

Case No. : <u>CTA24061300301</u>	
Ambient Condition: <u>23</u> °C, <u>49</u> %RH	
According Standard: ■Part15C	
Test Date: <u>2024.6.15</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]
DH1	Ant1	2402	1.038	2401.463	2402.501
		2441	1.038	2440.463	2441.501
		2480	1.035	2479.463	2480.498
2DH1	Ant1	2402	1.341	2401.310	2402.651
		2441	1.338	2440.313	2441.651
		2480	1.332	2479.316	2480.648
3DH1	Ant1	2402	1.368	2401.316	2402.684
		2441	1.362	2440.316	2441.678
		2480	1.335	2479.316	2480.651

Test Graphs

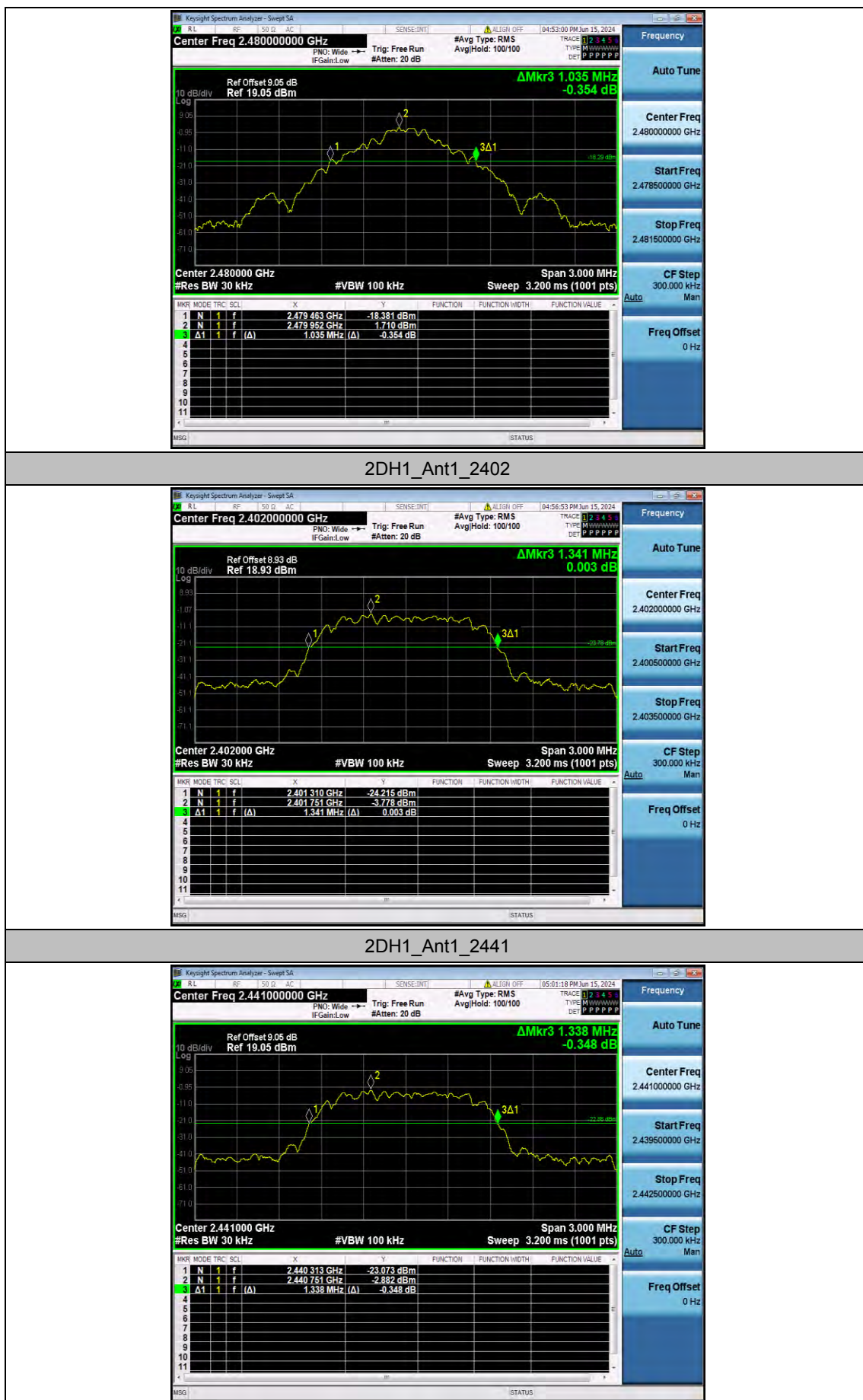
DH1_Ant1_2402



DH1_Ant1_2441



DH1_Ant1_2480



2DH1_Ant1_2480



3DH1_Ant1_2402



3DH1_Ant1_2441



3DH1_Ant1_2480

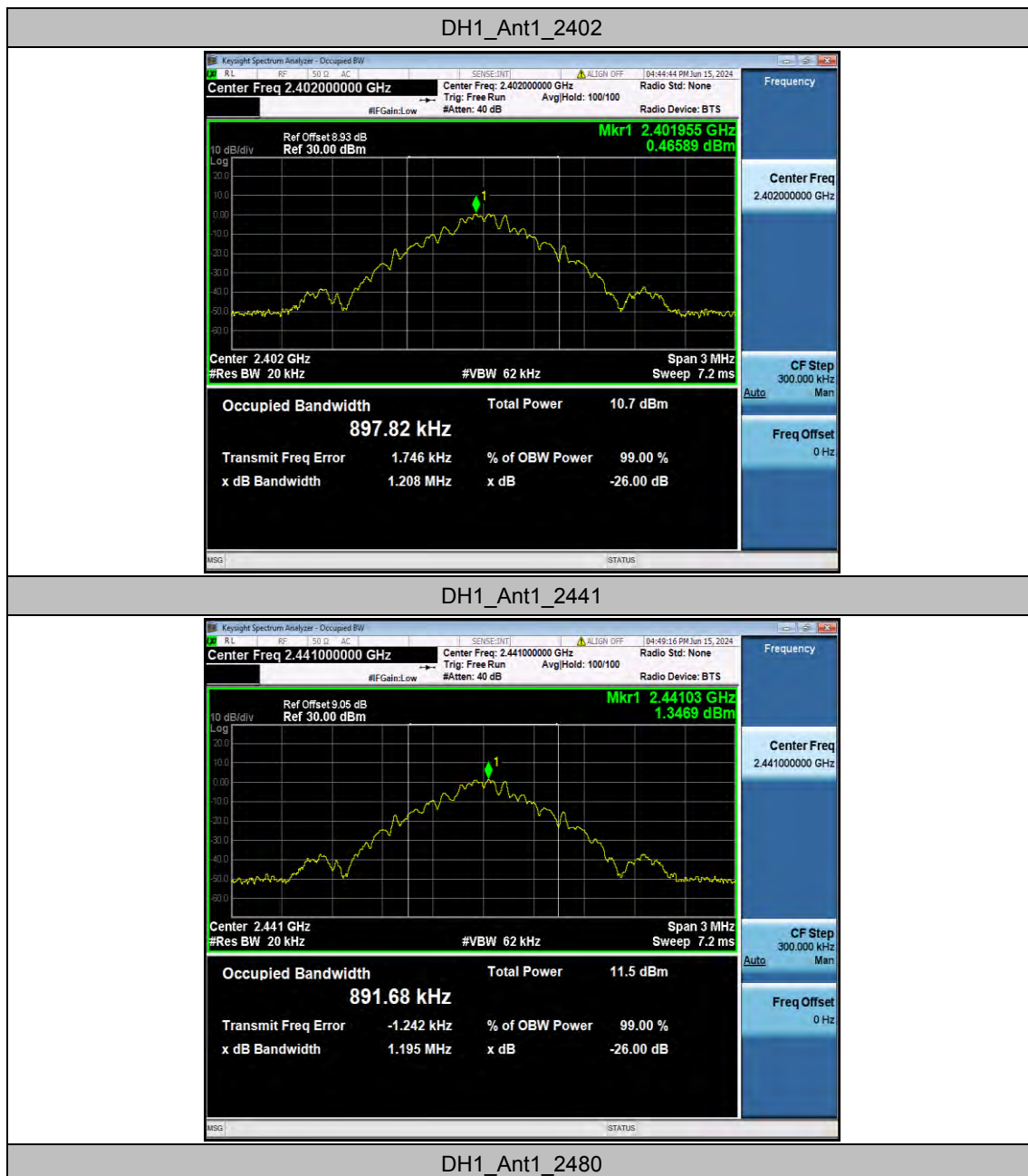


Appendix A.2: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]
DH1	Ant1	2402	0.89782	2401.5528	2402.4507
		2441	0.89168	2440.5529	2441.4446
		2480	0.88719	2479.5516	2480.4388
2DH1	Ant1	2402	1.1838	2401.4026	2402.5864
		2441	1.1840	2440.4029	2441.5869
		2480	1.1839	2479.4024	2480.5863
3DH1	Ant1	2402	1.2252	2401.3723	2402.5975
		2441	1.2249	2440.3717	2441.5966
		2480	1.2256	2479.3707	2480.5963

Test Graphs





2DH1_Ant1_2402



2DH1_Ant1_2441



2DH1_Ant1_2480

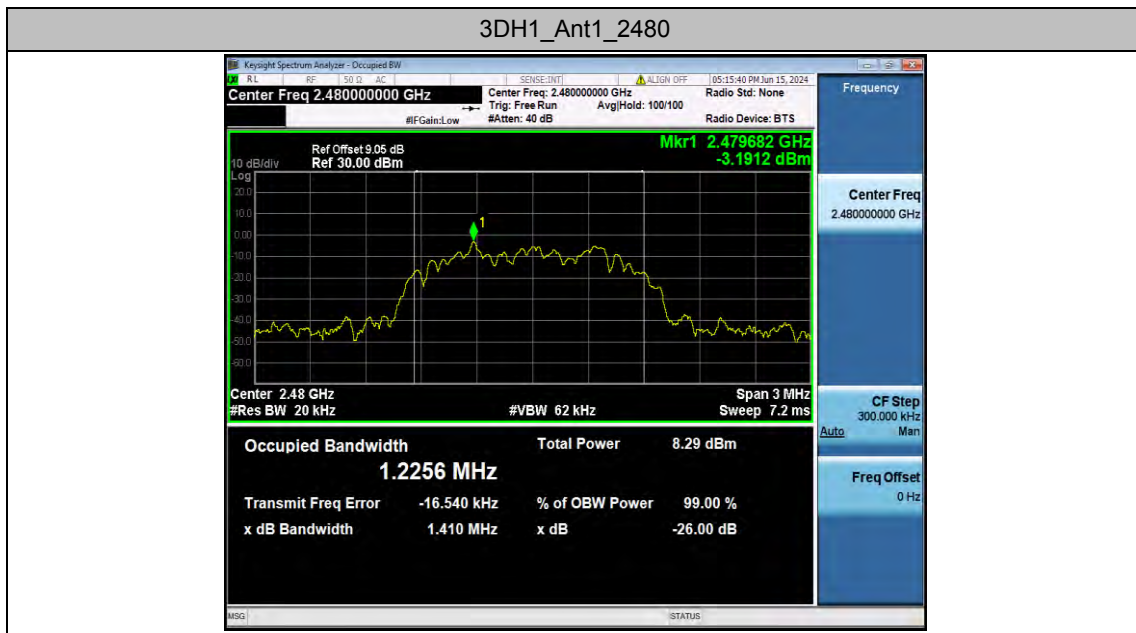


3DH1_Ant1_2402



3DH1_Ant1_2441





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	6.33	≤ 20.97	PASS
		2441	7.11	≤ 20.97	PASS
		2480	6.33	≤ 20.97	PASS
2DH1	Ant1	2402	6.22	≤ 20.97	PASS
		2441	7.11	≤ 20.97	PASS
		2480	6.26	≤ 20.97	PASS
3DH1	Ant1	2402	6.66	≤ 20.97	PASS
		2441	7.50	≤ 20.97	PASS
		2480	6.69	≤ 20.97	PASS

Appendix A.4: Carrier frequency separation

Test Result

TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Hop_2402	1.002	≥ 0.692	PASS
		Hop_2441	1.004	≥ 0.692	PASS
		Hop_2480	1.014	≥ 0.692	PASS
2DH1	Ant1	Hop_2402	0.996	≥ 0.894	PASS
		Hop_2441	1.006	≥ 0.894	PASS
		Hop_2480	1.008	≥ 0.894	PASS
3DH1	Ant1	Hop_2402	0.994	≥ 0.912	PASS
		Hop_2441	0.998	≥ 0.912	PASS
		Hop_2480	1.006	≥ 0.912	PASS

