

Case No. : <u>GTS20220921005-1-1</u>	
Ambient Condition: <u>25</u> °C, <u>47</u> %RH,	
Test Date: <u>2022.10.13</u>	Test Engineer: <u>Jenny zeng</u>

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	0.882	2401.547	2402.429	---	---
		2441	0.867	2440.550	2441.417	---	---
		2480	0.927	2479.553	2480.480	---	---
2DH1	Ant1	2402	1.299	2401.343	2402.642	---	---
		2441	1.260	2440.361	2441.621	---	---
		2480	1.251	2479.385	2480.636	---	---
3DH1	Ant1	2402	1.227	2401.397	2402.624	---	---
		2441	1.233	2440.394	2441.627	---	---
		2480	1.218	2479.406	2480.624	---	---

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	0.83446	2401.586	2402.420	---	---
		2441	0.82125	2440.596	2441.417	---	---
		2480	0.81761	2479.583	2480.400	---	---
2DH1	Ant1	2402	1.1618	2401.411	2402.573	---	---
		2441	1.1590	2440.411	2441.570	---	---
		2480	1.1599	2479.412	2480.572	---	---
3DH1	Ant1	2402	1.1396	2401.442	2402.581	---	---
		2441	1.1462	2440.438	2441.584	---	---
		2480	1.1434	2479.438	2480.581	---	---

Test Graphs

DH1_Ant1_2402



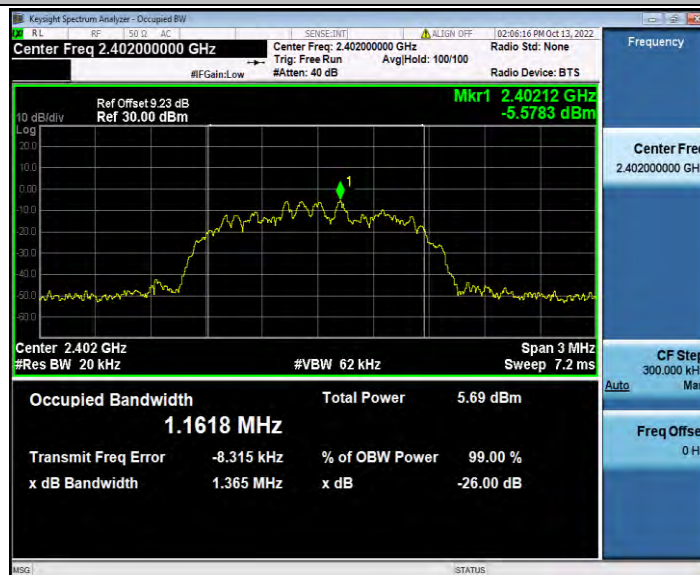
DH1_Ant1_2441



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	-0.75	≤30.00	PASS
		2441	1.23	≤30.00	PASS
		2480	1.15	≤30.00	PASS
2DH1	Ant1	2402	1.13	≤20.97	PASS
		2441	3.2	≤20.97	PASS
		2480	3.08	≤20.97	PASS
3DH1	Ant1	2402	1.79	≤20.97	PASS
		2441	3.86	≤20.97	PASS
		2480	3.69	≤20.97	PASS

Appendix A.4: Carrier frequency separation

Test Result

TestMode	Antenna	Frequency[MHz]	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Hop_2402	1.166	≥ 0.927	PASS
		Hop_2441	1.006	≥ 0.927	PASS
		Hop_2480	0.996	≥ 0.927	PASS
2DH1	Ant1	Hop_2402	0.872	≥ 0.866	PASS
		Hop_2441	1.006	≥ 0.866	PASS
		Hop_2480	1.000	≥ 0.866	PASS
3DH1	Ant1	Hop_2402	1.002	≥ 0.822	PASS
		Hop_2441	1.004	≥ 0.822	PASS
		Hop_2480	0.998	≥ 0.822	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	0.40	320	0.126	≤0.4	PASS
DH3	Ant1	Hop	1.65	180	0.297	≤0.4	PASS
DH5	Ant1	Hop	2.89	130	0.376	≤0.4	PASS
2DH1	Ant1	Hop	0.41	320	0.13	≤0.4	PASS
2DH3	Ant1	Hop	1.66	160	0.265	≤0.4	PASS
2DH5	Ant1	Hop	2.90	130	0.377	≤0.4	PASS
3DH1	Ant1	Hop	0.38	320	0.121	≤0.4	PASS
3DH3	Ant1	Hop	1.64	180	0.296	≤0.4	PASS
3DH5	Ant1	Hop	2.88	100	0.288	≤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

03:05:44 PM Oct 13, 2022

TRACE 1 2 3 4 5 6
TYPE W W W W W W W W
DET P P P P P P P

10 dB/div
Log

9.35
-0.65
-10.7
-20.7
-30.7
-40.7
-50.7
-60.7
-70.7

2d1

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

Span 0 Hz

MSG STATUS

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

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

03:05:51 PM Oct 13, 2022

TRACE 1 2 3 4 5 6
TYPE W W W W W W W W
DET P P P P P P P

10 dB/div
Log

9.35
-0.65
-10.7
-20.7
-30.7
-40.7
-50.7
-60.7
-70.7

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

Span 0 Hz

MSG STATUS

Frequency

Auto Tune

Center Freq
2.441000000 GHz

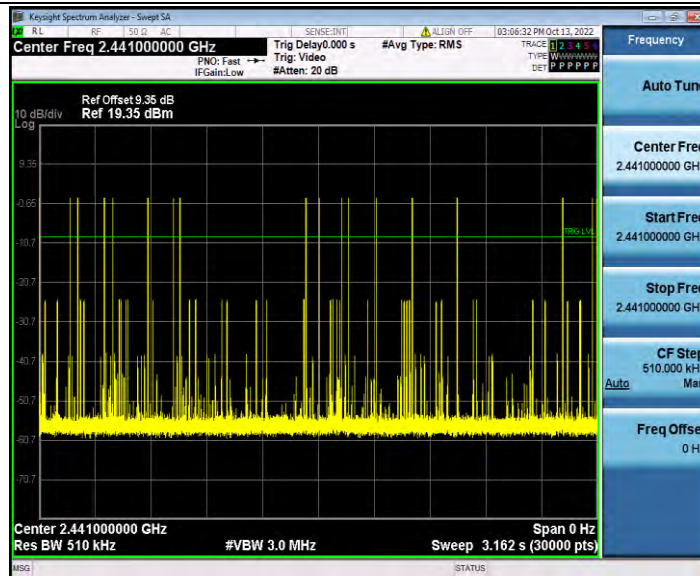
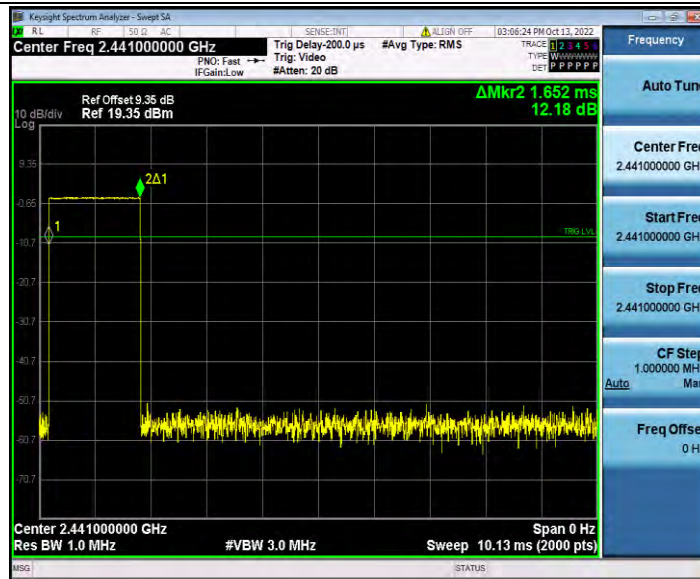
Start Freq
2.441000000 GHz

