

FCC Appendix RF Test Data

FCC ID : 2BP5V-8SA8P

Company : Dong Guan Zhen Ke Technology Co., LTD

EUT : Weather Station

Model Number : SA8 Plus

Report No. : CTA25061800502

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	0.954	2401.547	2402.501	---	---
		2441	0.948	2440.550	2441.498	---	---
		2480	0.948	2479.550	2480.498	---	---
2DH5	Ant1	2402	1.272	2401.382	2402.654	---	---
		2441	1.320	2440.349	2441.669	---	---
		2480	1.314	2479.364	2480.678	---	---
3DH5	Ant1	2402	1.281	2401.367	2402.648	---	---
		2441	1.287	2440.367	2441.654	---	---
		2480	1.290	2479.367	2480.657	---	---

DH5_Ant1_2402

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.40200000 GHz

Ref Offset 0.3 dB
Ref 10.30 dBm

Trig: Free Run
#Atten: 20 dB

#Avg Type: RMS
Avg/Hold: 100/100

Span 3.000 MHz
#Res BW 30 kHz
#VBW 100 kHz
Sweep (#Swp) 3.200 ms (1001 pts)

ΔMkr3 954 kHz
0.443 dB

MNR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.401547 GHz	-22.831 dBm			
2	N	1	f	2.401980 GHz	-3.132 dBm			
3	Δ	1	f (Δ)	954 kHz (Δ)	0.443 dB			

DH5_Ant1_2441

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.441000000 GHz

Ref Offset 0.3 dB
Ref 10.30 dBm

Trig: Free Run
#Atten: 20 dB

#Avg Type: RMS
Avg/Hold: 100/100

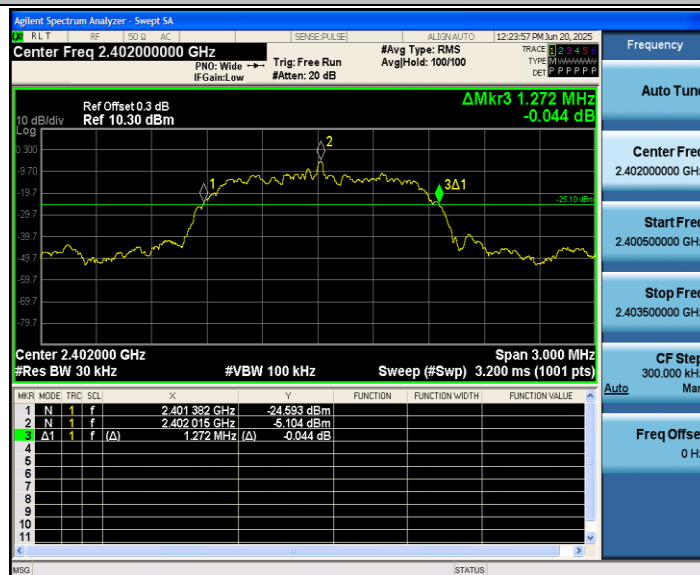
Span 3.000 MHz
#Res BW 30 kHz
#VBW 100 kHz
Sweep (#Swp) 3.200 ms (1001 pts)

ΔMkr3 948 kHz
-0.083 dB

MNR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.440550 GHz	-22.088 dBm			
2	N	1	f	2.441009 GHz	-2.285 dBm			
3	Δ	1	f (Δ)	948 kHz (Δ)	-0.083 dB			



2DH5_Ant1_2402



2DH5_Ant1_2441



2DH5_Ant1_2480



3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

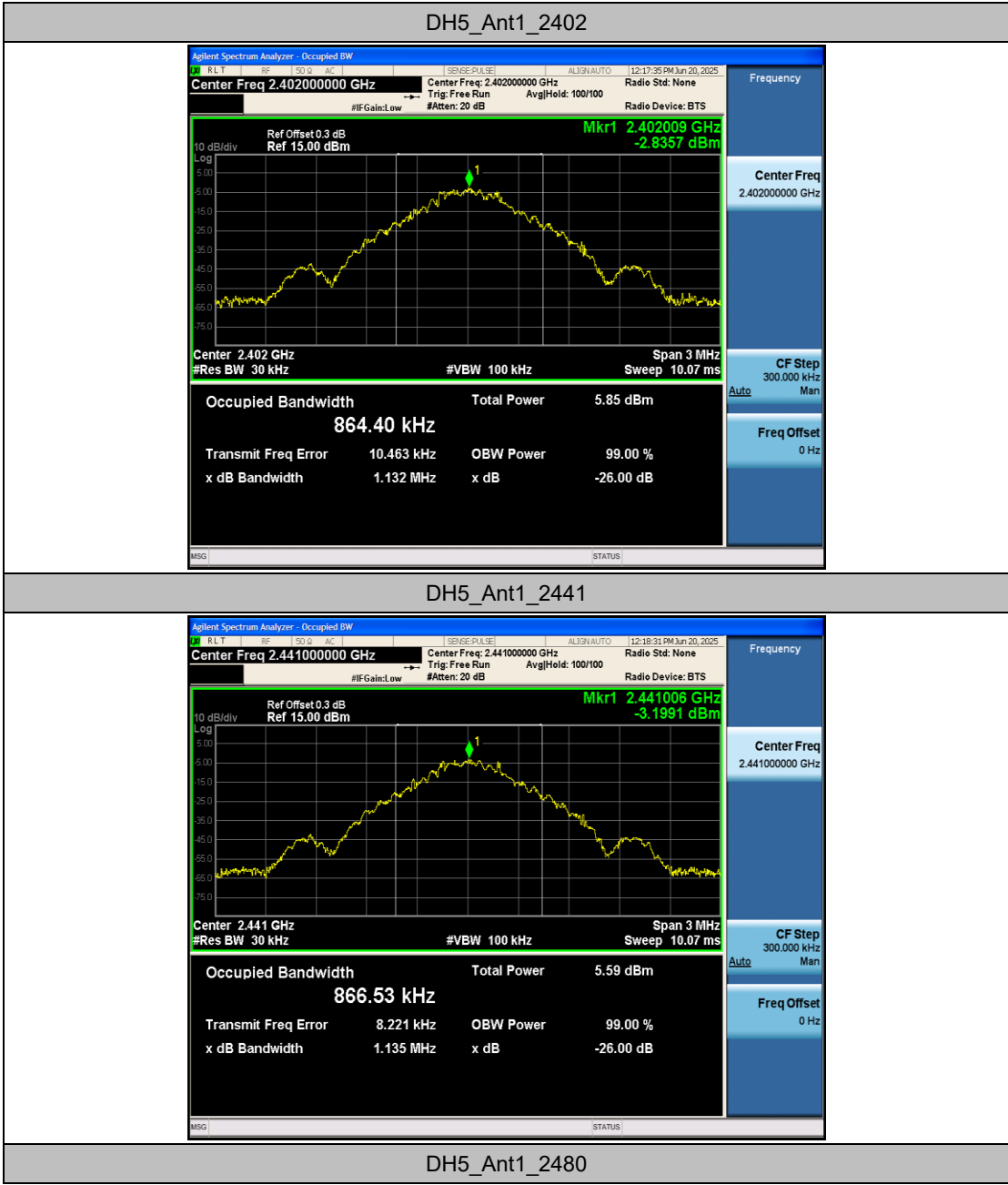


Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.86440	2401.5783	2402.4427	---	---
		2441	0.86653	2440.5750	2441.4415	---	---
		2480	0.86580	2479.5754	2480.4412	---	---
2DH5	Ant1	2402	1.1919	2401.4145	2402.6064	---	---
		2441	1.1868	2440.4174	2441.6042	---	---
		2480	1.1898	2479.4164	2480.6062	---	---
3DH5	Ant1	2402	1.1896	2401.4160	2402.6056	---	---
		2441	1.1862	2440.4178	2441.6040	---	---
		2480	1.1838	2479.4203	2480.6041	---	---

Test Graphs

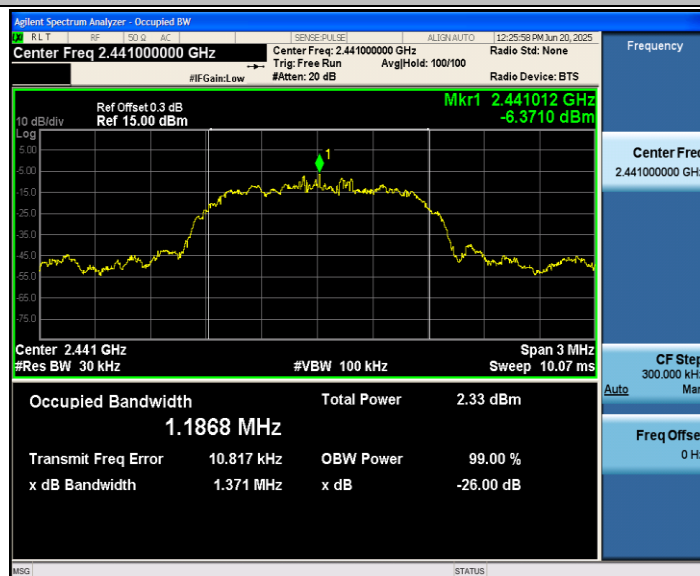




2DH5_Ant1_2402



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	-0.15	≤20.97	PASS
		2441	-0.35	≤20.97	PASS
		2480	-0.39	≤20.97	PASS
2DH5	Ant1	2402	-0.99	≤20.97	PASS
		2441	-1.16	≤20.97	PASS
		2480	-1.21	≤20.97	PASS
3DH5	Ant1	2402	-0.59	≤20.97	PASS
		2441	-0.79	≤20.97	PASS
		2480	-0.82	≤20.97	PASS

