

Case No. : <u>CTA24051100401</u>	
Ambient Condition: <u>24</u> °C, <u>50</u> %RH	
According Standard: ■Part15C	
Test Date: <u>2024.5.13</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	0.879	2401.526	2402.405	---	---
		2441	0.882	2440.526	2441.408	---	---
		2480	0.939	2479.517	2480.456	---	---
2DH1	Ant1	2402	1.425	2401.250	2402.675	---	---
		2441	1.401	2440.268	2441.669	---	---
		2480	1.416	2479.259	2480.675	---	---
3DH1	Ant1	2402	1.419	2401.262	2402.681	---	---
		2441	1.392	2440.283	2441.675	---	---
		2480	1.419	2479.250	2480.669	---	---

Test Graphs

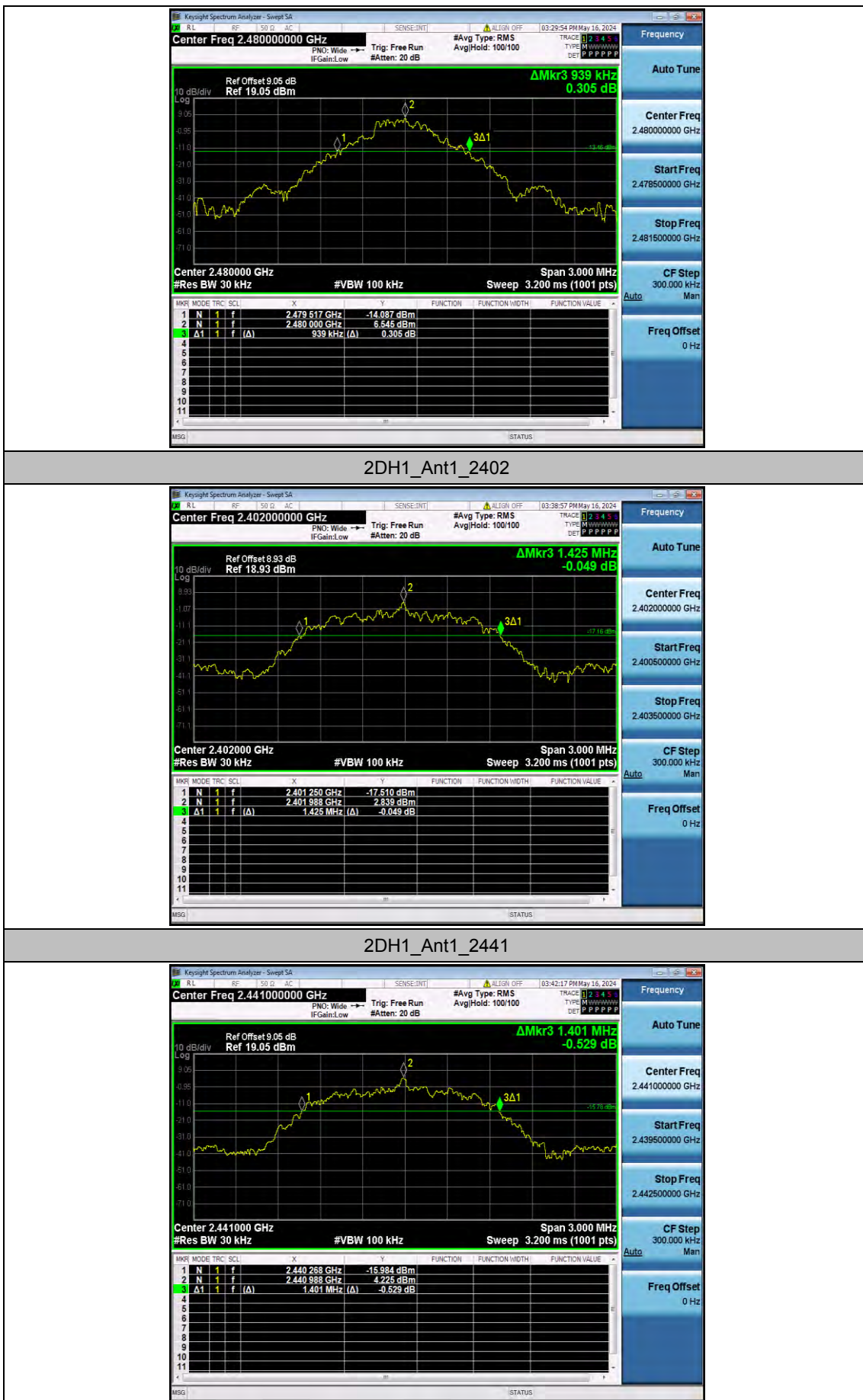
DH1_Ant1_2402



DH1_Ant1_2441



DH1_Ant1_2480



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	0.86040	2401.5447	2402.4051	---	---
		2441	0.86302	2440.5432	2441.4063	---	---
		2480	0.85479	2479.5475	2480.4022	---	---
2DH1	Ant1	2402	1.3460	2401.2996	2402.6456	---	---
		2441	1.3381	2440.3035	2441.6416	---	---
		2480	1.3458	2479.2945	2480.6403	---	---
3DH1	Ant1	2402	1.3461	2401.3047	2402.6508	---	---
		2441	1.3416	2440.3053	2441.6469	---	---
		2480	1.3407	2479.3002	2480.6409	---	---

Test Graphs

DH1_Ant1_2402



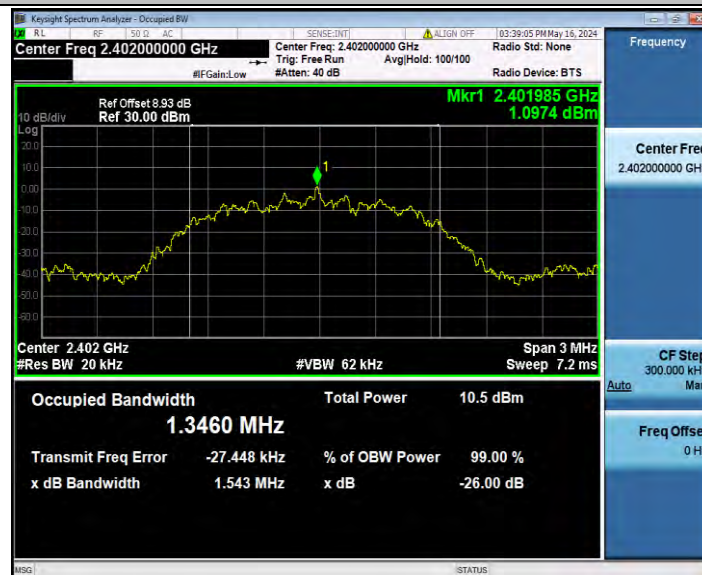
DH1_Ant1_2441



DH1_Ant1_2480



2DH1_Ant1_2402



2DH1_Ant1_2441



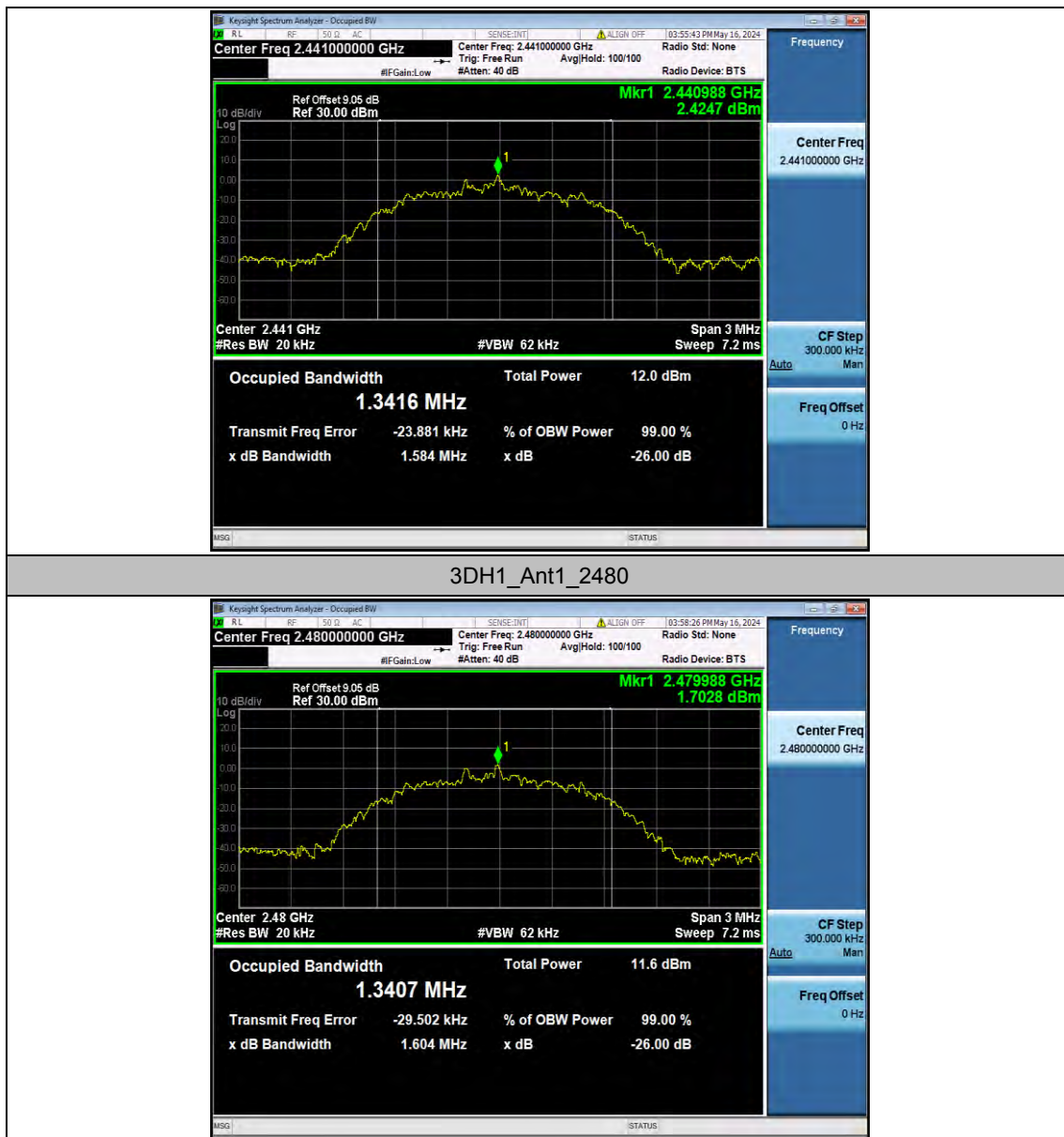
2DH1_Ant1_2480



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	7.51	≤30.00	PASS
		2441	9.46	≤30.00	PASS
		2480	9.16	≤30.00	PASS
2DH1	Ant1	2402	6.05	≤20.97	PASS
		2441	7.60	≤20.97	PASS
		2480	7.14	≤20.97	PASS
3DH1	Ant1	2402	6.17	≤20.97	PASS
		2441	7.73	≤20.97	PASS
		2480	7.25	≤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	1.018	≥0.939	PASS
		Hop_2441	1.01	≥0.939	PASS
		Hop_2480	1	≥0.939	PASS
2DH1	Ant1	Hop_2402	1.008	≥0.950	PASS
		Hop_2441	0.976	≥0.950	PASS
		Hop_2480	1.008	≥0.950	PASS
3DH1	Ant1	Hop_2402	1.17	≥0.946	PASS
		Hop_2441	0.964	≥0.946	PASS
		Hop_2480	0.982	≥0.946	PASS

