

Case No. : <u>GTS20221215003-1-3</u>
Ambient Condition: <u>23</u> °C, <u>49</u> %RH, Atmos100.1Kpa,
Test Date: <u>2023.6.1</u> Test Engineer: <u>Jenny zeng</u>

Appendix A.1: 20dB Emission Bandwidth

Test Result

Test Mode	Antenna	Frequency[MHz]	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	0.864	2401.553	2402.417	---	---
		2441	0.843	2440.556	2441.399	---	---
		2480	0.873	2479.553	2480.426	---	---
2DH1	Ant1	2402	1.266	2401.367	2402.633	---	---
		2441	1.251	2440.367	2441.618	---	---
		2480	1.248	2479.382	2480.630	---	---
3DH1	Ant1	2402	1.224	2401.400	2402.624	---	---
		2441	1.221	2440.403	2441.624	---	---
		2480	1.257	2479.370	2480.627	---	---

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

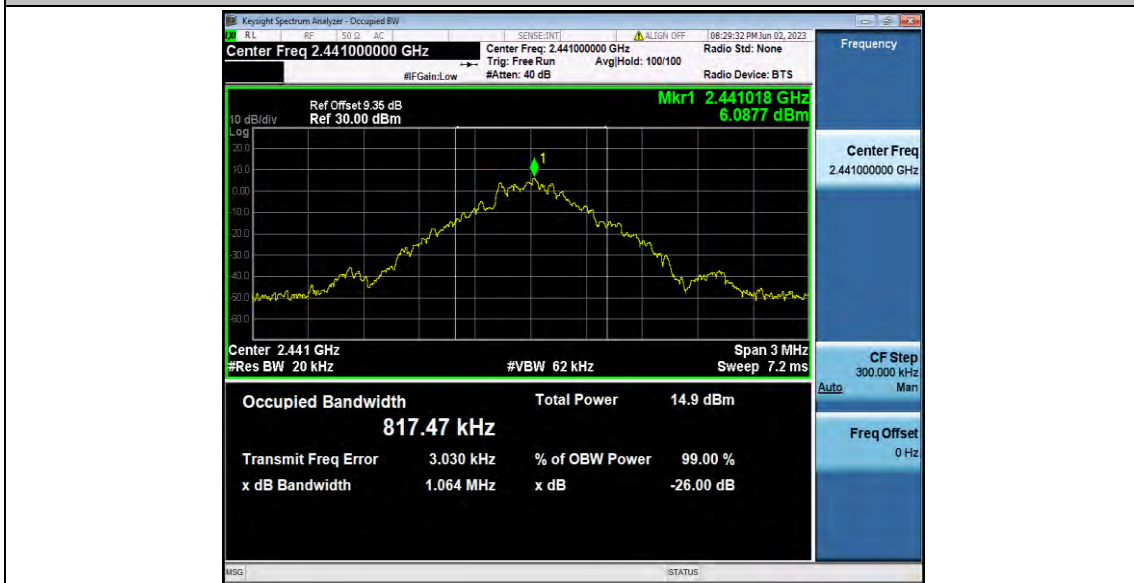
Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	0.80457	2401.599	2402.403	---	---
		2441	0.81747	2440.594	2441.412	---	---
		2480	0.79890	2479.592	2480.391	---	---
2DH1	Ant1	2402	1.1622	2401.416	2402.579	---	---
		2441	1.1600	2440.417	2441.577	---	---
		2480	1.1613	2479.418	2480.579	---	---
3DH1	Ant1	2402	1.1487	2401.438	2402.587	---	---
		2441	1.1476	2440.437	2441.584	---	---
		2480	1.1463	2479.438	2480.584	---	---

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	9.19	≤20.97	PASS
		2441	8.77	≤20.97	PASS
		2480	8.24	≤20.97	PASS
2DH1	Ant1	2402	8.97	≤20.97	PASS
		2441	8.59	≤20.97	PASS
		2480	8.95	≤20.97	PASS
3DH1	Ant1	2402	9.35	≤20.97	PASS
		2441	8.98	≤20.97	PASS
		2480	9.27	≤20.97	PASS

Appendix A.4: Carrier frequency separation

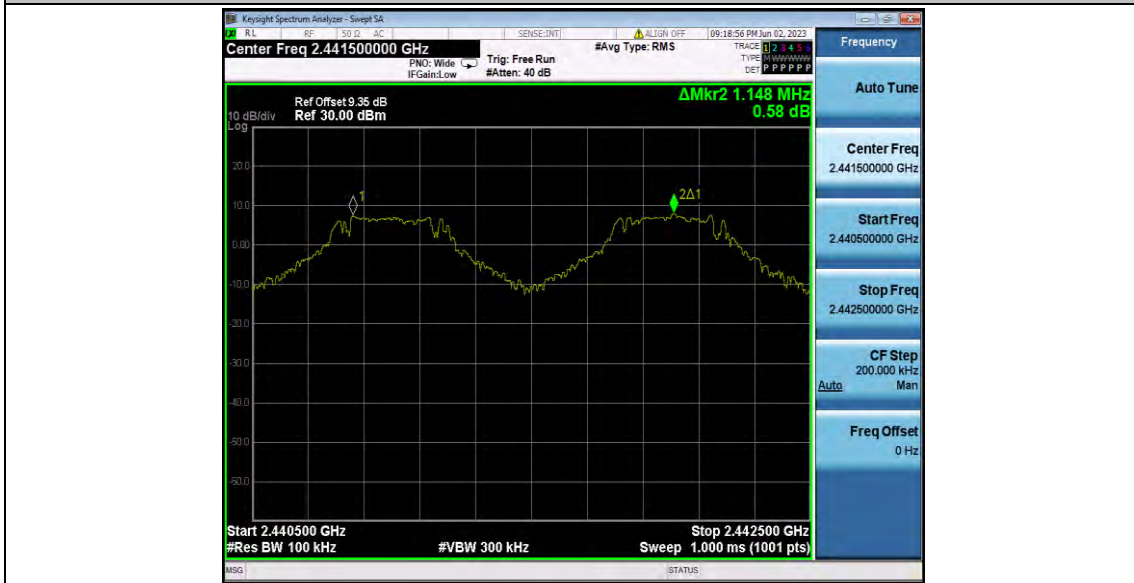
Test Result

Test Mode	Antenna	Frequency[MHz]	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Hop_2402	0.838	≥ 0.582	PASS
		Hop_2441	1.148	≥ 0.582	PASS
		Hop_2480	1	≥ 0.582	PASS
2DH1	Ant1	Hop_2402	0.994	≥ 0.844	PASS
		Hop_2441	1.004	≥ 0.844	PASS
		Hop_2480	0.856	≥ 0.844	PASS
3DH1	Ant1	Hop_2402	0.84	≥ 0.838	PASS
		Hop_2441	0.998	≥ 0.838	PASS
		Hop_2480	1.006	≥ 0.838	PASS

Test Graphs



DH1_Ant1_Hop_2402



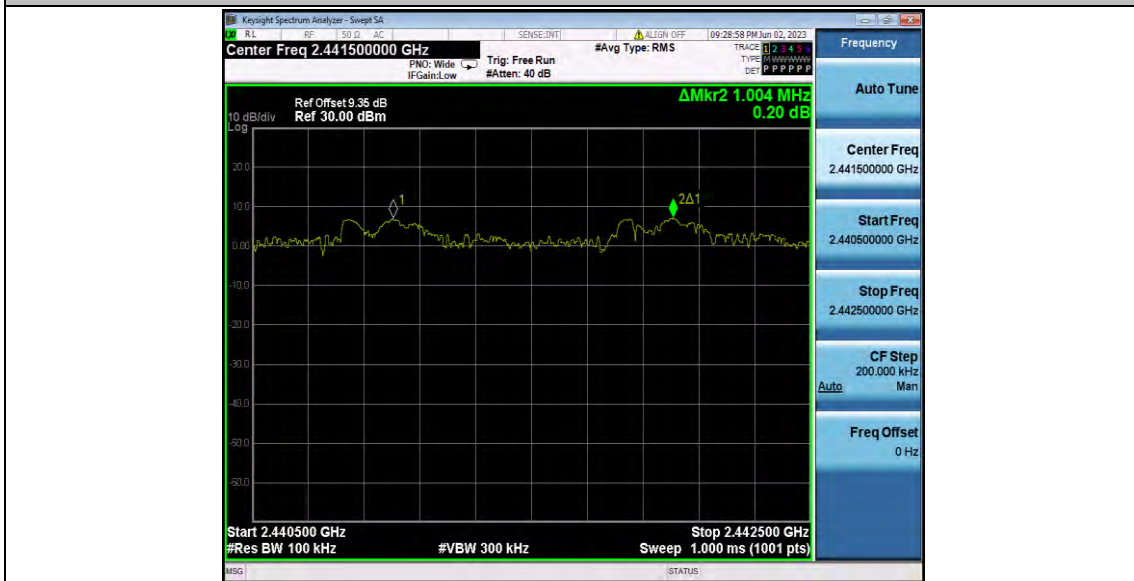
DH1_Ant1_Hop_2441



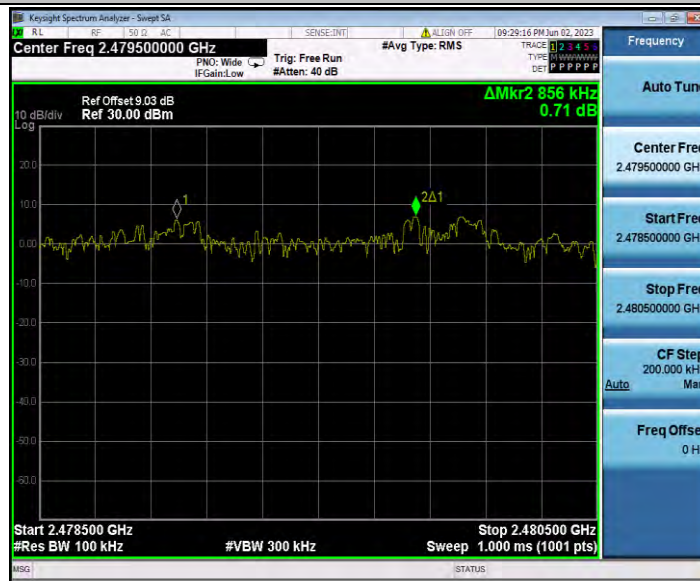
DH1_Ant1_Hop_2480



2DH1_Ant1_Hop_2402



2DH1_Ant1_Hop_2441



2DH1_Ant1_Hop_2480



3DH1_Ant1_Hop_2402



3DH1_Ant1_Hop_2441



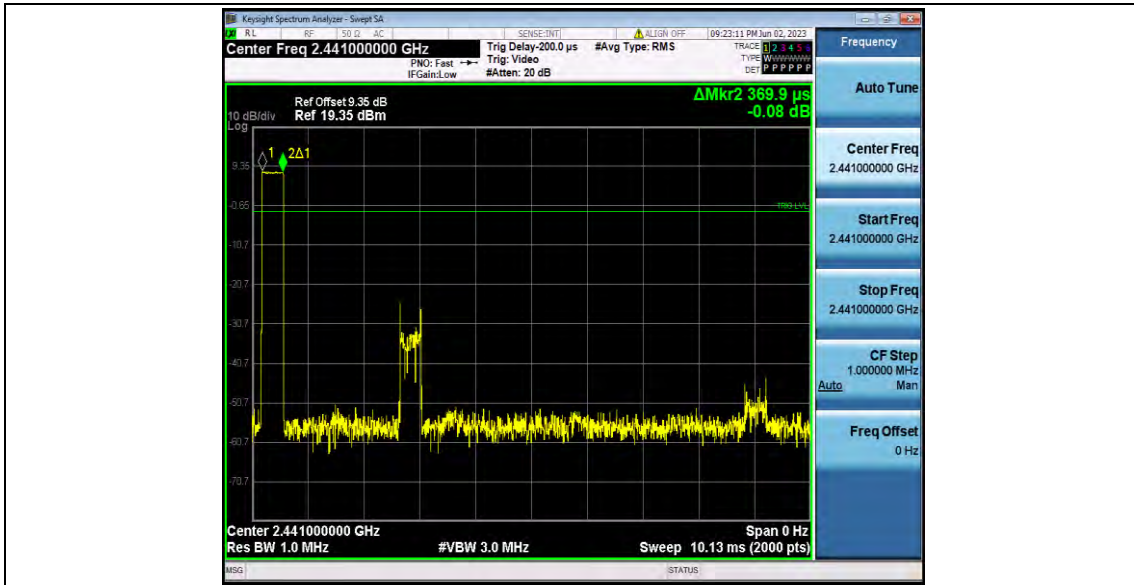
3DH1_Ant1_Hop_2480

Appendix A.5: Time of occupancy

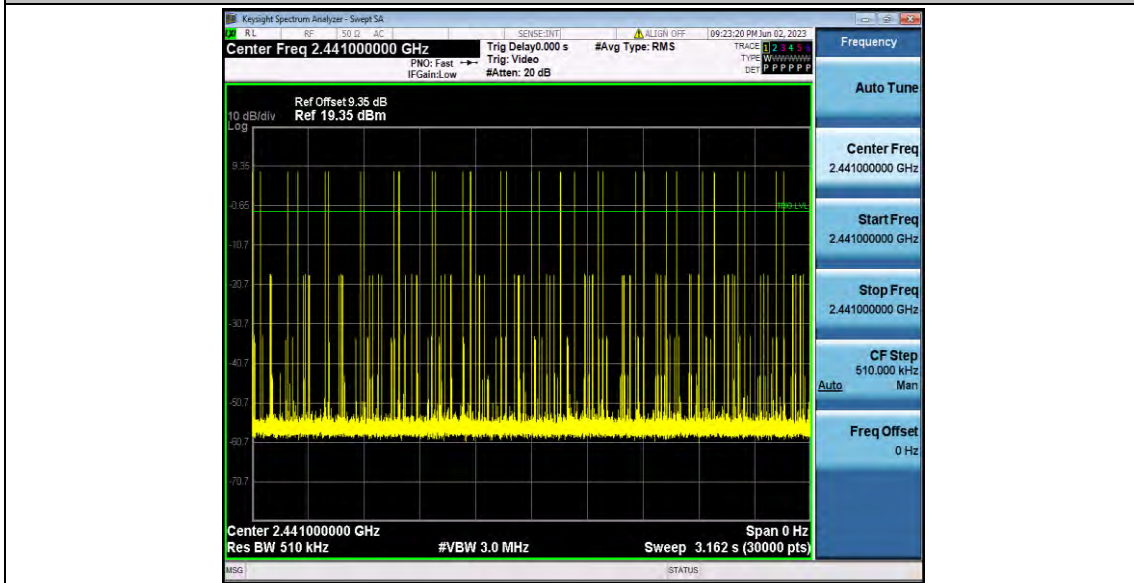
Test Result

Test Mode	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	200	0.326	≤0.4	PASS
DH5	Ant1	Hop	2.88	110	0.317	≤0.4	PASS
2DH1	Ant1	Hop	0.38	320	0.122	≤0.4	PASS
2DH3	Ant1	Hop	1.63	170	0.277	≤0.4	PASS
2DH5	Ant1	Hop	2.88	120	0.345	≤0.4	PASS
3DH1	Ant1	Hop	0.36	320	0.116	≤0.4	PASS
3DH3	Ant1	Hop	1.62	160	0.259	≤0.4	PASS
3DH5	Ant1	Hop	2.88	90	0.259	≤0.4	PASS

