

FCC Appendix RF Test Data for BT

FCC ID : 2BKDL-LC19

Company : Shenzhen Jinruihuan Technology Co., LTD

EUT : Smart watch

Model Number : LC19

Report No. : CTA26091500801

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	2401.544	2402.498	---	---
		2441	0.939	2440.547	2441.486	---	---
		2480	0.963	2479.544	2480.507	---	---
2DH5	Ant1	2402	1.281	2401.382	2402.663	---	---
		2441	1.344	2440.337	2441.681	---	---
		2480	1.341	2479.340	2480.681	---	---
3DH5	Ant1	2402	1.293	2401.364	2402.657	---	---
		2441	1.308	2440.361	2441.669	---	---
		2480	1.317	2479.358	2480.675	---	---

DH5_Ant1_2402

Agilent Spectrum Analyzer - Sweep SA

Center Freq 2.40200000 GHz

Ref Offset 0.4 dB
Ref 30.00 dBm

Trig: Free Run
#Atten: 40 dB

#Avg Type: RMS
AvgHold: 100/100

Span 3.000 MHz
Sweep 3.200 ms (1001 pts)

#Res BW 30 kHz
#VBW 100 kHz

ΔMkr3 954 kHz
-0.176 dB

MNR	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.401544 GHz	-22.711 dBm			
2	N	1	f	2.402003 GHz	-2.646 dBm			
3	Δ	1	f (Δ)	954 kHz (Δ)	-0.176 dB			

DH5_Ant1_2441

Agilent Spectrum Analyzer - Sweep SA

Center Freq 2.441000000 GHz

Ref Offset 0.4 dB
Ref 30.00 dBm

Trig: Free Run
#Atten: 40 dB

#Avg Type: RMS
AvgHold: 100/100

Span 3.000 MHz
Sweep 3.200 ms (1001 pts)

#Res BW 30 kHz
#VBW 100 kHz

ΔMkr3 939 kHz
0.060 dB

MNR	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.440547 GHz	-22.437 dBm			
2	N	1	f	2.441018 GHz	-1.960 dBm			
3	Δ	1	f (Δ)	939 kHz (Δ)	0.060 dB			



