## 9.7 Band Edge

### 9.7.1 Test Requirement:

FCC CFR 47 Rule Part 15.247 (d)

ISED RSS-247 [5.5]

### 9.7.2 Test Method:

Measurements were performed according to the procedure defined in ANSI C63.10:2013 Section 7.8.

**Spectrum analyzer settings:**

Span = wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products which fall outside of the authorized band of operation
RBW = 100 kHz
VBW = 300 kHz
Sweep = Auto
Detector function = Peak
Trace = Max Hold
The trace was allowed to stabilize. The marker was set on the emission at the band edge, or on the highest modulation product outside of the band, if this level is greater than that at the band edge. The delta marker function was set and the marker-to-peak function moved to the peak of the in-band emission.

With the same instrument settings, the hopping function of the EUT was enabled and the trace was allowed to stabilize. The same procedure listed above was used to determine if any spurious emissions caused by the hopping function complied with the specified limit.

**Sample Calculations:**
Cable losses are accounted for directly on the spectrum analyzer.
Corrected Amplitude: Amplitude (Analyzer level) + CL (Cable losses) – Amplifier Gain = -25 dBm + 5 dB = -20dBm.

### 9.7.3 Limits:

The maximum level is at least 20dBc with measurements taken with the EUT in pseudorandom hopping mode and with hopping mode disabled.

### 9.7.4 Test Results:

Pass.

