OCTOBER 2017

# FCC PART 15.247 CERTIFICATION TEST REPORT

for the

**BlueFIRE Inflation Device**

**FCC ID: 2AMVF-IN10**

**REPORT# 15083-01 REV 0**

Prepared for:

Merit Medical Systems, Inc.

1600 West Merit Parkway

South Jordan, UT 84095

Prepared By:

Washington Laboratories, Ltd.

7560 Lindbergh Drive

Gaithersburg, Maryland 20879

Testing Certificate AT-1448

# FCC Part 15.247 Certification Test Report

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## Merit Medical Systems, Inc.

### BlueFIRE Inflation Device

FCC ID: 2AMVF-IN10

*October 2017*

WLL REPORT# 15083-01 REV 0

Prepared by:

Michael F. Violette, P.E.
Test Engineer

Reviewed by:

Steve Koster
President

 

# ABSTRACT

This report has been prepared on behalf of Merit Medical Systems, Inc. to support the attached Application for Equipment Authorization. The test report and application are submitted for a Digital Transmission System (DTS) Transmitter under Part 15.247 of the FCC Rules and Regulations and Spectrum Management and Telecommunications Policy and under RSS-247 of Innovation, Science and Economic Development Canada (ISED). This Certification Test Report documents the test configuration and test results for the Merit Medical Systems, Inc. BlueFIRE Inflation Device.

Testing was performed on an Open Area Test Site (OATS) of Washington Laboratories, Ltd, 7560 Lindbergh Drive, Gaithersburg, MD 20879. Site description and site attenuation data have been placed on file with the FCC's Sampling and Measurements Branch at the FCC laboratory in Columbia, MD. The ISED OATS numbers are 3035A-1 and 3035A-2 for Washington Laboratories, Ltd. Site 1 and Site 2, respectively. Washington Laboratories, Ltd. has been accepted by the FCC and approved by ANAB under Certificate AT-1448 as an independent FCC test laboratory.

The Merit Medical Systems, Inc. BlueFIRE Inflation Device complies with the limits for a Digital Transmission System (DTS) Transmitter device under FCC Part 15.247 and Innovation, Science and Economic Development Canada (ISED) RSS-247.

| Revision History | Description of Change | Date |
|---|---|---|
| Rev 0 | Initial Release | October 2017 |
| Rev 1 | Revised per ACB comments | November 2, 2017 |

 

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# 1 INTRODUCTION

## 1.1 COMPLIANCE STATEMENT

The Merit Medical Systems, Inc. BlueFIRE Inflation Device complies with the limits for a Frequency Hopping Spread Spectrum Transmitter device under FCC Part 15.247 and ISED Canada RSS-247.

## 1.2 TEST SCOPE

Tests for radiated and conducted (at antenna terminal) emissions were performed. All measurements were performed in accordance with FCC Public Notice DA-00-705 "Measurement Guidance for Frequency Hopping Spread Spectrum Systems. The measurement equipment conforms to ANSI C63.2 Specifications for Electromagnetic Noise and Field Strength Instrumentation.

## 1.3 CONTRACT INFORMATION

| | |
|---|---|
| Customer: | Merit Medical Systems, Inc. |
| Address | **1600 West Merit Parkway** |
| | South Jordan, UT 84095 |
| Purchase Order Number: | 378584 |
| Quotation Number: | 70106 |

## 1.4 TEST DATES

Testing was performed on the following date(s): 31 May 2017

## 1.5 TEST AND SUPPORT PERSONNEL

| | |
|---|---|
| Washington Laboratories, LTD | Michael Violette |
| Customer Representative | Jon Davis |

## 1.6 ABBREVIATIONS

| | |
|---|---|
| A | **A**mpere |
| ac | **a**lternating **c**urrent |
| AM | Amplitude Modulation |
| Amps | Amperes |
| b/s | **b**its per **s**econd |
| BW | **B**and**W**idth |
| CE | **C**onducted **E**mission |
| cm | **C**enti**m**eter |
| CW | **C**ontinuous **W**ave |
| dB | **d**eci**B**el |
| dc | **d**irect **c**urrent |
| EMI | **E**lectro**m**agnetic **I**nterference |
| EUT | **E**quipment **U**nder **T**est |
| FM | **F**requency **M**odulation |
| G | **g**iga – prefix for $10^9$ multiplier |
| Hz | **H**ertz |
| IF | **I**ntermediate **F**requency |
| k | **k**ilo – prefix for $10^3$ multiplier |
| LISN | **L**ine **I**mpedance **S**tabilization **N**etwork |
| M | **M**ega – prefix for $10^6$ multiplier |
| m | **M**eter |
| µ | **m**icro – prefix for $10^{-6}$ multiplier |
| NB | **N**arrow**b**and |
| QP | **Q**uasi-**P**eak |
| RE | **R**adiated **E**missions |
| RF | **R**adio **F**requency |
| rms | **r**oot-**m**ean-**s**quare |
| SN | **S**erial **N**umber |
| S/A | **S**pectrum **A**nalyzer |
| V | **V**olt |

# 2 EQUIPMENT UNDER TEST

## 2.1 EUT IDENTIFICATION & DESCRIPTION

The BlueFIRE Inflation Device and Fluid Dispensing Syringe by Merit Medical is a 30mL disposable device with an integral pressure transducer, microcomputer, back-lit LCD, threaded plunger assembly with lock/release bar, a flexible high pressure extension tube, and a three-way stopcock. The BlueFIRE Syringe is designed to generate positive and negative pressure, and monitor positive pressures over a range of zero to +35ATM/BAR (zero to 514 PSI).

The BlueFIRE device communicates with a tablet computer that is running proprietary software (BlueFIRE Monitor) via a Bluetooth connection.

The BlueFIRE Monitor displays pressures created by the BlueFIRE Syringe. The BlueFIRE Syringe is connected to the Monitor via Bluetooth wireless technology. In addition to displaying pressure parameters in ATM (atmospheres), psi (pounds per square inch), mmHg (millimeters of mercury), or Bar, the BlueFIRE Monitor displays duration of pressurization in minutes and seconds, time elapsed since last pressurization, and when a negative pressure has been reached. The Monitor also has the capability to store a log of the inflation pressures and times for each BlueFIRE Syringe, and to email or print these logs.

*Table 1: Device Summary*

| | |
|---|---|
| **Item** | See above |
| **Manufacturer:** | Merit Medical Systems, Inc. |
| **FCC ID:** | 2AMVF-IN10 |
| **ISED ID:** | NA |
| **Model:** | BlueFIRE Inflation Device |
| **Serial Number of Unit Tested** | None |
| **FCC Rule Parts:** | §15.247 |
| **Frequency Range:** | 2402-2480 MHz |
| **Maximum Output Power:** | 0.62mW (-2.1dBm) |
| **Modulation:** | PSK |
| **Occupied Bandwidth:** | 1.7MHz |
| **Keying:** | Automatic |
| **Type of Information:** | Data |

| | |
|---|---|
| **Number of Channels:** | 40 |
| **Power Output Level** | Fixed |
| **Antenna Connector** | None |
| **Antenna Type** | PIFA |
| **Interface Cables:** | None |
| **Power Source & Voltage:** | 3V CR1616 coin cell battery |

## 2.2 TEST CONFIGURATION

The BlueFIRE Inflation Device was configured with a SMA connector at the output of the matching network with the PCB antenna cut away. The conducted measurements were performed at the antenna input.

Software, provided by the client, was used to control the output frequency and modes of the device during the RF measurements

## 2.3 TESTING ALGORITHM

The BlueFIRE Inflation Device was tested was programmed for FHSS operation via ??  Worst cast emission levels are provided in the test results data.using software provided by the chip manufacturer, Nordic Semiconductor.

## 2.4 TEST LOCATION

All measurements herein were performed at Washington Laboratories, Ltd. test center in Gaithersburg, MD. Site description and site attenuation data have been placed on file with the FCC's Sampling and Measurements Branch at the FCC laboratory in Columbia, MD. The ISED Canada OATS numbers are 3035A-1 and 3035A-2 for Washington Laboratories, Ltd. Site 1 and Site 2, respectively. Washington Laboratories, Ltd. has been accepted by the FCC and approved by ANAB under Certificate AT-1448 as an independent FCC test laboratory.

## 2.5 MEASUREMENTS

### 2.5.1 References

ANSI C63.2 Specifications for Electromagnetic Noise and Field Strength Instrumentation

ANSI C63.4-2014: American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

ANSI 63.10-2013: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

## 2.6 MEASUREMENT UNCERTAINTY

All results reported herein relate only to the equipment tested. The basis for uncertainty calculation uses ANSI/NCSL Z540-2-1997 (R2002) with a type B evaluation of the standard uncertainty. Elements contributing to the standard uncertainty are combined using the method described in Equation 1 to arrive at the total standard uncertainty. The standard uncertainty is multiplied by the coverage factor to determine the expanded uncertainty which is generally accepted for use in commercial, industrial, and regulatory applications and when health and safety are concerned (see Equation 2). A coverage factor was selected to yield a 95% confidence in the uncertainty estimation.

### *Equation 1: Standard Uncertainty*

$$u_c = \pm\sqrt{\frac{a^2}{div_a{}^2} + \frac{b^2}{div_b{}^2} + \frac{c^2}{div_c{}^2} + \ldots\ldots}$$

Where $u_c$ = standard uncertainty

a, b, c,.. = individual uncertainty elements

$Div_{a,\ b,\ c}$ = the individual uncertainty element divisor based on the probability distribution

Divisor = 1.732 for rectangular distribution

Divisor = 2 for normal distribution

Divisor = 1.414 for trapezoid distribution

### *Equation 2: Expanded Uncertainty*

$$U = ku_c$$

Where U = expanded uncertainty

k = coverage factor

$k \leq 2$ for 95% coverage (ANSI/NCSL Z540-2 Annex G)

$u_c$ = standard uncertainty

The measurement uncertainty complies with the maximum allowed uncertainty from CISPR 16-4-2. Measurement uncertainty is not used to adjust the measurements to determine compliance. The expanded uncertainty values for the various scopes in the WLL accreditation are provided in Table 2 below.

### *Table 2: Expanded Uncertainty List*

| Scope | Standard(s) | Expanded Uncertainty |
|---|---|---|
| Conducted Emissions | CISPR11, CISPR22, CISPR14, FCC Part 15 | ±2.63 dB |
| Radiated Emissions | CISPR11, CISPR22, CISPR14, FCC Part 15 | ±4.55 dB |

# 3 TEST EQUIPMENT

Table 3 shows a list of the test equipment used for measurements along with the calibration information.