2DH5_Ant1_2402



2DH5_Ant1_2441



2DH5_Ant1_2480



3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480

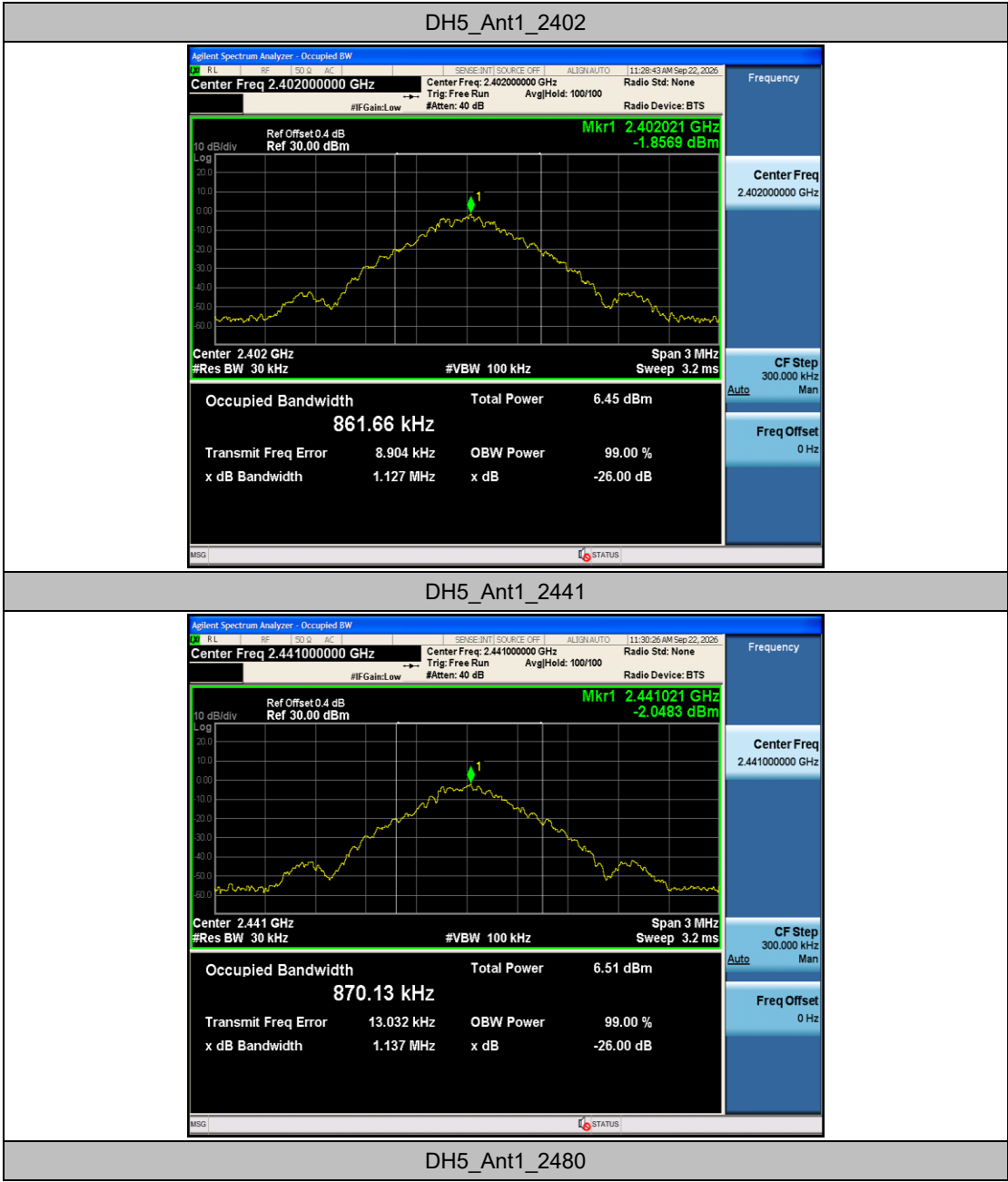


Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.86166	2401.5781	2402.4397	---	---
		2441	0.87013	2440.5780	2441.4481	---	---
		2480	0.87574	2479.5731	2480.4488	---	---
2DH5	Ant1	2402	1.1919	2401.4182	2402.6101	---	---
		2441	1.1982	2440.4117	2441.6099	---	---
		2480	1.1898	2479.4181	2480.6079	---	---
3DH5	Ant1	2402	1.1905	2401.4140	2402.6045	---	---
		2441	1.1935	2440.4156	2441.6091	---	---
		2480	1.1790	2479.4214	2480.6004	---	---

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	0.10	≤20.97	PASS
		2441	-0.01	≤20.97	PASS
		2480	-0.24	≤20.97	PASS
2DH5	Ant1	2402	-0.75	≤20.97	PASS
		2441	-0.86	≤20.97	PASS
		2480	-1.07	≤20.97	PASS
3DH5	Ant1	2402	-0.35	≤20.97	PASS
		2441	-0.48	≤20.97	PASS
		2480	-0.67	≤20.97	PASS

Appendix D: Carrier frequency separation

Test Result

TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	0.98	≥ 0.963	PASS
2DH5	Ant1	Hop	1.01	≥ 0.896	PASS
3DH5	Ant1	Hop	1.096	≥ 0.878	PASS

