

FCC Appendix RF Test Data

FCC ID : 2BOU9-R89

Company: : Shenzhen Yuntian Intelligent Terminal Co.,LTD.

EUT : SMART LOCK

Model Number : R89

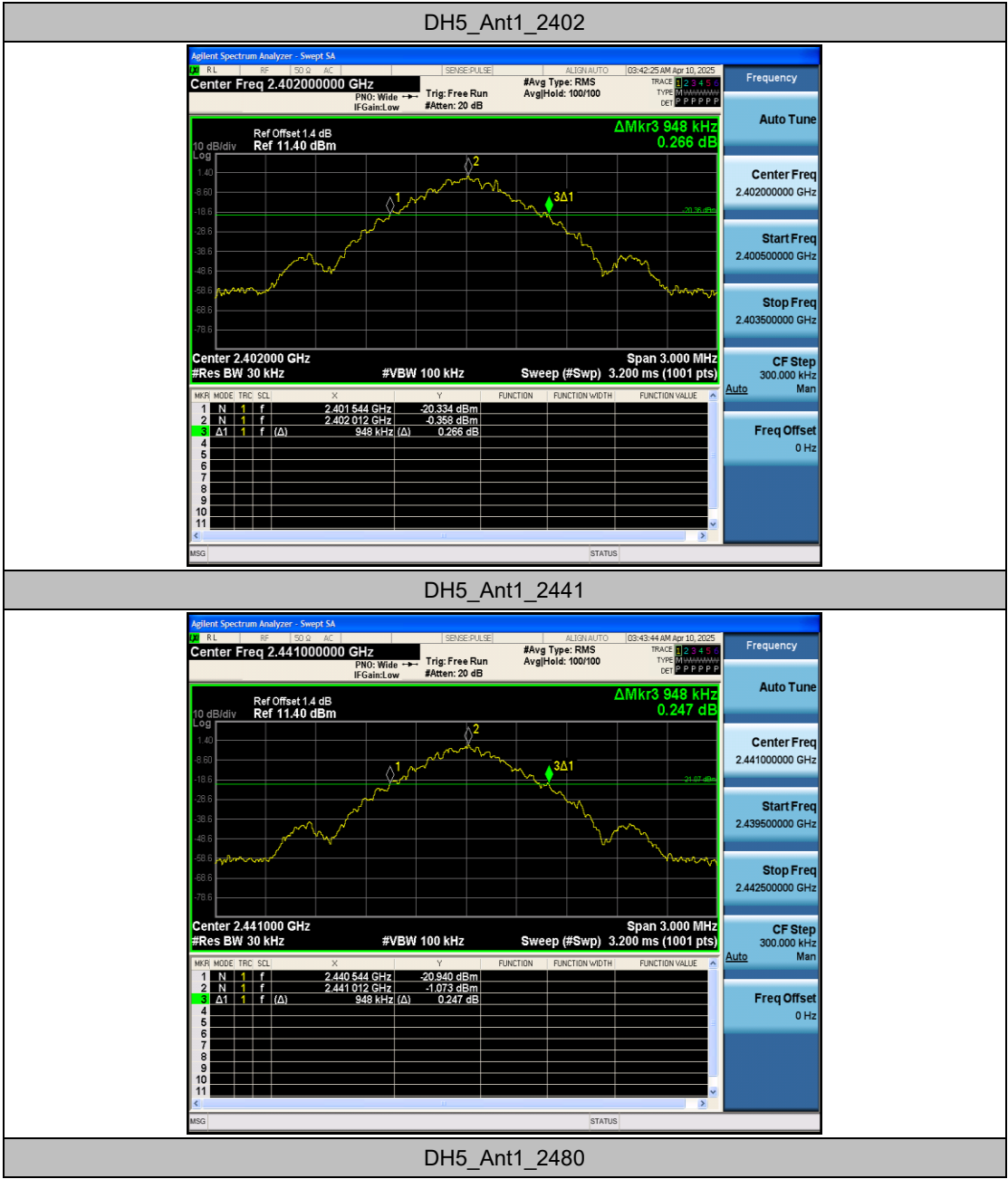
Reviewed By : Eric Wang

Appendix A: 20dB Emission Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	20dB EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.948	2401.544	2402.492	---	---
		2441	0.948	2440.544	2441.492	---	---
		2480	0.957	2479.541	2480.498	---	---
2DH5	Ant1	2402	1.305	2401.355	2402.660	---	---
		2441	1.299	2440.355	2441.654	---	---
		2480	1.314	2479.349	2480.663	---	---
3DH5	Ant1	2402	1.314	2401.349	2402.663	---	---
		2441	1.317	2440.343	2441.660	---	---
		2480	1.284	2479.373	2480.657	---	---