### 9.7.5 Test Data:

**Figure 9-30 Low Channel Band edge: 1-DH5 Mode (Hopping disabled)**

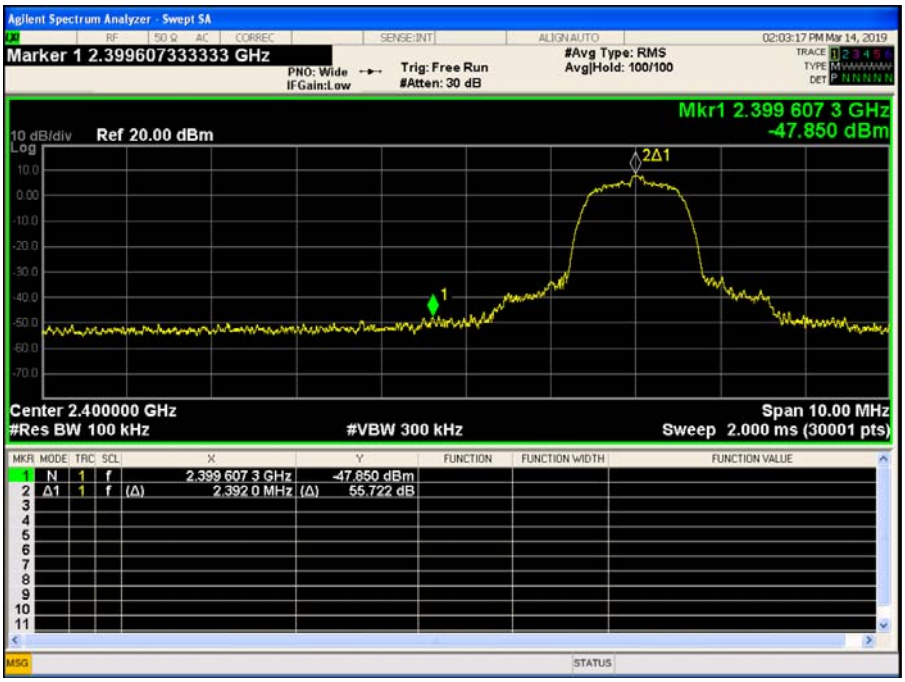



**Figure 9-31 Low Channel Band edge: 2-DH5 Mode (Hopping disabled)**

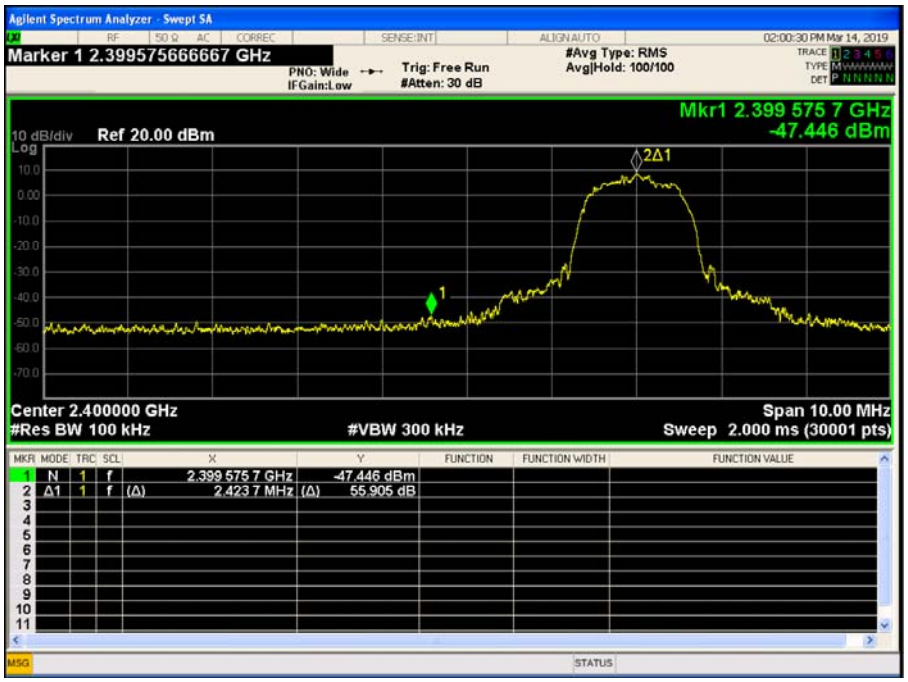



**Figure 9-32 Low Channel Band edge: 3-DH5 Mode (Hopping disabled)**

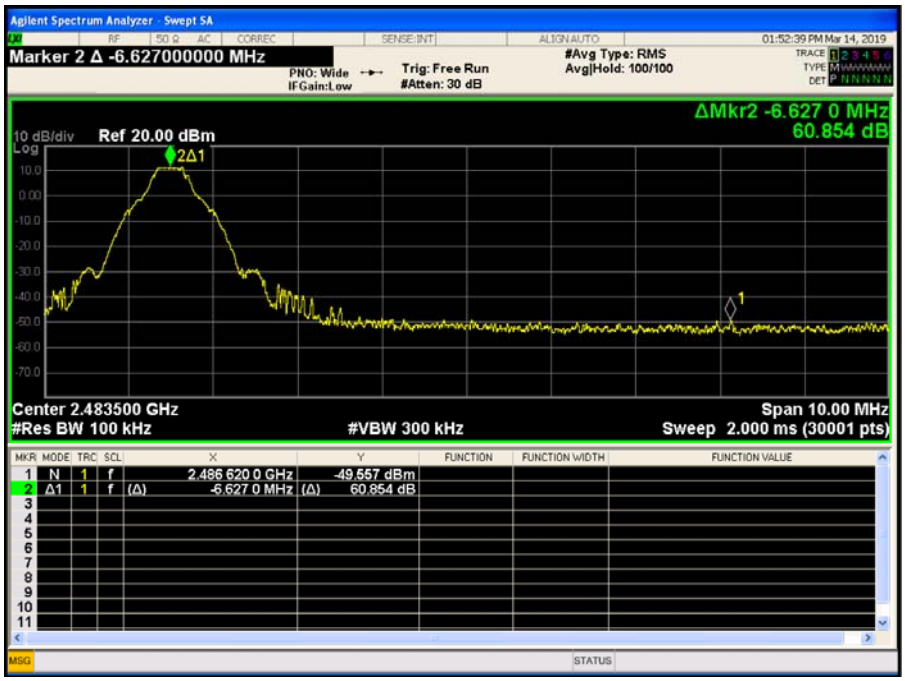



**Figure 9-33 High Channel Band edge: 1-DH5 Mode (Hopping disabled)**

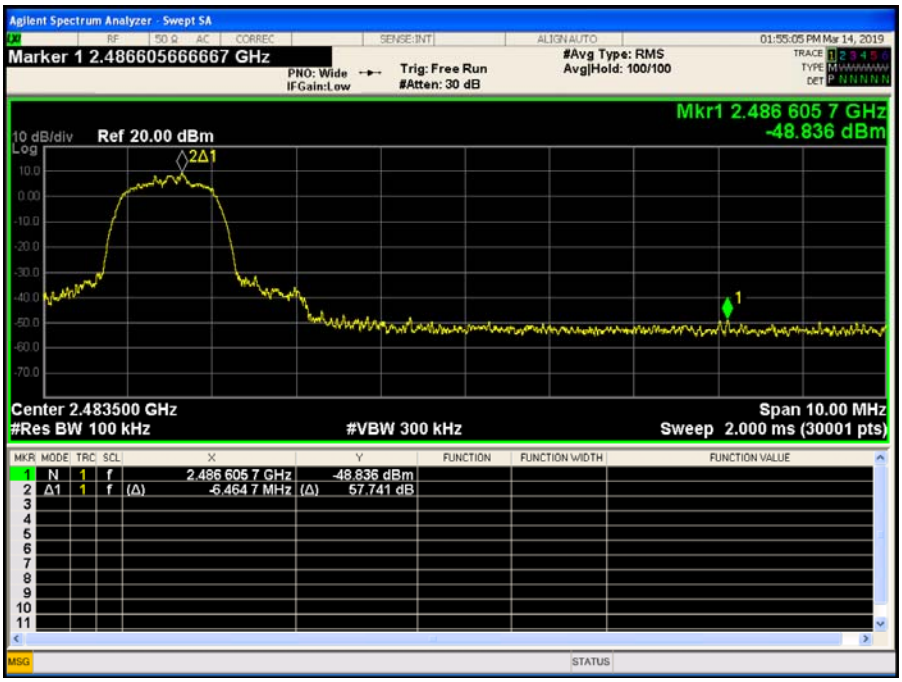



**Figure 9-34 High Channel Band edge: 2-DH5 Mode (Hopping disabled)**

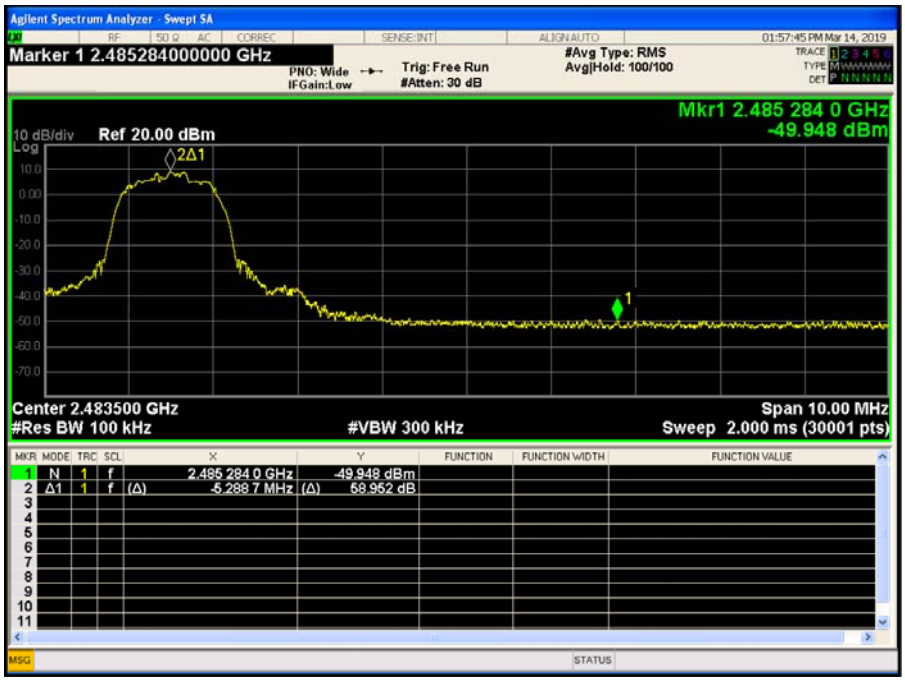



**Figure 9-35 High Channel Band edge: 3-DH5 Mode (Hopping disabled)**

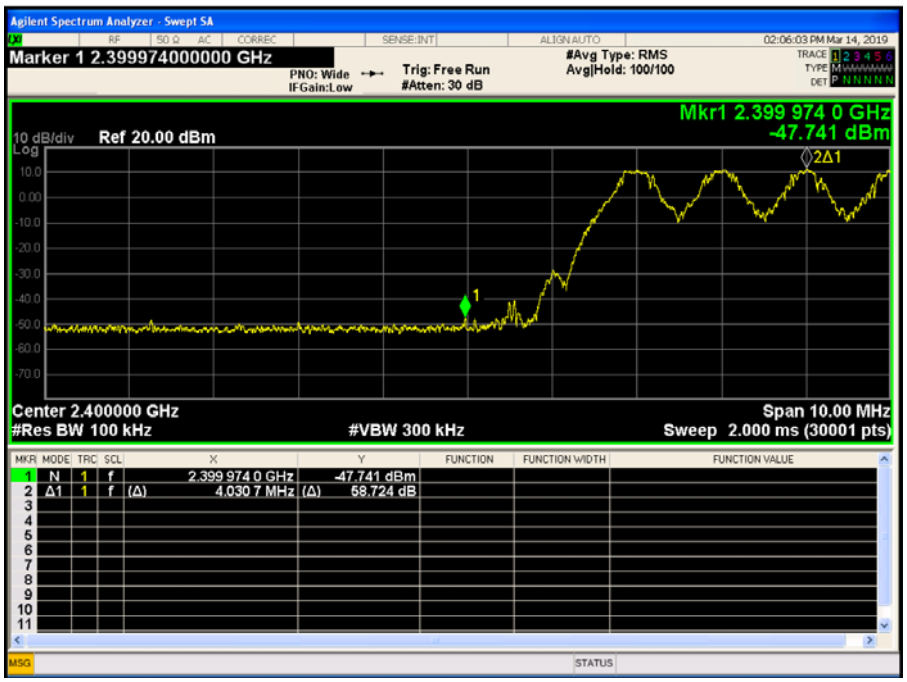



**Figure 9-36 Low Channel Band edge 1-DH5 Mode (Hopping enabled)**

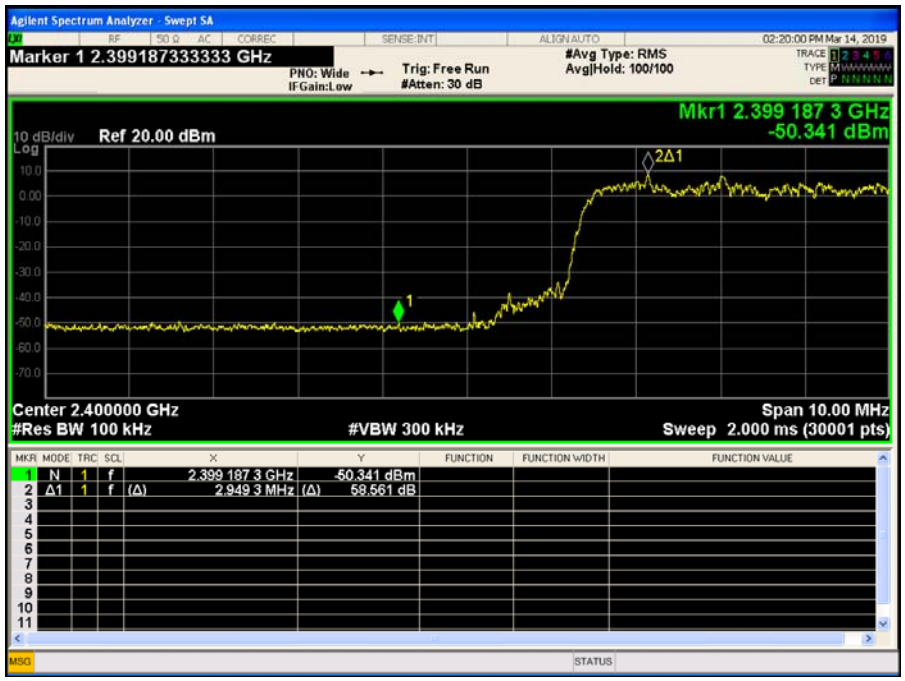



**Figure 9-37 Low Channel Band edge 2-DH5 Mode (Hopping enabled)**

**Figure 9-38 Low Channel Band edge 3-DH5 Mode (Hopping enabled)**

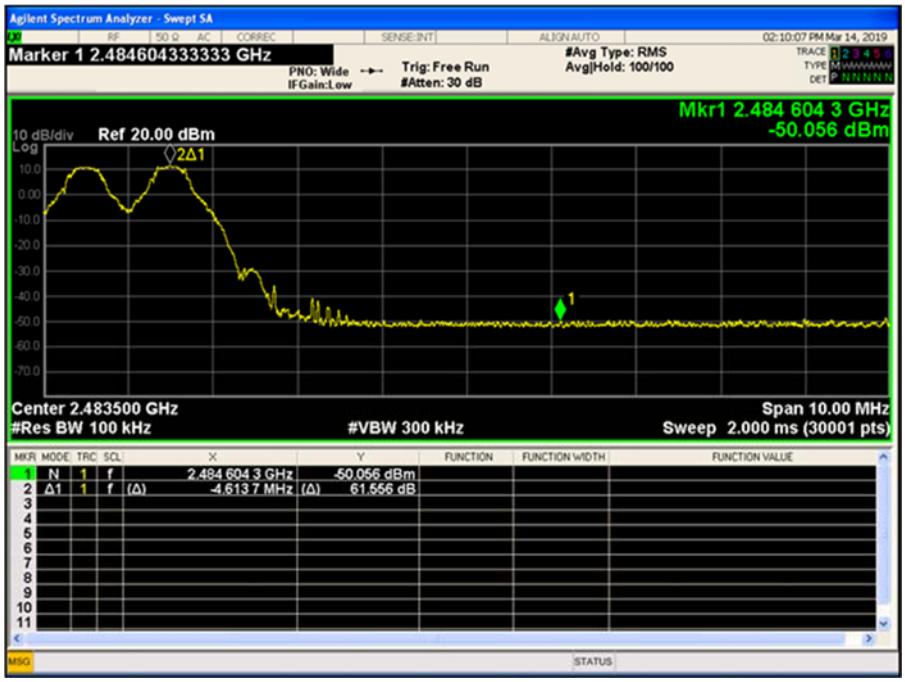



**Figure 9-39 High Channel Band 1-DH5 Mode (Hopping enabled)**

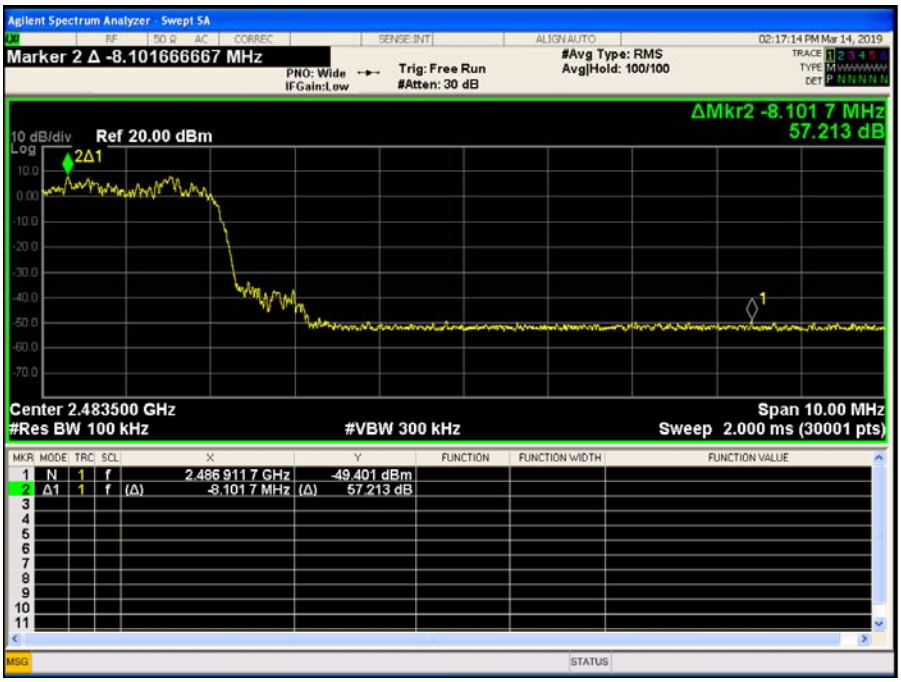



**Figure 9-40 High Channel Band 2-DH5 Mode (Hopping enabled)**

**Figure 9-41 High Channel Band 3-DH5 Mode (Hopping enabled)**

## 9.8 Conducted Spurious Emissions

### 9.8.1 Test Requirement:

FCC CFR 47 Rule Part 15.247 (d)

ISED RSS-247 [5.5]

### 9.8.2 Test Method:

Measurements were performed according to the procedure defined in ANSI C63.10:2013 Section 7.8.

**Spectrum analyzer settings:**
Span = 30 M- 12 GHz; 12 G- 25 GHz
RBW = 1 MHz
VBW = 3 MHz
Sweep Time = Auto
Sweep Points= 30000
Detector function = Peak
Trace = Max Hold
If an emission is found within 3dB of the limit or exceeding the limit, reduce the RBW to 100 kHz for the final measurements.
The trace was allowed to stabilize. The marker was set on the peak of any spurious emission recorded. The level displayed had to comply with the limit specified.

**Sample Calculations:**
Cable losses are accounted for directly on the spectrum analyzer.
Corrected Amplitude: Amplitude (Analyzer level) + CL (Cable losses) = -25 dBm + 5 dB = -20dBm.

### 9.8.3 Limits:

The maximum spurious emission shall be at least 20dBc.

