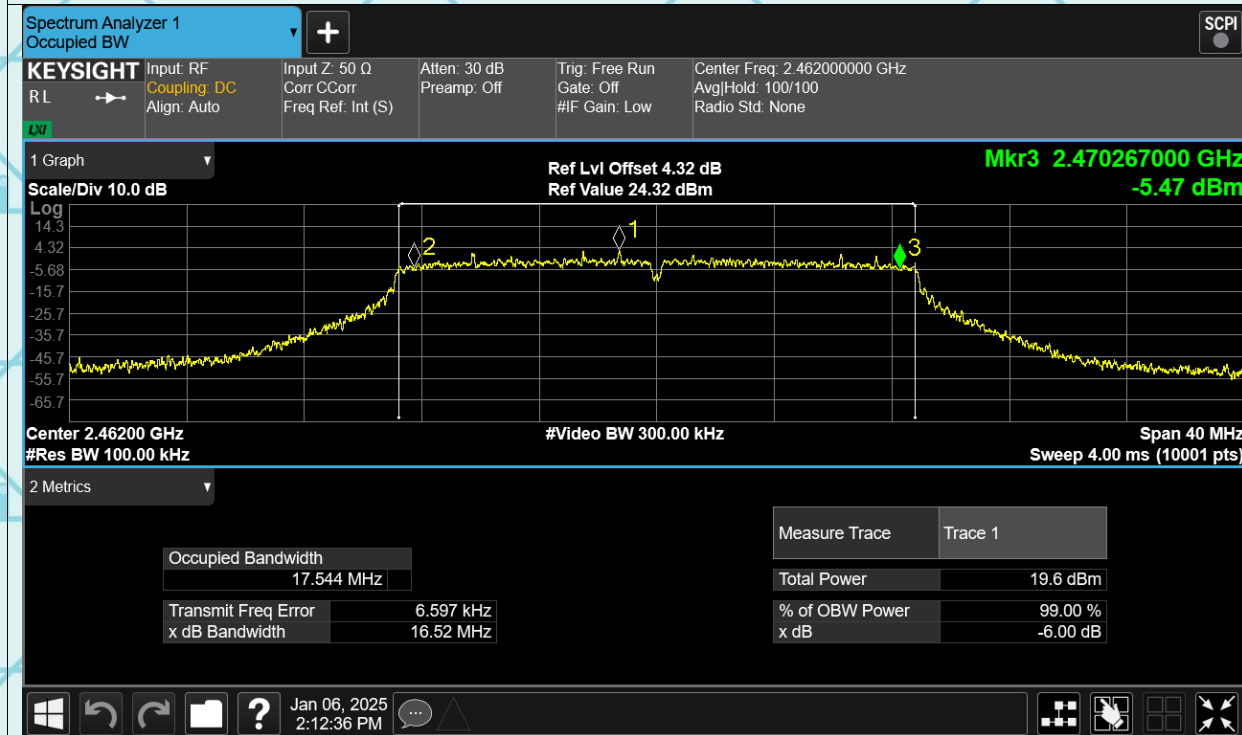


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

-6dB Bandwidth n20 2462MHz

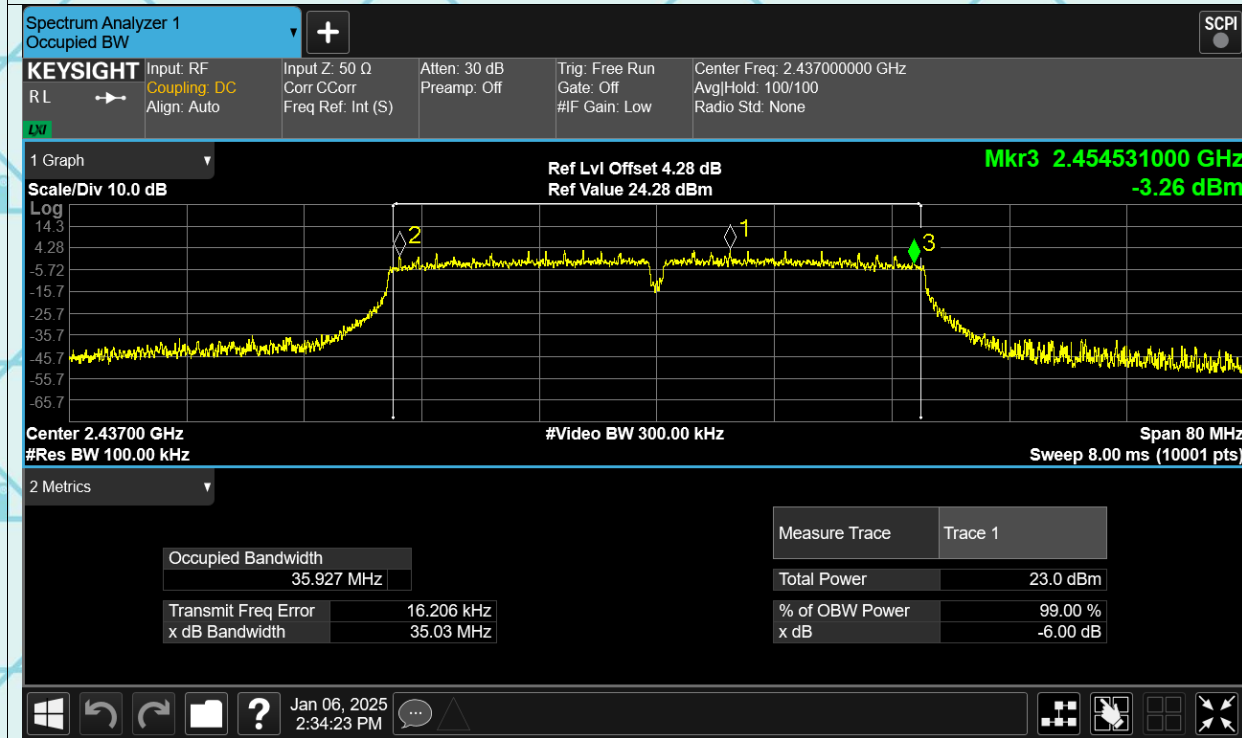


-6dB Bandwidth n40 2422MHz

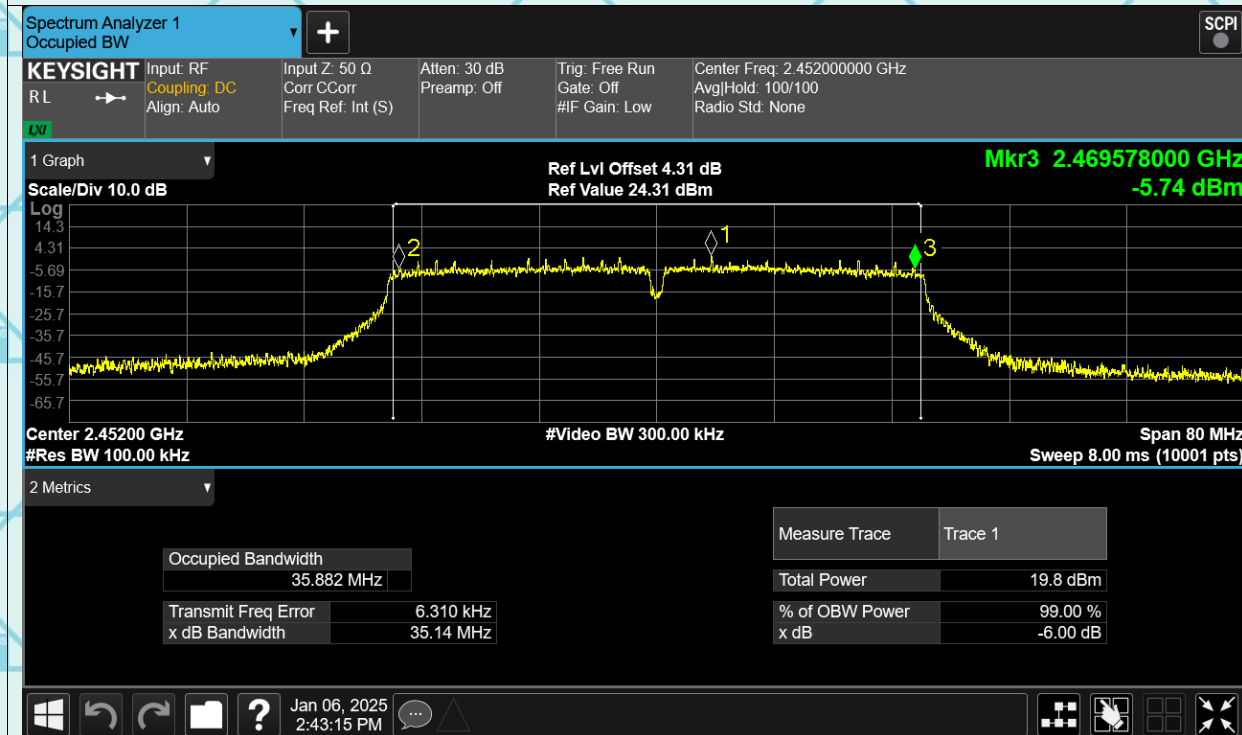


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

-6dB Bandwidth n40 2437MHz



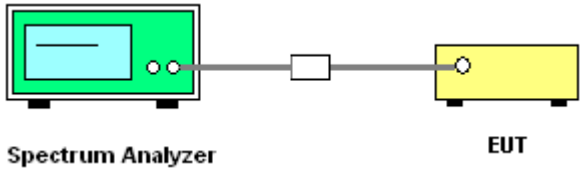
-6dB Bandwidth n40 2452MHz



Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

## 6.4. Power Spectral Density

### 6.4.1 Test Specification

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b> | FCC Part15 C Section 15.247 (e)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Test Method:</b>      | KDB 558074                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Limit:</b>            | The average power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Test Setup:</b>       |  <p style="text-align: center;">Spectrum Analyzer                      EUT</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Test Mode:</b>        | Transmitting mode with modulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Test Procedure:</b>   | <ol style="list-style-type: none"> <li>1. The testing follows Measurement Procedure 10.3 Method AVGPS of FCC KDB Publication No.558074 D01 DTS Meas. Guidance v04</li> <li>2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.</li> <li>3. Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW): <math>3\text{ kHz} \leq \text{RBW} \leq 100\text{ kHz}</math>. Video bandwidth VBW <math>\geq 3 \times \text{RBW}</math>. Set the span to at least 1.5 times the OBW.</li> <li>5. Detector = RMS, Sweep time = auto couple.</li> <li>6. Employ trace averaging (RMS) mode over a minimum of 100 traces. Use the peak marker function to determine the maximum power level.</li> <li>6. Measure and record the results in the test report.</li> </ol> |
| <b>Test Result:</b>      | PASS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

### 6.4.2. Test data(worst)

Ant1

| Mode | Frequency (MHz) | Total PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|------|-----------------|----------------------|------------------|---------|
| b    | 2412            | -4.16                | 5.92             | Pass    |
| b    | 2437            | -2.07                | 5.92             | Pass    |
| b    | 2462            | -2.53                | 5.92             | Pass    |
| g    | 2412            | -12.14               | 5.92             | Pass    |
| g    | 2437            | -15.04               | 5.92             | Pass    |
| g    | 2462            | -11.54               | 5.92             | Pass    |
| n20  | 2412            | -11.67               | 5.92             | Pass    |
| n20  | 2437            | -14.75               | 5.92             | Pass    |
| n20  | 2462            | -11.65               | 5.92             | Pass    |
| n40  | 2422            | -13.29               | 5.92             | Pass    |
| n40  | 2437            | -10.20               | 5.92             | Pass    |
| n40  | 2452            | -13.14               | 5.92             | Pass    |

Ant2

| Mode | Frequency (MHz) | Total PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|------|-----------------|----------------------|------------------|---------|
| b    | 2412            | -8.10                | 5.92             | Pass    |
| b    | 2437            | -8.06                | 5.92             | Pass    |
| b    | 2462            | -9.00                | 5.92             | Pass    |
| g    | 2412            | -13.91               | 5.92             | Pass    |
| g    | 2437            | -11.66               | 5.92             | Pass    |
| g    | 2462            | -14.30               | 5.92             | Pass    |
| n20  | 2412            | -13.32               | 5.92             | Pass    |
| n20  | 2437            | -10.88               | 5.92             | Pass    |
| n20  | 2462            | -13.98               | 5.92             | Pass    |
| n40  | 2422            | -15.61               | 5.92             | Pass    |
| n40  | 2437            | -13.09               | 5.92             | Pass    |
| n40  | 2452            | -15.34               | 5.92             | Pass    |

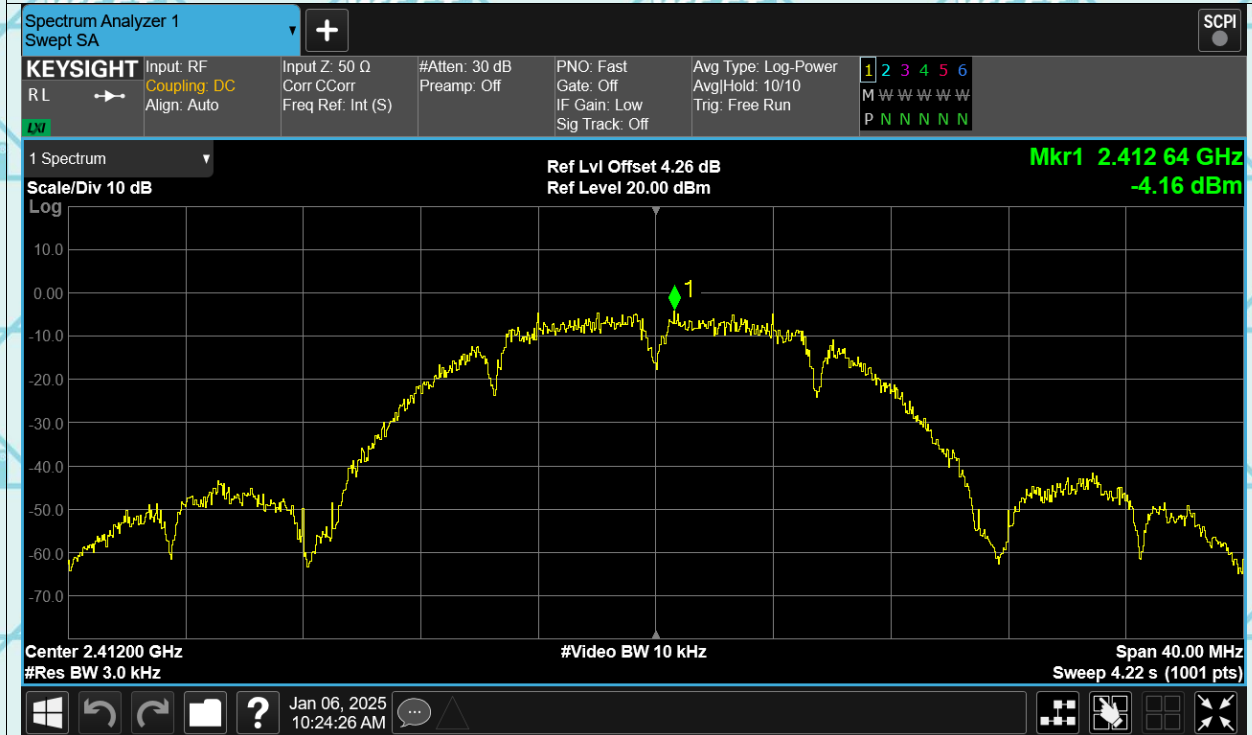
MIMO

| Mode | Frequency (MHz) | Total PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|------|-----------------|----------------------|------------------|---------|
| n20  | 2412            | -9.41                | 5.92             | Pass    |
| n20  | 2437            | -9.39                | 5.92             | Pass    |
| n20  | 2462            | -9.65                | 5.92             | Pass    |
| n40  | 2422            | -11.29               | 5.92             | Pass    |
| n40  | 2437            | -8.40                | 5.92             | Pass    |
| n40  | 2452            | -11.09               | 5.92             | Pass    |

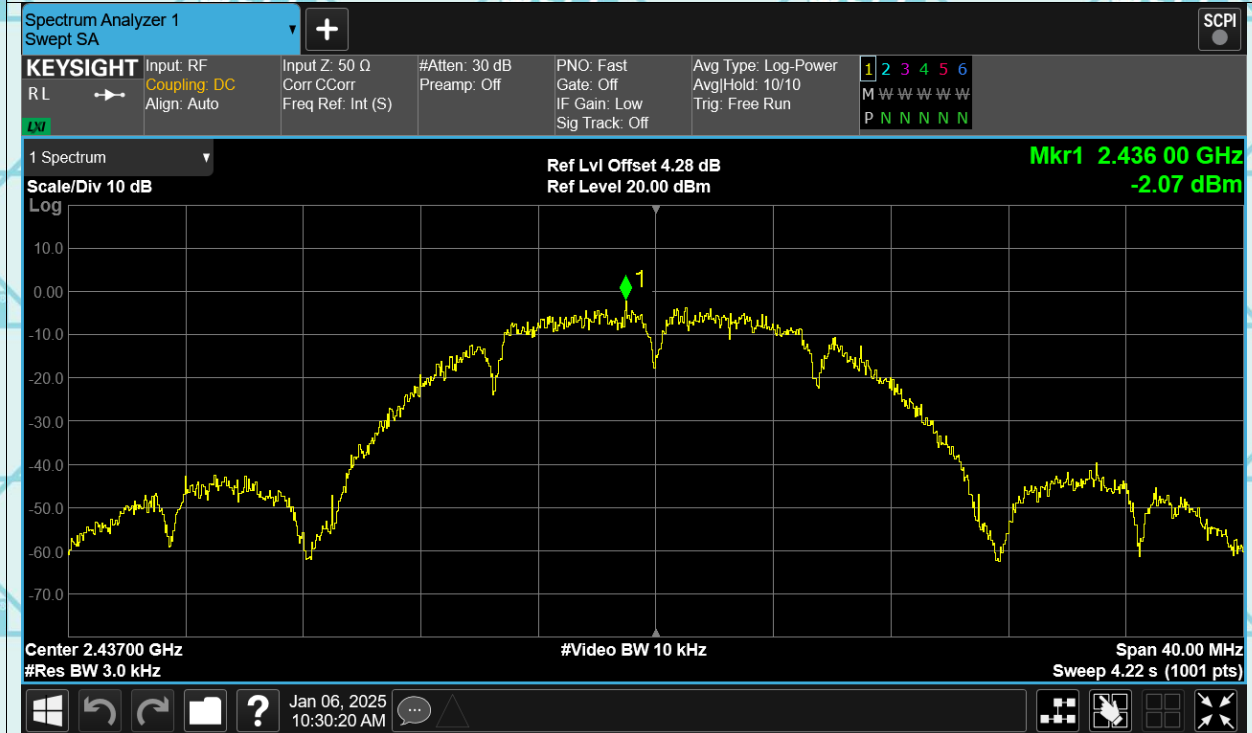
Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1  
ANT1

