

## Table of Contents

|                                 |    |
|---------------------------------|----|
| 1. -6dB Bandwidth .....         | 2  |
| 2. 99% Occupied Bandwidth ..... | 9  |
| 3. Duty Cycle .....             | 16 |
| 4. MAX. Output Power .....      | 23 |
| 5. Power Spectral Density ..... | 24 |
| 6. Bandedge .....               | 31 |
| 7. Spurious Emission .....      | 39 |

# FCC ID WIFI2.4

## FCC\_2.4G\_WIFI (Part15.247) Test Data

### 1. -6dB Bandwidth

| Condition | Antenna | Modulation    | Frequency (MHz) | -6dB BW(MHz) | limit(kHz) | Result |
|-----------|---------|---------------|-----------------|--------------|------------|--------|
| NVNT      | ANT1    | 802.11b       | 2412.00         | 8.59         | 500        | Pass   |
| NVNT      | ANT1    | 802.11b       | 2437.00         | 8.60         | 500        | Pass   |
| NVNT      | ANT1    | 802.11b       | 2462.00         | 8.62         | 500        | Pass   |
| NVNT      | ANT1    | 802.11g       | 2412.00         | 15.83        | 500        | Pass   |
| NVNT      | ANT1    | 802.11g       | 2437.00         | 16.09        | 500        | Pass   |
| NVNT      | ANT1    | 802.11g       | 2462.00         | 16.35        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00         | 16.86        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00         | 16.88        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00         | 17.13        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2422.00         | 35.61        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2437.00         | 35.19        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2452.00         | 35.58        | 500        | Pass   |



**-6dB Bandwidth\_NVNT\_ANT1\_802\_11b\_2437**



-6dB Bandwidth NVNT\_ANT1\_802\_11b\_2462



-6dB Bandwidth NVNT\_ANT1\_802\_11g\_2412



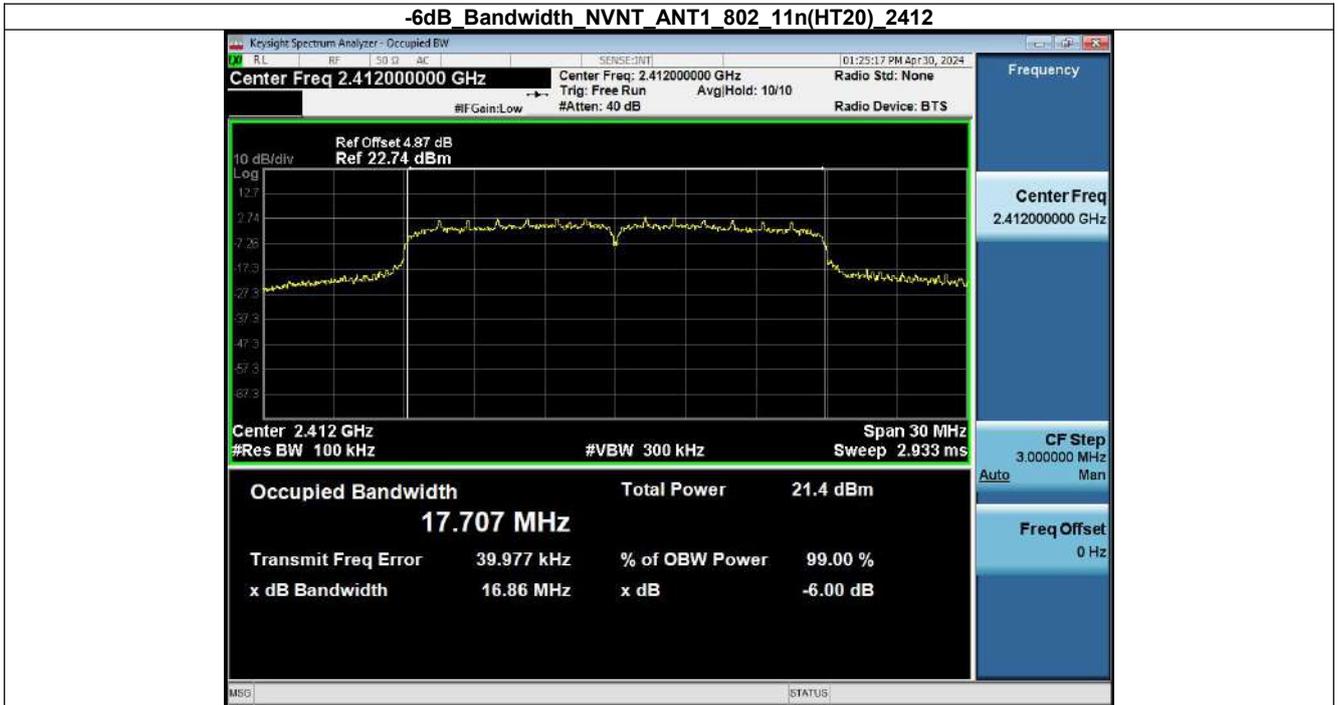
**-6dB Bandwidth NVNT\_ANT1\_802\_11g\_2437**



**-6dB Bandwidth NVNT\_ANT1\_802\_11g\_2462**



-6dB Bandwidth NVNT\_ANT1\_802\_11n(HT20)\_2412



-6dB Bandwidth NVNT\_ANT1\_802\_11n(HT20)\_2437



**-6dB\_Bandwidth\_NVNT\_ANT1\_802\_11n(HT20)\_2462**



**-6dB\_Bandwidth\_NVNT\_ANT1\_802\_11n(HT40)\_2422**



**-6dB Bandwidth NVNT\_ANT1\_802\_11n(HT40)\_2437**

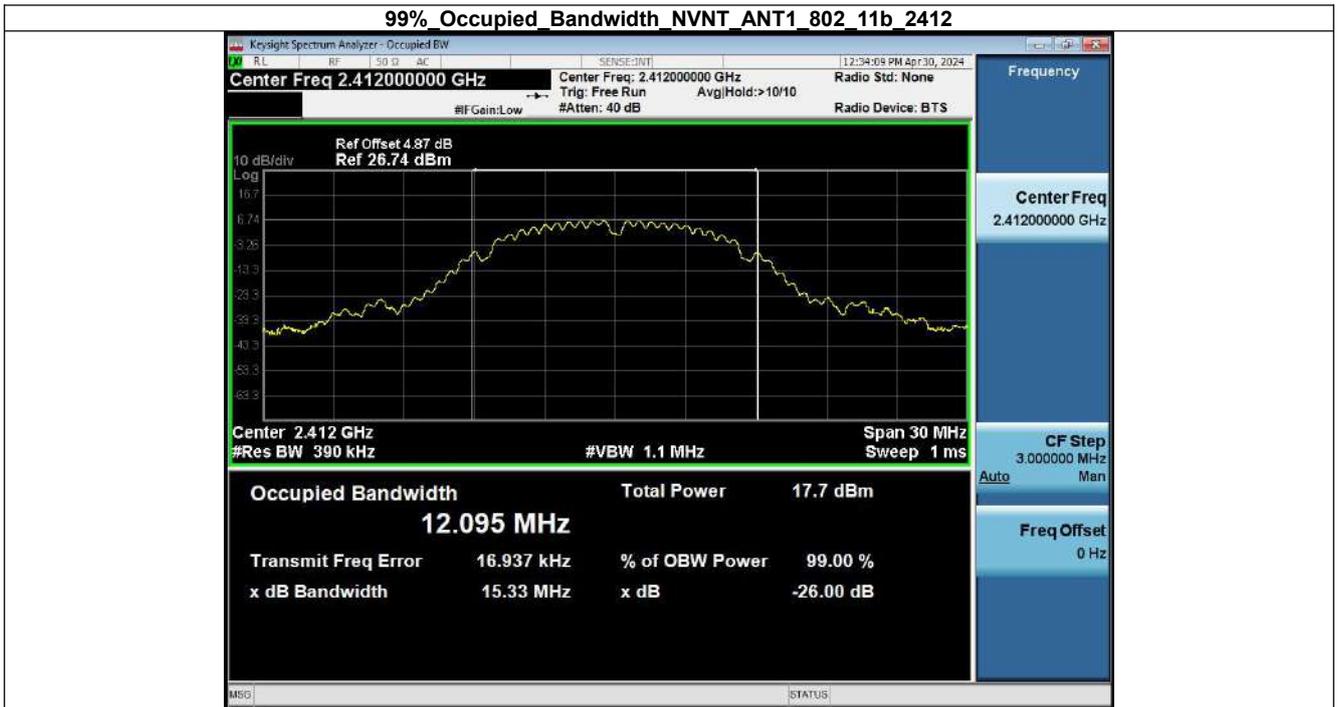


**-6dB Bandwidth NVNT\_ANT1\_802\_11n(HT40)\_2452**



## 2. 99% Occupied Bandwidth

| Condition | Antenna | Modulation    | Frequency (MHz) | 99% BW (MHz) |
|-----------|---------|---------------|-----------------|--------------|
| NVNT      | ANT1    | 802.11b       | 2412.00         | 12.095       |
| NVNT      | ANT1    | 802.11b       | 2437.00         | 12.501       |
| NVNT      | ANT1    | 802.11b       | 2462.00         | 12.434       |
| NVNT      | ANT1    | 802.11g       | 2412.00         | 18.217       |
| NVNT      | ANT1    | 802.11g       | 2437.00         | 20.404       |
| NVNT      | ANT1    | 802.11g       | 2462.00         | 19.780       |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00         | 18.594       |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00         | 20.228       |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00         | 19.651       |
| NVNT      | ANT1    | 802.11n(HT40) | 2422.00         | 38.198       |
| NVNT      | ANT1    | 802.11n(HT40) | 2437.00         | 37.369       |
| NVNT      | ANT1    | 802.11n(HT40) | 2452.00         | 37.465       |