### 9.8.4 Test Results:

Pass

### 9.8.5 Test Data:

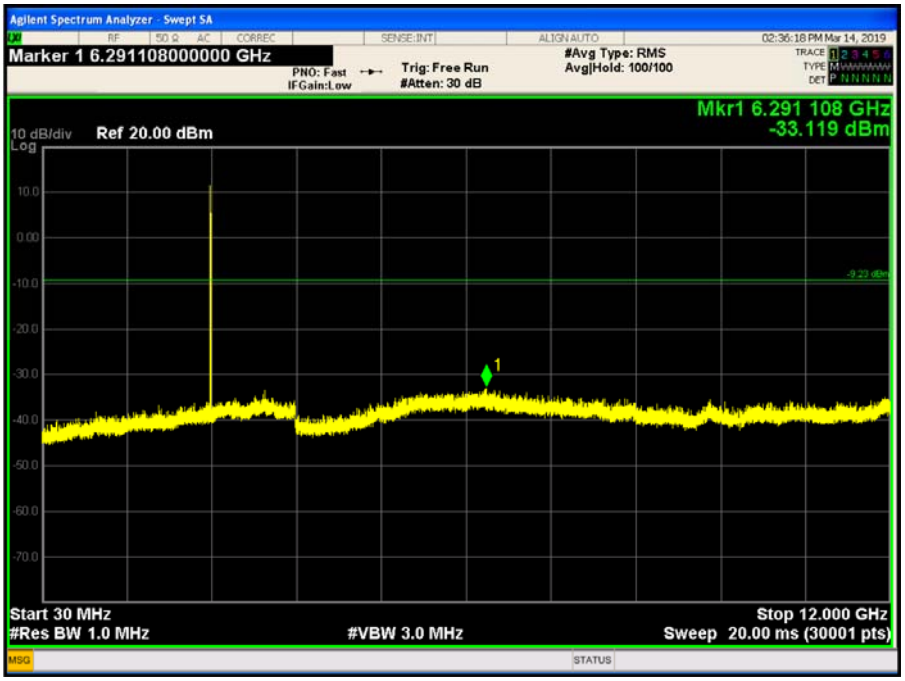



**Figure 9-42 Conducted Spurious Emissions 30-12000 MHz: 1-DH5 Mode (Ch. 0)**

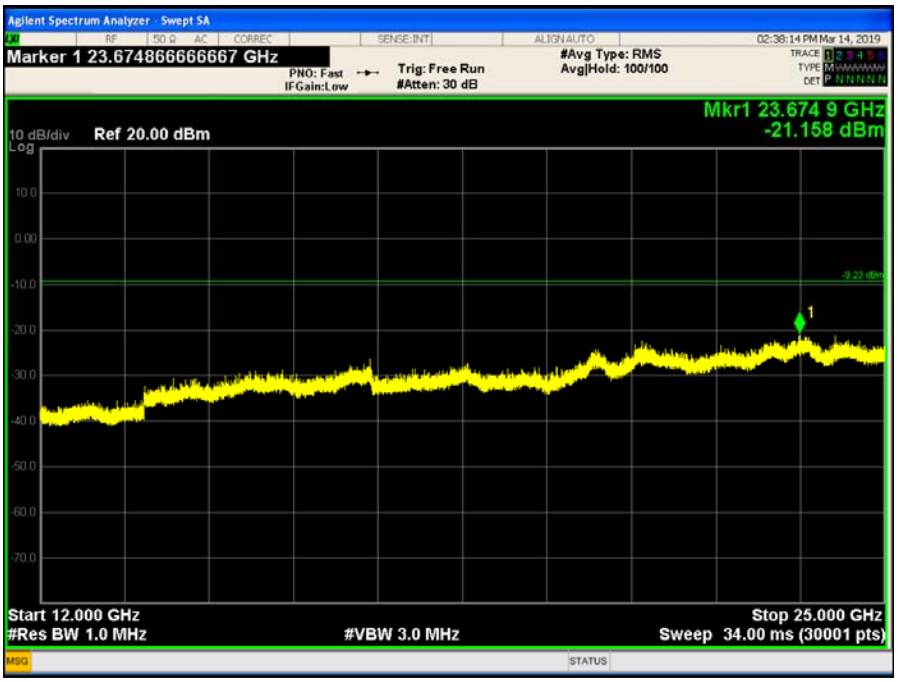



**Figure 9-43 Conducted Spurious Emissions 12-25 GHz: 1-DH5 Mode (Ch. 0)**

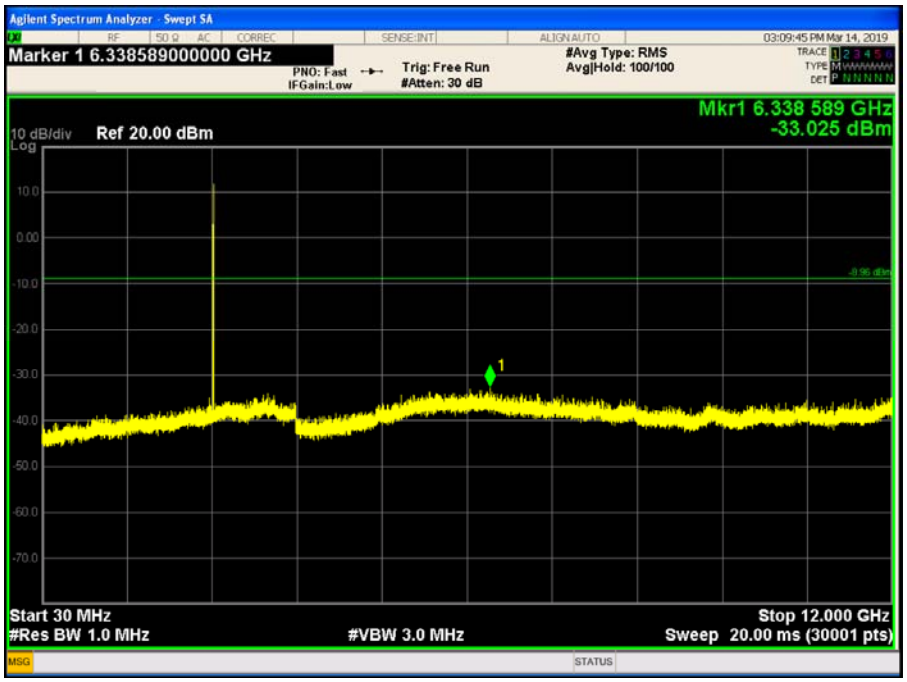



**Figure 9-44 Conducted Spurious Emissions 30-12000 MHz: 1-DH5 Mode (Ch. 39)**

**Figure 9-45 Conducted Spurious Emissions 12-25 GHz: 1-DH5 Mode (Ch. 39)**

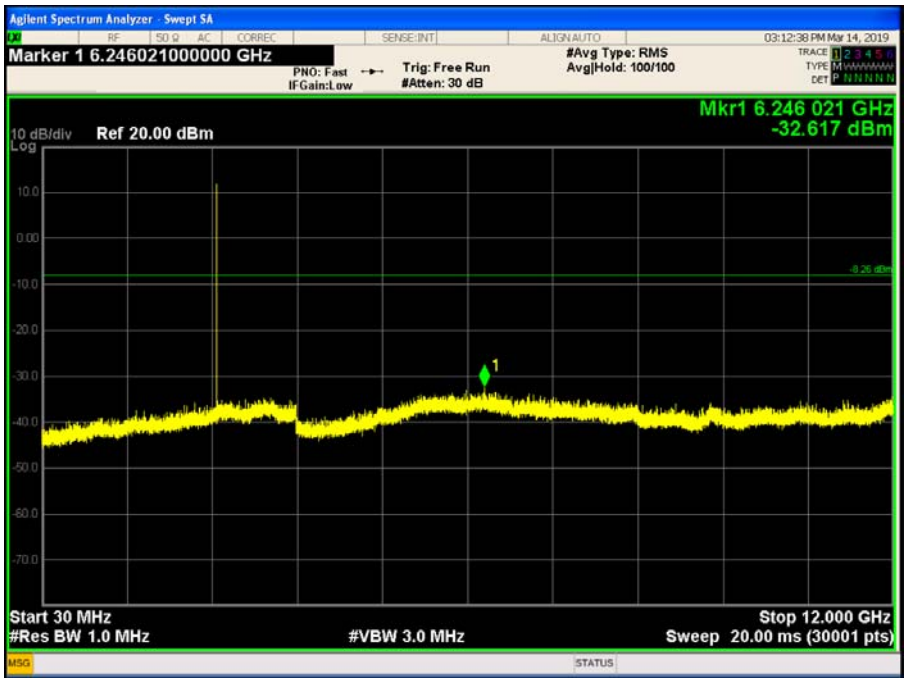



**Figure 9-46 Conducted Spurious Emissions 30-12000 MHz: 1-DH5 Mode (Ch. 78)**

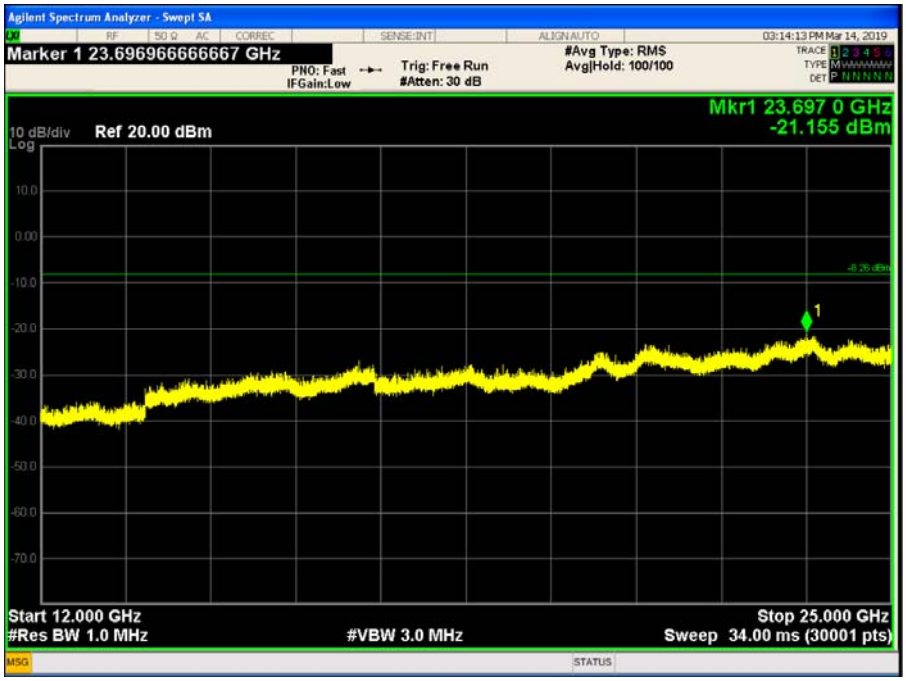



**Figure 9-47 Conducted Spurious Emissions 12-25 GHz: 1-DH5 Mode (Ch. 78)**

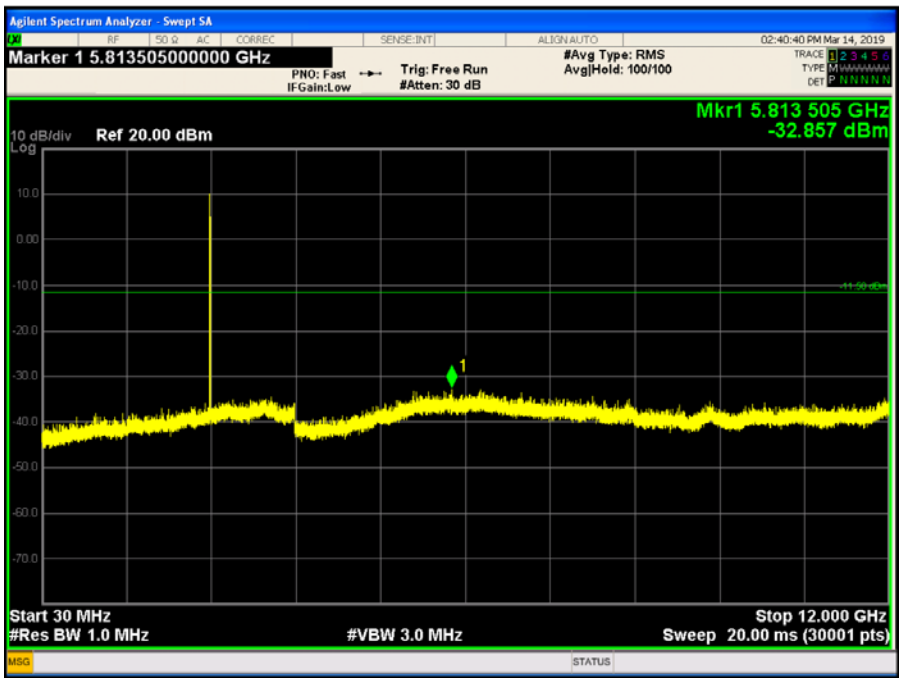



**Figure 9-48 Conducted Spurious Emissions 30-12000 MHz: 2-DH5 Mode (Ch. 0)**

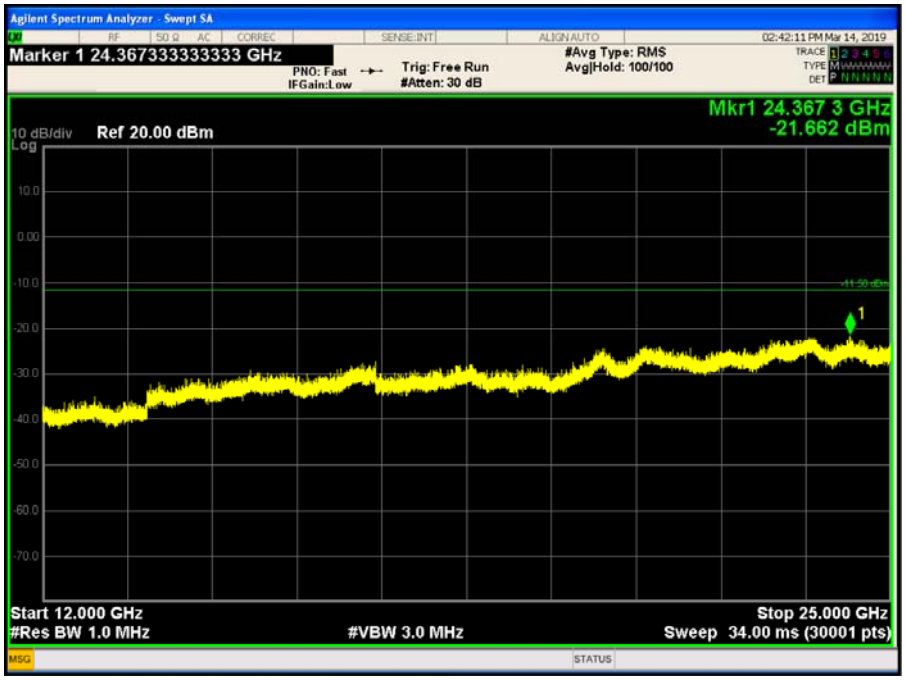



**Figure 9-49 Conducted Spurious Emissions 12-25 GHz: 2-DH5 Mode (Ch. 0)**

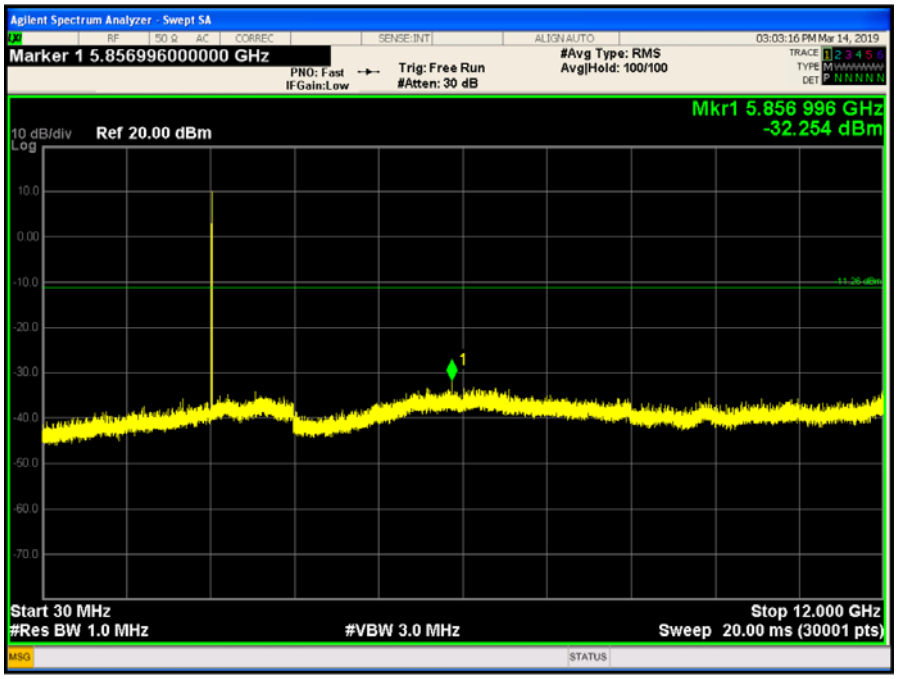



**Figure 9-50 Conducted Spurious Emissions 30-12000 MHz: 2-DH5 Mode (Ch. 39)**

**Figure 9-51 Conducted Spurious Emissions 12-25 GHz: 2-DH5 Mode (Ch. 39)**

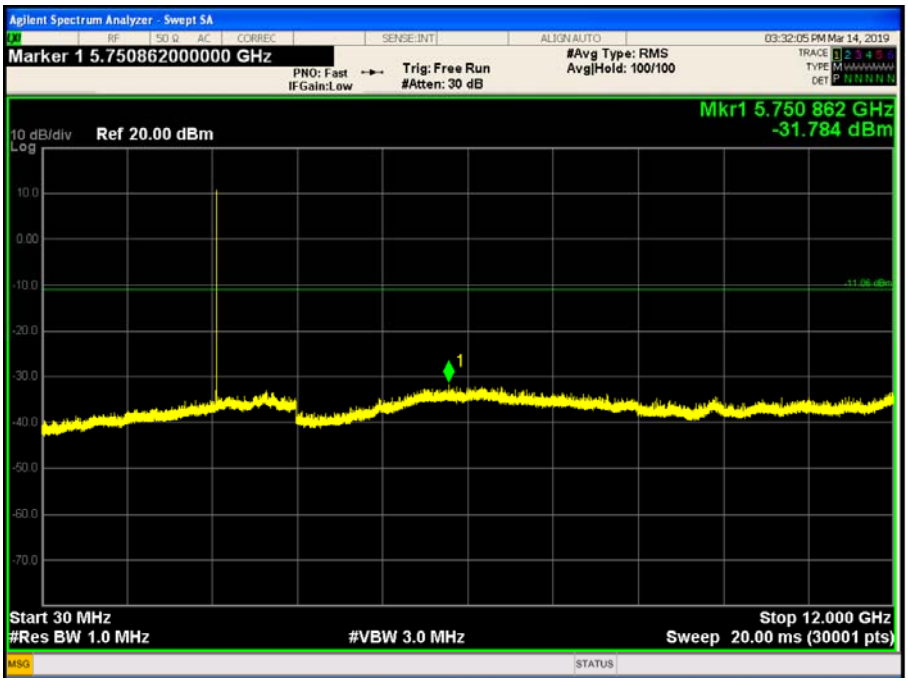



**Figure 9-52 Conducted Spurious Emissions 30-12000 MHz: 2-DH5 Mode (Ch. 78)**

**Figure 9-53 Conducted Spurious Emissions 12-25 GHz: 2-DH5 Mode (Ch. 78)**

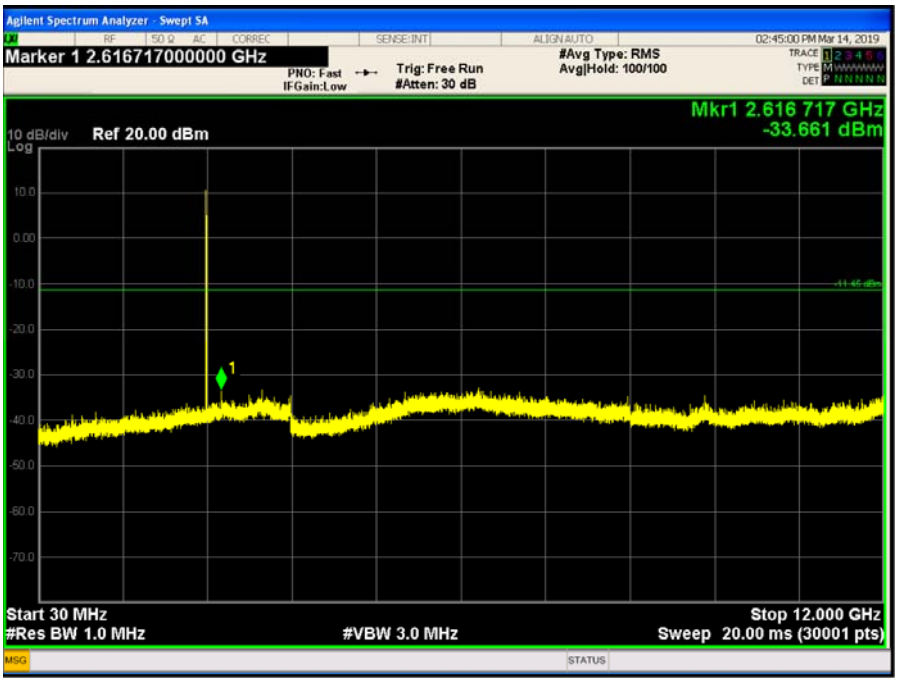



**Figure 9-54 Conducted Spurious Emissions 30-12000 MHz: 3-DH5 Mode (Ch. 0)**

**Figure 9-55 Conducted Spurious Emissions 12-25 GHz: 3-DH5 Mode (Ch. 0)**

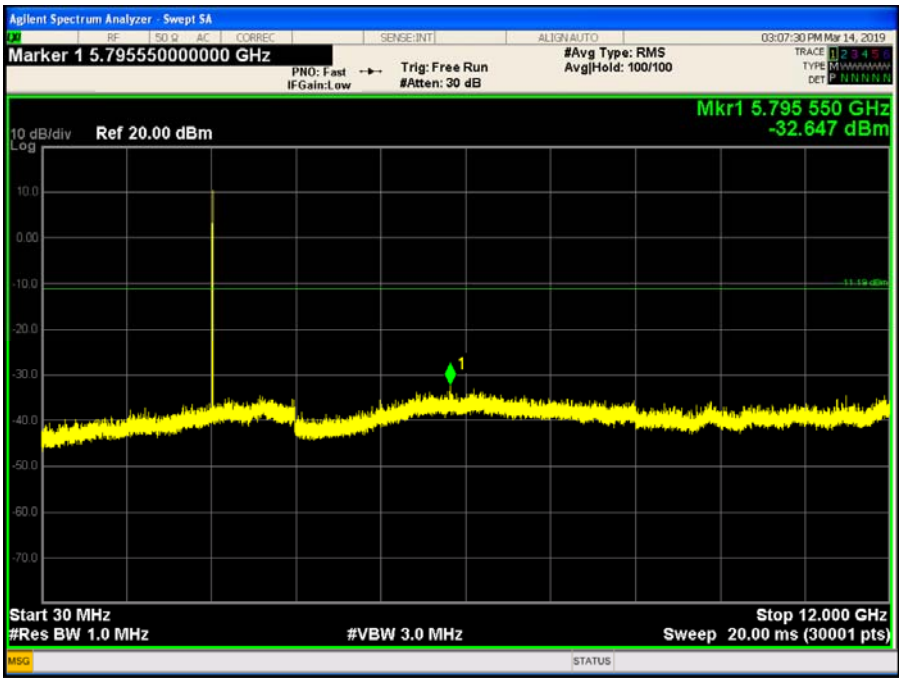



**Figure 9-56 Conducted Spurious Emissions 30-12000 MHz: 3-DH5 Mode (Ch. 39)**

**Figure 9-57 Conducted Spurious Emissions 12-25 GHz: 3-DH5 Mode (Ch. 39)**

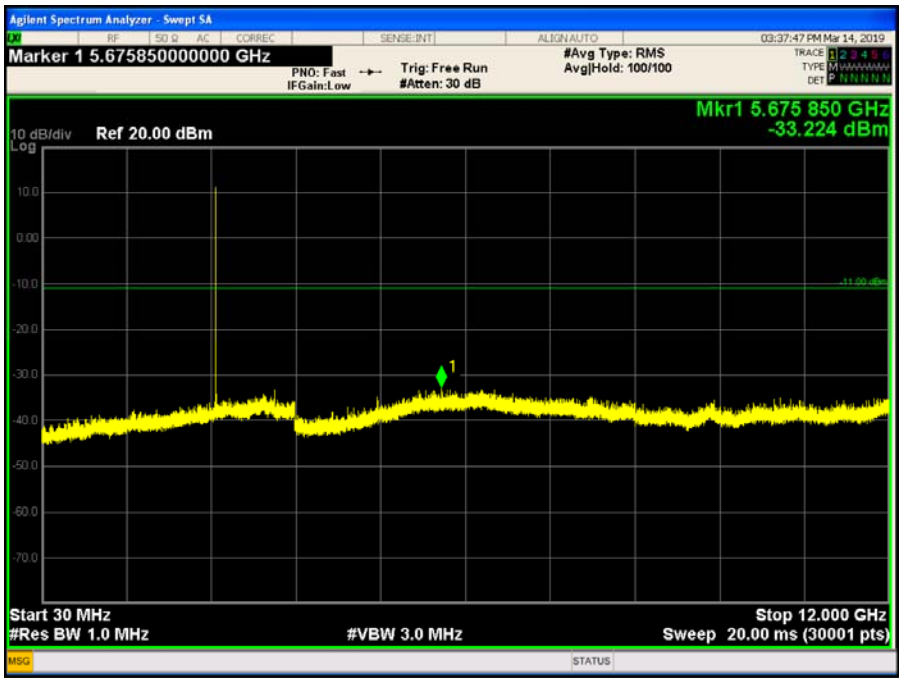



**Figure 9-58 Conducted Spurious Emissions 30-12000 MHz: 3-DH5 Mode (Ch. 78)**

**Figure 9-59 Conducted Spurious Emissions 12-25 GHz: 3-DH5 Mode (Ch. 78)**

## 9.9 Radiated Spurious and Band Edge Emissions

### 9.9.1 Test Requirement:

FCC CFR 47 Rule Part 15.247 (d)

ISED RSS-247 [5.5] and RSS GEN [8.9]

### 9.9.2 Test Method:

Measurements were performed according to the procedure defined in KDB 558074 - Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 V04 and ANSI C63.10 2013.

Radiated spurious measurements are made from 30MHz to the 10th harmonic of the fundamental frequency of the transmitter. Measurements below 30MHz were not performed since the radio circuitry of the EUT does not contain clocks below 30MHz. The limit for radiated spurious emissions is per 15.209 and RSS-247 [5.5]. Additionally, emissions found in the restricted bands listed in 15.205 and RSS-Gen were tested for compliance per limits in 15.209 and RSS-Gen.

The EUT was tested near the low, middle and high channels of operation in each sub band. Guidelines in ANSI C63.10:2013 were followed with respect to maximizing the emissions.

A pre-amp and a high pass filter were required for this test, in order to provide the measuring system with sufficient sensitivity. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength.

Both horizontal and vertical antenna polarizations were investigated. Worst case maximized data is shown in this test report.

**Restricted Band-Edge Emissions**

**Peak Measurements**

**Spectrum Analyzer Settings:**

RBW= 1 MHz
VBW= 3 MHz
Trace Mode: Peak Detector (Max Hold)
Span= 2310 – 2500 MHz
Sweep Points = 401
Sweep Time = Auto

**Average Measurements (Reduced Video Bandwidth Method)**

**Spectrum Analyzer Settings:**

RBW= 1 MHz
VBW= 2 kHz
VBW Mode = Linear
Trace Mode: Peak Detector (Max Hold)
Span= 2310 – 2500 MHz
Sweep Points = 401
Sweep Time = Auto
Sweep Count = 200

**Radiated Spurious Emissions**

**Spectrum Analyzer Settings:**

***30 MHz- 1 GHz:***

RBW= 120 kHz
VBW ≥ 3 X RBW
