

Case No. : <u>CTA24071502101</u>	
Ambient Condition: <u>24</u> °C, <u>51</u> %RH	
According Standard: <u>■Part15C</u>	
Test Date: <u>2024.7.25</u>	Test Engineer: <u>Lushan Kong</u>

Appendix A.1: 20dB Emission Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	20dB EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	0.858	2401.541	2402.399	---	---
		2441	0.942	2440.541	2441.483	---	---
		2480	0.873	2479.538	2480.411	---	---
2DH1	Ant1	2402	1.392	2401.295	2402.687	---	---
		2441	1.428	2440.262	2441.690	---	---
		2480	1.407	2479.280	2480.687	---	---
3DH1	Ant1	2402	1.449	2401.265	2402.714	---	---
		2441	1.422	2440.289	2441.711	---	---
		2480	1.410	2479.274	2480.684	---	---

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

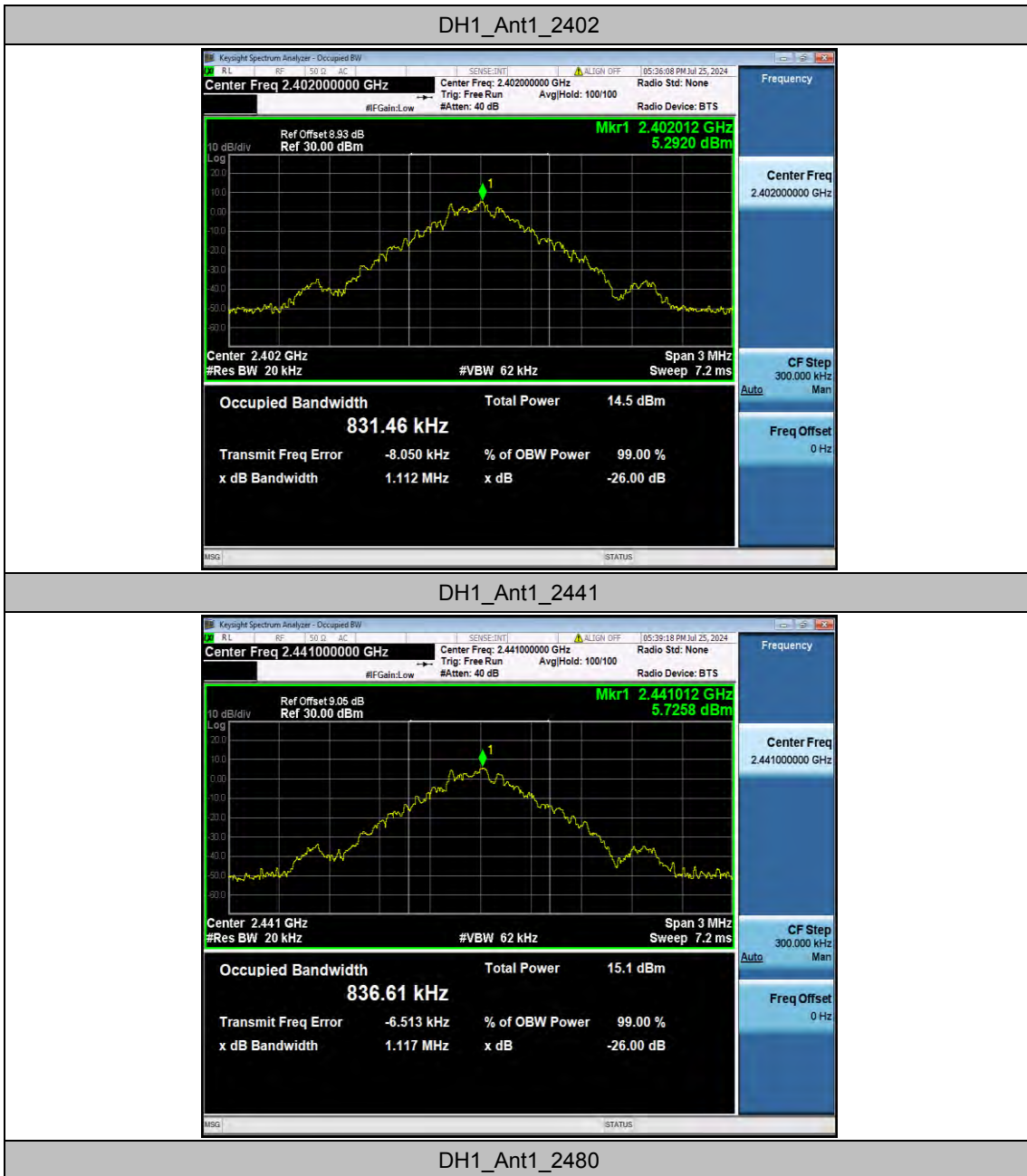


Appendix A.2: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	0.83146	2401.5762	2402.4077	---	---
		2441	0.83661	2440.5752	2441.4118	---	---
		2480	0.81314	2479.5853	2480.3985	---	---
2DH1	Ant1	2402	1.3372	2401.3214	2402.6586	---	---
		2441	1.3356	2440.3223	2441.6579	---	---
		2480	1.3409	2479.3159	2480.6568	---	---
3DH1	Ant1	2402	1.3312	2401.3242	2402.6554	---	---
		2441	1.3411	2440.3211	2441.6622	---	---
		2480	1.3370	2479.3224	2480.6594	---	---

Test Graphs





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

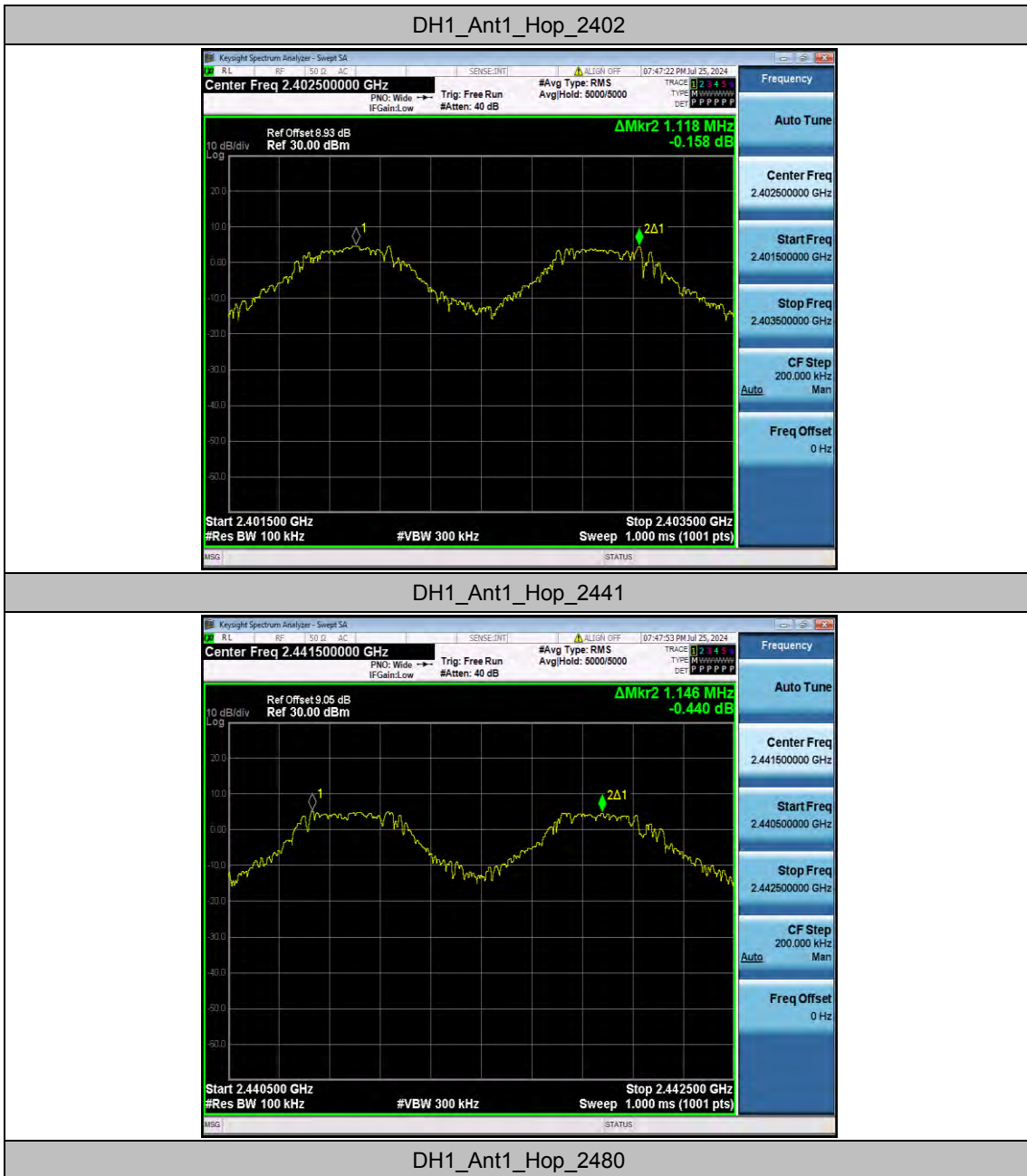
Test Mode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH1	Ant1	2402	8.40	≤30.00	PASS
		2441	8.84	≤30.00	PASS
		2480	9.30	≤30.00	PASS
2DH1	Ant1	2402	6.64	≤20.97	PASS
		2441	6.41	≤20.97	PASS
		2480	6.66	≤20.97	PASS
3DH1	Ant1	2402	6.76	≤20.97	PASS
		2441	6.58	≤20.97	PASS
		2480	6.89	≤20.97	PASS

Appendix A.4: Carrier frequency separation

Test Result

TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Hop_2402	1.118	≥ 0.942	PASS
		Hop_2441	1.146	≥ 0.942	PASS
		Hop_2480	1.306	≥ 0.942	PASS
2DH1	Ant1	Hop_2402	1.164	≥ 0.952	PASS
		Hop_2441	1.014	≥ 0.952	PASS
		Hop_2480	1.004	≥ 0.952	PASS
3DH1	Ant1	Hop_2402	1.15	≥ 0.966	PASS
		Hop_2441	1.192	≥ 0.966	PASS
		Hop_2480	1.164	≥ 0.966	PASS

Test Graphs





2DH1_Ant1_Hop_2402



2DH1_Ant1_Hop_2441



2DH1_Ant1_Hop_2480



3DH1_Ant1_Hop_2402



3DH1_Ant1_Hop_2441



3DH1_Ant1_Hop_2480

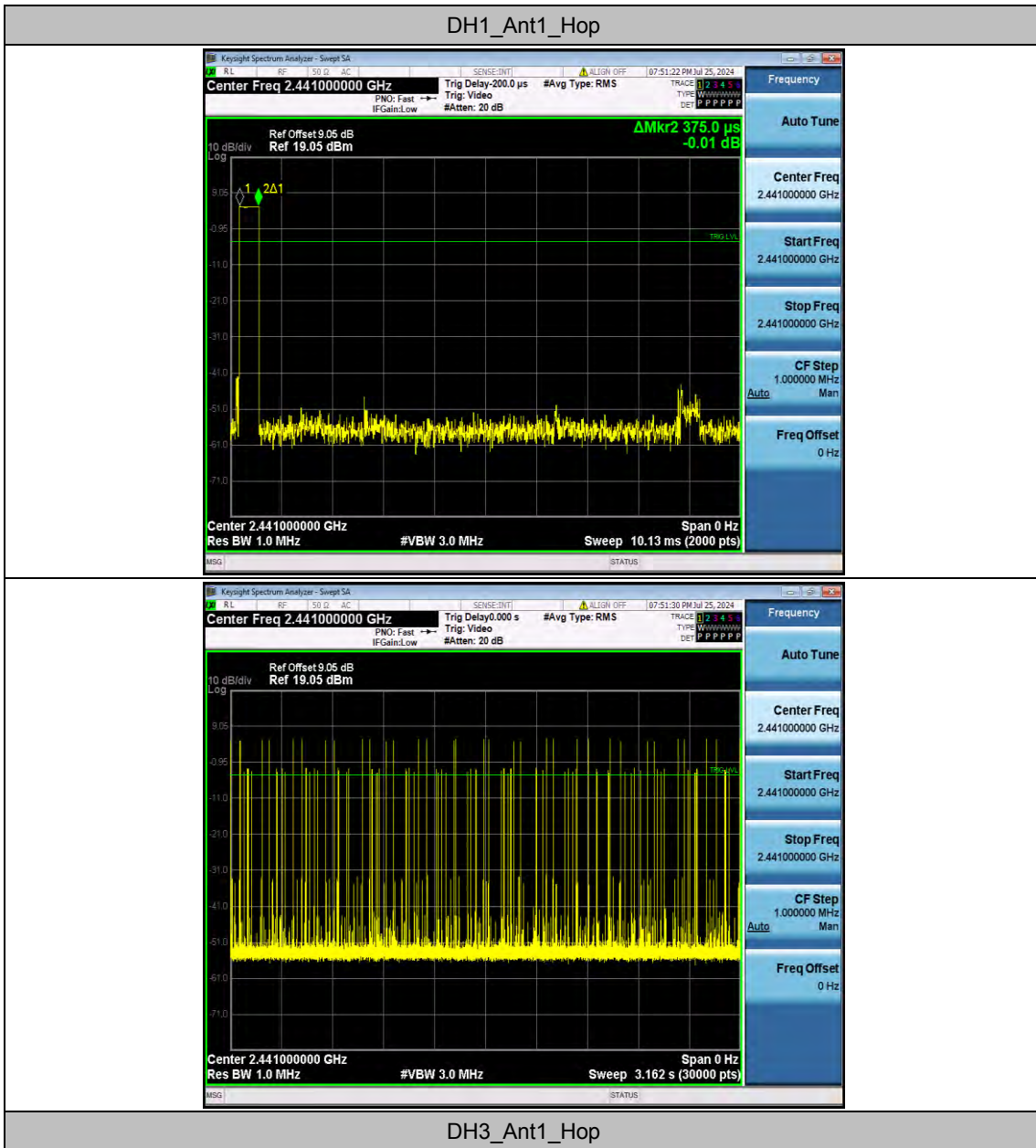


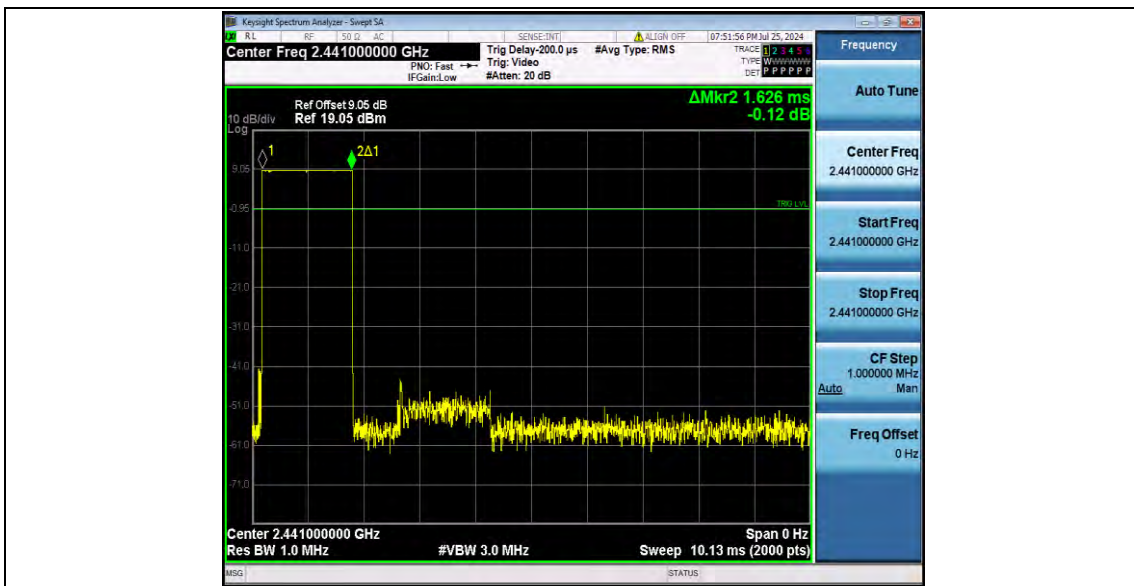
Appendix A.5: Time of occupancy

Test Result

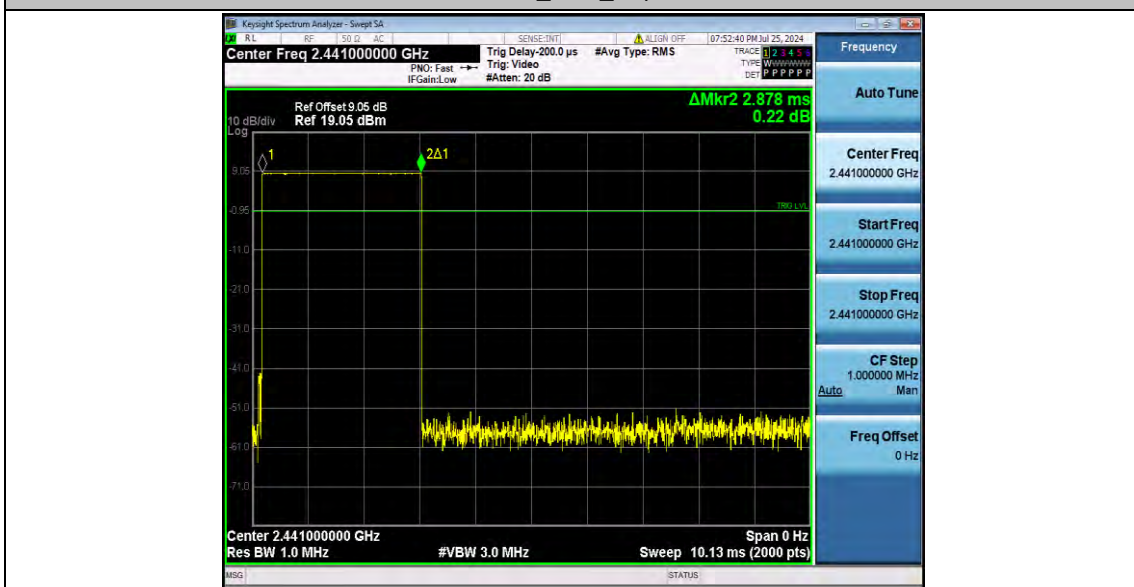
TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.375	330	0.124	≤0.4	PASS
DH3	Ant1	Hop	1.626	190	0.309	≤0.4	PASS
DH5	Ant1	Hop	2.878	100	0.288	≤0.4	PASS
2DH1	Ant1	Hop	0.380	390	0.148	≤0.4	PASS
2DH3	Ant1	Hop	1.631	160	0.261	≤0.4	PASS
2DH5	Ant1	Hop	2.873	100	0.287	≤0.4	PASS
3DH1	Ant1	Hop	0.370	330	0.122	≤0.4	PASS
3DH3	Ant1	Hop	1.626	170	0.276	≤0.4	PASS
3DH5	Ant1	Hop	2.878	100	0.288	≤0.4	PASS