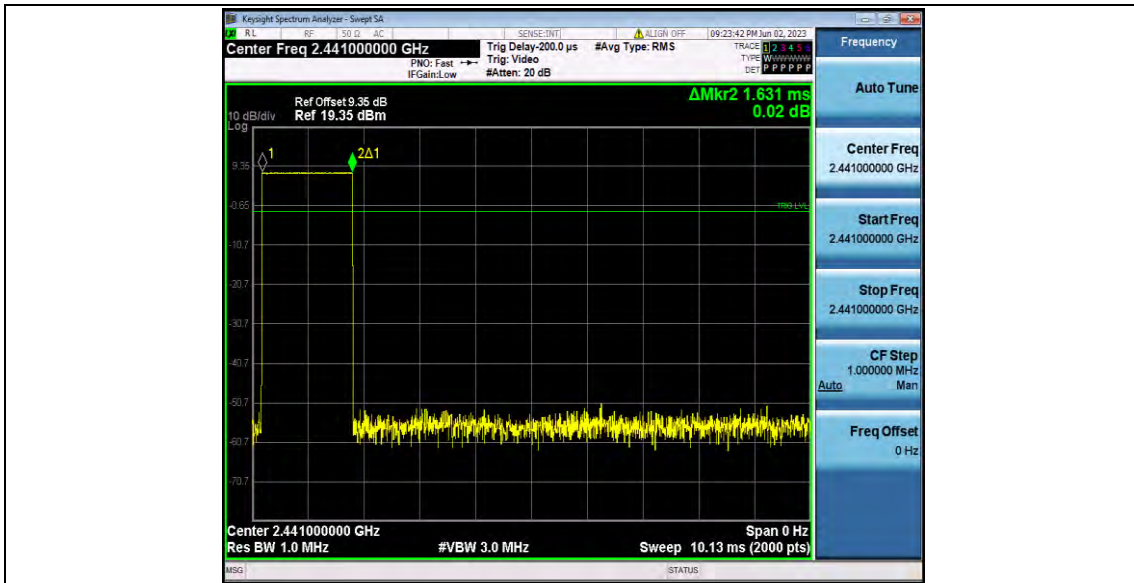
Test Graphs



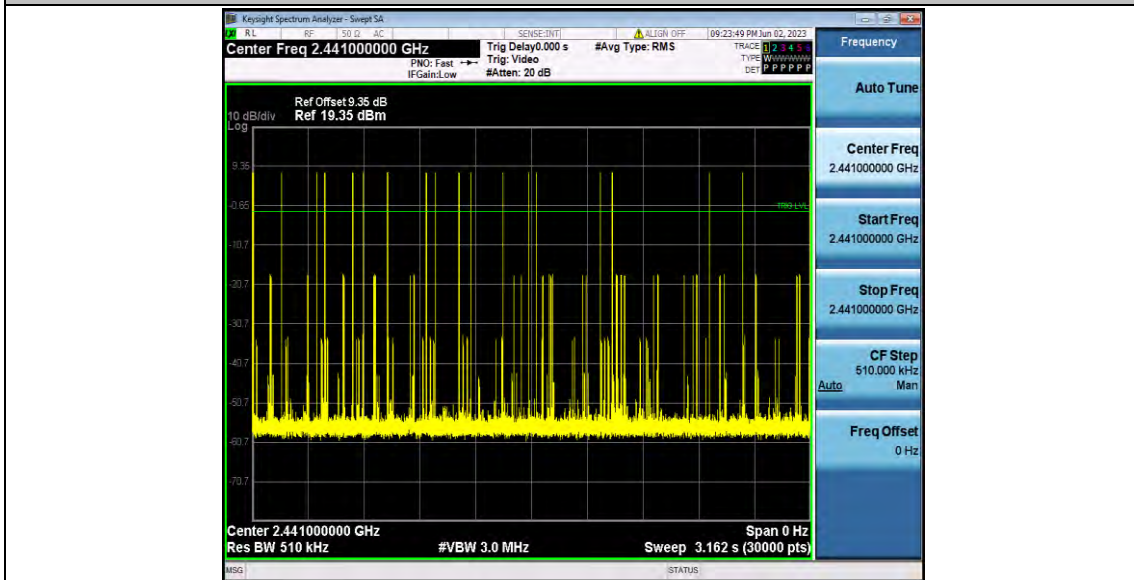
DH1_Ant1_Hop



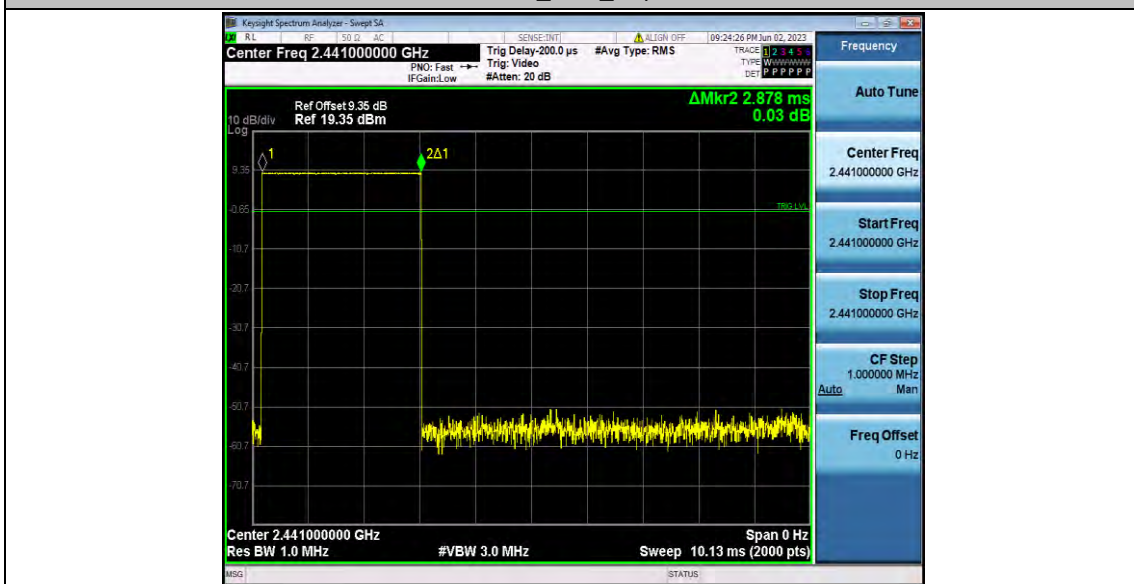
DH1_Ant1_Hop



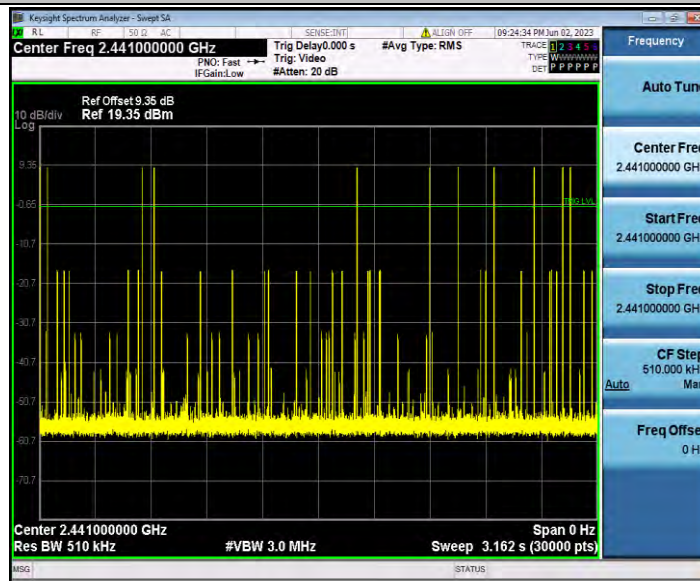
DH3_Ant1_Hop



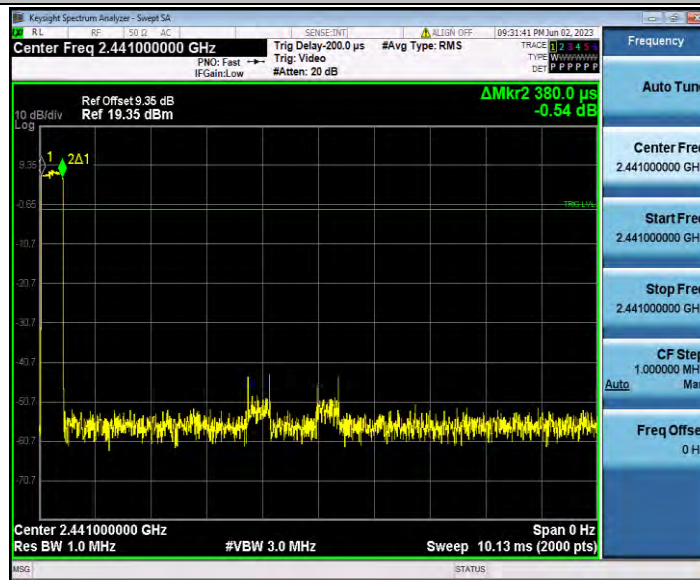
DH3_Ant1_Hop



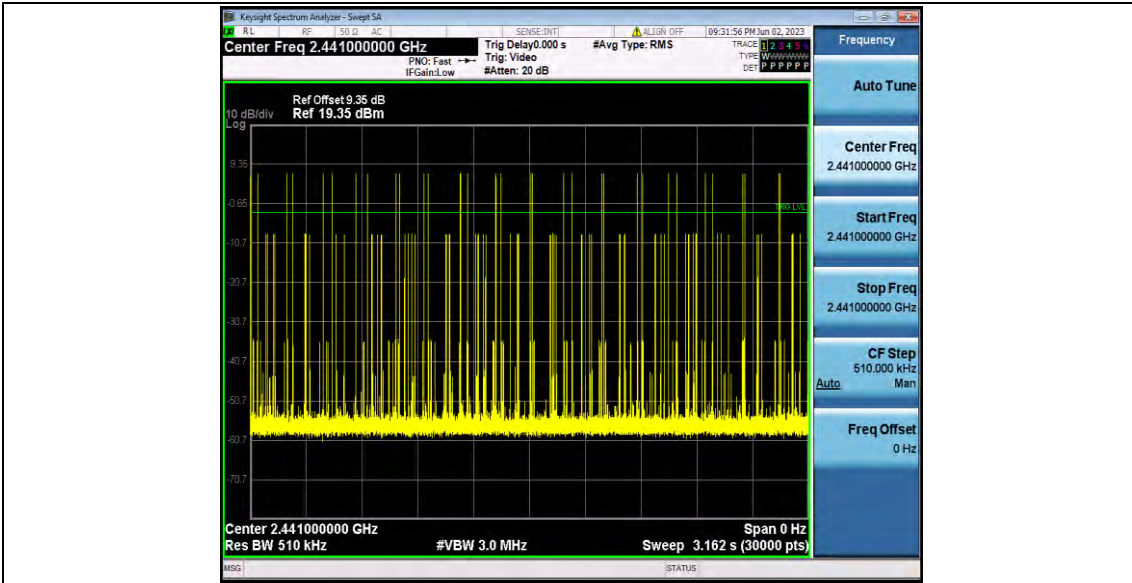
DH5_Ant1_Hop



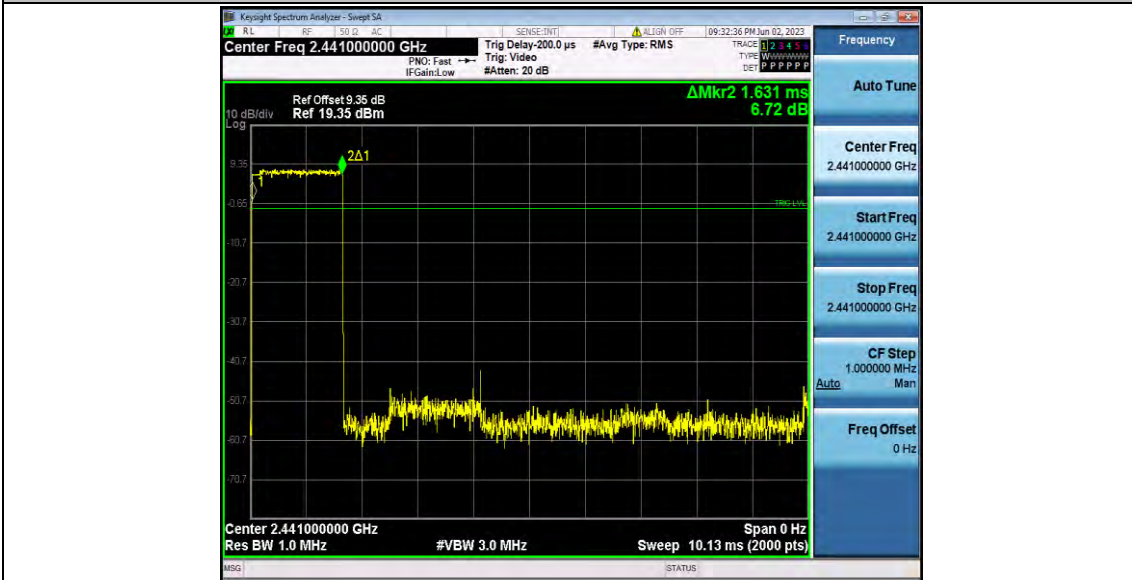
DH5_Ant1_Hop



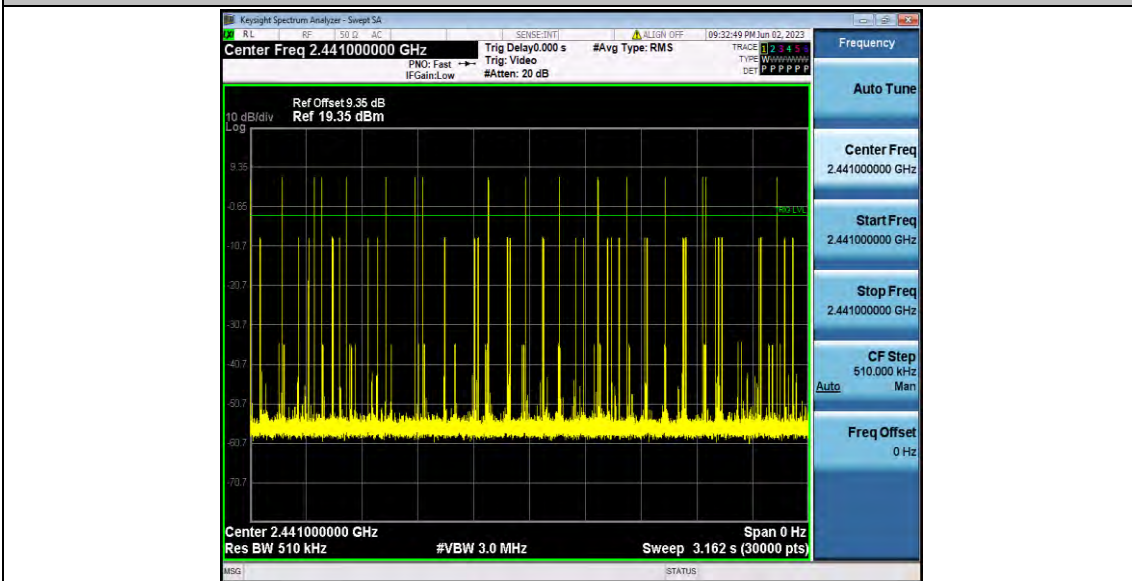
2DH1_Ant1_Hop



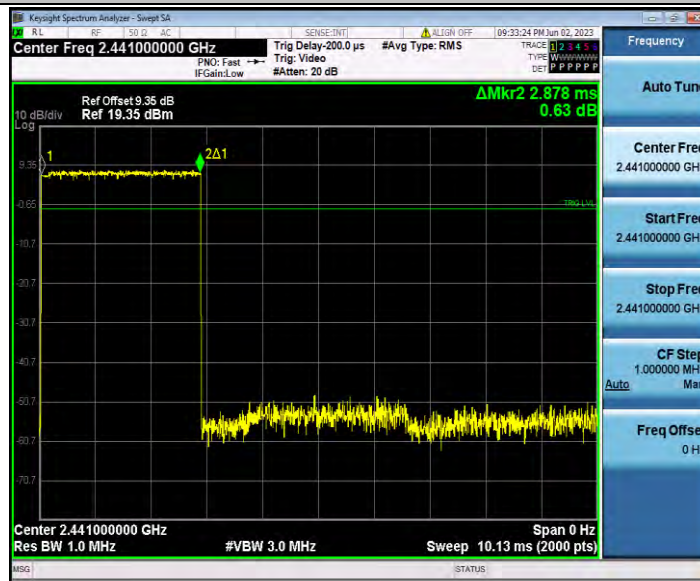
2DH1_Ant1_Hop