Trace Mode: Peak Detector (Max Hold). Final measurements performed using QP Detector.
Span= 30 MHz- 1 GHz
Sweep time= Auto
Sweep points ≥ 2 x Span/RBW

***Above 1 GHz:***

RBW= 1 MHz
VBW= 3 MHz
Trace Mode: Peak Detector (Max Hold) and RMS Average Detector (Max Hold)
Span= 1- 18 GHz and 18- 26.5 GHz.
Sweep time= Auto
Sweep points ≥ 2 x Span/RBW

**Final Measurements above 1 GHz**

**Peak Measurements**

**Spectrum Analyzer Settings:**

RBW= 1 MHz
VBW= 3 MHz
Trace Mode: Peak Detector (Max Hold)
Span= wide enough to encompass the emission
Sweep Points ≥ 2 × Span/RBW
Sweep Time = Auto

**RMS Average Measurements – Other Spurious Emissions**

**Spectrum Analyzer Settings:**
RBW= 1 MHz
VBW≥ 3 × RBW
Detector= RMS
Span= wide enough to encompass the emission
Sweep points≥ 2 × Span/RBW
Sweep time = auto
Trace= Average at least 100 traces
Trace Averaging Type= power (RMS)
The duty cycle correction factor is added to the emission level.

**Average Measurements – Harmonic Emissions**

**Spectrum Analyzer Settings:**
RBW= 1 MHz
VBW≥ 3 × RBW
Detector= Peak
Span= wide enough to encompass the emission
Sweep points = auto
Sweep time ≥ 2 × Span/RBW
Trace= Max Hold
The normal operational duty cycle correction factor is added to the emission level.

**Sample Calculations:**
**Field Strength Level:** Amplitude (Analyzer level) + AFCL (Antenna Factor and Cable losses) – Amplifier Gain = 50 dBuV + 33 dB – 25 dB = 58dBuV/m.

**Duty Cycle for spurious emissions:**
Duty Cycle (%) = $[(T_{on}) / (T_{on} + T_{off})] * 100$
If duty cycle >98% then the correction factor is 0, else the correction factor is calculated as follows.
Duty Cycle Correction Factor = 10 log*(1/DC) =10 log (1/0.92) =0.362dB

**Average Measurements for spurious emissions:**
Peak Amplitude + AFCL (Antenna Factor and Cable Losses) – Amplifier Gain + Duty Cycle Correction Factor = 50dBµV + 33 dB – 25 dB + 0.36 dB = 58.36 dBµV/m

**Duty Cycle for harmonic frequencies:**
DH5 packet length per channel is 3.125ms, therefore in 100ms there are 32 time slots. Across the minimum number of 20 channels, the worst case (i.e. round up) utilization for any channel is 2 times. Transmit time = 2 x 2.86ms = 5.72ms. Per FCC 15.35 (c), average measurements are integrated over 100ms.
Duty Cycle Correction Factor = 20xlog(5.72ms/100ms) = 24.85 dB

**Average Measurements for harmonic frequencies:**
Peak Amplitude + AFCL (Antenna Factor and Cable Losses) – Amplifier Gain + Duty Cycle Correction Factor = 50 dBµV + 33 dB – 25 dB – 24.85 dB = 33.15 dBµV/m

### 9.9.3 Limits:

| Frequency (MHz) | Field Strength (µV/m) | Measurement Distance (meters) | Corrected Field Strength for 3m measurement distance (dBµV/m) |
|---|---|---|---|
| 0.009-0.490 | 2400/F (kHz) | 300 | 48.5- 13.8 |
| 0.490-1.705 | 24000/F (kHz) | 30 | 33.8- 23.0 |
| 1.705-30 | 30 | 30 | 29.5 |
| 30-88 | 100 | 3 | 40 |
| 88-216 | 150 | 3 | 43.5 |
| 216-960 | 200 | 3 | 46 |
| 960-1000 | 500 | 3 | 54 |
| Above 1000 (Restricted Frequency Bands) | 500 | 3 | 54 (Average)<br>74 (Peak) |

### 9.9.4 Test Result:

Pass.

## 9.9.5 Test Data:

### *9.9.5.1 Radiated Restricted Band-edge emissions*

| | Band edge Average Data | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Carrier Frequency (MHz)** | **Mode** | **Frequency (MHz)** | **Raw Avg. Amplitude (dBµV)** | **System Correction Factor (dB)** | **DC Correction Factor (dB)** | **Corrected Avg. Field Strength (dBµV/m)** | **Average Limit (dBµV/m)** | **Margin (dB)** |
| 2402 | 1-DH5 | 2389.08 | 29.80 | 12.70 | 1.25 | 43.75 | 54 | -10.25 |
| 2480 | 1-DH5 | 2483.80 | 31.24 | 13.20 | 1.25 | 45.69 | 54 | -8.31 |
| 2402 | 2-DH5 | 2389.99 | 29.80 | 12.70 | 2.09 | 44.59 | 54 | -9.41 |
| 2402 | 2-DH5 | 2483.60 | 30.26 | 13.20 | 2.09 | 45.55 | 54 | -8.45 |
| 2402 | 3-DH5 | 2389.70 | 29.86 | 12.70 | 1.26 | 43.82 | 54 | -10.18 |
| 2402 | 3-DH5 | 2483.80 | 30.98 | 13.20 | 1.26 | 45.44 | 54 | -8.56 |

