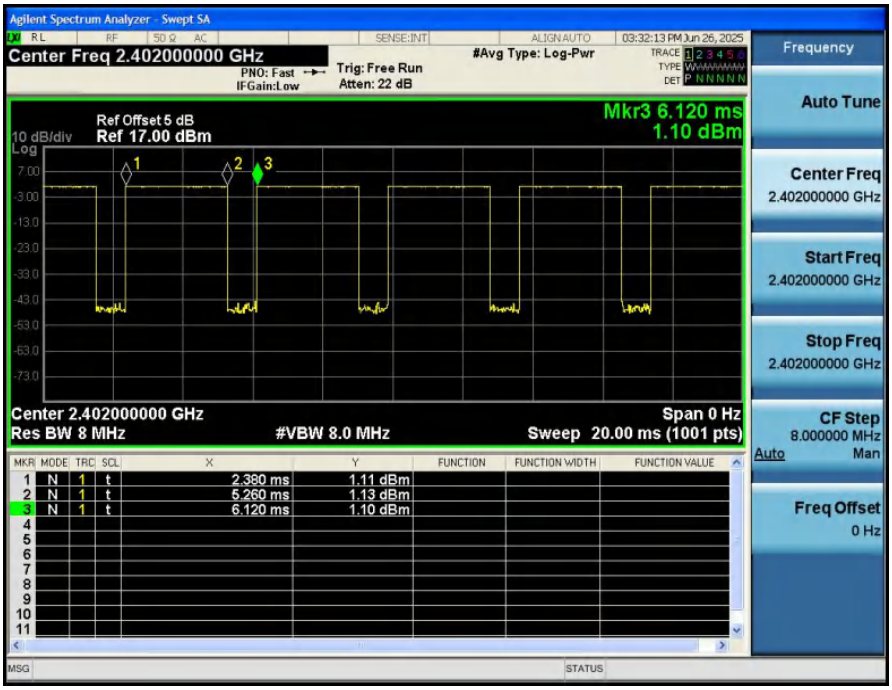
Appendix Test Data

Report No.:	1812C50307612501	Test Sample No.:	1-2-2
Start Test Date:	2025-06-24	Finish Test Date:	2025-06-26
Test Engineer:	Qiangfei Yang	Auditor:	Justin Feng
Temperature:	22.4℃	Relative Humidity:	57%
Pressure:	101kPa		

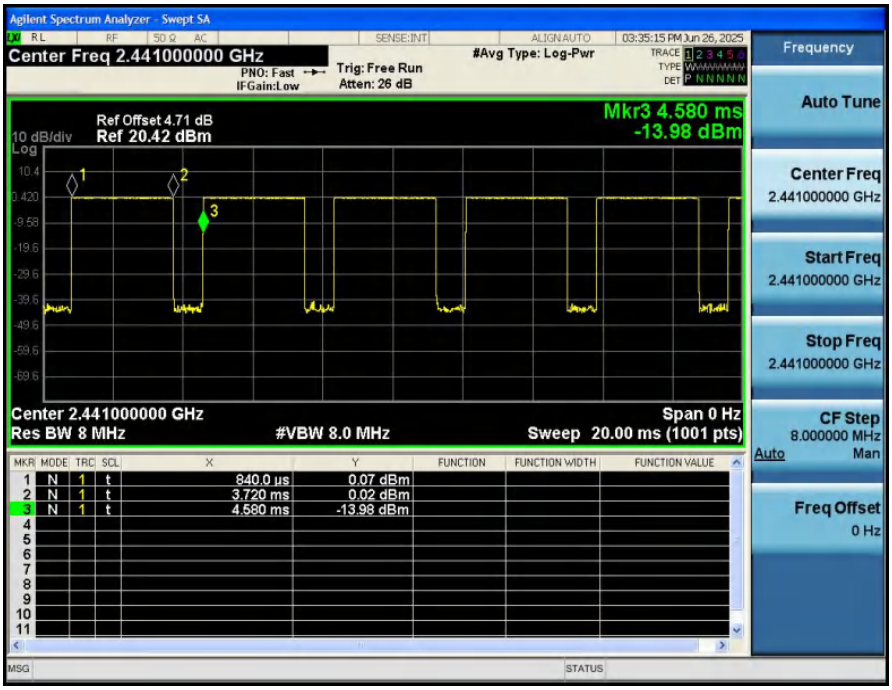
Appendix A: Duty Cycle

Condition	Antenna	Rate	Frequency (MHz)	Dutycycle(%)	Duty_factor
NVNT	ANT1	1-DH5	2402.00	77.54	1.10
NVNT	ANT1	1-DH5	2441.00	77.01	1.13
NVNT	ANT1	1-DH5	2480.00	77.66	1.10
NVNT	ANT1	2-DH5	2402.00	77.66	1.10
NVNT	ANT1	2-DH5	2441.00	77.66	1.10
NVNT	ANT1	2-DH5	2480.00	77.66	1.10
NVNT	ANT1	3-DH5	2402.00	77.54	1.10
NVNT	ANT1	3-DH5	2441.00	77.54	1.10
NVNT	ANT1	3-DH5	2480.00	77.66	1.10

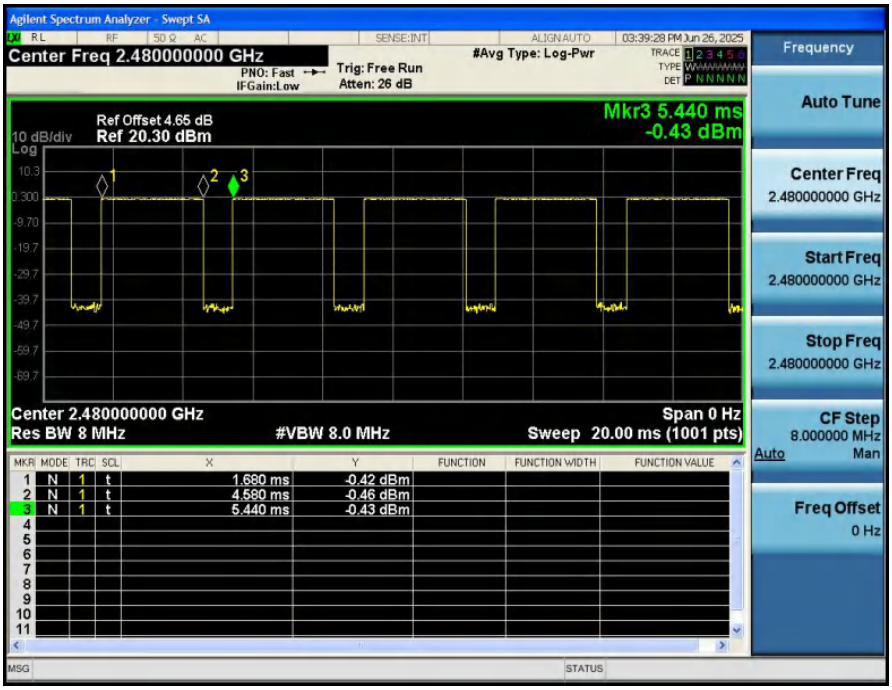
Duty_Cycle_NVNT_ANT1_1-DH5_2402



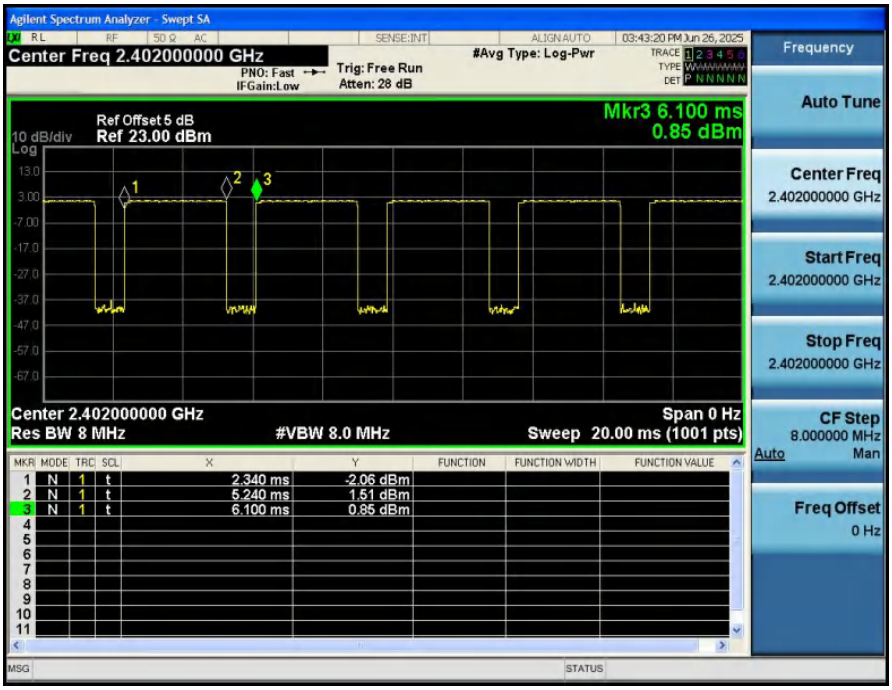
Duty_Cycle_NVNT_ANT1_1-DH5_2441



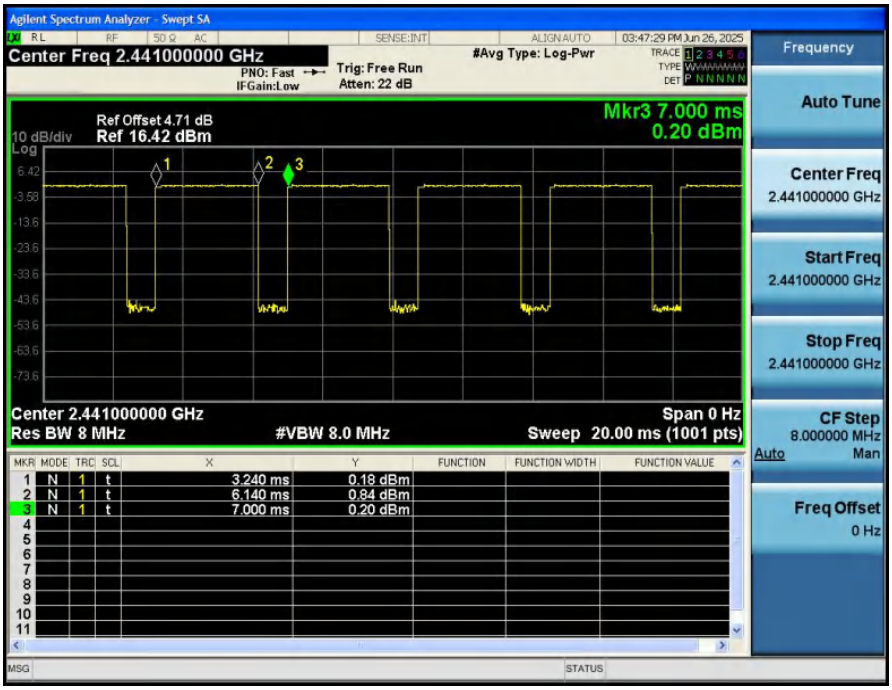
Duty_Cycle_NVNT_ANT1_1-DH5_2480



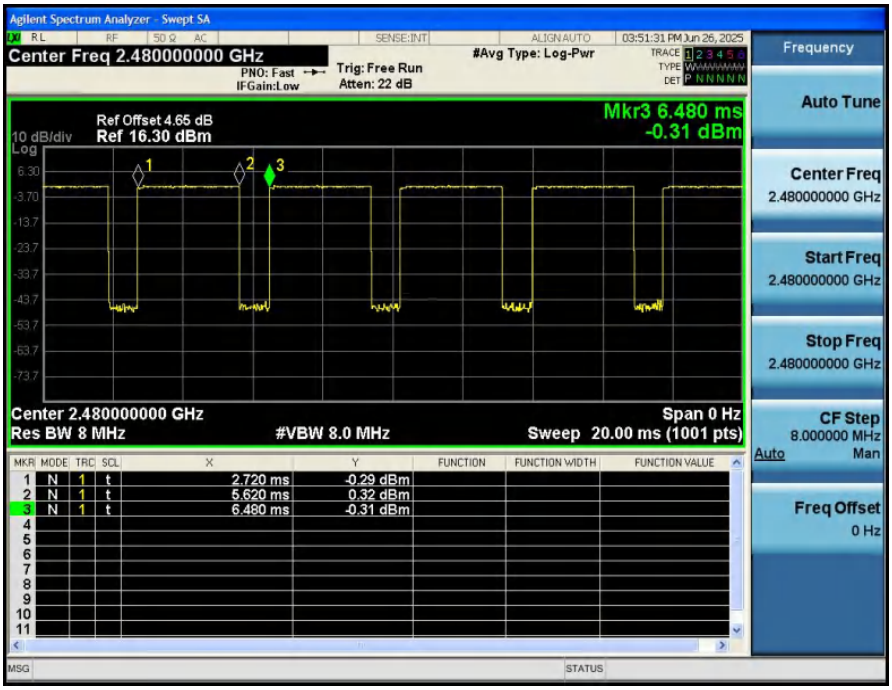
Duty_Cycle_NVNT_ANT1_2-DH5_2402



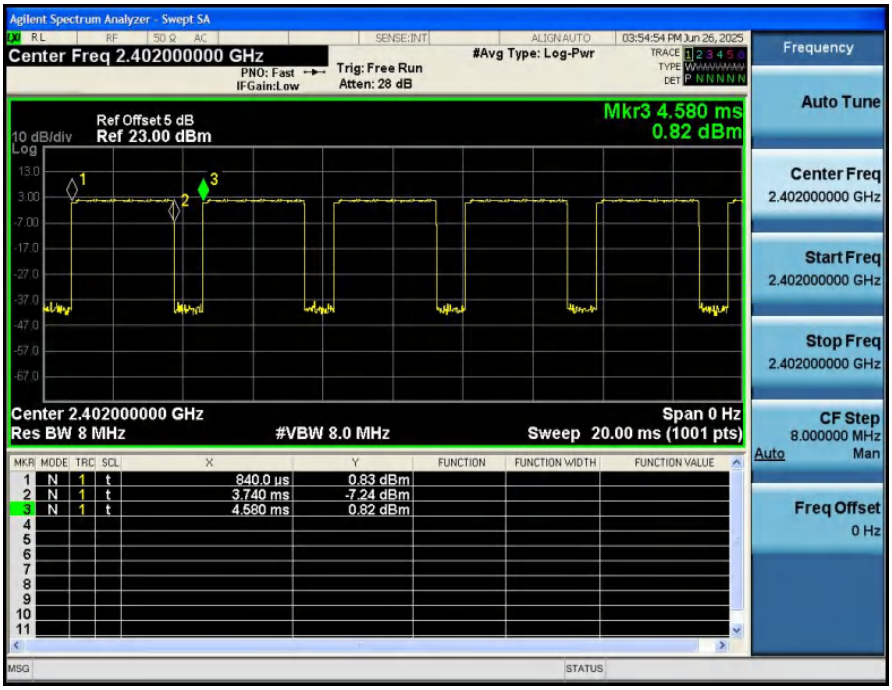
Duty_Cycle_NVNT_ANT1_2-DH5_2441



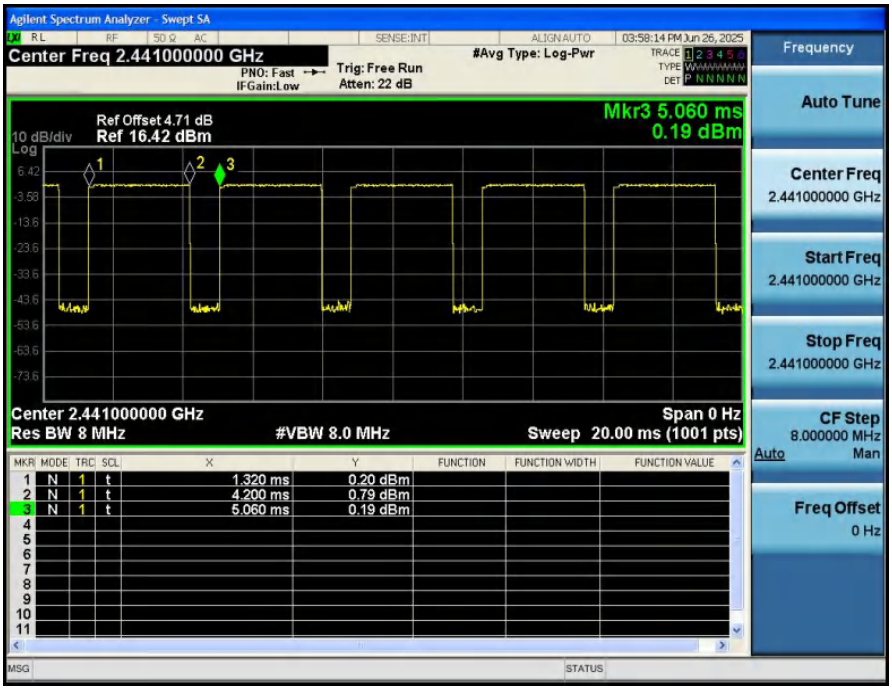
Duty_Cycle_NVNT_ANT1_2-DH5_2480



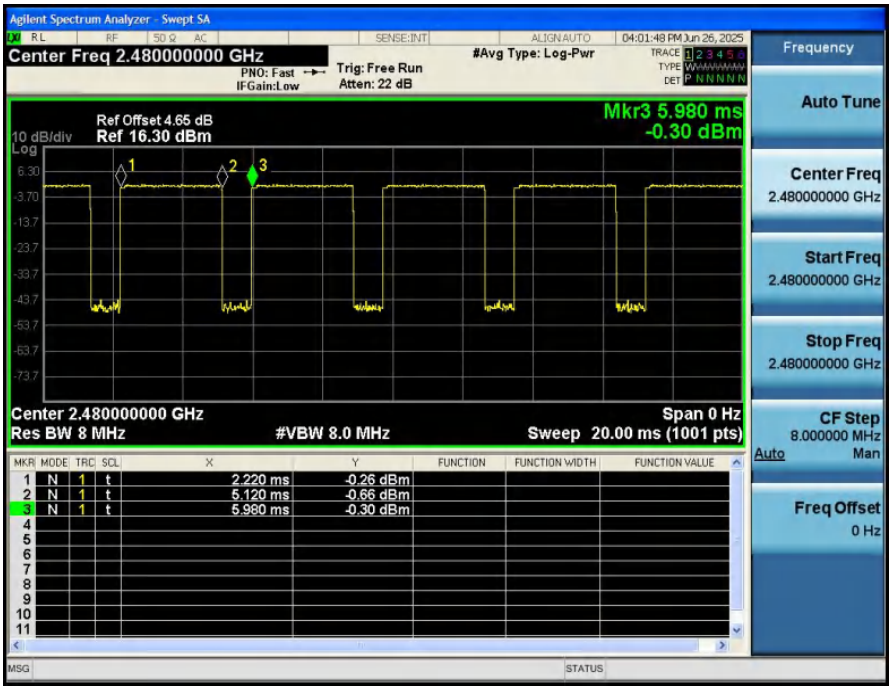
Duty_Cycle_NVNT_ANT1_3-DH5_2402



Duty_Cycle_NVNT_ANT1_3-DH5_2441



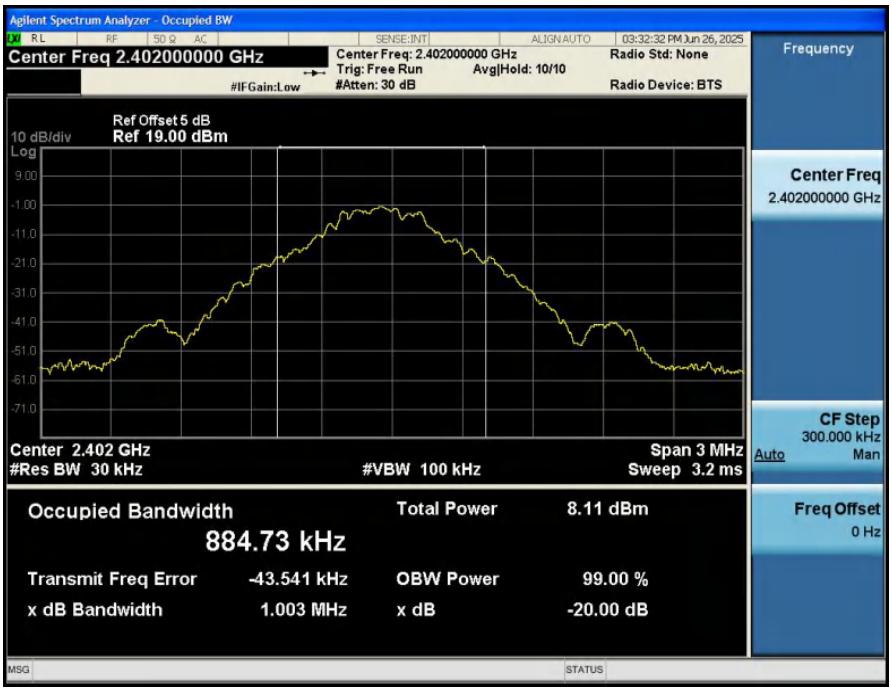
Duty_Cycle_NVNT_ANT1_3-DH5_2480


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 22 dB
#Avg Type: Log-Pwr
04:01:48 PM Jun 26, 2025
Ref Offset 4.65 dB
10 dB/div
Log
Ref 16.30 dBm
Mkr3 5.980 ms
-0.30 dBm
Center 2.480000000 GHz
Res BW 8 MHz
#VBW 8.0 MHz
Span 0 Hz
Sweep 20.00 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 t 2.220 ms -0.26 dBm
2 N 1 t 5.120 ms -0.66 dBm
3 N 1 t 5.980 ms -0.30 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
MSG
STATUS

