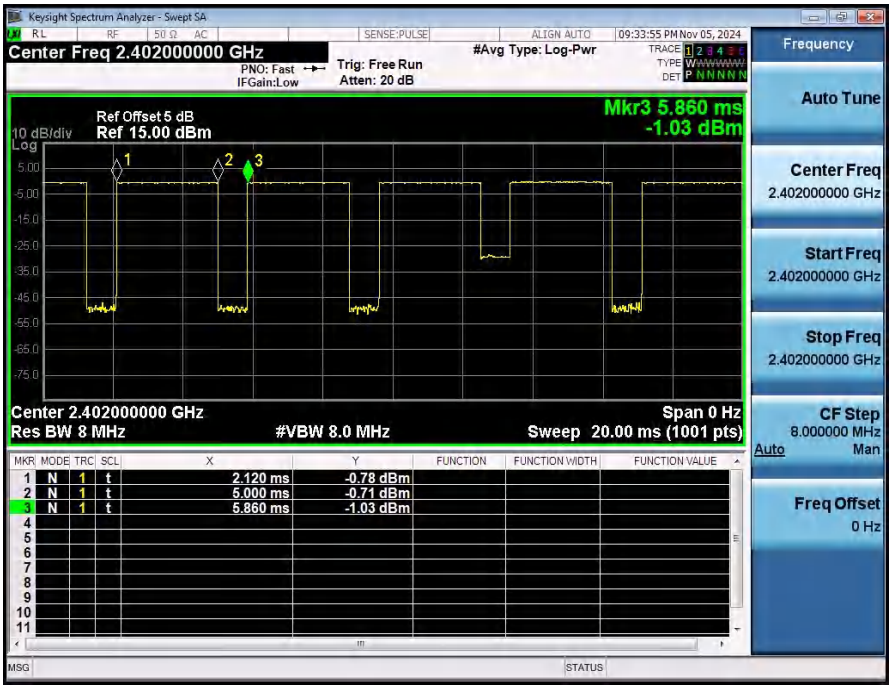
Appendix Test Data

Report No.:	1812C40122812501	Test Sample No.:	1-2-2
Start Test Date:	2024.10.28	Finish Test Date:	2024.11.12
Test Engineer:	Jokes Wang	Auditor:	Justin Feng
Temperature:	24.9℃	Relative Humidity:	54%
Pressure:	101kPa		

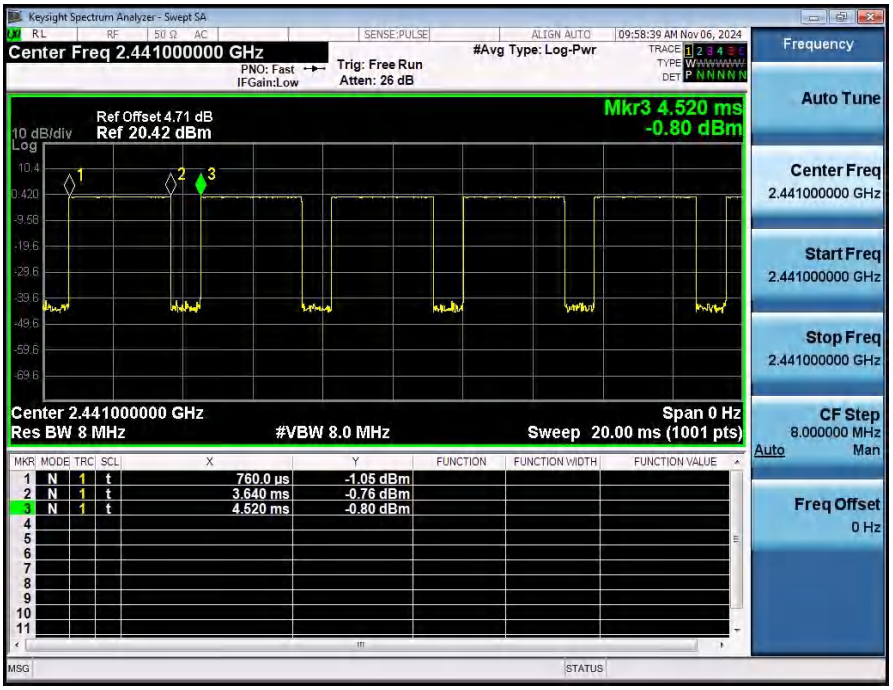
Appendix A: Duty Cycle

Condition	Antenna	Rate	Frequency (MHz)	Dutycycle(%)	Duty_factor
NVNT	ANT1	1-DH5	2402.00	77.54	1.10
NVNT	ANT1	1-DH5	2441.00	76.60	1.16
NVNT	ANT1	1-DH5	2480.00	77.01	1.13
NVNT	ANT1	2-DH5	2402.00	77.13	1.13
NVNT	ANT1	2-DH5	2441.00	77.01	1.13
NVNT	ANT1	2-DH5	2480.00	77.13	1.13
NVNT	ANT1	3-DH5	2402.00	77.54	1.10
NVNT	ANT1	3-DH5	2441.00	77.13	1.13
NVNT	ANT1	3-DH5	2480.00	77.54	1.10

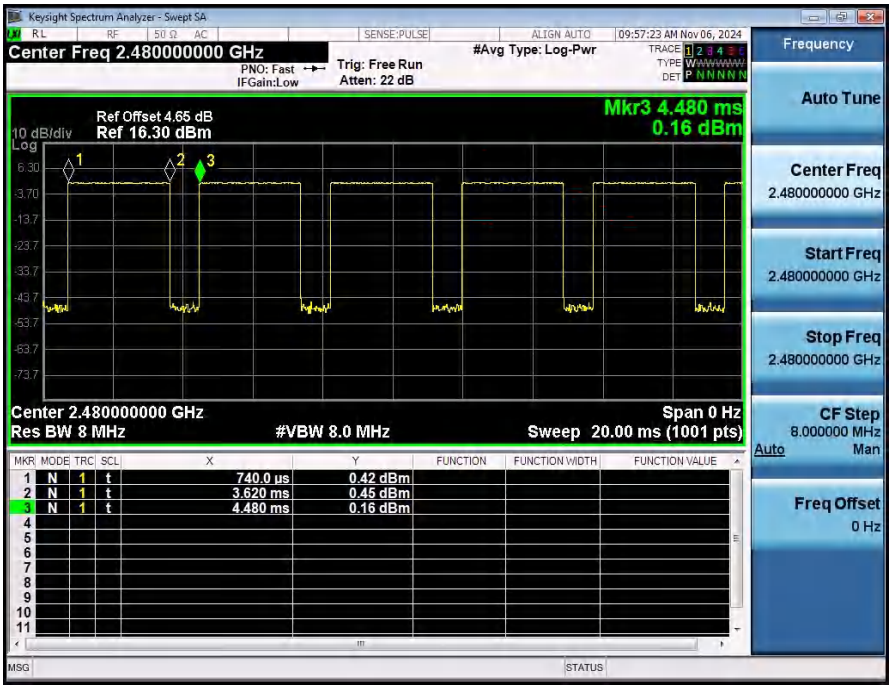
Duty_Cycle_NVNT_ANT1_1-DH5_2402



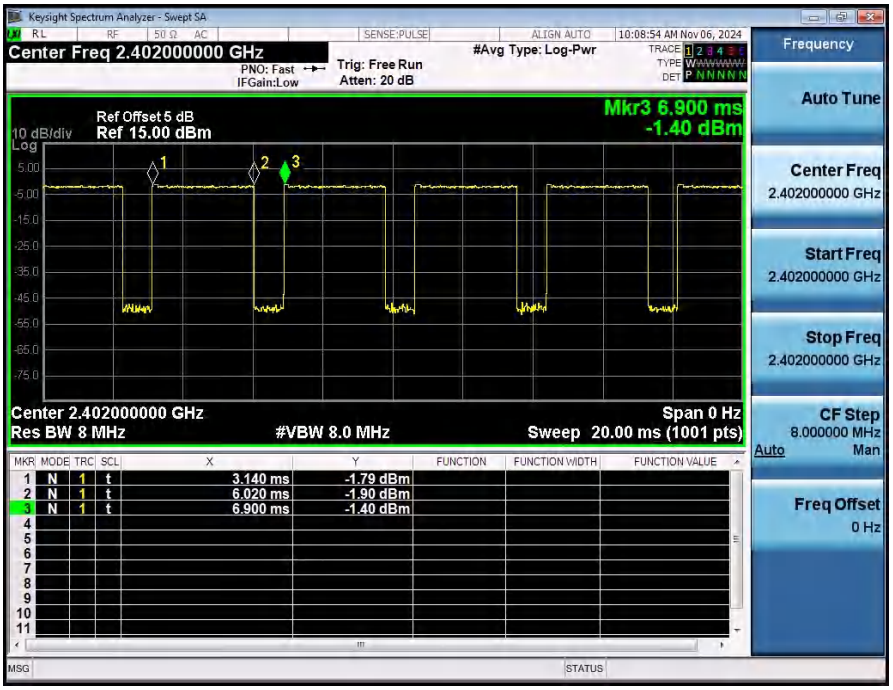
Duty_Cycle_NVNT_ANT1_1-DH5_2441



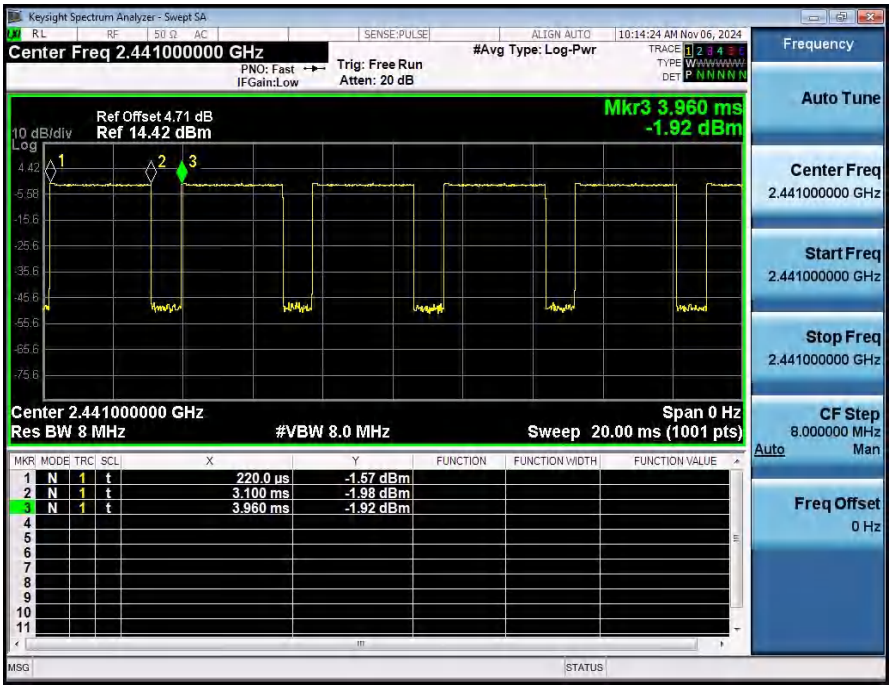
Duty_Cycle_NVNT_ANT1_1-DH5_2480



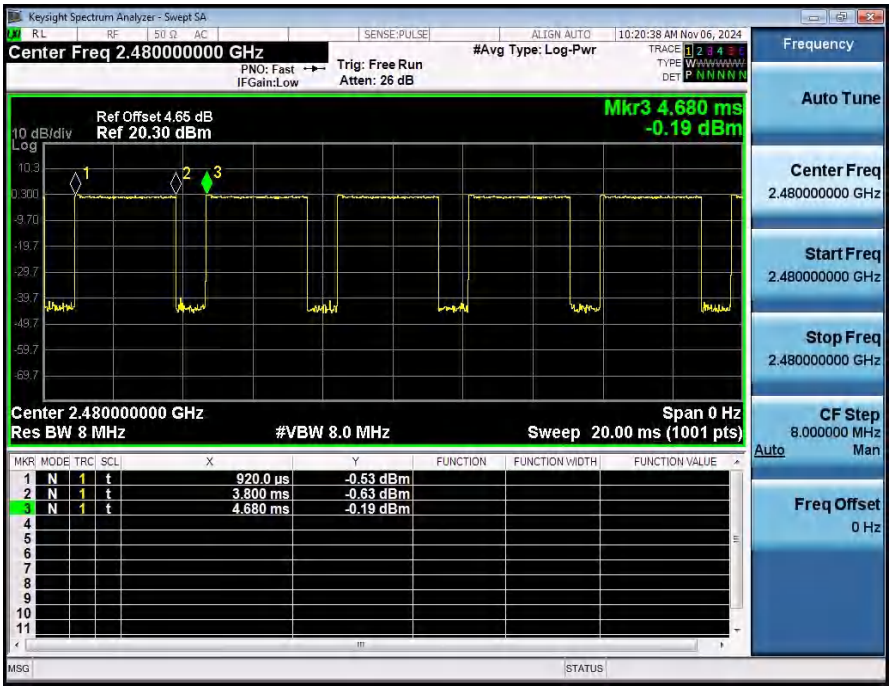
Duty_Cycle_NVNT_ANT1_2-DH5_2402



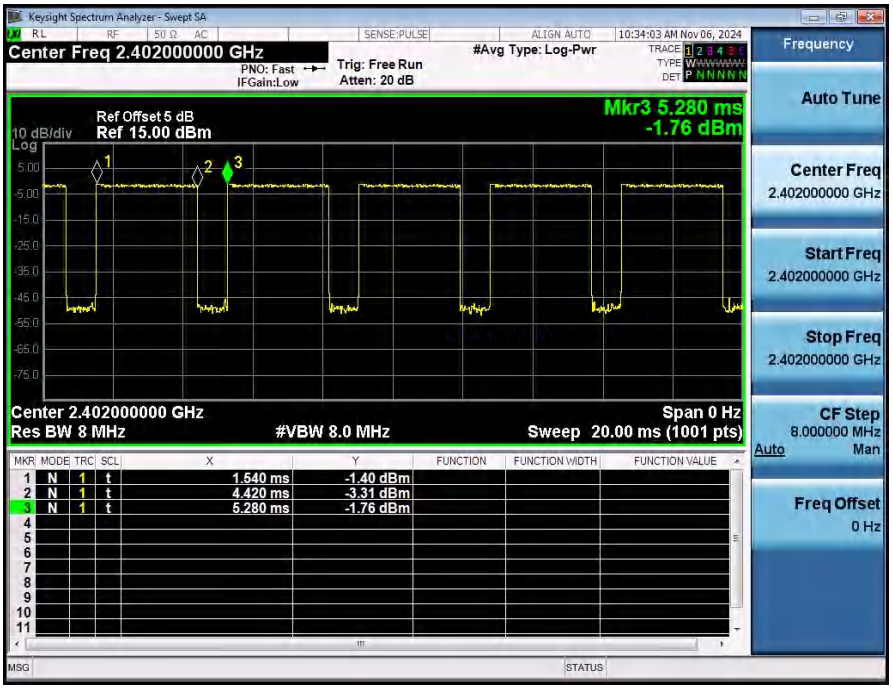
Duty_Cycle_NVNT_ANT1_2-DH5_2441



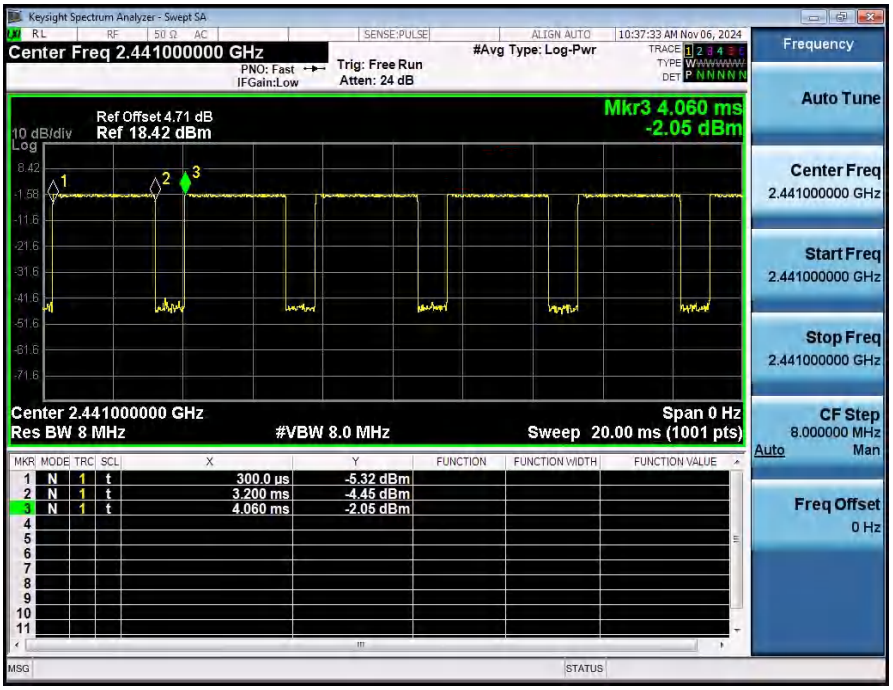
Duty_Cycle_NVNT_ANT1_2-DH5_2480



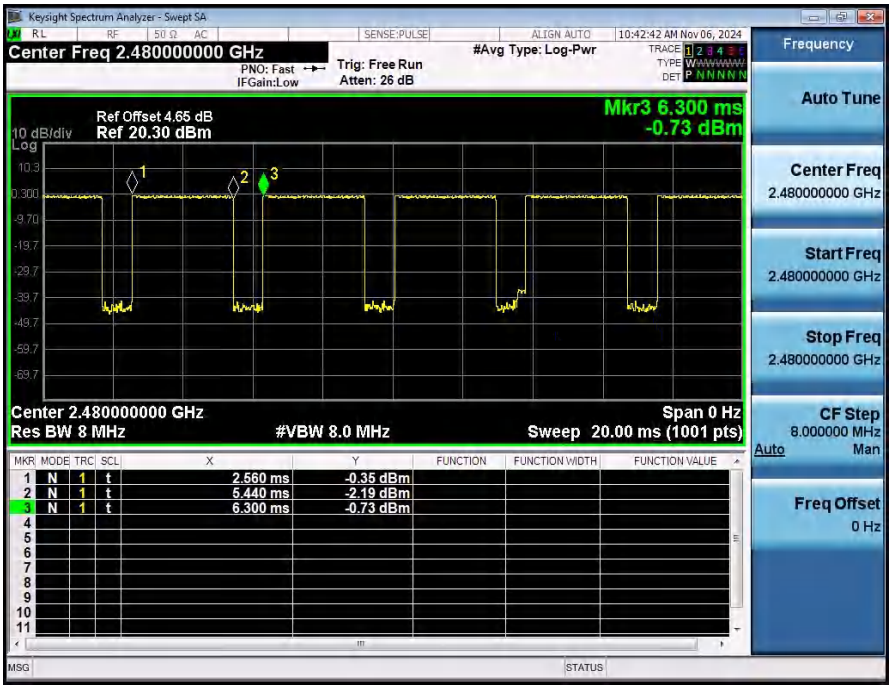
Duty_Cycle_NVNT_ANT1_3-DH5_2402



Duty_Cycle_NVNT_ANT1_3-DH5_2441



Duty_Cycle_NVNT_ANT1_3-DH5_2480

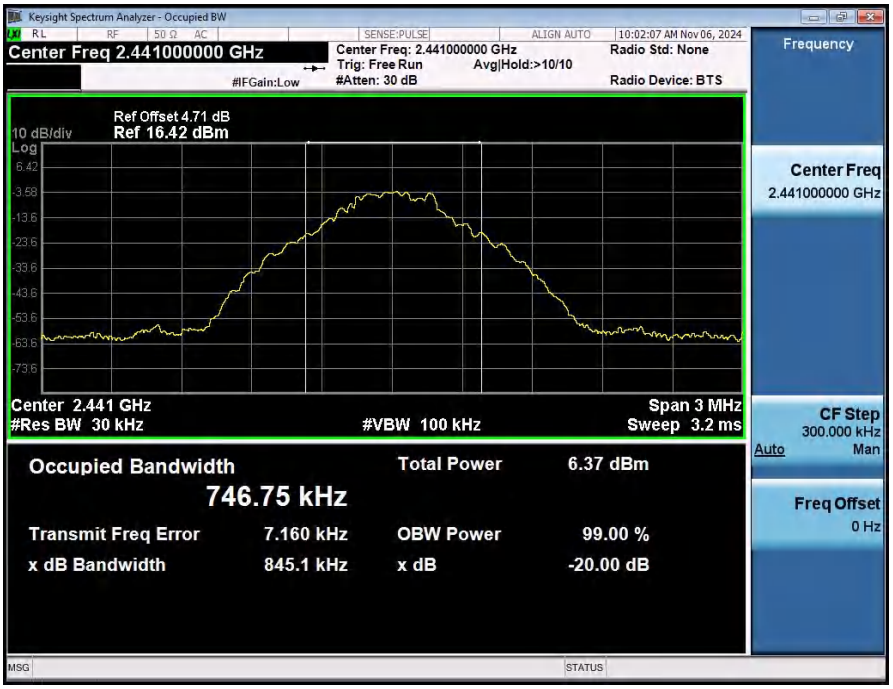

Keysight Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 26 dB
#Avg Type: Log-Pwr
10:42:42 AM Nov 06, 2024
Ref Offset 4.65 dB
10 dB/div
Log
Ref 20.30 dBm
Mkr3 6.300 ms
-0.73 dBm
Center 2.480000000 GHz
Res BW 8 MHz
#VBW 8.0 MHz
Span 0 Hz
Sweep 20.00 ms (1001 pts)
1 N 1 t 2.560 ms -0.35 dBm
2 N 1 t 5.440 ms -2.19 dBm
3 N 1 t 6.300 ms -0.73 dBm
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.480000000 GHz
Stop Freq
2.480000000 GHz
CF Step
8.000000 MHz
Auto
Man
Freq Offset
0 Hz

