

Right earphone:

Condition	Antenna	Packet Type	Pulse Time(ms)	Hops	Dwell Time(ms)	Limit(s)	Result
NVNT	ANT1	1-DH1	0.400	320.00	128.000	0.40	Pass
NVNT	ANT1	2-DH1	0.400	319.00	127.600	0.40	Pass
NVNT	ANT1	3-DH1	0.400	320.00	128.000	0.40	Pass
NVNT	ANT1	1-DH3	1.650	168.00	277.200	0.40	Pass
NVNT	ANT1	1-DH5	2.900	98.00	284.200	0.40	Pass
NVNT	ANT1	2-DH3	1.660	154.00	255.640	0.40	Pass
NVNT	ANT1	2-DH5	2.900	98.00	284.200	0.40	Pass
NVNT	ANT1	3-DH3	1.660	156.00	258.960	0.40	Pass
NVNT	ANT1	3-DH5	2.900	98.00	284.200	0.40	Pass



KeySight Spectrum Analyzer - Swept SA

Center Freq 2.441000000 GHz

Ref Offset 4.08 dB
Ref 19.16 dBm

Trig Delay 500.0 μ s
Trig: Video
Atten: 26 dB

PNO: Fast
IFGain: Low

#Avg Type: Log-Pwr

04:25:44 PM Dec 17, 2024

TRACE 1 2 3 4 5 6
TYPE W W W W W W W W
DET P N N N N N

Frequency

Auto Tune

Center Freq
2.441000000 GHz

Start Freq
2.441000000 GHz

Stop Freq
2.441000000 GHz

CF Step
1.000000 MHz
Man

Freq Offset
0 Hz

Scale Type
Log

10 dB/div
Log

Δ Mkr1 400.0 μ s
-53.46 dB

Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Sweep 10.00 ms (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	A2	1	t	(Δ)	400.0 μ s	(Δ)	-53.46 dB	
2	F	1	t		480.0 μ s		-4.14 dBm	
3								
4								
5								
6								
7								
8								
9								
10								
11								

MSG

STATUS

Dwell_Time_(Hopping)_NVNT_ANT1_1-DH1_2441_00_Accumulated

The screenshot displays a Keysight Spectrum Analyzer interface. The main display area shows a spectrum plot with a yellow signal trace. A green marker labeled '1' is positioned at the top of the signal. The plot has a grid with a vertical axis labeled '10 dB/div Log' and a horizontal axis labeled 'Center Freq 2.441000000 GHz'. The signal is centered at 2.441 GHz. The plot shows a dense, noisy signal with a peak level around -0.39 dBm. The plot area is labeled 'Ref Offset 4.08 dB' and 'Ref 24.08 dBm'. The plot area also shows 'PNO: Fast', 'Trig: Free Run', 'IFGain: Low', and 'Atten: 30 dB'. The plot area is labeled 'Mkr1 6.913 s' and '-0.39 dBm'. The plot area is labeled 'Center 2.441000000 GHz', 'Res BW 1.0 MHz', '#VBW 1.0 MHz', 'Span 0 Hz', and 'Sweep 31.60 s (30001 pts)'. The plot area is labeled 'MSG' and 'STATUS'.

Keysight Spectrum Analyzer - Swept SA

Center Freq 2.441000000 GHz

PNO: Fast Trig: Free Run IFGain: Low Atten: 30 dB

#Avg Type: Log-Pwr

TRACE 1 2 3 4 5 6

TYPE W W W W W W W W

DET P N N N N N

Frequency

Auto Tune

Center Freq 2.441000000 GHz

Start Freq 2.441000000 GHz

Stop Freq 2.441000000 GHz

CF Step 1.000000 MHz

Auto Man

Freq Offset 0 Hz

Scale Type Log Lin

Ref Offset 4.08 dB

Ref 24.08 dBm

Mkr1 6.913 s

-0.39 dBm

10 dB/div Log

Center 2.441000000 GHz

Res BW 1.0 MHz

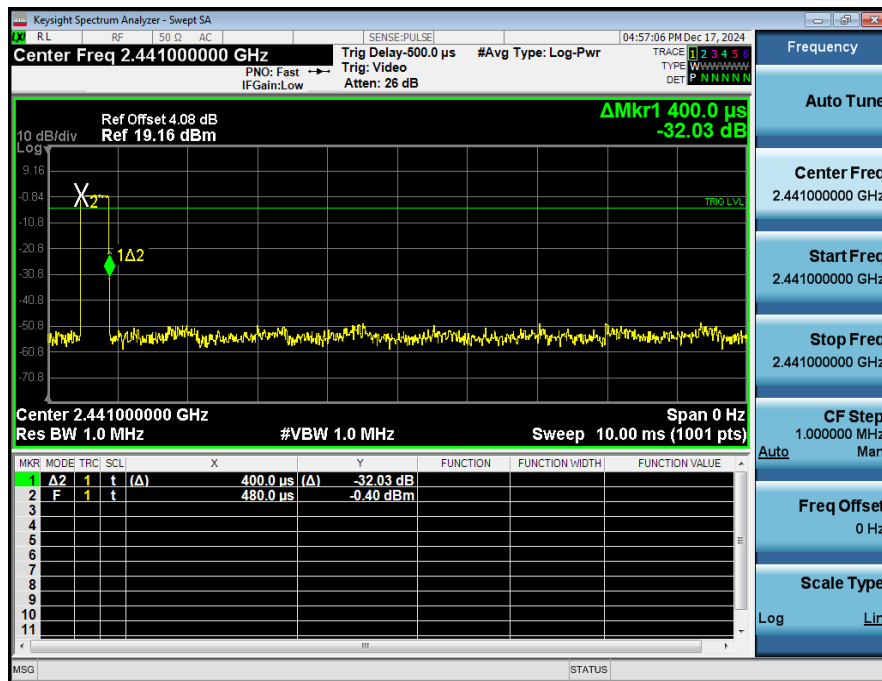
#VBW 1.0 MHz

Span 0 Hz

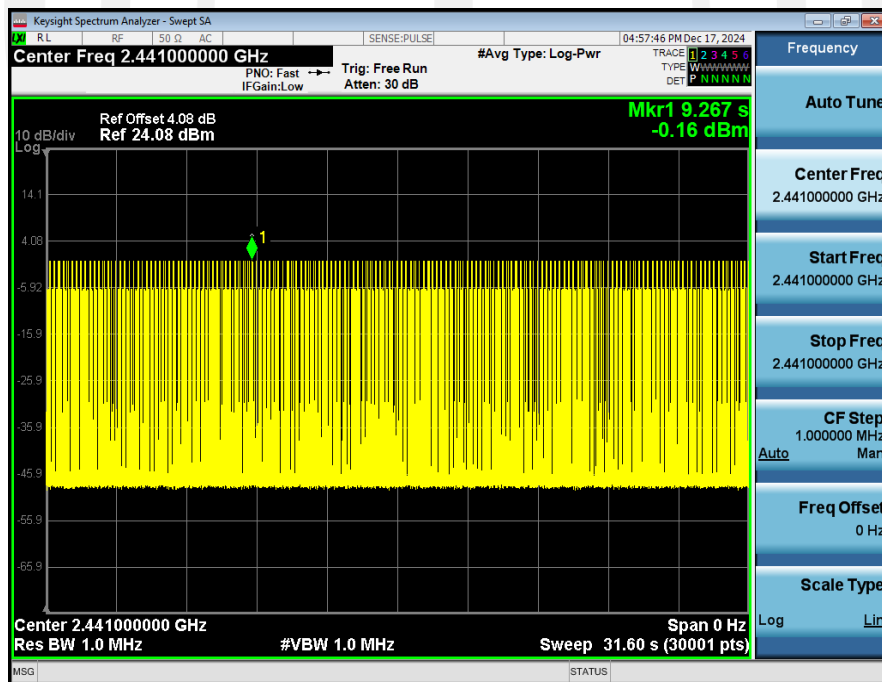
Sweep 31.60 s (30001 pts)

MSG STATUS

Dwell_Time_(Hopping)_NVNT_ANT1_2-DH1_2441_00_One_Burst_Time



Dwell_Time_(Hopping)_NVNT_ANT1_2-DH1_2441_00_Accumulated



KeySight Spectrum Analyzer - Sweep SA

Center Freq 2.441000000 GHz

Ref Offset 4.08 dB
Ref 15.16 dBm

Trig Delay 500.0 μ s
Trig: Video
Atten: 22 dB

PNO: Fast
IFGain: Low

Frequency

Auto Tune

Center Freq
2.441000000 GHz

Start Freq
2.441000000 GHz

Stop Freq
2.441000000 GHz

CF Step
1.000000 MHz

Man

Freq Offset
0 Hz

Scale Type
Log

Span 0 Hz

Res BW 1.0 MHz

#VBW 1.0 MHz

Sweep 10.00 ms (1001 pts)

10 dB/div

Log

5.16

-4.84

-14.8

-24.8

-34.8

-44.8

-54.8

-64.8

-74.8

Trig LVL

1A2

400.0 μ s

-47.14 dB

-0.26 dBm

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	A2	1	t	(Δ)	400.0 μ s	(Δ)		-47.14 dB
2	F	1	t		480.0 μ s			-0.26 dBm
3								
4								
5								
6								
7								
8								
9								
10								
11								

MSG

STATUS

Keysight Spectrum Analyzer - Swept SA

Center Freq 2.441000000 GHz

Ref Offset 4.08 dB
Ref 24.08 dBm

10 dB/div
Log

Mkr1 28.28 s
0.51 dBm

Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Sweep 31.60 s (30001 pts)

Span 0 Hz

Frequency

Auto Tune

Center Freq
2.441000000 GHz

Start Freq
2.441000000 GHz

Stop Freq
2.441000000 GHz

CF Step
1.000000 MHz
Auto Man

Freq Offset
0 Hz

Scale Type
Log Lin

Dwell Time (Hopping) NVNT_ANT1_1-DH3_2441_00_One_Burst_Time

Keysight Spectrum Analyzer - Swept SA

RL RF S0 O AC SENSE:PULSE 05:49:09 PM Dec 17, 2024

Center Freq 2.441000000 GHz Trig Delay: 500.0 μ s #Avg Type: Log-Pwr

PNO: Fast IFGain: Low Trig: Video Atten: 26 dB

TRACE 1 2 3 4 5 6 TYPE W W W W W W W W DET P N N N N N N

Ref Offset 4.08 dB Δ Mkr1 1.650 ms -49.00 dBm

10 dB/div Log

9.16 -0.84 -10.8 -20.8 -30.8 -40.8 -50.8 -60.8 -70.8

TRG LVL

Center 2.441000000 GHz Span 0 Hz

Res BW 1.0 MHz #VBW 1.0 MHz Sweep 10.00 ms (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	Δ 2	t	(Δ)	1.650 ms	(Δ) -49.00 dB			
2	F	t		480.0 μ s	-0.36 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								

MSG STATUS

Frequency

Auto Tune

Center Freq 2.441000000 GHz

Start Freq 2.441000000 GHz

Stop Freq 2.441000000 GHz

CF Step 1.000000 MHz

Freq Offset 0 Hz

Scale Type Log

Keysight Spectrum Analyzer - Swept SA

Center Freq 2.441000000 GHz

PNO: Fast IFGain: Low Trig: Free Run Atten: 30 dB #Avg Type: Log-Pwr

TRACE 1 2 3 4 5 6 TYPE W W W W W W W W DET P N N N N N N

05:49:50 PM Dec 17, 2024

Ref Offset 4.08 dB
Ref 24.08 dBm

Mkr1 11.67 s
-0.34 dBm

10 dB/div
Log

Center 2.441000000 GHz
Res BW 1.0 MHz #VBW 1.0 MHz Span 0 Hz
Sweep 31.60 s (30001 pts)

Frequency

Auto Tune

Center Freq
2.441000000 GHz

Start Freq
2.441000000 GHz

Stop Freq
2.441000000 GHz

CF Step
1.000000 MHz
Man

Auto

Freq Offset
0 Hz

Scale Type
Log Lin

Dwell Time (Hopping) NVNT_ANT1_1-DH5_2441_00_One_Burst_Time

Keysight Spectrum Analyzer - Swept SA

RL RF S0 O AC SENSE:PULSE 05:50:42 PM Dec 17, 2024

Center Freq 2.441000000 GHz Trig Delay: 500.0 μ s #Avg Type: Log-Pwr
 PNO: Fast IFGain: Low Trig: Video Atten: 26 dB

TRACE 1 2 3 4 5 6
 TYPE W W W W W W W W
 DET P N N N N N N

Ref Offset 4.08 dB Δ Mkr1 2.900 ms
 Ref 19.16 dBm -52.39 dB

10 dB/div Log
 9.16
 -0.84
 -10.8
 -20.8
 -30.8
 -40.8
 -50.8
 -60.8
 -70.8

Center 2.441000000 GHz Span 0 Hz
 Res BW 1.0 MHz #VBW 1.0 MHz Sweep 10.00 ms (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	Δ 2	t	(Δ)	2.900 ms	(Δ) -52.39 dB			
2	F	t		480.0 μ s	-0.42 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								

MSG STATUS

Frequency

Auto Tune

Center Freq
2.441000000 GHz

Start Freq
2.441000000 GHz

Stop Freq
2.441000000 GHz

CF Step
1.000000 MHz

Auto

Freq Offset
0 Hz

Scale Type
Log

Keysight Spectrum Analyzer - Swept SA

Center Freq 2.441000000 GHz

Ref Offset 4.08 dB
Ref 24.08 dBm

Mkr1 6.831 s
-0.38 dBm

Center Freq 2.441000000 GHz

Start Freq 2.441000000 GHz

Stop Freq 2.441000000 GHz

CF Step 1.000000 MHz

Freq Offset 0 Hz

Scale Type Log

Center 2.441000000 GHz

Res BW 1.0 MHz

#VBW 1.0 MHz

Span 0 Hz

Sweep 31.60 s (30001 pts)

The image shows a Keysight Spectrum Analyzer interface. The main display is a log-log plot of power spectral density (PSD) versus frequency. The frequency range is from 2.441000000 GHz to 2.441000000 GHz (span 0 Hz). The power range is from -65.9 dBm to 14.1 dBm. A dense signal is visible at the center frequency. A marker is placed at 6.831 s, showing a power level of -0.38 dBm. The interface includes various controls and readouts for frequency, power, and sweep parameters.

Dwell_Time_(Hopping)_NVNT_ANT1_2-DH5_2441_00_One_Burst_Time

The screenshot shows a Keysight Spectrum Analyzer interface. At the top, it says "Keysight Spectrum Analyzer - Swept SA". Below that, there are tabs for "RL", "RF", "50 Ω", "AC", "SENSE:PULSE", and a date/time stamp "05:54:31 PM Dec 17, 2024". The main display area shows a power spectrum plot with a yellow trace. A green box highlights the plot area. Above the plot, it says "Center Freq 2.441000000 GHz", "Trig Delay: 500.0 μs", "#Avg Type: Log-Pwr", "PNO: Fast", "IFGain: Low", "Atten: 26 dB", "TRACE 1 2 3 4 5 6", "TYPE WXXXXXXXXXX", and "DET P NNNNN". Inside the plot area, it says "Ref Offset 4.08 dB", "Ref 19.16 dBm", "ΔMkr1 2.900 ms", and "-32.41 dB". The plot has a vertical axis labeled "Log" and a horizontal axis labeled "dBm/dB". There are several markers on the plot, including one labeled "X2". To the right of the plot, there is a control panel with buttons for "Auto Tune", "Center Freq", "Start Freq", "Stop Freq", "CF Step", "Freq Offset", "Scale Type", and "Log". Below the plot, there is a table with columns "MKR", "MODE", "TRC", "SCL", "X", "Y", "FUNCTION", "FUNCTION WIDTH", and "FUNCTION VALUE". The table contains two rows of data.