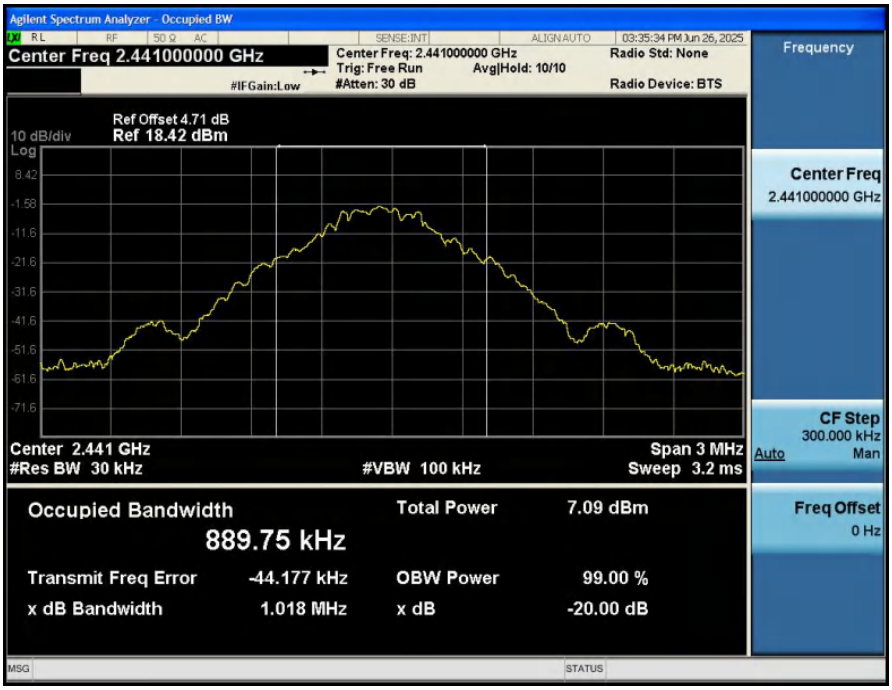
Appendix B: -20dB Bandwidth

Condition	Antenna	Modulation	Frequency (MHz)	-20dB BW(MHz)	if larger than CFS
NVNT	ANT1	1-DH5	2402.00	1.003	Yes
NVNT	ANT1	1-DH5	2441.00	1.018	Yes
NVNT	ANT1	1-DH5	2480.00	0.996	No
NVNT	ANT1	2-DH5	2402.00	1.314	Yes
NVNT	ANT1	2-DH5	2441.00	1.288	Yes
NVNT	ANT1	2-DH5	2480.00	1.285	Yes
NVNT	ANT1	3-DH5	2402.00	1.295	Yes
NVNT	ANT1	3-DH5	2441.00	1.301	Yes
NVNT	ANT1	3-DH5	2480.00	1.303	Yes

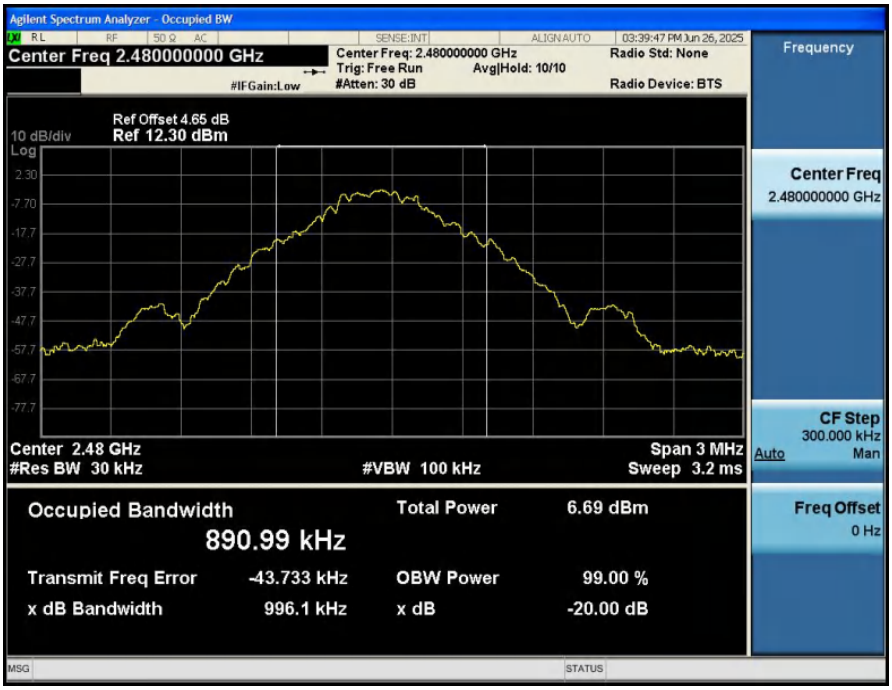
-20dB_Bandwidth_NVNT_ANT1_1-DH5_2402_00



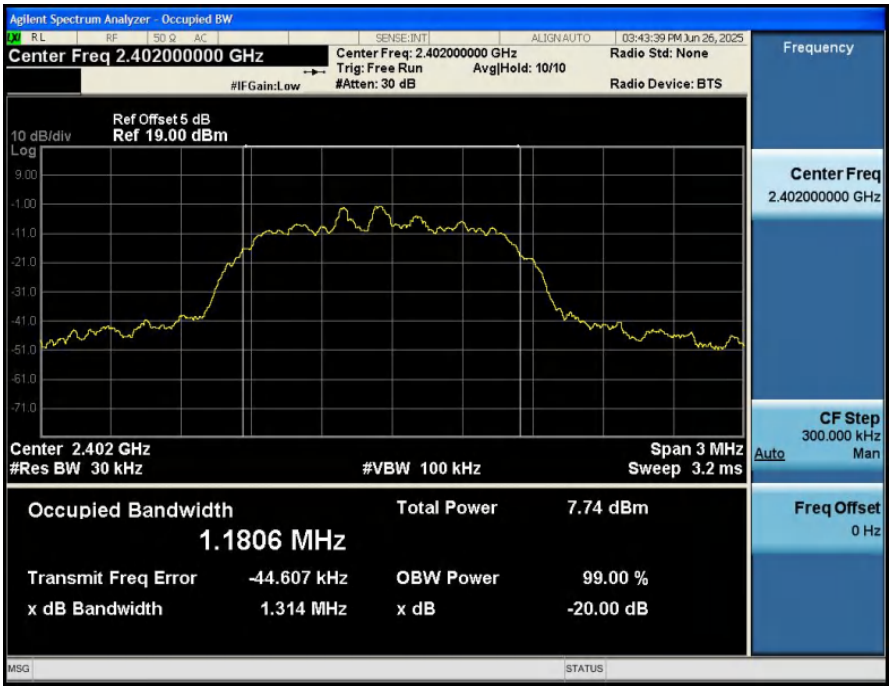
-20dB_Bandwidth_NVNT_ANT1_1-DH5_2441_00



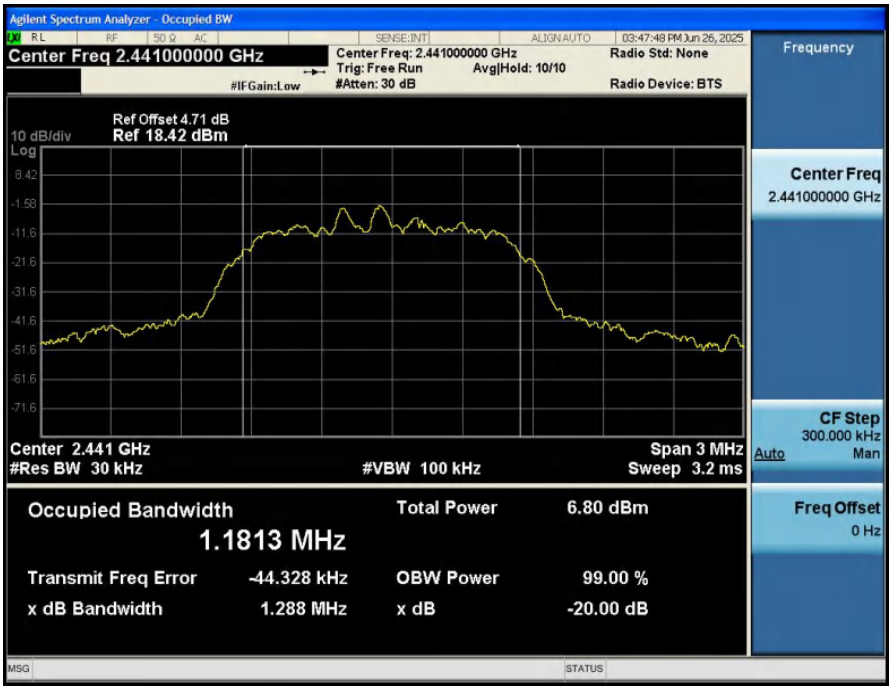
-20dB_Bandwidth_NVNT_ANT1_1-DH5_2480_00



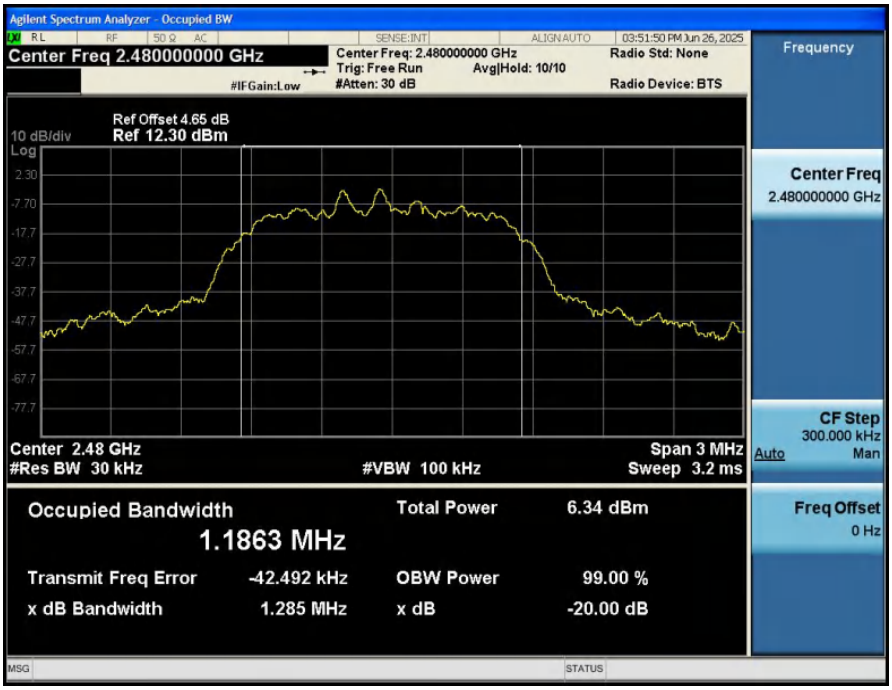
-20dB_Bandwidth_NVNT_ANT1_2-DH5_2402_00



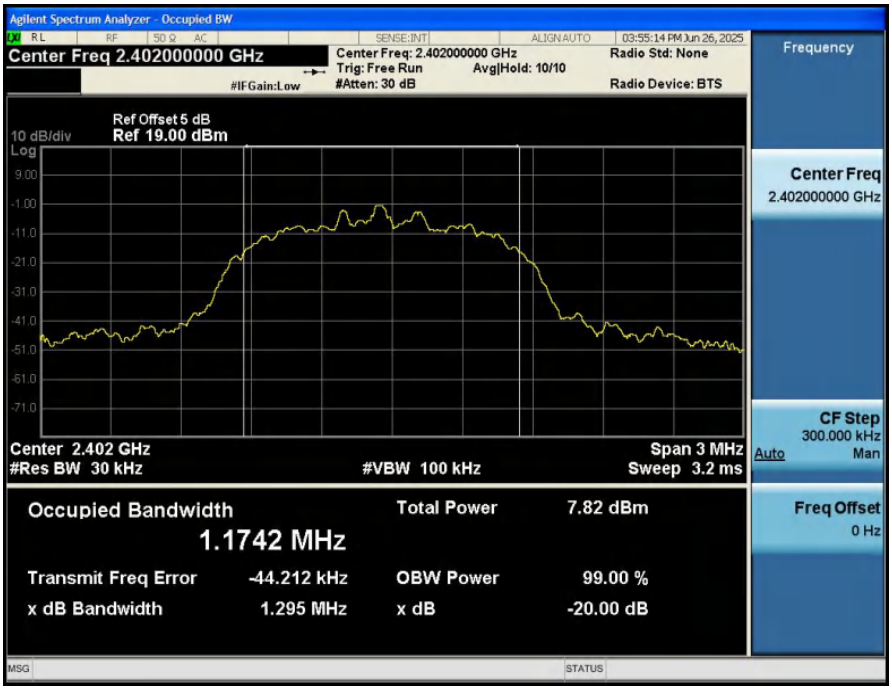
-20dB_Bandwidth_NVNT_ANT1_2-DH5_2441_00



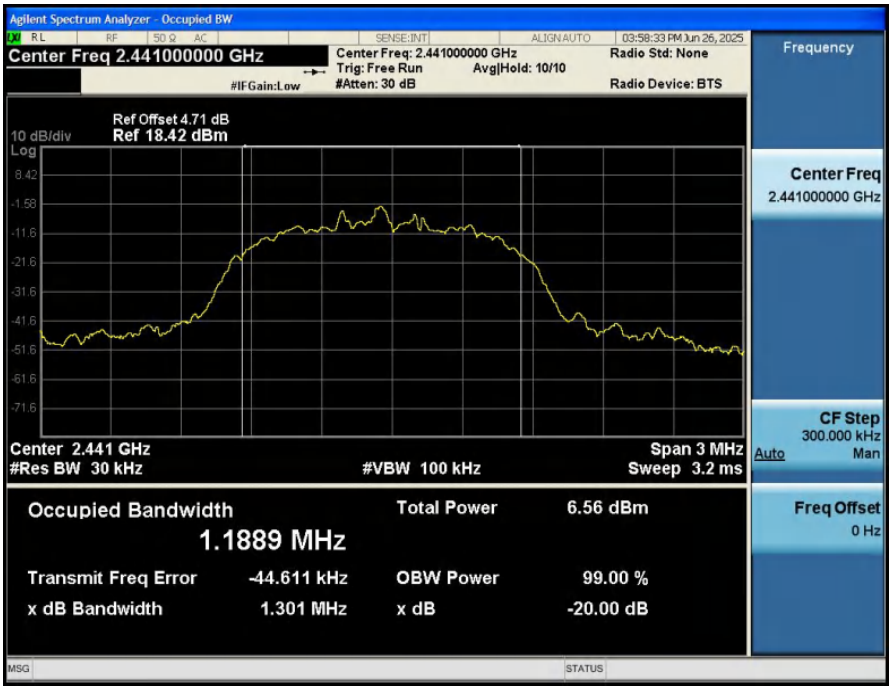
-20dB_Bandwidth_NVNT_ANT1_2-DH5_2480_00



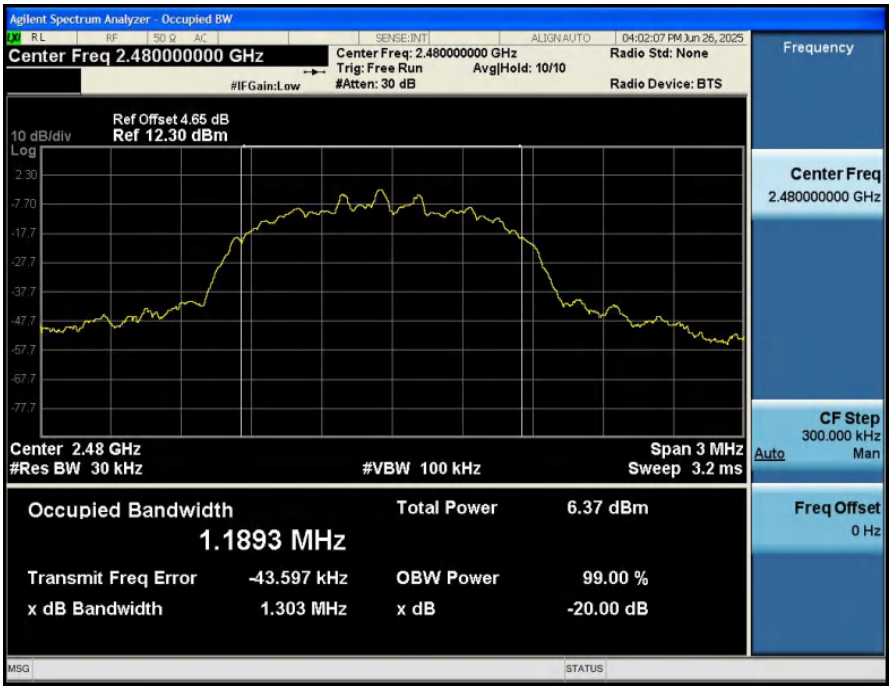
-20dB_Bandwidth_NVNT_ANT1_3-DH5_2402_00



-20dB_Bandwidth_NVNT_ANT1_3-DH5_2441_00



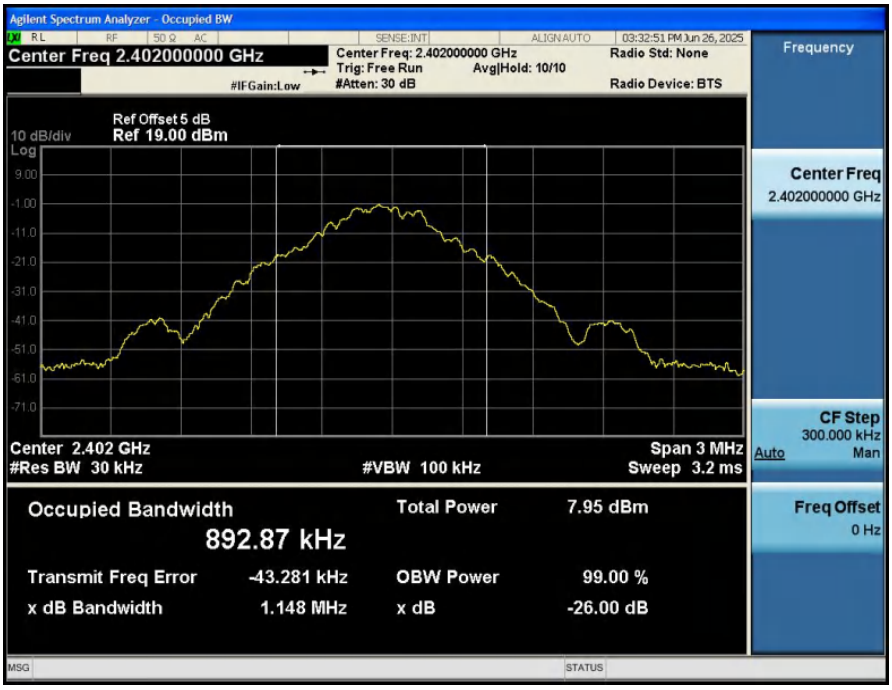
-20dB_Bandwidth_NVNT_ANT1_3-DH5_2480_00



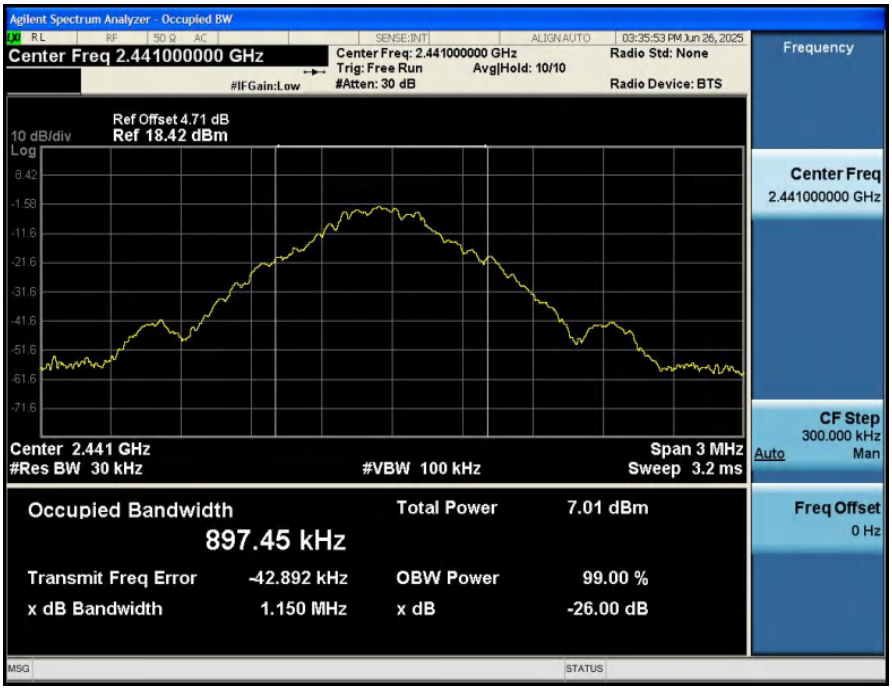
Appendix C: 99% Occupied Bandwidth

Condition	Antenna	Modulation	Frequency (MHz)	99%BW(MHz)
NVNT	ANT1	1-DH5	2402.00	0.893
NVNT	ANT1	1-DH5	2441.00	0.897
NVNT	ANT1	1-DH5	2480.00	0.890
NVNT	ANT1	2-DH5	2402.00	1.180
NVNT	ANT1	2-DH5	2441.00	1.185
NVNT	ANT1	2-DH5	2480.00	1.190
NVNT	ANT1	3-DH5	2402.00	1.179
NVNT	ANT1	3-DH5	2441.00	1.182
NVNT	ANT1	3-DH5	2480.00	1.187