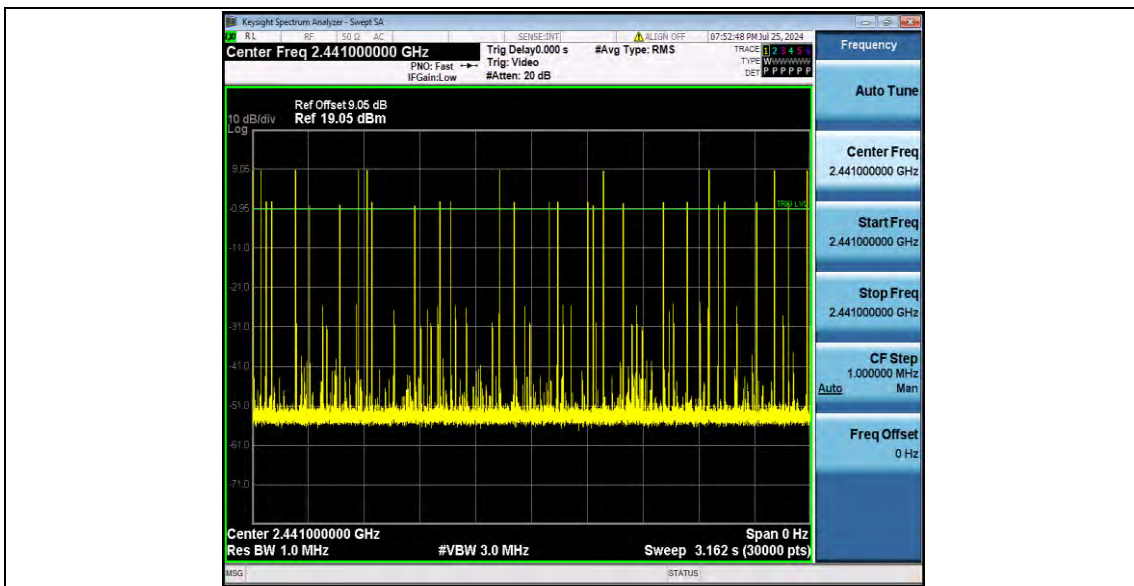
Test Graphs



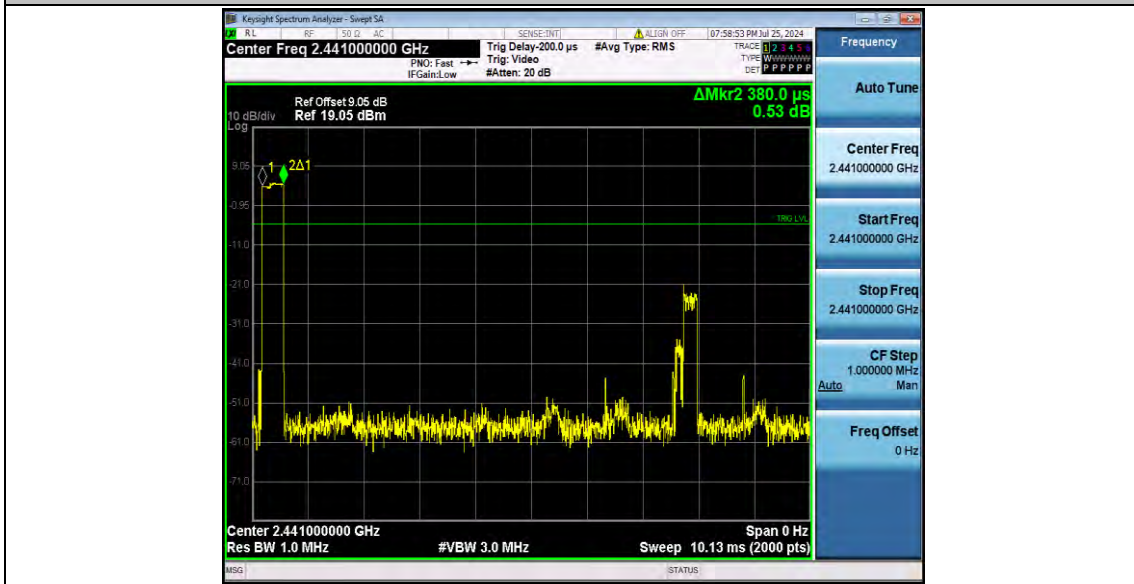


DH5_Ant1_Hop

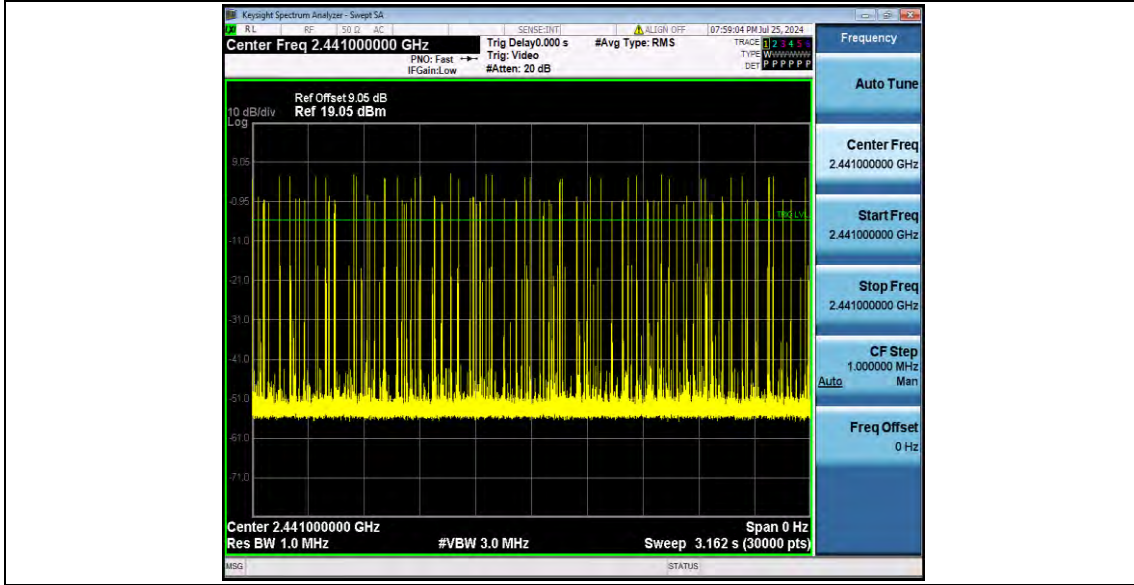


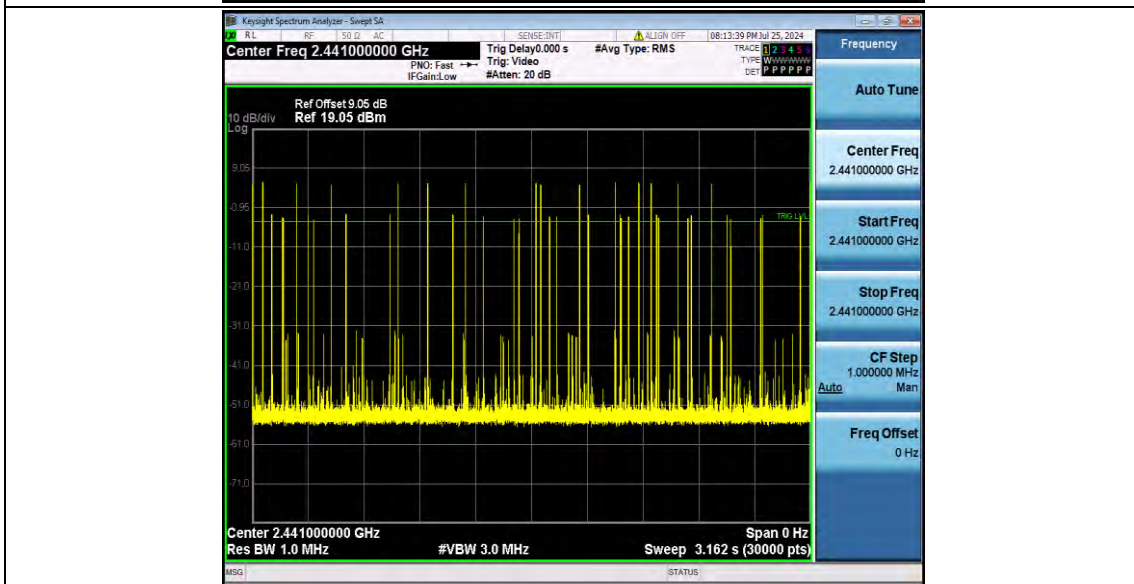
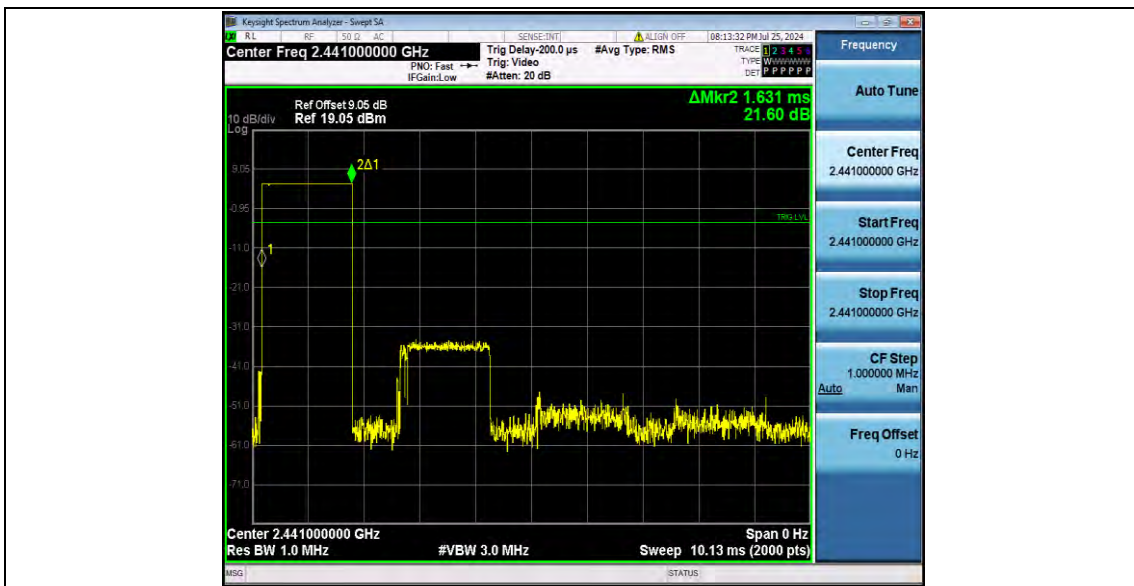