**99% Occupied Bandwidth NVNT ANT1 802\_11b\_2437**



99% Occupied Bandwidth\_NVNT\_ANT1\_802\_11b\_2462



99% Occupied Bandwidth\_NVNT\_ANT1\_802\_11g\_2412



99% Occupied Bandwidth\_NVNT\_ANT1\_802\_11g\_2437



99% Occupied Bandwidth\_NVNT\_ANT1\_802\_11g\_2462



99% Occupied Bandwidth\_NVNT\_ANT1\_802\_11n(HT20)\_2412



99% Occupied Bandwidth\_NVNT\_ANT1\_802\_11n(HT20)\_2437



99% Occupied Bandwidth\_NVNT\_ANT1\_802\_11n(HT20)\_2462



99% Occupied Bandwidth\_NVNT\_ANT1\_802\_11n(HT40)\_2422



99% Occupied Bandwidth\_NVNT\_ANT1\_802\_11n(HT40)\_2437

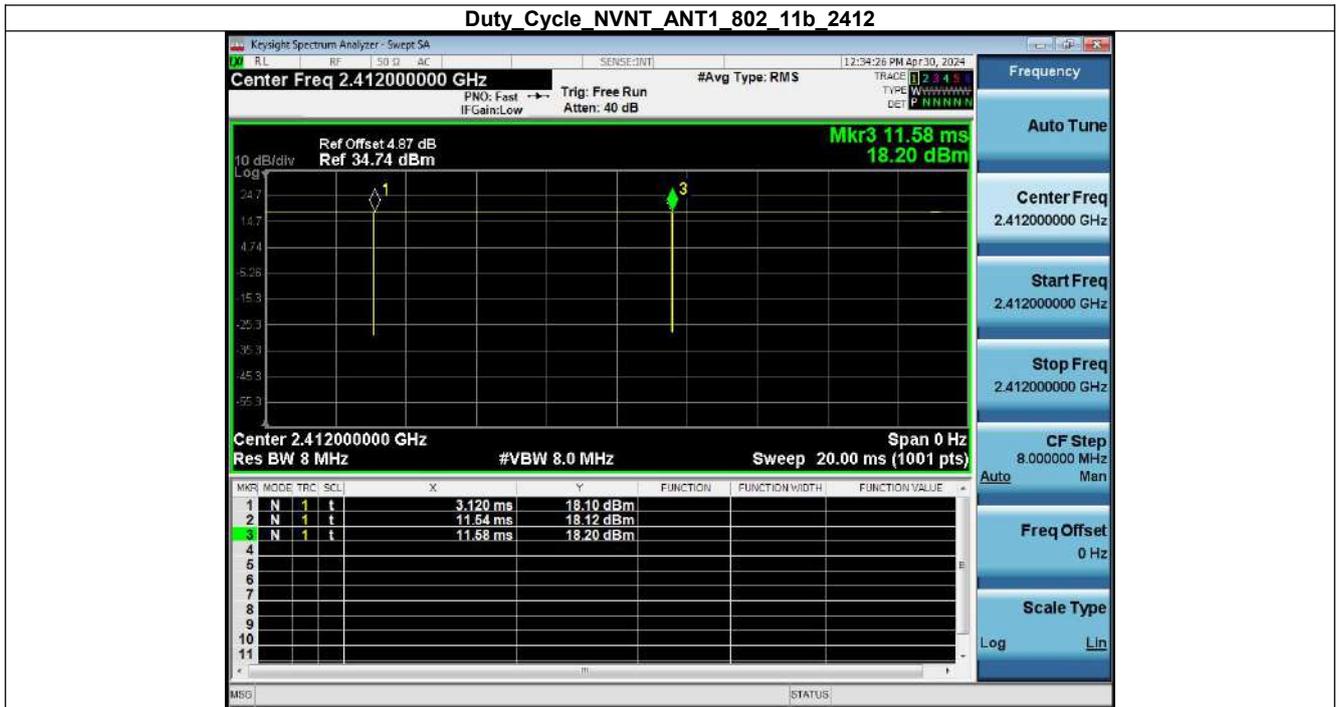


99% Occupied Bandwidth\_NVNT\_ANT1\_802\_11n(HT40)\_2452

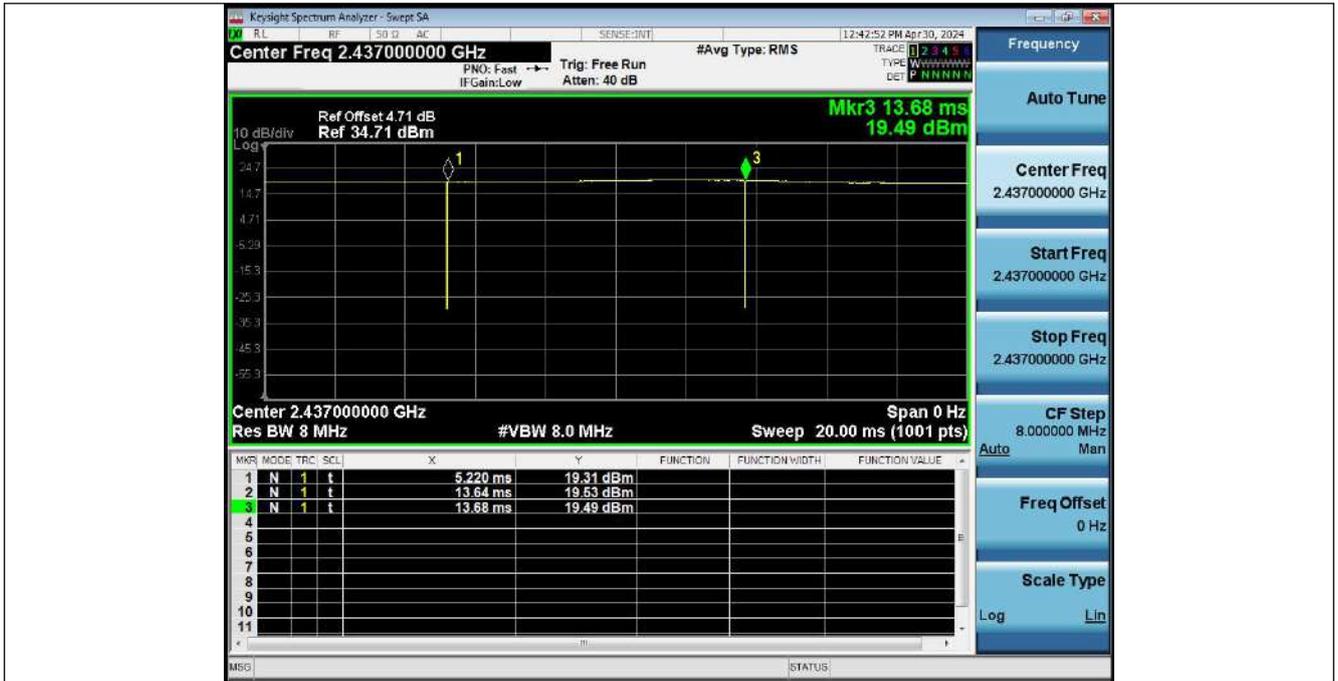


### 3. Duty Cycle

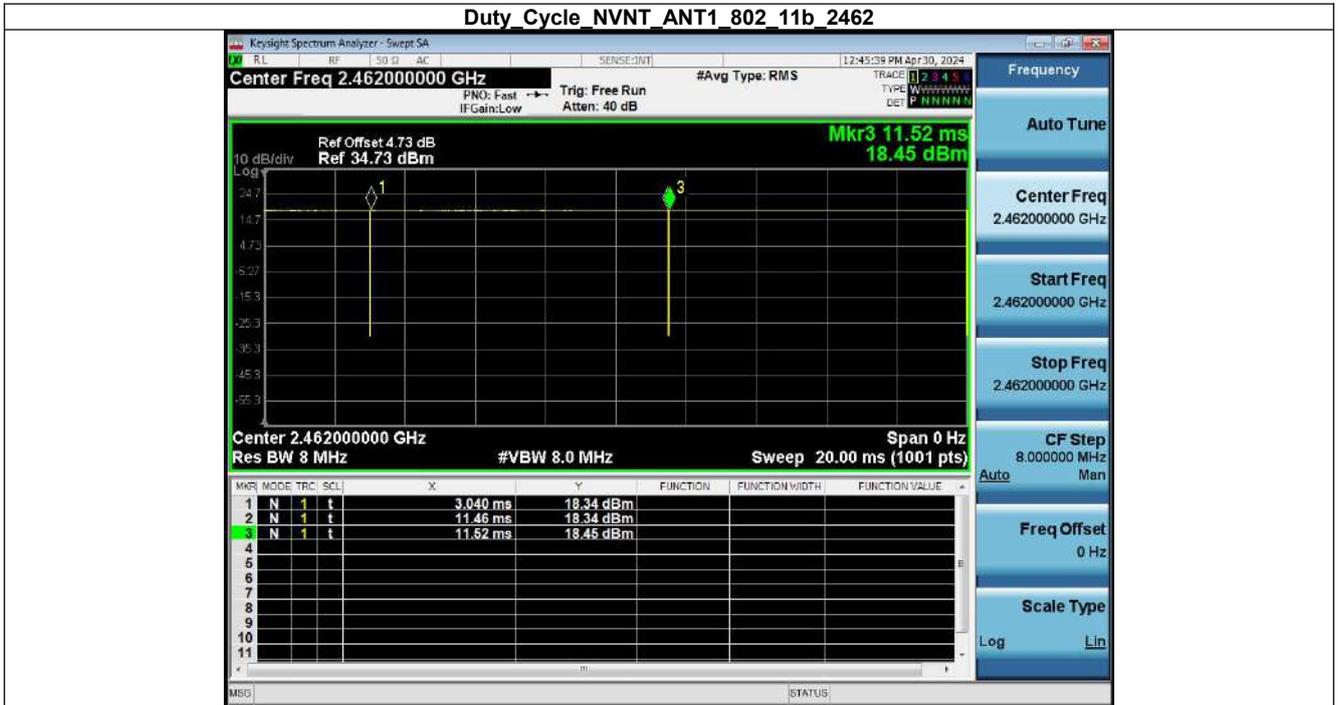
| Condition | Antenna | Modulation    | Frequency (MHz) | Duty cycle(%) | Duty factor(dB) |
|-----------|---------|---------------|-----------------|---------------|-----------------|
| NVNT      | ANT1    | 802.11b       | 2412.00         | 99.76         | 0.00            |
| NVNT      | ANT1    | 802.11b       | 2437.00         | 99.76         | 0.00            |
| NVNT      | ANT1    | 802.11b       | 2462.00         | 99.53         | 0.00            |
| NVNT      | ANT1    | 802.11g       | 2412.00         | 97.26         | 0.12            |
| NVNT      | ANT1    | 802.11g       | 2437.00         | 97.26         | 0.12            |
| NVNT      | ANT1    | 802.11g       | 2462.00         | 97.26         | 0.12            |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00         | 96.77         | 0.14            |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00         | 95.16         | 0.22            |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00         | 96.77         | 0.14            |
| NVNT      | ANT1    | 802.11n(HT40) | 2422.00         | 90.91         | 0.41            |
| NVNT      | ANT1    | 802.11n(HT40) | 2437.00         | 90.63         | 0.43            |
| NVNT      | ANT1    | 802.11n(HT40) | 2452.00         | 96.87         | 0.14            |



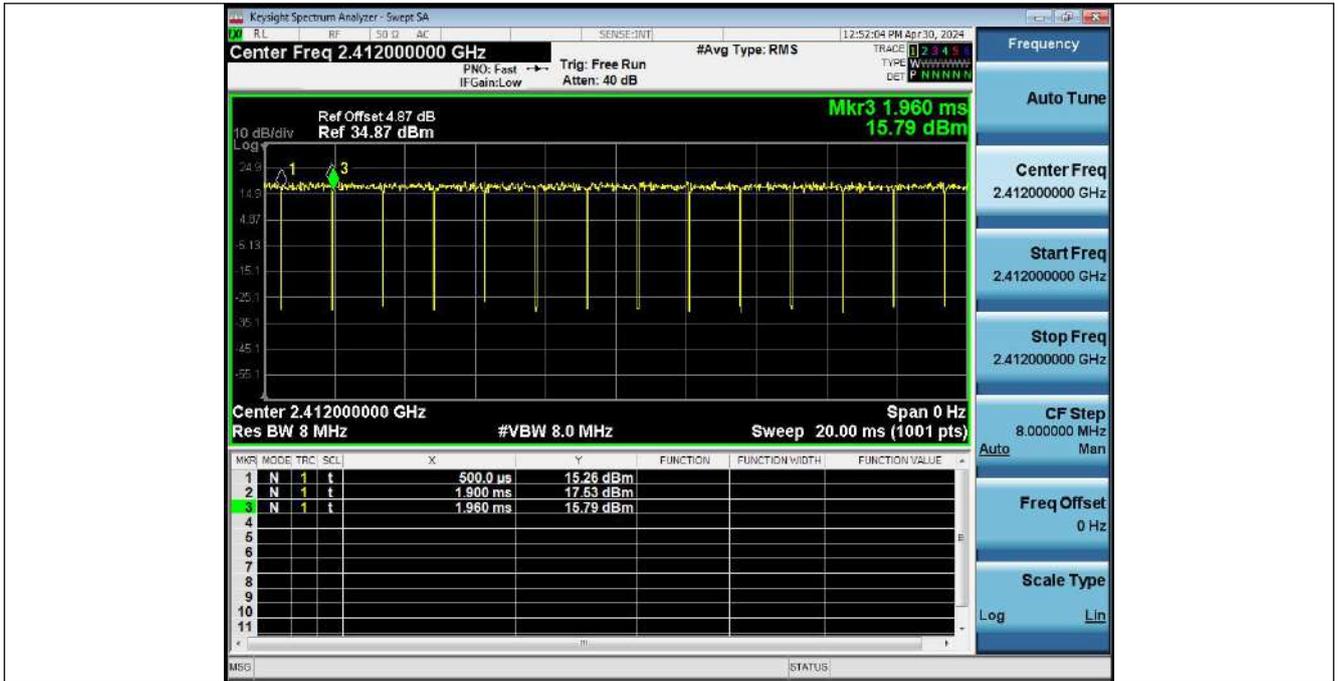
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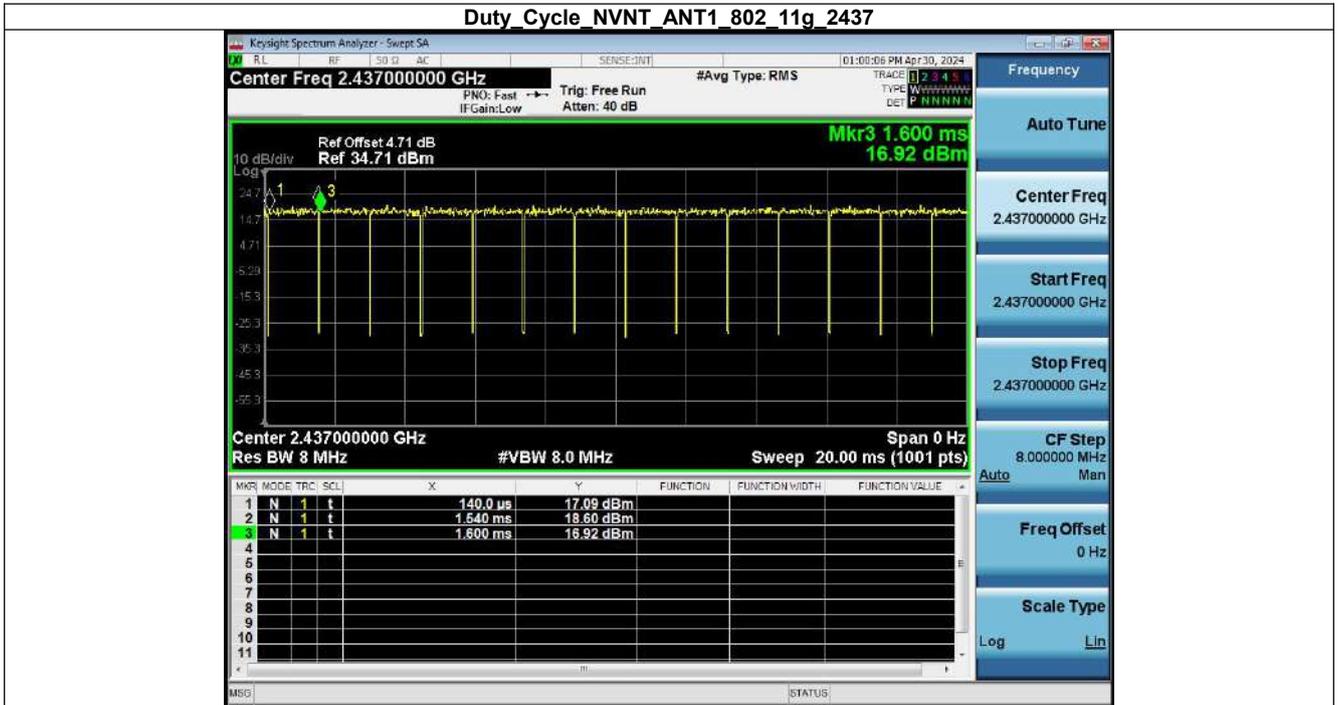
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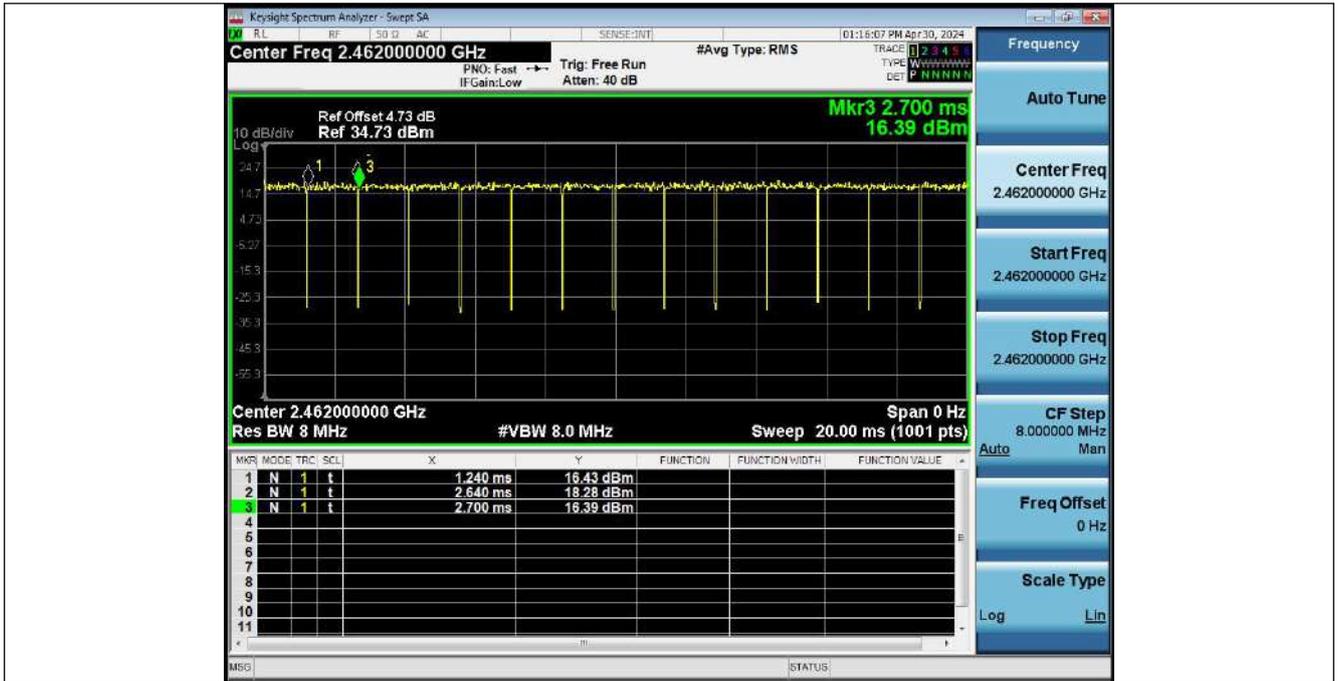
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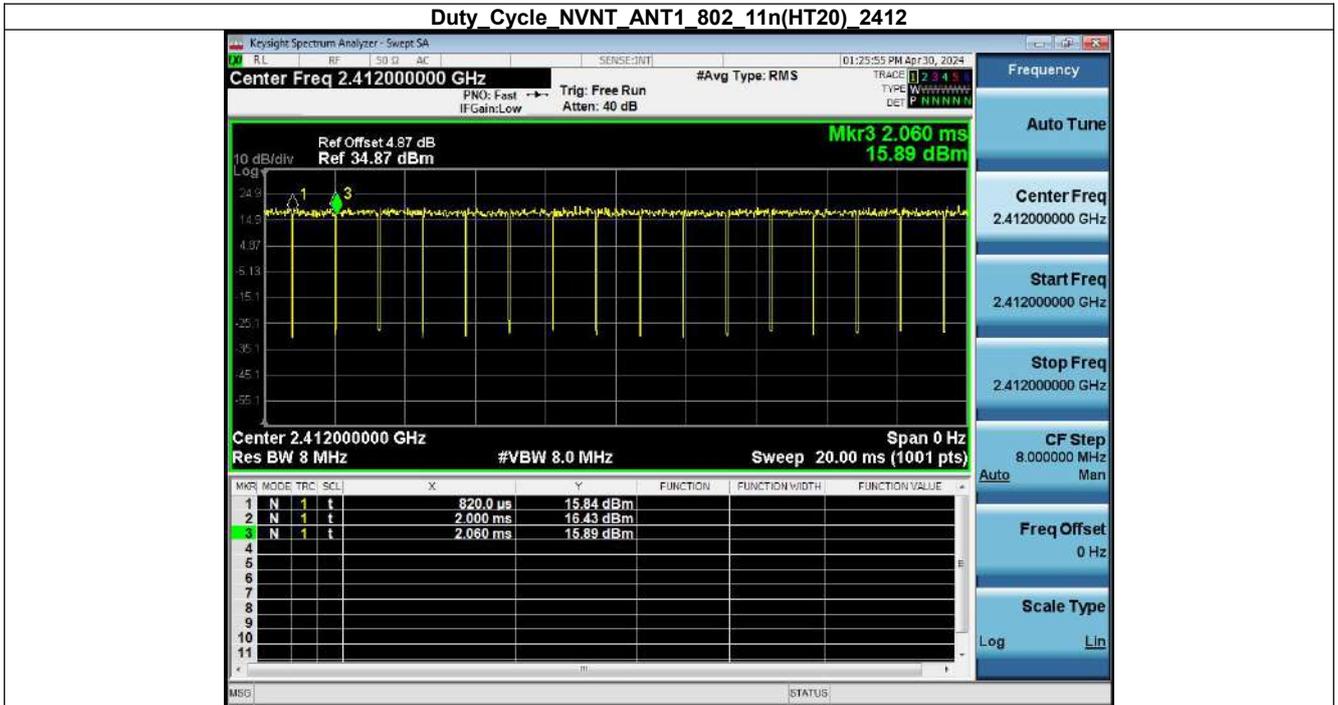
Duty Cycle\_NVNT\_ANT1\_802\_11g\_2437