Stop Freq
2.441000000 GHz

CF Step
510.000 kHz
Man

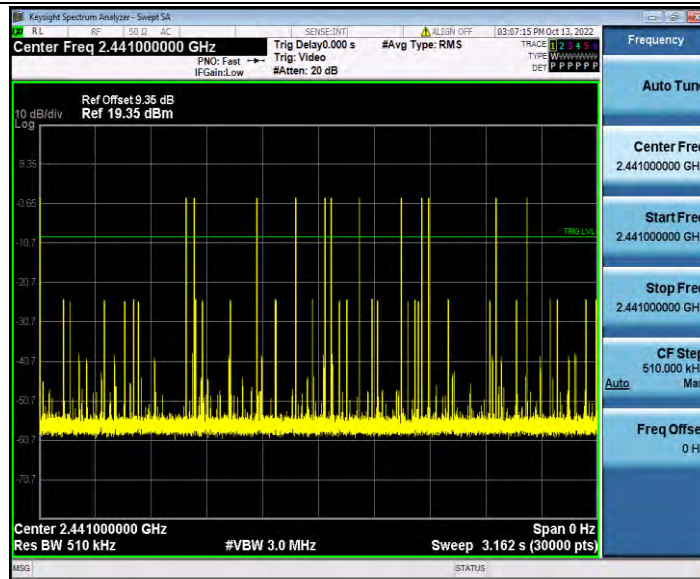
Freq Offset
0 Hz

DH3_Ant1_Hop

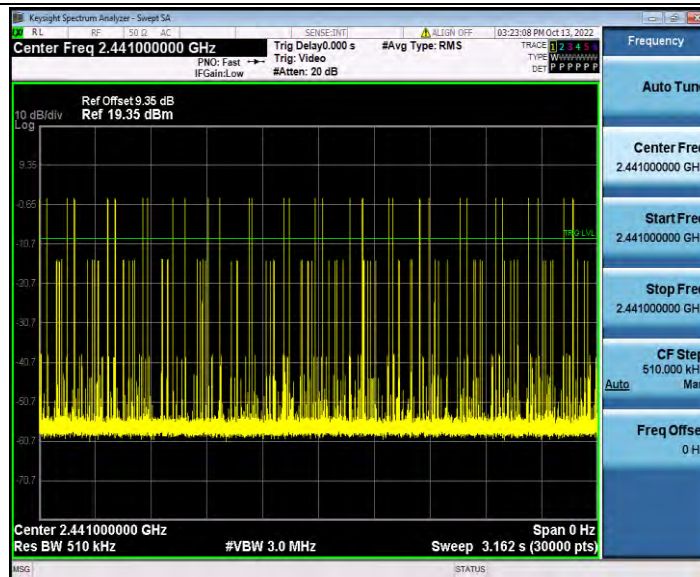
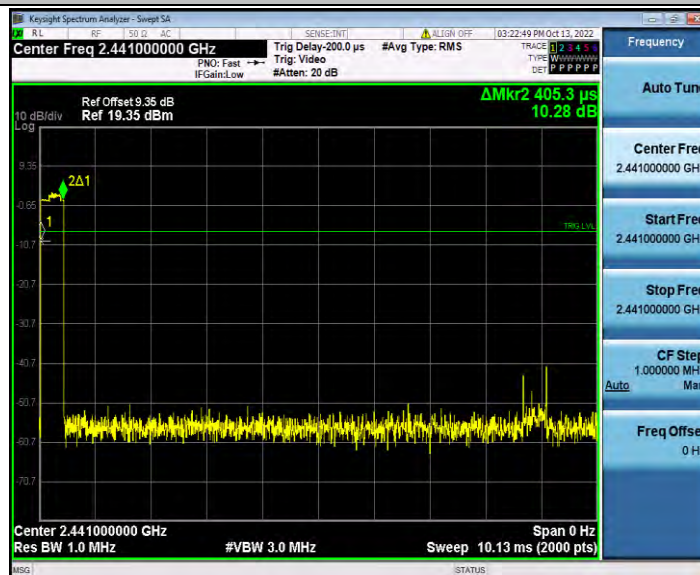