Test Graphs

DH1_Ant1_Hop_2402



DH1_Ant1_Hop_2441



DH1_Ant1_Hop_2480



2DH1_Ant1_Hop_2402



2DH1_Ant1_Hop_2441



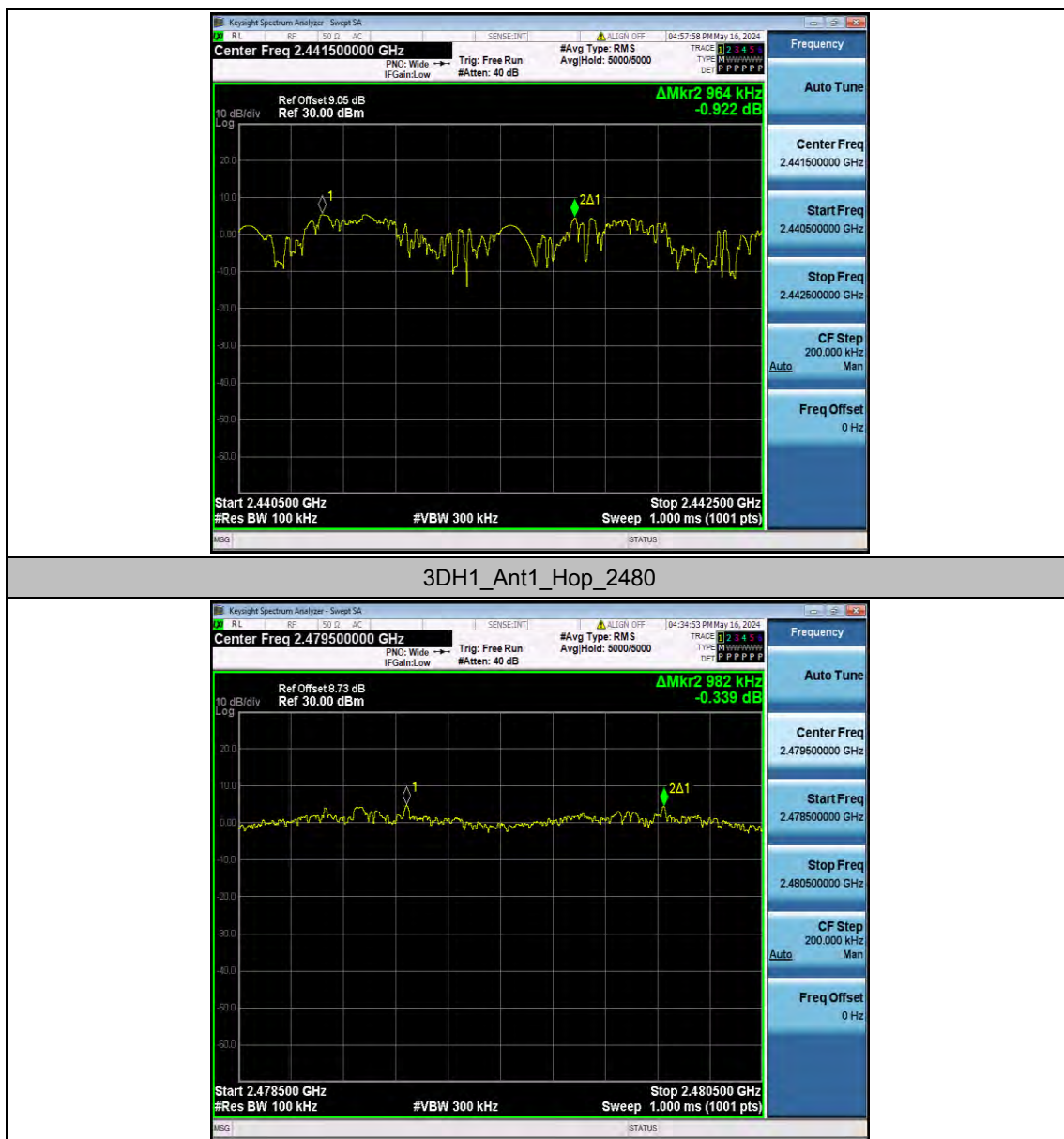
2DH1_Ant1_Hop_2480



3DH1_Ant1_Hop_2402



3DH1_Ant1_Hop_2441

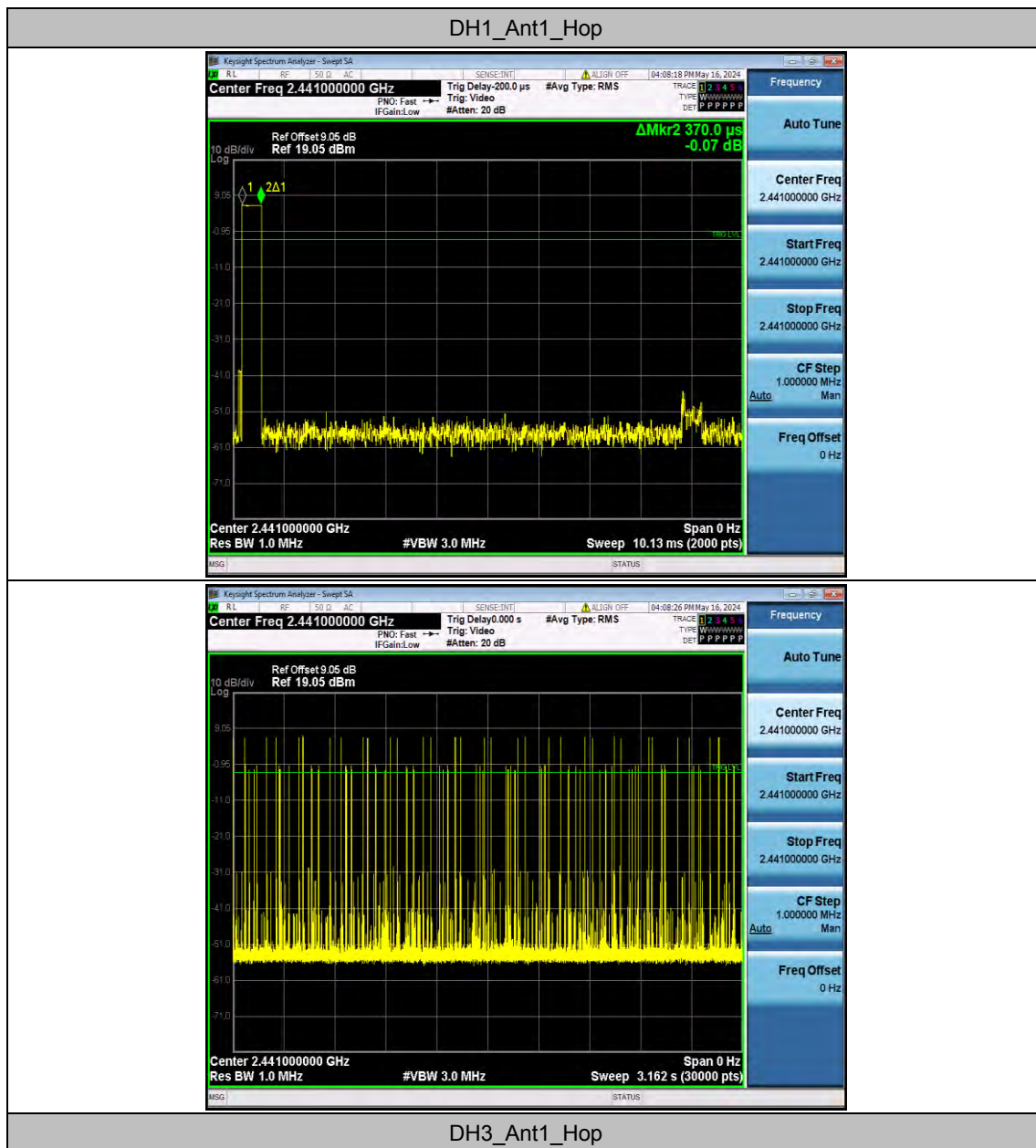


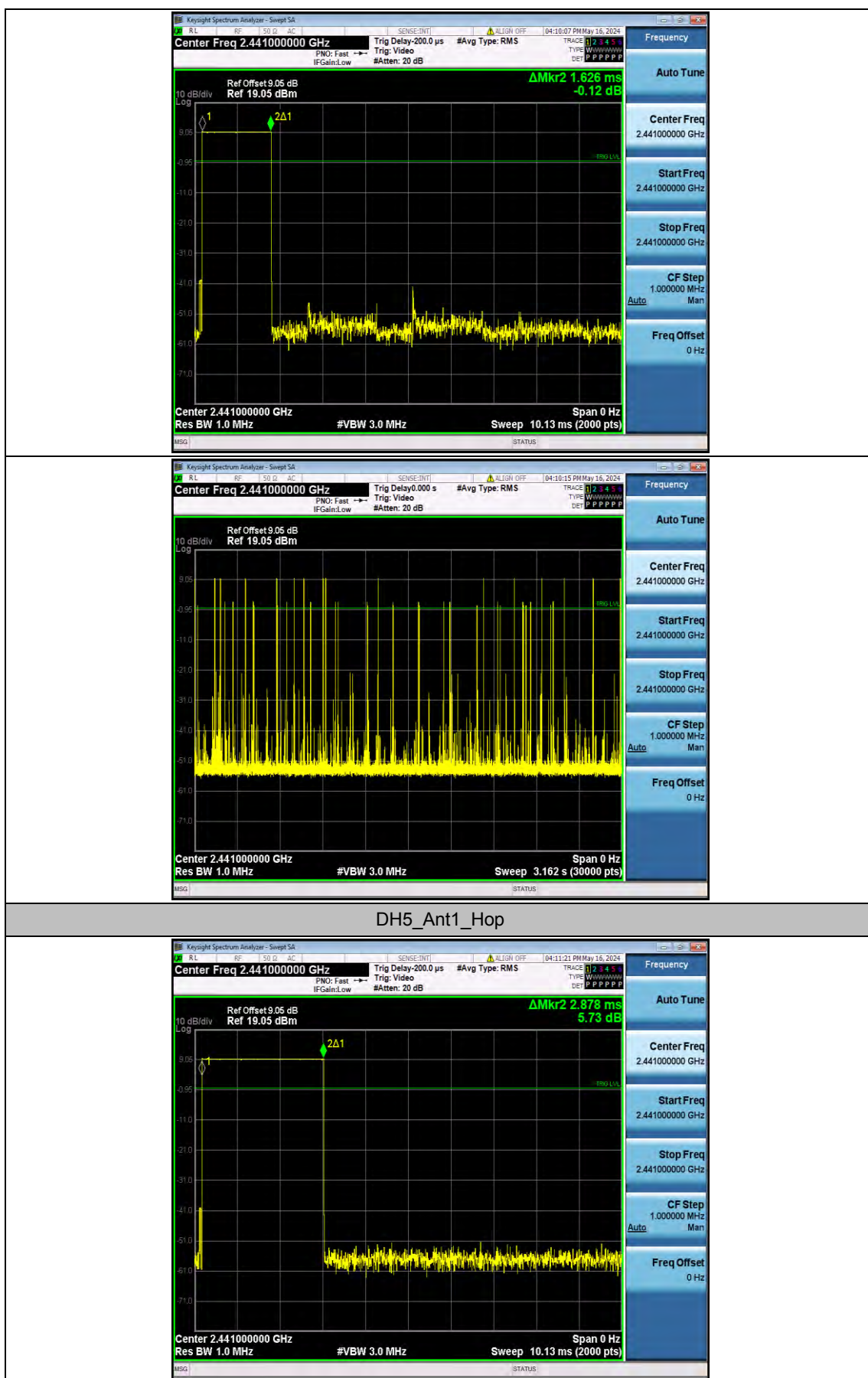
Appendix A.5: Time of occupancy

Test Result

TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.370	320	0.118	≤0.4	PASS
DH3	Ant1	Hop	1.626	160	0.26	≤0.4	PASS
DH5	Ant1	Hop	2.878	120	0.345	≤0.4	PASS
2DH1	Ant1	Hop	0.380	400	0.152	≤0.4	PASS
2DH3	Ant1	Hop	1.631	190	0.31	≤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	1.626	160	0.26	≤0.4	PASS
3DH5	Ant1	Hop	2.883	100	0.288	≤0.4	PASS

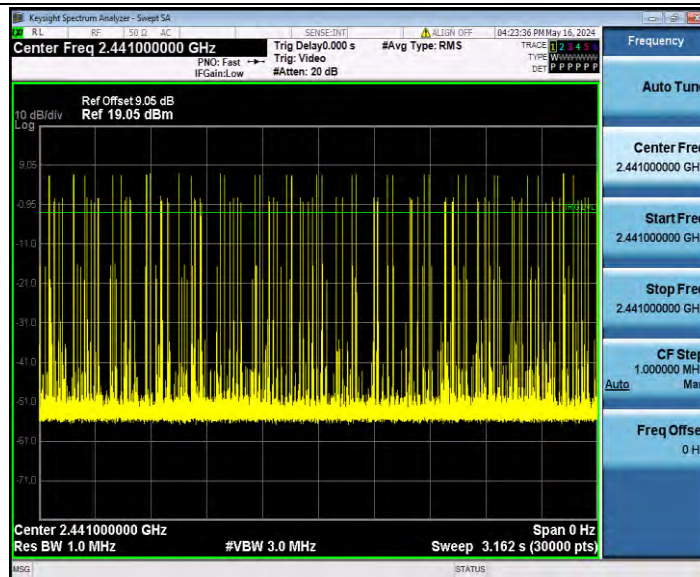
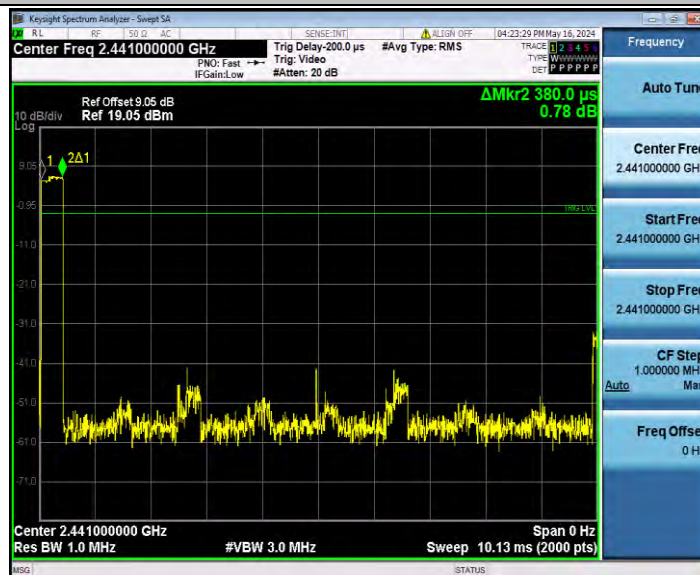
Test Graphs



