

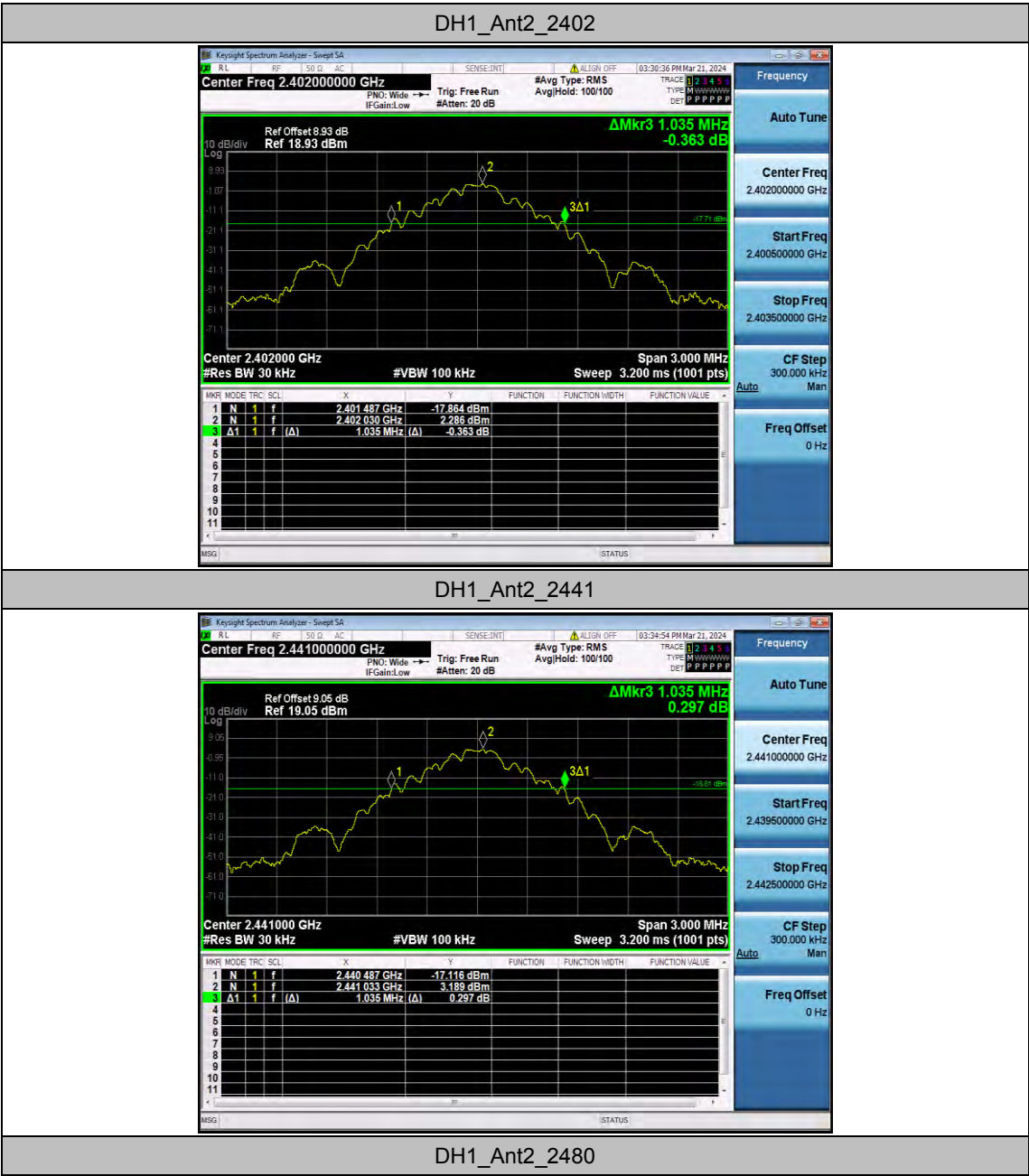
Case No. : <u>CTA24051100201</u>	
Ambient Condition: <u>22</u> °C, <u>46</u> %RH	
According Standard: ■Part15C	
Test Date: <u>2024.3.21</u>	Test Engineer: <u>Evan ouyang</u>

Appendix A.1: 20dB Emission Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	20dB EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant2	2402	1.035	2401.487	2402.522	---	---
		2441	1.035	2440.487	2441.522	---	---
		2480	1.041	2479.484	2480.525	---	---
2DH1	Ant2	2402	1.350	2401.319	2402.669	---	---
		2441	1.356	2440.313	2441.669	---	---
		2480	1.347	2479.316	2480.663	---	---
3DH1	Ant2	2402	1.296	2401.337	2402.633	---	---
		2441	1.290	2440.334	2441.624	---	---
		2480	1.290	2479.337	2480.627	---	---

Test Graphs

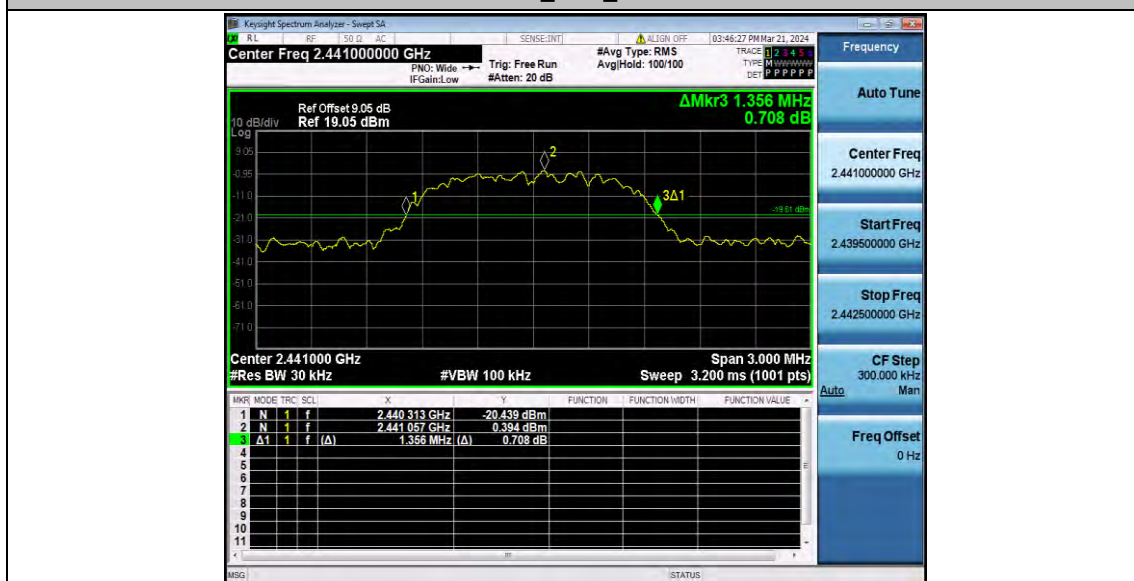




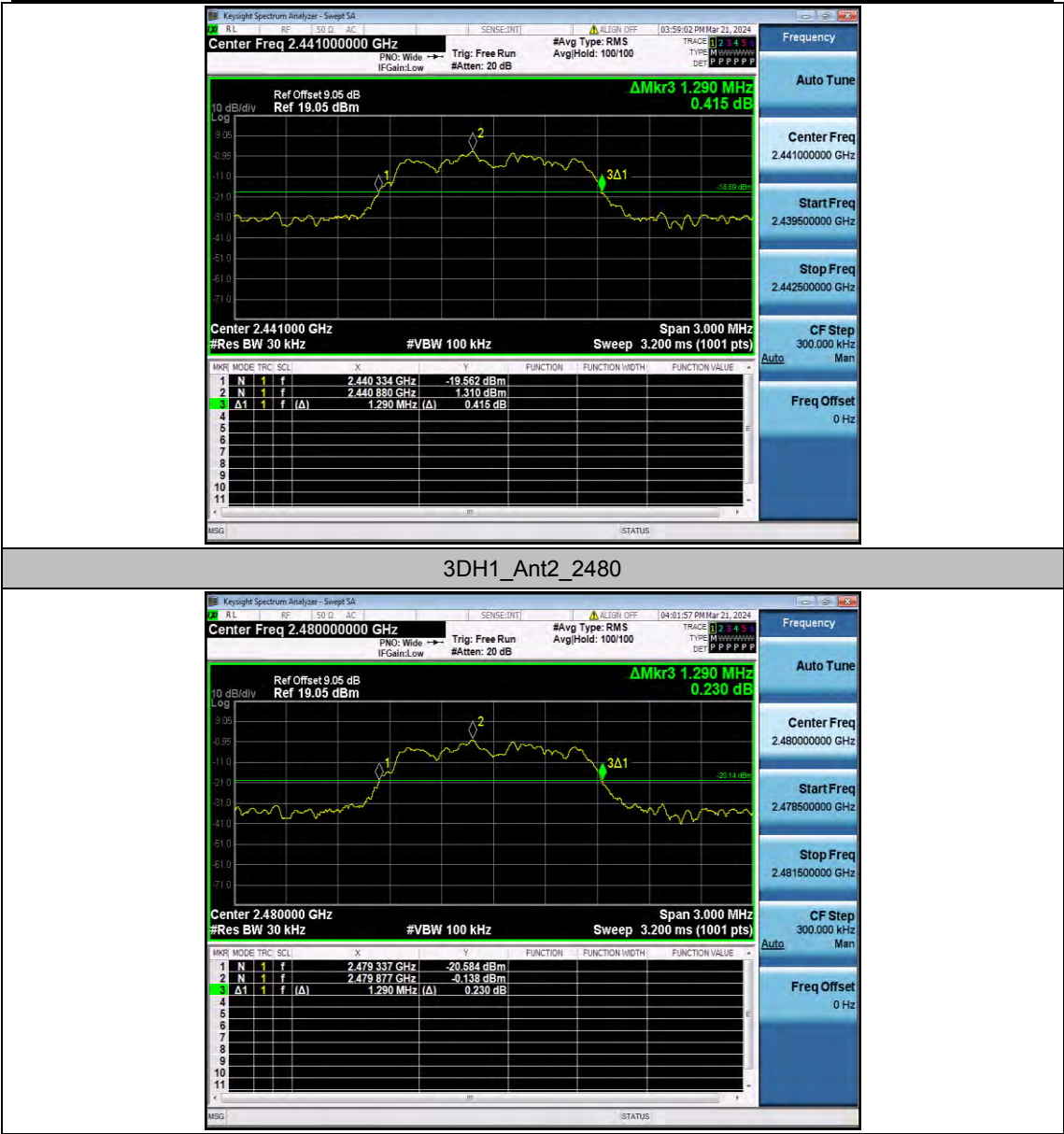
2DH1_Ant2_2402



2DH1_Ant2_2441





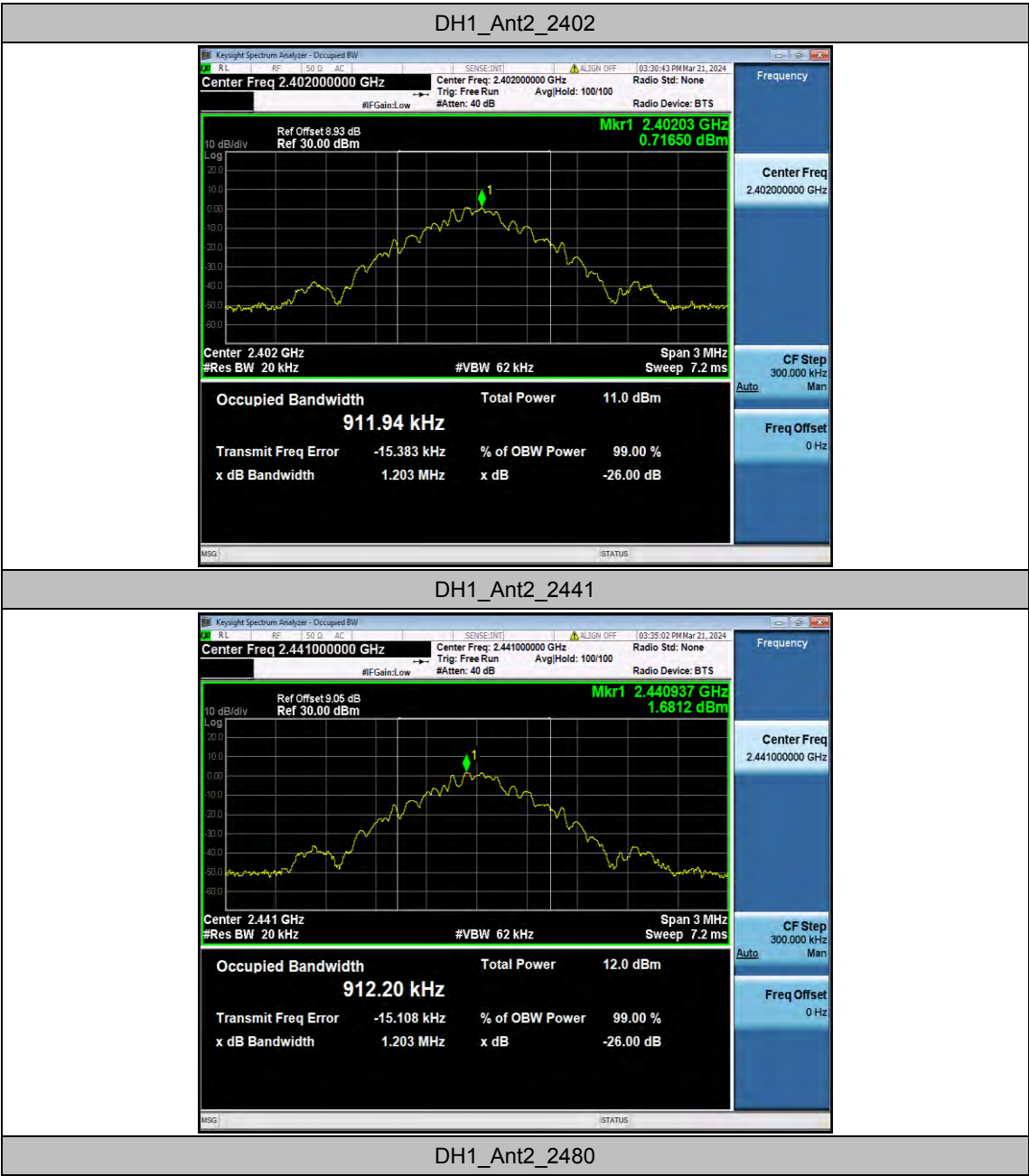


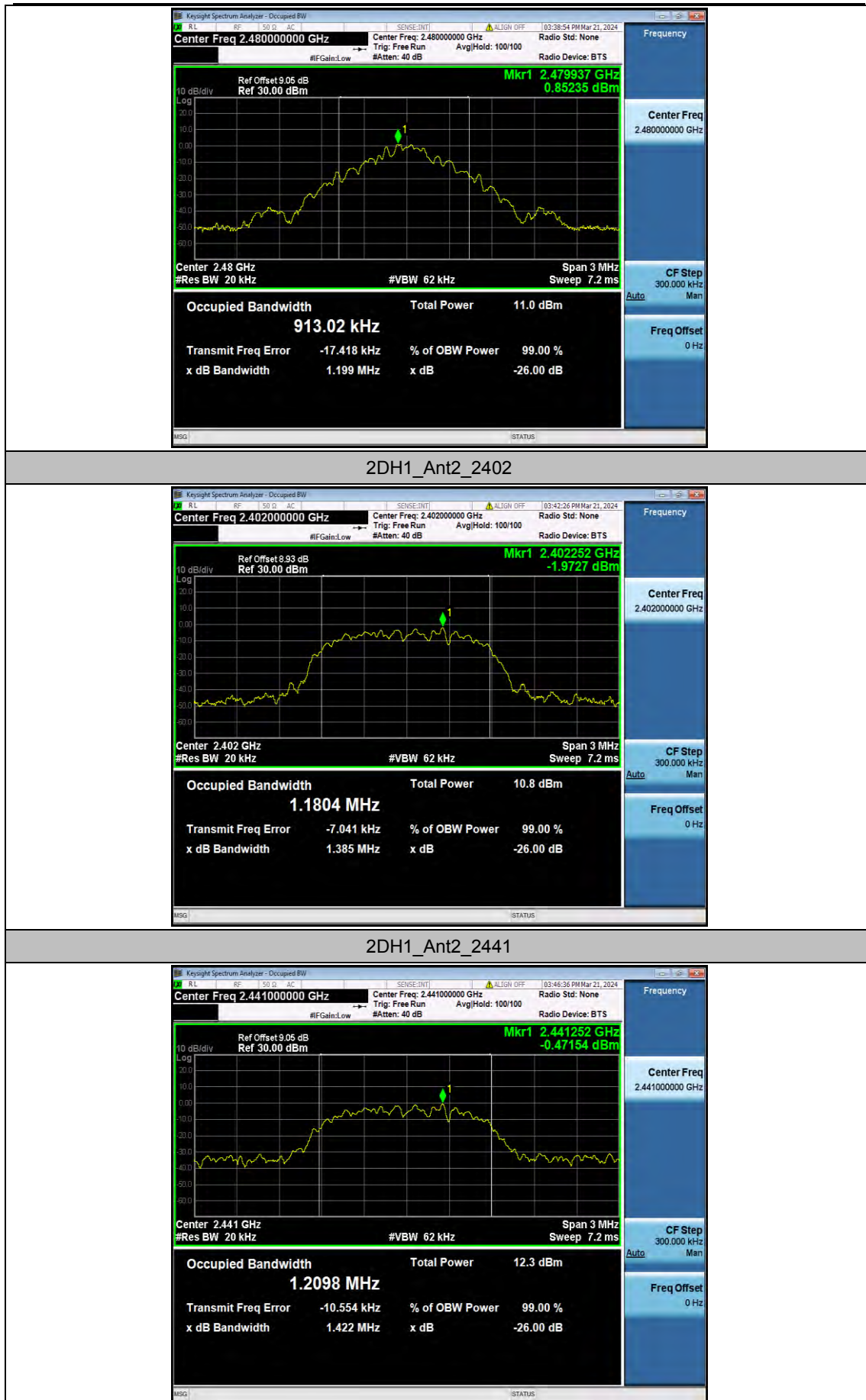
Appendix A.2: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant2	2402	0.91194	2401.5287	2402.4406	---	---
		2441	0.91220	2440.5288	2441.4410	---	---
		2480	0.91302	2479.5261	2480.4391	---	---
2DH1	Ant2	2402	1.1804	2401.4028	2402.5832	---	---
		2441	1.2098	2440.3846	2441.5944	---	---
		2480	1.2004	2479.3887	2480.5891	---	---
3DH1	Ant2	2402	1.1637	2401.4154	2402.5791	---	---
		2441	1.1944	2440.3905	2441.5849	---	---
		2480	1.1783	2479.4020	2480.5803	---	---

