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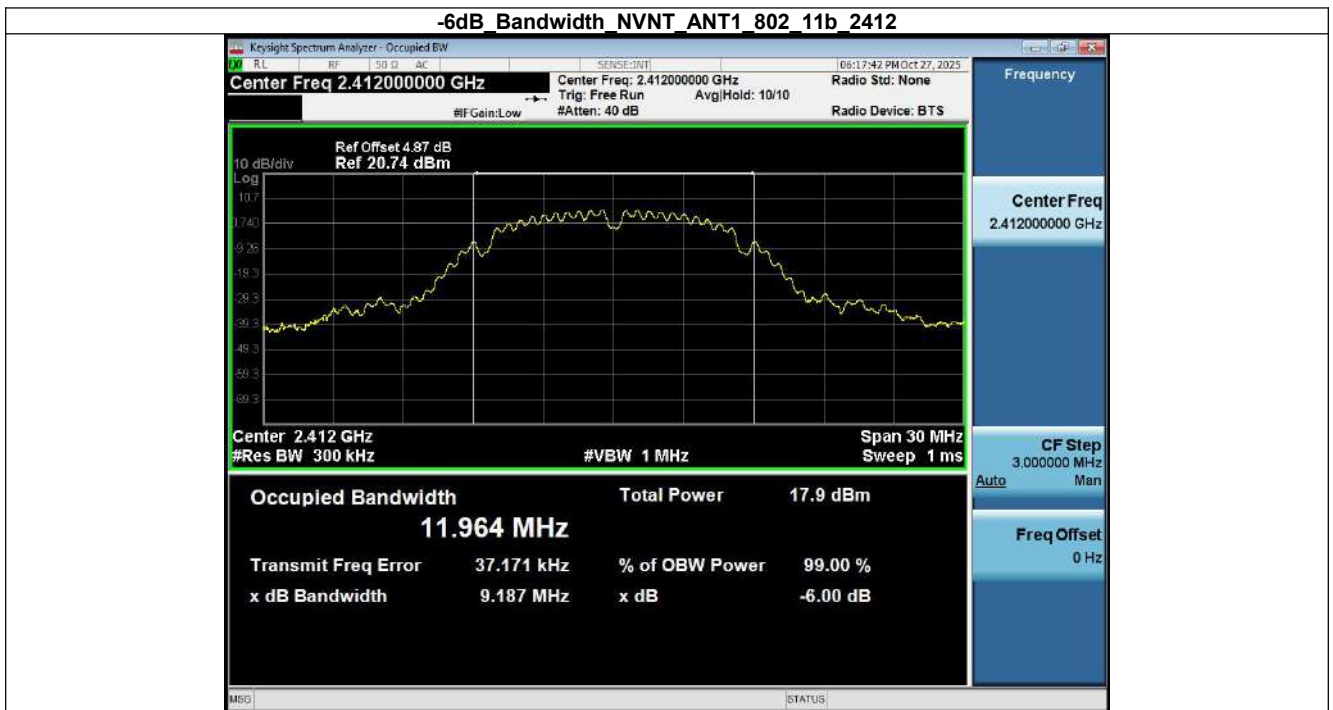
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# FCC ID:2BORJ-RAY6MINI

## 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         | 9.16         | 500        | Pass   |
| NVNT      | ANT1    | 802.11b       | 2462.00         | 9.22         | 500        | Pass   |
| NVNT      | ANT1    | 802.11g       | 2412.00         | 16.37        | 500        | Pass   |
| NVNT      | ANT1    | 802.11g       | 2437.00         | 16.41        | 500        | Pass   |
| NVNT      | ANT1    | 802.11g       | 2462.00         | 16.58        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00         | 17.37        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00         | 17.30        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00         | 17.52        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2422.00         | 36.04        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2437.00         | 35.78        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2452.00         | 35.84        | 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         | 11.967      |
| NVNT      | ANT1    | 802.11b       | 2437.00         | 12.082      |
| NVNT      | ANT1    | 802.11b       | 2462.00         | 12.037      |
| NVNT      | ANT1    | 802.11g       | 2412.00         | 17.349      |
| NVNT      | ANT1    | 802.11g       | 2437.00         | 18.066      |
| NVNT      | ANT1    | 802.11g       | 2462.00         | 17.539      |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00         | 17.844      |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00         | 18.032      |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00         | 18.063      |
| NVNT      | ANT1    | 802.11n(HT40) | 2422.00         | 36.885      |
| NVNT      | ANT1    | 802.11n(HT40) | 2437.00         | 36.459      |
| NVNT      | ANT1    | 802.11n(HT40) | 2452.00         | 36.624      |



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

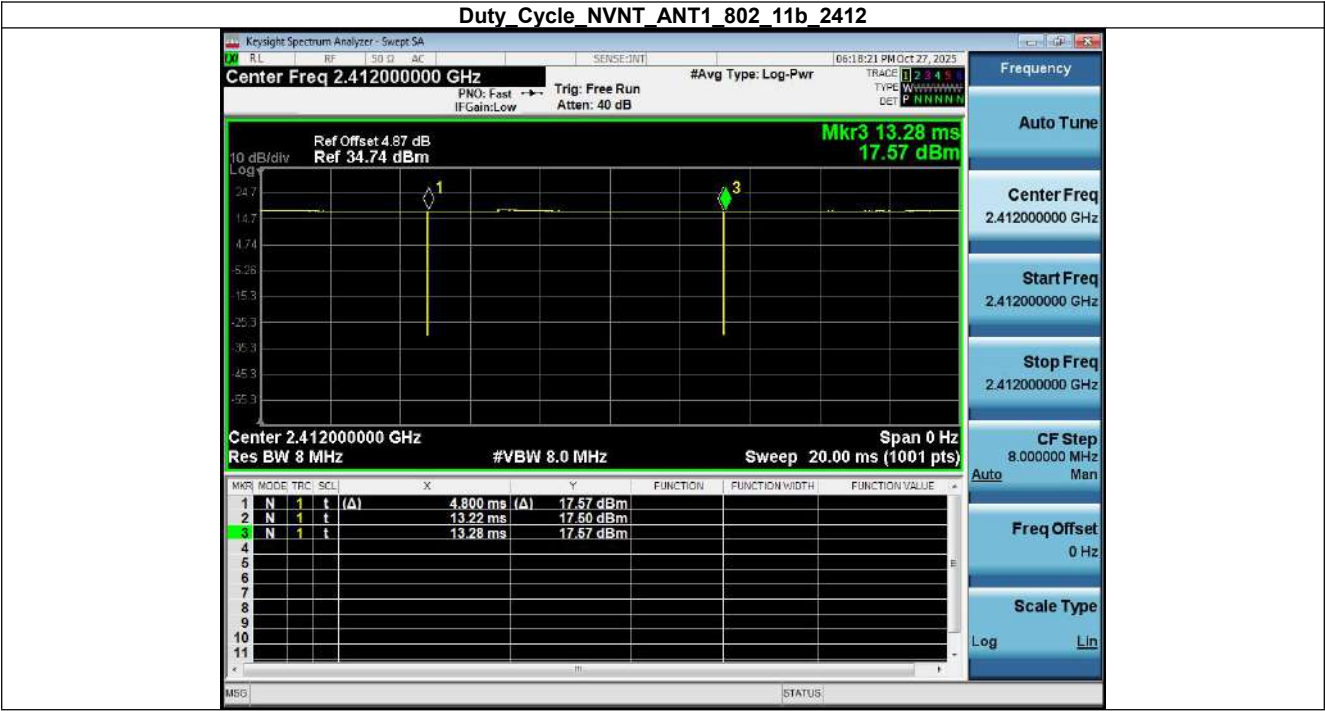


99%\_Occupied\_Bandwidth\_NVNT\_ANT1\_802\_11n(HT40)\_2452

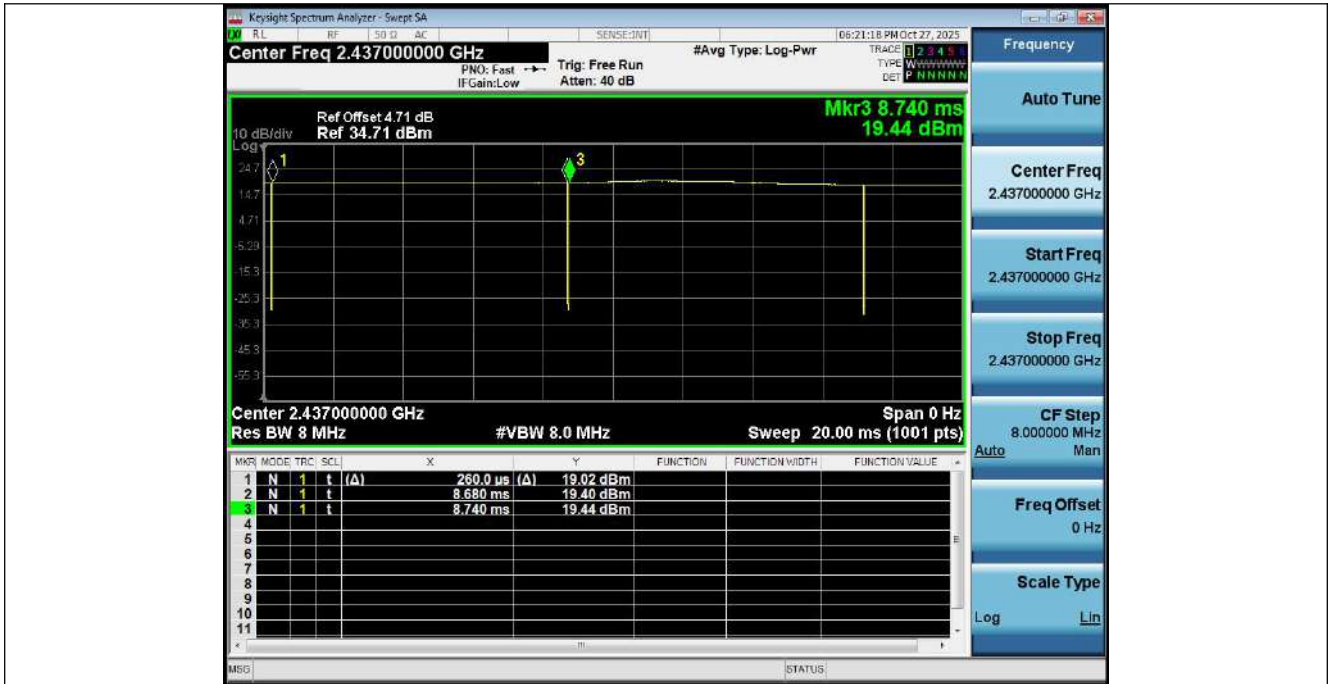


3. Duty Cycle

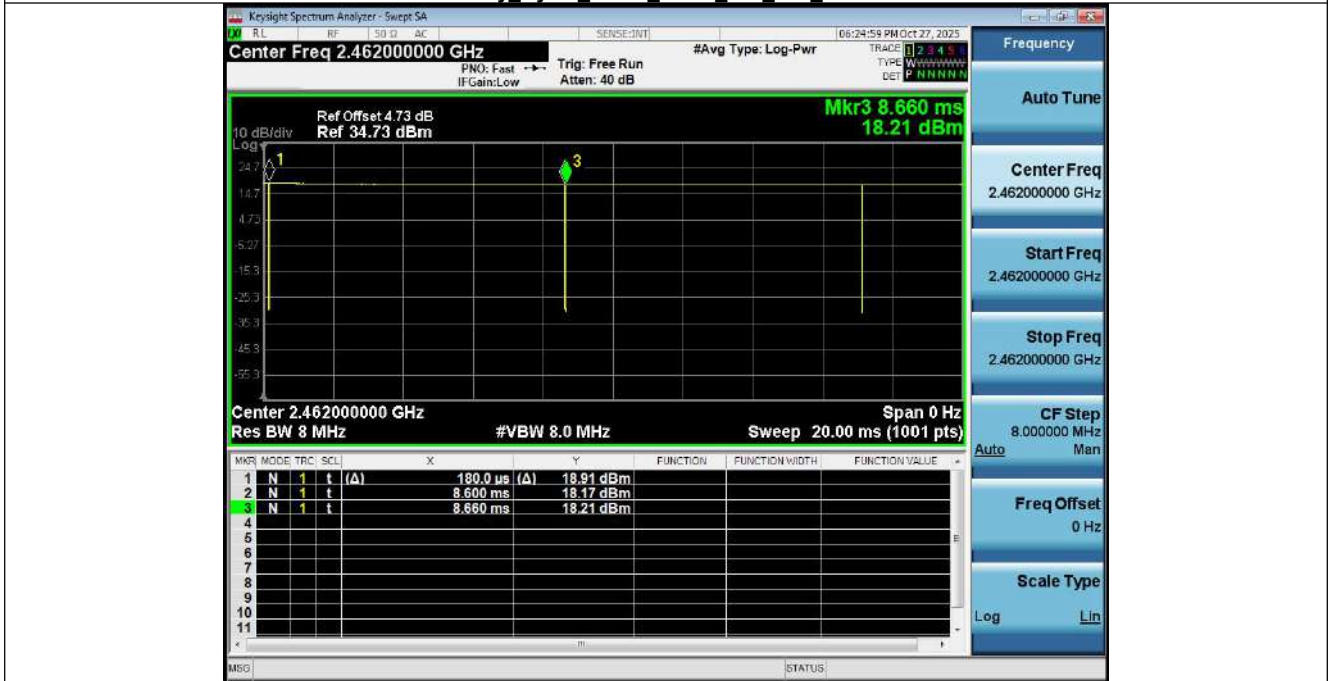
| Condition | Antenna | Modulation    | Frequency (MHz) | Duty cycle(%) | Duty factor(dB) |
|-----------|---------|---------------|-----------------|---------------|-----------------|
| NVNT      | ANT1    | 802.11b       | 2412.00         | 99.53         | 0.00            |
| NVNT      | ANT1    | 802.11b       | 2437.00         | 99.53         | 0.00            |
| NVNT      | ANT1    | 802.11b       | 2462.00         | 99.53         | 0.00            |
| NVNT      | ANT1    | 802.11g       | 2412.00         | 97.22         | 0.12            |
| NVNT      | ANT1    | 802.11g       | 2437.00         | 98.61         | 0.00            |
| 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         | 98.36         | 0.00            |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00         | 98.39         | 0.00            |
| NVNT      | ANT1    | 802.11n(HT40) | 2422.00         | 93.75         | 0.28            |
| NVNT      | ANT1    | 802.11n(HT40) | 2437.00         | 96.88         | 0.14            |
| NVNT      | ANT1    | 802.11n(HT40) | 2452.00         | 93.75         | 0.28            |



