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# Report No.: NCT25026759XE1-2

## FCC ID:2BC96NB-CMA04-0

### 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         | 9.19         | 500        | Pass   |
| NVNT      | ANT1    | 802.11b       | 2437.00         | 9.20         | 500        | Pass   |
| NVNT      | ANT1    | 802.11b       | 2462.00         | 9.22         | 500        | Pass   |
| NVNT      | ANT1    | 802.11g       | 2412.00         | 16.38        | 500        | Pass   |
| NVNT      | ANT1    | 802.11g       | 2437.00         | 16.33        | 500        | Pass   |
| NVNT      | ANT1    | 802.11g       | 2462.00         | 16.46        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00         | 17.30        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00         | 17.45        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00         | 17.32        | 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

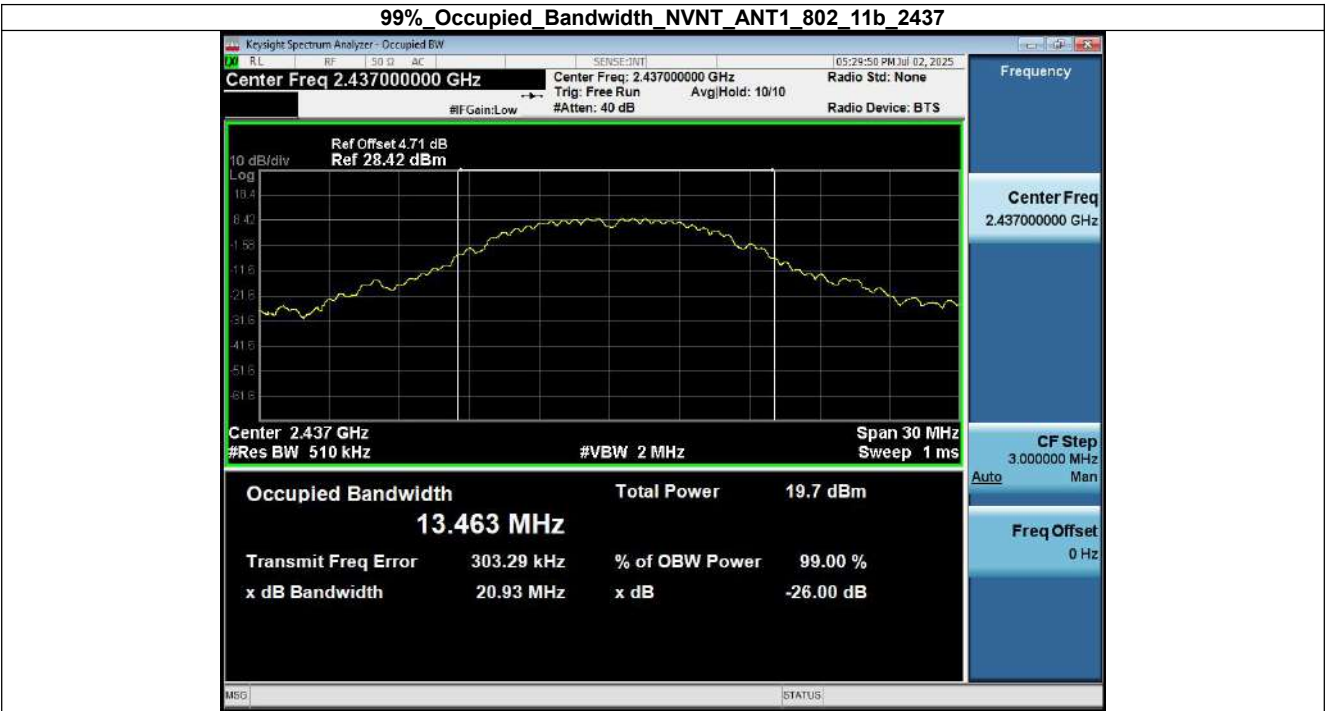
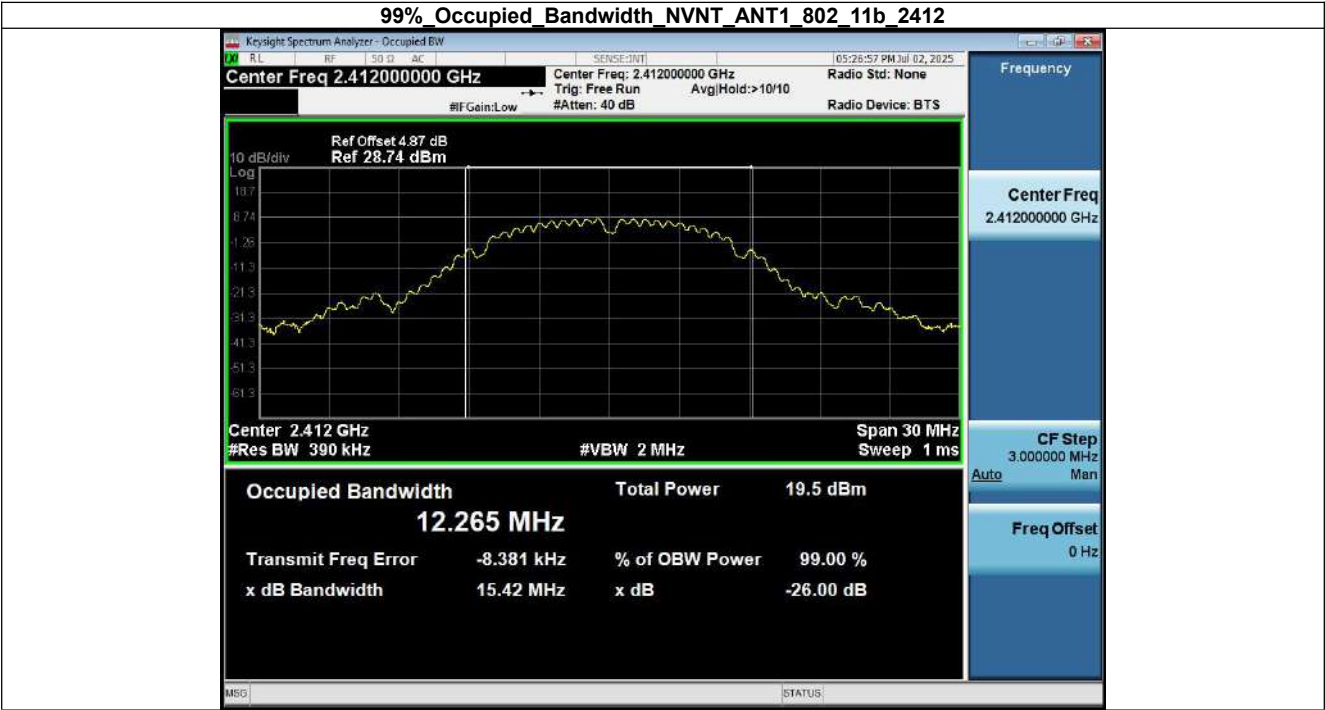


-6dB Bandwidth NVNT\_ANT1\_802\_11n(HT20)\_2462



2. 99% Occupied Bandwidth

| Condition | Antenna | Modulation    | Frequency (MHz) | 99% BW (MHz) |
|-----------|---------|---------------|-----------------|--------------|
| NVNT      | ANT1    | 802.11b       | 2412.00         | 12.265       |
| NVNT      | ANT1    | 802.11b       | 2437.00         | 13.463       |
| NVNT      | ANT1    | 802.11b       | 2462.00         | 12.528       |
| NVNT      | ANT1    | 802.11g       | 2412.00         | 17.150       |
| NVNT      | ANT1    | 802.11g       | 2437.00         | 17.280       |
| NVNT      | ANT1    | 802.11g       | 2462.00         | 17.182       |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00         | 17.863       |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00         | 17.925       |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00         | 17.862       |



### 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

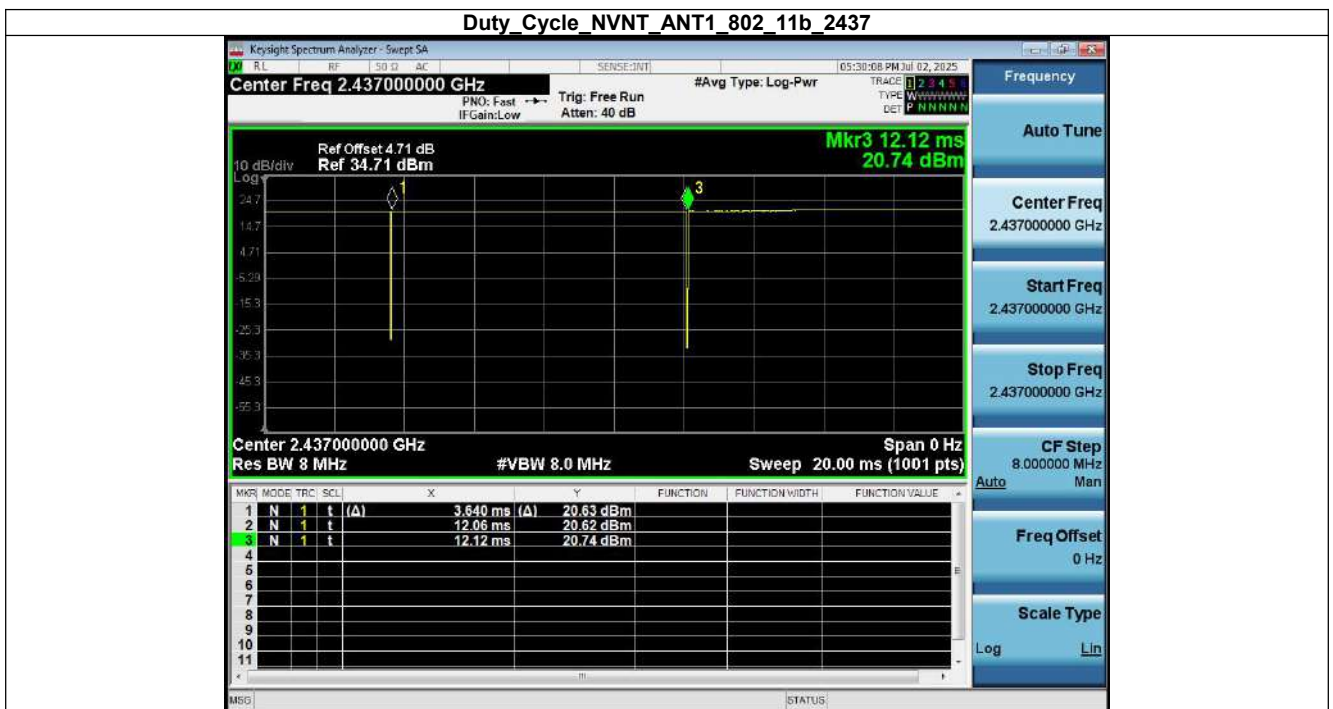
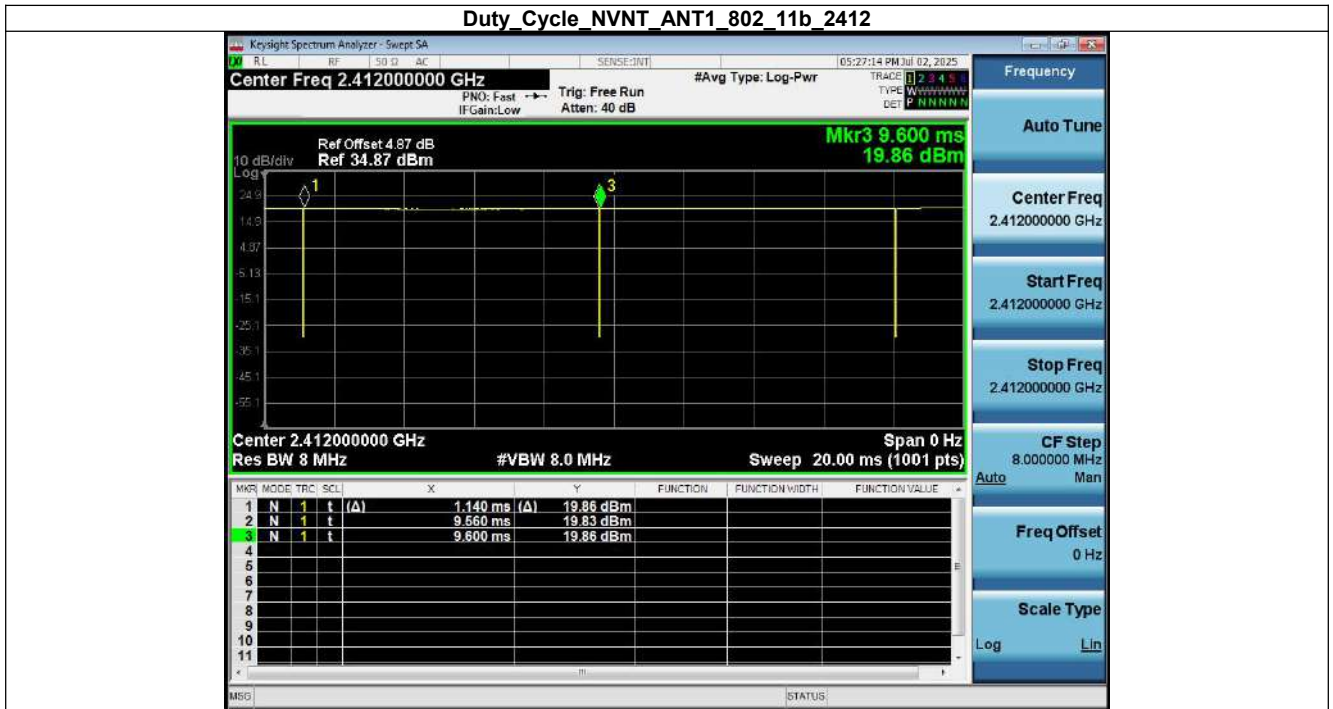


