

Case No. : <u>GTS20231120007-1-2</u>
Ambient Condition: <u>23</u> °C, <u>48</u> %RH
According Standard: ■Part15C
Test Date: <u>2024.1.11</u> Test Engineer: <u>Evan ouyang</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	1.035	2401.469	2402.504	---	---
		2441	1.038	2440.466	2441.504	---	---
		2480	1.038	2479.466	2480.504	---	---
2DH1	Ant1	2402	1.371	2401.319	2402.690	---	---
		2441	1.335	2440.334	2441.669	---	---
		2480	1.353	2479.328	2480.681	---	---
3DH1	Ant1	2402	1.344	2401.328	2402.672	---	---
		2441	1.365	2440.322	2441.687	---	---
		2480	1.344	2479.328	2480.672	---	---

Test Graphs

DH1_Ant1_2402



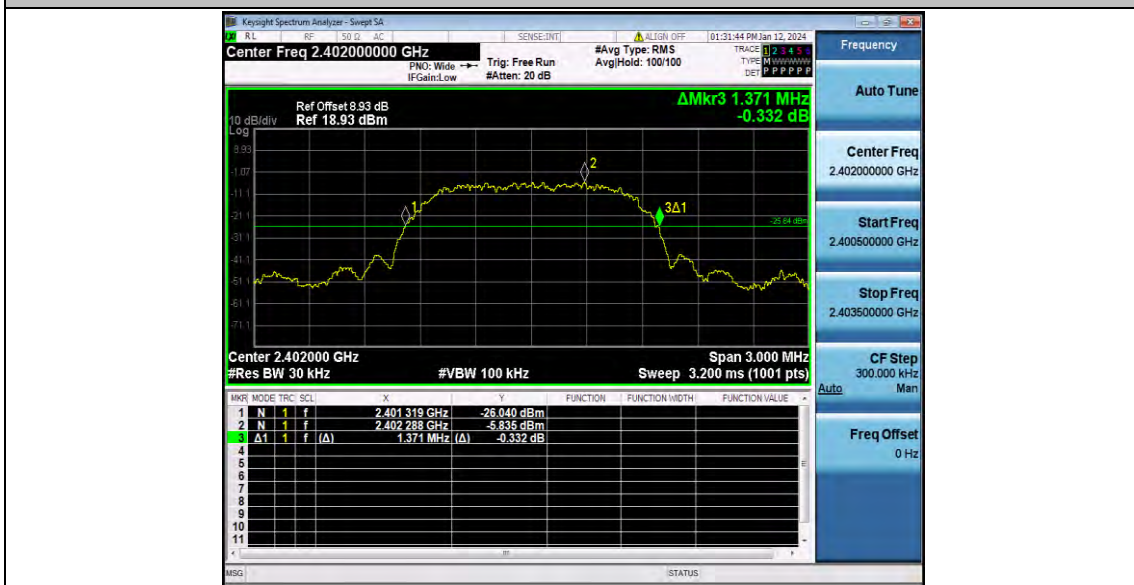
DH1_Ant1_2441



DH1_Ant1_2480



2DH1_Ant1_2402



2DH1_Ant1_2441



2DH1_Ant1_2480



3DH1_Ant1_2402



3DH1_Ant1_2441



3DH1_Ant1_2480

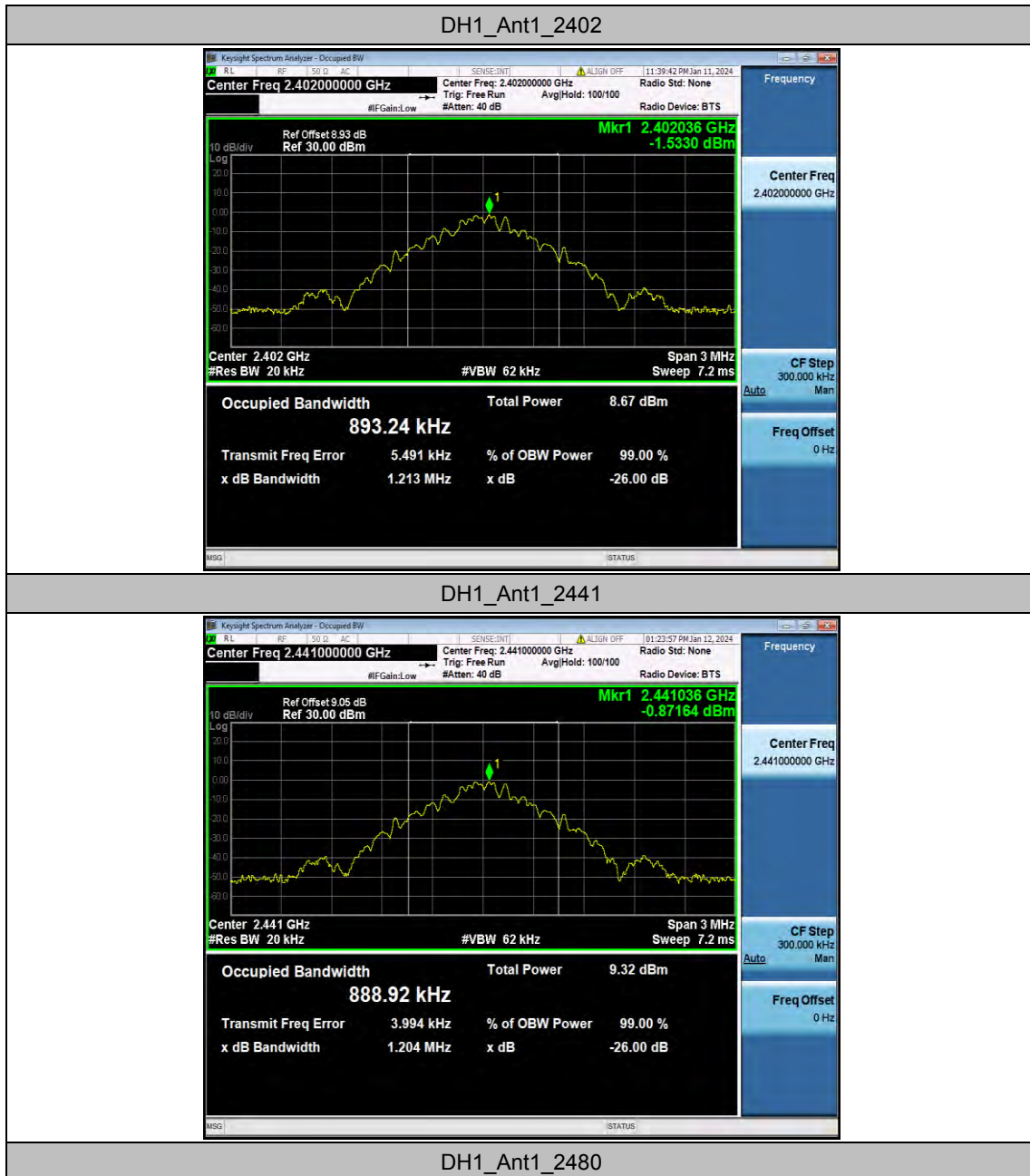


Appendix A.2: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	0.89324	2401.5589	2402.4521	---	---
		2441	0.88892	2440.5595	2441.4485	---	---
		2480	0.88591	2479.5590	2480.4449	---	---
2DH1	Ant1	2402	1.1959	2401.3953	2402.5912	---	---
		2441	1.2029	2440.3970	2441.5999	---	---
		2480	1.1919	2479.4039	2480.5958	---	---
3DH1	Ant1	2402	1.1957	2401.4065	2402.6022	---	---
		2441	1.1860	2440.4096	2441.5956	---	---
		2480	1.1962	2479.4073	2480.6035	---	---

Test Graphs





2DH1_Ant1_2402



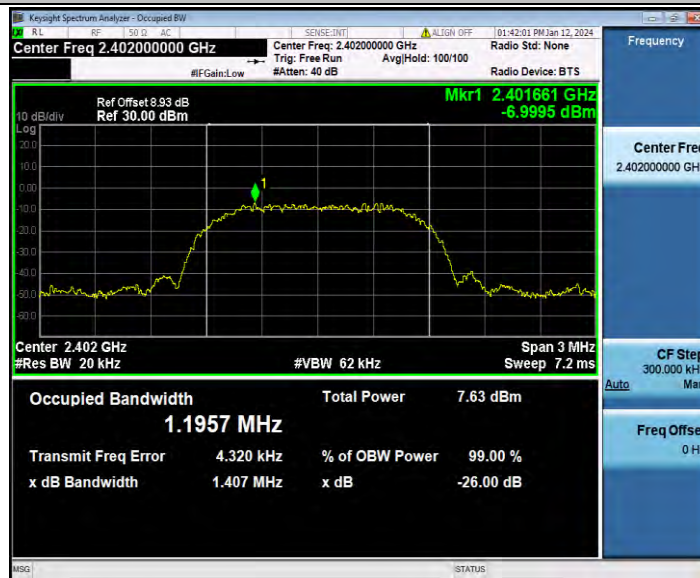
2DH1_Ant1_2441



2DH1_Ant1_2480



3DH1_Ant1_2402



3DH1_Ant1_2441



3DH1_Ant1_2480



Appendix A.3: Maximum conducted output power

Test Result

Test Mode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH1	Ant1	2402	4.32	≤20.97	PASS
		2441	4.90	≤20.97	PASS
		2480	5.64	≤20.97	PASS
2DH1	Ant1	2402	2.75	≤20.97	PASS
		2441	3.32	≤20.97	PASS
		2480	3.85	≤20.97	PASS
3DH1	Ant1	2402	3.39	≤20.97	PASS
		2441	3.88	≤20.97	PASS
		2480	4.59	≤20.97	PASS

Note:

1. The Duty Cycle Factor and RBW Factor is compensated in the graph.

Appendix A.4: Carrier frequency separation

Test Result

TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Hop_2402	1.334	≥ 0.692	PASS
		Hop_2441	1.022	≥ 0.692	PASS
		Hop_2480	0.856	≥ 0.692	PASS
2DH1	Ant1	Hop_2402	0.996	≥ 0.914	PASS
		Hop_2441	0.998	≥ 0.914	PASS
		Hop_2480	1.012	≥ 0.914	PASS
3DH1	Ant1	Hop_2402	1.01	≥ 0.910	PASS
		Hop_2441	0.992	≥ 0.910	PASS
		Hop_2480	1.026	≥ 0.910	PASS

