

Case No. : <u>GTS20231117002-1-1</u>
Ambient Condition: <u>25</u> °C, <u>48</u> %RH, Atmos100.1Kpa,
Test Date: <u>Evan ouyang</u> Test Engineer: <u>2023.11.28</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	0.930	2401.547	2402.477	---	---
		2441	0.882	2440.550	2441.432	---	---
		2480	0.882	2479.550	2480.432	---	---
2DH1	Ant1	2402	1.248	2401.367	2402.615	---	---
		2441	1.272	2440.364	2441.636	---	---
		2480	1.242	2479.373	2480.615	---	---
3DH1	Ant1	2402	1.254	2401.373	2402.627	---	---
		2441	1.263	2440.364	2441.627	---	---
		2480	1.251	2479.376	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	0.85692	2401.571	2402.428	---	---
		2441	0.85349	2440.571	2441.425	---	---
		2480	0.83784	2479.580	2480.418	---	---
2DH1	Ant1	2402	1.1681	2401.409	2402.578	---	---
		2441	1.1560	2440.416	2441.572	---	---
		2480	1.1560	2479.417	2480.573	---	---
3DH1	Ant1	2402	1.1577	2401.428	2402.585	---	---
		2441	1.1527	2440.432	2441.585	---	---
		2480	1.1529	2479.431	2480.584	---	---

Test Graphs



DH1_Ant1_2402



DH1_Ant1_2441



DH1_Ant1_2480



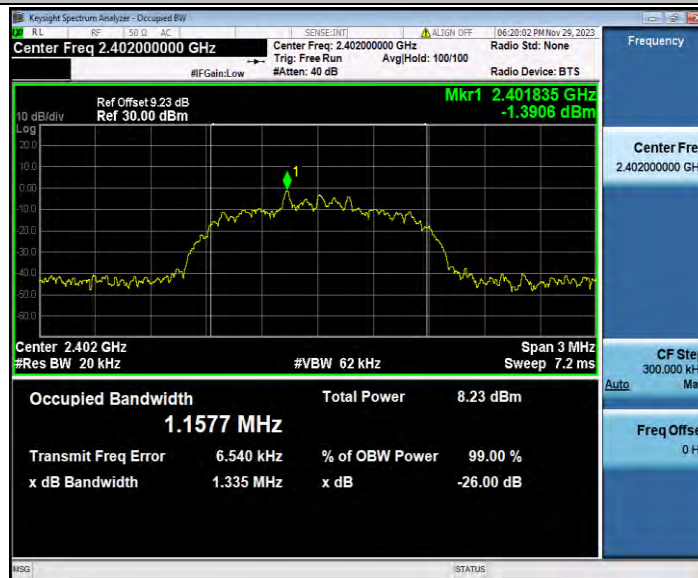
2DH1_Ant1_2402



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	3.74	≤30.00	PASS
		2441	4.05	≤30.00	PASS
		2480	3.94	≤30.00	PASS
2DH1	Ant1	2402	3.2	≤20.97	PASS
		2441	3.5	≤20.97	PASS
		2480	3.38	≤20.97	PASS
3DH1	Ant1	2402	3.33	≤20.97	PASS
		2441	3.77	≤20.97	PASS
		2480	3.62	≤20.97	PASS

Appendix A.4: Carrier frequency separation

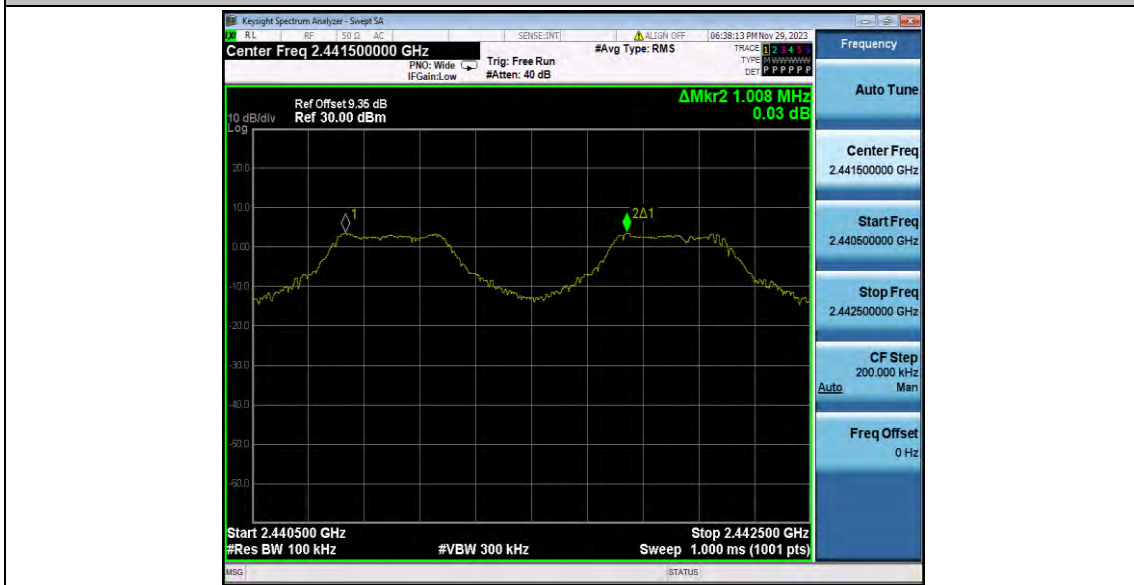
Test Result

Test Mode	Antenna	Frequency[MHz]	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Hop_2402	1.32	≥ 0.930	PASS
		Hop_2441	1.008	≥ 0.930	PASS
		Hop_2480	0.994	≥ 0.930	PASS
2DH1	Ant1	Hop_2402	0.978	≥ 0.848	PASS
		Hop_2441	1.008	≥ 0.848	PASS
		Hop_2480	1.172	≥ 0.848	PASS
3DH1	Ant1	Hop_2402	1.332	≥ 0.842	PASS
		Hop_2441	1.002	≥ 0.842	PASS
		Hop_2480	1.008	≥ 0.842	PASS

Test Graphs



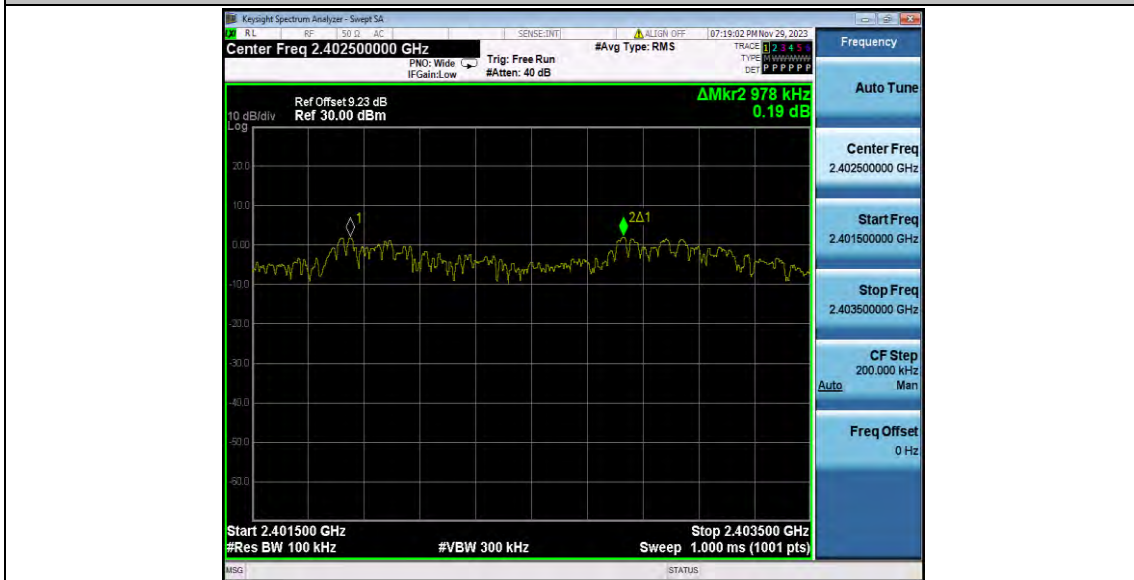
DH1_Ant1_Hop_2402



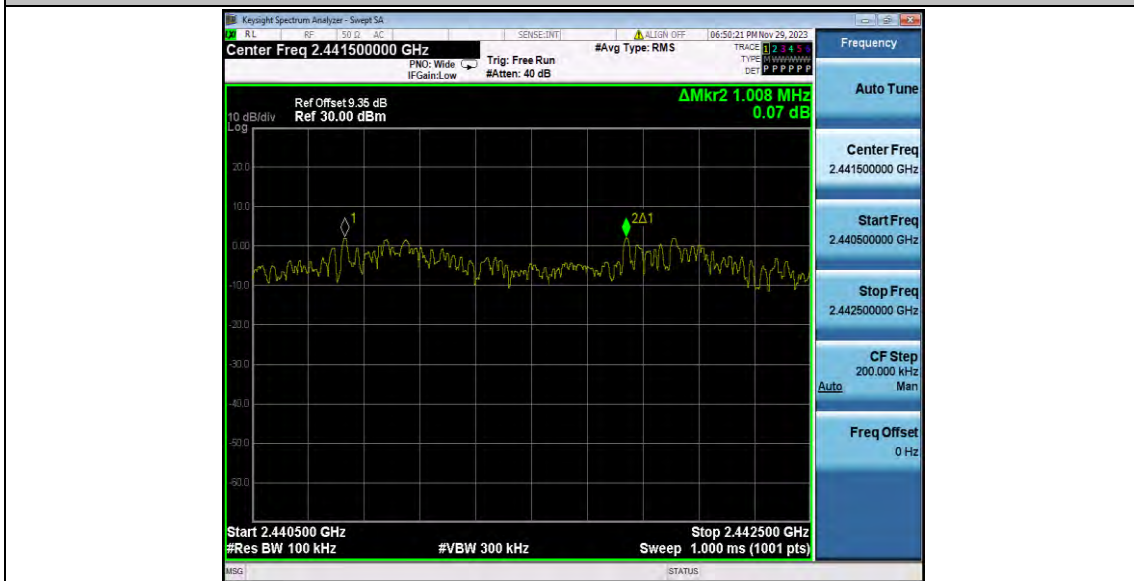
DH1_Ant1_Hop_2441



DH1_Ant1_Hop_2480



2DH1_Ant1_Hop_2402



2DH1_Ant1_Hop_2441



2DH1_Ant1_Hop_2480



3DH1_Ant1_Hop_2402



3DH1_Ant1_Hop_2441



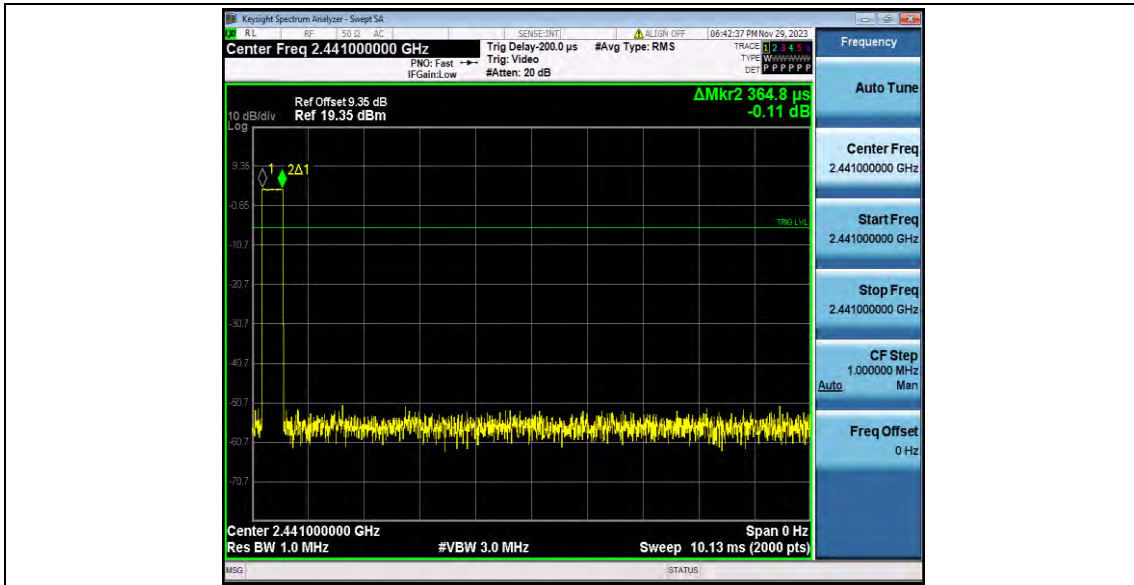
3DH1_Ant1_Hop_2480

Appendix A.5: Time of occupancy

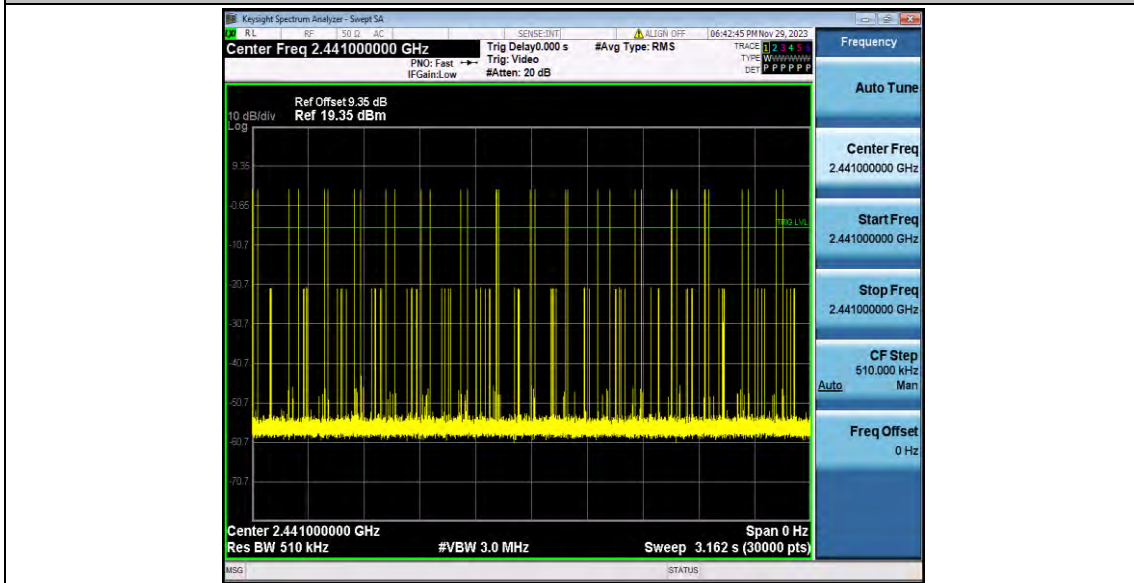
Test Result

Test Mode	Antenna	Frequency[MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.36	320	0.117	≤0.4	PASS
DH3	Ant1	Hop	1.63	160	0.26	≤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	0.26	≤0.4	PASS
2DH5	Ant1	Hop	2.88	110	0.317	≤0.4	PASS
3DH1	Ant1	Hop	0.38	330	0.125	≤0.4	PASS
3DH3	Ant1	Hop	1.62	200	0.323	≤0.4	PASS
3DH5	Ant1	Hop	2.88	80	0.23	≤0.4	PASS

