

Case No. : <u>GTS20231018011-1-64</u>
Ambient Condition: <u>22 °C, 49 %RH</u>
According Standard: <u>■Part15C</u>
Test Date: <u>2024.1.19</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	0.801	2401.583	2402.384	---	---
		2441	0.858	2440.547	2441.405	---	---
		2480	0.801	2479.592	2480.393	---	---
2DH1	Ant1	2402	1.233	2401.373	2402.606	---	---
		2441	1.266	2440.364	2441.630	---	---
		2480	1.275	2479.364	2480.639	---	---
3DH1	Ant1	2402	1.251	2401.367	2402.618	---	---
		2441	1.218	2440.400	2441.618	---	---
		2480	1.218	2479.403	2480.621	---	---

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



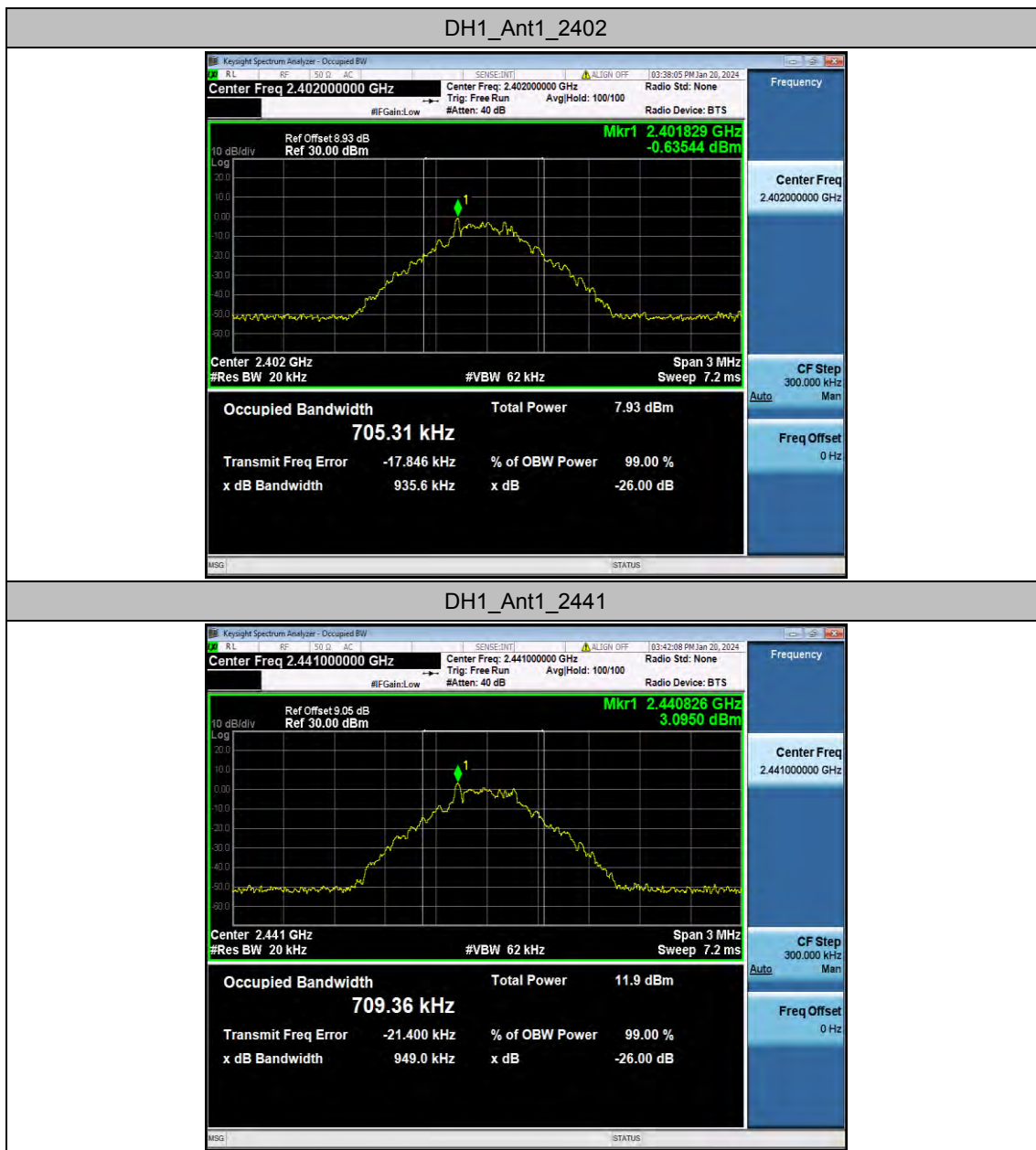


Appendix A.2: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	0.70531	2401.6295	2402.3348	---	---
		2441	0.70936	2440.6239	2441.3333	---	---
		2480	0.71534	2479.6252	2480.3405	---	---
2DH1	Ant1	2402	1.1306	2401.4191	2402.5497	---	---
		2441	1.1340	2440.4275	2441.5615	---	---
		2480	1.1458	2479.4222	2480.5680	---	---
3DH1	Ant1	2402	1.1268	2401.4364	2402.5632	---	---
		2441	1.1367	2440.4326	2441.5693	---	---
		2480	1.1411	2479.4342	2480.5753	---	---

Test Graphs



DH1_Ant1_2480



2DH1_Ant1_2402



2DH1_Ant1_2441



2DH1_Ant1_2480

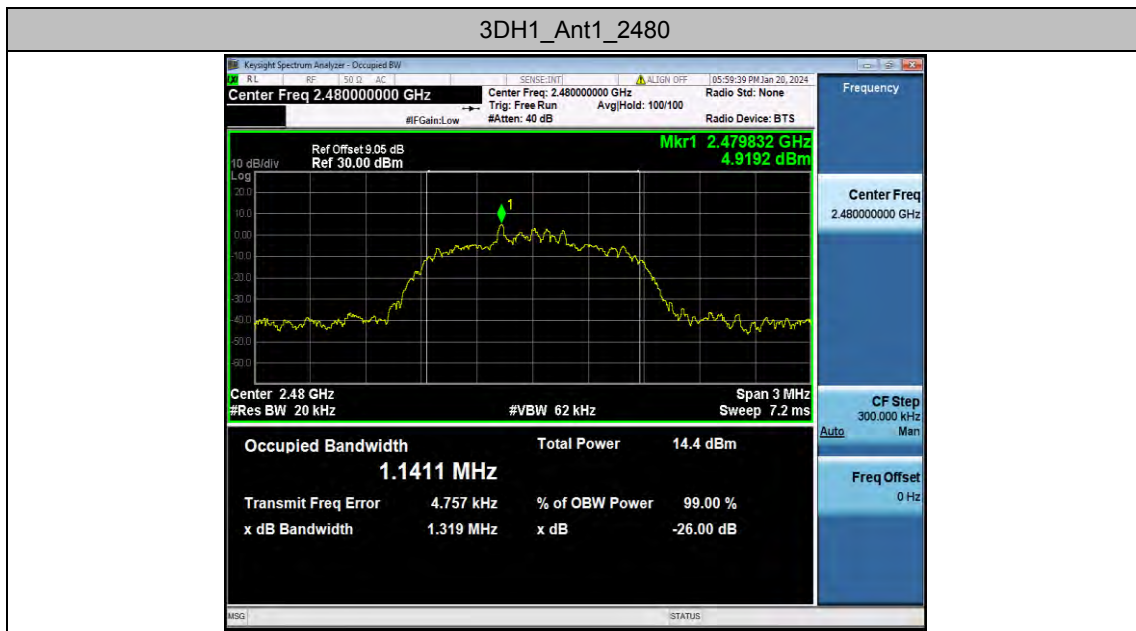


3DH1_Ant1_2402



3DH1_Ant1_2441





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	2.41	≤20.97	PASS
		2441	5.89	≤20.97	PASS
		2480	9.48	≤20.97	PASS
2DH1	Ant1	2402	2.25	≤20.97	PASS
		2441	6.15	≤20.97	PASS
		2480	9.31	≤20.97	PASS
3DH1	Ant1	2402	3.08	≤20.97	PASS
		2441	6.01	≤20.97	PASS
		2480	9.22	≤20.97	PASS

Note:

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

Appendix A.4: Carrier frequency separation

Test Result

TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Hop_2402	0.854	≥ 0.572	PASS
		Hop_2441	0.84	≥ 0.572	PASS
		Hop_2480	1.002	≥ 0.572	PASS
2DH1	Ant1	Hop_2402	1.002	≥ 0.850	PASS
		Hop_2441	1.002	≥ 0.850	PASS
		Hop_2480	1	≥ 0.850	PASS
3DH1	Ant1	Hop_2402	1.21	≥ 0.834	PASS
		Hop_2441	0.974	≥ 0.834	PASS
		Hop_2480	1.166	≥ 0.834	PASS