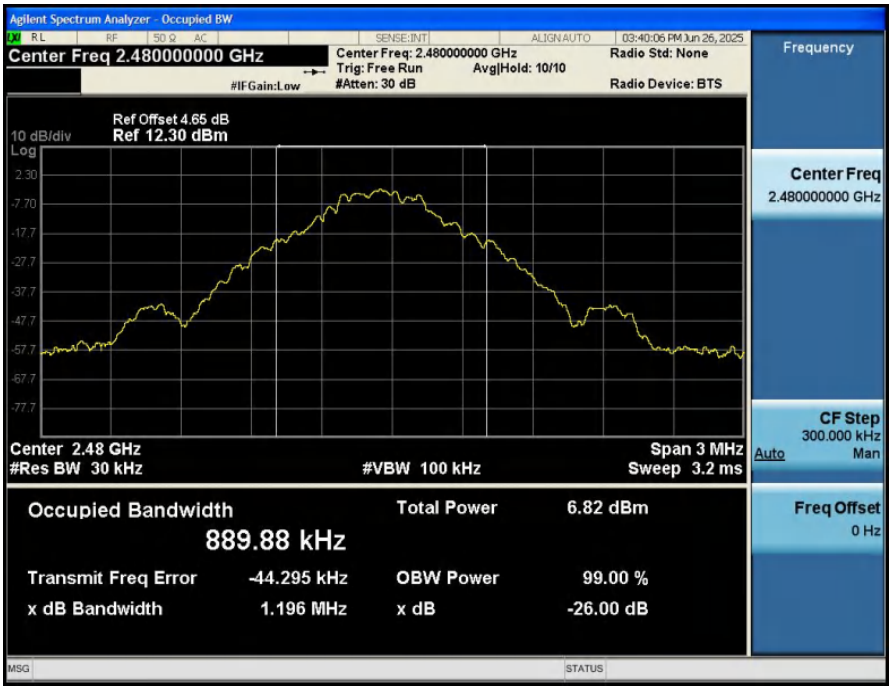
99%_Occupied_Bandwidth_NVNT_ANT1_1-DH5_2402_00



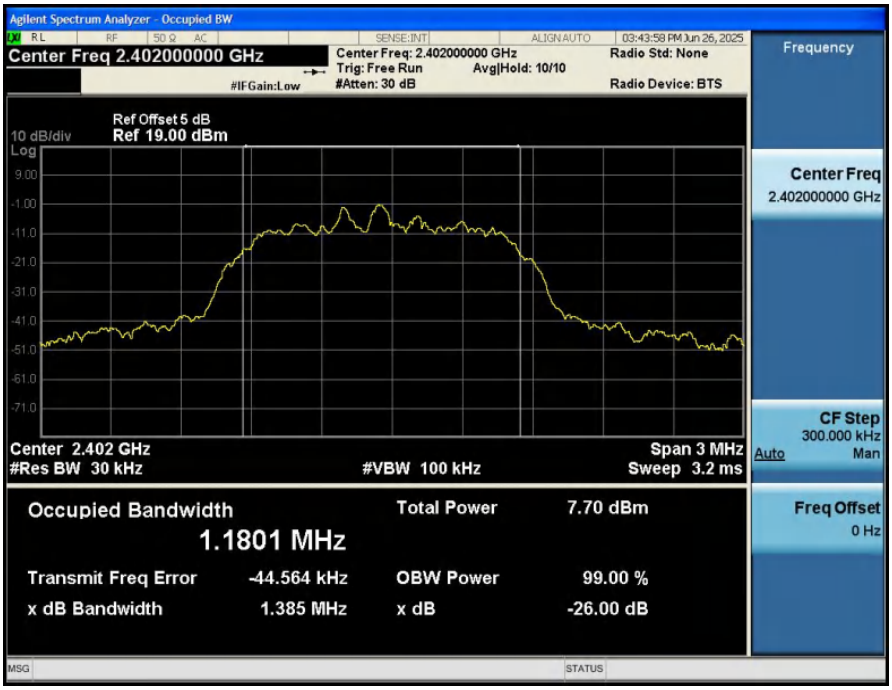
99%_Occupied_Bandwidth_NVNT_ANT1_1-DH5_2441_00



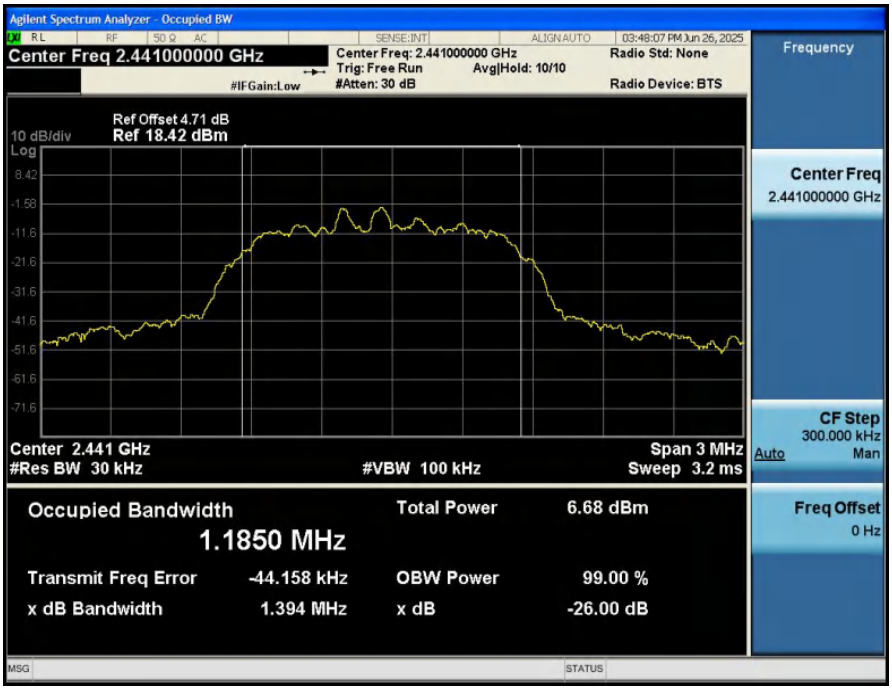
99%_Occupied_Bandwidth_NVNT_ANT1_1-DH5_2480_00



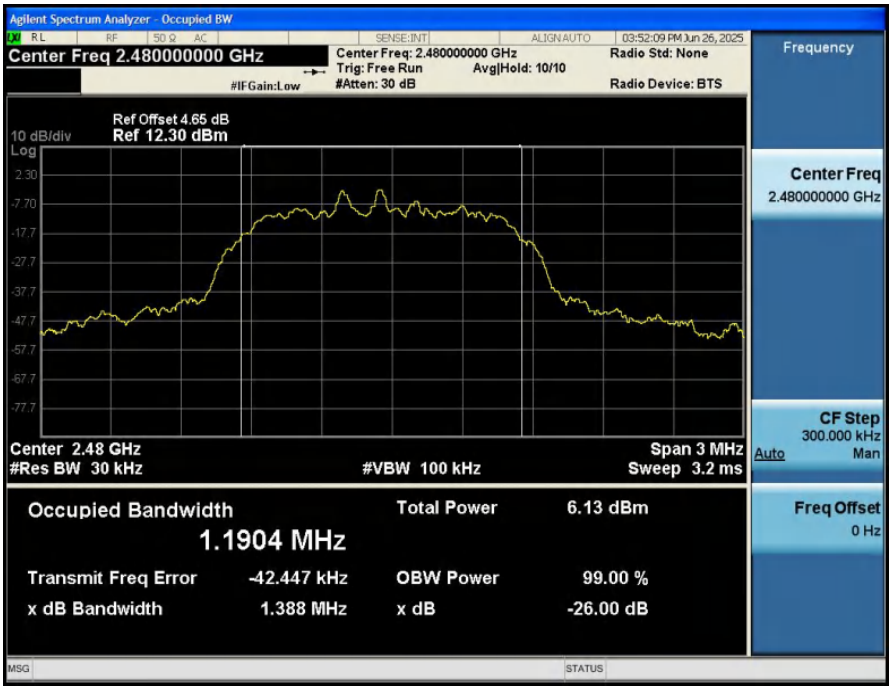
99%_Occupied_Bandwidth_NVNT_ANT1_2-DH5_2402_00



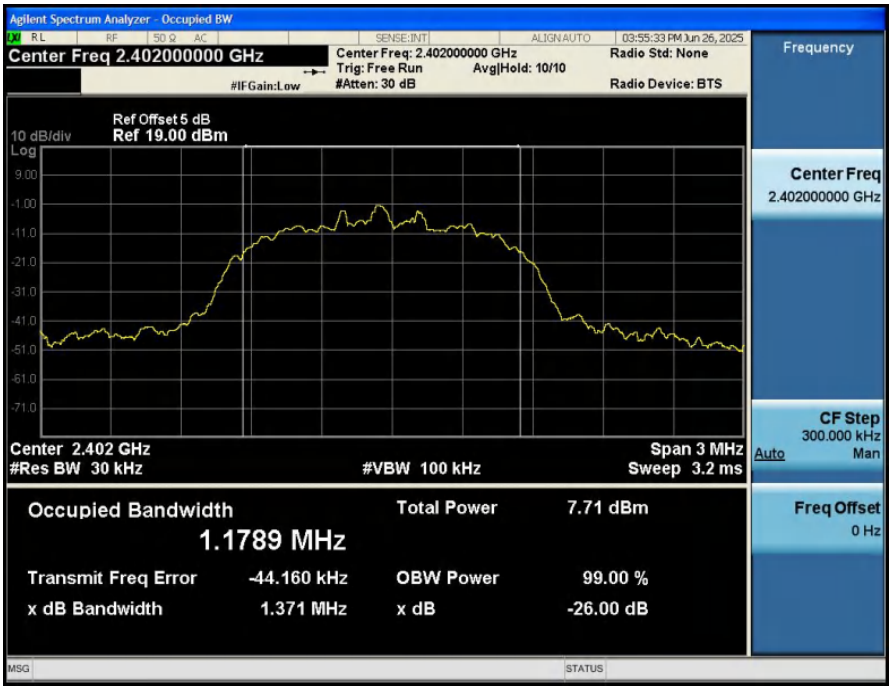
99%_Occupied_Bandwidth_NVNT_ANT1_2-DH5_2441_00



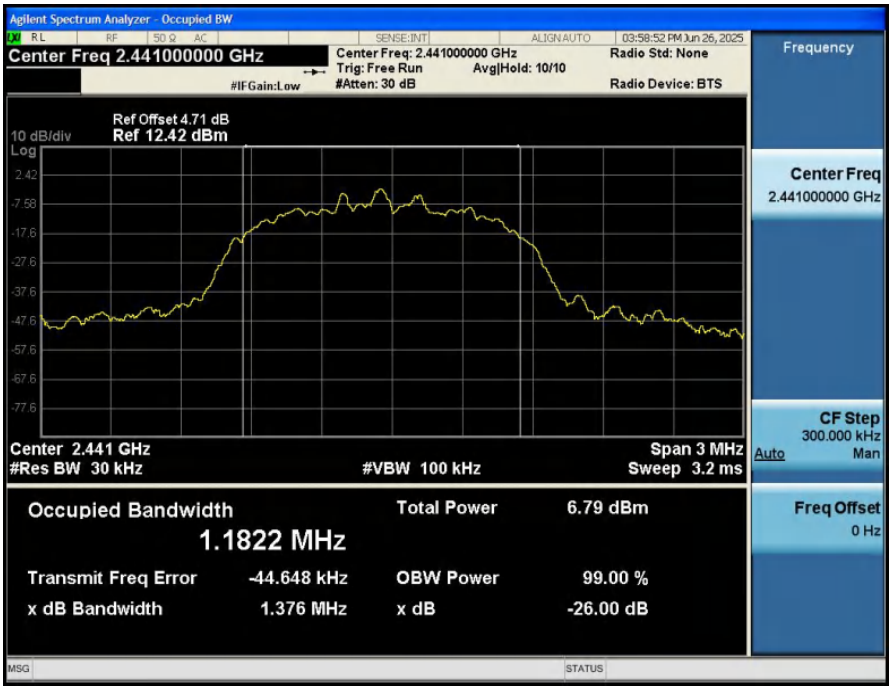
99%_Occupied_Bandwidth_NVNT_ANT1_2-DH5_2480_00



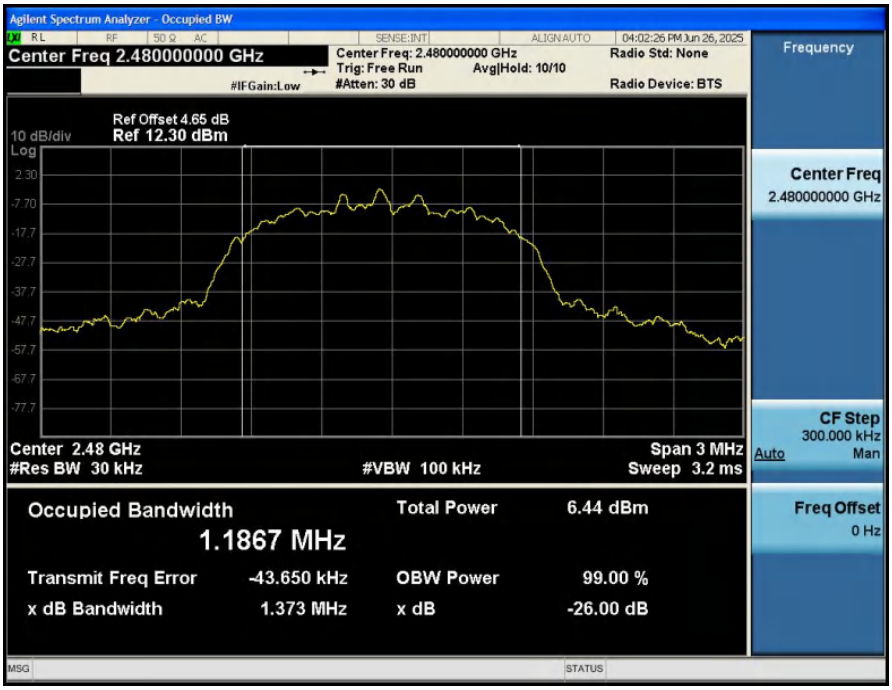
99%_Occupied_Bandwidth_NVNT_ANT1_3-DH5_2402_00



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	0.98	1.25	125	Pass
NVNT	ANT1	1-DH5	2441.00	-0.20	0.96	125	Pass
NVNT	ANT1	1-DH5	2480.00	-0.71	0.85	125	Pass
NVNT	ANT1	2-DH5	2402.00	1.88	1.54	125	Pass
NVNT	ANT1	2-DH5	2441.00	0.93	1.24	125	Pass
NVNT	ANT1	2-DH5	2480.00	0.47	1.11	125	Pass
NVNT	ANT1	3-DH5	2402.00	**2.27**	1.69	125	Pass
NVNT	ANT1	3-DH5	2441.00	1.33	1.36	125	Pass
NVNT	ANT1	3-DH5	2480.00	0.92	1.23	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

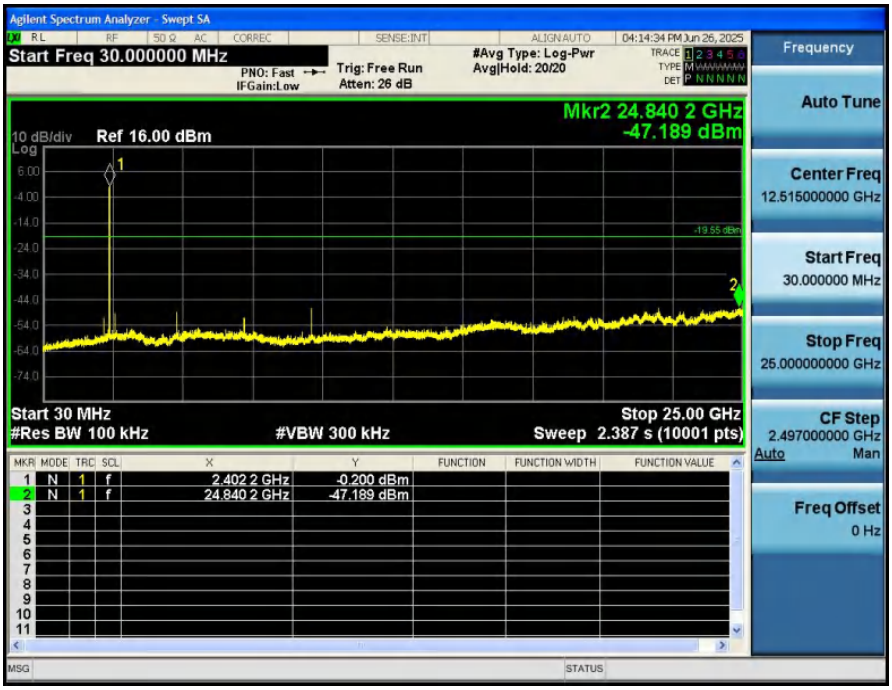
Appendix E: Spurious Emissions

Condition	Antenna	Modulation	TX Mode	Ref_level(dBm)	Spurious MAX.Value(dBm)	Limit	Result
NVNT	ANT1	1-DH5	2402.00	0.450	-47.189	-19.550	Pass
NVNT	ANT1	1-DH5	2441.00	-0.627	-36.907	-20.627	Pass
NVNT	ANT1	1-DH5	2480.00	-1.238	-36.635	-21.238	Pass
NVNT	ANT1	2-DH5	2402.00	-0.159	-45.015	-20.159	Pass
NVNT	ANT1	2-DH5	2441.00	-0.865	-45.211	-20.865	Pass
NVNT	ANT1	2-DH5	2480.00	-1.060	-44.799	-21.060	Pass
NVNT	ANT1	3-DH5	2402.00	0.032	-46.837	-19.968	Pass
NVNT	ANT1	3-DH5	2441.00	-0.768	-44.741	-20.768	Pass
NVNT	ANT1	3-DH5	2480.00	-1.497	-45.223	-21.497	Pass

Note:Regarding the spurious emissions from 30MHz to 26.5GHz, the cable lose have been set in the 'Input Correction' of the Spectrum Analyzer during the test.

