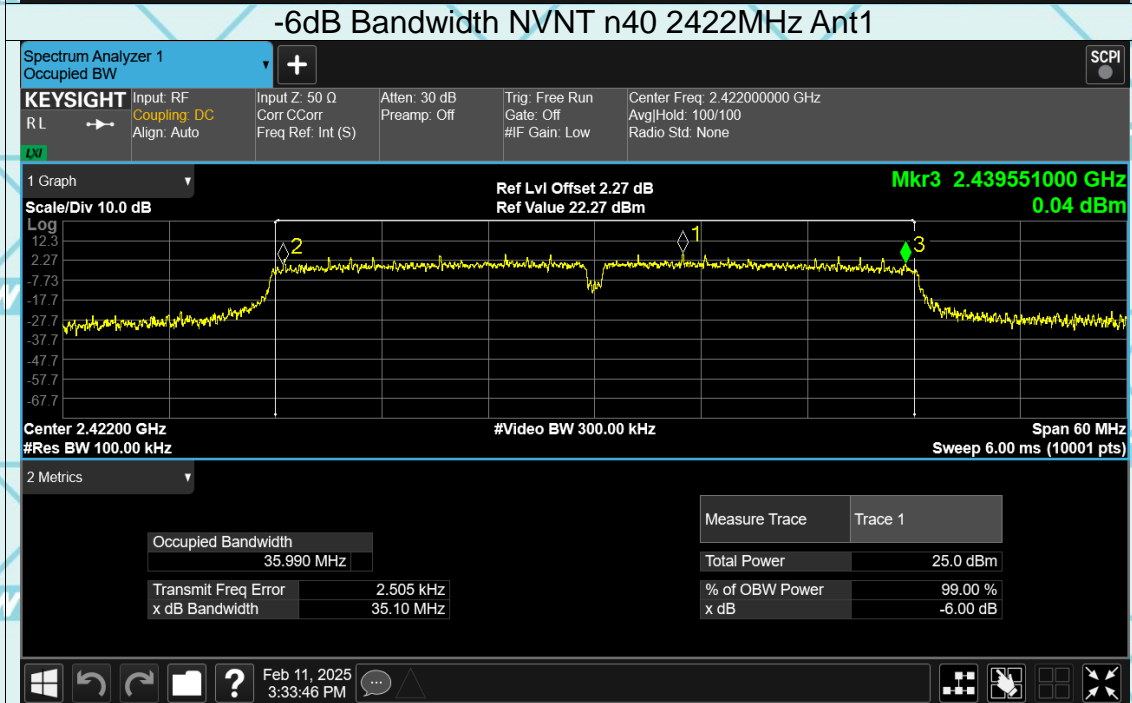
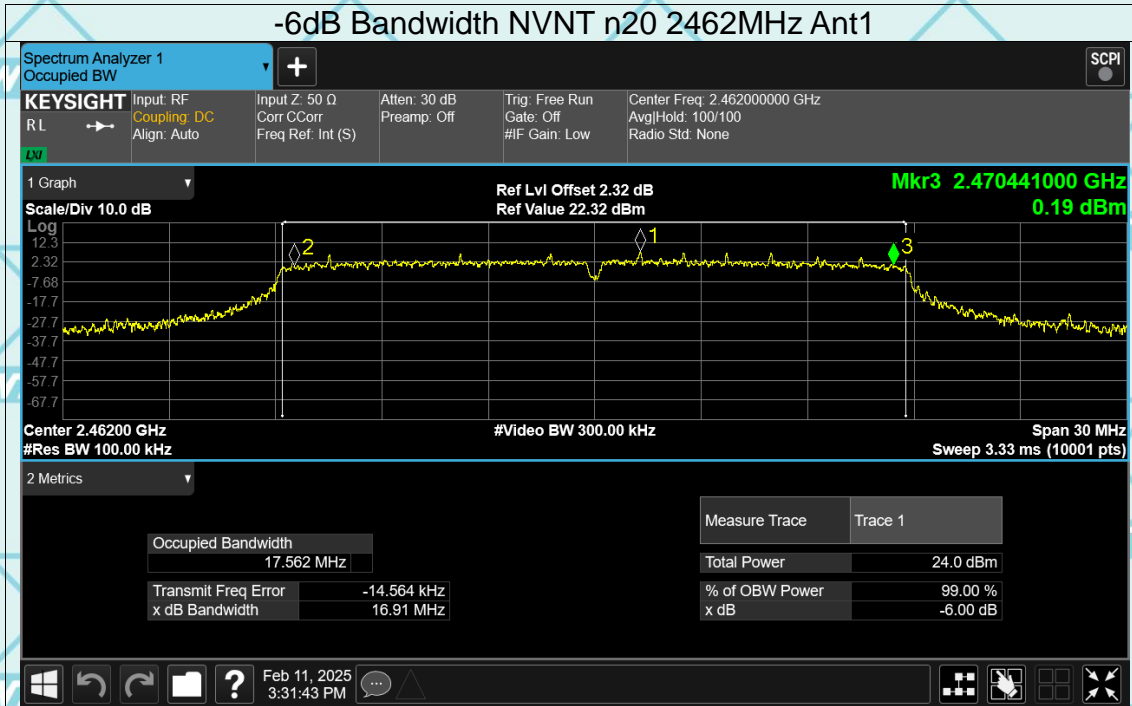
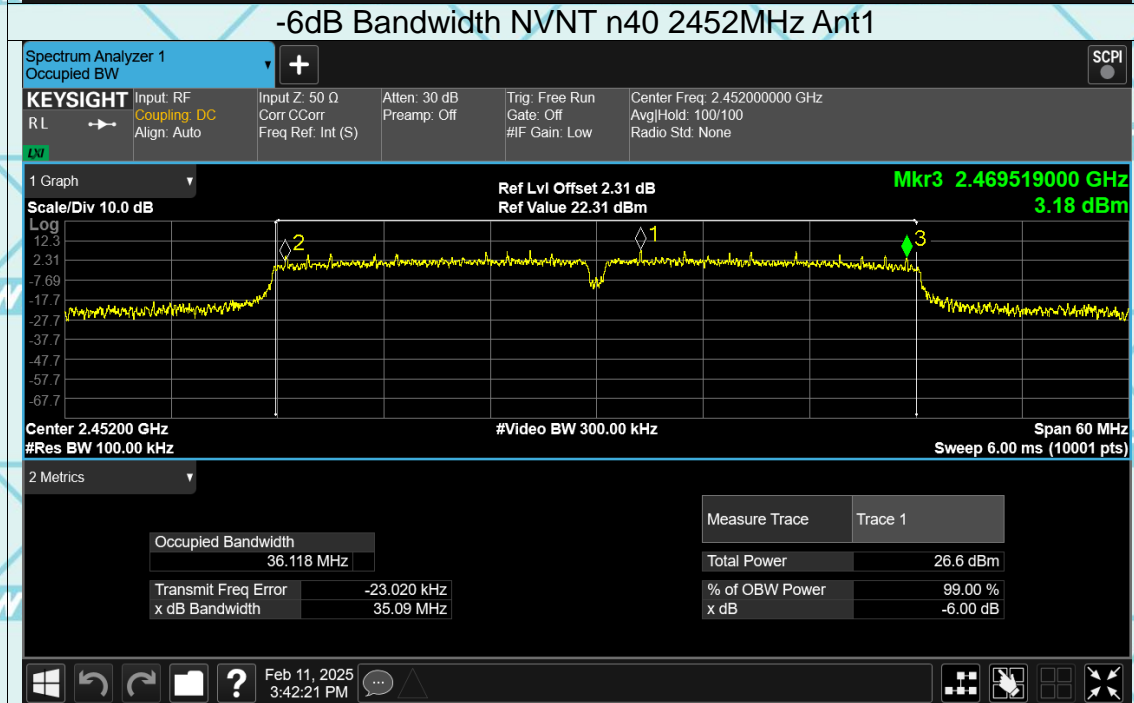
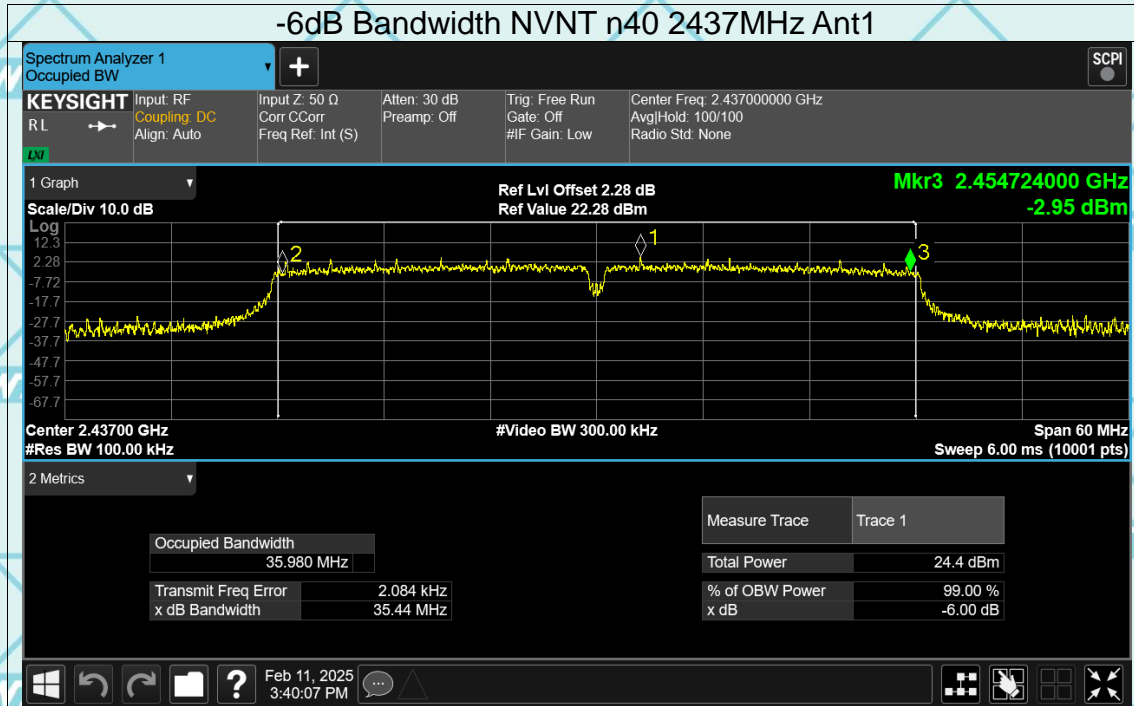


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1



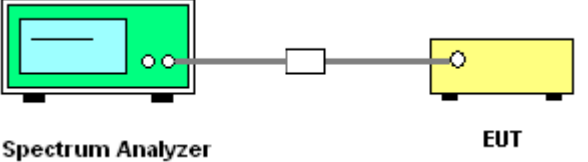
Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1





## 6.5. Power Spectral Density

### 6.5.1 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 AVGPSPD 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



## 6.5.2. Test data

MAIN Ant1

Mode	Frequency (MHz)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
b	2412	-7	8	Pass
b	2437	-7.44	8	Pass
b	2462	-8.06	8	Pass
g	2412	-14.14	8	Pass
g	2437	-14.54	8	Pass
g	2462	-14.43	8	Pass
n20	2412	-12.7	8	Pass
n20	2437	-13.63	8	Pass
n20	2462	-14.03	8	Pass
n40	2422	-14.91	8	Pass
n40	2437	-15.62	8	Pass
n40	2452	-15.77	8	Pass

AUX Ant2

Mode	Frequency (MHz)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
b	2412	-9.61	8	Pass
b	2437	-9.05	8	Pass
b	2462	-9.92	8	Pass
g	2412	-7.26	8	Pass
g	2437	-7.05	8	Pass
g	2462	-7.7	8	Pass
n20	2412	-7.17	8	Pass
n20	2437	-6.59	8	Pass
n20	2462	-7.33	8	Pass
n40	2422	-9	8	Pass
n40	2437	-9.09	8	Pass
n40	2452	-8.95	8	Pass



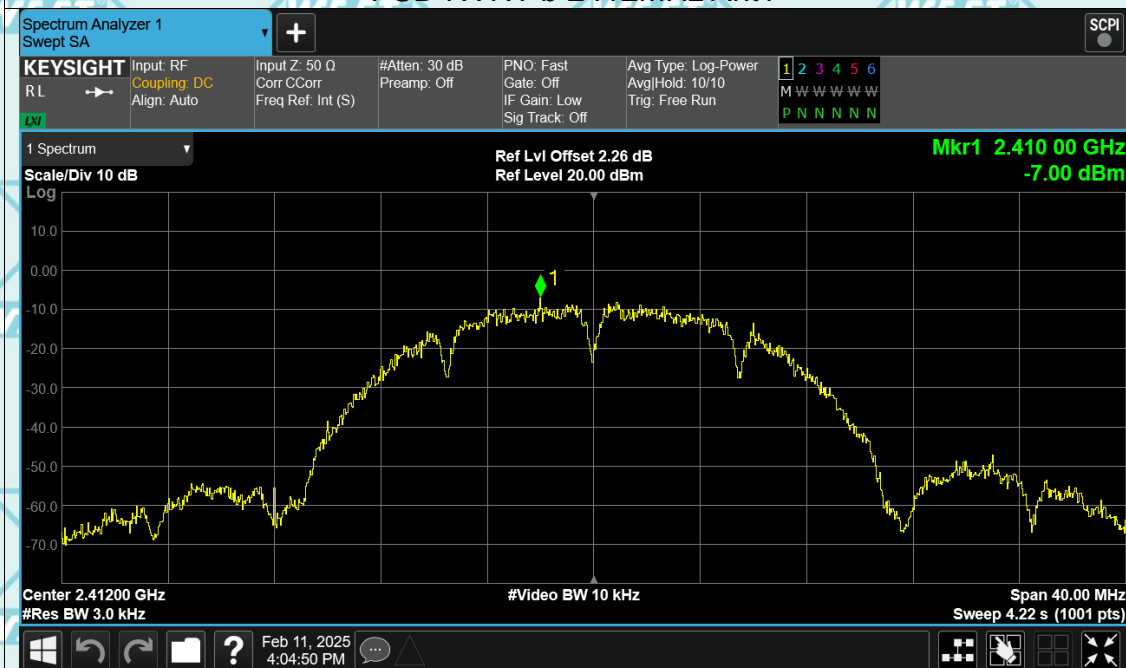
Report No.: WSCT-ANAB-R&amp;E250100005A-Wi-Fi1

## MIMO

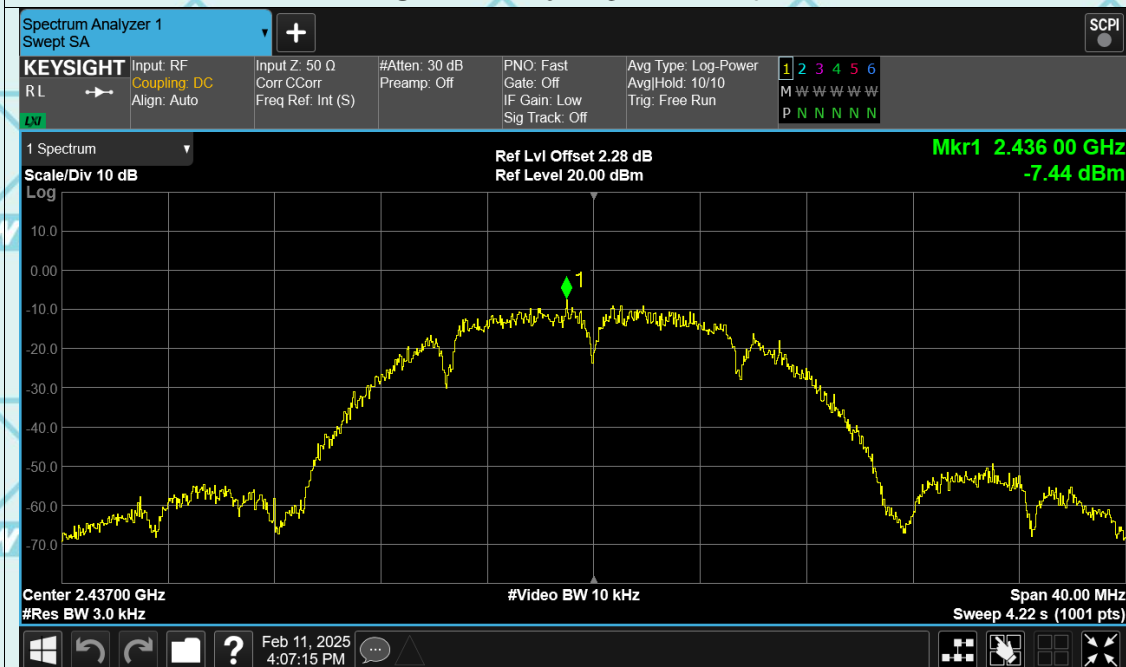
Mode	Frequency (MHz)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
n20	2412	-6.10	8	Pass
n20	2437	-5.81	8	Pass
n20	2462	-6.49	8	Pass
n40	2422	-8.01	8	Pass
n40	2437	-8.22	8	Pass
n40	2452	-8.13	8	Pass