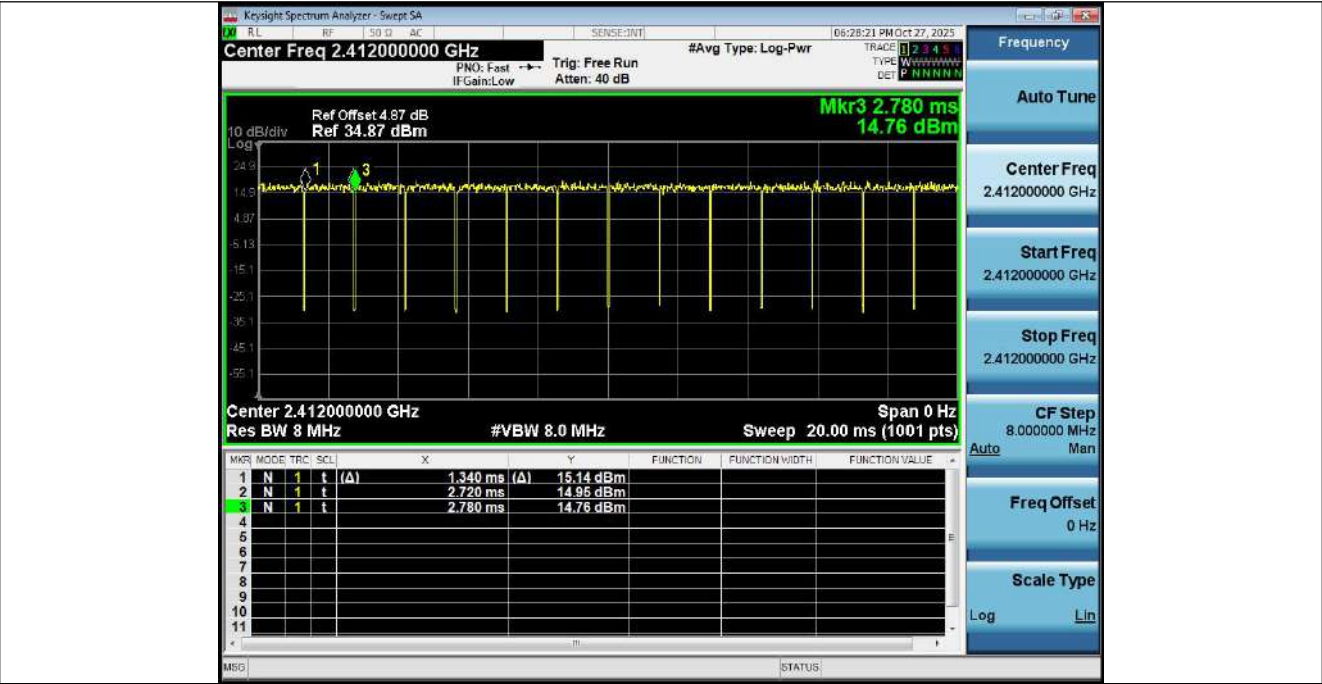
Duty Cycle NVNT ANT1 802 11b 2437



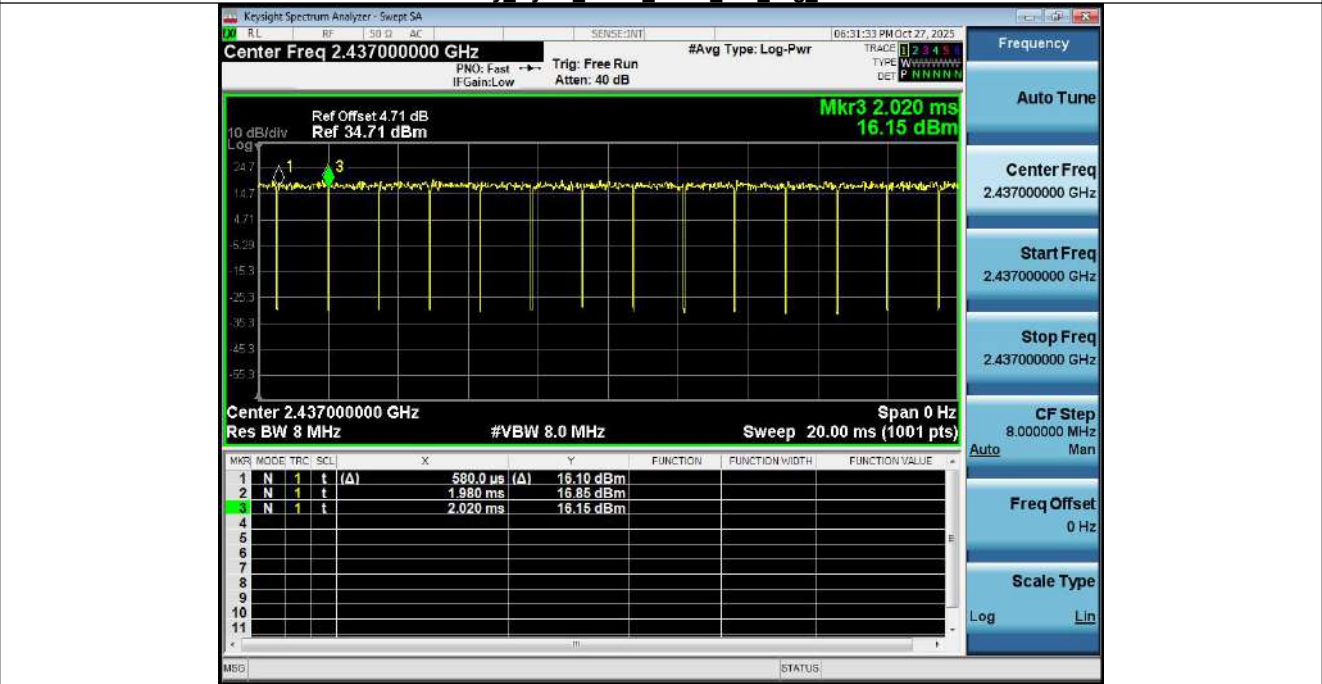
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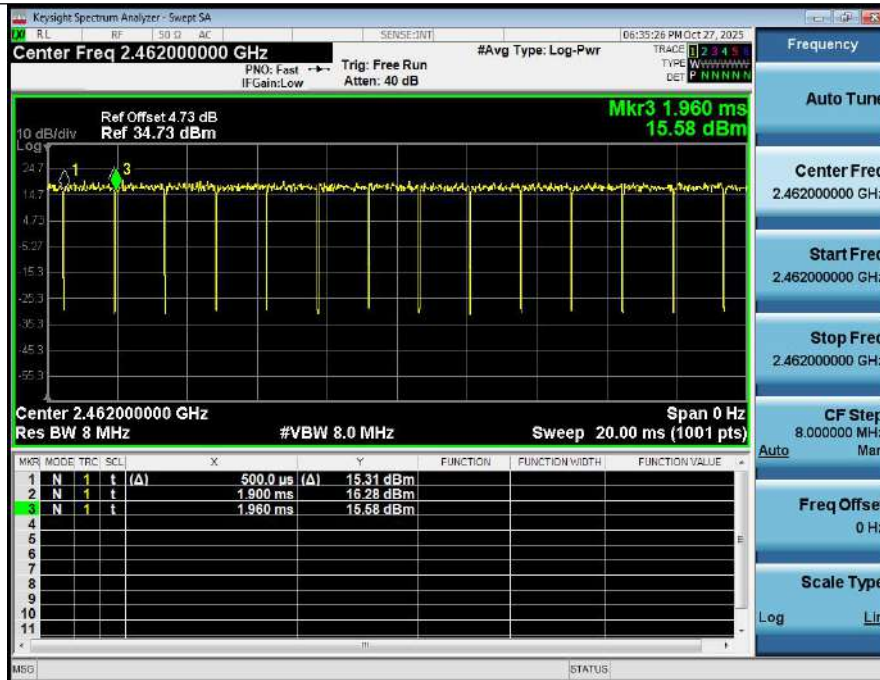
Duty\_Cycle\_NVNT\_ANT1\_802\_11g\_2412