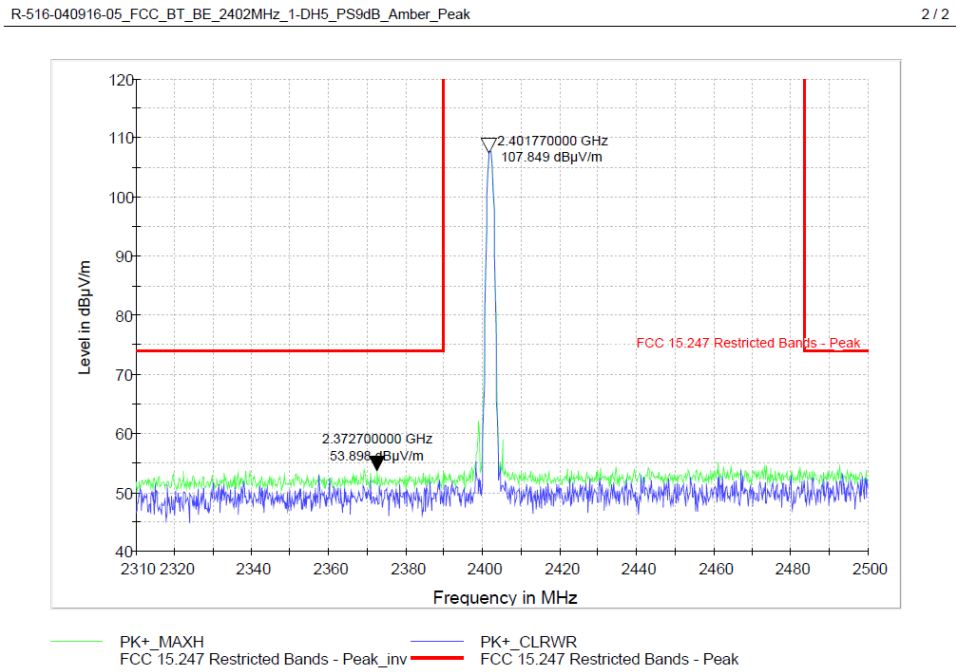



**Figure 9-60 Restricted Band Edge 1-DH5 Mode– Ch. 0 (2310-2390MHz) – Peak**

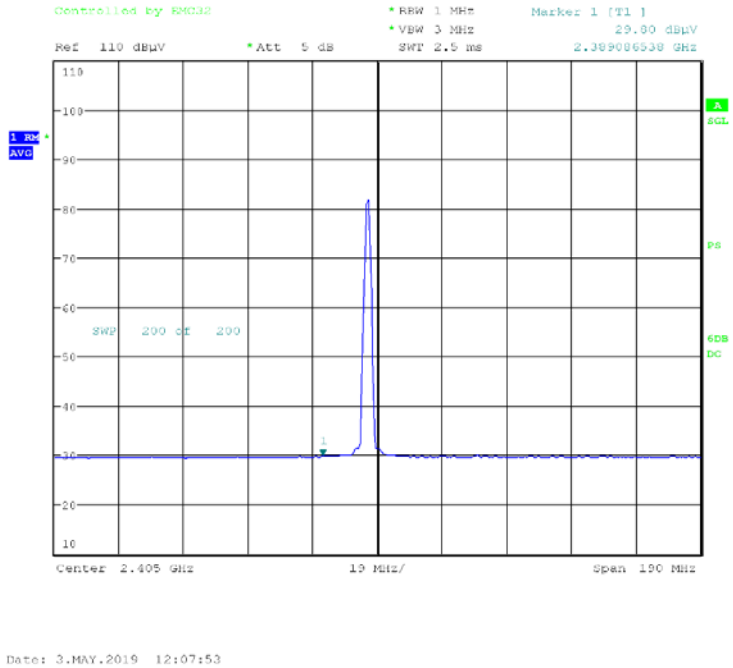



**Figure 9-61 Restricted Band Edge 1-DH5 Mode– Ch. 0 (2310-2390MHz) – Average**

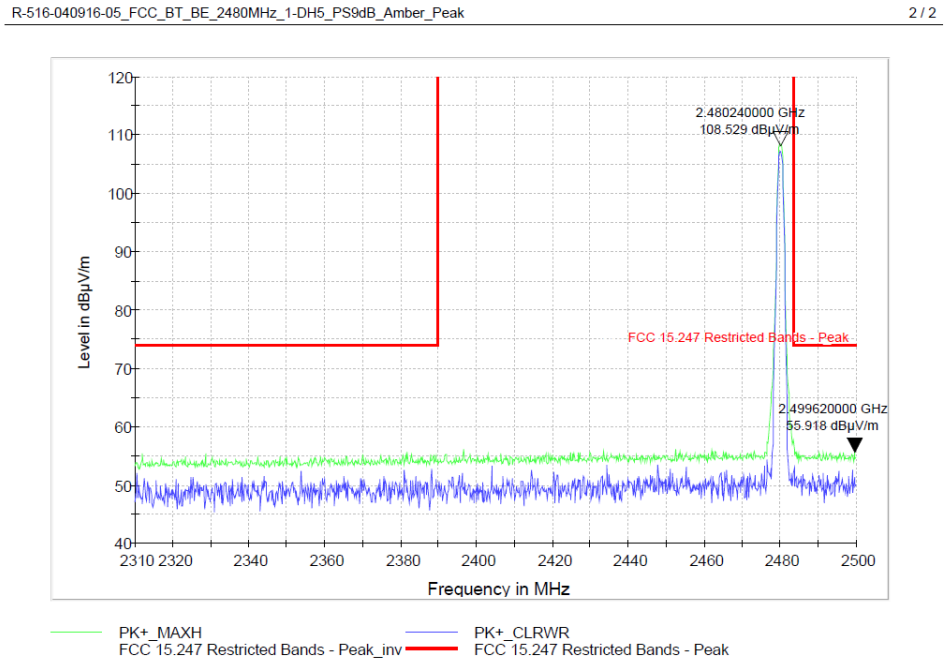



**Figure 9-62 Restricted Band Edge 1-DH5 Mode– Ch. 78 (2483.5-2500MHz) – Peak**

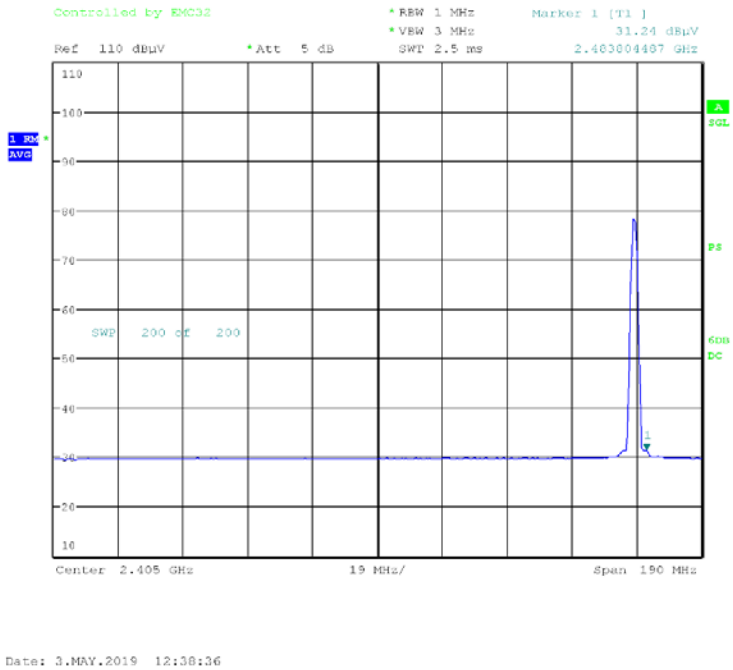



**Figure 9-63 Restricted Band Edge 1-DH5 Mode– Ch. 78 (2483.5-2500MHz) – Average**

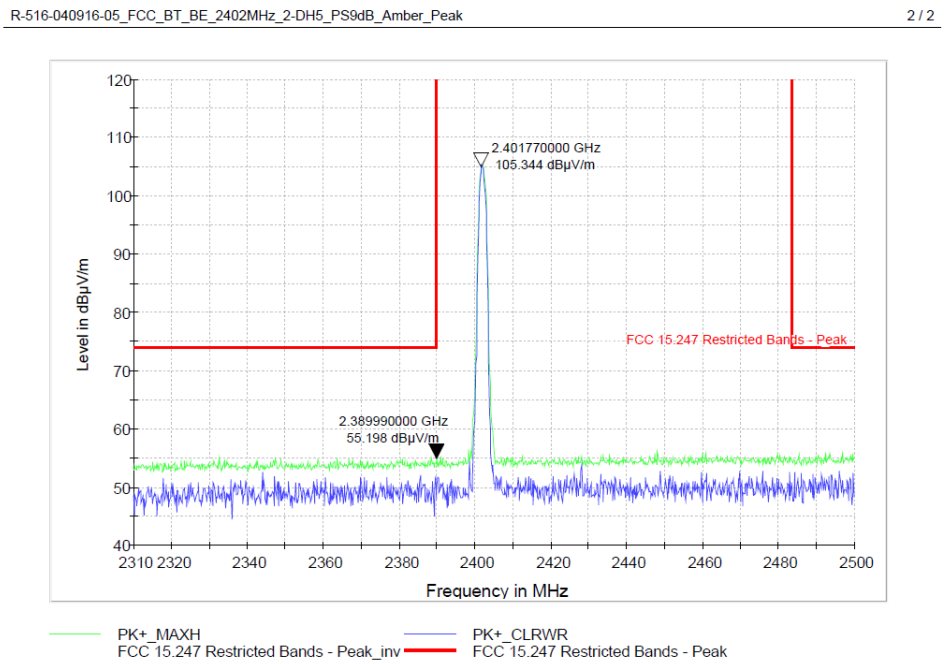



**Figure 9-64 Restricted Band Edge 2-DH5 Mode– Ch. 0 (2310-2390MHz) – Peak**

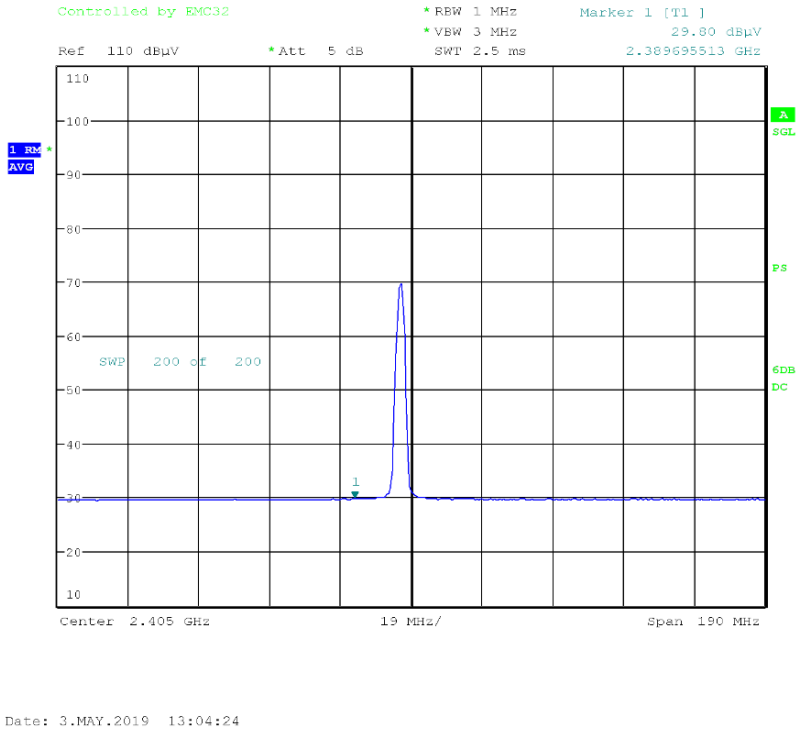



**Figure 9-65 Restricted Band Edge 2-DH5 Mode– Ch. 0 (2310-2390MHz) - Average**

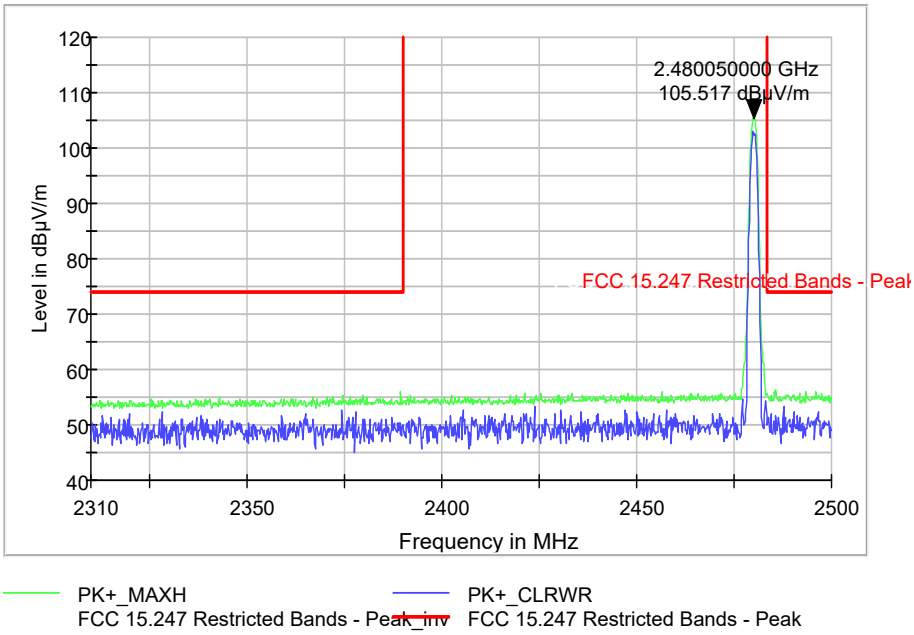



**Figure 9-66 Restricted Band Edge 2-DH5 Mode– Ch. 78 (2483.5-2500MHz) – Peak**

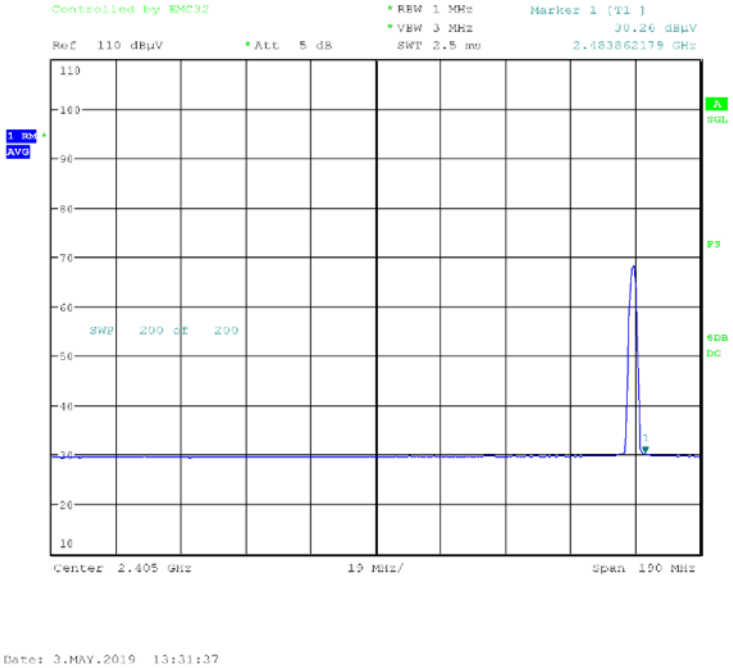



**Figure 9-67 Restricted Band Edge 2-DH5 Mode– Ch. 78 (2483.5-2500MHz) – Average**

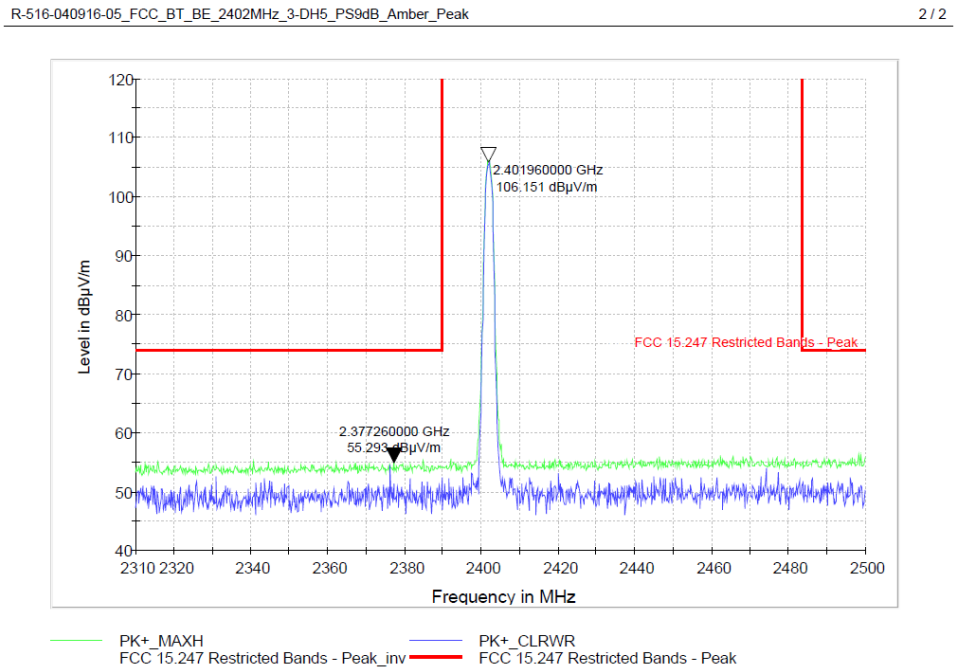



**Figure 9-68 Restricted Band Edge 3-DH5 Mode– Ch. 0 (2310-2390MHz) – Peak**

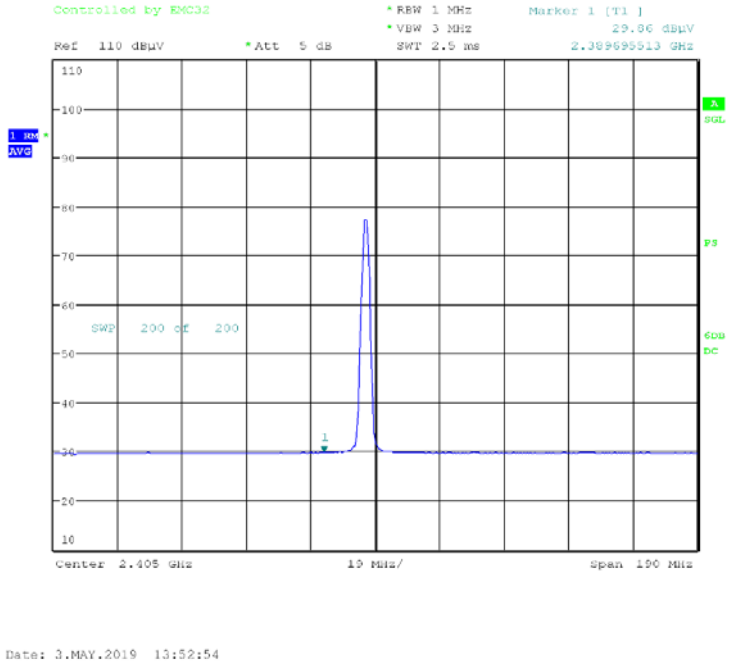



**Figure 9-69 Restricted Band Edge 3-DH5 Mode– Ch. 0 (2310-2390MHz) – Average**

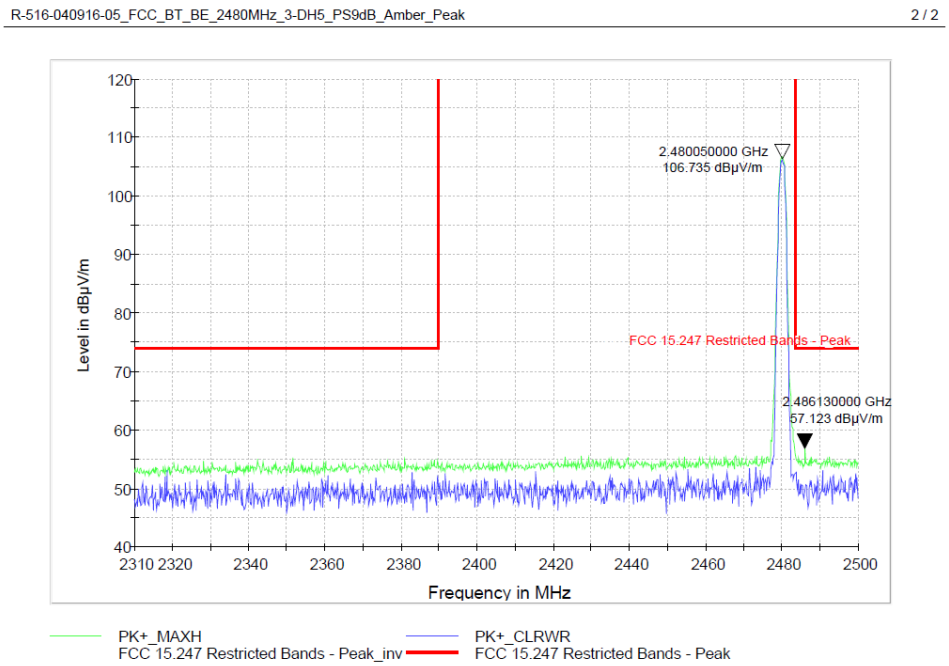



**Figure 9-70 Restricted Band Edge 3-DH5 Mode– Ch. 78 (2483.5-2500MHz) – Peak**

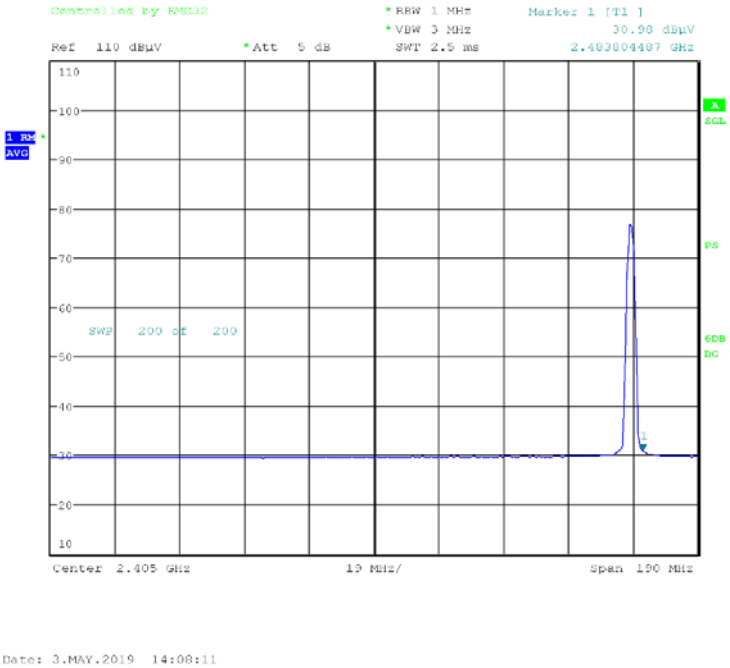
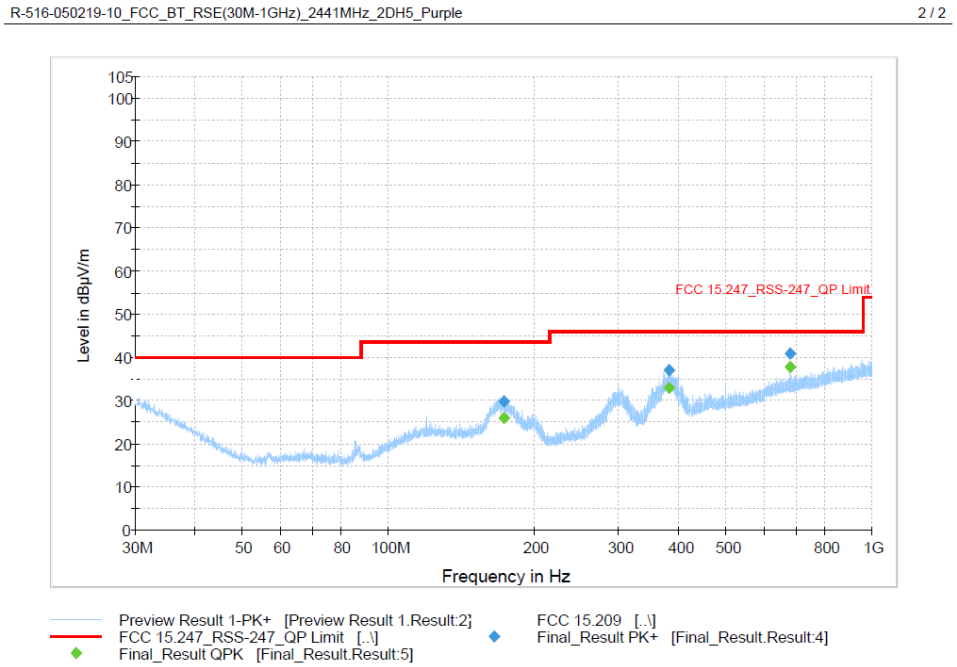



**Figure 9-71 Restricted Band Edge 3-DH5 Mode– Ch. 78 (2483.5-2500MHz) - Average**

### *9.9.5.2 Emissions in 30 MHz- 1 GHz range*

All channels and modes of operations were tested and worst-case emissions in 2DH5 mode, Ch 39 shown below.

| Carrier Frequency (MHz) | Frequency (MHz) | Raw Quasi-Peak Field Strength (dBµV/m) | Correction Factor (dB) | Corrected Quasi-Peak Field Strength (dBµV/m) | QP Limit (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|
| 2441 | 173.23 | 6.58 | 19.5 | 26.08 | 43.50 | -17.42 |
| 2441 | 381.91 | 13.09 | 23.9 | 36.99 | 46.00 | -9.01 |
| 2441 | 679.93 | 8.01 | 29.8 | 37.81 | 46.00 | -8.19 |