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	A2	1	t	(Δ)	2.900 ms (Δ)	-32.41 dB		
2	F	1	t		480.0 μs	-0.39 dBm		

Keysight Spectrum Analyzer - Swept SA

Center Freq 2.441000000 GHz

Ref Offset 4.08 dB
Ref 24.08 dBm

10 dB/div
Log

14.1
4.08
-5.92
-15.9
-25.9
-35.9
-45.9
-55.9
-65.9

Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 1.0 MHz
Sweep 31.60 s (30001 pts)

Span 0 Hz

Frequency

Auto Tune

Center Freq
2.441000000 GHz

Start Freq
2.441000000 GHz

Stop Freq
2.441000000 GHz

CF Step
1.000000 MHz
Auto Man

Freq Offset
0 Hz

Scale Type
Log Lin

MSG STATUS

[illegible]

Keysight Spectrum Analyzer - Swept SA

RL RF 50 Ω AC SENSE:PULSE 05:56:53 PM Dec 17, 2024

Center Freq 2.441000000 GHz #Avg Type: Log-Pwr

PNO: Fast → Trigg: Free Run
IF Gain: Low Atten: 30 dB

TRACE 1 2 3 4 5 6
TYPE WWWWWWW
DET 2 N N N N N

Ref Offset 4.08 dB
Ref 24.08 dBm

10 dB/div
Log

Mkr1 30.22 s
0.32 dBm

Center 2.441000000 GHz
Res BW 1.0 MHz #VBW 1.0 MHz Sweep 31.60 s (30001 pts) Span 0 Hz

MSG STATUS

Frequency

Auto Tune

Center Freq
2.441000000 GHz

Start Freq
2.441000000 GHz

Stop Freq
2.441000000 GHz

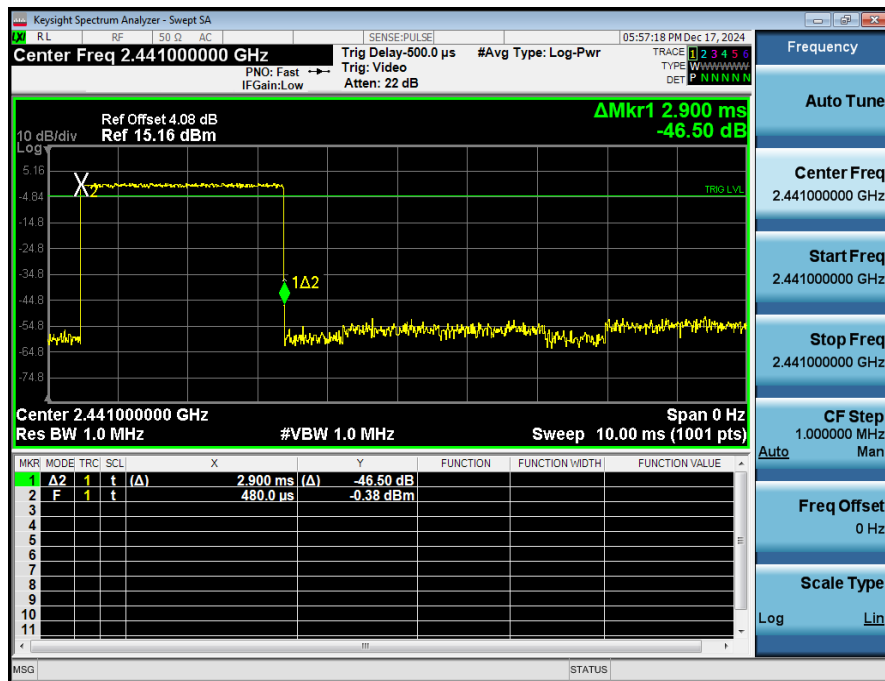
CF Step
1.00000 MHz
Auto Man

Freq Offset
0 Hz

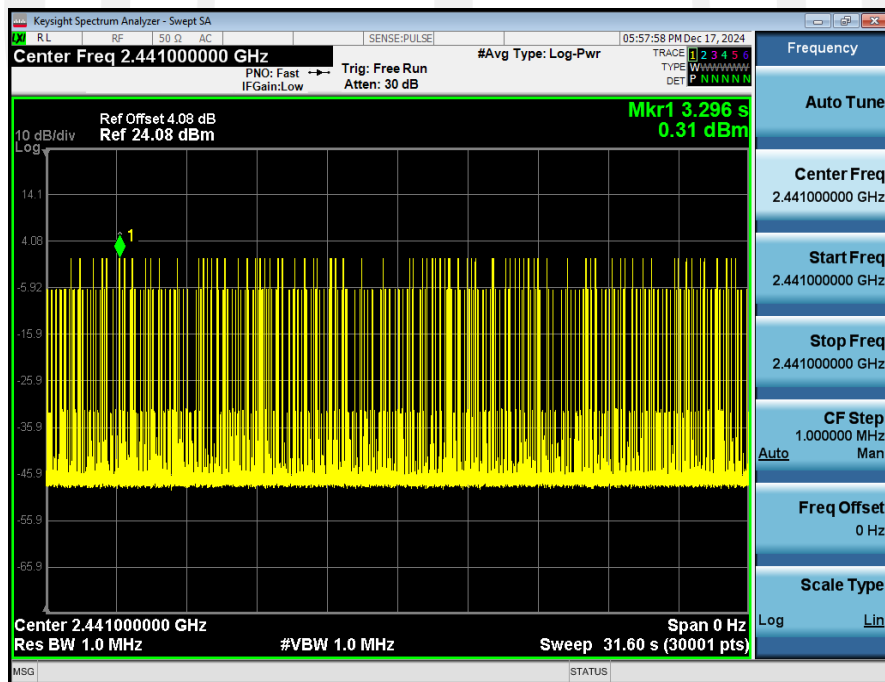
Scale Type

Log Lin

Dwell_Time_(Hopping)_NVNT_ANT1_3-DH5_2441_00_One_Burst_Time



Dwell_Time_(Hopping)_NVNT_ANT1_3-DH5_2441_00_Accumulated



8. Out-of-band Emissions

8.1. Test Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in FCC Part 15.209(a) is not required.

8.2. Test Procedure

Connect the transmitter output to spectrum analyzer using a low loss RF cable, and set the spectrum analyzer to RBW=100 kHz, VBW= 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, band edge and out-of-band emissions.

8.3. Test Setup



8.4. Test Results

PASS.

The test results are listed in next pages.

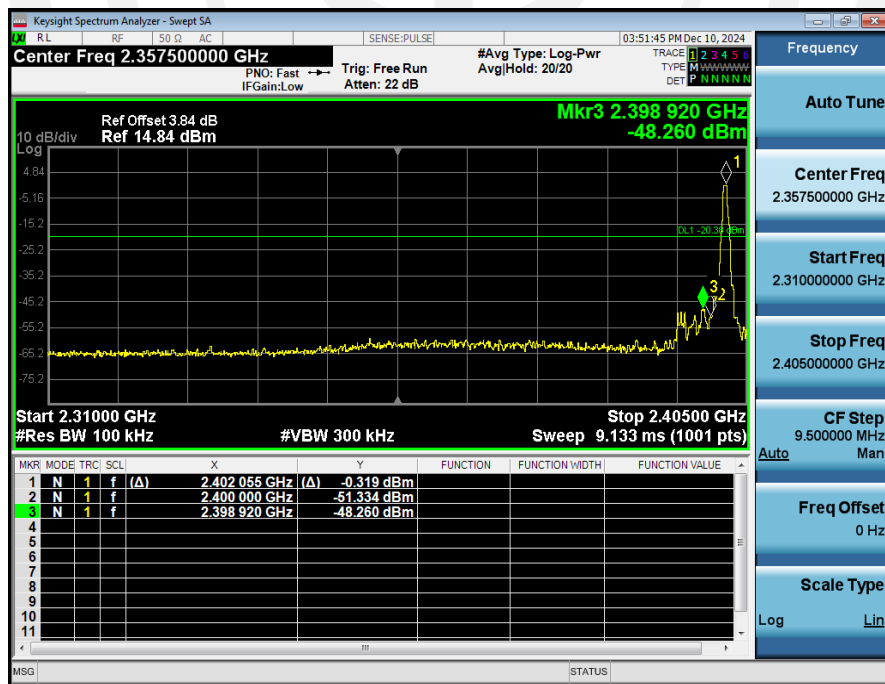
Left earphone:

Band Edge: Pass

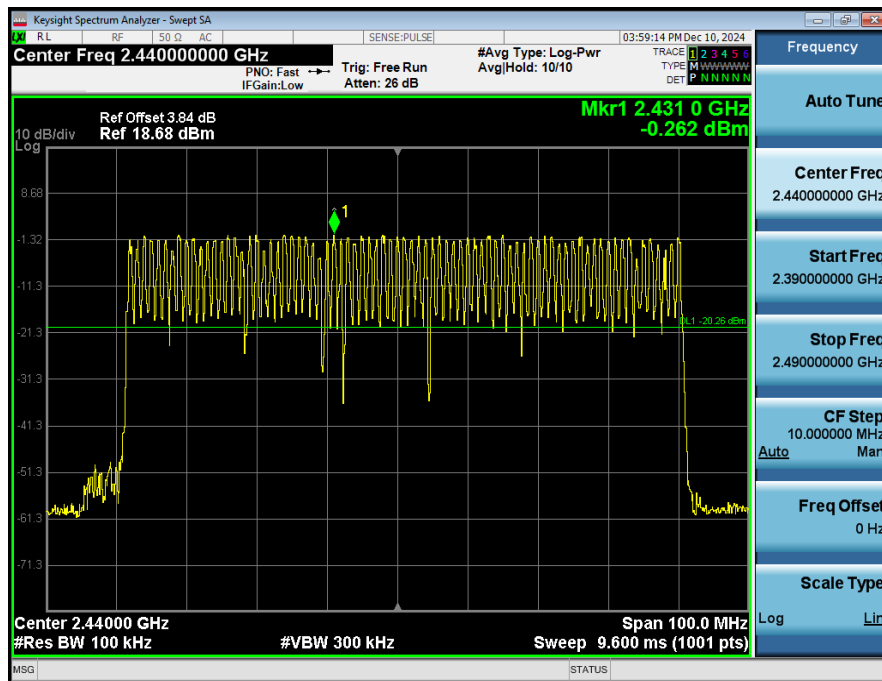
1_Reference_Level_NVNT_ANT1_1-DH1_2402_00



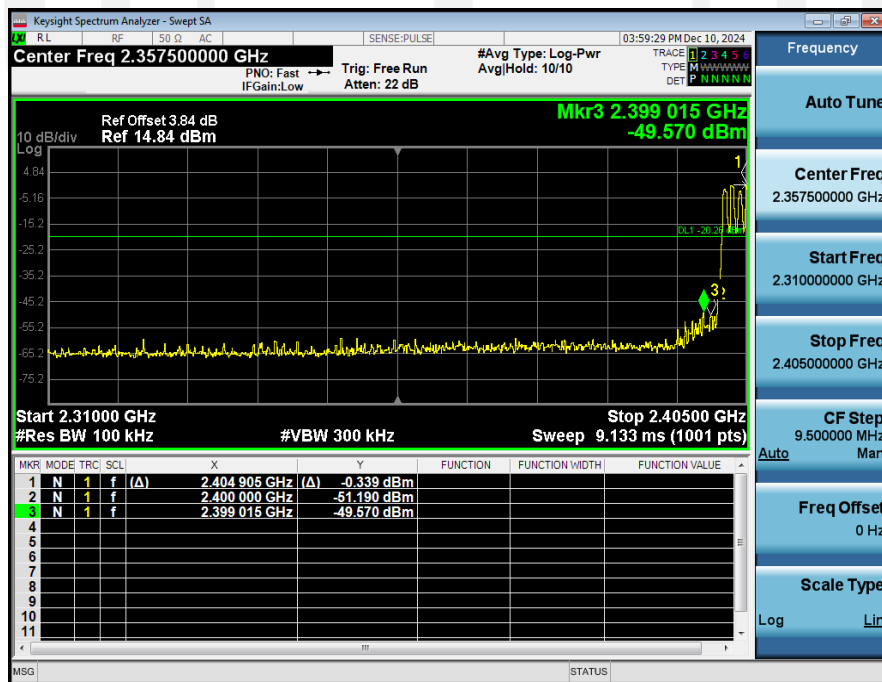
2_Bandedge_NVNT_ANT1_1-DH1_2402_00



1_Reference_Level_Hopping_NVNT_ANT1_1-DH1_Hopping



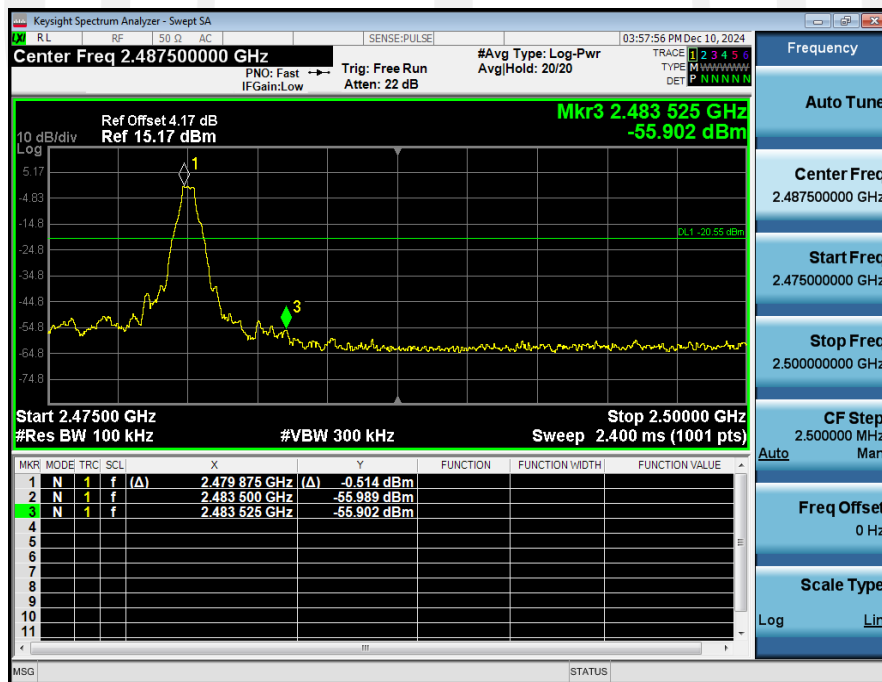
2_Band_Edge_(Hopping)_NVNT_ANT1_1-DH1_Hopping



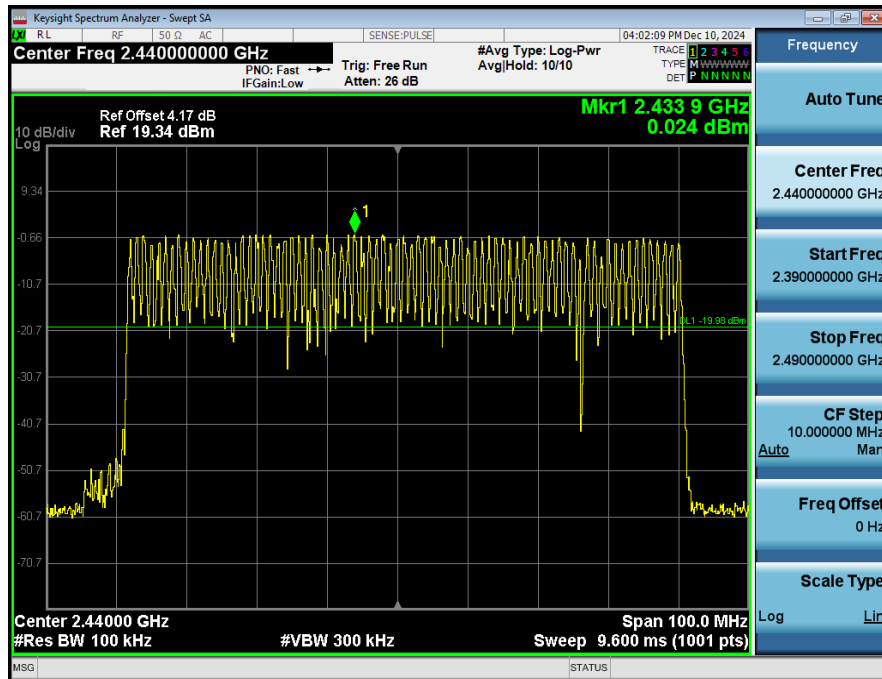
1_Reference_Level_NVNT_ANT1_1-DH1_2480_00