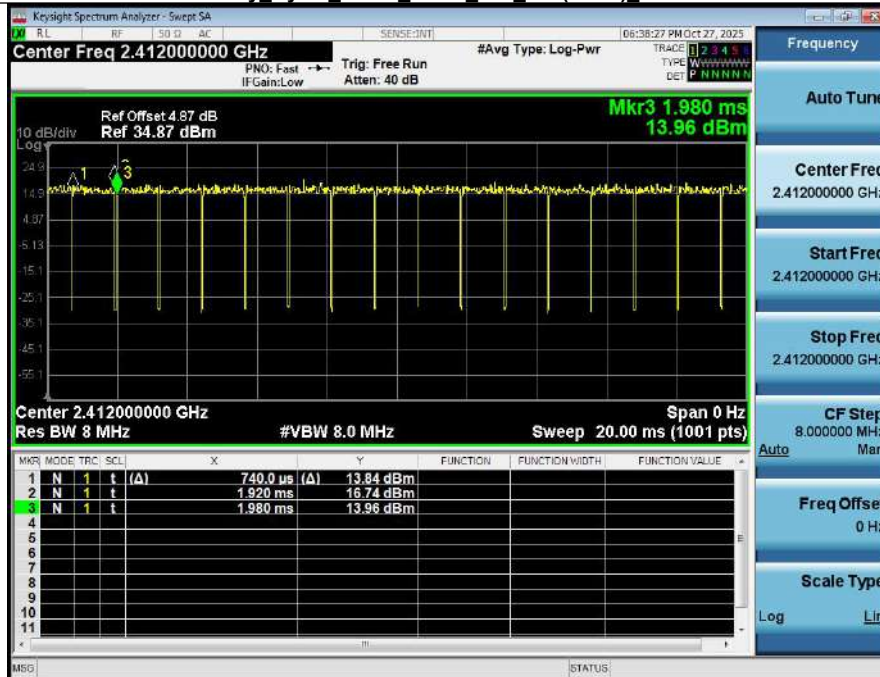
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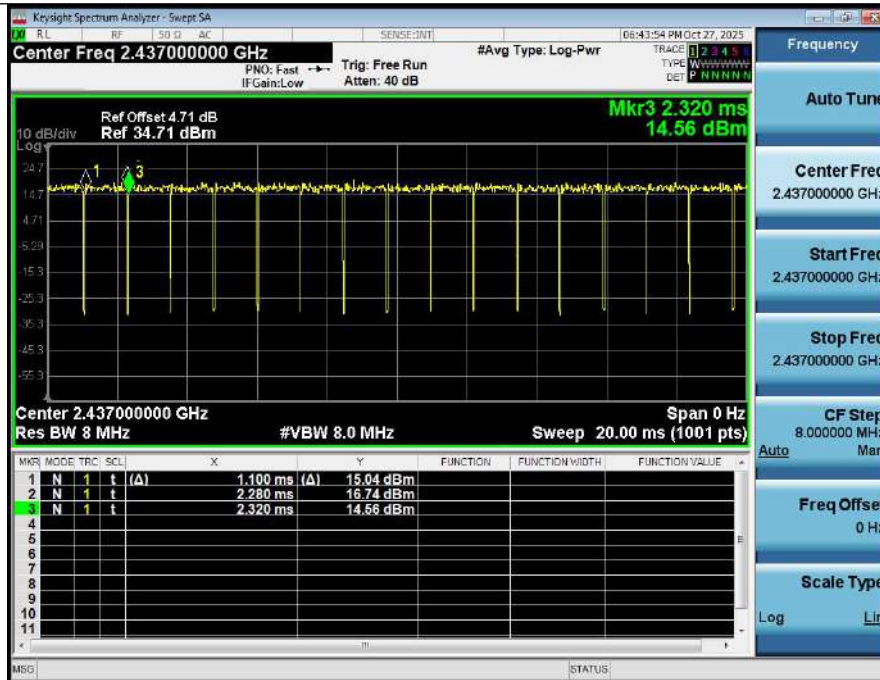
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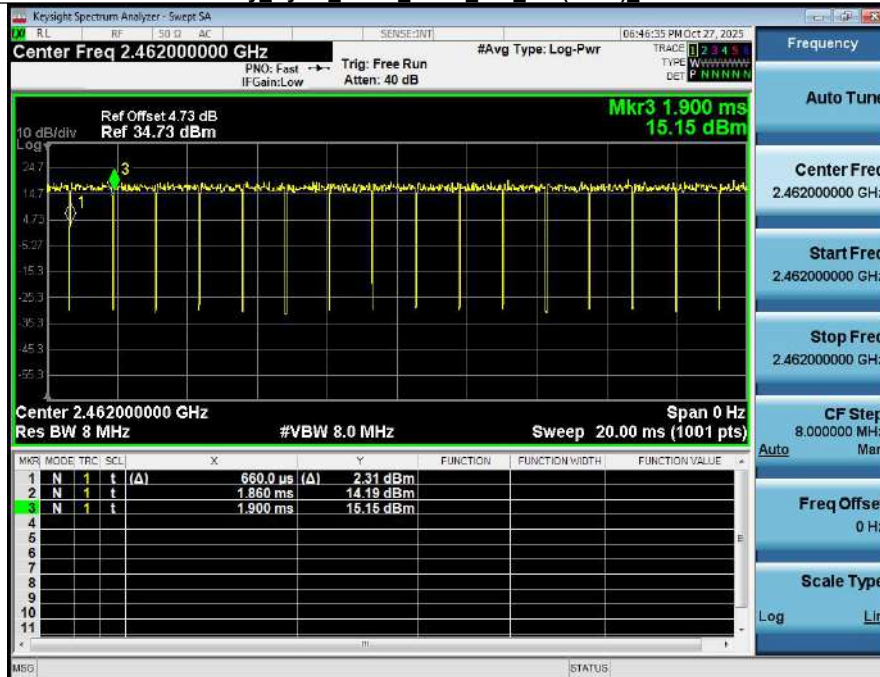
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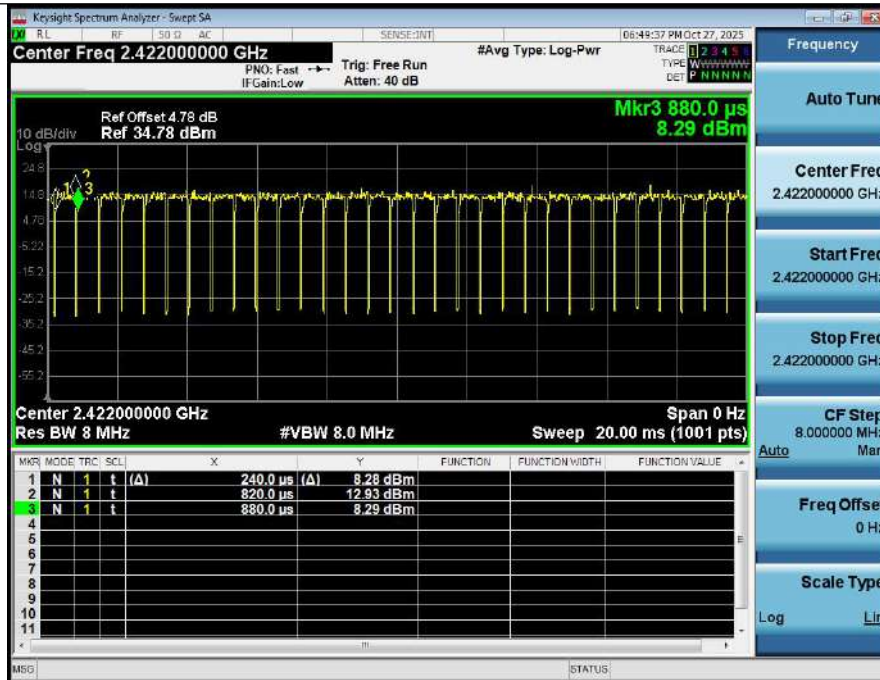
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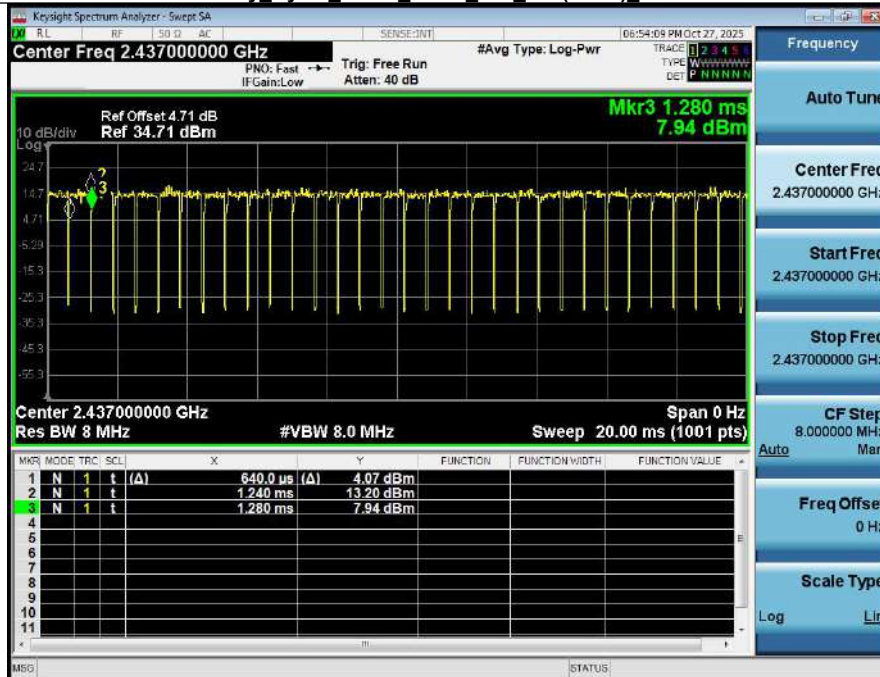
Duty\_Cycle\_NVNT\_ANT1\_802\_11n(HT20)\_2462



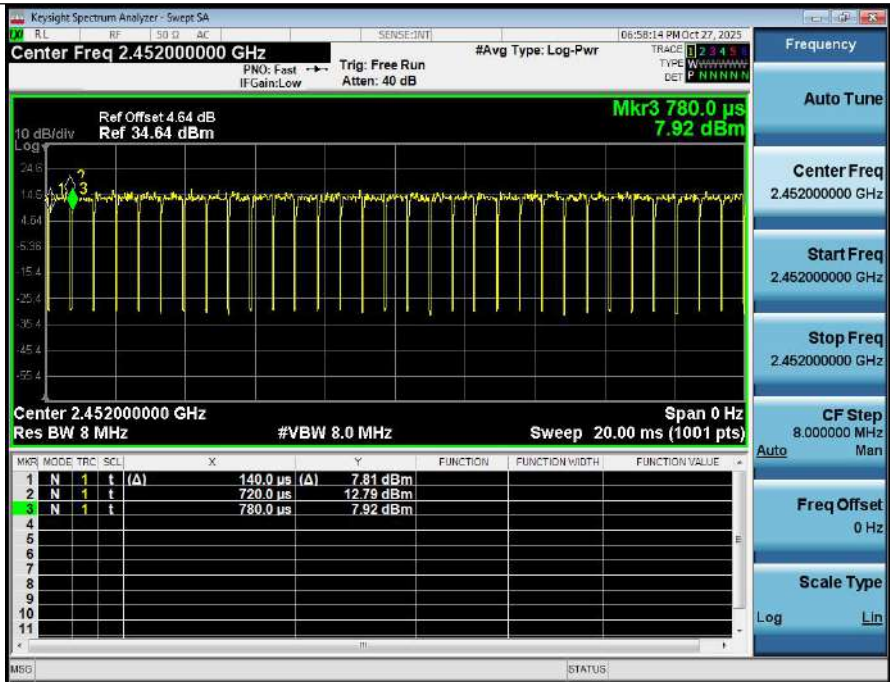
Duty\_Cycle\_NVNT\_ANT1\_802\_11n(HT40)\_2422



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) | limit(dBm) | Result |
|-----------|---------|---------------|-----------------|----------|----------------------|------------|--------|
| NVNT      | ANT1    | 802.11b       | 2412.00         | Peak     | 16.53                | 30         | Pass   |
| NVNT      | ANT1    | 802.11b       | 2437.00         | Peak     | 17.44                | 30         | Pass   |
| NVNT      | ANT1    | 802.11b       | 2462.00         | Peak     | 17.25                | 30         | Pass   |
| NVNT      | ANT1    | 802.11g       | 2412.00         | Peak     | 19.53                | 30         | Pass   |
| NVNT      | ANT1    | 802.11g       | 2437.00         | Peak     | 20.38                | 30         | Pass   |
| NVNT      | ANT1    | 802.11g       | 2462.00         | Peak     | 20.51                | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00         | Peak     | 19.77                | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00         | Peak     | 20.65                | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00         | Peak     | 20.82                | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2422.00         | Peak     | 20.74                | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2437.00         | Peak     | 20.72                | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2452.00         | Peak     | 20.35                | 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         | 1.83               | -10.00        | -8.17         | 8               | Pass   |
| NVNT      | ANT1    | 802.11b       | 2437.00         | 2.71               | -10.00        | -7.29         | 8               | Pass   |
| NVNT      | ANT1    | 802.11b       | 2462.00         | 2.40               | -10.00        | -7.60         | 8               | Pass   |
| NVNT      | ANT1    | 802.11g       | 2412.00         | -1.94              | -10.00        | -11.94        | 8               | Pass   |
| NVNT      | ANT1    | 802.11g       | 2437.00         | -1.43              | -10.00        | -11.43        | 8               | Pass   |
| NVNT      | ANT1    | 802.11g       | 2462.00         | -1.92              | -10.00        | -11.92        | 8               | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00         | -3.45              | -10.00        | -13.45        | 8               | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00         | -2.30              | -10.00        | -12.30        | 8               | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00         | -2.82              | -10.00        | -12.82        | 8               | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2422.00         | -6.06              | -10.00        | -16.06        | 8               | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2437.00         | -5.47              | -10.00        | -15.47        | 8               | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2452.00         | -5.80              | -10.00        | -15.80        | 8               | Pass   |



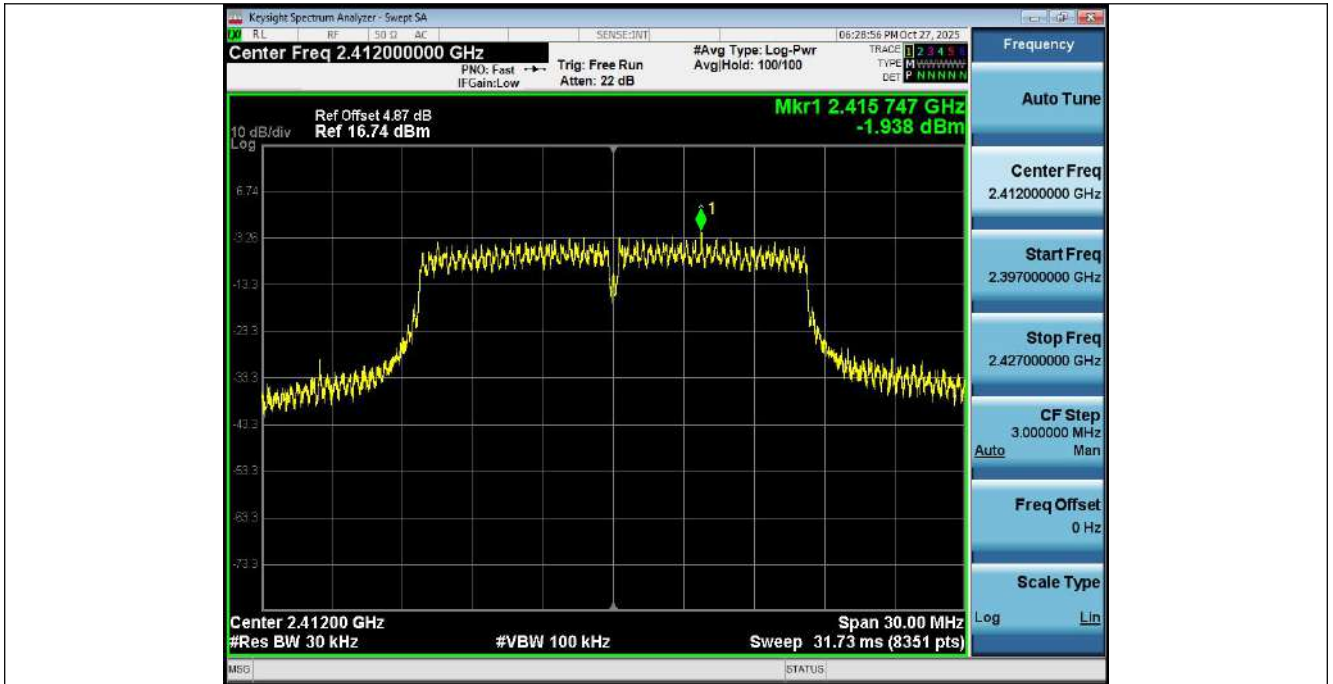
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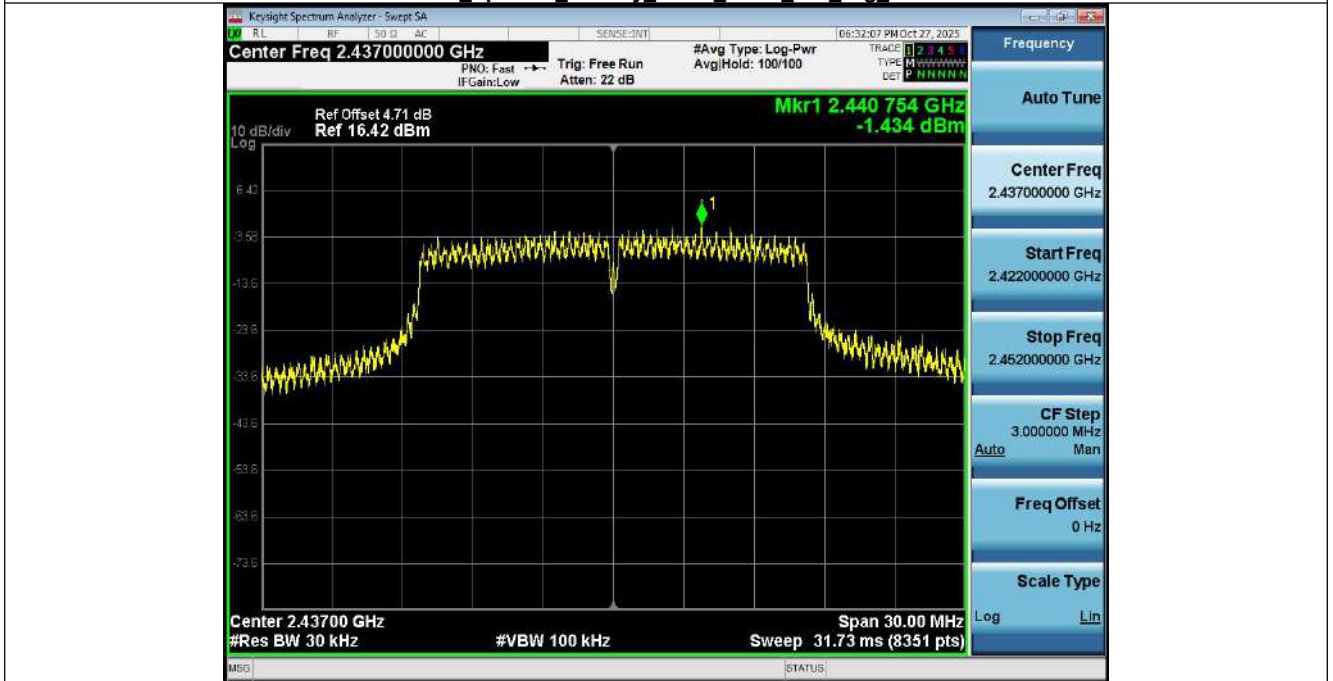
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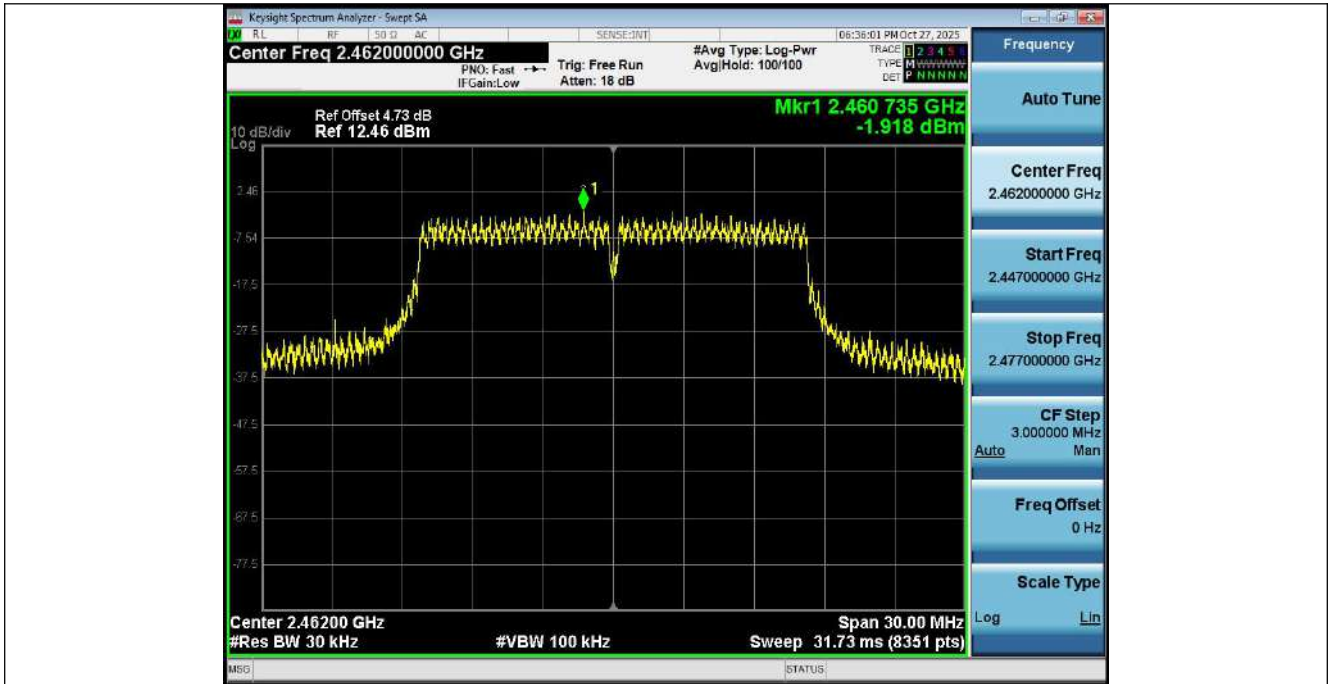
Power\_Spectral\_Density\_NVNT\_ANT1\_802\_11g\_2412