99%\_Occupied\_Bandwidth\_NVNT\_ANT1\_802\_11n(HT20)\_2462



### 3. Duty Cycle

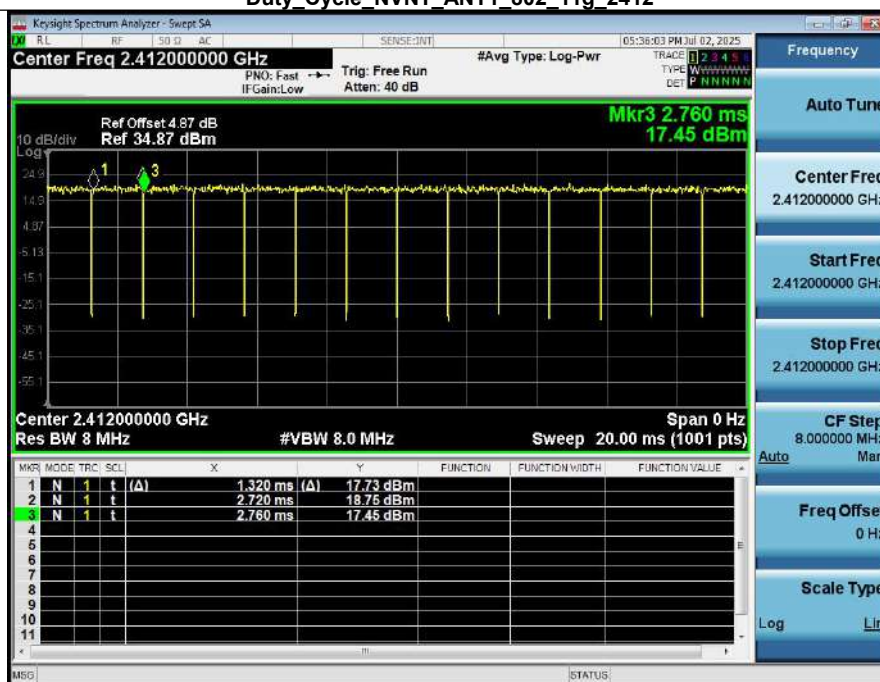
| Condition | Antenna | Modulation    | Frequency (MHz) | Duty cycle(%) | Duty factor(dB) |
|-----------|---------|---------------|-----------------|---------------|-----------------|
| NVNT      | ANT1    | 802.11b       | 2412.00         | 99.76         | 0.00            |
| NVNT      | ANT1    | 802.11b       | 2437.00         | 99.53         | 0.00            |
| NVNT      | ANT1    | 802.11b       | 2462.00         | 99.53         | 0.00            |
| NVNT      | ANT1    | 802.11g       | 2412.00         | 98.61         | 0.00            |
| NVNT      | ANT1    | 802.11g       | 2437.00         | 97.22         | 0.12            |
| NVNT      | ANT1    | 802.11g       | 2462.00         | 97.22         | 0.12            |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00         | 96.77         | 0.14            |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00         | 96.77         | 0.14            |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00         | 96.77         | 0.14            |



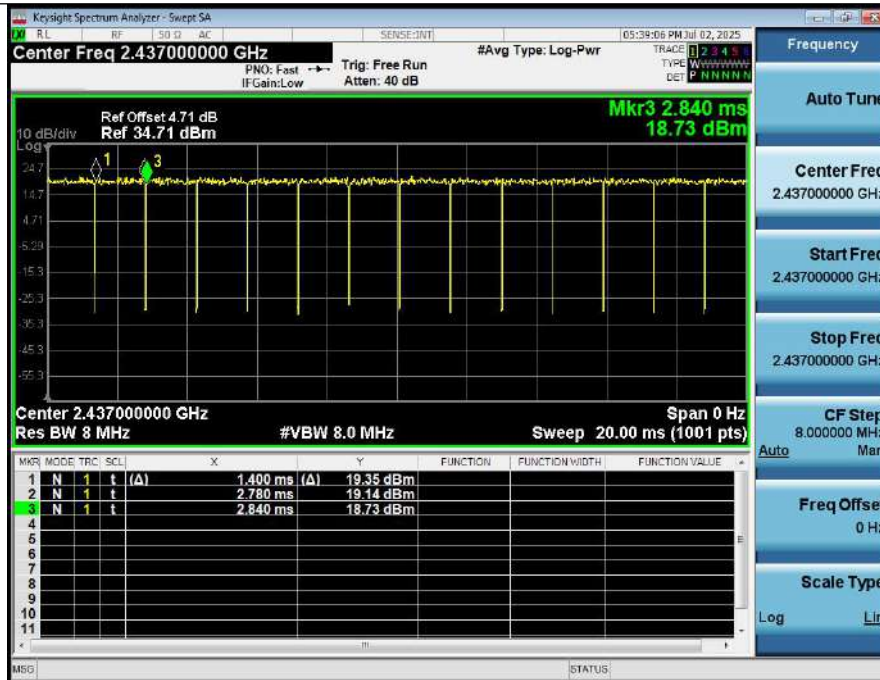
### Duty Cycle NVNT\_ANT1\_802\_11b\_2462