Test Graphs



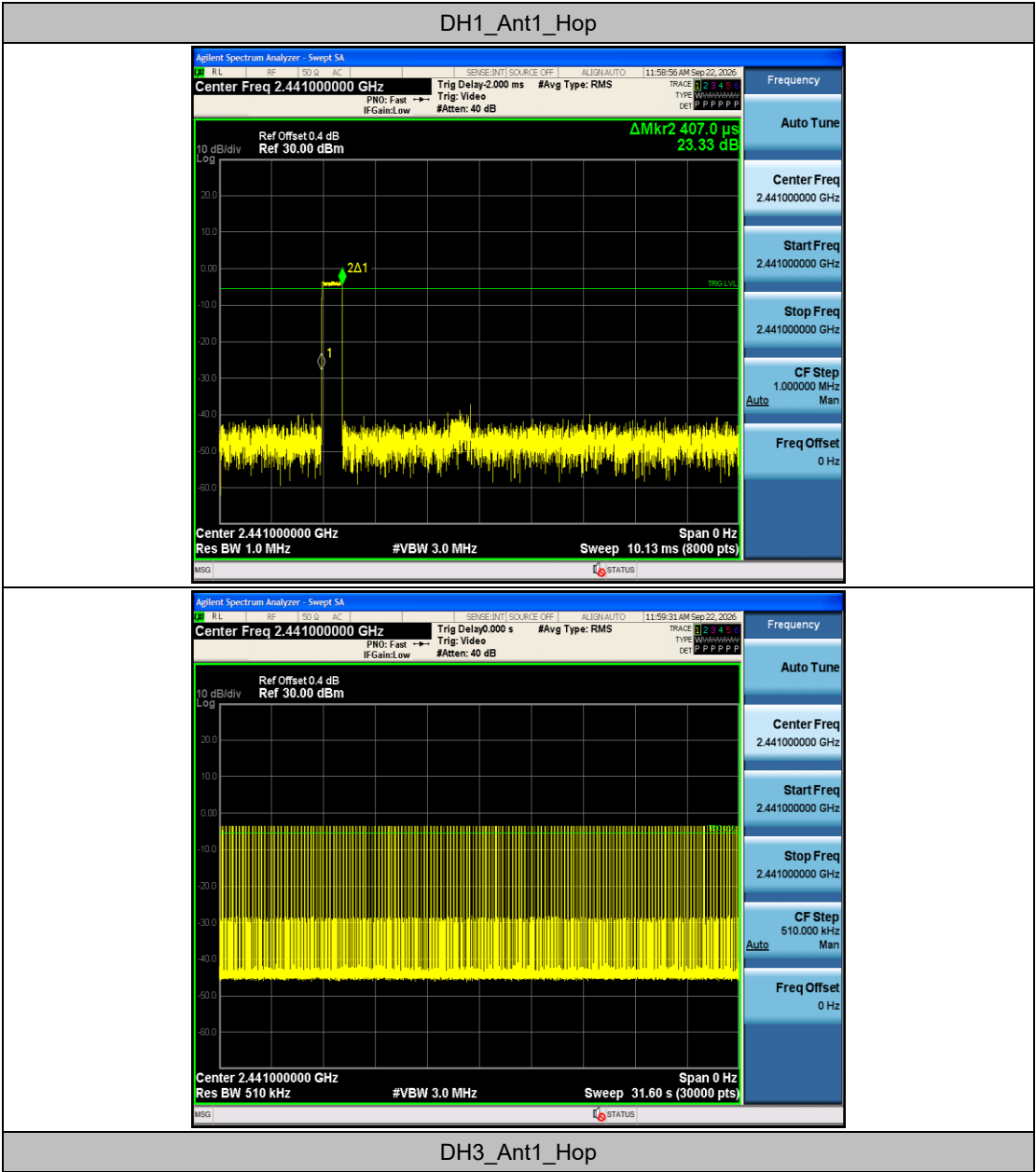


Appendix E: Time of occupancy

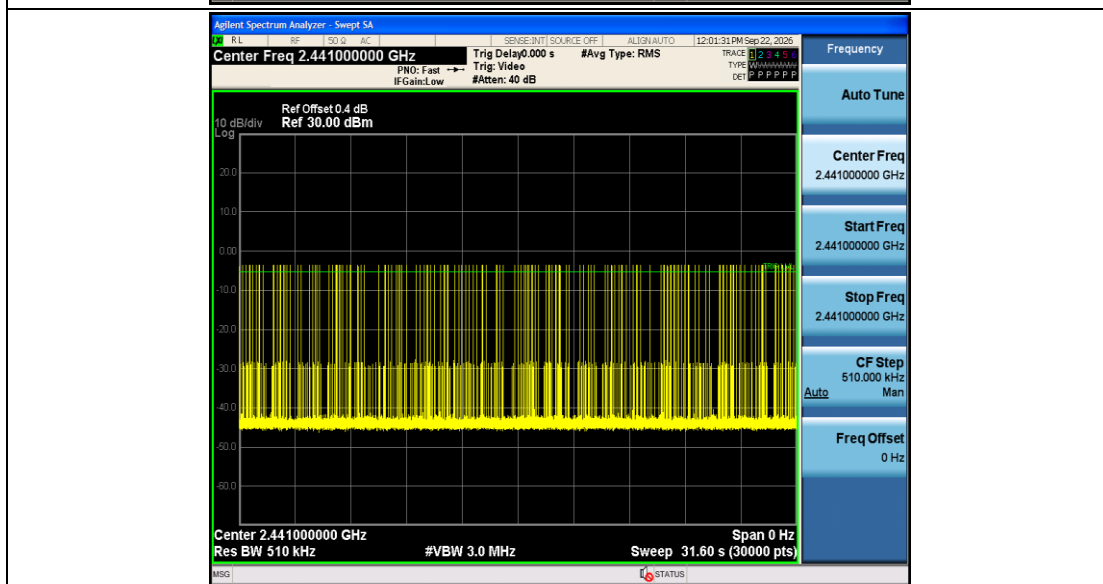
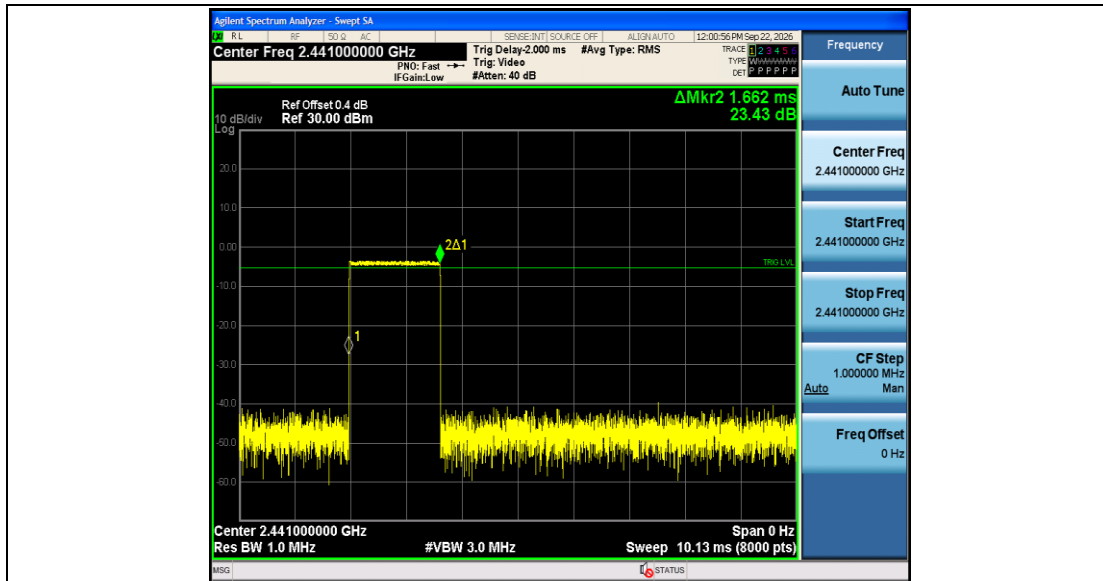
Test Result

TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.407	319	0.13	≤0.4	PASS
DH3	Ant1	Hop	1.662	160	0.266	≤0.4	PASS
DH5	Ant1	Hop	2.910	103	0.3	≤0.4	PASS
2DH1	Ant1	Hop	0.415	319	0.132	≤0.4	PASS
2DH3	Ant1	Hop	1.668	160	0.267	≤0.4	PASS
2DH5	Ant1	Hop	2.915	106	0.309	≤0.4	PASS
3DH1	Ant1	Hop	0.417	320	0.133	≤0.4	PASS
3DH3	Ant1	Hop	1.666	155	0.258	≤0.4	PASS
3DH5	Ant1	Hop	2.917	112	0.327	≤0.4	PASS