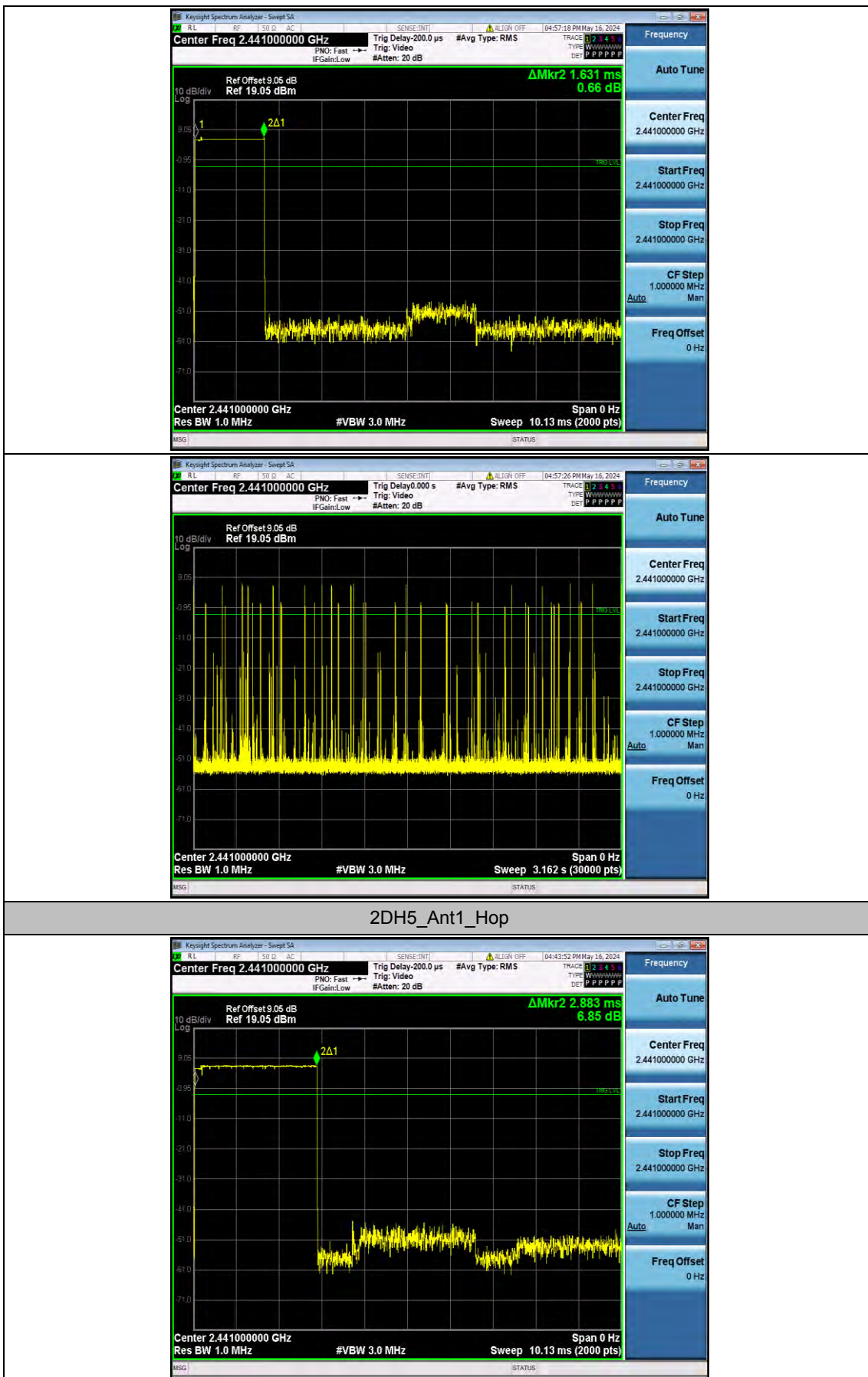


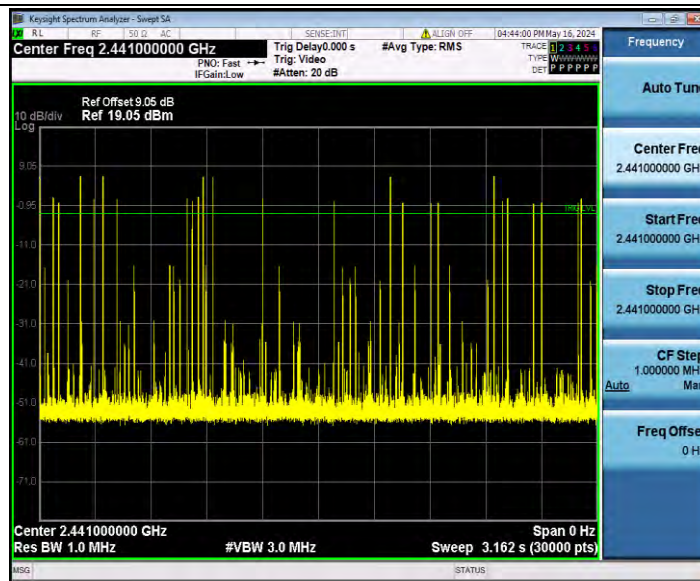


2DH1_Ant1_Hop

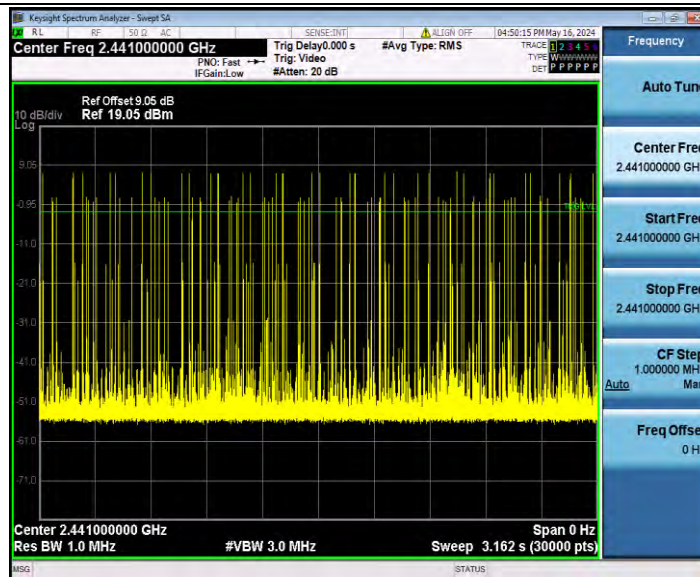
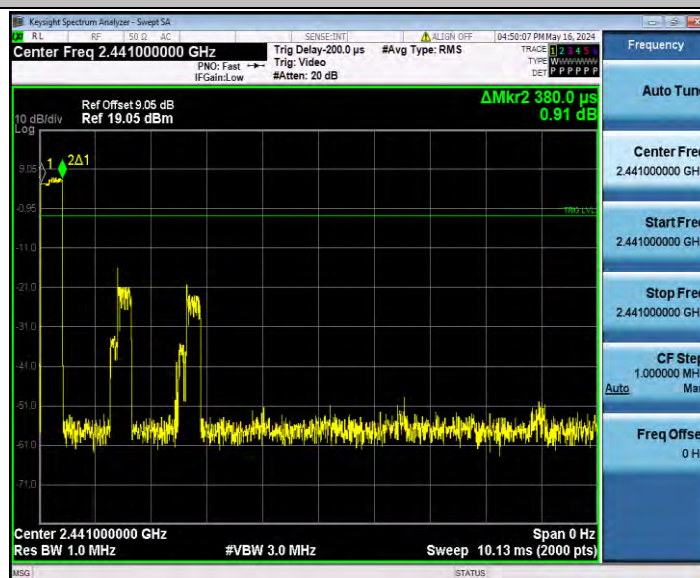


