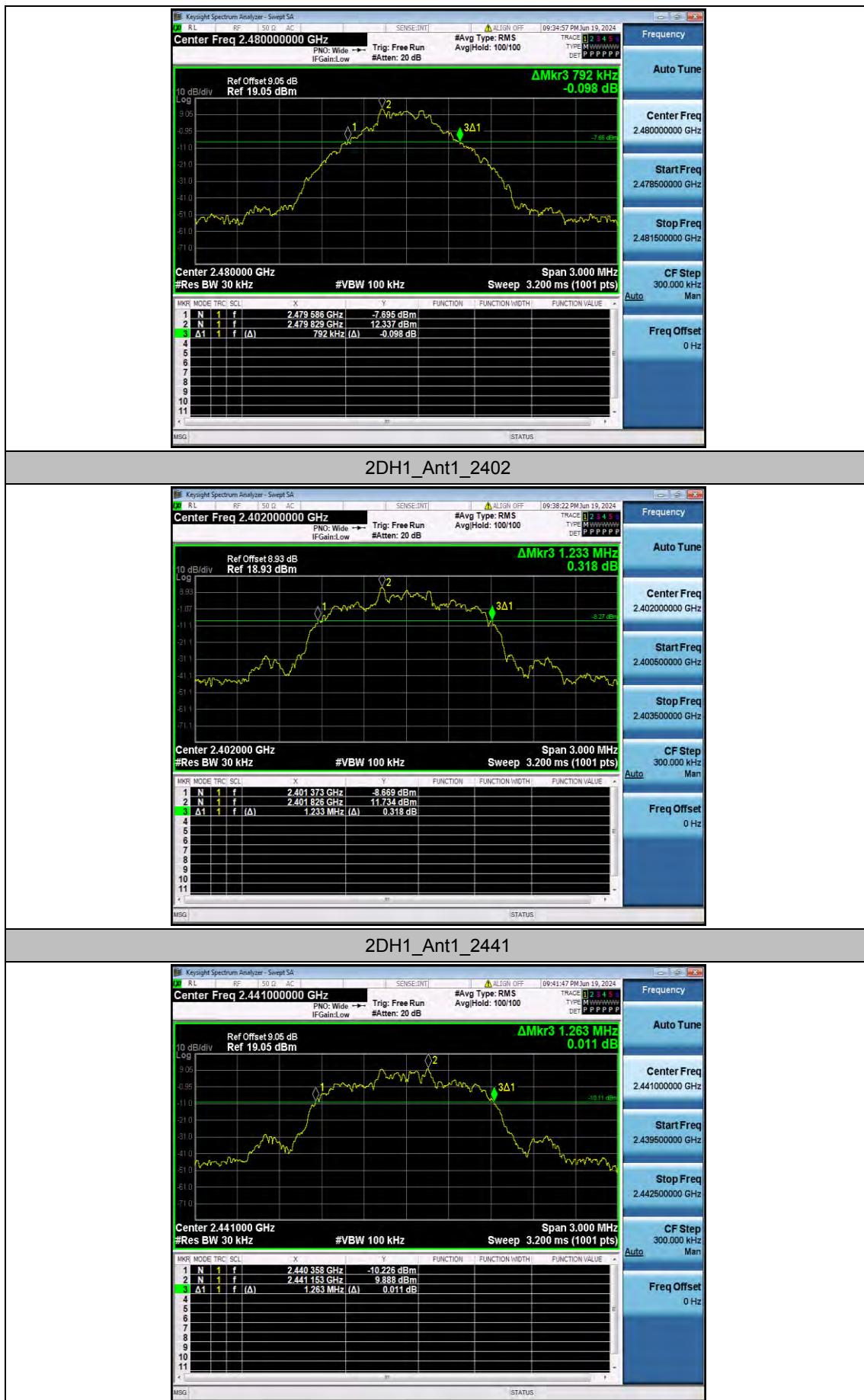


Case No. : <u>CTA24070301801</u>	
Ambient Condition: <u>23</u> °C, <u>51</u> %RH	
According Standard: ■Part15C	
Test Date: <u>2024.6.9-2024.7.10</u>	Test Engineer: <u>Lushan Kong</u>

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	0.822	2401.559	2402.381	---	---
		2441	0.813	2440.571	2441.384	---	---
		2480	0.792	2479.586	2480.378	---	---
2DH1	Ant1	2402	1.233	2401.373	2402.606	---	---
		2441	1.263	2440.358	2441.621	---	---
		2480	1.248	2479.364	2480.612	---	---
3DH1	Ant1	2402	1.227	2401.388	2402.615	---	---
		2441	1.227	2440.388	2441.615	---	---
		2480	1.221	2479.391	2480.612	---	---



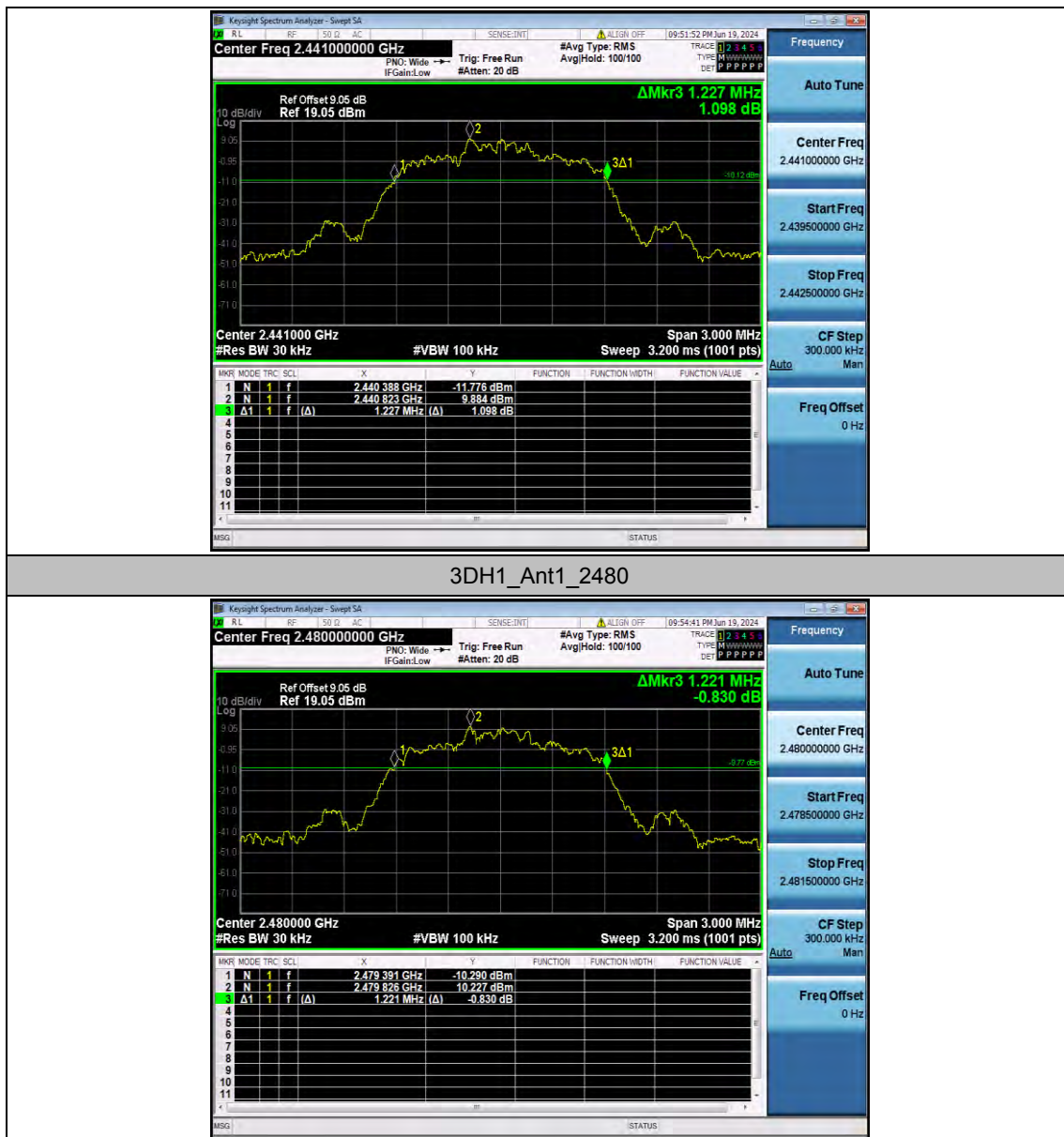
2DH1_Ant1_2480



3DH1_Ant1_2402



3DH1_Ant1_2441

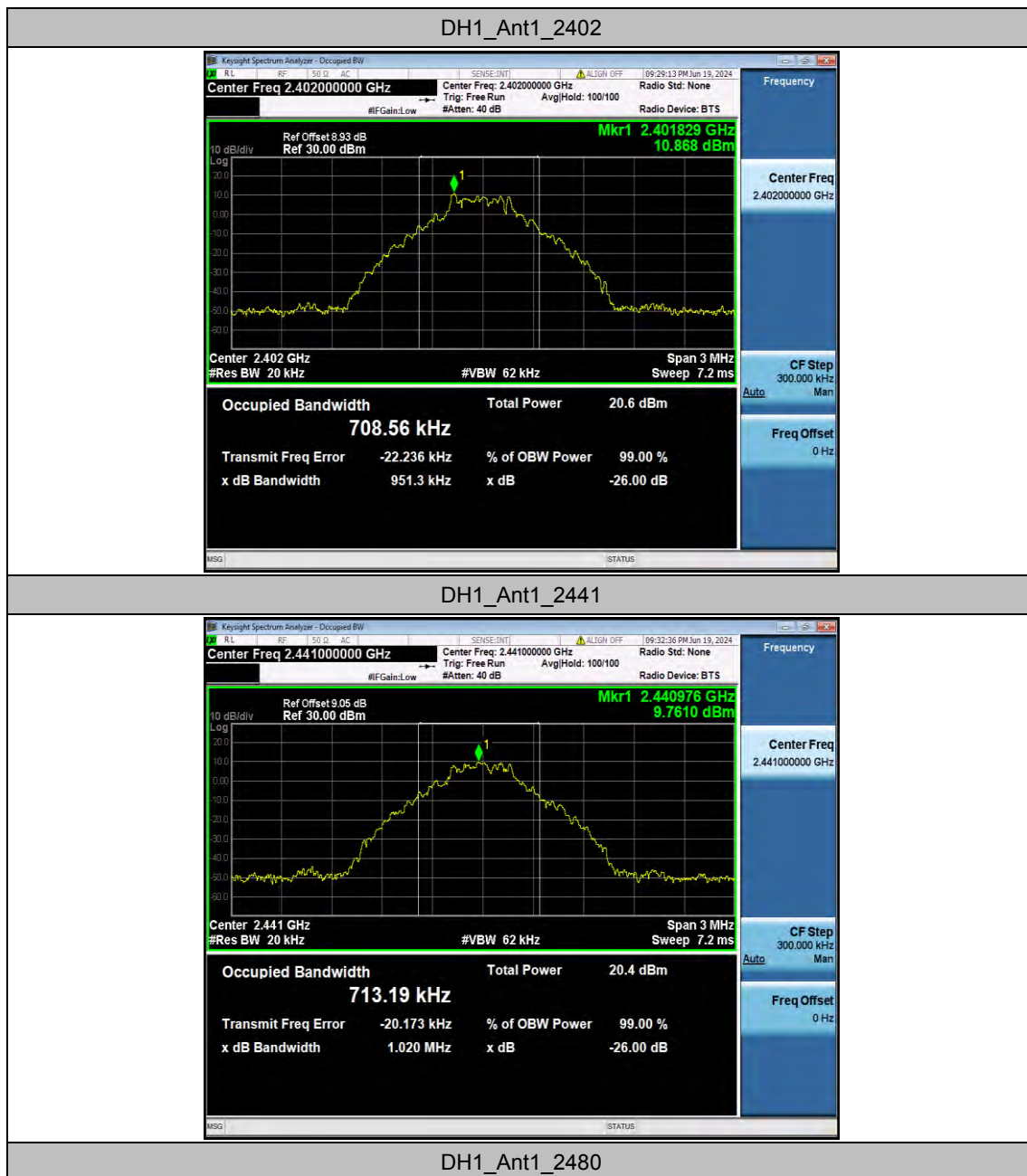


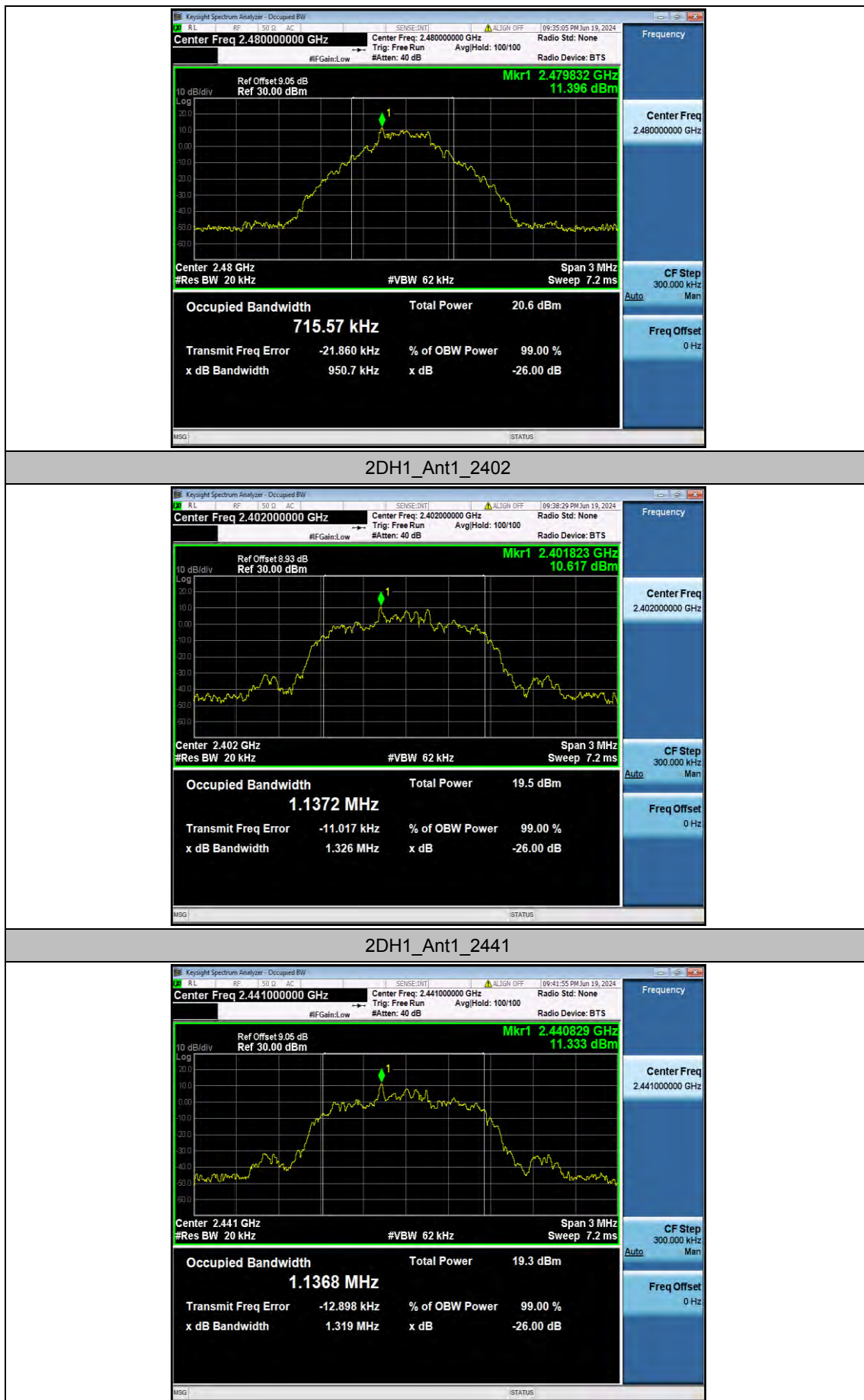
Appendix A.2: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	0.70856	2401.6235	2402.3320	---	---
		2441	0.71319	2440.6232	2441.3364	---	---
		2480	0.71557	2479.6204	2480.3359	---	---
2DH1	Ant1	2402	1.1372	2401.4204	2402.5576	---	---
		2441	1.1368	2440.4187	2441.5555	---	---
		2480	1.1389	2479.4176	2480.5565	---	---
3DH1	Ant1	2402	1.1287	2401.4330	2402.5617	---	---
		2441	1.1283	2440.4343	2441.5626	---	---
		2480	1.1274	2479.4318	2480.5592	---	---