Test Graphs





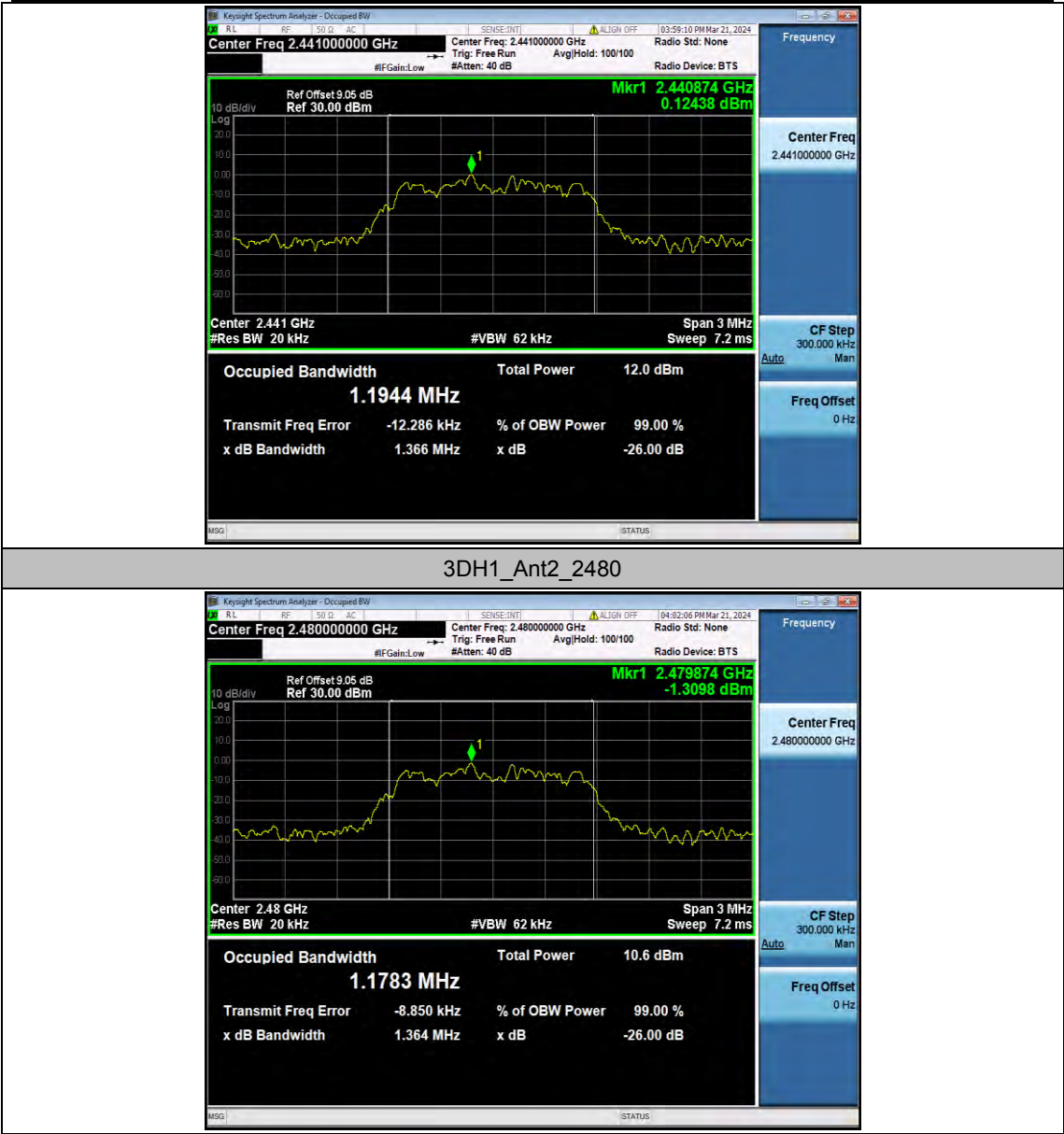
2DH1_Ant2_2480



3DH1_Ant2_2402



3DH1_Ant2_2441



Appendix A.3: Maximum conducted output power

Test Result Peak

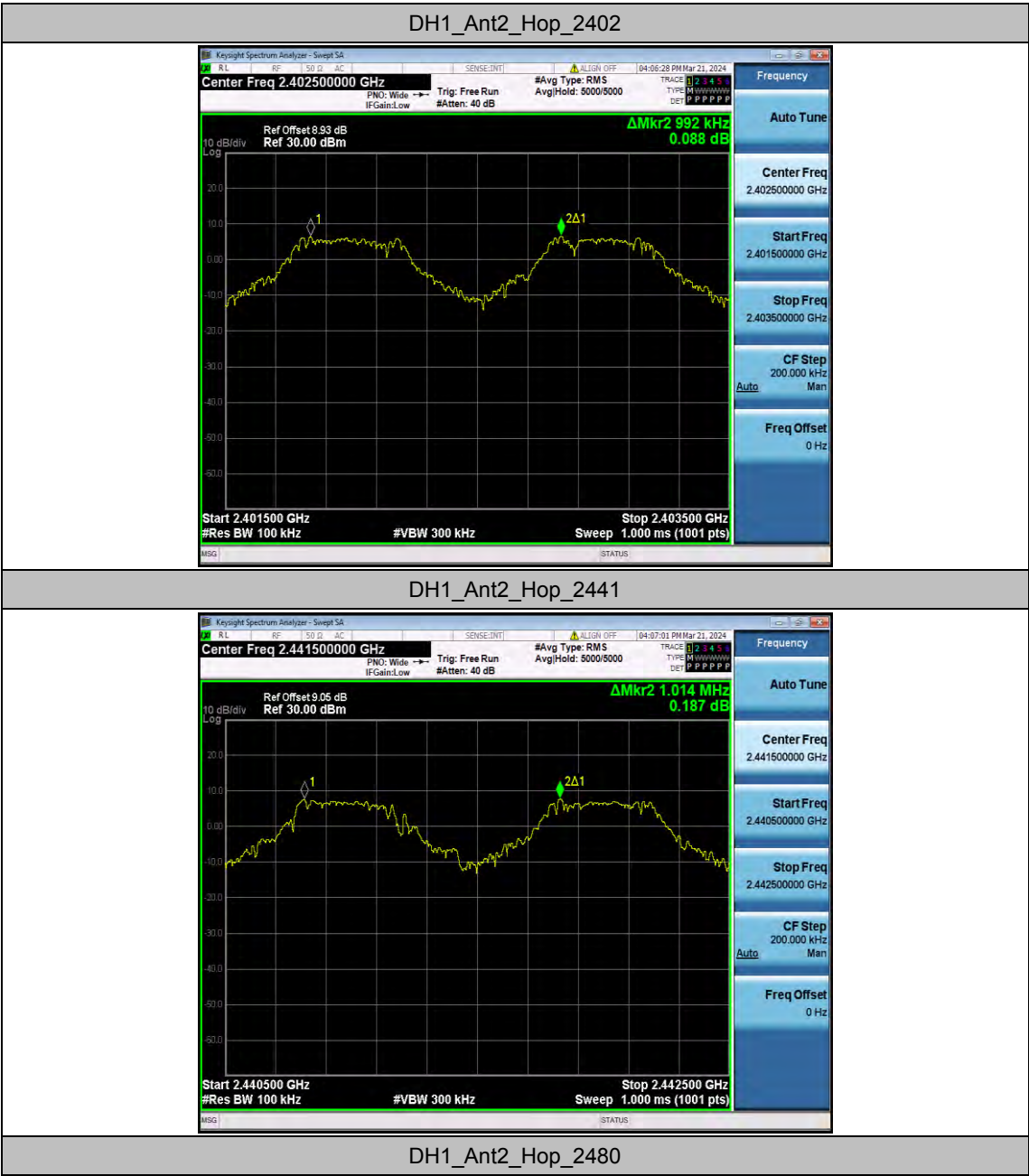
Test Mode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH1	Ant2	2402	6.65	≤ 20.97	PASS
		2441	7.56	≤ 20.97	PASS
		2480	6.54	≤ 20.97	PASS
2DH1	Ant2	2402	8.55	≤ 20.97	PASS
		2441	9.21	≤ 20.97	PASS
		2480	8.28	≤ 20.97	PASS
3DH1	Ant2	2402	8.69	≤ 20.97	PASS
		2441	9.22	≤ 20.97	PASS
		2480	8.39	≤ 20.97	PASS

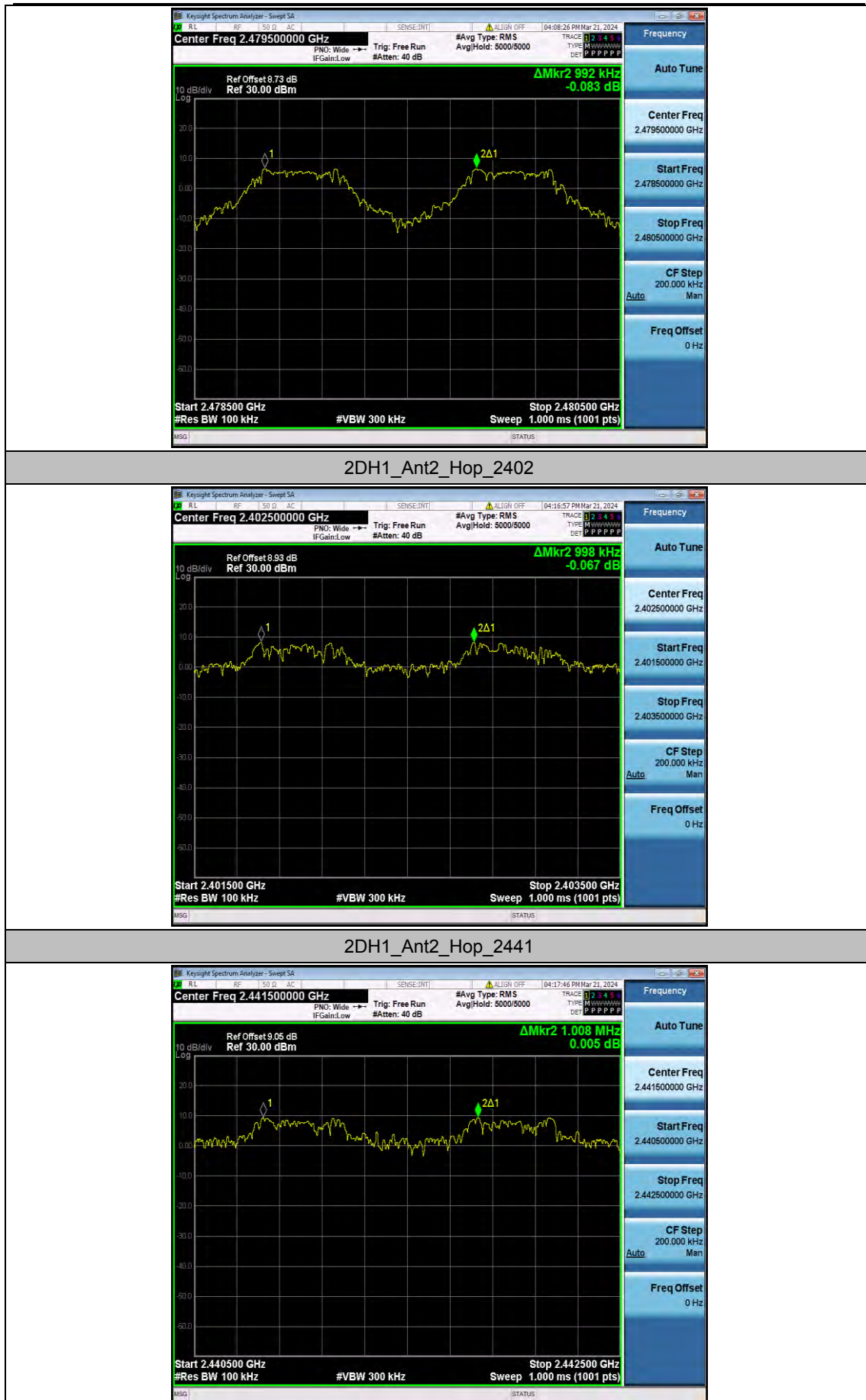
Appendix A.4: Carrier frequency separation

Test Result

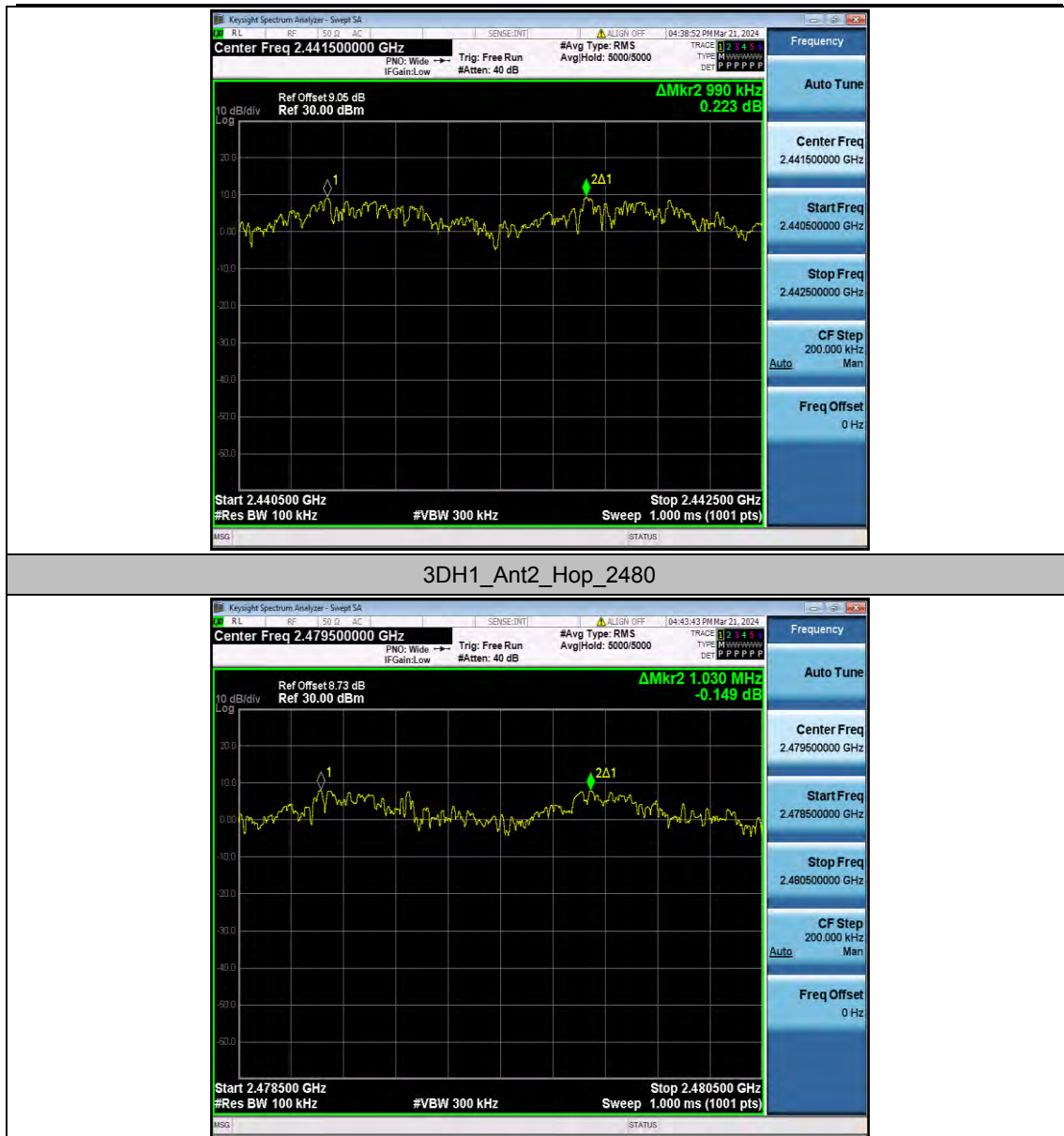
TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant2	Hop_2402	0.992	≥ 0.694	PASS
		Hop_2441	1.014	≥ 0.694	PASS
		Hop_2480	0.992	≥ 0.694	PASS
2DH1	Ant2	Hop_2402	0.998	≥ 0.904	PASS
		Hop_2441	1.008	≥ 0.904	PASS
		Hop_2480	1.004	≥ 0.904	PASS
3DH1	Ant2	Hop_2402	1.004	≥ 0.864	PASS
		Hop_2441	0.99	≥ 0.864	PASS
		Hop_2480	1.03	≥ 0.864	PASS