Test Graphs





2DH1_Ant1_Hop_2402



2DH1_Ant1_Hop_2441



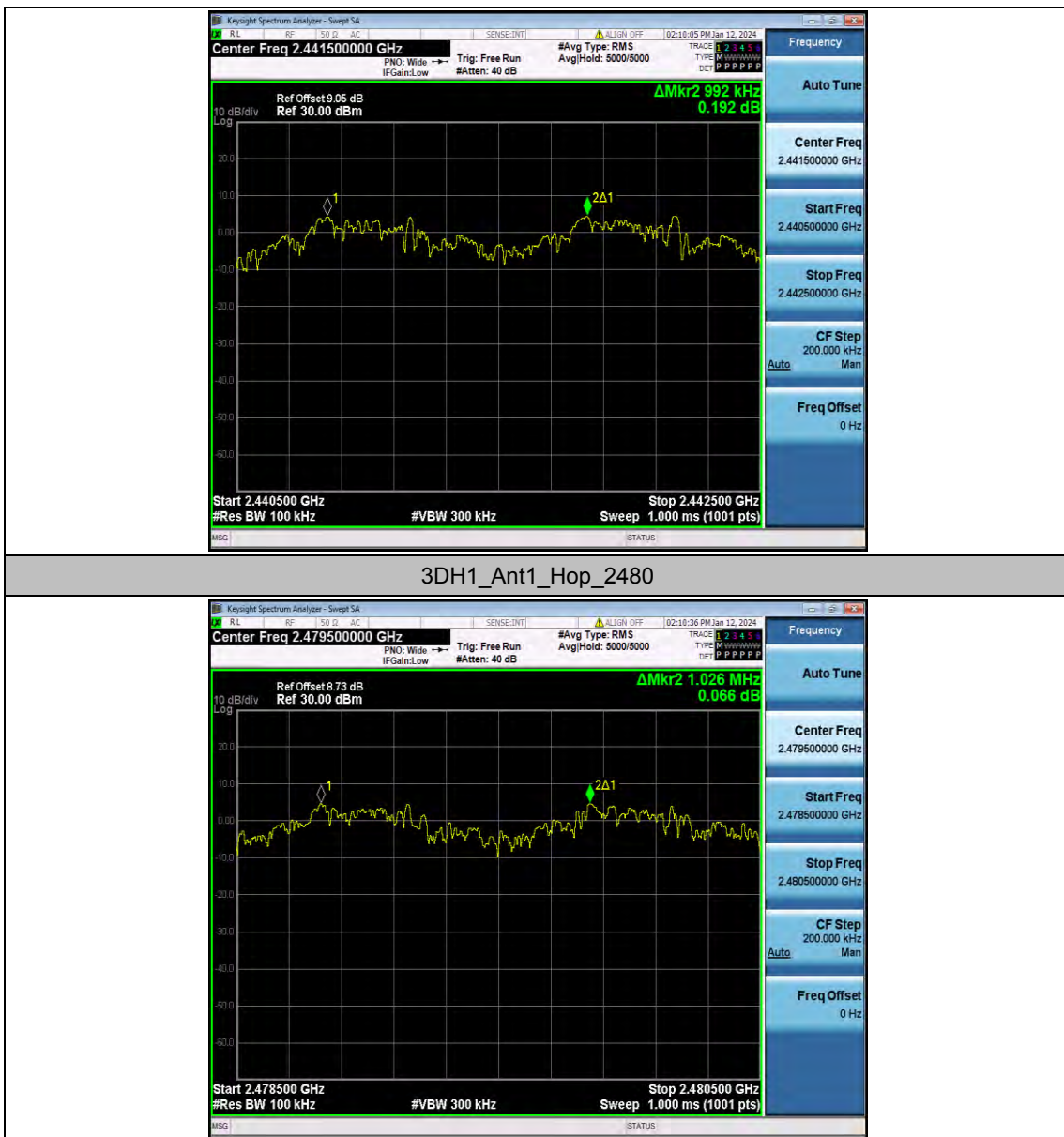
2DH1_Ant1_Hop_2480



3DH1_Ant1_Hop_2402



3DH1_Ant1_Hop_2441

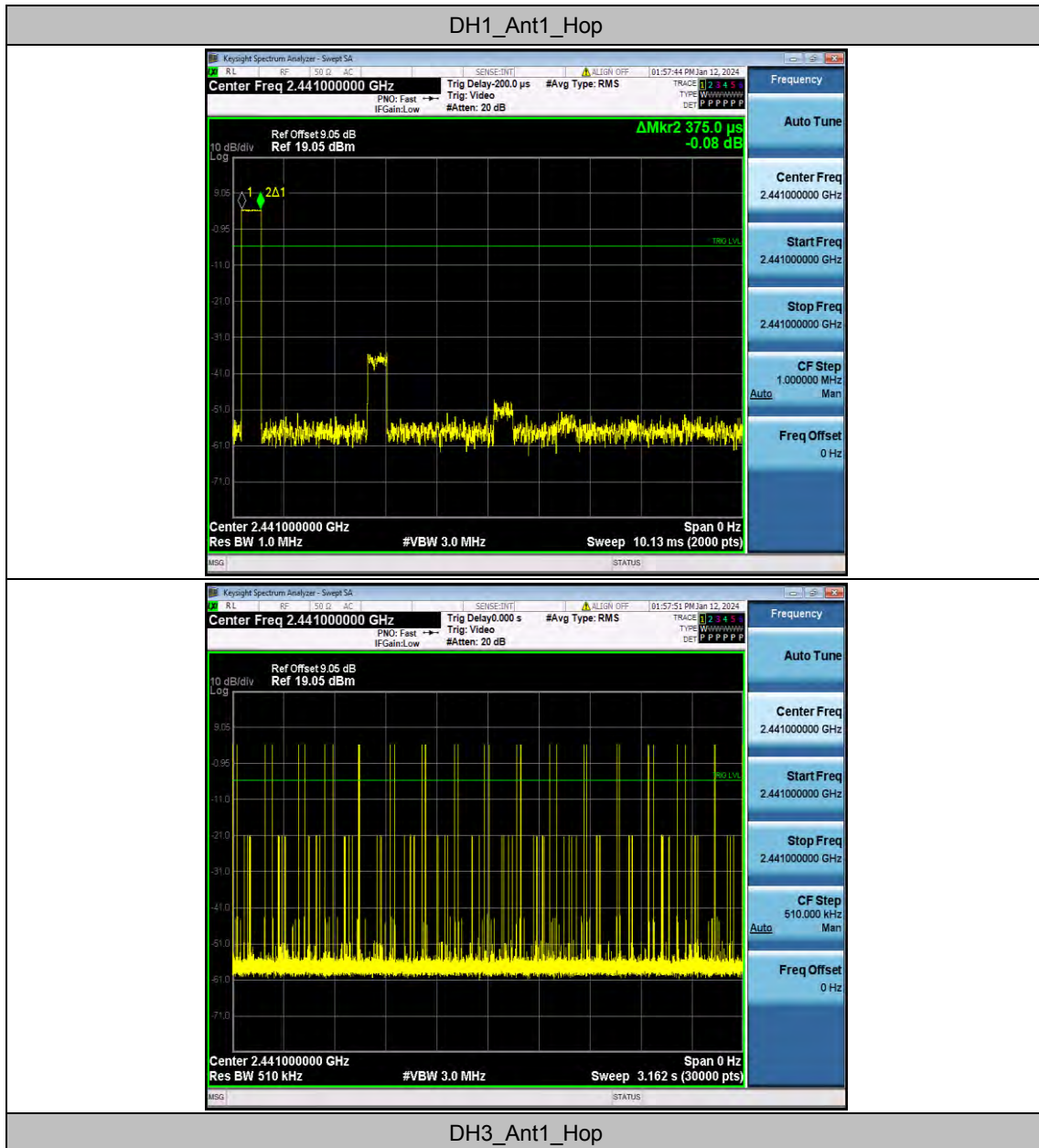


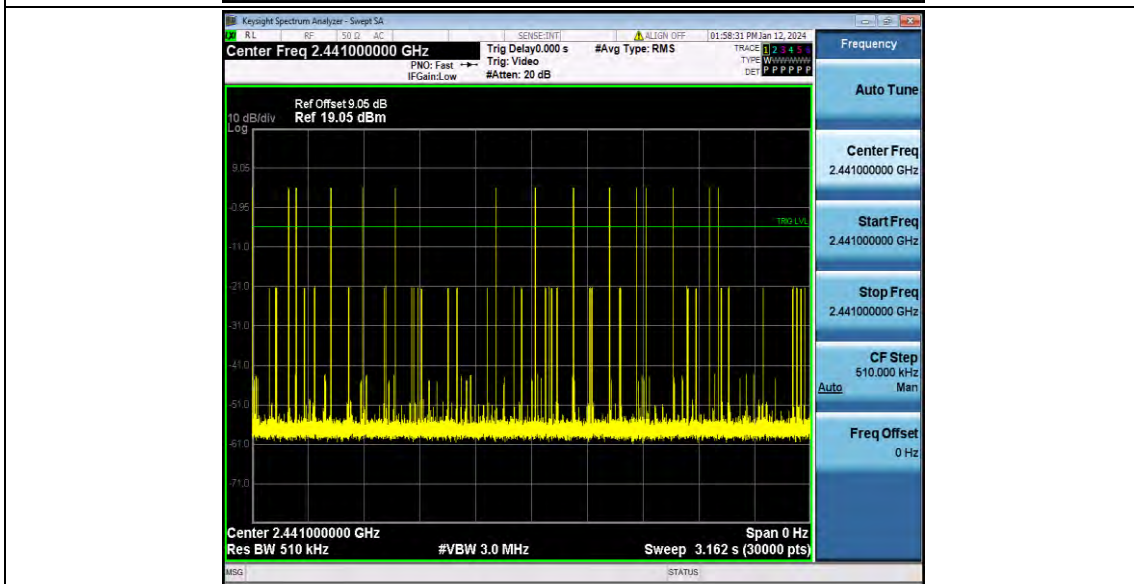
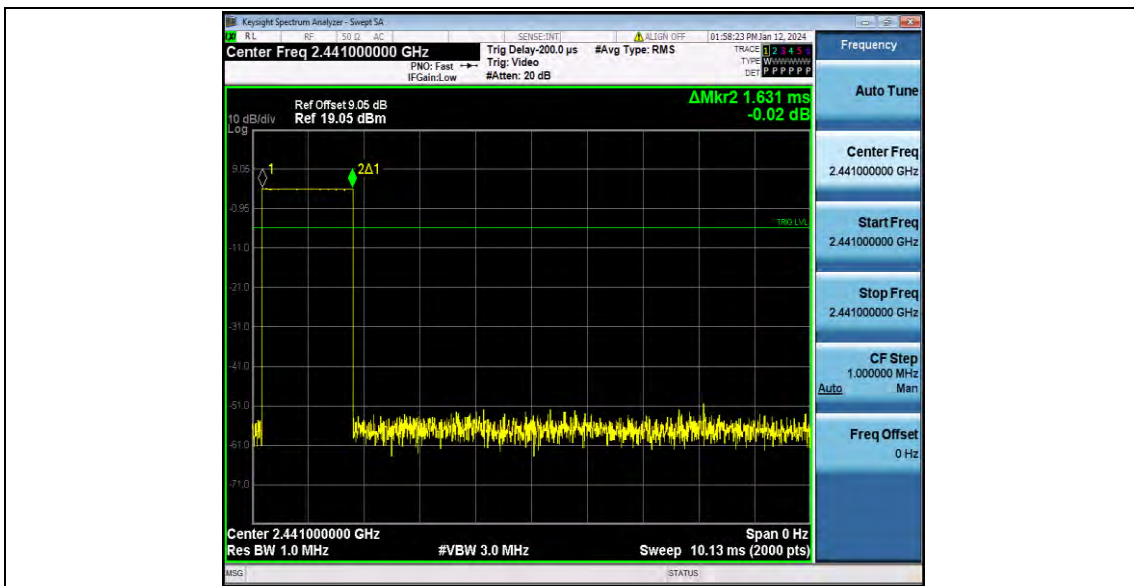
Appendix A.5: Time of occupancy

Test Result

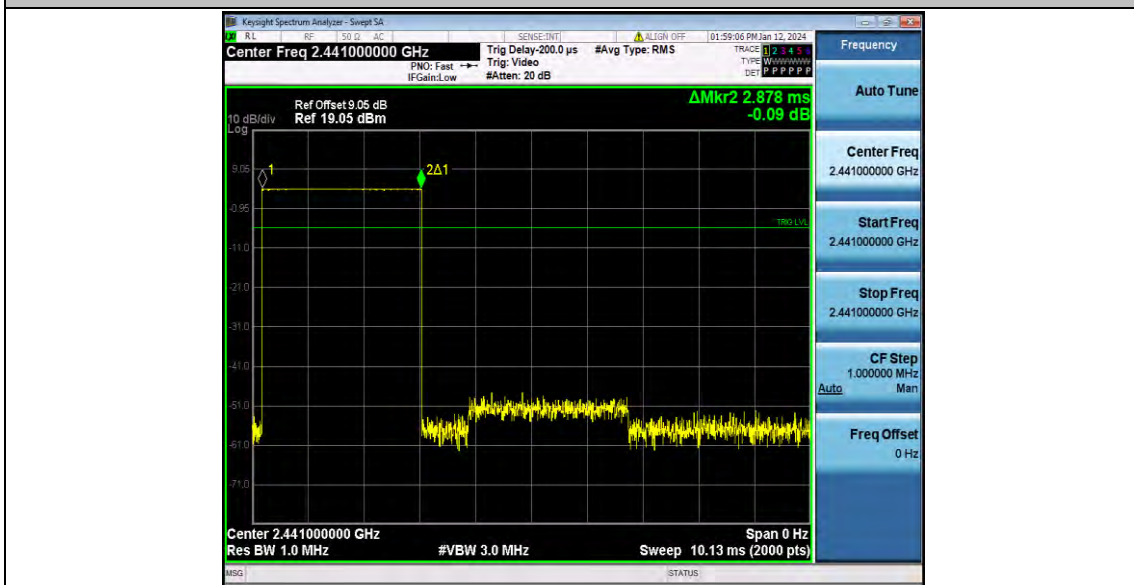
TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.375	330	0.124	≤0.4	PASS
DH3	Ant1	Hop	1.631	150	0.245	≤0.4	PASS
DH5	Ant1	Hop	2.878	110	0.317	≤0.4	PASS
2DH1	Ant1	Hop	0.380	320	0.122	≤0.4	PASS
2DH3	Ant1	Hop	1.637	200	0.327	≤0.4	PASS
2DH5	Ant1	Hop	2.883	120	0.346	≤0.4	PASS
3DH1	Ant1	Hop	0.380	330	0.125	≤0.4	PASS
3DH3	Ant1	Hop	1.637	170	0.278	≤0.4	PASS
3DH5	Ant1	Hop	2.883	60	0.173	≤0.4	PASS