2DH1_Ant1_Hop

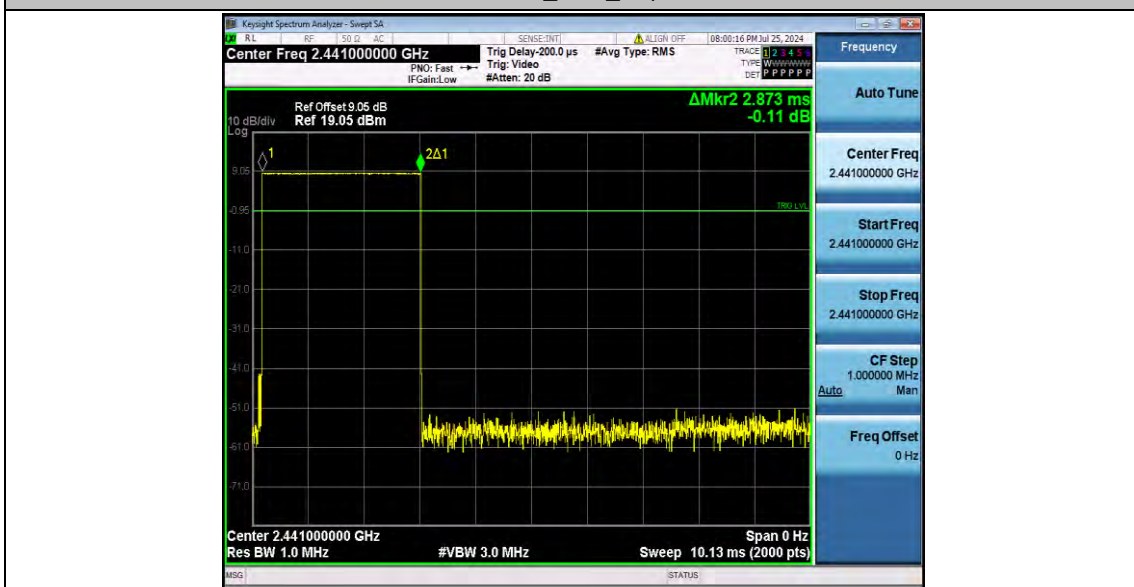


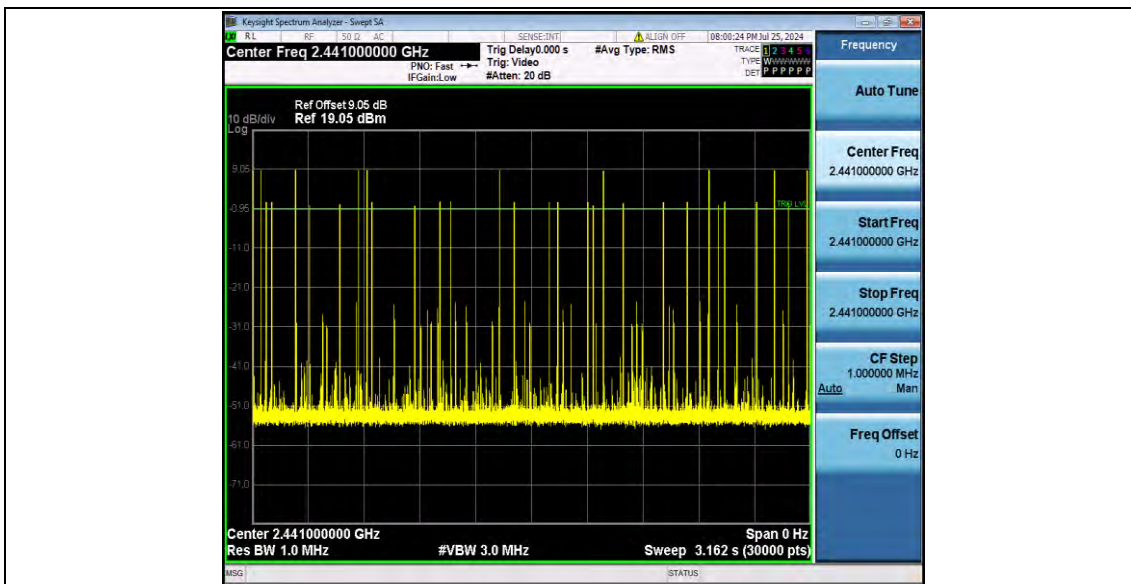
2DH3_Ant1_Hop



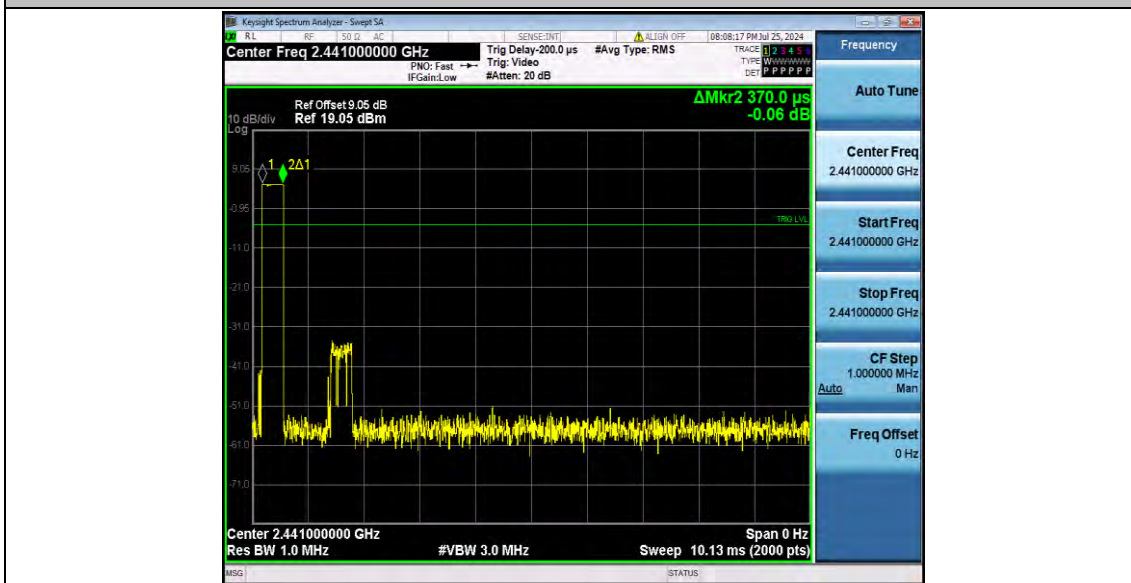


2DH5_Ant1_Hop

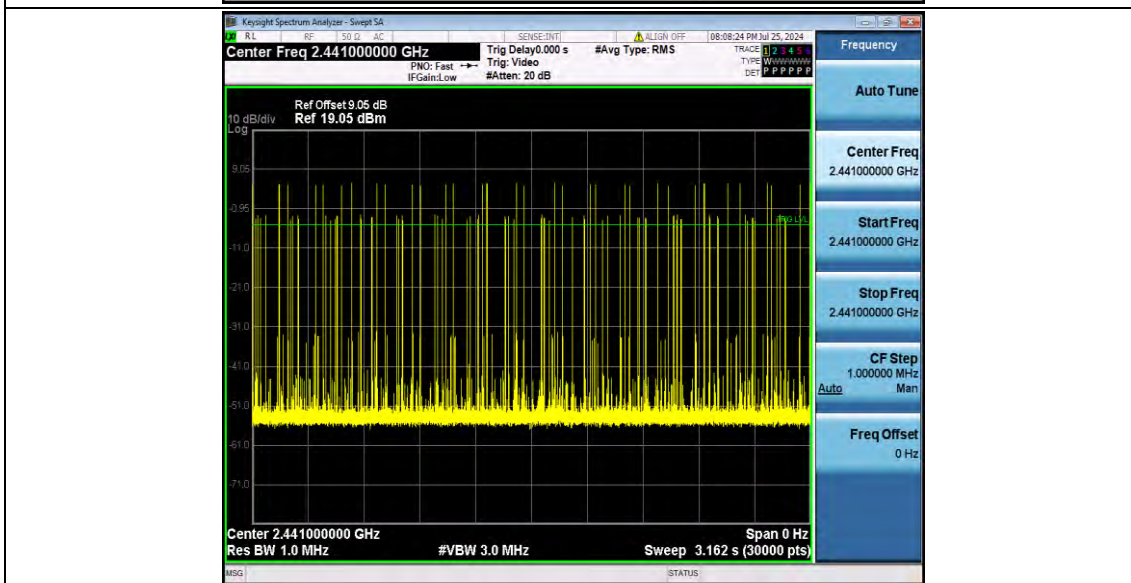


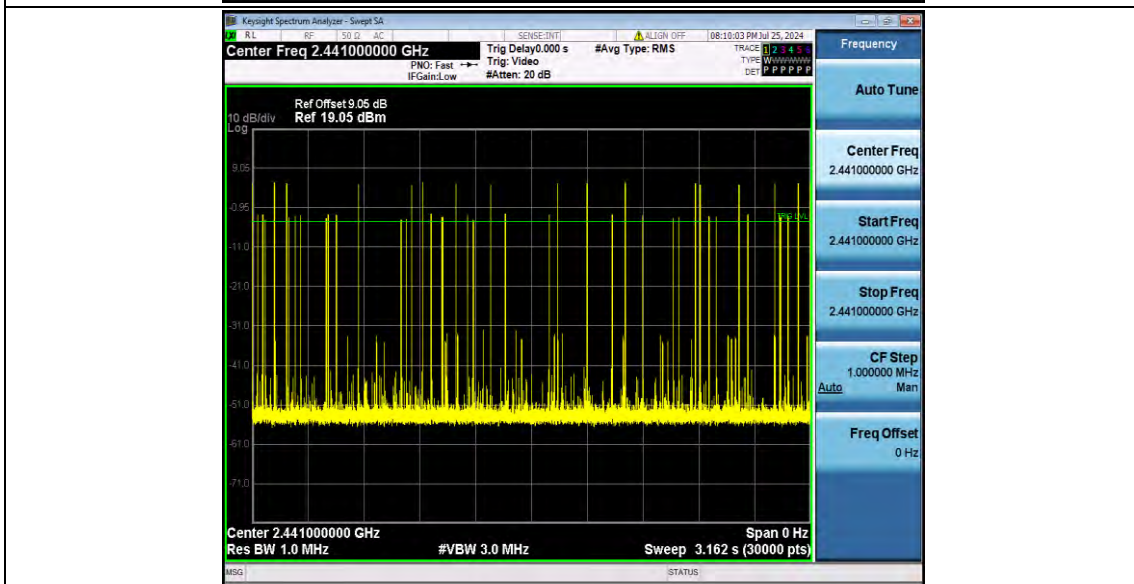
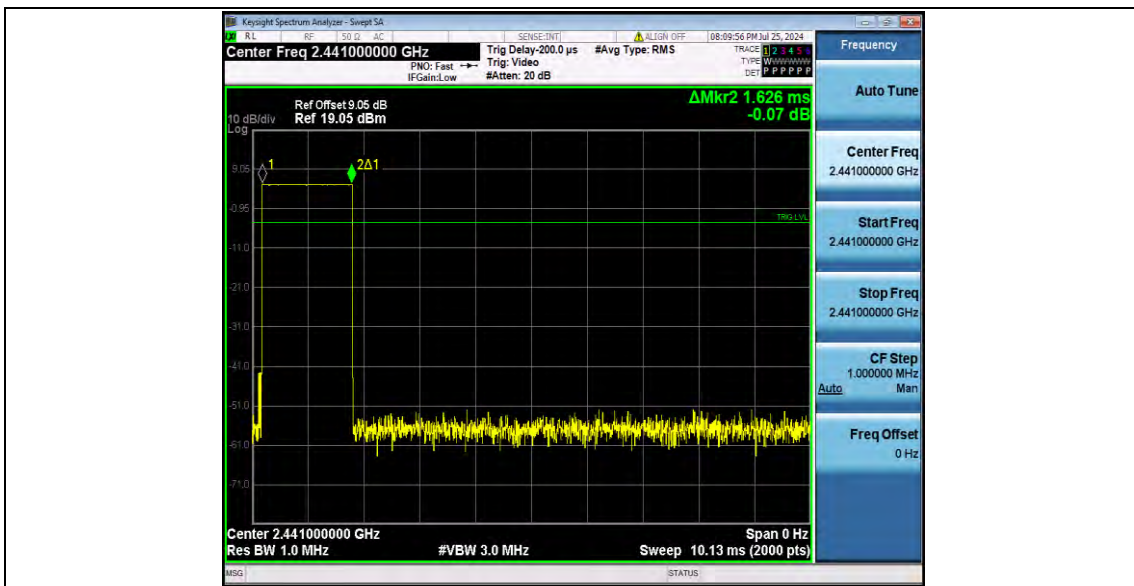


3DH1_Ant1_Hop

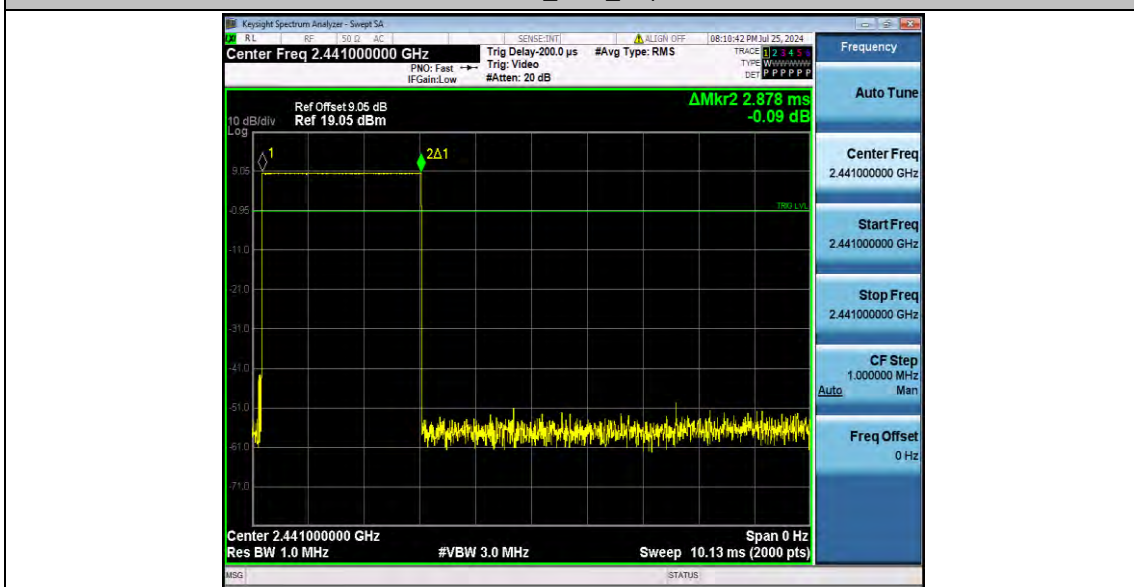


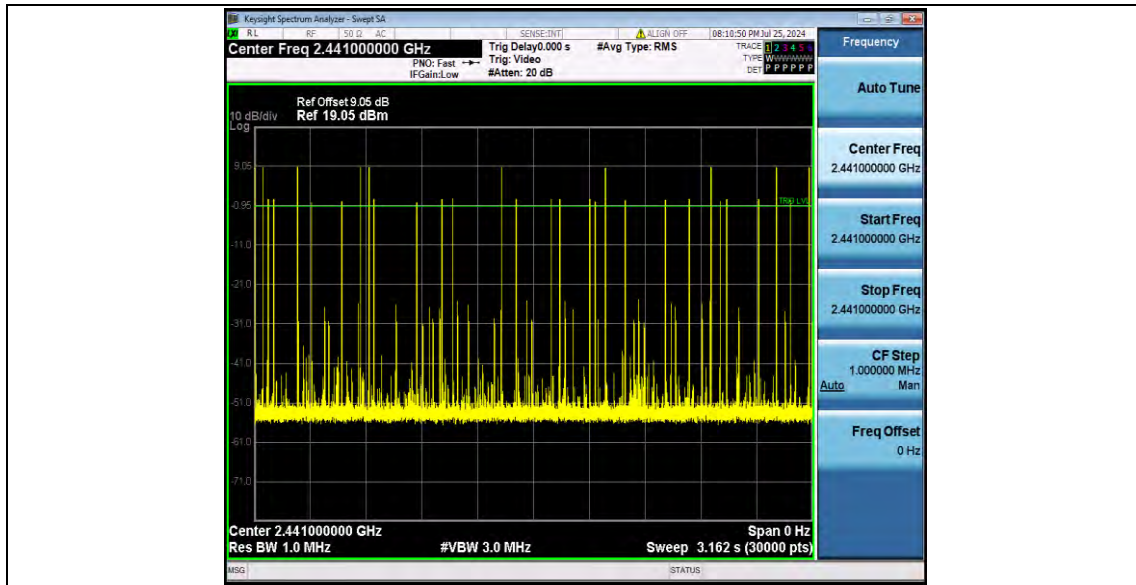
3DH3_Ant1_Hop





3DH5_Ant1_Hop



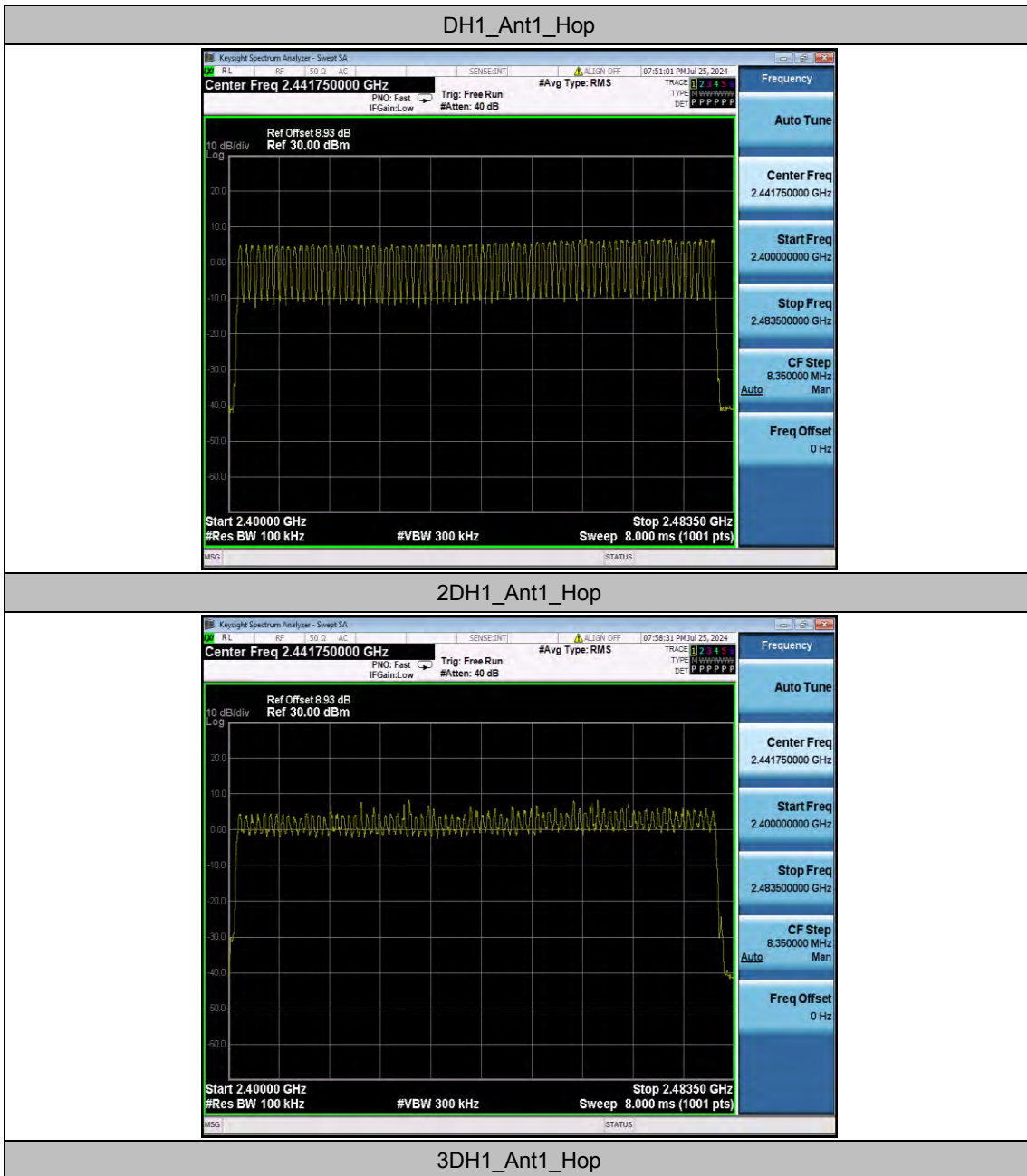


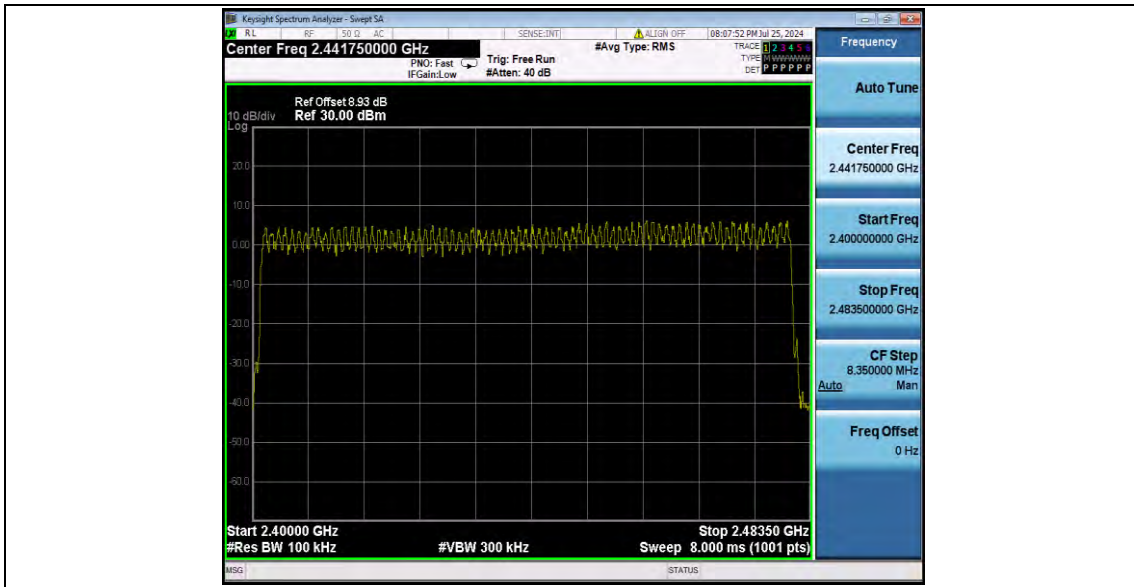
Appendix A.6: Number of hopping channels