## Test Graphs

### PSD NVNT b 2412MHz Ant1



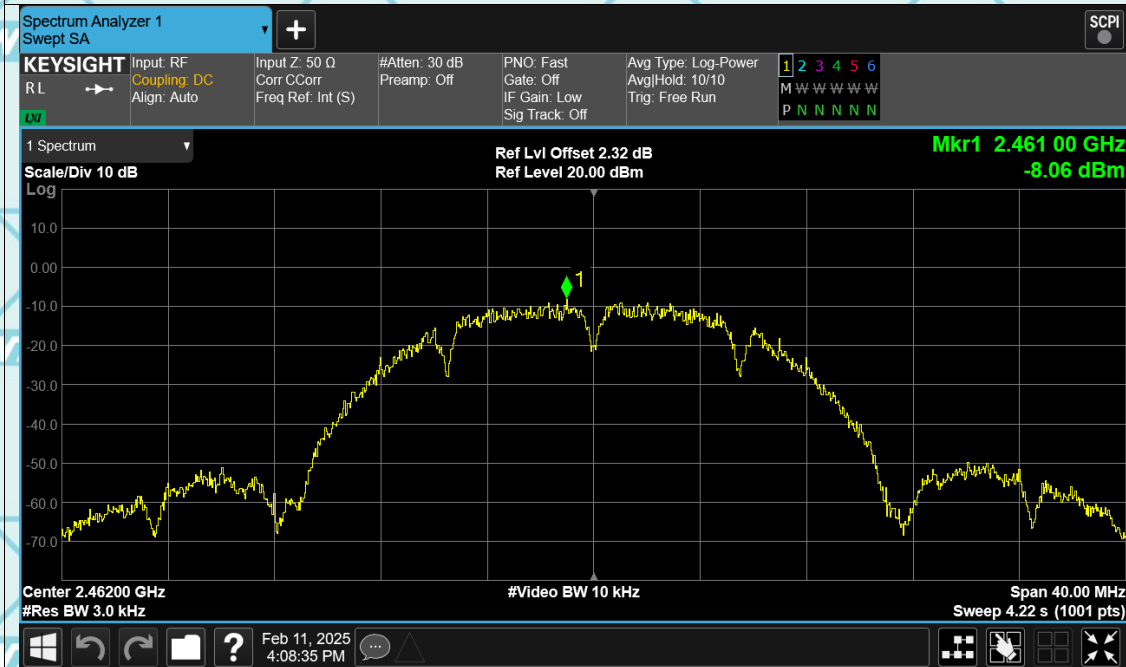
### PSD NVNT b 2437MHz Ant1



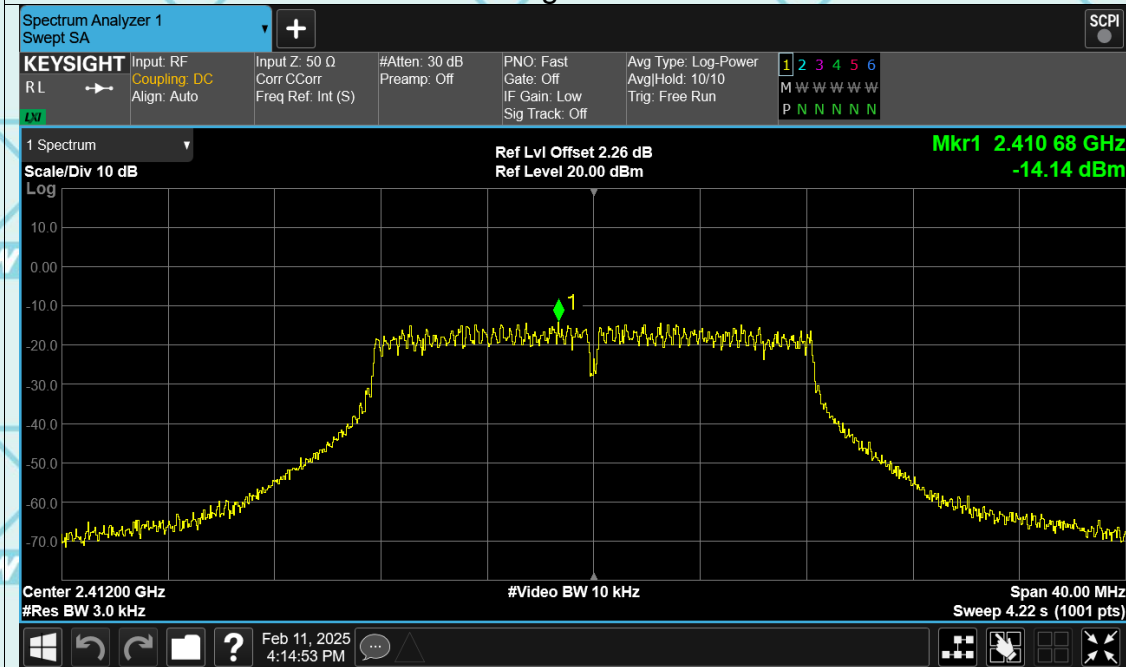


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

### PSD NVNT b 2462MHz Ant1

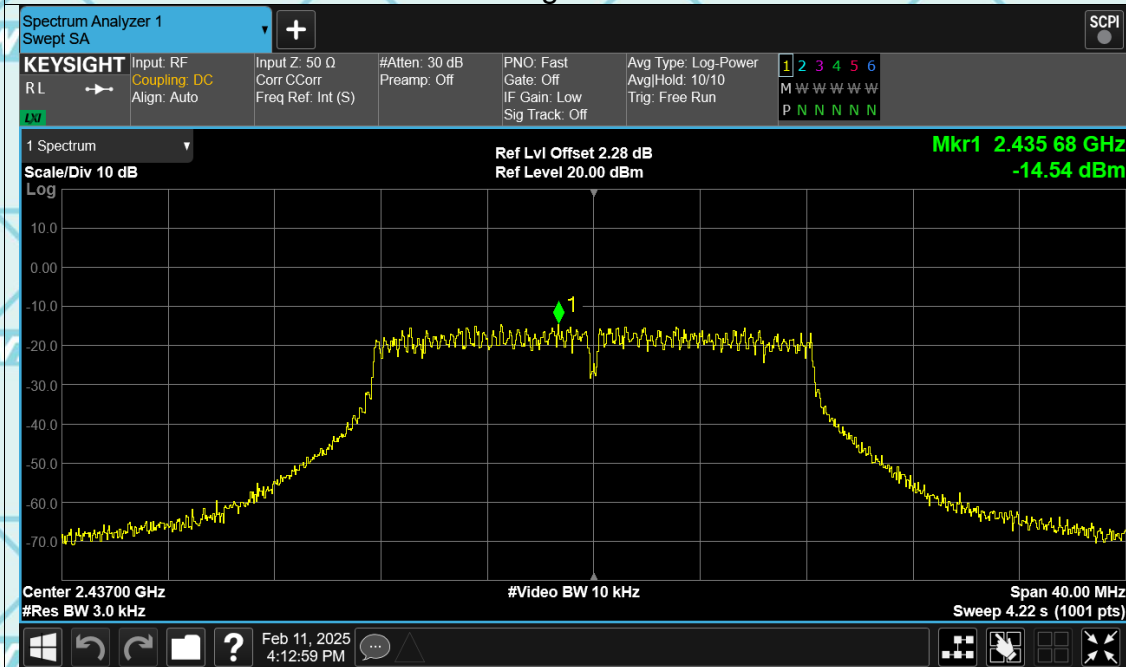


### PSD NVNT g 2412MHz Ant1

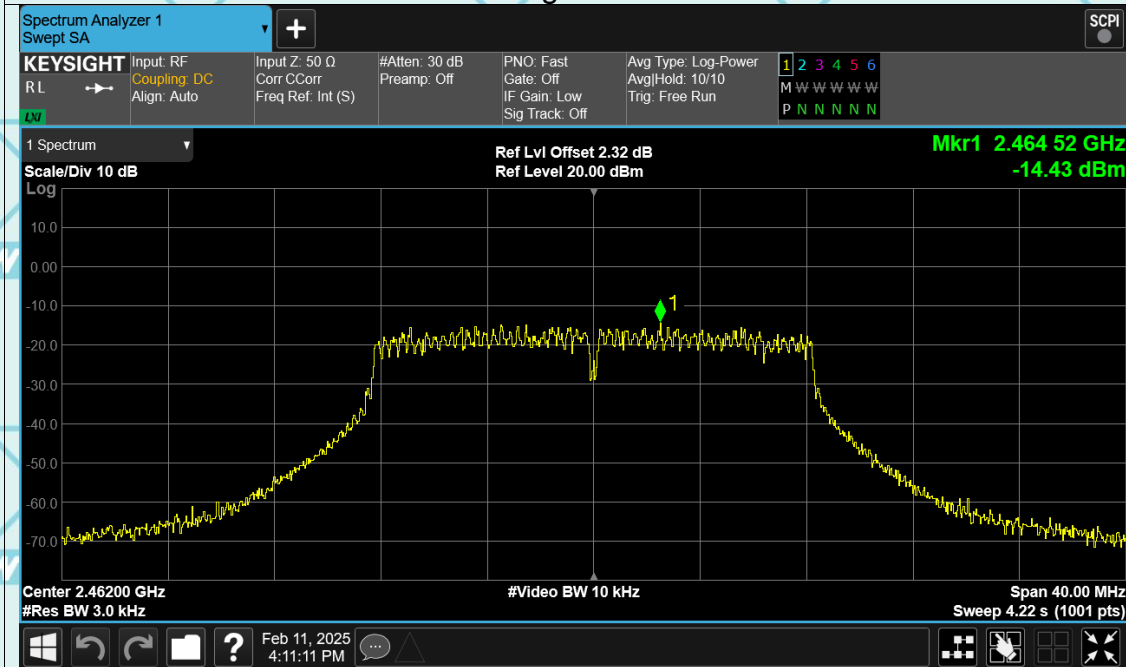


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

### PSD NVNT g 2437MHz Ant1



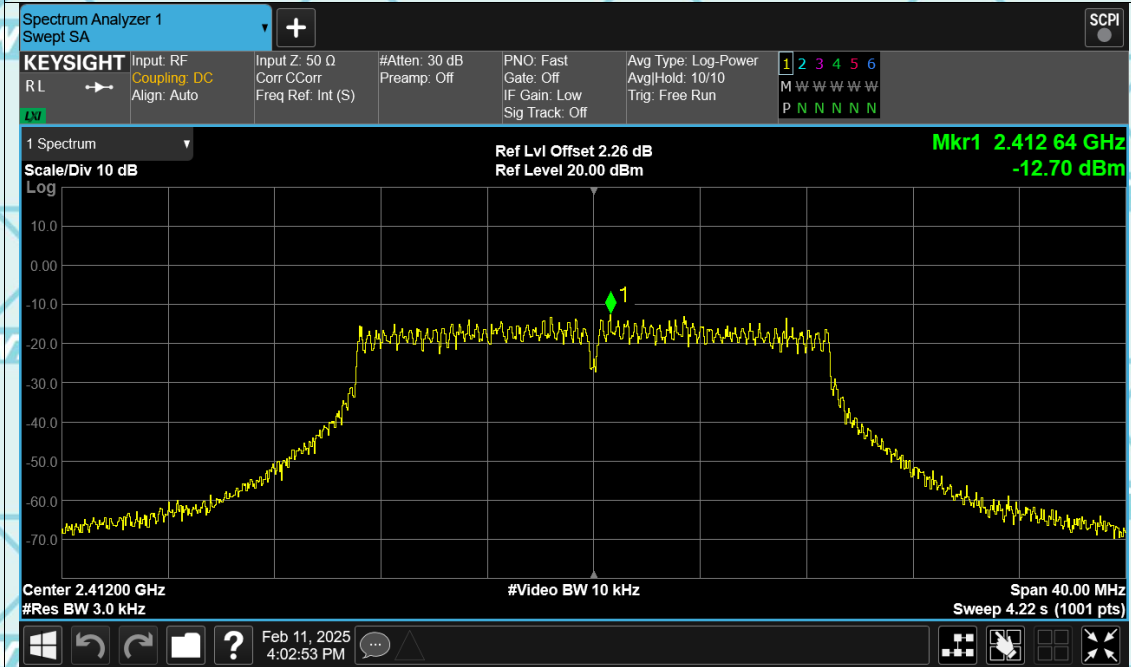
### PSD NVNT g 2462MHz Ant1



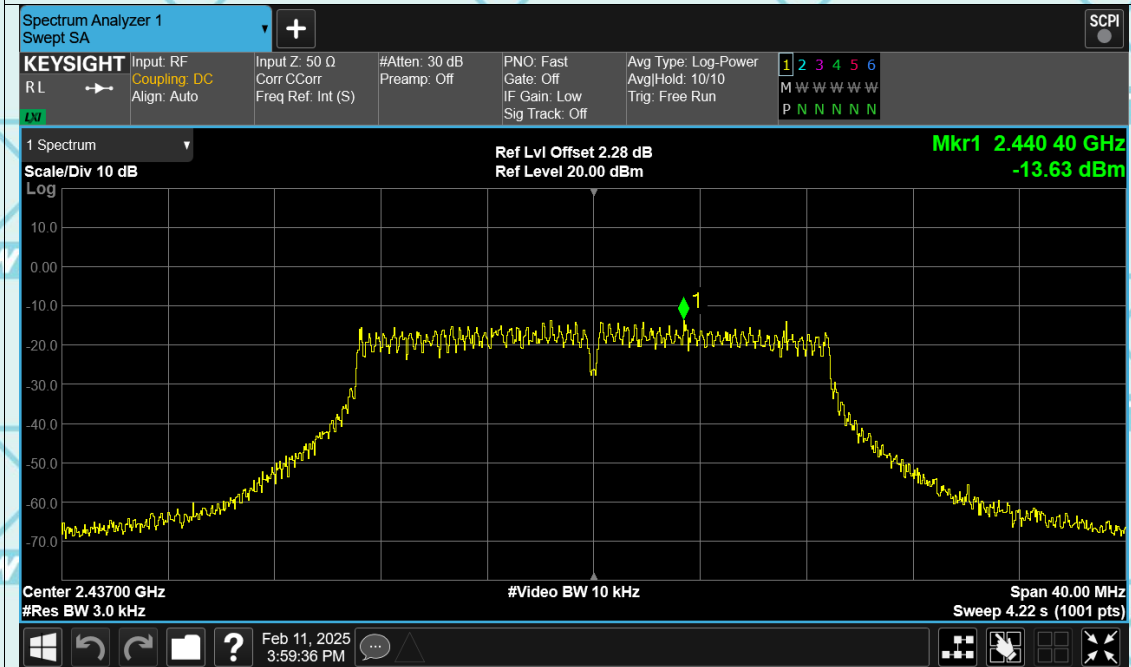


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

### PSD NVNT n20 2412MHz Ant1

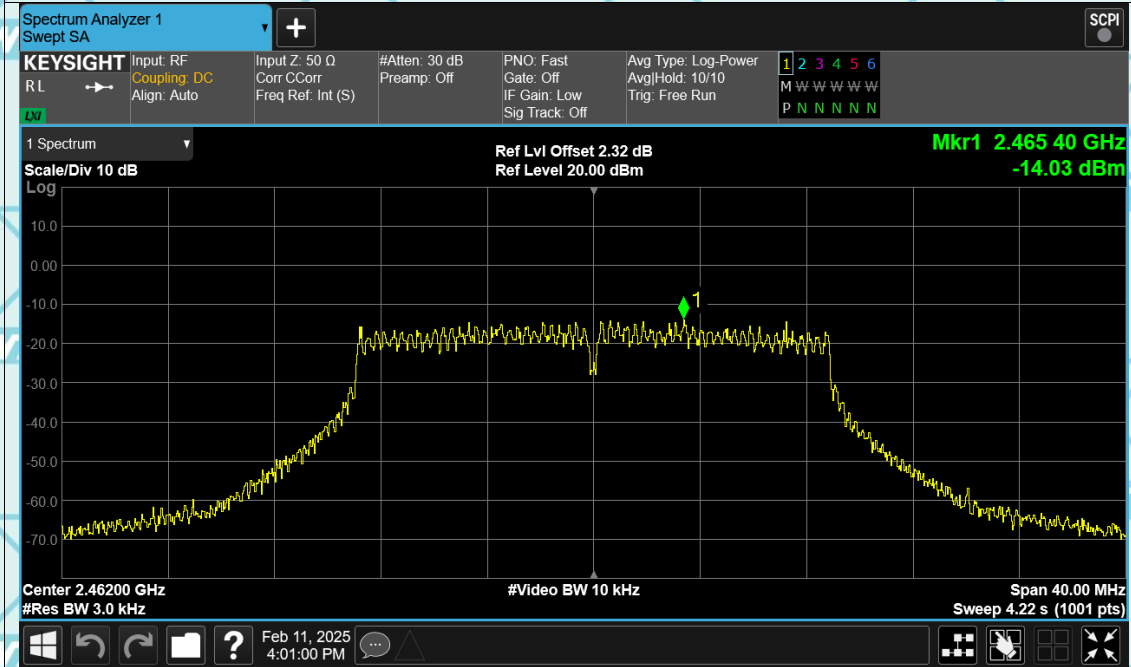


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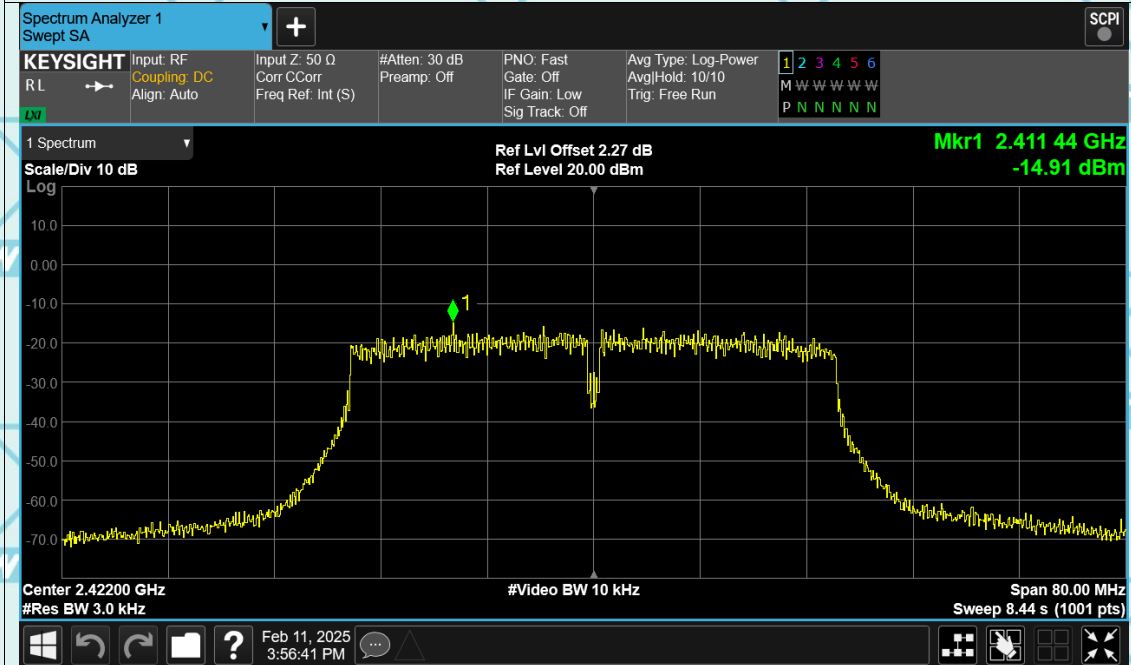


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

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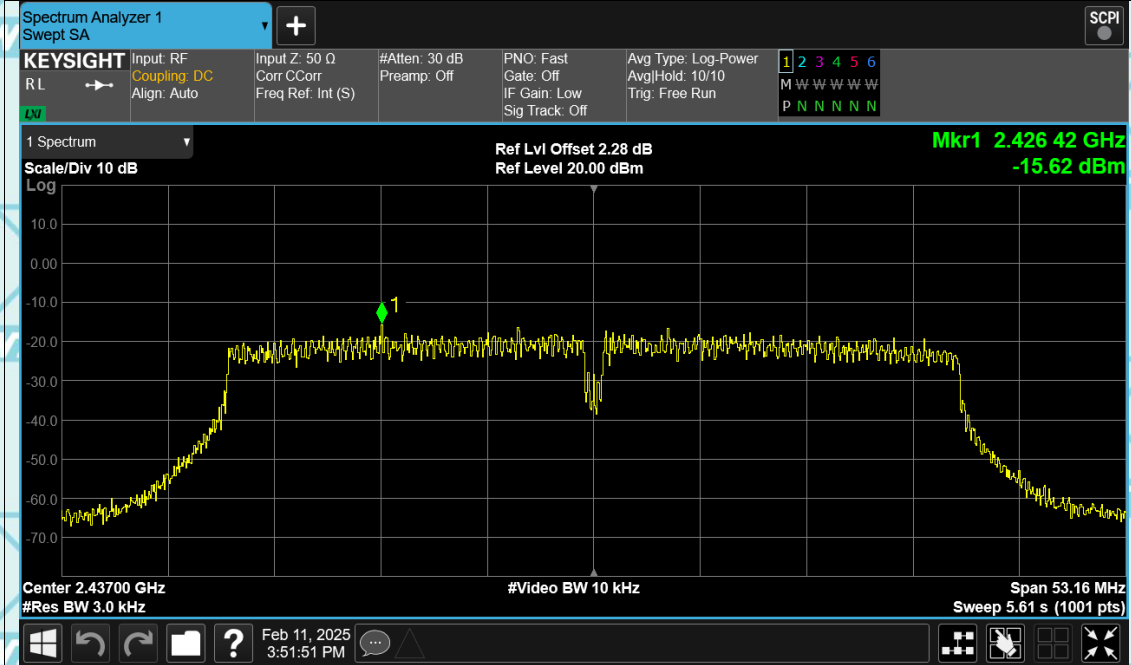
### PSD NVNT n40 2422MHz Ant1