Test Graphs





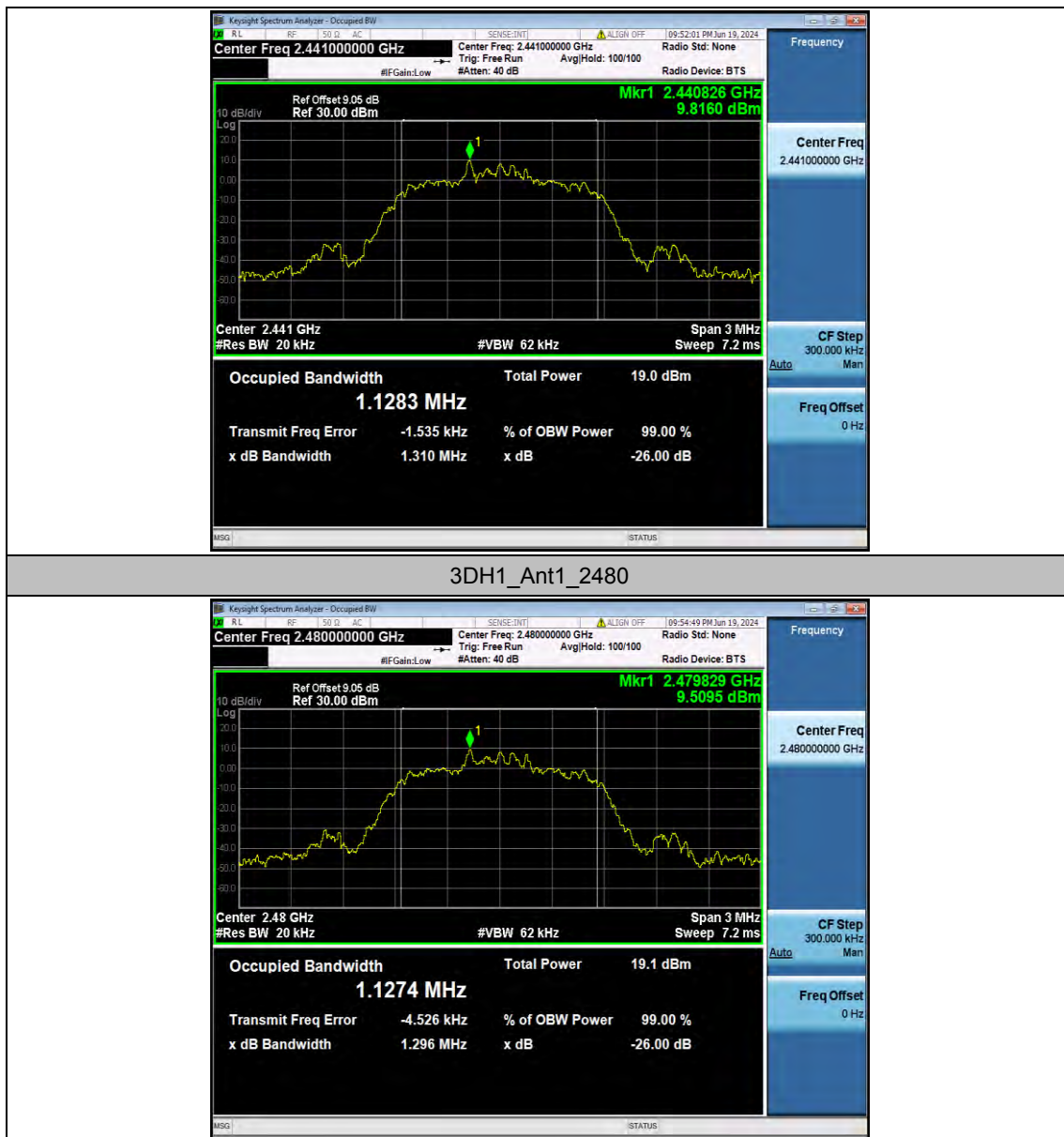
2DH1_Ant1_2480



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	14.67	≤30.00	PASS
		2441	14.82	≤30.00	PASS
		2480	14.86	≤30.00	PASS
2DH1	Ant1	2402	13.90	≤20.97	PASS
		2441	13.99	≤20.97	PASS
		2480	14.11	≤20.97	PASS
3DH1	Ant1	2402	13.83	≤20.97	PASS
		2441	13.93	≤20.97	PASS
		2480	13.25	≤20.97	PASS

Appendix A.4: Carrier frequency separation

Test Result

TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Hop_2402	0.988	≥ 0.822	PASS
		Hop_2441	1.002	≥ 0.822	PASS
		Hop_2480	1.004	≥ 0.822	PASS
2DH1	Ant1	Hop_2402	0.992	≥ 0.842	PASS
		Hop_2441	0.994	≥ 0.842	PASS
		Hop_2480	0.994	≥ 0.842	PASS
3DH1	Ant1	Hop_2402	1.17	≥ 0.818	PASS
		Hop_2441	1.01	≥ 0.818	PASS
		Hop_2480	0.992	≥ 0.818	PASS