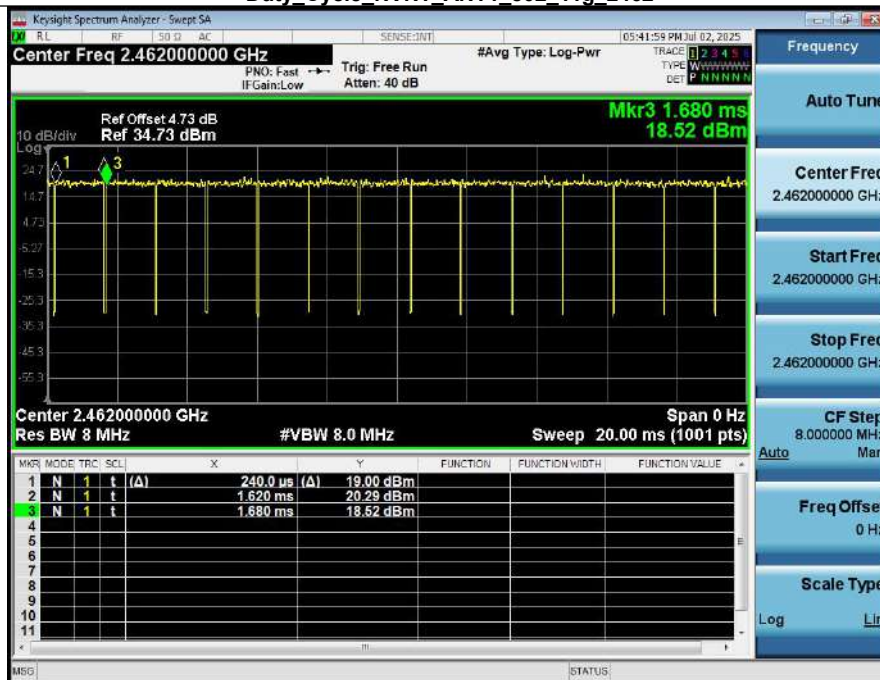
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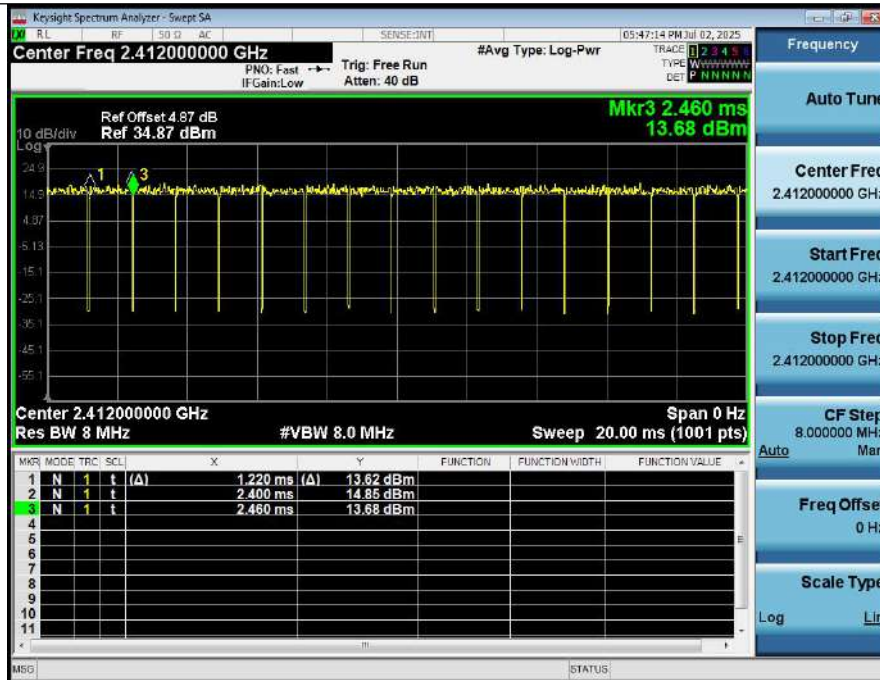
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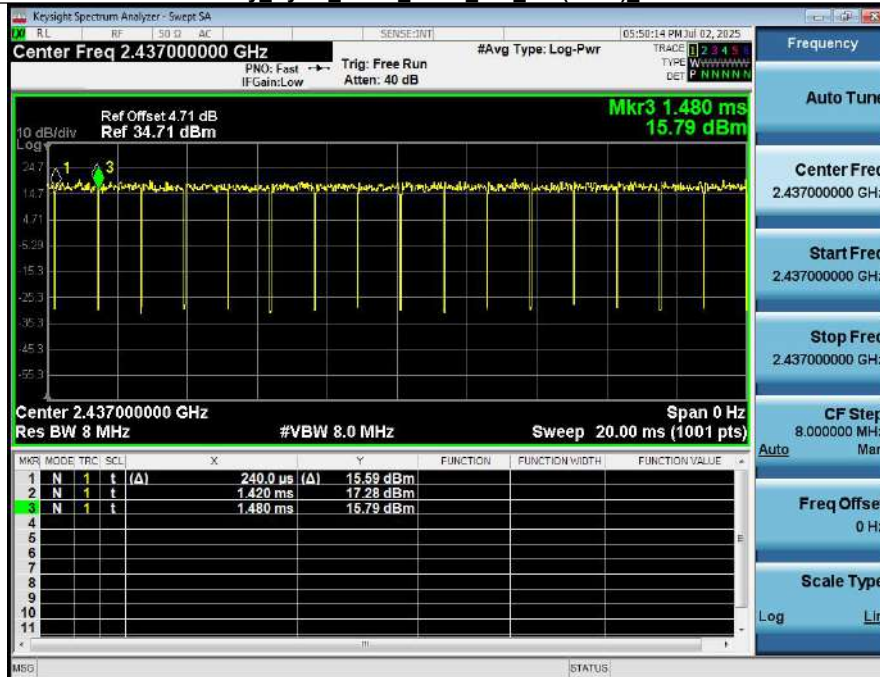
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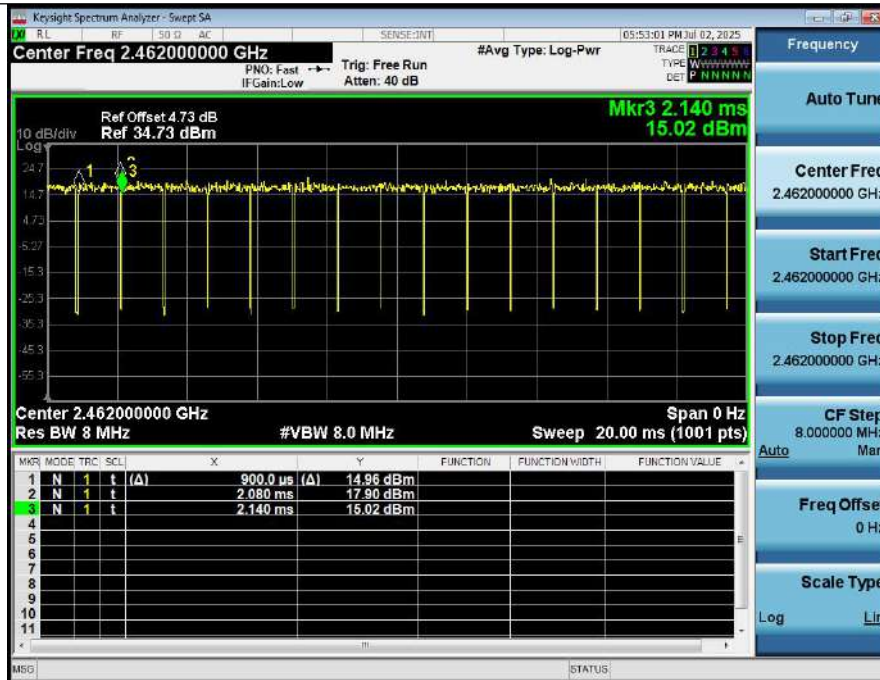
Duty\_Cycle\_NVNT\_ANT1\_802\_11n(HT20)\_2412



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



Duty\_Cycle\_NVNT\_ANT1\_802\_11n(HT20)\_2462



#### 4. MAX. Output Power

| Condition | Antenna | Modulation    | Frequency (MHz) | Detector | Conducted Power(dBm) | Total Power(dBm) | limit(dBm) | Result |
|-----------|---------|---------------|-----------------|----------|----------------------|------------------|------------|--------|
| NVNT      | ANT1    | 802.11b       | 2412.00         | Peak     | 18.85                | 18.85            | 30         | Pass   |
| NVNT      | ANT1    | 802.11b       | 2437.00         | Peak     | 19.70                | 19.70            | 30         | Pass   |
| NVNT      | ANT1    | 802.11b       | 2462.00         | Peak     | 19.95                | 19.95            | 30         | Pass   |
| NVNT      | ANT1    | 802.11g       | 2412.00         | Peak     | 18.94                | 18.94            | 30         | Pass   |
| NVNT      | ANT1    | 802.11g       | 2437.00         | Peak     | 19.71                | 19.71            | 30         | Pass   |
| NVNT      | ANT1    | 802.11g       | 2462.00         | Peak     | 19.94                | 19.94            | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00         | Peak     | 20.01                | 20.01            | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00         | Peak     | 20.78                | 20.78            | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00         | Peak     | 20.99                | 20.99            | 30         | Pass   |

5. Power Spectral Density

| Condition | Antenna | Modulation    | Frequency (MHz) | SA_PSD(dBm/30kHz) | RB factor(dB) | PSD(dBm/3kHz) | limit(dBm/3kHz) | Result |
|-----------|---------|---------------|-----------------|-------------------|---------------|---------------|-----------------|--------|
| NVNT      | ANT1    | 802.11b       | 2412.00         | 6.24              | -10.00        | -3.76         | 8               | Pass   |
| NVNT      | ANT1    | 802.11b       | 2437.00         | 7.75              | -10.00        | -2.25         | 8               | Pass   |
| NVNT      | ANT1    | 802.11b       | 2462.00         | 4.70              | -10.00        | -5.30         | 8               | Pass   |
| NVNT      | ANT1    | 802.11g       | 2412.00         | 0.09              | -10.00        | -9.91         | 8               | Pass   |
| NVNT      | ANT1    | 802.11g       | 2437.00         | 1.67              | -10.00        | -8.33         | 8               | Pass   |
| NVNT      | ANT1    | 802.11g       | 2462.00         | 0.77              | -10.00        | -9.23         | 8               | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00         | -2.88             | -10.00        | -12.88        | 8               | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00         | -2.86             | -10.00        | -12.86        | 8               | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00         | -2.06             | -10.00        | -12.06        | 8               | Pass   |



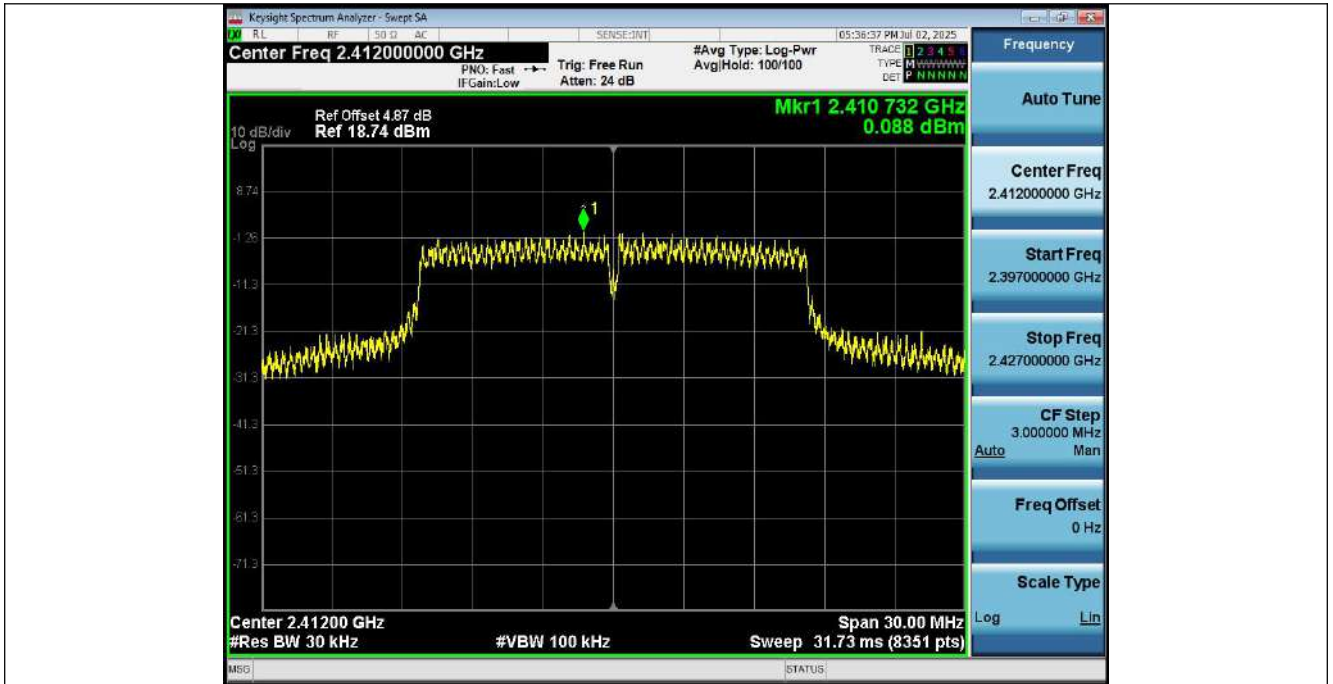
Power\_Spectral\_Density\_NVNT\_ANT1\_802\_11b\_2437