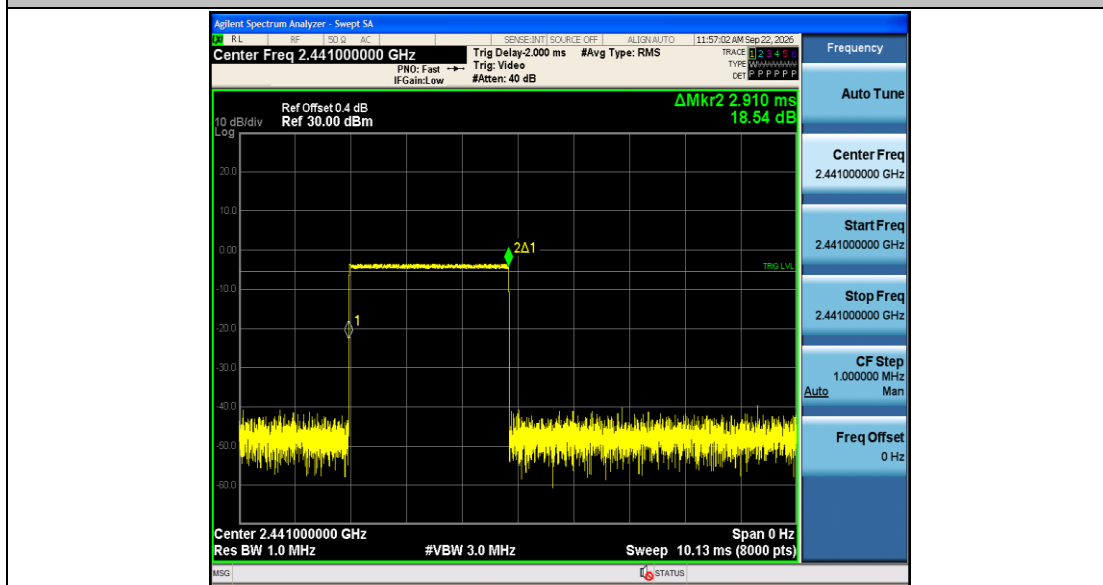
Test Graphs

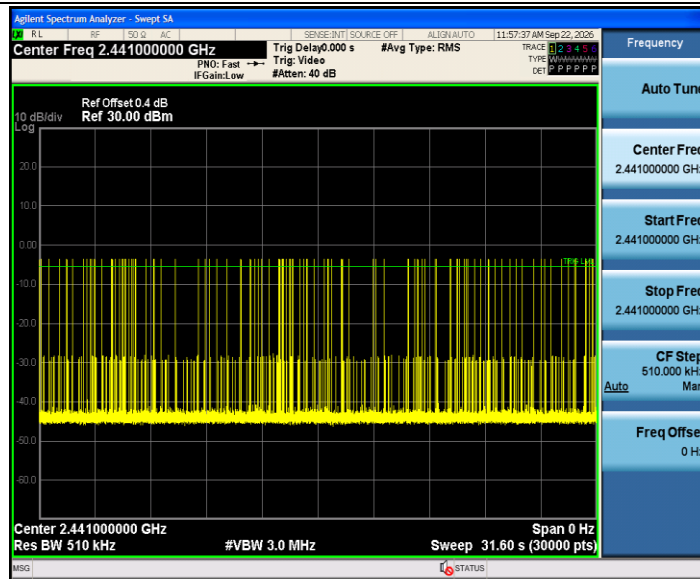


DH3_Ant1_Hop

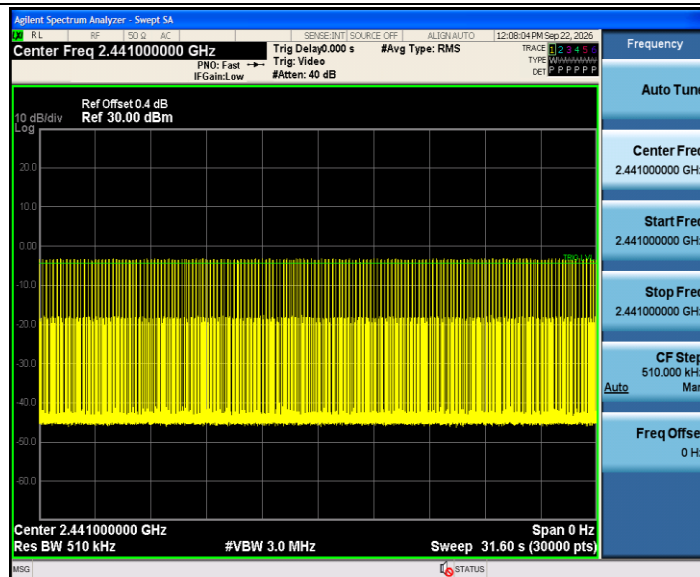