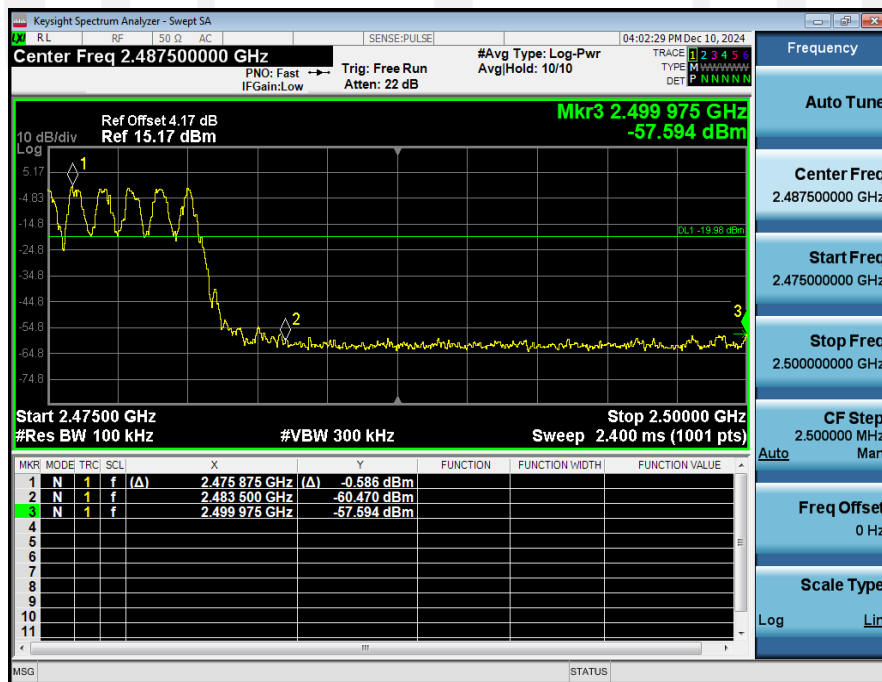
2_Bandedge_NVNT_ANT1_1-DH1_2480_00



1_Reference_Level_Hopping_NVNT_ANT1_1-DH1_Hopping



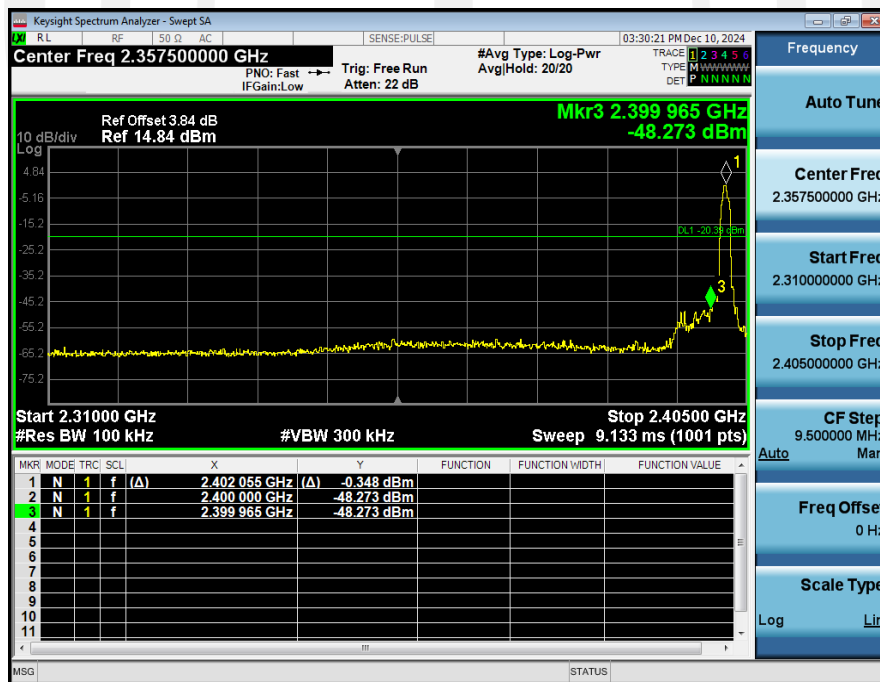
2_Band_Edge_(Hopping)_NVNT_ANT1_1-DH1_Hopping



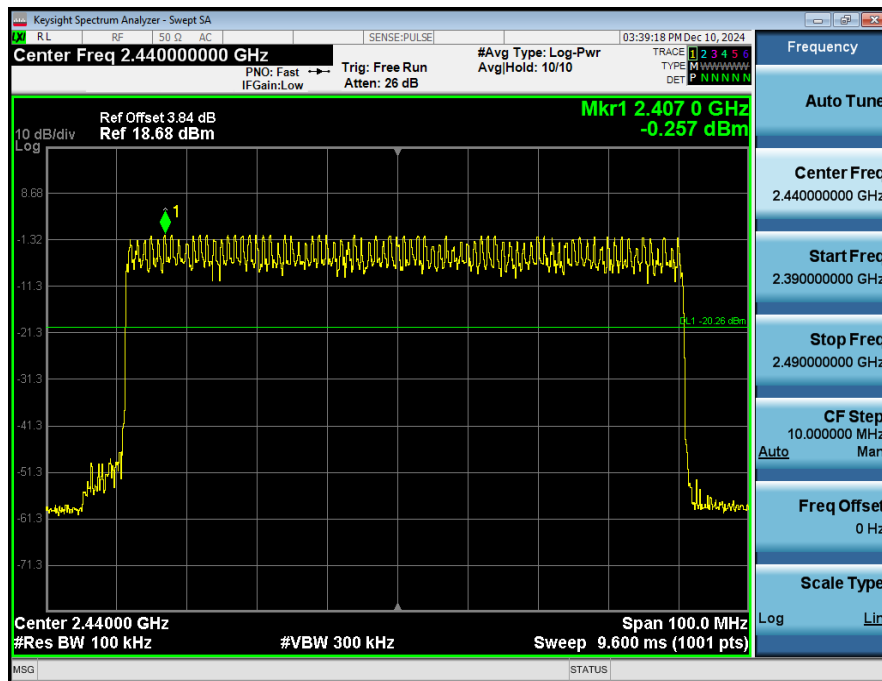
1_Reference_Level_NVNT_ANT1_2-DH1_2402_00



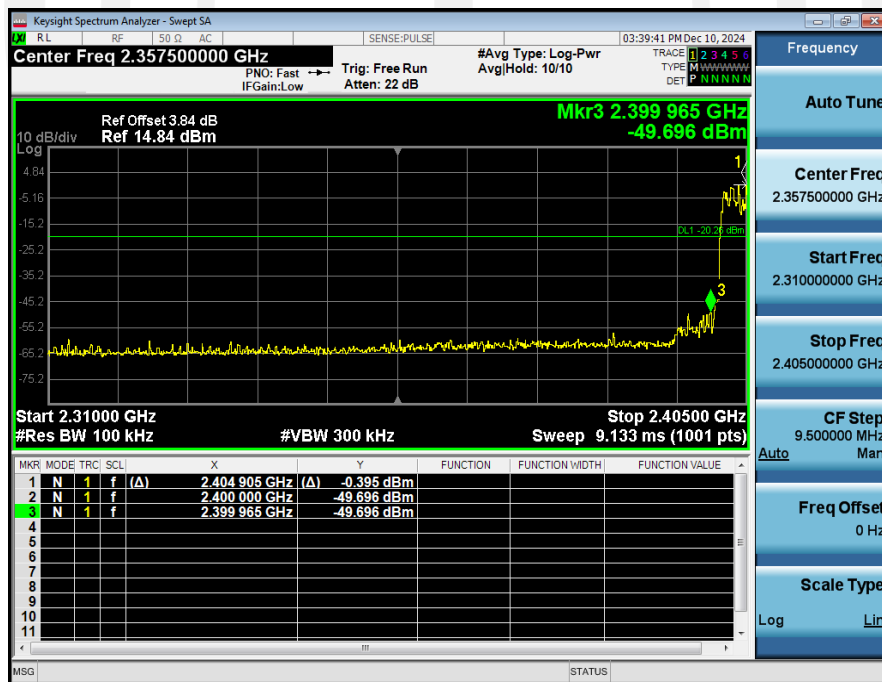
2_Bandedge_NVNT_ANT1_2-DH1_2402_00



1_Reference_Level_Hopping_NVNT_ANT1_2-DH1_Hopping



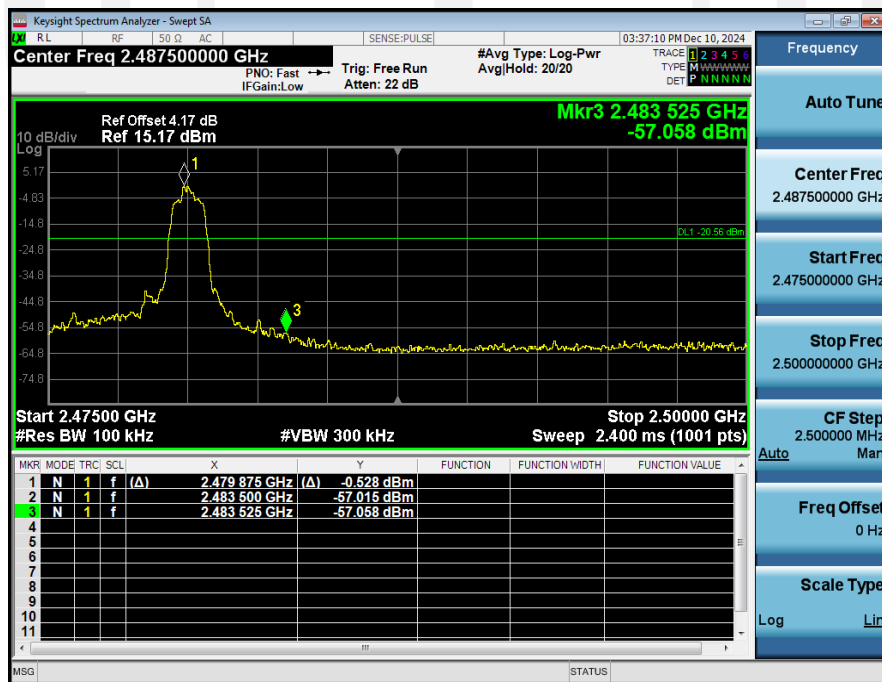
2_Band_Edge_(Hopping)_NVNT_ANT1_2-DH1_Hopping



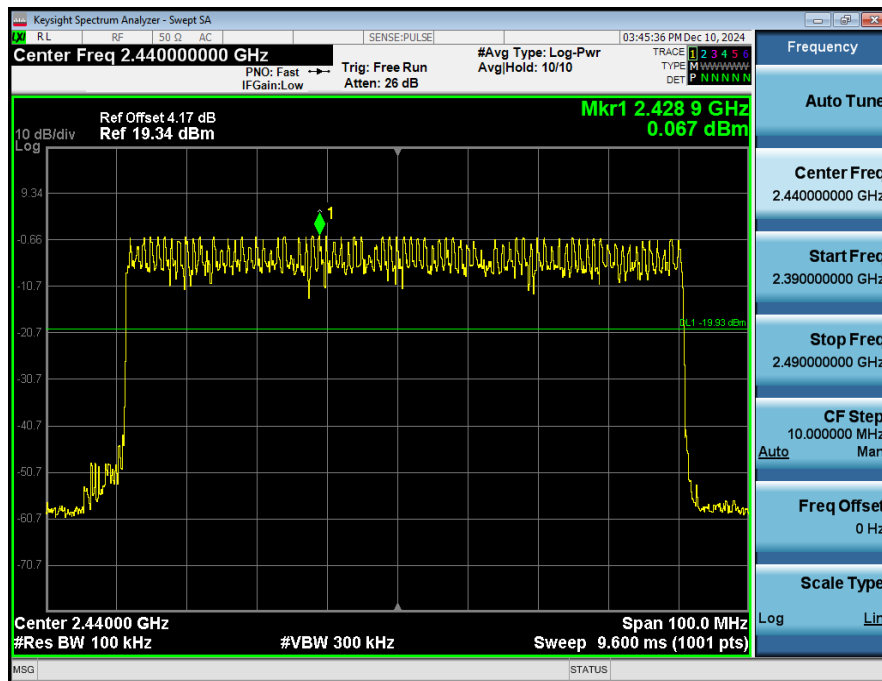
1_Reference_Level_NVNT_ANT1_2-DH1_2480_00



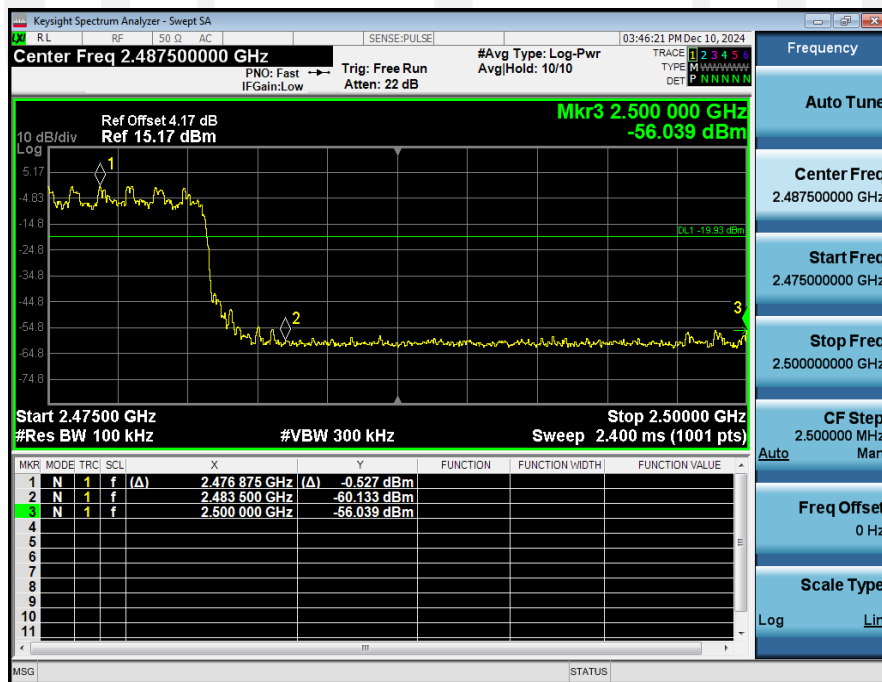
2_Bandedge_NVNT_ANT1_2-DH1_2480_00



1_Reference_Level_Hopping_NVNT_ANT1_2-DH1_Hopping



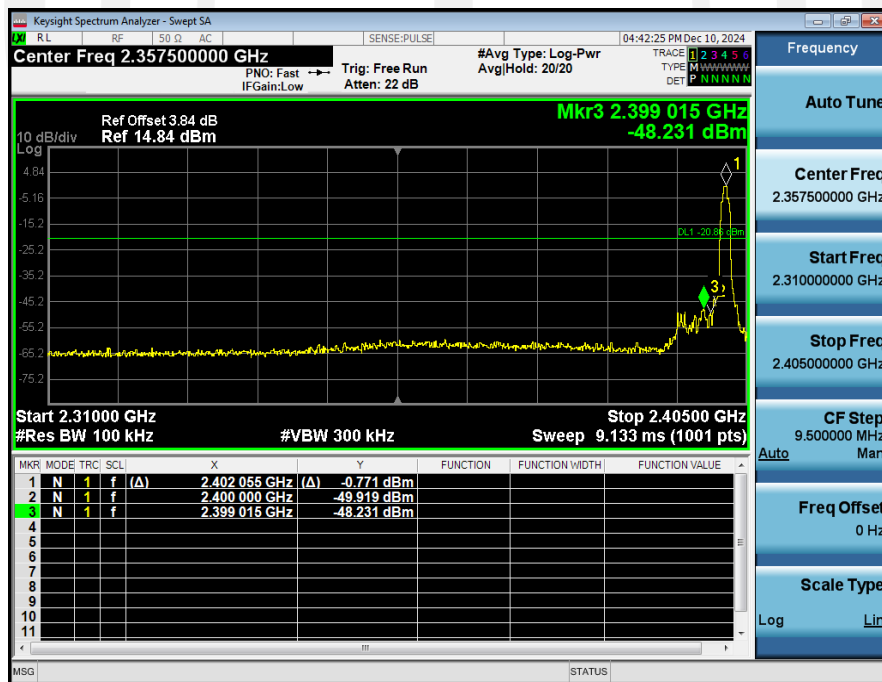
2_Band_Edge_(Hopping)_NVNT_ANT1_2-DH1_Hopping



