Appendix Test Data

Report No.:	18220WC20284601	Test Sample No.:	1-2-2
Start Test Date:	2022.12.13	Finish Test Date:	2022.12.20
Test Engineer:	Tony.He	Auditor:	Edward.Pan
Temperature:	24.1℃	Relative Humidity:	40 %
Pressure:	1012 hPa		

Appendix A: 20dB Emission Bandwidth

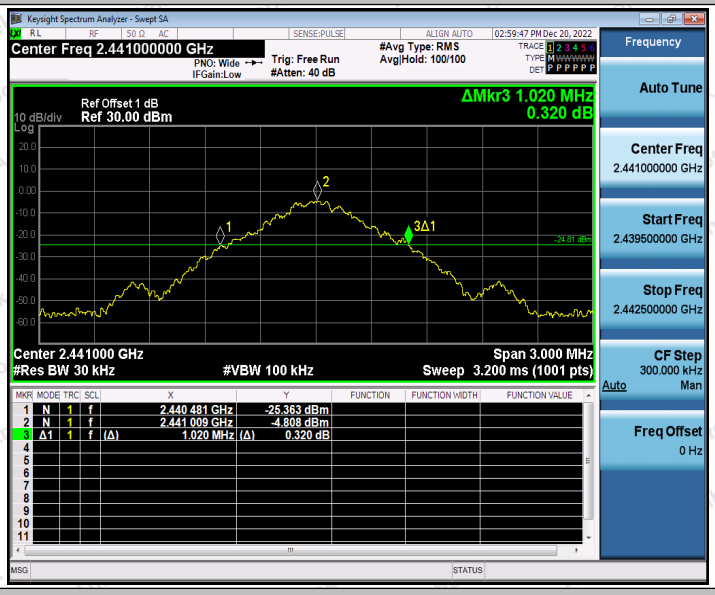
Test Result

TestMode	Antenna	Frequency[MHz]	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	1.029	2401.469	2402.498	---	---
		2441	1.020	2440.481	2441.501	---	---
		2480	1.026	2479.472	2480.498	---	---
2DH5	Ant1	2402	1.284	2401.370	2402.654	---	---
		2441	1.296	2440.361	2441.657	---	---
		2480	1.323	2479.340	2480.663	---	---
3DH5	Ant1	2402	1.278	2401.370	2402.648	---	---
		2441	1.314	2440.346	2441.660	---	---
		2480	1.278	2479.352	2480.630	---	---

