

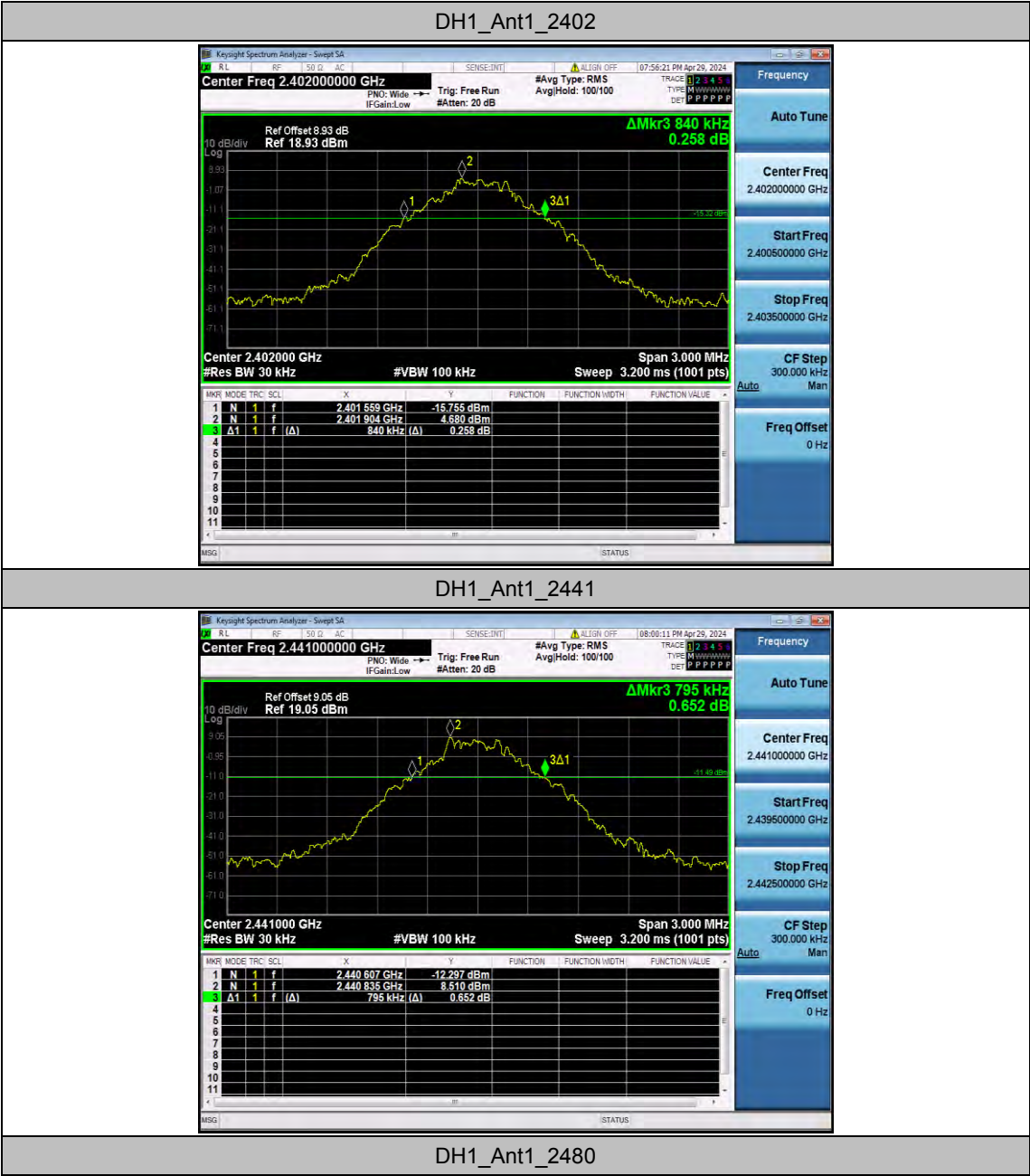
Case No. : <u>CTA24052001001</u>	
Ambient Condition: <u>23</u> °C, <u>55</u> %RH	
According Standard: ■Part15C	
Test Date: <u>2024.4.27</u>	Test Engineer: <u>Evan ouyang</u>

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	0.840	2401.559	2402.399	---	---
		2441	0.795	2440.607	2441.402	---	---
		2480	0.840	2479.562	2480.402	---	---
2DH1	Ant1	2402	1.248	2401.373	2402.621	---	---
		2441	1.266	2440.367	2441.633	---	---
		2480	1.263	2479.364	2480.627	---	---
3DH1	Ant1	2402	1.239	2401.379	2402.618	---	---
		2441	1.248	2440.370	2441.618	---	---
		2480	1.257	2479.367	2480.624	---	---

Test Graphs





2DH1_Ant1_2402



2DH1_Ant1_2441



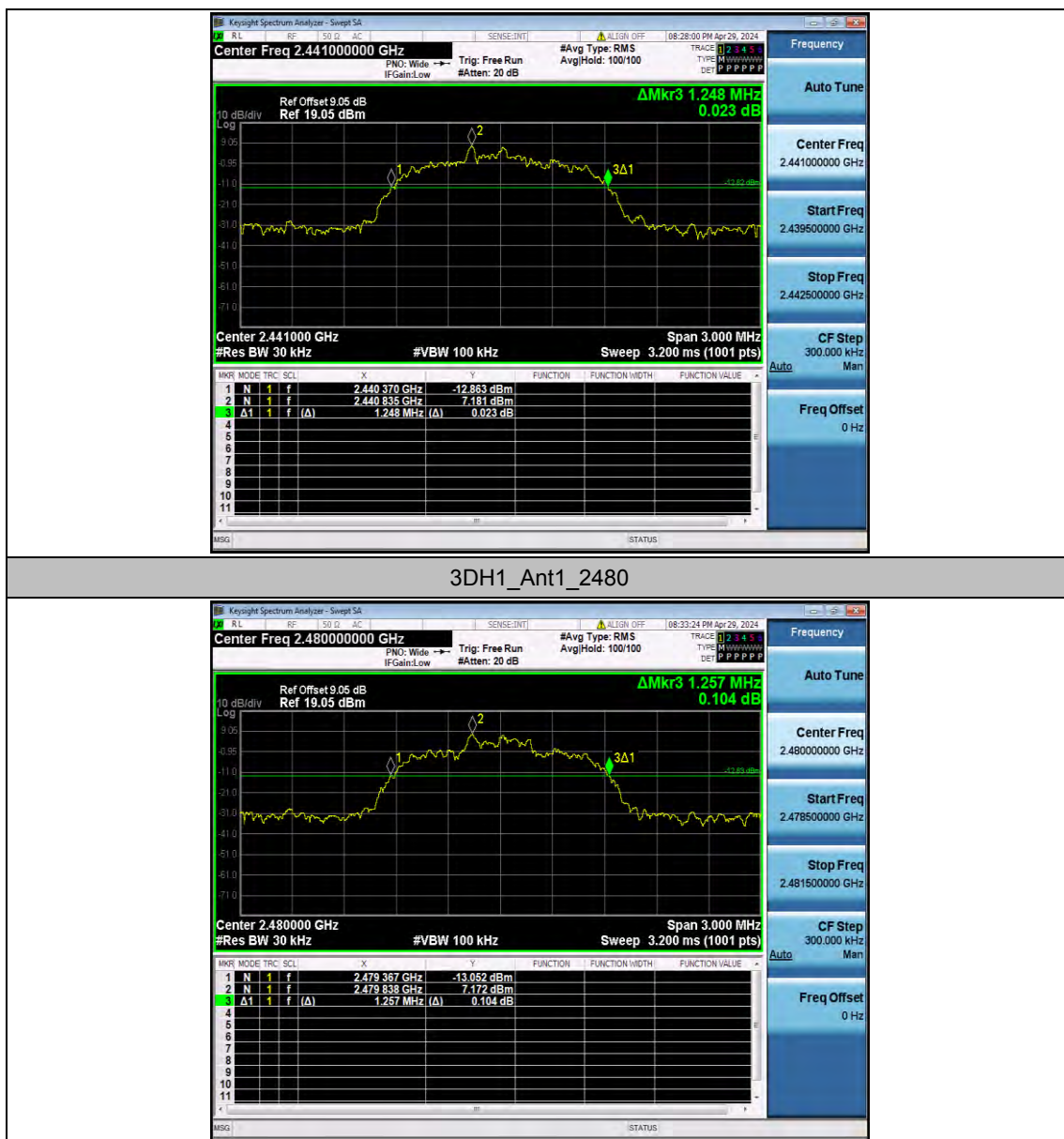
2DH1_Ant1_2480



3DH1_Ant1_2402



3DH1_Ant1_2441



Appendix A.2: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]
DH1	Ant1	2402	0.71221	2401.6351	2402.3473
		2441	0.73600	2440.6272	2441.3632
		2480	0.72588	2479.6293	2480.3552
2DH1	Ant1	2402	1.1416	2401.4257	2402.5673
		2441	1.1524	2440.4191	2441.5715
		2480	1.1510	2479.4191	2480.5701
3DH1	Ant1	2402	1.1400	2401.4381	2402.5781
		2441	1.1539	2440.4330	2441.5869
		2480	1.1553	2479.4300	2480.5853

Test Graphs

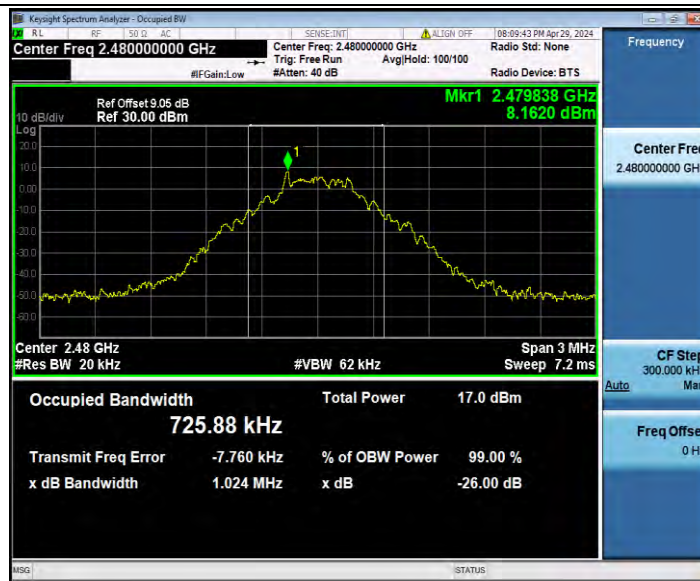
DH1_Ant1_2402



DH1_Ant1_2441



DH1_Ant1_2480



2DH1_Ant1_2402



2DH1_Ant1_2441



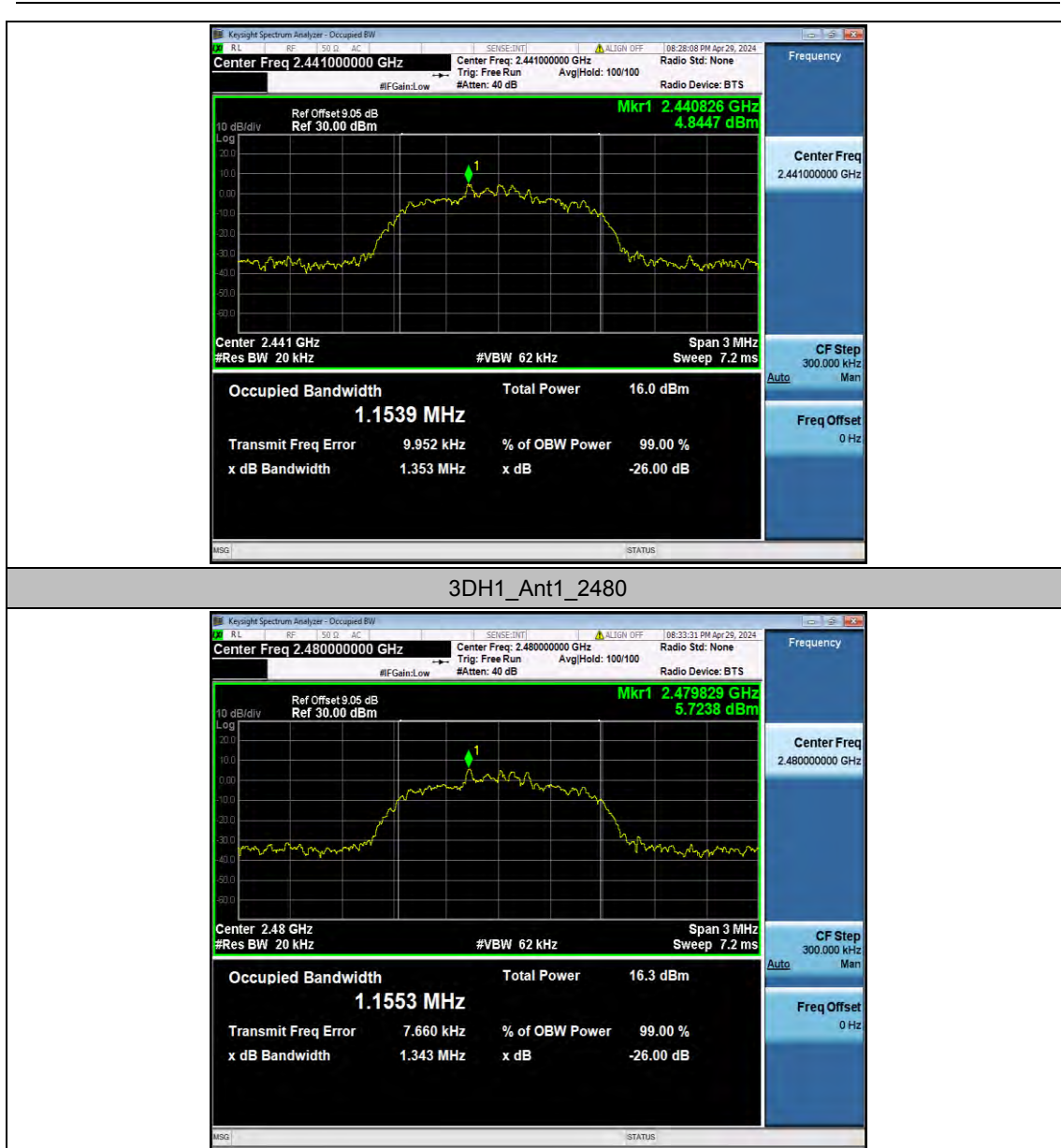
2DH1_Ant1_2480



3DH1_Ant1_2402



3DH1_Ant1_2441



Appendix A.3: Maximum conducted output power

Test Result Peak

Test Mode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH1	Ant1	2402	8.45	≤ 20.97	PASS
		2441	11.09	≤ 20.97	PASS
		2480	11.26	≤ 20.97	PASS
2DH1	Ant1	2402	7.84	≤ 20.97	PASS
		2441	11.15	≤ 20.97	PASS
		2480	11.37	≤ 20.97	PASS
3DH1	Ant1	2402	7.71	≤ 20.97	PASS
		2441	11.11	≤ 20.97	PASS
		2480	11.36	≤ 20.97	PASS