Appendix B: -20dB Bandwidth

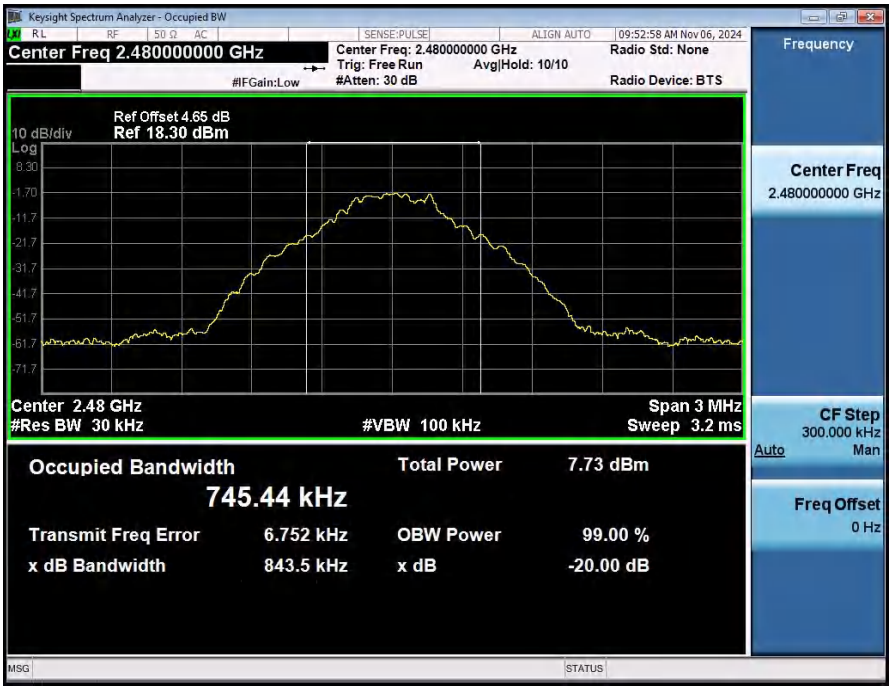
Condition	Antenna	Modulation	Frequency (MHz)	-20dB BW(MHz)	if larger than CFS
NVNT	ANT1	1-DH5	2402.00	0.850	No
NVNT	ANT1	1-DH5	2441.00	0.845	No
NVNT	ANT1	1-DH5	2480.00	0.844	No
NVNT	ANT1	2-DH5	2402.00	1.269	Yes
NVNT	ANT1	2-DH5	2441.00	1.268	Yes
NVNT	ANT1	2-DH5	2480.00	1.274	Yes
NVNT	ANT1	3-DH5	2402.00	1.274	Yes
NVNT	ANT1	3-DH5	2441.00	1.293	Yes
NVNT	ANT1	3-DH5	2480.00	1.268	Yes

-20dB_Bandwidth_NVNT_ANT1_1-DH5_2402_00

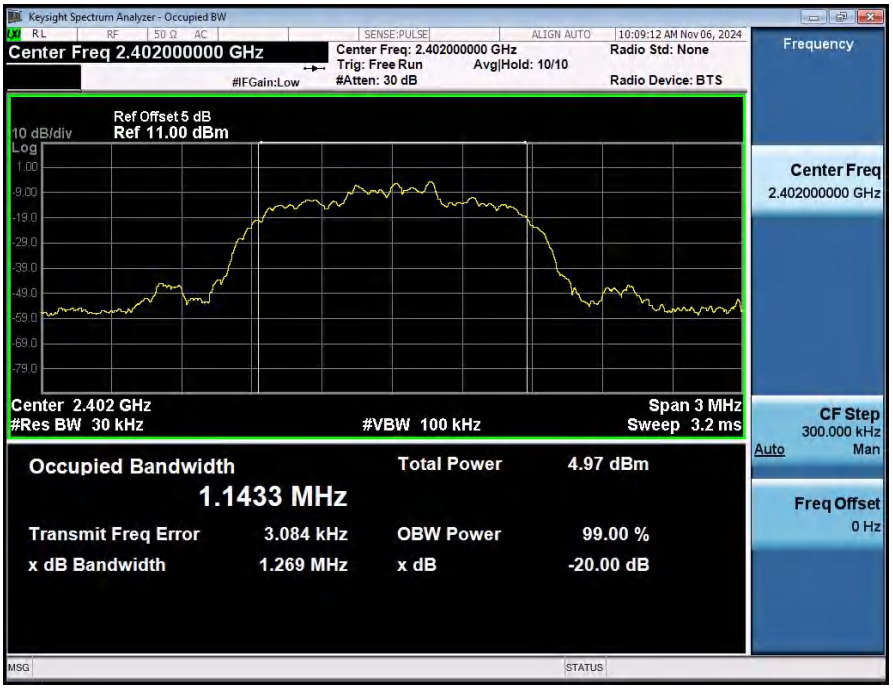
-20dB_Bandwidth_NVNT_ANT1_1-DH5_2441_00



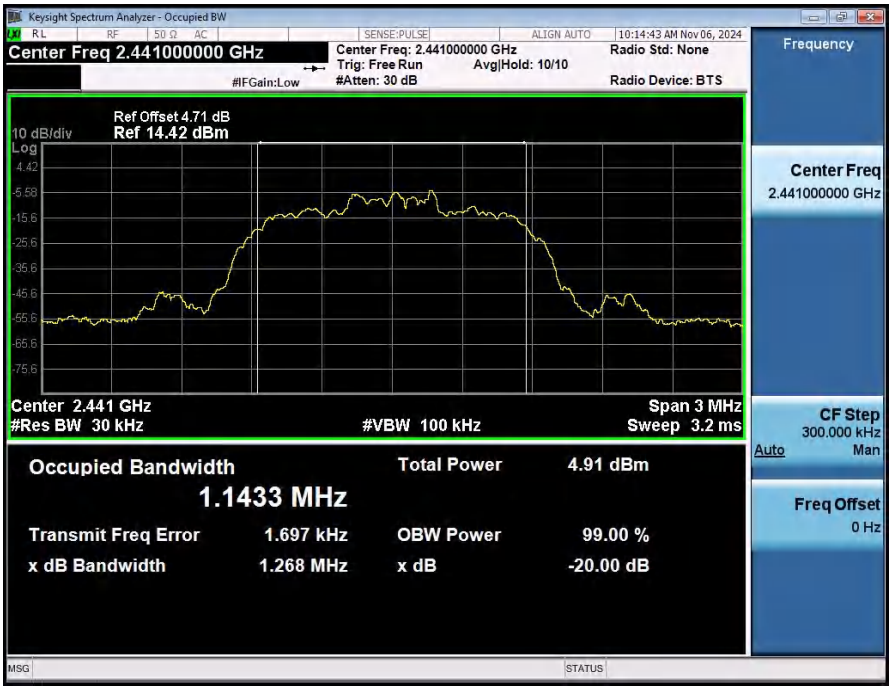
-20dB_Bandwidth_NVNT_ANT1_1-DH5_2480_00



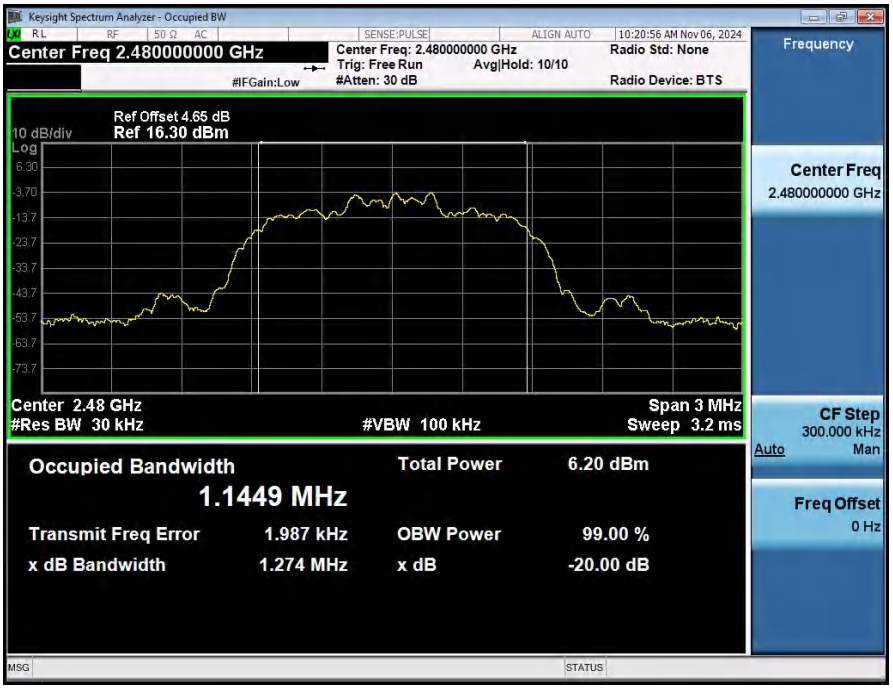
-20dB_Bandwidth_NVNT_ANT1_2-DH5_2402_00



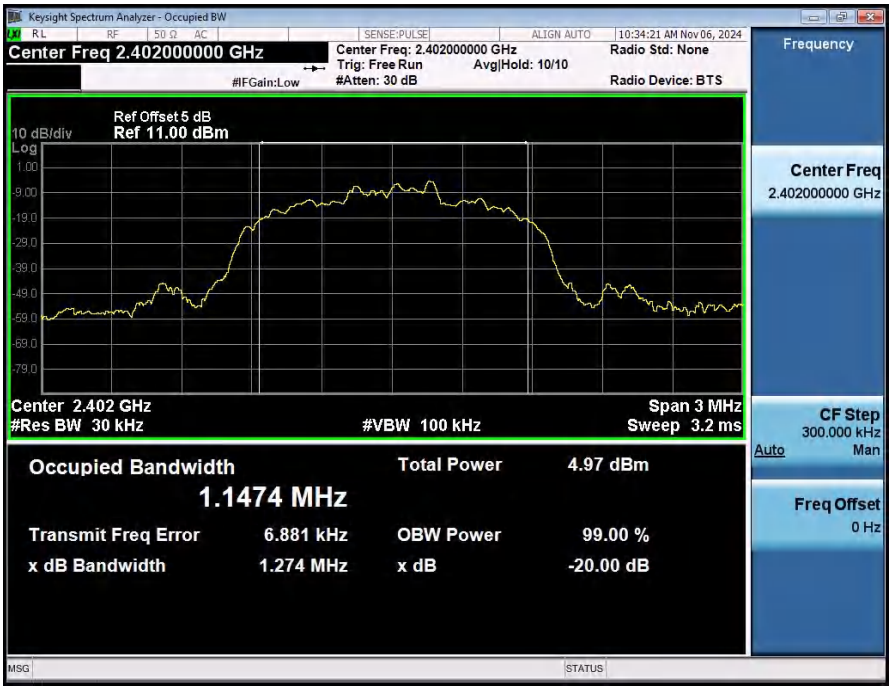
-20dB_Bandwidth_NVNT_ANT1_2-DH5_2441_00



-20dB_Bandwidth_NVNT_ANT1_2-DH5_2480_00

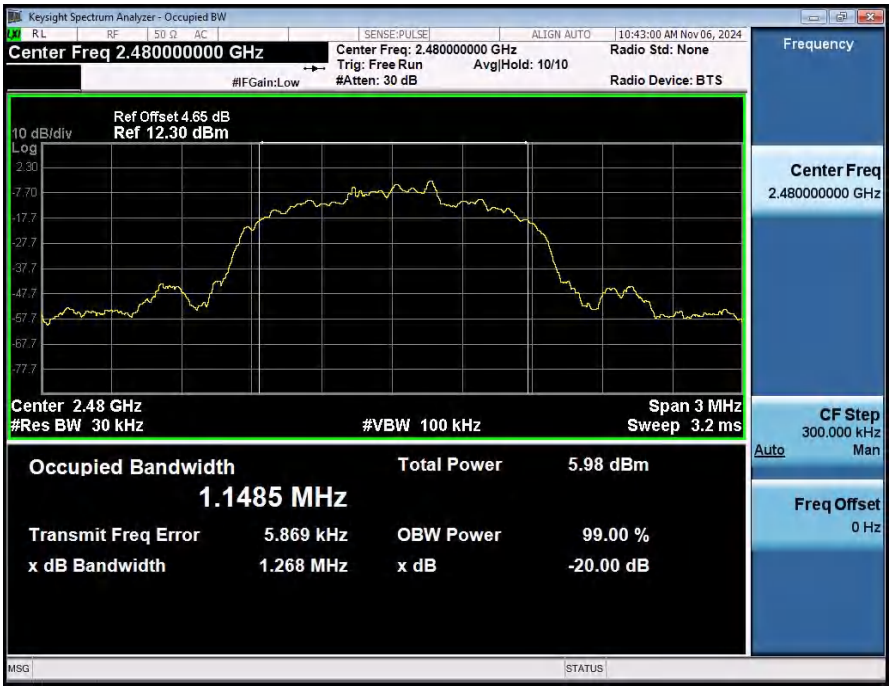


-20dB_Bandwidth_NVNT_ANT1_3-DH5_2402_00



-20dB_Bandwidth_NVNT_ANT1_3-DH5_2441_00

-20dB_Bandwidth_NVNT_ANT1_3-DH5_2480_00



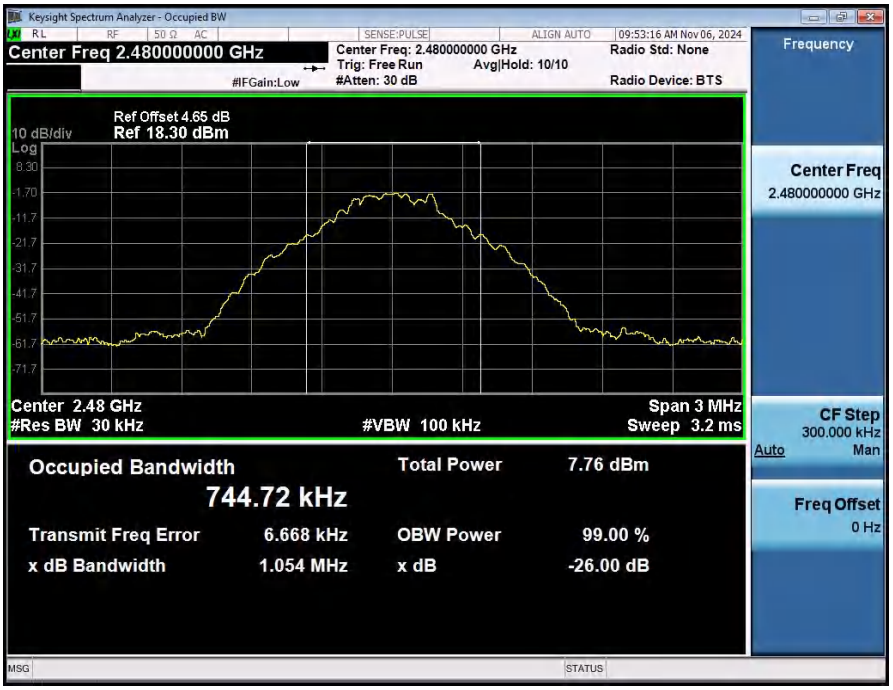
Appendix C: 99% Occupied Bandwidth

Condition	Antenna	Modulation	Frequency (MHz)	99%BW(MHz)
NVNT	ANT1	1-DH5	2402.00	0.750
NVNT	ANT1	1-DH5	2441.00	0.747
NVNT	ANT1	1-DH5	2480.00	0.745
NVNT	ANT1	2-DH5	2402.00	1.140
NVNT	ANT1	2-DH5	2441.00	1.147
NVNT	ANT1	2-DH5	2480.00	1.170
NVNT	ANT1	3-DH5	2402.00	1.148
NVNT	ANT1	3-DH5	2441.00	1.150
NVNT	ANT1	3-DH5	2480.00	1.155

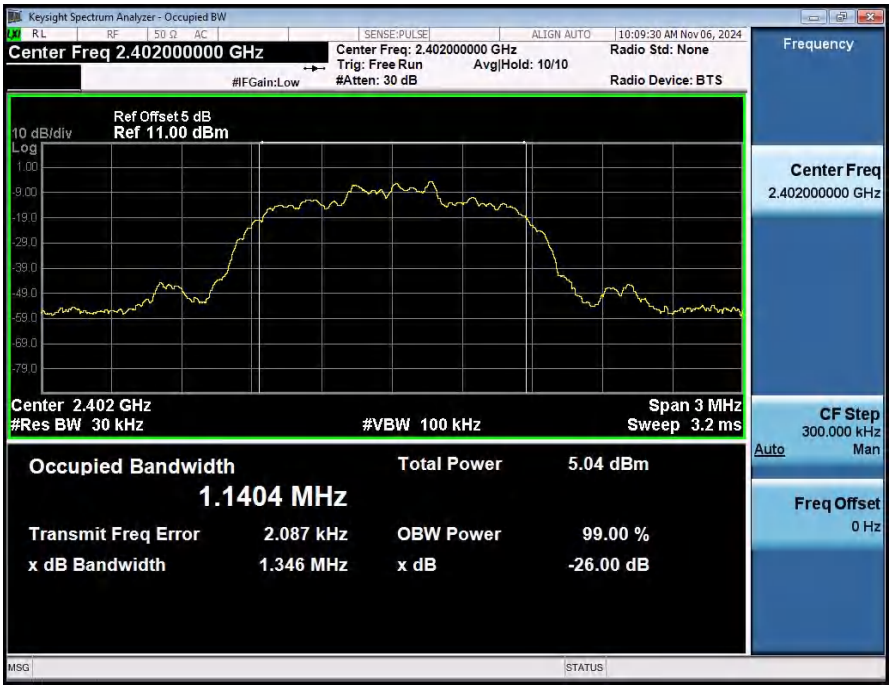
99%_Occupied_Bandwidth_NVNT_ANT1_1-DH5_2402_00

