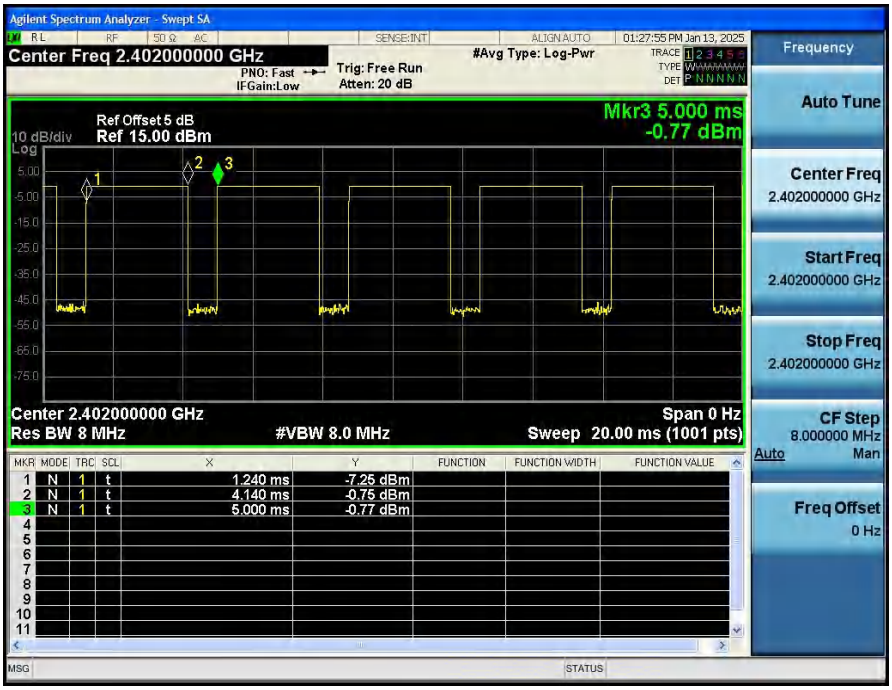
Appendix Test Data

Report No.:	1813C50010412501	Test Sample No.:	1-2-2
Start Test Date:	2025.1.7	Finish Test Date:	2025.1.13
Test Engineer:	Joker Huang	Auditor:	Justin Feng
Temperature:	23.5℃	Relative Humidity:	55%
Pressure:	101kPa		

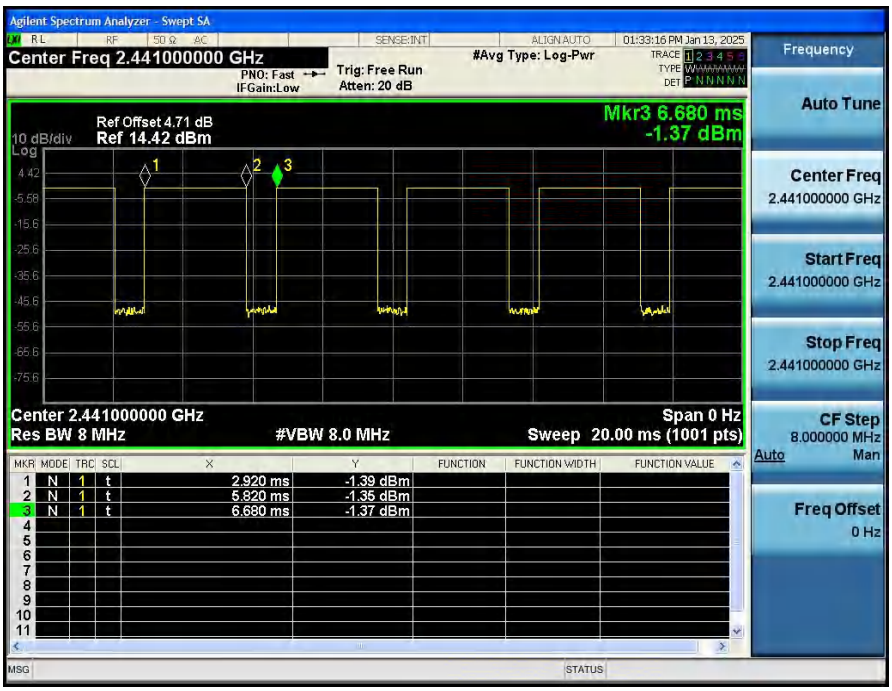
Appendix A: Duty Cycle

Condition	Antenna	Rate	Frequency (MHz)	Dutycycle(%)	Duty_factor
NVNT	ANT1	1-DH5	2402.00	77.66	1.10
NVNT	ANT1	1-DH5	2441.00	77.66	1.10
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

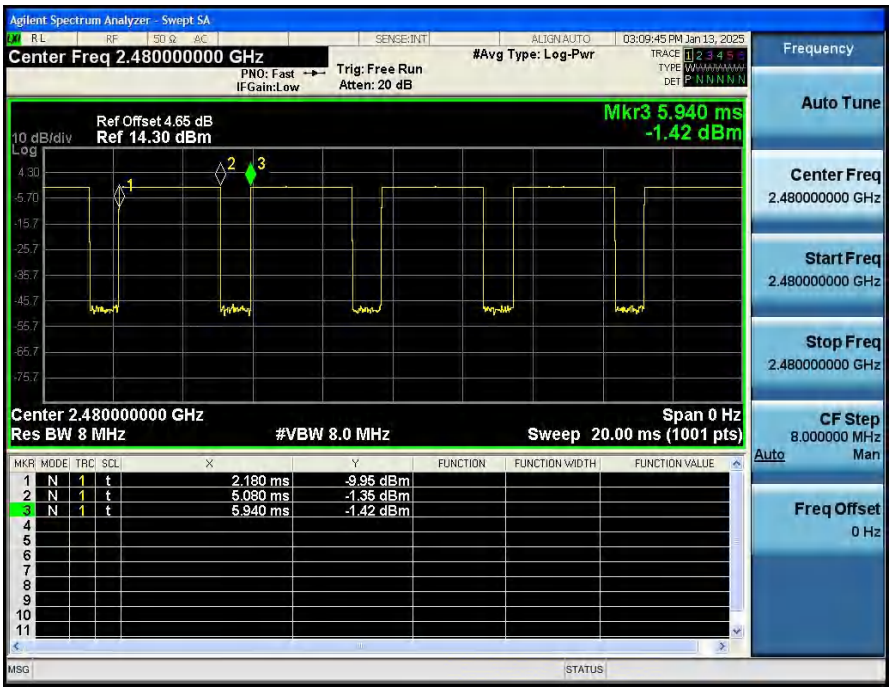
Duty_Cycle_NVNT_ANT1_1-DH5_2402



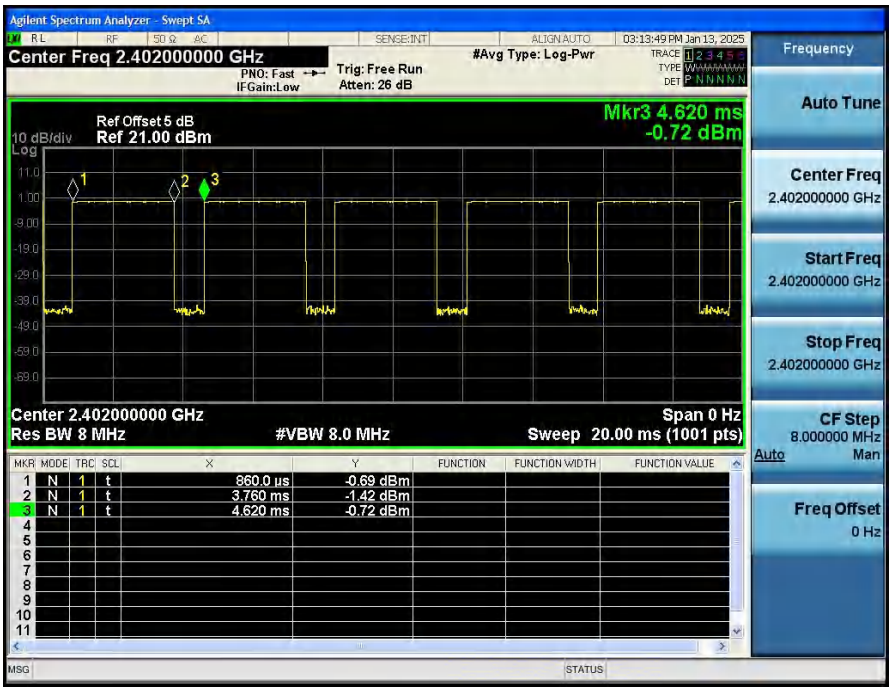
Duty_Cycle_NVNT_ANT1_1-DH5_2441



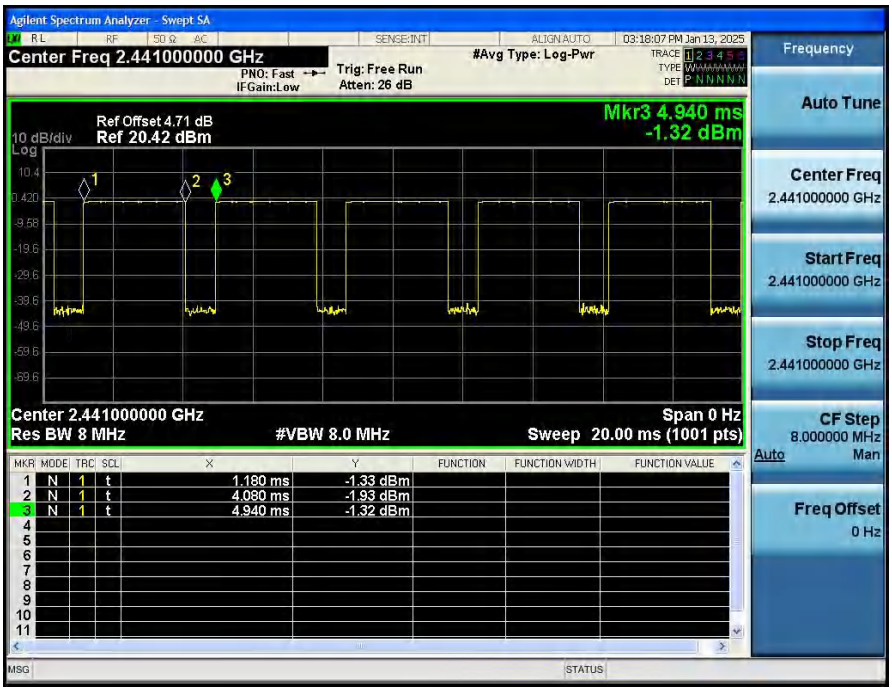
Duty_Cycle_NVNT_ANT1_1-DH5_2480



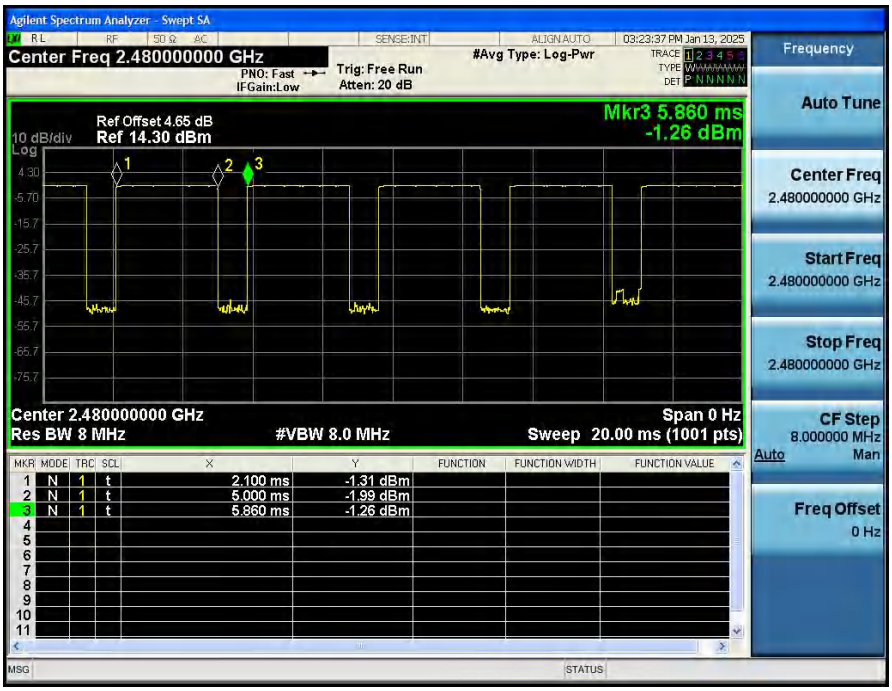
Duty_Cycle_NVNT_ANT1_2-DH5_2402



Duty_Cycle_NVNT_ANT1_2-DH5_2441



Duty_Cycle_NVNT_ANT1_2-DH5_2480


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
#Avg Type: Log-Pwr
03:23:37 PM Jan 13, 2025
Ref Offset 4.65 dB
10 dB/div
Ref 14.30 dBm
Log
Mkr3 5.860 ms
-1.26 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 2.100 ms -1.31 dBm
2 N 1 t 5.000 ms -1.99 dBm
3 N 1 t 5.860 ms -1.26 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