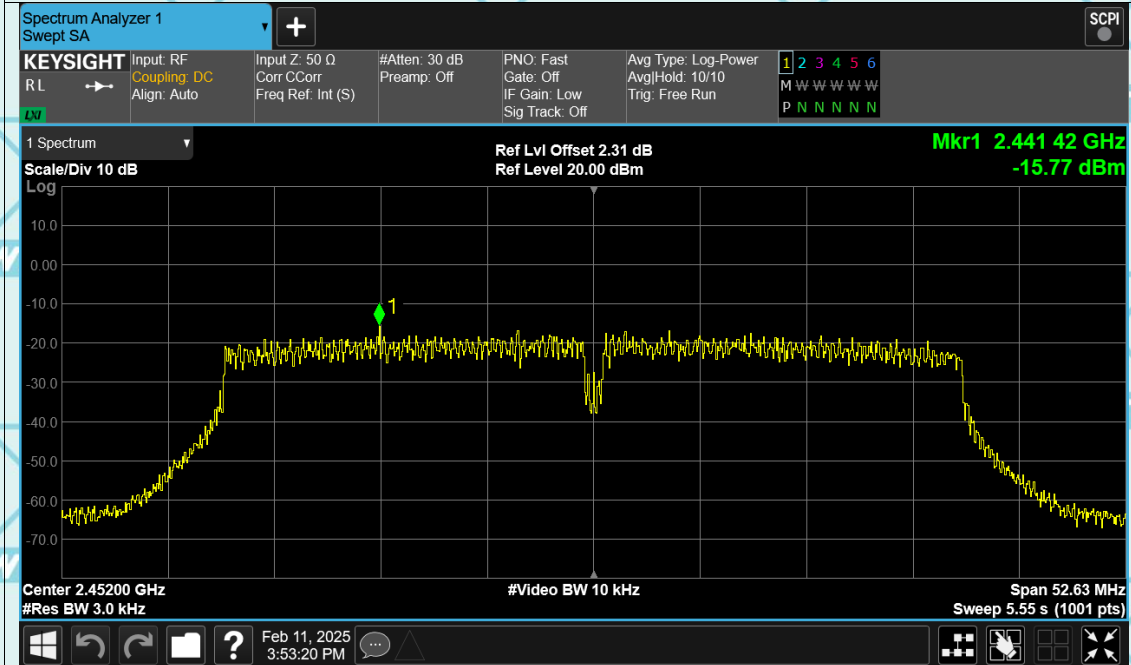


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

### PSD NVNT n40 2437MHz Ant1

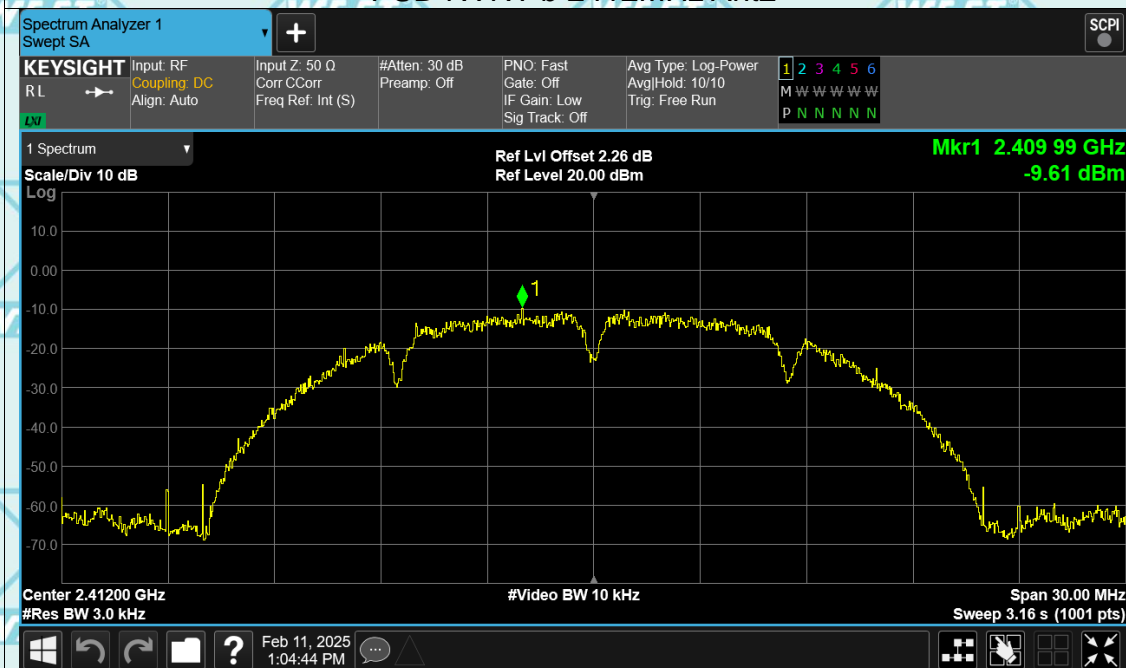


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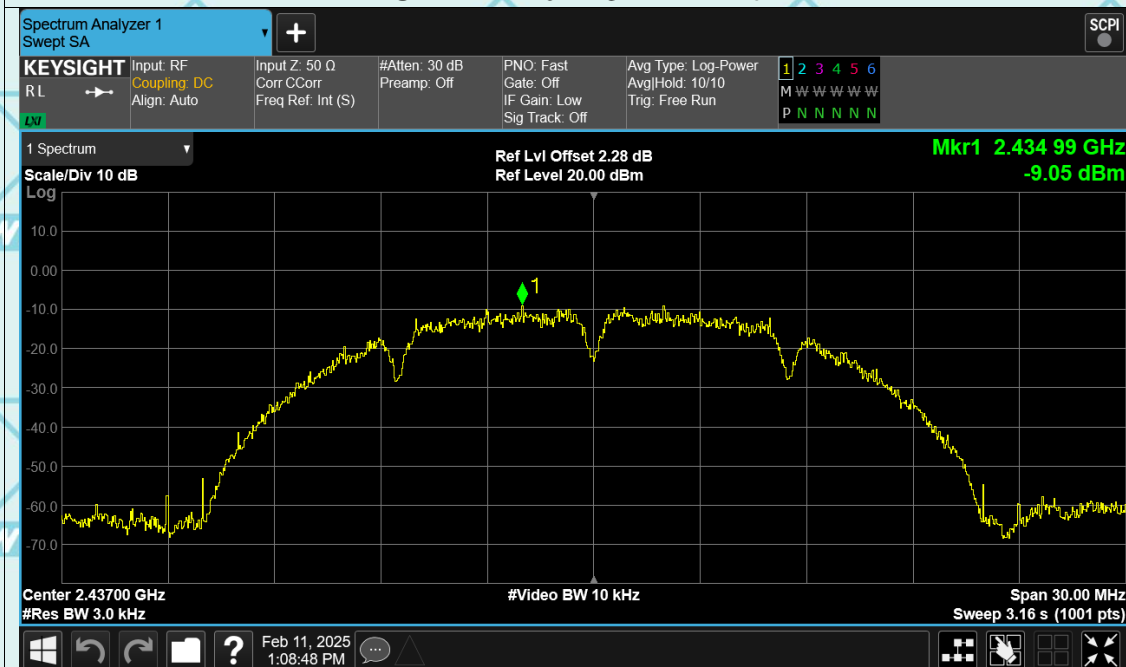


## Test Graphs

### PSD NVNT b 2412MHz Ant2



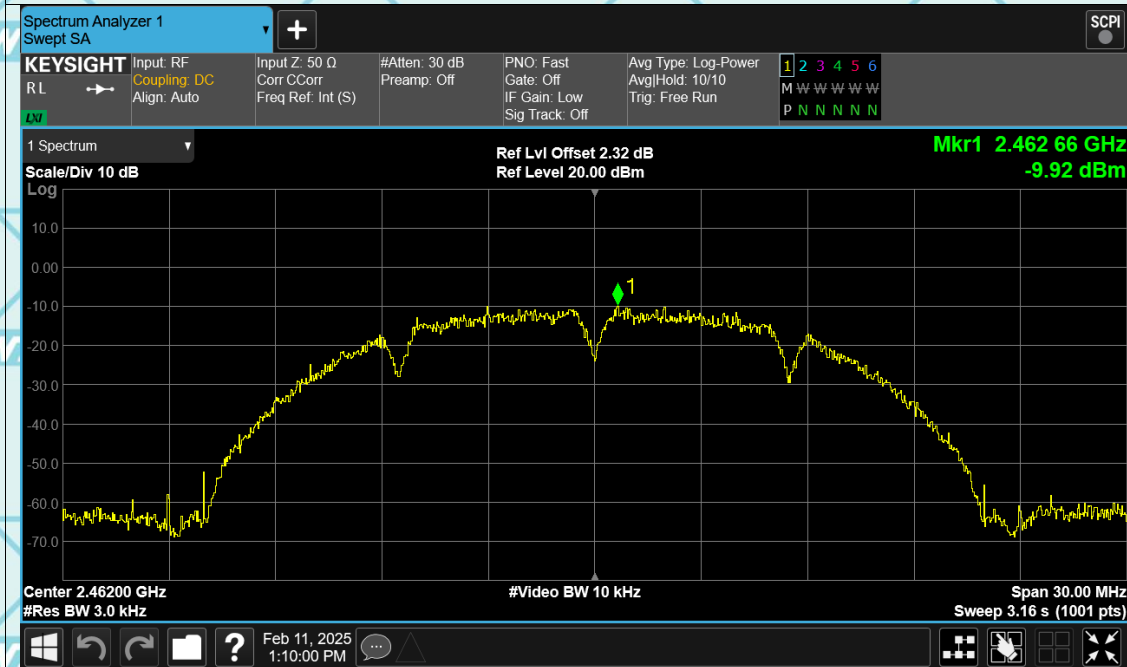
### PSD NVNT b 2437MHz Ant2



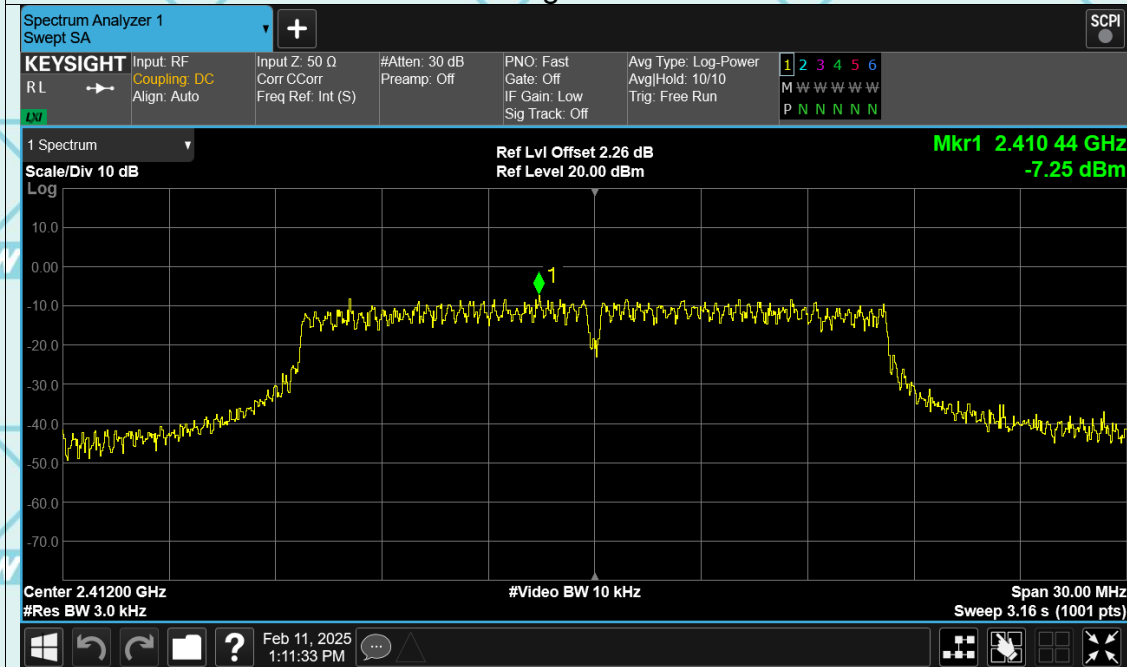


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

### PSD NVNT b 2462MHz Ant2

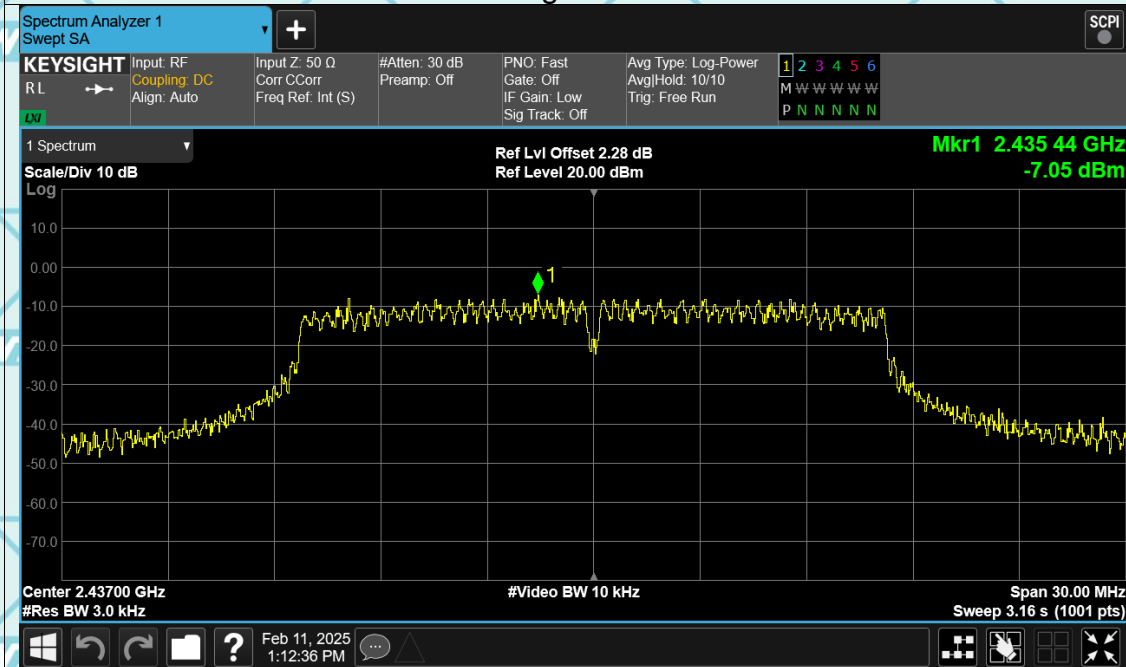


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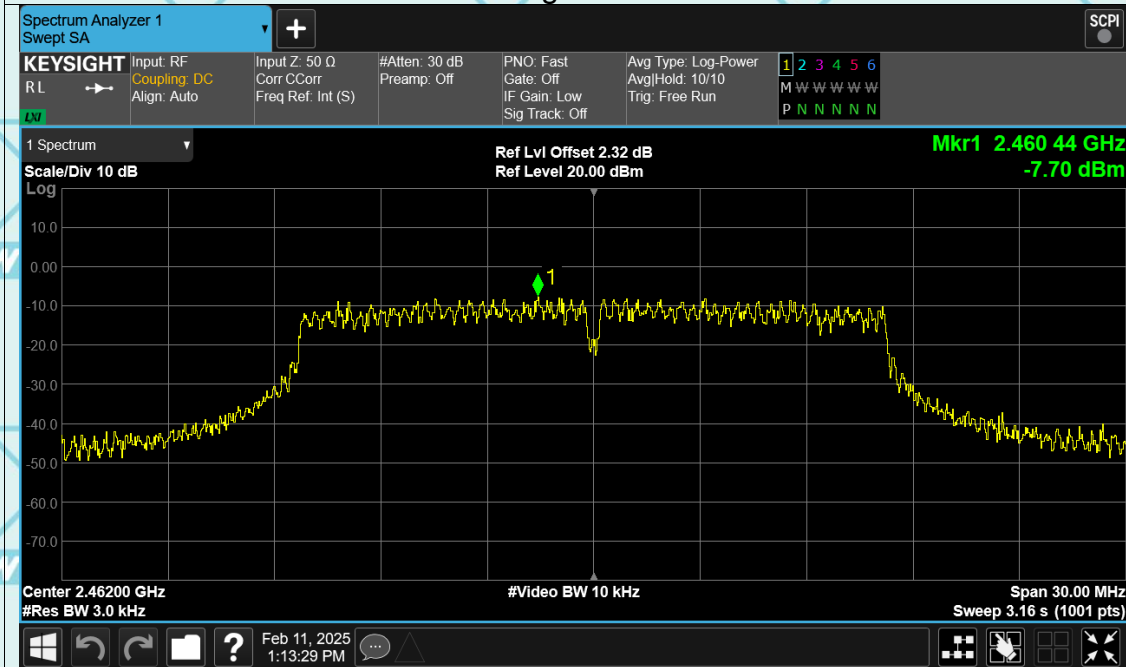


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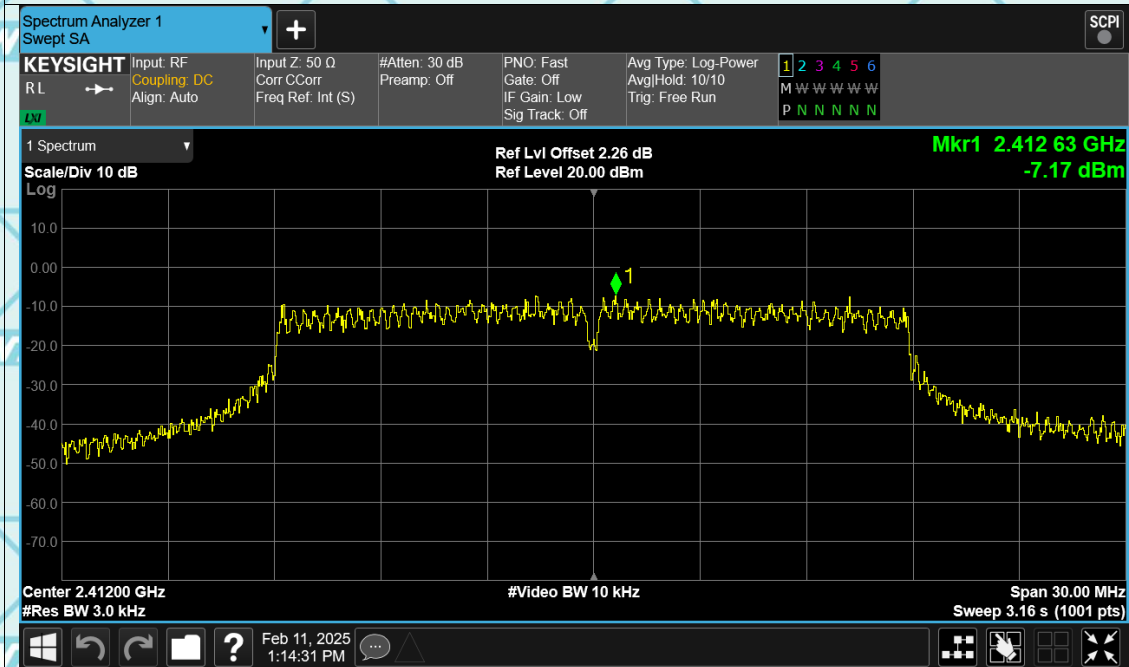
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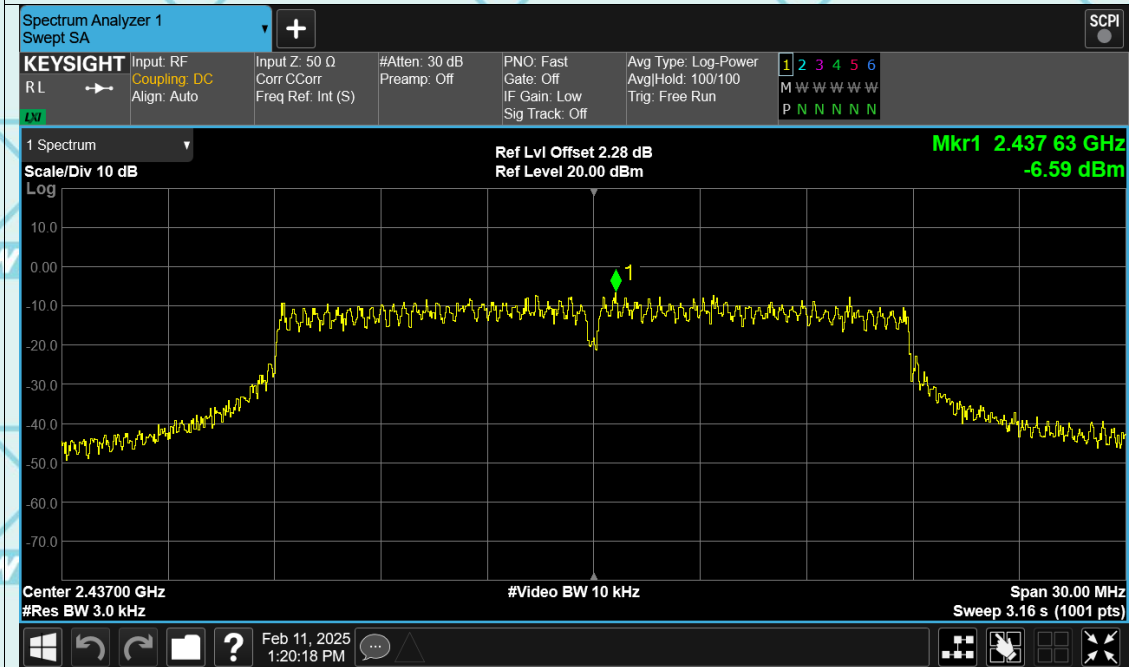