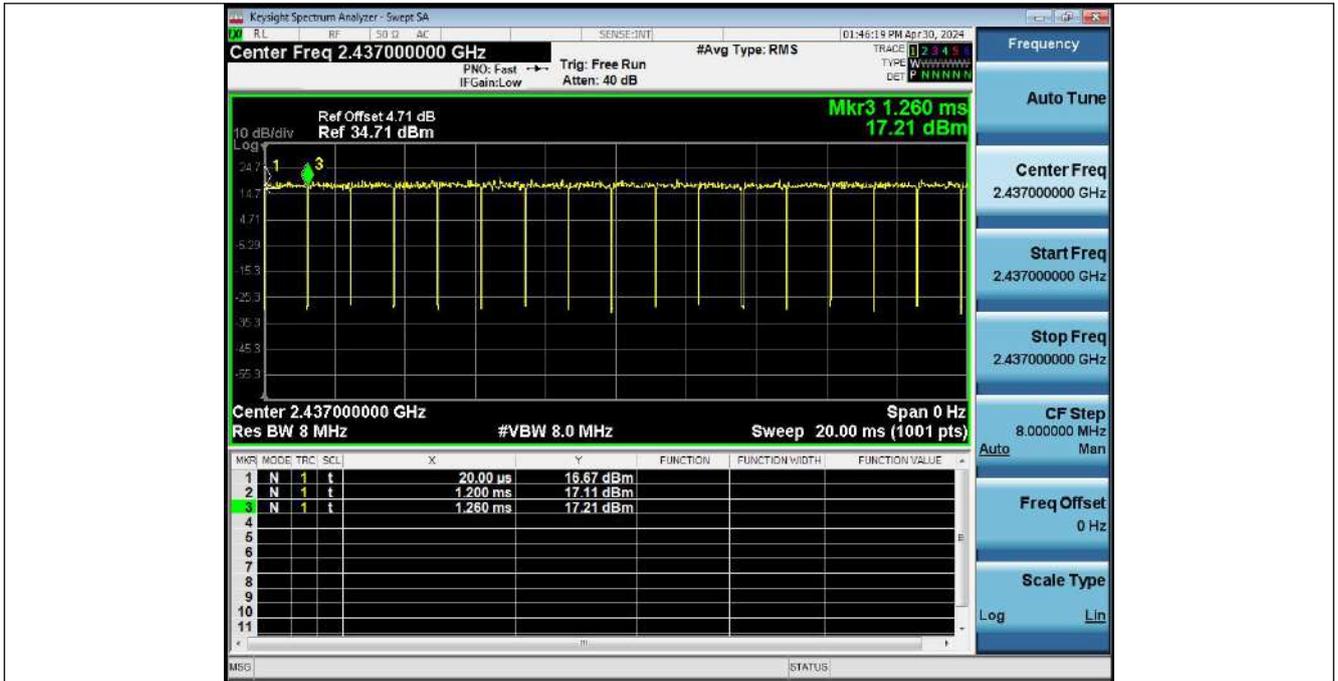
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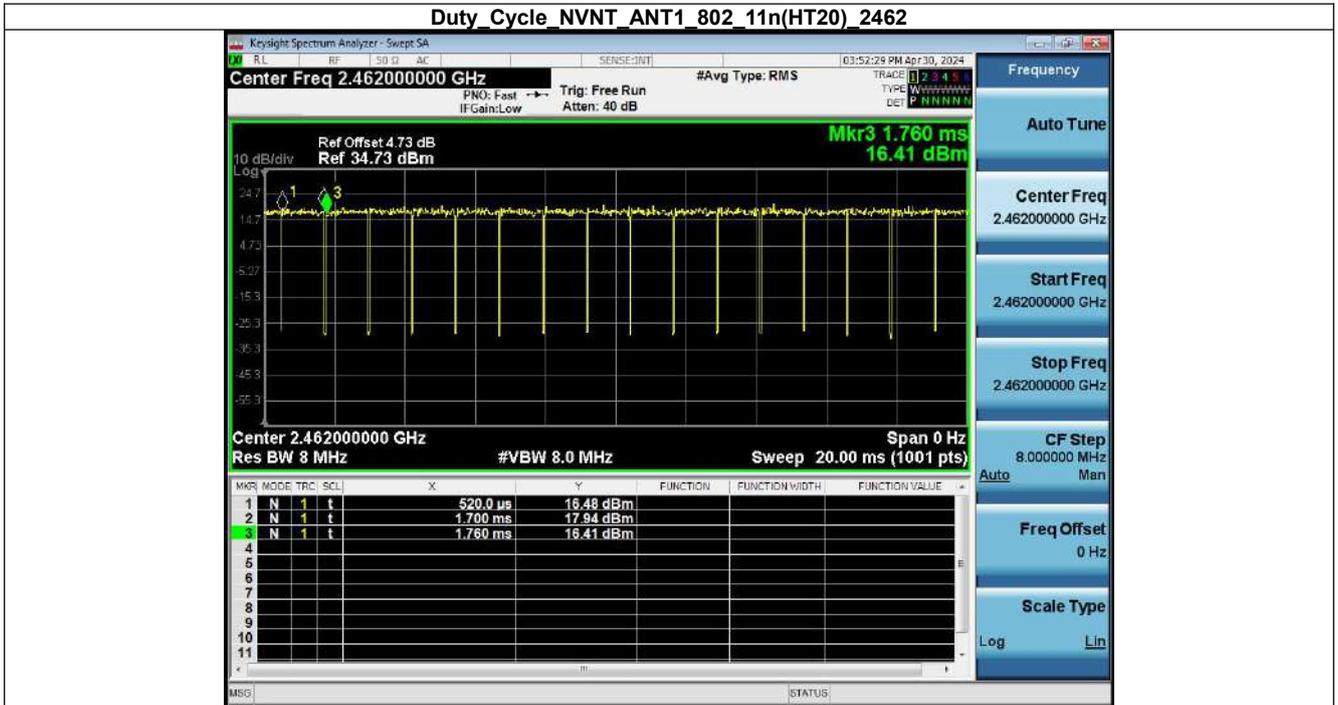
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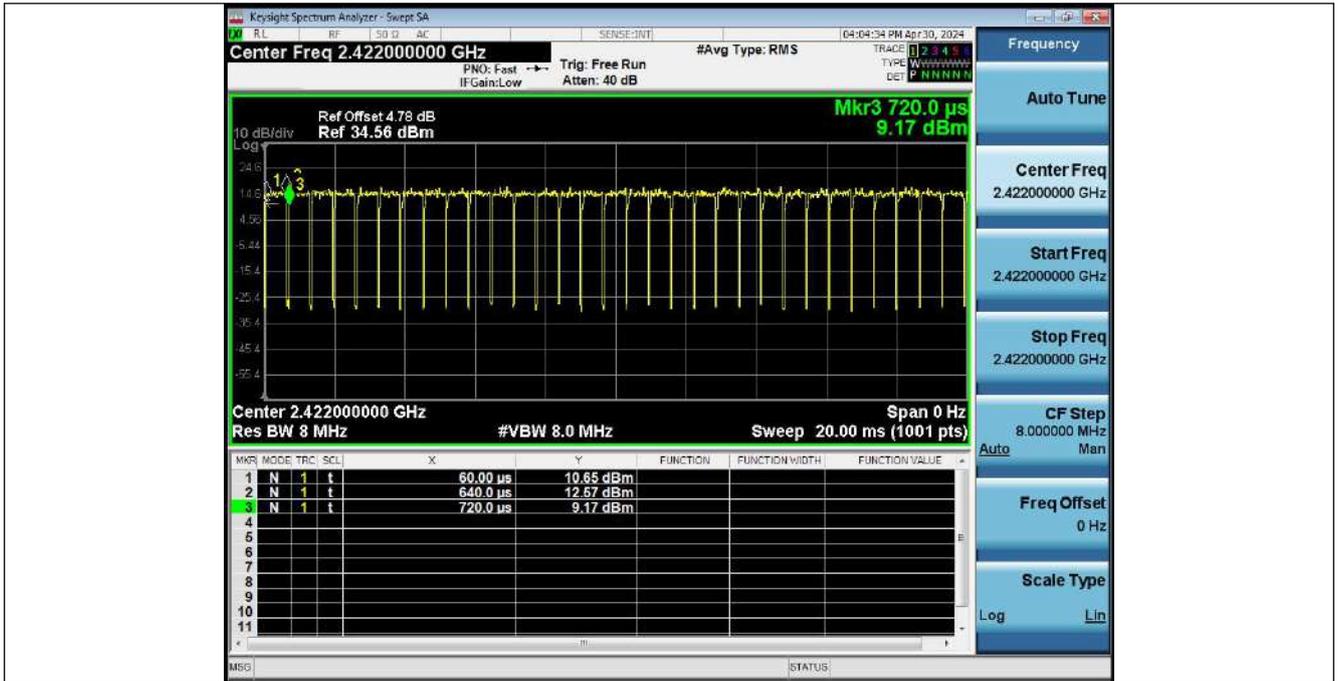
Duty Cycle\_NVNT\_ANT1\_802\_11n(HT20)\_2437



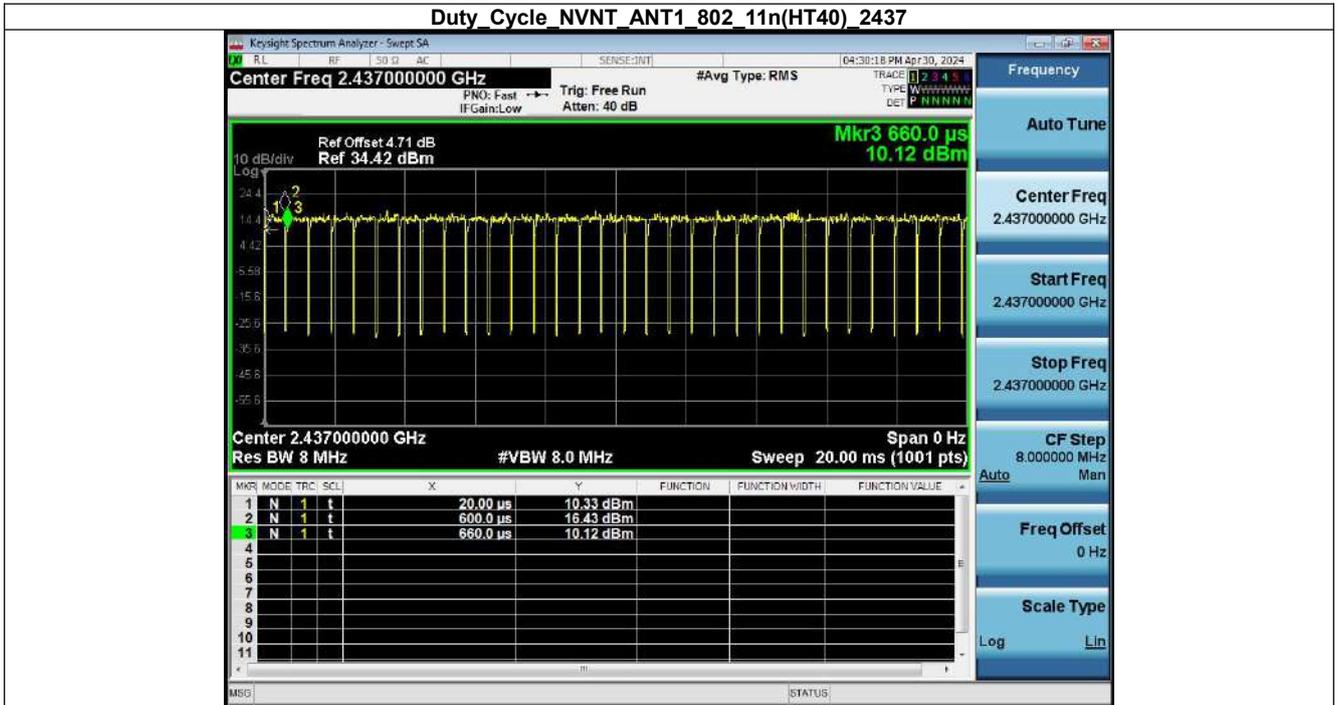
Duty Cycle NVNT\_ANT1\_802\_11n(HT20)\_2462



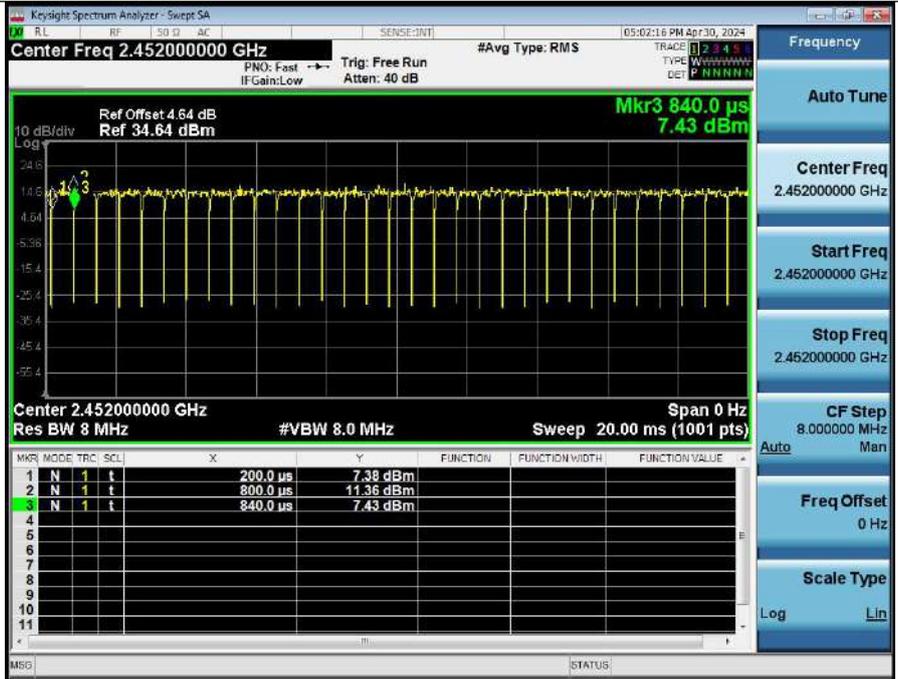
Duty Cycle NVNT\_ANT1\_802\_11n(HT40)\_2422