DH5_Ant1_Hop

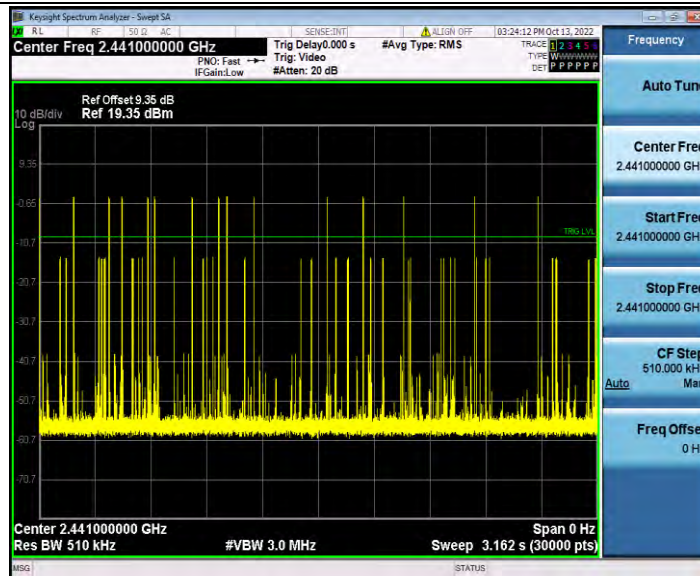




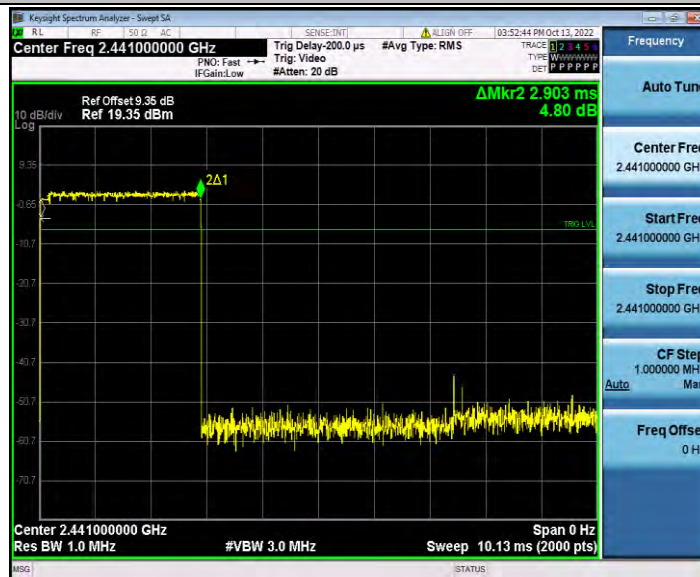
2DH1_Ant1_Hop

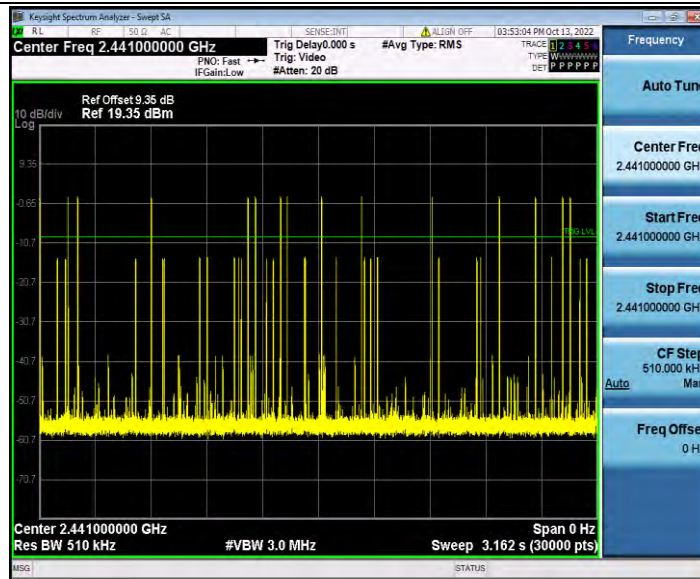


2DH3_Ant1_Hop

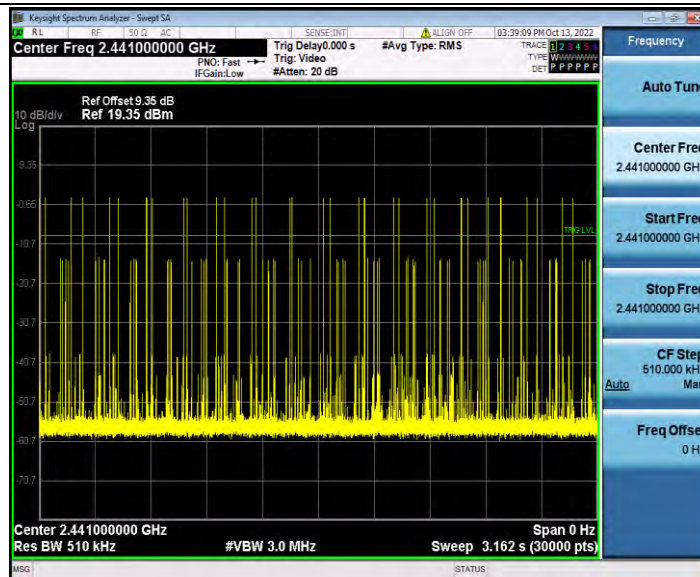
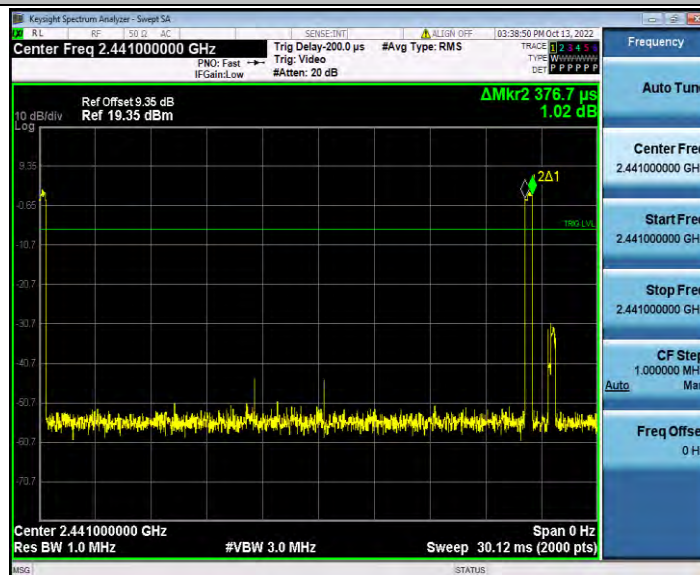


2DH5_Ant1_Hop

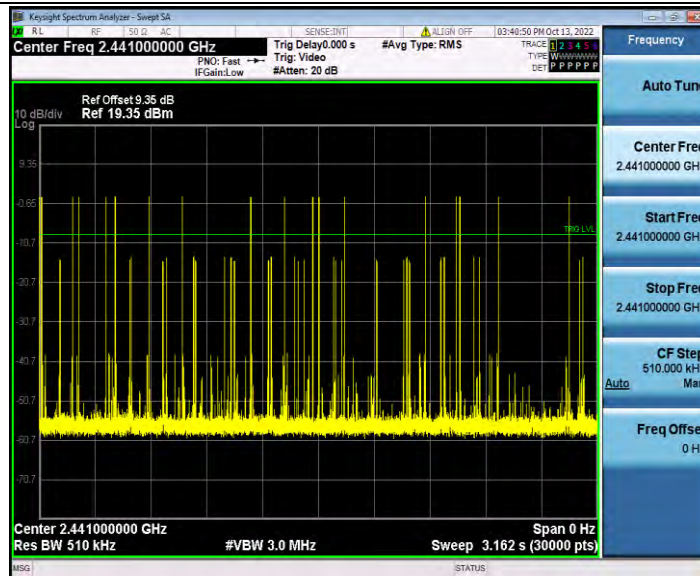
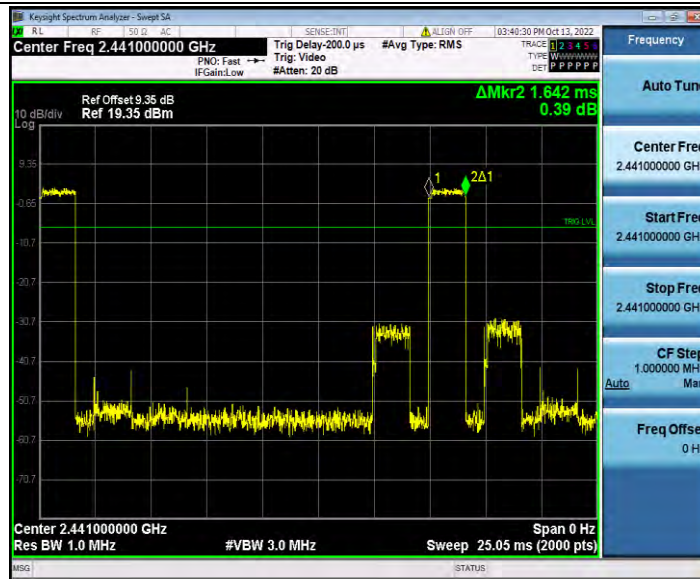




