

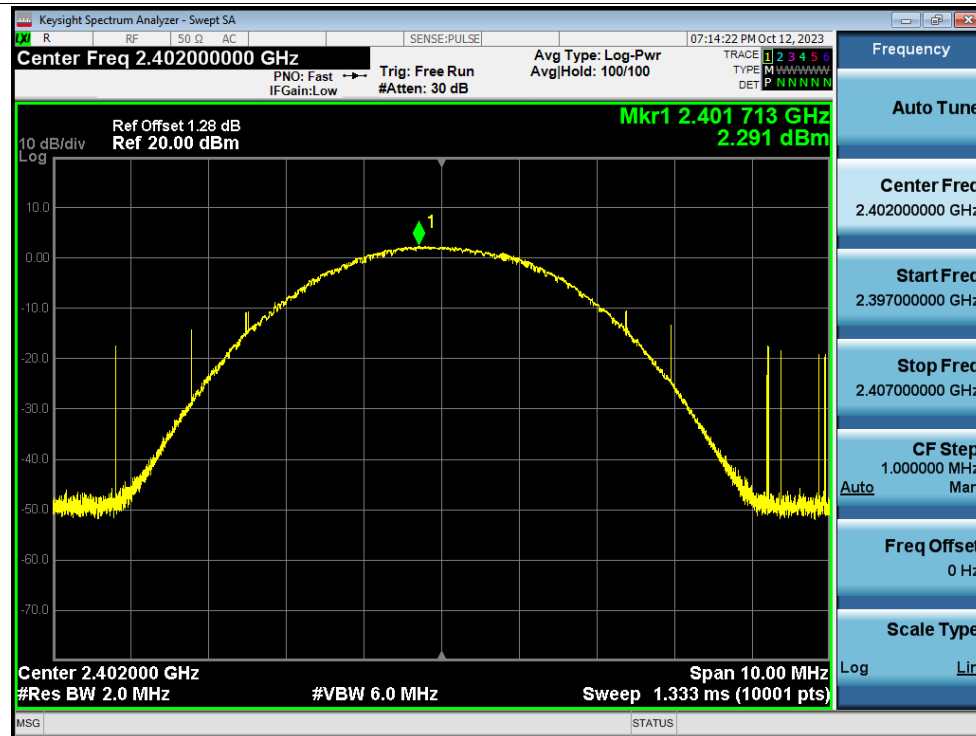
Appendix A

Maximum Conducted Output Power

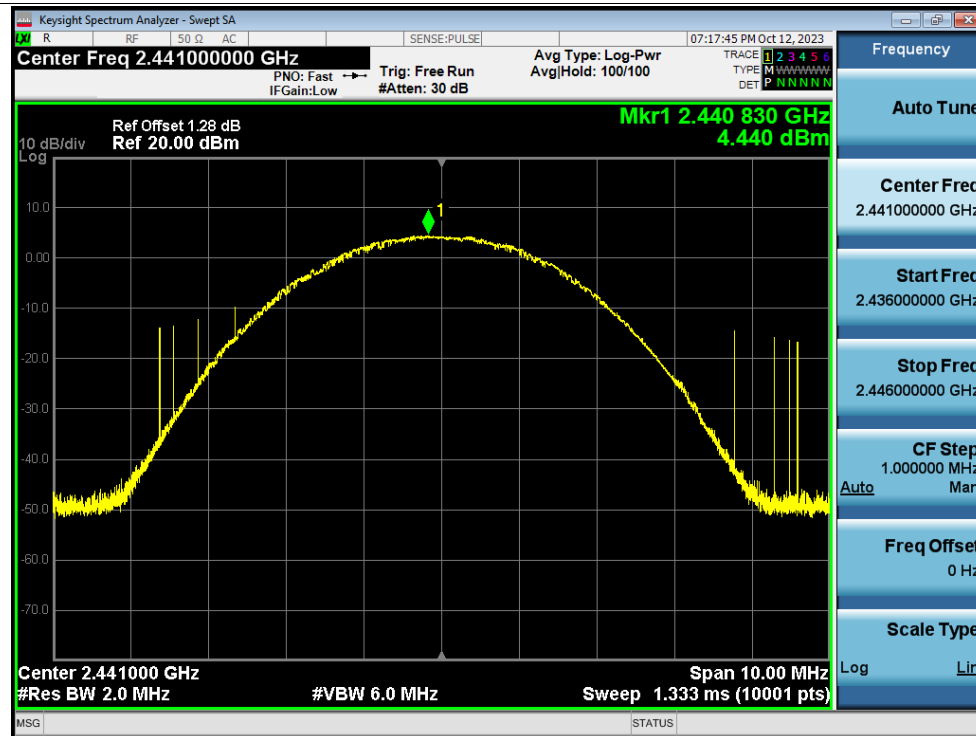
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	E.I.R.P (dBm)	E.I.R.P Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant1	2.29	0	2.29	21	4.87	<=36.02	Pass
NVNT	1-DH5	2441	Ant1	4.44	0	4.44	21	7.02	<=36.02	Pass
NVNT	1-DH5	2480	Ant1	6.77	0	6.77	21	9.35	<=36.02	Pass
NVNT	2-DH5	2402	Ant1	2.31	0	2.31	21	4.89	<=36.02	Pass
NVNT	2-DH5	2441	Ant1	4.13	0	4.13	21	6.71	<=36.02	Pass
NVNT	2-DH5	2480	Ant1	6.3	0	6.3	21	8.88	<=36.02	Pass
NVNT	3-DH5	2402	Ant1	2.25	0	2.25	21	4.83	<=36.02	Pass
NVNT	3-DH5	2441	Ant1	4.14	0	4.14	21	6.72	<=36.02	Pass
NVNT	3-DH5	2480	Ant1	6.69	0	6.69	21	9.27	<=36.02	Pass
Note1: Antenna Gain: 2.58dBi; Note2: E.I.R.P = Measured Power + Antenna Gain										