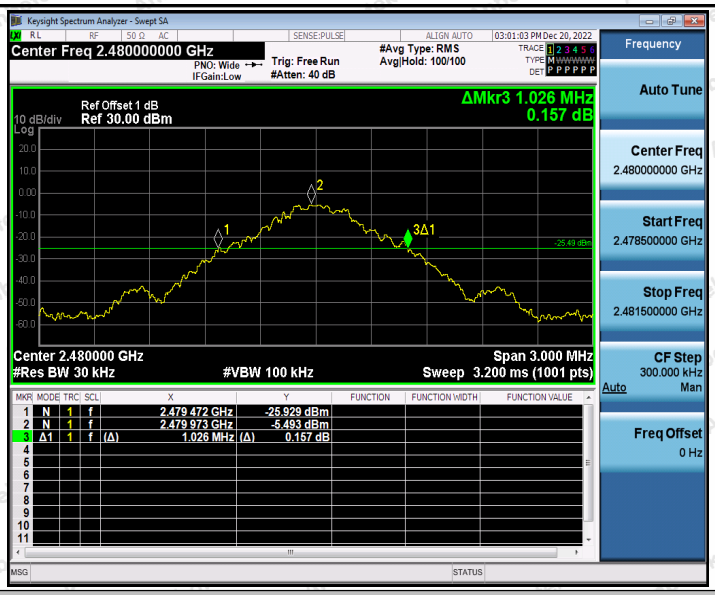
Test Graphs

DH5_Ant1_2402

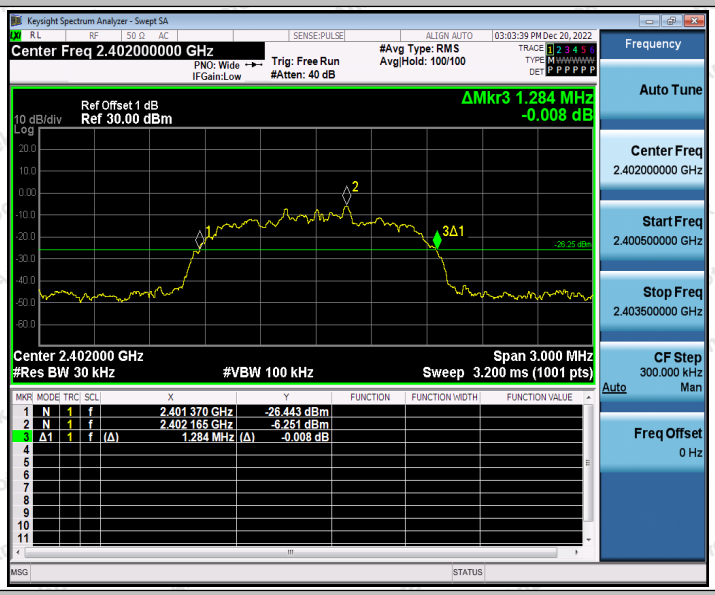
DH5_Ant1_2441



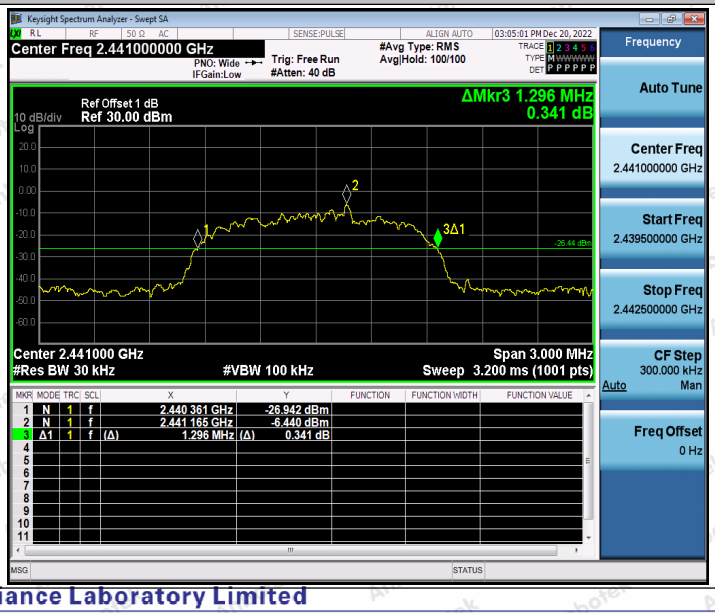
DH5_Ant1_2480



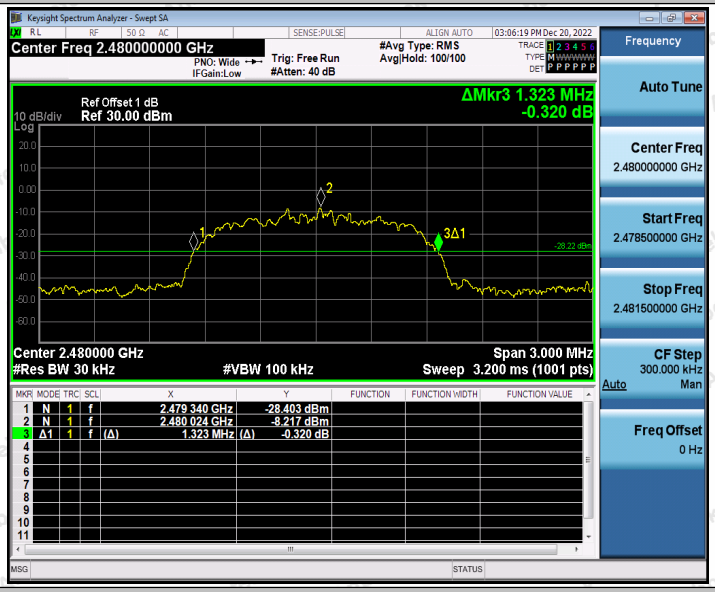
2DH5_Ant1_2402



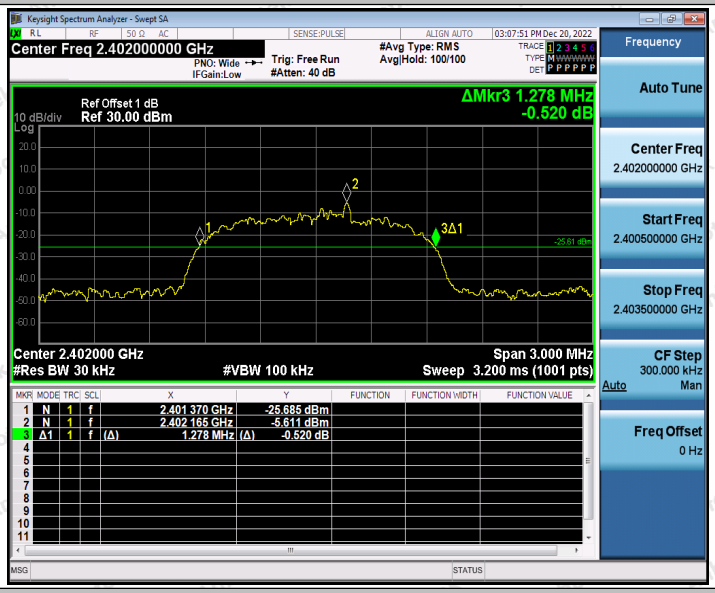
2DH5_Ant1_2441



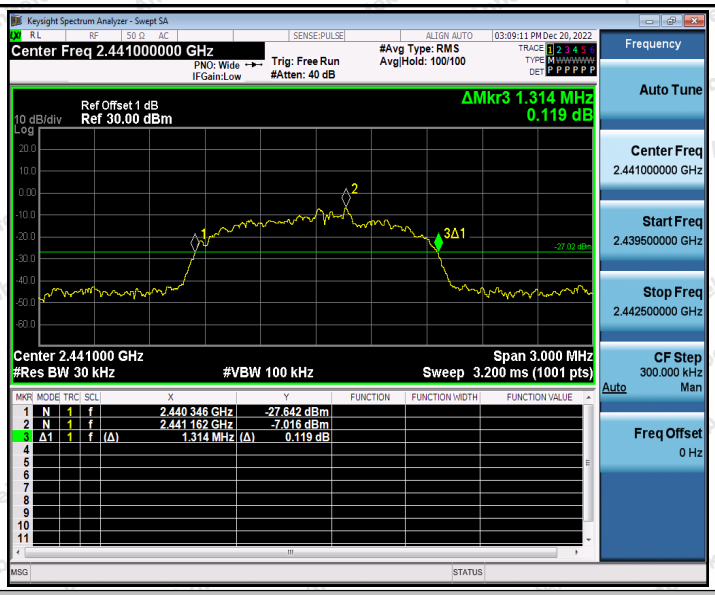
2DH5_Ant1_2480



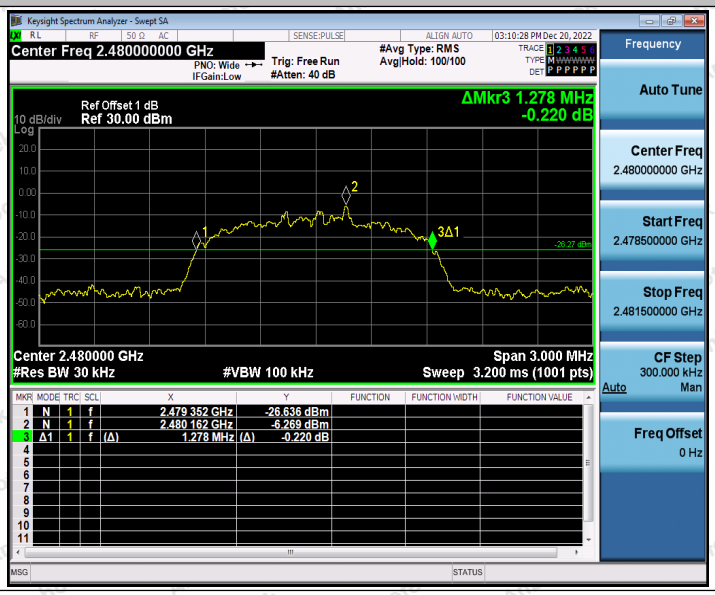
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.90406	2401.5553	2402.4594	---	---
		2441	0.90334	2440.5511	2441.4544	---	---
		2480	0.91864	2479.5477	2480.4664	---	---
2DH5	Ant1	2402	1.1813	2401.4091	2402.5904	---	---
		2441	1.1891	2440.4074	2441.5965	---	---
		2480	1.1956	2479.4037	2480.5993	---	---
3DH5	Ant1	2402	1.2063	2401.3934	2402.5997	---	---
		2441	1.1952	2440.4062	2441.6014	---	---
		2480	1.2006	2479.4045	2480.6051	---	---