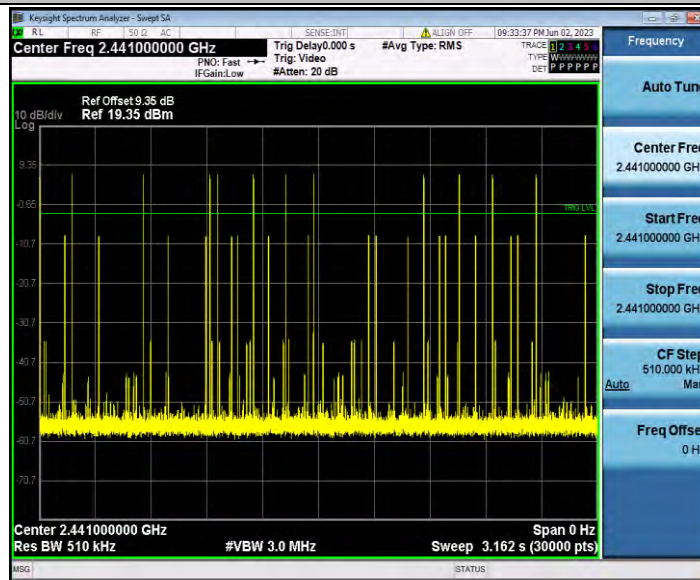
2DH3_Ant1_Hop



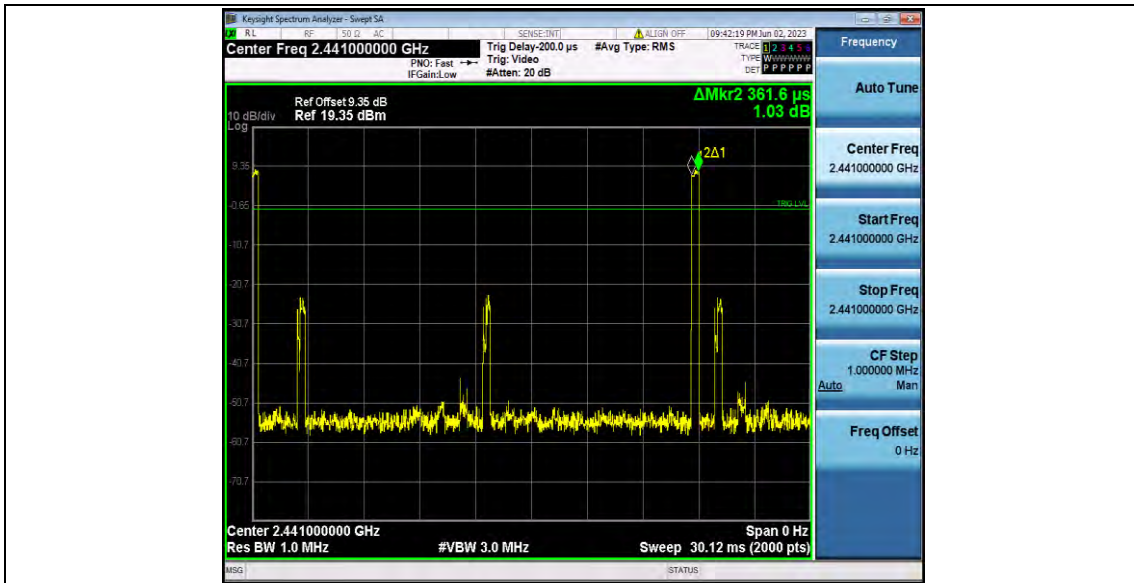
2DH3_Ant1_Hop



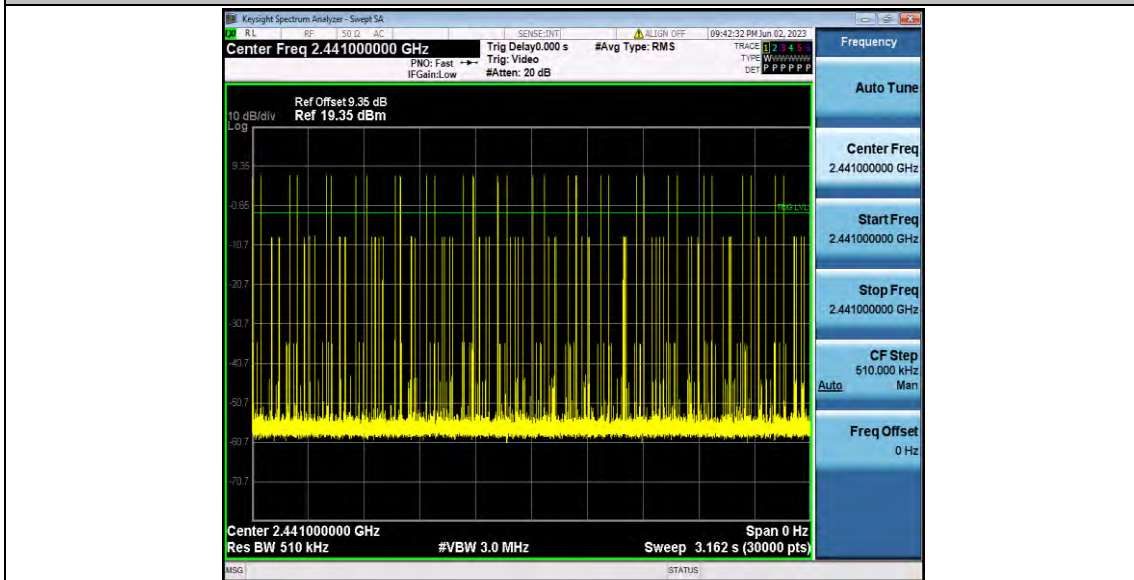
2DH5_Ant1_Hop



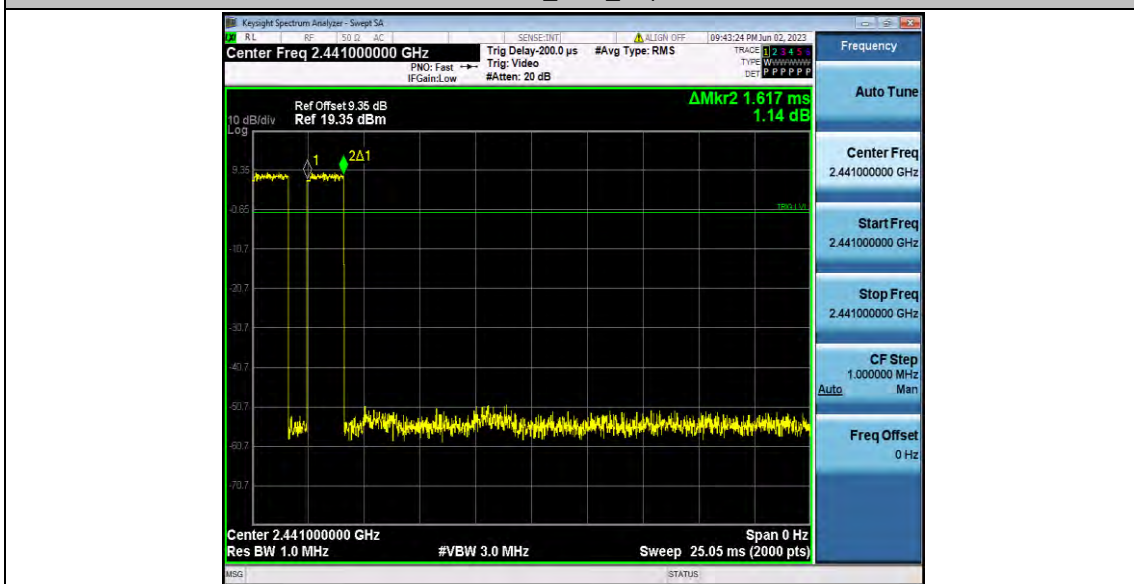
2DH5_Ant1_Hop



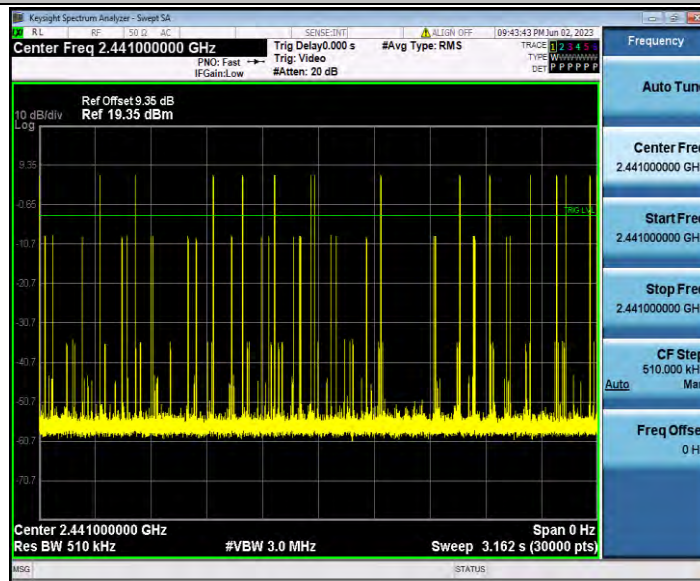
3DH1_Ant1_Hop



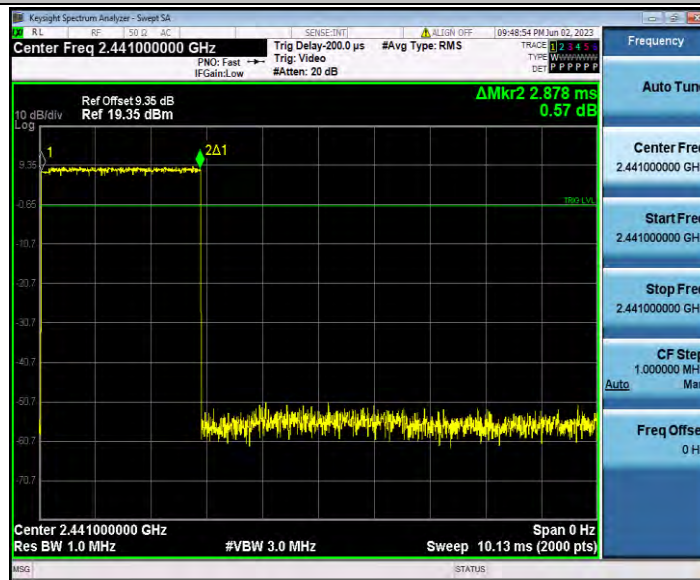
3DH1_Ant1_Hop



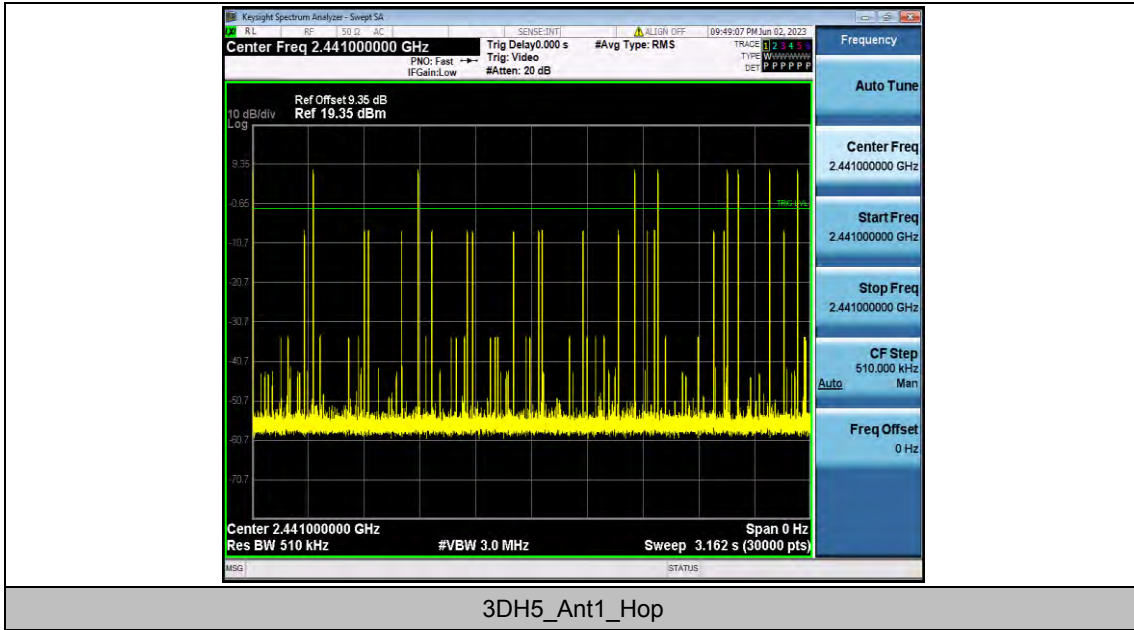
3DH3_Ant1_Hop



3DH3_Ant1_Hop



3DH5_Ant1_Hop



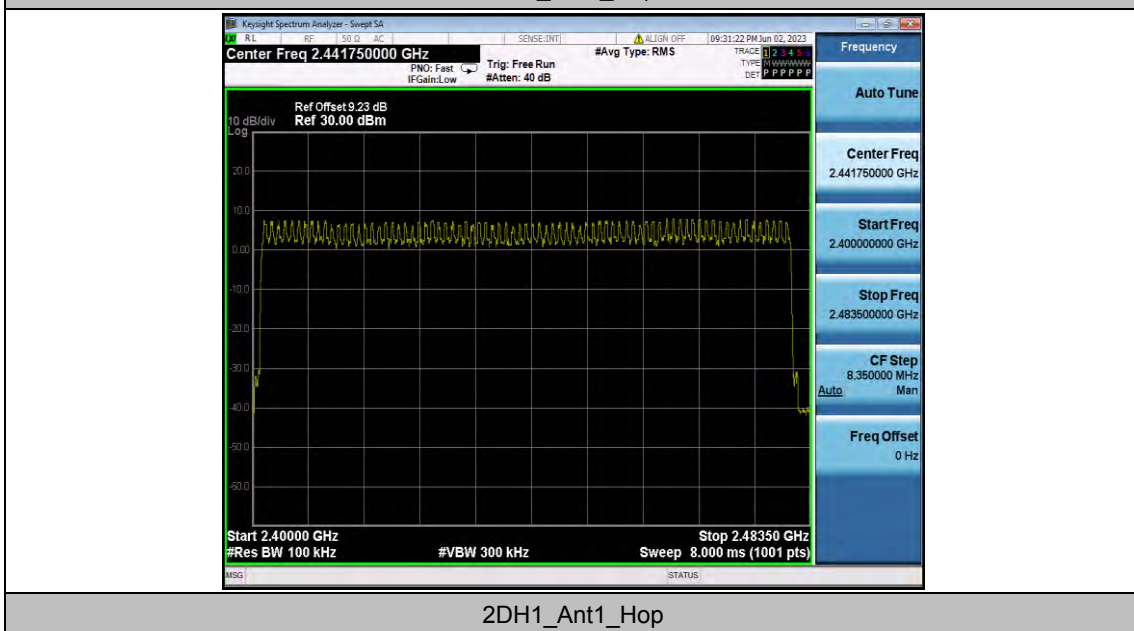
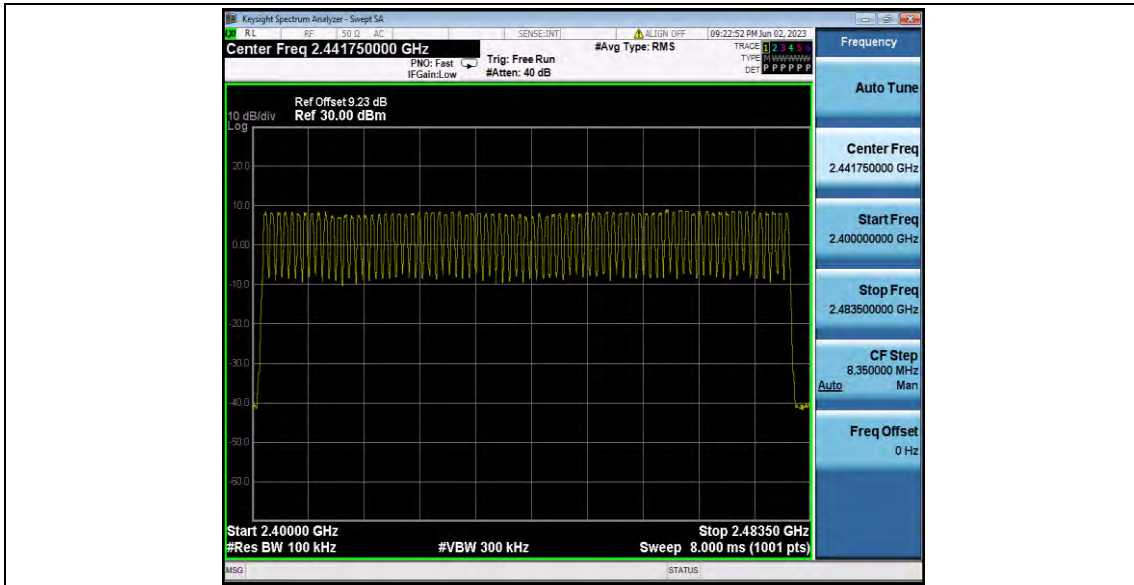
3DH5_Ant1_Hop