### Test Graphs

#### PSD b 2412MHz

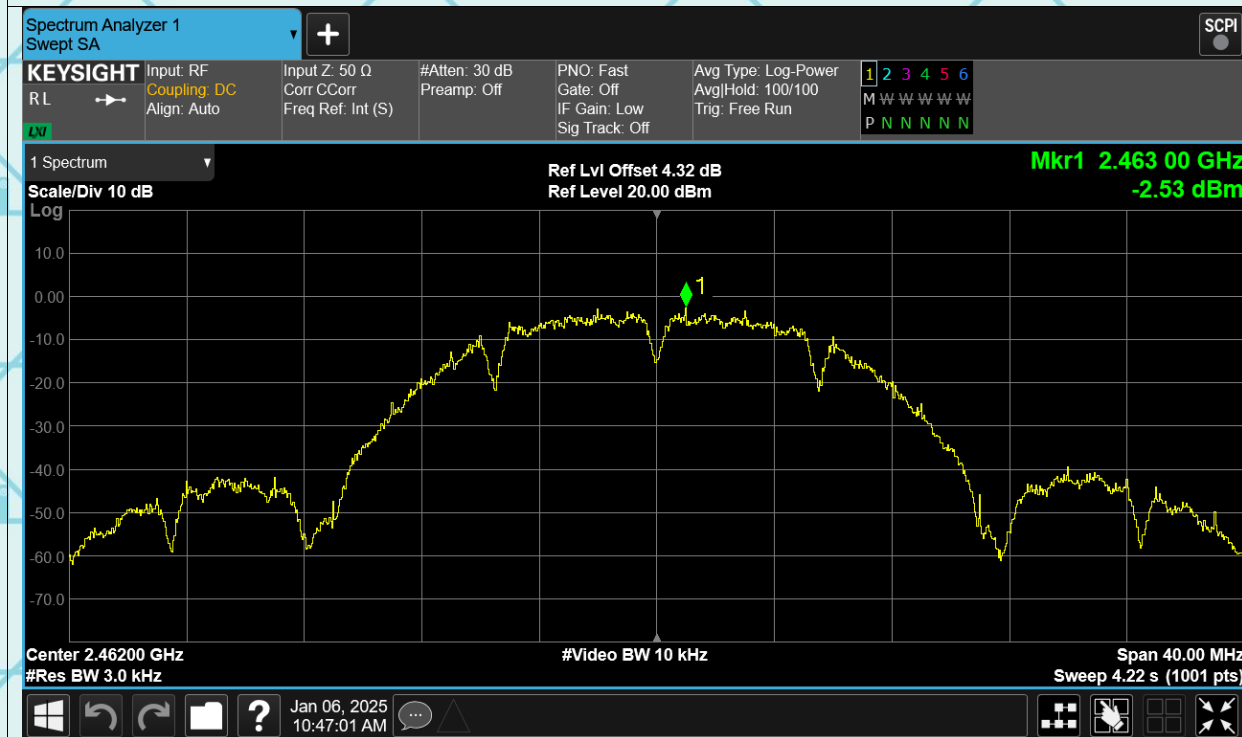


#### PSD b 2437MHz

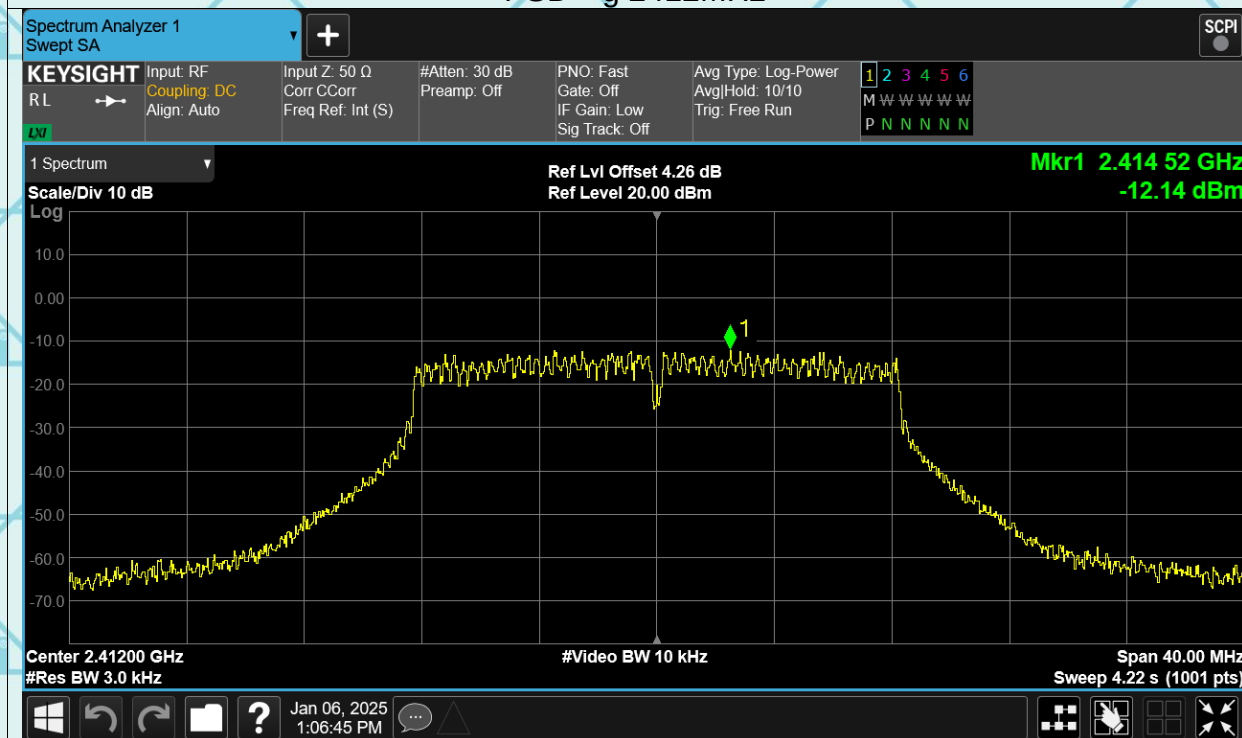


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

## PSD b 2462MHz

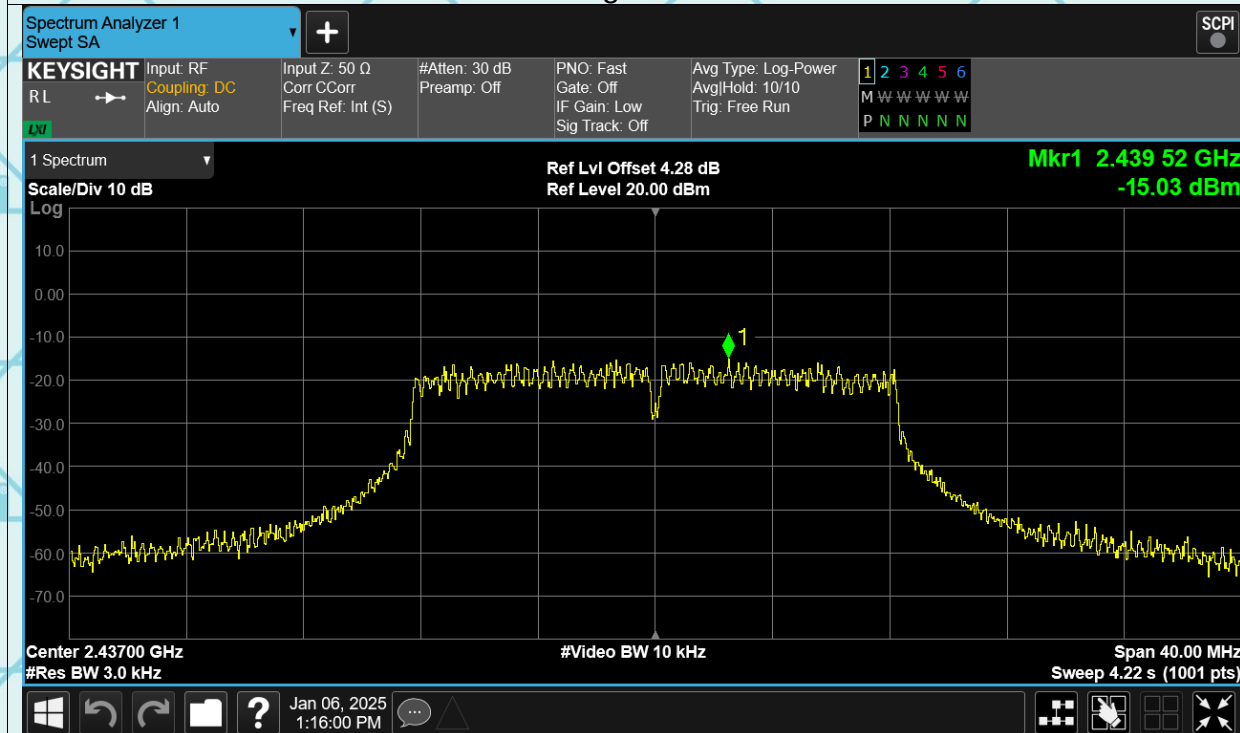


## PSD g 2412MHz

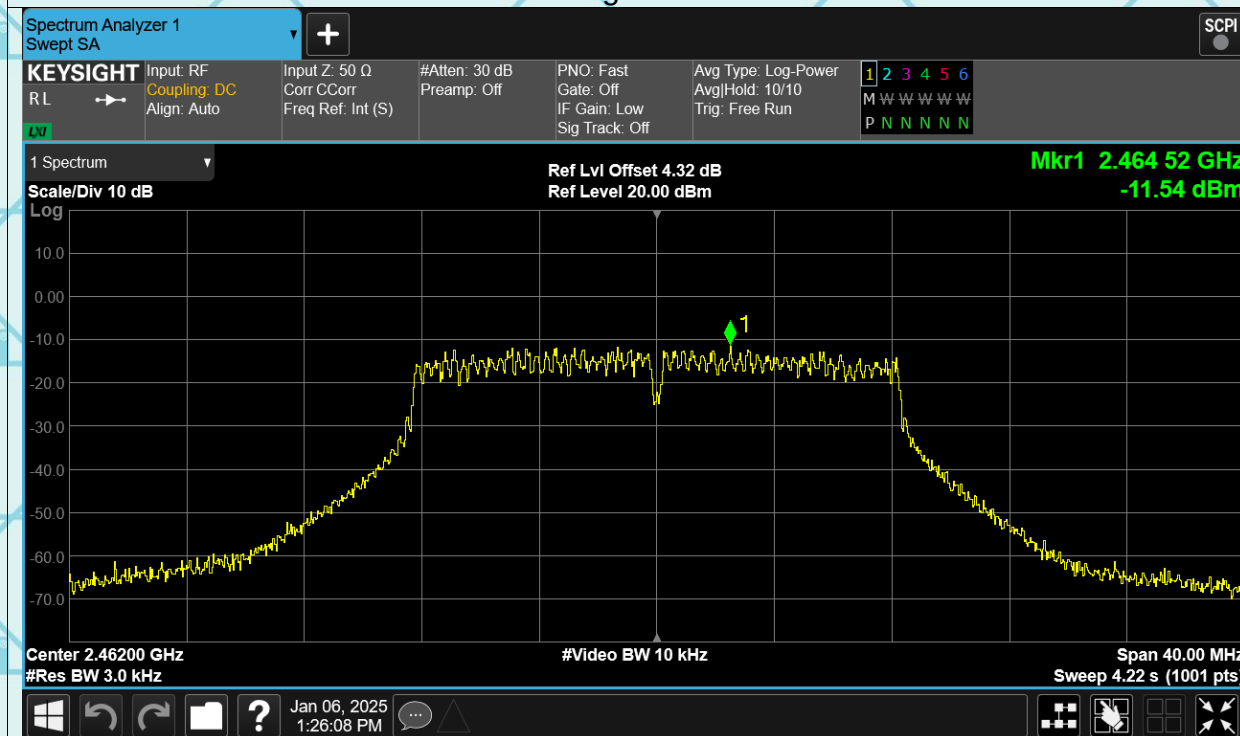


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

### PSD g 2437MHz

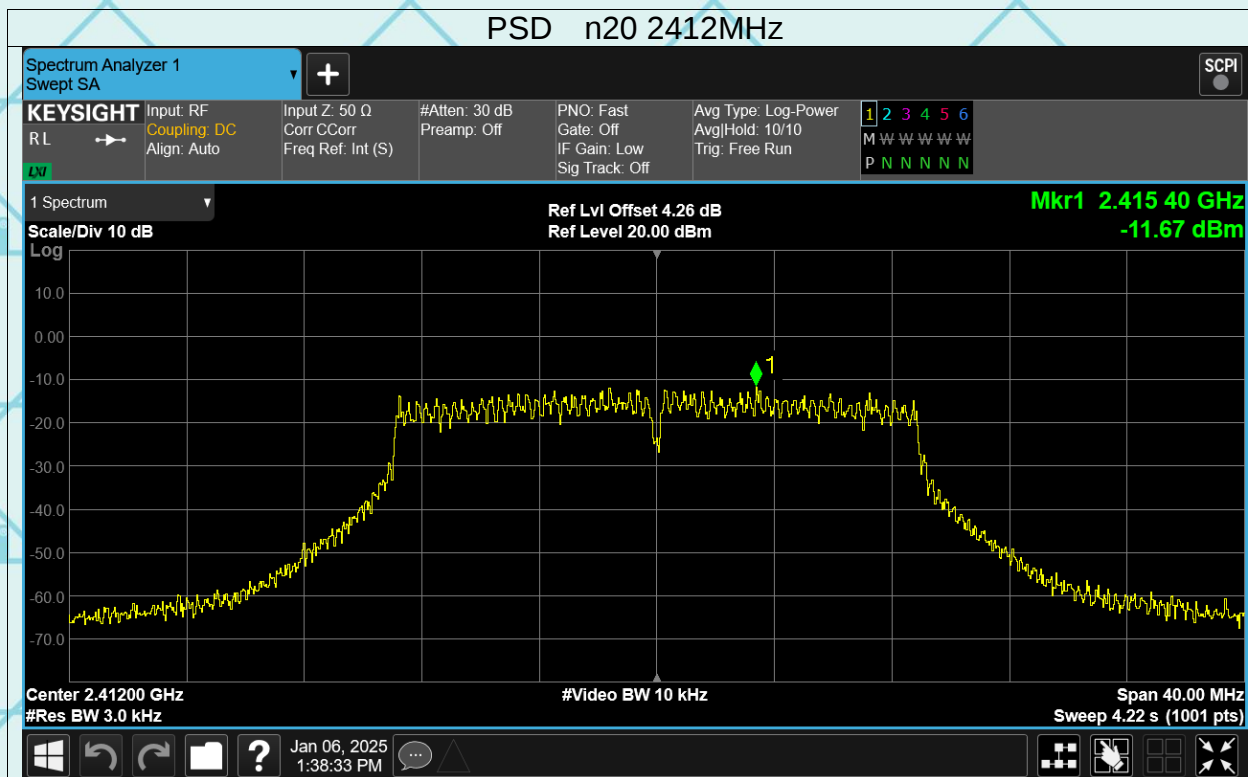


### PSD g 2462MHz

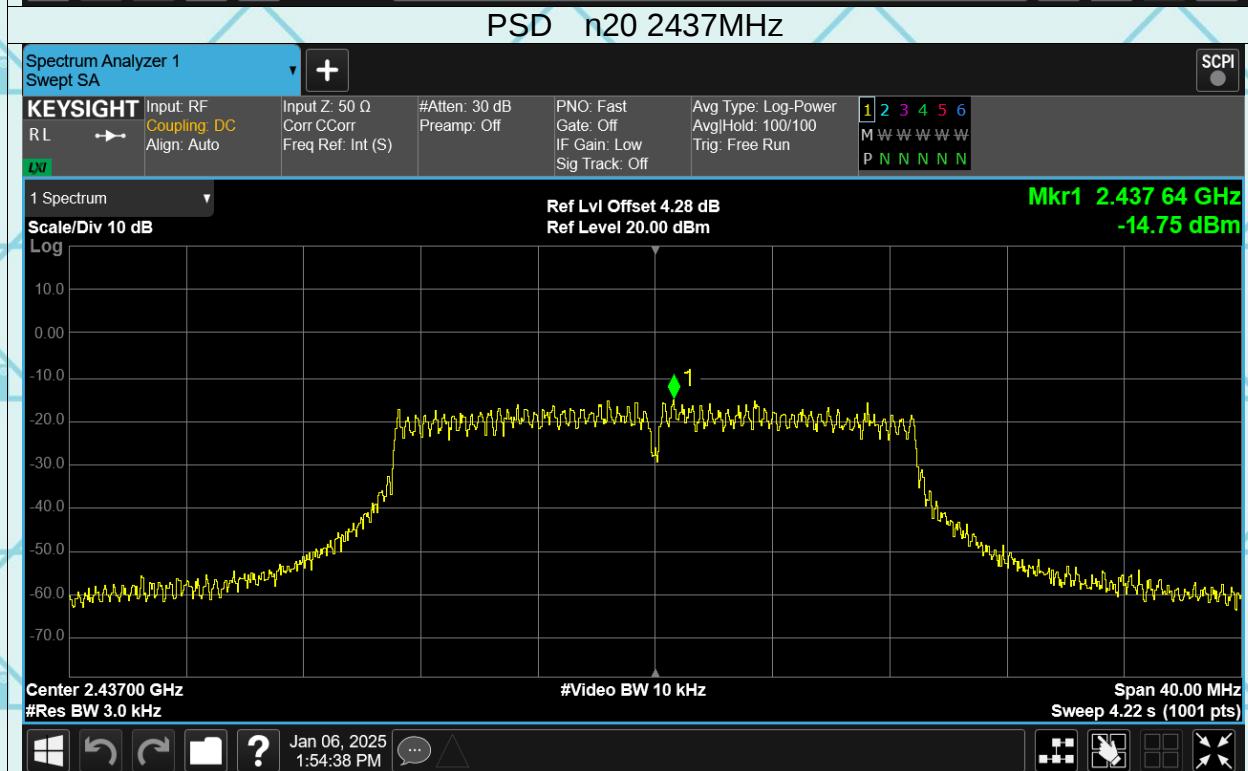


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

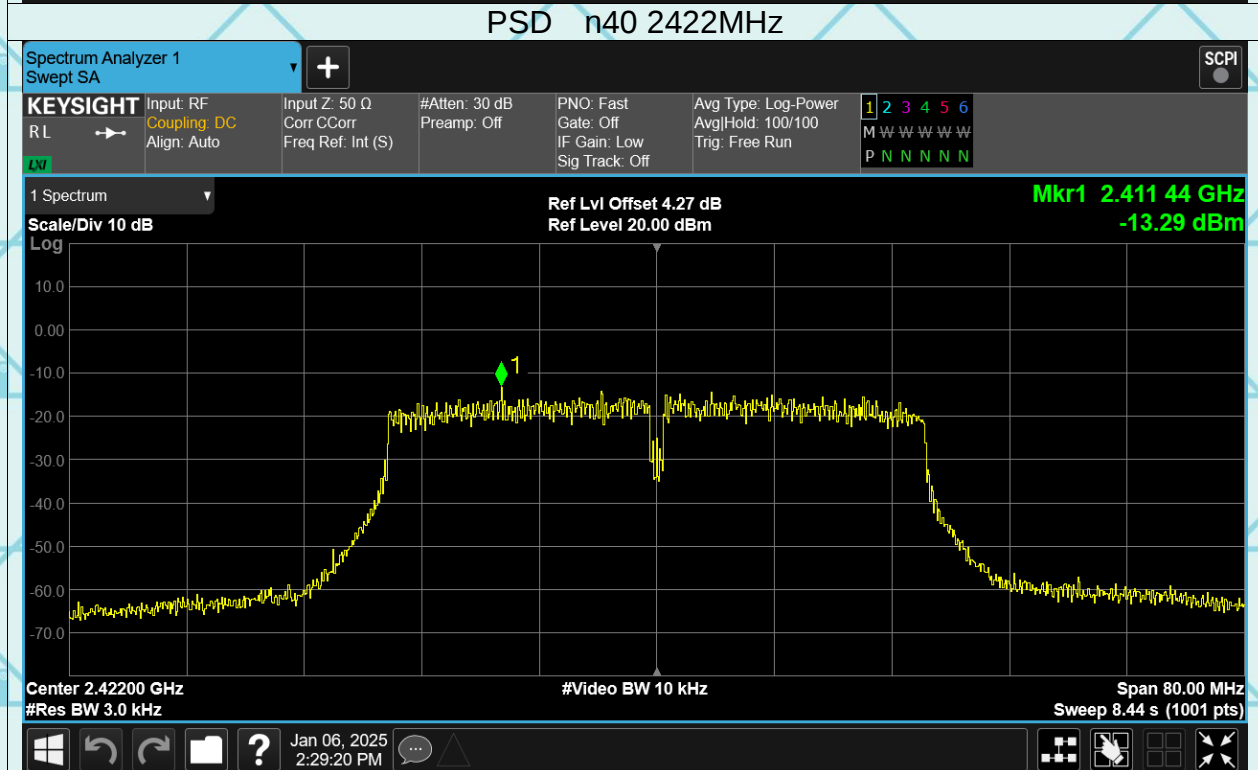
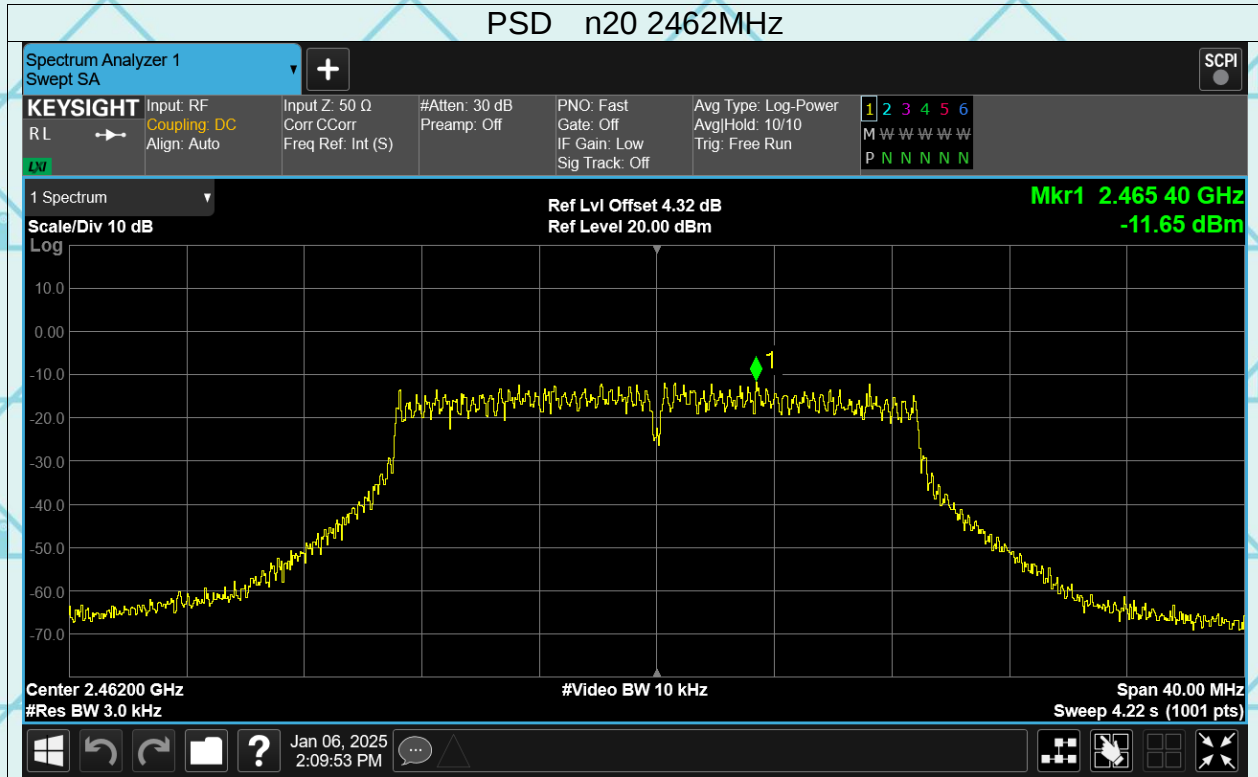
## PSD n20 2412MHz



## PSD n20 2437MHz

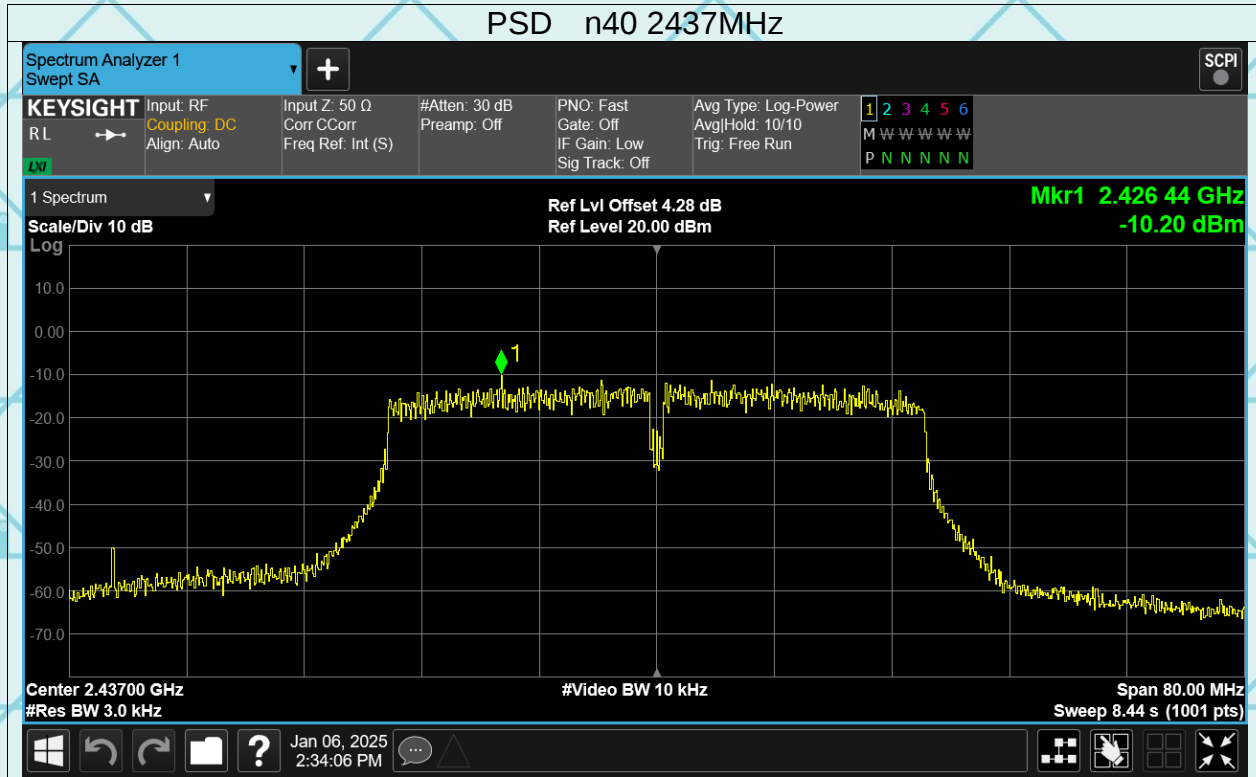


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

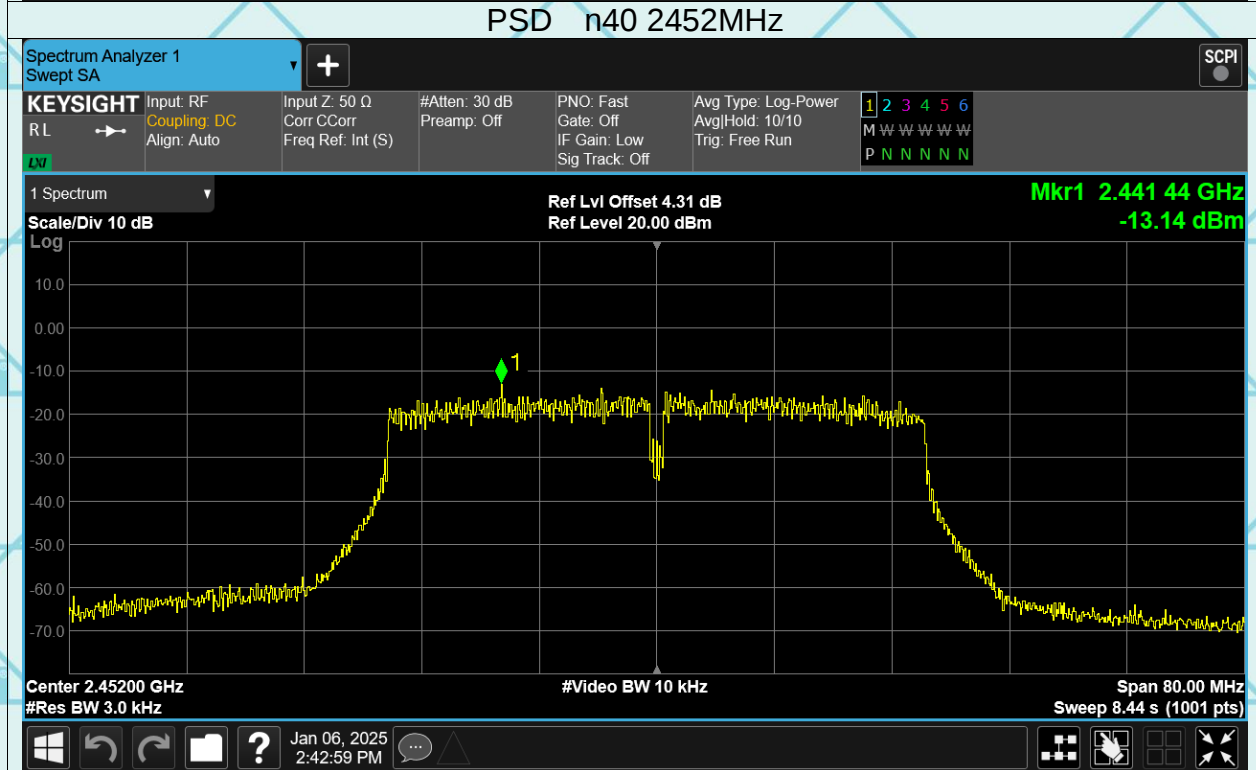


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

### PSD n40 2437MHz



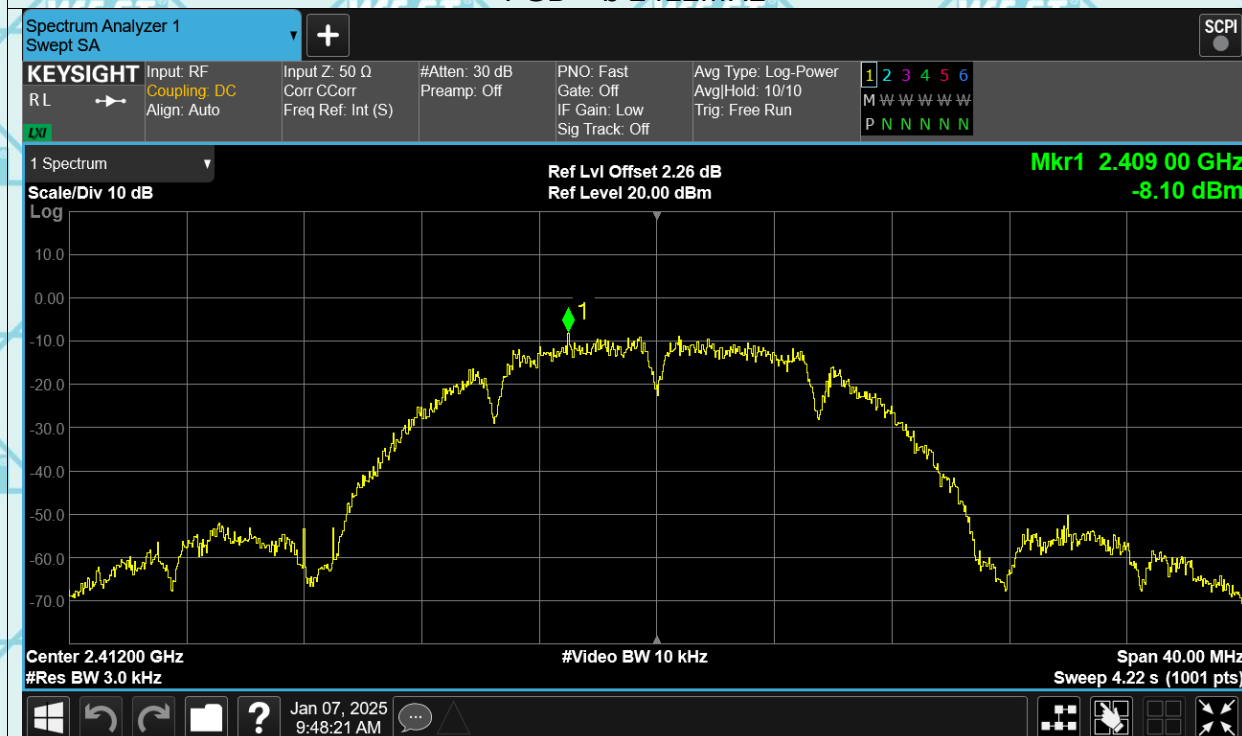
### PSD n40 2452MHz



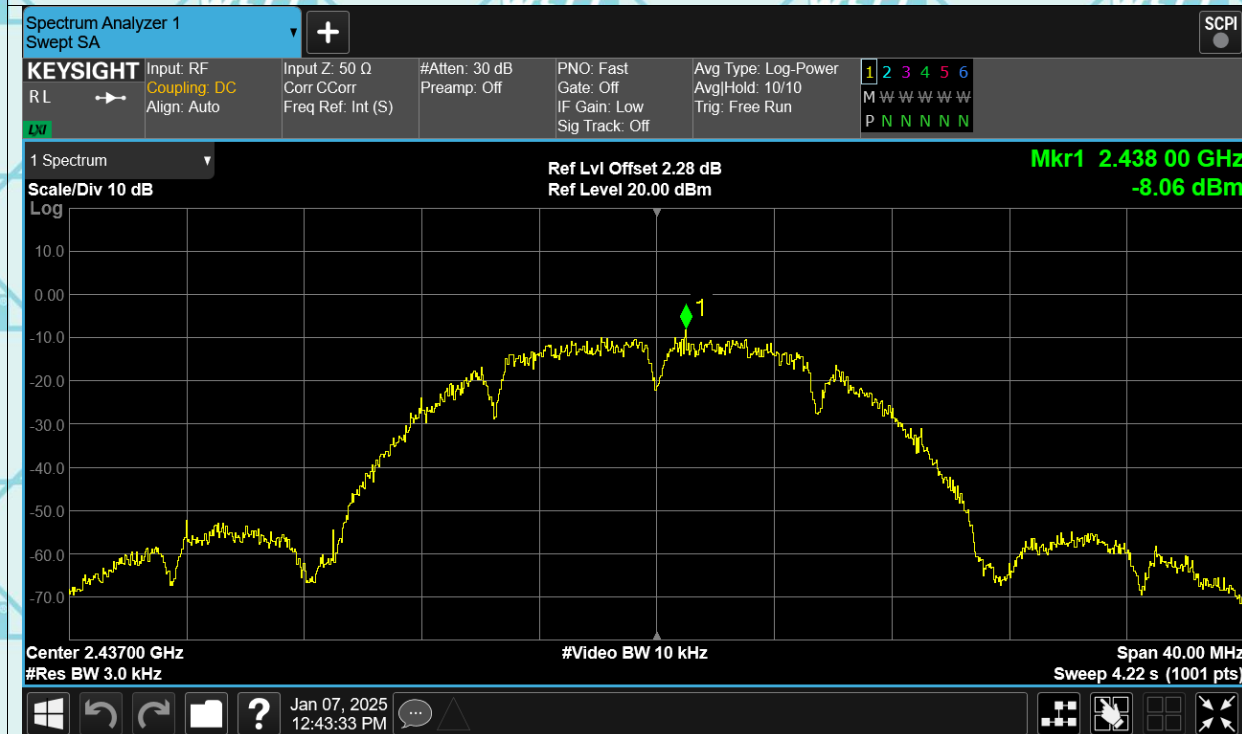
Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1  
ANT2