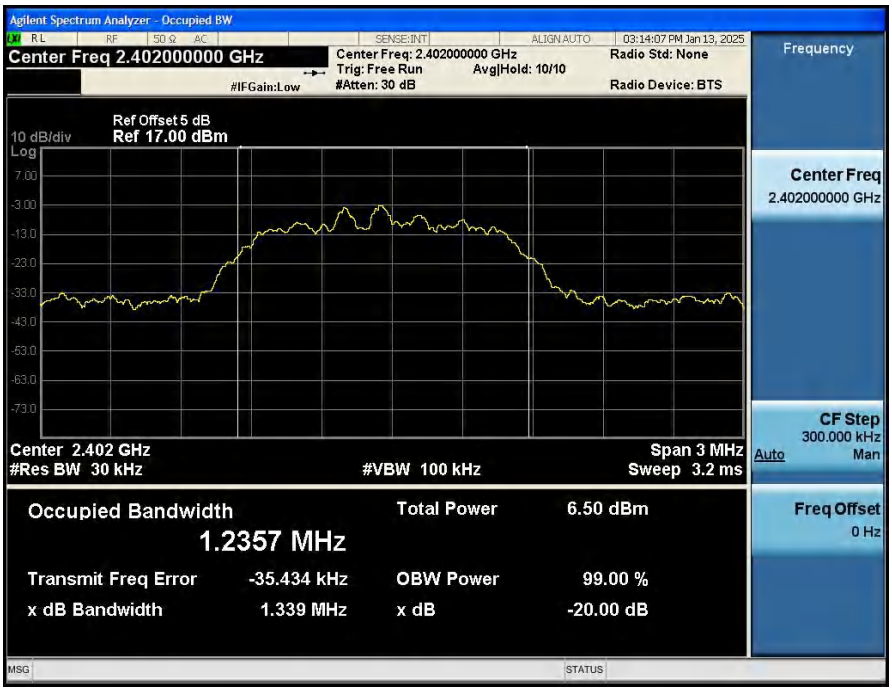
Condition	Antenna	Modulation	Frequency (MHz)	-20dB BW(MHz)	if larger than CFS
NVNT	ANT1	1-DH5	2402.00	1.018	Yes
NVNT	ANT1	1-DH5	2441.00	1.013	Yes
NVNT	ANT1	1-DH5	2480.00	1.020	Yes
NVNT	ANT1	2-DH5	2402.00	1.339	Yes
NVNT	ANT1	2-DH5	2441.00	1.319	Yes
NVNT	ANT1	2-DH5	2480.00	1.315	Yes

-20dB_Bandwidth_NVNT_ANT1_1-DH5_2402_00

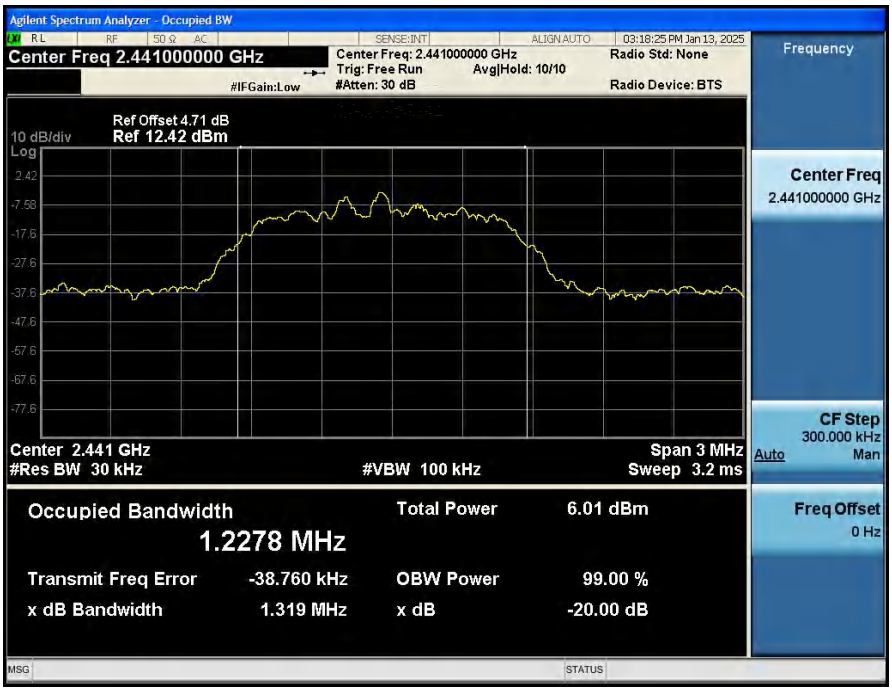
-20dB_Bandwidth_NVNT_ANT1_1-DH5_2441_00

-20dB_Bandwidth_NVNT_ANT1_1-DH5_2480_00

-20dB_Bandwidth_NVNT_ANT1_2-DH5_2402_00



-20dB_Bandwidth_NVNT_ANT1_2-DH5_2441_00



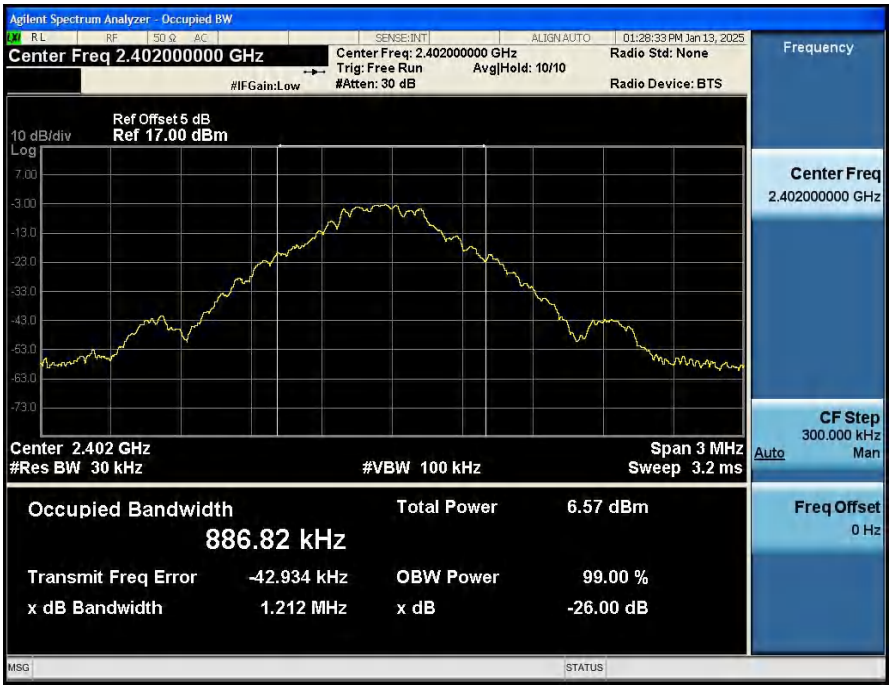
-20dB_Bandwidth_NVNT_ANT1_2-DH5_2480_00

Agilent Spectrum Analyzer - Occupied BW
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold: 10/10
#Atten: 30 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
03:23:57 PM Jan 13, 2025
Frequency
Ref Offset 4.65 dB
10 dB/div
Ref 12.30 dBm
Log
Center Freq
2.480000000 GHz
Center 2.48 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 3 MHz
Sweep 3.2 ms
CF Step
300.000 kHz
Auto
Man
Occupied Bandwidth
1.2244 MHz
Total Power 5.88 dBm
Transmit Freq Error -38.584 kHz
OBW Power 99.00 %
x dB Bandwidth 1.315 MHz
x dB -20.00 dB
Freq Offset
0 Hz
MSG
STATUS

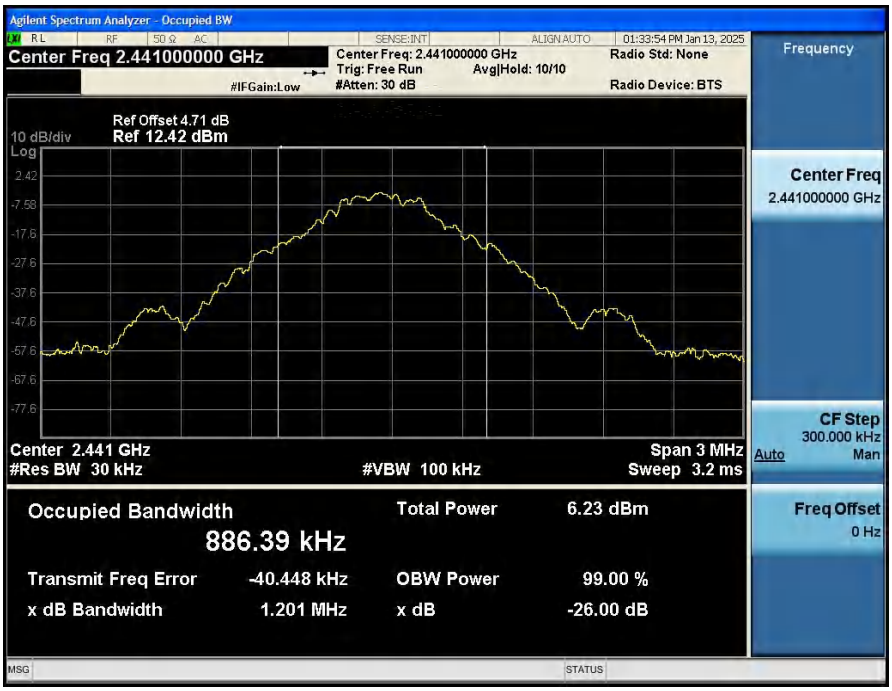
Appendix C: 99% Occupied Bandwidth

Condition	Antenna	Modulation	Frequency (MHz)	99%BW(MHz)
NVNT	ANT1	1-DH5	2402.00	0.887
NVNT	ANT1	1-DH5	2441.00	0.886
NVNT	ANT1	1-DH5	2480.00	0.903
NVNT	ANT1	2-DH5	2402.00	1.236
NVNT	ANT1	2-DH5	2441.00	1.225
NVNT	ANT1	2-DH5	2480.00	1.225