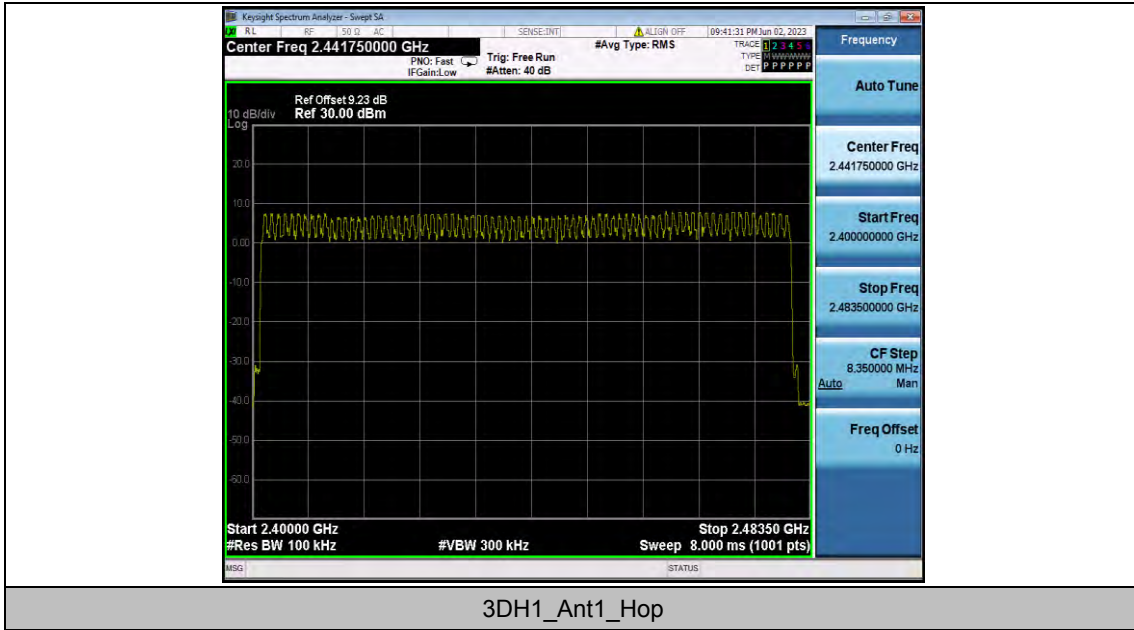
Appendix A.6: Number of hopping channels

Test Result

Test Mode	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





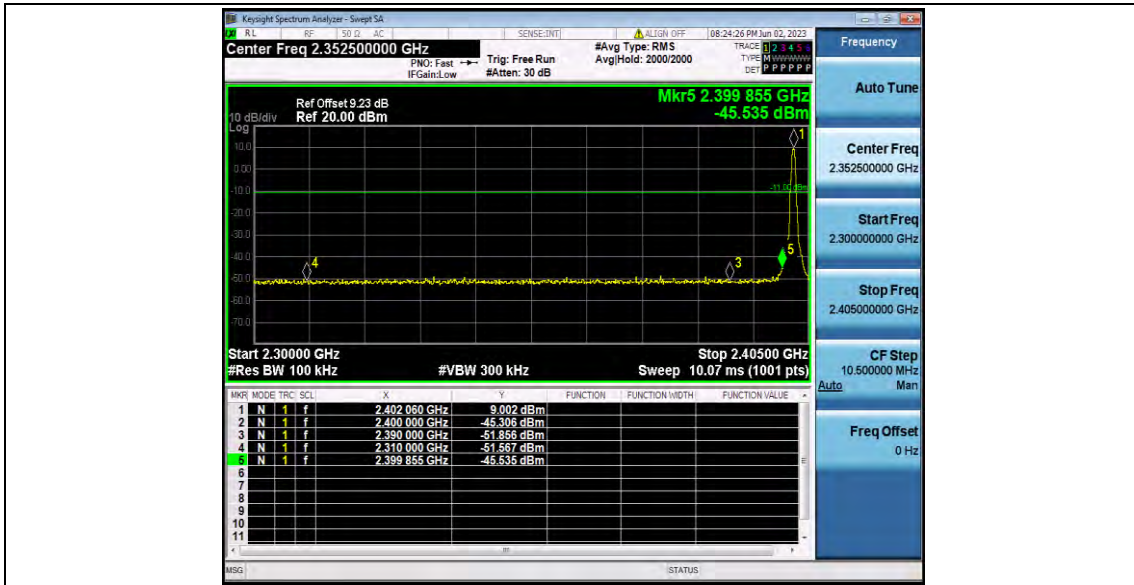
3DH1_Ant1_Hop

Appendix A.7: Band edge measurements

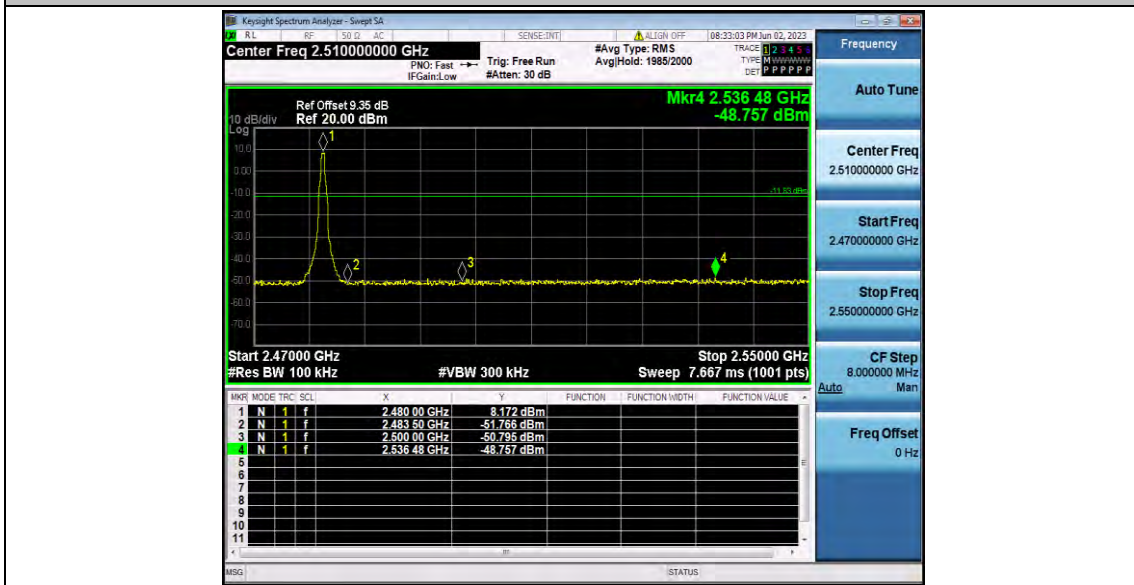
Test Result

Test Mode	Antenna	ChName	Frequency[MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	Low	2402	9.00	-45.54	≤-11	PASS
		High	2480	8.17	-48.76	≤-11.83	PASS
		Low	Hop_2402	8.14	-49.17	≤-11.86	PASS
		High	Hop_2480	8.39	-48.88	≤-11.61	PASS
2DH1	Ant1	Low	2402	7.36	-45.85	≤-12.64	PASS
		High	2480	7.40	-48.71	≤-12.6	PASS
		Low	Hop_2402	7.27	-49.28	≤-12.73	PASS
		High	Hop_2480	7.58	-48.05	≤-12.42	PASS
3DH1	Ant1	Low	2402	7.39	-46.61	≤-12.61	PASS
		High	2480	7.44	-48.54	≤-12.56	PASS
		Low	Hop_2402	7.28	-48.79	≤-12.72	PASS
		High	Hop_2480	7.11	-48.78	≤-12.89	PASS

