

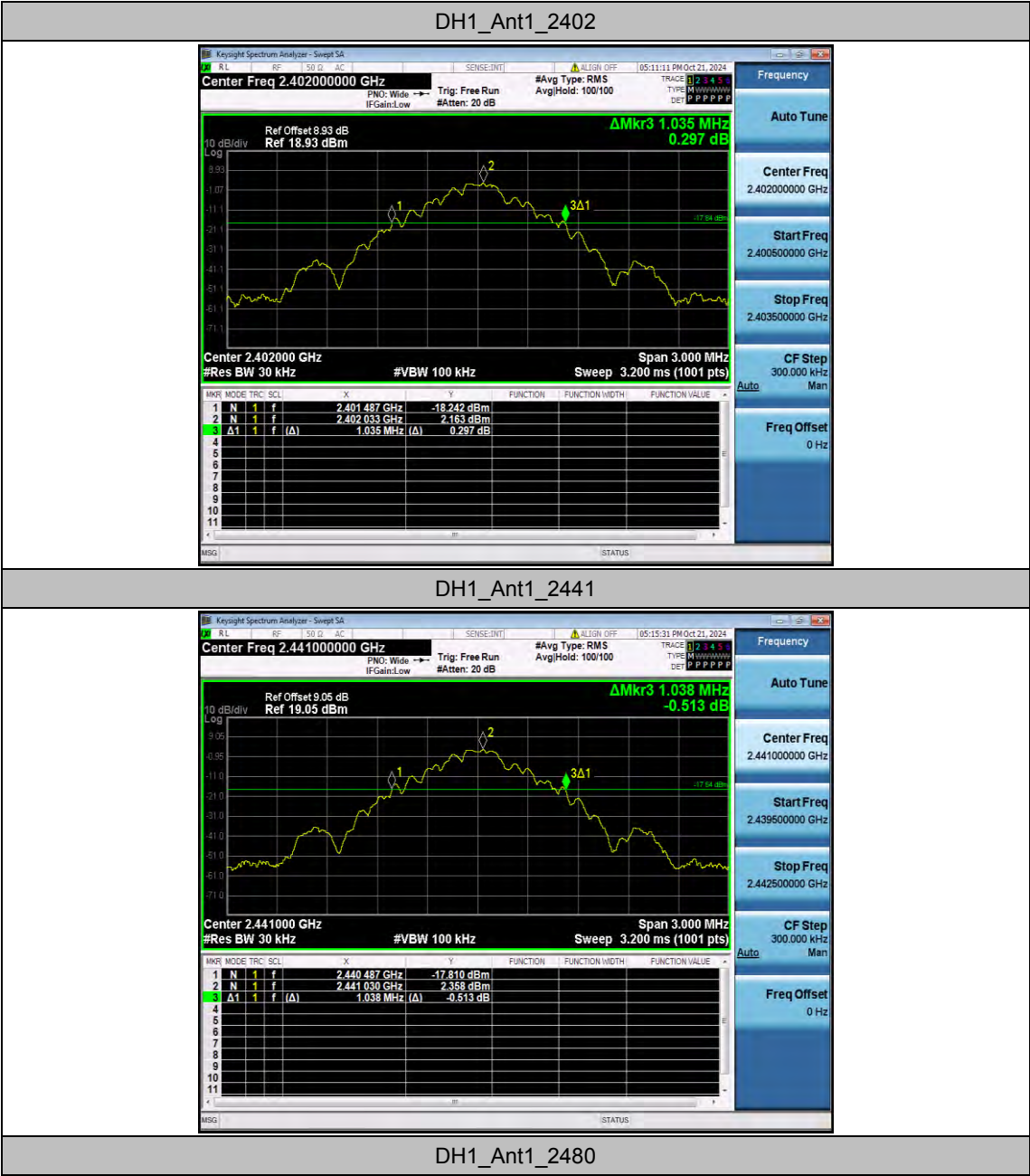
Case No. : <u>CTA24102501801</u>	
Ambient Condition: <u>23</u> °C, <u>52</u> %RH	
According Standard: ■Part15C	
Test Date: <u>2024.10.16</u>	Test Engineer: <u>Evan ouyang</u>

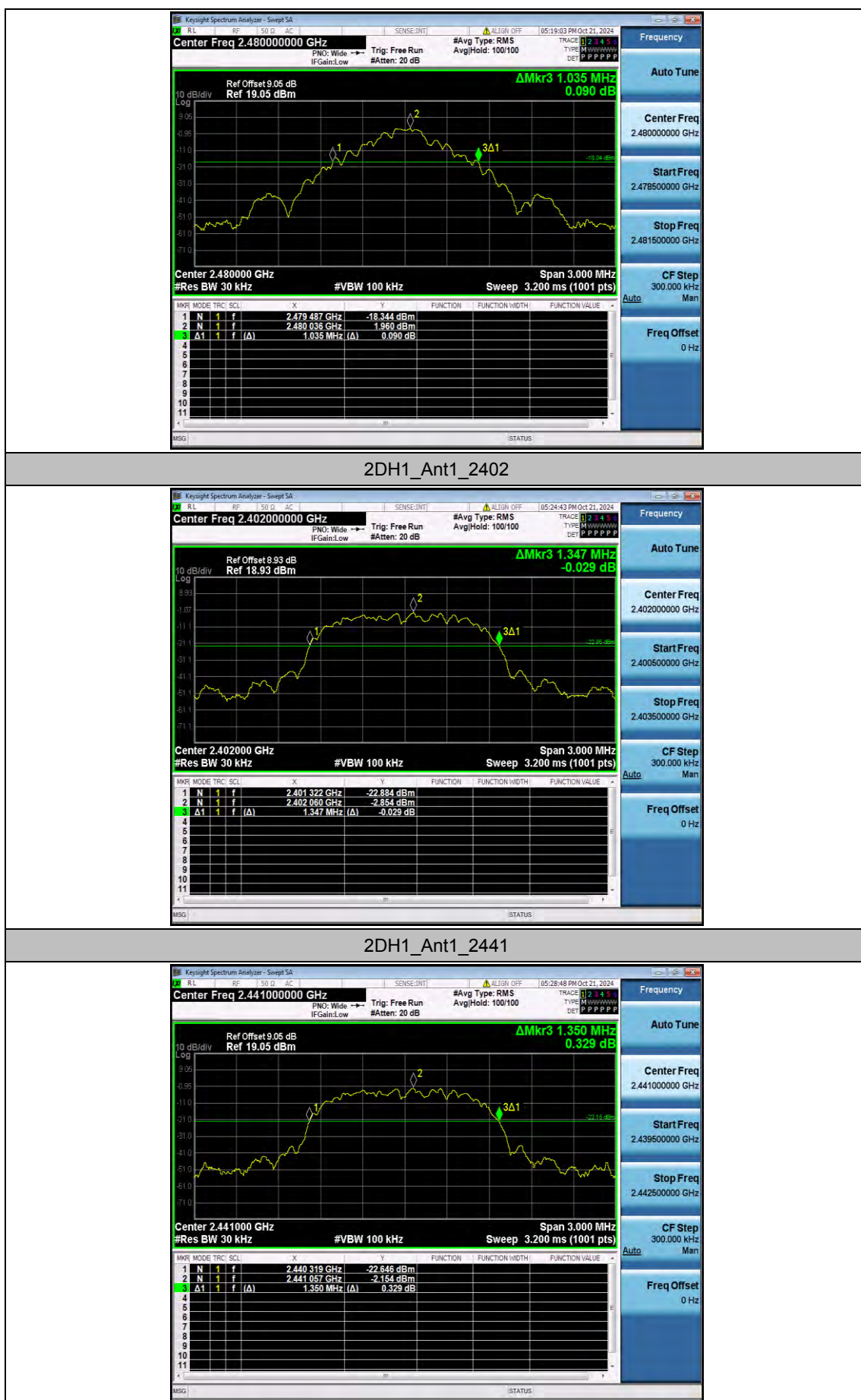
Appendix A.1: 20dB Emission Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	20dB EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	1.035	2401.487	2402.522	---	---
		2441	1.038	2440.487	2441.525	---	---
		2480	1.035	2479.487	2480.522	---	---
2DH1	Ant1	2402	1.347	2401.322	2402.669	---	---
		2441	1.350	2440.319	2441.669	---	---
		2480	1.347	2479.319	2480.666	---	---
3DH1	Ant1	2402	1.296	2401.340	2402.636	---	---
		2441	1.296	2440.340	2441.636	---	---
		2480	1.296	2479.337	2480.633	---	---

Test Graphs





2DH1_Ant1_2480



3DH1_Ant1_2402



3DH1_Ant1_2441



3DH1_Ant1_2480

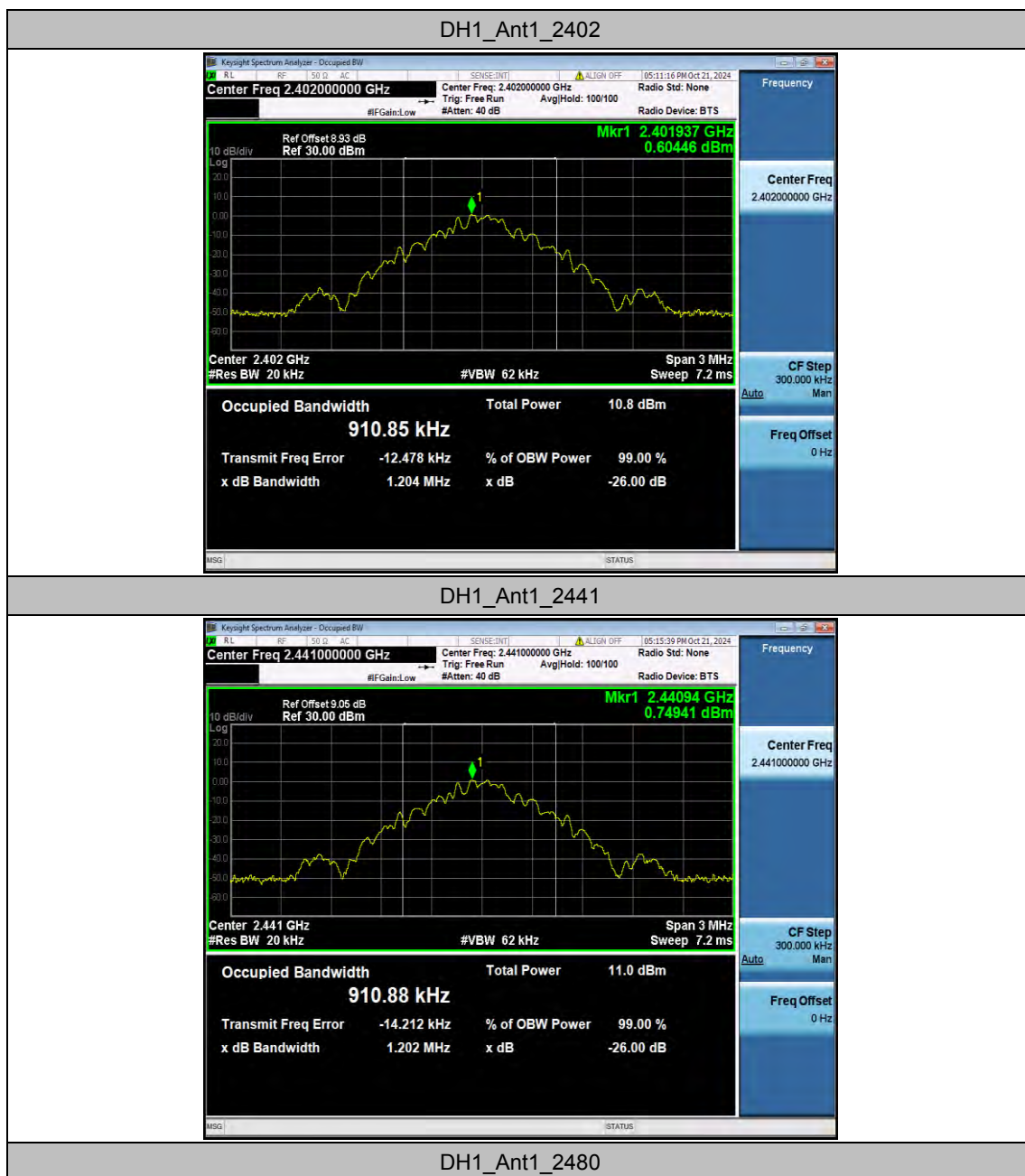


Appendix A.2: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH1	Ant1	2402	0.91085	2401.5321	2402.4429	---	---
		2441	0.91088	2440.5304	2441.4412	---	---
		2480	0.90943	2479.5298	2480.4393	---	---
2DH1	Ant1	2402	1.1784	2401.4050	2402.5834	---	---
		2441	1.1788	2440.4036	2441.5824	---	---
		2480	1.1809	2479.4022	2480.5831	---	---
3DH1	Ant1	2402	1.1627	2401.4165	2402.5792	---	---
		2441	1.1633	2440.4150	2441.5783	---	---
		2480	1.1632	2479.4142	2480.5774	---	---