Test Graphs



DH1_Ant1_Hop_2480



2DH1_Ant1_Hop_2402

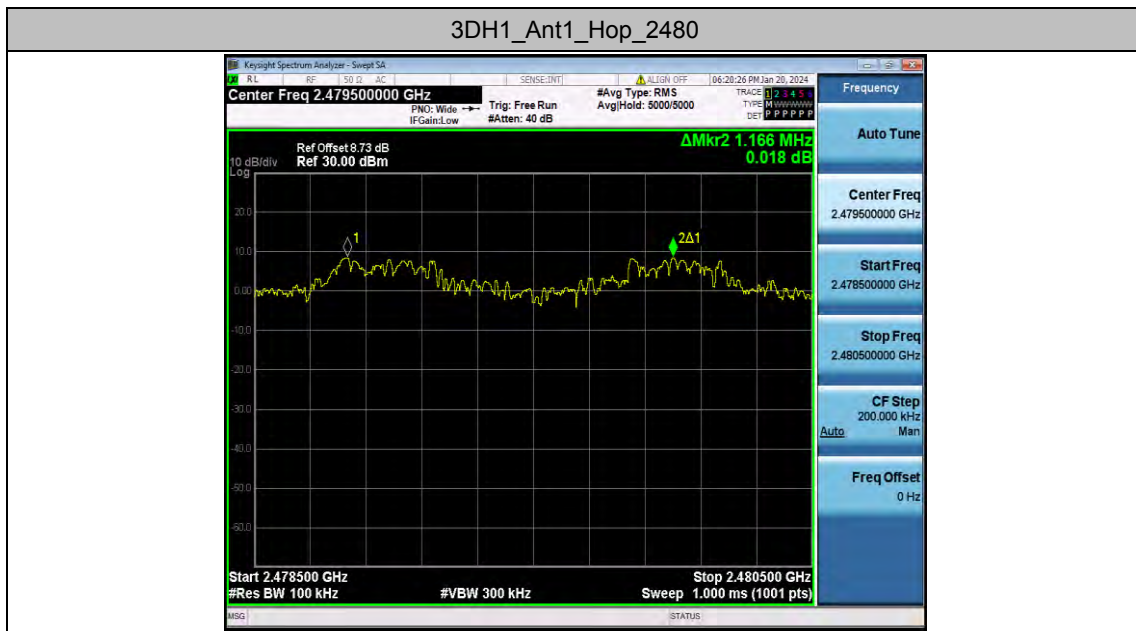


3DH1_Ant1_Hop_2402



3DH1_Ant1_Hop_2441



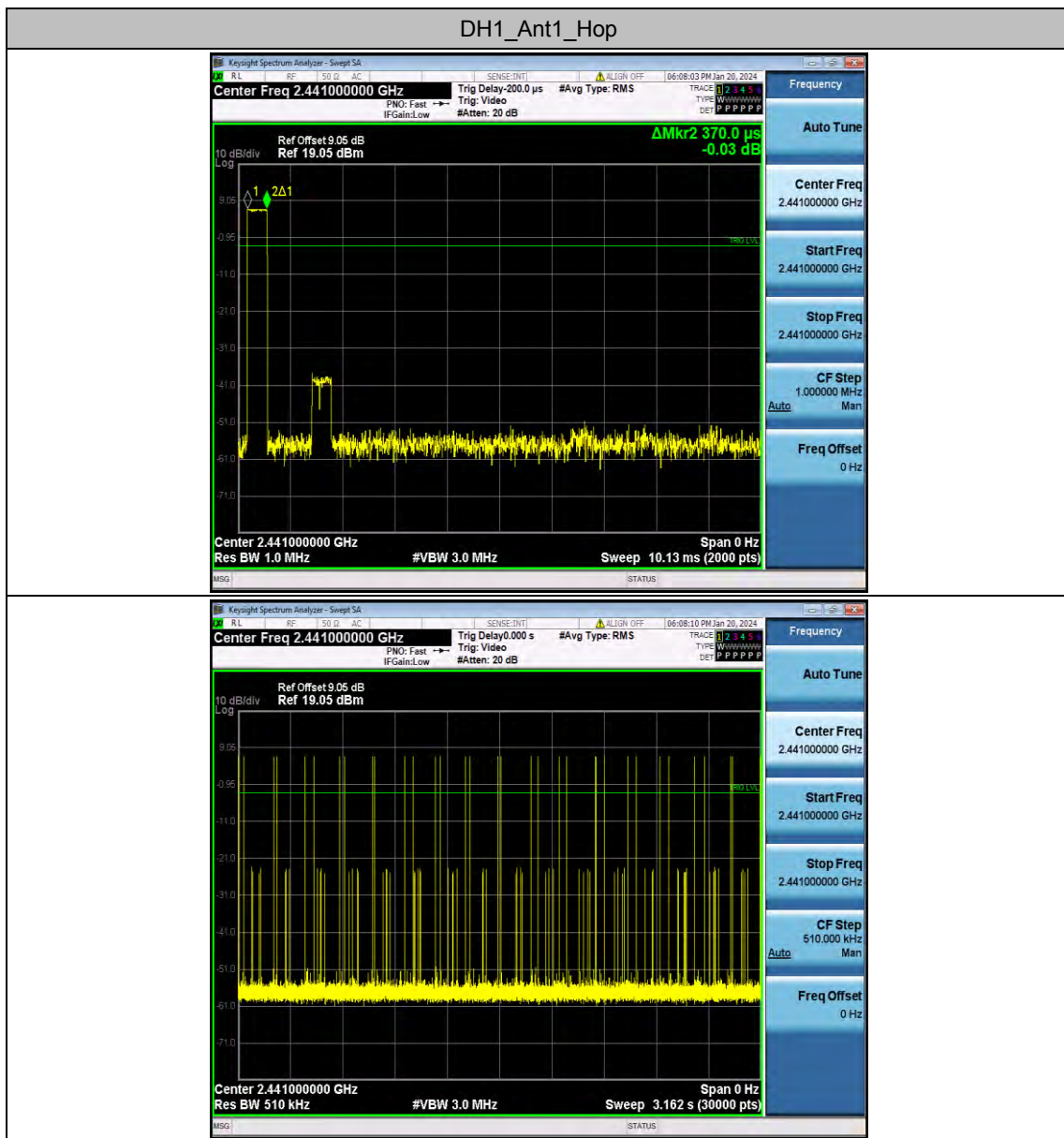


Appendix A.5: Time of occupancy

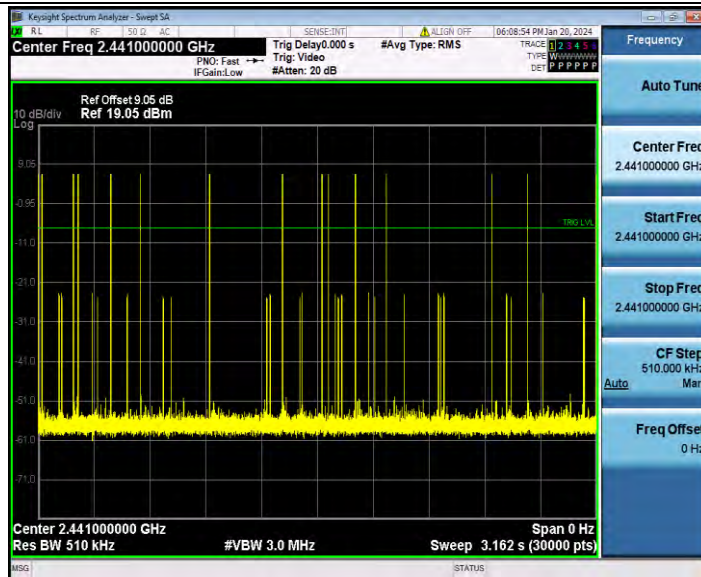
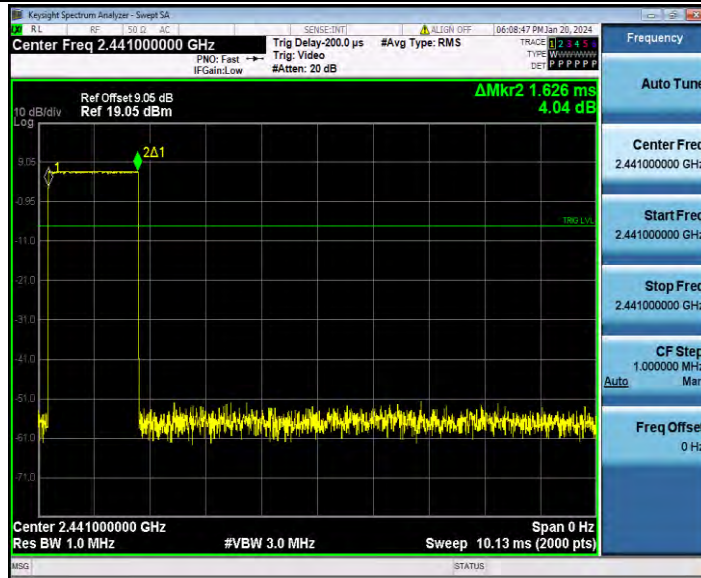
Test Result

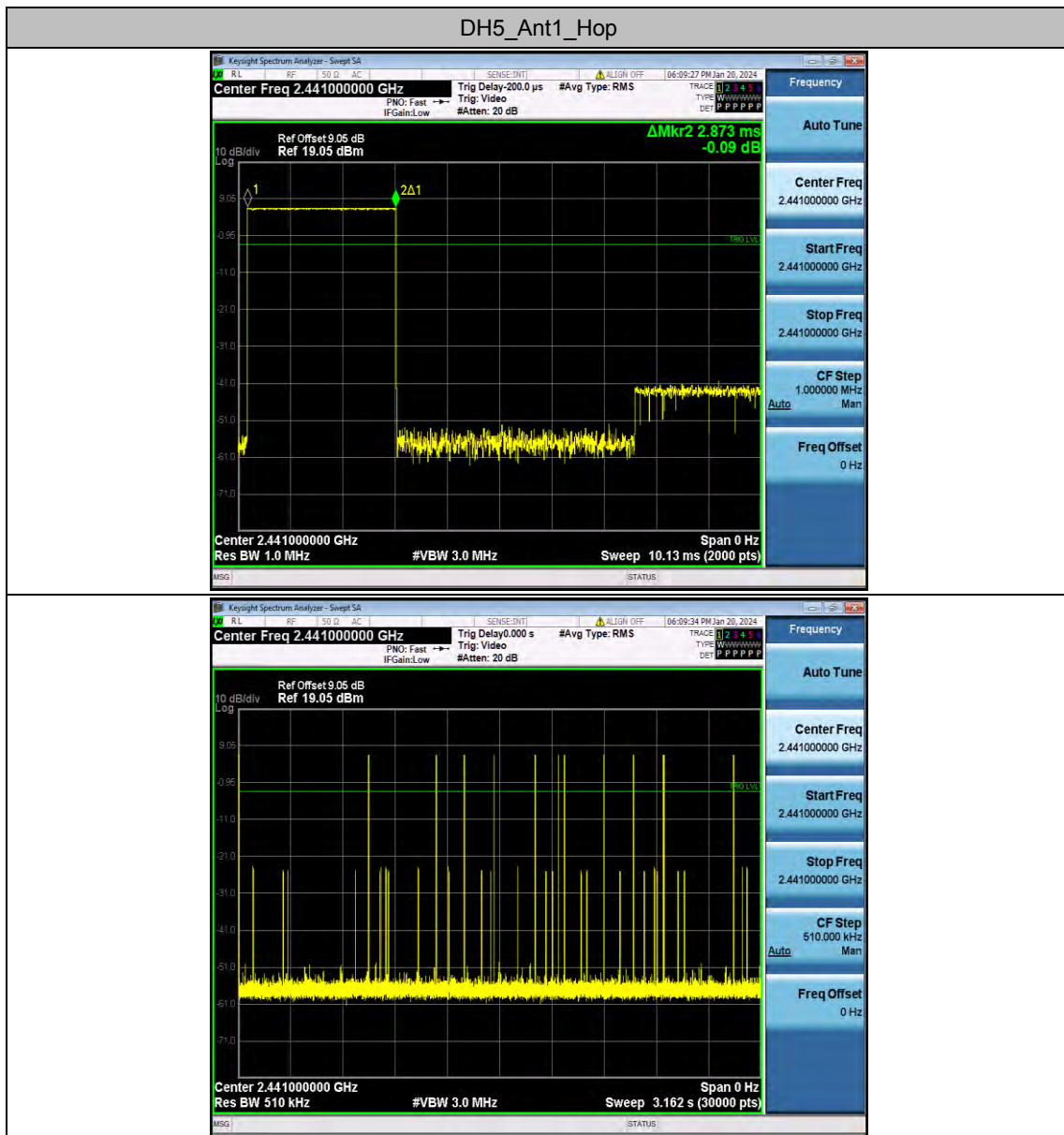
TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.370	330	0.122	≤0.4	PASS
DH3	Ant1	Hop	1.626	150	0.244	≤0.4	PASS
DH5	Ant1	Hop	2.873	130	0.373	≤0.4	PASS
2DH1	Ant1	Hop	0.375	330	0.124	≤0.4	PASS
2DH3	Ant1	Hop	1.626	160	0.26	≤0.4	PASS
2DH5	Ant1	Hop	2.878	130	0.374	≤0.4	PASS
3DH1	Ant1	Hop	0.375	320	0.12	≤0.4	PASS
3DH3	Ant1	Hop	1.626	170	0.276	≤0.4	PASS
3DH5	Ant1	Hop	2.878	130	0.374	≤0.4	PASS

Test Graphs

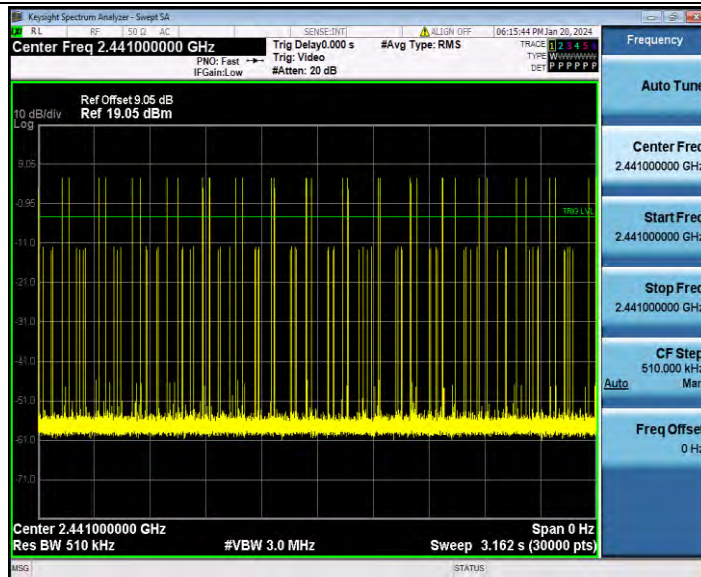
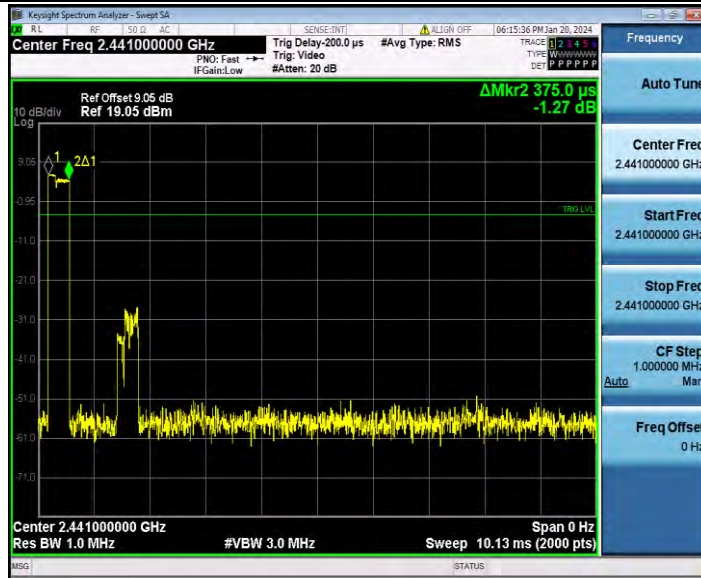