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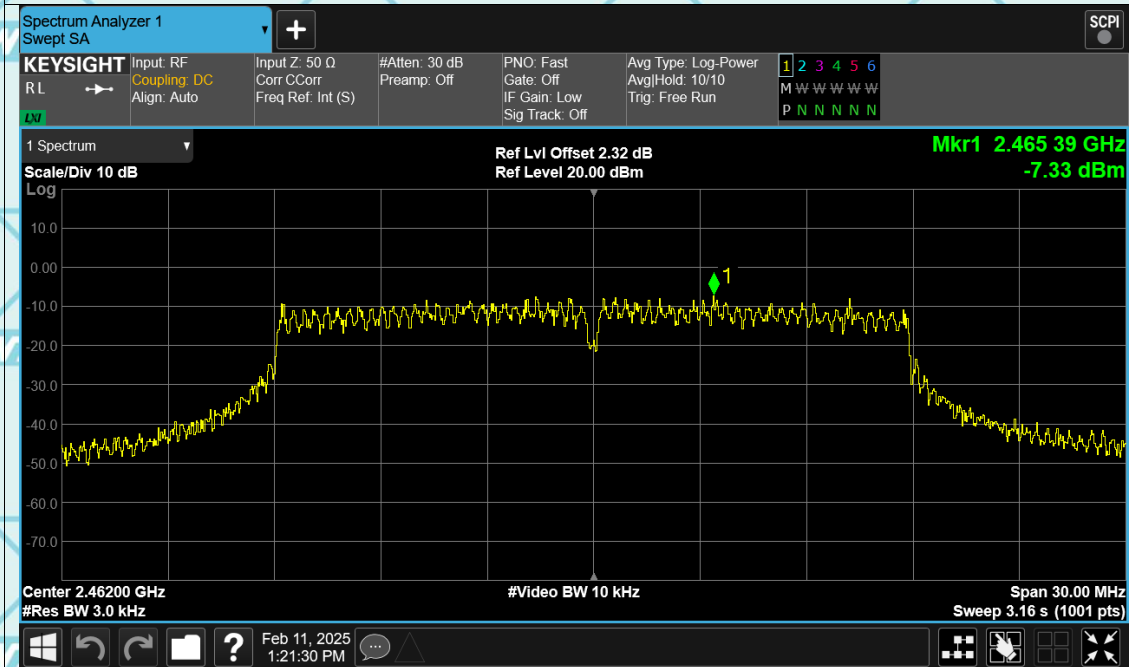


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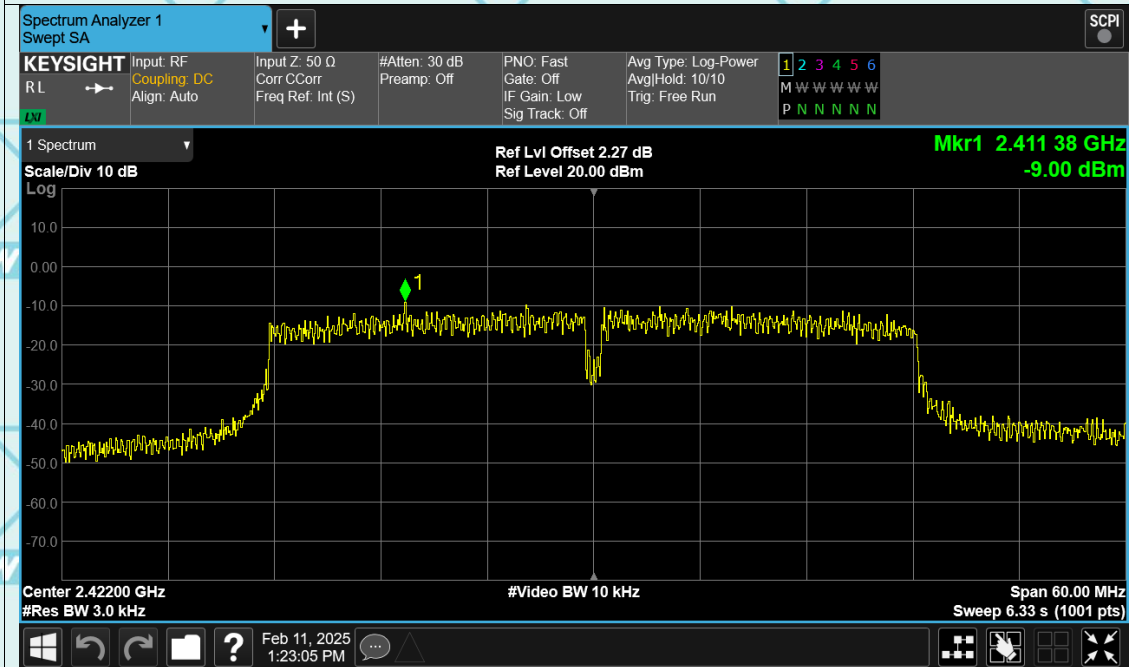


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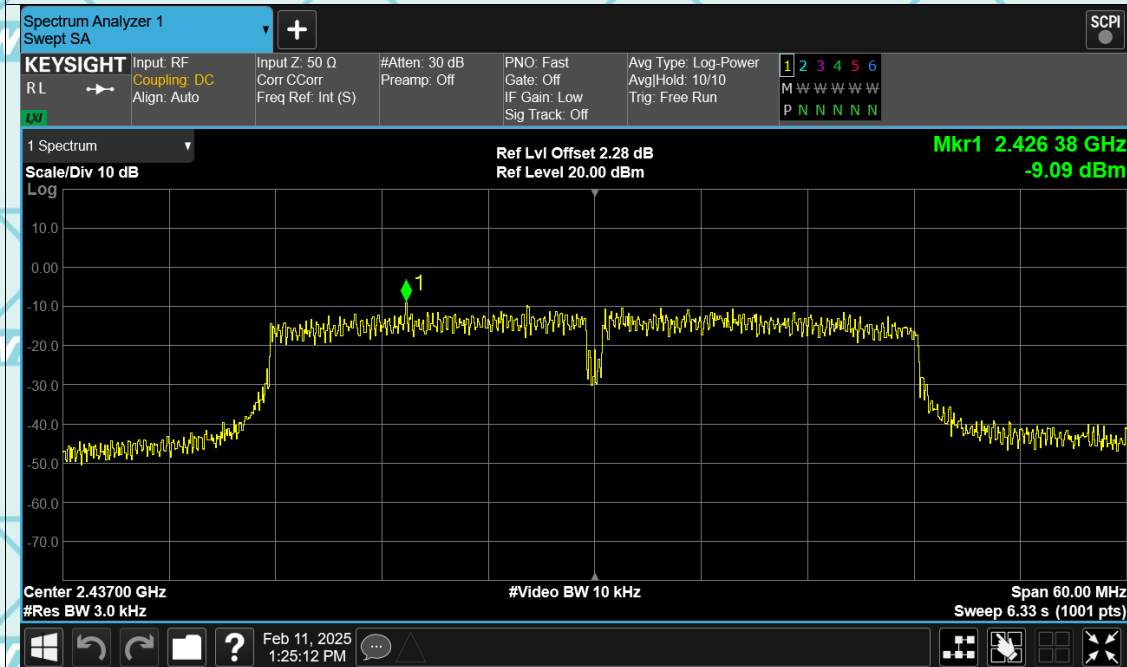
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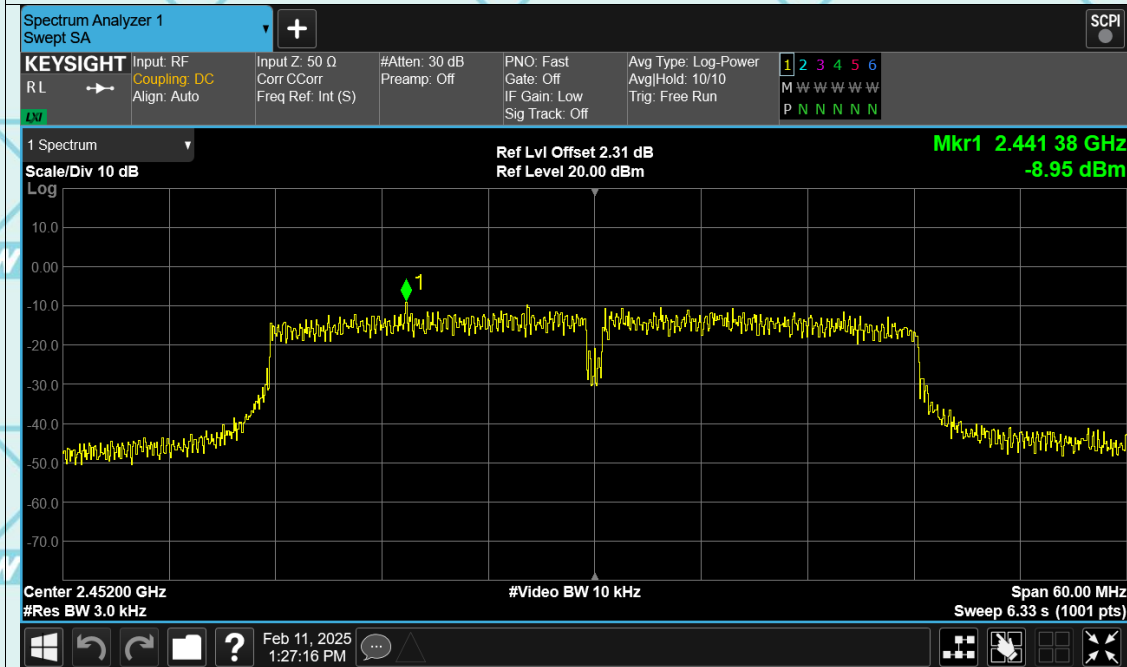


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

### PSD NVNT n40 2437MHz Ant2

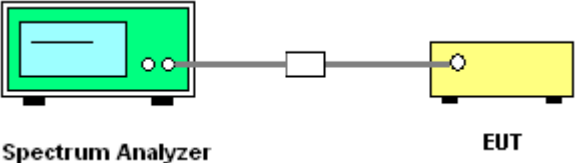


### PSD NVNT n40 2452MHz Ant2



## 6.6. Conducted Band Edge and Spurious Emission Measurement

### 6.6.1 Test Specification

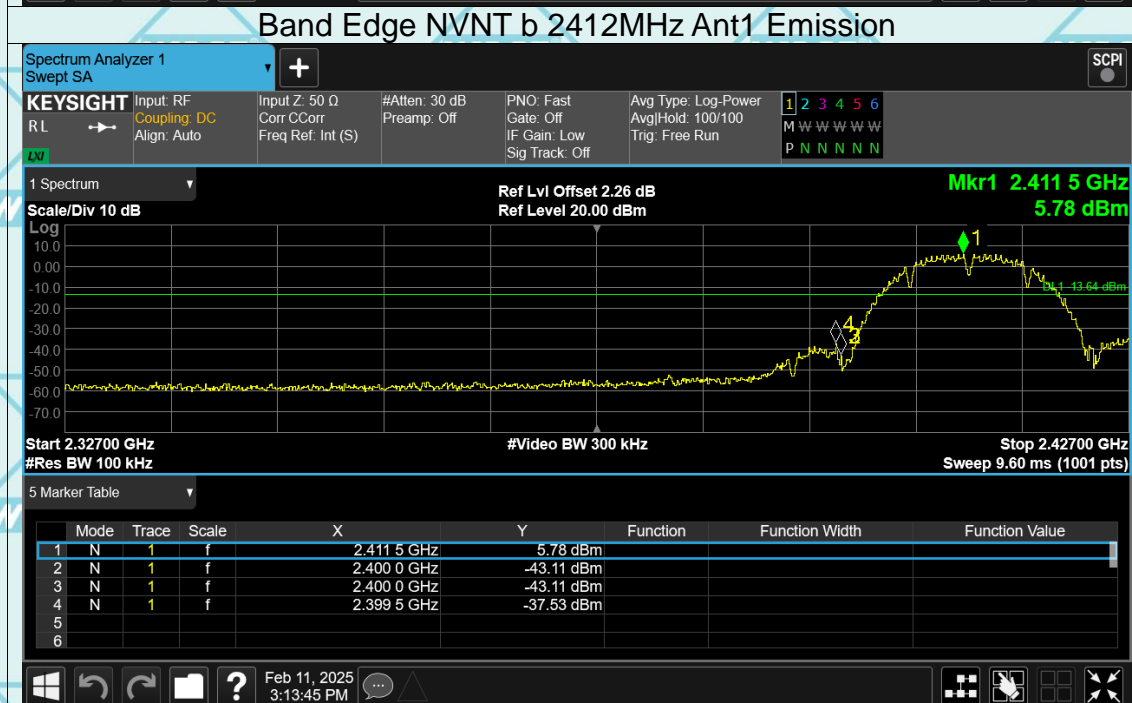
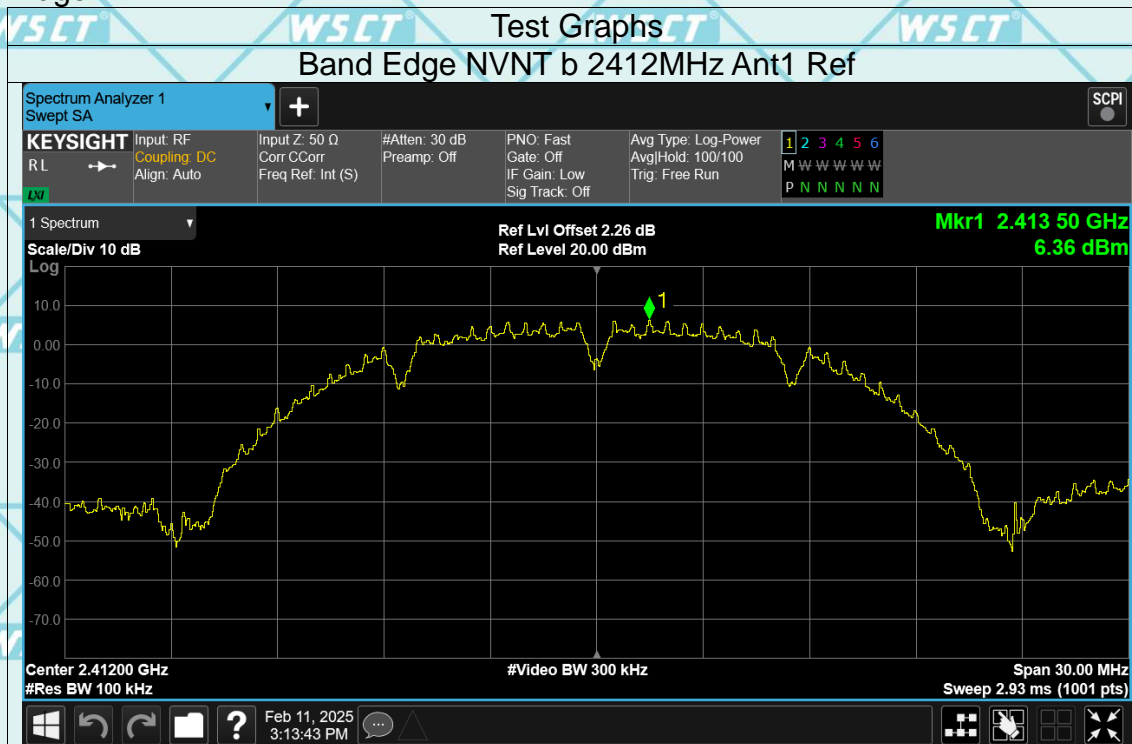
<b>Test Requirement:</b>	FCC Part15 C Section 15.247 (d)
<b>Test Method:</b>	KDB558074
<b>Limit:</b>	In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 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 representing the 'Spectrum Analyzer'. A line connects it to a small white box representing an 'attenuator'. This line then connects to a yellow box representing the '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&E250100005A-Wi-Fi1

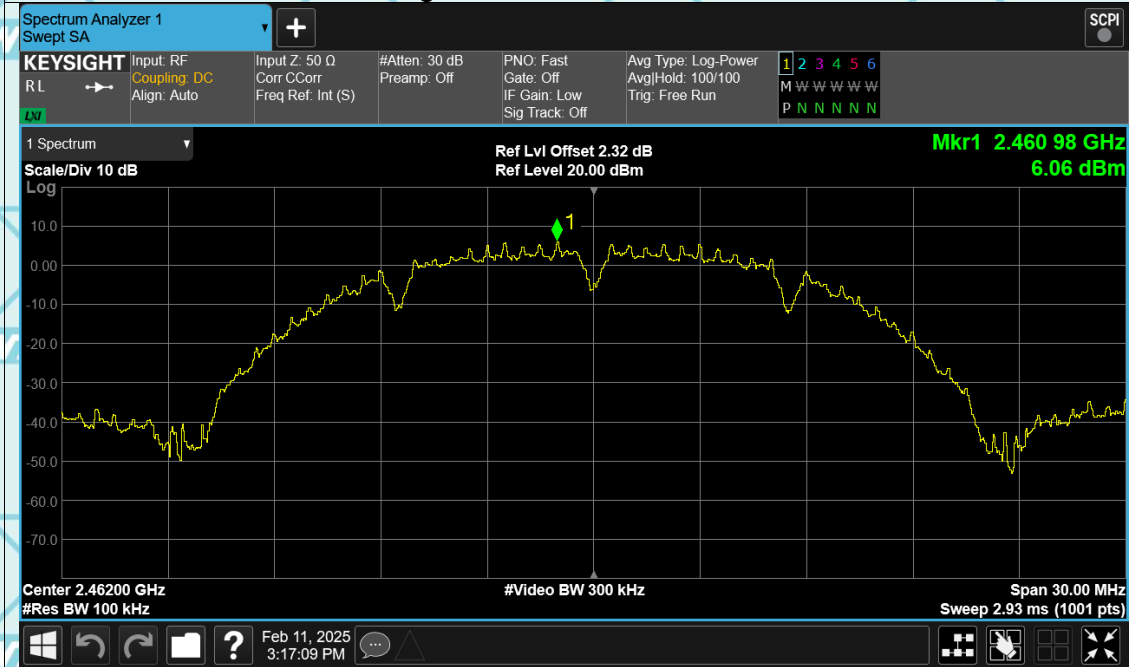
## 6.6.2. Test Data(worst)

### Band Edge

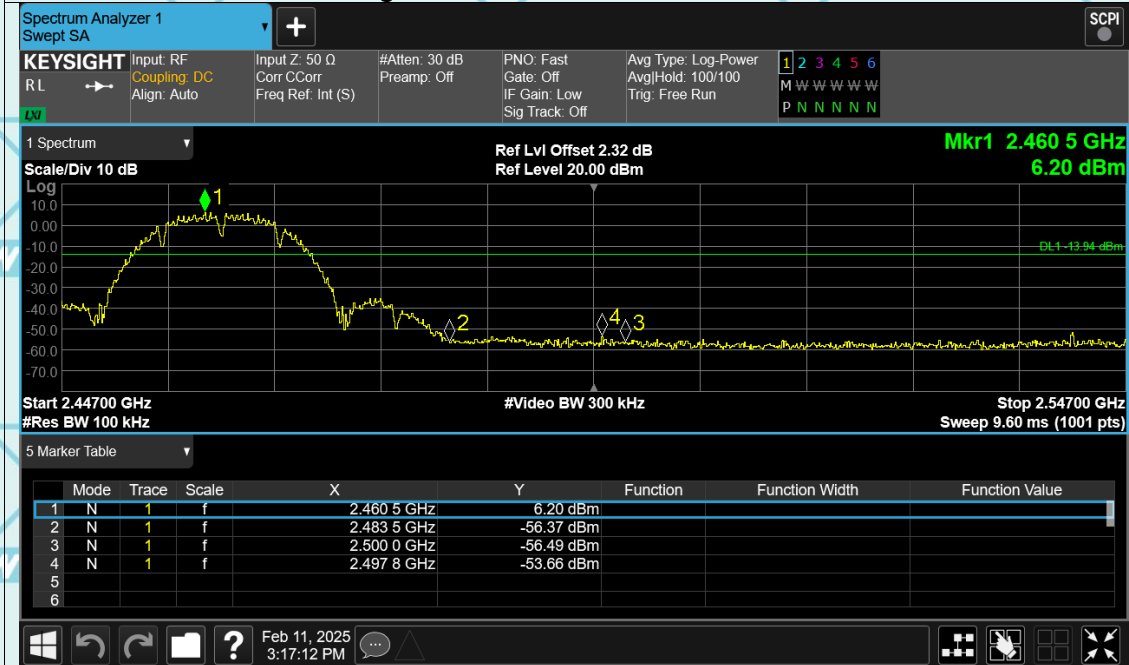


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

### Band Edge NVNT b 2462MHz Ant1 Ref



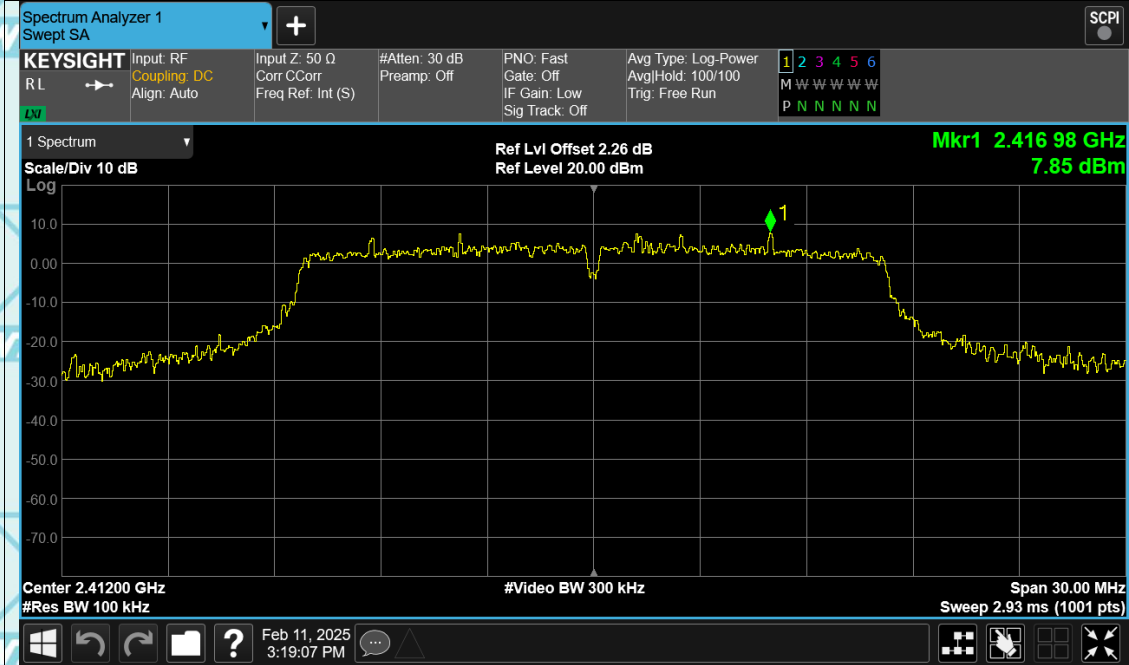
### Band Edge NVNT b 2462MHz Ant1 Emission