2DH3_Ant1_Hop

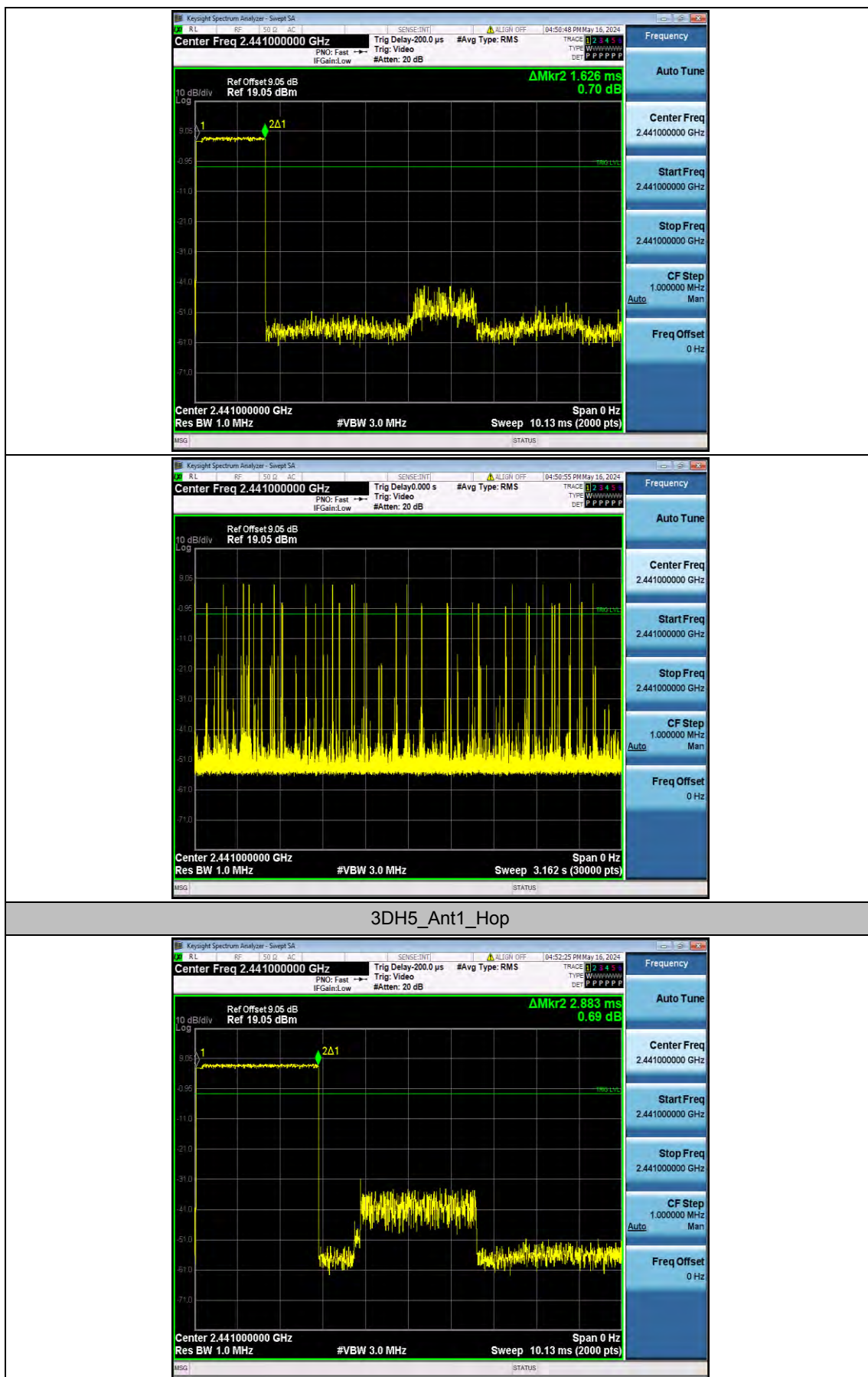




3DH1_Ant1_Hop



3DH3_Ant1_Hop



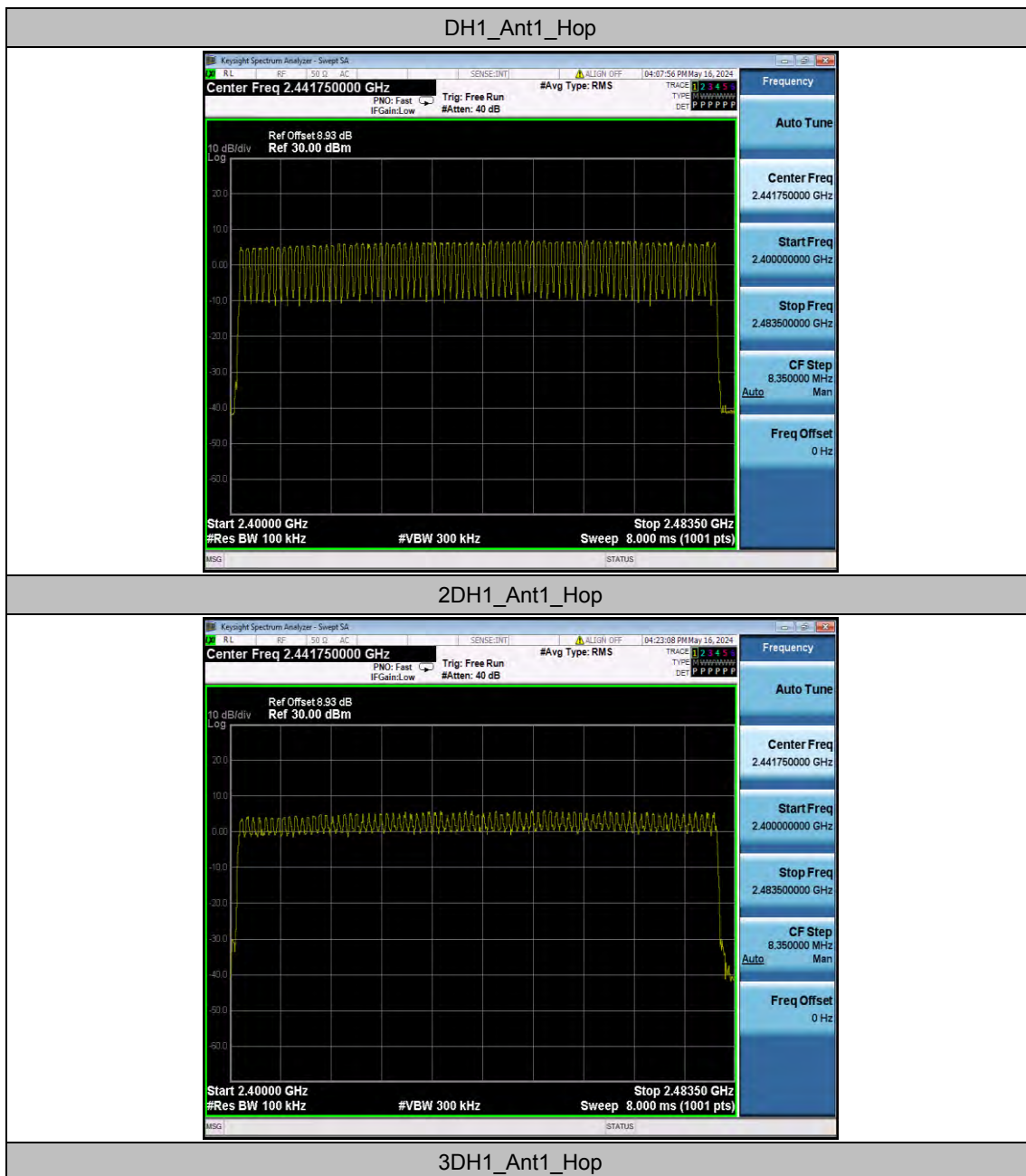


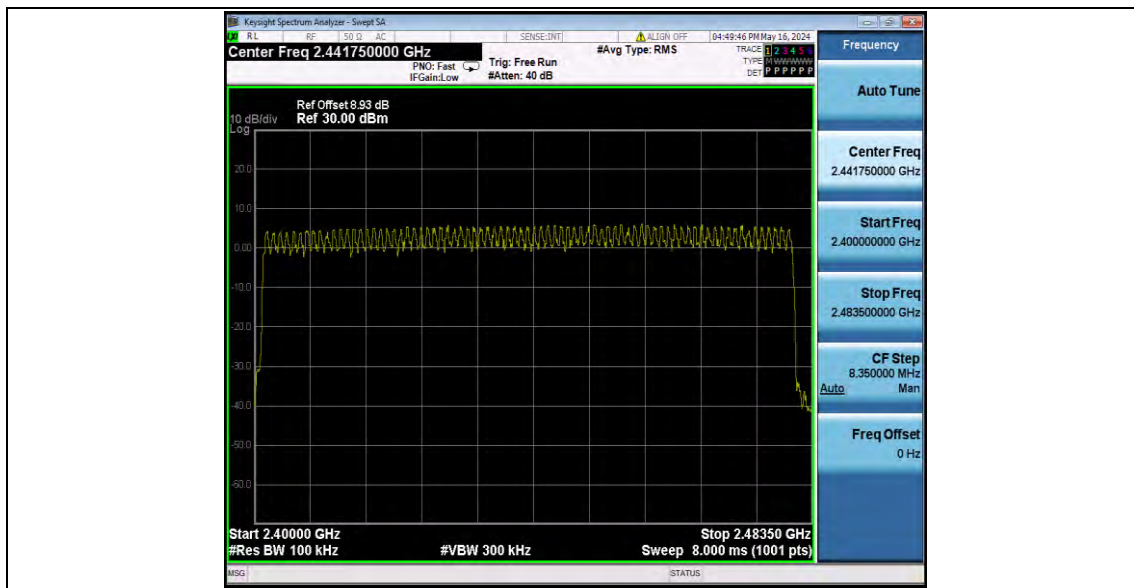
Appendix A.6: Number of hopping channels

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





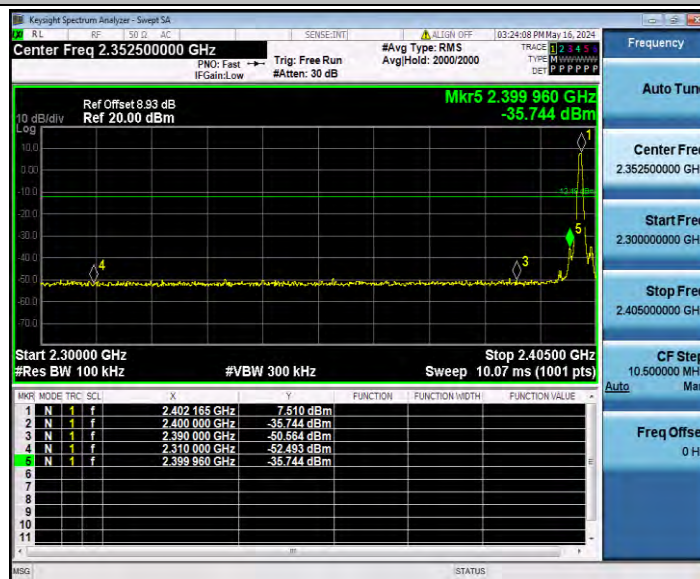
Appendix A.7: Band edge measurements

Test Result

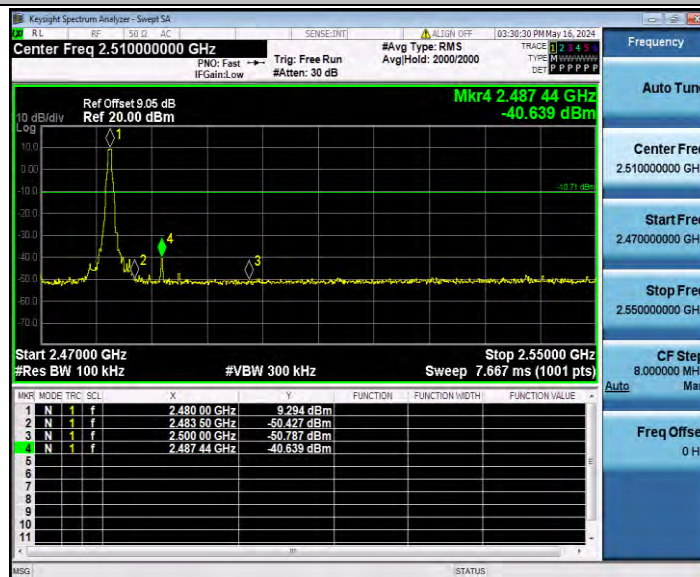
TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	Low	2402	7.51	-35.74	≤ -12.49	PASS
		High	2480	9.29	-40.64	≤ -10.71	PASS
		Low	Hop_2402	7.09	-44.89	≤ -12.91	PASS
		High	Hop_2480	9.36	-48.04	≤ -10.64	PASS
2DH1	Ant1	Low	2402	4.04	-36.64	≤ -15.96	PASS
		High	2480	4.97	-40.72	≤ -15.03	PASS
		Low	Hop_2402	3.88	-40.37	≤ -16.12	PASS
		High	Hop_2480	5.03	-48.78	≤ -14.97	PASS
3DH1	Ant1	Low	2402	4.17	-36.66	≤ -15.83	PASS
		High	2480	5.03	-40.41	≤ -14.97	PASS
		Low	Hop_2402	2.58	-39.58	≤ -17.42	PASS
		High	Hop_2480	5.15	-48.4	≤ -14.85	PASS