DH3_Ant1_Hop

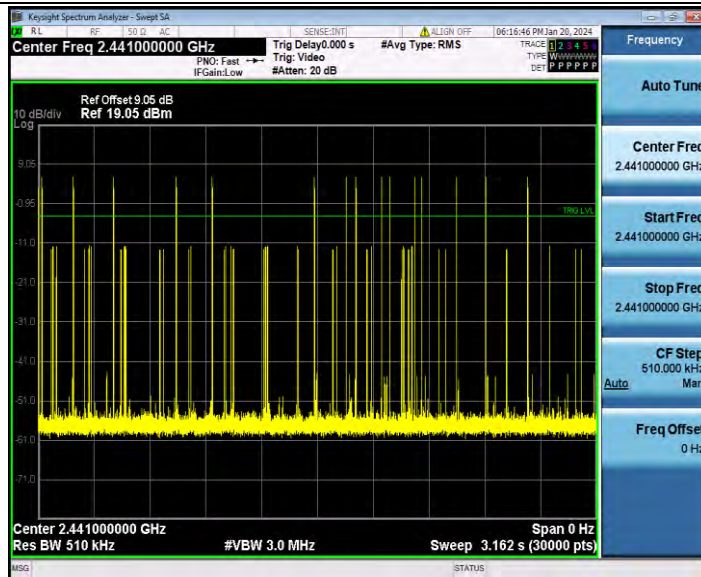
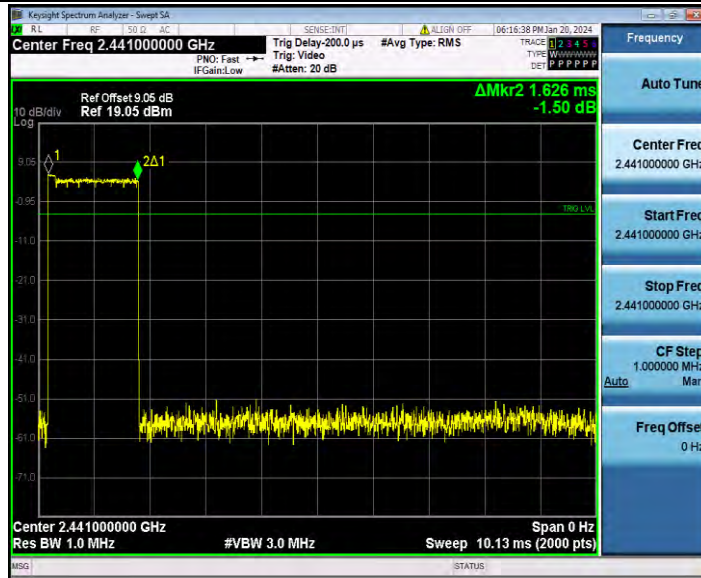




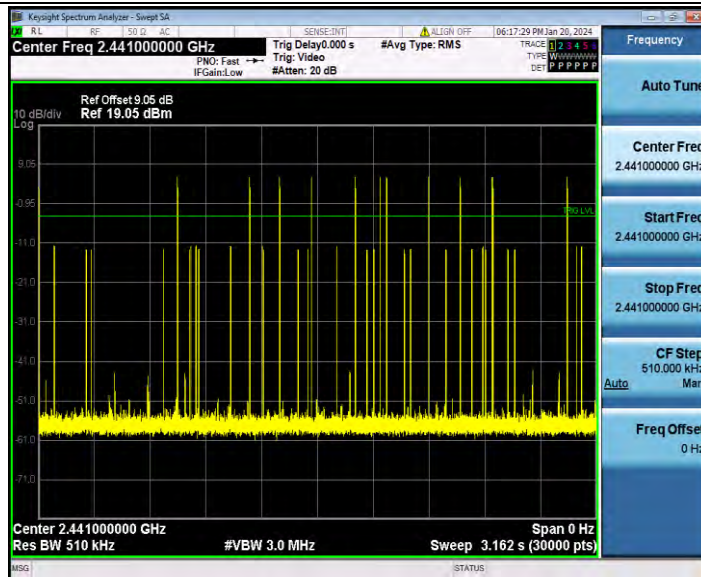
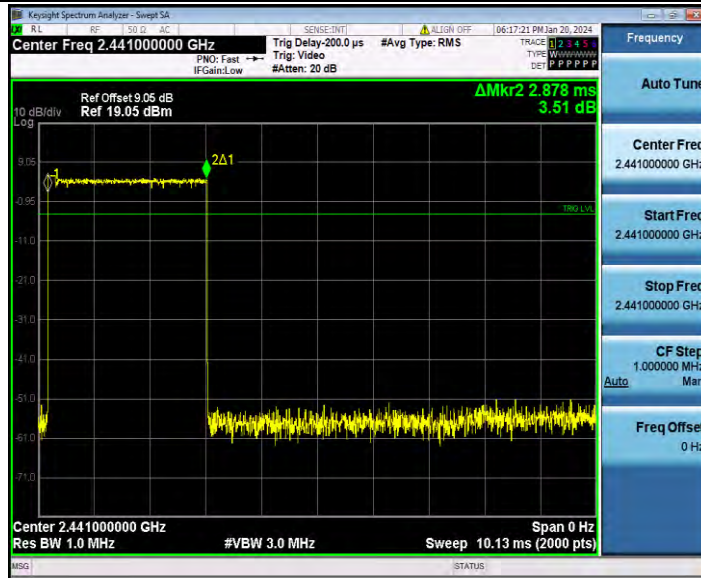
2DH1_Ant1_Hop



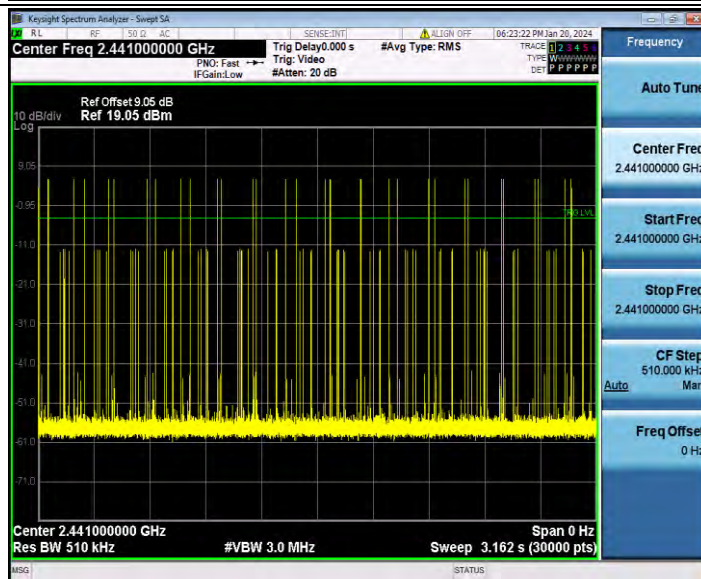
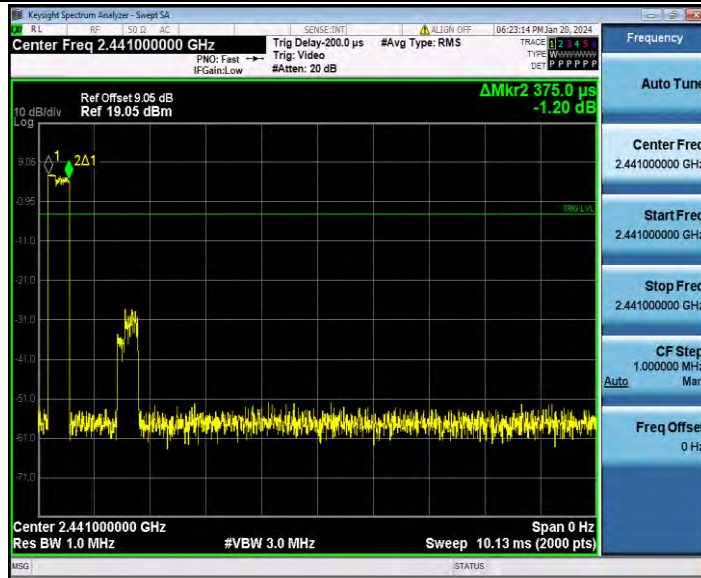
2DH3_Ant1_Hop



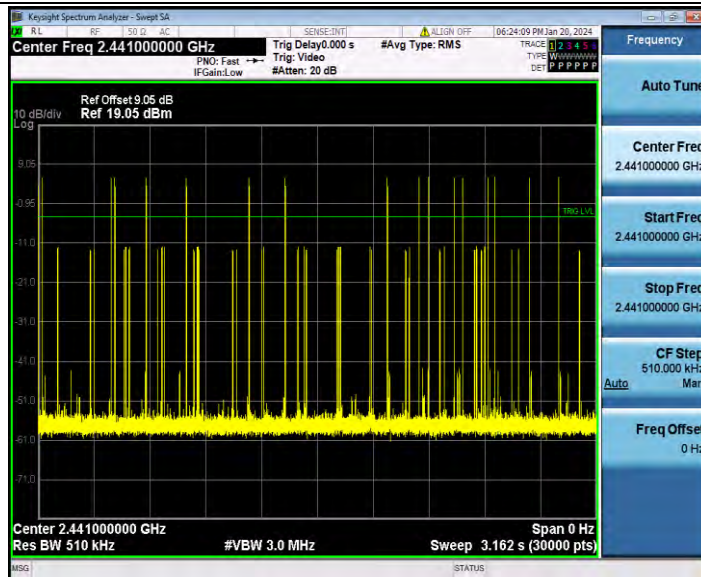
2DH5_Ant1_Hop



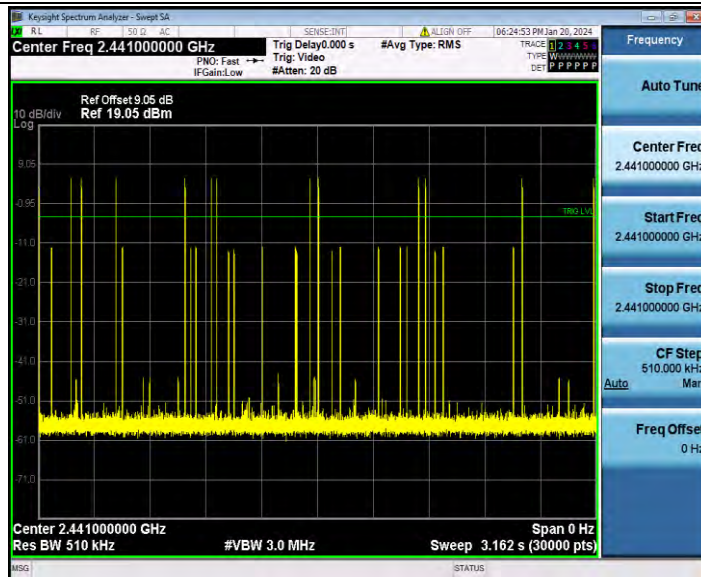
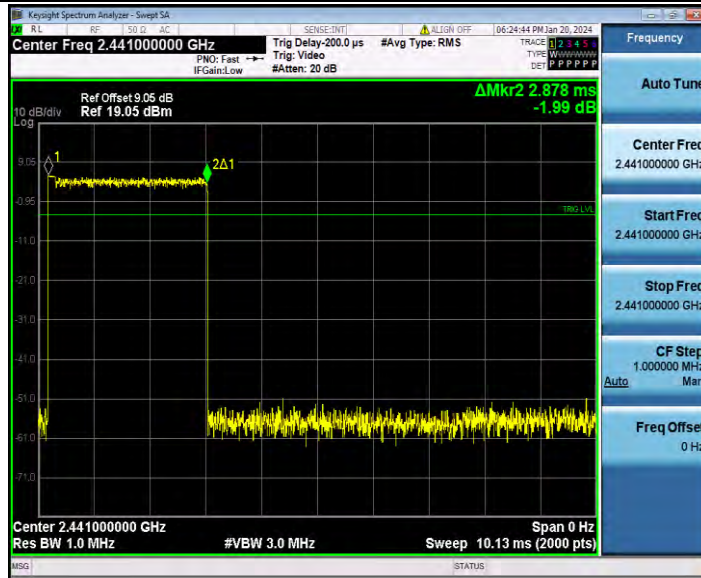
3DH1_Ant1_Hop