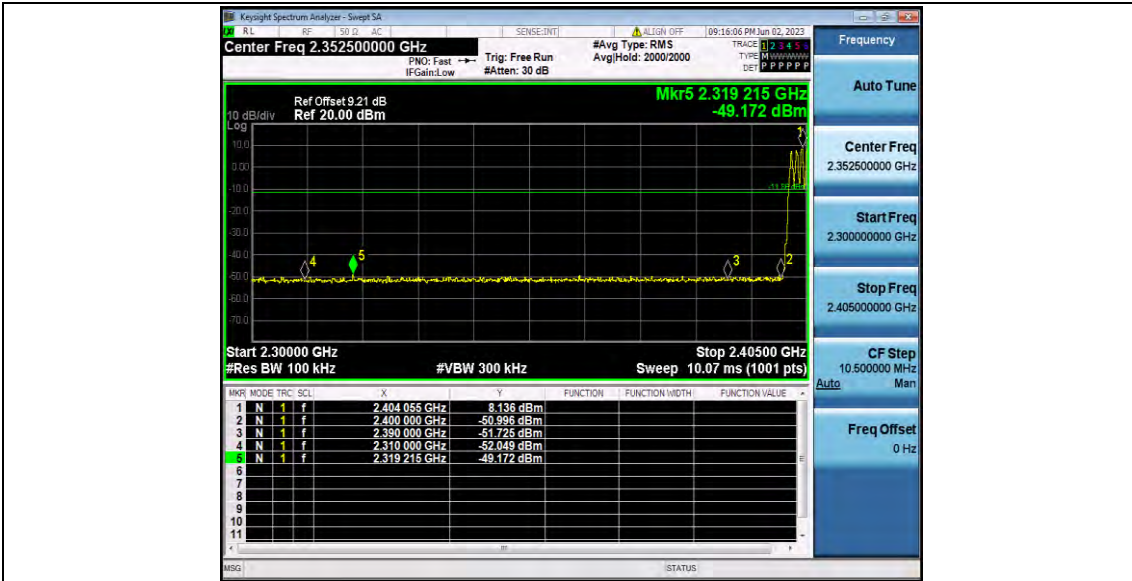
Test Graphs



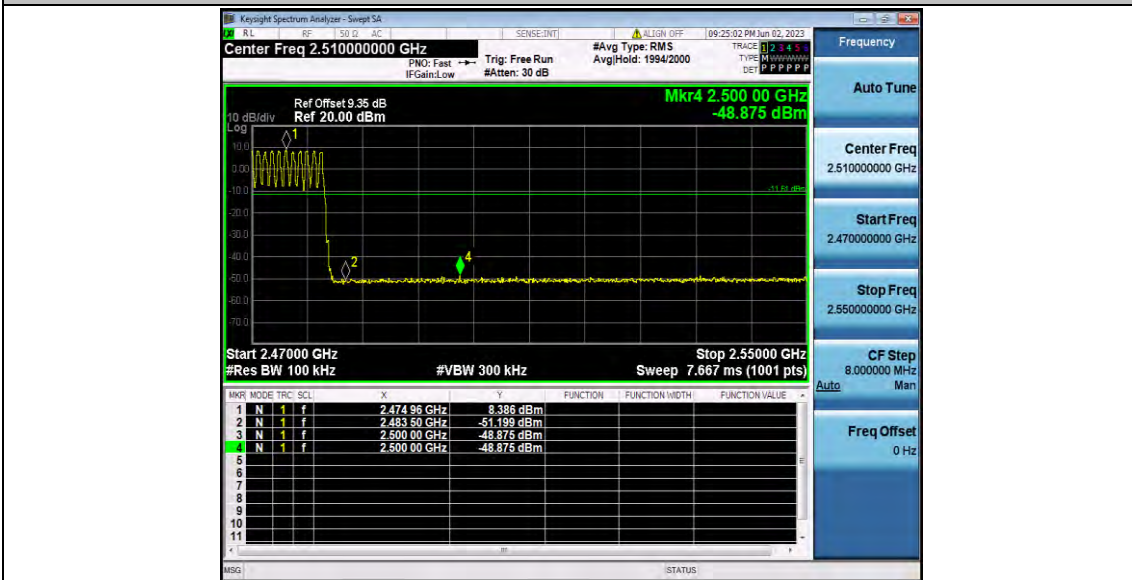
DH1_Ant1_Low_2402



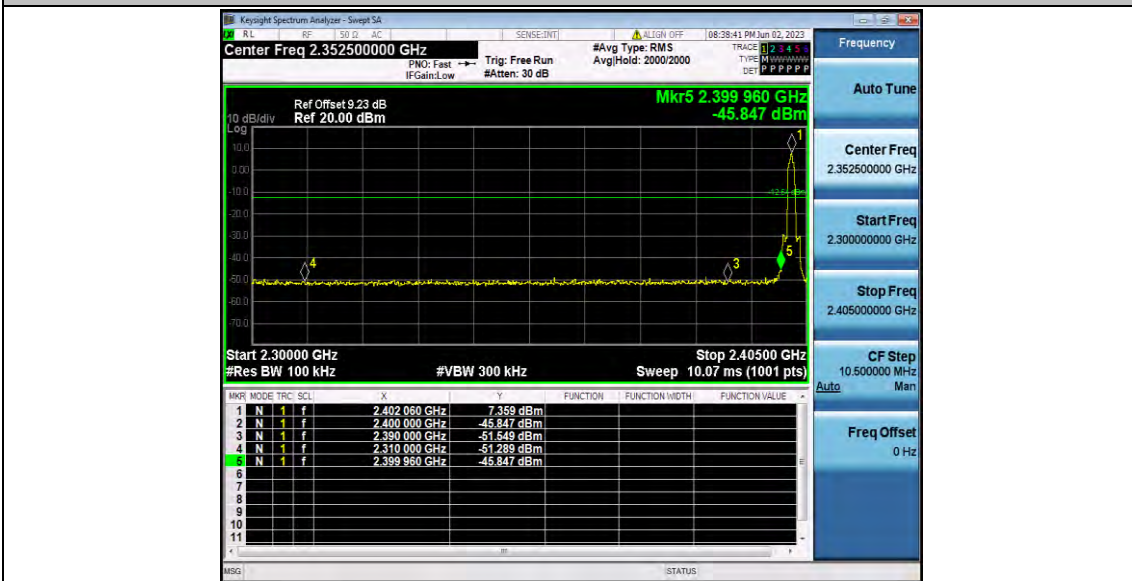
DH1_Ant1_High_2480



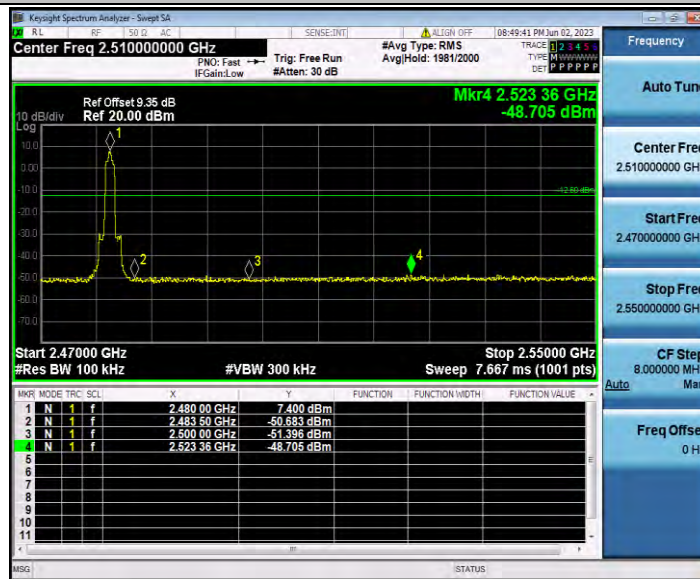
DH1_Ant1_Low_Hop_2402



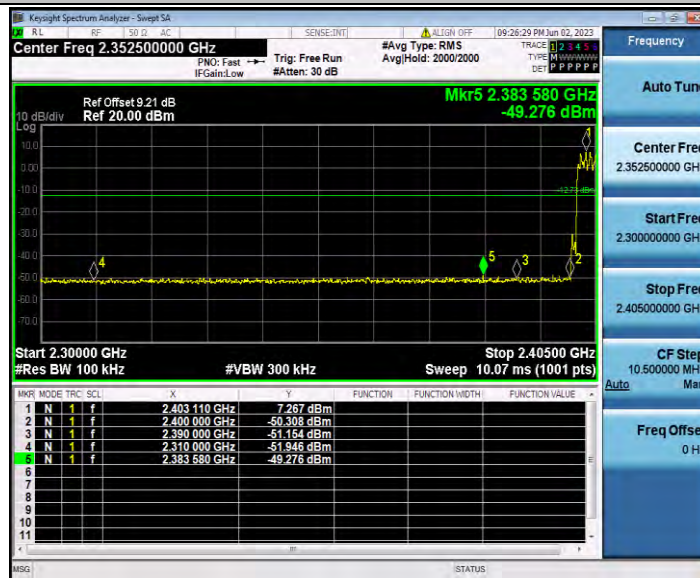
DH1_Ant1_High_Hop_2480



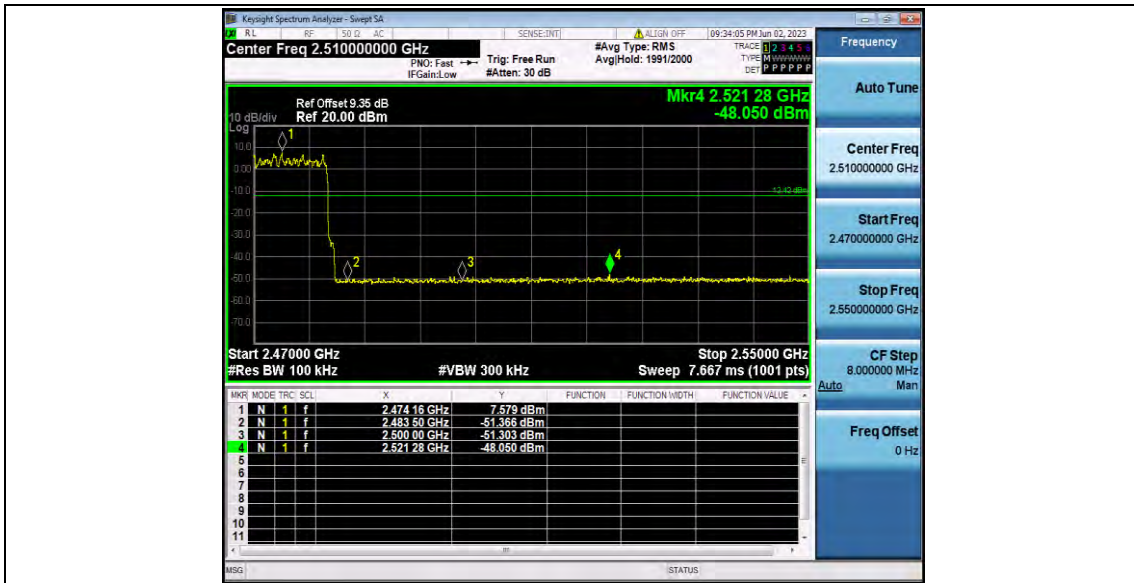
2DH1_Ant1_Low_2402



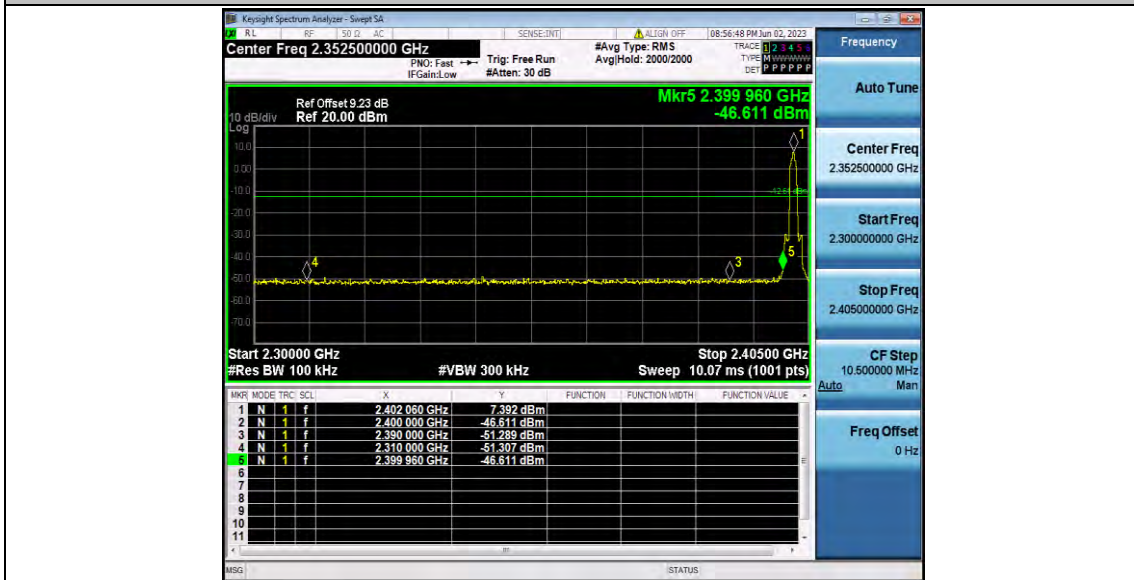
2DH1_Ant1_High_2480



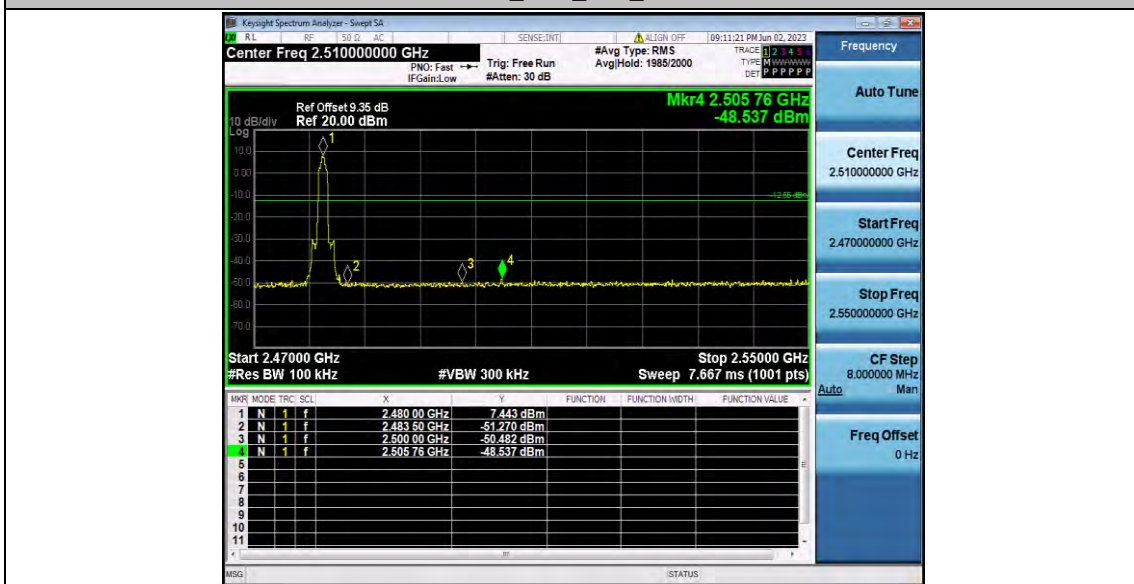
2DH1_Ant1_Low_Hop_2402



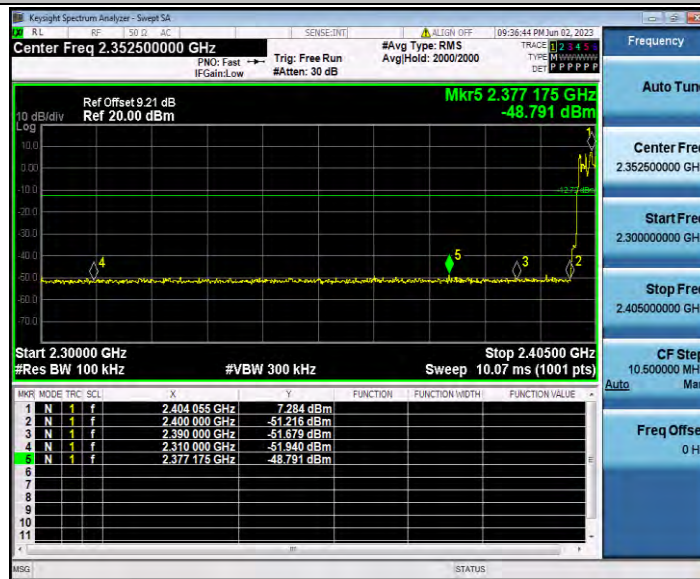
2DH1_Ant1_High_Hop_2480



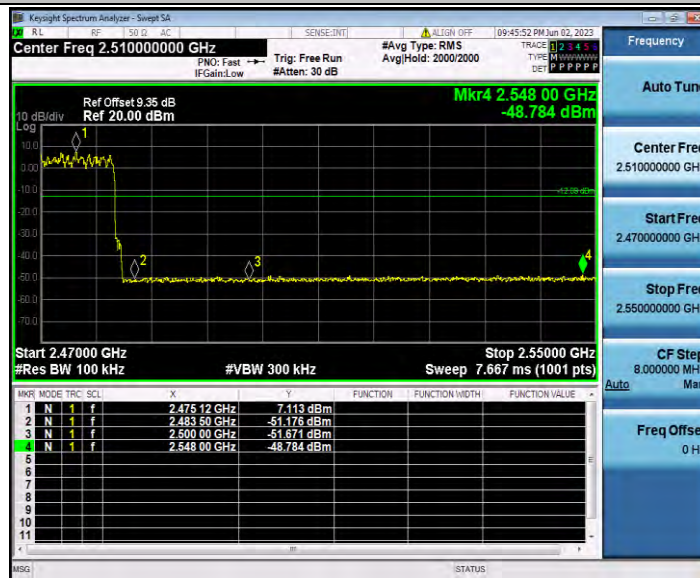
3DH1_Ant1_Low_2402



3DH1_Ant1_High_2480



3DH1_Ant1_Low_Hop_2402



3DH1_Ant1_High_Hop_2480

Appendix A.8: Conducted Spurious Emission

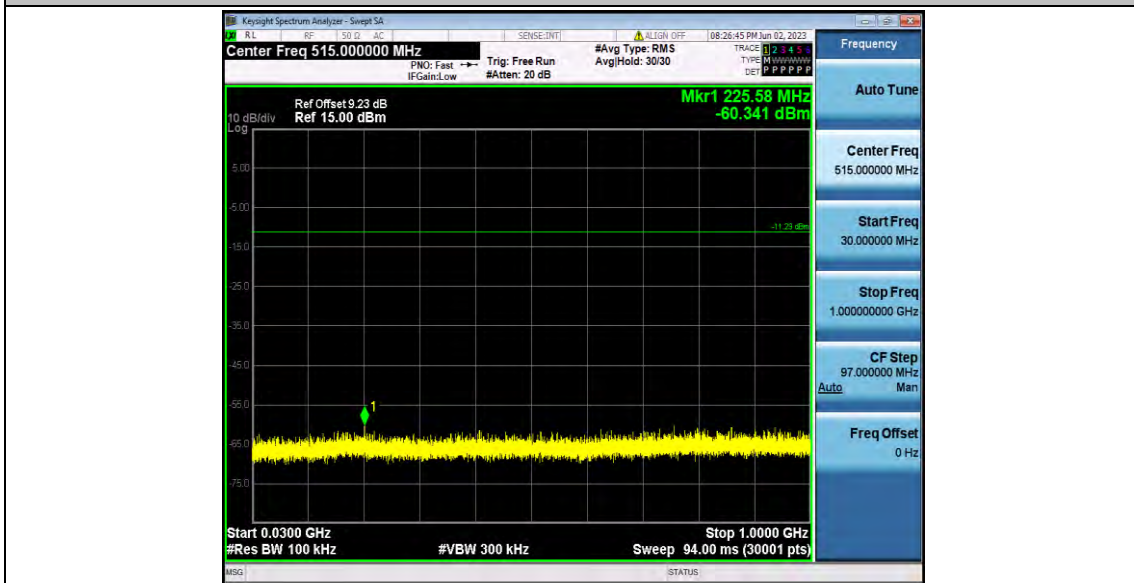
Test Result

Test Mode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	2402	Reference	8.71	8.71	---	PASS
			30~1000	8.71	-60.34	≤ -11.29	PASS
			1000~26500	8.71	-47.54	≤ -11.29	PASS
		2441	Reference	8.41	8.41	---	PASS
			30~1000	8.41	-58.9	≤ -11.59	PASS
			1000~26500	8.41	-47.07	≤ -11.59	PASS
		2480	Reference	7.64	7.64	---	PASS
			30~1000	7.64	-59.72	≤ -12.36	PASS
			1000~26500	7.64	-47.99	≤ -12.36	PASS
2DH1	Ant1	2402	Reference	7.27	7.27	---	PASS
			30~1000	7.27	-60.11	≤ -12.73	PASS
			1000~26500	7.27	-47.96	≤ -12.73	PASS
		2441	Reference	6.59	6.59	---	PASS
			30~1000	6.59	-59.88	≤ -13.41	PASS
			1000~26500	6.59	-47.07	≤ -13.41	PASS
		2480	Reference	7.25	7.25	---	PASS
			30~1000	7.25	-60.21	≤ -12.75	PASS
			1000~26500	7.25	-47.45	≤ -12.75	PASS
3DH1	Ant1	2402	Reference	7.30	7.30	---	PASS
			30~1000	7.30	-60.72	≤ -12.7	PASS
			1000~26500	7.30	-47.94	≤ -12.7	PASS
		2441	Reference	6.74	6.74	---	PASS
			30~1000	6.74	-60.82	≤ -13.26	PASS
			1000~26500	6.74	-47.14	≤ -13.26	PASS
		2480	Reference	7.19	7.19	---	PASS
			30~1000	7.19	-60.54	≤ -12.81	PASS
			1000~26500	7.19	-46.9	≤ -12.81	PASS