Test Graphs





2DH5_Ant1_2402



2DH5_Ant1_2441



2DH5_Ant1_2480



3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



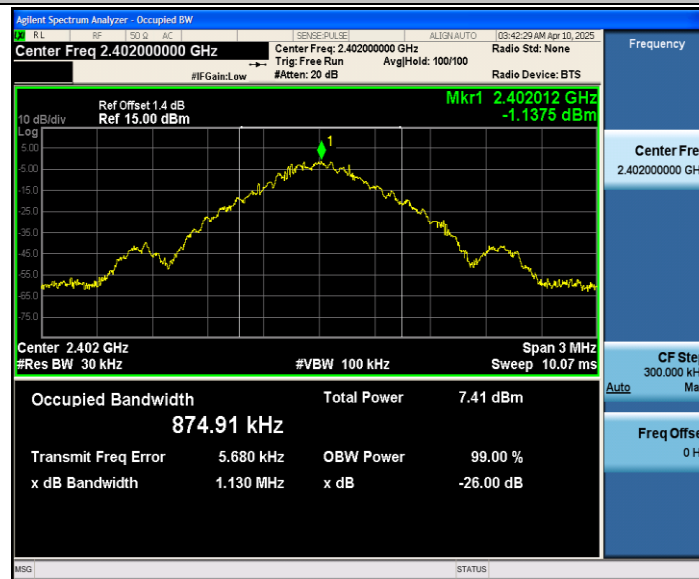
Appendix B: Occupied Channel Bandwidth

Test Result

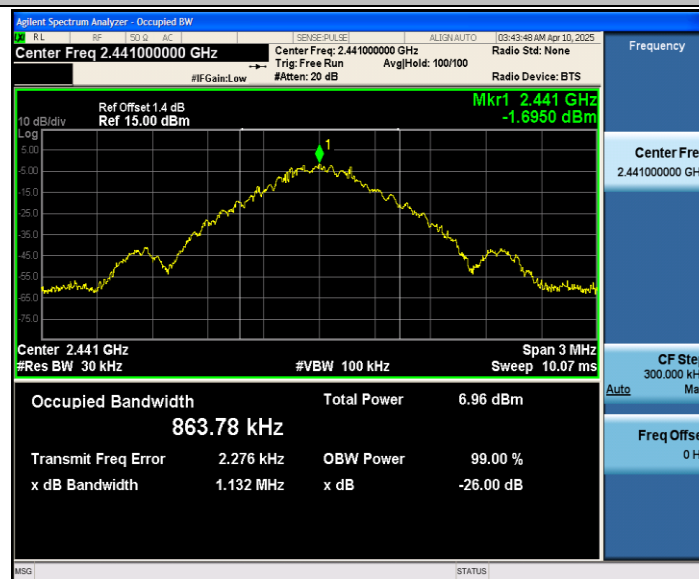
TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.87491	2401.5682	2402.4431	---	---
		2441	0.86378	2440.5704	2441.4342	---	---
		2480	0.86579	2479.5684	2480.4342	---	---
2DH5	Ant1	2402	1.1858	2401.4113	2402.5971	---	---
		2441	1.1851	2440.4138	2441.5989	---	---
		2480	1.1831	2479.4145	2480.5976	---	---
3DH5	Ant1	2402	1.1877	2401.4114	2402.5991	---	---
		2441	1.1967	2440.4072	2441.6039	---	---
		2480	1.1903	2479.4102	2480.6005	---	---

Test Graphs

DH5_Ant1_2402



DH5_Ant1_2441



DH5_Ant1_2480



2DH5_Ant1_2402



2DH5_Ant1_2441



2DH5_Ant1_2480



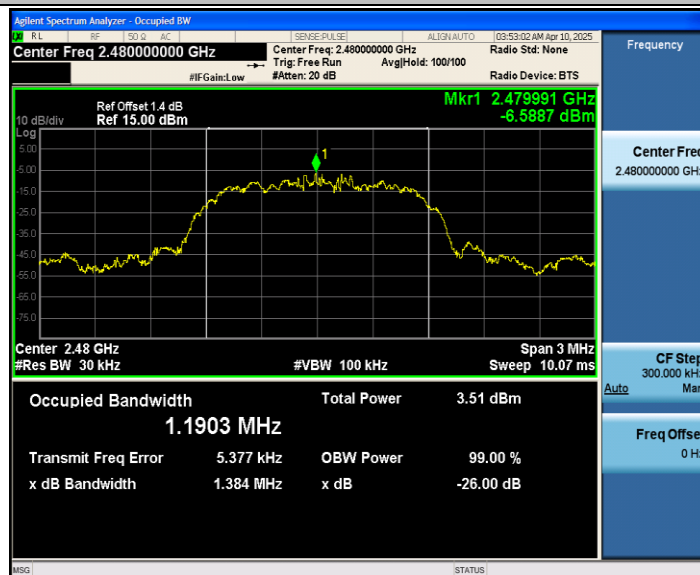
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



Appendix C: Maximum conducted output power

Test Result Peak

Test Mode	Antenna	Freq(MHz)	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
DH5	Ant1	2402	1.45	≤20.97	PASS
		2441	0.88	≤20.97	PASS
		2480	0.70	≤20.97	PASS
2DH5	Ant1	2402	0.71	≤20.97	PASS
		2441	0.14	≤20.97	PASS
		2480	-0.02	≤20.97	PASS
3DH5	Ant1	2402	0.72	≤20.97	PASS
		2441	0.12	≤20.97	PASS
		2480	-0.04	≤20.97	PASS

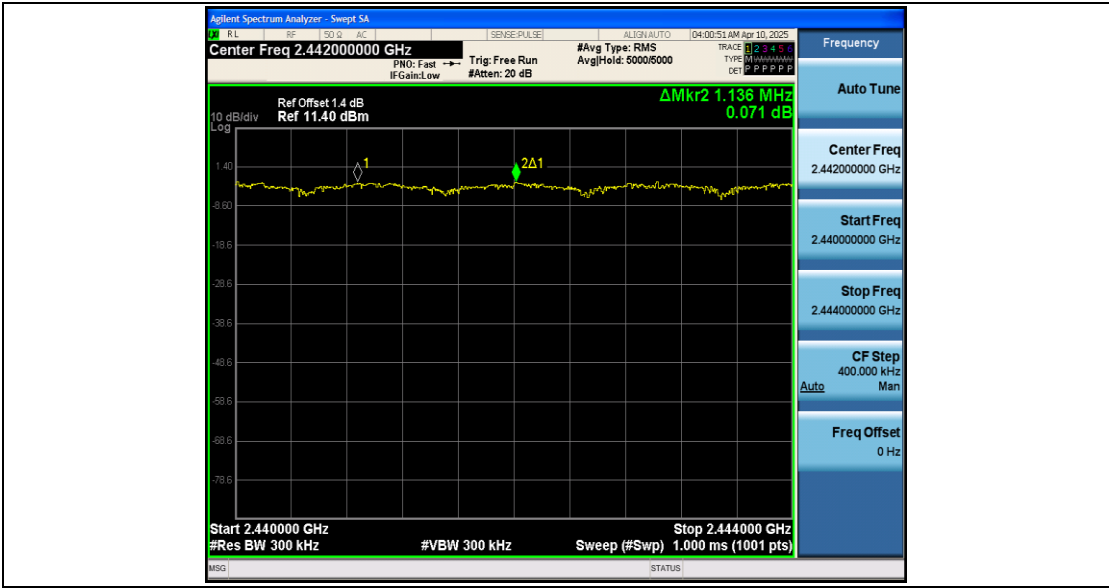
Appendix D: Carrier frequency separation

Test Result

TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.16	≥ 0.957	PASS
2DH5	Ant1	Hop	1	≥ 0.876	PASS
3DH5	Ant1	Hop	1.136	≥ 0.878	PASS

