antenna conducted spurious emissions per FCC 15.247(d) were measured from the EUT antenna port using a 50-ohm spectrum analyzer with the resolution bandwidth set at 100 kHz, and the video bandwidth set at 300 kHz. The modulated carrier was identified at the following frequencies: 2412 MHz, 2437 MHz and 2462 MHz for Wi-Fi; 2402 MHz, 2441 MHz and 2480 MHz for ANT+; 2402 MHz, 2440 MHz and 2480 MHz for BLE and Bluetooth modes.

### 5.2 Antenna Conducted Spurious Emissions Test Results

No harmonics or spurs were found within 20 dB (note that we are reporting power as peak) of the carrier level from the carrier to the 10<sup>th</sup> harmonic of the carrier frequency. Per FCC 15.31(o), no data is being reported.


**Table 5-1: Antenna Conducted Spurious Test Equipment**

| RTL Asset # | Manufacturer         | Model  | Part Type                            | Serial Number | Calibration Due 1 |
|-------------|----------------------|--------|--------------------------------------|---------------|-------------------|
| 901583      | Agilent Technologies | N9010A | EXA Signal Analyzer (10 Hz-26.5 GHz) | MY51250846    | 2/6/20            |

Measurement uncertainty: Measurement uncertainties shown for these tests are expanded uncertainties expressed at 95% confidence level using a coverage factor  $k = 2$ . Measurement uncertainty = -2 dB / +2 dB.

### PASS

#### Test Personnel:

|                    |                                                                                     |                            |
|--------------------|-------------------------------------------------------------------------------------|----------------------------|
| Daniel W. Baltzell |  | February 21-March 13, 2018 |
| Test Engineer      | Signature                                                                           | Dates of Test              |

## 6 20 dB Bandwidth – FCC 15.247(a)(1); RSS-247 5.1

### 6.1 20 dB Bandwidth Test Procedure

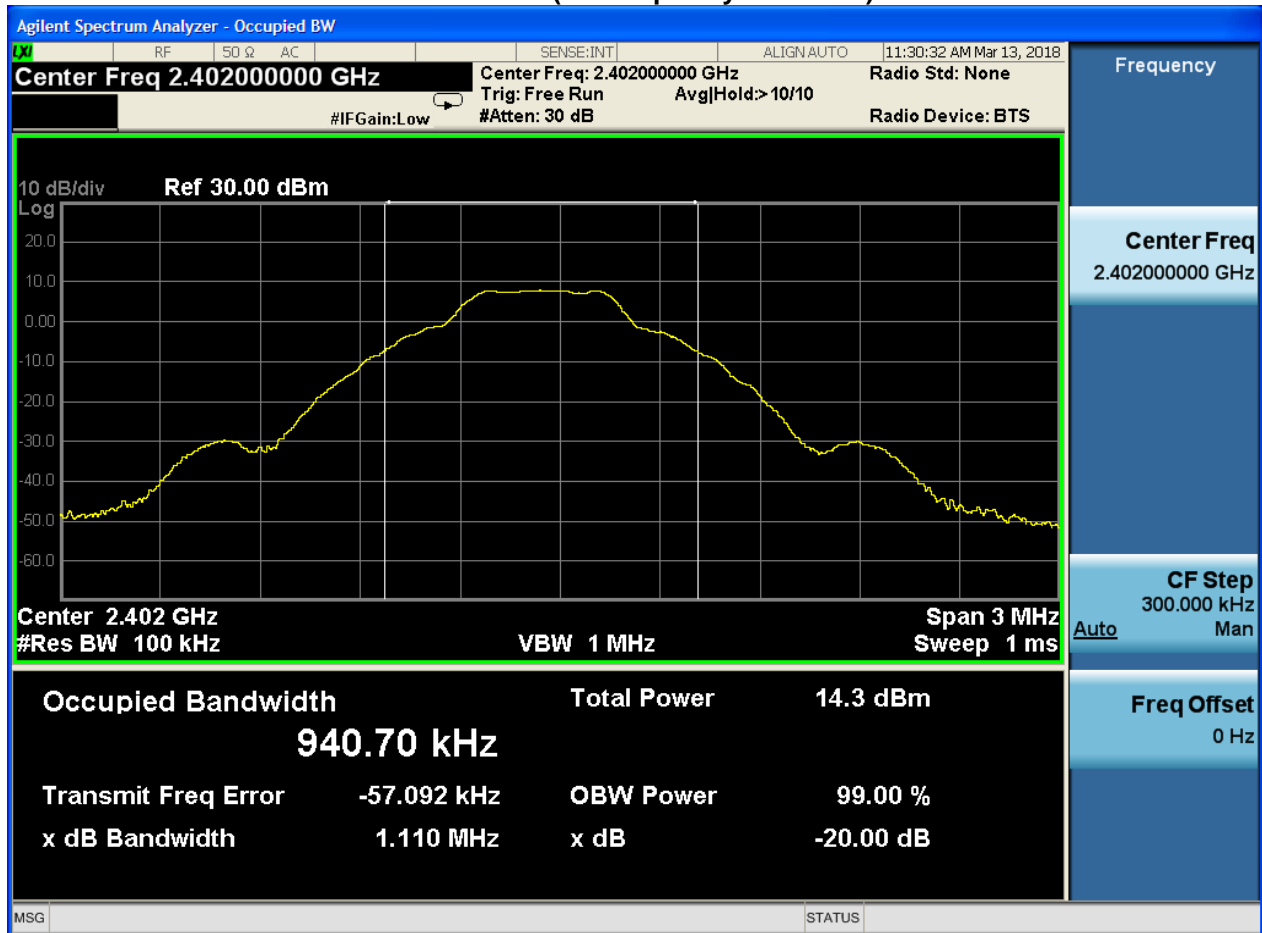
The minimum 20 dB bandwidths per FCC 15.247(a)(1) were measured using a 50-ohm spectrum analyzer with the resolution bandwidth set at 100 kHz, and the video bandwidth set at  $\geq 3 \times \text{RBW}$ . The device was modulated. The minimum 20 dB bandwidths are presented below.

### 6.2 20 dB Bandwidth Test Data

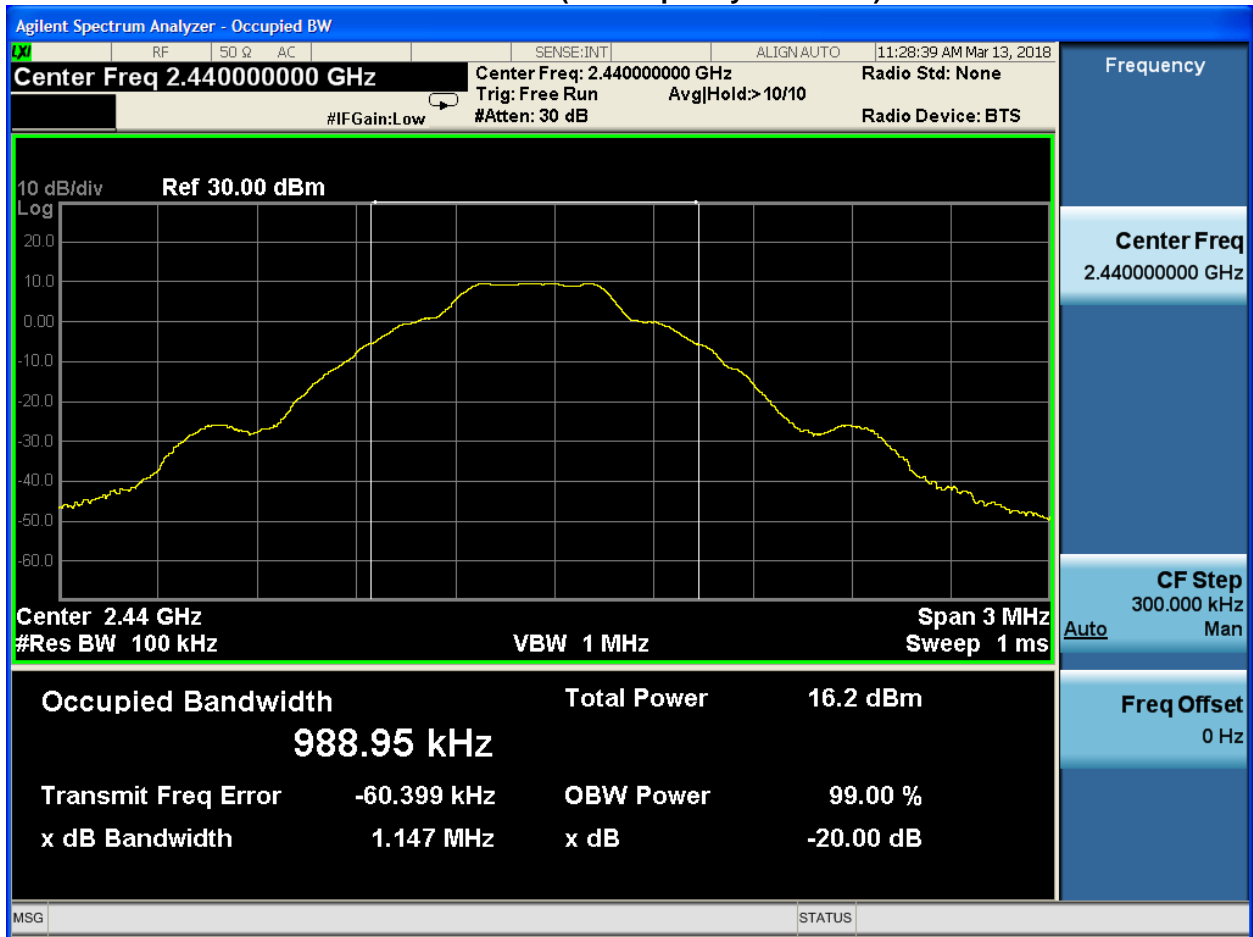
Table 6-1: 20 dB Bandwidth Test Data – Bluetooth

| Channel | Frequency (MHz) | 20 dB Bandwidth (MHz) |
|---------|-----------------|-----------------------|
| 2       | 2402            | 1.110                 |
| 40      | 2440            | 1.147                 |
| 80      | 2480            | 1.146                 |

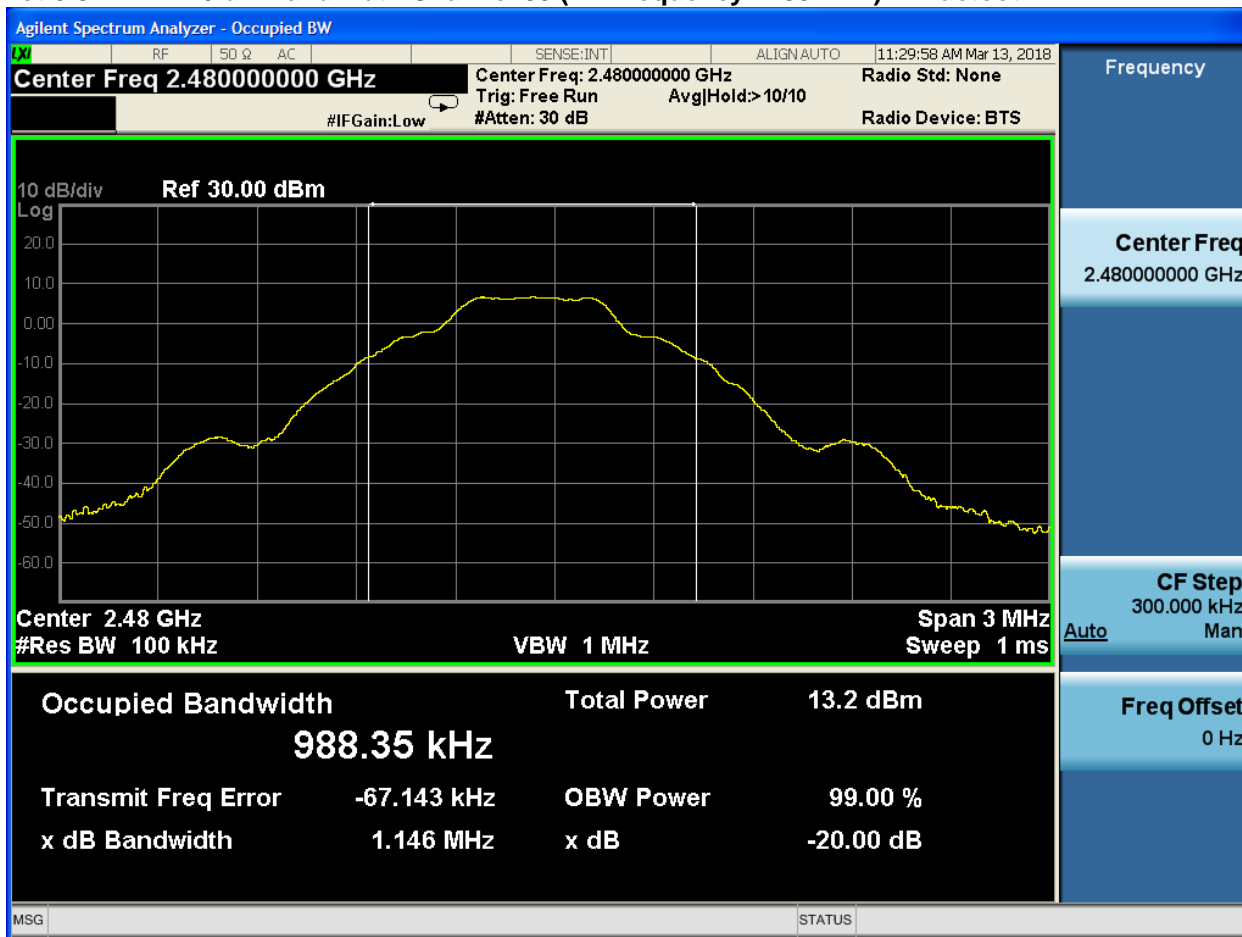
Plot 6-1: 20 dB Bandwidth Channel 2 (TX Frequency 2402 MHz) – Bluetooth



**Plot 6-2: 20 dB Bandwidth Channel 40 (TX Frequency 2440 MHz) – Bluetooth**



**Plot 6-3: 20 dB Bandwidth Channel 80 (TX Frequency 2480 MHz) – Bluetooth**



**Table 6-2: 20 dB Bandwidth Test Equipment**

| RTL Asset # | Manufacturer         | Model  | Part Type                            | Serial Number | Calibration Due Date |
|-------------|----------------------|--------|--------------------------------------|---------------|----------------------|
| 901583      | Agilent Technologies | N9010A | EXA Signal Analyzer (10 Hz-26.5 GHz) | MY51250846    | 2/6/20               |

Measurement uncertainty: Measurement uncertainties shown for these tests are expanded uncertainties expressed at 95% confidence level using a coverage factor k = 2. Measurement uncertainty = -2 dB/+2 dB.

**PASS**

**Test Personnel:**

|                                     |               |                                |
|-------------------------------------|---------------|--------------------------------|
| Daniel W. Baltzell<br>Test Engineer | <br>Signature | March 13, 2018<br>Date of Test |
|-------------------------------------|---------------|--------------------------------|

## 7 6 dB Bandwidth – FCC 15.247(a)(2); RSS-247 5.2

### 7.1 6 dB Bandwidth Test Procedure – Minimum 6 dB Bandwidth

The minimum 6 dB bandwidths per FCC 15.247(a)(2) were measured using a 50-ohm spectrum analyzer with the resolution bandwidth set at 100 kHz, and the video bandwidth set at  $\geq 3xRBW$ . The device was modulated. The minimum 6 dB bandwidths are presented below.

### 7.2 6 dB Bandwidth Test Results

**Table 7-1: 6 dB Bandwidth Test Data – ANT+**

| Channel | Frequency (MHz) | 6 dB Bandwidth (MHz) | Minimum Limit (MHz) | Pass/Fail |
|---------|-----------------|----------------------|---------------------|-----------|
| Low     | 2402            | 0.515                | 0.5                 | Pass      |
| Mid     | 2441            | 0.516                | 0.5                 | Pass      |
| High    | 2480            | 0.516                | 0.5                 | Pass      |

**Table 7-2: 6 dB Bandwidth Test Data – BLE PRB29**

| Channel | Frequency (MHz) | 6 dB Bandwidth (MHz) | Minimum Limit (MHz) | Pass/Fail |
|---------|-----------------|----------------------|---------------------|-----------|
| 0       | 2402            | 0.556                | 0.5                 | Pass      |
| 19      | 2440            | 0.560                | 0.5                 | Pass      |
| 39      | 2480            | 0.551                | 0.5                 | Pass      |

**Table 7-3: 6 dB Bandwidth Test Data – BLE 0x0F**

| Channel | Frequency (MHz) | 6 dB Bandwidth (MHz) | Minimum Limit (MHz) | Pass/Fail |
|---------|-----------------|----------------------|---------------------|-----------|
| 0       | 2402            | 0.723                | 0.5                 | Pass      |
| 19      | 2440            | 0.716                | 0.5                 | Pass      |
| 39      | 2480            | 0.705                | 0.5                 | Pass      |

**Table 7-4: 6 dB Bandwidth Test Data – BLE 0x55**

| Channel | Frequency (MHz) | 6 dB Bandwidth (MHz) | Minimum Limit (MHz) | Pass/Fail |
|---------|-----------------|----------------------|---------------------|-----------|
| 0       | 2402            | 0.610                | 0.5                 | Pass      |
| 19      | 2440            | 0.607                | 0.5                 | Pass      |
| 39      | 2480            | 0.601                | 0.5                 | Pass      |

**Table 7-5: 6 dB Bandwidth Test Data – 802.11b (11 Mbps)**

| Channel | Frequency (MHz) | 6 dB Bandwidth (MHz) | Minimum Limit (MHz) | Pass/Fail |
|---------|-----------------|----------------------|---------------------|-----------|
| 1       | 2412            | 11.86                | 0.5                 | Pass      |
| 6       | 2437            | 11.68                | 0.5                 | Pass      |
| 11      | 2462            | 11.40                | 0.5                 | Pass      |

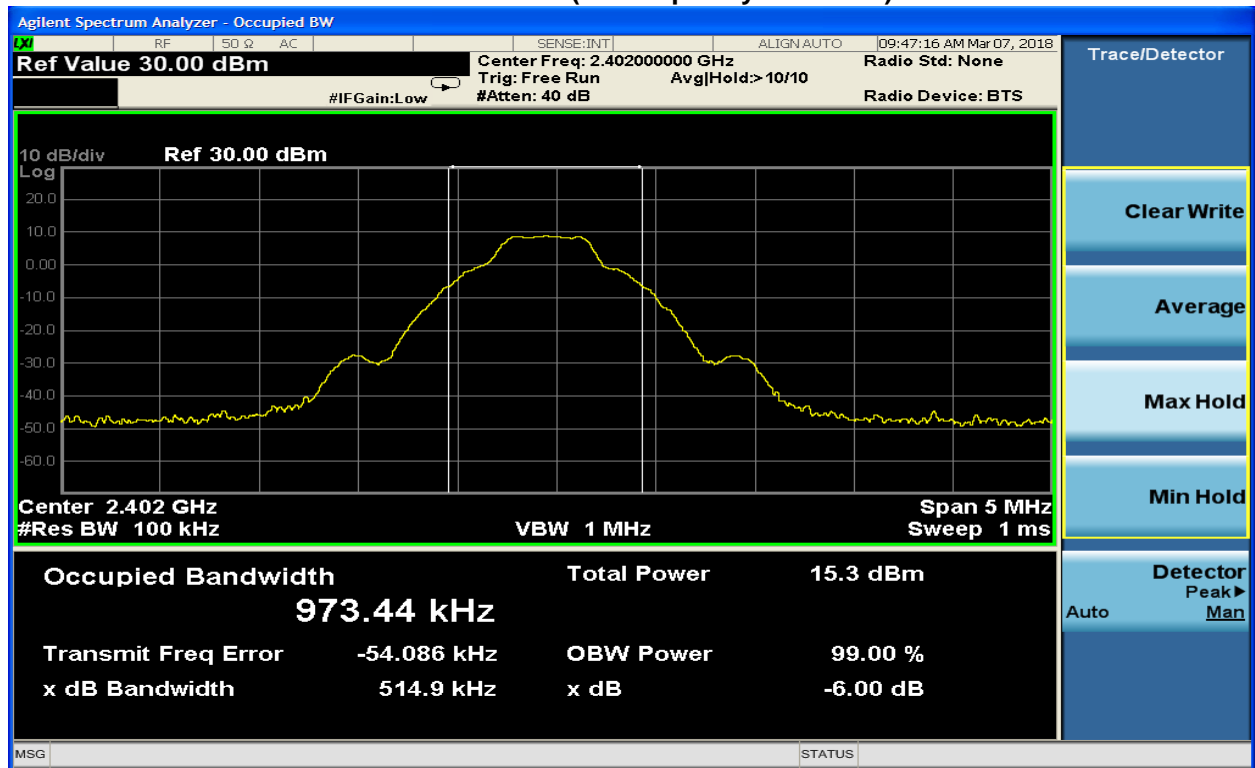
**Table 7-6: 6 dB Bandwidth Test Data – 802.11g (54 Mbps)**

| Channel | Frequency (MHz) | 6 dB Bandwidth (MHz) | Minimum Limit (MHz) | Pass/Fail |
|---------|-----------------|----------------------|---------------------|-----------|
| 1       | 2412            | 16.55                | 0.5                 | Pass      |
| 6       | 2437            | 16.56                | 0.5                 | Pass      |
| 11      | 2462            | 16.57                | 0.5                 | Pass      |