Test Graphs







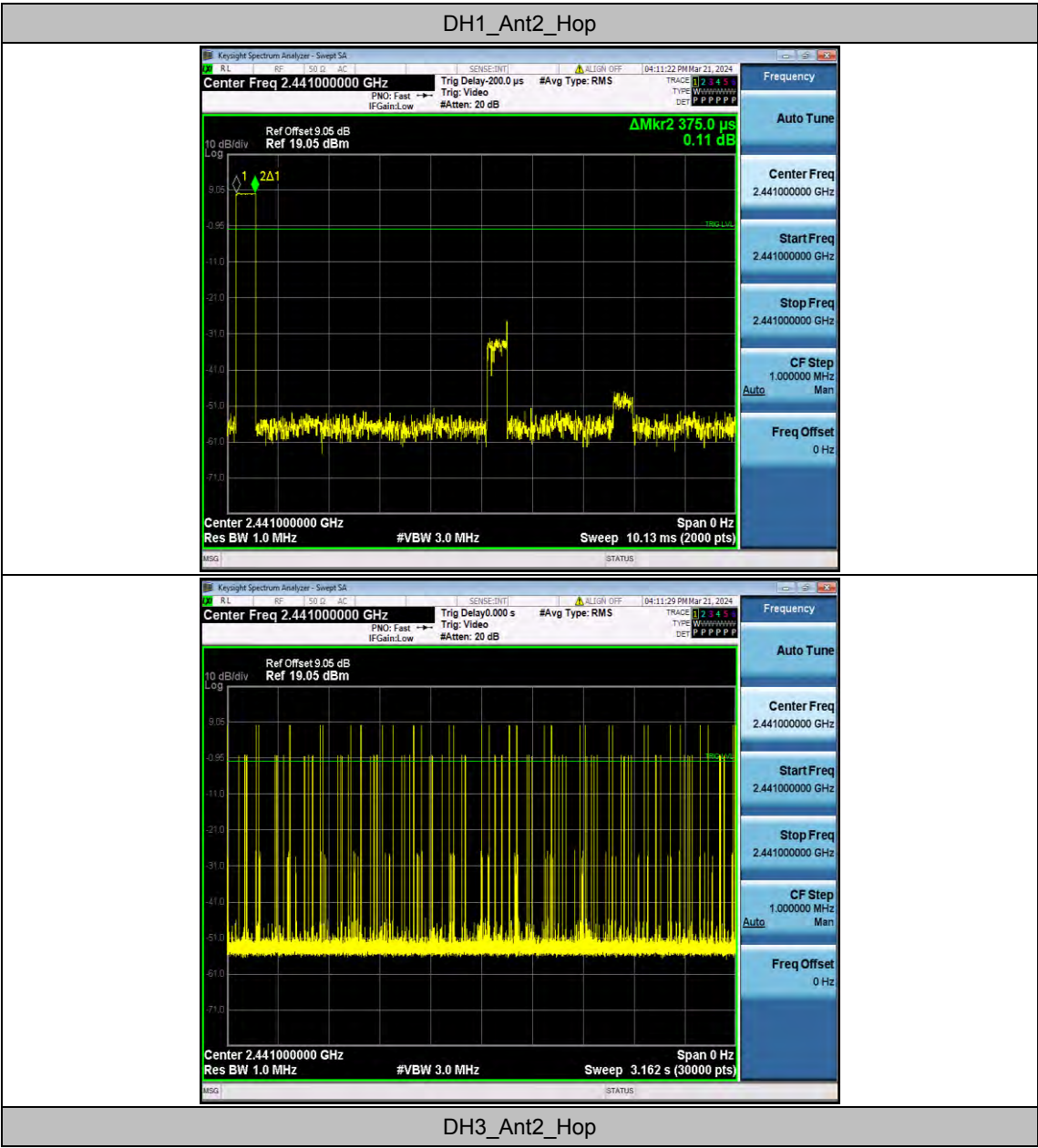


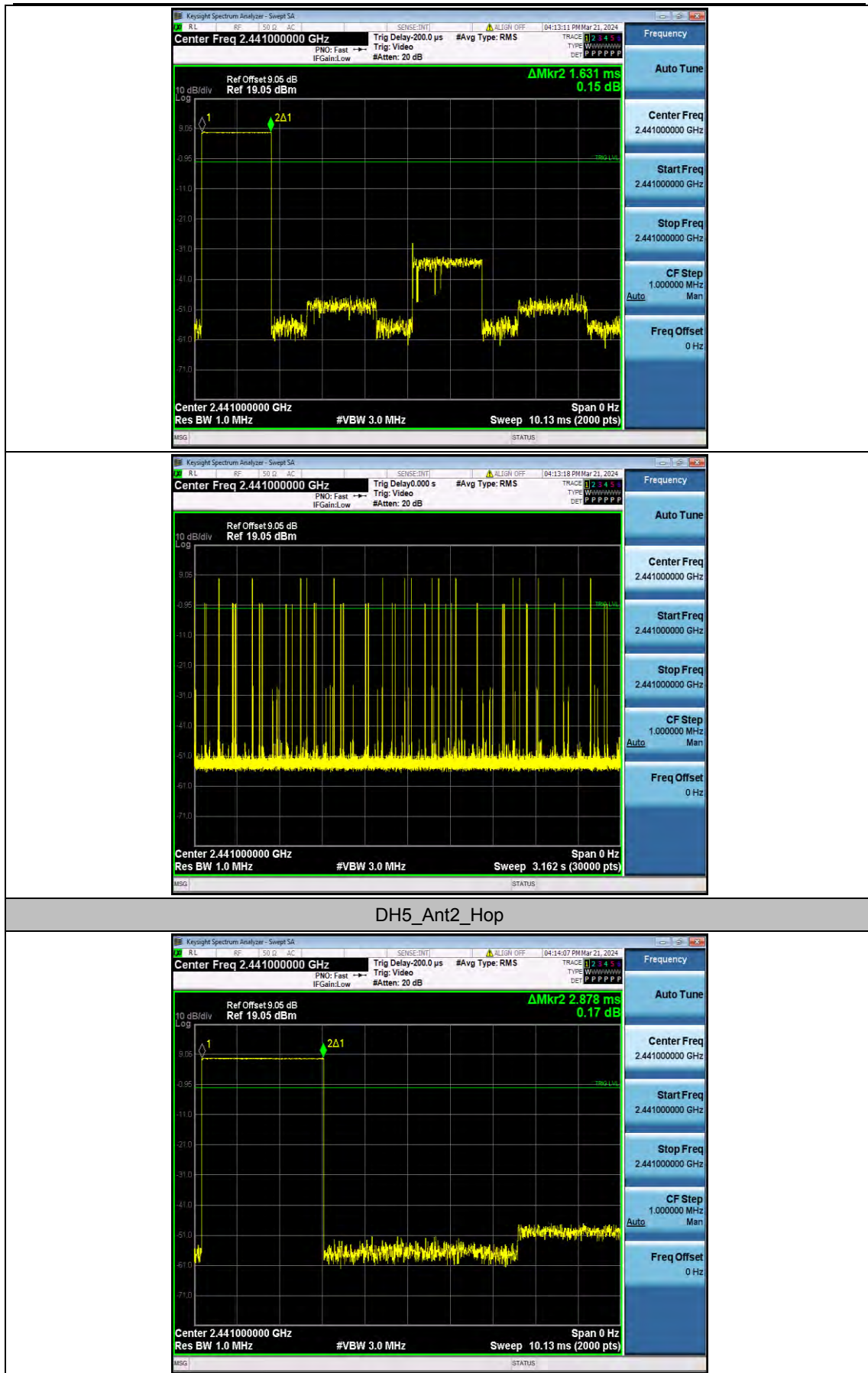
Appendix A.5: Time of occupancy

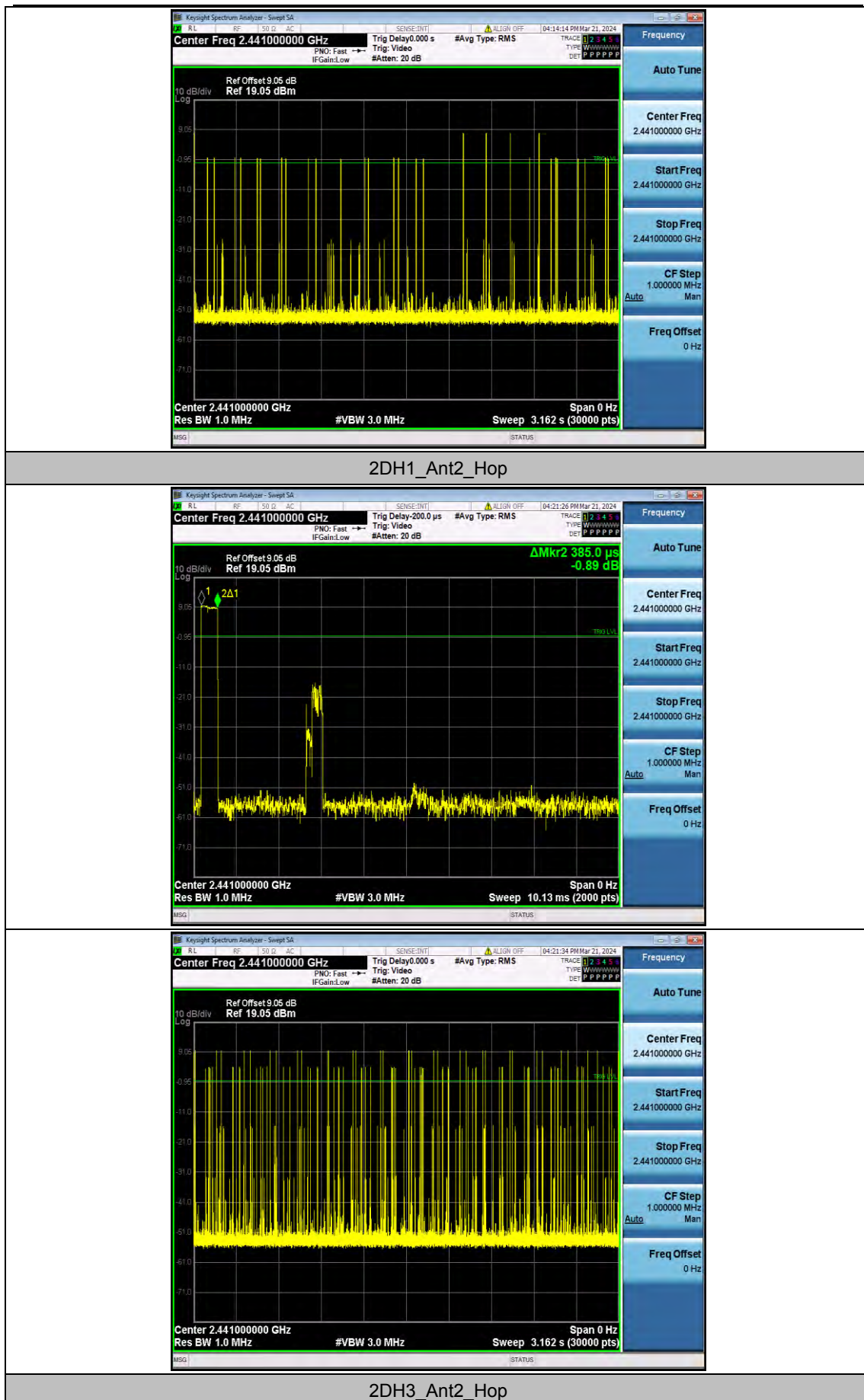
Test Result

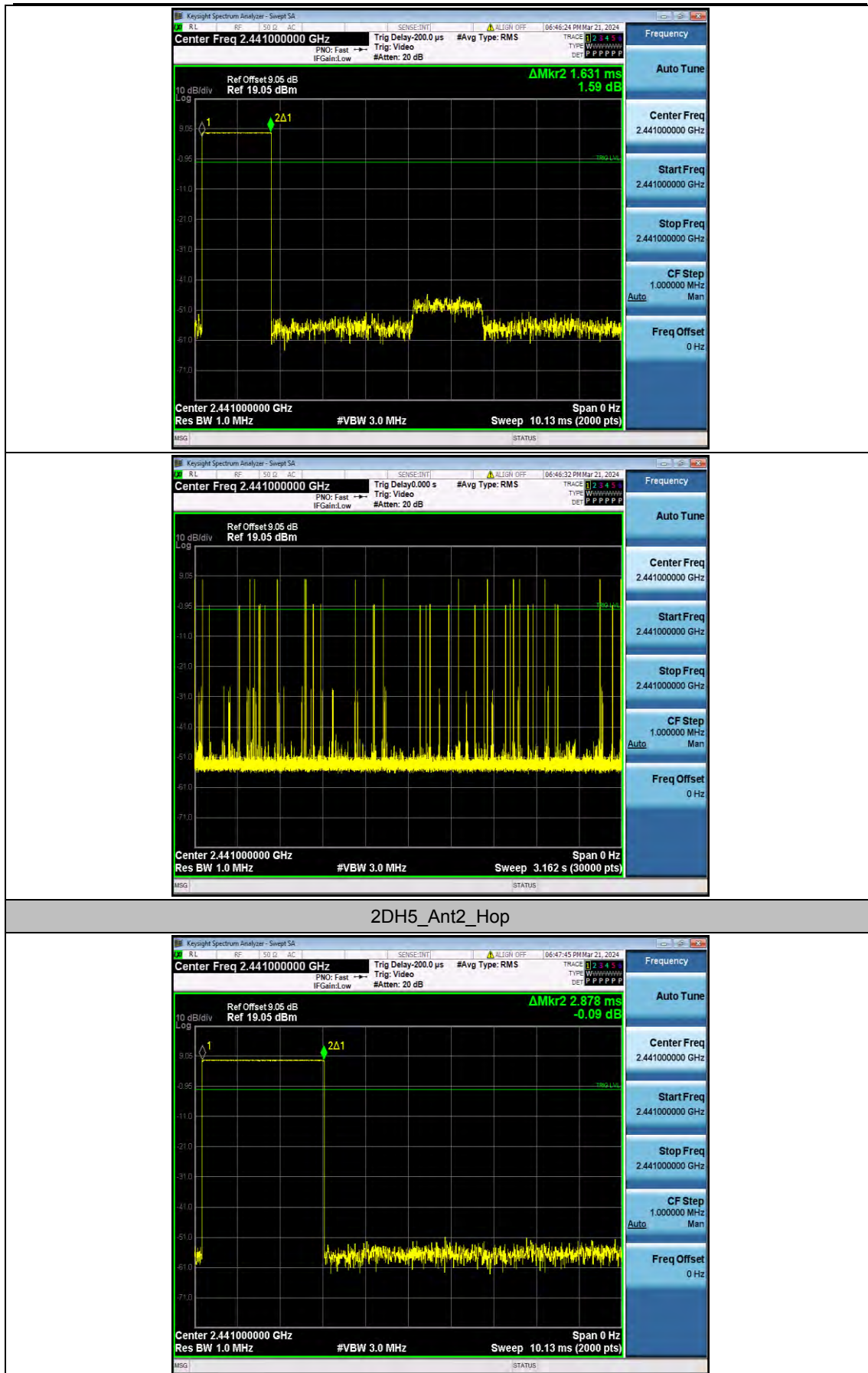
TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant2	Hop	0.375	330	0.124	≤0.4	PASS
DH3	Ant2	Hop	1.631	170	0.277	≤0.4	PASS
DH5	Ant2	Hop	2.878	50	0.144	≤0.4	PASS
2DH1	Ant2	Hop	0.385	970	0.373	≤0.4	PASS
2DH3	Ant2	Hop	1.631	160	0.261	≤0.4	PASS
2DH5	Ant2	Hop	2.878	80	0.23	≤0.4	PASS
3DH1	Ant2	Hop	0.385	920	0.354	≤0.4	PASS
3DH3	Ant2	Hop	1.631	200	0.326	≤0.4	PASS
3DH5	Ant2	Hop	2.878	80	0.23	≤0.4	PASS

