

Case No. : GTS20221226005-1-7	
Ambient Condition: 25 °C, 45 %RH, Atmos100.1Kpa,	
Test Date: 2023.1.10	Test Engineer: Jenny zeng

Appendix A.1: 20dB Emission Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	0.828	2401.598	2402.426	---	---
		2441	0.792	2440.628	2441.420	---	---
		2480	0.858	2479.583	2480.441	---	---
2DH1	Ant1	2402	1.221	2401.397	2402.618	---	---
		2441	1.266	2440.385	2441.651	---	---
		2480	1.248	2479.397	2480.645	---	---
3DH1	Ant1	2402	1.257	2401.388	2402.645	---	---
		2441	1.254	2440.391	2441.645	---	---
		2480	1.248	2479.394	2480.642	---	---

Test Graphs

DH1_Ant1_2402



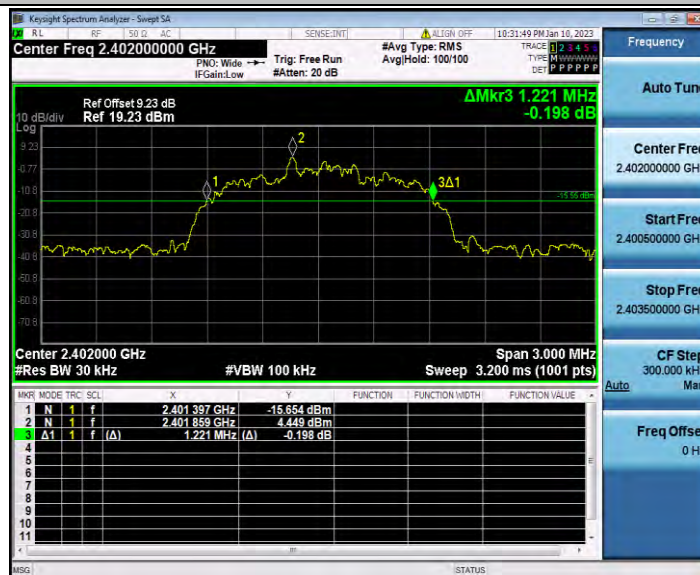
DH1_Ant1_2441



DH1_Ant1_2480



2DH1_Ant1_2402



2DH1_Ant1_2441



2DH1_Ant1_2480



3DH1_Ant1_2402



3DH1_Ant1_2441



3DH1_Ant1_2480



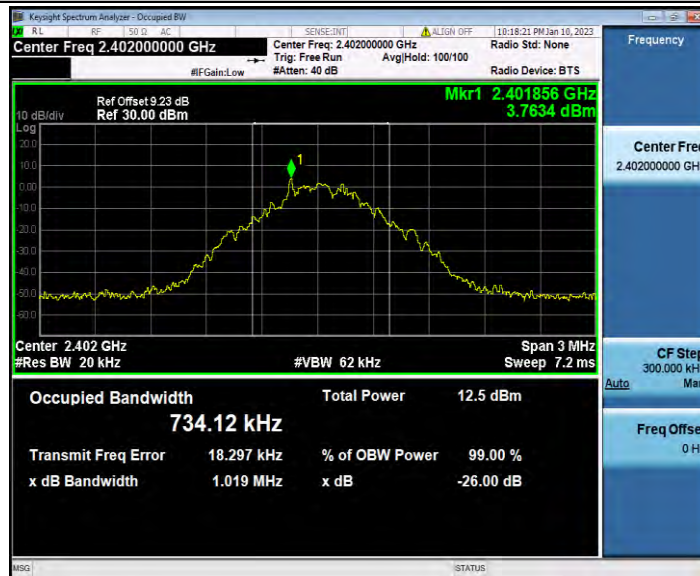
Appendix A.2: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	0.73412	2401.651	2402.385	---	---
		2441	0.71903	2440.654	2441.373	---	---
		2480	0.71808	2479.653	2480.371	---	---
2DH1	Ant1	2402	1.1524	2401.441	2402.593	---	---
		2441	1.1444	2440.447	2441.592	---	---
		2480	1.1399	2479.446	2480.586	---	---
3DH1	Ant1	2402	1.1492	2401.456	2402.605	---	---
		2441	1.1424	2440.456	2441.599	---	---
		2480	1.1386	2479.459	2480.598	---	---

Test Graphs

DH1_Ant1_2402



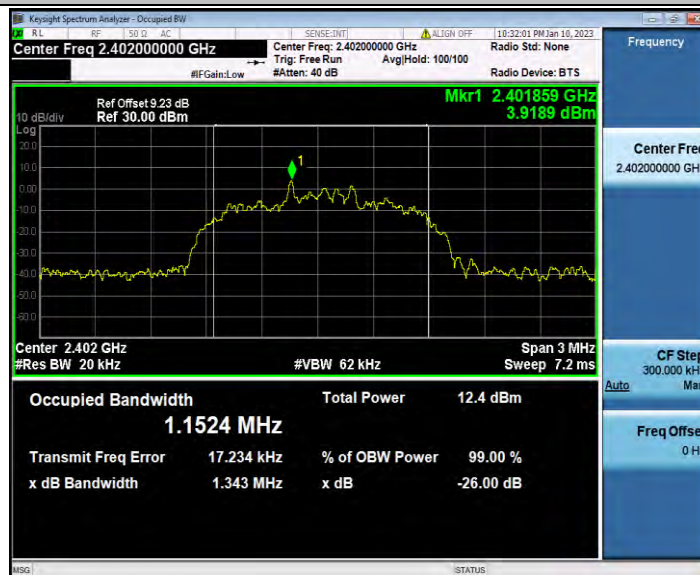
DH1_Ant1_2441



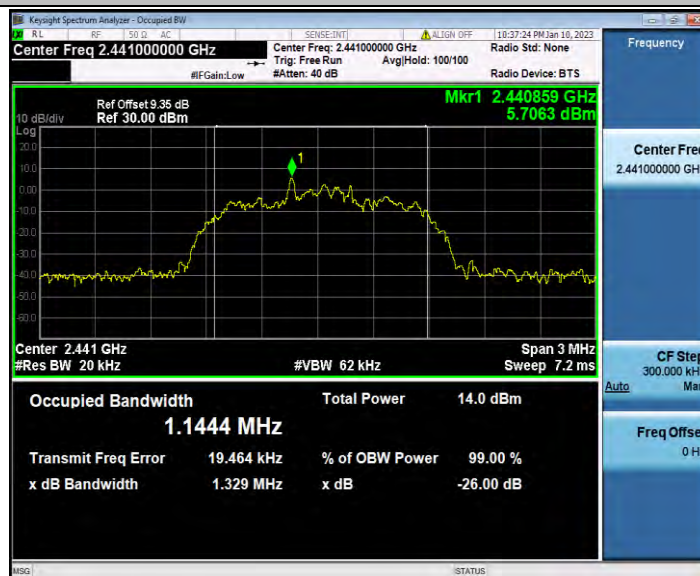
DH1_Ant1_2480



2DH1_Ant1_2402



2DH1_Ant1_2441



2DH1_Ant1_2480



3DH1_Ant1_2402



3DH1_Ant1_2441



3DH1_Ant1_2480



Appendix A.3: Maximum conducted output power

Test Result Peak

Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH1	Ant1	2402	6.89	≤20.97	PASS
		2441	9.28	≤20.97	PASS
		2480	8.94	≤20.97	PASS
2DH1	Ant1	2402	6.87	≤20.97	PASS
		2441	8.61	≤20.97	PASS
		2480	8.29	≤20.97	PASS
3DH1	Ant1	2402	6.83	≤20.97	PASS
		2441	8.57	≤20.97	PASS
		2480	8.24	≤20.97	PASS

Appendix A.4: Carrier frequency separation

Test Result

TestMode	Antenna	Frequency[MHz]	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Hop_2402	1.004	≥ 0.572	PASS
		Hop_2441	0.844	≥ 0.572	PASS
		Hop_2480	0.85	≥ 0.572	PASS
2DH1	Ant1	Hop_2402	1.144	≥ 0.844	PASS
		Hop_2441	0.992	≥ 0.844	PASS
		Hop_2480	0.998	≥ 0.844	PASS
3DH1	Ant1	Hop_2402	0.998	≥ 0.838	PASS
		Hop_2441	0.996	≥ 0.838	PASS
		Hop_2480	1.01	≥ 0.838	PASS