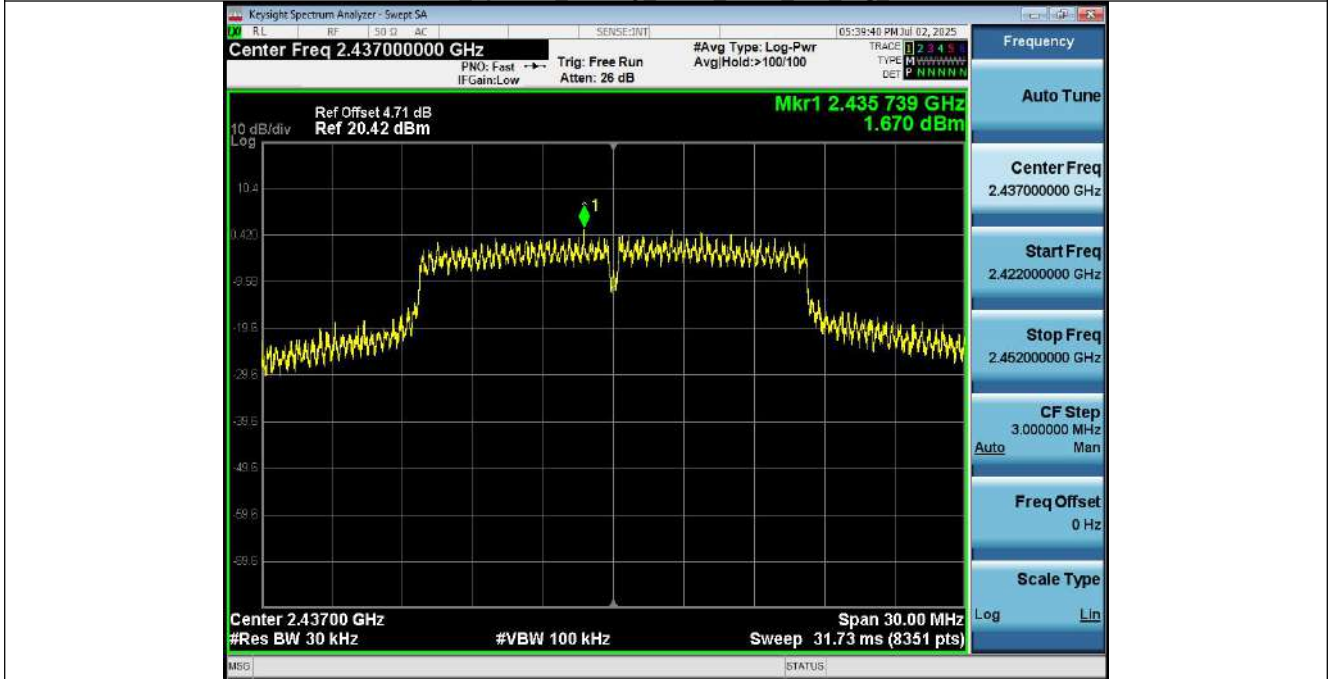
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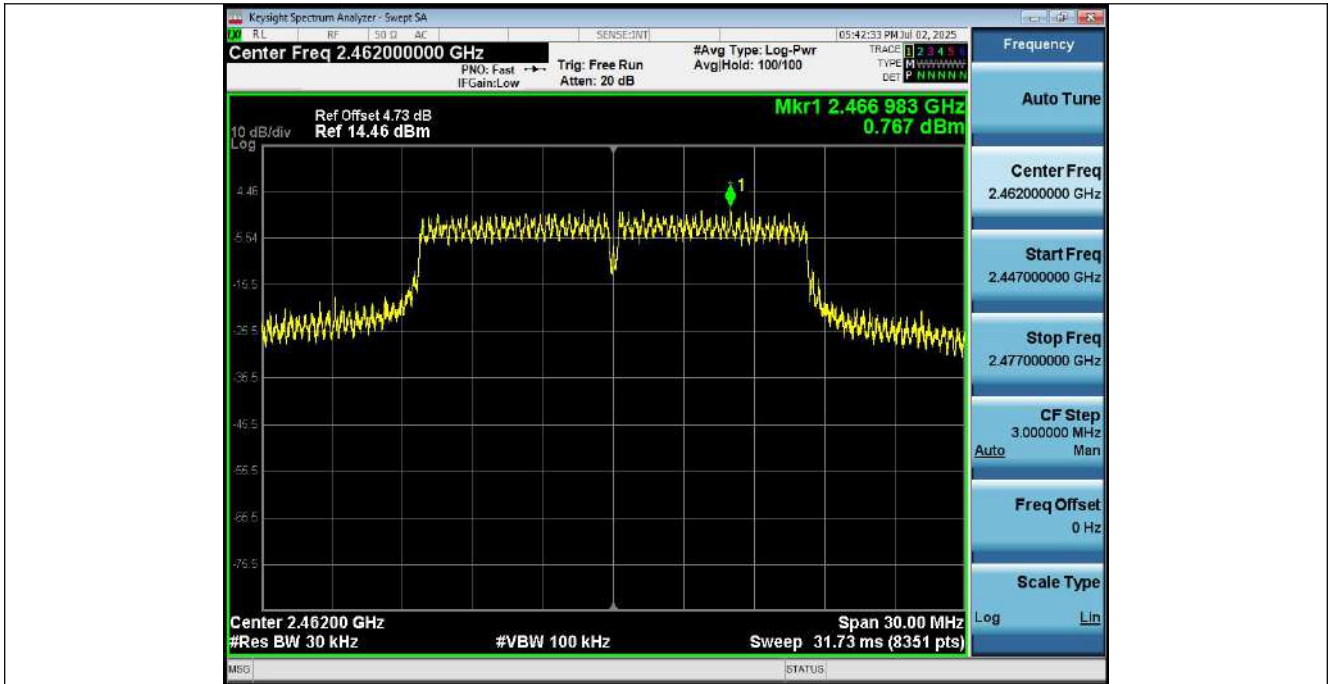
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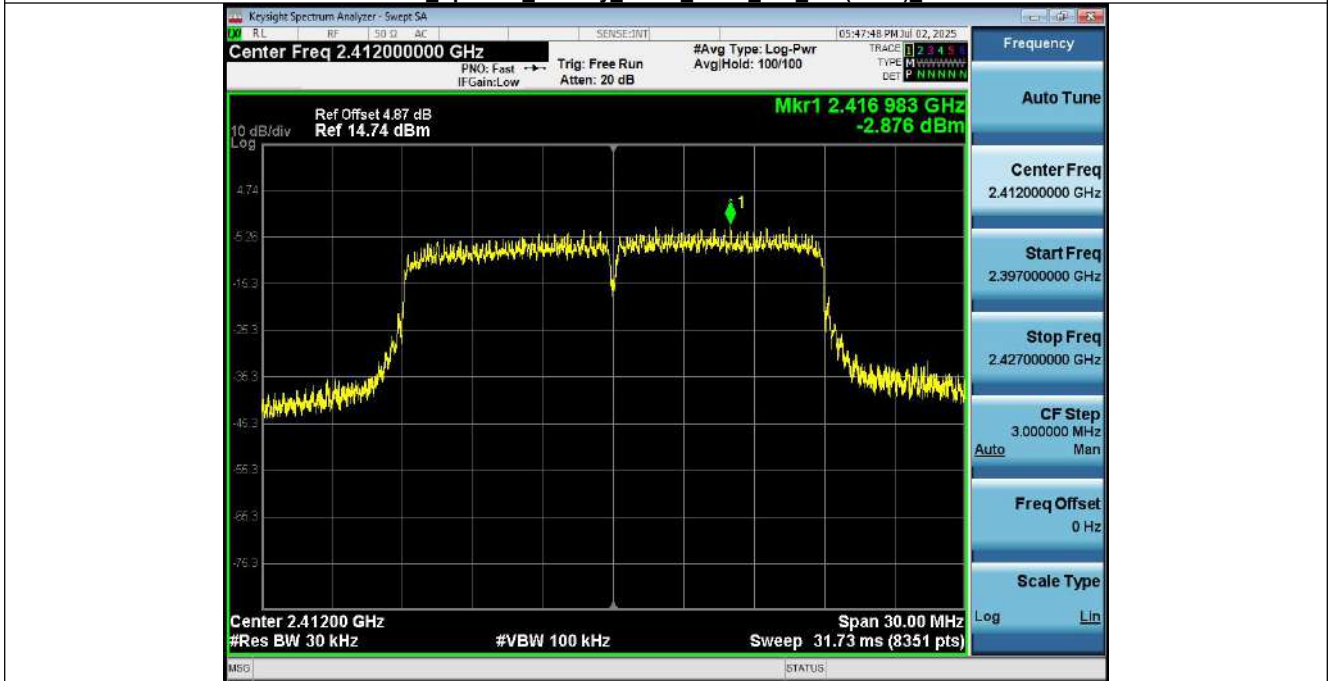
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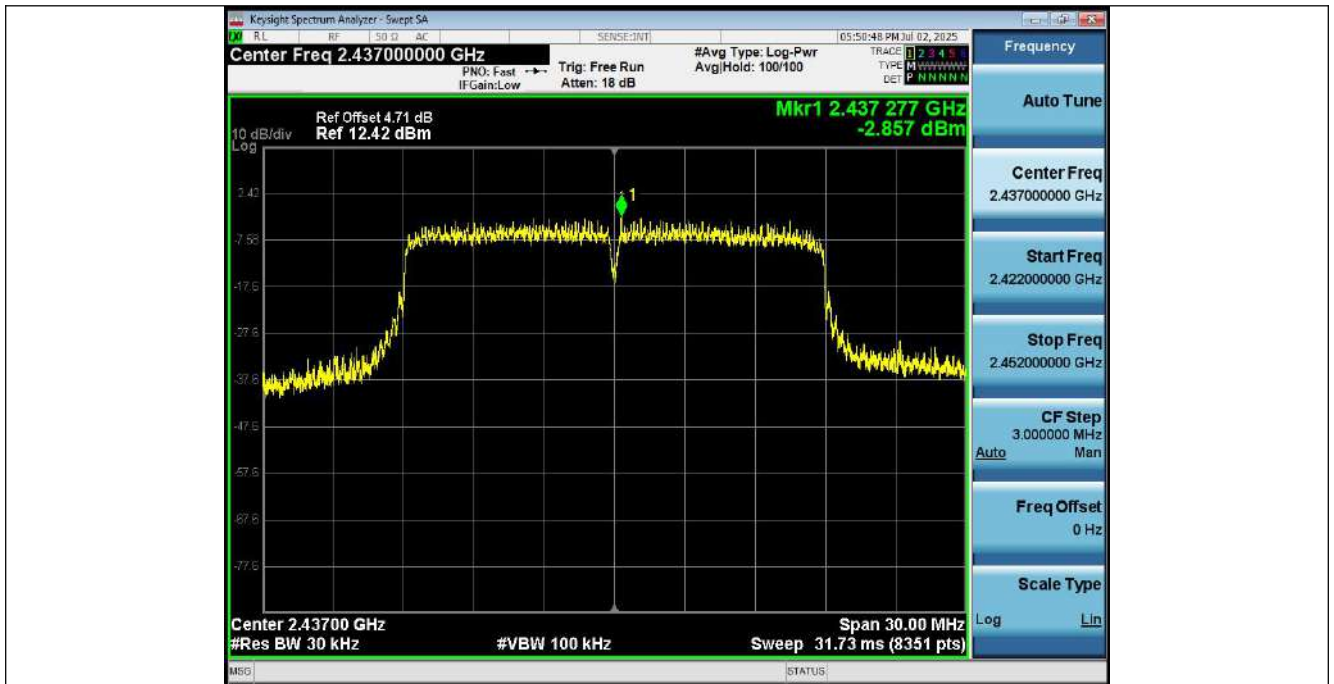
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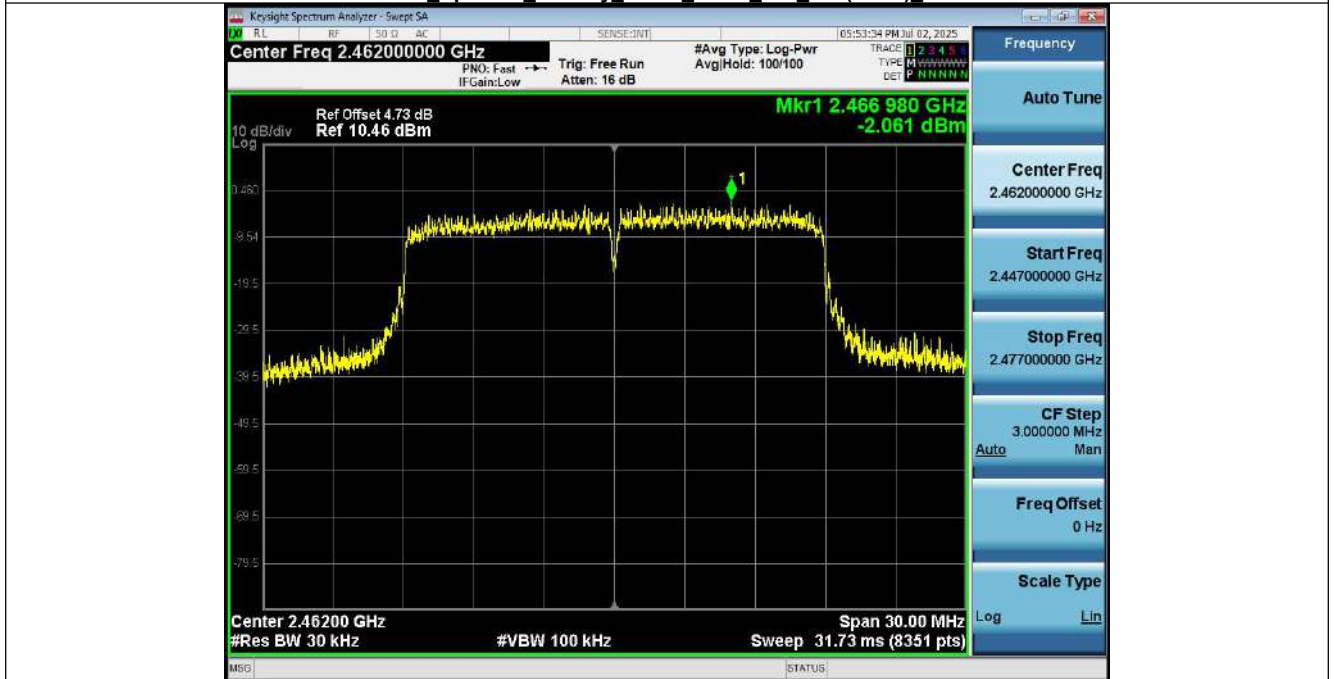
Power\_Spectral\_Density\_NVNT\_ANT1\_802\_11n(HT20)\_2412