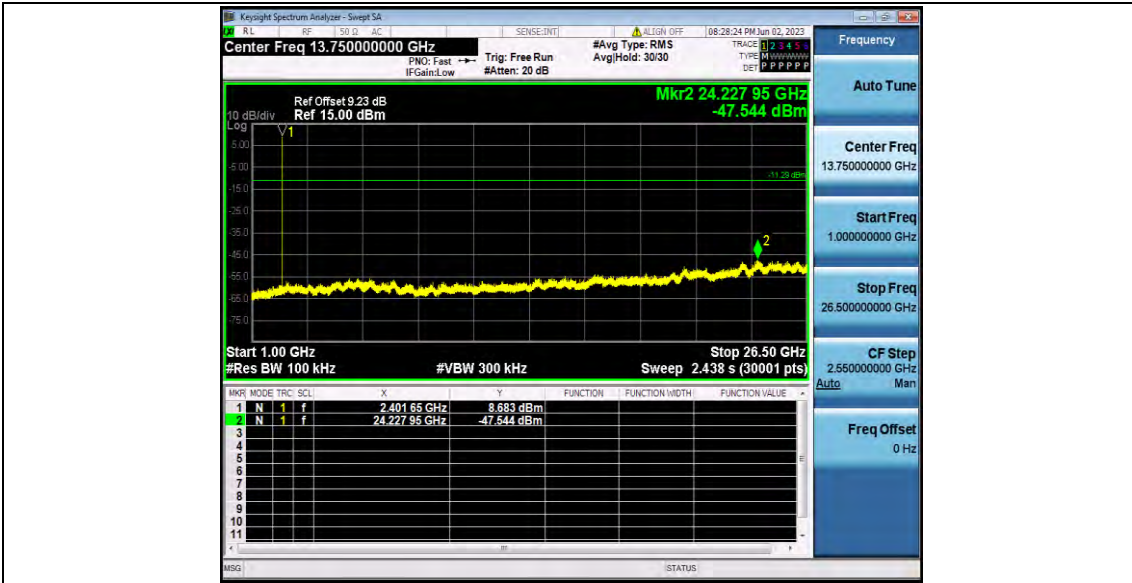
Test Graphs



DH1_Ant1_2402_0~Reference



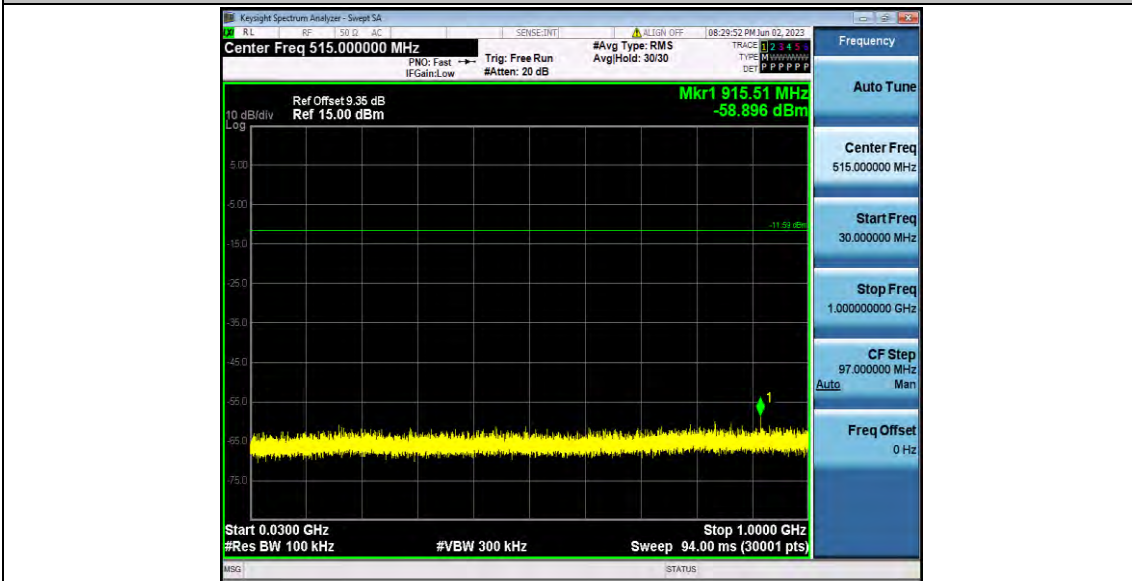
DH1_Ant1_2402_30~1000



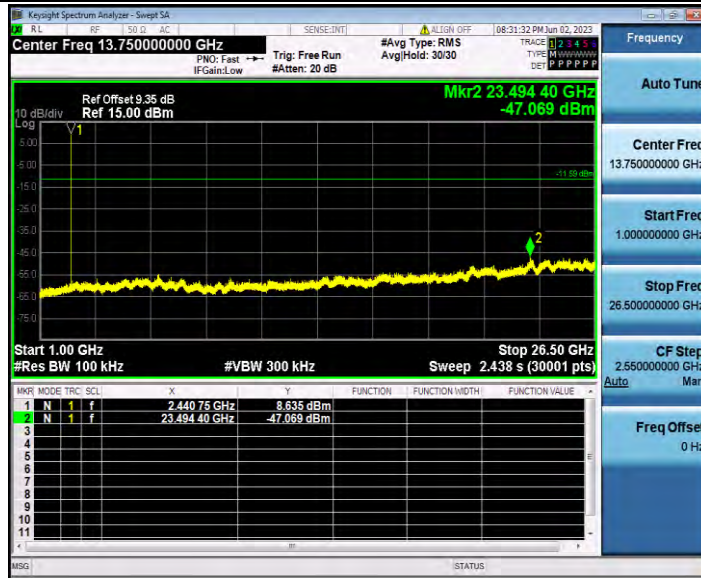
DH1_Ant1_2402_1000~26500



DH1_Ant1_2441_0~Reference



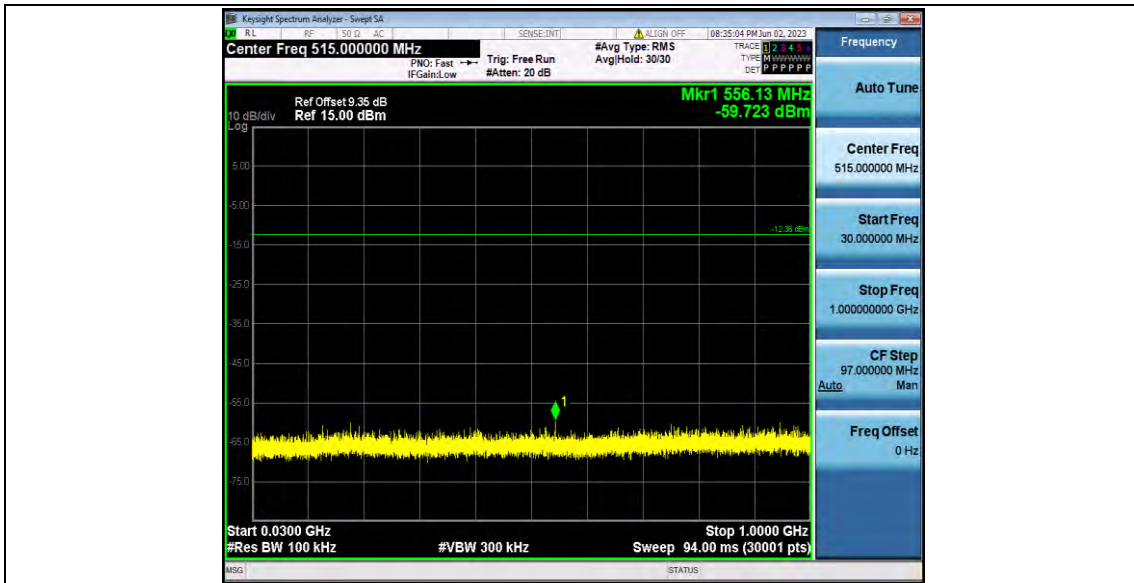
DH1_Ant1_2441_30~1000



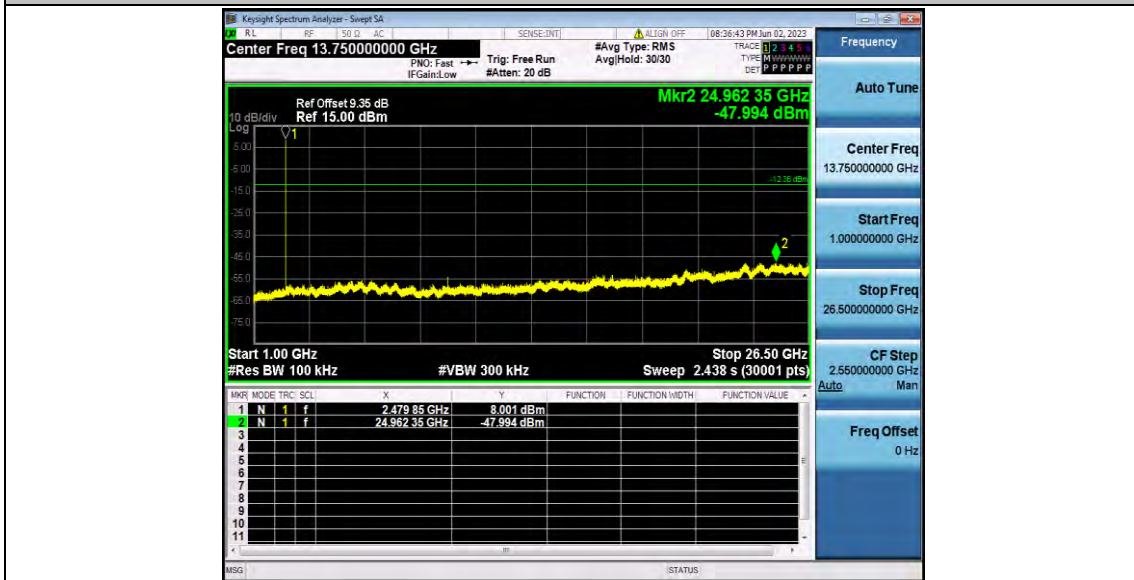
DH1_Ant1_2441_1000~26500



DH1_Ant1_2480_0~Reference



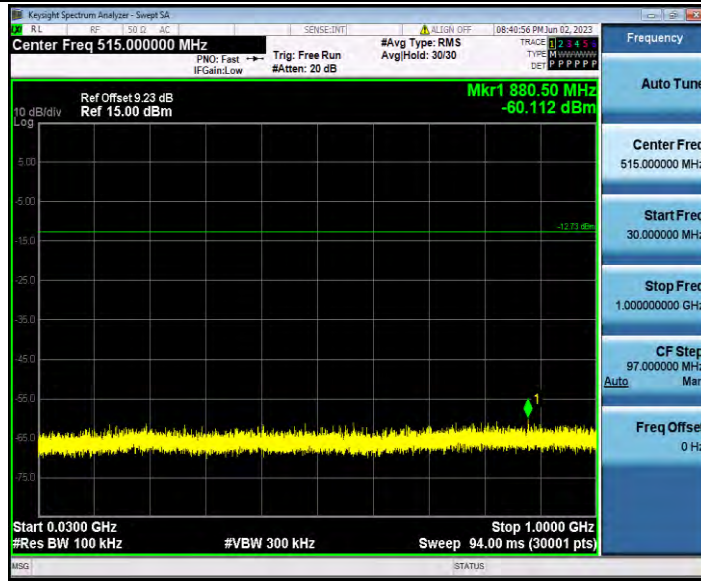
DH1_Ant1_2480_30~1000



DH1_Ant1_2480_1000~26500



2DH1_Ant1_2402_0~Reference



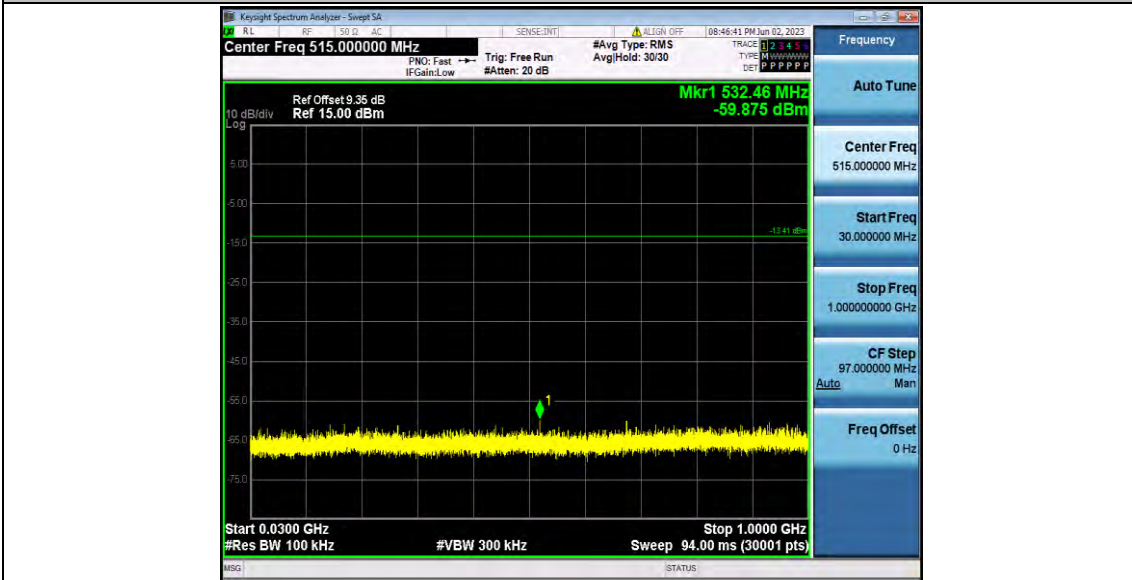
2DH1_Ant1_2402_30~1000



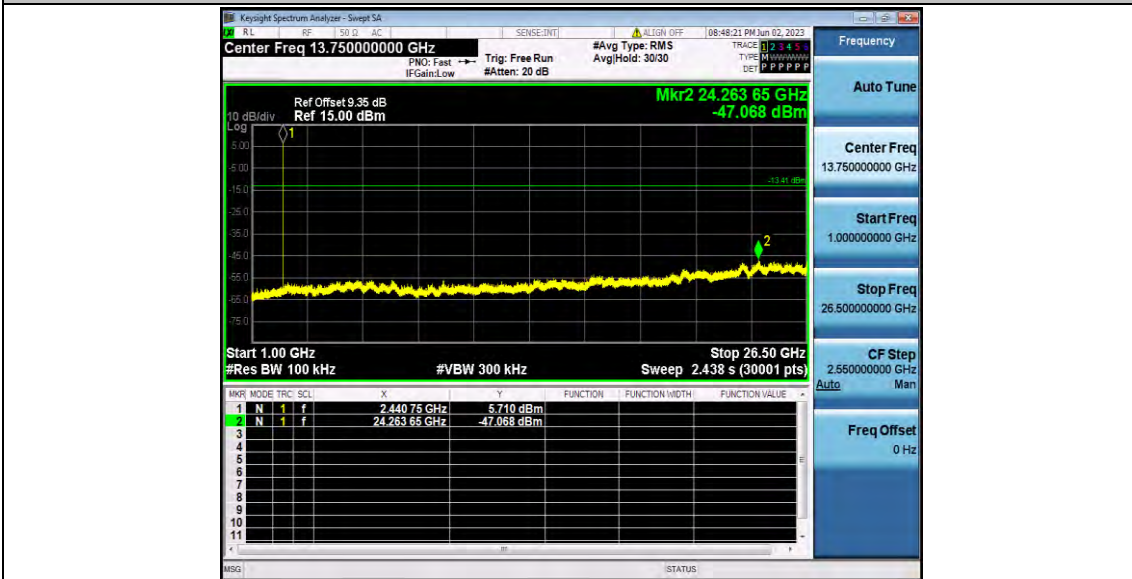
2DH1_Ant1_2402_1000~26500



2DH1_Ant1_2441_0~Reference



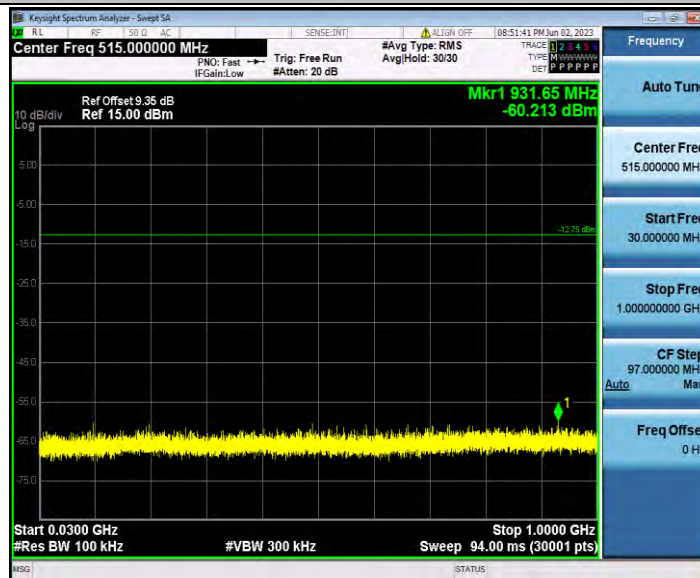
2DH1_Ant1_2441_30~1000



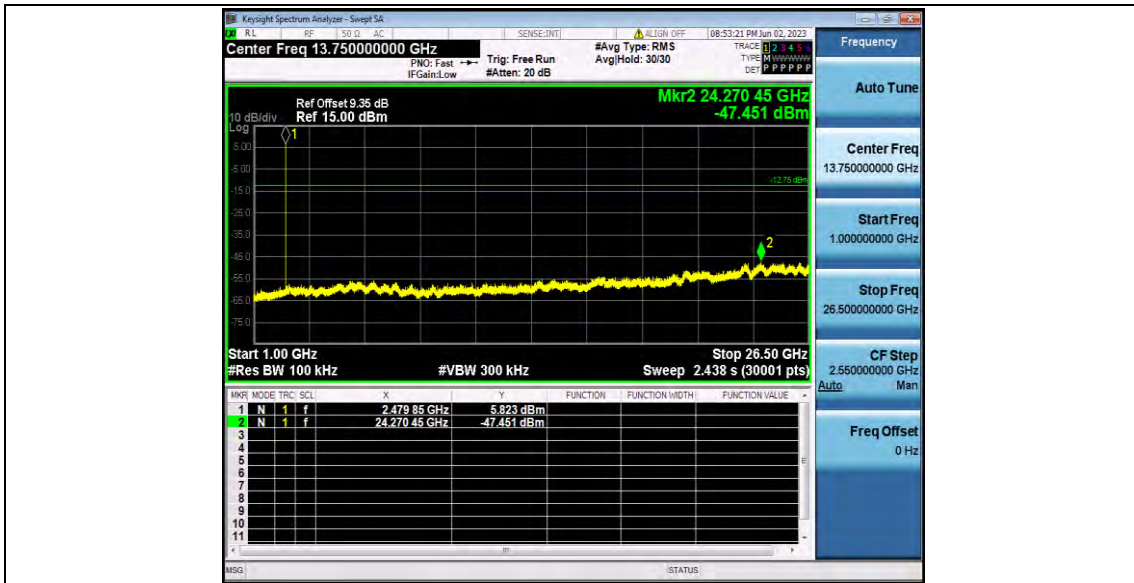
2DH1_Ant1_2441_1000~26500



2DH1_Ant1_2480_0~Reference



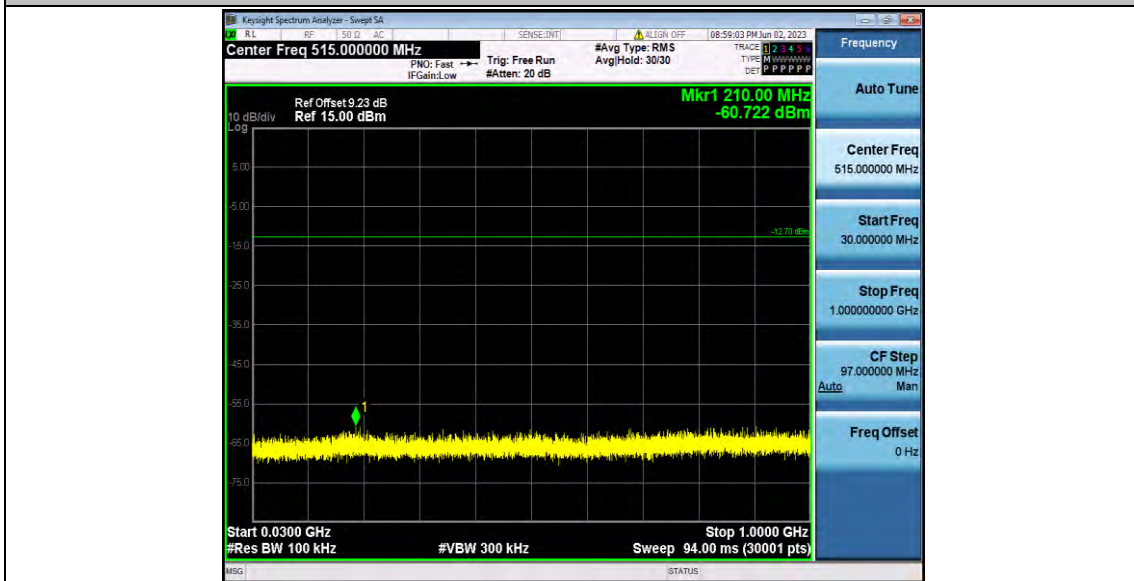
2DH1_Ant1_2480_30~1000



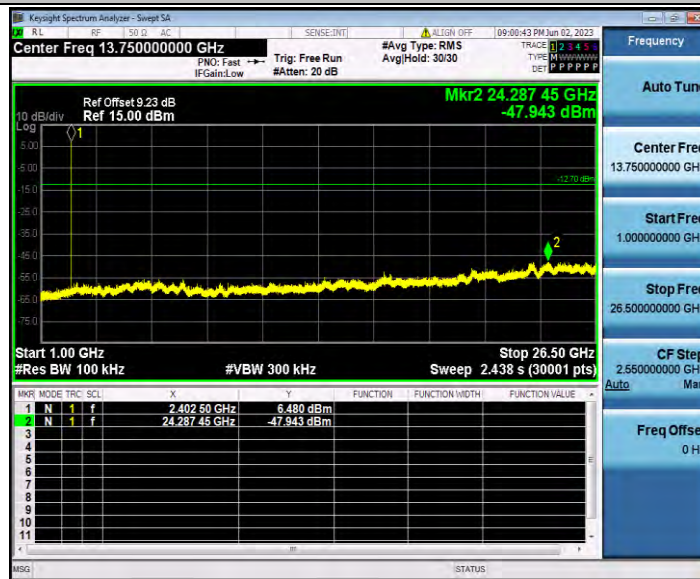
2DH1_Ant1_2480_1000~26500



3DH1_Ant1_2402_0~Reference



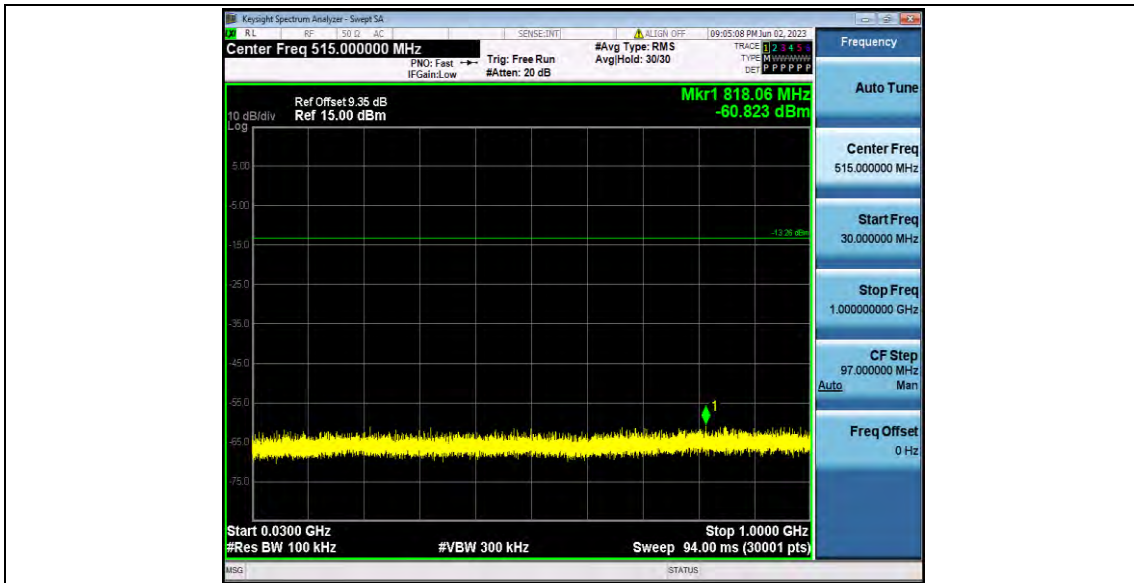
3DH1_Ant1_2402_30~1000



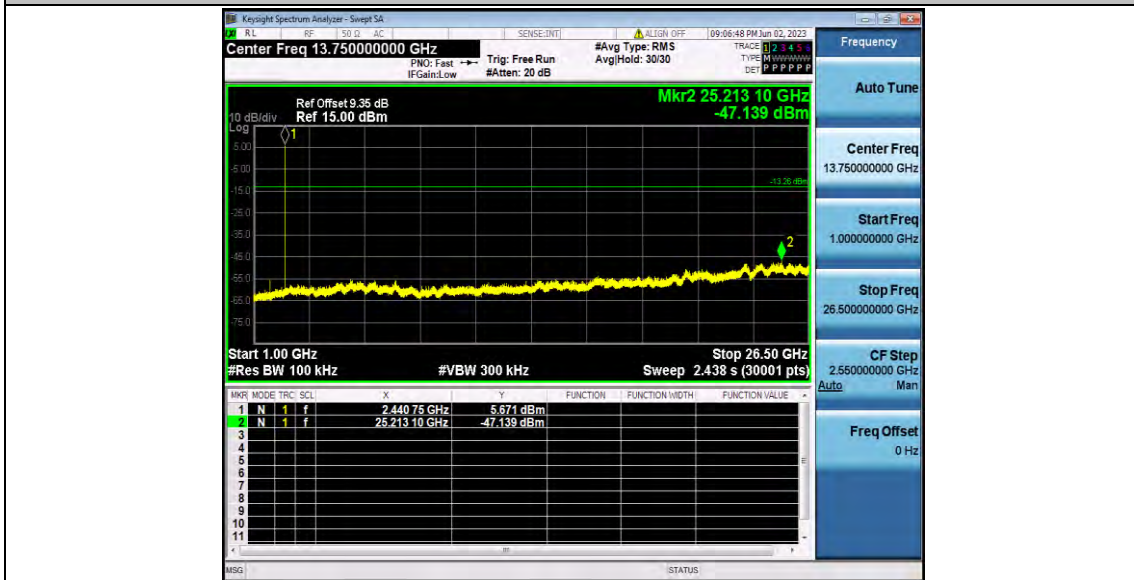
3DH1_Ant1_2402_1000~26500



3DH1_Ant1_2441_0~Reference



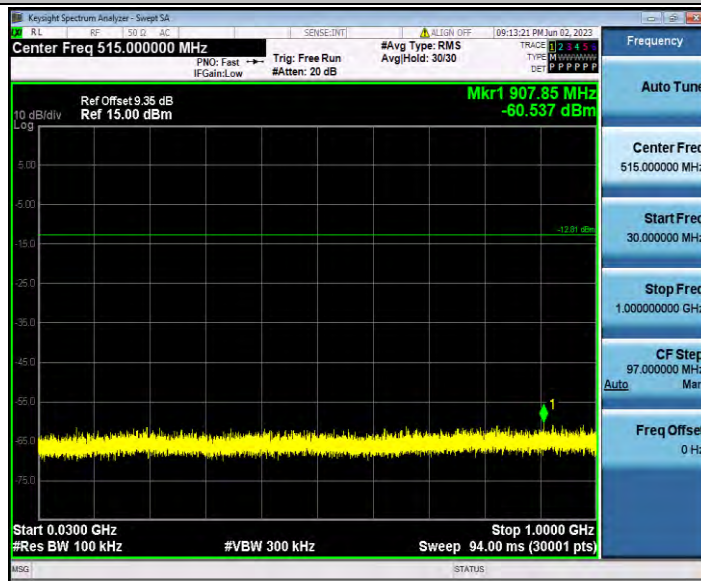
3DH1_Ant1_2441_30~100



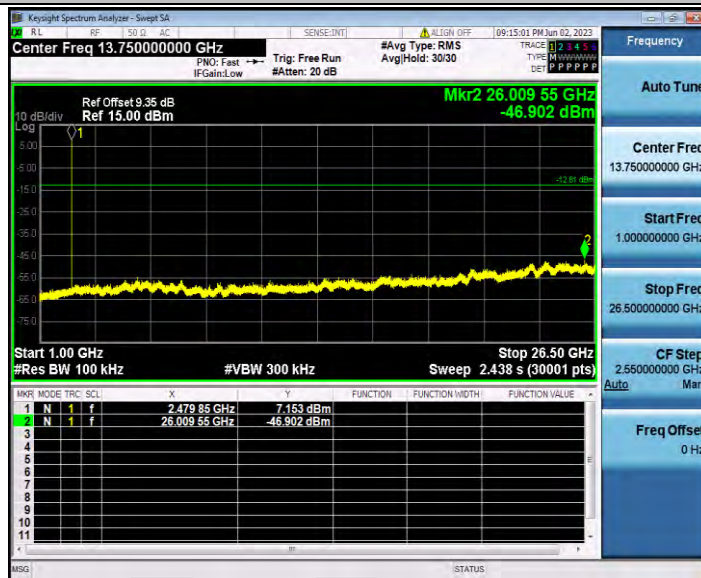
3DH1_Ant1_2441_1000~26500



3DH1_Ant1_2480_0~Reference



3DH1_Ant1_2480_30~1000



3DH1_Ant1_2480_1000~26500

Appendix A.9: Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Frequency [MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH1	Ant1	Low	2402	AV	2310.000	-49.16	≤-41.20	46.04	≤54	PASS
				AV	2384.000	-48.68	≤-41.20	46.52	≤54	PASS