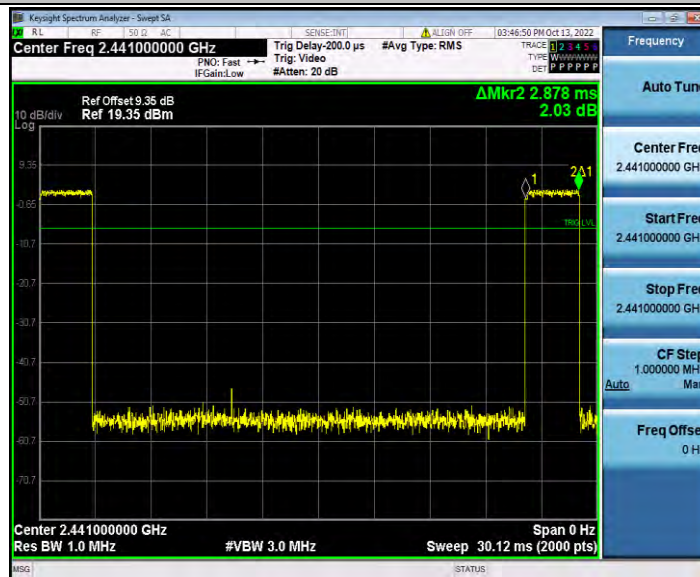
3DH1_Ant1_Hop

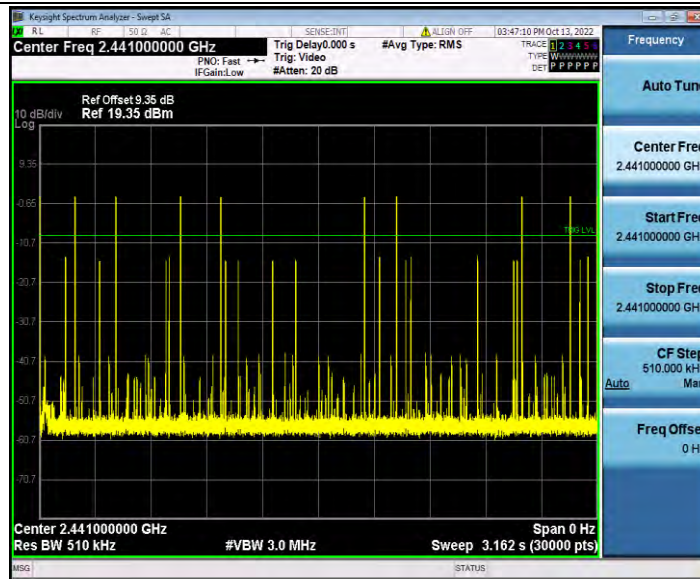


3DH3_Ant1_Hop



3DH5_Ant1_Hop





Appendix A.6: Number of hopping channels

Test Result

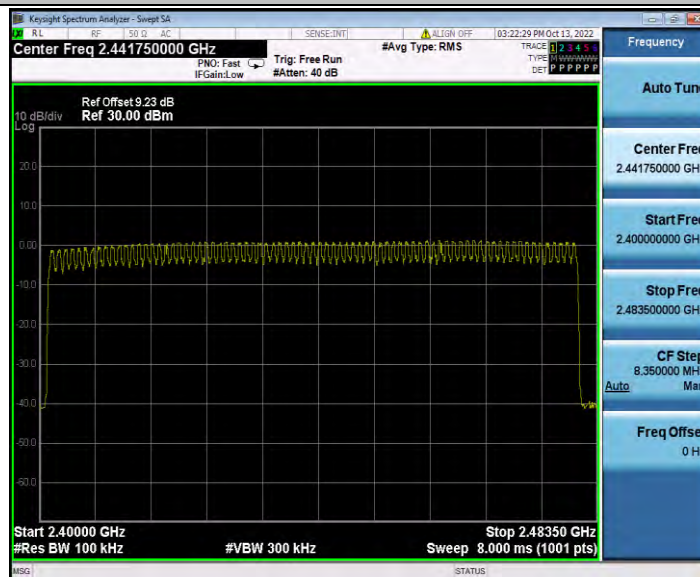
TestMode	Antenna	Frequency[MHz]	Result[Num]	Limit[Num]	Verdict
DH1	Ant1	Hop	79	≥15	PASS
2DH1	Ant1	Hop	79	≥15	PASS
3DH1	Ant1	Hop	79	≥15	PASS

Test Graphs

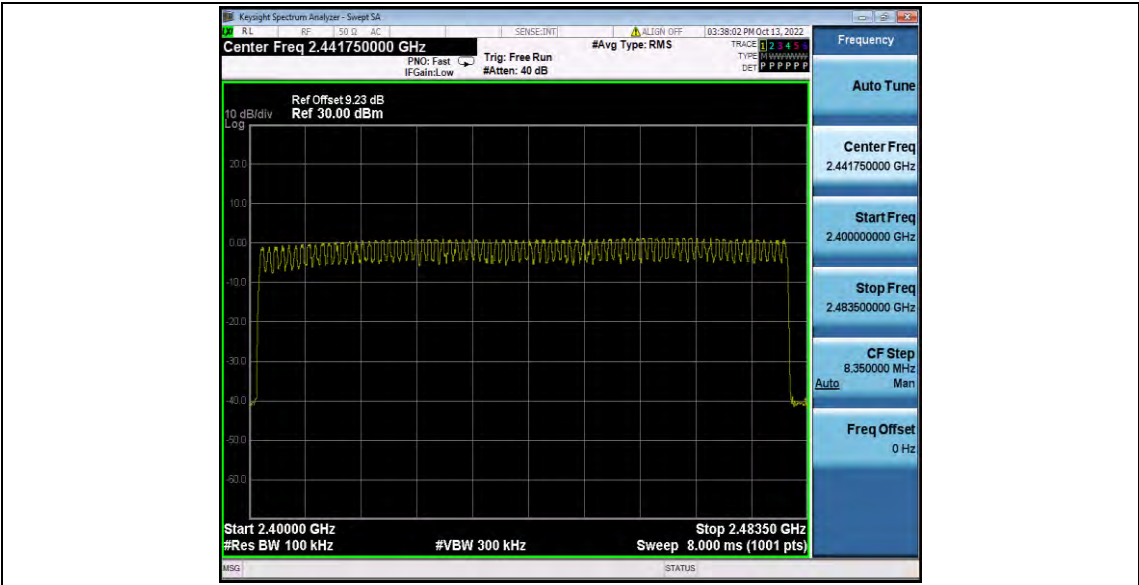
DH1_Ant1_Hop



2DH1_Ant1_Hop



3DH1_Ant1_Hop



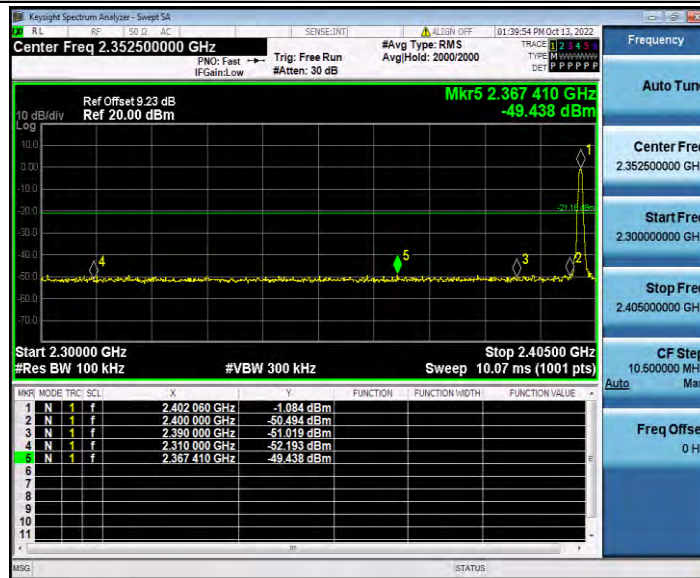
Appendix A.7: Band edge measurements

Test Result

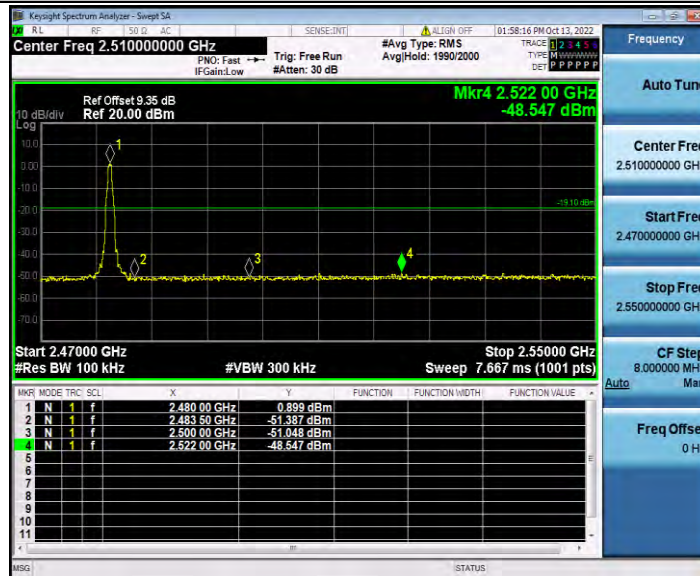
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	Low	2402	-1.16	-49.44	≤-21.16	PASS
		High	2480	0.90	-48.55	≤-19.1	PASS
		Low	Hop_2402	-1.24	-49.26	≤-21.24	PASS
		High	Hop_2480	0.79	-48.06	≤-19.21	PASS
2DH1	Ant1	Low	2402	-1.19	-49.06	≤-21.19	PASS
		High	2480	0.92	-48.48	≤-19.08	PASS
		Low	Hop_2402	-1.22	-49.32	≤-21.22	PASS
		High	Hop_2480	0.96	-48.36	≤-19.04	PASS
3DH1	Ant1	Low	2402	-1.11	-47.9	≤-21.11	PASS
		High	2480	0.93	-48.44	≤-19.07	PASS
		Low	Hop_2402	-0.94	-49.55	≤-20.94	PASS
		High	Hop_2480	1.04	-49.02	≤-18.96	PASS