Test Result

TestMode	Antenna	Freq(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



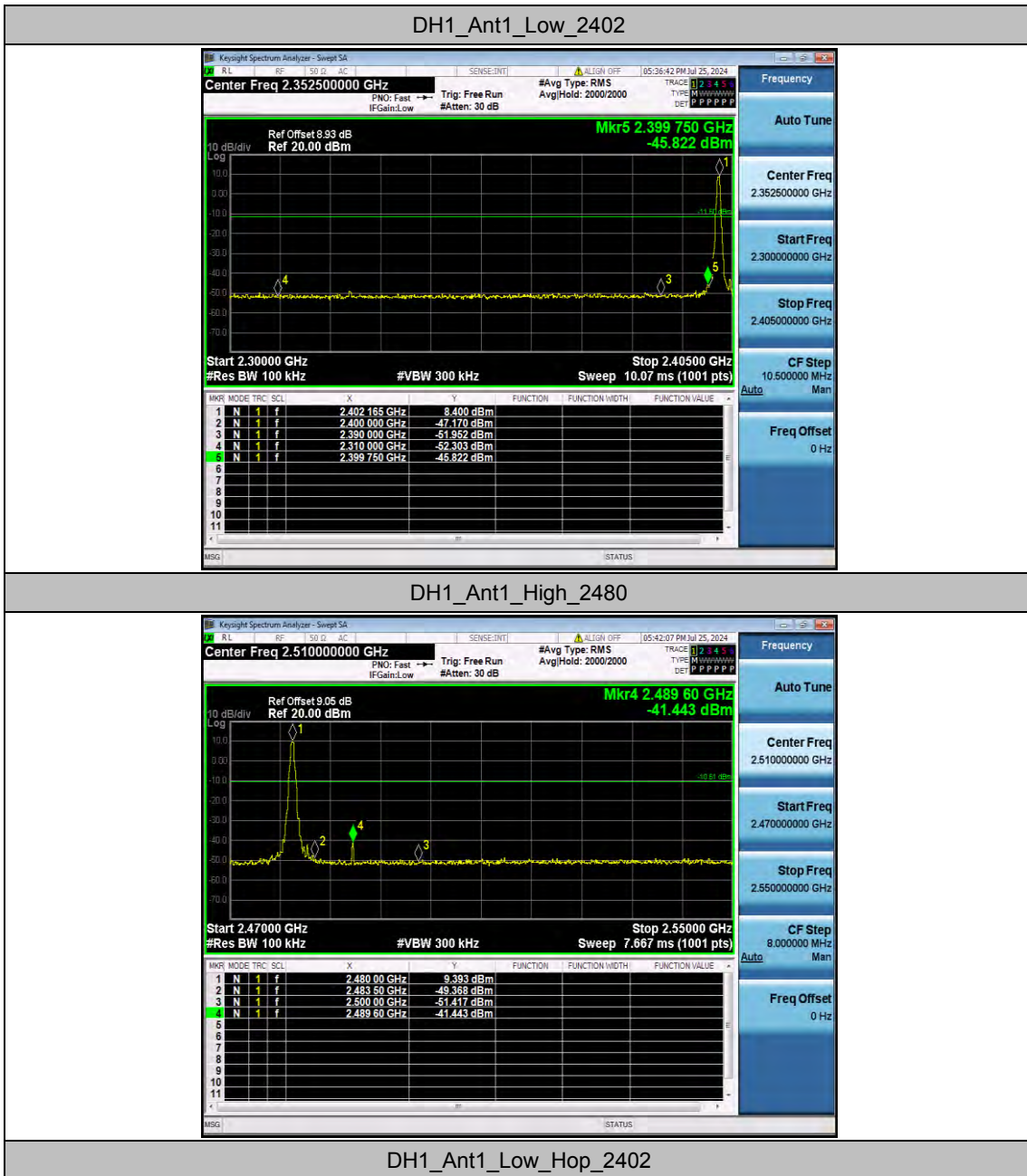


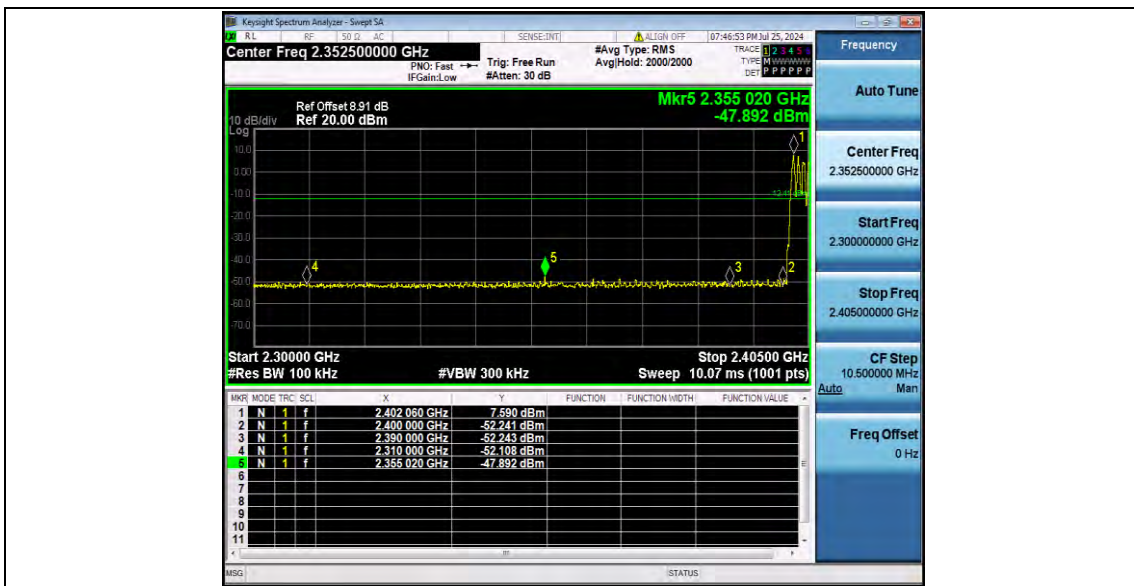
Appendix A.7: Band edge measurements

Test Result

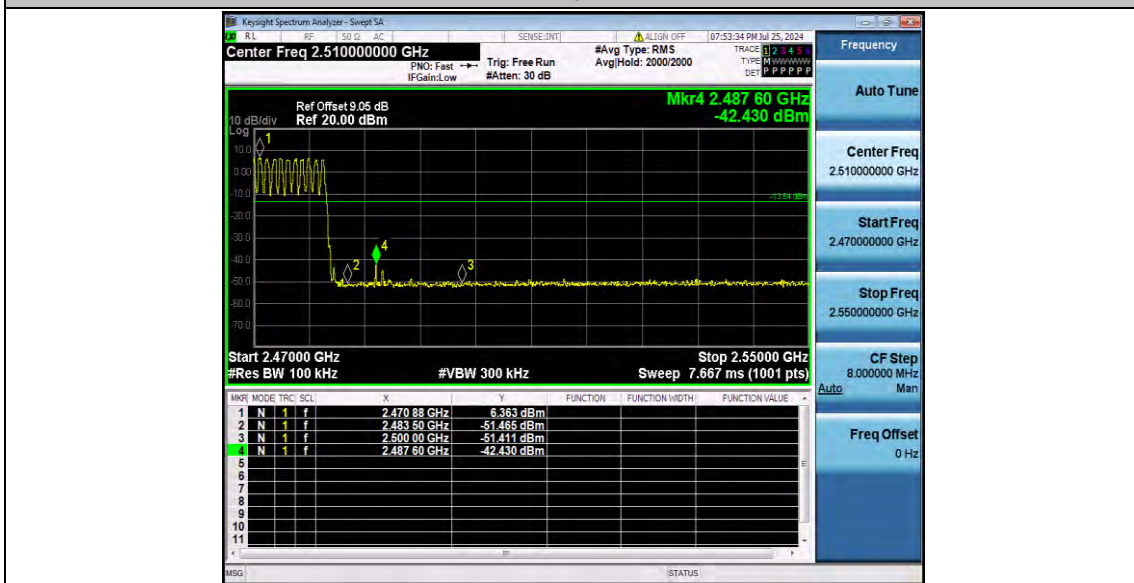
TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	Low	2402	8.40	-45.82	≤-11.6	PASS
		High	2480	9.39	-41.44	≤-10.61	PASS
		Low	Hop_2402	7.59	-47.89	≤-12.41	PASS
		High	Hop_2480	6.36	-42.43	≤-13.64	PASS
2DH1	Ant1	Low	2402	4.77	-39.82	≤-15.23	PASS
		High	2480	4.66	-41.98	≤-15.34	PASS
		Low	Hop_2402	3.62	-47.47	≤-16.38	PASS
		High	Hop_2480	6.27	-42.49	≤-13.73	PASS
3DH1	Ant1	Low	2402	4.73	-42.45	≤-15.27	PASS
		High	2480	4.73	-40.8	≤-15.27	PASS
		Low	Hop_2402	2.51	-47.76	≤-17.5	PASS
		High	Hop_2480	6.13	-46.2	≤-13.88	PASS