				AV	2390.000	-48.68	≤-41.20	46.52	≤54	PASS
				Peak	2310.000	-40.4	≤-21.20	54.80	≤74	PASS
				Peak	2385.680	-39	≤-21.20	56.20	≤74	PASS
				Peak	2390.000	-41.57	≤-21.20	53.63	≤74	PASS
		High	2480	AV	2483.500	-47.62	≤-41.20	47.58	≤54	PASS
				AV	2483.520	-47.62	≤-41.20	47.58	≤54	PASS
				AV	2500.000	-48.45	≤-41.20	46.75	≤54	PASS
				Peak	2483.500	-39.56	≤-21.20	55.64	≤74	PASS
				Peak	2490.000	-38.91	≤-21.20	56.29	≤74	PASS
				Peak	2500.000	-41.46	≤-21.20	53.74	≤74	PASS
2DH1	Ant1	Low	2402	AV	2310.000	-49.1	≤-41.20	46.10	≤54	PASS
				AV	2389.355	-48.61	≤-41.20	46.59	≤54	PASS
				AV	2390.000	-48.73	≤-41.20	46.47	≤54	PASS
				Peak	2310.000	-40.61	≤-21.20	54.59	≤74	PASS
				Peak	2343.470	-38.71	≤-21.20	56.49	≤74	PASS
				Peak	2390.000	-42.32	≤-21.20	52.88	≤74	PASS
		High	2480	AV	2483.500	-47.2	≤-41.20	48.00	≤54	PASS
				AV	2483.520	-47.2	≤-41.20	48.00	≤54	PASS
				AV	2500.000	-48.42	≤-41.20	46.78	≤54	PASS
				Peak	2483.500	-35.8	≤-21.20	59.40	≤74	PASS
				Peak	2483.520	-35.8	≤-21.20	59.40	≤74	PASS
				Peak	2500.000	-40.96	≤-21.20	54.24	≤74	PASS
3DH1	Ant1	Low	2402	AV	2310.000	-49.05	≤-41.20	46.15	≤54	PASS
				AV	2389.460	-48.59	≤-41.20	46.61	≤54	PASS
				AV	2390.000	-48.65	≤-41.20	46.55	≤54	PASS
				Peak	2310.000	-41.61	≤-21.20	53.59	≤74	PASS
				Peak	2363.210	-38.68	≤-21.20	56.52	≤74	PASS
				Peak	2390.000	-41.92	≤-21.20	53.28	≤74	PASS
		High	2480	AV	2483.500	-47.38	≤-41.20	47.82	≤54	PASS
				AV	2483.520	-47.38	≤-41.20	47.82	≤54	PASS
				AV	2500.000	-48.39	≤-41.20	46.81	≤54	PASS
				Peak	2483.500	-41.14	≤-21.20	54.06	≤74	PASS
				Peak	2496.880	-38.86	≤-21.20	56.34	≤74	PASS
				Peak	2500.000	-41.62	≤-21.20	53.58	≤74	PASS

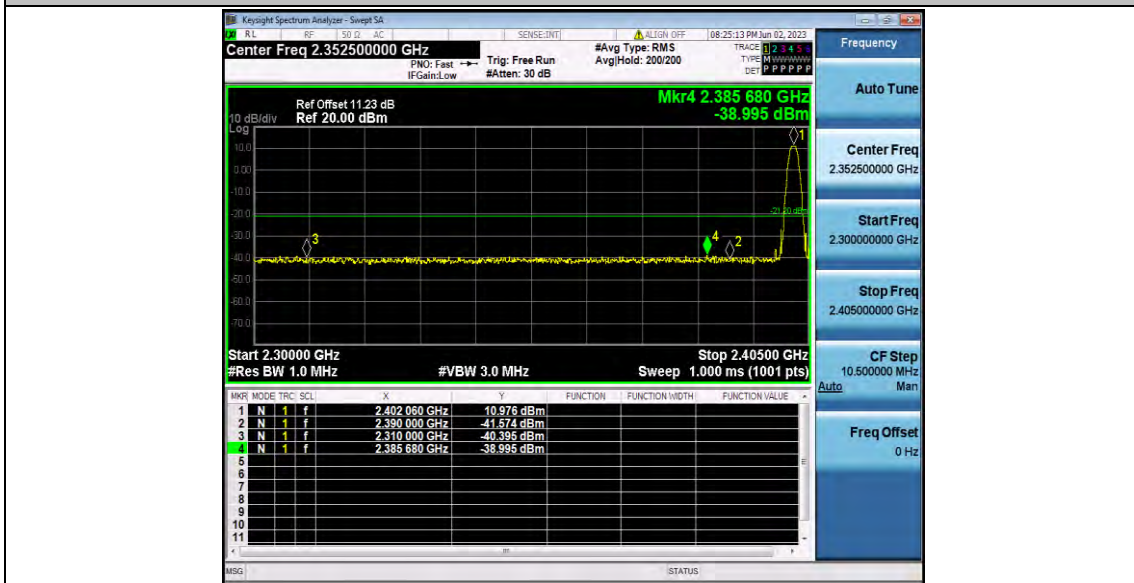
Note:

1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

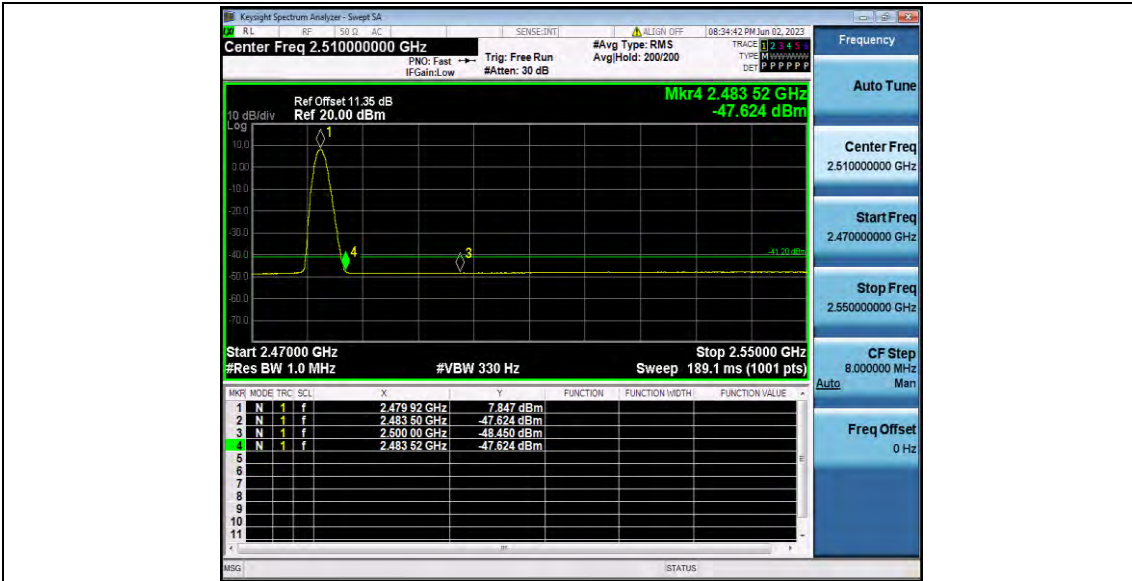
Test Graphs



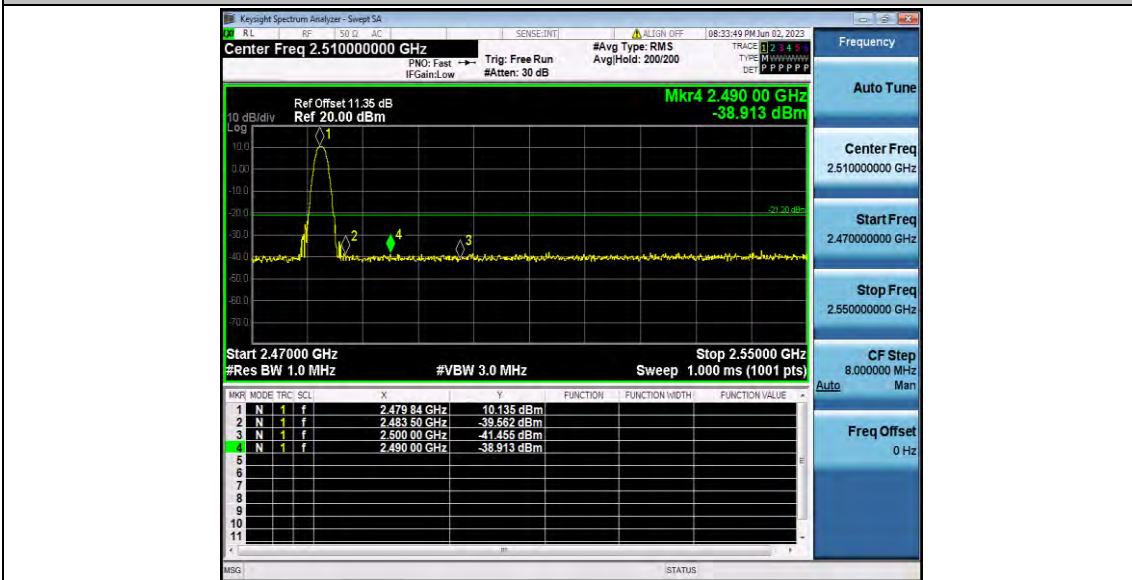
DH1_Ant1_Low_2402_AV



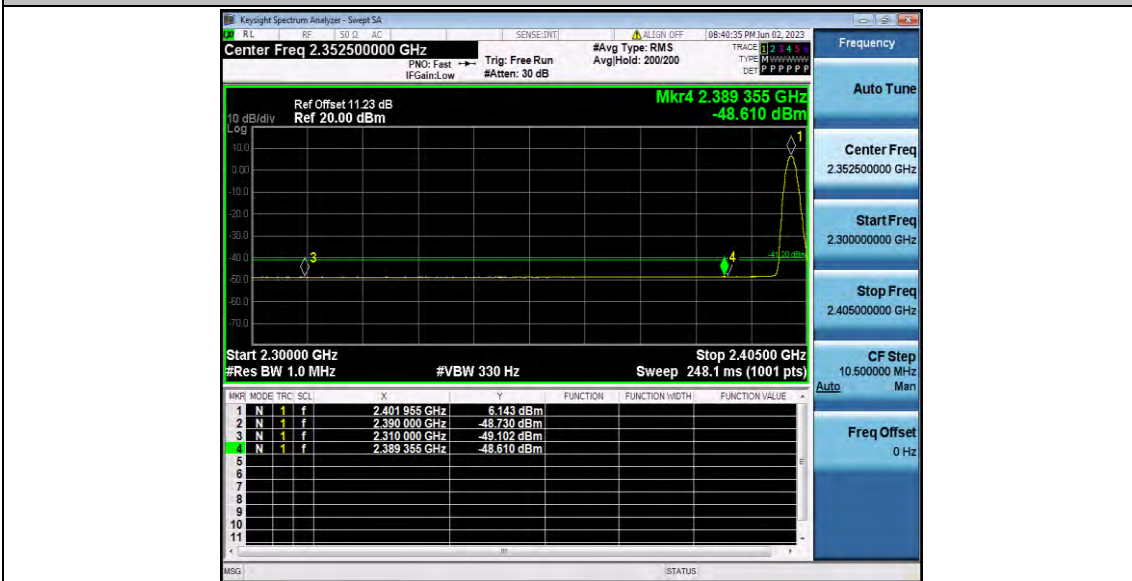
DH1_Ant1_Low_2402_Peak



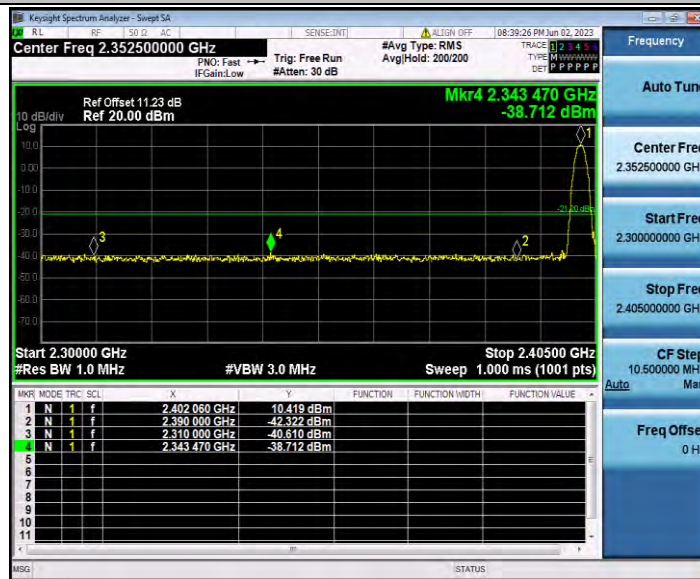
DH1_Ant1_High_2480_AV



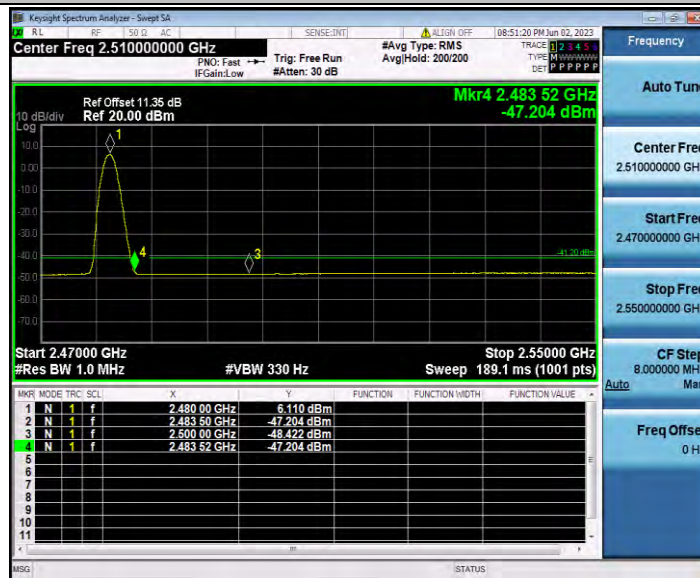
DH1_Ant1_High_2480_Peak



2DH1_Ant1_Low_2402_AV



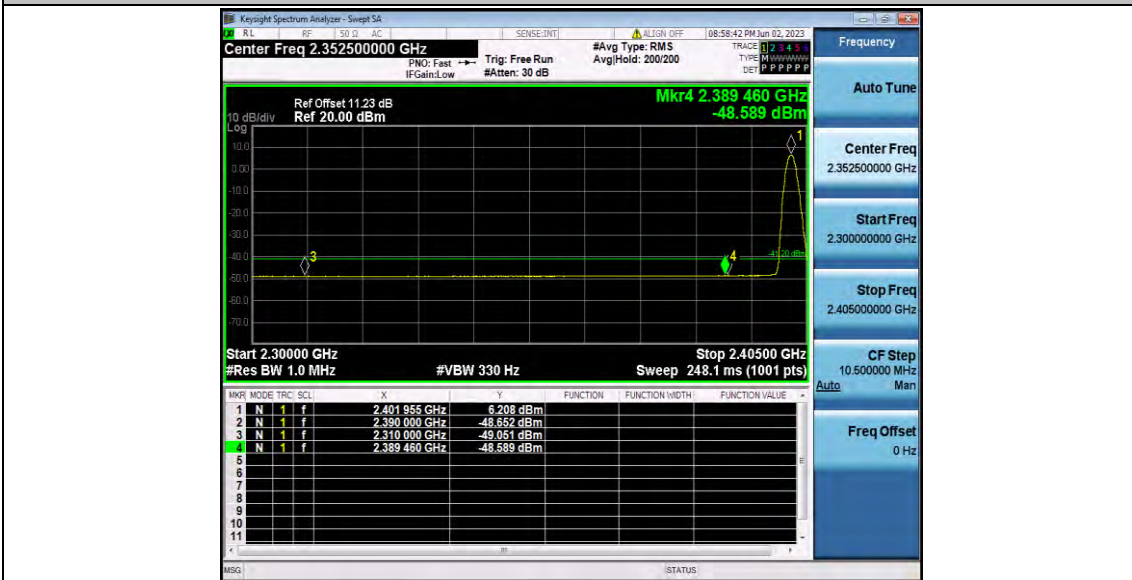
2DH1_Ant1_Low_2402_Peak



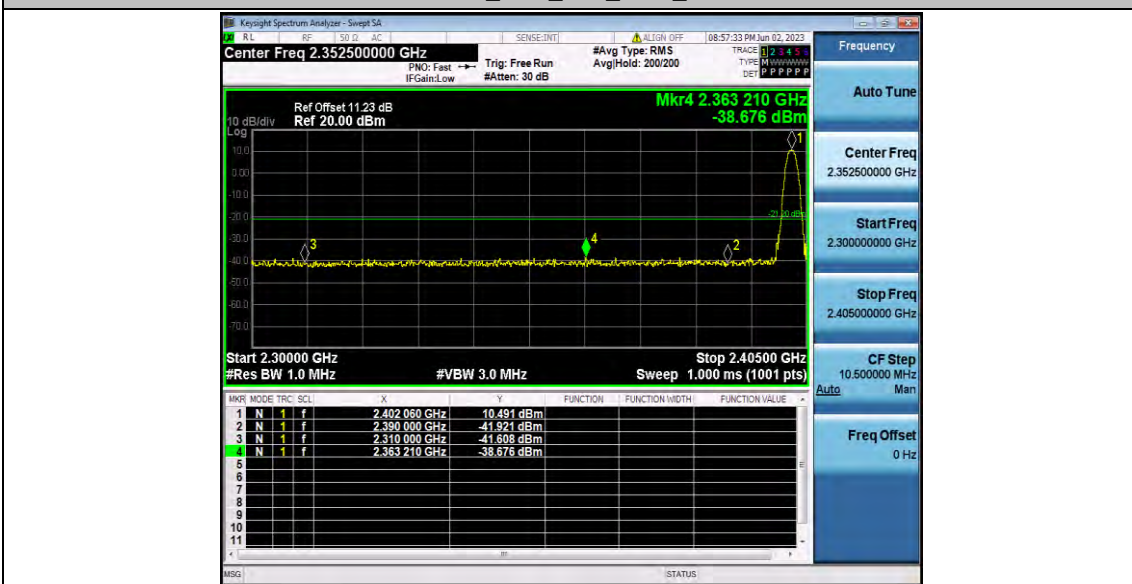
2DH1_Ant1_High_2480_AV



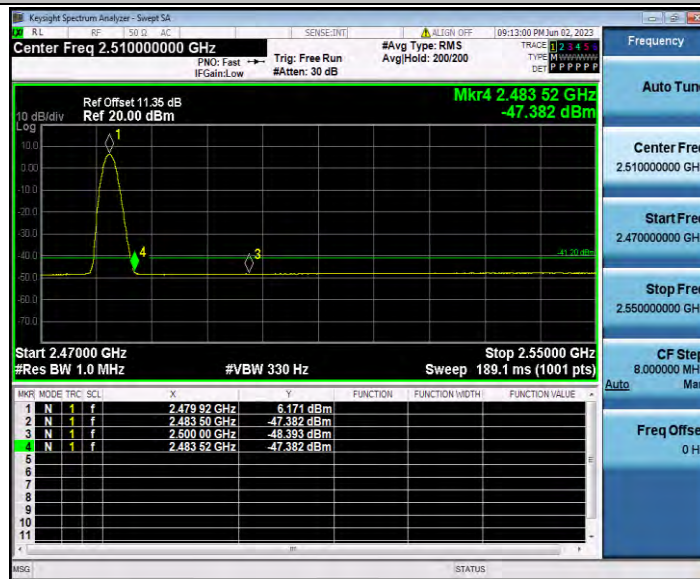
2DH1_Ant1_High_2480_Peak



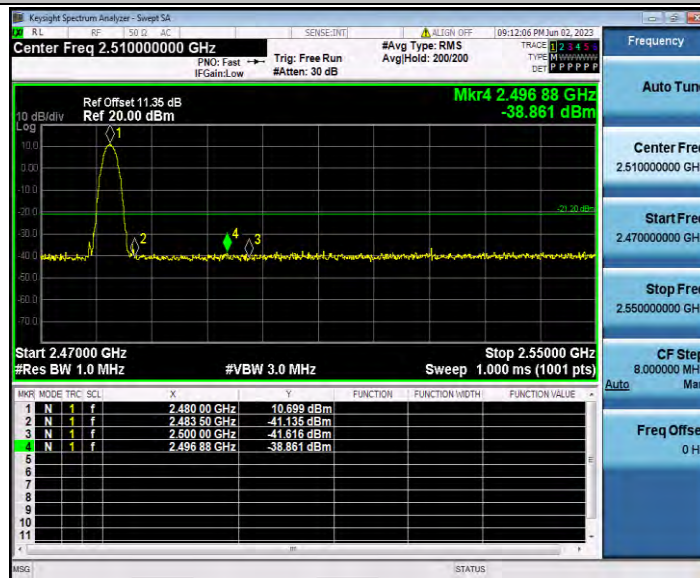
3DH1_Ant1_Low_2402_AV



3DH1_Ant1_Low_2402_Peak



3DH1_Ant1_High_2480_AV



3DH1_Ant1_High_2480_Peak