3DH3_Ant1_Hop



3DH5_Ant1_Hop

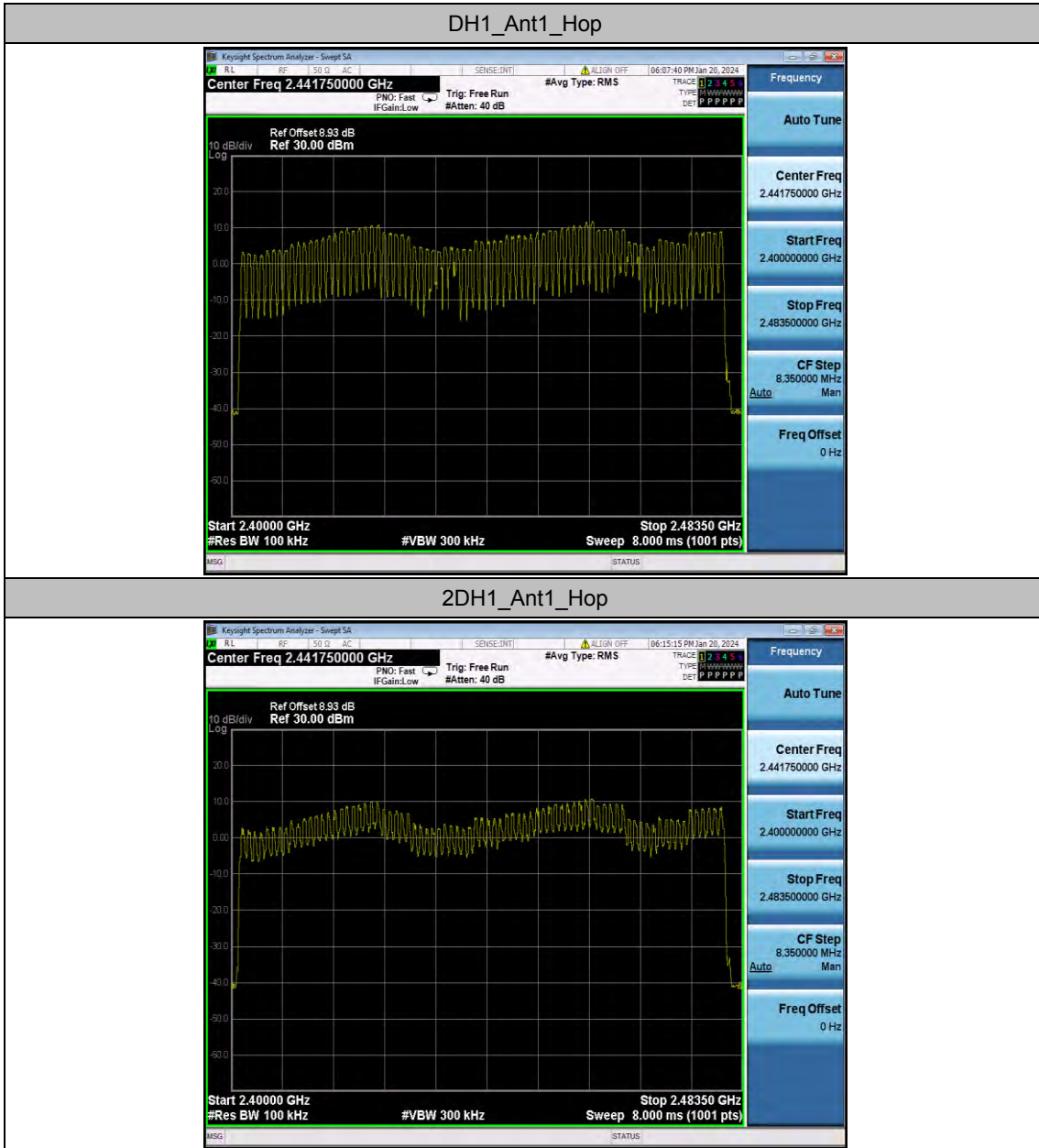


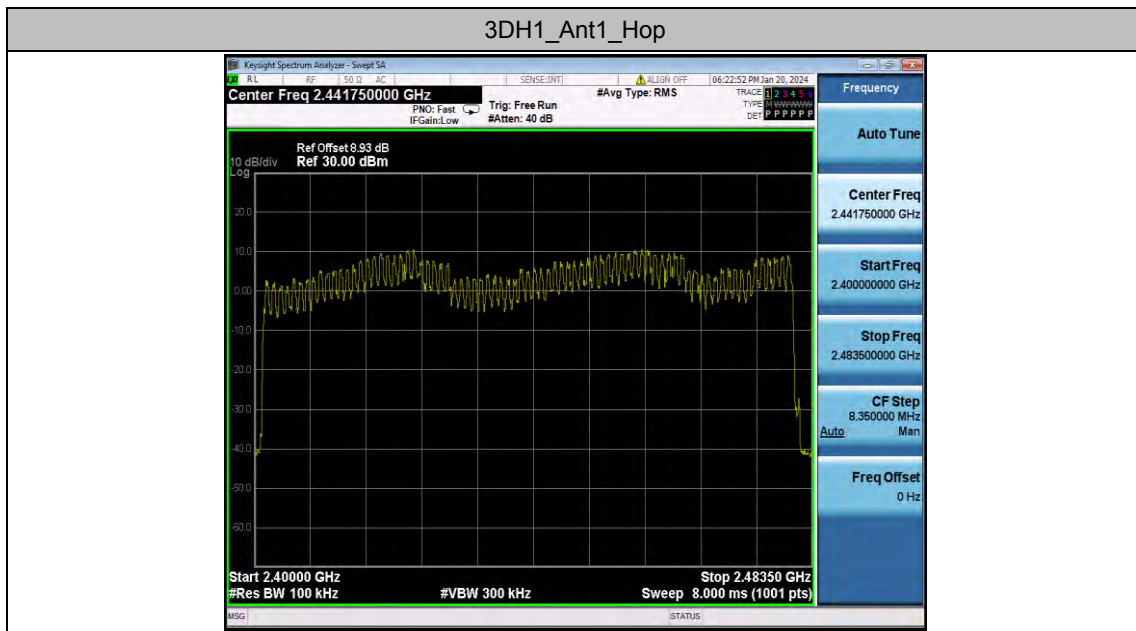
Appendix A.6: Number of hopping channels

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



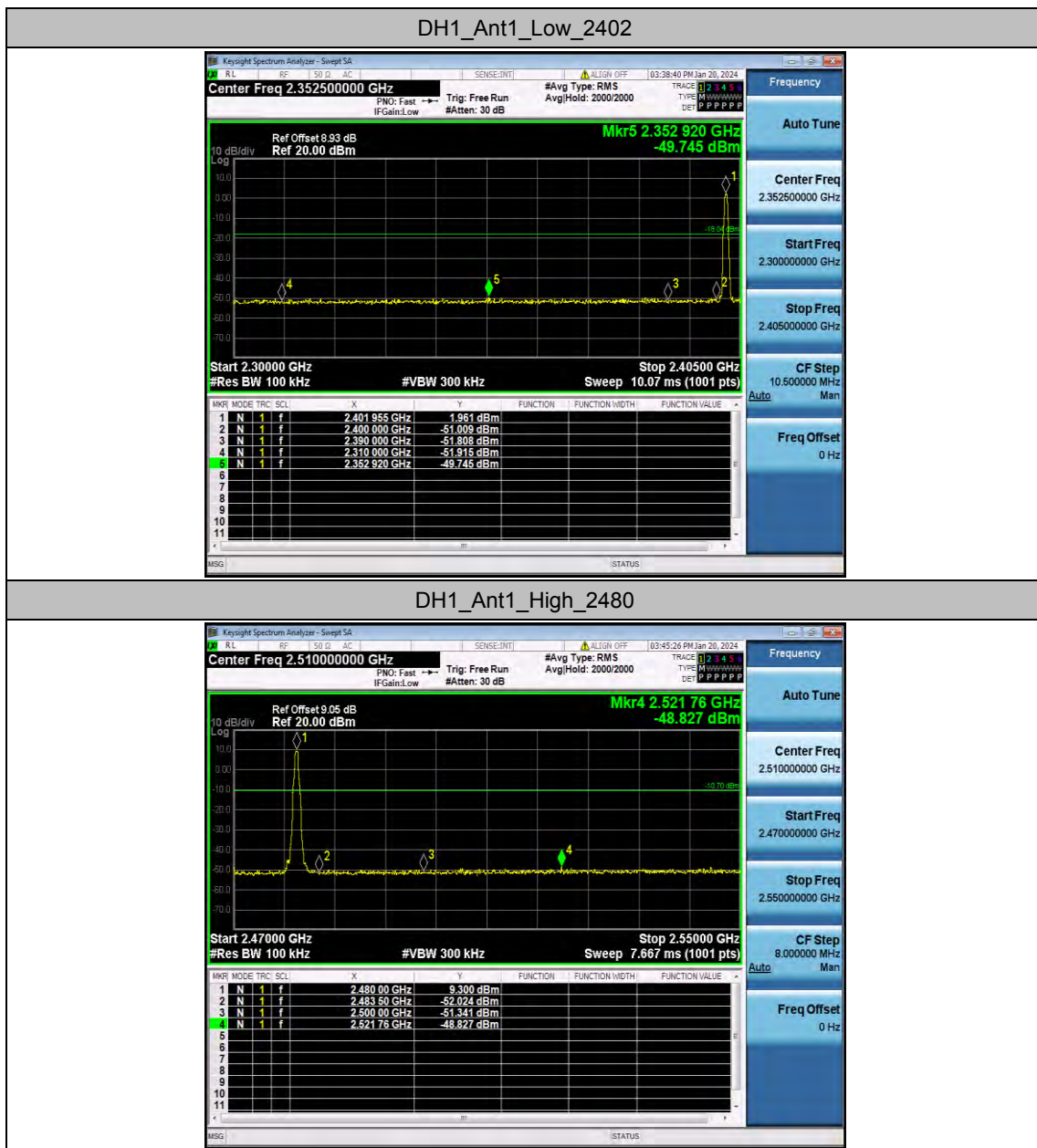


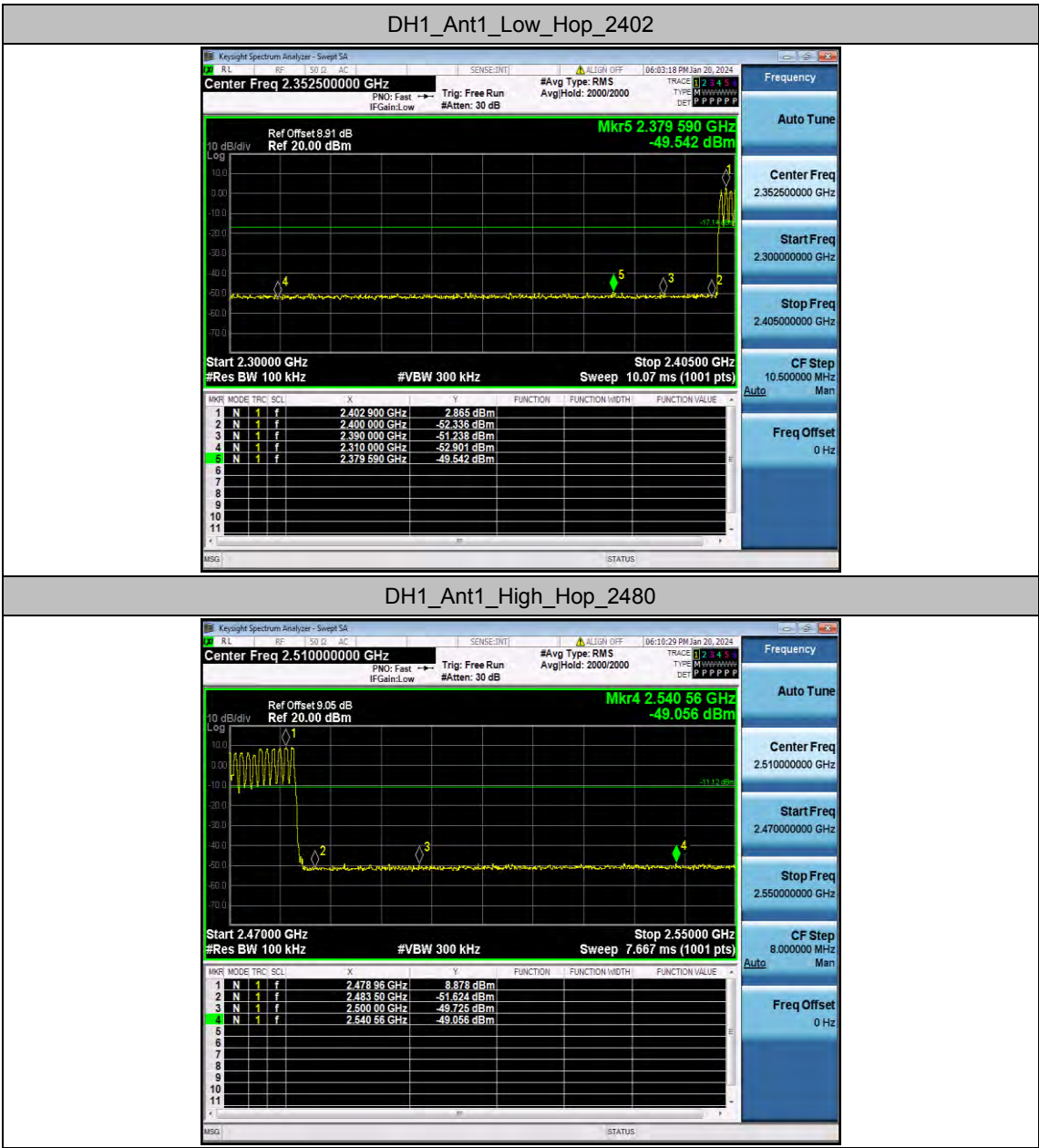
Appendix A.7: Band edge measurements

Test Result

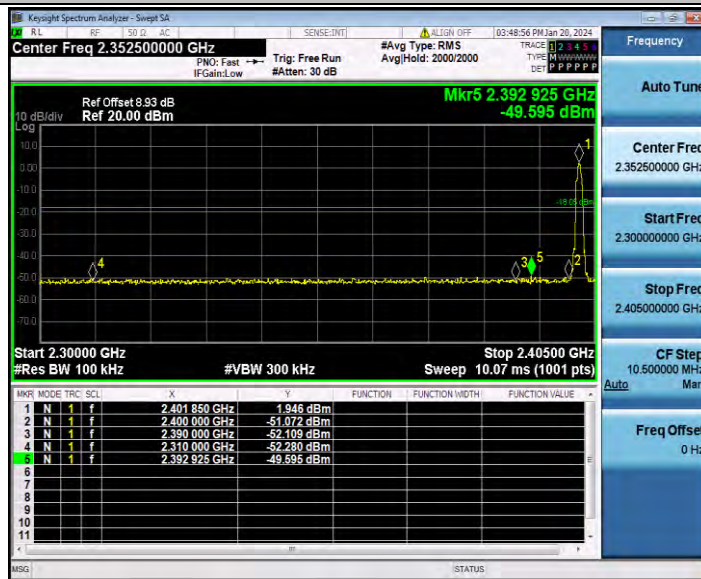
TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	Low	2402	1.96	-49.75	≤-18.04	PASS
		High	2480	9.30	-48.83	≤-10.7	PASS
		Low	Hop_2402	2.87	-49.54	≤-17.14	PASS
		High	Hop_2480	8.88	-49.06	≤-11.12	PASS
2DH1	Ant1	Low	2402	1.95	-49.6	≤-18.05	PASS
		High	2480	9.05	-48.52	≤-10.96	PASS
		Low	Hop_2402	2.22	-49.14	≤-17.78	PASS
		High	Hop_2480	8.88	-48.58	≤-11.12	PASS
3DH1	Ant1	Low	2402	2.94	-49.21	≤-17.06	PASS
		High	2480	9.02	-49.13	≤-10.98	PASS
		Low	Hop_2402	2.20	-49.62	≤-17.8	PASS
		High	Hop_2480	8.04	-49.1	≤-11.96	PASS