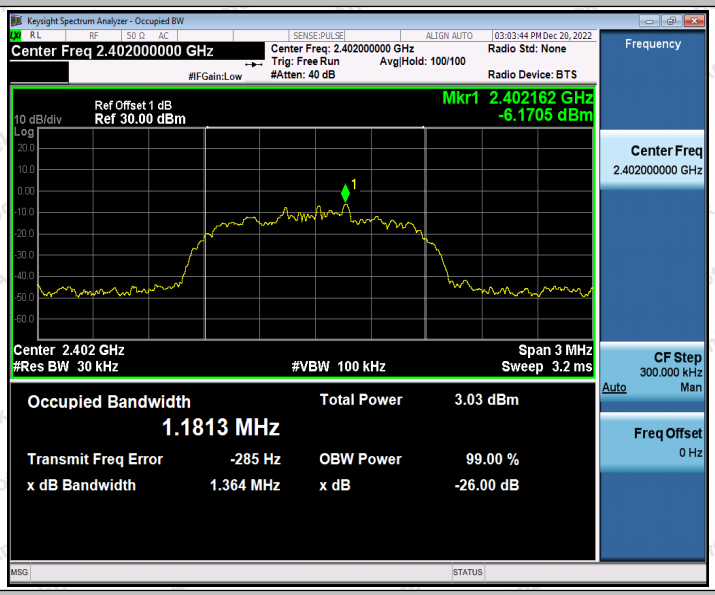
Test Graphs

DH5_Ant1_2402

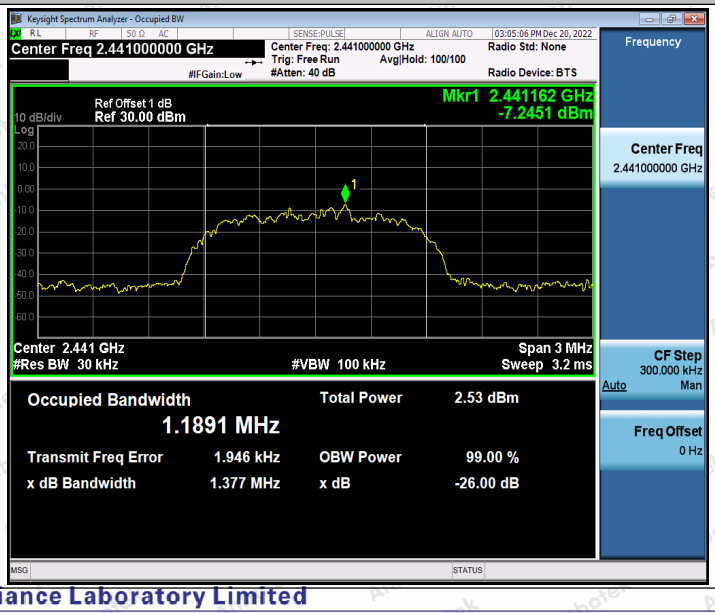
DH5_Ant1_2441

DH5_Ant1_2480

2DH5_Ant1_2402

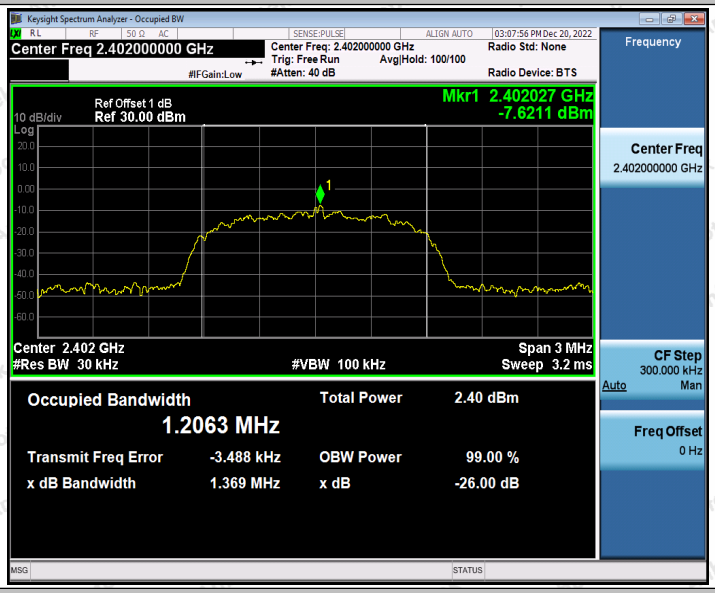


2DH5_Ant1_2441

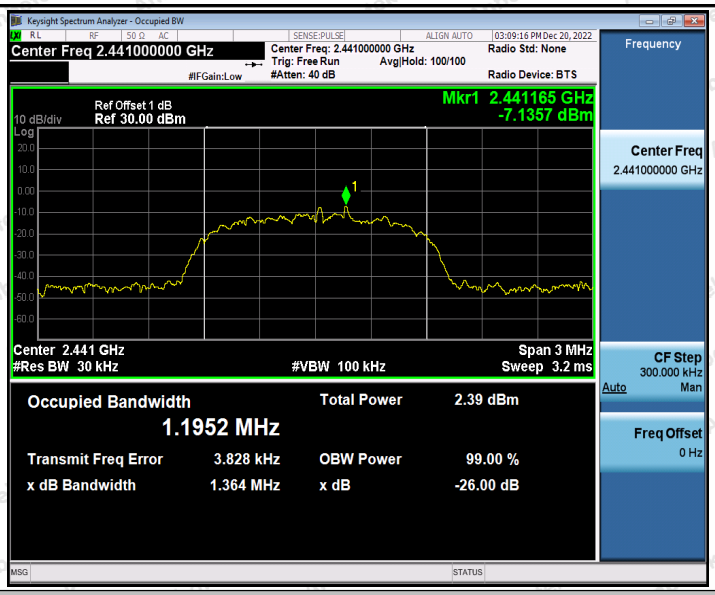


2DH5_Ant1_2480

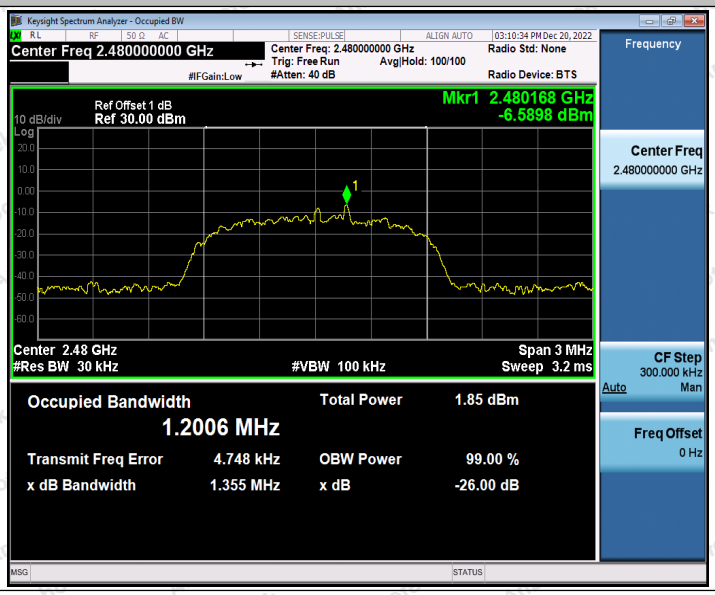
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



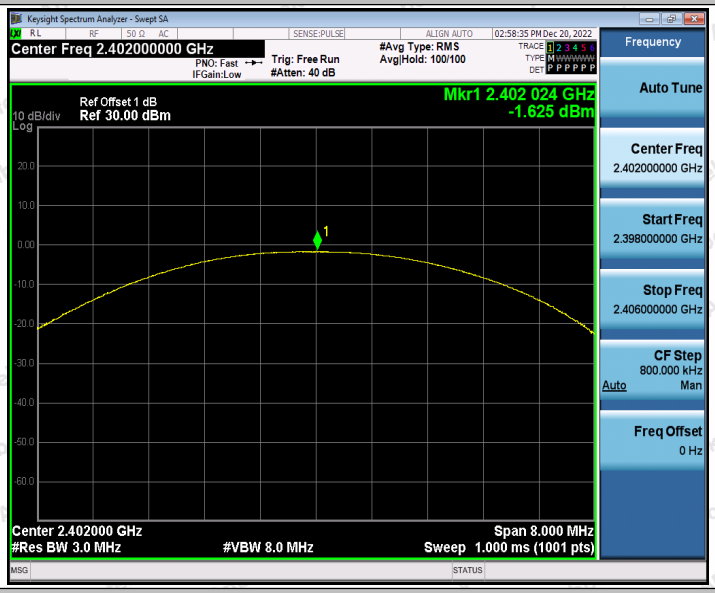
Appendix C: Maximum conducted output power

Test Result Peak

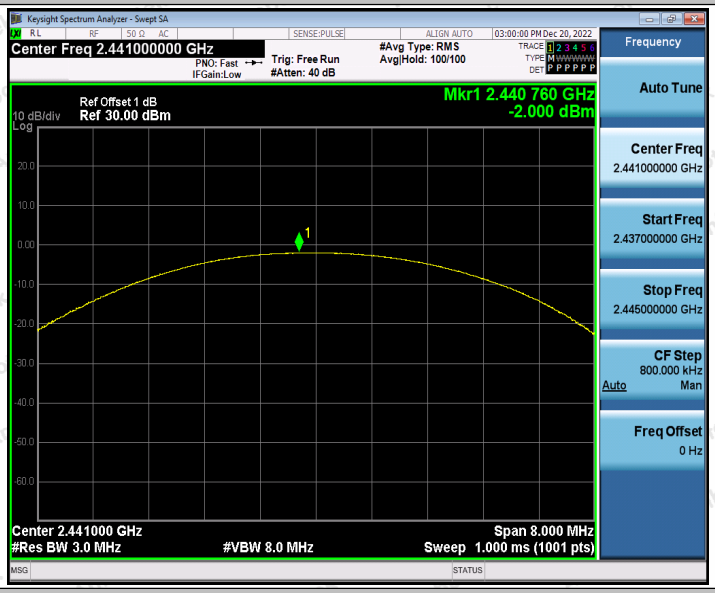
Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	-1.63	≤20.97	PASS
		2441	-2.00	≤20.97	PASS
		2480	-2.74	≤20.97	PASS
2DH5	Ant1	2402	-2.43	≤20.97	PASS
		2441	-2.72	≤20.97	PASS
		2480	-3.41	≤20.97	PASS
3DH5	Ant1	2402	-2.27	≤20.97	PASS
		2441	-2.55	≤20.97	PASS
		2480	-3.29	≤20.97	PASS