## Test Graphs

### PSD b 2412MHz

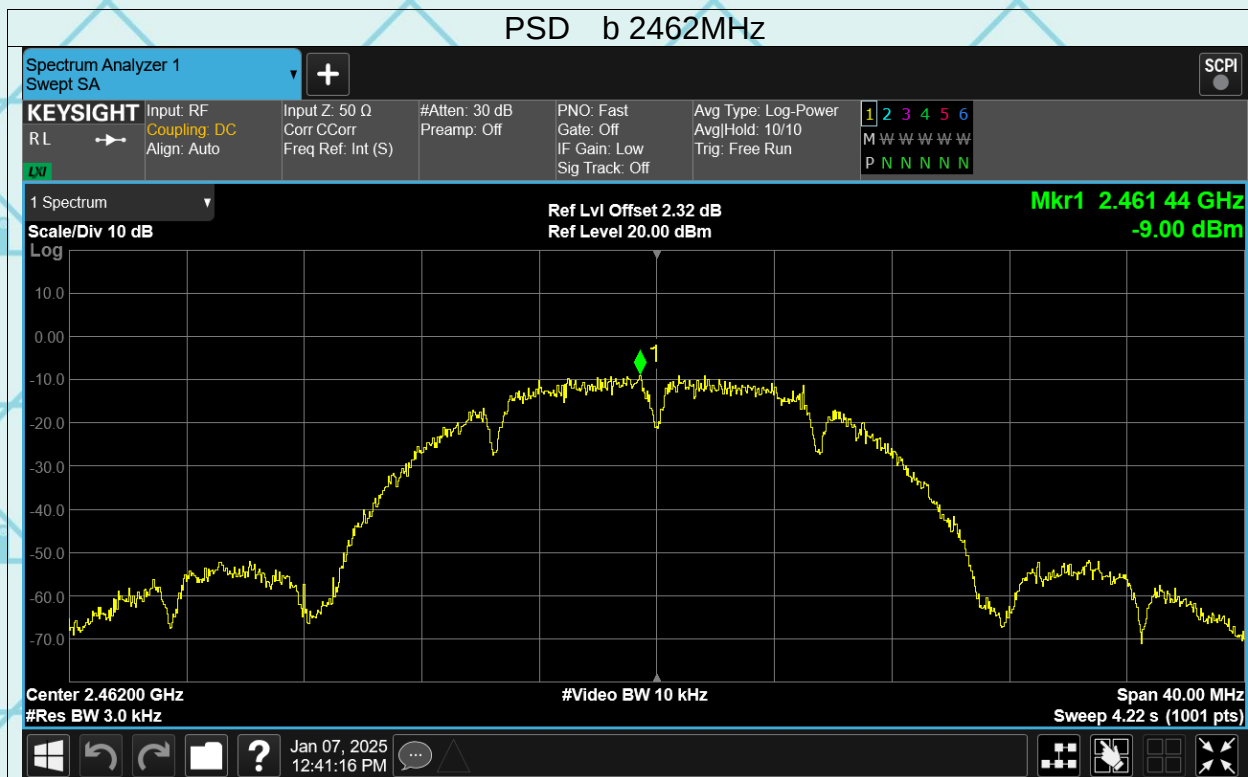


### PSD b 2437MHz

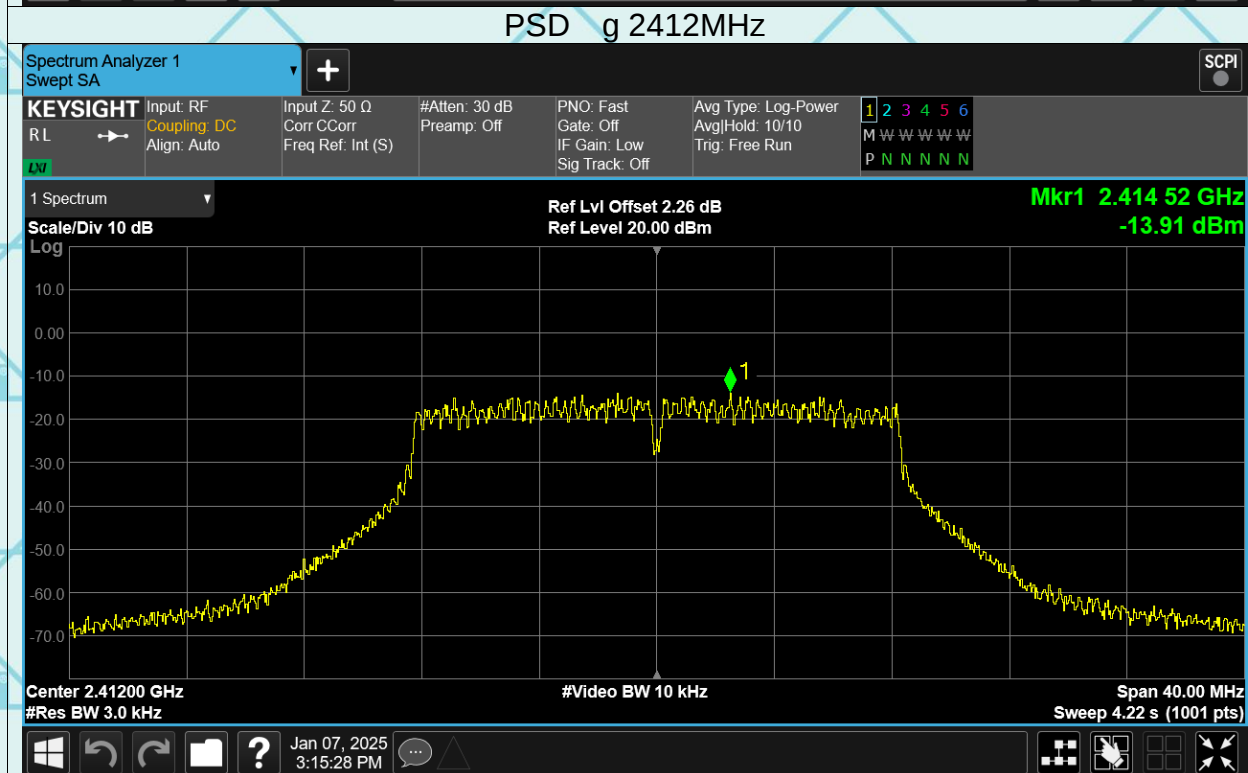


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

## PSD b 2462MHz

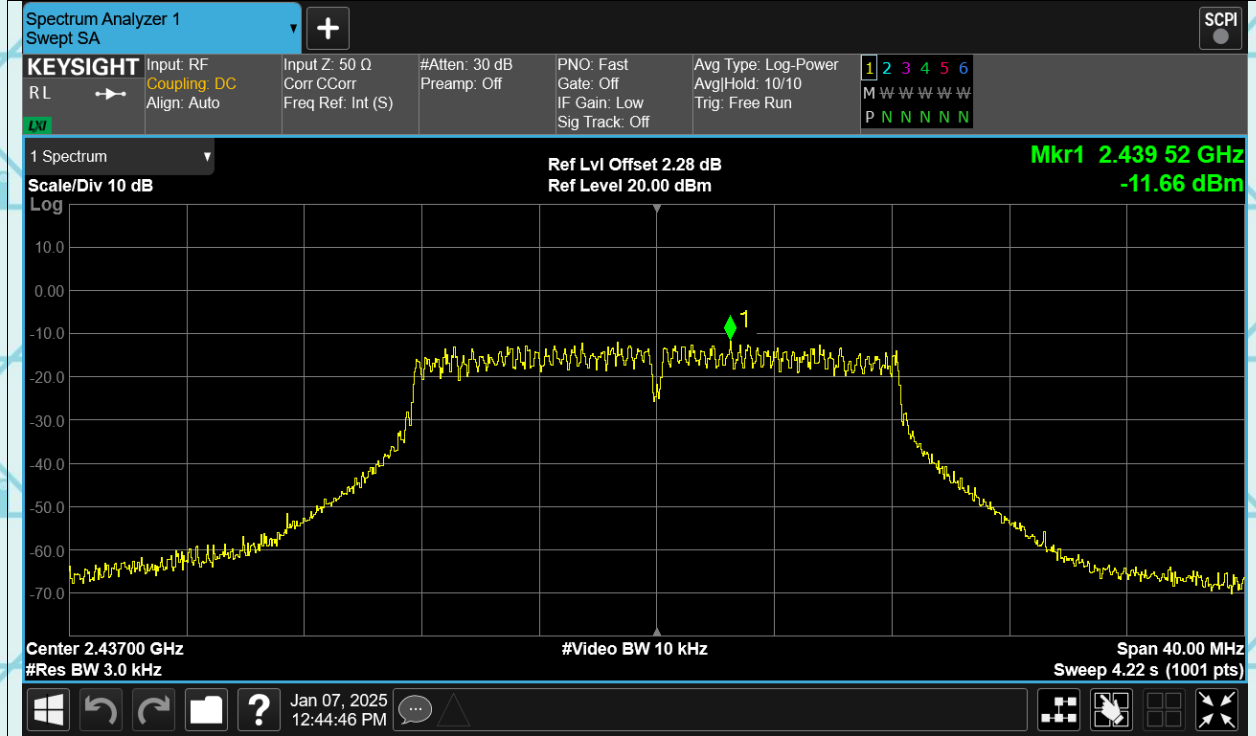


## PSD g 2412MHz

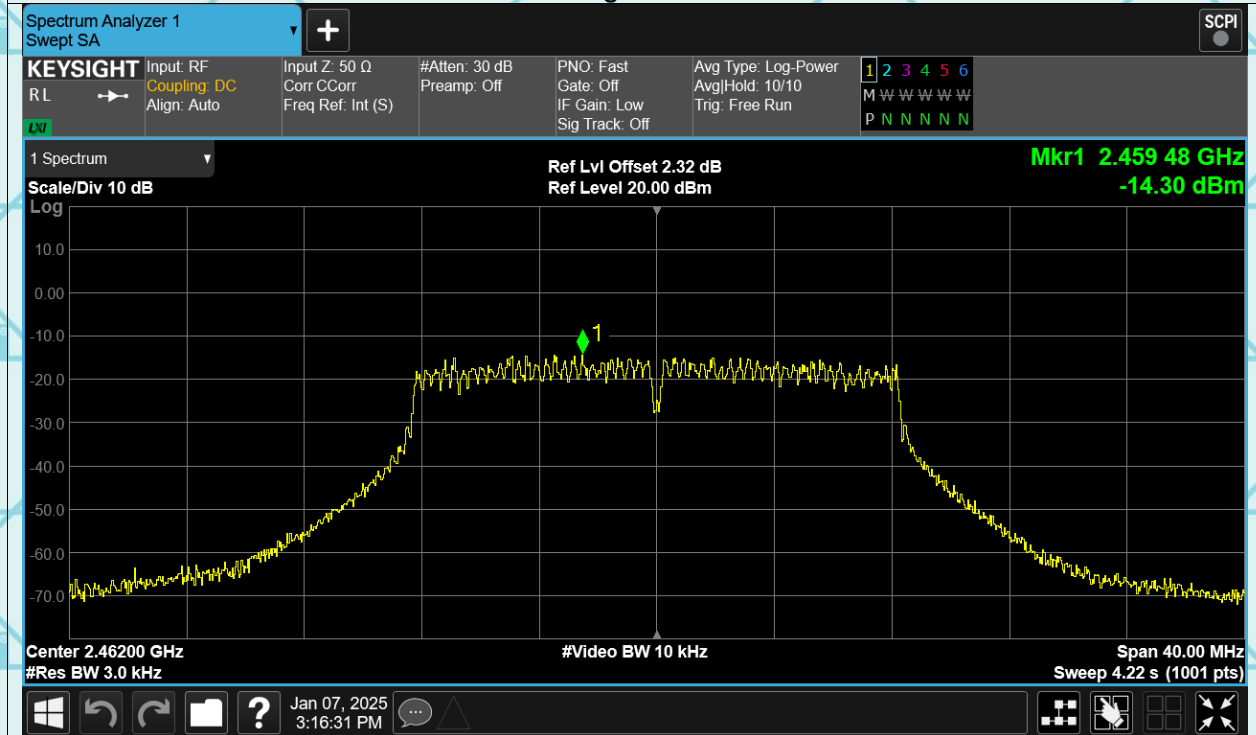


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

## PSD g 2437MHz

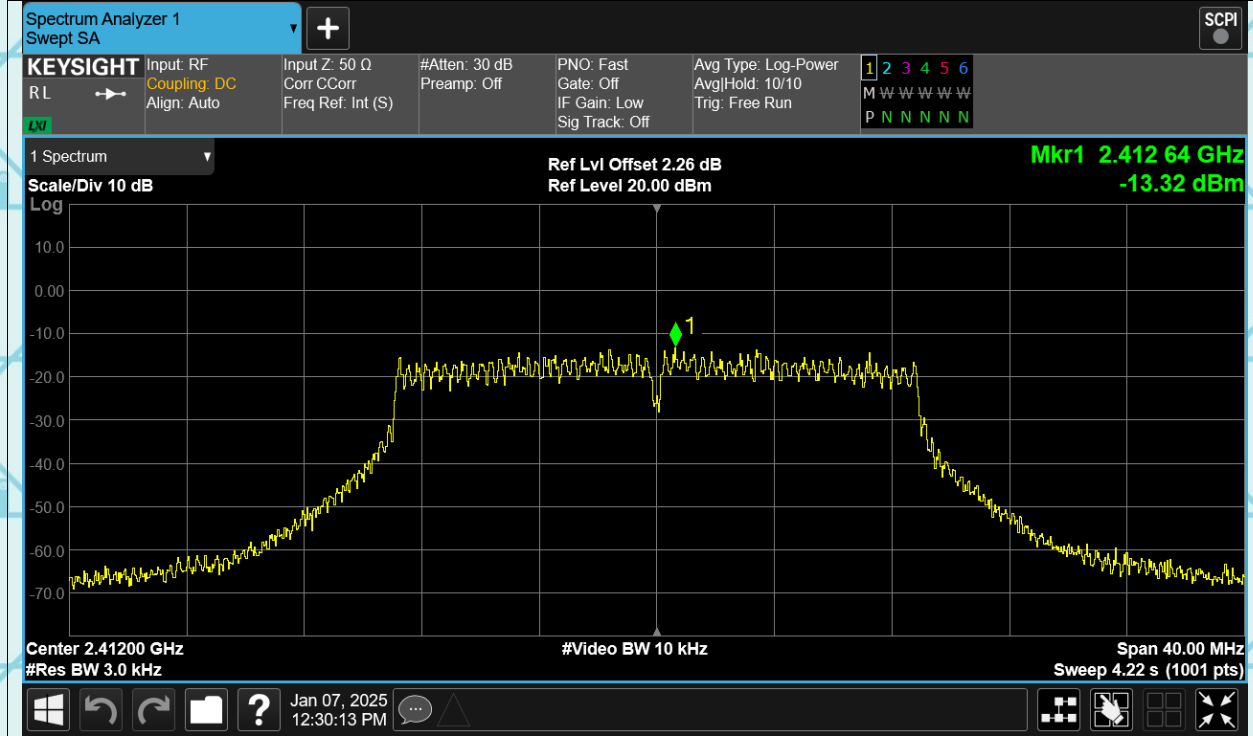


## PSD g 2462MHz

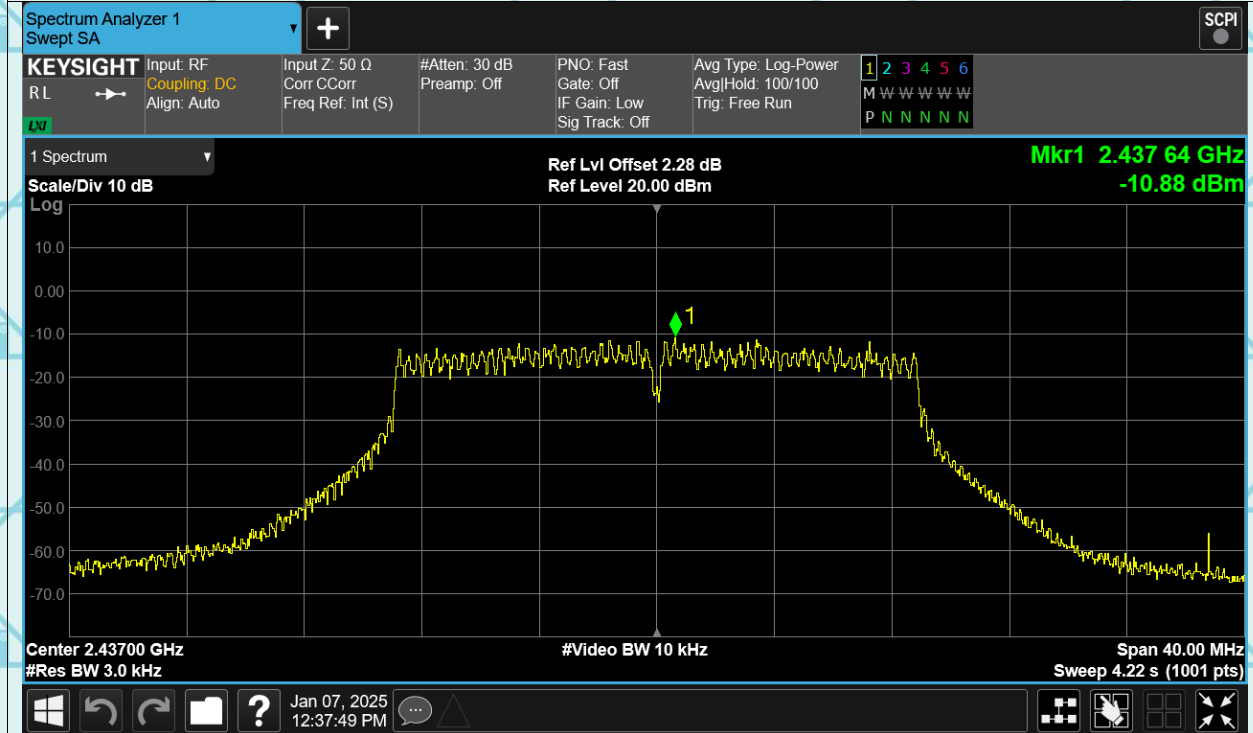


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

## PSD n20 2412MHz

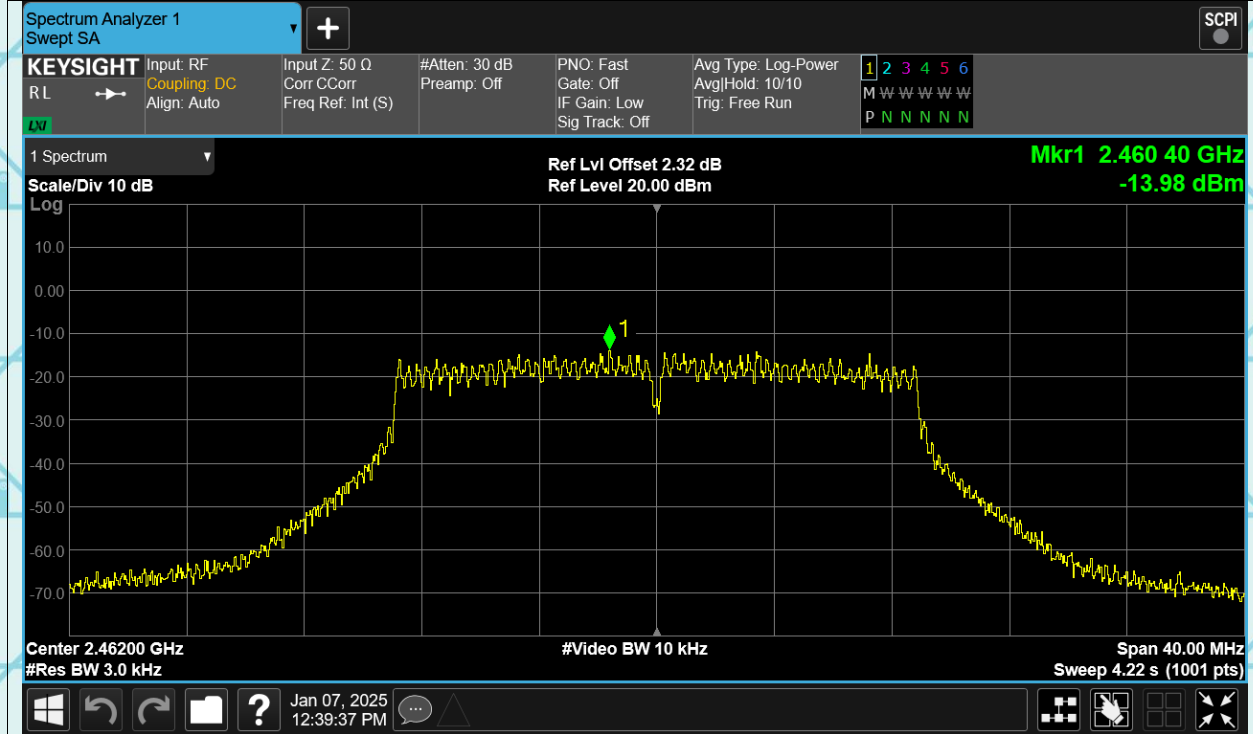


## PSD n20 2437MHz

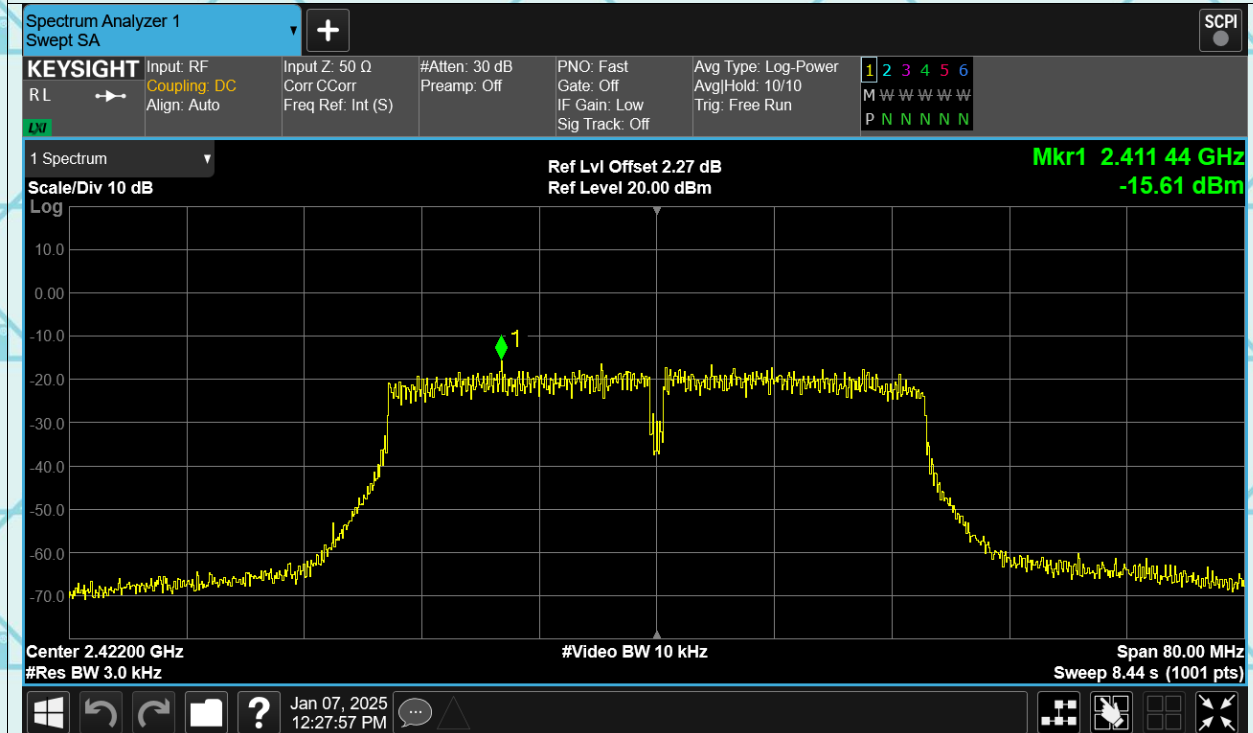


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

### PSD n20 2462MHz

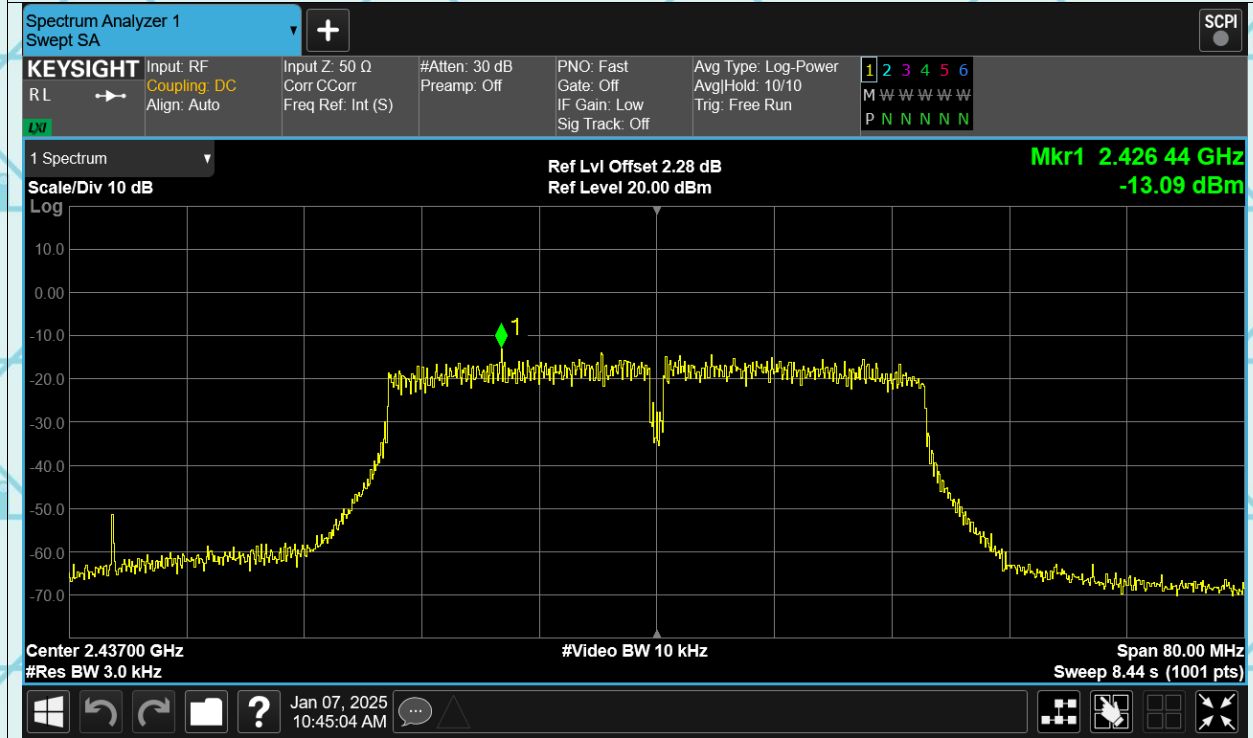


### PSD n40 2422MHz

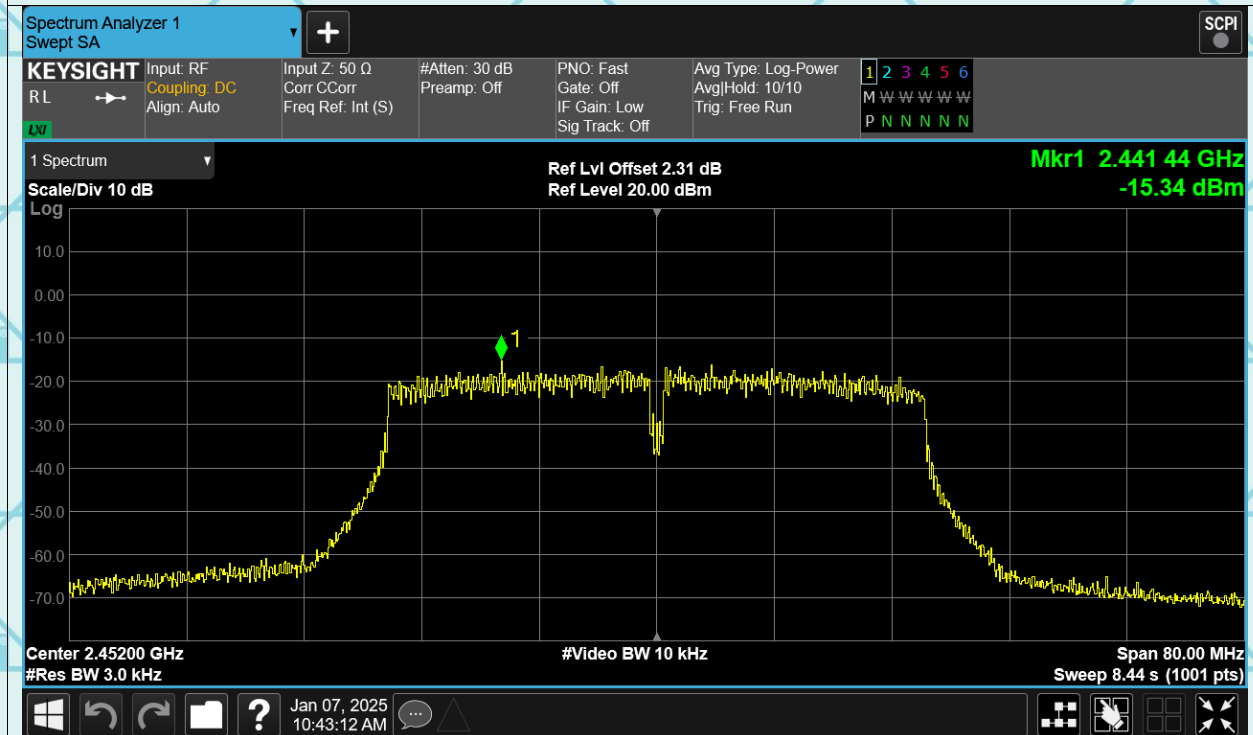


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

### PSD n40 2437MHz

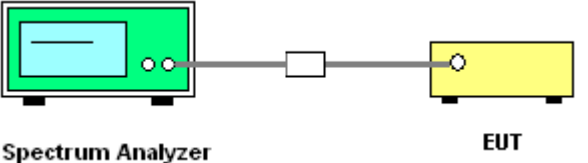


### PSD n40 2452MHz



## 6.5. Conducted Band Edge and Spurious Emission Measurement

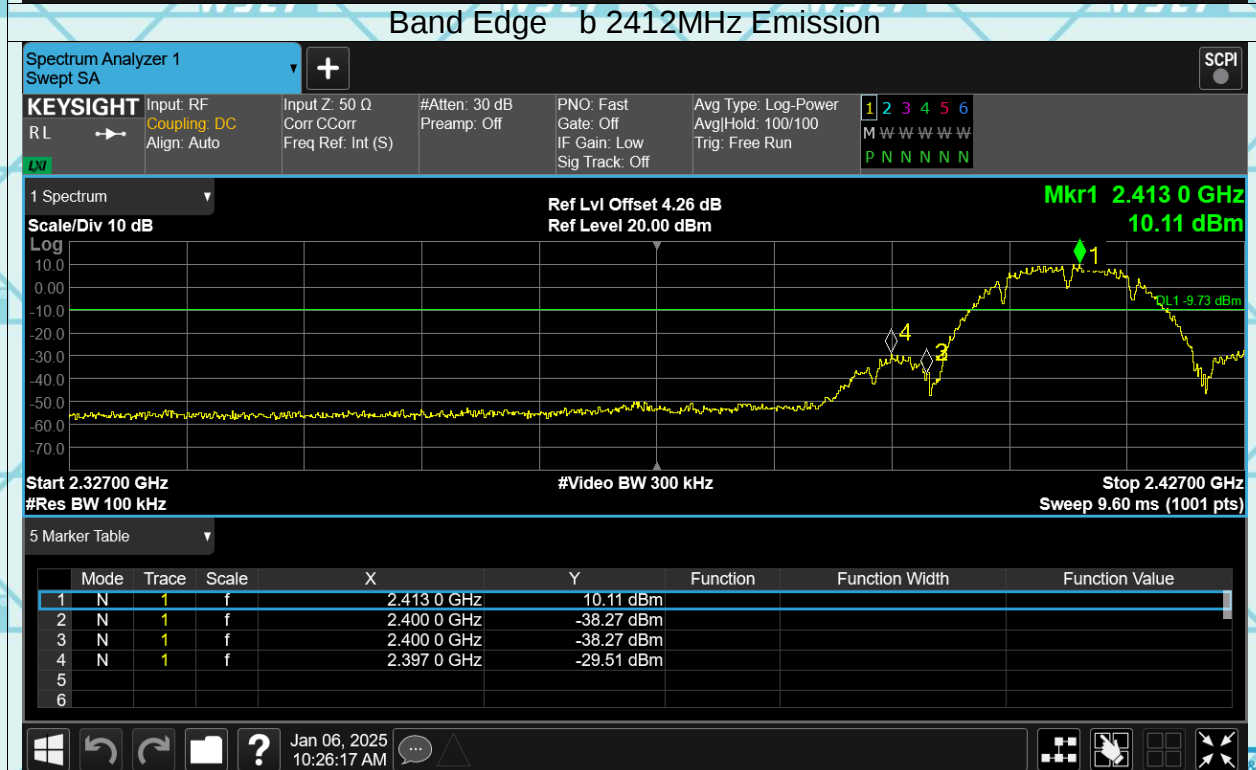
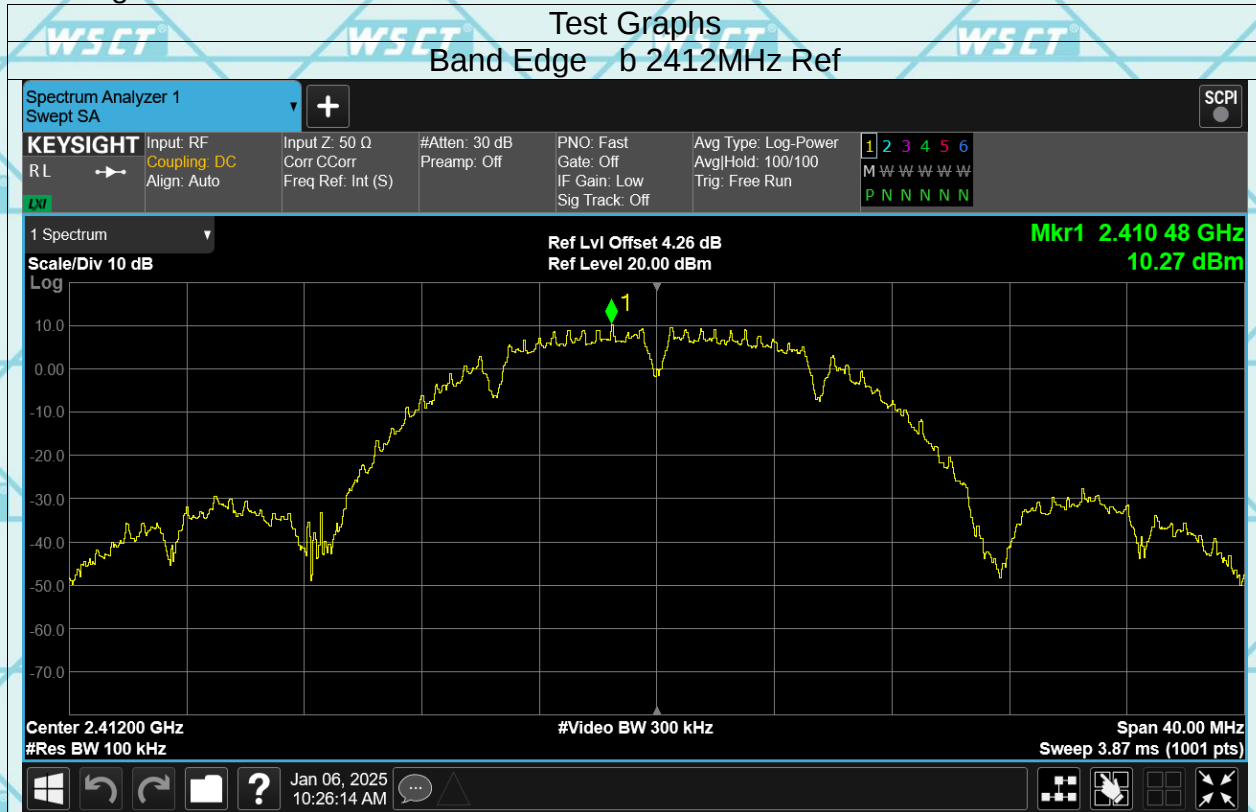
### 6.5.1 Test Specification

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b> | FCC Part15 C Section 15.247 (d)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Test Method:</b>      | KDB558074                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Limit:</b>            | In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Test Setup:</b>       |  <p>The diagram illustrates the test setup. On the left is a green box labeled 'Spectrum Analyzer'. A cable connects it to a small white box labeled 'Attenuator'. Another cable connects the attenuator to a yellow box labeled 'EUT' (Equipment Under Test).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Test Mode:</b>        | Transmitting mode with modulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Test Procedure:</b>   | <ol style="list-style-type: none"> <li>1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v04.</li> <li>2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.</li> <li>3. Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>4. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).</li> <li>5. Measure and record the results in the test report.</li> <li>6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.</li> </ol> |
| <b>Test Result:</b>      | PASS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