Test Graphs

DH1_Ant1_Hop_2402



DH1_Ant1_Hop_2441



DH1_Ant1_Hop_2480



2DH1_Ant1_Hop_2402



2DH1_Ant1_Hop_2441



2DH1_Ant1_Hop_2480



3DH1_Ant1_Hop_2402



3DH1_Ant1_Hop_2441



3DH1_Ant1_Hop_2480



Appendix A.5: Time of occupancy

Test Result

TestMode	Antenna	Frequency[MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.37	330	0.122	≤0.4	PASS
DH3	Ant1	Hop	1.63	180	0.293	≤0.4	PASS
DH5	Ant1	Hop	2.87	110	0.316	≤0.4	PASS
2DH1	Ant1	Hop	0.37	330	0.124	≤0.4	PASS
2DH3	Ant1	Hop	1.63	160	0.261	≤0.4	PASS
2DH5	Ant1	Hop	2.88	130	0.374	≤0.4	PASS
3DH1	Ant1	Hop	0.37	330	0.124	≤0.4	PASS
3DH3	Ant1	Hop	1.63	190	0.309	≤0.4	PASS
3DH5	Ant1	Hop	2.88	130	0.374	≤0.4	PASS

KeySight Spectrum Analyzer - Sweep SA

Center Freq 2.441000000 GHz

Ref Offset 9.35 dB
Ref 19.35 dBm

Trig Delay: 200.0 μ s
Trig: Video
#Atten: 20 dB

Avg Type: RMS

Frequency

Auto Tune

Center Freq
2.441000000 GHz

Start Freq
2.441000000 GHz

Stop Freq
2.441000000 GHz

CF Step
1.000000 MHz
Man

Freq Offset
0 Hz

10 dB/div
Log

Ref Offset 9.35 dB
Ref 19.35 dBm

Δ Mkr2 369.9 μ s
-0.37 dB

Center 2.441000000 GHz
Res BW 1.0 MHz
#VBW 3.0 MHz
Sweep 10.13 ms (2000 pts)

MSG STATUS

KeySight Spectrum Analyzer - Sweep SA

Center Freq 2.441000000 GHz

Ref Offset 9.35 dB
Ref 19.35 dBm

Trig Delay: 0.000 s
Trig: Video
#Atten: 20 dB

Avg Type: RMS

Frequency

Auto Tune

Center Freq
2.441000000 GHz

Start Freq
2.441000000 GHz

Stop Freq
2.441000000 GHz

CF Step
510.000 kHz
Man

Freq Offset
0 Hz

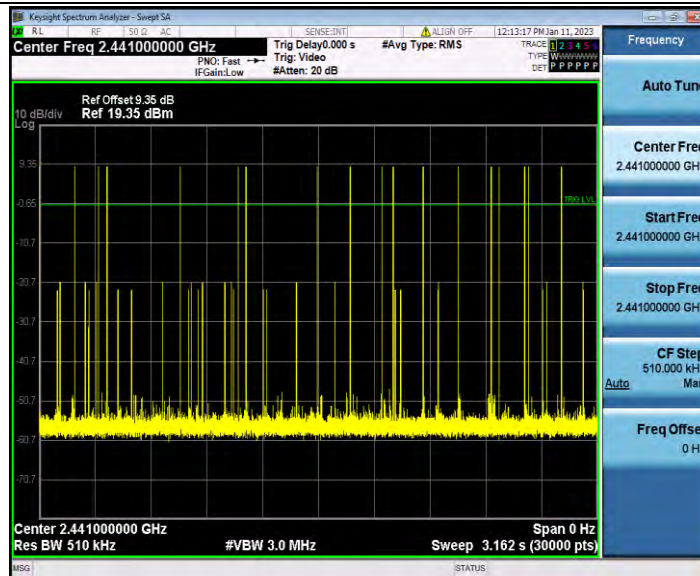
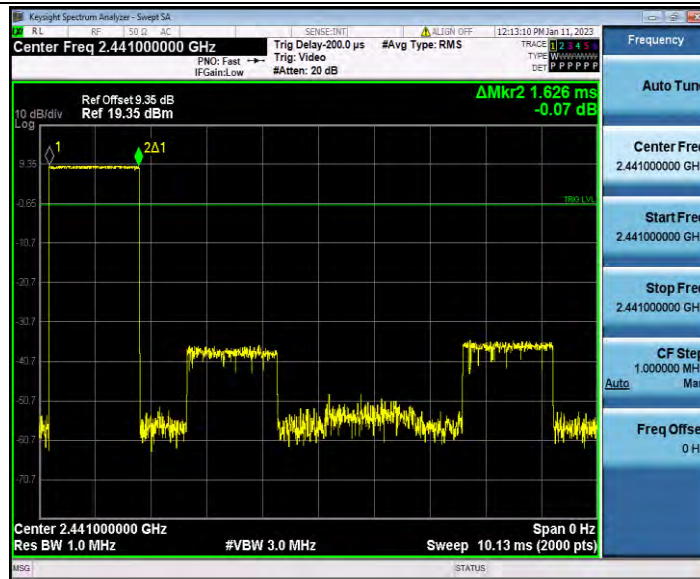
10 dB/div
Log

Ref Offset 9.35 dB
Ref 19.35 dBm

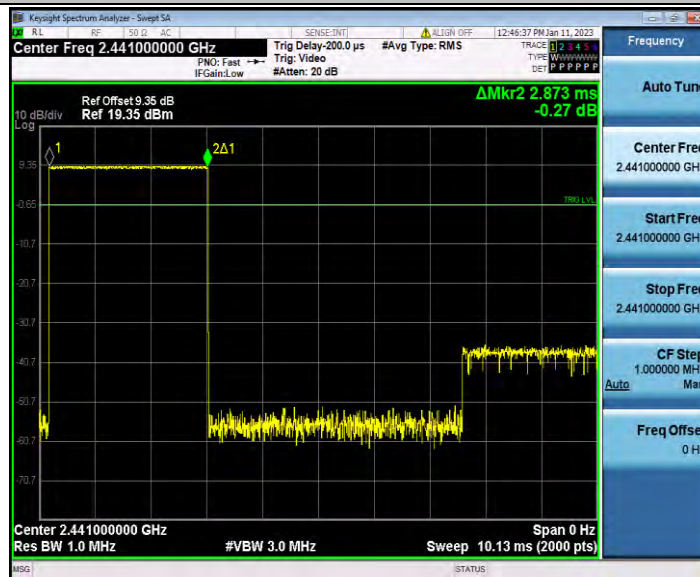
Center 2.441000000 GHz
Res BW 510 kHz
#VBW 3.0 MHz
Sweep 3.162 s (30000 pts)

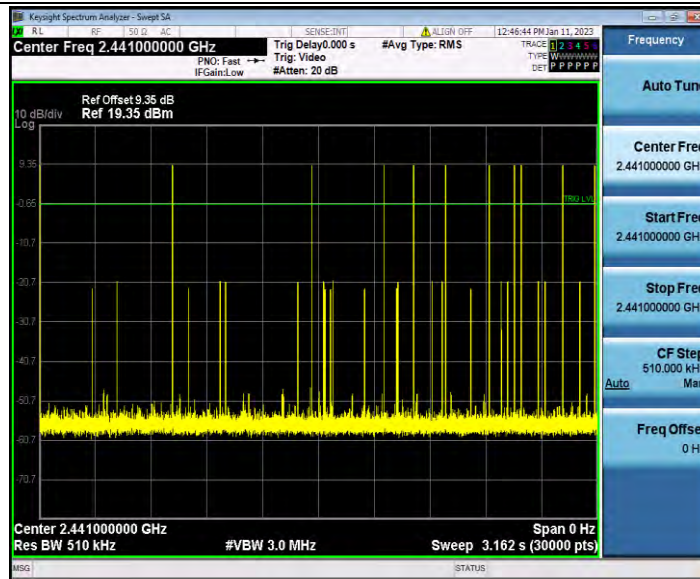
MSG STATUS

DH3_Ant1_Hop

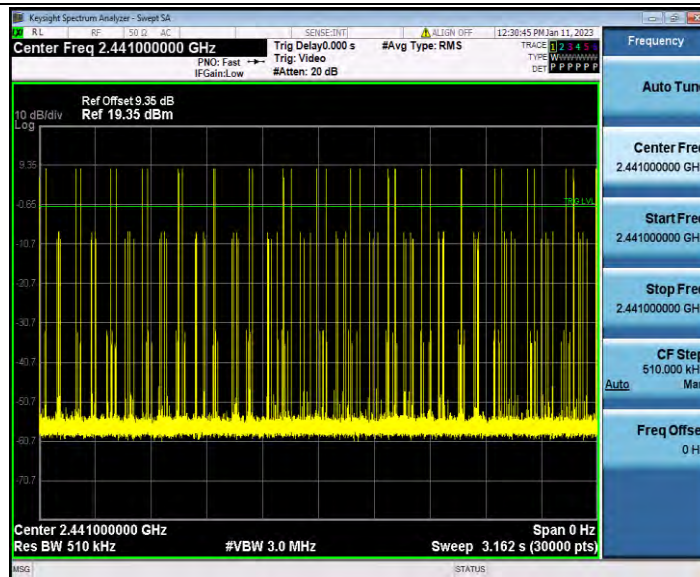
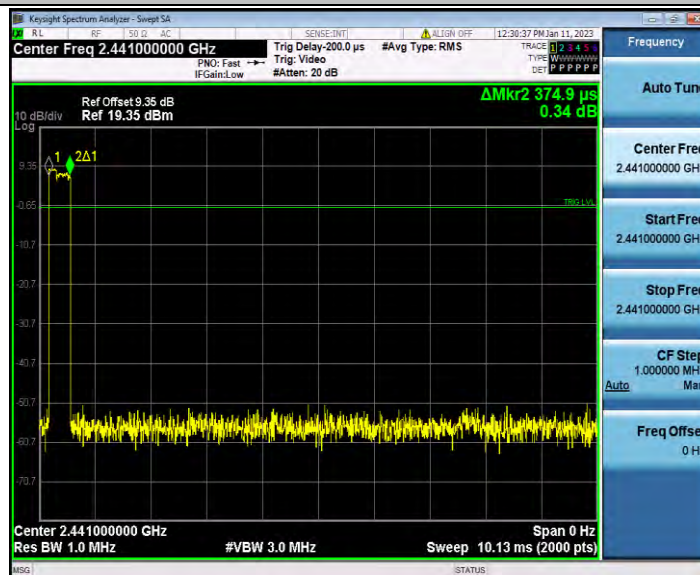