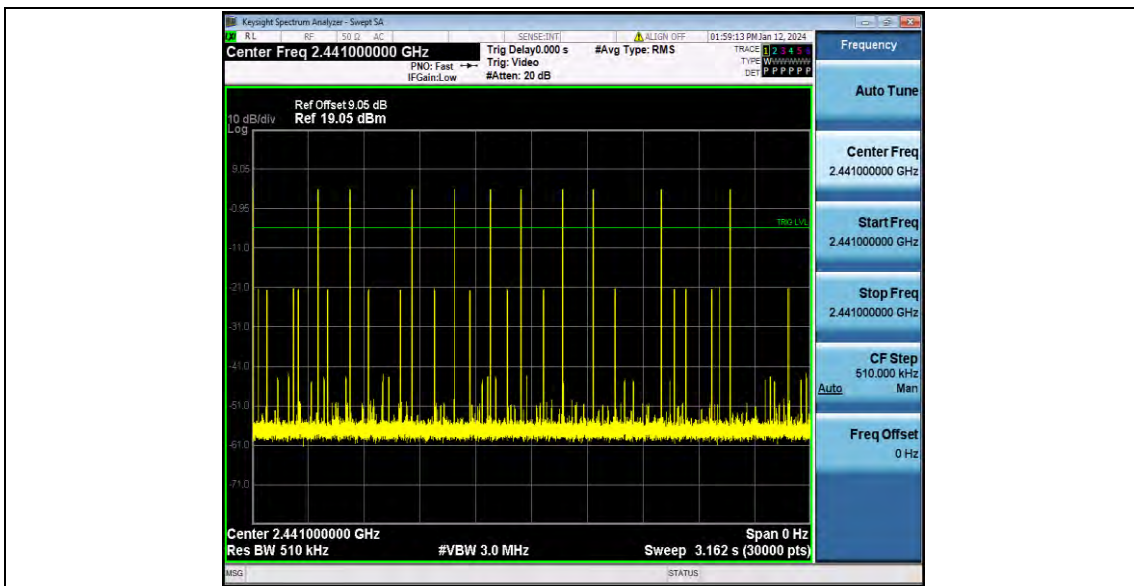
Test Graphs



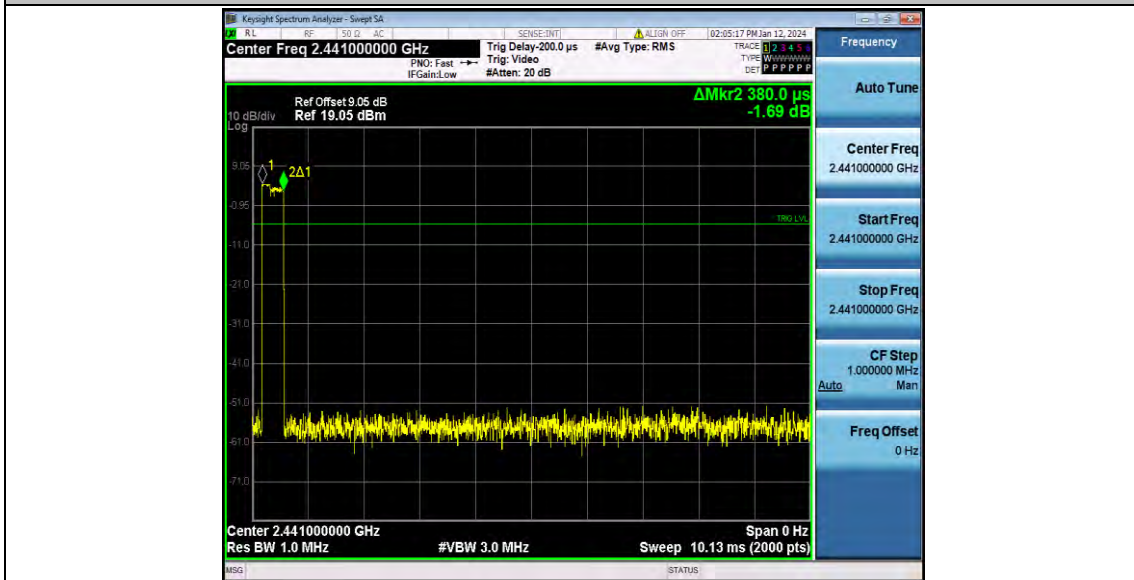


DH5_Ant1_Hop

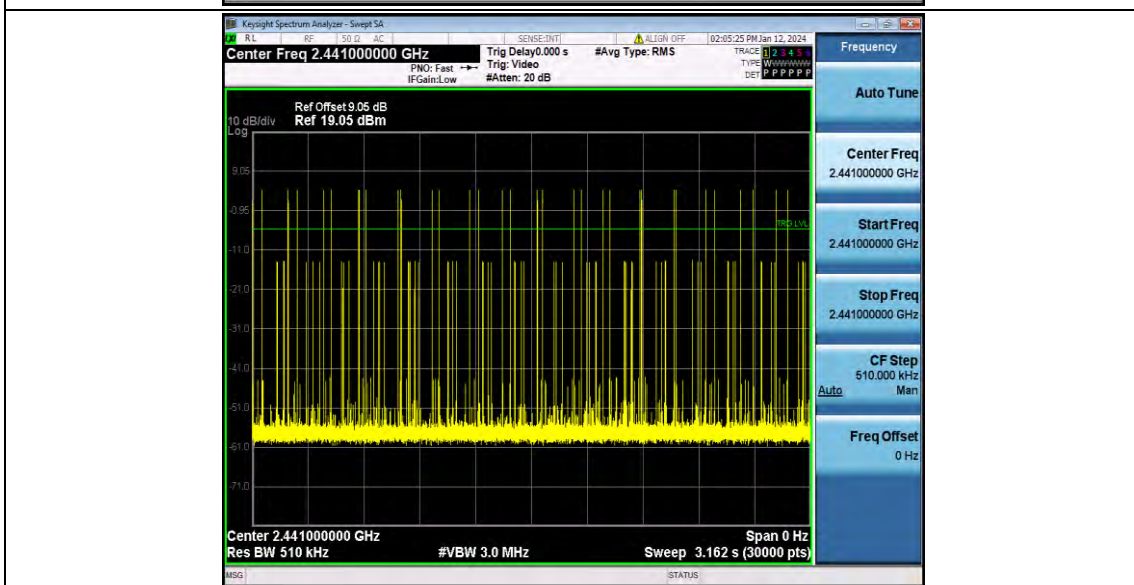


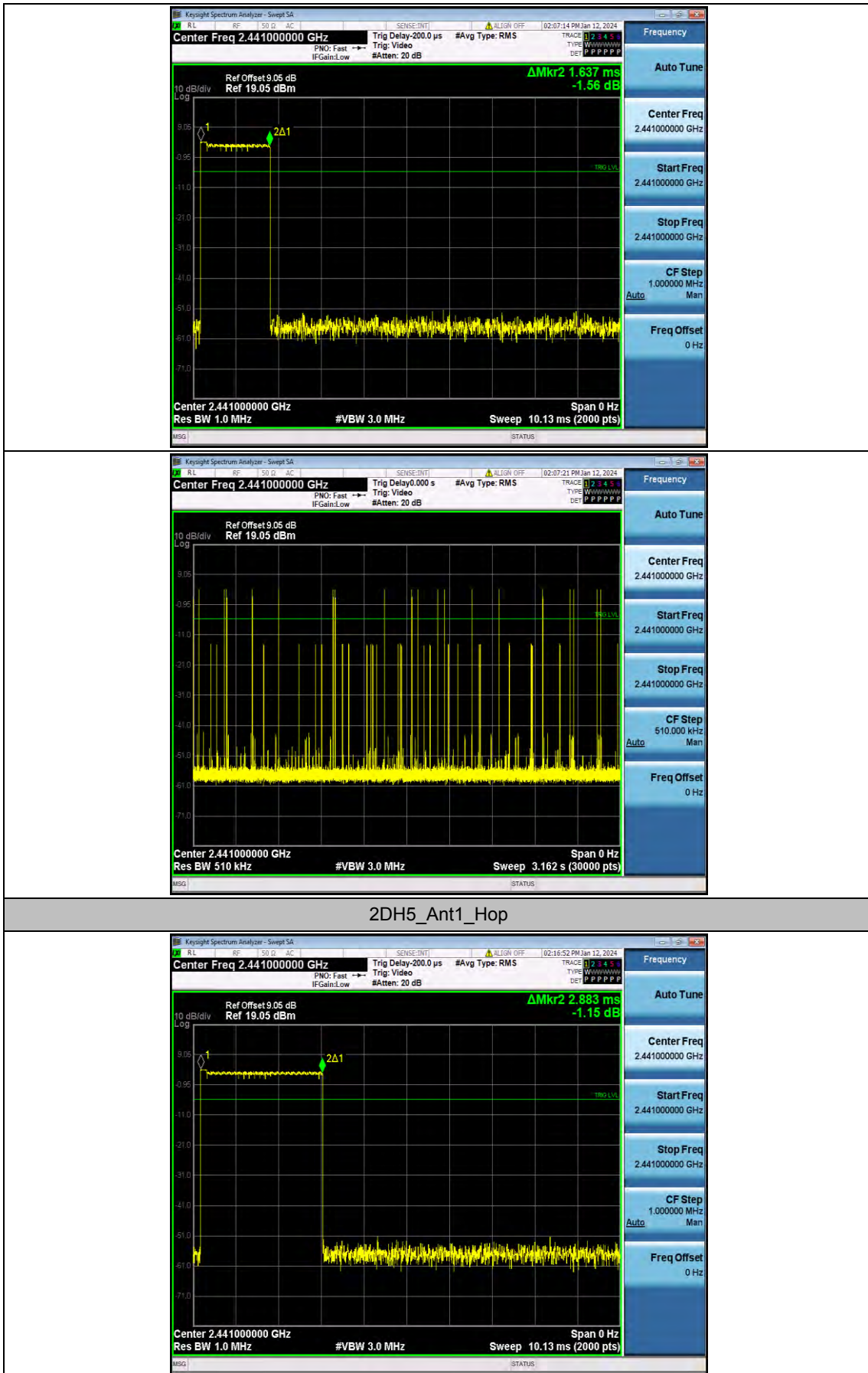


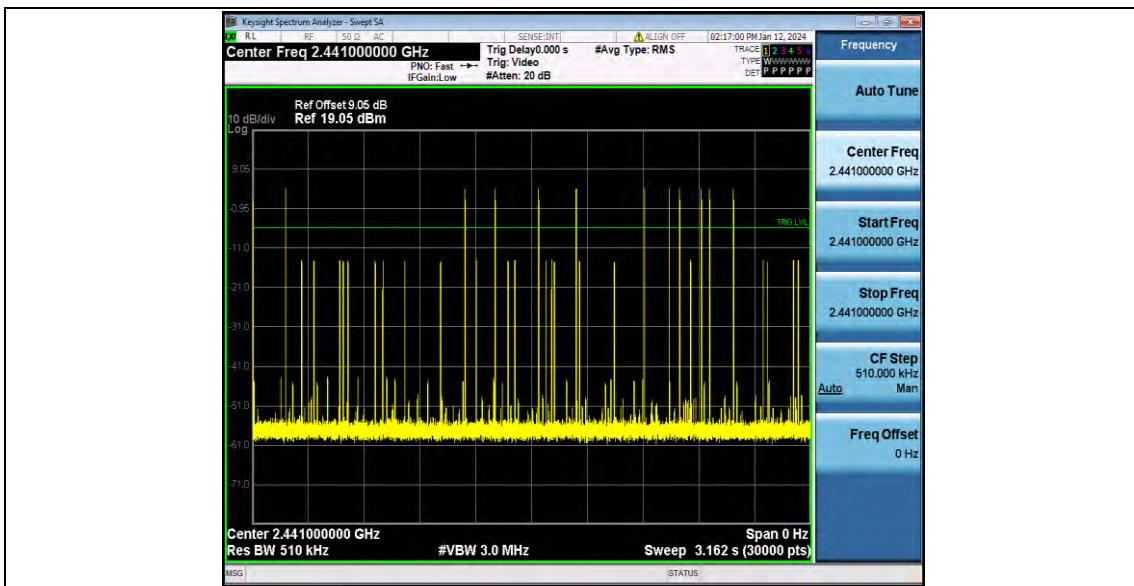
2DH1_Ant1_Hop



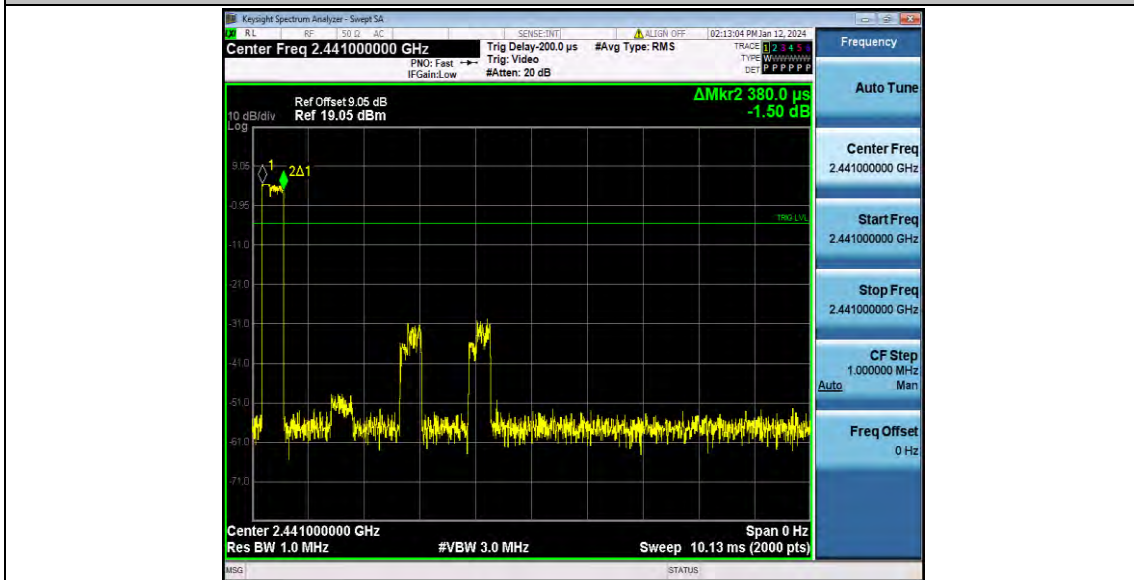
2DH3_Ant1_Hop



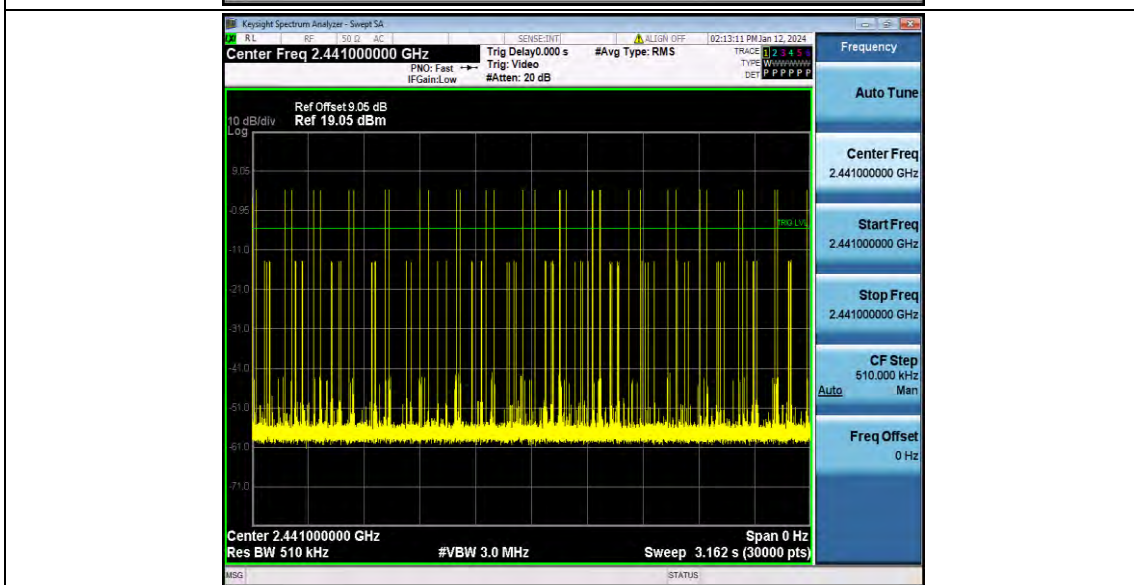


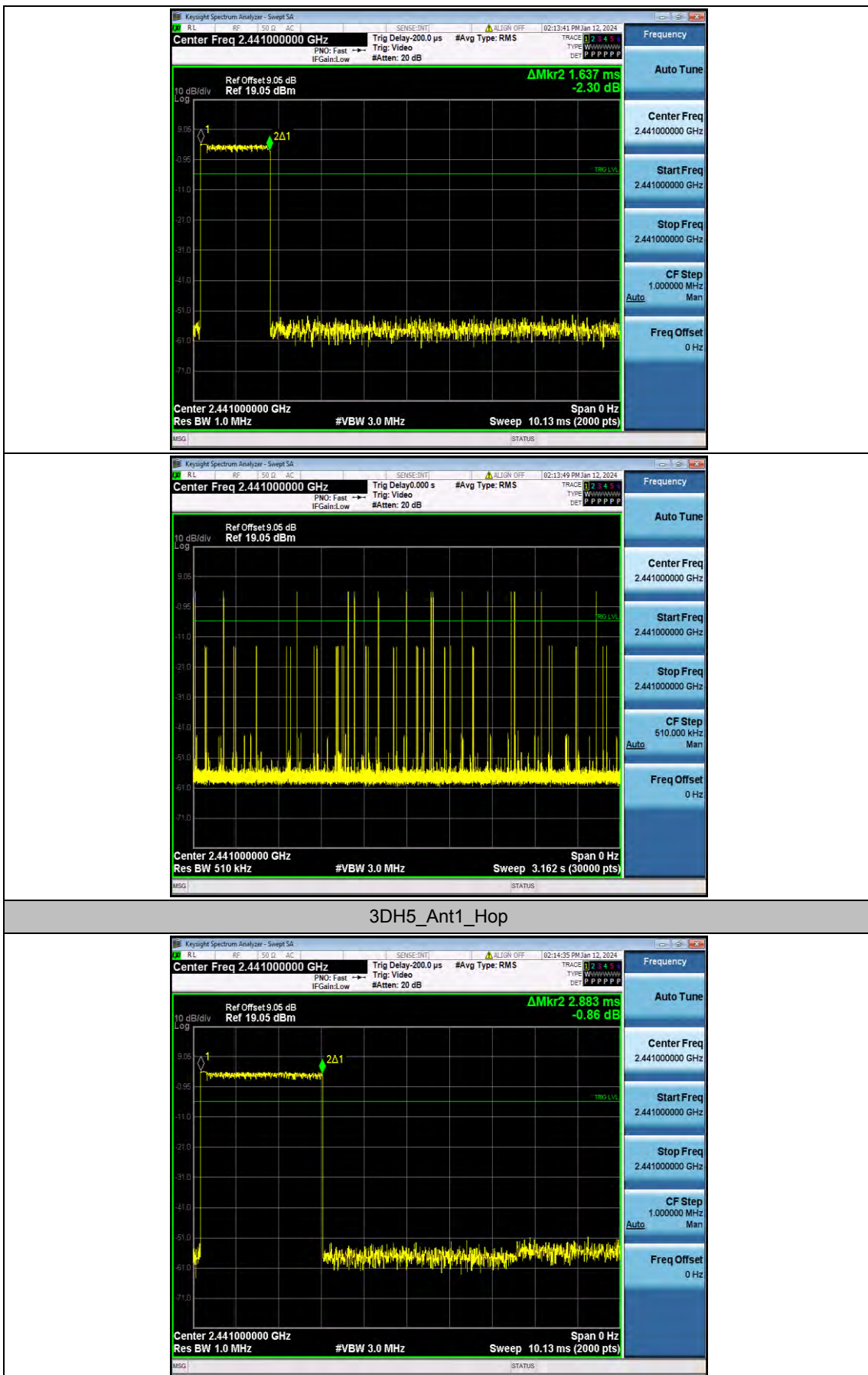


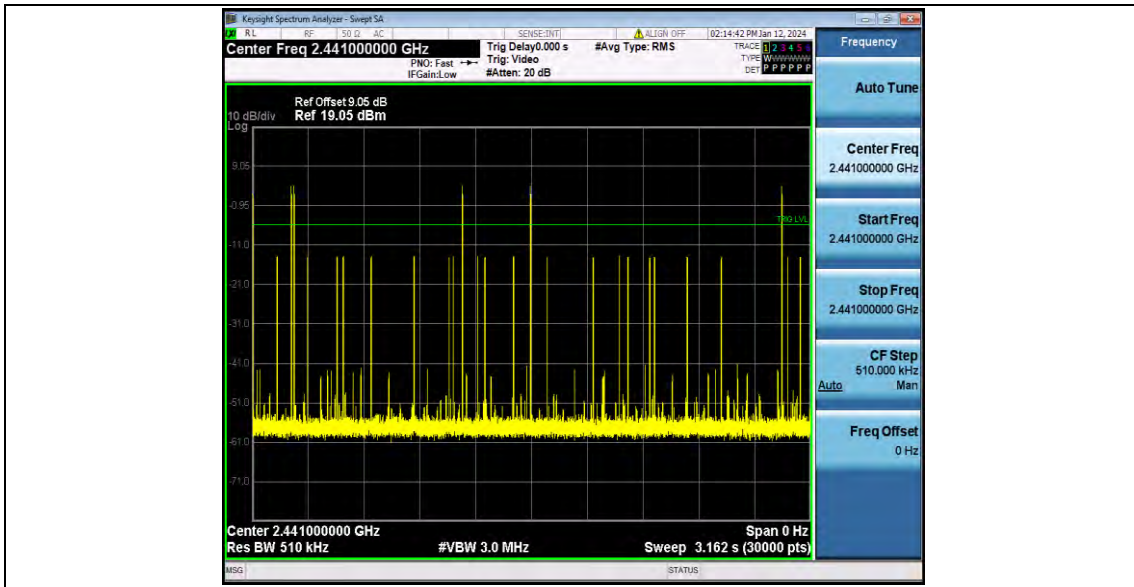
3DH1_Ant1_Hop



3DH3_Ant1_Hop





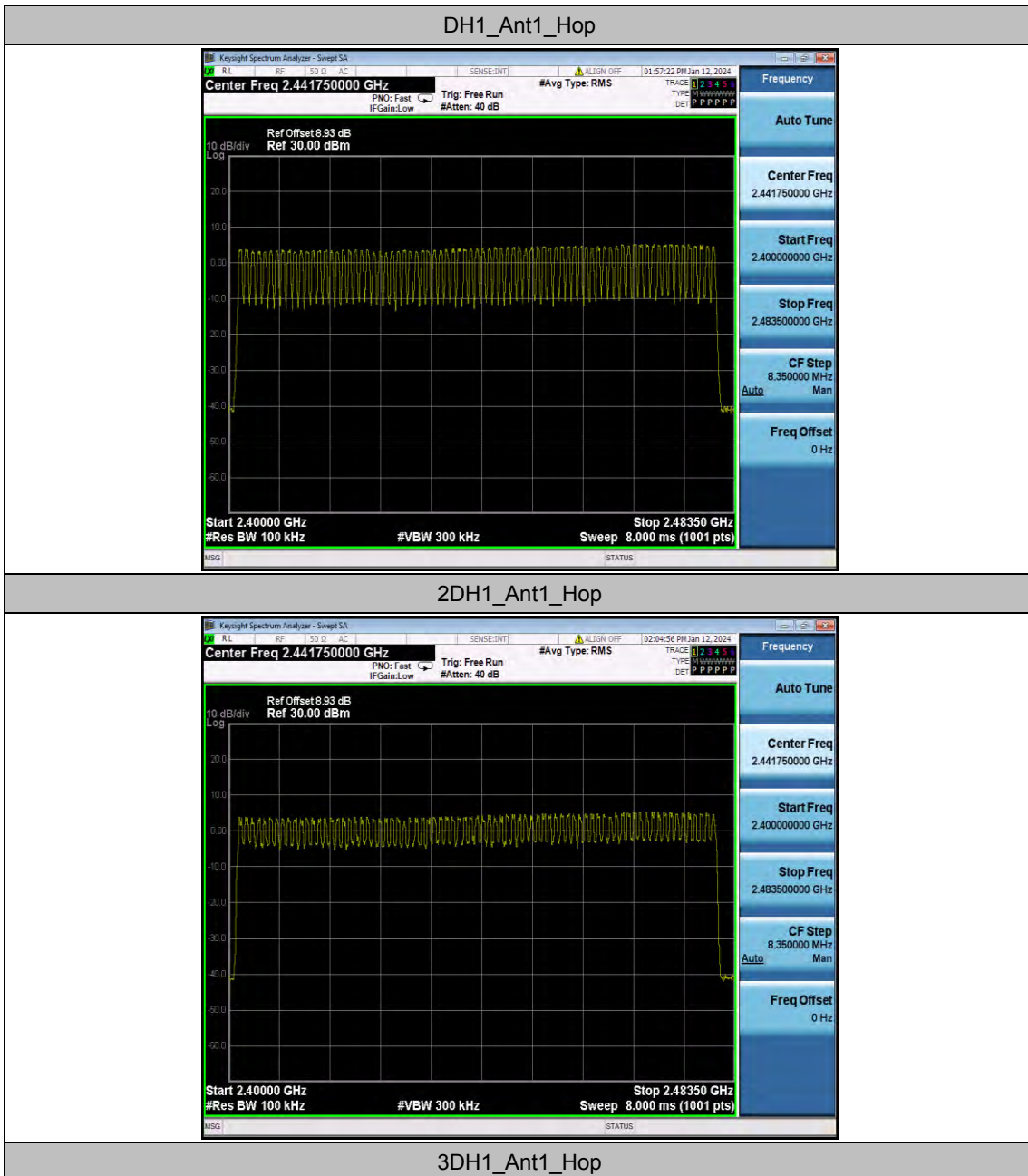


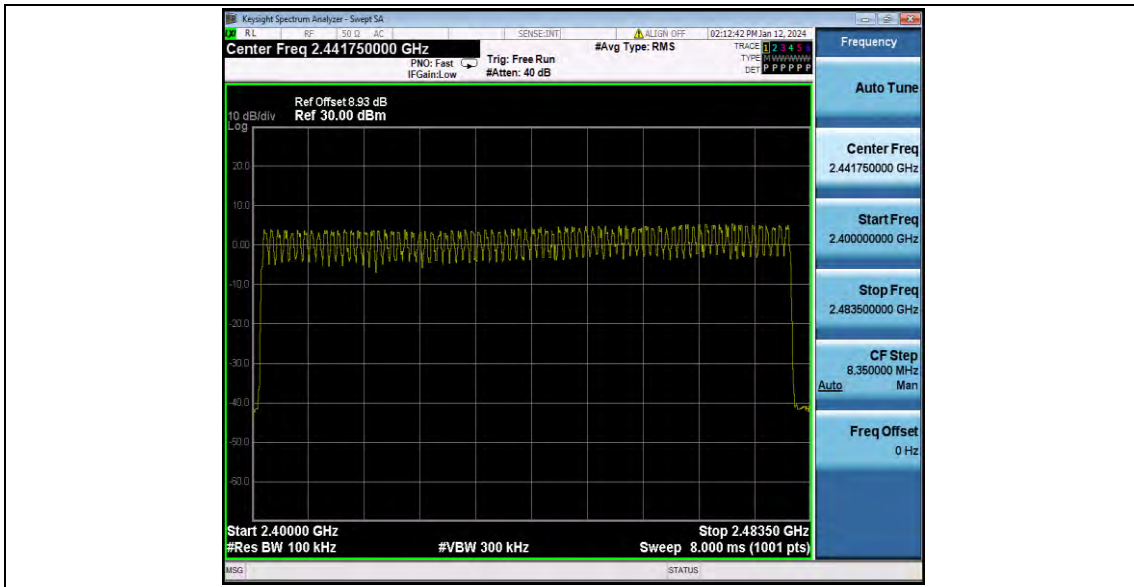
Appendix A.6: Number of hopping channels