*Table 3: Test Equipment List*

| Asset # | Manufacturer/Model | Description | Cal. Due |
|---|---|---|---|
| 4 | ARA - DRG-118/A | ANTENNA DRG 1-18GHZ | **12/14/2018** |
| 66 | B&Z (HP) - BZ-01002650-401545-282525 | HF PRE-AMPLIFIER 1-26.5GHZ (MODIFIED) | **2/14/2018** |
| 823 | AGILENT - N9010A | EXA SPECTRUM ANALYZER | **12/21/2017** |
| 382 | SUNOL SCIENCES CORPORATION - JB1 | ANTENNA BICONLOG | **8/31/2017** |
| 626 | ARA - DRG-118/A | ANTENNA HORN | **4/7/2018** |
| 210 | NARDA - V638 | HORN STANDARD GAIN | **CNR** |
| 453 | AH SYSTEMS - PAM1840 | PRE-AMPLIFIER 18GHZ-40 GHZ | **5/11//2019** |
| 280 | ITC - 21C-3A1 | WAVEGUIDE 3.45-11.0GHZ | **8/1/2017** |
| 281 | ITC - 21A-3A1 | WAVEGUIDE 4.51-10.0GHZ | **8/1/2017** |
| 282 | ITC - 21X-3A1 | WAVEGUIDE 6.8-15GHZ | **10/22/2017** |

# 4 TEST RESULTS

The Table Below shows the results of testing for compliance with a Frequency Hopping Spread Spectrum device in accordance with FCC Part 15.247 10/2014 and RSS-247 Issue 1. Full test results are shown in subsequent sub-sections.

*Table 4: Test Summary Table*

| FCC Rule Part | Description | Result |
|---|---|---|
| 15.247 (a)(1) | 20dB Bandwidth | 1.7 MHz |
| 15.247 (b) | Transmit Output Power | 0.6mW |
| 15.247 (a)(1) | Channel Separation | 1.02 MHz |
| 15.247 (a)(1) | Number of Channels | 40 |
| 15.247 (a)(1) | Time of Occupancy | 0.196 ms |
| 15.247 (d) | Occupied BW / Out-of-Band Emissions (Band Edge @ 20dB below) | Pass |
| 15.205<br>15.209 | General Field Strength Limits (Restricted Bands & RE Limits) | Pass |
| 15.207 | AC Conducted Emissions | N/A |
| **FCC Rule Part** | **Description** | **Result** |
| 15.207 | AC Conducted Emissions | N/A |

## 4.1 TIME OF OCCUPANCY

In accordance with the FCC Public Notice the spurious radiated emissions measurements may be adjusted if using a duty cycle correction factor if the dwell time per channel of the hopping signal is less than 100 ms.

The following figure shows the plot of the dwell time for the transmitter. Each channel is on for 0.196 ms which corresponds to 64.6 hops per channel per second. Thus, each channel is active for 6.46 times over 100ms. The total "ON" time for each channel over 100ms is (6.46*0.196ms) or 1.2 ms.

Duty cycle = 20*Log(1.2/100) = 58.4 dB

These tests were conducted with the RF output connected through appropriate attenuators to the input of a spectrum analyzer set to zero span mode. The unit was set to hopping mode with the spectrum analyzer set to 2442MHz. The results are shown in the plots below.

*Table 5: Duty Cycle/Time of Occupancy Results*

| | Test | Result | Limit | Pass/Fail |
|---|---|---|---|---|
| A | Dwell time per Hop | 0.196ms | | |
| B | Averaging time (79 *0.4) seconds | 31.6 s | | |
| C | Number of hops per second (1/A) | 5100 hops | | |
| D | Number of hops per channel per second (C/79) | 64.6 | | |
| E | Number of hops over averaging time (D*B) | 2040.8 | | |
| F | Total on-time over averaging time (A*E) | 0.4 | 0.4 | Pass |

*Figure 1: Channel Occupancy*

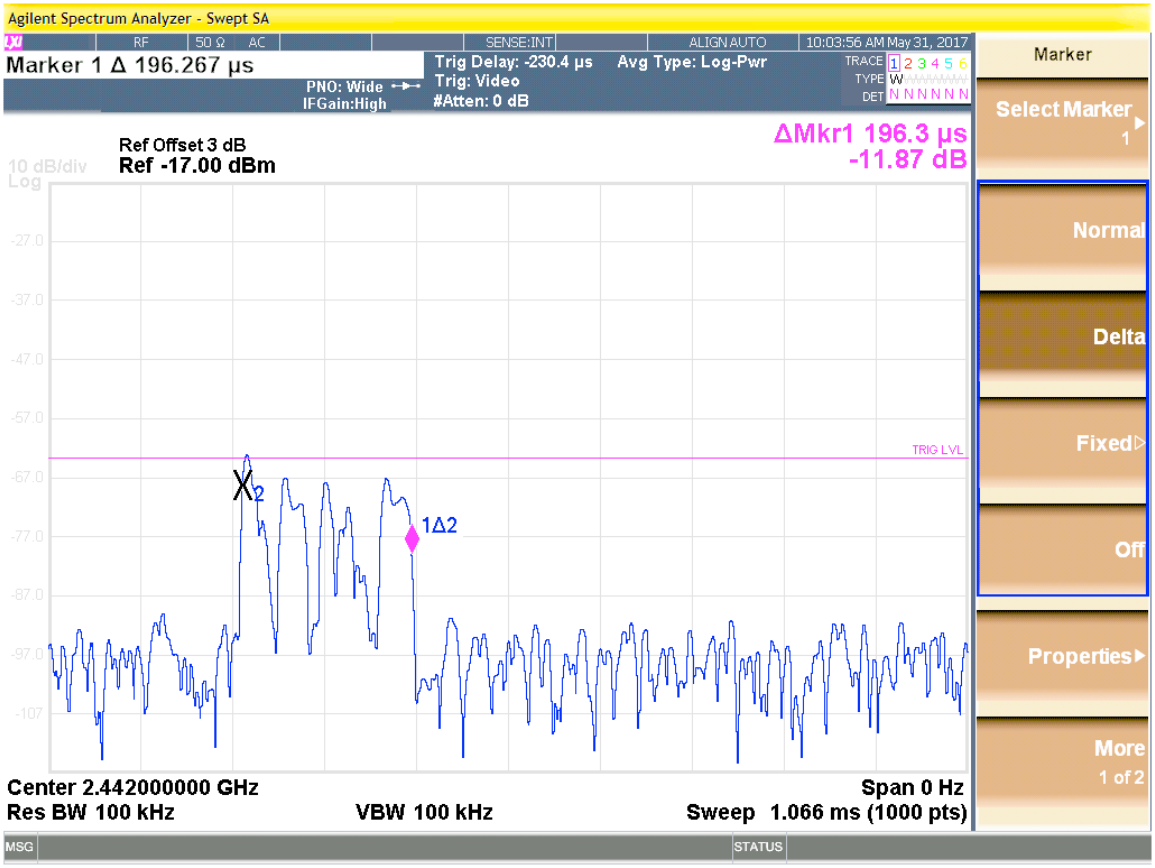
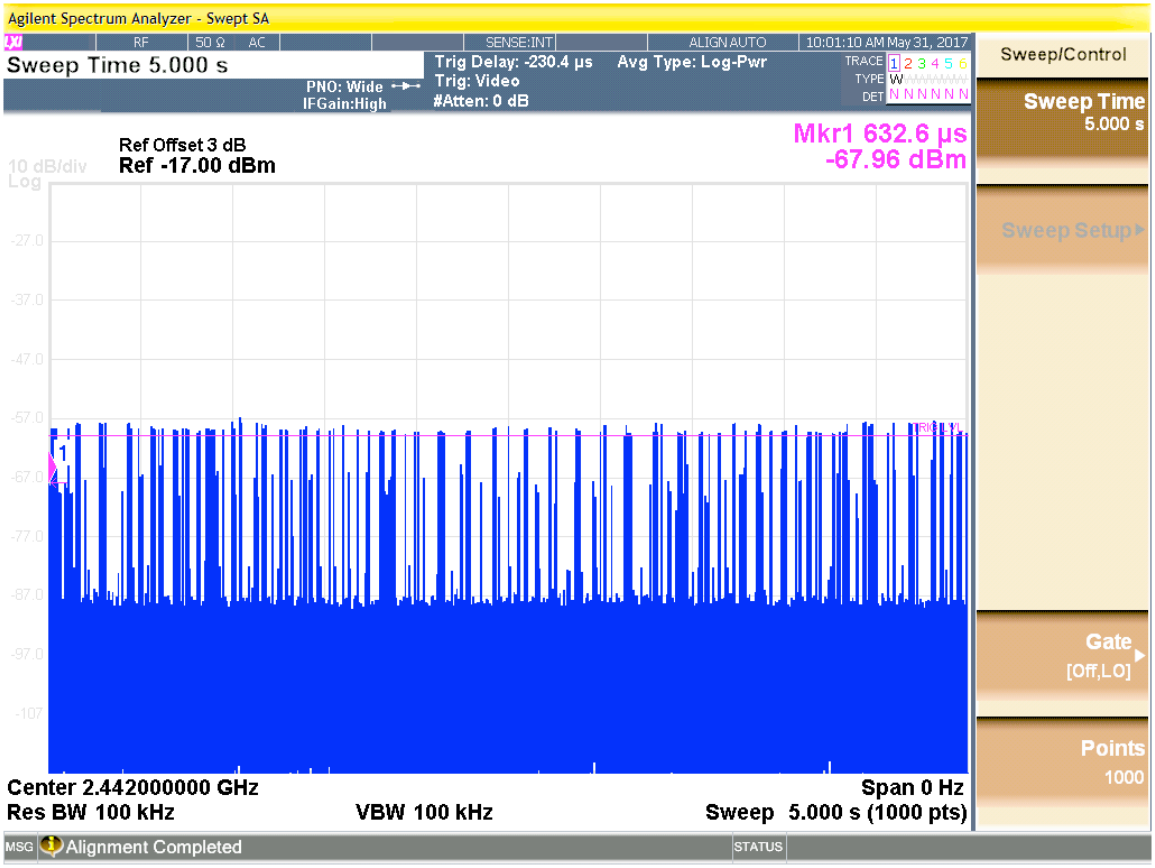


*Figure 2: Sweep of 50 seconds*



RF Power Output: (FCC Part §2.1046)

To measure the output power the hopping sequence was stopped while the frequency dwelled on a low, high and middle channel. The output from the transmitter was connected to an attenuator and then to the input of the RF Spectrum Analyzer. The analyzer offset was adjusted to compensate for the attenuator and other losses in the system.