Test Graphs

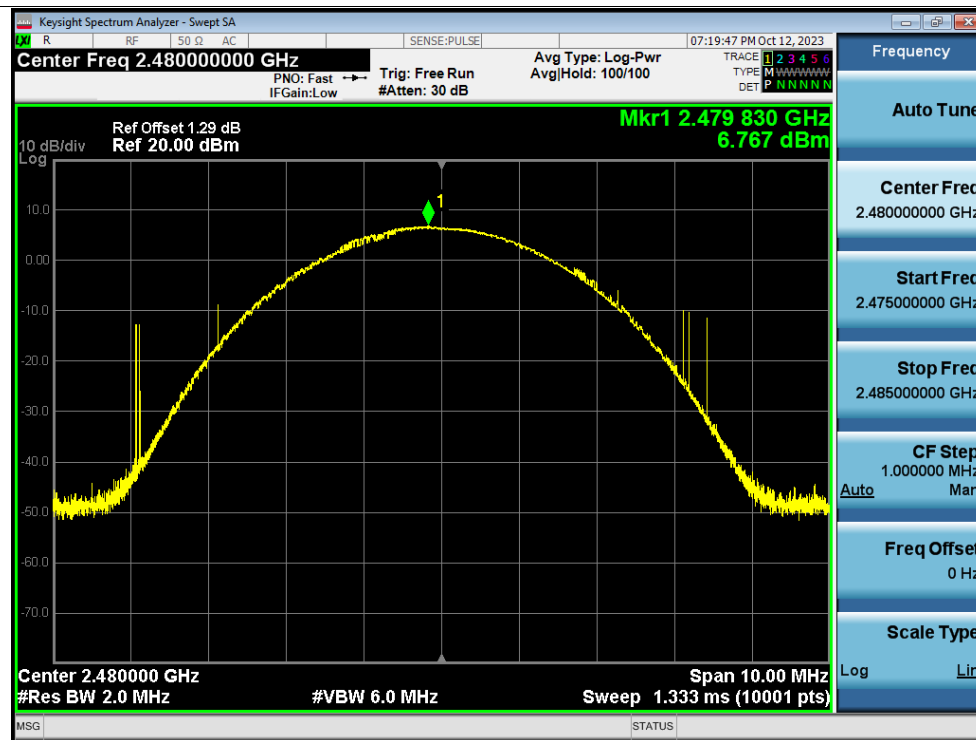
Power NVNT 1-DH5 2402MHz Ant1



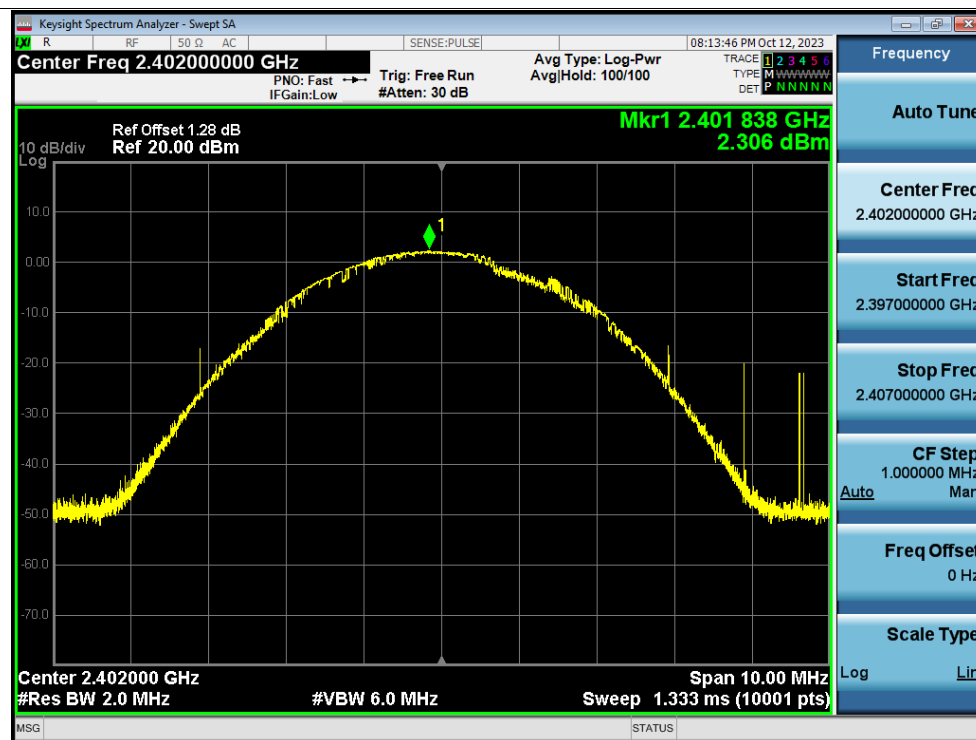
Power NVNT 1-DH5 2441MHz Ant1



Power NVNT 1-DH5 2480MHz Ant1



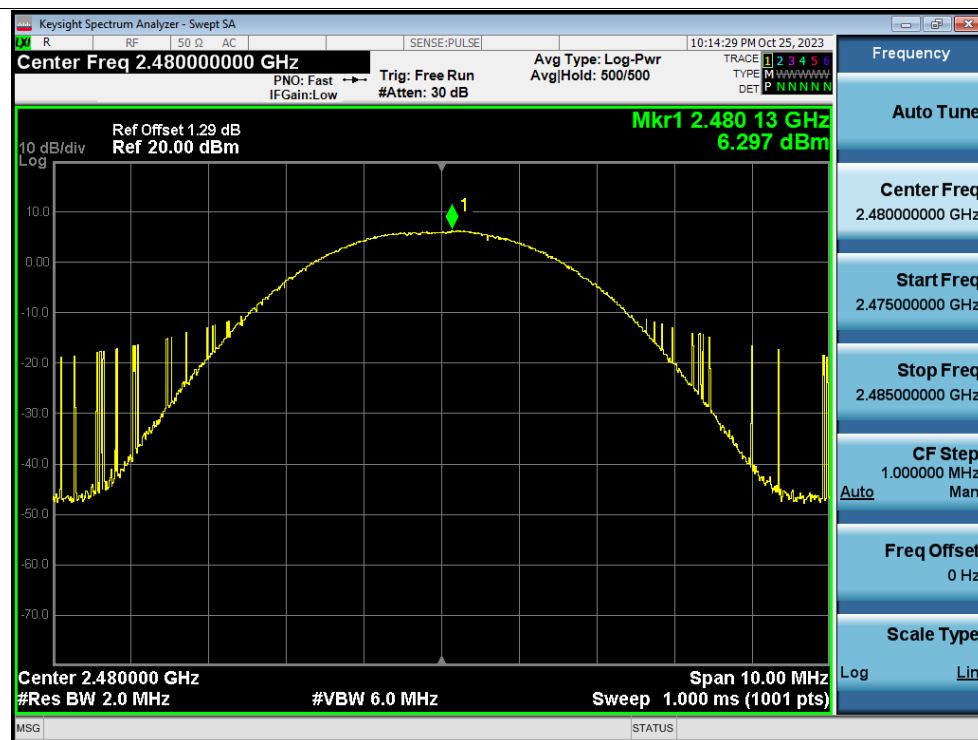
Power NVNT 2-DH5 2402MHz Ant1



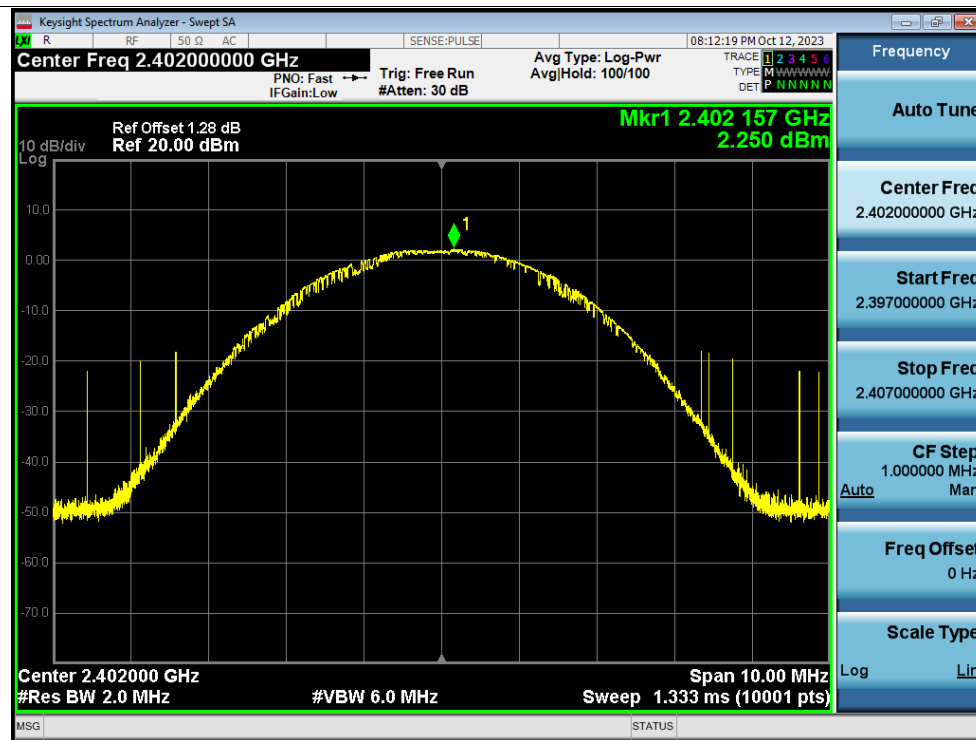
Power NVNT 2-DH5 2441MHz Ant1



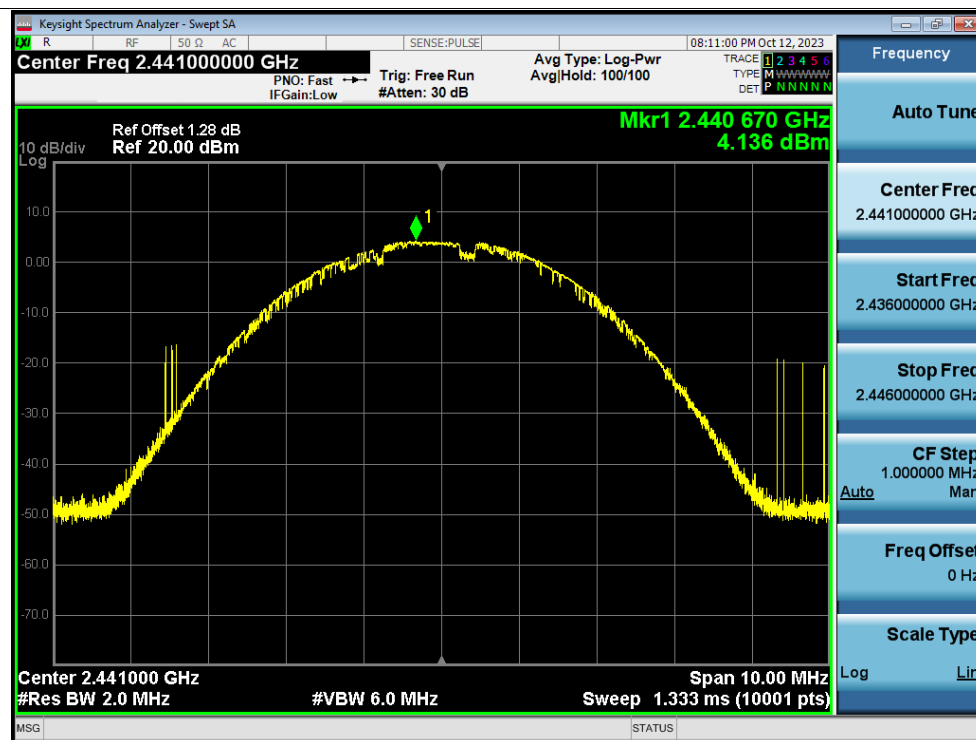
Power NVNT 2-DH5 2480MHz Ant1



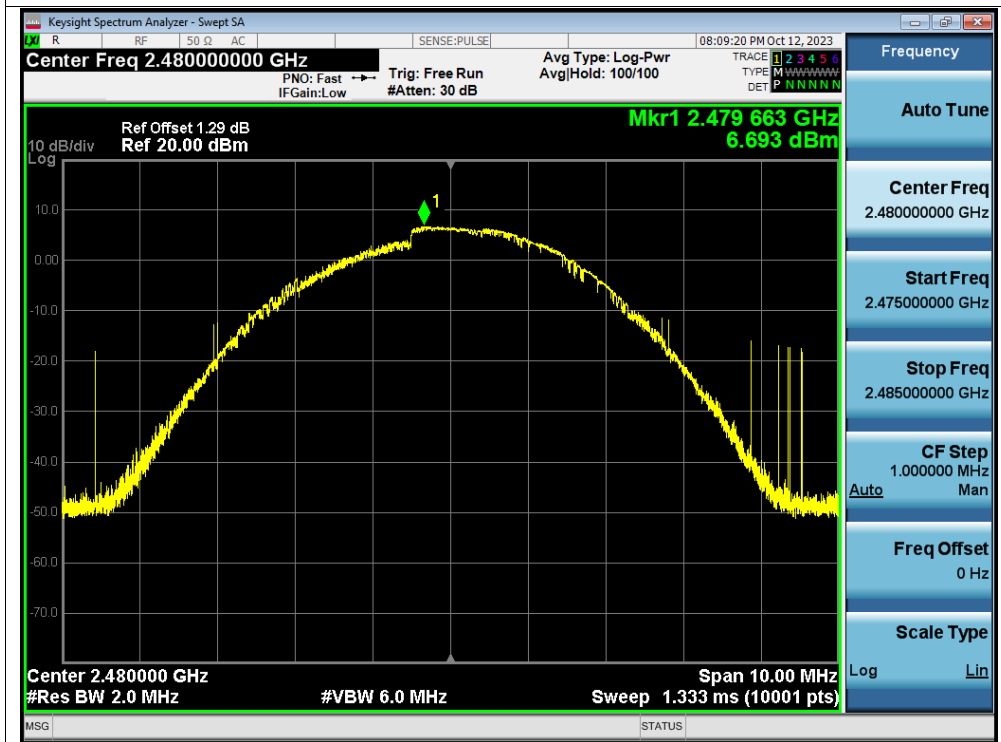
Power NVNT 3-DH5 2402MHz Ant1



Power NVNT 3-DH5 2441MHz Ant1



Power NVNT 3-DH5 2480MHz Ant1



-20dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant1	0.942	Pass
NVNT	1-DH5	2441	Ant1	0.931	Pass
NVNT	1-DH5	2480	Ant1	0.932	Pass
NVNT	2-DH5	2402	Ant1	1.225	Pass
NVNT	2-DH5	2441	Ant1	1.175	Pass
NVNT	2-DH5	2480	Ant1	1.175	Pass
NVNT	3-DH5	2402	Ant1	1.186	Pass
NVNT	3-DH5	2441	Ant1	1.2	Pass
NVNT	3-DH5	2480	Ant1	1.166	Pass

Test Graphs

-20dB Bandwidth NVNT 1-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 1-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 1-DH5 2480MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH5 2480MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2402MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2441MHz Ant1



-20dB Bandwidth NVNT 3-DH5 2480MHz Ant1



Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH5	2402	Ant1	0.835
NVNT	1-DH5	2441	Ant1	0.858
NVNT	1-DH5	2480	Ant1	0.845
NVNT	2-DH5	2402	Ant1	1.157
NVNT	2-DH5	2441	Ant1	1.16
NVNT	2-DH5	2480	Ant1	1.146
NVNT	3-DH5	2402	Ant1	1.166
NVNT	3-DH5	2441	Ant1	1.146
NVNT	3-DH5	2480	Ant1	1.139

Test Graphs

OBW NVNT 1-DH5 2402MHz Ant1



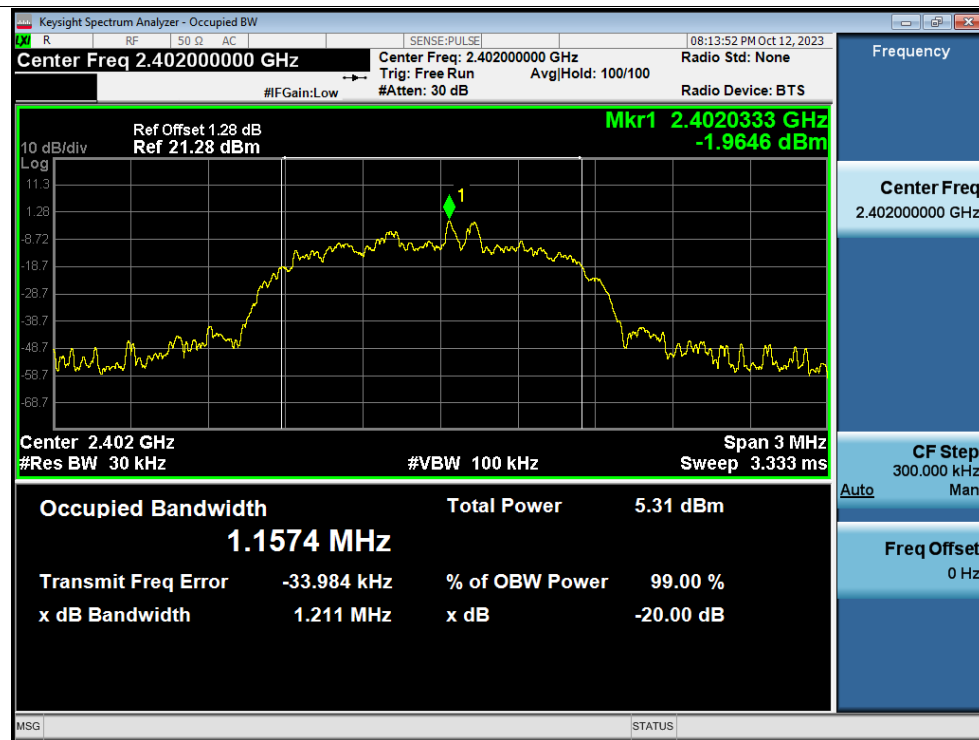
OBW NVNT 1-DH5 2441MHz Ant1



OBW NVNT 1-DH5 2480MHz Ant1



OBW NVNT 2-DH5 2402MHz Ant1



OBW NVNT 2-DH5 2441MHz Ant1



OBW NVNT 2-DH5 2480MHz Ant1



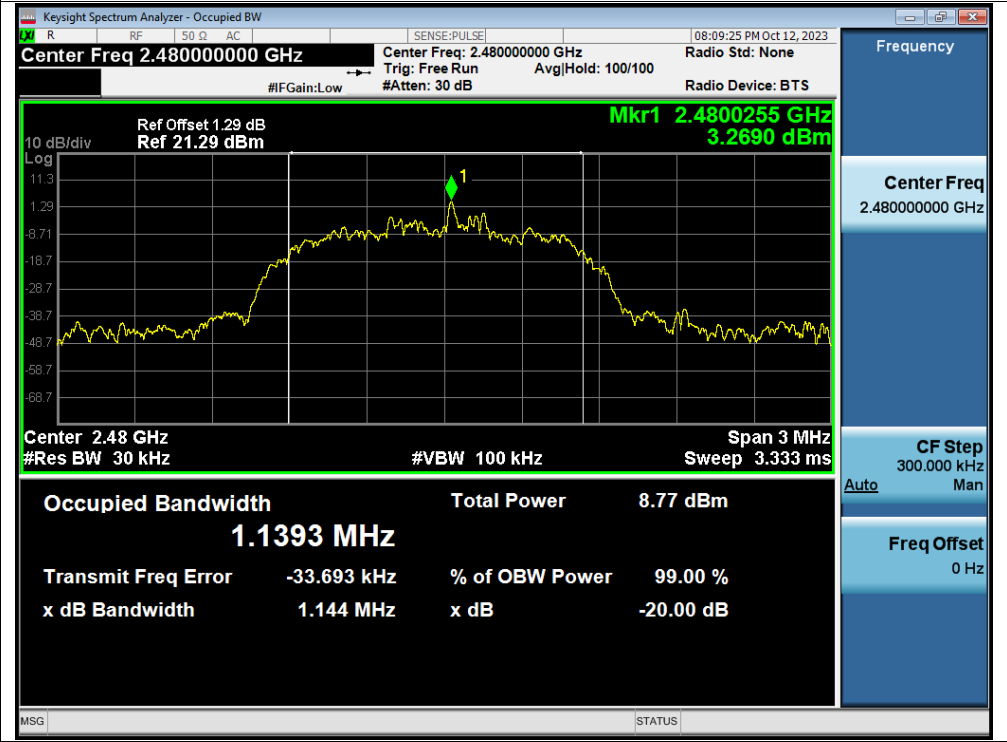
OBW NVNT 3-DH5 2402MHz Ant1



OBW NVNT 3-DH5 2441MHz Ant1



OBW NVNT 3-DH5 2480MHz Ant1



Carrier Frequencies Separation

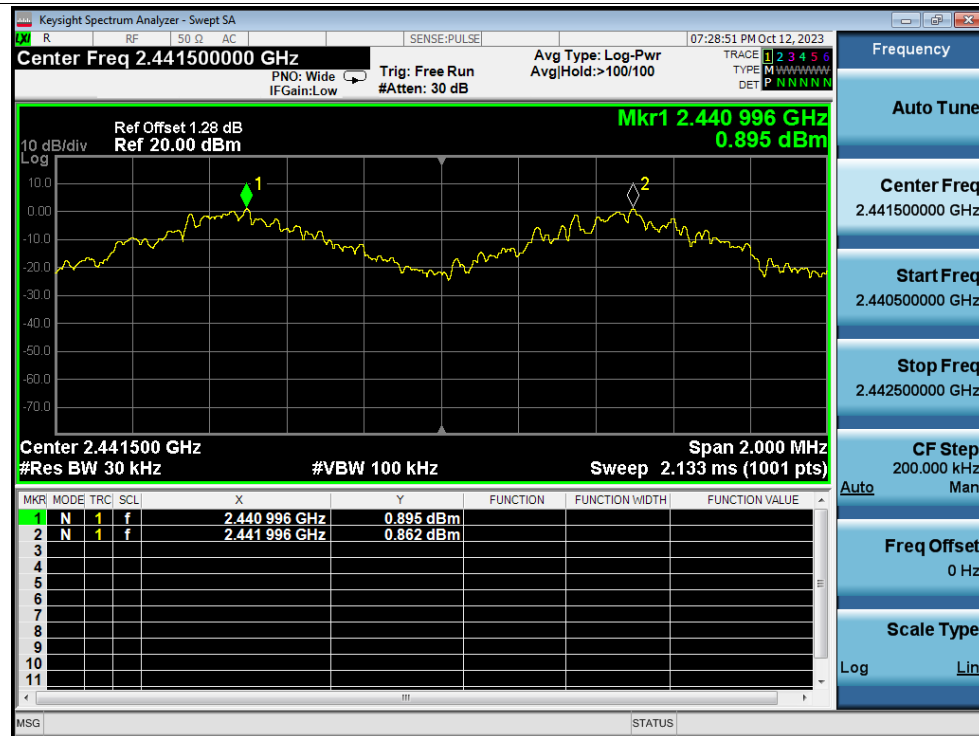
Condition	Mode	Antenna	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	Ant1	2402.006	2403.002	0.996	0.628	Pass
NVNT	1-DH5	Ant1	2440.996	2441.996	1	0.621	Pass
NVNT	1-DH5	Ant1	2478.96	2479.94	0.98	0.621	Pass
NVNT	2-DH5	Ant1	2402.148	2403.122	0.974	0.764	Pass
NVNT	2-DH5	Ant1	2440.87	2441.854	0.984	0.783	Pass
NVNT	2-DH5	Ant1	2478.972	2480.052	1.08	0.783	Pass
NVNT	3-DH5	Ant1	2401.996	2403.022	1.026	0.790	Pass
NVNT	3-DH5	Ant1	2441.144	2442.154	1.01	0.8	Pass
NVNT	3-DH5	Ant1	2478.968	2480.066	1.098	0.777	Pass