**Plot 9-72. Radiated Spurious Emissions (Ch. 39) 2-DH5 (30MHz - 1GHz)**

### 9.9.5.3 Emissions in 1-18 GHz range

| RSE 1 - 18GHz Average Data 1-DH5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Carrier Frequency (MHz) | Frequency (MHz) | Raw Avg. Amplitude (dBµV) | System Correction Factor (dB) | DC Correction Factor (dB) | Corrected Avg. Field Strength (dBµV/m) | Average Limit (dBµV/m) | Margin (dB) |
| 2402 | 3401.00 | 26.85 | 8.3 | 2.33 | 37.48 | 54 | -16.52 |
| 2402 | 5220.00 | 32.16 | 10.9 | 2.33 | 45.39 | 54 | -8.61 |
| 2402 | 7206.30 | -14.63 | 13.1 | 25.80 | 24.27 | 54 | -29.73 |
| 2402 | 9608.50 | -13.74 | 16.4 | 25.80 | 28.46 | 54 | -25.54 |
| 2402 | 12010.70 | -14.67 | 19.9 | 25.80 | 31.03 | 54 | -22.97 |
| 2402 | 14411.40 | -17.62 | 22.1 | 25.80 | 30.28 | 54 | -23.72 |
| 2441 | 2048.32 | 27.47 | 13.1 | 2.33 | 42.89 | 54 | -11.10 |
| 2441 | 3400.80 | 25.81 | 8.3 | 2.33 | 36.44 | 54 | -17.56 |
| 2441 | 6963.00 | 26.59 | 13.7 | 2.33 | 42.62 | 54 | -11.38 |
| 2441 | 9764.50 | -12.67 | 16.5 | 25.80 | 29.63 | 54 | -24.37 |
| 2441 | 12229.90 | -19.05 | 20.1 | 25.80 | 26.85 | 54 | -27.15 |
| 2441 | 14645.40 | -16.24 | 22.7 | 25.80 | 32.26 | 54 | -21.74 |
| 2480 | 3399.20 | 20.95 | 8.3 | 2.33 | 31.57 | 54 | -22.43 |
| 2480 | 6960.00 | 22.03 | 13.7 | 2.33 | 38.05 | 54 | -15.95 |
| 2480 | 17941.00 | 20.71 | 25.5 | 0 | 46.21 | 54 | -7.79 |

| RSE 1 - 18GHz Peak Data 1-DH5 | | | | | | |
|---|---|---|---|---|---|---|
| Carrier Frequency (MHz) | Frequency (MHz) | Raw Peak Amplitude (dBµV) | Correction Factor (dB) | Corrected Peak Field Strength (dBµV/m) | Peak Limit (dBµV/m) | Margin (dB) |
| 2402 | 3401.00 | 38.15 | 8.3 | 46.45 | 74 | -27.55 |
| 2402 | 5220.00 | 37.87 | 10.9 | 48.77 | 74 | -25.23 |
| 2402 | 7206.30 | 36.97 | 13.1 | 50.07 | 74 | -23.93 |
| 2402 | 9608.50 | 37.86 | 16.4 | 54.26 | 74 | -19.74 |
| 2402 | 12010.70 | 36.93 | 19.9 | 56.83 | 74 | -17.17 |
| 2402 | 14411.40 | 33.98 | 22.1 | 56.08 | 74 | -17.92 |
| 2441 | 2048.32 | 37.54 | 13.1 | 50.64 | 74 | -23.36 |
| 2441 | 3400.80 | 36.5 | 8.3 | 44.8 | 74 | -29.2 |
| 2441 | 6963.00 | 33.48 | 13.7 | 47.18 | 74 | -26.82 |
| 2441 | 9764.50 | 38.93 | 16.5 | 55.43 | 74 | -18.57 |
| 2441 | 12229.90 | 32.55 | 20.1 | 52.65 | 74 | -21.35 |
| 2441 | 14645.40 | 35.36 | 22.7 | 58.06 | 74 | -15.94 |
| 2480 | 3399.20 | 35.23 | 8.3 | 43.53 | 74 | -30.47 |
| 2480 | 6960.00 | 34.13 | 13.7 | 47.83 | 74 | -26.17 |
| 2480 | 17941.00 | 32.33 | 25.5 | 57.83 | 74 | -16.17 |