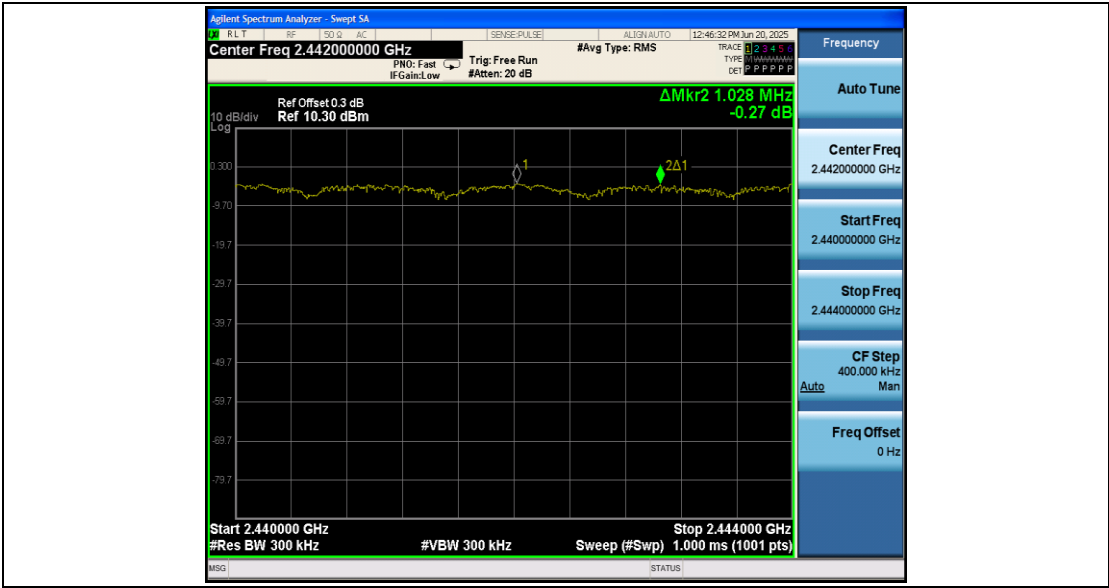
Appendix D: Carrier frequency separation

Test Result

TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.012	≥ 0.954	PASS
2DH5	Ant1	Hop	1.004	≥ 0.880	PASS
3DH5	Ant1	Hop	1.028	≥ 0.860	PASS

Test Graphs



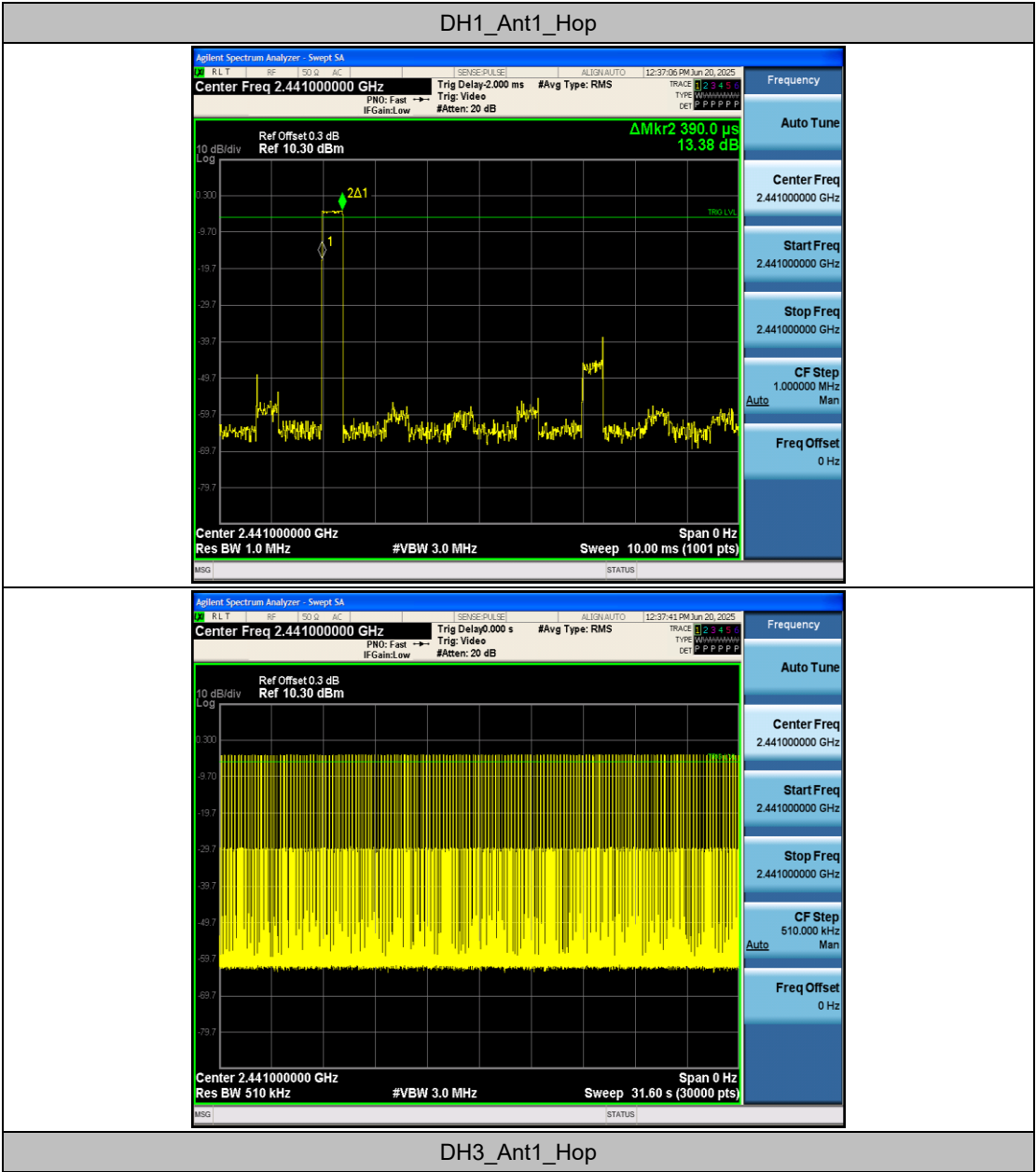


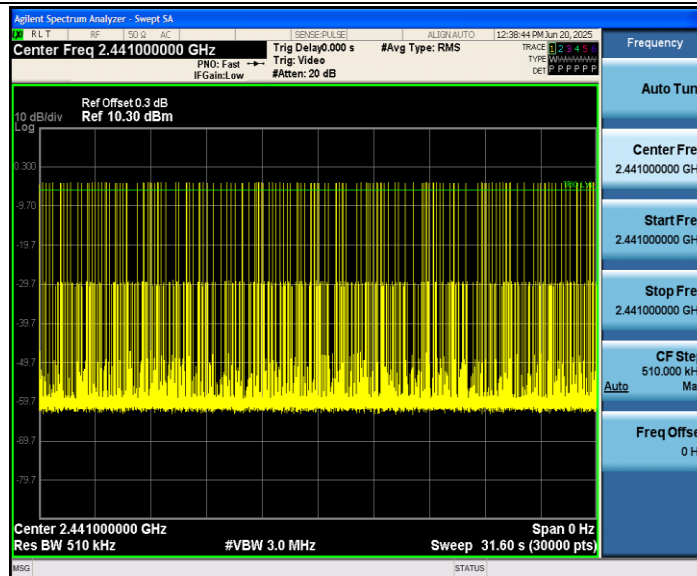
Appendix E: Time of occupancy

Test Result

TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.390	319	0.124	≤0.4	PASS
DH3	Ant1	Hop	1.640	153	0.251	≤0.4	PASS
DH5	Ant1	Hop	2.890	110	0.318	≤0.4	PASS
2DH1	Ant1	Hop	0.400	317	0.127	≤0.4	PASS
2DH3	Ant1	Hop	1.650	152	0.251	≤0.4	PASS
2DH5	Ant1	Hop	2.900	118	0.342	≤0.4	PASS
3DH1	Ant1	Hop	0.400	320	0.128	≤0.4	PASS
3DH3	Ant1	Hop	1.650	149	0.246	≤0.4	PASS
3DH5	Ant1	Hop	2.900	95	0.276	≤0.4	PASS