Test Graphs





2D11_Ant1_2402



2D11_Ant1_2441



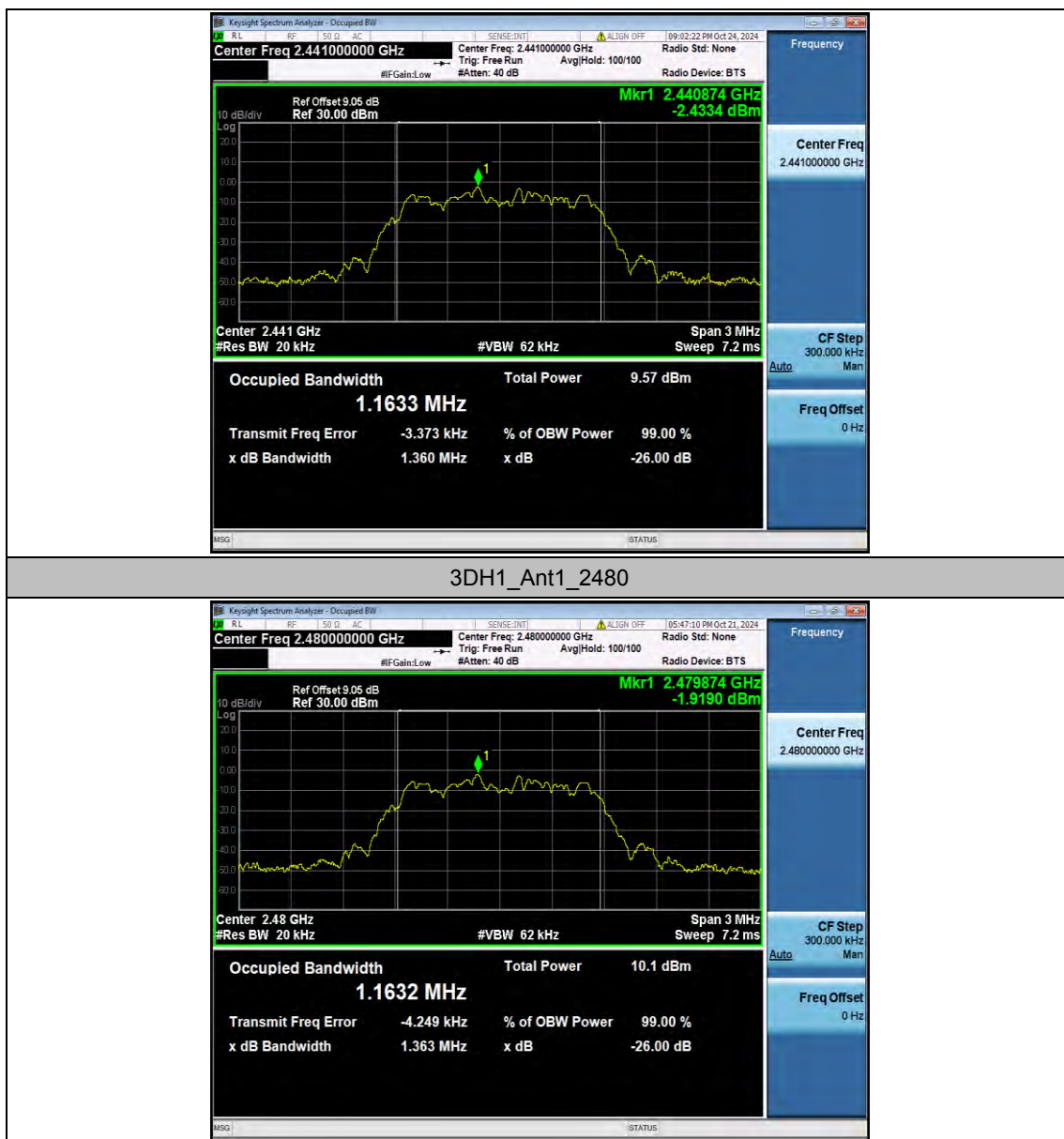
2DH1_Ant1_2480



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	6.46	≤ 20.97	PASS
		2441	6.60	≤ 20.97	PASS
		2480	6.44	≤ 20.97	PASS
2DH1	Ant1	2402	6.90	≤ 20.97	PASS
		2441	7.58	≤ 20.97	PASS
		2480	7.31	≤ 20.97	PASS
3DH1	Ant1	2402	7.01	≤ 20.97	PASS
		2441	7.58	≤ 20.97	PASS
		2480	8.29	≤ 20.97	PASS

Appendix A.4: Carrier frequency separation

Test Result

TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Hop_2402	0.994	≥ 0.692	PASS
		Hop_2441	1.35	≥ 0.692	PASS
		Hop_2480	1.004	≥ 0.692	PASS
2DH1	Ant1	Hop_2402	1.018	≥ 0.900	PASS
		Hop_2441	1.022	≥ 0.900	PASS
		Hop_2480	1.012	≥ 0.900	PASS
3DH1	Ant1	Hop_2402	0.984	≥ 0.864	PASS
		Hop_2441	0.99	≥ 0.864	PASS
		Hop_2480	1.004	≥ 0.864	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

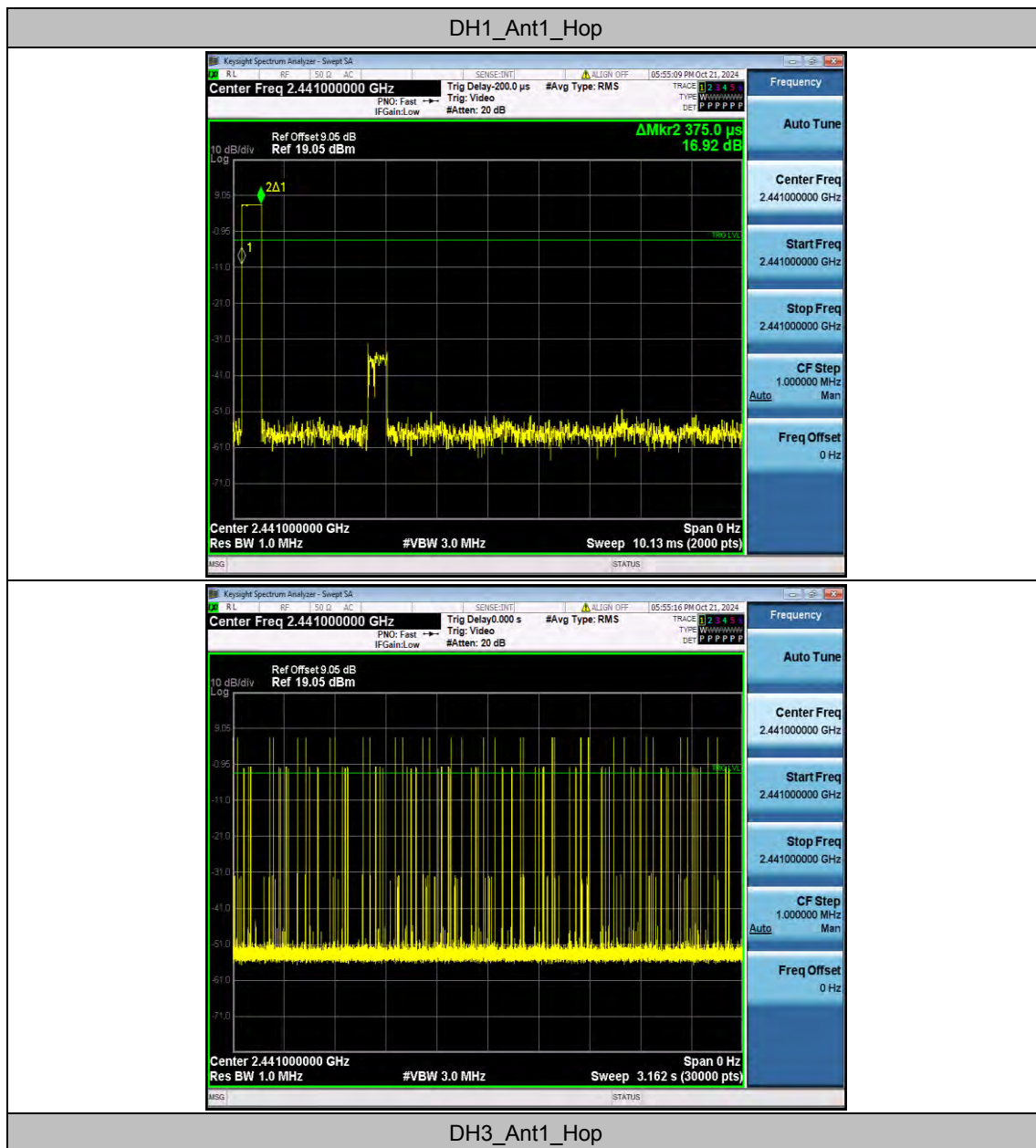


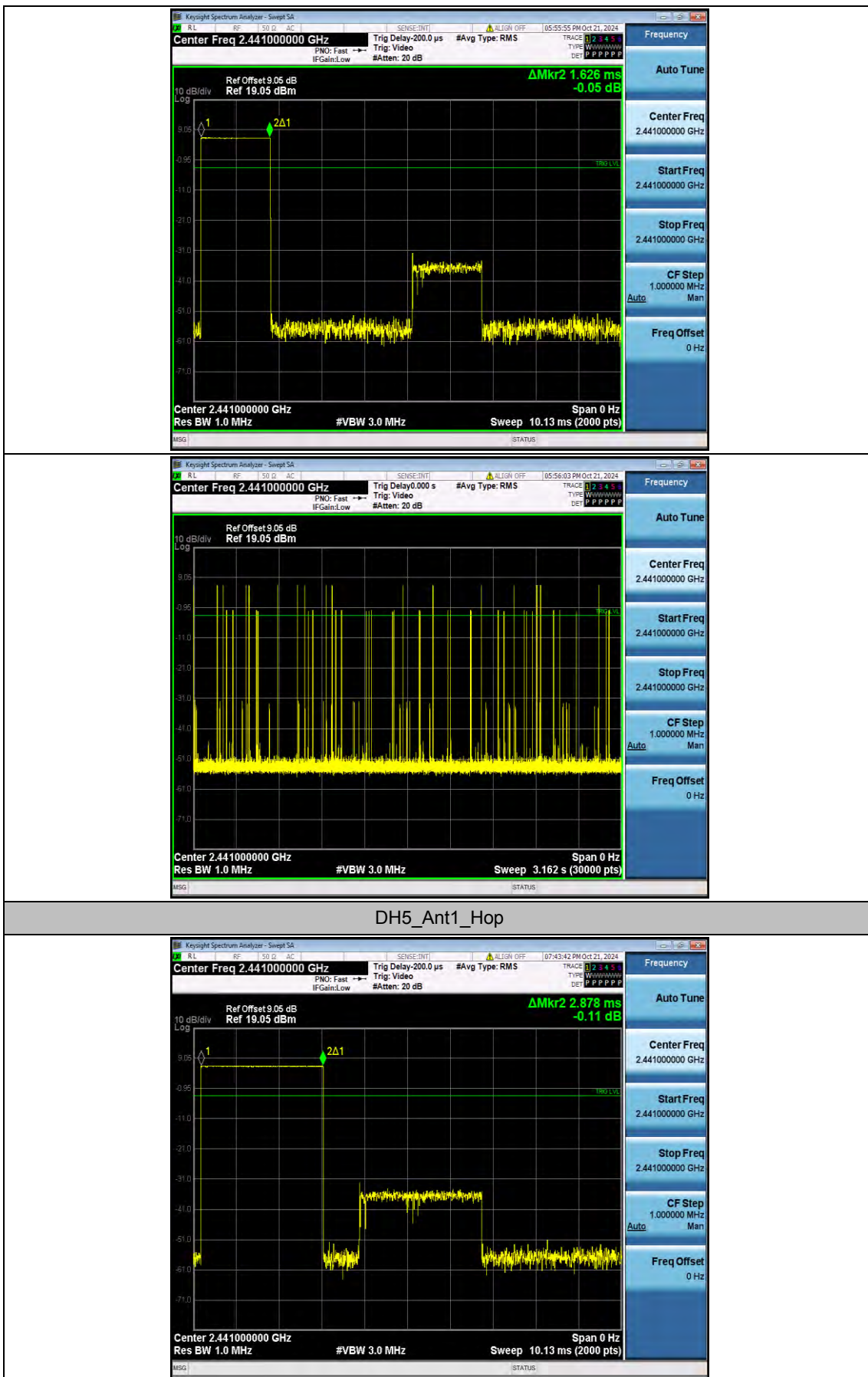
Appendix A.5: Time of occupancy

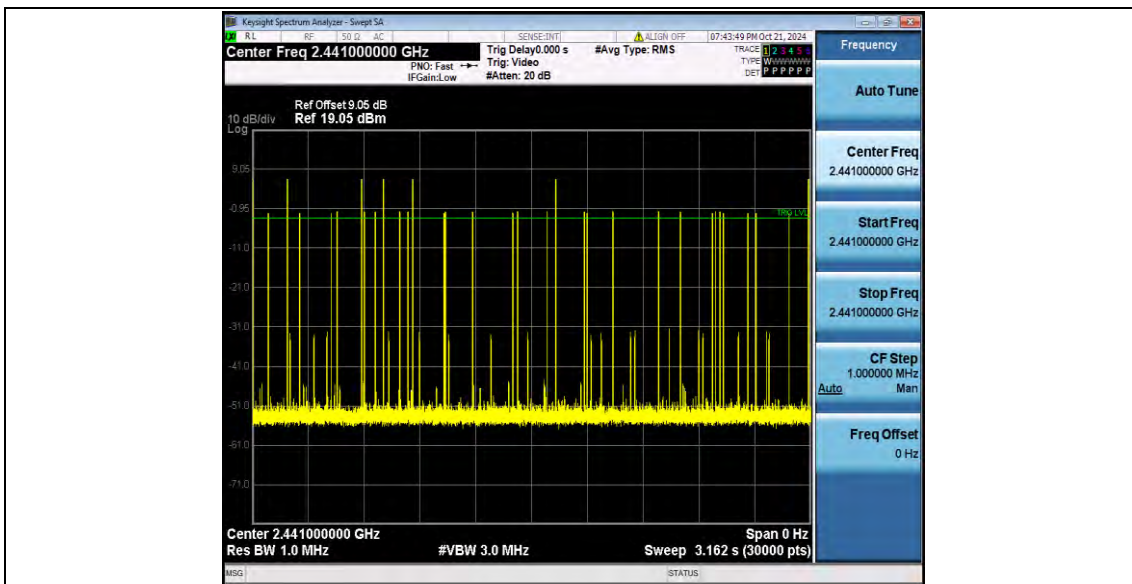
Test Result

TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.375	320	0.12	≤0.4	PASS
DH3	Ant1	Hop	1.626	170	0.276	≤0.4	PASS
DH5	Ant1	Hop	2.878	70	0.201	≤0.4	PASS
2DH1	Ant1	Hop	0.385	310	0.119	≤0.4	PASS
2DH3	Ant1	Hop	1.631	200	0.326	≤0.4	PASS
2DH5	Ant1	Hop	2.883	90	0.259	≤0.4	PASS
3DH1	Ant1	Hop	0.380	330	0.125	≤0.4	PASS
3DH3	Ant1	Hop	1.631	180	0.294	≤0.4	PASS
3DH5	Ant1	Hop	2.883	100	0.288	≤0.4	PASS