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



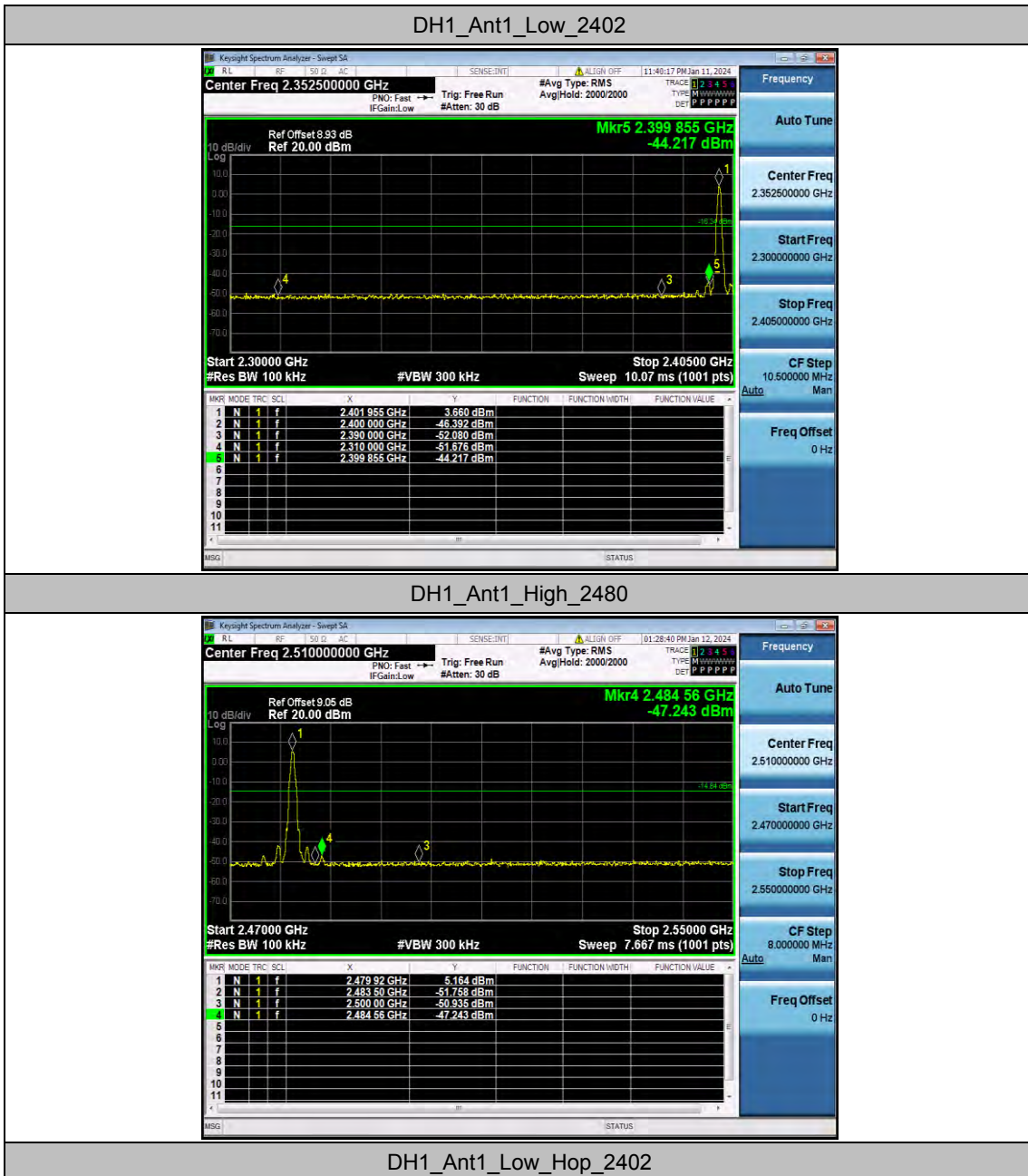


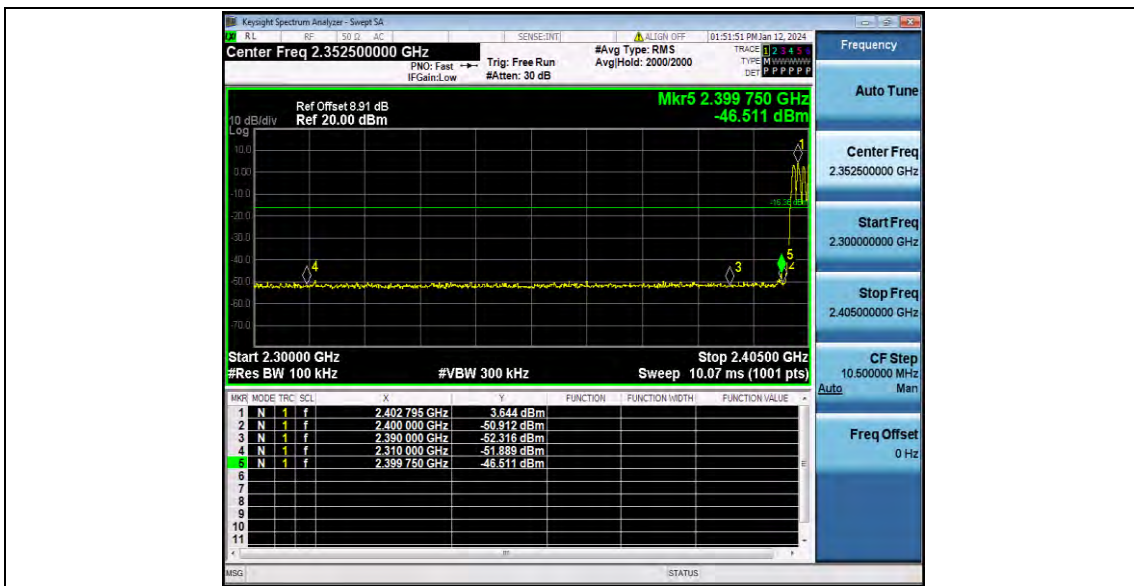
Appendix A.7: Band edge measurements

Test Result

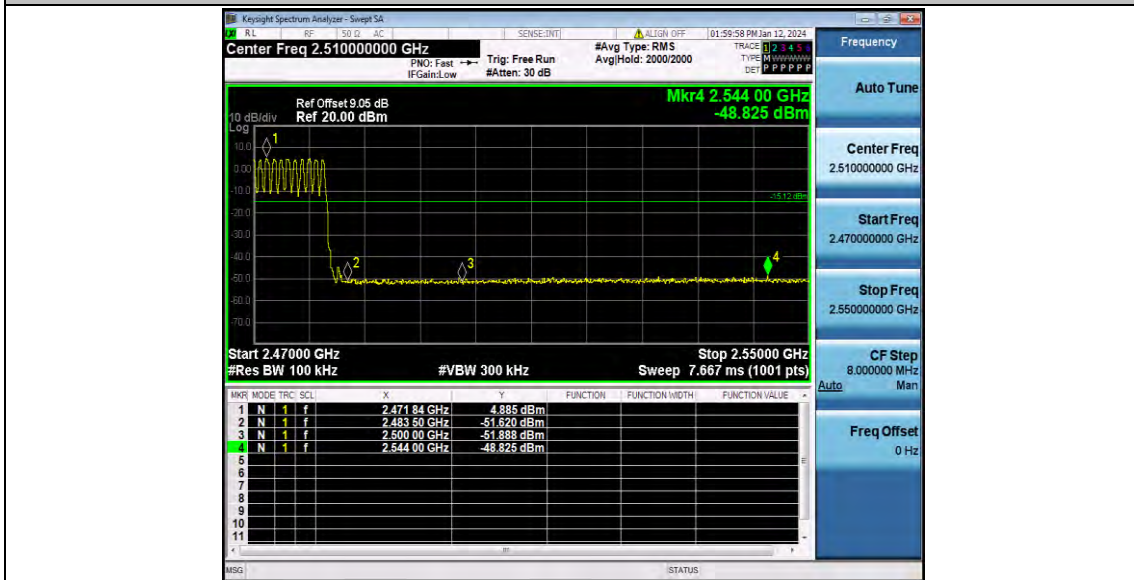
TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	Low	2402	3.66	-44.22	≤-16.34	PASS
		High	2480	5.16	-47.24	≤-14.84	PASS
		Low	Hop_2402	3.64	-46.51	≤-16.36	PASS
		High	Hop_2480	4.89	-48.83	≤-15.12	PASS
2DH1	Ant1	Low	2402	-0.68	-46.98	≤-20.68	PASS
		High	2480	0.34	-48.69	≤-19.66	PASS
		Low	Hop_2402	3.66	-47.97	≤-16.34	PASS
		High	Hop_2480	4.84	-49.17	≤-15.16	PASS
3DH1	Ant1	Low	2402	-1.02	-47.19	≤-21.02	PASS
		High	2480	0.47	-48.47	≤-19.53	PASS
		Low	Hop_2402	3.68	-46.97	≤-16.32	PASS
		High	Hop_2480	4.16	-49.05	≤-15.84	PASS