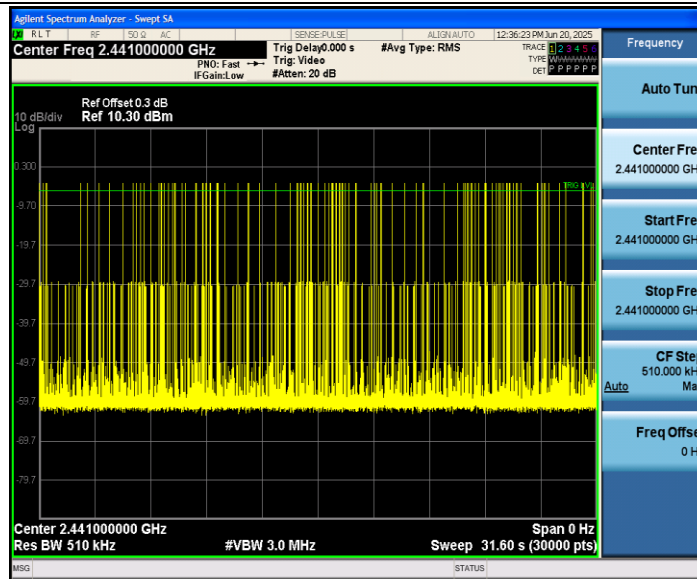
Test Graphs



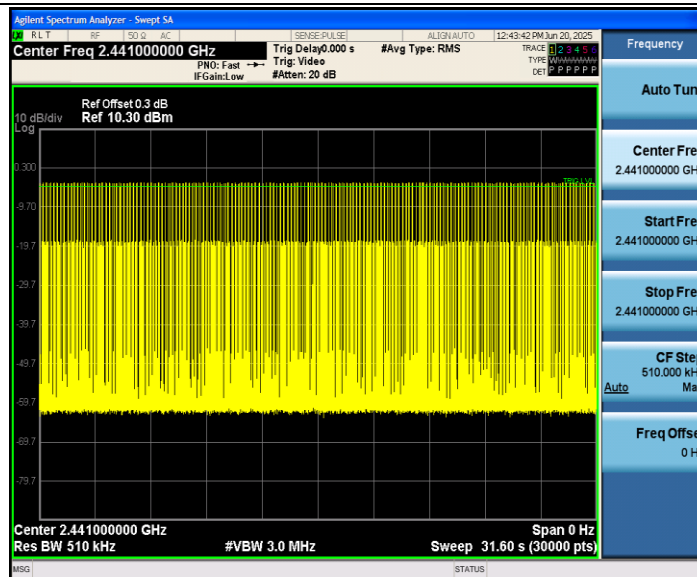
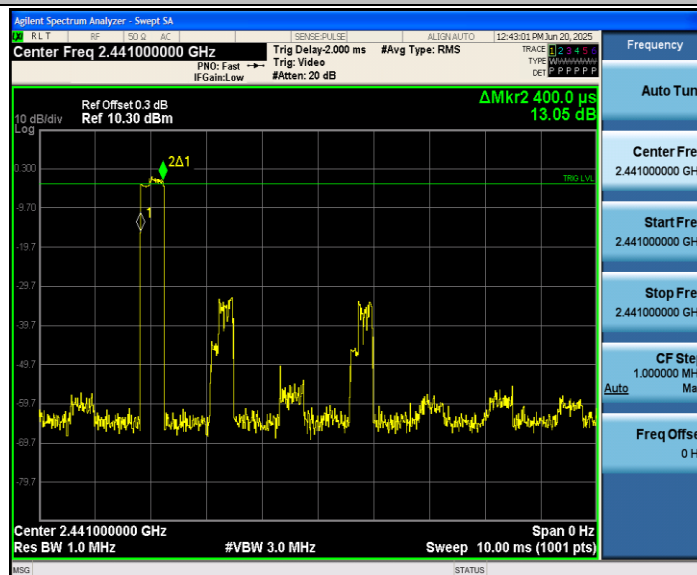


DH5_Ant1_Hop

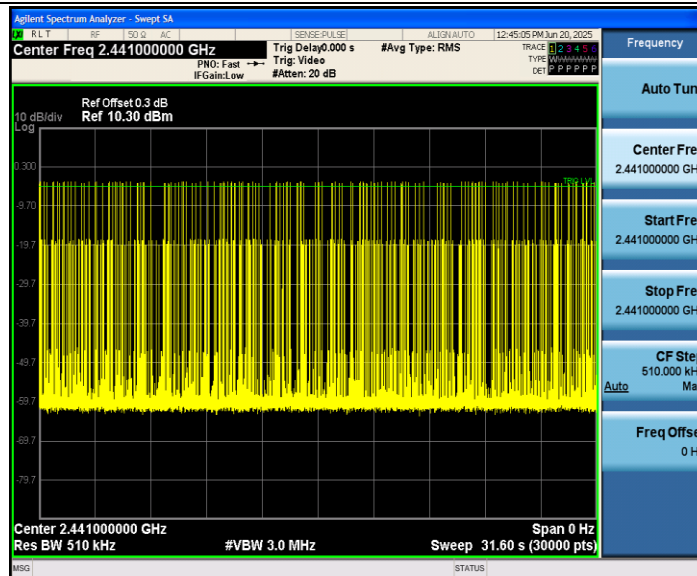
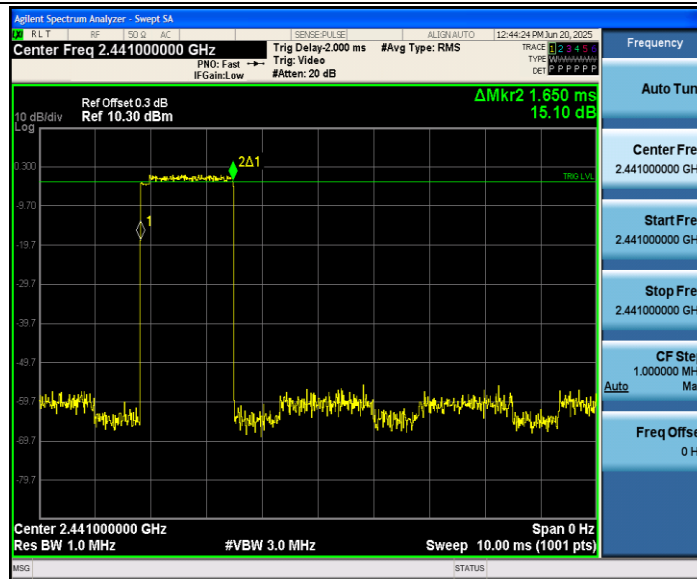