Test Graphs

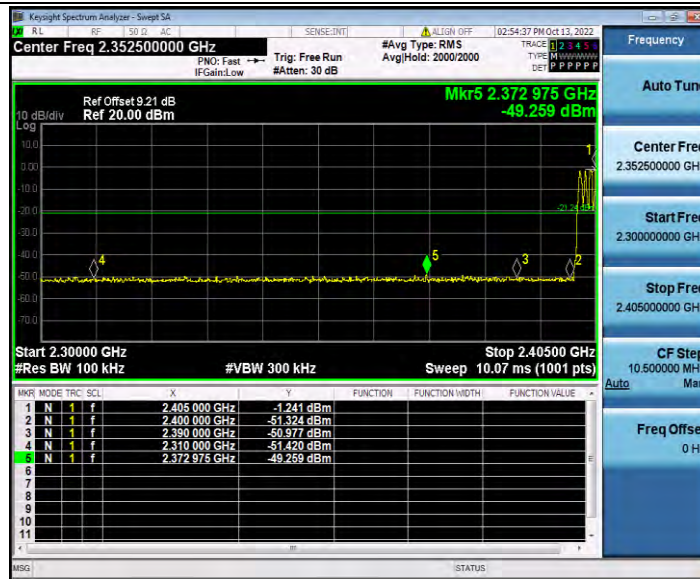
DH1_Ant1_Low_2402



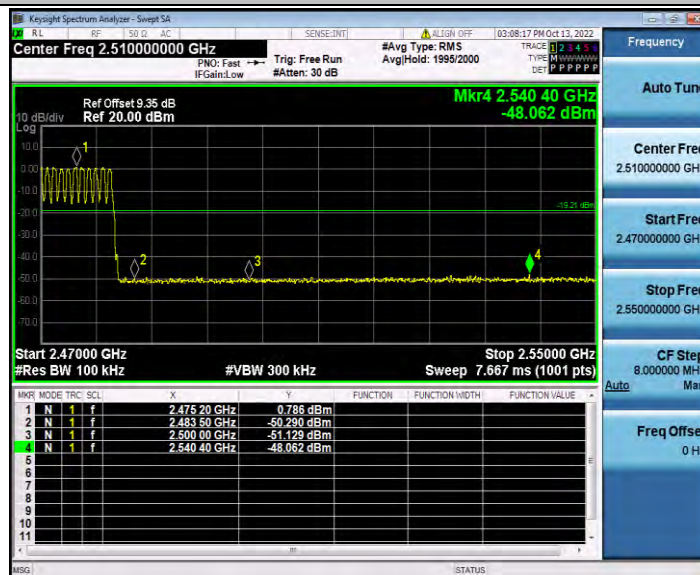
DH1_Ant1_High_2480



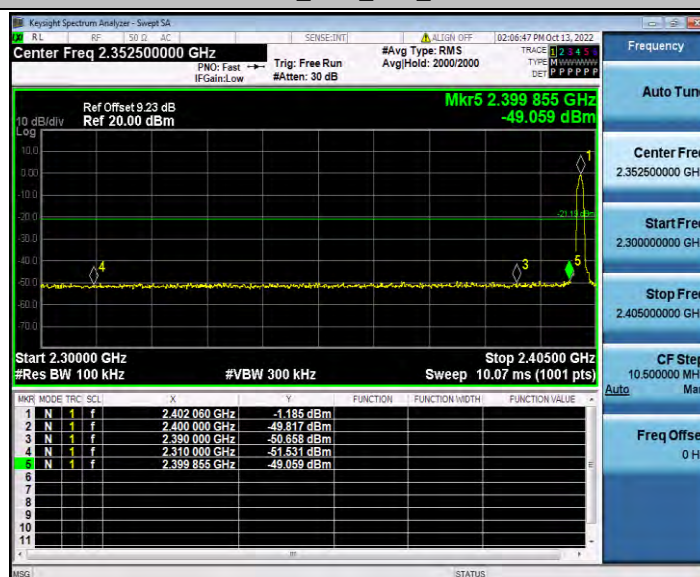
DH1_Ant1_Low_Hop_2402



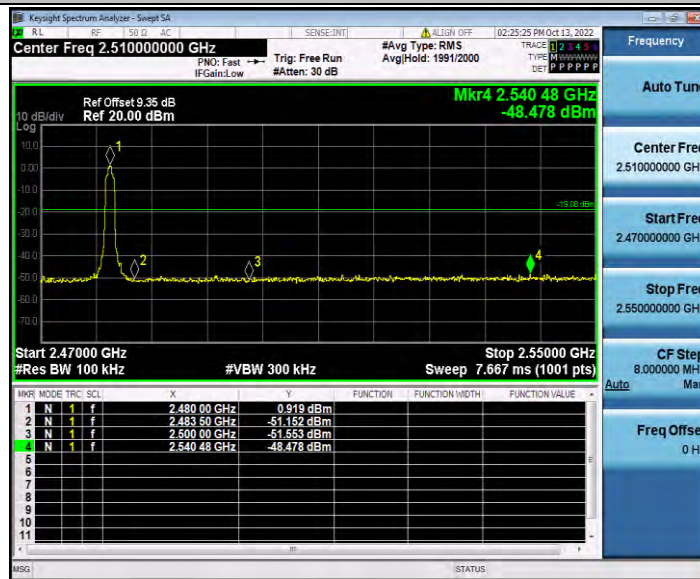
DH1_Ant1_High_Hop_2480



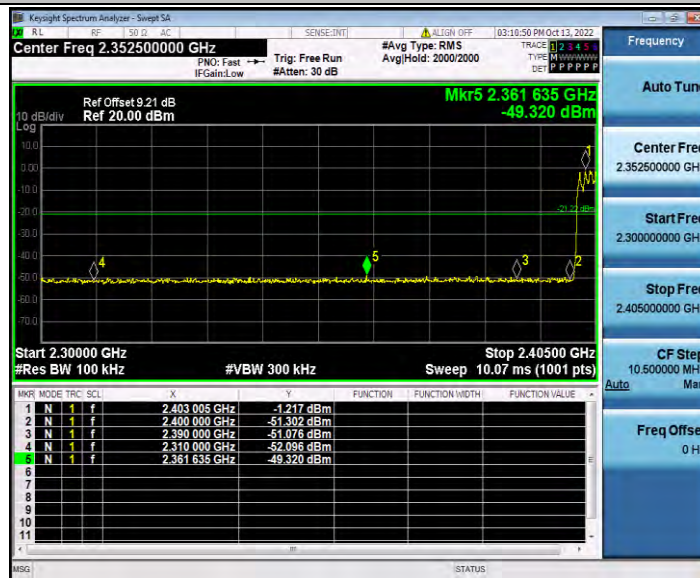
2DH1_Ant1_Low_2402



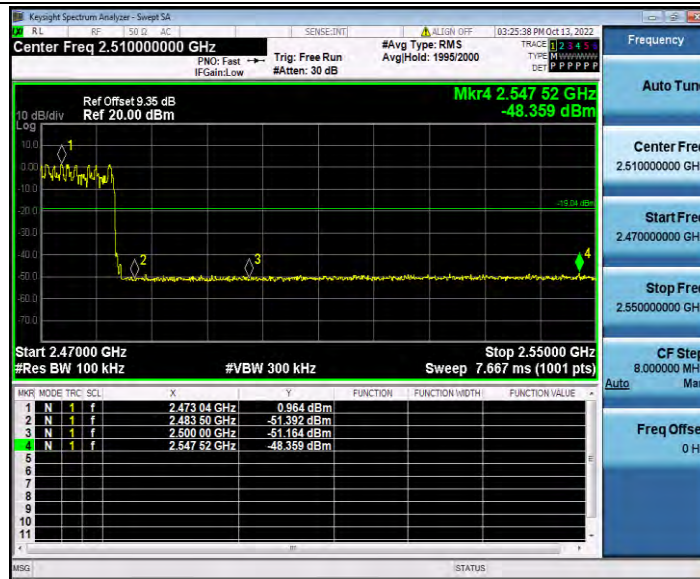
2DH1_Ant1_High_2480



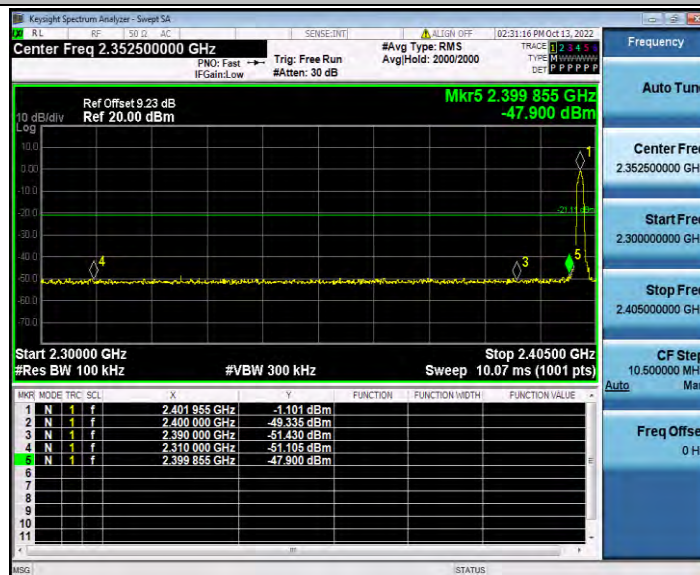
2DH1_Ant1_Low_Hop_2402



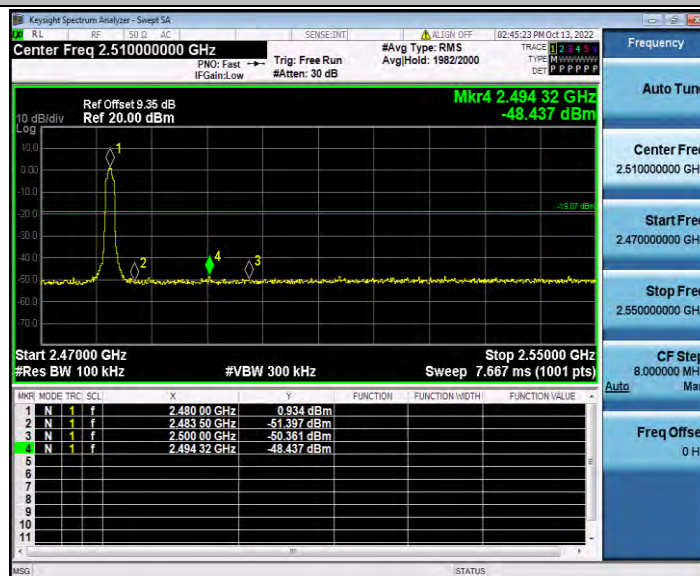
2DH1_Ant1_High_Hop_2480



3DH1_Ant1_Low_2402



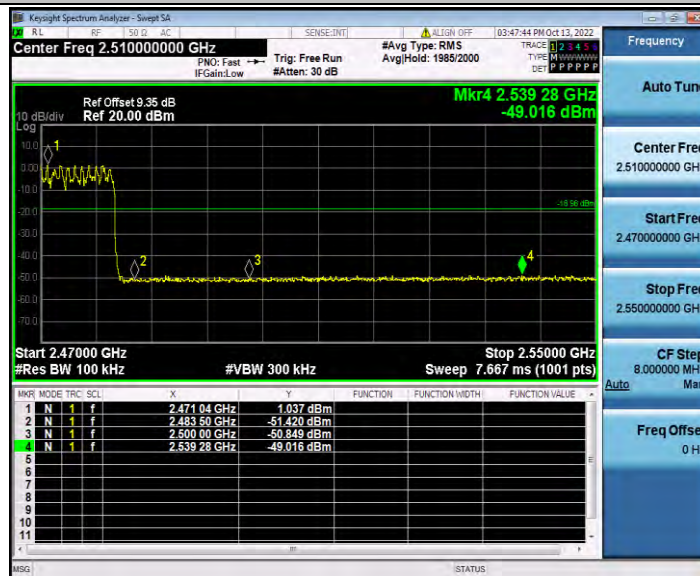
3DH1_Ant1_High_2480



3DH1_Ant1_Low_Hop_2402



3DH1_Ant1_High_Hop_2480



Appendix A.8: Conducted Spurious Emission

Test Result

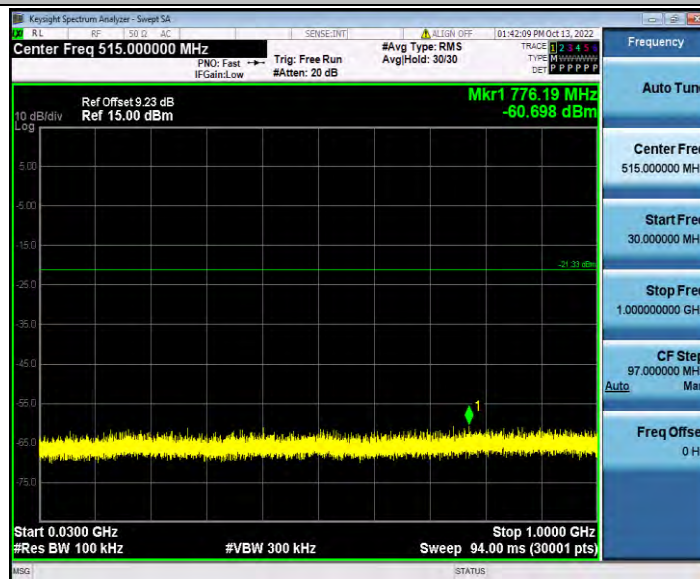
TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	2402	Reference	-1.33	-1.33	---	PASS
			30~1000	-1.33	-60.7	≤-21.33	PASS
			1000~26500	-1.33	-47.62	≤-21.33	PASS