*Table 6: RF Power Output*

| Frequency | Level (dBm) | Limit (dBm) | Pass/Fail |
|---|---|---|---|
| Low Channel: 2402MHz | -2.1 | 30 | Pass |
| Mid Channel: 2442MHz | -2.3 | 30 | Pass |
| High Channel: 2480MHz | -2.6 | 30 | Pass |

*Figure 3: RF Peak Power, Low Channel*

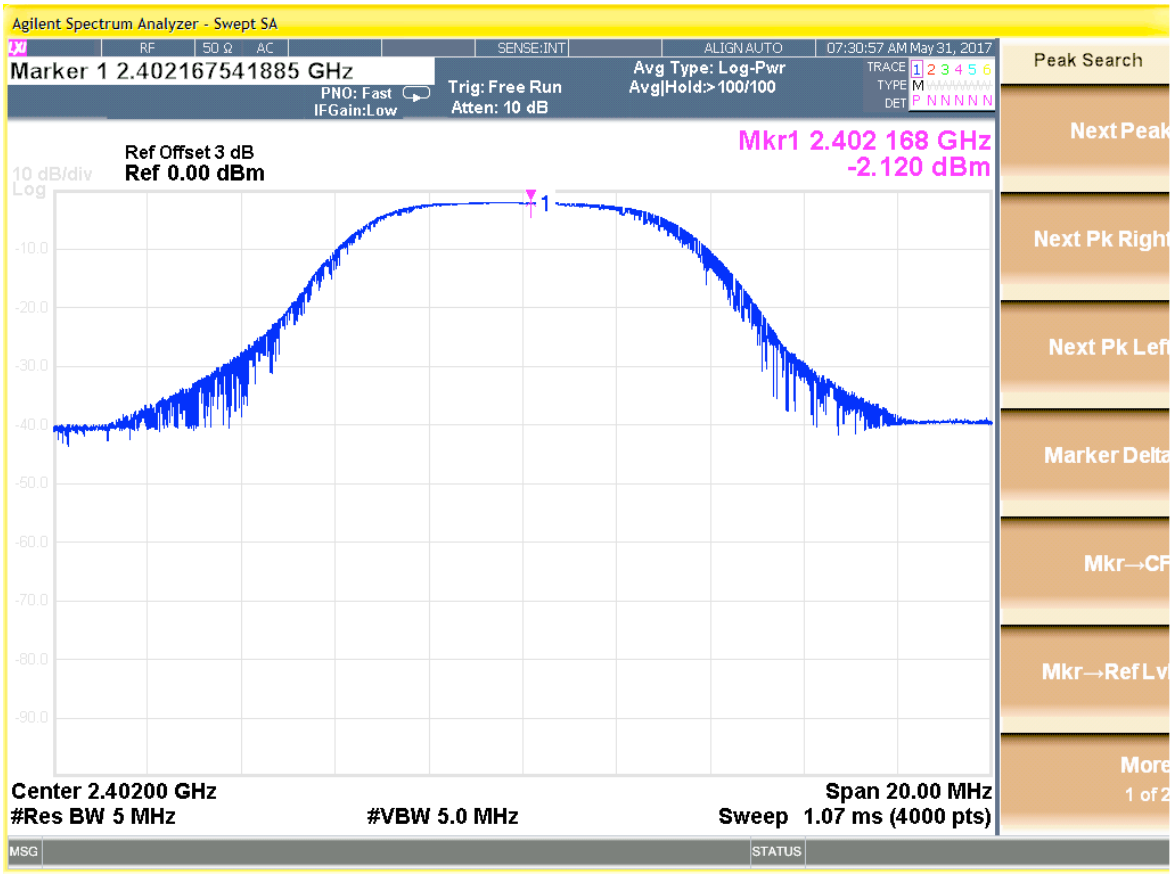


*Figure 4: RF Peak Power, Mid Channel*

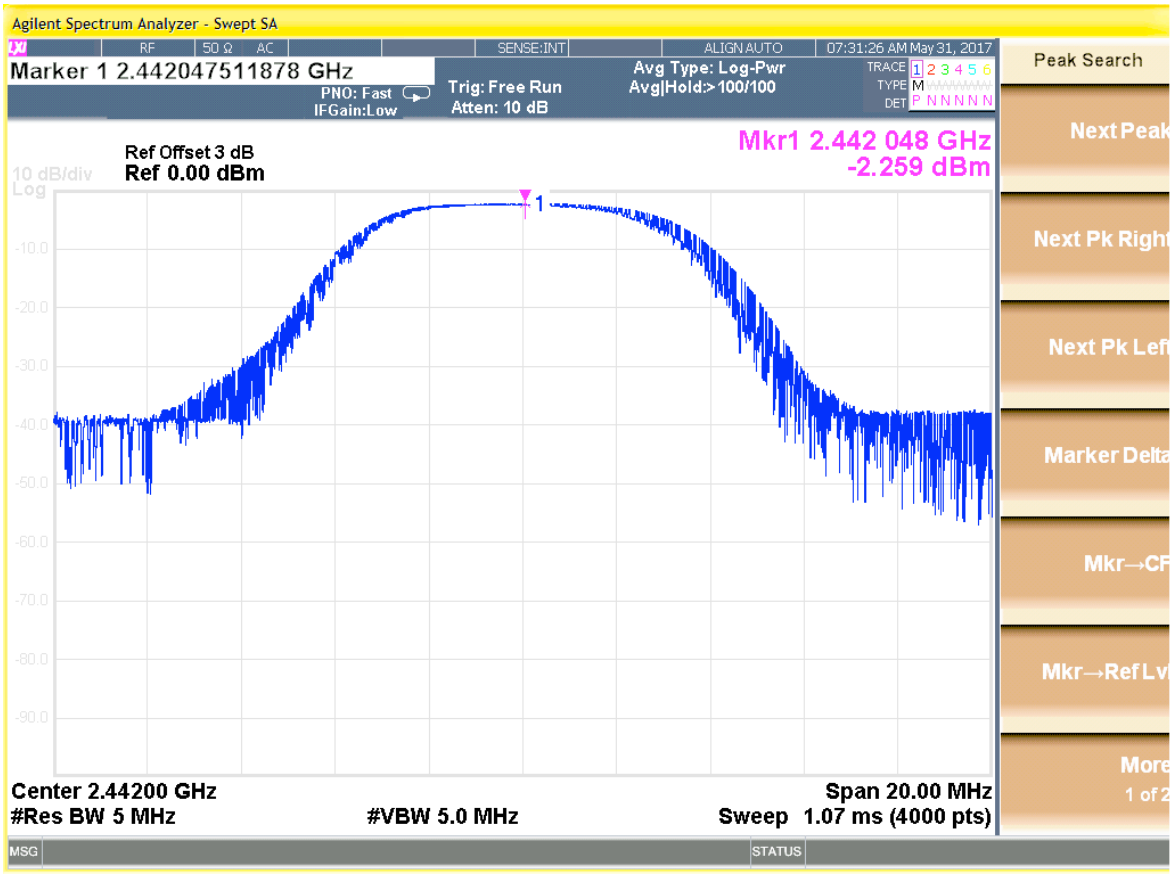
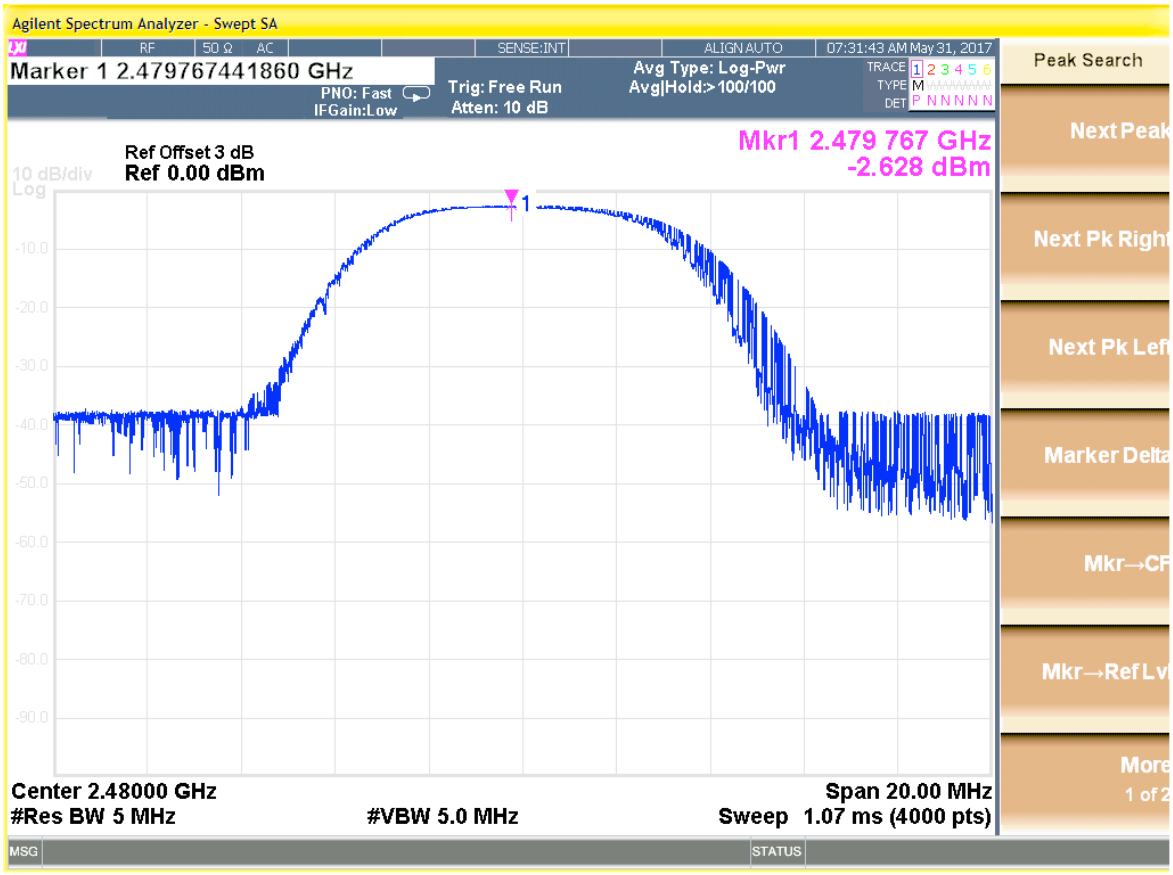


*Figure 5: RF Peak Power, High Channel*



## 4.2 OCCUPIED BANDWIDTH: (FCC PART §2.1049)

Occupied bandwidth was performed by coupling the output of the EUT to the input of a spectrum analyzer.

For Frequency Hopping Spread Spectrum Systems, FCC Part 15.247 requires the maximum 20 dB bandwidth not exceed 500 kHz.

At full modulation, the occupied bandwidth was measured as shown.

Table 7 provides a summary of the Occupied Bandwidth Results.