2DH1_Ant1_Hop

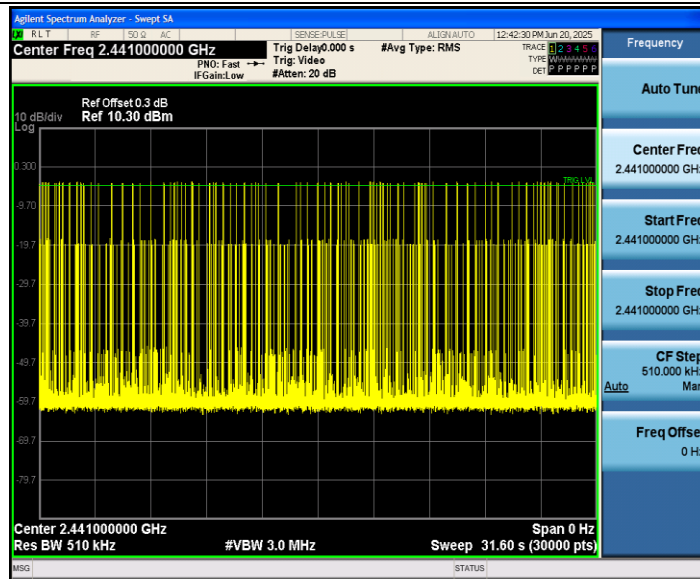


2DH3_Ant1_Hop

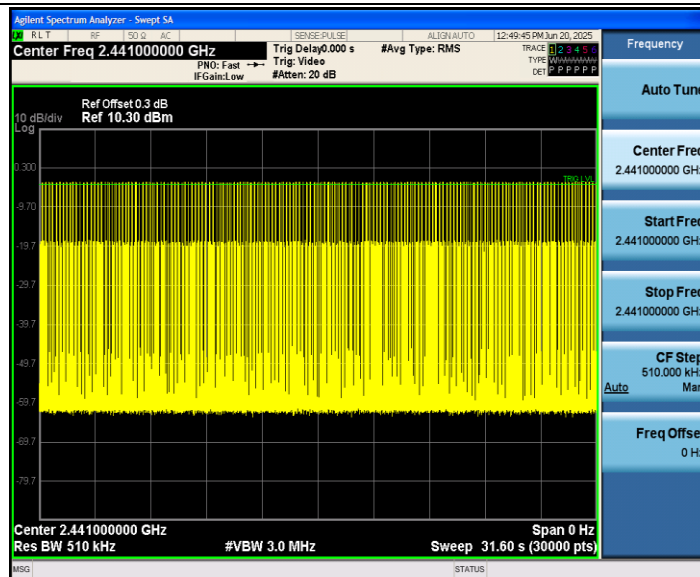
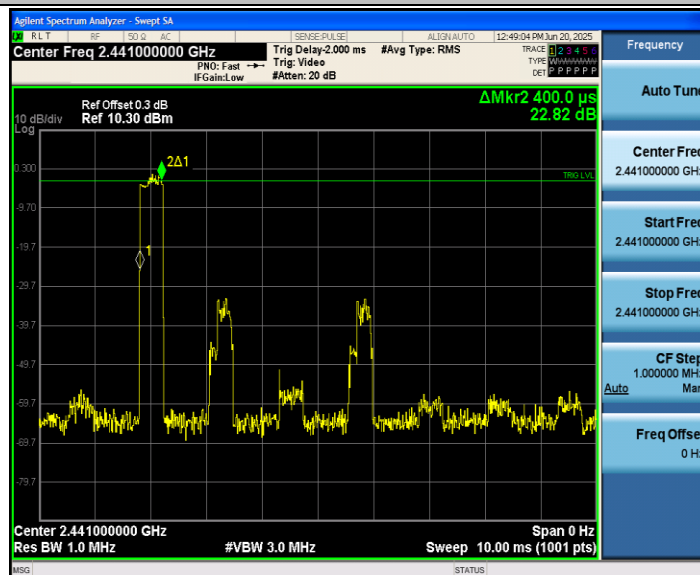


2DH5_Ant1_Hop

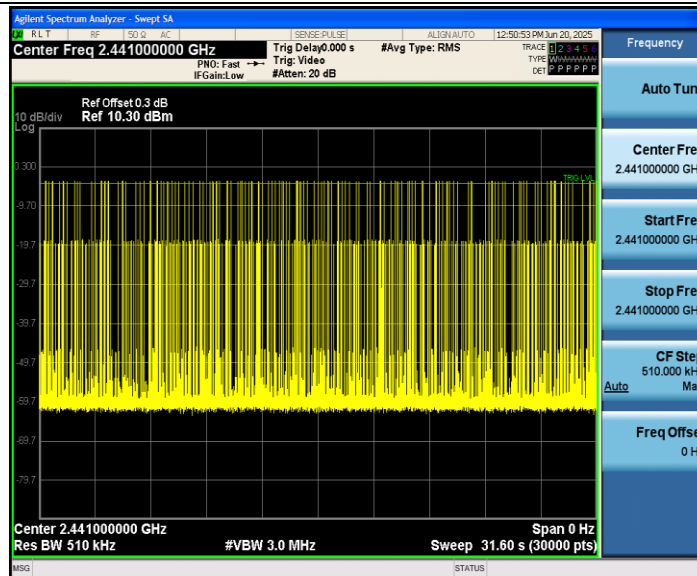
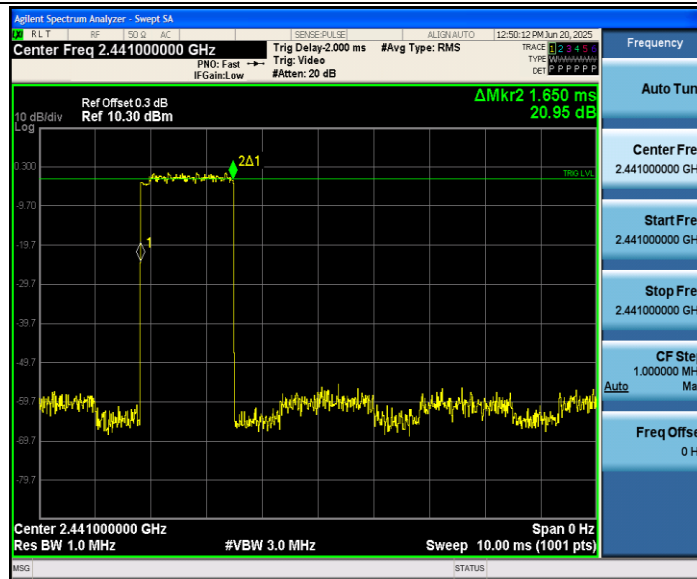