Test Graphs

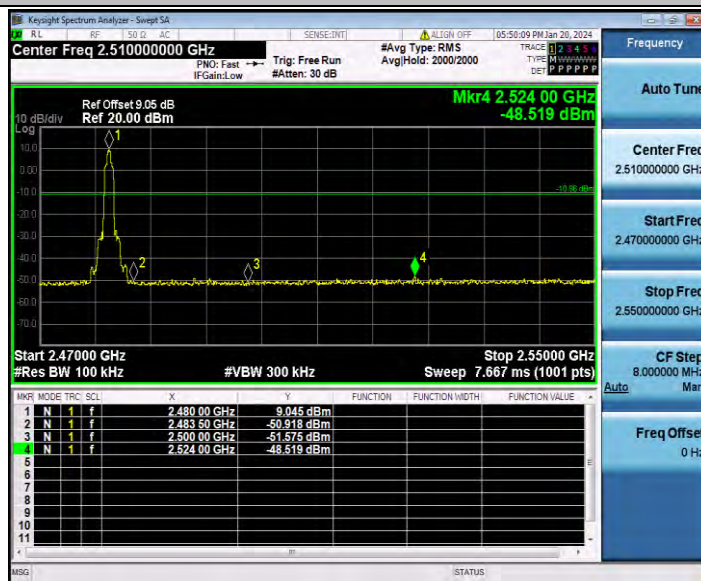




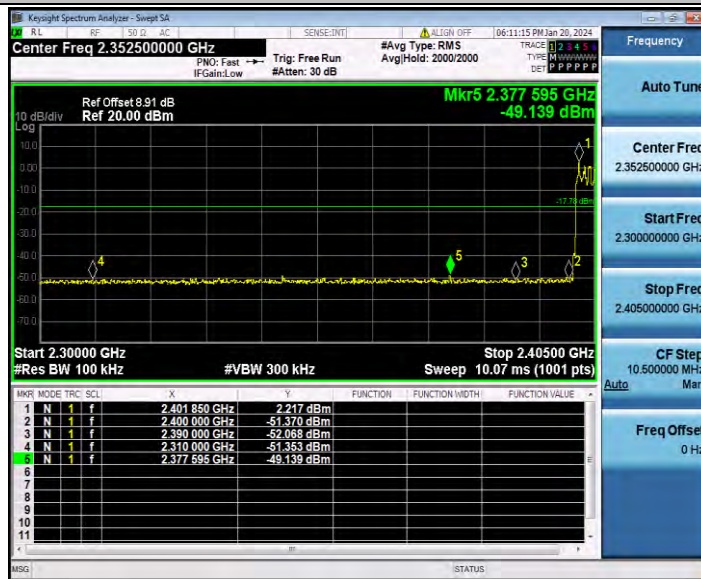
2DH1_Ant1_Low_2402



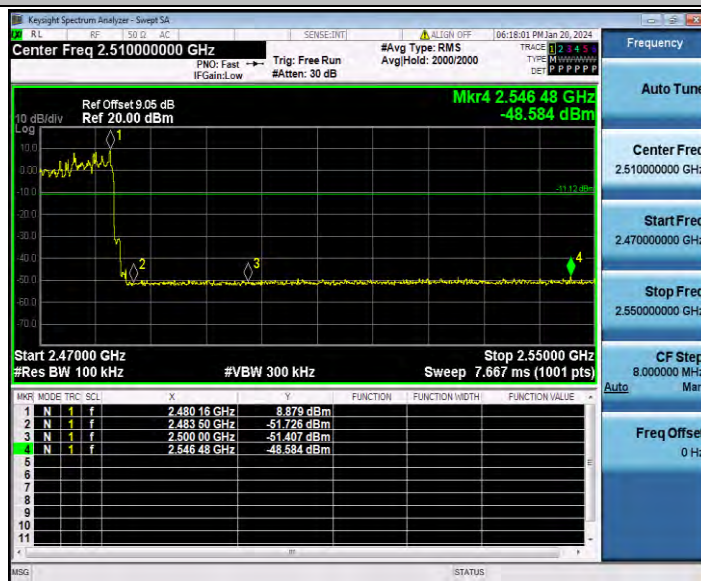
2DH1_Ant1_High_2480



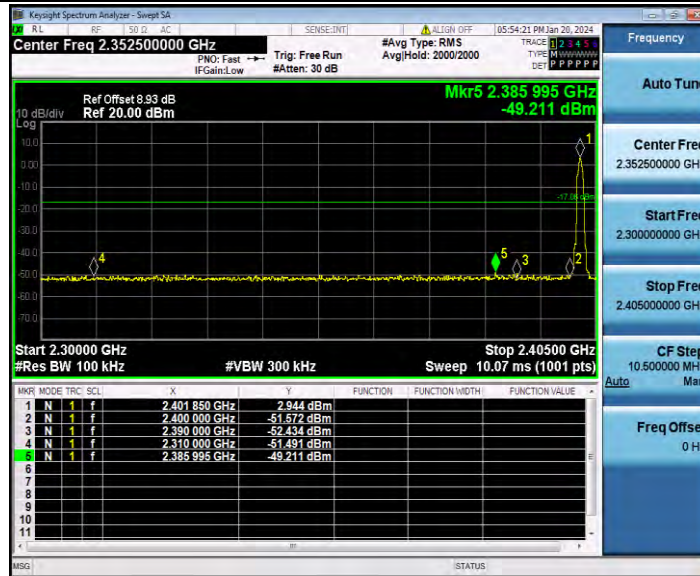
2DH1_Ant1_Low_Hop_2402



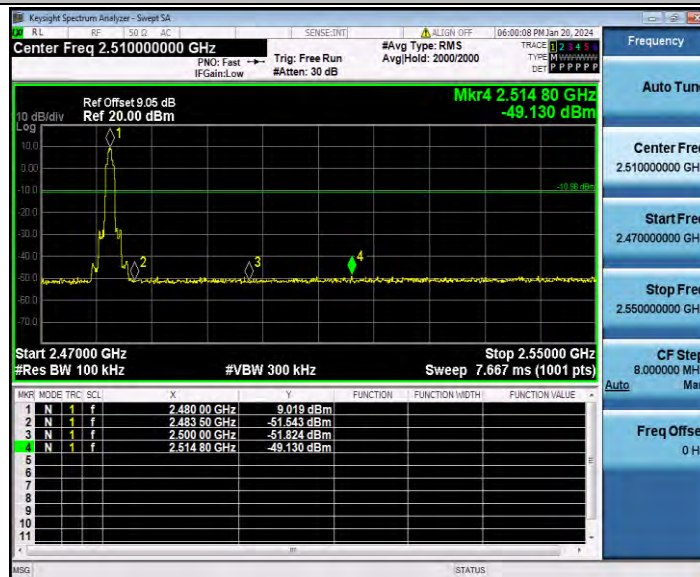
2DH1_Ant1_High_Hop_2480



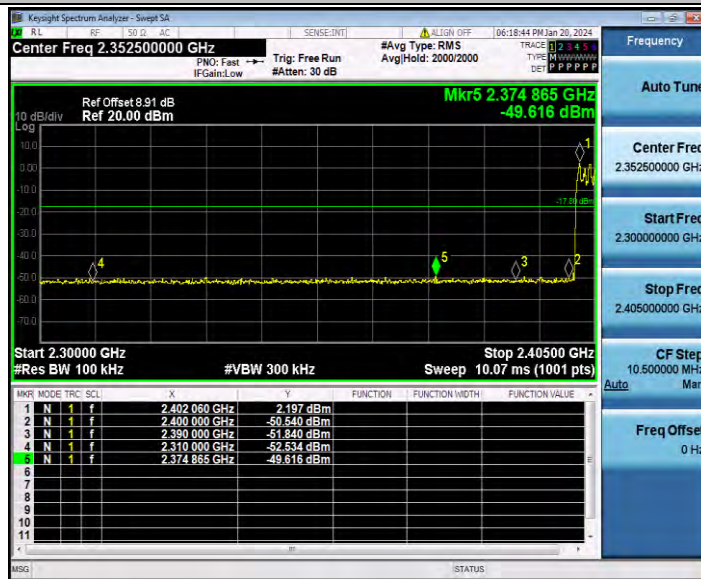
3DH1_Ant1_Low_2402



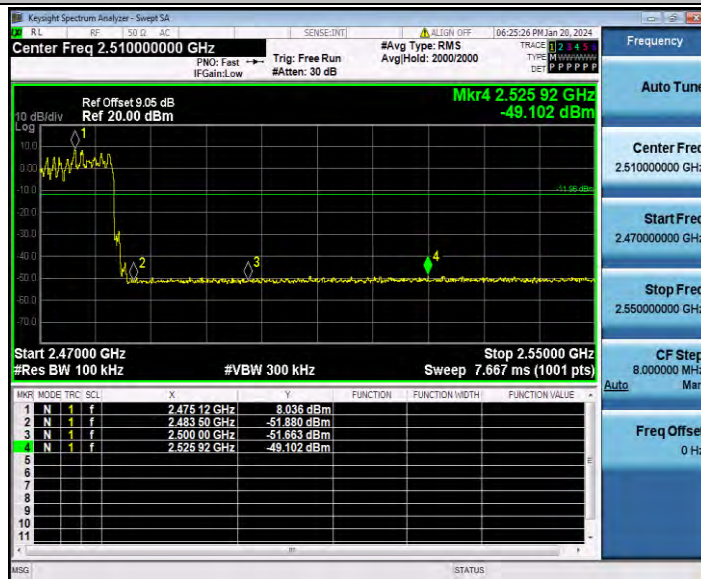
3DH1_Ant1_High_2480



3DH1_Ant1_Low_Hop_2402



3DH1_Ant1_High_Hop_2480

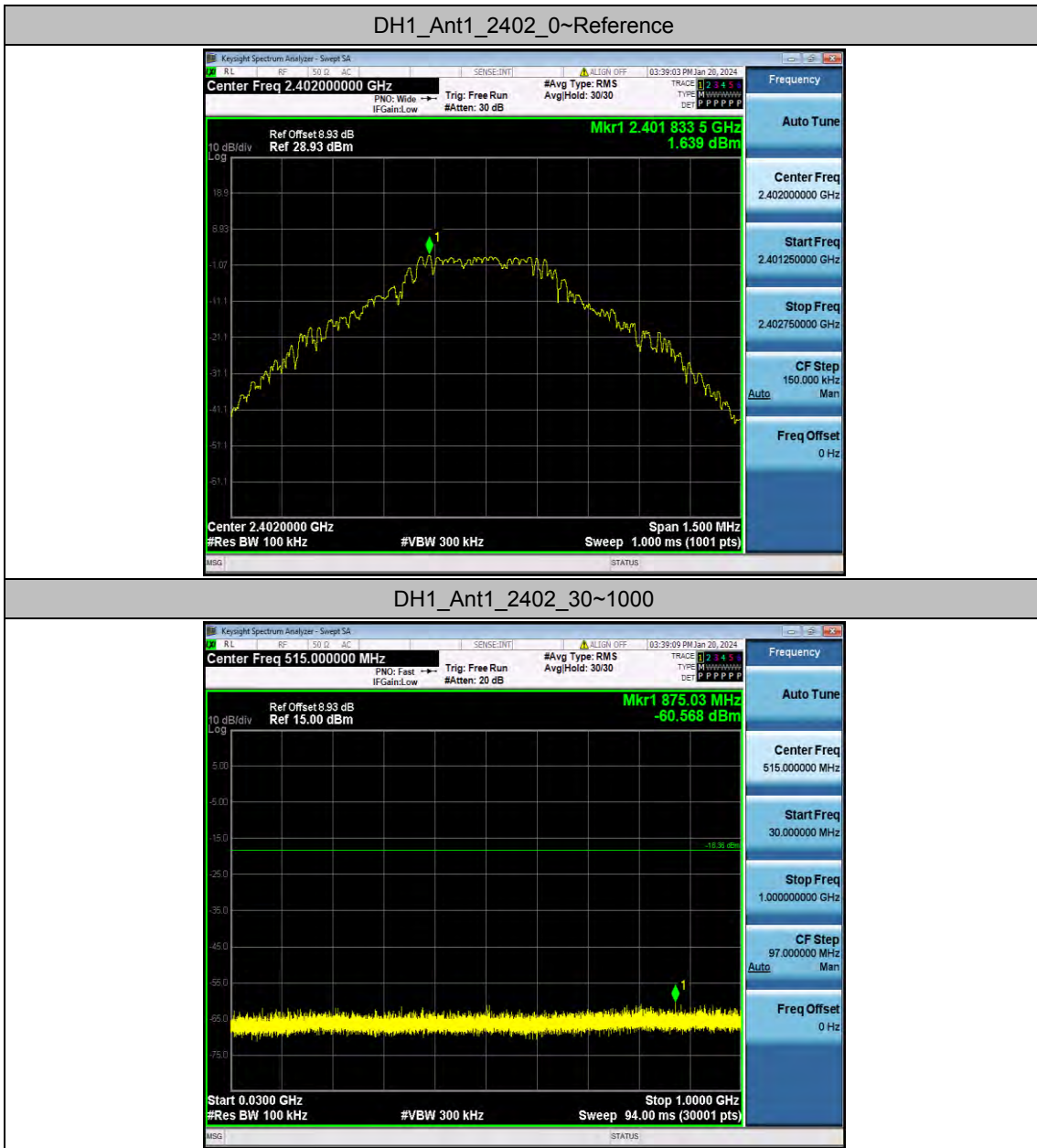


Appendix A.8: Conducted Spurious Emission

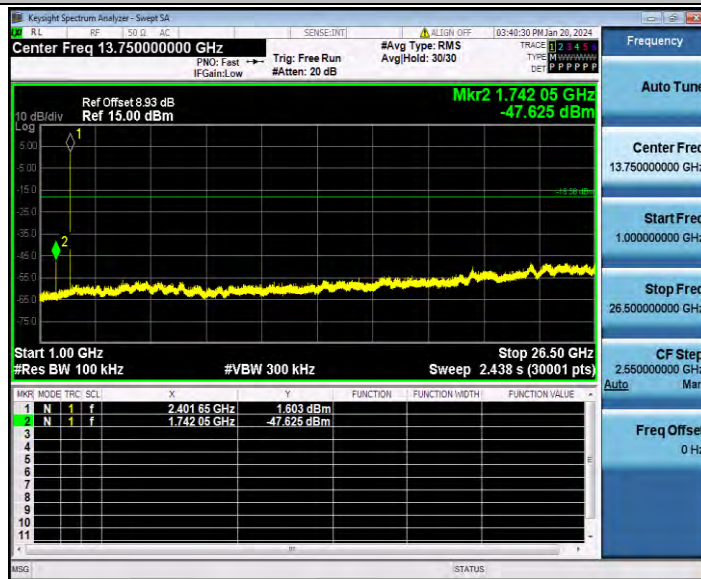
Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	2402	Reference	1.64	1.64	---	PASS
			30~1000	1.64	-60.57	≤-18.36	PASS
			1000~26500	1.64	-47.63	≤-18.36	PASS
		2441	Reference	5.30	5.30	---	PASS
			30~1000	5.30	-60.7	≤-14.7	PASS
			1000~26500	5.30	-47.49	≤-14.7	PASS
		2480	Reference	8.63	8.63	---	PASS
			30~1000	8.63	-60.8	≤-11.37	PASS
			1000~26500	8.63	-47.68	≤-11.37	PASS
2DH1	Ant1	2402	Reference	1.19	1.19	---	PASS
			30~1000	1.19	-60.99	≤-18.81	PASS
			1000~26500	1.19	-47.8	≤-18.81	PASS
		2441	Reference	5.90	5.90	---	PASS
			30~1000	5.90	-60.31	≤-14.1	PASS
			1000~26500	5.90	-47.95	≤-14.1	PASS
		2480	Reference	8.37	8.37	---	PASS
			30~1000	8.37	-60.07	≤-11.63	PASS
			1000~26500	8.37	-47.56	≤-11.63	PASS
3DH1	Ant1	2402	Reference	1.65	1.65	---	PASS
			30~1000	1.65	-61	≤-18.35	PASS
			1000~26500	1.65	-47.91	≤-18.35	PASS
		2441	Reference	5.48	5.48	---	PASS
			30~1000	5.48	-60.59	≤-14.52	PASS
			1000~26500	5.48	-48.12	≤-14.52	PASS
		2480	Reference	8.02	8.02	---	PASS
			30~1000	8.02	-60.77	≤-11.98	PASS
			1000~26500	8.02	-47.89	≤-11.98	PASS