Test Graphs

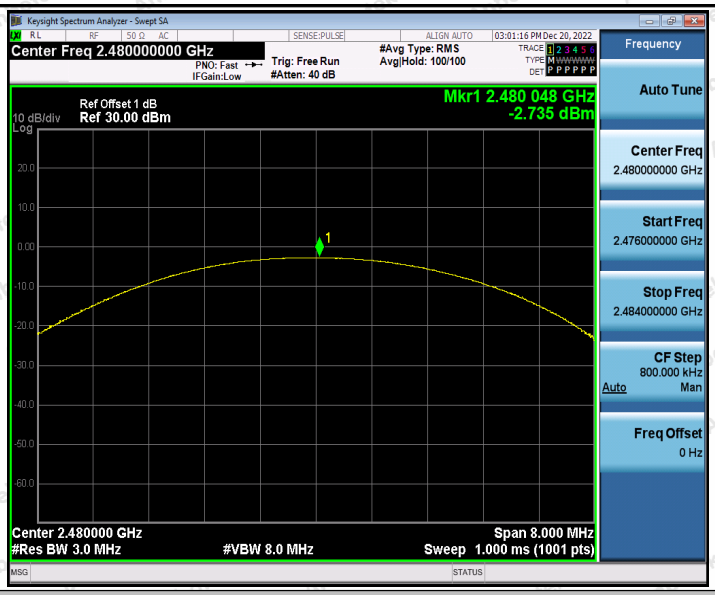
DH5_Ant1_2402



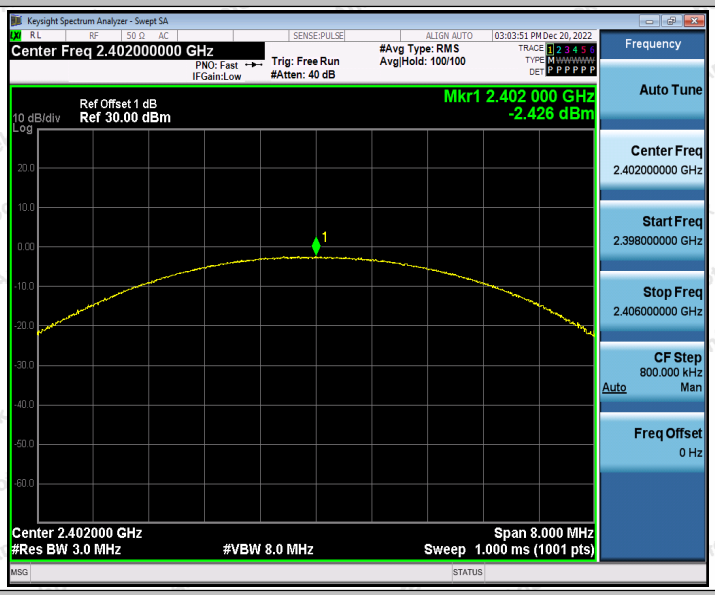
DH5_Ant1_2441



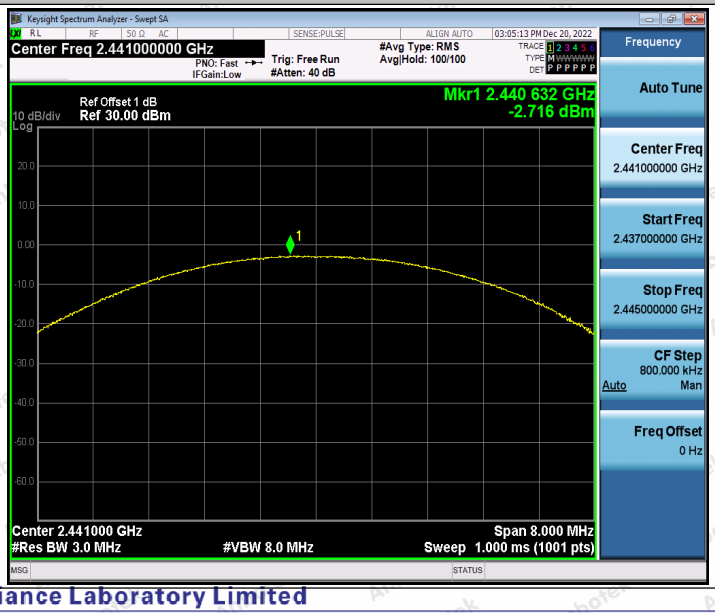
DH5_Ant1_2480



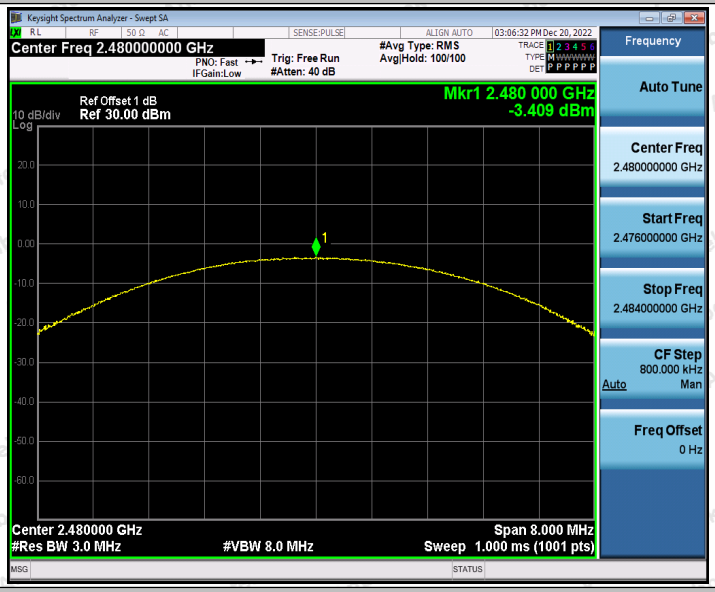
2DH5_Ant1_2402



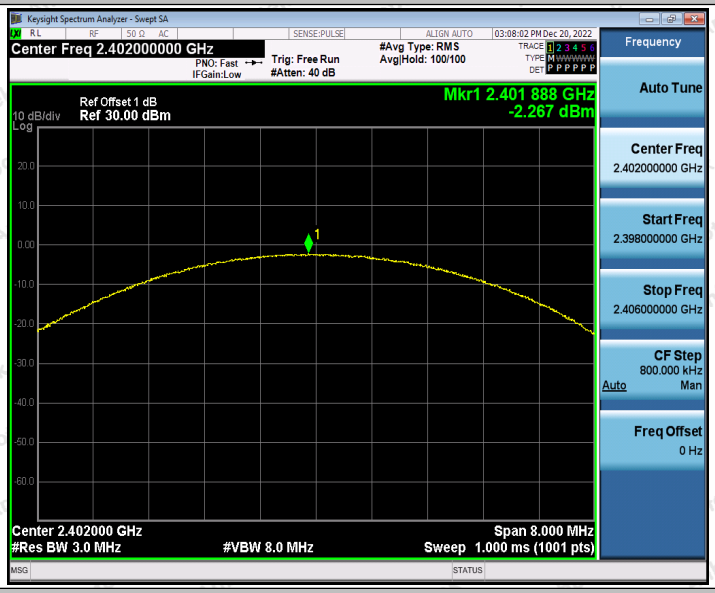
2DH5_Ant1_2441



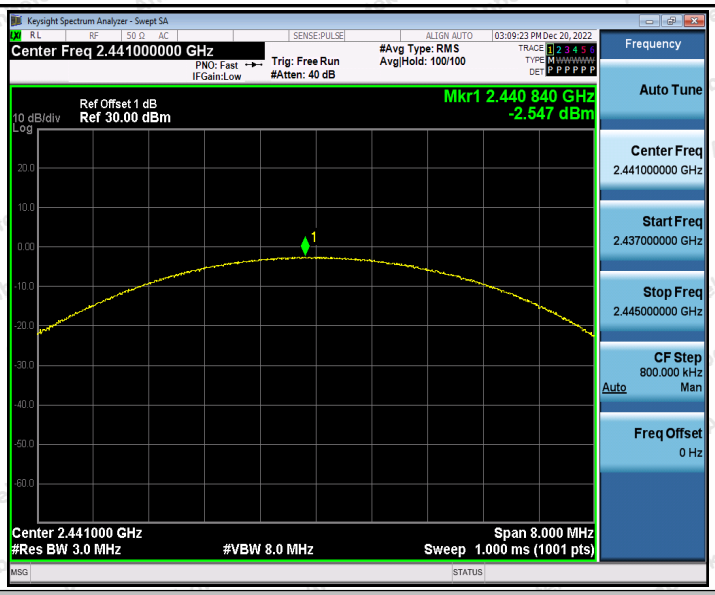
2DH5_Ant1_2480



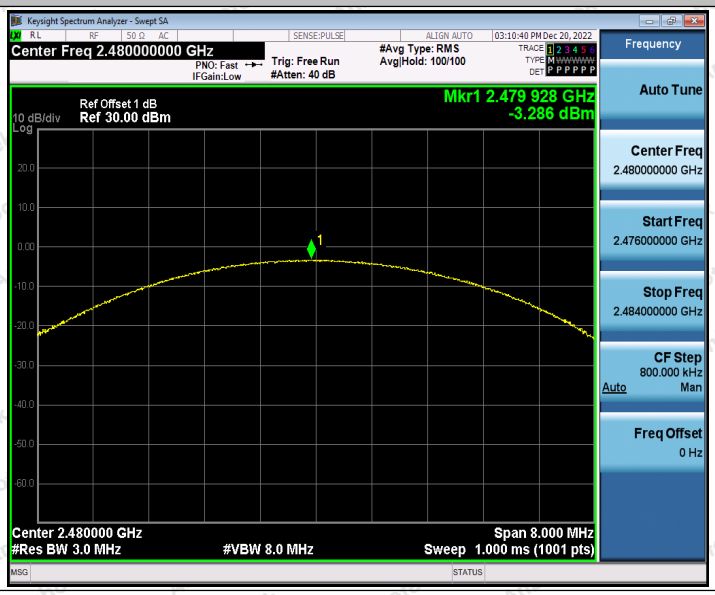
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



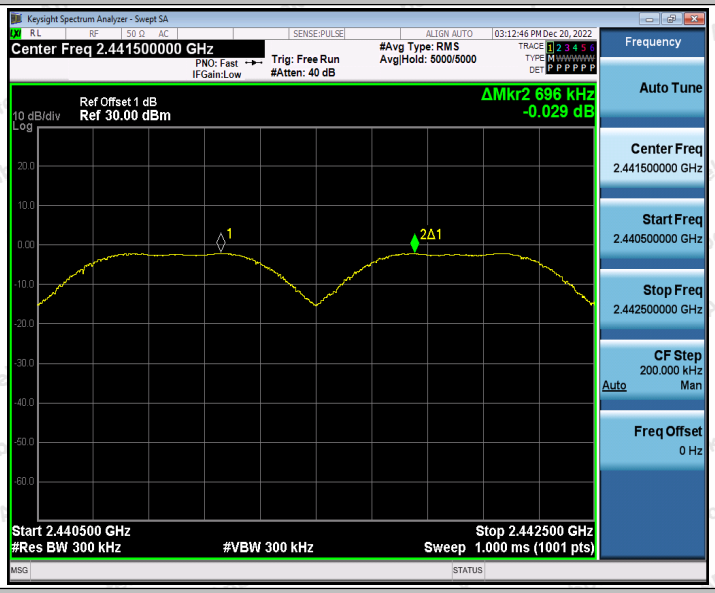
Appendix D: Carrier frequency separation