99%_Occupied_Bandwidth_NVNT_ANT1_1-DH5_2441_00

99%_Occupied_Bandwidth_NVNT_ANT1_1-DH5_2480_00

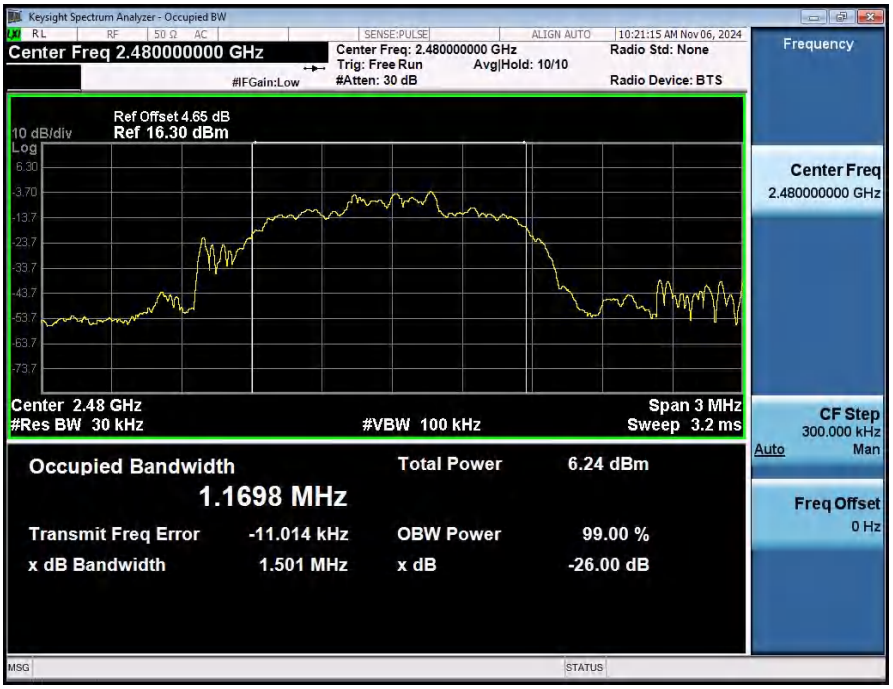


99%_Occupied_Bandwidth_NVNT_ANT1_2-DH5_2402_00

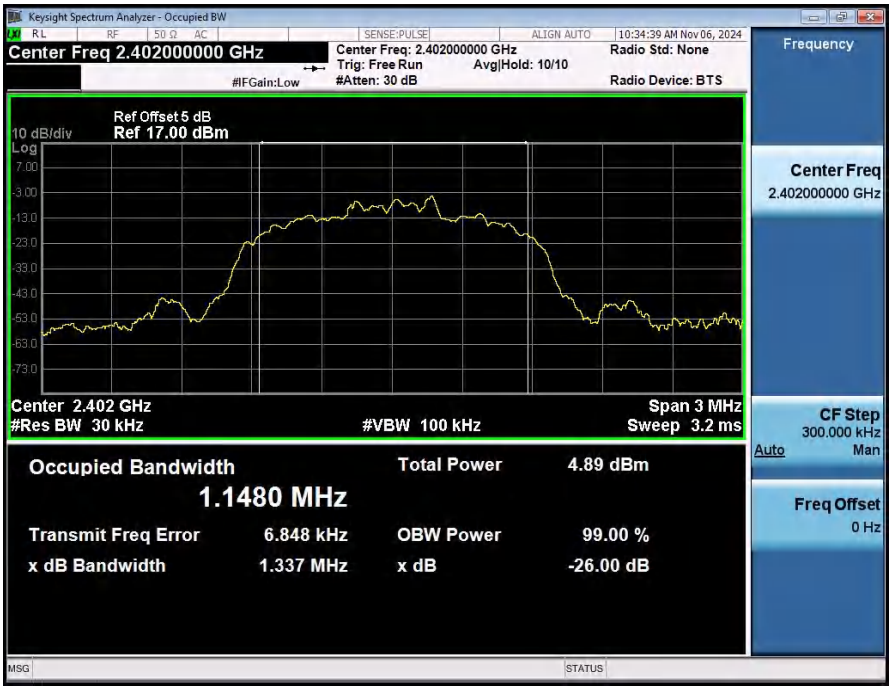


99%_Occupied_Bandwidth_NVNT_ANT1_2-DH5_2441_00

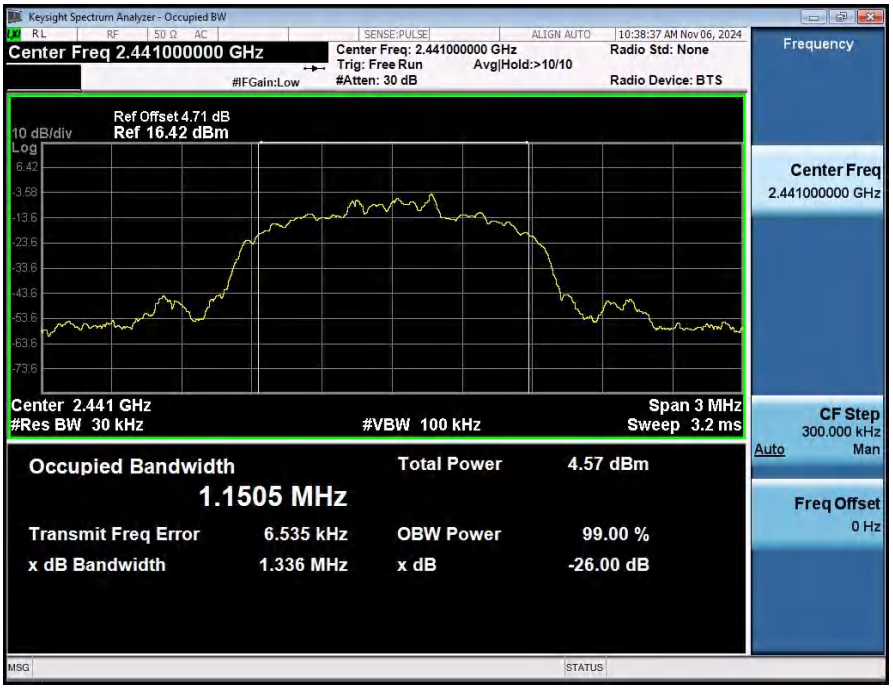
99%_Occupied_Bandwidth_NVNT_ANT1_2-DH5_2480_00



99%_Occupied_Bandwidth_NVNT_ANT1_3-DH5_2402_00



99%_Occupied_Bandwidth_NVNT_ANT1_3-DH5_2441_00



99%_Occupied_Bandwidth_NVNT_ANT1_3-DH5_2480_00

Appendix D: Peak Output Power

Condition	Antenna	Modulation	Frequency (MHz)	Max. Conducted Power(dBm)	Max. Conducted Power(mW)	Limit(mW)	Result
NVNT	ANT1	1-DH5	2402.00	-0.42	0.91	1000	Pass
NVNT	ANT1	1-DH5	2441.00	0.90	1.23	1000	Pass
NVNT	ANT1	1-DH5	2480.00	-0.84	0.82	1000	Pass
NVNT	ANT1	2-DH5	2402.00	-0.78	0.84	125	Pass
NVNT	ANT1	2-DH5	2441.00	0.50	1.12	125	Pass
NVNT	ANT1	2-DH5	2480.00	-1.16	0.77	125	Pass
NVNT	ANT1	3-DH5	2402.00	-0.34	0.92	125	Pass
NVNT	ANT1	3-DH5	2441.00	1.03	1.27	125	Pass
NVNT	ANT1	3-DH5	2480.00	-0.63	0.86	125	Pass

Peak_Output_Power_NVNT_ANT1_1-DH5_2402_00

Peak_Output_Power_NVNT_ANT1_1-DH5_2441_00

Peak_Output_Power_NVNT_ANT1_1-DH5_2480_00

Peak_Output_Power_NVNT_ANT1_2-DH5_2402_00

Peak_Output_Power_NVNT_ANT1_2-DH5_2441_00

Peak_Output_Power_NVNT_ANT1_2-DH5_2480_00

Peak_Output_Power_NVNT_ANT1_3-DH5_2402_00

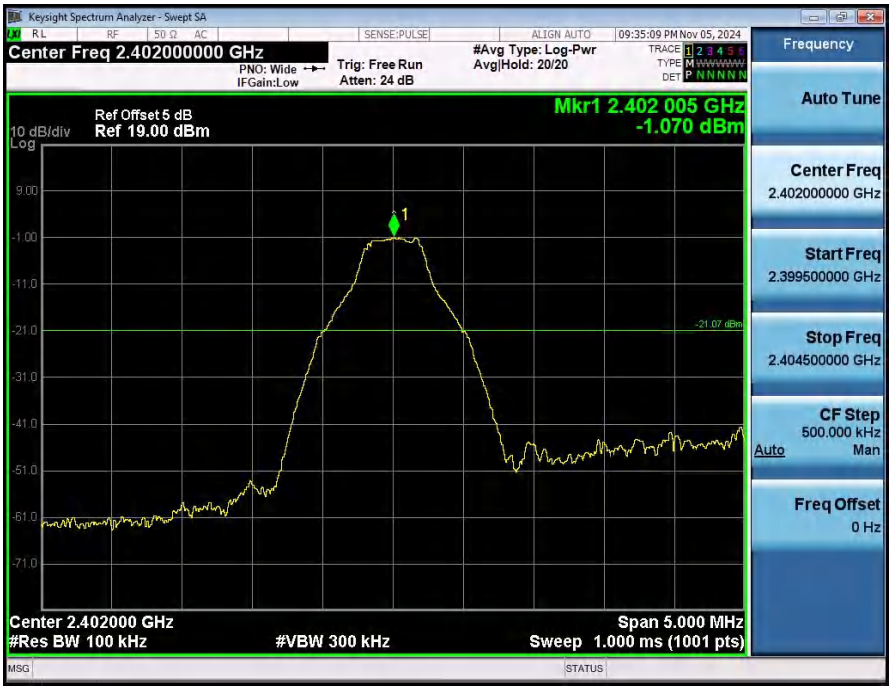
Peak_Output_Power_NVNT_ANT1_3-DH5_2441_00

Peak_Output_Power_NVNT_ANT1_3-DH5_2480_00

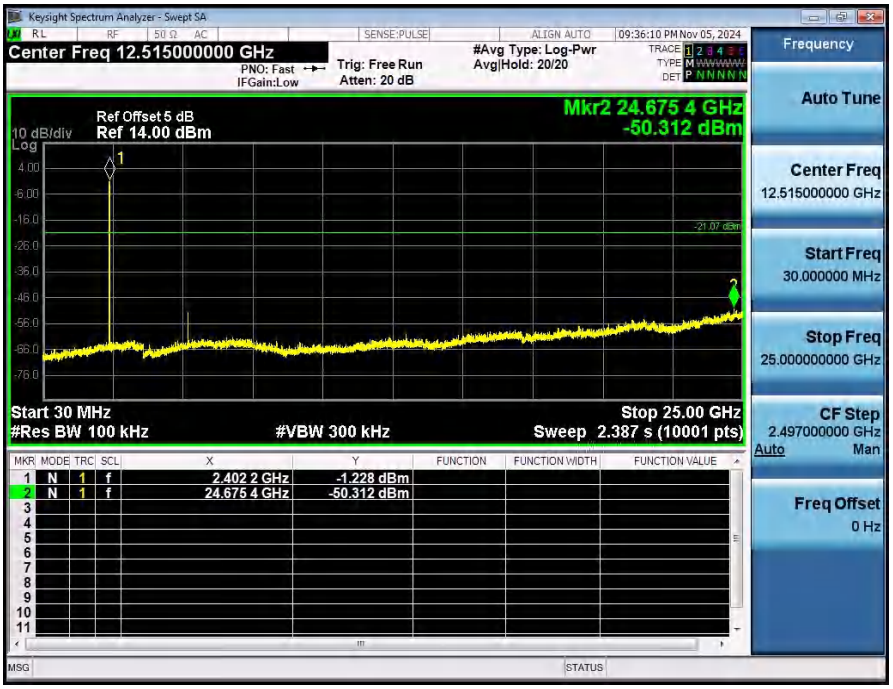
Appendix E: Spurious Emissions

Condition	Antenna	Modulation	TX Mode	Spurious MAX.Value(dBm)	Limit	Result
NVNT	ANT1	1-DH5	2402.00	-50.312	-21.070	Pass
NVNT	ANT1	1-DH5	2441.00	-53.079	-21.133	Pass
NVNT	ANT1	1-DH5	2480.00	-49.147	-19.864	Pass
NVNT	ANT1	2-DH5	2402.00	-51.003	-21.960	Pass
NVNT	ANT1	2-DH5	2441.00	-43.821	-22.384	Pass
NVNT	ANT1	2-DH5	2480.00	-54.389	-20.700	Pass
NVNT	ANT1	3-DH5	2402.00	-50.115	-21.812	Pass
NVNT	ANT1	3-DH5	2441.00	-39.774	-21.823	Pass
NVNT	ANT1	3-DH5	2480.00	-46.131	-20.785	Pass

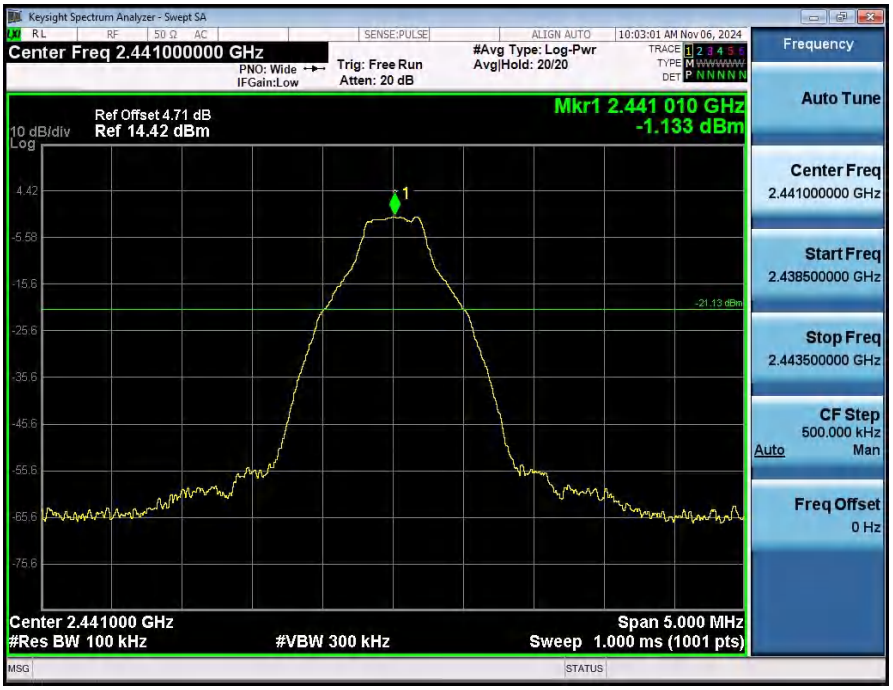
1_Reference_Level_NVNT_ANT1_1-DH5_2402_00



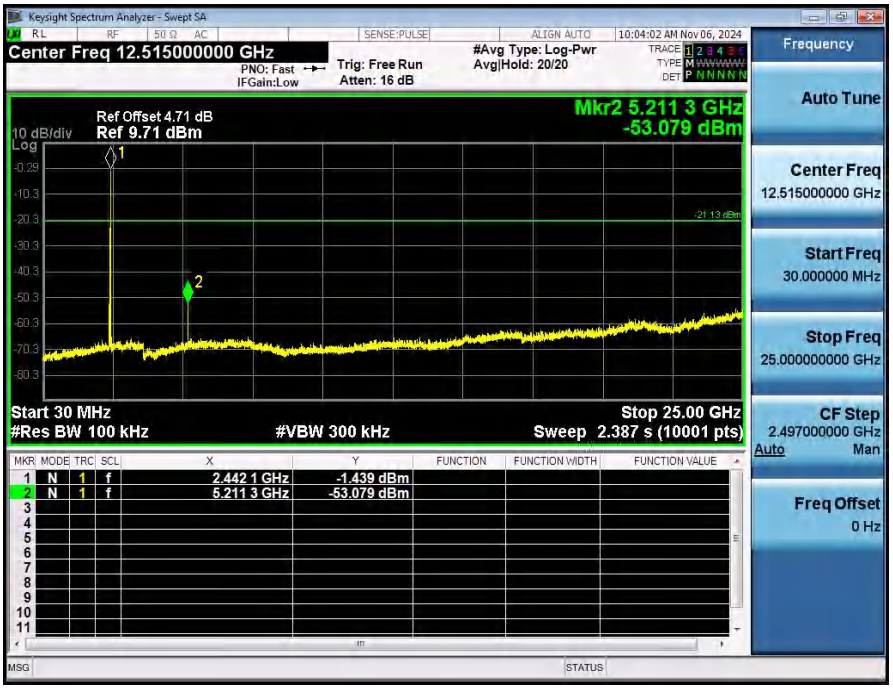
2_Spurious_Emissions_NVNT_ANT1_1-DH5_2402_00



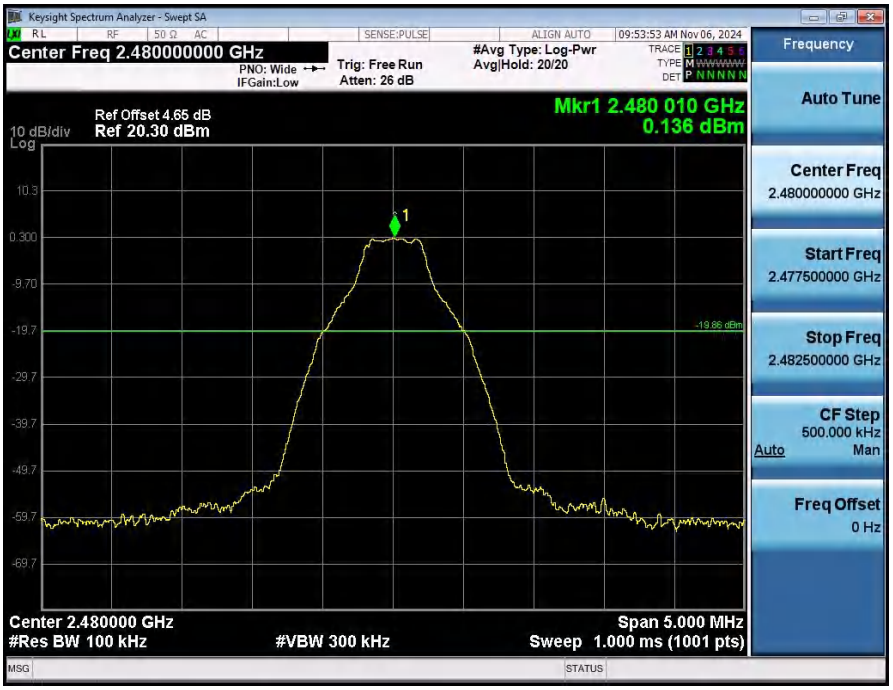
1_Reference_Level_NVNT_ANT1_1-DH5_2441_00



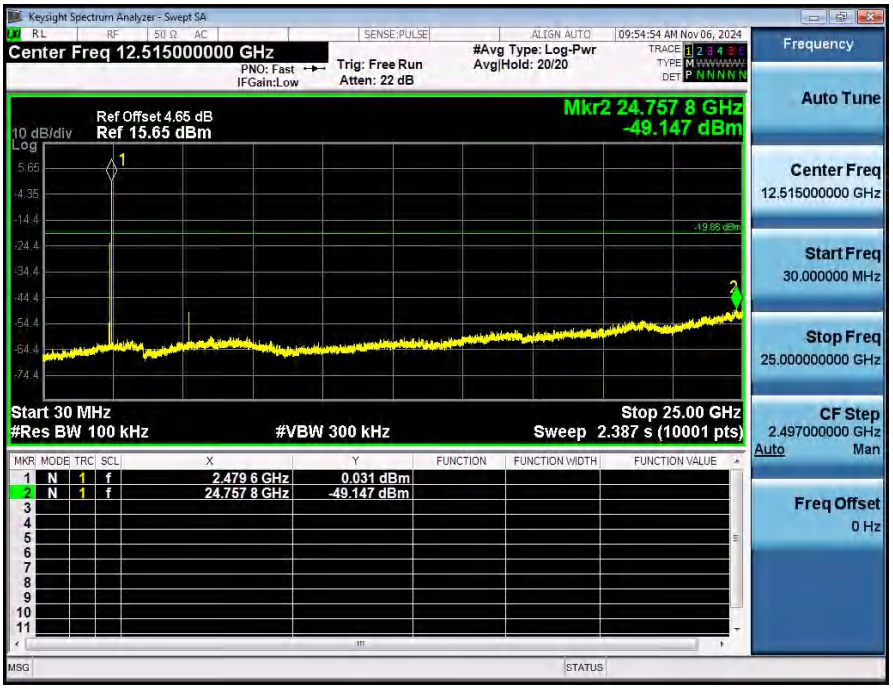
2_Spurious_Emissions_NVNT_ANT1_1-DH5_2441_00