Test Graphs

CFS NVNT 1-DH5 2402MHz Ant1



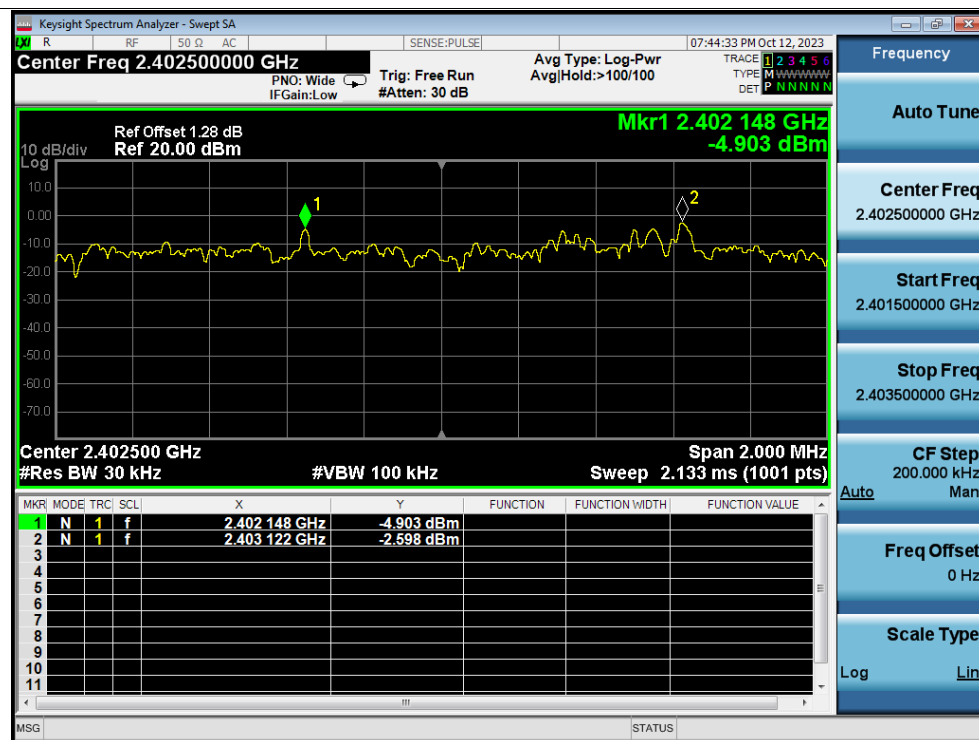
CFS NVNT 1-DH5 2441MHz Ant1



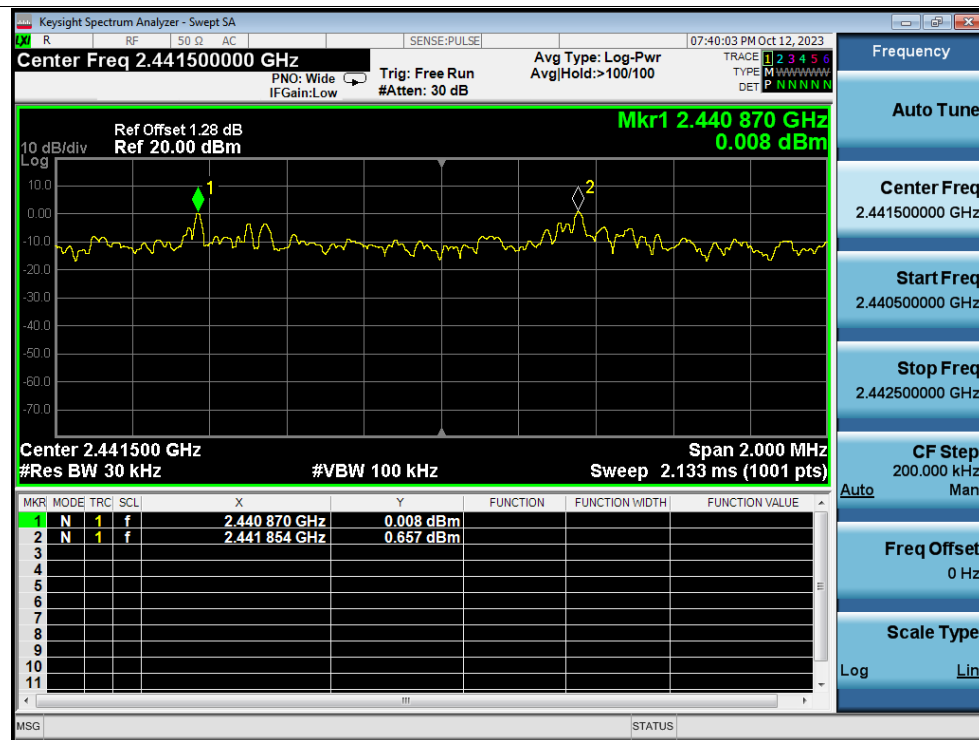
CFS NVNT 1-DH5 2480MHz Ant1



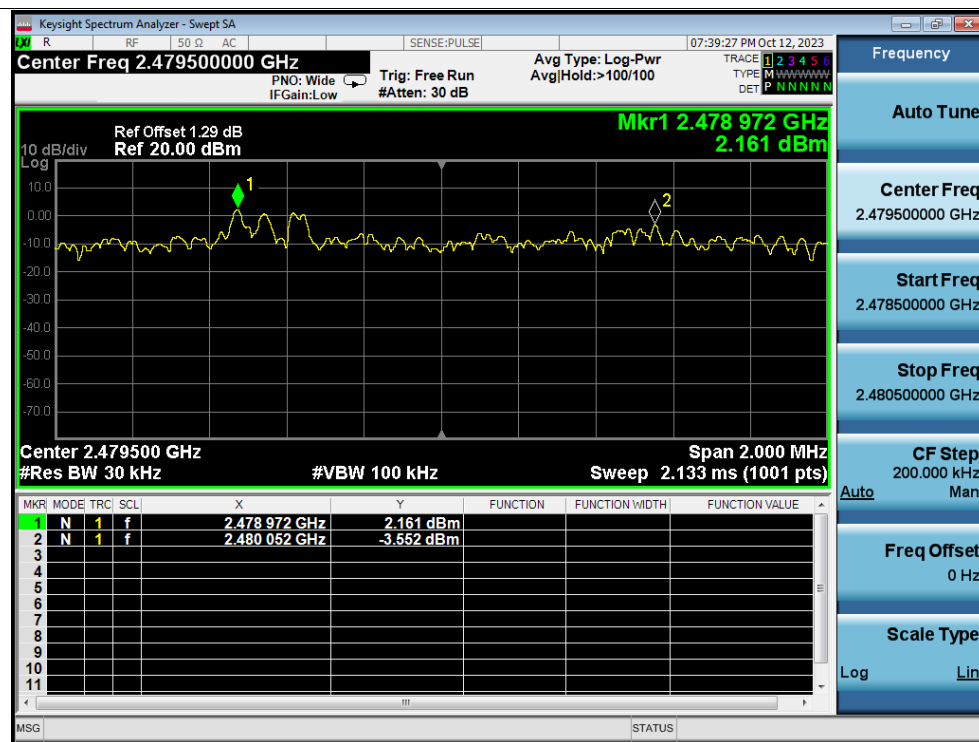
CFS NVNT 2-DH5 2402MHz Ant1



CFS NVNT 2-DH5 2441MHz Ant1



CFS NVNT 2-DH5 2480MHz Ant1



CFS NVNT 3-DH5 2402MHz Ant1

Keysight Spectrum Analyzer - Swept SA

R RF 50 Ω AC SENSE:PULSE 08:08:00 PM Oct 12, 2023

Center Freq 2.402500000 GHz PNO: Wide IF Gain: Low Trig: Free Run Avg Type: Log-Pwr Avg Hold: >100/100

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

Ref Offset 1.28 dB Ref 20.00 dB

Mkr1 2.401 996 GHz -1.484 dBm

10 dB/div Log

Center 2.402500 GHz Span 2.000 MHz
#Res BW 30 kHz #VBW 100 kHz Sweep 2.133 ms (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.401 996 GHz	-1.484 dBm			
2	N	1	f	2.403 022 GHz	-6.764 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								

MSG STATUS

Frequency

Auto Tune

Center Freq
2.402500000 GHz

Start Freq
2.401500000 GHz

Stop Freq
2.403500000 GHz

CF Step
200.000 kHz
Man

Auto

Freq Offset
0 Hz

Scale Type
Log Lin

CFS NVNT 3-DH5 2441MHz Ant1

Keysight Spectrum Analyzer - Swept SA

R F 50 Ω AC SENSE:PULSE 08:07:01 PM Oct 12, 2023

Center Freq 2.441500000 GHz PNO: Wide IF Gain: Low Trig: Free Run Avg Type: Log-Pwr Avg Hold: >100/100

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

Ref Offset 1.28 dB Ref 20.00 dBm

Mkr1 2.441144 GHz -1.353 dBm

10 dB/div Log

Center 2.441500 GHz Span 2.000 MHz
#Res BW 30 kHz #VBW 100 kHz Sweep 2.133 ms (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.441144 GHz	-1.353 dBm			
2	N	1	f	2.442154 GHz	-4.581 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								

MSG STATUS

Frequency

Auto Tune

Center Freq 2.441500000 GHz

Start Freq 2.440500000 GHz

Stop Freq 2.442500000 GHz

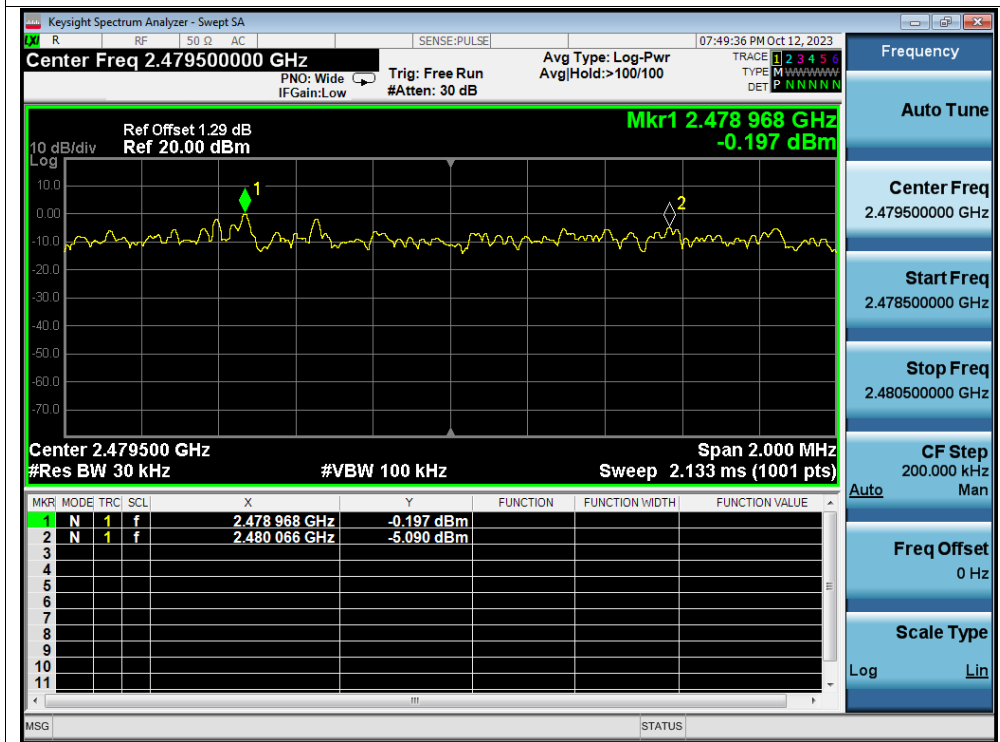
CF Step 200.000 kHz Man

Auto

Freq Offset 0 Hz

Scale Type Log Lin

CFS NVNT 3-DH5 2480MHz Ant1

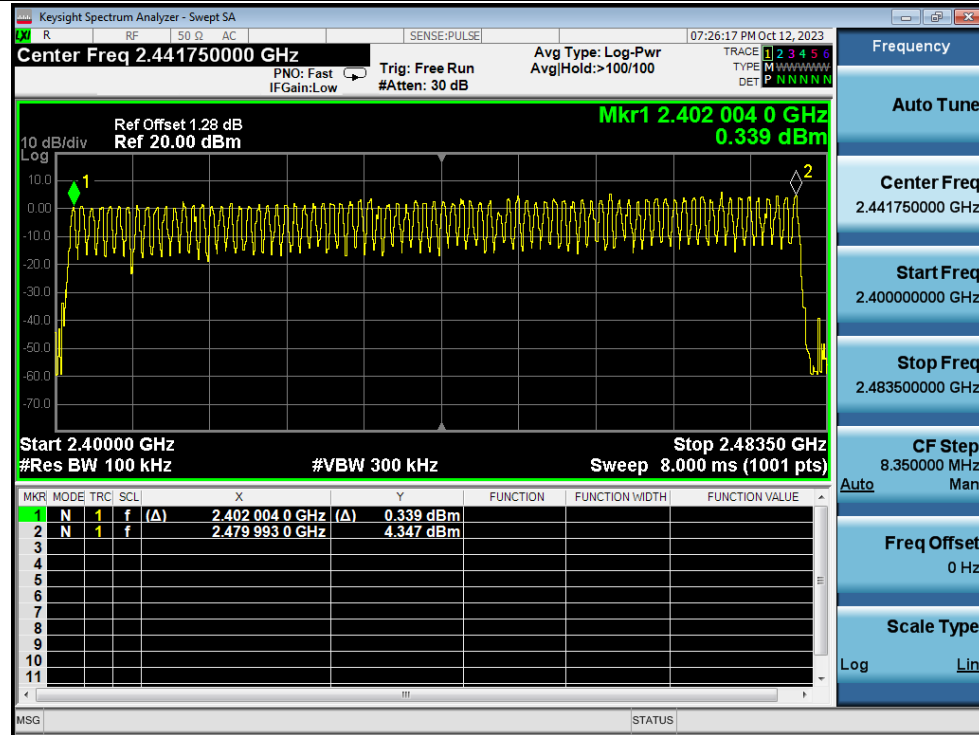


Number of Hopping Channel

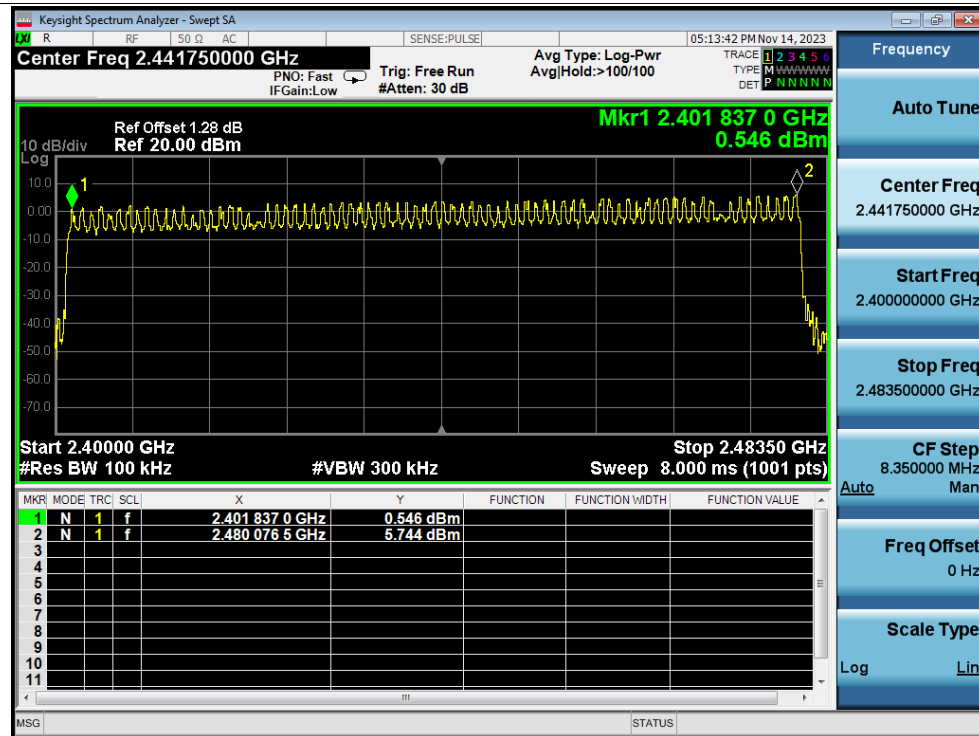
Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH5	Ant1	79	15	Pass
NVNT	2-DH5	Ant1	79	15	Pass
NVNT	3-DH5	Ant1	79	15	Pass

Test Graphs

Hopping No. NVNT 1-DH5 2402MHz Ant1



Hopping No. NVNT 2-DH5 2402MHz Ant1



Keysight Spectrum Analyzer - Swept SA

R F 50 Q AC SENSE:PULSE 05:24:06 PM Nov 14, 2023

Center Freq 2.441750000 GHz PNO: Fast IFGain:Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr AvgHold:>100/100

TRACE 1 2 3 4 5 6 TYPE M WWWWNNN DET P NNNNN

Ref Offset 1.28 dB Ref 20.00 dBm

Mkr1 2.402 004 0 GHz
-1.491 dBm

Start 2.400000 GHz Stop 2.483500 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 8.000 ms (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.402 004 0 GHz	-1.491 dBm			
2	N	1	f	2.480 410 5 GHz	-1.663 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								

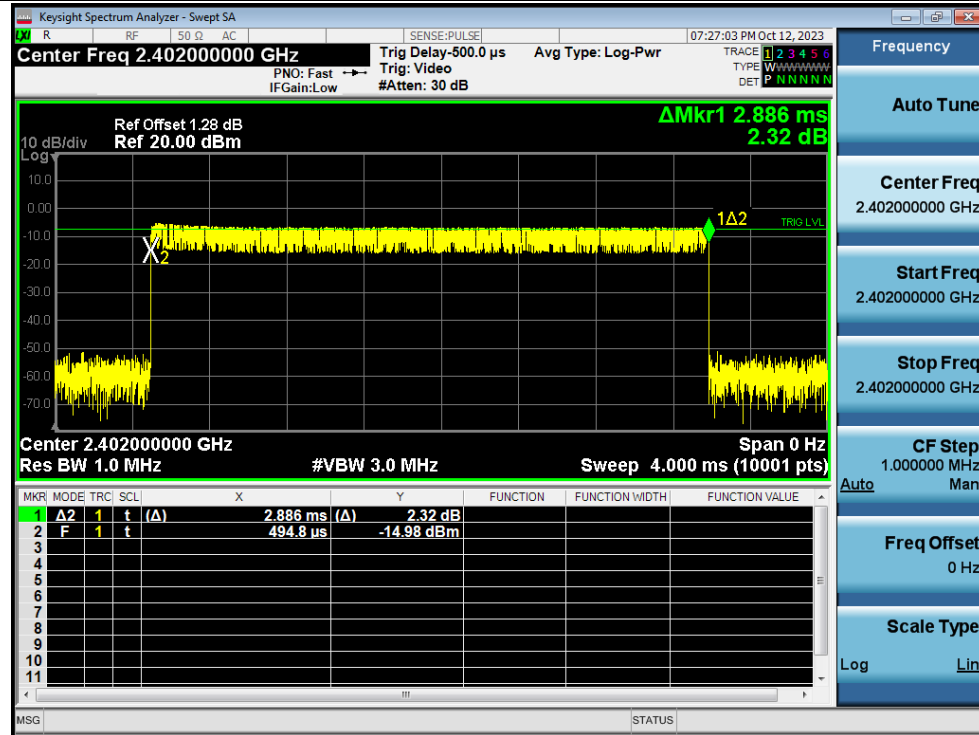
MSG [] STATUS []

Dwell Time

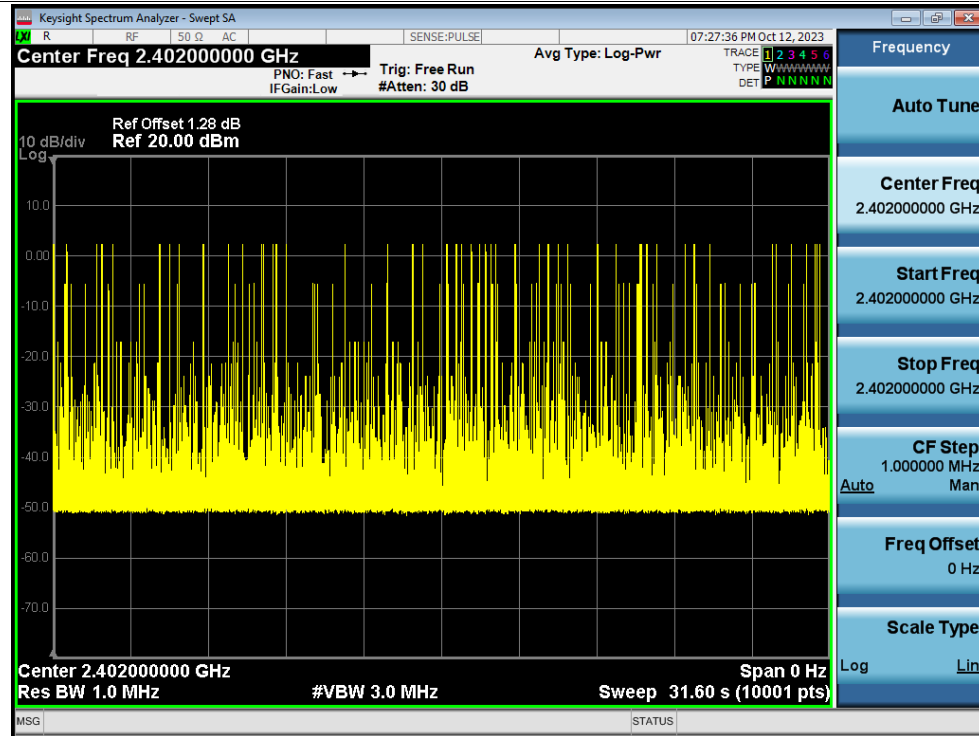
Condition	Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH5	2402	Ant1	2.886	161.616	56	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.885	138.48	48	31600	400	Pass
NVNT	1-DH5	2480	Ant1	2.886	158.73	55	31600	400	Pass
NVNT	2-DH5	2402	Ant1	2.892	121.464	42	31600	400	Pass
NVNT	2-DH5	2441	Ant1	2.892	141.708	49	31600	400	Pass
NVNT	2-DH5	2480	Ant1	2.892	156.168	54	31600	400	Pass
NVNT	3-DH5	2402	Ant1	2.892	130.14	45	31600	400	Pass
NVNT	3-DH5	2441	Ant1	2.892	121.464	42	31600	400	Pass
NVNT	3-DH5	2480	Ant1	2.893	127.292	44	31600	400	Pass