Test Graphs



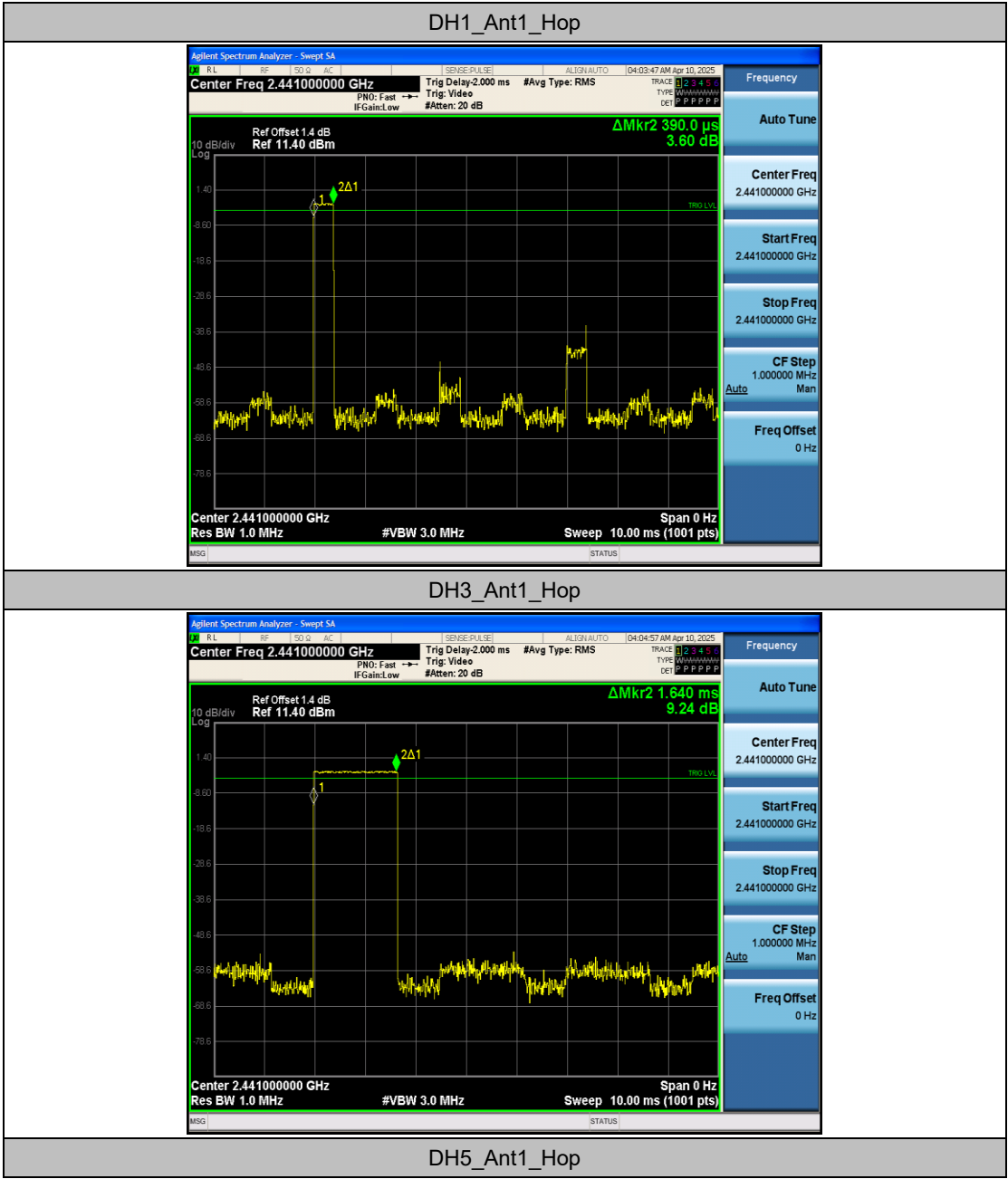


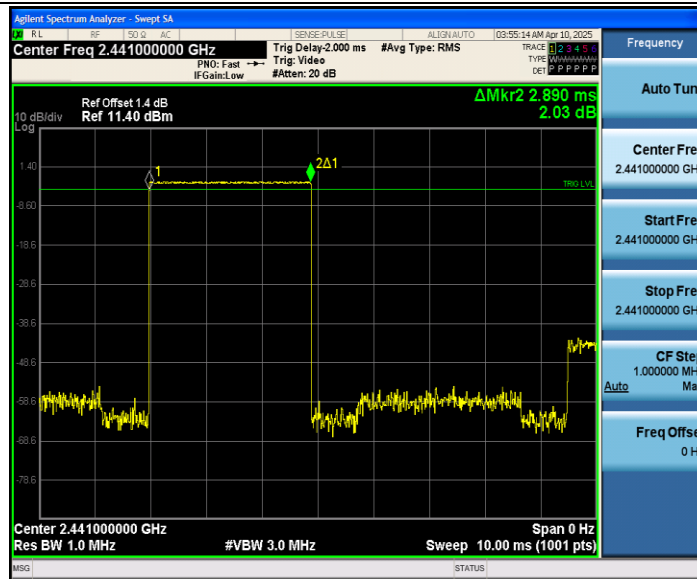
Appendix E: Time of occupancy

Test Result

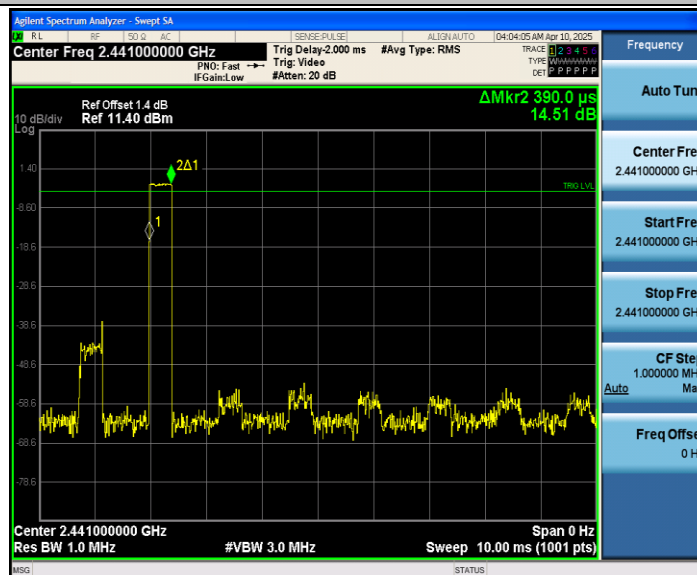
TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.390	320	0.125	≤0.4	PASS
DH3	Ant1	Hop	1.640	160	0.262	≤0.4	PASS
DH5	Ant1	Hop	2.890	106.67	0.308	≤0.4	PASS
2DH1	Ant1	Hop	0.390	320	0.125	≤0.4	PASS
2DH3	Ant1	Hop	1.640	160	0.262	≤0.4	PASS
2DH5	Ant1	Hop	2.900	106.67	0.309	≤0.4	PASS
3DH1	Ant1	Hop	0.390	320	0.125	≤0.4	PASS
3DH3	Ant1	Hop	1.650	160	0.264	≤0.4	PASS
3DH5	Ant1	Hop	2.890	106.67	0.308	≤0.4	PASS