1_Reference_Level_NVNT_ANT1_1-DH5_2480_00

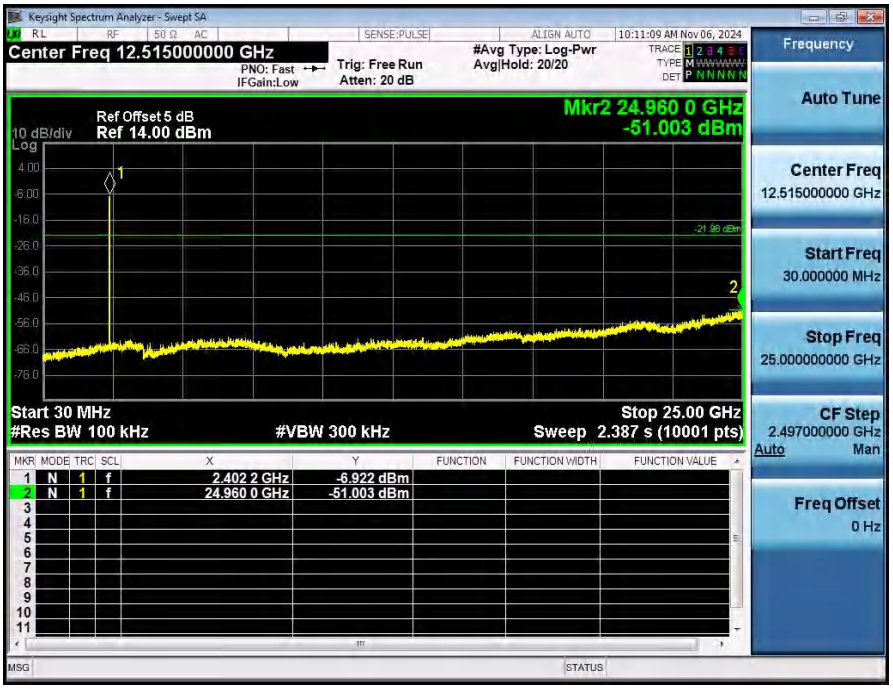


2_Spurious_Emissions_NVNT_ANT1_1-DH5_2480_00



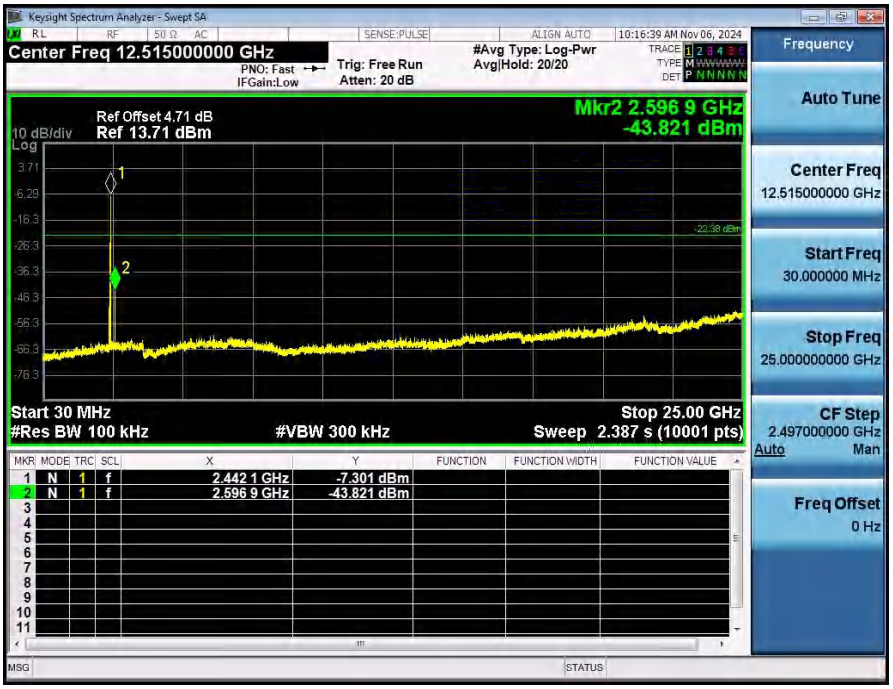
1_Reference_Level_NVNT_ANT1_2-DH5_2402_00

2_Spurious_Emissions_NVNT_ANT1_2-DH5_2402_00



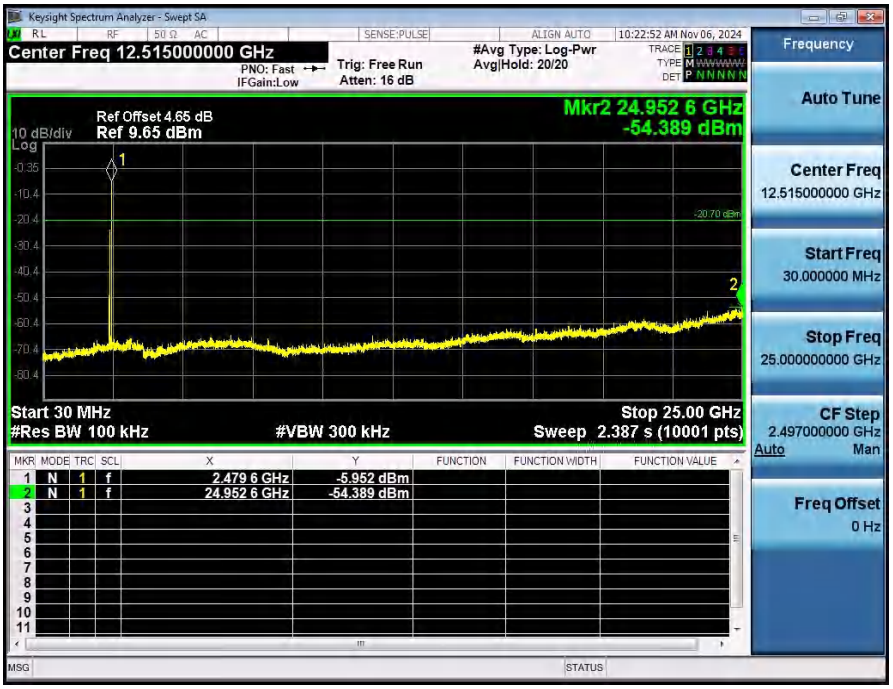
1_Reference_Level_NVNT_ANT1_2-DH5_2441_00

2_Spurious_Emissions_NVNT_ANT1_2-DH5_2441_00



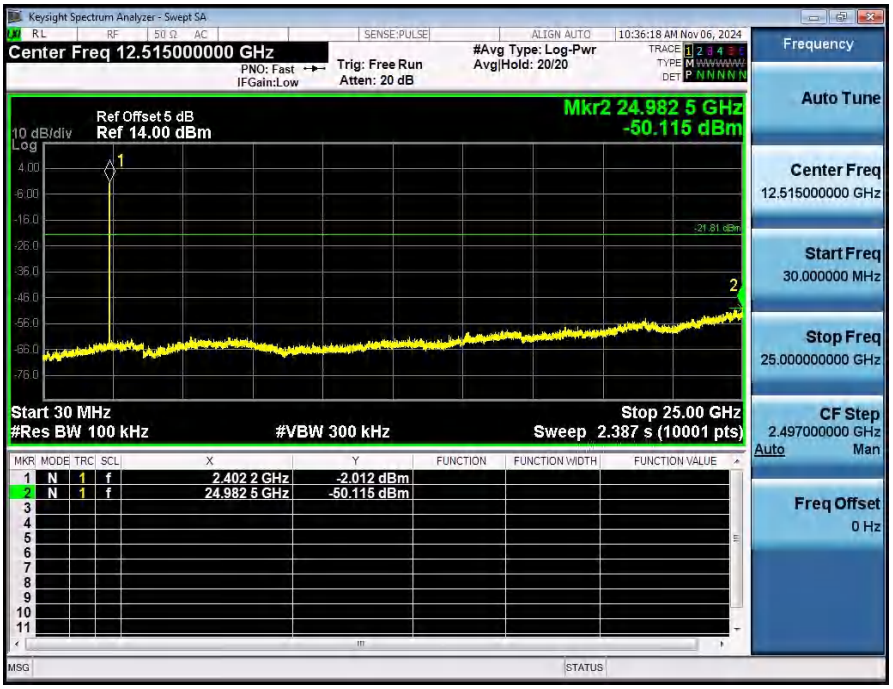
1_Reference_Level_NVNT_ANT1_2-DH5_2480_00

2_Spurious_Emissions_NVNT_ANT1_2-DH5_2480_00



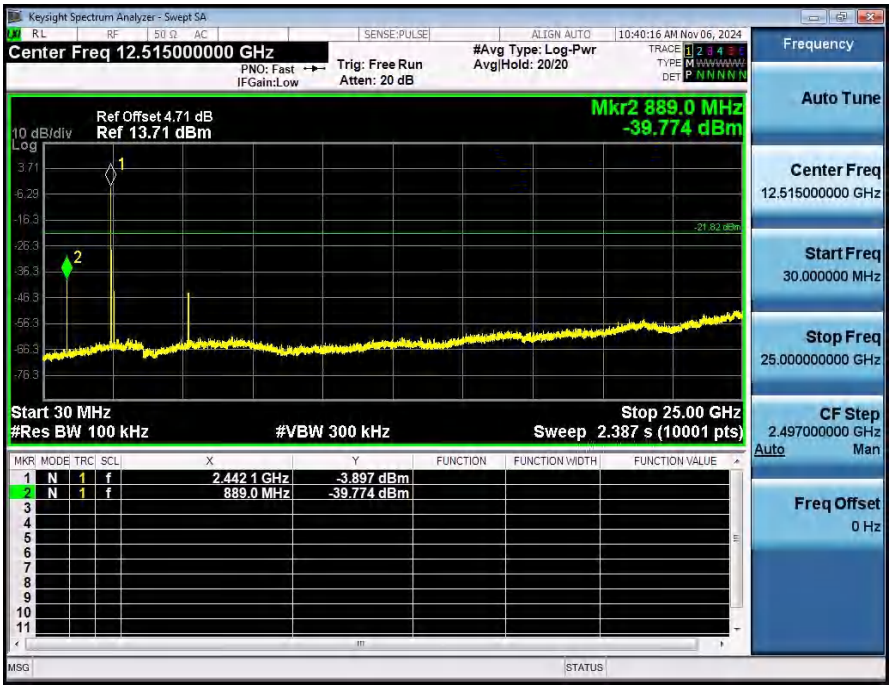
1_Reference_Level_NVNT_ANT1_3-DH5_2402_00

2_Spurious_Emissions_NVNT_ANT1_3-DH5_2402_00



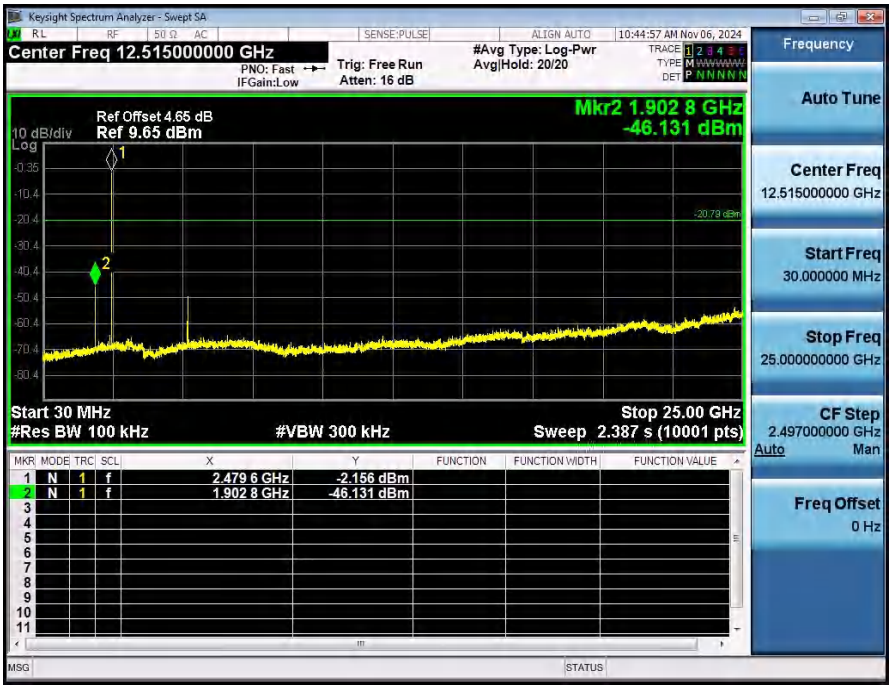
1_Reference_Level_NVNT_ANT1_3-DH5_2441_00

2_Spurious_Emissions_NVNT_ANT1_3-DH5_2441_00



1_Reference_Level_NVNT_ANT1_3-DH5_2480_00

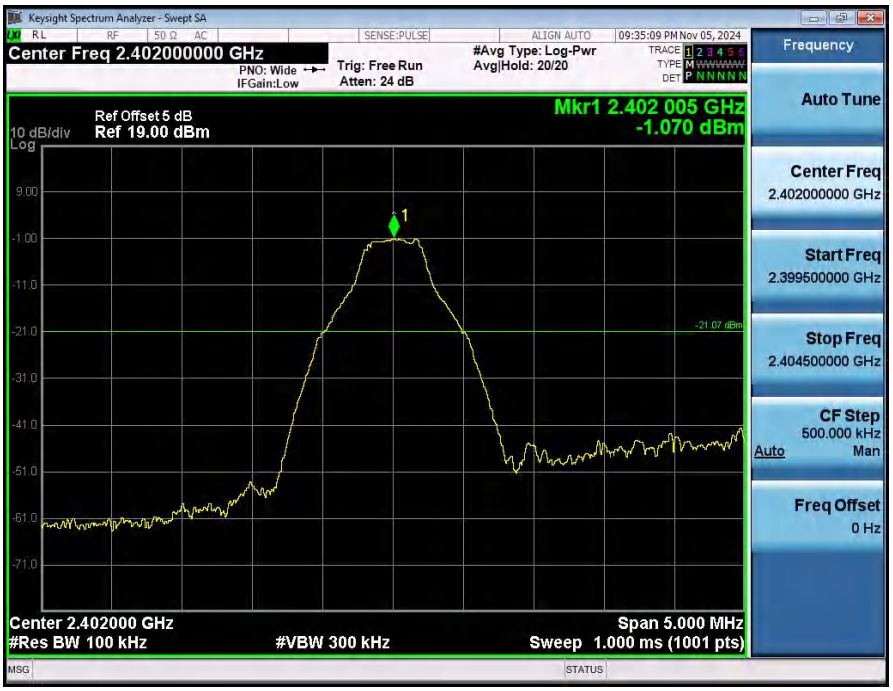
2_Spurious_Emissions_NVNT_ANT1_3-DH5_2480_00


Keysight Spectrum Analyzer - Swept SA
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 16 dB
#Avg Type: Log-Pwr
Avg|Hold: 20/20
10:44:57 AM Nov 06, 2024
Ref Offset 4.65 dB
10 dB/div
Log
Ref 9.65 dBm
Mkr2 1.902 8 GHz
-46.131 dBm
-20.78 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.387 s (10001 pts)
1 N 1 f 2.479 6 GHz -2.156 dBm
2 N 1 f 1.902 8 GHz -46.131 dBm
Frequency
Auto Tune
Center Freq
12.515000000 GHz
Start Freq
30.000000 MHz
Stop Freq
25.000000000 GHz
CF Step
2.497000000 GHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

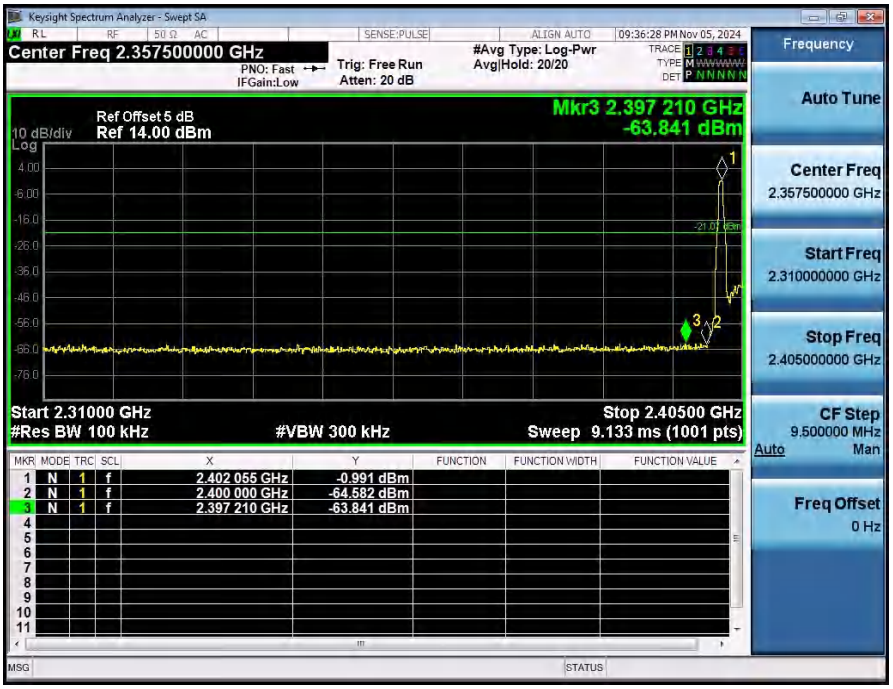
Appendix F: Bandedge

Condition	Antenna	Modulation	TX Mode	Bandedge MAX.Value	Limit	Result
NVNT	ANT1	1-DH5	2402.00	-63.841	-21.070	Pass
NVNT	ANT1	1-DH5	Hopping_LCH	-61.781	-19.425	Pass
NVNT	ANT1	1-DH5	2480.00	-62.467	-19.864	Pass
NVNT	ANT1	1-DH5	Hopping_HCH	-62.649	-19.927	Pass
NVNT	ANT1	2-DH5	2402.00	-61.509	-21.960	Pass
NVNT	ANT1	2-DH5	Hopping_LCH	-65.714	-20.212	Pass
NVNT	ANT1	2-DH5	2480.00	-66.915	-20.700	Pass
NVNT	ANT1	2-DH5	Hopping_HCH	-64.354	-20.704	Pass
NVNT	ANT1	3-DH5	2402.00	-61.934	-21.812	Pass
NVNT	ANT1	3-DH5	Hopping_LCH	-60.814	-21.917	Pass
NVNT	ANT1	3-DH5	2480.00	-66.433	-20.785	Pass
NVNT	ANT1	3-DH5	Hopping_HCH	-68.291	-20.769	Pass