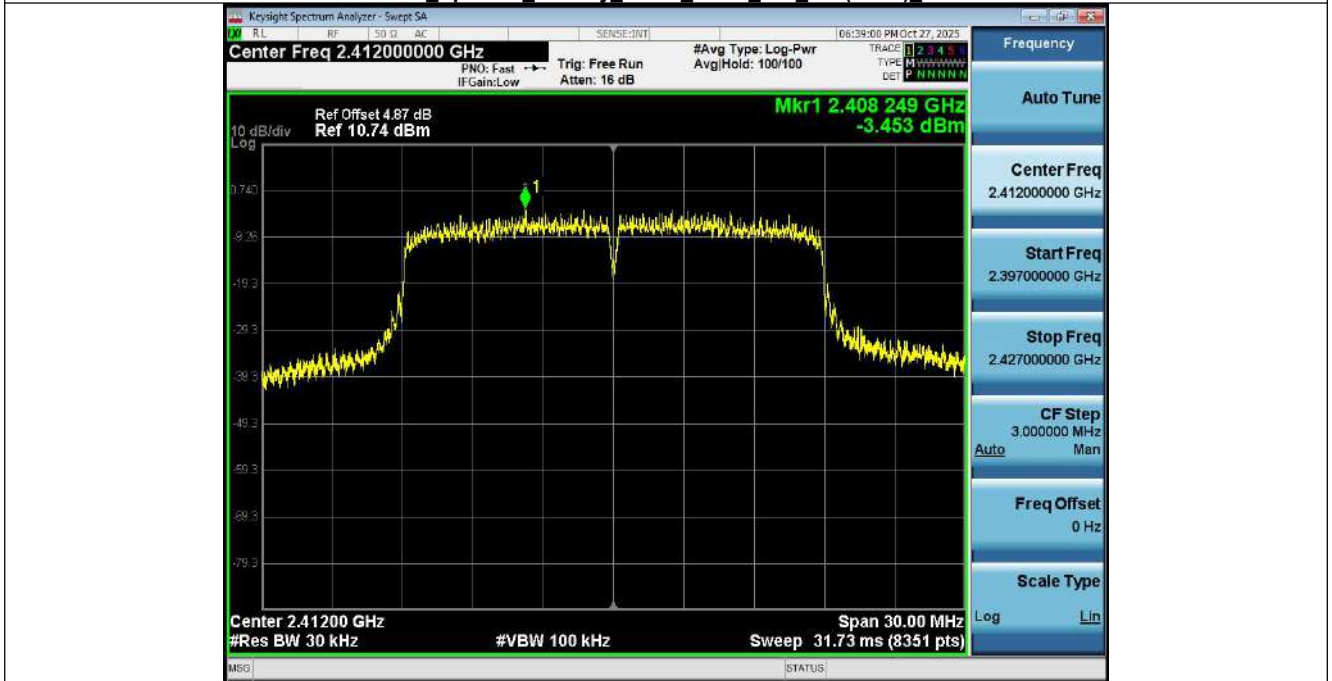
Power\_Spectral\_Density\_NVNT\_ANT1\_802\_11g\_2437



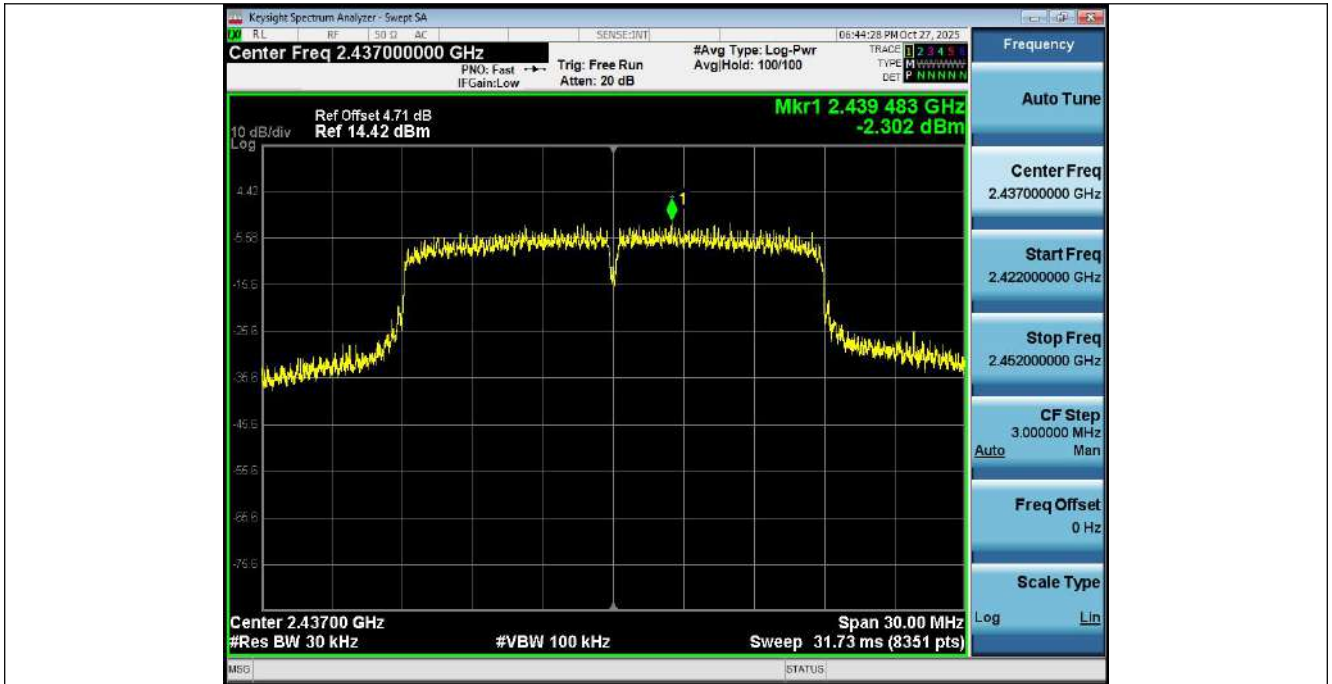
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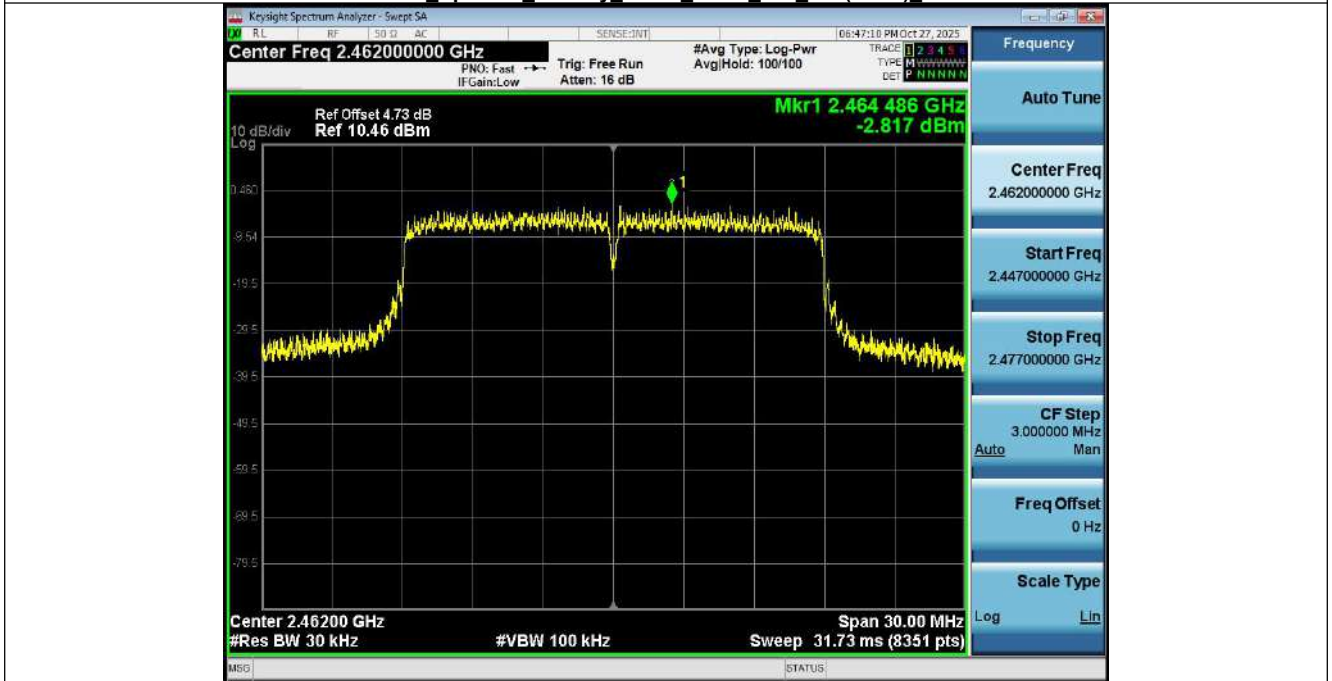
Power Spectral Density NVNT ANT1 802\_11n(HT20)\_2412