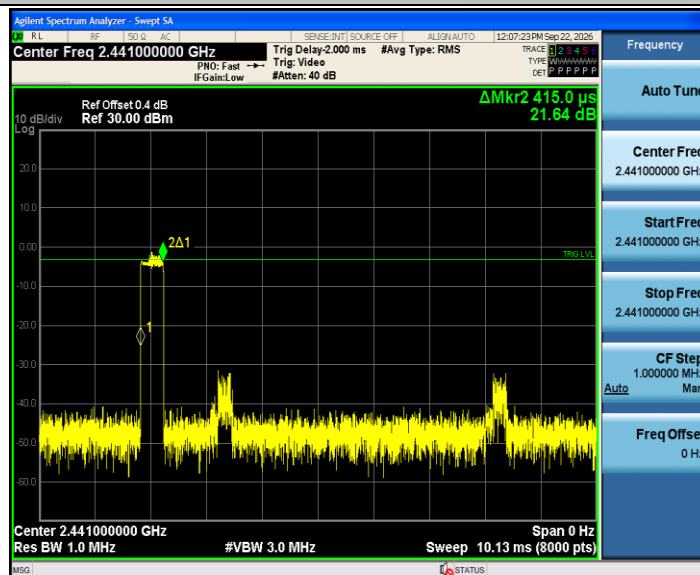


DH5_Ant1_Hop

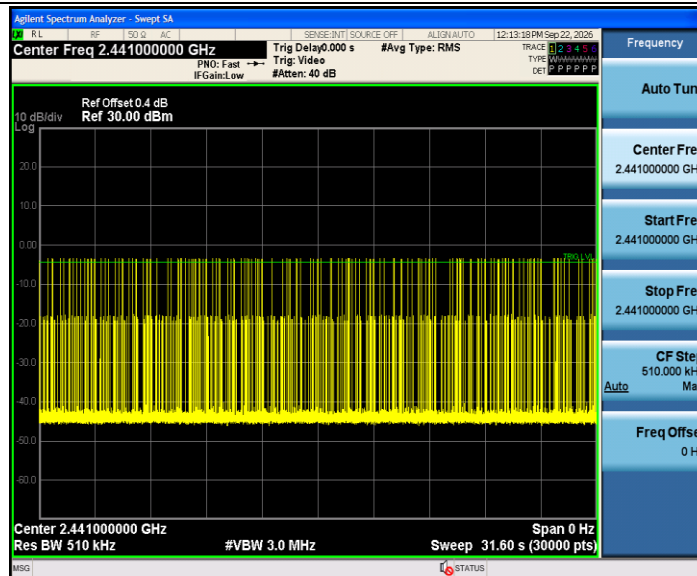
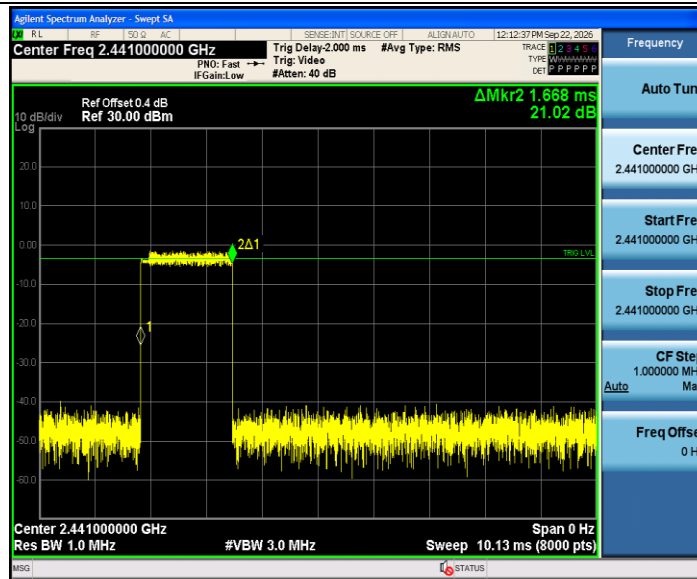