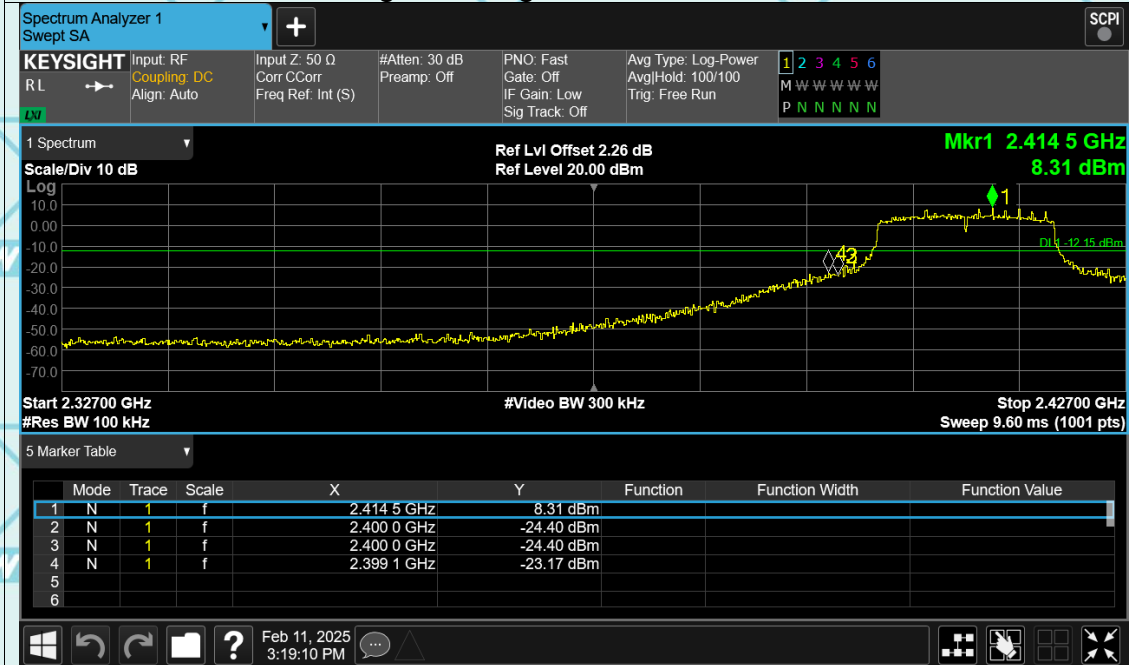


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

### Band Edge NVNT g 2412MHz Ant1 Ref

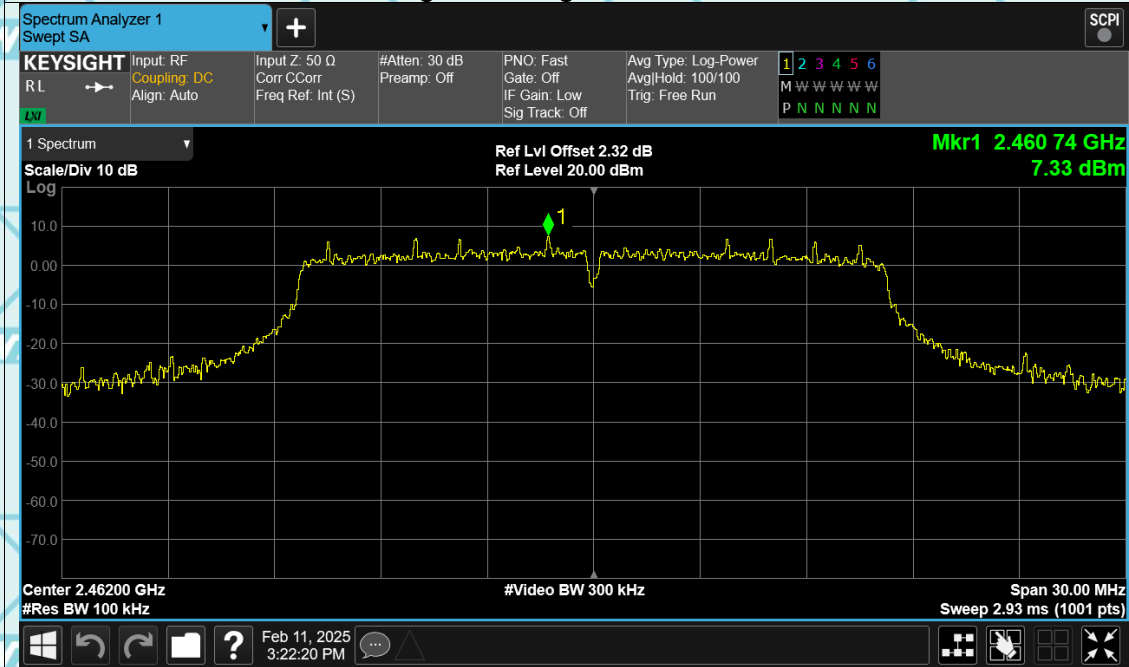


### Band Edge NVNT g 2412MHz Ant1 Emission

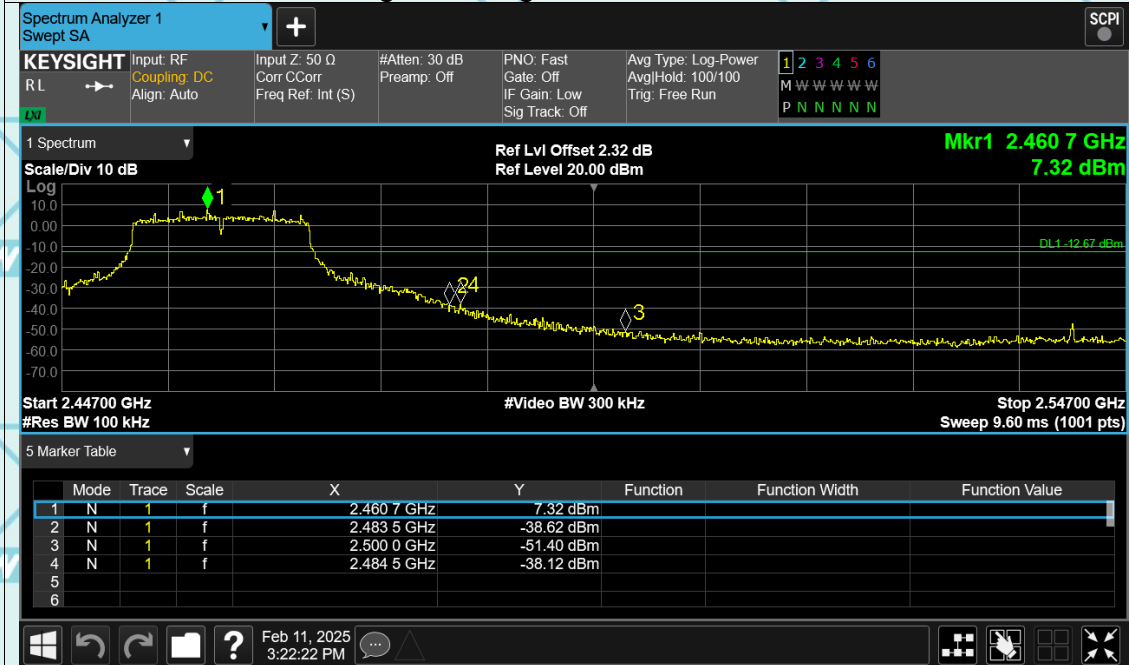


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

### Band Edge NVNT g 2462MHz Ant1 Ref



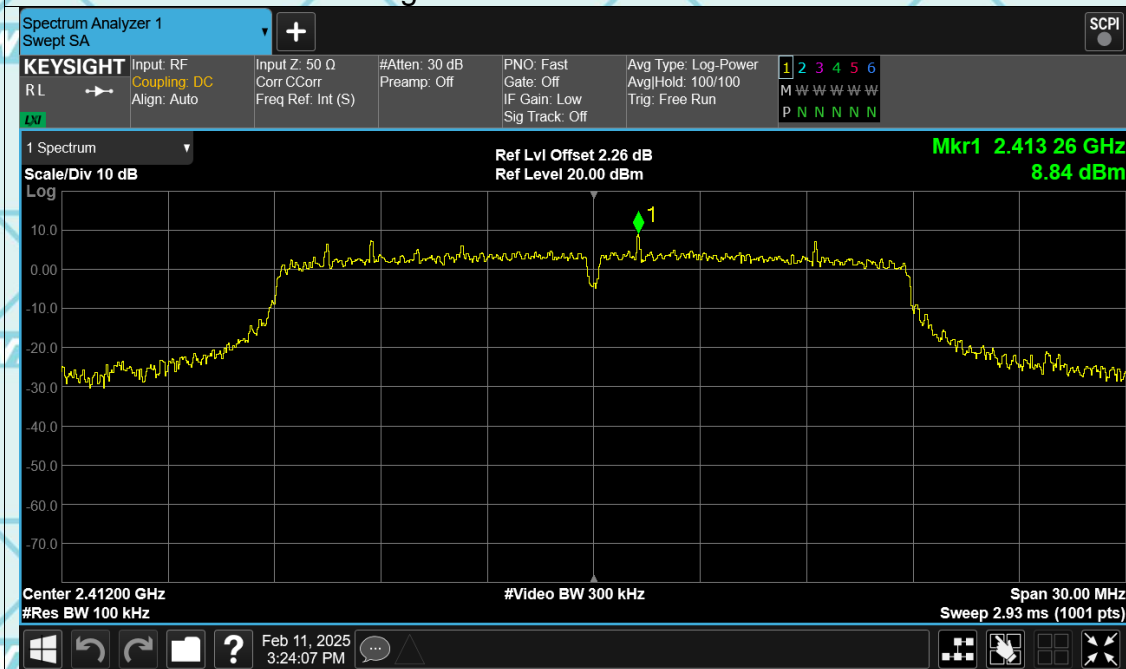
### Band Edge NVNT g 2462MHz Ant1 Emission