Test Graphs

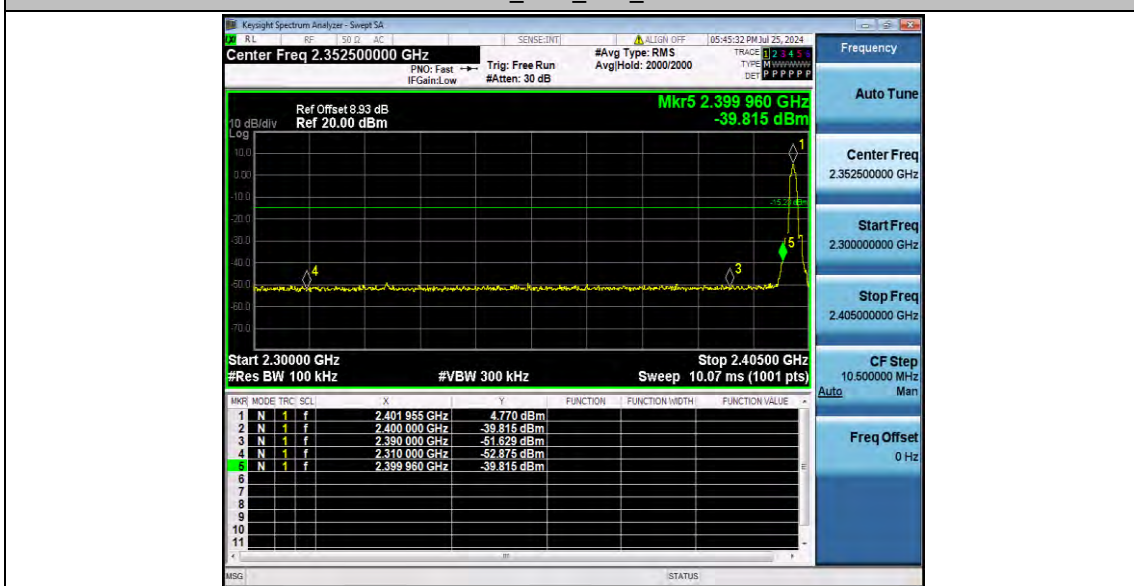




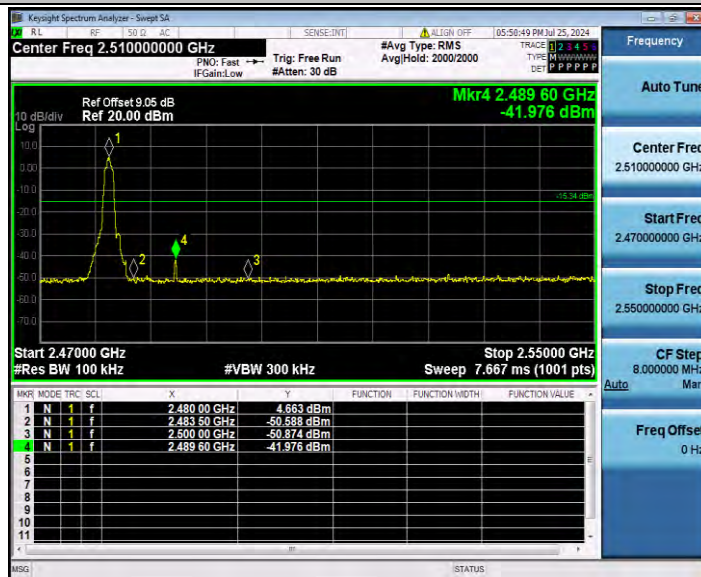
DH1_Ant1_High_Hop_2480



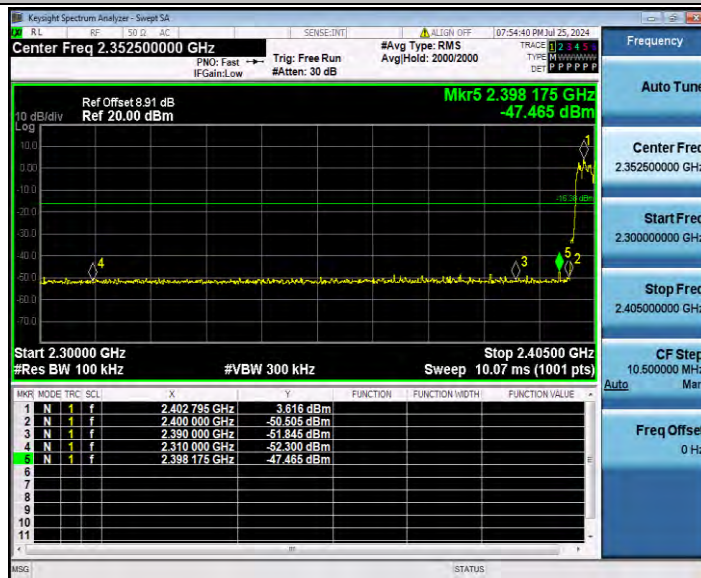
2DH1_Ant1_Low_2402



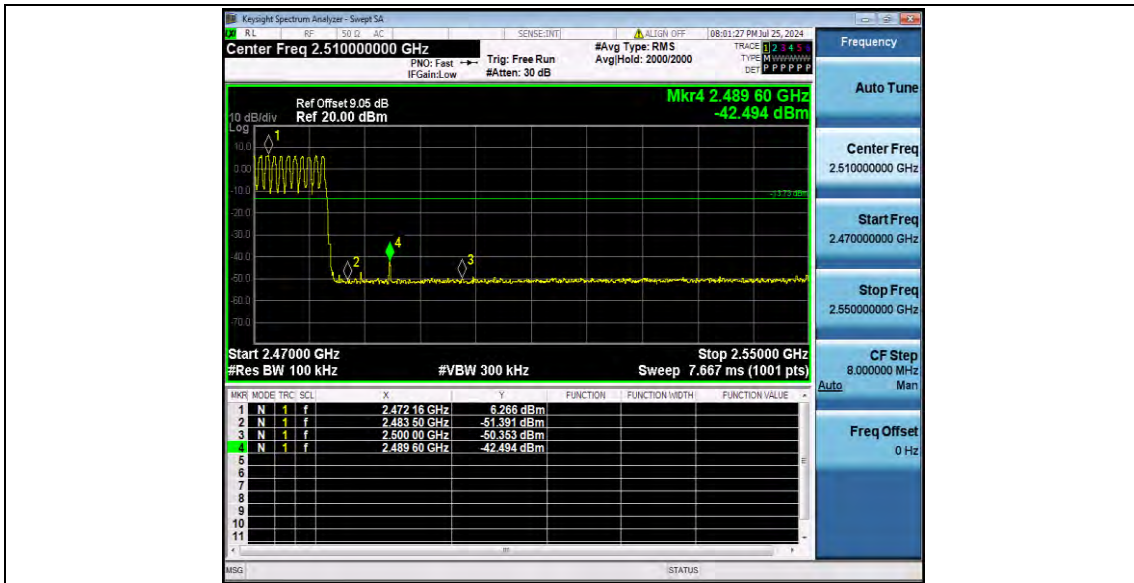
2DH1_Ant1_High_2480



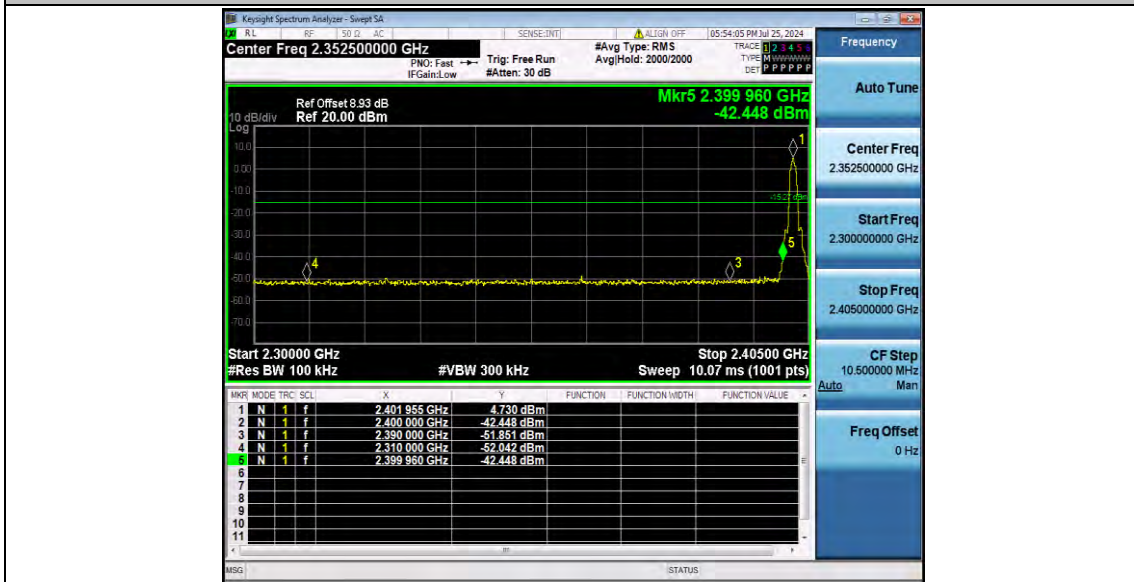
2DH1_Ant1_Low_Hop_2402



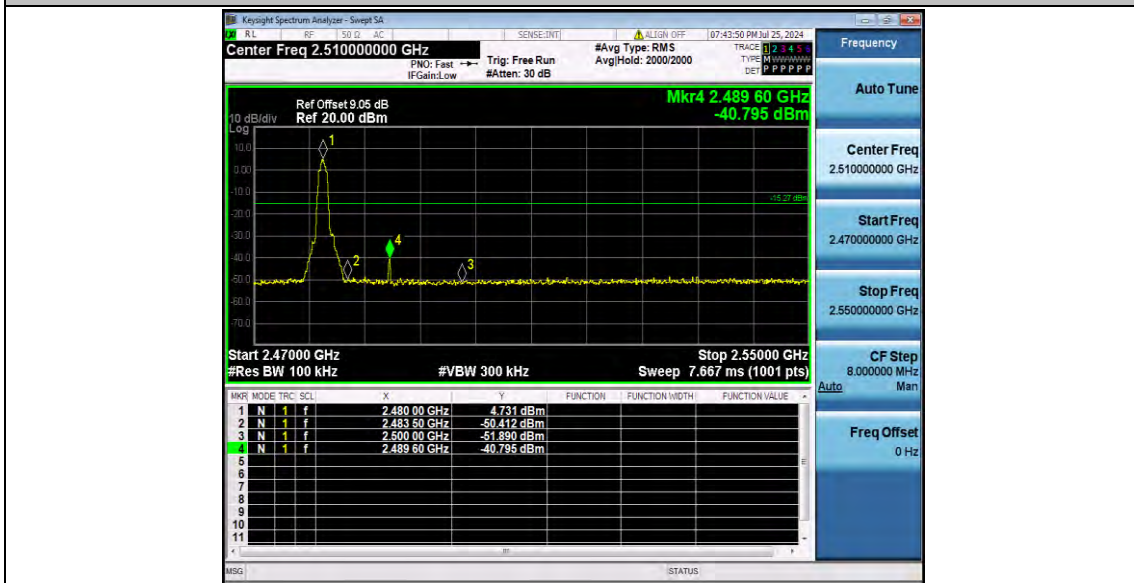
2DH1_Ant1_High_Hop_2480



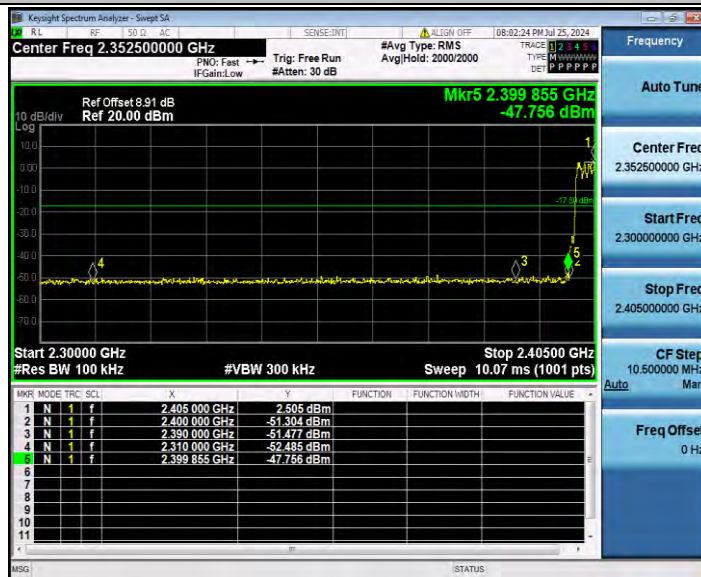
3DH1_Ant1_Low_2402



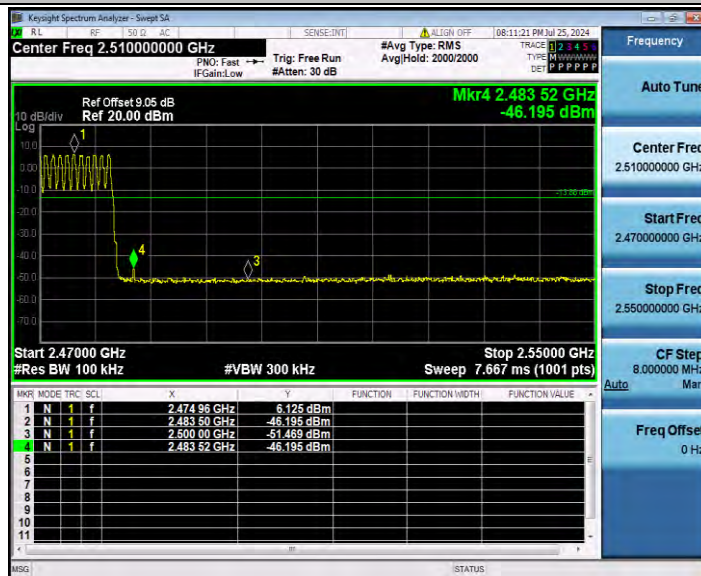
3DH1_Ant1_High_2480



3DH1_Ant1_Low_Hop_2402



3DH1_Ant1_High_Hop_2480

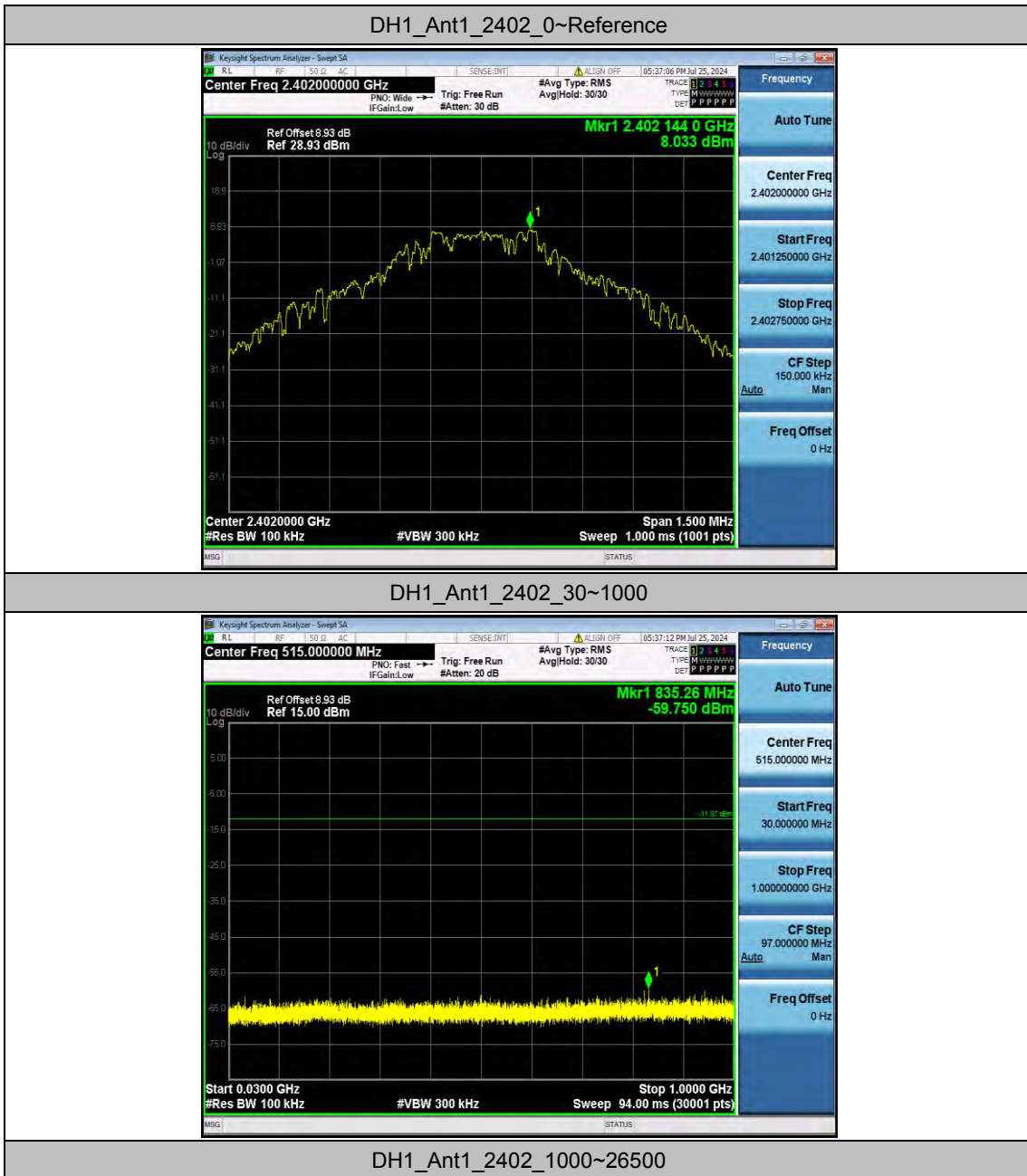


Appendix A.8: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	2402	Reference	8.03	8.03	---	PASS
			30~1000	8.03	-59.75	≤-11.97	PASS
			1000~26500	8.03	-47.97	≤-11.97	PASS
		2441	Reference	8.44	8.44	---	PASS
			30~1000	8.44	-60.42	≤-11.56	PASS
			1000~26500	8.44	-47.2	≤-11.56	PASS
		2480	Reference	9.16	9.16	---	PASS
			30~1000	9.16	-60.47	≤-10.84	PASS
			1000~26500	9.16	-47.65	≤-10.84	PASS
2DH1	Ant1	2402	Reference	4.25	4.25	---	PASS
			30~1000	4.25	-60.45	≤-15.75	PASS
			1000~26500	4.25	-48.08	≤-15.75	PASS
		2441	Reference	3.87	3.87	---	PASS
			30~1000	3.87	-60.34	≤-16.13	PASS
			1000~26500	3.87	-47.56	≤-16.13	PASS
		2480	Reference	4.39	4.39	---	PASS
			30~1000	4.39	-59.2	≤-15.61	PASS
			1000~26500	4.39	-47.84	≤-15.61	PASS
3DH1	Ant1	2402	Reference	4.51	4.51	---	PASS
			30~1000	4.51	-60.38	≤-15.49	PASS
			1000~26500	4.51	-48.39	≤-15.49	PASS
		2441	Reference	4.11	4.11	---	PASS
			30~1000	4.11	-60.67	≤-15.89	PASS
			1000~26500	4.11	-47.72	≤-15.89	PASS
		2480	Reference	3.60	3.60	---	PASS
			30~1000	3.60	-60.98	≤-16.4	PASS
			1000~26500	3.60	-47.51	≤-16.4	PASS