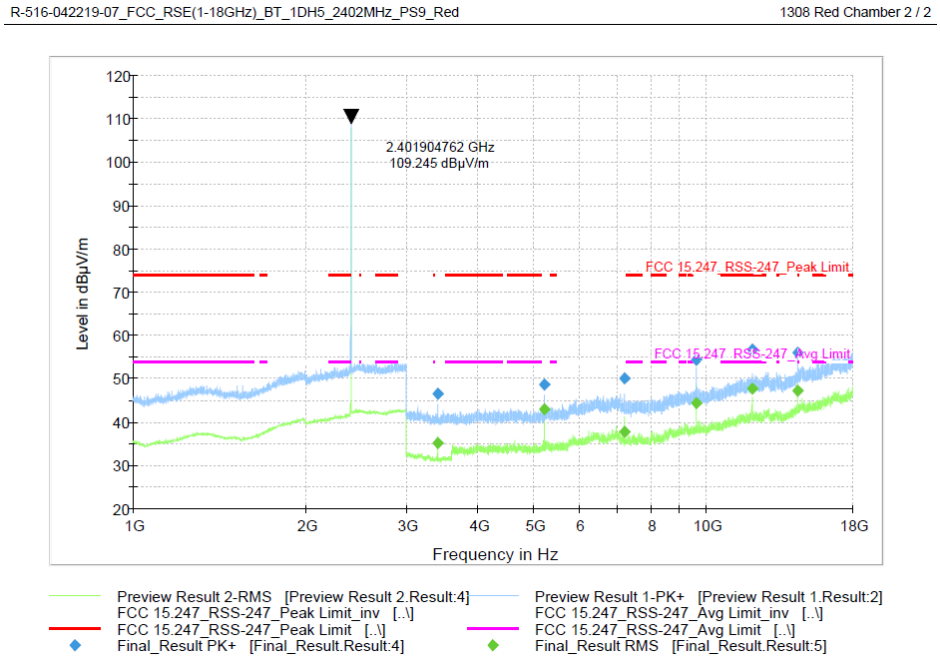



**Figure 9-73 Radiated Spurious Emissions (Ch. 0) 1-DH5 (1-18 GHz)**

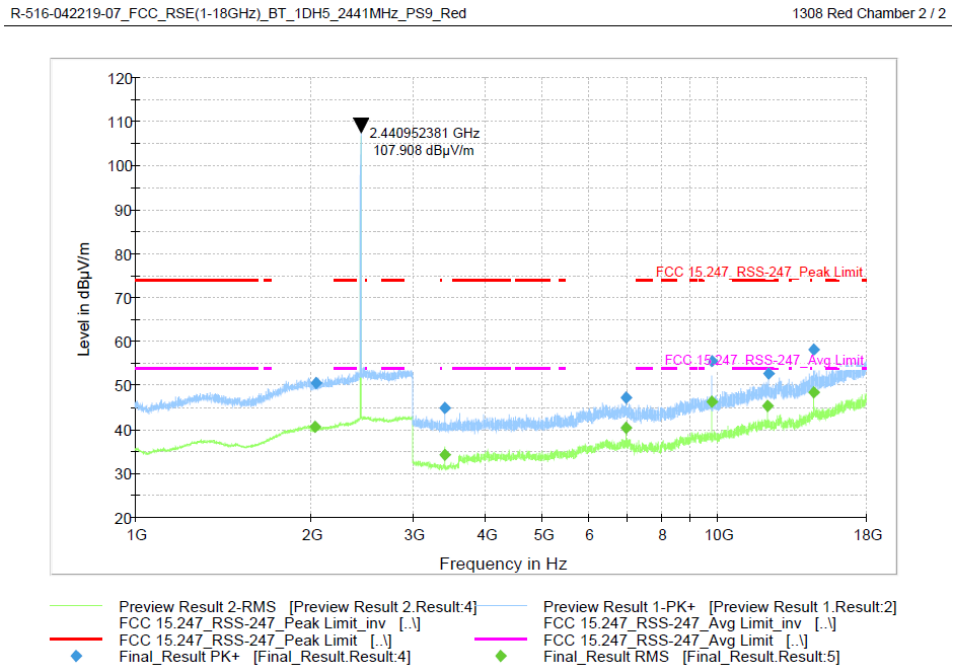



**Figure 9-74 Radiated Spurious Emissions (Ch. 39) 1-DH5 (1-18 GHz)**

R-516-042219-07_FCC_RSE(1-18GHz)_BT_1DH5_2480MHz_PS9_Red 1308 Red Chamber 2 / 2

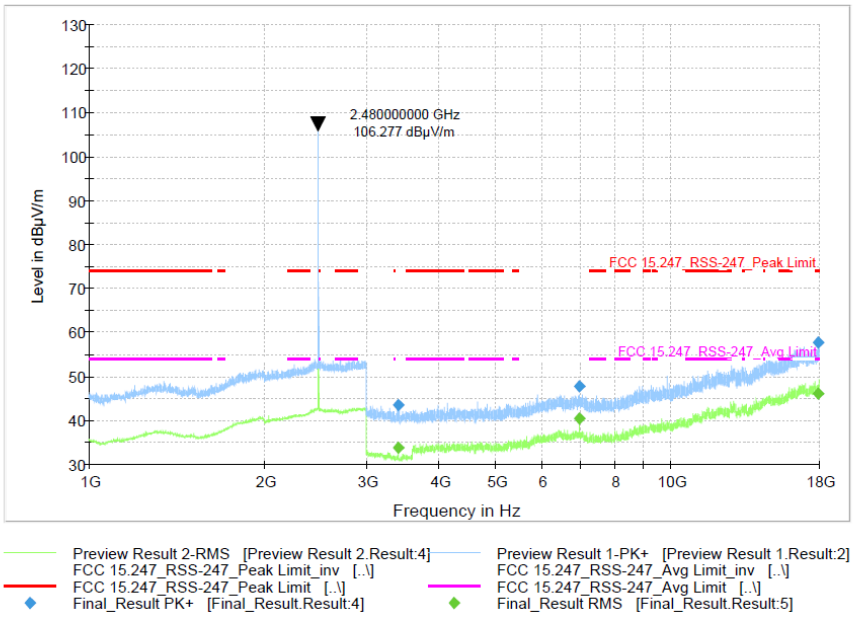



**Figure 9-75 Radiated Spurious Emissions (Ch. 78) 1-DH5 (1-18 GHz)**

| RSE 1 - 18GHz Average Data 2-DH5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Carrier Frequency (MHz) | Frequency (MHz) | Raw Avg. Amplitude (dBµV) | System Correction Factor (dB) | DC Correction Factor | Corrected Avg. Field Strength (dBµV/m) | Average Limit (dBµV/m) | Margin (dB) |
| 2402 | 3400.70 | 20.28 | 8.3 | 2.33 | 30.90 | 54 | -23.10 |
| 2402 | 17864.50 | 20.82 | 25.4 | 0 | 46.22 | 54 | -7.78 |
| 2441 | 3399.20 | 20.12 | 8.3 | 2.33 | 30.74 | 54 | -23.26 |
| 2441 | 17704.10 | 20.27 | 26.5 | 0 | 46.77 | 54 | -7.23 |
| 2480 | 3401.90 | 20.62 | 8.3 | 2.33 | 31.24 | 54 | -22.76 |
| 2480 | 17884.20 | 20.81 | 25.4 | 0 | 46.21 | 54 | -7.79 |

| RSE 1 - 18GHz Peak Data 2-DH5 | | | | | | |
|---|---|---|---|---|---|---|
| Carrier Frequency (MHz) | Frequency (MHz) | Raw Peak Amplitude (dBµV) | Correction Factor (dB) | Corrected Peak Field Strength (dBµV/m) | Peak Limit (dBµV/m) | Margin (dB) |
| 2402 | 3400.7 | 36.11 | 8.3 | 44.41 | 74 | -29.59 |
| 2402 | 17864.5 | 32.03 | 25.4 | 57.43 | 74 | -16.57 |
| 2441 | 3399.2 | 36.57 | 8.3 | 44.87 | 74 | -29.13 |
| 2441 | 17704.1 | 31.84 | 26.5 | 58.34 | 74 | -15.66 |
| 2480 | 3401.9 | 35.3 | 8.3 | 43.6 | 74 | -30.4 |
| 2480 | 17884.2 | 32.57 | 25.4 | 57.97 | 74 | -16.03 |

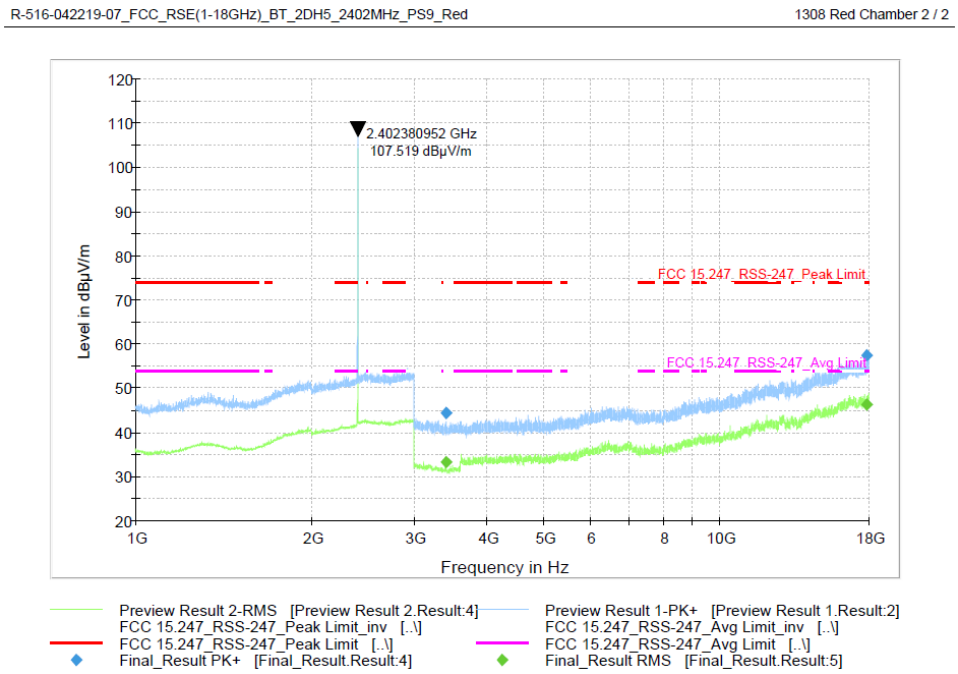



**Figure 9-76 Radiated Spurious Emissions (Ch. 0) 2-DH5 (1-18 GHz)**

R-516-042219-07_FCC_RSE(1-18GHz)_BT_2DH5_2441MHz_PS9_Red 1308 Red Chamber 2 / 2

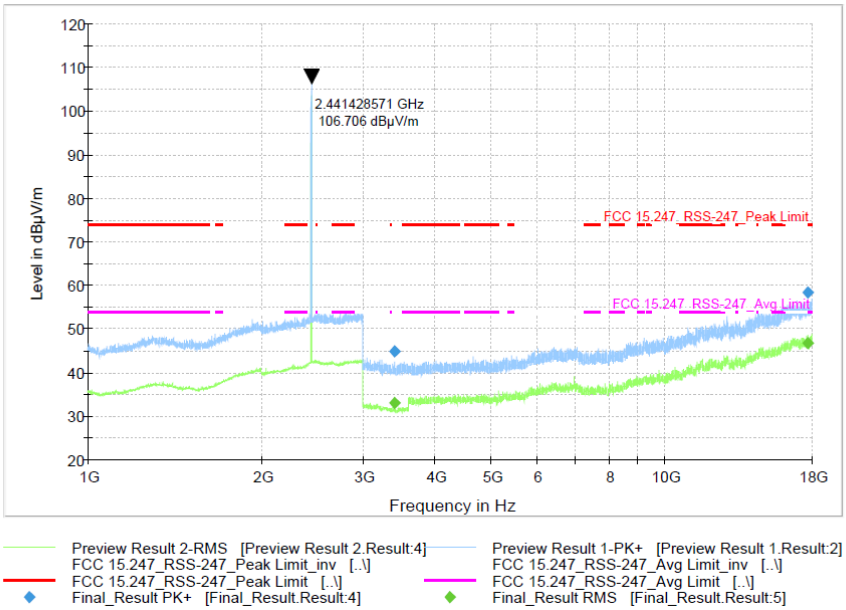



**Figure 9-77 Radiated Spurious Emissions (Ch. 39) 2-DH5 (1-18 GHz)**

R-516-042219-07_FCC_RSE(1-18GHz)_BT_2DH5_2480MHz_PS9_Red 1308 Red Chamber 2 / 2

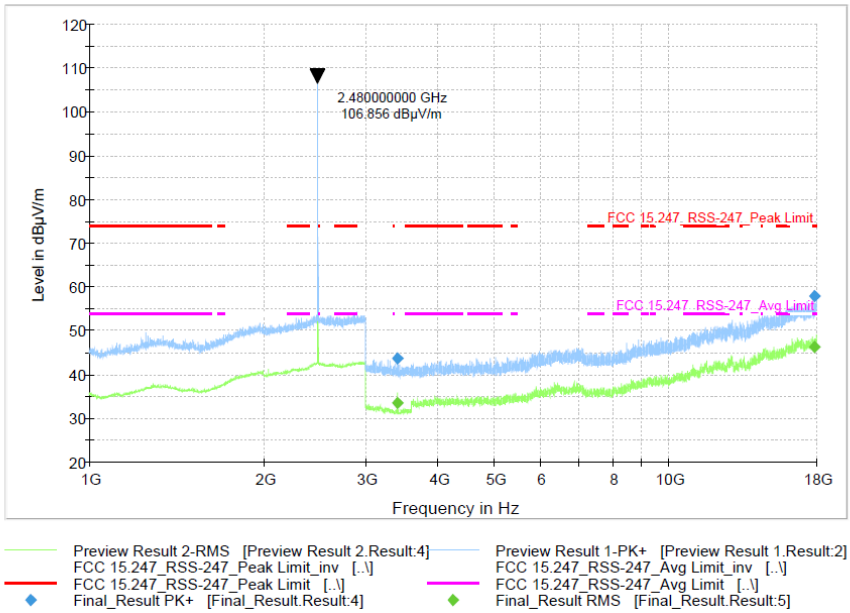



**Figure 9-78 Radiated Spurious Emissions (Ch. 78) 2-DH5 (1-18 GHz)**

| RSE 1 - 18GHz Average Data 3-DH5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Carrier Frequency (MHz) | Frequency (MHz) | Raw Avg. Amplitude (dBµV) | System Correction Factor (dB) | DC Correction Factor | Corrected Avg. Field Strength (dBµV/m) | Average Limit (dBµV/m) | Margin (dB) |
| 2402 | 3399.50 | 21.99 | 8.3 | 2.33 | 32.62 | 54 | -21.38 |
| 2402 | 17971.50 | 20.68 | 26.3 | 0 | 46.98 | 54 | -7.02 |
| 2441 | 3399.40 | 21.53 | 8.3 | 2.33 | 32.15 | 54 | -21.85 |
| 2441 | 17961.10 | 20.81 | 26 | 0 | 46.81 | 54 | -7.19 |
| 2480 | 3400.80 | 25.17 | 8.3 | 2.33 | 35.80 | 54 | -18.20 |
| 2480 | 17889.50 | 20.81 | 25.5 | 0 | 46.31 | 54 | -7.69 |

| RSE 1 - 18GHz Peak Data 3-DH5 | | | | | | |
|---|---|---|---|---|---|---|
| Carrier Frequency (MHz) | Frequency (MHz) | Raw Peak Amplitude (dBµV) | Correction Factor (dB) | Corrected Peak Field Strength (dBµV/m) | Peak Limit (dBµV/m) | Margin (dB) |
| 2402 | 3399.50 | 38.29 | 8.3 | 46.59 | 74 | -27.41 |
| 2402 | 17971.50 | 32.97 | 26.3 | 59.27 | 74 | -14.73 |
| 2441 | 3399.40 | 38.36 | 8.3 | 46.66 | 74 | -27.34 |
| 2441 | 17961.10 | 32.11 | 26 | 58.11 | 74 | -15.89 |
| 2480 | 3400.80 | 35.67 | 8.3 | 43.97 | 74 | -30.03 |
| 2480 | 17889.50 | 32.43 | 25.5 | 57.93 | 74 | -16.07 |