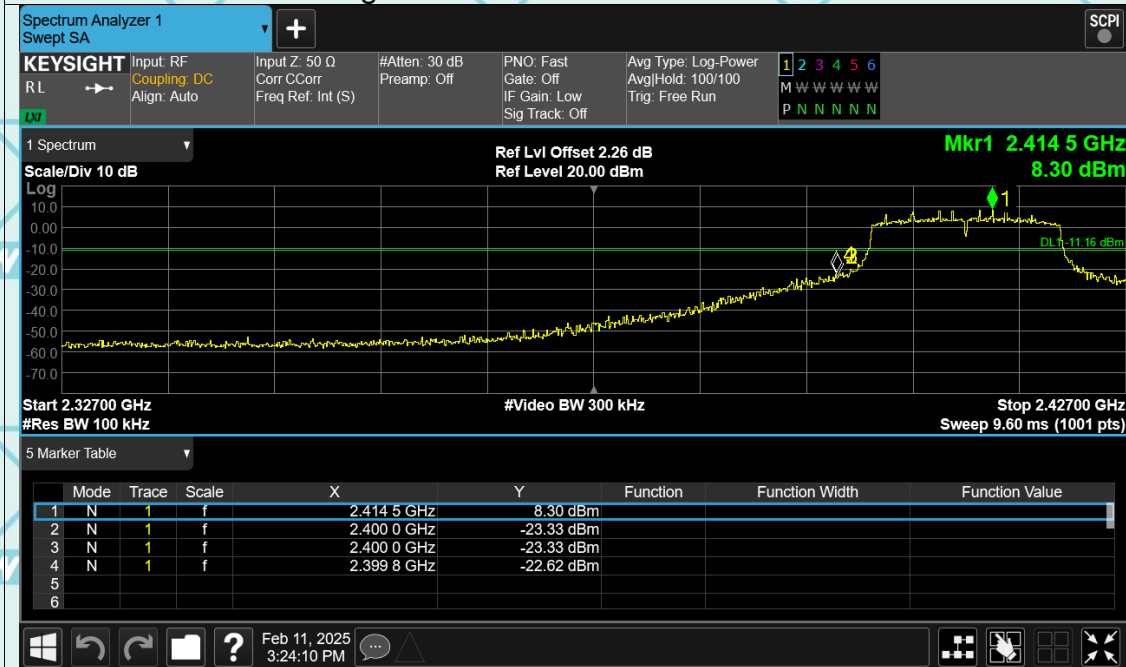


Report No.: WSCT-ANAB-R&amp;E250100005A-Wi-Fi1

## Band Edge NVNT n20 2412MHz Ant1 Ref

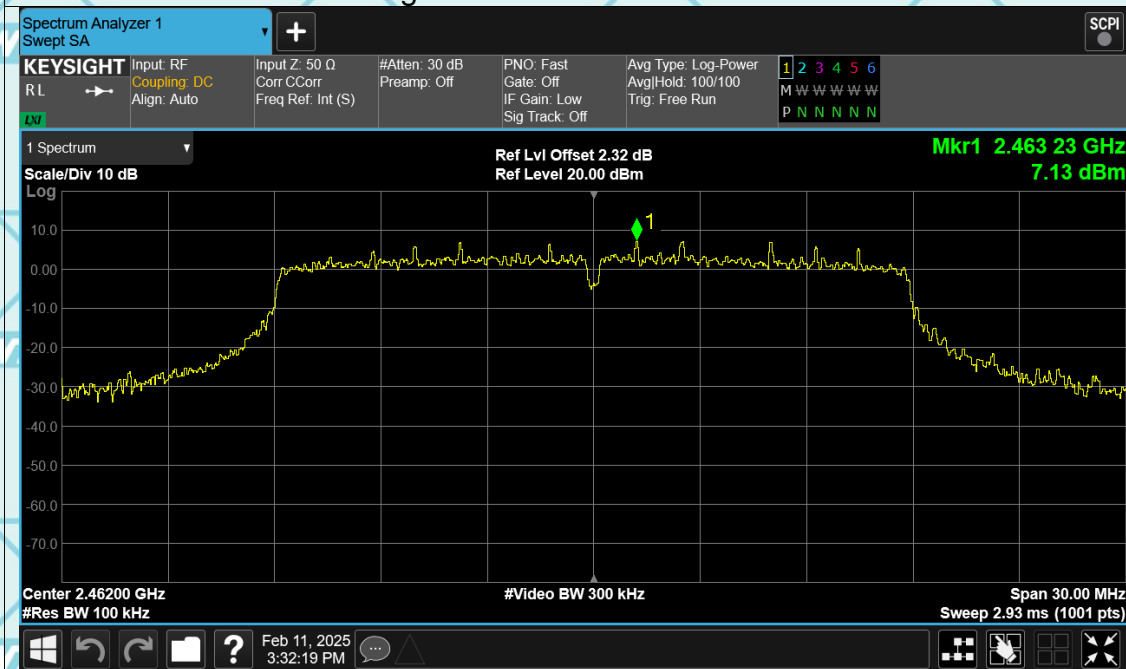


## Band Edge NVNT n20 2412MHz Ant1 Emission

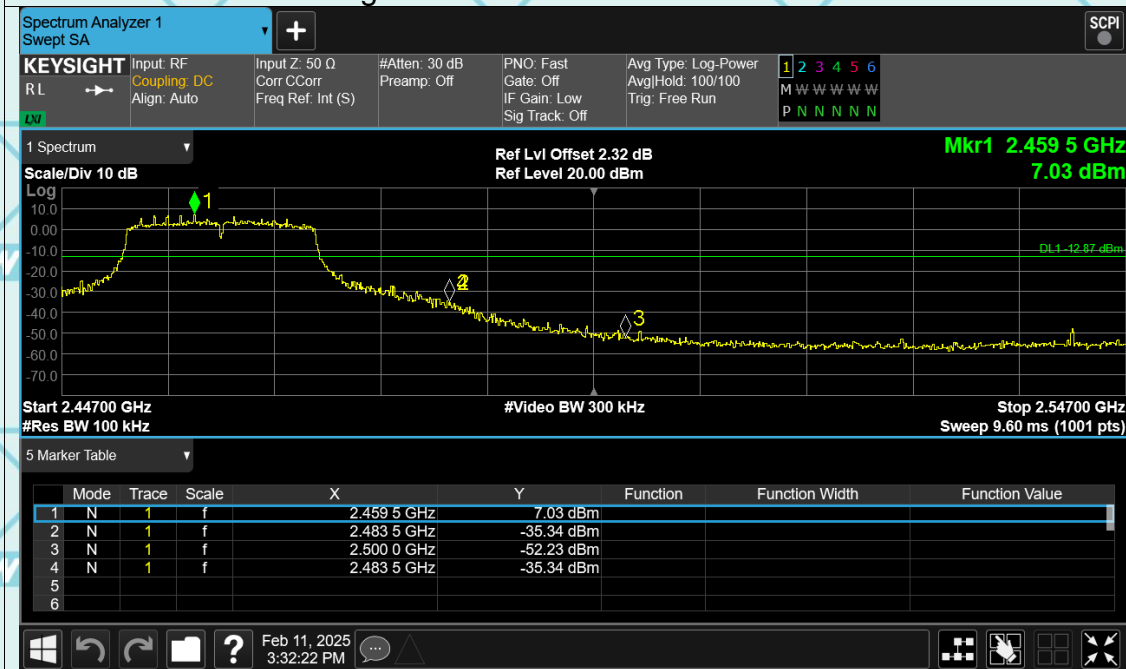


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

### Band Edge NVNT n20 2462MHz Ant1 Ref



### Band Edge NVNT n20 2462MHz Ant1 Emission



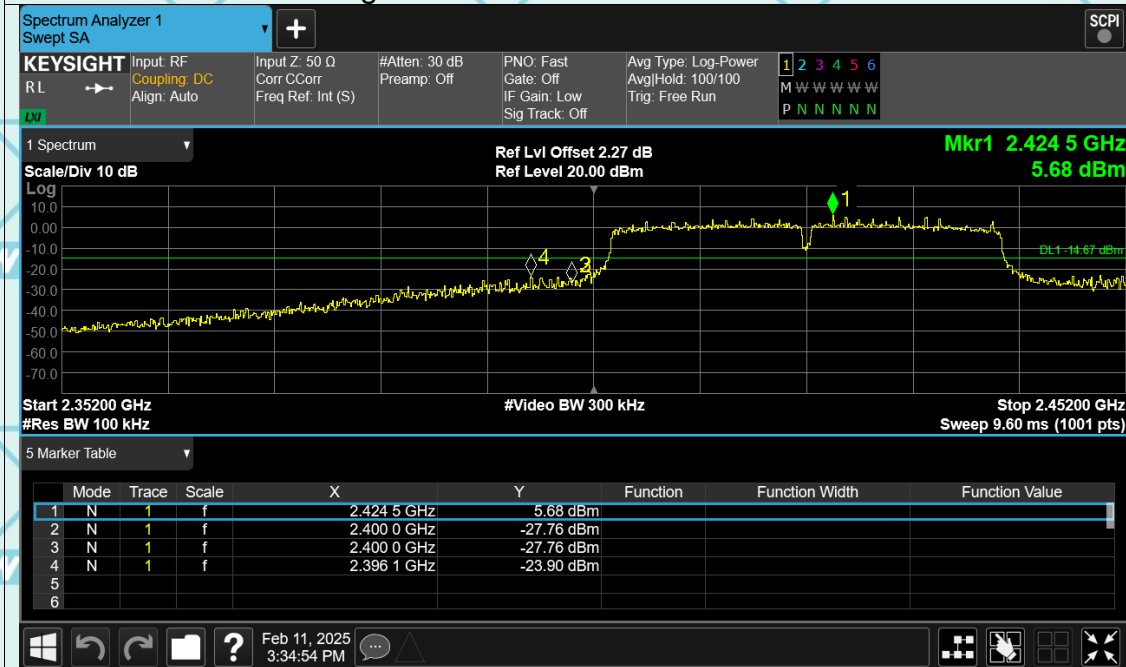


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

### Band Edge NVNT n40 2422MHz Ant1 Ref



### Band Edge NVNT n40 2422MHz Ant1 Emission

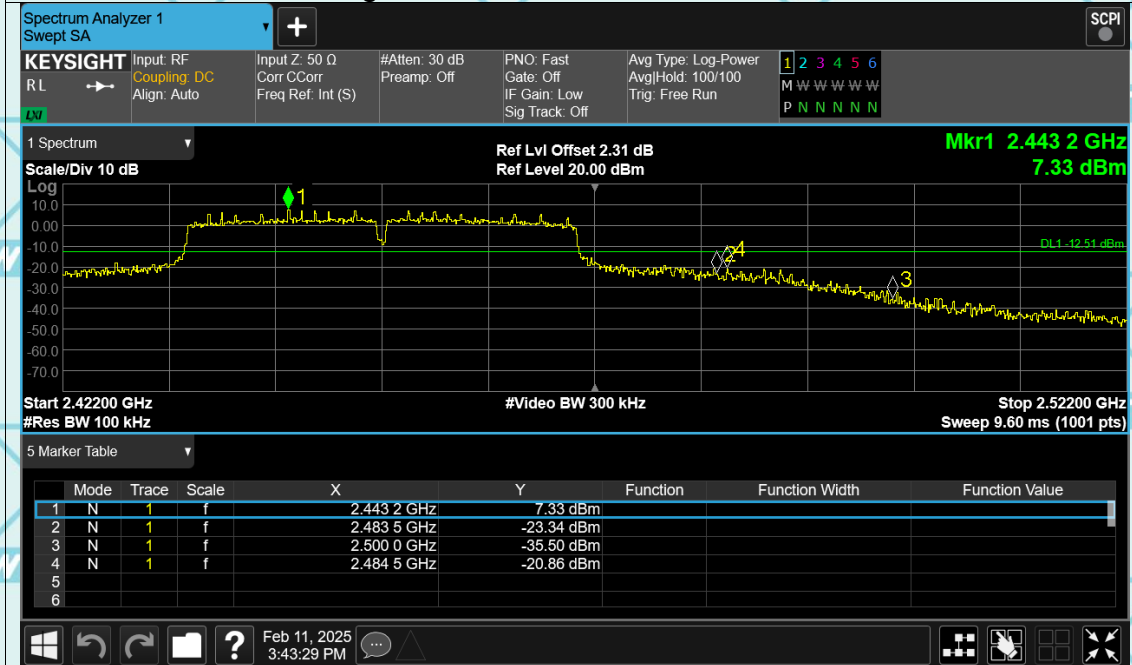


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

### Band Edge NVNT n40 2452MHz Ant1 Ref



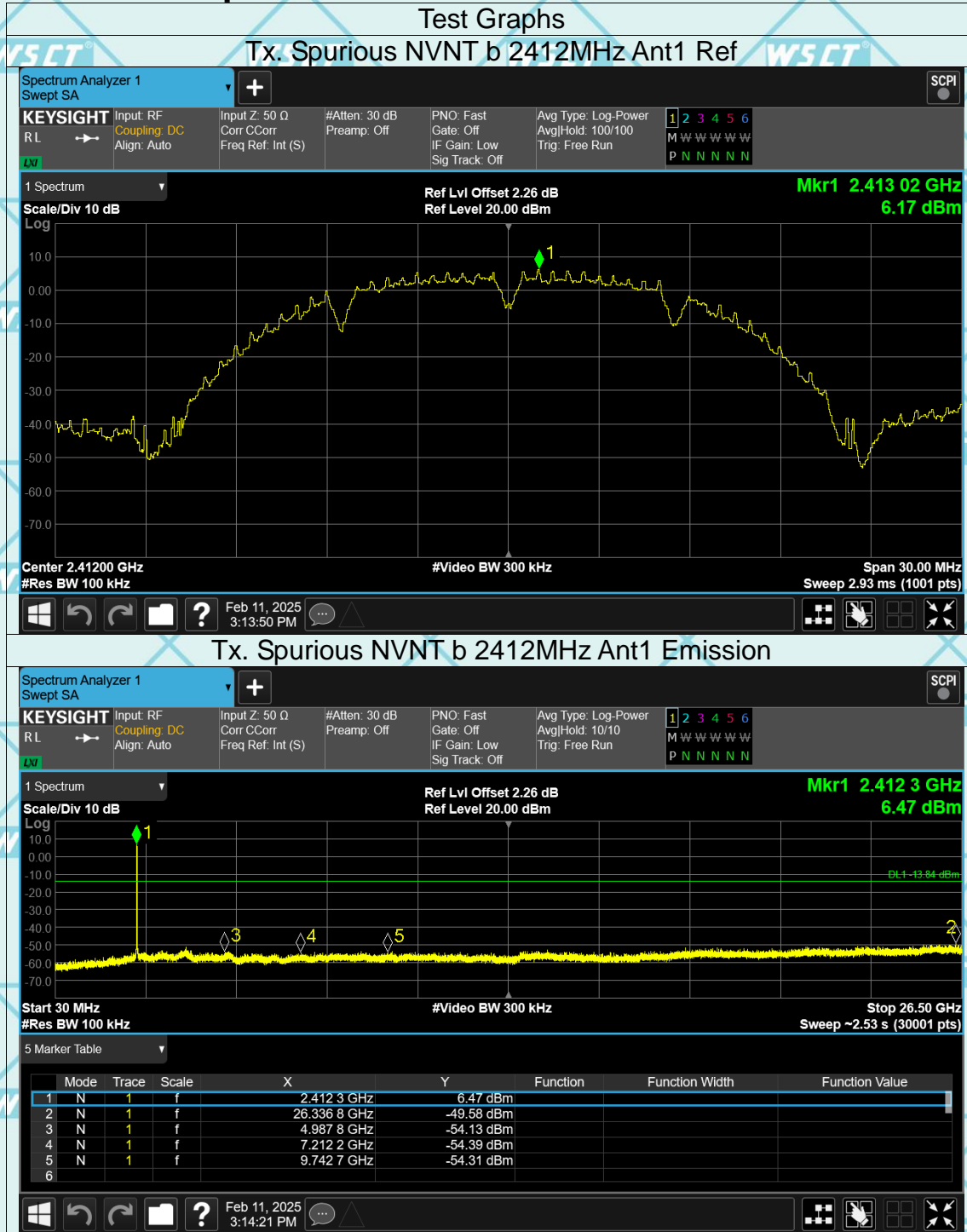
### Band Edge NVNT n40 2452MHz Ant1 Emission





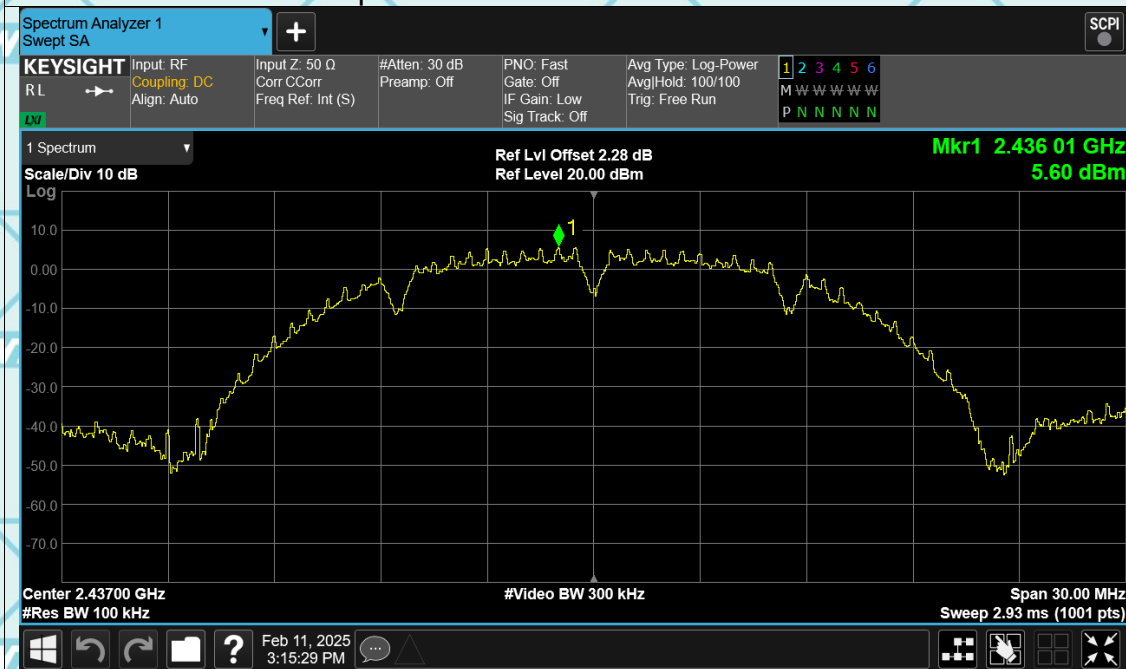
Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

## Conducted RF Spurious Emission

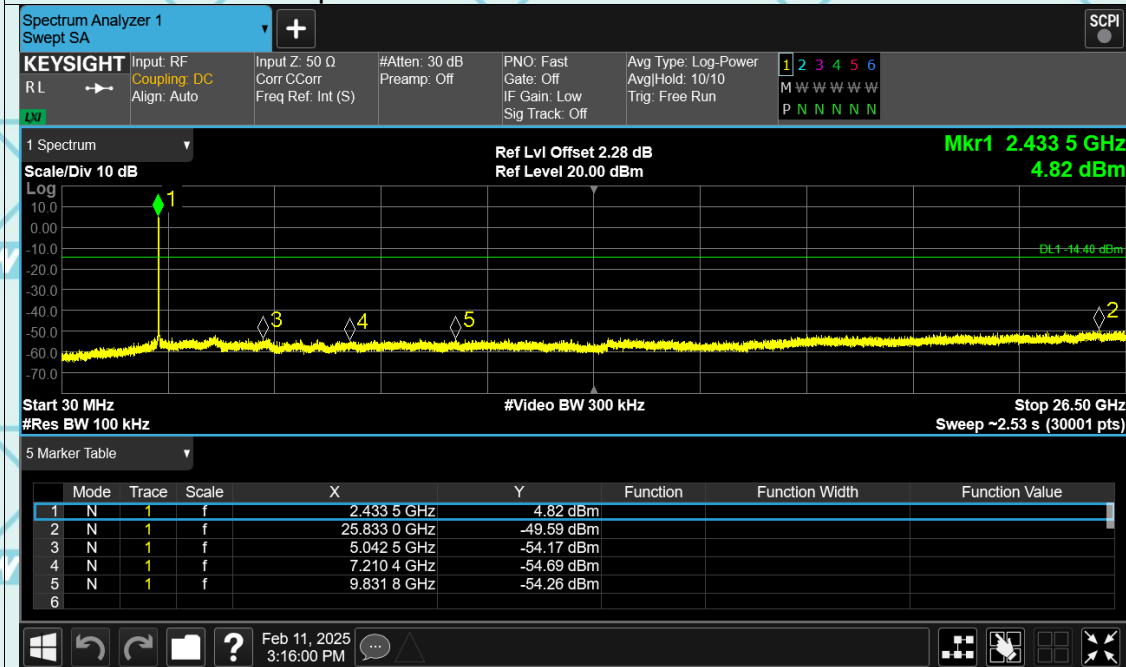


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

### Tx. Spurious NVNT b 2437MHz Ant1 Ref



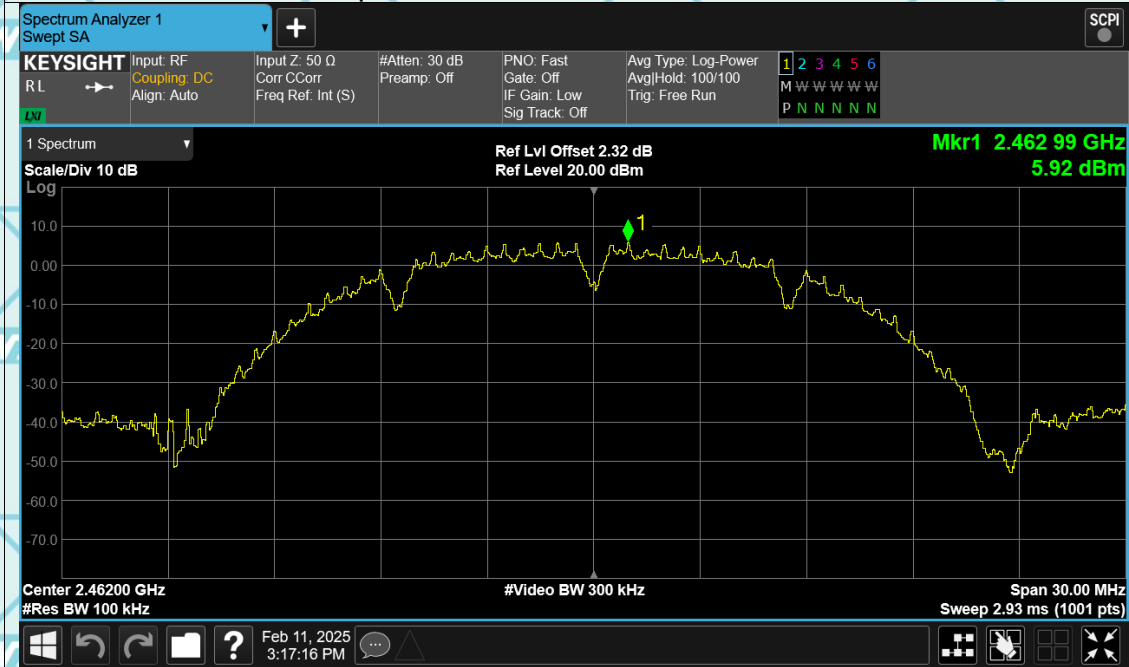
### Tx. Spurious NVNT b 2437MHz Ant1 Emission



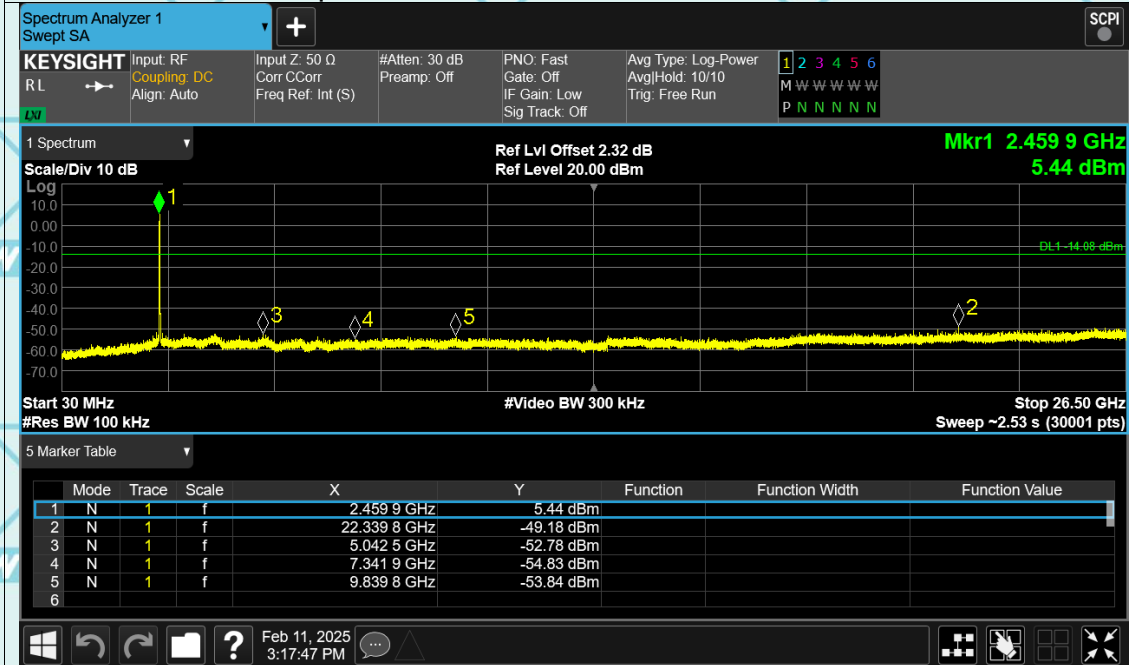


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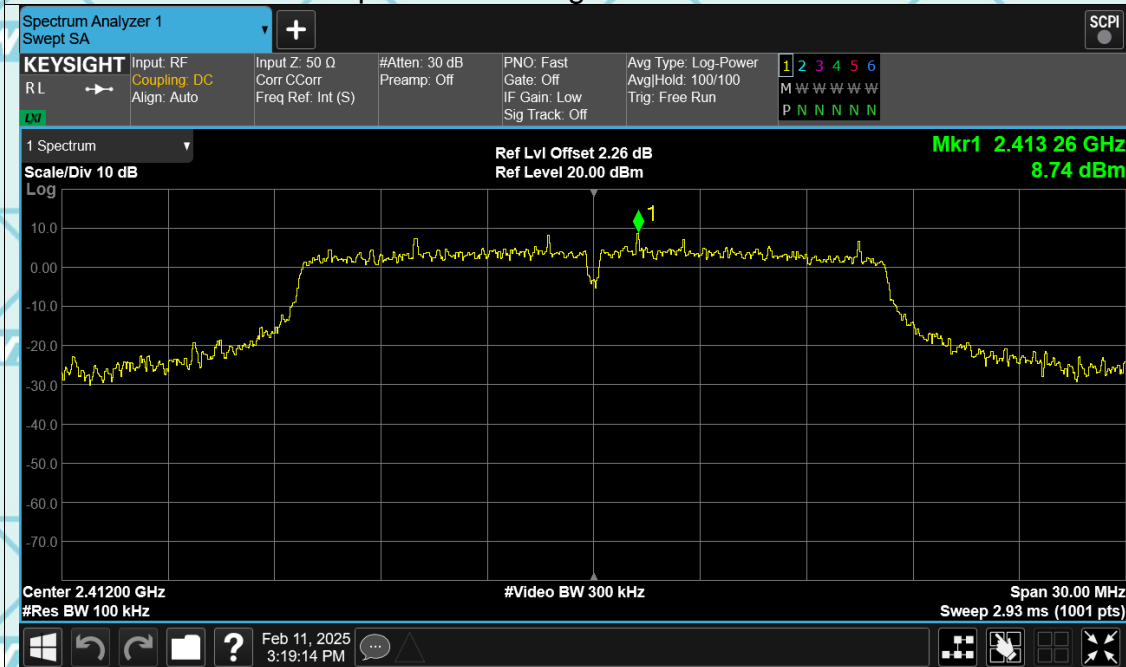
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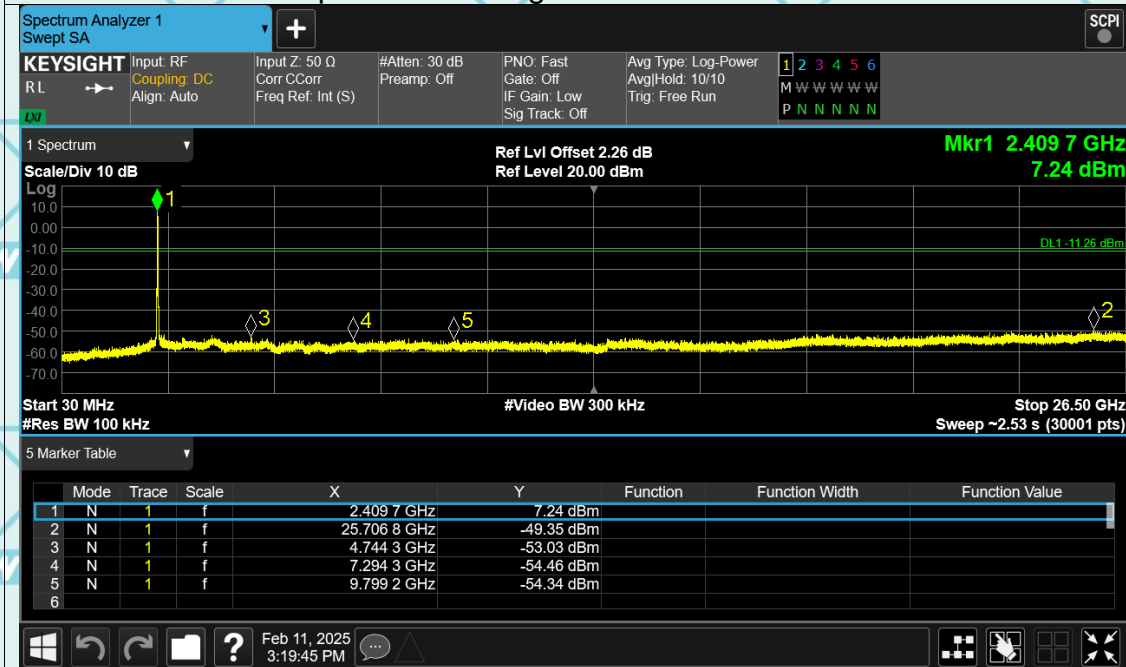
### Tx. Spurious NVNT b 2462MHz Ant1 Emission