Test Graphs

DH1_Ant1_Hop_2402



DH1_Ant1_Hop_2441



DH1_Ant1_Hop_2480



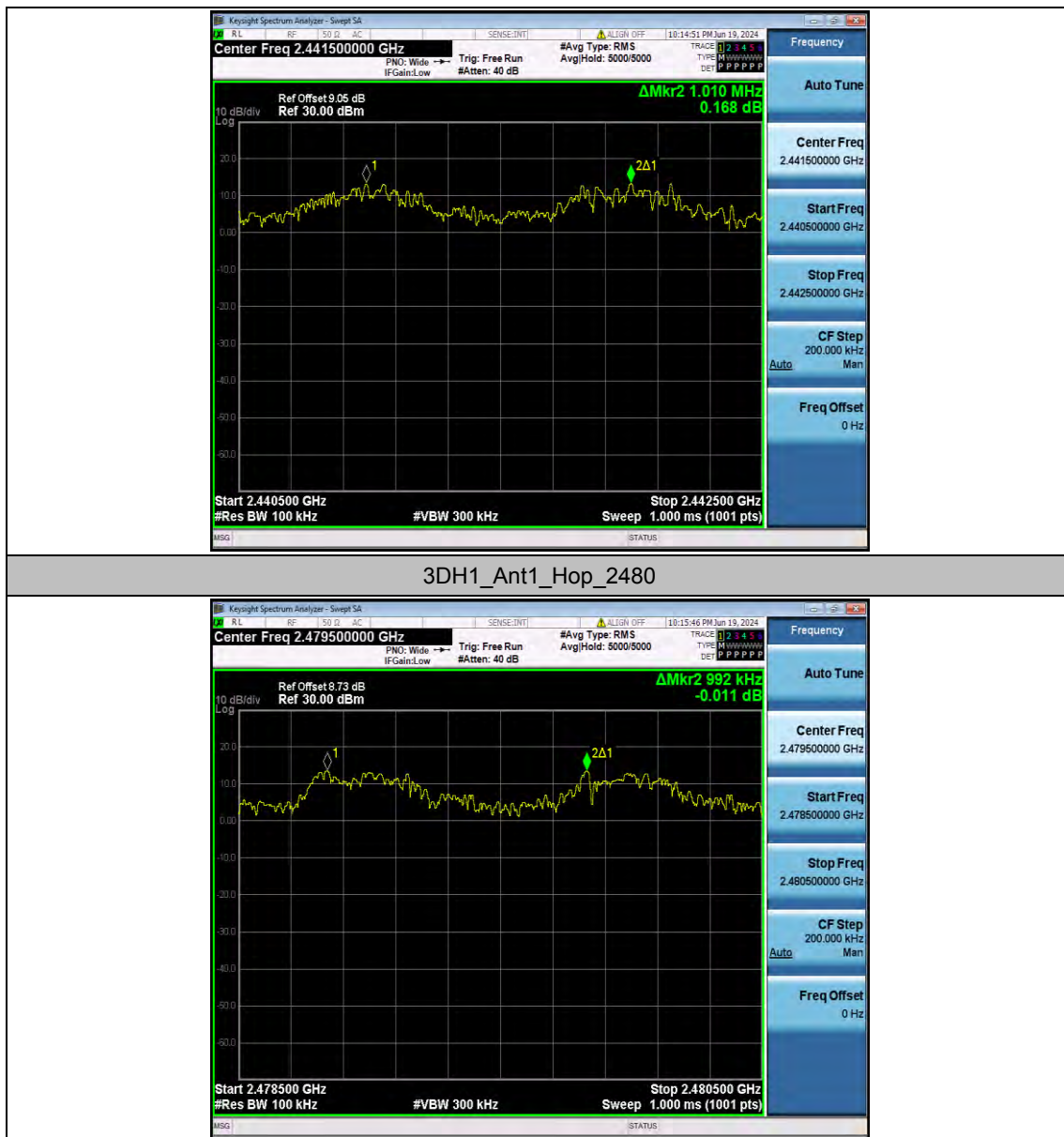
2DH1_Ant1_Hop_2480



3DH1_Ant1_Hop_2402



3DH1_Ant1_Hop_2441

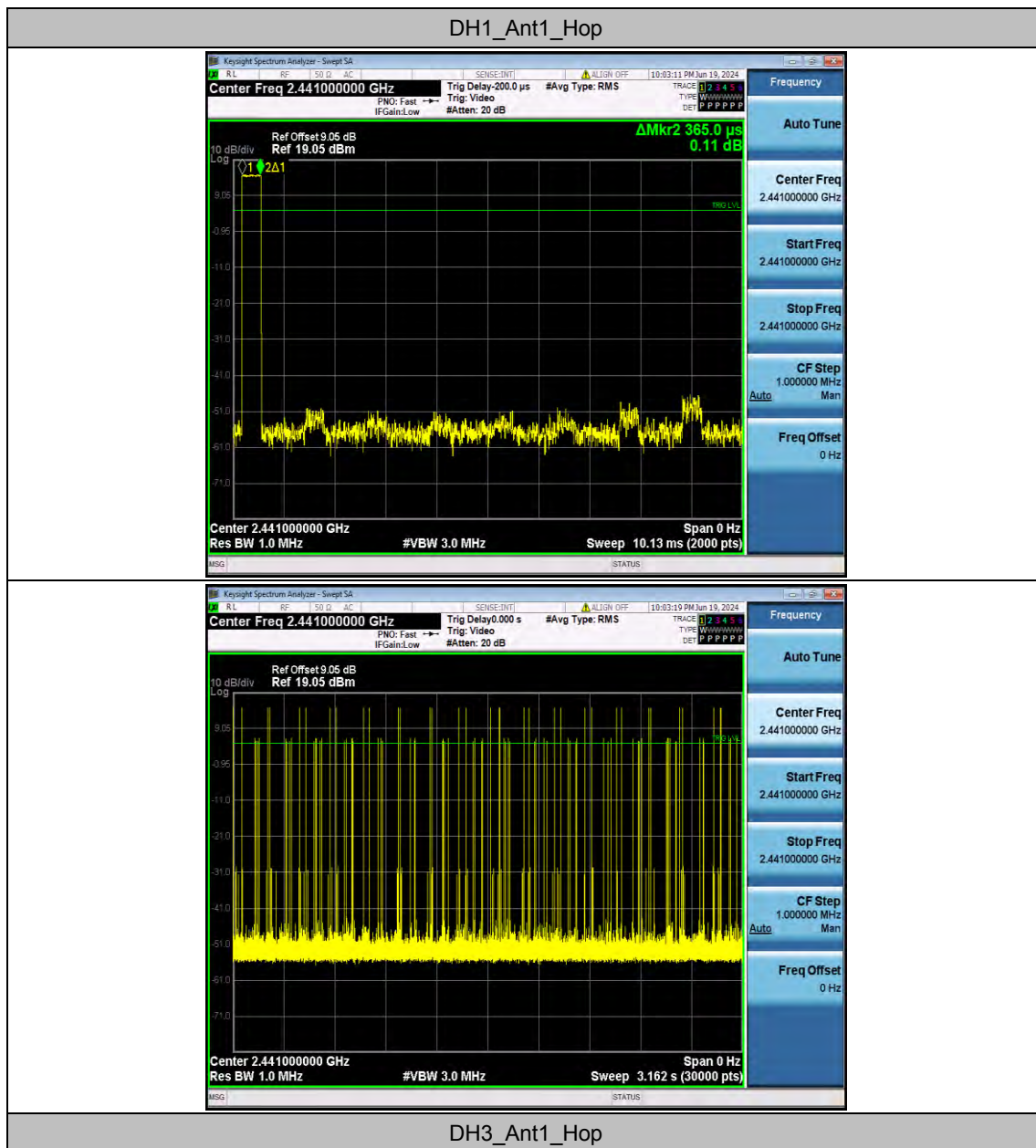


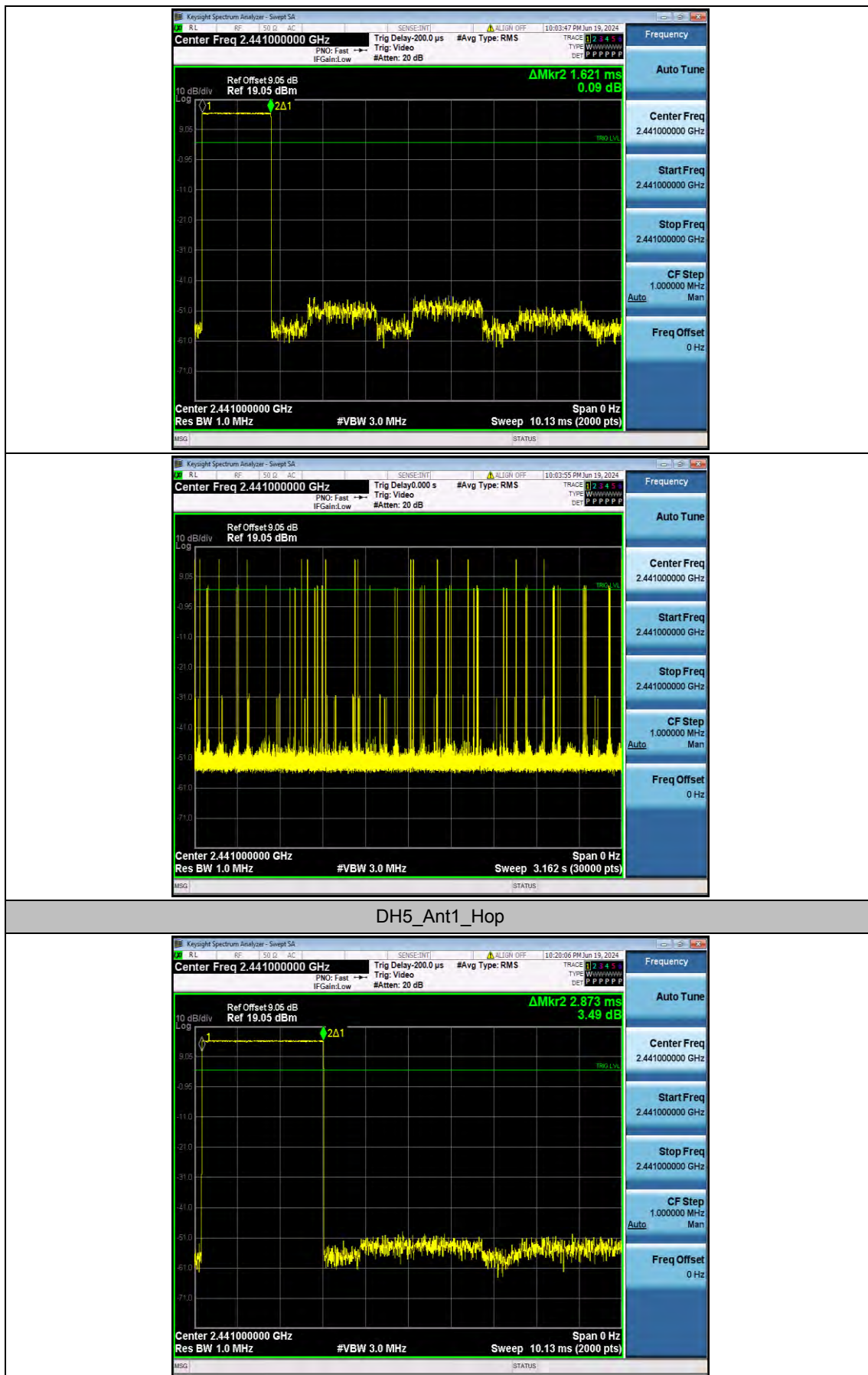
Appendix A.5: Time of occupancy

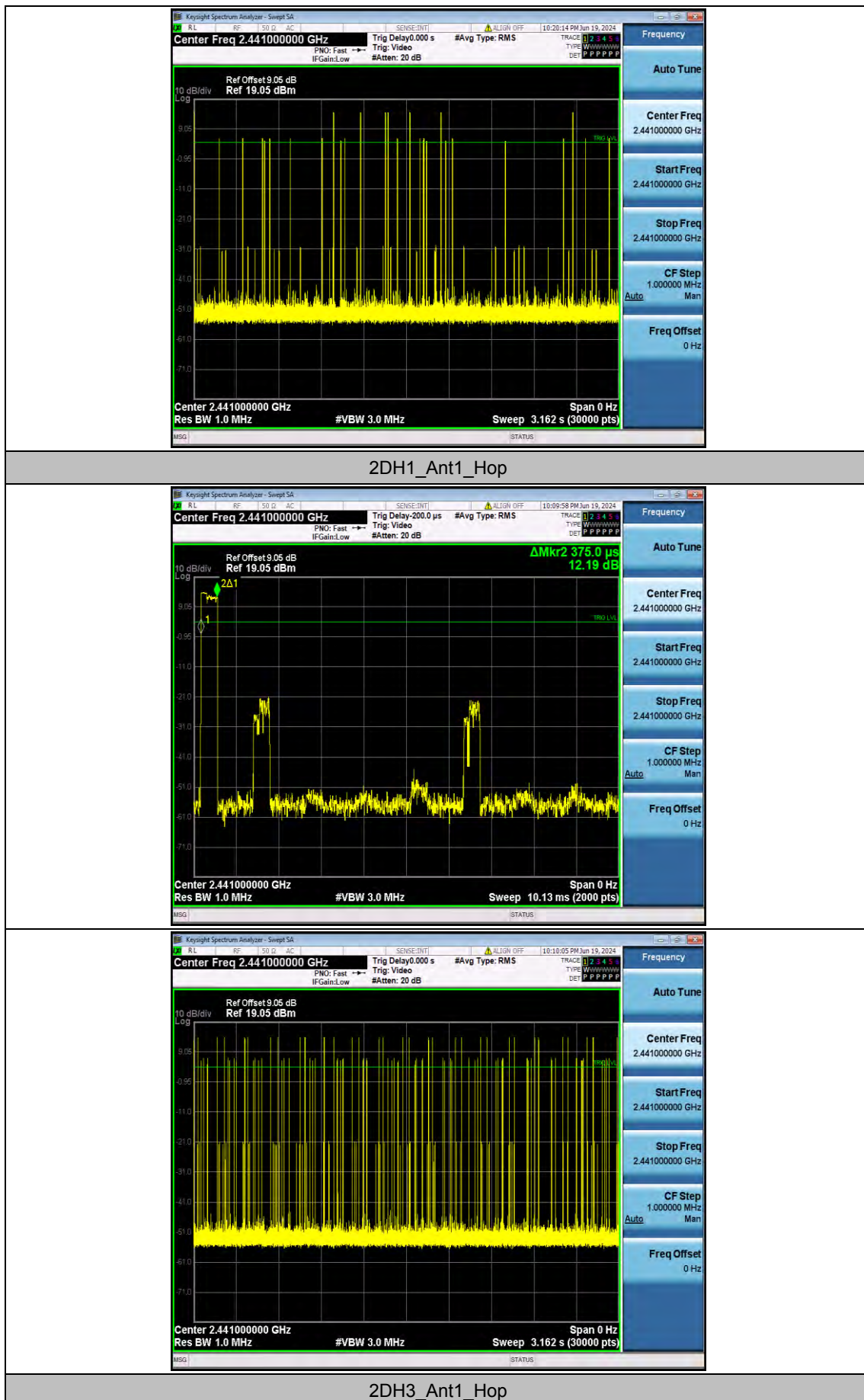
Test Result

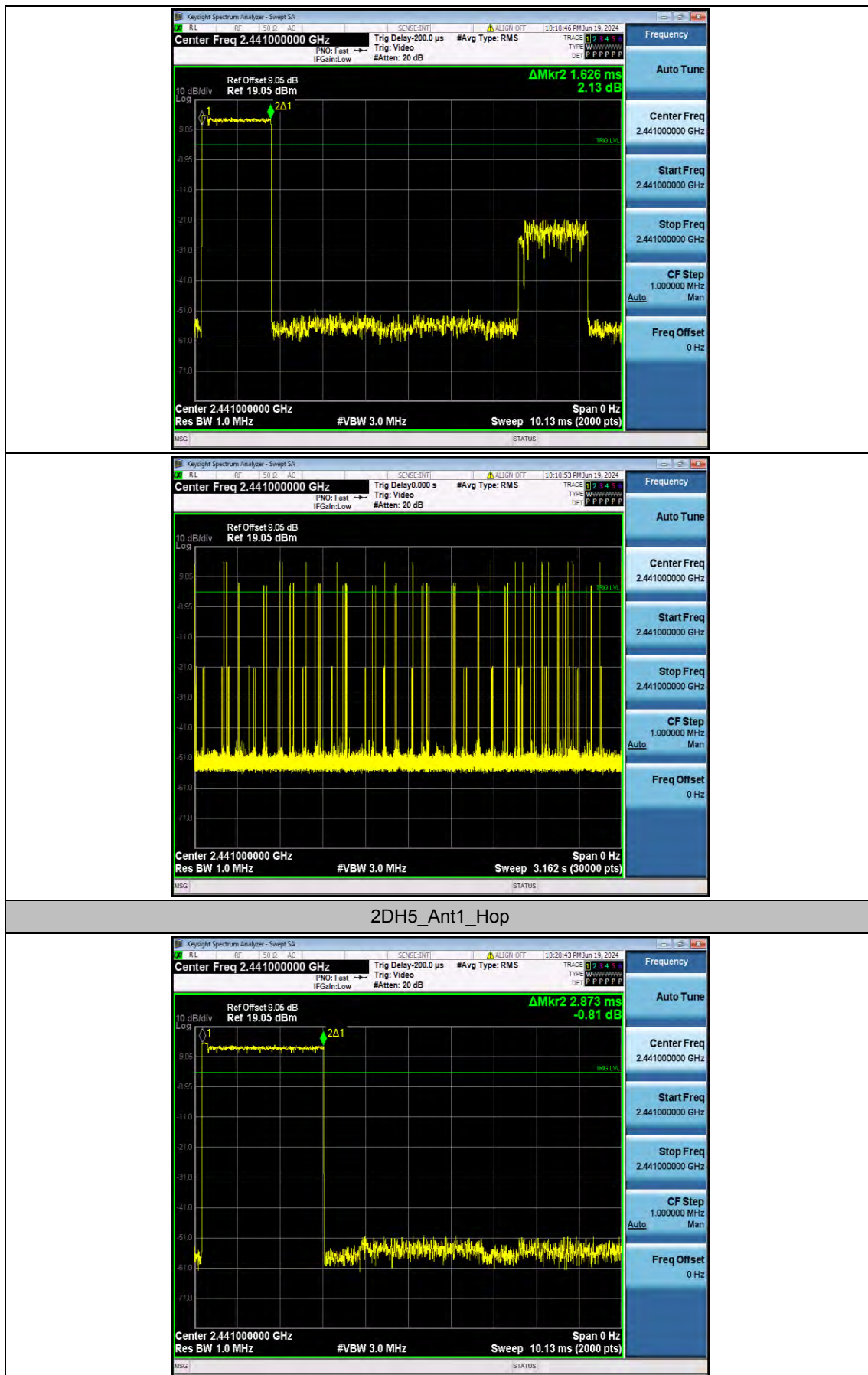
TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.365	320	0.117	≤0.4	PASS
DH3	Ant1	Hop	1.621	160	0.259	≤0.4	PASS
DH5	Ant1	Hop	2.873	80	0.23	≤0.4	PASS
2DH1	Ant1	Hop	0.375	330	0.124	≤0.4	PASS
2DH3	Ant1	Hop	1.626	180	0.293	≤0.4	PASS
2DH5	Ant1	Hop	2.873	110	0.316	≤0.4	PASS
3DH1	Ant1	Hop	0.370	330	0.122	≤0.4	PASS
3DH3	Ant1	Hop	1.626	180	0.293	≤0.4	PASS
3DH5	Ant1	Hop	2.878	120	0.345	≤0.4	PASS