Test Graphs

DH1_Ant1_Hop_2402



DH1_Ant1_Hop_2441



DH1_Ant1_Hop_2480



2DH1_Ant1_Hop_2402



2DH1_Ant1_Hop_2441



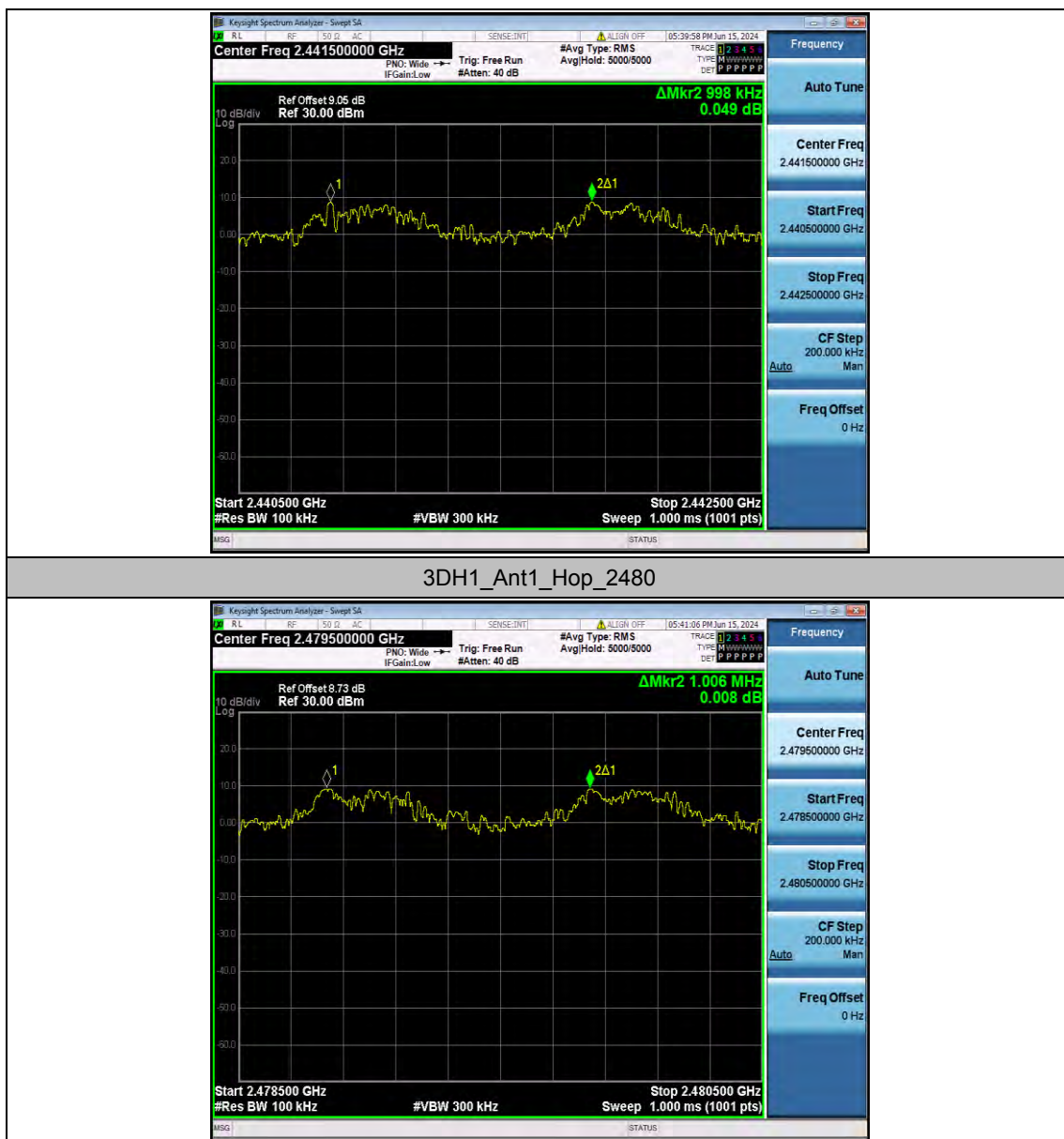
2DH1_Ant1_Hop_2480



3DH1_Ant1_Hop_2402



3DH1_Ant1_Hop_2441

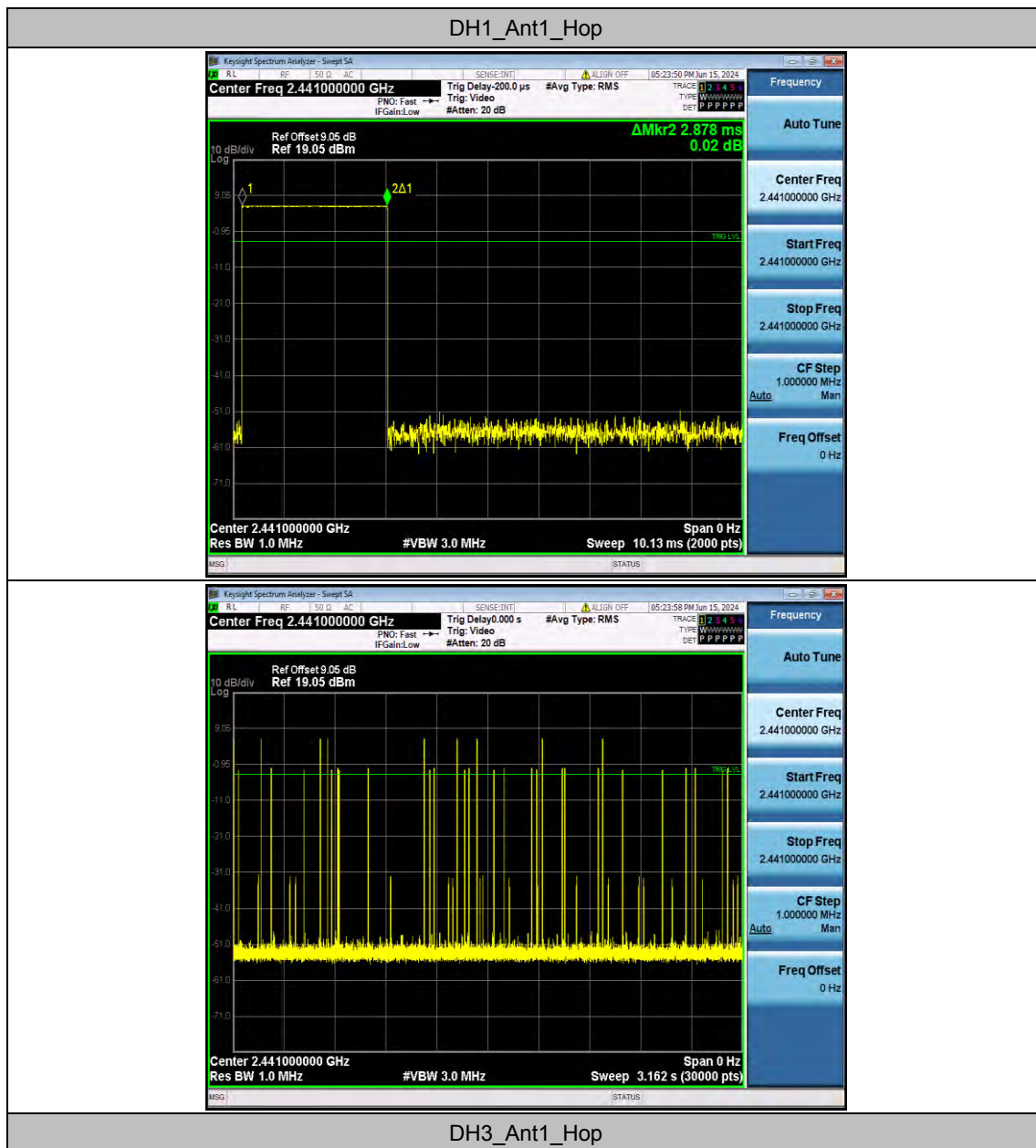


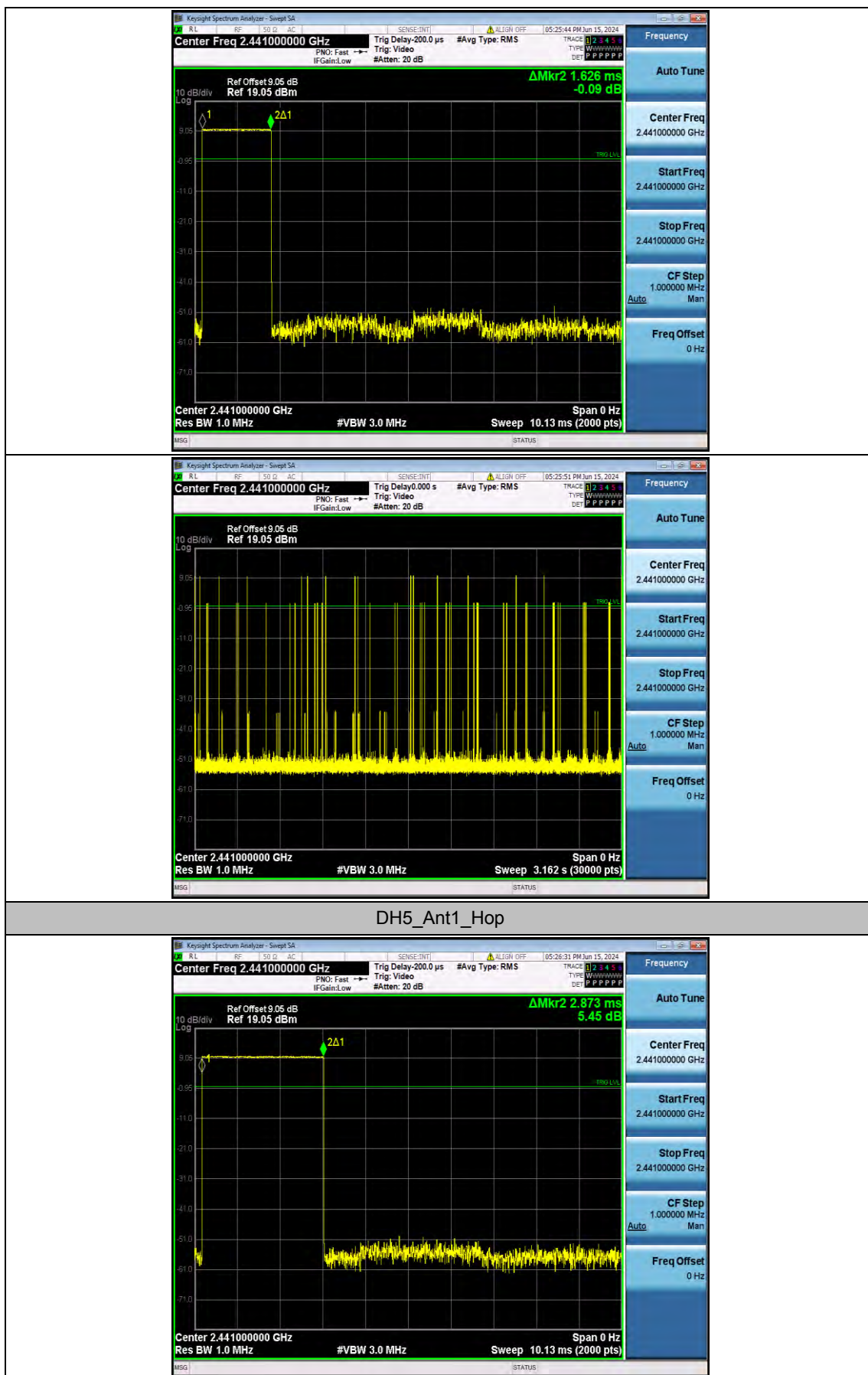
Appendix A.5: Time of occupancy

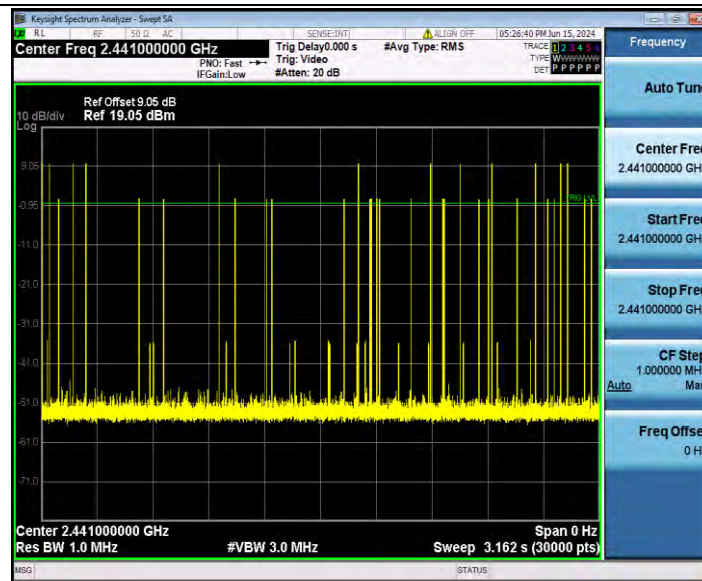
Test Result

TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	2.878	90	0.259	≤0.4	PASS
DH3	Ant1	Hop	1.626	160	0.26	≤0.4	PASS
DH5	Ant1	Hop	2.873	120	0.345	≤0.4	PASS
2DH1	Ant1	Hop	0.375	330	0.124	≤0.4	PASS
2DH3	Ant1	Hop	1.631	160	0.261	≤0.4	PASS
2DH5	Ant1	Hop	2.873	90	0.259	≤0.4	PASS
3DH1	Ant1	Hop	0.380	320	0.122	≤0.4	PASS
3DH3	Ant1	Hop	1.631	160	0.261	≤0.4	PASS
3DH5	Ant1	Hop	2.878	120	0.345	≤0.4	PASS