Test Result

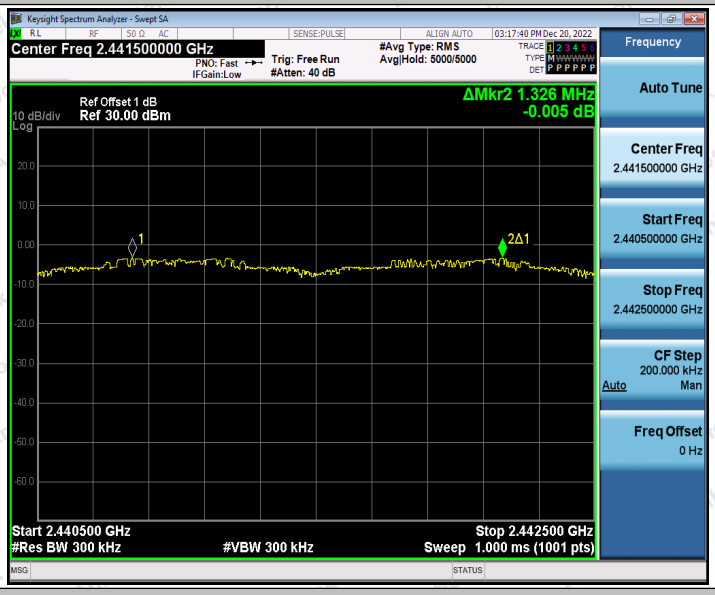
TestMode	Antenna	Frequency[MHz]	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.696	≥0.686	PASS
2DH5	Ant1	Hop	1.326	≥0.882	PASS
3DH5	Ant1	Hop	1.010	≥0.876	PASS

Test Graphs

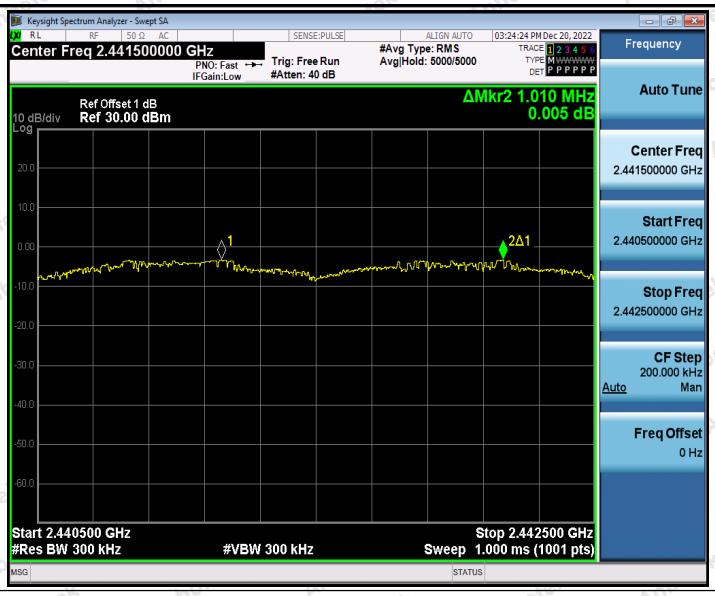
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.441500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
#Avg Type: RMS
Avg|Hold: 5000/5000
03:24:24 PM Dec 20, 2022
Ref Offset 1 dB
10 dB/div
Ref 30.00 dBm
Log
ΔMkr2 1.010 MHz
0.005 dB
Start 2.440500 GHz
#Res BW 300 kHz
#VBW 300 kHz
Stop 2.442500 GHz
Sweep 1.000 ms (1001 pts)
Frequency
Auto Tune
Center Freq
2.441500000 GHz
Start Freq
2.440500000 GHz
Stop Freq
2.442500000 GHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz

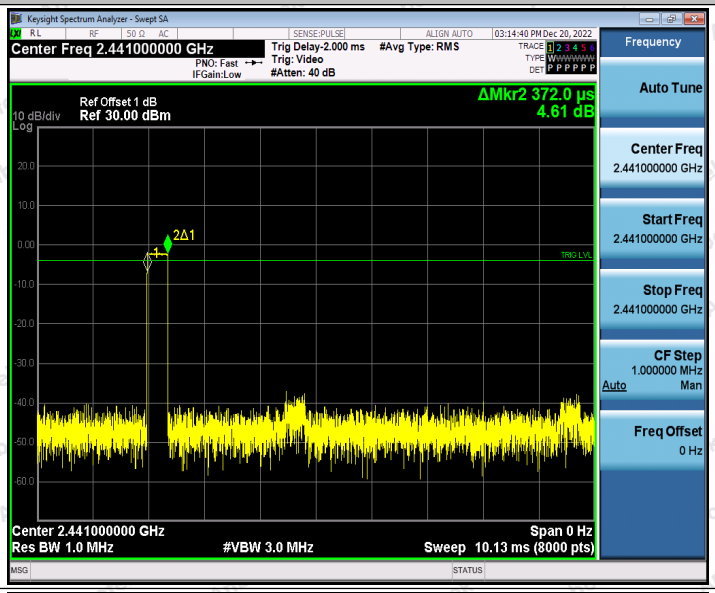
Appendix E: Time of occupancy

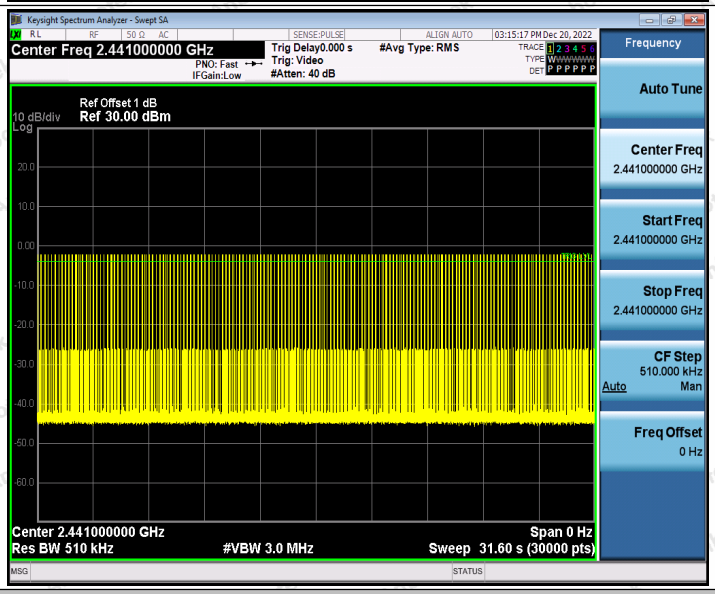
Test Result

TestMode	Antenna	Frequency[MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.372	313	0.116	≤0.4	PASS
DH3	Ant1	Hop	1.628	157	0.256	≤0.4	PASS
DH5	Ant1	Hop	2.877	113	0.325	≤0.4	PASS
2DH1	Ant1	Hop	0.380	313	0.119	≤0.4	PASS
2DH3	Ant1	Hop	1.633	157	0.256	≤0.4	PASS
2DH5	Ant1	Hop	2.879	111	0.32	≤0.4	PASS
3DH1	Ant1	Hop	0.381	313	0.119	≤0.4	PASS
3DH3	Ant1	Hop	1.631	158	0.258	≤0.4	PASS
3DH5	Ant1	Hop	2.882	105	0.303	≤0.4	PASS