Test Graphs

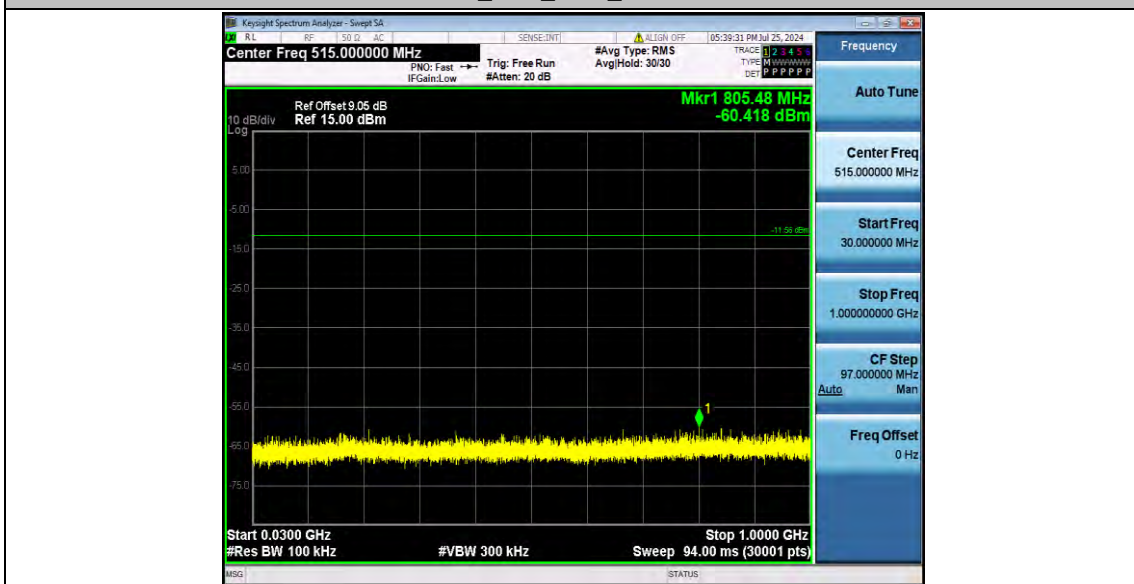




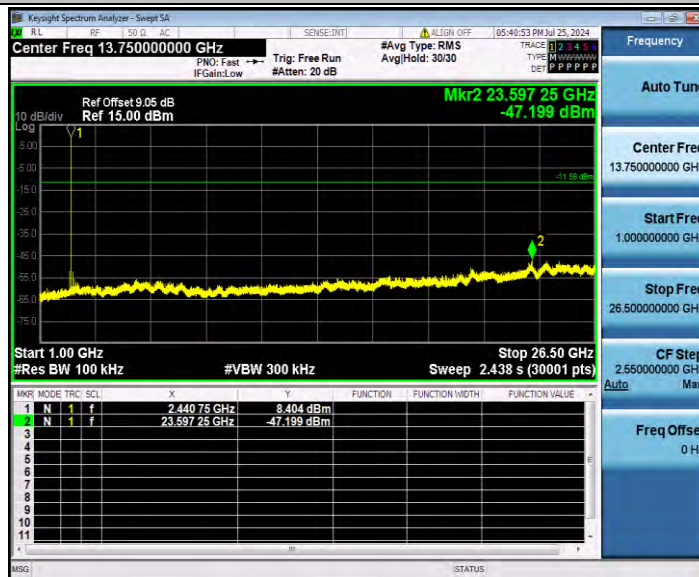
DH1_Ant1_2441_0~Reference



DH1_Ant1_2441_30~1000



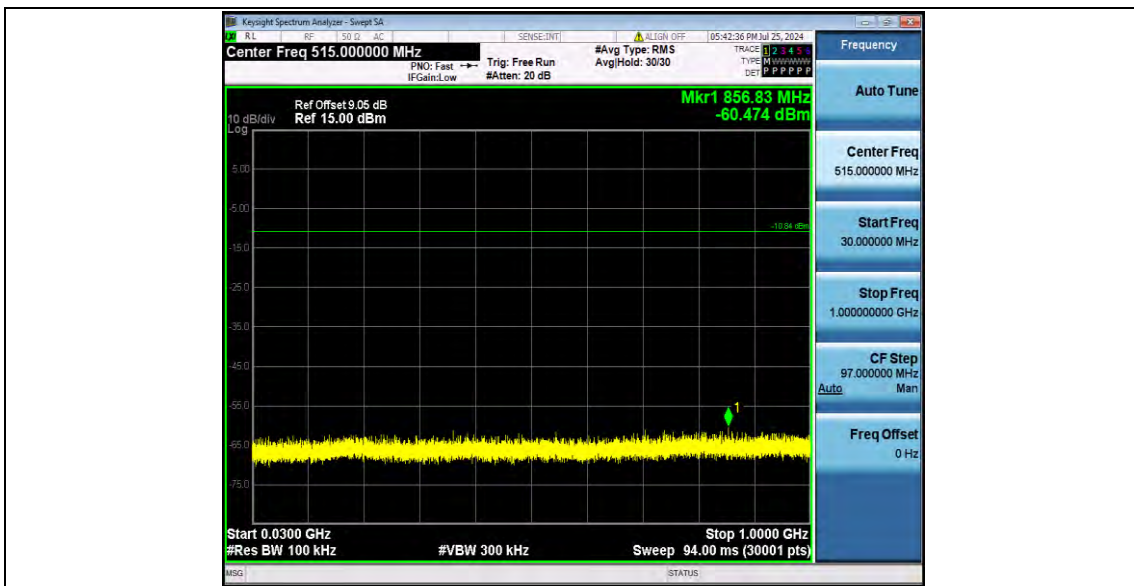
DH1_Ant1_2441_1000~26500



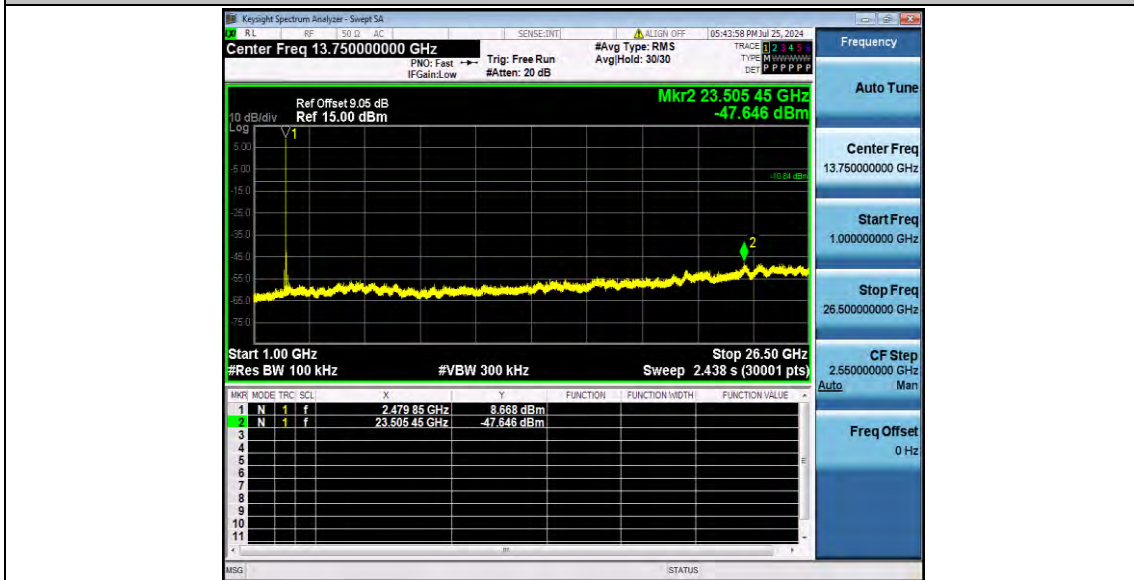
DH1_Ant1_2480_0~Reference



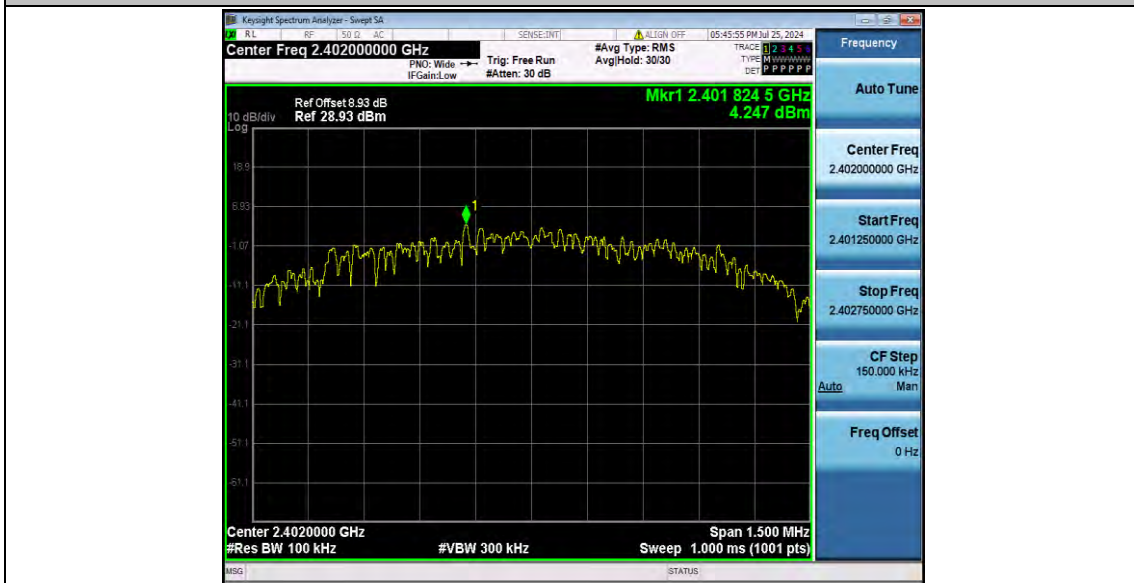
DH1_Ant1_2480_30~1000



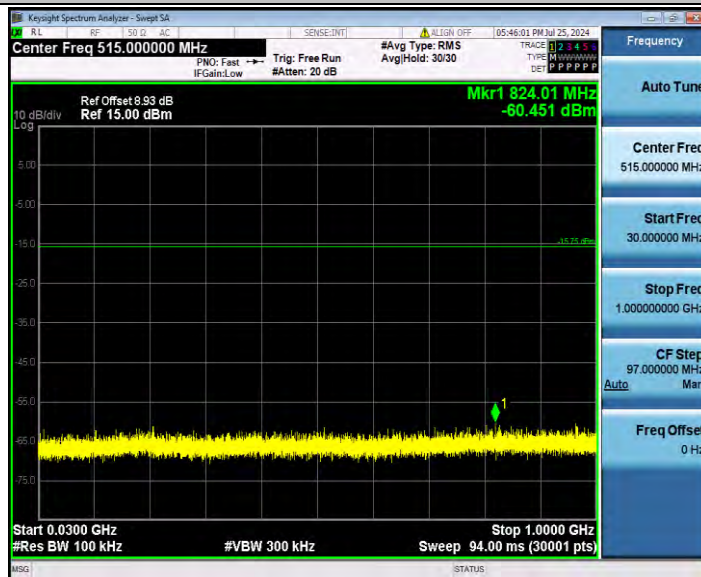
DH1_Ant1_2480_1000~26500



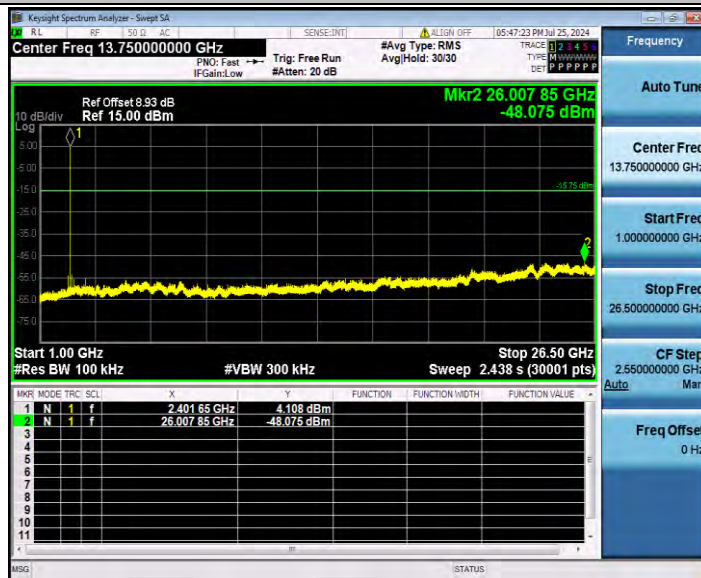
2DH1_Ant1_2402_0~Reference



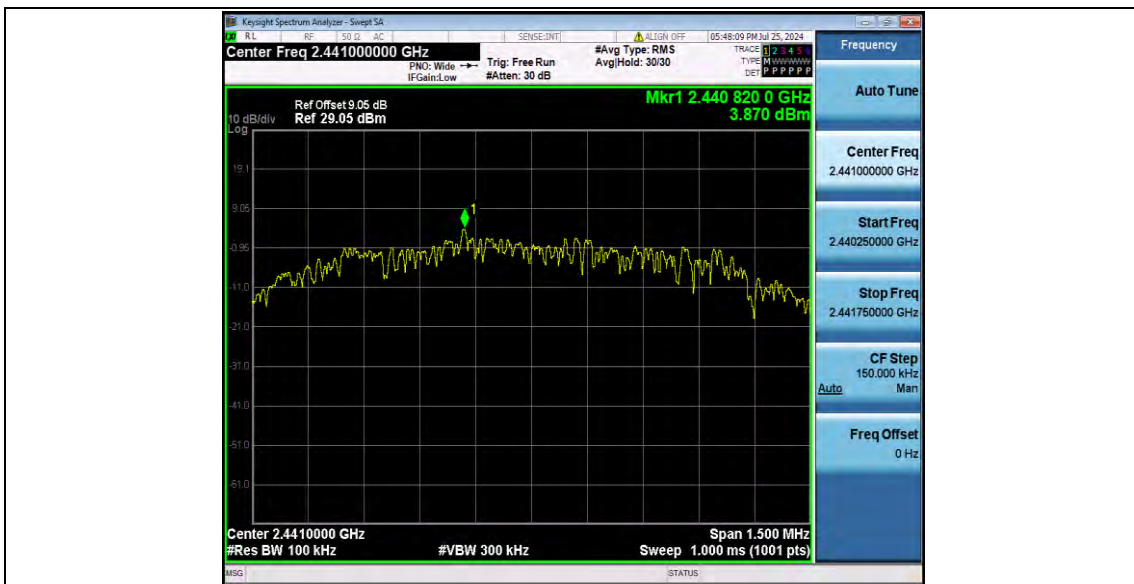
2DH1_Ant1_2402_30~1000



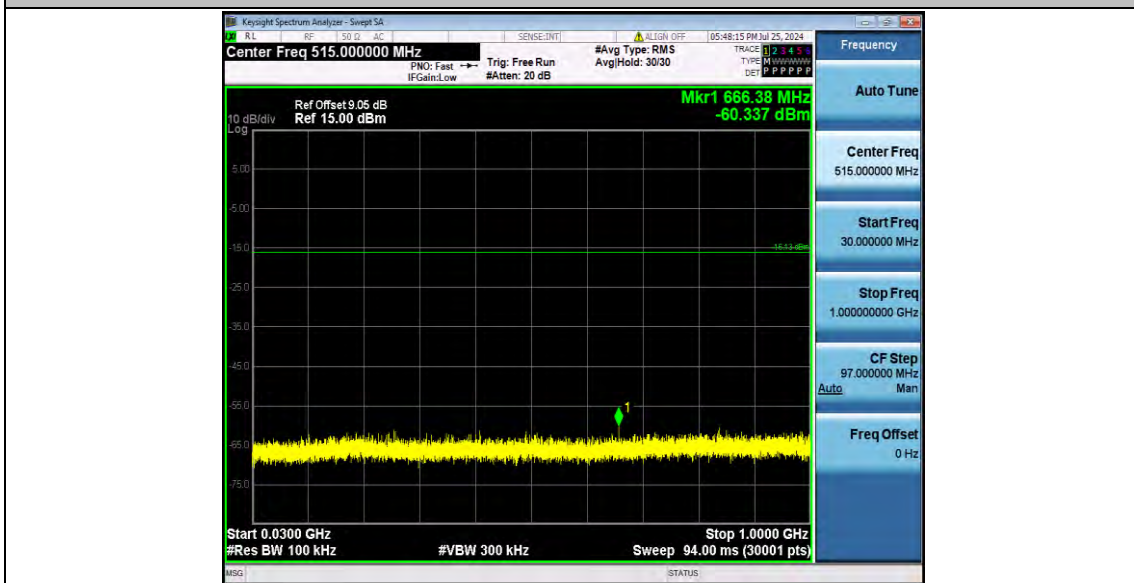
2DH1_Ant1_2402_1000~26500



2DH1_Ant1_2441_0~Reference



2DH1_Ant1_2441_30~100



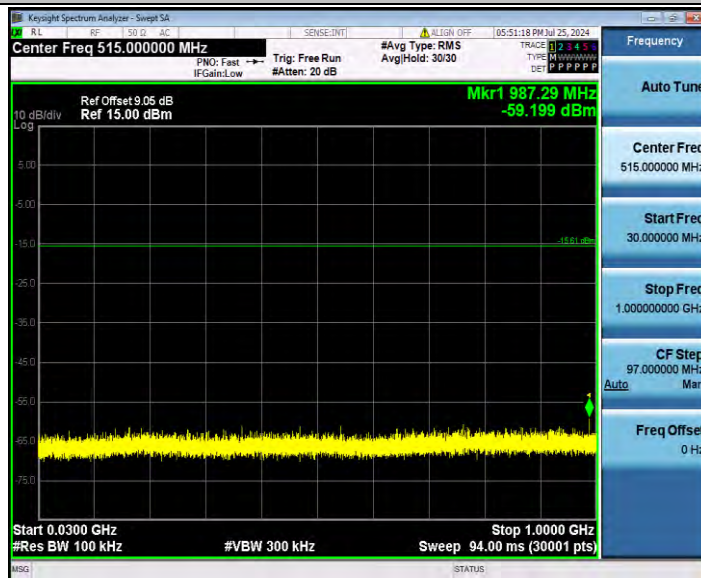
2DH1_Ant1_2441_1000~26500



2DH1_Ant1_2480_0~Reference



2DH1_Ant1_2480_30~1000



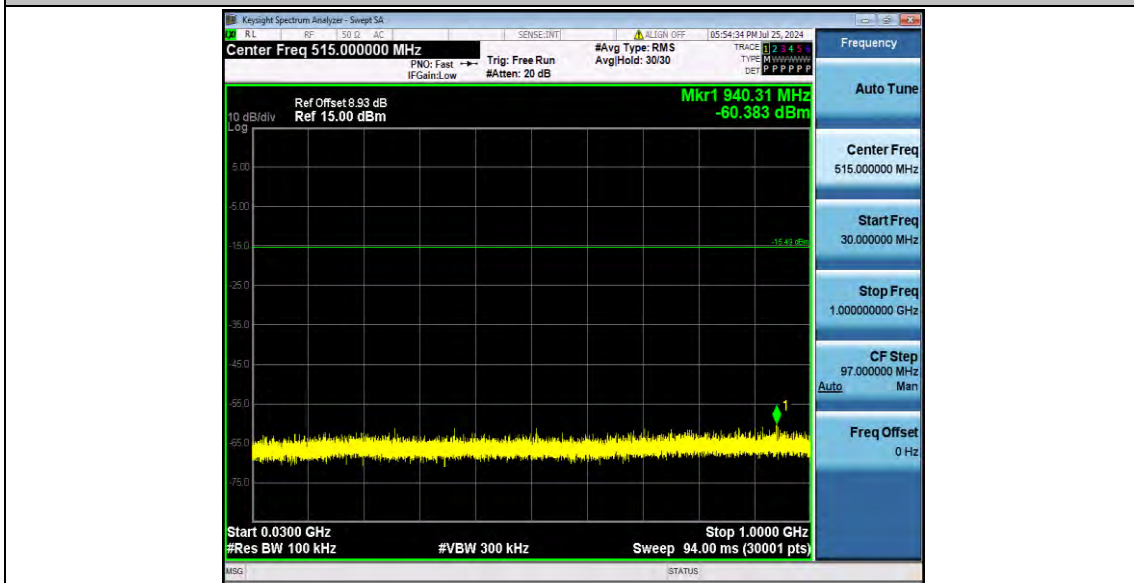
2DH1_Ant1_2480_1000~26500



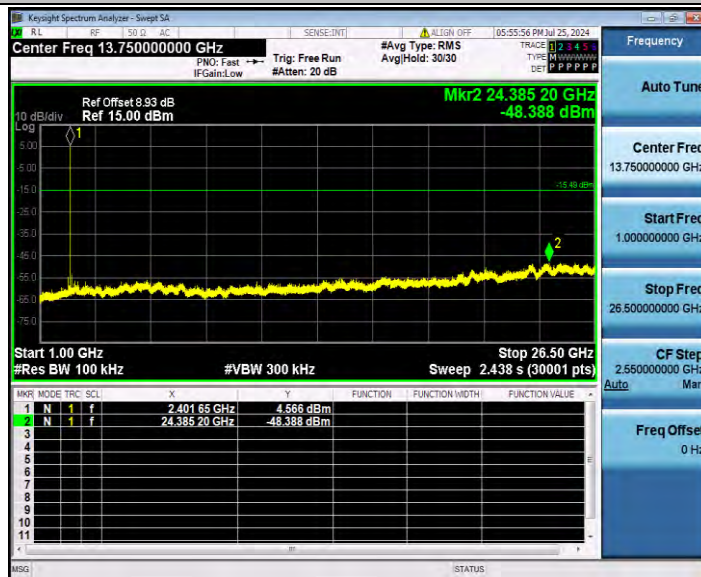
3DH1_Ant1_2402_0~Reference



3DH1_Ant1_2402_30~1000



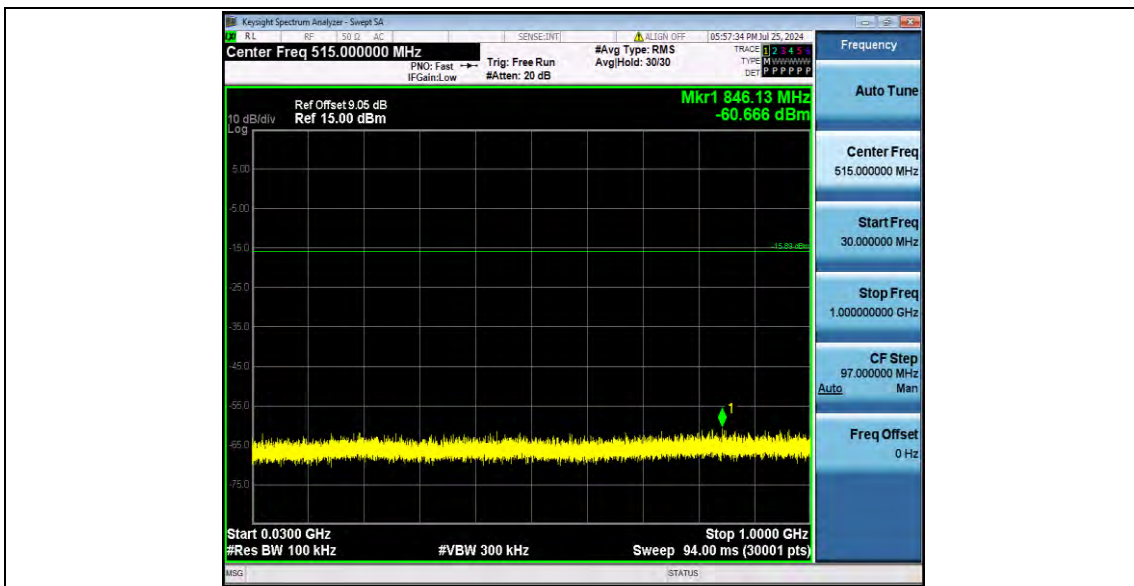
3DH1_Ant1_2402_1000~26500



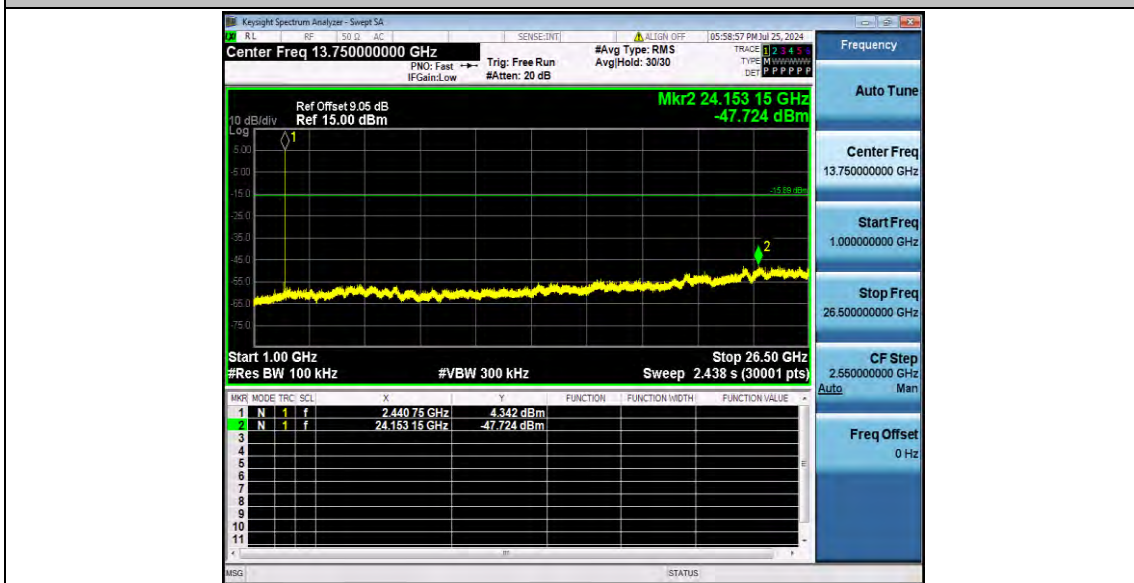
3DH1_Ant1_2441_0~Reference



3DH1_Ant1_2441_30~1000



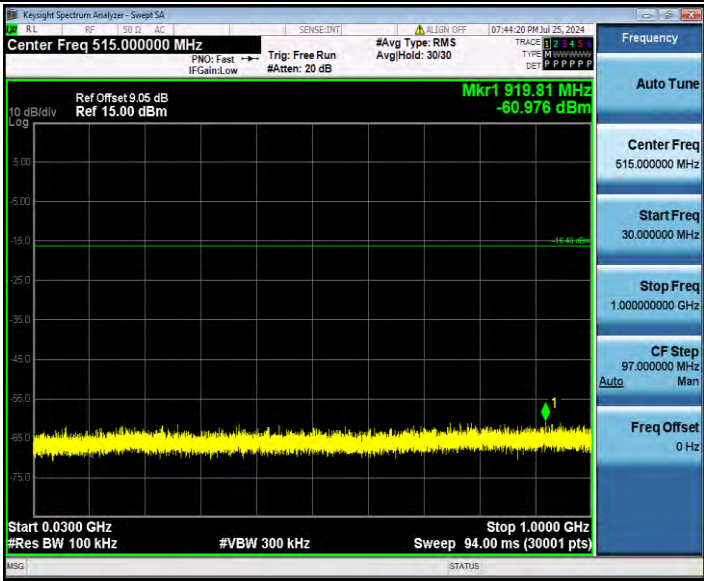
3DH1_Ant1_2441_1000~26500



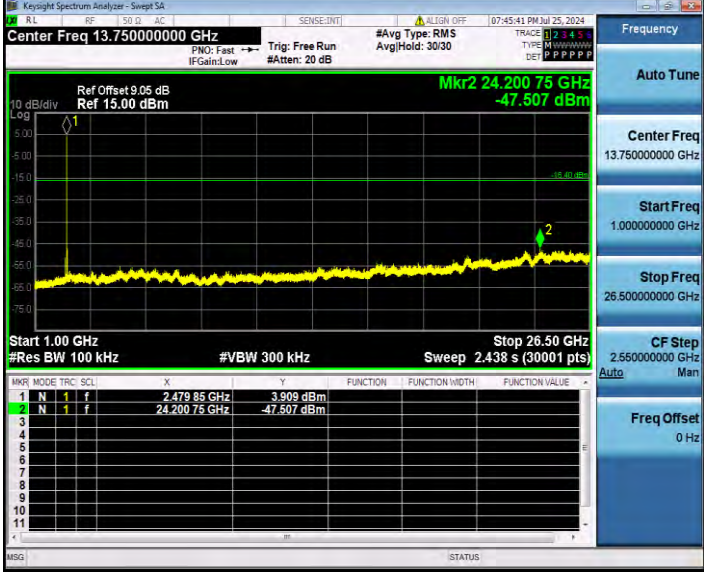
3DH1_Ant1_2480_0~Reference



3DH1_Ant1_2480_30~1000



3DH1_Ant1_2480_1000~26500



Appendix A.9: Emissions in Restricted Bands

Test Result

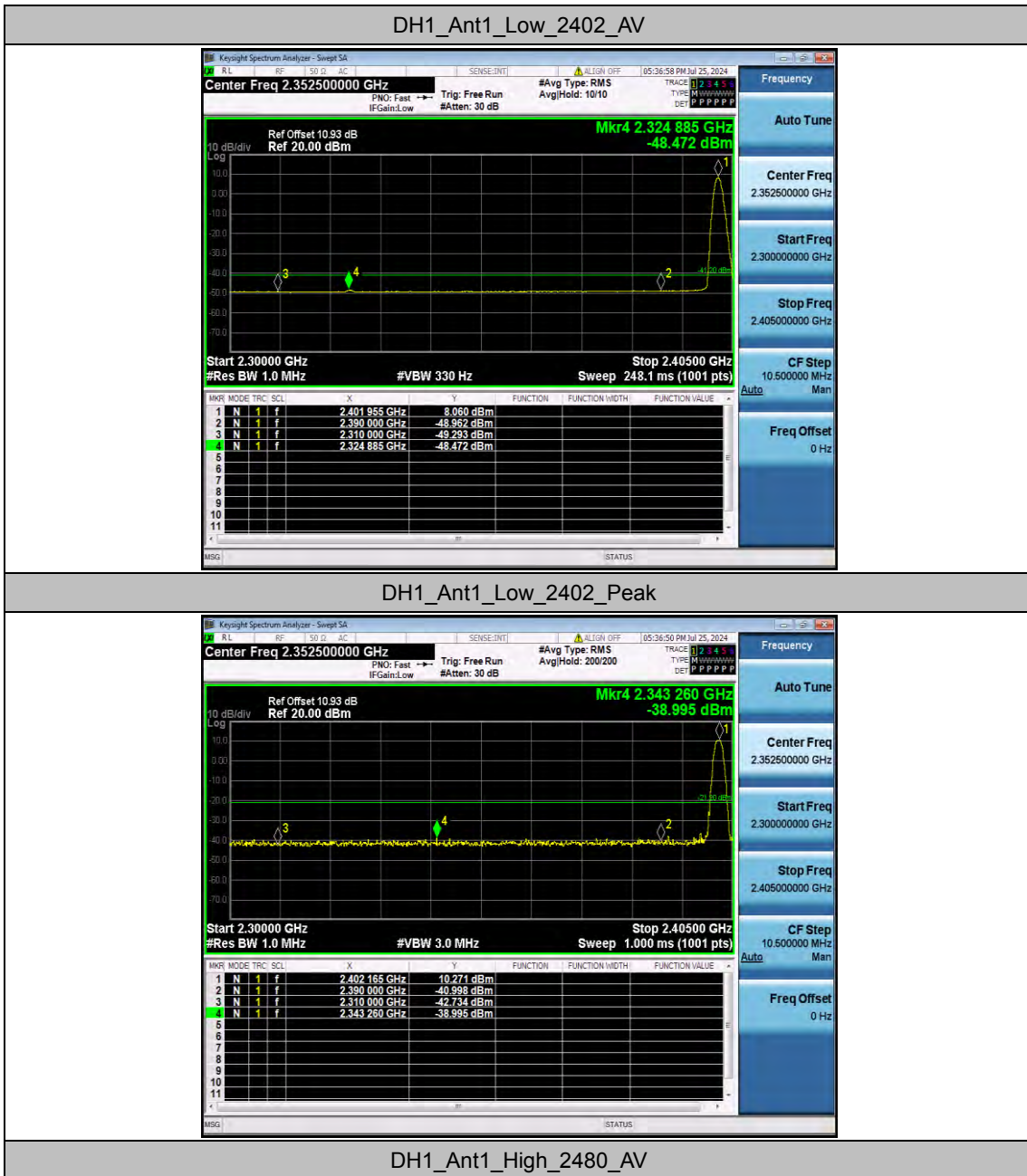
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH1	Ant1	Low	2402	AV	2310.000	-49.29	≤-41.20	45.91	≤54	PASS
				AV	2324.885	-48.47	≤-41.20	46.73	≤54	PASS