Appendix A.4: Carrier frequency separation

Test Result

TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Hop_2402	0.84	≥ 0.560	PASS
		Hop_2441	1.02	≥ 0.560	PASS
		Hop_2480	1.016	≥ 0.560	PASS
2DH1	Ant1	Hop_2402	0.996	≥ 0.844	PASS
		Hop_2441	1.152	≥ 0.844	PASS
		Hop_2480	1.172	≥ 0.844	PASS
3DH1	Ant1	Hop_2402	0.996	≥ 0.838	PASS
		Hop_2441	0.994	≥ 0.838	PASS
		Hop_2480	0.998	≥ 0.838	PASS

Test Graphs

DH1_Ant1_Hop_2402



DH1_Ant1_Hop_2441



DH1_Ant1_Hop_2480



2DH1_Ant1_Hop_2402



2DH1_Ant1_Hop_2441



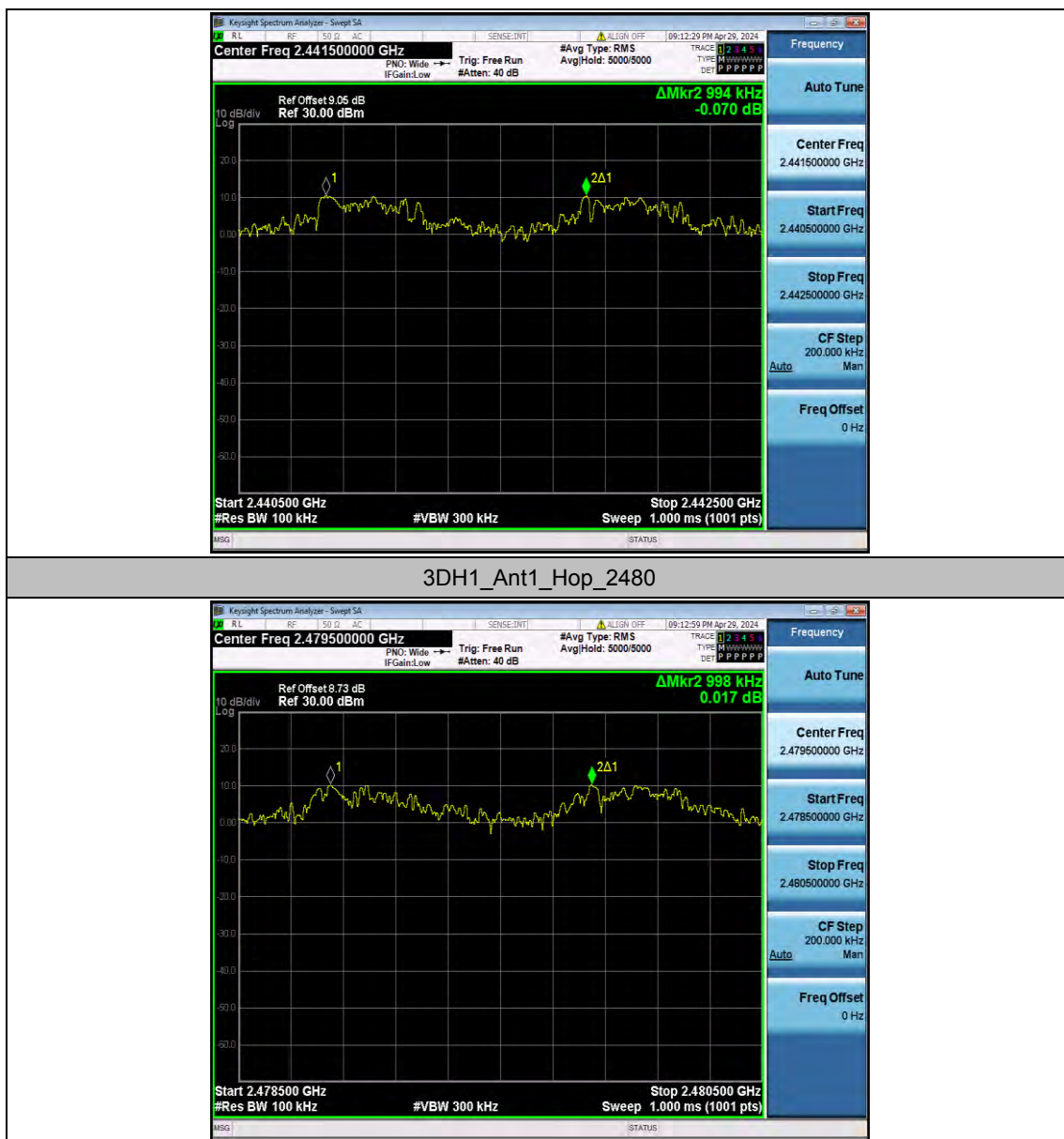
2DH1_Ant1_Hop_2480



3DH1_Ant1_Hop_2402



3DH1_Ant1_Hop_2441

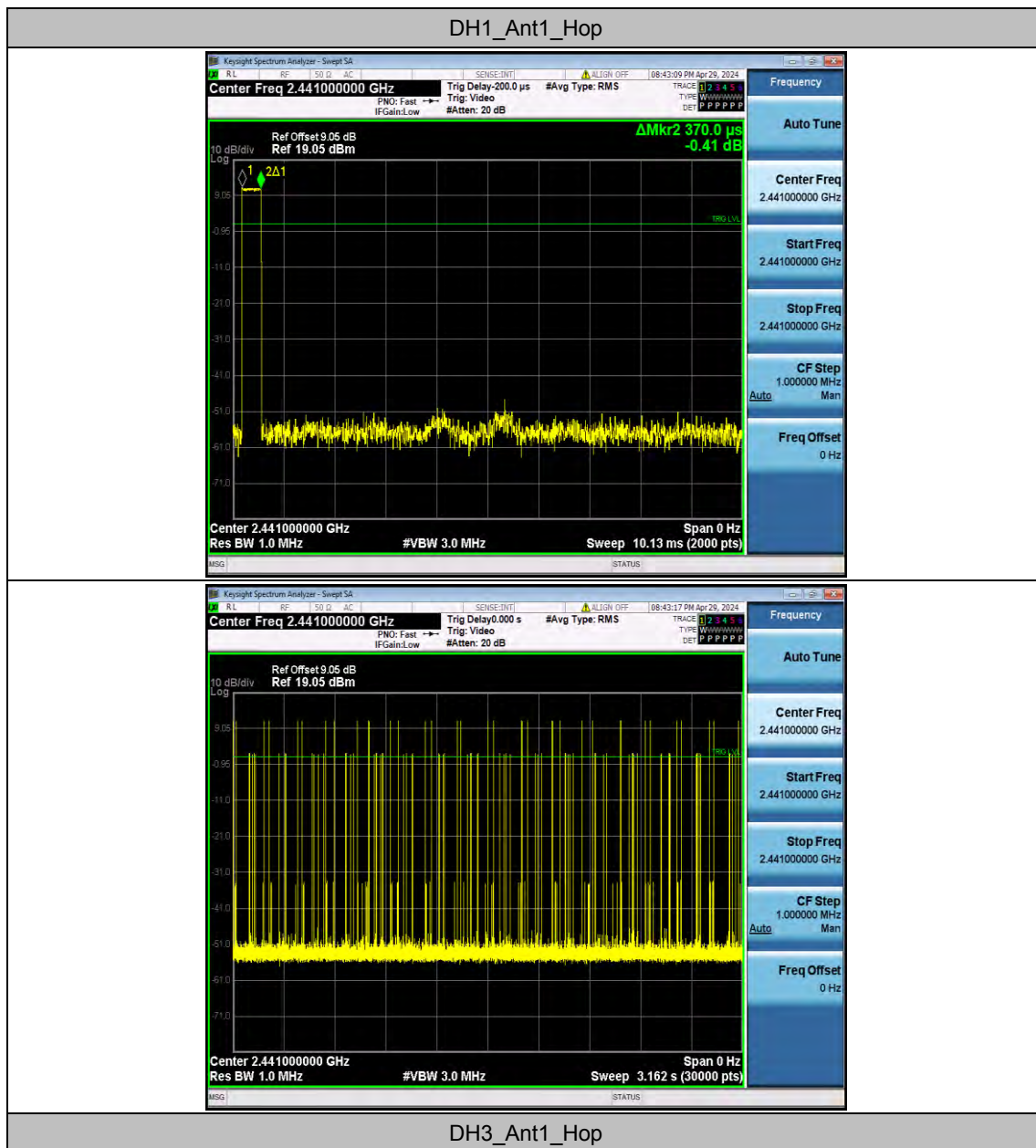


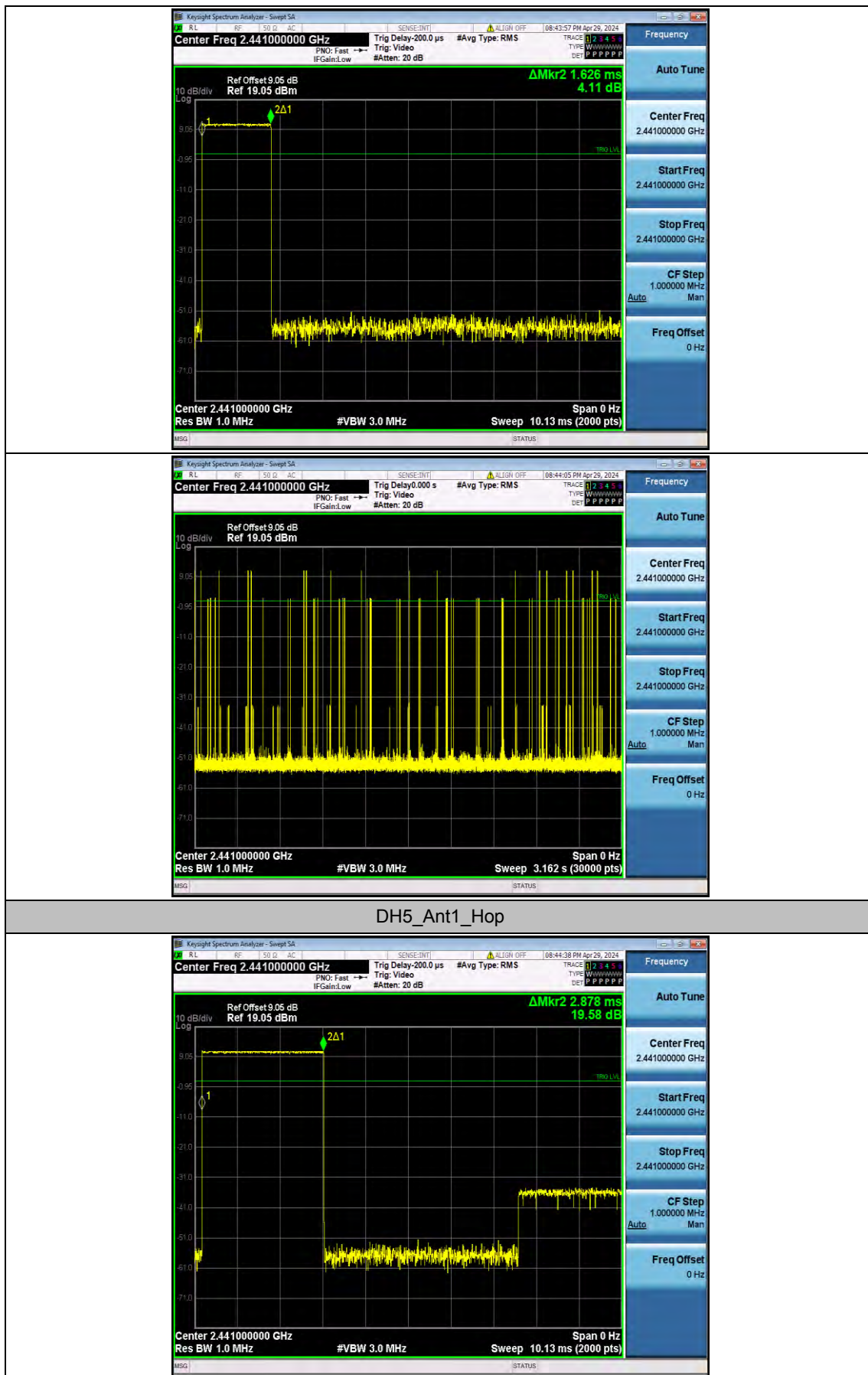
Appendix A.5: Time of occupancy

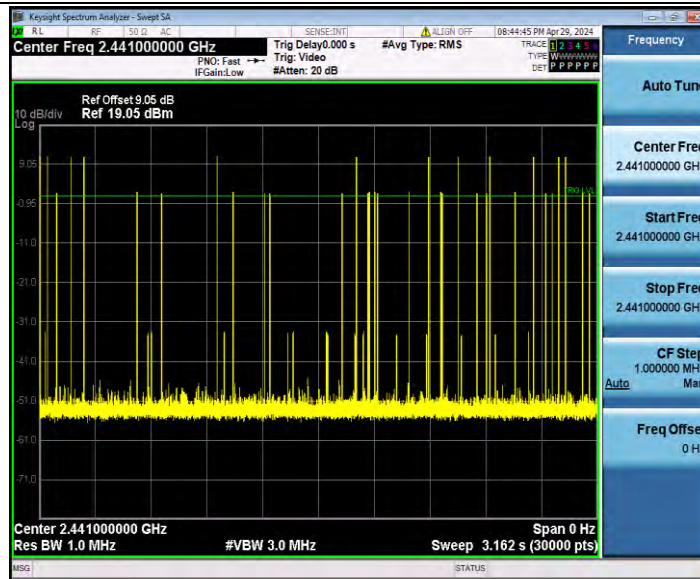
Test Result

TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.370	330	0.122	≤0.4	PASS
DH3	Ant1	Hop	1.626	180	0.293	≤0.4	PASS
DH5	Ant1	Hop	2.878	120	0.345	≤0.4	PASS
2DH1	Ant1	Hop	0.380	320	0.122	≤0.4	PASS
2DH3	Ant1	Hop	1.631	180	0.294	≤0.4	PASS
2DH5	Ant1	Hop	2.870	120	0.344	≤0.4	PASS
3DH1	Ant1	Hop	0.375	330	0.124	≤0.4	PASS
3DH3	Ant1	Hop	1.626	160	0.26	≤0.4	PASS
3DH5	Ant1	Hop	2.878	120	0.345	≤0.4	PASS