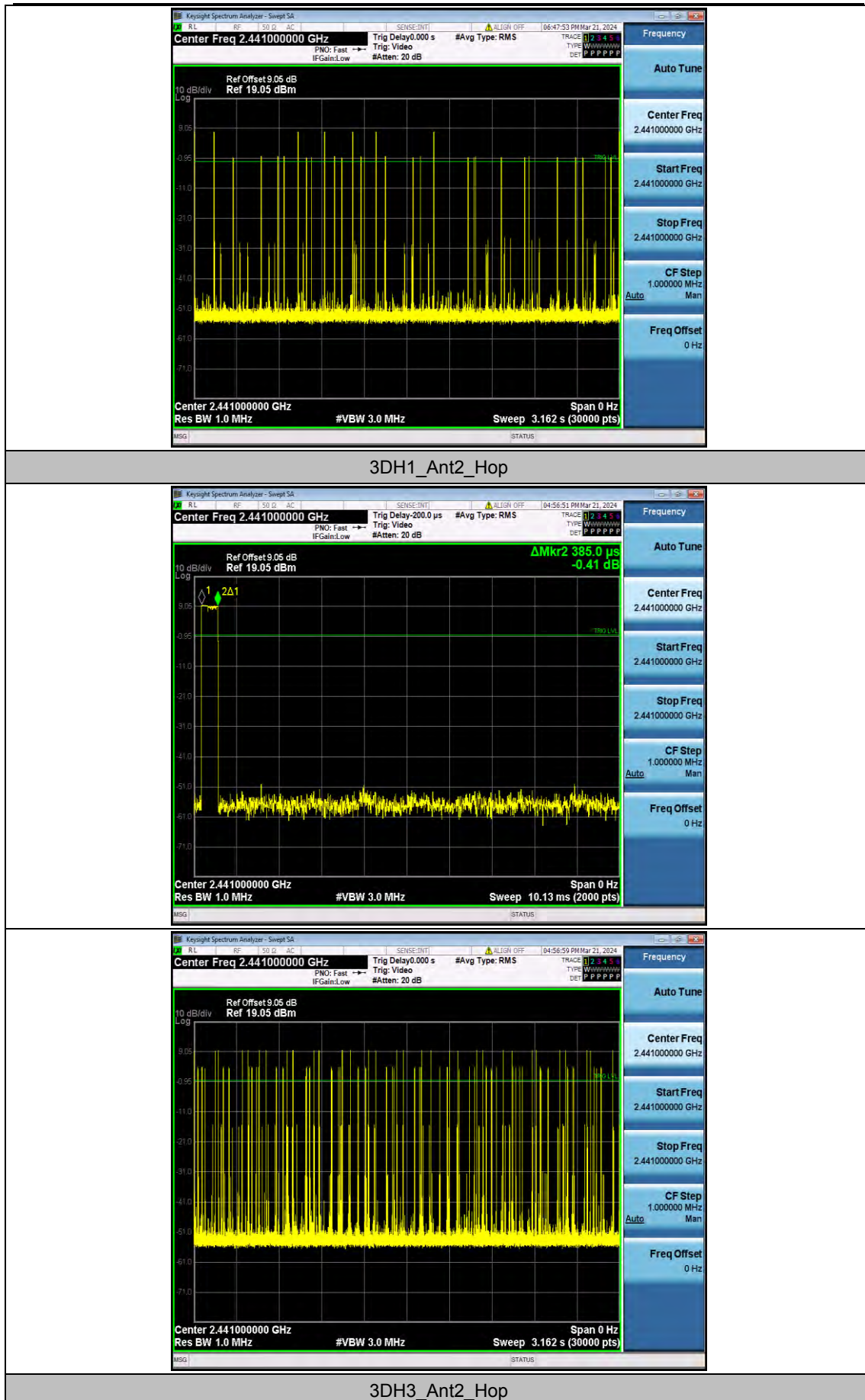
Test Graphs

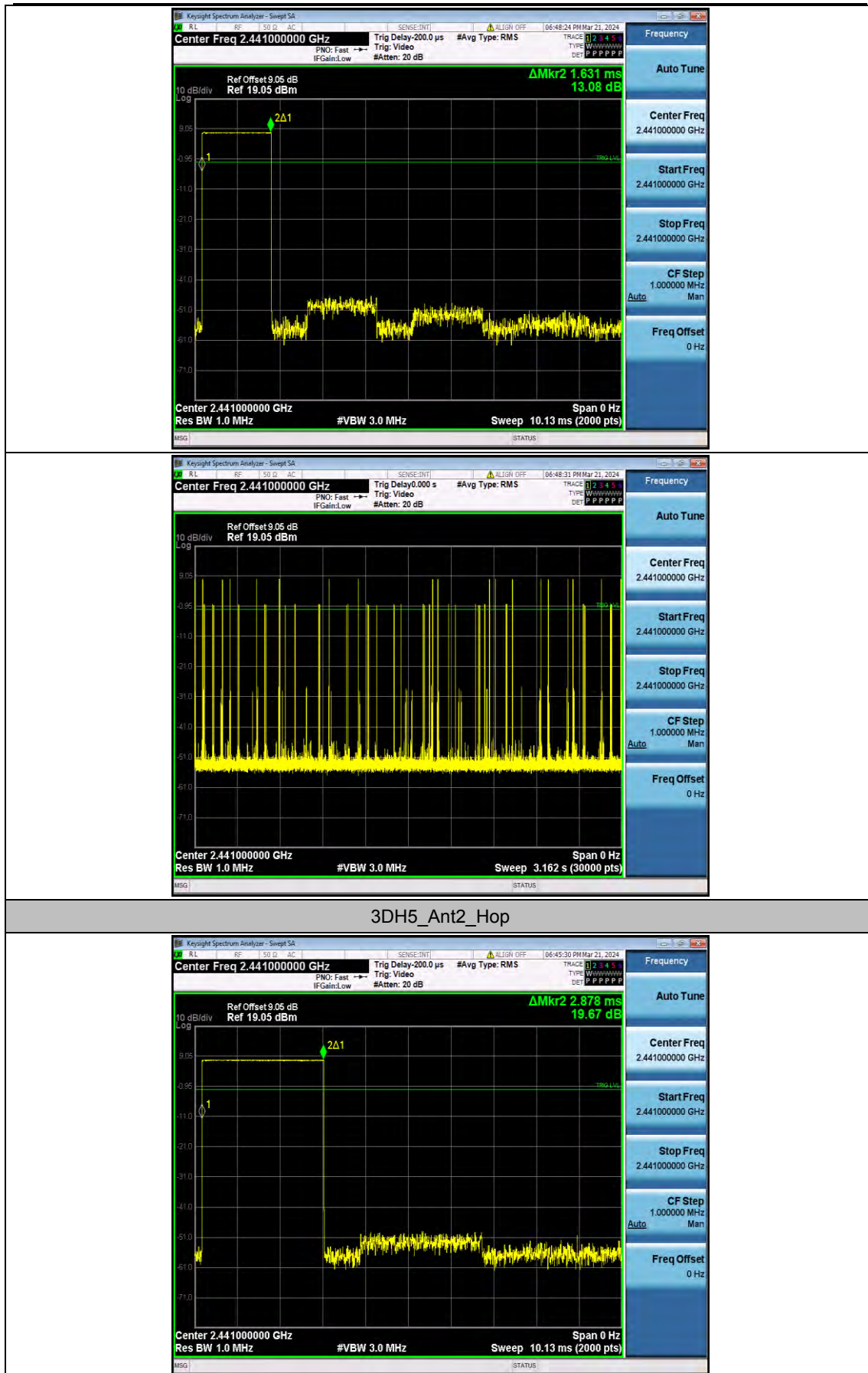


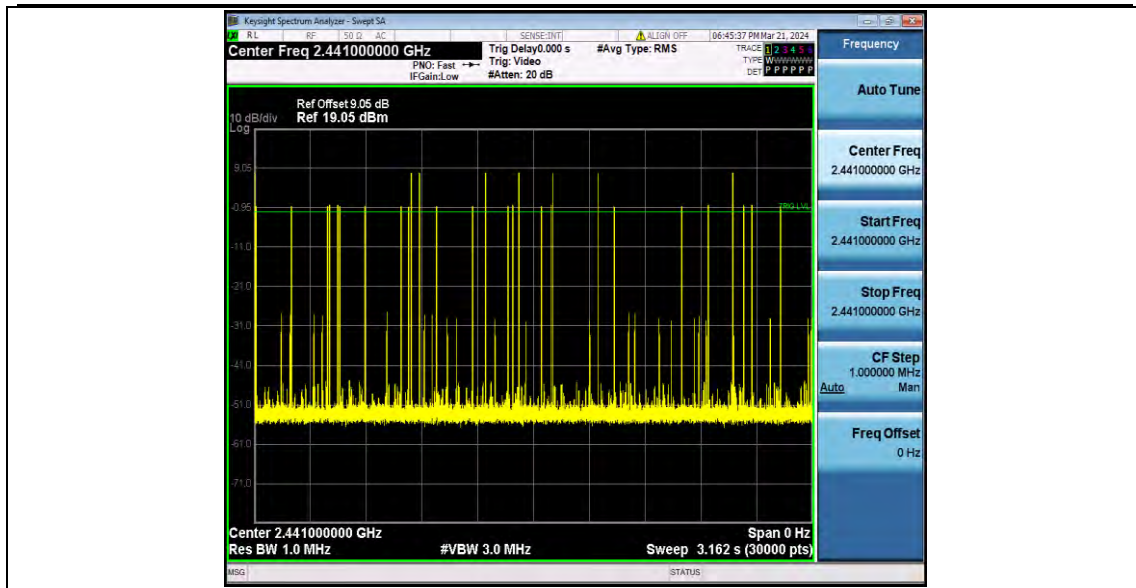










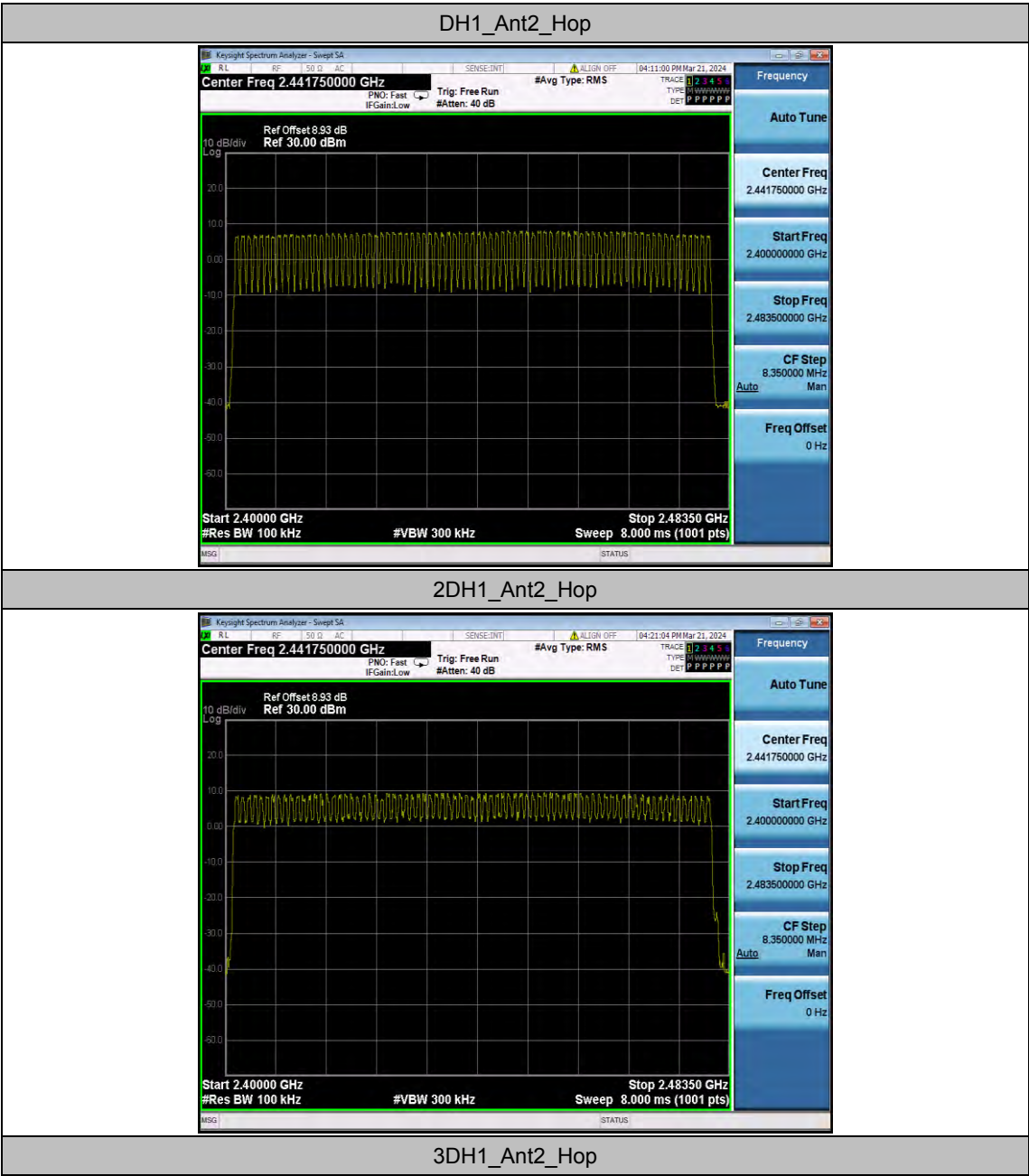


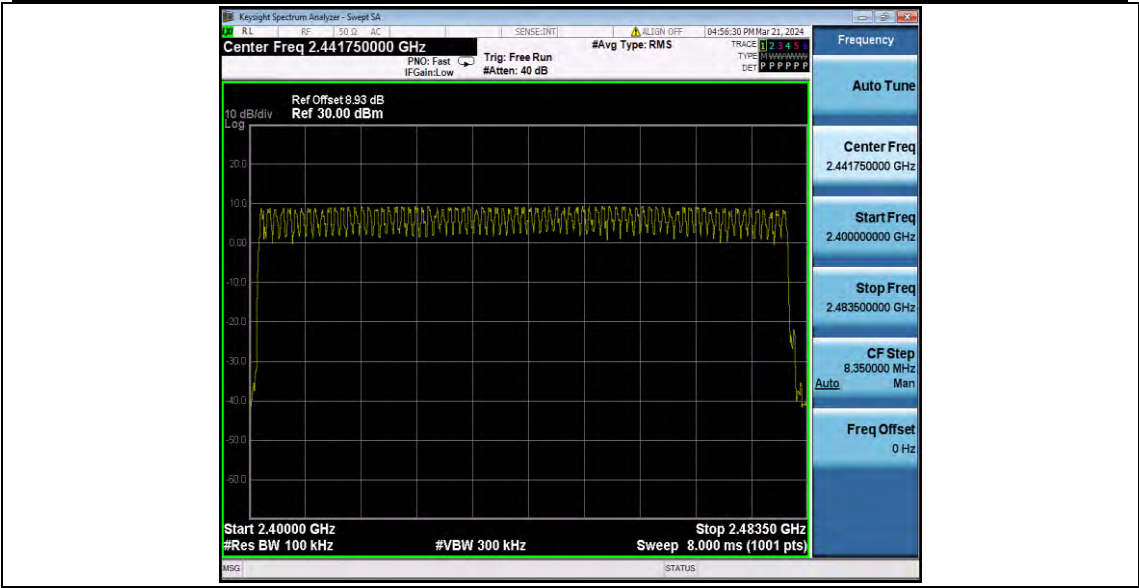
Appendix A.6: Number of hopping channels

Test Result

TestMode	Antenna	Freq(MHz)	Result[Num]	Limit[Num]	Verdict
DH1	Ant2	Hop	79	≥15	PASS
2DH1	Ant2	Hop	79	≥15	PASS
3DH1	Ant2	Hop	79	≥15	PASS

Test Graphs



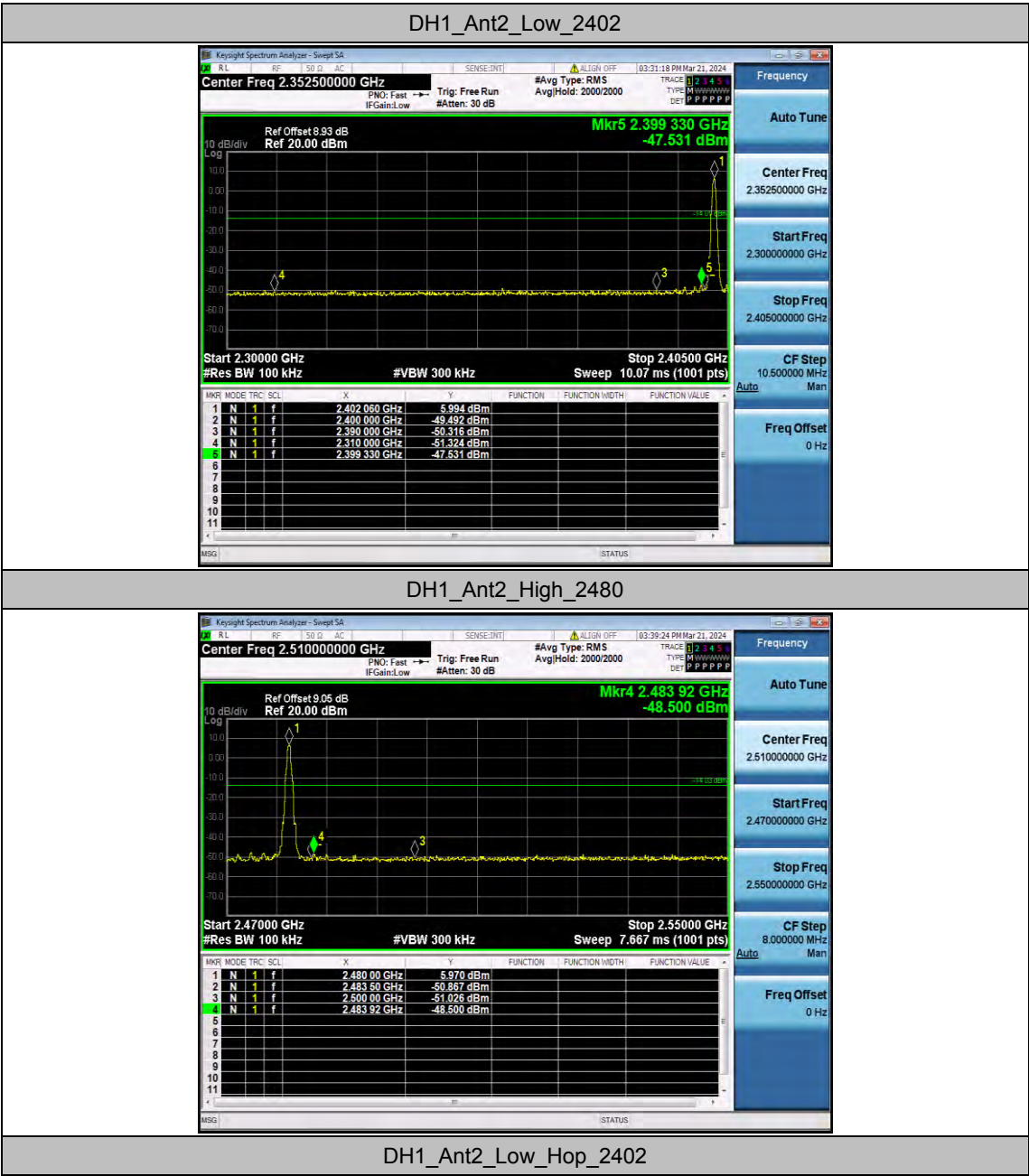


Appendix A.7: Band edge measurements

Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant2	Low	2402	5.99	-47.53	≤ -14.01	PASS
		High	2480	5.97	-48.5	≤ -14.03	PASS
		Low	Hop_2402	6.66	-48.83	≤ -13.34	PASS
		High	Hop_2480	7.28	-48.25	≤ -12.72	PASS
2DH1	Ant2	Low	2402	3.77	-47.06	≤ -16.23	PASS
		High	2480	3.90	-47.91	≤ -16.1	PASS
		Low	Hop_2402	8.58	-46.49	≤ -11.42	PASS
		High	Hop_2480	8.21	-48.88	≤ -11.79	PASS
3DH1	Ant2	Low	2402	4.00	-45.12	≤ -16	PASS
		High	2480	4.04	-47.55	≤ -15.96	PASS
		Low	Hop_2402	7.63	-49.26	≤ -12.37	PASS
		High	Hop_2480	7.73	-48.95	≤ -12.27	PASS

Test Graphs



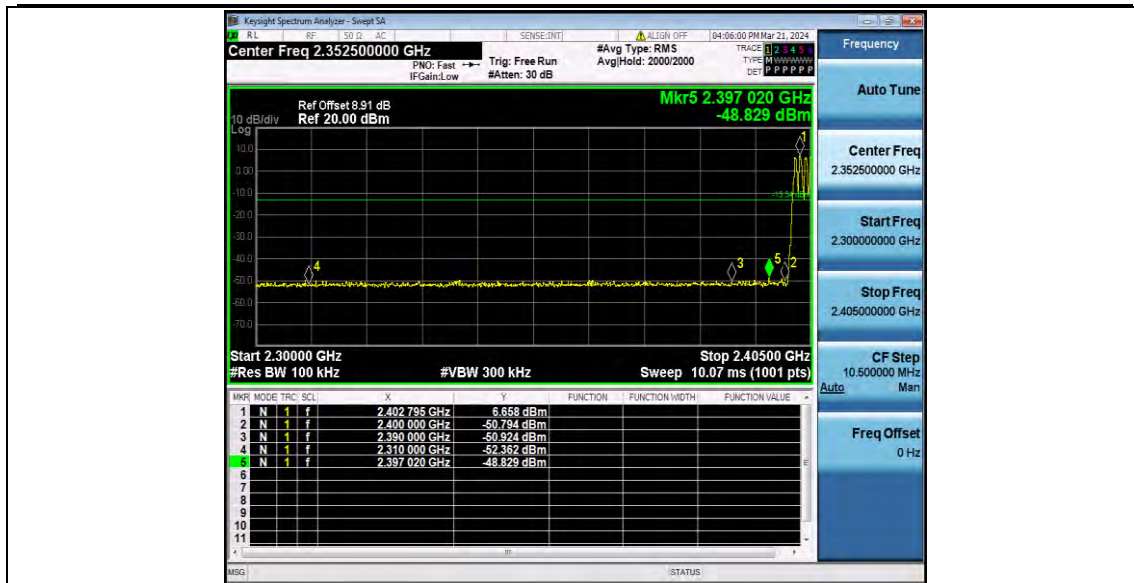
DH1_Ant2_High_2480

Frequency

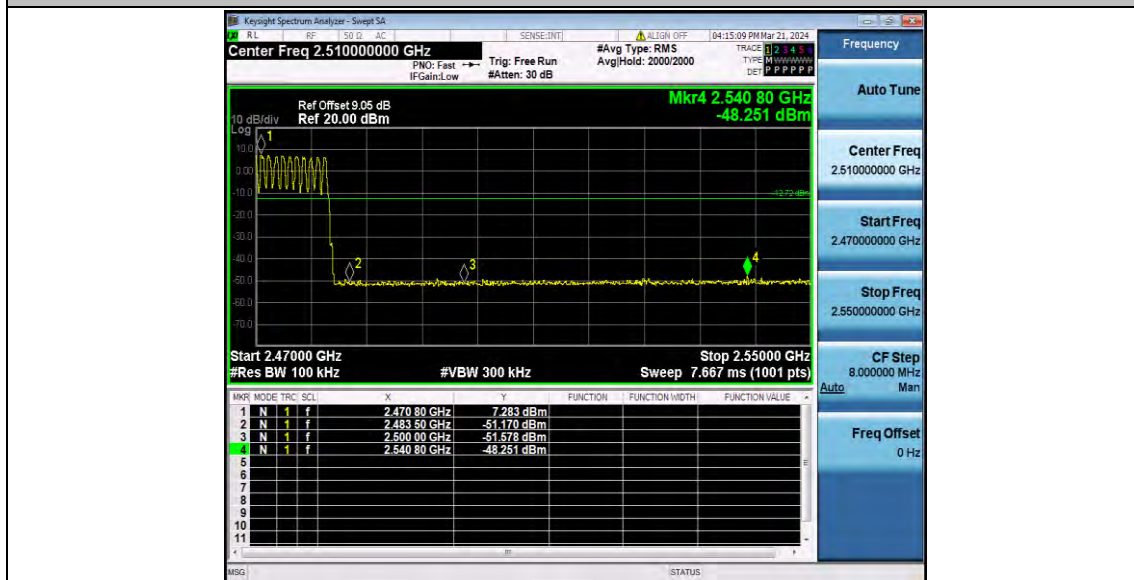
Auto Tune

Center Freq
2.510000000 GHzStart Freq
2.470000000 GHzStop Freq
2.550000000 GHzCF Step
8.000000 MHz
AutoFreq Offset
0 Hz