1_Reference_Level_NVNT_ANT1_1-DH5_2402_00

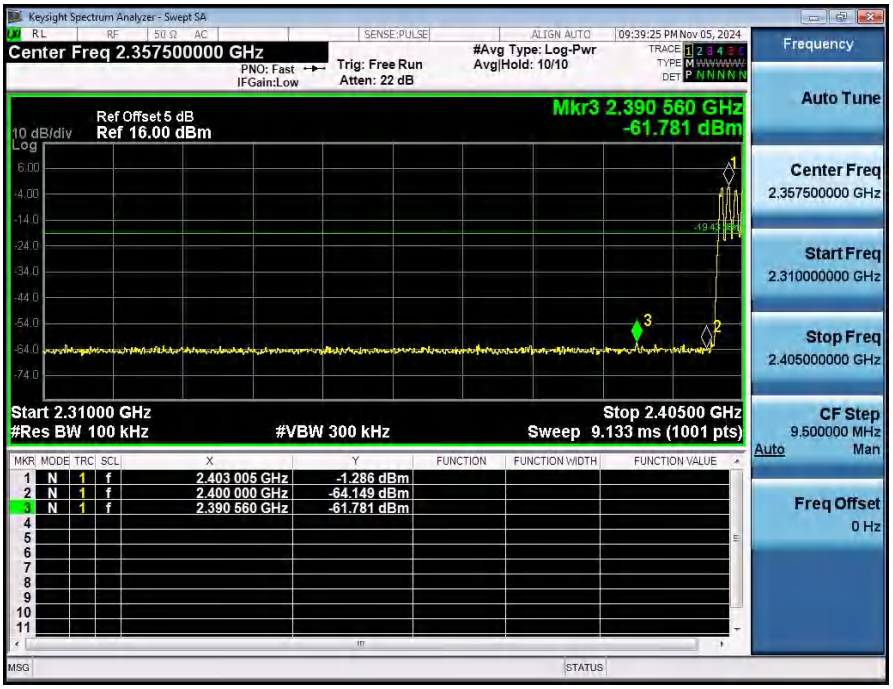


2_Bandedge_NVNT_ANT1_1-DH5_2402_00

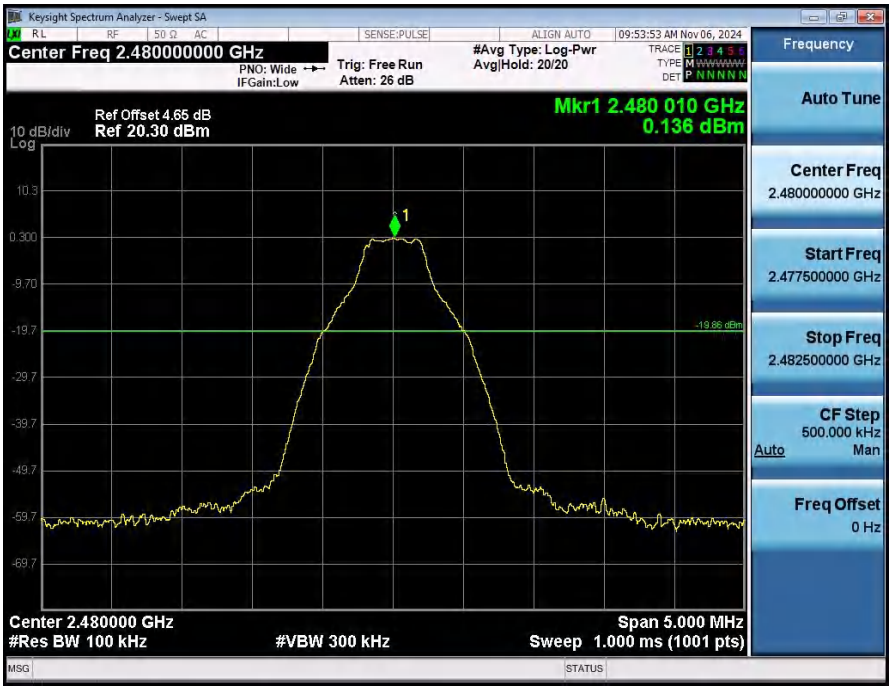


1_Reference_Level_Hopping_NVNT_ANT1_1-DH5_Hopping

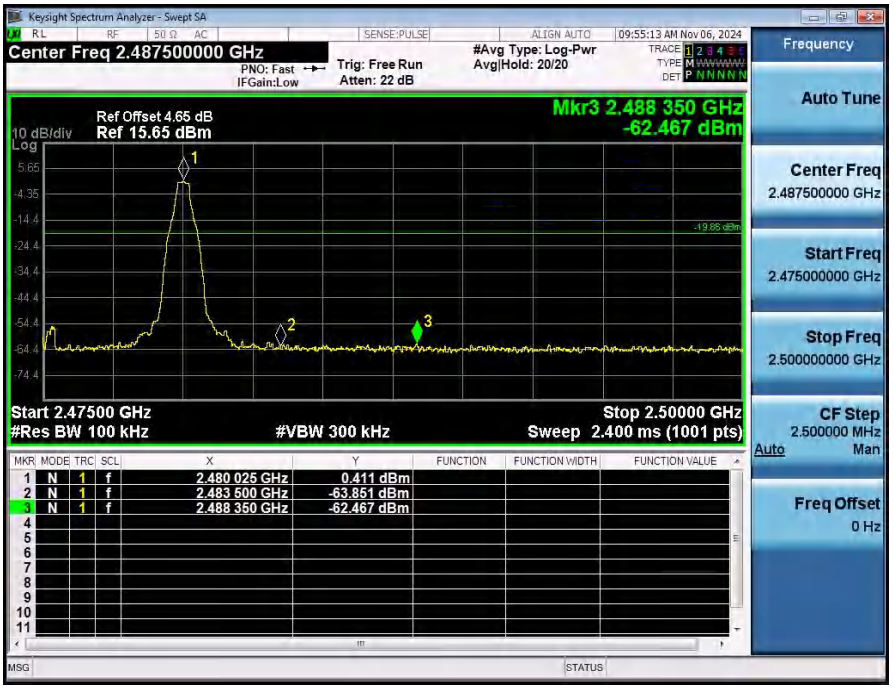
2_Band_Edge_(Hopping)_NVNT_ANT1_1-DH5_Hopping



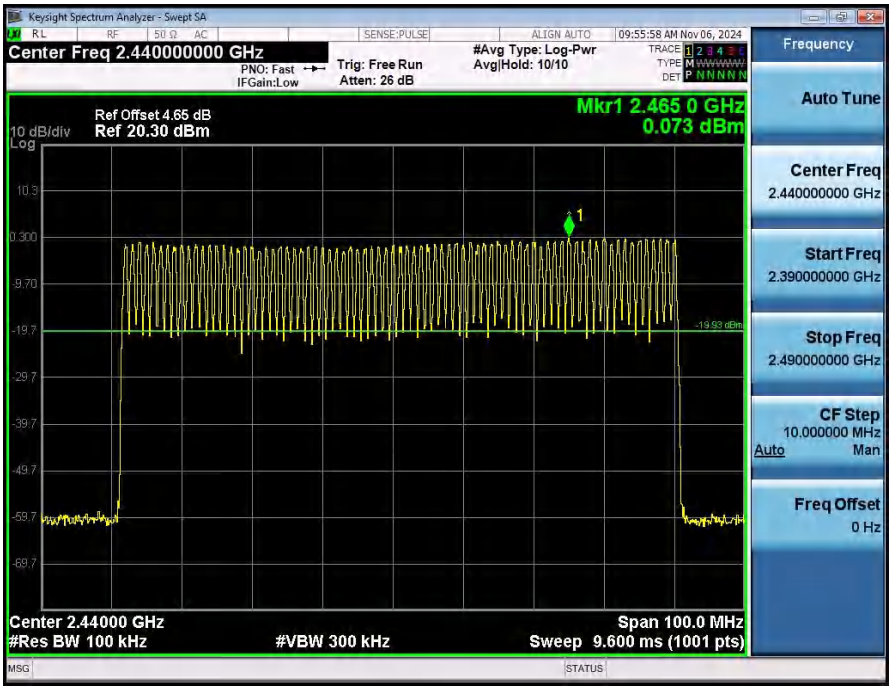
1_Reference_Level_NVNT_ANT1_1-DH5_2480_00



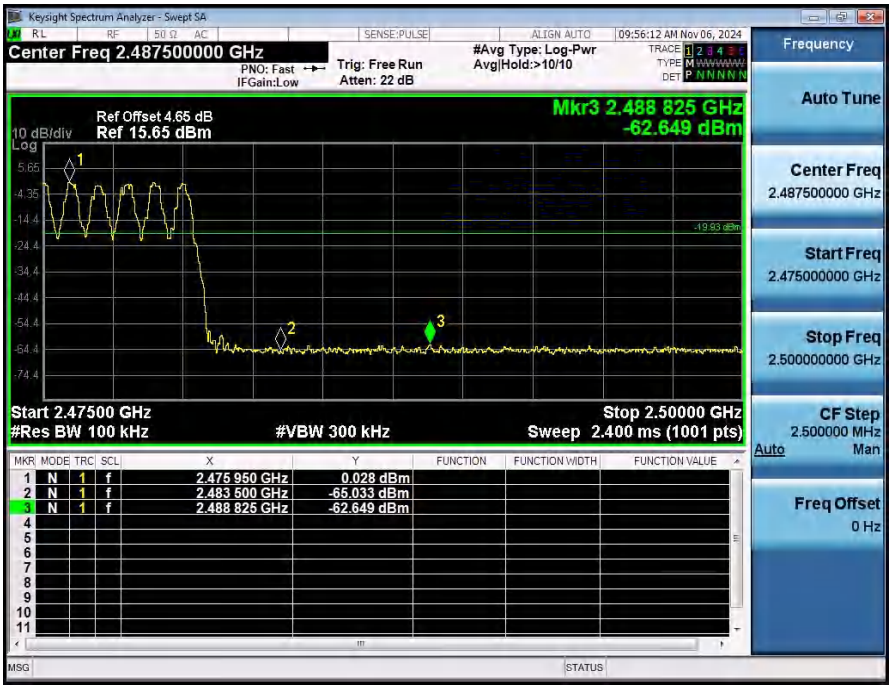
2_Bandedge_NVNT_ANT1_1-DH5_2480_00



1_Reference_Level_Hopping_NVNT_ANT1_1-DH5_Hopping

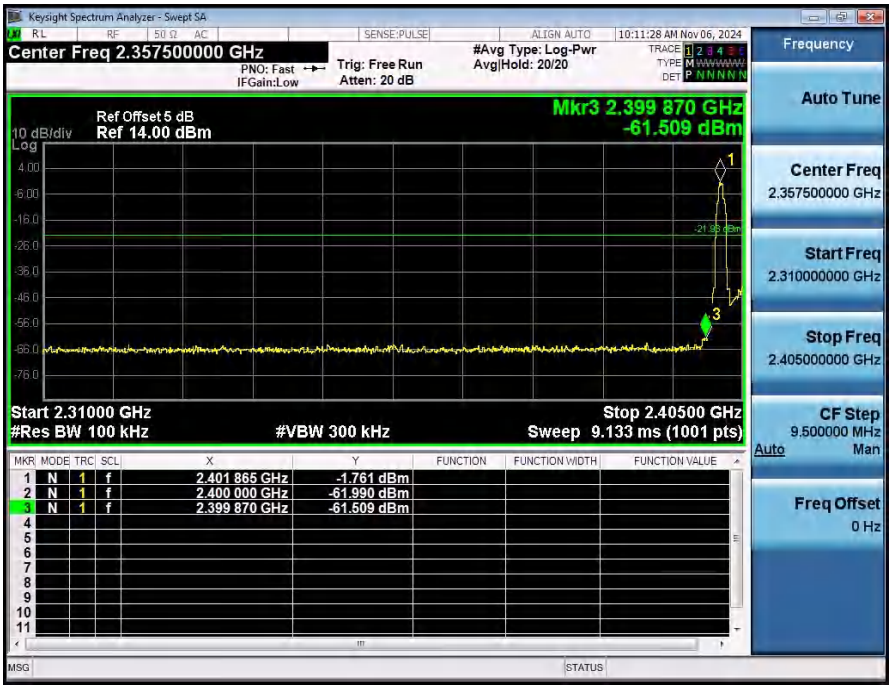


2_Band_Edge_(Hopping)_NVNT_ANT1_1-DH5_Hopping



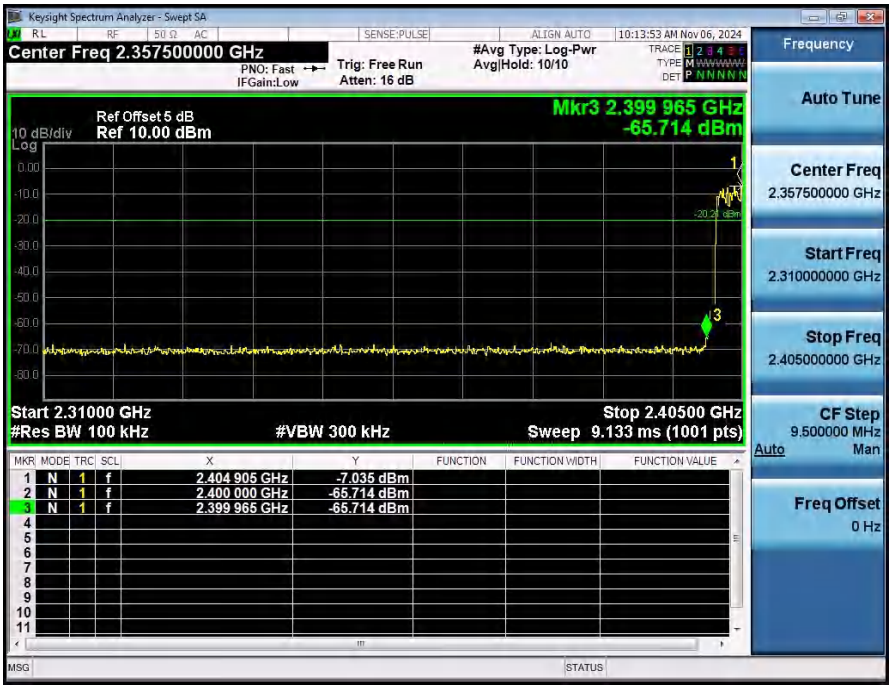
1_Reference_Level_NVNT_ANT1_2-DH5_2402_00

2_Bandedge_NVNT_ANT1_2-DH5_2402_00



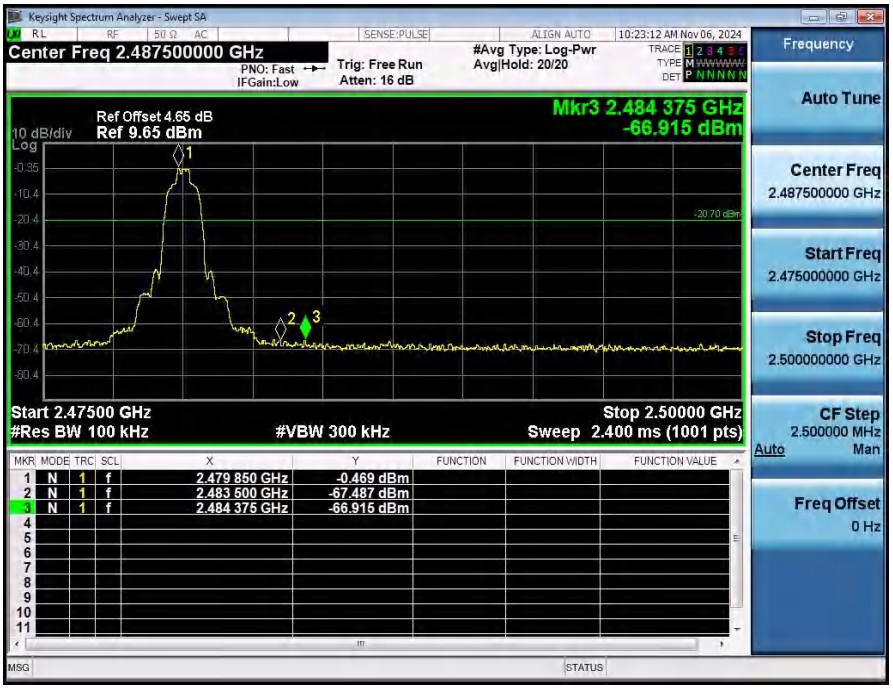
1_Reference_Level_Hopping_NVNT_ANT1_2-DH5_Hopping