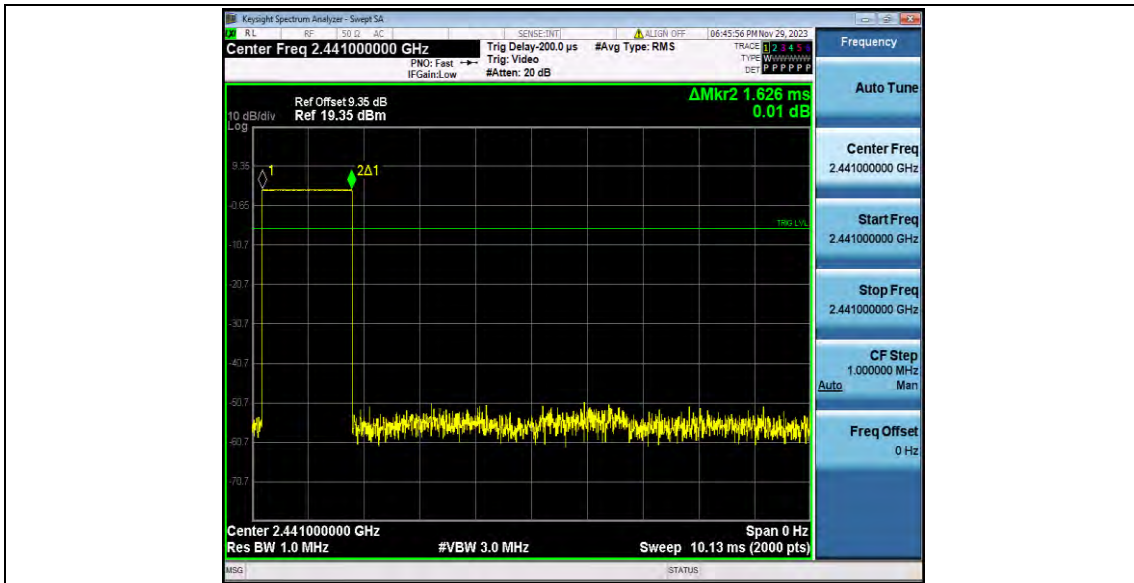
Test Graphs



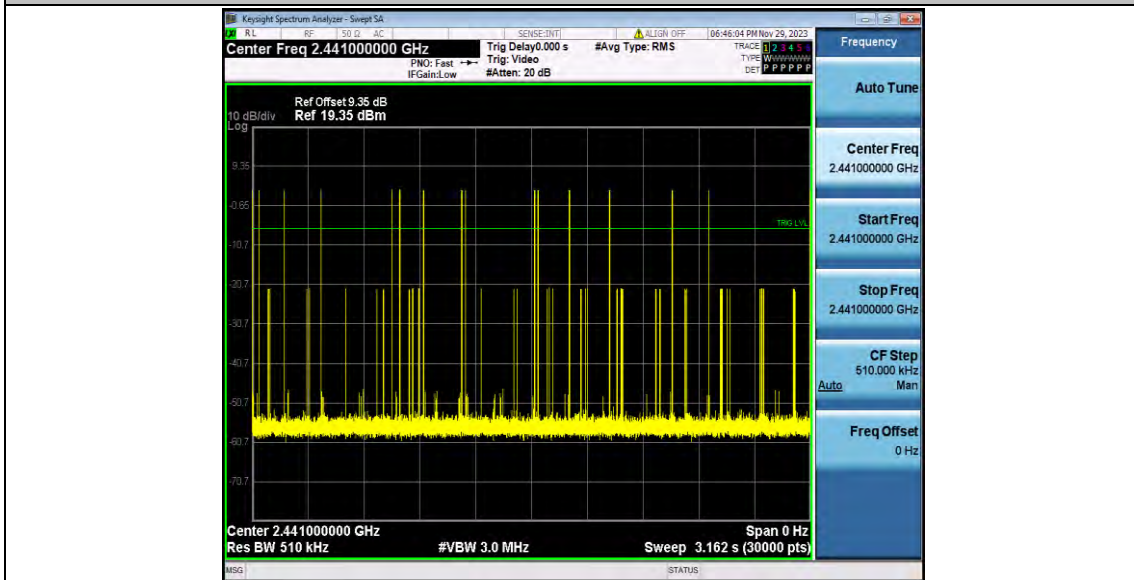
DH1_Ant1_Hop



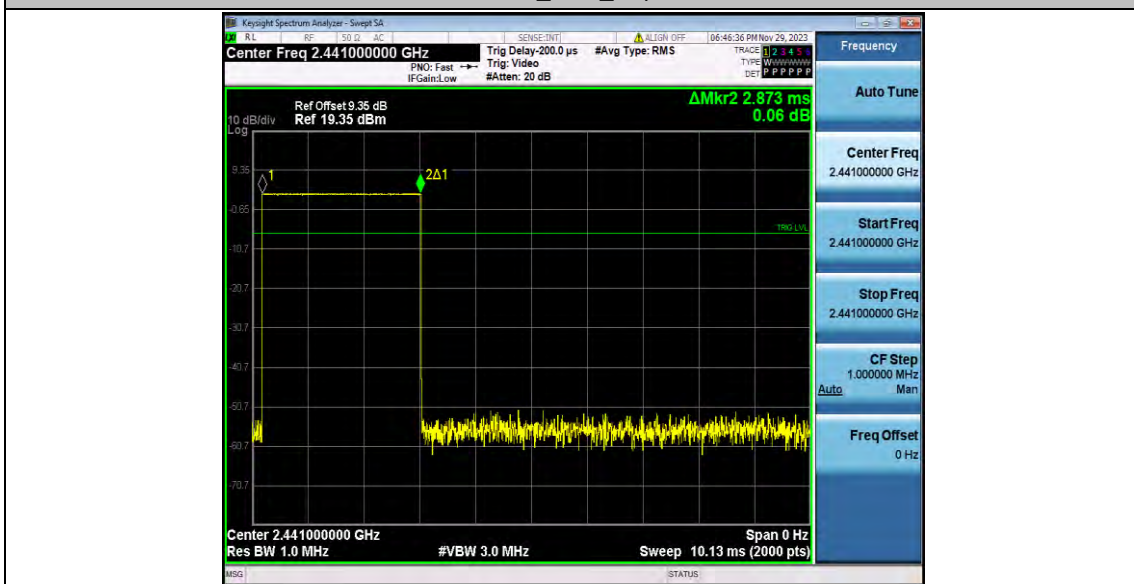
DH1_Ant1_Hop



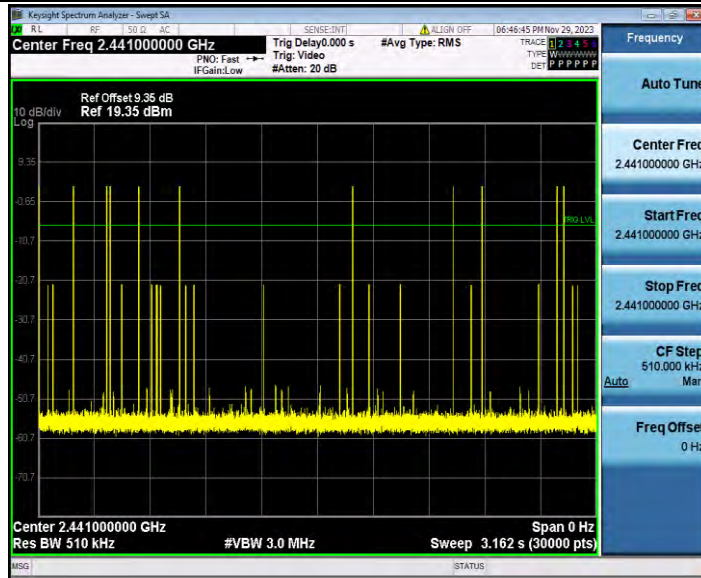
DH3_Ant1_Hop



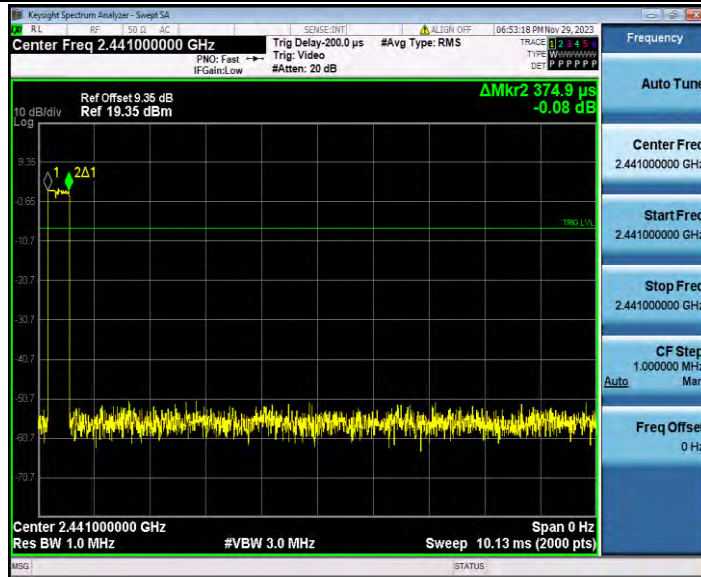
DH3_Ant1_Hop



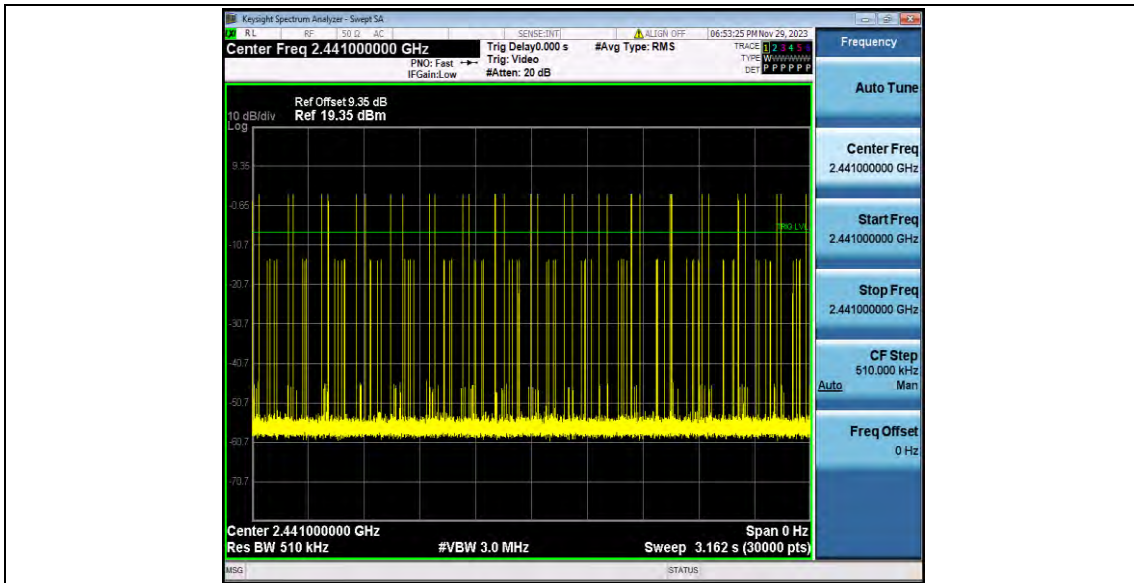
DH5_Ant1_Hop



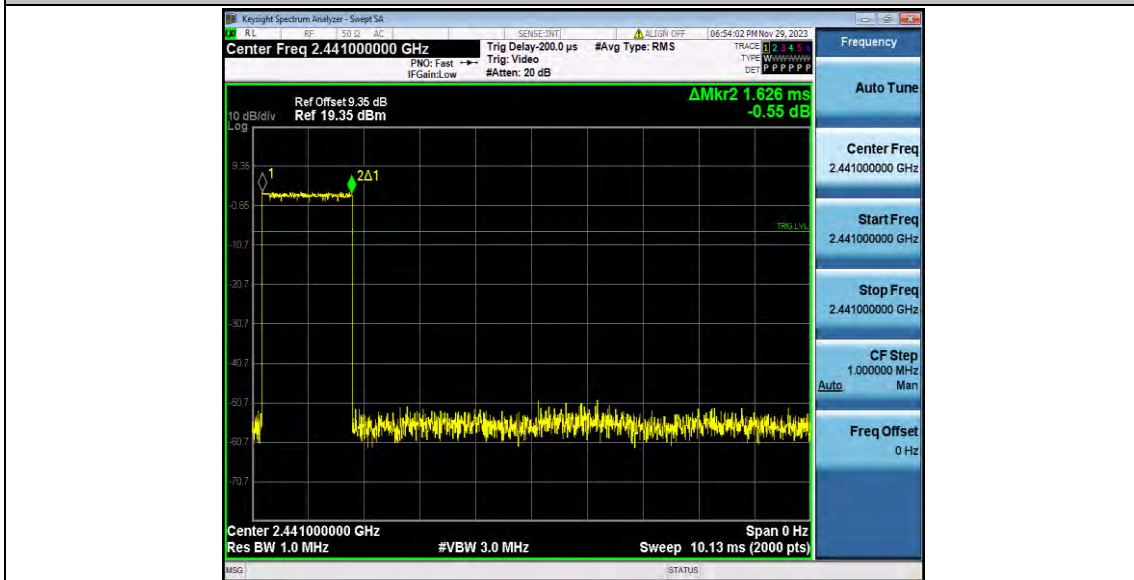
DH5_Ant1_Hop



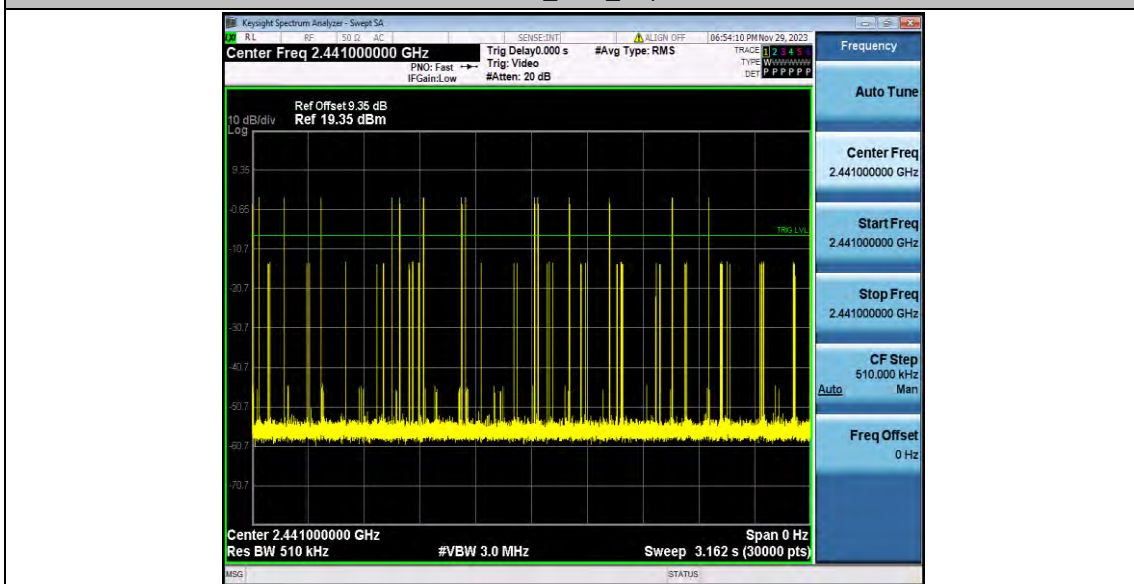
2DH1_Ant1_Hop



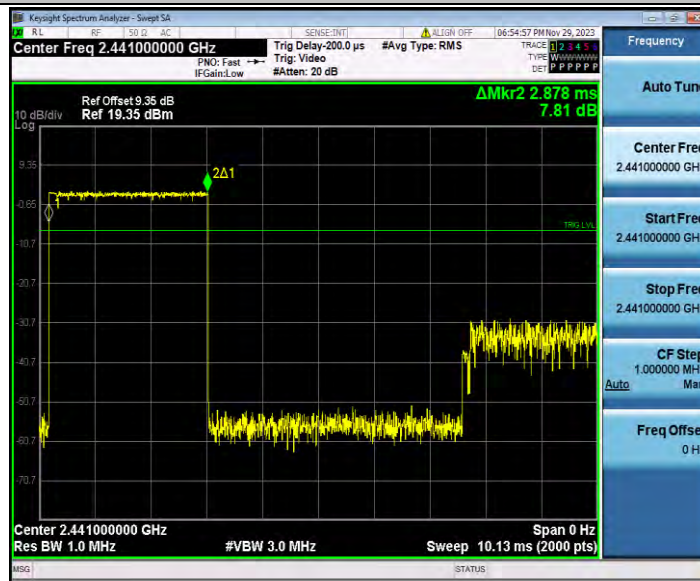
2DH1_Ant1_Hop



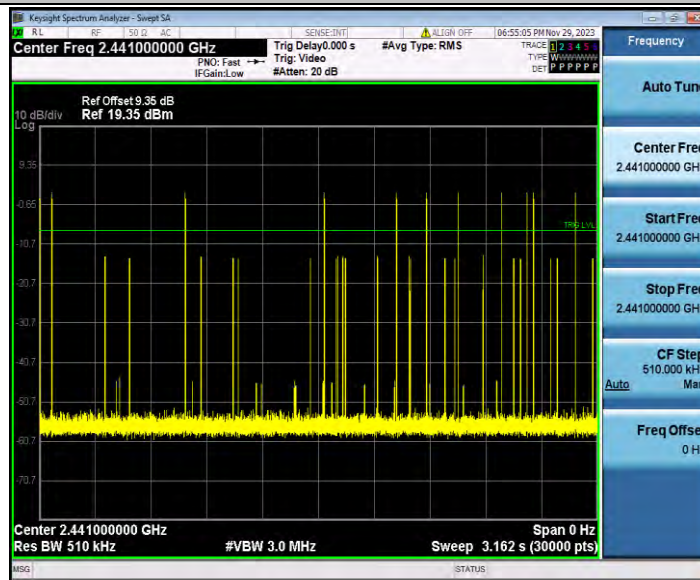
2DH3_Ant1_Hop



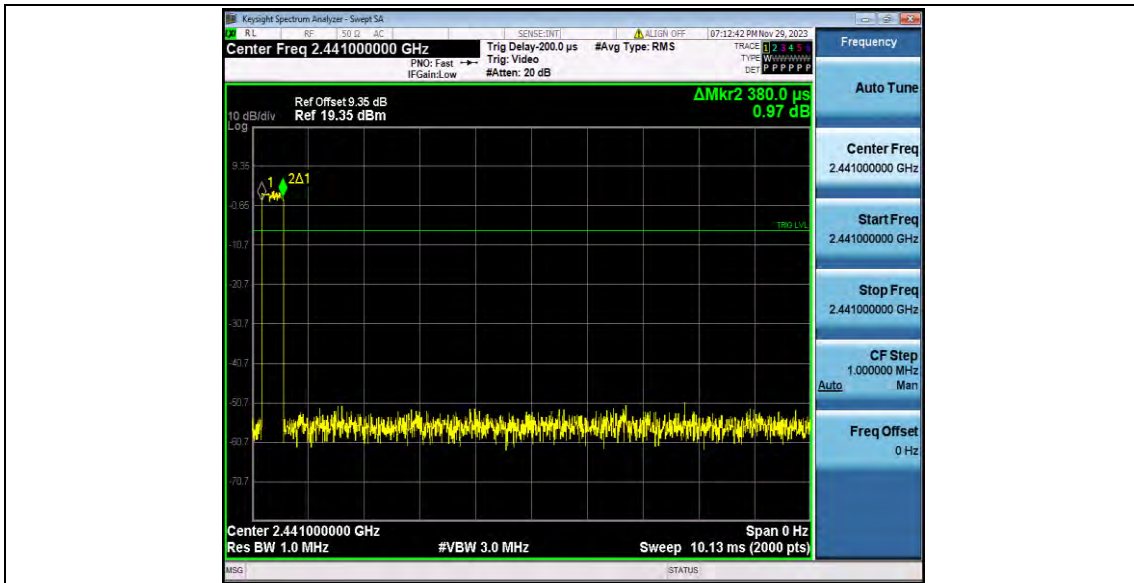
2DH3_Ant1_Hop