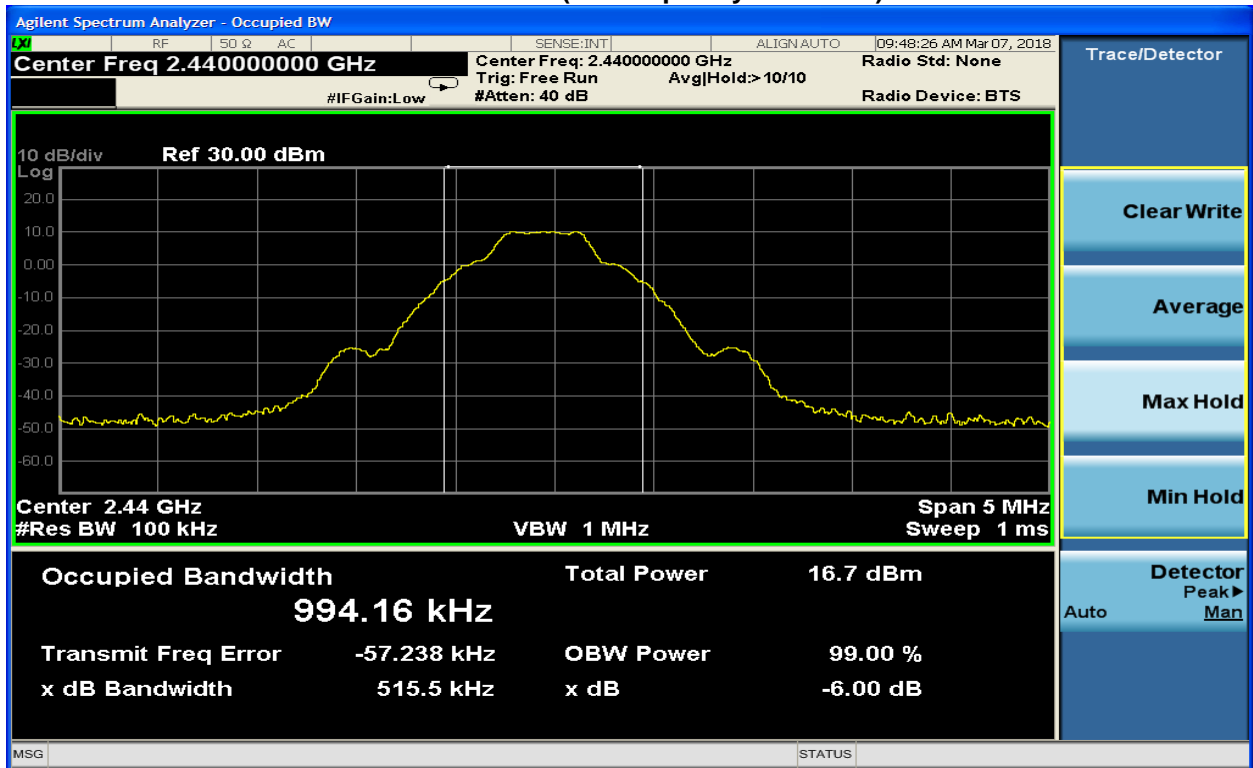
**Table 7-7: 6 dB Bandwidth Test Data – 802.11n (65 Mbps)**

| Channel | Frequency (MHz) | 6 dB Bandwidth (MHz) | Minimum Limit (MHz) | Pass/Fail |
|---------|-----------------|----------------------|---------------------|-----------|
| 1       | 2412            | 17.80                | 0.5                 | Pass      |
| 6       | 2437            | 17.75                | 0.5                 | Pass      |
| 11      | 2462            | 17.77                | 0.5                 | Pass      |

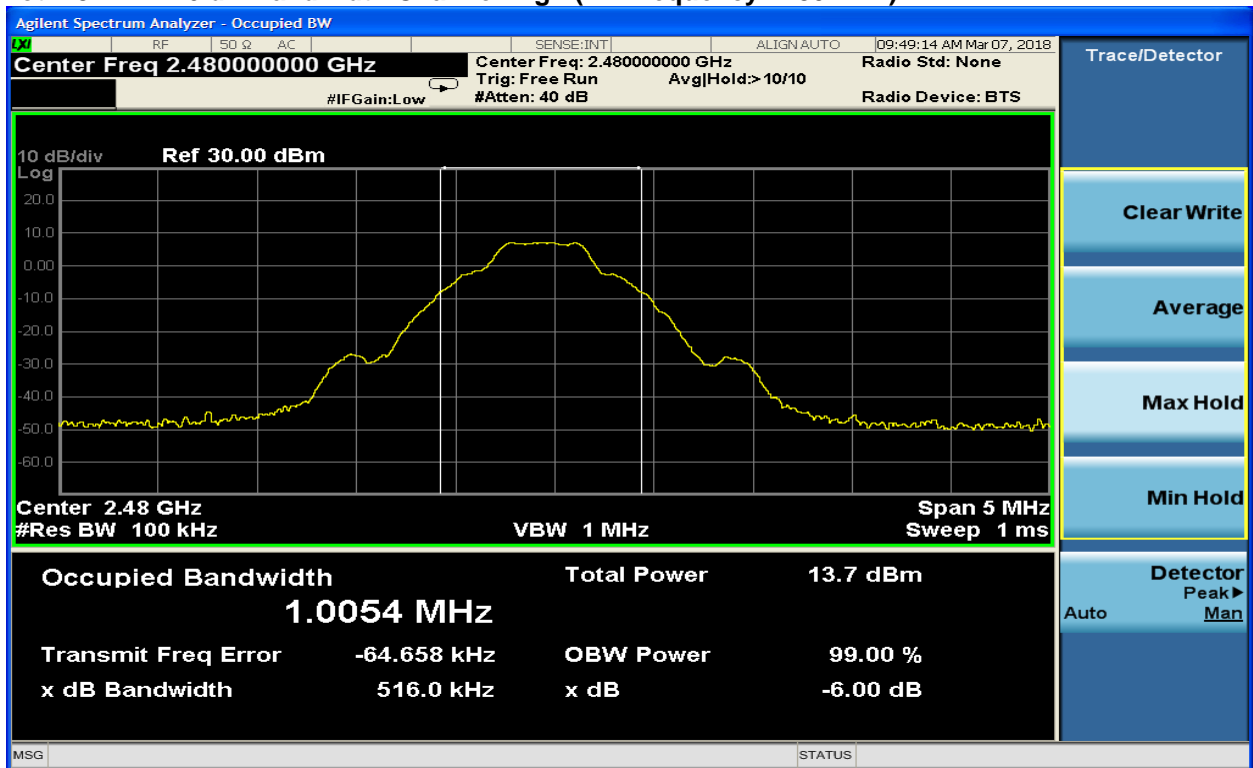
**Plot 7-1: 6 dB Bandwidth Channel Low (TX Frequency 2402 MHz) - ANT+**



**Plot 7-2: 6 dB Bandwidth Channel Mid (TX Frequency 2441 MHz) - ANT+**

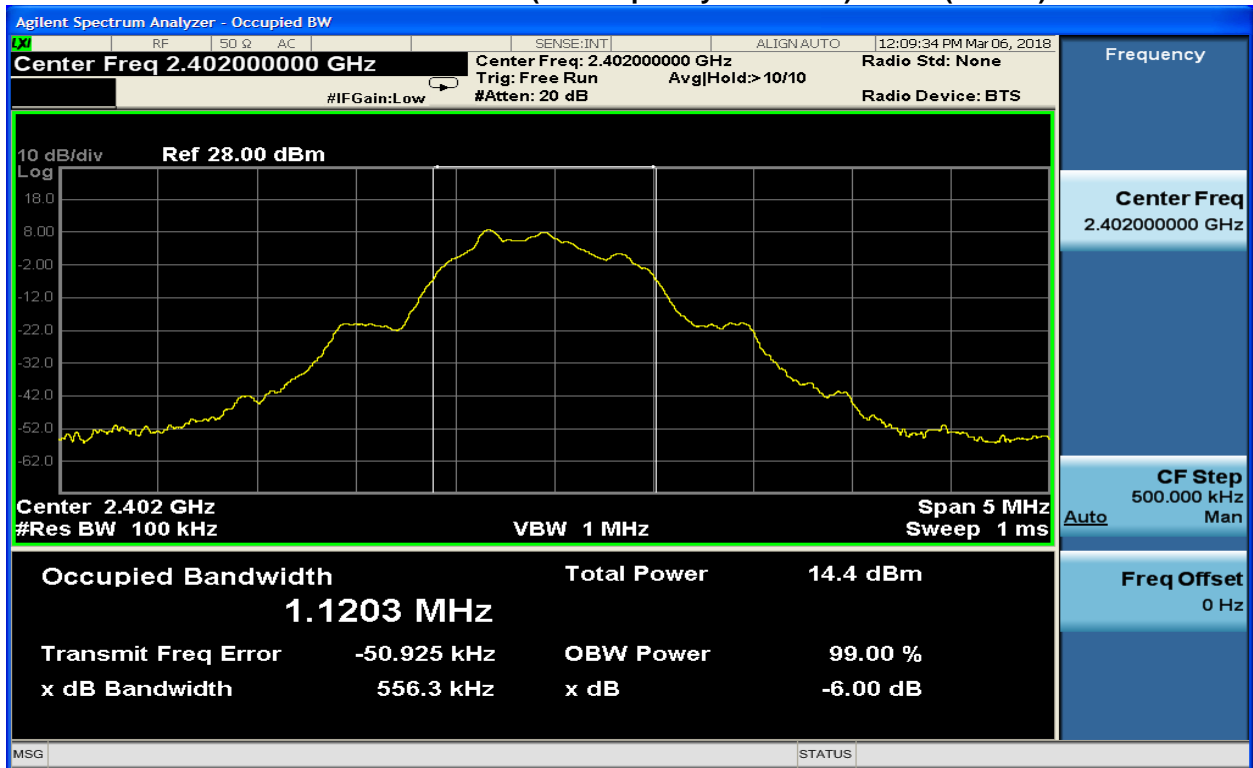


**Plot 7-3: 6 dB Bandwidth Channel High (TX Frequency 2480 MHz) - ANT+**

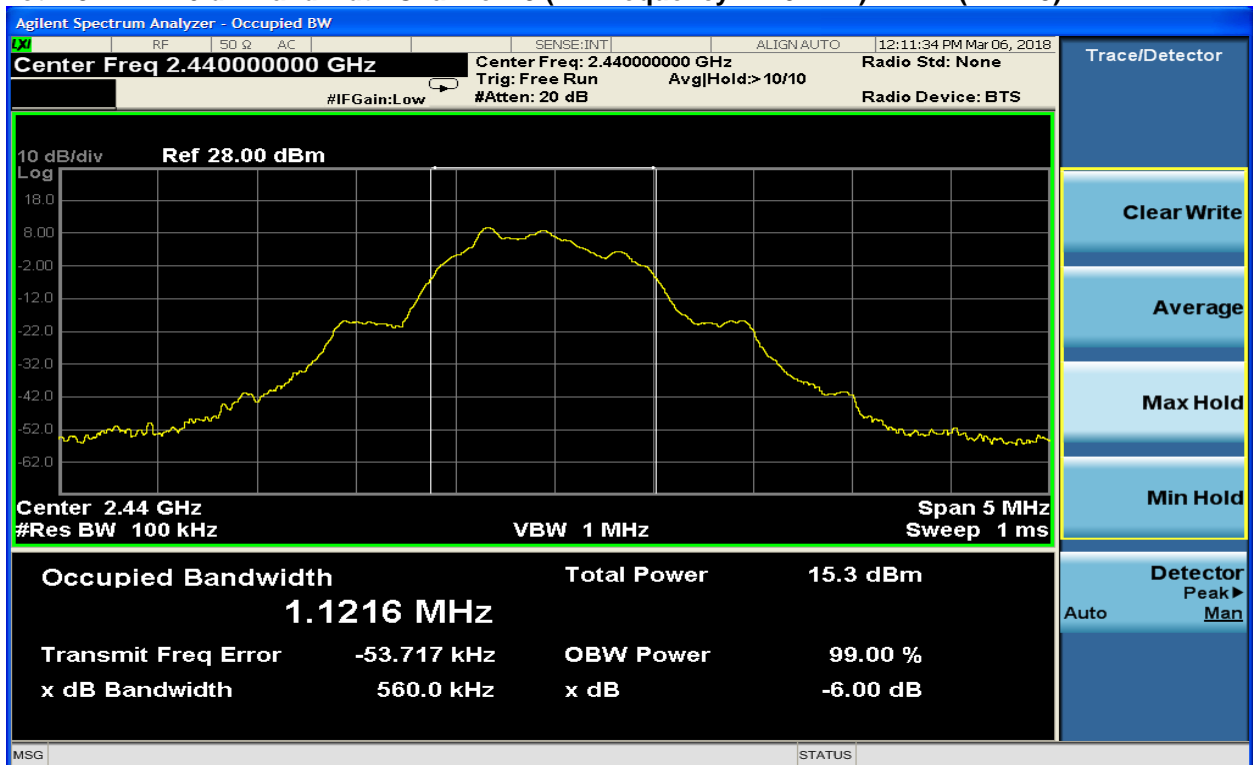




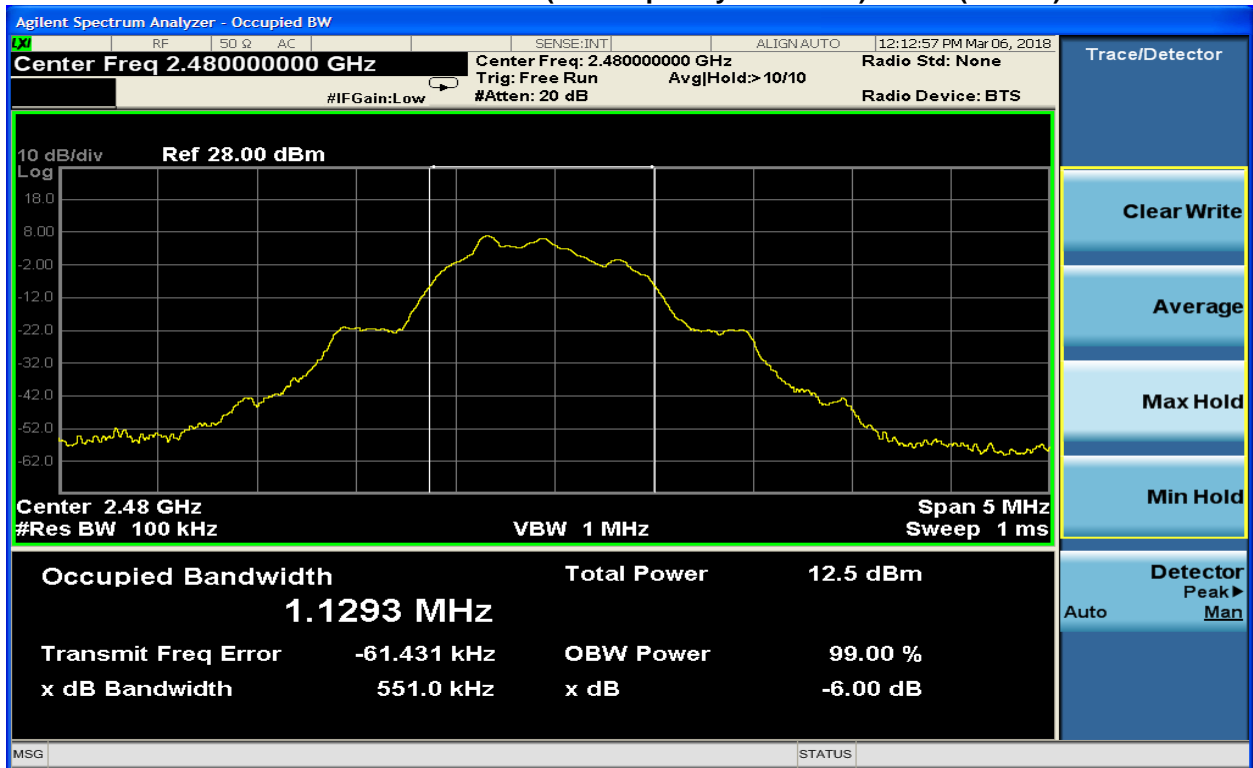
**Plot 7-4: 6 dB Bandwidth Channel 1 (TX Frequency 2402 MHz) – BLE (PRB29)**



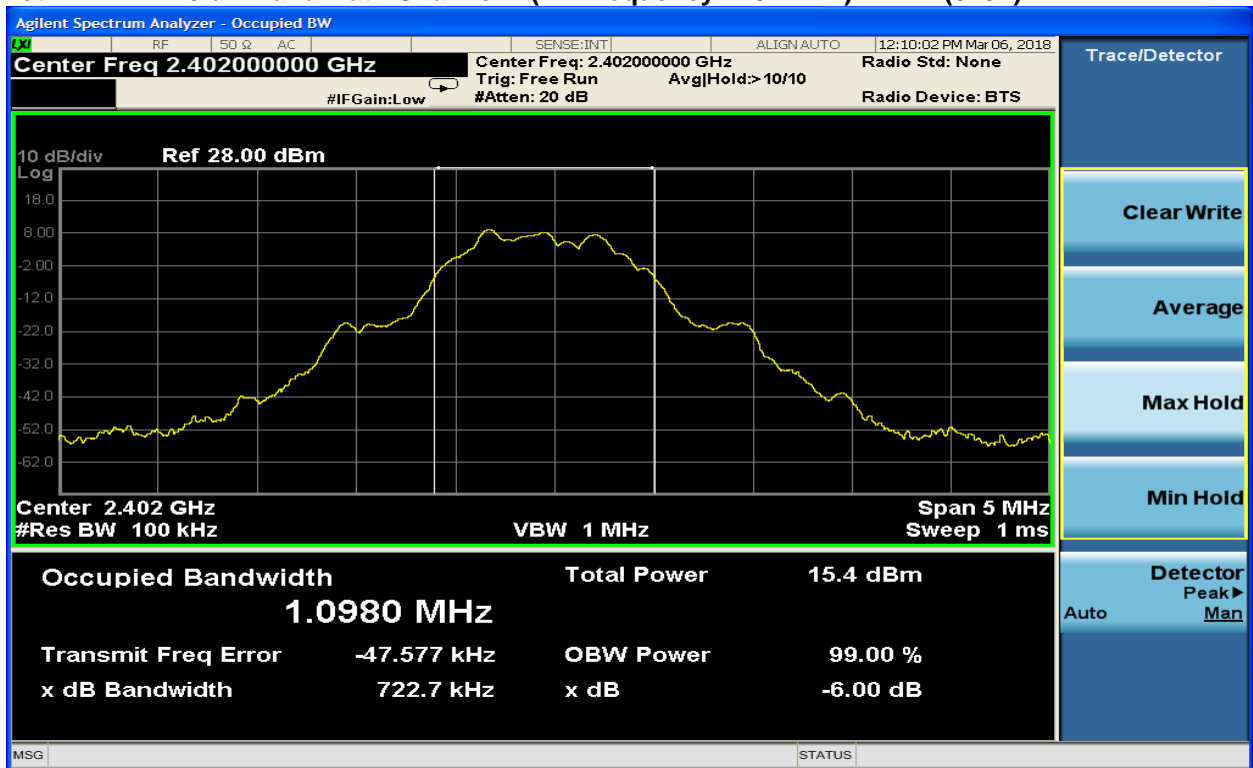
**Plot 7-5: 6 dB Bandwidth Channel 19 (TX Frequency 2440 MHz) – BLE (PRB29)**



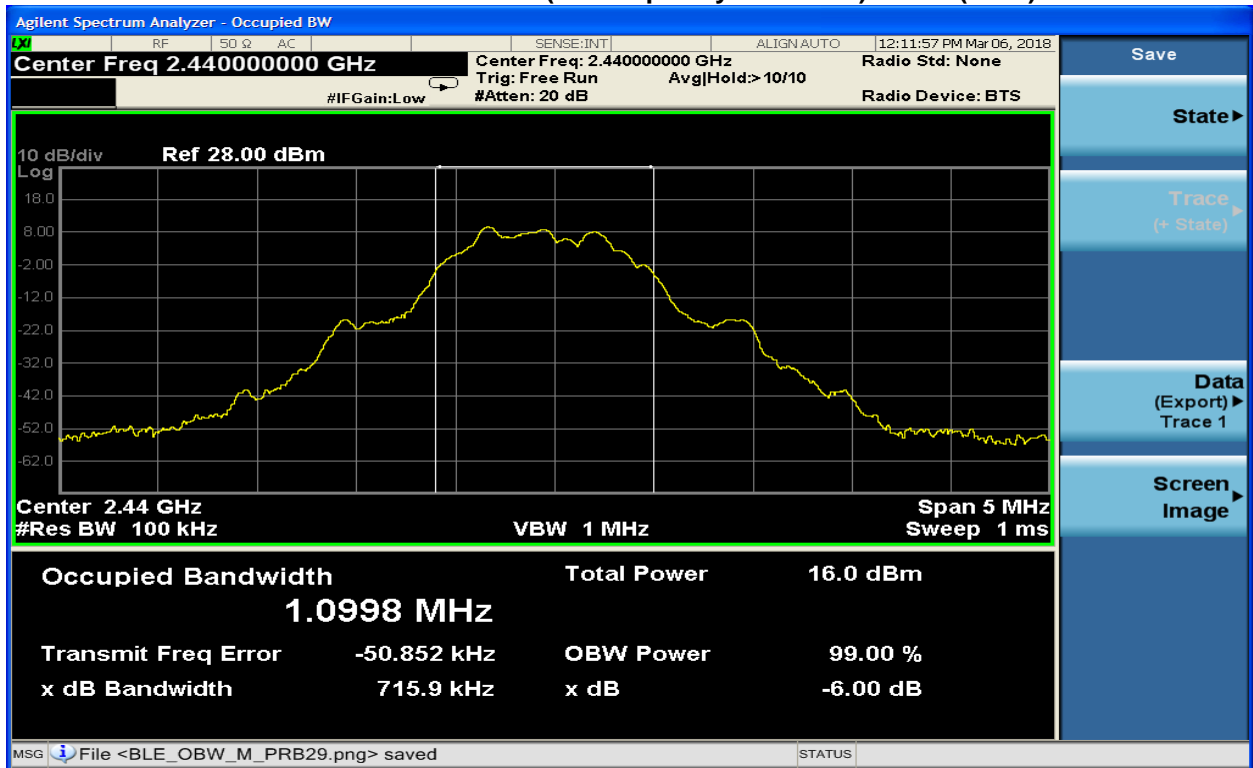
**Plot 7-6: 6 dB Bandwidth Channel 39 (TX Frequency 2480 MHz) – BLE (PRB29)**