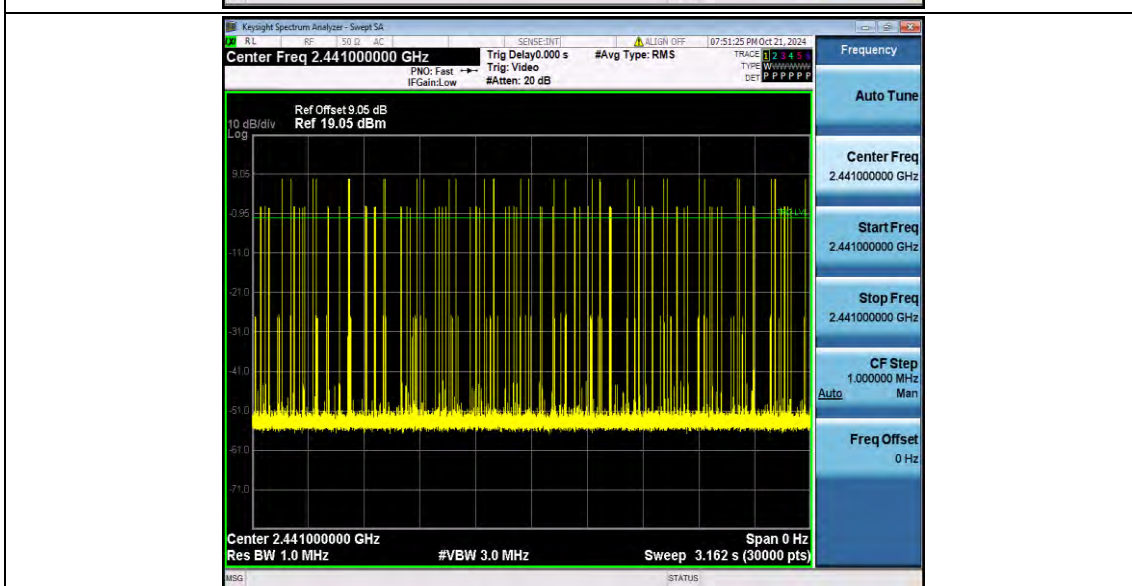
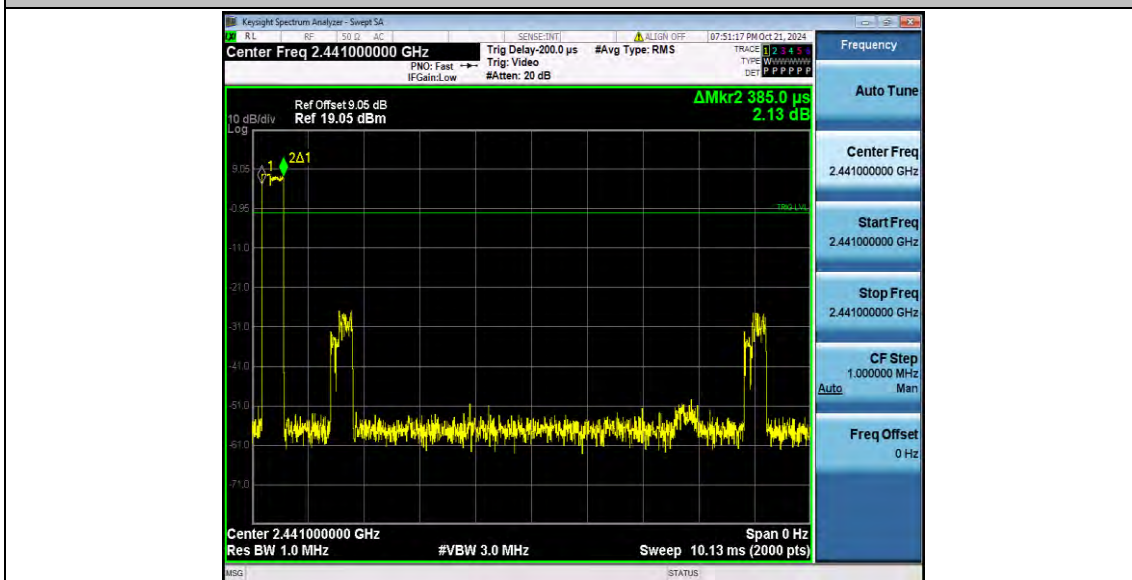
Test Graphs