Power\_Spectral\_Density\_NVNT\_ANT1\_802\_11n(HT20)\_2437



Power Spectral Density NVNT ANT1 802\_11n(HT20)\_2462



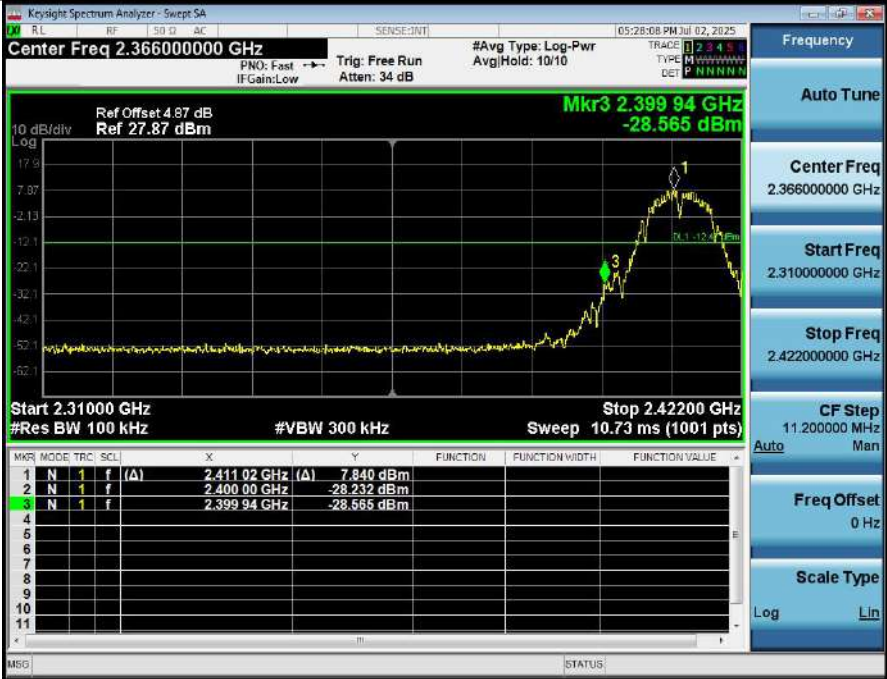
6. Bandedge

| Condition | Antenna | Modulation    | TX_Frequency (MHz) | Max. Mark_freq(MHz) | Ref_level(dBm) | Spurious level(dBm) | limit(dBm) | Result |
|-----------|---------|---------------|--------------------|---------------------|----------------|---------------------|------------|--------|
| NVNT      | ANT1    | 802.11b       | 2412.00            | 2399.936            | 7.531          | -28.565             | -12.469    | Pass   |
| NVNT      | ANT1    | 802.11b       | 2462.00            | 2483.536            | 8.741          | -43.799             | -11.259    | Pass   |
| NVNT      | ANT1    | 802.11g       | 2412.00            | 2399.824            | 5.123          | -16.822             | -14.877    | Pass   |
| NVNT      | ANT1    | 802.11g       | 2462.00            | 2484.256            | 6.012          | -29.497             | -13.988    | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00            | 2399.824            | 1.565          | -32.156             | -18.435    | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00            | 2484.256            | 2.404          | -37.006             | -17.596    | Pass   |

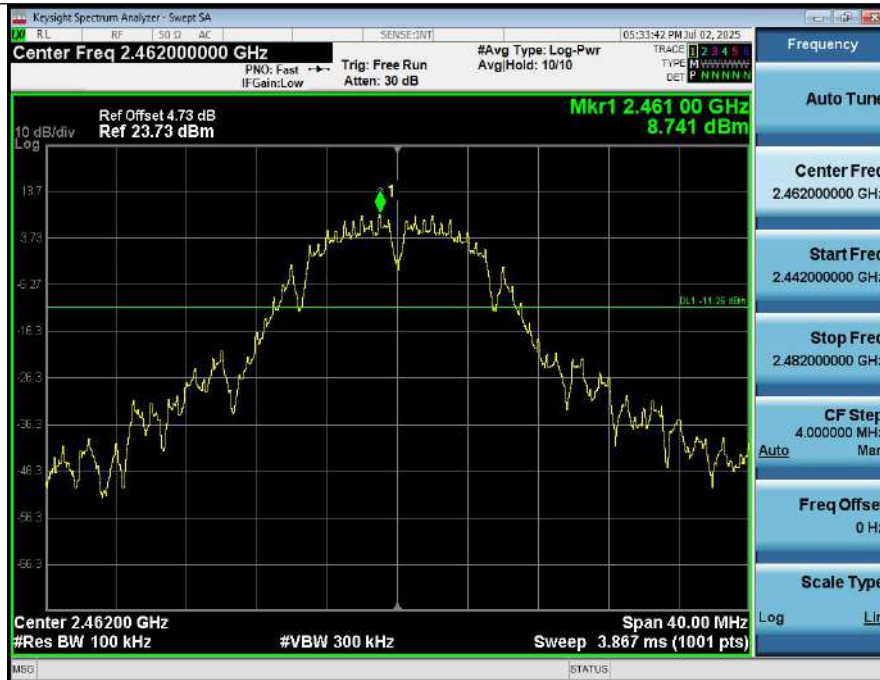
1 Reference Level NVNT ANT1 802 11b 2412



2 Bandedge NVNT ANT1 802 11b 2412



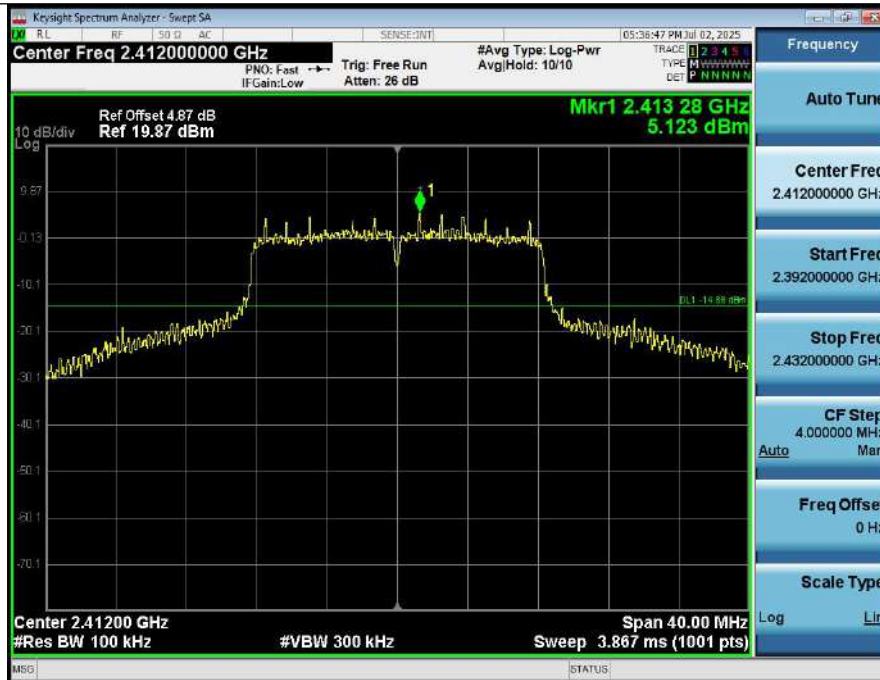
1 Reference Level NVNT ANT1 802 11b 2462