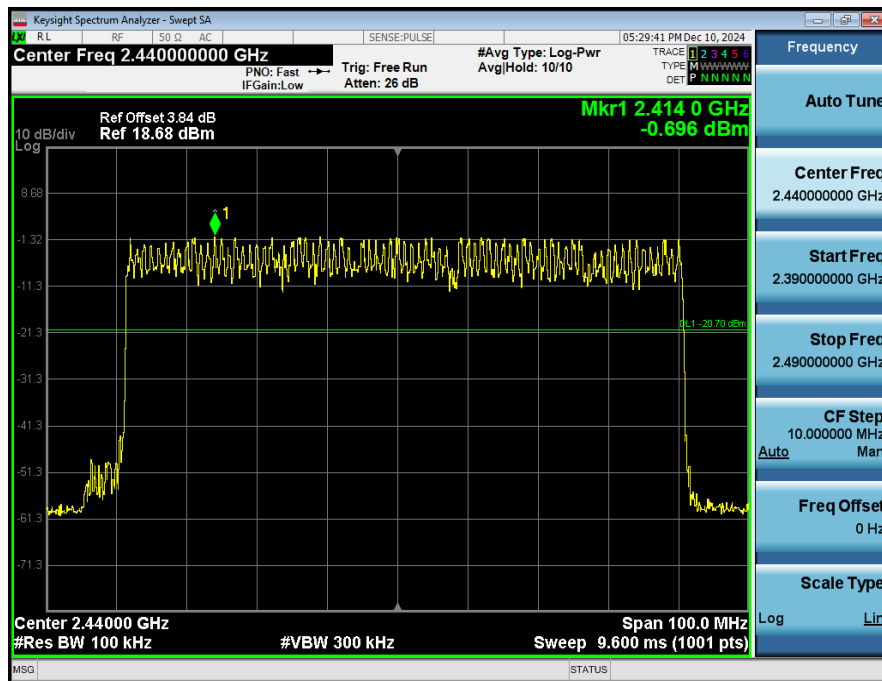
1_Reference_Level_NVNT_ANT1_3-DH1_2402_00



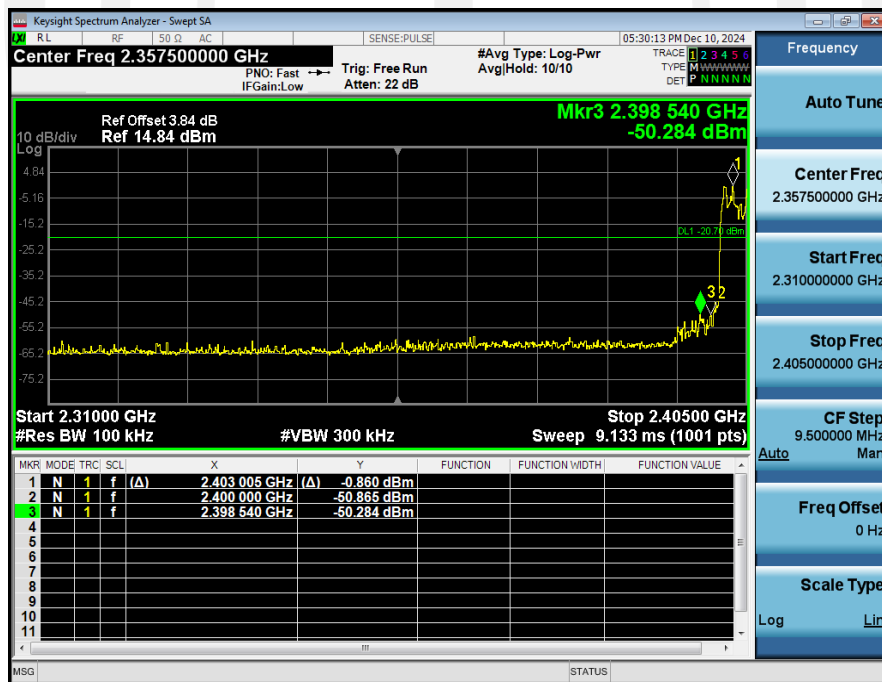
2_Bandedge_NVNT_ANT1_3-DH1_2402_00



1_Reference_Level_Hopping_NVNT_ANT1_3-DH1_Hopping



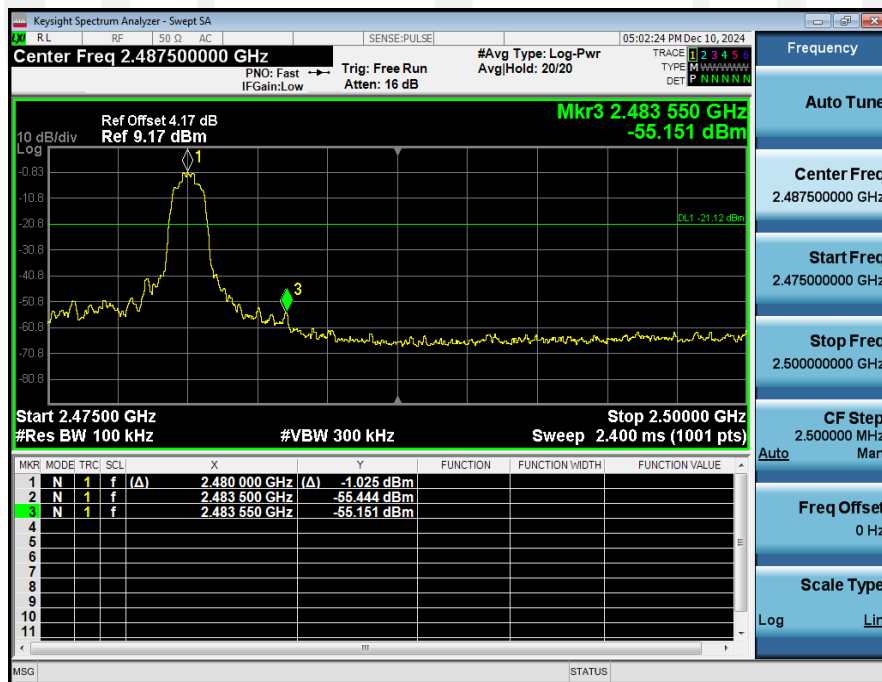
2_Band_Edge_(Hopping)_NVNT_ANT1_3-DH1_Hopping



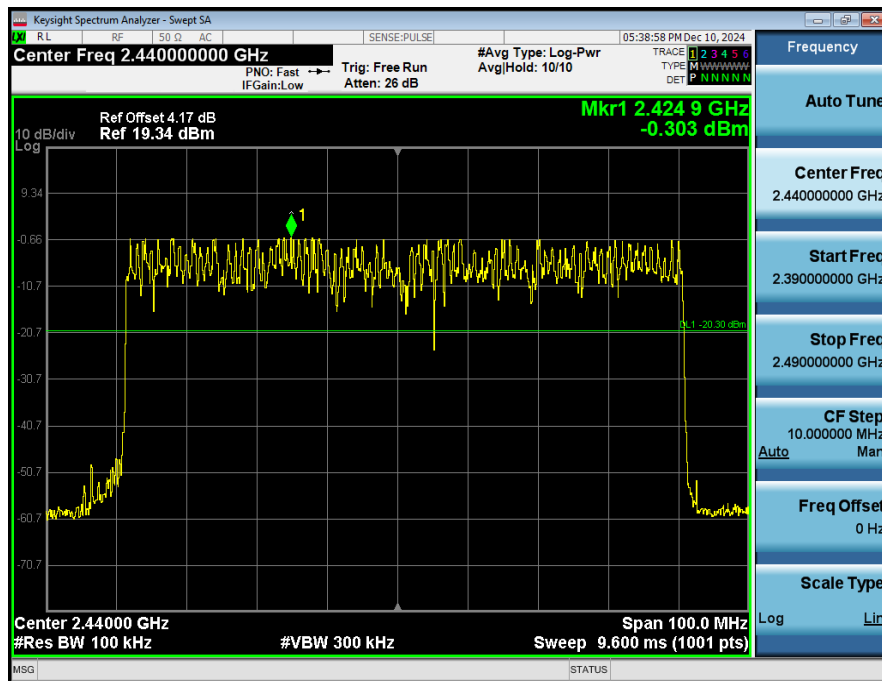
1_Reference_Level_NVNT_ANT1_3-DH1_2480_00



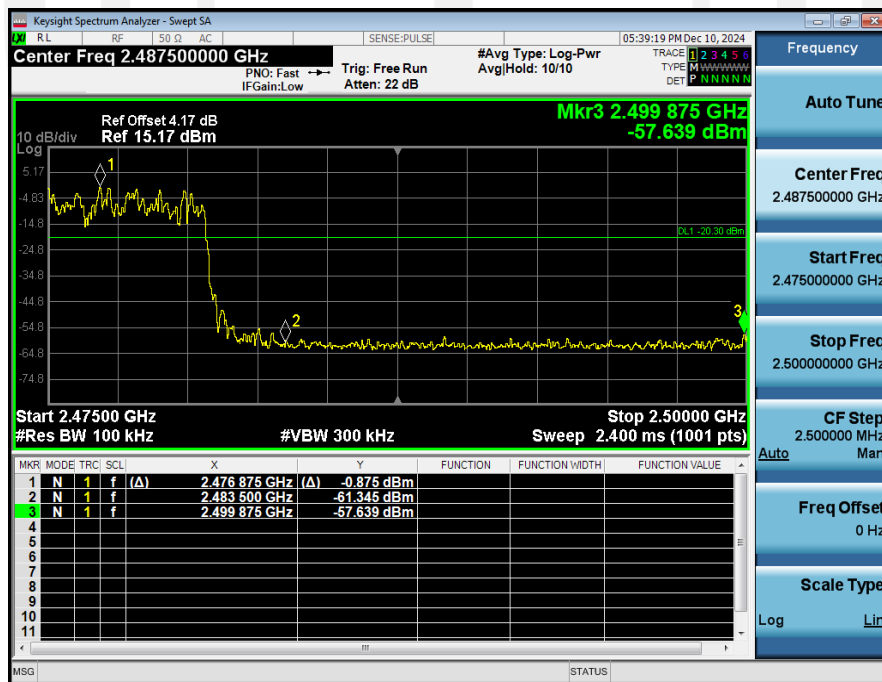
2_Bandedge_NVNT_ANT1_3-DH1_2480_00



1_Reference_Level_Hopping_NVNT_ANT1_3-DH1_Hopping



2_Band_Edge_(Hopping)_NVNT_ANT1_3-DH1_Hopping

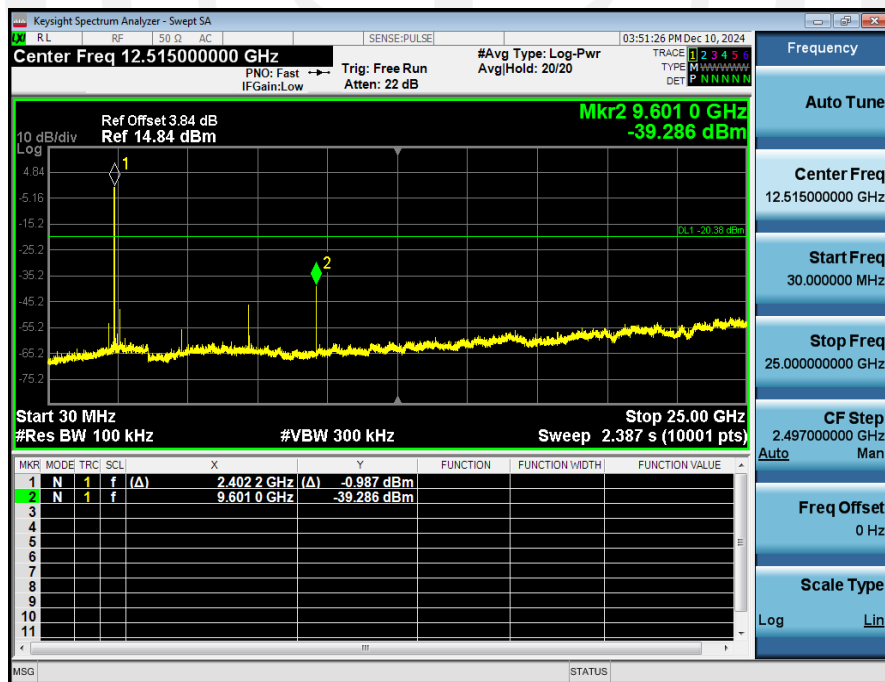


Conducted spurious emission: Pass

1_Reference_Level_NVNT_ANT1_1-DH1_2402_00



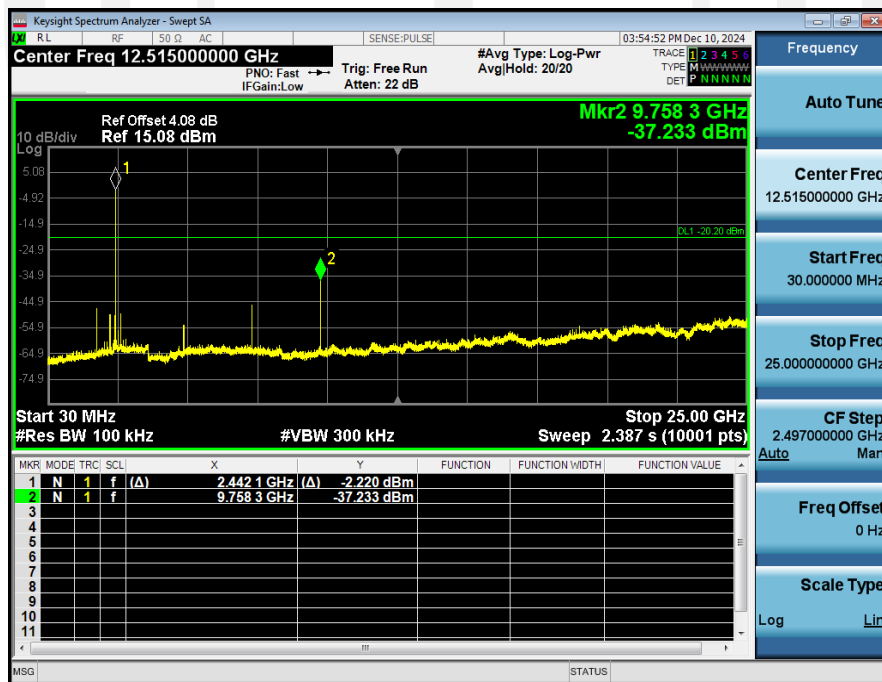
2_Spurious_Emissions_NVNT_ANT1_1-DH1_2402_00