*Table 7: Occupied Bandwidth Results (20 dB OBW)*

| Frequency | Bandwidth (MHz) | Limit (kHz) | Pass/Fail |
|---|---|---|---|
| Low Channel: 2402MHz | 1.7 | None | Pass |
| Mid Channel: 2442MHz | 1.6 | None | Pass |
| High Channel: 2480MHz | 1.5 | None | Pass |

*Figure 6: Occupied Bandwidth, Low Channel*

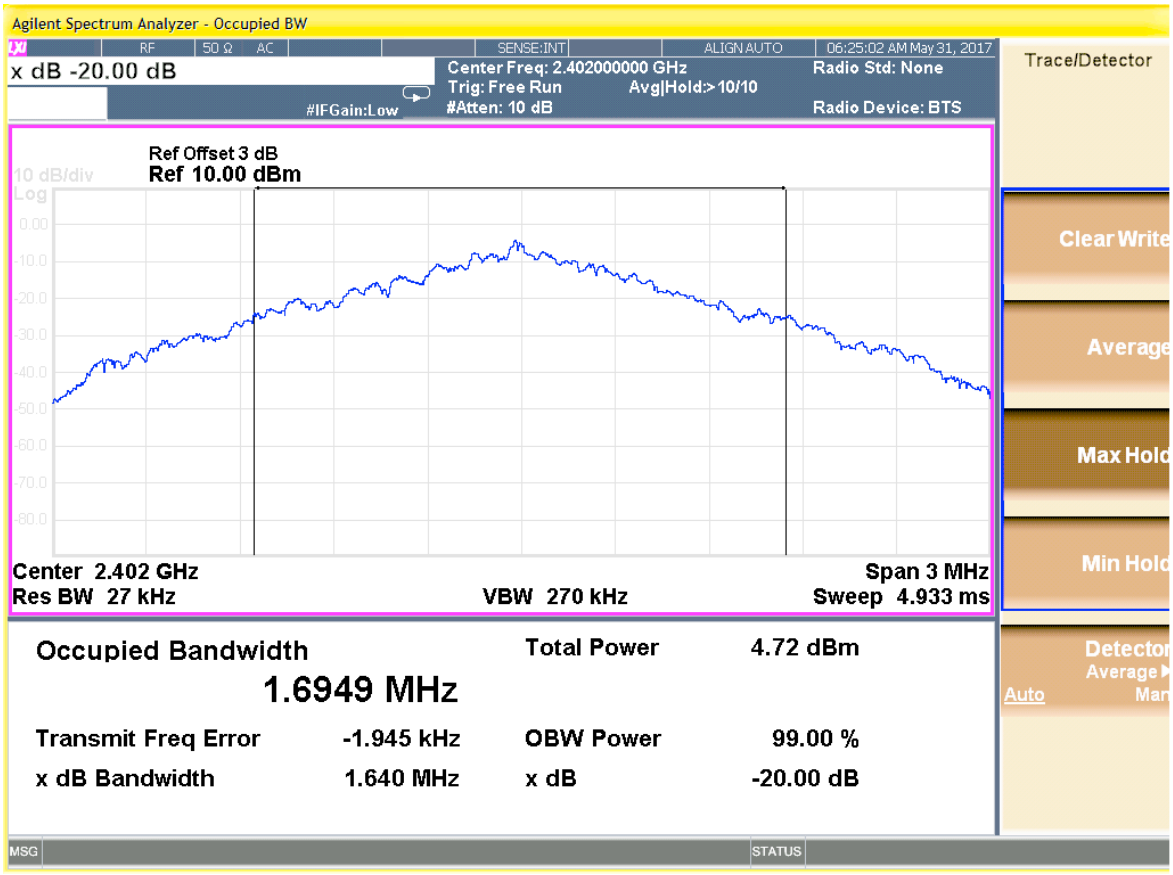


*Figure 7: Occupied Bandwidth, Mid Channel*

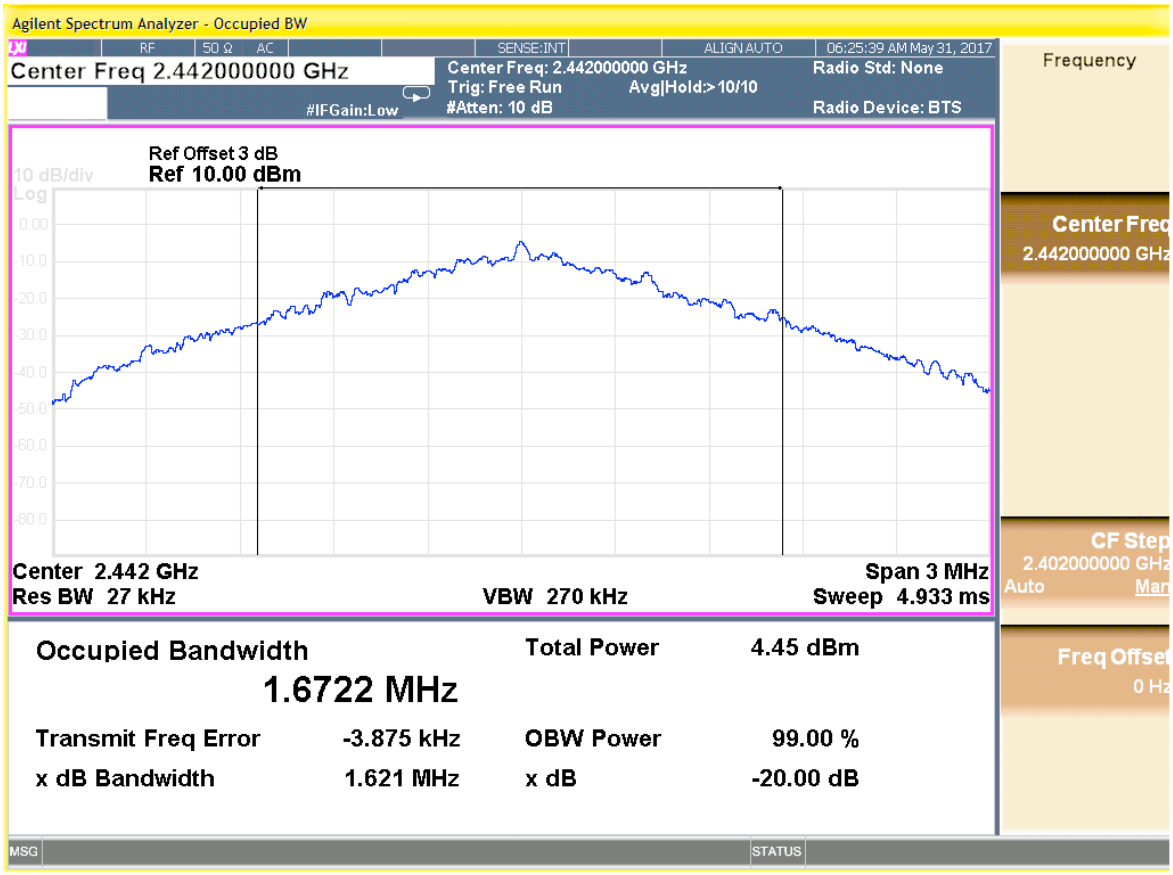
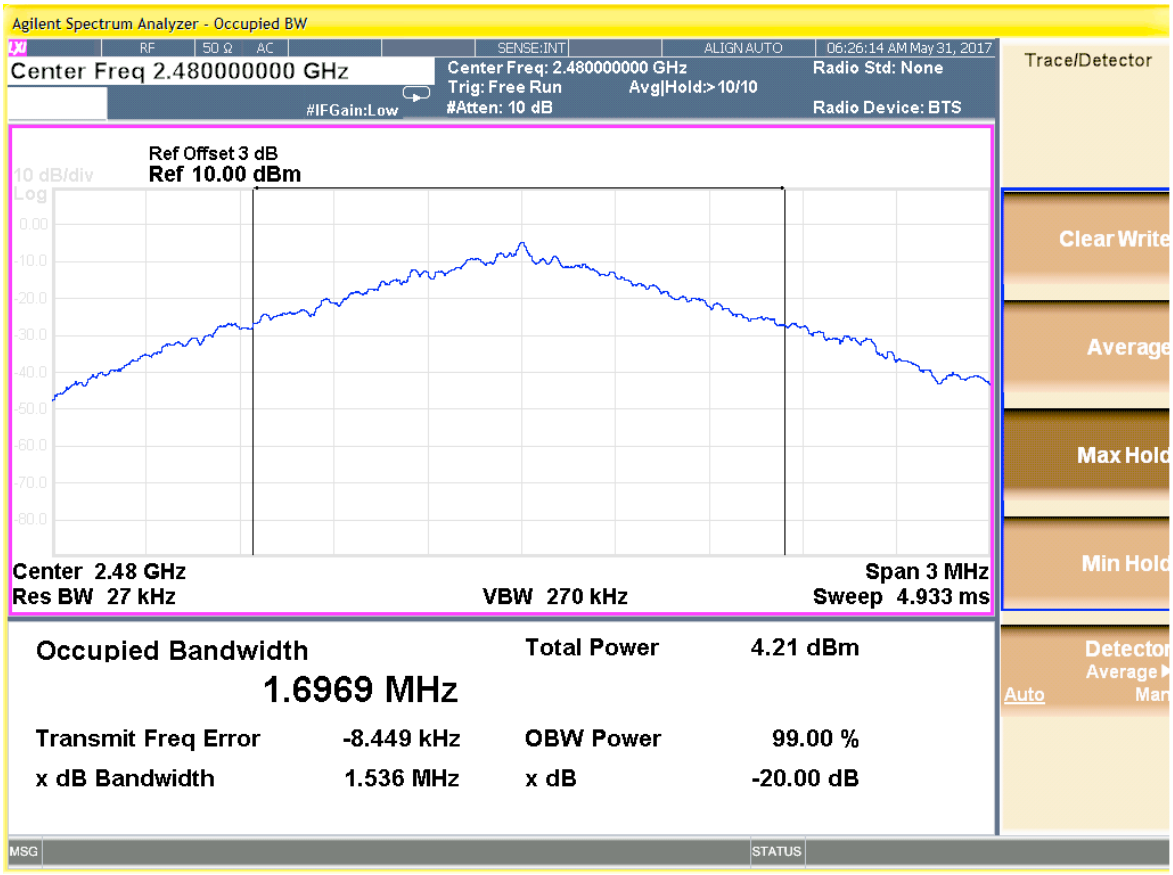


*Figure 8: Occupied Bandwidth, High Channel*



## 4.3 Channel Spacing and Number of Hop Channels (FCC Part §15247(a)(1)

Per the FCC requirements, frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25kHz or the 20 dB bandwidth, whichever is greater. In addition, for a 2.4GHz transmitter the number of hopping channels shall be stated.

The EUT antenna was removed and the cable was connected directly into a spectrum analyzer through a 10 dB attenuator. An offset was programmed into the spectrum analyzer to compensate for the loss of the external attenuator. The spectrum analyzer resolution bandwidth was set to 30 kHz and the video bandwidth was set to 100 kHz. The channel spacing of 2 adjacent channels was measured using a spectrum analyzer span setting of 100 kHz.

The following are plots of the channel spacing and number of hopping channels data.

Note: In the following plots, each channel is composed of 2 distinct peaks.