2_Band_Edge_(Hopping)_NVNT_ANT1_2-DH5_Hopping

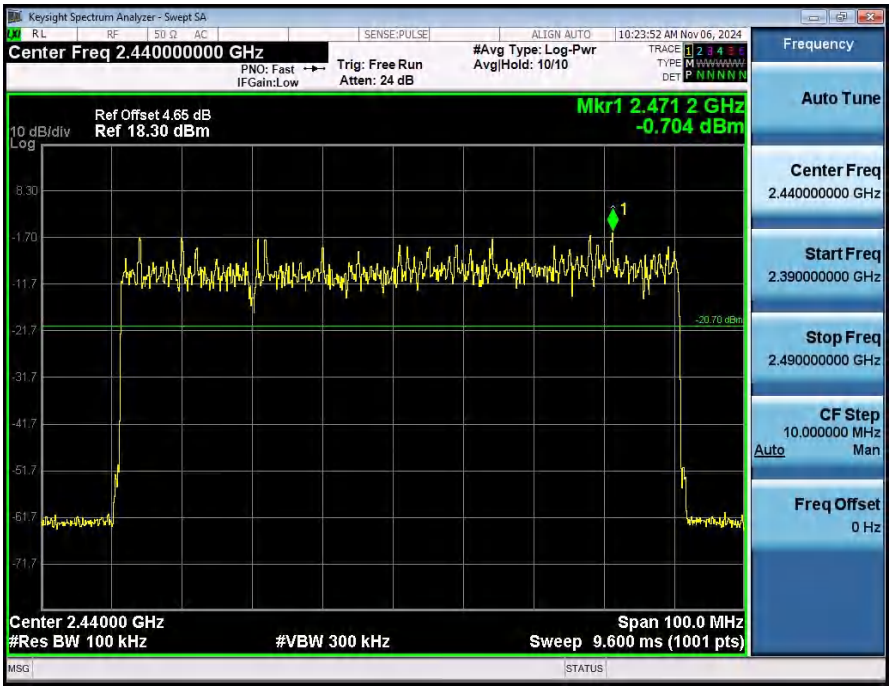


1_Reference_Level_NVNT_ANT1_2-DH5_2480_00

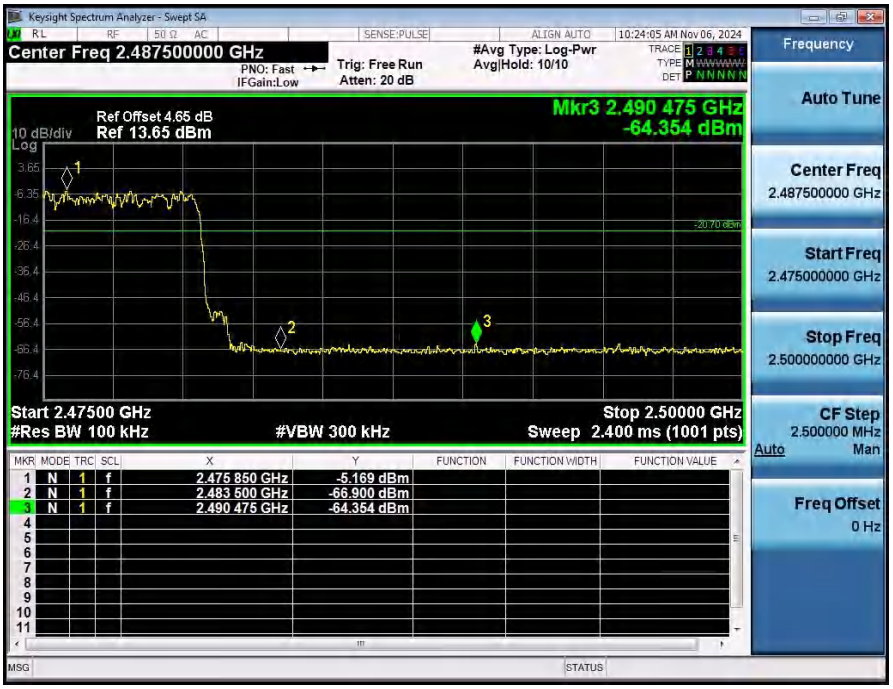
2_Bandedge_NVNT_ANT1_2-DH5_2480_00



1_Reference_Level_Hopping_NVNT_ANT1_2-DH5_Hopping

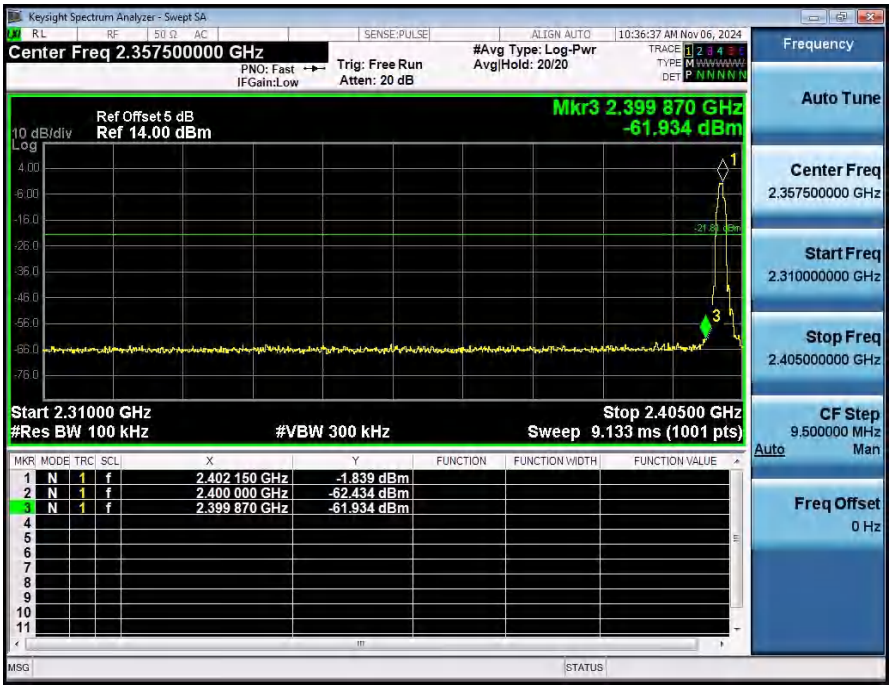


2_Band_Edge_(Hopping)_NVNT_ANT1_2-DH5_Hopping

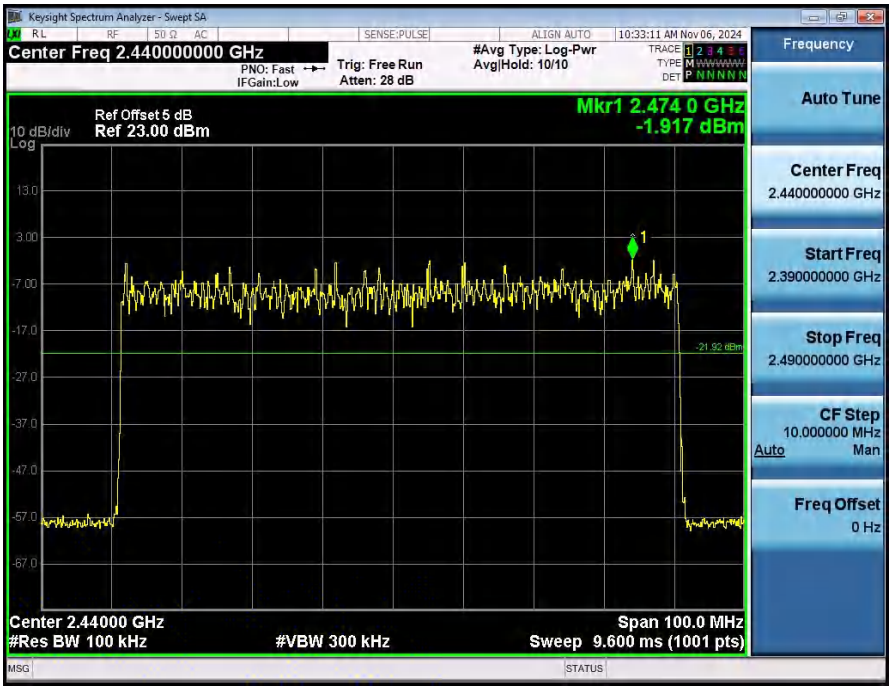


1_Reference_Level_NVNT_ANT1_3-DH5_2402_00

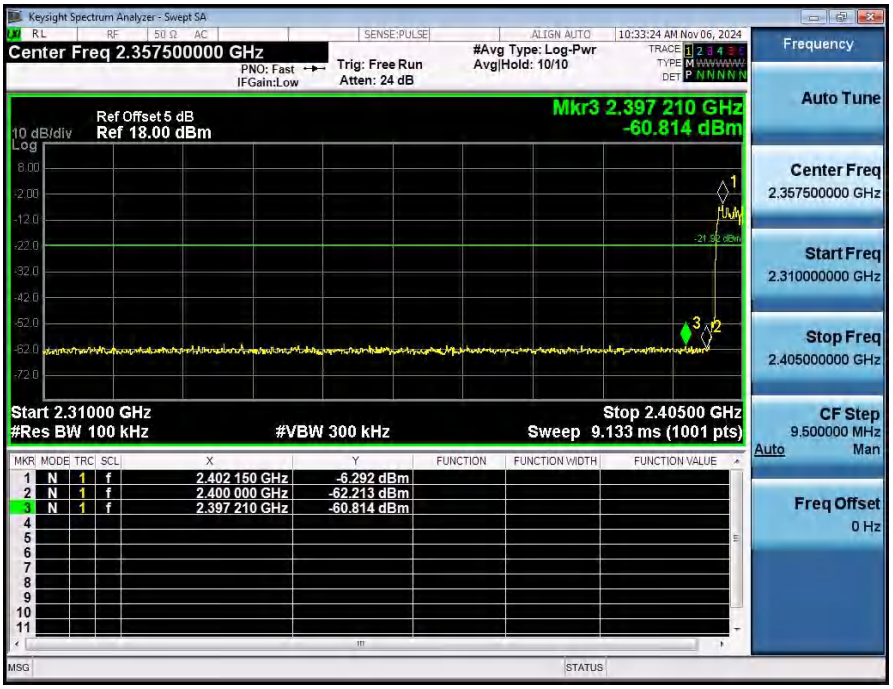
2_Bandedge_NVNT_ANT1_3-DH5_2402_00



1_Reference_Level_Hopping_NVNT_ANT1_3-DH5_Hopping

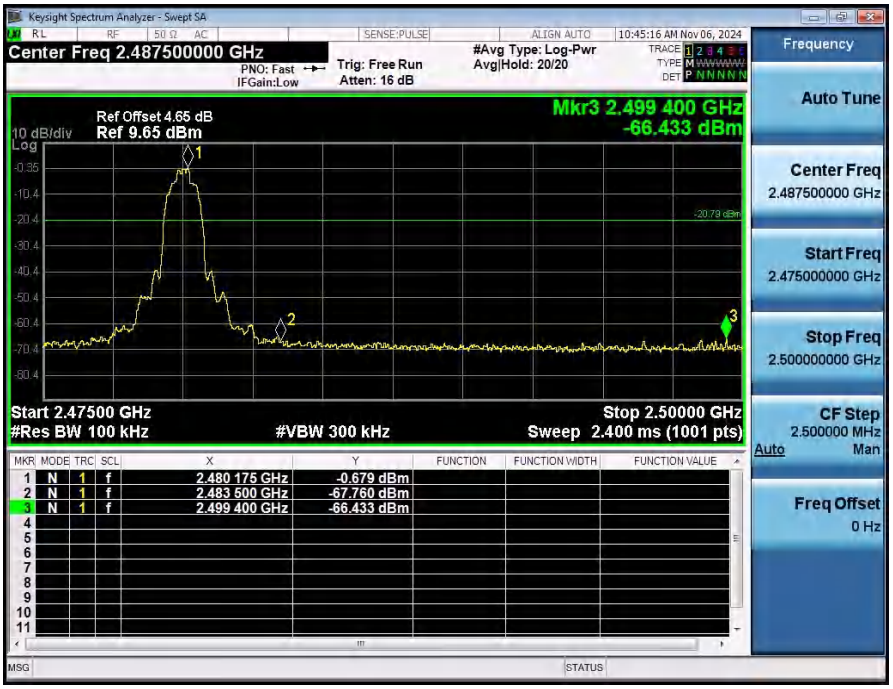


2_Band_Edge_(Hopping)_NVNT_ANT1_3-DH5_Hopping

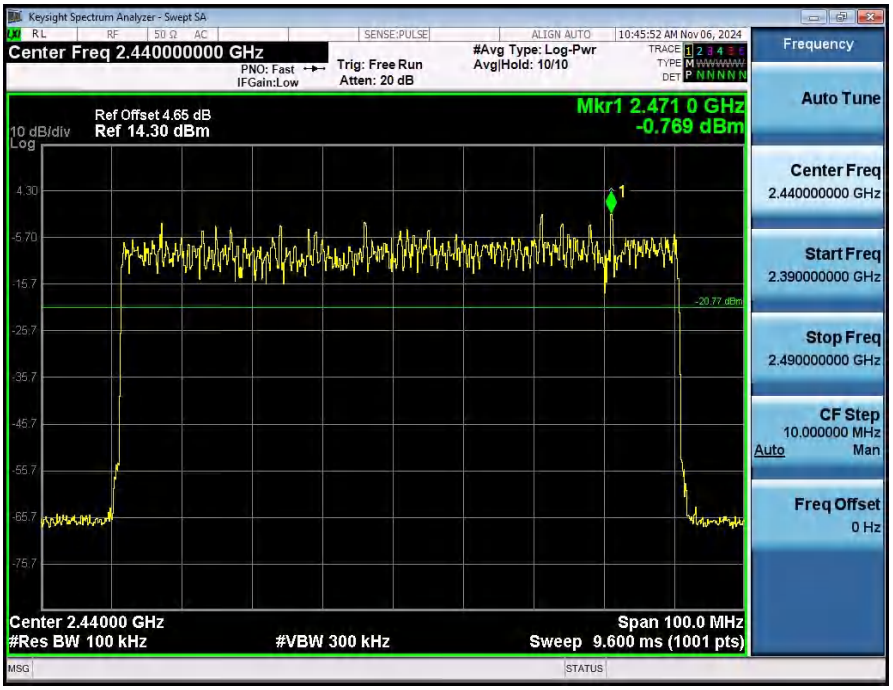


1_Reference_Level_NVNT_ANT1_3-DH5_2480_00

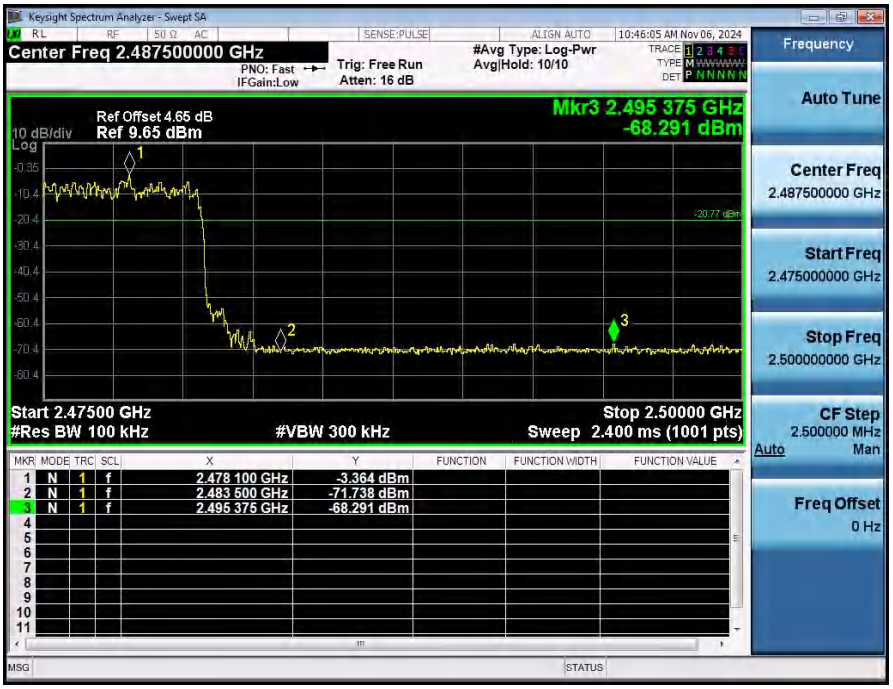
2_Bandedge_NVNT_ANT1_3-DH5_2480_00



1_Reference_Level_Hopping_NVNT_ANT1_3-DH5_Hopping



2_Band_Edge_(Hopping)_NVNT_ANT1_3-DH5_Hopping


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.487500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 16 dB
#Avg Type: Log-Pwr
Avg|Hold: 10/10
10:46:05 AM Nov 06, 2024
Ref Offset 4.65 dB
10 dB/div
Log
Ref 9.65 dBm
Mkr3 2.495 375 GHz
-68.291 dBm
-20.77 dBm
Start 2.47500 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.50000 GHz
Sweep 2.400 ms (1001 pts)
1 N 1 f 2.478 100 GHz -3.364 dBm
2 N 1 f 2.483 500 GHz -71.738 dBm
3 N 1 f 2.495 375 GHz -68.291 dBm
Frequency
Auto Tune
Center Freq
2.487500000 GHz
Start Freq
2.475000000 GHz
Stop Freq
2.500000000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz

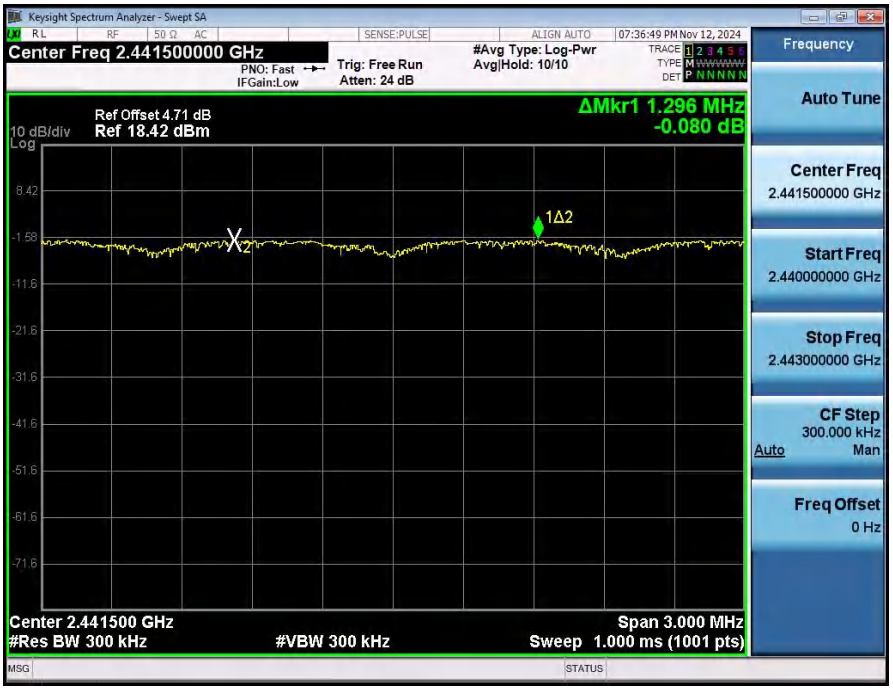
Appendix G: Carrier Frequencies Separation (Hopping)

Condition	Antenna	Modulation	Frequency(MHz)	Hopping NO.0 (MHz)	Hopping NO.1 (MHz)	Carrier Frequencies Separation(MHz)	Limit(MHz)	Result
NVNT	ANT1	1-DH5	2441.00	2440.942	2441.962	1.02	0.845	Pass
NVNT	ANT1	2-DH5	2441.00	2440.852	2441.857	1.00	0.845	Pass
NVNT	ANT1	3-DH5	2441.00	2440.822	2442.118	1.30	0.862	Pass

Carrier_Frequencies_Separation_(Hopping)_NVNT_ANT1_1-DH5_Hopping

Carrier_Frequencies_Separation_(Hopping)_NVNT_ANT1_2-DH5_Hopping

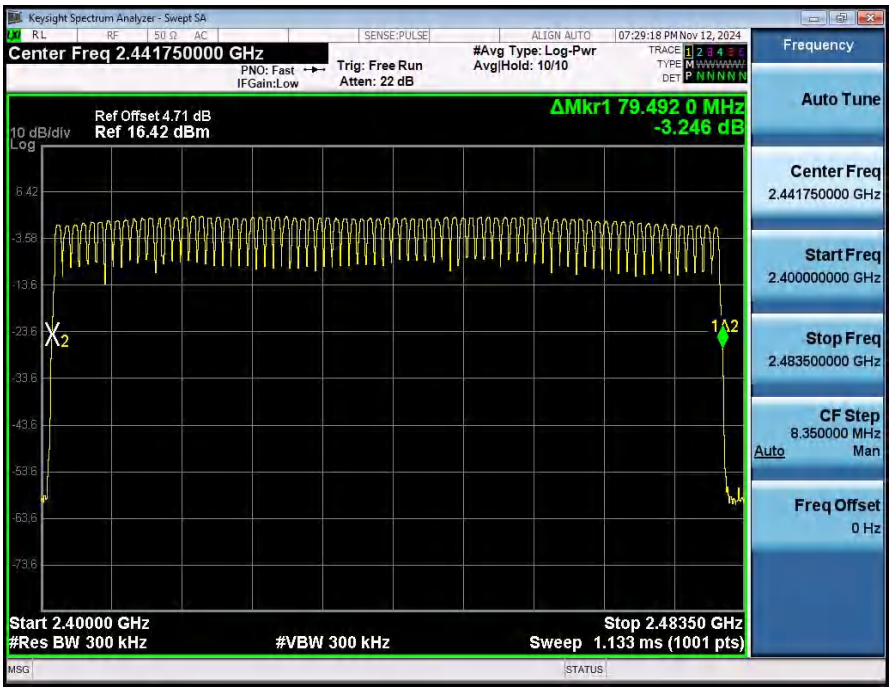
Carrier_Frequencies_Separation_(Hopping)_NVNT_ANT1_3-DH5_Hopping



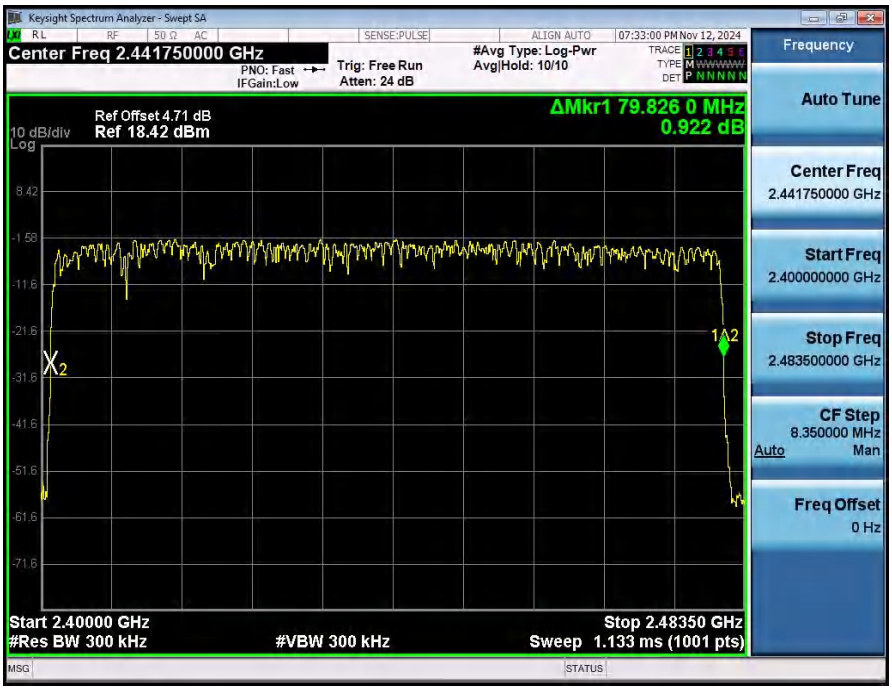
Appendix H: Number of Hopping Channel (Hopping)