1_Reference_Level_NVNT_ANT1_1-DH1_2441_00



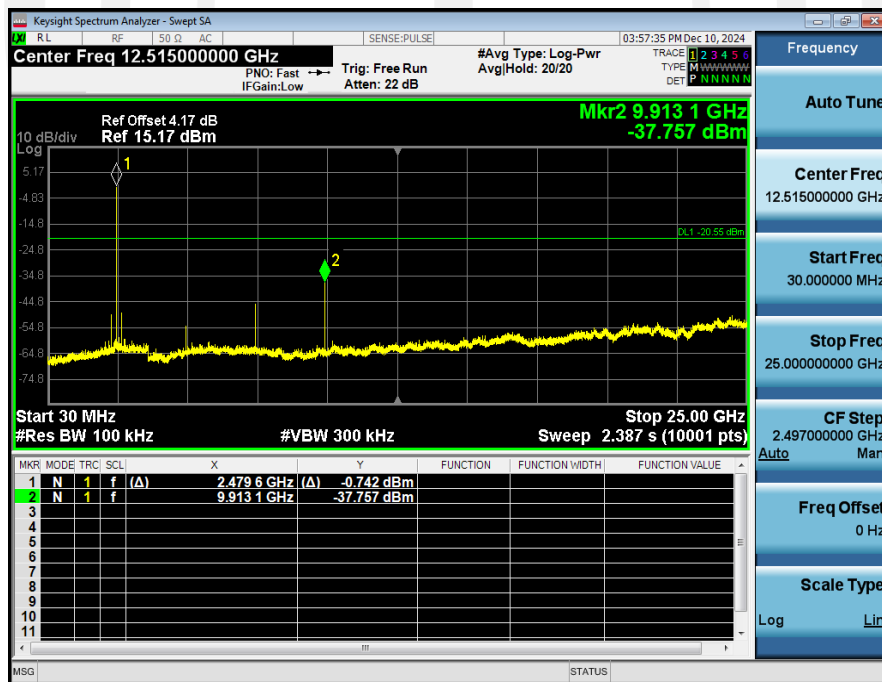
2_Spurious_Emissions_NVNT_ANT1_1-DH1_2441_00



1_Reference_Level_NVNT_ANT1_1-DH1_2480_00



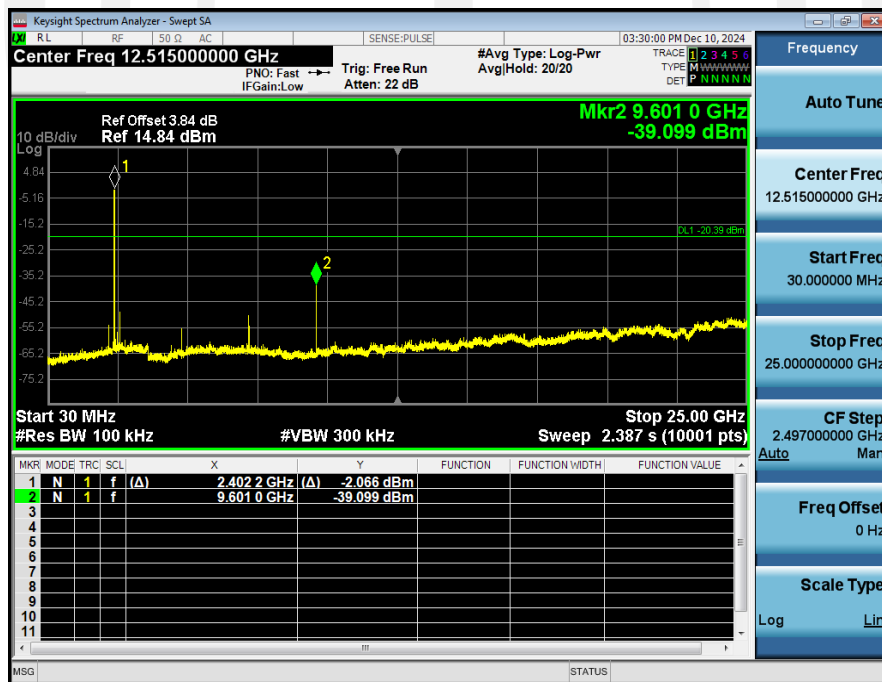
2_Spurious_Emissions_NVNT_ANT1_1-DH1_2480_00



1_Reference_Level_NVNT_ANT1_2-DH1_2402_00



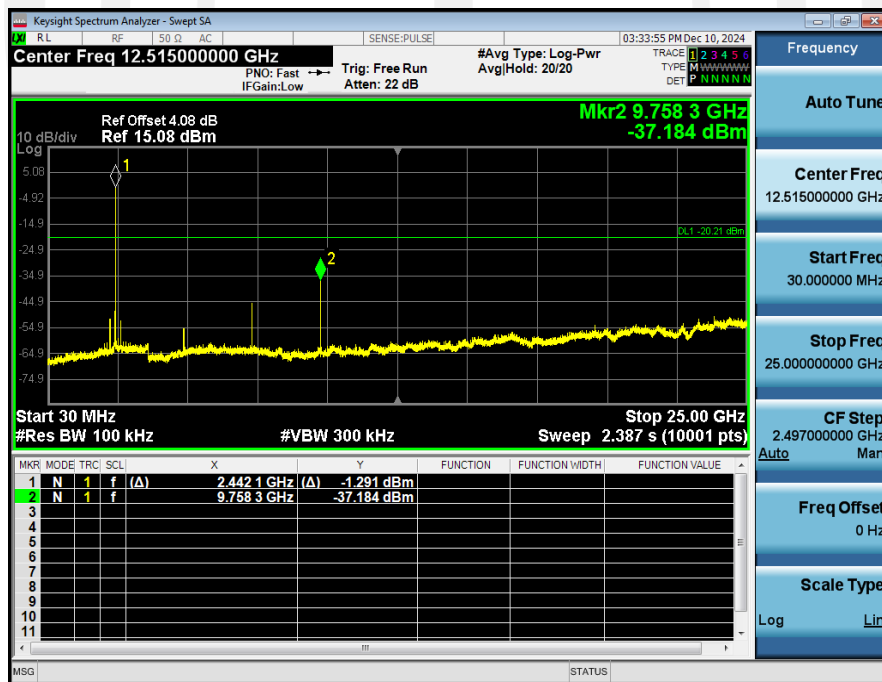
2_Spurious_Emissions_NVNT_ANT1_2-DH1_2402_00



1_Reference_Level_NVNT_ANT1_2-DH1_2441_00



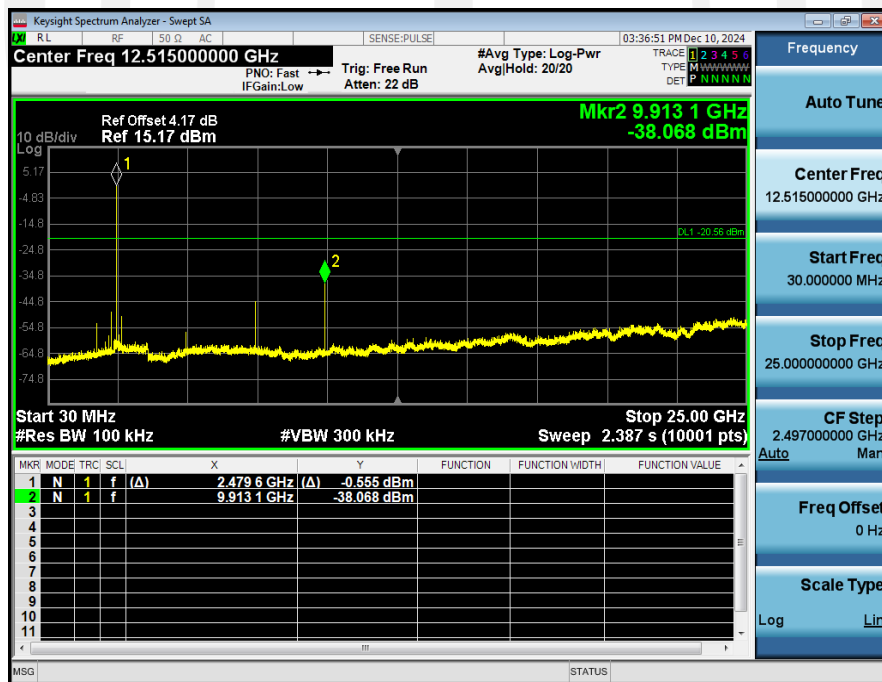
2_Spurious_Emissions_NVNT_ANT1_2-DH1_2441_00



1_Reference_Level_NVNT_ANT1_2-DH1_2480_00



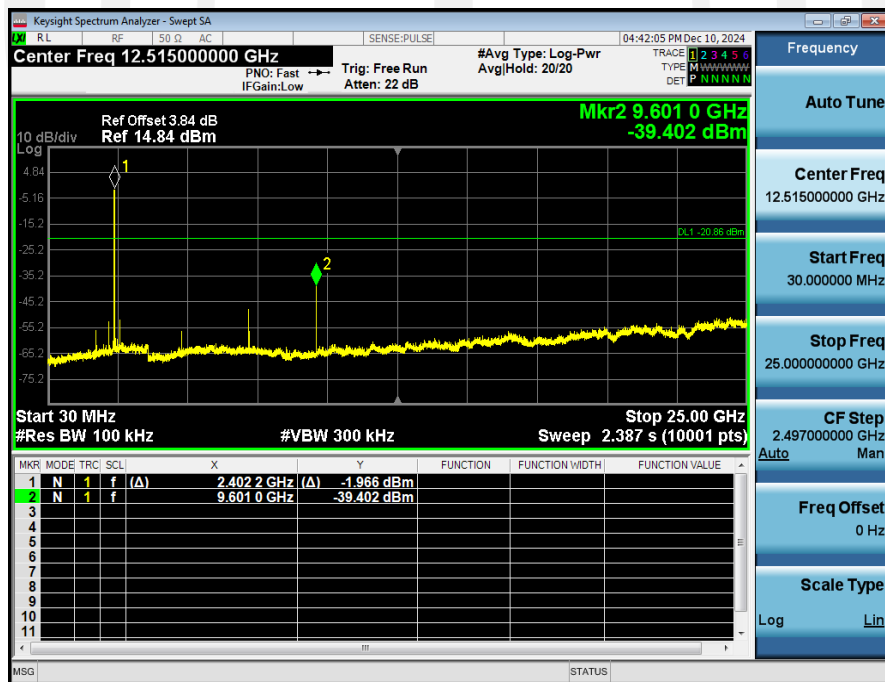
2_Spurious_Emissions_NVNT_ANT1_2-DH1_2480_00



1_Reference_Level_NVNT_ANT1_3-DH1_2402_00



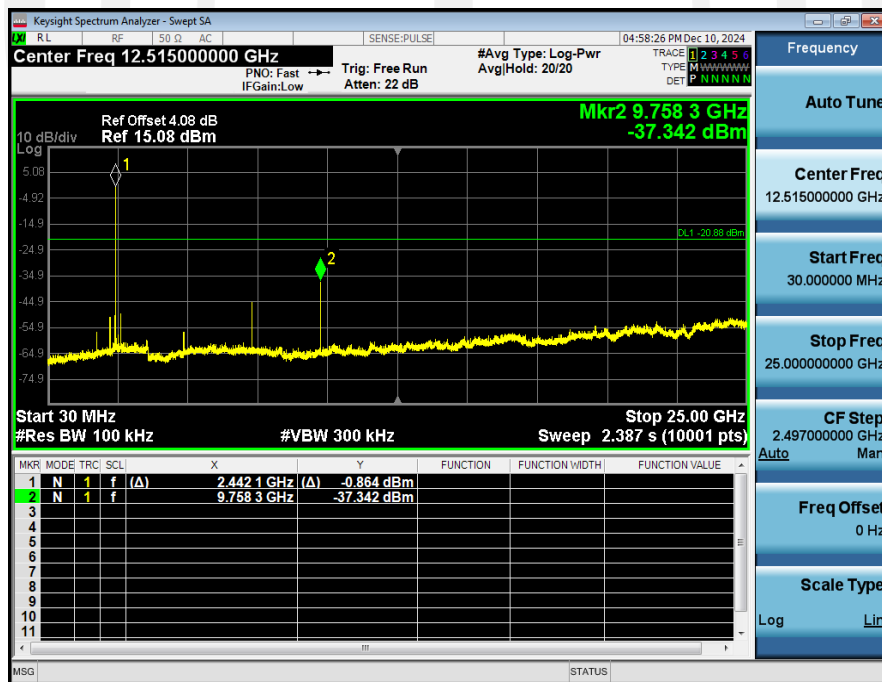
2_Spurious_Emissions_NVNT_ANT1_3-DH1_2402_00



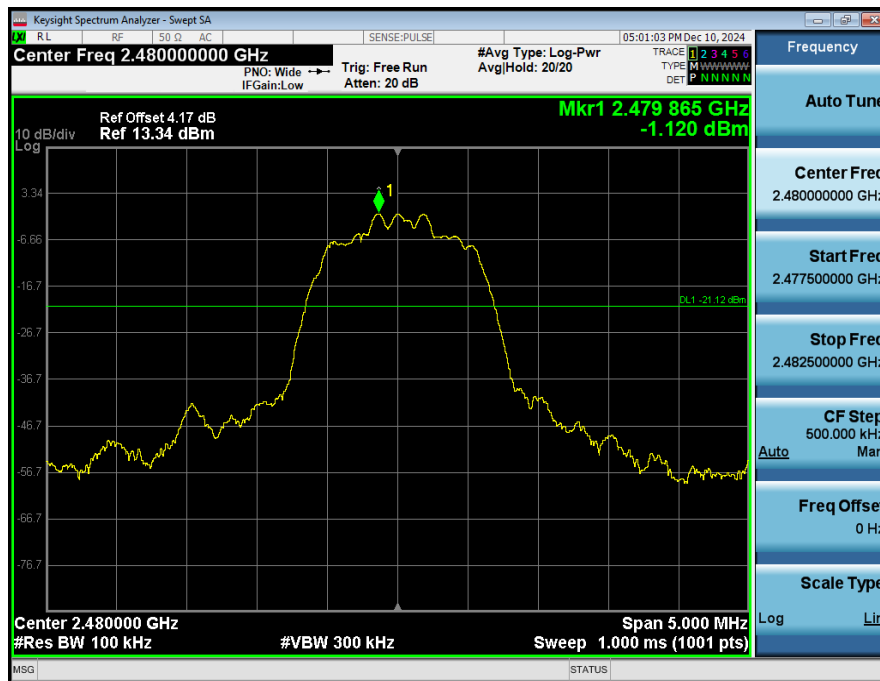
1_Reference_Level_NVNT_ANT1_3-DH1_2441_00