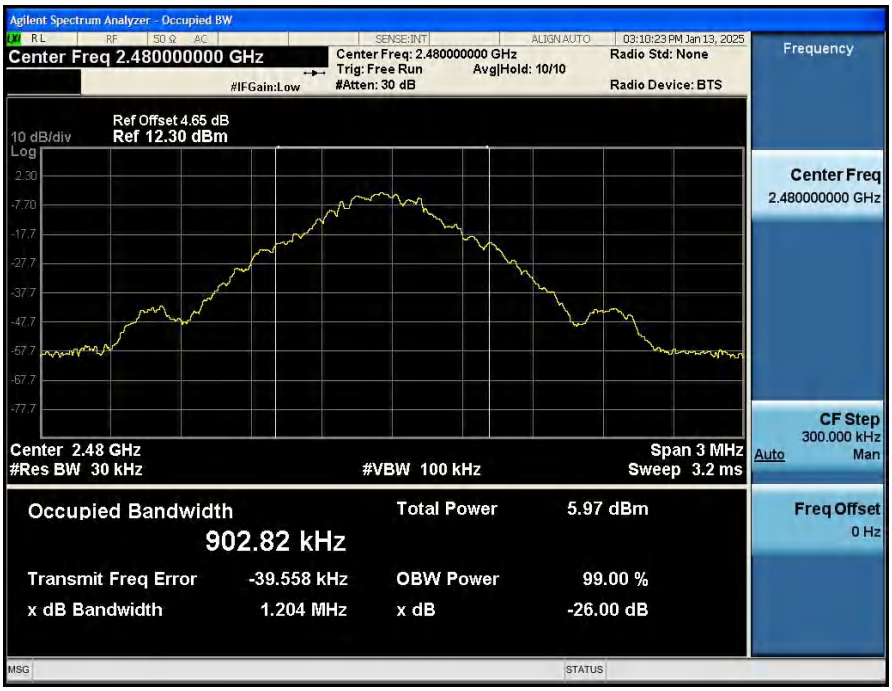
99%_Occupied_Bandwidth_NVNT_ANT1_1-DH5_2402_00



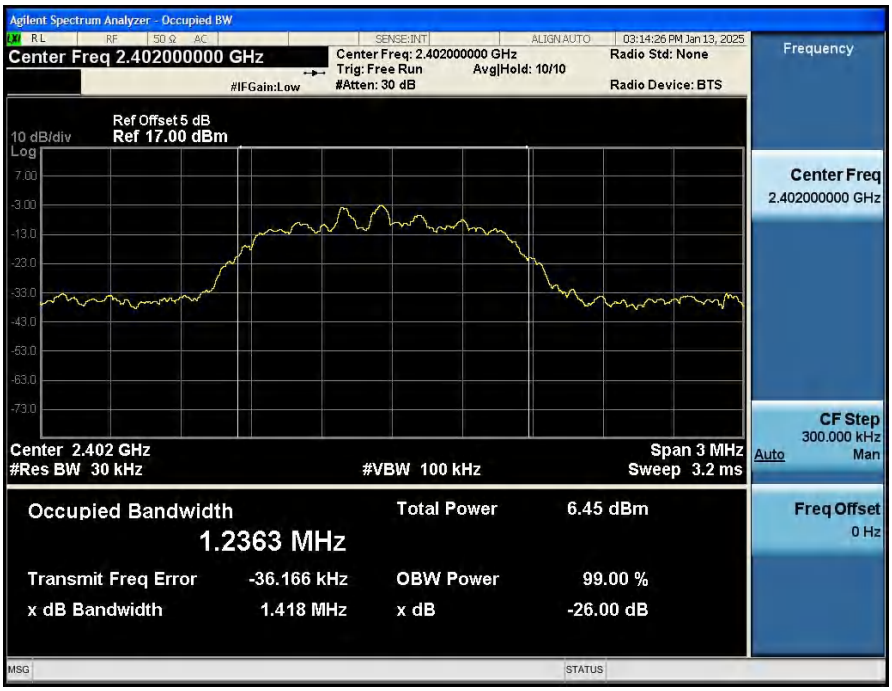
99%_Occupied_Bandwidth_NVNT_ANT1_1-DH5_2441_00



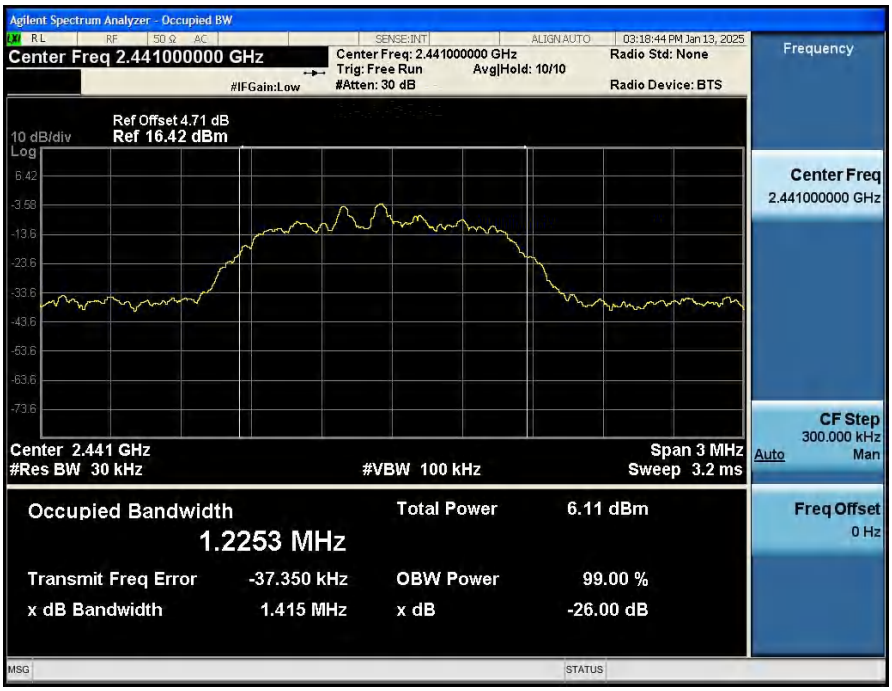
99%_Occupied_Bandwidth_NVNT_ANT1_1-DH5_2480_00



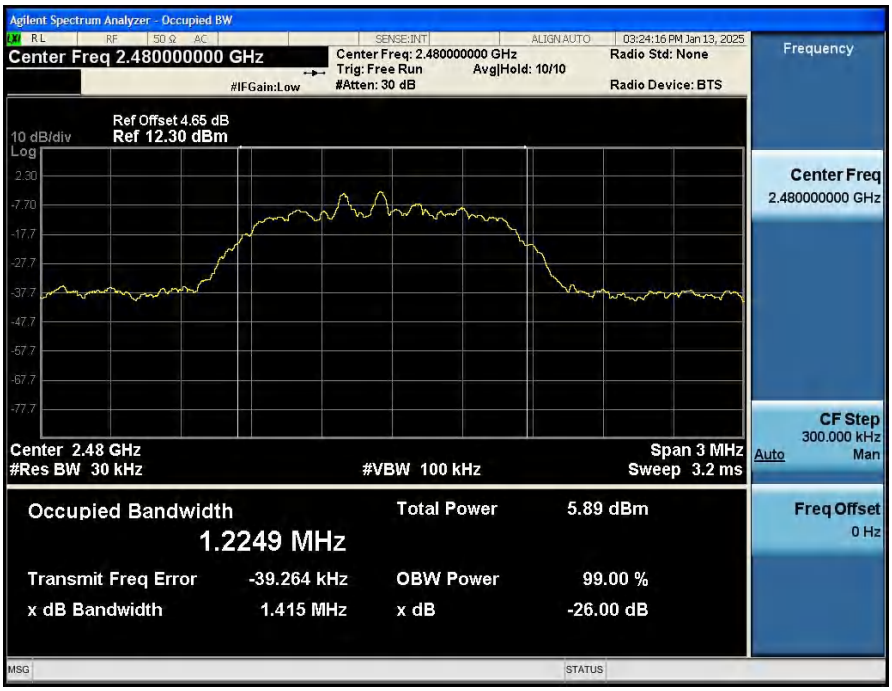
99%_Occupied_Bandwidth_NVNT_ANT1_2-DH5_2402_00



99%_Occupied_Bandwidth_NVNT_ANT1_2-DH5_2441_00



99%_Occupied_Bandwidth_NVNT_ANT1_2-DH5_2480_00


Agilent Spectrum Analyzer - Occupied BW
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold: 10/10
#Atten: 30 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
03:24:16 PM Jan 13, 2025
Frequency
Ref Offset 4.65 dB
10 dB/div
Ref 12.30 dBm
Log
2.30
-7.70
-17.7
-27.7
-37.7
-47.7
-57.7
-67.7
-77.7
Center Freq
2.480000000 GHz
Center 2.48 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 3 MHz
Sweep 3.2 ms
CF Step
300.000 kHz
Auto
Man
Occupied Bandwidth
1.2249 MHz
Total Power 5.89 dBm
Transmit Freq Error -39.264 kHz
OBW Power 99.00 %
x dB Bandwidth 1.415 MHz
x dB -26.00 dB
Freq Offset
0 Hz
MSG
STATUS

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	-0.72	0.85	125	Pass
NVNT	ANT1	1-DH5	2441.00	-1.30	0.74	125	Pass
NVNT	ANT1	1-DH5	2480.00	-1.28	0.74	125	Pass
NVNT	ANT1	2-DH5	2402.00	-0.18	0.96	125	Pass
NVNT	ANT1	2-DH5	2441.00	-0.74	0.84	125	Pass
NVNT	ANT1	2-DH5	2480.00	-0.72	0.85	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

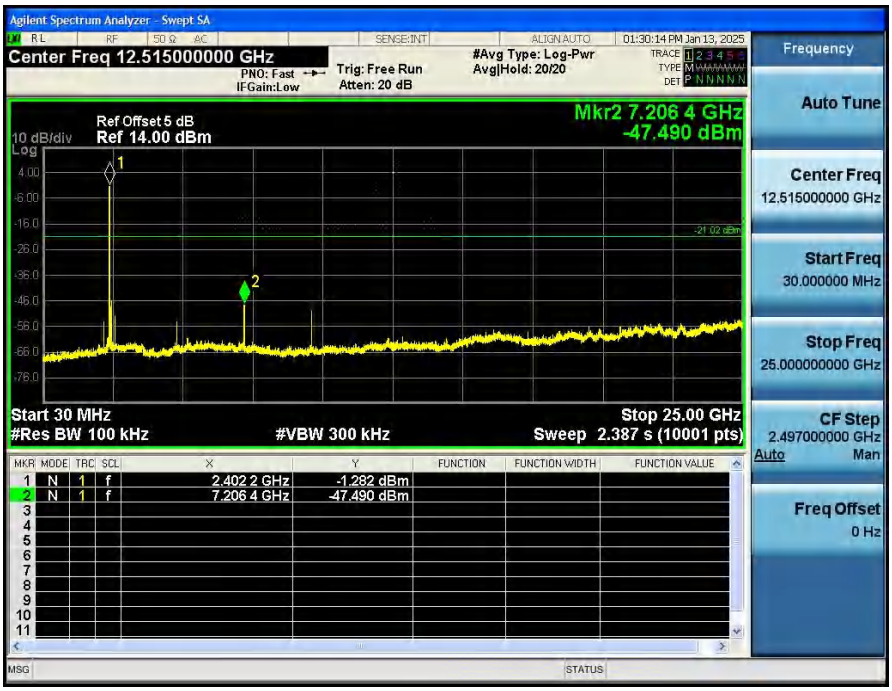
Agilent Spectrum Analyzer - Swept SA
Center Freq 2.480000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
#Avg Type: Log-Pwr
Avg|Hold: 10/10
03:24:35 PM Jan 13, 2025
Ref Offset 4.65 dB
10 dB/div
Ref 14.30 dBm
Log
Mkr1 2.479 895 GHz
-0.716 dBm
Center 2.480000 GHz
#Res BW 3.0 MHz
#VBW 8.0 MHz
Span 7.000 MHz
Sweep 1.000 ms (1001 pts)
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.476500000 GHz
Stop Freq
2.483500000 GHz
CF Step
700.000 kHz
Auto
Man
Freq Offset
0 Hz