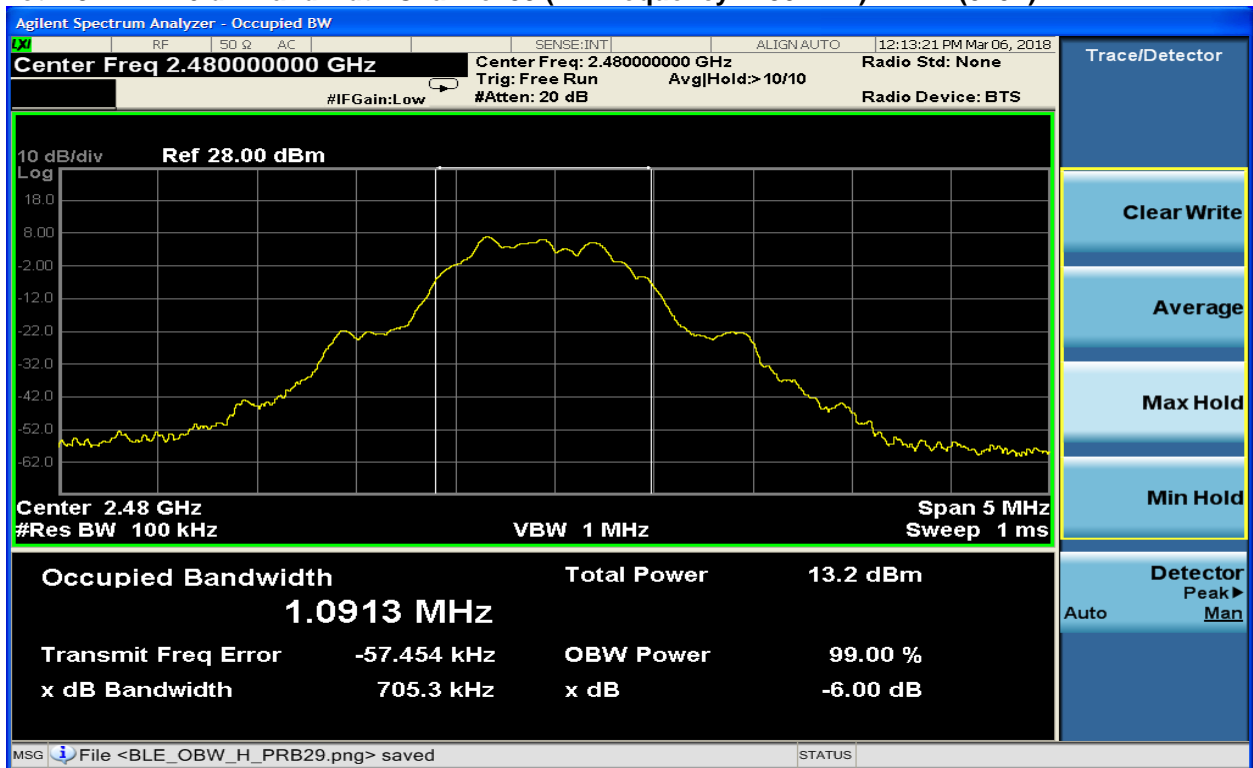
**Plot 7-7: 6 dB Bandwidth Channel 1 (TX Frequency 2402 MHz) – BLE (0x0F)**



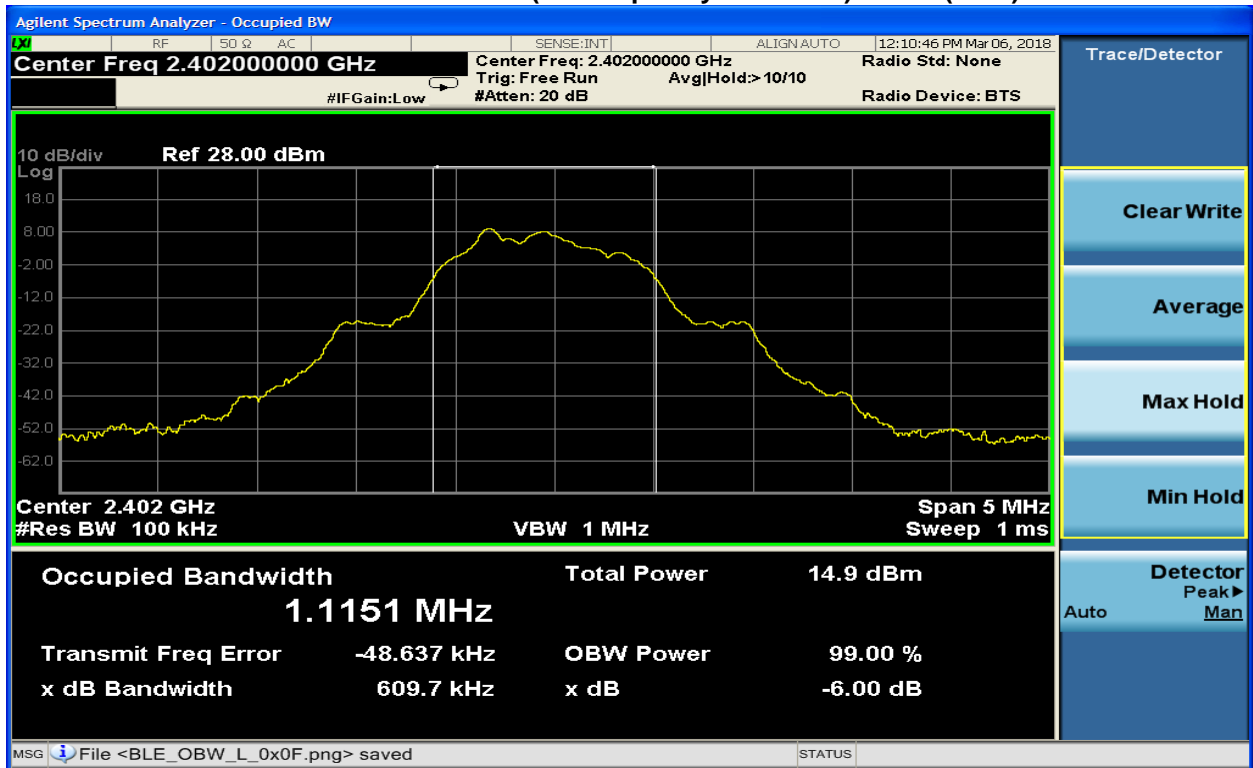
**Plot 7-8: 6 dB Bandwidth Channel 19 (TX Frequency 2440 MHz) – BLE (0x0F)**



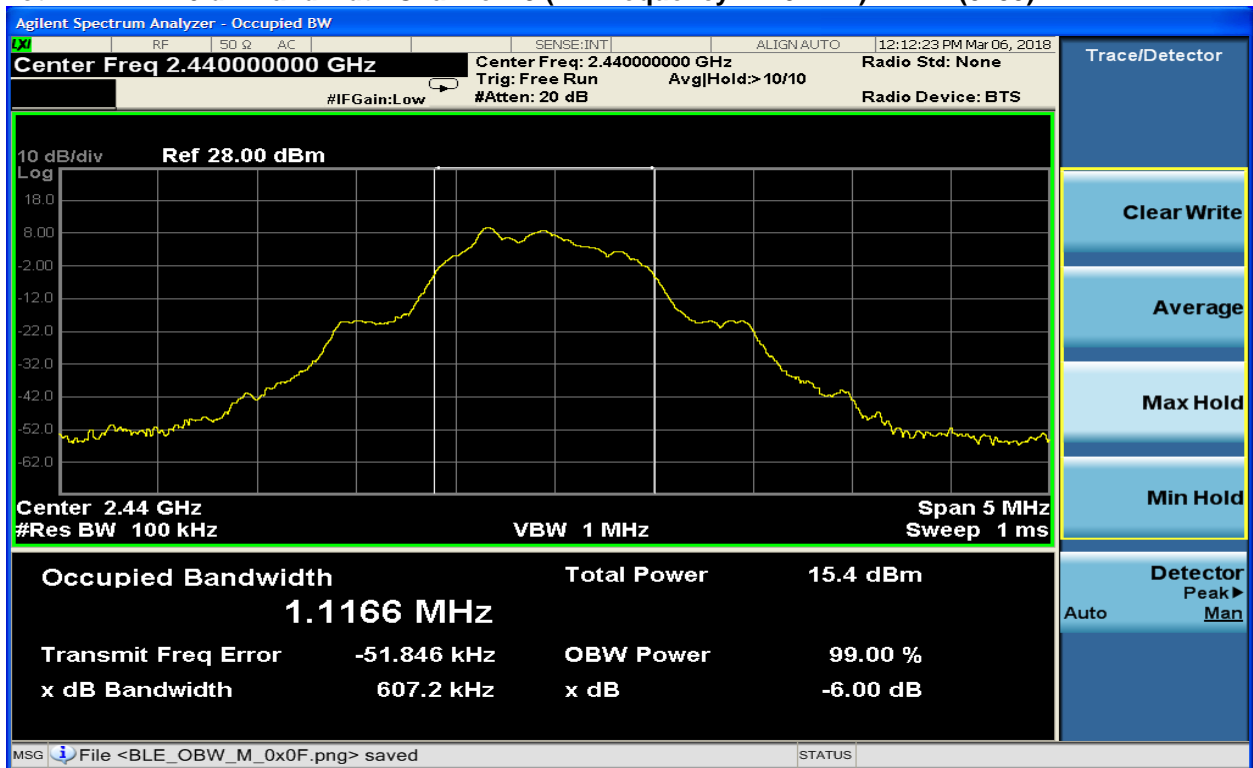
**Plot 7-9: 6 dB Bandwidth Channel 39 (TX Frequency 2480 MHz) – BLE (0x0F)**



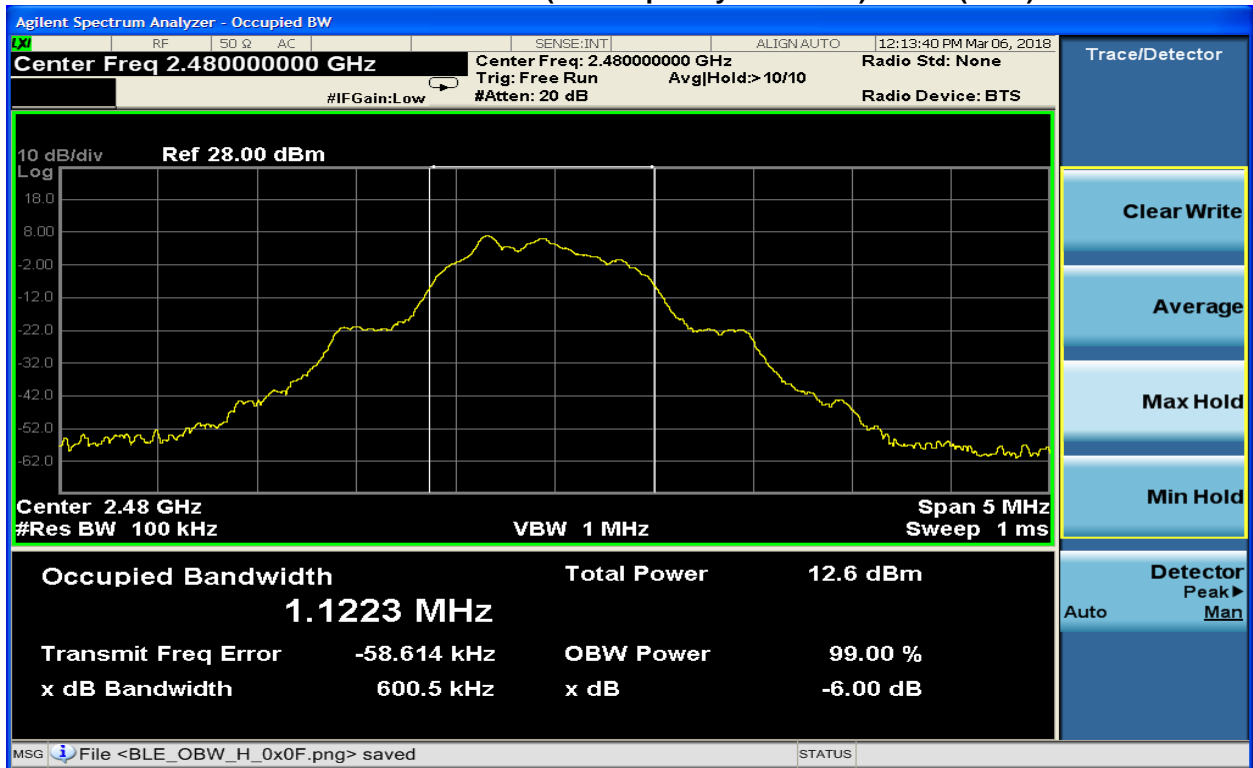
**Plot 7-10: 6 dB Bandwidth Channel 1 (TX Frequency 2402 MHz) – BLE (0x55)**



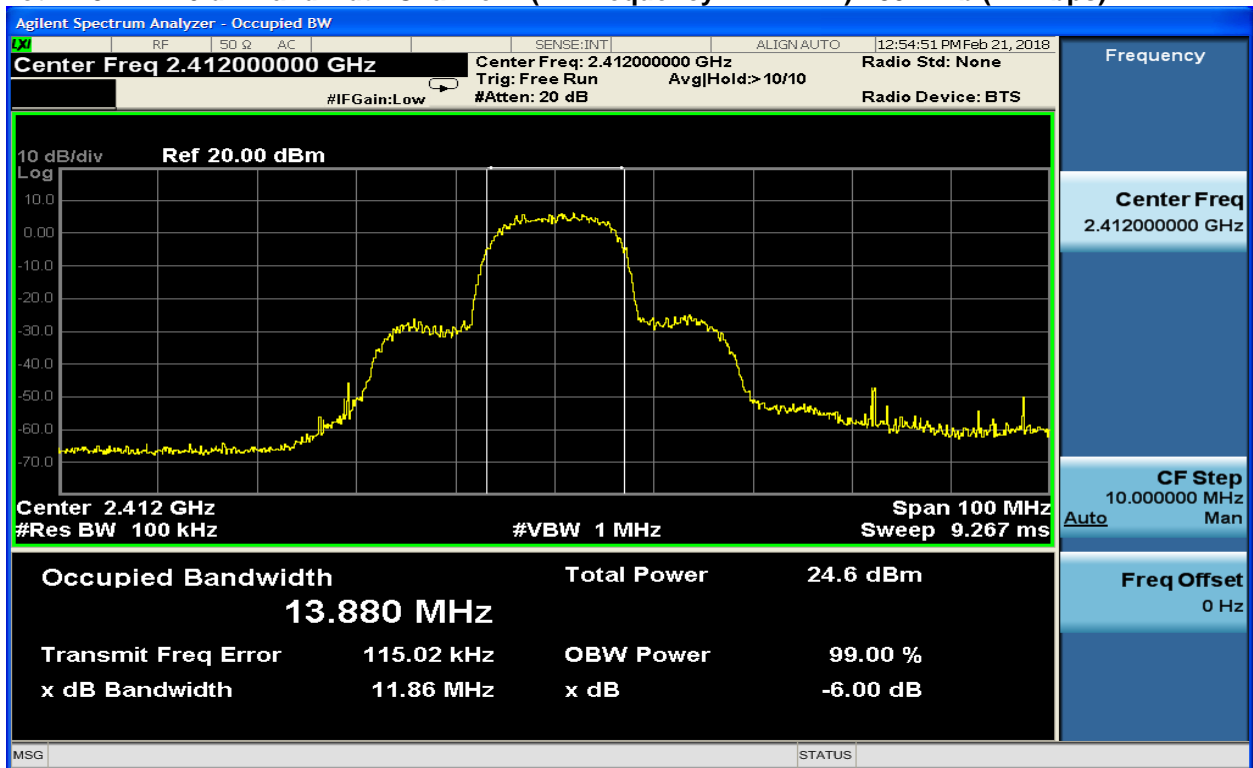
**Plot 7-11: 6 dB Bandwidth Channel 19 (TX Frequency 2440 MHz) – BLE (0x55)**



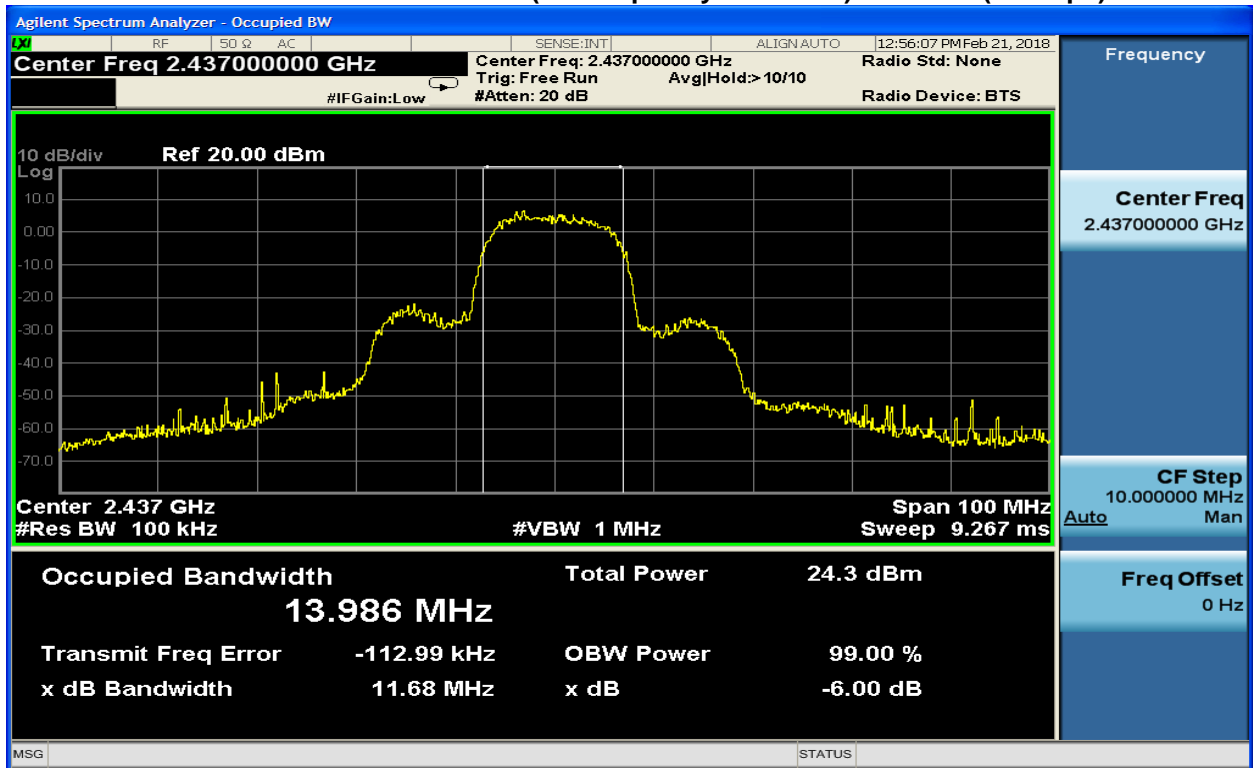
**Plot 7-12: 6 dB Bandwidth Channel 39 (TX Frequency 2480 MHz) – BLE (0x55)**



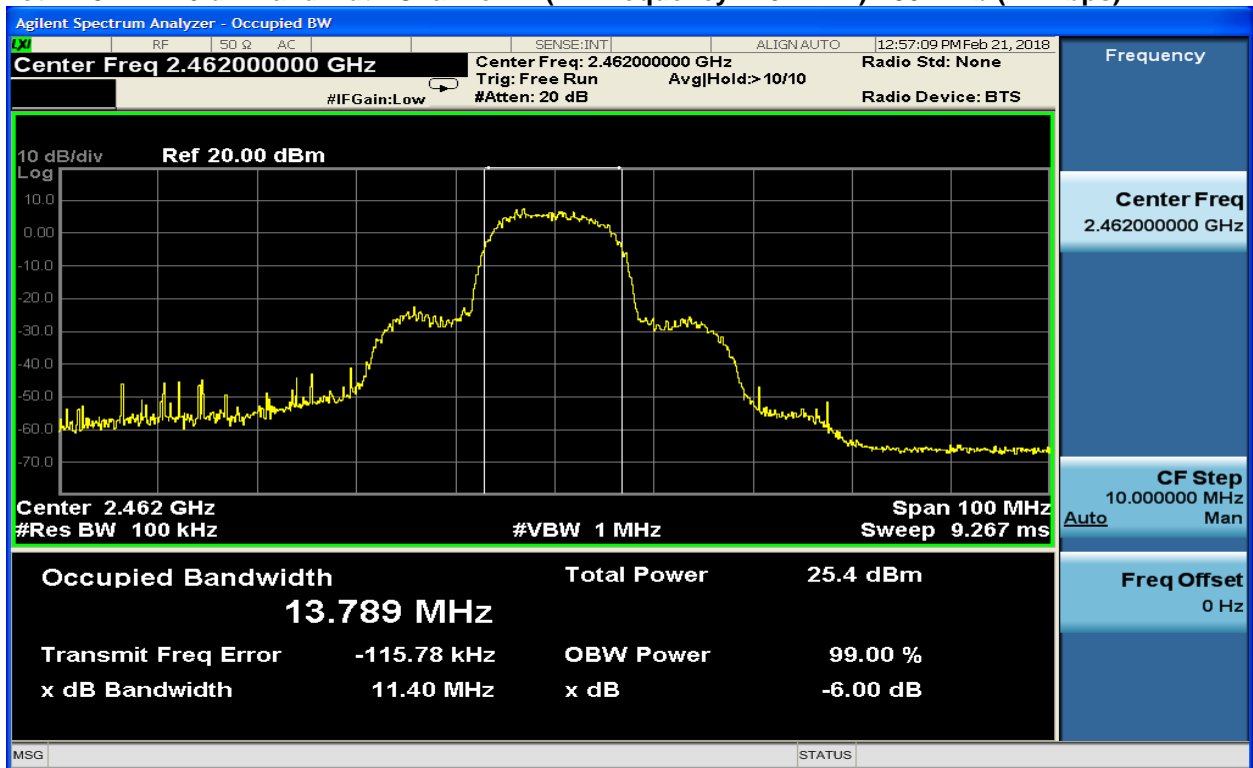
**Plot 7-13: 6 dB Bandwidth Channel 1 (TX Frequency 2412 MHz) - 802.11b (11 Mbps)**