Test Graphs

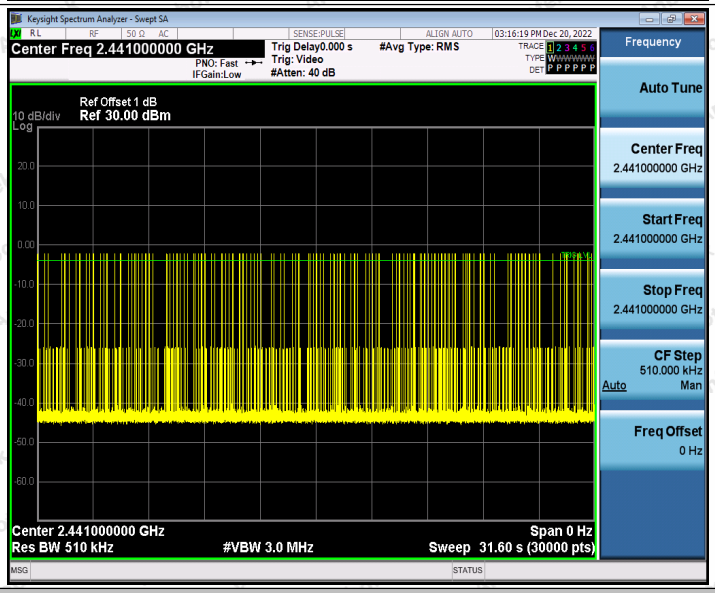
DH1_Ant1_Hop





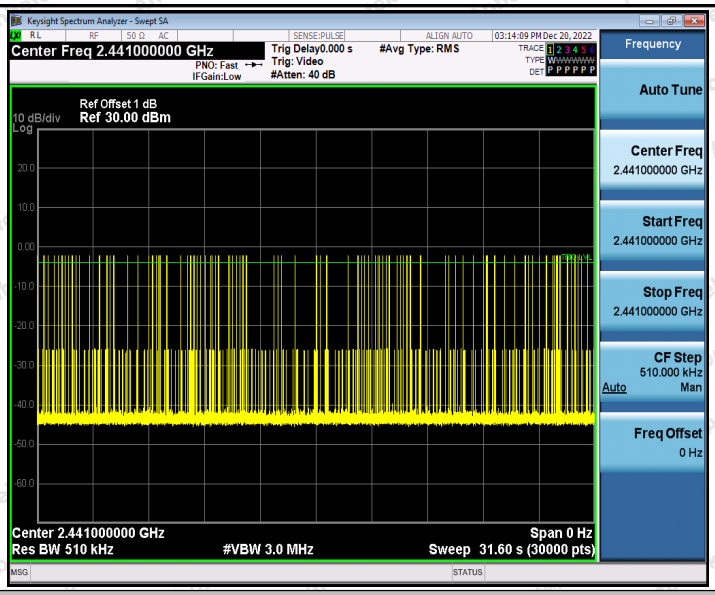
DH3_Ant1_Hop

Keysight Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
Trig Delay-2.000 ms
#Avg Type: RMS
Trig: Video
#Atten: 40 dB
PNO: Fast
IFGain:Low
03:15:43 PM Dec 20, 2022
Ref Offset 1 dB
10 dB/div
Ref 30.00 dBm
ΔMkr2 1.628 ms
4.21 dB
2Δ1
Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 3.0 MHz
Span 0 Hz
Sweep 10.13 ms (8000 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

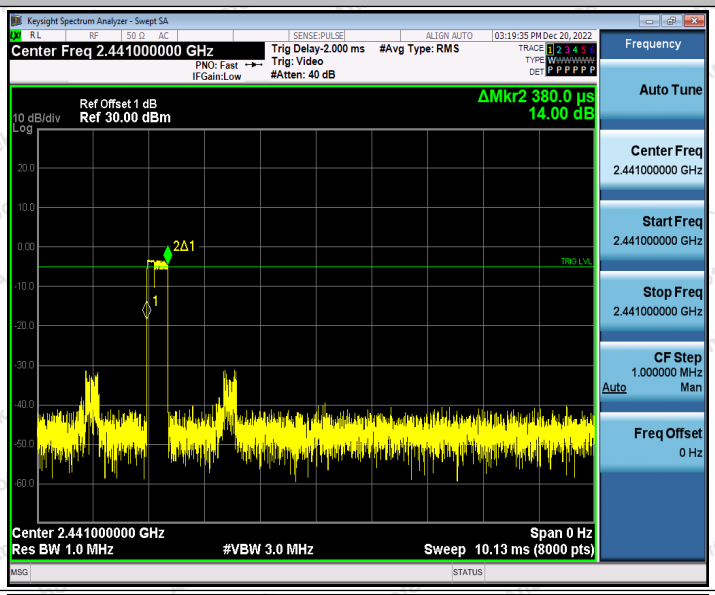

Keysight Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
Trig Delay0.000 s
#Avg Type: RMS
Trig: Video
#Atten: 40 dB
PNO: Fast
IFGain:Low
03:16:19 PM Dec 20, 2022
Ref Offset 1 dB
10 dB/div
Ref 30.00 dBm
Center 2.441000000 GHz
Res BW 510 kHz
#VBW 3.0 MHz
Span 0 Hz
Sweep 31.60 s (30000 pts)
Frequency
Auto Tune
Center Freq
2.441000000 GHz
Start Freq
2.441000000 GHz
Stop Freq
2.441000000 GHz
CF Step
510.000 kHz
Auto
Man
Freq Offset
0 Hz

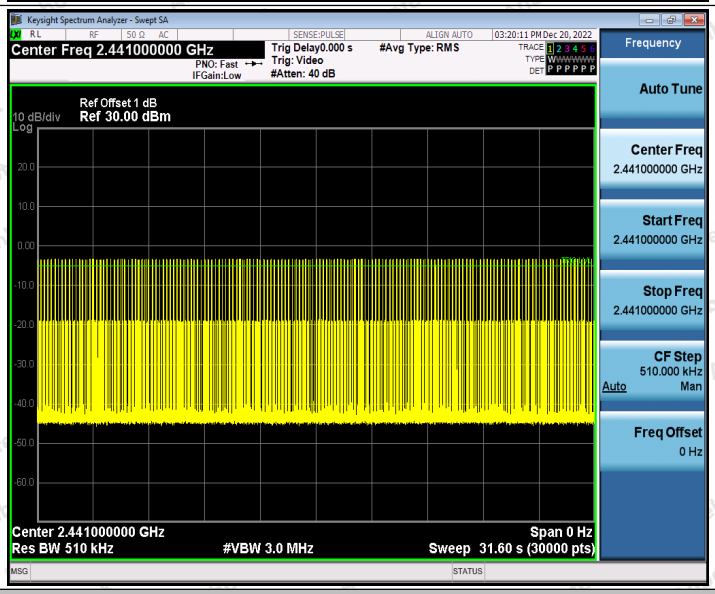
DH5_Ant1_Hop

Keysight Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
Trig Delay-2.000 ms
#Avg Type: RMS
Trig: Video
#Atten: 40 dB
PNO: Fast
IFGain:Low
03:13:33 PM Dec 20, 2022
Ref Offset 1 dB
10 dB/div
Ref 30.00 dBm
ΔMkr2 2.877 ms
5.48 dB
2Δ1
Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 3.0 MHz
Span 0 Hz
Sweep 10.13 ms (8000 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