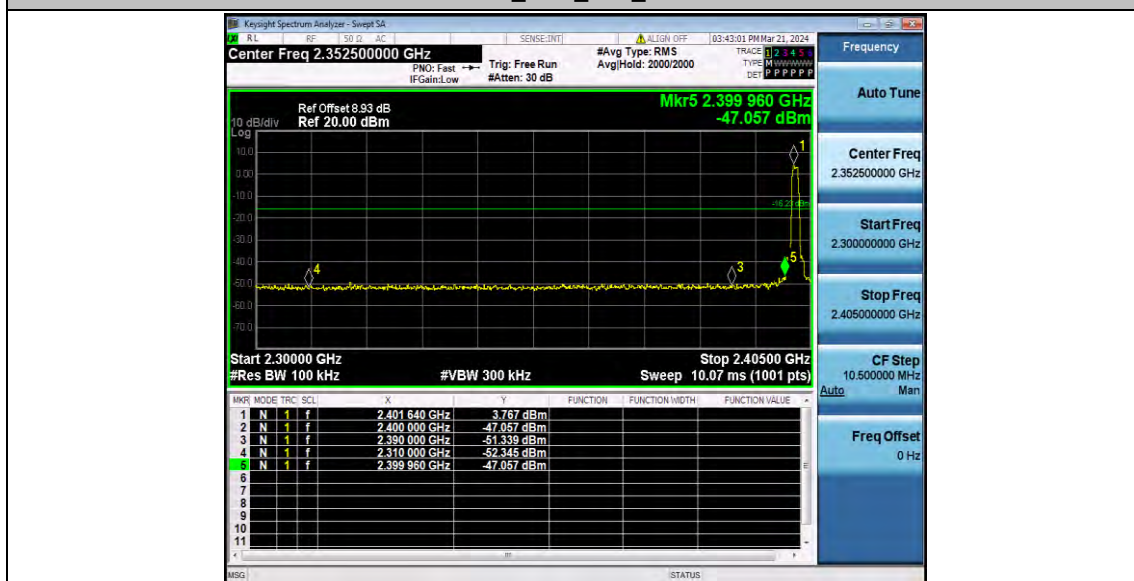
DH1_Ant2_Low_Hop_2402

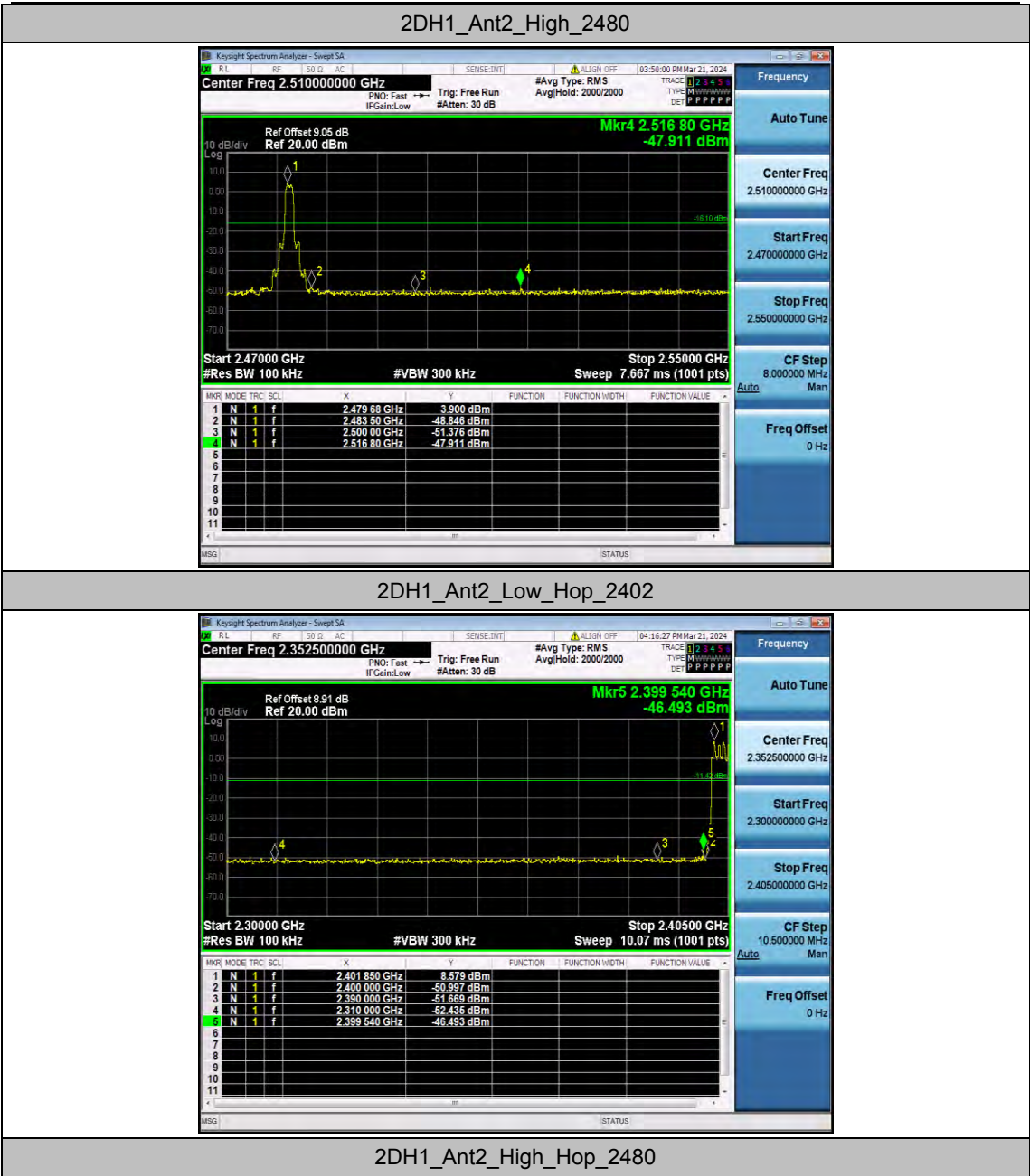


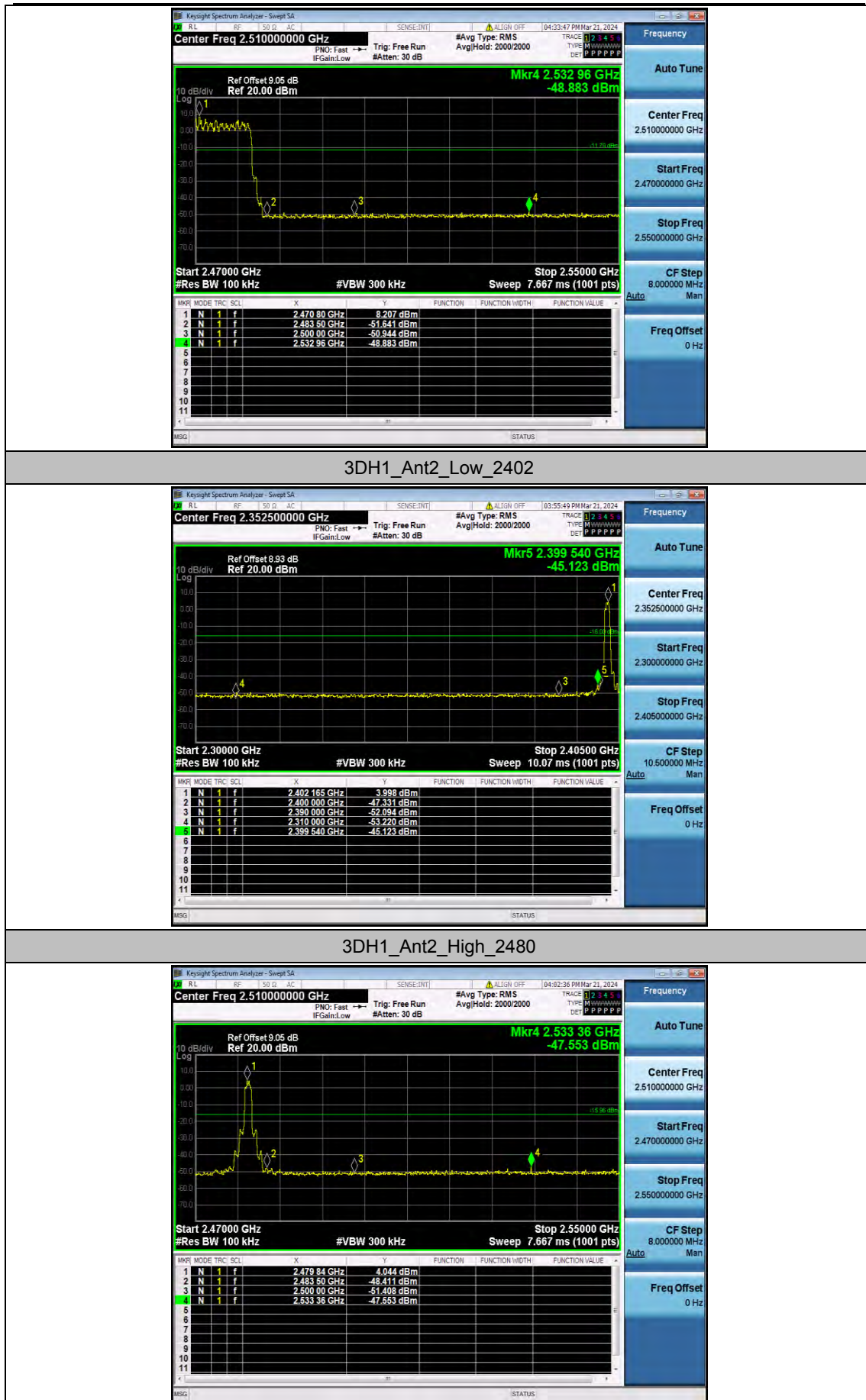
DH1_Ant2_High_Hop_2480

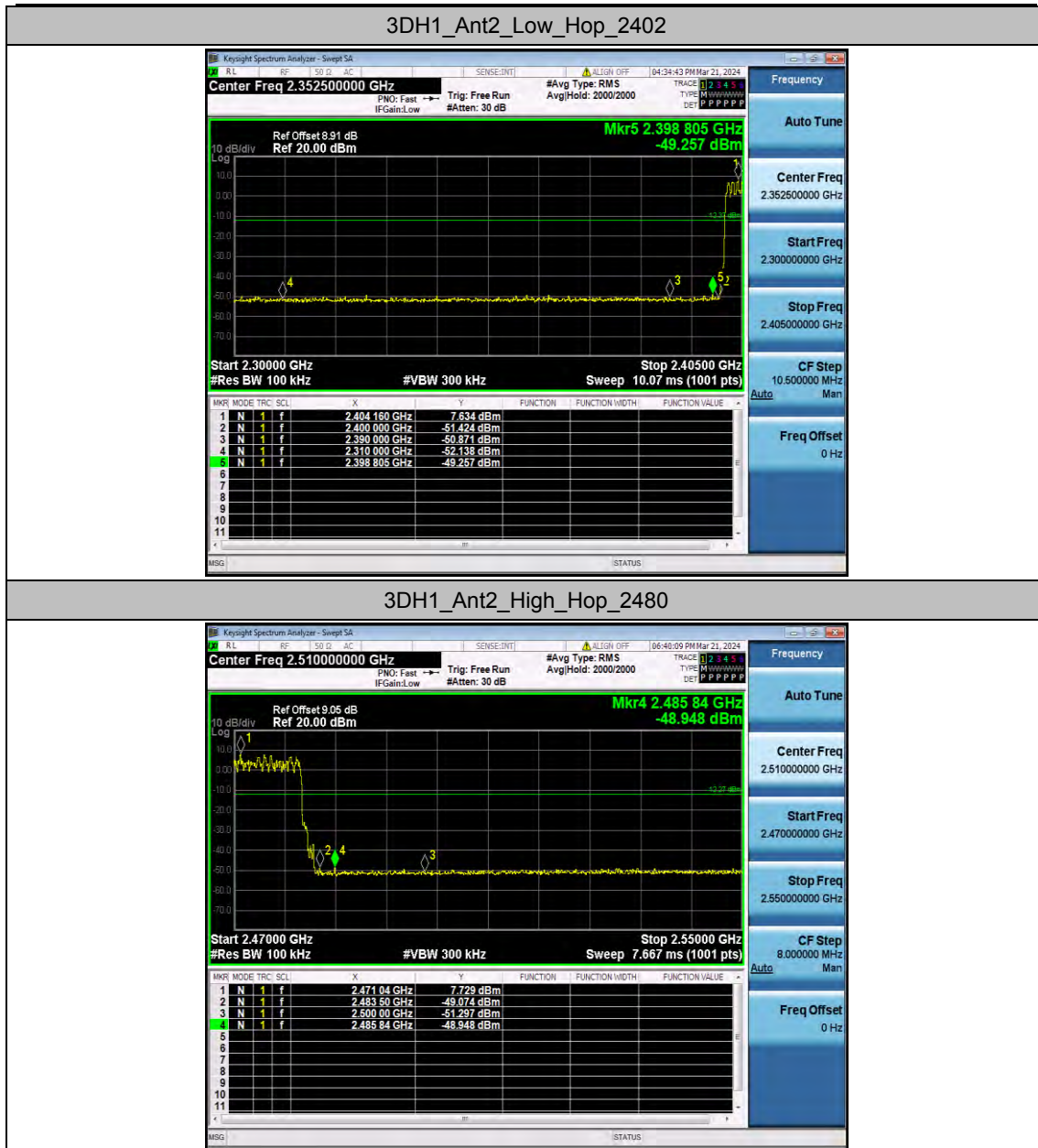


2DH1_Ant2_Low_2402







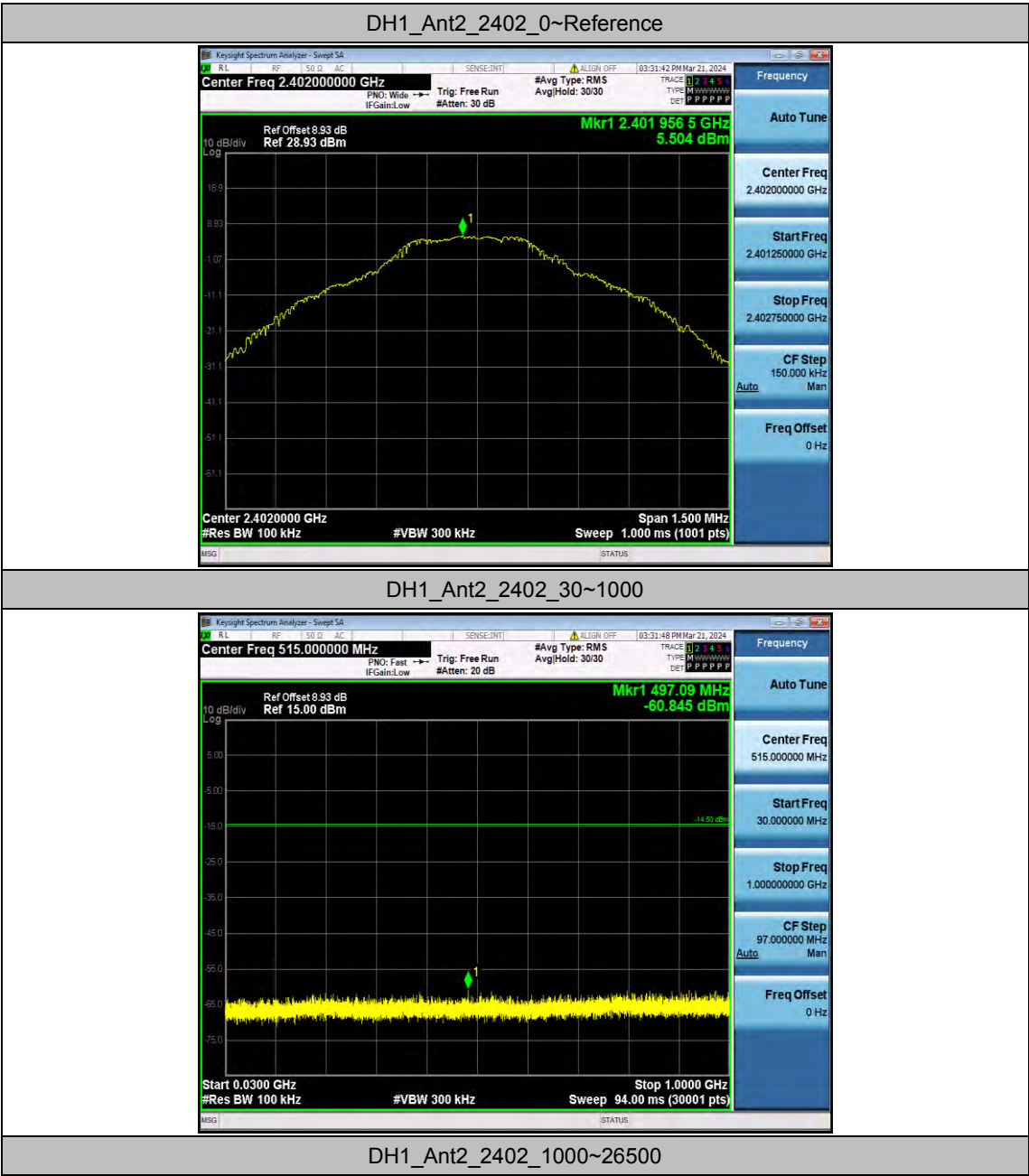


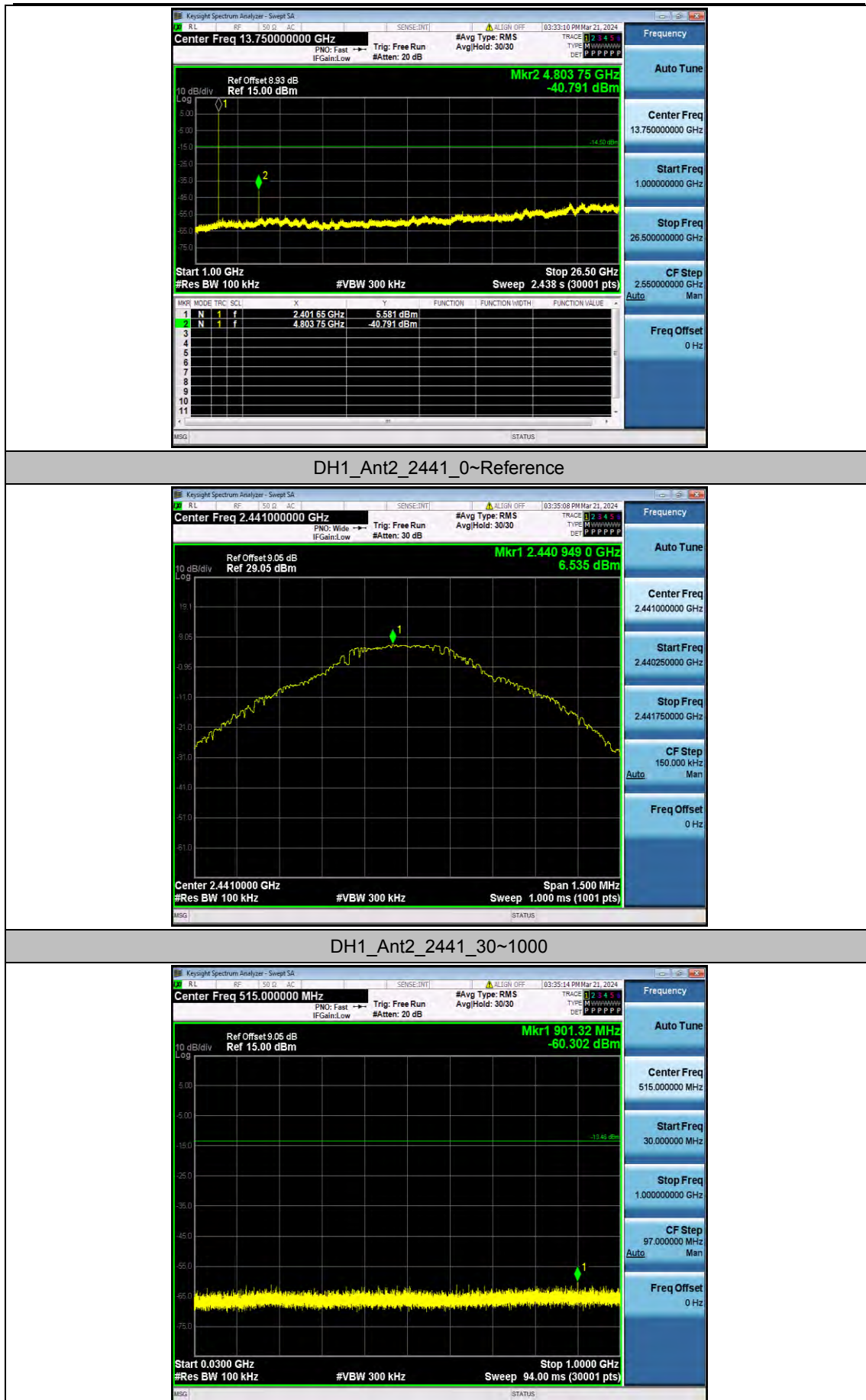
Appendix A.8: Conducted Spurious Emission

Test Result

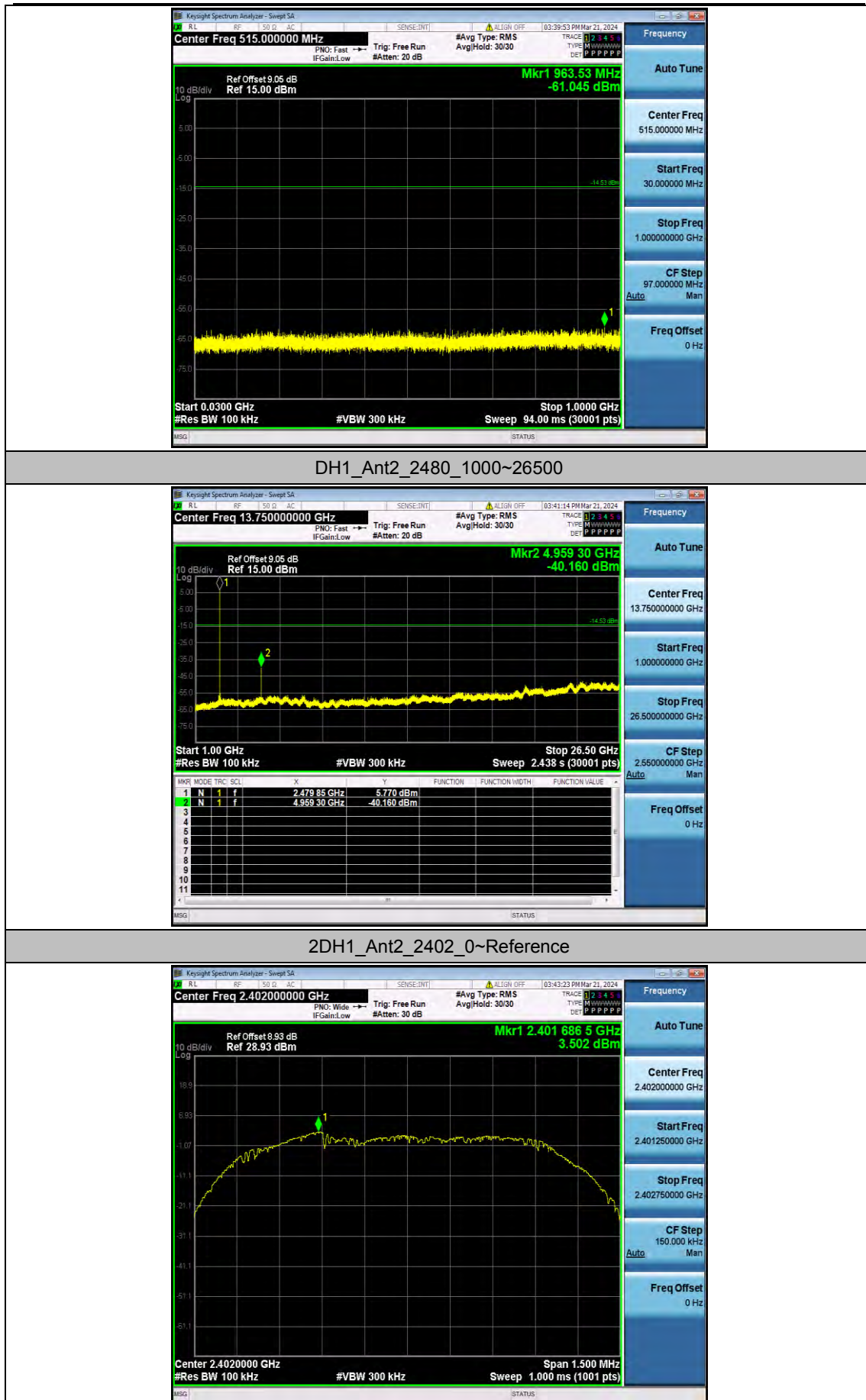
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant2	2402	Reference	5.50	5.50	---	PASS
			30~1000	5.50	-60.85	≤-14.5	PASS
			1000~26500	5.50	-40.79	≤-14.5	PASS
		2441	Reference	6.54	6.54	---	PASS
			30~1000	6.54	-60.3	≤-13.46	PASS
			1000~26500	6.54	-40.91	≤-13.46	PASS
		2480	Reference	5.47	5.47	---	PASS
			30~1000	5.47	-61.05	≤-14.53	PASS
			1000~26500	5.47	-40.16	≤-14.53	PASS
2DH1	Ant2	2402	Reference	3.50	3.50	---	PASS
			30~1000	3.50	-60.11	≤-16.5	PASS
			1000~26500	3.50	-45.66	≤-16.5	PASS
		2441	Reference	5.02	5.02	---	PASS
			30~1000	5.02	-59.77	≤-14.98	PASS
			1000~26500	5.02	-47.34	≤-14.98	PASS
		2480	Reference	3.58	3.58	---	PASS
			30~1000	3.58	-60.6	≤-16.42	PASS
			1000~26500	3.58	-48.33	≤-16.42	PASS
3DH1	Ant2	2402	Reference	3.49	3.49	---	PASS
			30~1000	3.49	-61.08	≤-16.51	PASS
			1000~26500	3.49	-44.93	≤-16.51	PASS
		2441	Reference	5.00	5.00	---	PASS
			30~1000	5.00	-60.52	≤-15	PASS
			1000~26500	5.00	-47.92	≤-15	PASS
		2480	Reference	3.57	3.57	---	PASS
			30~1000	3.57	-60.63	≤-16.43	PASS
			1000~26500	3.57	-48.26	≤-16.43	PASS