*Table 8: Channel Spacing and Number of Channels Results*

| Frequency | Result | Limit | Pass/Fail |
|---|---|---|---|
| Channel Spacing | 1.02 MHz | 25 kHz Minimum | Pass |
| Number of channels | 79 channels | 15 Channels Minimum | Pass |

*Figure 9: Channel Spacing*

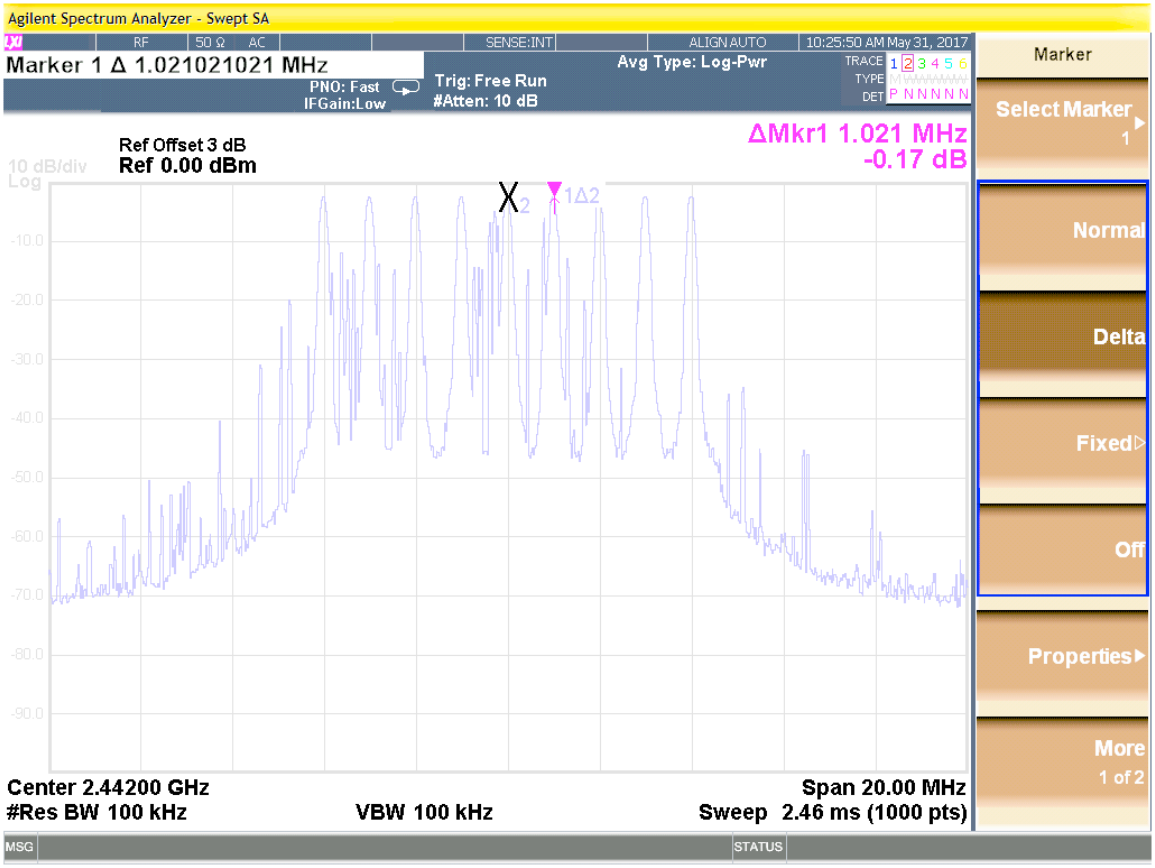


*Figure 10: Number of Hopping Channels*

The software that was used was generic software and all 79 channels were measured. The 40 channels represent a subset of the full hopping channels, however the device firmware employs BT LE functionality.

## 4.4 Conducted Spurious Emissions at Antenna Terminals (FCC Part §2.1051)

The EUT must comply with requirements for spurious emissions at antenna terminals. Per §15.247(c) all spurious emissions in any 100 kHz bandwidth outside the frequency band in which the spread spectrum device is operating shall be attenuated 20 dB below the highest power level in a 100 kHz bandwidth within the band containing the highest level of the desired power.

The EUT antenna was removed and the cable was connected directly into a spectrum analyzer through a 10 dB attenuator. An offset was programmed into the spectrum analyzer to compensate for the loss of the external attenuator. The spectrum analyzer resolution bandwidth was set to 100 kHz and the video bandwidth was set to 300 kHz. The amplitude of the EUT carrier frequency was measured to determine the emissions limit (20 dB below the carrier frequency amplitude). The emissions outside of the allocated frequency band were then scanned from 30 MHz up to the tenth harmonic of the carrier.

The following are plots of the conducted spurious emissions data.