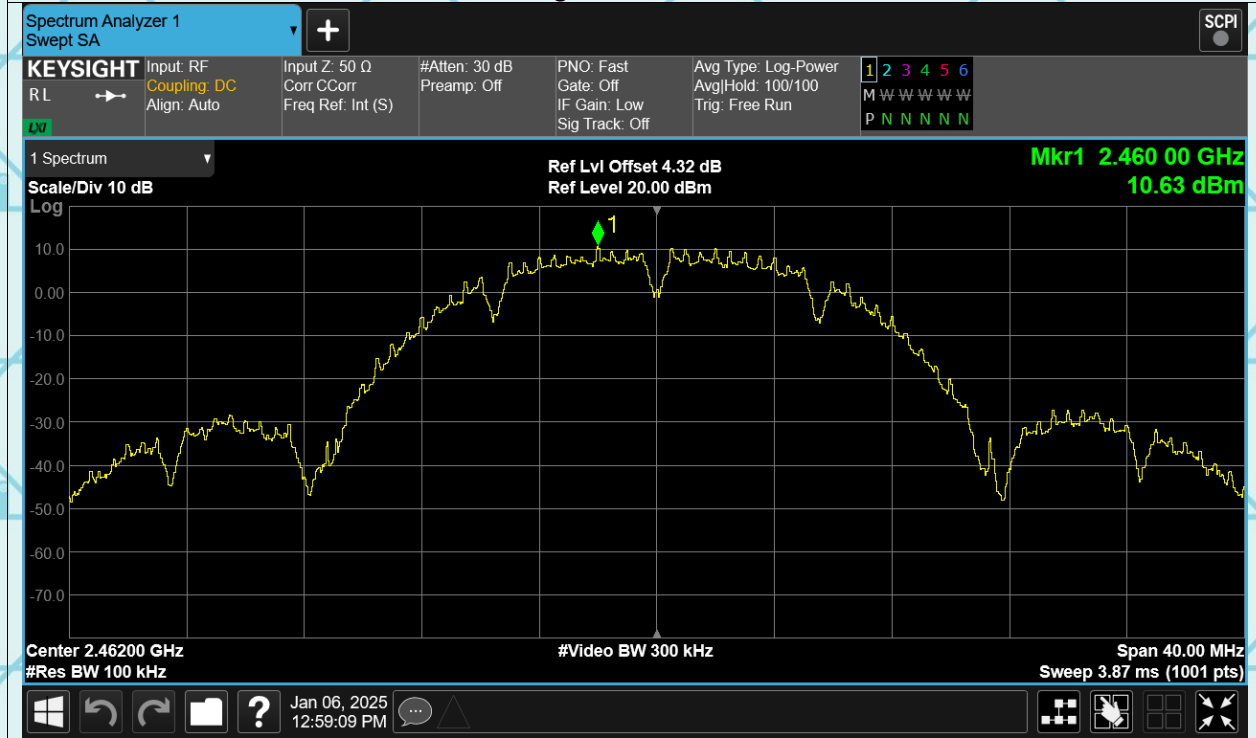
## Test Data

### Band Edge

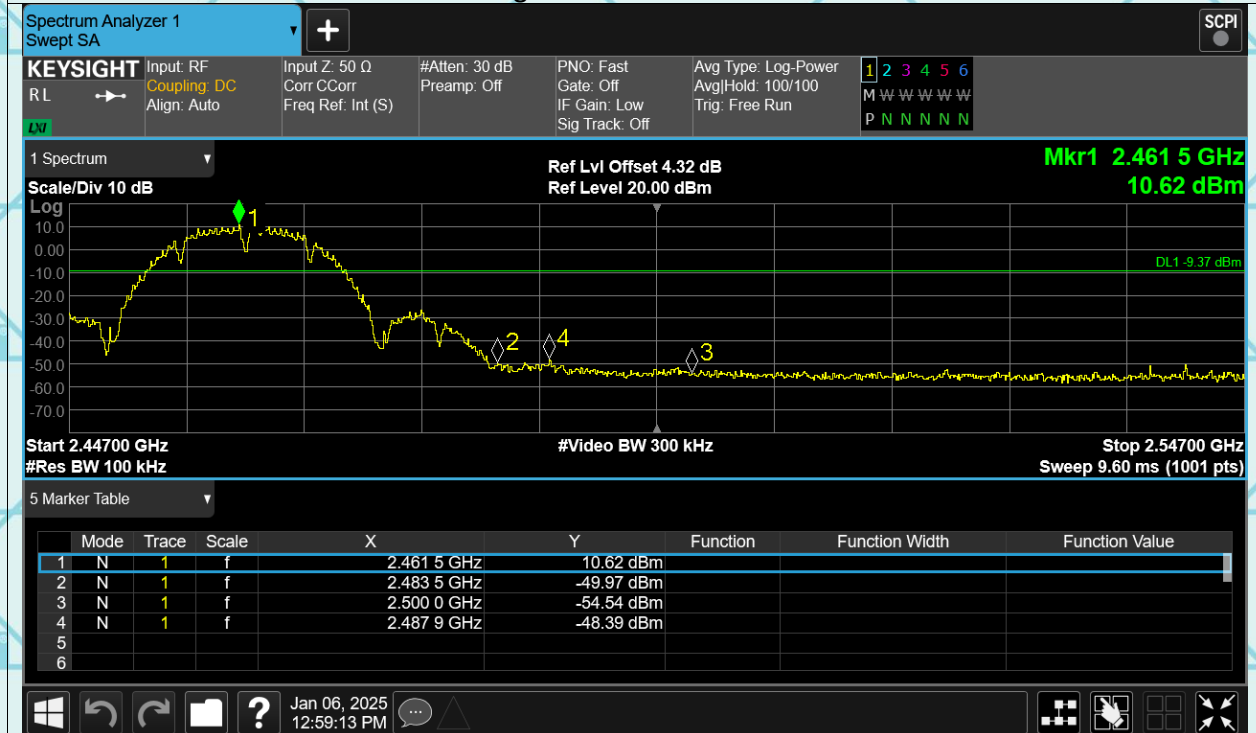


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

### Band Edge b 2462MHz Ref

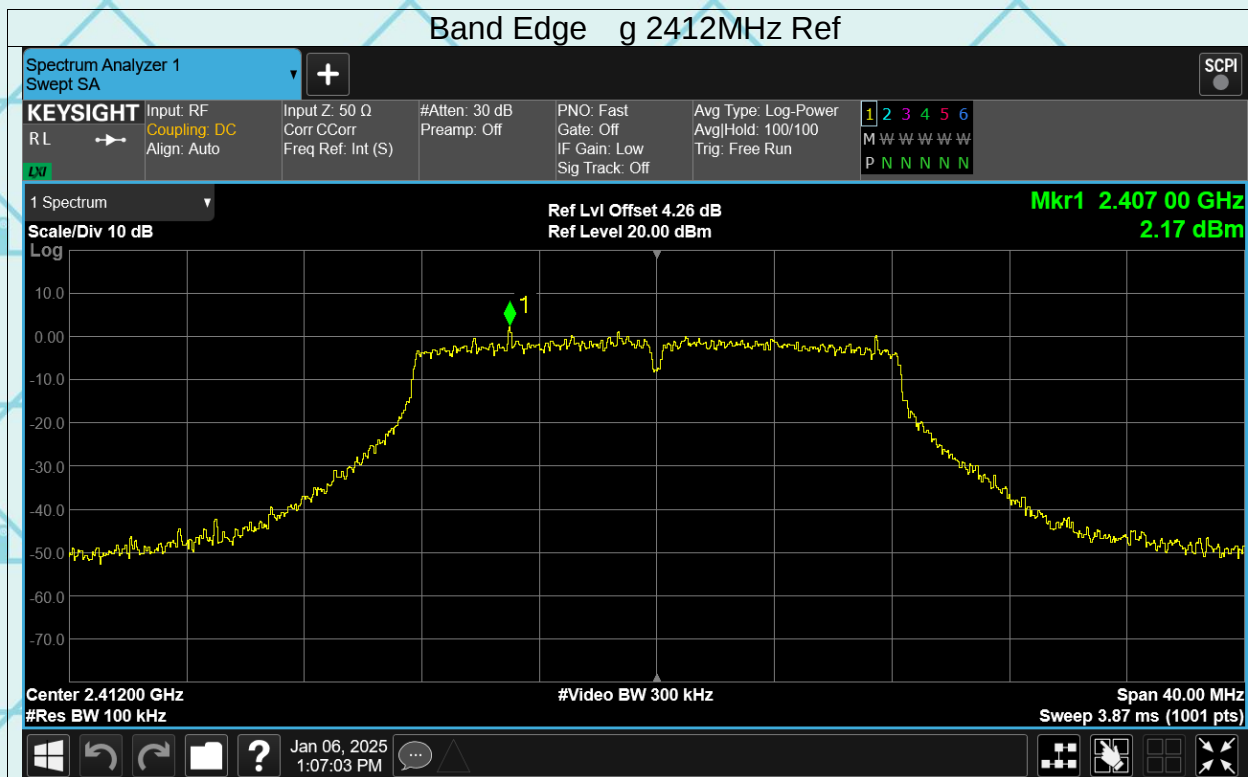


### Band Edge b 2462MHz Emission

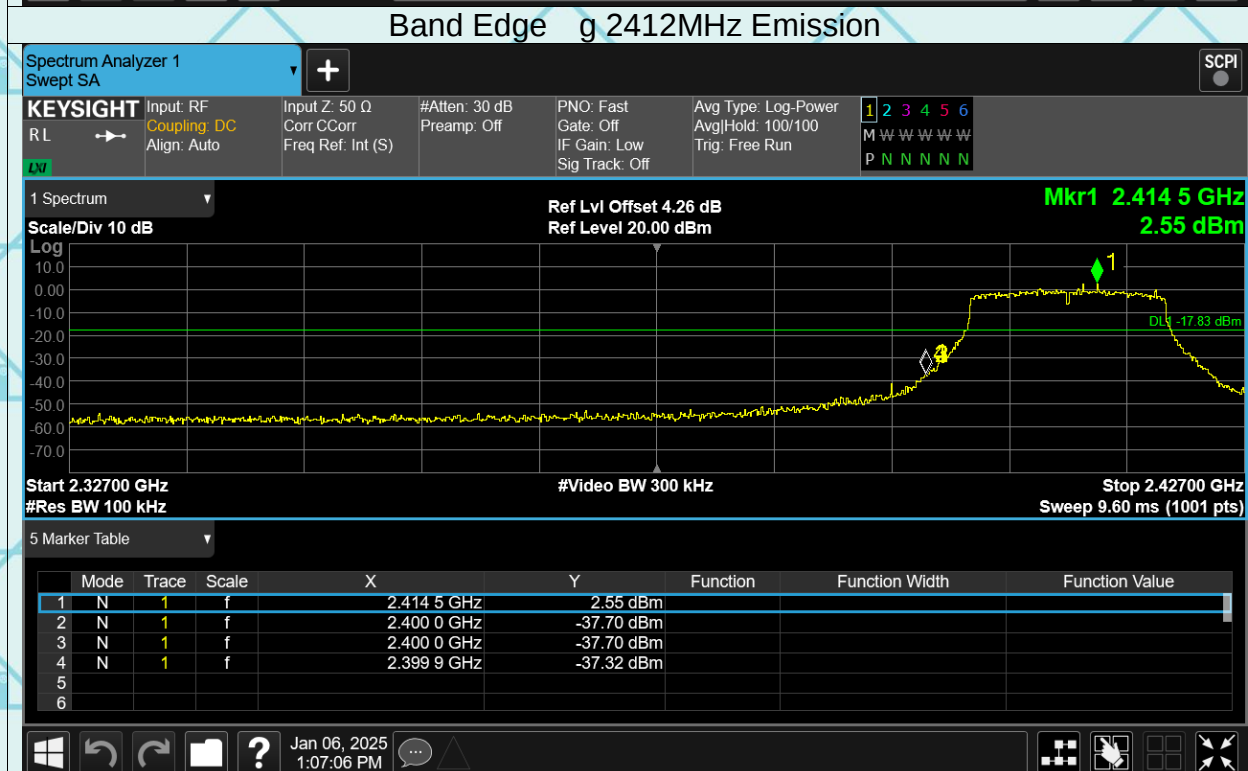


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

### Band Edge g 2412MHz Ref

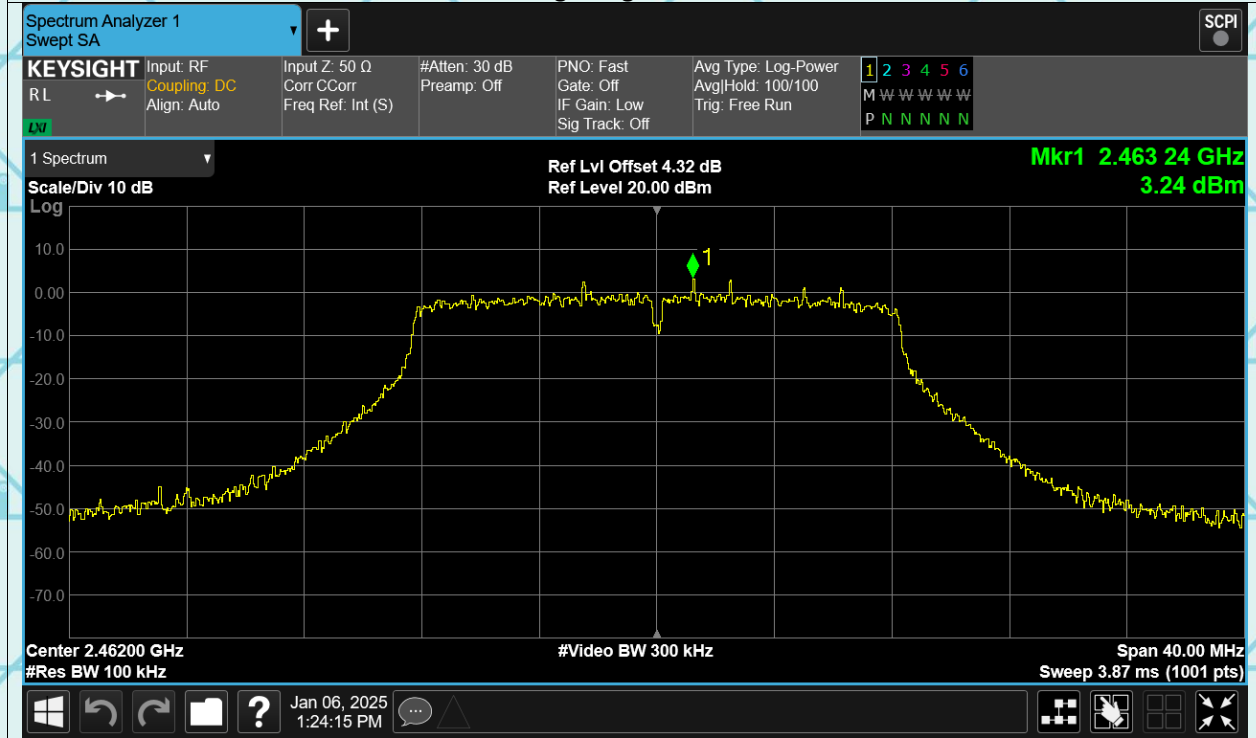


### Band Edge g 2412MHz Emission

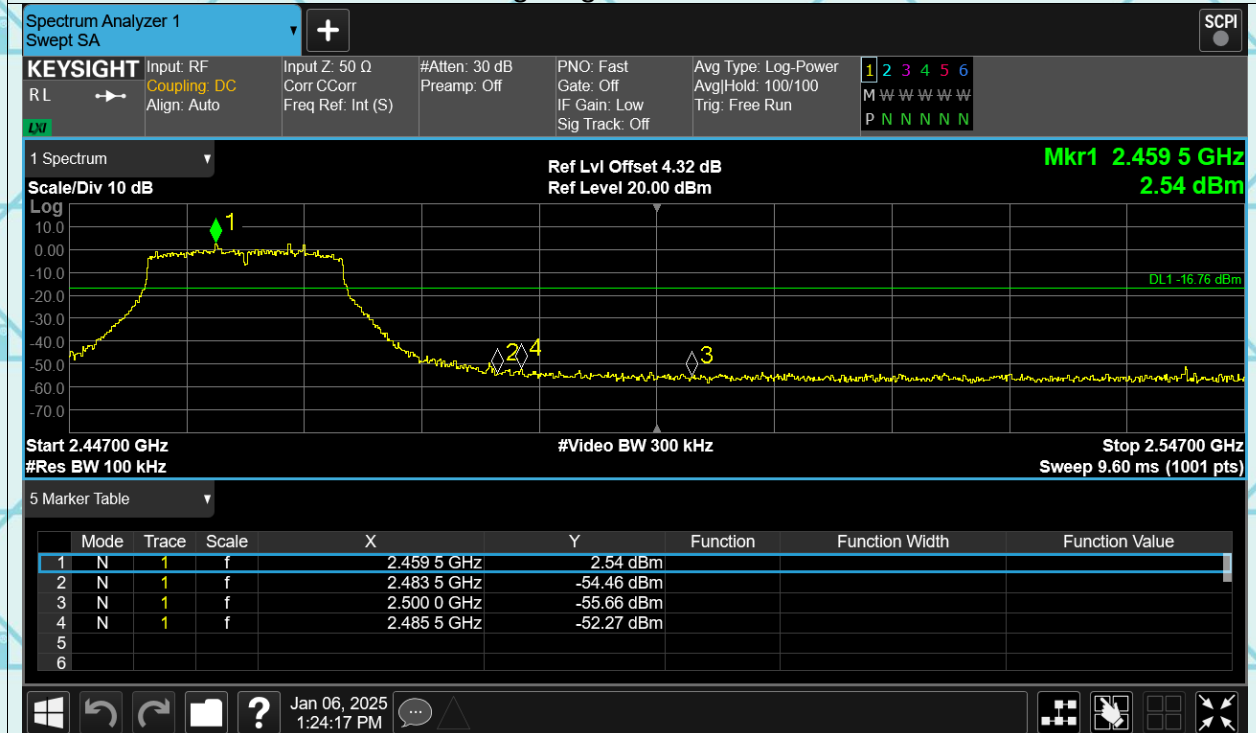


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

### Band Edge g 2462MHz Ref

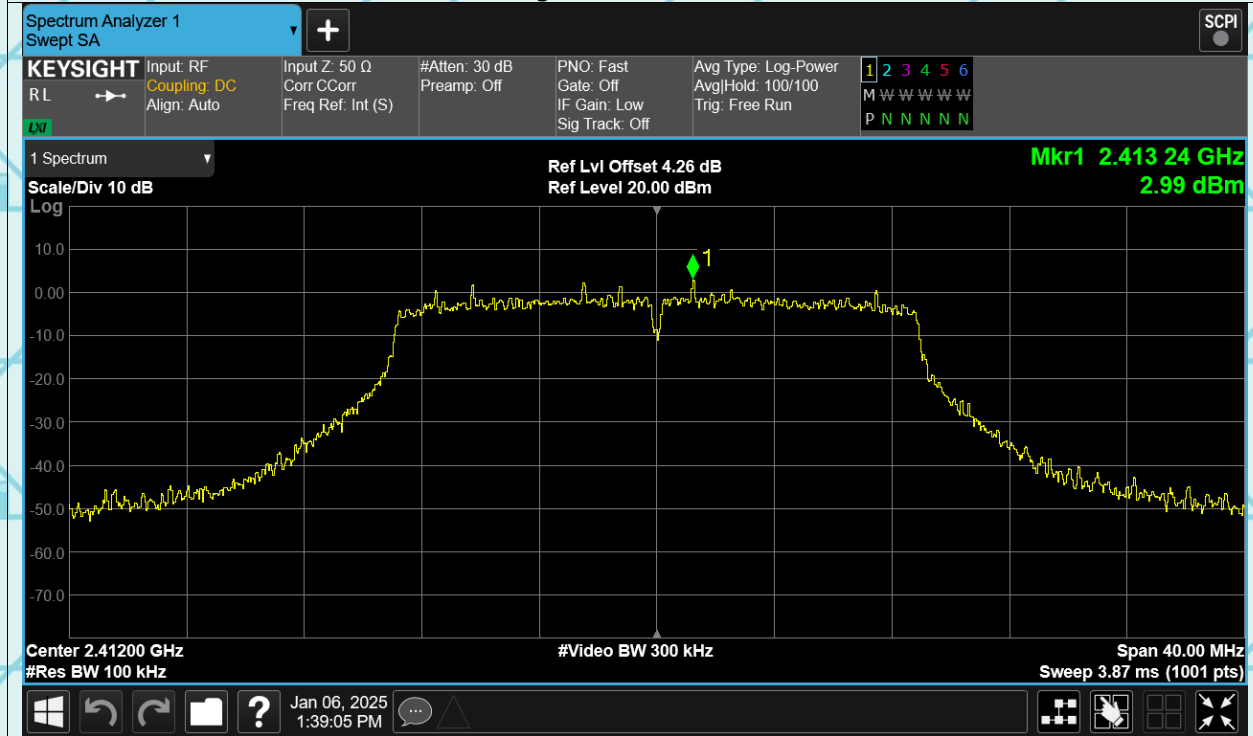


### Band Edge g 2462MHz Emission

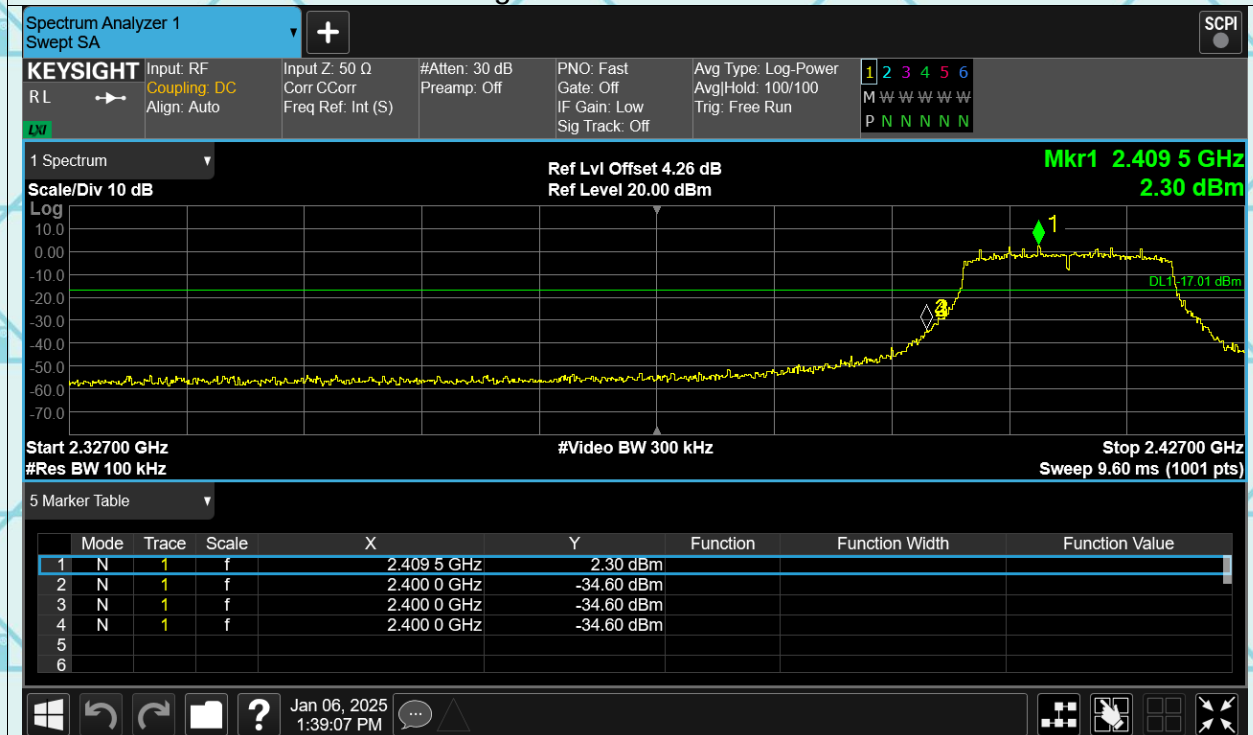


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