Test Graphs



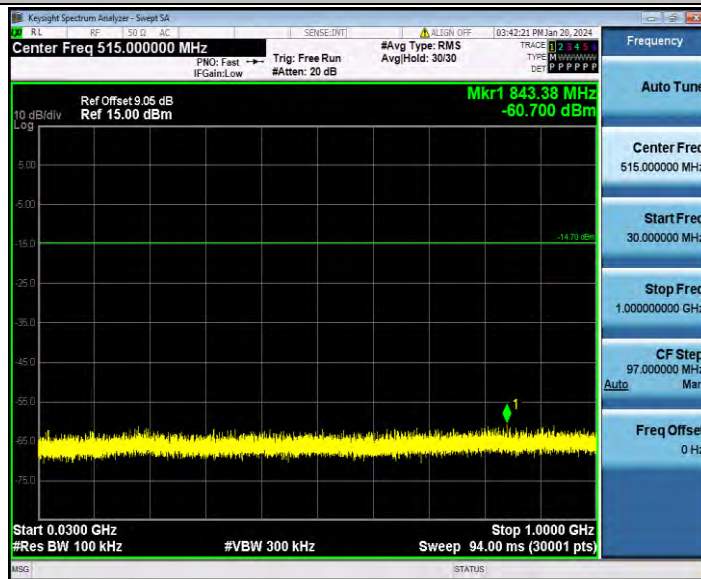
DH1_Ant1_2402_1000~26500



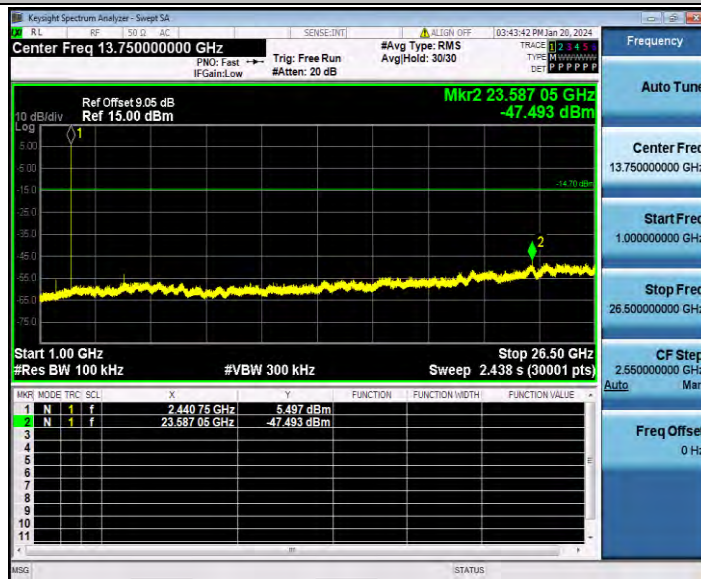
DH1_Ant1_2441_0~Reference



DH1_Ant1_2441_30~1000



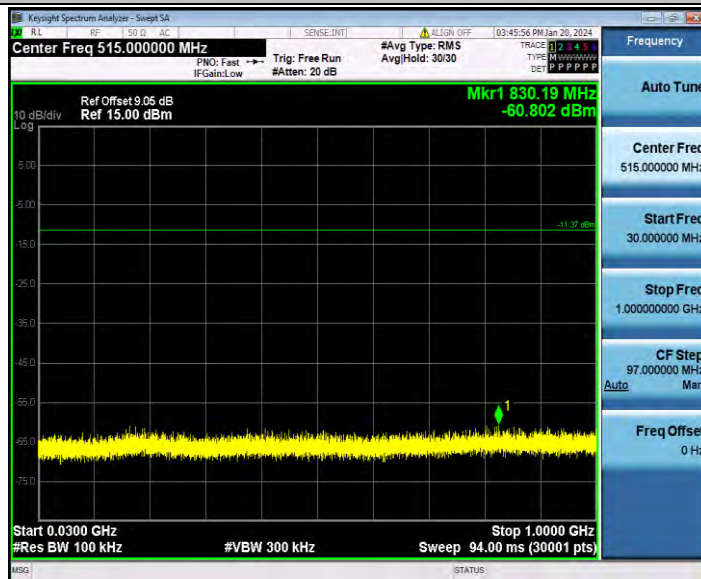
DH1_Ant1_2441_1000~26500



DH1_Ant1_2480_0~Reference



DH1_Ant1_2480_30~1000

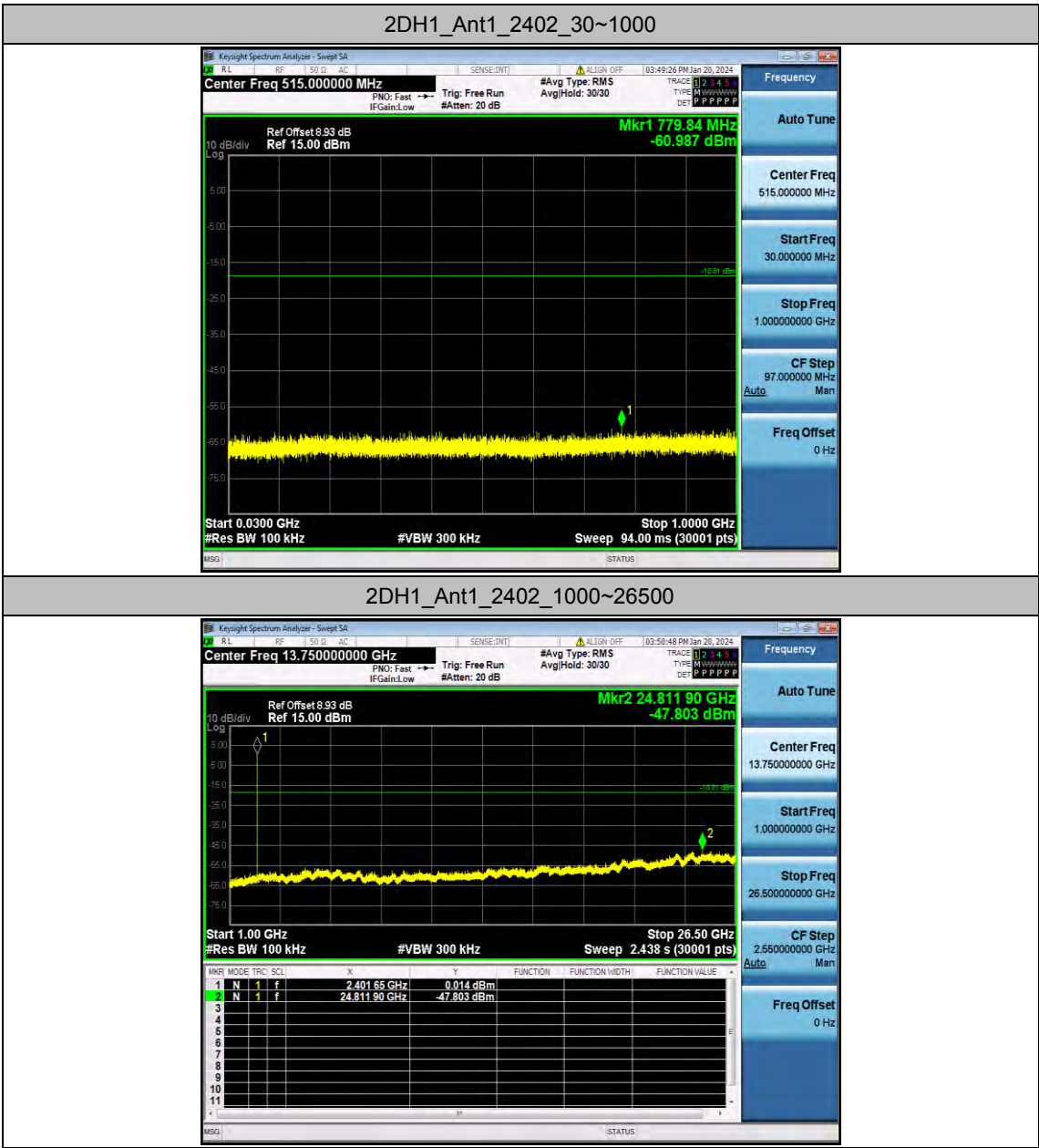


DH1_Ant1_2480_1000~26500



2DH1_Ant1_2402_0~Reference

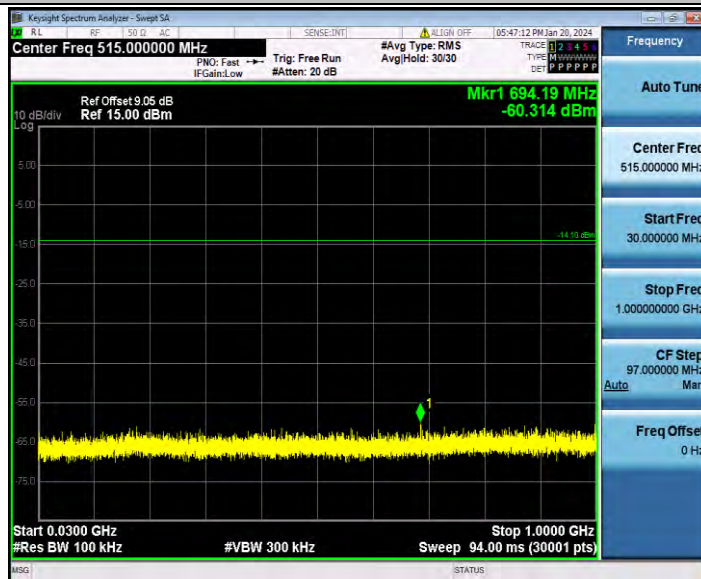




2DH1_Ant1_2441_0~Reference



2DH1_Ant1_2441_30~1000

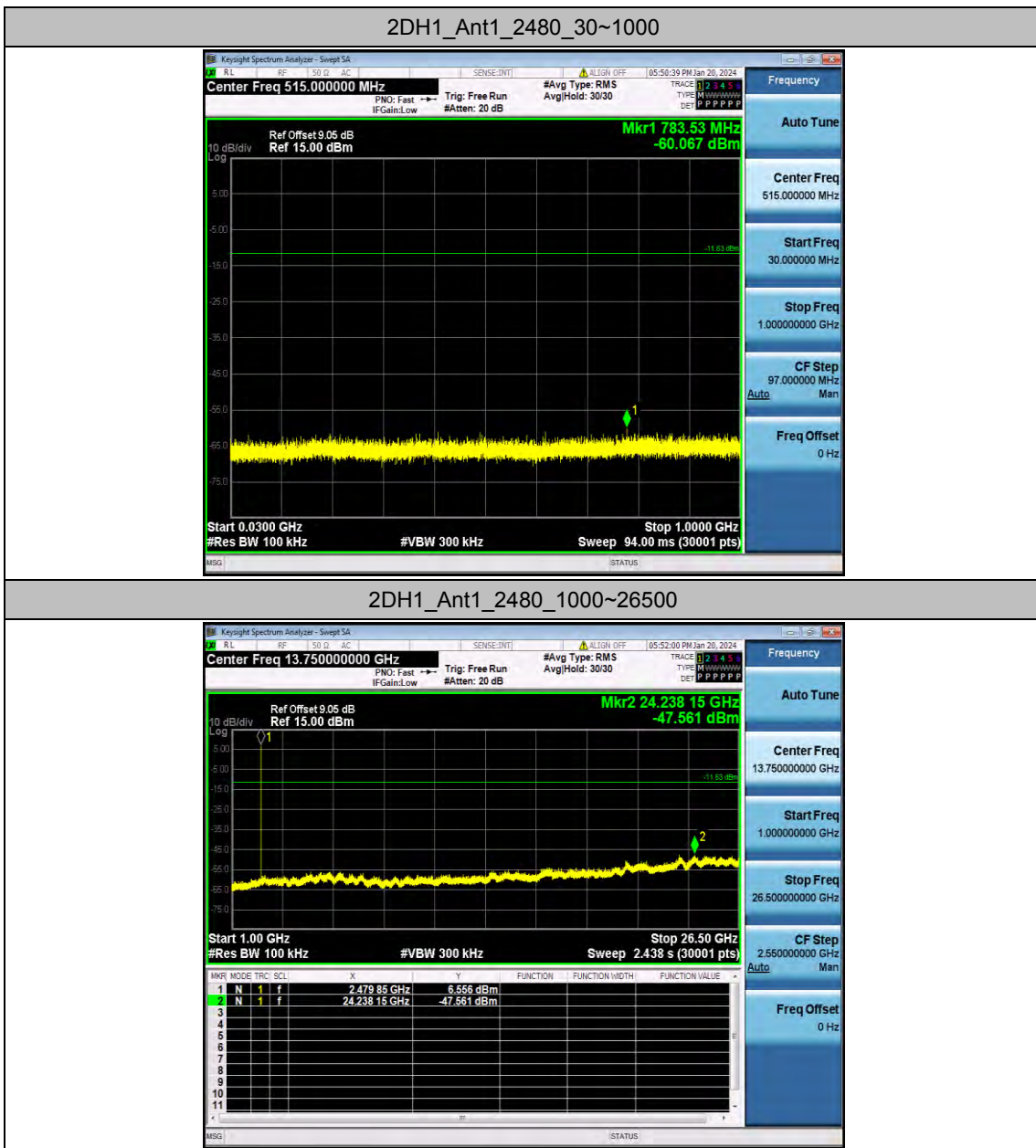


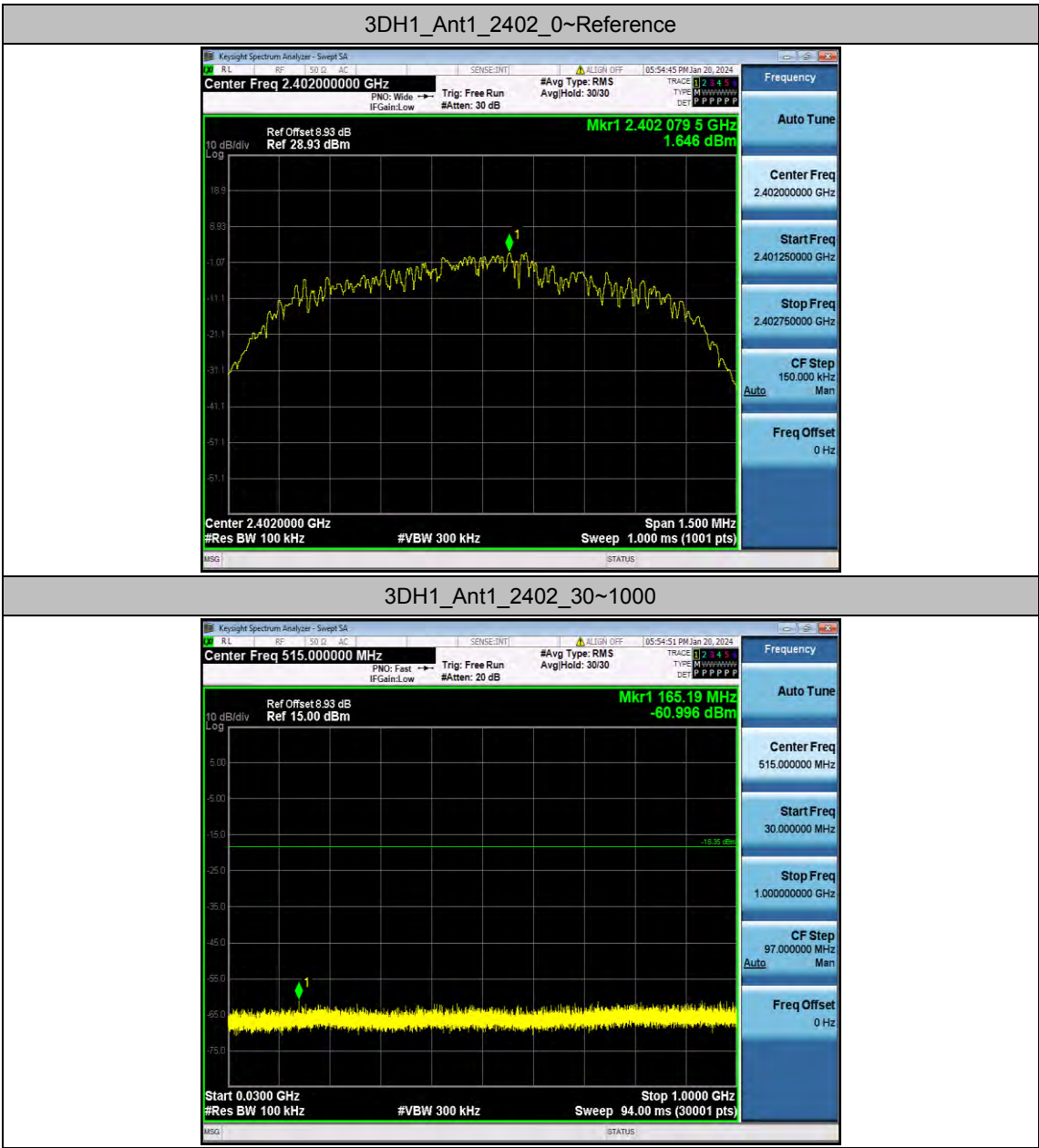
2DH1_Ant1_2441_1000~26500

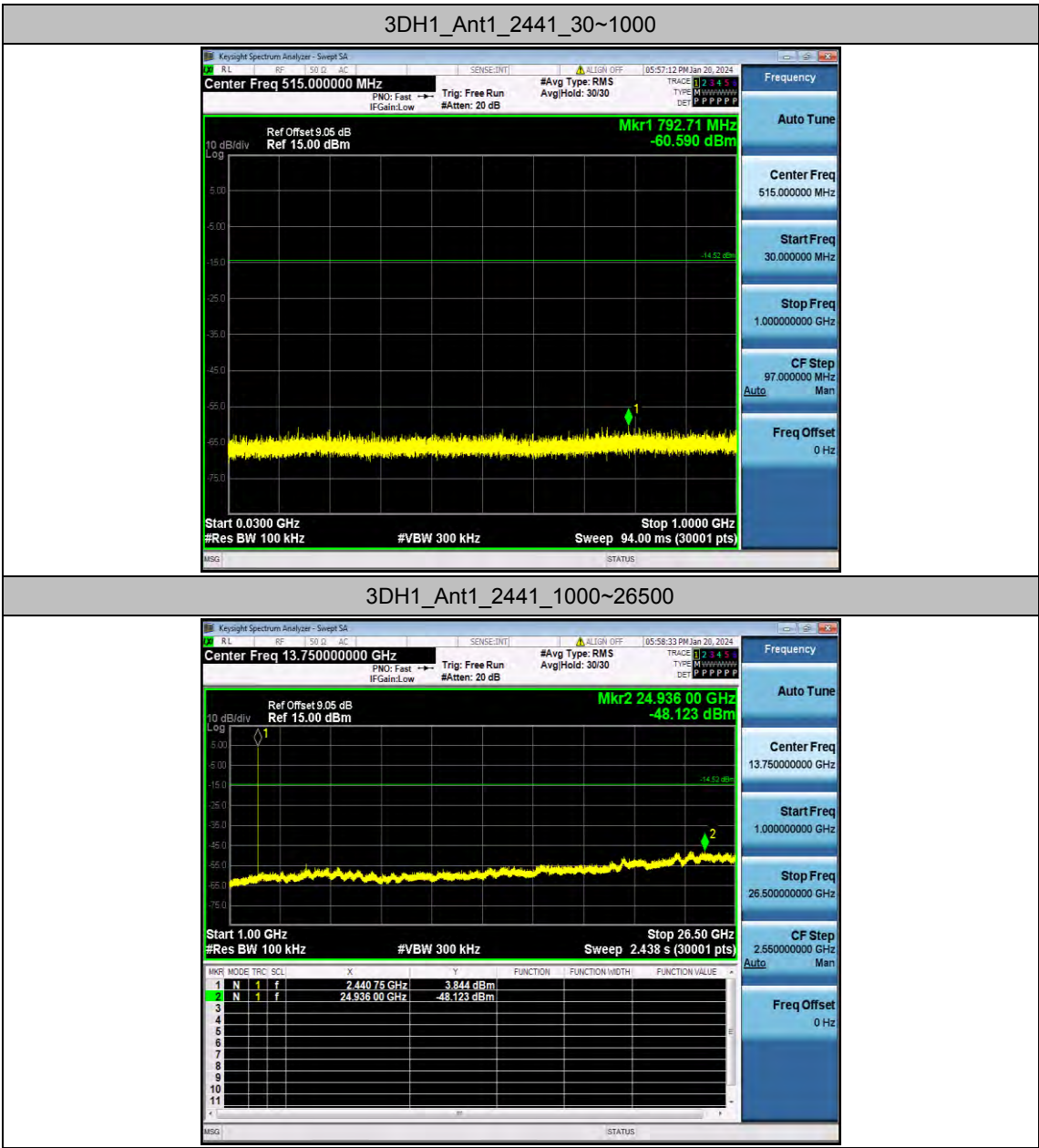


2DH1_Ant1_2480_0~Reference





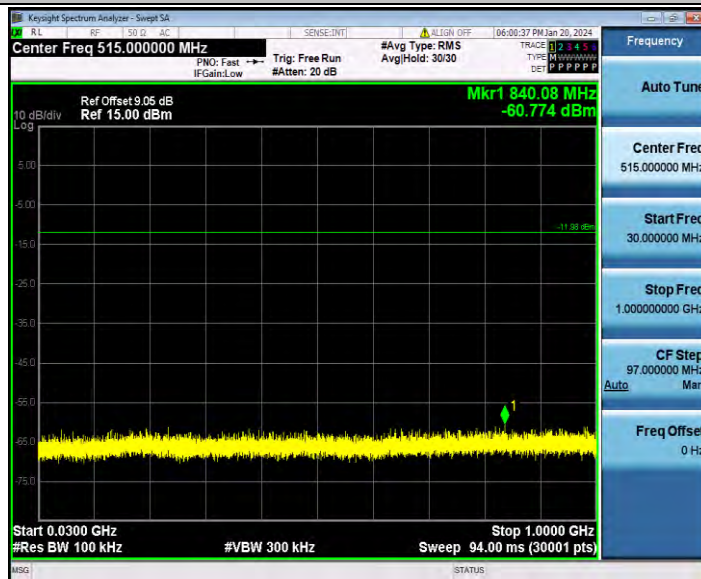


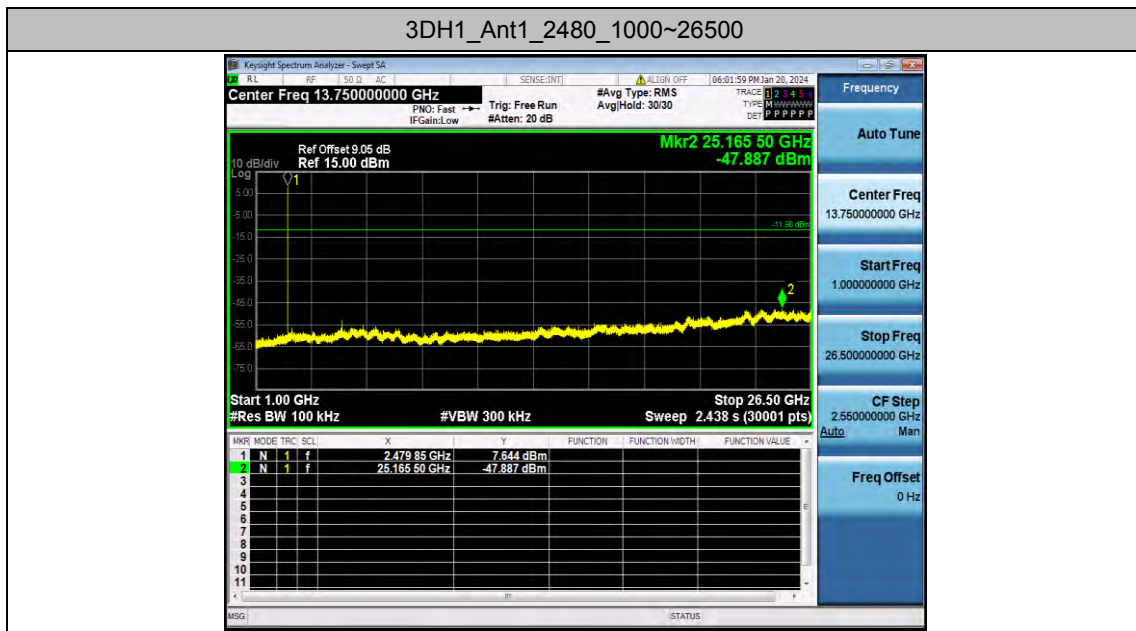


3DH1_Ant1_2480_0~Reference



3DH1_Ant1_2480_30~1000





Appendix A.9: Emissions in Restricted Bands

Test Result

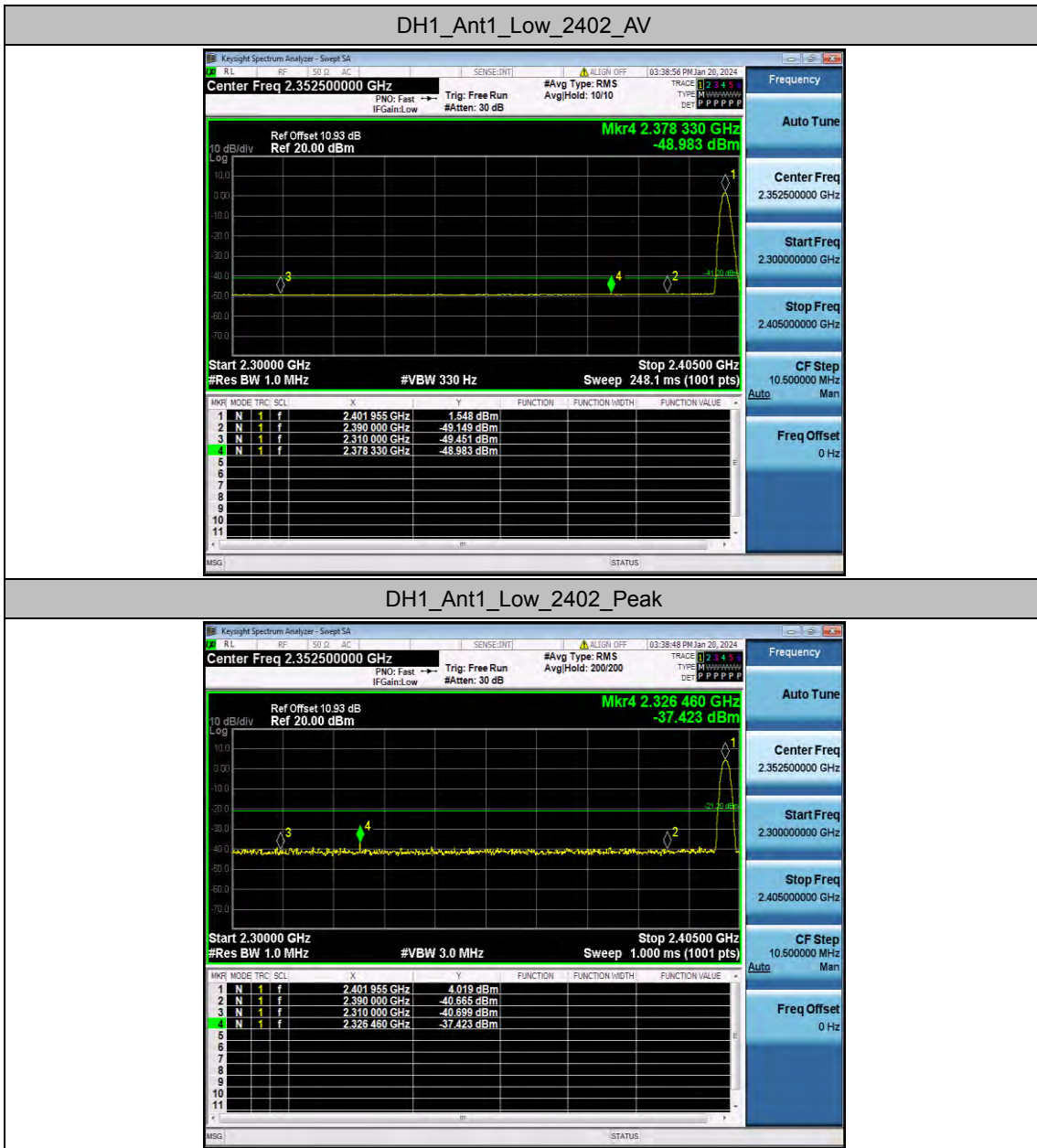
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH1	Ant1	Low	2402	AV	2310.000	-49.45	≤-41.20	45.75	≤54	PASS