Test Graphs

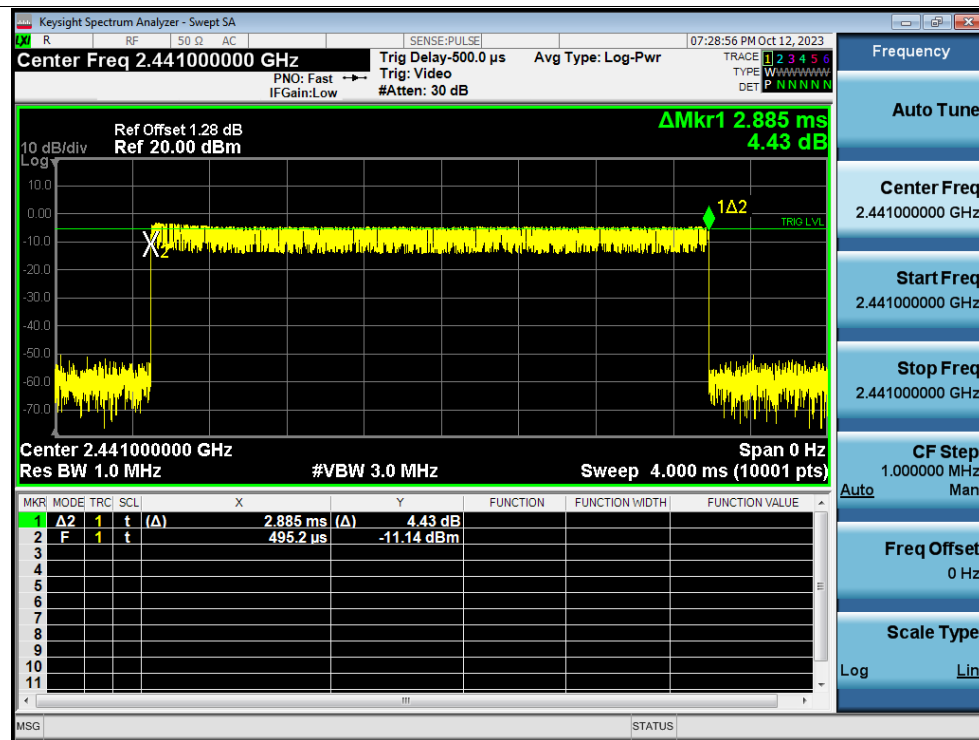
Dwell NVNT 1-DH5 2402MHz Ant1 One Burst



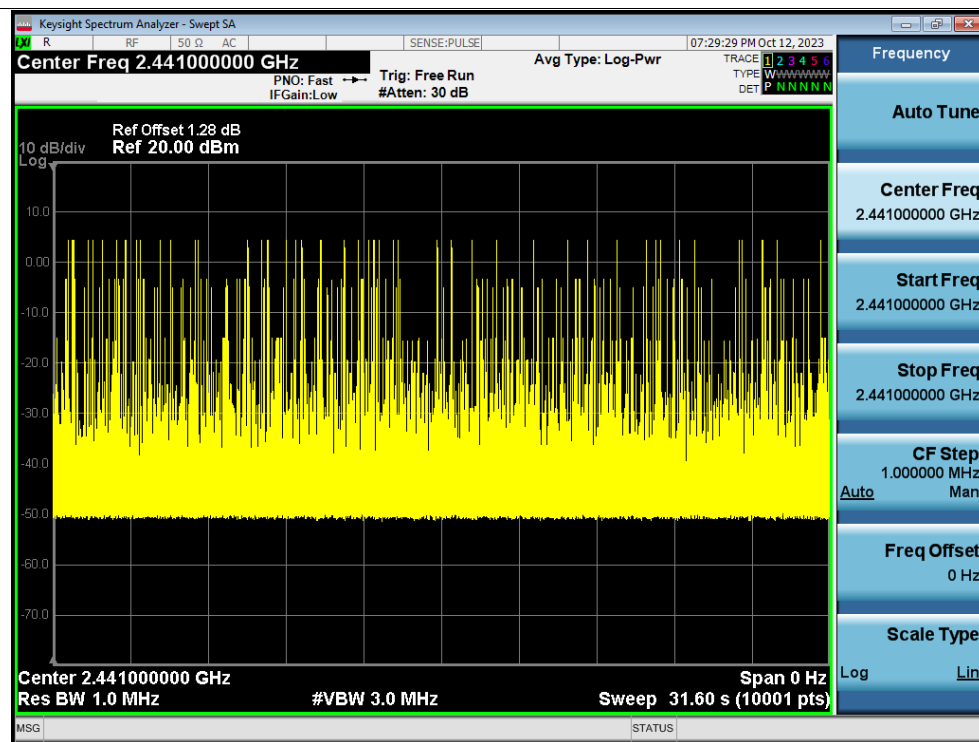
Dwell NVNT 1-DH5 2402MHz Ant1 Accumulated



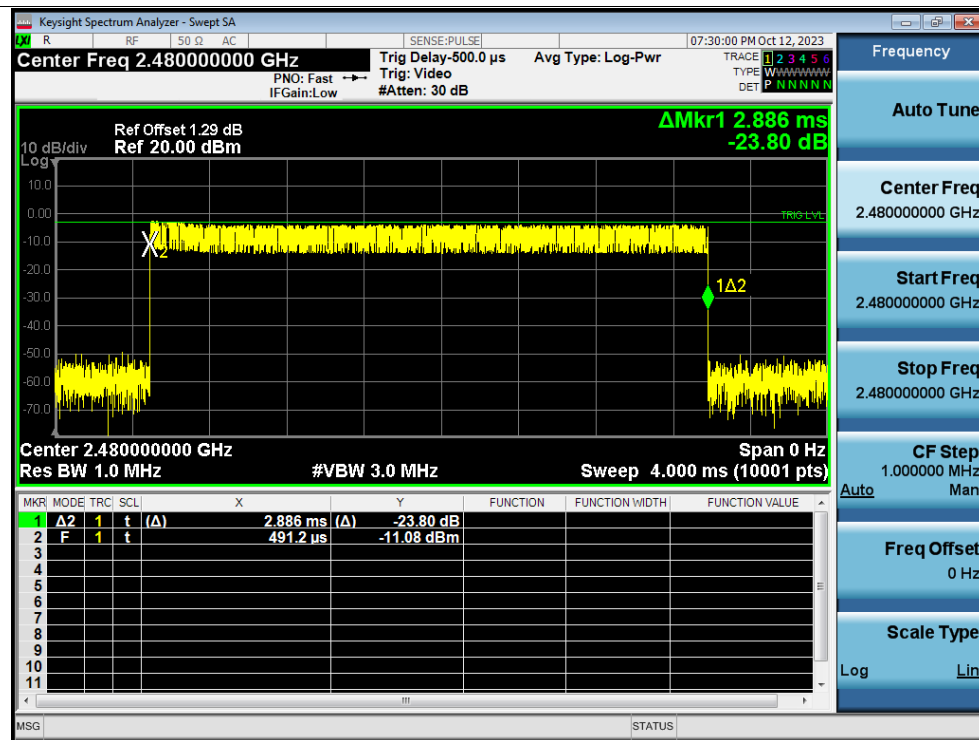
Dwell NVNT 1-DH5 2441MHz Ant1 One Burst



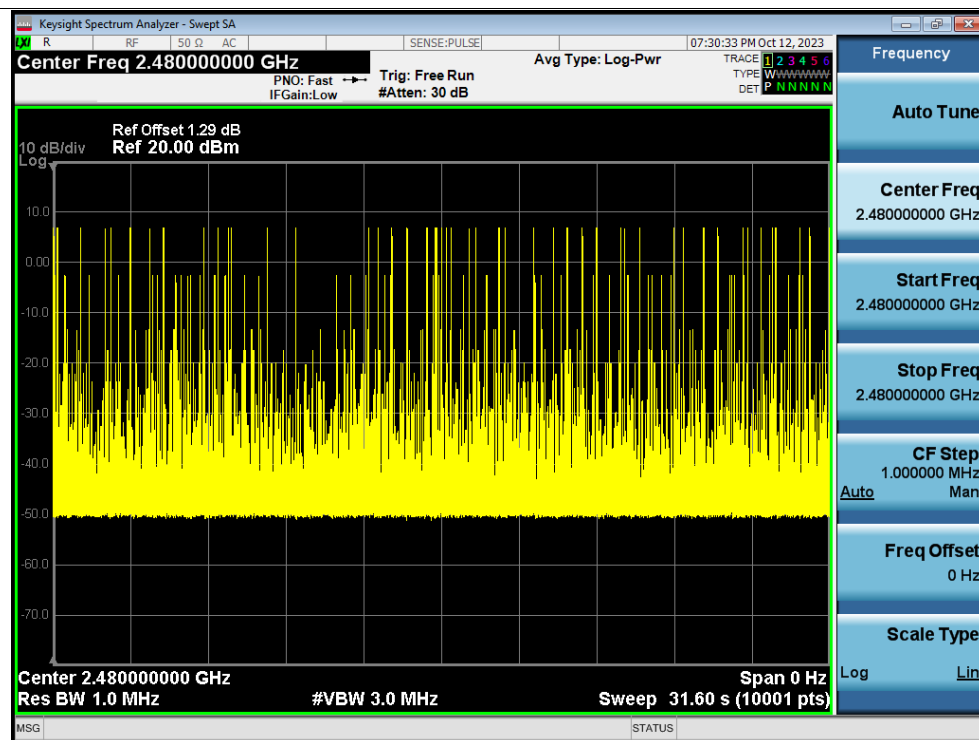
Dwell NVNT 1-DH5 2441MHz Ant1 Accumulated



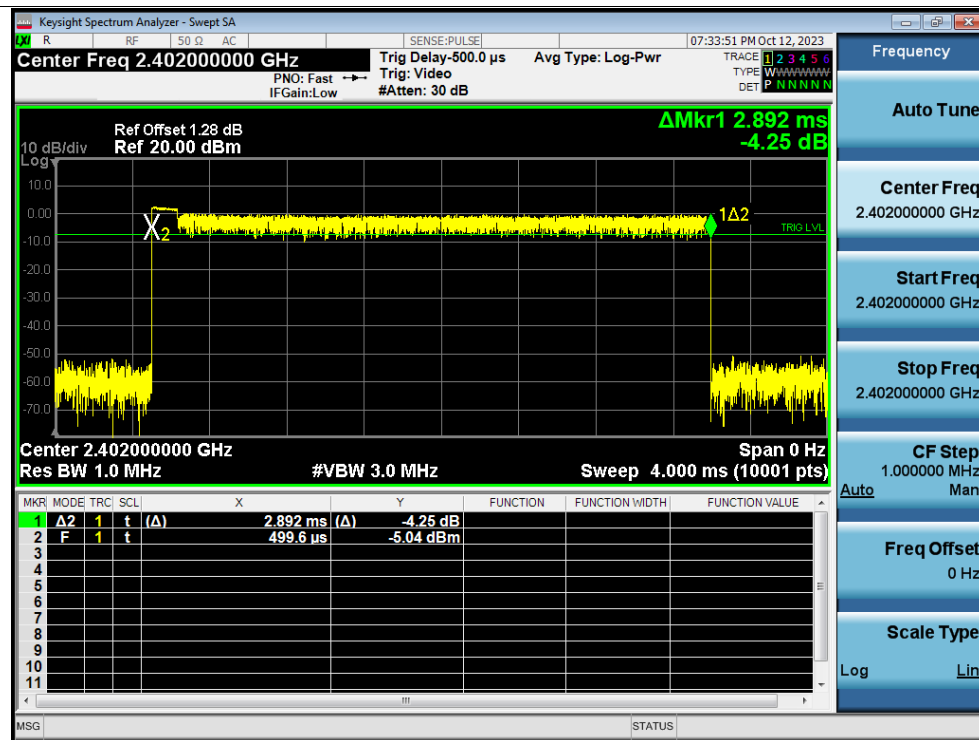
Dwell NVNT 1-DH5 2480MHz Ant1 One Burst



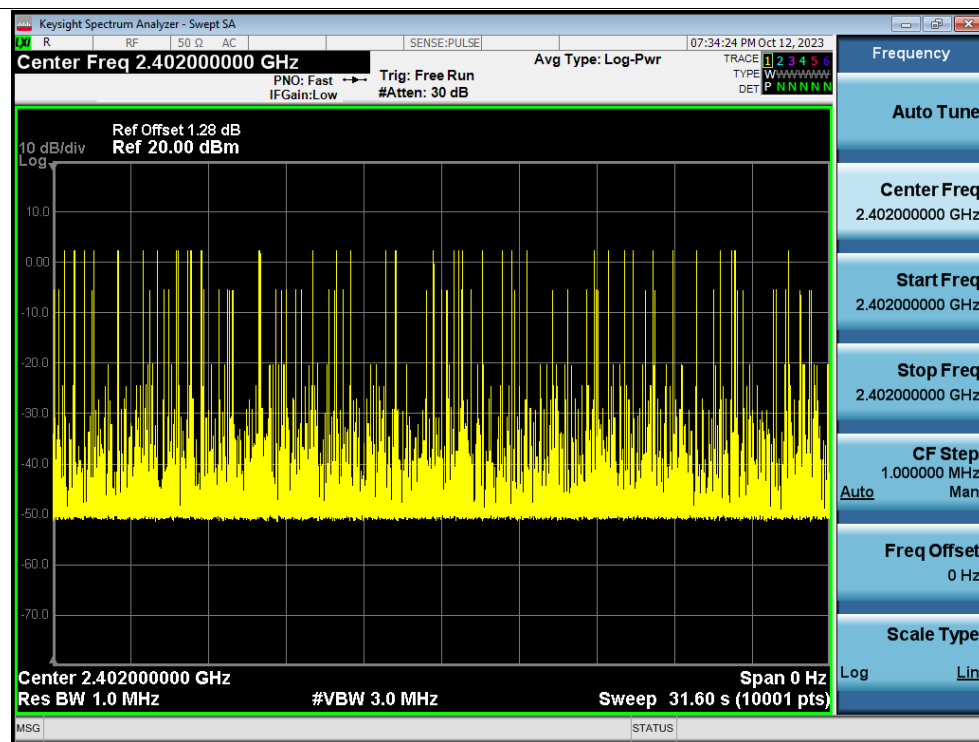
Dwell NVNT 1-DH5 2480MHz Ant1 Accumulated



Dwell NVNT 2-DH5 2402MHz Ant1 One Burst



Dwell NVNT 2-DH5 2402MHz Ant1 Accumulated



Dwell NVNT 2-DH5 2441MHz Ant1 One Burst

Keysight Spectrum Analyzer - Swept SA

R RE 50 Q AC SENSE:PULSE 07:35:44 PM Oct 12, 2023
 Center Freq 2.441000000 GHz Trg Delay: 500.0 μ s Avg Type: Log-Pwr
 PNO: Fast Trg: Video TYPE: W W W W W W W W
 IF Gain: Low #Atten: 30 dB DET: P N N N N N N

Ref Offset 1.28 dB Δ Mkr 1 2.892 ms
 Ref 20.00 dBm -10.51 dB

10 dB/div Log
 Ref Offset 1.28 dB
 Ref 20.00 dBm
 Center Freq 2.441000000 GHz Span 0 Hz
 Res BW 1.0 MHz #VBW 3.0 MHz Sweep 4.000 ms (10001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	Δ 2	1	t	(Δ)	2.892 ms (Δ)	-10.51 dB		
2	F	1	t		491.2 μ s	-13.73 dBm		
3								
4								
5								
6								
7								
8								
9								
10								
11								

Auto Tune
 Center Freq 2.441000000 GHz
 Start Freq 2.441000000 GHz
 Stop Freq 2.441000000 GHz
 CF Step 1.00000 MHz Man
 Freq Offset 0 Hz
 Scale Type Log Lin

MSG STATUS

Keysight Spectrum Analyzer - Swept SA

Center Freq 2.441000000 GHz

Ref Offset 1.28 dB
Ref 20.00 dBm

10 dB/div
Log

Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 3.0 MHz

Span 0 Hz
Sweep 31.60 s (10001 pts)