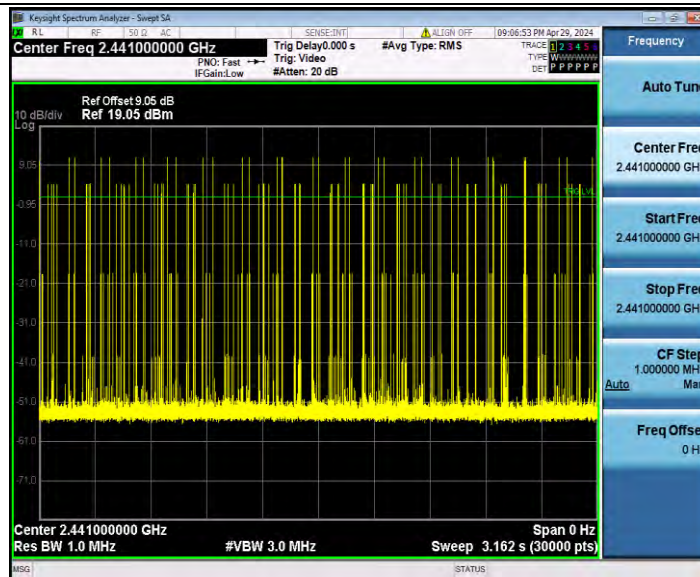
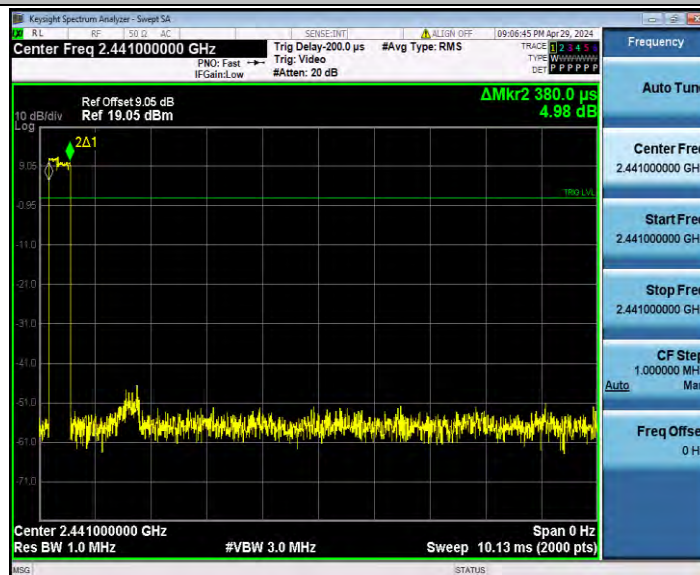
Test Graphs



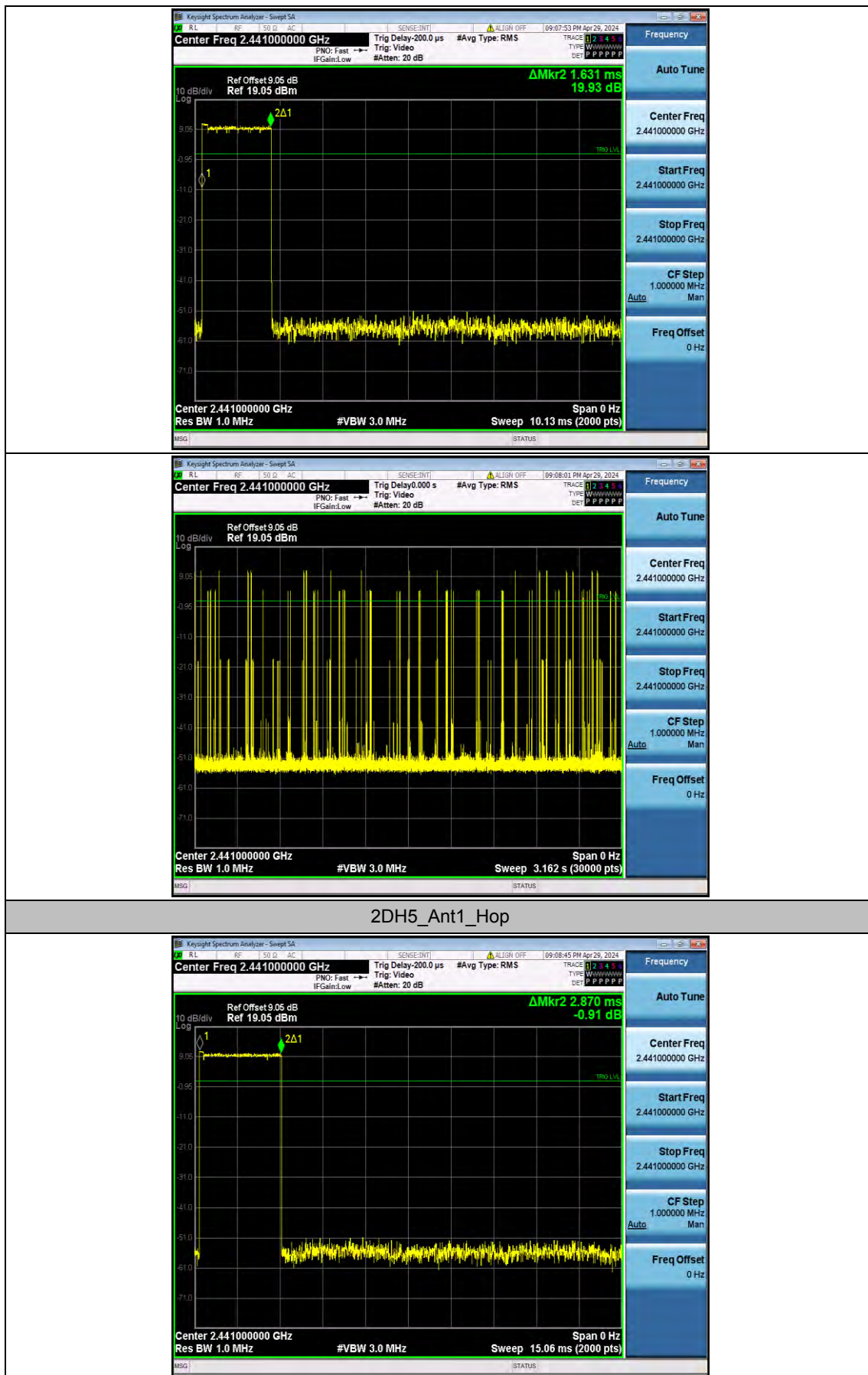




2DH1_Ant1_Hop

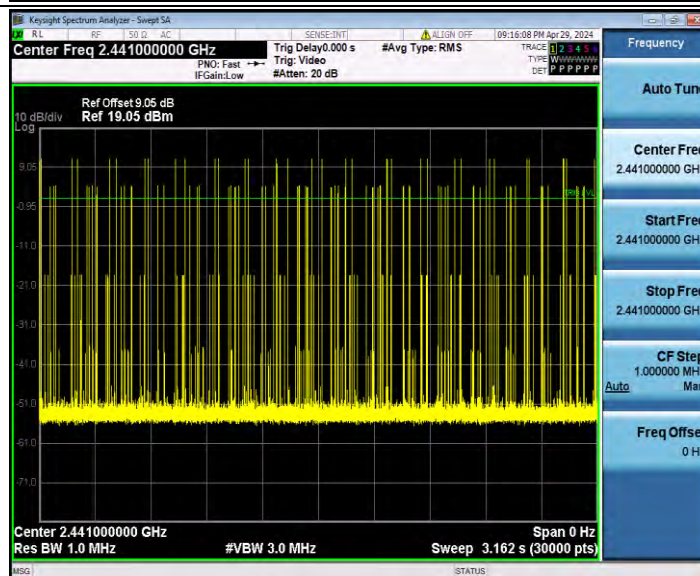
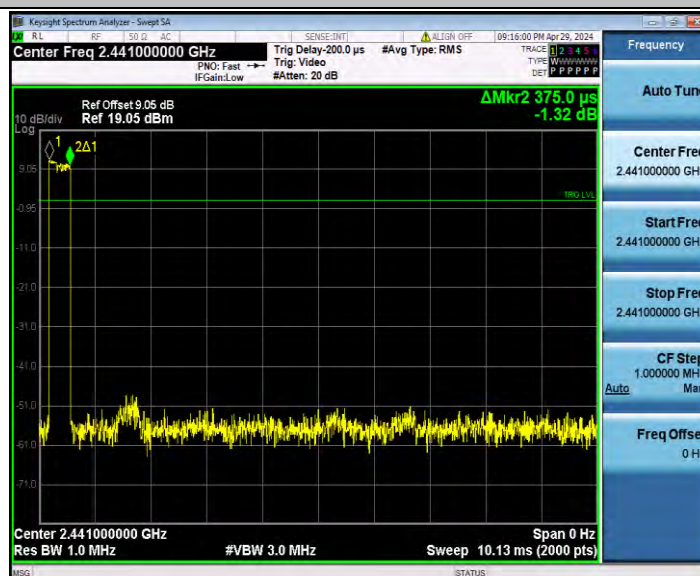