### Band Edge n20 2412MHz Ref

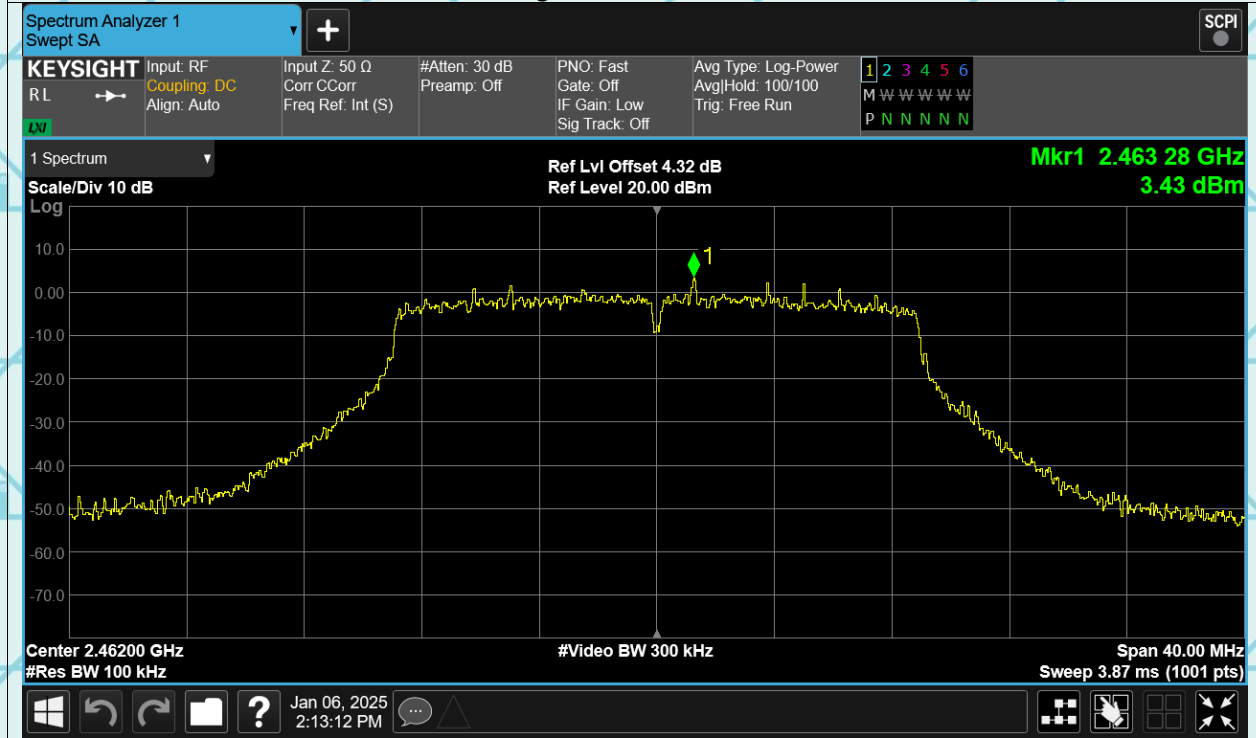


### Band Edge n20 2412MHz Emission

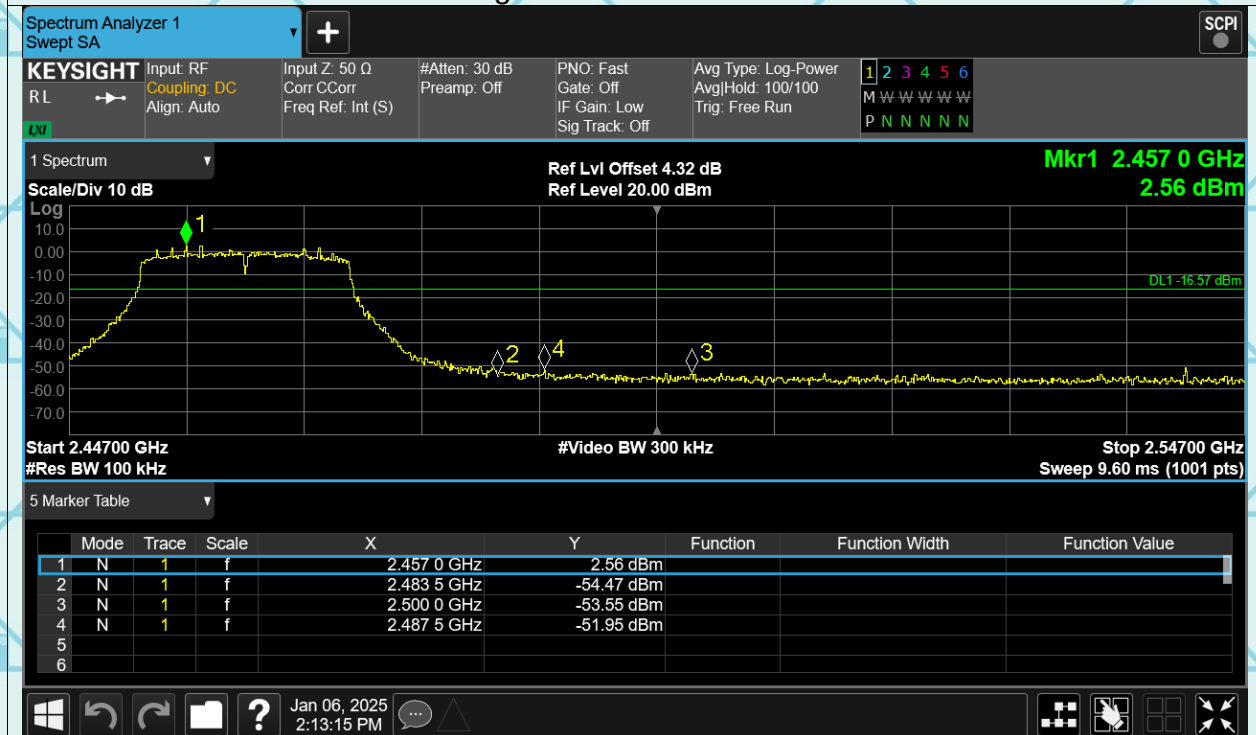


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

### Band Edge n20 2462MHz Ref

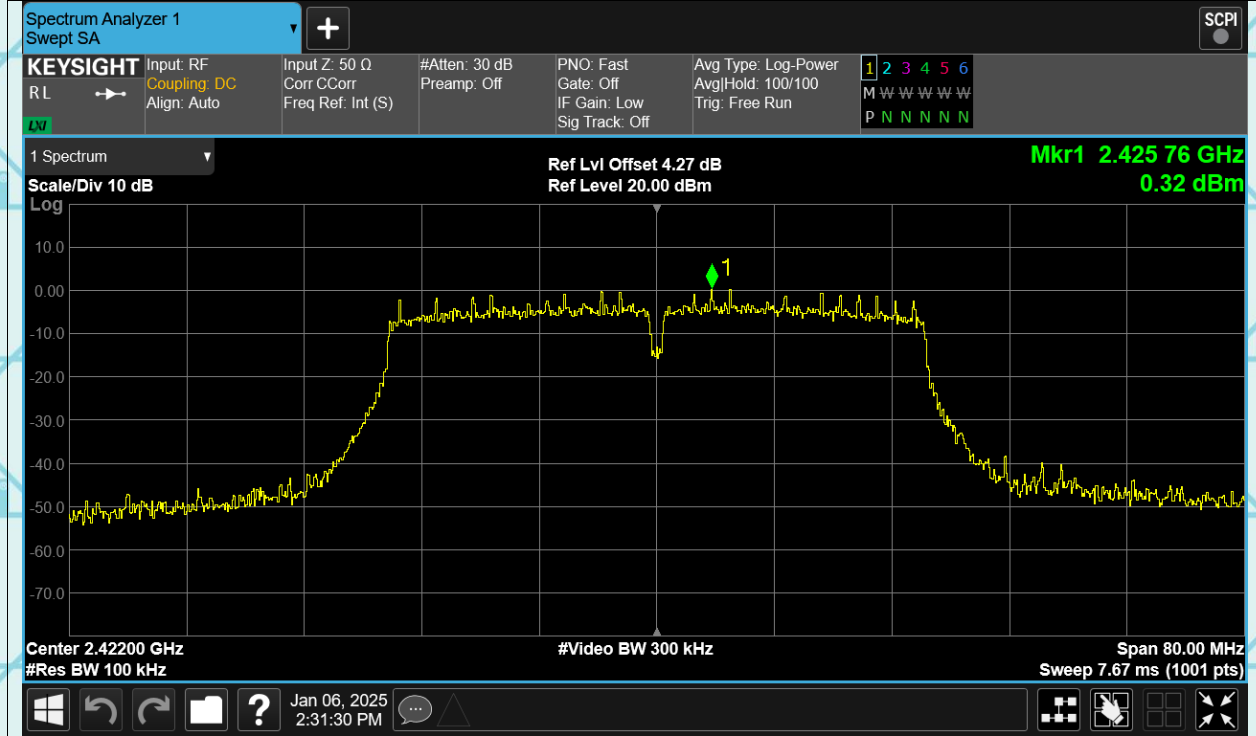


### Band Edge n20 2462MHz Emission

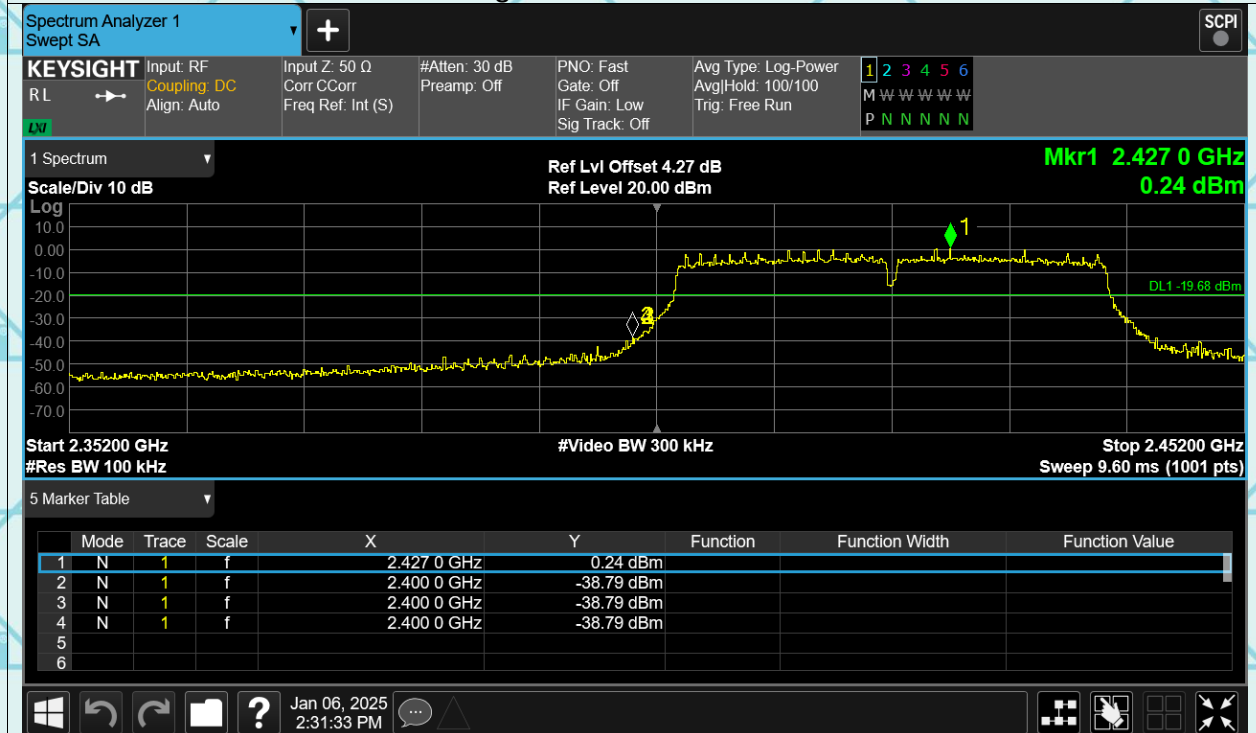


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

### Band Edge n40 2422MHz Ref

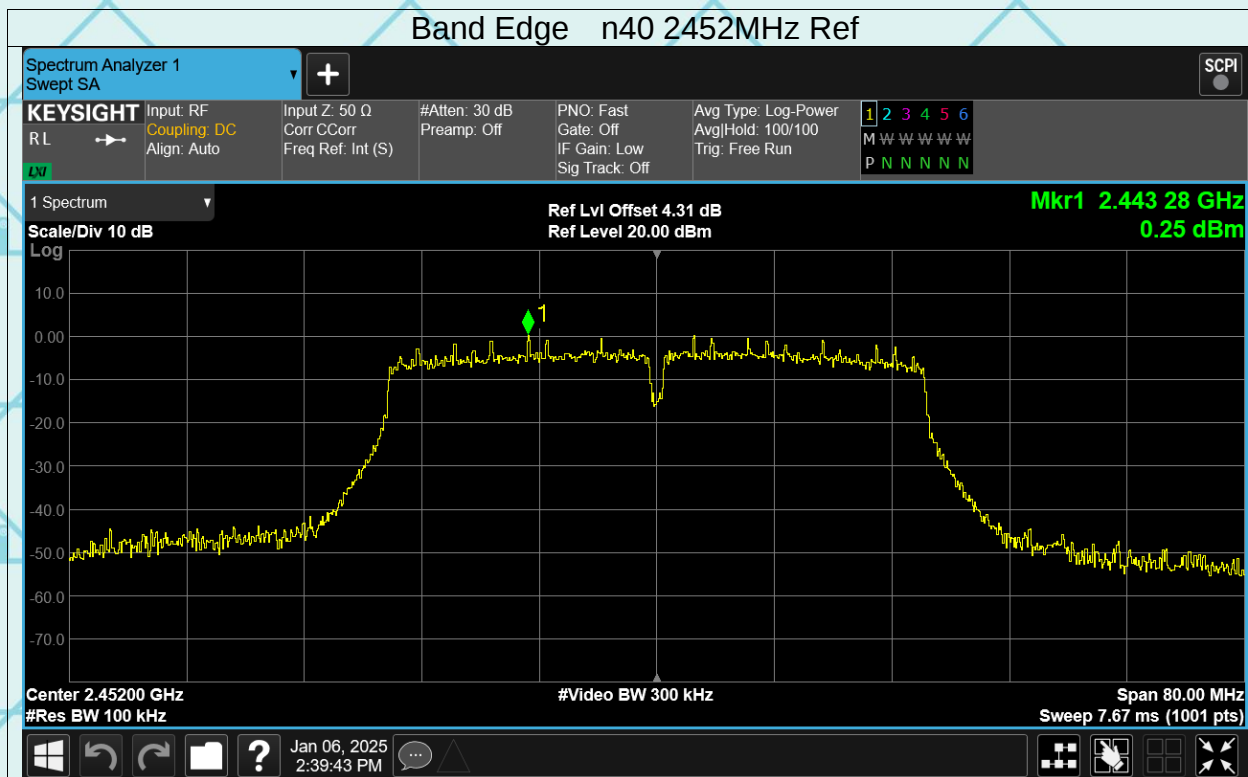


### Band Edge n40 2422MHz Emission

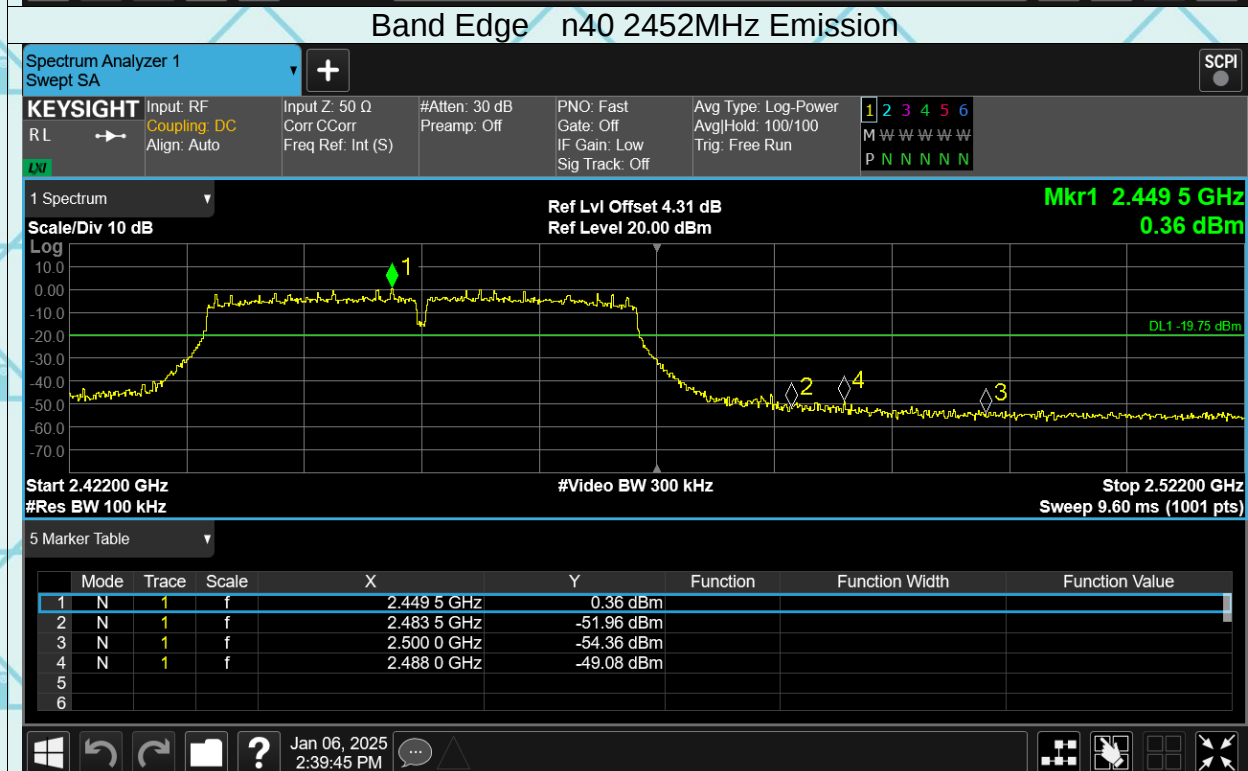


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

### Band Edge n40 2452MHz Ref



### Band Edge n40 2452MHz Emission

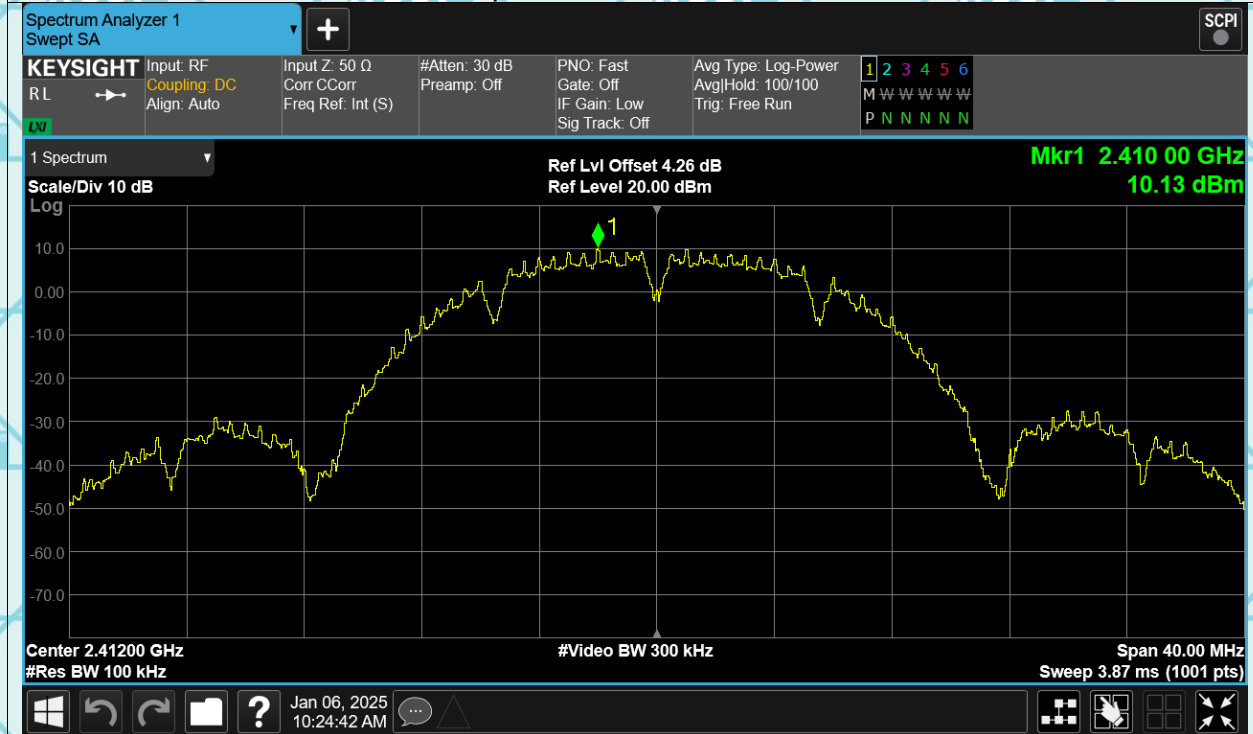


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

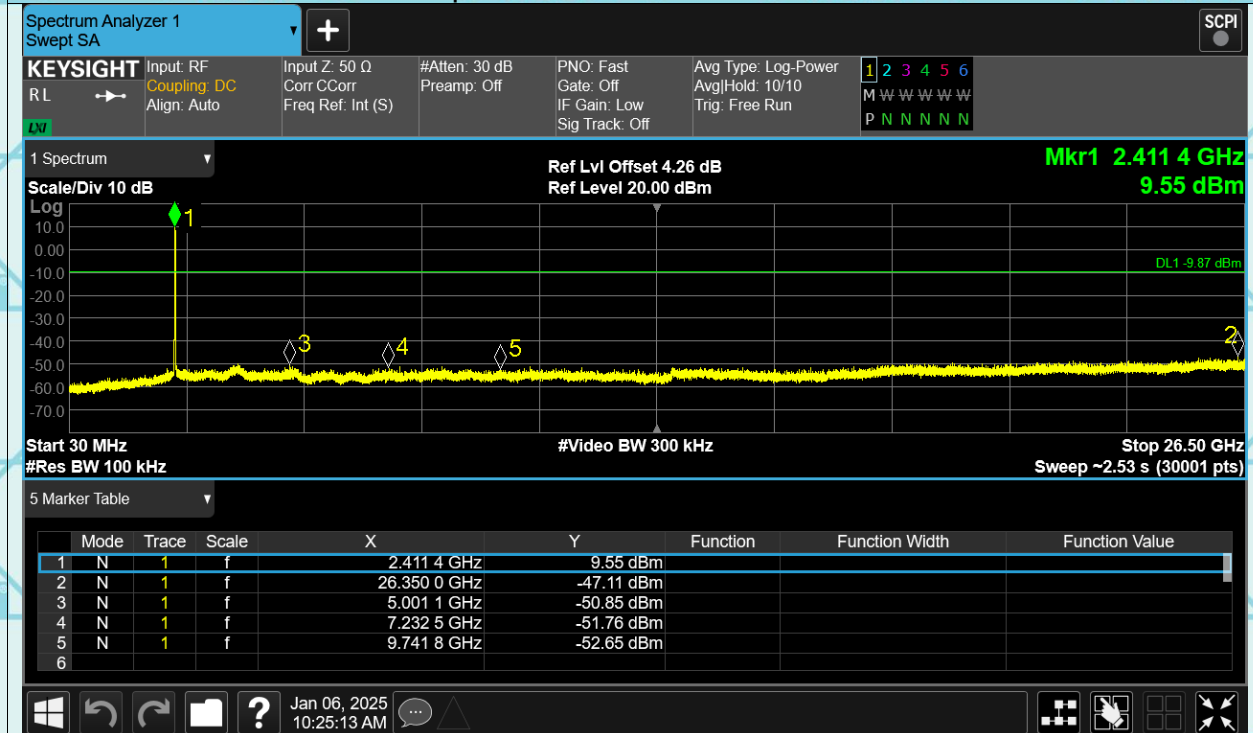