Trig: Free Run
#Atten: 30 dB

Avg Type: Log-Pwr

07:36:16 PM Oct 12, 2023

TRACE 1 2 3 4 5 6
TYPE 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

Dwell NVNT 2-DH5 2480MHz Ant1 One Burst

Keysight Spectrum Analyzer - Swept SA

R 50.0 AC SENSE: PULSE 07:36:45 PM Oct 12, 2023

Center Freq 2.480000000 GHz Trg Delay: 500.0 μ s Avg Type: Log-Pwr

PNO: Fast IF Gain: Low Trg: Video #Atten: 30 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 1.29 dB
Ref 20.00 dBm

Δ Mkr1 2.892 ms
2.21 dB

10 dB/div Log

Center 2.480000000 GHz Span 0 Hz
Res BW 1.0 MHz #VBW 3.0 MHz Sweep 4.000 ms (10001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	Δ 2	1	t	(Δ)	2.892 ms 488.0 μ s	(Δ)	2.21 dB -11.77 dBm	
2	F	1	t					
3								
4								
5								
6								
7								
8								
9								
10								
11								

MSG STATUS

Frequency
Auto Tune
Center Freq 2.480000000 GHz
Start Freq 2.480000000 GHz
Stop Freq 2.480000000 GHz
CF Step 1.000000 MHz
Man
Auto
Freq Offset 0 Hz
Scale Type
Log Lin

Keysight Spectrum Analyzer - Swept SA

Center Freq 2.480000000 GHz

Ref Offset 1.29 dB
Ref 20.00 dBm

10 dB/div
Log

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

07:37:18 PM Oct 12, 2023

Frequency

Auto Tune

Center Freq
2.480000000 GHz

Start Freq
2.480000000 GHz

Stop Freq
2.480000000 GHz

CF Step
1.000000 MHz
Man

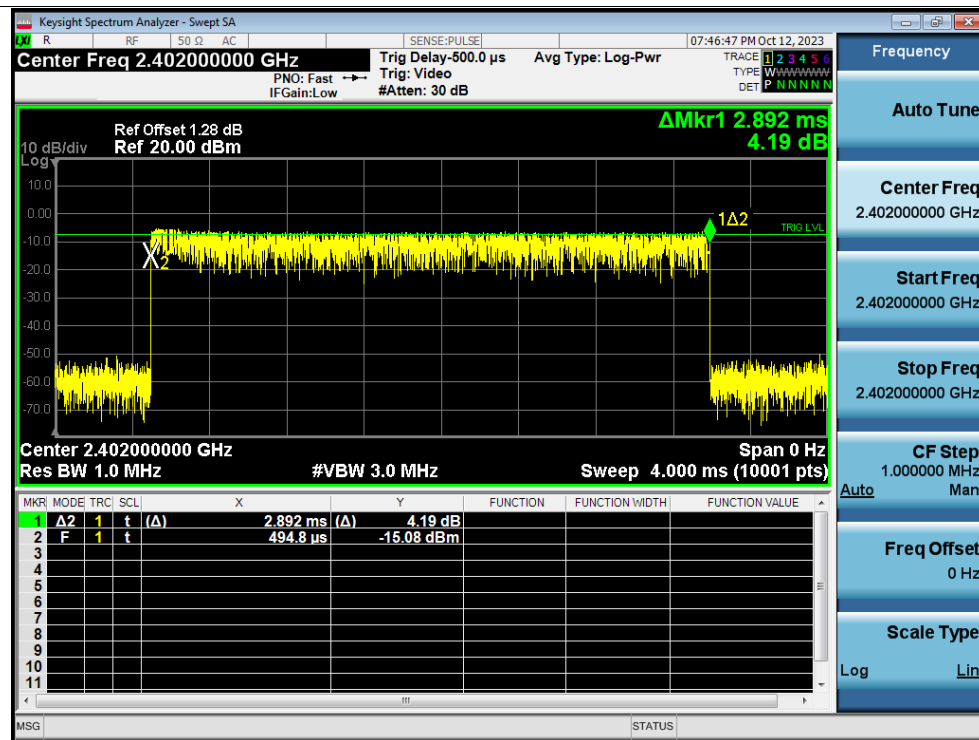
Freq Offset
0 Hz

Scale Type
Log Lin

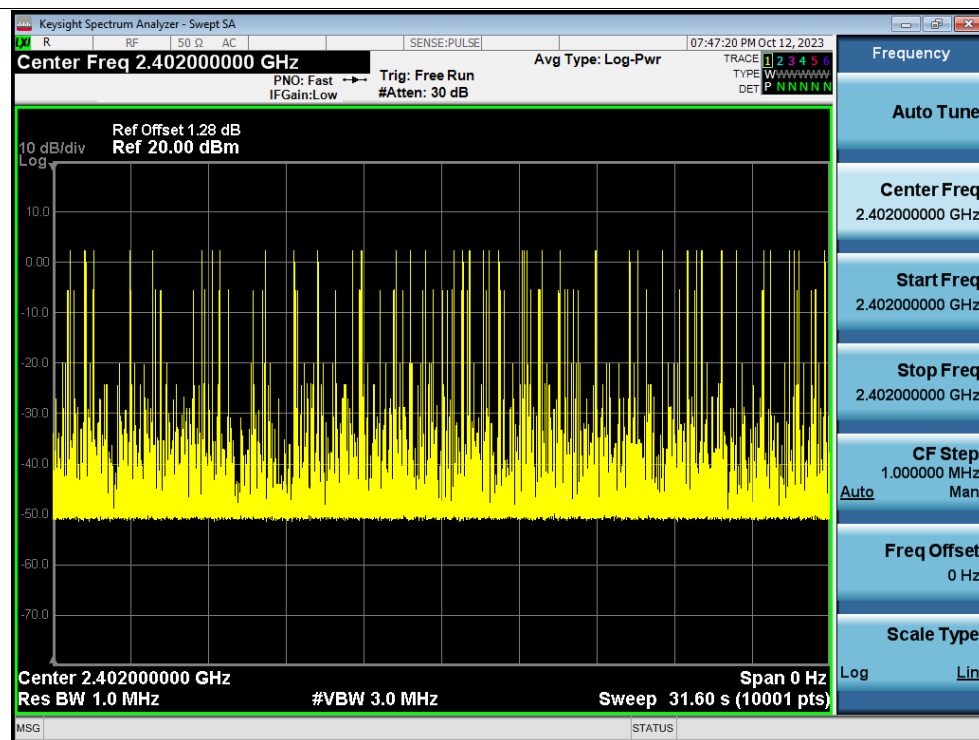
Center 2.480000000 GHz Span 0 Hz
Res BW 1.0 MHz #VBW 3.0 MHz Sweep 31.60 s (10001 pts)

MSG STATUS

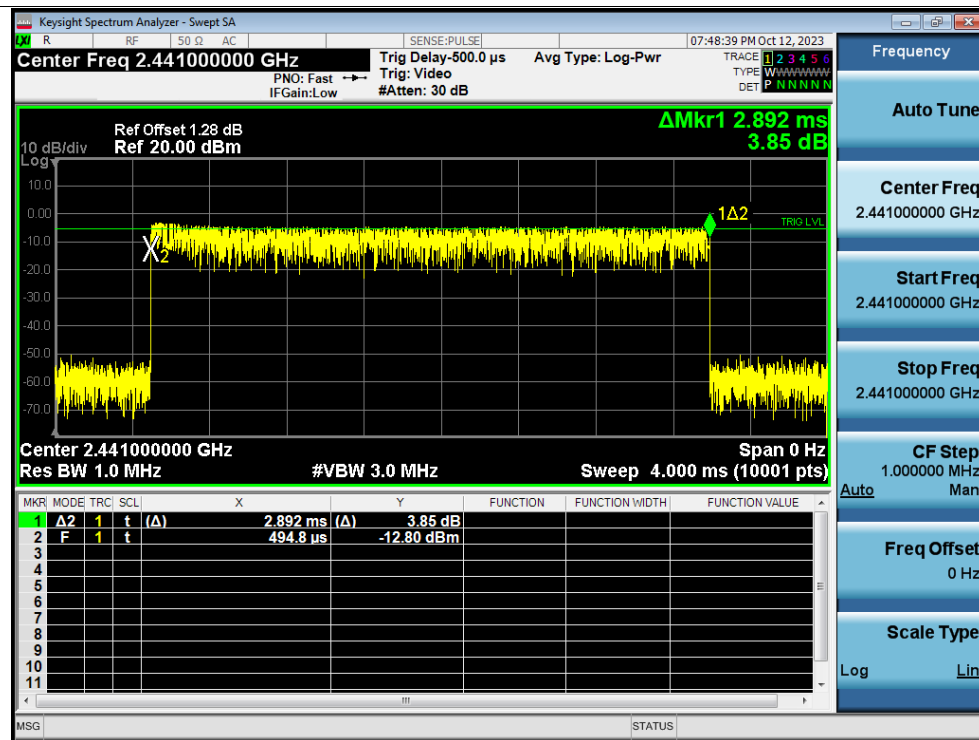
Dwell NVNT 3-DH5 2402MHz Ant1 One Burst



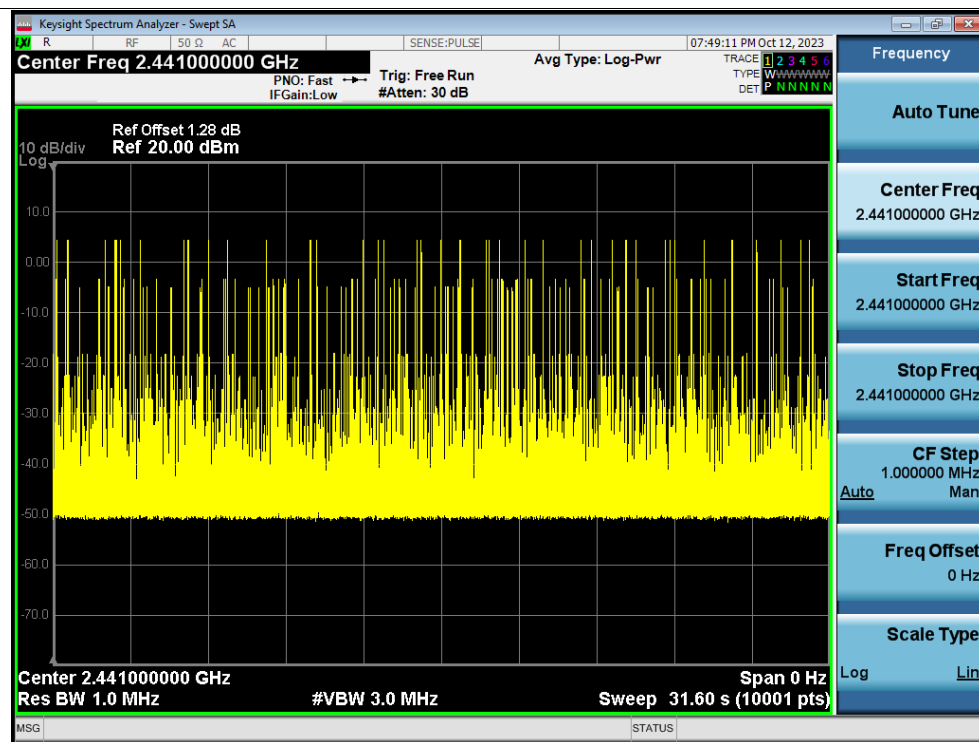
Dwell NVNT 3-DH5 2402MHz Ant1 Accumulated



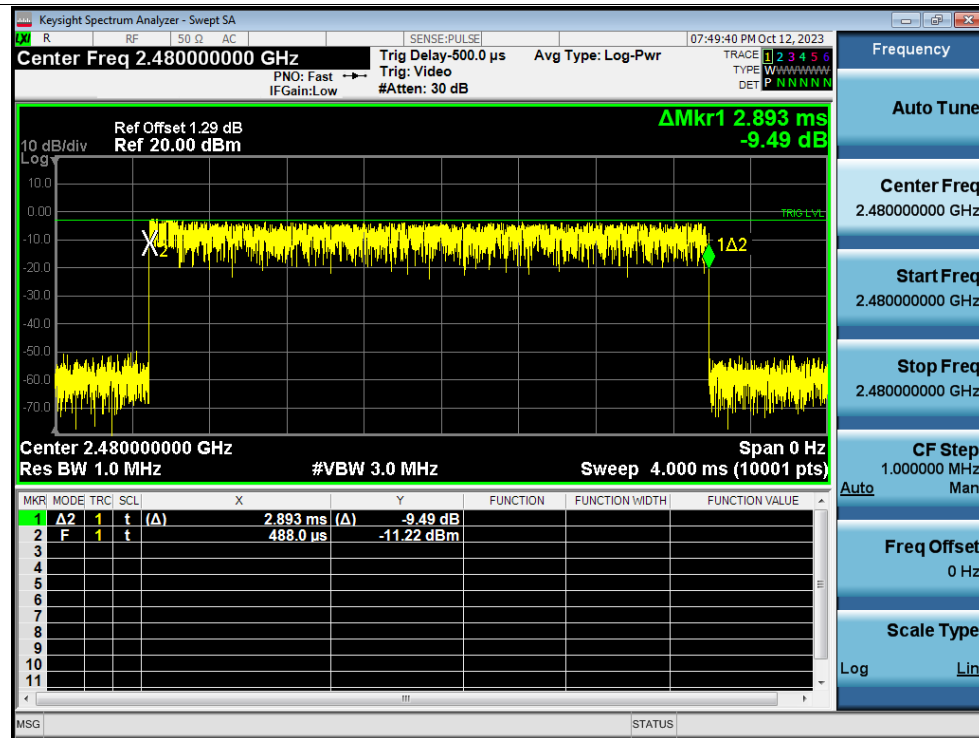
Dwell NVNT 3-DH5 2441MHz Ant1 One Burst



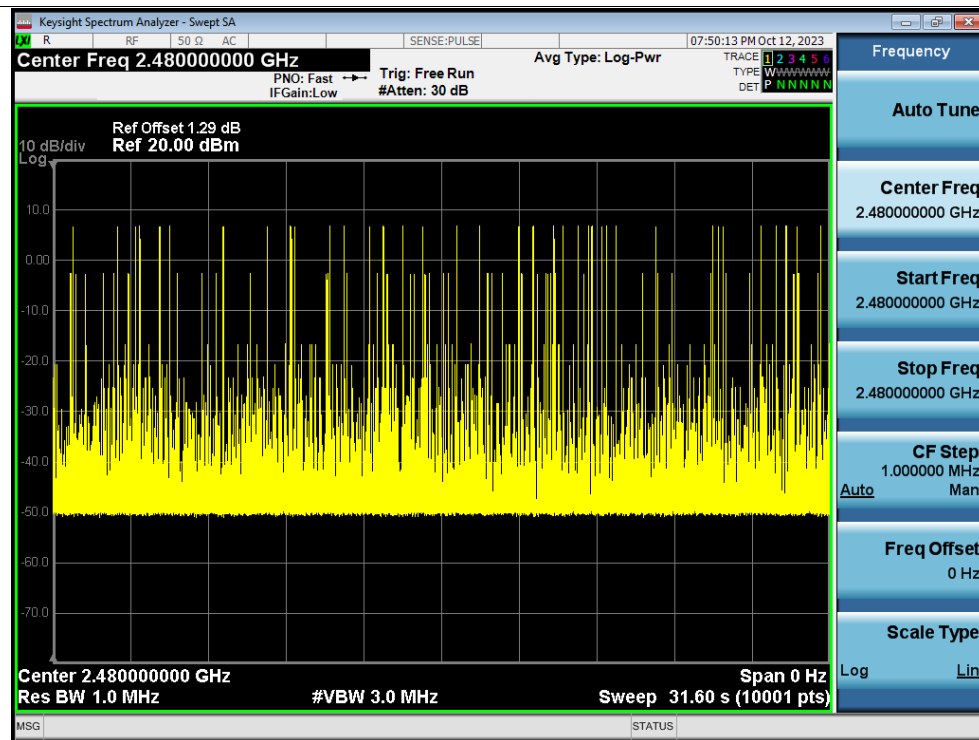
Dwell NVNT 3-DH5 2441MHz Ant1 Accumulated



Dwell NVNT 3-DH5 2480MHz Ant1 One Burst



Dwell NVNT 3-DH5 2480MHz Ant1 Accumulated



Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	No-Hopping	-40.68	-20	Pass
NVNT	1-DH5	2480	Ant1	No-Hopping	-45	-20	Pass
NVNT	2-DH5	2402	Ant1	No-Hopping	-38.09	-20	Pass
NVNT	2-DH5	2480	Ant1	No-Hopping	-49.58	-20	Pass
NVNT	3-DH5	2402	Ant1	No-Hopping	-38.7	-20	Pass
NVNT	3-DH5	2480	Ant1	No-Hopping	-49.05	-20	Pass

Keysight Spectrum Analyzer - Swept SA

RF 50.0 AC SENSE:PULSE 07:20:03 PM Oct 12, 2023

Center Freq 2.48000000 GHz PNO: Wide Trig: Free Run Avg Type: Log-Pwr
IFGain:Low #Atten: 30 dB AvgHold: 100/100

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

Ref Offset 1.29 dB
Ref 20.00 dBm

Mkr1 2.480 144 GHz
5.875 dBm

10 dB/div
Log

Center Freq 2.480000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 8.000 MHz
Sweep 1.000 ms (1001 pts)

Frequency
Auto Tune
Center Freq 2.480000000 GHz
Start Freq 2.476000000 GHz
Stop Freq 2.484000000 GHz
CF Step 800.000 kHz
Auto Man
Freq Offset 0 Hz
Scale Type Log Lin