				AV	2390.000	-48.96	≤-41.20	46.24	≤54	PASS
				Peak	2310.000	-42.73	≤-21.20	52.47	≤74	PASS
				Peak	2343.260	-39	≤-21.20	56.20	≤74	PASS
				Peak	2390.000	-41	≤-21.20	54.20	≤74	PASS
		High	2480	AV	2483.500	-47.28	≤-41.20	47.92	≤54	PASS
				AV	2483.520	-47.28	≤-41.20	47.92	≤54	PASS
				AV	2500.000	-48.79	≤-41.20	46.41	≤54	PASS
				Peak	2483.500	-37.43	≤-21.20	57.77	≤74	PASS
				Peak	2483.520	-37.43	≤-21.20	57.77	≤74	PASS
				Peak	2500.000	-41.37	≤-21.20	53.83	≤74	PASS
2DH1	Ant1	Low	2402	AV	2310.000	-49.45	≤-41.20	45.75	≤54	PASS
				AV	2324.990	-48.59	≤-41.20	46.61	≤54	PASS
				AV	2390.000	-48.86	≤-41.20	46.34	≤54	PASS
				Peak	2310.000	-42.04	≤-21.20	53.16	≤74	PASS
				Peak	2345.360	-38.56	≤-21.20	56.64	≤74	PASS
				Peak	2390.000	-39.95	≤-21.20	55.25	≤74	PASS
		High	2480	AV	2483.500	-47.64	≤-41.20	47.56	≤54	PASS
				AV	2483.520	-47.64	≤-41.20	47.56	≤54	PASS
				AV	2500.000	-48.62	≤-41.20	46.58	≤54	PASS
				Peak	2483.500	-40.77	≤-21.20	54.43	≤74	PASS
				Peak	2489.600	-36.92	≤-21.20	58.28	≤74	PASS
				Peak	2500.000	-40.51	≤-21.20	54.69	≤74	PASS
3DH1	Ant1	Low	2402	AV	2310.000	-49.4	≤-41.20	45.80	≤54	PASS
				AV	2325.305	-48.67	≤-41.20	46.53	≤54	PASS
				AV	2390.000	-48.92	≤-41.20	46.28	≤54	PASS
				Peak	2310.000	-41.52	≤-21.20	53.68	≤74	PASS
				Peak	2367.935	-38.6	≤-21.20	56.60	≤74	PASS
				Peak	2390.000	-41.97	≤-21.20	53.23	≤74	PASS
		High	2480	AV	2483.500	-47.35	≤-41.20	47.85	≤54	PASS
				AV	2483.520	-47.35	≤-41.20	47.85	≤54	PASS
				AV	2500.000	-48.85	≤-41.20	46.35	≤54	PASS
				Peak	2483.500	-41.09	≤-21.20	54.11	≤74	PASS
Peak	2489.920	-37.41	≤-21.20	57.79	≤74	PASS				