Duty Cycle\_NVNT\_ANT1\_802\_11n(HT40)\_2437



Duty Cycle\_NVNT\_ANT1\_802\_11n(HT40)\_2452

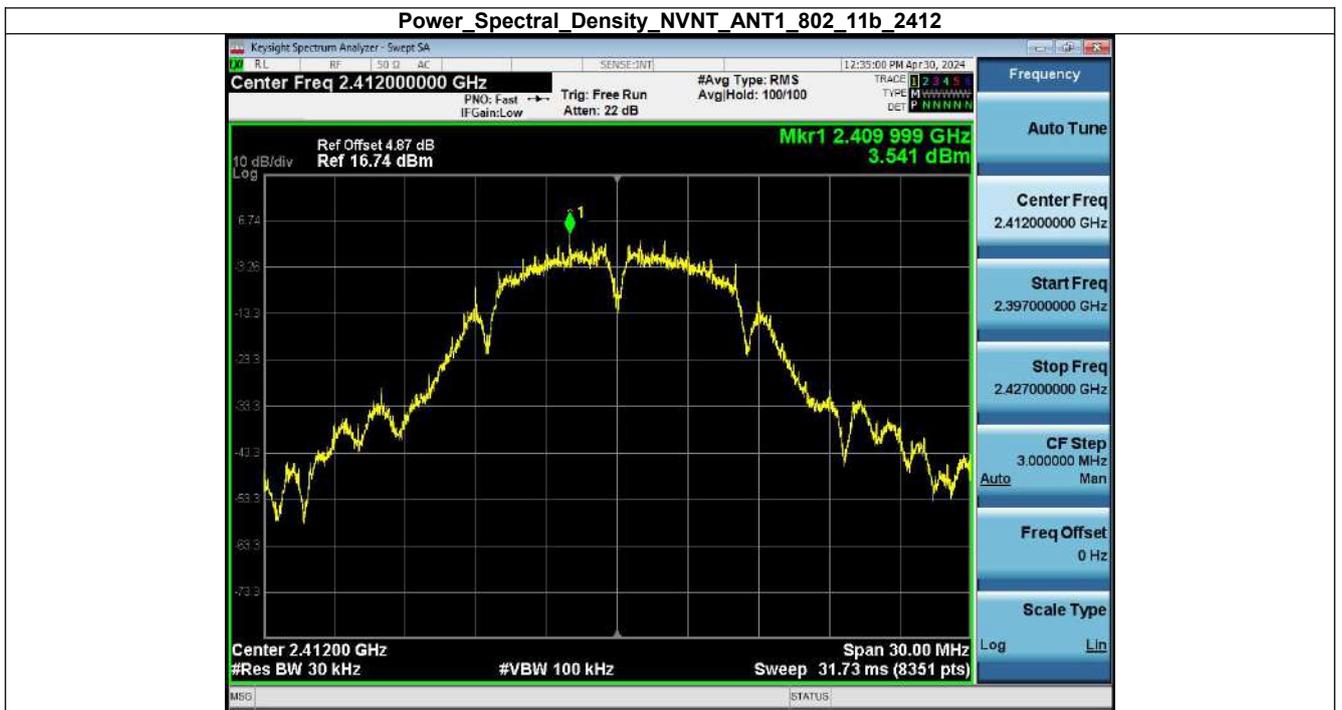


#### 4. MAX. Output Power

| Condition | Antenna | Modulation    | Frequency (MHz) | Detector | Conducted Power(dBm) | Duty factor(dB) | Total Power(dBm) | limit(dBm) | Result |
|-----------|---------|---------------|-----------------|----------|----------------------|-----------------|------------------|------------|--------|
| NVNT      | ANT1    | 802.11b       | 2412.00         | Peak     | 17.51                | N/A             | 17.51            | 30         | Pass   |
| NVNT      | ANT1    | 802.11b       | 2437.00         | Peak     | 17.94                | N/A             | 17.94            | 30         | Pass   |
| NVNT      | ANT1    | 802.11b       | 2462.00         | Peak     | 17.88                | N/A             | 17.88            | 30         | Pass   |
| NVNT      | ANT1    | 802.11g       | 2412.00         | Peak     | 21.40                | N/A             | 21.40            | 30         | Pass   |
| NVNT      | ANT1    | 802.11g       | 2437.00         | Peak     | 21.97                | N/A             | 21.97            | 30         | Pass   |
| NVNT      | ANT1    | 802.11g       | 2462.00         | Peak     | 22.02                | N/A             | 22.02            | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00         | Peak     | 21.82                | N/A             | 21.82            | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00         | Peak     | 22.41                | N/A             | 22.41            | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00         | Peak     | 22.48                | N/A             | 22.48            | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2422.00         | Peak     | 22.39                | N/A             | 22.39            | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2437.00         | Peak     | 22.25                | N/A             | 22.25            | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2452.00         | Peak     | 21.60                | N/A             | 21.60            | 30         | Pass   |

## 5. Power Spectral Density

| Antenna | Modulation    | Frequency (MHz) | PSD(dBm/30kHz) | RB factor(dB) | PSD(dBm/3kHz) | limit(dBm/3kHz) | Result |
|---------|---------------|-----------------|----------------|---------------|---------------|-----------------|--------|
| ANT1    | 802.11b       | 2412.00         | 3.54           | -10.00        | -6.46         | 8               | Pass   |
| ANT1    | 802.11b       | 2437.00         | 3.85           | -10.00        | -6.15         | 8               | Pass   |
| ANT1    | 802.11b       | 2462.00         | 2.44           | -10.00        | -7.56         | 8               | Pass   |
| ANT1    | 802.11g       | 2412.00         | -1.15          | -10.00        | -11.15        | 8               | Pass   |
| ANT1    | 802.11g       | 2437.00         | -0.43          | -10.00        | -10.43        | 8               | Pass   |
| ANT1    | 802.11g       | 2462.00         | -1.21          | -10.00        | -11.21        | 8               | Pass   |
| ANT1    | 802.11n(HT20) | 2412.00         | -1.47          | -10.00        | -11.47        | 8               | Pass   |
| ANT1    | 802.11n(HT20) | 2437.00         | -1.03          | -10.00        | -11.03        | 8               | Pass   |
| ANT1    | 802.11n(HT20) | 2462.00         | -1.28          | -10.00        | -11.28        | 8               | Pass   |
| ANT1    | 802.11n(HT40) | 2422.00         | -3.92          | -10.00        | -13.92        | 8               | Pass   |
| ANT1    | 802.11n(HT40) | 2437.00         | -4.15          | -10.00        | -14.15        | 8               | Pass   |
| ANT1    | 802.11n(HT40) | 2452.00         | -5.03          | -10.00        | -15.03        | 8               | Pass   |



**Power\_Spectral\_Density\_NVNT\_ANT1\_802\_11b\_2437**



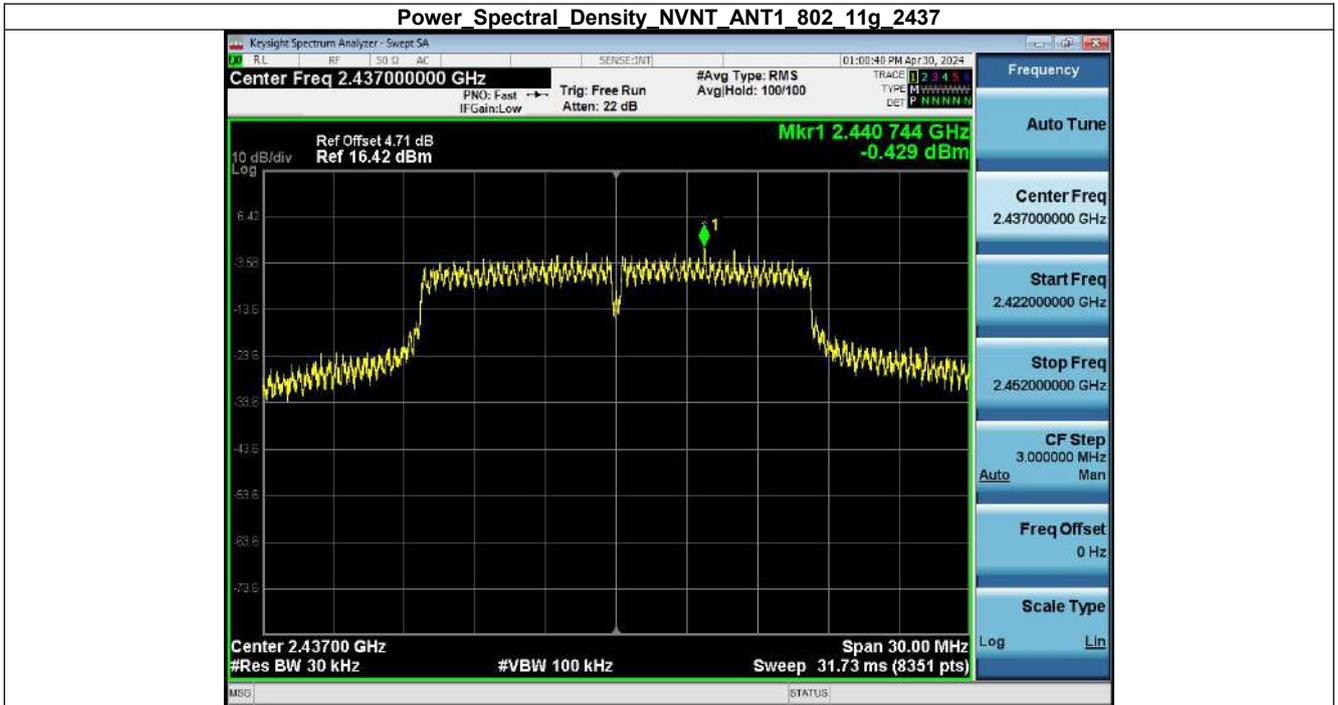
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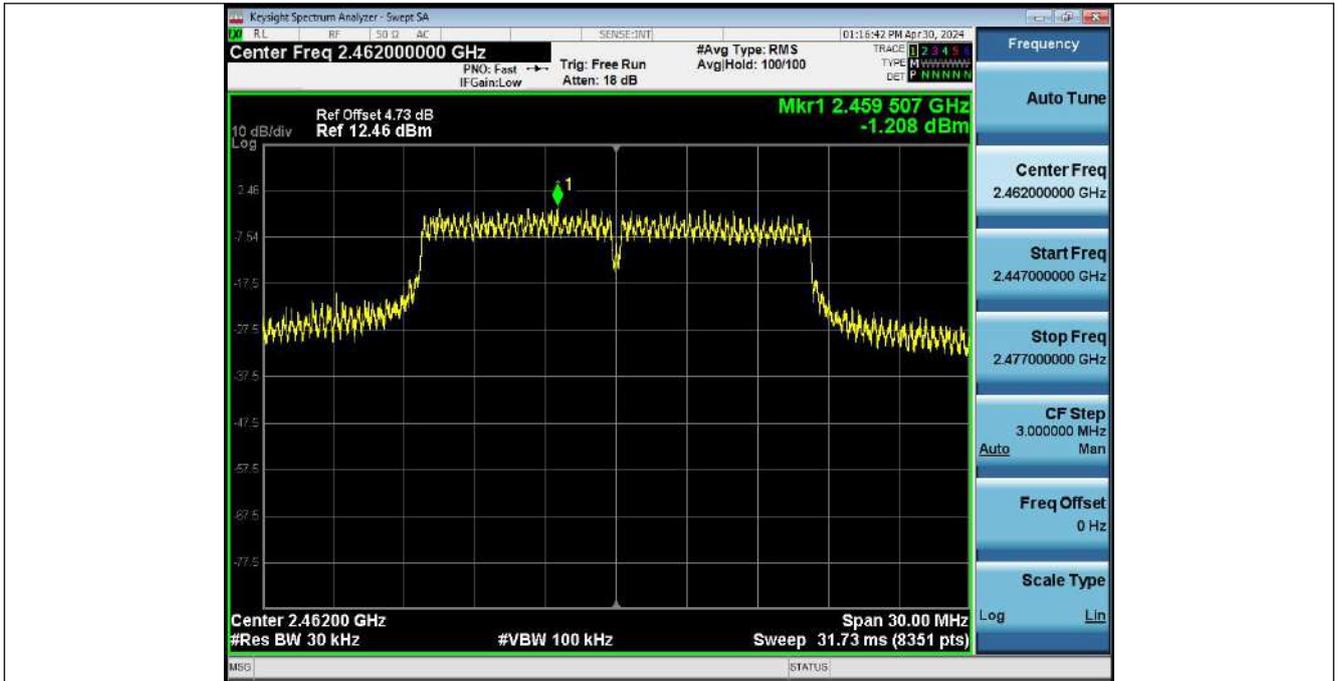
Power\_Spectral\_Density\_NVNT\_ANT1\_802\_11g\_2412



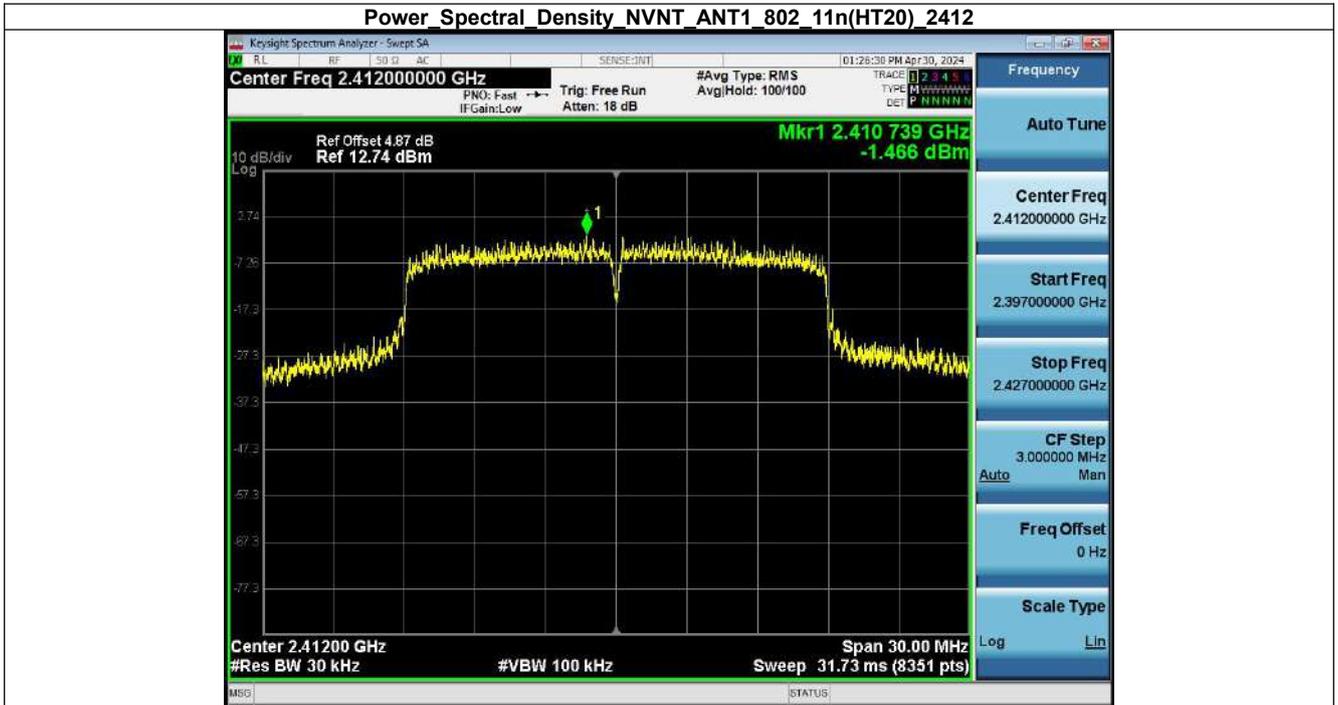
Power\_Spectral\_Density\_NVNT\_ANT1\_802\_11g\_2437