## Conducted RF Spurious Emission

### Test Graphs

Tx: Spurious b 2412MHz Ref

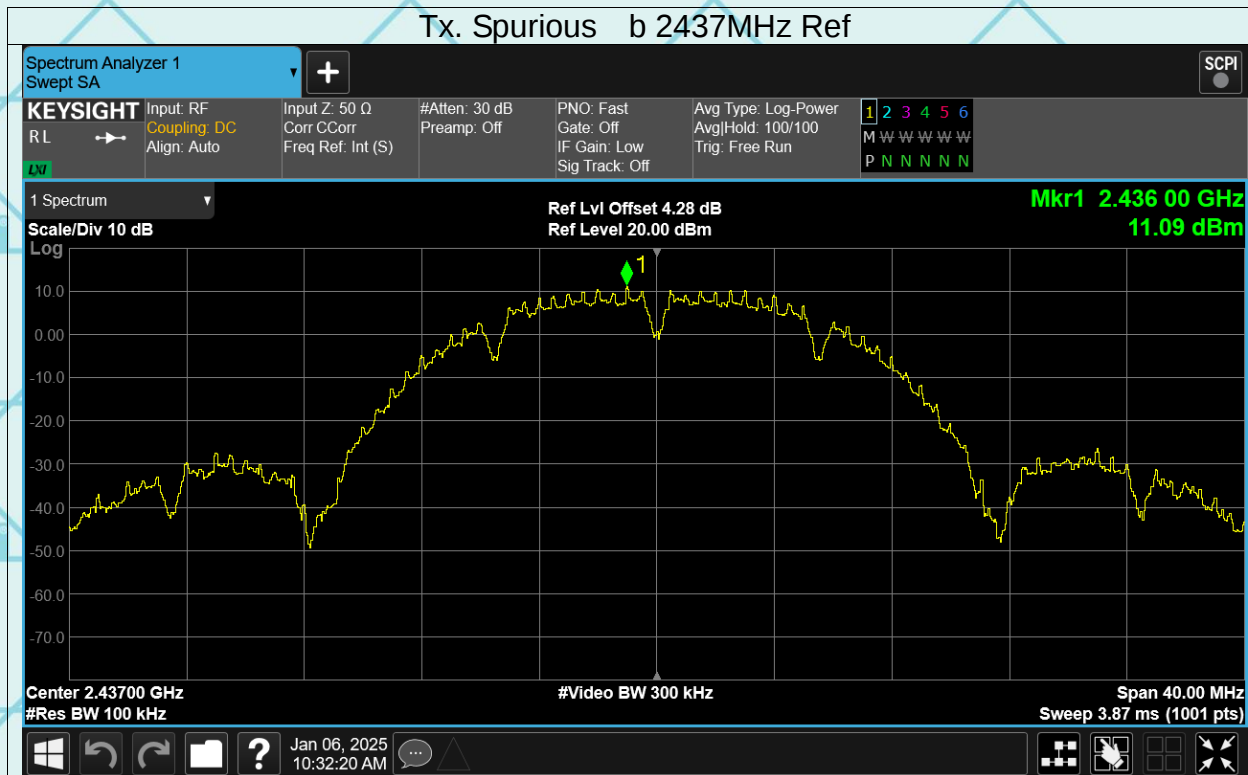


Tx: Spurious b 2412MHz Emission

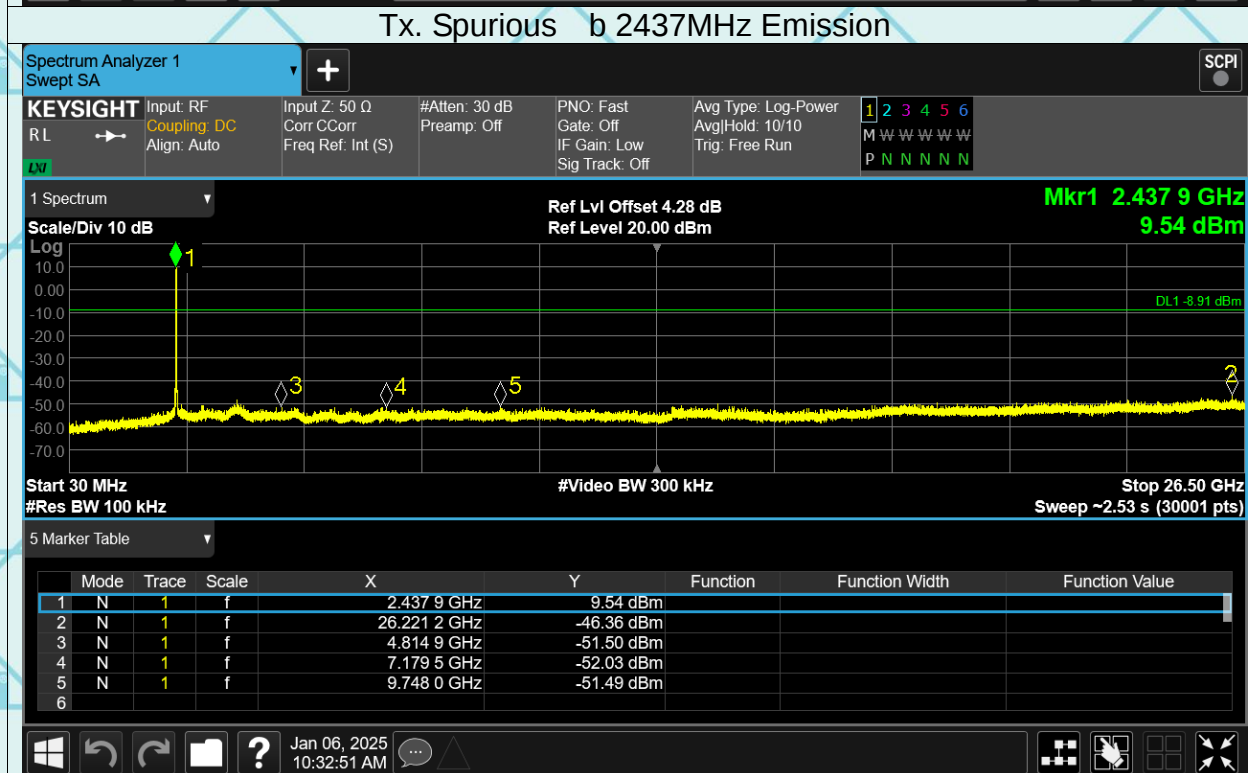


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

### Tx. Spurious b 2437MHz Ref

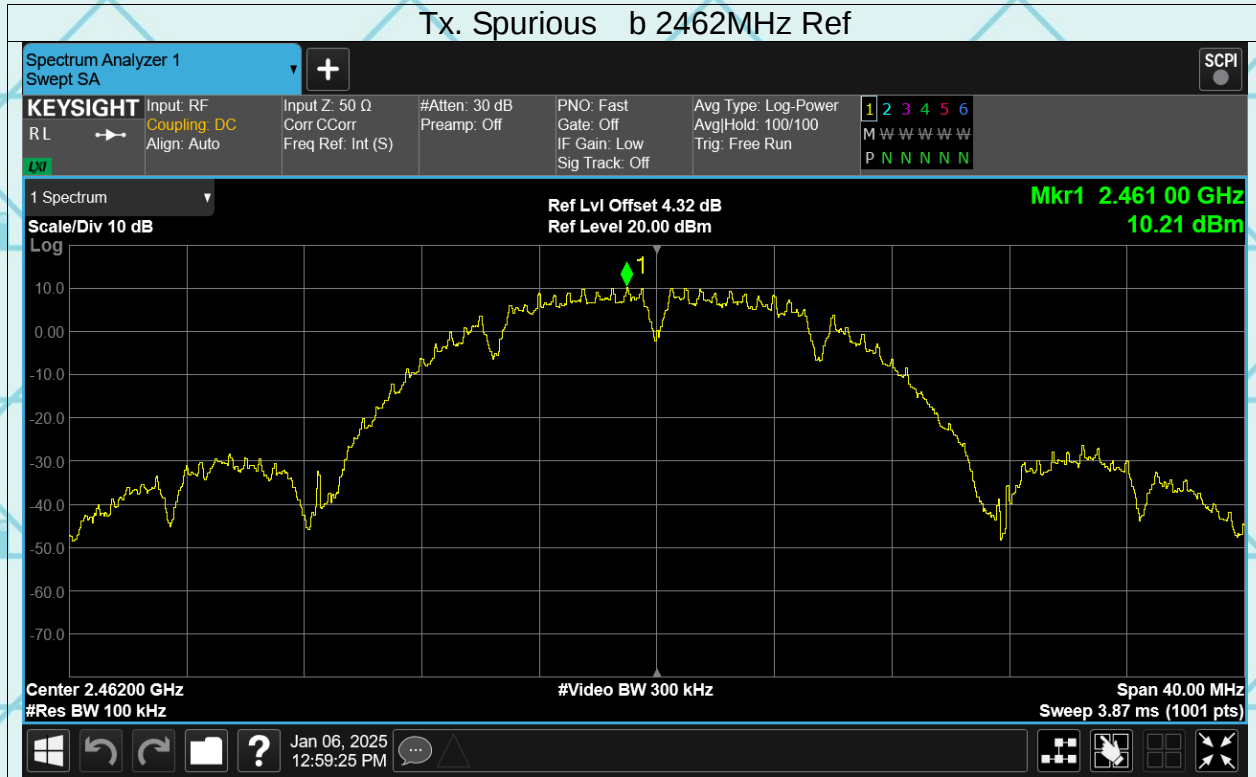


### Tx. Spurious b 2437MHz Emission

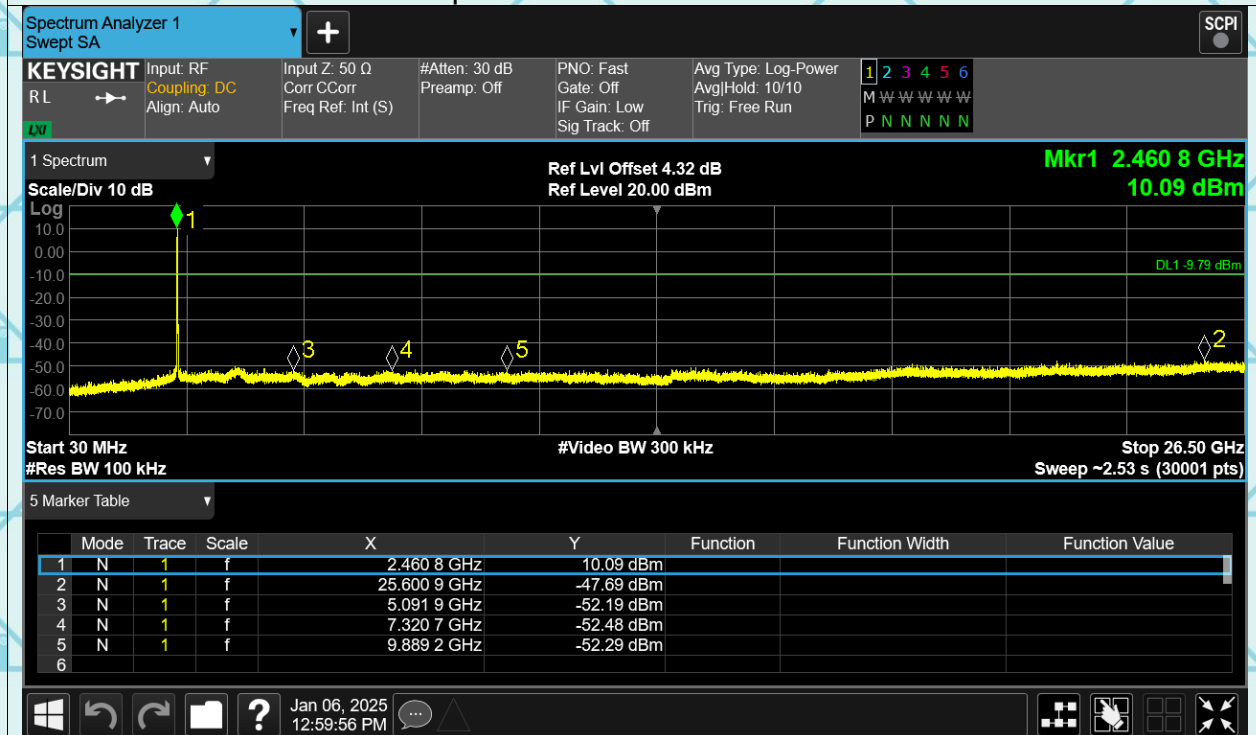


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

### Tx. Spurious b 2462MHz Ref

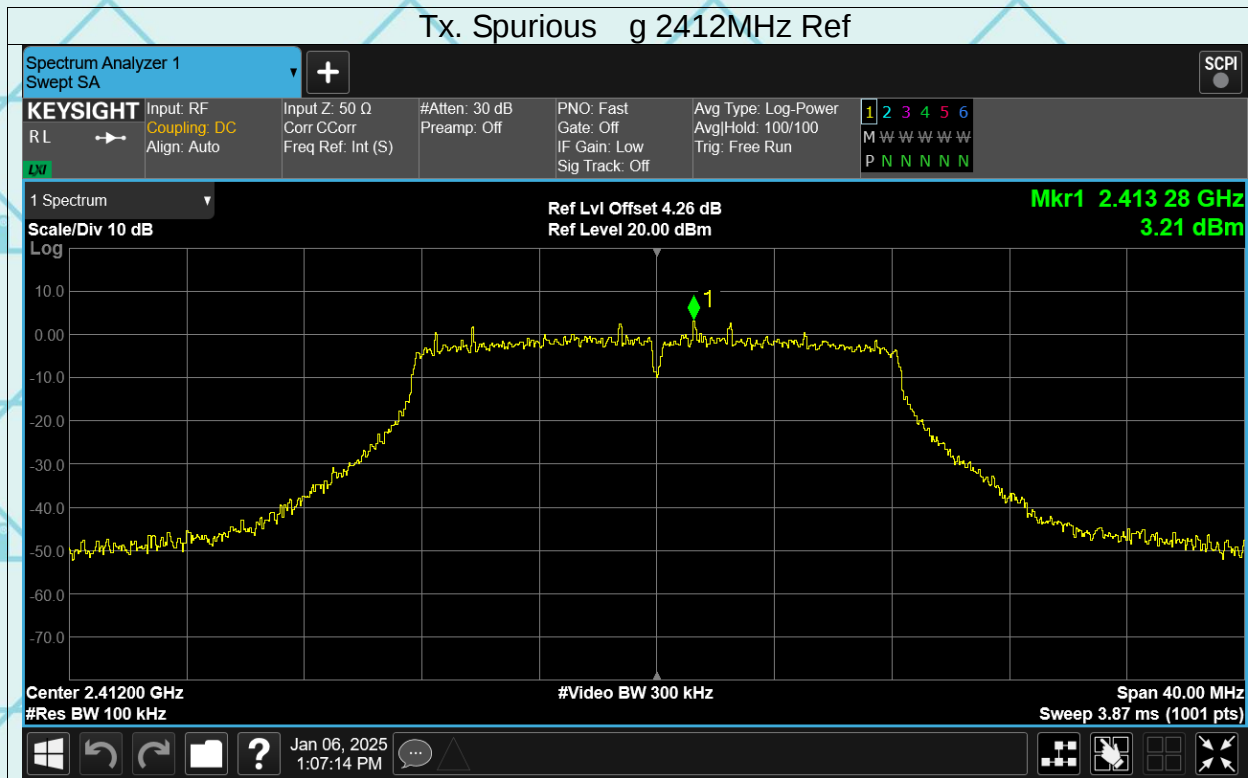


### Tx. Spurious b 2462MHz Emission

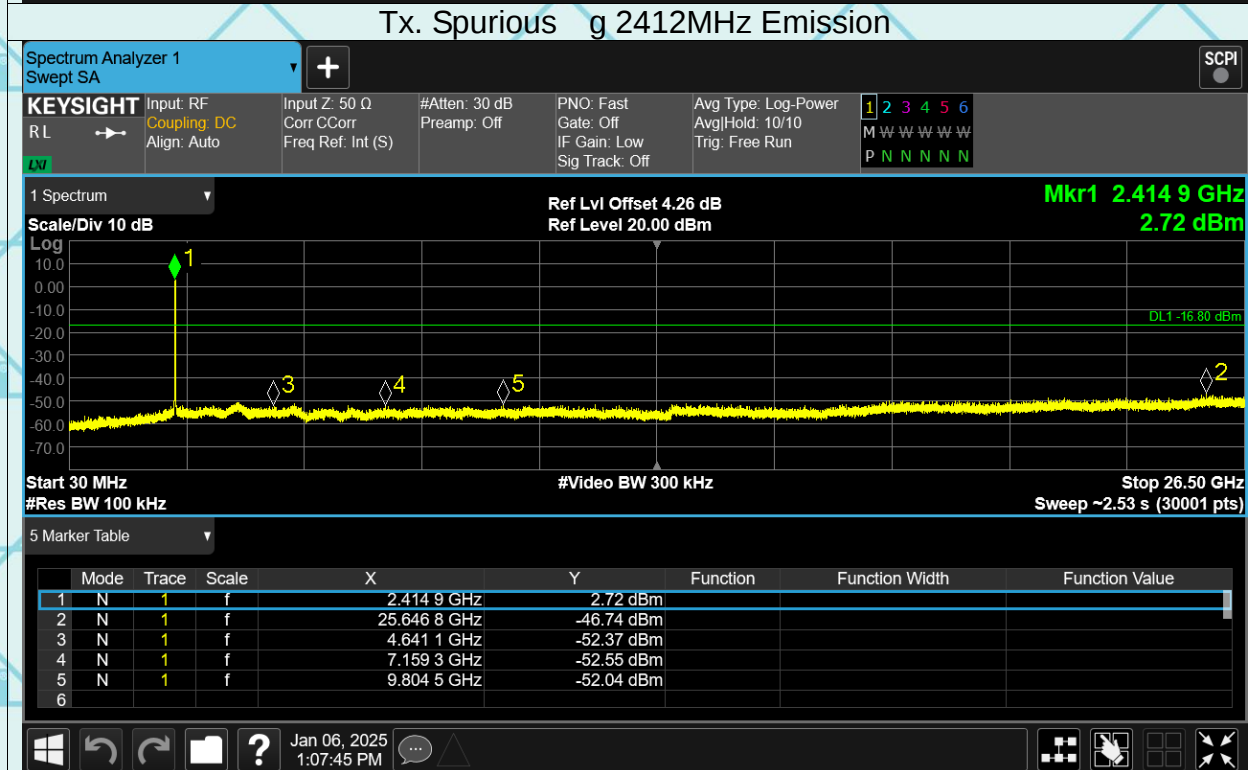


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

### Tx. Spurious g 2412MHz Ref

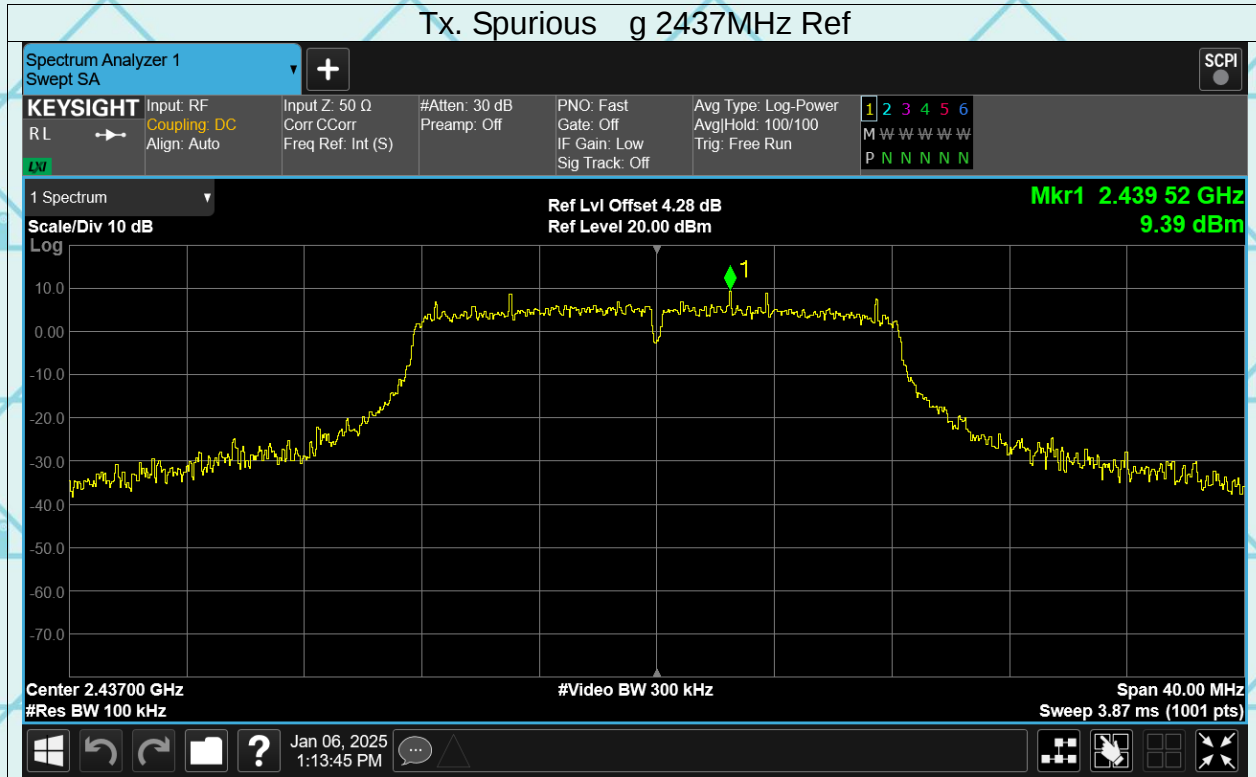


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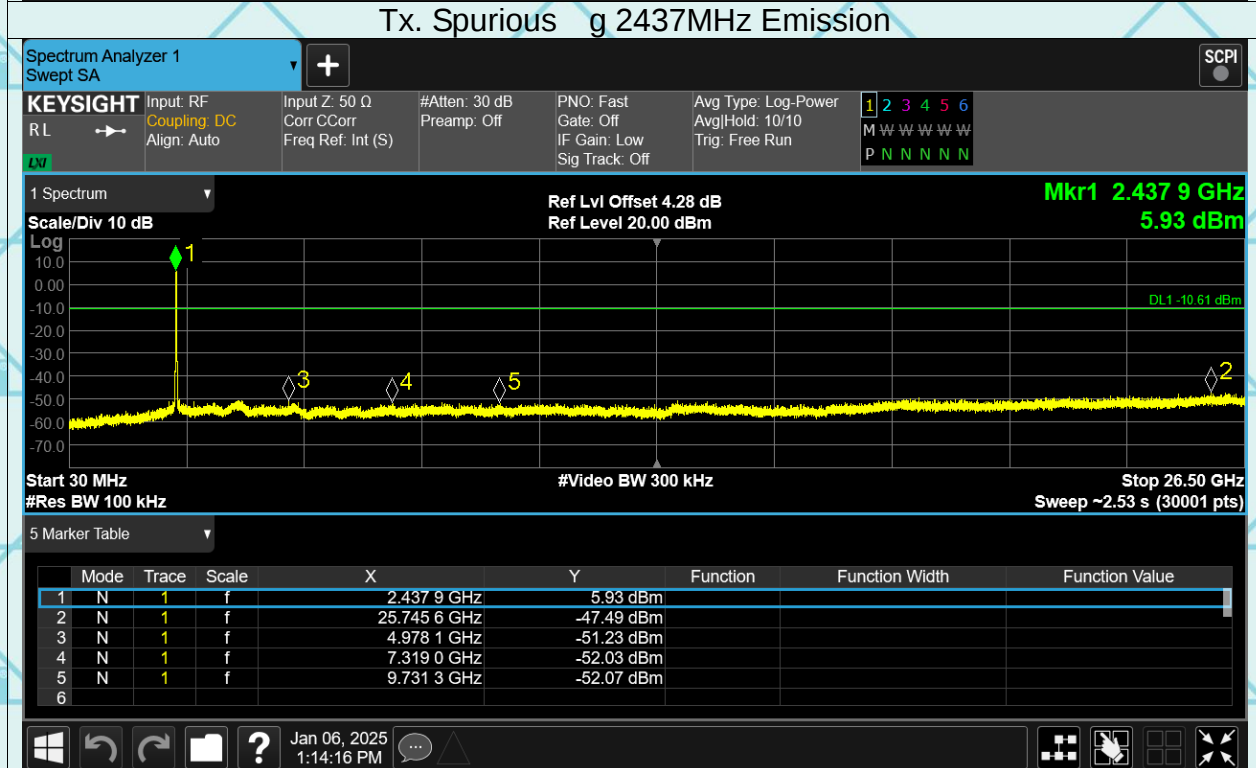