2\_Bandedge\_NVNT\_ANT1\_802\_11b\_2462



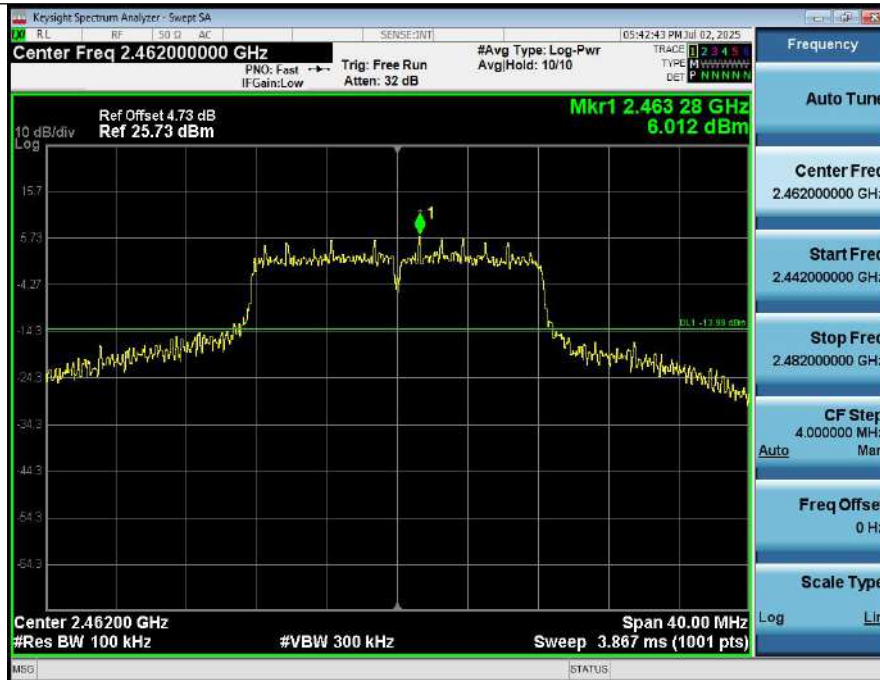
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2\_Bandedge\_NVNT\_ANT1\_802\_11g\_2412



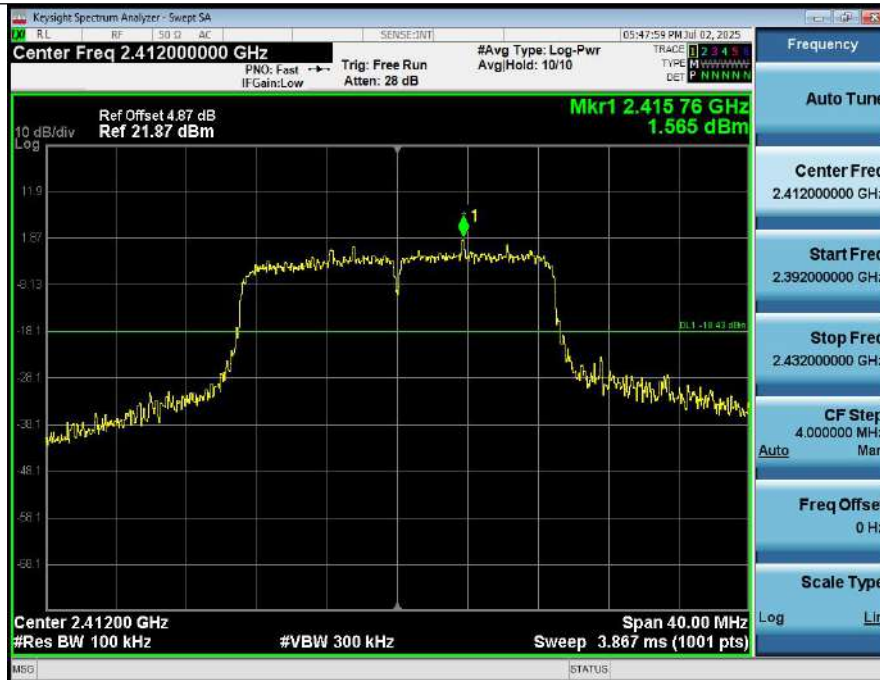
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2\_Bandedge\_NVNT\_ANT1\_802\_11g\_2462



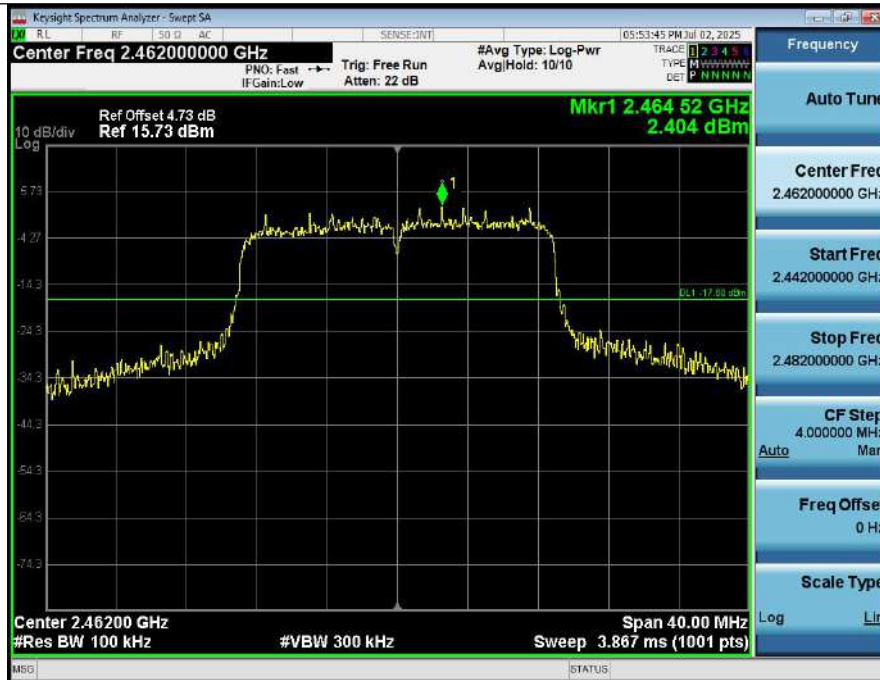
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2\_Bandedge\_NVNT\_ANT1\_802\_11n(HT20)\_2412



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



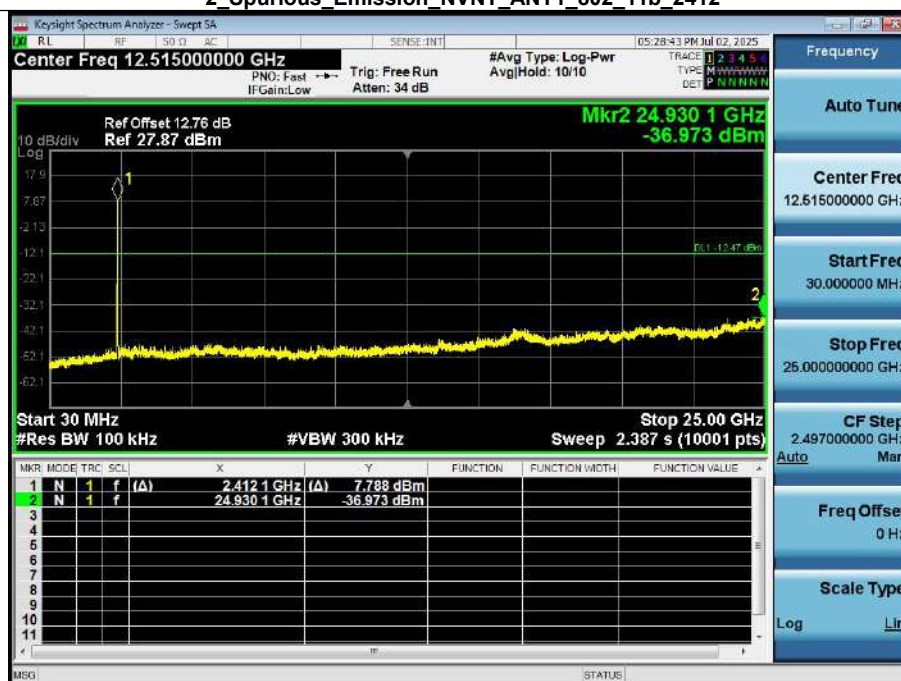
## 2\_Bandedge\_NVNT\_ANT1\_802\_11n(HT20)\_2462



## 7. Spurious Emission

| Condition | Antenna | Modulation    | TX_Frequency<br>(MHz) | Max.<br>Mark_freq(MHz) | Ref_level(dBm) | Spurious<br>level(dBm) | limit(dBm) | Result |
|-----------|---------|---------------|-----------------------|------------------------|----------------|------------------------|------------|--------|
| NVNT      | ANT1    | 802.11b       | 2412.00               | 24930.084              | 7.531          | -36.973                | -12.469    | Pass   |
| NVNT      | ANT1    | 802.11b       | 2437.00               | 24960.048              | 8.785          | -41.608                | -11.215    | Pass   |
| NVNT      | ANT1    | 802.11b       | 2462.00               | 24980.024              | 8.741          | -40.802                | -11.259    | Pass   |
| NVNT      | ANT1    | 802.11g       | 2412.00               | 24350.780              | 5.123          | -45.406                | -14.877    | Pass   |
| NVNT      | ANT1    | 802.11g       | 2437.00               | 24950.060              | 6.145          | -42.594                | -13.855    | Pass   |
| NVNT      | ANT1    | 802.11g       | 2462.00               | 24917.599              | 6.012          | -39.189                | -13.988    | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00               | 24905.114              | 1.565          | -42.552                | -18.435    | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00               | 24972.533              | 1.777          | -42.184                | -18.223    | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00               | 25000.000              | 2.404          | -49.352                | -17.596    | Pass   |

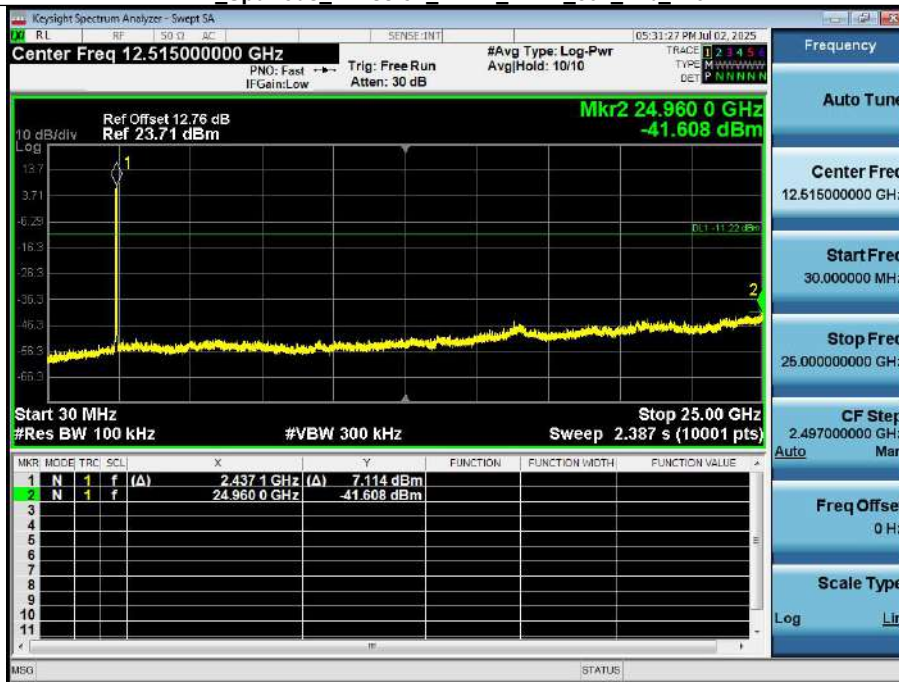
Note: The test diagram has integrated cable loss to Offset Settings. The cable loss is compensated in the test data.