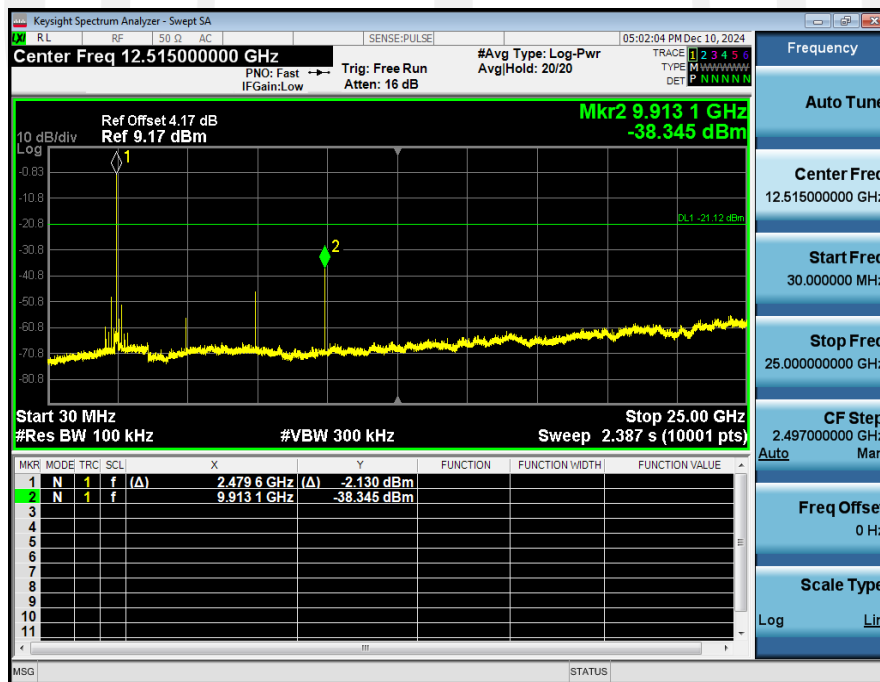
2_Spurious_Emissions_NVNT_ANT1_3-DH1_2441_00



1_Reference_Level_NVNT_ANT1_3-DH1_2480_00



2_Spurious_Emissions_NVNT_ANT1_3-DH1_2480_00



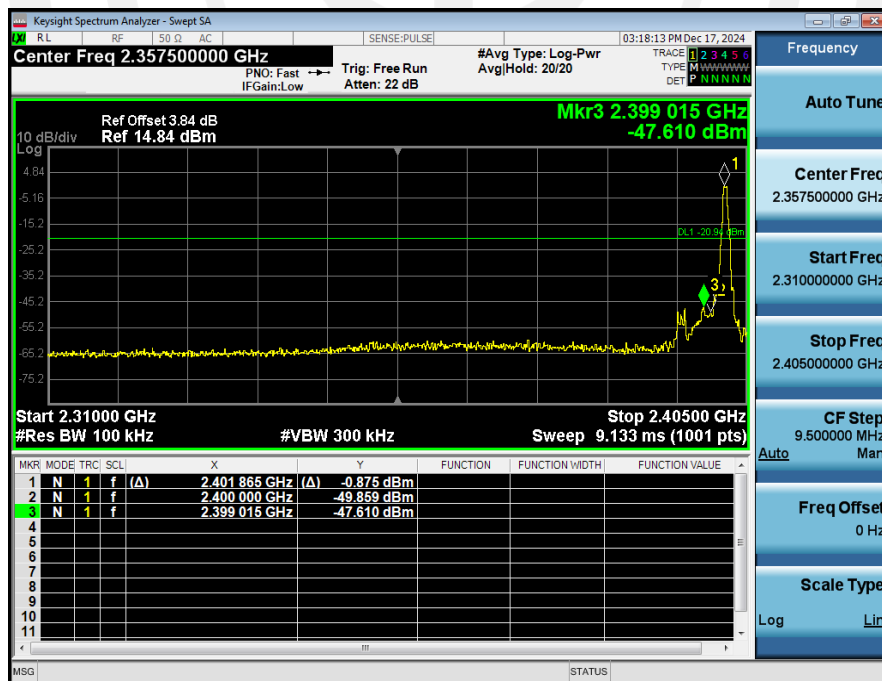
Right earphone:

Band Edge: Pass

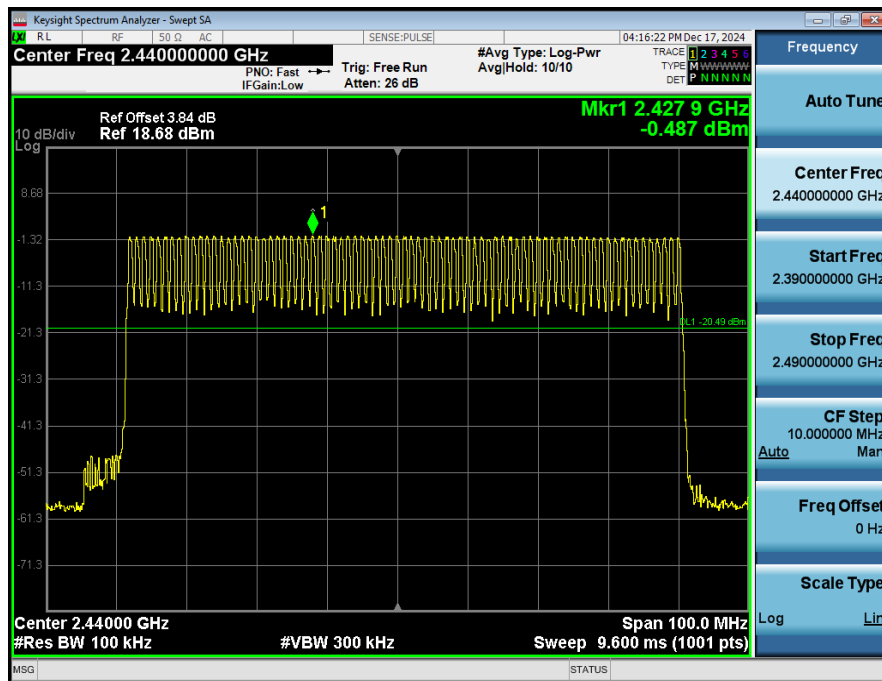
1_Reference_Level_NVNT_ANT1_1-DH1_2402_00



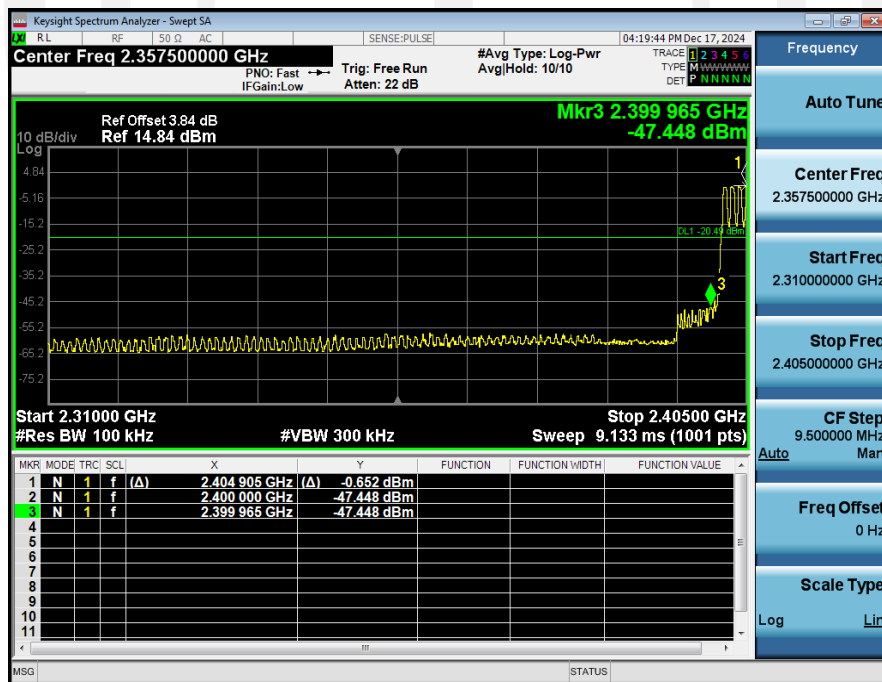
2_Bandedge_NVNT_ANT1_1-DH1_2402_00



1_Reference_Level_Hopping_NVNT_ANT1_1-DH1_Hopping



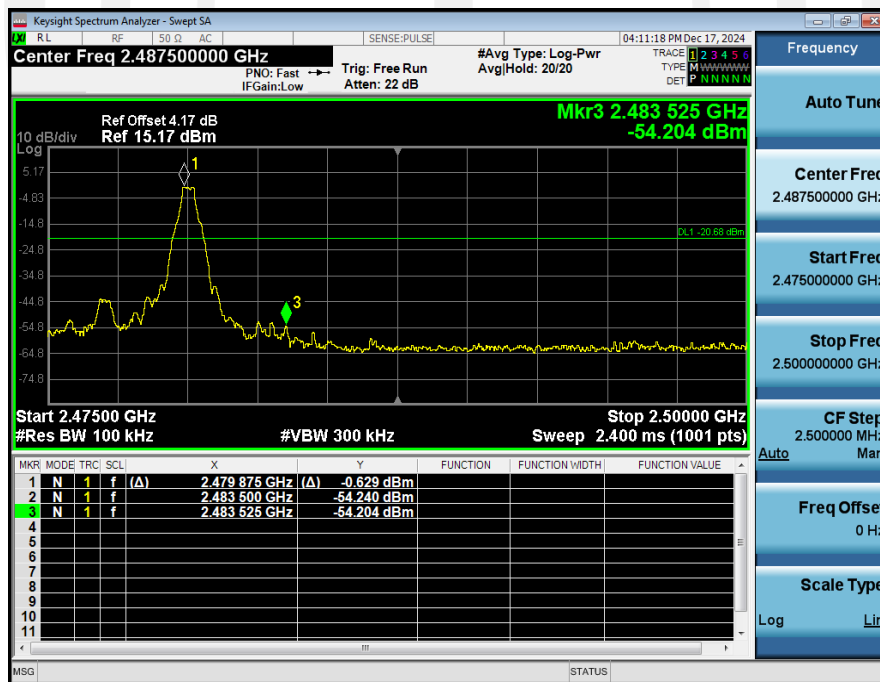
2_Band_Edge_(Hopping)_NVNT_ANT1_1-DH1_Hopping



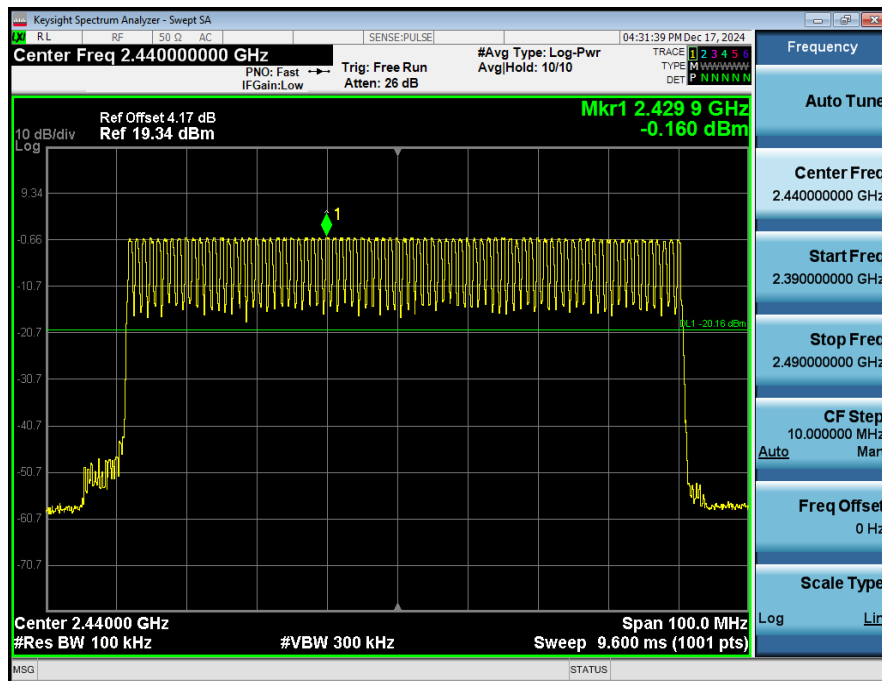
1_Reference_Level_NVNT_ANT1_1-DH1_2480_00



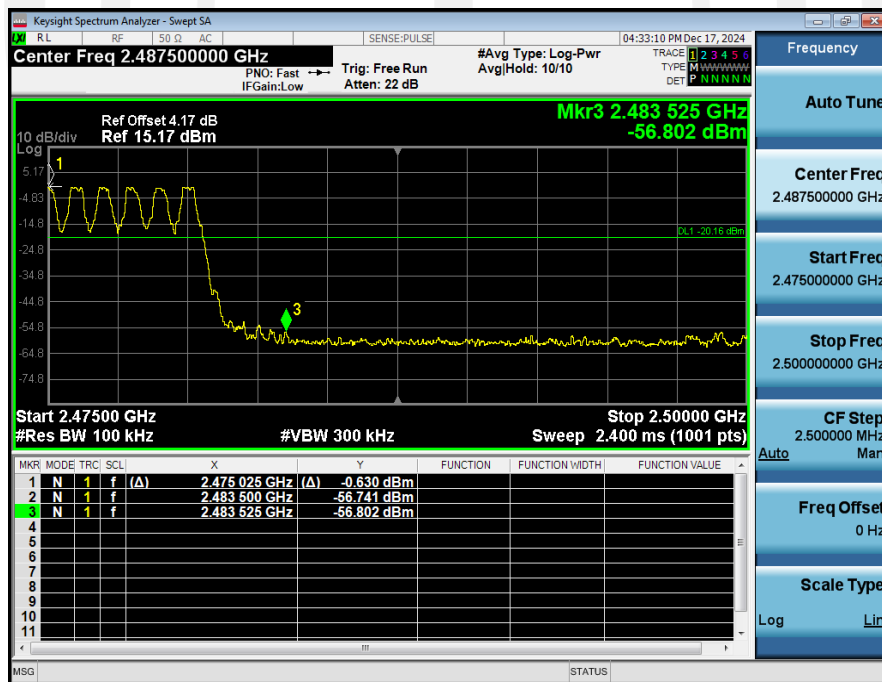
2_Bandedge_NVNT_ANT1_1-DH1_2480_00



1_Reference_Level_Hopping_NVNT_ANT1_1-DH1_Hopping



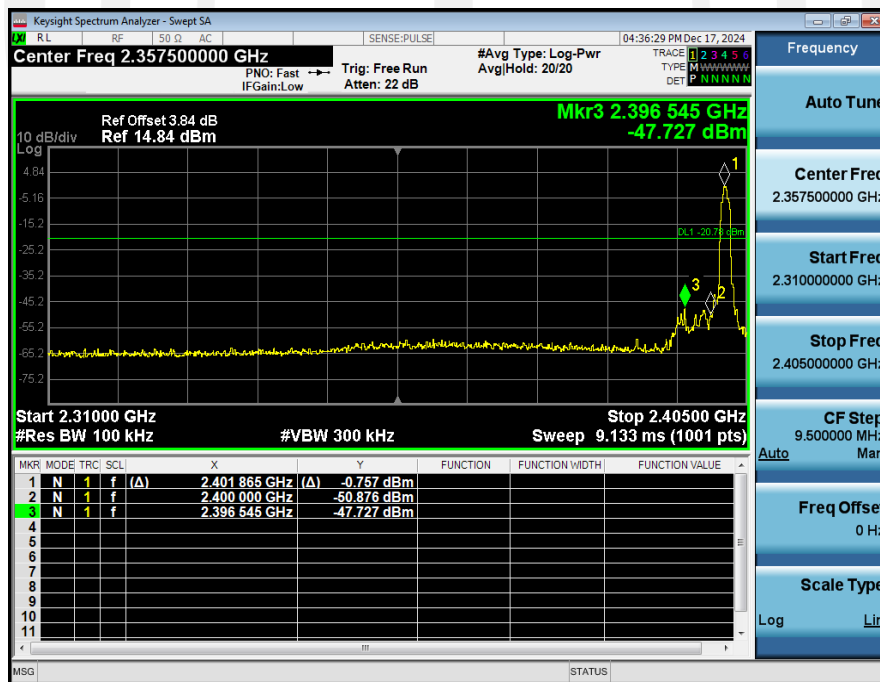
2_Band_Edge_(Hopping)_NVNT_ANT1_1-DH1_Hopping