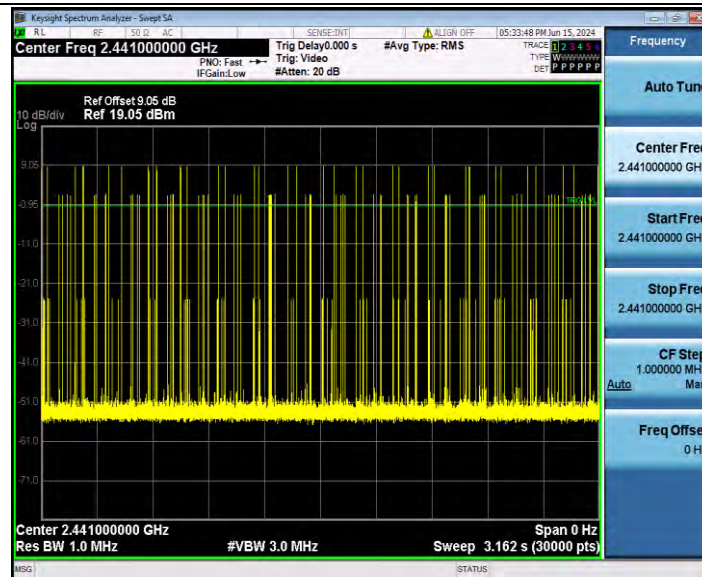
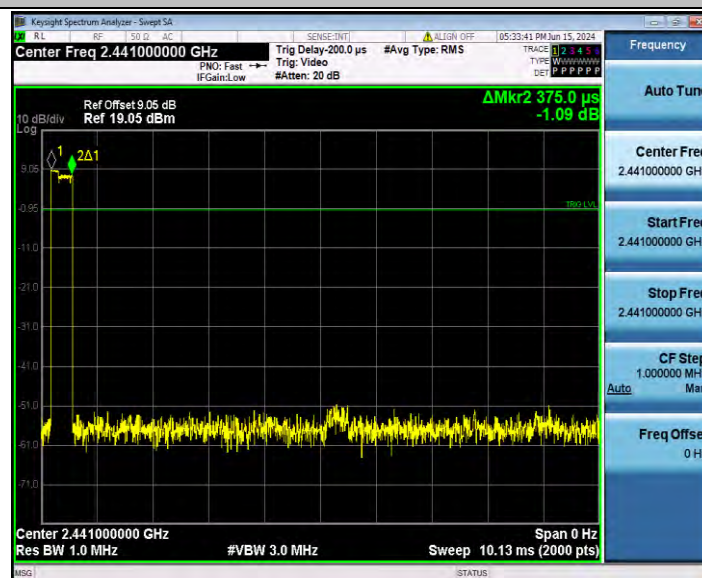
Test Graphs