# 1 Reference Level NVNT\_ANT1\_802\_11b\_2437



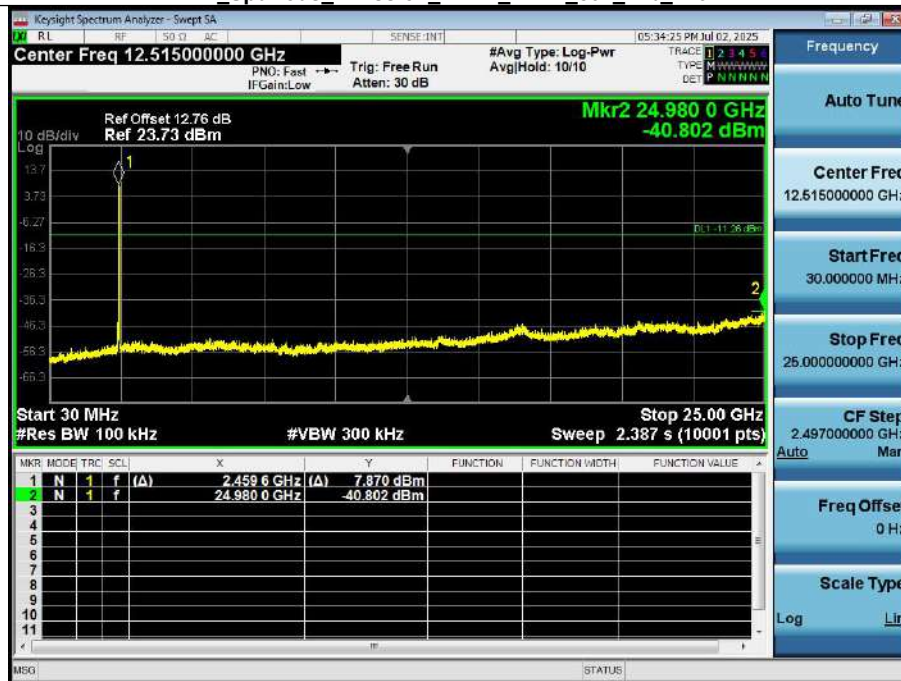
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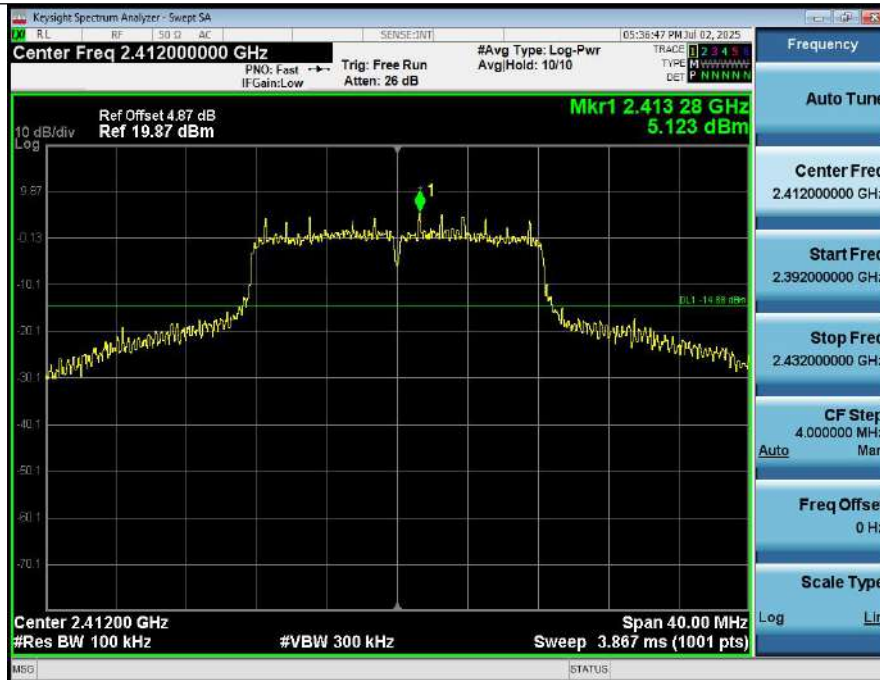
# 1 Reference Level NVNT\_ANT1\_802\_11b\_2462



2\_Spurious\_Emission\_NVNT\_ANT1\_802\_11b\_2462



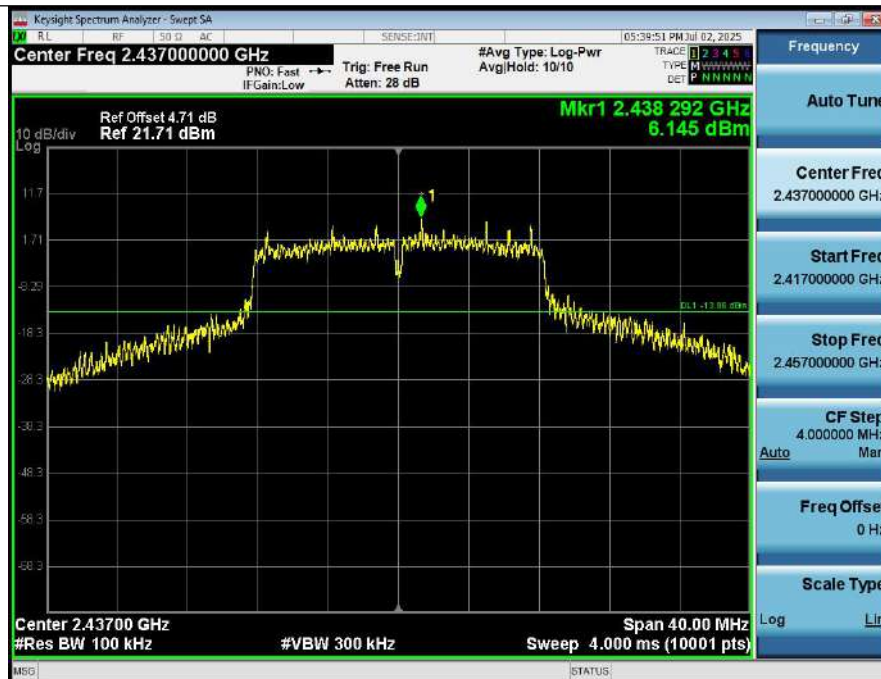
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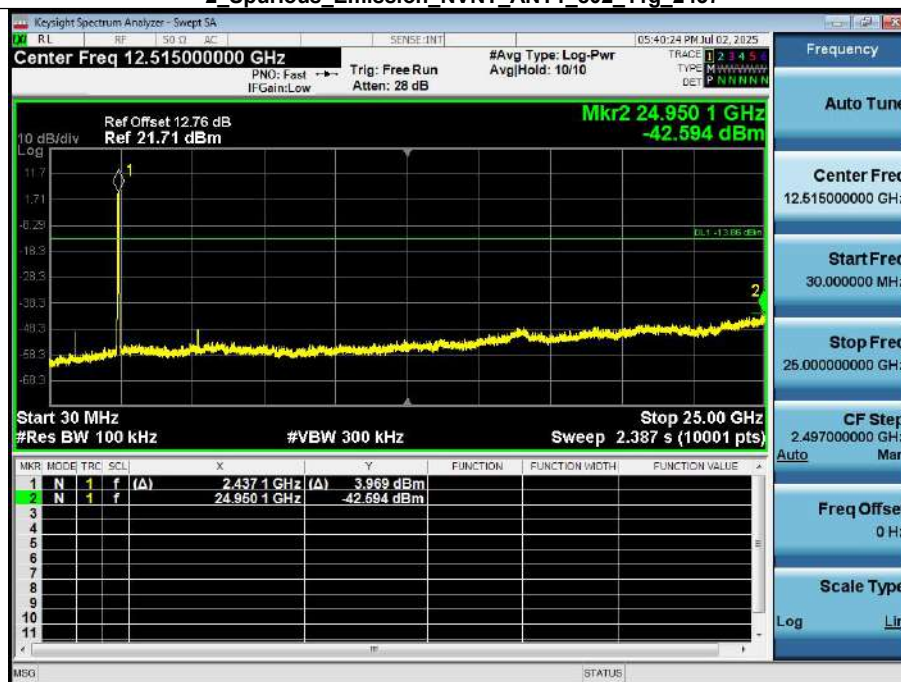
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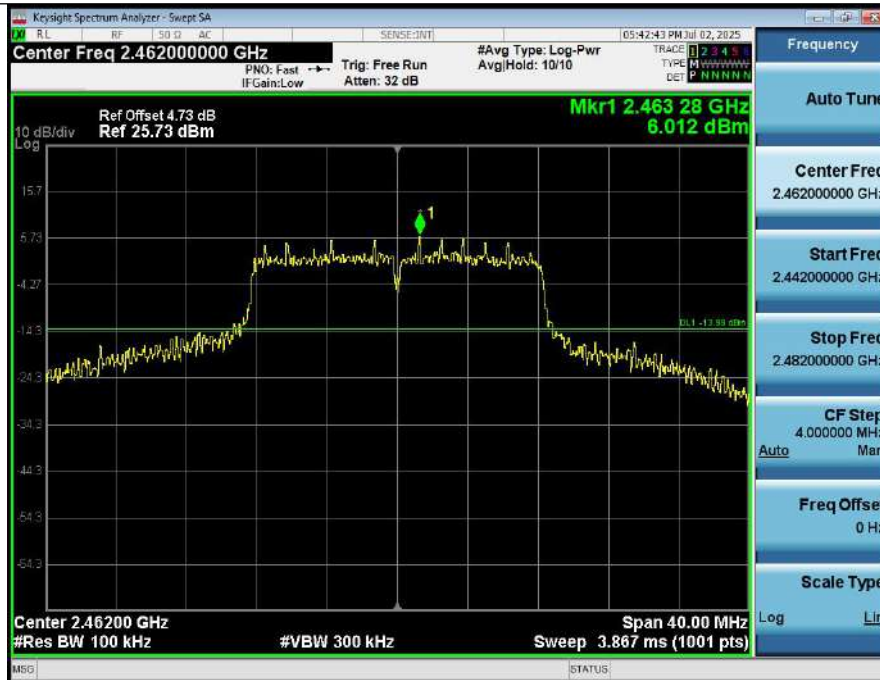
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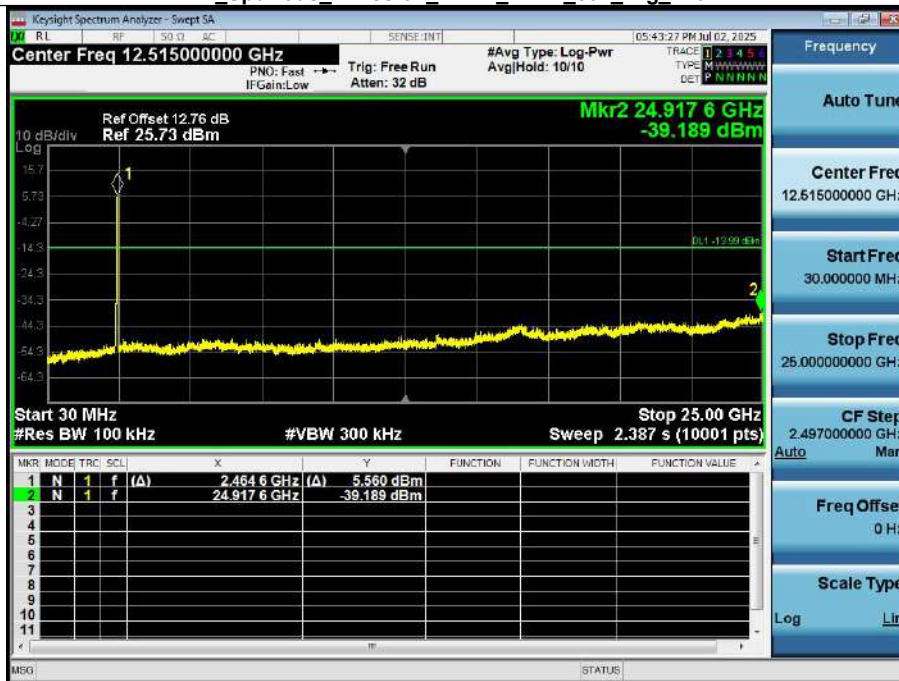
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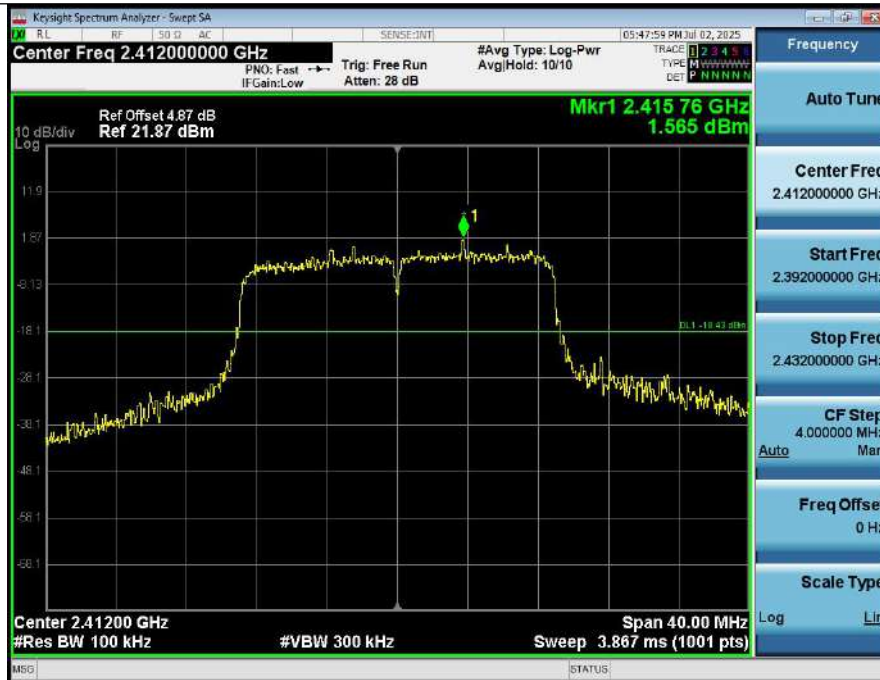
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2\_Spurious\_Emission\_NVNT\_ANT1\_802\_11g\_2462