				AV	2378.330	-48.98	≤-41.20	46.22	≤54	PASS
				AV	2390.000	-49.15	≤-41.20	46.05	≤54	PASS
				Peak	2310.000	-40.7	≤-21.20	54.50	≤74	PASS
				Peak	2326.460	-37.42	≤-21.20	57.78	≤74	PASS
				Peak	2390.000	-40.67	≤-21.20	54.53	≤74	PASS
		High	2480	AV	2483.500	-47.89	≤-41.20	47.31	≤54	PASS
				AV	2483.520	-47.88	≤-41.20	47.32	≤54	PASS
				AV	2500.000	-48.88	≤-41.20	46.32	≤54	PASS
				Peak	2483.500	-41.76	≤-21.20	53.44	≤74	PASS
				Peak	2489.840	-39.16	≤-21.20	56.04	≤74	PASS
				Peak	2500.000	-40.4	≤-21.20	54.80	≤74	PASS
2DH1	Ant1	Low	2402	AV	2310.000	-49.44	≤-41.20	45.76	≤54	PASS
				AV	2382.215	-48.99	≤-41.20	46.21	≤54	PASS
				AV	2390.000	-49.13	≤-41.20	46.07	≤54	PASS
				Peak	2310.000	-39.97	≤-21.20	55.23	≤74	PASS
				Peak	2343.785	-39.15	≤-21.20	56.05	≤74	PASS
				Peak	2390.000	-41.8	≤-21.20	53.40	≤74	PASS
		High	2480	AV	2483.500	-47.34	≤-41.20	47.86	≤54	PASS
				AV	2483.520	-47.34	≤-41.20	47.86	≤54	PASS