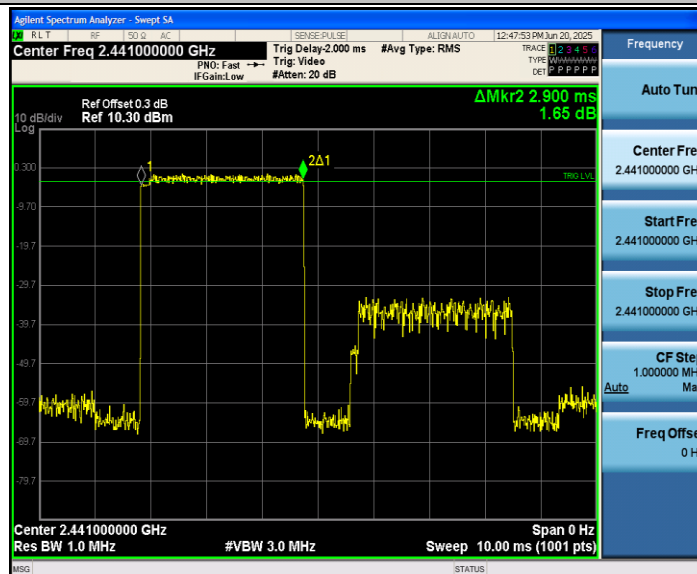
3DH1_Ant1_Hop

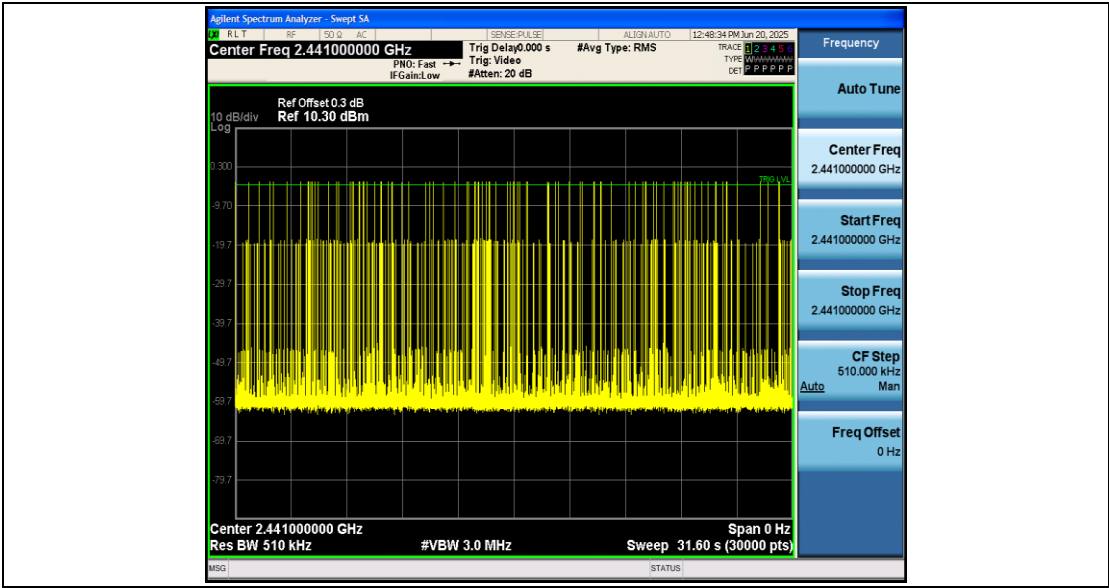


3DH3_Ant1_Hop



3DH5_Ant1_Hop





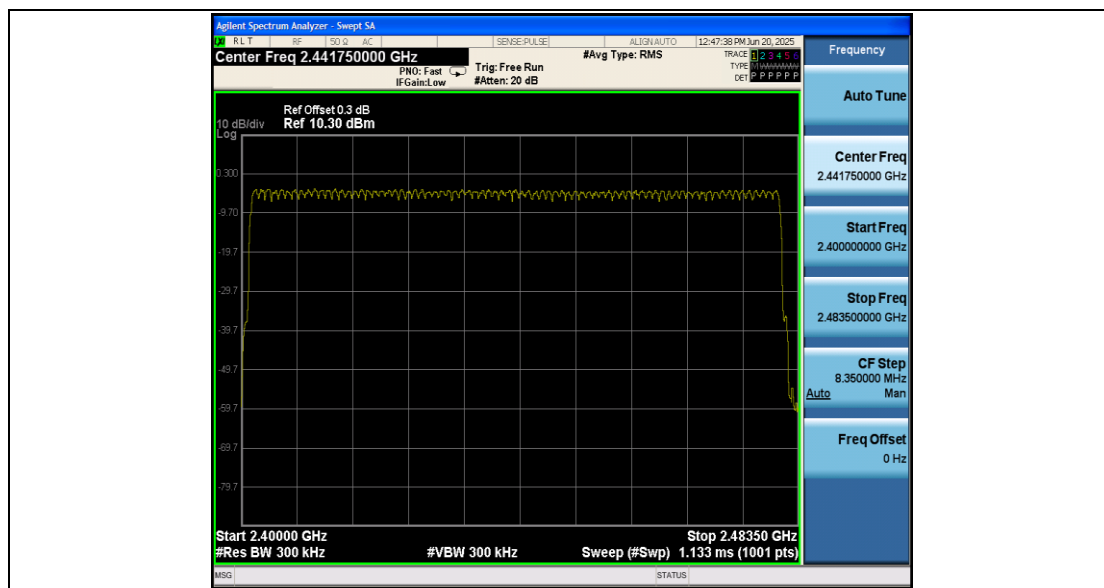
Appendix F: Number of hopping channels

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



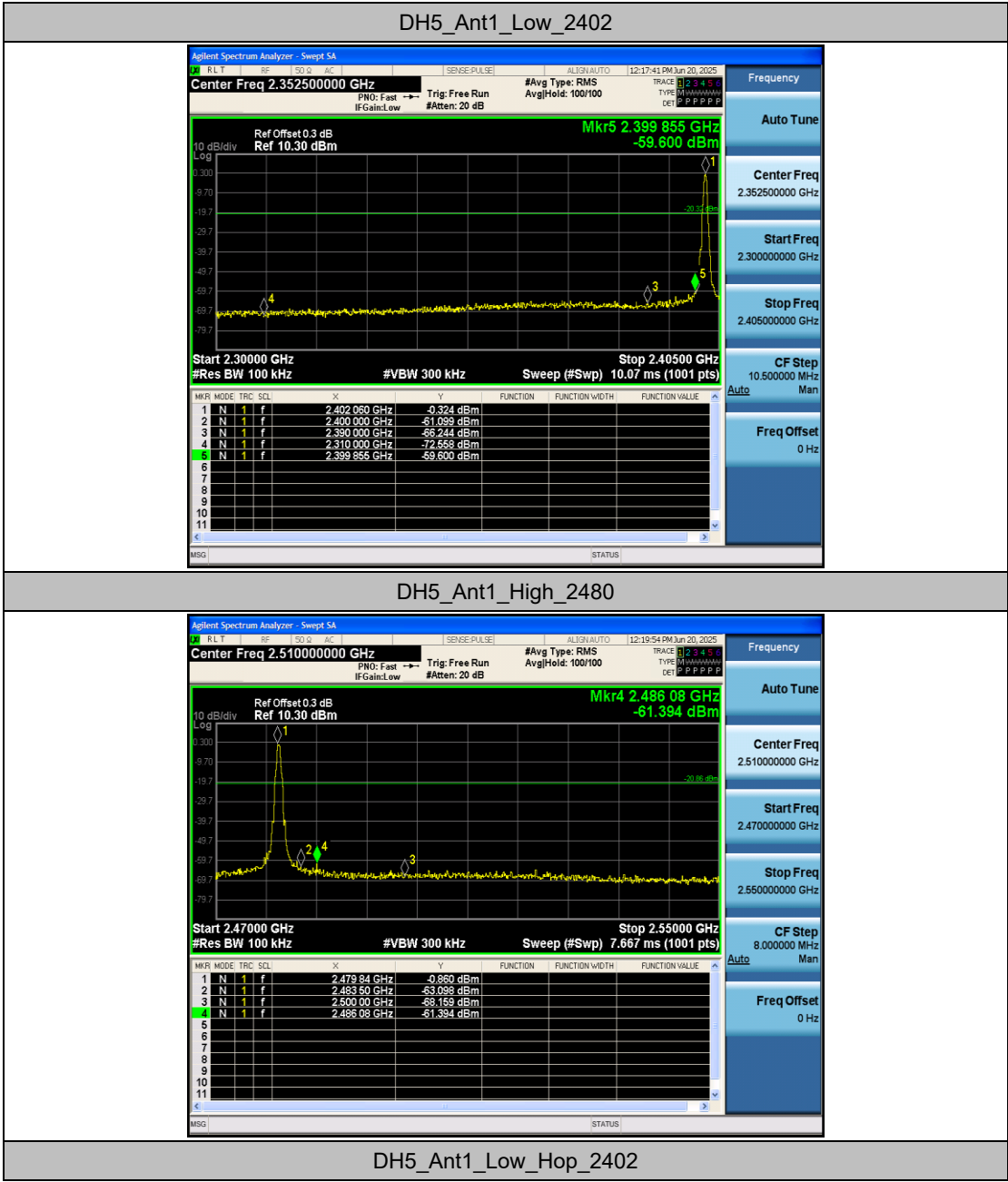


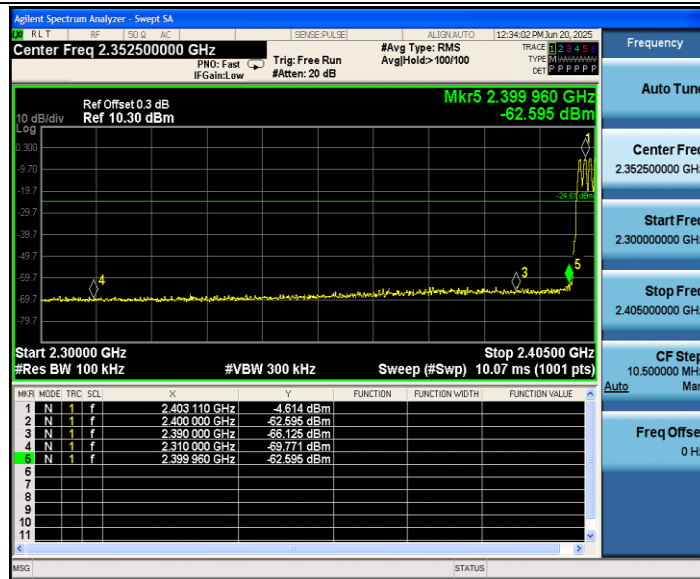
Appendix G: Band edge measurements

Test Result

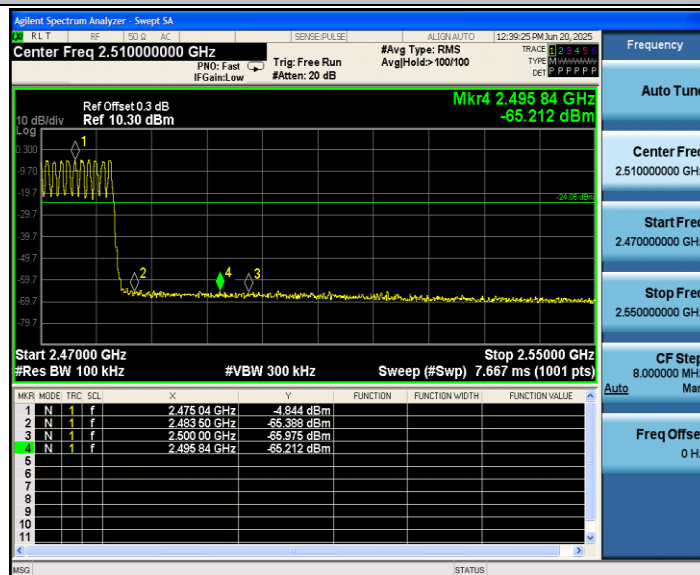
TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-0.32	-59.6	≤-20.32	PASS
		High	2480	-0.86	-61.39	≤-20.86	PASS
		Low	Hop_2402	-4.61	-62.6	≤-24.61	PASS
		High	Hop_2480	-4.06	-65.21	≤-24.06	PASS
2DH5	Ant1	Low	2402	-4.38	-59.22	≤-24.38	PASS
		High	2480	-4.45	-63.39	≤-24.45	PASS
		Low	Hop_2402	-7.21	-62.93	≤-27.21	PASS
		High	Hop_2480	-5.09	-64.4	≤-25.09	PASS
3DH5	Ant1	Low	2402	-3.94	-58.22	≤-23.94	PASS
		High	2480	-3.96	-57.59	≤-23.96	PASS
		Low	Hop_2402	-6.10	-61.9	≤-26.1	PASS
		High	Hop_2480	-5.08	-65.4	≤-25.08	PASS