*Figure 11: Conducted Spurious Emissions*

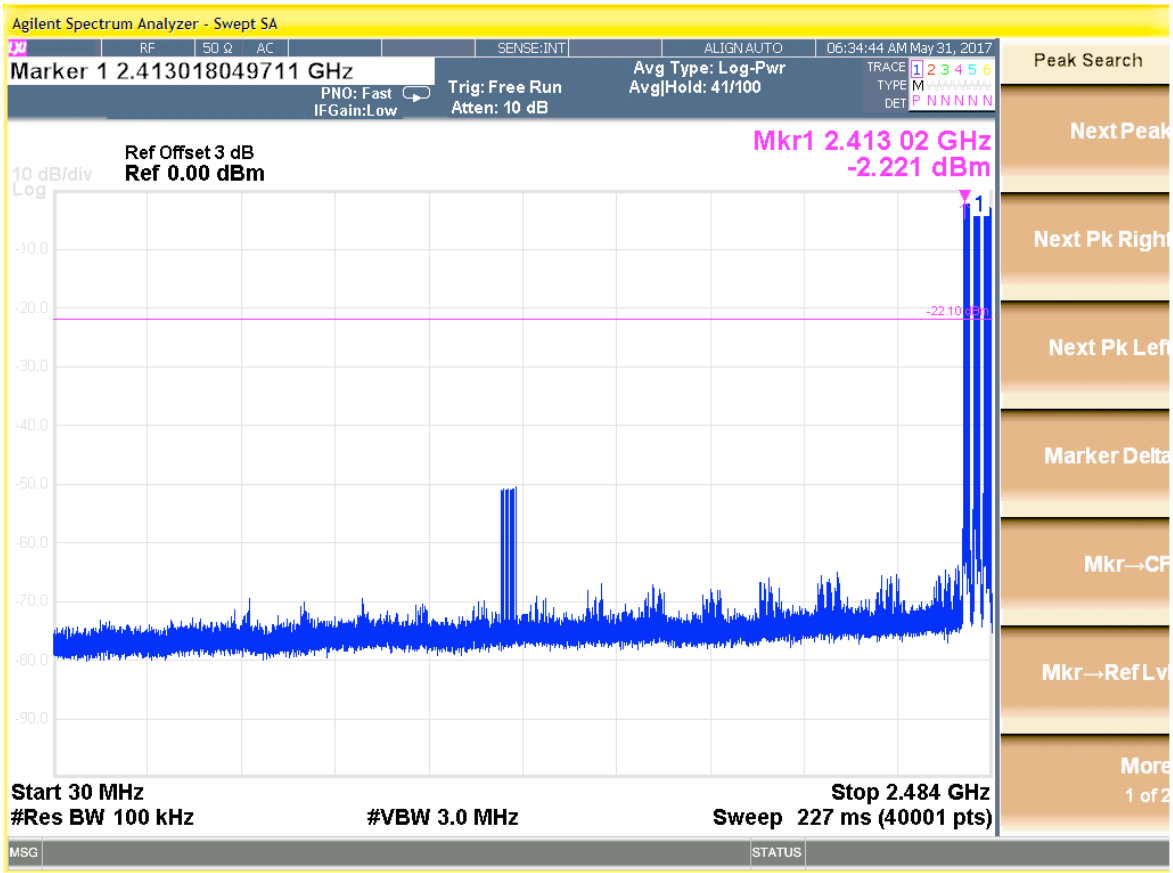


*Figure 12: Conducted Spurious Emissions, Channel*

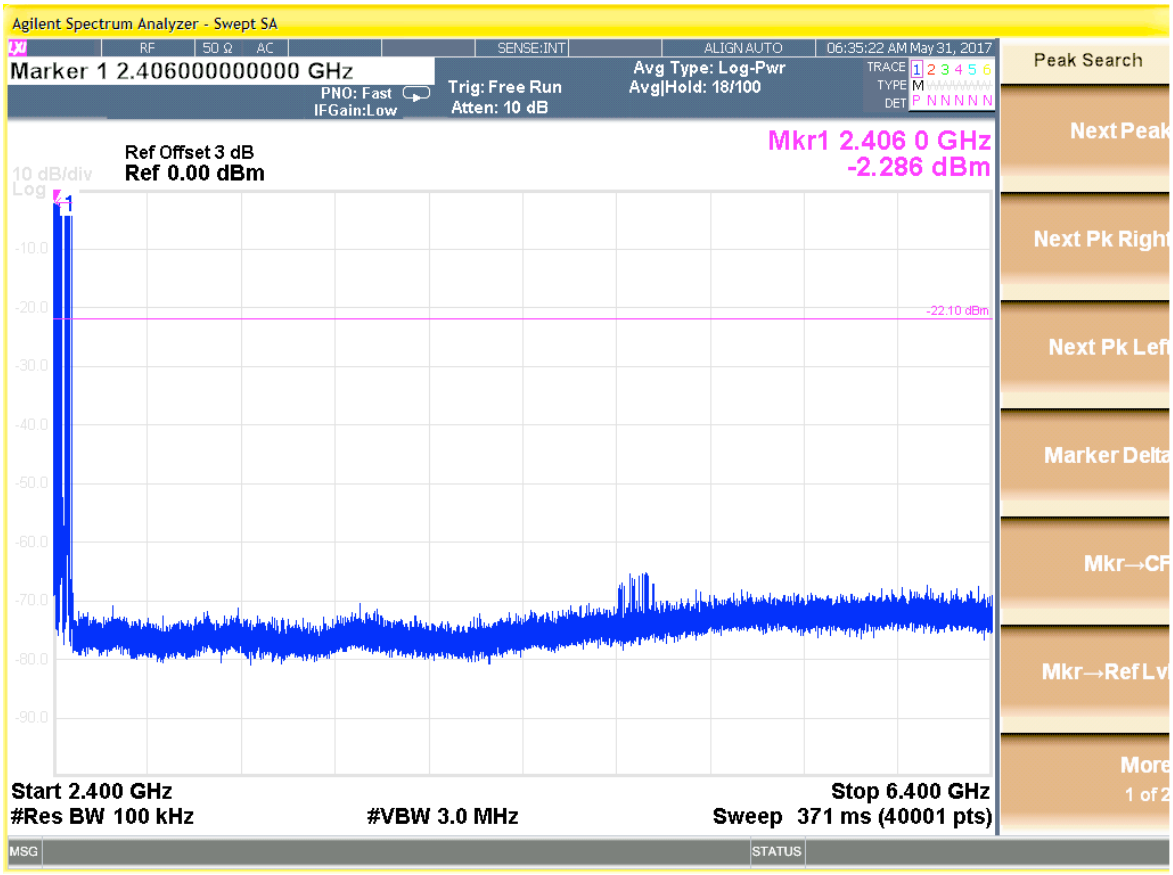


*Figure 13: Conducted Spurious Emissions, Channel*

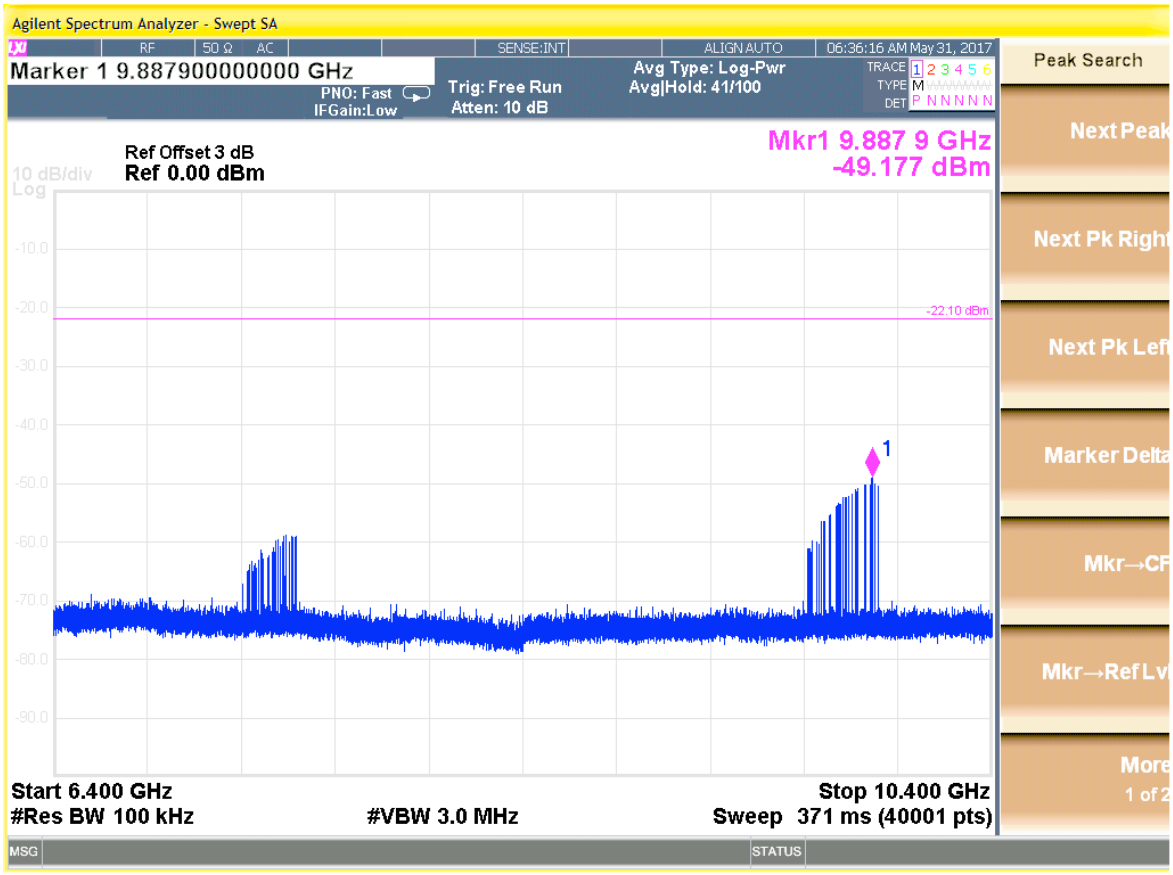


*Figure 14: Conducted Spurious Emissions, Low Channel*

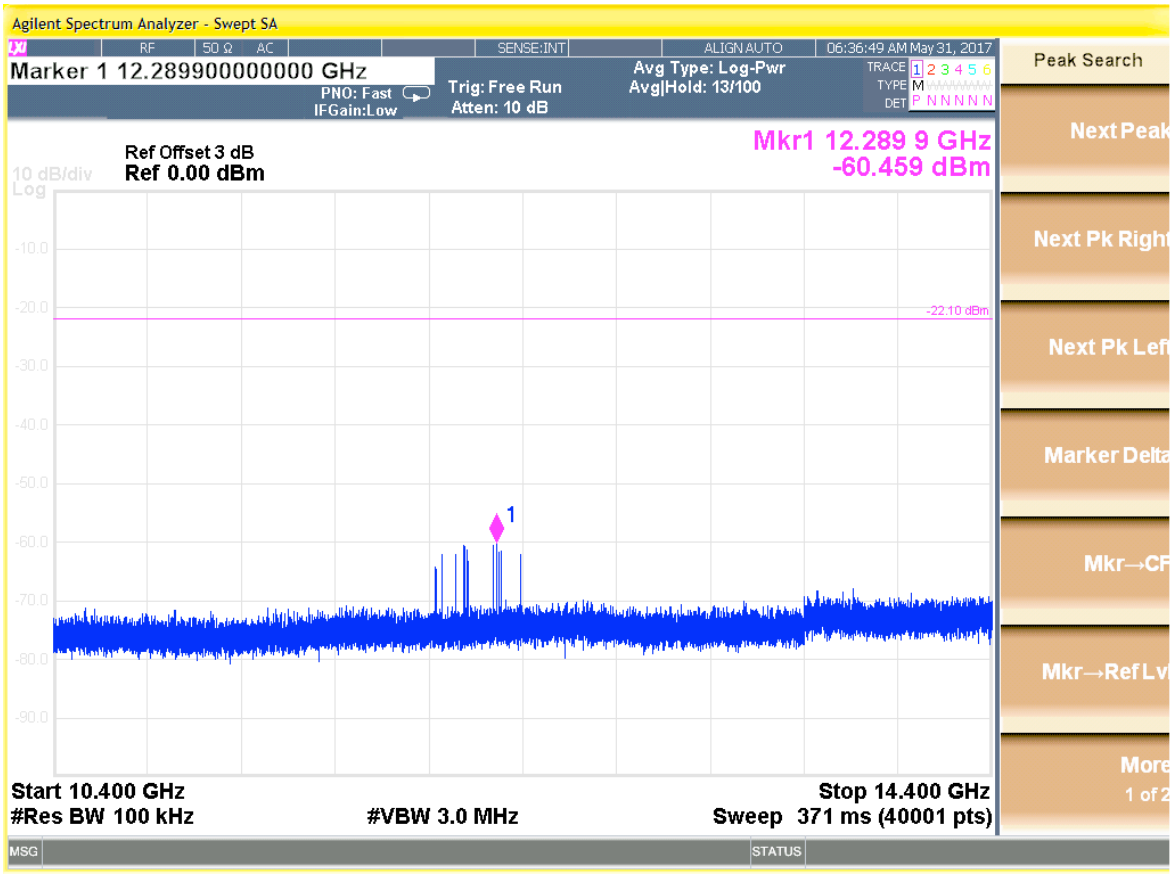


*Figure 15: Conducted Spurious Emissions*

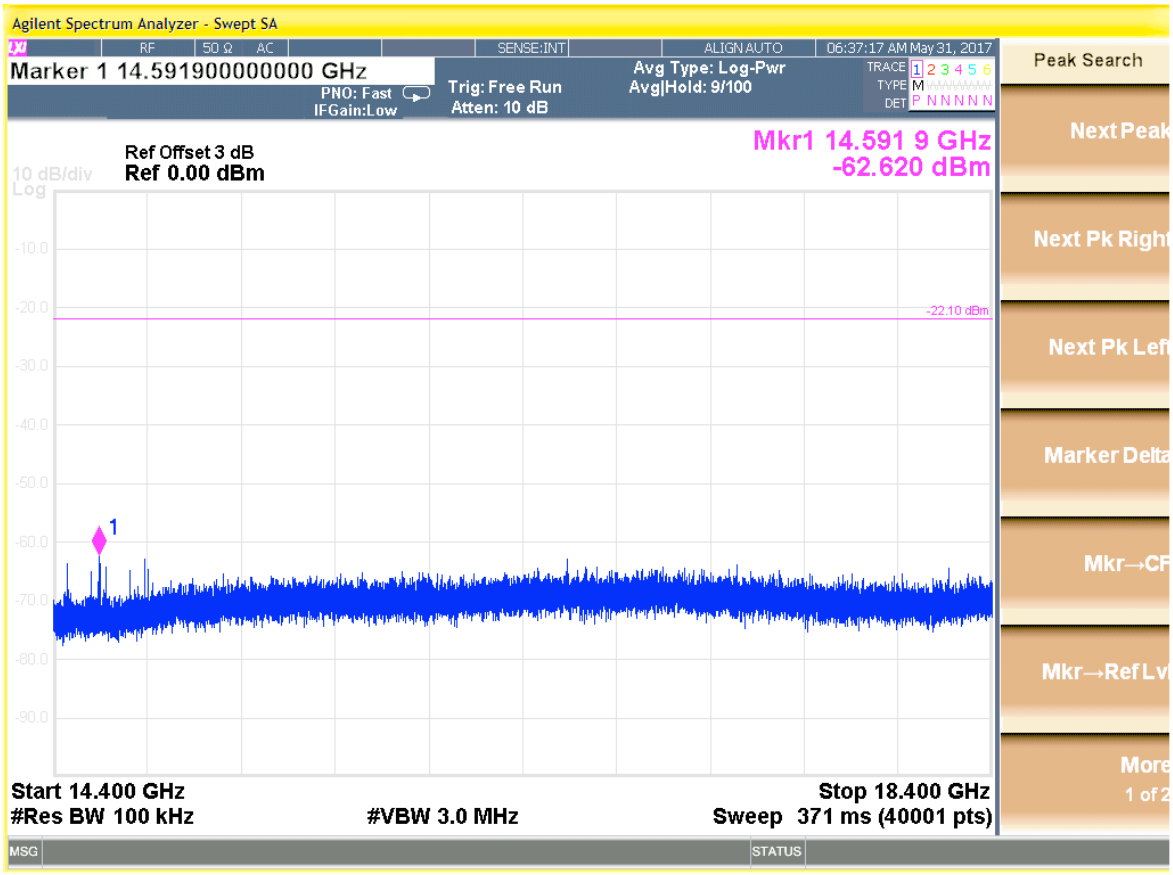


*Figure 16: Conducted Spurious Emissions*

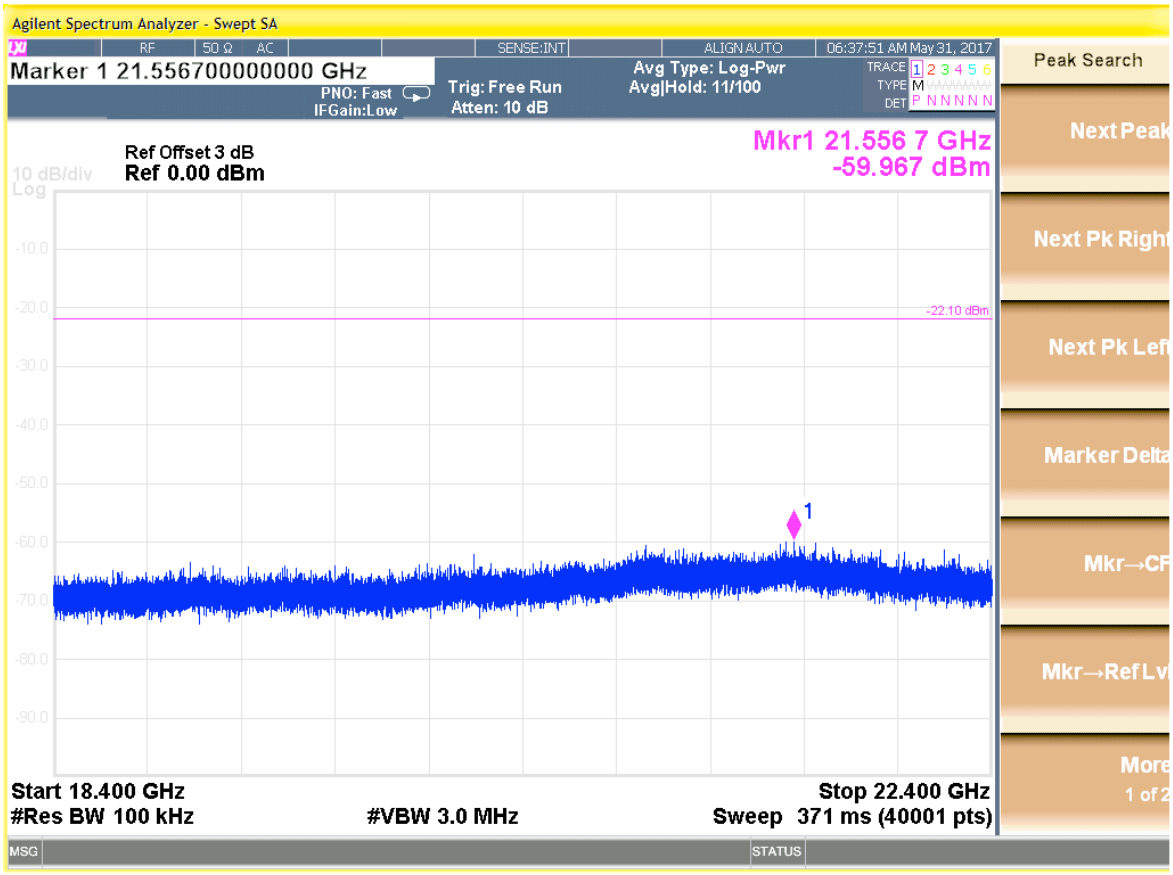
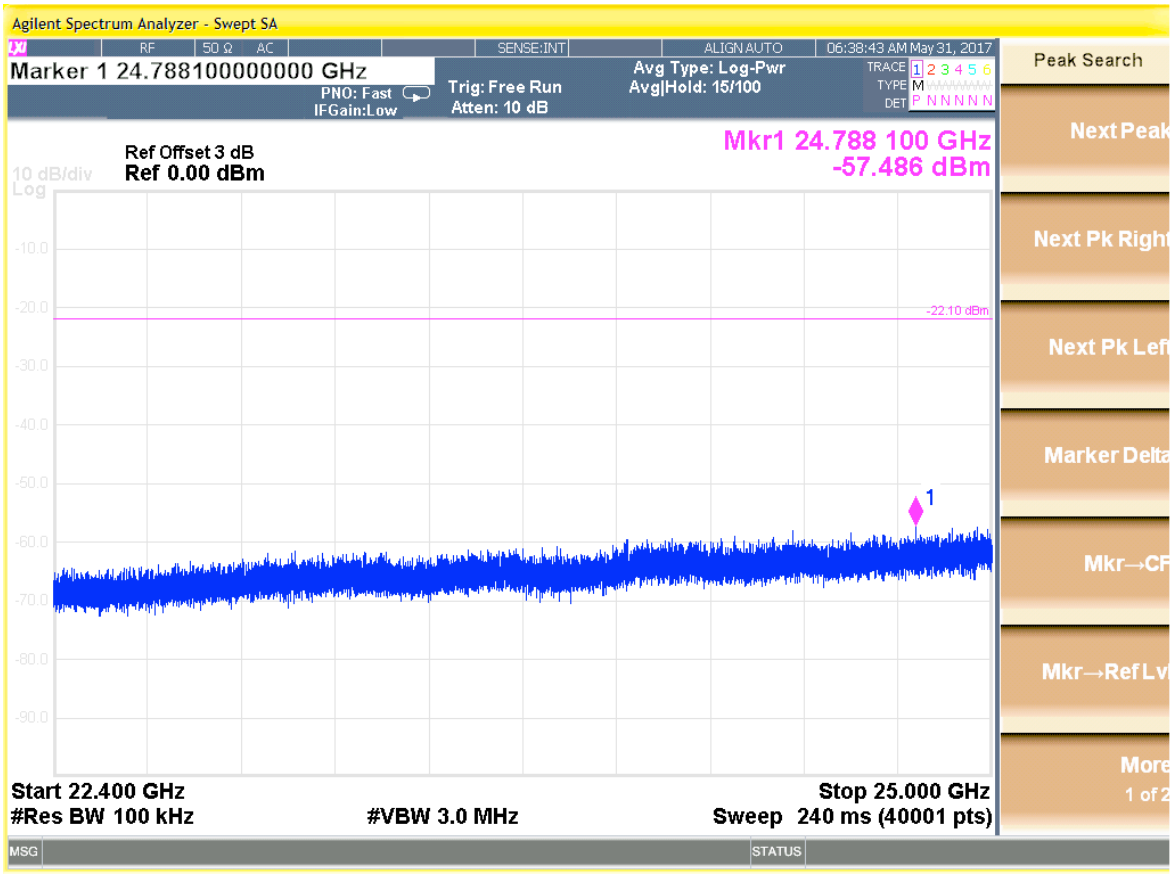


*Figure 17: Conducted Spurious Emissions*



## 4.5 Band Edge Compliance

In accordance with FCC Public Notice DA-00-705 close-up plots of the upper and lower channels