Appendix E: Spurious Emissions

Condition	Antenna	Modulation	TX Mode	Ref_level(dBm)	Spurious MAX.Value(dBm)	Limit	Result
NVNT	ANT1	1-DH5	2402.00	-1.017	-47.490	-21.017	Pass
NVNT	ANT1	1-DH5	2441.00	-1.500	-45.883	-21.500	Pass
NVNT	ANT1	1-DH5	2480.00	-1.521	-47.464	-21.521	Pass
NVNT	ANT1	2-DH5	2402.00	-0.884	-50.591	-20.884	Pass
NVNT	ANT1	2-DH5	2441.00	-1.369	-49.495	-21.369	Pass
NVNT	ANT1	2-DH5	2480.00	-1.369	-48.421	-21.369	Pass

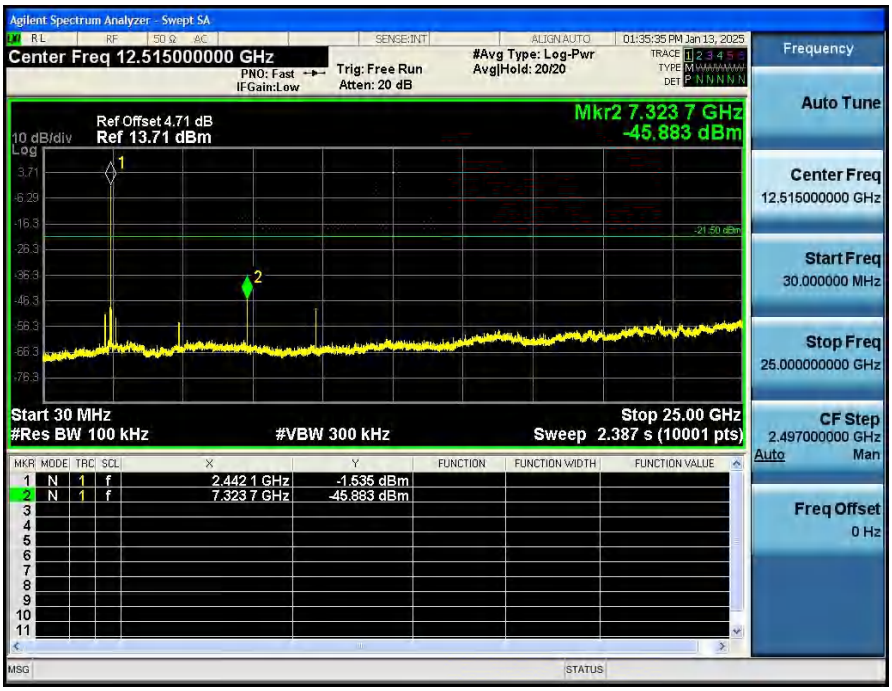
1_Reference_Level_NVNT_ANT1_1-DH5_2402_00

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

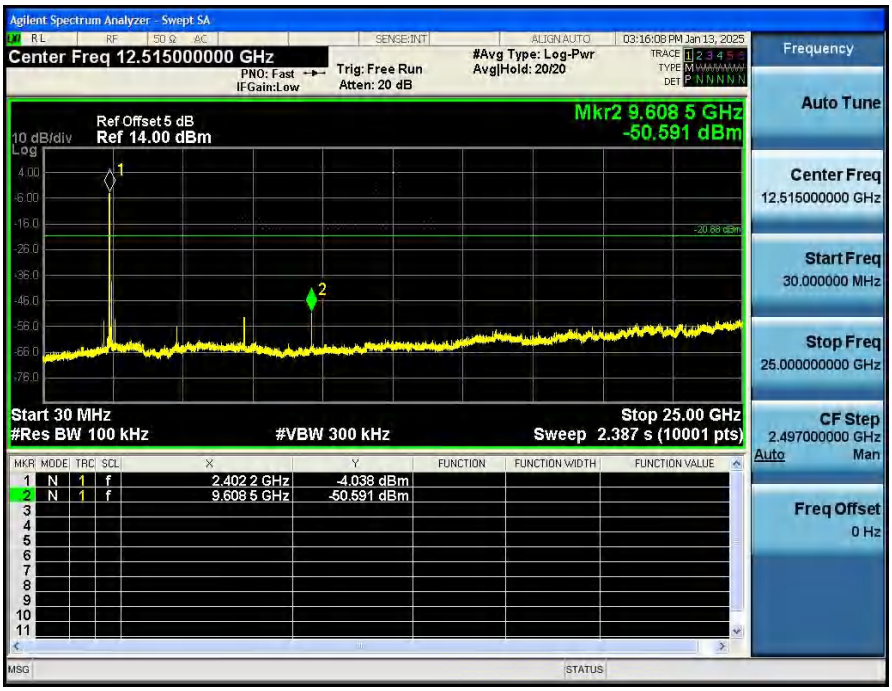


1_Reference_Level_NVNT_ANT1_1-DH5_2480_00

2_Spurious_Emissions_NVNT_ANT1_1-DH5_2480_00

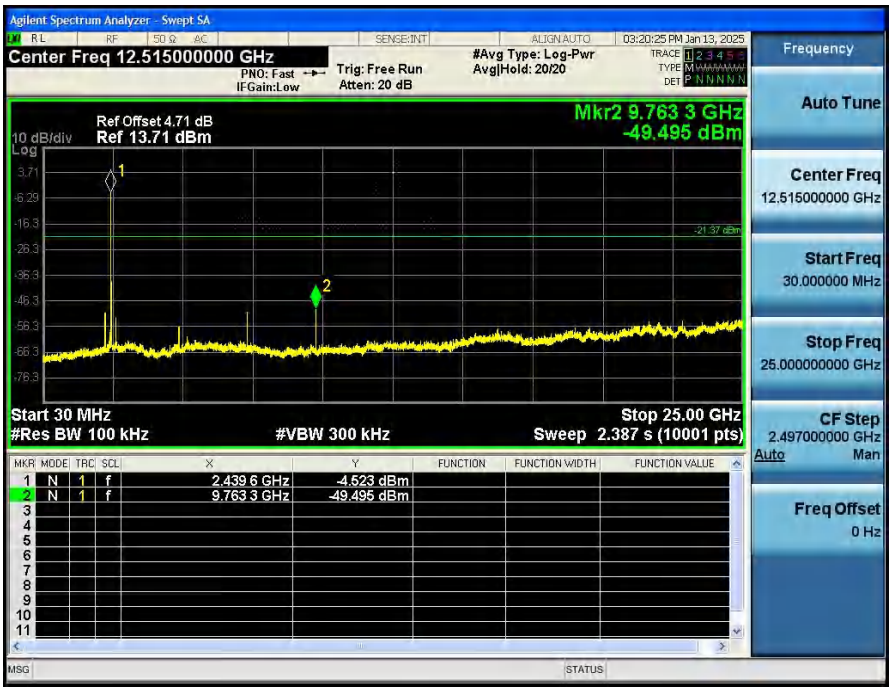
1_Reference_Level_NVNT_ANT1_2-DH5_2402_00

2_Spurious_Emissions_NVNT_ANT1_2-DH5_2402_00



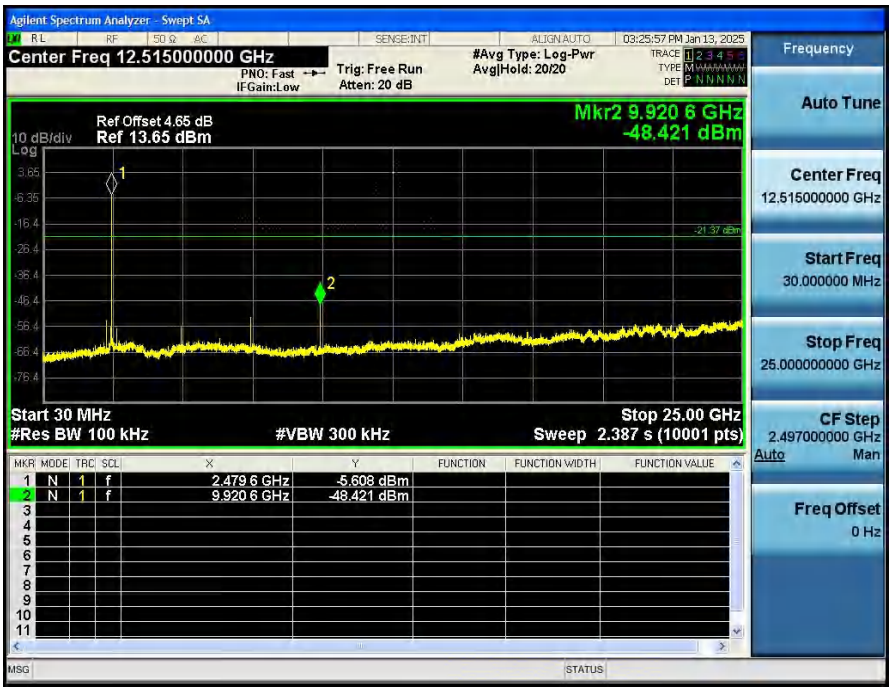
1_Reference_Level_NVNT_ANT1_2-DH5_2441_00

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

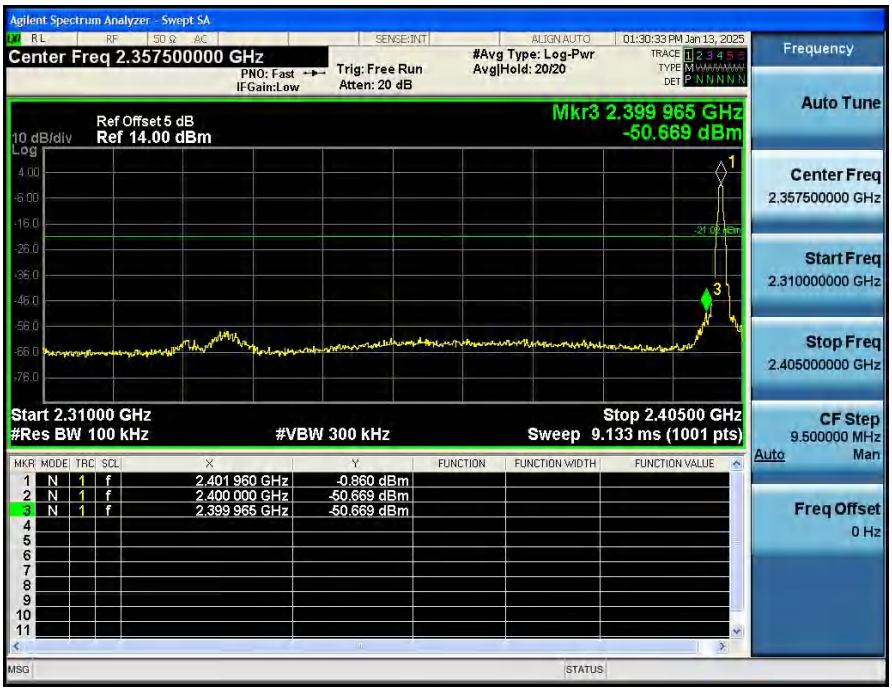

Agilent Spectrum Analyzer - Swept SA
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
#Avg Type: Log-Pwr
Avg|Hold: 20/20
03:25:57 PM Jan 13, 2025
Ref Offset 4.65 dB
10 dB/div
Ref 13.65 dBm
Log
Mkr2 9.920 6 GHz
-48.421 dBm
-21.37 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
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 -5.608 dBm
2 N 1 f 9.920 6 GHz -48.421 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