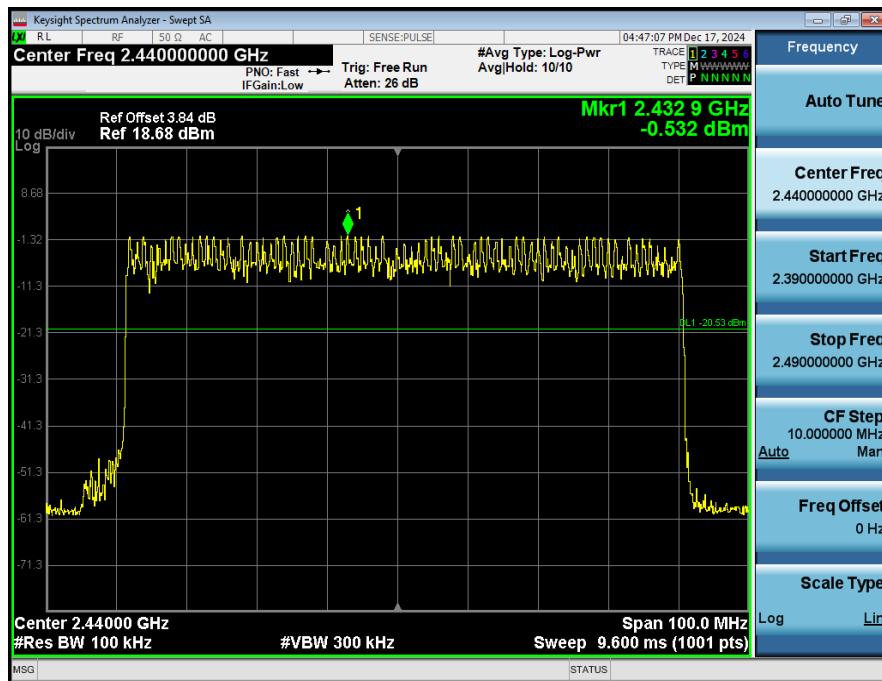
1_Reference_Level_NVNT_ANT1_2-DH1_2402_00



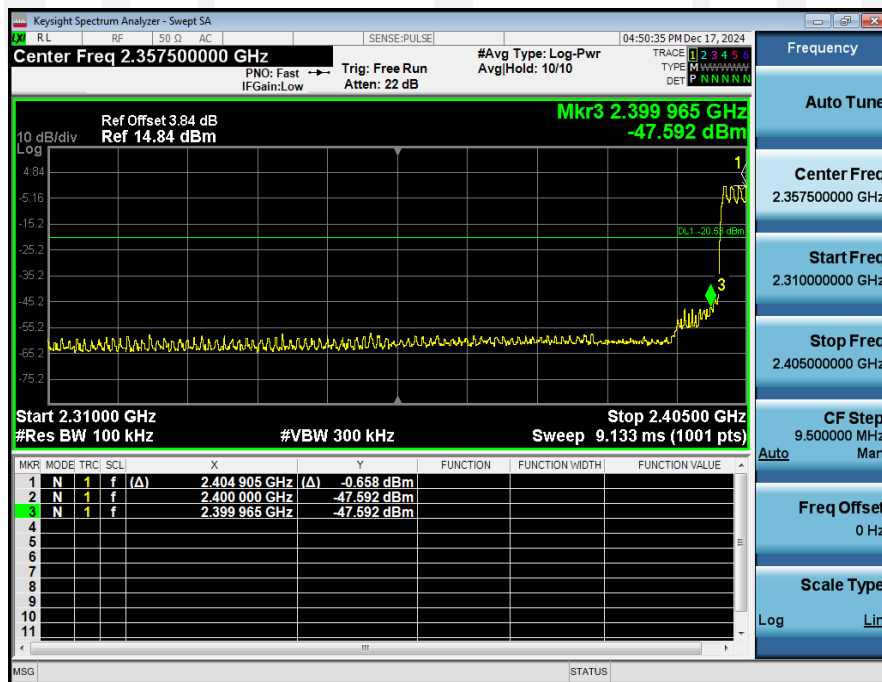
2_Bandedge_NVNT_ANT1_2-DH1_2402_00



1_Reference_Level_Hopping_NVNT_ANT1_2-DH1_Hopping



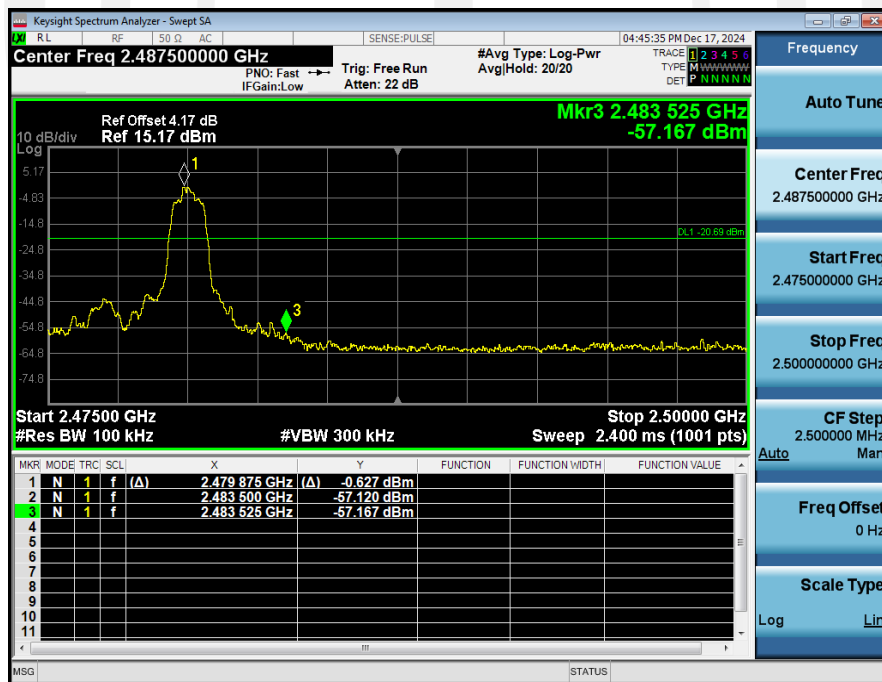
2_Band_Edge_(Hopping)_NVNT_ANT1_2-DH1_Hopping



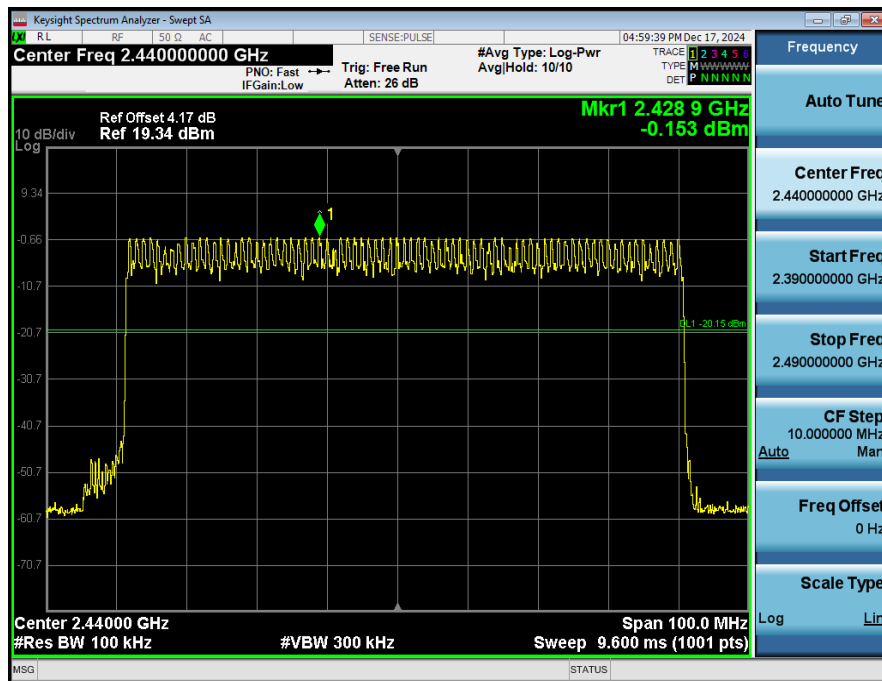
1_Reference_Level_NVNT_ANT1_2-DH1_2480_00



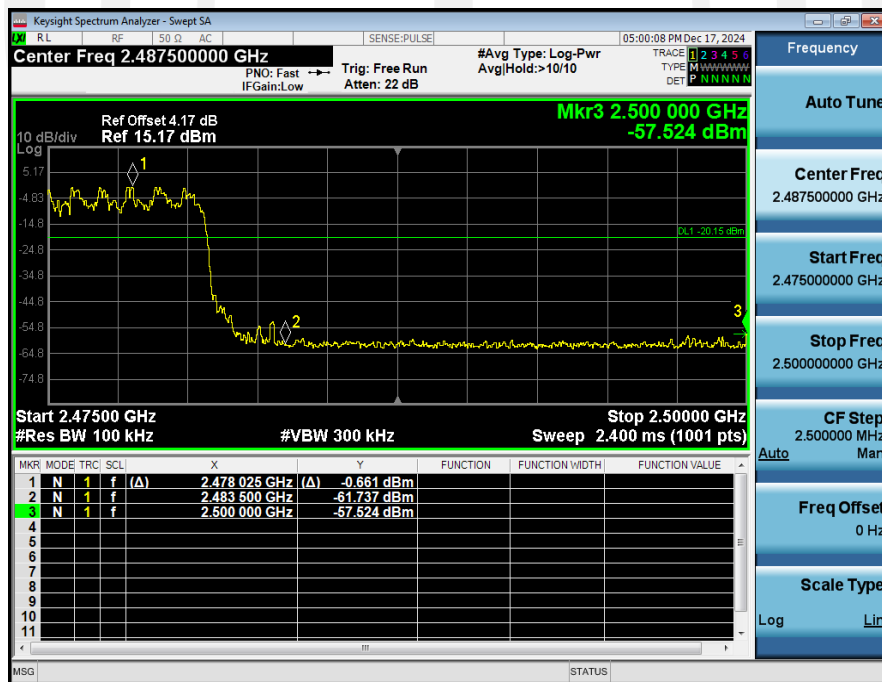
2_Bandedge_NVNT_ANT1_2-DH1_2480_00



1_Reference_Level_Hopping_NVNT_ANT1_2-DH1_Hopping



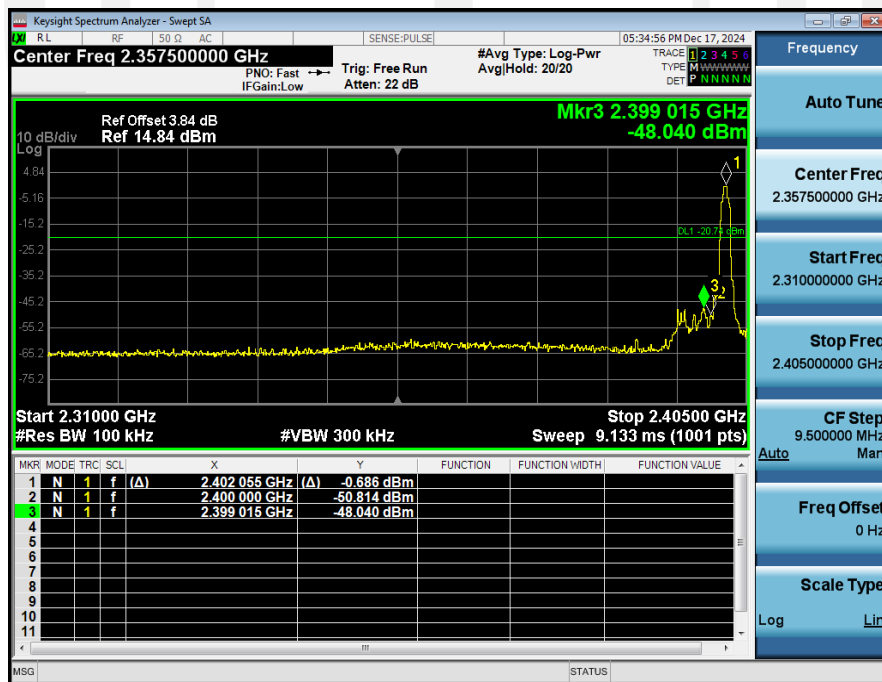
2_Band_Edge_(Hopping)_NVNT_ANT1_2-DH1_Hopping



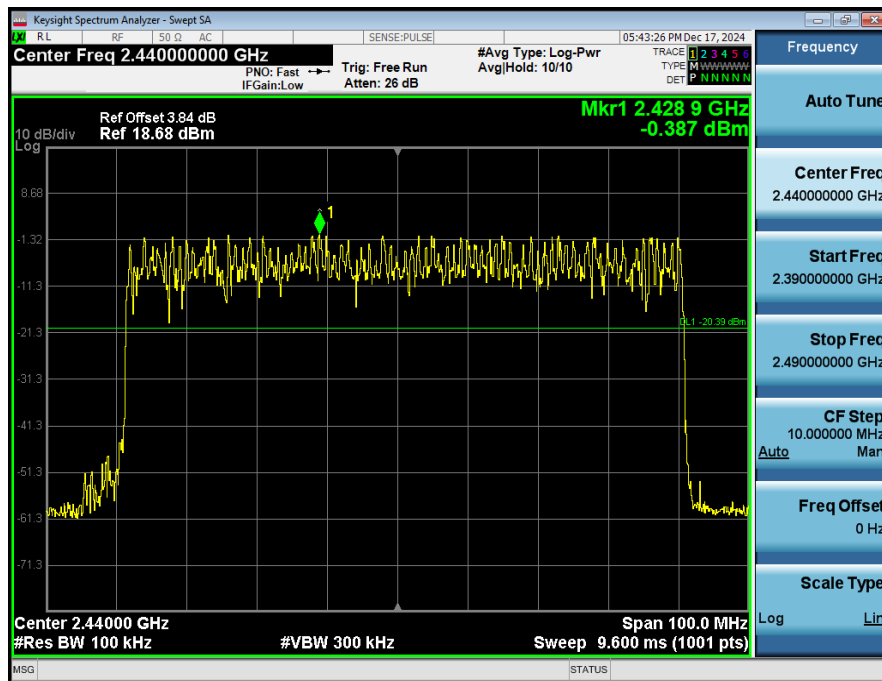
1_Reference_Level_NVNT_ANT1_3-DH1_2402_00