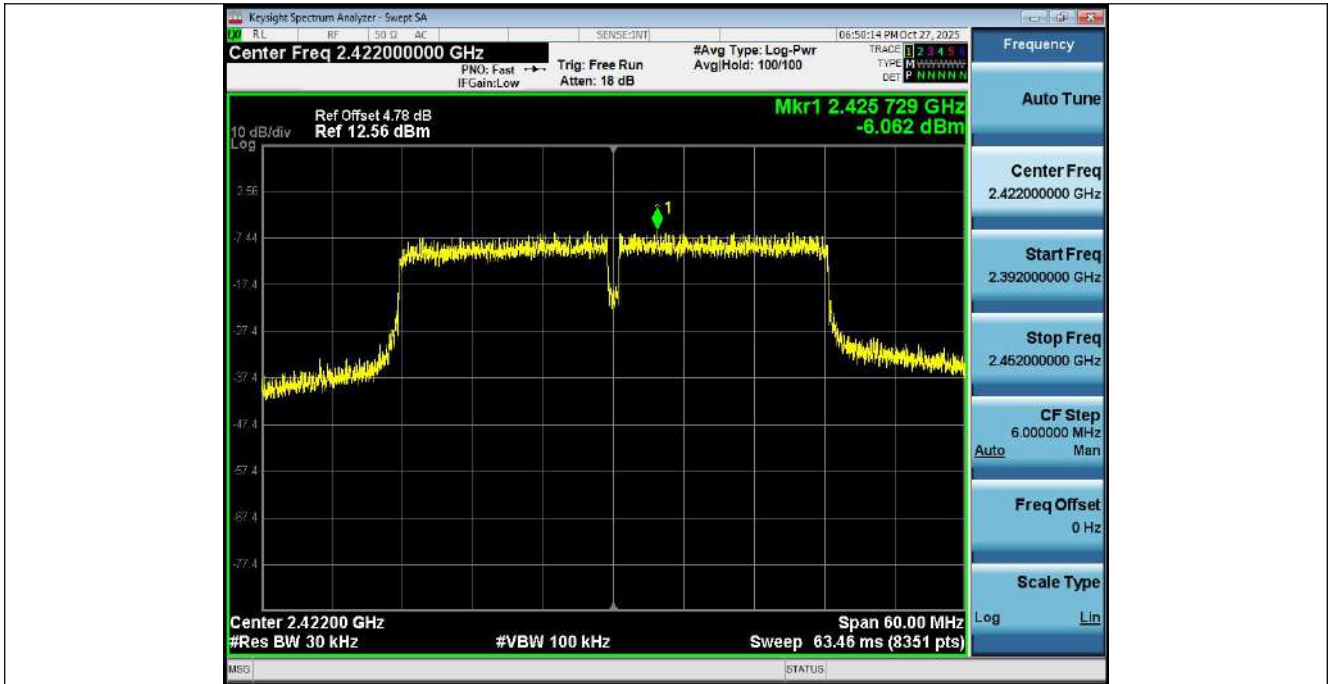
Power Spectral Density NVNT ANT1 802\_11n(HT20)\_2437



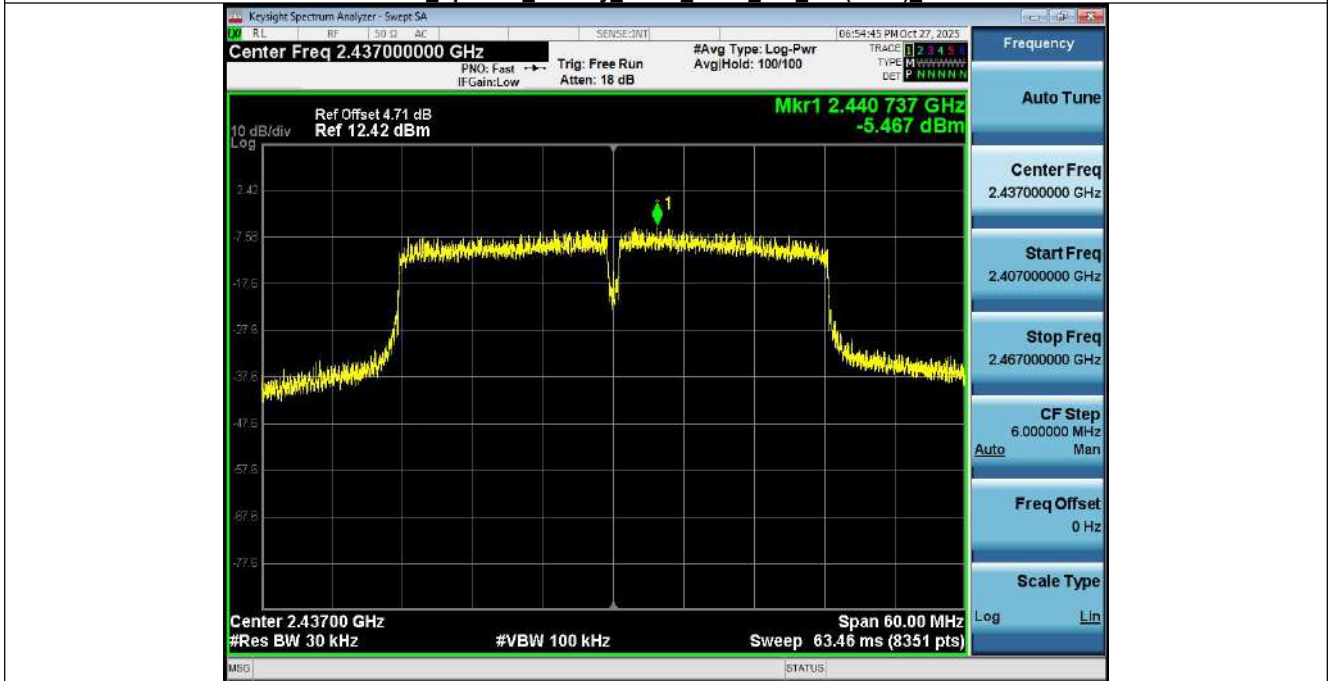
Power\_Spectral\_Density\_NVNT\_ANT1\_802\_11n(HT20)\_2462



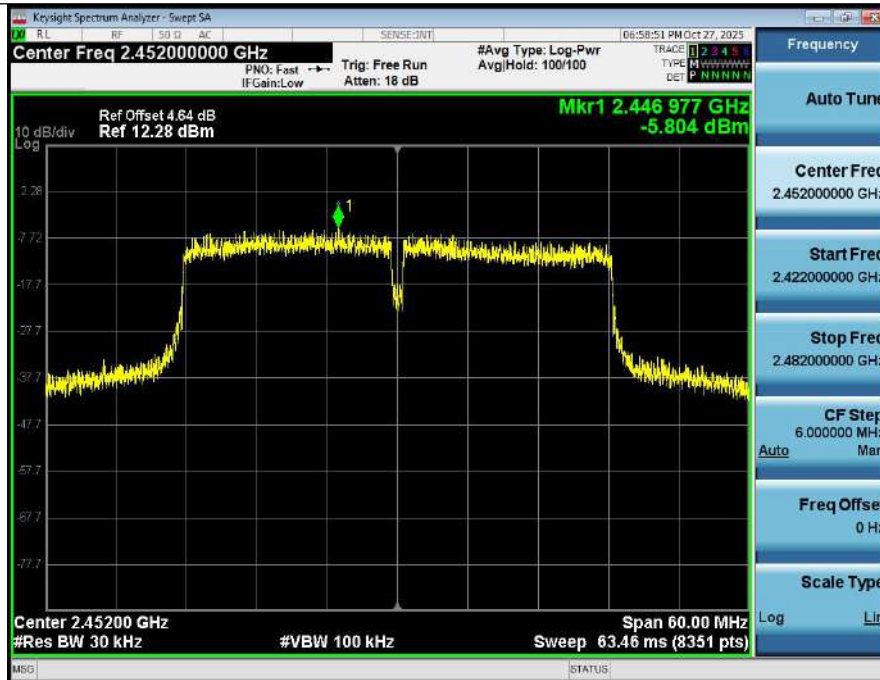
Power\_Spectral\_Density\_NVNT\_ANT1\_802\_11n(HT40)\_2422



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_freq(MHz) | Ref_level(dBm) | Spurious level(dBm) | limit(dBm) | Result |
|-----------|---------|---------------|--------------------|---------------------|----------------|---------------------|------------|--------|
| NVNT      | ANT1    | 802.11b       | 2412.00            | 2399.936            | 5.628          | -36.834             | -14.372    | Pass   |
| NVNT      | ANT1    | 802.11b       | 2462.00            | 2497.552            | 5.791          | -52.679             | -14.209    | Pass   |
| NVNT      | ANT1    | 802.11g       | 2412.00            | 2399.824            | 2.143          | -26.812             | -17.857    | Pass   |
| NVNT      | ANT1    | 802.11g       | 2462.00            | 2483.536            | 2.656          | -37.117             | -17.344    | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00            | 2399.488            | 1.006          | -28.773             | -18.994    | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00            | 2483.920            | 1.766          | -36.519             | -18.234    | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2422.00            | 2399.892            | -0.761         | -28.758             | -20.761    | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2452.00            | 2483.544            | -0.740         | -35.190             | -20.740    | Pass   |



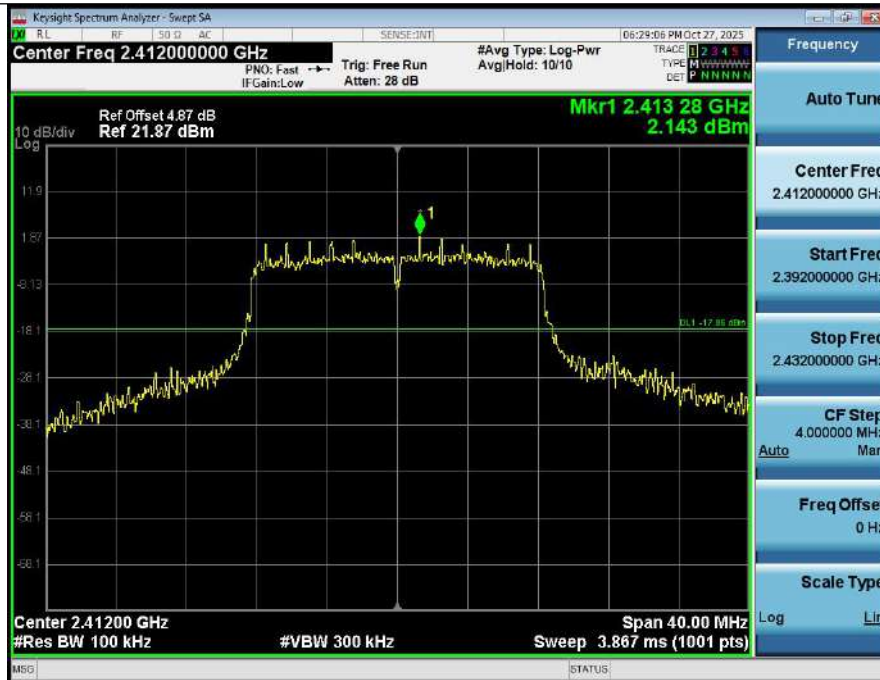
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2\_Bandedge\_NVNT\_ANT1\_802\_11b\_2462



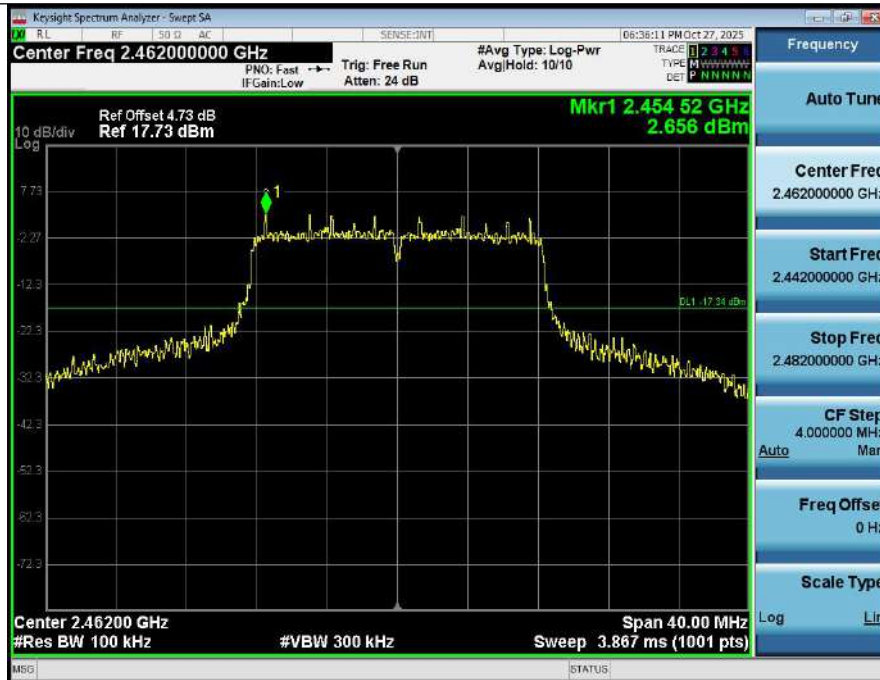
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2\_Bandedge\_NVNT\_ANT1\_802\_11g\_2412



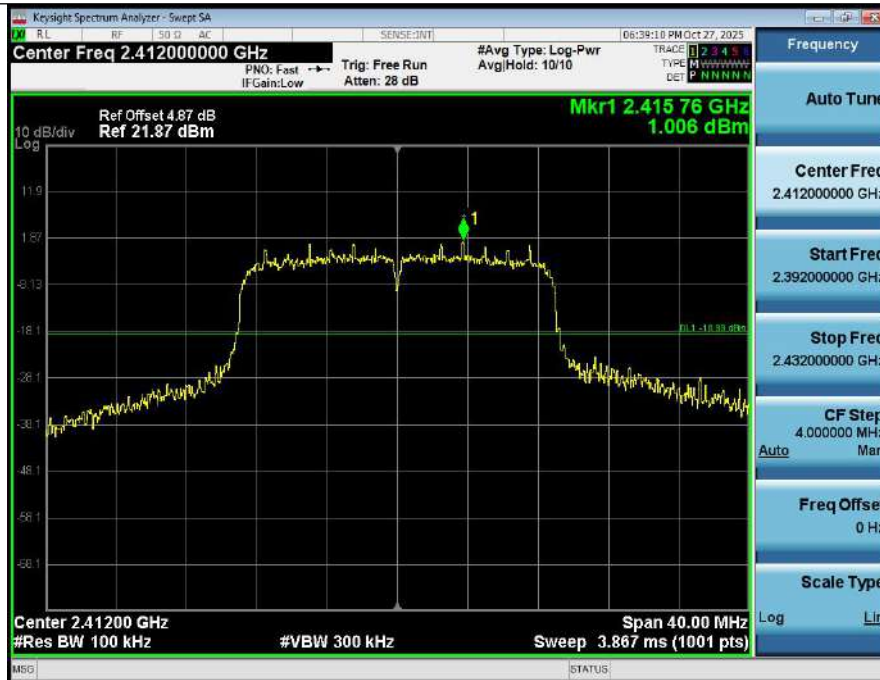
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2\_Bandedge\_NVNT\_ANT1\_802\_11g\_2462