Power\_Spectral\_Density\_NVNT\_ANT1\_802\_11g\_2462



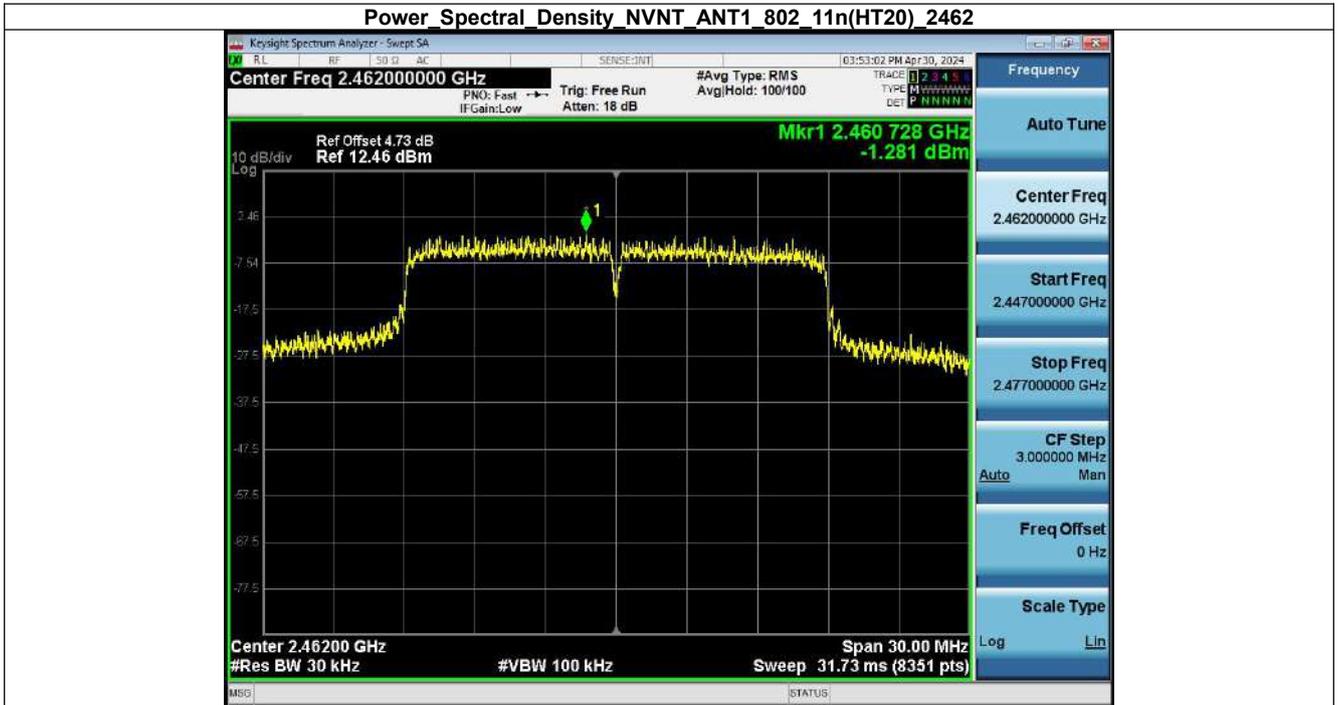
Power Spectral Density\_NVNT\_ANT1\_802\_11n(HT20)\_2412



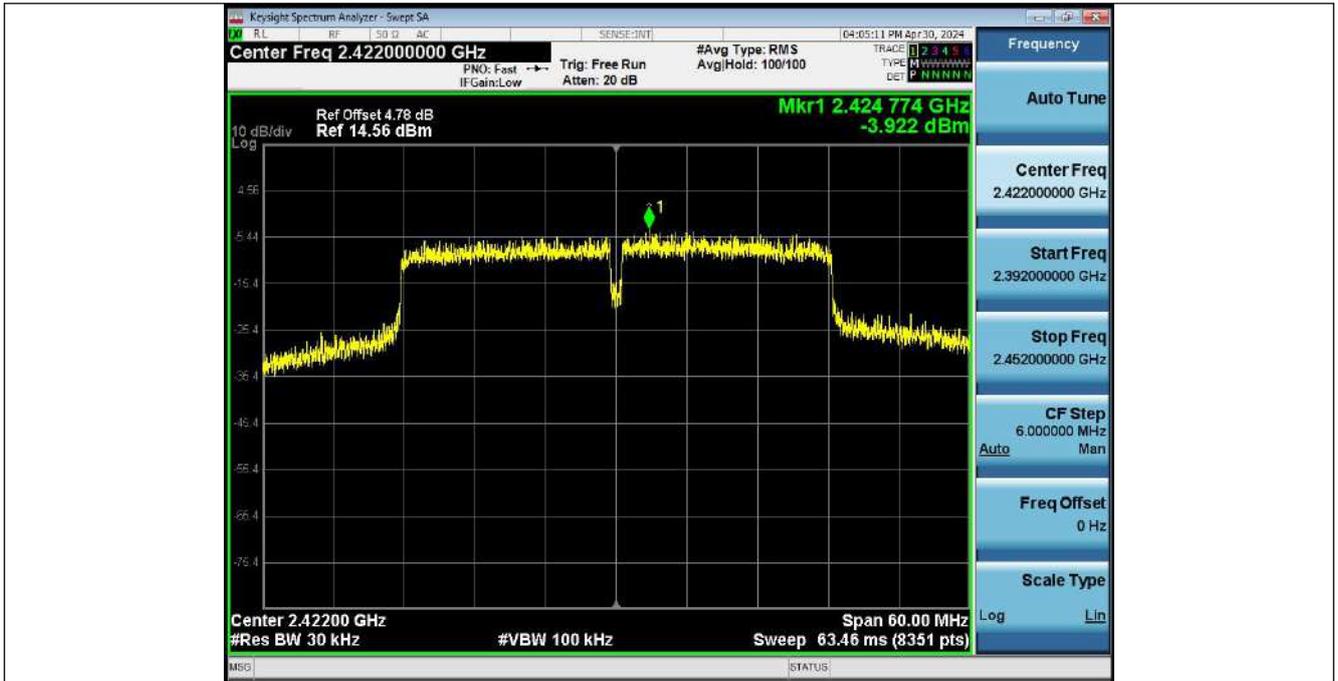
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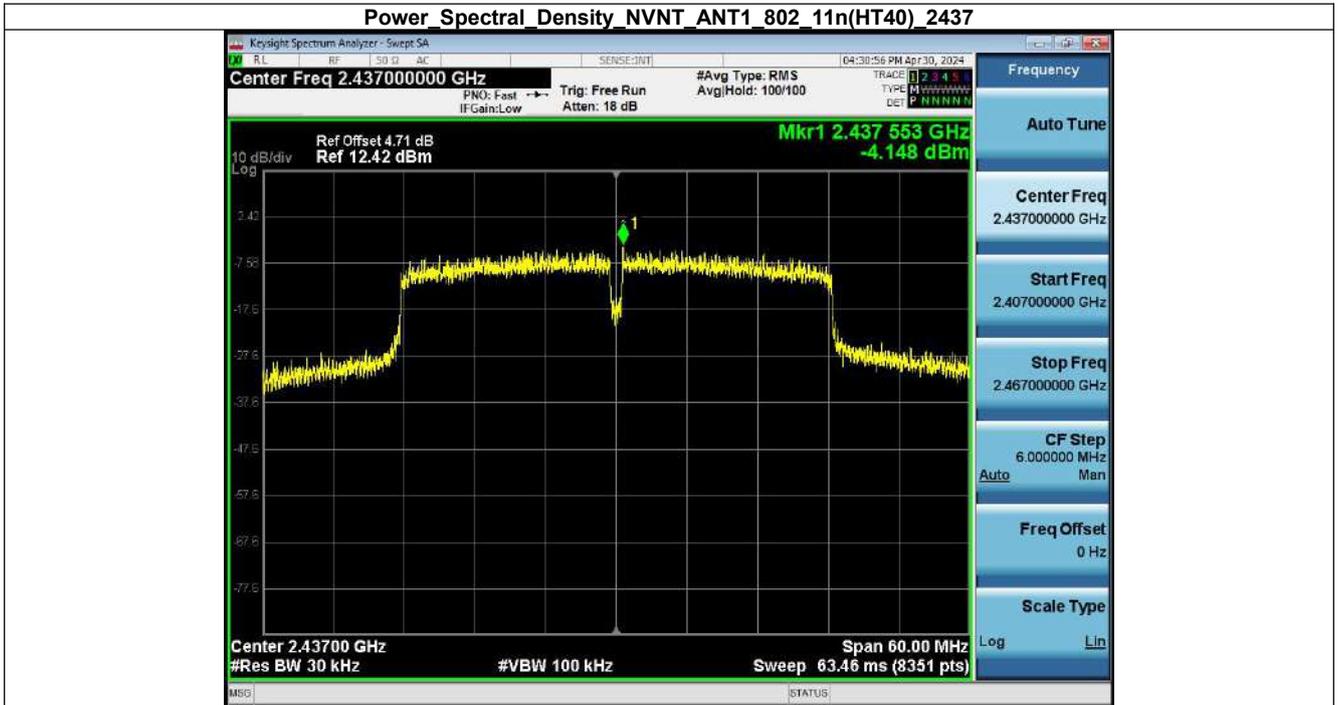
Power Spectral Density\_NVNT\_ANT1\_802\_11n(HT20)\_2462



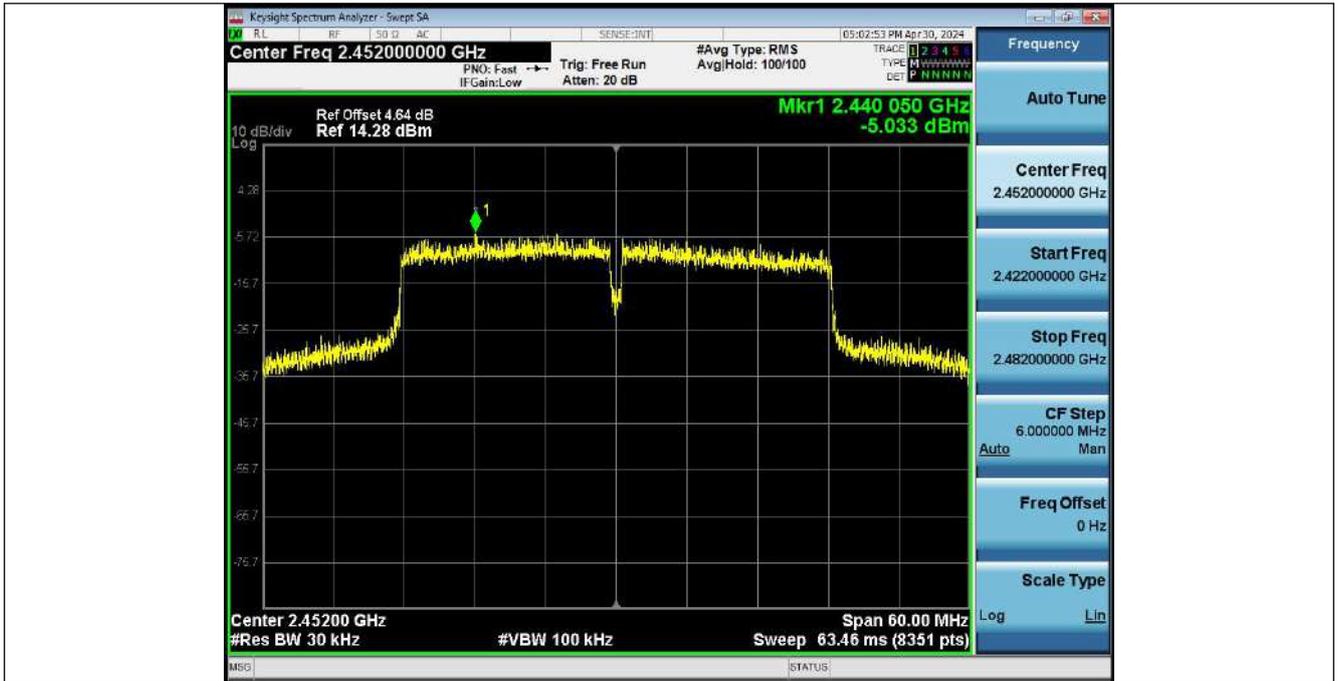
Power Spectral Density\_NVNT\_ANT1\_802\_11n(HT40)\_2422



Power Spectral Density\_NVNT\_ANT1\_802\_11n(HT40)\_2437



Power Spectral Density\_NVNT\_ANT1\_802\_11n(HT40)\_2452



## 6. Bandedge

| Condition | Antenna | Modulation    | TX_Frequency (MHz) | Max. Mark_frequency(MHz) | Spurious level(dBm) | limit(dBm) | Result |
|-----------|---------|---------------|--------------------|--------------------------|---------------------|------------|--------|
| NVNT      | ANT1    | 802.11b       | 2412.00            | 2399.936                 | -35.280             | -14.357    | Pass   |
| NVNT      | ANT1    | 802.11b       | 2462.00            | 2484.496                 | -50.445             | -13.783    | Pass   |
| NVNT      | ANT1    | 802.11g       | 2412.00            | 2399.152                 | -21.686             | -17.228    | Pass   |
| NVNT      | ANT1    | 802.11g       | 2462.00            | 2483.584                 | -33.998             | -16.601    | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00            | 2399.936                 | -22.382             | -16.805    | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00            | 2483.632                 | -30.885             | -16.469    | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2422.00            | 2399.892                 | -20.532             | -18.450    | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2452.00            | 2484.496                 | -25.784             | -20.074    | Pass   |

1 Reference Level NVNT\_ANT1\_802\_11b\_2412



2 Bandedge\_NVNT\_ANT1\_802\_11b\_2412



1 Reference Level NVNT\_ANT1\_802\_11b\_2462



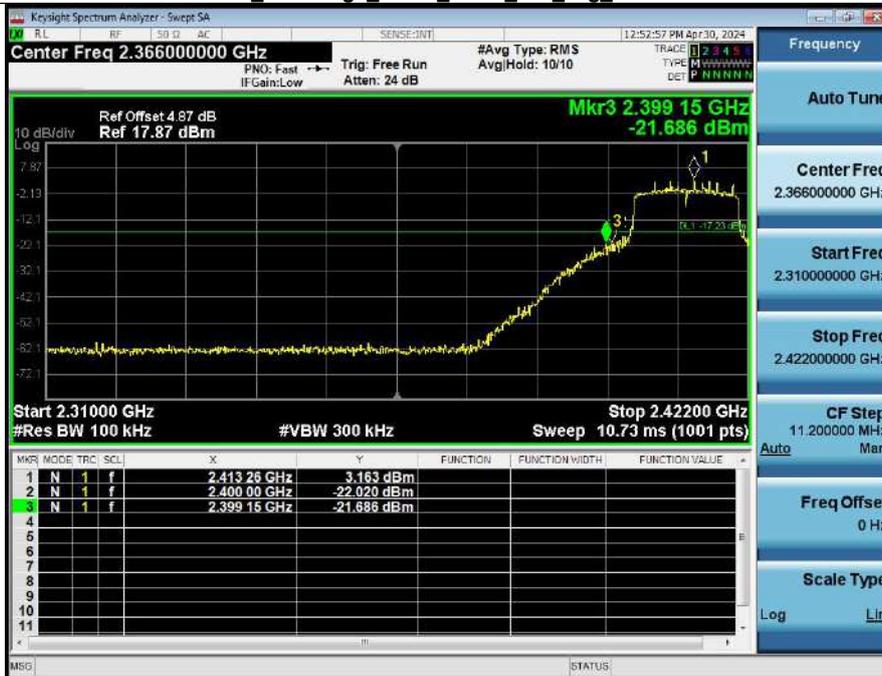
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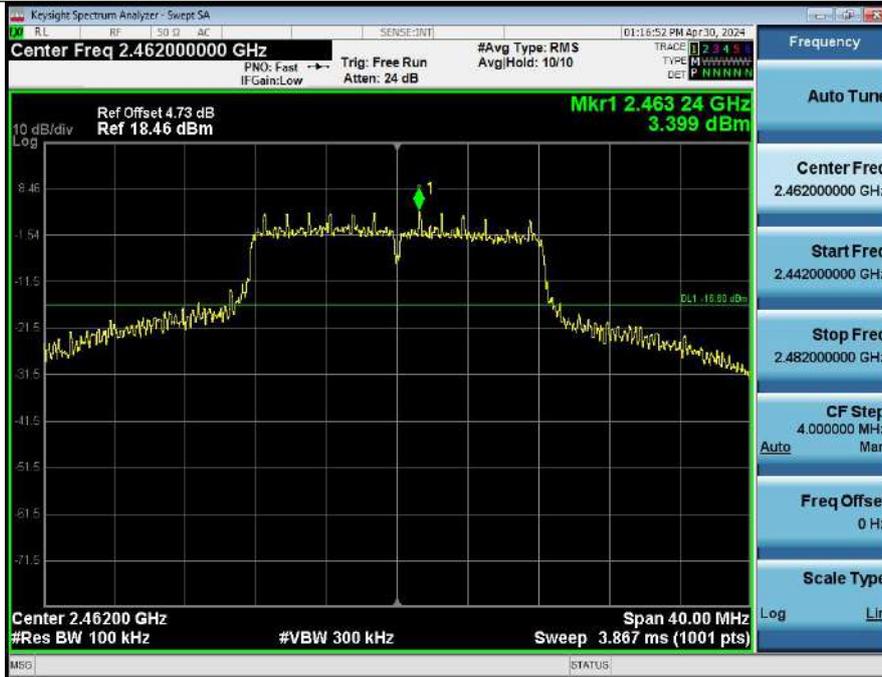
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2\_Bandedge\_NVNT\_ANT1\_802\_11g\_2412