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

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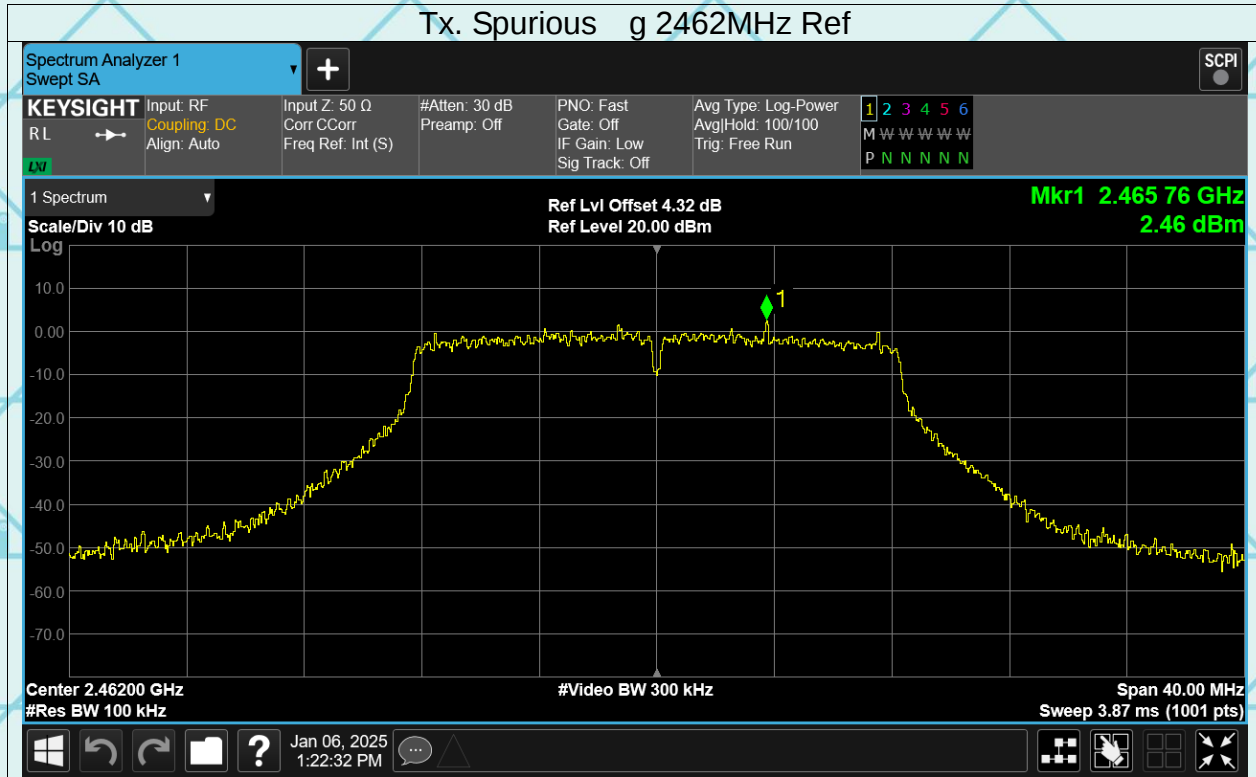


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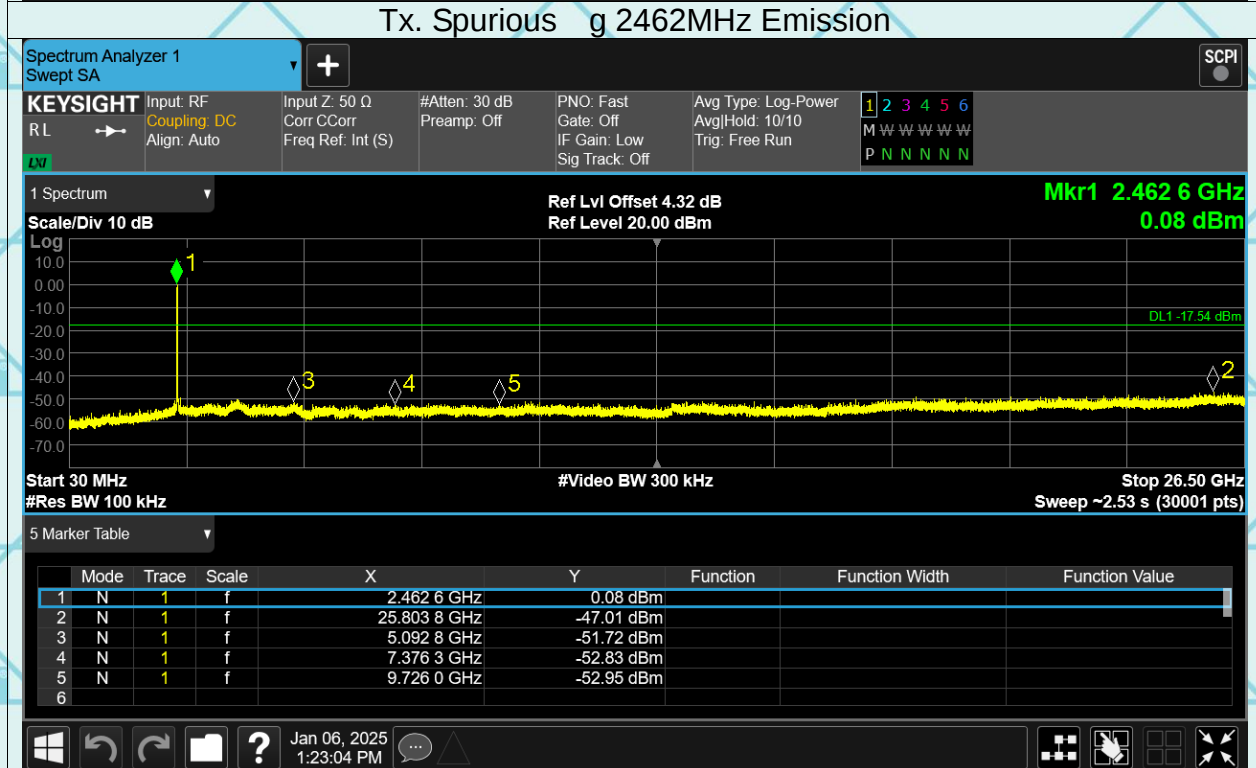


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

### Tx. Spurious g 2462MHz Ref

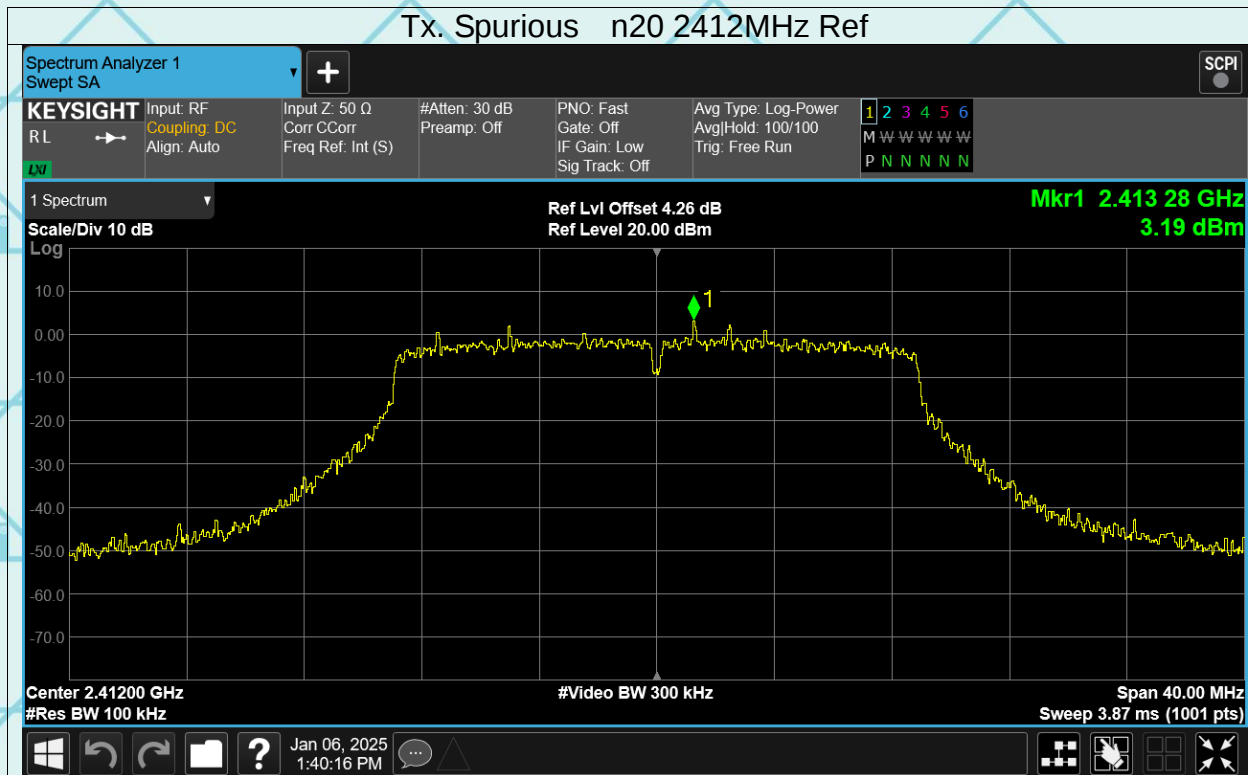


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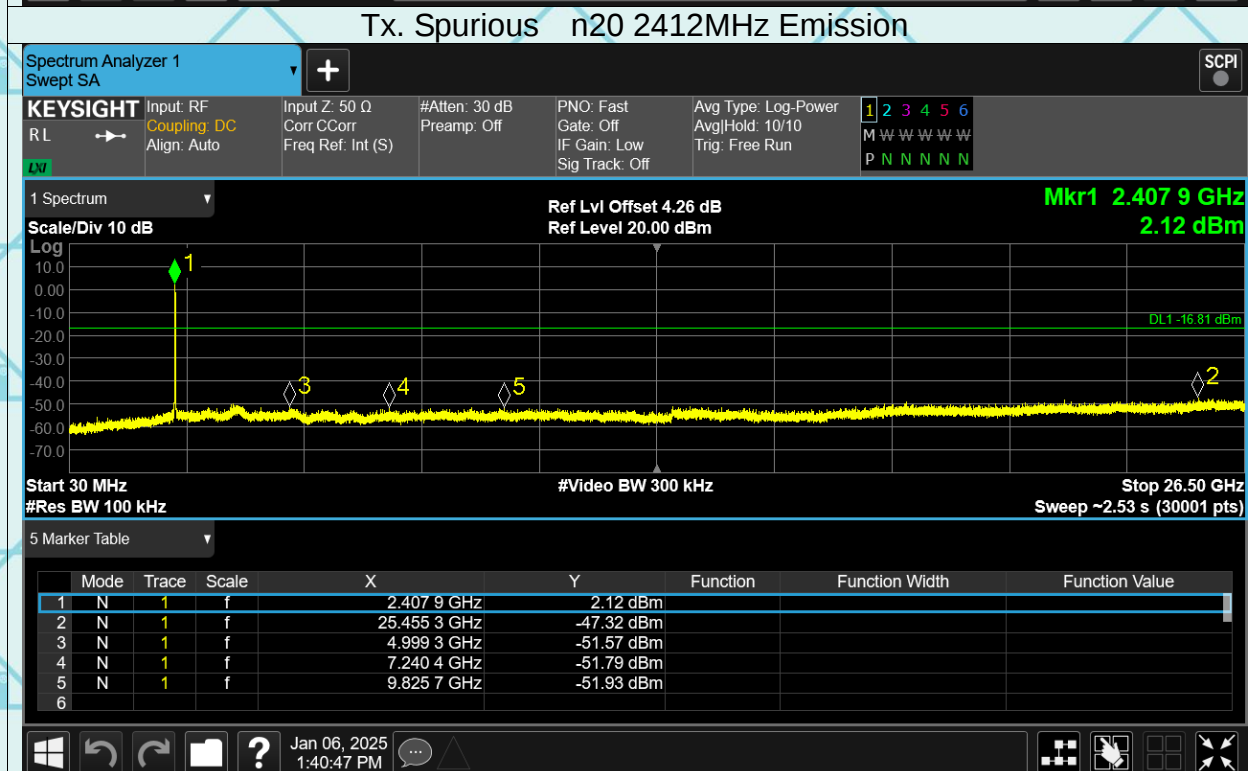


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

### Tx. Spurious n20 2412MHz Ref

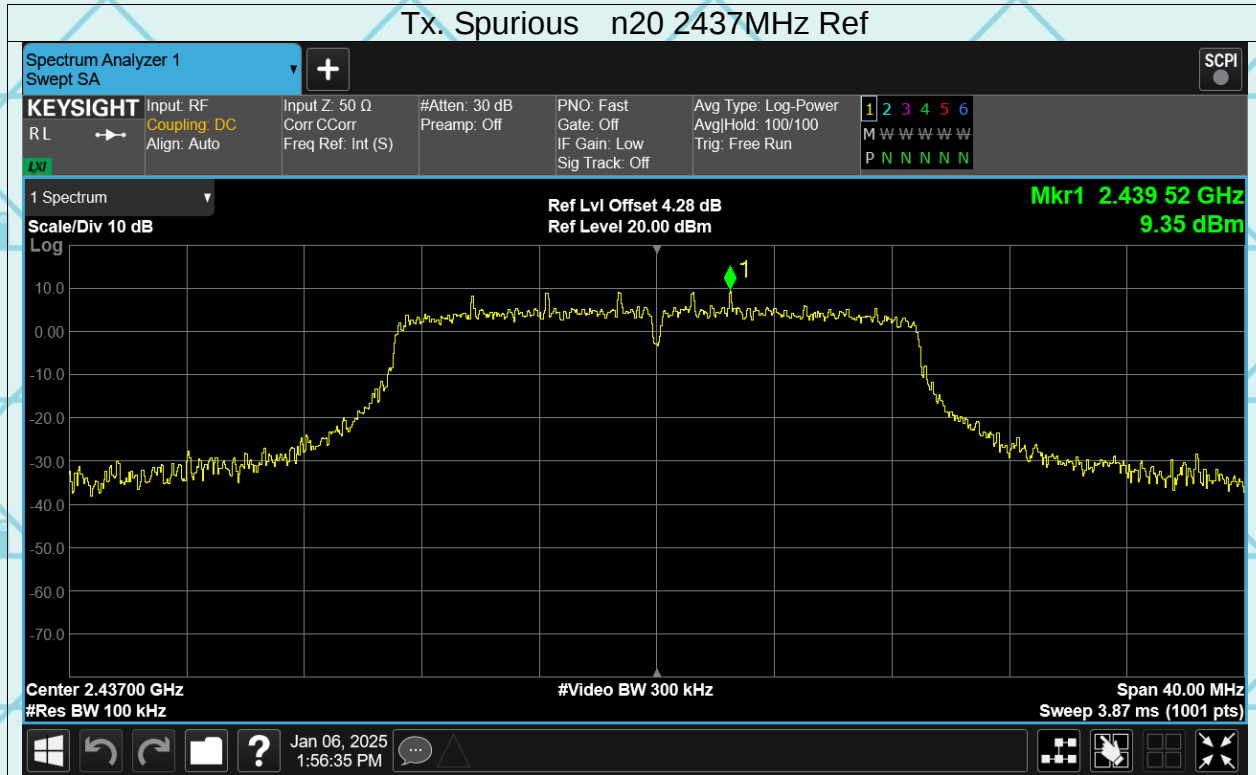


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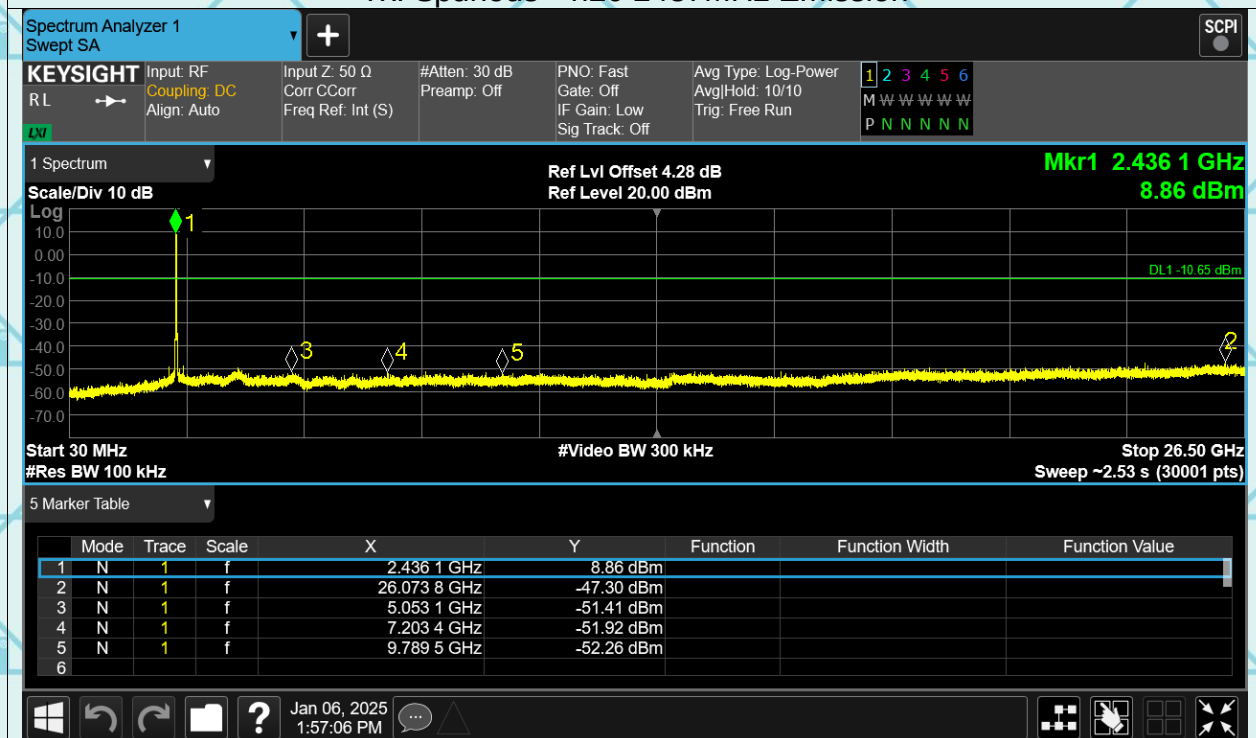


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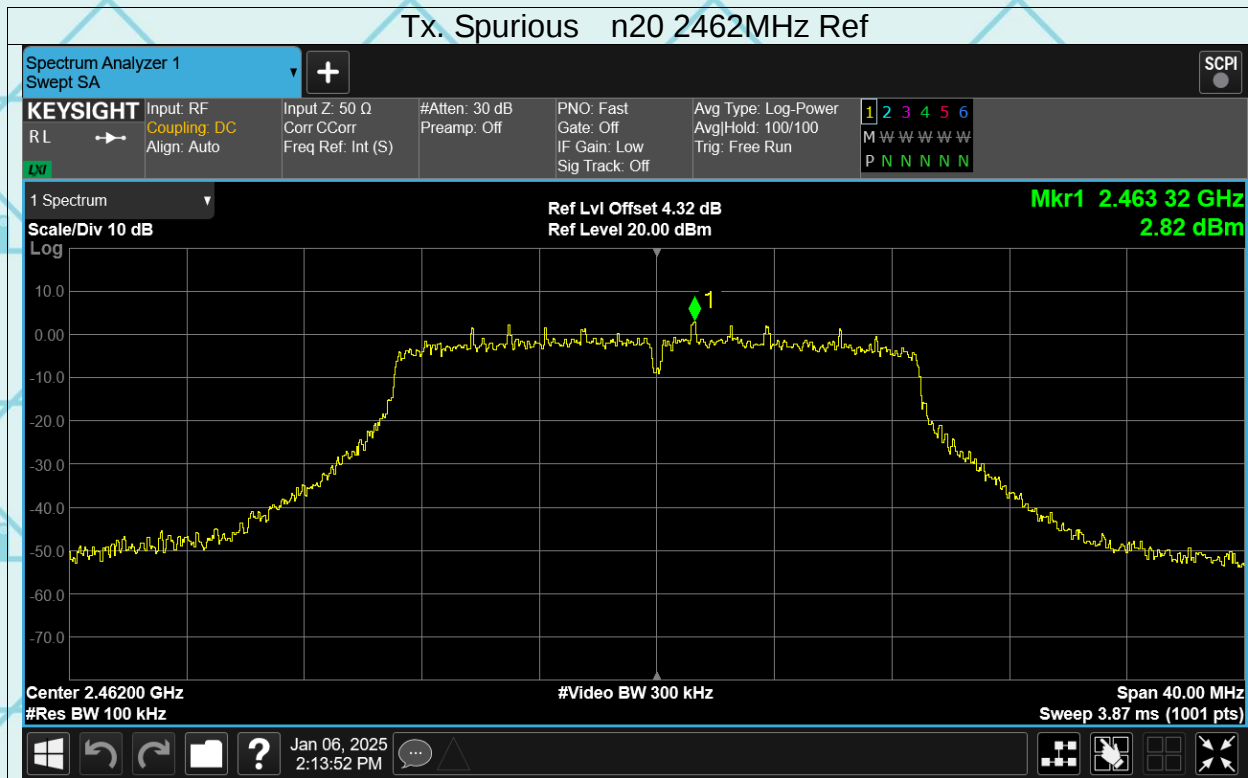