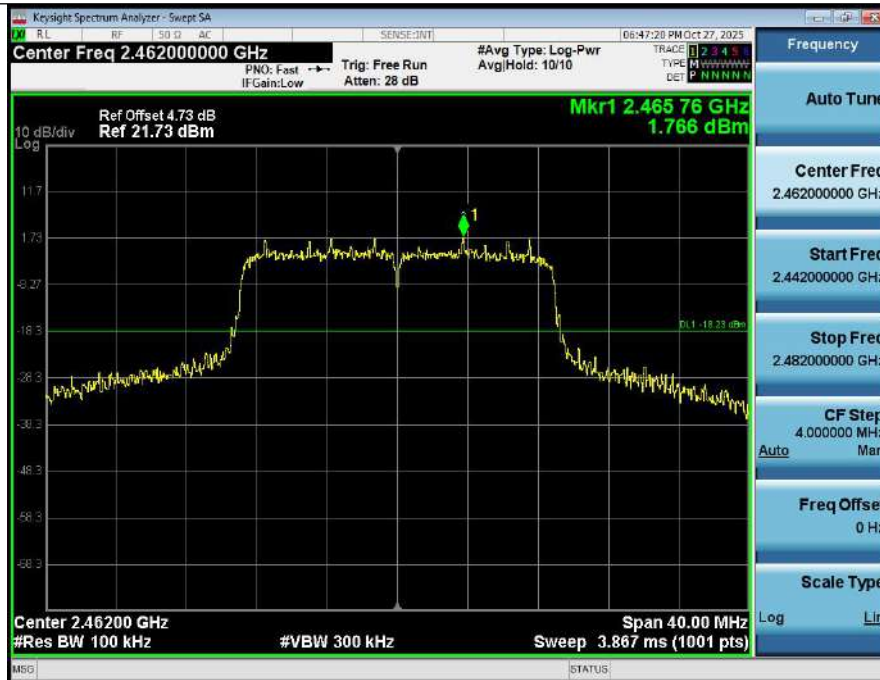
1\_Reference\_Level\_NVNT\_ANT1\_802\_11n(HT20)\_2412



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



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



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



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



## 2\_Bandedge\_NVNT\_ANT1\_802\_11n(HT40)\_2452



## 7. Spurious Emission

| 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            | 24440.672           | 5.628          | -39.193             | -14.372    | Pass   |
| NVNT      | ANT1    | 802.11b       | 2437.00            | 24977.527           | 6.723          | -42.623             | -13.277    | Pass   |
| NVNT      | ANT1    | 802.11b       | 2462.00            | 24855.174           | 5.791          | -40.218             | -14.209    | Pass   |
| NVNT      | ANT1    | 802.11g       | 2412.00            | 24975.030           | 2.143          | -42.322             | -17.857    | Pass   |
| NVNT      | ANT1    | 802.11g       | 2437.00            | 24573.013           | 3.138          | -47.423             | -16.862    | Pass   |
| NVNT      | ANT1    | 802.11g       | 2462.00            | 24470.636           | 2.656          | -47.136             | -17.344    | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00            | 24997.503           | 1.006          | -42.681             | -18.994    | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00            | 24972.533           | 2.624          | -46.142             | -17.376    | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00            | 24925.090           | 1.766          | -42.328             | -18.234    | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2422.00            | 24957.551           | -0.761         | -44.709             | -20.761    | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2437.00            | 24907.611           | -0.434         | -45.295             | -20.434    | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2452.00            | 24980.024           | -0.740         | -45.654             | -20.740    | Pass   |

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



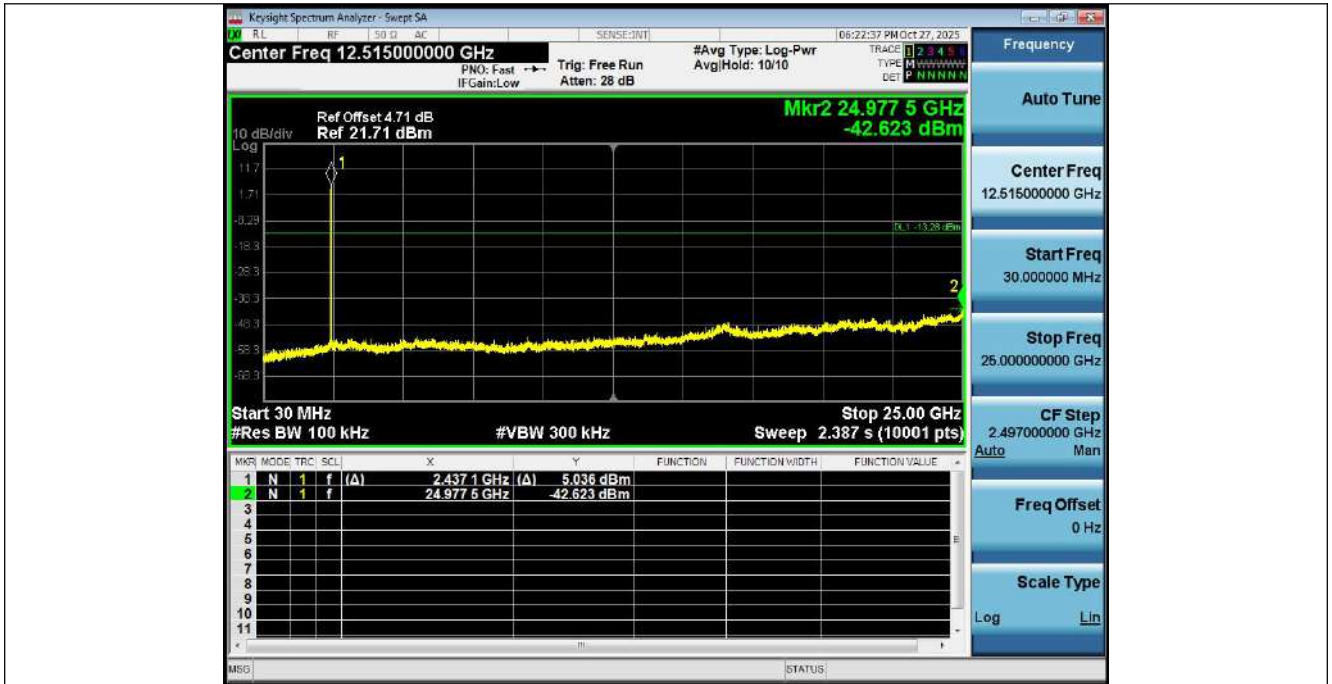
2 Spurious\_Emission\_NVNT\_ANT1\_802\_11b\_2412



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



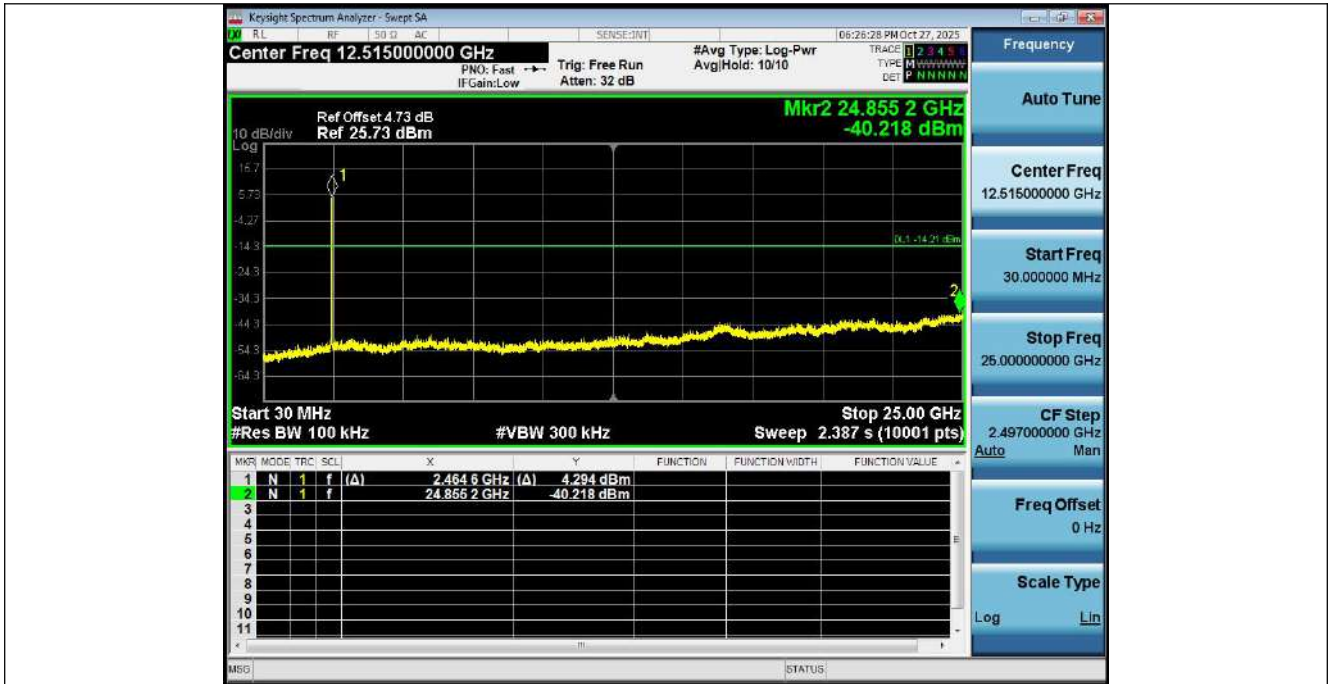
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### 1 Reference Level NVNT\_ANT1\_802\_11b\_2462