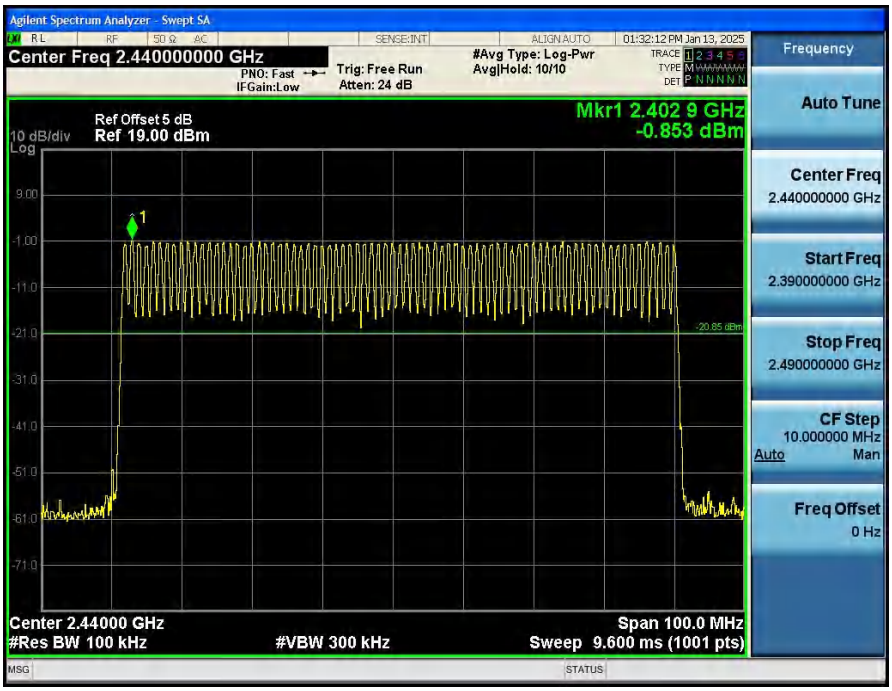
Condition	Antenna	Modulation	TX Mode	Ref_level(dBm)	Bandedge MAX.Value	Limit	Result
NVNT	ANT1	1-DH5	2402.00	-1.017	-50.669	-21.017	Pass
NVNT	ANT1	1-DH5	Hopping_LCH	-0.853	-57.462	-20.853	Pass
NVNT	ANT1	1-DH5	2480.00	-1.521	-52.495	-21.521	Pass
NVNT	ANT1	1-DH5	Hopping_HCH	-1.427	-61.092	-21.427	Pass
NVNT	ANT1	2-DH5	2402.00	-0.884	-45.117	-20.884	Pass
NVNT	ANT1	2-DH5	Hopping_LCH	-0.957	-48.988	-20.957	Pass
NVNT	ANT1	2-DH5	2480.00	-1.369	-59.064	-21.369	Pass
NVNT	ANT1	2-DH5	Hopping_HCH	-1.580	-61.130	-21.580	Pass

1_Reference_Level_NVNT_ANT1_1-DH5_2402_00

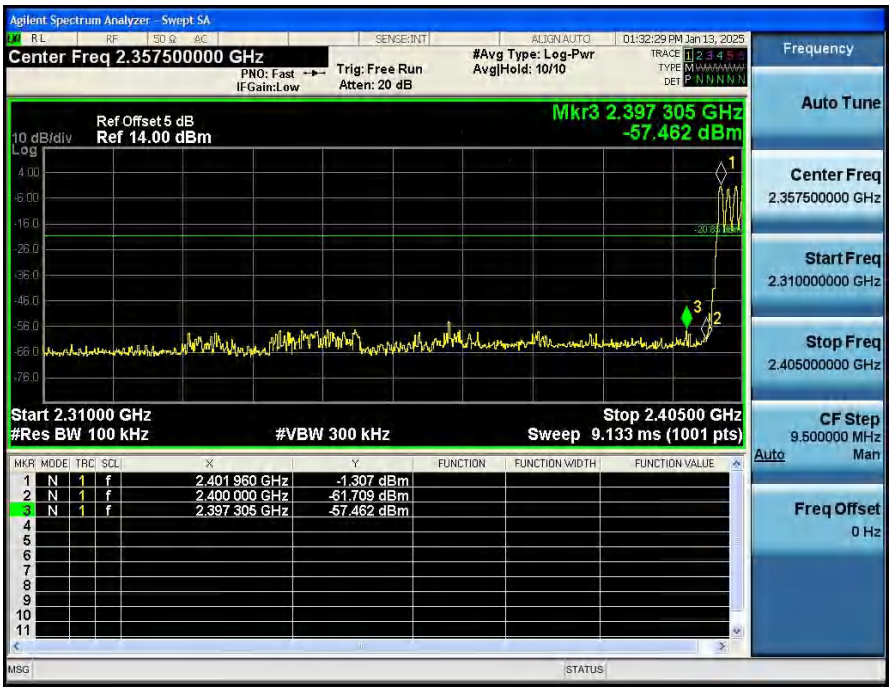
2_Bandedge_NVNT_ANT1_1-DH5_2402_00



1_Reference_Level_Hopping_NVNT_ANT1_1-DH5_Hopping



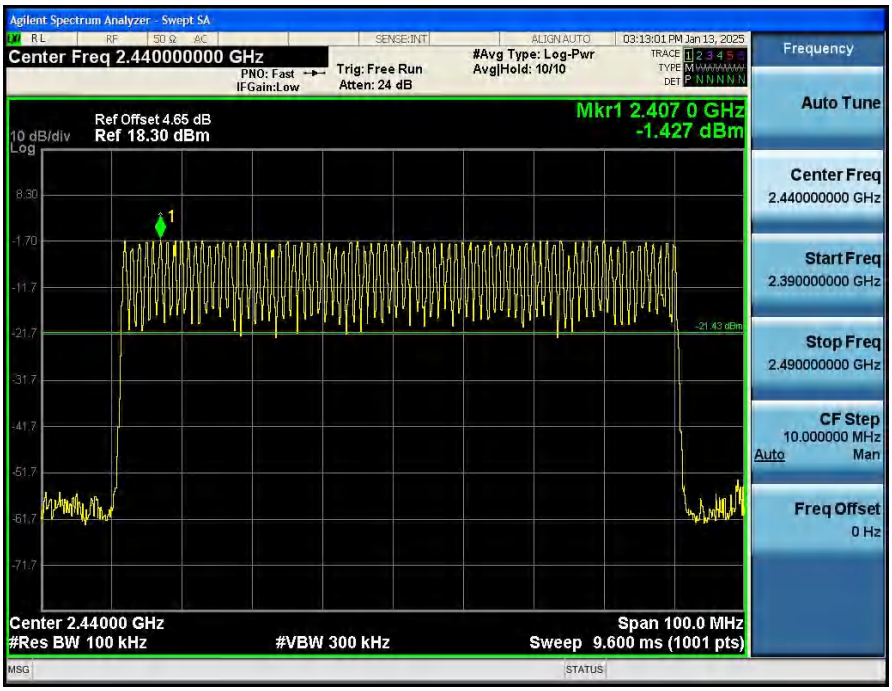
2_Band_Edge_(Hopping)_NVNT_ANT1_1-DH5_Hopping



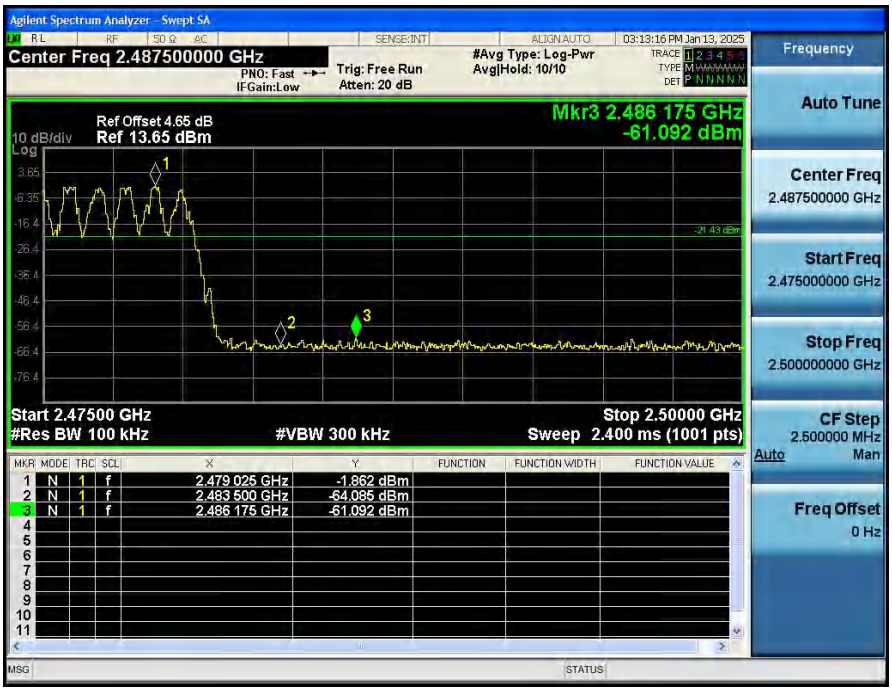
1_Reference_Level_NVNT_ANT1_1-DH5_2480_00