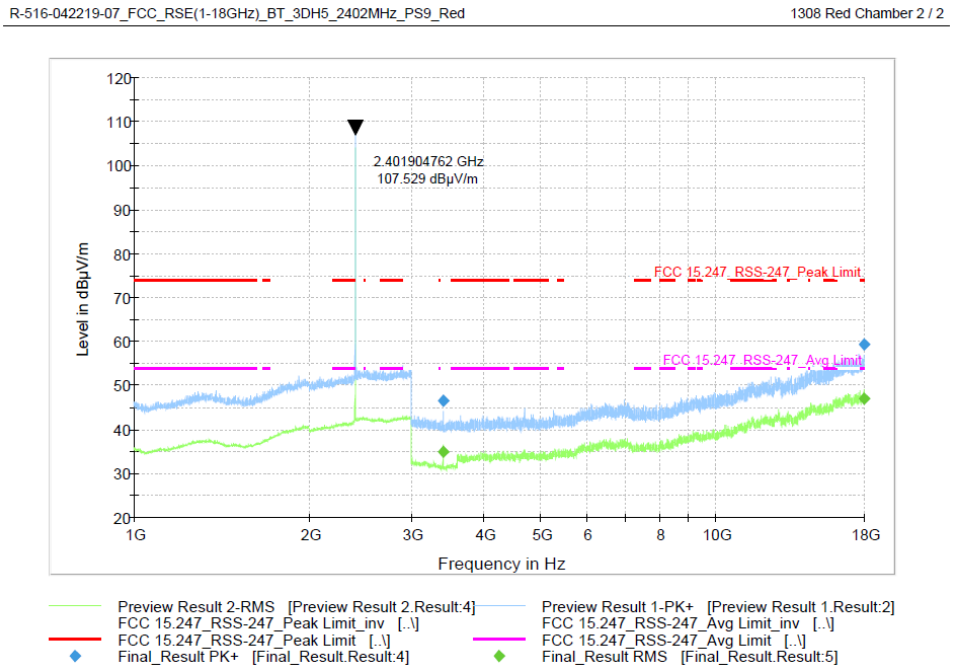



**Figure 9-79 Radiated Spurious Emissions (Ch. 0) 3-DH5 (1-18 GHz)**

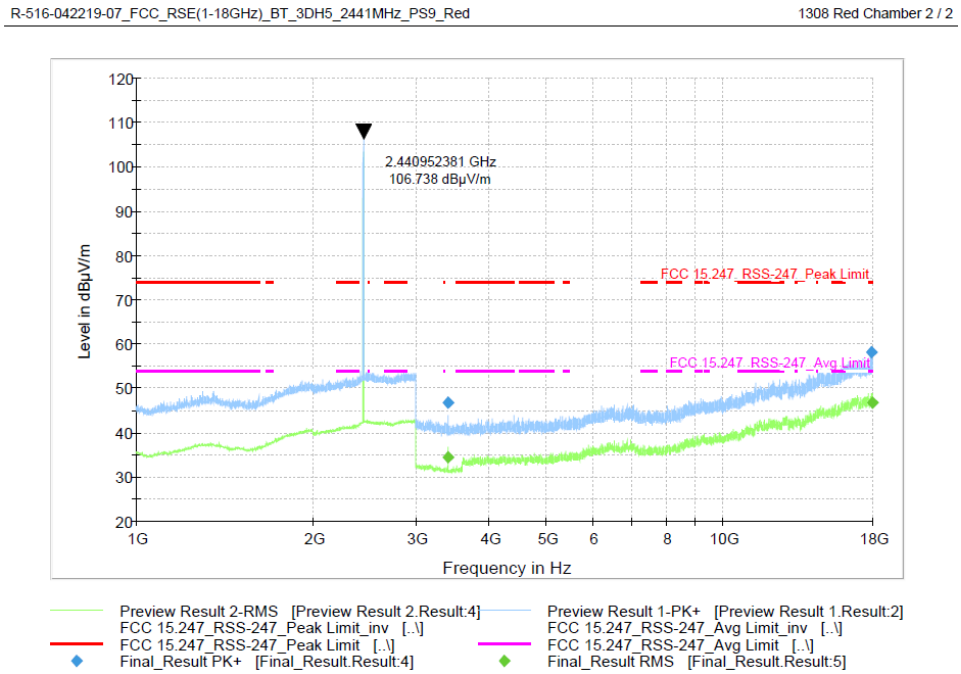



**Figure 9-80 Radiated Spurious Emissions (Ch. 39) 3-DH5 (1-18 GHz)**

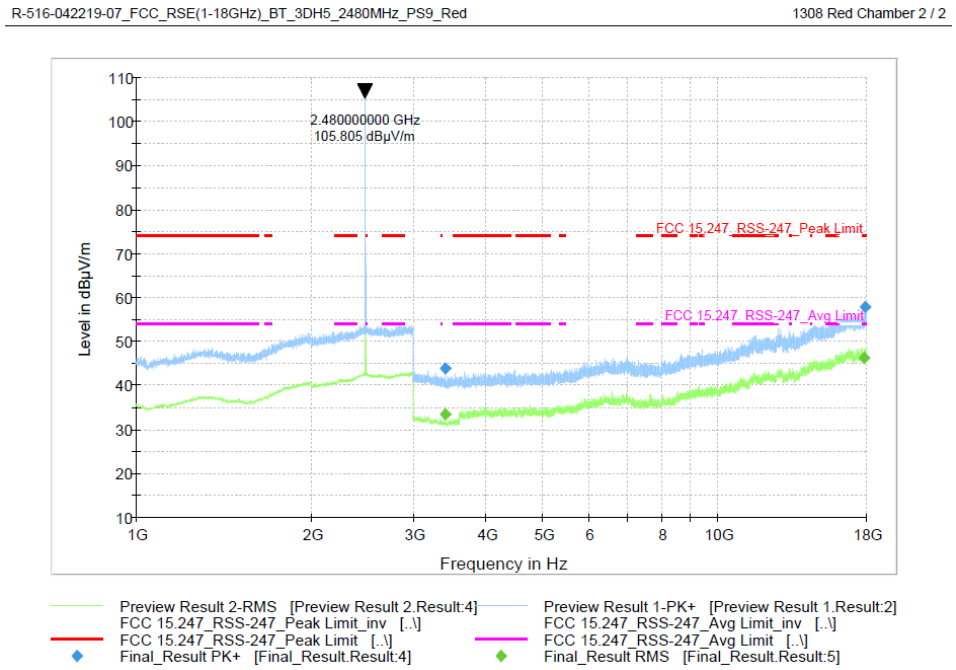



**Figure 9-81 Radiated Spurious Emissions (Ch. 78) 3-DH5 (1-18 GHz)**

### *9.9.5.4 Emissions in 18-26.5 GHz range*

All channels and modes of operations were tested and worst-case results from 2DH5 mode, Ch 39 shown below. No significant emissions above noise floor.

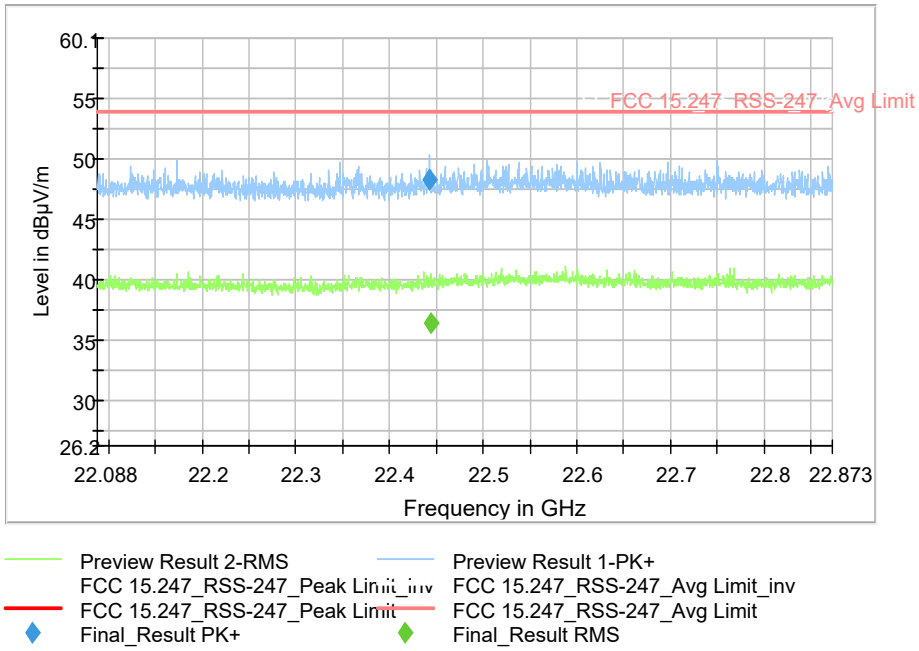



**Figure 9-82 Radiated Spurious Emissions (Ch. 39) 2-DH5 (18-26.5 GHz)**

## 9.10 AC Line Conducted Emissions

### 9.10.1 Test Requirements

FCC CFR 47 Rule Part 15.207 (a)

ISED RSS Gen [8.8]

### 9.10.2 Test Method

Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the unsymmetrical radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Equipment is tested with the power cords that are used under normal operating conditions. These measurements are made using a LISN (Line Impedance Stabilization Network). AC powered peripherals are attached to a second LISN with the 50-ohm measuring port terminated by a 50-ohm resistive load.

The EUT is set to continuously transmit on BT hopping mode.

**EMI Receiver Settings:**
***150 kHz – 30 MHz:***
RBW= 9 kHz
VBW ≥ 3 X RBW
Trace Mode: Peak Detector (Max Hold).
Final measurements were performed using Quasi-Peak and Average Detectors.
Span= 150 kHz – 30 MHz
Sweep time= Auto

### 9.10.3 Limit

| Frequency of emission (MHz) | Conducted limit (dBµV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.15-0.5 | 66 to 56* | 56 to 46* |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

### 9.10.4 Test Result:

Pass

## 9.10.5 Test Data:

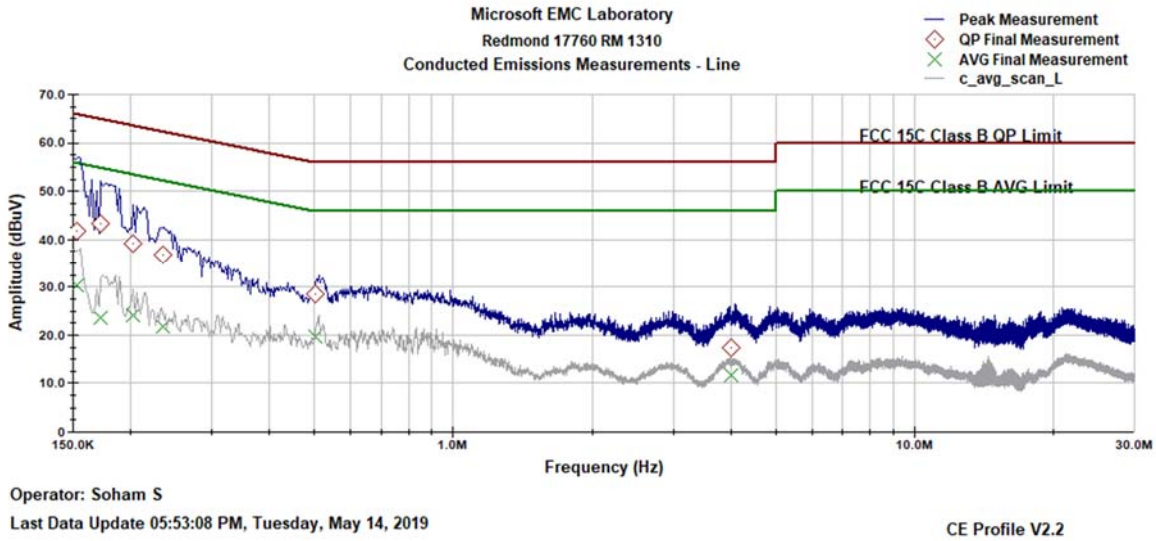



**Figure 9-83 AC Line Conducted Emissions- Line (150 kHz- 30 MHz)**

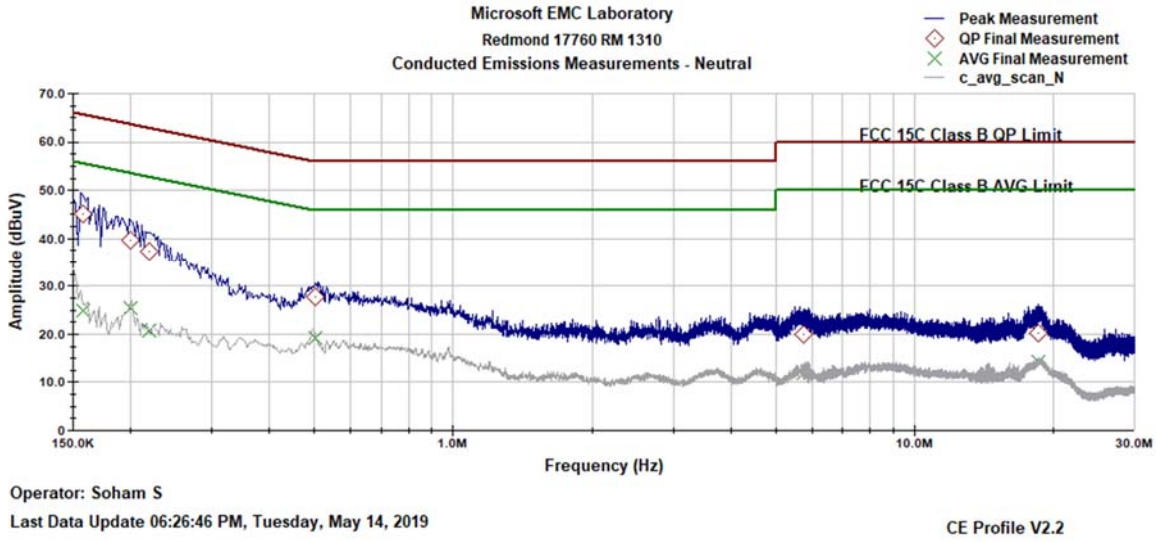



**Figure 9-84 AC Line Conducted Emissions- Neutral (150 kHz- 30 MHz)**

| Frequency (MHz) | QP Net Reading (dBµV) | AVG Net Reading (dBµV) | Quasi-Peak Limit (dBµV) | Average Limit (dBµV) | Line Tested (L or N) | Quasi-Peak Margin (dB) | Average Margin (dB) |
|---|---|---|---|---|---|---|---|
| 0.158 | 45.22 | 24.76 | 65.59 | 55.59 | N | -20.37 | -30.82 |
| 0.20 | 39.56 | 25.43 | 63.59 | 53.59 | N | -24.03 | -28.16 |
| 0.219 | 37.40 | 20.75 | 62.85 | 52.85 | N | -25.46 | -32.10 |
| 0.503 | 27.82 | 19.30 | 56.00 | 46.00 | N | -28.18 | -26.70 |
| 18.533 | 20.17 | 14.26 | 60.00 | 50.00 | N | -39.83 | -35.75 |
| 5.77 | 19.90 | 12.04 | 60.00 | 50.00 | N | -40.10 | -37.96 |
| 0.172 | 43.31 | 23.68 | 64.85 | 54.85 | L | -21.54 | -31.18 |
| 0.153 | 41.66 | 30.32 | 65.84 | 55.84 | L | -24.18 | -25.53 |
| 0.203 | 39.22 | 24.15 | 63.49 | 53.49 | L | -24.28 | -29.35 |
| 0.235 | 36.78 | 21.67 | 62.28 | 52.28 | L | -25.50 | -30.61 |
| 0.501 | 28.39 | 19.58 | 56.00 | 46.00 | L | -27.61 | -26.42 |
| 4.01 | 17.40 | 11.69 | 56.00 | 46.00 | L | -38.60 | -34.31 |

# End of Report