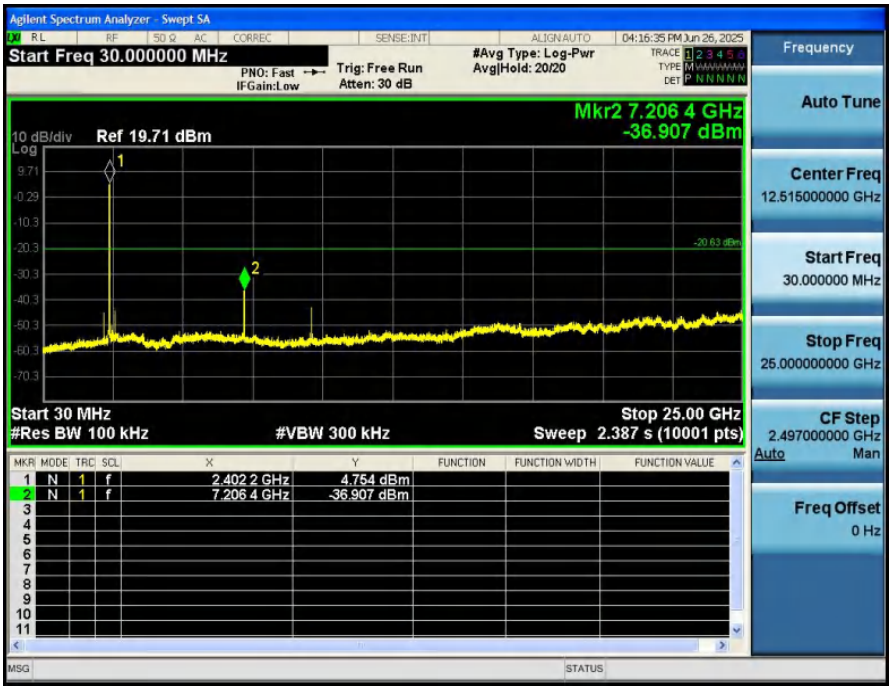
1_Reference_Level_NVNT_ANT1_1-DH5_2402_00

2_Spurious_Emissions_NVNT_ANT1_1-DH5_2402_00



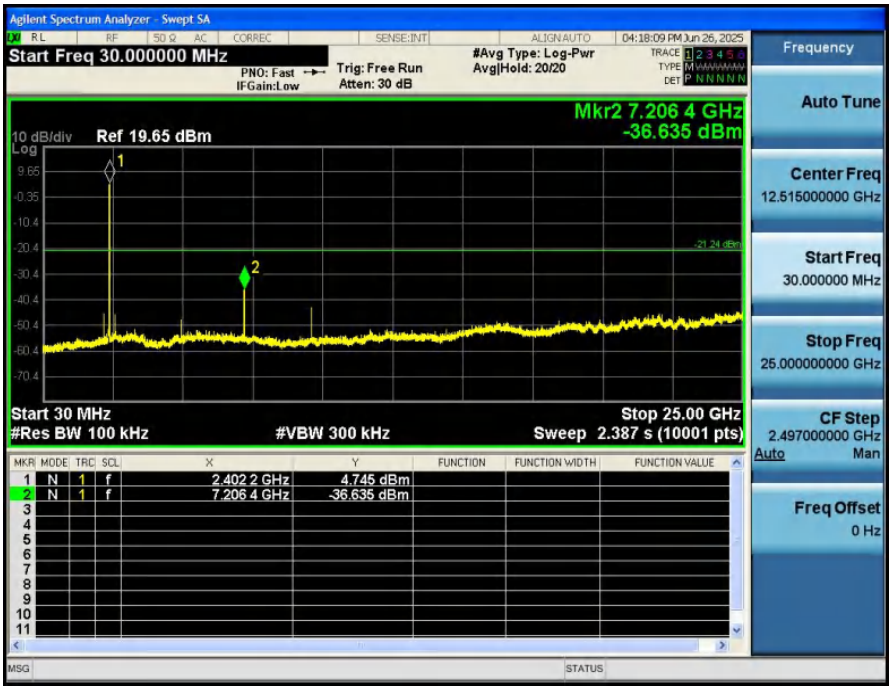
1_Reference_Level_NVNT_ANT1_1-DH5_2441_00

2_Spurious_Emissions_NVNT_ANT1_1-DH5_2441_00



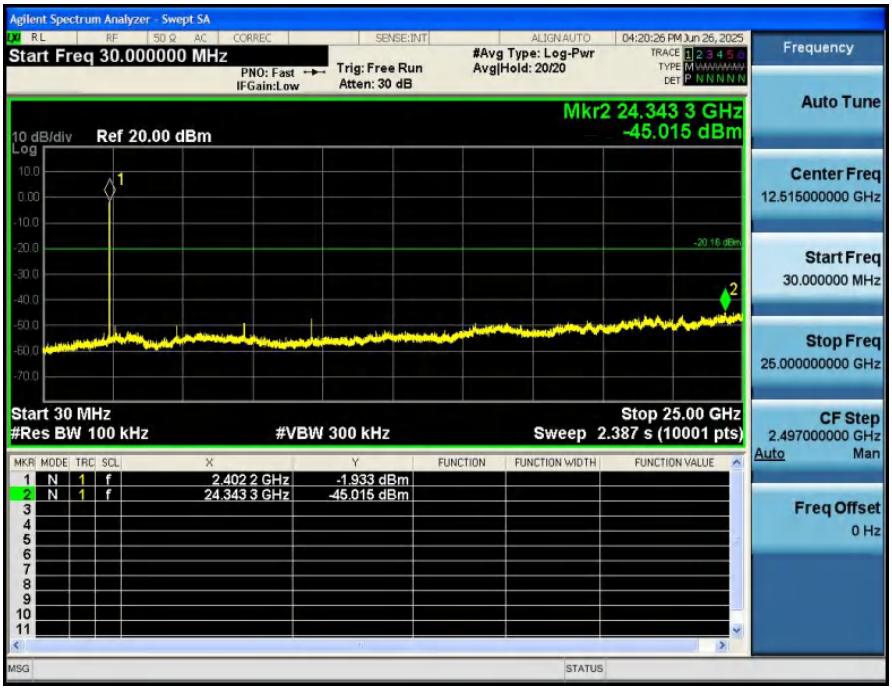
1_Reference_Level_NVNT_ANT1_1-DH5_2480_00

2_Spurious_Emissions_NVNT_ANT1_1-DH5_2480_00



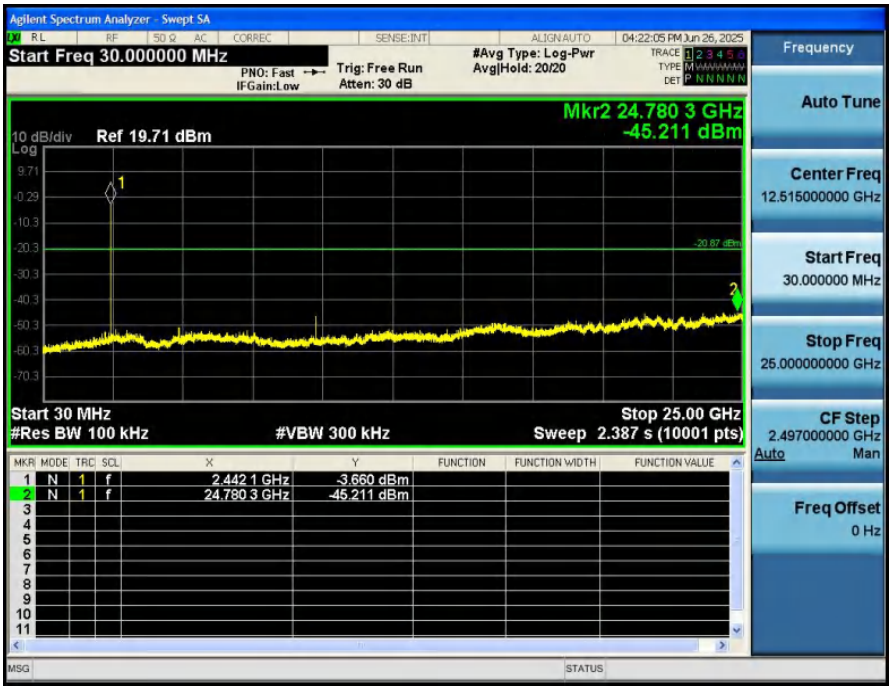
1_Reference_Level_NVNT_ANT1_2-DH5_2402_00

2_Spurious_Emissions_NVNT_ANT1_2-DH5_2402_00



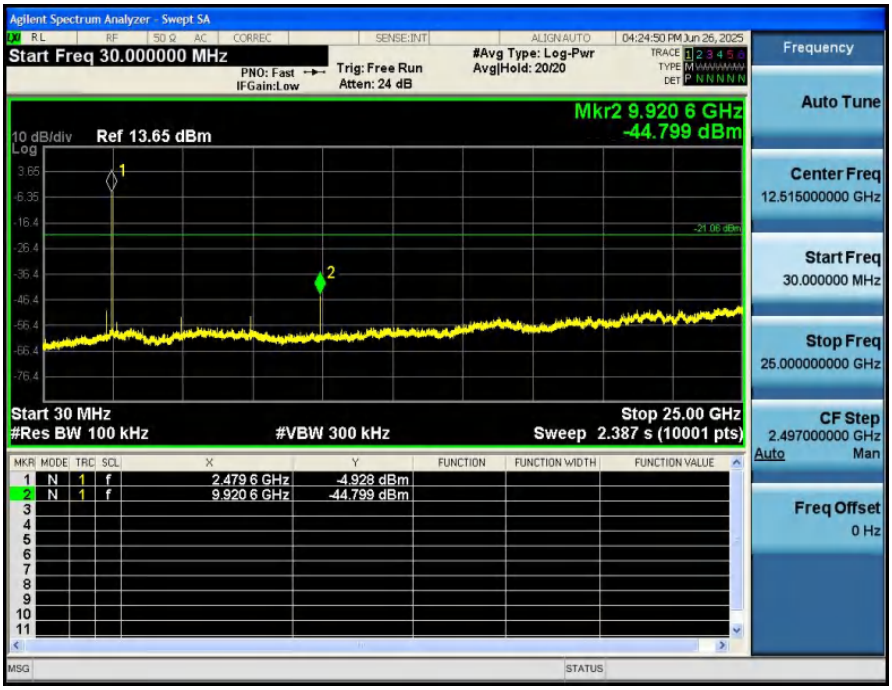
1_Reference_Level_NVNT_ANT1_2-DH5_2441_00

2_Spurious_Emissions_NVNT_ANT1_2-DH5_2441_00



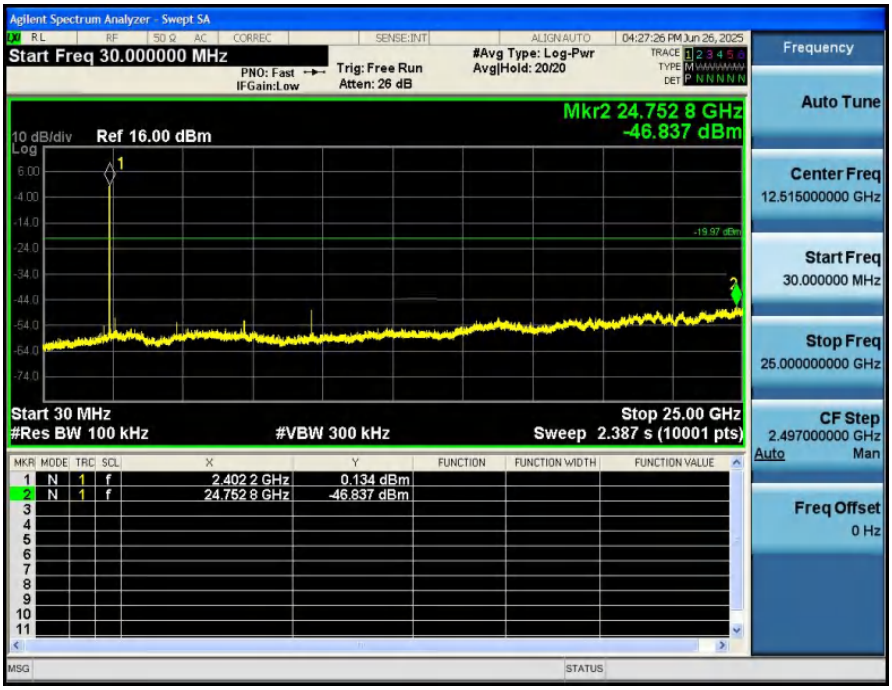
1_Reference_Level_NVNT_ANT1_2-DH5_2480_00

2_Spurious_Emissions_NVNT_ANT1_2-DH5_2480_00



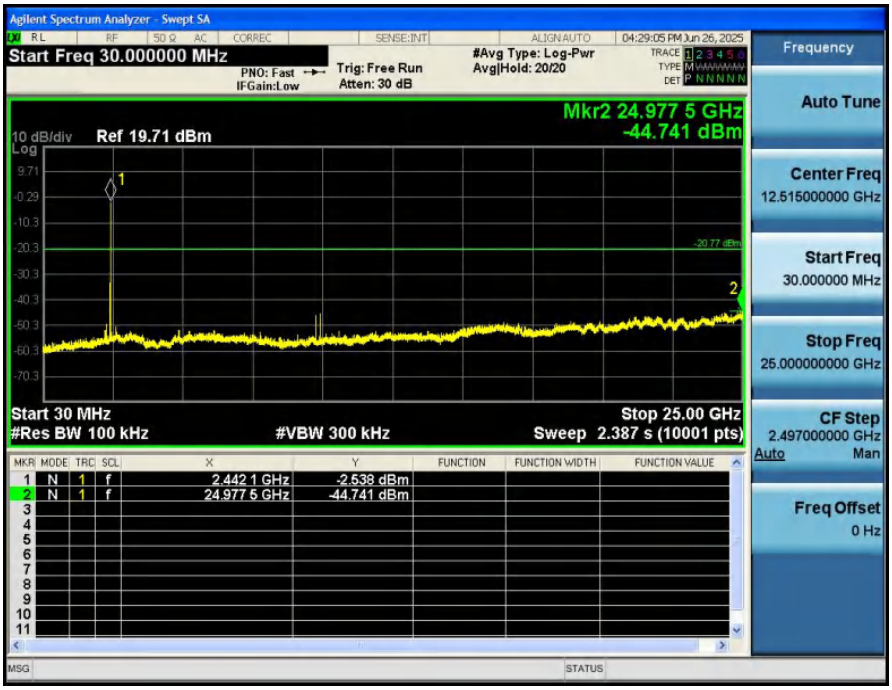
1_Reference_Level_NVNT_ANT1_3-DH5_2402_00

2_Spurious_Emissions_NVNT_ANT1_3-DH5_2402_00



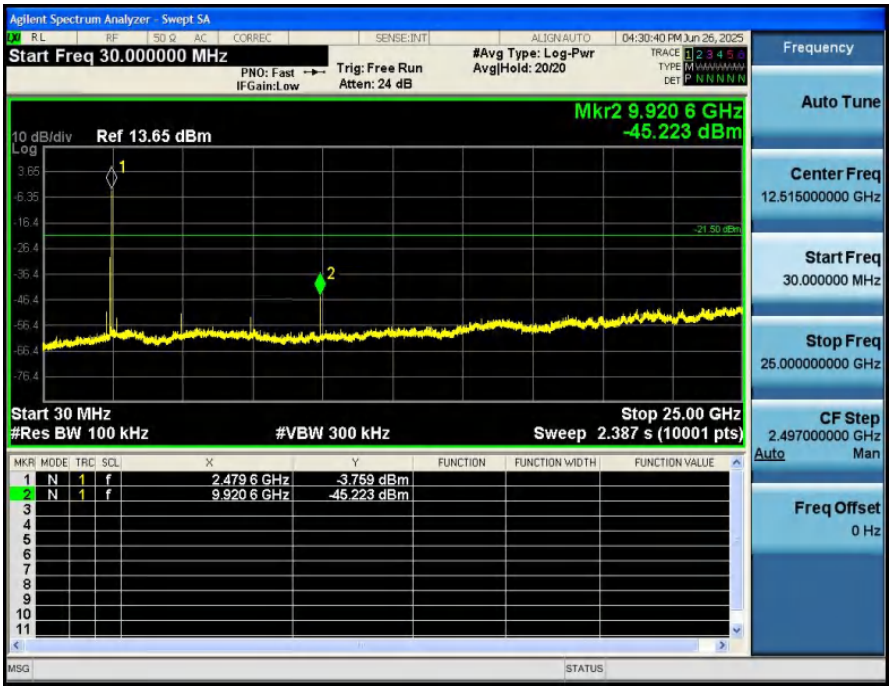
1_Reference_Level_NVNT_ANT1_3-DH5_2441_00

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

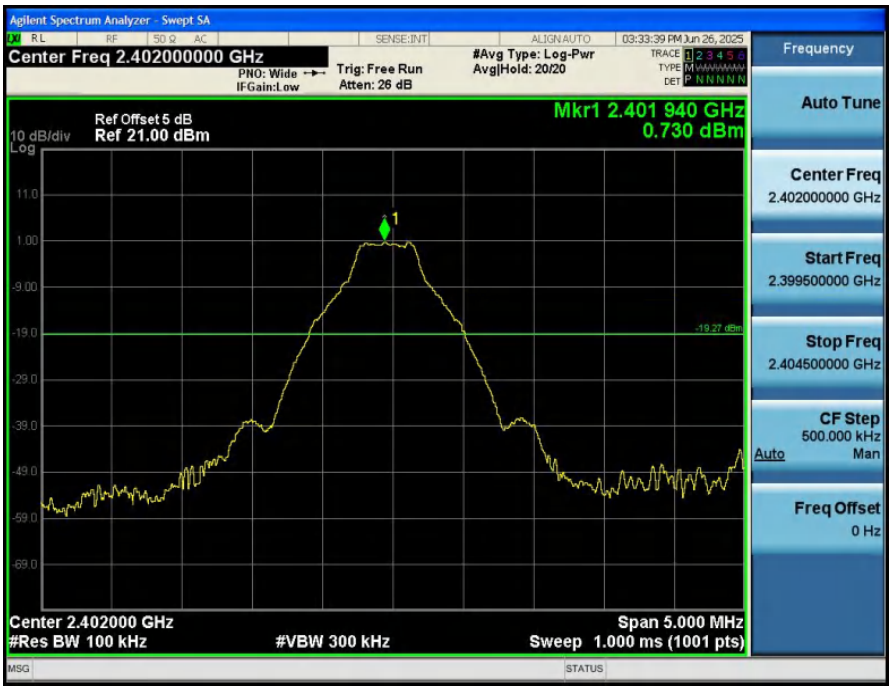

Agilent Spectrum Analyzer - Swept SA
Start Freq 30.000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 24 dB
#Avg Type: Log-Pwr
Avg|Hold: 20/20
04:30:40 PM Jun 26, 2025
Mkr2 9.920 6 GHz
-45.223 dBm
10 dB/div
Log
Ref 13.65 dBm
-21.50 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.387 s (10001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.479 6 GHz -3.759 dBm
2 N 1 f 9.920 6 GHz -45.223 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

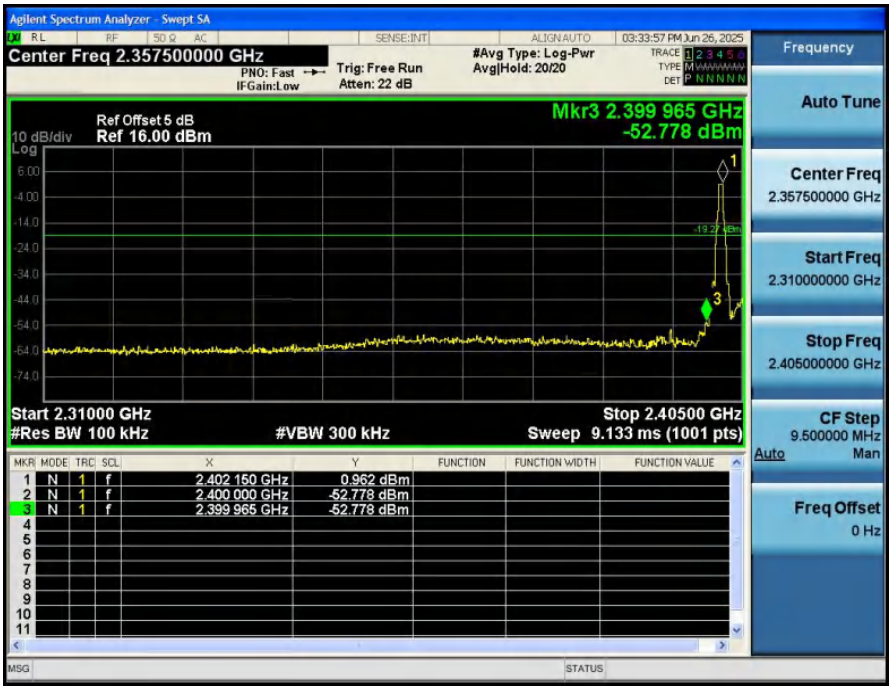
Condition	Antenna	Modulation	TX Mode	Ref_level(dBm)	Bandedge MAX.Value	Limit	Result
NVNT	ANT1	1-DH5	2402.00	0.730	-52.778	-19.270	Pass
NVNT	ANT1	1-DH5	Hopping_LCH	0.698	-54.667	-19.302	Pass
NVNT	ANT1	1-DH5	2480.00	-0.924	-61.448	-20.924	Pass
NVNT	ANT1	1-DH5	Hopping_HCH	-3.009	-60.260	-23.009	Pass
NVNT	ANT1	2-DH5	2402.00	0.735	-47.756	-19.265	Pass
NVNT	ANT1	2-DH5	Hopping_LCH	0.736	-58.591	-19.264	Pass
NVNT	ANT1	2-DH5	2480.00	-1.033	-62.007	-21.033	Pass
NVNT	ANT1	2-DH5	Hopping_HCH	-0.099	-55.114	-20.099	Pass
NVNT	ANT1	3-DH5	2402.00	0.714	-49.477	-19.286	Pass
NVNT	ANT1	3-DH5	Hopping_LCH	0.420	-59.888	-19.580	Pass
NVNT	ANT1	3-DH5	2480.00	-0.943	-62.341	-20.943	Pass
NVNT	ANT1	3-DH5	Hopping_HCH	0.231	-56.598	-19.769	Pass

Remark:1. Regarding the spurious emissions from 30MHz to 26.5GHz, the cable lose have been set in the 'offset' of the Spectrum Analyzer during the test.

