

Case No. : <u>CTA24101702001</u>	
Ambient Condition: <u>23</u> °C, <u>52</u> %RH	
According Standard: ■Part15C	
Test Date: <u>2024.9.4</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	0.855	2401.565	2402.420	---	---
		2441	0.879	2440.544	2441.423	---	---
		2480	0.882	2479.544	2480.426	---	---
2DH1	Ant1	2402	1.263	2401.364	2402.627	---	---
		2441	1.239	2440.367	2441.606	---	---
		2480	1.239	2479.361	2480.600	---	---
3DH1	Ant1	2402	1.218	2401.397	2402.615	---	---
		2441	1.215	2440.400	2441.615	---	---
		2480	1.215	2479.397	2480.612	---	---

Test Graphs





2DH1_Ant1_2402



2DH1_Ant1_2441



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	0.80916	2401.5884	2402.3975	---	---
		2441	0.79865	2440.5909	2441.3895	---	---
		2480	0.82978	2479.5756	2480.4053	---	---
2DH1	Ant1	2402	1.1620	2401.4086	2402.5706	---	---
		2441	1.1559	2440.4115	2441.5674	---	---
		2480	1.1581	2479.4062	2480.5643	---	---
3DH1	Ant1	2402	1.1503	2401.4218	2402.5721	---	---
		2441	1.1599	2440.4230	2441.5829	---	---
		2480	1.1545	2479.4220	2480.5765	---	---

Test Graphs

DH1_Ant1_2402



DH1_Ant1_2441



DH1_Ant1_2480



2DH1_Ant1_2402



2DH1_Ant1_2441



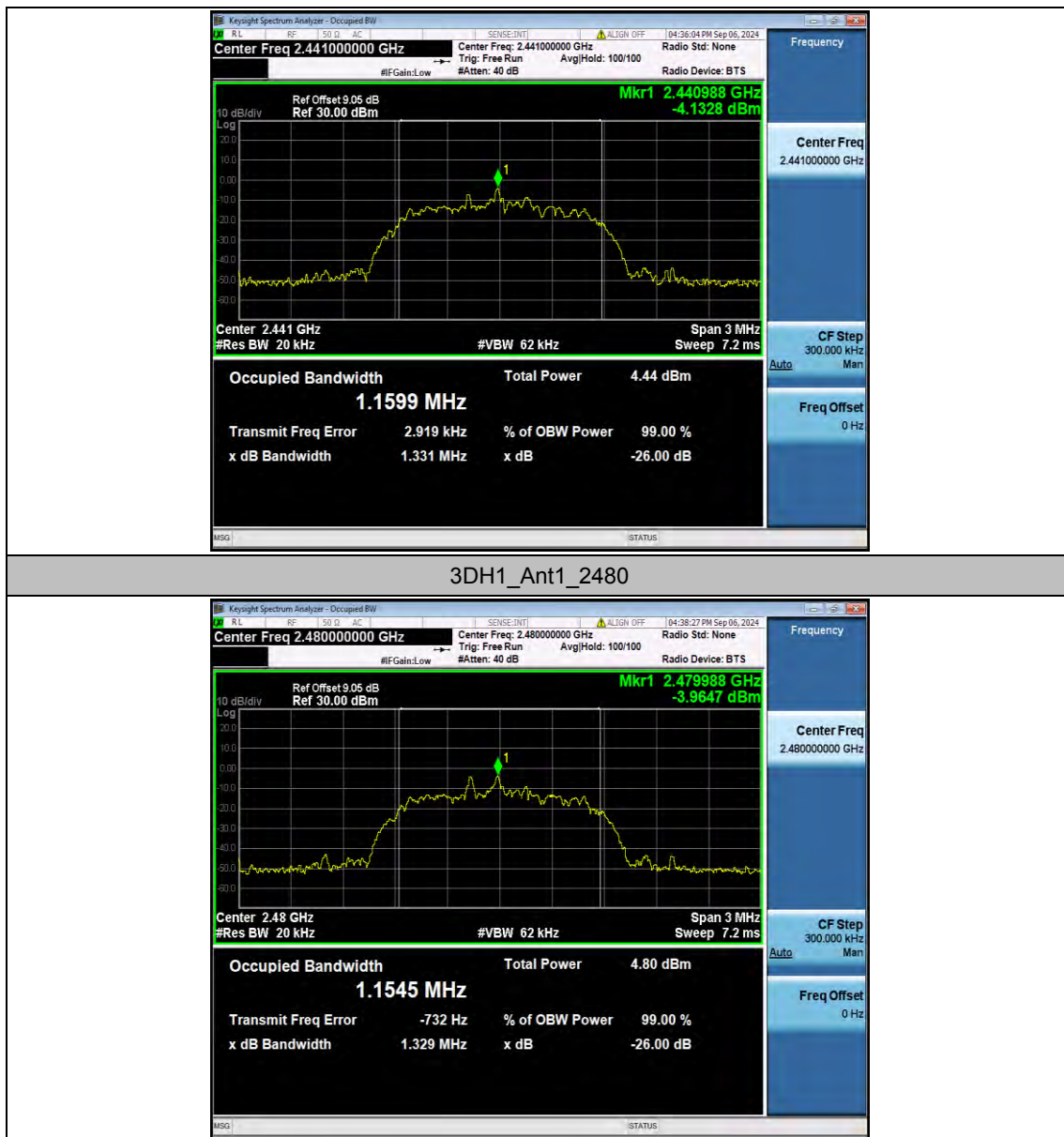
2DH1_Ant1_2480



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	-1.57	≤30.00	PASS
		2441	-0.13	≤30.00	PASS
		2480	-0.28	≤30.00	PASS
2DH1	Ant1	2402	-0.94	≤20.97	PASS
		2441	0.37	≤20.97	PASS
		2480	0.22	≤20.97	PASS
3DH1	Ant1	2402	-0.56	≤20.97	PASS
		2441	0.88	≤20.97	PASS
		2480	0.81	≤20.97	PASS

Appendix A.4: Carrier frequency separation

Test Result

TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH1	Ant1	Hop_2402	1.014	≥ 0.882	PASS
		Hop_2441	0.986	≥ 0.882	PASS
		Hop_2480	1.002	≥ 0.882	PASS
2DH1	Ant1	Hop_2402	1.01	≥ 0.842	PASS
		Hop_2441	0.992	≥ 0.842	PASS
		Hop_2480	0.99	≥ 0.842	PASS
3DH1	Ant1	Hop_2402	1.01	≥ 0.812	PASS
		Hop_2441	1.008	≥ 0.812	PASS
		Hop_2480	0.878	≥ 0.812	PASS