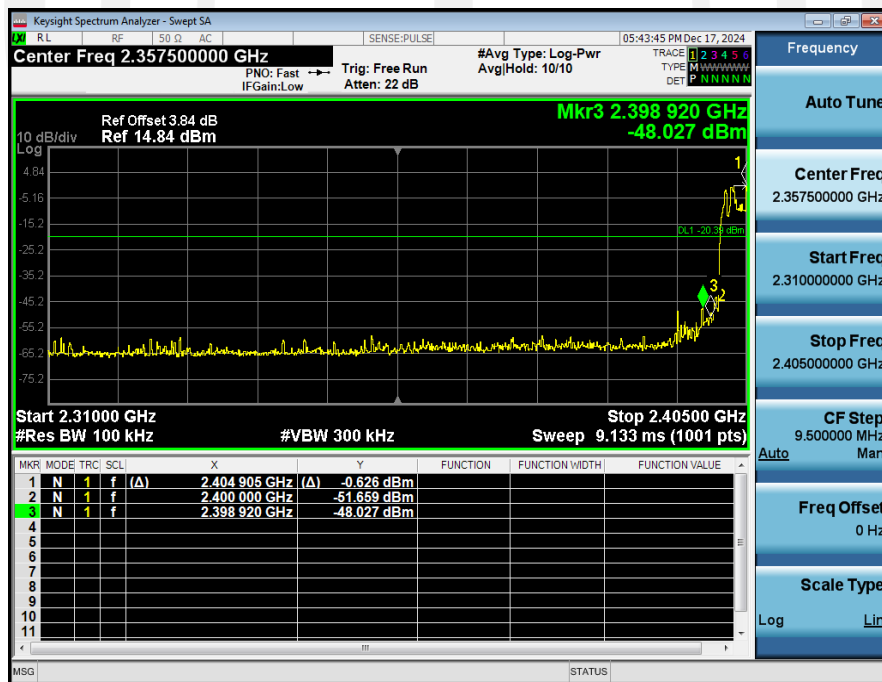
2_Bandedge_NVNT_ANT1_3-DH1_2402_00



1_Reference_Level_Hopping_NVNT_ANT1_3-DH1_Hopping

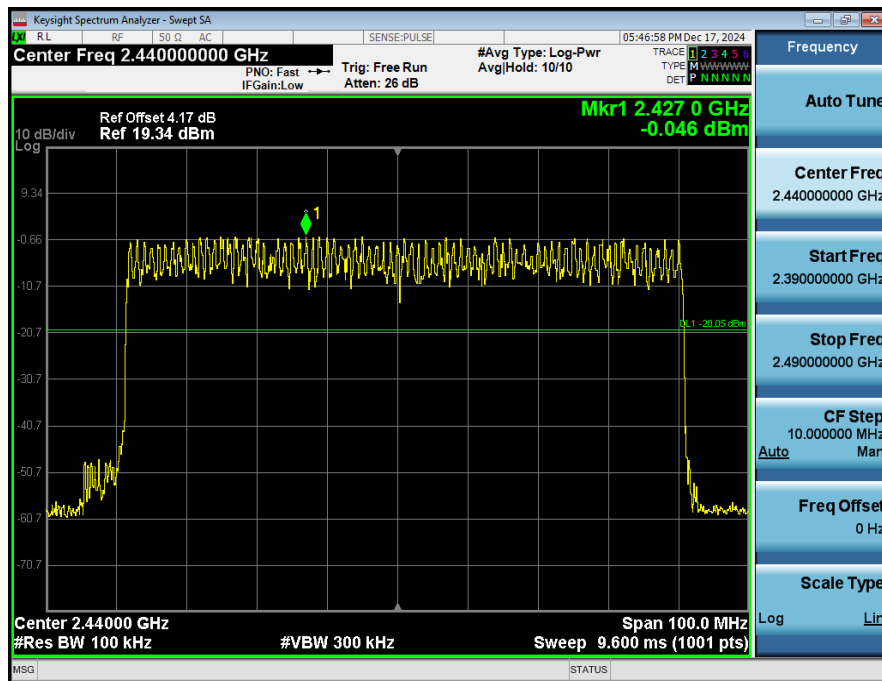


2_Band_Edge_(Hopping)_NVNT_ANT1_3-DH1_Hopping

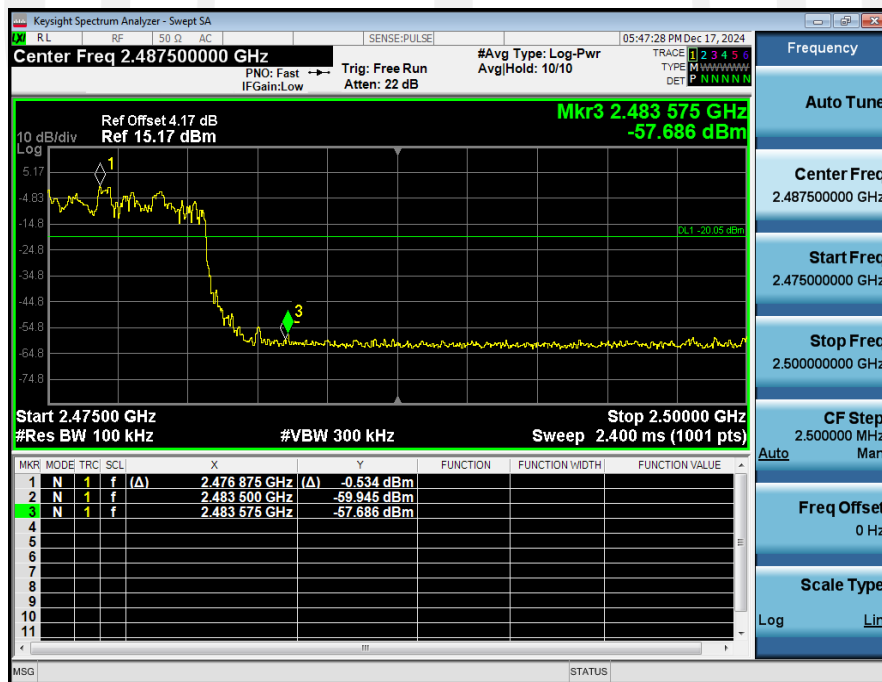


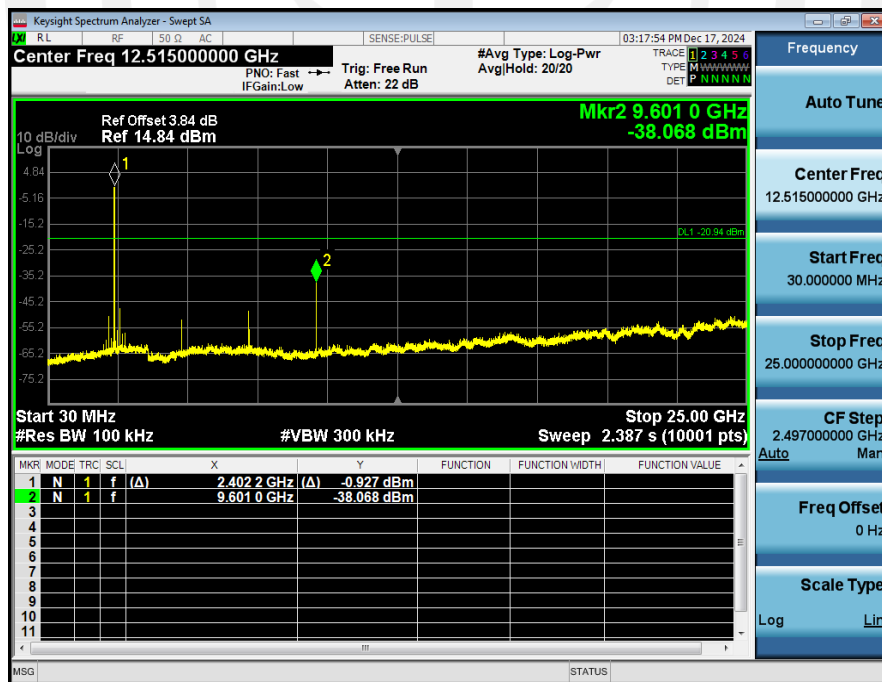
[illegible]

1_Reference_Level_Hopping_NVNT_ANT1_3-DH1_Hopping



2_Band_Edge_(Hopping)_NVNT_ANT1_3-DH1_Hopping

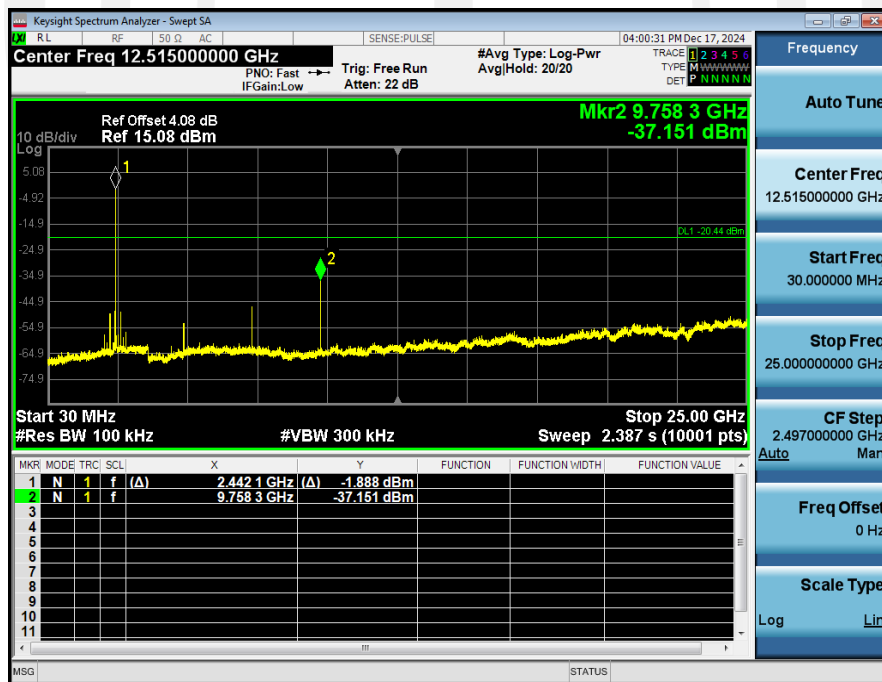


Conducted spurious emission: Pass**1_Reference_Level_NVNT_ANT1_1-DH1_2402_00****2_Spurious_Emissions_NVNT_ANT1_1-DH1_2402_00**

1_Reference_Level_NVNT_ANT1_1-DH1_2441_00



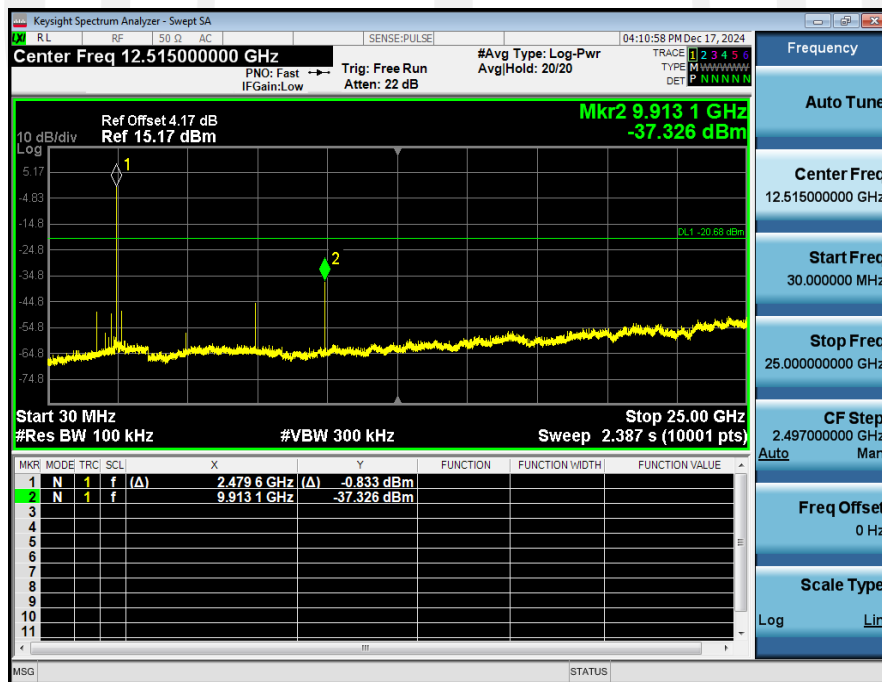
2_Spurious_Emissions_NVNT_ANT1_1-DH1_2441_00



1_Reference_Level_NVNT_ANT1_1-DH1_2480_00



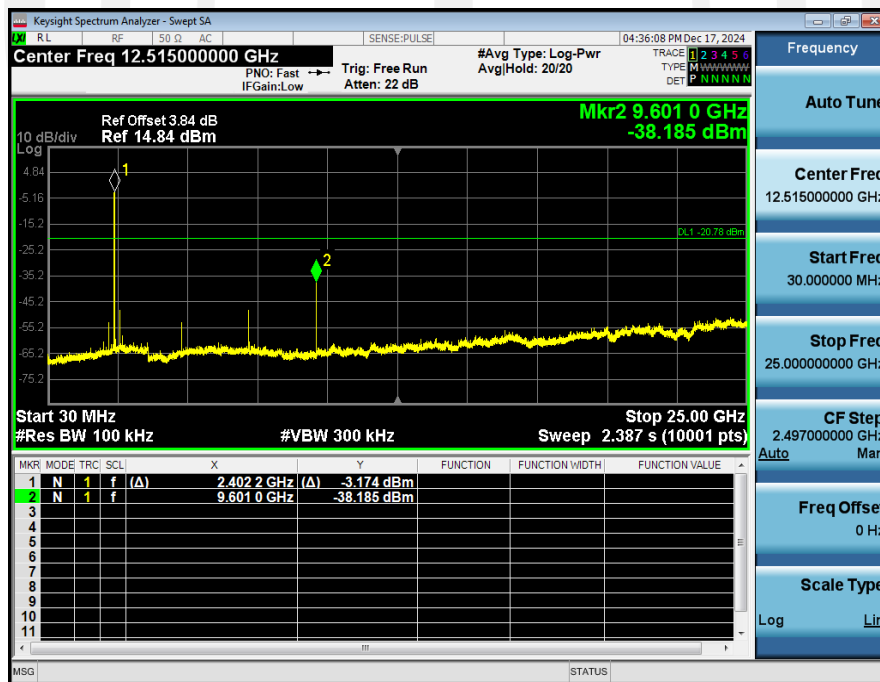
2_Spurious_Emissions_NVNT_ANT1_1-DH1_2480_00



1_Reference_Level_NVNT_ANT1_2-DH1_2402_00



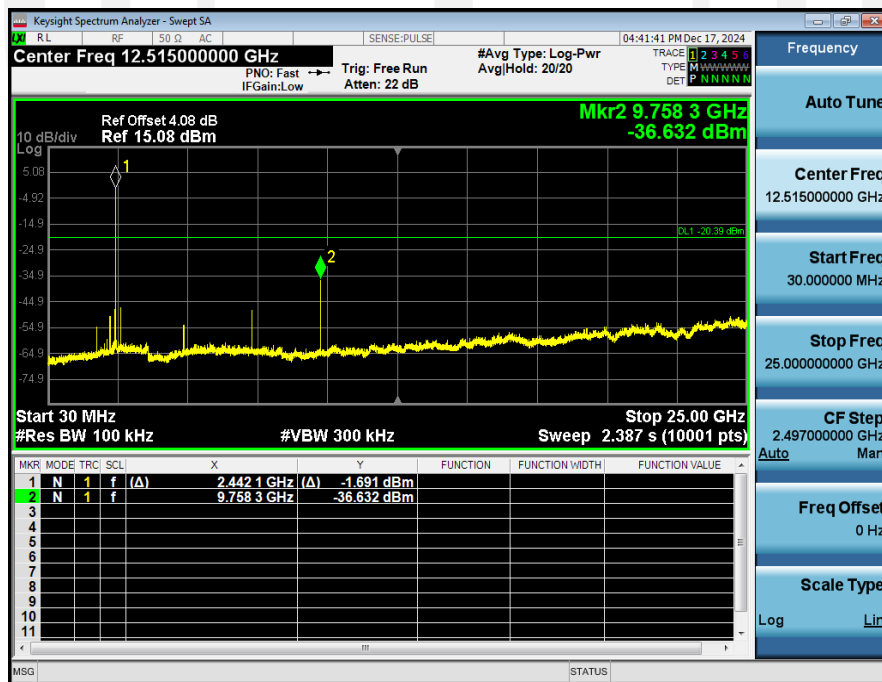
2_Spurious_Emissions_NVNT_ANT1_2-DH1_2402_00



1_Reference_Level_NVNT_ANT1_2-DH1_2441_00



2_Spurious_Emissions_NVNT_ANT1_2-DH1_2441_00



1_Reference_Level_NVNT_ANT1_2-DH1_2480_00



2_Spurious_Emissions_NVNT_ANT1_2-DH1_2480_00