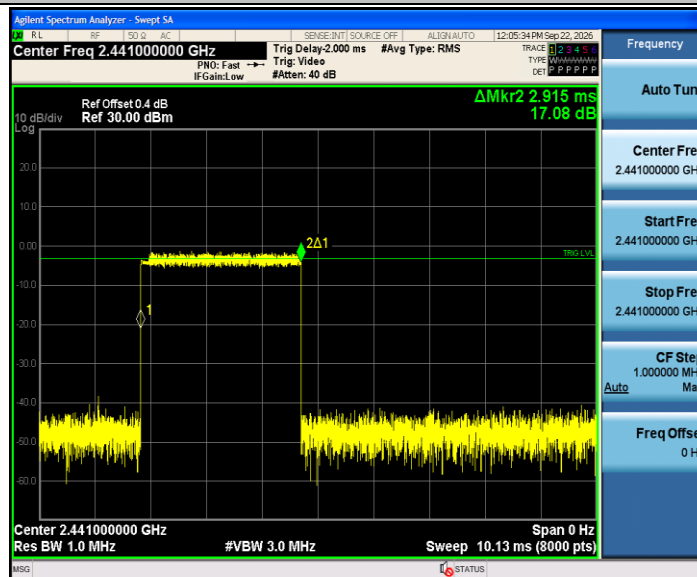
2DH1_Ant1_Hop

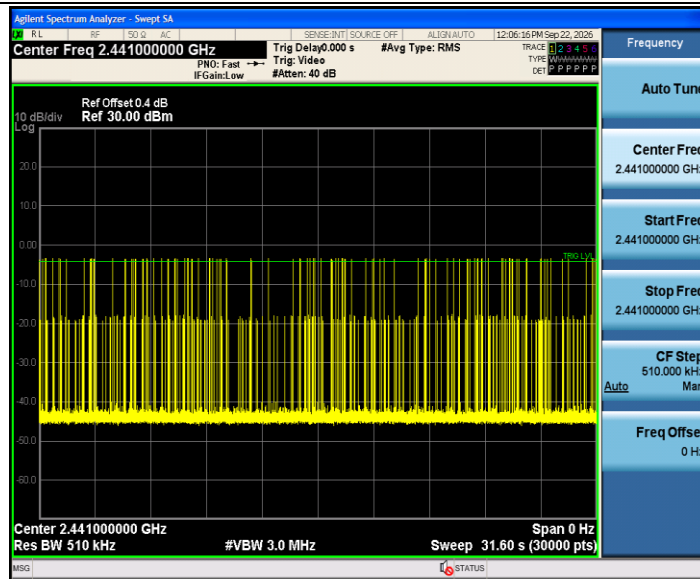


2DH3_Ant1_Hop

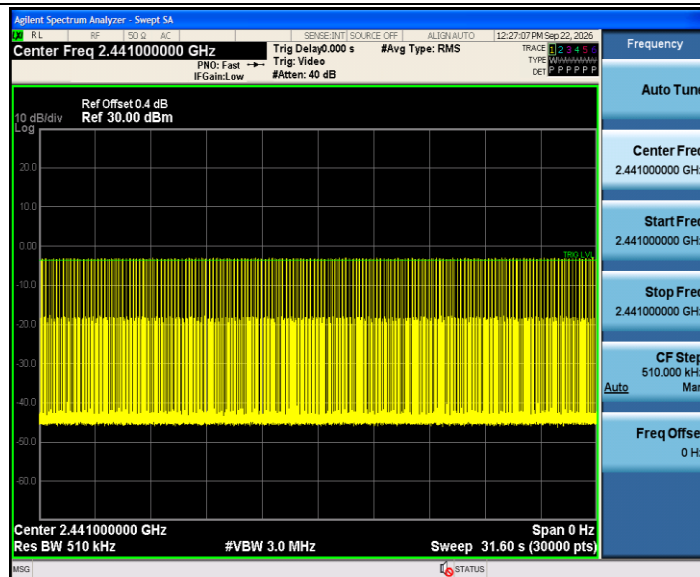