Test Graphs

DH1_Ant1_Hop_2402



DH1_Ant1_Hop_2441



DH1_Ant1_Hop_2480



2DH1_Ant1_Hop_2402



2DH1_Ant1_Hop_2441



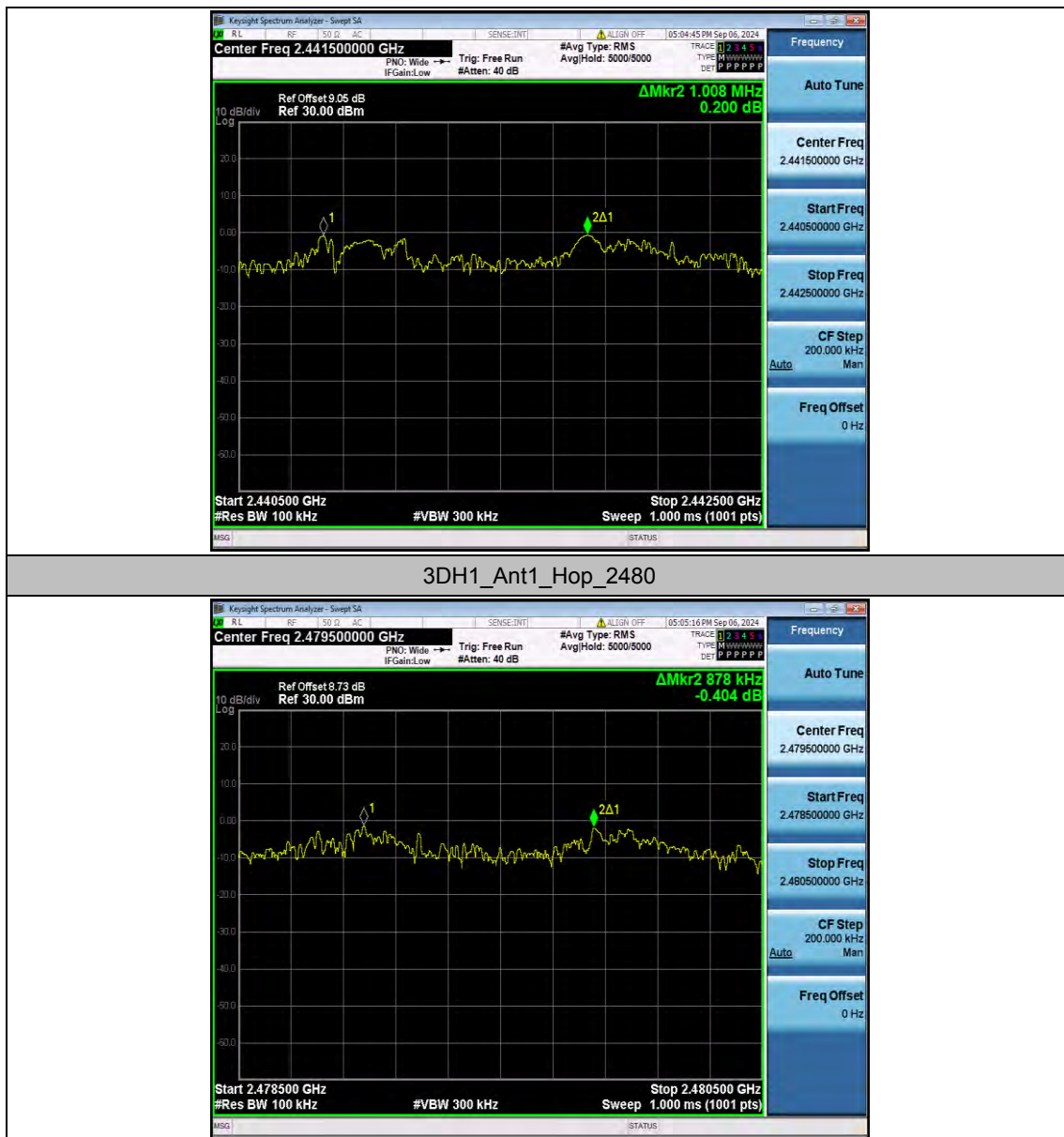
2DH1_Ant1_Hop_2480



3DH1_Ant1_Hop_2402



3DH1_Ant1_Hop_2441

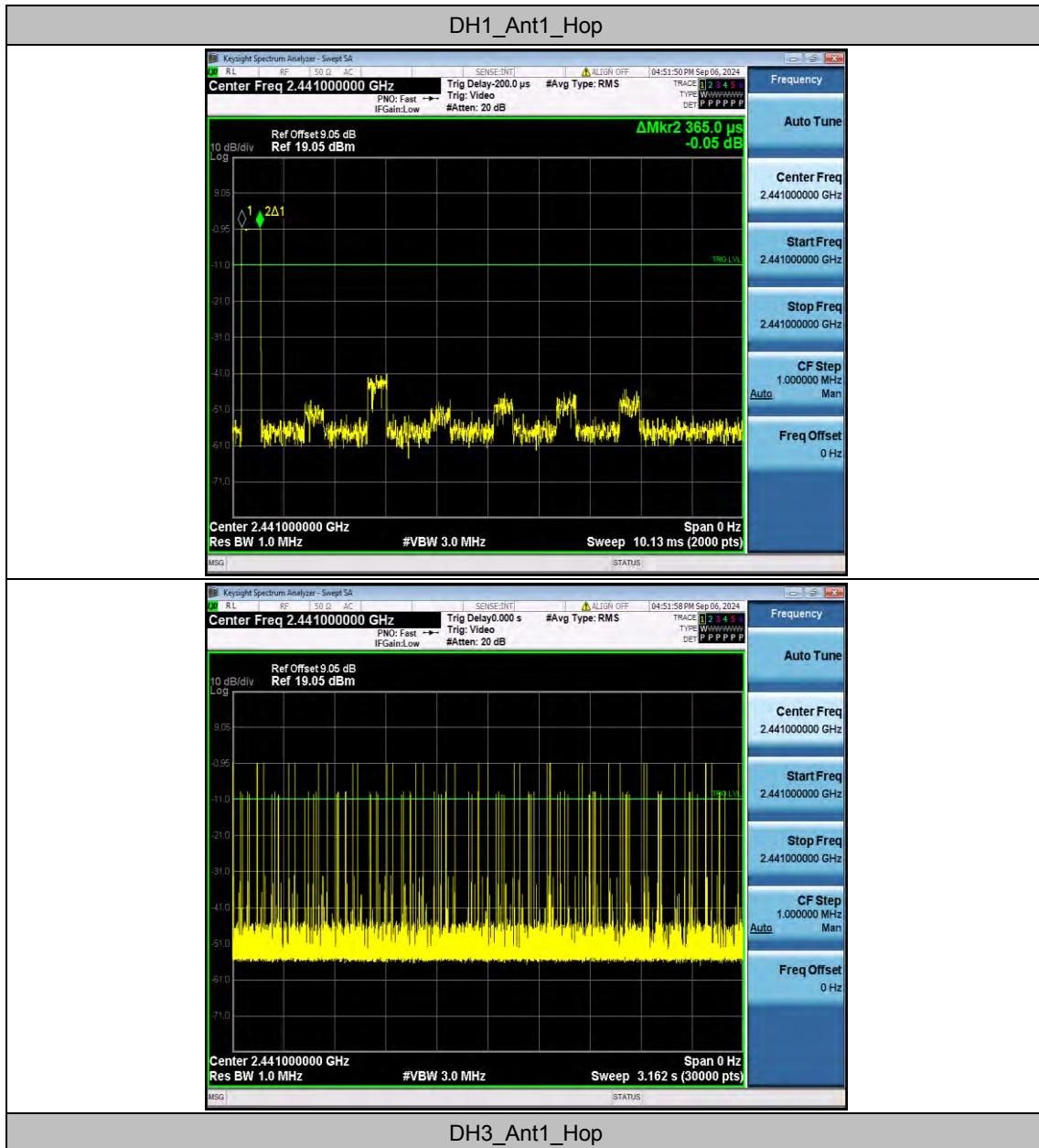


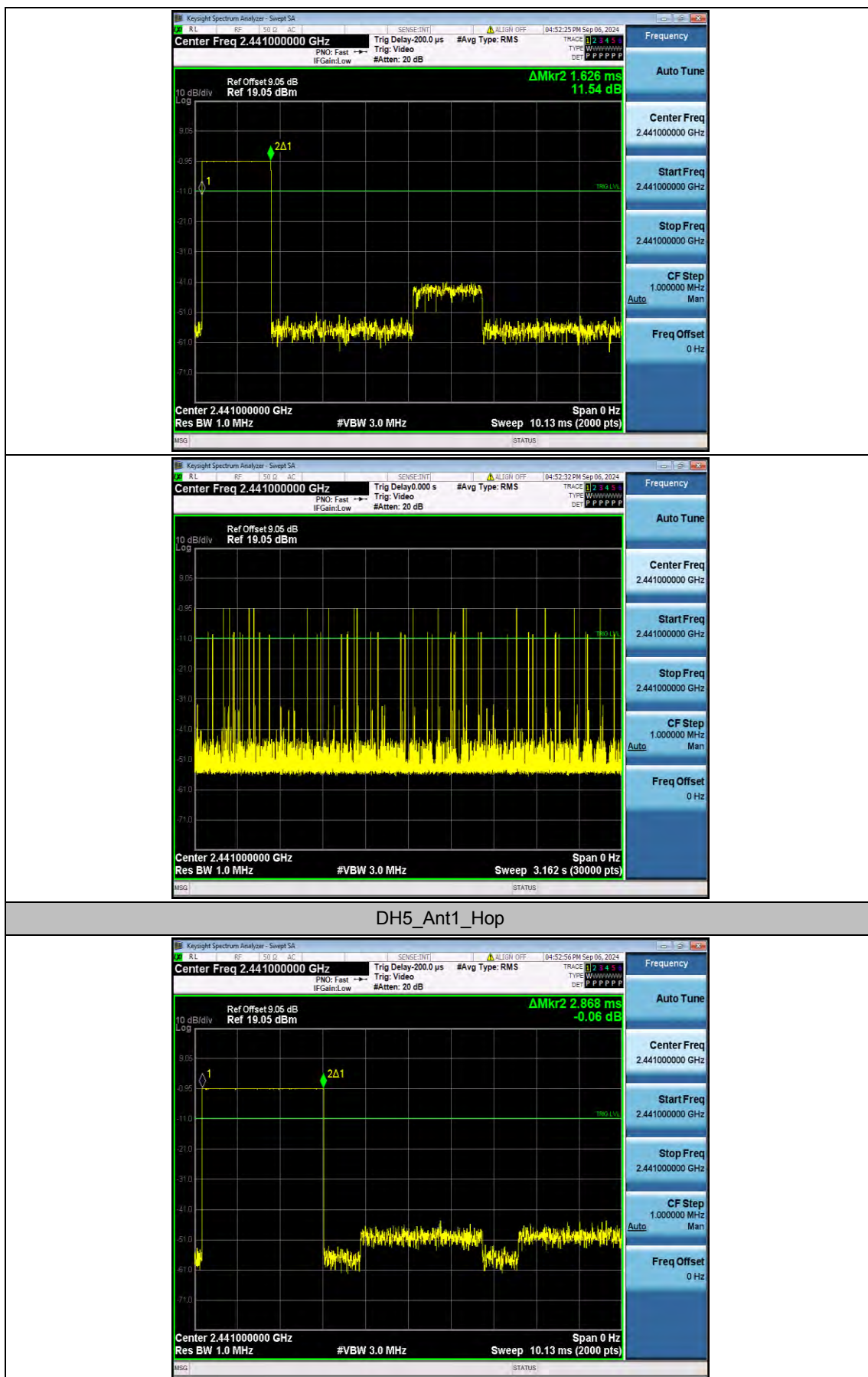
Appendix A.5: Time of occupancy

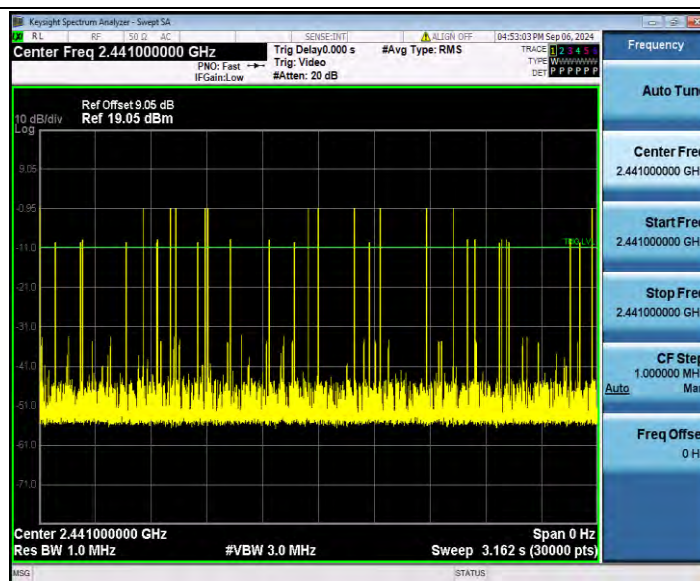
Test Result

TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.365	340	0.124	≤0.4	PASS
DH3	Ant1	Hop	1.626	170	0.276	≤0.4	PASS
DH5	Ant1	Hop	2.868	130	0.373	≤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	2.878	90	0.259	≤0.4	PASS
3DH1	Ant1	Hop	0.375	330	0.124	≤0.4	PASS
3DH3	Ant1	Hop	1.631	200	0.326	≤0.4	PASS
3DH5	Ant1	Hop	2.878	110	0.317	≤0.4	PASS

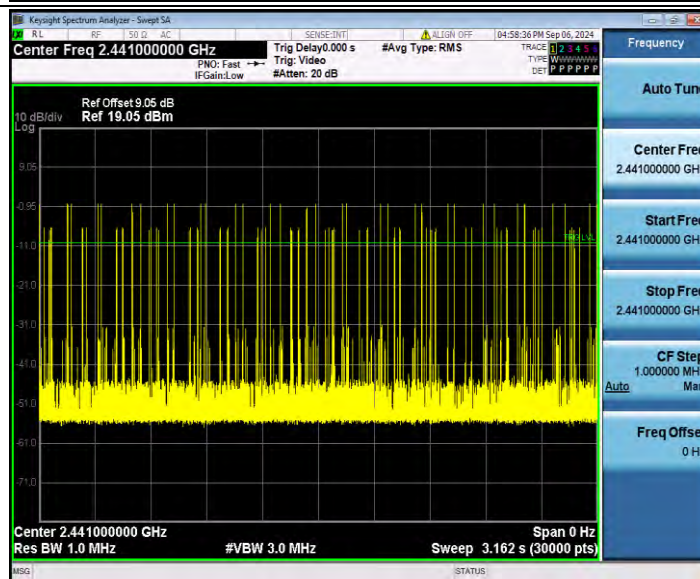
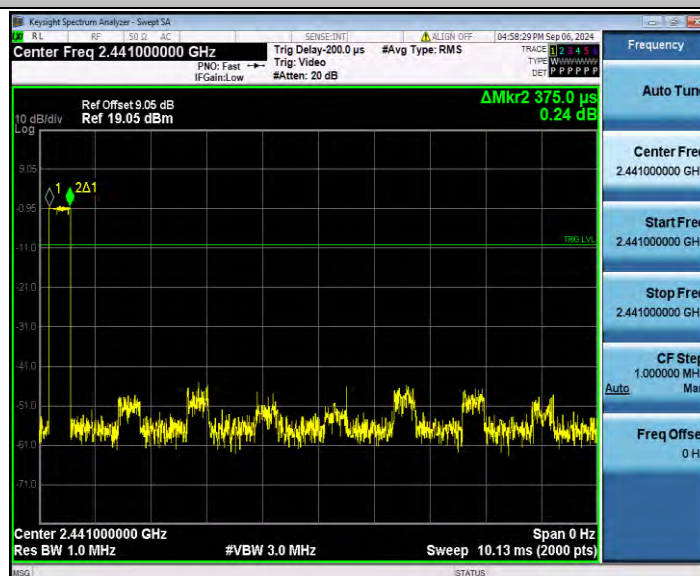
Test Graphs