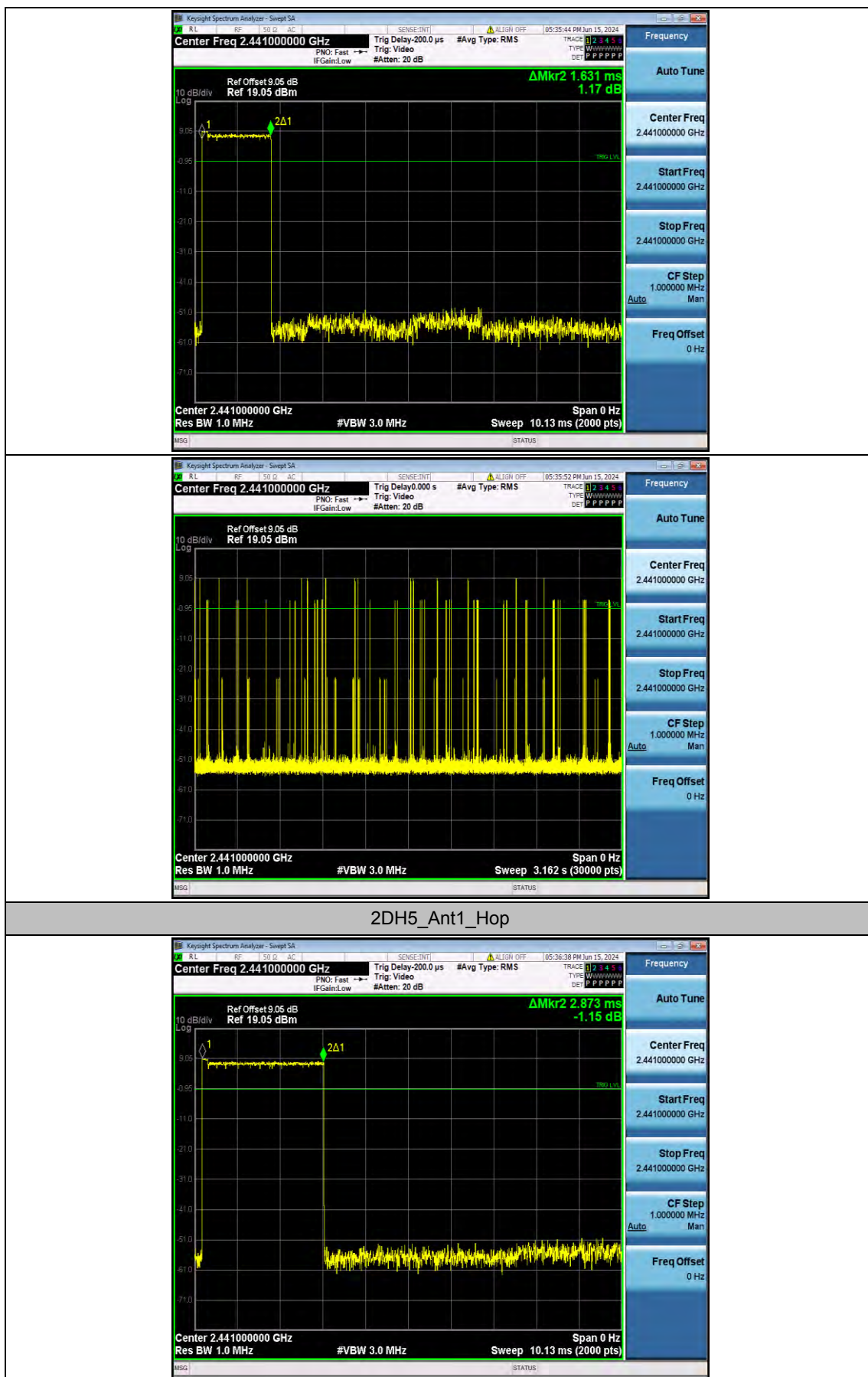


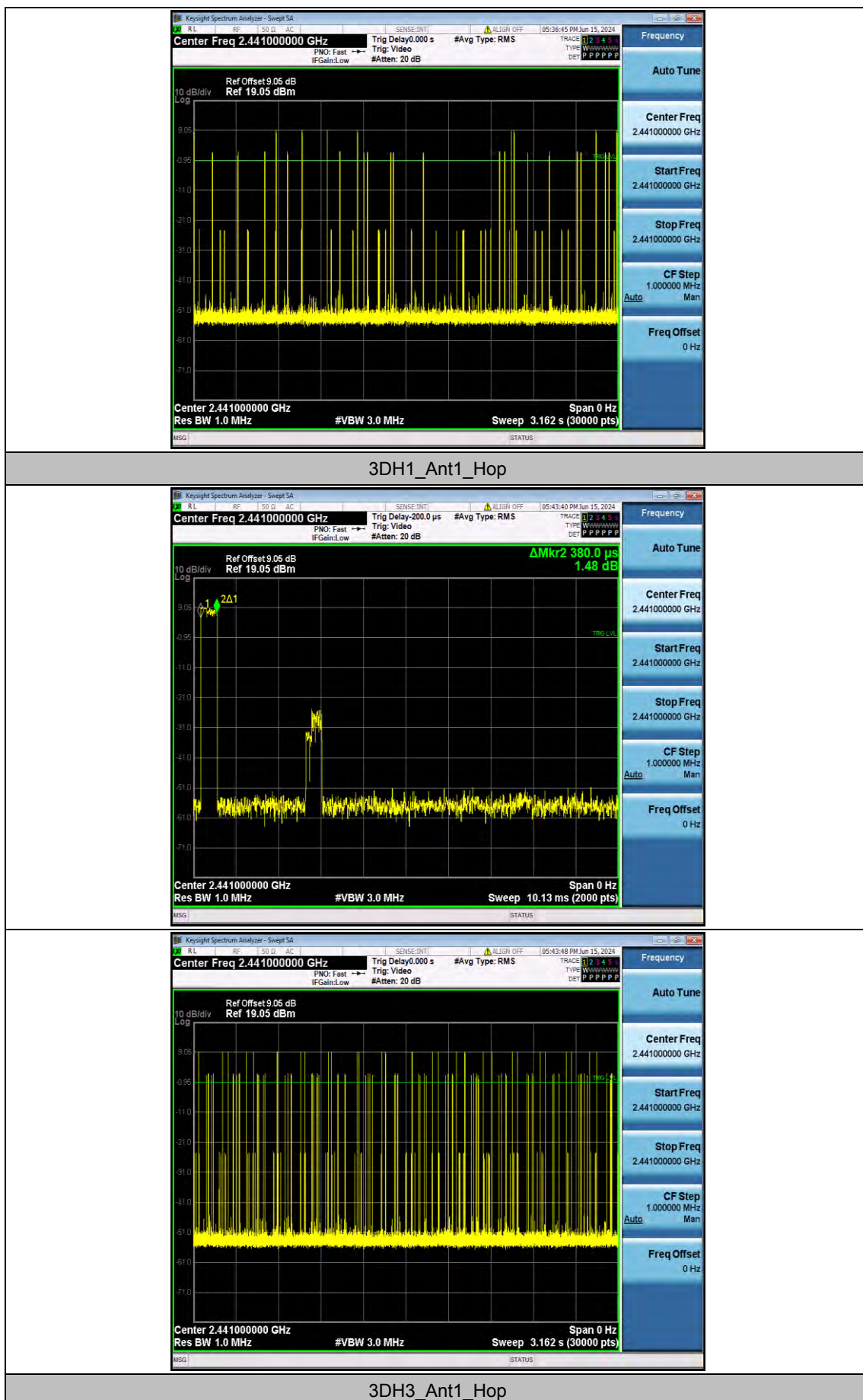


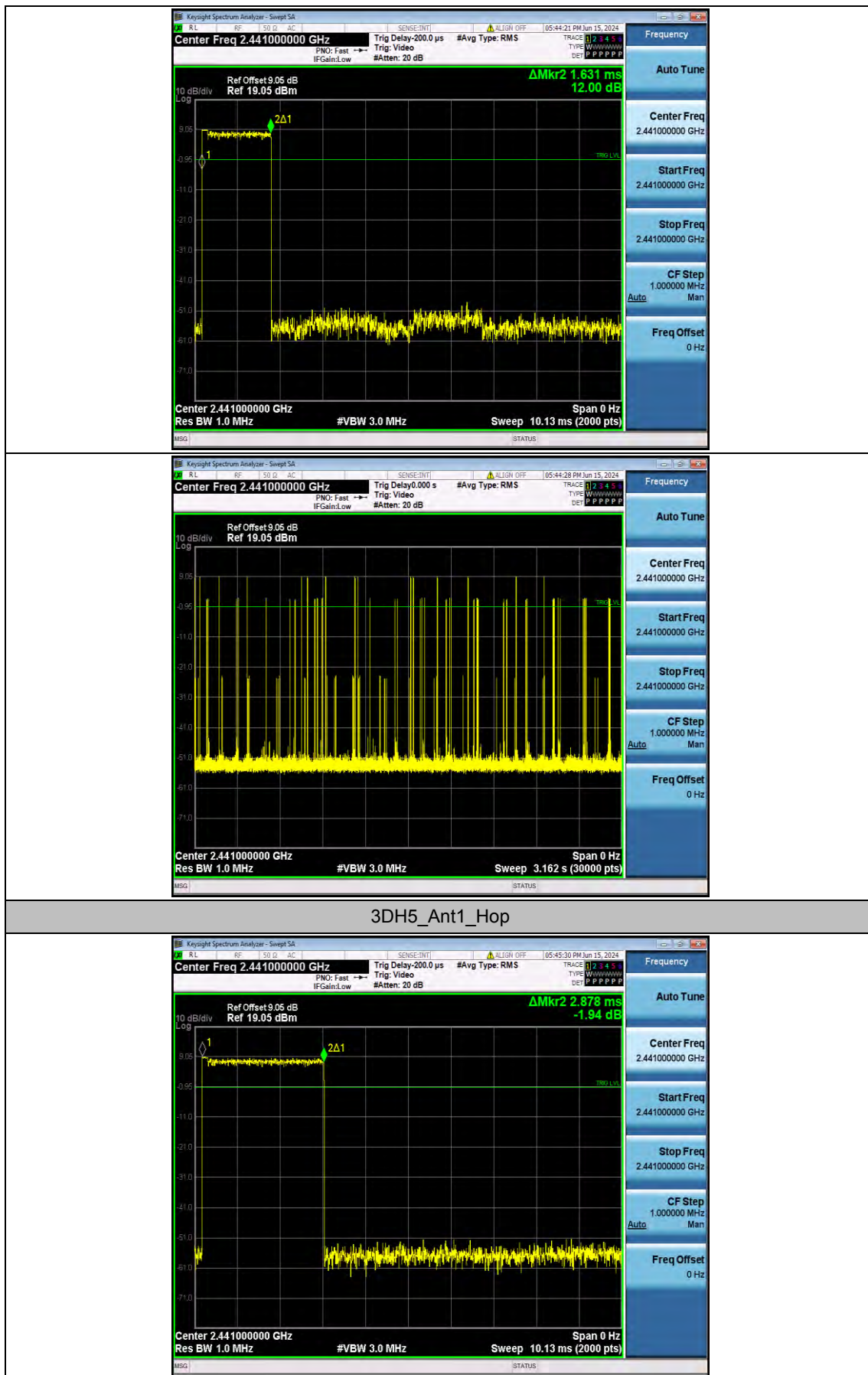
2DH1_Ant1_Hop

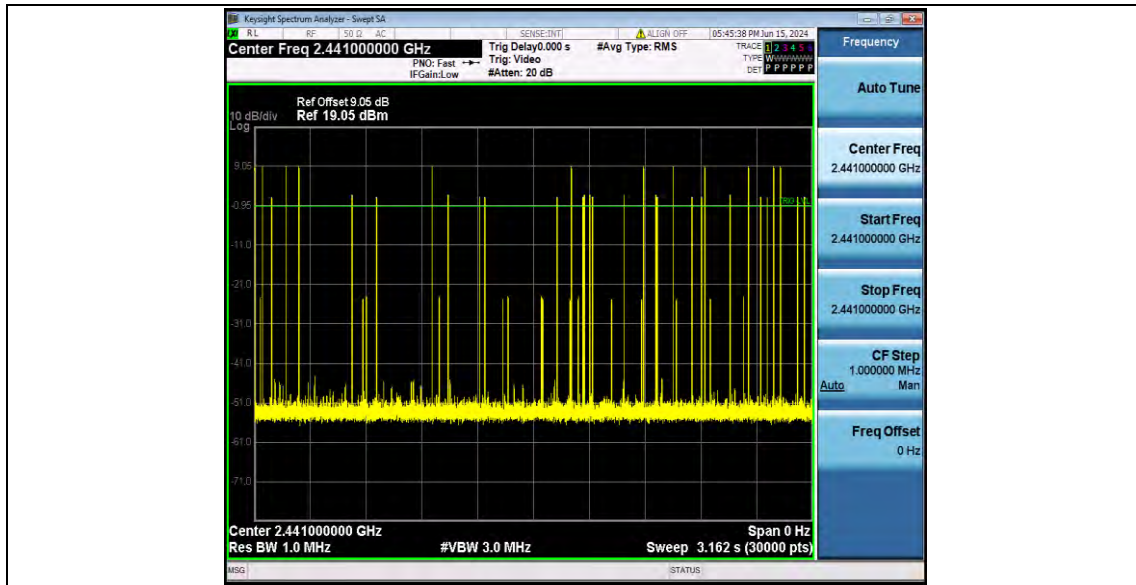


2DH3_Ant1_Hop







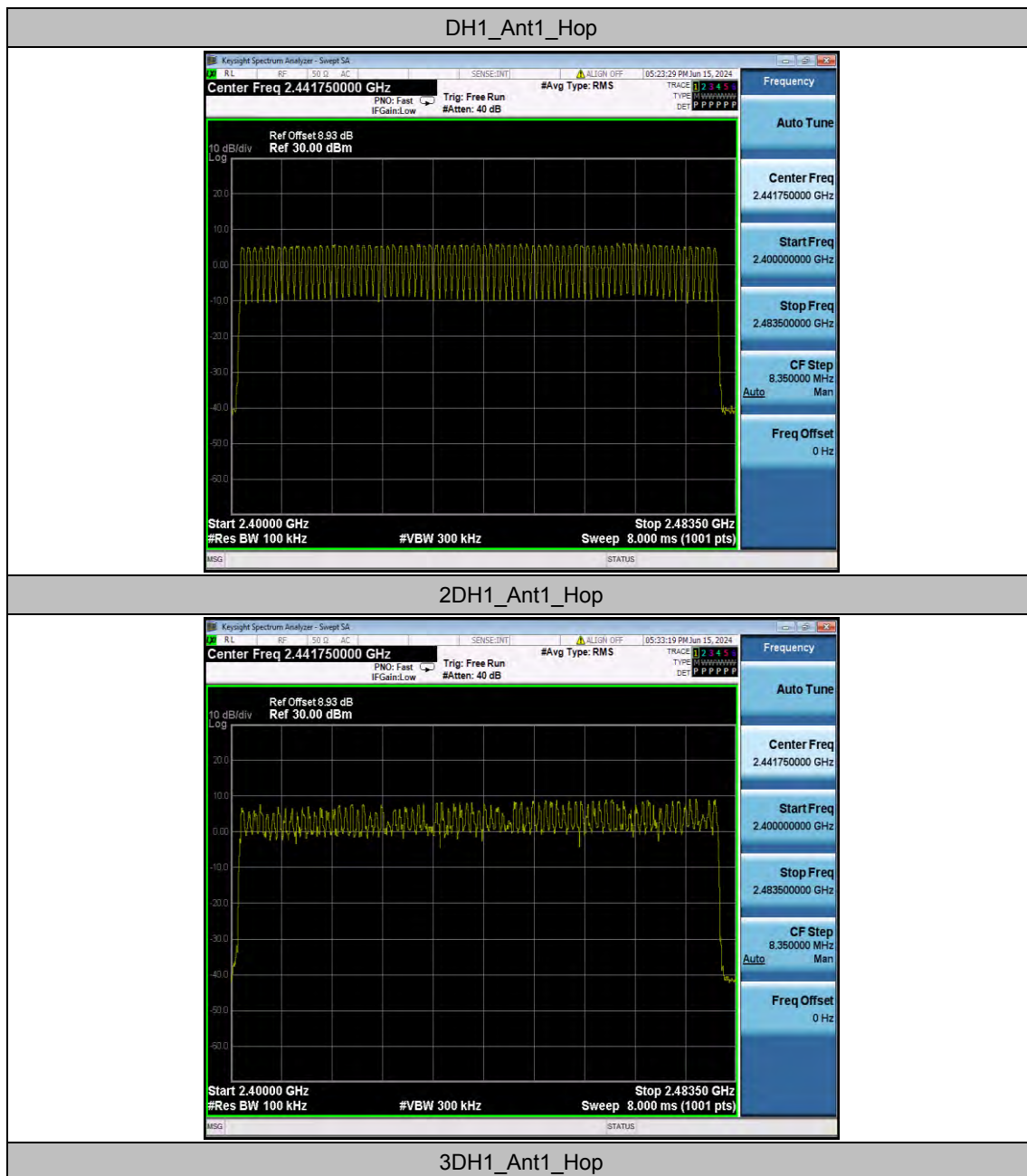


Appendix A.6: Number of hopping channels

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

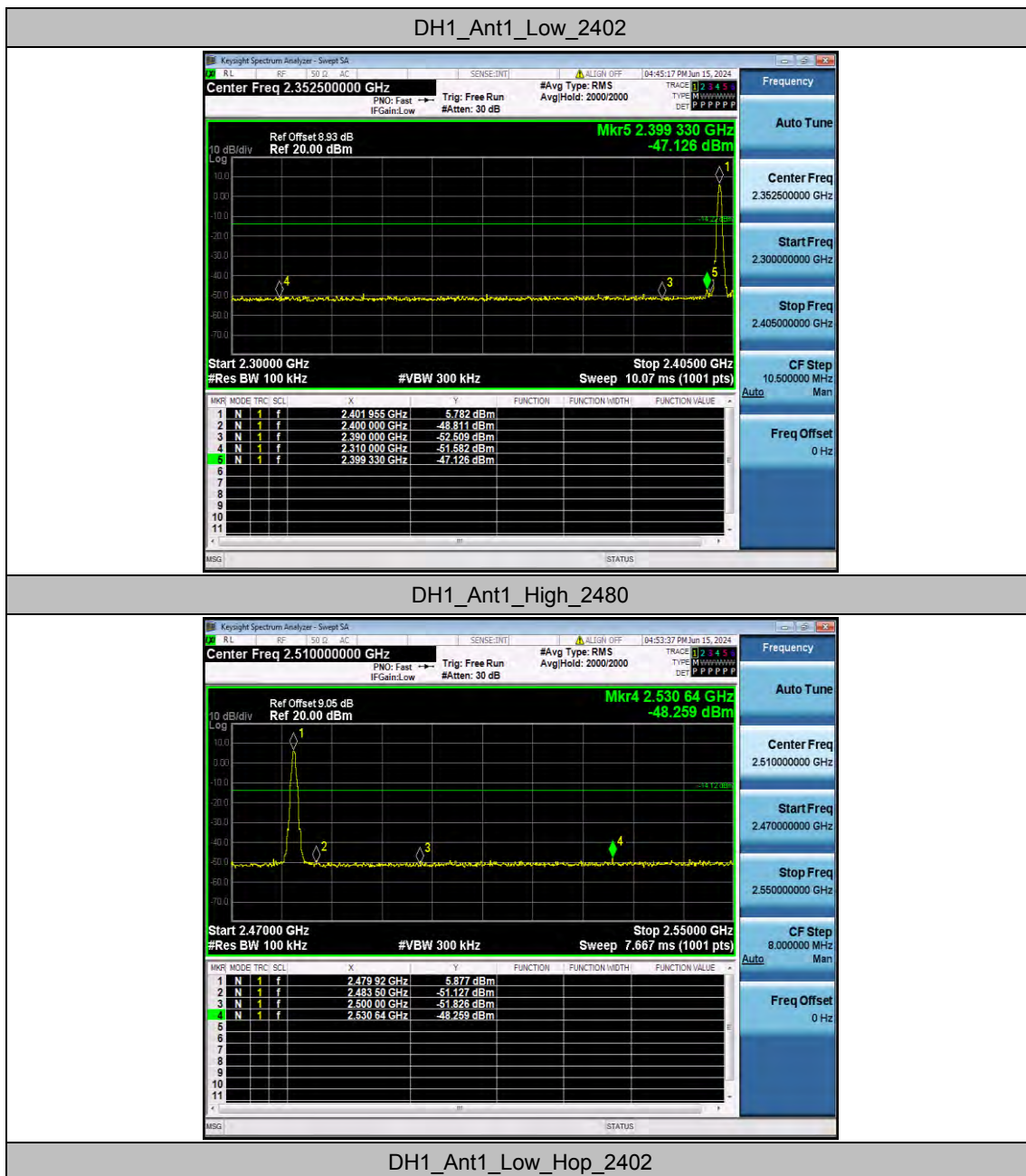


Appendix A.7: Band edge measurements

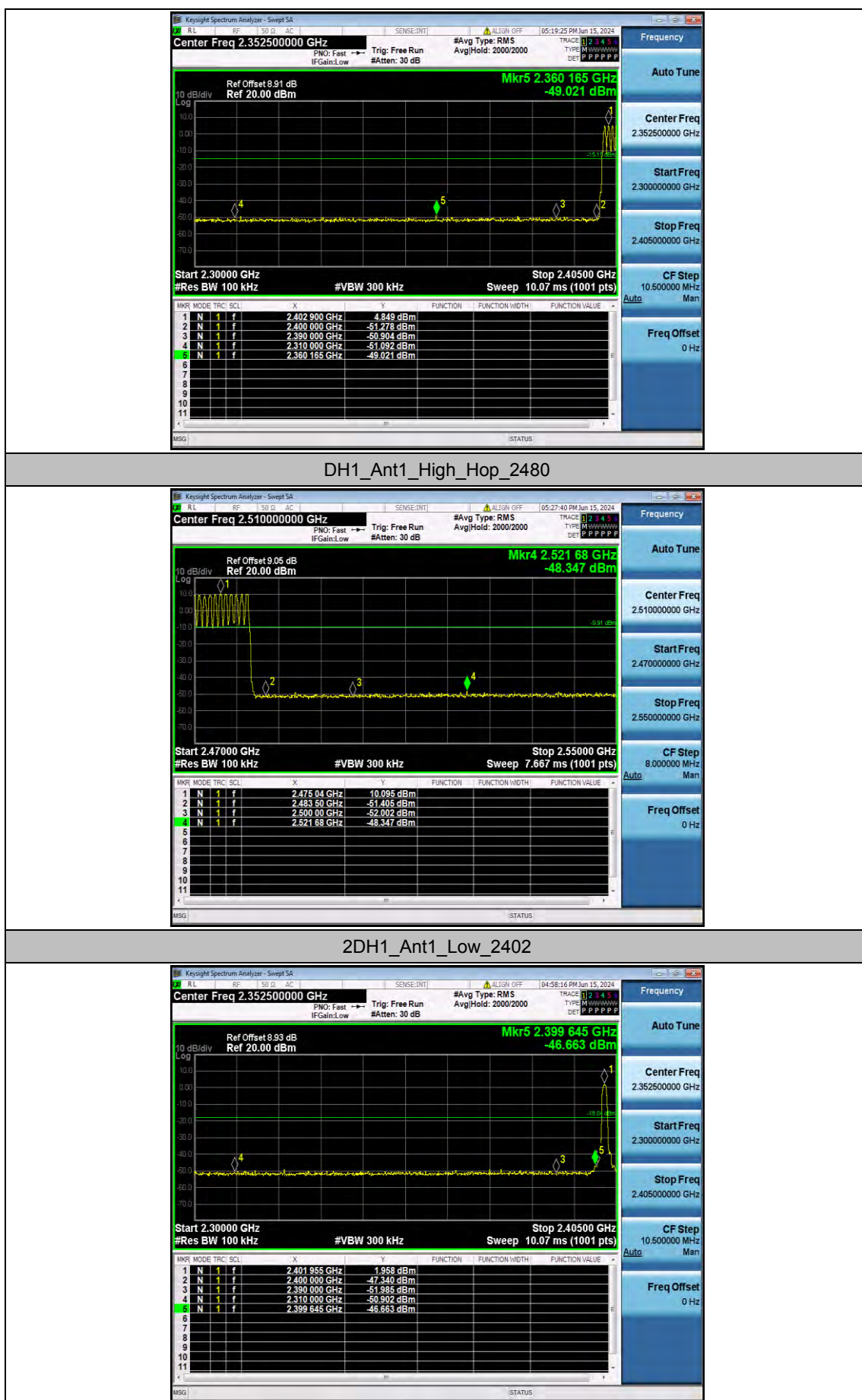
Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	Low	2402	5.78	-47.13	≤-14.22	PASS
		High	2480	5.88	-48.26	≤-14.12	PASS
		Low	Hop_2402	4.85	-49.02	≤-15.15	PASS
		High	Hop_2480	10.10	-48.35	≤-9.91	PASS
2DH1	Ant1	Low	2402	1.96	-46.66	≤-18.04	PASS
		High	2480	1.92	-48.62	≤-18.08	PASS
		Low	Hop_2402	7.69	-49.15	≤-12.31	PASS
		High	Hop_2480	10.07	-48.79	≤-9.93	PASS
3DH1	Ant1	Low	2402	1.79	-46.44	≤-18.21	PASS
		High	2480	1.85	-48.46	≤-18.15	PASS
		Low	Hop_2402	7.44	-49.44	≤-12.56	PASS
		High	Hop_2480	9.45	-48.17	≤-10.55	PASS