Keysight Spectrum Analyzer - Swept SA

R F 50 Ω AC SENSE:PULSE 07:20:07 PM Oct 12, 2023

Center Freq 2.526000000 GHz Avg Type: Log-Pwr Avg/Hold: 100/100

PNO: Fast → Trig: Free Run #Atten: 30 dB

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

Ref Offset 1.29 dB Ref 20.00 dBm

Mkr1 2.480 0 GHz 4.617 dBm

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	(Δ) 2.480 0 GHz	(Δ) 4.617 dBm			
2	N	1	f	2.483 5 GHz	-59.889 dBm			
3	N	1	f	(Δ) 2.500 0 GHz	(Δ) -61.004 dBm			
4	N	1	f	2.483 7 GHz	-39.122 dBm			
5								
6								
7								
8								
9								
10								
11								

Start 2.47600 GHz Stop 2.57600 GHz

#Res BW 100 kHz #VBW 300 kHz Sweep 9.600 ms (1001 pts)

Frequency Auto Tune

Center Freq 2.526000000 GHz

Start Freq 2.476000000 GHz

Stop Freq 2.576000000 GHz

CF Step 10.000000 MHz

Auto Man

Freq Offset 0 Hz

Scale Type Log Lin

MSG STATUS

Band Edge NVNT 2-DHS 2402MHz Ant1 No-Hopping Ref

Keysight Spectrum Analyzer - Swept SA

RF 50.0 AC SENSE:PULSE 08:14:03 PM Oct 12, 2023

Center Freq 2.402000000 GHz PNO: Wide → Trg: Free Run Avg Type: Log-Pwr Avg|Hold: 100/100

IFGain:Low #Atten: 30 dB

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

Ref Offset 1.28 dB Ref 20.00 dBm

Mkr1 2.401 816 GHz -5.289 dBm

10 dB/div Log

Center 2.402000 GHz Span 8.000 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.000 ms (1001 pts)

MSG STATUS

Frequency

Auto Tune

Center Freq 2.402000000 GHz

Start Freq 2.398000000 GHz

Stop Freq 2.406000000 GHz

CF Step 800.000 kHz Man

Auto

Freq Offset 0 Hz

Scale Type Log Lin

Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Emission

Keysight Spectrum Analyzer - Swept SA

R RF 50 Ω AC SENSE:PULSE 08:14:06 PM Oct 12, 2023

Center Freq 2.356000000 GHz PNO: Fast → Trg: Free Run Avg Type: Log-Pwr Avg|Hold: 100/100

Ref Offset 1.28 dB Ref 20.00 dBm

Mkr4 2.399 6 GHz -43.388 dBm

10 dB/div Log

Start 2.30600 GHz Stop 2.40600 GHz

#Res BW 100 kHz #VBW 300 kHz Sweep 9.600 ms (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.401 7 GHz	-0.400 dBm			
2	N	1	f	25.533 0 GHz	-41.665 dBm			
3	N	1	f (Δ)	4.994 0 GHz (Δ)	-57.418 dBm			
4	N	1	f	7.041 9 GHz	-55.924 dBm			
5	N	1	f	9.584 8 GHz	-57.022 dBm			

Auto Tune

Center Freq 2.356000000 GHz

Start Freq 2.306000000 GHz

Stop Freq 2.406000000 GHz

CF Step 10.000000 MHz Man

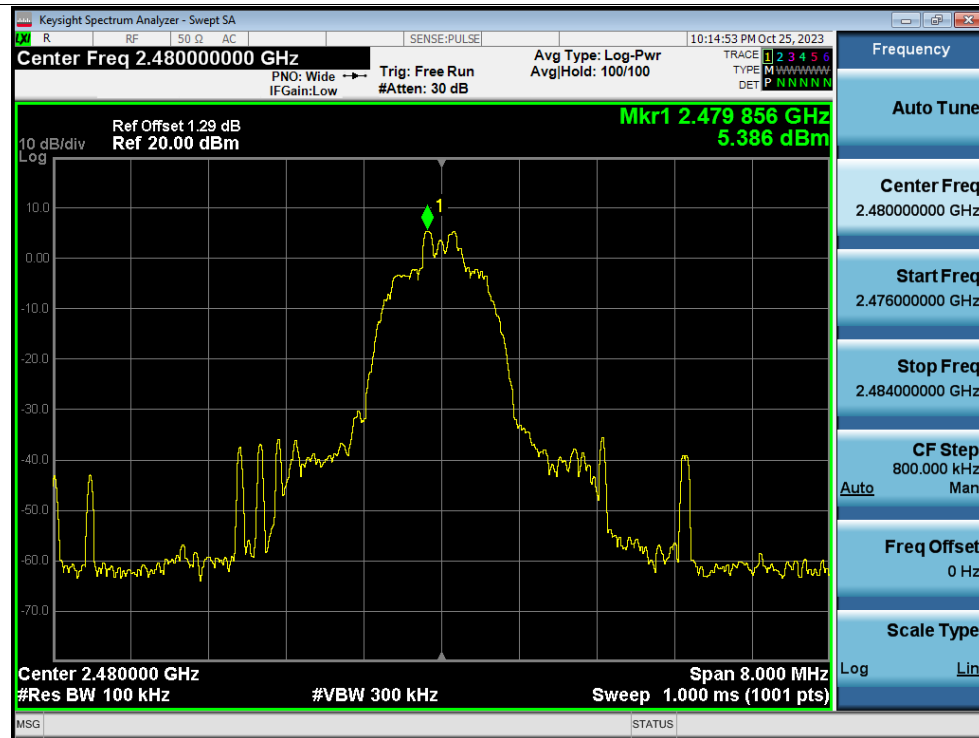
Auto

Freq Offset 0 Hz

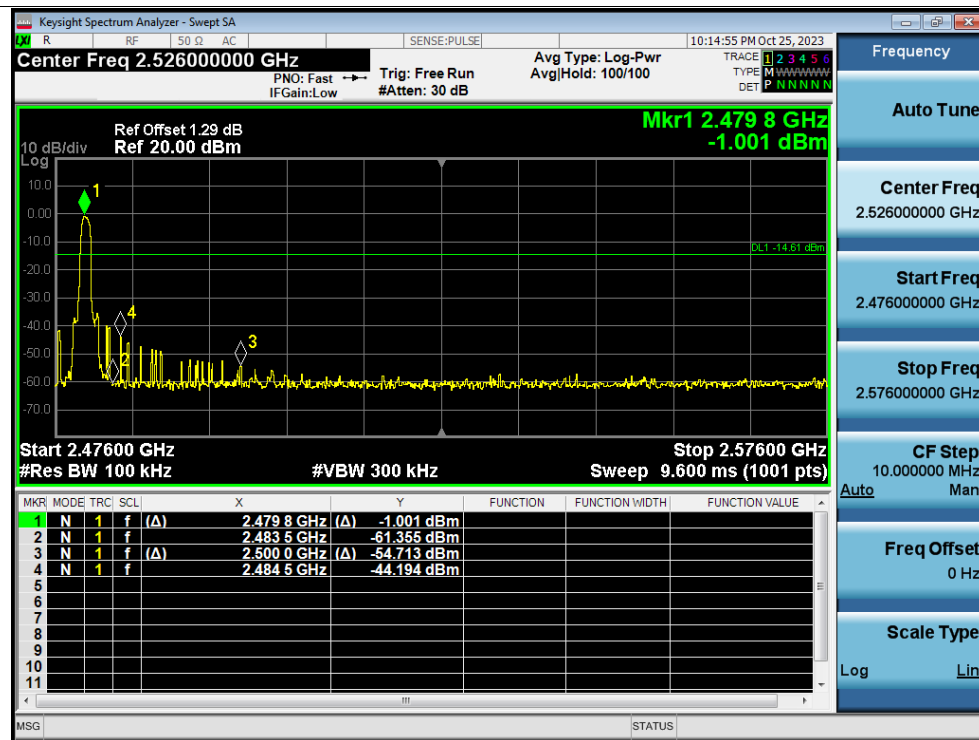
Scale Type Log Lin

MSG STATUS

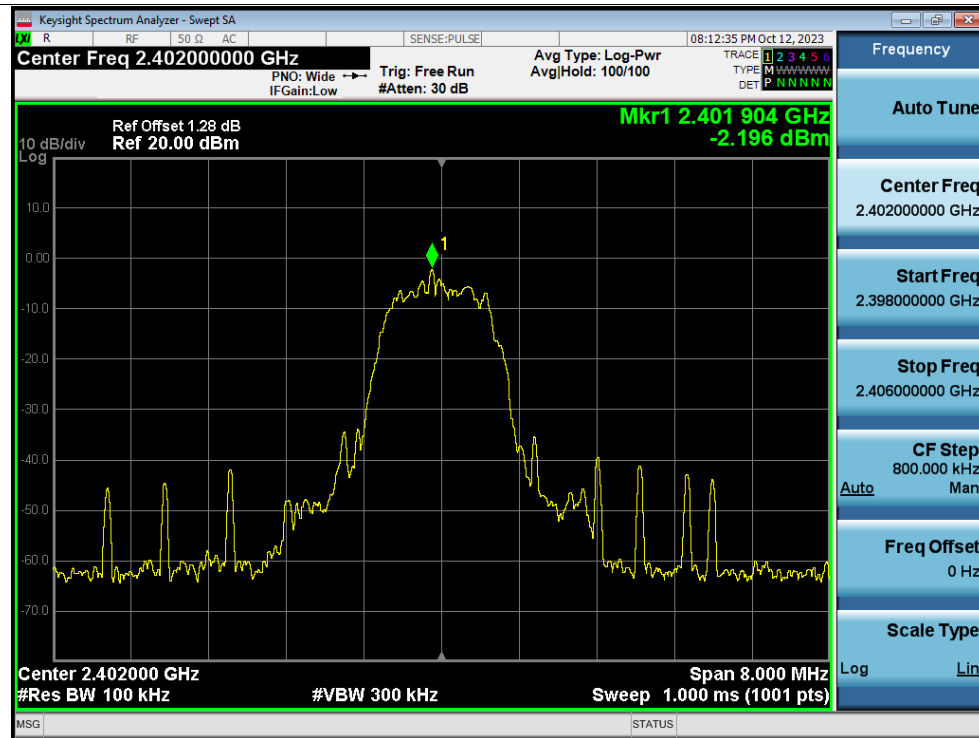
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref



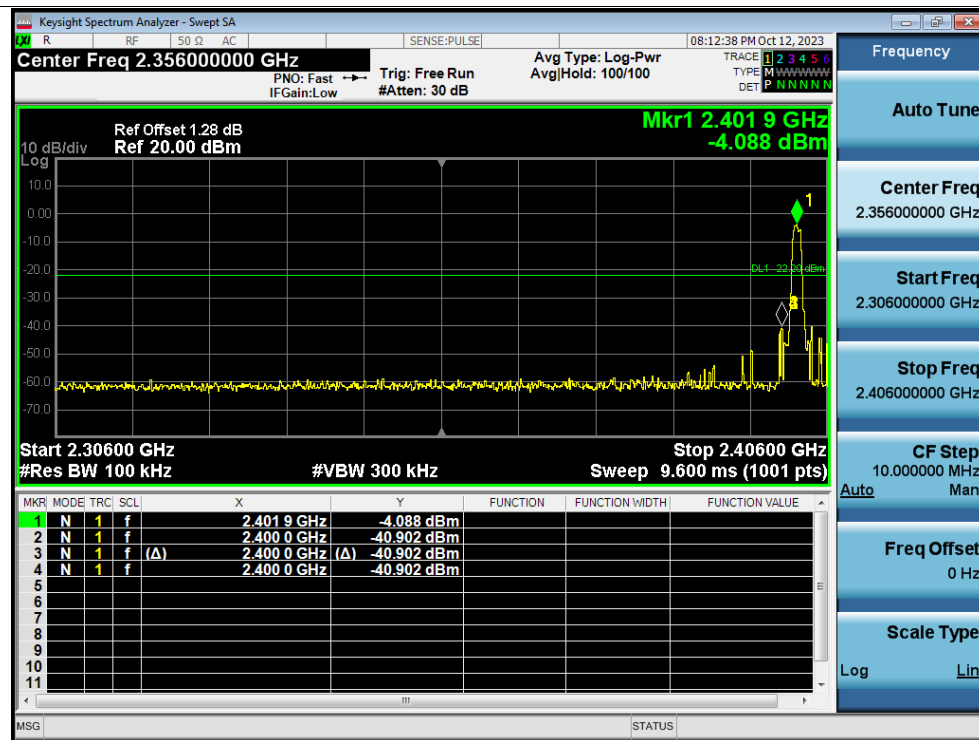
Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Emission



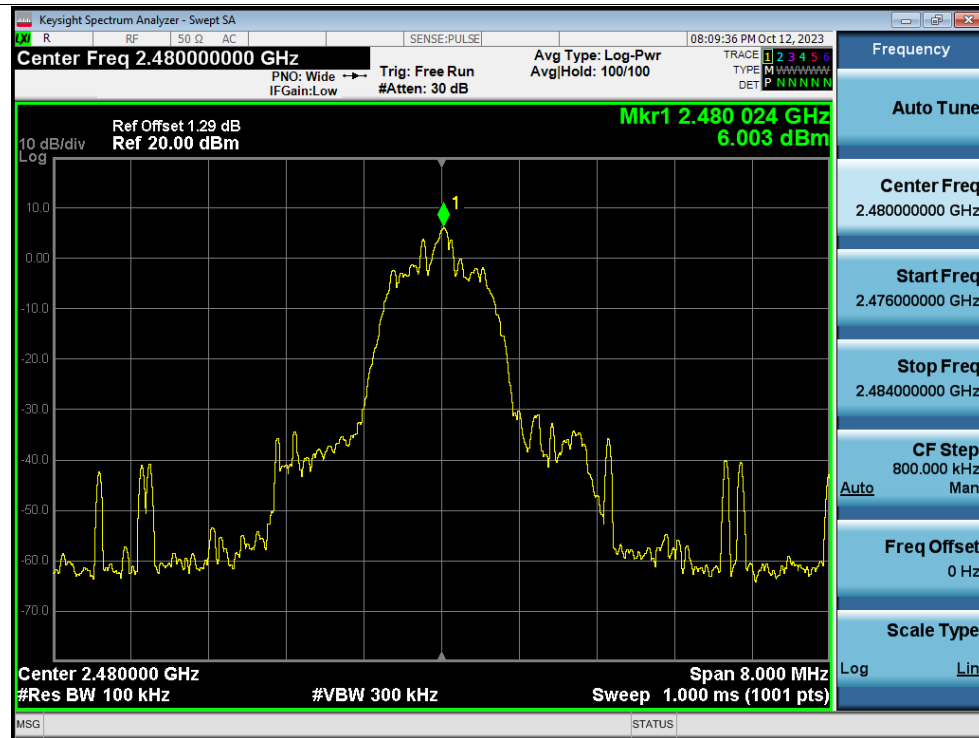
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref



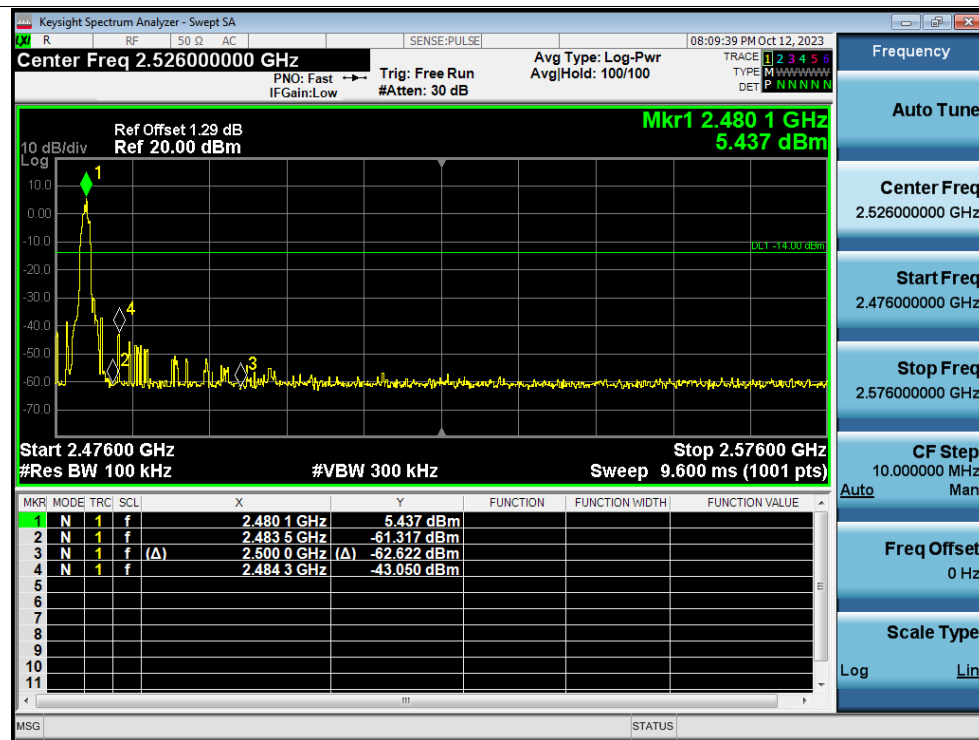
Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission



Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref



Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Emission



Band Edge(Hopping)

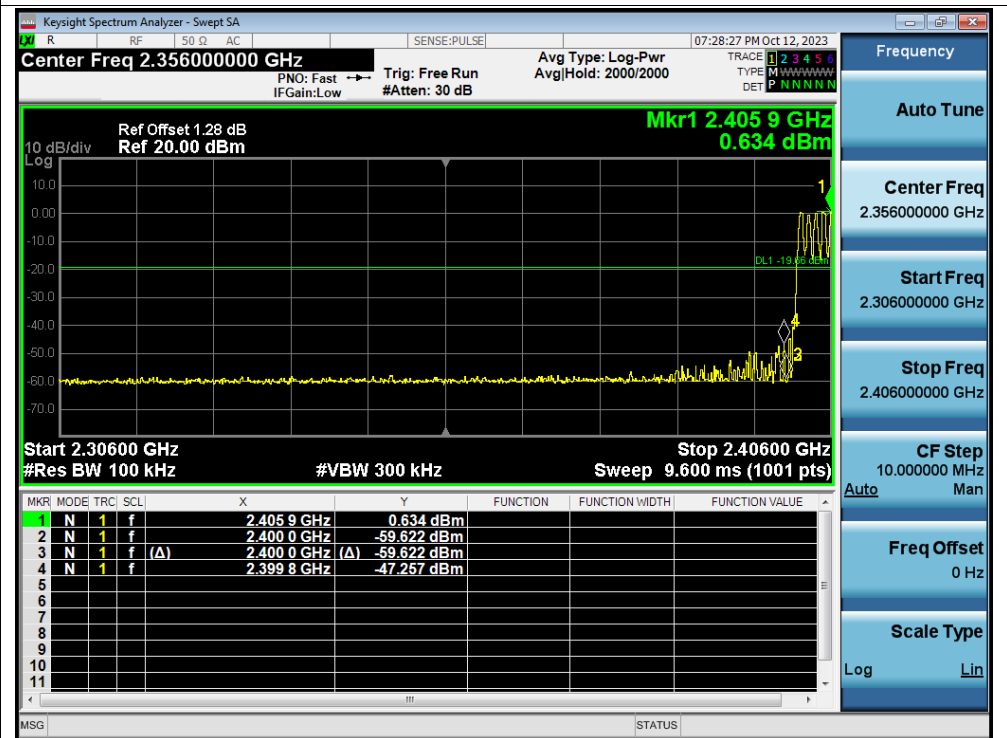
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	Hopping	-47.59	-20	Pass
NVNT	1-DH5	2480	Ant1	Hopping	-49.38	-20	Pass
NVNT	2-DH5	2402	Ant1	Hopping	-50.81	-20	Pass
NVNT	2-DH5	2480	Ant1	Hopping	-49.23	-20	Pass
NVNT	3-DH5	2402	Ant1	Hopping	-41.82	-20	Pass
NVNT	3-DH5	2480	Ant1	Hopping	-48.26	-20	Pass

Test Graphs

Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref
--



Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission



Keysight Spectrum Analyzer - Swept SA

Center Freq 2.48000000 GHz

Ref Offset 1.29 dB
Ref 20.00 dBm

10 dB/div
Log

Trig: Free Run
#Atten: 30 dB

Avg Type: Log-Pwr
Avg/Hold: 2000/2000

07:30:50 PM Oct 12, 2023

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

Frequency

Auto Tune

Center Freq
2.48000000 GHz

Start Freq
2.47600000 GHz

Stop Freq
2.48400000 GHz

CF Step
800.000 kHz
Auto Man

Freq Offset
0 Hz

Scale Type
Log Lin

Center 2.480000 GHz
#Res BW 100 kHz

#VBW 300 kHz

Span 8.000 MHz
Sweep 1.000 ms (1001 pts)

The figure shows a Keysight Spectrum Analyzer interface. The main display area shows a frequency spectrum with a yellow trace. A green marker is placed on the trace at 2.478024 GHz, indicating a signal level of 4.305 dBm. The center frequency is set to 2.48000000 GHz, and the span is 8.000 MHz. The resolution bandwidth (Res BW) is 100 kHz, and the video bandwidth (VBW) is 300 kHz. The sweep time is 1.000 ms. The display includes various settings and controls, such as 'Auto Tune', 'Center Freq', 'Start Freq', 'Stop Freq', 'CF Step', 'Freq Offset', 'Scale Type', and 'Log'/'Lin' options. The top status bar shows the date and time as 07:30:50 PM Oct 12, 2023.

Band Edge(Hopping) NVNT 1-DHS 2480MHz Ant1 Hopping Emission

Keysight Spectrum Analyzer - Swept SA

R RF 50.0 AC SENSE:PULSE 07:31:22 PM Oct 12, 2023

Center Freq 2.52600000 GHz PNO: Fast IFGain:Low Trig: Free Run Avg Type: Log-Pwr AvgHold: 2000/2000

Ref Offset 1.29 dB Ref 20.00 dBm Mkr1 2.479 8 GHz 4.714 dBm

10 dB/div Log

Start 2.47600 GHz Stop 2.57600 GHz

#Res BW 100 kHz #VBW 300 kHz Sweep 9.600 ms (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.479 8 GHz	4.714 dBm			
2	N	1	f	2.483 5 GHz	-52.403 dBm			
3	N	1	f (Δ)	2.500 0 GHz (Δ)	-54.556 dBm			
4	N	1	f	2.486 8 GHz	-45.072 dBm			
5								
6								
7								
8								
9								
10								
11								

MSG STATUS

Frequency

Auto Tune

Center Freq 2.526000000 GHz

Start Freq 2.476000000 GHz

Stop Freq 2.576000000 GHz

CF Step 10.000000 MHz Man

Auto

Freq Offset 0 Hz

Scale Type Log Lin

Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Ref

Keysight Spectrum Analyzer - Swept SA
R RF 50 Ω AC SENSE:PULSE 07:34:40 PM Oct 12, 2023
Center Freq 2.402000000 GHz PNO: Wide Trg: Free Run Avg Type: Log-Pwr
IFGain:Low #Atten: 30 dB Avg|Hold: 2000/2000 TRACE 1 2 3 4 5 6
TYPE M N N N N N N N DET P N N N N N N

Ref Offset 1.28 dB
Ref 20.00 dBm

Mkr1 2.404 000 GHz
1.556 dBm

10 dB/div
Log

Center 2.402000 GHz Span 8.000 MHz
#Res BW 100 kHz Sweep 1.000 ms (1001 pts)
#VBW 300 kHz

Frequency
Auto Tune
Center Freq 2.402000000 GHz
Start Freq 2.398000000 GHz
Stop Freq 2.406000000 GHz
CF Step 800.000 kHz Man
Auto
Freq Offset 0 Hz
Scale Type Log Lin

Band Edge(Hopping) NVNT 2-DHS 2402MHz Ant1 Hopping Emission

Keysight Spectrum Analyzer - Swept SA

Center Freq 2.356000000 GHz

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

Avg Type: Log-Pwr Avg|Hold: 2000/2000

07:35:14 PM Oct 12, 2023

TRACE 1 2 3 4 5 6

TYPE: MATHS

DET: P NNNNN

Ref Offset 1.28 dB

Ref 20.00 dBm

Mkr1 2.402 1 GHz

-0.937 dBm

10 dB/div

Log

Start 2.30600 GHz

Stop 2.40600 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 9.600 ms (1001 pts)

Mkr	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.402 1 GHz	-0.937 dBm			
2	N	1	f	2.400 0 GHz	-59.836 dBm			
3	N	1	f (Δ)	2.400 0 GHz (Δ)	-59.836 dBm			
4	N	1	f	2.399 9 GHz	-49.259 dBm			
5								
6								
7								
8								
9								
10								
11								

Frequency

Auto Tune

Center Freq 2.356000000 GHz

Start Freq 2.306000000 GHz

Stop Freq 2.406000000 GHz

CF Step 10.000000 MHz

Man

Auto

Freq Offset 0 Hz

Scale Type Log Lin

MSG STATUS

Keysight Spectrum Analyzer - Swept SA

R RF 50 Ω AC SENSE:PULSE 07:37:34 PM Oct 12, 2023

Center Freq 2.480000000 GHz PNO: Wide → Trig: Free Run Avg Type: Log-Pwr
IFGain:Low #Atten: 30 dB Avg|Hold: 2000/2000

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

Ref Offset 1.29 dB Ref 20.00 dBM

Mkr1 2.477 904 GHz 5.442 dBm

10 dB/div Log

The plot shows a spectrum from approximately 2.475 GHz to 2.485 GHz. The y-axis is power in dBm, ranging from -70 to 10. A prominent peak is visible at 2.477904 GHz, marked with a green diamond and labeled '1'. The signal level at this peak is 5.442 dBm. The background noise floor is around -10 dBm. The signal drops off sharply after 2.480 GHz.

Center Freq 2.480000000 GHz Span 8.000 MHz
#Res BW 100 kHz #VBW 300 kHz Sweep 1.000 ms (1001 pts)

MSG STATUS

Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission

Keysight Spectrum Analyzer - Swept SA
R RF 50 Ω AC SENSE:PULSE 07:38:08 PM Oct 12, 2023

Center Freq 2.526000000 GHz PNO: Fast → Trig: Free Run Avg Type: Log-Pwr Avg|Hold: 2000/2000 TRACE 1 2 3 4 5 6
IFGain:Low #Atten: 30 dB TYPE M W W W W W W W W W
DET P N N N N N N

Ref Offset 1.29 dB Mkr1 2.480 0 GHz
Ref 20.00 dB 6.412 dBm

10 dB/div Log

Mkr1 2.480 0 GHz
6.412 dBm

Start 2.47600 GHz Stop 2.57600 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 9.600 ms (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.480 0 GHz	6.412 dBm			
2	N	1	f	2.483 5 GHz	-55.054 dBm			
3	N	1	(Δ)	2.500 0 GHz (Δ)	-57.868 dBm			
4	N	1	f	2.483 6 GHz	-43.795 dBm			
5								
6								
7								
8								
9								
10								
11								

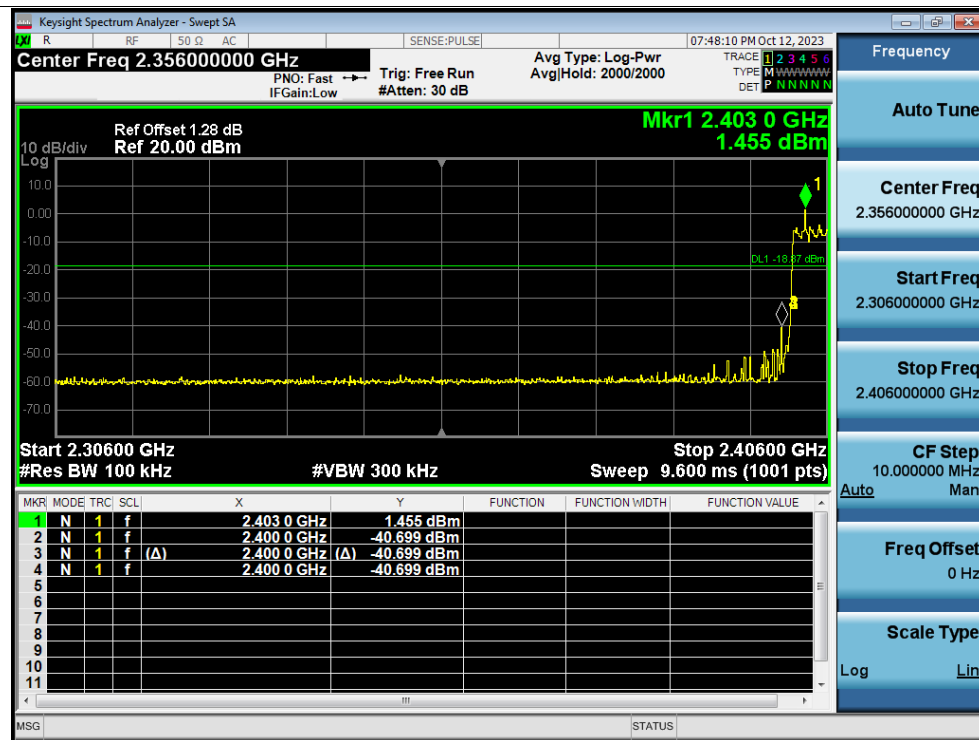
MSG STATUS

Frequency
Auto Tune
Center Freq 2.526000000 GHz
Start Freq 2.476000000 GHz
Stop Freq 2.576000000 GHz
CF Step 10.000000 MHz Man
Auto
Freq Offset 0 Hz
Scale Type Log Lin

Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission



Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Ref

Keysight Spectrum Analyzer - Swept SA
R RF 50 Ω AC SENSE:PULSE 07:50:29 PM Oct 12, 2023

Center Freq 2.48000000 GHz PNO: Wide → Trig: Free Run Avg Type: Log-Pwr
IFGain:Low #Atten: 30 dB Avg|Hold: 2000/2000

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

Ref Offset 1.29 dB
Ref 20.00 dBm

Mkr1 2.477 896 GHz
4.642 dBm

10 dB/div
Log

Center Freq 2.48000000 GHz
Start Freq 2.476000000 GHz
Stop Freq 2.484000000 GHz
CF Step 800.000 kHz Man
Auto
Freq Offset 0 Hz
Scale Type Log Lin

Center 2.480000 GHz Span 8.000 MHz
#Res BW 100 kHz #VBW 300 kHz Sweep 1.000 ms (1001 pts)

Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Emission

Keysight Spectrum Analyzer - Swept SA

R RF 50 Ω AC SENSE:PULSE 07:51:03 PM Oct 12, 2023

Center Freq 2.526000000 GHz PNO: Fast → Trig: Free Run Avg Type: Log-Pwr Avg|Hold: 2000/2000 TRACE 1 2 3 4 5 6
IFGain:Low #Atten: 30 dB TYPE M W W W W W W W W W
DET P N N N N N

Ref Offset 1.29 dB Mkr1 2.479 0 GHz
Ref 20.00 dB 3.961 dBm

10 dB/div Log

Start 2.47600 GHz Stop 2.57600 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 9.600 ms (1001 pts)

MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.479 0 GHz	3.961 dBm			
2	N	1	f	2.483 5 GHz	-45.749 dBm			
3	N	1	f (Δ)	2.500 0 GHz (Δ)	-55.489 dBm			
4	N	1	f	2.484 4 GHz	-43.626 dBm			
5								
6								
7								
8								
9								
10								
11								

DL1 -15.36 dbm

Auto Tune

Center Freq 2.526000000 GHz

Start Freq 2.476000000 GHz

Stop Freq 2.576000000 GHz

CF Step 10.000000 MHz Man

Auto

Freq Offset 0 Hz

Scale Type Log Lin

MSG STATUS

Conducted RF Spurious Emission

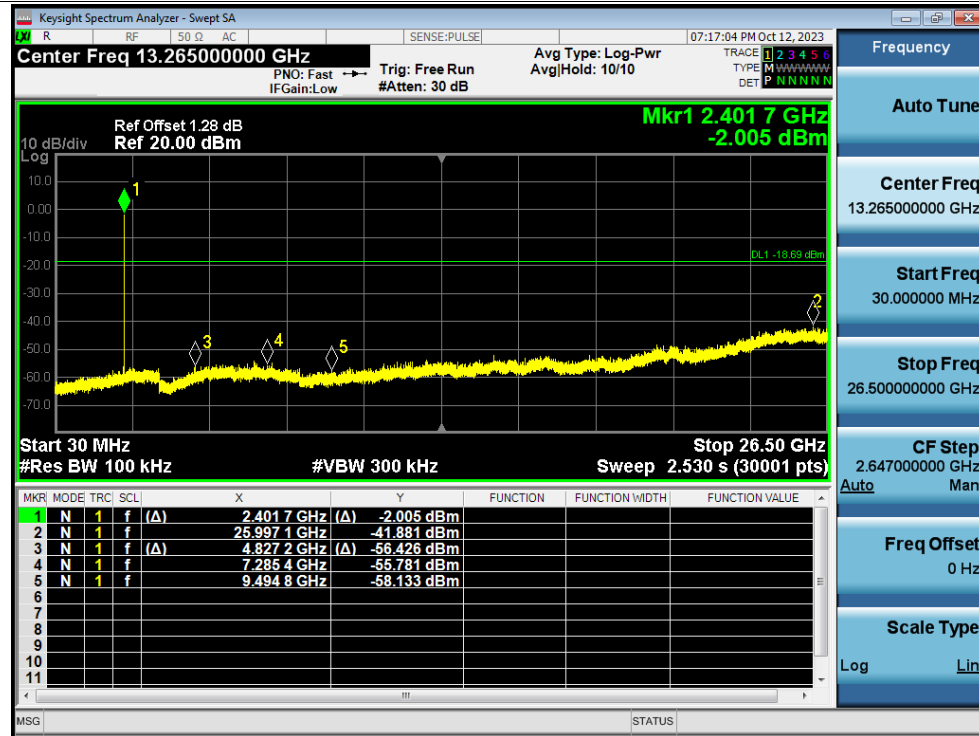
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant1	-43.19	-20	Pass
NVNT	1-DH5	2441	Ant1	-45.52	-20	Pass
NVNT	1-DH5	2480	Ant1	-47.24	-20	Pass
NVNT	2-DH5	2402	Ant1	-43.17	-20	Pass
NVNT	2-DH5	2441	Ant1	-45.39	-20	Pass
NVNT	2-DH5	2480	Ant1	-48.02	-20	Pass
NVNT	3-DH5	2402	Ant1	-42.82	-20	Pass
NVNT	3-DH5	2441	Ant1	-44.73	-20	Pass
NVNT	3-DH5	2480	Ant1	-47.58	-20	Pass