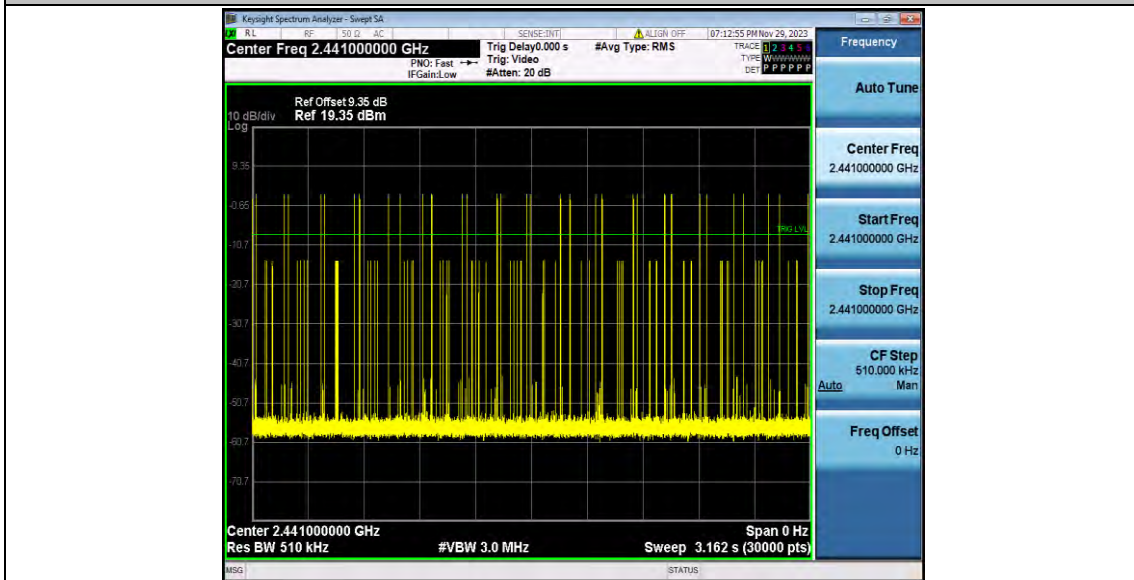
2DH5_Ant1_Hop



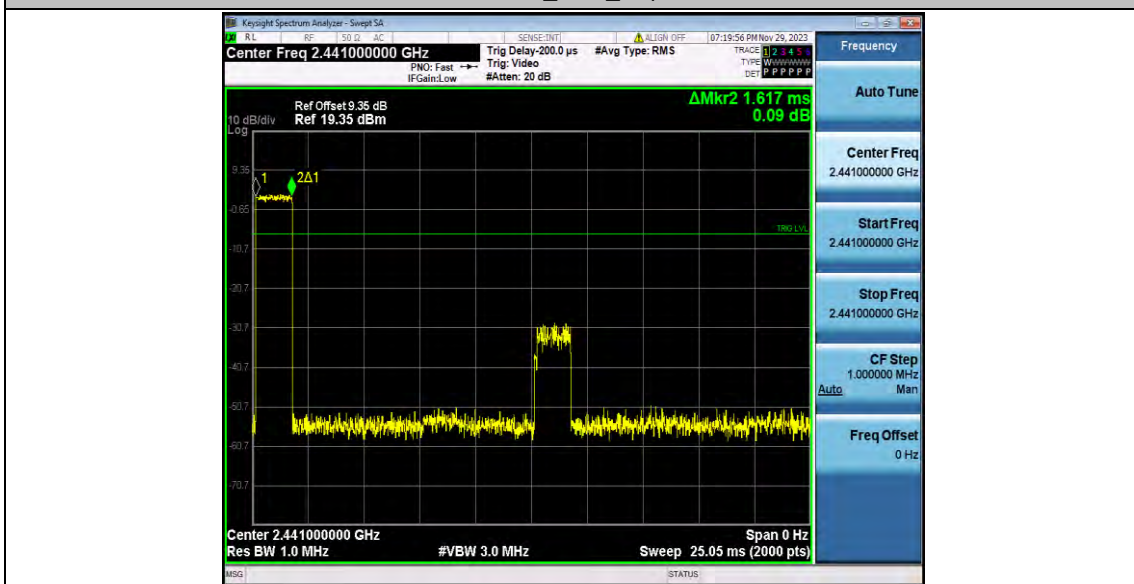
2DH5_Ant1_Hop



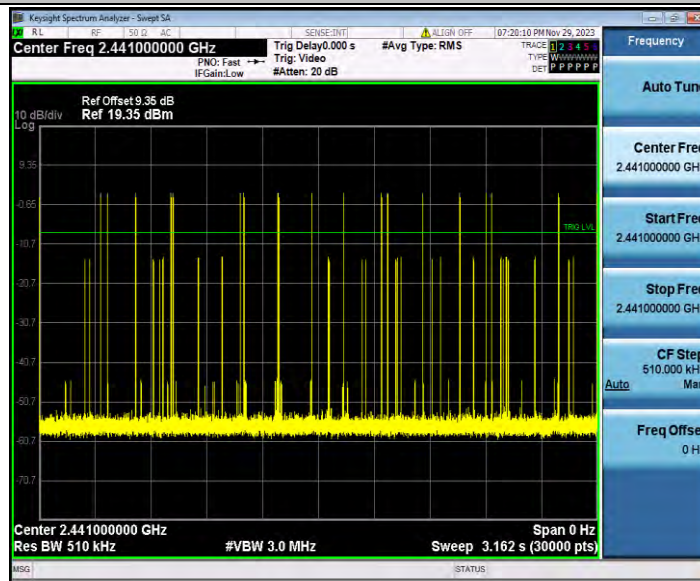
3DH1_Ant1_Hop



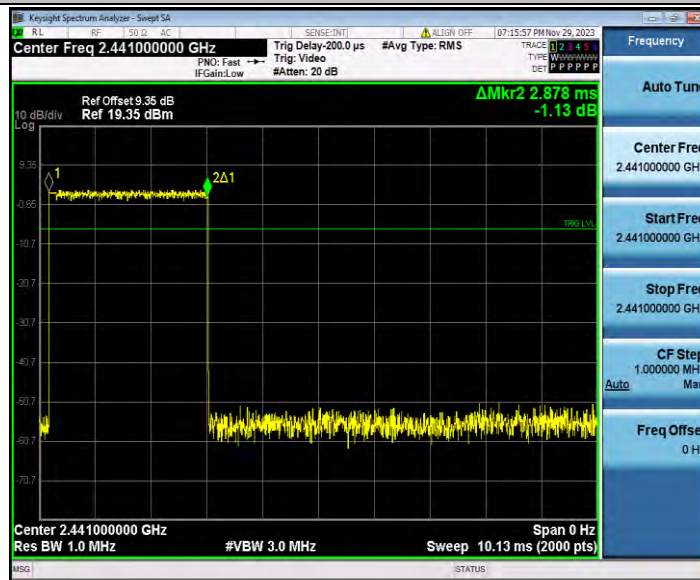
3DH1_Ant1_Hop



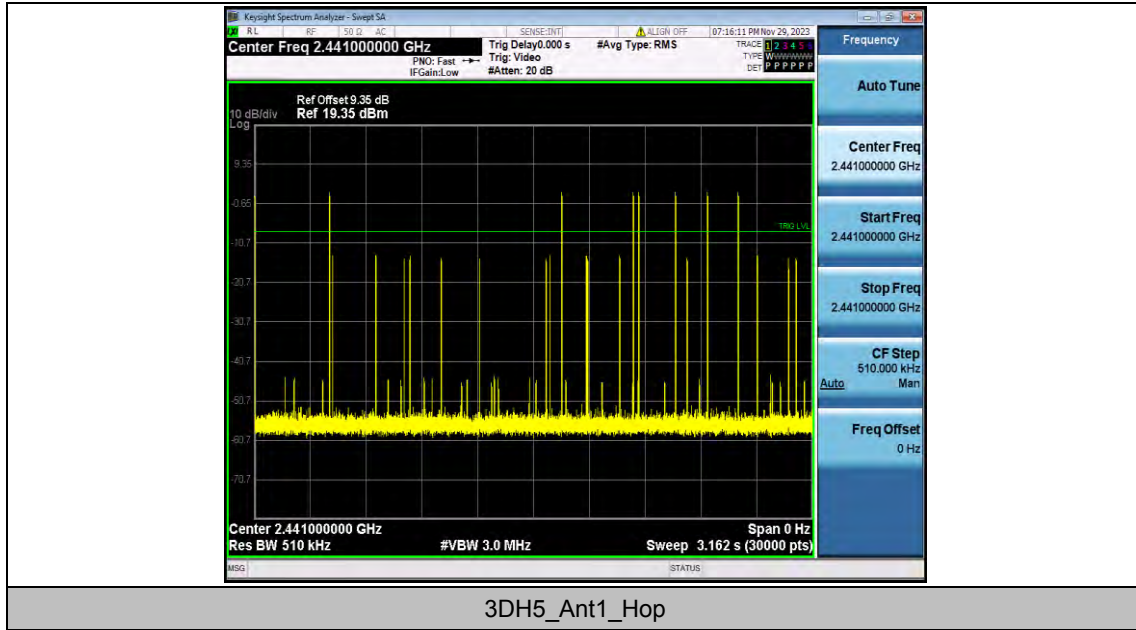
3DH3_Ant1_Hop



3DH3_Ant1_Hop



3DH5_Ant1_Hop

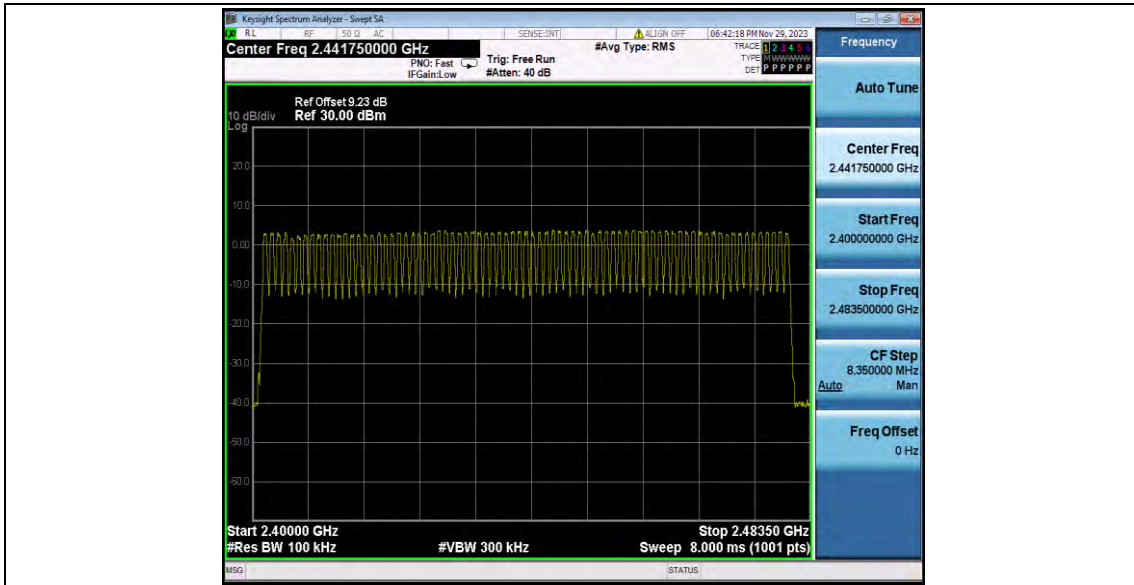


Appendix A.6: Number of hopping channels

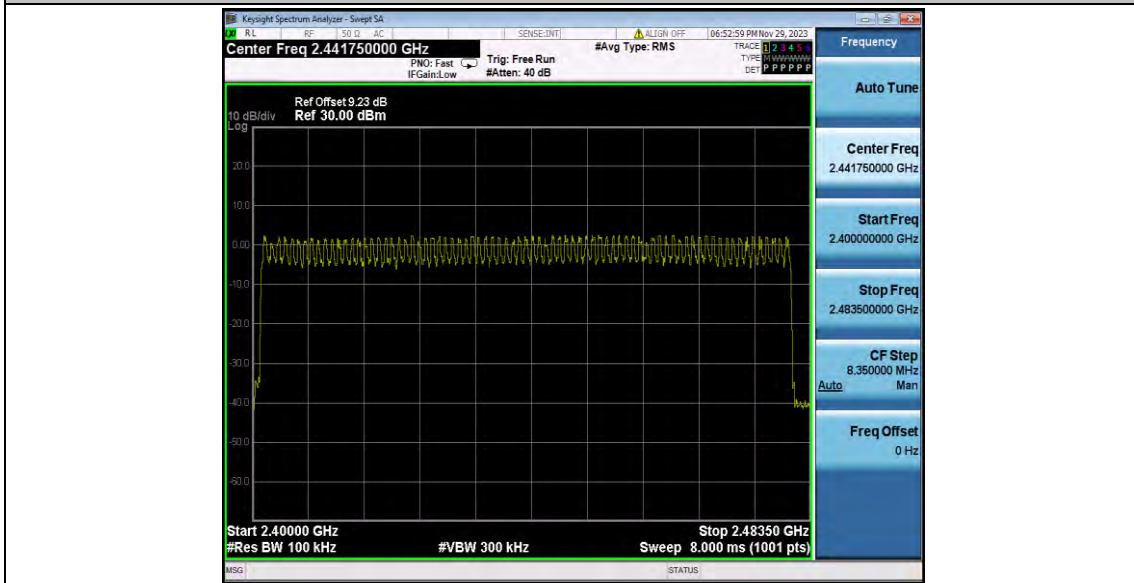
Test Result

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

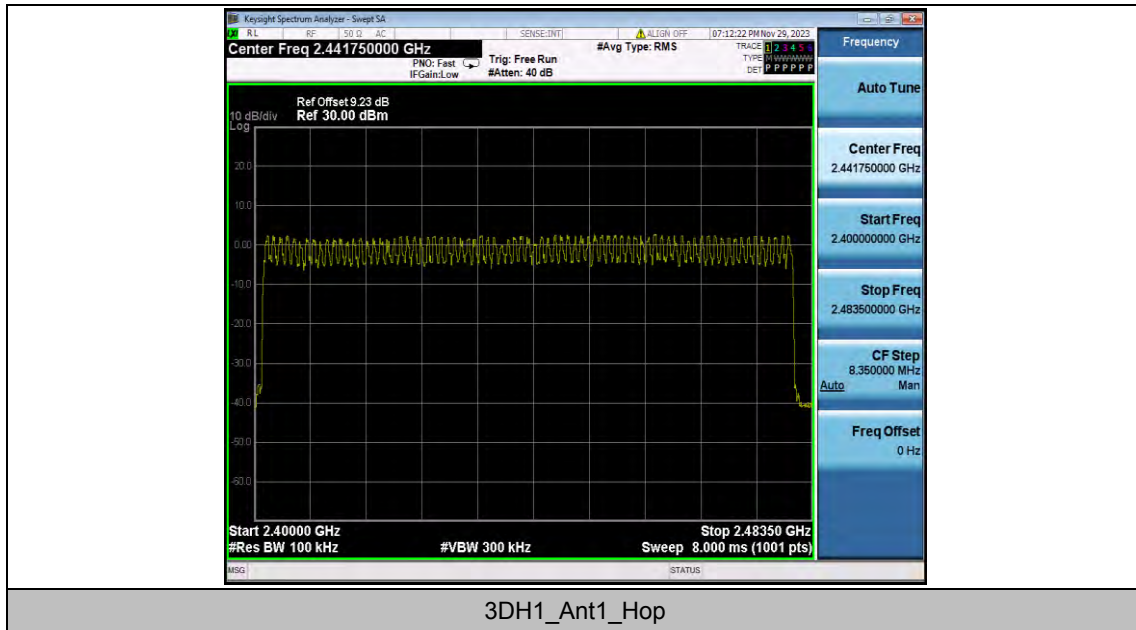
Test Graphs



DH1_Ant1_Hop



2DH1_Ant1_Hop

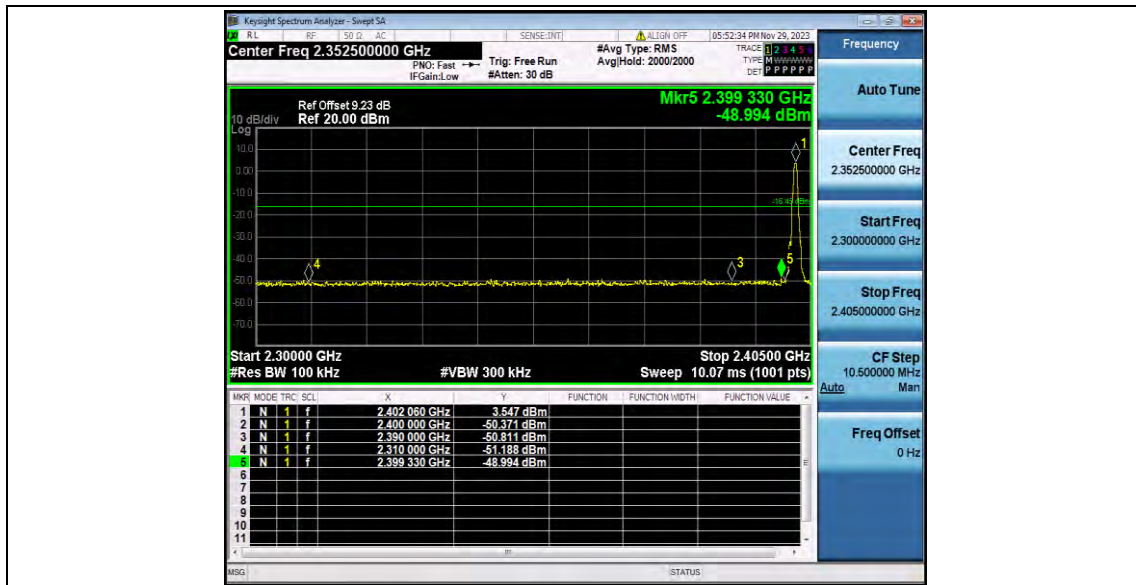