Test Graphs

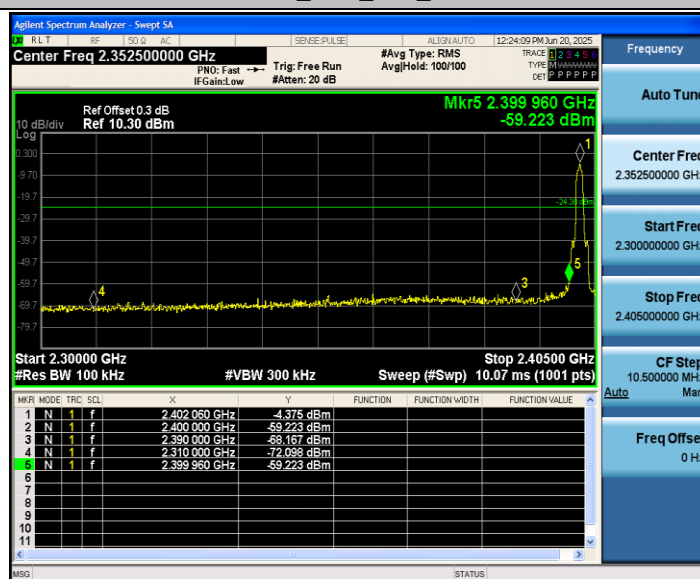




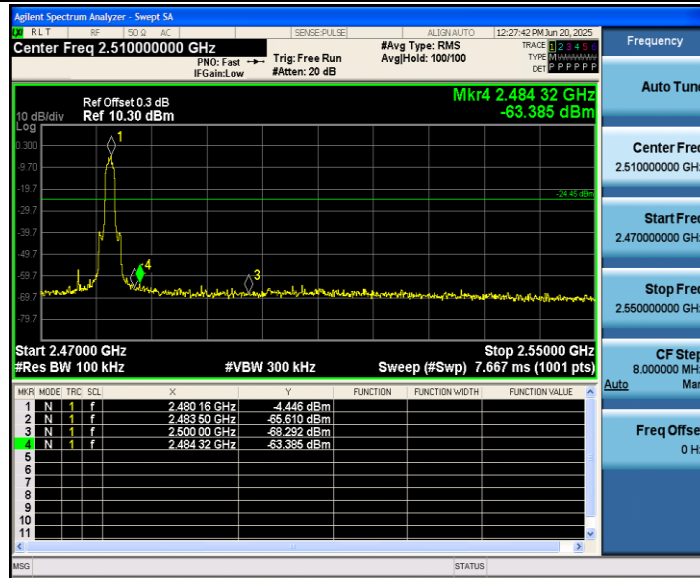
DH5_Ant1_High_Hop_2480



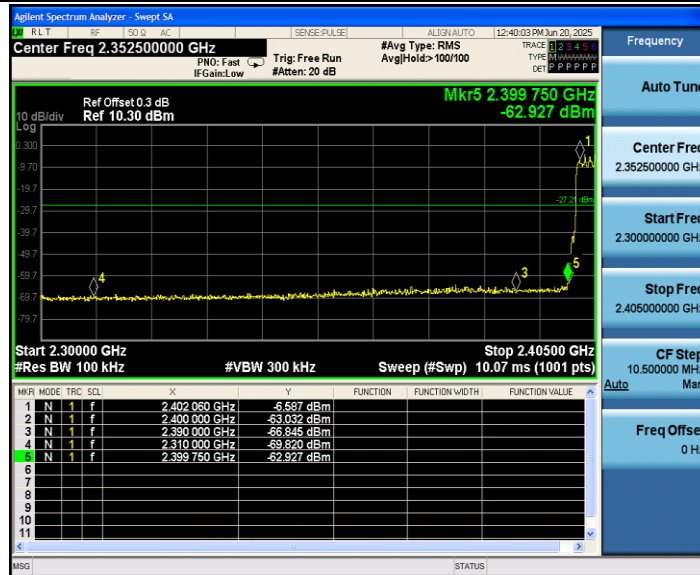
2DH5_Ant1_Low_2402



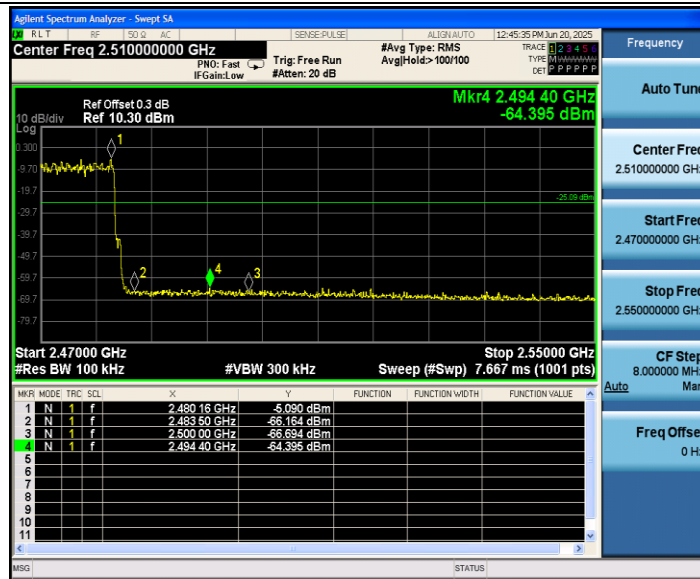
2DH5_Ant1_High_2480



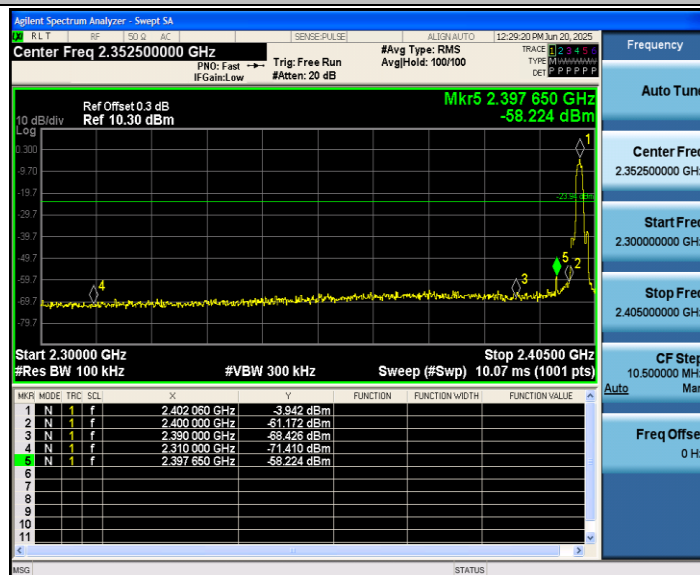
2DH5_Ant1_Low_Hop_2402



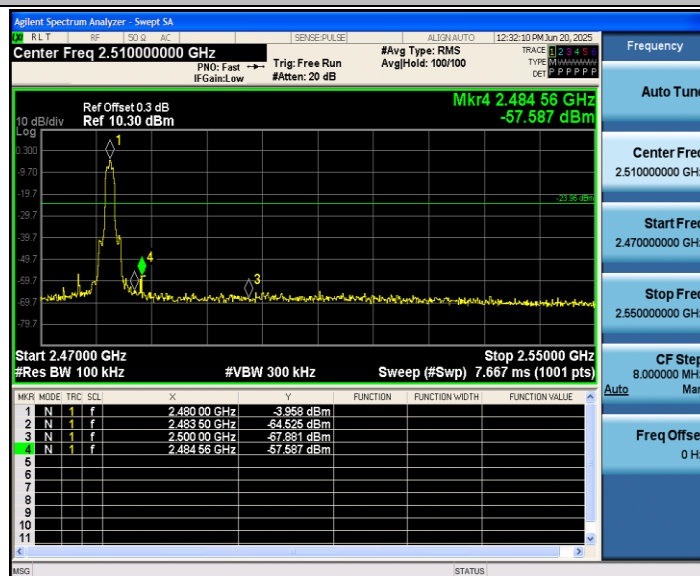
2DH5_Ant1_High_Hop_2480



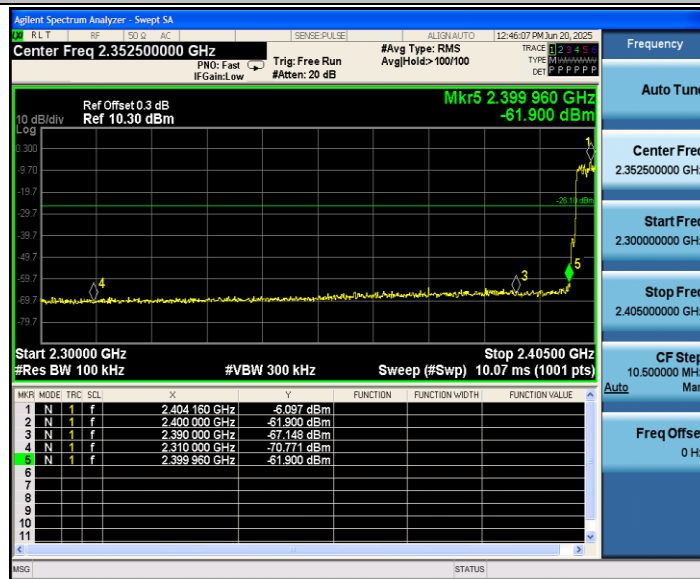
3DH5_Ant1_Low_2402



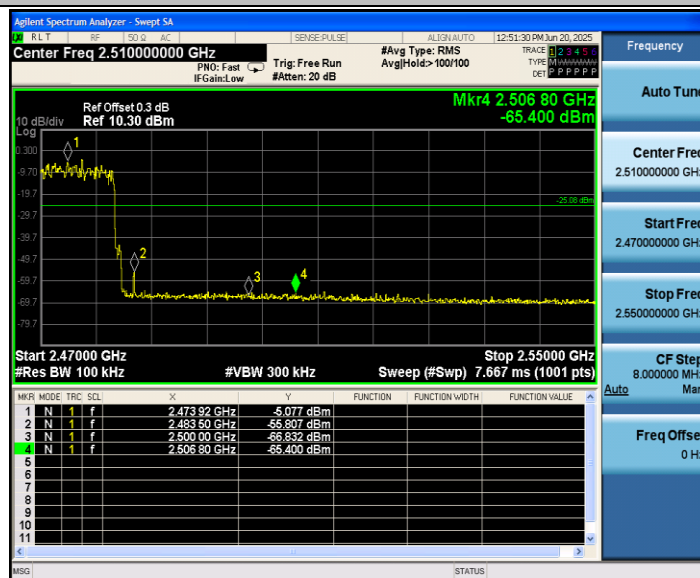
3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480