Test Graphs





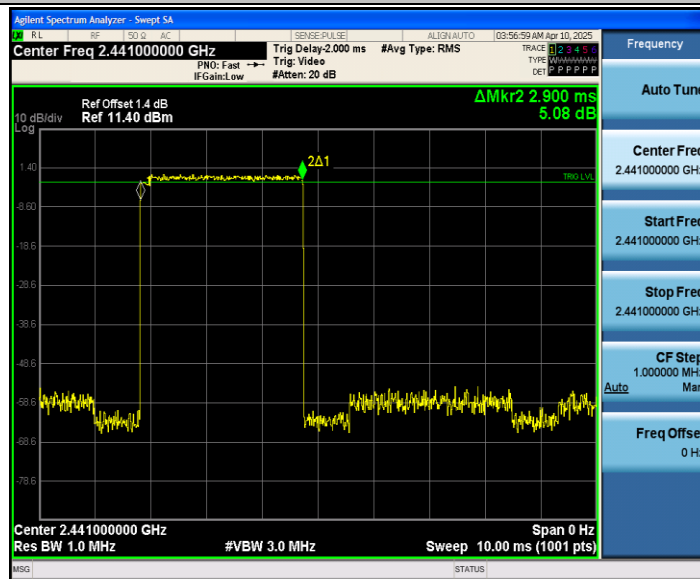
2DH1_Ant1_Hop



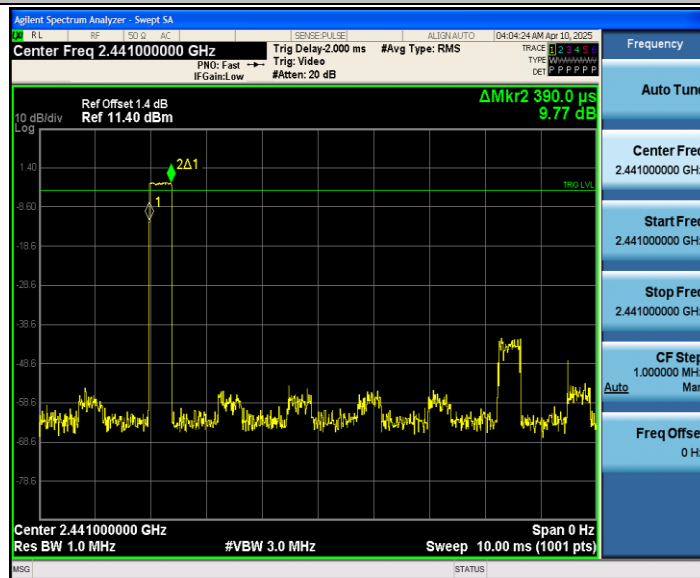
2DH3_Ant1_Hop



2DH5_Ant1_Hop



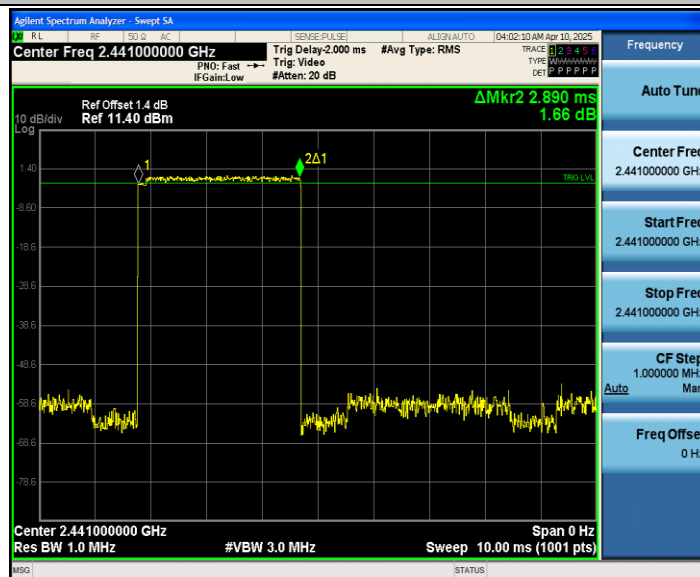
3DH1_Ant1_Hop



3DH3_Ant1_Hop



3DH5_Ant1_Hop



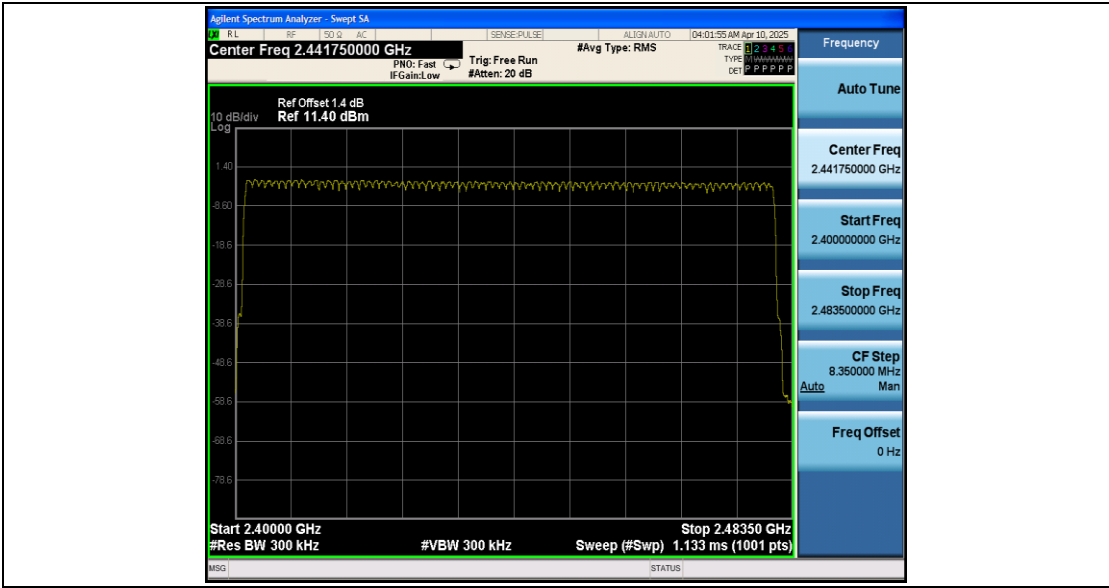
Appendix F: Number of hopping channels

Test Result

TestMode	Antenna	Freq(MHz)	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

Test Graphs



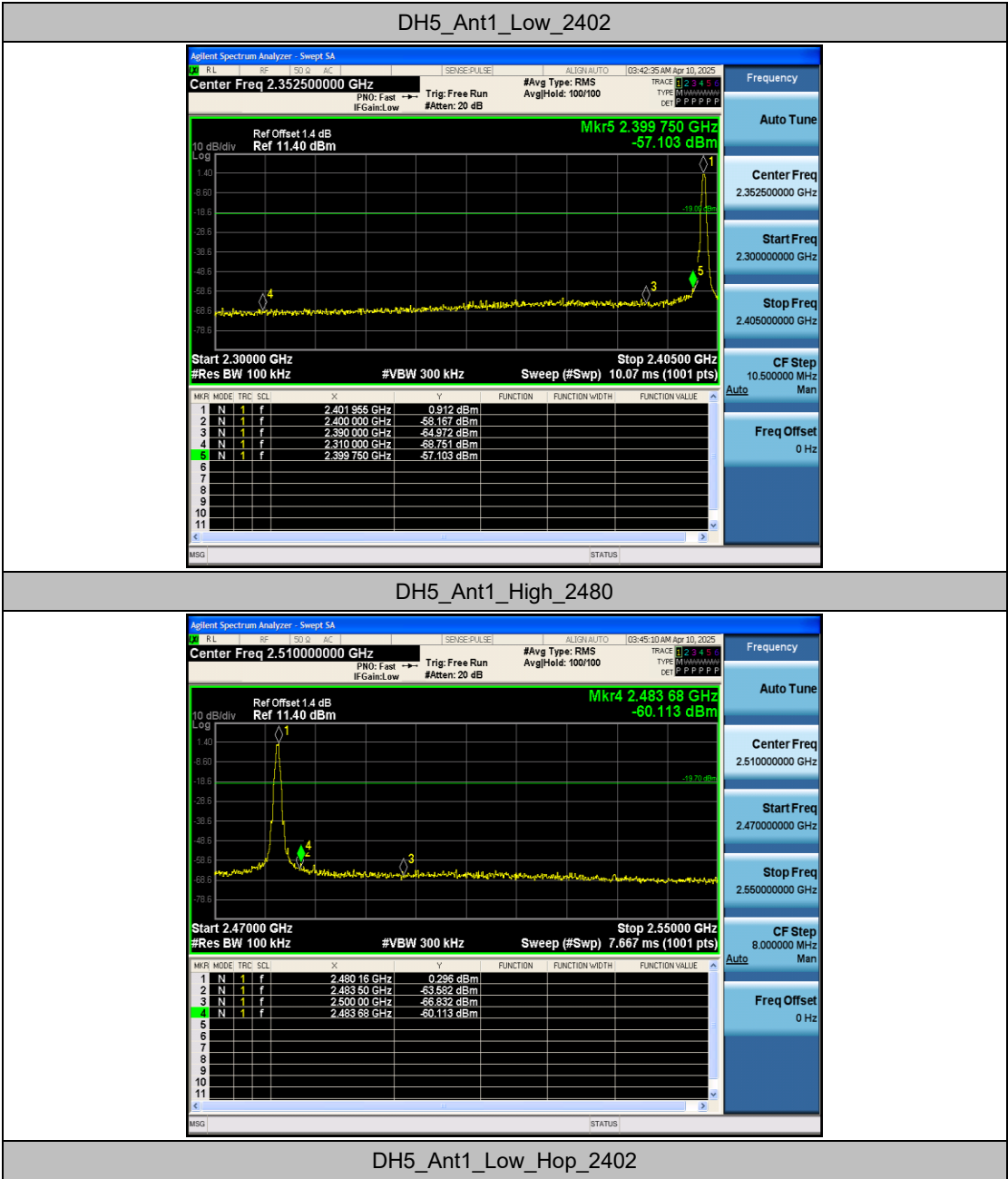


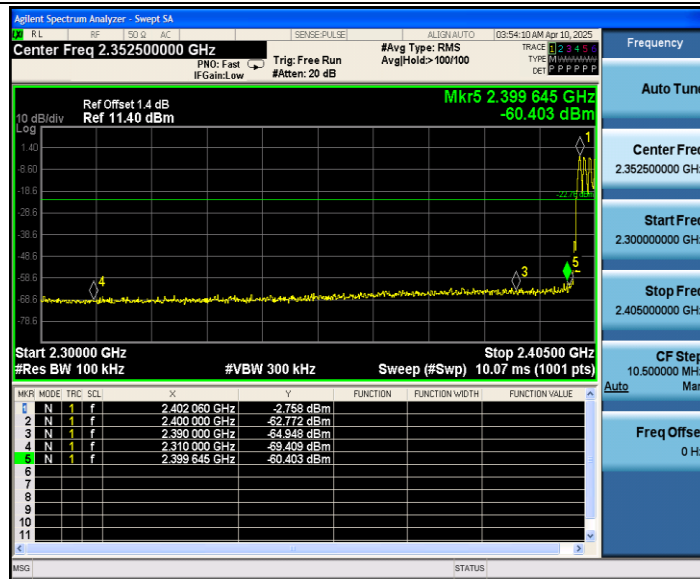
Appendix G: Band edge measurements

Test Result