Test Graphs

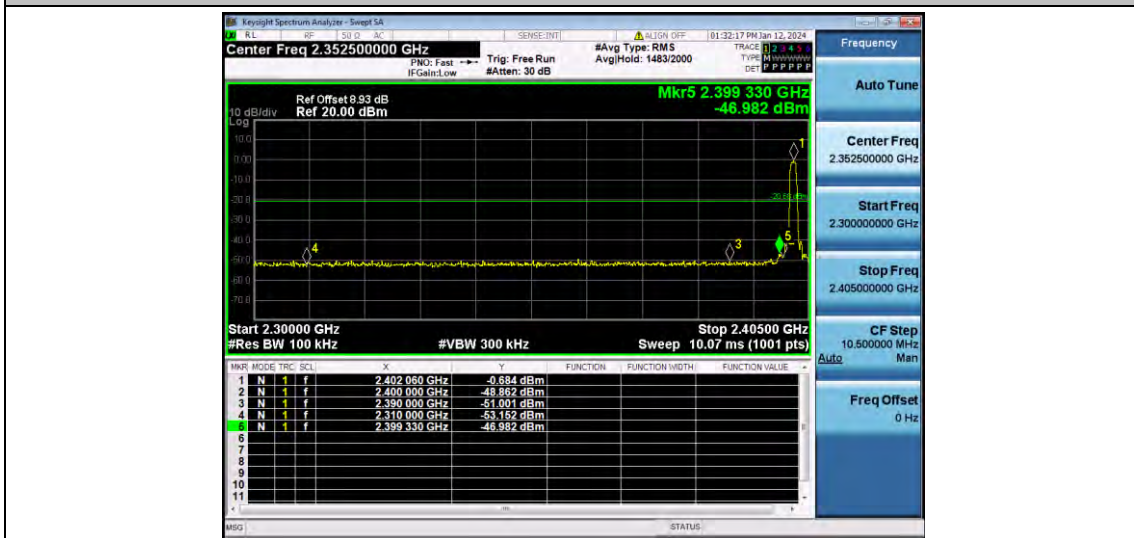




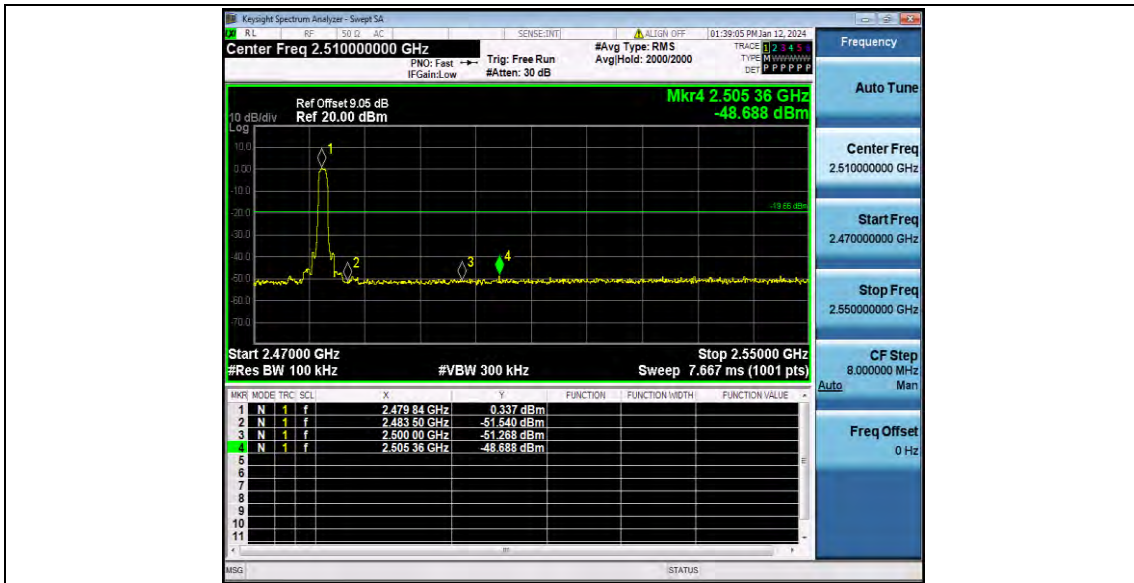
DH1_Ant1_High_Hop_2480



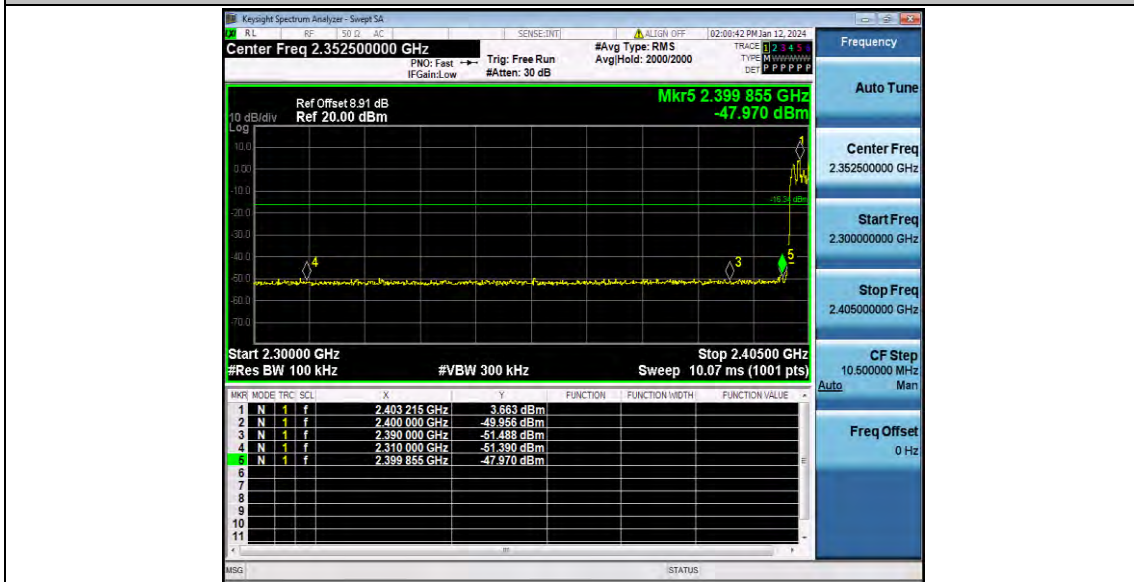
2DH1_Ant1_Low_2402



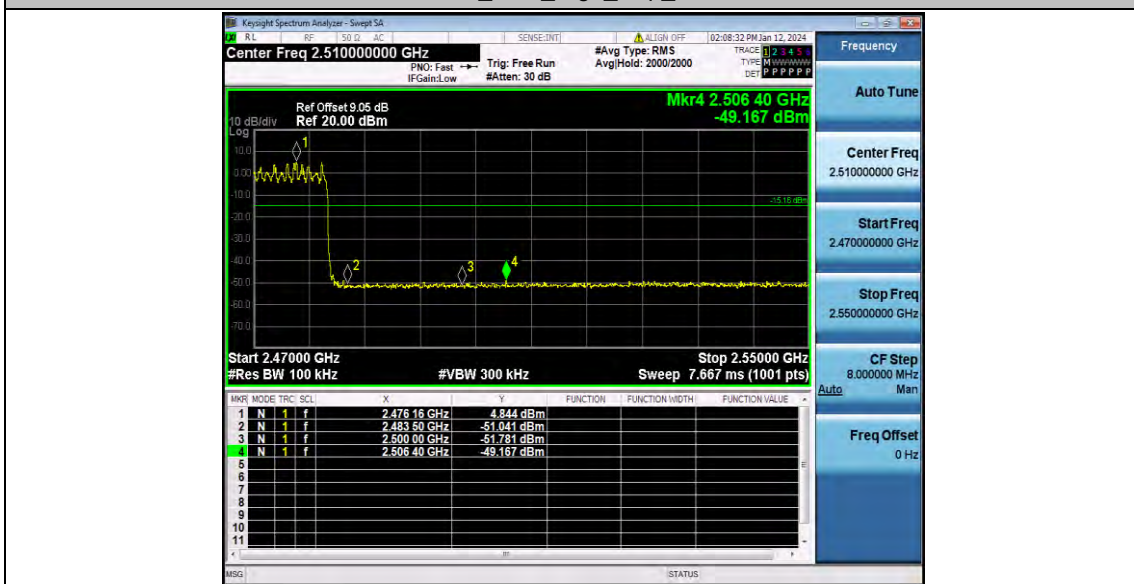
2DH1_Ant1_High_2480



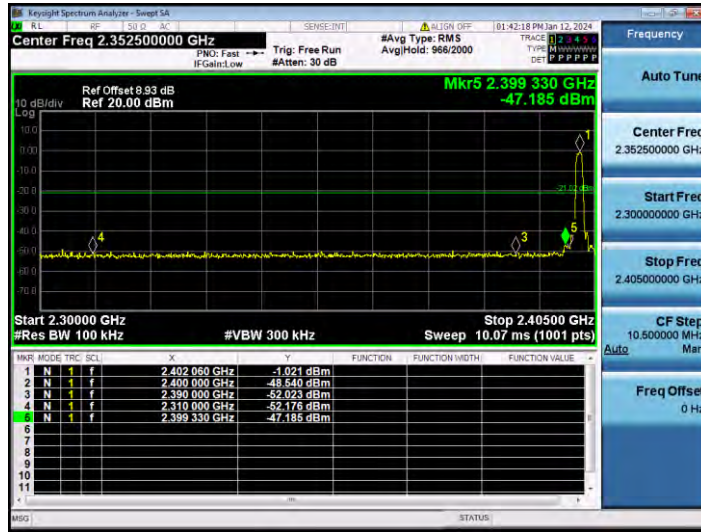
2DH1_Ant1_Low_Hop_2402



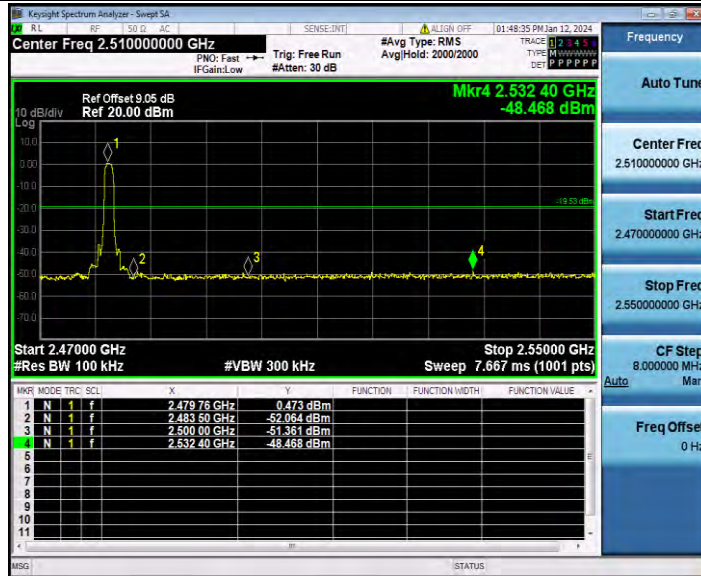
2DH1_Ant1_High_Hop_2480



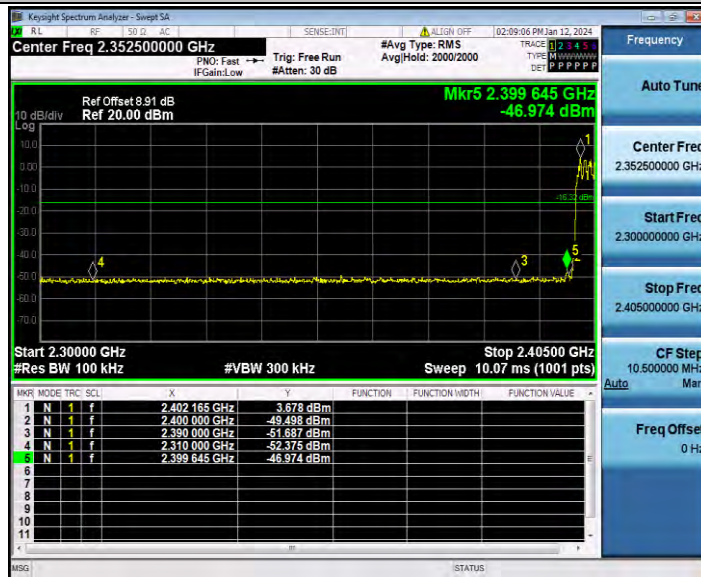
3DH1_Ant1_Low_2402

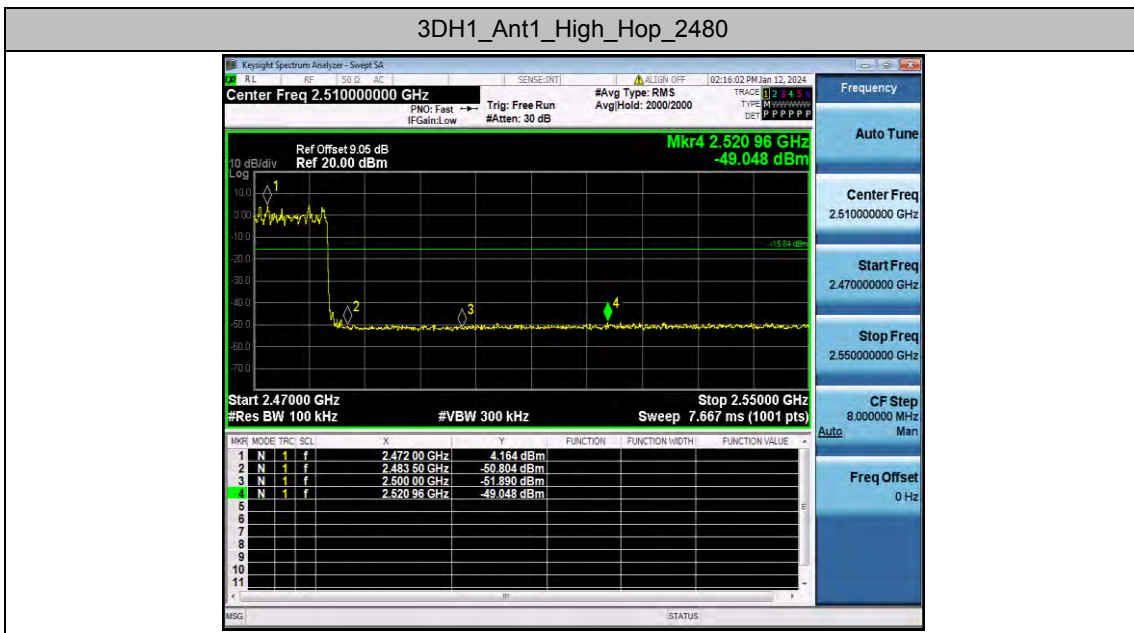


3DH1_Ant1_High_2480



3DH1_Ant1_Low_Hop_2402



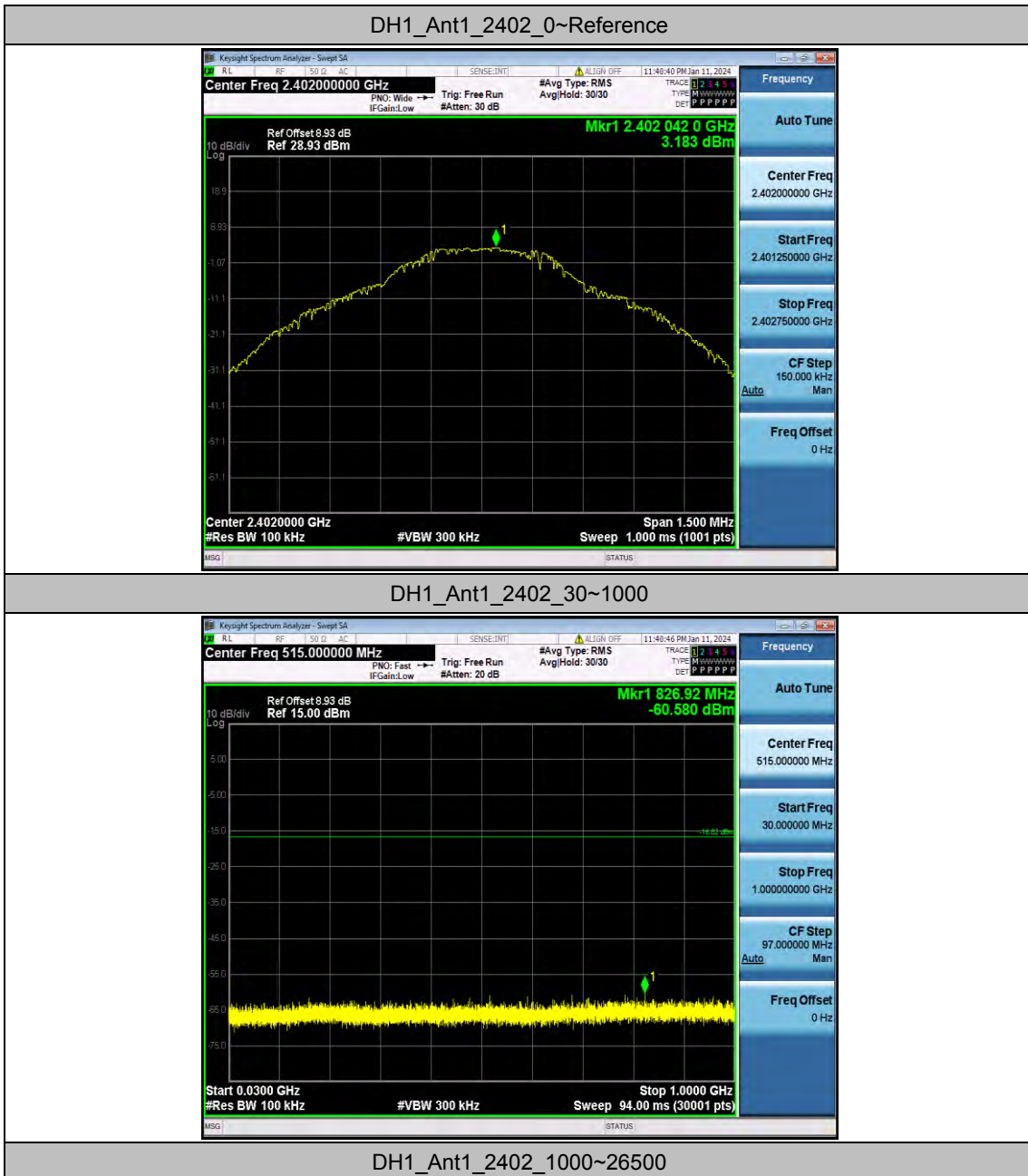


Appendix A.8: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	2402	Reference	3.18	3.18	---	PASS
			30~1000	3.18	-60.58	≤-16.82	PASS
			1000~26500	3.18	-48.09	≤-16.82	PASS
		2441	Reference	3.83	3.83	---	PASS
			30~1000	3.83	-60.29	≤-16.17	PASS
			1000~26500	3.83	-47.95	≤-16.17	PASS
		2480	Reference	4.71	4.71	---	PASS
			30~1000	4.71	-60.61	≤-15.29	PASS
			1000~26500	4.71	-47.84	≤-15.29	PASS
2DH1	Ant1	2402	Reference	-1.72	-1.72	---	PASS
			30~1000	-1.72	-59.81	≤-21.72	PASS
			1000~26500	-1.72	-47.79	≤-21.72	PASS
		2441	Reference	-1.11	-1.11	---	PASS
			30~1000	-1.11	-60.03	≤-21.11	PASS
			1000~26500	-1.11	-48.23	≤-21.11	PASS
		2480	Reference	-0.19	-0.19	---	PASS
			30~1000	-0.19	-59.95	≤-20.19	PASS
			1000~26500	-0.19	-47.56	≤-20.19	PASS
3DH1	Ant1	2402	Reference	-1.75	-1.75	---	PASS
			30~1000	-1.75	-60.25	≤-21.75	PASS
			1000~26500	-1.75	-47.05	≤-21.75	PASS
		2441	Reference	-1.04	-1.04	---	PASS
			30~1000	-1.04	-60.12	≤-21.04	PASS
			1000~26500	-1.04	-47.83	≤-21.04	PASS
		2480	Reference	-0.42	-0.42	---	PASS
			30~1000	-0.42	-60.27	≤-20.42	PASS
			1000~26500	-0.42	-47.67	≤-20.42	PASS