2DH3_Ant1_Hop

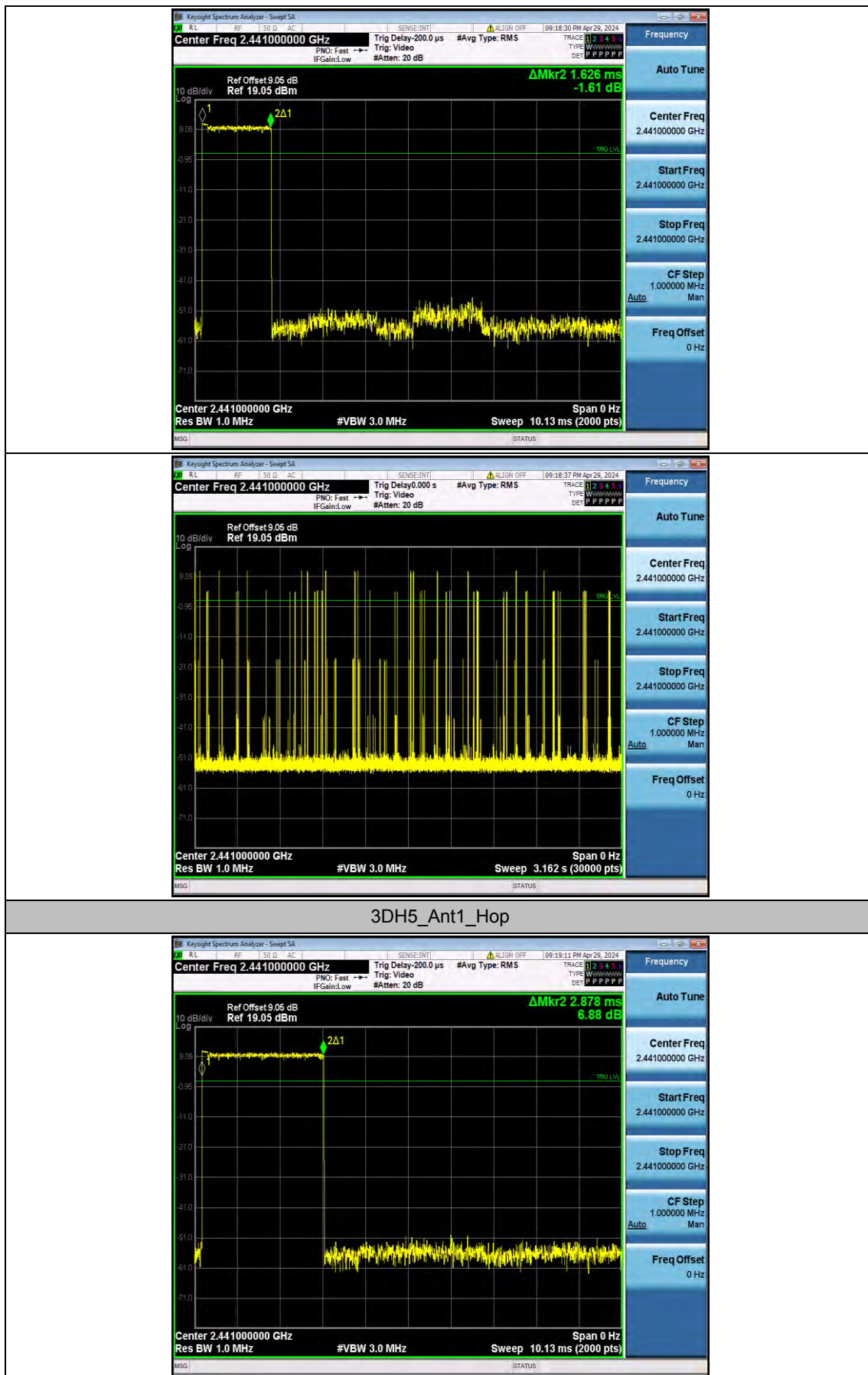




3DH1_Ant1_Hop



3DH3_Ant1_Hop



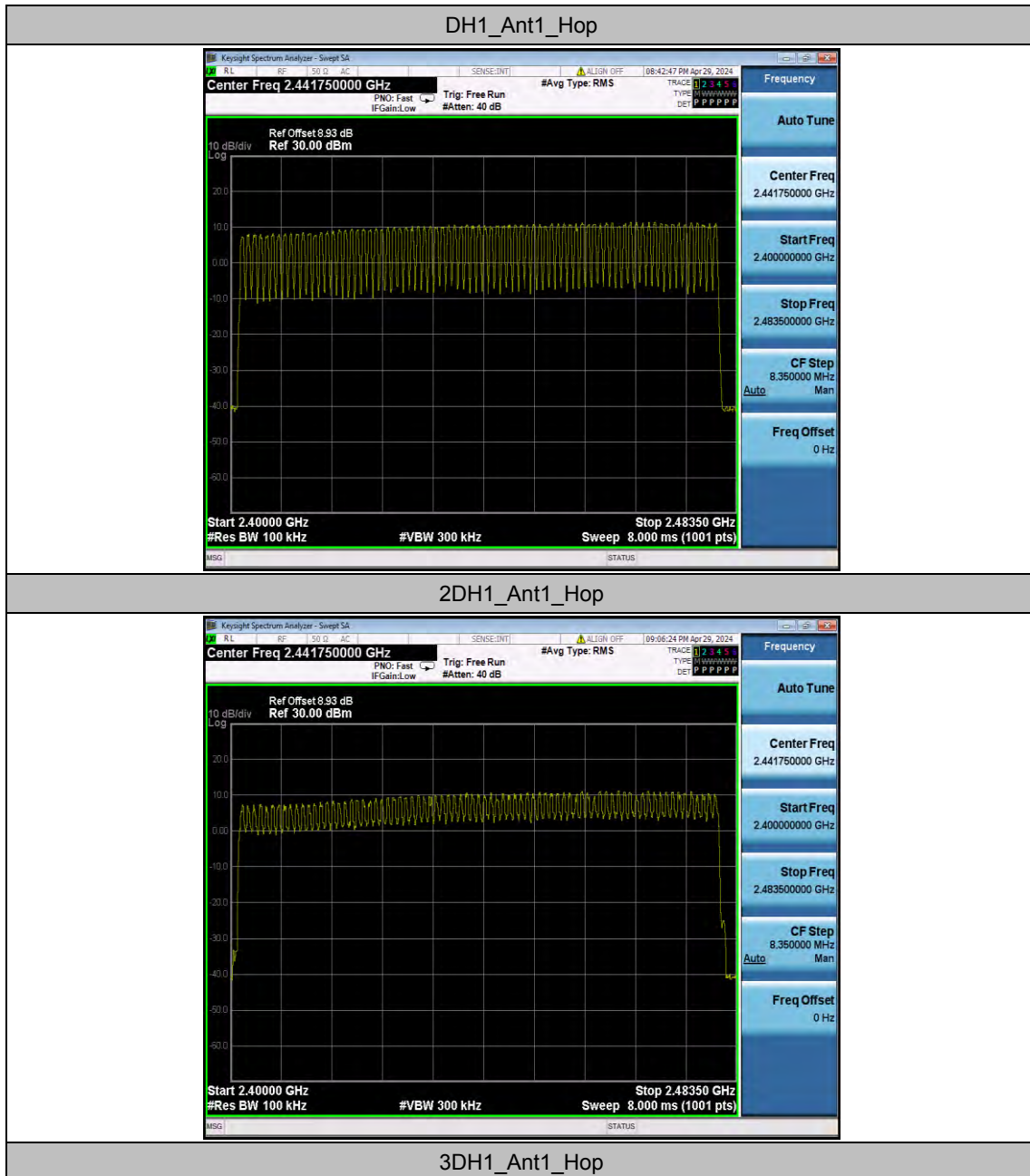


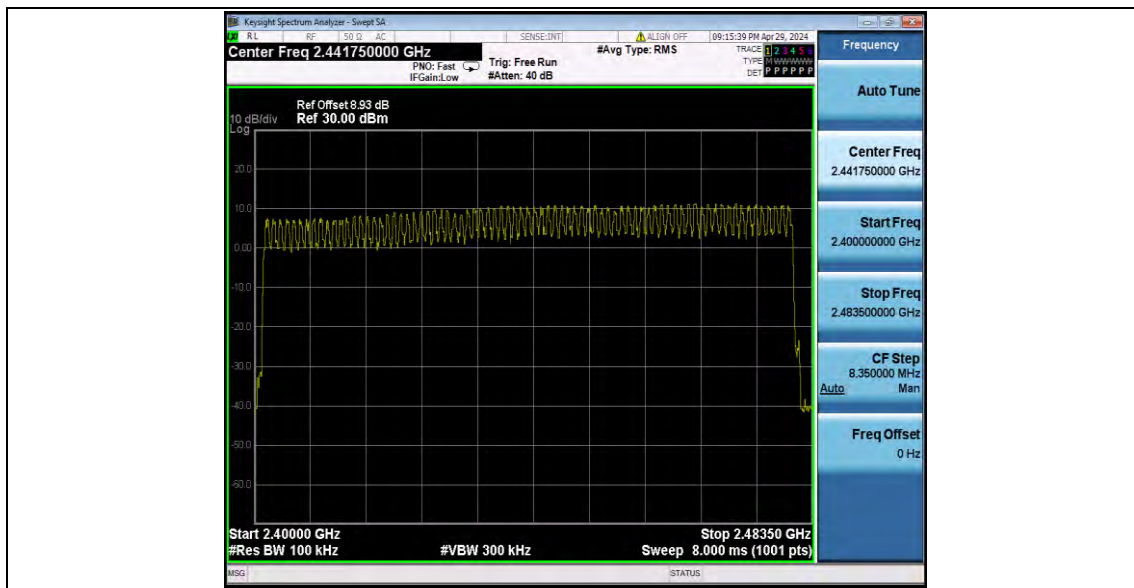
Appendix A.6: Number of hopping channels

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



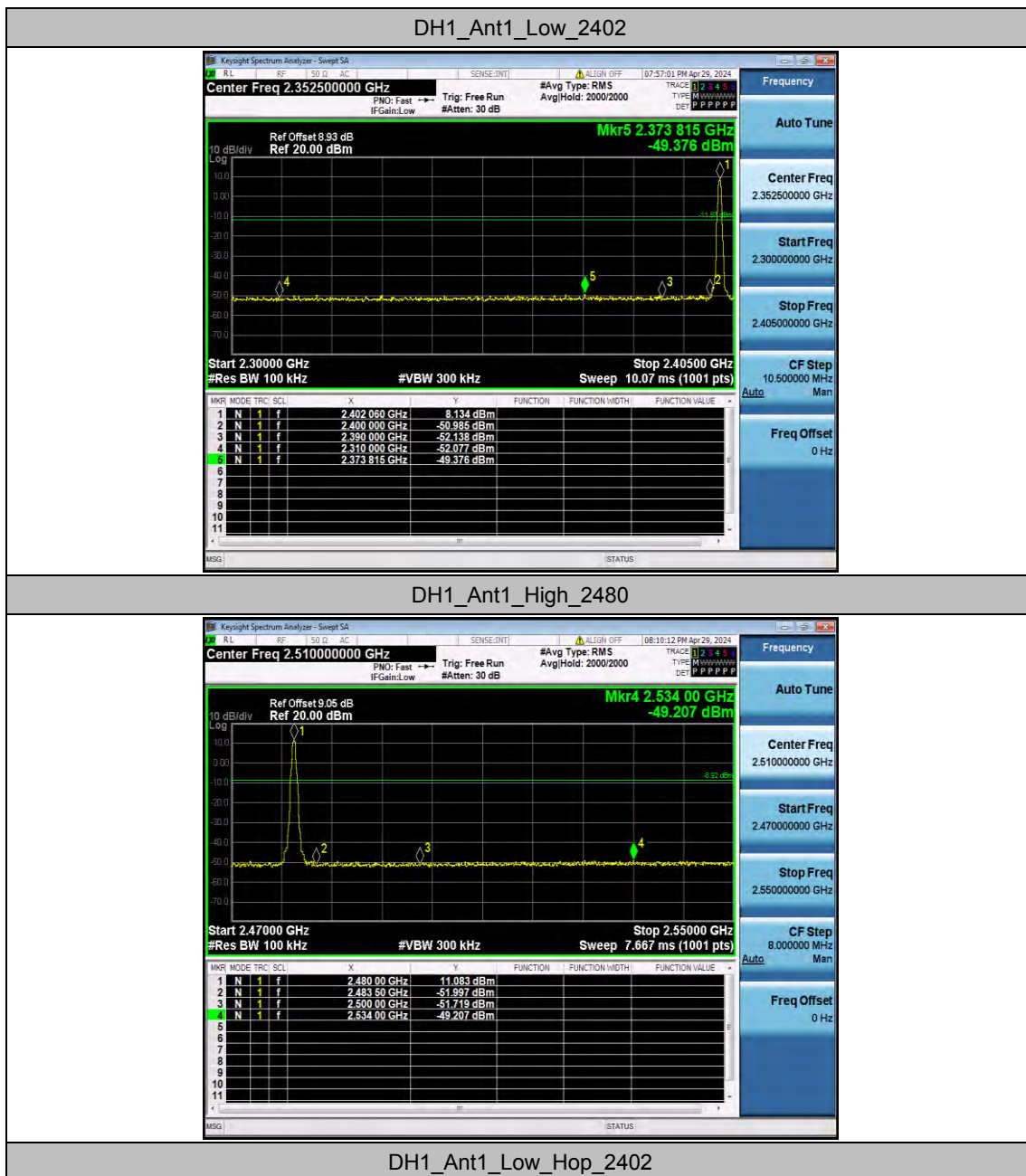


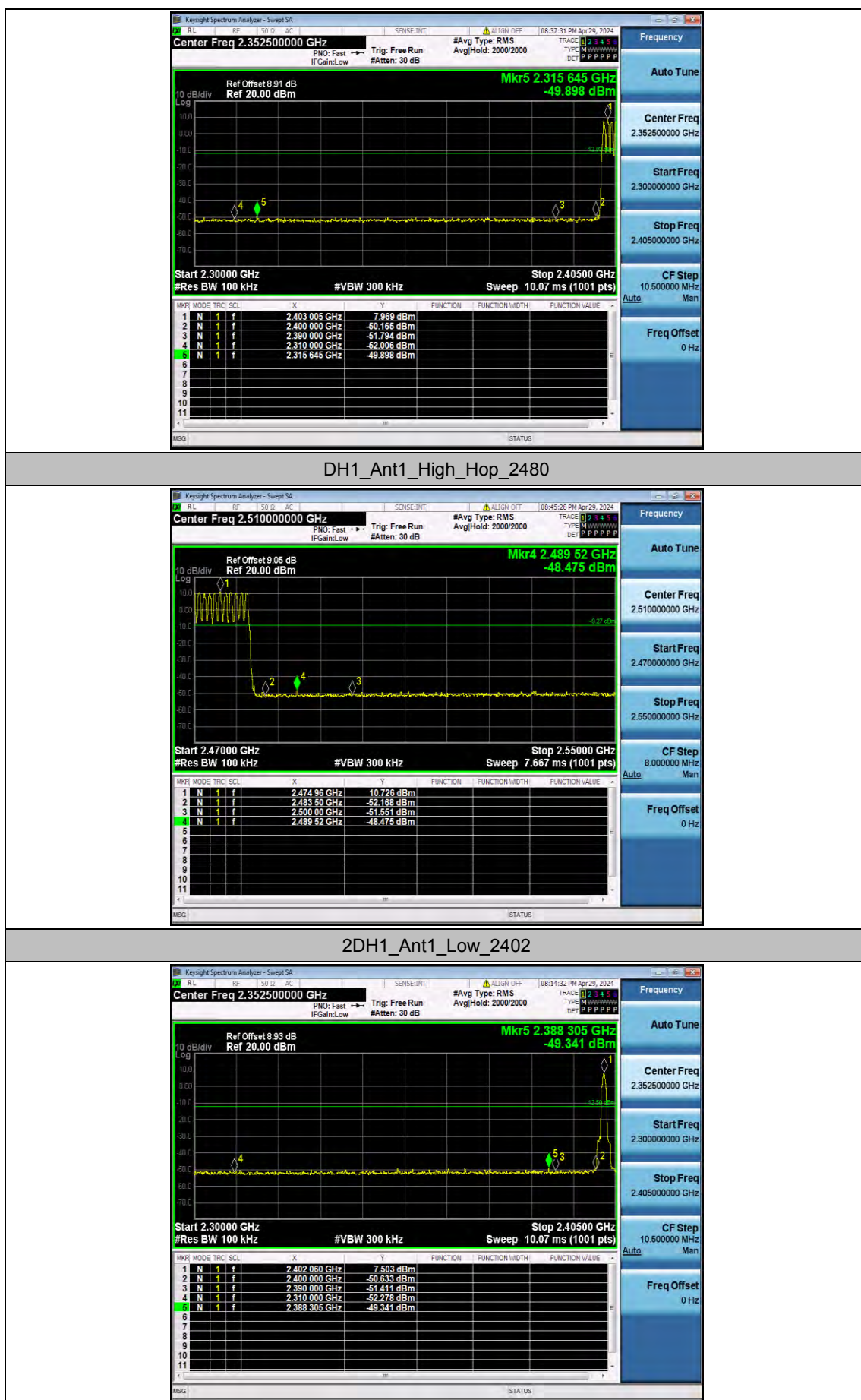
Appendix A.7: Band edge measurements

Test Result

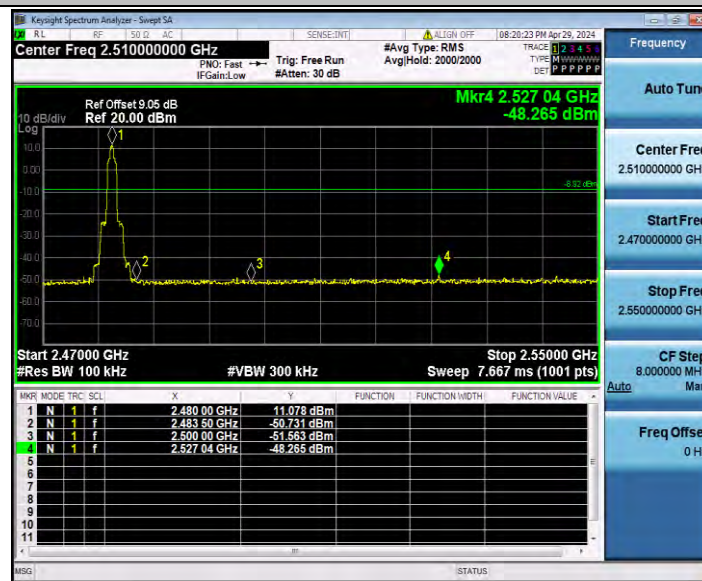
TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	Low	2402	8.13	-49.38	≤ -11.87	PASS
		High	2480	11.08	-49.21	≤ -8.92	PASS
		Low	Hop_2402	7.97	-49.9	≤ -12.03	PASS
		High	Hop_2480	10.73	-48.48	≤ -9.27	PASS
2DH1	Ant1	Low	2402	7.50	-49.34	≤ -12.5	PASS
		High	2480	11.08	-48.27	≤ -8.92	PASS
		Low	Hop_2402	7.29	-50.09	≤ -12.71	PASS
		High	Hop_2480	9.80	-48.45	≤ -10.2	PASS
3DH1	Ant1	Low	2402	7.45	-47.13	≤ -12.55	PASS
		High	2480	11.07	-48.85	≤ -8.94	PASS
		Low	Hop_2402	6.53	-49.64	≤ -13.47	PASS
		High	Hop_2480	11.00	-48.6	≤ -9.01	PASS