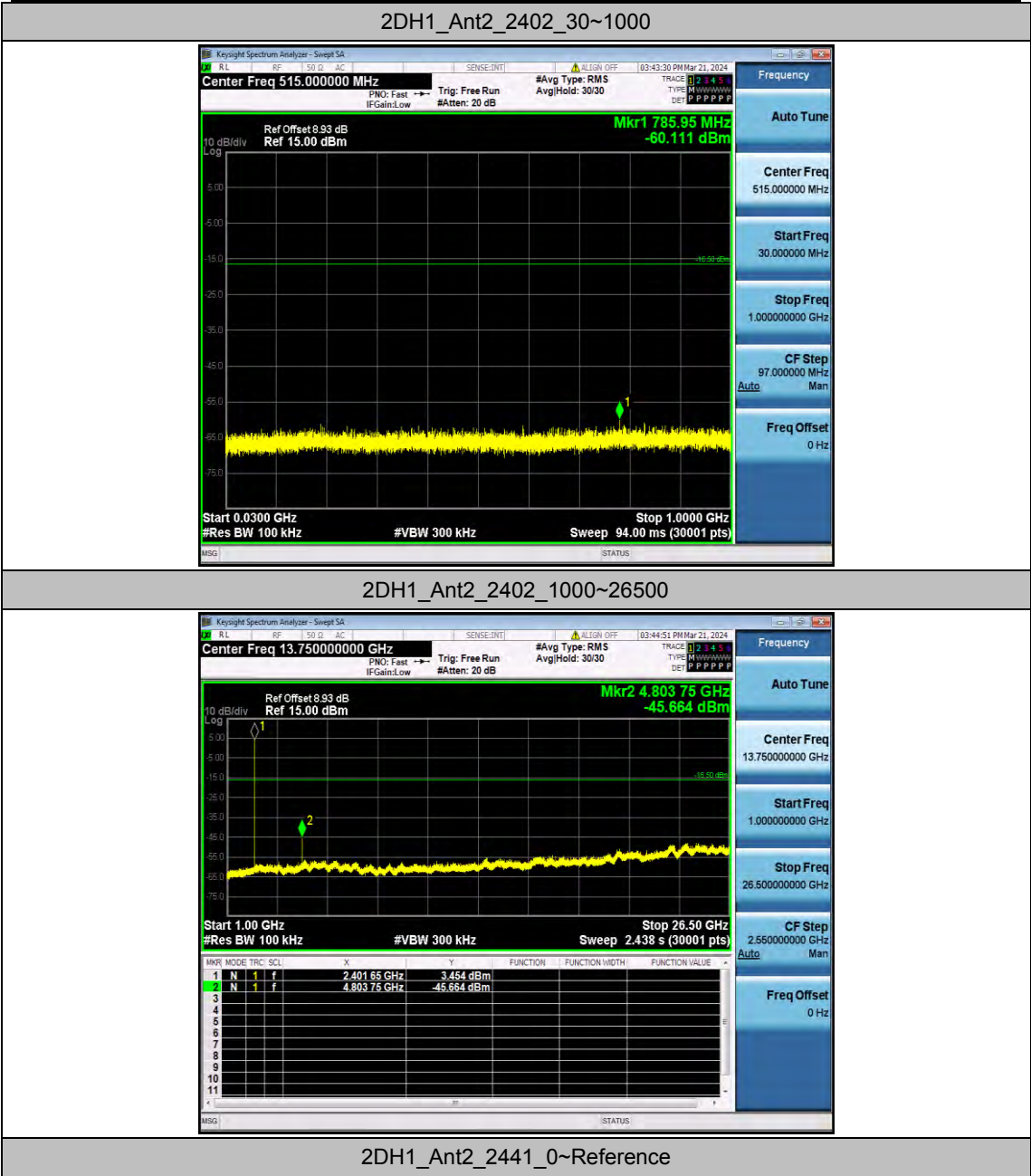
Test Graphs

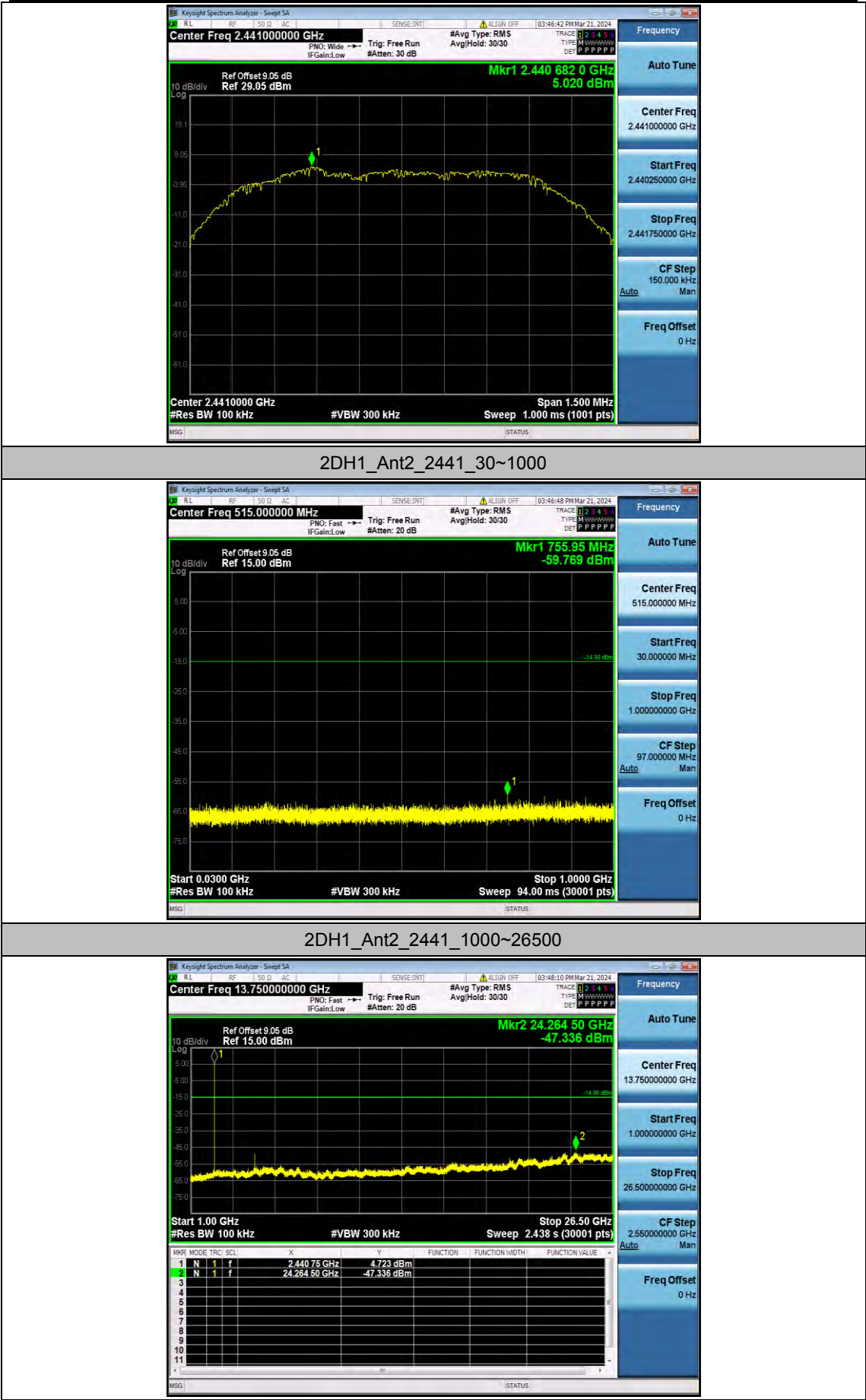


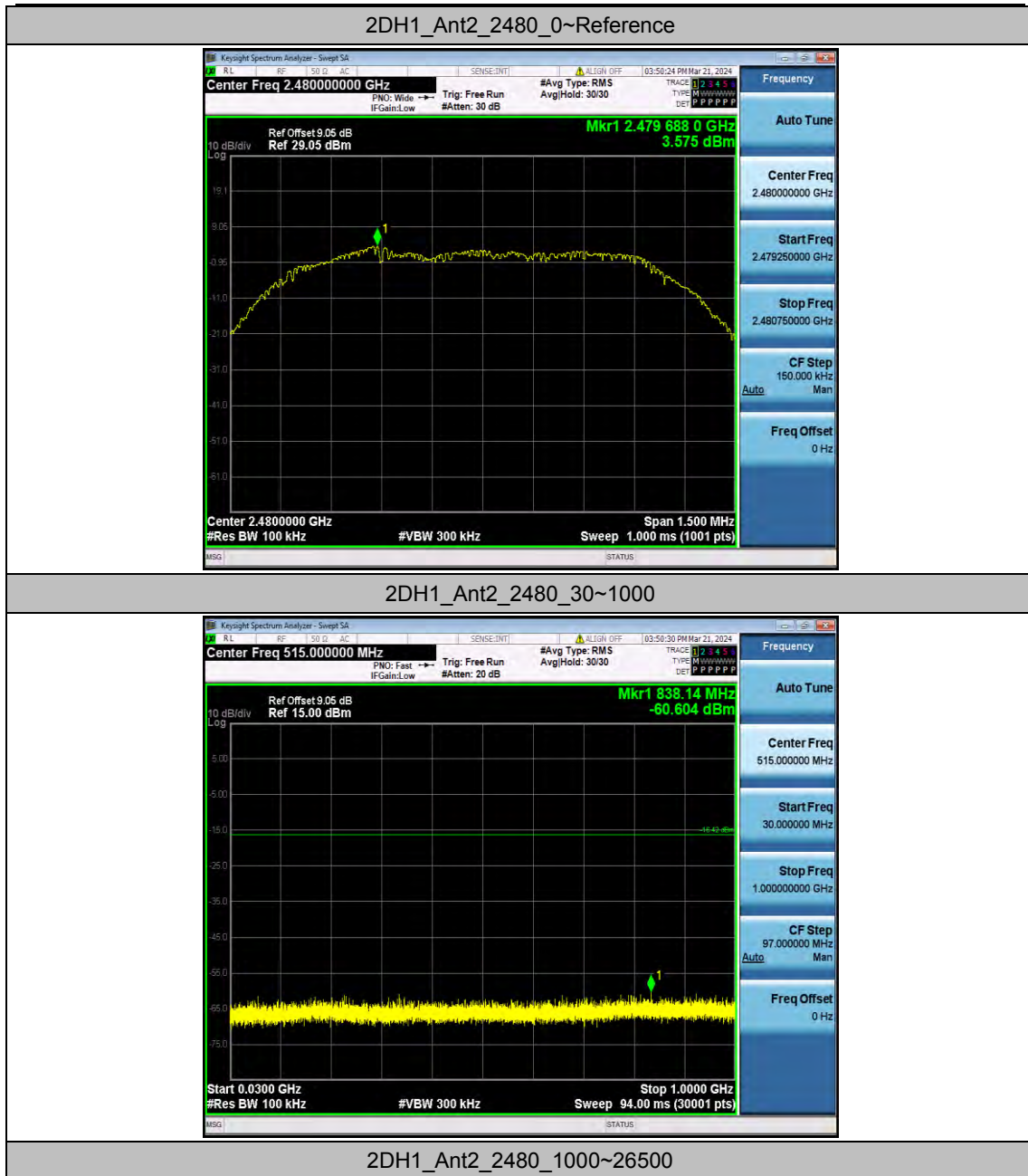






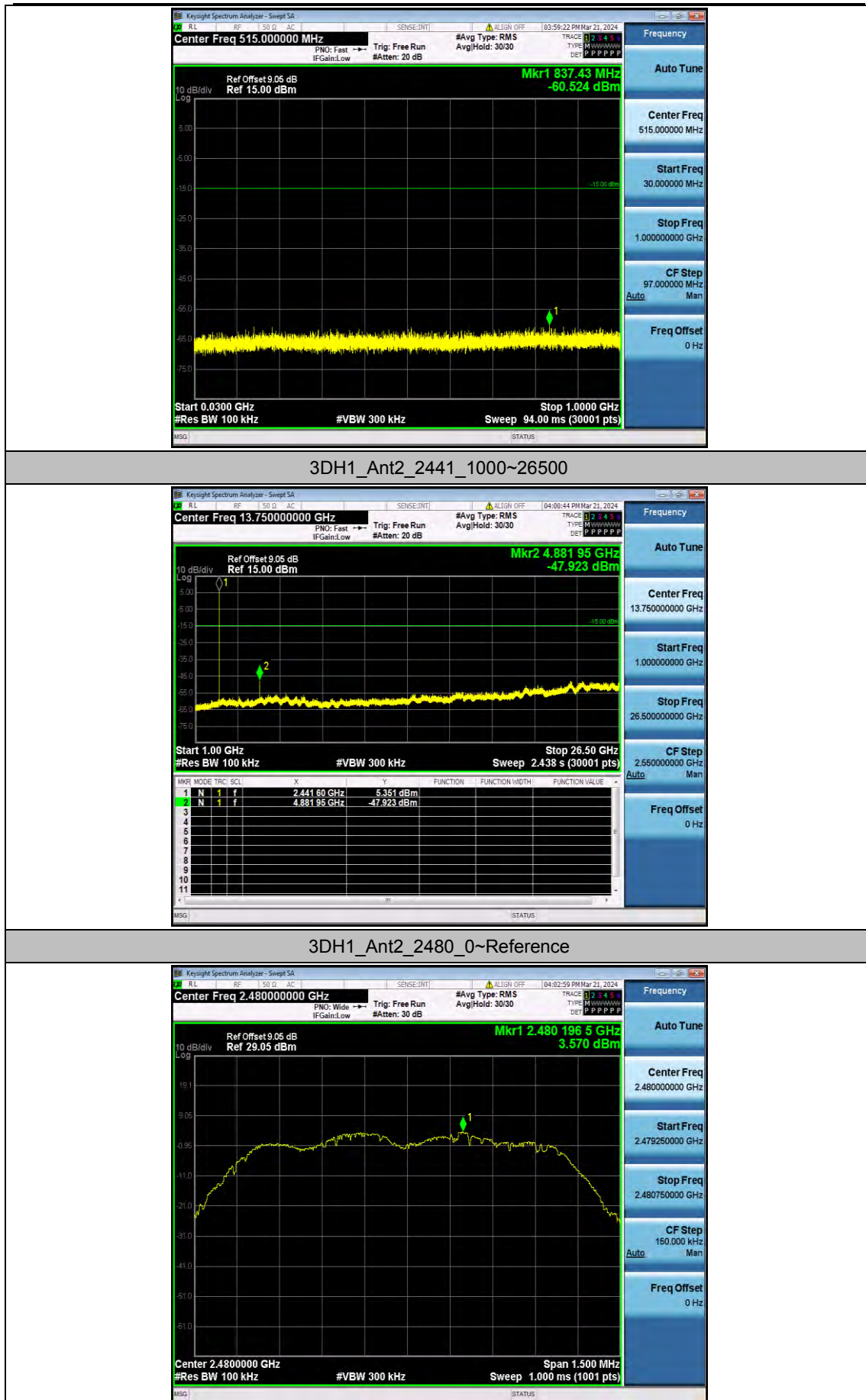


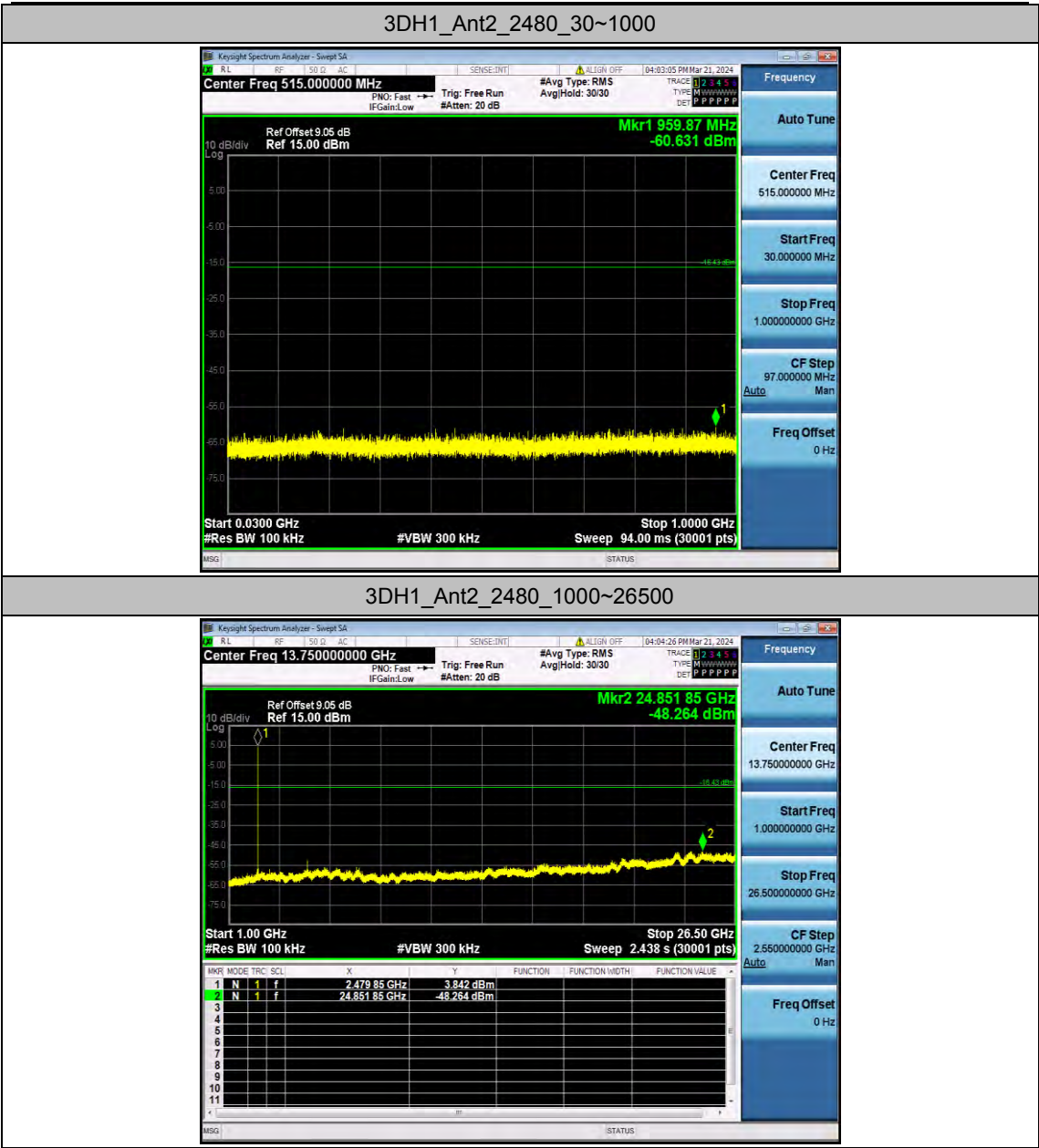












Appendix A.9: Emissions in Restricted Bands

Test Result

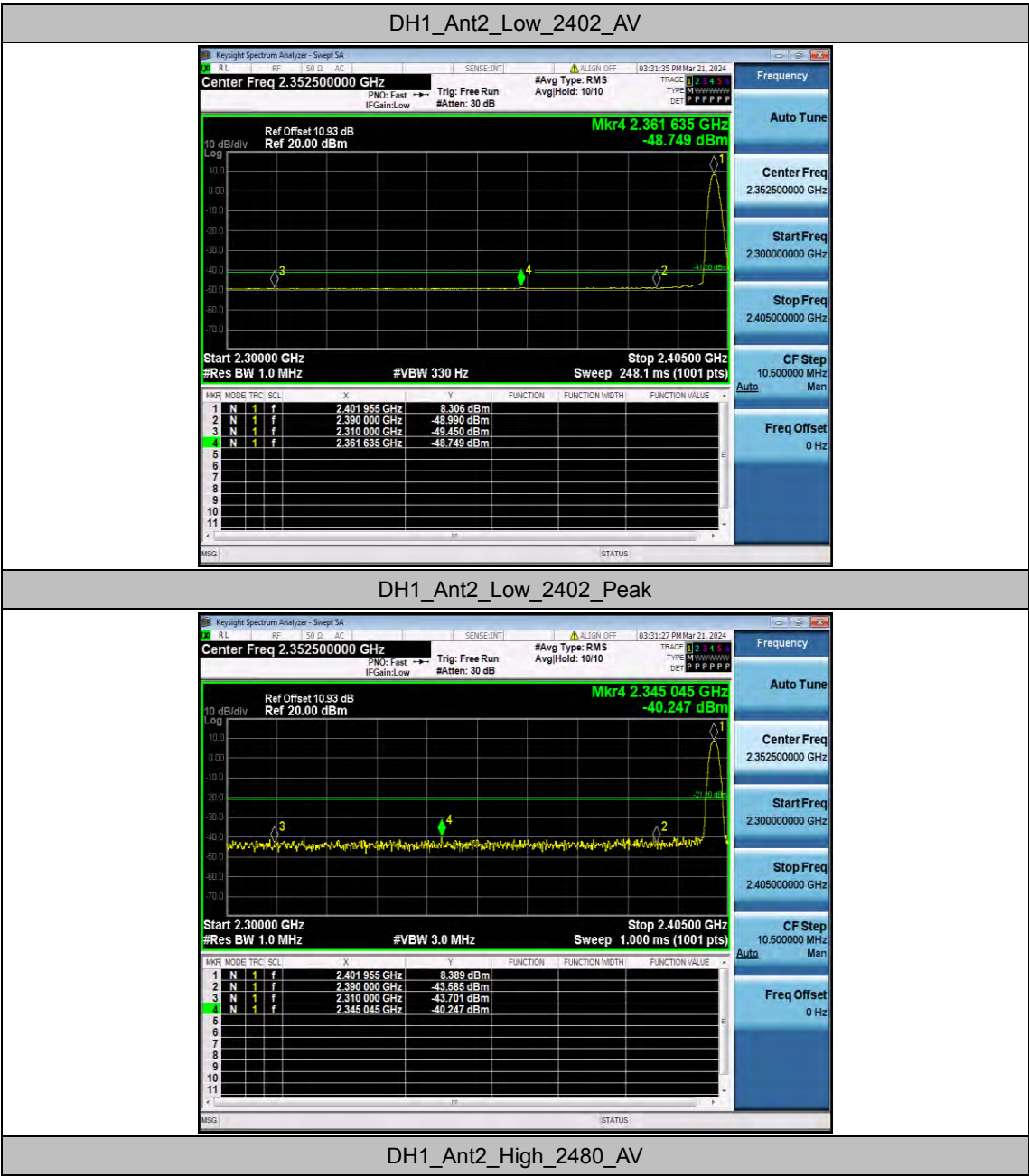
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH1	Ant2	Low	2402	AV	2310.000	-49.45	≤-41.20	45.75	≤54	PASS
				AV	2361.635	-48.75	≤-41.20	46.45	≤54	PASS
				AV	2390.000	-48.99	≤-41.20	46.21	≤54	PASS
				Peak	2310.000	-43.7	≤-21.20	51.50	≤74	PASS
				Peak	2345.045	-40.25	≤-21.20	54.95	≤74	PASS
				Peak	2390.000	-43.59	≤-21.20	51.61	≤74	PASS
		High	2480	AV	2483.500	-46.32	≤-41.20	48.88	≤54	PASS
				AV	2483.520	-46.32	≤-41.20	48.88	≤54	PASS
				AV	2500.000	-48.68	≤-41.20	46.52	≤54	PASS
				Peak	2483.500	-44.02	≤-21.20	51.18	≤74	PASS
				Peak	2498.240	-40.18	≤-21.20	55.02	≤74	PASS
				Peak	2500.000	-44.3	≤-21.20	50.90	≤74	PASS
2DH1	Ant2	Low	2402	AV	2310.000	-49.43	≤-41.20	45.77	≤54	PASS
				AV	2388.095	-48.81	≤-41.20	46.39	≤54	PASS
				AV	2390.000	-48.97	≤-41.20	46.23	≤54	PASS