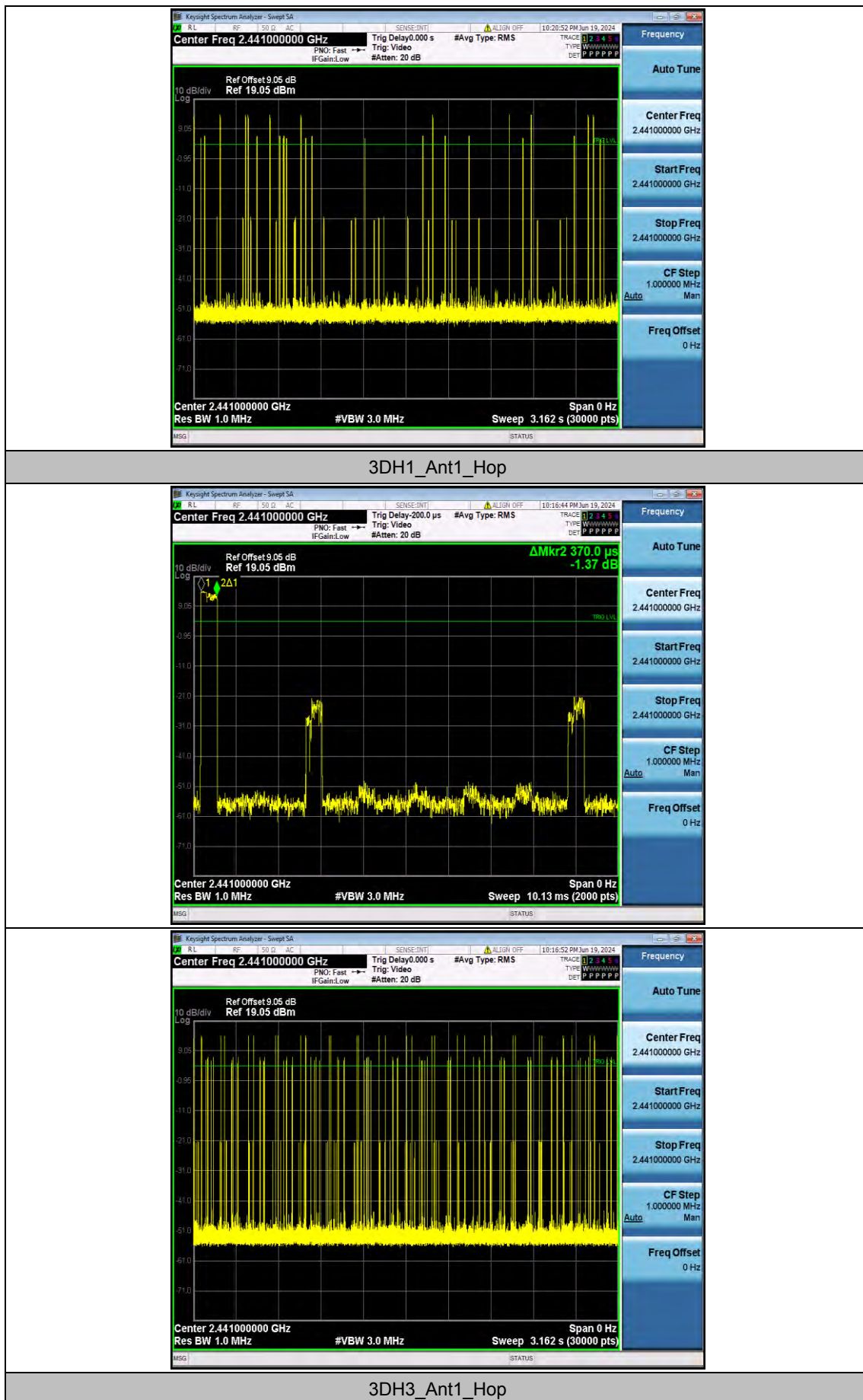
Test Graphs

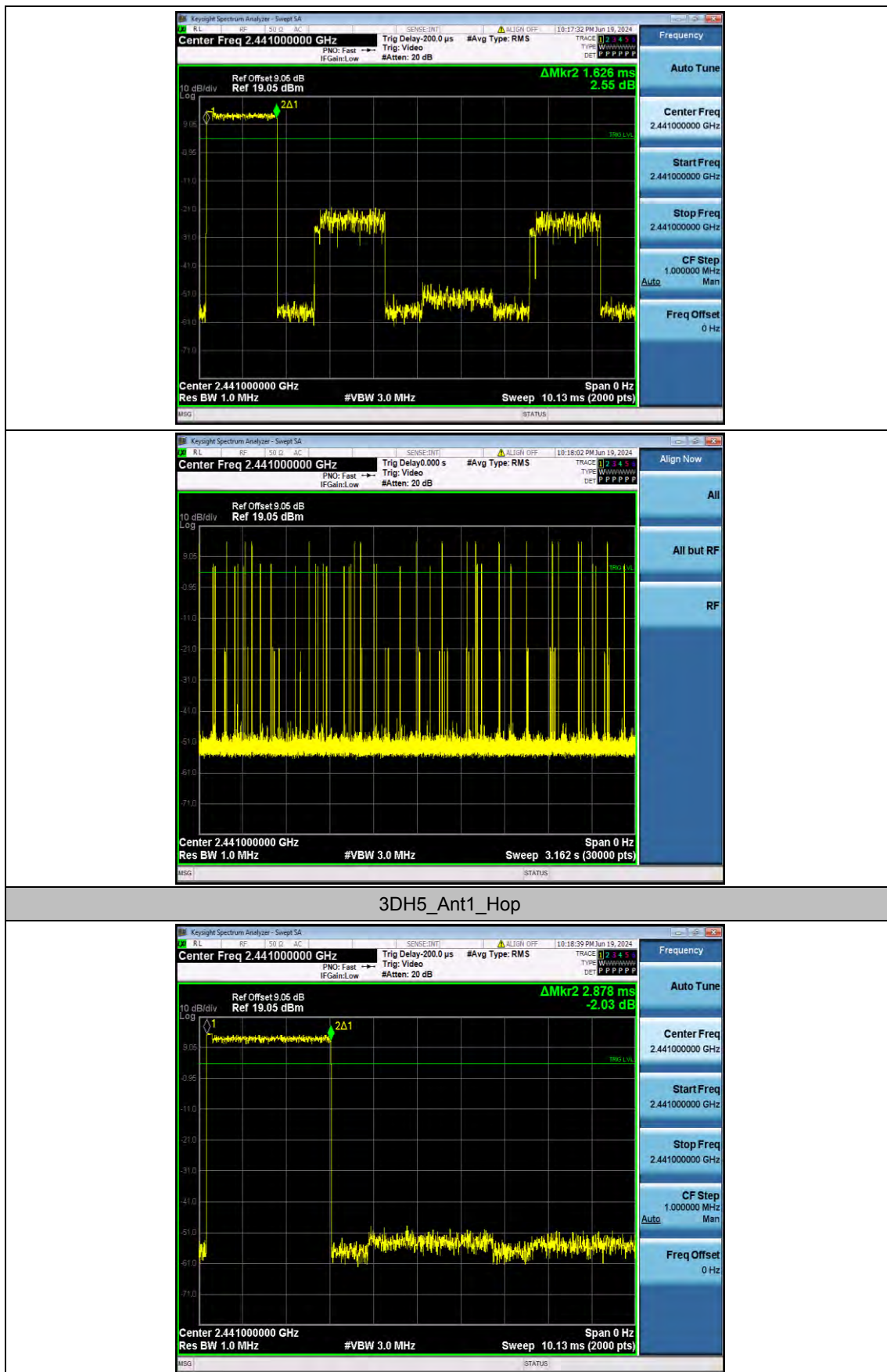


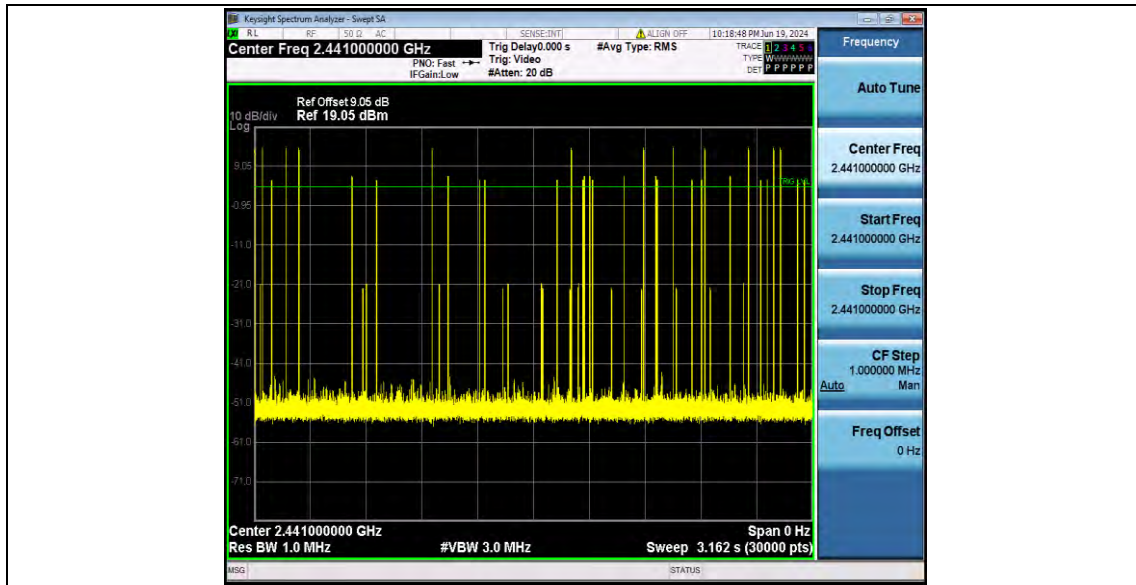










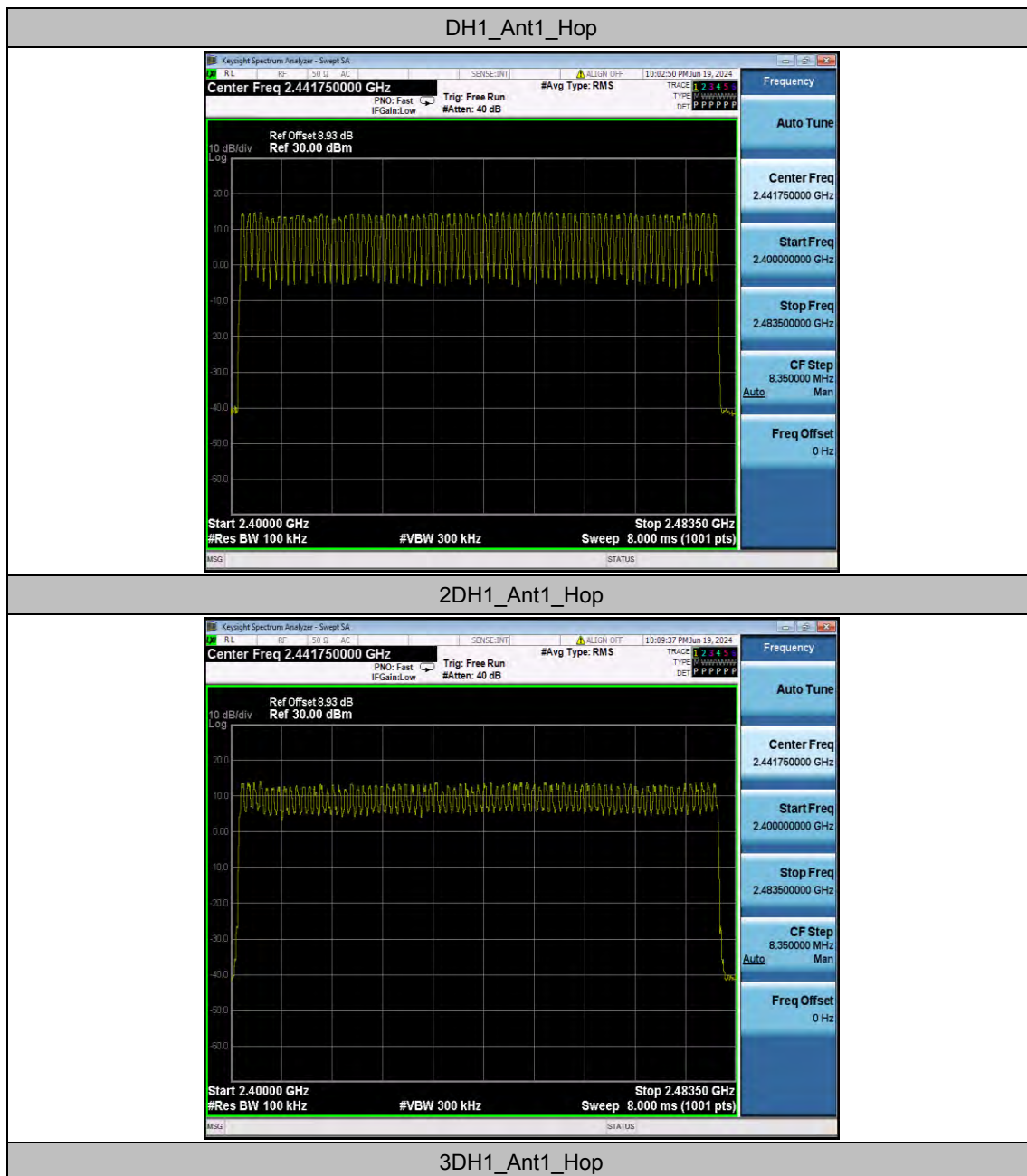


Appendix A.6: Number of hopping channels

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

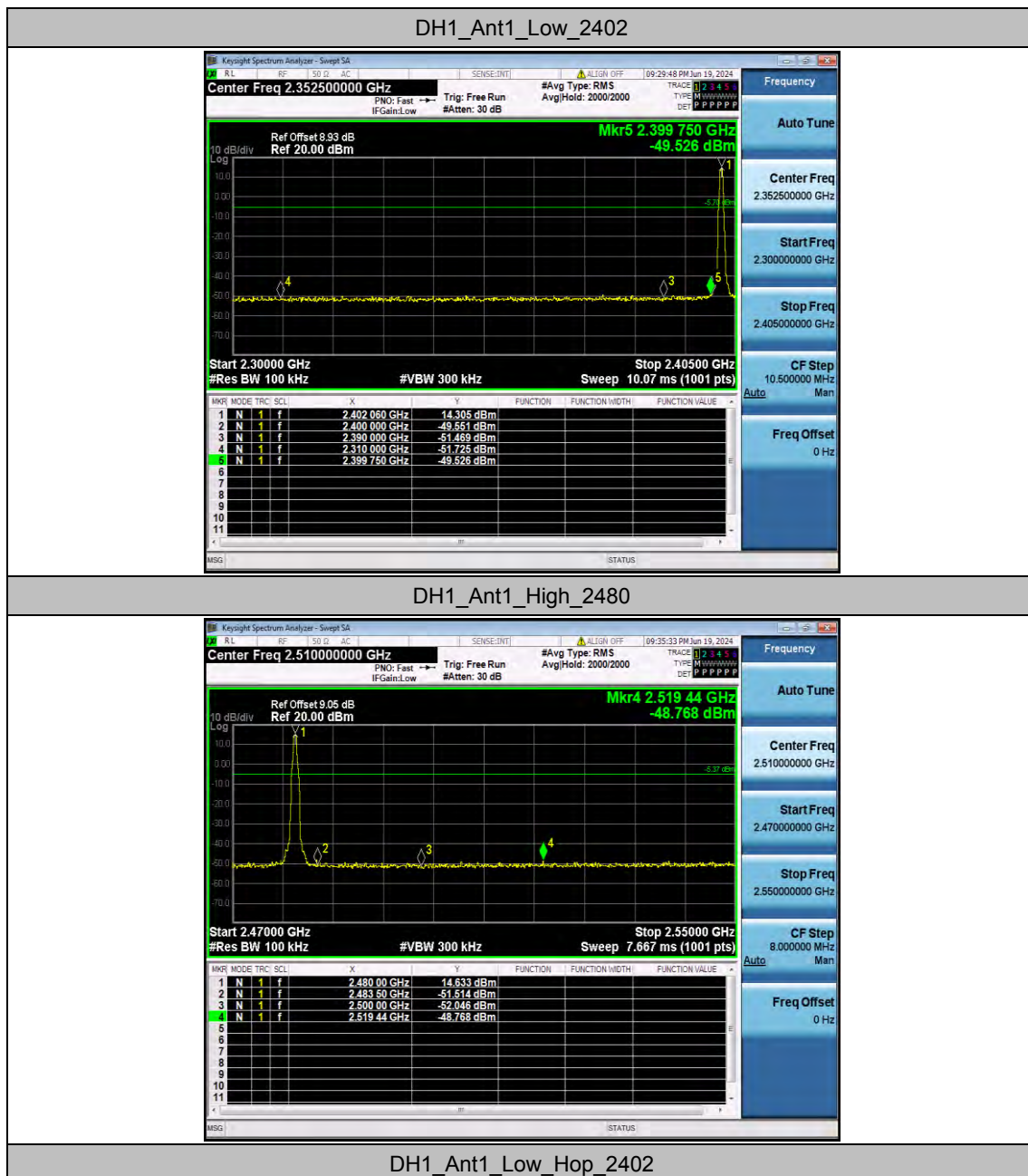


Appendix A.7: Band edge measurements

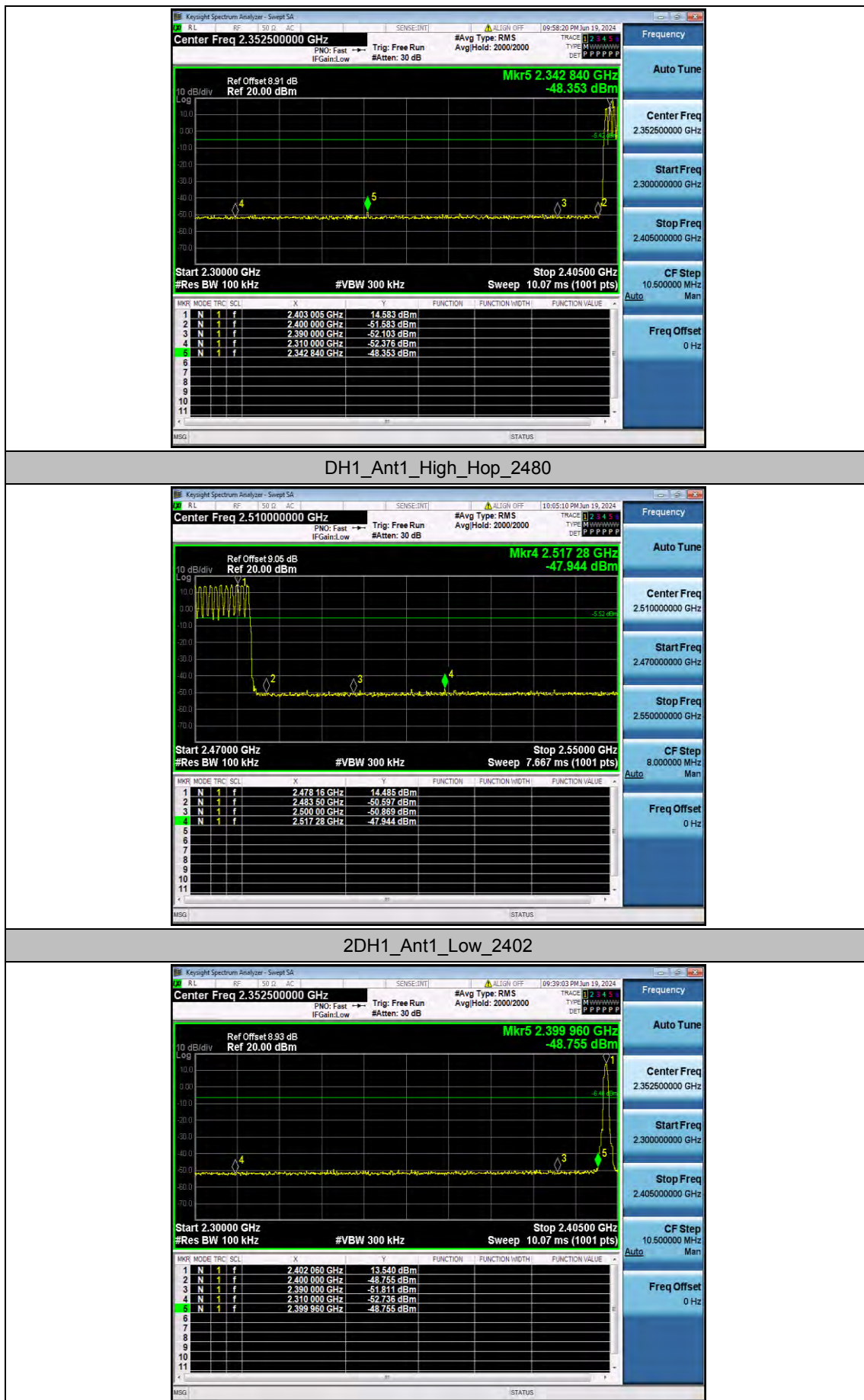
Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	Low	2402	14.31	-49.53	≤ -5.7	PASS
		High	2480	14.63	-48.77	≤ -5.37	PASS
		Low	Hop_2402	14.58	-48.35	≤ -5.42	PASS
		High	Hop_2480	14.49	-47.94	≤ -5.52	PASS
2DH1	Ant1	Low	2402	13.54	-48.76	≤ -6.46	PASS
		High	2480	13.88	-48.54	≤ -6.12	PASS
		Low	Hop_2402	13.84	-48.95	≤ -6.16	PASS
		High	Hop_2480	11.21	-48.58	≤ -8.79	PASS
3DH1	Ant1	Low	2402	13.49	-48.86	≤ -6.51	PASS
		High	2480	12.30	-47.94	≤ -7.7	PASS
		Low	Hop_2402	11.35	-48.93	≤ -8.66	PASS
		High	Hop_2480	13.22	-46.28	≤ -6.79	PASS