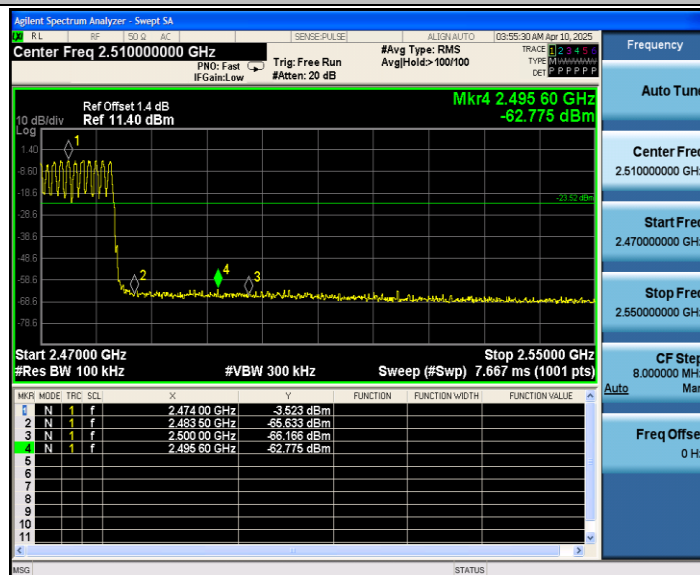
TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	0.91	-57.1	≤-19.09	PASS
		High	2480	0.30	-60.11	≤-19.7	PASS
		Low	Hop_2402	-2.76	-60.4	≤-22.76	PASS
		High	Hop_2480	-3.52	-62.78	≤-23.52	PASS
2DH5	Ant1	Low	2402	-2.15	-54.12	≤-22.15	PASS
		High	2480	-3.06	-62.75	≤-23.06	PASS
		Low	Hop_2402	-2.17	-61.92	≤-22.17	PASS
		High	Hop_2480	-2.93	-62.11	≤-22.93	PASS
3DH5	Ant1	Low	2402	-2.42	-57.29	≤-22.42	PASS
		High	2480	-2.78	-63.36	≤-22.78	PASS
		Low	Hop_2402	-4.26	-59.93	≤-24.26	PASS
		High	Hop_2480	-3.72	-59.48	≤-23.72	PASS