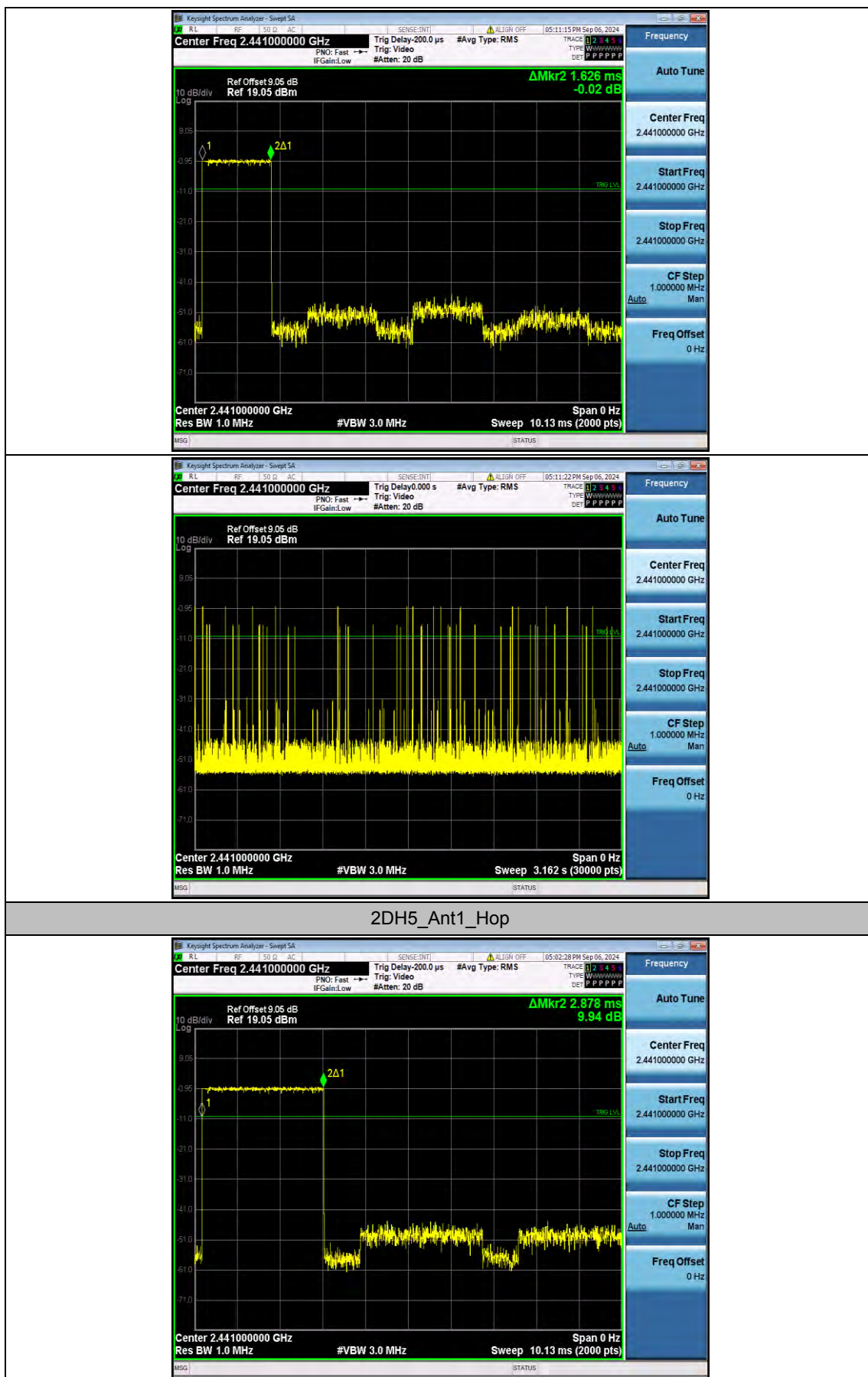


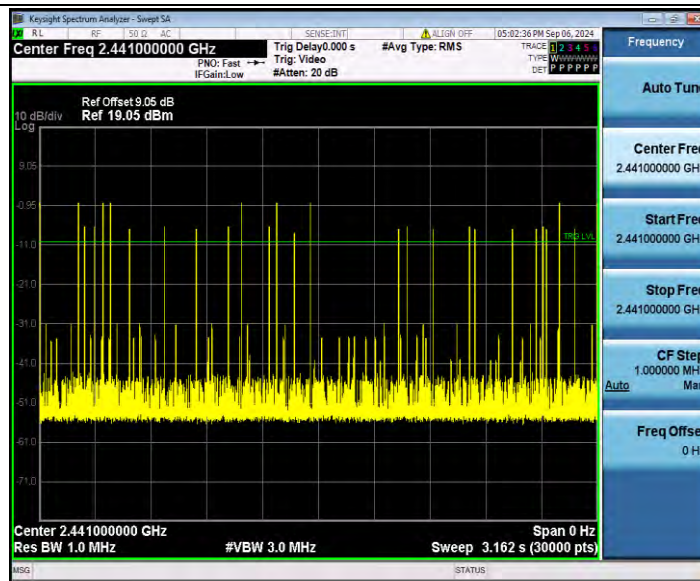


2DH1_Ant1_Hop

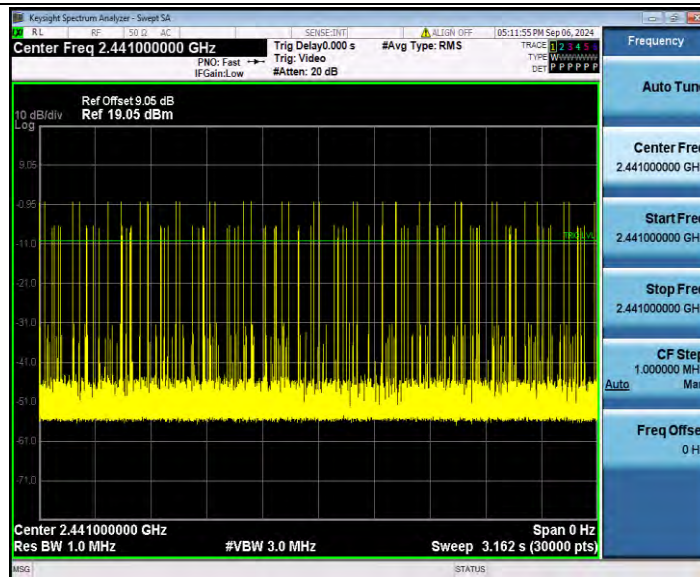
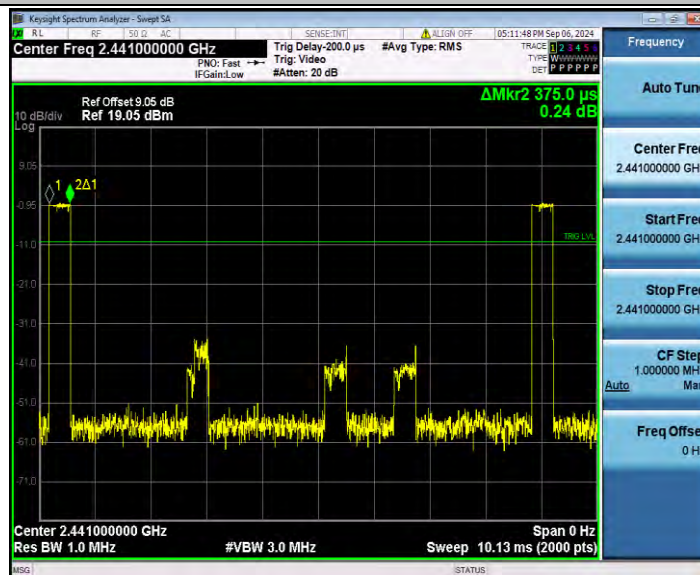