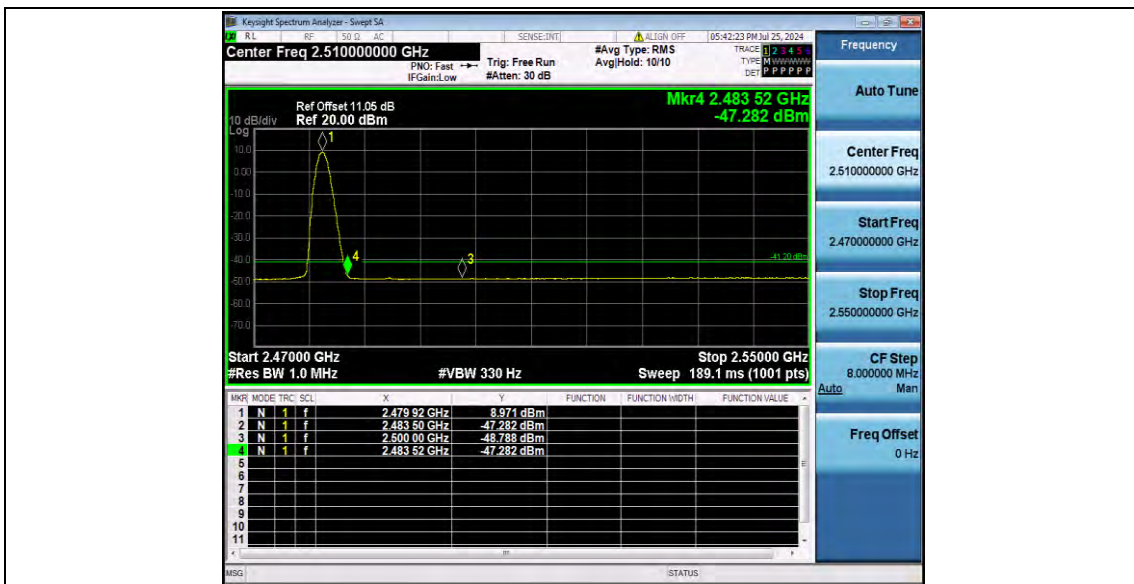
				Peak	2500.000	-41.17	≤ -21.20	54.03	≤ 74	PASS
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Note:

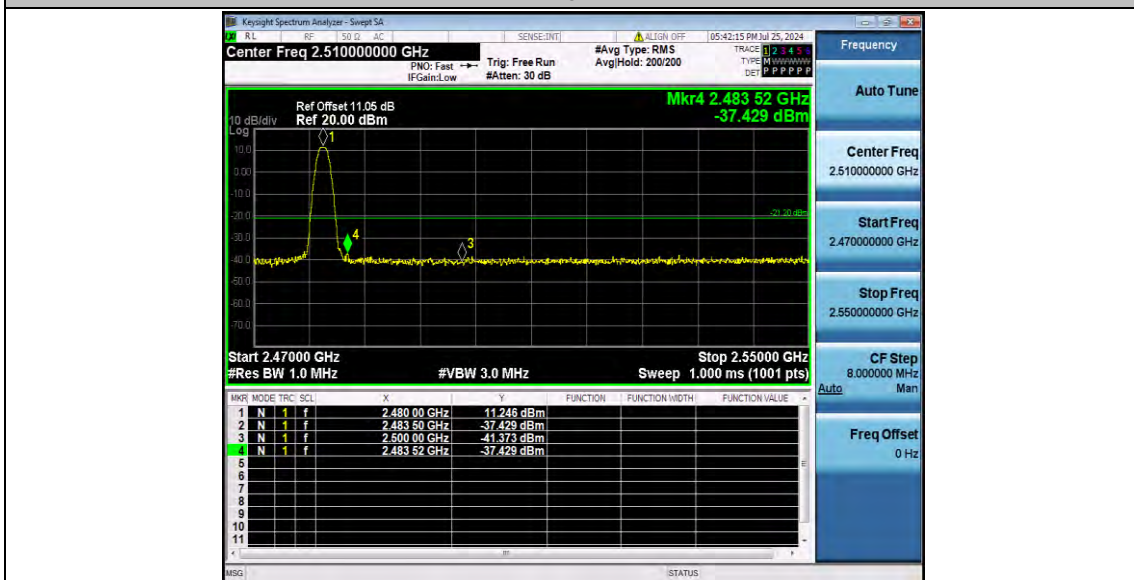
1. The Antenna Gain is compensated in the graph.
2. The Duty Cycle Factor and RBW Factor is compensated in the graph.
3. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

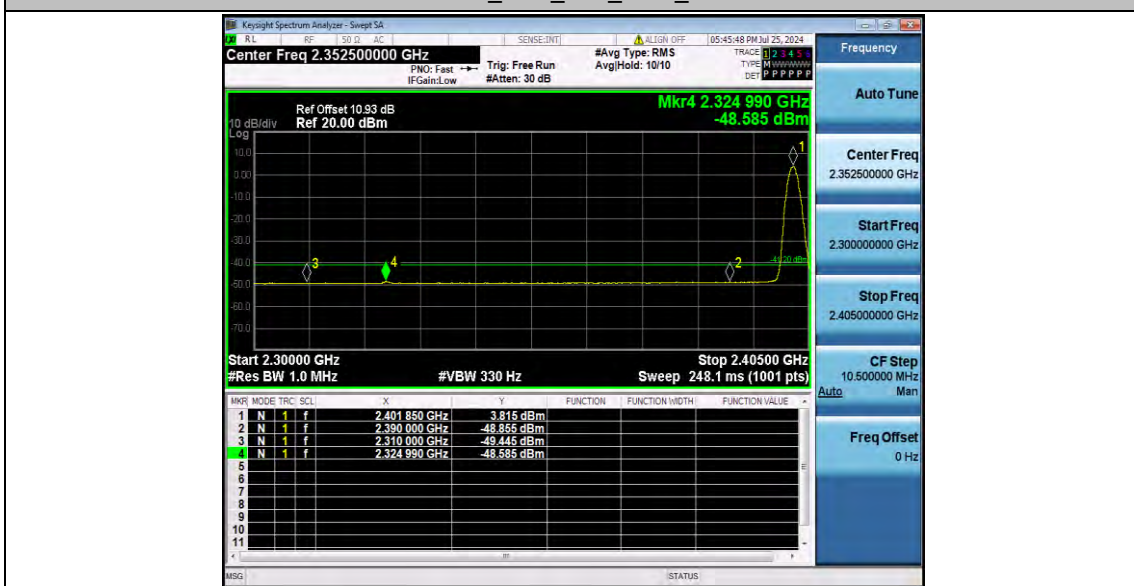




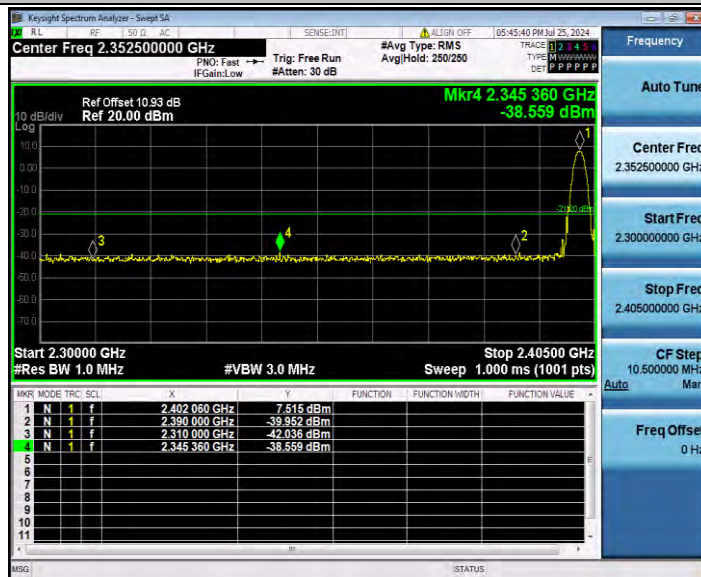
DH1_Ant1_High_2480_Peak



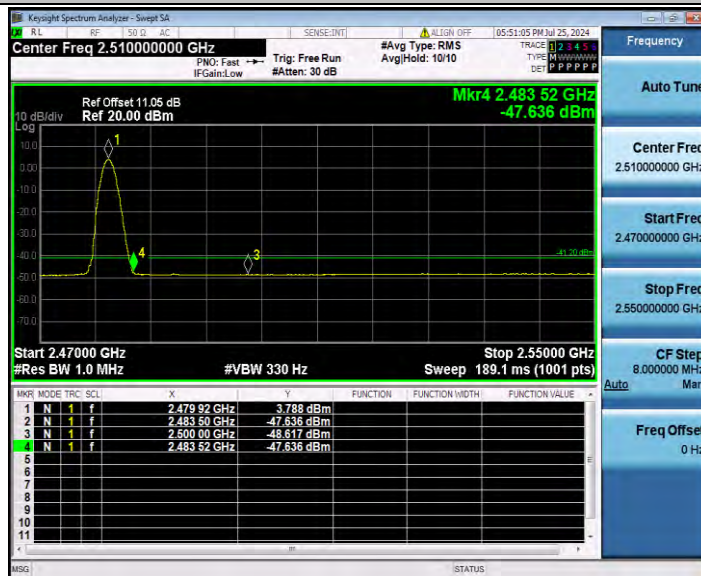
2DH1_Ant1_Low_2402_AV



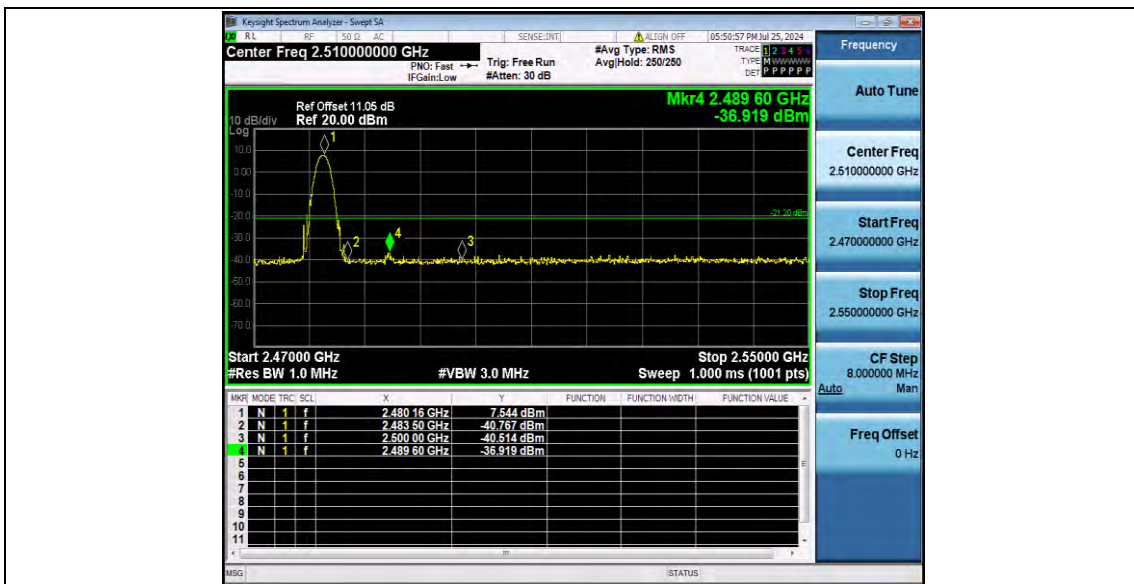
2DH1_Ant1_Low_2402_Peak



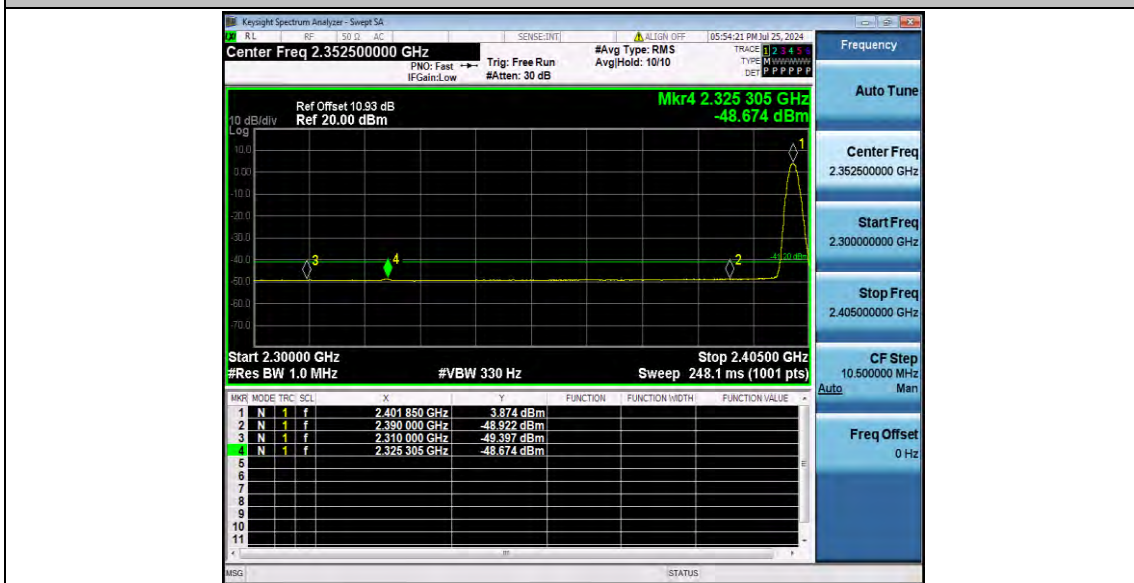
2DH1_Ant1_High_2480_AV



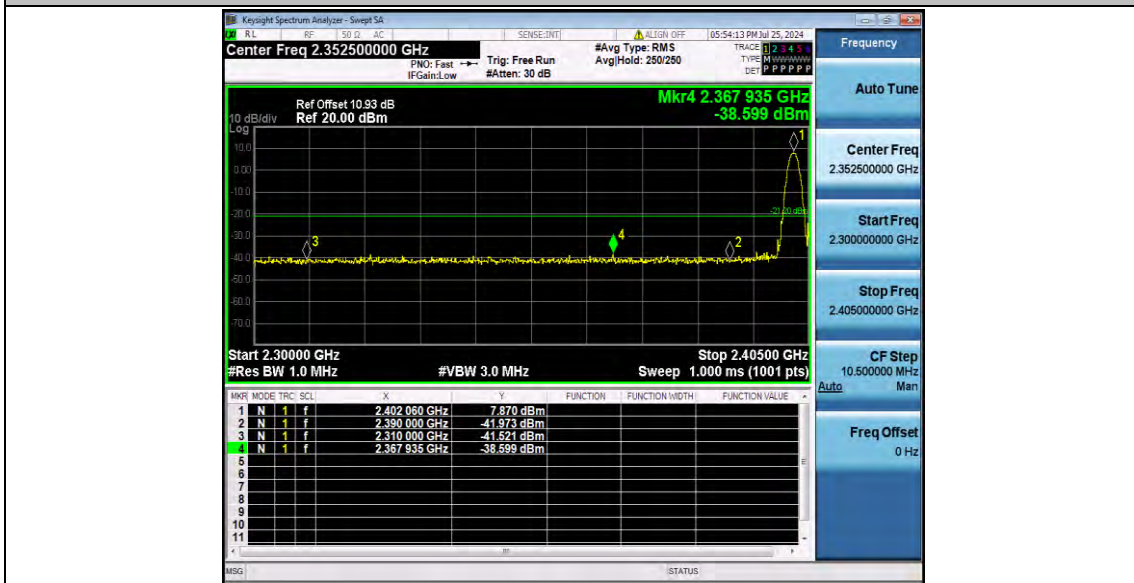
2DH1_Ant1_High_2480_Peak



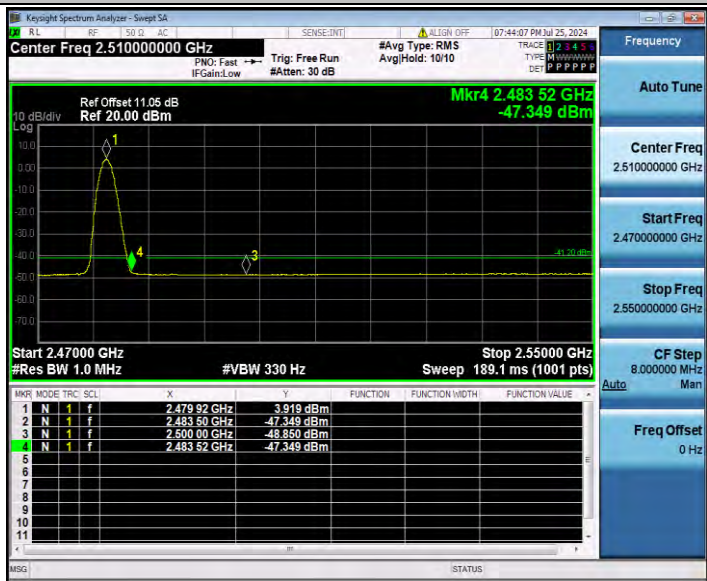
3DH1_Ant1_Low_2402_AV



3DH1_Ant1_Low_2402_Peak



3DH1_Ant1_High_2480_AV



3DH1_Ant1_High_2480_Peak