				AV	2500.000	-48.87	≤-41.20	46.33	≤54	PASS
				Peak	2483.500	-40.46	≤-21.20	54.74	≤74	PASS
				Peak	2495.280	-39.19	≤-21.20	56.01	≤74	PASS
				Peak	2500.000	-40.66	≤-21.20	54.54	≤74	PASS
3DH1	Ant1	Low	2402	AV	2310.000	-49.47	≤-41.20	45.73	≤54	PASS
				AV	2388.410	-48.99	≤-41.20	46.21	≤54	PASS
				AV	2390.000	-49.1	≤-41.20	46.10	≤54	PASS
				Peak	2310.000	-42.03	≤-21.20	53.17	≤74	PASS
				Peak	2381.270	-38.93	≤-21.20	56.27	≤74	PASS
				Peak	2390.000	-42	≤-21.20	53.20	≤74	PASS
		High	2480	AV	2483.500	-47.53	≤-41.20	47.67	≤54	PASS
				AV	2483.520	-47.53	≤-41.20	47.67	≤54	PASS
				AV	2500.000	-48.75	≤-41.20	46.45	≤54	PASS
				Peak	2483.500	-39.68	≤-21.20	55.52	≤74	PASS
				Peak	2484.800	-38.48	≤-21.20	56.72	≤74	PASS
				Peak	2484.800	-38.48	≤-21.20	56.72	≤74	PASS

				Peak	2500.000	-39	≤-21.20	56.20	≤74	PASS
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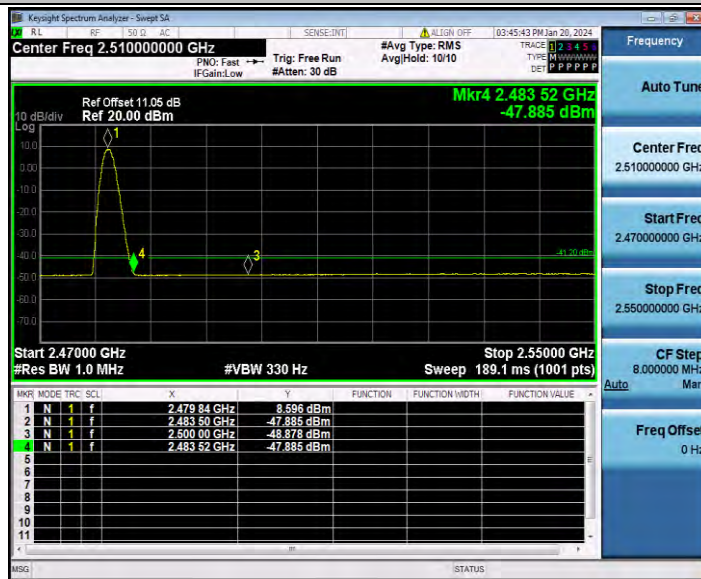
Note:

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_AV



DH1_Ant1_High_2480_Peak