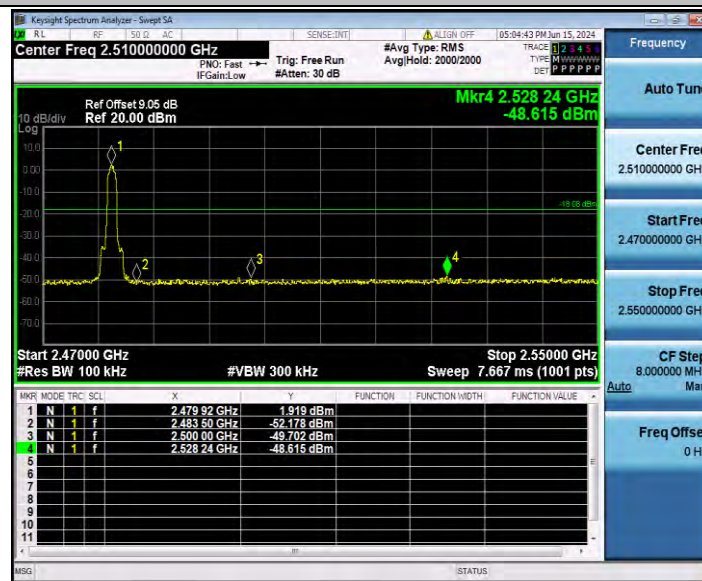
Test Graphs



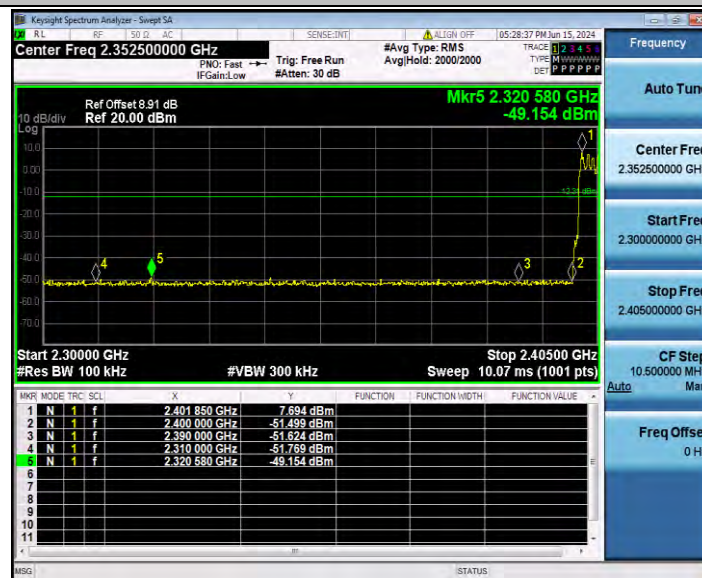
DH1_Ant1_Low_Hop_2402



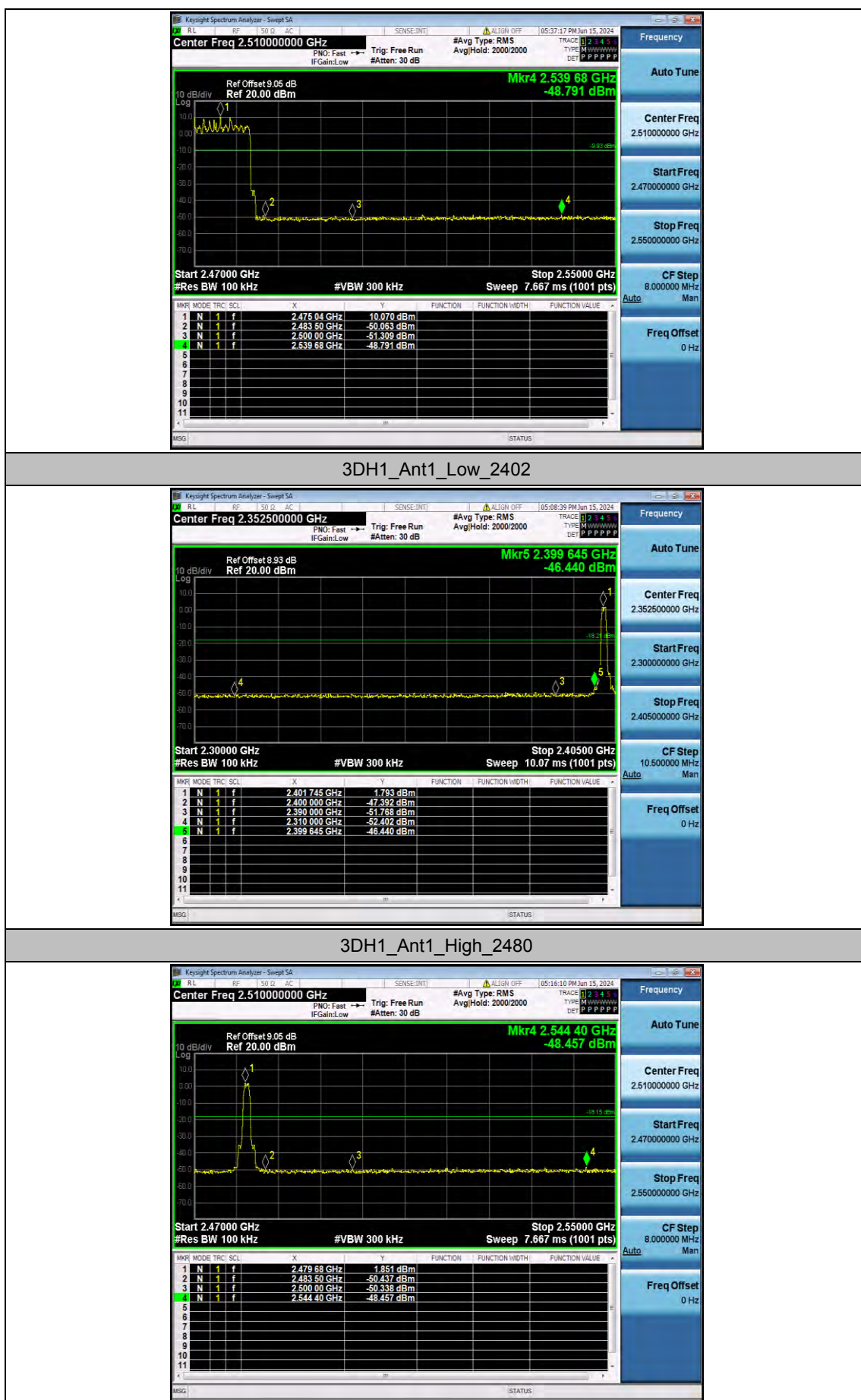
2DH1_Ant1_High_2480



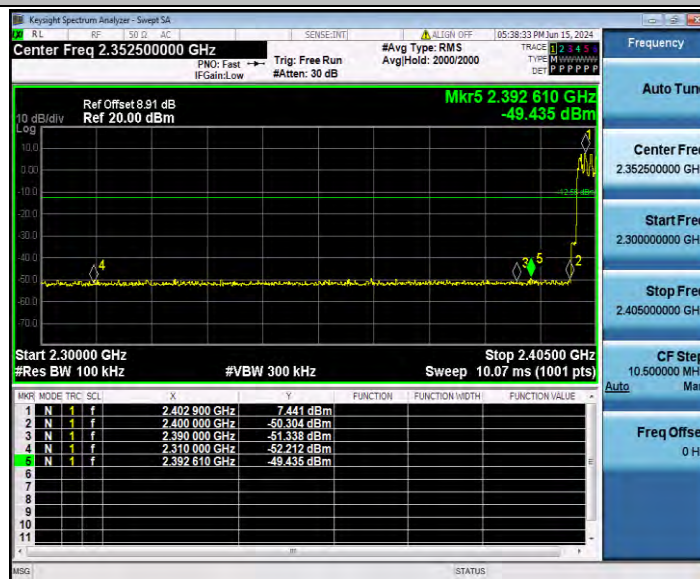
2DH1_Ant1_Low_Hop_2402



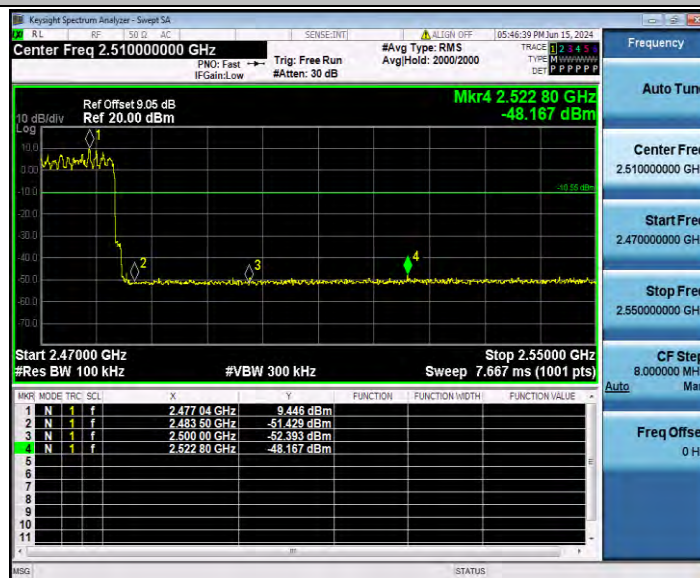
2DH1_Ant1_High_Hop_2480



3DH1_Ant1_Low_Hop_2402



3DH1_Ant1_High_Hop_2480

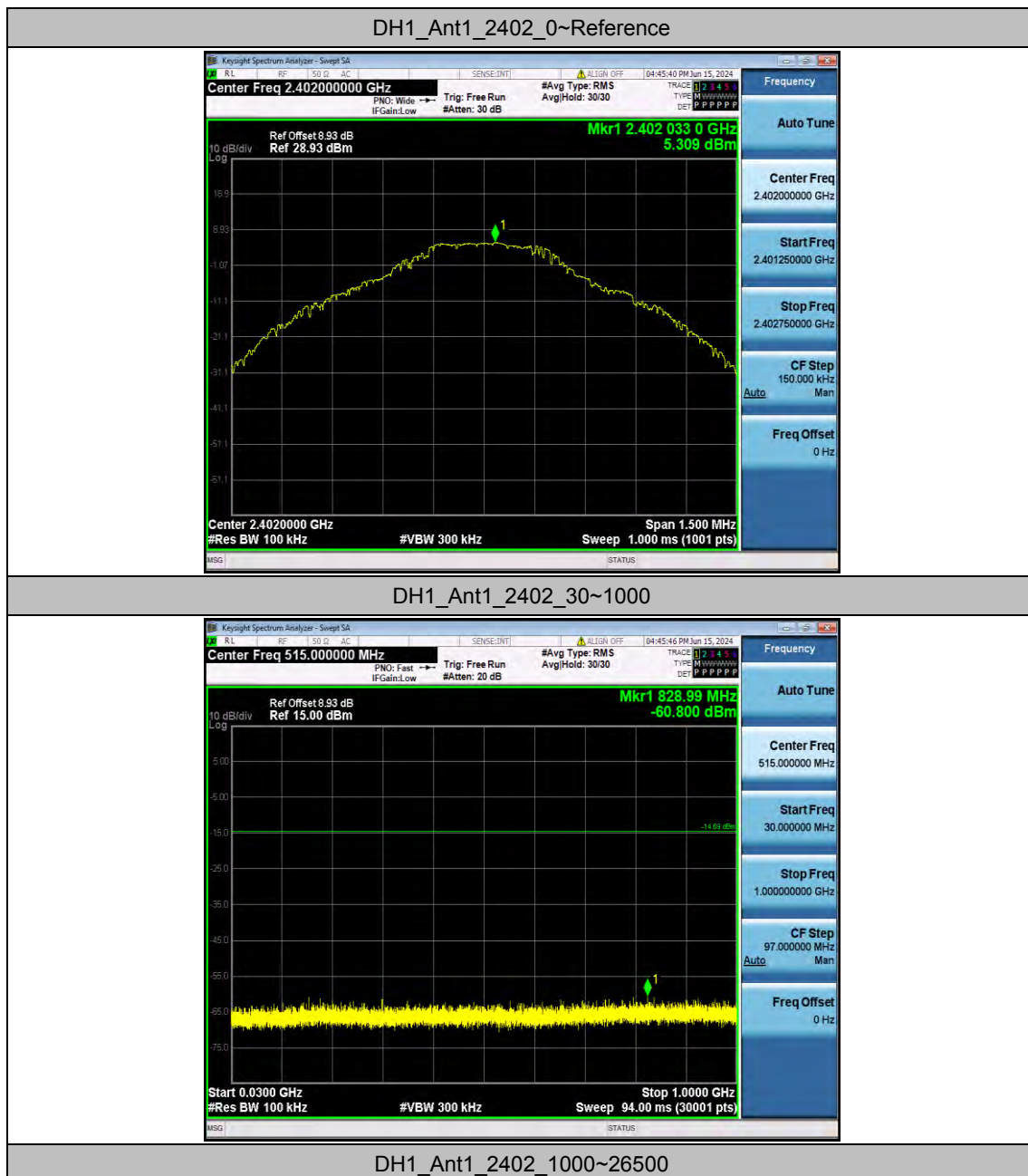


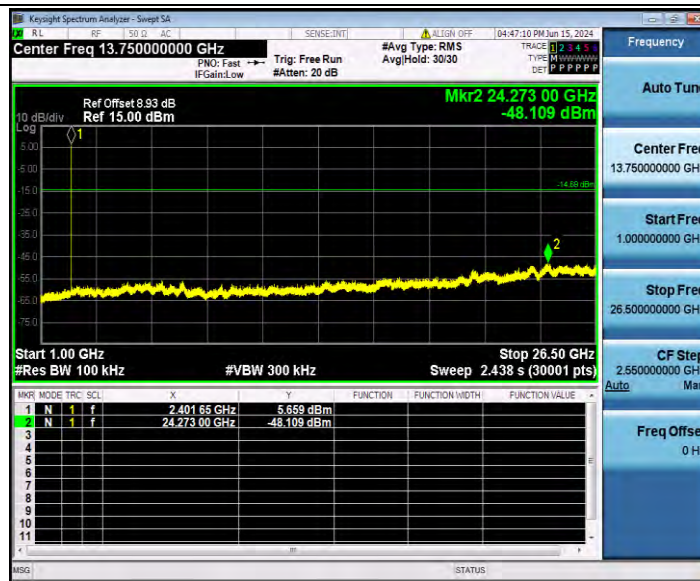
Appendix A.8: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	2402	Reference	5.31	5.31	---	PASS
			30~1000	5.31	-60.8	≤ -14.69	PASS
			1000~26500	5.31	-48.11	≤ -14.69	PASS
		2441	Reference	6.10	6.10	---	PASS
			30~1000	6.10	-59.92	≤ -13.9	PASS
			1000~26500	6.10	-47.1	≤ -13.9	PASS
		2480	Reference	5.33	5.33	---	PASS
			30~1000	5.33	-60.52	≤ -14.67	PASS
			1000~26500	5.33	-43.23	≤ -14.67	PASS
2DH1	Ant1	2402	Reference	1.29	1.29	---	PASS
			30~1000	1.29	-61.09	≤ -18.71	PASS
			1000~26500	1.29	-48.27	≤ -18.71	PASS
		2441	Reference	2.14	2.14	---	PASS
			30~1000	2.14	-60.49	≤ -17.86	PASS
			1000~26500	2.14	-31.15	≤ -17.86	PASS
		2480	Reference	1.24	1.24	---	PASS
			30~1000	1.24	-59.65	≤ -18.76	PASS
			1000~26500	1.24	-47.77	≤ -18.76	PASS
3DH1	Ant1	2402	Reference	1.58	1.58	---	PASS
			30~1000	1.58	-60.94	≤ -18.42	PASS
			1000~26500	1.58	-47.04	≤ -18.42	PASS
		2441	Reference	2.44	2.44	---	PASS
			30~1000	2.44	-56.34	≤ -17.56	PASS
			1000~26500	2.44	-47.7	≤ -17.56	PASS
		2480	Reference	1.63	1.63	---	PASS
			30~1000	1.63	-60.11	≤ -18.37	PASS
			1000~26500	1.63	-47.58	≤ -18.37	PASS