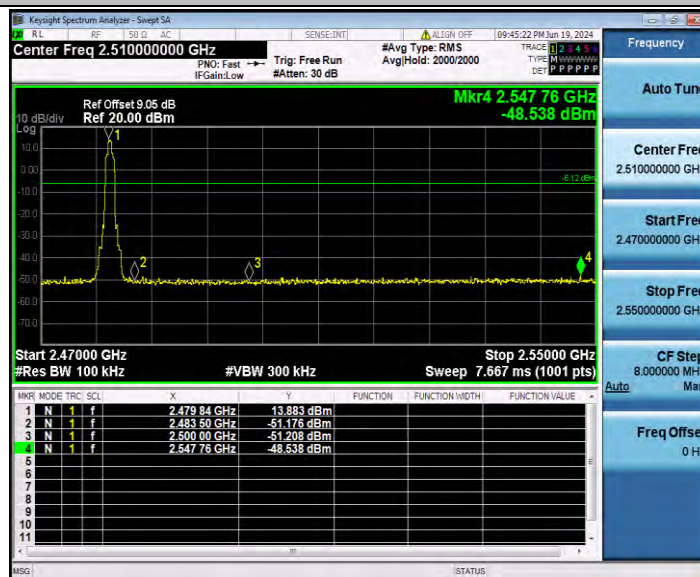
Test Graphs



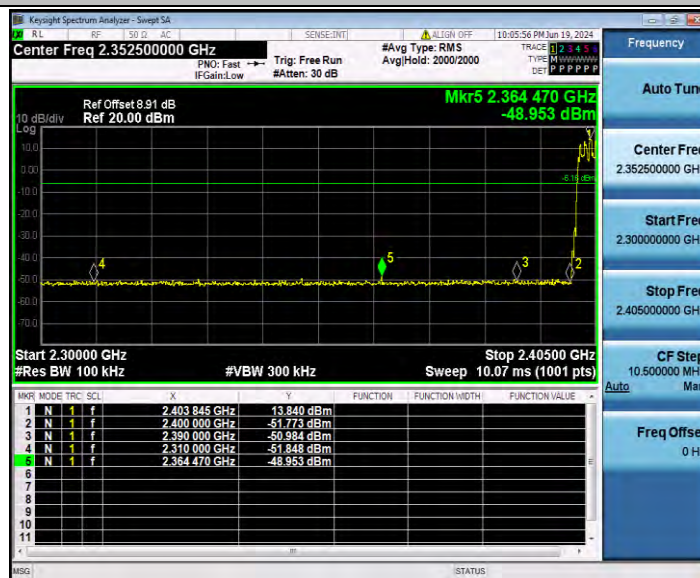
DH1_Ant1_Low_Hop_2402



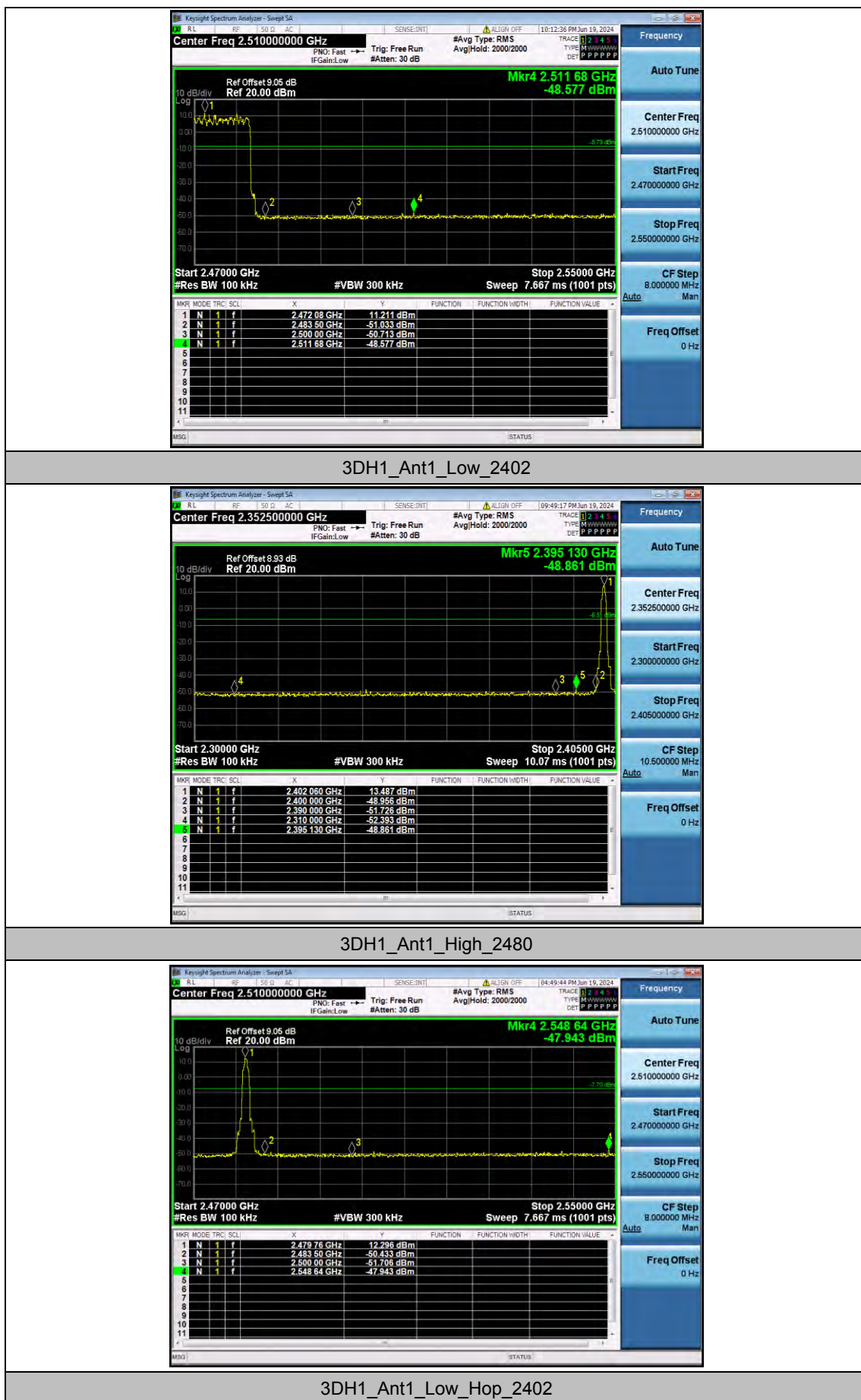
2DH1_Ant1_High_2480

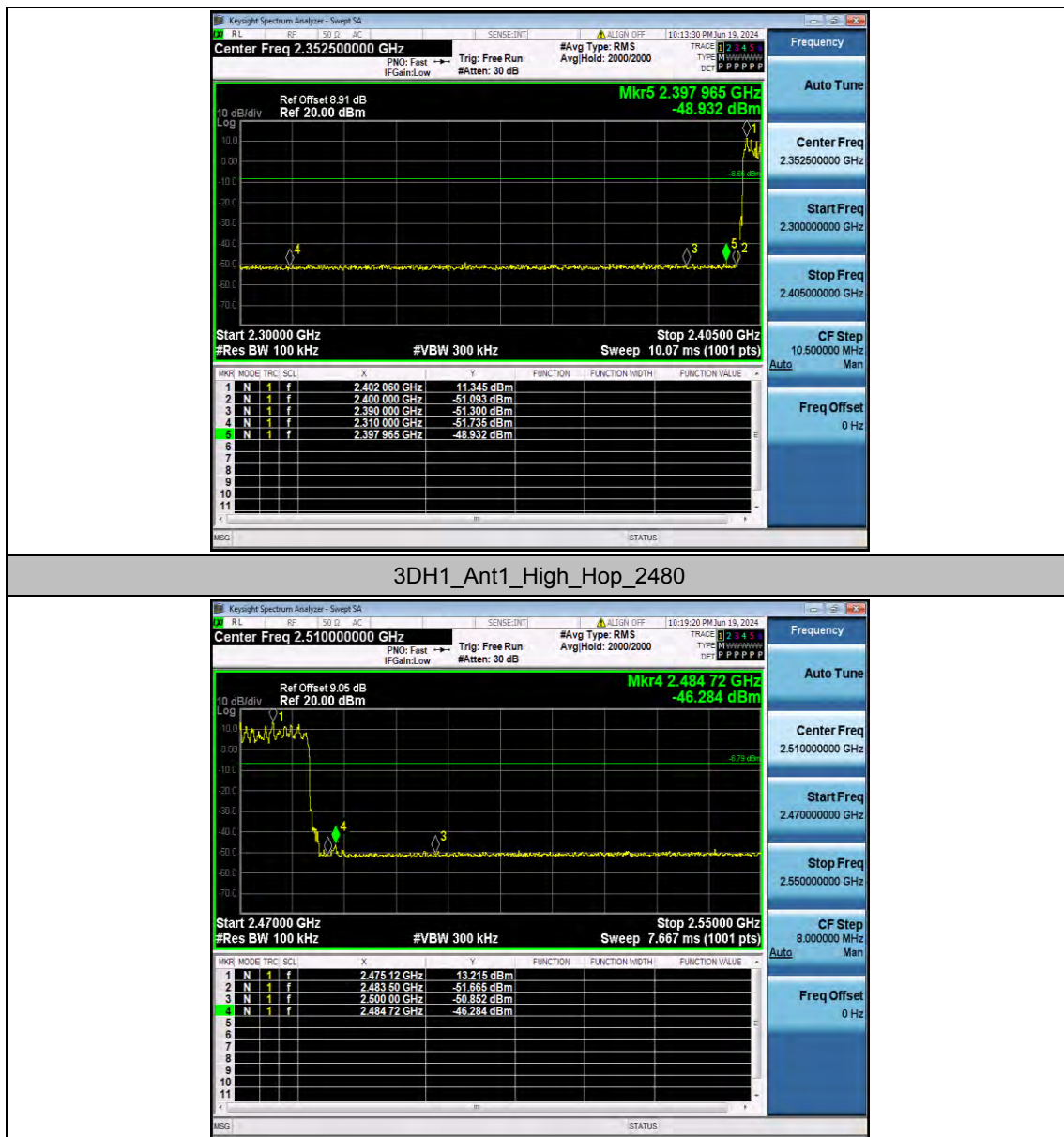


2DH1_Ant1_Low_Hop_2402



2DH1_Ant1_High_Hop_2480



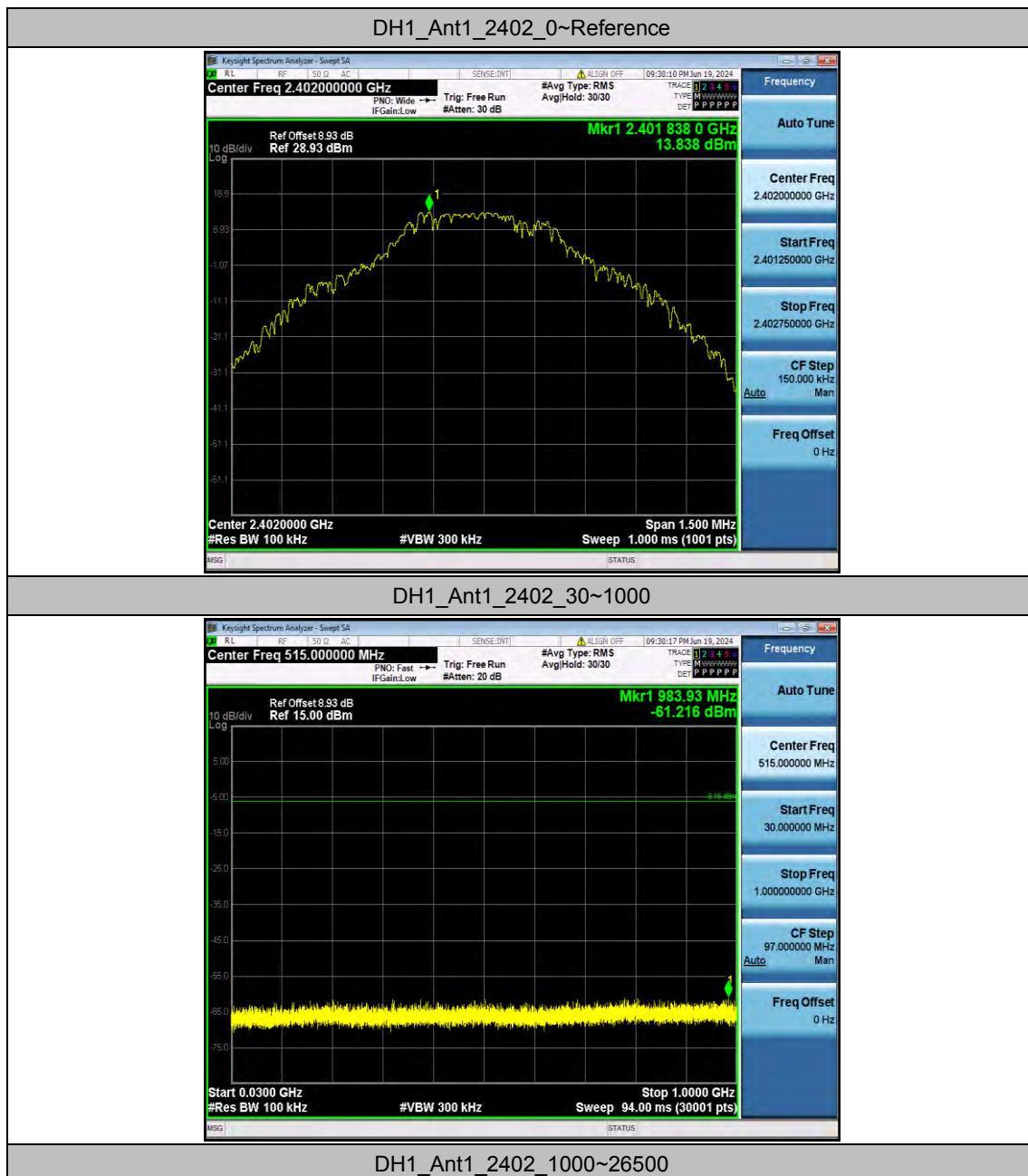


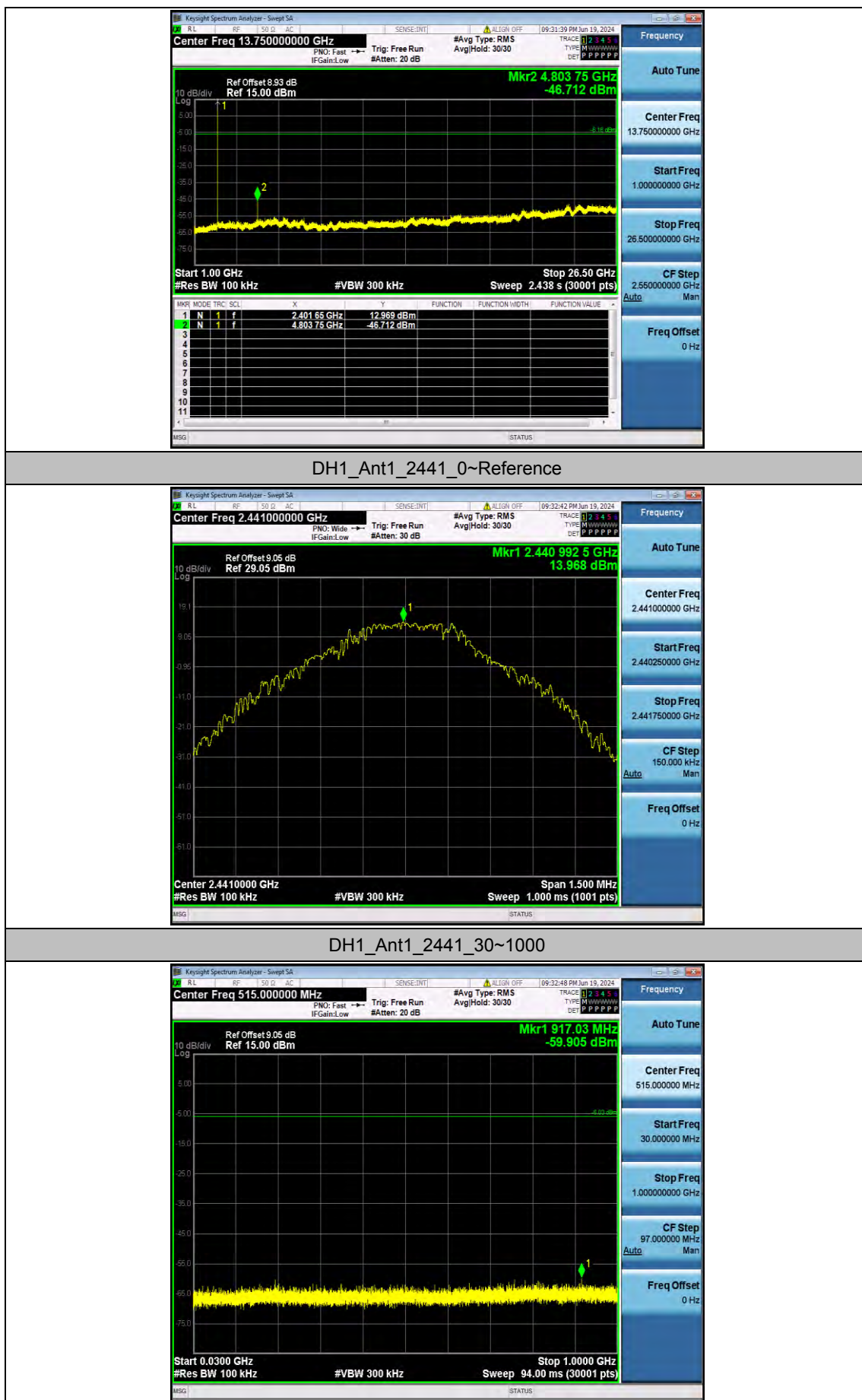
Appendix A.8: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	2402	Reference	13.84	13.84	---	PASS
			30~1000	13.84	-61.22	≤ -6.16	PASS
			1000~26500	13.84	-46.71	≤ -6.16	PASS
		2441	Reference	13.97	13.97	---	PASS
			30~1000	13.97	-59.91	≤ -6.03	PASS
			1000~26500	13.97	-47.6	≤ -6.03	PASS
		2480	Reference	14.28	14.28	---	PASS
			30~1000	14.28	-59.81	≤ -5.72	PASS
			1000~26500	14.28	-47.59	≤ -5.72	PASS
2DH1	Ant1	2402	Reference	13.25	13.25	---	PASS
			30~1000	13.25	-60.83	≤ -6.75	PASS
			1000~26500	13.25	-47.58	≤ -6.75	PASS
		2441	Reference	13.14	13.14	---	PASS
			30~1000	13.14	-60.74	≤ -6.86	PASS
			1000~26500	13.14	-47.3	≤ -6.86	PASS
		2480	Reference	13.66	13.66	---	PASS
			30~1000	13.66	-60.52	≤ -6.34	PASS
			1000~26500	13.66	-47.35	≤ -6.34	PASS
3DH1	Ant1	2402	Reference	12.78	12.78	---	PASS
			30~1000	12.78	-59.9	≤ -7.22	PASS
			1000~26500	12.78	-47.75	≤ -7.22	PASS
		2441	Reference	13.02	13.02	---	PASS
			30~1000	13.02	-59.9	≤ -6.98	PASS
			1000~26500	13.02	-47.58	≤ -6.98	PASS
		2480	Reference	12.53	12.53	---	PASS
			30~1000	12.53	-60.76	≤ -7.47	PASS
			1000~26500	12.53	-47.46	≤ -7.47	PASS