1\_Reference\_Level\_NVNT\_ANT1\_802\_11g\_2462



2\_Bandedge\_NVNT\_ANT1\_802\_11g\_2462



1\_Reference\_Level\_NVNT\_ANT1\_802\_11n(HT20)\_2412



2\_Bandedge\_NVNT\_ANT1\_802\_11n(HT20)\_2412



1\_Reference\_Level\_NVNT\_ANT1\_802\_11n(HT20)\_2462



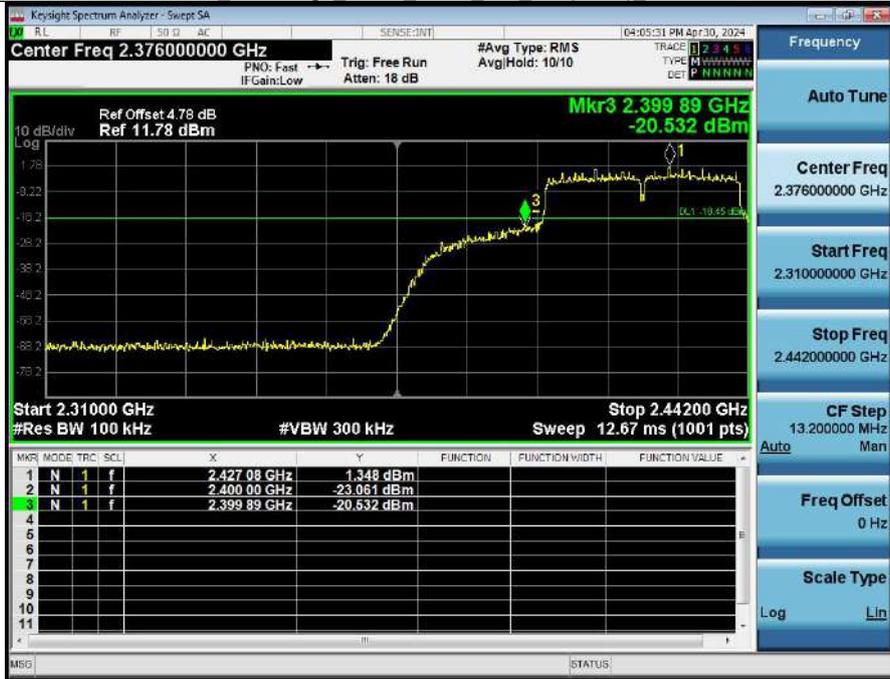
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1\_Reference\_Level\_NVNT\_ANT1\_802\_11n(HT40)\_2422



2\_Bandedge\_NVNT\_ANT1\_802\_11n(HT40)\_2422



1\_Reference\_Level\_NVNT\_ANT1\_802\_11n(HT40)\_2452



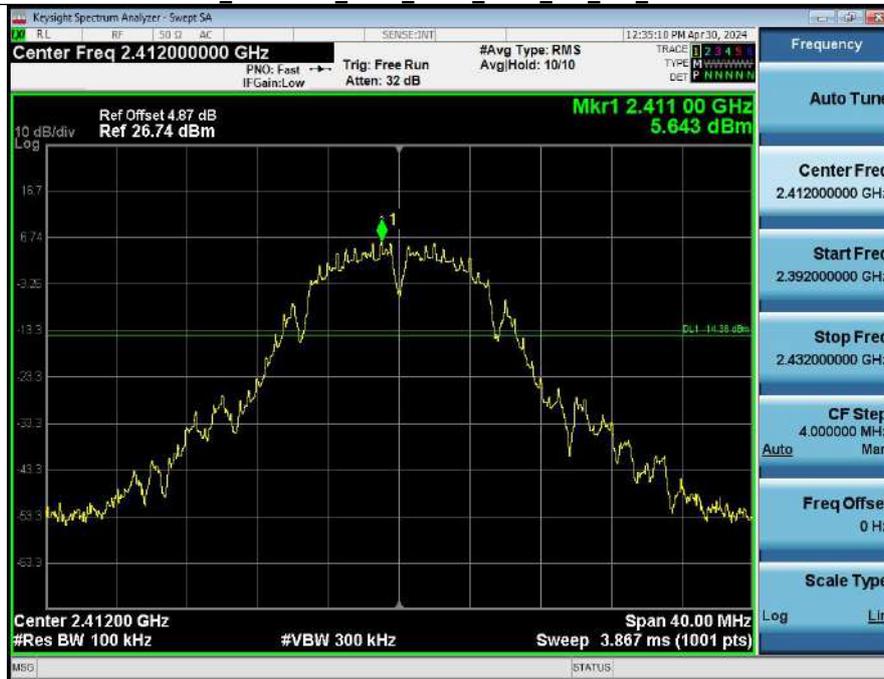
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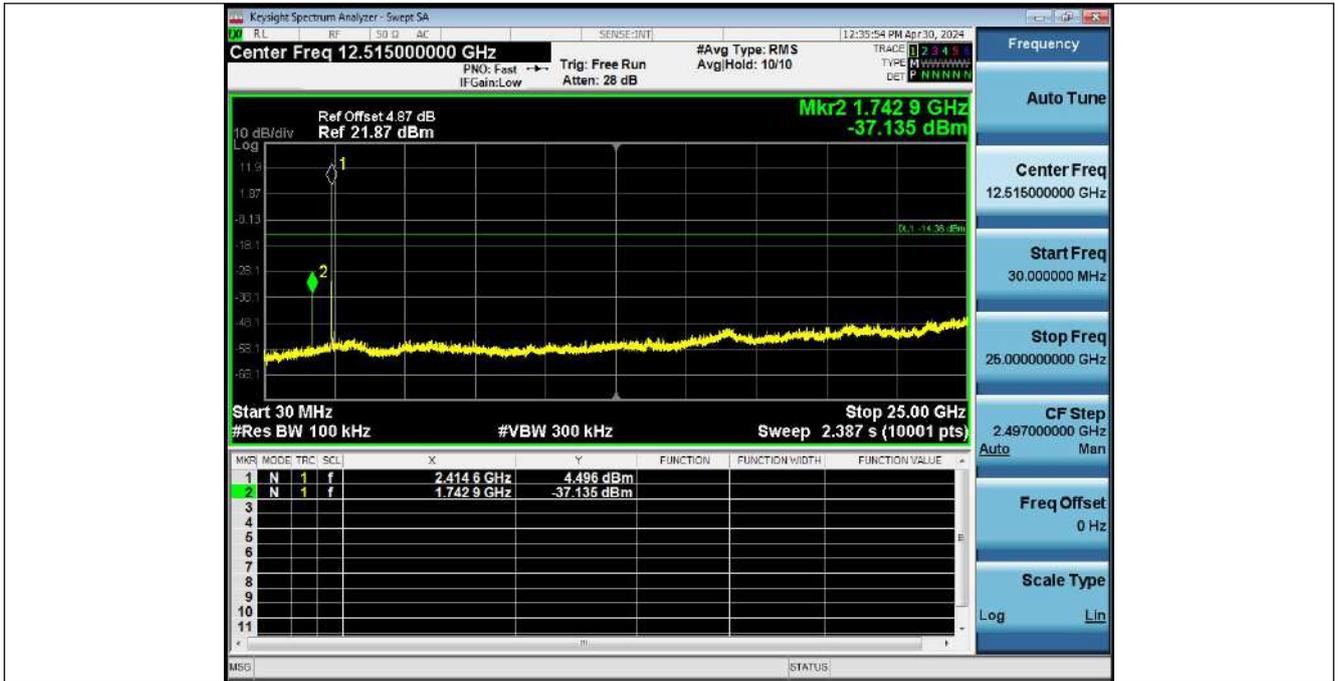
## 7. Spurious Emission

| Condition | Antenna | Modulation    | TX_Frequency (MHz) | Max. Mark_frequency(MHz) | Spurious level(dBm) | limit(dBm) | Result |
|-----------|---------|---------------|--------------------|--------------------------|---------------------|------------|--------|
| NVNT      | ANT1    | 802.11b       | 2412.00            | 1742.942                 | -37.135             | -14.357    | Pass   |
| NVNT      | ANT1    | 802.11b       | 2437.00            | 24917.599                | -45.562             | -13.366    | Pass   |
| NVNT      | ANT1    | 802.11b       | 2462.00            | 24720.336                | -45.807             | -13.783    | Pass   |
| NVNT      | ANT1    | 802.11g       | 2412.00            | 24632.941                | -49.928             | -17.228    | Pass   |
| NVNT      | ANT1    | 802.11g       | 2437.00            | 711.681                  | -34.006             | -16.465    | Pass   |
| NVNT      | ANT1    | 802.11g       | 2462.00            | 2614.395                 | -51.811             | -16.601    | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00            | 721.669                  | -47.724             | -16.805    | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00            | 24925.090                | -53.596             | -16.741    | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00            | 24990.012                | -54.115             | -16.469    | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2422.00            | 24992.509                | -56.029             | -18.450    | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2437.00            | 24950.060                | -52.327             | -19.250    | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2452.00            | 719.172                  | -47.107             | -20.074    | Pass   |

1 Reference\_Level\_NVNT\_ANT1\_802\_11b\_2412



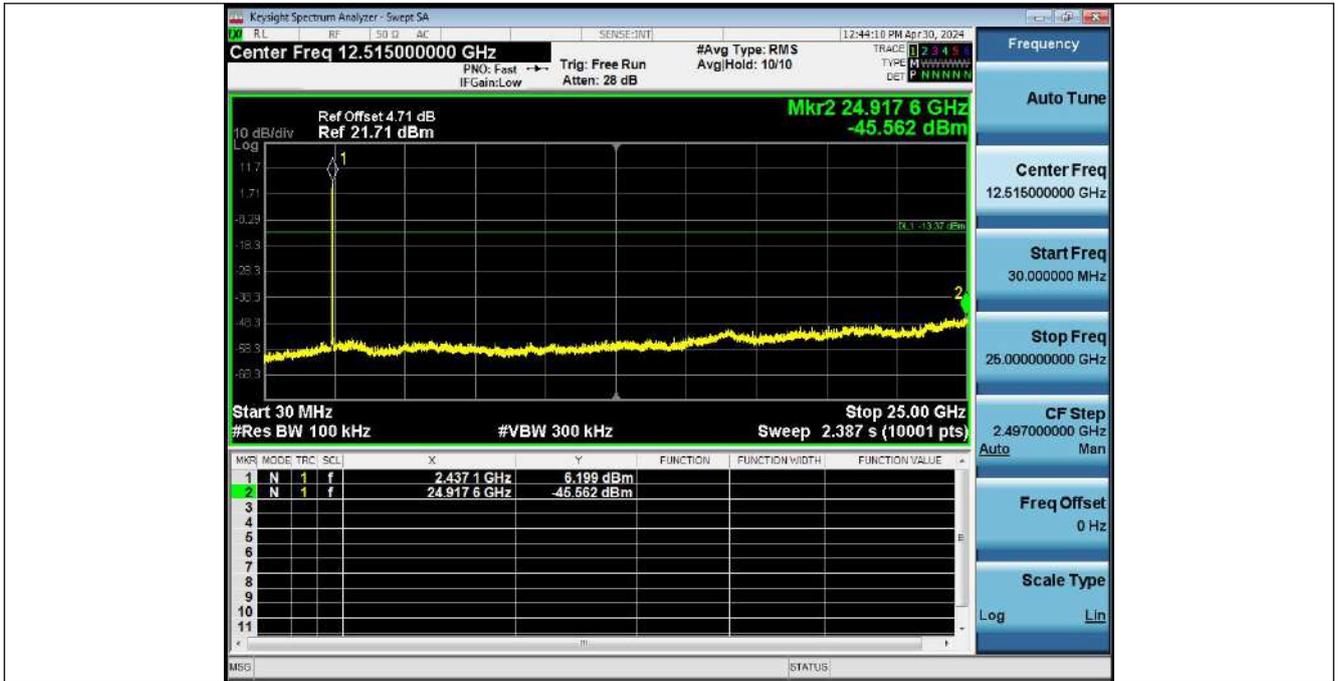
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1 Reference Level NVNT ANT1 802 11b 2437



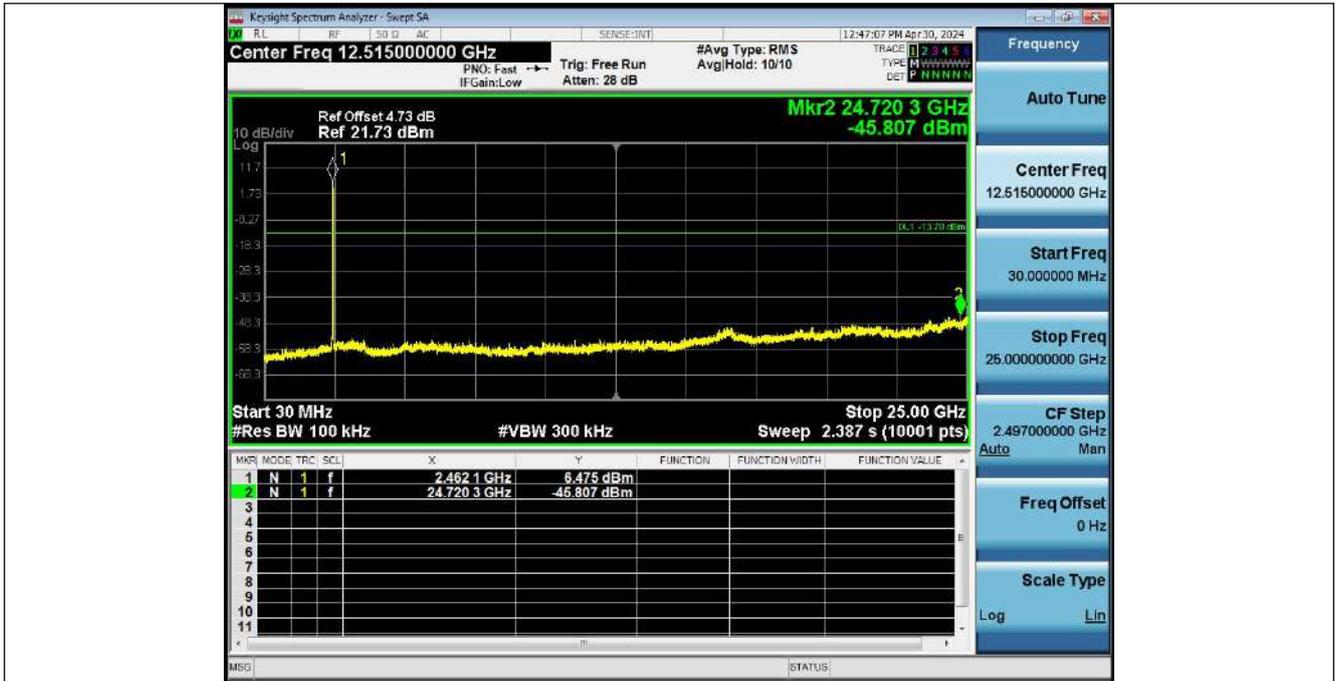
2 Spurious Emission NVNT ANT1 802 11b 2437