		2441	Reference	0.64	0.64	---	PASS
			30~1000	0.64	-60.13	≤-19.36	PASS
			1000~26500	0.64	-47.73	≤-19.36	PASS
		2480	Reference	0.70	0.70	---	PASS
			30~1000	0.70	-60.09	≤-19.3	PASS
			1000~26500	0.70	-47.29	≤-19.3	PASS
2DH1	Ant1	2402	Reference	-1.52	-1.52	---	PASS
			30~1000	-1.52	-60.37	≤-21.52	PASS
			1000~26500	-1.52	-47.55	≤-21.52	PASS
		2441	Reference	0.42	0.42	---	PASS
			30~1000	0.42	-60.32	≤-19.58	PASS
			1000~26500	0.42	-47.37	≤-19.58	PASS
		2480	Reference	0.74	0.74	---	PASS
			30~1000	0.74	-60.68	≤-19.26	PASS
			1000~26500	0.74	-47.17	≤-19.26	PASS
3DH1	Ant1	2402	Reference	-1.41	-1.41	---	PASS
			30~1000	-1.41	-60.2	≤-21.41	PASS
			1000~26500	-1.41	-47.52	≤-21.41	PASS
		2441	Reference	0.82	0.82	---	PASS
			30~1000	0.82	-60.01	≤-19.18	PASS
			1000~26500	0.82	-47.27	≤-19.18	PASS
		2480	Reference	0.76	0.76	---	PASS
			30~1000	0.76	-59.95	≤-19.24	PASS
			1000~26500	0.76	-47.26	≤-19.24	PASS