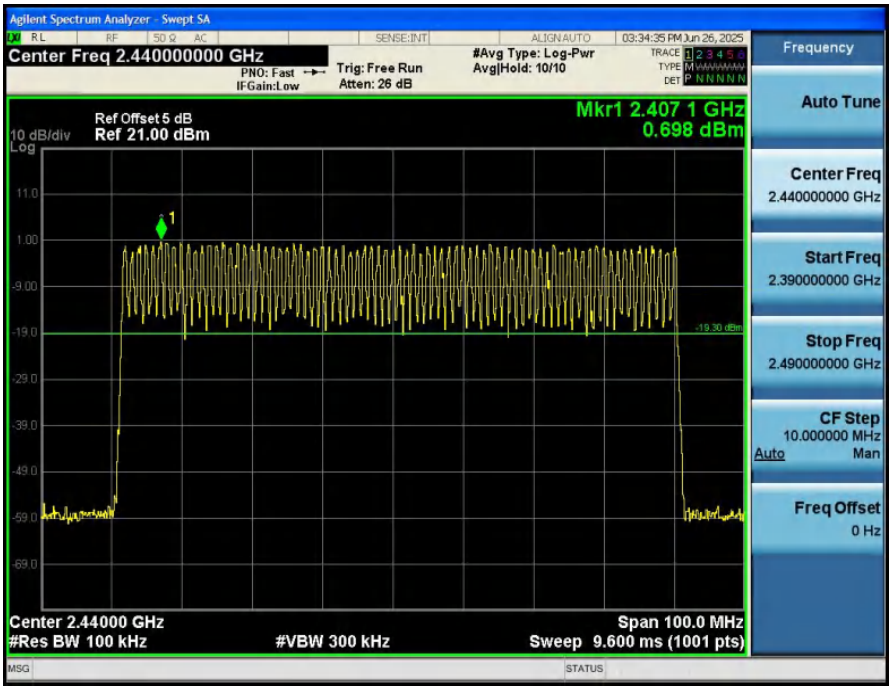
1_Reference_Level_NVNT_ANT1_1-DH5_2402_00