Test Graphs





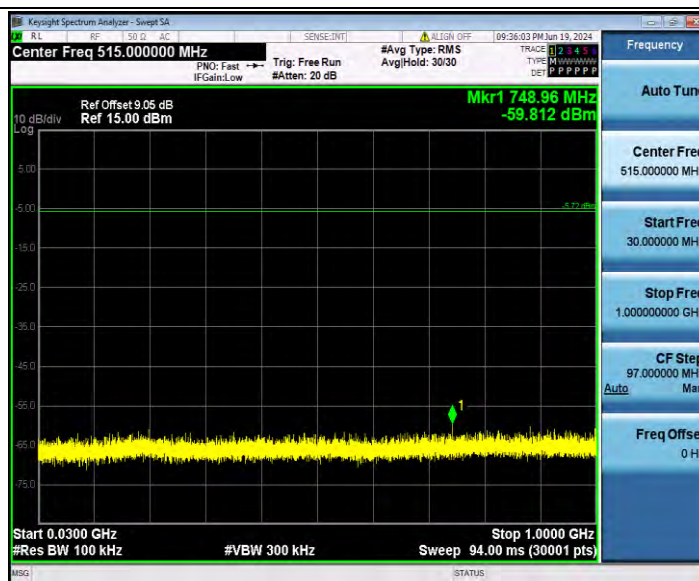
DH1_Ant1_2441_1000~26500



DH1_Ant1_2480_0~Reference



DH1_Ant1_2480_30~1000

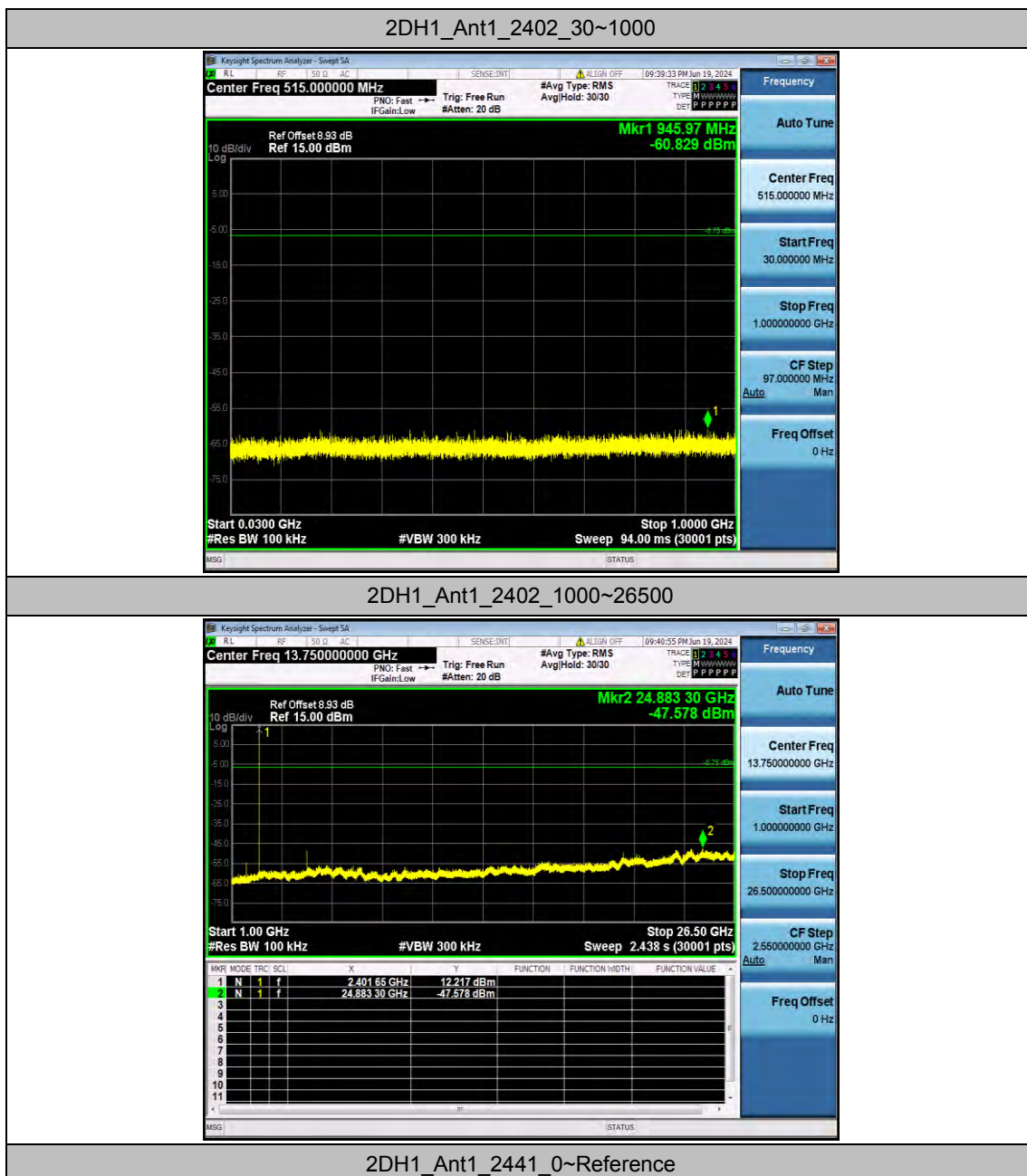


DH1_Ant1_2480_1000~26500



2DH1_Ant1_2402_0~Reference

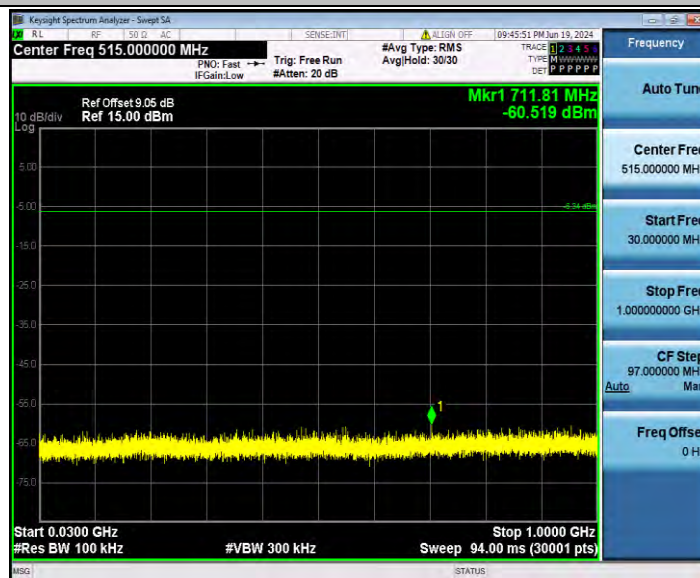




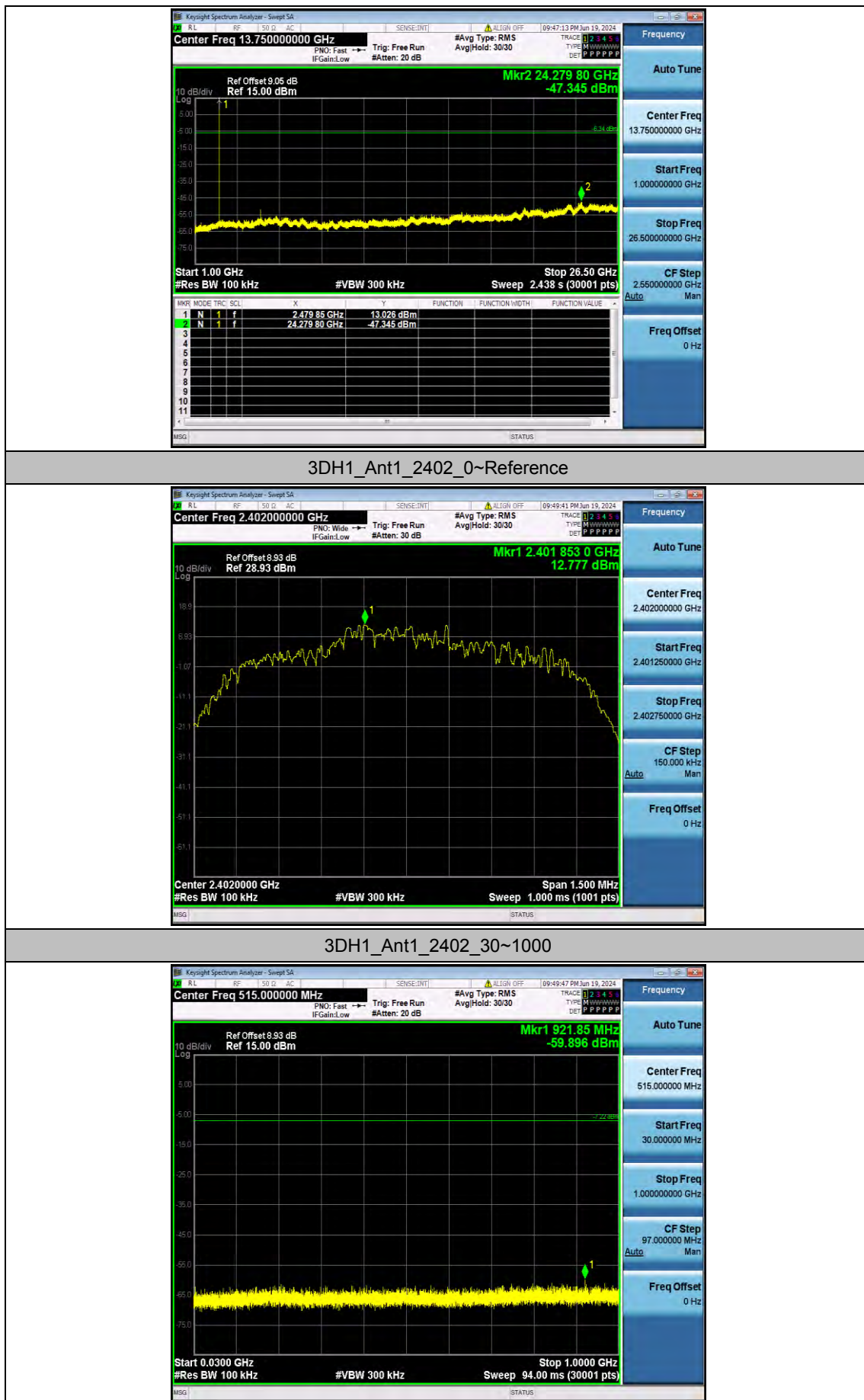
2DH1_Ant1_2480_0~Reference



2DH1_Ant1_2480_30~1000



2DH1_Ant1_2480_1000~26500



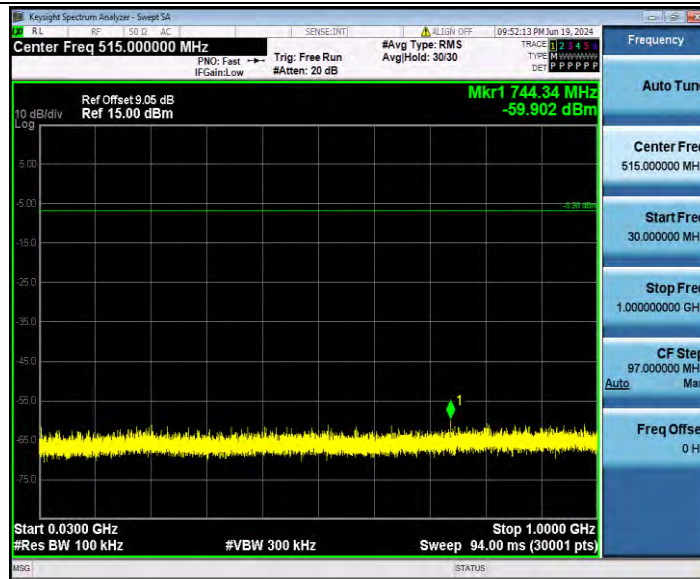
3DH1_Ant1_2402_1000~26500



3DH1_Ant1_2441_0~Reference



3DH1_Ant1_2441_30~1000

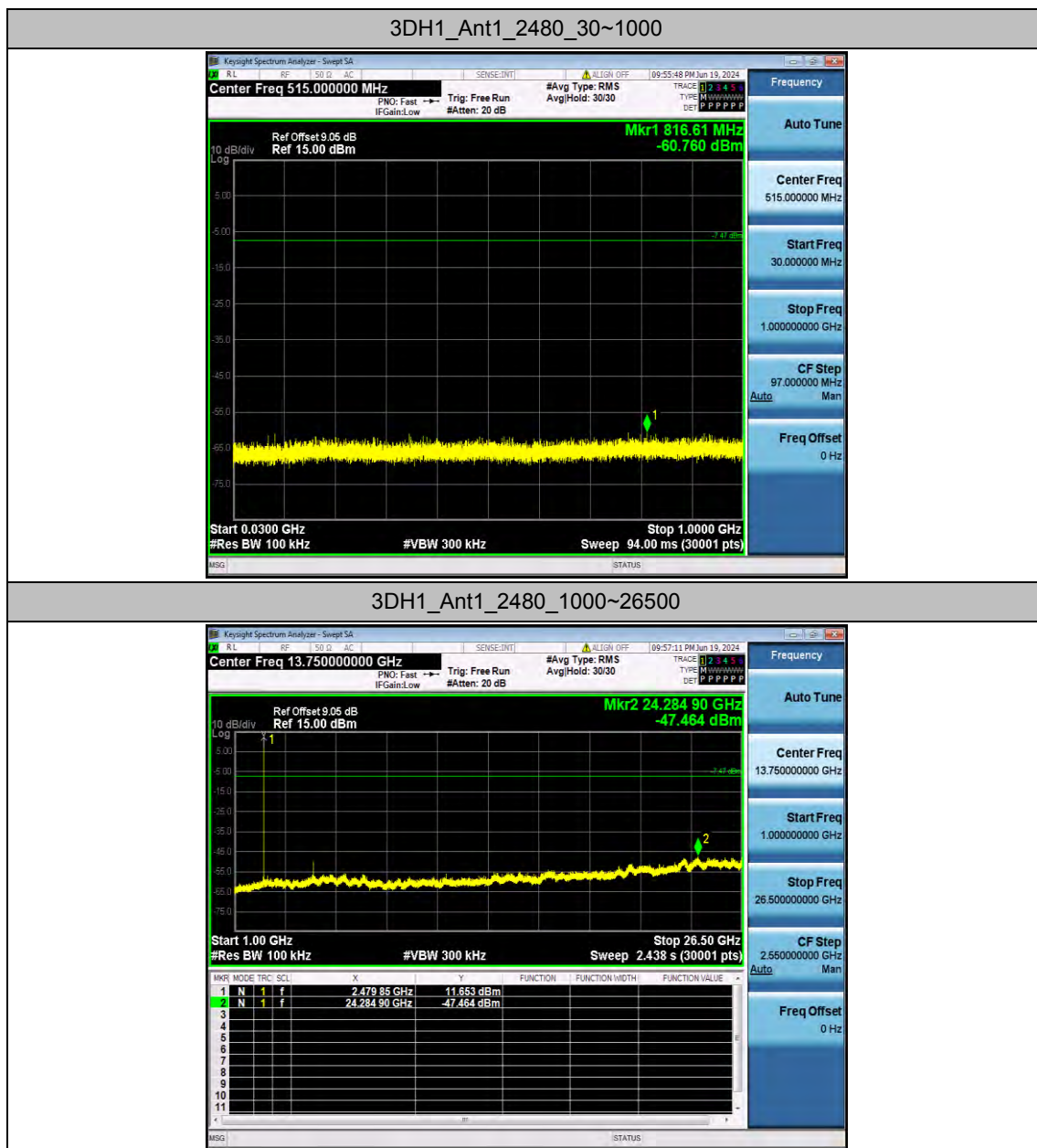


3DH1_Ant1_2441_1000~26500



3DH1_Ant1_2480_0~Reference





Appendix A.9: Emissions in Restricted Bands

Test Result

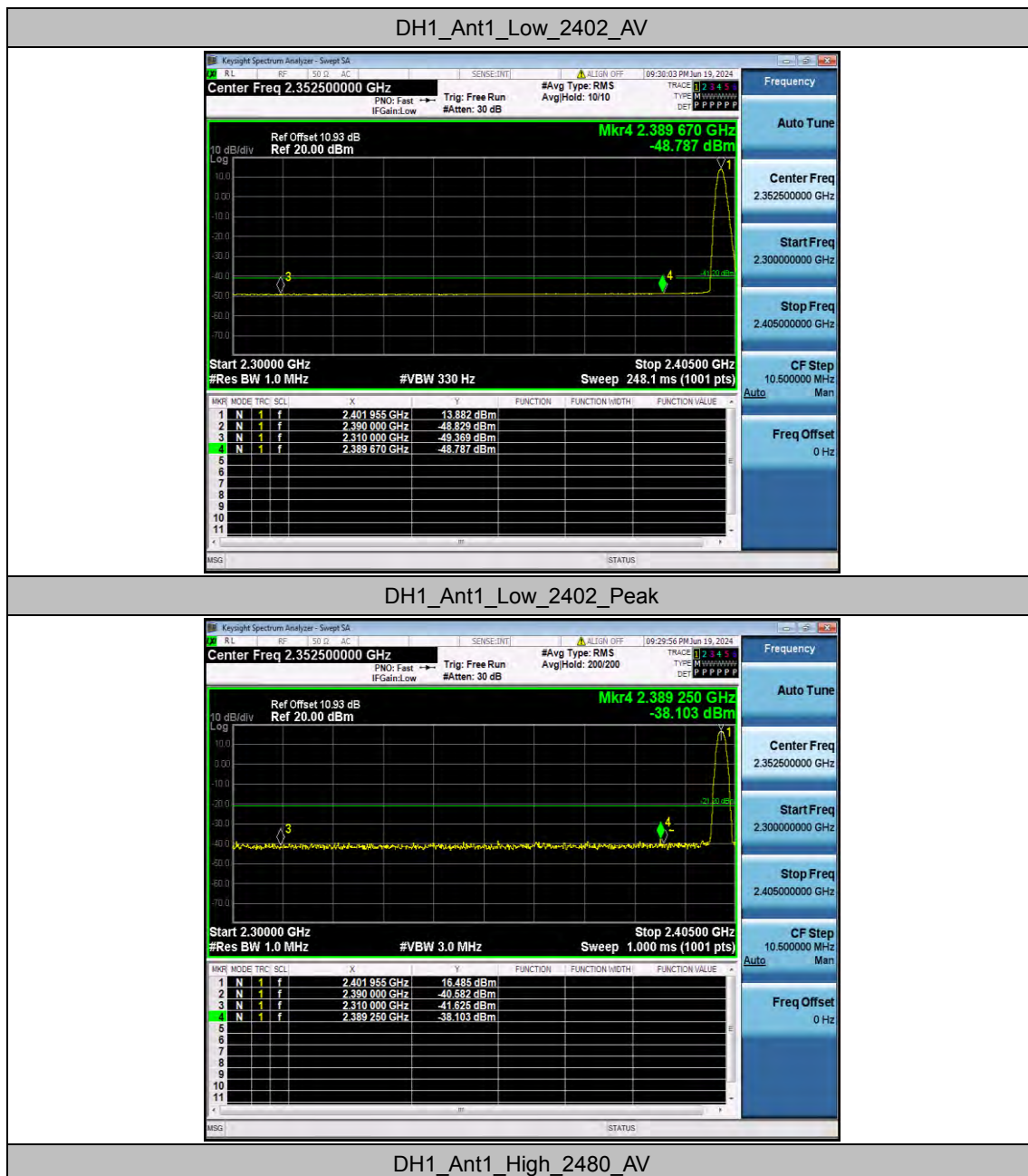
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH1	Ant1	Low	2402	AV	2310.000	-49.37	≤-41.20	45.83	≤54	PASS
				AV	2389.670	-48.79	≤-41.20	46.41	≤54	PASS
				AV	2390.000	-48.83	≤-41.20	46.37	≤54	PASS
				Peak	2310.000	-41.63	≤-21.20	53.57	≤74	PASS
				Peak	2389.250	-38.1	≤-21.20	57.10	≤74	PASS
				Peak	2390.000	-40.58	≤-21.20	54.62	≤74	PASS
		High	2480	AV	2483.500	-45.64	≤-41.20	49.56	≤54	PASS
				AV	2483.520	-45.64	≤-41.20	49.56	≤54	PASS
				AV	2500.000	-48.68	≤-41.20	46.52	≤54	PASS