DH5_Ant1_Hop

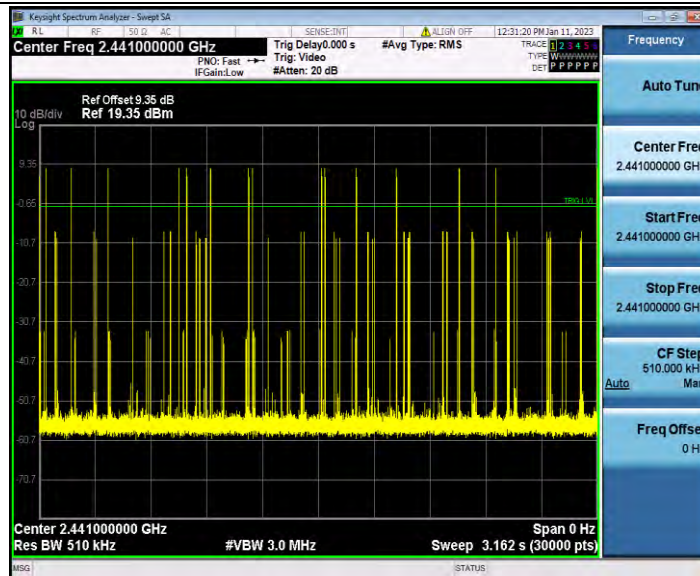
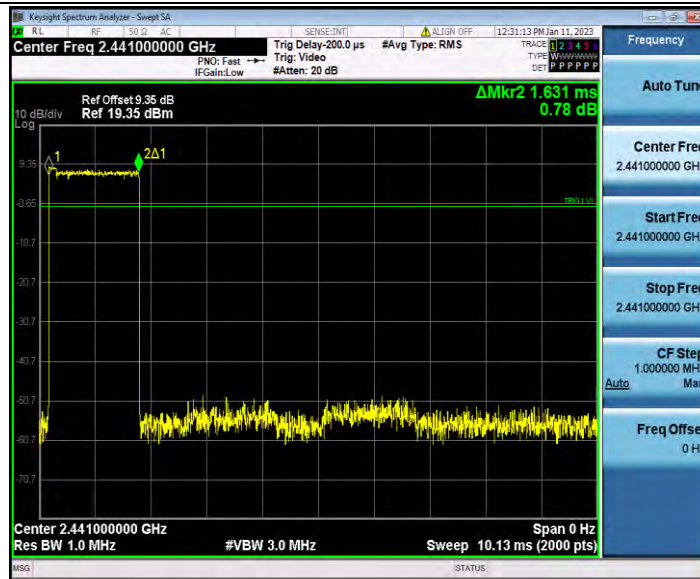




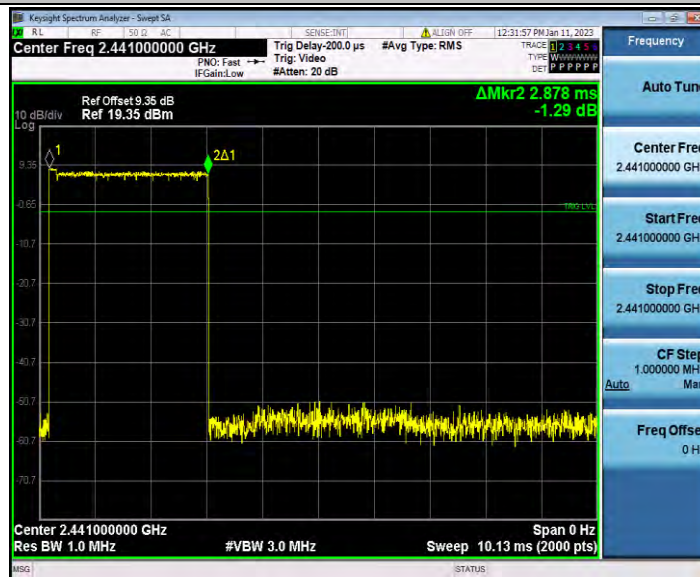
2DH1_Ant1_Hop

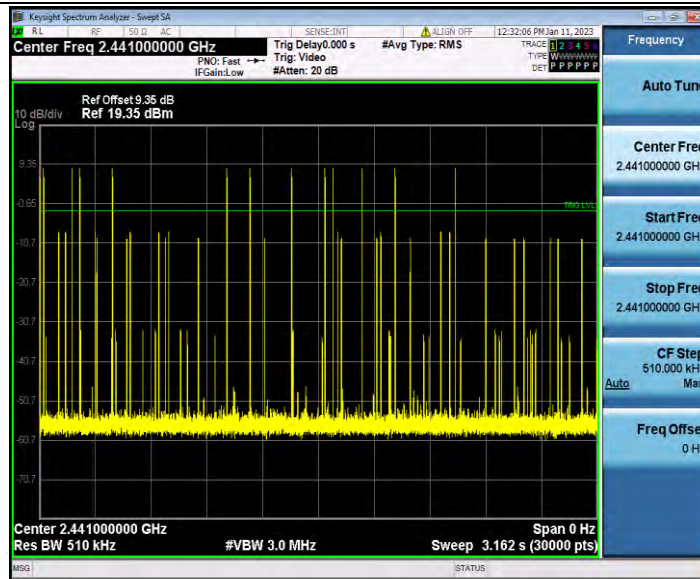


2DH3_Ant1_Hop

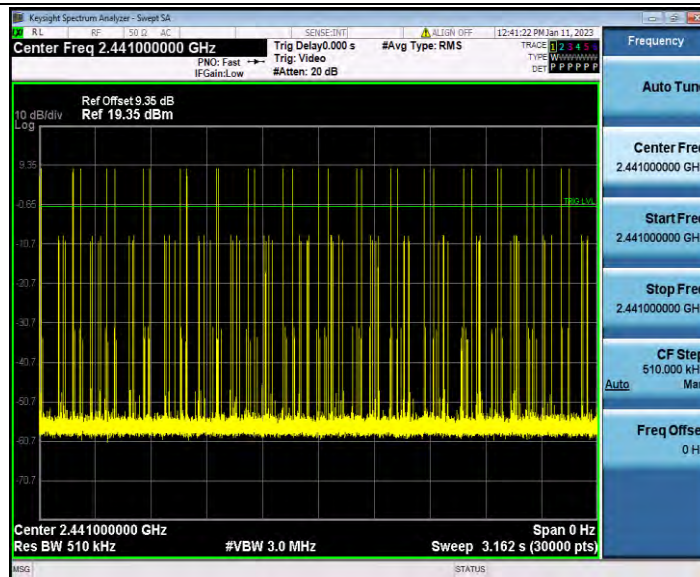
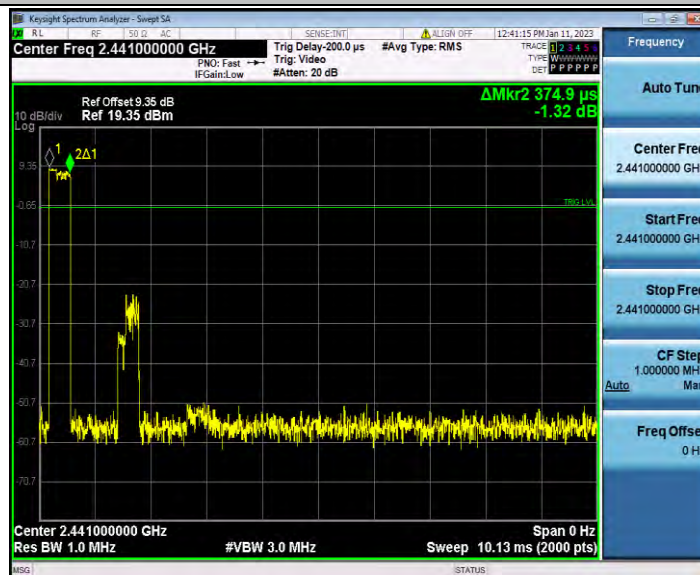