Test Graphs

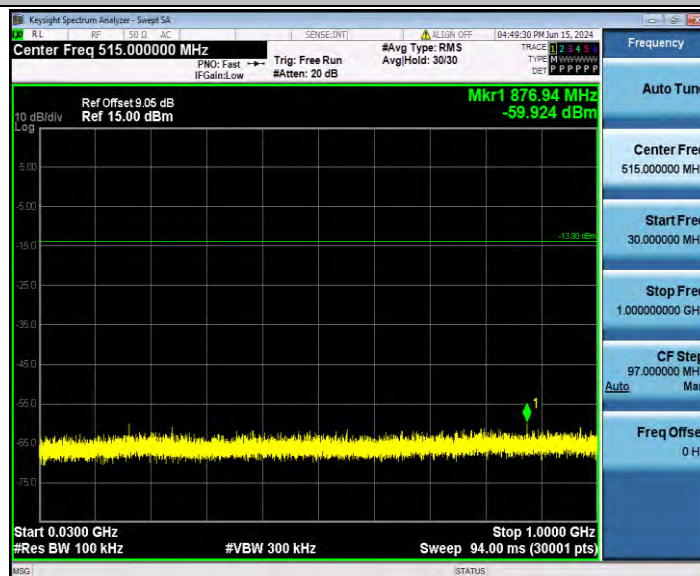




DH1_Ant1_2441_0~Reference



DH1_Ant1_2441_30~1000



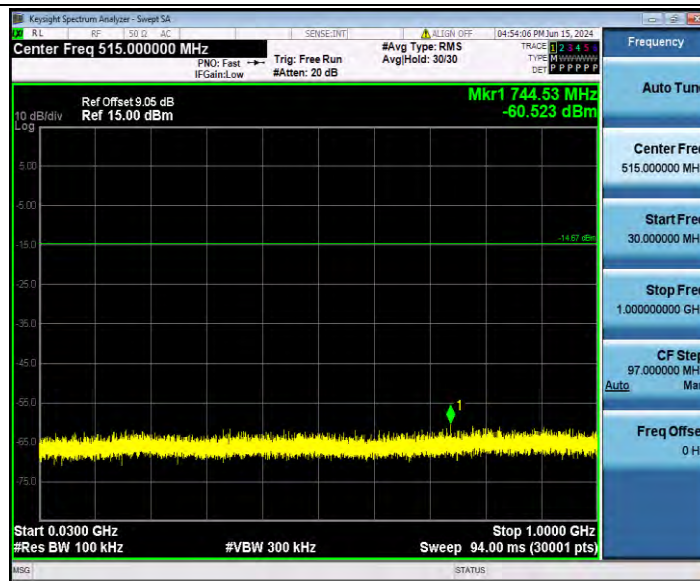
DH1_Ant1_2441_1000~26500



DH1_Ant1_2480_0~Reference



DH1_Ant1_2480_30~1000

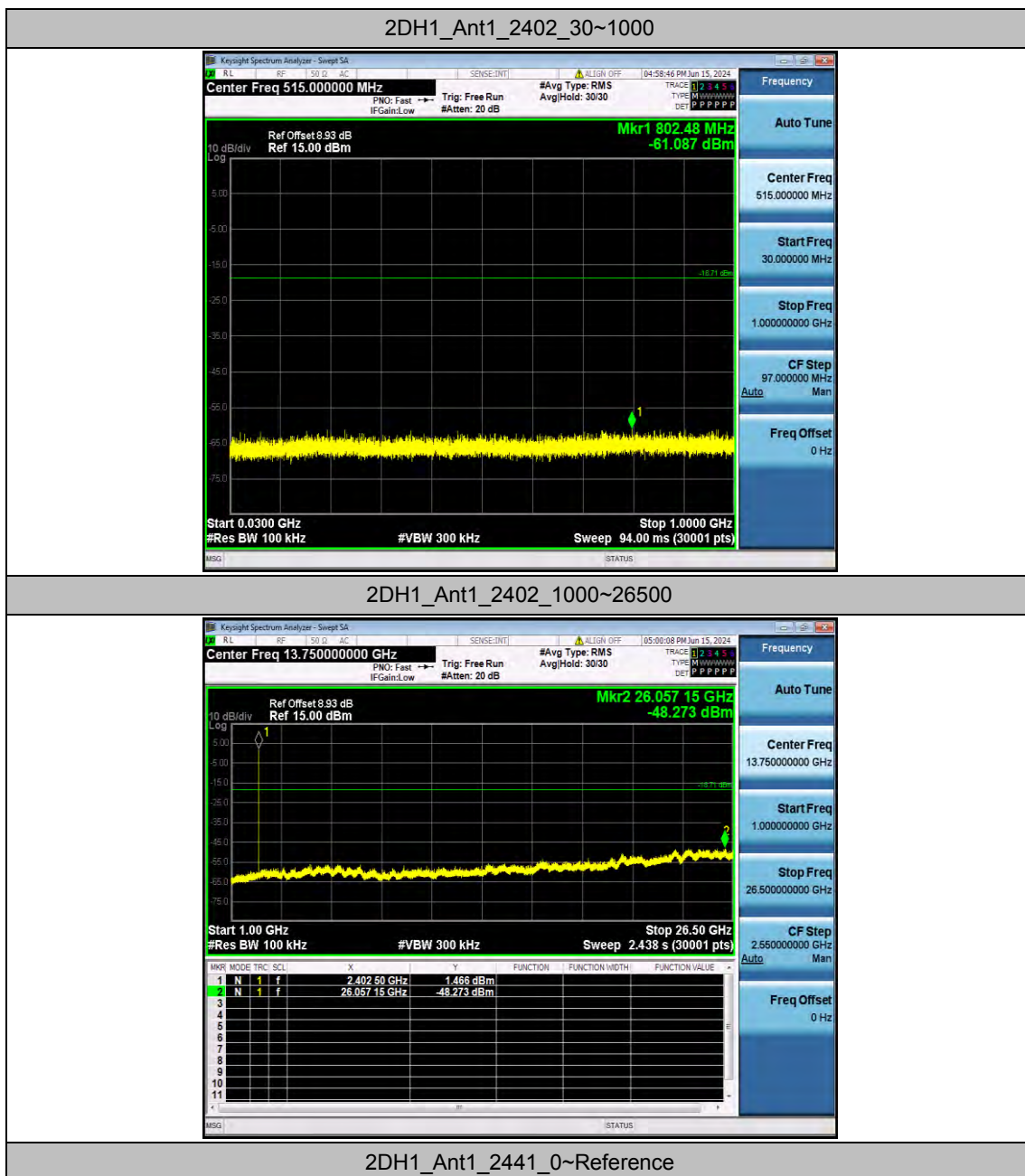


DH1_Ant1_2480_1000~26500



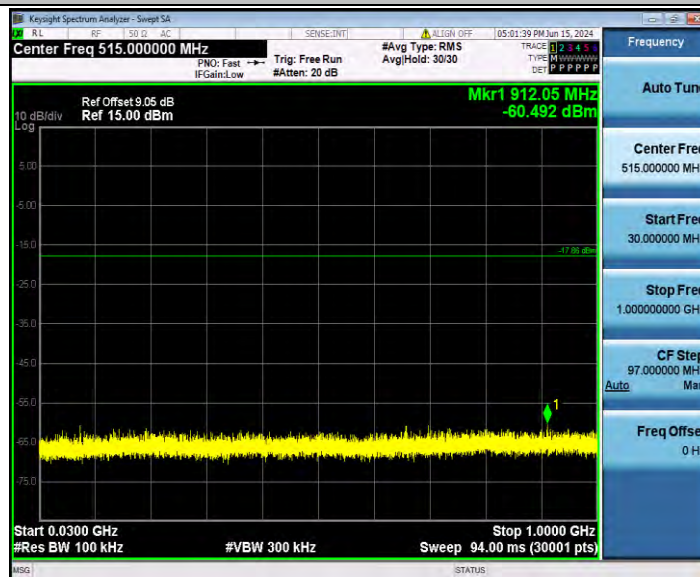
2DH1_Ant1_2402_0~Reference







2DH1_Ant1_2441_30~1000



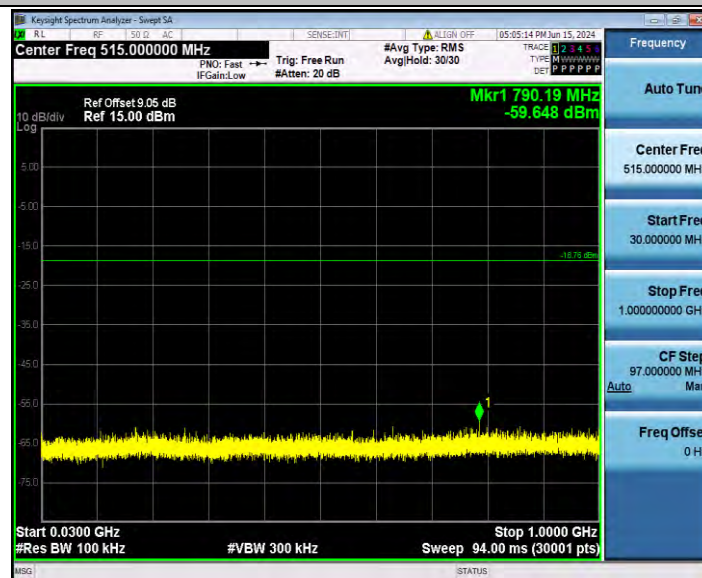
2DH1_Ant1_2441_1000~26500



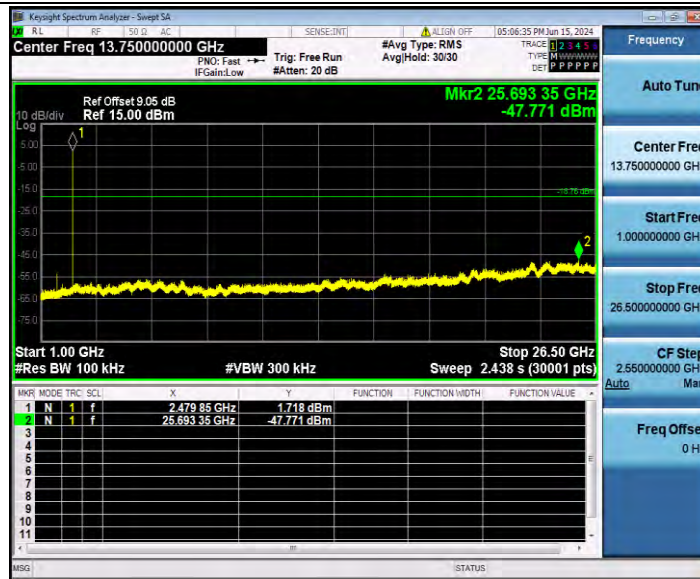
2DH1_Ant1_2480_0~Reference



2DH1_Ant1_2480_30~1000



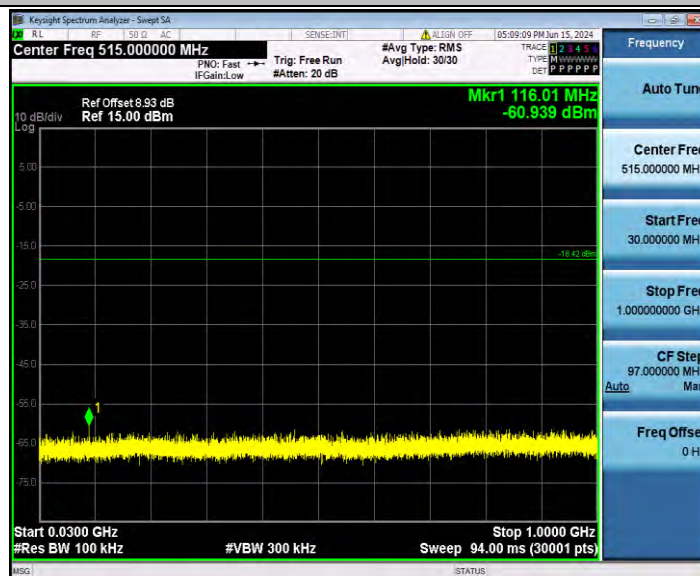
2DH1_Ant1_2480_1000~26500



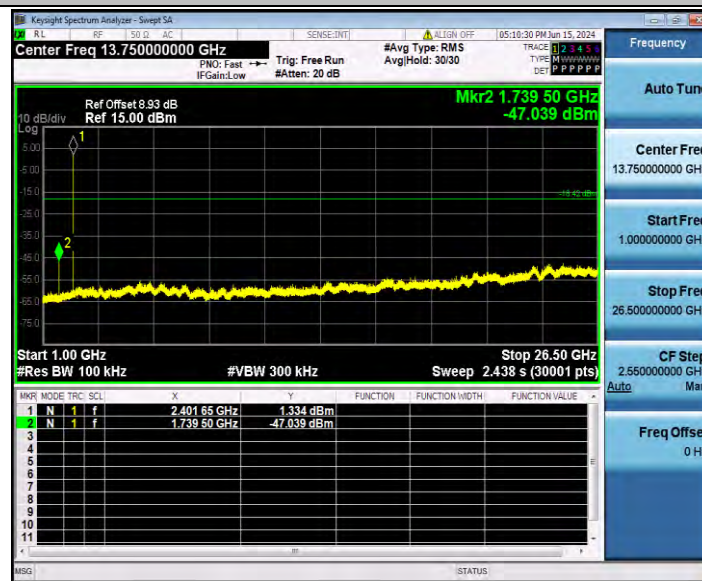
3DH1_Ant1_2402_0~Reference



3DH1_Ant1_2402_30~1000



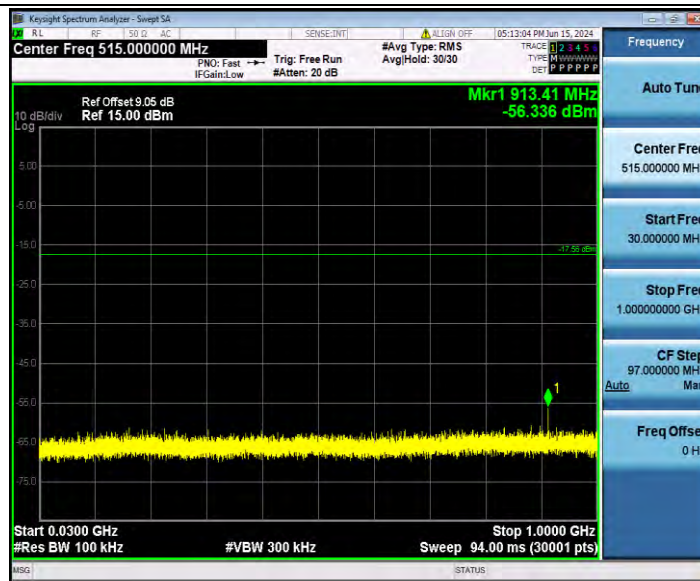
3DH1_Ant1_2402_1000~26500



3DH1_Ant1_2441_0~Reference



3DH1_Ant1_2441_30~1000

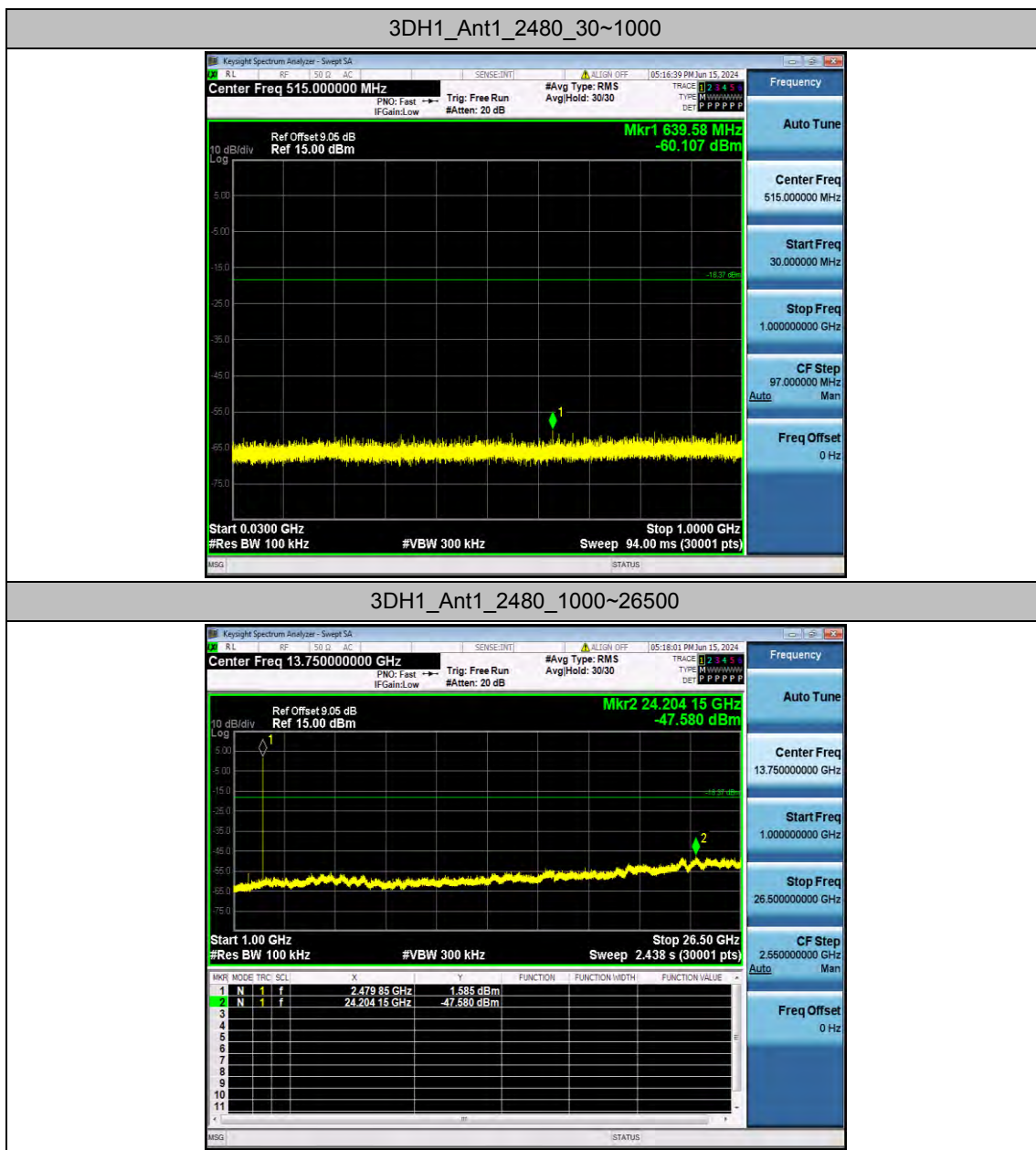


3DH1_Ant1_2441_1000~26500



3DH1_Ant1_2480_0~Reference





Appendix A.9: Emissions in Restricted Bands

Test Result

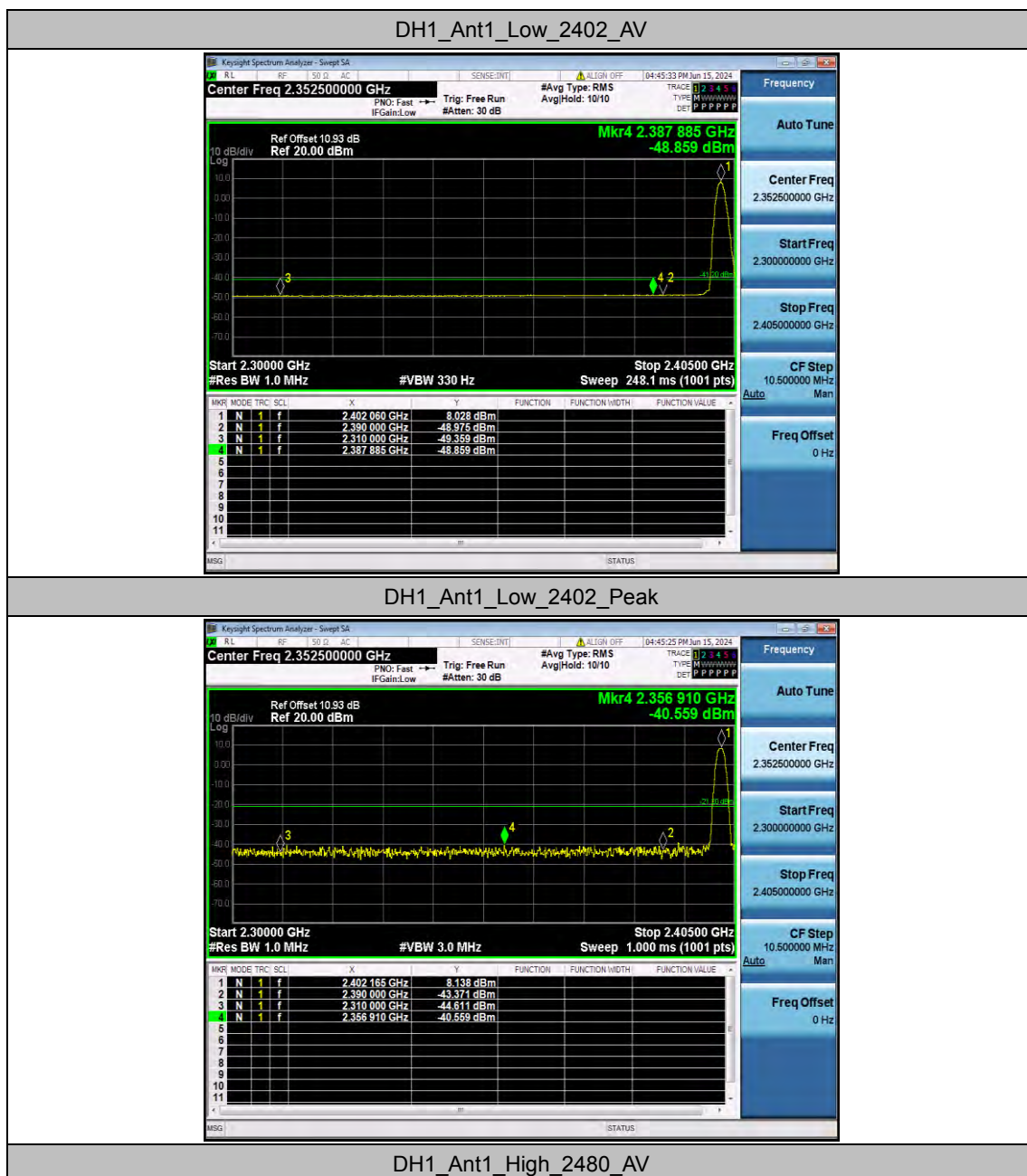
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH1	Ant1	Low	2402	AV	2310.000	-49.36	≤-41.20	45.84	≤54	PASS
				AV	2387.885	-48.86	≤-41.20	46.34	≤54	PASS
				AV	2390.000	-48.98	≤-41.20	46.22	≤54	PASS
				Peak	2310.000	-44.61	≤-21.20	50.59	≤74	PASS
				Peak	2356.910	-40.56	≤-21.20	54.64	≤74	PASS
				Peak	2390.000	-43.37	≤-21.20	51.83	≤74	PASS
		High	2480	AV	2483.500	-46.94	≤-41.20	48.26	≤54	PASS
				AV	2483.520	-46.94	≤-41.20	48.26	≤54	PASS
				AV	2500.000	-48.76	≤-41.20	46.44	≤54	PASS
				Peak	2483.500	-43.51	≤-21.20	51.69	≤74	PASS
				Peak	2494.720	-39.22	≤-21.20	55.98	≤74	PASS
				Peak	2500.000	-45.45	≤-21.20	49.75	≤74	PASS
2DH1	Ant1	Low	2402	AV	2310.000	-49.31	≤-41.20	45.89	≤54	PASS
				AV	2386.940	-48.87	≤-41.20	46.33	≤54	PASS
				AV	2390.000	-48.95	≤-41.20	46.25	≤54	PASS
				Peak	2310.000	-43.31	≤-21.20	51.89	≤74	PASS
				Peak	2354.285	-40	≤-21.20	55.20	≤74	PASS
				Peak	2390.000	-44.17	≤-21.20	51.03	≤74	PASS
		High	2480	AV	2483.500	-46.77	≤-41.20	48.43	≤54	PASS
				AV	2483.520	-46.77	≤-41.20	48.43	≤54	PASS
				AV	2500.000	-48.7	≤-41.20	46.50	≤54	PASS
				Peak	2483.500	-43.4	≤-21.20	51.80	≤74	PASS
				Peak	2488.560	-39.29	≤-21.20	55.91	≤74	PASS
				Peak	2500.000	-44.84	≤-21.20	50.36	≤74	PASS
3DH1	Ant1	Low	2402	AV	2310.000	-49.37	≤-41.20	45.83	≤54	PASS
				AV	2382.740	-48.92	≤-41.20	46.28	≤54	PASS
				AV	2390.000	-49.05	≤-41.20	46.15	≤54	PASS
				Peak	2310.000	-41.8	≤-21.20	53.40	≤74	PASS
				Peak	2389.040	-39.18	≤-21.20	56.02	≤74	PASS
				Peak	2390.000	-44.27	≤-21.20	50.93	≤74	PASS
		High	2480	AV	2483.500	-46.72	≤-41.20	48.48	≤54	PASS
				AV	2483.520	-46.72	≤-41.20	48.48	≤54	PASS
				AV	2500.000	-48.58	≤-41.20	46.62	≤54	PASS
				Peak	2483.500	-45.32	≤-21.20	49.88	≤74	PASS