2DH3_Ant1_Hop

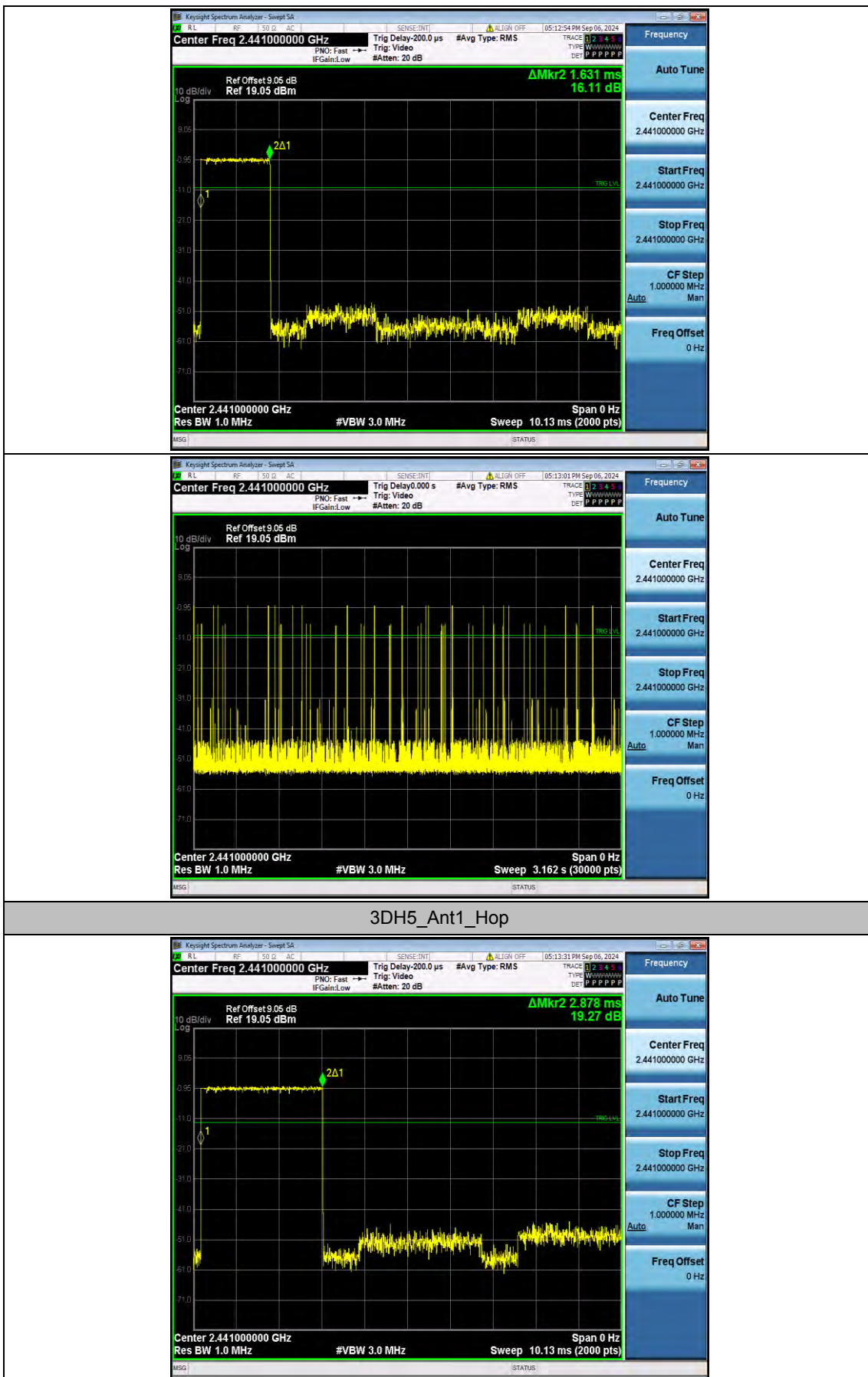




3DH1_Ant1_Hop



3DH3_Ant1_Hop



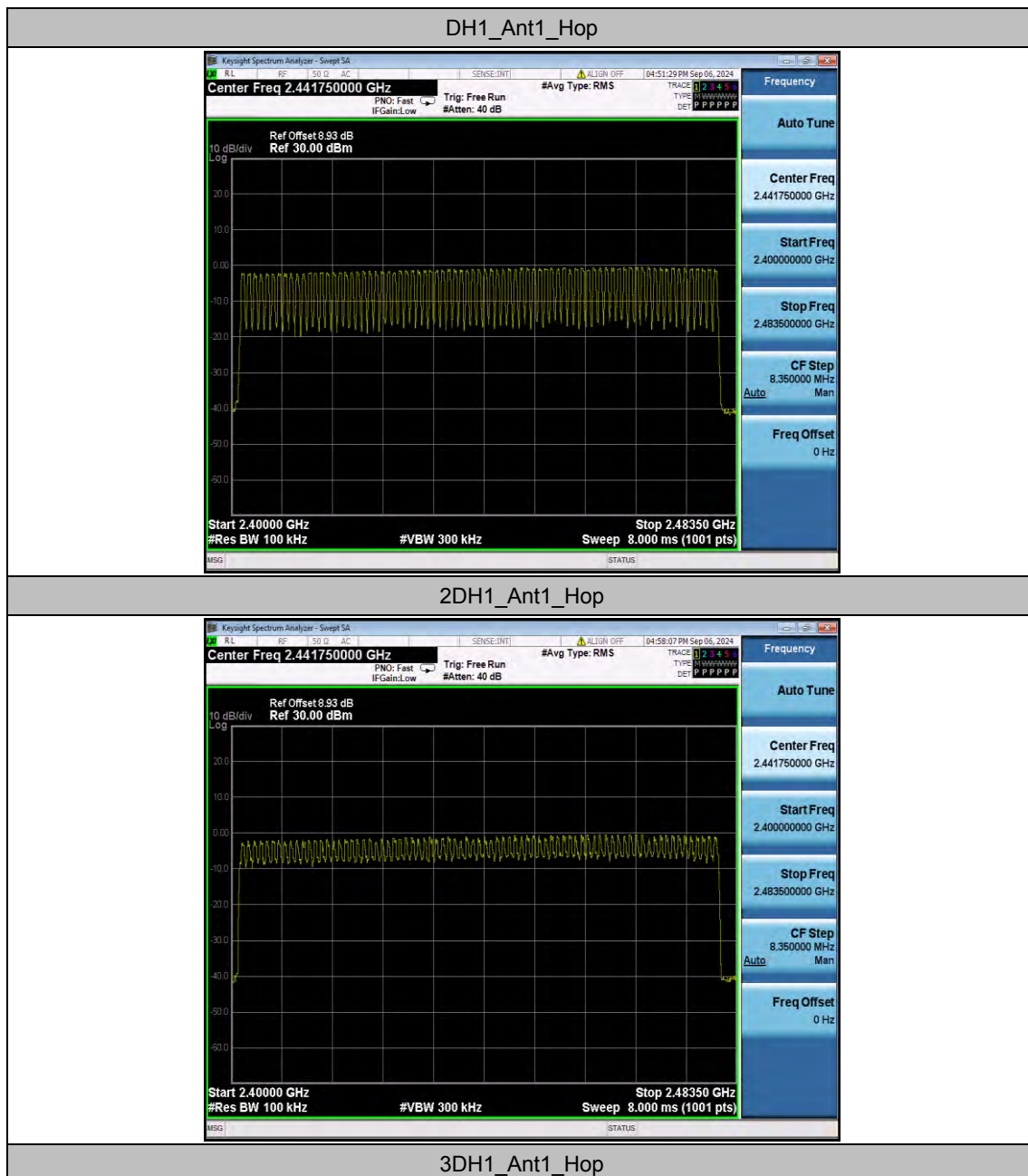


Appendix A.6: Number of hopping channels

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



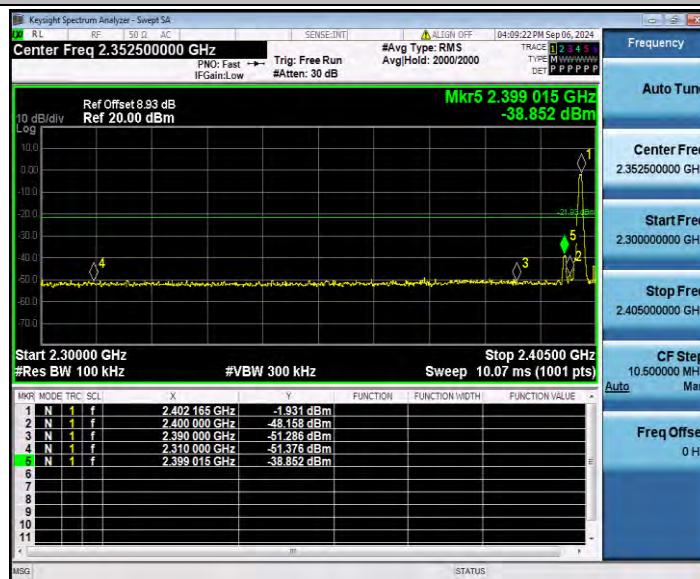
Appendix A.7: Band edge measurements

Test Result

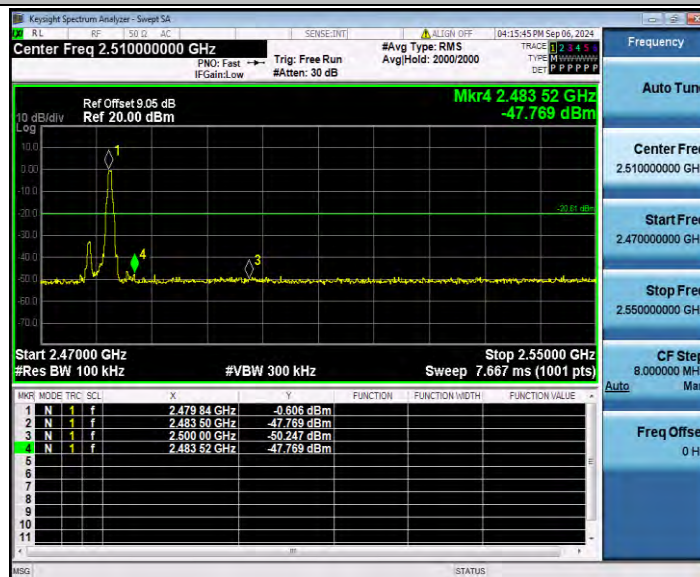
TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	Low	2402	-1.93	-38.85	≤ -21.93	PASS
		High	2480	-0.61	-47.77	≤ -20.61	PASS
		Low	Hop_2402	-3.45	-41.49	≤ -23.45	PASS
		High	Hop_2480	-0.69	-48.49	≤ -20.69	PASS
2DH1	Ant1	Low	2402	-2.09	-39.26	≤ -22.09	PASS
		High	2480	-0.80	-48.03	≤ -20.8	PASS
		Low	Hop_2402	-3.46	-39.92	≤ -23.46	PASS
		High	Hop_2480	-0.59	-42.74	≤ -20.59	PASS
3DH1	Ant1	Low	2402	-2.25	-39.22	≤ -22.25	PASS
		High	2480	-0.91	-48.67	≤ -20.91	PASS
		Low	Hop_2402	-2.27	-40.23	≤ -22.27	PASS
		High	Hop_2480	-0.95	-48.44	≤ -20.95	PASS