Tx. Spurious n20 2437MHz Emission

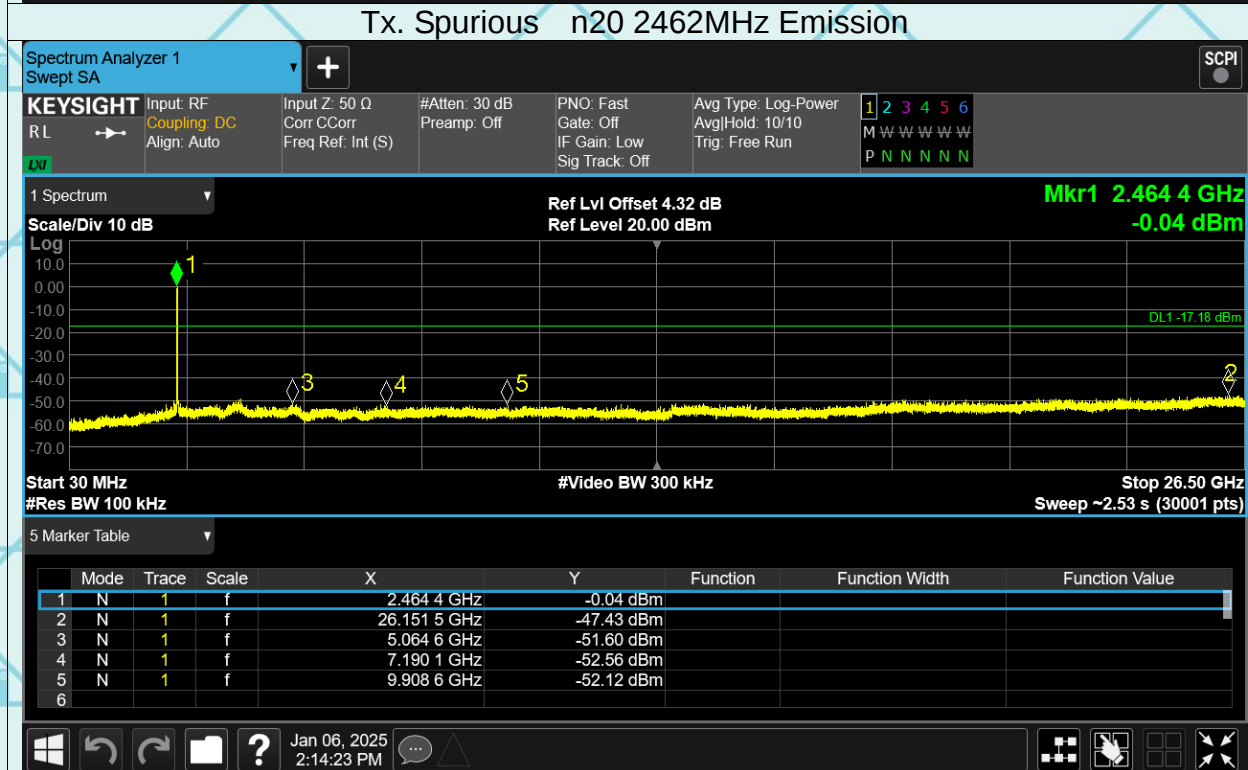


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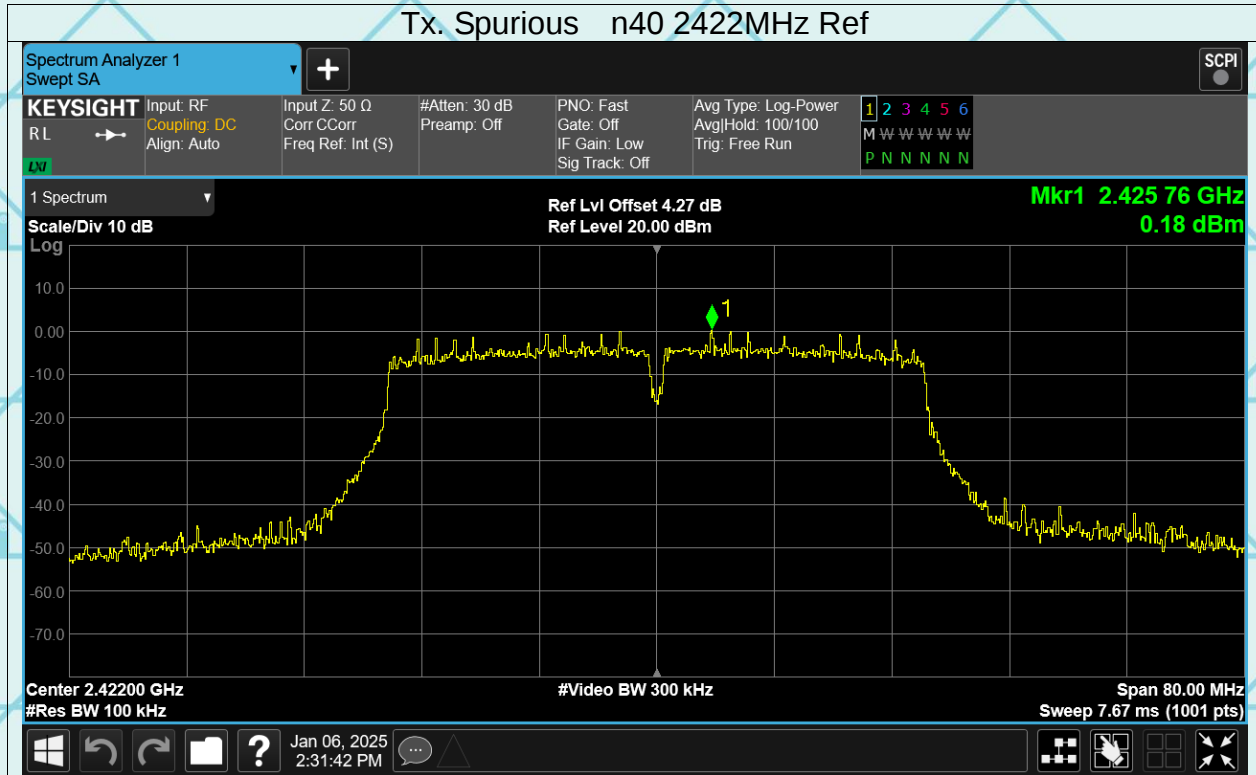


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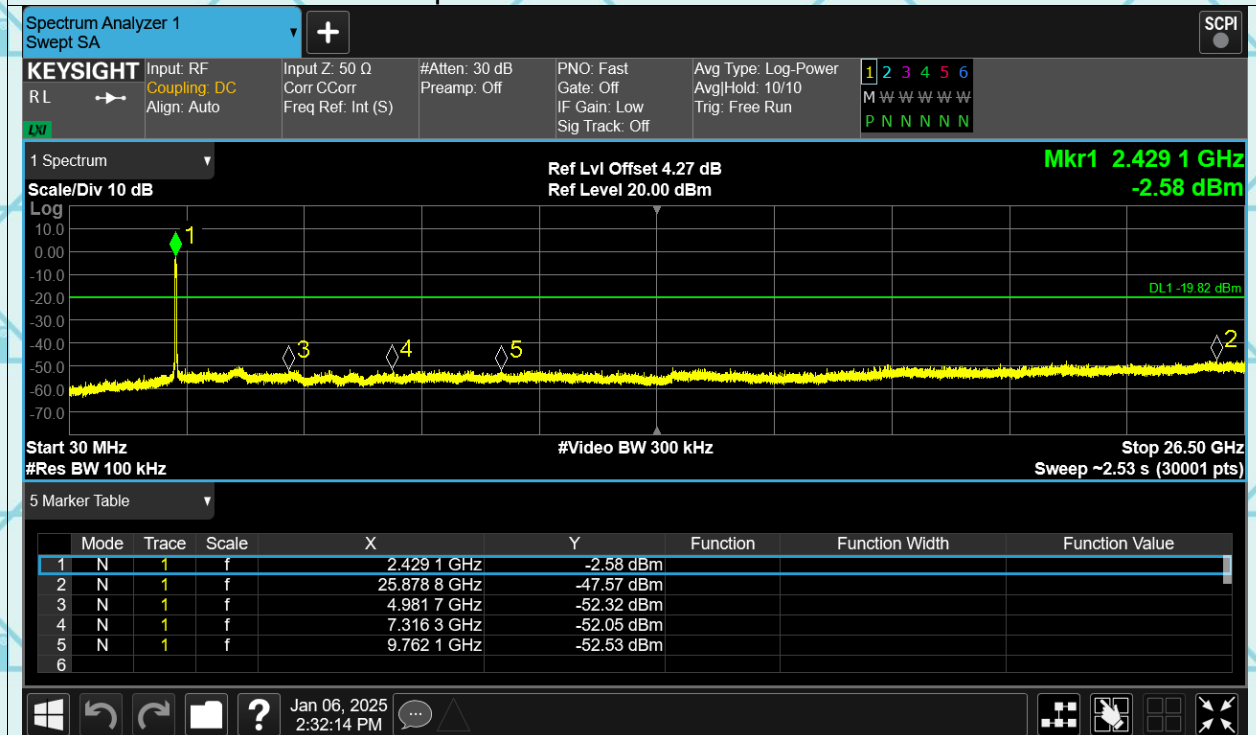


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

### Tx. Spurious n40 2422MHz Ref

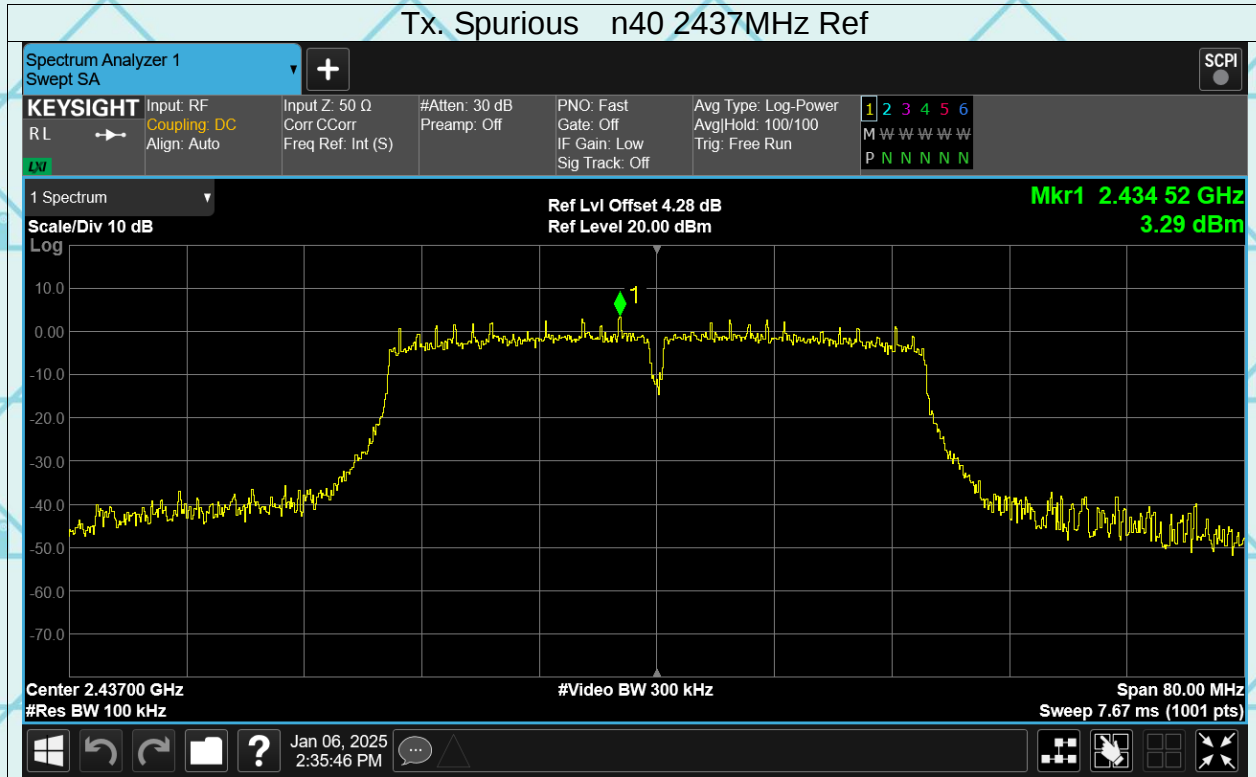


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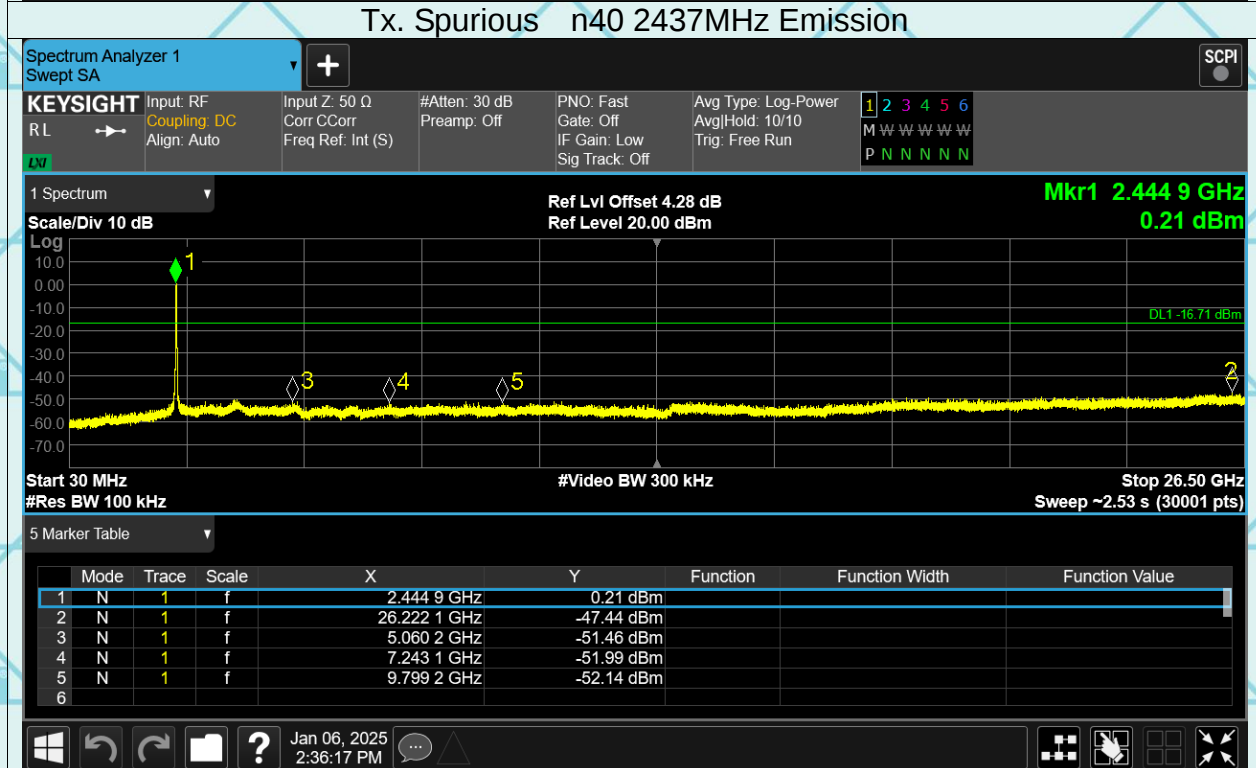


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

Tx. Spurious n40 2437MHz Ref

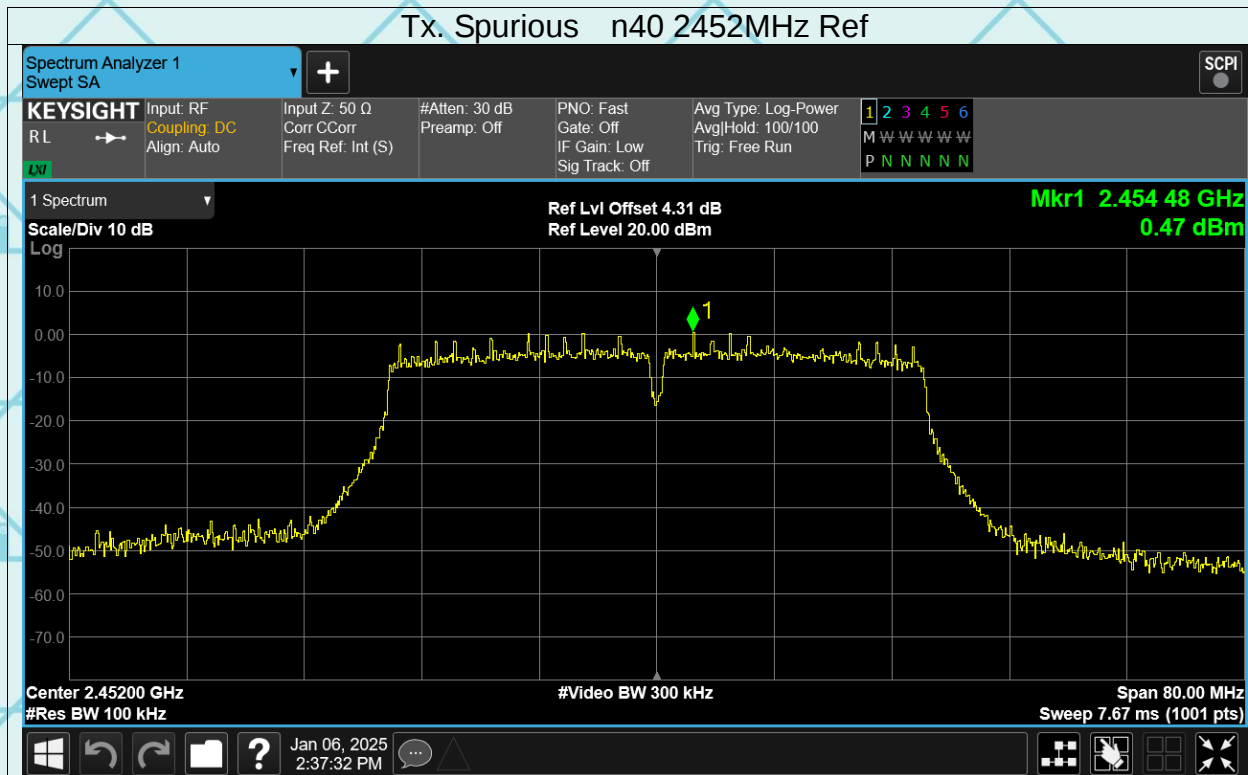


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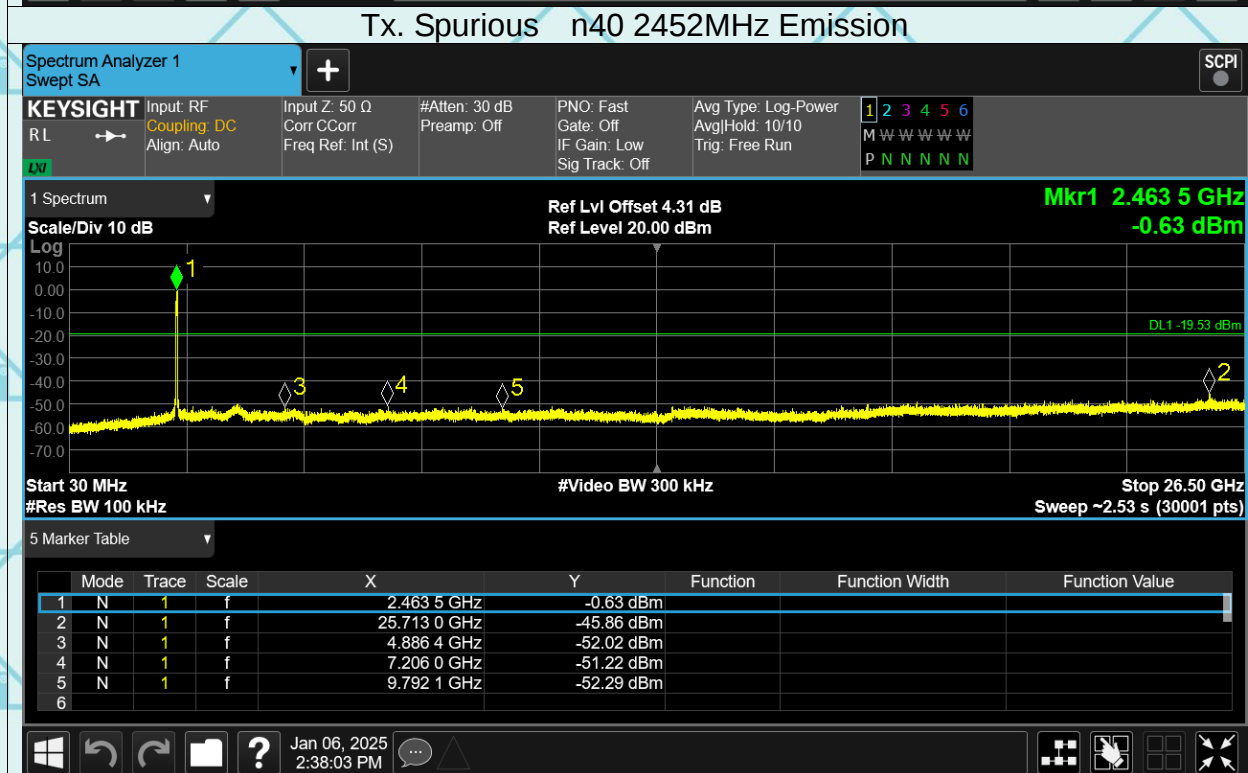


Report No.: WSCT-ANAB-R&E241200076A-Wi-Fi1

### Tx. Spurious n40 2452MHz Ref

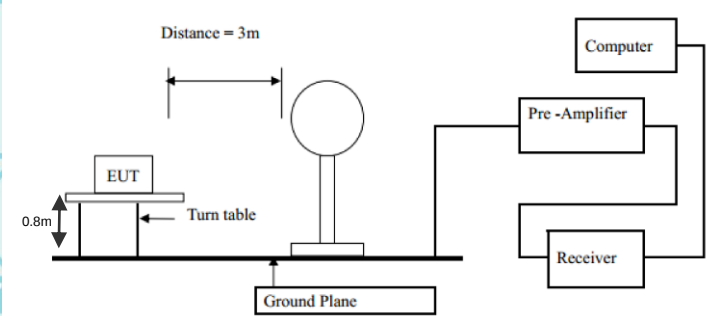


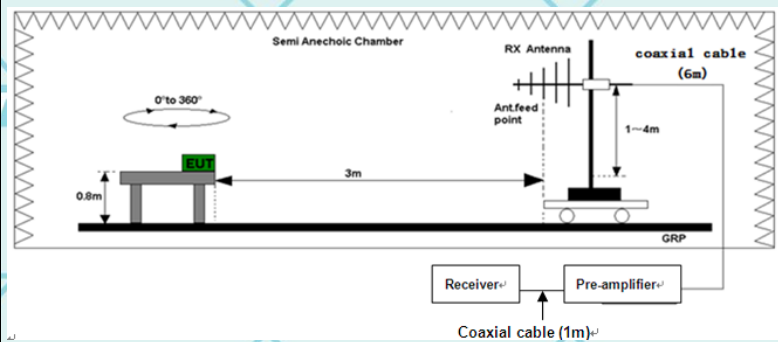
### Tx. Spurious n40 2452MHz Emission



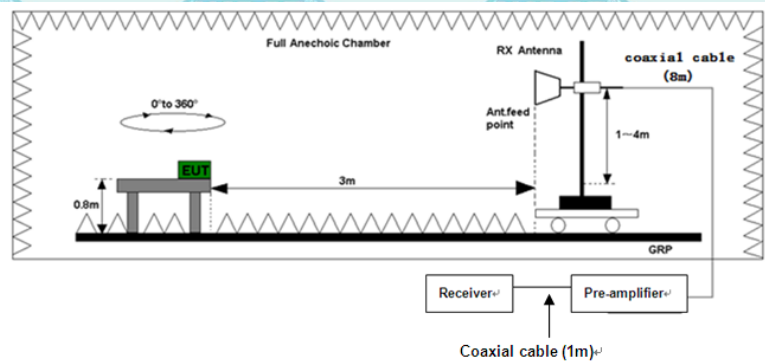
## 6.6. Radiated Spurious Emission Measurement

### 6.6.1. Test Specification

|                              |                                                                                      |                                   |                               |          |
|------------------------------|--------------------------------------------------------------------------------------|-----------------------------------|-------------------------------|----------|
| <b>Test Requirement:</b>     | FCC Part15 C Section 15.209                                                          |                                   |                               |          |
| <b>Test Method:</b>          | ANSI C63.10: 2014                                                                    |                                   |                               |          |
| <b>Frequency Range:</b>      | 9 kHz to 25 GHz                                                                      |                                   |                               |          |
| <b>Measurement Distance:</b> | 3 m                                                                                  |                                   |                               |          |
| <b>Antenna Polarization:</b> | Horizontal & Vertical                                                                |                                   |                               |          |
| <b>Operation mode:</b>       | Transmitting mode with modulation                                                    |                                   |                               |          |
| <b>Receiver Setup:</b>       | Frequency                                                                            | Detector                          | RBW                           | VBW      |
|                              | 9kHz- 150kHz                                                                         | Quasi-peak                        | 200Hz                         | 1kHz     |
|                              | 150kHz- 30MHz                                                                        | Quasi-peak                        | 9kHz                          | 30kHz    |
|                              | 30MHz-1GHz                                                                           | Quasi-peak                        | 100KHz                        | 300KHz   |
|                              | Above 1GHz                                                                           | Peak                              | 1MHz                          | 3MHz     |
| <b>Limit:</b>                | Remark                                                                               |                                   |                               |          |
|                              | Quasi-peak Value                                                                     |                                   |                               |          |
|                              | Quasi-peak Value                                                                     |                                   |                               |          |
|                              | Quasi-peak Value                                                                     |                                   |                               |          |
|                              | Peak Value                                                                           |                                   |                               |          |
| <b>Test setup:</b>           | Average Value                                                                        |                                   |                               |          |
|                              |                                                                                      |                                   |                               |          |
|                              |                                                                                      |                                   |                               |          |
|                              |                                                                                      |                                   |                               |          |
|                              |                                                                                      |                                   |                               |          |
| <b>Test setup:</b>           | Frequency                                                                            | Field Strength (microvolts/meter) | Measurement Distance (meters) |          |
|                              | 0.009-0.490                                                                          | 2400/F(KHz)                       | 300                           |          |
|                              | 0.490-1.705                                                                          | 24000/F(KHz)                      | 30                            |          |
|                              | 1.705-30                                                                             | 30                                | 30                            |          |
|                              | 30-88                                                                                | 100                               | 3                             |          |
| <b>Test setup:</b>           | 88-216                                                                               | 150                               | 3                             |          |
|                              | 216-960                                                                              | 200                               | 3                             |          |
|                              | Above 960                                                                            | 500                               | 3                             |          |
|                              |                                                                                      |                                   |                               |          |
|                              |                                                                                      |                                   |                               |          |
| <b>Test setup:</b>           | Frequency                                                                            | Field Strength (microvolts/meter) | Measurement Distance (meters) | Detector |
|                              | Above 1GHz                                                                           | 500                               | 3                             | Average  |
|                              |                                                                                      | 5000                              | 3                             | Peak     |
|                              |                                                                                      |                                   |                               |          |
|                              |                                                                                      |                                   |                               |          |
| <b>Test setup:</b>           | For radiated emissions below 30MHz                                                   |                                   |                               |          |
|                              |  |                                   |                               |          |
|                              | 30MHz to 1GHz                                                                        |                                   |                               |          |
|                              |                                                                                      |                                   |                               |          |
|                              |                                                                                      |                                   |                               |          |



Above 1GHz



### Test Procedure:

- For the radiated emission test below 1GHz:  
The EUT was placed on a turntable with 0.8 meter above ground. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high PASS filter are used for the test in order to get better signal level.
- For the radiated emission test above 1GHz:  
Place the measurement antenna on a turntable with 1.5 meter above ground, which is away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.