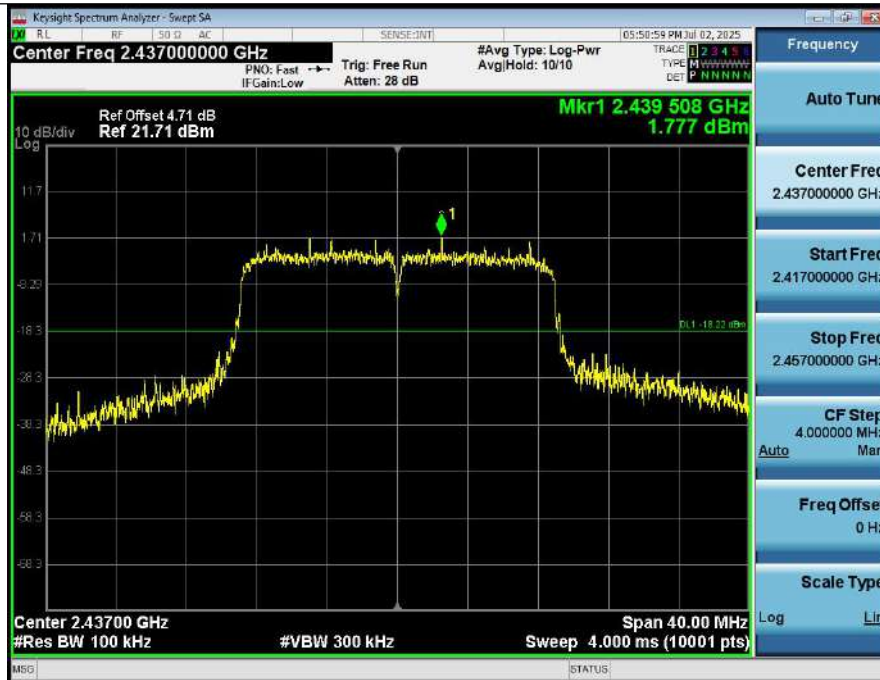
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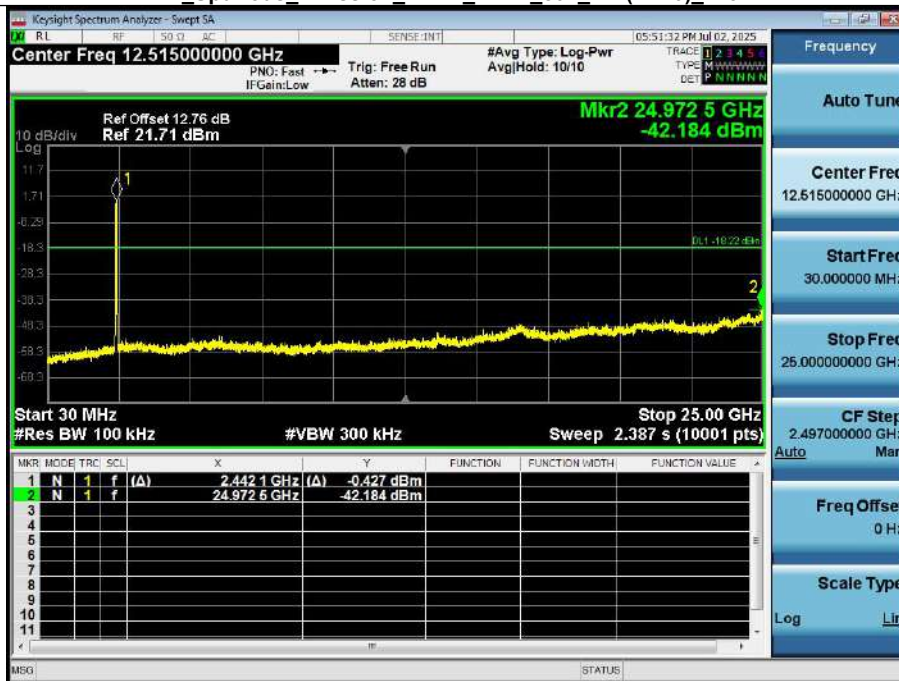
2 Spurious\_Emission\_NVNT\_ANT1\_802\_11n(HT20)\_2412



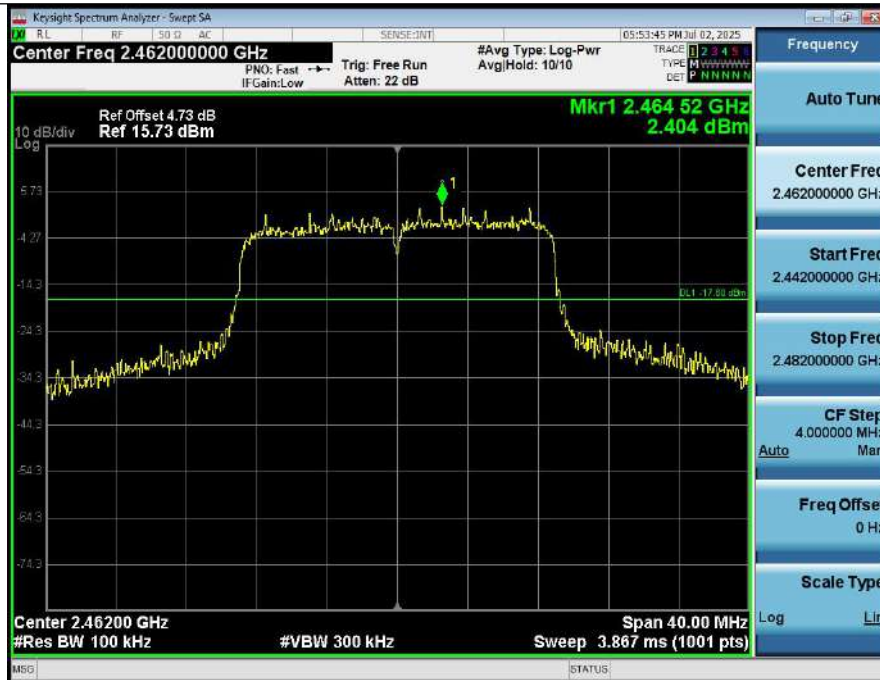
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2 Spurious Emission\_NVNT\_ANT1\_802\_11n(HT20)\_2437



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



## 2 Spurious Emission\_NVNT\_ANT1\_802\_11n(HT20)\_2462