2_Bandedge_NVNT_ANT1_1-DH5_2480_00

1_Reference_Level_Hopping_NVNT_ANT1_1-DH5_Hopping

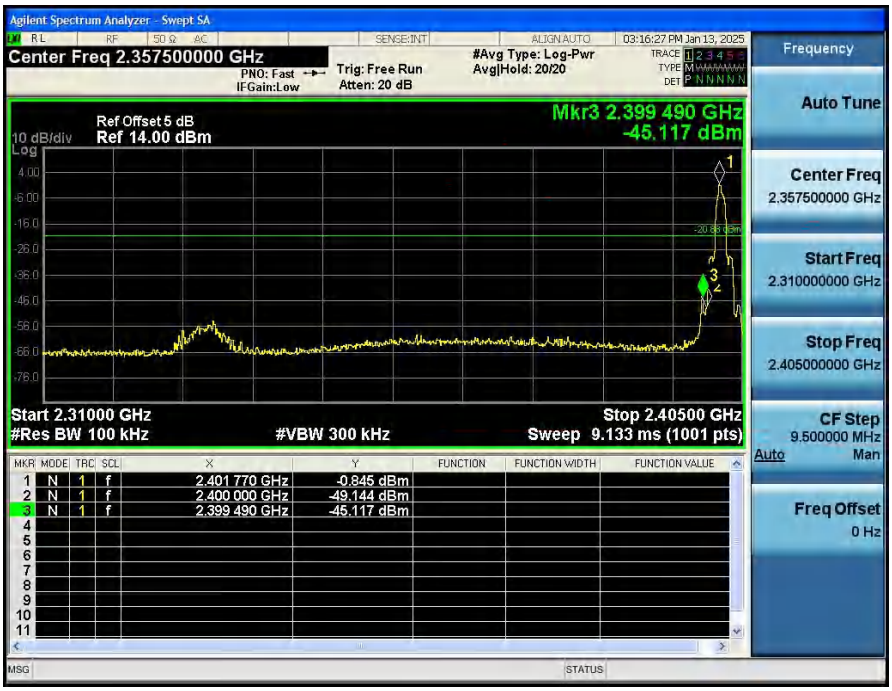


2_Band_Edge_(Hopping)_NVNT_ANT1_1-DH5_Hopping

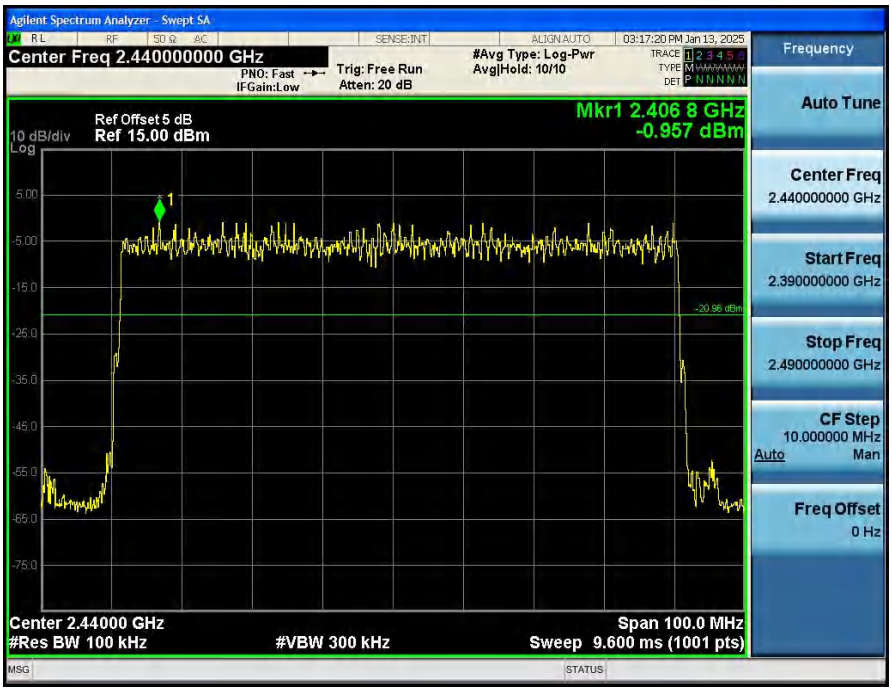


1_Reference_Level_NVNT_ANT1_2-DH5_2402_00

2_Bandedge_NVNT_ANT1_2-DH5_2402_00



1_Reference_Level_Hopping_NVNT_ANT1_2-DH5_Hopping

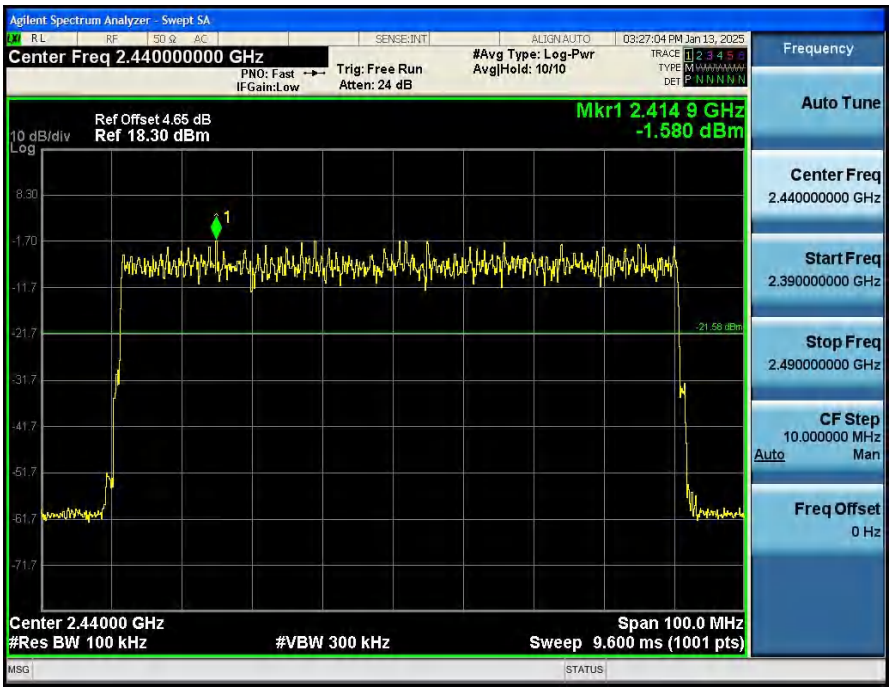


2_Band_Edge_(Hopping)_NVNT_ANT1_2-DH5_Hopping

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

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.487500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 20 dB
#Avg Type: Log-Pwr
Avg|Hold: 10/10
03:27:21 PM Jan 13, 2025
Ref Offset 4.65 dB
10 dB/div
Ref 13.65 dBm
Log
Mkr3 2.483 900 GHz
-61.130 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 2.476 775 GHz -2.077 dBm
2 N 1 f 2.483 500 GHz -62.455 dBm
3 N 1 f 2.483 900 GHz -61.130 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	2440.801	2442.127	1.33	0.680	Pass
NVNT	ANT1	2-DH5	2441.00	2440.780	2441.794	1.01	0.892	Pass

Carrier_Frequencies_Separation_(Hopping)_NVNT_ANT1_1-DH5_Hopping

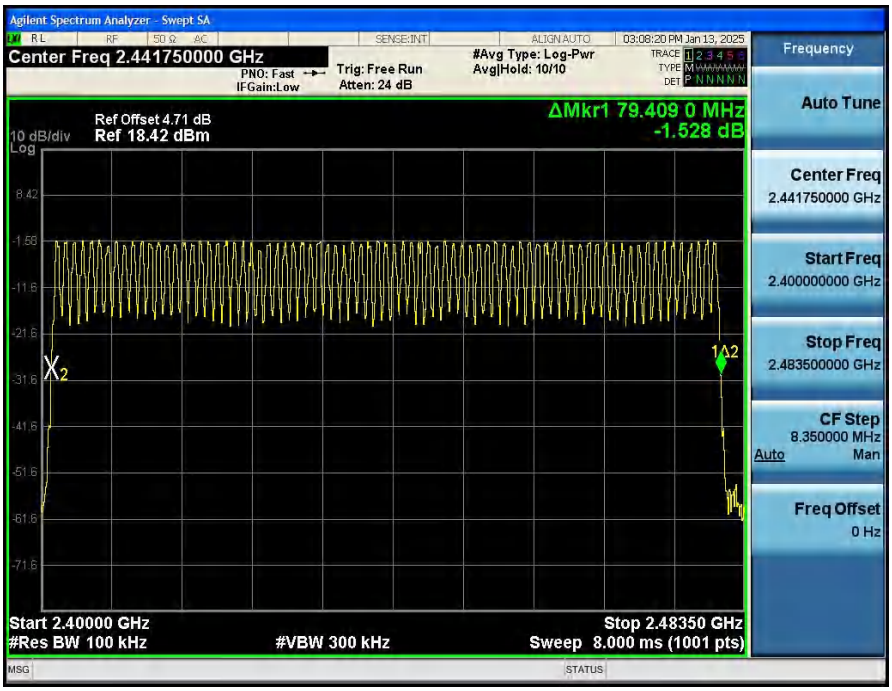
Carrier_Frequencies_Separation_(Hopping)_NVNT_ANT1_2-DH5_Hopping

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 24 dB
#Avg Type: Log-Pwr
Avg|Hold: 10/10
03:21:22 PM Jan 13, 2025
Ref Offset 4.71 dB
10 dB/div
Ref 18.42 dBm
ΔMkr1 1.014 MHz
0.013 dB
1Δ2
Center 2.441500 GHz
#Res BW 300 kHz
#VBW 1.0 MHz
Span 3.000 MHz
Sweep 1.000 ms (1001 pts)
Frequency
Auto Tune
Center Freq
2.441500000 GHz
Start Freq
2.440000000 GHz
Stop Freq
2.443000000 GHz
CF Step
300.000 kHz
Auto
Man
Freq Offset
0 Hz

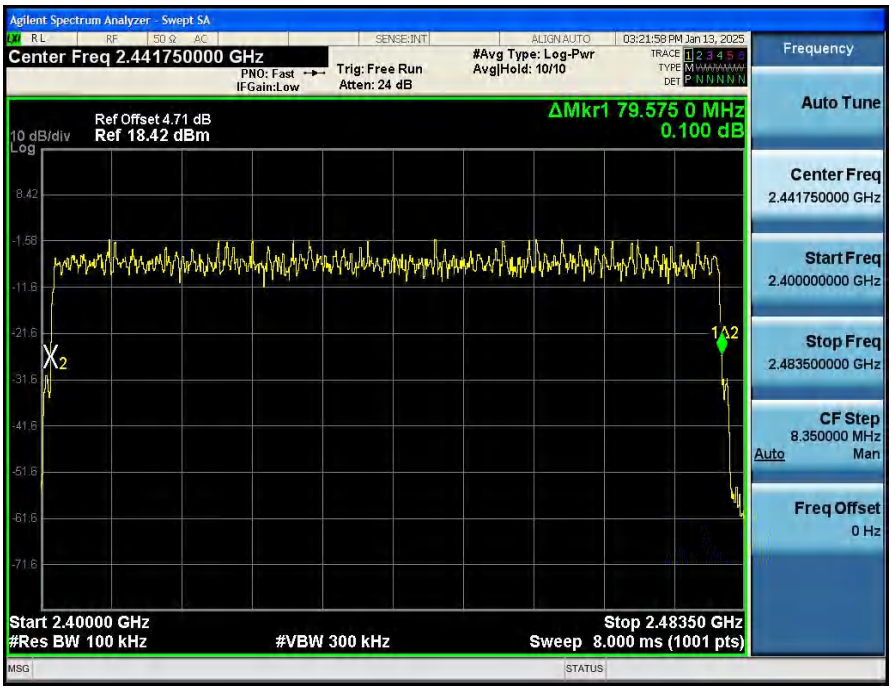
Appendix H: Number of Hopping Channel (Hopping)