Test Graphs

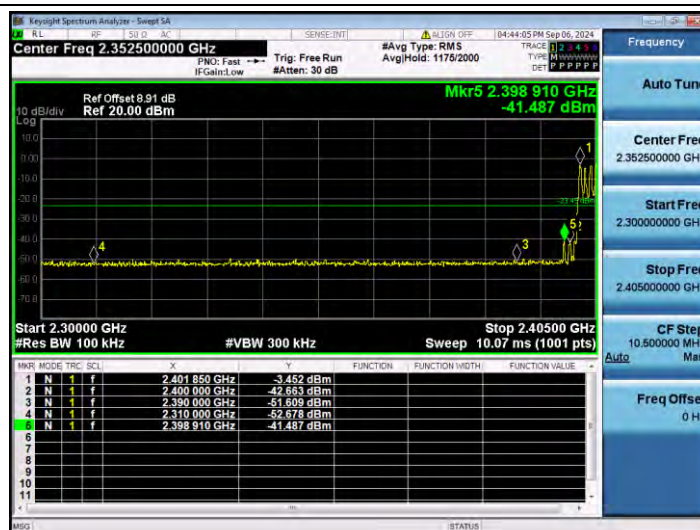
DH1_Ant1_Low_2402



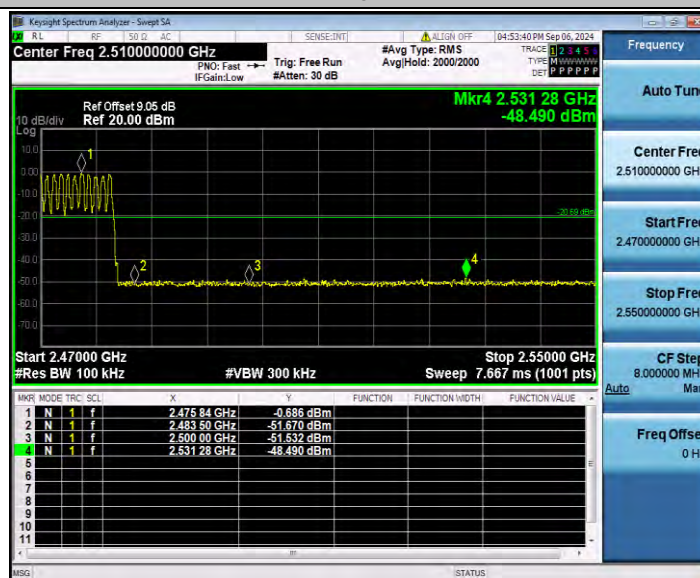
DH1_Ant1_High_2480



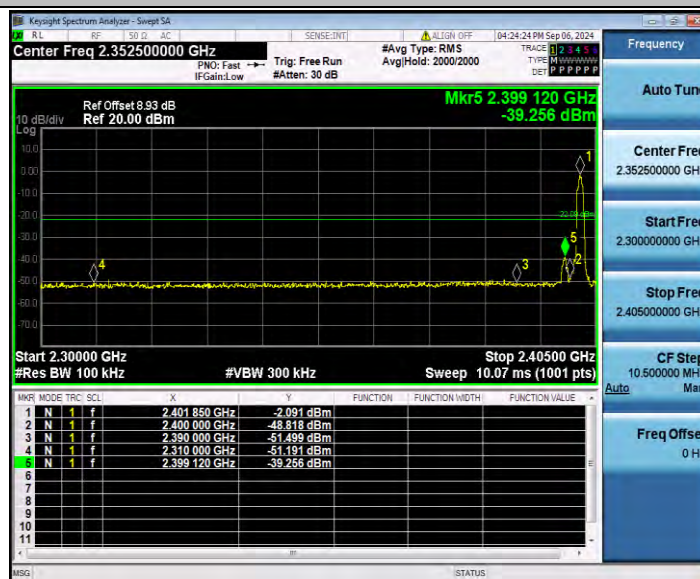
DH1_Ant1_Low_Hop_2402



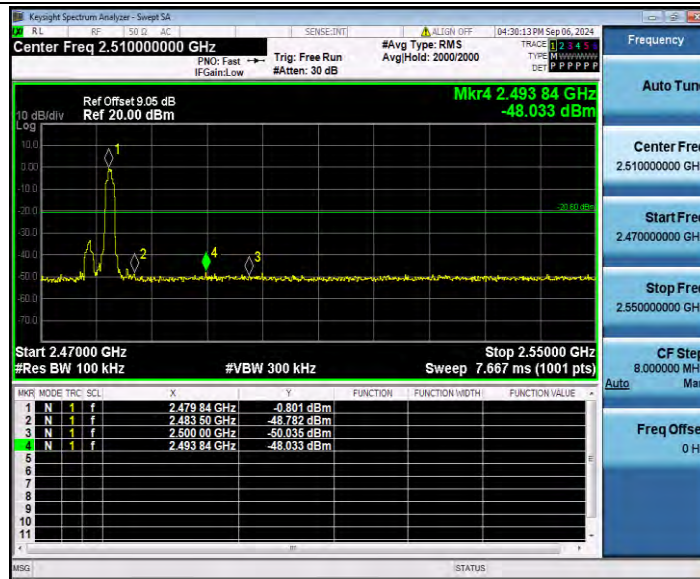
DH1_Ant1_High_Hop_2480



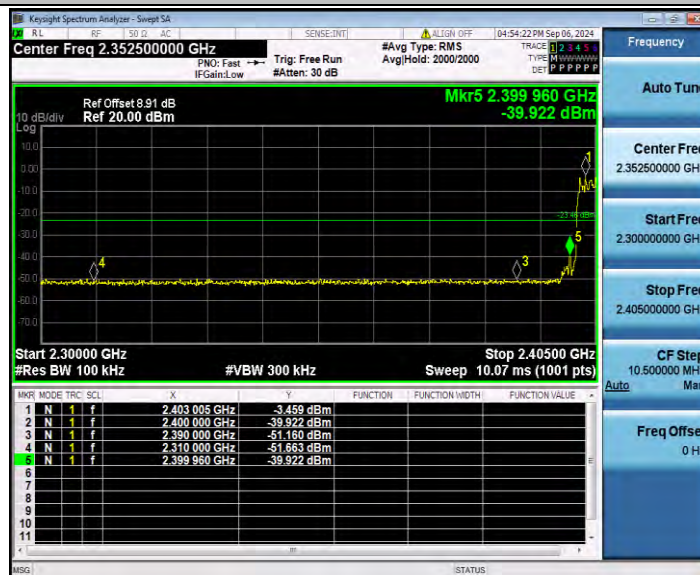
2DH1_Ant1_Low_2402



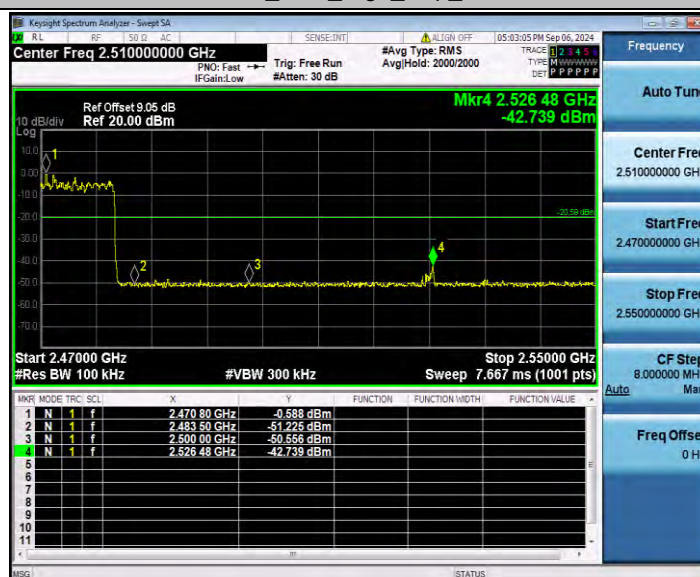
2DH1_Ant1_High_2480



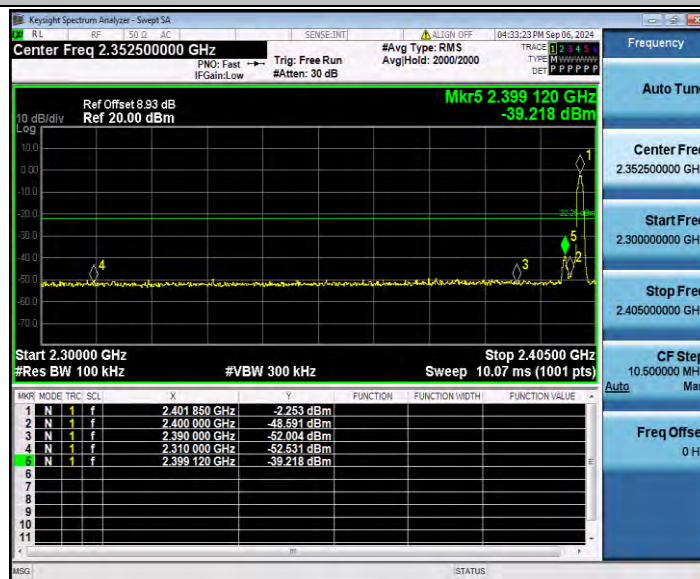
2DH1_Ant1_Low_Hop_2402



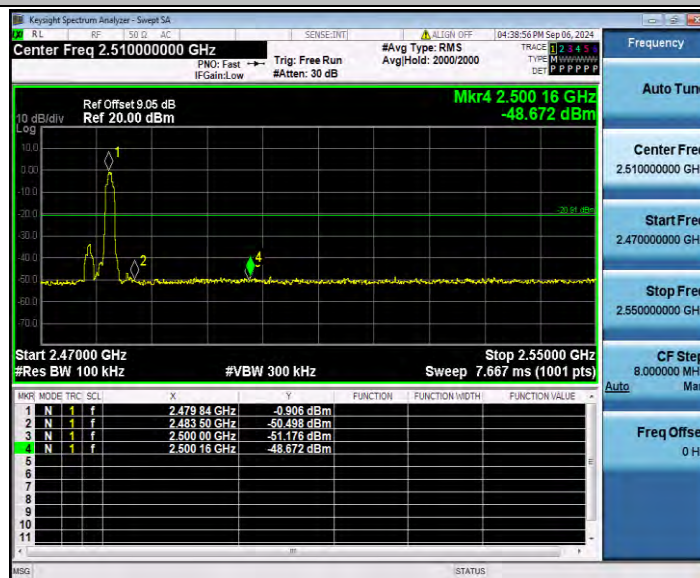
2DH1_Ant1_High_Hop_2480



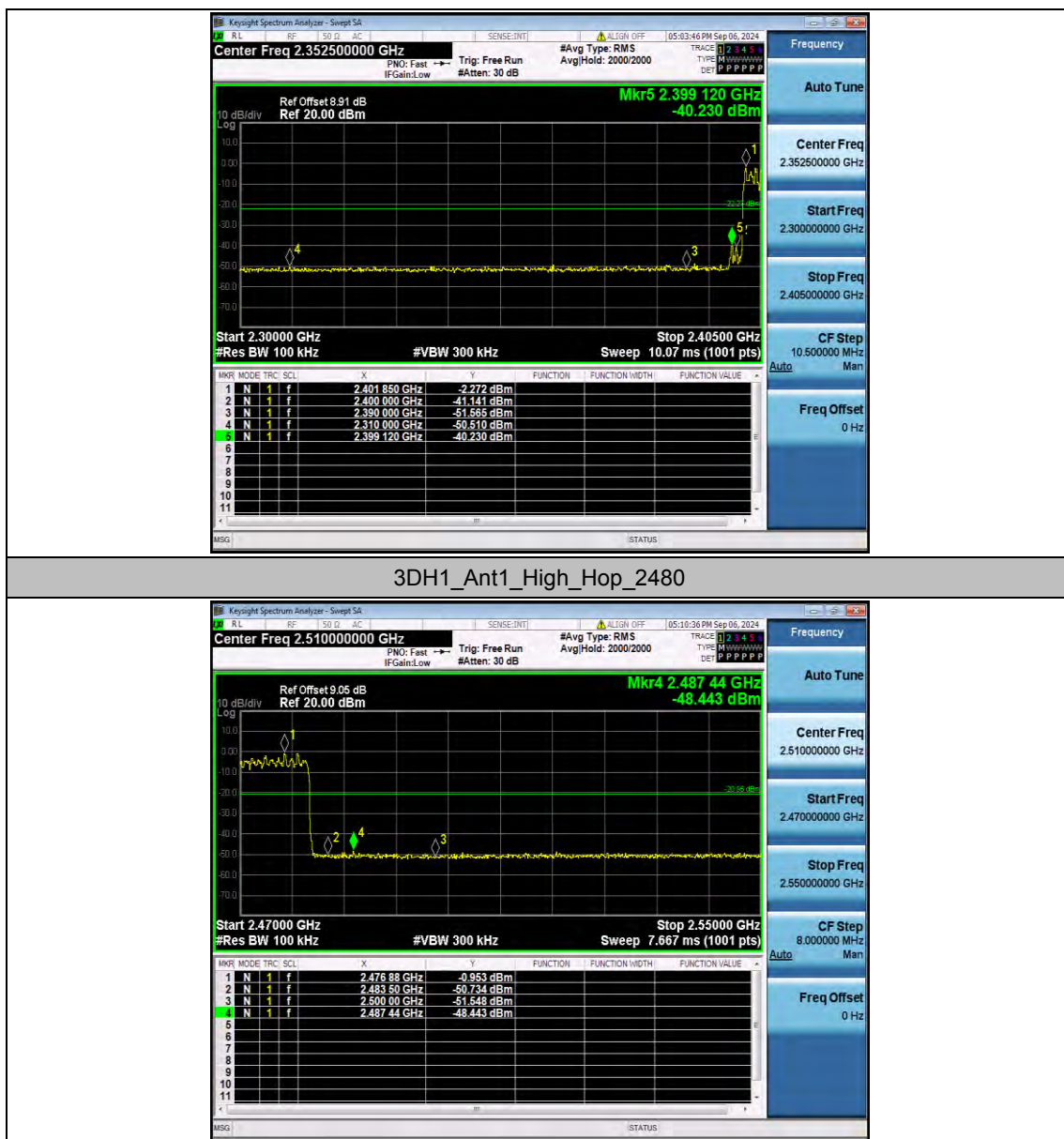
3DH1_Ant1_Low_2402



3DH1_Ant1_High_2480



3DH1_Ant1_Low_Hop_2402

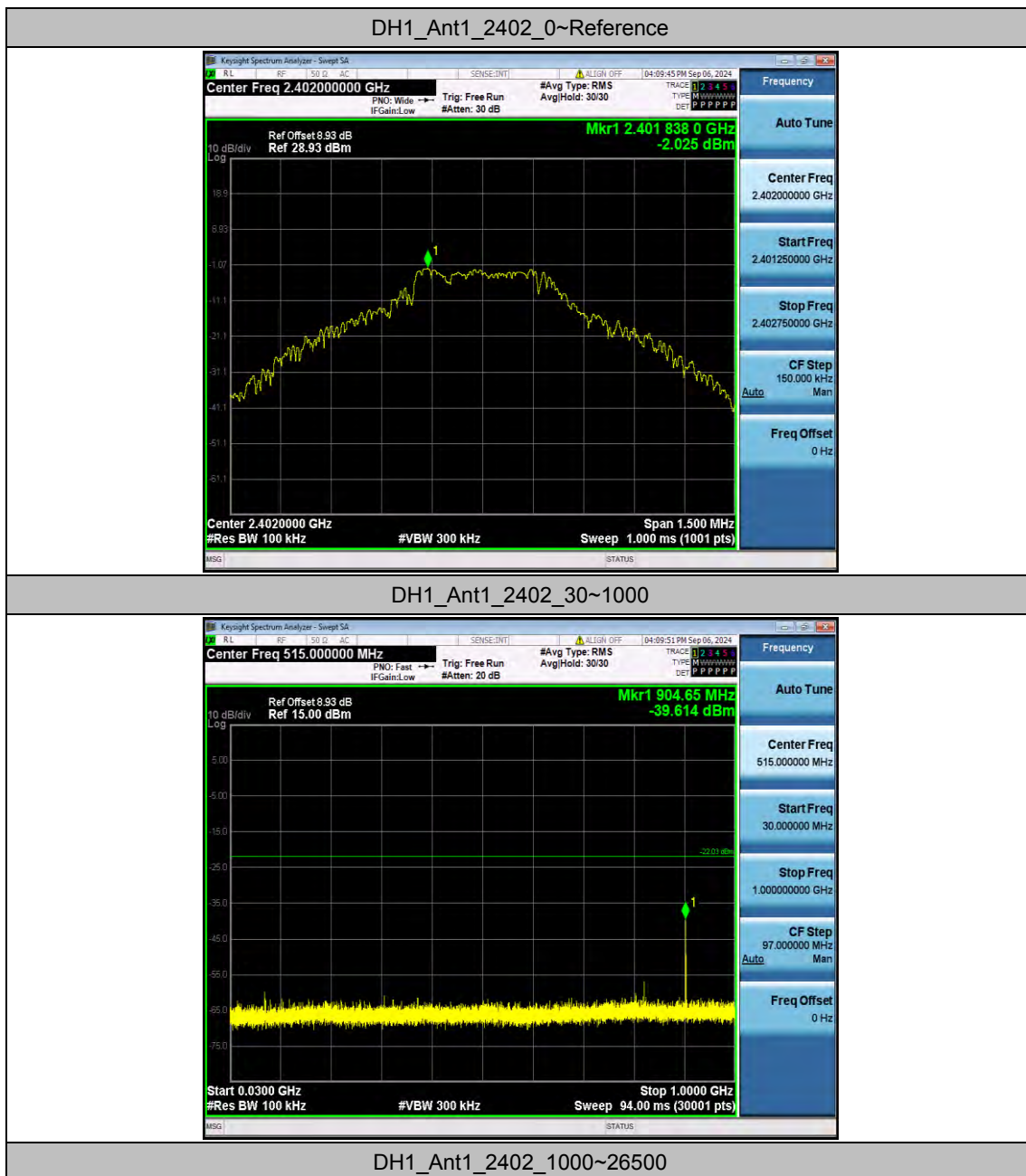


Appendix A.8: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH1	Ant1	2402	Reference	-2.03	-2.03	---	PASS
			30~1000	-2.03	-39.61	≤ -22.03	PASS
			1000~26500	-2.03	-47.24	≤ -22.03	PASS
		2441	Reference	-0.75	-0.75	---	PASS
			30~1000	-0.75	-60.18	≤ -20.75	PASS
			1000~26500	-0.75	-47.84	≤ -20.75	PASS
		2480	Reference	-0.78	-0.78	---	PASS
			30~1000	-0.78	-59.75	≤ -20.78	PASS
			1000~26500	-0.78	-47.63	≤ -20.78	PASS
2DH1	Ant1	2402	Reference	-2.26	-2.26	---	PASS
			30~1000	-2.26	-60.18	≤ -22.26	PASS
			1000~26500	-2.26	-31.39	≤ -22.26	PASS
		2441	Reference	-0.94	-0.94	---	PASS
			30~1000	-0.94	-59.32	≤ -20.94	PASS
			1000~26500	-0.94	-30.27	≤ -20.94	PASS
		2480	Reference	-0.91	-0.91	---	PASS
			30~1000	-0.91	-59.39	≤ -20.91	PASS
			1000~26500	-0.91	-36.78	≤ -20.91	PASS
3DH1	Ant1	2402	Reference	-2.32	-2.32	---	PASS
			30~1000	-2.32	-60.23	≤ -22.32	PASS
			1000~26500	-2.32	-32.69	≤ -22.32	PASS
		2441	Reference	-1.77	-1.77	---	PASS
			30~1000	-1.77	-60.07	≤ -21.77	PASS
			1000~26500	-1.77	-47.17	≤ -21.77	PASS
		2480	Reference	-1.90	-1.90	---	PASS
			30~1000	-1.90	-60.35	≤ -21.9	PASS
			1000~26500	-1.90	-47.04	≤ -21.9	PASS