Test Graphs

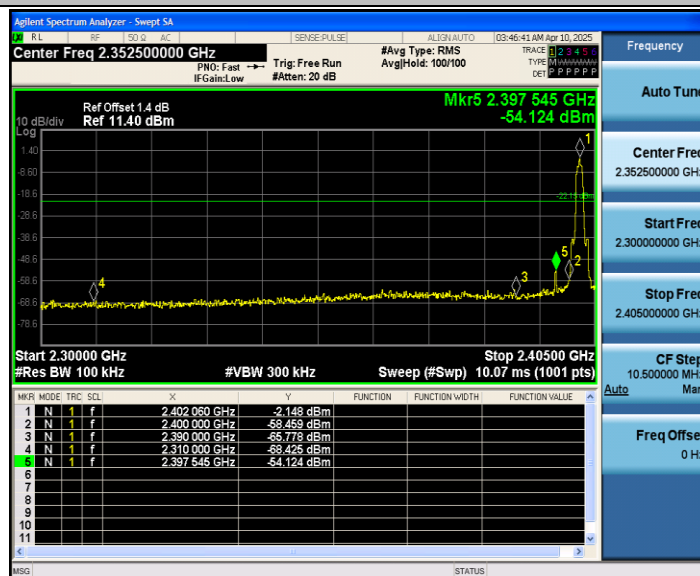




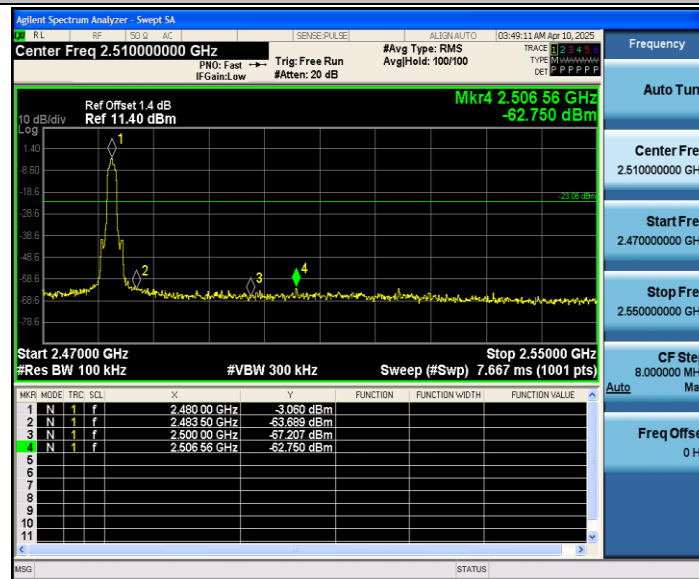
DH5_Ant1_High_Hop_2480



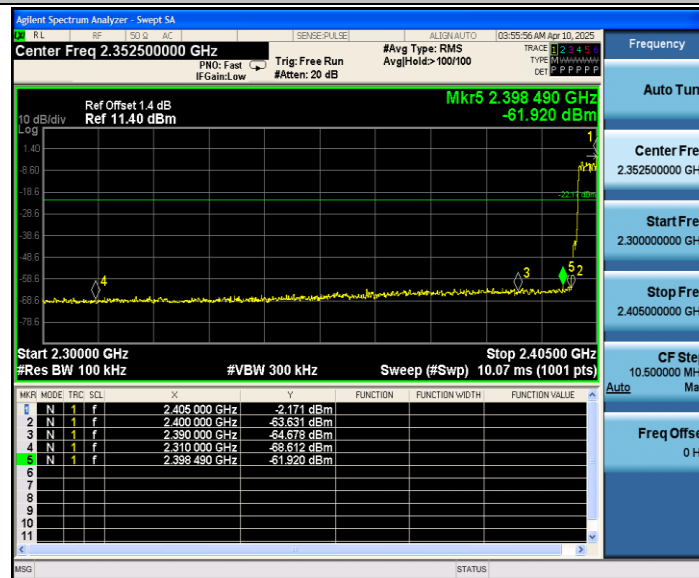
2DH5_Ant1_Low_2402



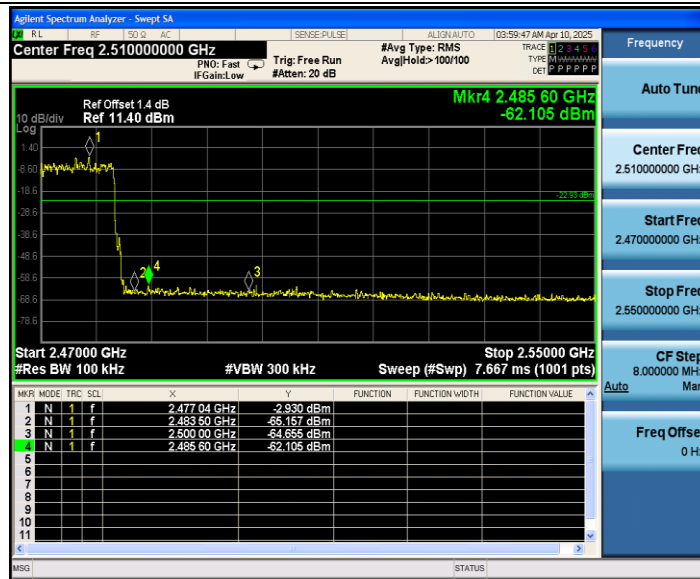
2DH5_Ant1_High_2480



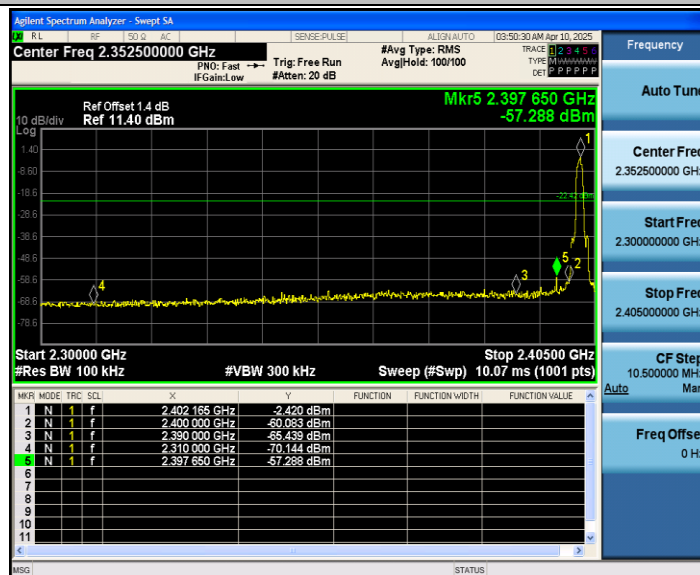