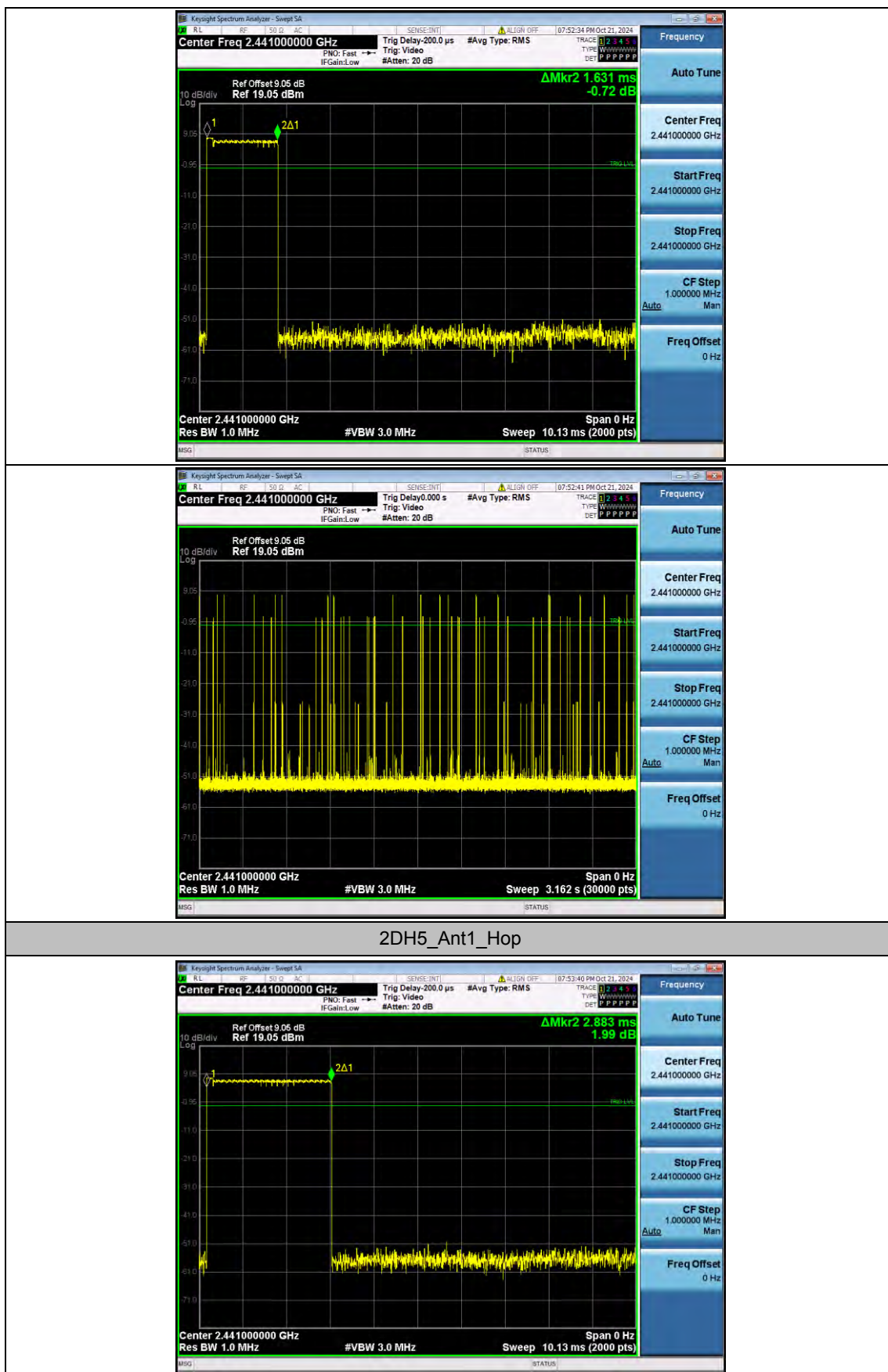


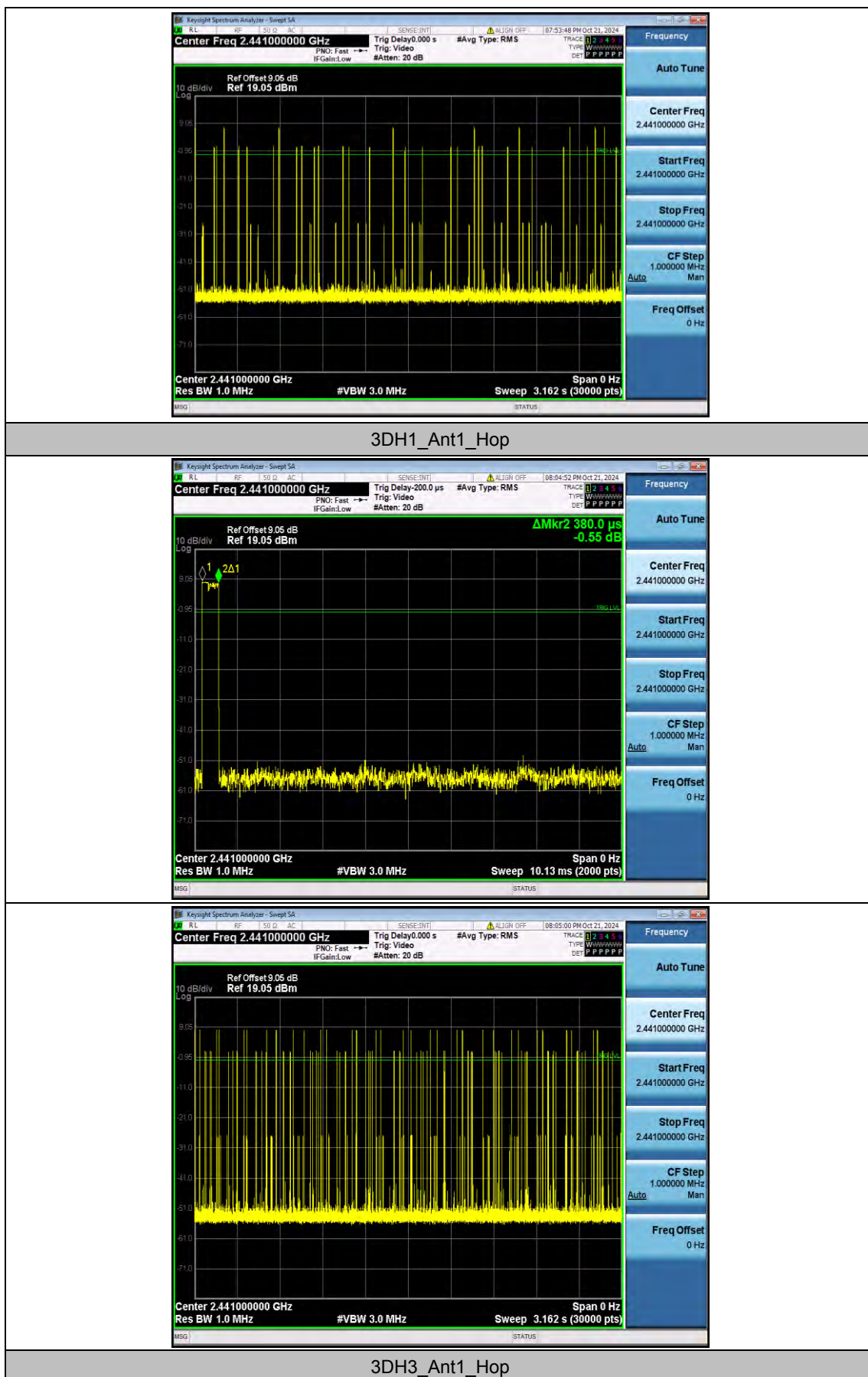


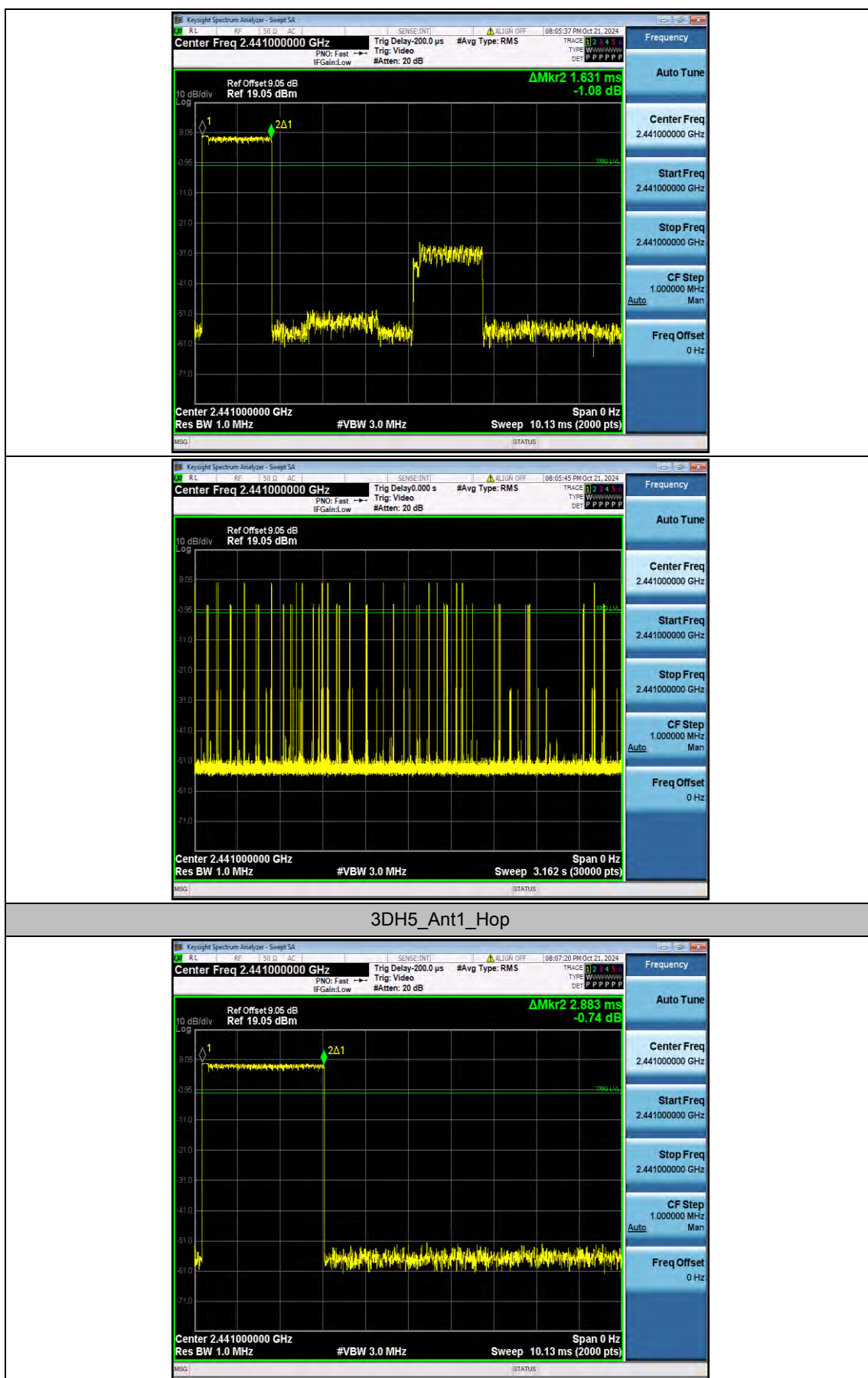
2DH1_Ant1_Hop



2DH3_Ant1_Hop







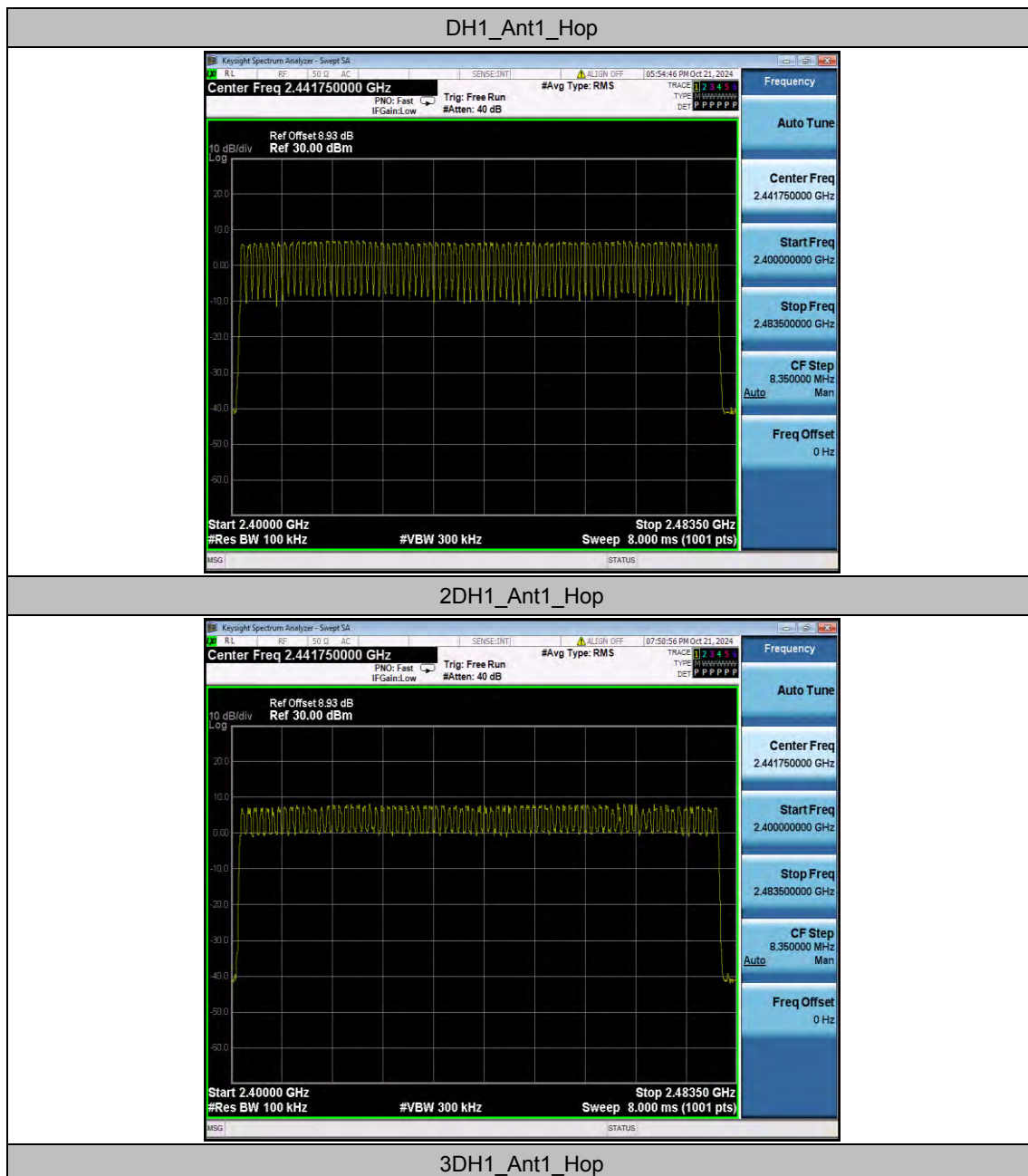


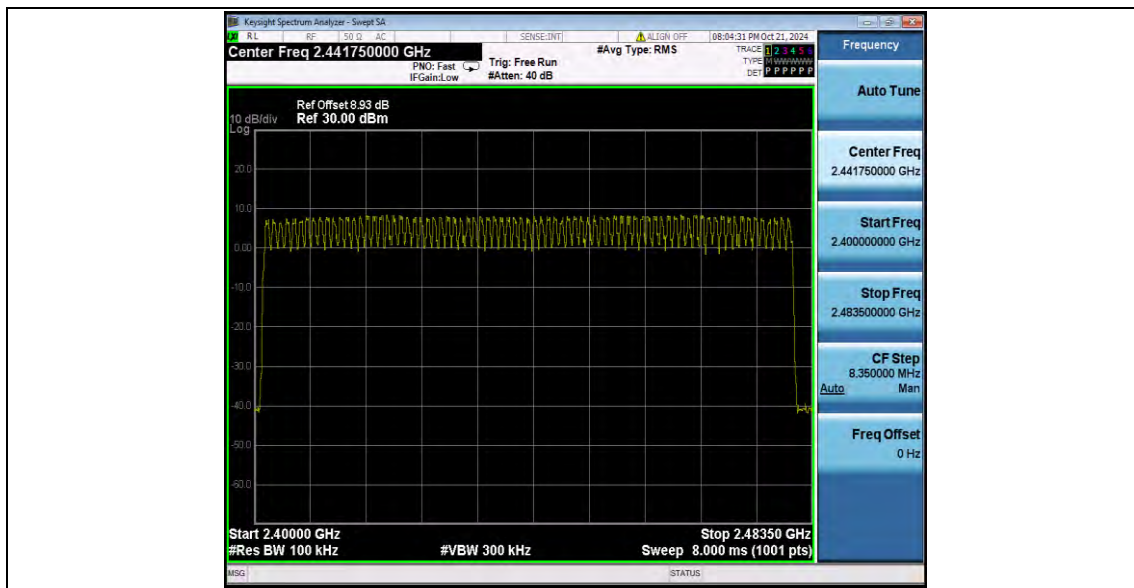
Appendix A.6: Number of hopping channels

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



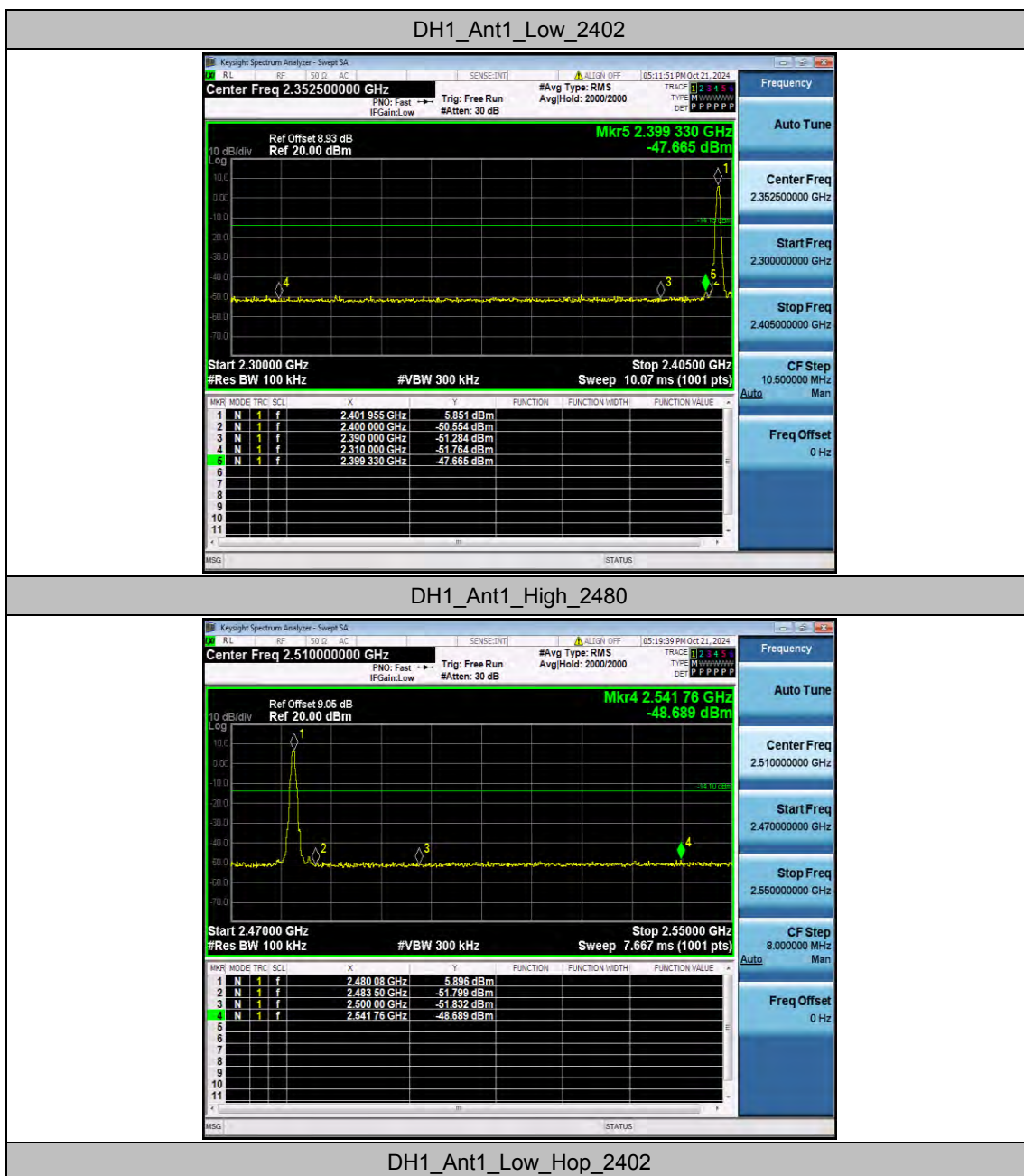


Appendix A.7: Band edge measurements

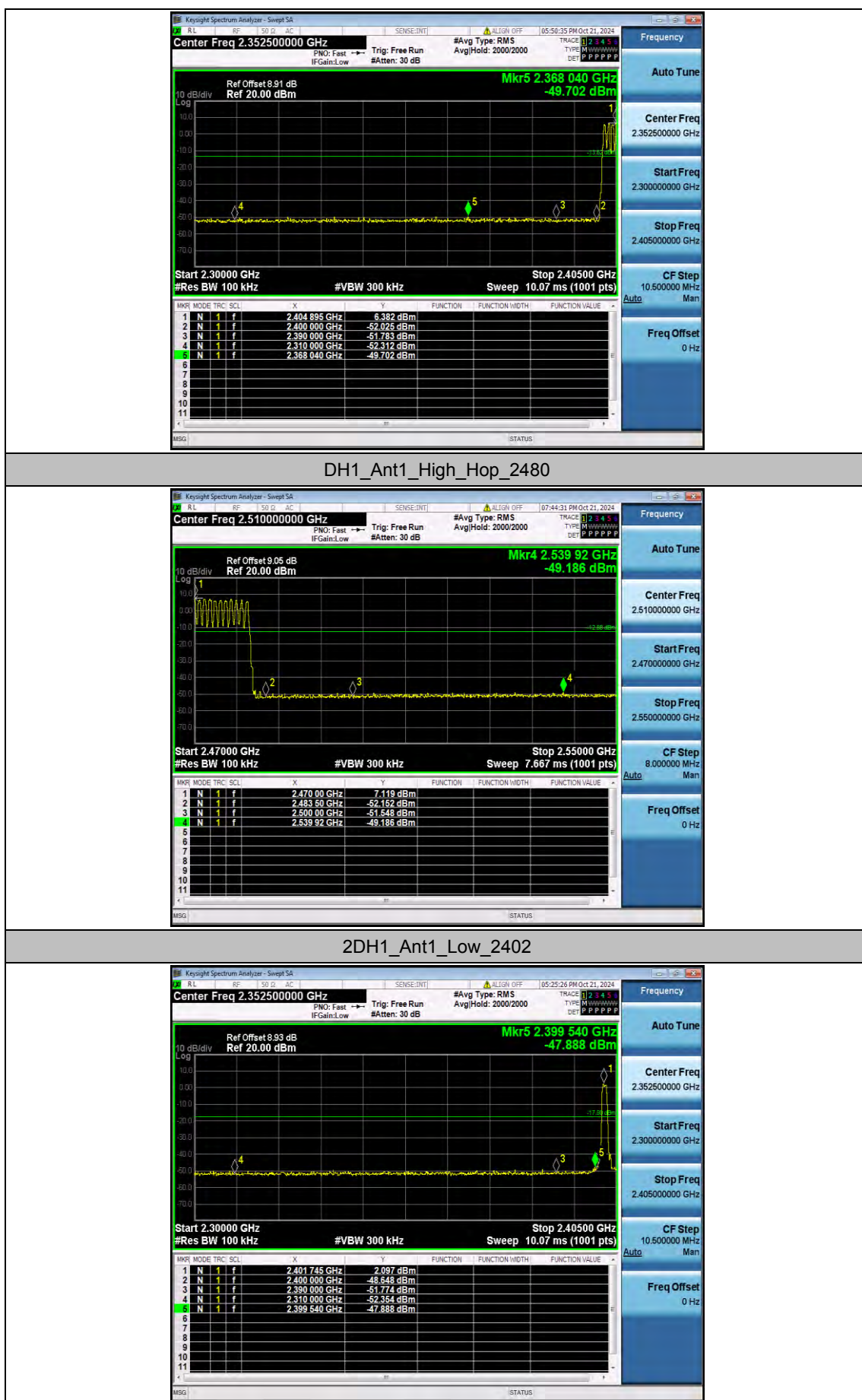
Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	Low	2402	5.85	-47.67	≤ -14.15	PASS
		High	2480	5.90	-48.69	≤ -14.1	PASS
		Low	Hop_2402	6.38	-49.7	≤ -13.62	PASS
		High	Hop_2480	7.12	-49.19	≤ -12.88	PASS
2DH1	Ant1	Low	2402	2.10	-47.89	≤ -17.9	PASS
		High	2480	2.59	-48.6	≤ -17.41	PASS
		Low	Hop_2402	6.30	-49.72	≤ -13.7	PASS
		High	Hop_2480	7.54	-49.05	≤ -12.46	PASS
3DH1	Ant1	Low	2402	2.13	-46.66	≤ -17.87	PASS
		High	2480	3.54	-48.84	≤ -16.46	PASS
		Low	Hop_2402	7.10	-49.17	≤ -12.9	PASS
		High	Hop_2480	7.73	-48.61	≤ -12.27	PASS