2DH5_Ant1_Hop

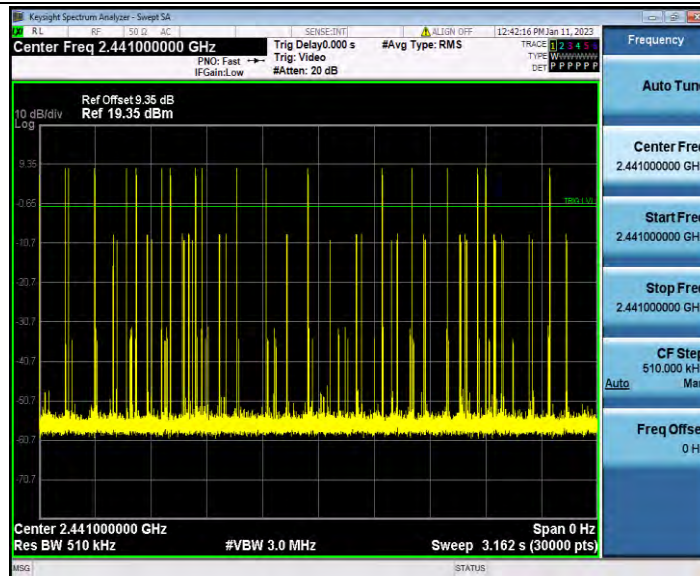




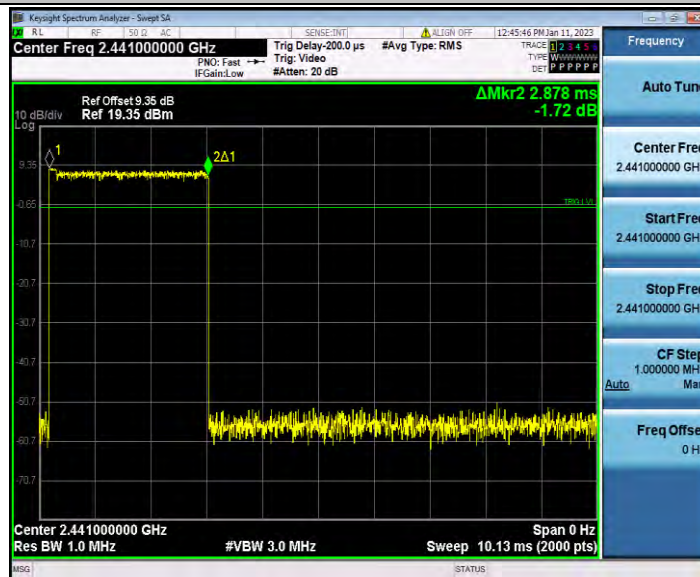
3DH1_Ant1_Hop

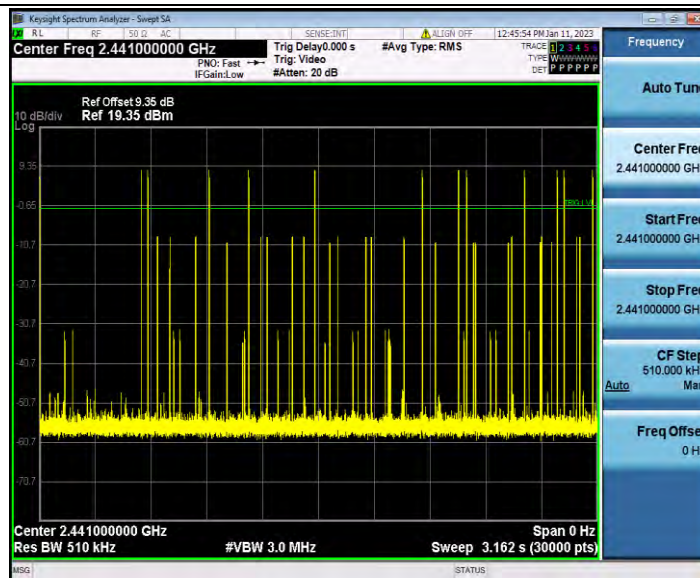


3DH3_Ant1_Hop



3DH5_Ant1_Hop





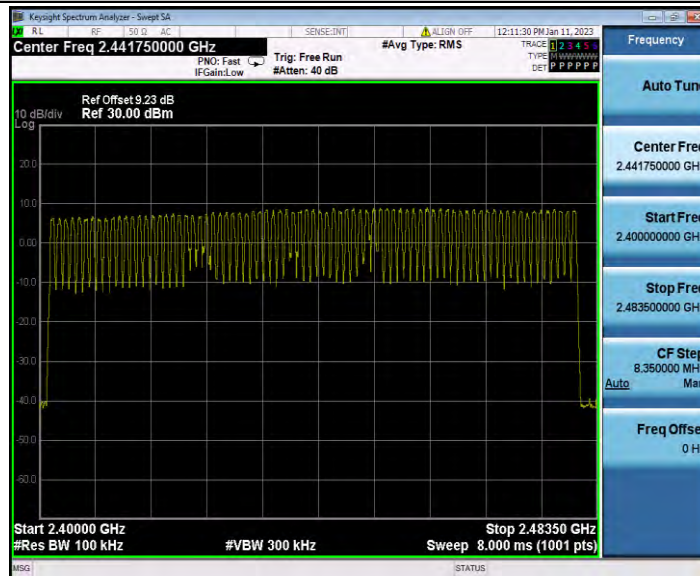
Appendix A.6: Number of hopping channels

Test Result

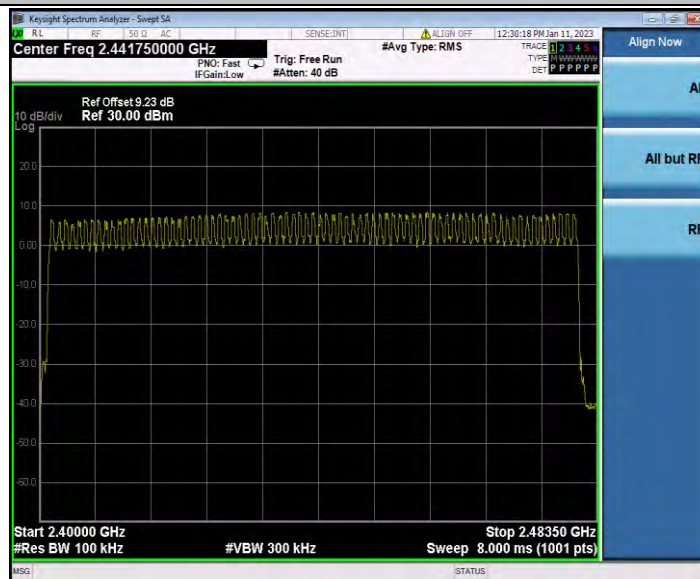
TestMode	Antenna	Frequency[MHz]	Result[Num]	Limit[Num]	Verdict
DH1	Ant1	Hop	79	≥15	PASS
2DH1	Ant1	Hop	79	≥15	PASS
3DH1	Ant1	Hop	79	≥15	PASS