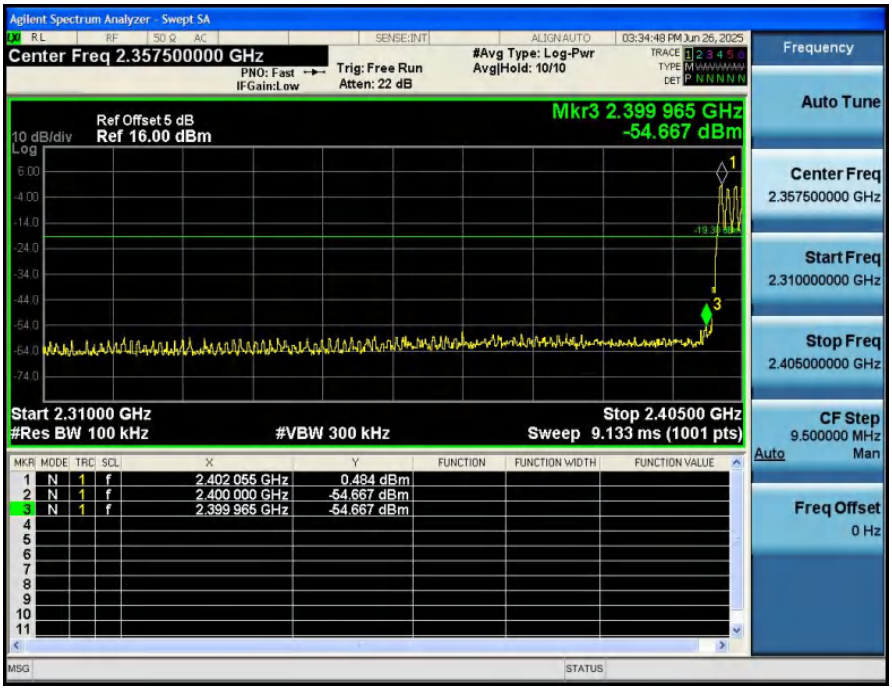
2_Bandedge_NVNT_ANT1_1-DH5_2402_00



1_Reference_Level_Hopping_NVNT_ANT1_1-DH5_Hopping

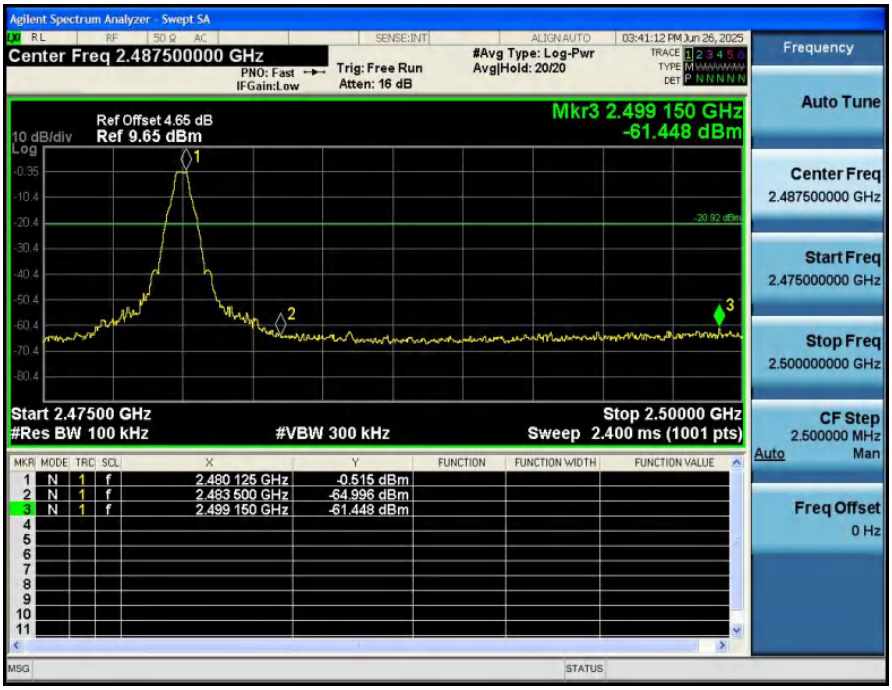


2_Band_Edge_(Hopping)_NVNT_ANT1_1-DH5_Hopping

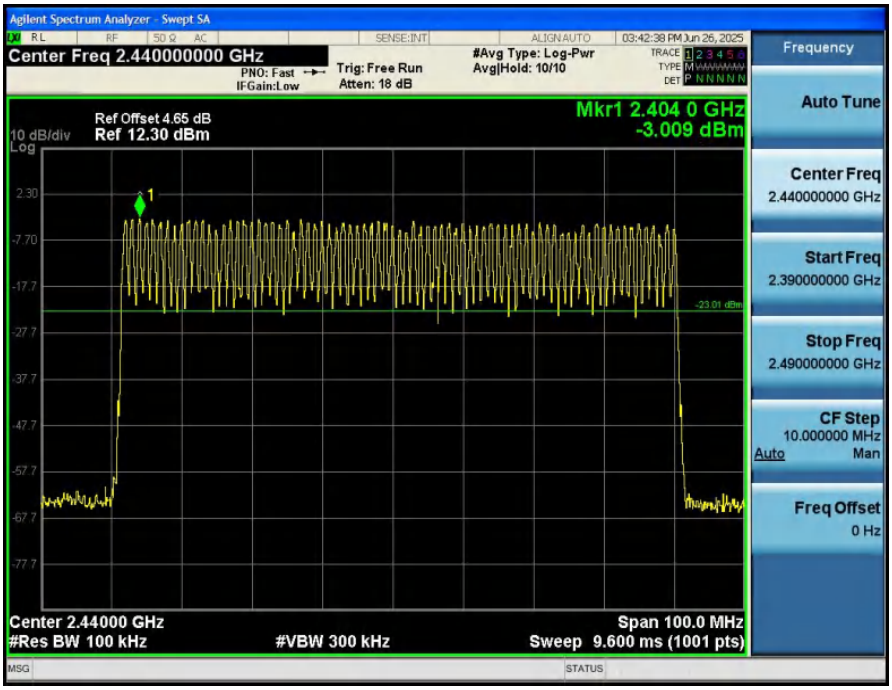


1_Reference_Level_NVNT_ANT1_1-DH5_2480_00

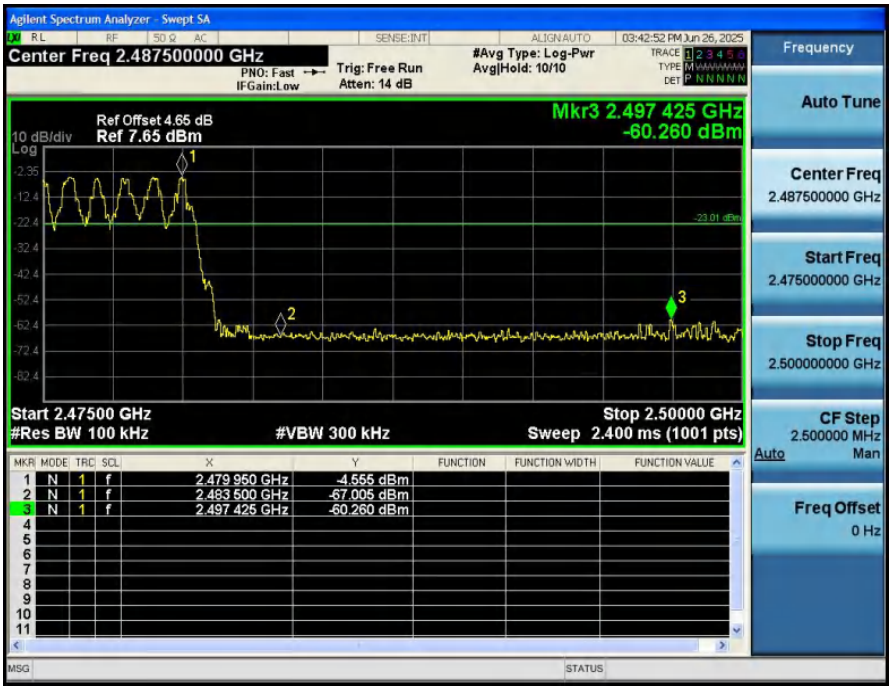
2_Bandedge_NVNT_ANT1_1-DH5_2480_00



1_Reference_Level_Hopping_NVNT_ANT1_1-DH5_Hopping

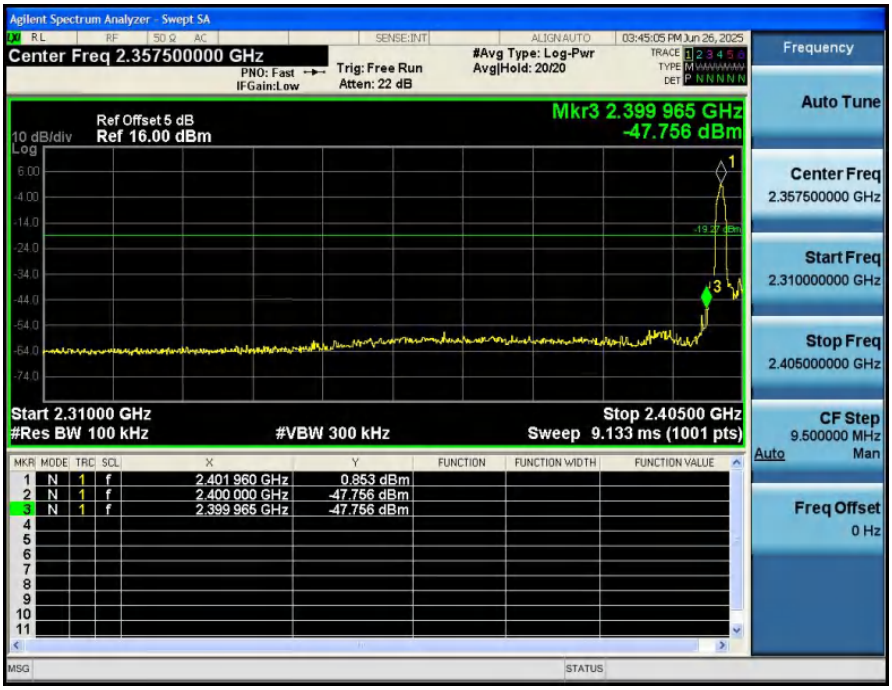


2_Band_Edge_(Hopping)_NVNT_ANT1_1-DH5_Hopping

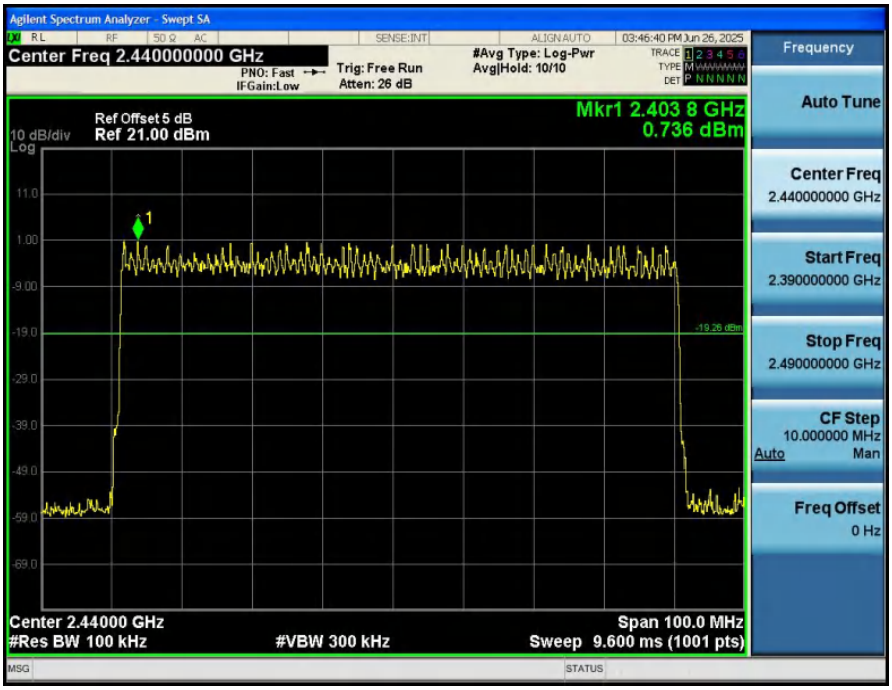


1_Reference_Level_NVNT_ANT1_2-DH5_2402_00

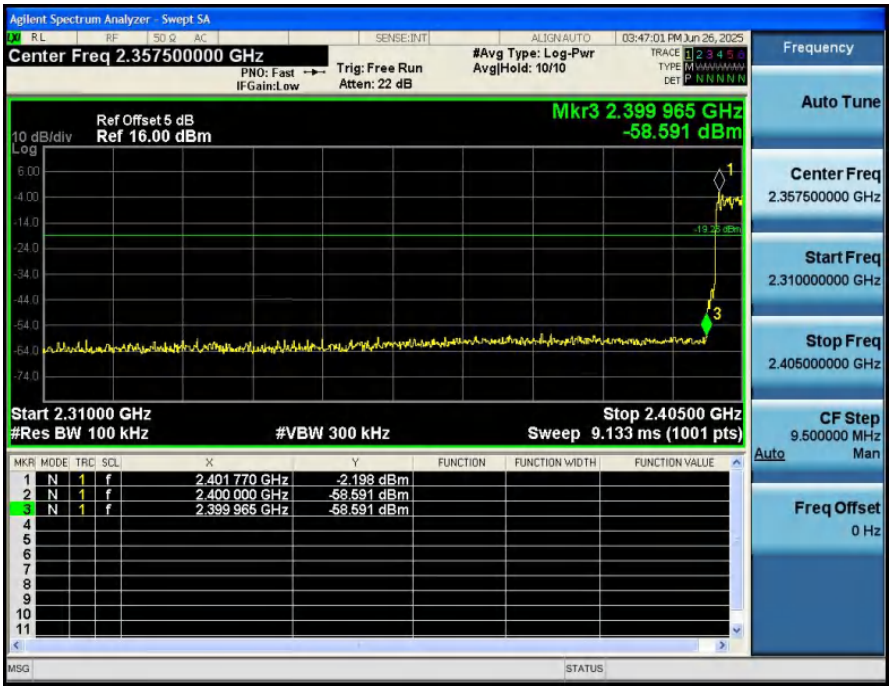
2_Bandedge_NVNT_ANT1_2-DH5_2402_00



1_Reference_Level_Hopping_NVNT_ANT1_2-DH5_Hopping

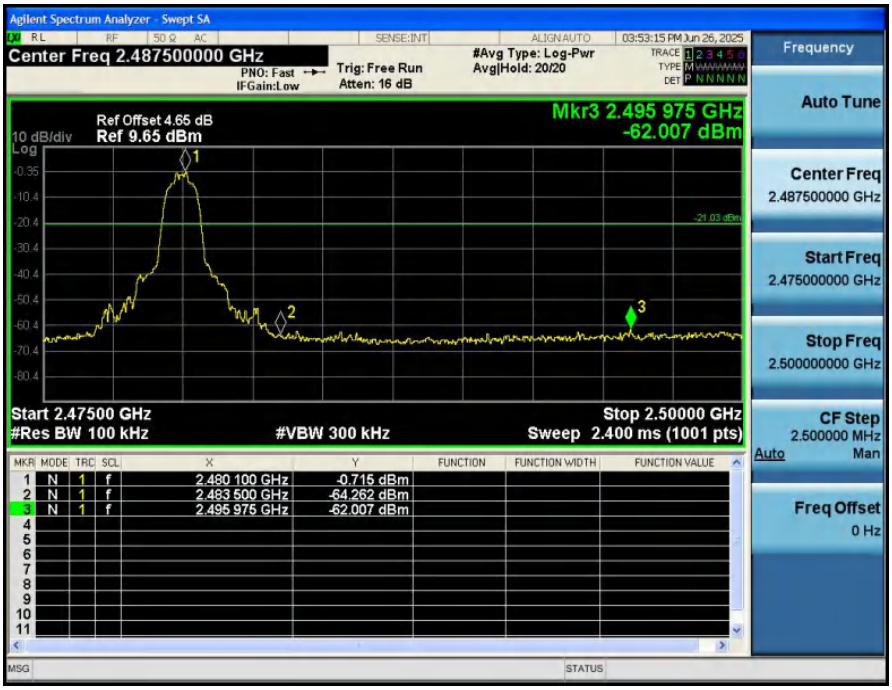


2_Band_Edge_(Hopping)_NVNT_ANT1_2-DH5_Hopping

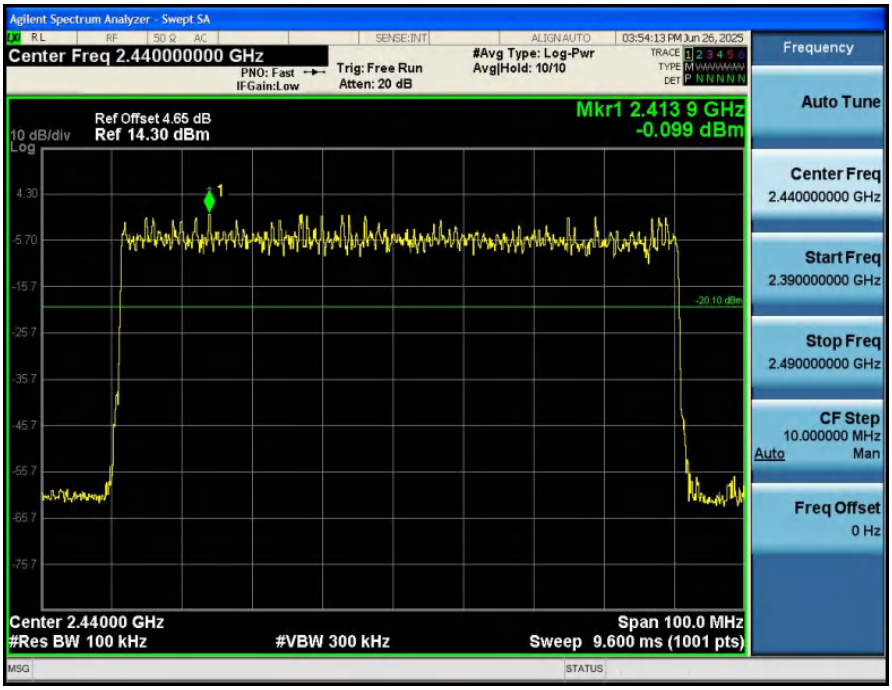


1_Reference_Level_NVNT_ANT1_2-DH5_2480_00

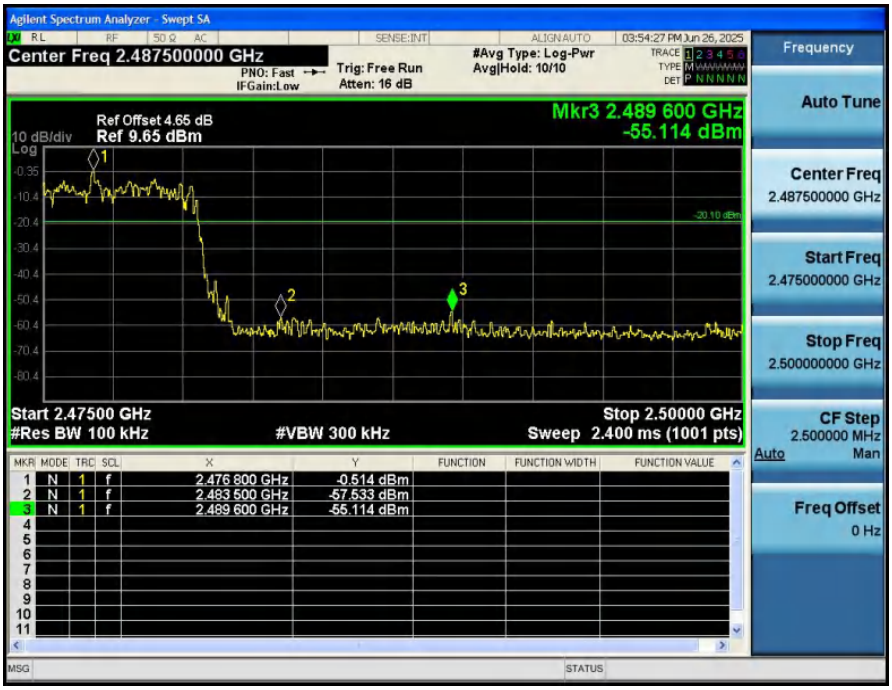
2_Bandedge_NVNT_ANT1_2-DH5_2480_00



1_Reference_Level_Hopping_NVNT_ANT1_2-DH5_Hopping

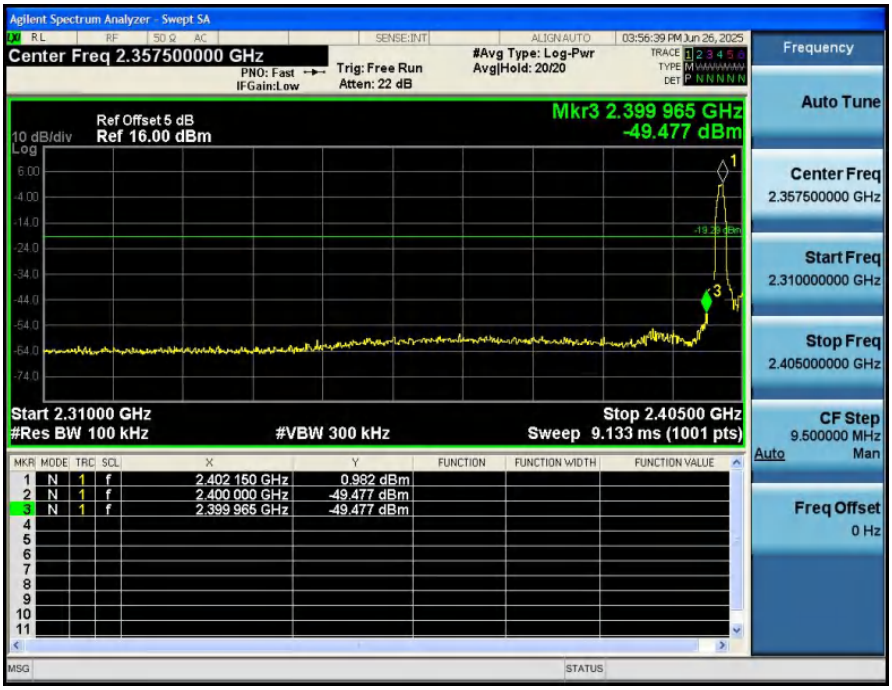


2_Band_Edge_(Hopping)_NVNT_ANT1_2-DH5_Hopping

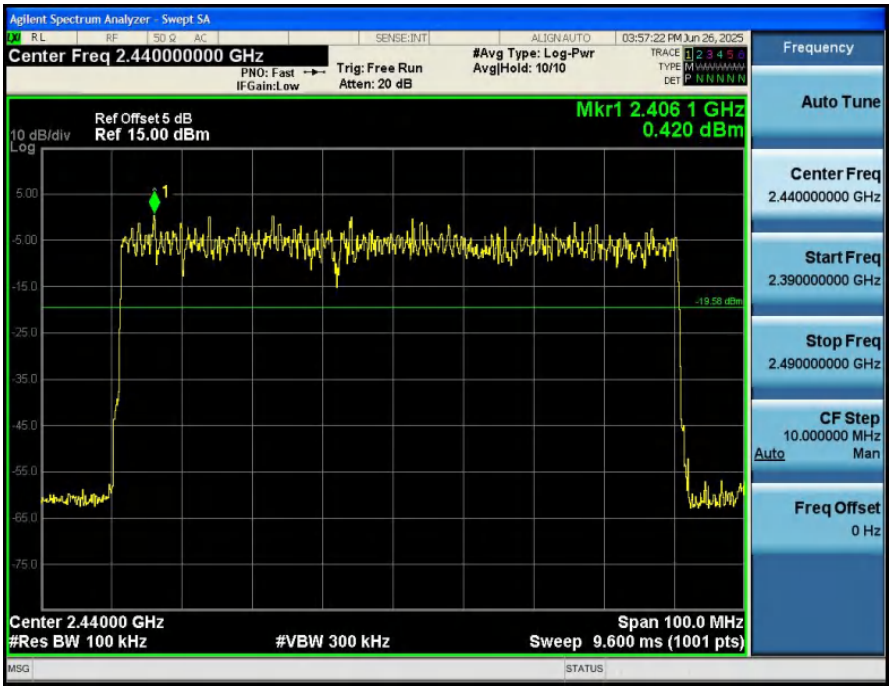


1_Reference_Level_NVNT_ANT1_3-DH5_2402_00

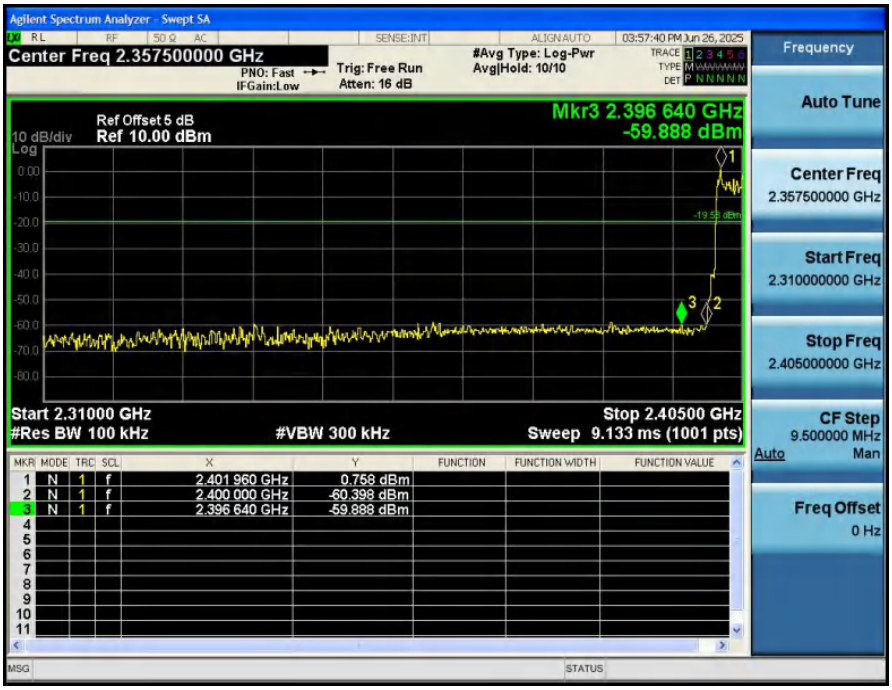
2_Bandedge_NVNT_ANT1_3-DH5_2402_00



1_Reference_Level_Hopping_NVNT_ANT1_3-DH5_Hopping

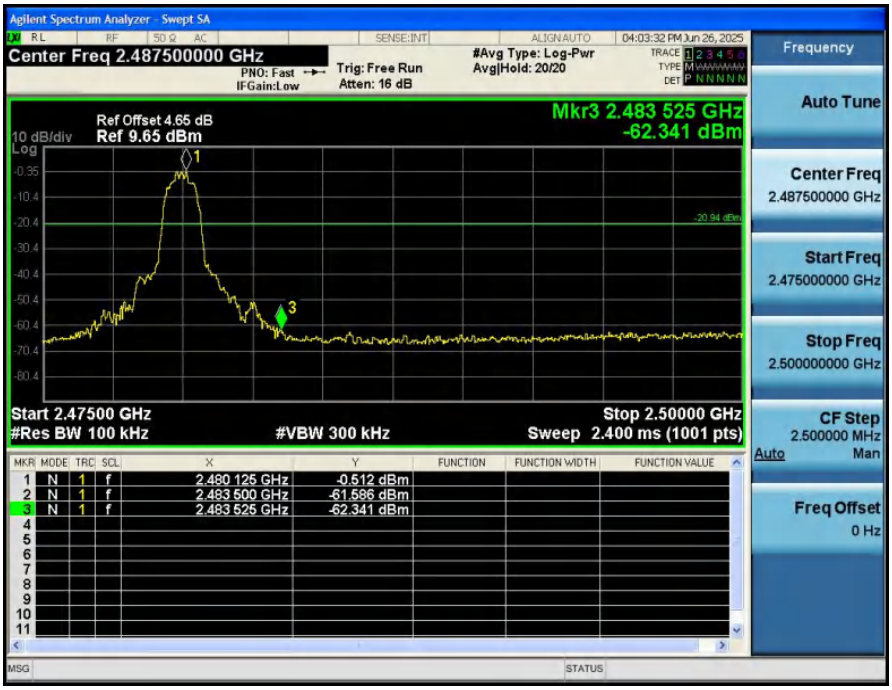


2_Band_Edge_(Hopping)_NVNT_ANT1_3-DH5_Hopping

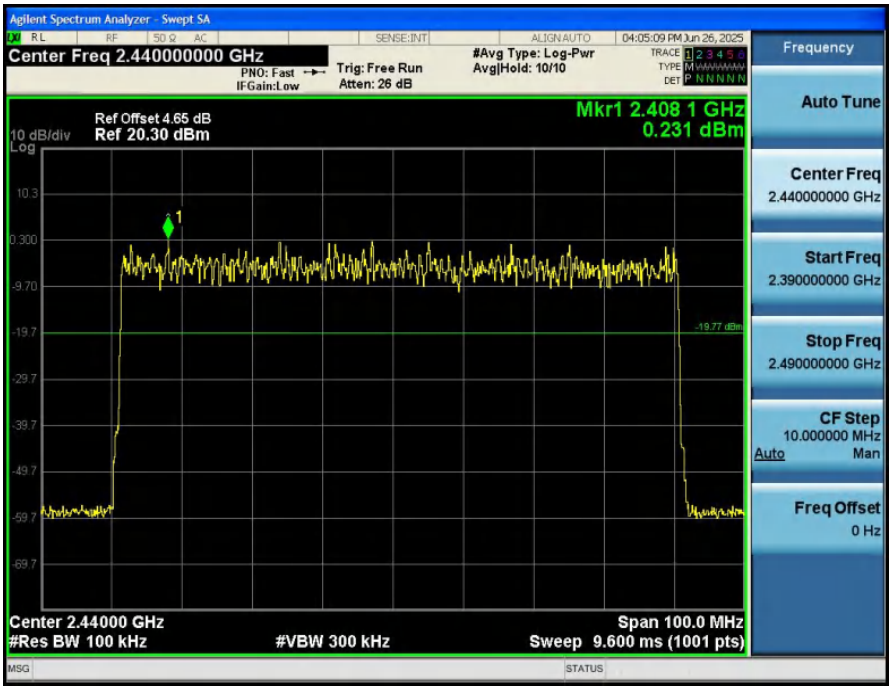


1_Reference_Level_NVNT_ANT1_3-DH5_2480_00

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


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.487500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 22 dB
#Avg Type: Log-Pwr
Avg|Hold: 10/10
04:05:25 PM Jun 26, 2025
Ref Offset 4.65 dB
10 dB/div
Log
Ref 15.65 dBm
Mkr3 2.489 925 GHz
-56.598 dBm
-19.77 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 2.478 875 GHz -3.992 dBm
2 N 1 f 2.483 500 GHz -61.540 dBm
3 N 1 f 2.489 925 GHz -56.598 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	2440.822	2442.121	1.30	0.679	Pass
NVNT	ANT1	2-DH5	2441.00	2440.795	2441.851	1.06	0.876	Pass
NVNT	ANT1	3-DH5	2441.00	2440.831	2441.947	1.12	0.869	Pass

Carrier_Frequencies_Separation_(Hopping)_NVNT_ANT1_1-DH5_Hopping

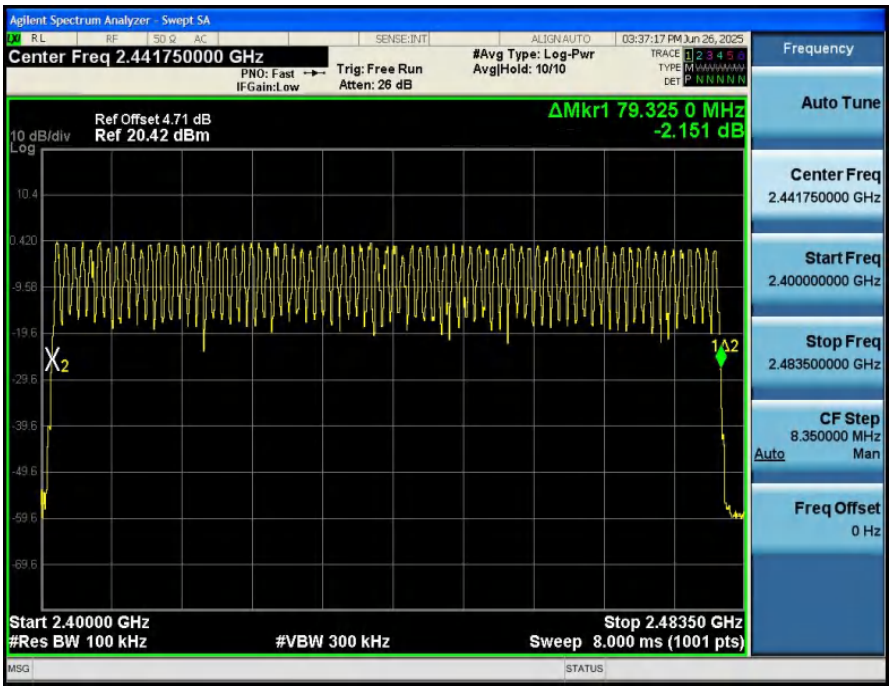
Carrier_Frequencies_Separation_(Hopping)_NVNT_ANT1_2-DH5_Hopping

Carrier_Frequencies_Separation_(Hopping)_NVNT_ANT1_3-DH5_Hopping

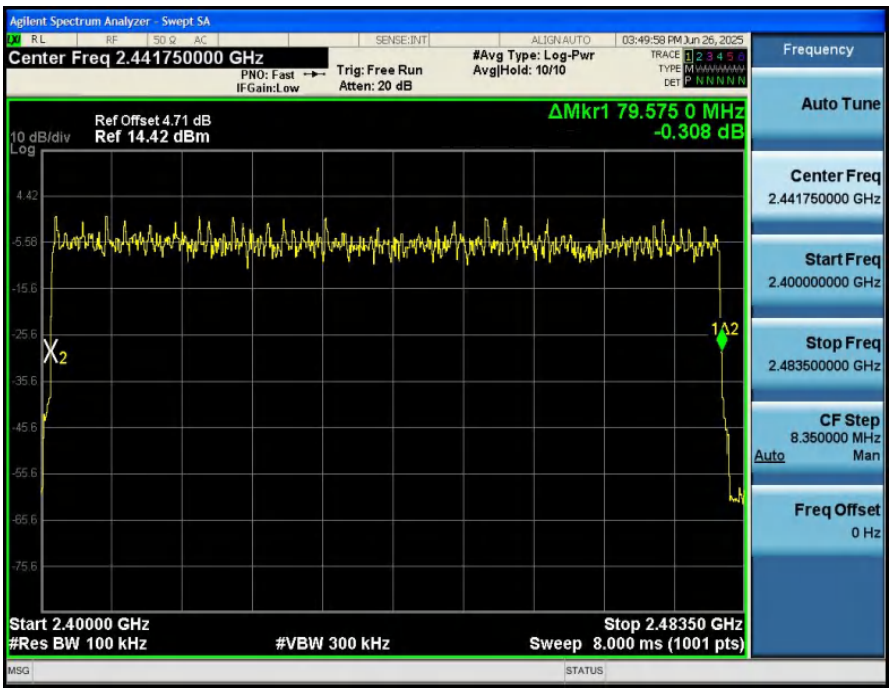
Appendix H: Number of Hopping Channel (Hopping)