Test Graphs

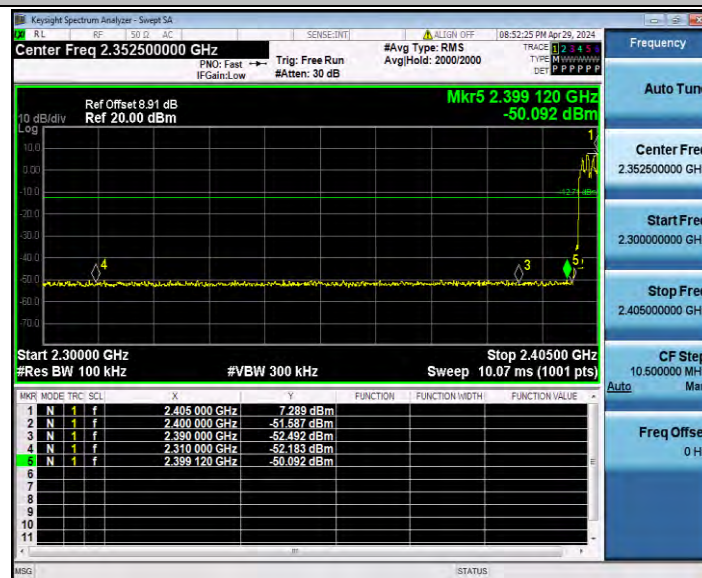




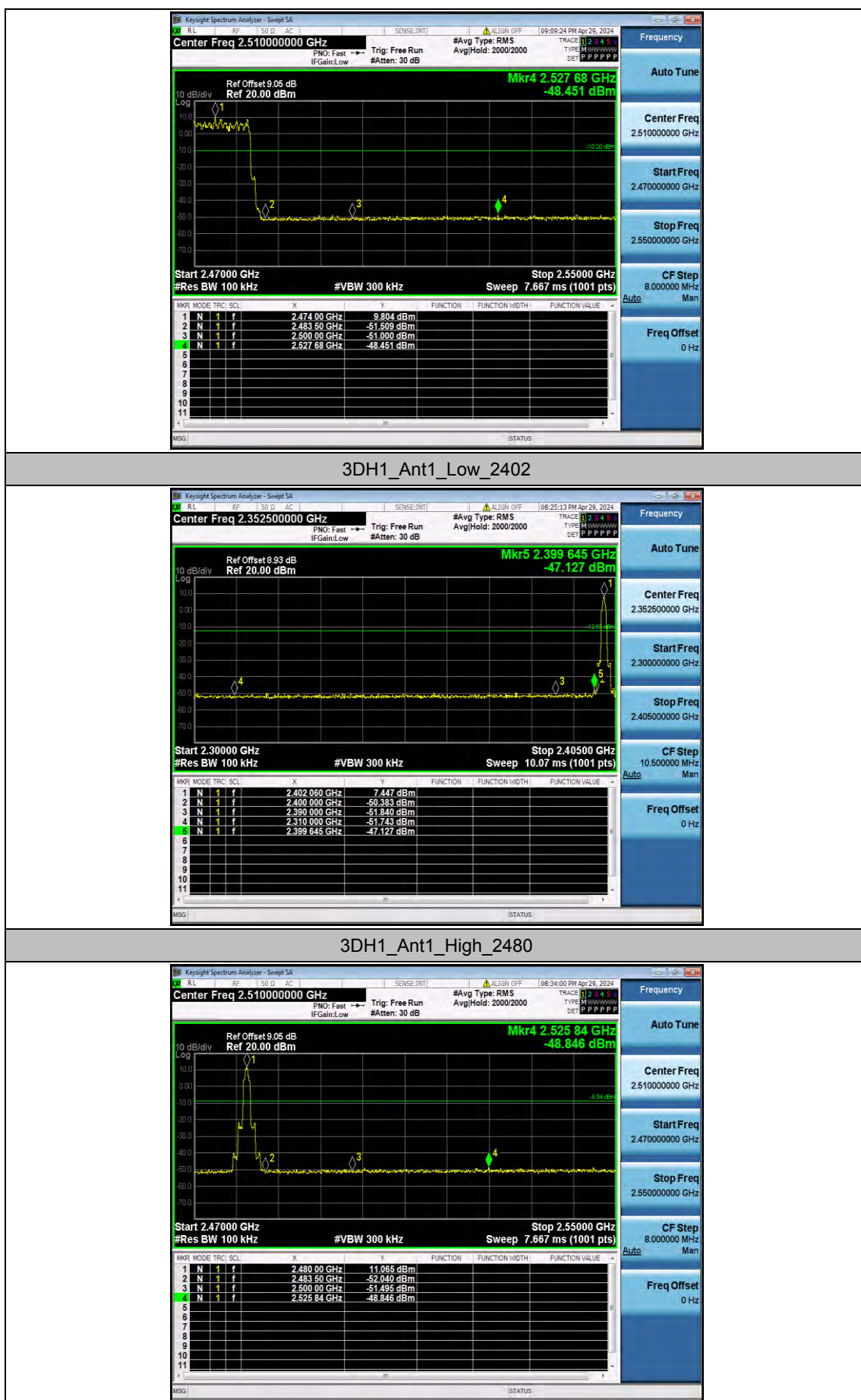
2DH1_Ant1_High_2480



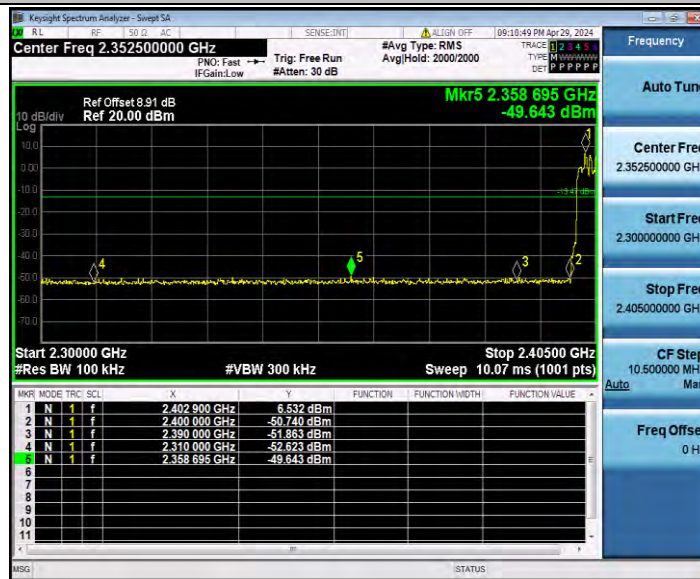
2DH1_Ant1_Low_Hop_2402



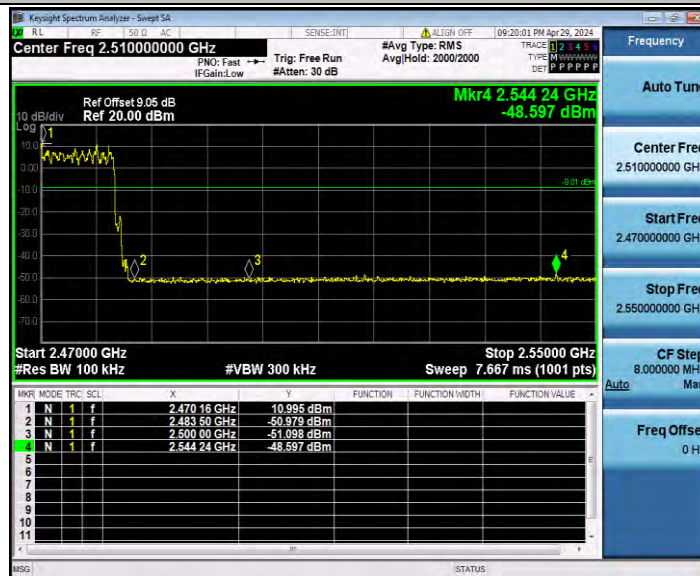
2DH1_Ant1_High_Hop_2480



3DH1_Ant1_Low_Hop_2402



3DH1_Ant1_High_Hop_2480

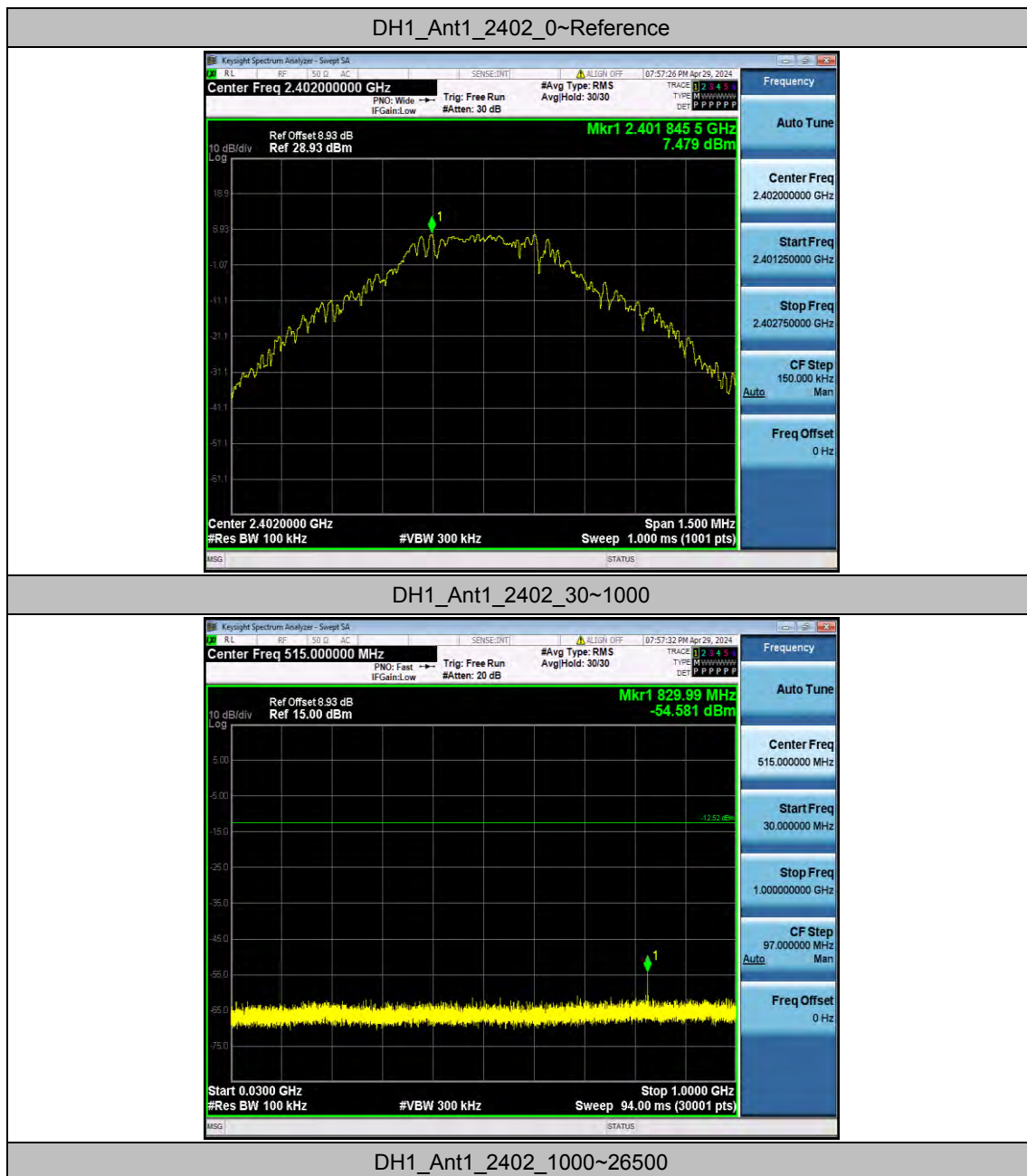


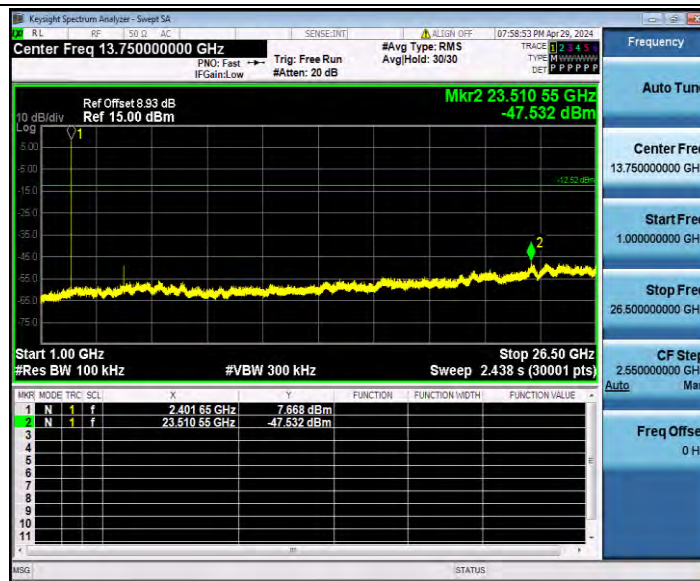
Appendix A.8: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	2402	Reference	7.48	7.48	---	PASS
			30~1000	7.48	-54.58	≤ -12.52	PASS
			1000~26500	7.48	-47.53	≤ -12.52	PASS
		2441	Reference	10.28	10.28	---	PASS
			30~1000	10.28	-46.11	≤ -9.72	PASS
			1000~26500	10.28	-47.77	≤ -9.72	PASS
		2480	Reference	10.65	10.65	---	PASS
			30~1000	10.65	-41.07	≤ -9.35	PASS
			1000~26500	10.65	-47.7	≤ -9.35	PASS
2DH1	Ant1	2402	Reference	7.15	7.15	---	PASS
			30~1000	7.15	-51.07	≤ -12.85	PASS
			1000~26500	7.15	-47.65	≤ -12.85	PASS
		2441	Reference	10.37	10.37	---	PASS
			30~1000	10.37	-60.52	≤ -9.63	PASS
			1000~26500	10.37	-47.61	≤ -9.63	PASS
		2480	Reference	9.86	9.86	---	PASS
			30~1000	9.86	-60.78	≤ -10.14	PASS
			1000~26500	9.86	-47.79	≤ -10.14	PASS
3DH1	Ant1	2402	Reference	6.99	6.99	---	PASS
			30~1000	6.99	-60.17	≤ -13.01	PASS
			1000~26500	6.99	-47.86	≤ -13.01	PASS
		2441	Reference	10.35	10.35	---	PASS
			30~1000	10.35	-51.55	≤ -9.65	PASS
			1000~26500	10.35	-47.71	≤ -9.65	PASS
		2480	Reference	10.75	10.75	---	PASS
			30~1000	10.75	-60.38	≤ -9.25	PASS
			1000~26500	10.75	-48.14	≤ -9.25	PASS