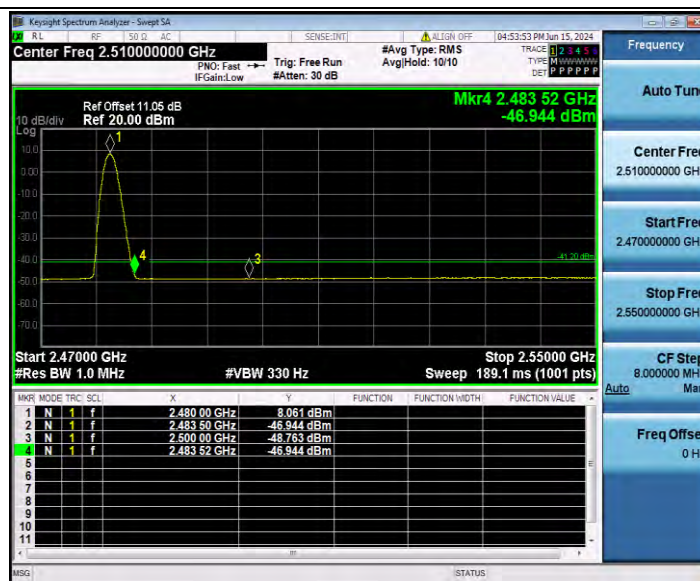
				Peak	2486.160	-39.86	≤ -21.20	55.34	≤ 74	PASS
				Peak	2500.000	-42.83	≤ -21.20	52.37	≤ 74	PASS

Note:

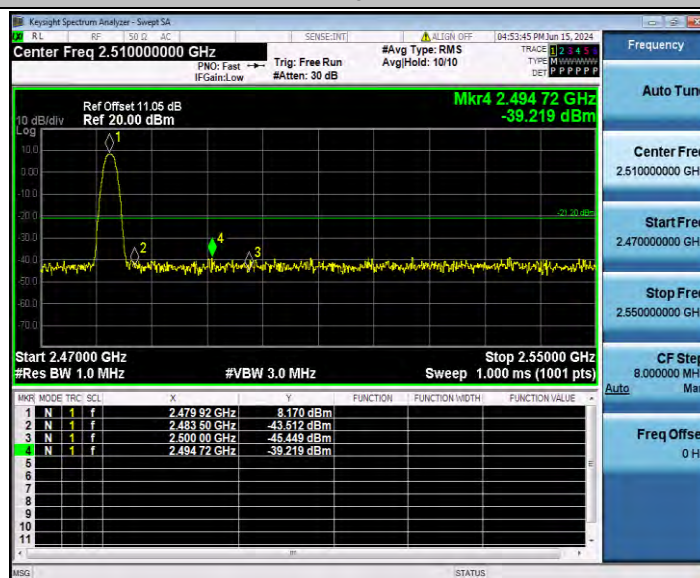
1. The Antenna Gain is compensated in the graph.
2. The Duty Cycle Factor and RBW Factor is compensated in the graph.
3. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

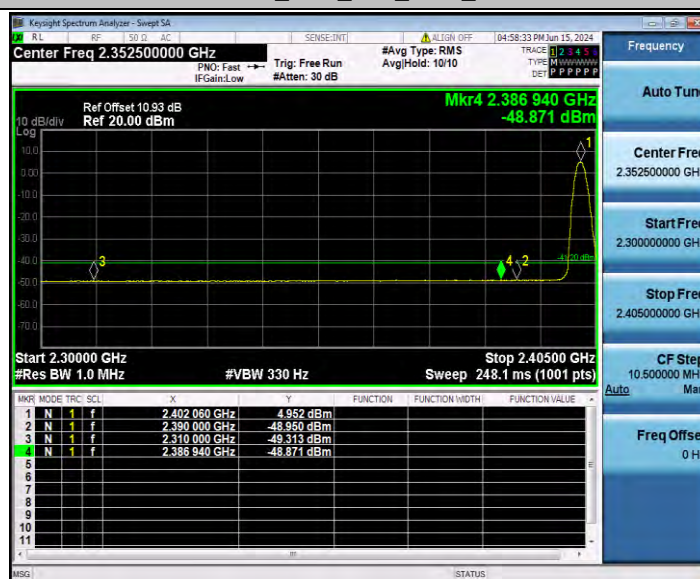




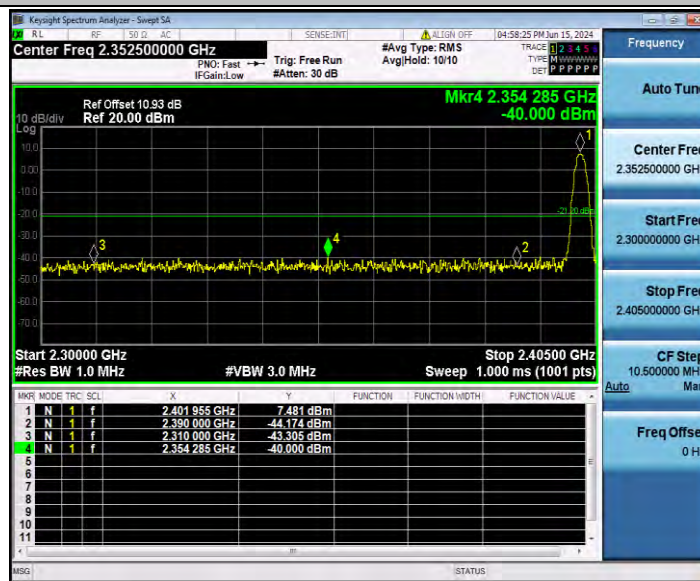
DH1_Ant1_High_2480_Peak



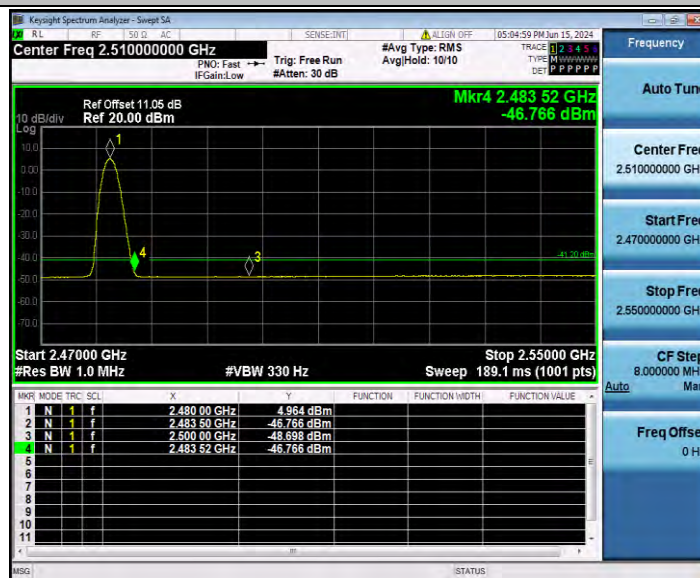
2DH1_Ant1_Low_2402_AV



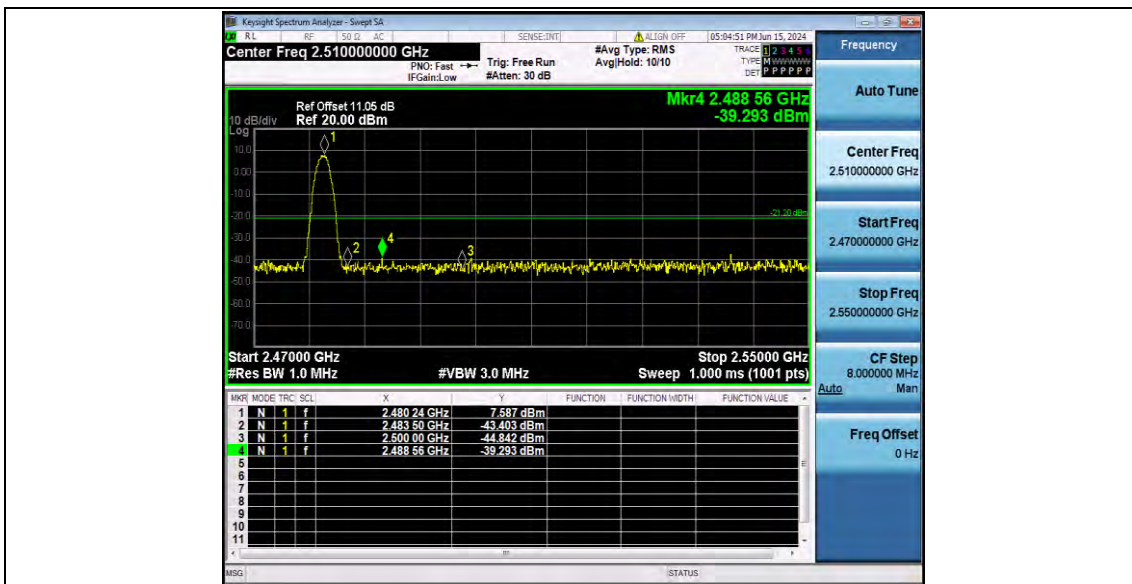
2DH1_Ant1_Low_2402_Peak



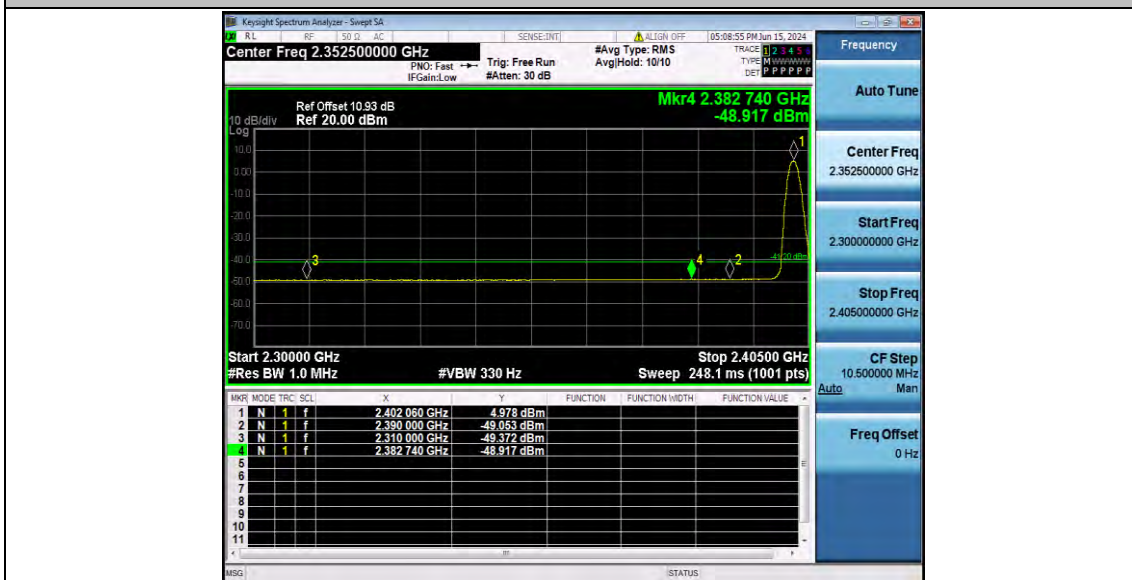
2DH1_Ant1_High_2480_AV



2DH1_Ant1_High_2480_Peak



3DH1_Ant1_Low_2402_AV



3DH1_Ant1_Low_2402_Peak