Appendix A.7: Band edge measurements

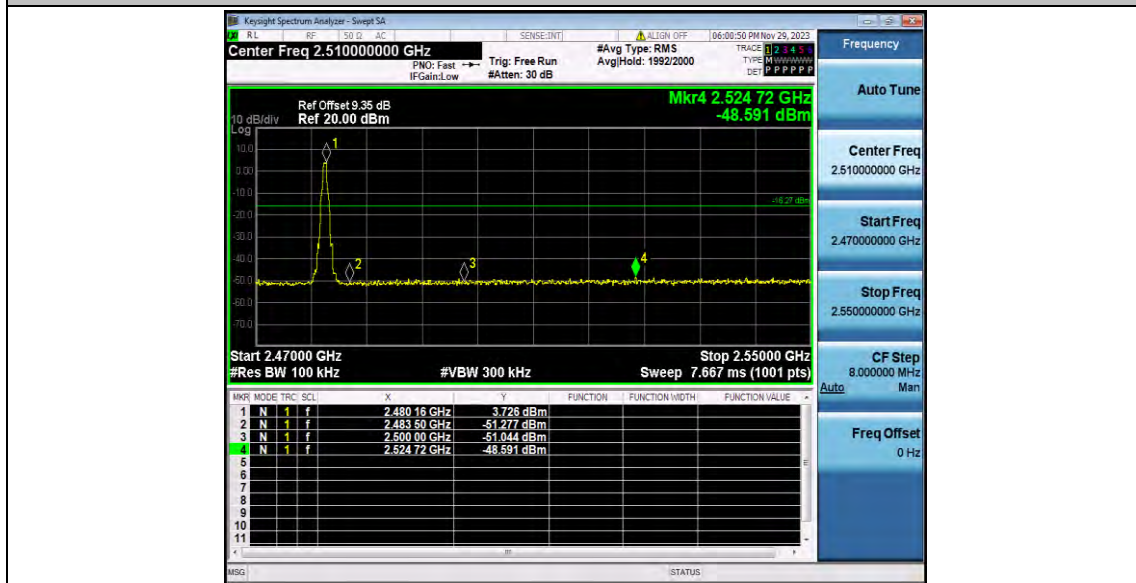
Test Result

Test Mode	Antenna	ChName	Frequency[MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	Low	2402	3.55	-48.99	≤-16.45	PASS
		High	2480	3.73	-48.59	≤-16.27	PASS
		Low	Hop_2402	3.03	-48.32	≤-16.97	PASS
		High	Hop_2480	2.99	-48.59	≤-17.01	PASS
2DH1	Ant1	Low	2402	2.66	-46.4	≤-17.34	PASS
		High	2480	2.67	-48.54	≤-17.33	PASS
		Low	Hop_2402	2.20	-48.95	≤-17.8	PASS
		High	Hop_2480	2.18	-48.33	≤-17.82	PASS
3DH1	Ant1	Low	2402	2.62	-46.87	≤-17.38	PASS
		High	2480	2.66	-48.07	≤-17.34	PASS
		Low	Hop_2402	-0.27	-49.52	≤-20.27	PASS
		High	Hop_2480	1.62	-48.61	≤-18.38	PASS