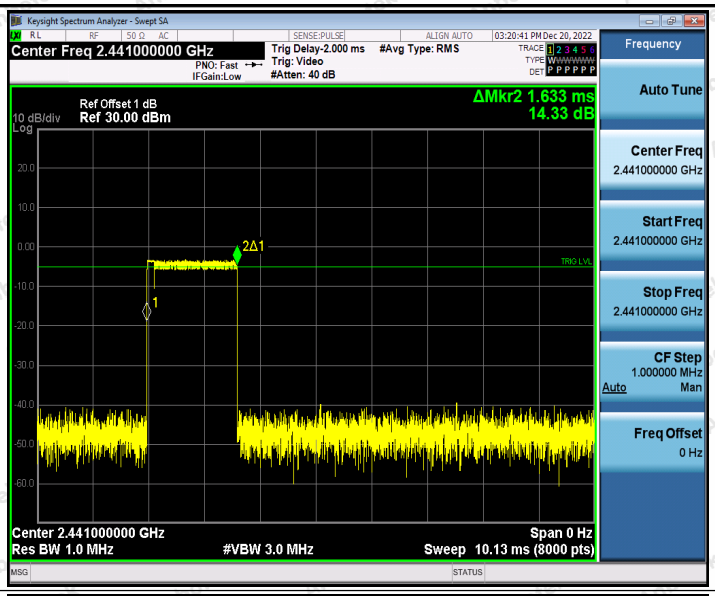


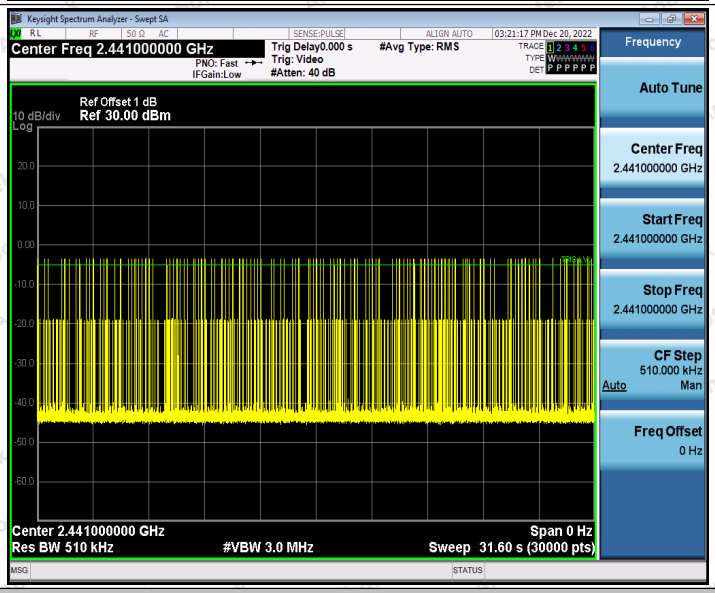
2DH1_Ant1_Hop



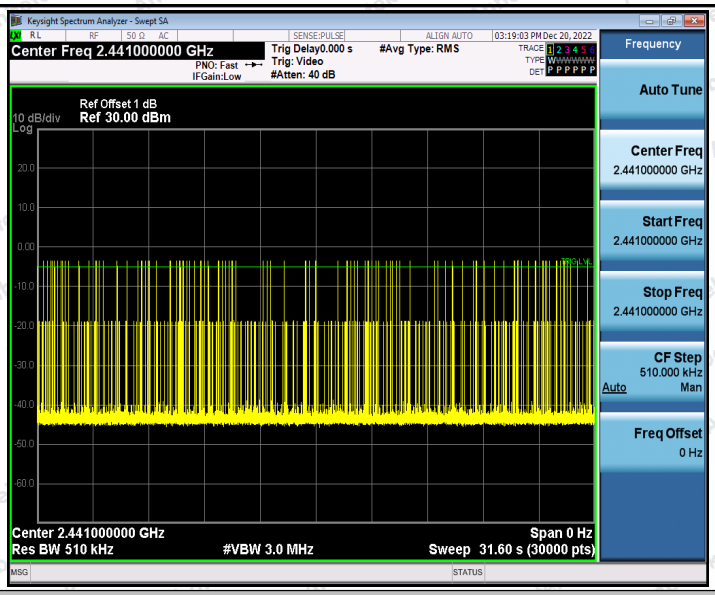


2DH3_Ant1_Hop

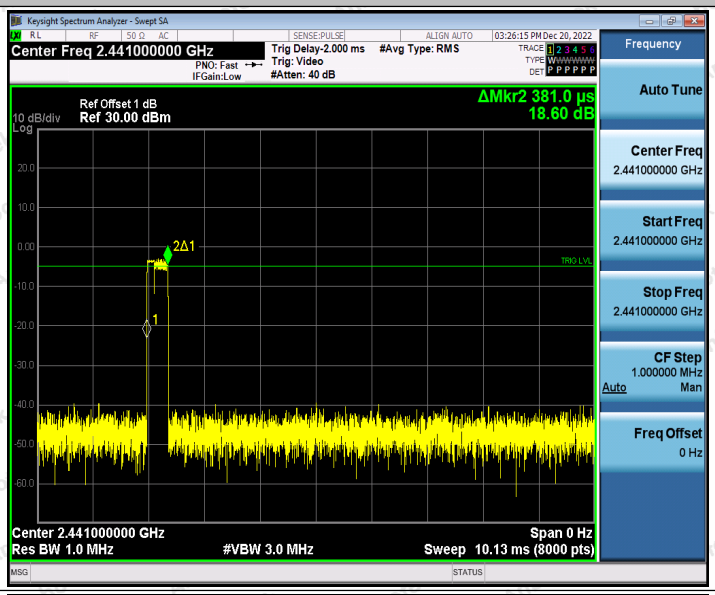


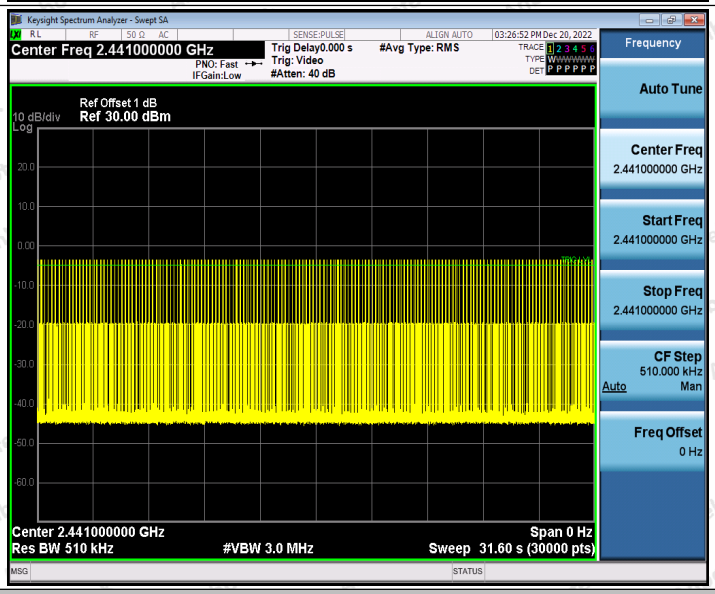


2DH5_Ant1_Hop

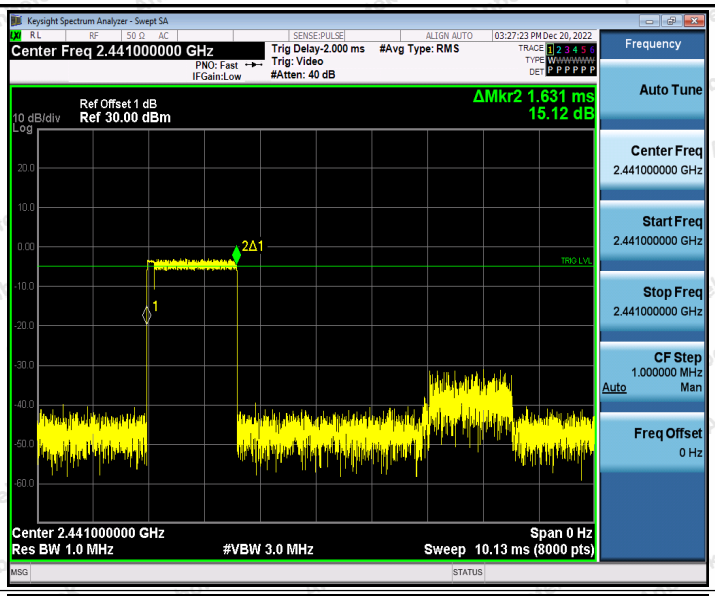


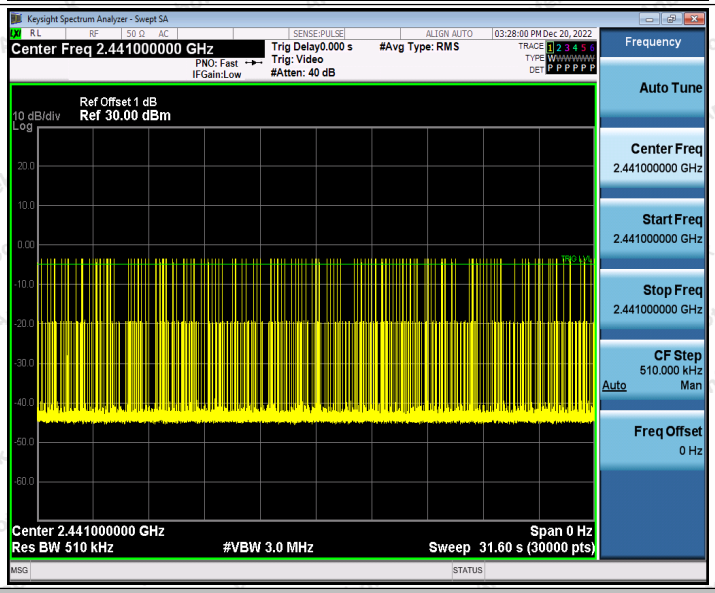
3DH1_Ant1_Hop



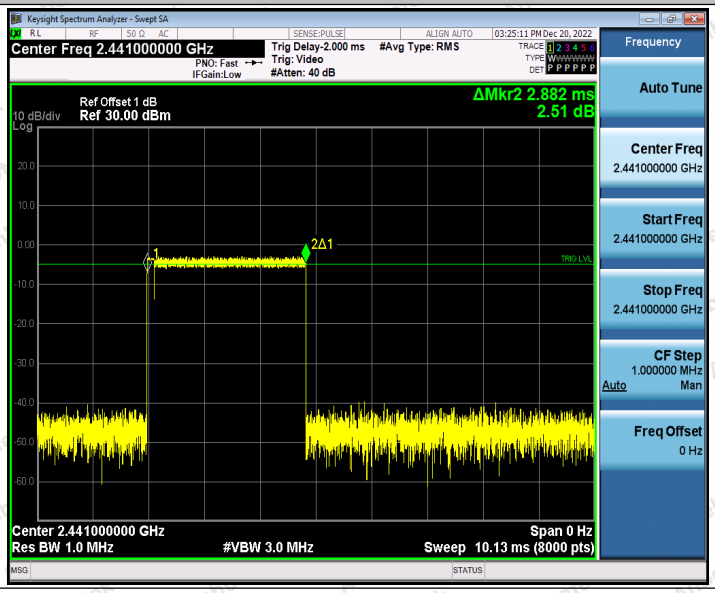


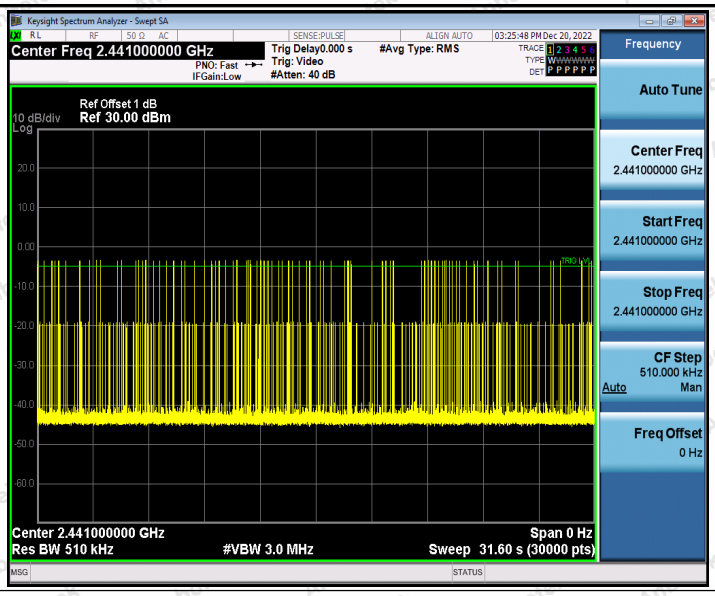
3DH3_Ant1_Hop





3DH5_Ant1_Hop




Keysight Spectrum Analyzer - Swept SA
Center Freq 2.441000000 GHz
Trig Delay0.000 s
Trig: Video
#Atten: 40 dB
#Avg Type: RMS
03:25:48 PM Dec 20, 2022
Frequency
Auto Tune
Center Freq
2.441000000 GHz
Start Freq
2.441000000 GHz
Stop Freq
2.441000000 GHz
CF Step
510.000 kHz
Auto
Man
Freq Offset
0 Hz
Ref Offset 1 dB
10 dB/div
Ref 30.00 dBm
Log
Center 2.441000000 GHz
Res BW 510 kHz
#VBW 3.0 MHz
Span 0 Hz
Sweep 31.60 s (30000 pts)

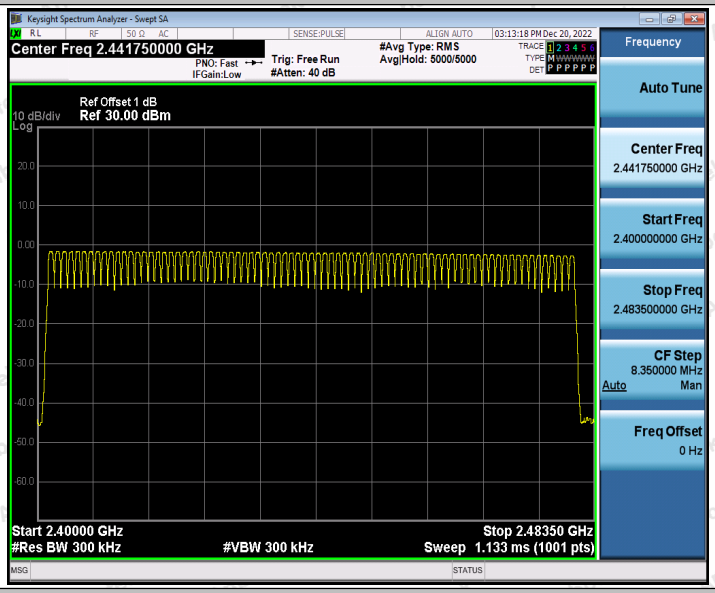
Appendix F: Number of hopping channels

Test Result

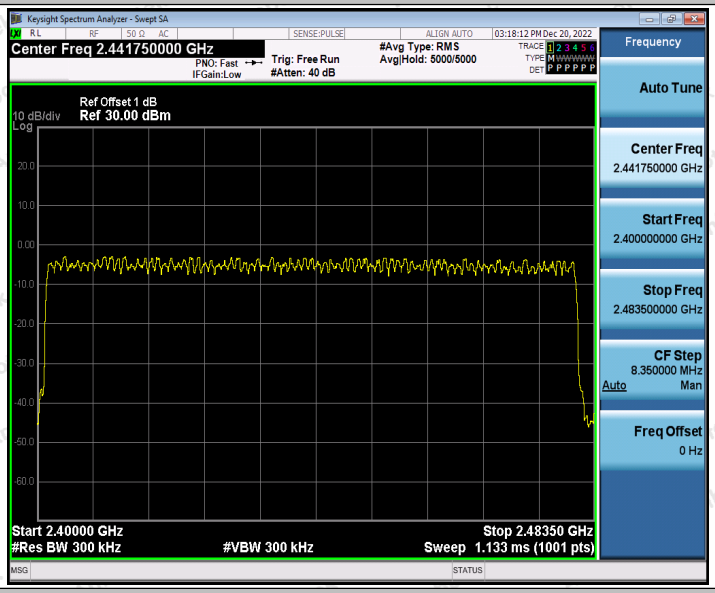
TestMode	Antenna	Frequency[MHz]	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