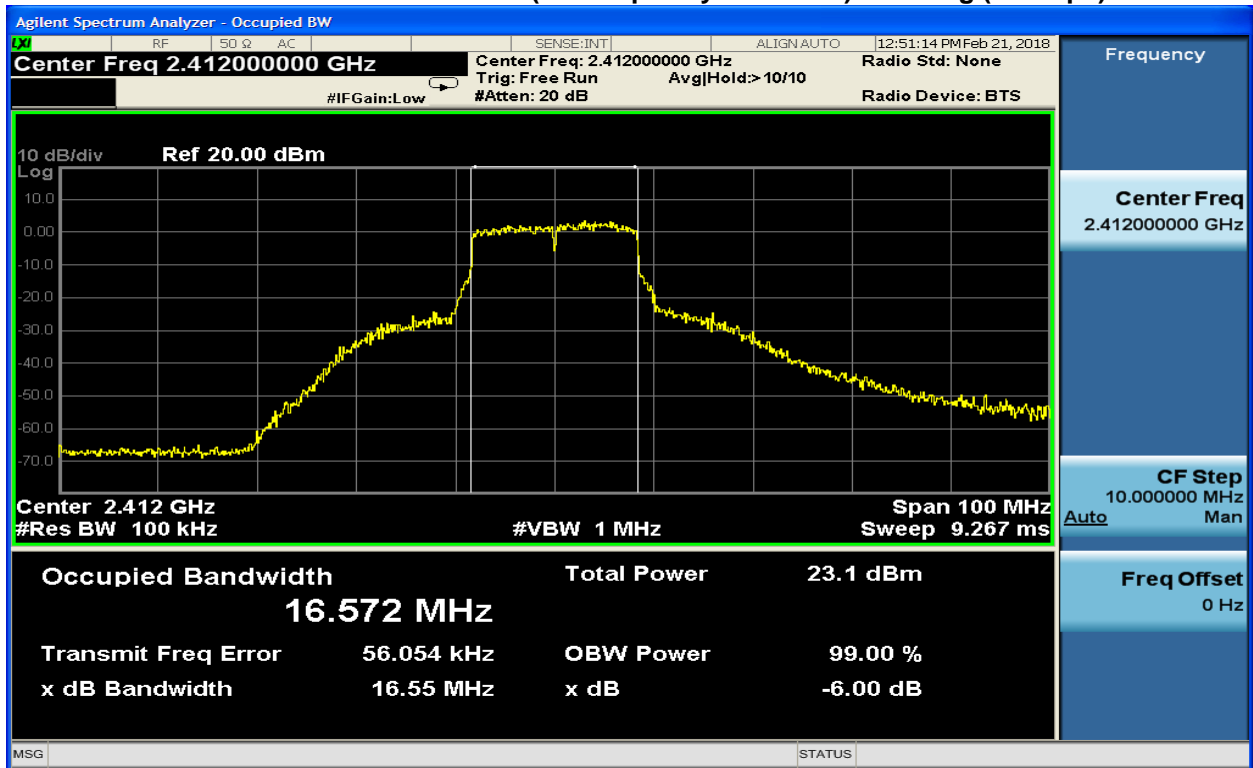
**Plot 7-14: 6 dB Bandwidth Channel 6 (TX Frequency 2437 MHz) - 802.11b (11 Mbps)**



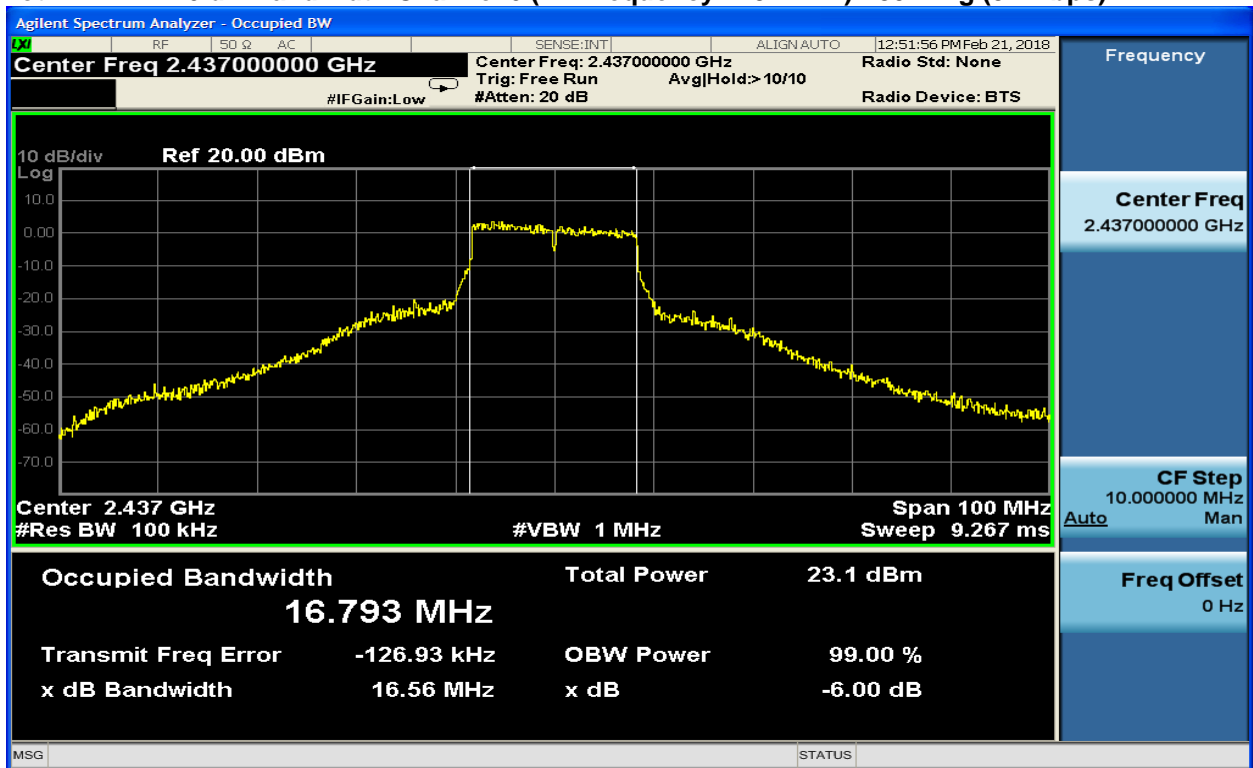
**Plot 7-15: 6 dB Bandwidth Channel 11 (TX Frequency 2462 MHz) - 802.11b (11 Mbps)**



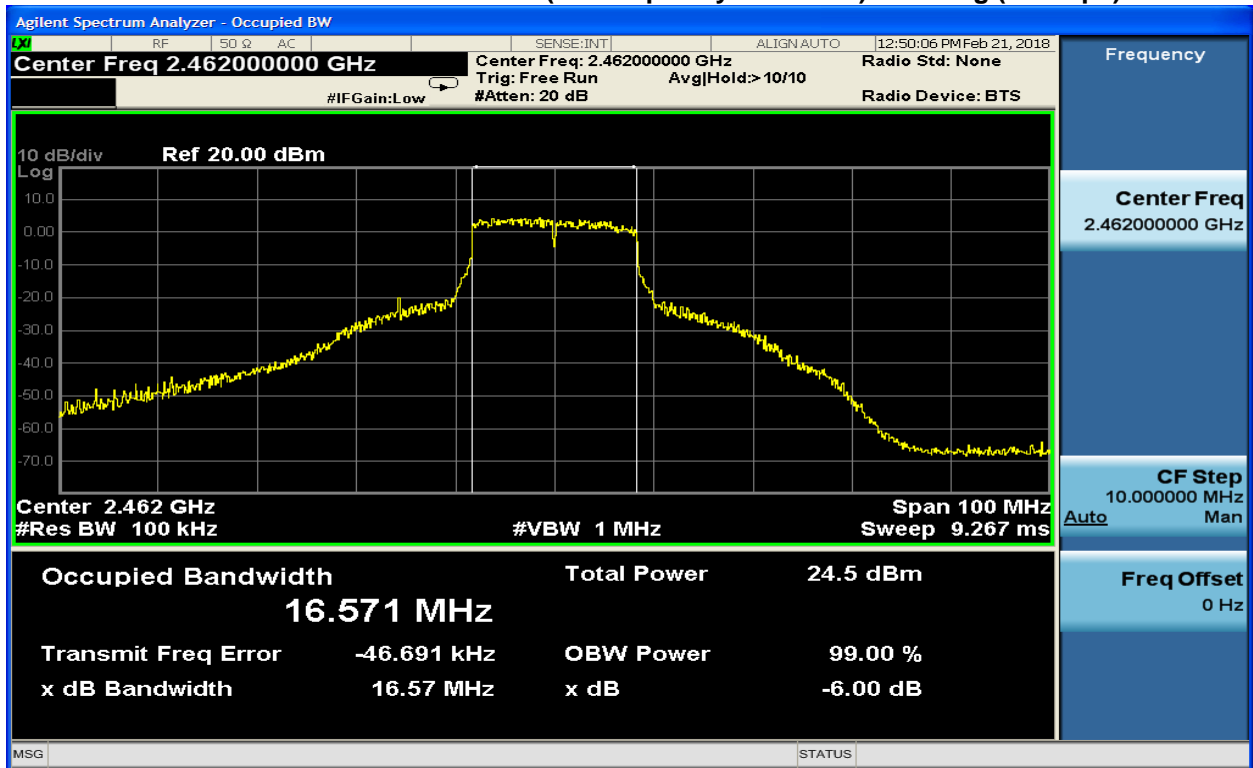
**Plot 7-16: 6 dB Bandwidth Channel 1 (TX Frequency 2412 MHz) - 802.11g (54 Mbps)**



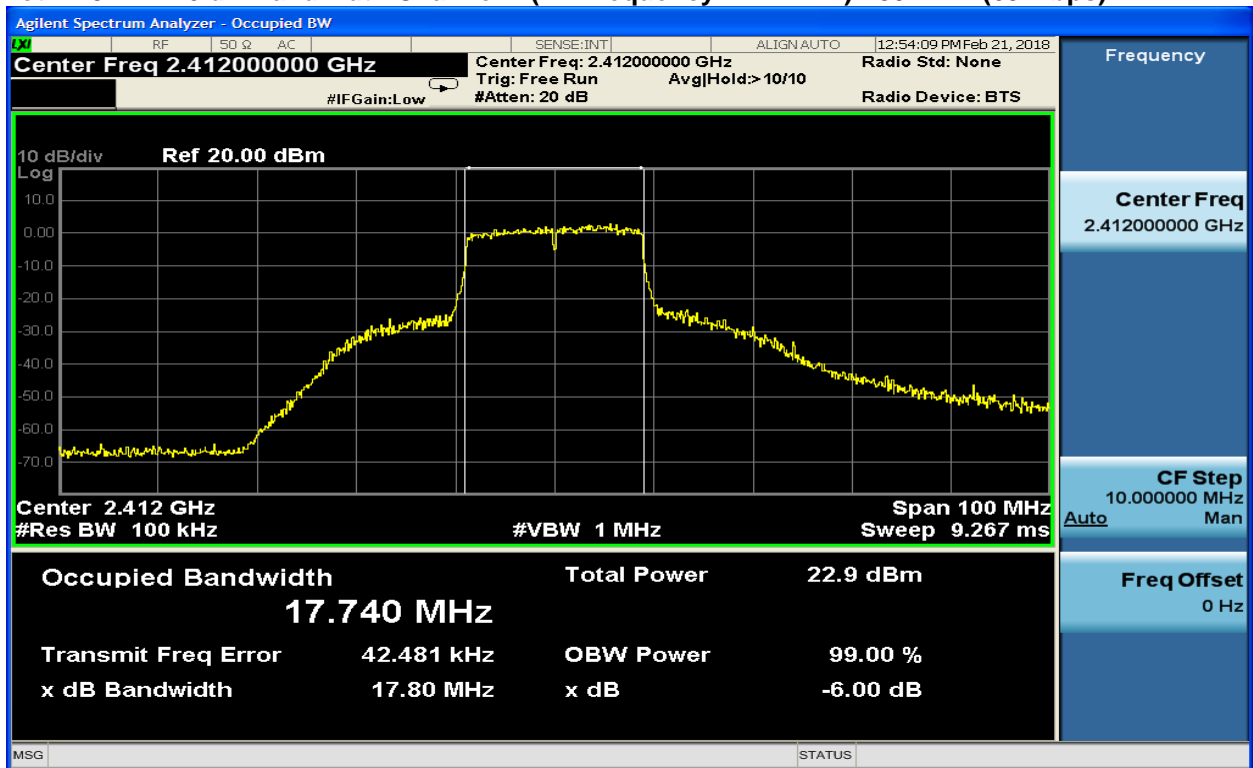
**Plot 7-17: 6 dB Bandwidth Channel 6 (TX Frequency 2437 MHz) - 802.11g (54 Mbps)**



**Plot 7-18: 6 dB Bandwidth Channel 11 (TX Frequency 2462 MHz) - 802.11g (54 Mbps)**

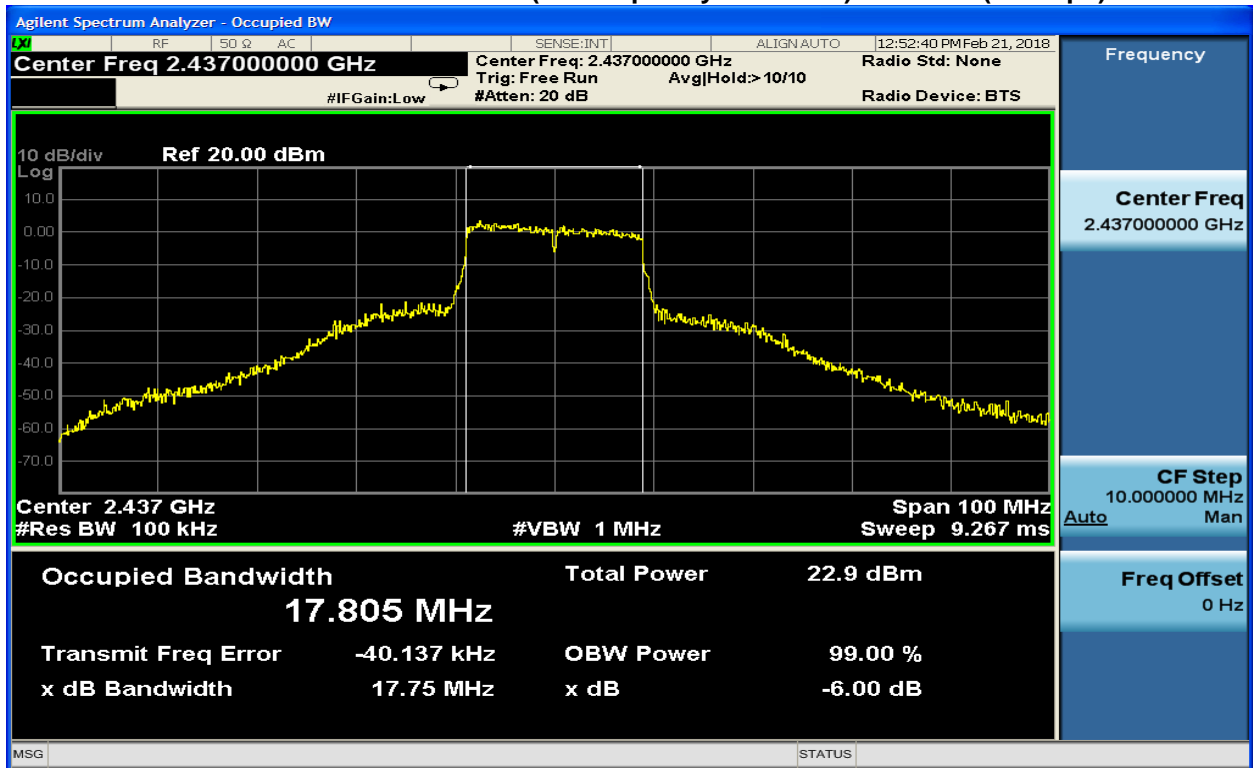


**Plot 7-19: 6 dB Bandwidth Channel 1 (TX Frequency 2412 MHz) - 802.11n (65 Mbps)**

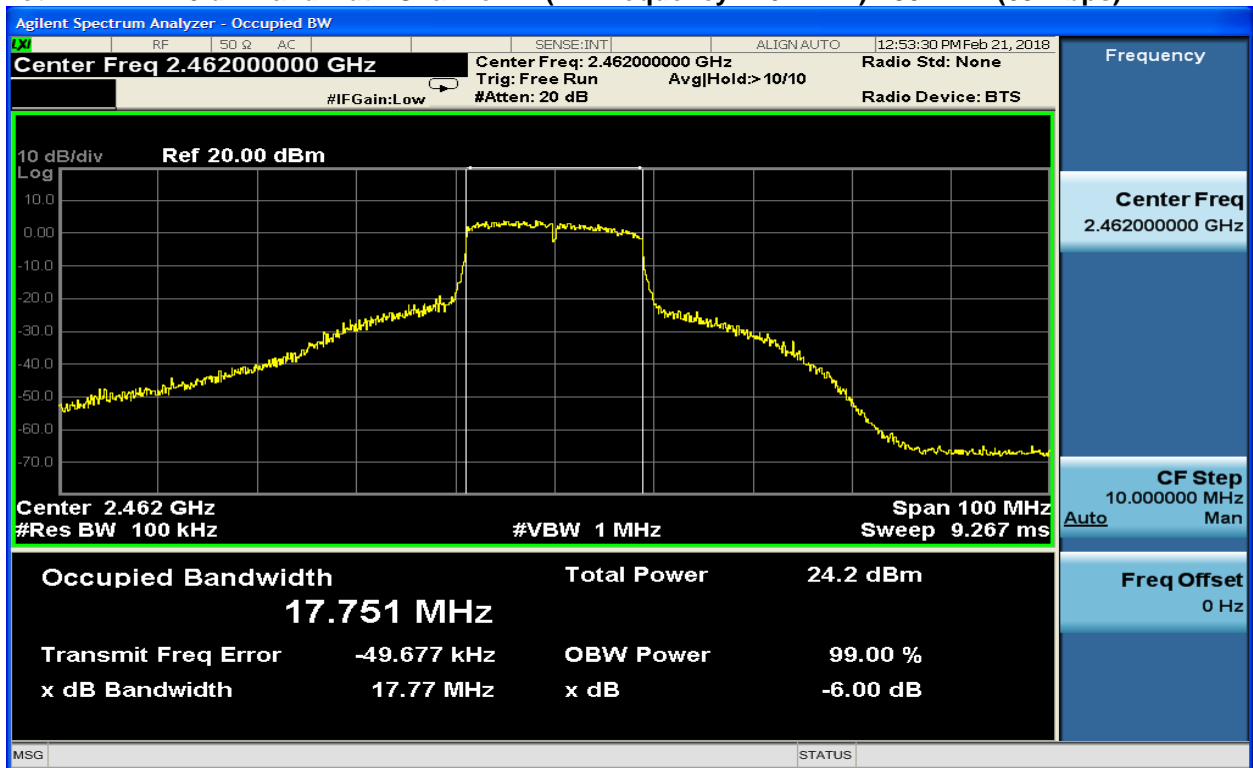




**Plot 7-20: 6 dB Bandwidth Channel 6 (TX Frequency 2437 MHz) - 802.11n (65 Mbps)**



**Plot 7-21: 6 dB Bandwidth Channel 11 (TX Frequency 2462 MHz) - 802.11n (65 Mbps)**



Measurement uncertainty: Measurement uncertainties shown for these tests are expanded uncertainties expressed at 95% confidence level using a coverage factor  $k = 2$ . Measurement uncertainty =  $-2 \text{ dB}/+2 \text{ dB}$ .

**Table 7-8: 6 dB Bandwidth Test Equipment**

| RTL Asset # | Manufacturer         | Model  | Part Type                            | Serial Number | Calibration Due Date |
|-------------|----------------------|--------|--------------------------------------|---------------|----------------------|
| 901583      | Agilent Technologies | N9010A | EXA Signal Analyzer (10 Hz-26.5 GHz) | MY51250846    | 2/6/20               |

**PASS**

**Test Personnel:**

---

|                    |                                                                                   |                                |
|--------------------|-----------------------------------------------------------------------------------|--------------------------------|
| Daniel W. Baltzell |  | February 21, March 6 & 7, 2018 |
| Test Engineer      | Signature                                                                         | Dates of Test                  |

## 8 Power Spectral Density – FCC 15.247(e); RSS-247 5.2(b)

### 8.1 Power Spectral Density Test Procedure

The power spectral density per FCC 15.247(e) was measured using a 50-ohm spectrum analyzer with the resolution bandwidth set at 3 kHz, the video bandwidth set at 30 kHz, and the auto sweep time. The spectral lines were resolved for the modulated carriers at 2412 MHz, 2437 MHz and 2462 MHz. These levels are below the +8 dBm limit. See the power spectral density table and plots.