				Peak	2483.500	-39.81	≤-21.20	55.39	≤74	PASS
				Peak	2486.800	-38.57	≤-21.20	56.63	≤74	PASS
				Peak	2500.000	-39.33	≤-21.20	55.87	≤74	PASS
2DH1	Ant1	Low	2402	AV	2310.000	-49.29	≤-41.20	45.91	≤54	PASS
				AV	2389.985	-48.83	≤-41.20	46.37	≤54	PASS
				AV	2390.000	-48.83	≤-41.20	46.37	≤54	PASS
				Peak	2310.000	-42.11	≤-21.20	53.09	≤74	PASS
				Peak	2350.190	-38.15	≤-21.20	57.05	≤74	PASS
				Peak	2390.000	-41.93	≤-21.20	53.27	≤74	PASS
		High	2480	AV	2483.500	-45.76	≤-41.20	49.44	≤54	PASS
				AV	2483.520	-45.76	≤-41.20	49.44	≤54	PASS
				AV	2500.000	-48.59	≤-41.20	46.61	≤54	PASS
				Peak	2483.500	-42.06	≤-21.20	53.14	≤74	PASS
				Peak	2487.920	-38.22	≤-21.20	56.98	≤74	PASS
				Peak	2500.000	-39.68	≤-21.20	55.52	≤74	PASS
3DH1	Ant1	Low	2402	AV	2310.000	-49.3	≤-41.20	45.90	≤54	PASS
				AV	2387.990	-48.86	≤-41.20	46.34	≤54	PASS
				AV	2390.000	-48.91	≤-41.20	46.29	≤54	PASS
				Peak	2310.000	-40.86	≤-21.20	54.34	≤74	PASS
				Peak	2356.805	-39.14	≤-21.20	56.06	≤74	PASS
				Peak	2390.000	-40.69	≤-21.20	54.51	≤74	PASS
		High	2480	AV	2483.500	-45.8	≤-41.20	49.40	≤54	PASS
				AV	2483.520	-45.8	≤-41.20	49.40	≤54	PASS
				AV	2500.000	-48.61	≤-41.20	46.59	≤54	PASS
				Peak	2483.500	-40.19	≤-21.20	55.01	≤74	PASS
				Peak	2491.920	-38.42	≤-21.20	56.78	≤74	PASS