Test Graphs

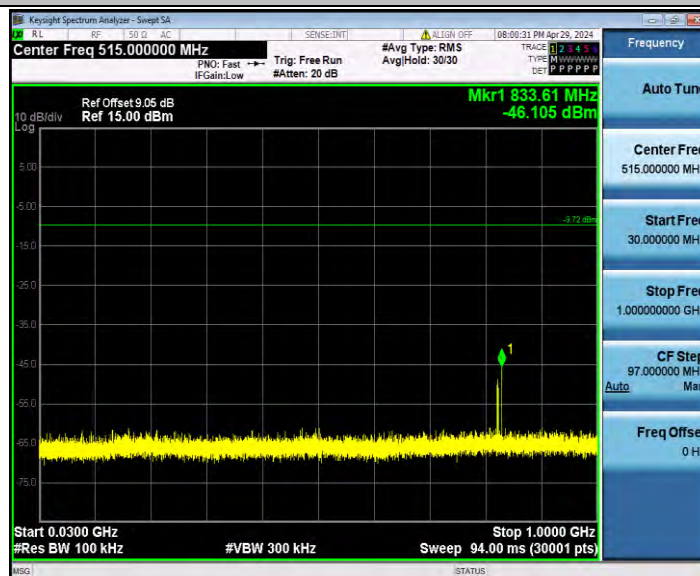




DH1_Ant1_2441_0~Reference



DH1_Ant1_2441_30~1000



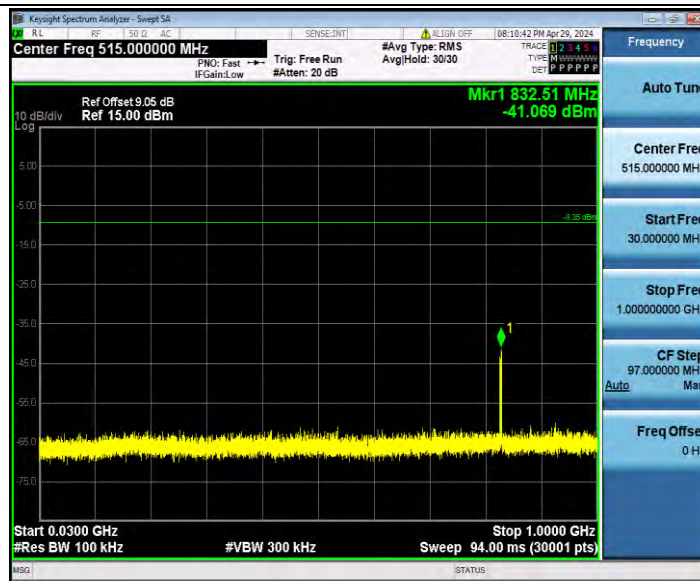
DH1_Ant1_2441_1000~26500



DH1_Ant1_2480_0~Reference



DH1_Ant1_2480_30~1000

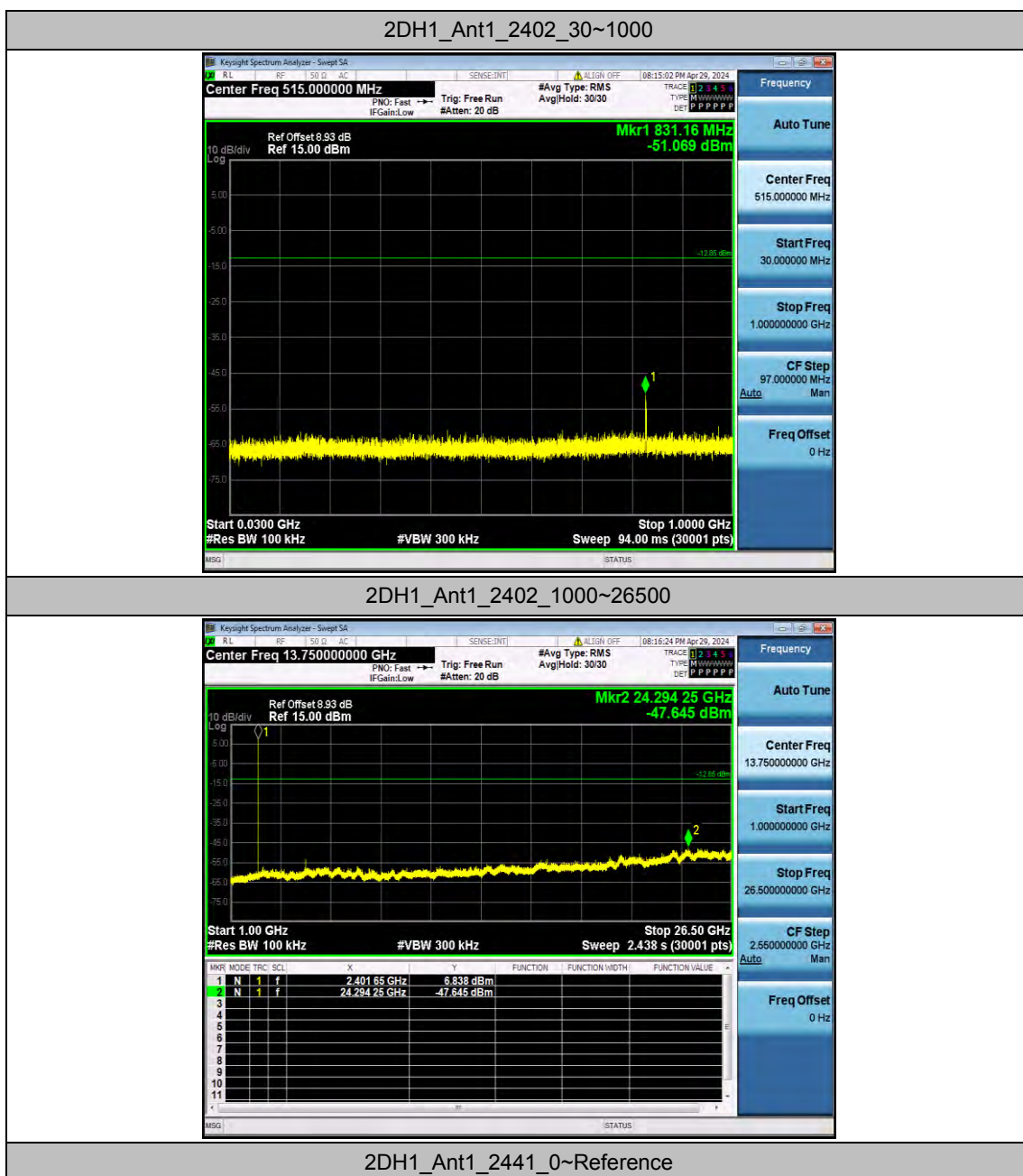


DH1_Ant1_2480_1000~26500



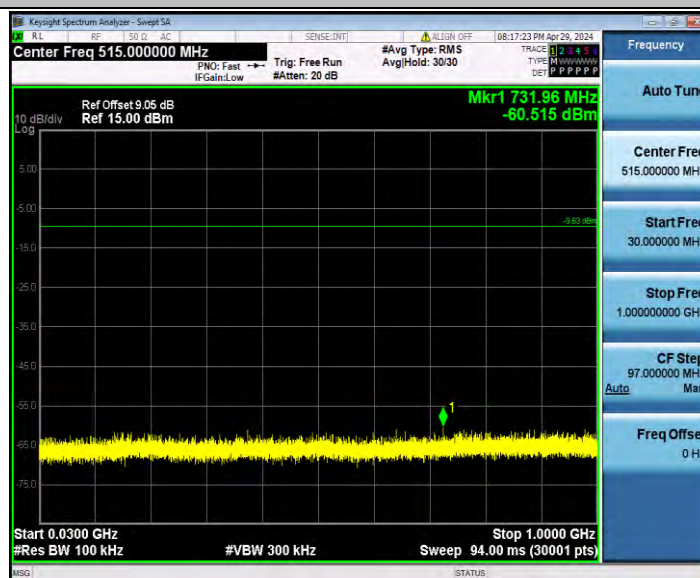
2DH1_Ant1_2402_0~Reference







2DH1_Ant1_2441_30~1000



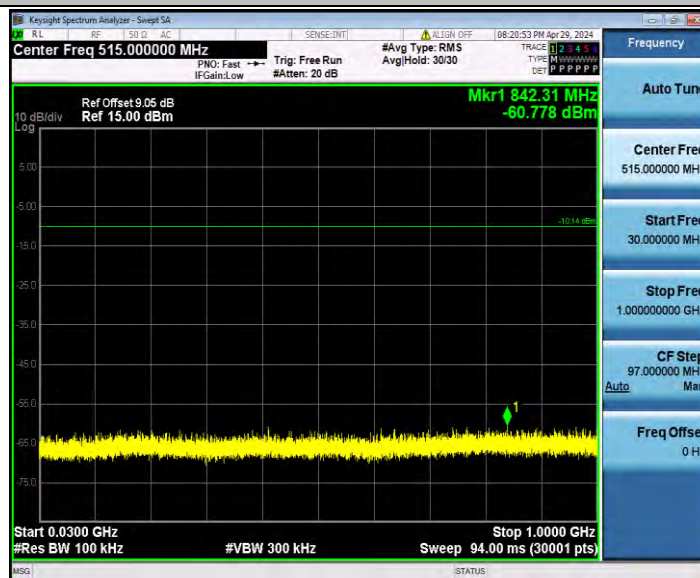
2DH1_Ant1_2441_1000~26500



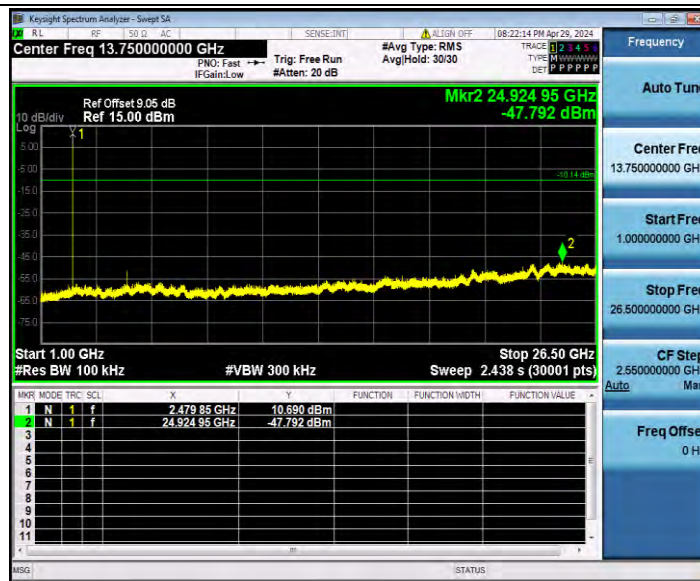
2DH1_Ant1_2480_0~Reference



2DH1_Ant1_2480_30~1000



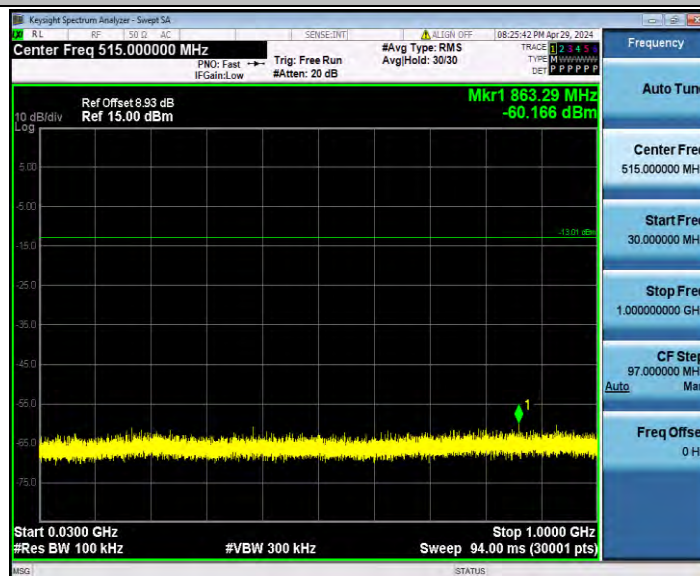
2DH1_Ant1_2480_1000~26500



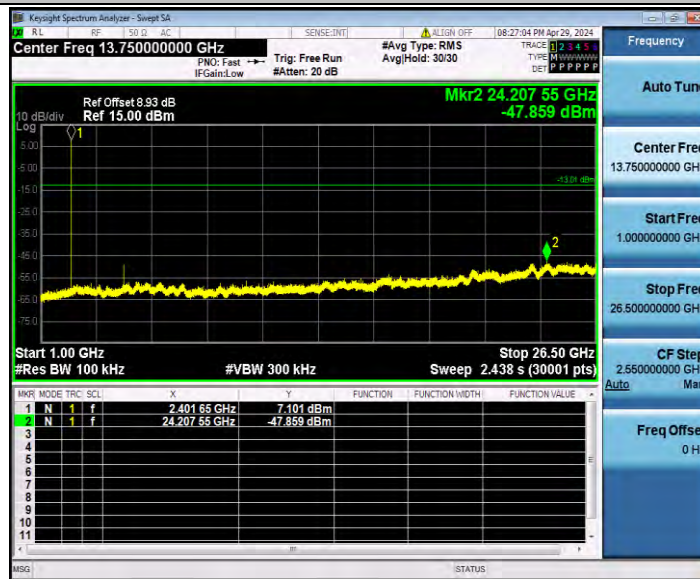
3DH1_Ant1_2402_0~Reference



3DH1_Ant1_2402_30~1000



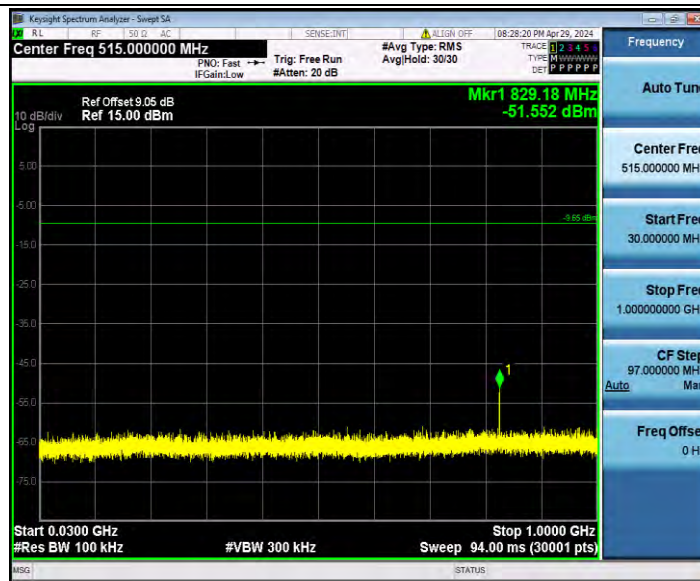
3DH1_Ant1_2402_1000~26500



3DH1_Ant1_2441_0~Reference



3DH1_Ant1_2441_30~1000

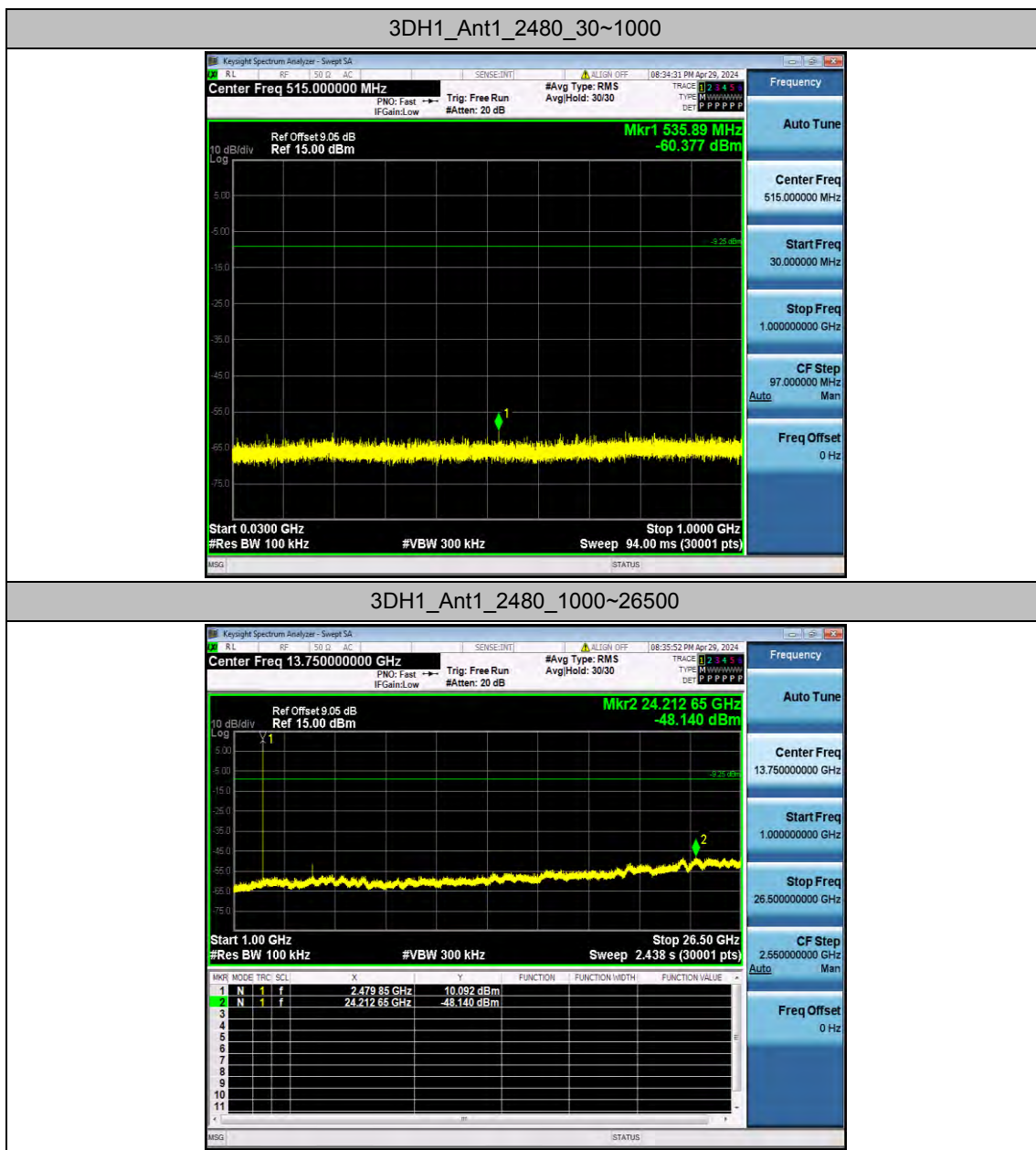


3DH1_Ant1_2441_1000~26500



3DH1_Ant1_2480_0~Reference





Appendix A.9: Emissions in Restricted Bands

Test Result

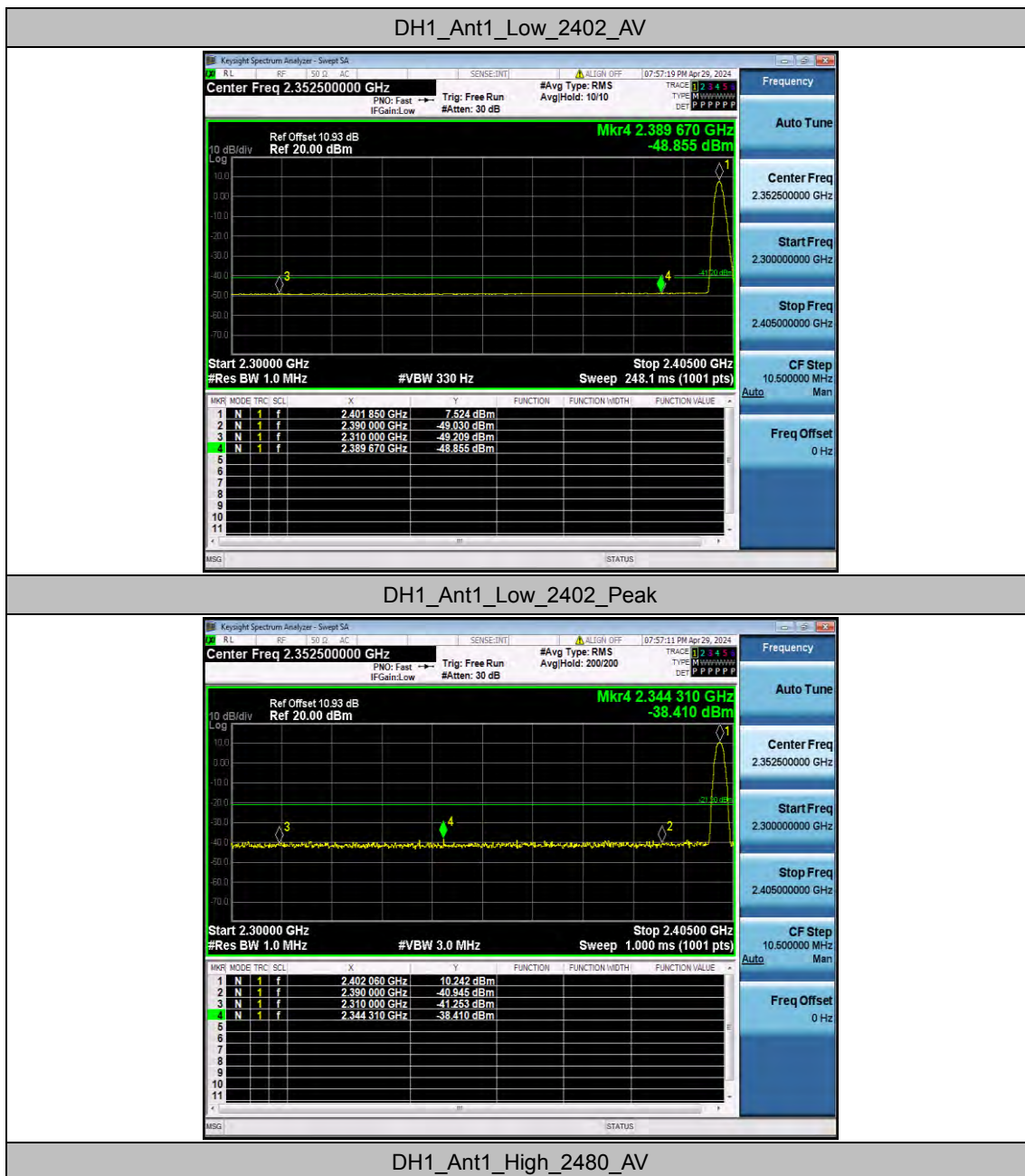
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH1	Ant1	Low	2402	AV	2310.000	-49.21	≤-41.20	45.99	≤54	PASS
				AV	2389.670	-48.85	≤-41.20	46.35	≤54	PASS
				AV	2390.000	-49.03	≤-41.20	46.17	≤54	PASS
				Peak	2310.000	-41.25	≤-21.20	53.95	≤74	PASS
				Peak	2344.310	-38.41	≤-21.20	56.79	≤74	PASS
				Peak	2390.000	-40.95	≤-21.20	54.25	≤74	PASS
		High	2480	AV	2483.500	-47.23	≤-41.20	47.97	≤54	PASS