Test Graphs

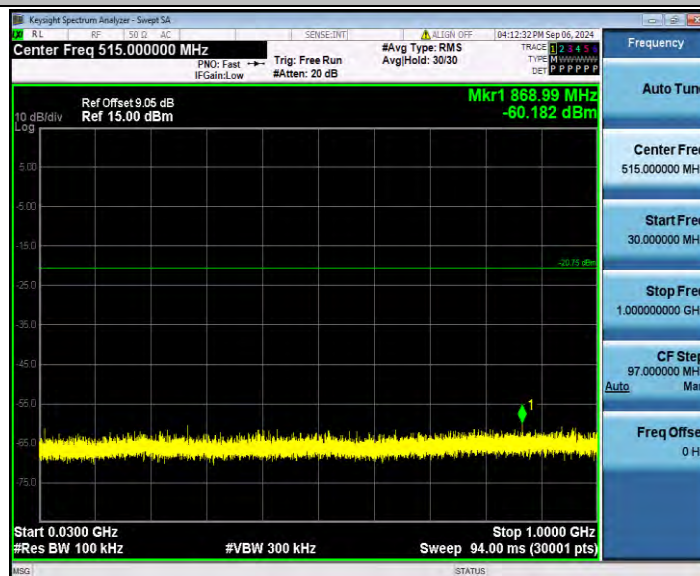




DH1_Ant1_2441_0~Reference



DH1_Ant1_2441_30~1000



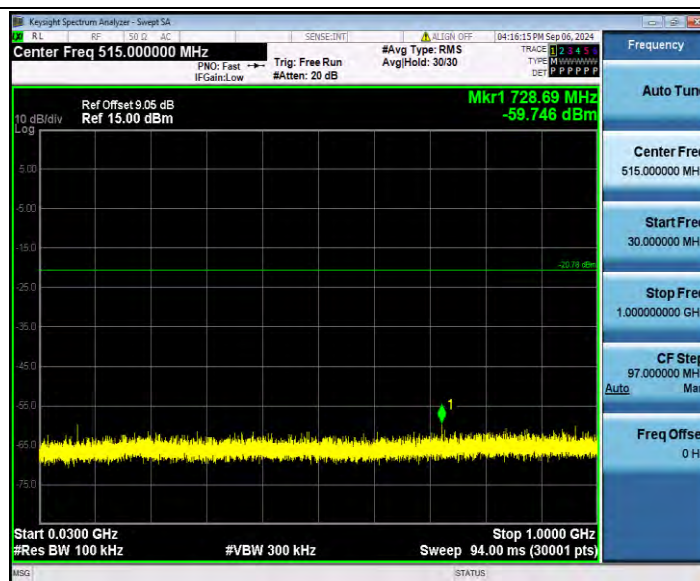
DH1_Ant1_2441_1000~26500



DH1_Ant1_2480_0~Reference



DH1_Ant1_2480_30~1000

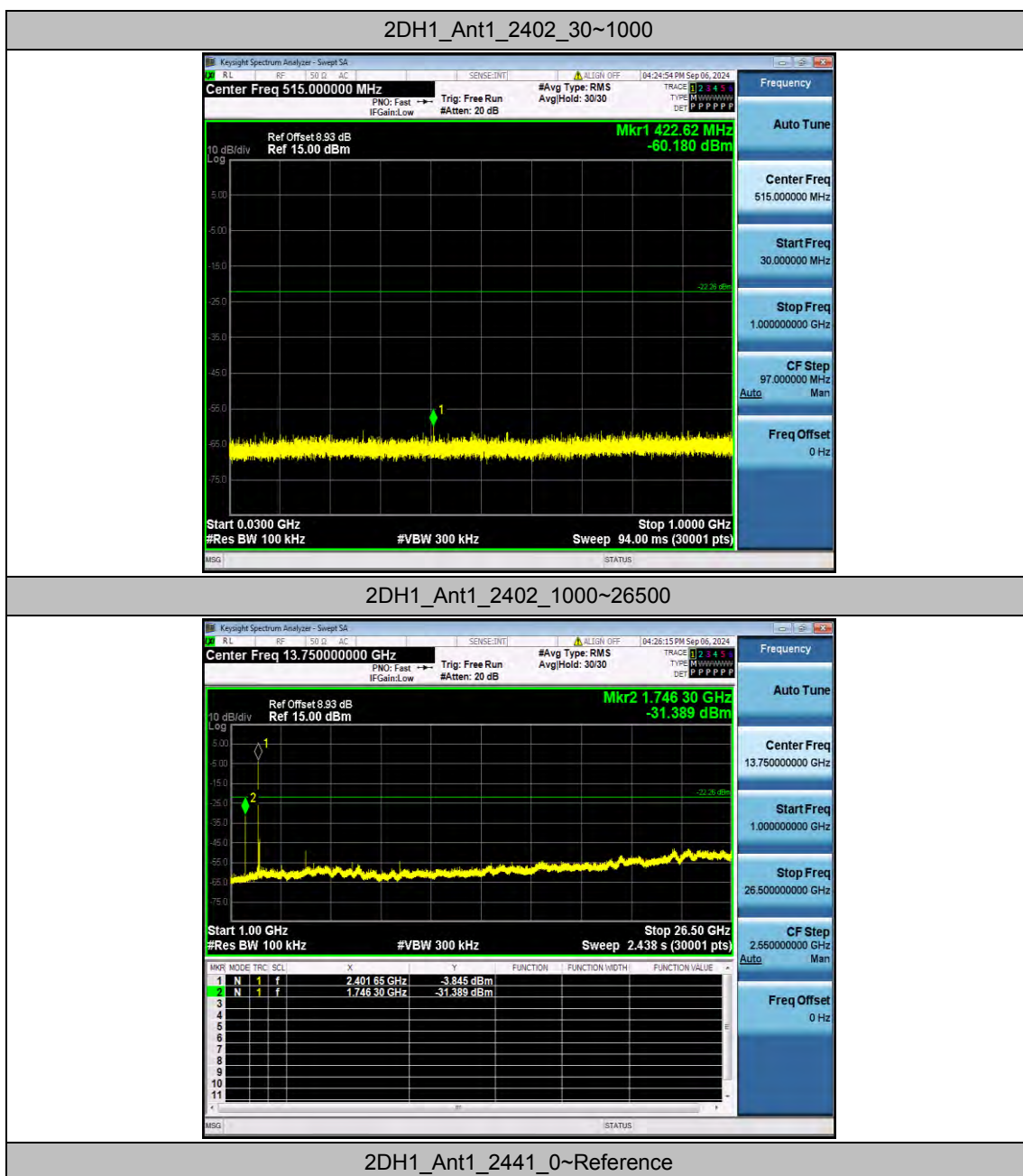


DH1_Ant1_2480_1000~26500



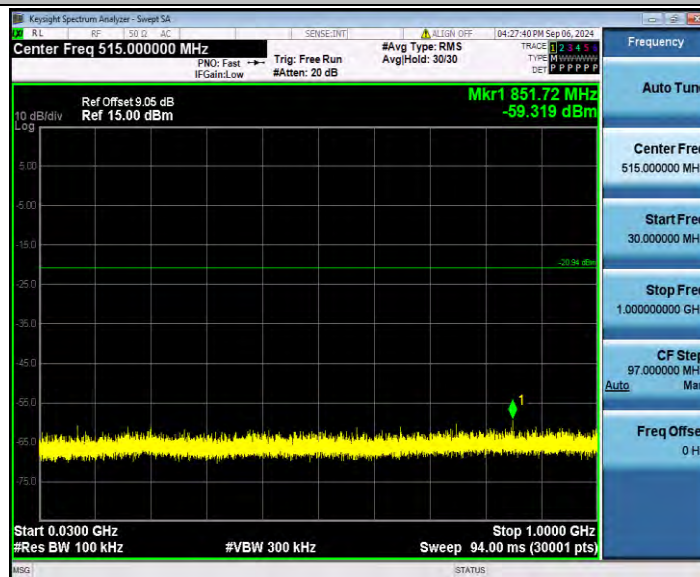
2DH1_Ant1_2402_0~Reference



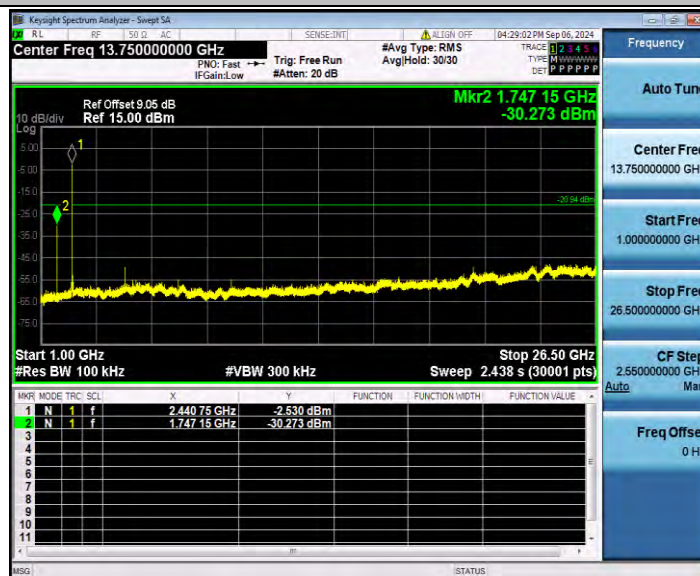




2DH1_Ant1_2441_30~1000



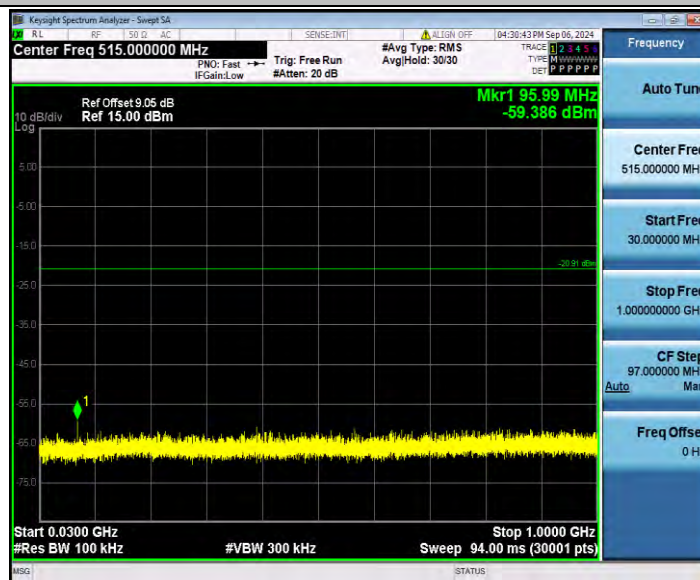
2DH1_Ant1_2441_1000~26500



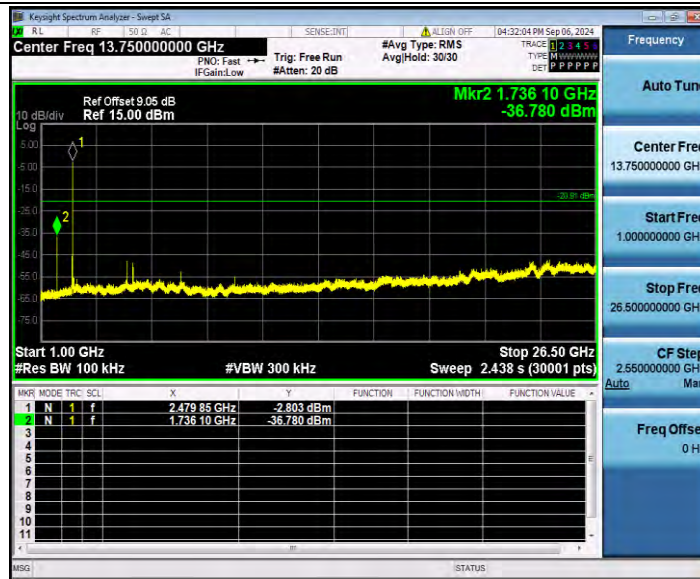
2DH1_Ant1_2480_0~Reference



2DH1_Ant1_2480_30~1000



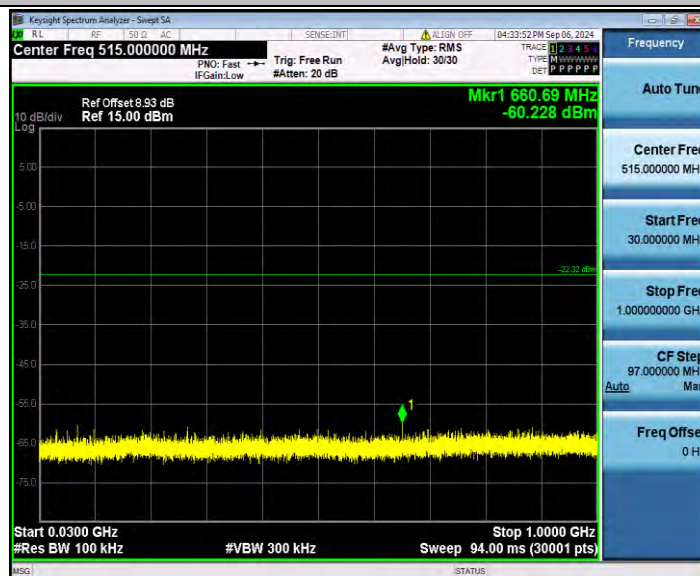
2DH1_Ant1_2480_1000~26500



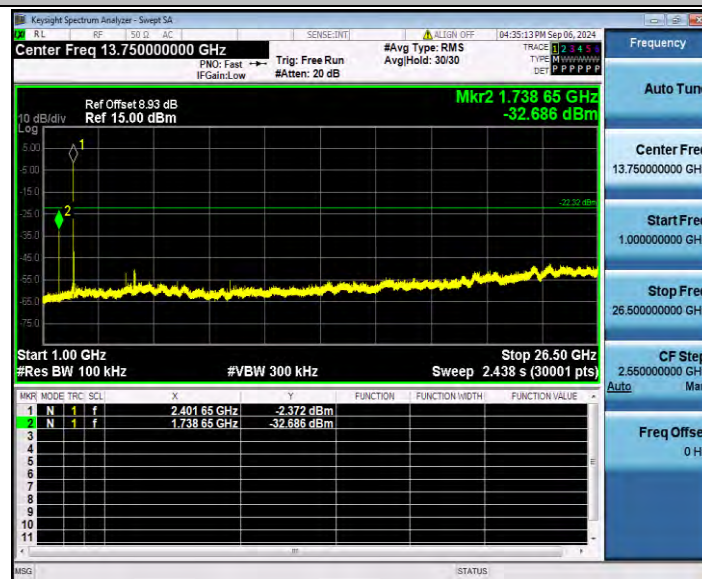
3DH1_Ant1_2402_0~Reference



3DH1_Ant1_2402_30~1000



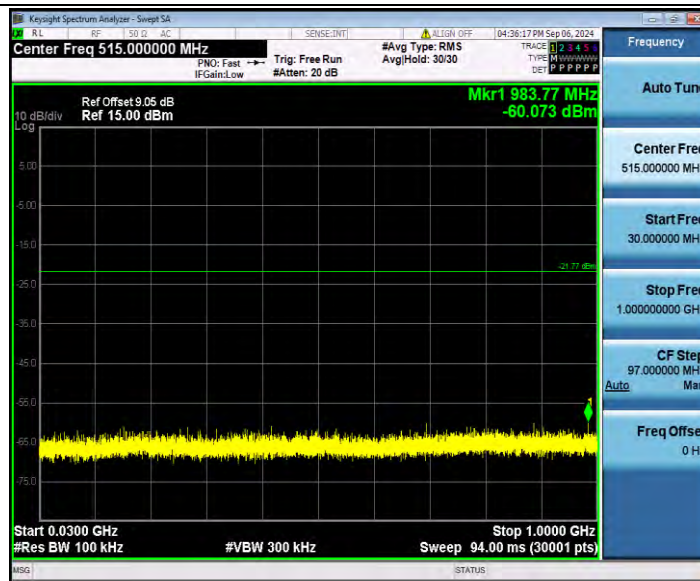
3DH1_Ant1_2402_1000~26500



3DH1_Ant1_2441_0~Reference



3DH1_Ant1_2441_30~1000

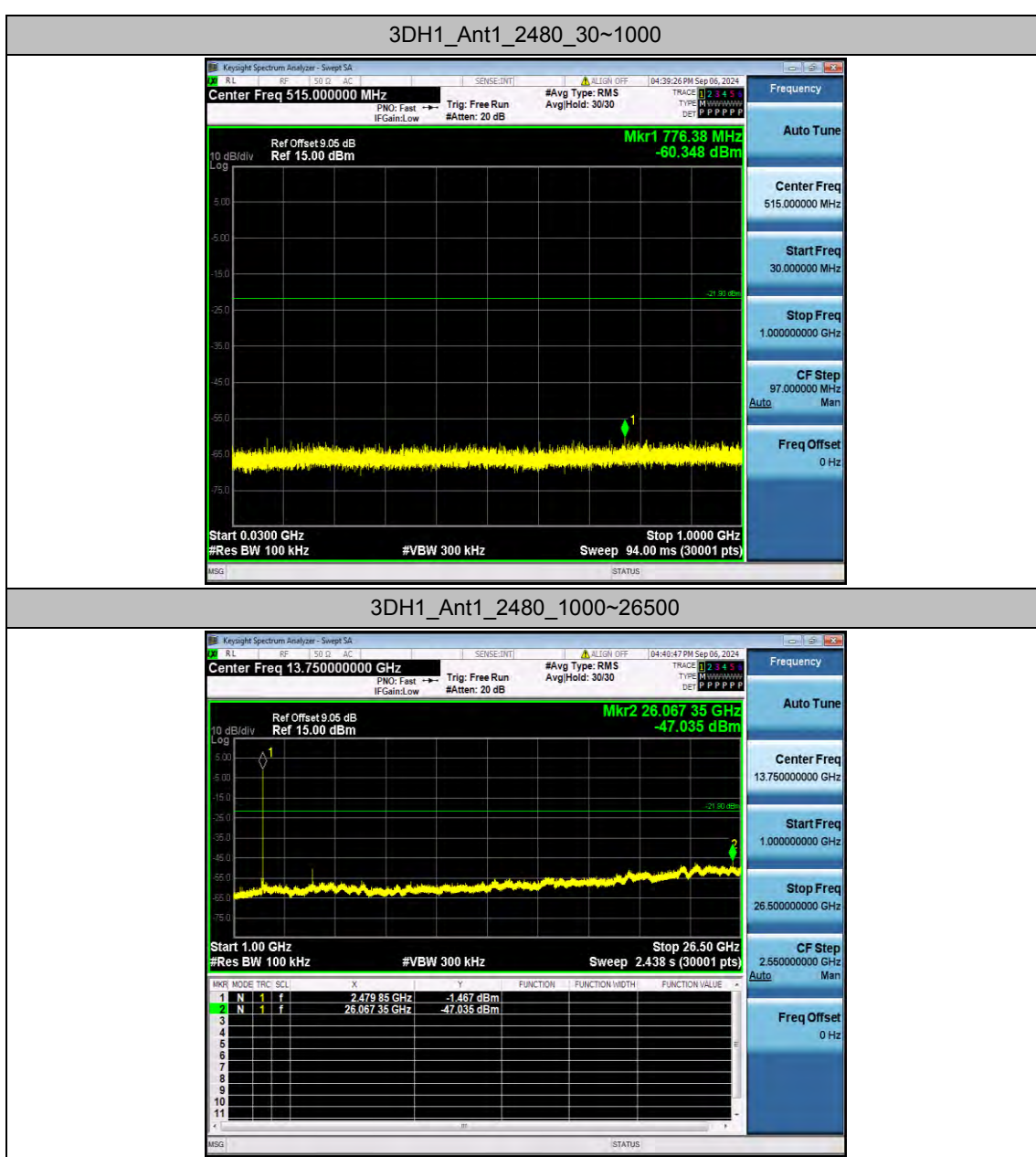


3DH1_Ant1_2441_1000~26500



3DH1_Ant1_2480_0~Reference





Appendix A.9: Emissions in Restricted Bands

Test Result

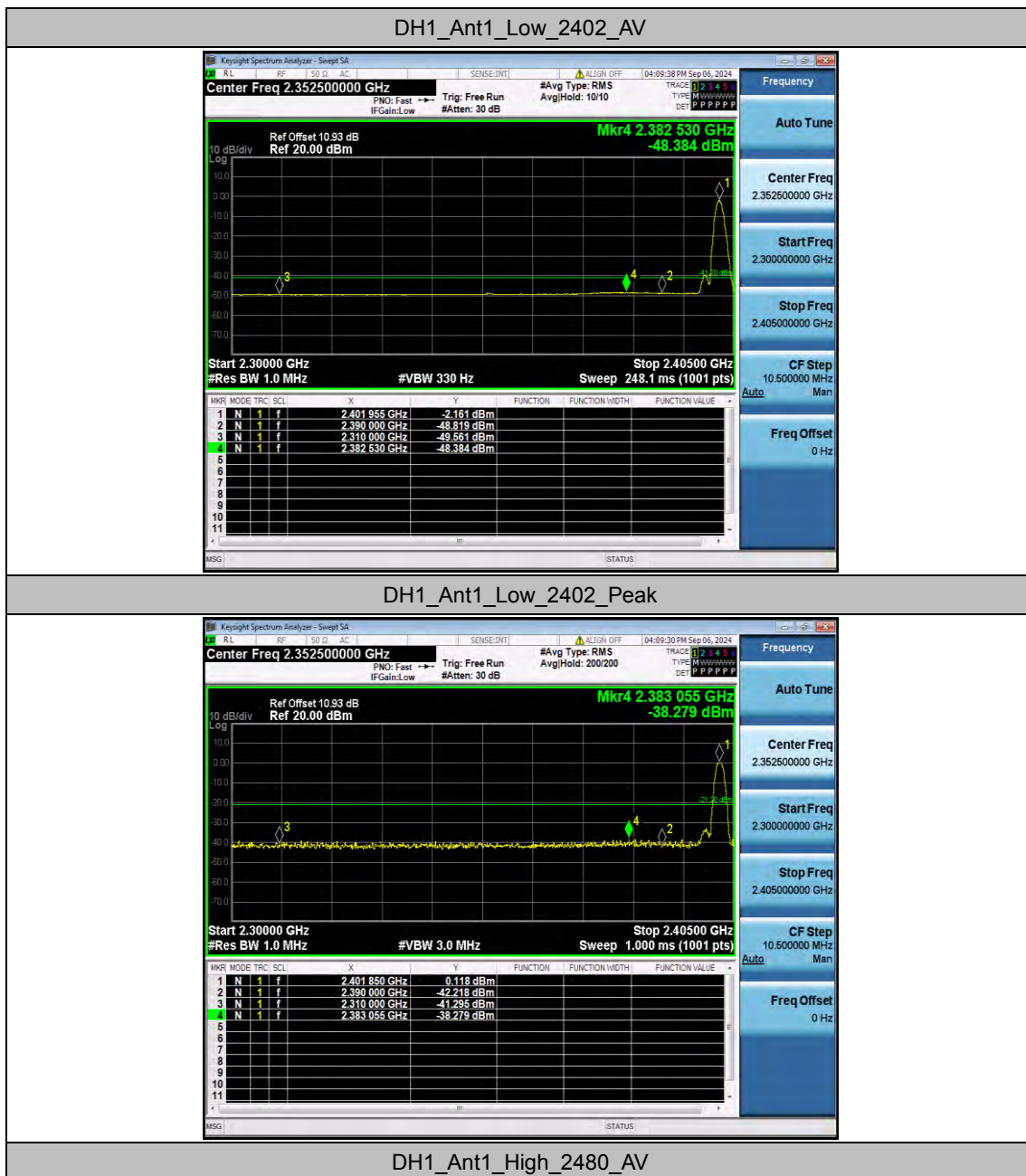
TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
DH1	Ant1	Low	2402	AV	2310.000	-49.56	≤-41.20	45.64	≤54	PASS
				AV	2382.530	-48.38	≤-41.20	46.82	≤54	PASS
				AV	2390.000	-48.82	≤-41.20	46.38	≤54	PASS
				Peak	2310.000	-41.3	≤-21.20	53.90	≤74	PASS
				Peak	2383.055	-38.28	≤-21.20	56.92	≤74	PASS
				Peak	2390.000	-42.22	≤-21.20	52.98	≤74	PASS