				Peak	2310.000	-43.15	≤-21.20	52.05	≤74	PASS
				Peak	2343.890	-39.97	≤-21.20	55.23	≤74	PASS
				Peak	2390.000	-43.62	≤-21.20	51.58	≤74	PASS
		High	2480	AV	2483.500	-44.39	≤-41.20	50.81	≤54	PASS
				AV	2483.520	-44.39	≤-41.20	50.81	≤54	PASS
				AV	2500.000	-48.6	≤-41.20	46.60	≤54	PASS
				Peak	2483.500	-42.25	≤-21.20	52.95	≤74	PASS
				Peak	2483.840	-38.99	≤-21.20	56.21	≤74	PASS
				Peak	2500.000	-43.39	≤-21.20	51.81	≤74	PASS
3DH1	Ant2	Low	2402	AV	2310.000	-49.31	≤-41.20	45.89	≤54	PASS
				AV	2389.985	-48.82	≤-41.20	46.38	≤54	PASS
				AV	2390.000	-48.82	≤-41.20	46.38	≤54	PASS
				Peak	2310.000	-43.26	≤-21.20	51.94	≤74	PASS
				Peak	2341.475	-39.77	≤-21.20	55.43	≤74	PASS
				Peak	2390.000	-45.01	≤-21.20	50.19	≤74	PASS
		High	2480	AV	2483.500	-44.23	≤-41.20	50.97	≤54	PASS
				AV	2483.520	-44.23	≤-41.20	50.97	≤54	PASS
				AV	2500.000	-48.59	≤-41.20	46.61	≤54	PASS
				Peak	2483.500	-42.59	≤-21.20	52.61	≤74	PASS
				Peak	2484.080	-39.32	≤-21.20	55.88	≤74	PASS

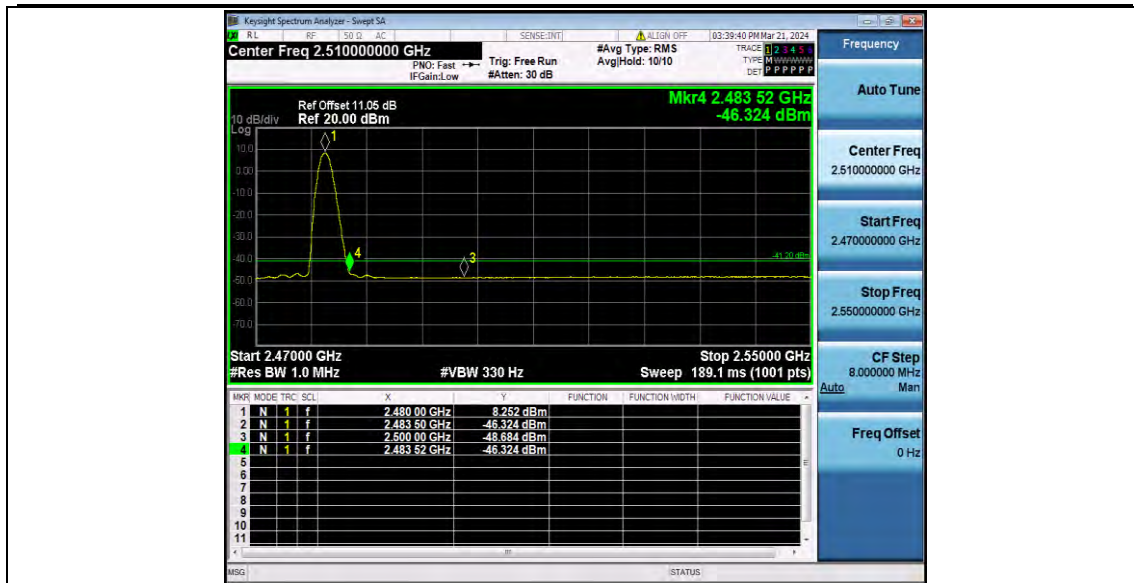
				Peak	2500.000	-42.91	≤ -21.20	52.29	≤ 74	PASS
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Note:

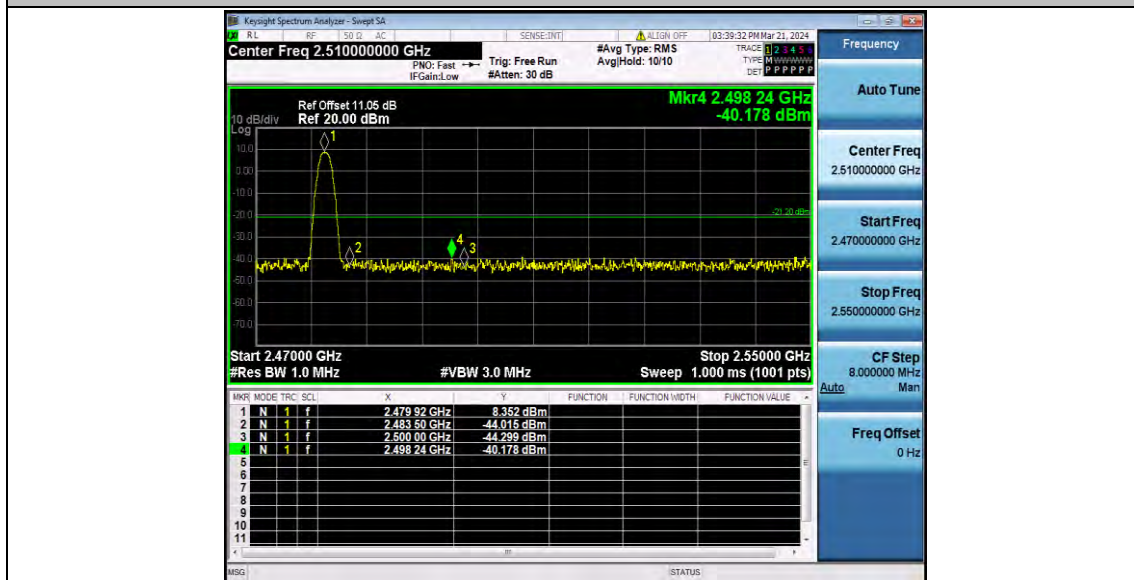
1. The Antenna Gain is compensated in the graph.
2. The Duty Cycle Factor and RBW Factor is compensated in the graph.
3. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

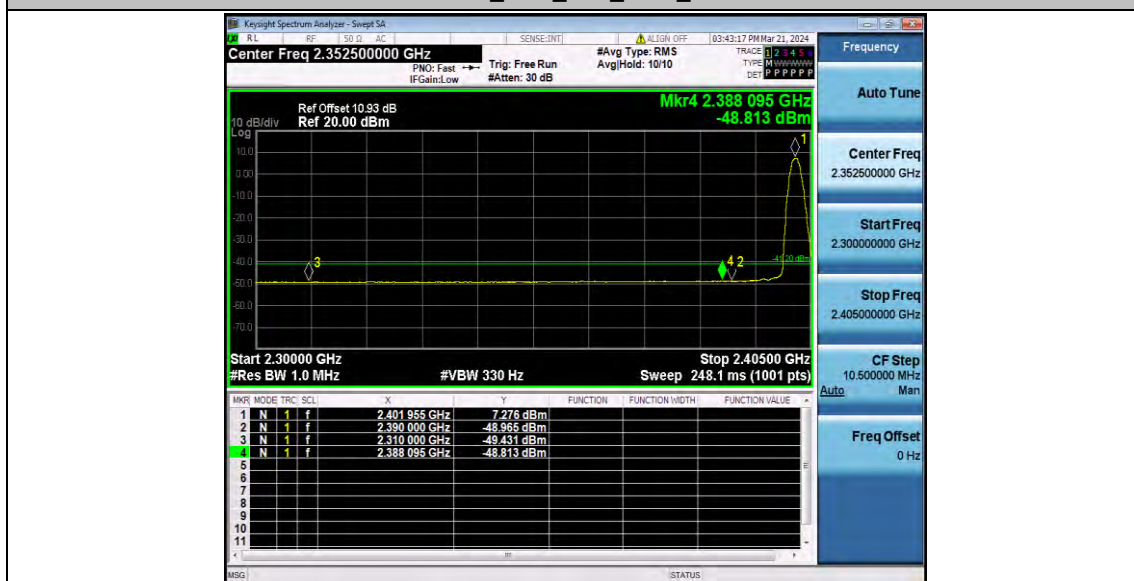


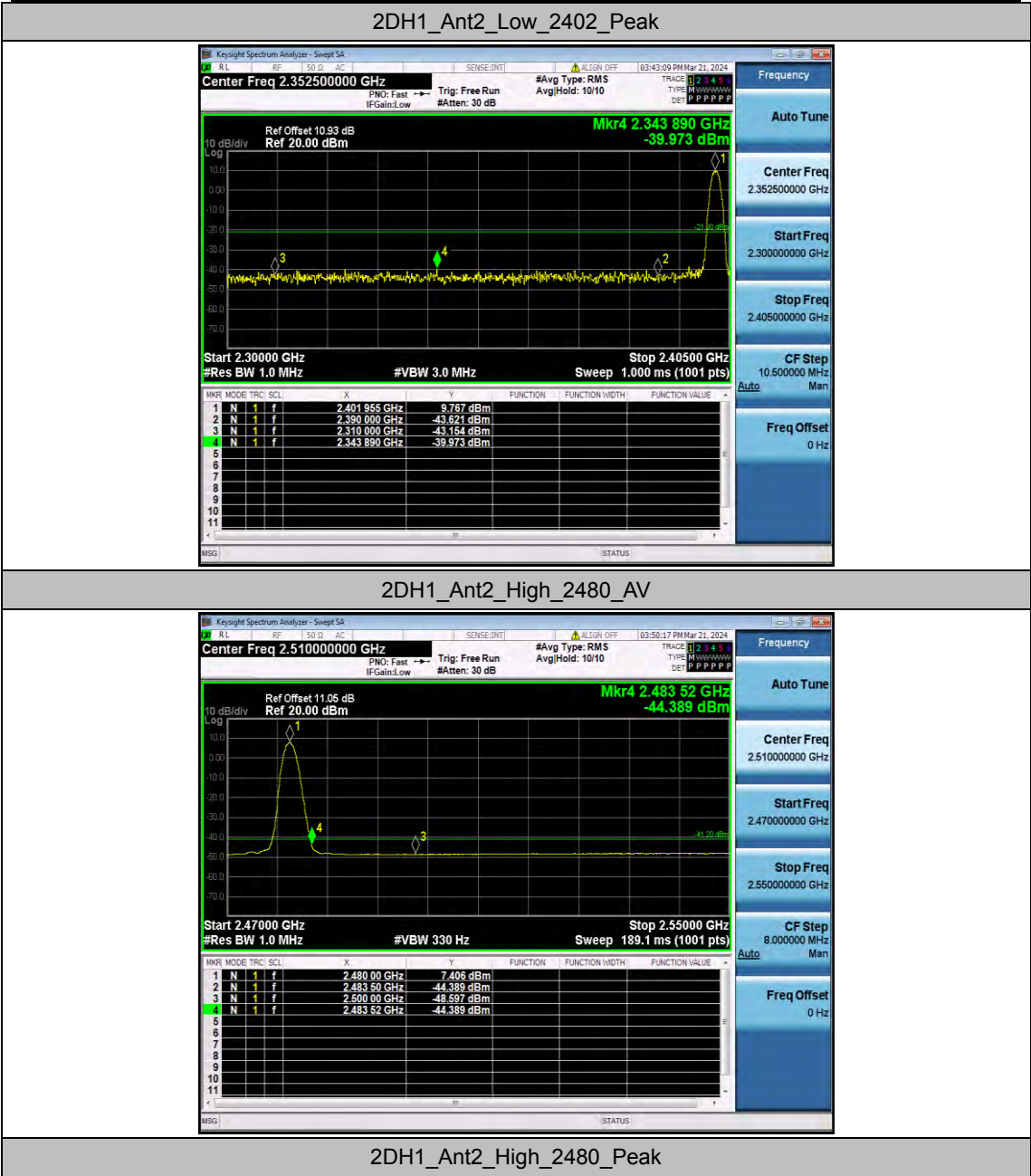


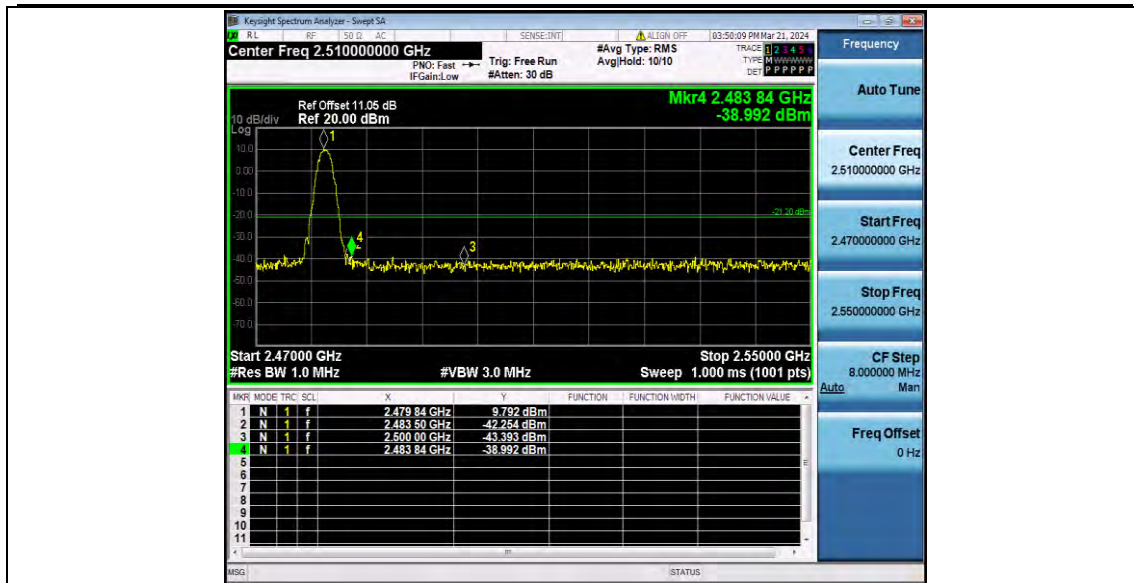
DH1_Ant2_High_2480_Peak



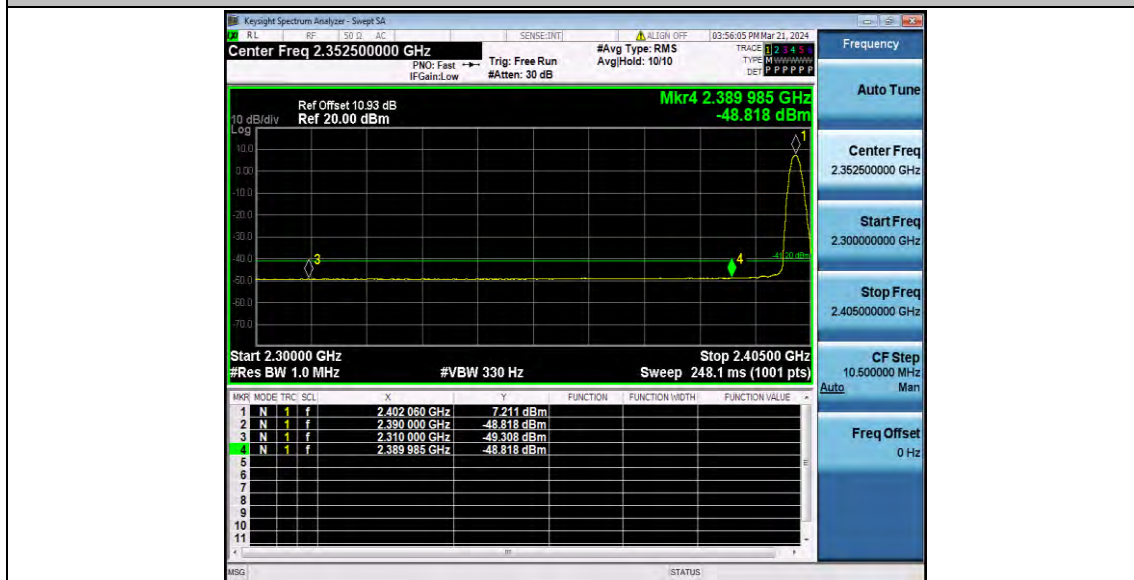
2DH1_Ant2_Low_2402_AV



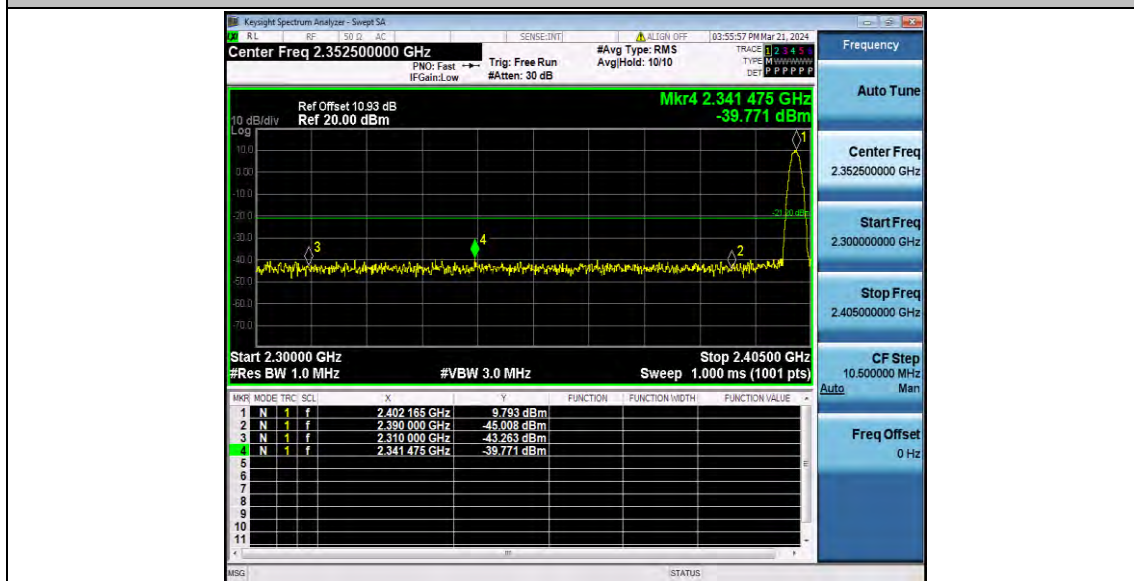


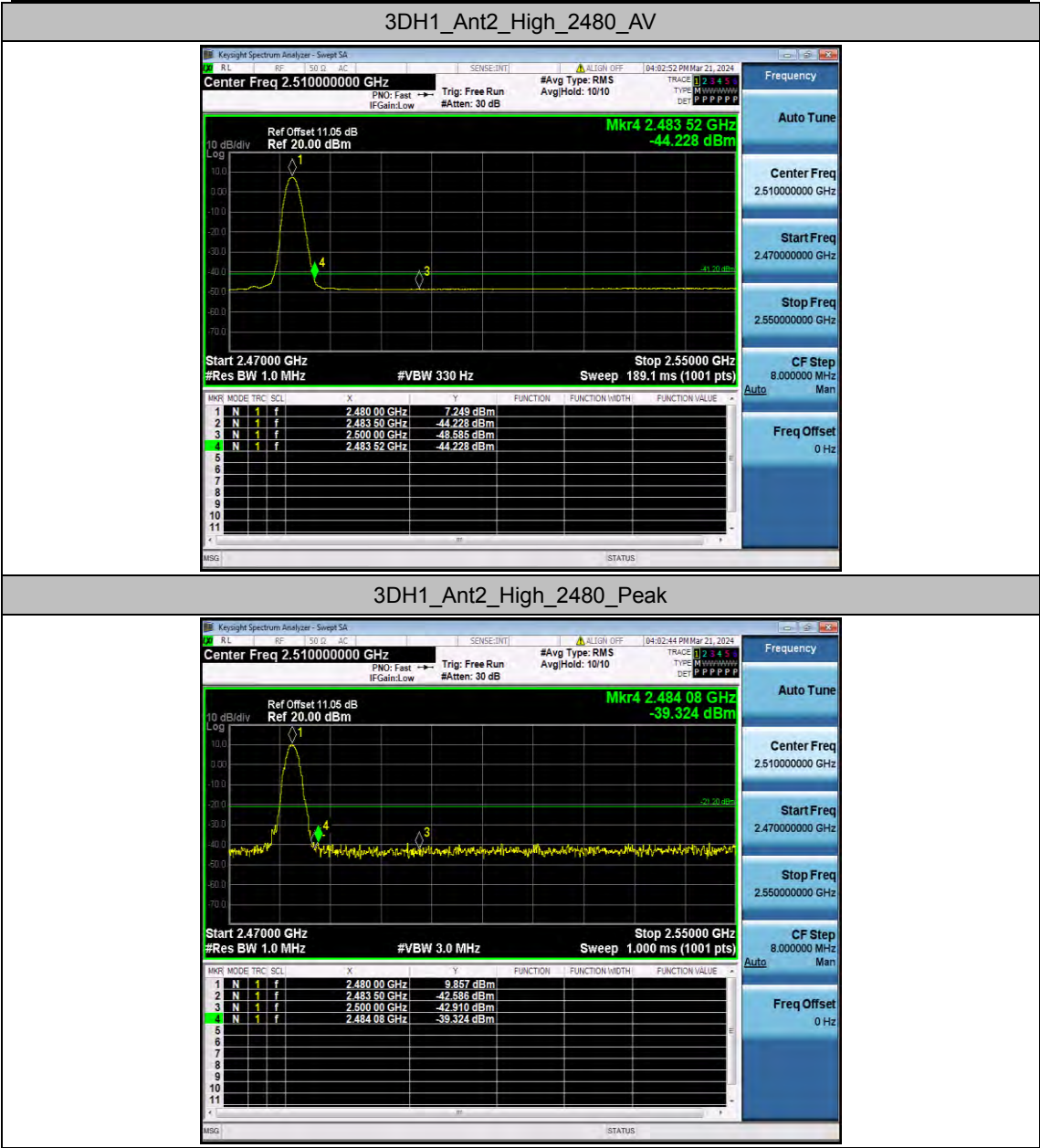


3DH1_Ant2_Low_2402_AV



3DH1_Ant2_Low_2402_Peak





3DH1_Ant2_High_2480_Peak

Frequency

Auto Tune

Center Freq
2.510000000 GHzStart Freq
2.470000000 GHzStop Freq
2.550000000 GHzCF Step
8.000000 MHz
ManFreq Offset
0 Hz