Test Graphs

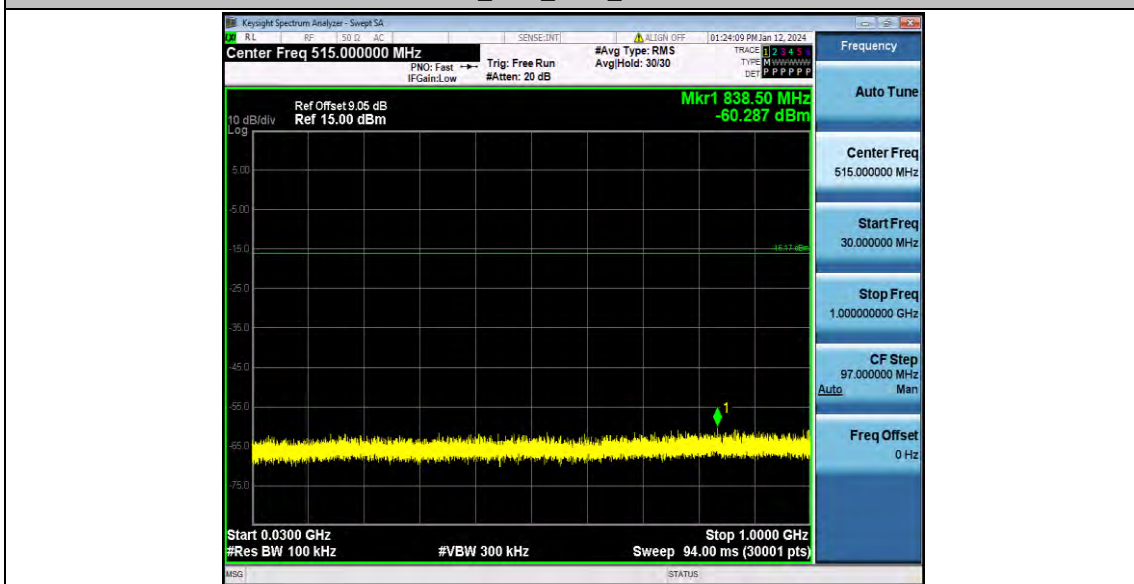




DH1_Ant1_2441_0~Reference



DH1_Ant1_2441_30~1000



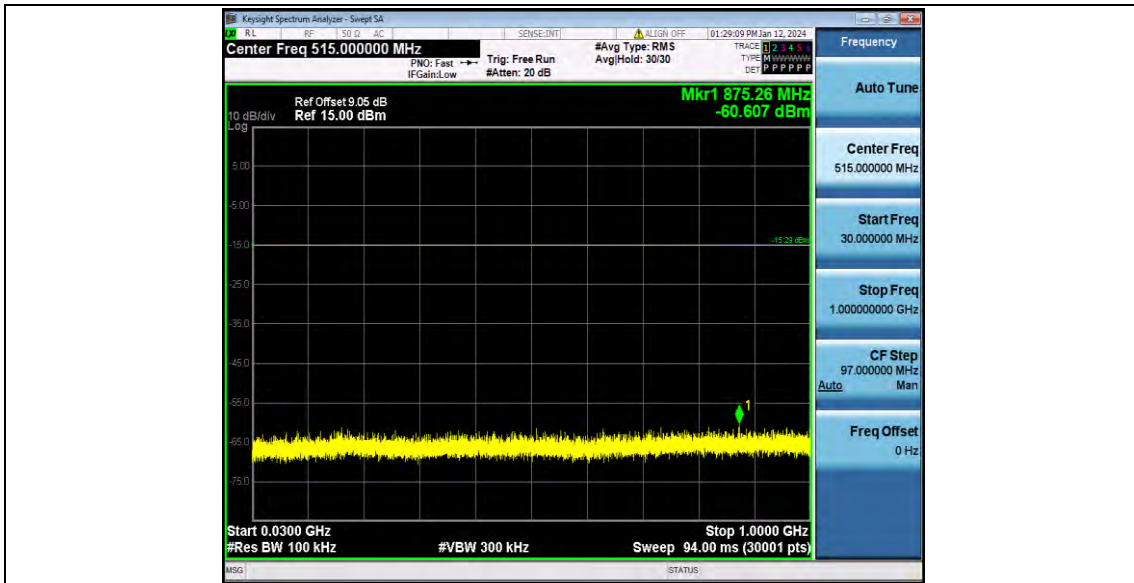
DH1_Ant1_2441_1000~26500



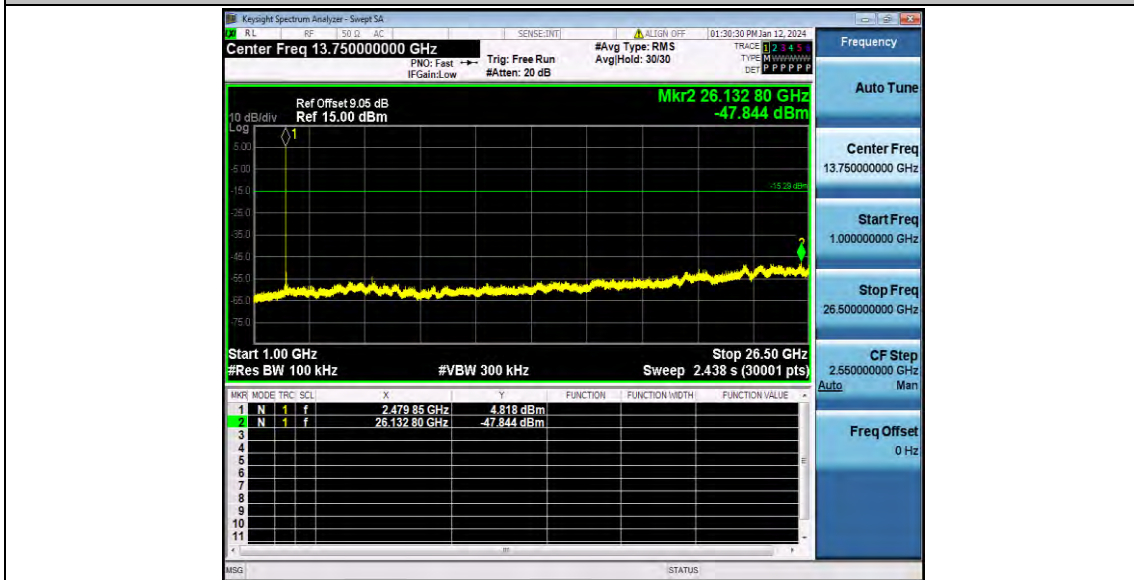
DH1_Ant1_2480_0~Reference



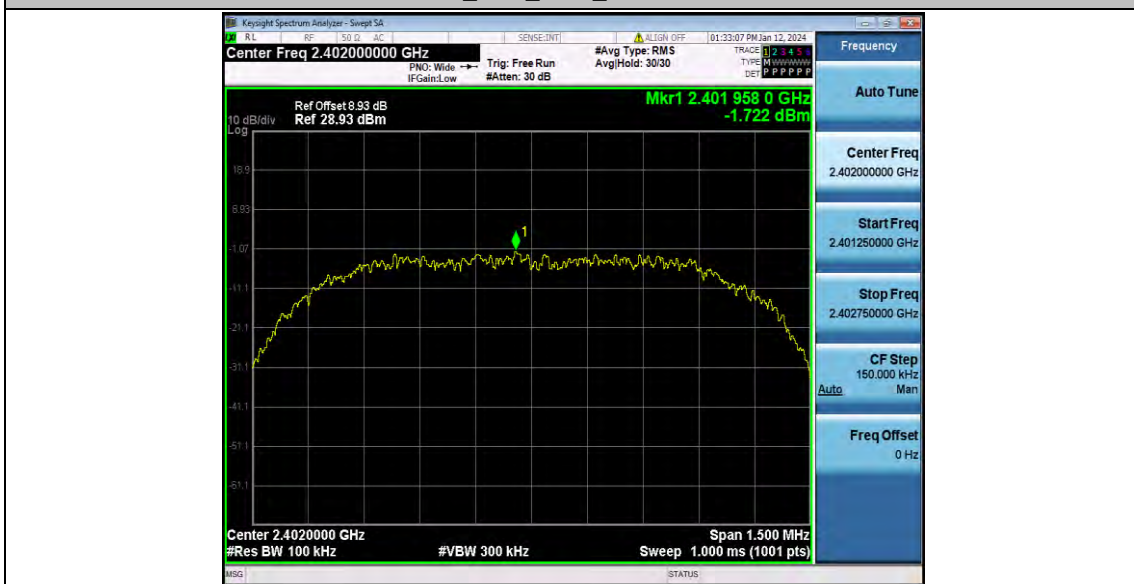
DH1_Ant1_2480_30~1000



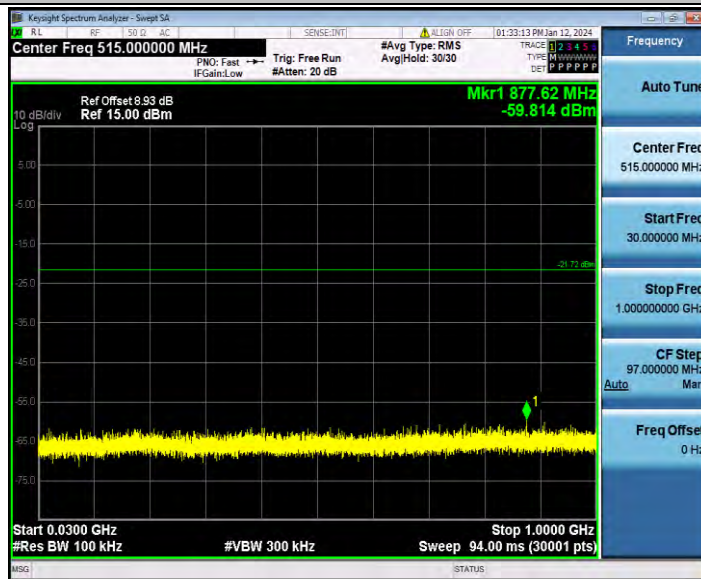
DH1_Ant1_2480_1000~26500



2DH1_Ant1_2402_0~Reference



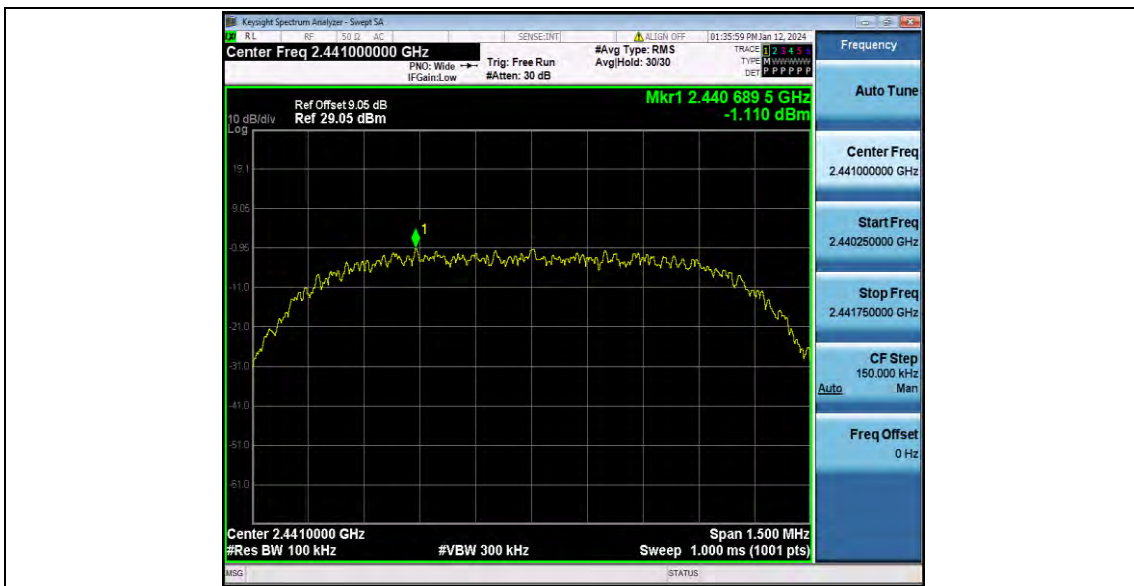
2DH1_Ant1_2402_30~1000



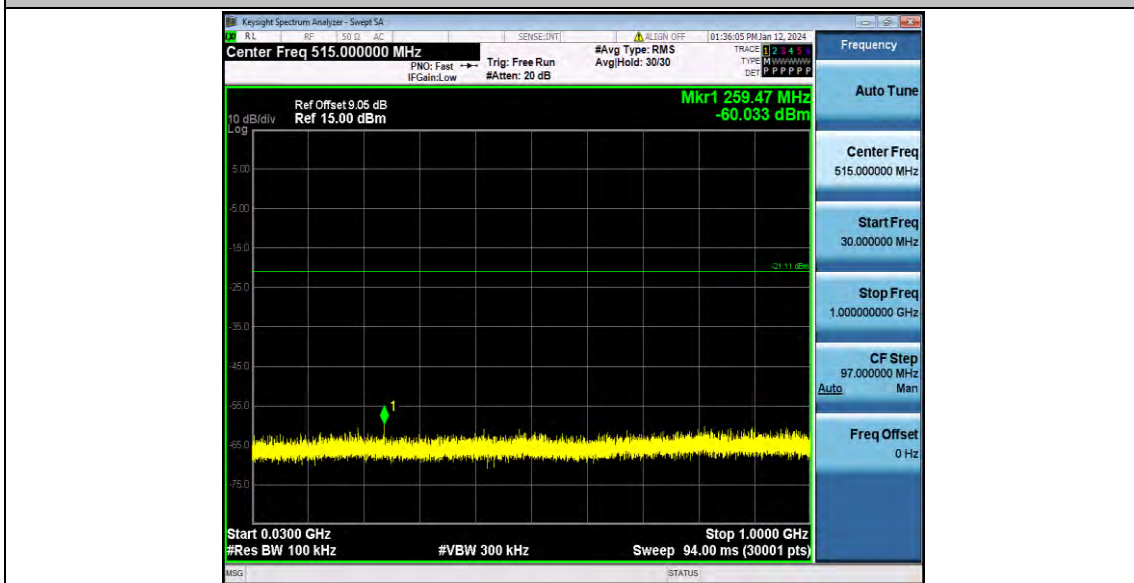
2DH1_Ant1_2402_1000~26500



2DH1_Ant1_2441_0~Reference



2DH1_Ant1_2441_30~100



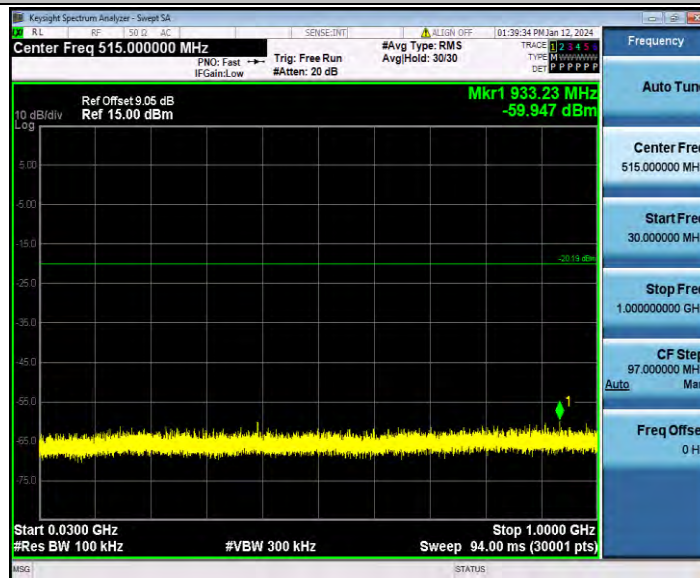
2DH1_Ant1_2441_1000~26500



2DH1_Ant1_2480_0~Reference



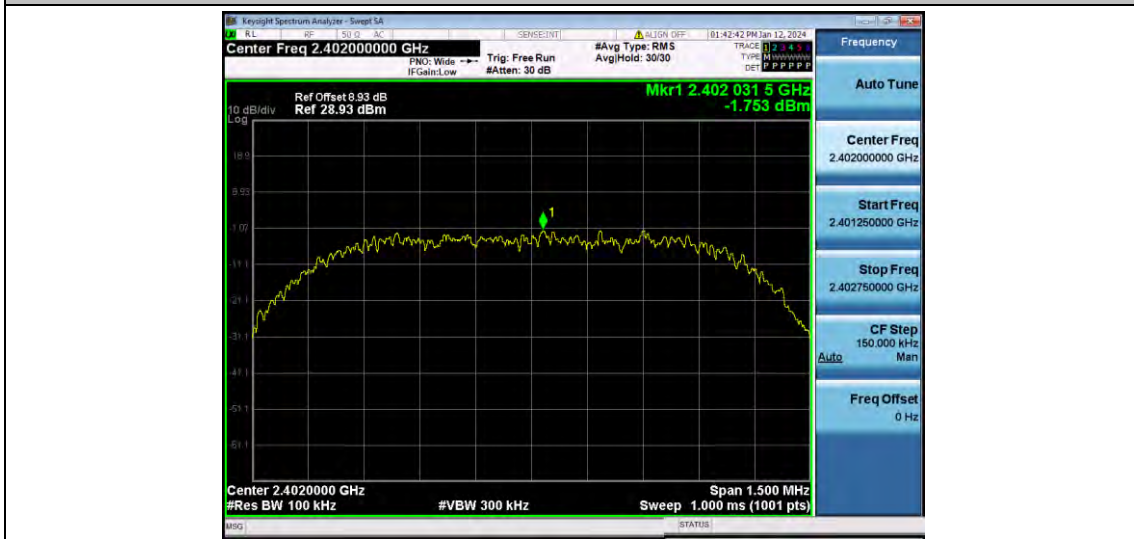
2DH1_Ant1_2480_30~1000



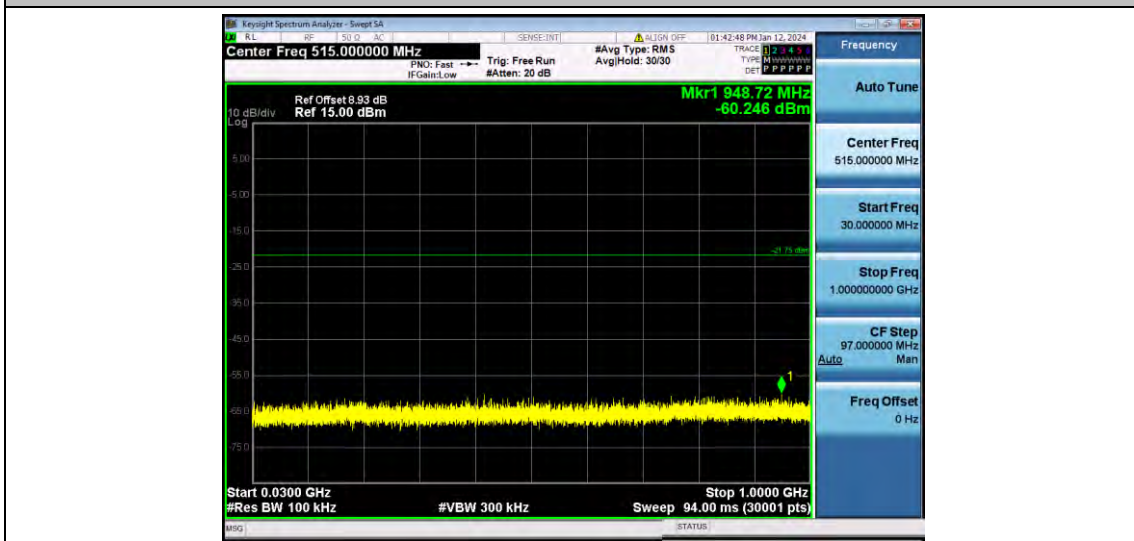
2DH1_Ant1_2480_1000~26500



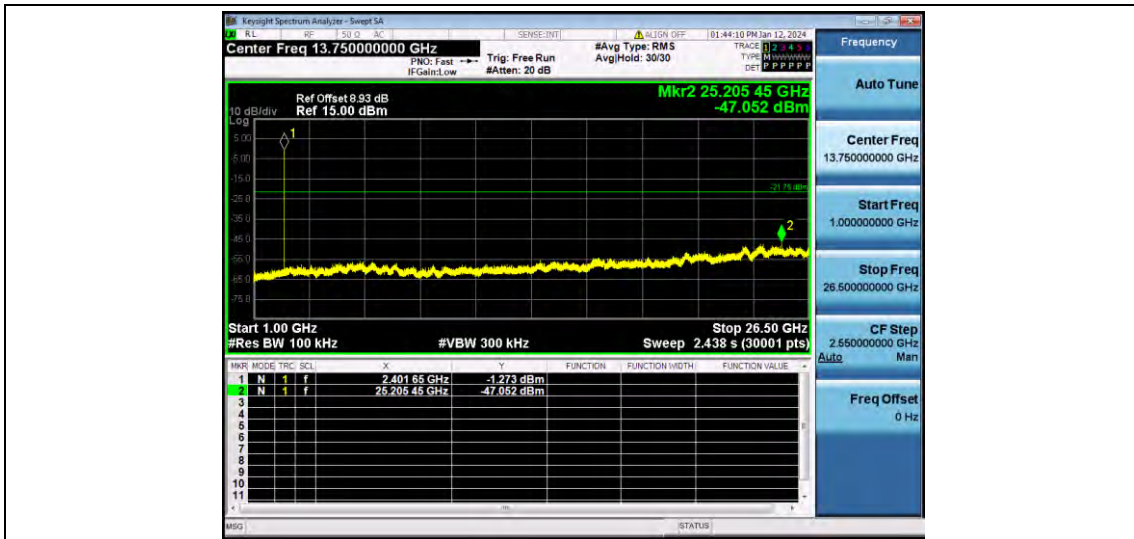
3DH1_Ant1_2402_0~Reference



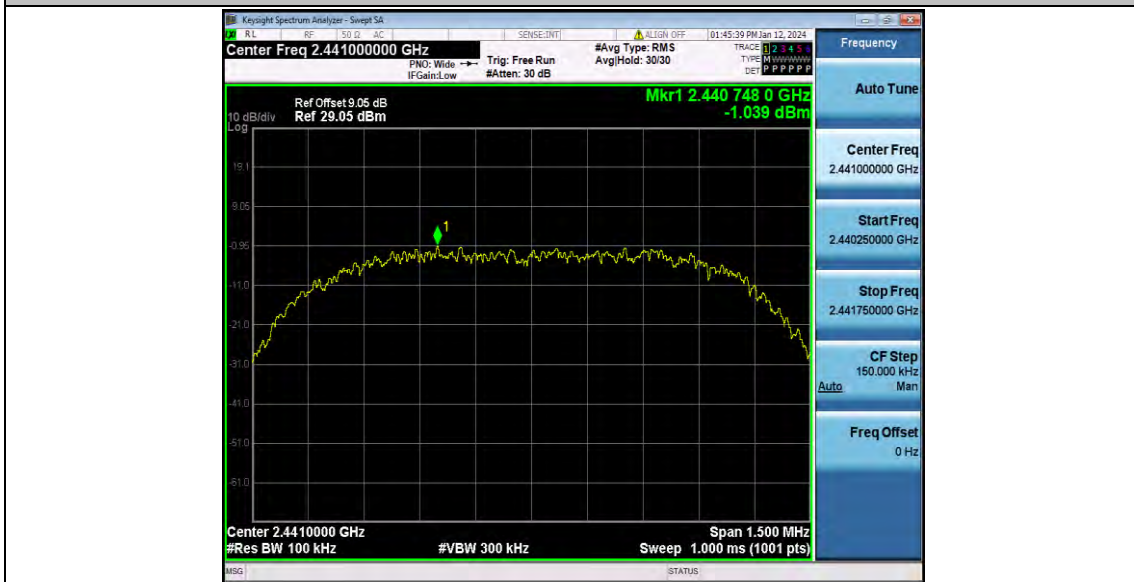
3DH1_Ant1_2402_30~1000



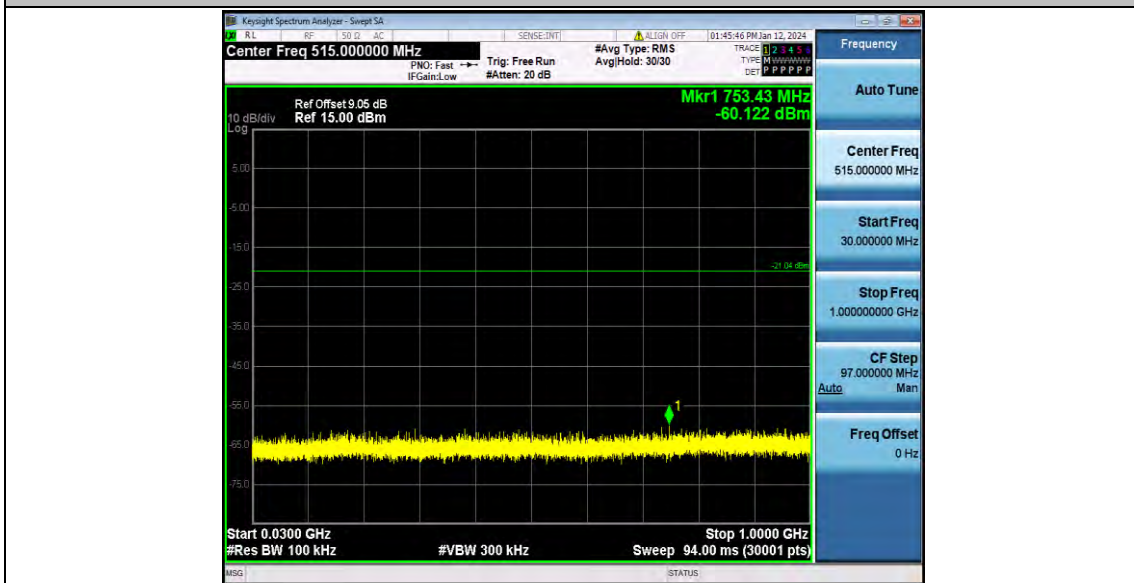
3DH1_Ant1_2402_1000~26500



3DH1_Ant1_2441_0~Reference



3DH1_Ant1_2441_30~1000



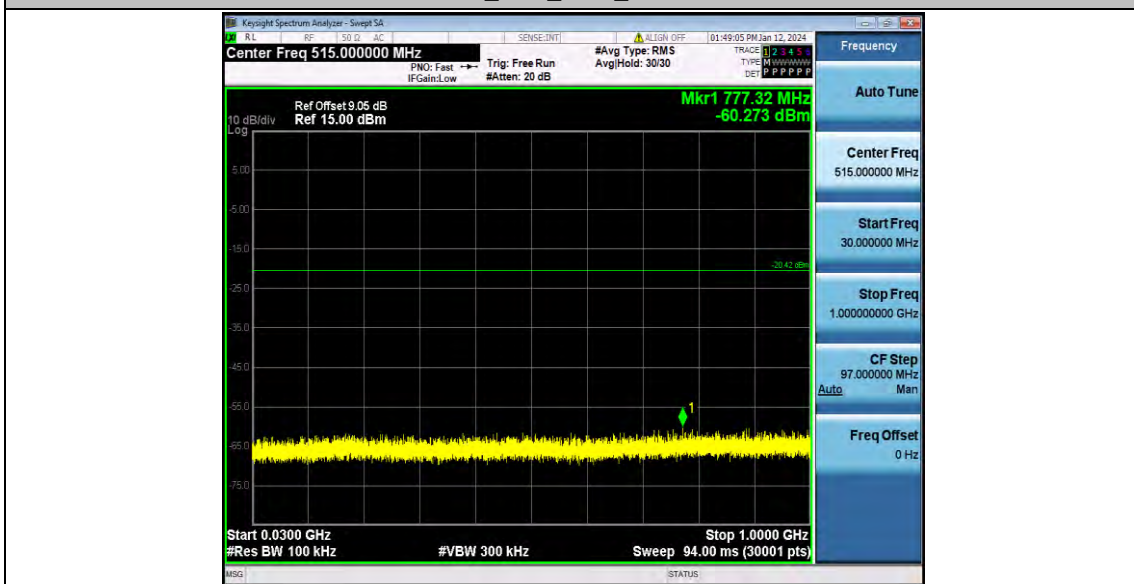
3DH1_Ant1_2441_1000~26500

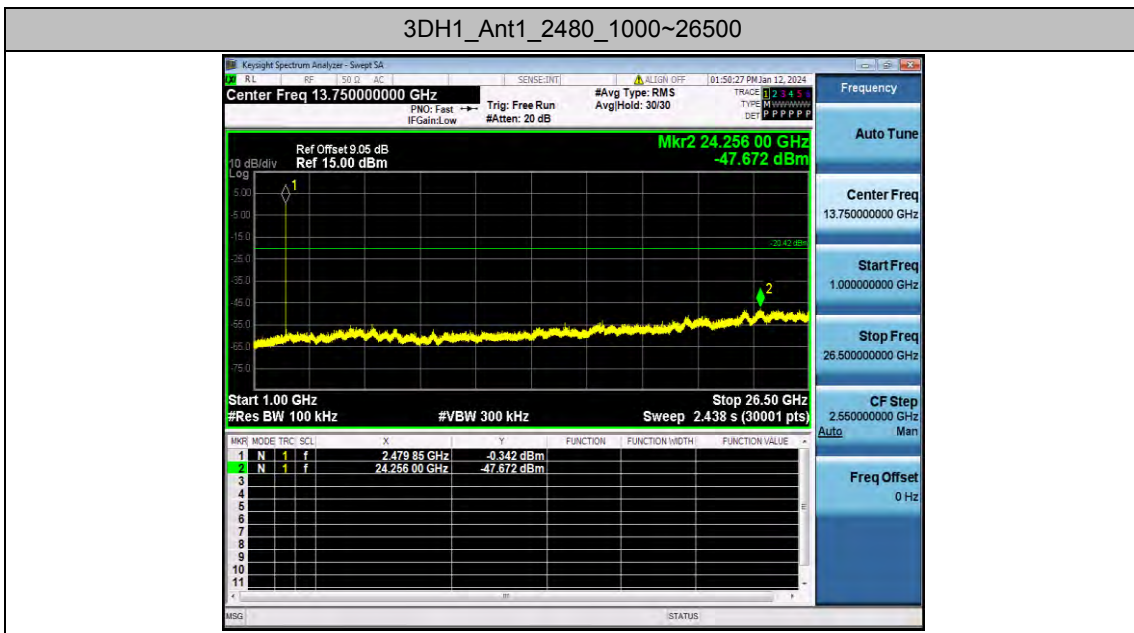


3DH1_Ant1_2480_0~Reference



3DH1_Ant1_2480_30~1000





Appendix A.9: Emissions in Restricted Bands

Test Result

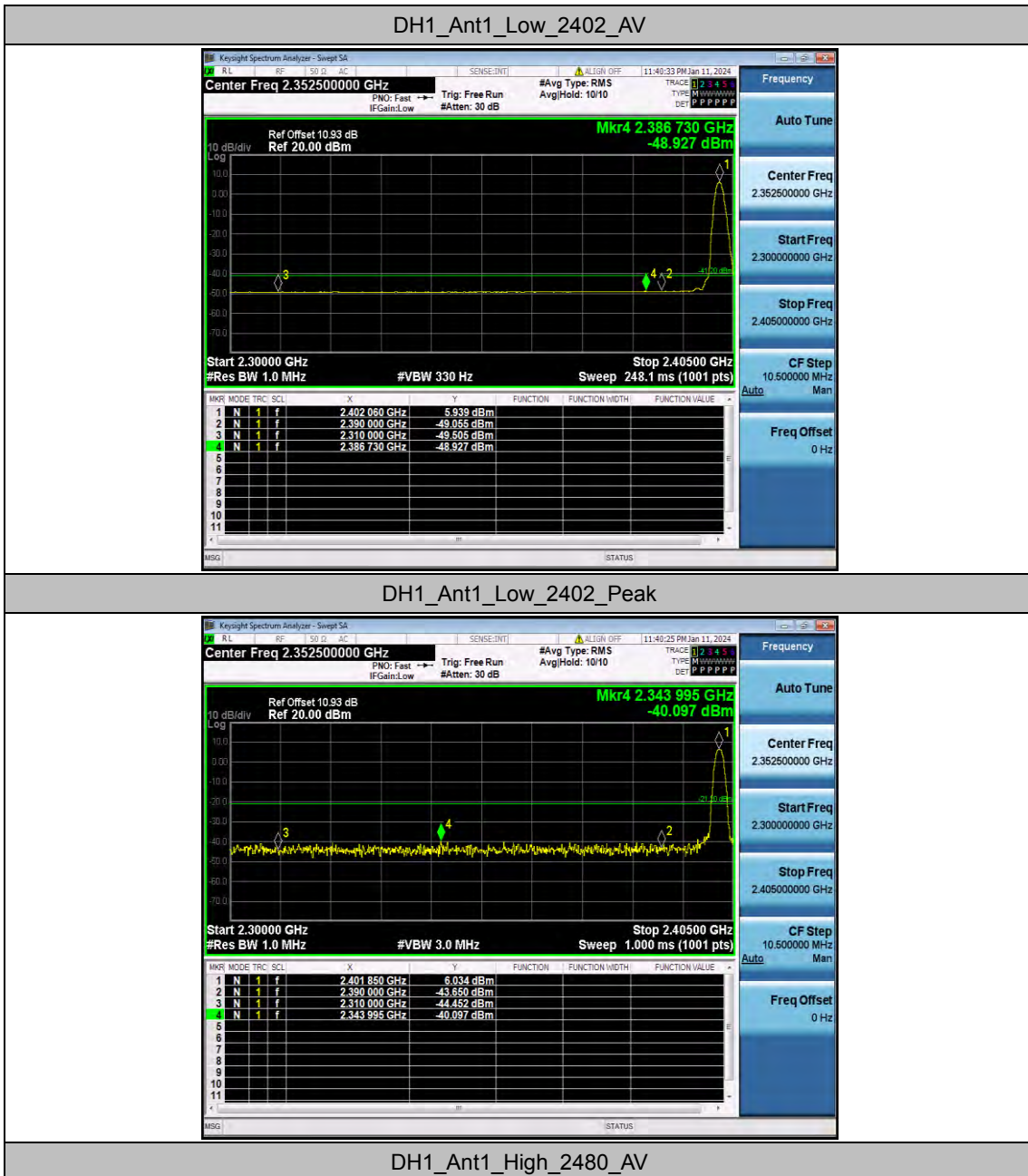
TestMode	Antenna	ChName	Freq (MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH1	Ant1	Low	2402	AV	2310.000	-49.51	≤-41.20	45.69	≤54	PASS
				AV	2386.730	-48.93	≤-41.20	46.27	≤54	PASS