### Tx. Spurious NVNT g 2412MHz Ant1 Ref



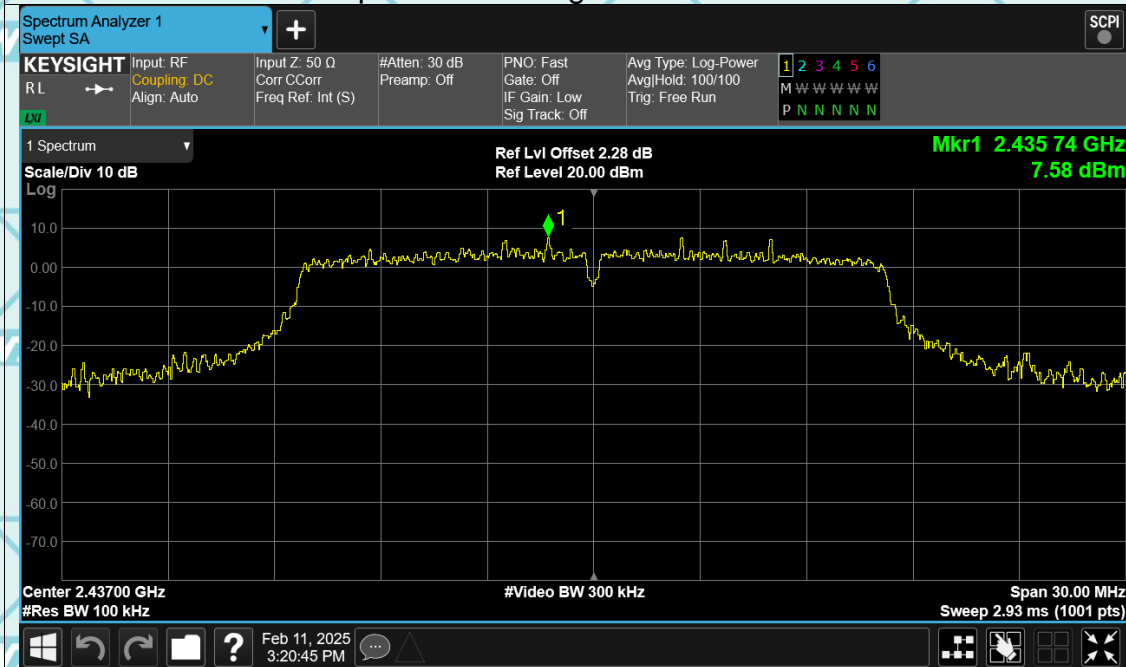
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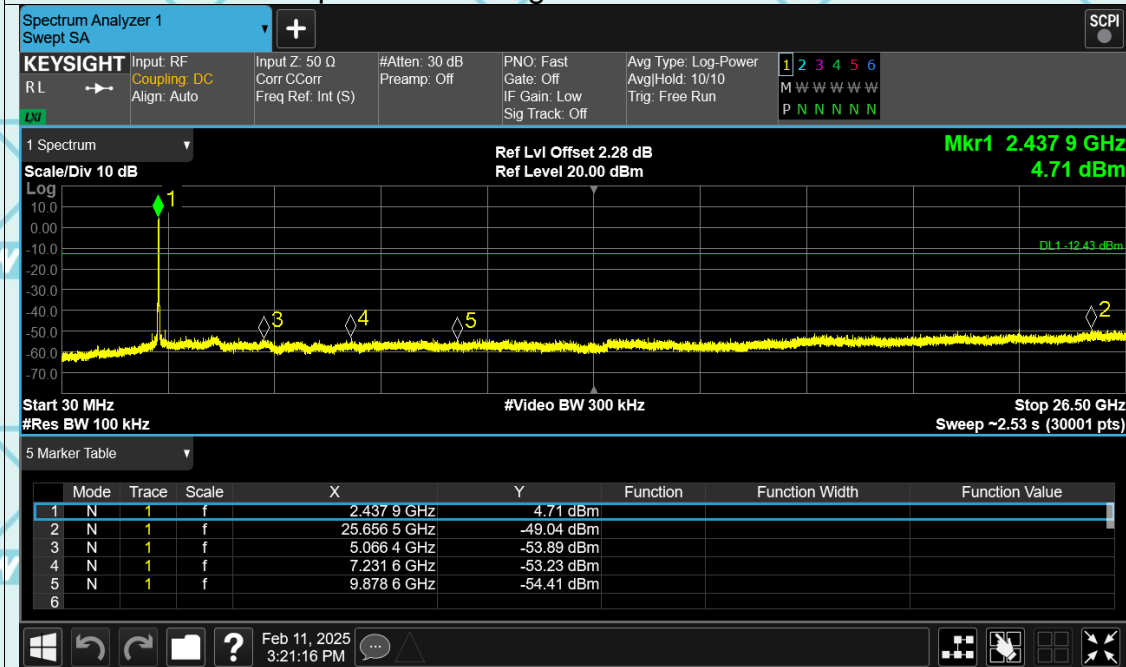


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

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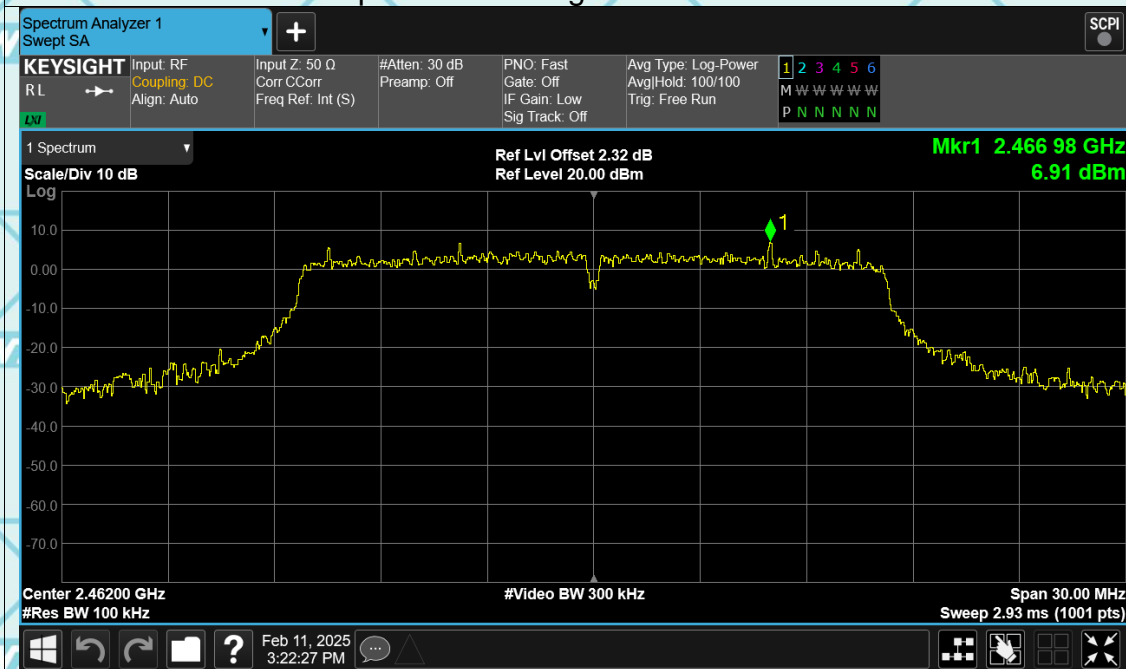


### Tx. Spurious NVNT g 2437MHz Ant1 Emission

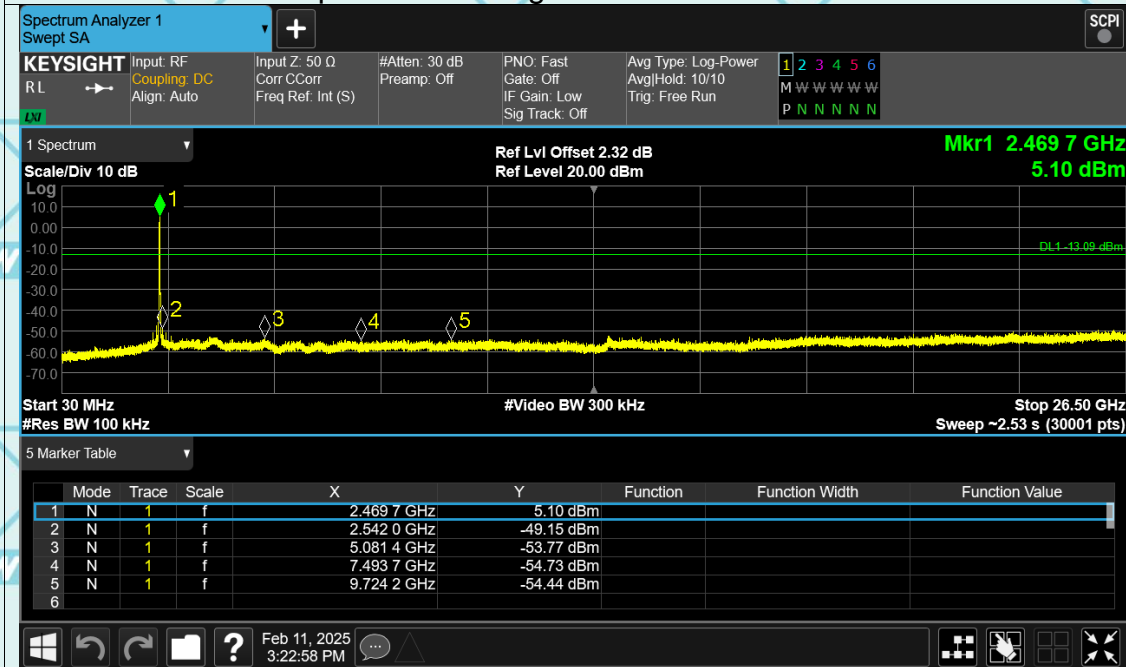


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

### Tx. Spurious NVNT g 2462MHz Ant1 Ref



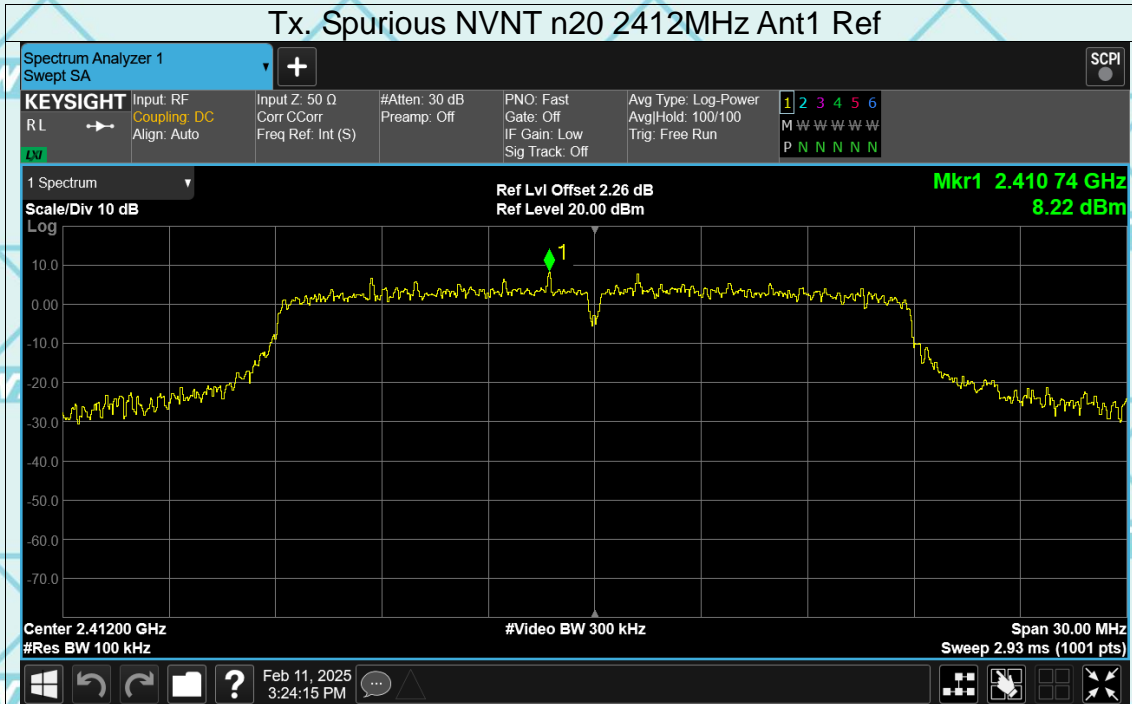
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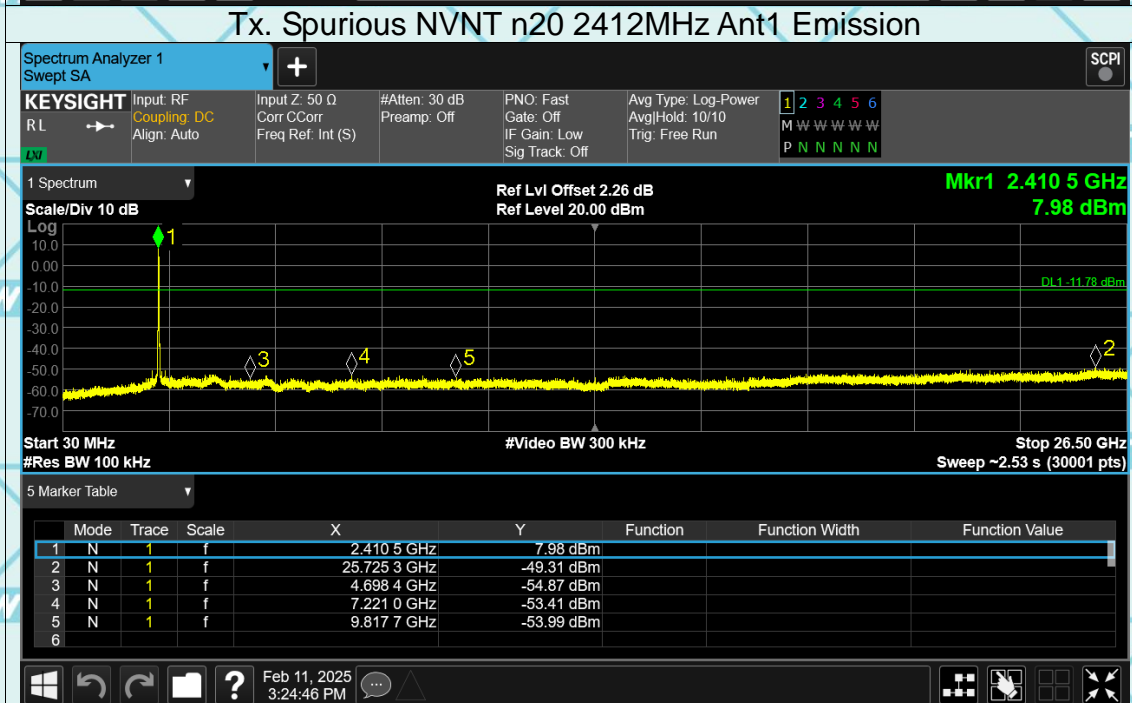


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

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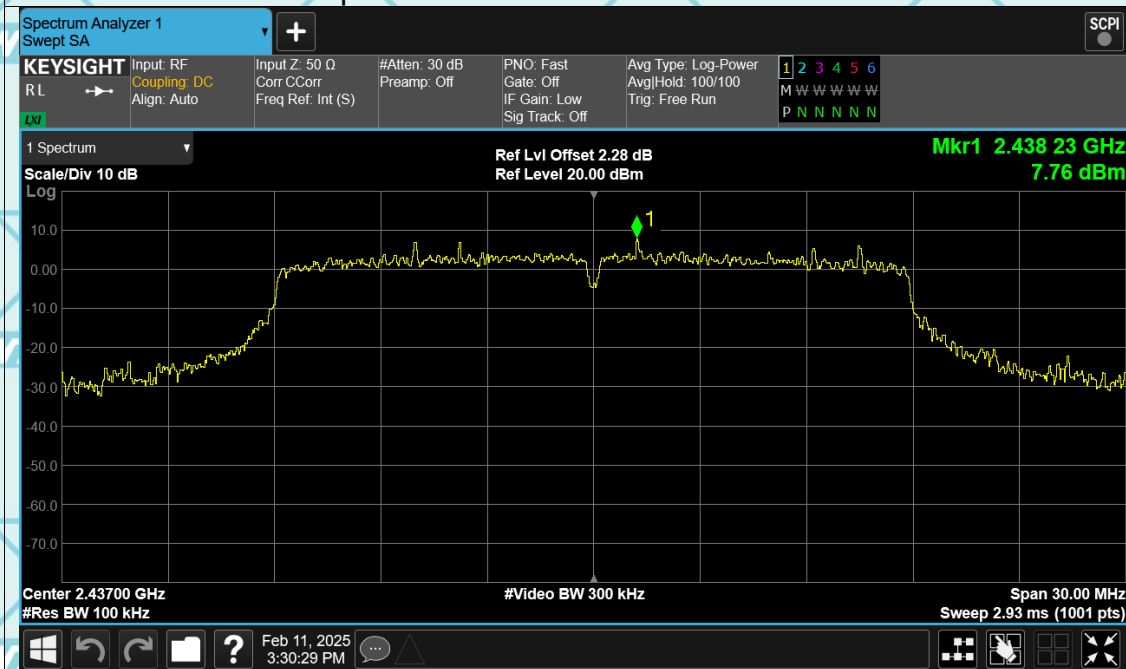


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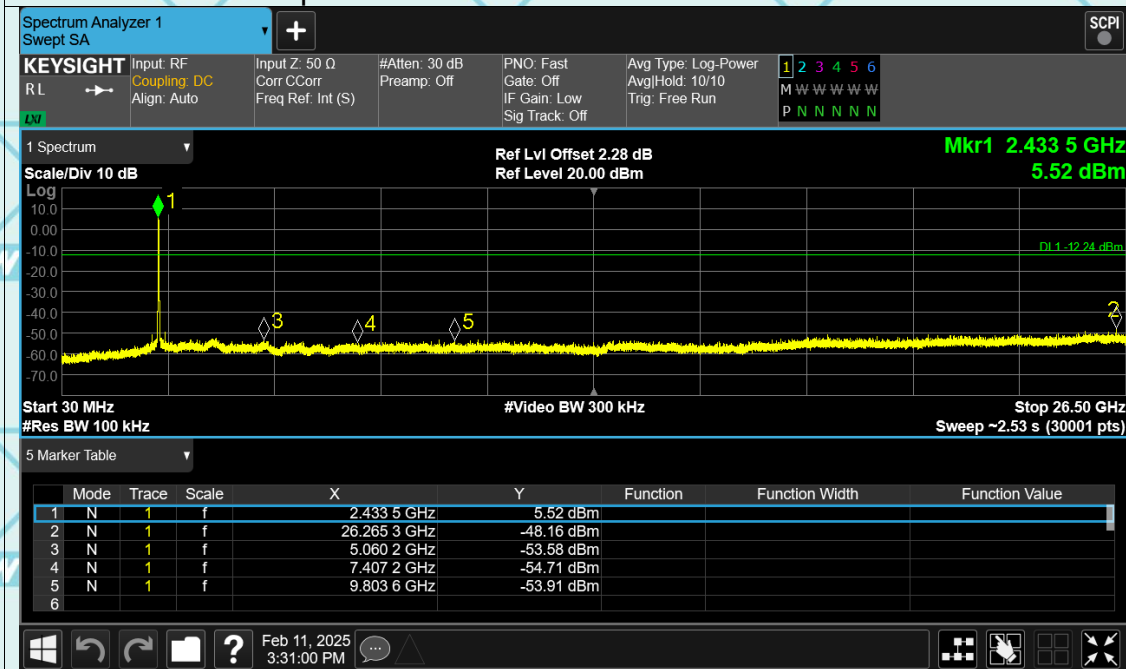