Test Graphs

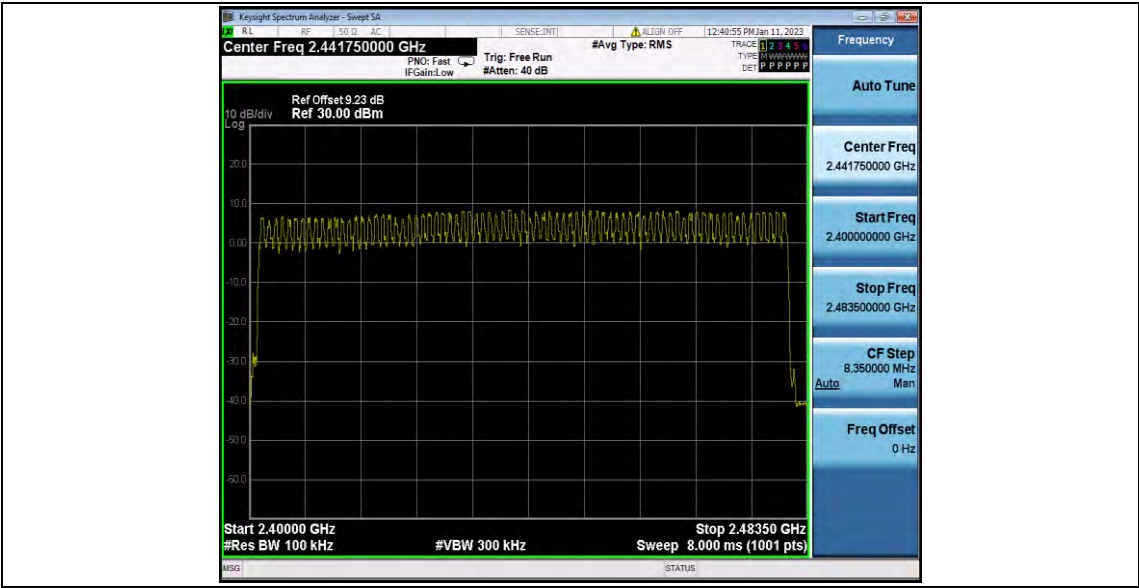
DH1_Ant1_Hop



2DH1_Ant1_Hop



3DH1_Ant1_Hop



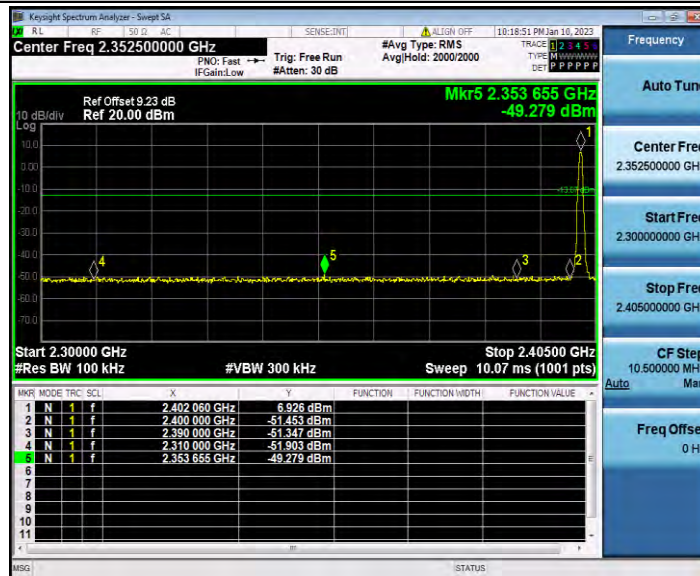
Appendix A.7: Band edge measurements

Test Result

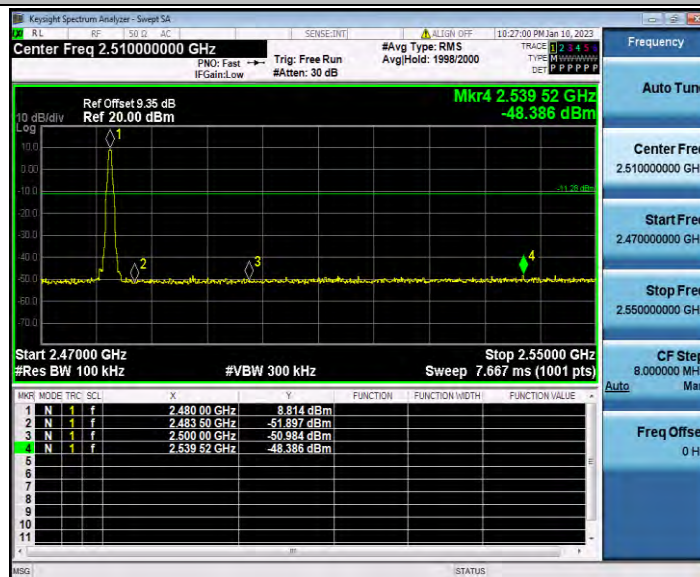
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	Low	2402	6.93	-49.28	≤-13.07	PASS
		High	2480	8.72	-48.39	≤-11.28	PASS
		Low	Hop_2402	6.49	-49.91	≤-13.52	PASS
		High	Hop_2480	7.96	-49.14	≤-12.04	PASS
2DH1	Ant1	Low	2402	6.55	-46.2	≤-13.45	PASS
		High	2480	8.09	-48.55	≤-11.91	PASS
		Low	Hop_2402	5.75	-49.43	≤-14.25	PASS
		High	Hop_2480	8.15	-49.04	≤-11.85	PASS
3DH1	Ant1	Low	2402	6.50	-45.19	≤-13.5	PASS
		High	2480	8.05	-47.57	≤-11.95	PASS
		Low	Hop_2402	6.25	-48.98	≤-13.75	PASS
		High	Hop_2480	7.85	-48.31	≤-12.15	PASS