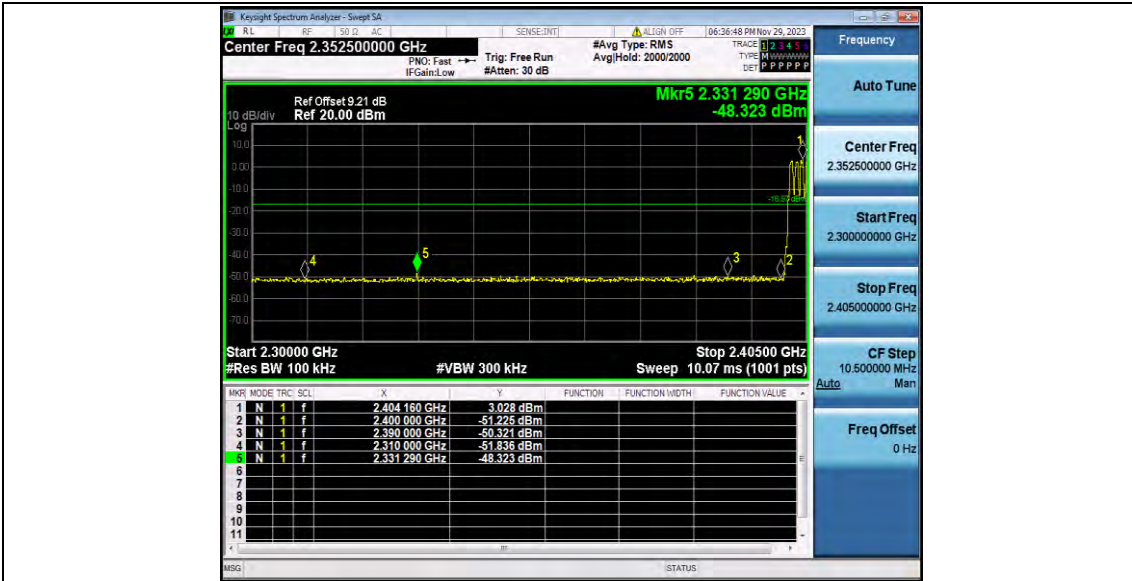
Test Graphs



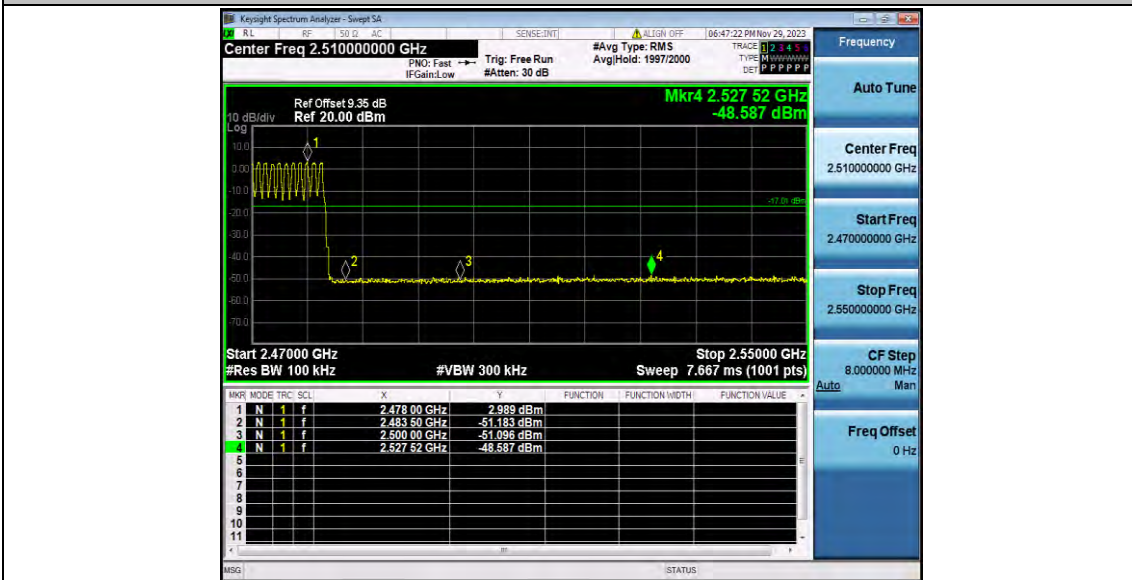
DH1_Ant1_Low_2402



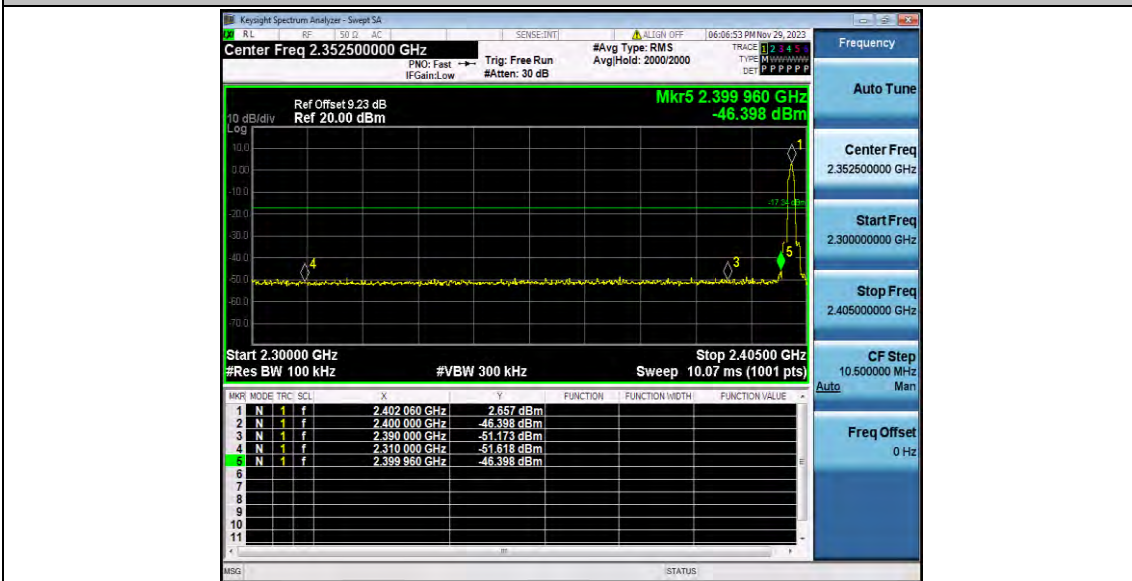
DH1_Ant1_High_2480



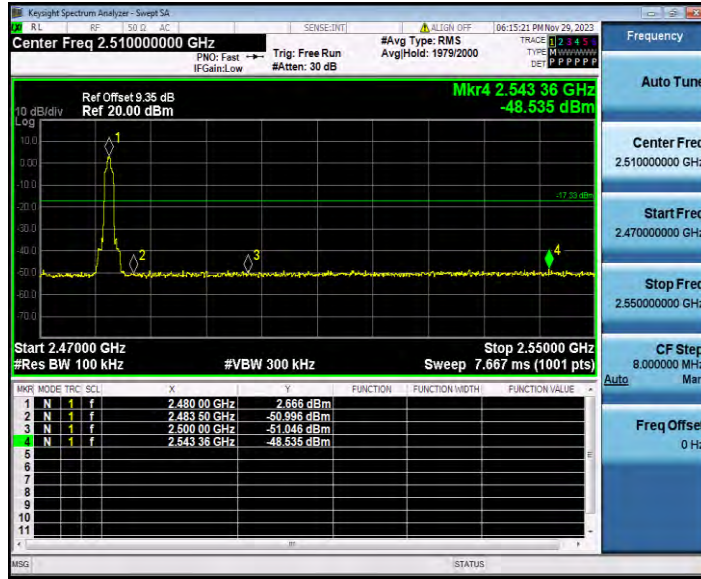
DH1_Ant1_Low_Hop_2402



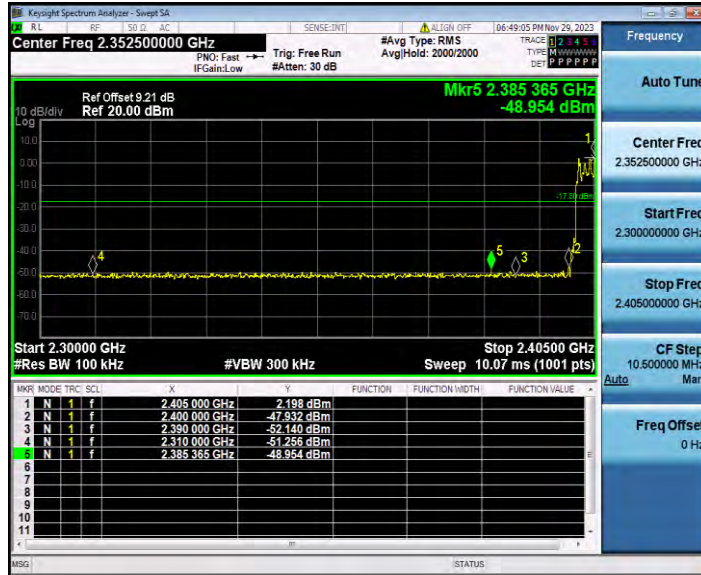
DH1_Ant1_High_Hop_2480



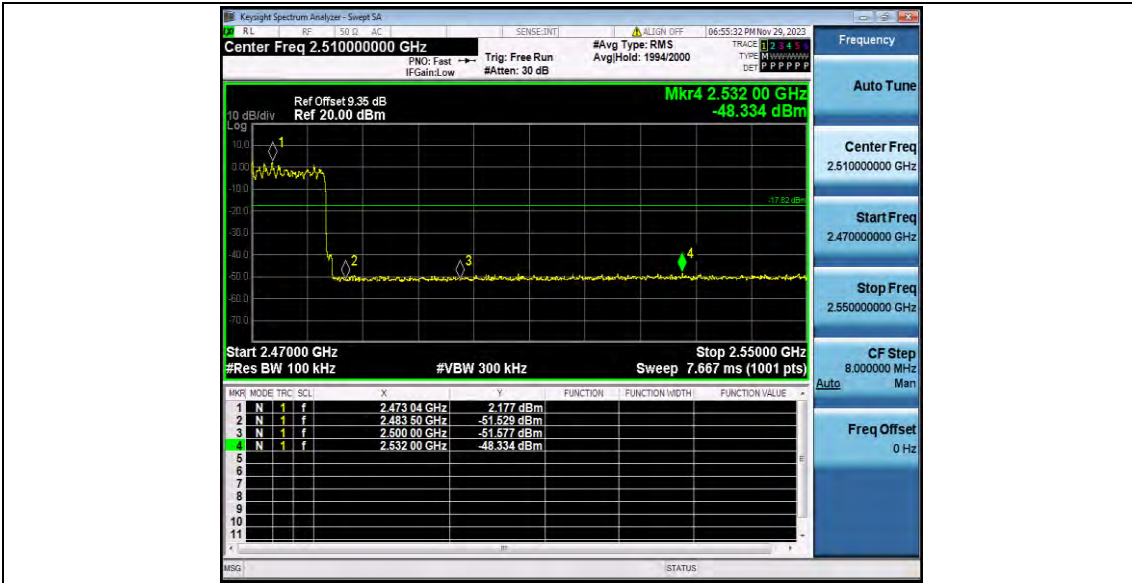
2DH1_Ant1_Low_2402



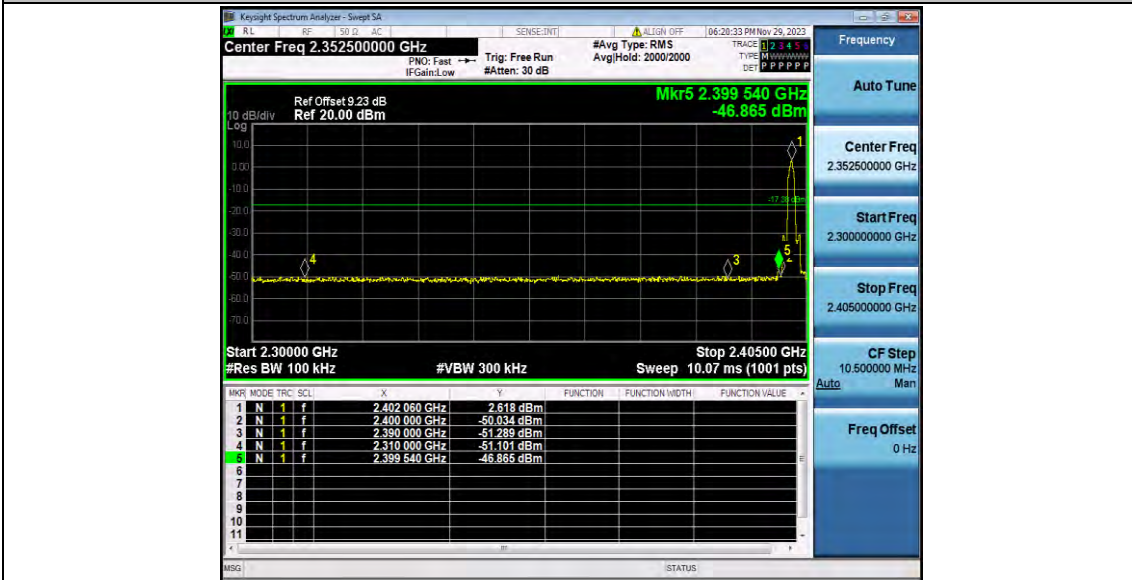
2DH1_Ant1_High_2480



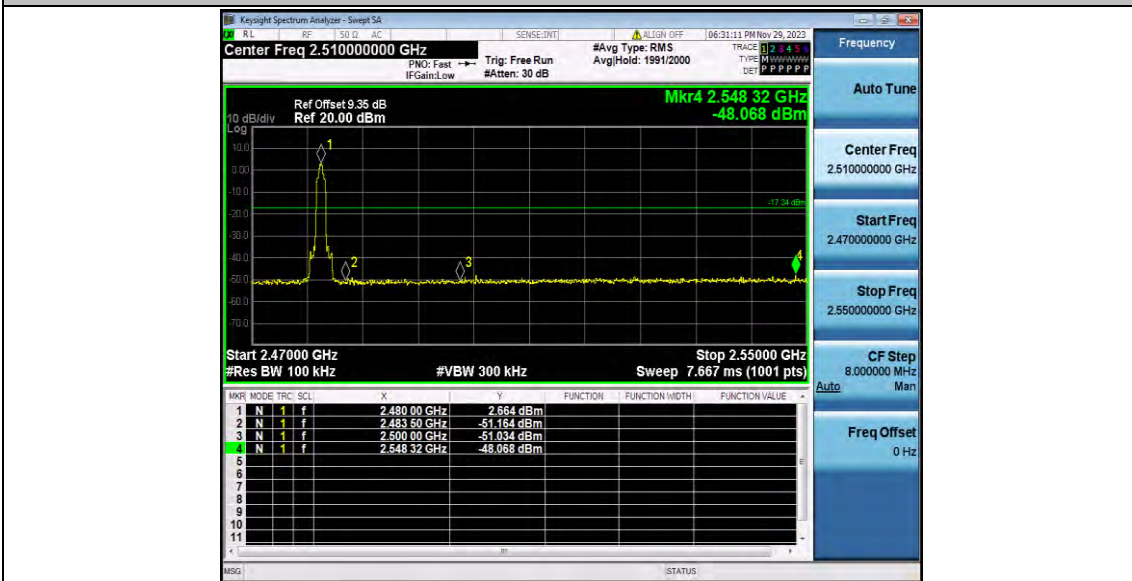
2DH1_Ant1_Low_Hop_2402



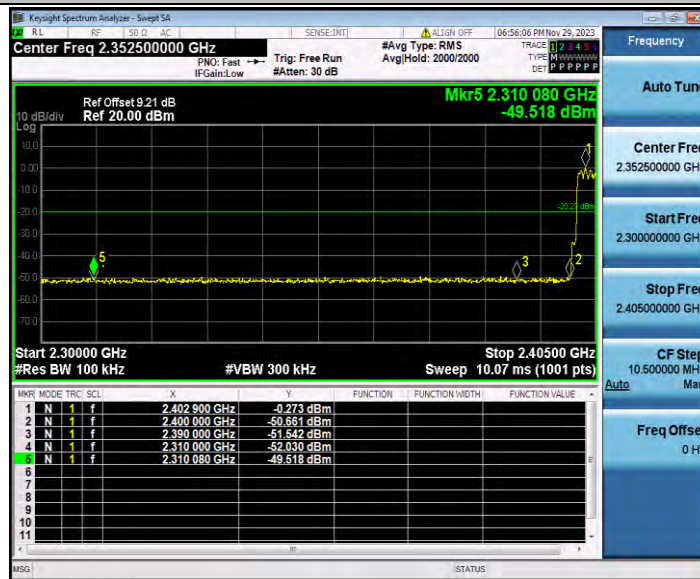
2DH1_Ant1_High_Hop_2480



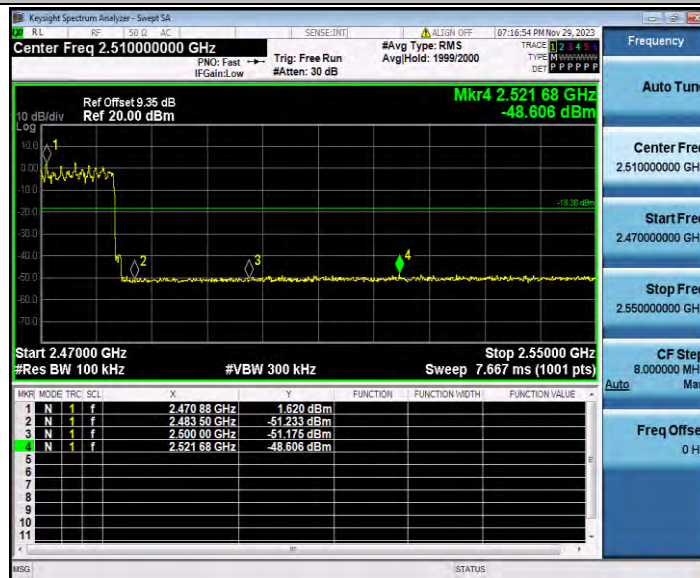
3DH1_Ant1_Low_2402



3DH1_Ant1_High_2480



3DH1_Ant1_Low_Hop_2402



3DH1_Ant1_High_Hop_2480

Appendix A.8: Conducted Spurious Emission

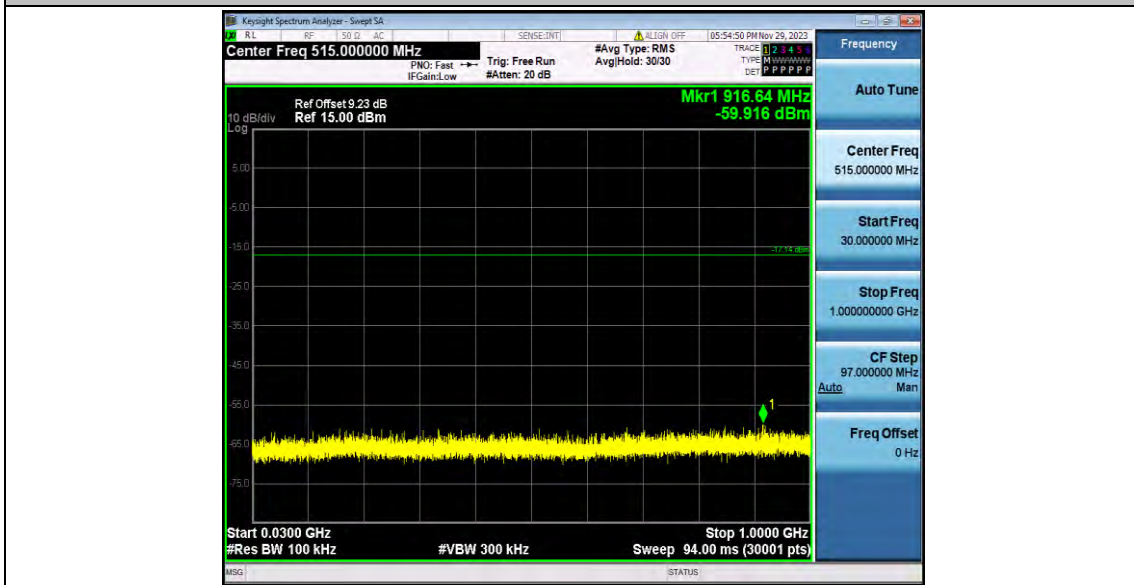
Test Result

Test Mode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	2402	Reference	2.86	2.86	---	PASS
			30~1000	2.86	-59.92	≤-17.14	PASS
			1000~26500	2.86	-46.72	≤-17.14	PASS
		2441	Reference	3.56	3.56	---	PASS
			30~1000	3.56	-60.43	≤-16.44	PASS
			1000~26500	3.56	-47.18	≤-16.44	PASS
		2480	Reference	3.63	3.63	---	PASS
			30~1000	3.63	-59.94	≤-16.37	PASS
			1000~26500	3.63	-47.09	≤-16.37	PASS
2DH1	Ant1	2402	Reference	2.12	2.12	---	PASS
			30~1000	2.12	-60.18	≤-17.88	PASS
			1000~26500	2.12	-47.43	≤-17.88	PASS
		2441	Reference	2.46	2.46	---	PASS
			30~1000	2.46	-56.79	≤-17.54	PASS
			1000~26500	2.46	-47.42	≤-17.54	PASS
		2480	Reference	2.22	2.22	---	PASS
			30~1000	2.22	-60.54	≤-17.78	PASS
			1000~26500	2.22	-47.52	≤-17.78	PASS
3DH1	Ant1	2402	Reference	2.12	2.12	---	PASS
			30~1000	2.12	-43.85	≤-17.88	PASS
			1000~26500	2.12	-47.11	≤-17.88	PASS
		2441	Reference	2.48	2.48	---	PASS
			30~1000	2.48	-60.22	≤-17.52	PASS
			1000~26500	2.48	-47.75	≤-17.52	PASS
		2480	Reference	2.37	2.37	---	PASS
			30~1000	2.37	-60.27	≤-17.63	PASS
			1000~26500	2.37	-47.59	≤-17.63	PASS