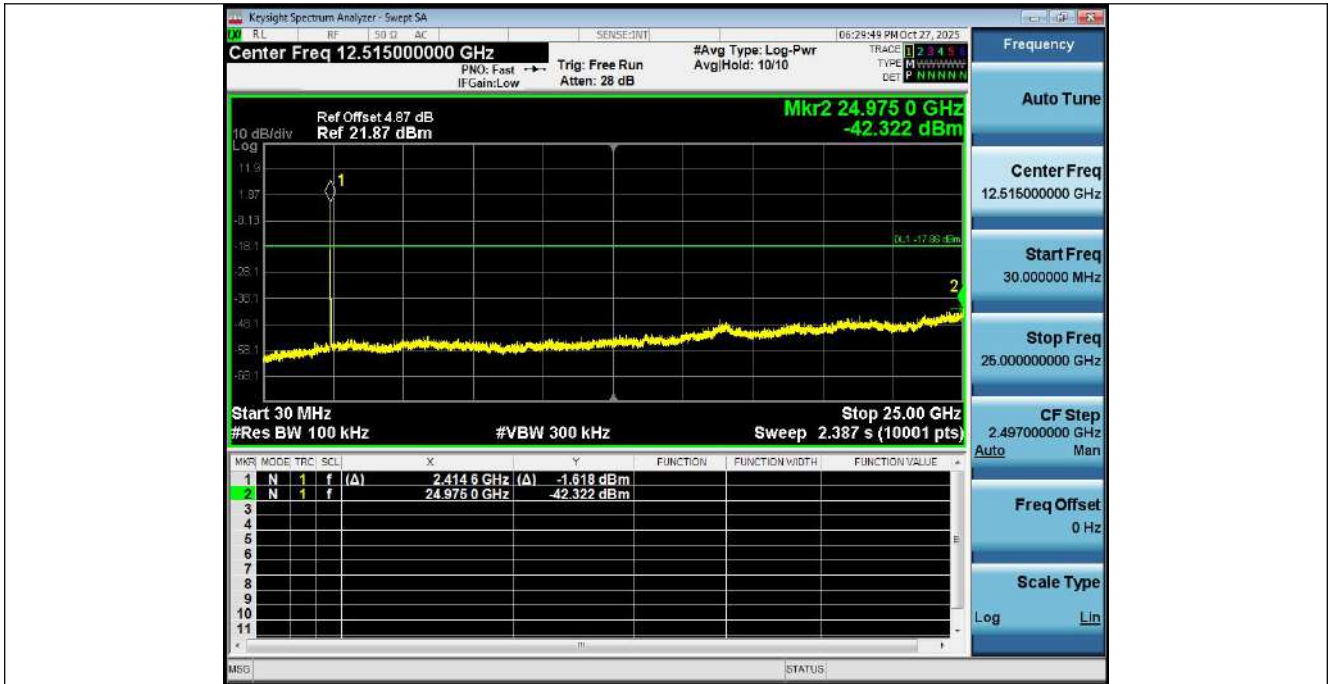
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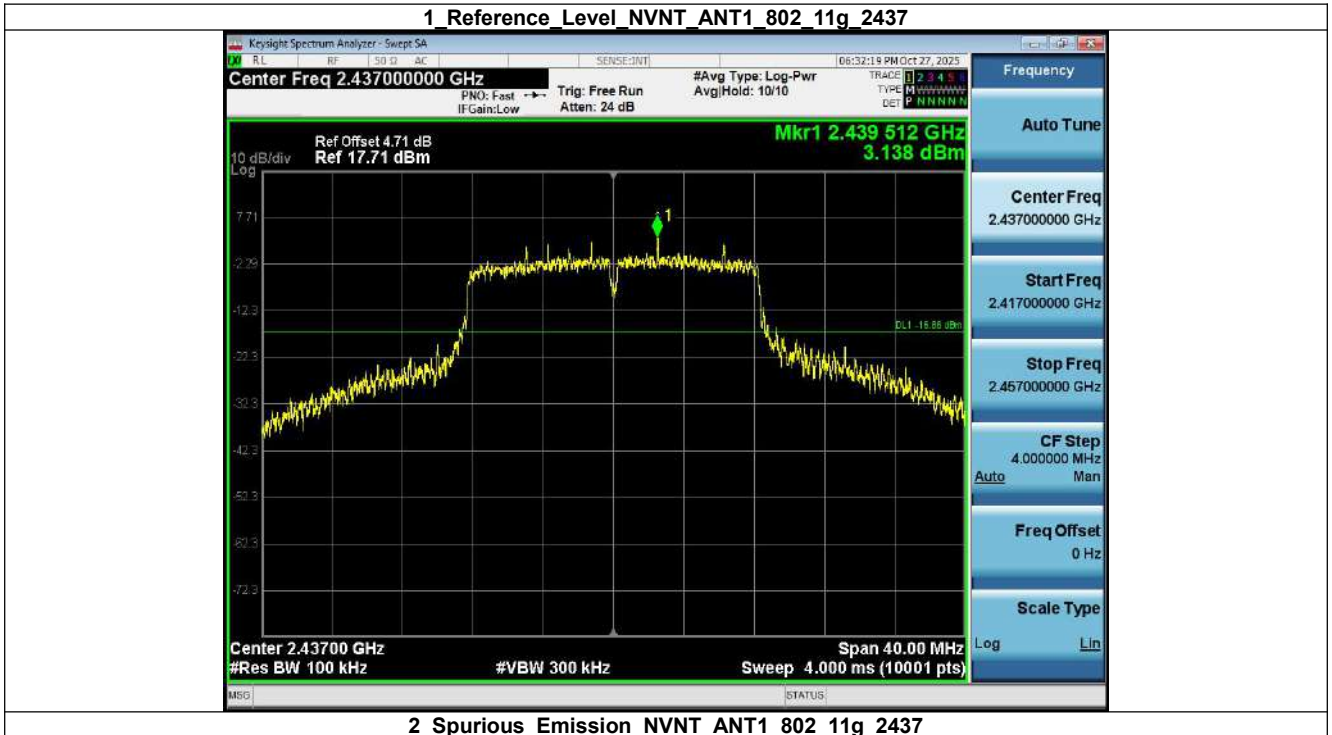
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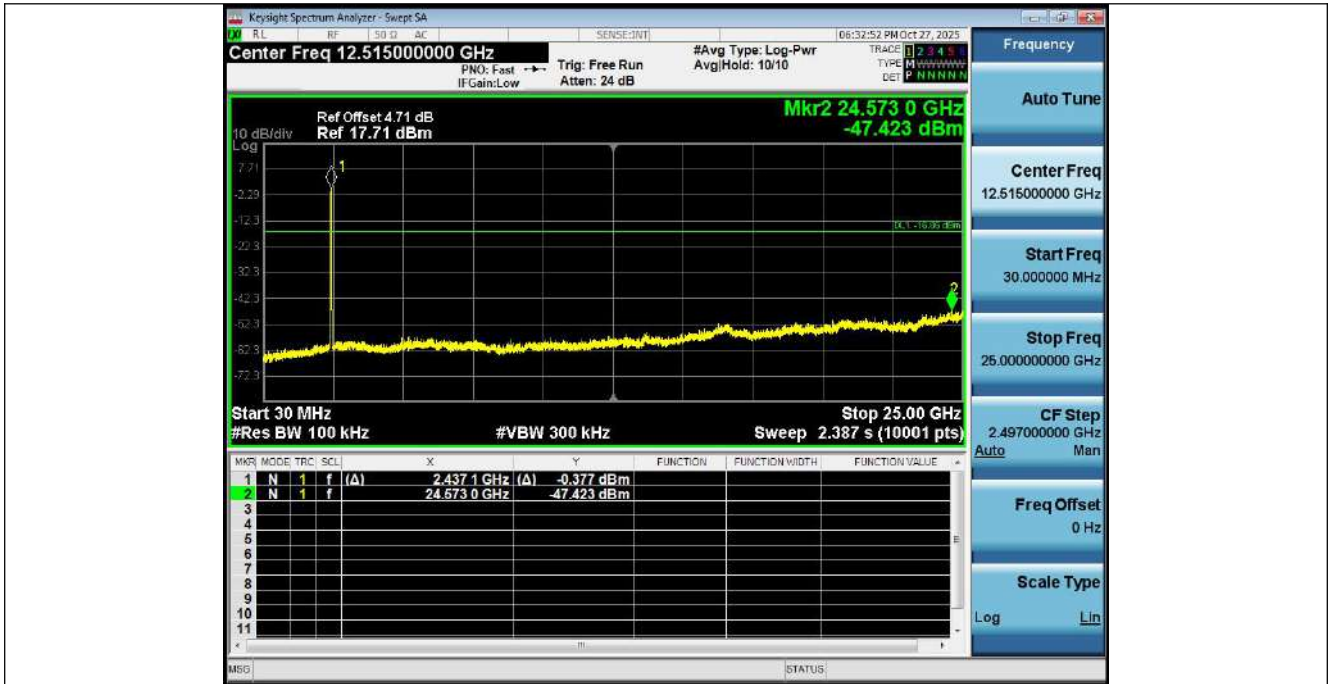
### 2 Spurious Emission NVNT\_ANT1\_802\_11g\_2412



### 1 Reference Level NVNT\_ANT1\_802\_11g\_2437



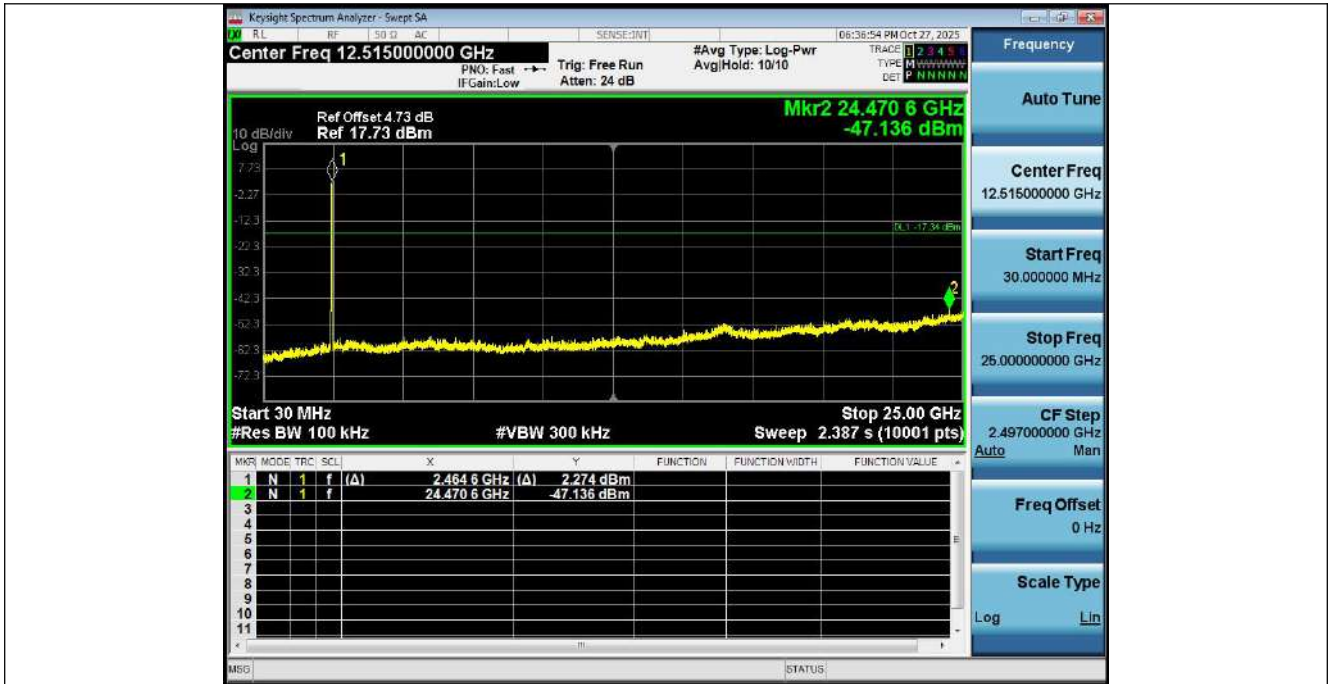
### 2 Spurious Emission NVNT\_ANT1\_802\_11g\_2437



### 1 Reference Level NVNT\_ANT1\_802\_11g\_2462



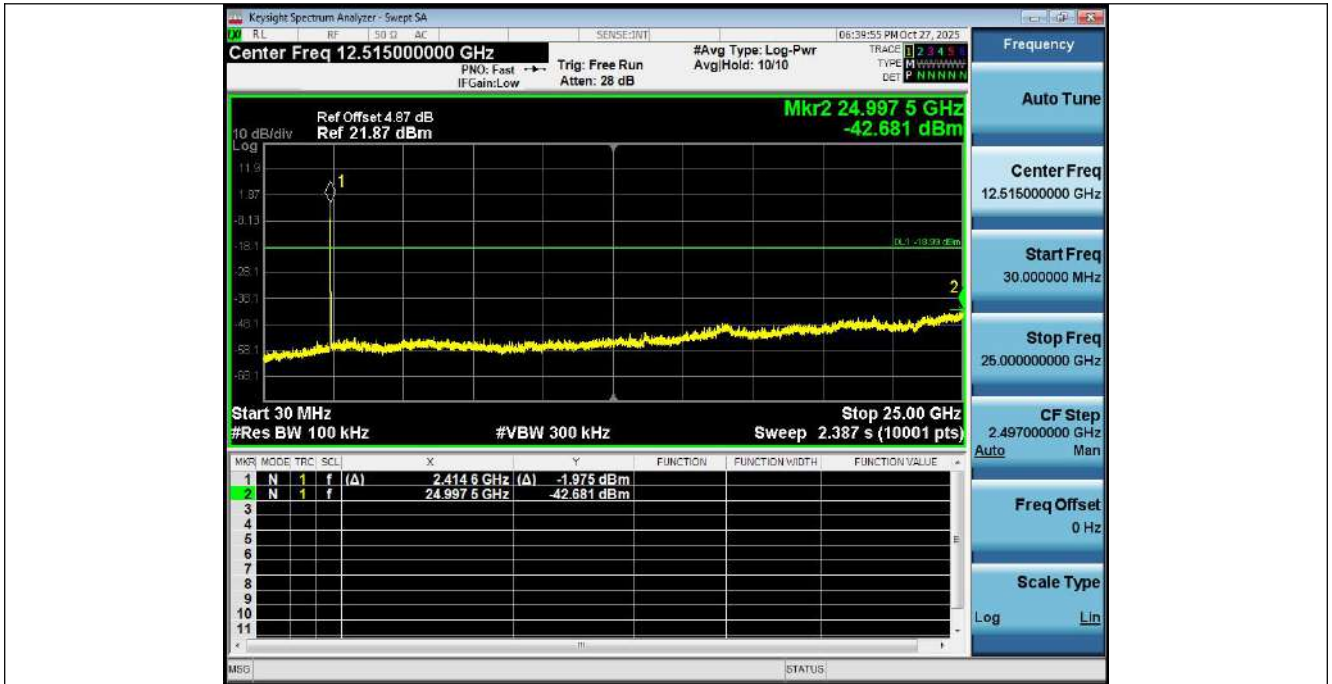
### 2 Spurious Emission NVNT\_ANT1\_802\_11g\_2462



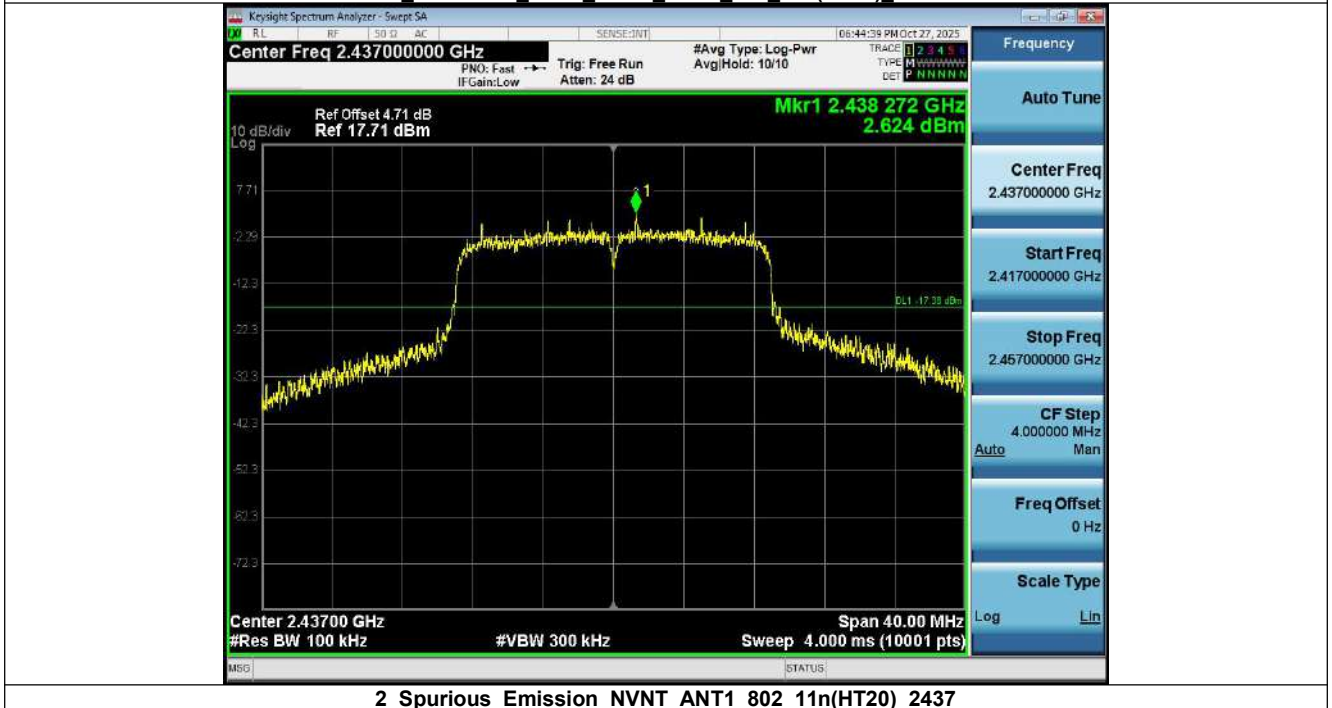
### 1 Reference Level NVNT\_ANT1\_802\_11n(HT20)\_2412