		High	2480	AV	2483.500	-47.63	≤-41.20	47.57	≤54	PASS
				AV	2483.520	-47.63	≤-41.20	47.57	≤54	PASS
				AV	2500.000	-47.96	≤-41.20	47.24	≤54	PASS
				Peak	2483.500	-39.69	≤-21.20	55.51	≤74	PASS
				Peak	2495.120	-37.2	≤-21.20	58.00	≤74	PASS
				Peak	2500.000	-41.69	≤-21.20	53.51	≤74	PASS
2DH1	Ant1	Low	2402	AV	2310.000	-49.61	≤-41.20	45.59	≤54	PASS
				AV	2382.320	-48.45	≤-41.20	46.75	≤54	PASS
				AV	2390.000	-48.97	≤-41.20	46.23	≤54	PASS
				Peak	2310.000	-40.23	≤-21.20	54.97	≤74	PASS
				Peak	2385.470	-37.74	≤-21.20	57.46	≤74	PASS
				Peak	2390.000	-41.83	≤-21.20	53.37	≤74	PASS
		High	2480	AV	2483.500	-48.08	≤-41.20	47.12	≤54	PASS
				AV	2496.000	-47.88	≤-41.20	47.32	≤54	PASS
				AV	2500.000	-48.07	≤-41.20	47.13	≤54	PASS
				Peak	2483.500	-39.99	≤-21.20	55.21	≤74	PASS
				Peak	2496.880	-37.07	≤-21.20	58.13	≤74	PASS
				Peak	2500.000	-38.73	≤-21.20	56.47	≤74	PASS
3DH1	Ant1	Low	2402	AV	2310.000	-49.64	≤-41.20	45.56	≤54	PASS
				AV	2382.110	-48.45	≤-41.20	46.75	≤54	PASS
				AV	2390.000	-48.97	≤-41.20	46.23	≤54	PASS
				Peak	2310.000	-41.19	≤-21.20	54.01	≤74	PASS
				Peak	2378.120	-38.17	≤-21.20	57.03	≤74	PASS
				Peak	2390.000	-41.79	≤-21.20	53.41	≤74	PASS
		High	2480	AV	2483.500	-48.01	≤-41.20	47.19	≤54	PASS
				AV	2499.200	-47.86	≤-41.20	47.34	≤54	PASS
				AV	2500.000	-47.88	≤-41.20	47.32	≤54	PASS
				Peak	2483.500	-39.14	≤-21.20	56.06	≤74	PASS
				Peak	2491.040	-37.87	≤-21.20	57.33	≤74	PASS