Test Graphs

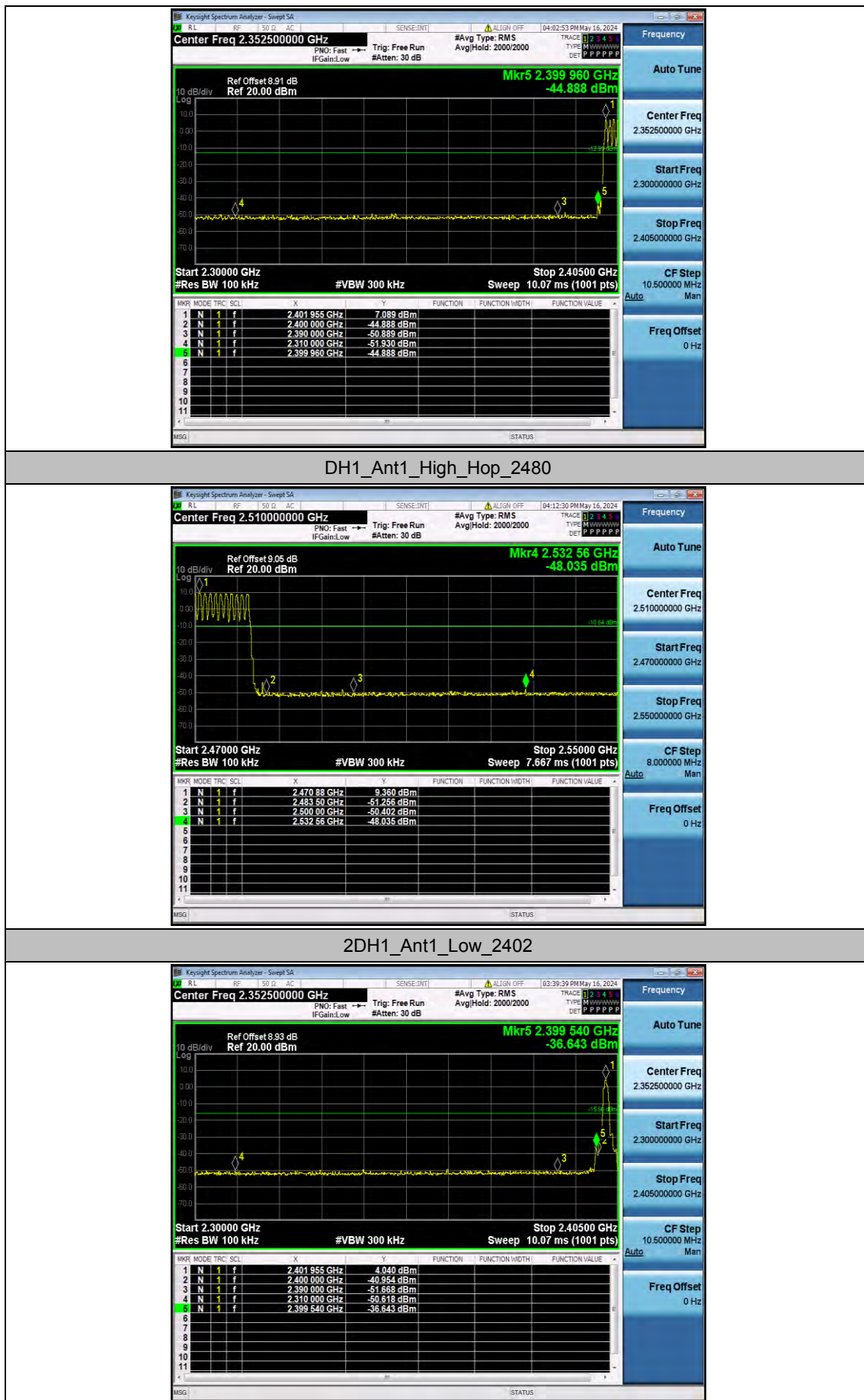
DH1_Ant1_Low_2402



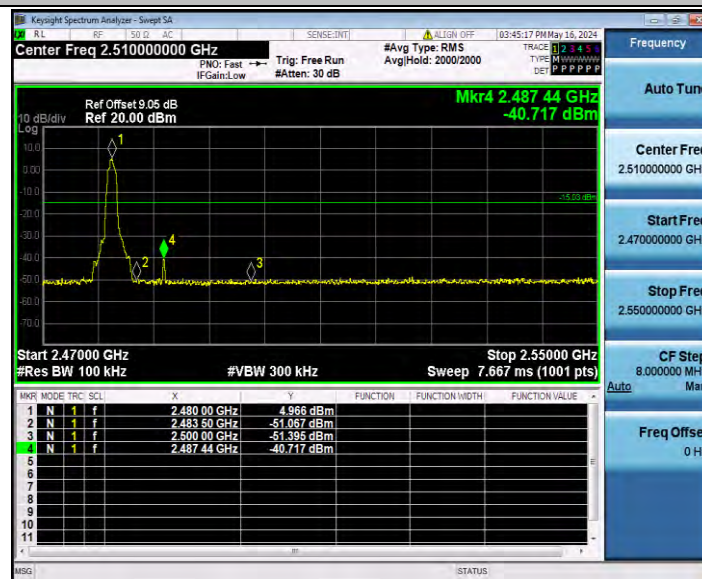
DH1_Ant1_High_2480



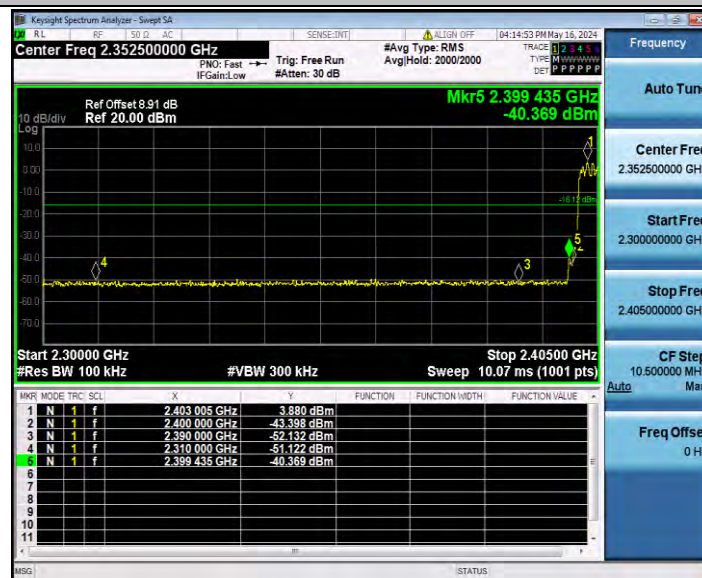
DH1_Ant1_Low_Hop_2402



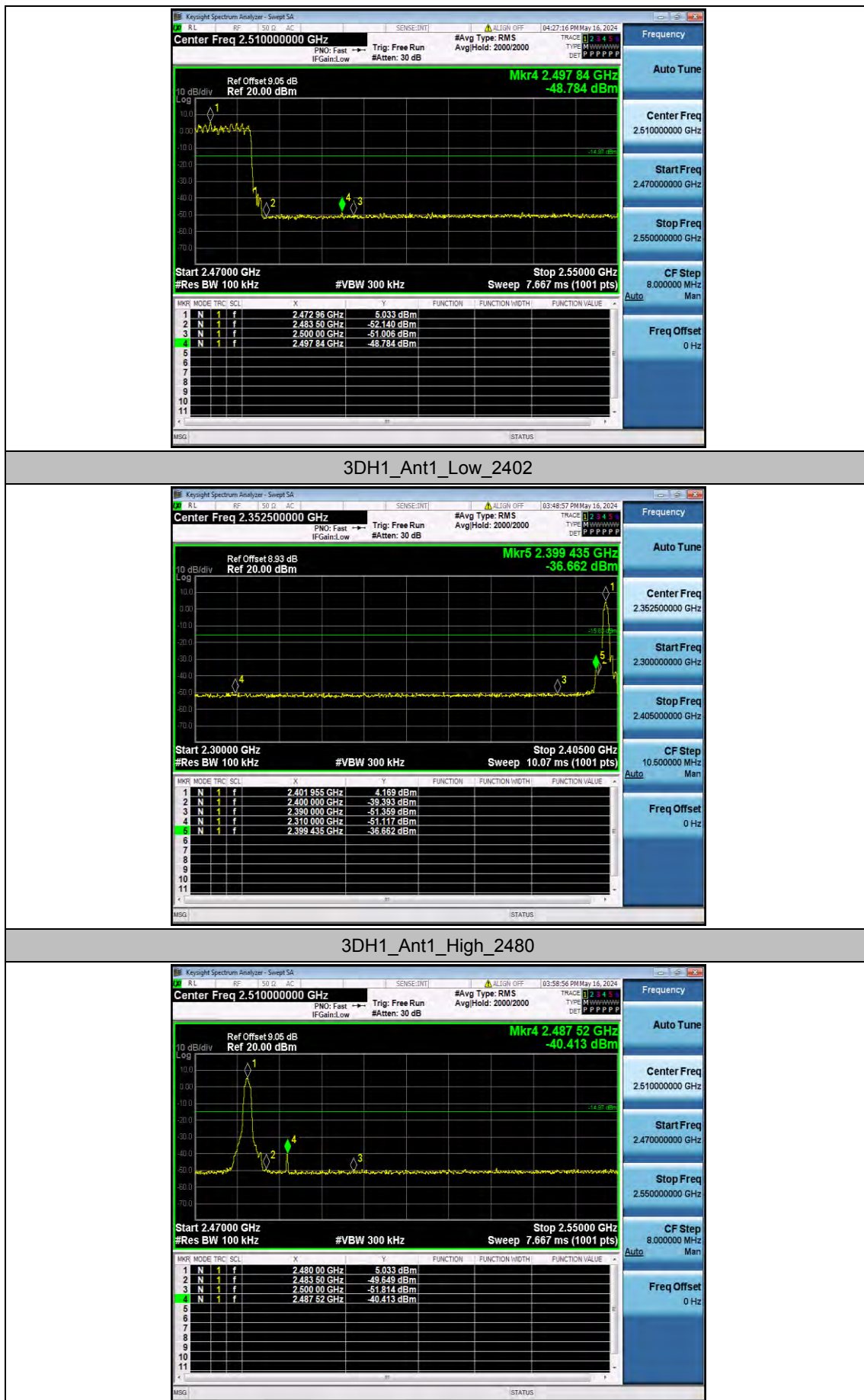
2DH1_Ant1_High_2480



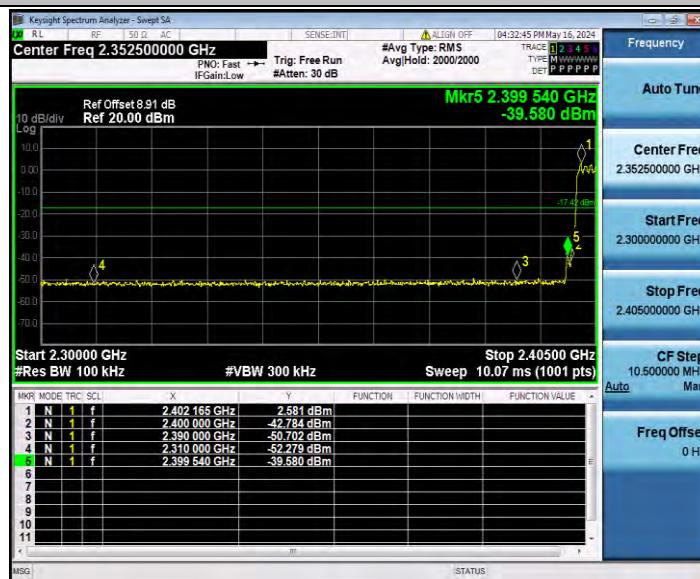
2DH1_Ant1_Low_Hop_2402



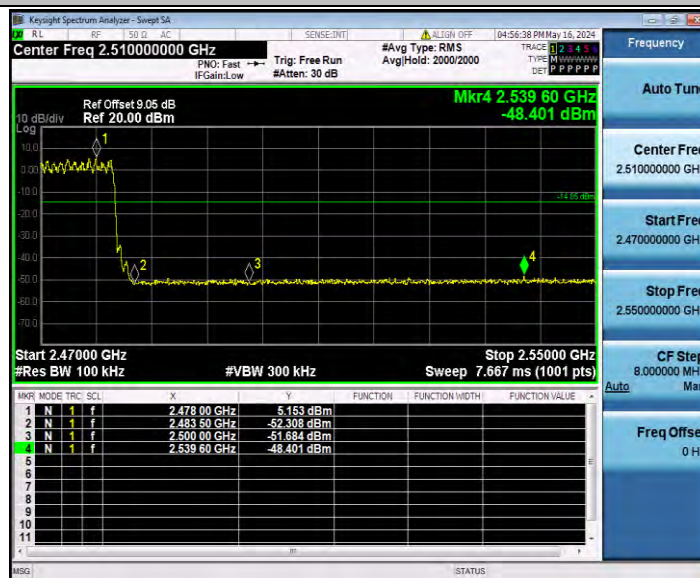
2DH1_Ant1_High_Hop_2480



3DH1_Ant1_Low_Hop_2402



3DH1_Ant1_High_Hop_2480

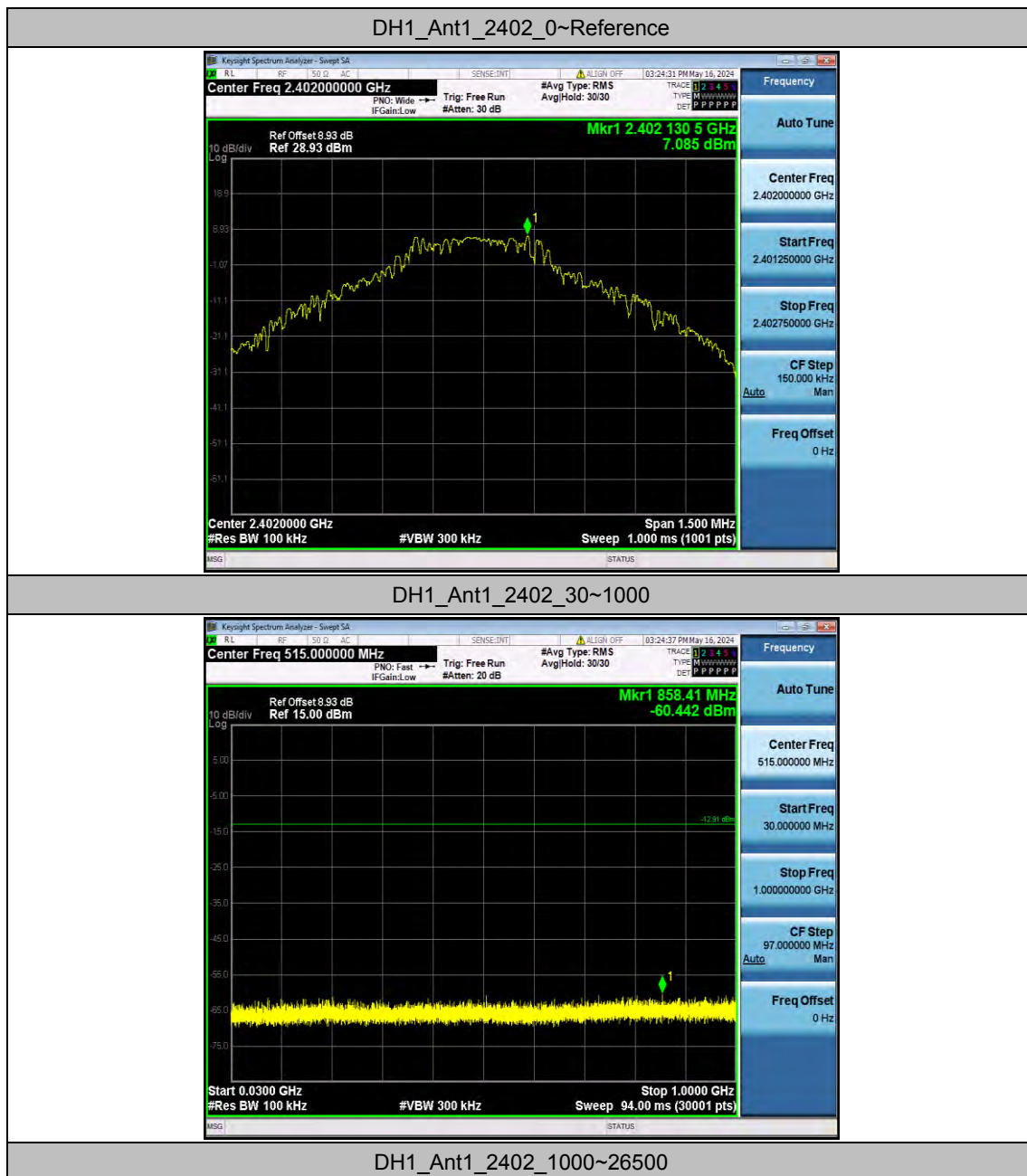


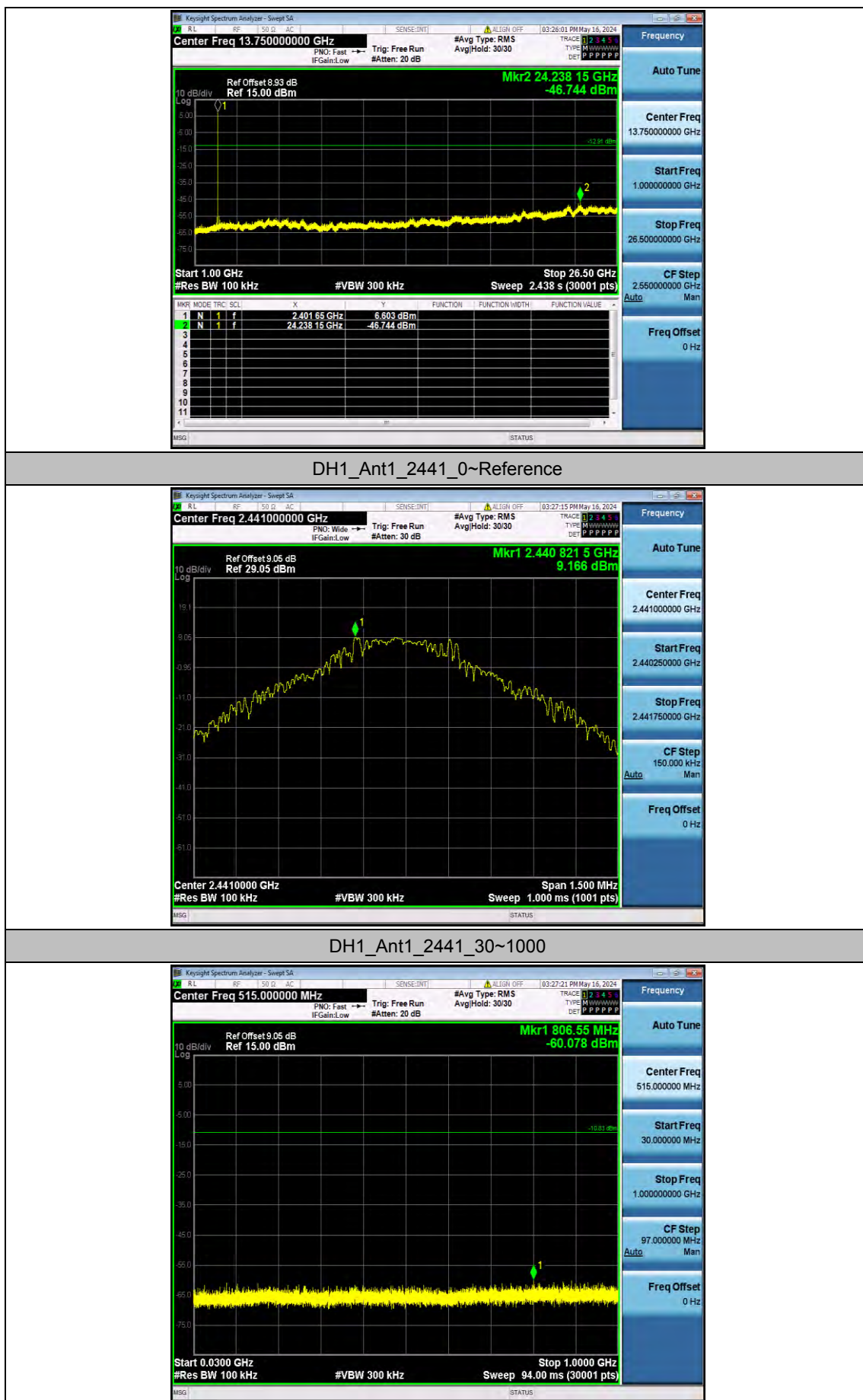
Appendix A.8: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	2402	Reference	7.09	7.09	---	PASS
			30~1000	7.09	-60.44	≤ -12.91	PASS
			1000~26500	7.09	-46.74	≤ -12.91	PASS
		2441	Reference	9.17	9.17	---	PASS
			30~1000	9.17	-60.08	≤ -10.83	PASS
			1000~26500	9.17	-48.02	≤ -10.83	PASS