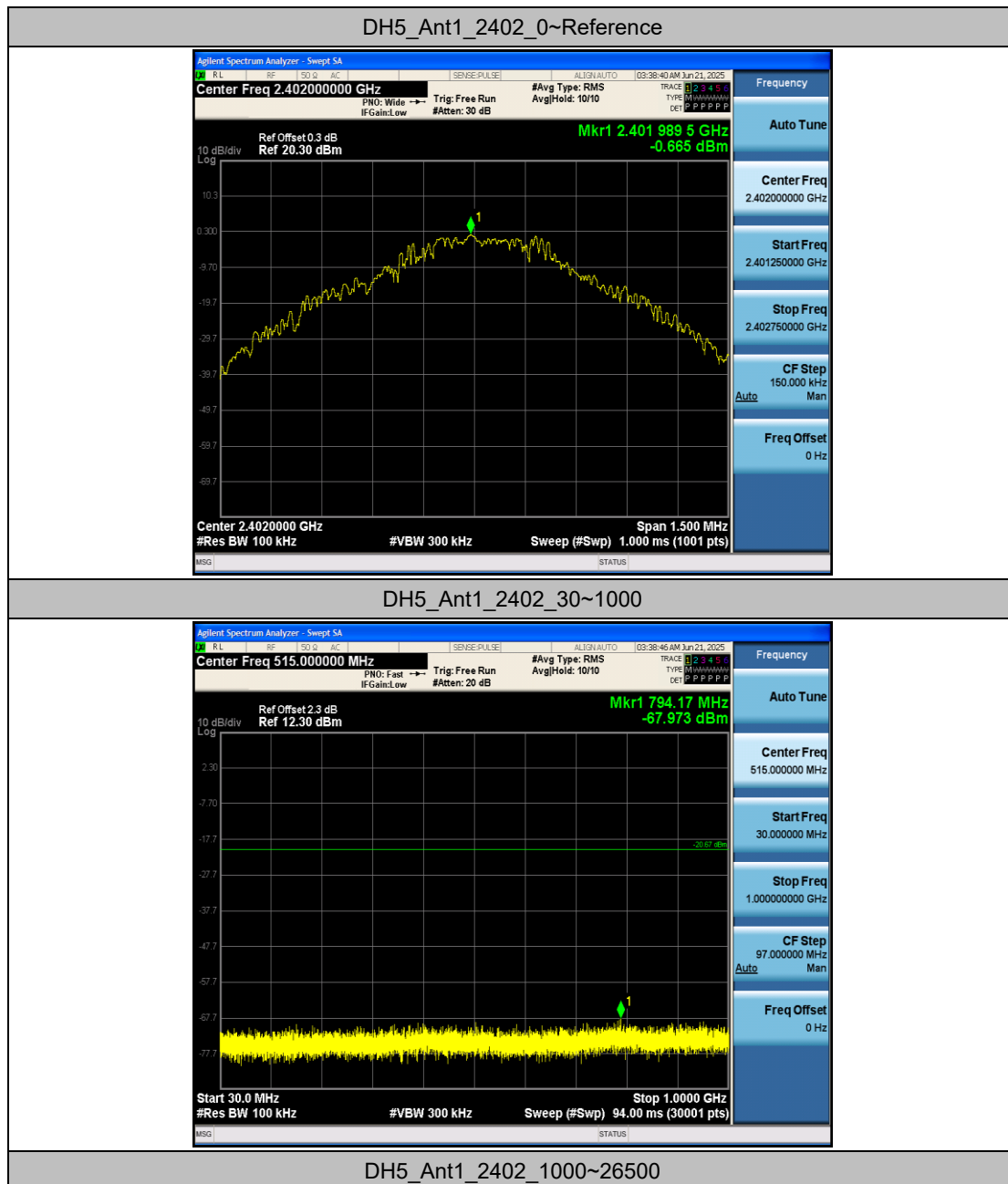


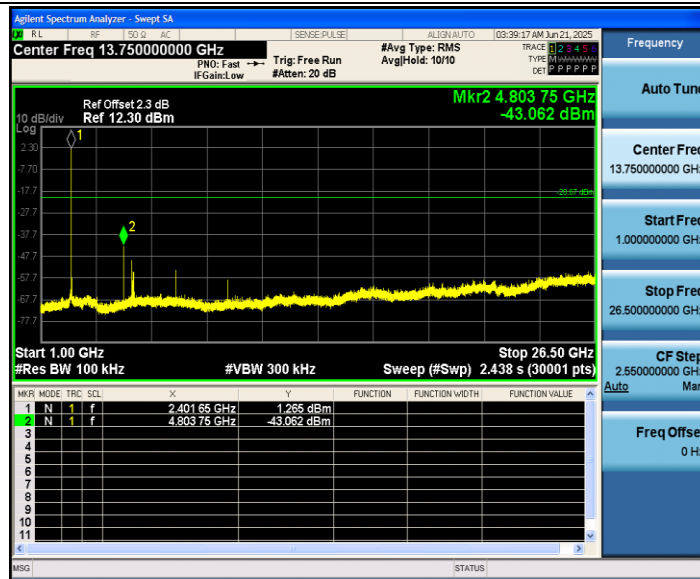
Appendix H: Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	-0.67	-0.67	---	PASS
			30~1000	-0.67	-67.97	≤-20.67	PASS
			1000~26500	-0.67	-43.06	≤-20.67	PASS
		2441	Reference	-0.89	-0.89	---	PASS
			30~1000	-0.89	-67.77	≤-20.89	PASS
			1000~26500	-0.89	-45.3	≤-20.89	PASS
		2480	Reference	-1.30	-1.30	---	PASS
			30~1000	-1.30	-68.28	≤-21.3	PASS
			1000~26500	-1.30	-45.14	≤-21.3	PASS
2DH5	Ant1	2402	Reference	-6.90	-6.90	---	PASS
			30~1000	-6.90	-68.29	≤-26.9	PASS
			1000~26500	-6.90	-49.21	≤-26.9	PASS
		2441	Reference	-5.84	-5.84	---	PASS
			30~1000	-5.84	-68.26	≤-25.84	PASS
			1000~26500	-5.84	-46.75	≤-25.84	PASS
		2480	Reference	-4.90	-4.90	---	PASS
			30~1000	-4.90	-67.92	≤-24.9	PASS
			1000~26500	-4.90	-50.89	≤-24.9	PASS
3DH5	Ant1	2402	Reference	-5.30	-5.30	---	PASS
			30~1000	-5.30	-67.64	≤-25.3	PASS
			1000~26500	-5.30	-49.17	≤-25.3	PASS
		2441	Reference	-4.49	-4.49	---	PASS
			30~1000	-4.49	-68.59	≤-24.49	PASS
			1000~26500	-4.49	-50.16	≤-24.49	PASS
		2480	Reference	-5.43	-5.43	---	PASS
			30~1000	-5.43	-68.72	≤-25.43	PASS
			1000~26500	-5.43	-49.2	≤-25.43	PASS