Test Graphs

DH1_Ant1_2402_0~Reference



DH1_Ant1_2402_30~1000



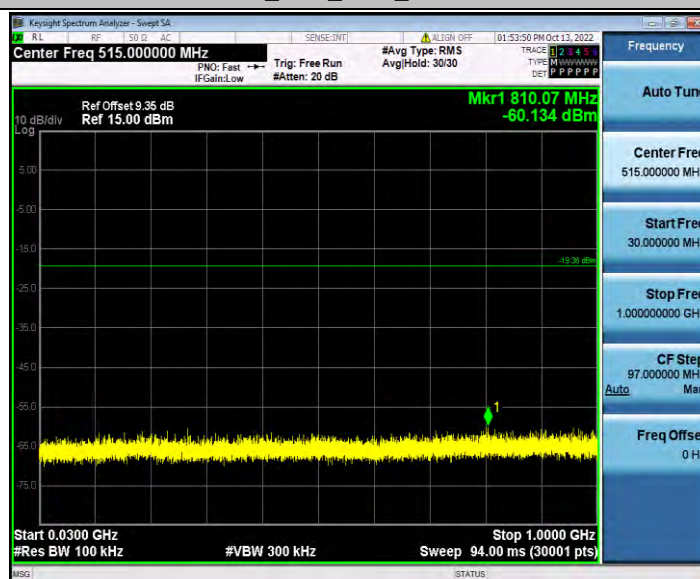
DH1_Ant1_2402_1000~26500



DH1_Ant1_2441_0~Reference



DH1_Ant1_2441_30~1000



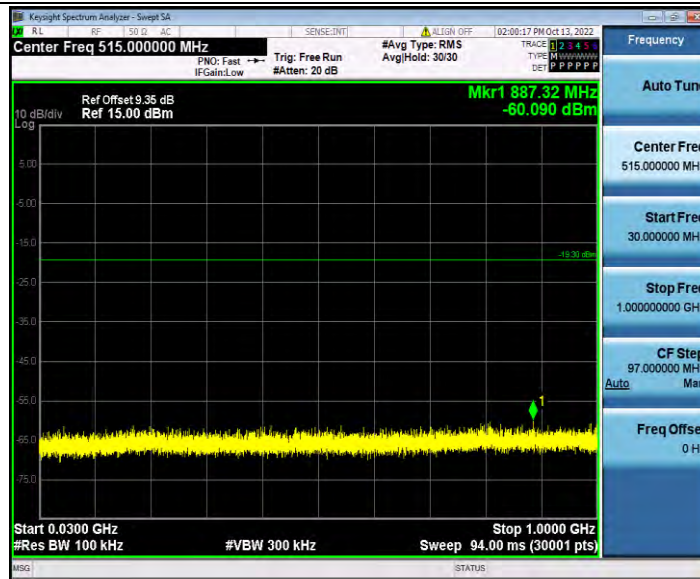
DH1_Ant1_2441_1000~26500



DH1_Ant1_2480_0~Reference



DH1_Ant1_2480_30~1000



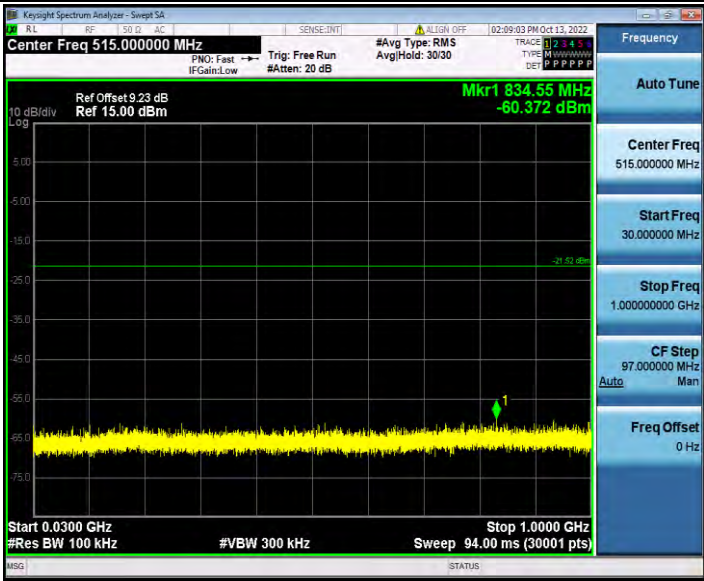
DH1_Ant1_2480_1000~26500



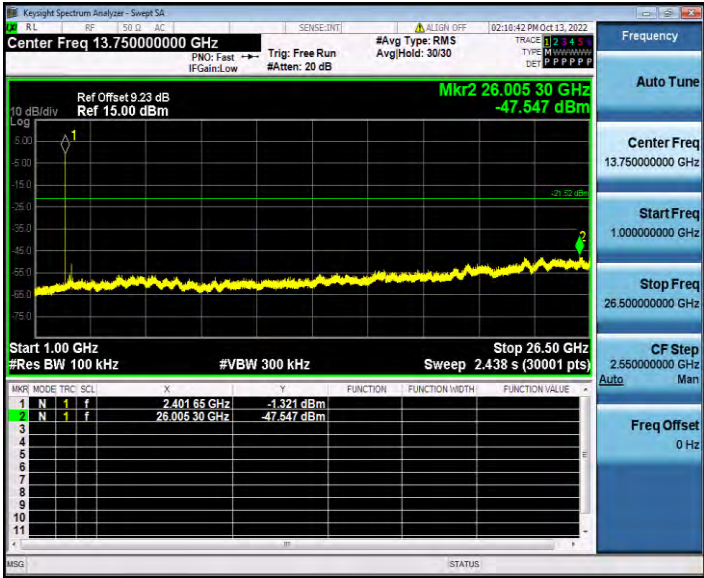
2DH1_Ant1_2402_0~Reference



2DH1_Ant1_2402_30~1000



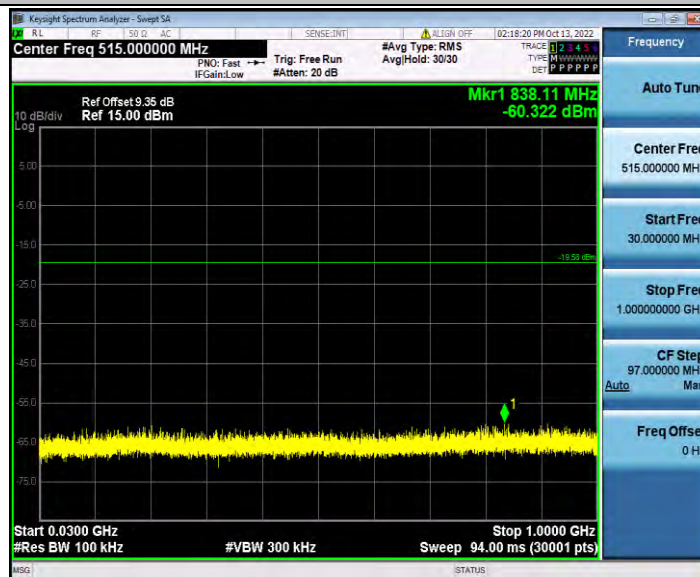
2DH1_Ant1_2402_1000~26500



2DH1_Ant1_2441_0~Reference