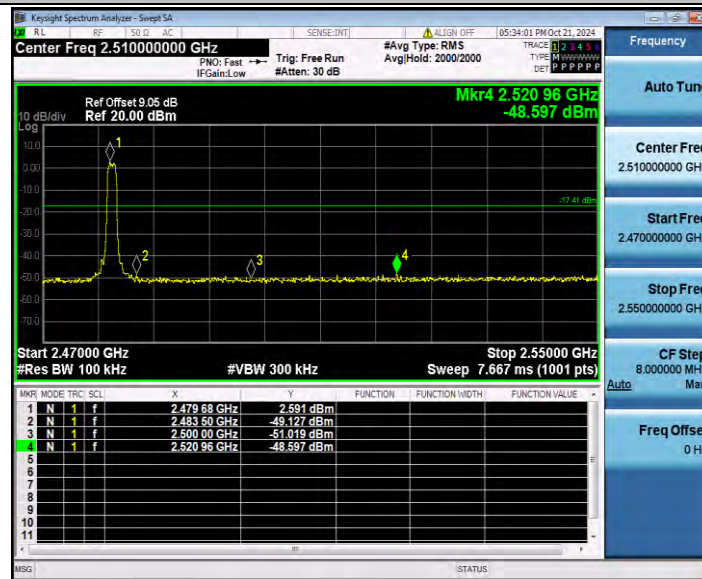
Test Graphs



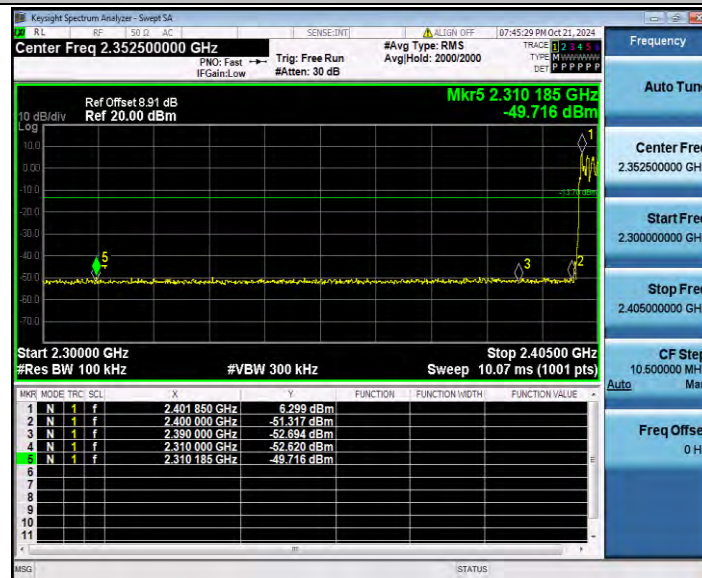
DH1_Ant1_Low_Hop_2402



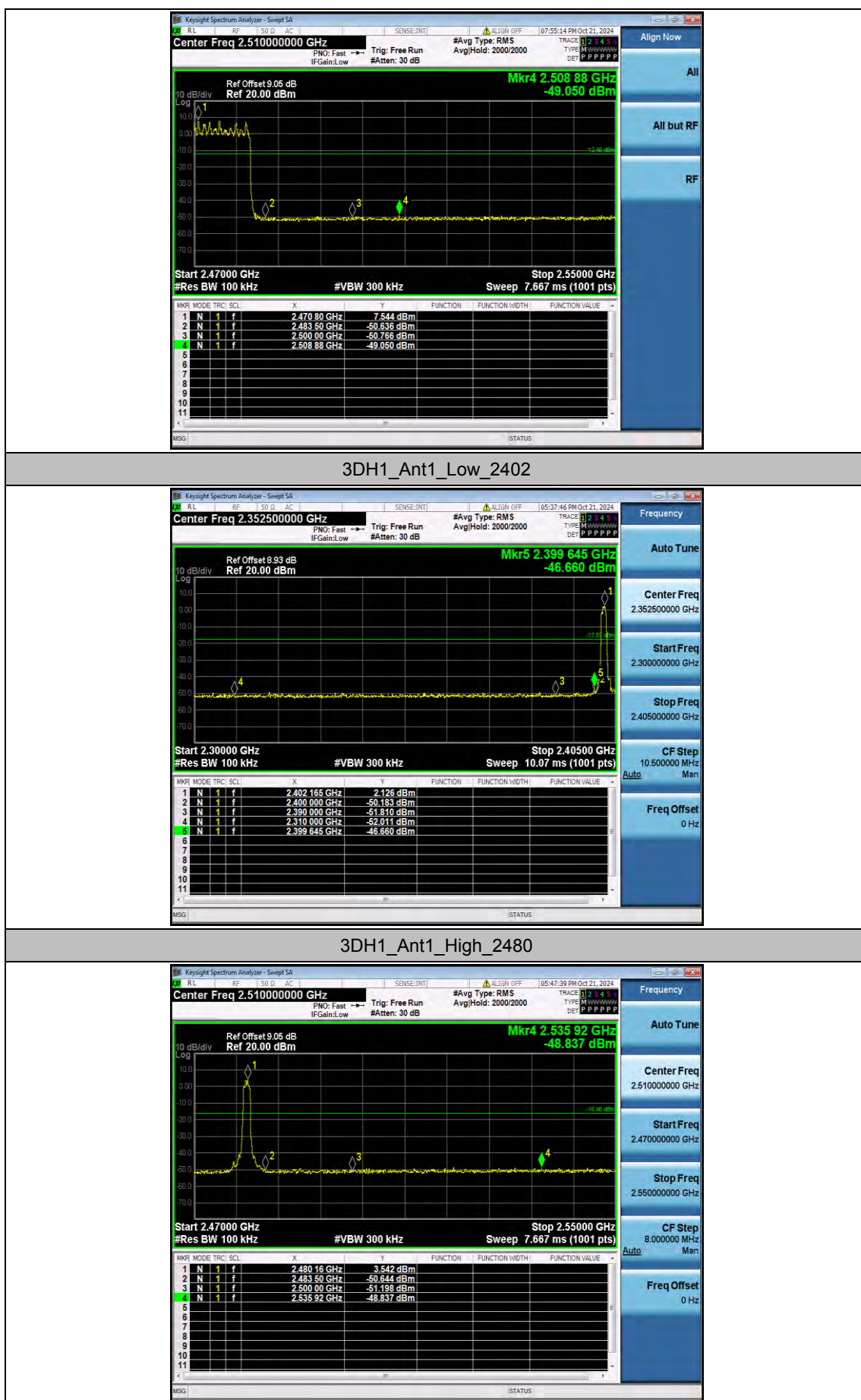
2DH1_Ant1_High_2480



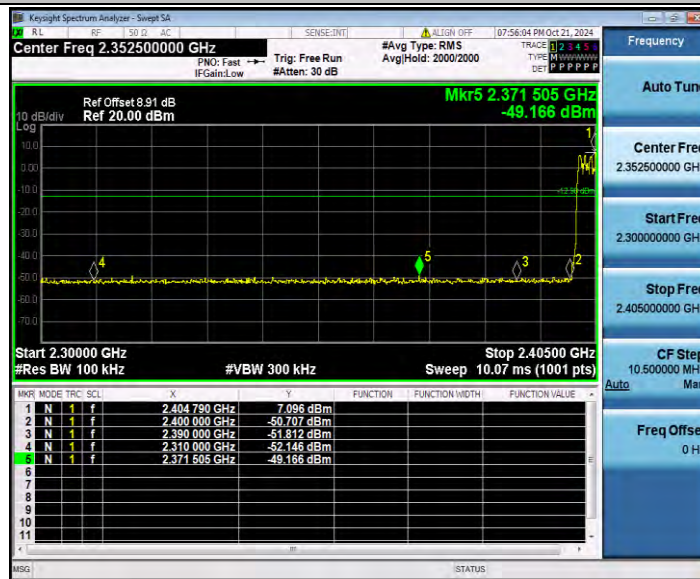
2DH1_Ant1_Low_Hop_2402



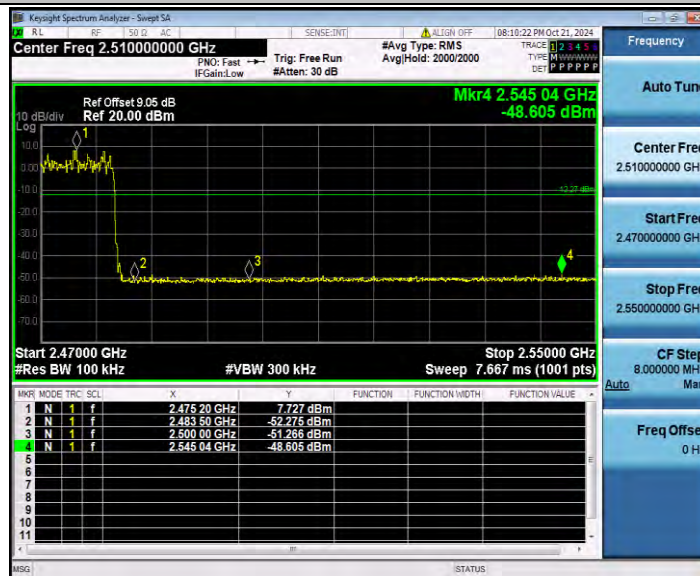
2DH1_Ant1_High_Hop_2480



3DH1_Ant1_Low_Hop_2402



3DH1_Ant1_High_Hop_2480

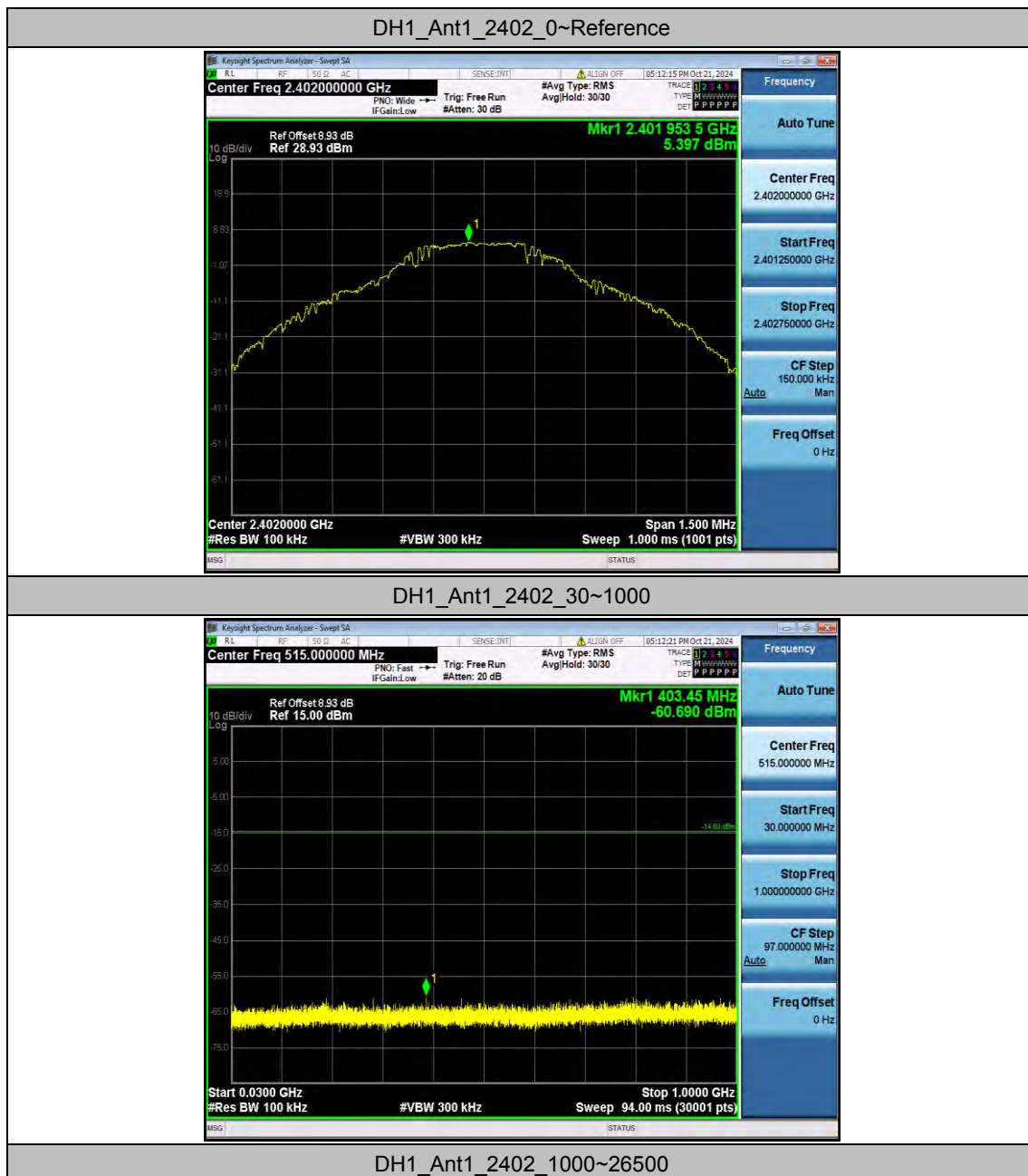


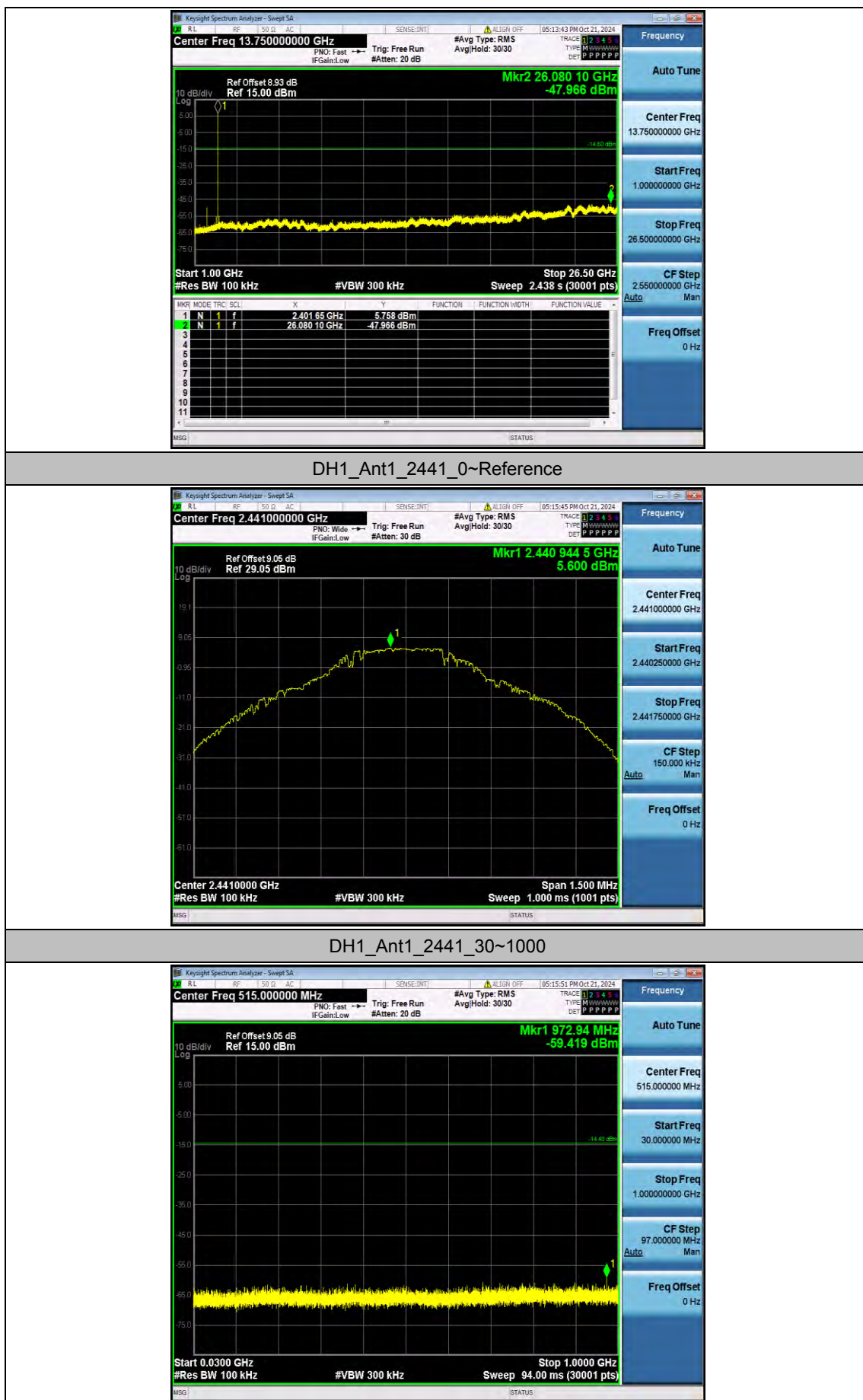
Appendix A.8: Conducted Spurious Emission

Test Result

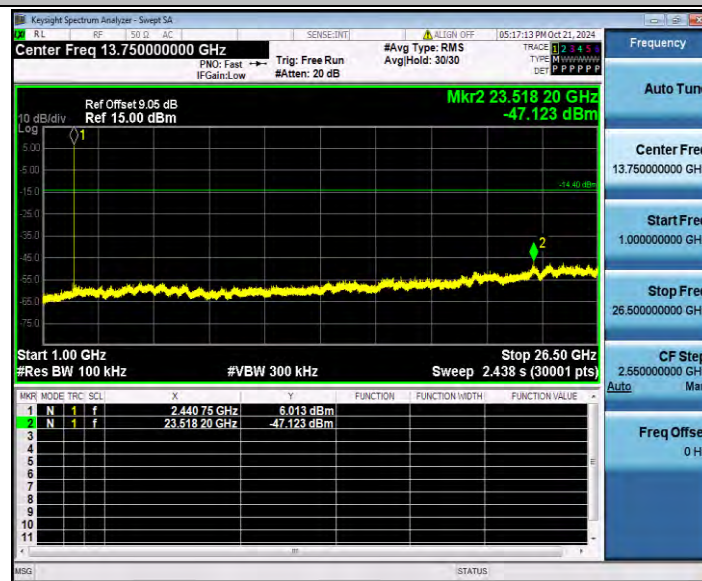
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	2402	Reference	5.40	5.40	---	PASS
			30~1000	5.40	-60.69	≤-14.6	PASS
			1000~26500	5.40	-47.97	≤-14.6	PASS
		2441	Reference	5.60	5.60	---	PASS
			30~1000	5.60	-59.42	≤-14.4	PASS
			1000~26500	5.60	-47.12	≤-14.4	PASS
		2480	Reference	5.40	5.40	---	PASS
			30~1000	5.40	-60.53	≤-14.6	PASS
			1000~26500	5.40	-47.75	≤-14.6	PASS
2DH1	Ant1	2402	Reference	1.84	1.84	---	PASS
			30~1000	1.84	-60.66	≤-18.16	PASS
			1000~26500	1.84	-47.7	≤-18.16	PASS
		2441	Reference	2.51	2.51	---	PASS
			30~1000	2.51	-60.25	≤-17.49	PASS
			1000~26500	2.51	-34.81	≤-17.49	PASS
		2480	Reference	2.34	2.34	---	PASS
			30~1000	2.34	-60.36	≤-17.66	PASS
			1000~26500	2.34	-47.64	≤-17.66	PASS
3DH1	Ant1	2402	Reference	1.63	1.63	---	PASS
			30~1000	1.63	-60.83	≤-18.37	PASS
			1000~26500	1.63	-45.55	≤-18.37	PASS
		2441	Reference	2.55	2.55	---	PASS
			30~1000	2.55	-60.01	≤-17.45	PASS
			1000~26500	2.55	-47.9	≤-17.45	PASS
		2480	Reference	3.05	3.05	---	PASS
			30~1000	3.05	-60.49	≤-16.95	PASS
			1000~26500	3.05	-48.01	≤-16.95	PASS