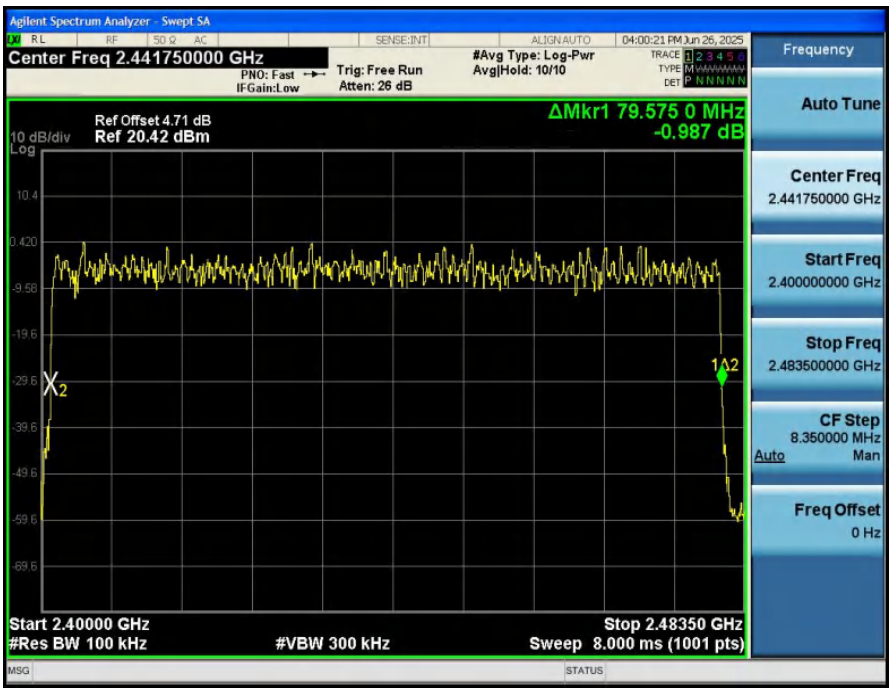
Condition	Antenna	Modulation	Hopping Num	Limit	Result
NVNT	ANT1	1-DH5	79	15	Pass
NVNT	ANT1	2-DH5	79	15	Pass
NVNT	ANT1	3-DH5	79	15	Pass

Number_of_Hopping_Channel_(Hopping)_NVNT_ANT1_1-DH5_Hopping



Number_of_Hopping_Channel_(Hopping)_NVNT_ANT1_2-DH5_Hopping

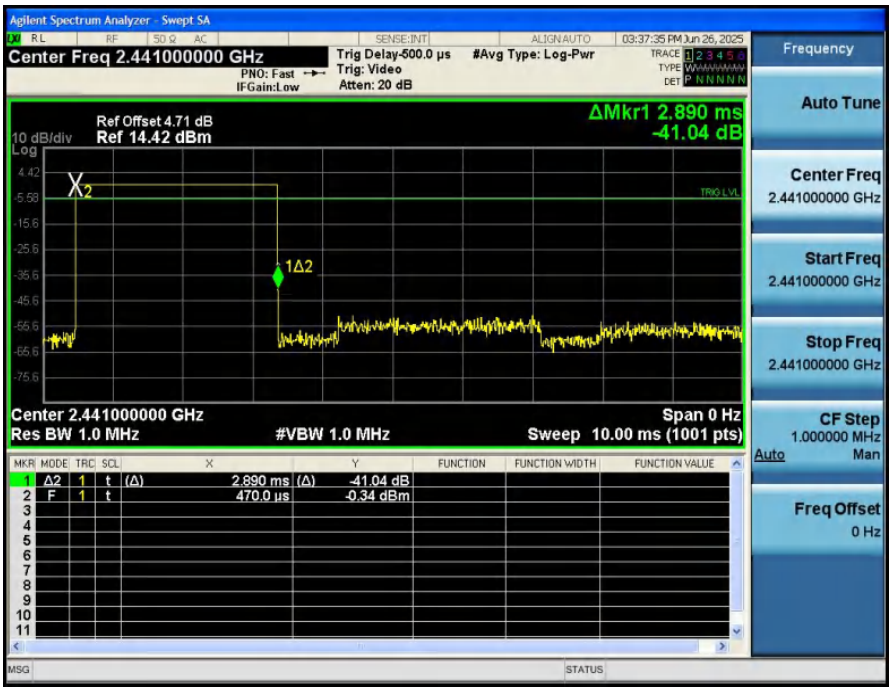


Number_of_Hopping_Channel_(Hopping)_NVNT_ANT1_3-DH5_Hopping


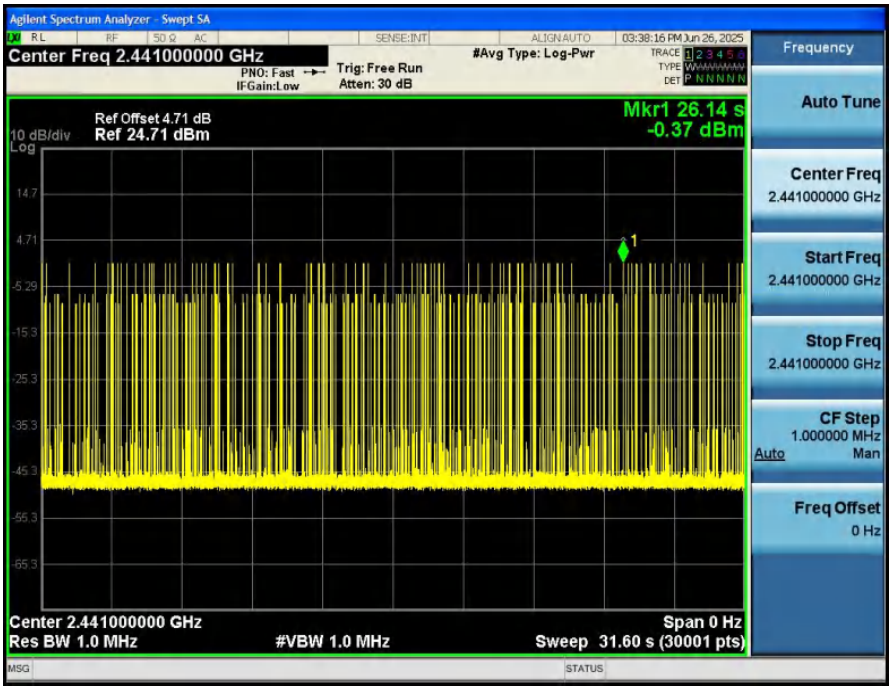
Appendix I: Dwell Time (Hopping)

Condition	Antenna	Packet Type	Pulse Time(ms)	Hops	Dwell Time(ms)	Limit(s)	Result
NVNT	ANT1	1-DH5	2.890	92.00	265.880	0.40	Pass
NVNT	ANT1	2-DH5	2.900	103.00	298.700	0.40	Pass
NVNT	ANT1	3-DH5	2.910	99.00	288.090	0.40	Pass
NVNT	ANT1	1-DH1	0.390	319.00	124.410	0.40	Pass
NVNT	ANT1	1-DH3	1.650	157.00	259.050	0.40	Pass
NVNT	ANT1	2-DH1	0.410	320.00	131.200	0.40	Pass
NVNT	ANT1	2-DH3	1.660	161.00	267.260	0.40	Pass
NVNT	ANT1	3-DH1	0.400	320.00	128.000	0.40	Pass
NVNT	ANT1	3-DH3	1.660	158.00	262.280	0.40	Pass

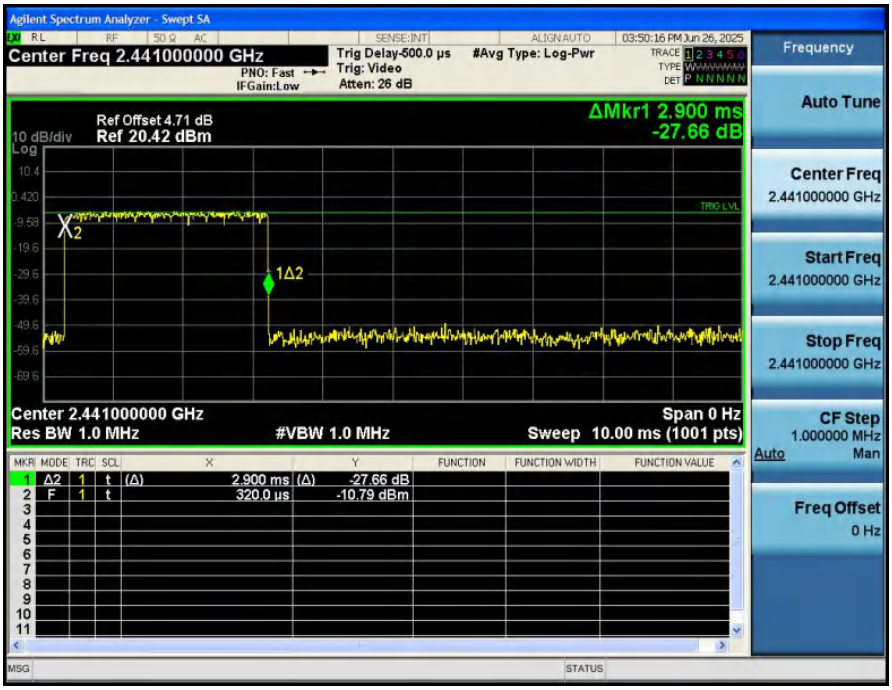
Dwell_Time_(Hopping)_NVNT_ANT1_1-DH5_2441_00_One_Burst_Time



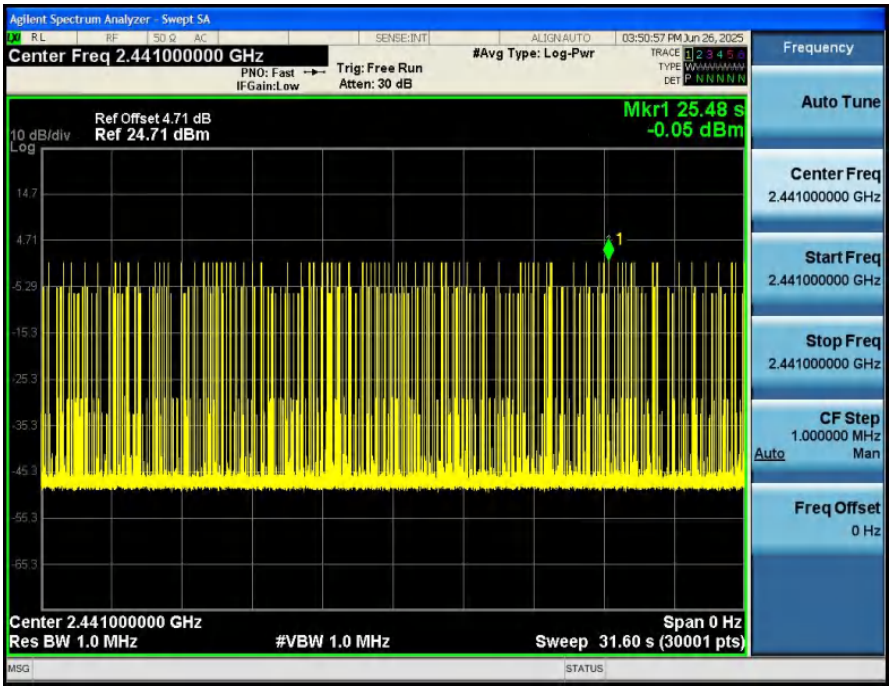
Dwell_Time_(Hopping)_NVNT_ANT1_1-DH5_2441_00_Accumulated



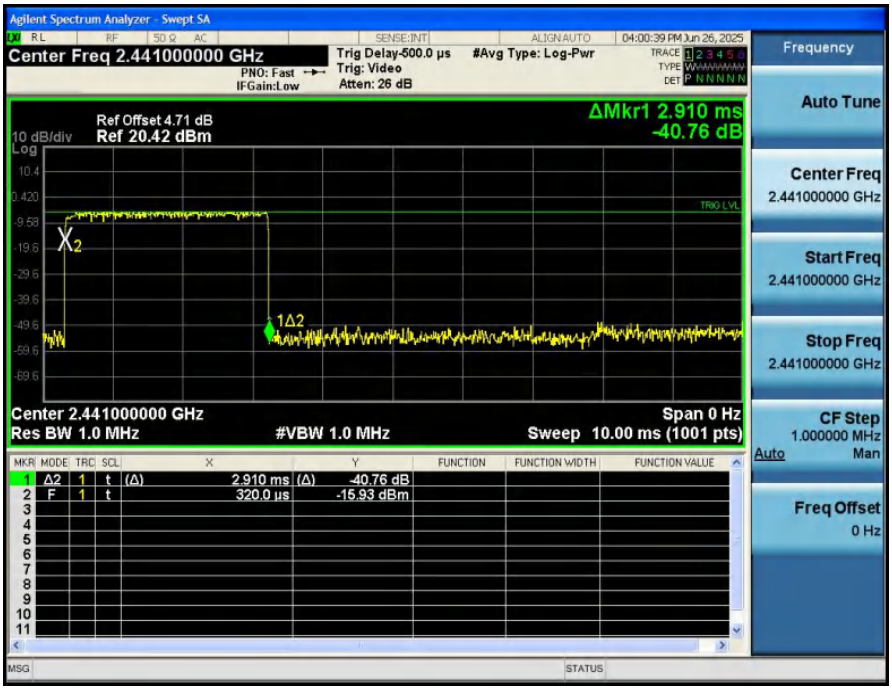
Dwell_Time_(Hopping)_NVNT_ANT1_2-DH5_2441_00_One_Burst_Time



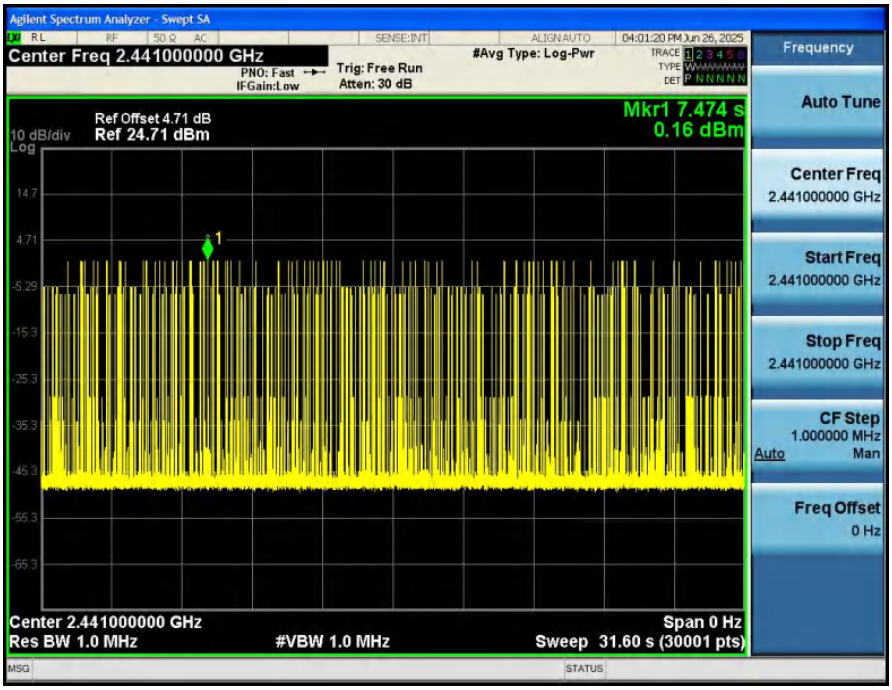
Dwell_Time_(Hopping)_NVNT_ANT1_2-DH5_2441_00_Accumulated



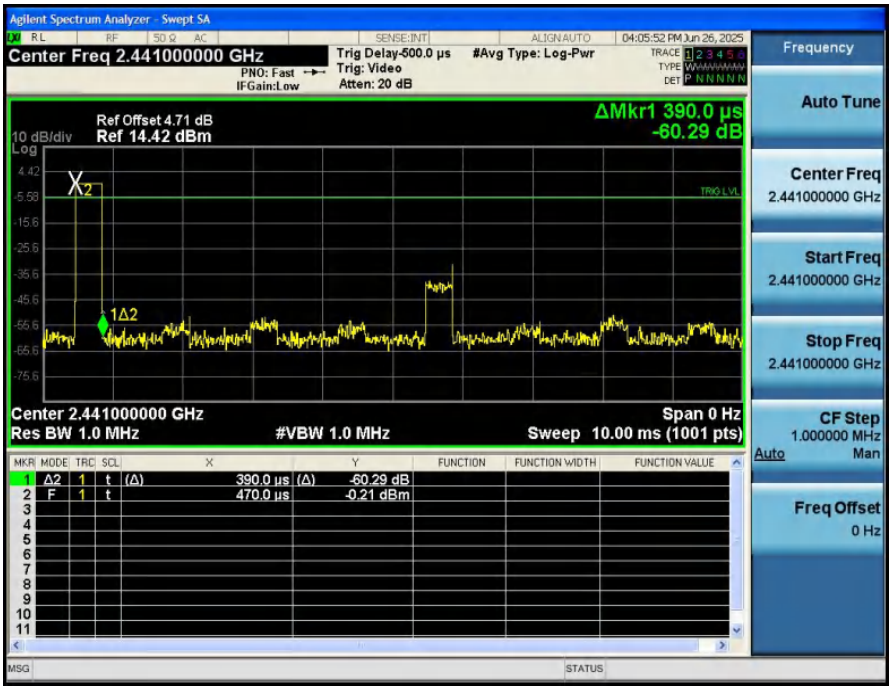
Dwell_Time_(Hopping)_NVNT_ANT1_3-DH5_2441_00_One_Burst_Time



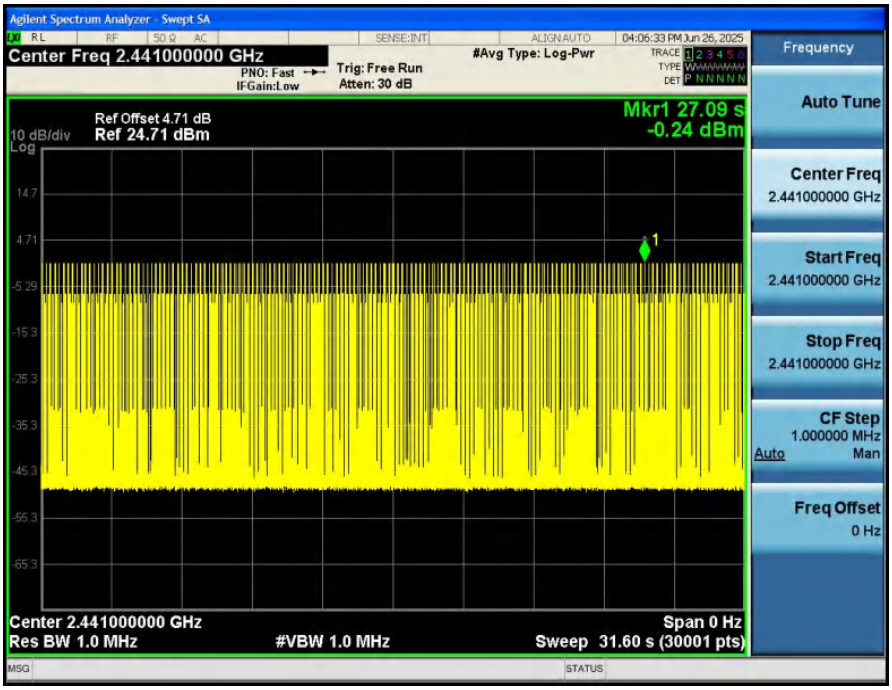
Dwell_Time_(Hopping)_NVNT_ANT1_3-DH5_2441_00_Accumulated