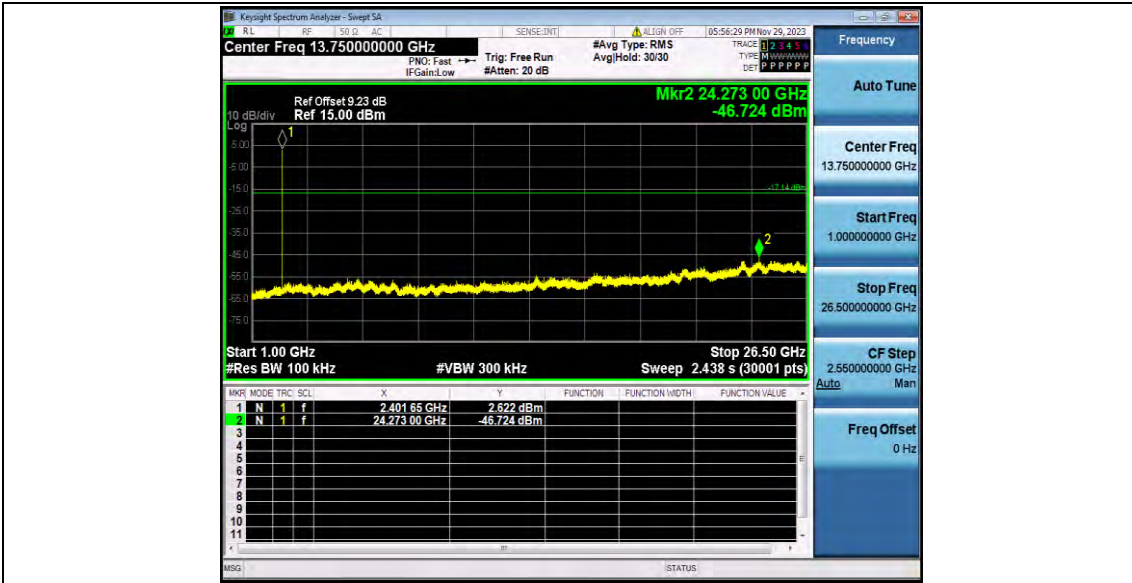
Test Graphs



DH1_Ant1_2402_0~Reference



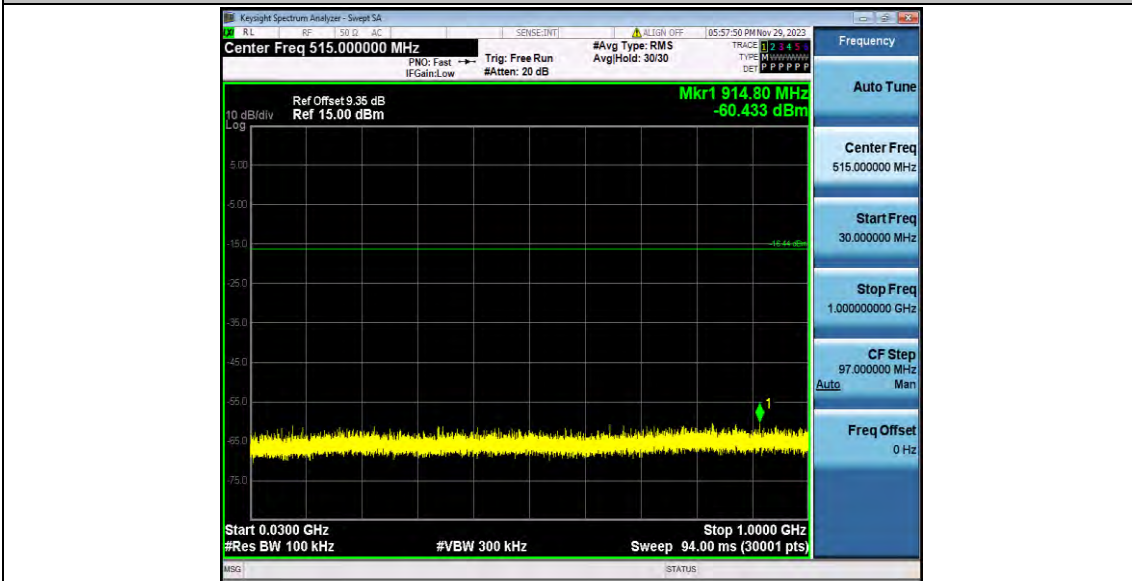
DH1_Ant1_2402_30~1000



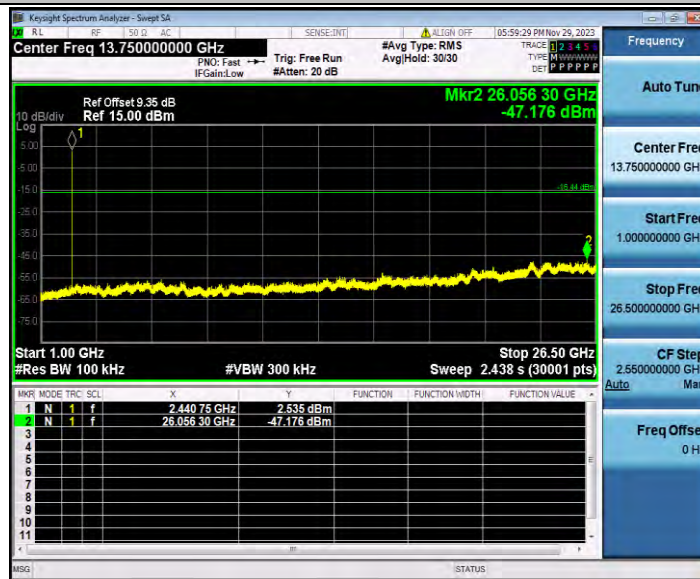
DH1_Ant1_2402_1000~26500



DH1_Ant1_2441_0~Reference



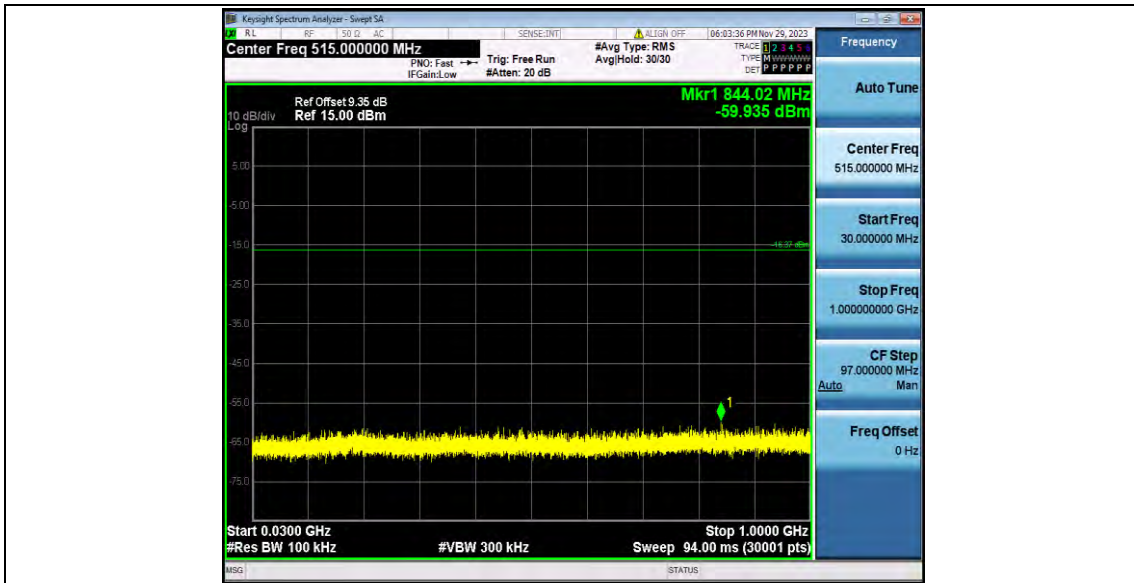
DH1_Ant1_2441_30~1000



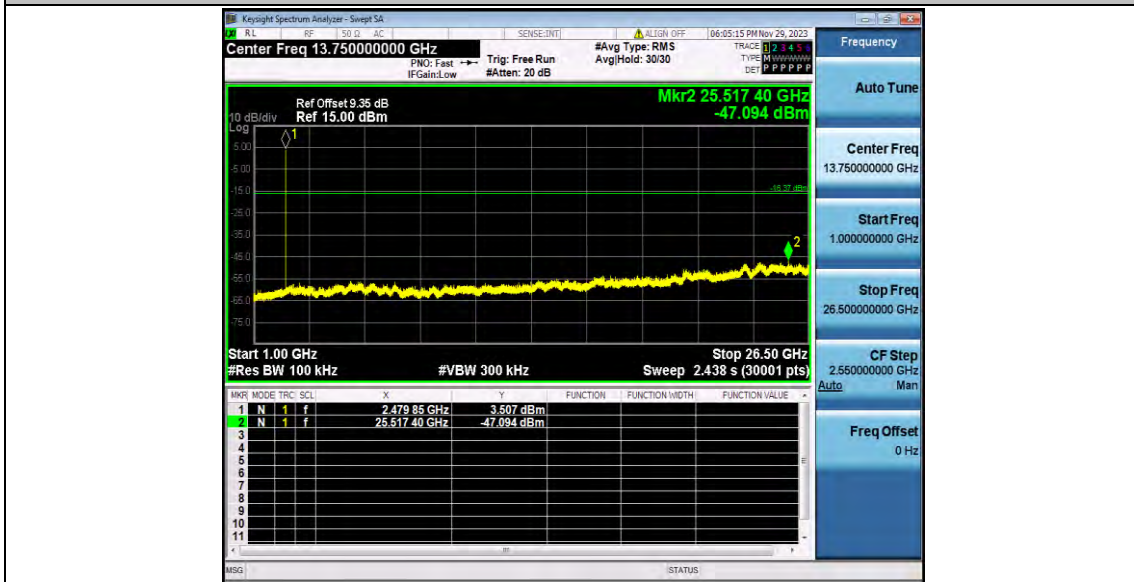
DH1_Ant1_2441_1000~26500



DH1_Ant1_2480_0~Reference



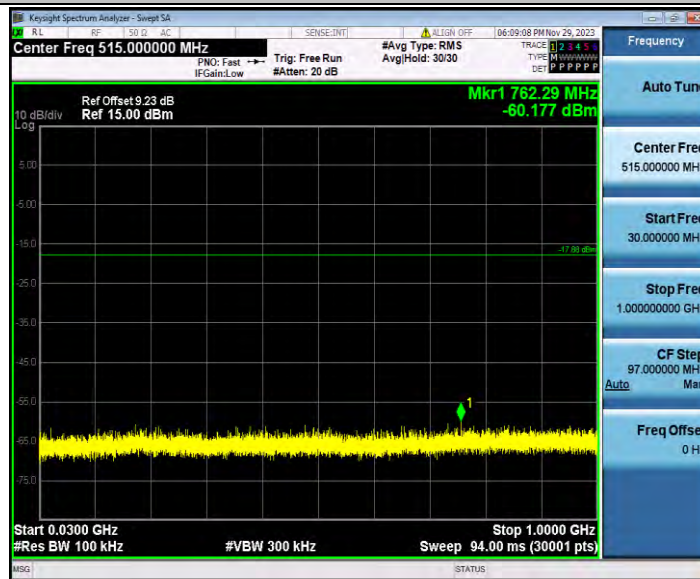
DH1_Ant1_2480_30~1000



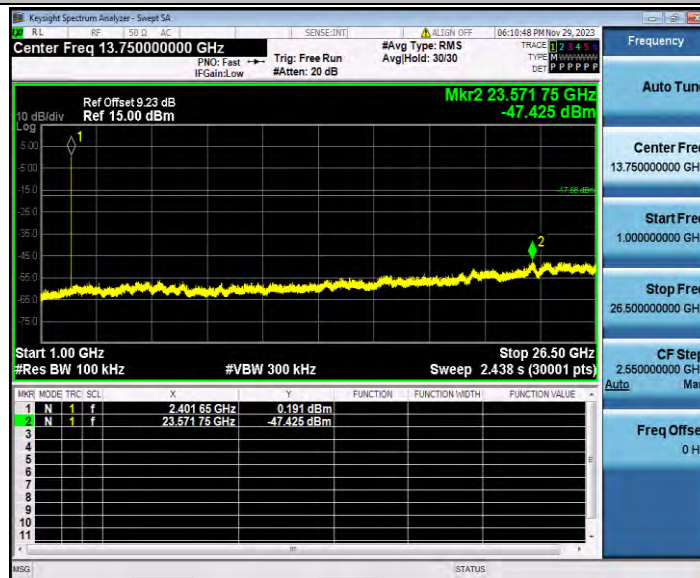
DH1_Ant1_2480_1000~26500



2DH1_Ant1_2402_0~Reference



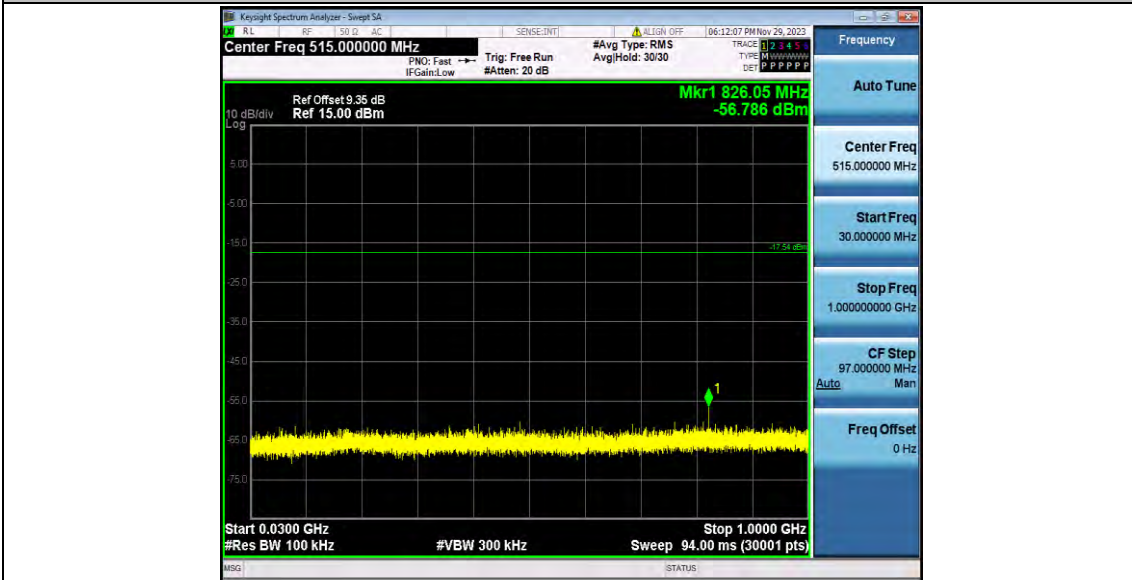
2DH1_Ant1_2402_30~1000



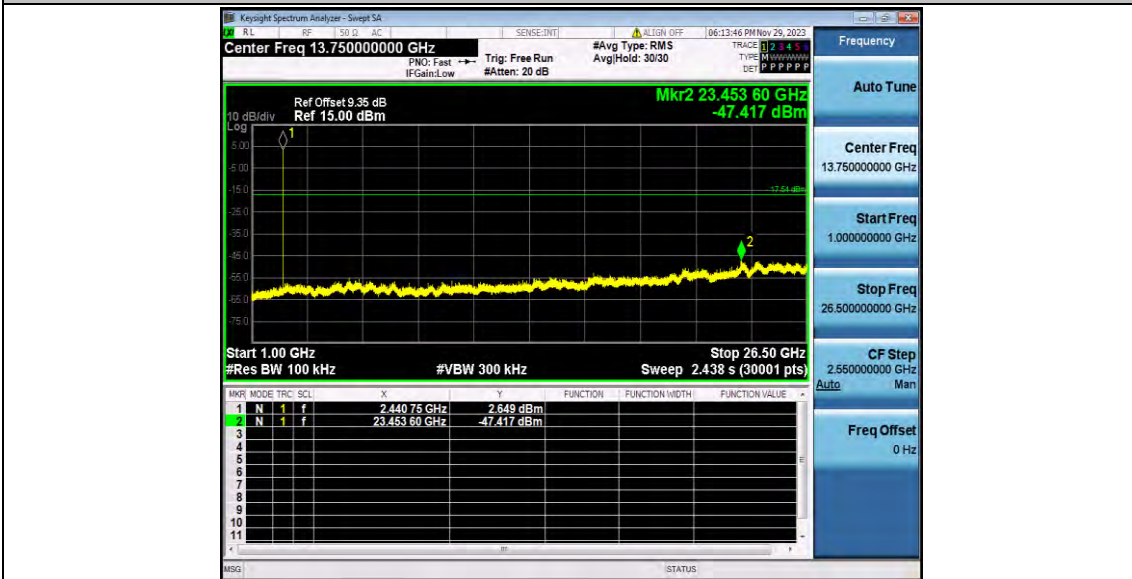
2DH1_Ant1_2402_1000~26500



2DH1_Ant1_2441_0~Reference



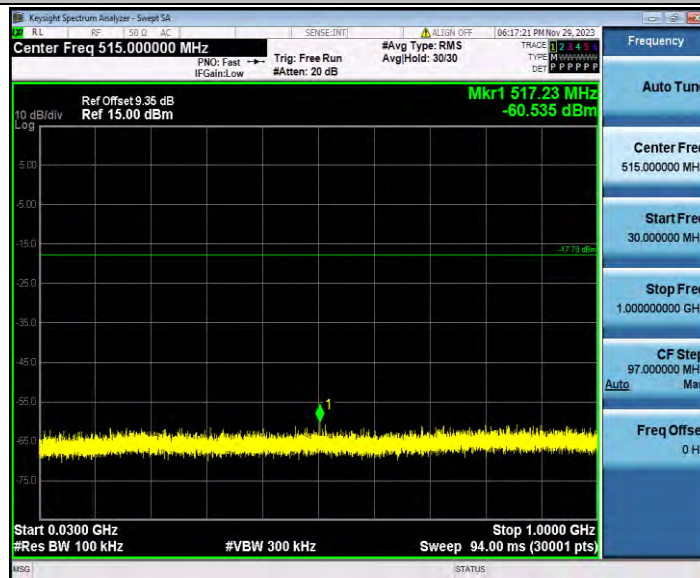
2DH1_Ant1_2441_30~1000



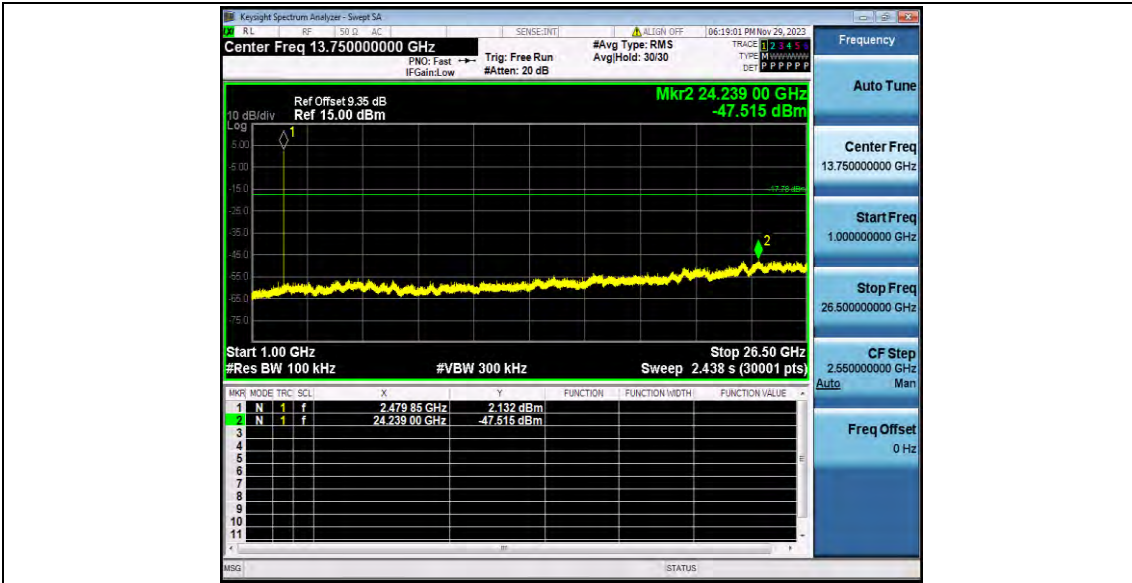
2DH1_Ant1_2441_1000~26500



2DH1_Ant1_2480_0~Reference



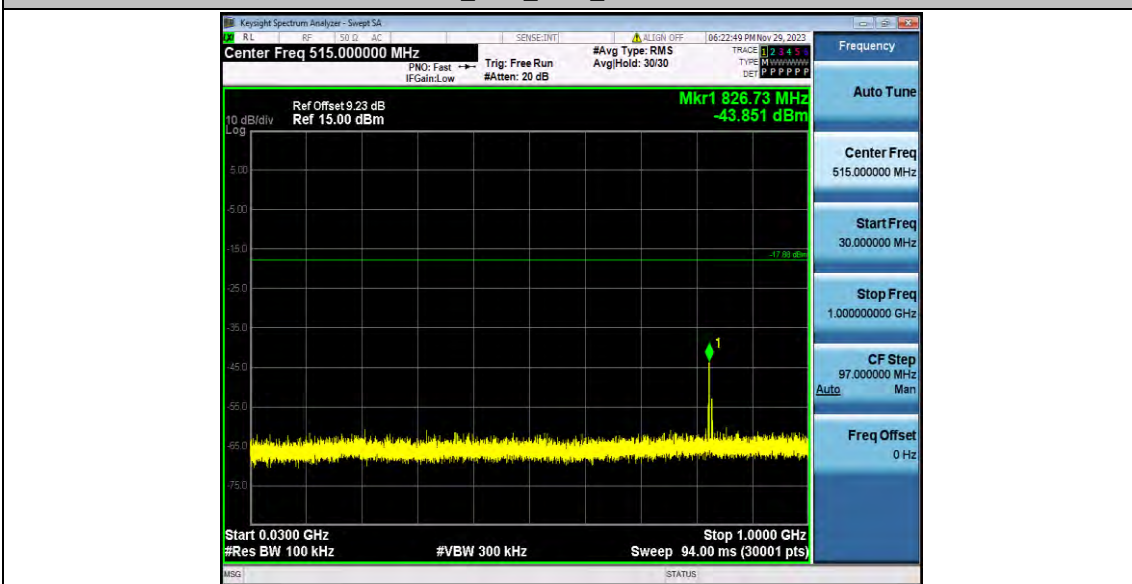
2DH1_Ant1_2480_30~1000



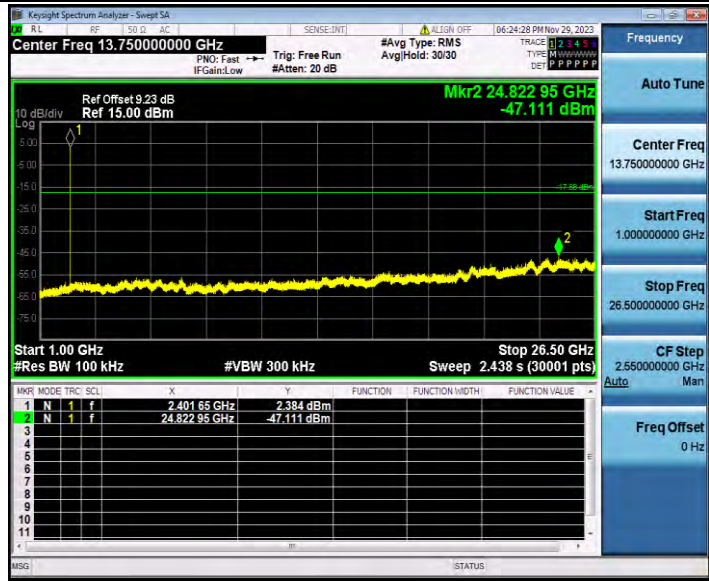
2DH1_Ant1_2480_1000~26500



3DH1_Ant1_2402_0~Reference



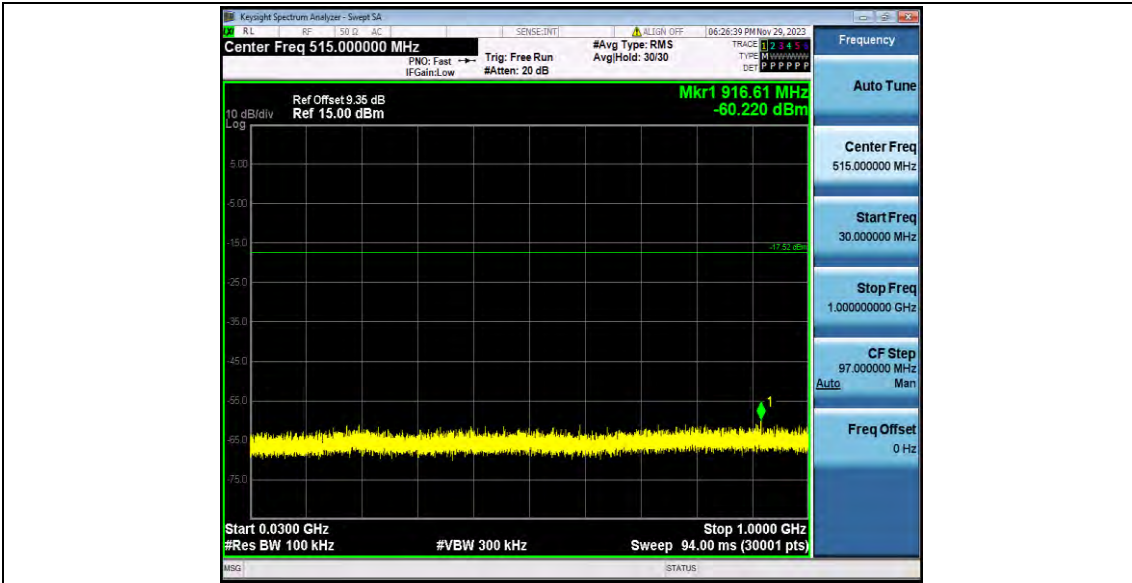
3DH1_Ant1_2402_30~1000



3DH1_Ant1_2402_1000~26500



3DH1_Ant1_2441_0~Reference



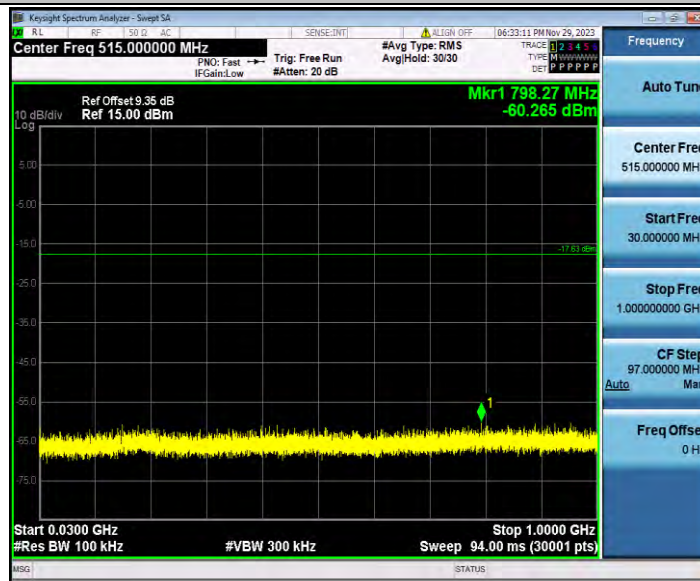
3DH1_Ant1_2441_30~100



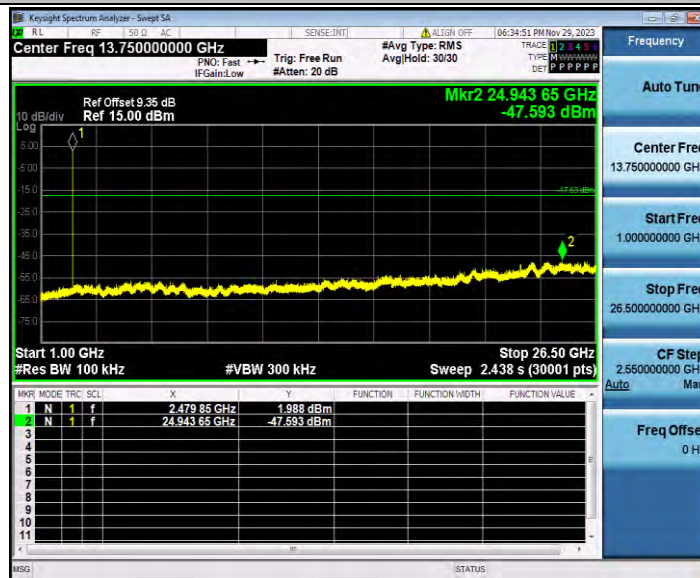
3DH1_Ant1_2441_1000~26500



3DH1_Ant1_2480_0~Reference



3DH1_Ant1_2480_30~1000



3DH1_Ant1_2480_1000~26500

Appendix A.9: Emissions in Restricted Bands

Test Result

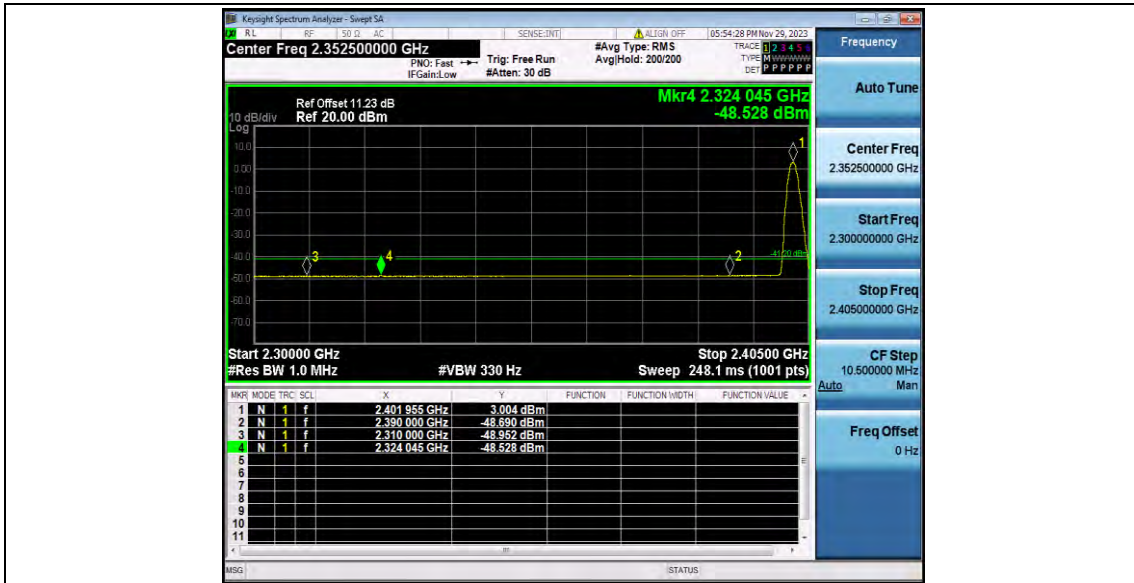
TestMode	Antenna	ChName	Frequency [MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH1	Ant1	Low	2402	AV	2310.000	-48.95	≤-41.20	46.25	≤54	PASS
				AV	2324.045	-48.53	≤-41.20	46.67	≤54	PASS