Test Graphs

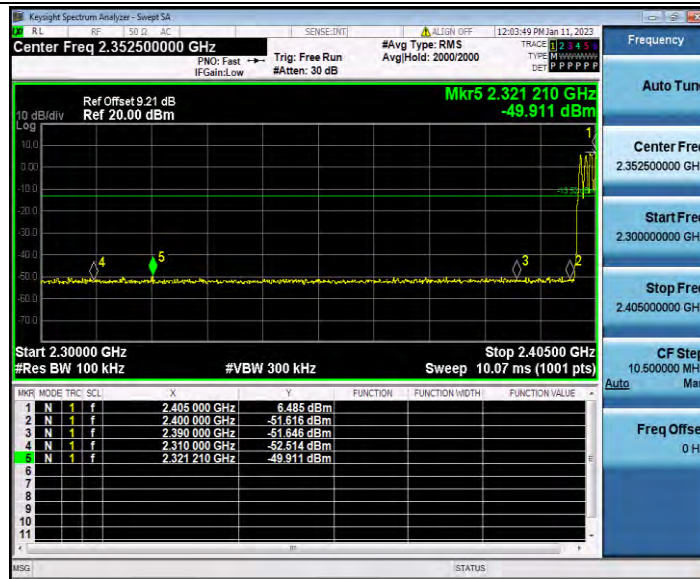
DH1_Ant1_Low_2402



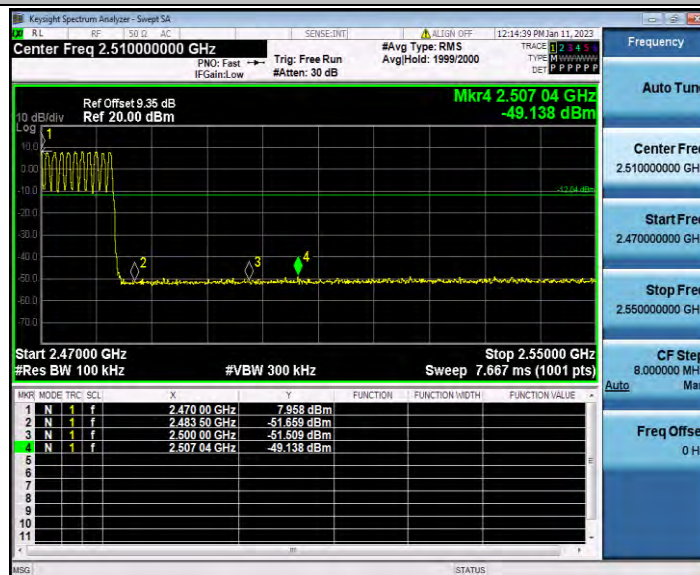
DH1_Ant1_High_2480



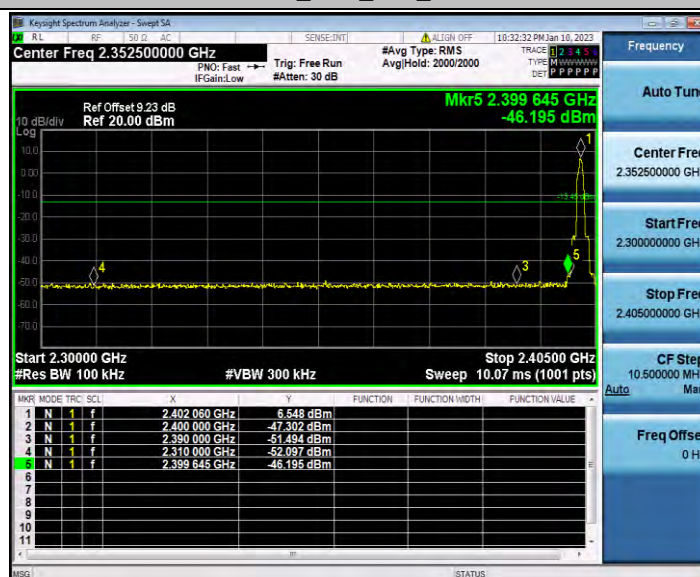
DH1_Ant1_Low_Hop_2402



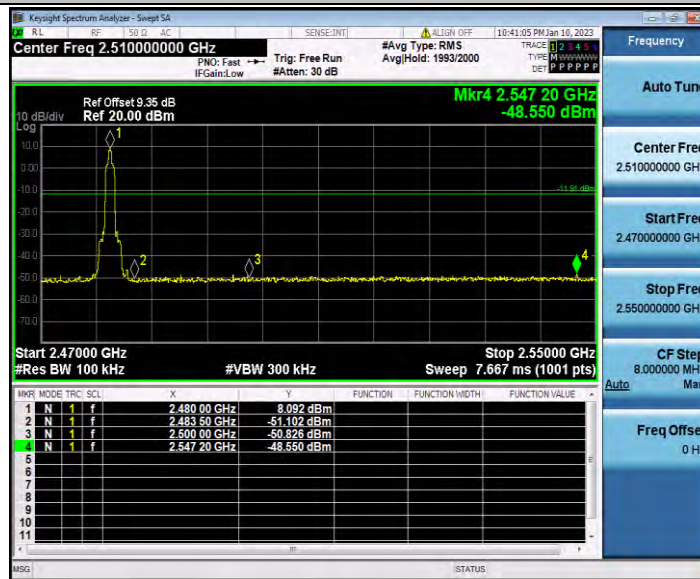
DH1_Ant1_High_Hop_2480



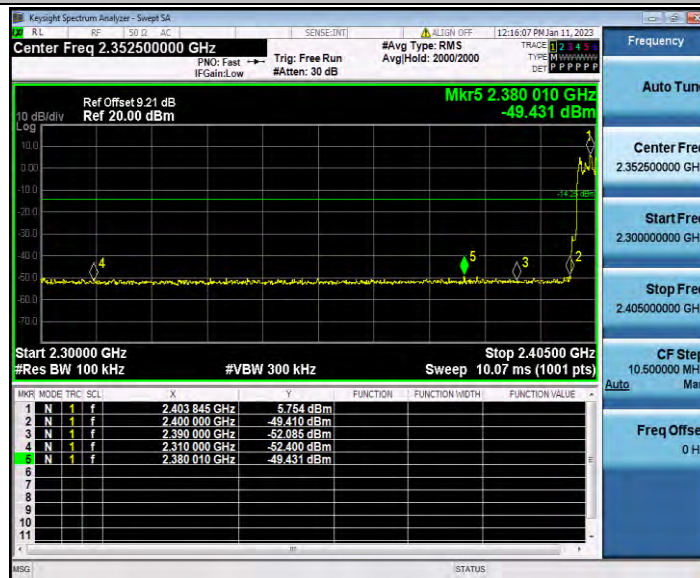
2DH1_Ant1_Low_2402



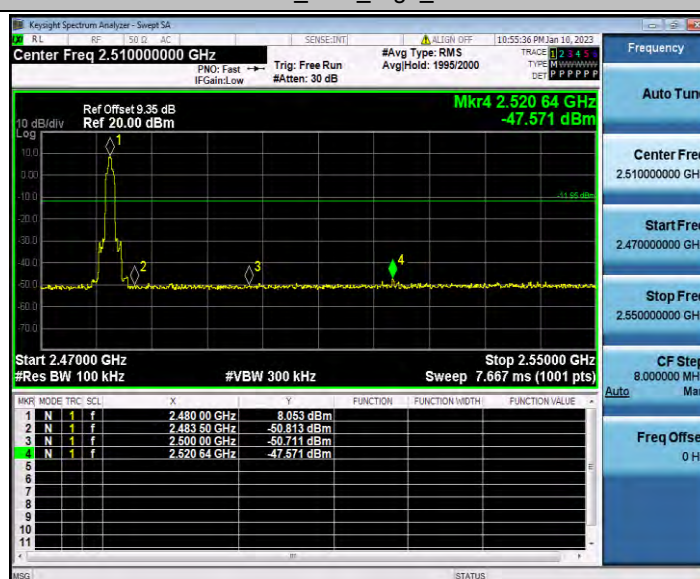
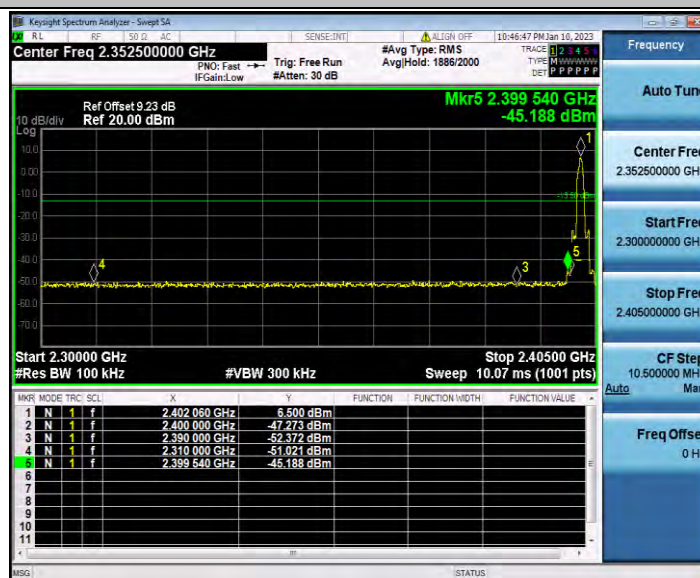
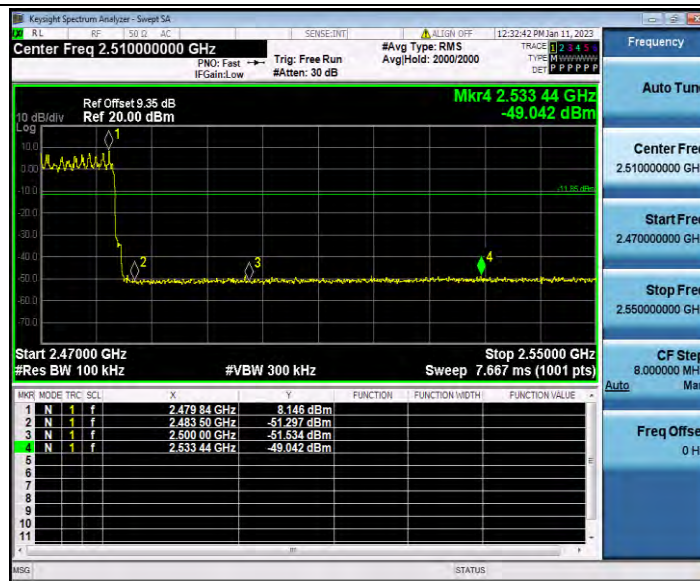
2DH1_Ant1_High_2480