				AV	2390.000	-49.06	≤-41.20	46.14	≤54	PASS
				Peak	2310.000	-44.45	≤-21.20	50.75	≤74	PASS
				Peak	2343.995	-40.1	≤-21.20	55.10	≤74	PASS
				Peak	2390.000	-43.65	≤-21.20	51.55	≤74	PASS
		High	2480	AV	2483.500	-46.36	≤-41.20	48.84	≤54	PASS
				AV	2483.520	-46.36	≤-41.20	48.84	≤54	PASS
				AV	2500.000	-48.86	≤-41.20	46.34	≤54	PASS
				Peak	2483.500	-41.18	≤-21.20	54.02	≤74	PASS
				Peak	2498.320	-38.89	≤-21.20	56.31	≤74	PASS
				Peak	2500.000	-44.4	≤-21.20	50.80	≤74	PASS
2DH1	Ant1	Low	2402	AV	2310.000	-49.7	≤-41.20	45.50	≤54	PASS
				AV	2379.590	-49.09	≤-41.20	46.11	≤54	PASS
				AV	2390.000	-49.4	≤-41.20	45.80	≤54	PASS
				Peak	2310.000	-44.57	≤-21.20	50.63	≤74	PASS
				Peak	2376.755	-40.27	≤-21.20	54.93	≤74	PASS
				Peak	2390.000	-42.09	≤-21.20	53.11	≤74	PASS
		High	2480	AV	2483.500	-47.27	≤-41.20	47.93	≤54	PASS
				AV	2483.520	-47.27	≤-41.20	47.93	≤54	PASS
				AV	2500.000	-48.94	≤-41.20	46.26	≤54	PASS
				Peak	2483.500	-45.12	≤-21.20	50.08	≤74	PASS
				Peak	2487.360	-39.41	≤-21.20	55.79	≤74	PASS
				Peak	2500.000	-43.62	≤-21.20	51.58	≤74	PASS
3DH1	Ant1	Low	2402	AV	2310.000	-49.58	≤-41.20	45.62	≤54	PASS
				AV	2387.675	-49.06	≤-41.20	46.14	≤54	PASS
				AV	2390.000	-49.36	≤-41.20	45.84	≤54	PASS
				Peak	2310.000	-43.69	≤-21.20	51.51	≤74	PASS
				Peak	2387.150	-39.63	≤-21.20	55.57	≤74	PASS
				Peak	2390.000	-44.73	≤-21.20	50.47	≤74	PASS
		High	2480	AV	2483.500	-47.26	≤-41.20	47.94	≤54	PASS
				AV	2483.520	-47.26	≤-41.20	47.94	≤54	PASS
				AV	2500.000	-48.75	≤-41.20	46.45	≤54	PASS
				Peak	2483.500	-41.68	≤-21.20	53.52	≤74	PASS
Peak	2484.880	-39.63	≤-21.20	55.57	≤74	PASS				