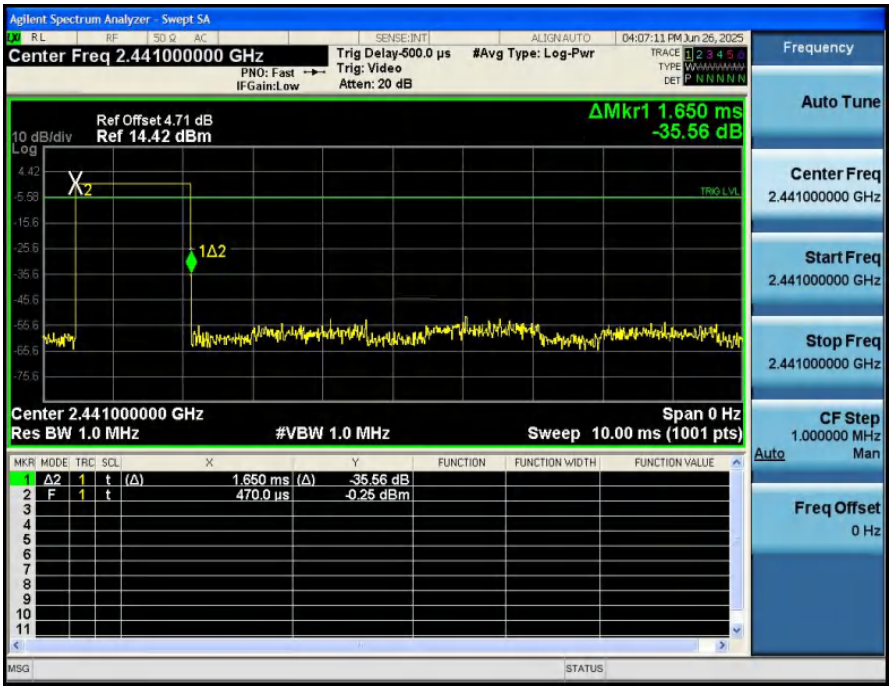
Dwell_Time_(Hopping)_NVNT_ANT1_1-DH1_2441_00_One_Burst_Time



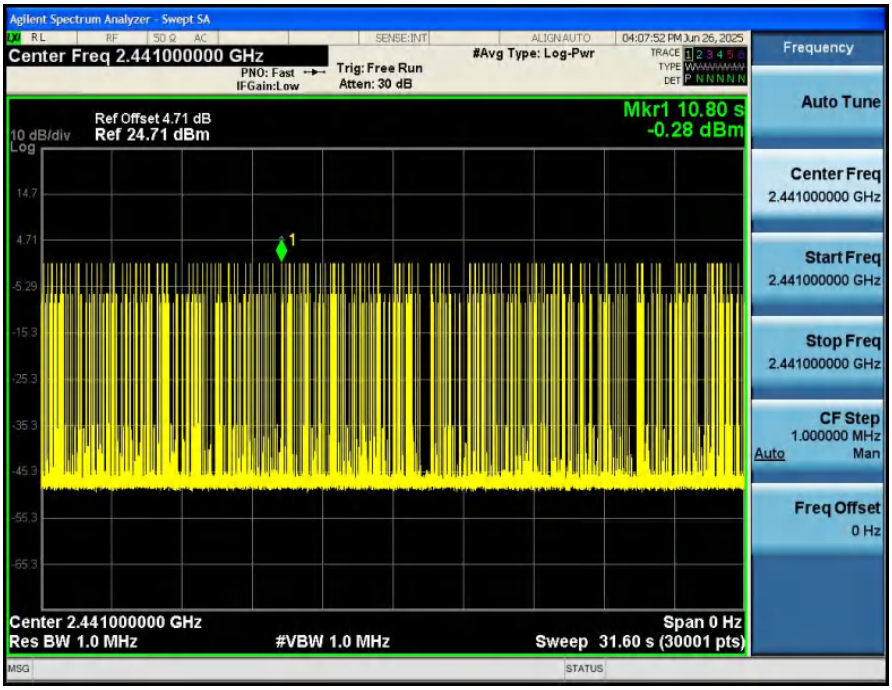
Dwell_Time_(Hopping)_NVNT_ANT1_1-DH1_2441_00_Accumulated



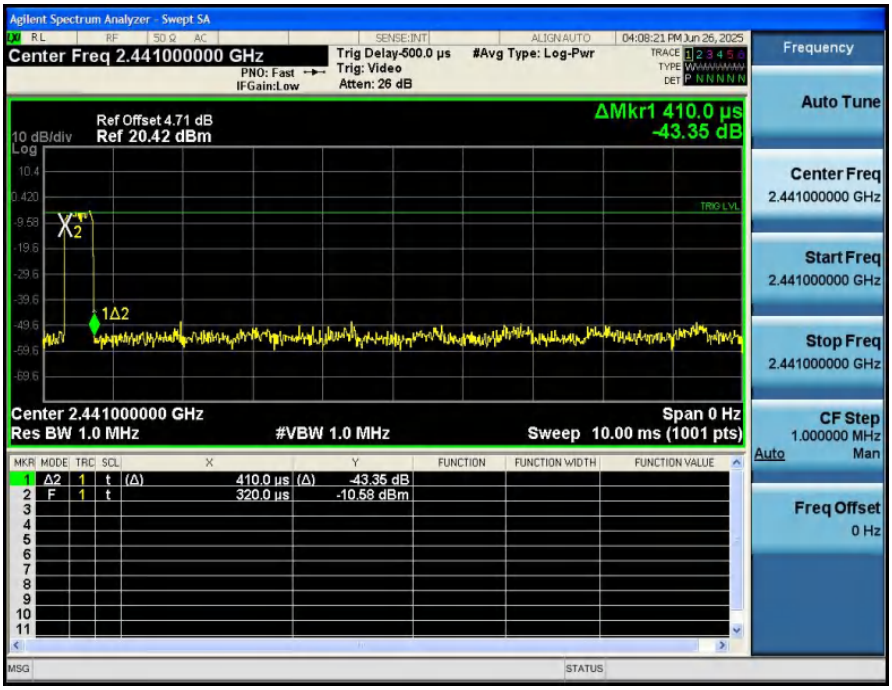
Dwell_Time_(Hopping)_NVNT_ANT1_1-DH3_2441_00_One_Burst_Time



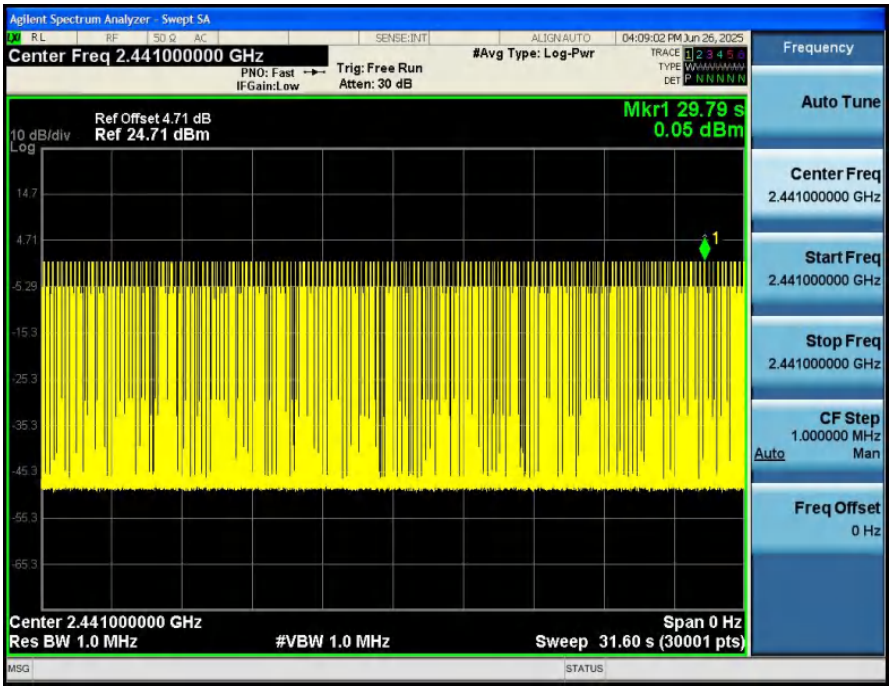
Dwell_Time_(Hopping)_NVNT_ANT1_1-DH3_2441_00_Accumulated



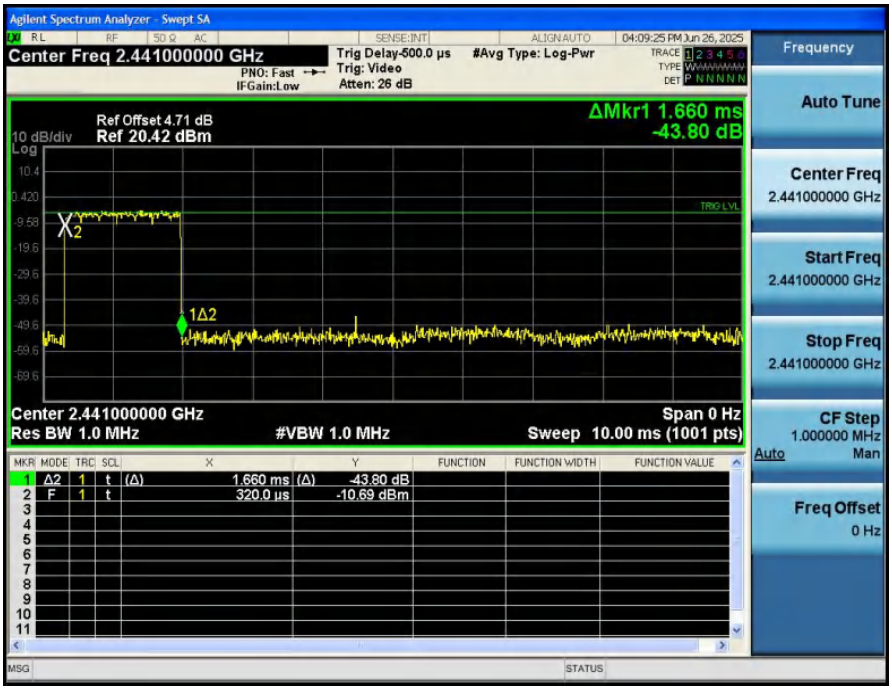
Dwell_Time_(Hopping)_NVNT_ANT1_2-DH1_2441_00_One_Burst_Time



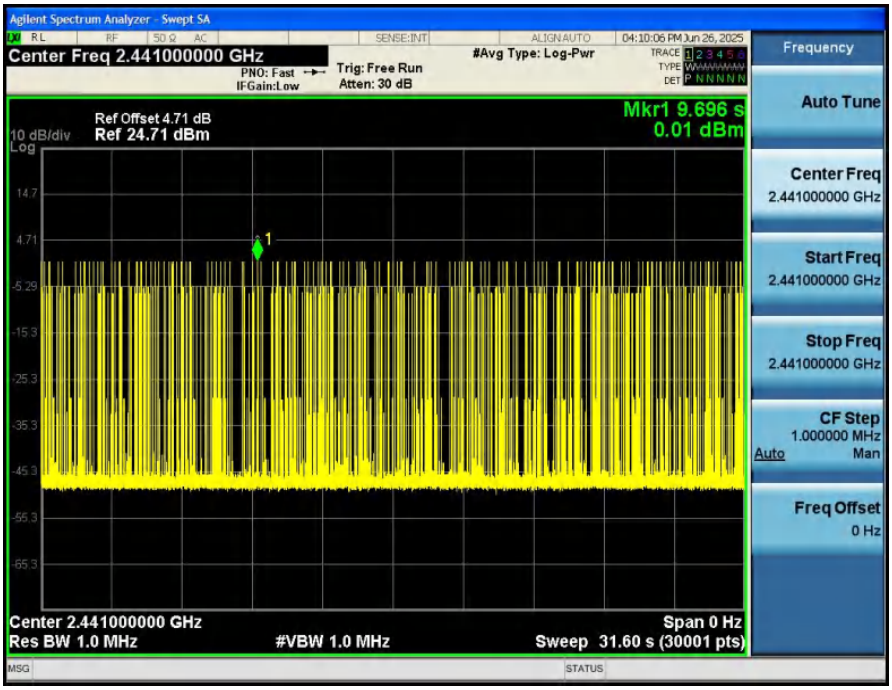
Dwell_Time_(Hopping)_NVNT_ANT1_2-DH1_2441_00_Accumulated



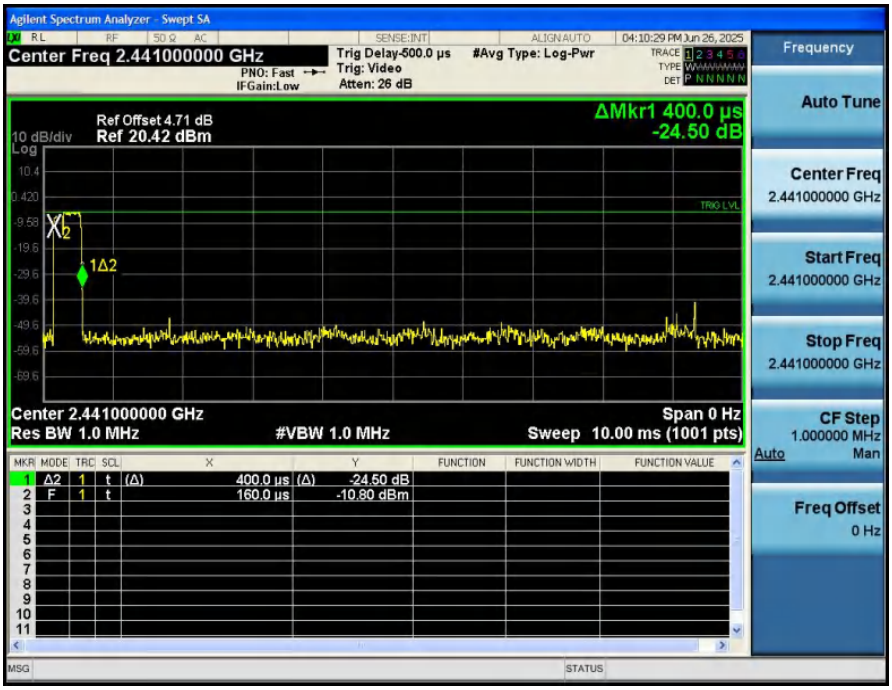
Dwell_Time_(Hopping)_NVNT_ANT1_2-DH3_2441_00_One_Burst_Time



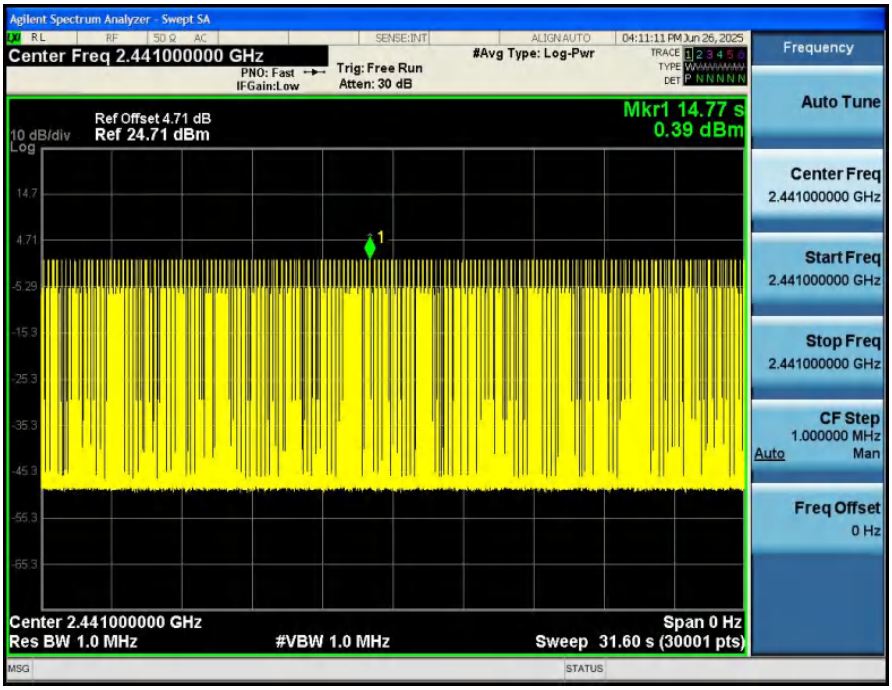
Dwell_Time_(Hopping)_NVNT_ANT1_2-DH3_2441_00_Accumulated



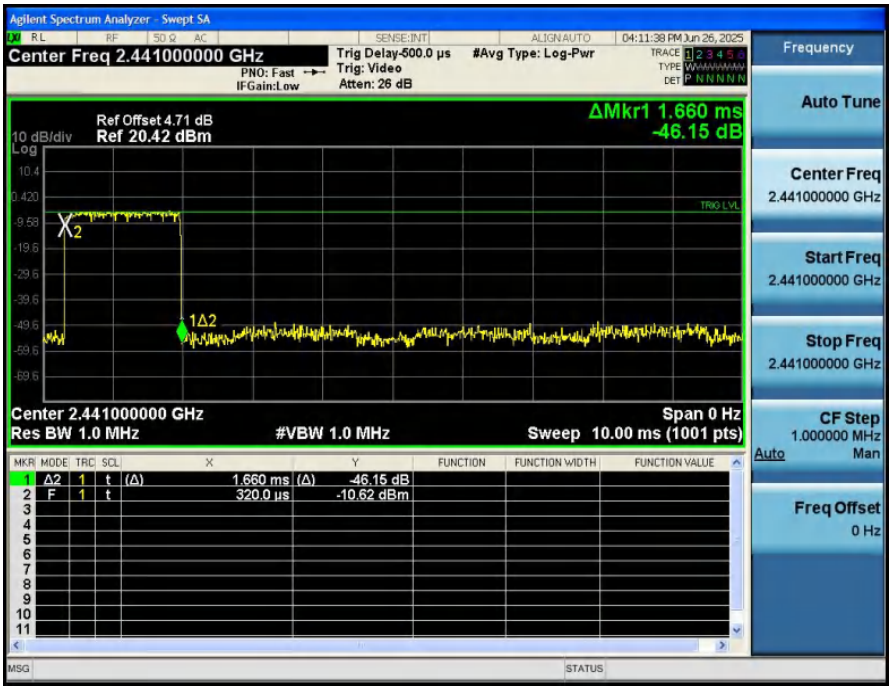
Dwell_Time_(Hopping)_NVNT_ANT1_3-DH1_2441_00_One_Burst_Time



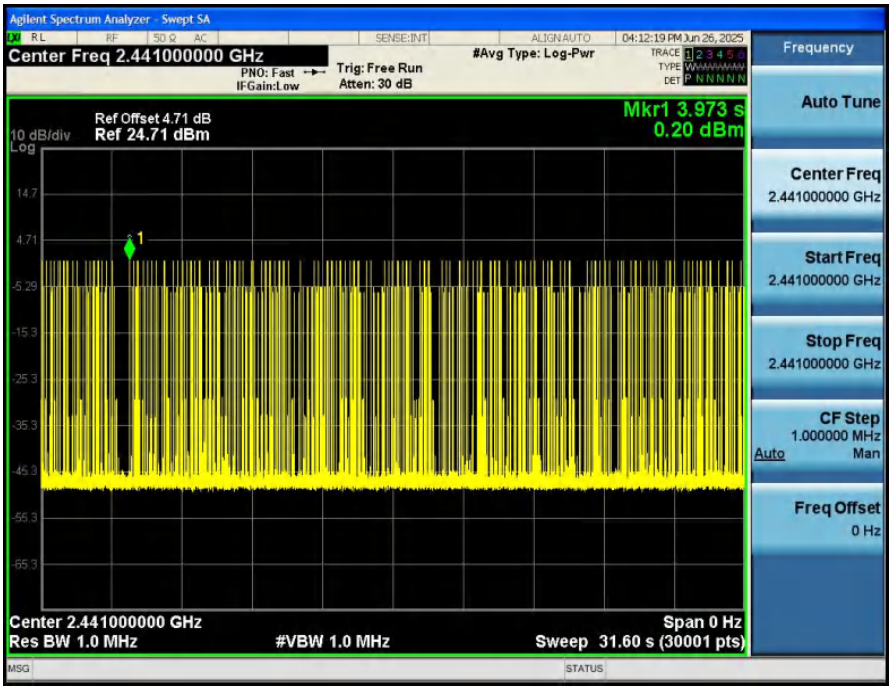
Dwell_Time_(Hopping)_NVNT_ANT1_3-DH1_2441_00_Accumulated



Dwell_Time_(Hopping)_NVNT_ANT1_3-DH3_2441_00_One_Burst_Time



Dwell_Time_(Hopping)_NVNT_ANT1_3-DH3_2441_00_Accumulated


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
#Avg Type: Log-Pwr
04:12:19 PM Jun 26, 2025
Ref Offset 4.71 dB
10 dB/div
Log
Ref 24.71 dBm
Mkr1 3.973 s
0.20 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---