				AV	2483.520	-47.22	≤-41.20	47.98	≤54	PASS
				AV	2500.000	-48.75	≤-41.20	46.45	≤54	PASS
				Peak	2483.500	-40.43	≤-21.20	54.77	≤74	PASS
				Peak	2499.840	-38.87	≤-21.20	56.33	≤74	PASS
				Peak	2500.000	-39.65	≤-21.20	55.55	≤74	PASS
2DH1	Ant1	Low	2402	AV	2310.000	-49.59	≤-41.20	45.61	≤54	PASS
				AV	2385.155	-49.02	≤-41.20	46.18	≤54	PASS
				AV	2390.000	-49.1	≤-41.20	46.10	≤54	PASS
				Peak	2310.000	-40.51	≤-21.20	54.69	≤74	PASS
				Peak	2310.920	-39.14	≤-21.20	56.06	≤74	PASS
				Peak	2390.000	-40.87	≤-21.20	54.33	≤74	PASS
		High	2480	AV	2483.500	-46.11	≤-41.20	49.09	≤54	PASS
				AV	2483.520	-46.11	≤-41.20	49.09	≤54	PASS
				AV	2500.000	-48.7	≤-41.20	46.50	≤54	PASS
				Peak	2483.500	-37.77	≤-21.20	57.43	≤74	PASS
				Peak	2483.520	-37.77	≤-21.20	57.43	≤74	PASS
				Peak	2500.000	-40.17	≤-21.20	55.03	≤74	PASS
3DH1	Ant1	Low	2402	AV	2310.000	-49.58	≤-41.20	45.62	≤54	PASS
				AV	2381.165	-49.07	≤-41.20	46.13	≤54	PASS
				AV	2390.000	-49.21	≤-41.20	45.99	≤54	PASS
				Peak	2310.000	-42.04	≤-21.20	53.16	≤74	PASS
				Peak	2355.230	-38.84	≤-21.20	56.36	≤74	PASS
				Peak	2390.000	-41.58	≤-21.20	53.62	≤74	PASS
		High	2480	AV	2483.500	-46.38	≤-41.20	48.82	≤54	PASS
				AV	2483.520	-46.38	≤-41.20	48.82	≤54	PASS
				AV	2500.000	-48.62	≤-41.20	46.58	≤54	PASS
				Peak	2483.500	-40.04	≤-21.20	55.16	≤74	PASS
				Peak	2485.520	-38.23	≤-21.20	56.97	≤74	PASS

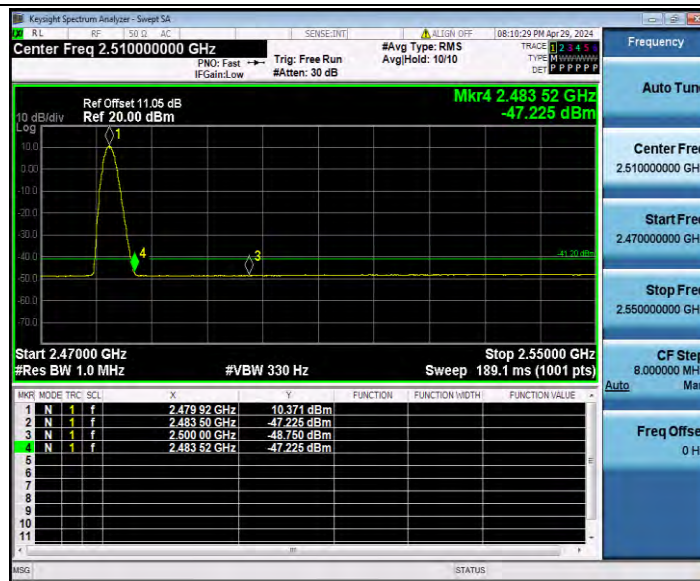
				Peak	2500.000	-40.71	≤ -21.20	54.49	≤ 74	PASS
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Note:

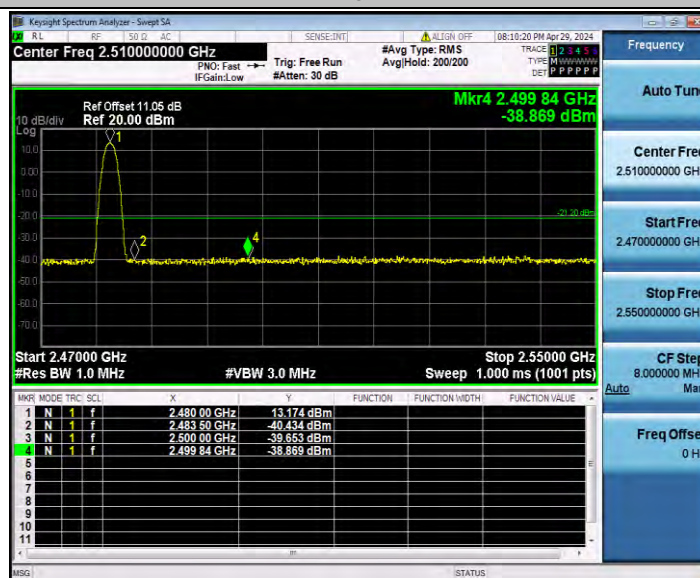
1. The Antenna Gain is compensated in the graph.
2. The Duty Cycle Factor and RBW Factor is compensated in the graph.
3. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

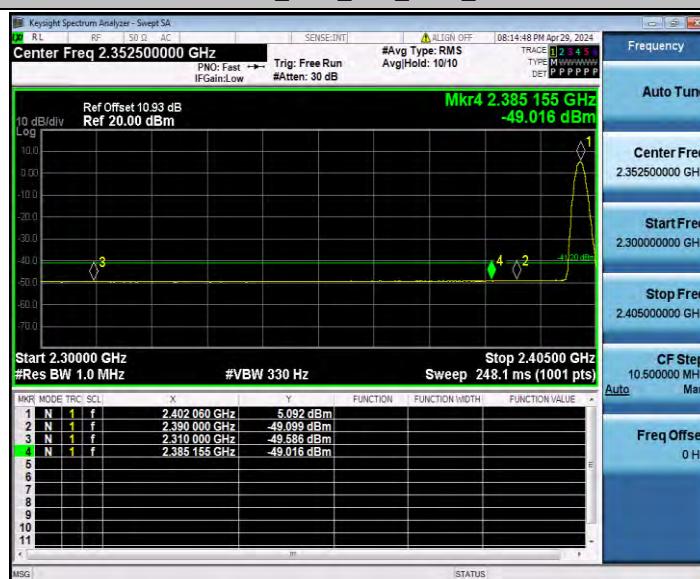




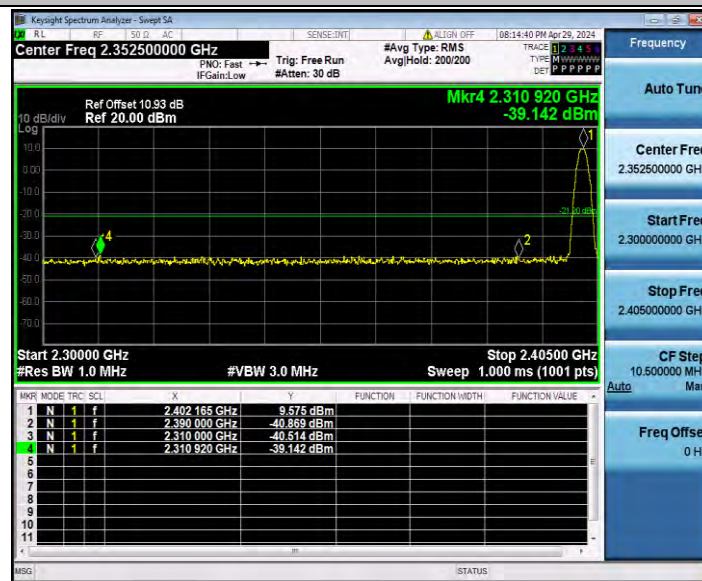
DH1_Ant1_High_2480_Peak



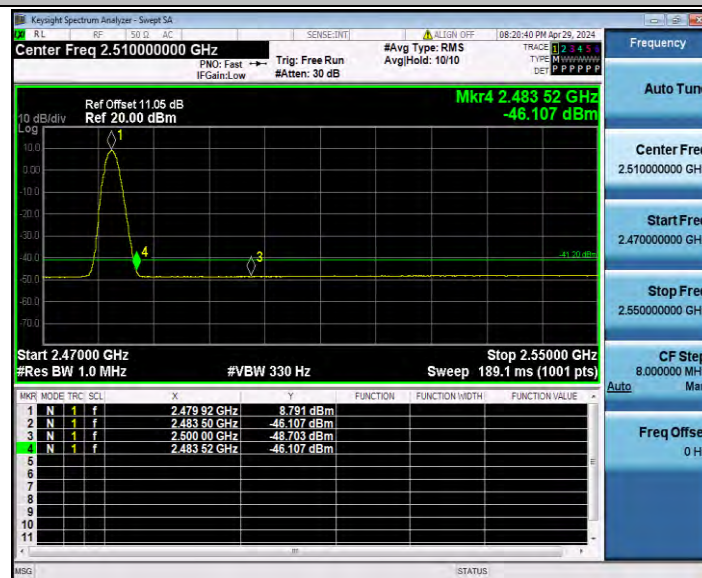
2DH1_Ant1_Low_2402_AV



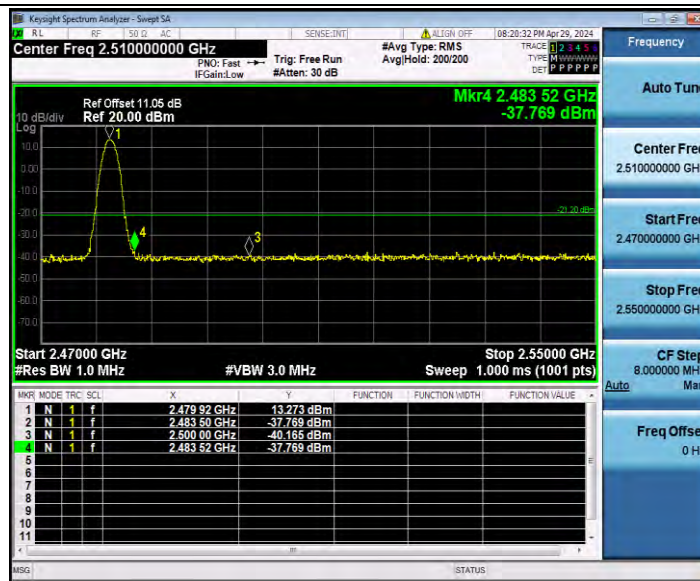
2DH1_Ant1_Low_2402_Peak



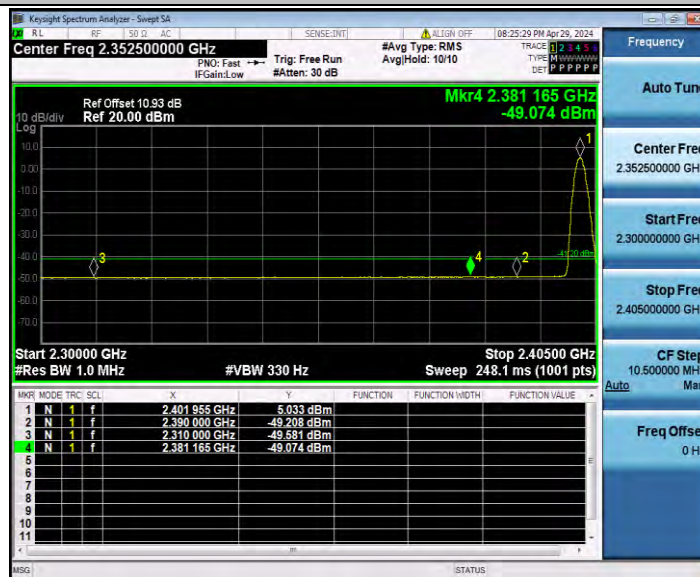
2DH1_Ant1_High_2480_AV



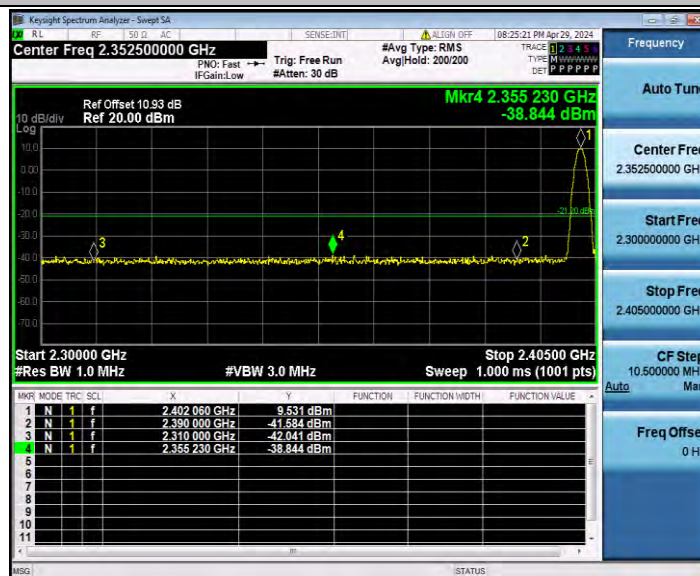
2DH1_Ant1_High_2480_Peak

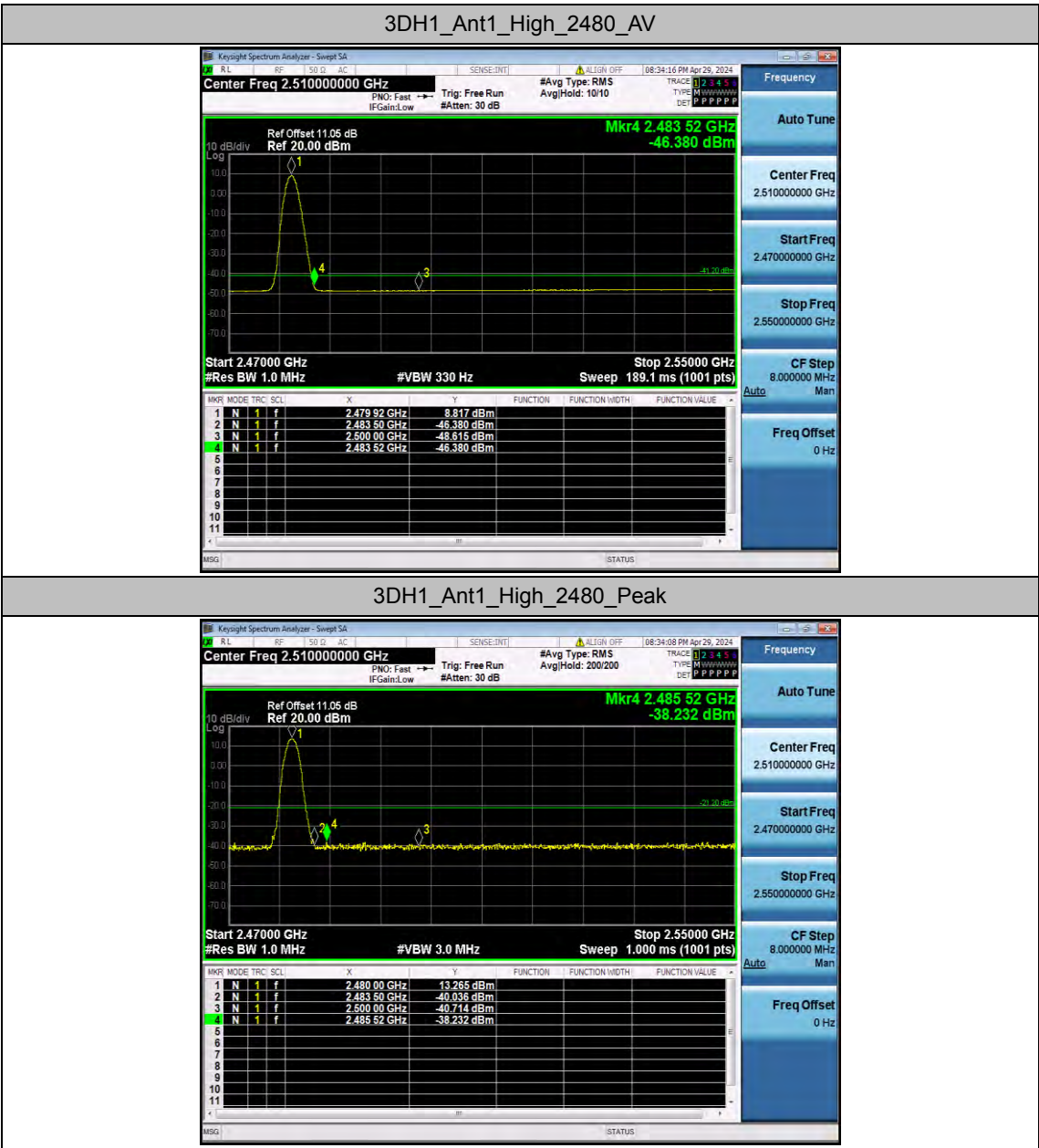


3DH1_Ant1_Low_2402_AV



3DH1_Ant1_Low_2402_Peak





3DH1_Ant1_High_2480_Peak

Frequency

Auto Tune

Center Freq
2.510000000 GHzStart Freq
2.470000000 GHzStop Freq
2.550000000 GHzCF Step
8.0000000 MHz
AutoFreq Offset
0 Hz