in both hopping and non-hopping modes with respect to the nearest authorized band-edges were measured. The tests were performed in the same manner as the above conducted spurious emissions tests. Hopping data produced worst-case and is shown here.

The following are plots of the conducted spurious emissions data.

*Figure 18: Low Channel, Lower Band-edge*

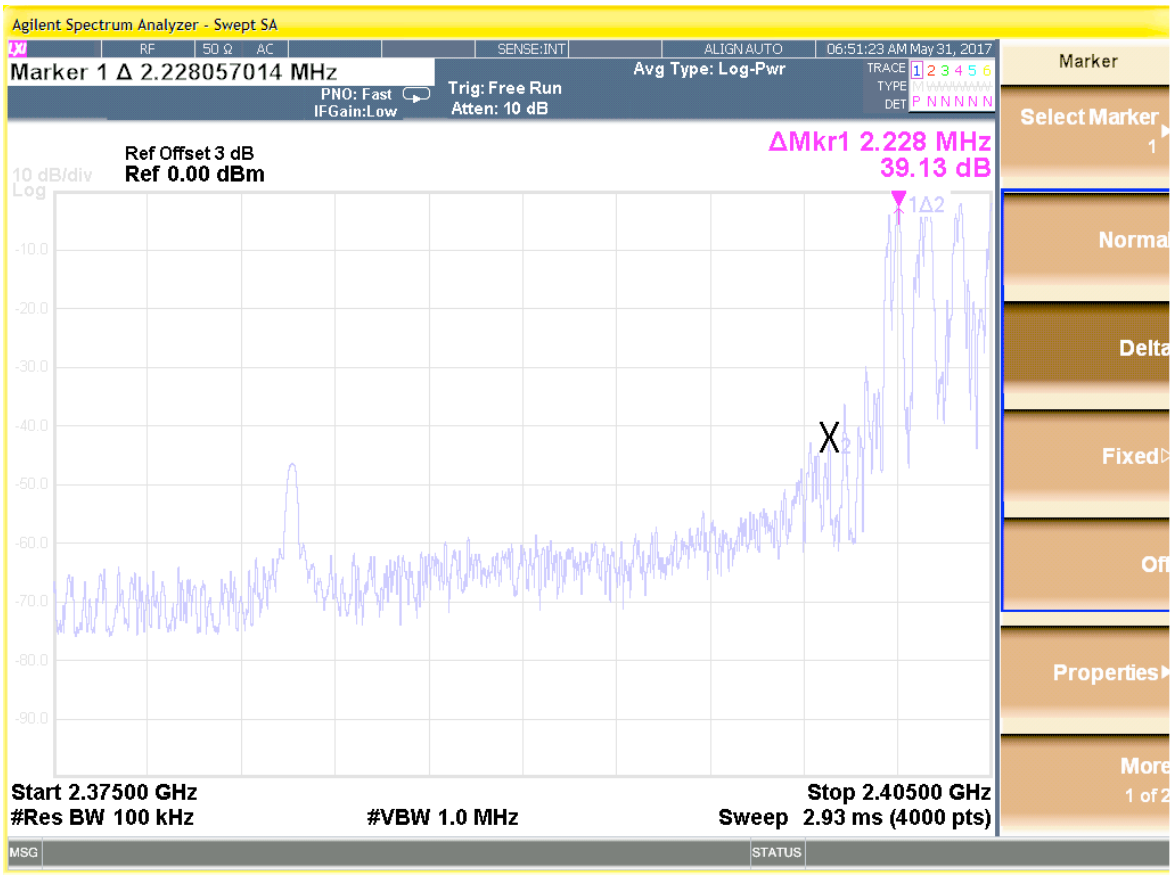
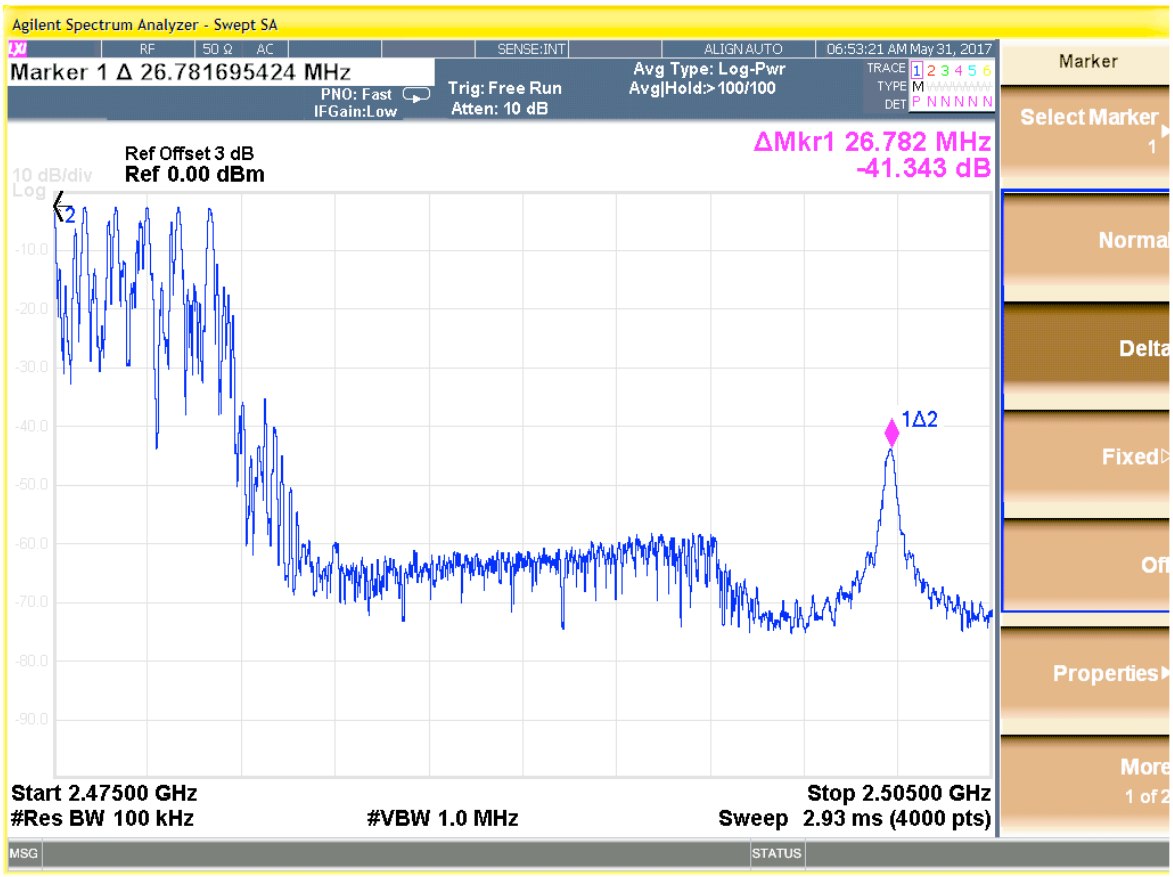


*Figure 19: High Channel, Upper Band-edge*



## 4.6 RADIATED SPURIOUS EMISSIONS: (FCC PART §2.1053)

The EUT must comply with the requirements for radiated spurious emissions that fall within the restricted bands. These emissions must meet the limits specified in §15.209 and §15.35(b) for peak measurements.