2DH5_Ant1_Low_Hop_2402



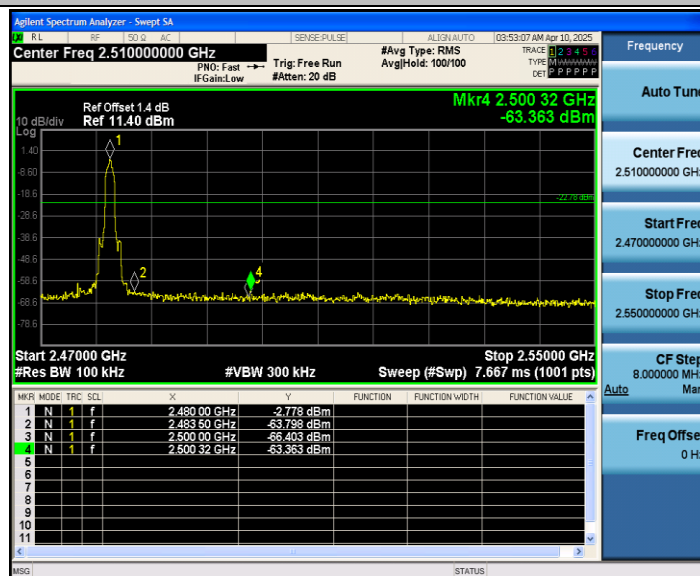
2DH5_Ant1_High_Hop_2480



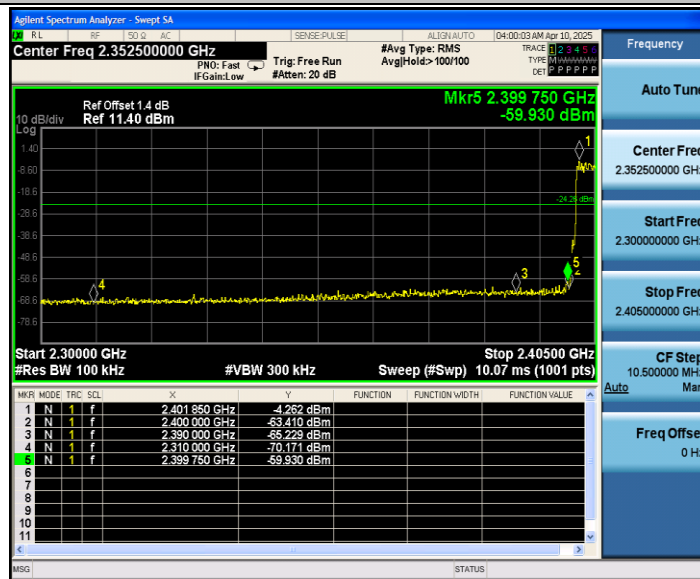
3DH5_Ant1_Low_2402



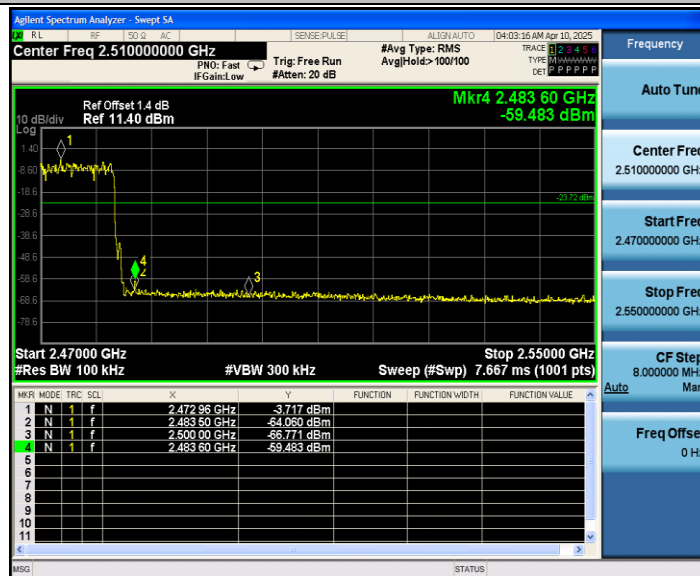
3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480