Test Graphs





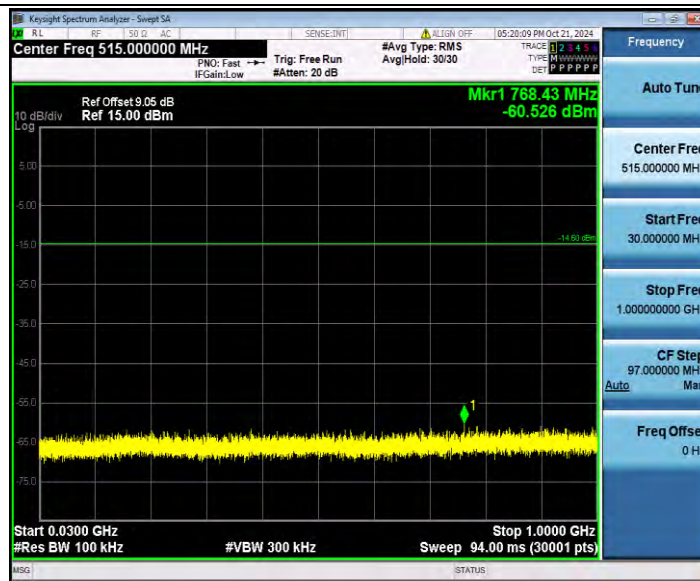
DH1_Ant1_2441_1000~26500



DH1_Ant1_2480_0~Reference



DH1_Ant1_2480_30~1000

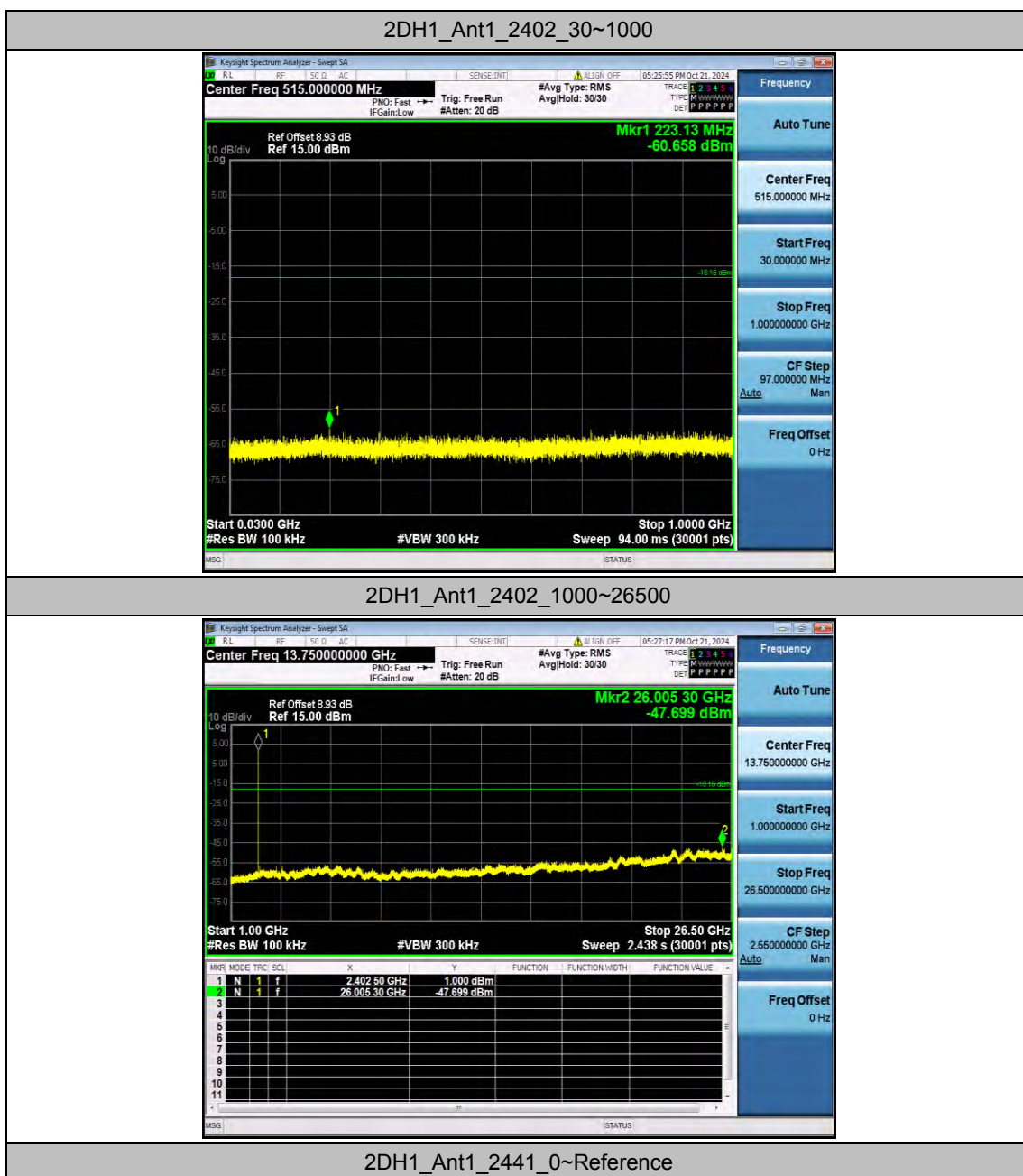


DH1_Ant1_2480_1000~26500

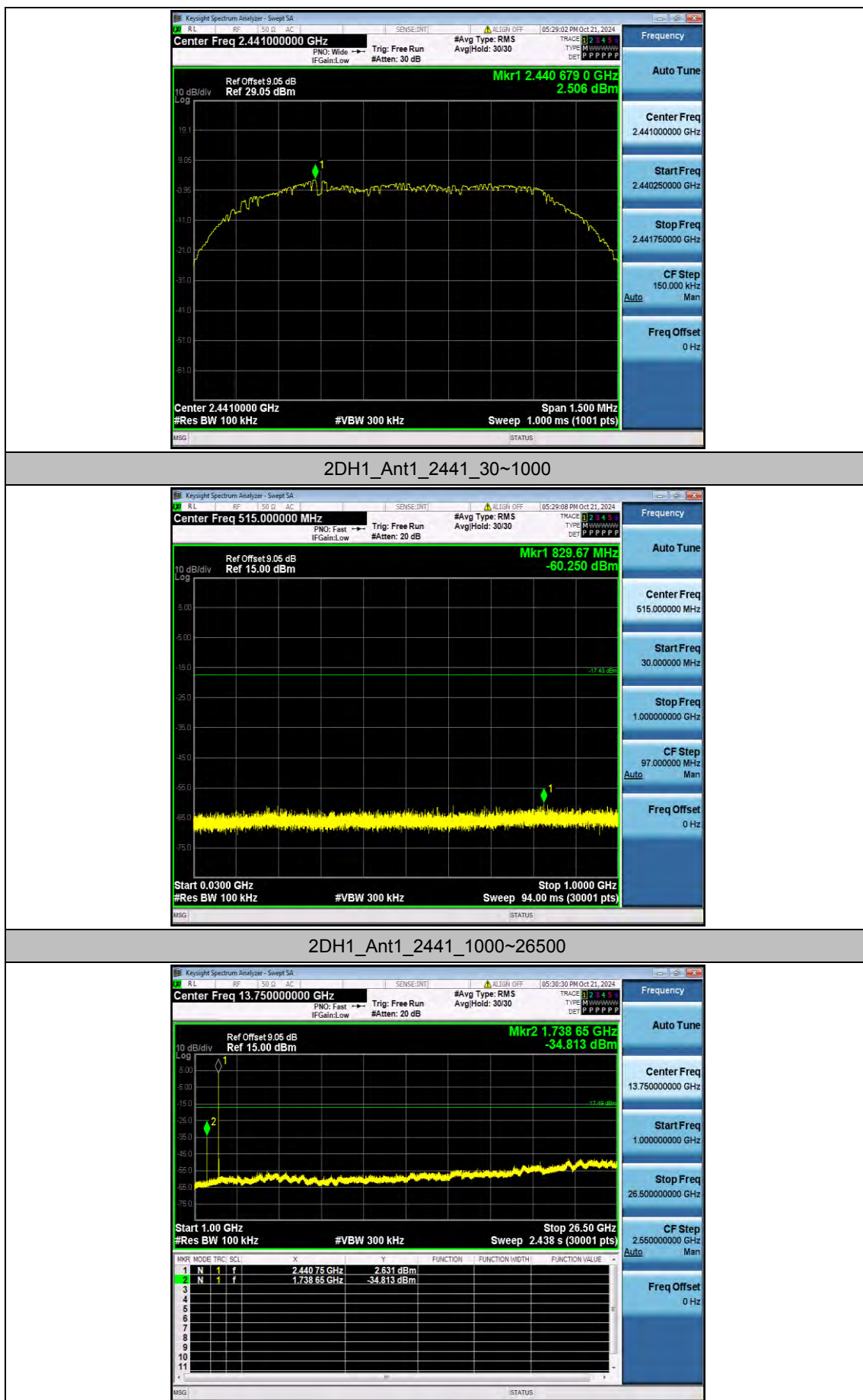


2DH1_Ant1_2402_0~Reference





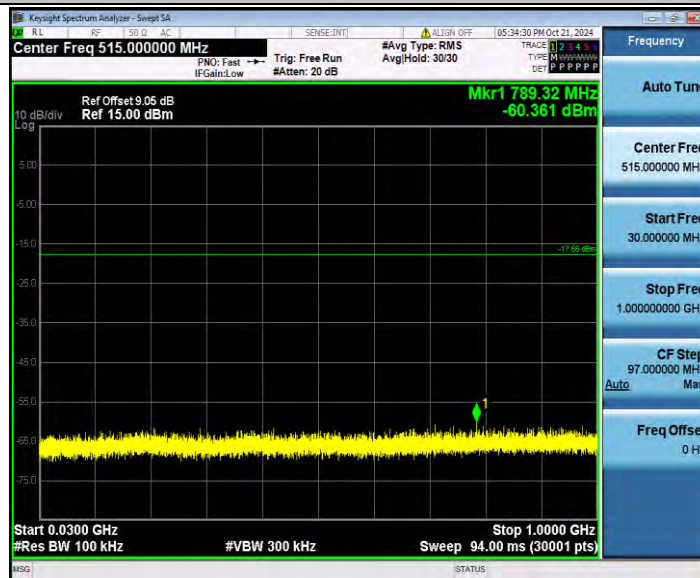
2DH1_Ant1_2441_0~Reference



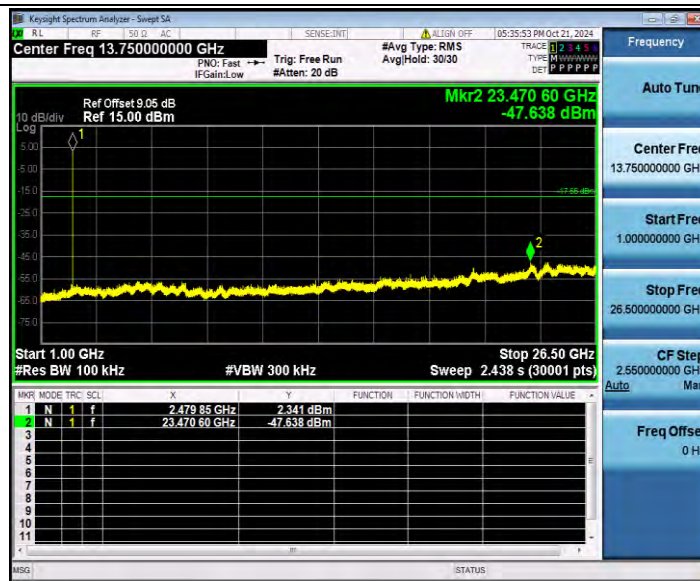
2DH1_Ant1_2480_0~Reference



2DH1_Ant1_2480_30~1000



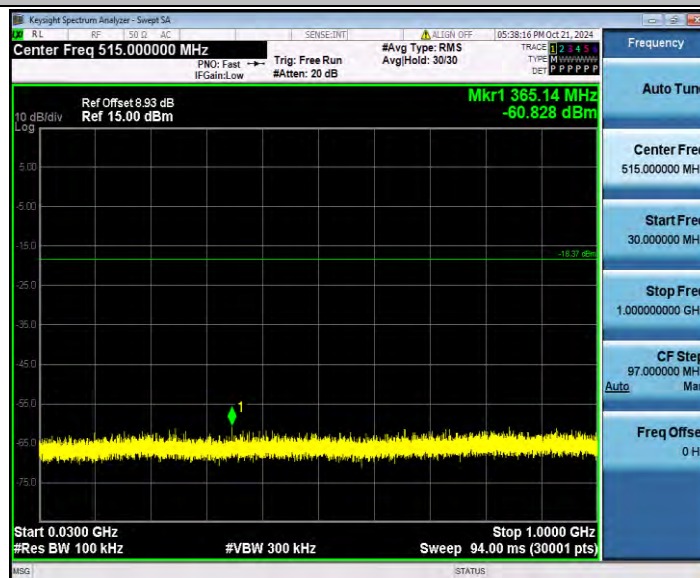
2DH1_Ant1_2480_1000~26500



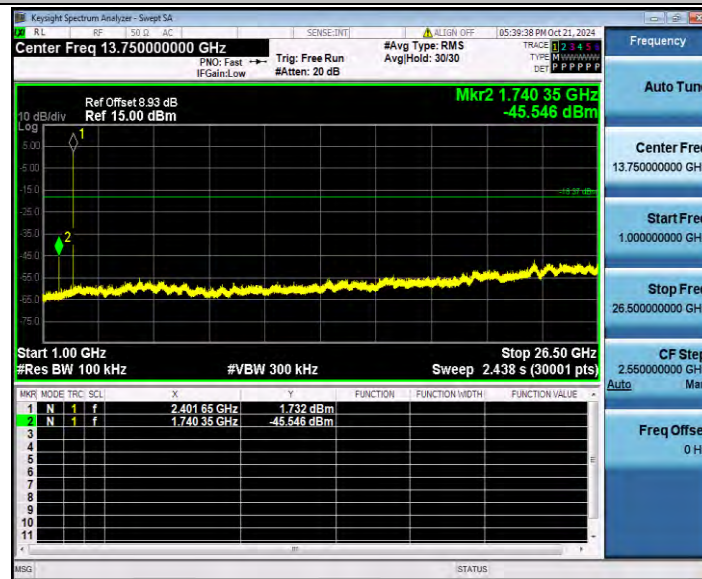
3DH1_Ant1_2402_0~Reference



3DH1_Ant1_2402_30~1000



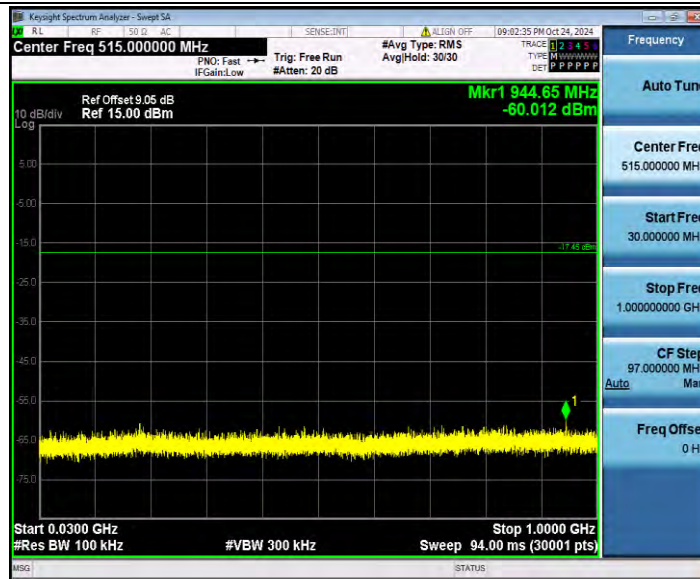
3DH1_Ant1_2402_1000~26500



3DH1_Ant1_2441_0~Reference



3DH1_Ant1_2441_30~1000

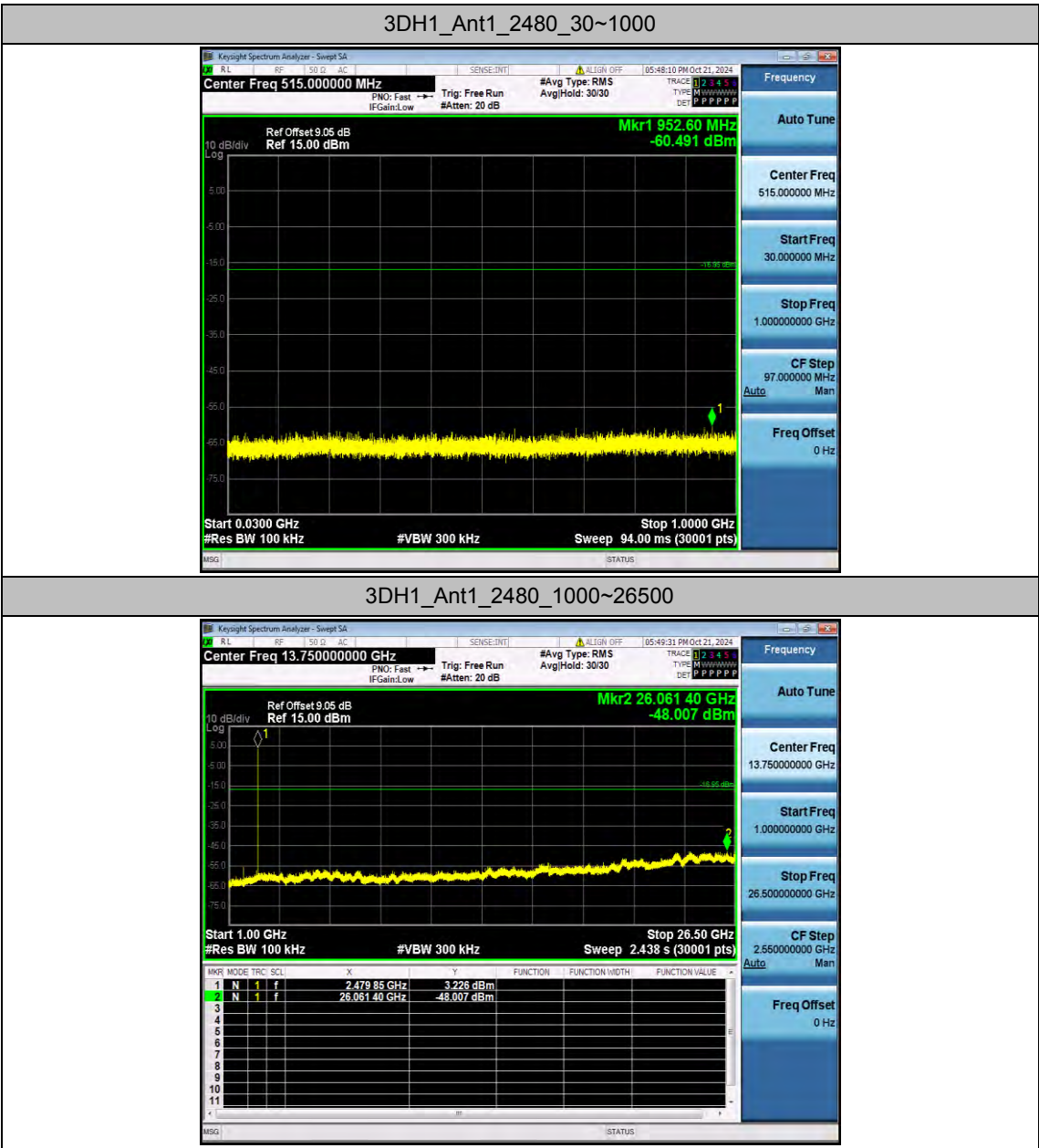


3DH1_Ant1_2441_1000~26500



3DH1_Ant1_2480_0~Reference





Appendix A.9: Emissions in Restricted Bands

Test Result

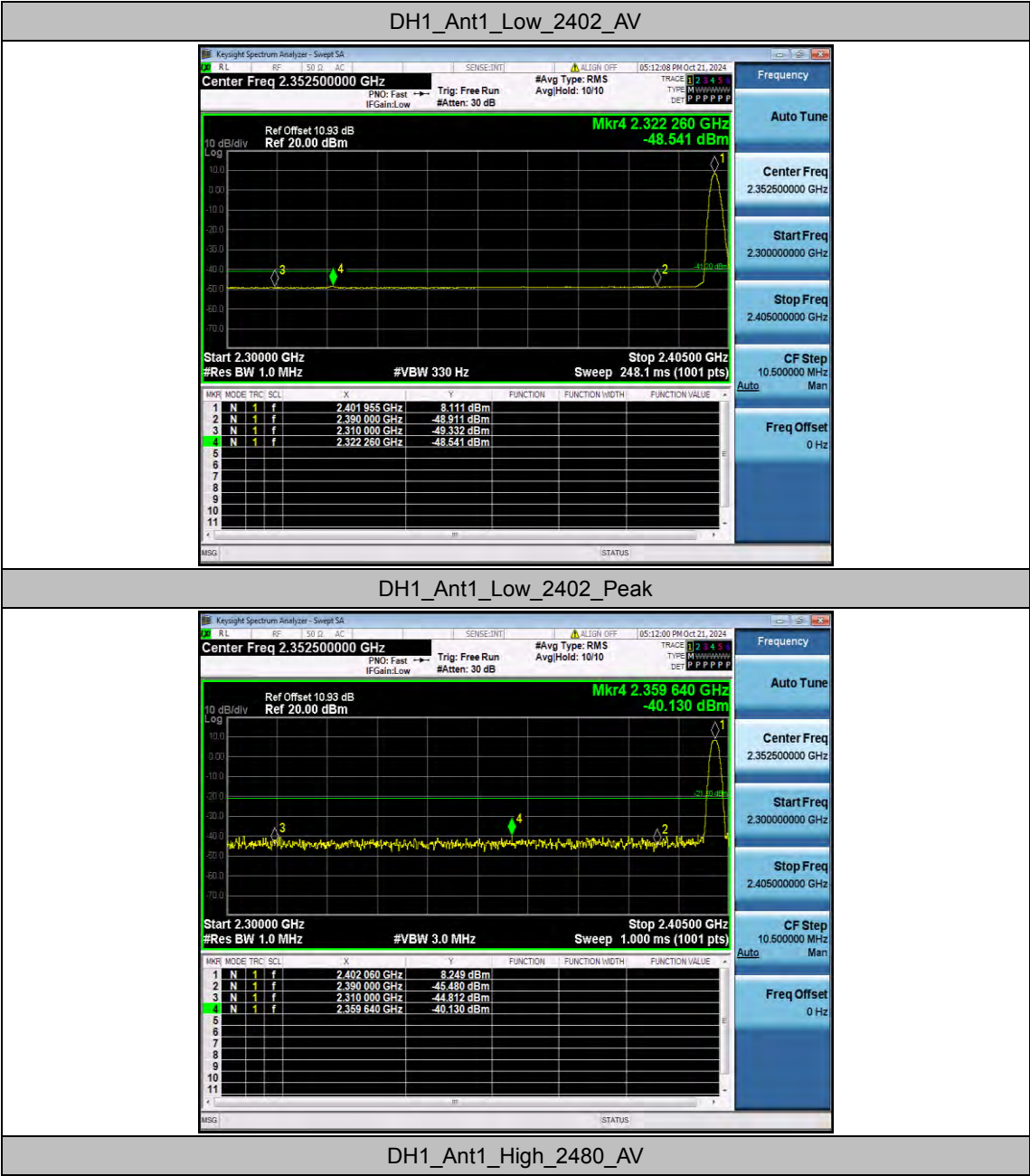
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH1	Ant1	Low	2402	AV	2310.000	-49.33	≤-41.20	45.87	≤54	PASS
				AV	2322.260	-48.54	≤-41.20	46.66	≤54	PASS
				AV	2390.000	-48.91	≤-41.20	46.29	≤54	PASS
				Peak	2310.000	-44.81	≤-21.20	50.39	≤74	PASS
				Peak	2359.640	-40.13	≤-21.20	55.07	≤74	PASS
				Peak	2390.000	-45.48	≤-21.20	49.72	≤74	PASS
		High	2480	AV	2483.500	-46.6	≤-41.20	48.60	≤54	PASS
				AV	2483.520	-46.6	≤-41.20	48.60	≤54	PASS
				AV	2500.000	-48.7	≤-41.20	46.50	≤54	PASS
				Peak	2483.500	-43.13	≤-21.20	52.07	≤74	PASS
				Peak	2490.880	-39.54	≤-21.20	55.66	≤74	PASS
				Peak	2500.000	-42.09	≤-21.20	53.11	≤74	PASS
2DH1	Ant1	Low	2402	AV	2310.000	-49.28	≤-41.20	45.92	≤54	PASS
				AV	2321.945	-48.86	≤-41.20	46.34	≤54	PASS