### 4.6.1 Test Procedure

The EUT was placed on motorized turntable for radiated testing on a 3-meter open field test site. The emissions from the EUT were measured continuously at every azimuth by rotating the turntable. Receiving antennas were mounted on an antenna mast to determine the height of maximum emissions. The height of the antenna was varied between 1 and 4 meters. The peripherals were placed on the table in accordance with ANSI C63.4-2014. Cables were varied in position to produce maximum emissions. Both the horizontal and vertical field components were measured.

Emissions were tested to 10X intentional emission frequency.

The emissions were measured using the following resolution bandwidths:

*Table 9: Spectrum Analyzer Settings*

| Frequency Range | Resolution Bandwidth | Video Bandwidth |
|---|---|---|
| 30MHz-1000 MHz | 120kHz | >100 kHz |
| >1000 MHz | 1 MHz | <10 Hz (Avg.), 1MHz (Peak) |

## *Table 10: Radiated Emission Test Data, Low Frequency Data (<1GHz)*

| Freq (MHz) | Polarity (H/V) | Azimuth (Degree) | Ant. Height (m) | SA Level (dBuV) | Corr Factors (dB) | Corr. Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Peak or QP | Note |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| 46.48 | V | 0.0 | 1.0 | 47.9 | -15.6 | 32.3 | 40.0 | -7.7 | Peak | amb |
| 54.97 | V | 45.0 | 2.0 | 48.7 | -17.9 | 30.7 | 40.0 | -9.3 | Peak | |
| 61.03 | V | 180.0 | 1.0 | 49.3 | -17.6 | 31.7 | 40.0 | -8.3 | Peak | |
| 75.38 | V | 90.0 | 2.0 | 49.5 | -16.7 | 32.8 | 40.0 | -7.2 | Peak | |
| 85.83 | V | 270.0 | 1.0 | 38.0 | -17.0 | 21.0 | 40.0 | -19.0 | Peak | |
| 217.58 | V | 270.0 | 1.5 | 37.2 | -13.0 | 24.2 | 40.0 | -15.8 | Peak | |
| 266.69 | V | 180.0 | 1.0 | 32.7 | -10.2 | 22.5 | 47.0 | -24.5 | Peak | |
| 277.35 | V | 0.0 | 1.0 | 37.5 | -9.6 | 27.9 | 47.0 | -19.1 | Peak | |
| 292.48 | V | 0.0 | 1.0 | 31.3 | -9.5 | 21.9 | 47.0 | -25.1 | Peak | |
| 649.17 | V | 180.0 | 1.0 | 42.8 | -0.8 | 42.0 | 47.0 | -5.0 | Peak | amb |
| 767.27 | V | 180.0 | 1.0 | 40.3 | 0.9 | 41.2 | 47.0 | -5.8 | Peak | amb |
| 788.83 | V | 220.0 | 1.0 | 38.8 | 1.3 | 40.1 | 47.0 | -6.9 | Peak | amb |
| | | | | | | | | | | |
| 46.48 | H | 0.0 | 1.5 | 45.0 | -15.6 | 29.4 | 40.0 | -10.6 | Peak | amb |
| 54.97 | H | 45.0 | 1.0 | 46.0 | -17.9 | 28.1 | 40.0 | -11.9 | Peak | |
| 61.03 | H | 180.0 | 2.0 | 46.3 | -17.6 | 28.7 | 40.0 | -11.3 | Peak | |
| 75.38 | H | 90.0 | 2.0 | 47.2 | -16.7 | 30.5 | 40.0 | -9.5 | Peak | |
| 85.83 | H | 270.0 | 1.0 | 38.0 | -17.0 | 21.0 | 40.0 | -19.0 | Peak | |
| 217.58 | H | 270.0 | 1.0 | 37.2 | -13.0 | 24.2 | 40.0 | -15.8 | Peak | |
| 266.69 | H | 180.0 | 1.0 | 32.7 | -10.2 | 22.5 | 47.0 | -24.5 | Peak | |
| 277.35 | H | 0.0 | 1.0 | 37.5 | -9.6 | 27.9 | 47.0 | -19.1 | Peak | |
| 292.48 | H | 0.0 | 1.0 | 31.3 | -9.5 | 21.9 | 47.0 | -25.1 | Peak | |
| 649.17 | H | 180.0 | 1.0 | 40.8 | -0.8 | 40.0 | 47.0 | -7.0 | Peak | amb |
| 767.27 | H | 180.0 | 1.0 | 38.5 | 0.9 | 39.4 | 47.0 | -7.6 | Peak | amb |
| 788.83 | H | 220.0 | 1.0 | 37.2 | 1.3 | 38.5 | 47.0 | -8.5 | Peak | amb |
| | | | | | | | | | | |

## *Table 11: Radiated Emission Test Data, High Frequency Data >1GHz*

| Pos | Frequency (MHz) | Polarity H/V | Azimuth (Degree) | Ant. Height (m) | SA Level (dBuV) | Corr Factors (dB) | Corr. Level (uV/m) | Limit (uV/m) | Margin (dB) | Note |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| X | 300.00 | V | 180.00 | 0.00 | 25.00 | -9.9 | 5.7 | 200.0 | -30.9 | Ambient |
| | 600.00 | V | 0.00 | 2.00 | 28.00 | -4.0 | 15.8 | 200.0 | -22.1 | Ambient |
| | 4884.00 | V | 180.00 | 1.50 | 36.00 | 15.3 | 367.6 | 500.0 | -2.7 | Average |
| | 6000.00 | V | 120.00 | 1.00 | 26.00 | 18.5 | 167.4 | 500.0 | -9.5 | Ambient |
| | 7000.00 | V | 180.00 | 1.00 | 28.00 | 21.9 | 312.5 | 500.0 | -4.1 | Ambient |
| | 7362.00 | V | 120.00 | 2.00 | 25.20 | 23.4 | 270.0 | 500.0 | -5.4 | Ambient |
| Y | 300.00 | V | 180.00 | 1.50 | 24.50 | -9.9 | 5.4 | 200.0 | -31.4 | Ambient |
| | 600.00 | V | 0.00 | 1.50 | 29.00 | -4.0 | 17.7 | 200.0 | -21.1 | Ambient |
| | 4884.00 | V | 180.00 | 2.00 | 35.50 | 15.3 | 347.0 | 500.0 | -3.2 | Average |
| | 6000.00 | V | 120.00 | 1.50 | 25.50 | 18.5 | 158.0 | 500.0 | -10.0 | Ambient |
| | 7000.00 | V | 180.00 | 1.00 | 28.10 | 21.9 | 316.2 | 500.0 | -4.0 | Ambient |
| | 7362.00 | V | 120.00 | 1.00 | 25.20 | 23.4 | 270.0 | 500.0 | -5.4 | Ambient |
| Z | 300.00 | V | 180.00 | 1.50 | 25.00 | -9.9 | 5.7 | 200.0 | -30.9 | Ambient |
| | 600.00 | V | 0.00 | 1.50 | 29.00 | -4.0 | 17.7 | 200.0 | -21.1 | Ambient |
| | 4884.00 | V | 0.00 | 1.50 | 36.20 | 15.3 | 376.1 | 500.0 | -2.5 | Average |
| | 6000.00 | V | 0.00 | 1.50 | 25.00 | 18.5 | 149.2 | 500.0 | -10.5 | Ambient |
| | 7000.00 | V | 90.00 | 1.50 | 28.00 | 21.9 | 312.5 | 500.0 | -4.1 | Ambient |
| | 7362.00 | H | 90.00 | 1.50 | 25.20 | 23.4 | 270.0 | 500.0 | -5.4 | Ambient |
| | | | | | | | | | | |
| X | 300.00 | H | 120.00 | 2.00 | 26.00 | -9.9 | 6.4 | 200.0 | -29.9 | Ambient |
| | 600.00 | H | 180.00 | 0.00 | 25.50 | -4.0 | 11.8 | 200.0 | -24.6 | Ambient |
| | 4884.00 | H | 120.00 | 0.00 | 35.50 | 15.3 | 347.0 | 500.0 | -3.2 | Average |
| | 6000.00 | H | 0.00 | 1.50 | 26.00 | 18.5 | 167.4 | 500.0 | -9.5 | Ambient |
| | 7000.00 | H | 120.00 | 1.50 | 26.00 | 21.9 | 248.3 | 500.0 | -6.1 | Ambient |
| | 7362.00 | H | 180.00 | 0.00 | 25.20 | 23.4 | 270.0 | 500.0 | -5.4 | Ambient |
| Y | 300.00 | H | 120.00 | 0.00 | 26.00 | -9.9 | 6.4 | 200.0 | -29.9 | Ambient |
| | 600.00 | H | 0.00 | 1.50 | 0.00 | -4.0 | 0.6 | 200.0 | -50.1 | Ambient |
| | 4884.00 | H | 180.00 | 1.50 | 0.00 | 15.3 | 5.8 | 500.0 | -38.7 | Average |
| | 6000.00 | H | 0.00 | 0.00 | 26.00 | 18.5 | 167.4 | 500.0 | -9.5 | Ambient |
| | 7000.00 | H | 0.00 | 0.00 | 26.00 | 21.9 | 248.3 | 500.0 | -6.1 | Ambient |
| | 7362.00 | H | 0.00 | 0.00 | 26.00 | 23.4 | 296.1 | 500.0 | -4.6 | Ambient |
| Z | 300.00 | H | 0.00 | 1.00 | 28.00 | -9.9 | 8.1 | 200.0 | -27.9 | Ambient |
| | 600.00 | H | 0.00 | 1.00 | 26.00 | -4.0 | 12.5 | 200.0 | -24.1 | Ambient |
| | 4884.00 | H | 120.00 | 1.50 | 36.00 | 15.3 | 367.6 | 500.0 | -2.7 | Average |
| | 6000.00 | H | 0.00 | 1.50 | 26.00 | 18.5 | 167.4 | 500.0 | -9.5 | Ambient |
| | 7000.00 | H | 0.00 | 1.50 | 26.00 | 21.9 | 248.3 | 500.0 | -6.1 | Ambient |
| | 7362.00 | H | 0.00 | 1.50 | 26.00 | 23.4 | 296.1 | 500.0 | -4.6 | Ambient |