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

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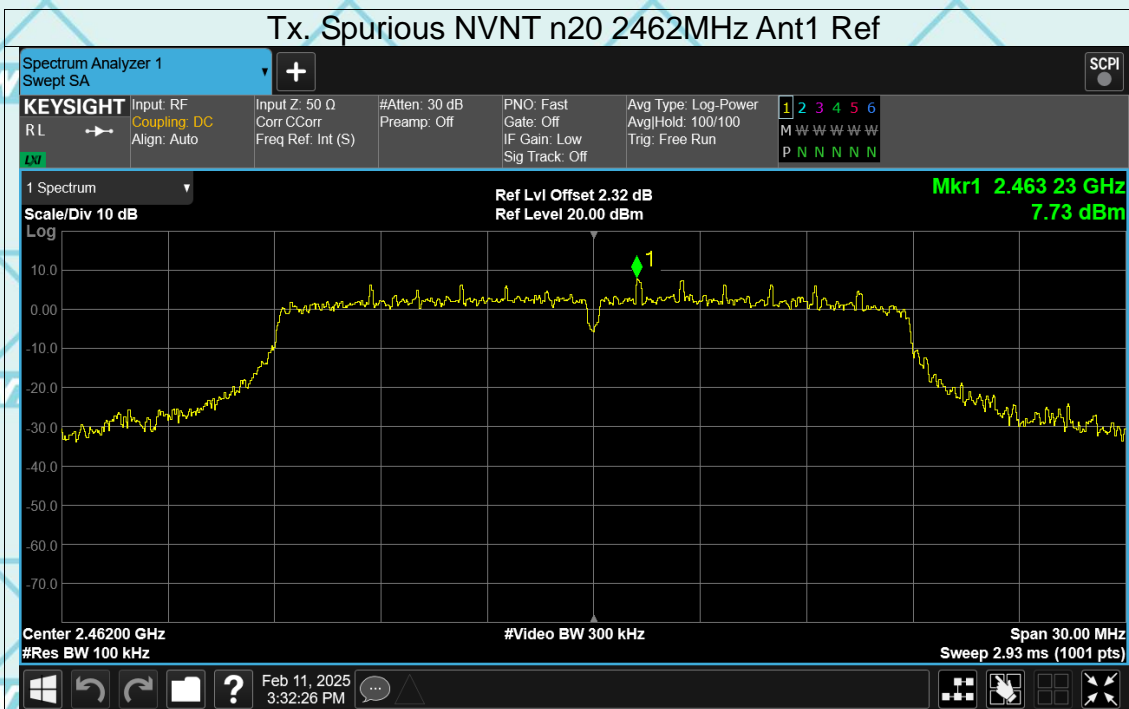
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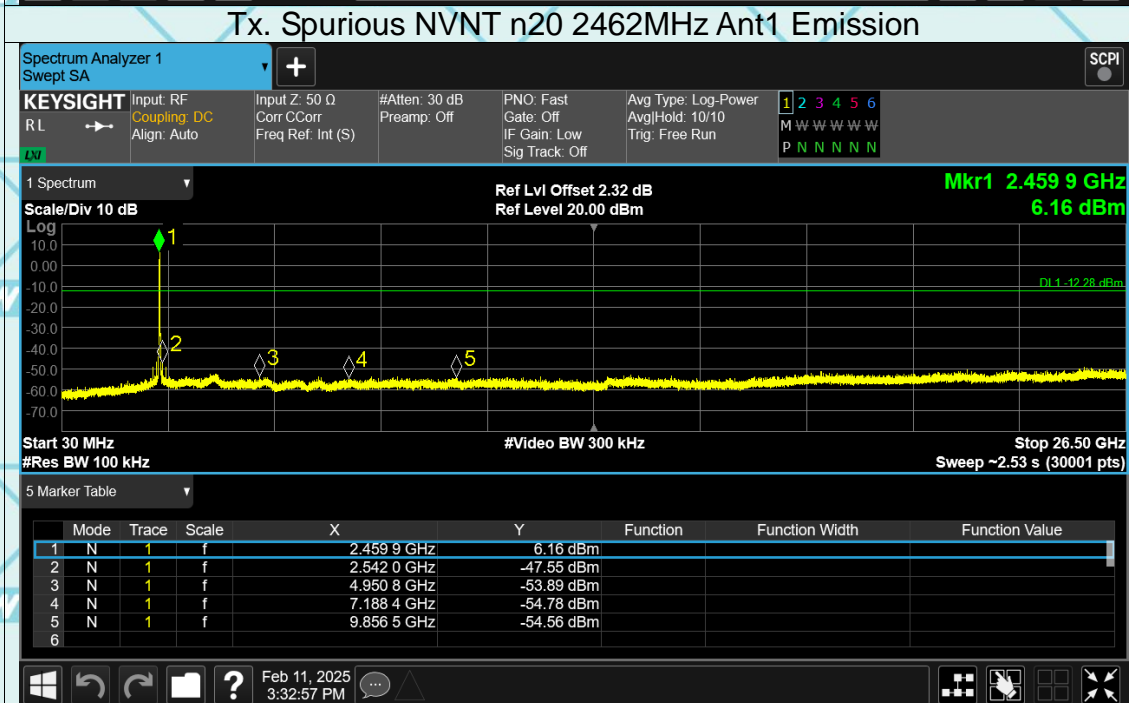


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

### Tx. Spurious NVNT n20 2462MHz Ant1 Ref



### Tx. Spurious NVNT n20 2462MHz Ant1 Emission

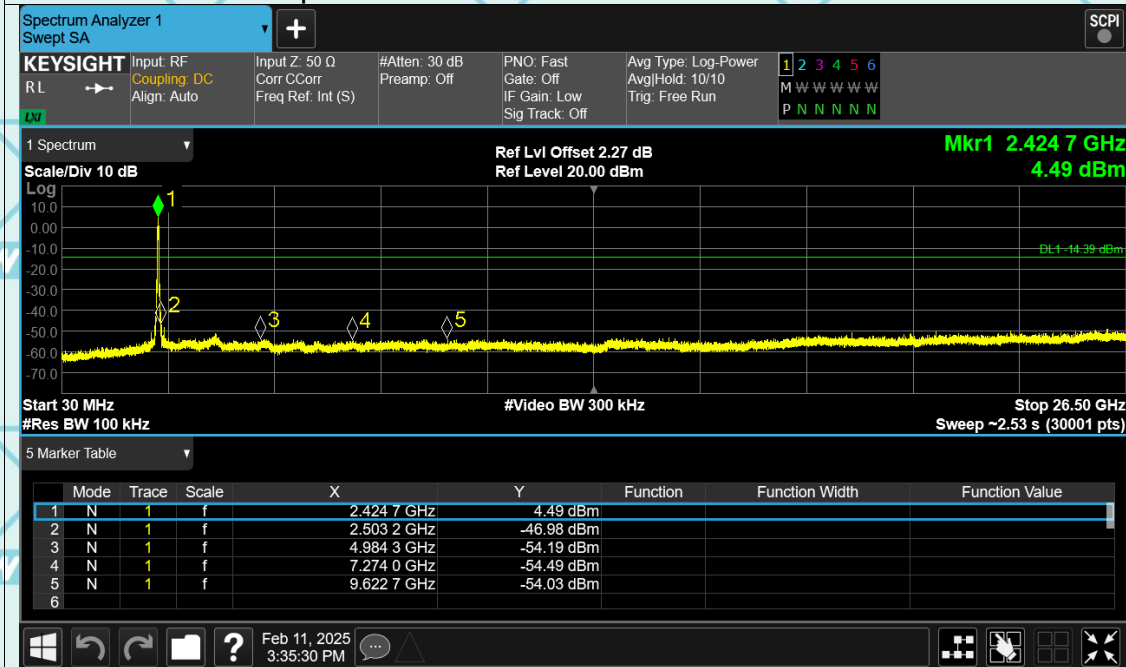


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

### Tx. Spurious NVNT n40 2422MHz Ant1 Ref



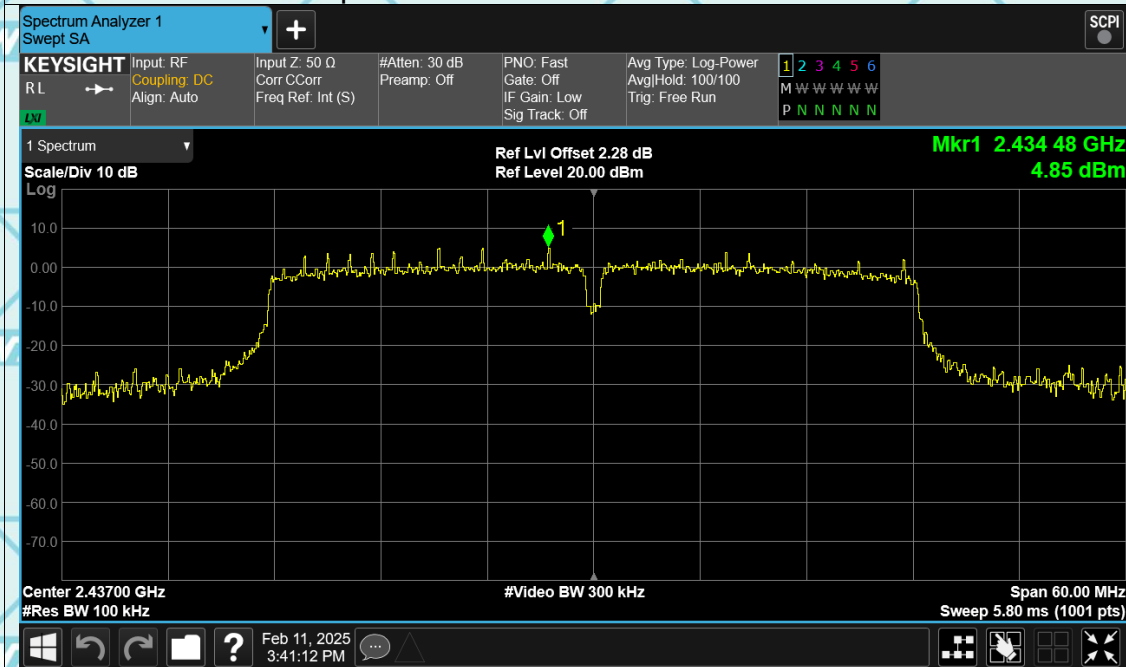
### Tx. Spurious NVNT n40 2422MHz Ant1 Emission



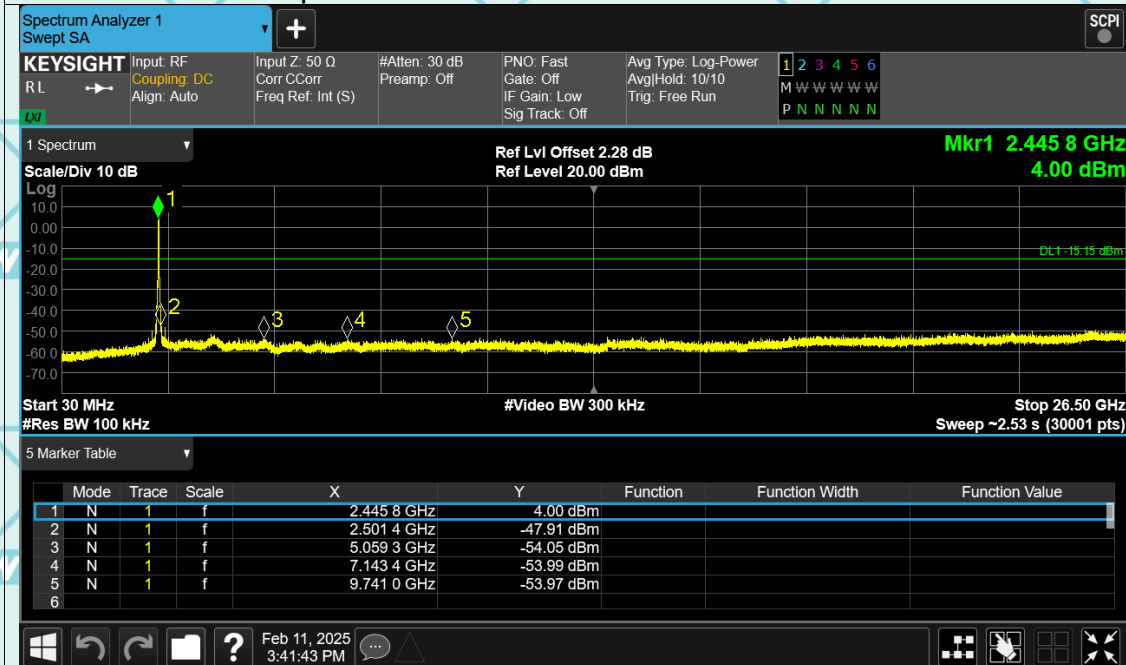


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

### Tx. Spurious NVNT n40 2437MHz Ant1 Ref

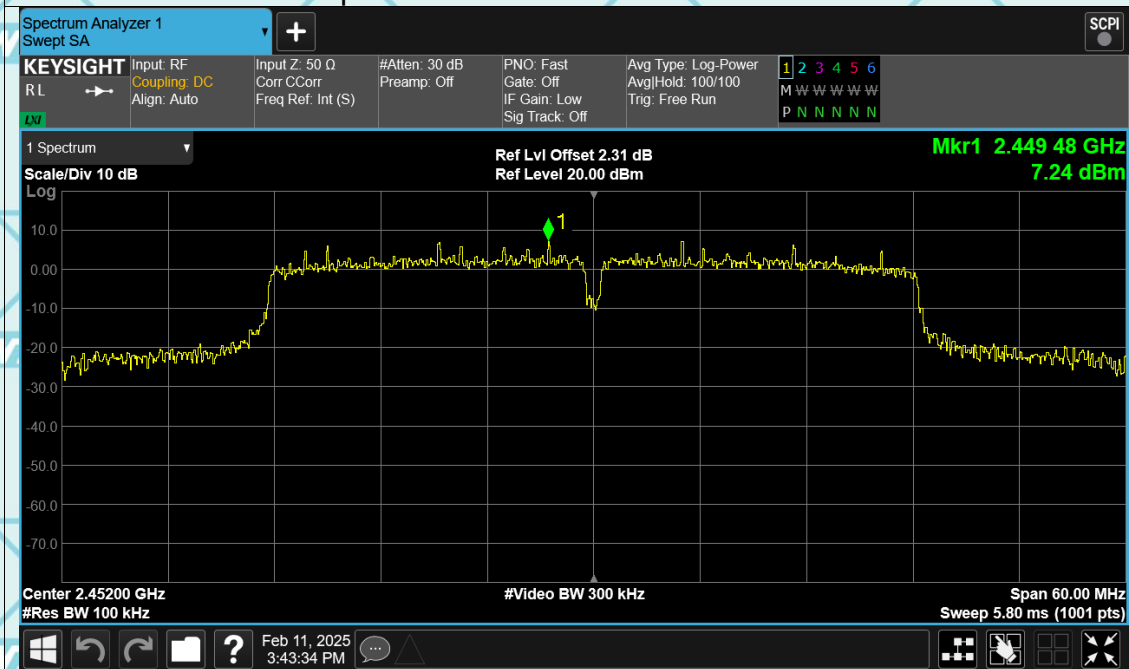


### Tx. Spurious NVNT n40 2437MHz Ant1 Emission

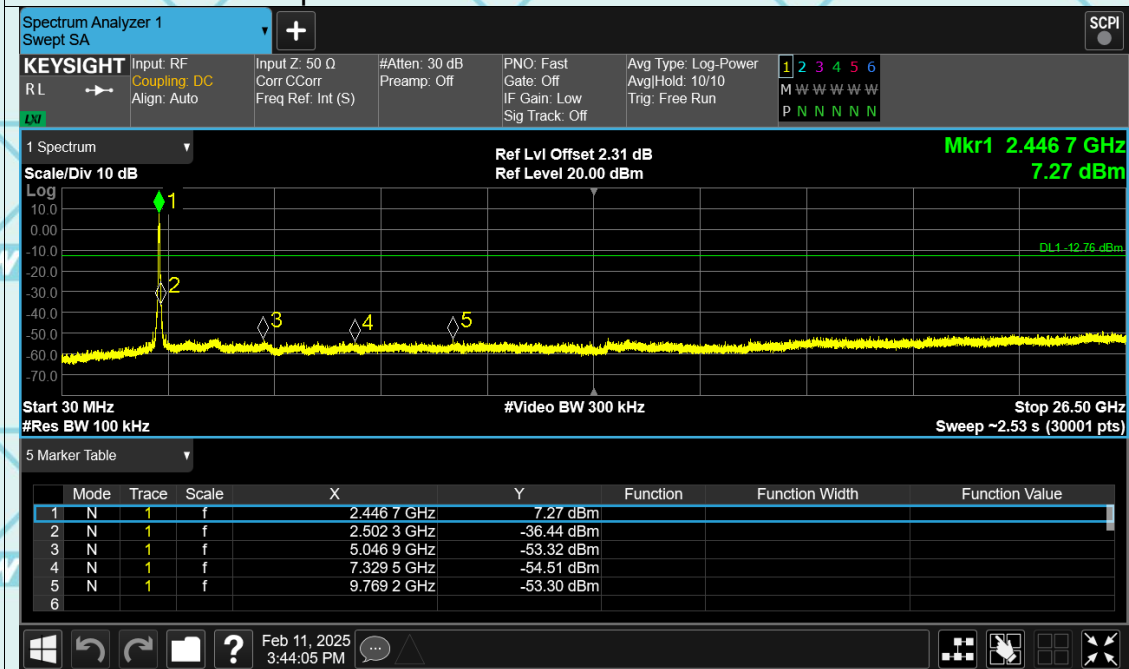


Report No.: WSCT-ANAB-R&E250100005A-Wi-Fi1

### Tx. Spurious NVNT n40 2452MHz Ant1 Ref



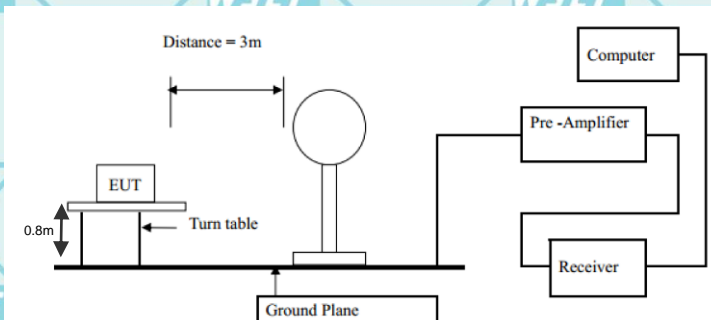
### Tx. Spurious NVNT n40 2452MHz Ant1 Emission



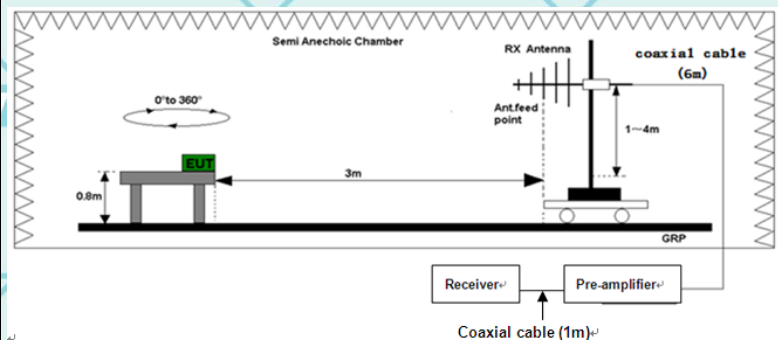


## 6.7. Radiated Spurious Emission Measurement

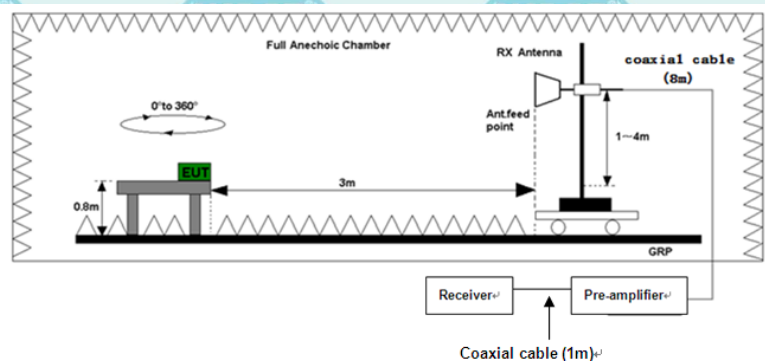
### 6.7.1. Test Specification

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