				AV	2390.000	-48.97	≤-41.20	46.23	≤54	PASS
				Peak	2310.000	-43.79	≤-21.20	51.41	≤74	PASS
				Peak	2383.790	-40.78	≤-21.20	54.42	≤74	PASS
				Peak	2390.000	-42.45	≤-21.20	52.75	≤74	PASS
		High	2480	AV	2483.500	-46.06	≤-41.20	49.14	≤54	PASS
				AV	2483.520	-46.06	≤-41.20	49.14	≤54	PASS
				AV	2500.000	-48.65	≤-41.20	46.55	≤54	PASS
				Peak	2483.500	-42.83	≤-21.20	52.37	≤74	PASS
				Peak	2492.880	-39.29	≤-21.20	55.91	≤74	PASS
				Peak	2500.000	-43.51	≤-21.20	51.69	≤74	PASS
3DH1	Ant1	Low	2402	AV	2310.000	-49.41	≤-41.20	45.79	≤54	PASS
				AV	2389.145	-48.82	≤-41.20	46.38	≤54	PASS
				AV	2390.000	-49.08	≤-41.20	46.12	≤54	PASS
				Peak	2310.000	-44.65	≤-21.20	50.55	≤74	PASS
				Peak	2389.250	-39.73	≤-21.20	55.47	≤74	PASS
				Peak	2390.000	-43.7	≤-21.20	51.50	≤74	PASS
		High	2480	AV	2483.500	-45.63	≤-41.20	49.57	≤54	PASS
				AV	2483.520	-45.63	≤-41.20	49.57	≤54	PASS
				AV	2500.000	-48.74	≤-41.20	46.46	≤54	PASS
				Peak	2483.500	-41.47	≤-21.20	53.73	≤74	PASS
				Peak	2484.240	-39.3	≤-21.20	55.90	≤74	PASS

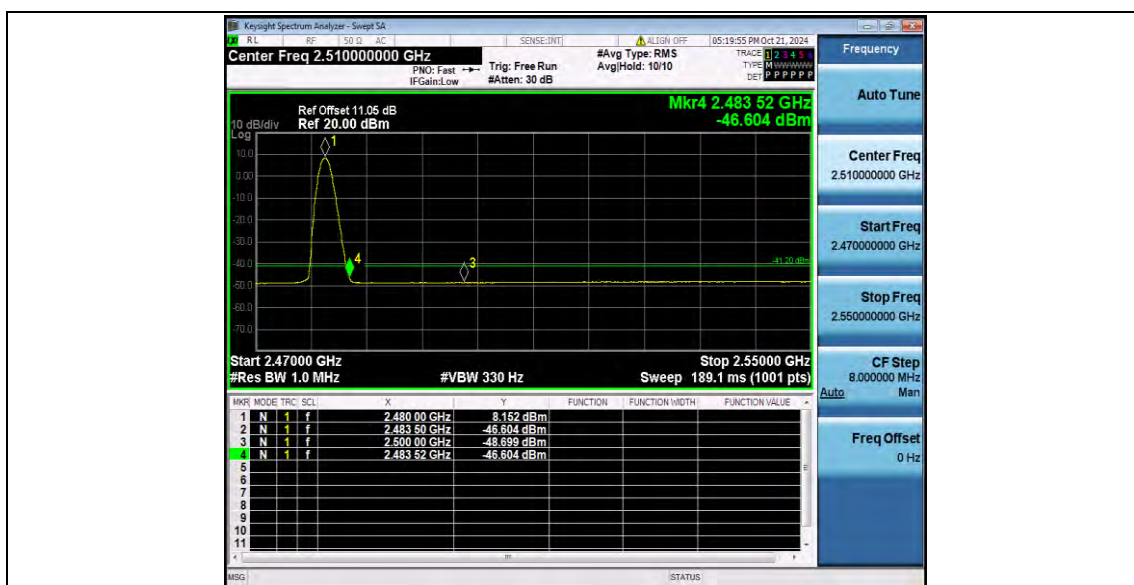
				Peak	2500.000	-42.03	≤ -21.20	53.17	≤ 74	PASS
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Note:

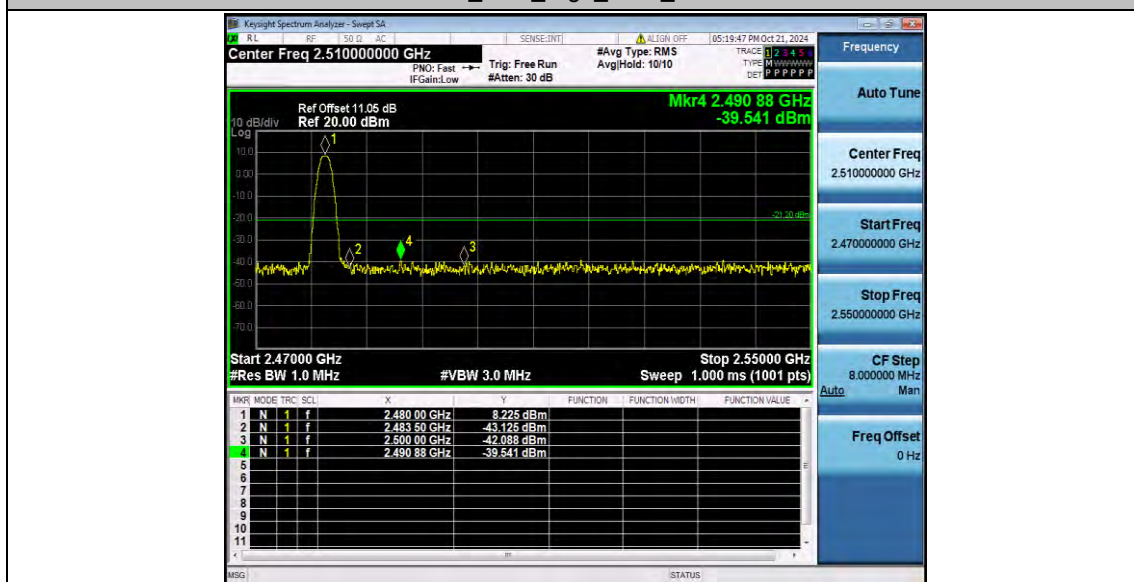
1. The Antenna Gain is compensated in the graph.
2. The Duty Cycle Factor and RBW Factor is compensated in the graph.
3. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

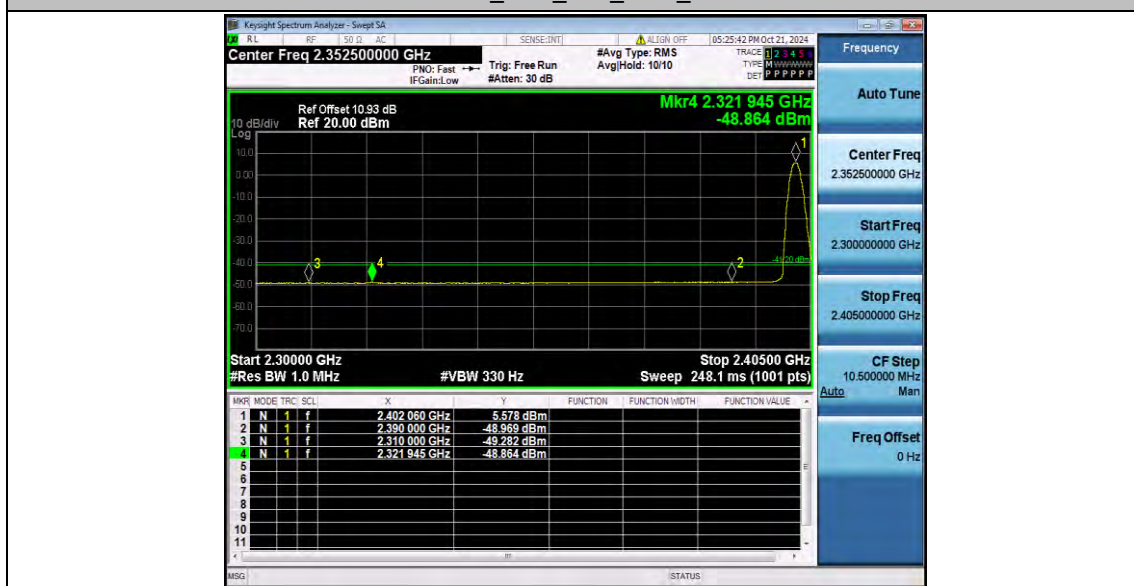




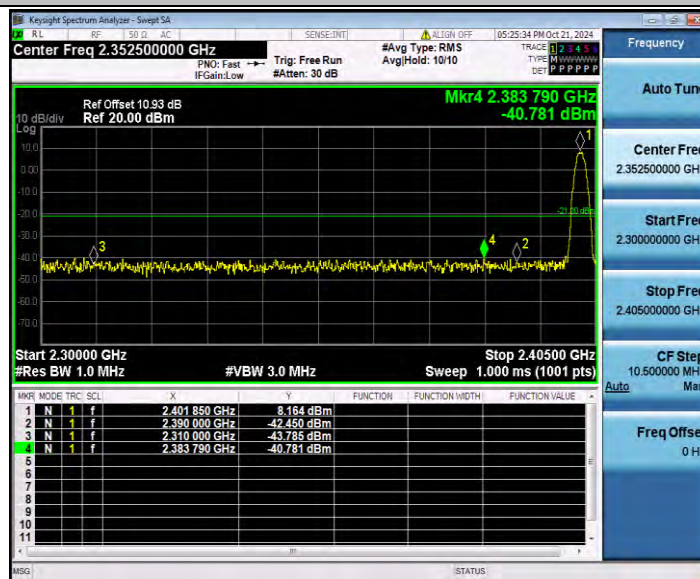
DH1_Ant1_High_2480_Peak



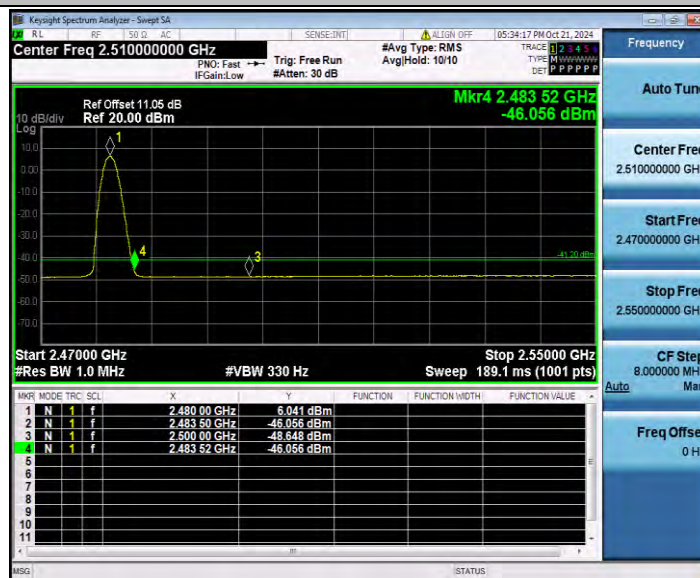
2DH1_Ant1_Low_2402_AV



2DH1_Ant1_Low_2402_Peak



2DH1_Ant1_High_2480_AV



2DH1_Ant1_High_2480_Peak