				AV	2390.000	-48.69	≤-41.20	46.51	≤54	PASS
				Peak	2310.000	-41.38	≤-21.20	53.82	≤74	PASS
				Peak	2366.885	-38.37	≤-21.20	56.83	≤74	PASS
				Peak	2390.000	-41.49	≤-21.20	53.71	≤74	PASS
		High	2480	AV	2483.500	-48.26	≤-41.20	46.94	≤54	PASS
				AV	2497.600	-48.24	≤-41.20	46.96	≤54	PASS
				AV	2500.000	-48.34	≤-41.20	46.86	≤54	PASS
				Peak	2483.500	-40.51	≤-21.20	54.69	≤74	PASS
				Peak	2491.440	-38.34	≤-21.20	56.86	≤74	PASS
				Peak	2500.000	-39.51	≤-21.20	55.69	≤74	PASS
2DH1	Ant1	Low	2402	AV	2310.000	-48.97	≤-41.20	46.23	≤54	PASS
				AV	2380.535	-48.54	≤-41.20	46.66	≤54	PASS
				AV	2390.000	-48.59	≤-41.20	46.61	≤54	PASS
				Peak	2310.000	-41.36	≤-21.20	53.84	≤74	PASS
				Peak	2367.200	-38.5	≤-21.20	56.70	≤74	PASS
				Peak	2390.000	-40.61	≤-21.20	54.59	≤74	PASS
		High	2480	AV	2483.500	-48.15	≤-41.20	47.05	≤54	PASS
				AV	2483.520	-48.15	≤-41.20	47.05	≤54	PASS
				AV	2500.000	-48.34	≤-41.20	46.86	≤54	PASS
				Peak	2483.500	-40.55	≤-21.20	54.65	≤74	PASS
				Peak	2488.080	-37.26	≤-21.20	57.94	≤74	PASS
				Peak	2500.000	-40.26	≤-21.20	54.94	≤74	PASS
3DH1	Ant1	Low	2402	AV	2310.000	-49	≤-41.20	46.20	≤54	PASS
				AV	2386.415	-48.62	≤-41.20	46.58	≤54	PASS
				AV	2390.000	-48.66	≤-41.20	46.54	≤54	PASS
				Peak	2310.000	-41.51	≤-21.20	53.69	≤74	PASS
				Peak	2381.375	-38.82	≤-21.20	56.38	≤74	PASS
				Peak	2390.000	-40.51	≤-21.20	54.69	≤74	PASS
		High	2480	AV	2483.500	-48.25	≤-41.20	46.95	≤54	PASS
				AV	2499.360	-48.22	≤-41.20	46.98	≤54	PASS
				AV	2500.000	-48.34	≤-41.20	46.86	≤54	PASS
				Peak	2483.500	-41.27	≤-21.20	53.93	≤74	PASS

				Peak	2492.240	-37.36	≤-21.20	57.84	≤74	PASS
				Peak	2500.000	-39.29	≤-21.20	55.91	≤74	PASS

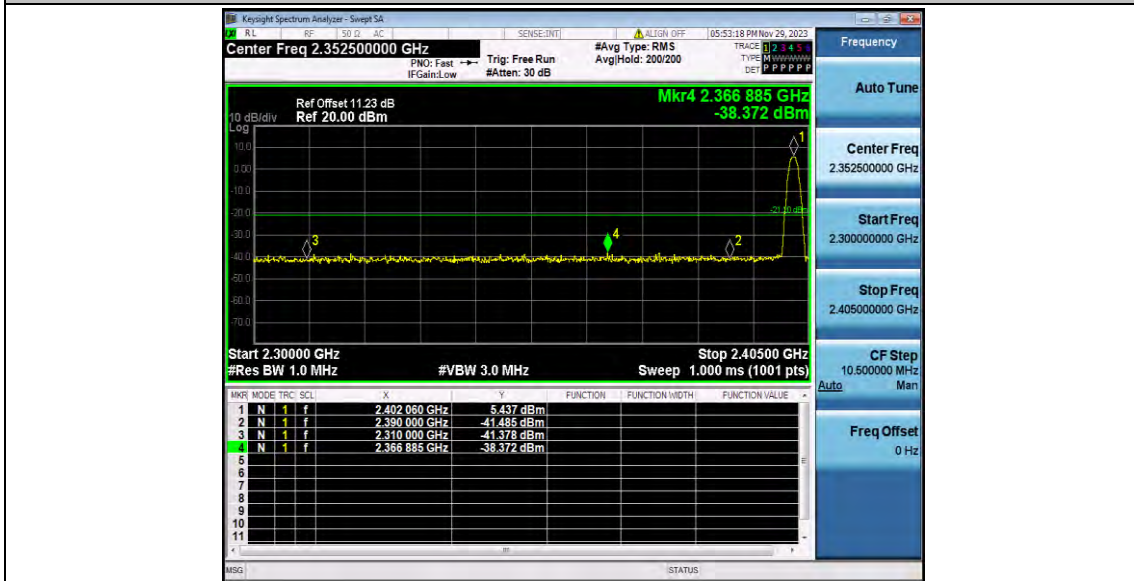
Note:

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.