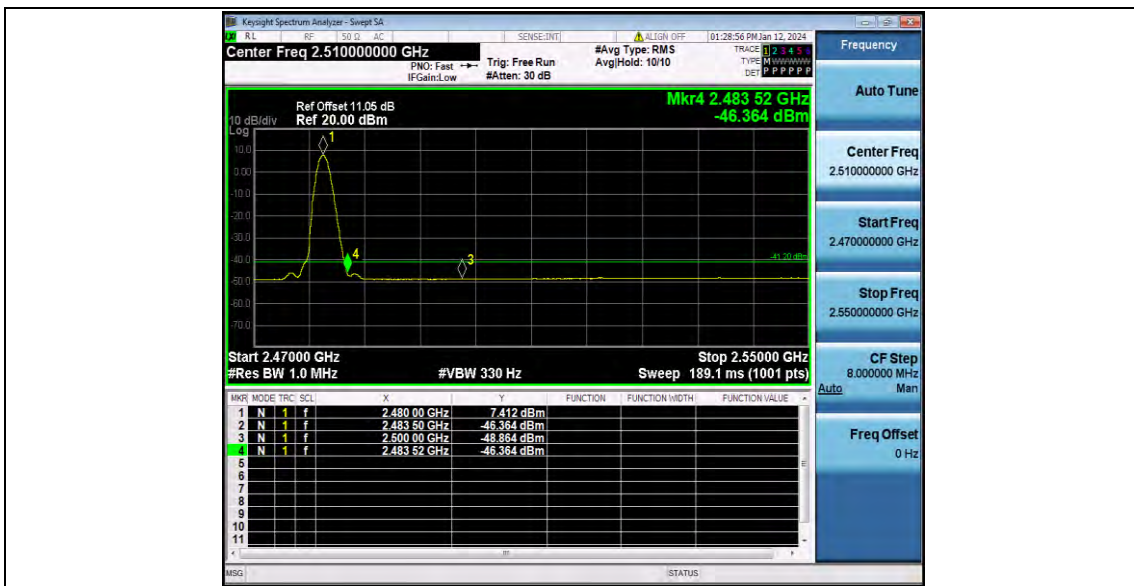
				Peak	2500.000	-42.71	≤-21.20	52.49	≤74	PASS
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Note:

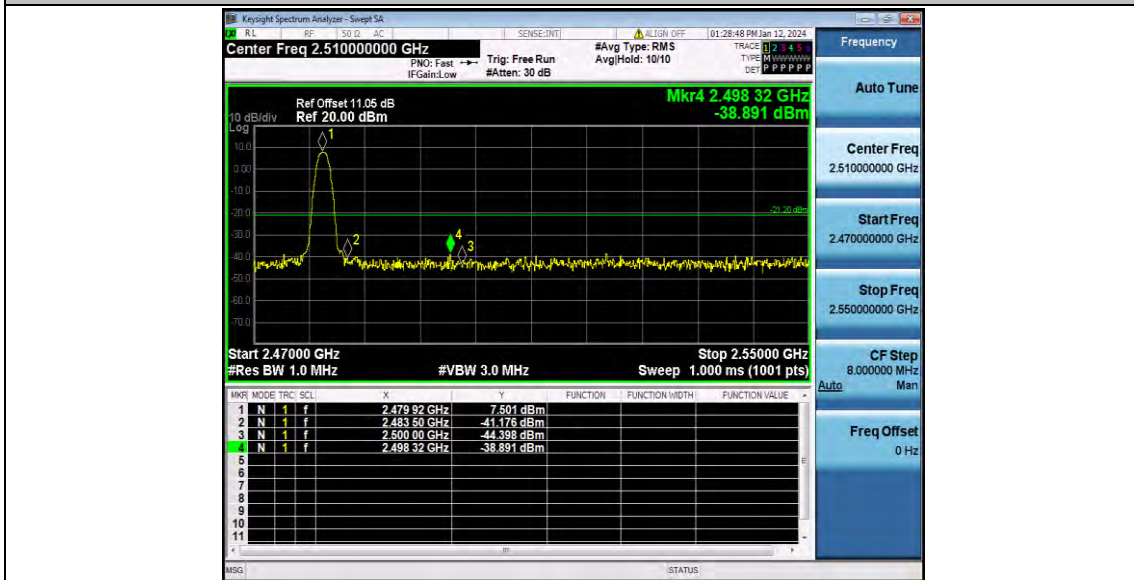
2. The Antenna Gain is compensated in the graph.
3. The Duty Cycle Factor and RBW Factor is compensated in the graph.
4. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

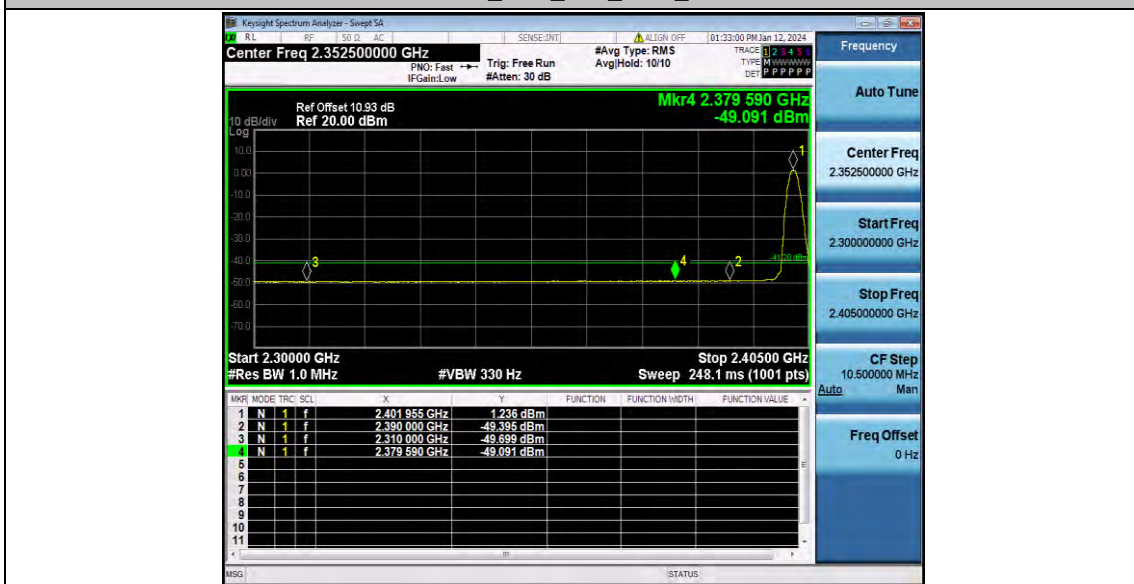




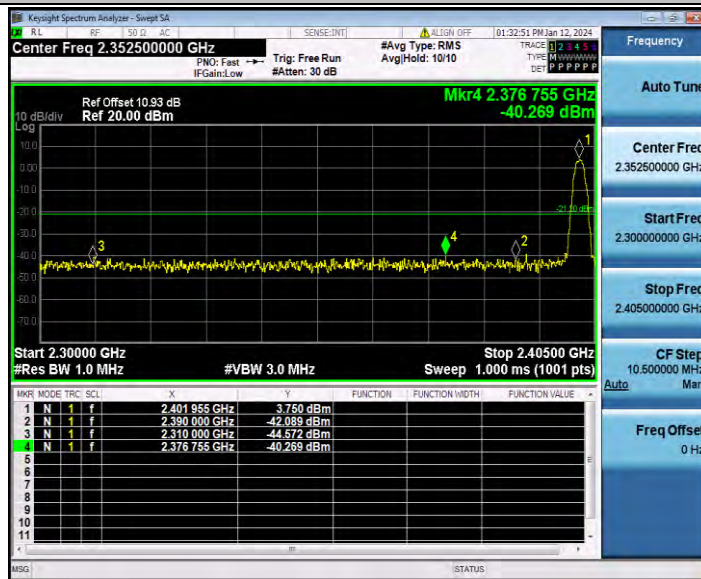
DH1_Ant1_High_2480_Peak



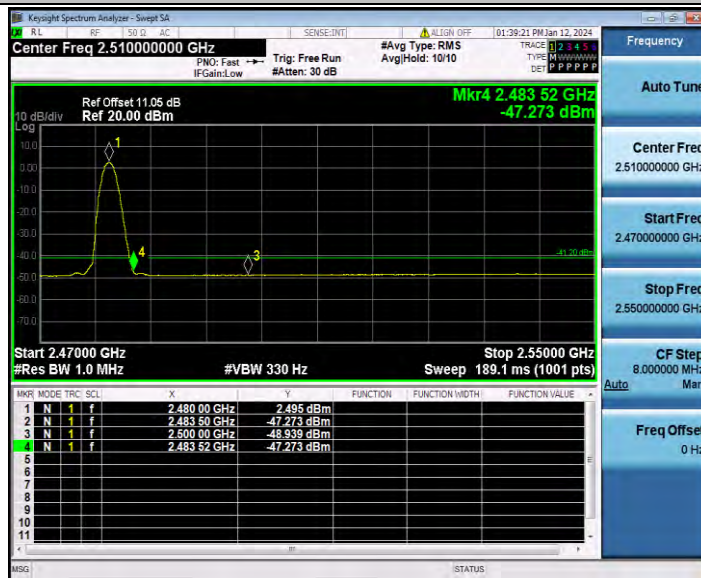
2DH1_Ant1_Low_2402_AV



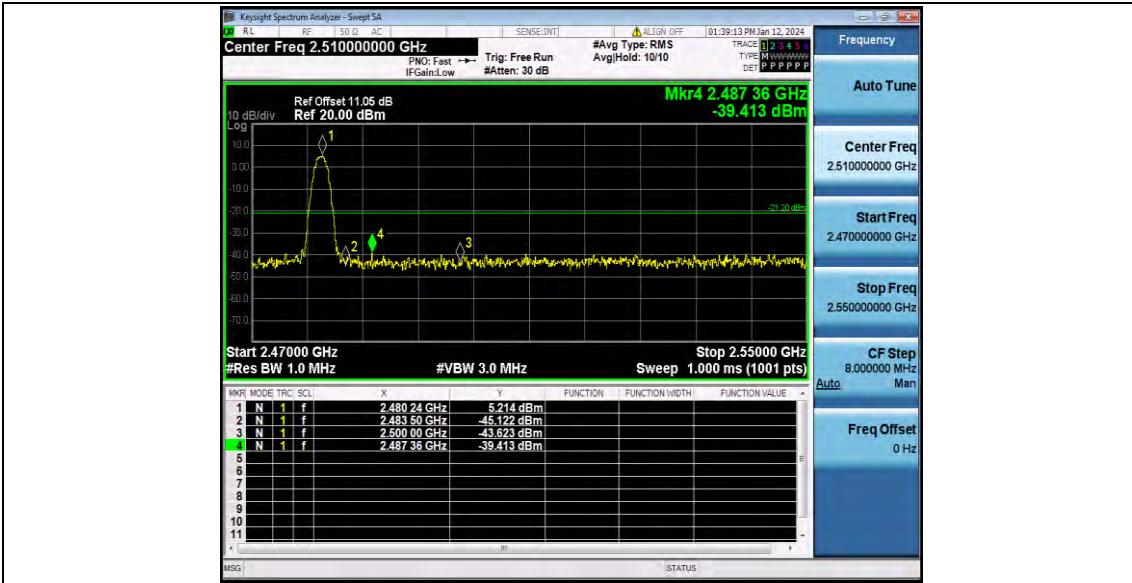
2DH1_Ant1_Low_2402_Peak



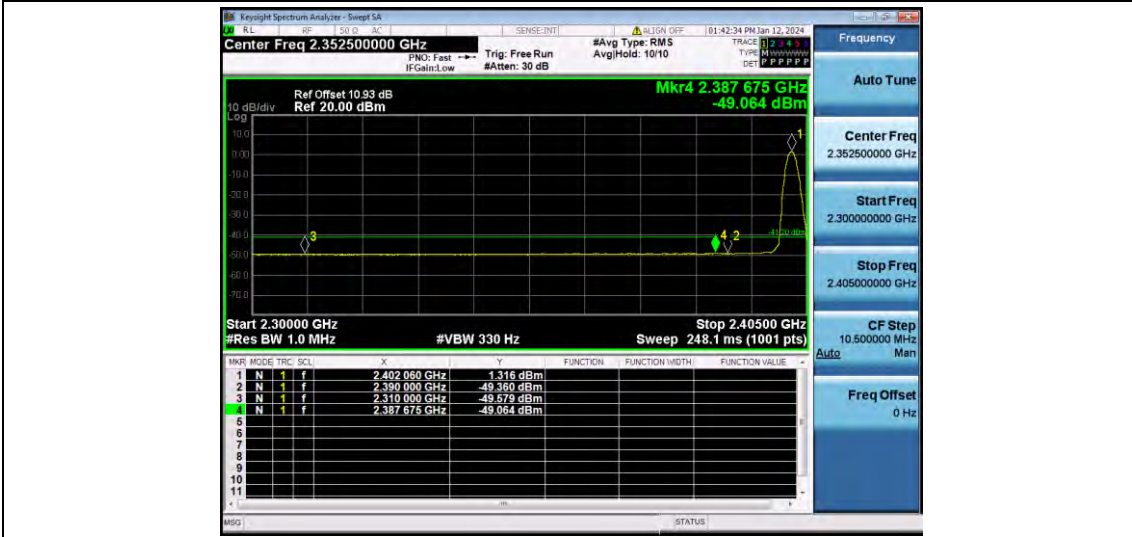
2DH1_Ant1_High_2480_AV



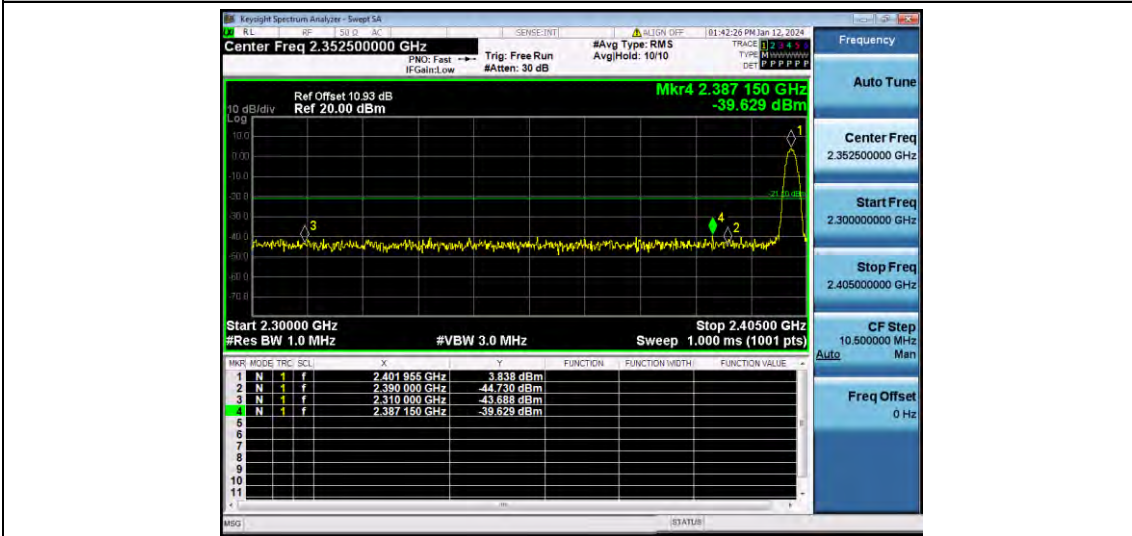
2DH1_Ant1_High_2480_Peak



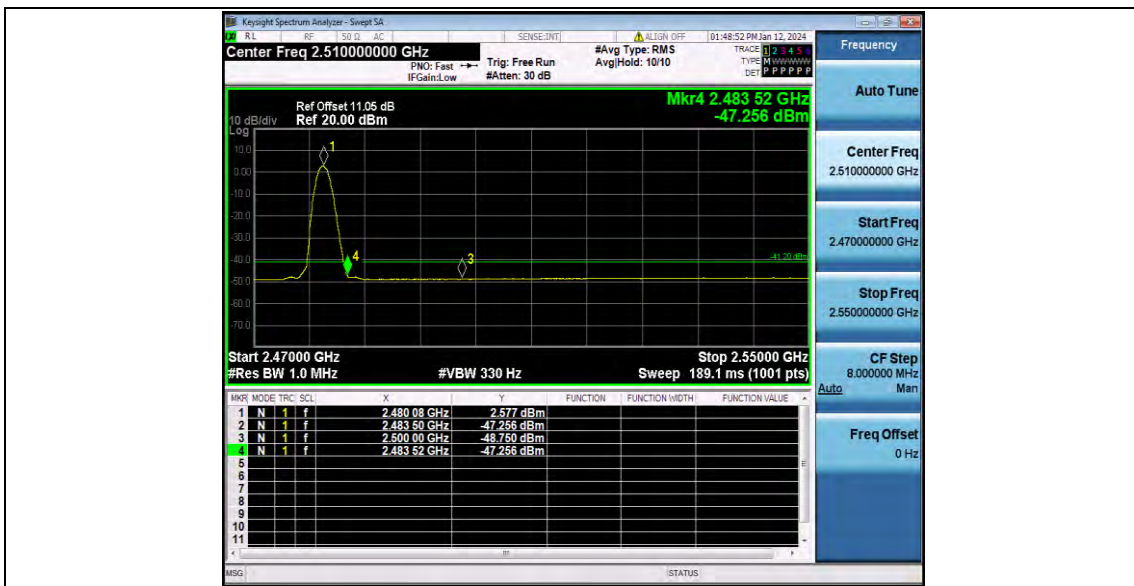
3DH1_Ant1_Low_2402_AV



3DH1_Ant1_Low_2402_Peak



3DH1_Ant1_High_2480_AV



3DH1_Ant1_High_2480_Peak