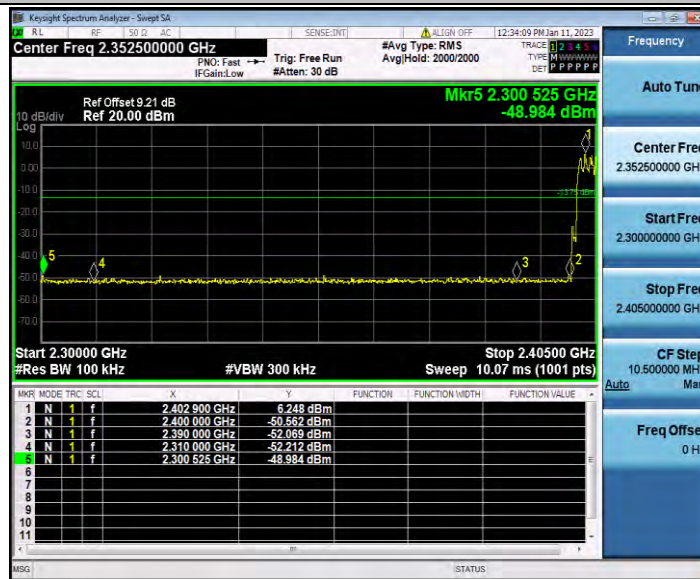
2DH1_Ant1_Low_Hop_2402



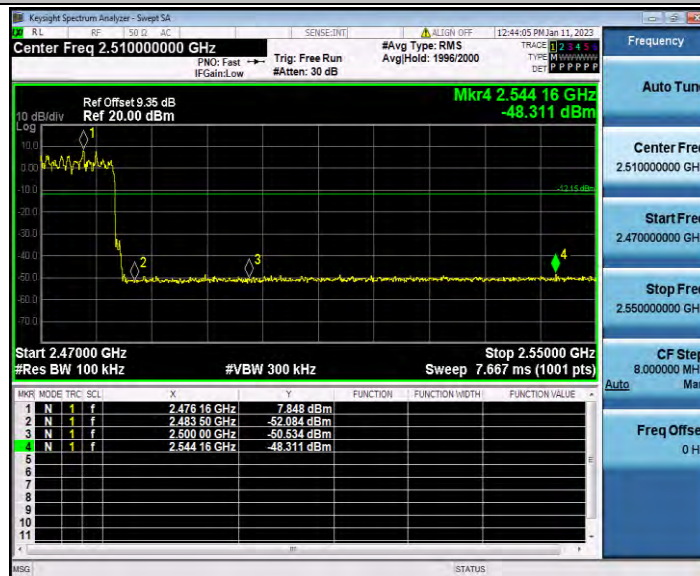
2DH1_Ant1_High_Hop_2480



3DH1_Ant1_Low_Hop_2402



3DH1_Ant1_High_Hop_2480



Appendix A.8: Conducted Spurious Emission

Test Result

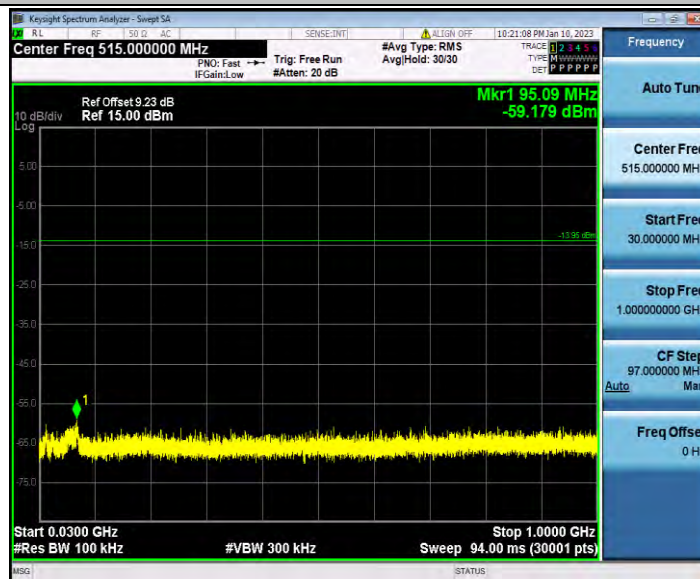
TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	2402	Reference	6.05	6.05	---	PASS
			30~1000	6.05	-59.18	≤-13.95	PASS
			1000~26500	6.05	-47.48	≤-13.95	PASS
		2441	Reference	8.28	8.28	---	PASS
			30~1000	8.28	-59.42	≤-11.72	PASS
			1000~26500	8.28	-47.75	≤-11.72	PASS
		2480	Reference	8.11	8.11	---	PASS
			30~1000	8.11	-58.01	≤-11.89	PASS
			1000~26500	8.11	-47.62	≤-11.89	PASS
2DH1	Ant1	2402	Reference	6.12	6.12	---	PASS
			30~1000	6.12	-58.75	≤-13.88	PASS
			1000~26500	6.12	-47.74	≤-13.88	PASS
		2441	Reference	8.07	8.07	---	PASS
			30~1000	8.07	-58.26	≤-11.93	PASS
			1000~26500	8.07	-46.55	≤-11.93	PASS
		2480	Reference	7.34	7.34	---	PASS
			30~1000	7.34	-57.56	≤-12.66	PASS
			1000~26500	7.34	-47.57	≤-12.66	PASS
3DH1	Ant1	2402	Reference	6.17	6.17	---	PASS
			30~1000	6.17	-58.15	≤-13.83	PASS
			1000~26500	6.17	-47.49	≤-13.83	PASS
		2441	Reference	7.81	7.81	---	PASS
			30~1000	7.81	-57.81	≤-12.19	PASS
			1000~26500	7.81	-40.13	≤-12.19	PASS
		2480	Reference	7.05	7.05	---	PASS
			30~1000	7.05	-56.96	≤-12.95	PASS
			1000~26500	7.05	-47.38	≤-12.95	PASS