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

Number_of_Hopping_Channel_(Hopping)_NVNT_ANT1_1-DH5_Hopping



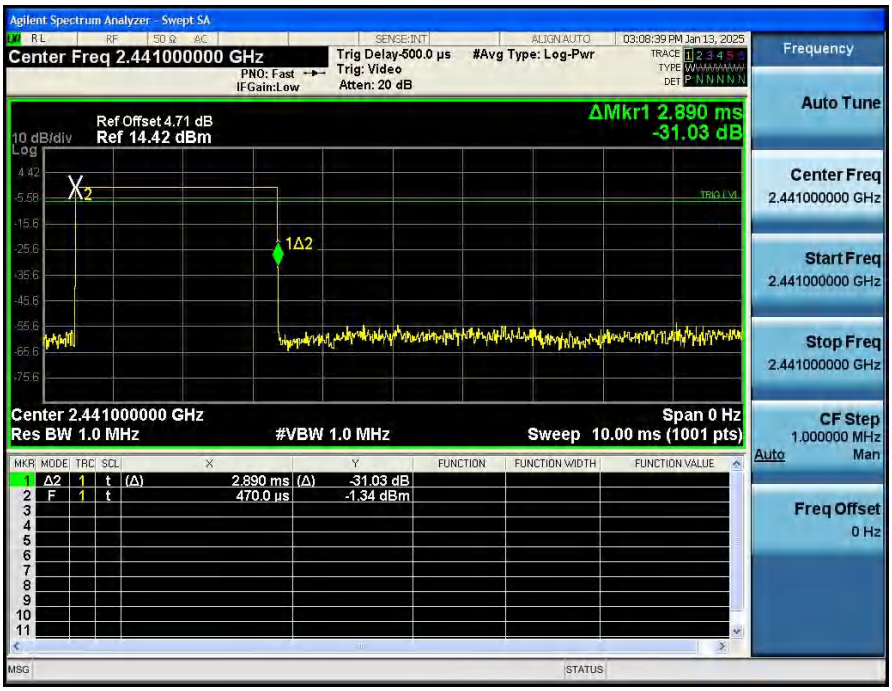
Number_of_Hopping_Channel_(Hopping)_NVNT_ANT1_2-DH5_Hopping



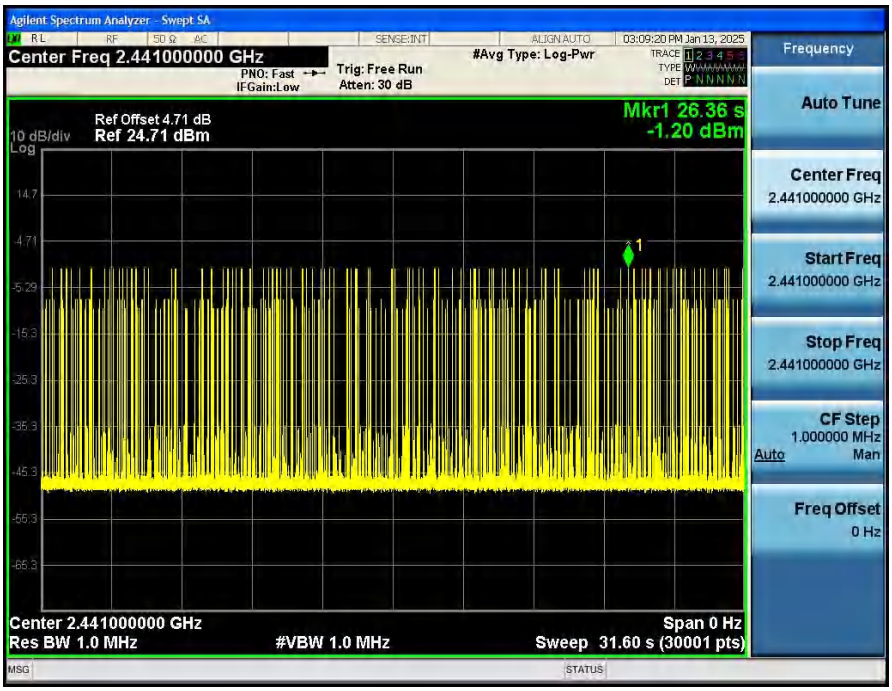
Appendix I: Dwell Time (Hopping)

Condition	Antenna	Packet Type	Pulse Time(ms)	Hops	Dwell Time(ms)	Limit(s)	Result
NVNT	ANT1	1-DH5	2.890	119.00	343.910	0.40	Pass
NVNT	ANT1	2-DH5	2.900	116.00	336.400	0.40	Pass
NVNT	ANT1	1-DH1	0.390	320.00	124.800	0.40	Pass
NVNT	ANT1	1-DH3	1.650	162.00	267.300	0.40	Pass
NVNT	ANT1	2-DH1	0.400	320.00	128.000	0.40	Pass
NVNT	ANT1	2-DH3	1.650	155.00	255.750	0.40	Pass

Dwell_Time_(Hopping)_NVNT_ANT1_1-DH5_2441_00_One_Burst_Time

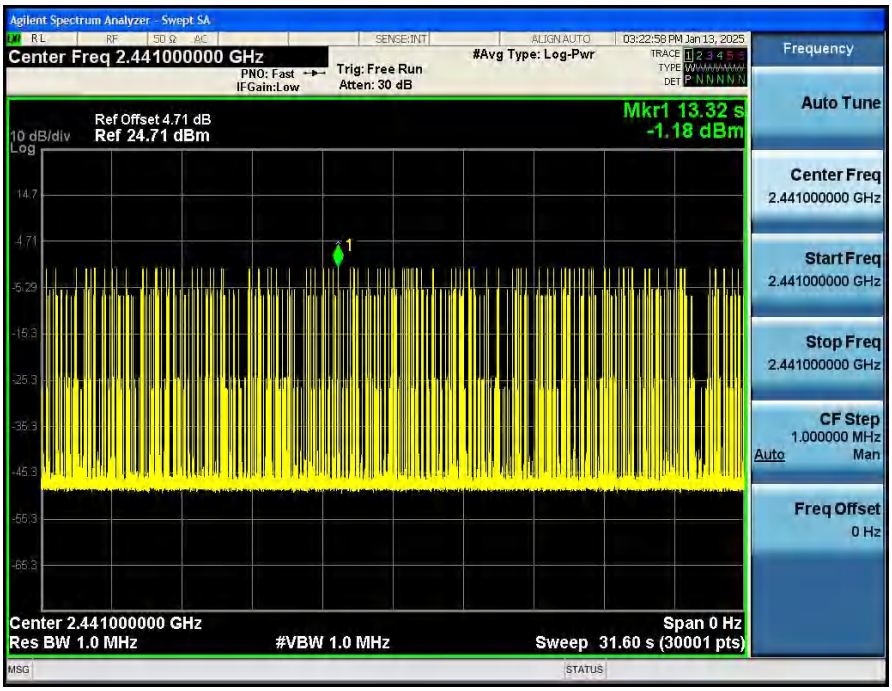


Dwell_Time_(Hopping)_NVNT_ANT1_1-DH5_2441_00_Accumulated

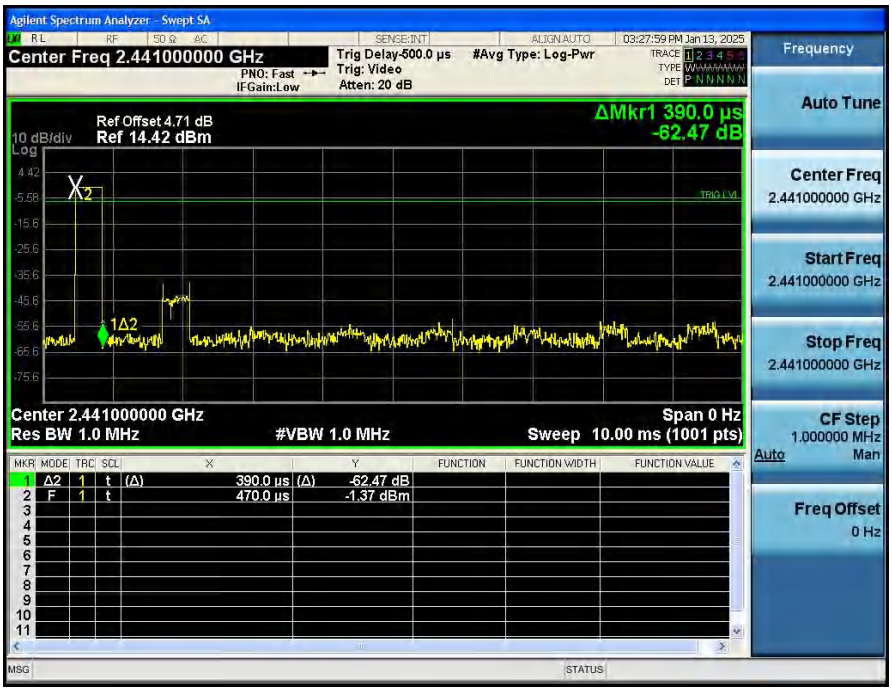


Dwell_Time_(Hopping)_NVNT_ANT1_2-DH5_2441_00_One_Burst_Time

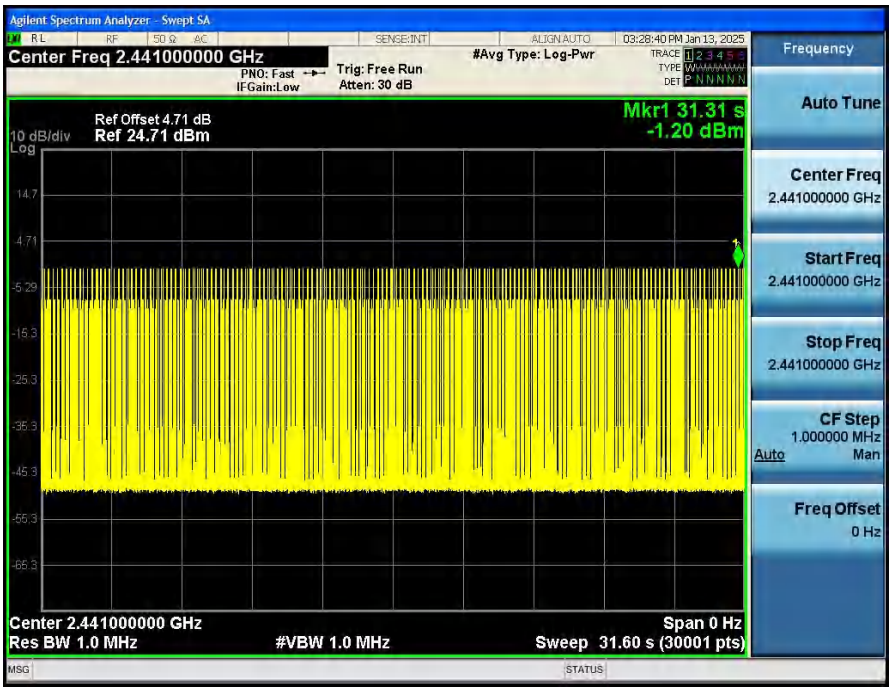
Dwell_Time_(Hopping)_NVNT_ANT1_2-DH5_2441_00_Accumulated



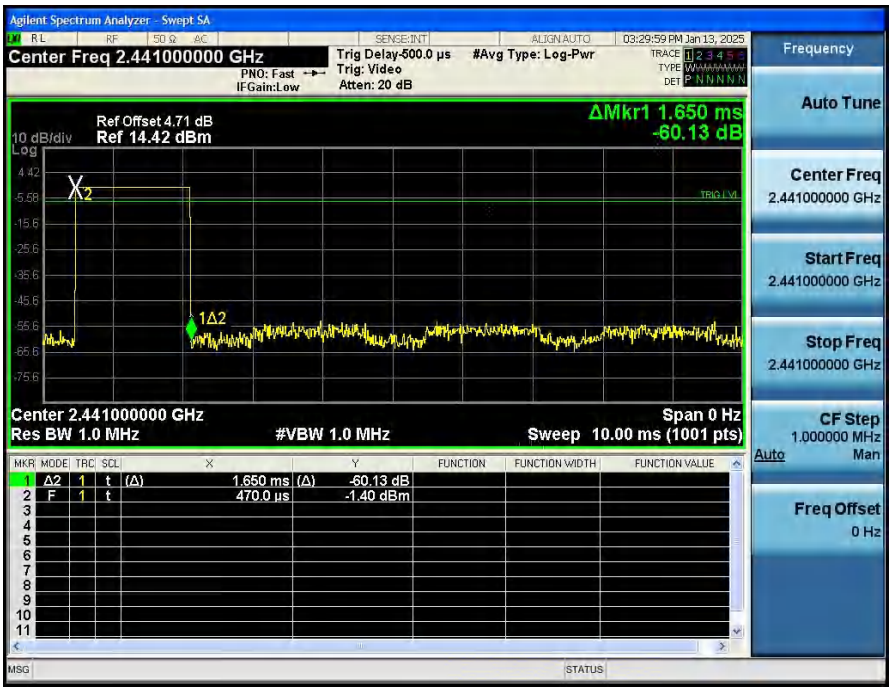
Dwell_Time_(Hopping)_NVNT_ANT1_1-DH1_2441_00_One_Burst_Time