Test Graphs

Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref



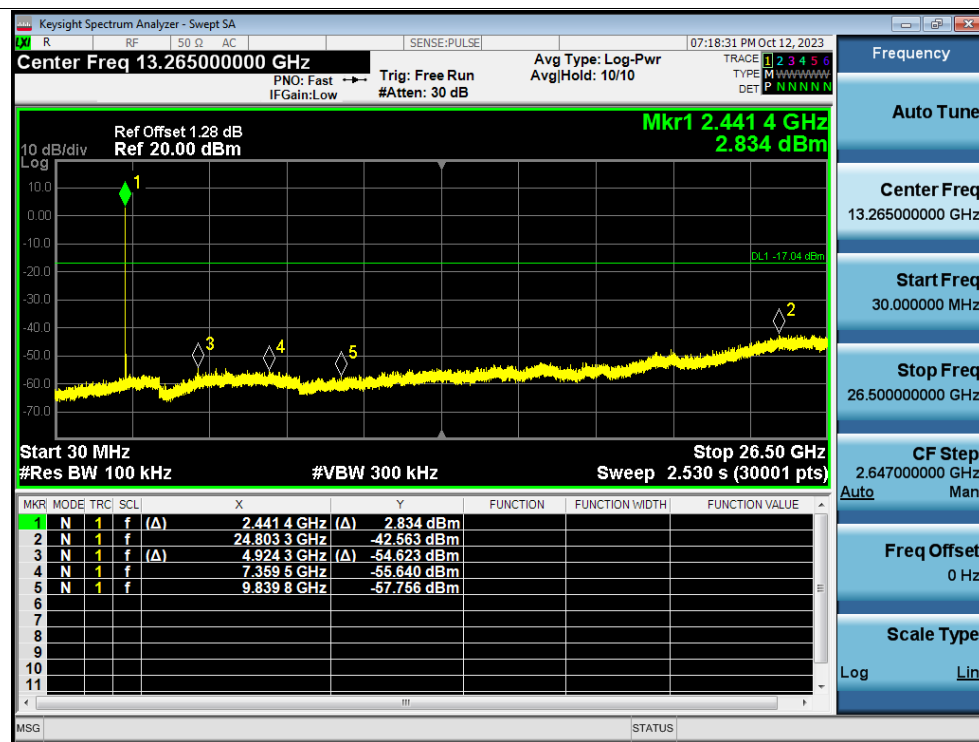
Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Emission



Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Ref



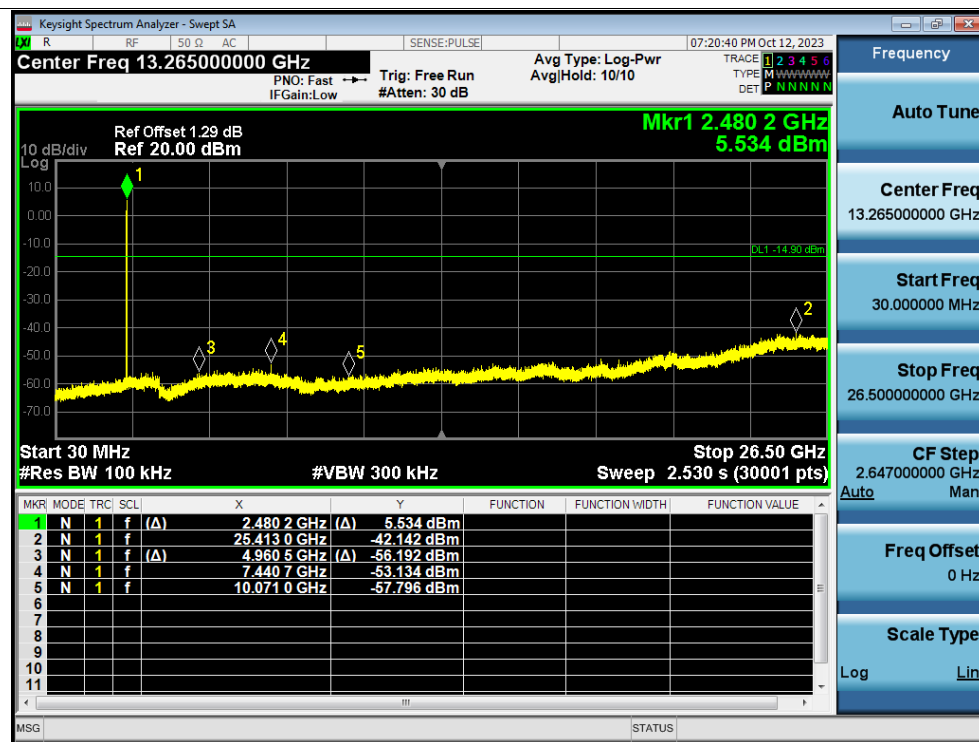
Tx. Spurious NVNT 1-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Ref



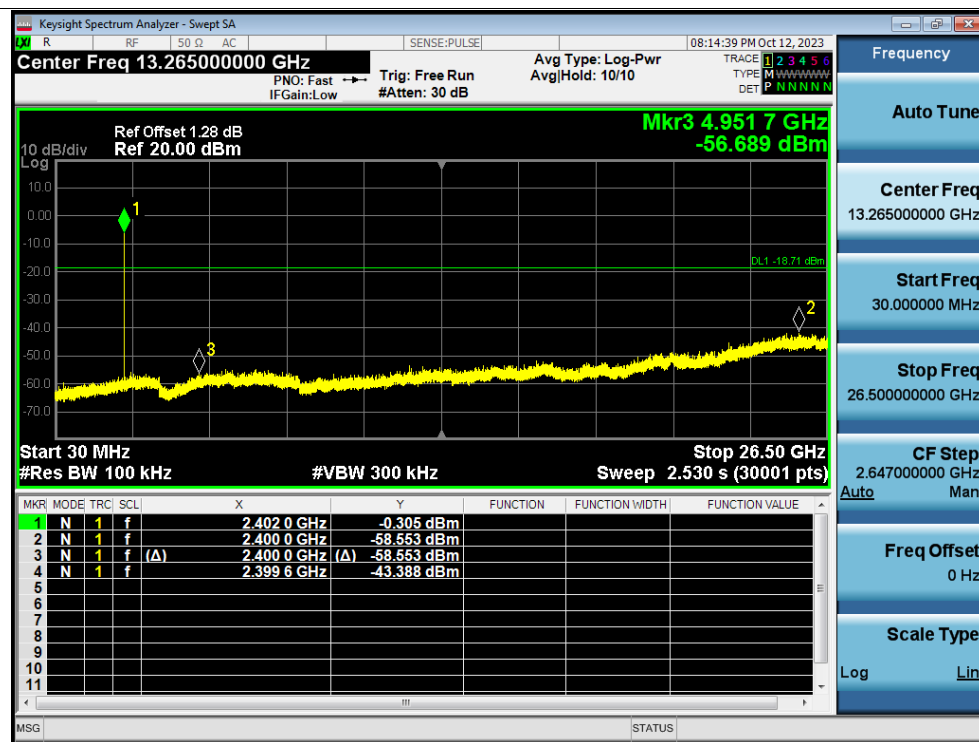
Tx. Spurious NVNT 1-DH5 2480MHz Ant1 Emission



Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Ref



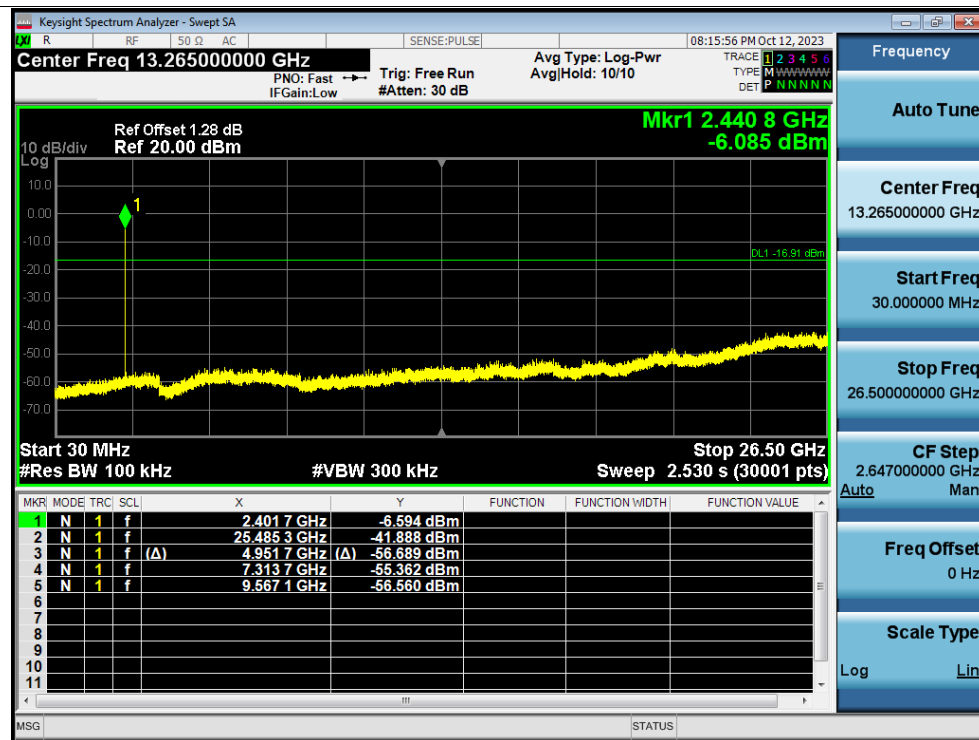
Tx. Spurious NVNT 2-DH5 2402MHz Ant1 Emission



Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Ref



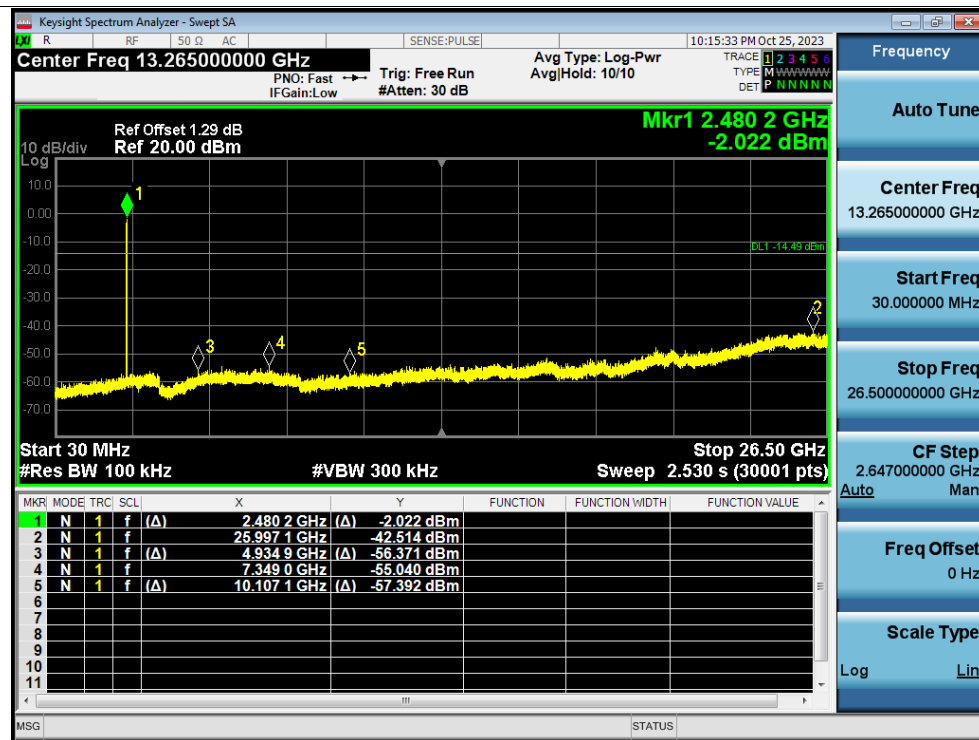
Tx. Spurious NVNT 2-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Ref



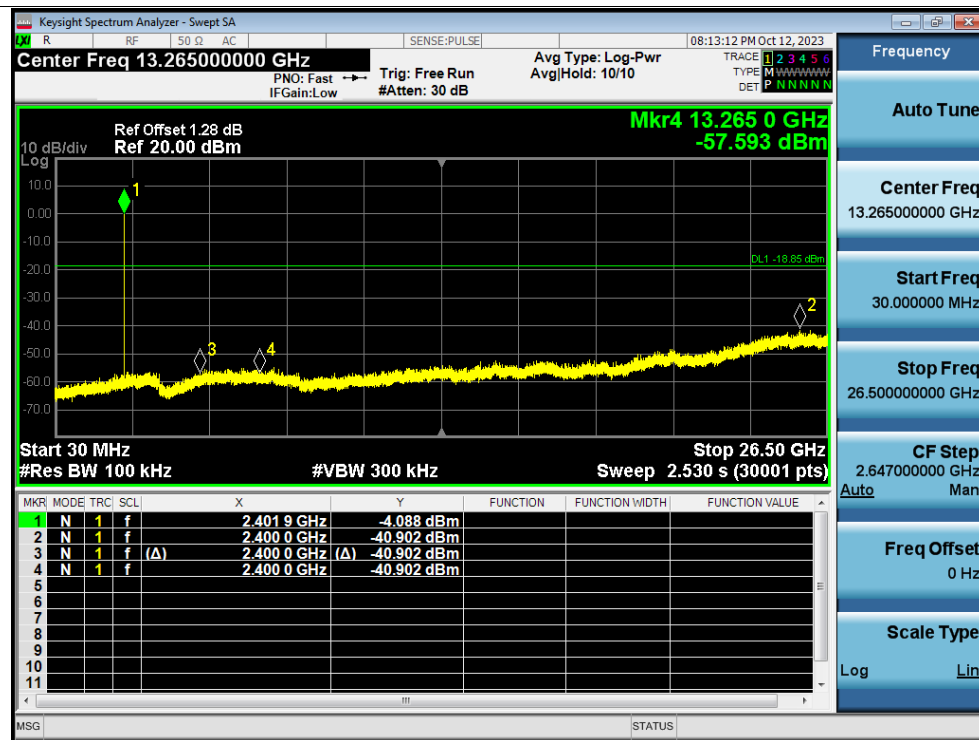
Tx. Spurious NVNT 2-DH5 2480MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Ref



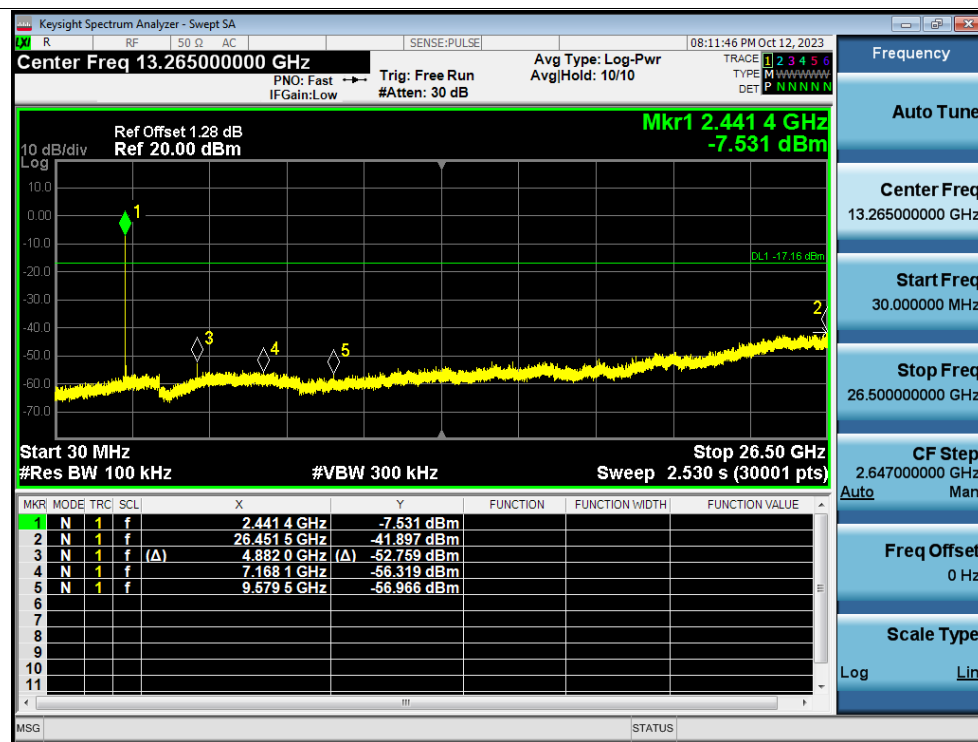
Tx. Spurious NVNT 3-DH5 2402MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2441MHz Ant1 Emission



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH5 2480MHz Ant1 Emission