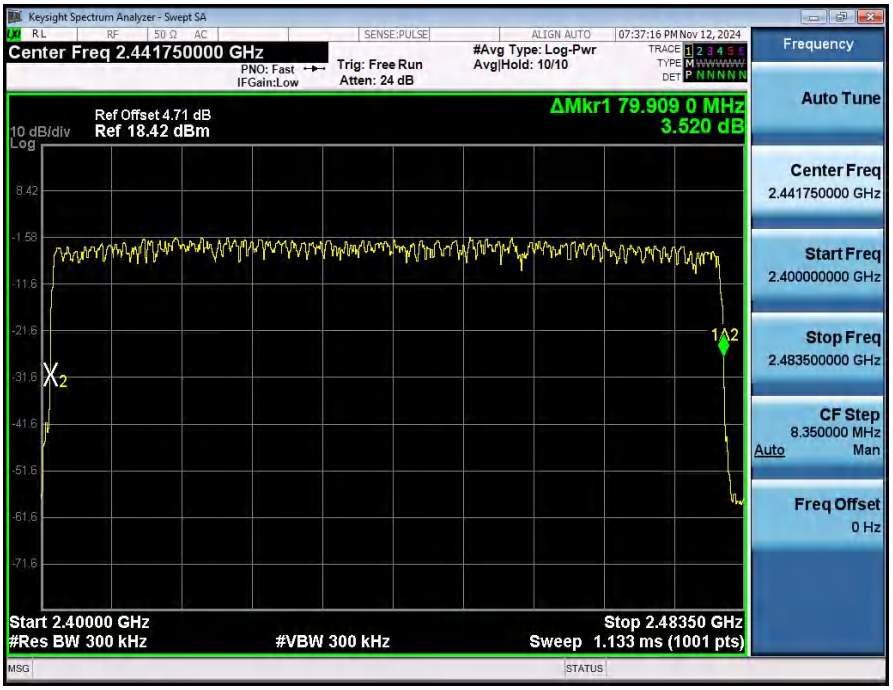
Condition	Antenna	Modulation	Hopping Num	Limit	Result
NVNT	ANT1	1-DH5	79	15	Pass
NVNT	ANT1	2-DH5	79	15	Pass
NVNT	ANT1	3-DH5	79	15	Pass

Number_of_Hopping_Channel_(Hopping)_NVNT_ANT1_1-DH5_Hopping



Number_of_Hopping_Channel_(Hopping)_NVNT_ANT1_2-DH5_Hopping

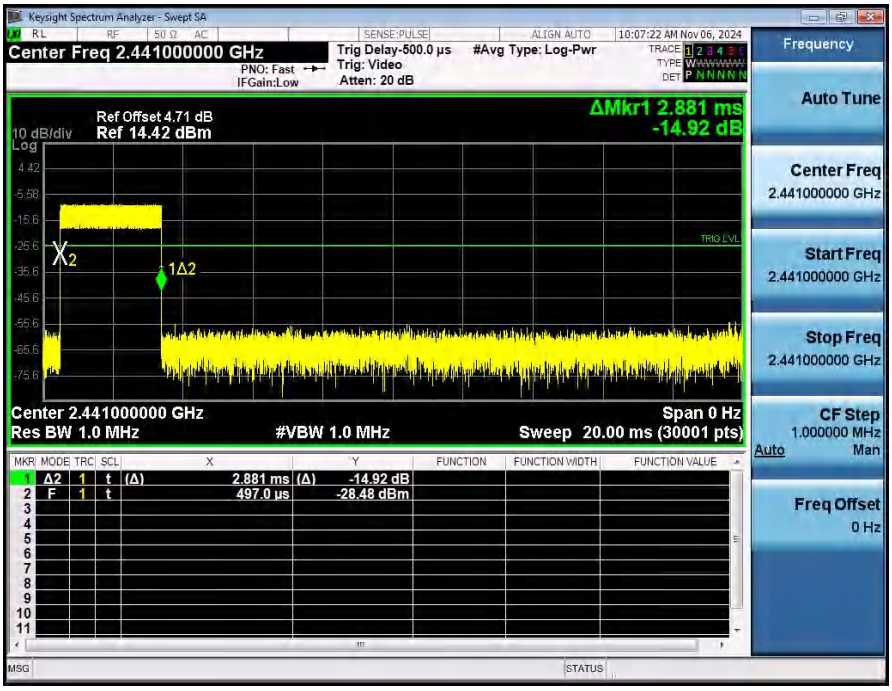


Number_of_Hopping_Channel_(Hopping)_NVNT_ANT1_3-DH5_Hopping


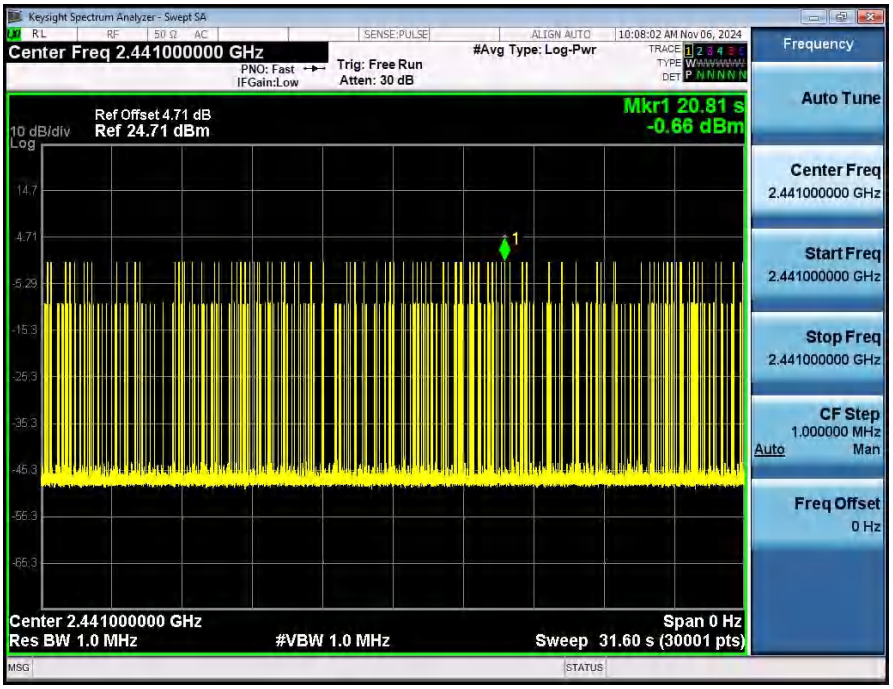
Appendix I: Dwell Time (Hopping)

Condition	Antenna	Packet Type	Pulse Time(ms)	Hops	Dwell Time(ms)	Limit(s)	Result
NVNT	ANT1	1-DH5	2.881	111.00	319.791	0.40	Pass
NVNT	ANT1	2-DH5	2.884	119.00	343.196	0.40	Pass
NVNT	ANT1	3-DH5	2.886	116.00	334.776	0.40	Pass
NVNT	ANT1	1-DH1	0.376	320.00	120.320	0.40	Pass
NVNT	ANT1	1-DH3	1.632	1.00	1.632	0.40	Pass
NVNT	ANT1	2-DH1	0.384	1.00	0.384	0.40	Pass
NVNT	ANT1	2-DH3	1.636	162.00	265.032	0.40	Pass
NVNT	ANT1	3-DH1	0.384	1.00	0.384	0.40	Pass
NVNT	ANT1	3-DH3	1.635	160.00	261.600	0.40	Pass

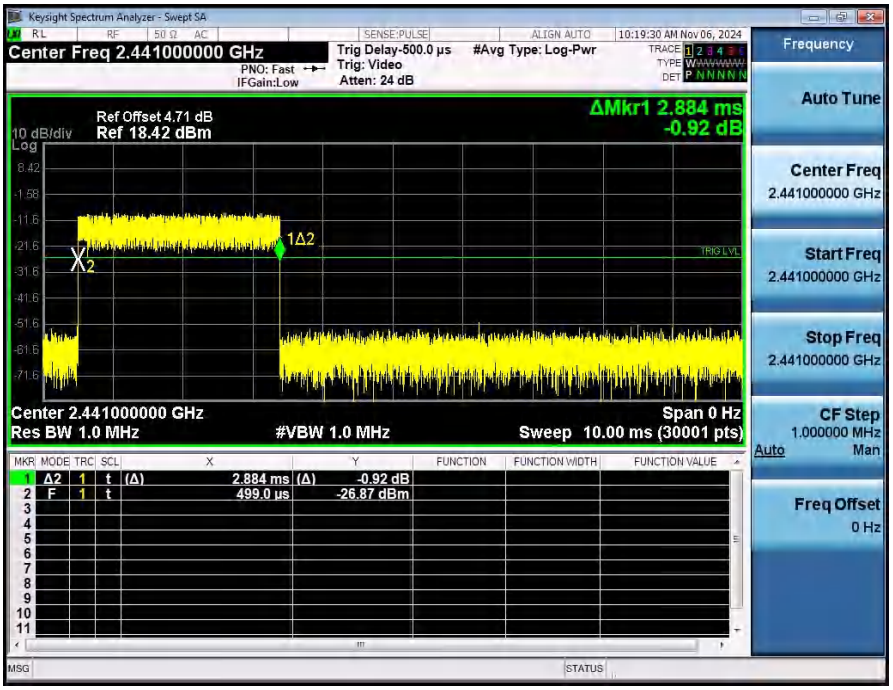
Dwell_Time_(Hopping)_NVNT_ANT1_1-DH5_2441_00_One_Burst_Time



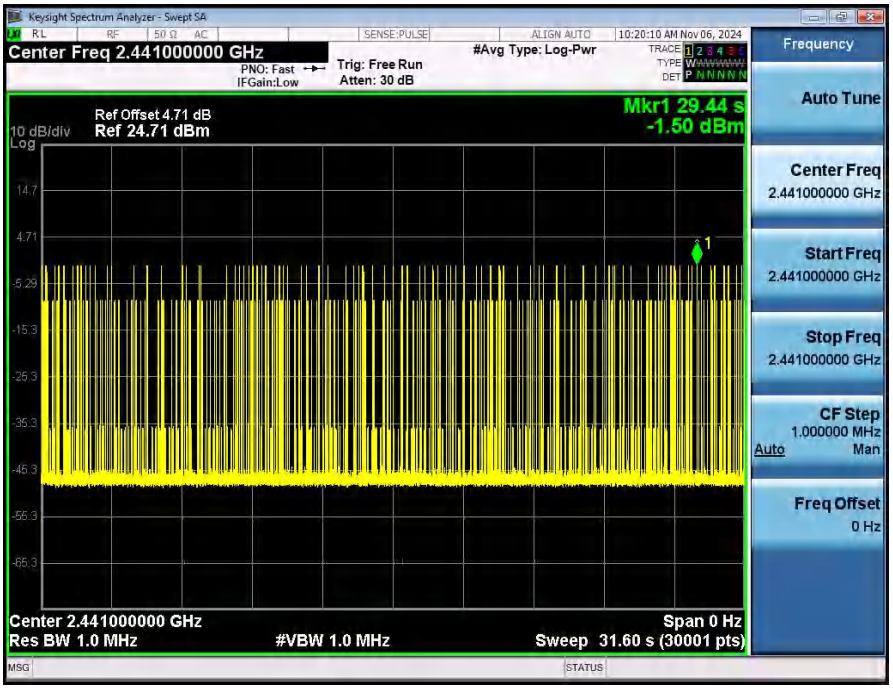
Dwell_Time_(Hopping)_NVNT_ANT1_1-DH5_2441_00_Accumulated



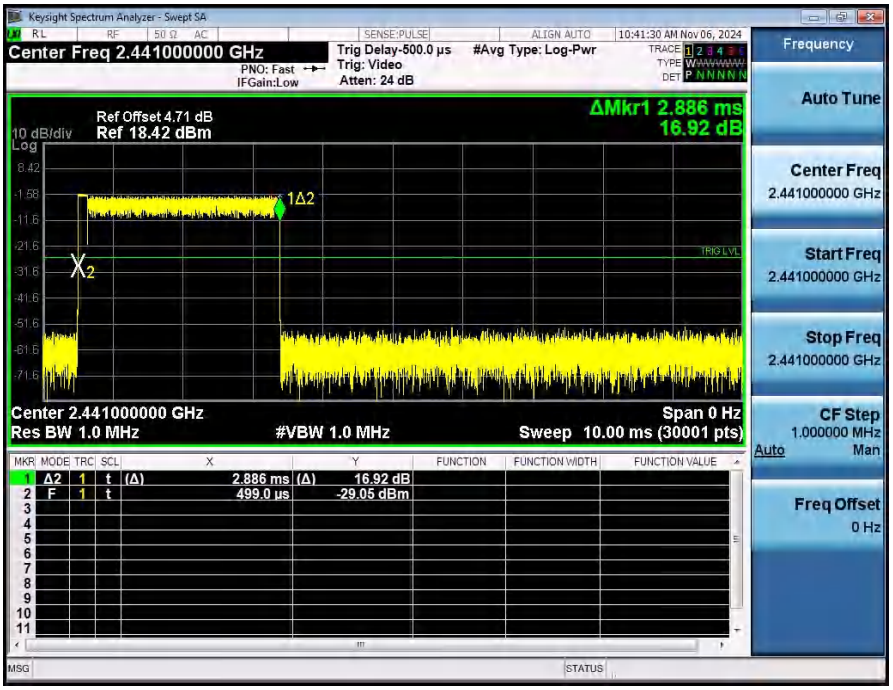
Dwell_Time_(Hopping)_NVNT_ANT1_2-DH5_2441_00_One_Burst_Time



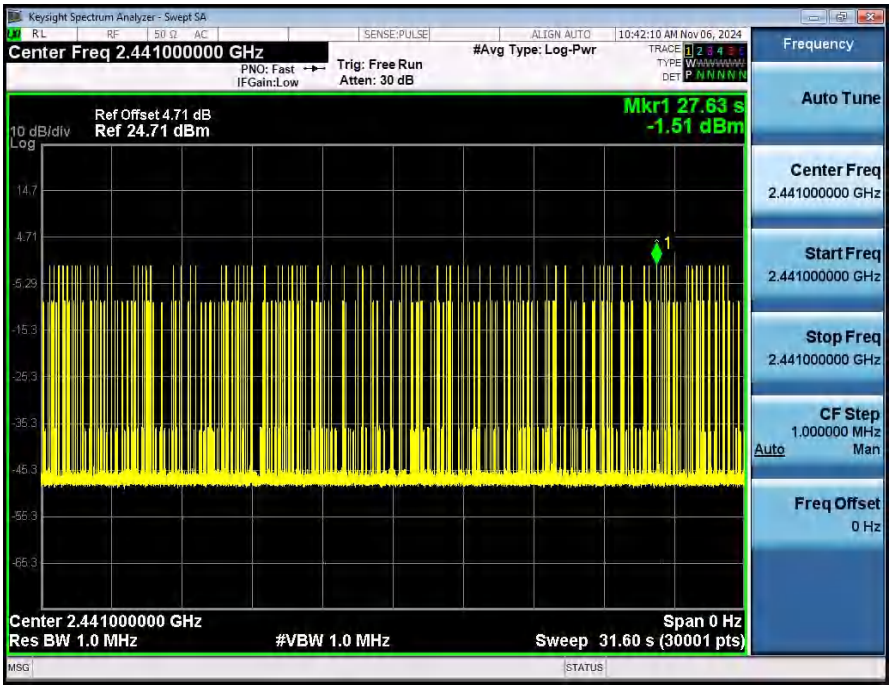
Dwell_Time_(Hopping)_NVNT_ANT1_2-DH5_2441_00_Accumulated



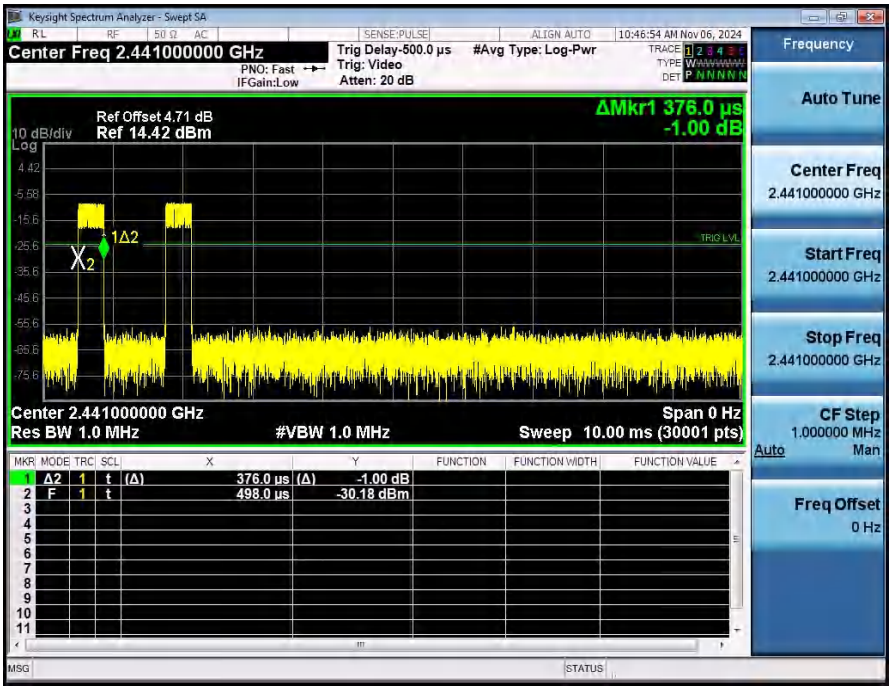
Dwell_Time_(Hopping)_NVNT_ANT1_3-DH5_2441_00_One_Burst_Time



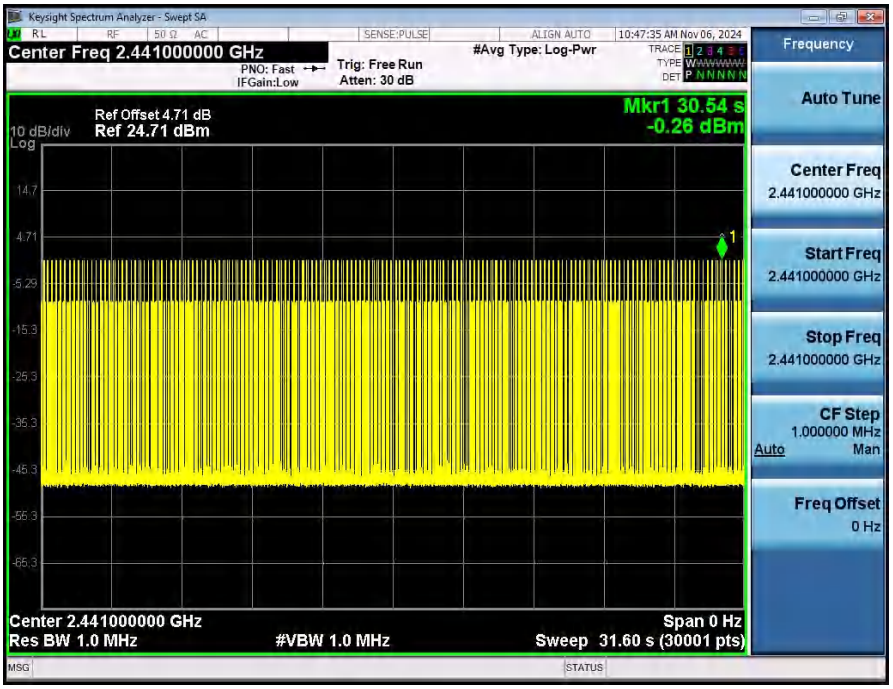
Dwell_Time_(Hopping)_NVNT_ANT1_3-DH5_2441_00_Accumulated