1 Reference Level NVNT ANT1 802 11b 2462



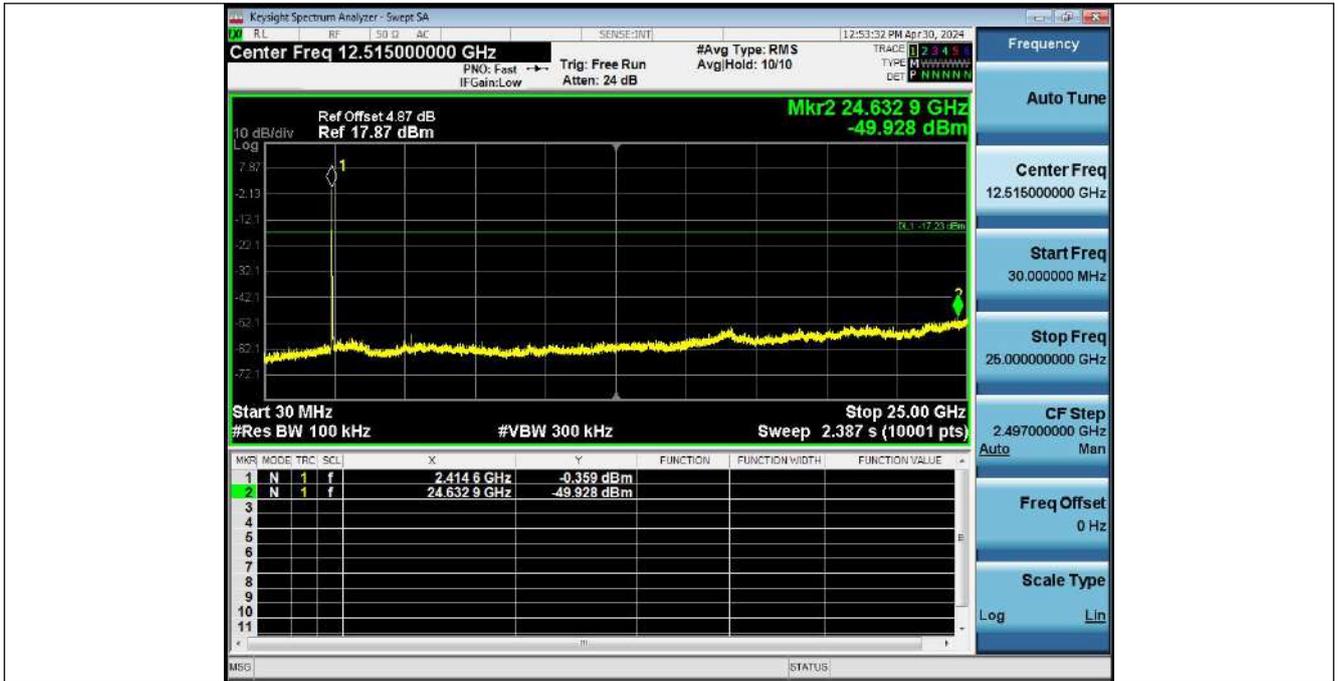
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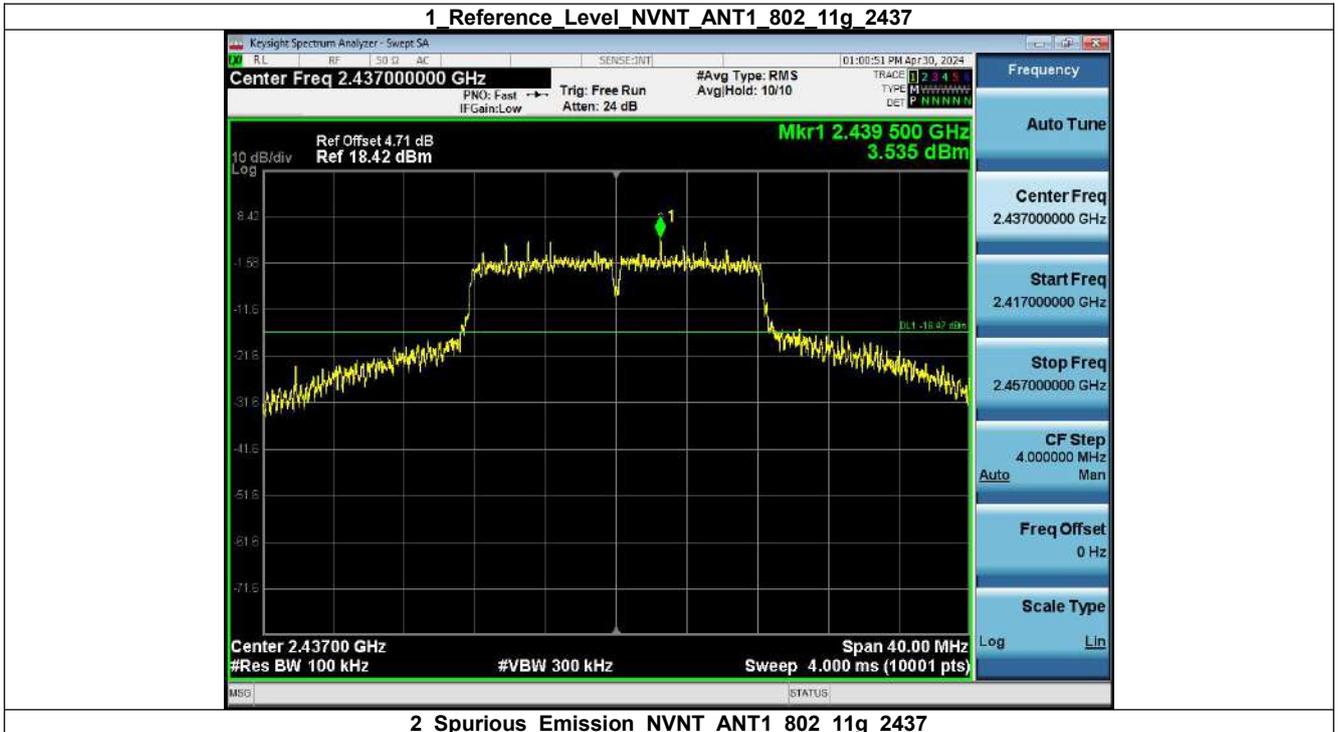
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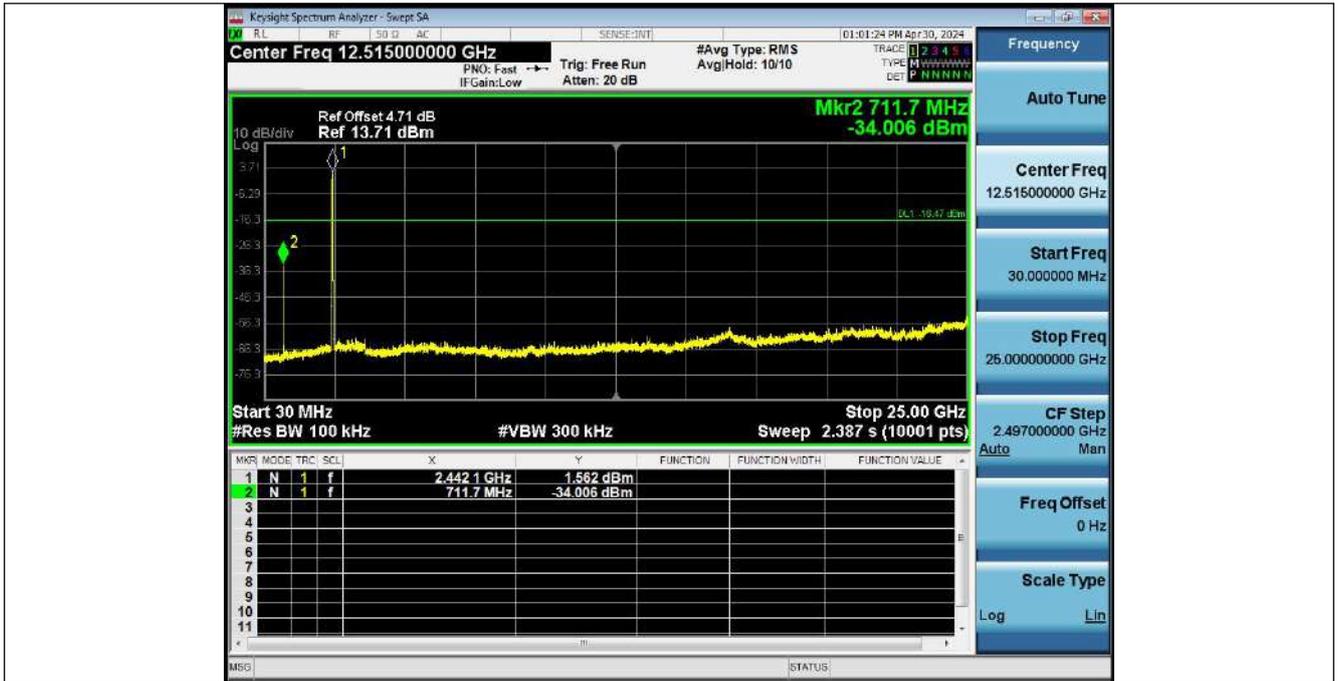
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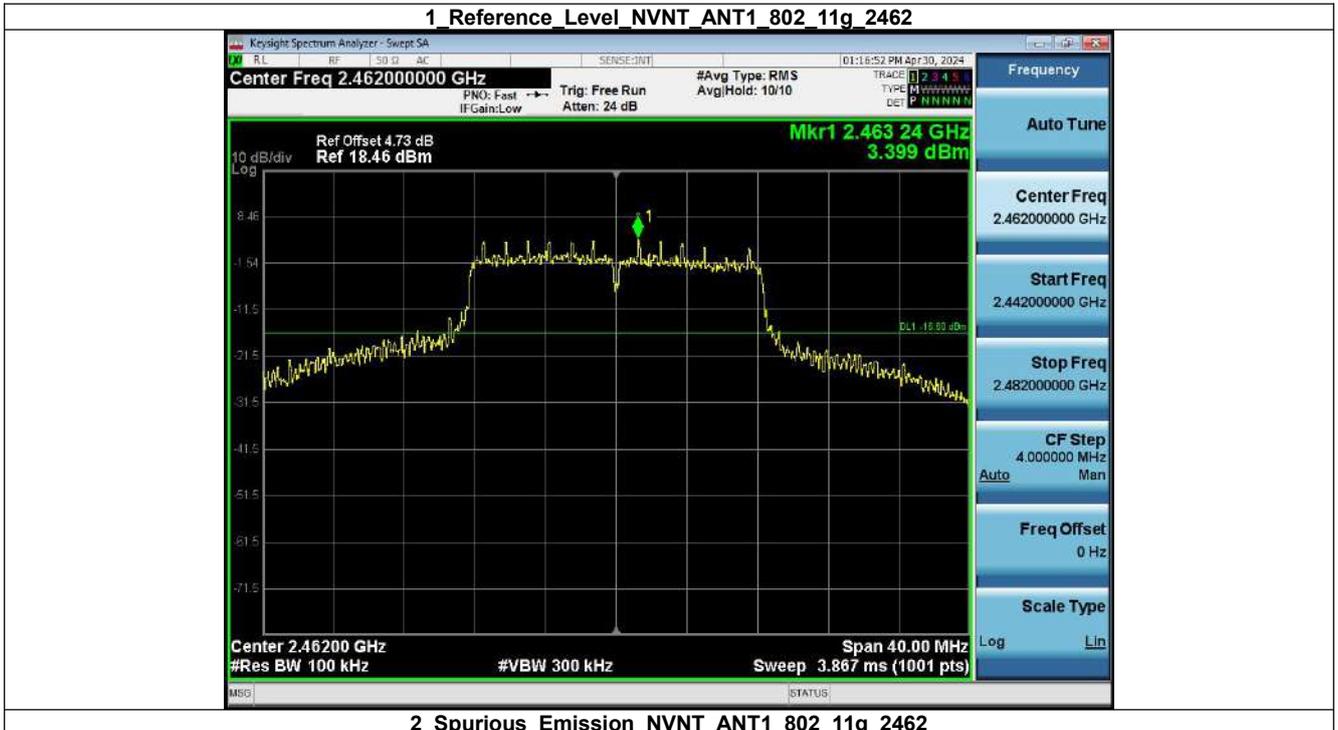
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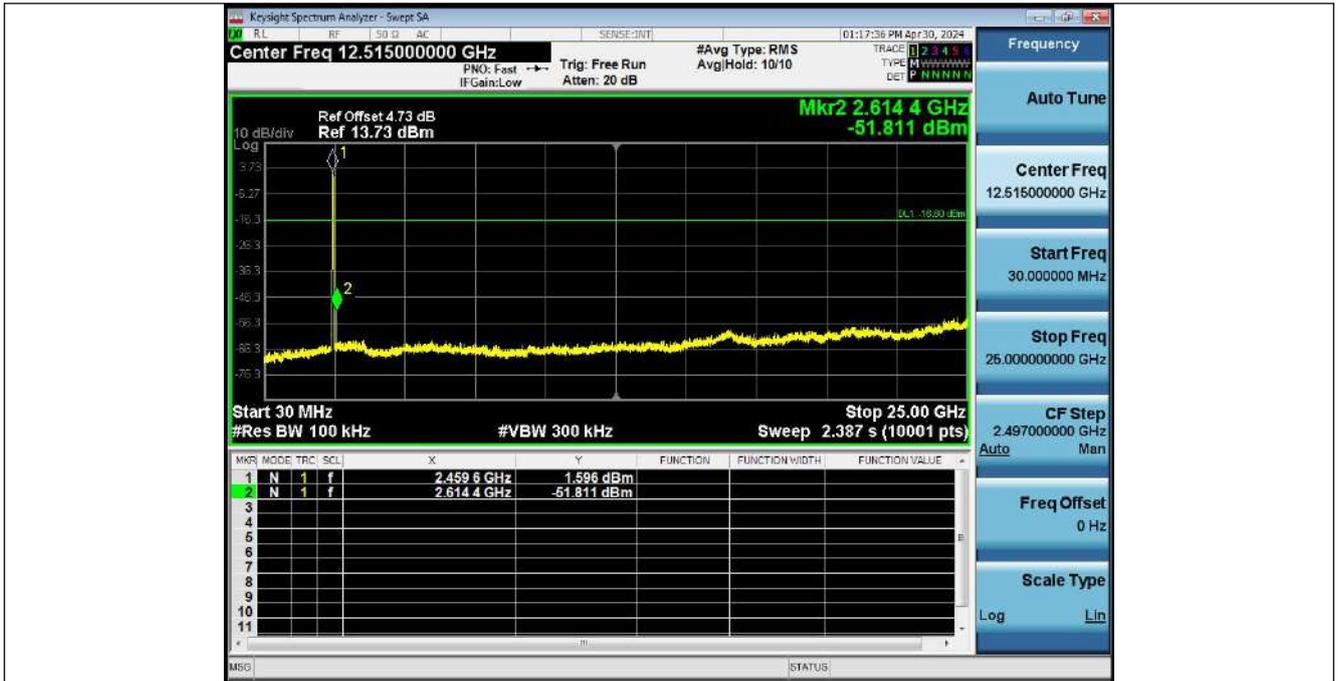
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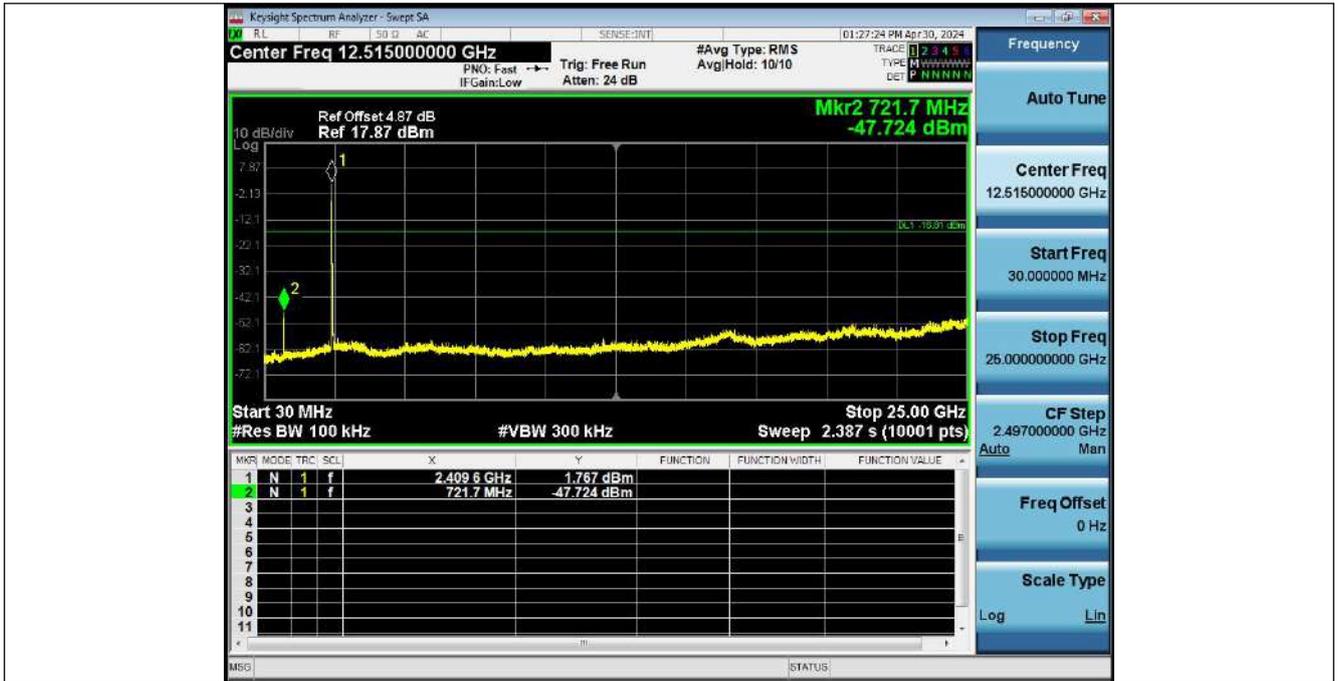
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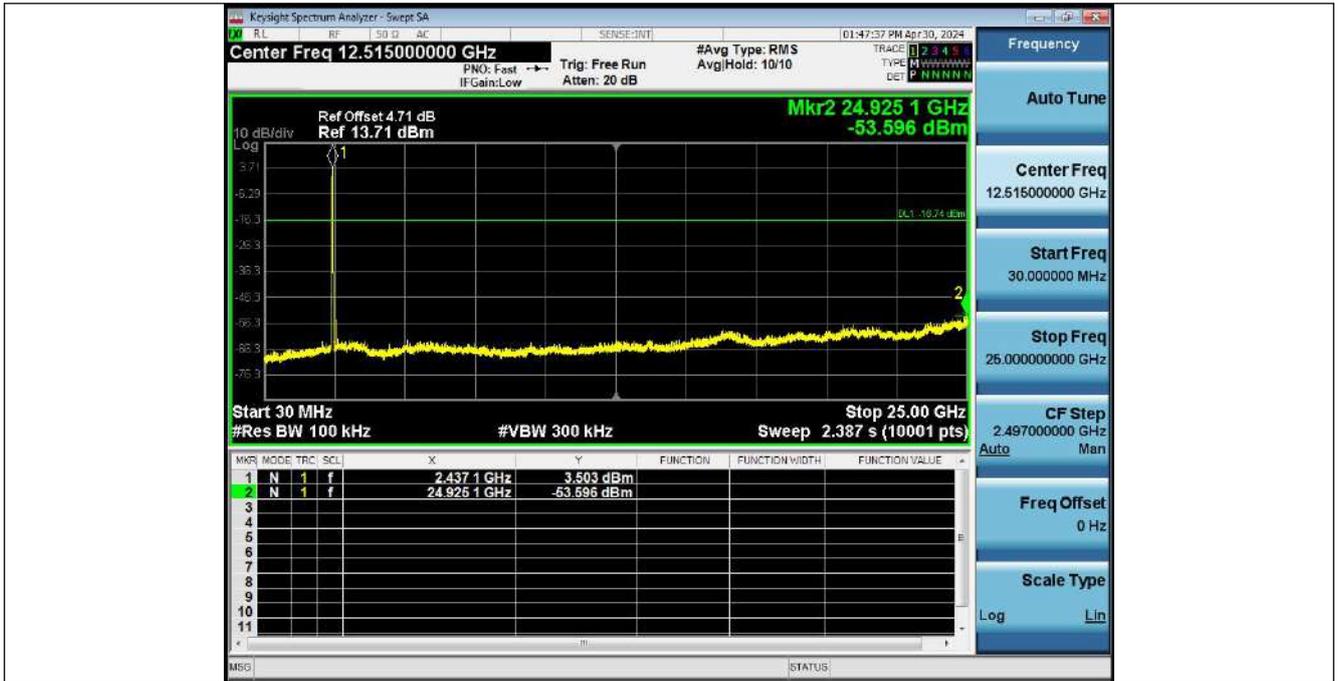