Test Graphs

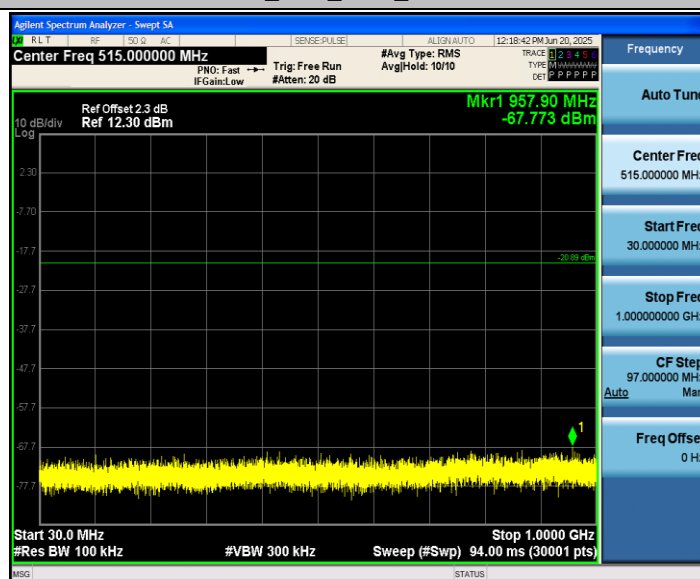




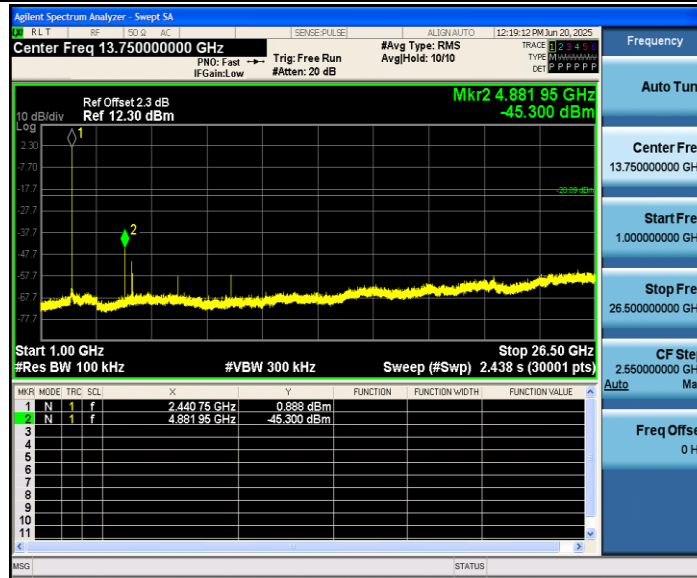
DH5_Ant1_2441_0~Reference



DH5_Ant1_2441_30~1000



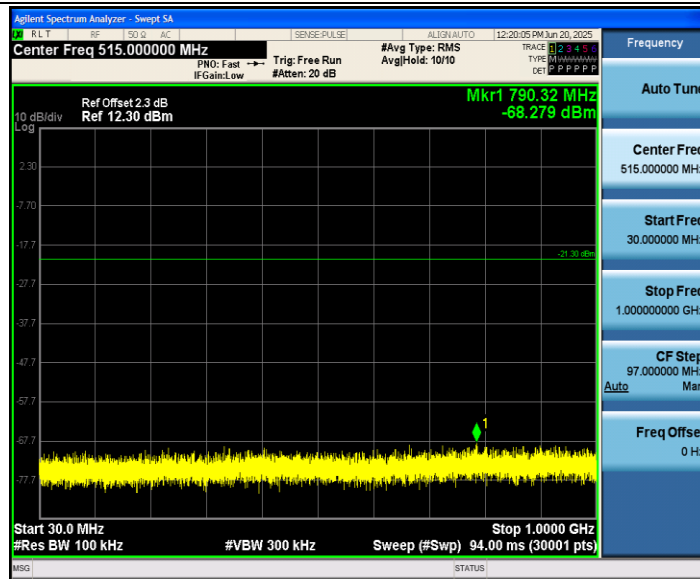
DH5_Ant1_2441_1000~26500



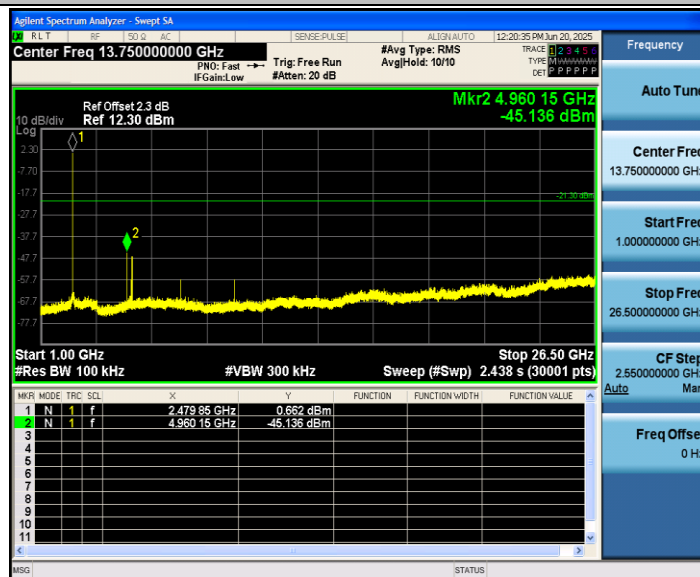
DH5_Ant1_2480_0~Reference



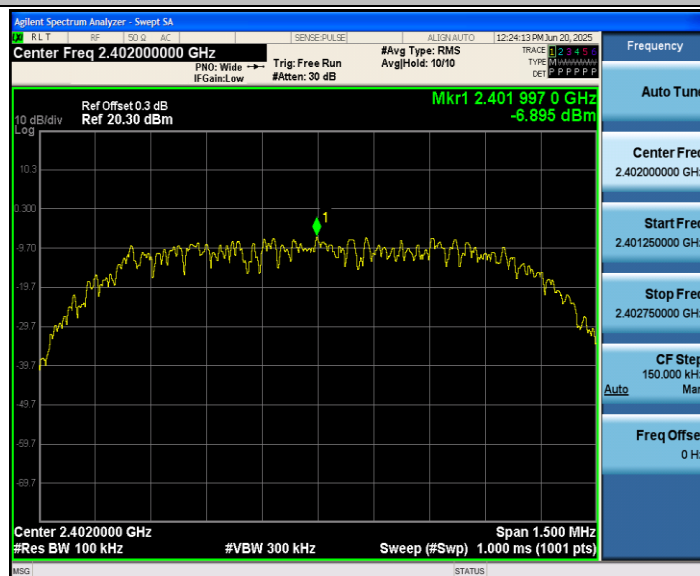
DH5_Ant1_2480_30~1000



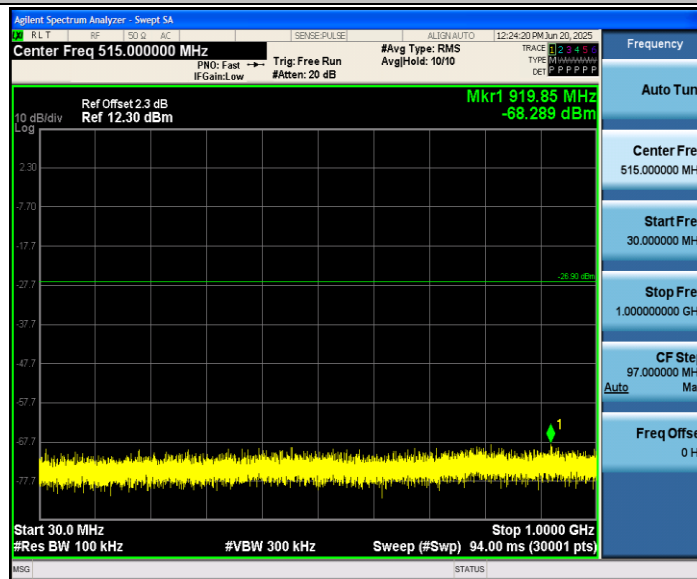
DH5_Ant1_2480_1000~26500



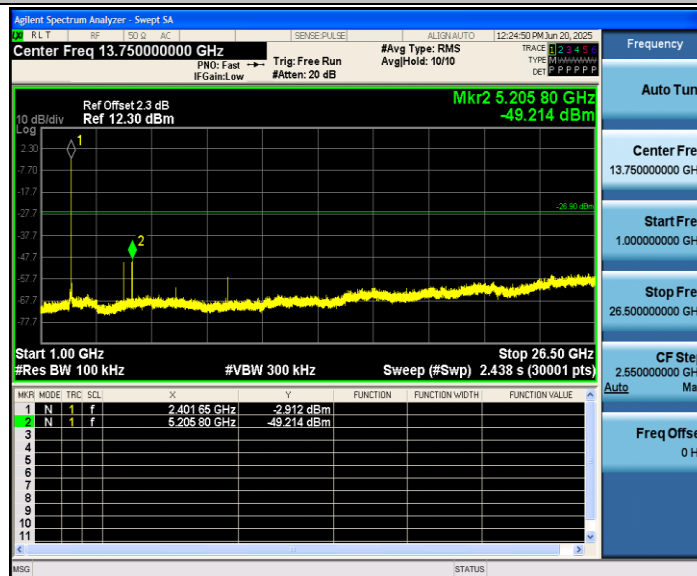
2DH5_Ant1_2402_0~Reference



2DH5_Ant1_2402_30~1000



2DH5_Ant1_2402_1000~26500



2DH5_Ant1_2441_0~Reference