### 8.2 Power Spectral Density Test Data

**Table 8-1: Power Spectral Density Test Data – ANT+**

| Channel | Frequency (MHz) | RF Power Level (dBm) | Maximum Limit +8dBm | Pass/Fail |
|---------|-----------------|----------------------|---------------------|-----------|
| Low     | 2402            | -2.7                 | 8                   | Pass      |
| Mid     | 2441            | -1.5                 | 8                   | Pass      |
| High    | 2480            | -4.3                 | 8                   | Pass      |

**Table 8-2: Power Spectral Density Test Data – BLE PRB29**

| Channel | Frequency (MHz) | RF Power Level (dBm) | Maximum Limit +8dBm | Pass/Fail |
|---------|-----------------|----------------------|---------------------|-----------|
| 0       | 2402            | -9.9                 | 8                   | Pass      |
| 19      | 2440            | -9.4                 | 8                   | Pass      |
| 39      | 2480            | -12.1                | 8                   | Pass      |

**Table 8-3: Power Spectral Density Test Data – BLE 0x0F**

| Channel | Frequency (MHz) | RF Power Level (dBm) | Maximum Limit +8dBm | Pass/Fail |
|---------|-----------------|----------------------|---------------------|-----------|
| 0       | 2402            | -8.1                 | 8                   | Pass      |
| 19      | 2440            | -7.5                 | 8                   | Pass      |
| 39      | 2480            | -10.4                | 8                   | Pass      |

**Table 8-4: Power Spectral Density Test Data – BLE 0x55**

| Channel | Frequency (MHz) | RF Power Level (dBm) | Maximum Limit +8dBm | Pass/Fail |
|---------|-----------------|----------------------|---------------------|-----------|
| 0       | 2402            | -9.9                 | 8                   | Pass      |
| 19      | 2440            | -9.4                 | 8                   | Pass      |
| 39      | 2480            | -12.2                | 8                   | Pass      |

**Table 8-5: Power Spectral Density Test Data – 802.11b (11 Mbps)**

| Channel | Frequency (MHz) | RF Power Level (dBm) | Maximum Limit +8dBm | Pass/Fail |
|---------|-----------------|----------------------|---------------------|-----------|
| 1       | 2412            | -7.4                 | 8                   | Pass      |
| 6       | 2437            | -8.4                 | 8                   | Pass      |
| 11      | 2462            | -6.2                 | 8                   | Pass      |

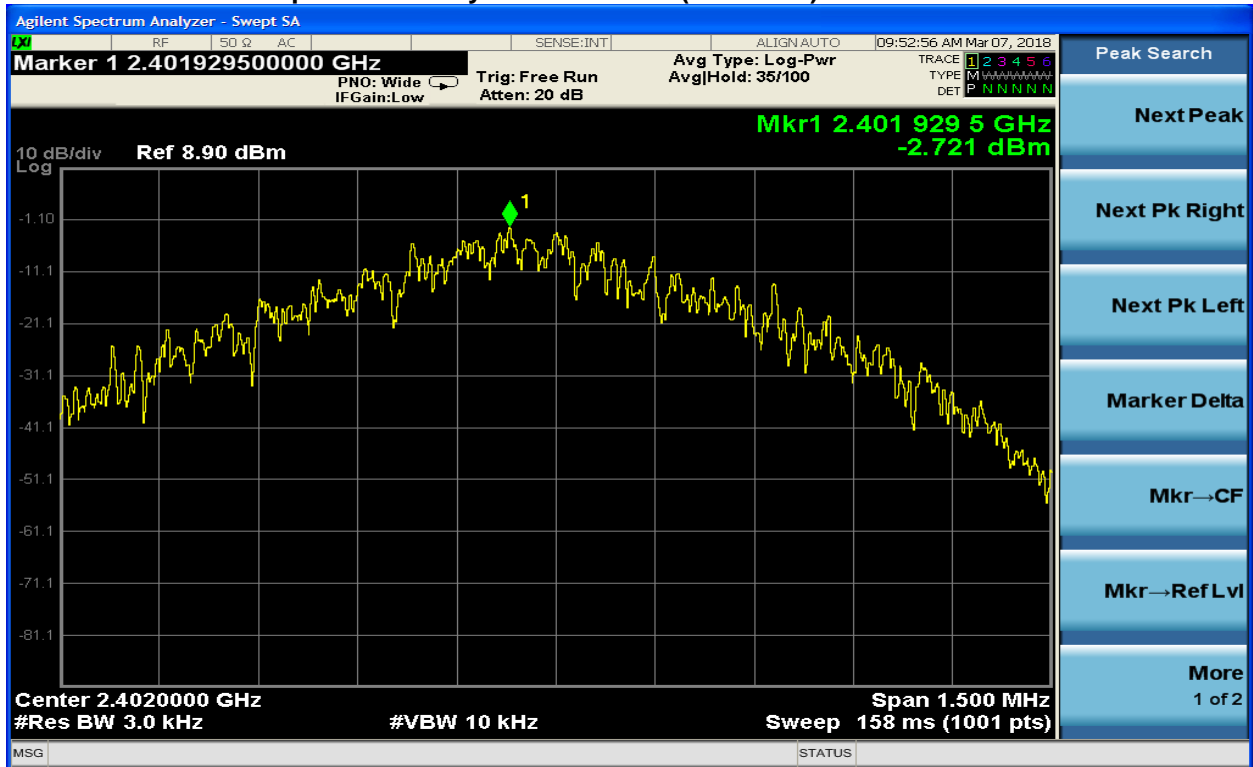
**Table 8-6: Power Spectral Density Test Data – 802.11g (54 Mbps)**

| Channel | Frequency (MHz) | RF Power Level (dBm) | Maximum Limit +8dBm | Pass/Fail |
|---------|-----------------|----------------------|---------------------|-----------|
| 1       | 2412            | -9.1                 | 8                   | Pass      |
| 6       | 2437            | -11.1                | 8                   | Pass      |
| 11      | 2462            | -8.6                 | 8                   | Pass      |

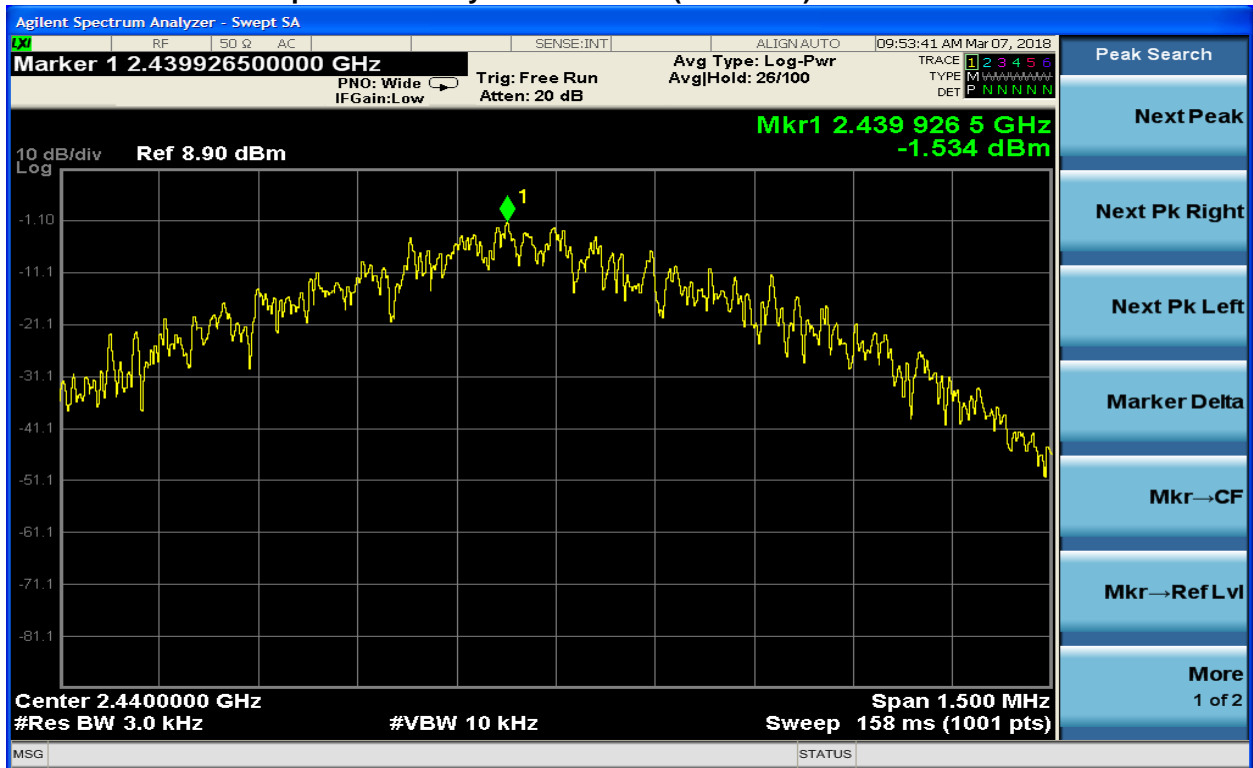
**Table 8-7: Power Spectral Density Test Data – 802.11n (65 Mbps)**

| Channel | Frequency (MHz) | RF Power Level (dBm) | Maximum Limit +8dBm | Pass/Fail |
|---------|-----------------|----------------------|---------------------|-----------|
| 1       | 2412            | -10.6                | 8                   | Pass      |
| 6       | 2437            | -11.2                | 8                   | Pass      |
| 11      | 2462            | -9.0                 | 8                   | Pass      |

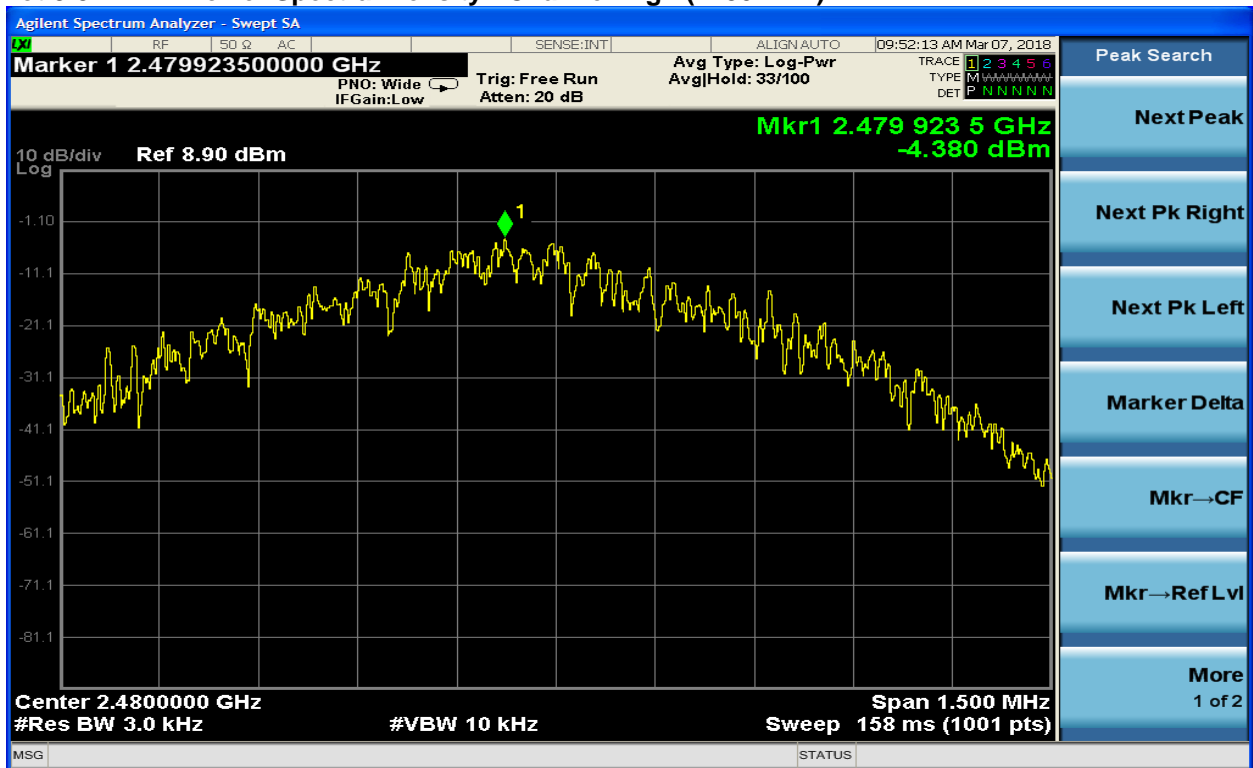
**Plot 8-1: Power Spectral Density: Channel Low (2402 MHz) - ANT+**



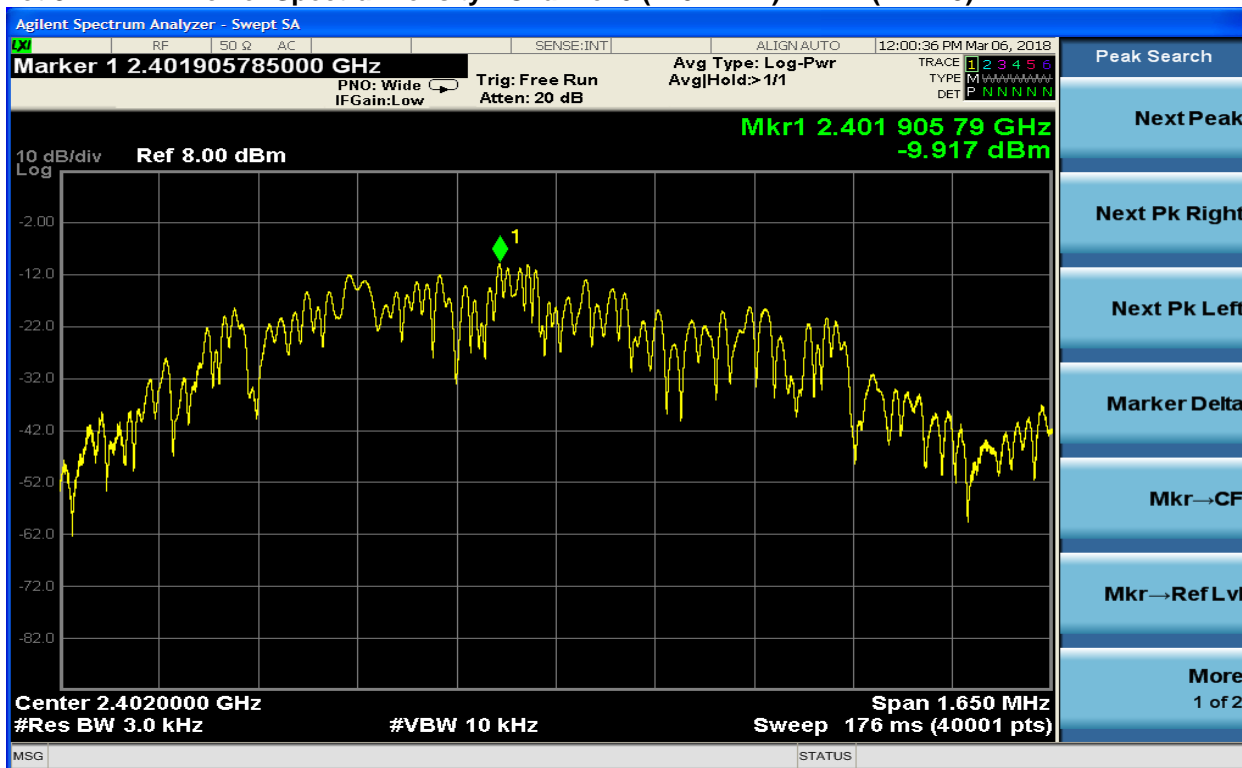
**Plot 8-2: Power Spectral Density: Channel Mid (2441 MHz) - ANT+**



**Plot 8-3: Power Spectral Density: Channel High (2480 MHz) - ANT+**



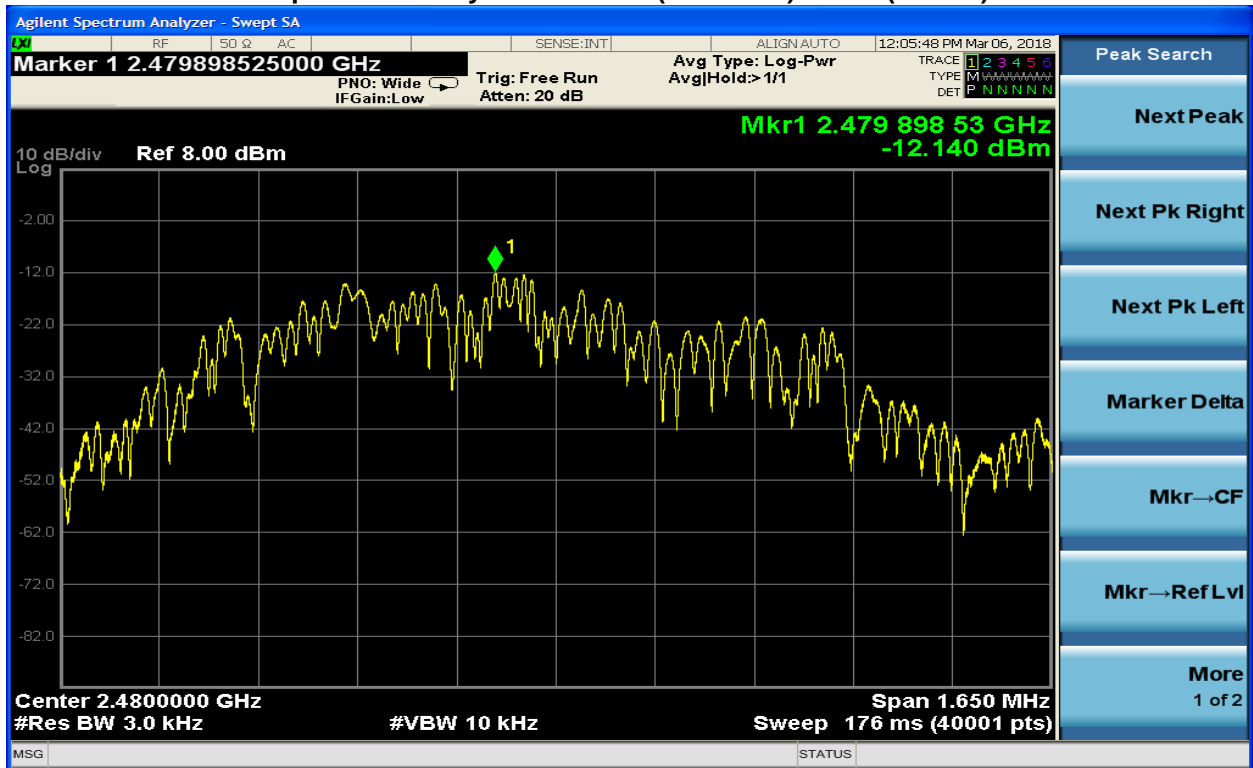
Plot 8-4: Power Spectral Density: Channel 0 (2402 MHz) – BLE (PRB29)



Plot 8-5: Power Spectral Density: Channel 19 (2440 MHz) – BLE (PRB29)



**Plot 8-6: Power Spectral Density: Channel 39 (2480 MHz) – BLE (PRB29)**



**Plot 8-7: Power Spectral Density: Channel 0 (2402 MHz) – BLE (0x0F)**



**Plot 8-8: Power Spectral Density: Channel 19 (2440 MHz) – BLE (0x0F)**



**Plot 8-9: Power Spectral Density: Channel 39 (2480 MHz) – BLE (0x0F)**





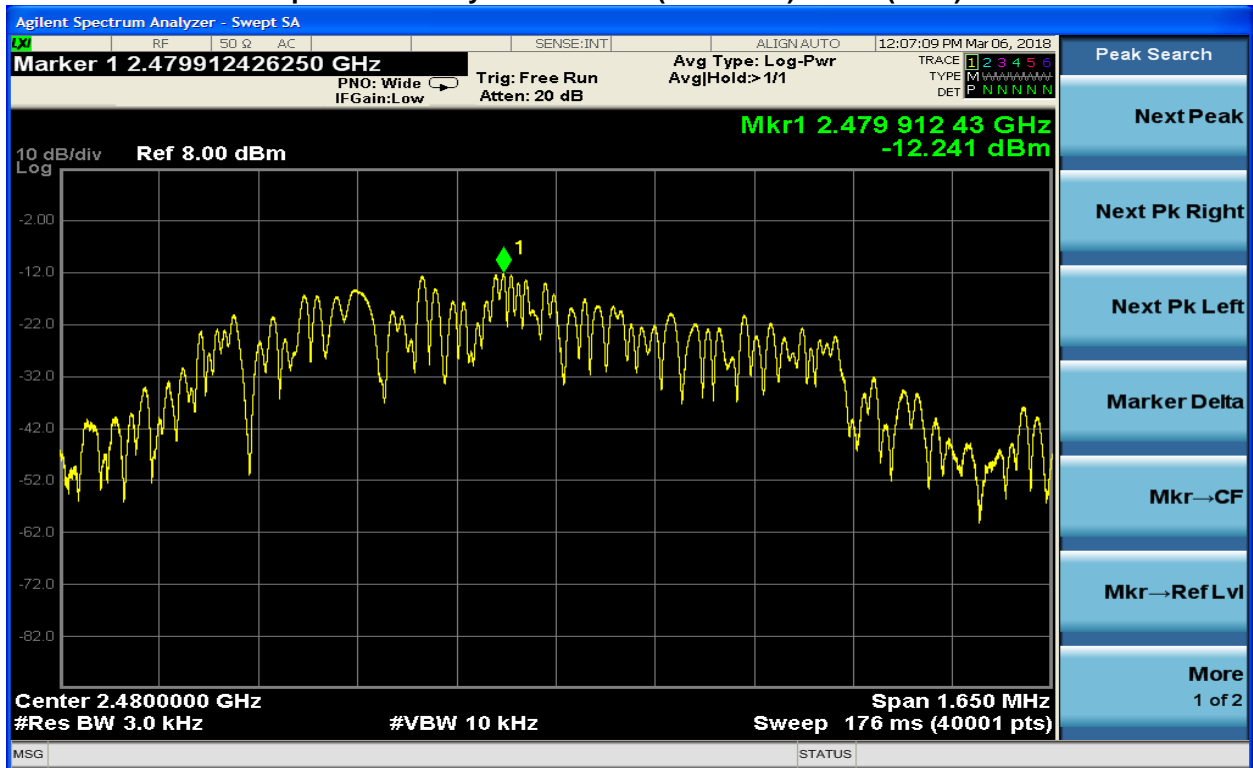
**Plot 8-10: Power Spectral Density: Channel 0 (2402 MHz) – BLE (0x55)**



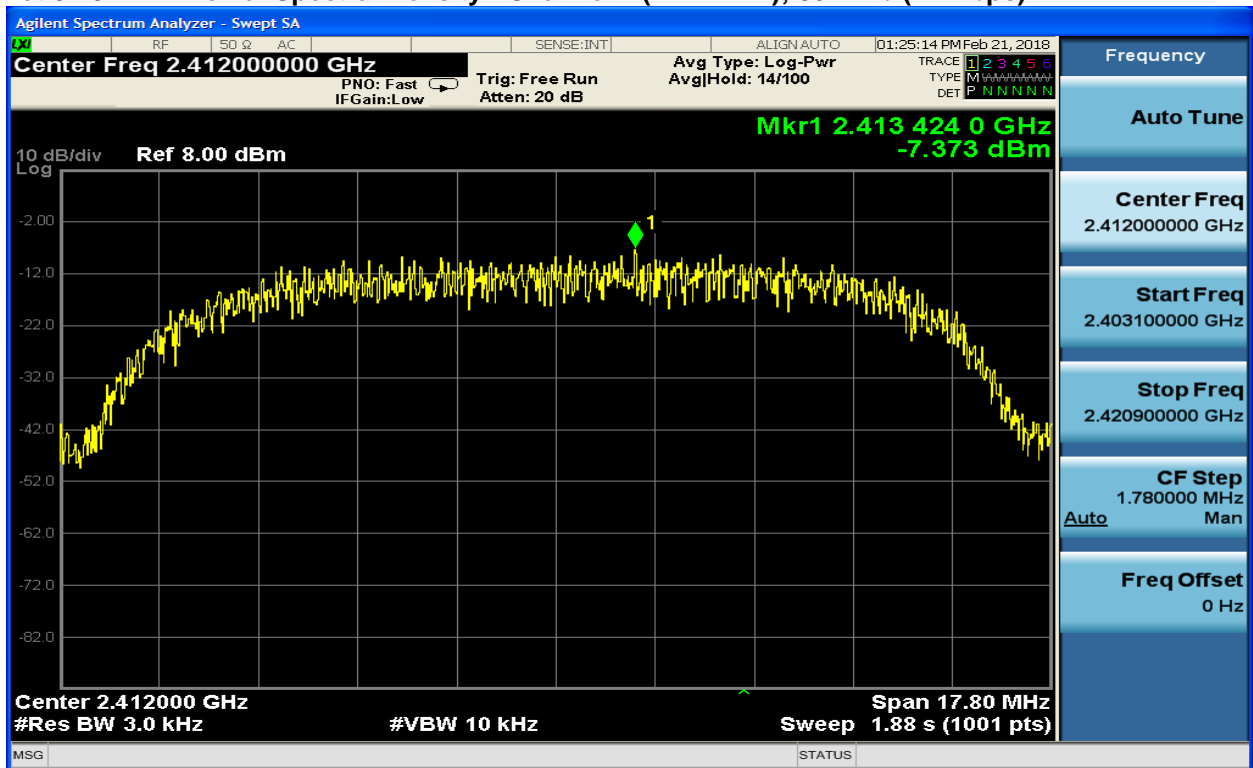
**Plot 8-11: Power Spectral Density: Channel 19 (2440 MHz) – BLE (0x55)**