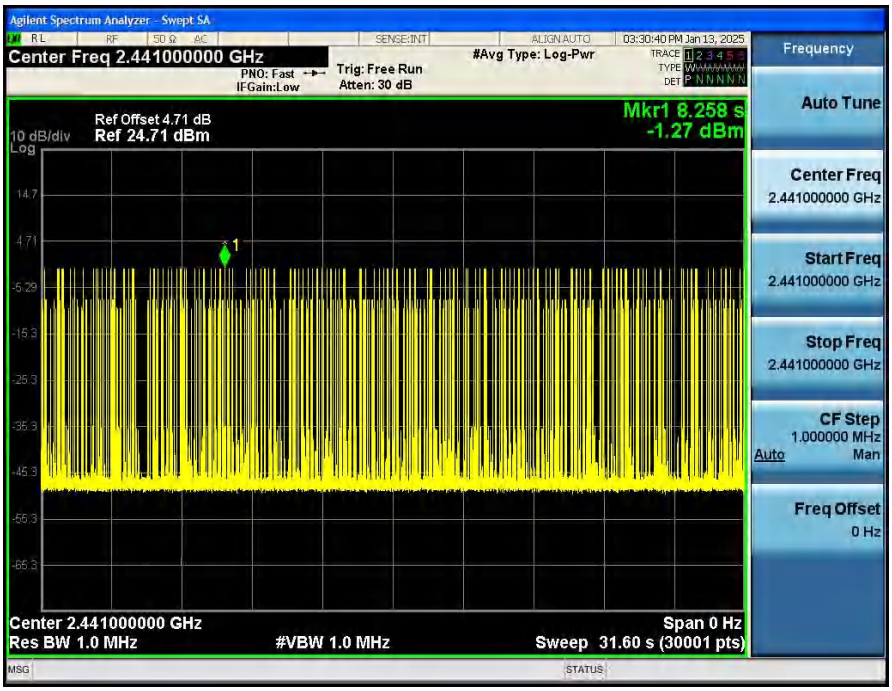
Dwell_Time_(Hopping)_NVNT_ANT1_1-DH1_2441_00_Accumulated



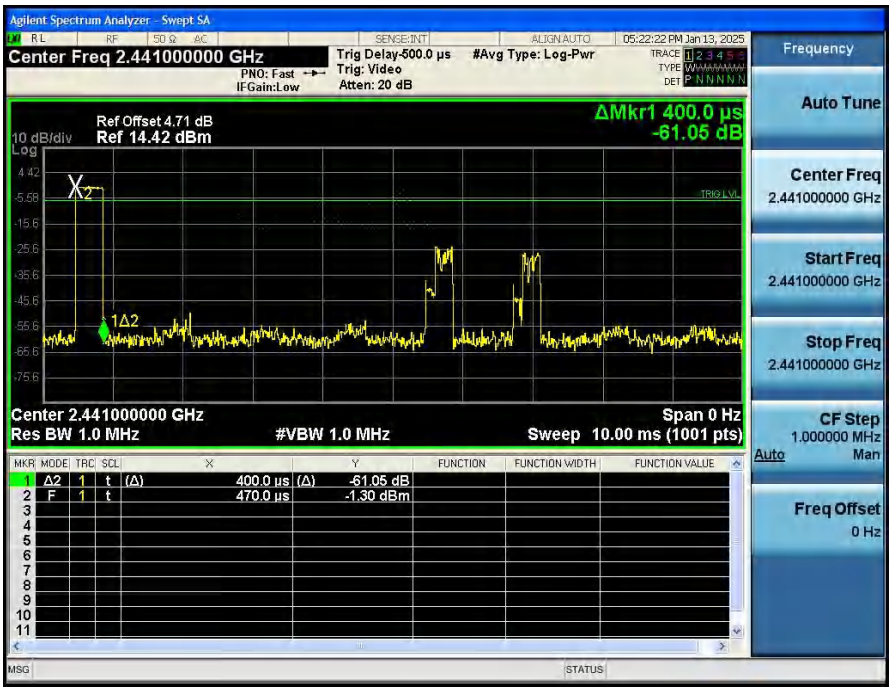
Dwell_Time_(Hopping)_NVNT_ANT1_1-DH3_2441_00_One_Burst_Time



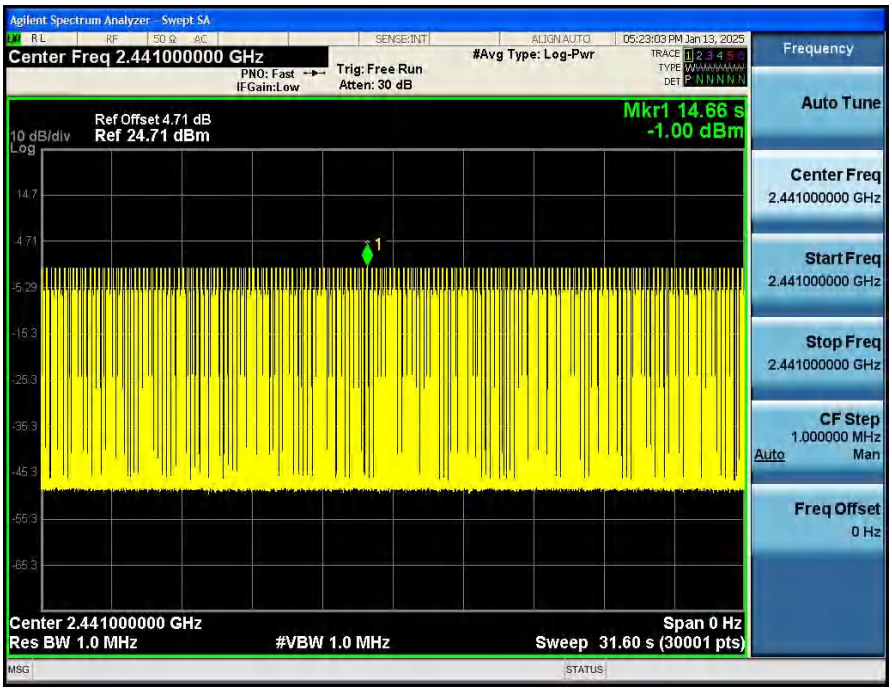
Dwell_Time_(Hopping)_NVNT_ANT1_1-DH3_2441_00_Accumulated



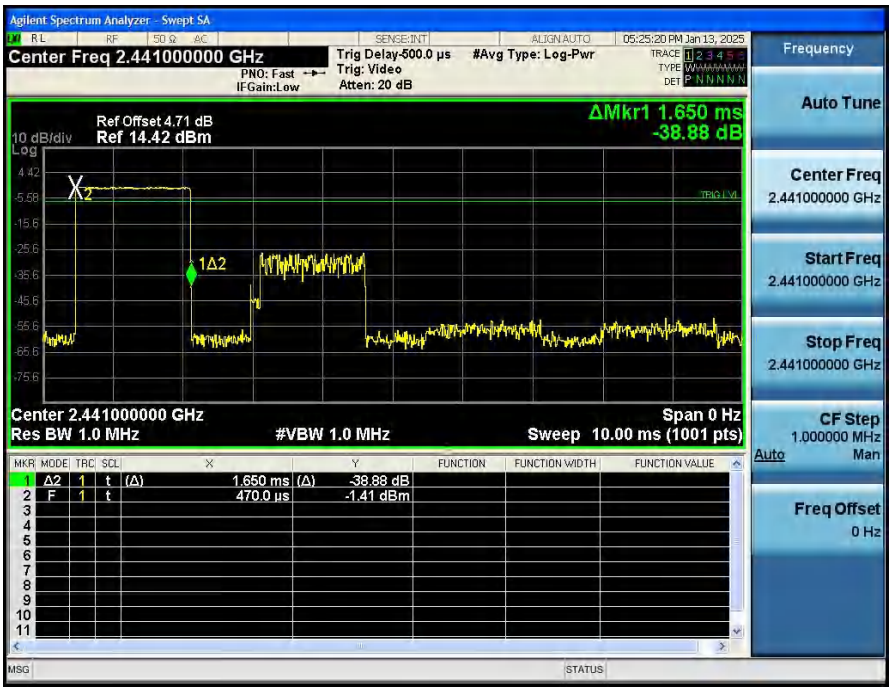
Dwell_Time_(Hopping)_NVNT_ANT1_2-DH1_2441_00_One_Burst_Time



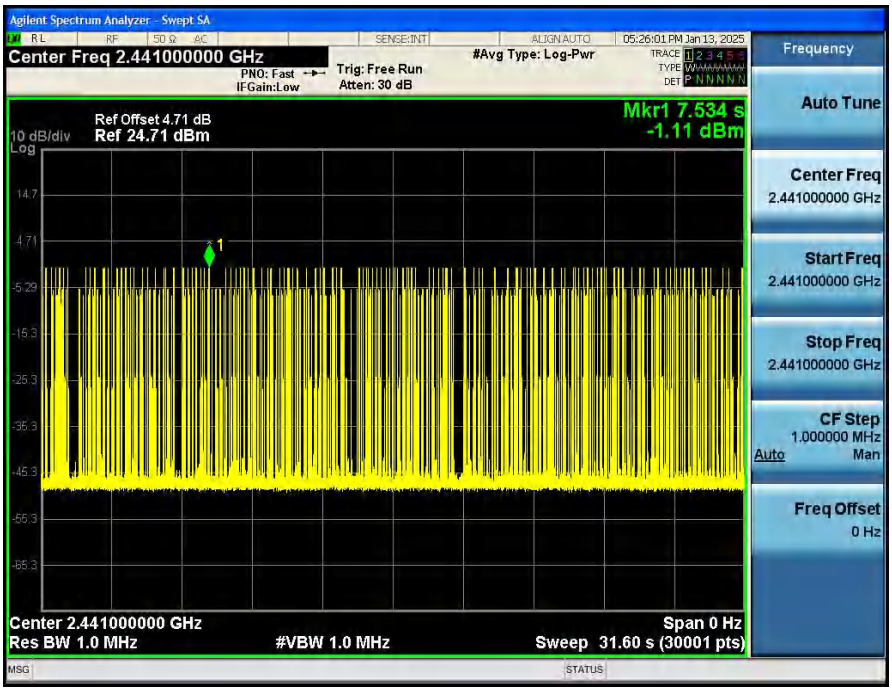
Dwell_Time_(Hopping)_NVNT_ANT1_2-DH1_2441_00_Accumulated



Dwell_Time_(Hopping)_NVNT_ANT1_2-DH3_2441_00_One_Burst_Time



Dwell_Time_(Hopping)_NVNT_ANT1_2-DH3_2441_00_Accumulated


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 30 dB
#Avg Type: Log-Pwr
05:26:01 PM Jan 13, 2025
Ref Offset 4.71 dB
10 dB/div
Ref 24.71 dBm
Log
Mkr1 7.534 s
-1.11 dBm
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

---END---