		2480	Reference	8.70	8.70	---	PASS
			30~1000	8.70	-60.43	≤ -11.3	PASS
			1000~26500	8.70	-48.44	≤ -11.3	PASS
2DH1	Ant1	2402	Reference	2.68	2.68	---	PASS
			30~1000	2.68	-60.35	≤ -17.32	PASS
			1000~26500	2.68	-47.74	≤ -17.32	PASS
		2441	Reference	4.92	4.92	---	PASS
			30~1000	4.92	-60.33	≤ -15.08	PASS
			1000~26500	4.92	-47.77	≤ -15.08	PASS
		2480	Reference	4.64	4.64	---	PASS
			30~1000	4.64	-48.4	≤ -15.36	PASS
			1000~26500	4.64	-47.62	≤ -15.36	PASS
3DH1	Ant1	2402	Reference	3.95	3.95	---	PASS
			30~1000	3.95	-61.05	≤ -16.05	PASS
			1000~26500	3.95	-47.55	≤ -16.05	PASS
		2441	Reference	5.30	5.30	---	PASS
			30~1000	5.30	-61.04	≤ -14.7	PASS
			1000~26500	5.30	-47.93	≤ -14.7	PASS
		2480	Reference	4.81	4.81	---	PASS
			30~1000	4.81	-60.99	≤ -15.19	PASS
			1000~26500	4.81	-47.95	≤ -15.19	PASS