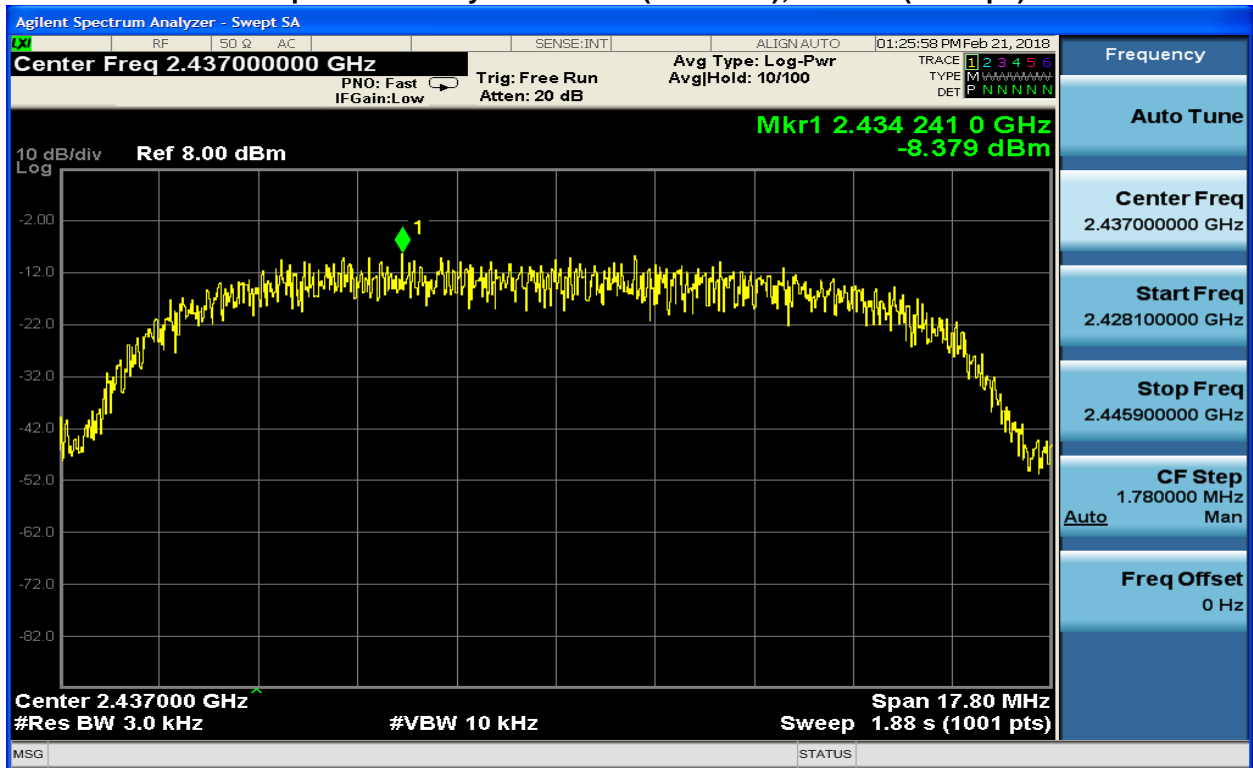
Plot 8-12: Power Spectral Density: Channel 39 (2480 MHz) – BLE (0x55)



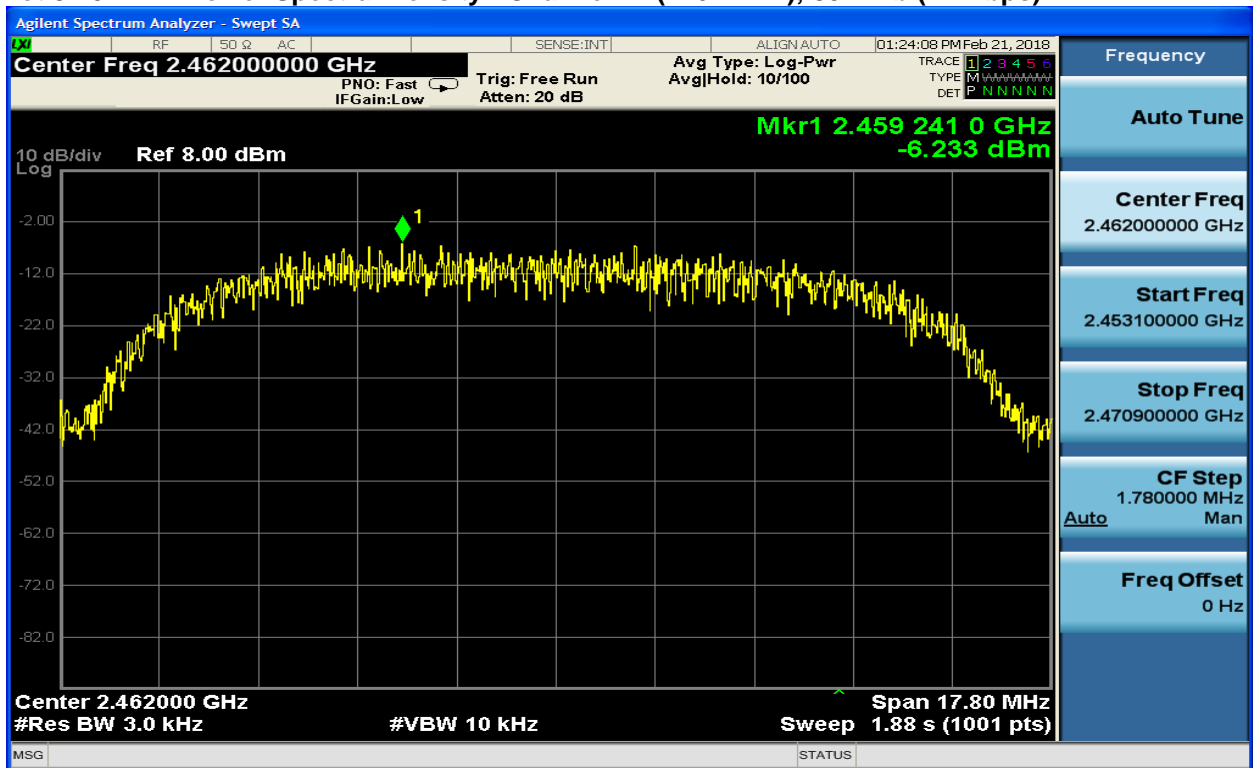
Plot 8-13: Power Spectral Density: Channel 1 (2412 MHz); 802.11b (11 Mbps)



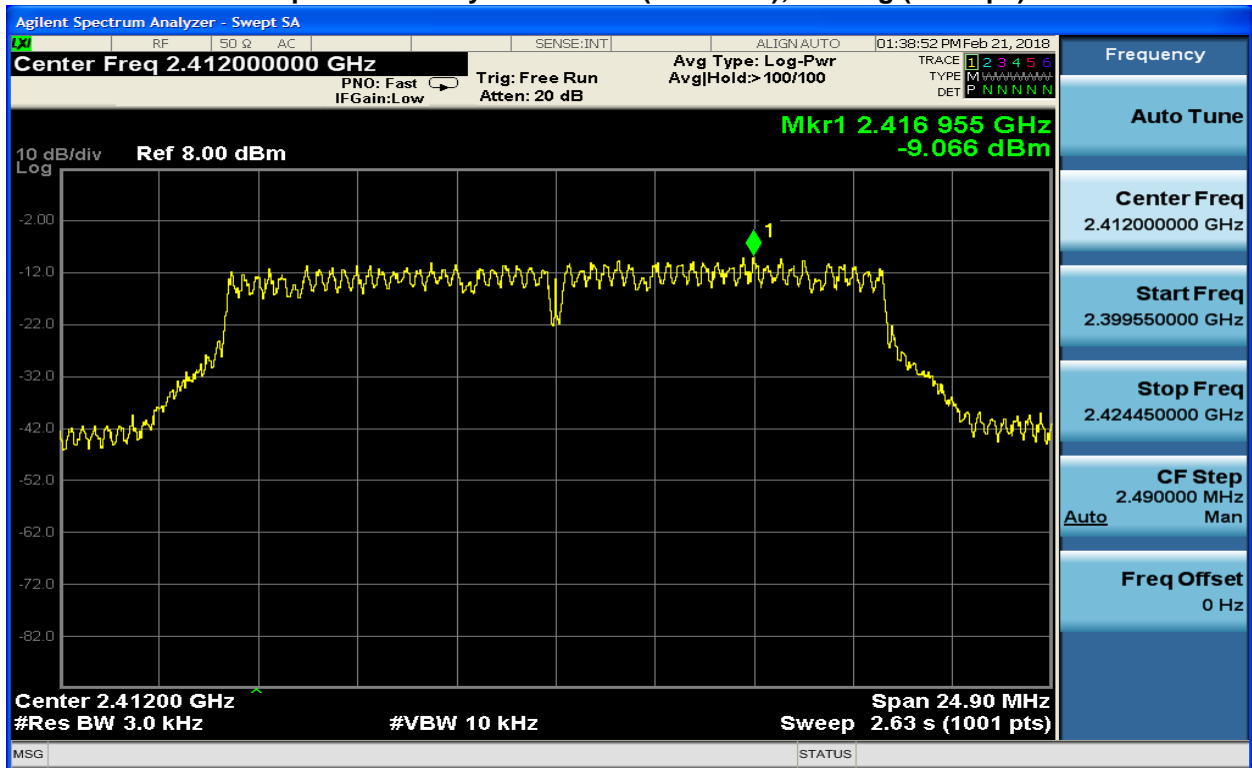
**Plot 8-14: Power Spectral Density: Channel 6 (2437 MHz); 802.11b (11 Mbps)**



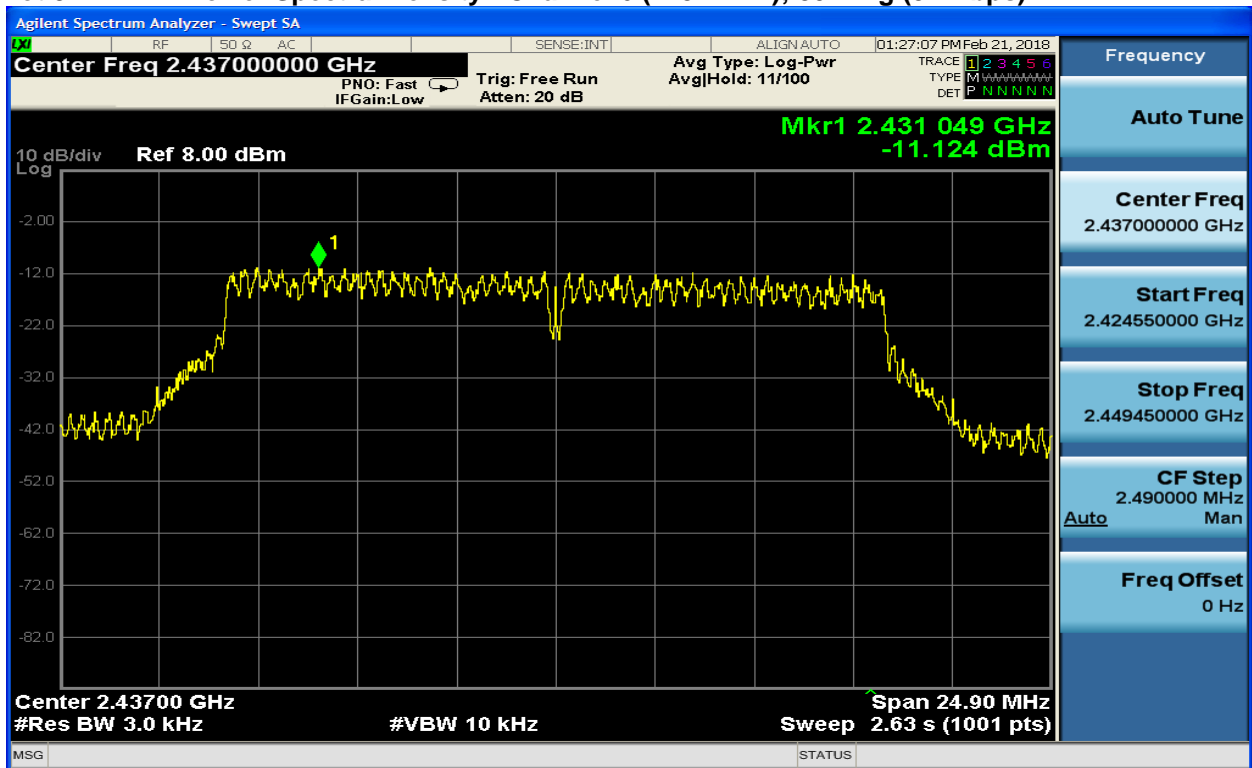
**Plot 8-15: Power Spectral Density: Channel 11 (2462 MHz); 802.11b (11 Mbps)**



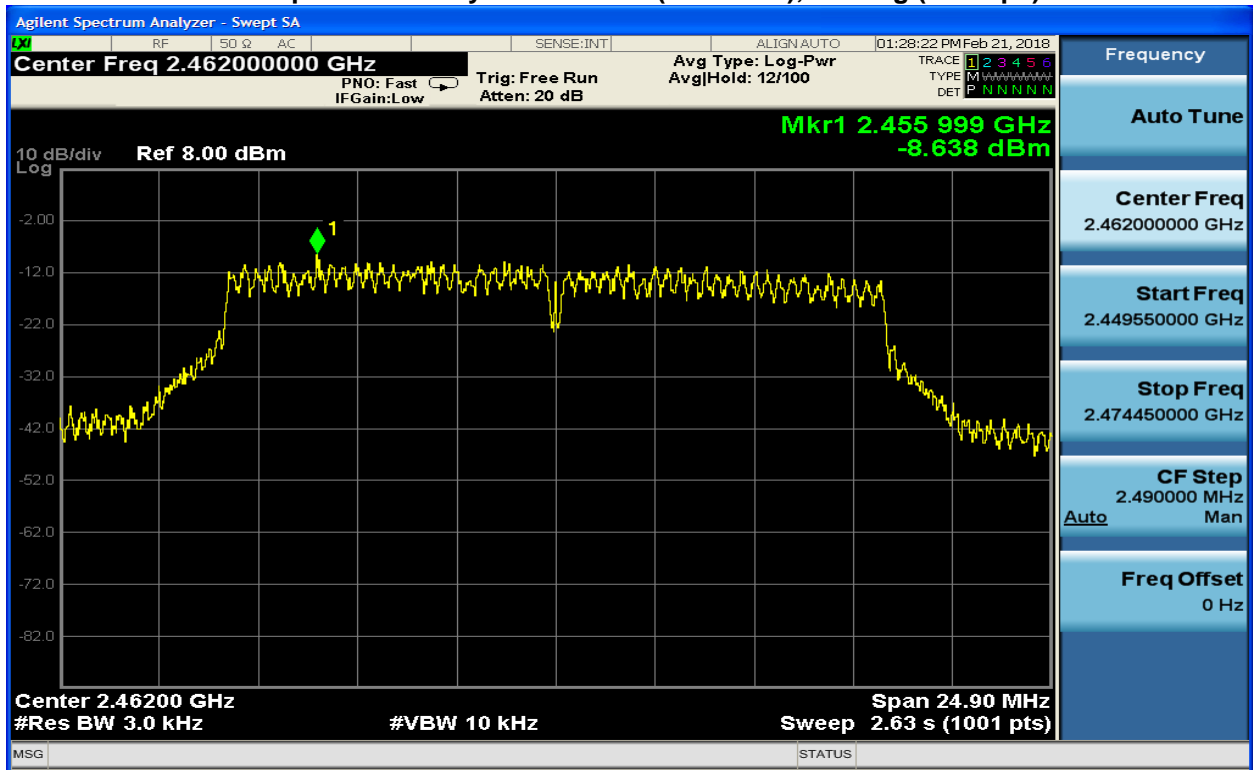
**Plot 8-16: Power Spectral Density: Channel 1 (2412 MHz); 802.11g (54 Mbps)**



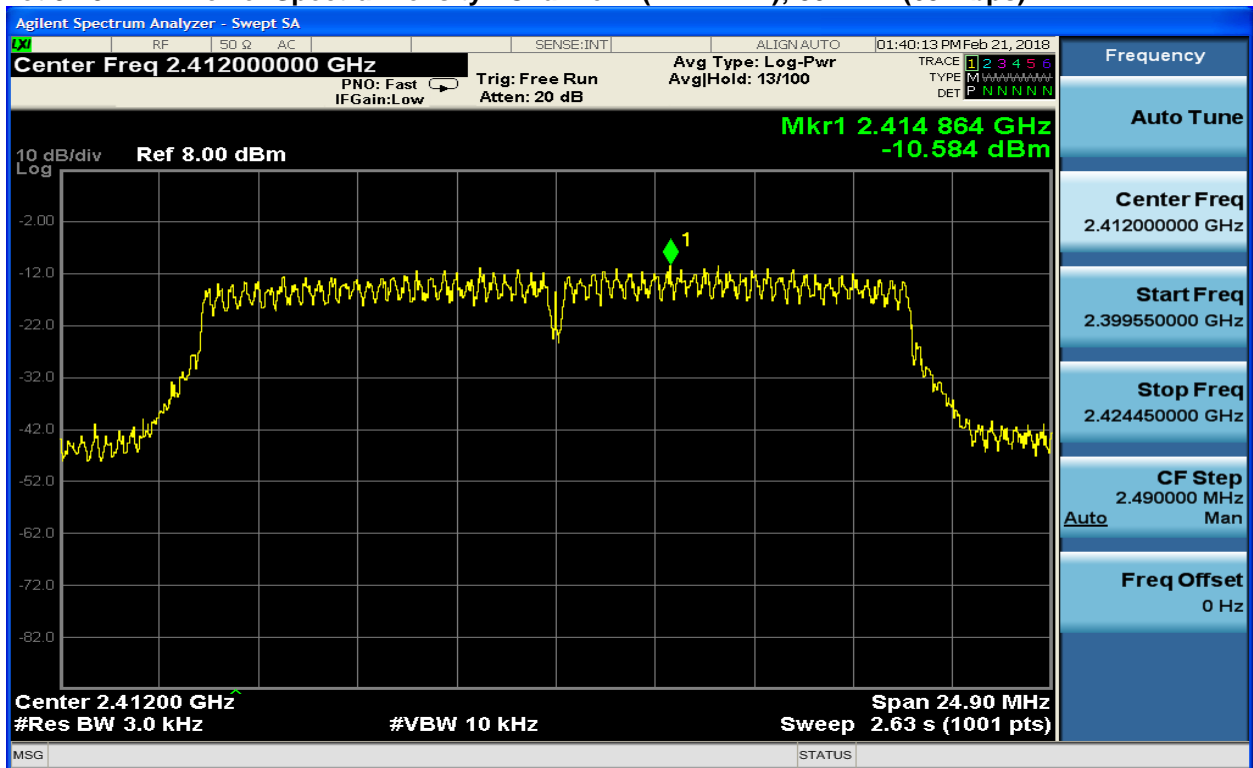
**Plot 8-17: Power Spectral Density: Channel 6 (2437 MHz); 802.11g (54 Mbps)**



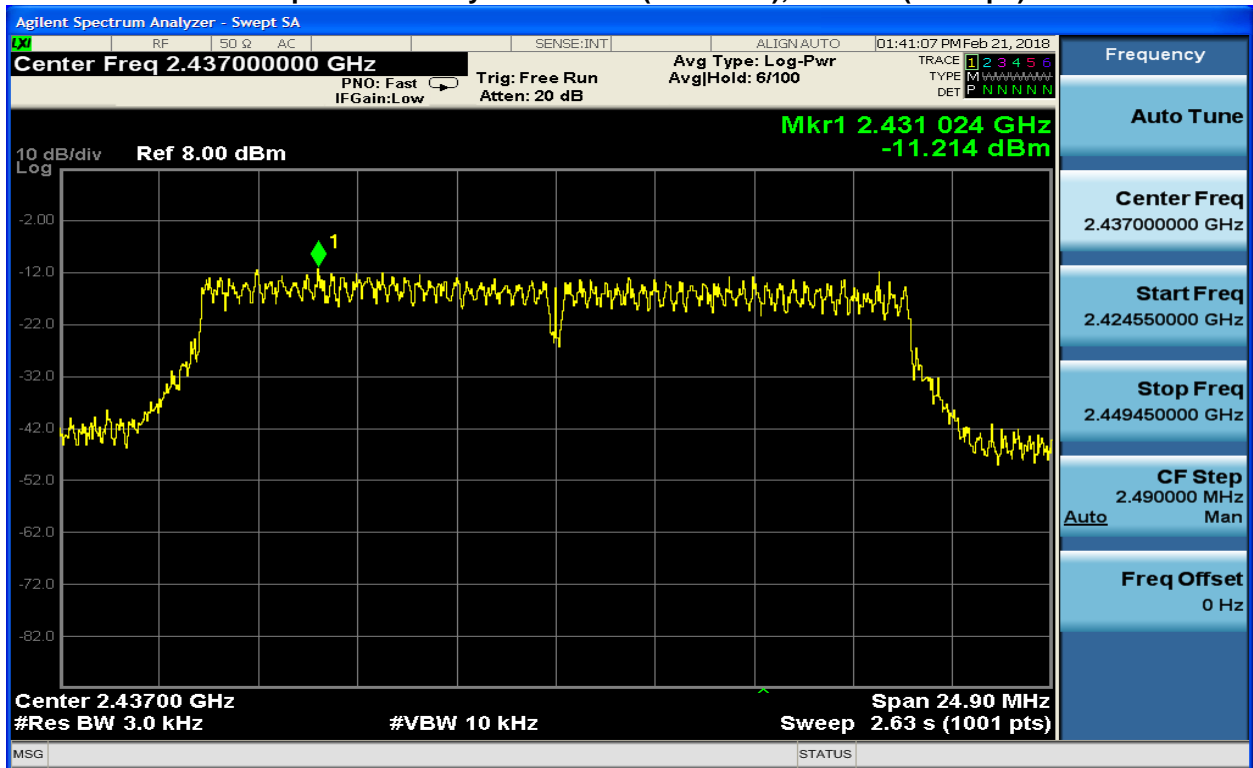
**Plot 8-18: Power Spectral Density: Channel 11 (2462 MHz); 802.11g (54 Mbps)**