Test Graphs

DH1_Ant1_2402_0~Reference



DH1_Ant1_2402_30~1000



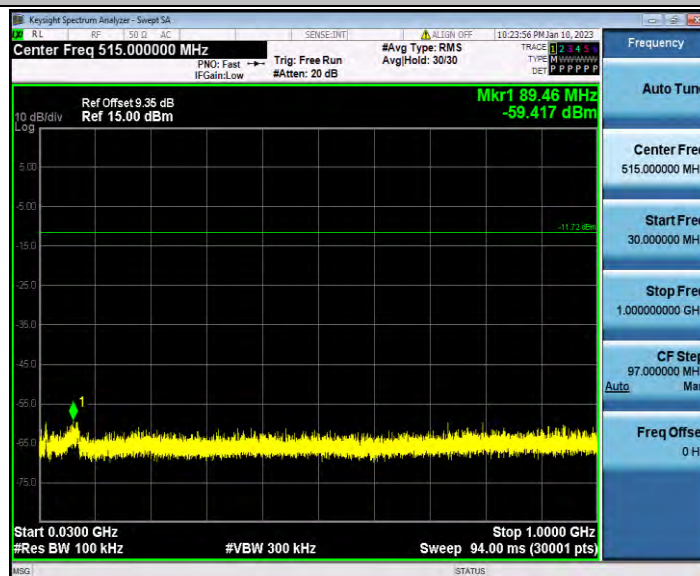
DH1_Ant1_2402_1000~26500



DH1_Ant1_2441_0~Reference



DH1_Ant1_2441_30~1000



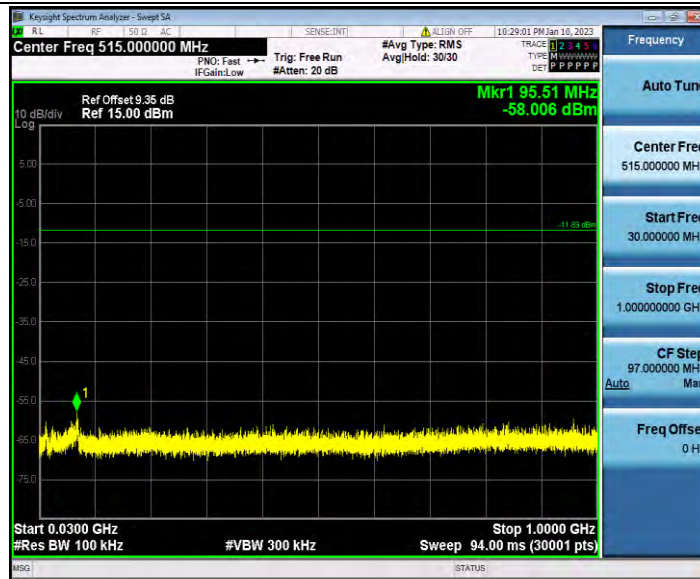
DH1_Ant1_2441_1000~26500



DH1_Ant1_2480_0~Reference



DH1_Ant1_2480_30~1000



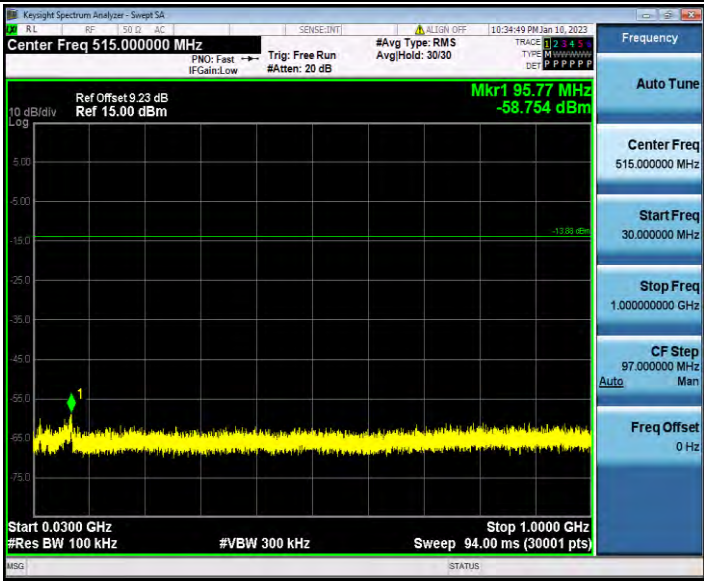
DH1_Ant1_2480_1000~26500



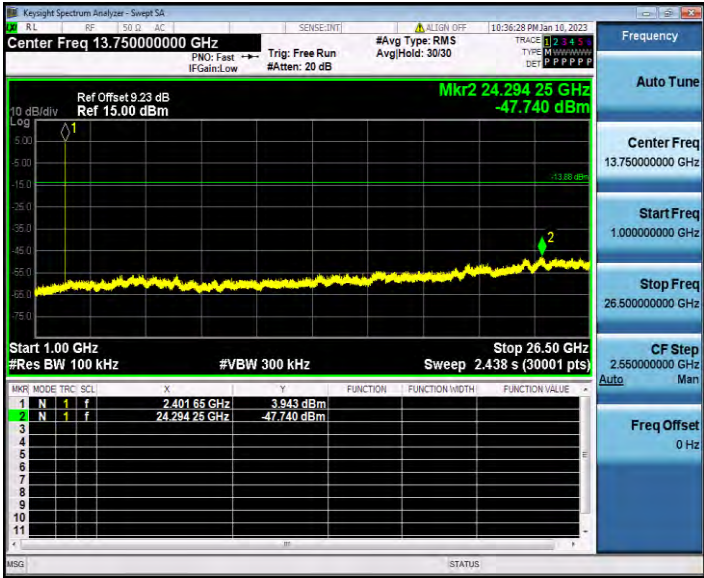
2DH1_Ant1_2402_0~Reference



2DH1_Ant1_2402_30~1000



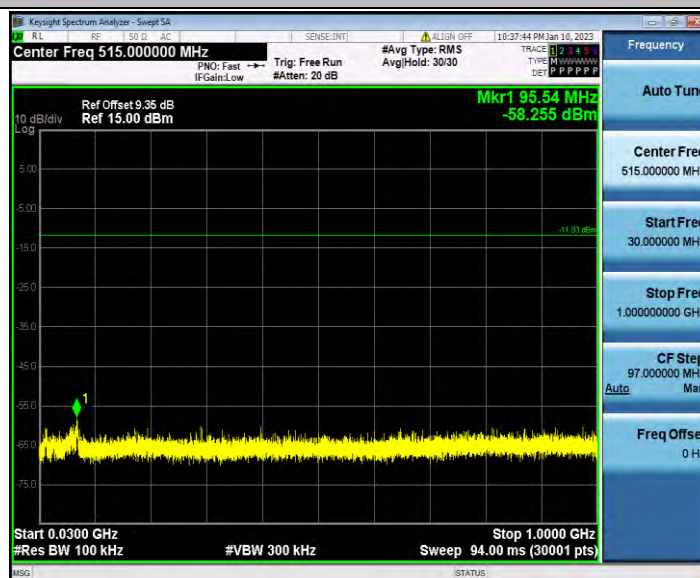
2DH1_Ant1_2402_1000~26500



2DH1_Ant1_2441_0~Reference



2DH1_Ant1_2441_30~1000



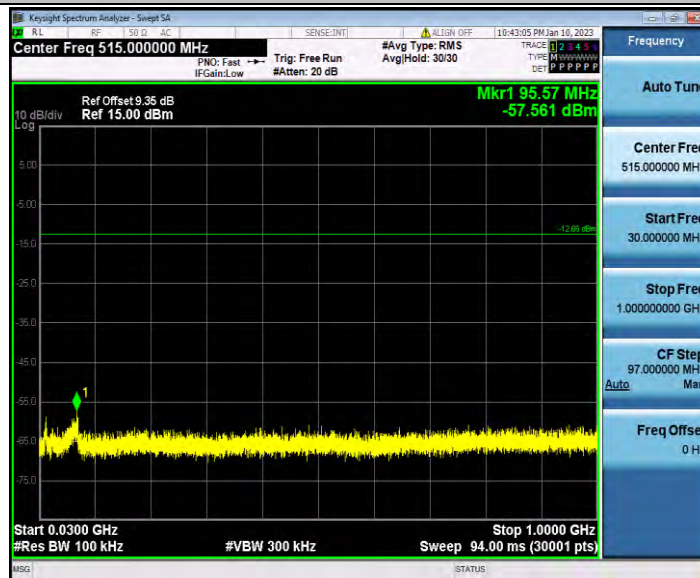
2DH1_Ant1_2441_1000~26500



2DH1_Ant1_2480_0~Reference



2DH1_Ant1_2480_30~1000



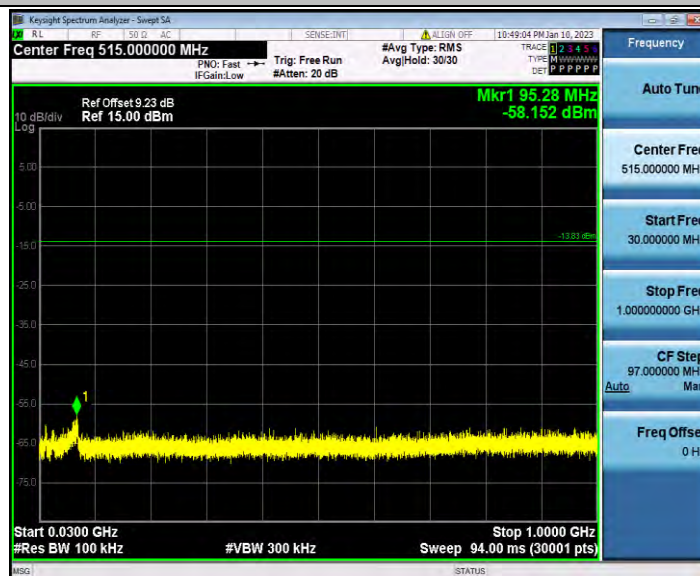
2DH1_Ant1_2480_1000~26500



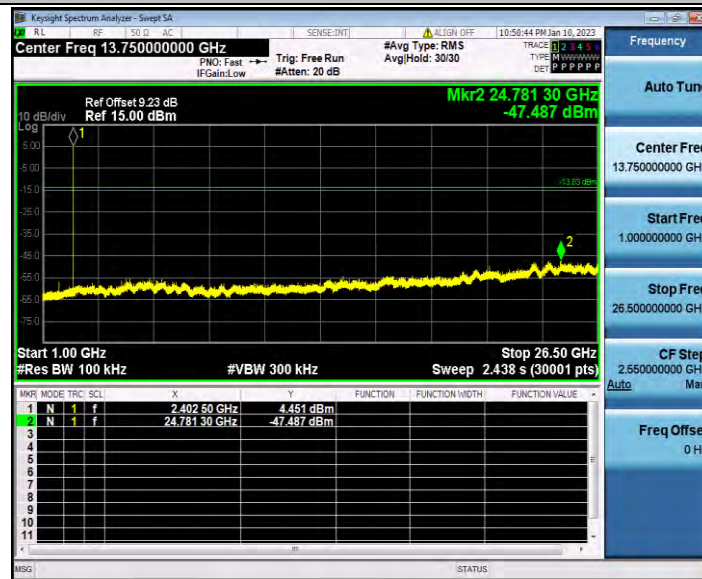
3DH1_Ant1_2402_0~Reference



3DH1_Ant1_2402_30~1000



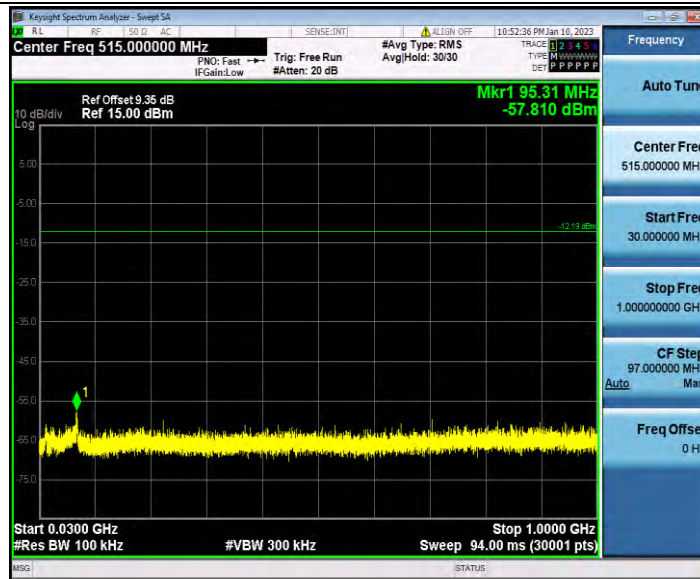
3DH1_Ant1_2402_1000~26500



3DH1_Ant1_2441_0~Reference



3DH1_Ant1_2441_30~1000



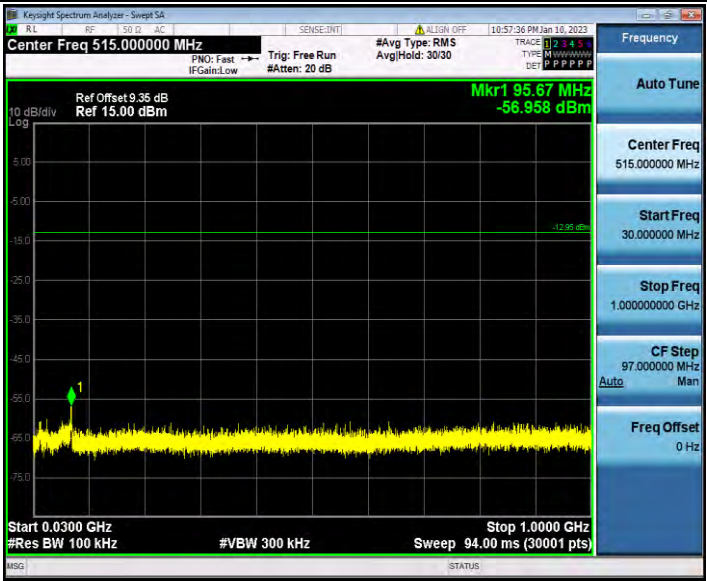
3DH1_Ant1_2441_1000~26500



3DH1_Ant1_2480_0~Reference



3DH1_Ant1_2480_30~1000



3DH1_Ant1_2480_1000~26500