Test Graphs





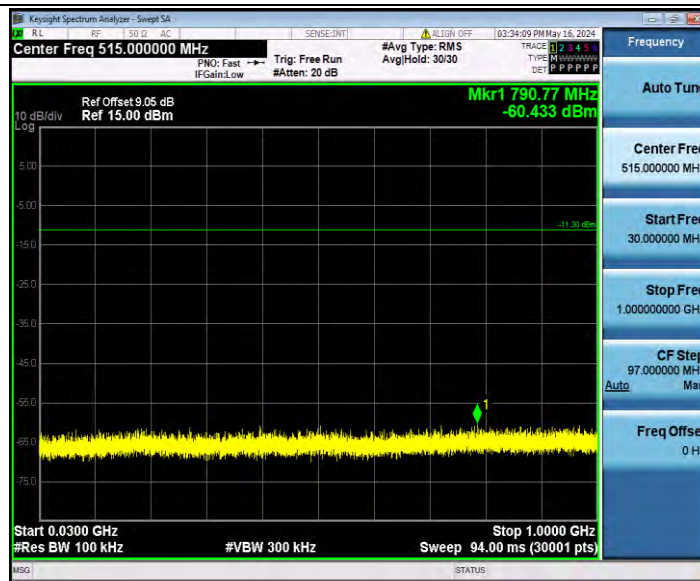
DH1_Ant1_2441_1000~26500



DH1_Ant1_2480_0~Reference



DH1_Ant1_2480_30~1000

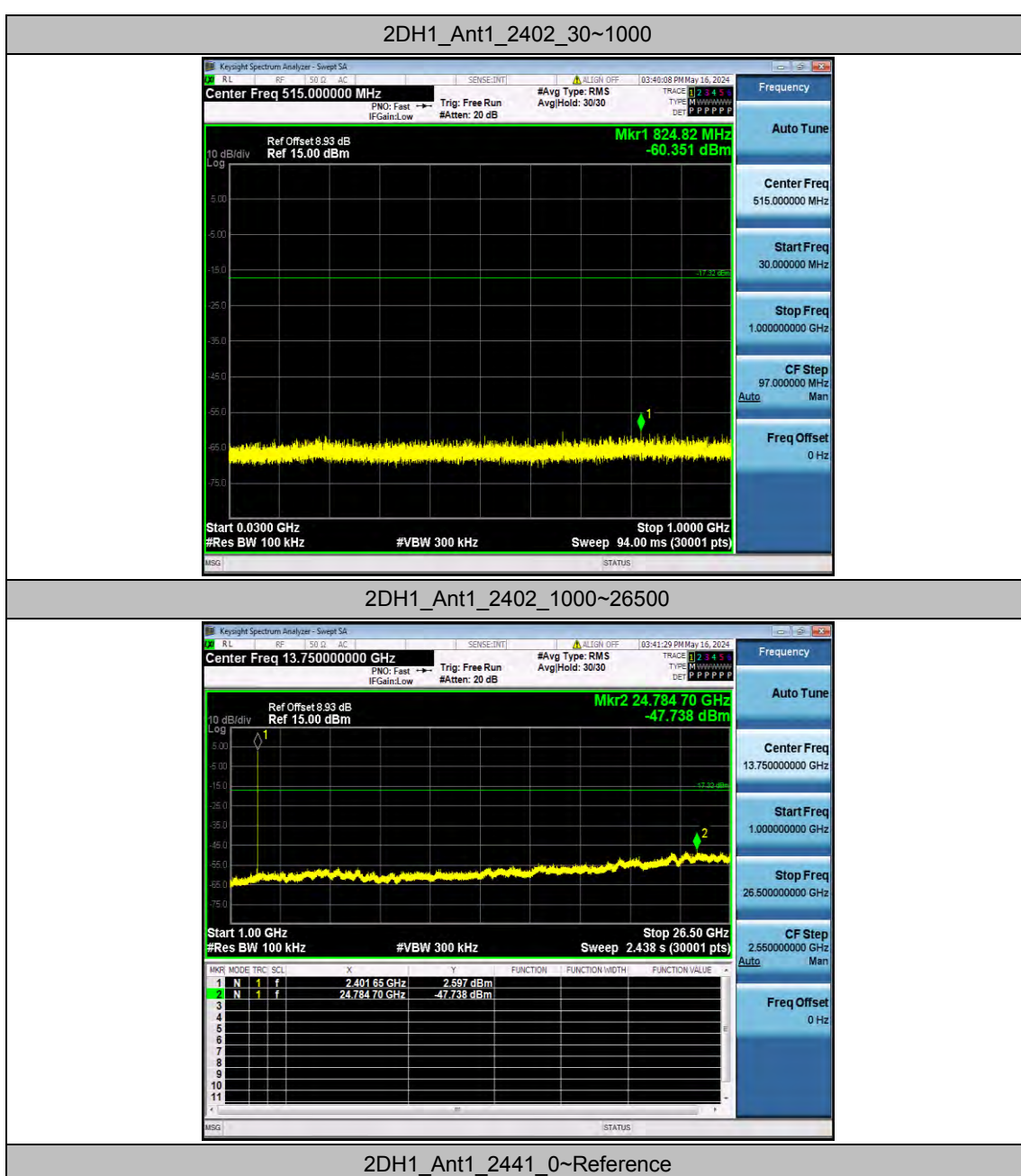


DH1_Ant1_2480_1000~26500



2DH1_Ant1_2402_0~Reference

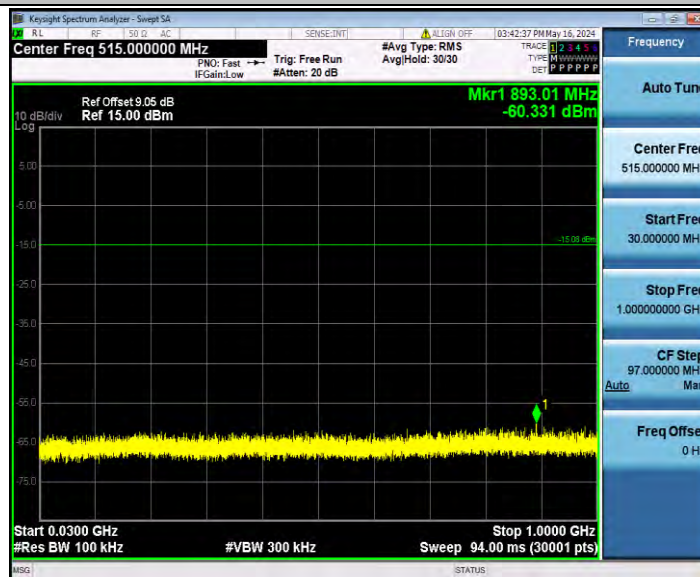




2DH1_Ant1_2441_0~Reference



2DH1_Ant1_2441_30~1000



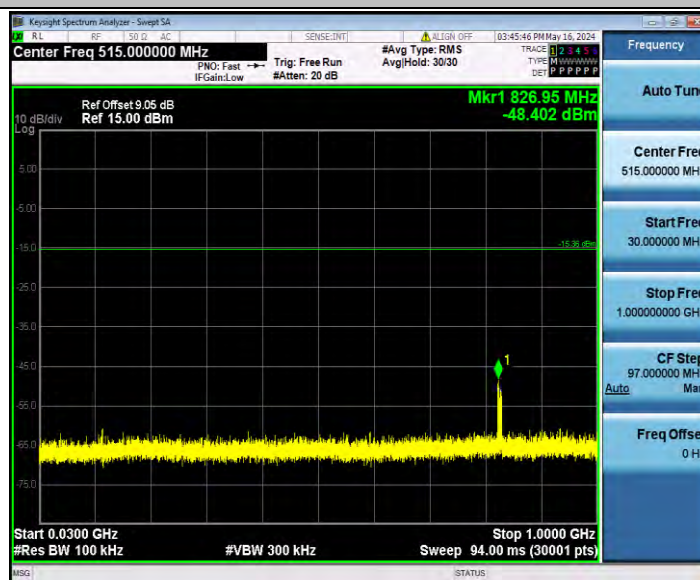
2DH1_Ant1_2441_1000~26500



2DH1_Ant1_2480_0~Reference



2DH1_Ant1_2480_30~1000



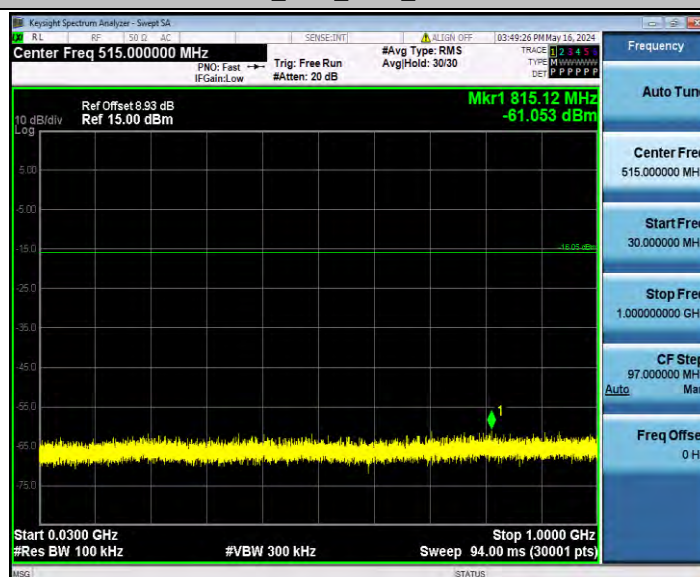
2DH1_Ant1_2480_1000~26500



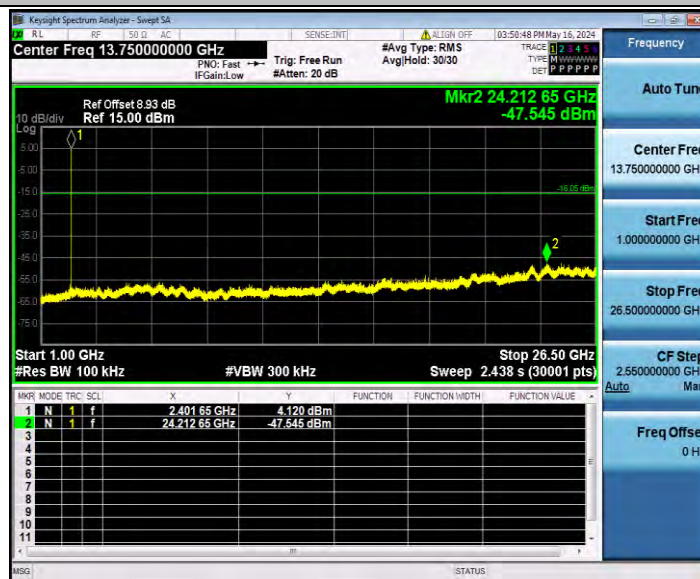
3DH1_Ant1_2402_0~Reference



3DH1_Ant1_2402_30~1000



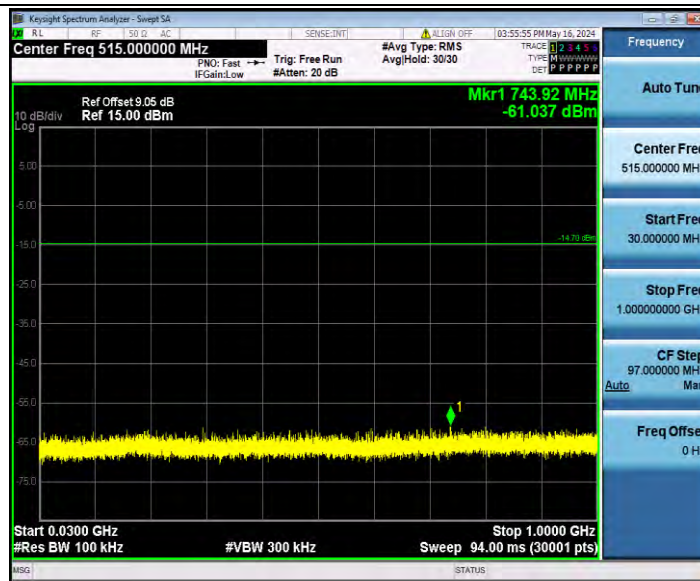
3DH1_Ant1_2402_1000~26500



3DH1_Ant1_2441_0~Reference



3DH1_Ant1_2441_30~1000

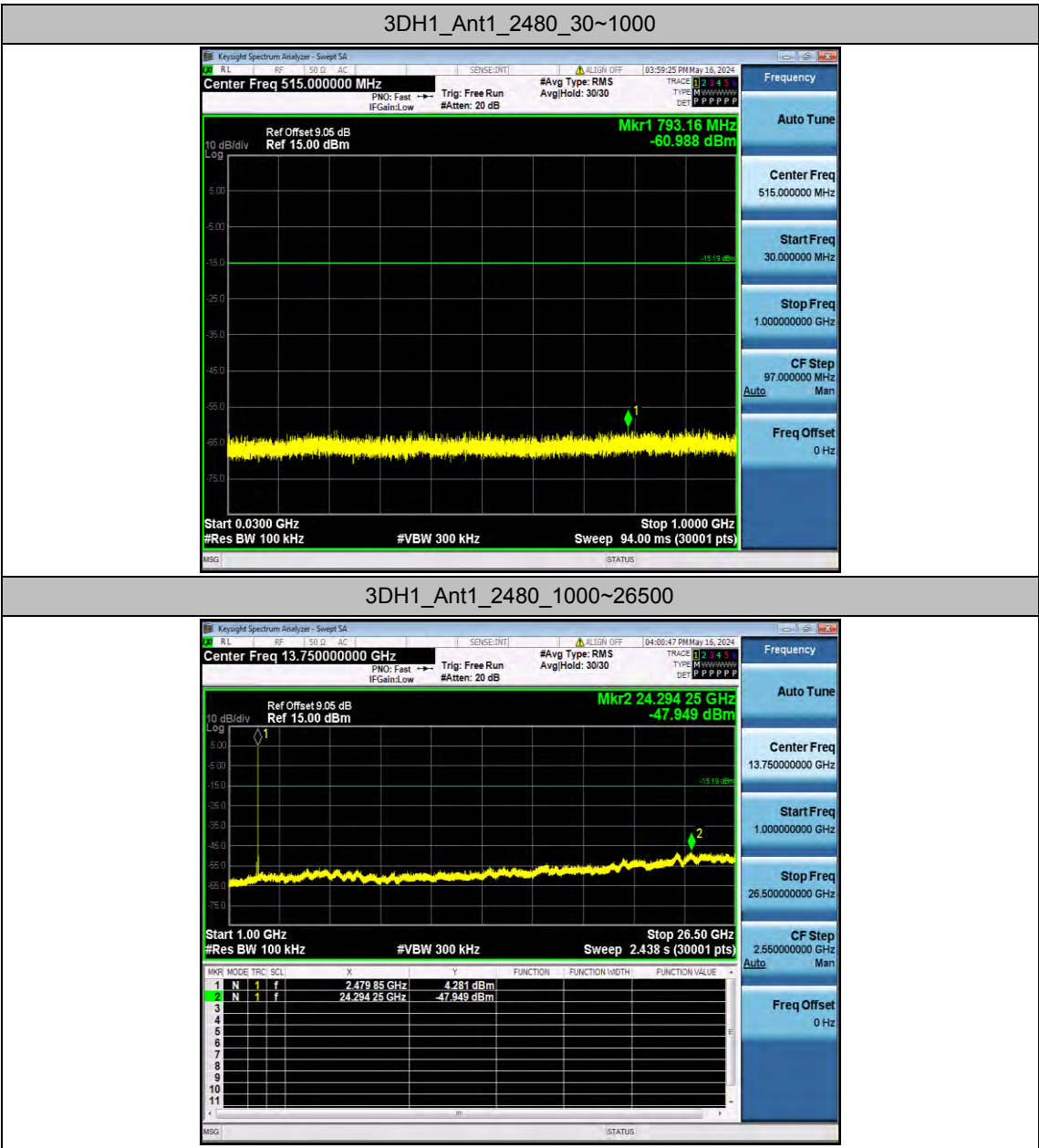


3DH1_Ant1_2441_1000~26500



3DH1_Ant1_2480_0~Reference





Appendix A.9: Emissions in Restricted Bands

Test Result

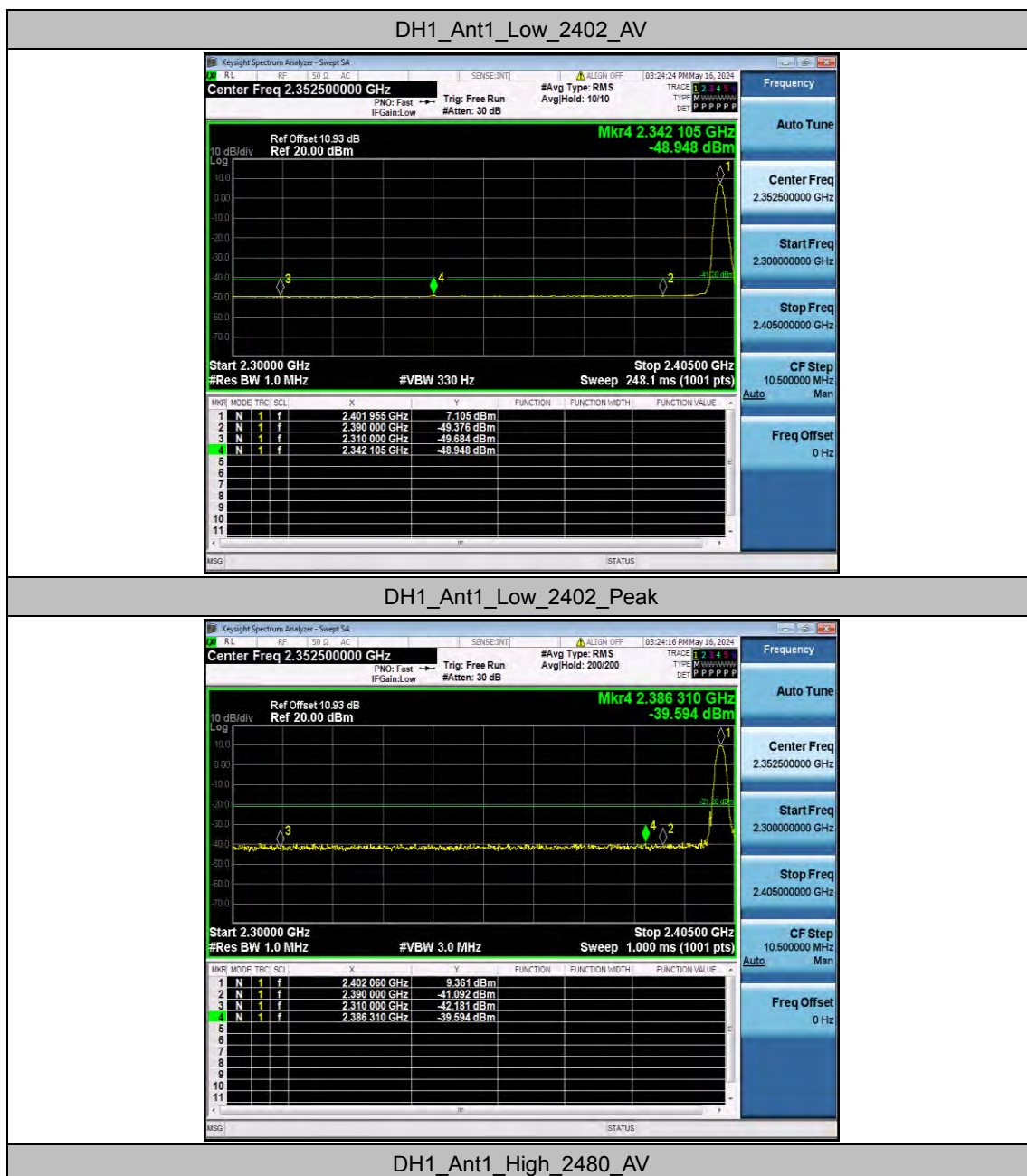
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH1	Ant1	Low	2402	AV	2310.000	-49.68	≤-41.20	45.52	≤54	PASS
				AV	2342.105	-48.95	≤-41.20	46.25	≤54	PASS
				AV	2390.000	-49.38	≤-41.20	45.82	≤54	PASS
				Peak	2310.000	-42.18	≤-21.20	53.02	≤74	PASS
				Peak	2386.310	-39.59	≤-21.20	55.61	≤74	PASS
				Peak	2390.000	-41.09	≤-21.20	54.11	≤74	PASS
		High	2480	AV	2483.500	-47.07	≤-41.20	48.13	≤54	PASS
				AV	2483.520	-47.07	≤-41.20	48.13	≤54	PASS
				AV	2500.000	-48.96	≤-41.20	46.24	≤54	PASS
				Peak	2483.500	-37.66	≤-21.20	57.54	≤74	PASS
				Peak	2487.040	-36.91	≤-21.20	58.29	≤74	PASS
				Peak	2500.000	-40.17	≤-21.20	55.03	≤74	PASS
2DH1	Ant1	Low	2402	AV	2310.000	-49.64	≤-41.20	45.56	≤54	PASS