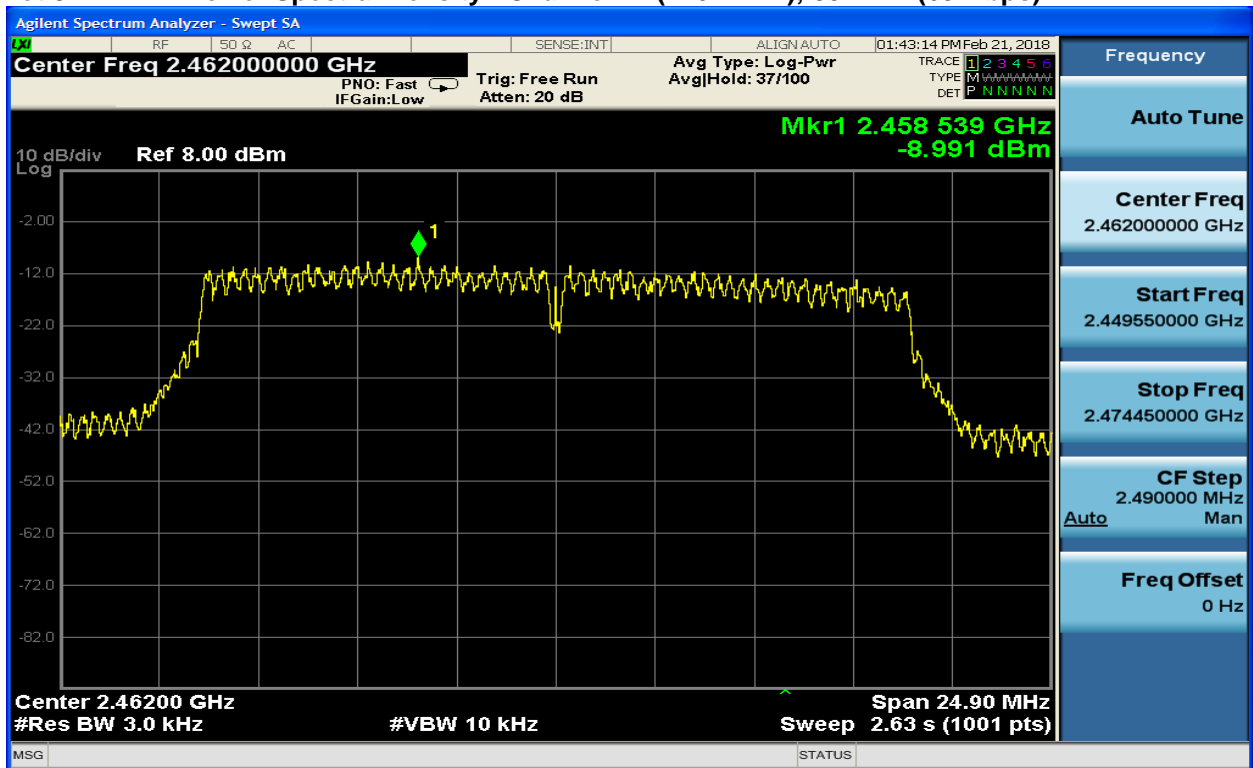
**Plot 8-19: Power Spectral Density: Channel 1 (2412 MHz); 802.11n (65 Mbps)**



**Plot 8-20: Power Spectral Density: Channel 6 (2437 MHz); 802.11n (65 Mbps)**



**Plot 8-21: Power Spectral Density: Channel 11 (2462 MHz); 802.11n (65 Mbps)**



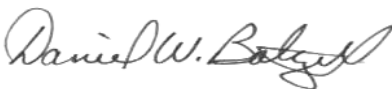

Measurement uncertainties shown for these tests are expanded Gaussian uncertainties expressed at 95% confidence level using a coverage factor  $k = 1.96$ . Measurement uncertainty = 0.5 dB.

**PASS**

**Table 8-8: Power Spectral Density Test Equipment**

| RTL Asset # | Manufacturer         | Model  | Part Type                            | Serial Number | Calibration Due Date |
|-------------|----------------------|--------|--------------------------------------|---------------|----------------------|
| 901583      | Agilent Technologies | N9010A | EXA Signal Analyzer (10 Hz-26.5 GHz) | MY51250846    | 2/6/20               |

**Test Personnel:**

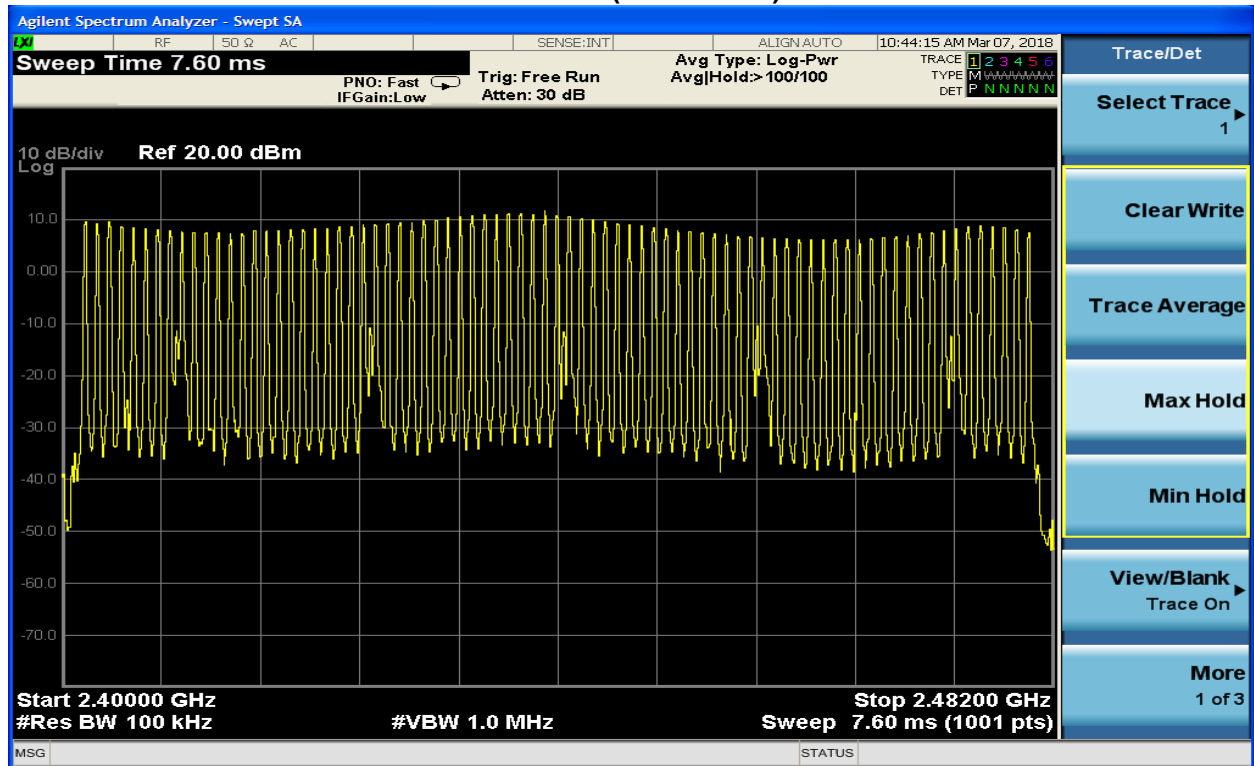
|                                     |                                                                                    |                                   |
|-------------------------------------|------------------------------------------------------------------------------------|-----------------------------------|
| Daniel W. Baltzell<br>Test Engineer |  | February 21, 2018<br>Date of Test |
| Khue Do<br>Test Engineer            |   | March 6-7, 2018<br>Dates of Test  |

### 9 Hopping Characteristics – FCC 15.247(a)(1); RSS-247 5.1

15.247(a)(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. 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.

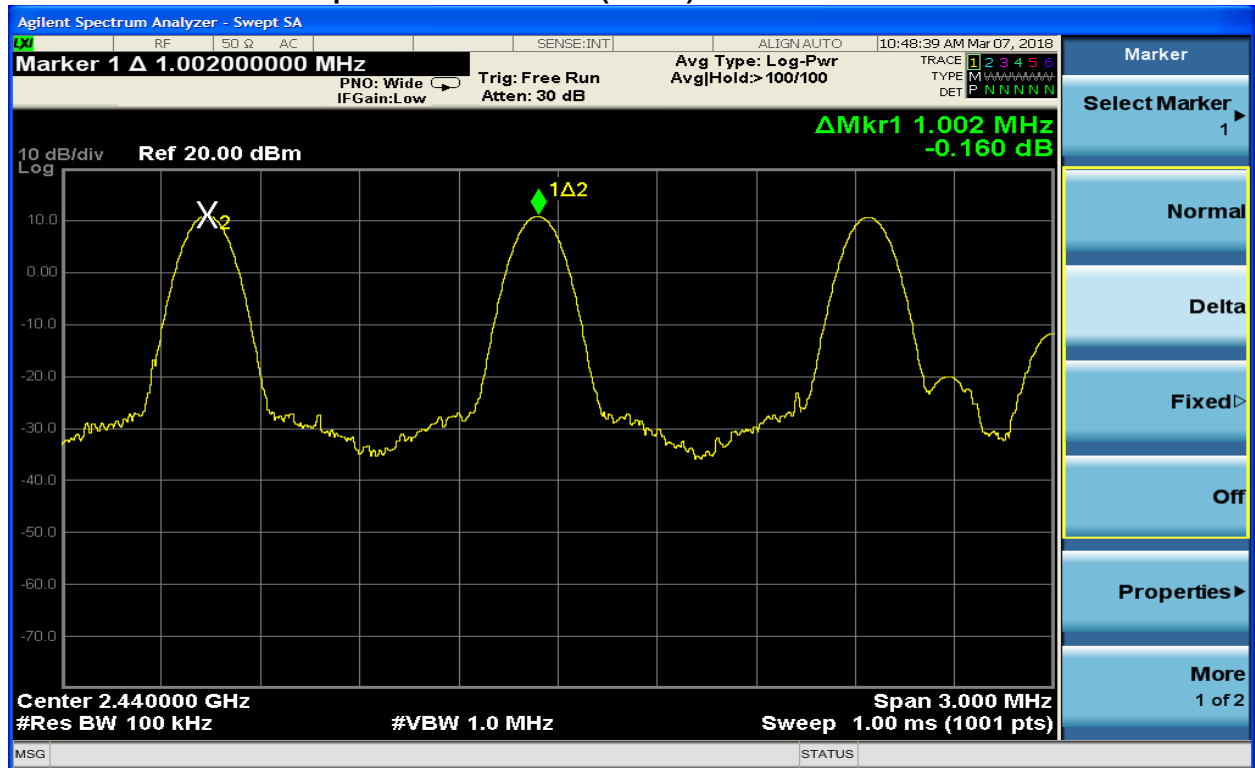
15.247(a)(1)(iii) Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

**Plot 9-1: Number of Channels – Bluetooth (79 channels)**

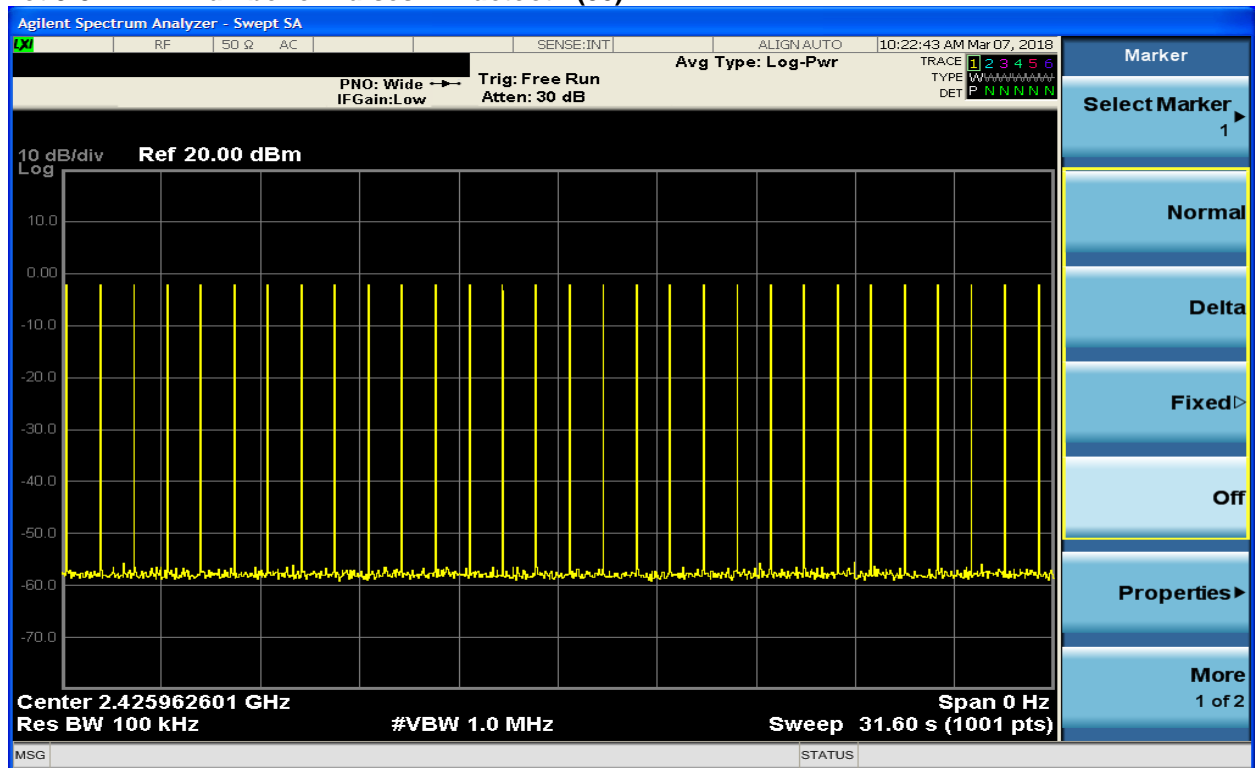




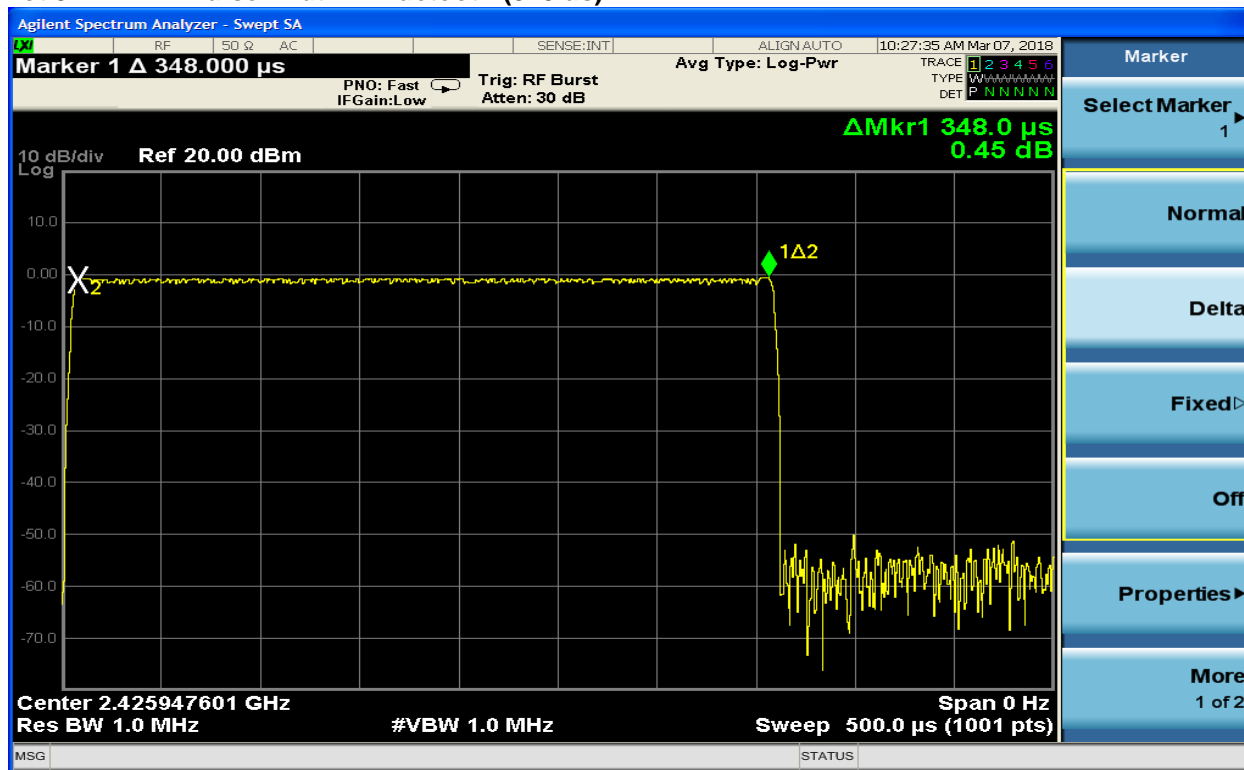
Plot 9-2: Channel Separation – Bluetooth (1 MHz)



Plot 9-3: Number of Pulses – Bluetooth (30)



**Plot 9-4: Pulse Width – Bluetooth (348 us)**



Number of pulses in 79 \* 0.4 (31.6) seconds = 30  
 Pulse width 348 us x 30 = 0.01 s which is less than 0.400s (limit)

Measurement uncertainty: ±1.4%. This measurement uncertainty is an expanded uncertainty for 95.45% confidence level received with a coverage factor k=2.

**Pass**

**Table 9-1: Hopping Mode Characteristics Test Equipment**

| RTL Asset # | Manufacturer         | Model  | Part Type                            | Serial Number | Calibration Due Date |
|-------------|----------------------|--------|--------------------------------------|---------------|----------------------|
| 901583      | Agilent Technologies | N9010A | EXA Signal Analyzer (10 Hz-26.5 GHz) | MY51250846    | 2/6/20               |

**PASS**

Test Personnel:

Khue Do  
 Test Engineer

*[Handwritten Signature]*  
 Signature

March 7, 2018  
 Date of Test

**10 Radiated Emissions – FCC 15.209; RSS-247 6.2 and RSS-Gen**

**10.1 Limits of Radiated Emissions Measurement**

| Frequency (MHz) | Field Strength (uV/m) | Measurement Distance (m) |
|-----------------|-----------------------|--------------------------|
| 0.009-0.490     | 2400/f (kHz)          | 300                      |
| 0.490-1.705     | 2400/f (kHz)          | 30                       |
| 1.705-30.0      | 30                    | 30                       |
| 30-88           | 100                   | 3                        |
| 88-216          | 150                   | 3                        |
| 216-960         | 200                   | 3                        |
| Above 960       | 500                   | 3                        |

As shown in 15.35(b), for frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any circumstances of modulation.

**10.2 Radiated Emissions Measurement Test Procedure**

Before final measurements of radiated emissions were made on the open-field three/ten meter range, the EUT was scanned indoors at one and three meter distances. This was done in order to determine its emissions spectrum signature. The physical arrangement of the test system and associated cabling was varied in order to determine the effect on the EUT's emissions in amplitude, direction and frequency. This process was repeated during final radiated emissions measurements on the open-field range, at each frequency, in order to ensure that maximum emission amplitudes were attained.

Final radiated emissions measurements were made on the three/ten-meter, open-field test site. The EUT was placed on a nonconductive turntable 0.8 meters above the ground plane. The spectrum was examined from 9 kHz to the 10<sup>th</sup> harmonic of the highest fundamental transmitter frequency (24.8 GHz) for the 2.4 GHz band.

At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the emission's maximum level. Measurements were taken using both horizontal and vertical antenna polarizations. For frequencies between 30 and 1000 MHz, the spectrum analyzer's 6 dB bandwidth was set to 120 kHz, and the analyzer was operated in the CISPR quasi-peak detection mode. For emissions above 1000 MHz, emissions are measured using the average detector function with a minimum resolution bandwidth of 1 MHz. No video filter less than 10 times the resolution bandwidth was used. The highest emission amplitudes relative to the appropriate limit were measured and recorded in this report.