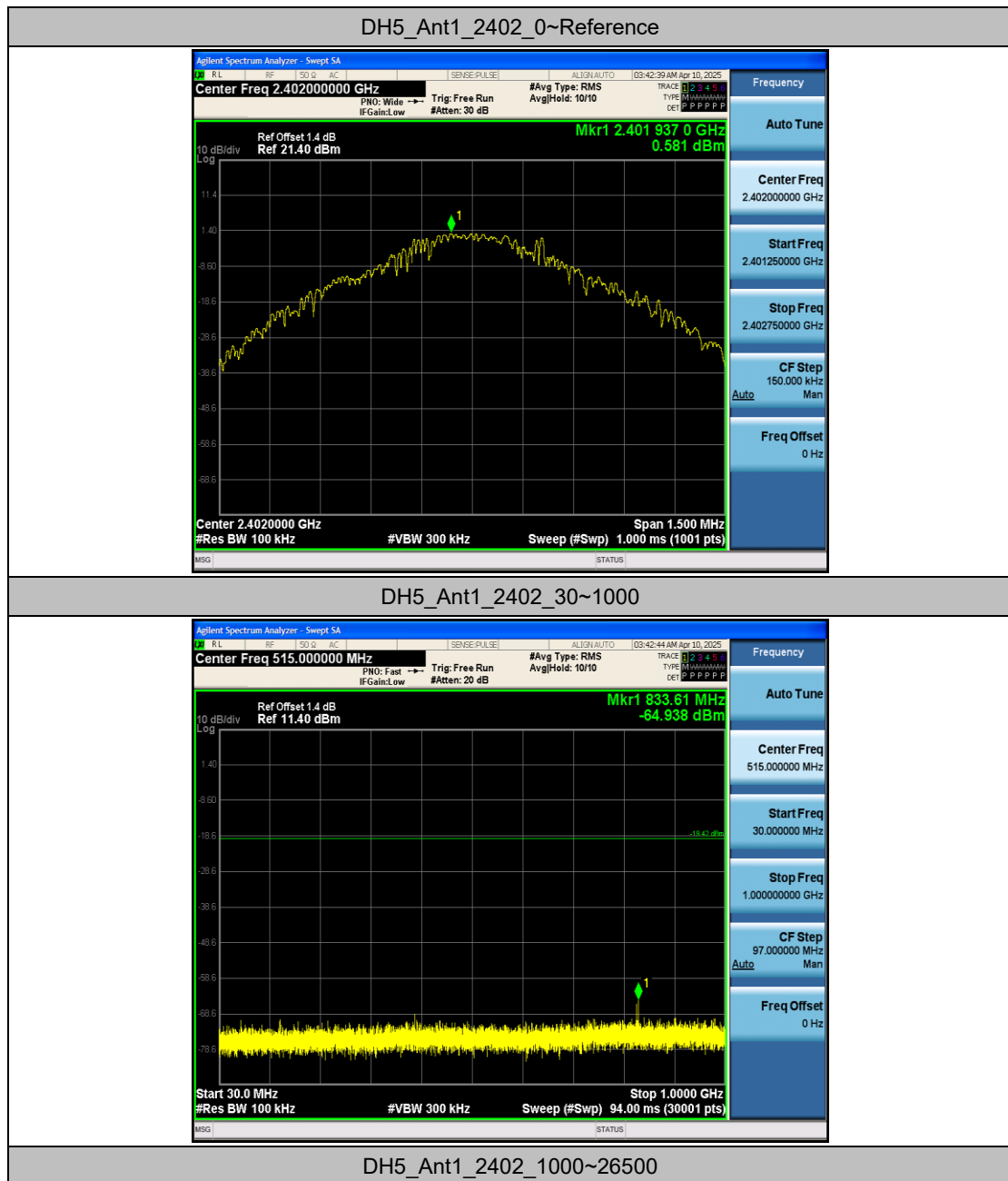


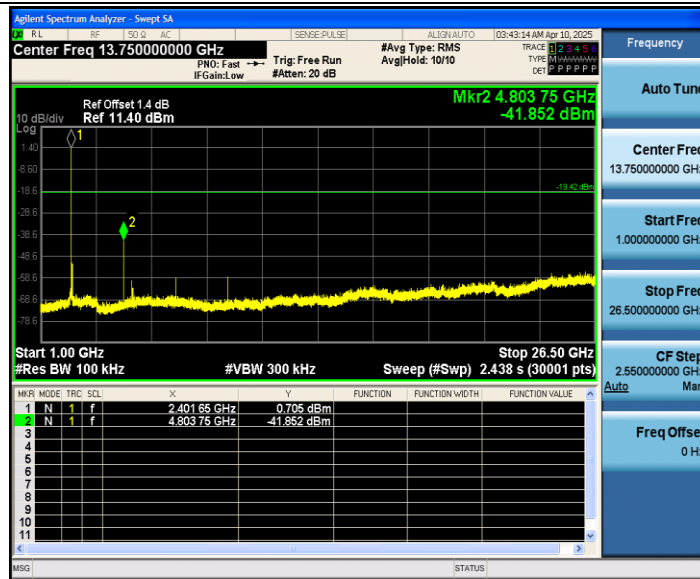
Appendix H: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	0.58	0.58	---	PASS
			30~1000	0.58	-64.94	≤-19.42	PASS
			1000~26500	0.58	-41.85	≤-19.42	PASS
		2441	Reference	-0.05	-0.05	---	PASS
			30~1000	-0.05	-69.23	≤-20.05	PASS
			1000~26500	-0.05	-41.59	≤-20.05	PASS
		2480	Reference	-0.26	-0.26	---	PASS
			30~1000	-0.26	-69.12	≤-20.26	PASS
			1000~26500	-0.26	-44.32	≤-20.26	PASS
2DH5	Ant1	2402	Reference	-3.46	-3.46	---	PASS
			30~1000	-3.46	-68.37	≤-23.46	PASS
			1000~26500	-3.46	-46.14	≤-23.46	PASS
		2441	Reference	-5.36	-5.36	---	PASS
			30~1000	-5.36	-68.94	≤-25.36	PASS
			1000~26500	-5.36	-45.97	≤-25.36	PASS
		2480	Reference	-4.95	-4.95	---	PASS
			30~1000	-4.95	-69.22	≤-24.95	PASS
			1000~26500	-4.95	-50.16	≤-24.95	PASS
3DH5	Ant1	2402	Reference	-2.26	-2.26	---	PASS
			30~1000	-2.26	-69.65	≤-22.26	PASS
			1000~26500	-2.26	-42.42	≤-22.26	PASS
		2441	Reference	-4.63	-4.63	---	PASS
			30~1000	-4.63	-68.98	≤-24.63	PASS
			1000~26500	-4.63	-45.27	≤-24.63	PASS
		2480	Reference	-5.15	-5.15	---	PASS
			30~1000	-5.15	-60.87	≤-25.15	PASS
			1000~26500	-5.15	-48.77	≤-25.15	PASS

Test Graphs

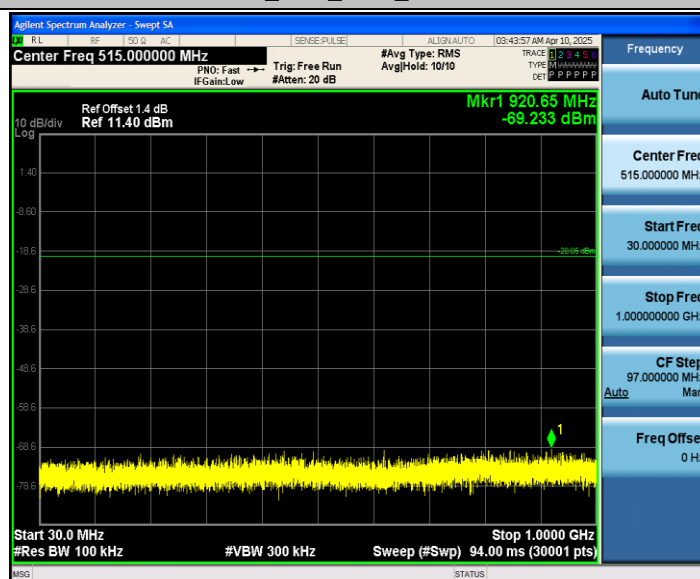




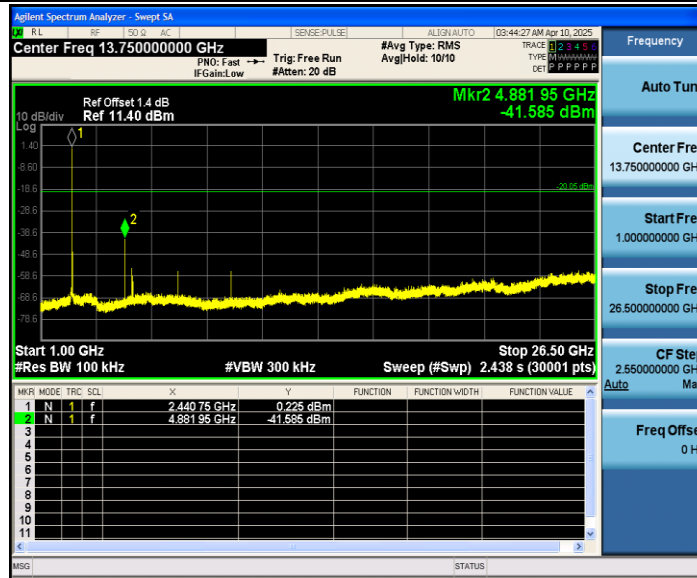
DH5_Ant1_2441_0~Reference



DH5_Ant1_2441_30~1000



DH5_Ant1_2441_1000~26500



DH5_Ant1_2480_0~Reference



DH5_Ant1_2480_30~1000