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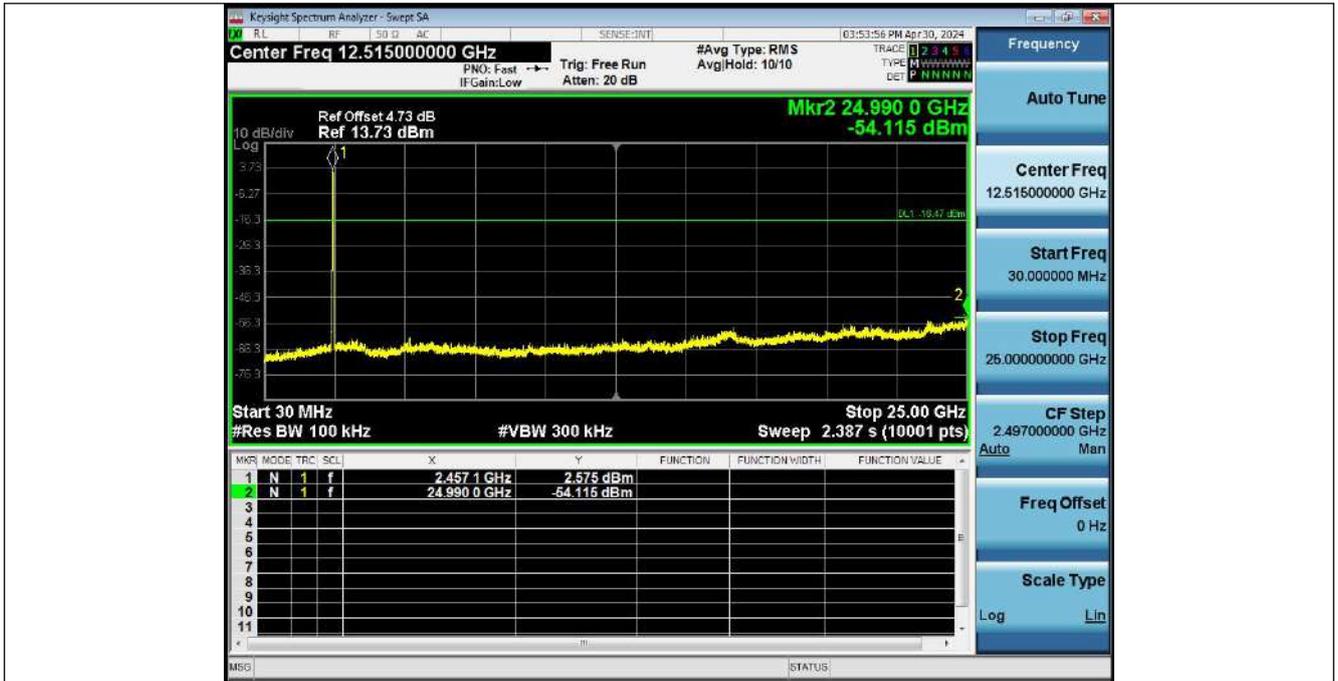
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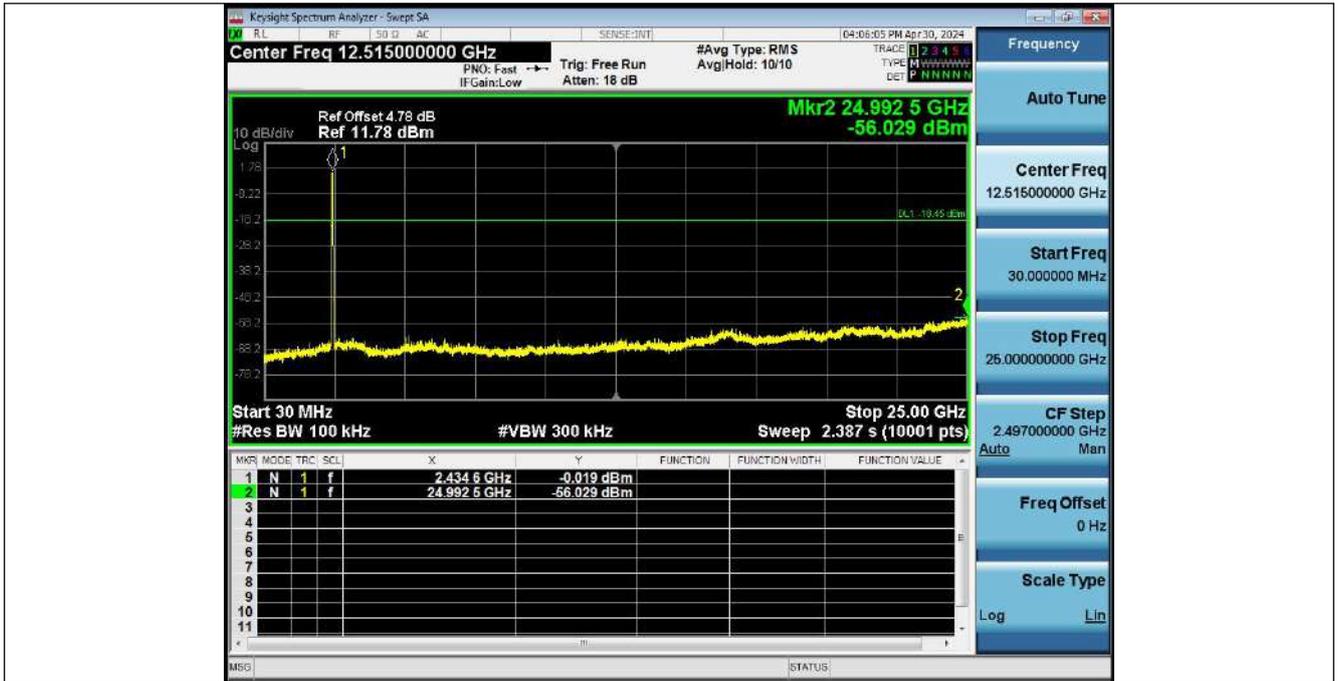
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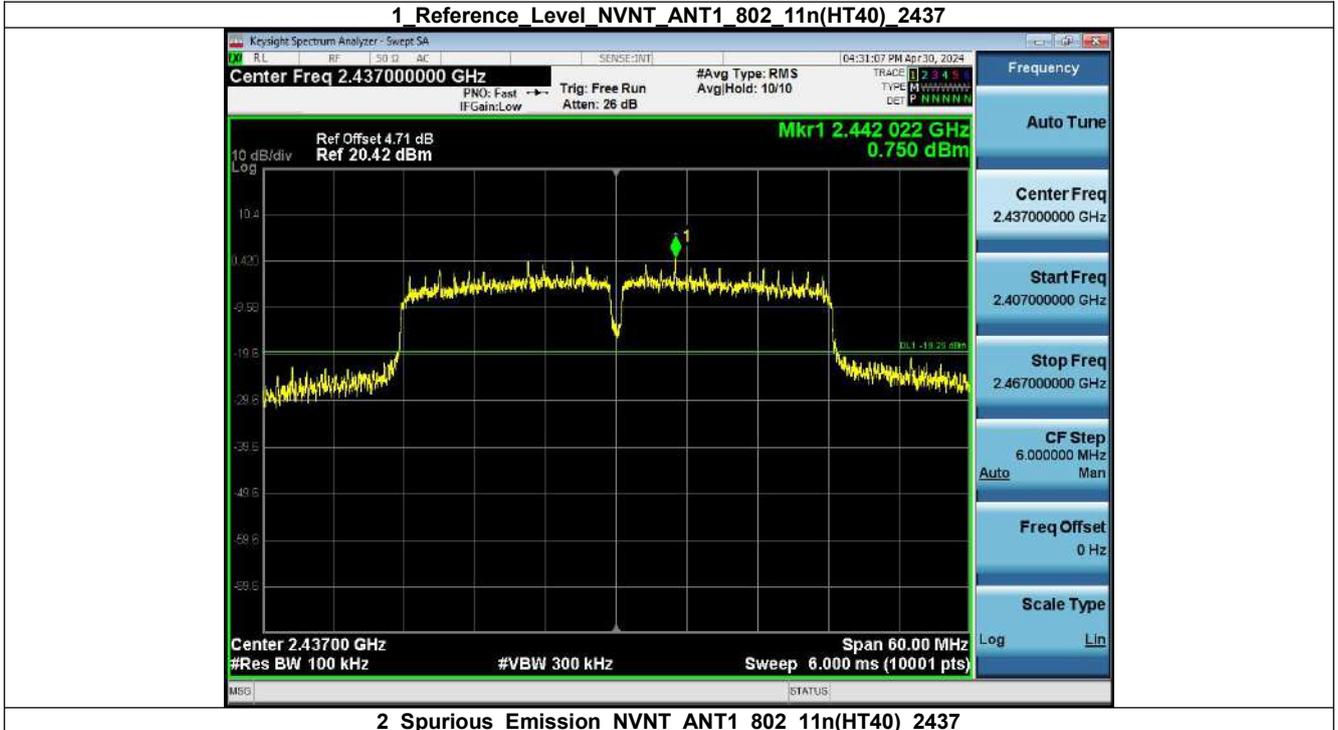
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2 Spurious Emission NVNT ANT1 802 11n(HT40) 2422



1 Reference Level NVNT ANT1 802 11n(HT40) 2437



2 Spurious Emission NVNT ANT1 802 11n(HT40) 2437



1 Reference Level NVNT\_ANT1\_802\_11n(HT40)\_2452



2 Spurious Emission NVNT\_ANT1\_802\_11n(HT40)\_2452