2DH1_Ant1_2441_30~1000



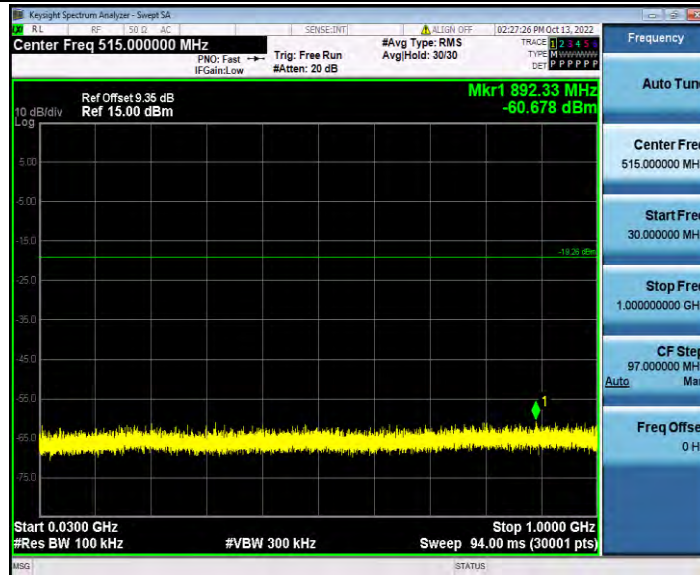
2DH1_Ant1_2441_1000~26500



2DH1_Ant1_2480_0~Reference



2DH1_Ant1_2480_30~1000



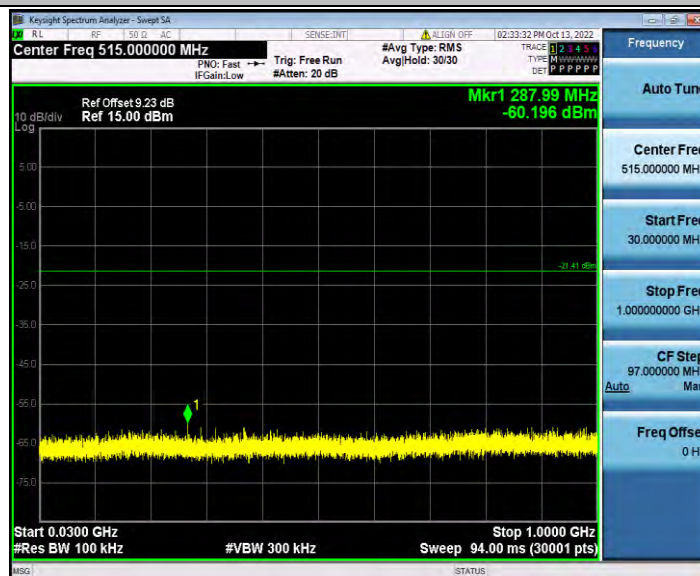
2DH1_Ant1_2480_1000~26500



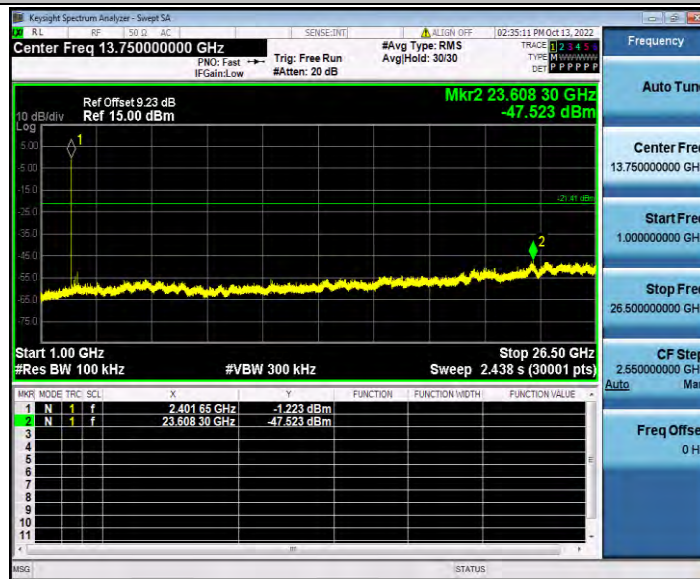
3DH1_Ant1_2402_0~Reference



3DH1_Ant1_2402_30~1000



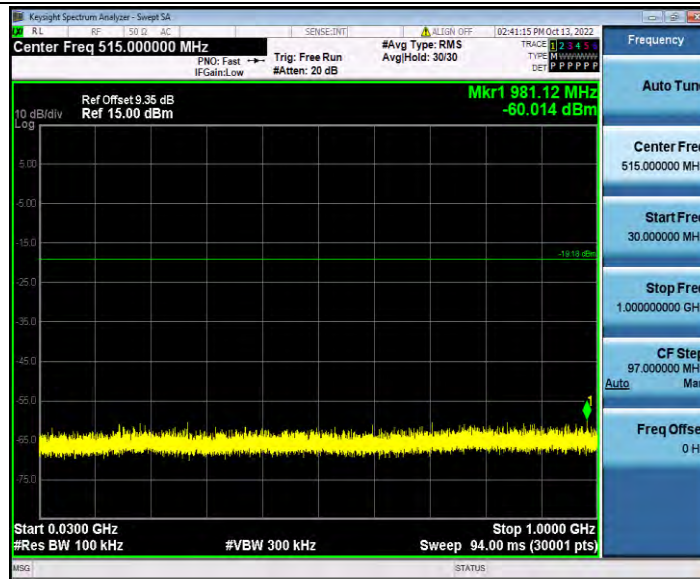
3DH1_Ant1_2402_1000~26500



3DH1_Ant1_2441_0~Reference



3DH1_Ant1_2441_30~1000



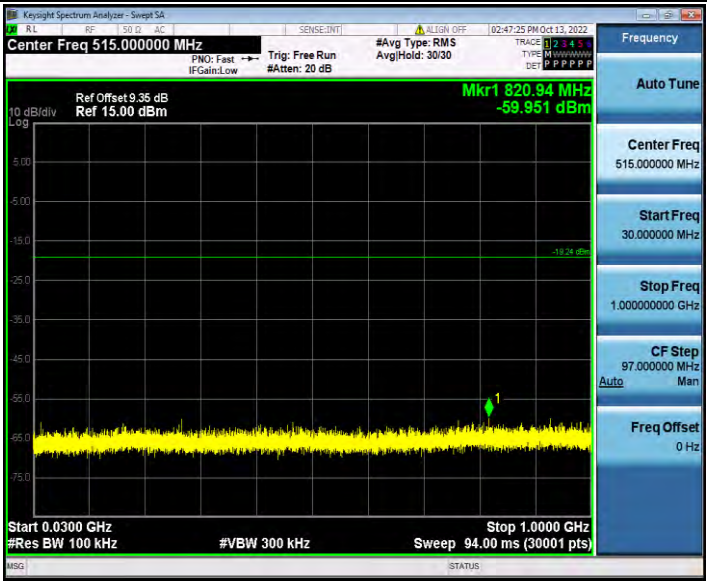
3DH1_Ant1_2441_1000~26500



3DH1_Ant1_2480_0~Reference



3DH1_Ant1_2480_30~1000



3DH1_Ant1_2480_1000~26500