### 10.3 Radiated Emissions Test Results

**Table 10-1: Radiated Emissions Harmonics/Spurious - 2412 MHz, 802.11b, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 4824.0          | 39.3                   | 0.2                           | 39.5                    | 74.0                | -34.5            |
| 12060.0         | 44.3                   | 3.2                           | 47.5                    | 74.0                | -26.5            |
| 14472.0         | 42.5                   | 8.6                           | 51.1                    | 74.0                | -22.9            |
| 19296.0         | 33.0                   | 13.2                          | 46.2                    | 74.0                | -27.8            |

**Table 10-2: Radiated Emissions Harmonics/Spurious - 2412 MHz, 802.11b, Average Detector**

| Frequency (MHz) | Average Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 4824.0          | 37.7                      | 0.2                           | 37.9                       | 54.0                   | -16.1               |
| 12060.0         | 39.4                      | 3.2                           | 42.6                       | 54.0                   | -11.4               |
| 14472.0         | 35.4                      | 8.6                           | 44.0                       | 54.0                   | -10.0               |
| 19296.0         | 30.3                      | 13.2                          | 43.5                       | 54.0                   | -10.5               |

**Table 10-3: Radiated Emissions Harmonics/Spurious- 2412 MHz, 802.11g, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 4824.0          | 37.8                   | 0.2                           | 38.0                    | 74.0                | -36.0            |
| 12060.0         | 44.5                   | 3.2                           | 47.7                    | 74.0                | -26.3            |
| 14472.0         | 45.0                   | 8.6                           | 53.6                    | 74.0                | -20.4            |
| 19296.0         | 35.9                   | 13.2                          | 49.1                    | 74.0                | -24.9            |

**Table 10-4: Radiated Emissions Harmonics/Spurious - 2412 MHz, 802.11g, Average Detector**

| Frequency (MHz) | Average Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 4824.0          | 35.6                      | 0.2                           | 35.8                       | 54.0                   | -18.2               |
| 12060.0         | 38.2                      | 3.2                           | 41.4                       | 54.0                   | -12.6               |
| 14472.0         | 36.3                      | 8.6                           | 44.9                       | 54.0                   | -9.1                |
| 19296.0         | 33.2                      | 13.2                          | 46.4                       | 54.0                   | -7.6                |

**Table 10-5: Radiated Emissions Harmonics/Spurious - 2412 MHz, 802.11n, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 4824.0          | 37.6                   | 0.2                           | 37.8                    | 74.0                | -36.2            |
| 12060.0         | 44.7                   | 3.2                           | 47.9                    | 74.0                | -26.1            |
| 14472.0         | 43.1                   | 8.6                           | 51.7                    | 74.0                | -22.3            |
| 19296.0         | 35.8                   | 13.2                          | 49.0                    | 74.0                | -25.0            |

**Table 10-6: Radiated Emissions Harmonics/Spurious - 2412 MHz, 802.11n, Average Detector**

| Frequency (MHz) | Average Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 4824.0          | 34.8                      | 0.2                           | 35.0                       | 54.0                   | -19.0               |
| 12060.0         | 38.5                      | 3.2                           | 41.7                       | 54.0                   | -12.3               |
| 14472.0         | 35.0                      | 8.6                           | 43.6                       | 54.0                   | -10.4               |
| 19296.0         | 33.0                      | 13.2                          | 46.2                       | 54.0                   | -7.8                |

**Table 10-7: Radiated Emissions Harmonics/Spurious - 2437 MHz, 802.11b, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 4874.0          | 38.5                   | 0.2                           | 38.7                    | 74.0                | -35.3            |
| 7311.0          | 42.9                   | -1.5                          | 41.4                    | 74.0                | -32.6            |
| 12185.0         | 43.7                   | 3.2                           | 46.9                    | 74.0                | -27.1            |
| 19496.0         | 35.2                   | 13.2                          | 48.4                    | 74.0                | -25.6            |

**Table 10-8: Radiated Emissions Harmonics/Spurious - 2437 MHz, 802.11b, Average Detector**

| Frequency (MHz) | Average Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 4874.0          | 36.5                      | 0.2                           | 36.7                       | 54.0                   | -17.3               |
| 7311.0          | 34.2                      | -1.5                          | 32.7                       | 54.0                   | -21.3               |
| 12185.0         | 39.0                      | 3.2                           | 42.2                       | 54.0                   | -11.8               |
| 19496.0         | 32.5                      | 13.2                          | 45.7                       | 54.0                   | -8.3                |

**Table 10-9: Radiated Emissions Harmonics/Spurious - 2437 MHz, 802.11g, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 4874.0          | 37.6                   | 0.2                           | 37.8                    | 74.0                | -36.2            |
| 7311.0          | 41.5                   | -1.5                          | 40.0                    | 74.0                | -34.0            |
| 12185.0         | 45.1                   | 3.2                           | 48.3                    | 74.0                | -25.7            |
| 19496.0         | 36.4                   | 13.2                          | 49.6                    | 74.0                | -24.4            |

**Table 10-10: Radiated Emissions Harmonics/Spurious - 2437 MHz, 802.11g, Average Detector**

| Frequency (MHz) | Average Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 4874.0          | 35.5                      | 0.2                           | 35.7                       | 54.0                   | -18.3               |
| 7311.0          | 31.9                      | -1.5                          | 30.4                       | 54.0                   | -23.6               |
| 12185.0         | 38.5                      | 3.2                           | 41.7                       | 54.0                   | -12.3               |
| 19496.0         | 32.3                      | 13.2                          | 45.5                       | 54.0                   | -8.5                |

**Table 10-11: Radiated Emissions Harmonics/Spurious - 2437 MHz, 802.11n, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 4874.0          | 37.7                   | 0.2                           | 37.9                    | 74.0                | -36.1            |
| 7311.0          | 41.8                   | -1.5                          | 40.3                    | 74.0                | -33.7            |
| 12185.0         | 41.8                   | 3.2                           | 45.0                    | 74.0                | -29.0            |
| 19496.0         | 36.5                   | 13.2                          | 49.7                    | 74.0                | -24.3            |

**Table 10-12: Radiated Emissions Harmonics/Spurious - 2437 MHz, 802.11n, Average Detector**

| Frequency (MHz) | Average Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 4874.0          | 35.3                      | 0.2                           | 35.5                       | 54.0                   | -18.5               |
| 7311.0          | 32.6                      | -1.5                          | 31.1                       | 54.0                   | -22.9               |
| 12185.0         | 35.6                      | 3.2                           | 38.8                       | 54.0                   | -15.2               |
| 19496.0         | 34.1                      | 13.2                          | 47.3                       | 54.0                   | -6.7                |

**Table 10-13: Radiated Emissions Harmonics/Spurious - 2462 MHz, 802.11b, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 4924.0          | 38.8                   | 0.2                           | 39.0                    | 74.0                | -35.0            |
| 7386.0          | 42.9                   | -1.5                          | 41.4                    | 74.0                | -32.6            |
| 12310.0         | 42.8                   | 3.2                           | 46.0                    | 74.0                | -28.0            |
| 19696.0         | 34.1                   | 13.2                          | 47.3                    | 74.0                | -26.7            |
| 22158.0         | 18.1                   | 12.0                          | 30.1                    | 74.0                | -43.9            |

**Table 10-14: Radiated Emissions Harmonics/Spurious - 2462 MHz, 802.11b, Average Detector**

| Frequency (MHz) | Average Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 4924.0          | 36.8                      | 0.2                           | 37.0                       | 54.0                   | -17.0               |
| 7386.0          | 32.4                      | -1.5                          | 30.9                       | 54.0                   | -23.1               |
| 12310.0         | 36.5                      | 3.2                           | 39.7                       | 54.0                   | -14.3               |
| 19696.0         | 31.2                      | 13.2                          | 44.4                       | 54.0                   | -9.6                |
| 22158.0         | 9.4                       | 12.0                          | 21.4                       | 54.0                   | -32.6               |

**Table 10-15: Radiated Emissions Harmonics/Spurious - 2462 MHz, 802.11g, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 4924.0          | 37.7                   | 0.2                           | 37.9                    | 74.0                | -36.1            |
| 7386.0          | 41.2                   | -1.5                          | 39.7                    | 74.0                | -34.3            |
| 12310.0         | 42.1                   | 3.2                           | 45.3                    | 74.0                | -28.7            |
| 19696.0         | 35.5                   | 13.2                          | 48.7                    | 74.0                | -25.3            |
| 22158.0         | 16.4                   | 12.0                          | 28.4                    | 74.0                | -45.6            |

**Table 10-16: Radiated Emissions Harmonics/Spurious - 2462 MHz, 802.11g, Average Detector**

| Frequency (MHz) | Average Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 4924.0          | 36.5                      | 0.2                           | 36.7                       | 54.0                   | -17.3               |
| 7386.0          | 31.8                      | -1.5                          | 30.3                       | 54.0                   | -23.7               |
| 12310.0         | 37.1                      | 3.2                           | 40.3                       | 54.0                   | -13.7               |
| 19696.0         | 32.2                      | 13.2                          | 45.4                       | 54.0                   | -8.6                |
| 22158.0         | 9.5                       | 12.0                          | 21.5                       | 54.0                   | -32.5               |

**Table 10-17: Radiated Emissions Harmonics/Spurious - 2462 MHz, 802.11n, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 4924.0          | 38.3                   | 0.2                           | 38.5                    | 74.0                | -35.5            |
| 7386.0          | 40.7                   | -1.5                          | 39.2                    | 74.0                | -34.8            |
| 12310.0         | 41.6                   | 3.2                           | 44.8                    | 74.0                | -29.2            |
| 19696.0         | 34.9                   | 13.2                          | 48.1                    | 74.0                | -25.9            |
| 22158.0         | 17.1                   | 12.0                          | 29.1                    | 74.0                | -44.9            |

**Table 10-18: Radiated Emissions Harmonics/Spurious - 2462 MHz, 802.11n, Average Detector**

| Frequency (MHz) | Average Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 4924.0          | 36.7                      | 0.2                           | 36.9                       | 54.0                   | -17.1               |
| 7386.0          | 31.8                      | -1.5                          | 30.3                       | 54.0                   | -23.7               |
| 12310.0         | 36.0                      | 3.2                           | 39.2                       | 54.0                   | -14.8               |
| 19696.0         | 32.6                      | 13.2                          | 45.8                       | 54.0                   | -8.2                |
| 22158.0         | 9.4                       | 12.0                          | 21.4                       | 54.0                   | -32.6               |



**Table 10-19: Radiated Emissions Harmonics/Spurious - 2402 MHz, ANT+, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 4804.0          | 47.6                   | 0.2                           | 47.8                    | 74.0                | -26.2            |
| 12010.0         | 39.0                   | 3.2                           | 42.2                    | 74.0                | -31.8            |
| 19216.0         | 41.8                   | 13.2                          | 55.0                    | 74.0                | -19.0            |

**Table 10-20: Radiated Emissions Harmonics/Spurious - 2402 MHz, ANT+, Average Detector**

| Frequency (MHz) | Average Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 4804.0          | 45.7                      | 0.2                           | 45.9                       | 54.0                   | -8.1                |
| 12010.0         | 35.9                      | 3.2                           | 39.1                       | 54.0                   | -14.9               |
| 19216.0         | 38.1                      | 13.2                          | 51.3                       | 54.0                   | -2.7                |

**Table 10-21: Radiated Emissions Harmonics/Spurious - 2441 MHz, ANT+, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 4882.0          | 46.6                   | 0.6                           | 47.2                    | 74.0                | -26.8            |
| 7323.0          | 42.1                   | -2.3                          | 39.8                    | 74.0                | -34.2            |
| 12205.0         | 38.0                   | 3.4                           | 41.4                    | 74.0                | -32.6            |
| 19528.0         | 25.8                   | 13.3                          | 39.1                    | 74.0                | -34.9            |

**Table 10-22: Radiated Emissions Harmonics/Spurious - 2441 MHz, ANT+, Average Detector**

| Frequency (MHz) | Average Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 4882.0          | 44.3                      | 0.6                           | 44.9                       | 54.0                   | -9.1                |
| 7323.0          | 39.1                      | -2.3                          | 36.8                       | 54.0                   | -17.2               |
| 12205.0         | 32.8                      | 3.4                           | 36.2                       | 54.0                   | -17.8               |
| 19528.0         | 22.8                      | 13.3                          | 36.1                       | 54.0                   | -17.9               |

**Table 10-23: Radiated Emissions Harmonics/Spurious - 2480 MHz, ANT+, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 4960.0          | 47.6                   | 0.8                           | 48.4                    | 74.0                | -25.6            |
| 7440.0          | 38.9                   | -2.4                          | 36.5                    | 74.0                | -37.5            |
| 12400.0         | 40.3                   | 3.7                           | 44.0                    | 74.0                | -30.0            |
| 19840.0         | 26.9                   | 13.1                          | 40.0                    | 74.0                | -34.0            |
| 22320.0         | 19.6                   | 12.0                          | 31.6                    | 74.0                | -42.4            |

**Table 10-24: Radiated Emissions Harmonics/Spurious - 2480 MHz, ANT+, Average Detector**

| Frequency (MHz) | Average Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 4960.0          | 44.3                      | 0.8                           | 45.1                       | 54.0                   | -8.9                |
| 7440.0          | 34.6                      | 4.6                           | 32.2                       | 54.0                   | -21.8               |
| 12400.0         | 37.8                      | 4.9                           | 41.5                       | 54.0                   | -12.5               |
| 19840.0         | 22.0                      | 6.2                           | 35.1                       | 54.0                   | -18.9               |
| 22320.0         | 12.9                      | 12.0                          | 24.9                       | 54.0                   | -29.1               |

**Table 10-25: Radiated Emissions Harmonics/Spurious - 2402 MHz, BLE, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 4804.0          | 46.7                   | 0.2                           | 46.9                    | 74.0                | -27.1            |
| 12010.0         | 45.0                   | 3.2                           | 48.2                    | 74.0                | -25.8            |
| 19216.0         | 38.5                   | 13.2                          | 51.7                    | 74.0                | -22.3            |

**Table 10-26: Radiated Emissions Harmonics/Spurious - 2402 MHz, BLE, Average Detector**

| Frequency (MHz) | Average Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 4804.0          | 45.0                      | 0.2                           | 45.2                       | 54.0                   | -8.8                |
| 12010.0         | 42.5                      | 3.2                           | 45.7                       | 54.0                   | -8.3                |
| 19216.0         | 37.4                      | 13.2                          | 50.6                       | 54.0                   | -3.4                |

**Table 10-27: Radiated Emissions Harmonics/Spurious - 2440 MHz, BLE, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 4880.0          | 46.2                   | 0.6                           | 46.8                    | 74.0                | -27.2            |
| 7320.0          | 40.4                   | -2.3                          | 38.1                    | 74.0                | -35.9            |
| 12200.0         | 38.7                   | 3.4                           | 42.1                    | 74.0                | -31.9            |
| 19520.0         | 27.6                   | 13.3                          | 40.9                    | 74.0                | -33.1            |

**Table 10-28: Radiated Emissions Harmonics/Spurious - 2440 MHz, BLE, Average Detector**

| Frequency (MHz) | Average Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 4880.0          | 44.7                      | 0.6                           | 45.3                       | 54.0                   | -8.7                |
| 7320.0          | 37.7                      | -2.3                          | 35.4                       | 54.0                   | -18.6               |
| 12200.0         | 34.0                      | 3.4                           | 37.4                       | 54.0                   | -16.6               |
| 19520.0         | 25.8                      | 13.3                          | 39.1                       | 54.0                   | -14.9               |

**Table 10-29: Radiated Emissions Harmonics/Spurious - 2480 MHz, BLE, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 4960.0          | 46.8                   | 0.8                           | 47.6                    | 74.0                | -26.4            |
| 7440.0          | 38.0                   | -2.4                          | 35.6                    | 74.0                | -38.4            |
| 12400.0         | 36.6                   | 3.7                           | 40.3                    | 74.0                | -33.7            |
| 19840.0         | 28.6                   | 13.1                          | 41.7                    | 74.0                | -32.3            |
| 22320.0         | 20.5                   | 12.0                          | 32.5                    | 74.0                | -41.5            |

**Table 10-30: Radiated Emissions Harmonics/Spurious - 2480 MHz, BLE, Average Detector**

| Frequency (MHz) | Average Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 4960.0          | 44.8                      | 0.8                           | 45.6                       | 54.0                   | -8.4                |
| 7440.0          | 34.4                      | -2.4                          | 32.0                       | 54.0                   | -22.0               |
| 12400.0         | 30.0                      | 3.7                           | 33.7                       | 54.0                   | -20.3               |
| 19840.0         | 25.4                      | 13.1                          | 38.5                       | 54.0                   | -15.5               |
| 22320.0         | 13.3                      | 12.0                          | 25.3                       | 54.0                   | -28.7               |

**Table 10-31: Radiated Emissions Harmonics/Spurious - 2402 MHz, Bluetooth, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 4804.0          | 47.7                   | 0.2                           | 47.9                    | 74.0                | -26.1            |
| 12010.0         | 42.4                   | 3.2                           | 45.6                    | 74.0                | -28.4            |
| 19216.0         | 42.6                   | 13.2                          | 55.8                    | 74.0                | -18.2            |

**Table 10-32: Radiated Emissions Harmonics/Spurious - 2402 MHz, Bluetooth, Average Detector**

| Frequency (MHz) | Average Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 4804.0          | 44.5                      | 0.2                           | 44.7                       | 54.0                   | -9.3                |
| 12010.0         | 38.7                      | 3.2                           | 41.9                       | 54.0                   | -12.1               |
| 19216.0         | 40.0                      | 13.2                          | 53.2                       | 54.0                   | -0.8                |

**Table 10-33: Radiated Emissions Harmonics/Spurious - 2440 MHz, Bluetooth, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 4880.0          | 46.1                   | 0.6                           | 46.7                    | 74.0                | -27.3            |
| 7320.0          | 40.6                   | -2.3                          | 38.3                    | 74.0                | -35.7            |
| 12200.0         | 37.9                   | 3.4                           | 41.3                    | 74.0                | -32.7            |
| 19520.0         | 25.0                   | 13.3                          | 38.3                    | 74.0                | -35.7            |

**Table 10-34: Radiated Emissions Harmonics/Spurious - 2440 MHz, Bluetooth, Average Detector**

| Frequency (MHz) | Average Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 4880.0          | 43.9                      | 0.6                           | 44.5                       | 54.0                   | -9.5                |
| 7320.0          | 37.3                      | -2.3                          | 35.0                       | 54.0                   | -19.0               |
| 12200.0         | 33.0                      | 3.4                           | 36.4                       | 54.0                   | -17.6               |
| 19520.0         | 19.9                      | 13.3                          | 33.2                       | 54.0                   | -20.8               |

**Table 10-35: Radiated Emissions Harmonics/Spurious - 2480 MHz, Bluetooth, Peak Detector**

| Frequency (MHz) | Peak Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Peak Corrected (dBuV/m) | Peak Limit (dBuV/m) | Peak Margin (dB) |
|-----------------|------------------------|-------------------------------|-------------------------|---------------------|------------------|
| 4960.0          | 46.3                   | 0.8                           | 47.1                    | 74.0                | -26.9            |
| 7440.0          | 39.7                   | -2.4                          | 37.3                    | 74.0                | -36.7            |
| 12400.0         | 37.1                   | 3.7                           | 40.8                    | 74.0                | -33.2            |
| 19840.0         | 26.4                   | 13.1                          | 39.5                    | 74.0                | -34.5            |
| 22320.0         | 19.8                   | 12.0                          | 31.8                    | 74.0                | -42.2            |

**Table 10-36: Radiated Emissions Harmonics/Spurious - 2480 MHz, Bluetooth, Average Detector**

| Frequency (MHz) | Average Analyzer (dBuV/m) | Site Correction Factor (dB/m) | Average Corrected (dBuV/m) | Average Limit (dBuV/m) | Average Margin (dB) |
|-----------------|---------------------------|-------------------------------|----------------------------|------------------------|---------------------|
| 4960.0          | 44.3                      | 0.8                           | 45.1                       | 54.0                   | -8.9                |
| 7440.0          | 34.7                      | -2.4                          | 32.3                       | 54.0                   | -21.7               |
| 12400.0         | 31.7                      | 3.7                           | 35.4                       | 54.0                   | -18.6               |
| 19840.0         | 21.5                      | 13.1                          | 34.6                       | 54.0                   | -19.4               |
| 22320.0         | 13.8                      | 12.0                          | 25.8                       | 54.0                   | -28.2               |

Measurement uncertainty: Measurement uncertainties shown for these tests are expanded uncertainties expressed at 95% confidence level using a coverage factor k = 2. +4.0 dB/-2.65 dB

**Table 10-37: Radiated Emissions Test Equipment**

| RTL Asset # | Manufacturer                      | Model             | Part Type                               | Serial Number   | Calibration Due Date |
|-------------|-----------------------------------|-------------------|-----------------------------------------|-----------------|----------------------|
| 901663      | Rohde and Schwarz                 | HFH2-Z2           | Loop Antenna (9 kHz-30 MHz)             | 827525/019      | 5/1/19               |
| 900932      | Hewlett Packard                   | 8449B OPT H02     | Preamplifier (1-26.5 GHz)               | 3008A00505      | 8/18/18              |
| 900905      | Rhein Tech Laboratories           | PR-1040           | OATS 1 Preamplifier 40dB (30 MHz-2 GHz) | 1006            | 8/18/18              |
| 900878      | Rhein Tech Laboratories           | AM3-1197-0005     | 3 meter Antenna mast, polarizing        | Outdoor Range 1 | Not Required         |
| 901592      | Insulated Wire Inc.               | KPS-1503-3600-KPR | SMK RF Cables 20'                       | NA              | 8/21/18              |
| 901593      | Insulated Wire Inc.               | KPS-1503-360-KPR  | SMK RF Cables 36"                       | NA              | 8/18/18              |
| 901242      | Rhein Tech Laboratories           | WRT-000-0003      | Wood rotating table                     | N/A             | Not Required         |
| 900913      | Hewlett Packard                   | 85462A            | EMI Receiver RF Section (9 kHz-6.5 GHz) | 3325A00159      | 4/4/19               |
| 900914      | Hewlett Packard                   | 85460A            | RF Filter Section (100 kHz-6.5 GHz)     | 3330A00107      | 4/4/19               |
| 900772      | EMCO                              | 3161-02           | Horn Antenna (2-4 GHz)                  | 9804-1044       | 4/9/18               |
| 900321      | EMCO                              | 3161-03           | Horn Antenna (4.0-8.2 GHz)              | 9508-1020       | 4/9/18               |
| 900323      | EMCO                              | 3160-07           | Horn Antenna (8.2-12.4 GHz)             | 9605-1054       | 4/9/18               |
| 900356      | EMCO                              | 3160-08           | Horn Antenna (12.4-18 GHz)              | 9607-1044       | 4/9/18               |
| 901218      | EMCO                              | 3160-09           | Horn Antenna (18-26.5 GHz)              | 960281-003      | 4/4/18               |
| 901581      | Rohde & Schwarz                   | FSU               | Spectrum Analyzer                       | 1166.1660.50    | 3/22/18              |
| 900791      | Antenna Research Associates, Inc. | LPB-2520          | BiLog Antenna (25-1000 MHz)             | 1037            | 10/4/20              |

**PASS**

**Test Personnel:**

Khue N. Do  
 Test Engineer



Signature

February 15-27, 2018  
 Dates of Test

Rhein Tech Laboratories, Inc.  
360 Herndon Parkway  
Suite 1400  
Herndon, VA 20170  
<http://www.rheintech.com>

Client: Garmin Int'l Inc.  
Model: A03436  
Standards: FCC 15.247/IC RSS-247  
ID's: IPH-03436, 1792A-03436  
Report #: 2017240

## **11 Conclusion**

The data in this measurement report shows that the EUT as tested, Garmin International Inc. Model/HVIN A03436, FCC ID: IPH-03436, IC: 1792A-03436, complies with all the applicable requirements of Parts 2 and 15 of the FCC Rules and Regulations, and IC RSS-247 and RSS-Gen.