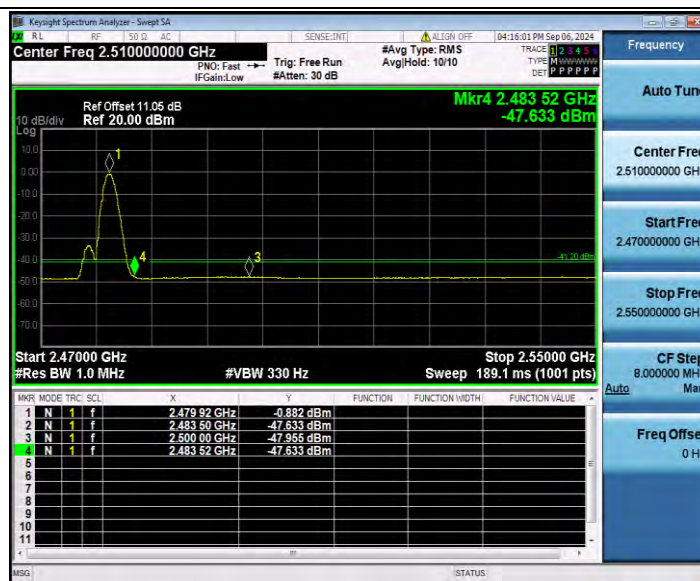
				Peak	2500.000	-38.61	≤ -21.20	56.59	≤ 74	PASS
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Note:

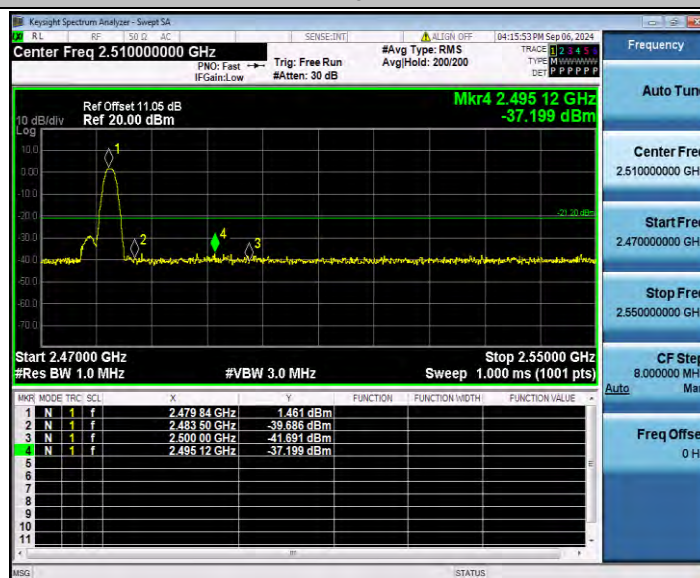
1. The Antenna Gain is compensated in the graph.
2. The Duty Cycle Factor and RBW Factor is compensated in the graph.
3. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

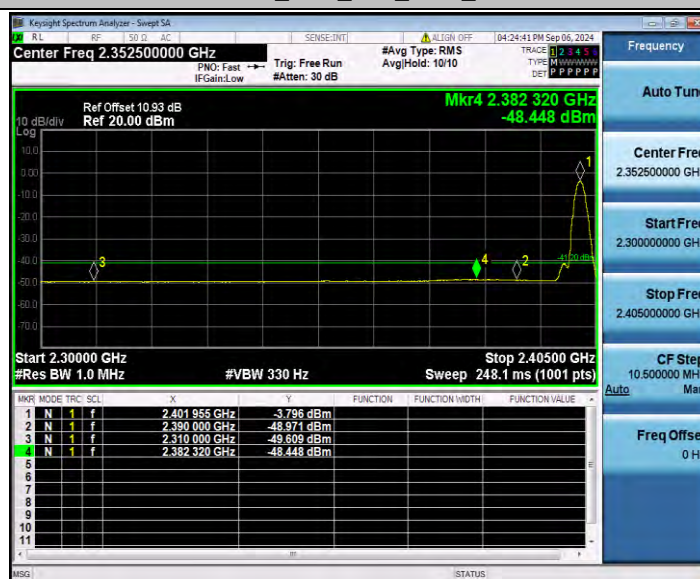




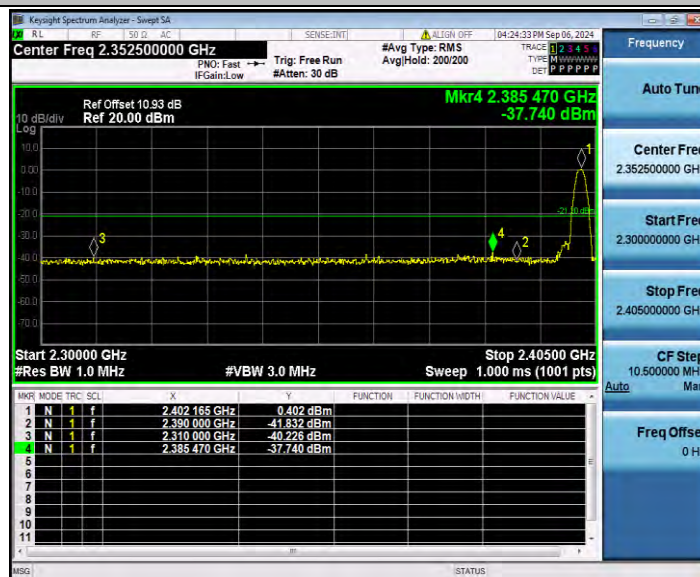
DH1_Ant1_High_2480_Peak



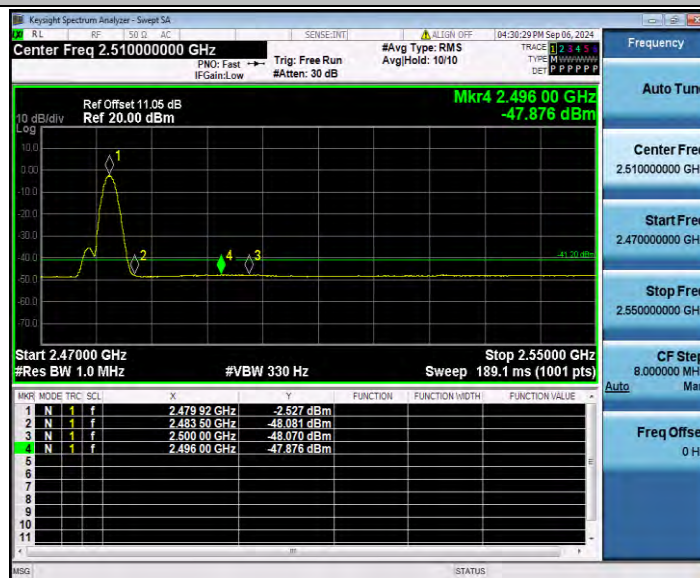
2DH1_Ant1_Low_2402_AV



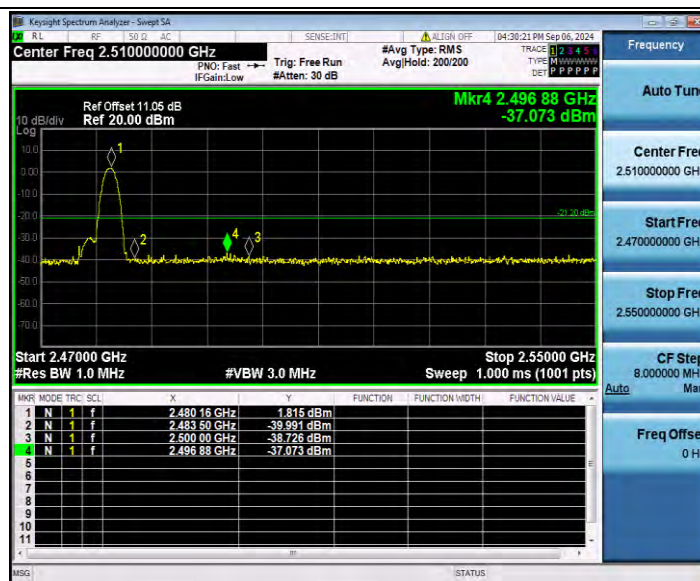
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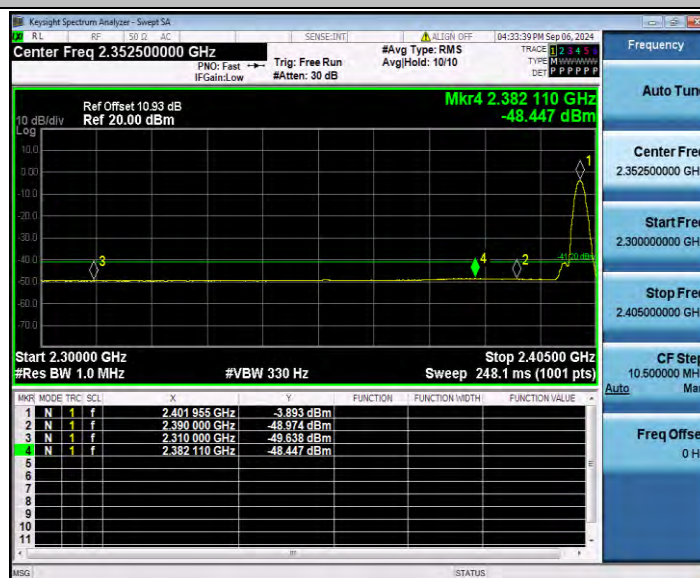
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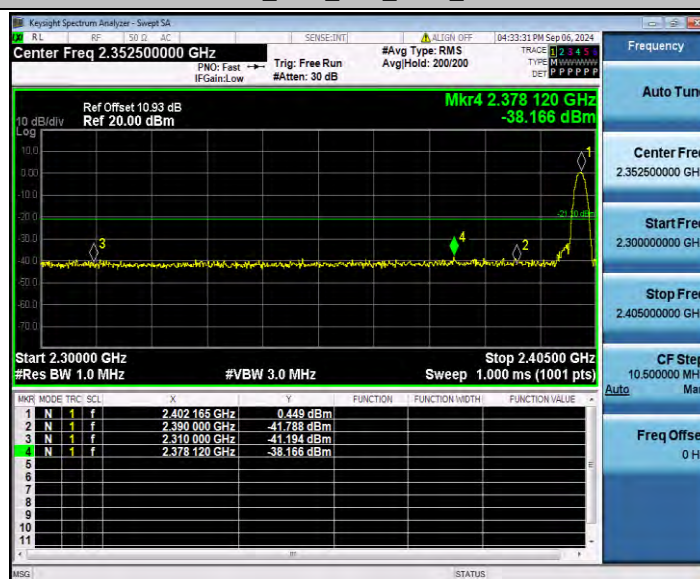
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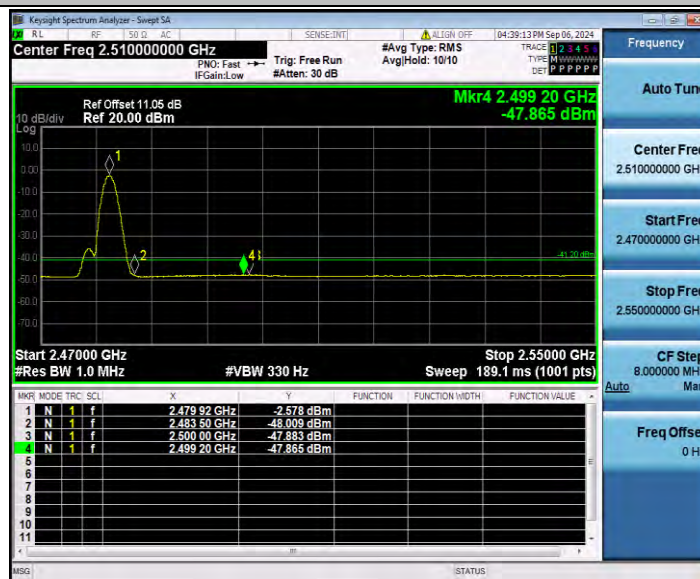
3DH1_Ant1_Low_2402_AV



3DH1_Ant1_Low_2402_Peak



3DH1_Ant1_High_2480_AV



3DH1_Ant1_High_2480_Peak