				AV	2341.685	-48.9	≤-41.20	46.30	≤54	PASS
				AV	2390.000	-49.17	≤-41.20	46.03	≤54	PASS
				Peak	2310.000	-41.54	≤-21.20	53.66	≤74	PASS
				Peak	2311.970	-37.75	≤-21.20	57.45	≤74	PASS
				Peak	2390.000	-42.07	≤-21.20	53.13	≤74	PASS
		High	2480	AV	2483.500	-47.29	≤-41.20	47.91	≤54	PASS
				AV	2483.520	-47.29	≤-41.20	47.91	≤54	PASS
				AV	2500.000	-48.91	≤-41.20	46.29	≤54	PASS
				Peak	2483.500	-37.9	≤-21.20	57.30	≤74	PASS
				Peak	2487.760	-35.52	≤-21.20	59.68	≤74	PASS
				Peak	2500.000	-40.07	≤-21.20	55.13	≤74	PASS
3DH1	Ant1	Low	2402	AV	2310.000	-49.53	≤-41.20	45.67	≤54	PASS
				AV	2342.000	-48.87	≤-41.20	46.33	≤54	PASS
				AV	2390.000	-49.12	≤-41.20	46.08	≤54	PASS
				Peak	2310.000	-41.77	≤-21.20	53.43	≤74	PASS
				Peak	2331.605	-39.25	≤-21.20	55.95	≤74	PASS
				Peak	2390.000	-40.58	≤-21.20	54.62	≤74	PASS
		High	2480	AV	2483.500	-47.03	≤-41.20	48.17	≤54	PASS
				AV	2483.520	-47.03	≤-41.20	48.17	≤54	PASS
				AV	2500.000	-48.86	≤-41.20	46.34	≤54	PASS
				Peak	2483.500	-37.73	≤-21.20	57.47	≤74	PASS
				Peak	2487.360	-36.42	≤-21.20	58.78	≤74	PASS

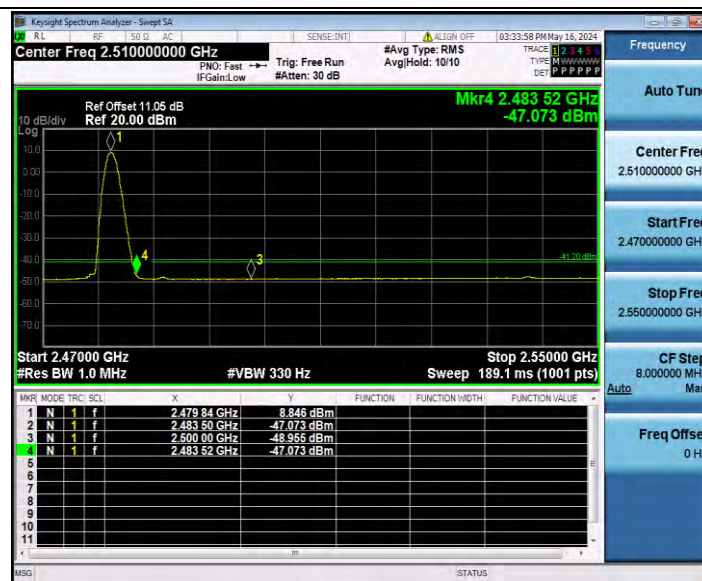
				Peak	2500.000	-42.22	≤-21.20	52.98	≤74	PASS
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Note:

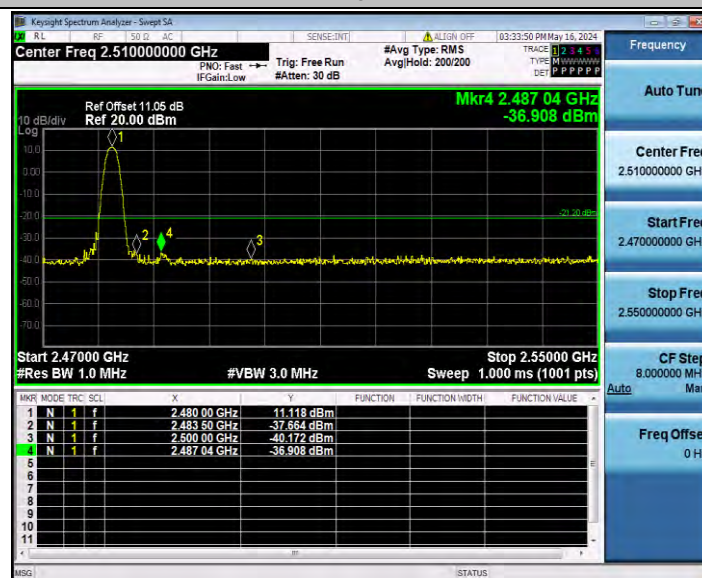
1. The Antenna Gain is compensated in the graph.
2. The Duty Cycle Factor and RBW Factor is compensated in the graph.
3. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

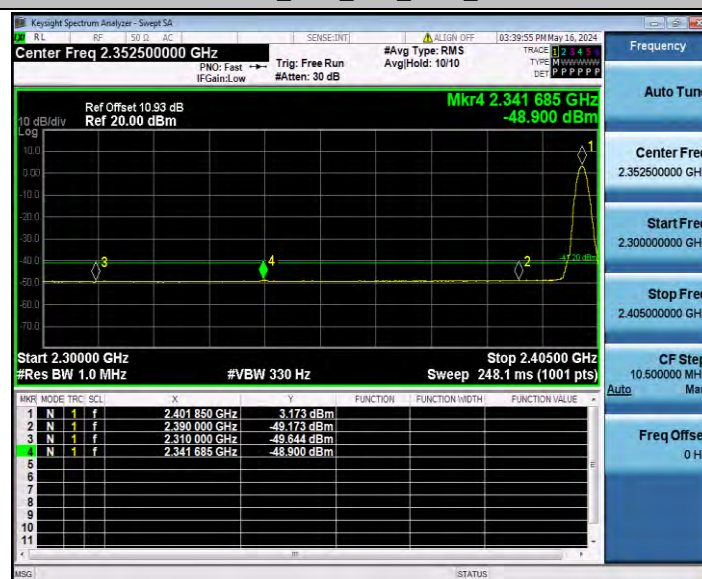




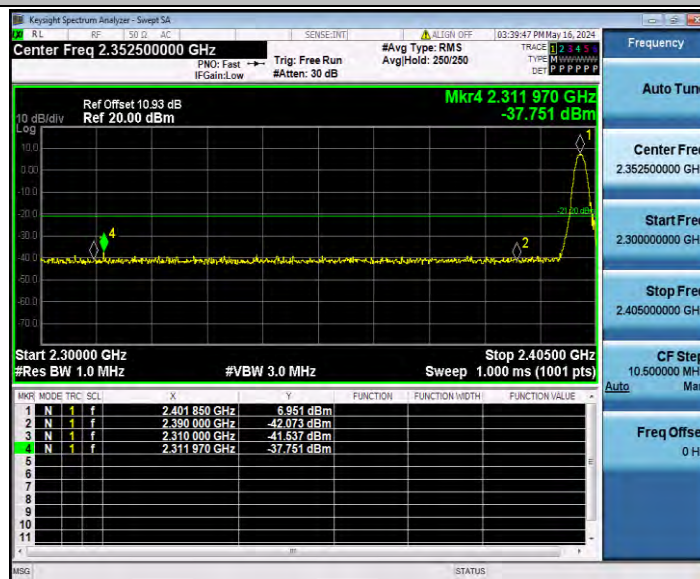
DH1_Ant1_High_2480_Peak



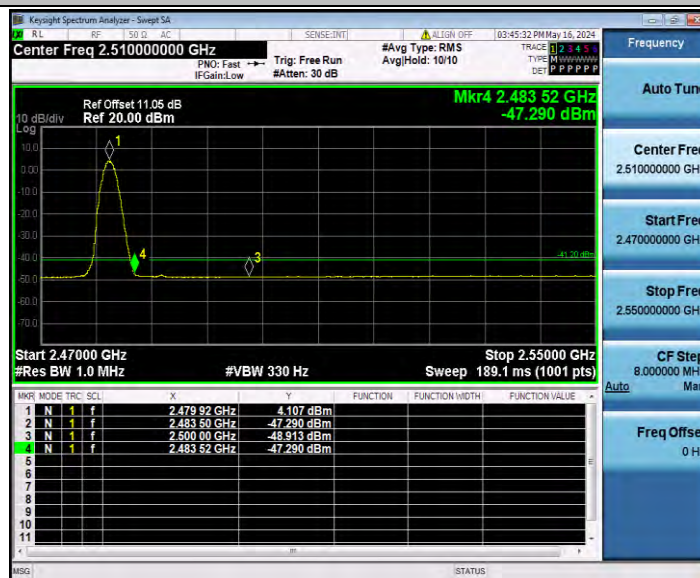
2DH1_Ant1_Low_2402_AV



2DH1_Ant1_Low_2402_Peak



2DH1_Ant1_High_2480_AV



2DH1_Ant1_High_2480_Peak