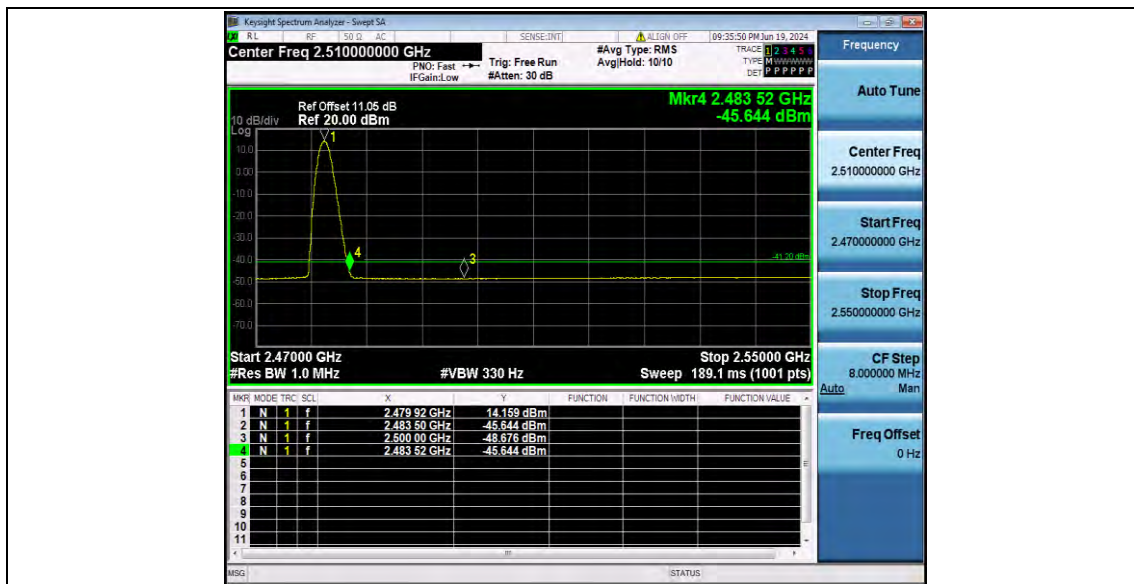
				Peak	2500.000	-41.72	≤ -21.20	53.48	≤ 74	PASS
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Note:

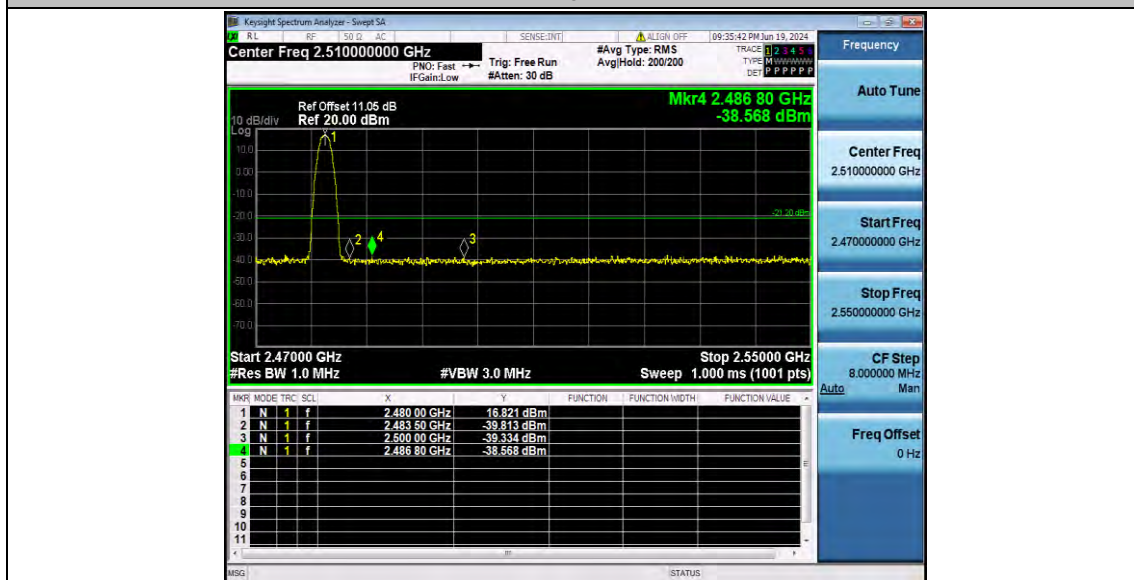
1. The Antenna Gain is compensated in the graph.
2. The Duty Cycle Factor and RBW Factor is compensated in the graph.
3. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

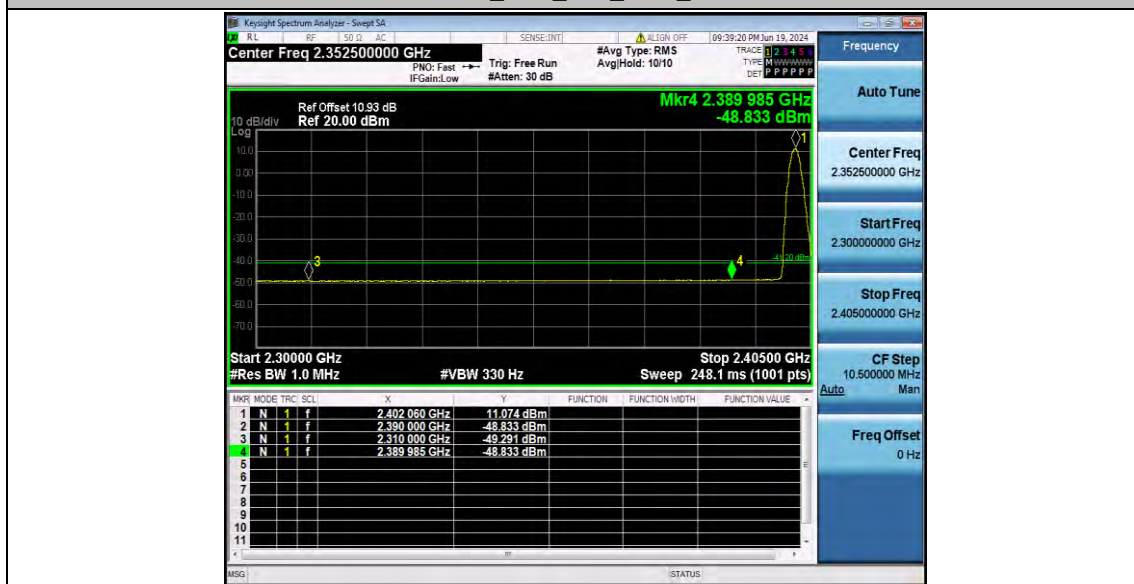




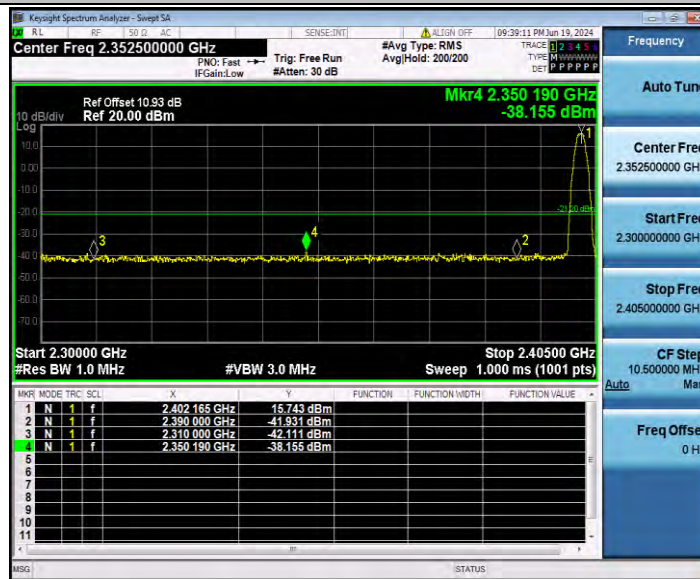
DH1_Ant1_High_2480_Peak



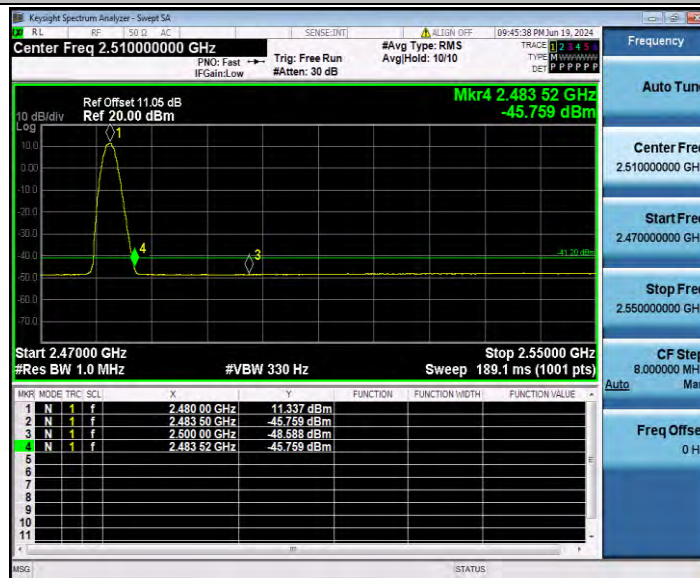
2DH1_Ant1_Low_2402_AV



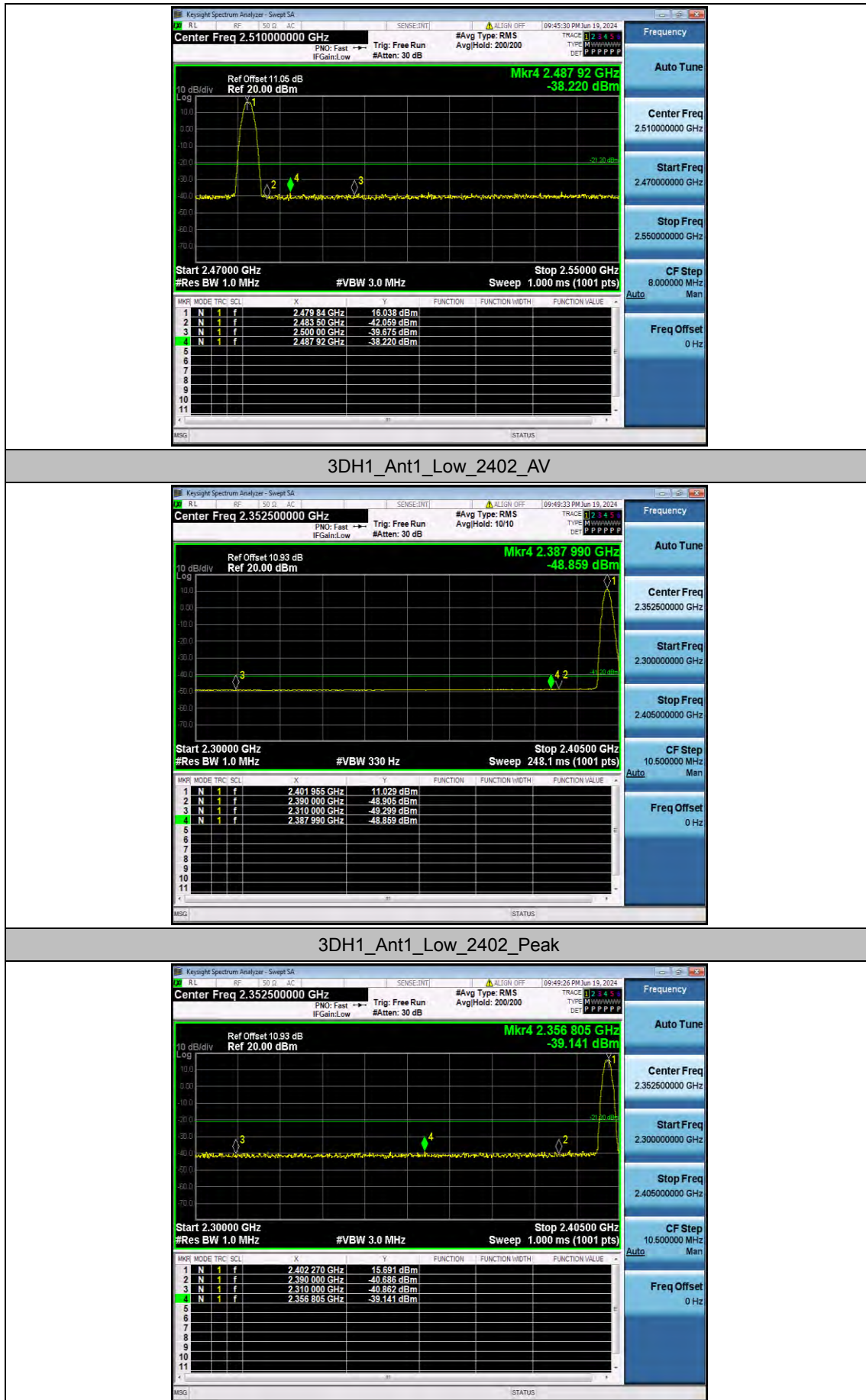
2DH1_Ant1_Low_2402_Peak



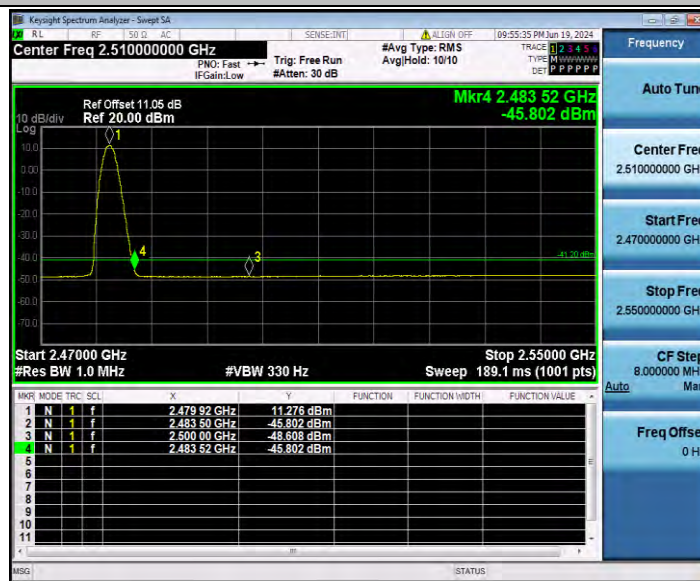
2DH1_Ant1_High_2480_AV



2DH1_Ant1_High_2480_Peak



3DH1_Ant1_High_2480_AV



3DH1_Ant1_High_2480_Peak