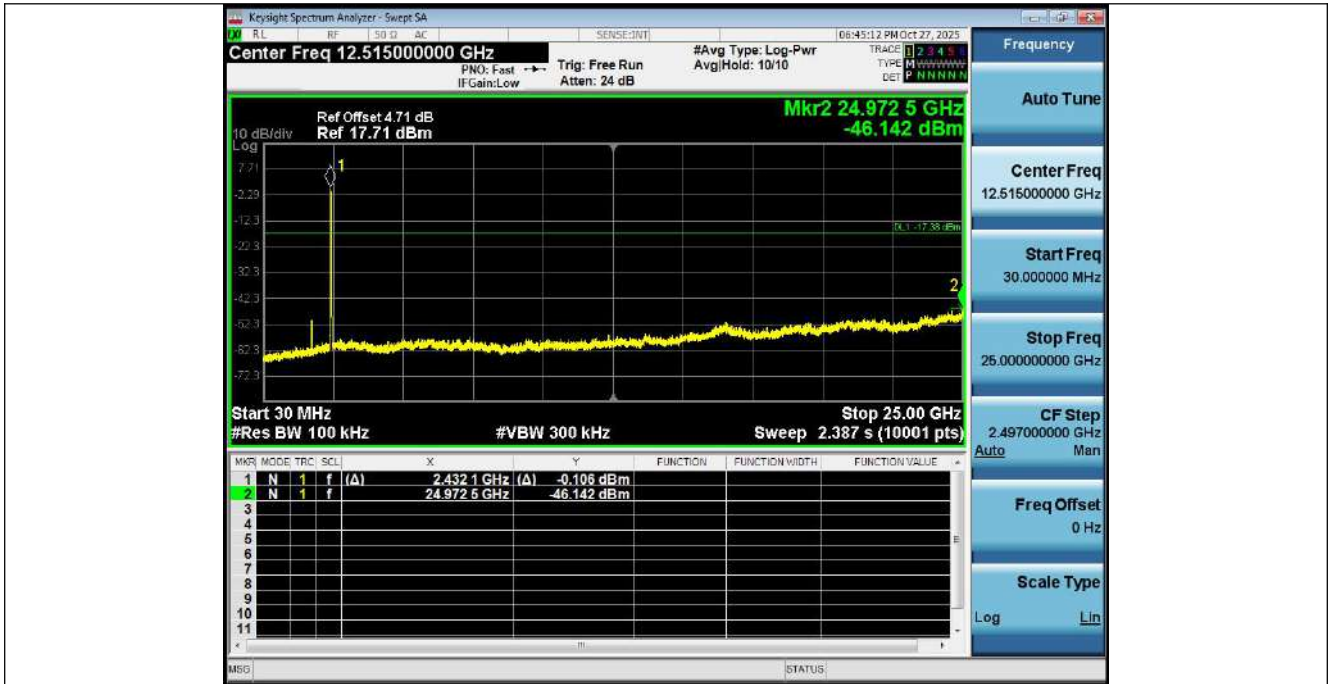
### 2 Spurious Emission NVNT\_ANT1\_802\_11n(HT20)\_2412



### 1 Reference Level NVNT\_ANT1\_802\_11n(HT20)\_2437



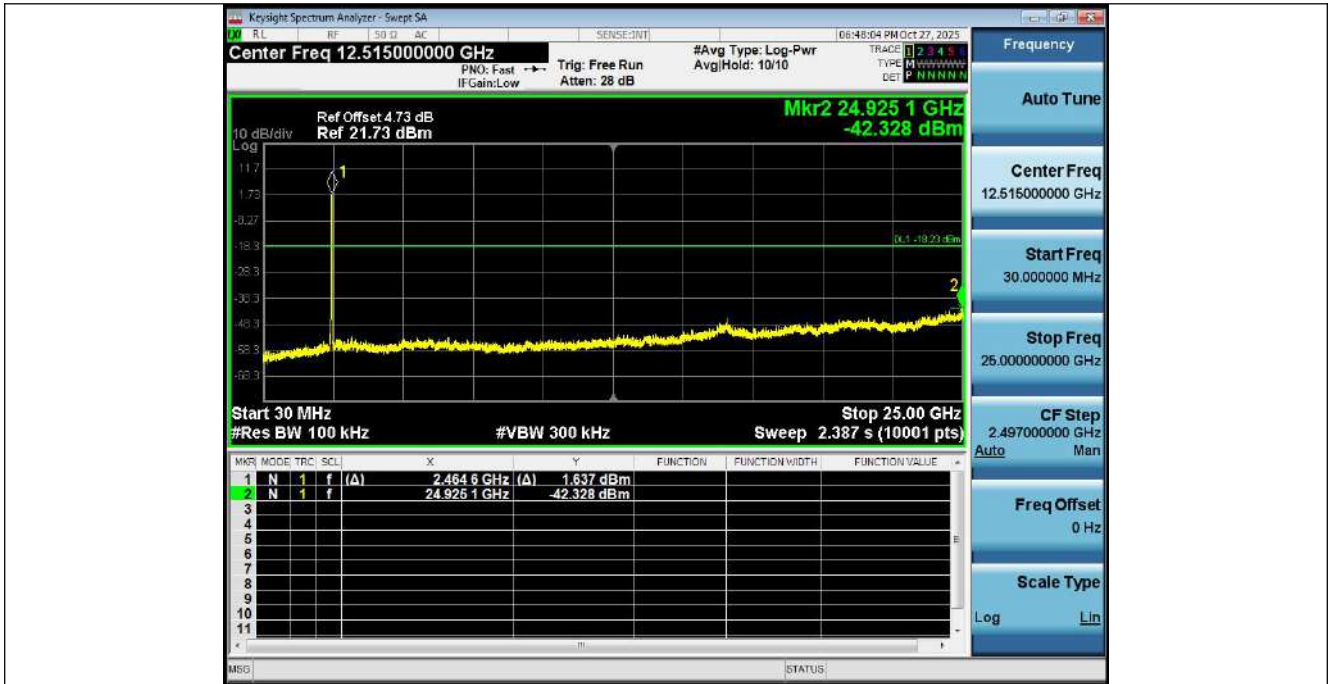
### 2 Spurious Emission NVNT\_ANT1\_802\_11n(HT20)\_2437



### 1 Reference Level NVNT ANT1 802 11n(HT20) 2462



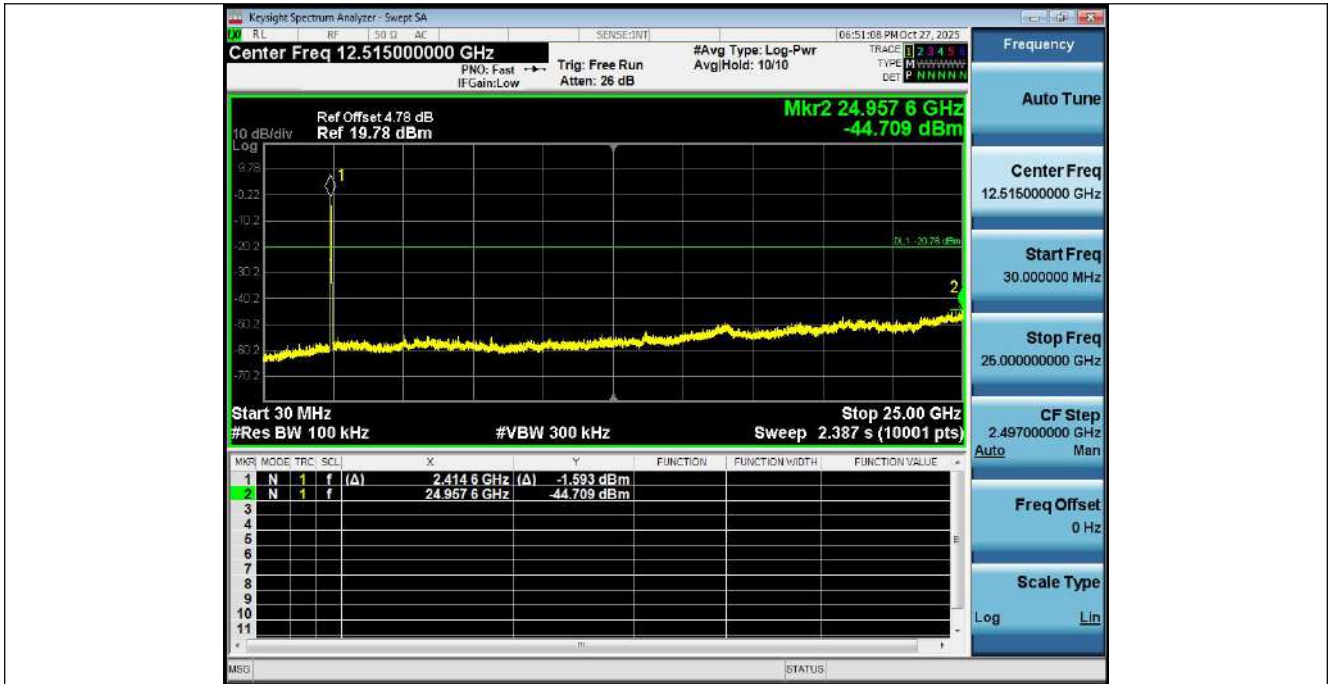
### 2 Spurious Emission NVNT ANT1 802 11n(HT20) 2462



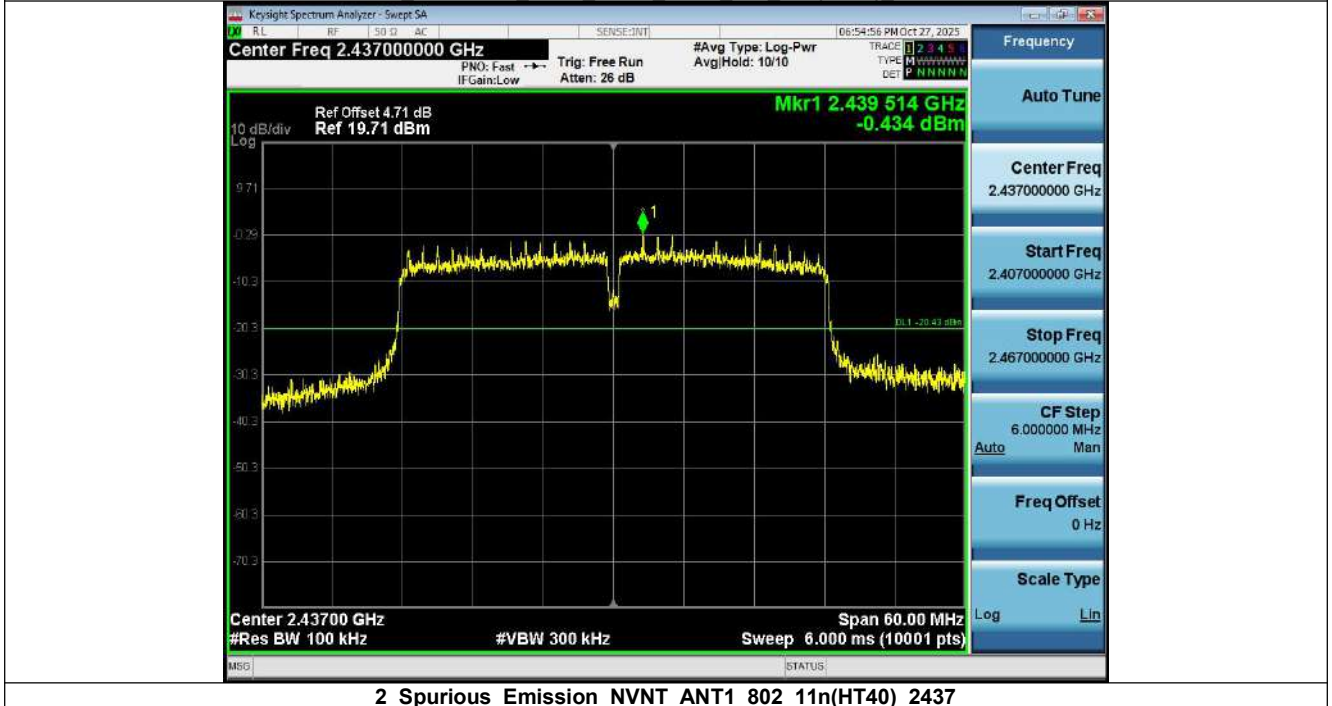
### 1 Reference Level NVNT\_ANT1\_802\_11n(HT40)\_2422



### 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