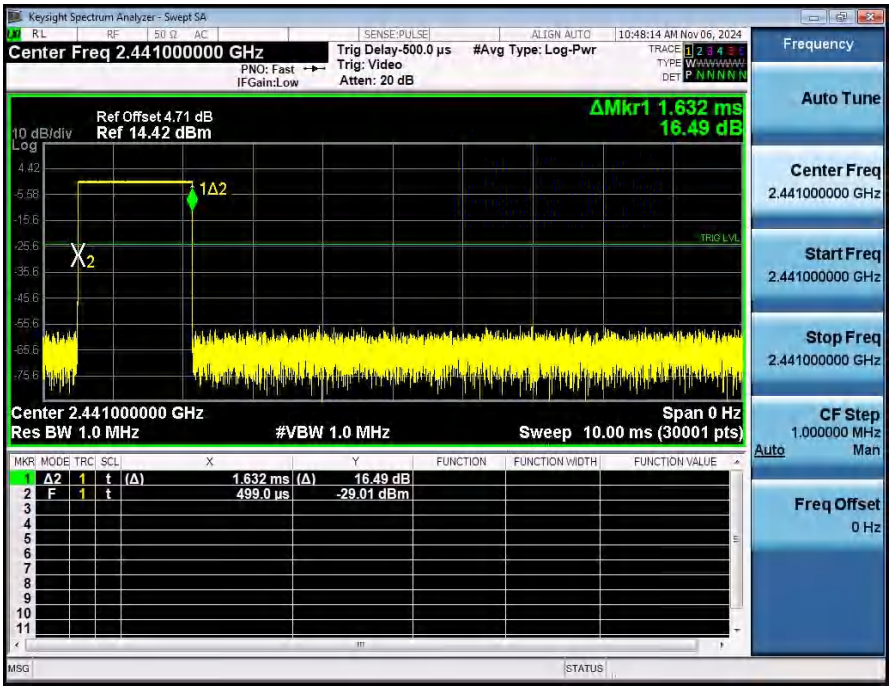
Dwell_Time_(Hopping)_NVNT_ANT1_1-DH1_2441_00_One_Burst_Time



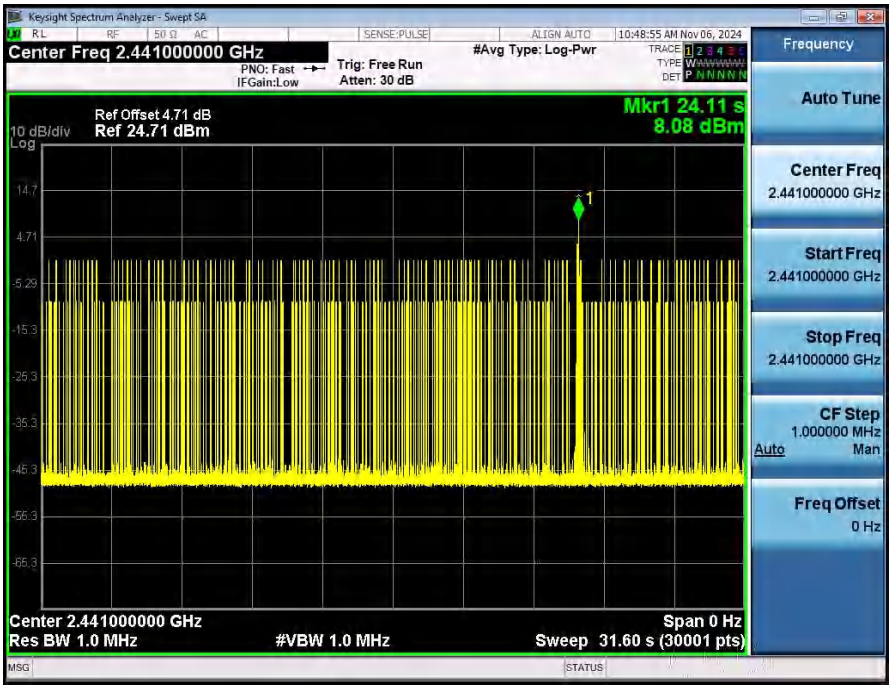
Dwell_Time_(Hopping)_NVNT_ANT1_1-DH1_2441_00_Accumulated



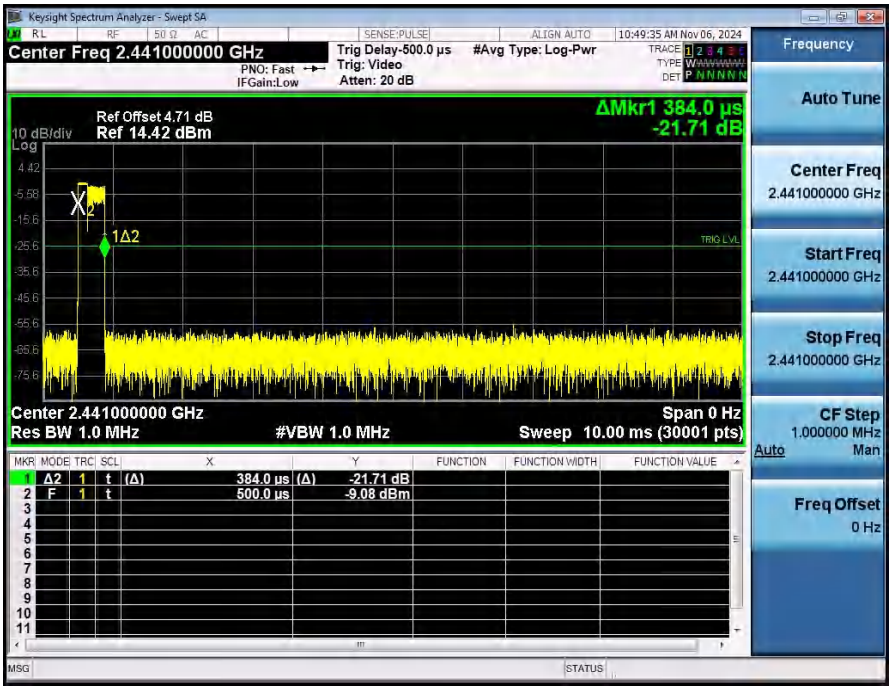
Dwell_Time_(Hopping)_NVNT_ANT1_1-DH3_2441_00_One_Burst_Time



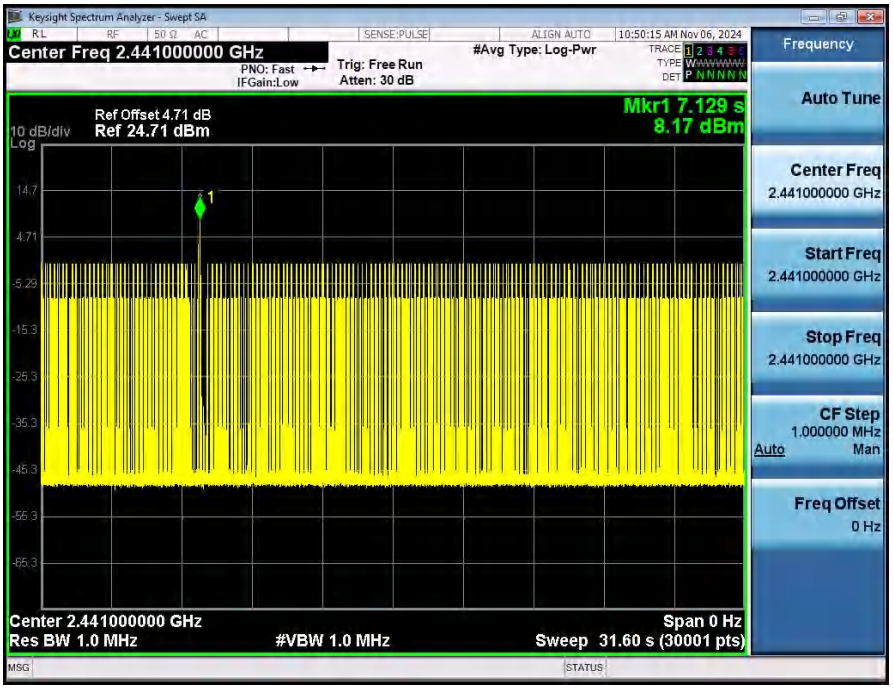
Dwell_Time_(Hopping)_NVNT_ANT1_1-DH3_2441_00_Accumulated



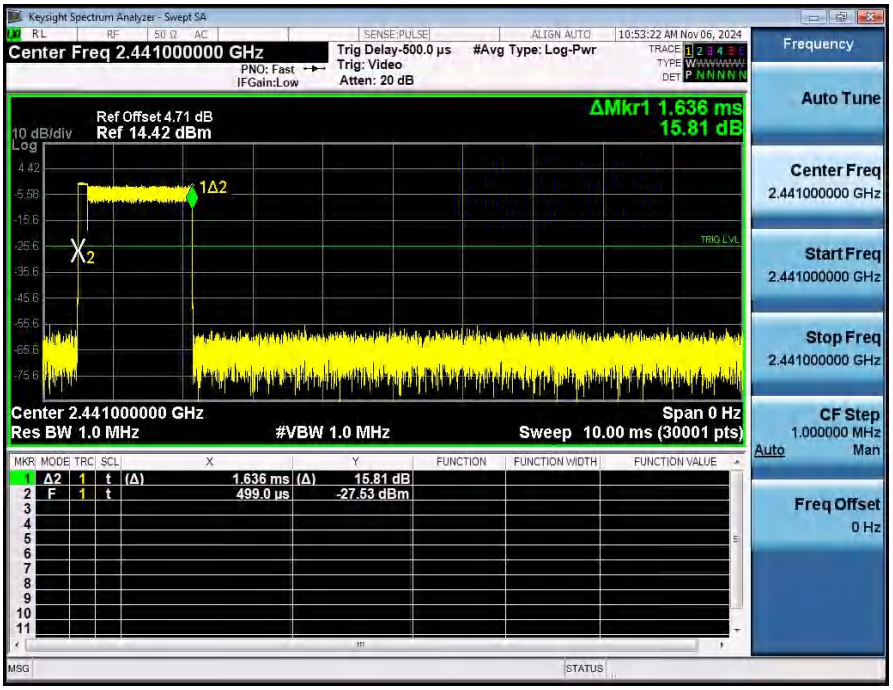
Dwell_Time_(Hopping)_NVNT_ANT1_2-DH1_2441_00_One_Burst_Time



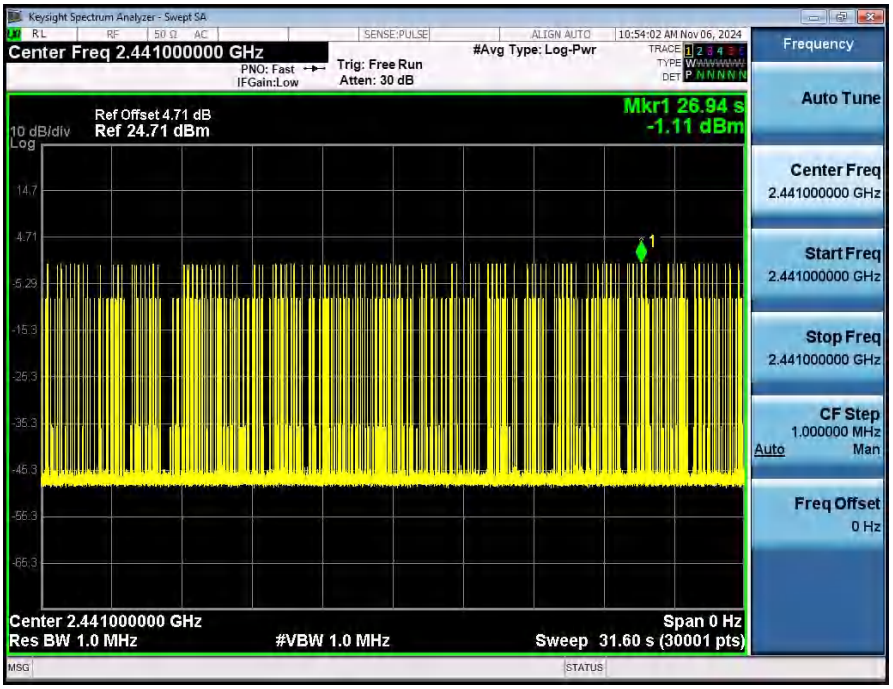
Dwell_Time_(Hopping)_NVNT_ANT1_2-DH1_2441_00_Accumulated



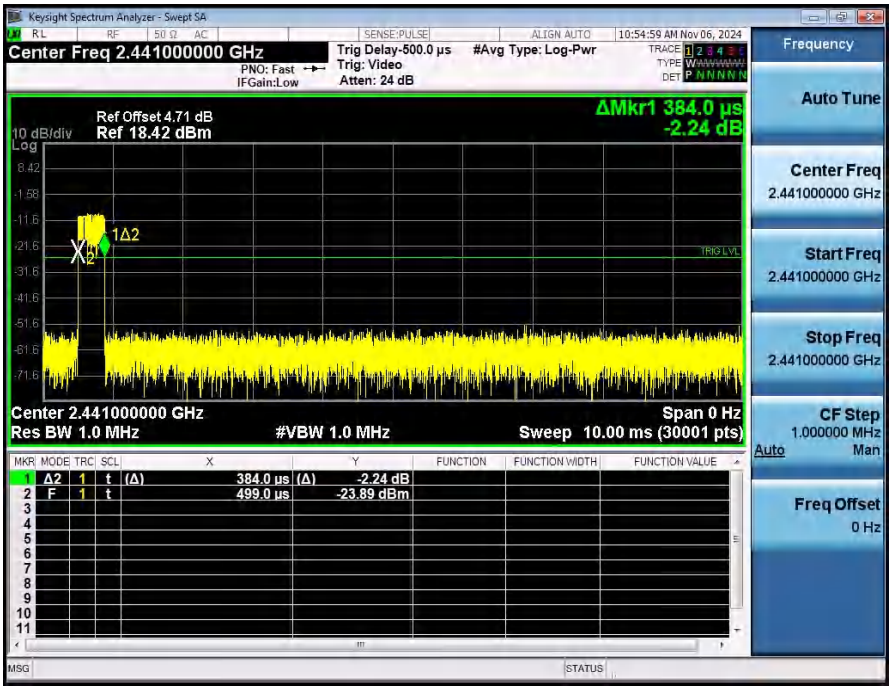
Dwell_Time_(Hopping)_NVNT_ANT1_2-DH3_2441_00_One_Burst_Time



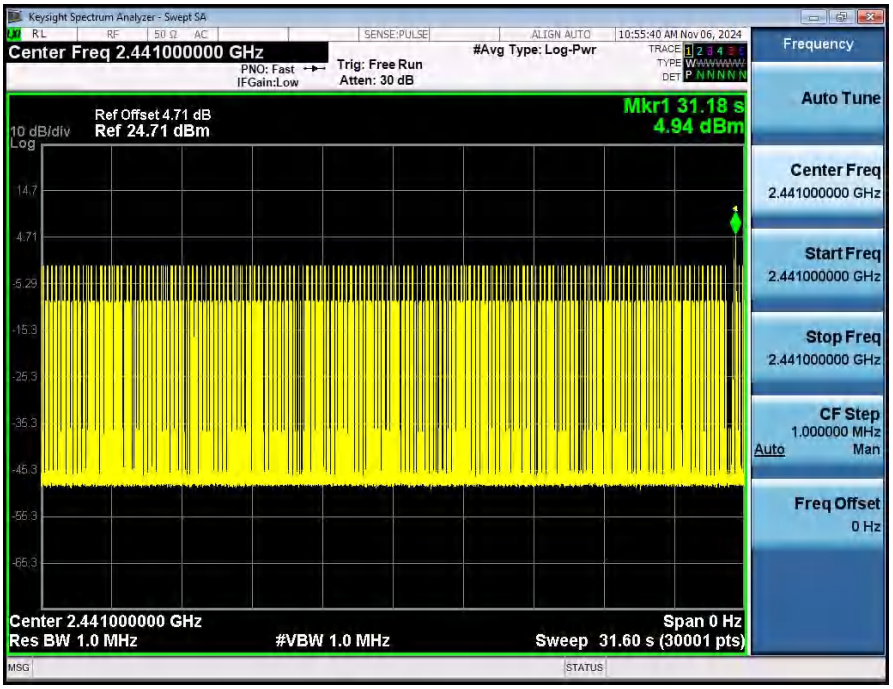
Dwell_Time_(Hopping)_NVNT_ANT1_2-DH3_2441_00_Accumulated



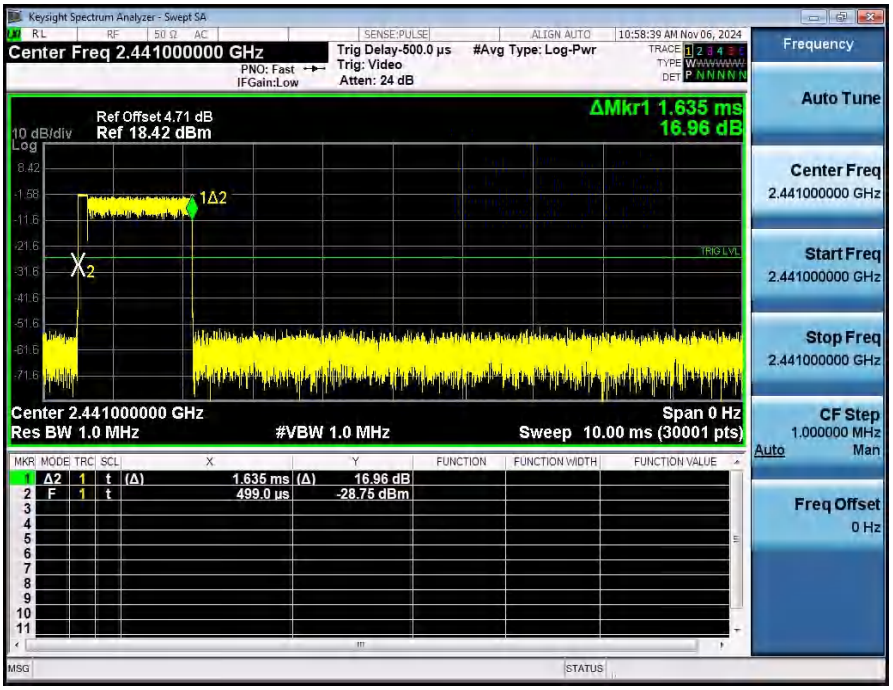
Dwell_Time_(Hopping)_NVNT_ANT1_3-DH1_2441_00_One_Burst_Time



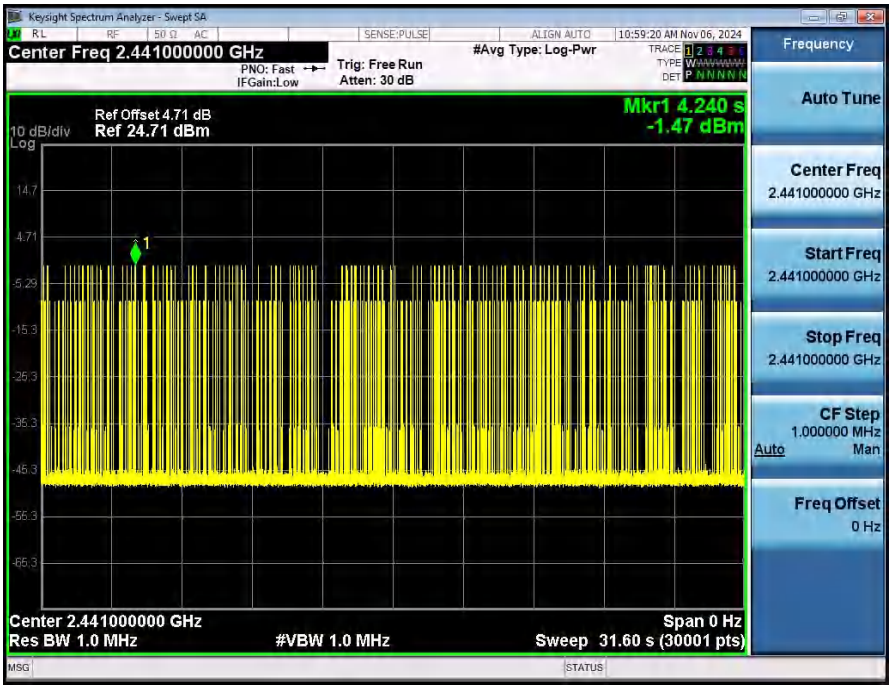
Dwell_Time_(Hopping)_NVNT_ANT1_3-DH1_2441_00_Accumulated



Dwell_Time_(Hopping)_NVNT_ANT1_3-DH3_2441_00_One_Burst_Time



Dwell_Time_(Hopping)_NVNT_ANT1_3-DH3_2441_00_Accumulated


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
#Avg Type: Log-Pwr
10:59:20 AM Nov 06, 2024
Ref Offset 4.71 dB
10 dB/div
Log
Ref 24.71 dBm
Mkr1 4.240 s
-1.47 dBm
14.7
4.71
-5.29
-15.3
-25.3
-35.3
-45.3
-55.3
-65.3
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
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

---END---