Test Graphs

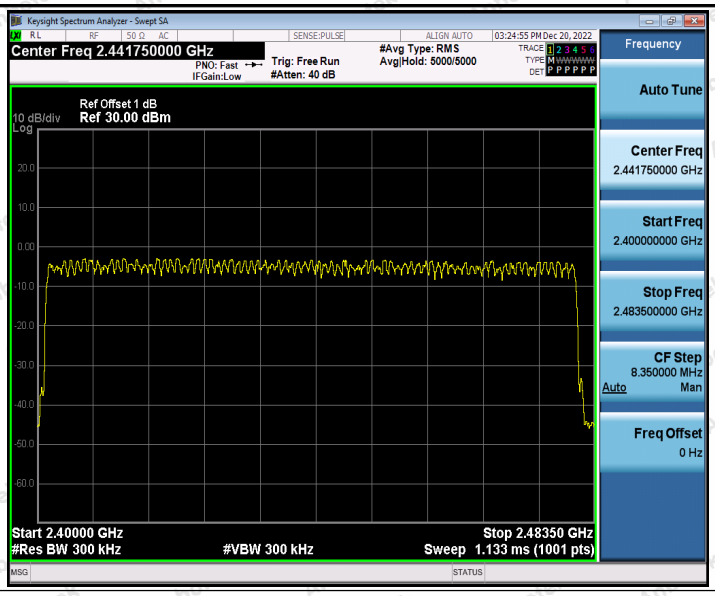
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop


Keysight Spectrum Analyzer - Swept SA
Center Freq 2.441750000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
#Avg Type: RMS
Avg|Hold: 5000/5000
03:24:55 PM Dec 20, 2022
Ref Offset 1 dB
10 dB/div
Ref 30.00 dBm
Log
Start 2.40000 GHz
#Res BW 300 kHz
#VBW 300 kHz
Stop 2.48350 GHz
Sweep 1.133 ms (1001 pts)
Frequency
Auto Tune
Center Freq
2.441750000 GHz
Start Freq
2.400000000 GHz
Stop Freq
2.483500000 GHz
CF Step
8.350000 MHz
Auto
Man
Freq Offset
0 Hz

Appendix G: Band edge measurements

Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-2.09	-56.98	≤-22.09	PASS
		High	2480	-3.16	-57.78	≤-23.16	PASS
		Low	Hop_2402	-2.20	-57.76	≤-22.2	PASS
		High	Hop_2480	-2.89	-57.25	≤-22.89	PASS
2DH5	Ant1	Low	2402	-3.69	-57.7	≤-23.69	PASS
		High	2480	-6.71	-57.51	≤-26.71	PASS
		Low	Hop_2402	-3.26	-57.71	≤-23.26	PASS
		High	Hop_2480	-5.48	-57.22	≤-25.48	PASS
3DH5	Ant1	Low	2402	-4.39	-57.69	≤-24.39	PASS
		High	2480	-4.08	-57.94	≤-24.08	PASS
		Low	Hop_2402	-4.35	-57.3	≤-24.35	PASS
		High	Hop_2480	-4.10	-53.94	≤-24.1	PASS