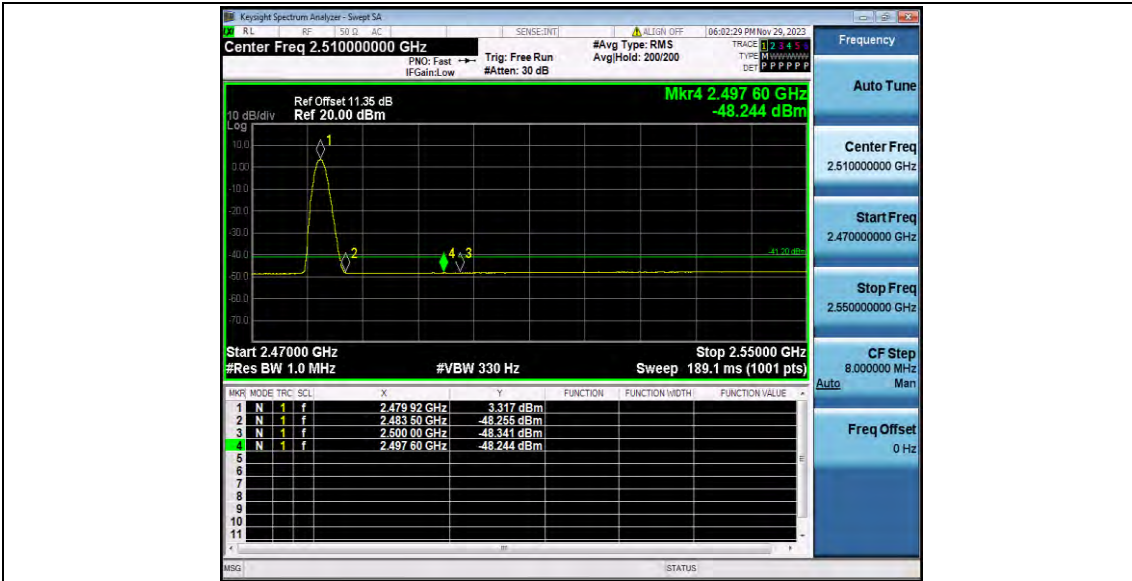
Test Graphs



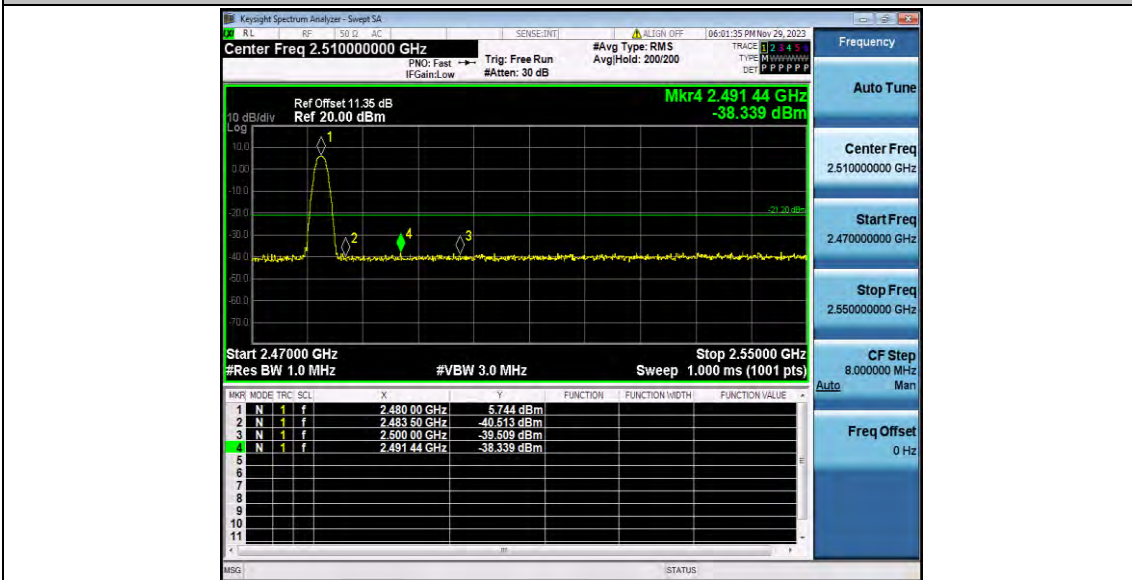
DH1_Ant1_Low_2402_AV



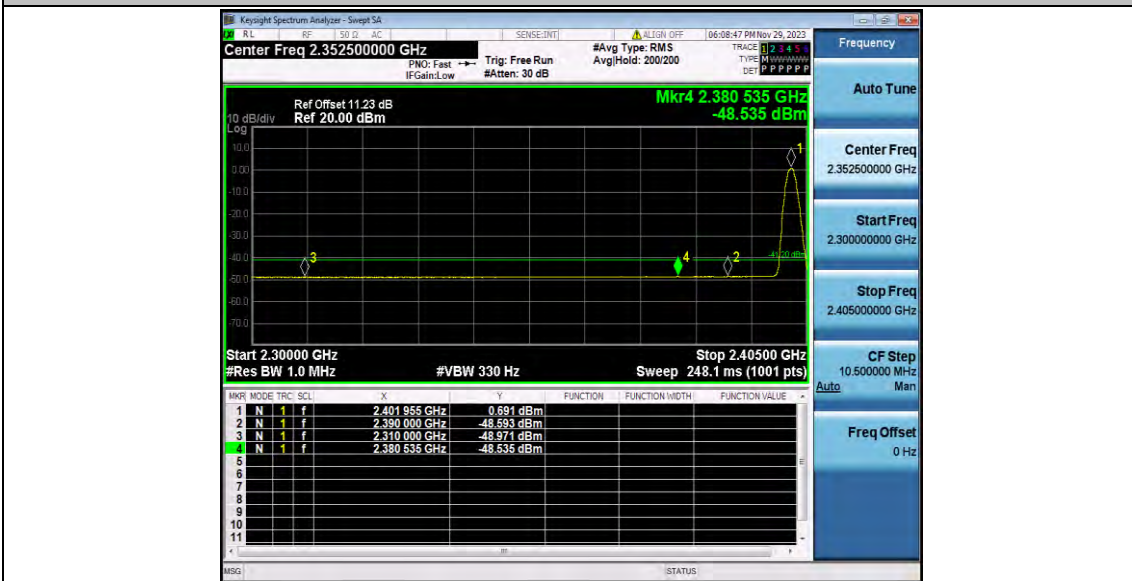
DH1_Ant1_Low_2402_Peak



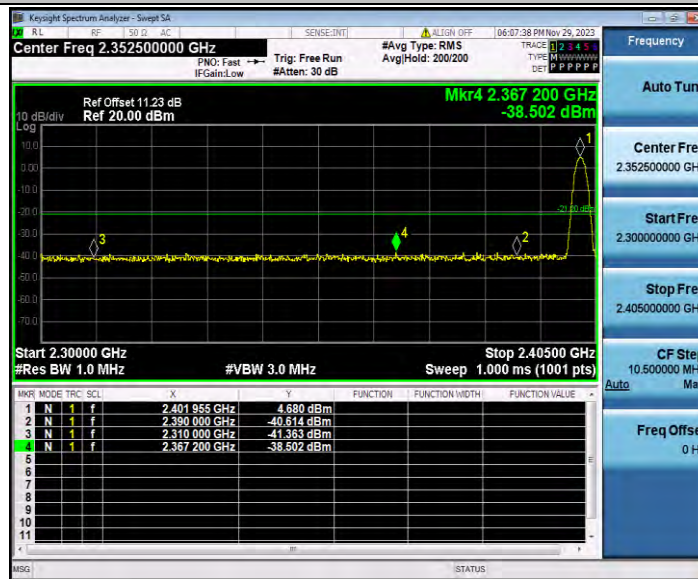
DH1_Ant1_High_2480_AV



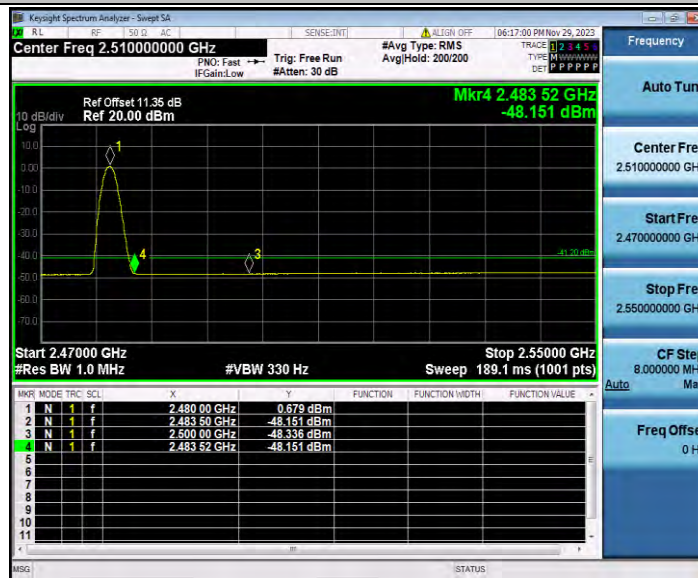
DH1_Ant1_High_2480_Peak



2DH1_Ant1_Low_2402_AV



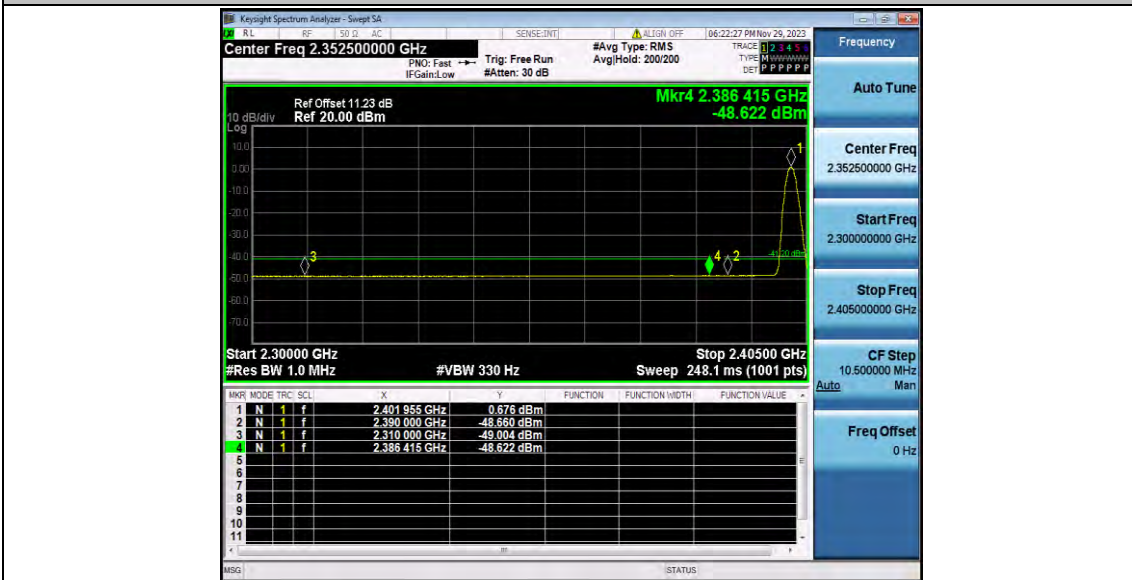
2DH1_Ant1_Low_2402_Peak



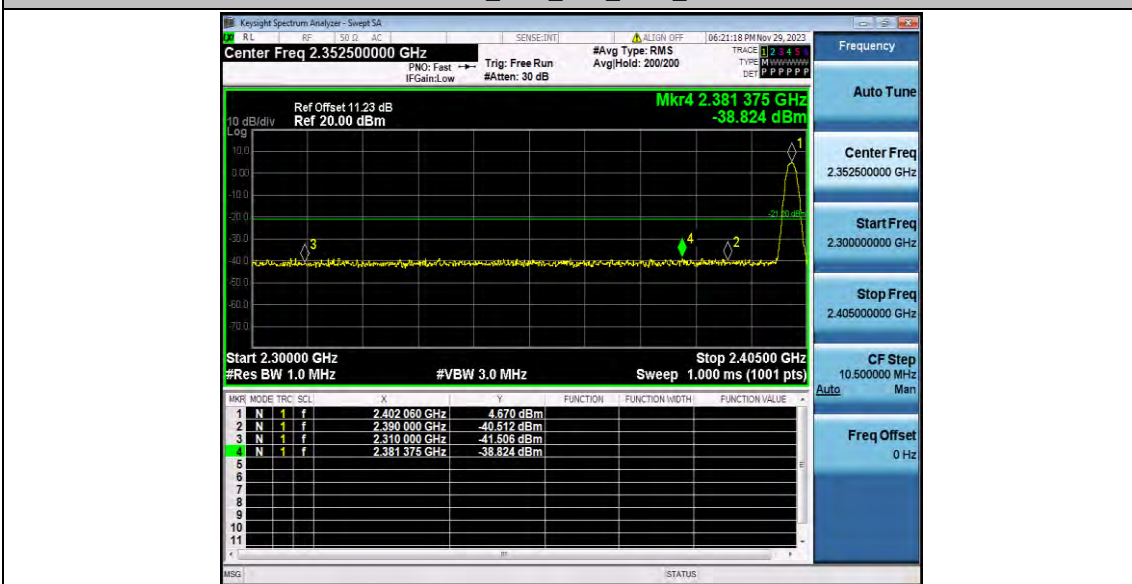
2DH1_Ant1_High_2480_AV



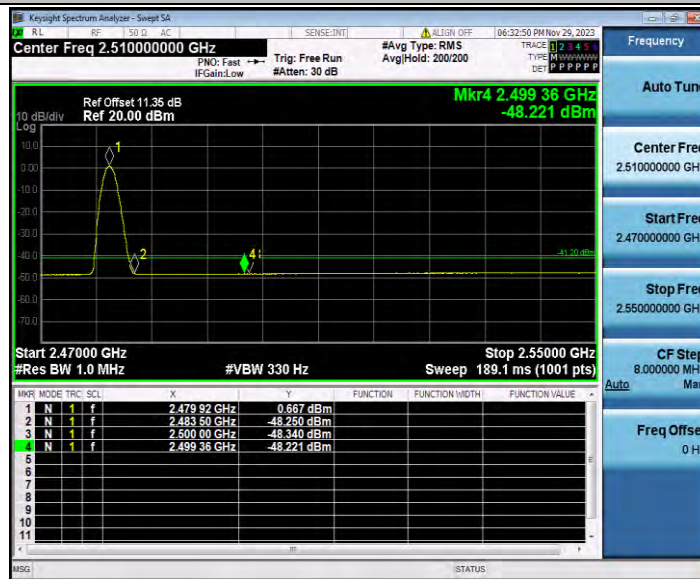
2DH1_Ant1_High_2480_Peak



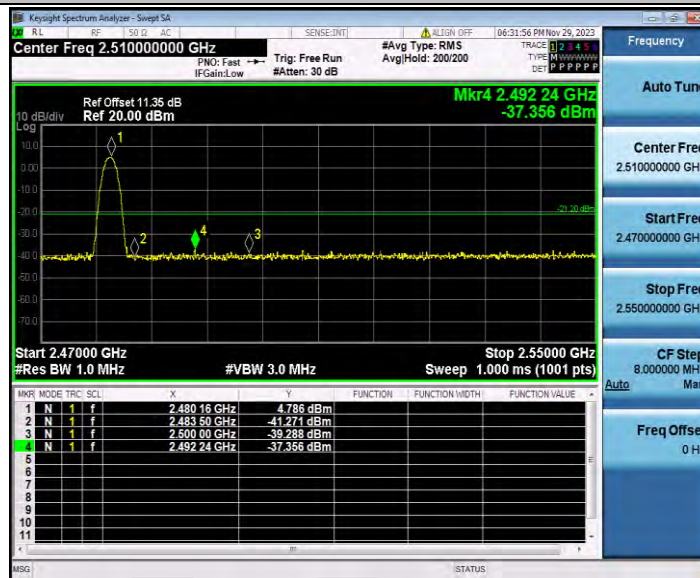
3DH1_Ant1_Low_2402_AV



3DH1_Ant1_Low_2402_Peak



3DH1_Ant1_High_2480_AV



3DH1_Ant1_High_2480_Peak