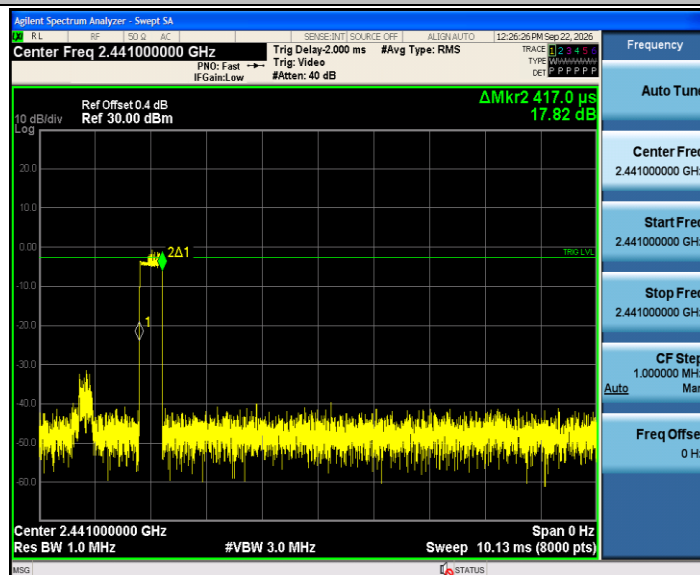


2DH5_Ant1_Hop

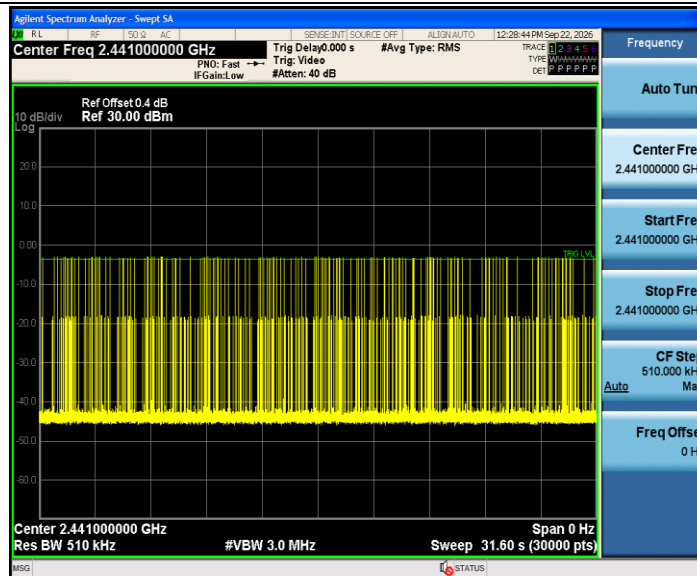
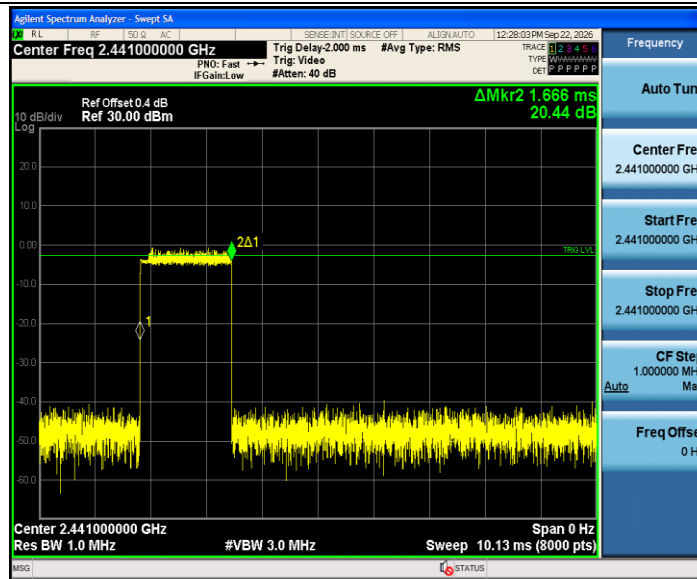




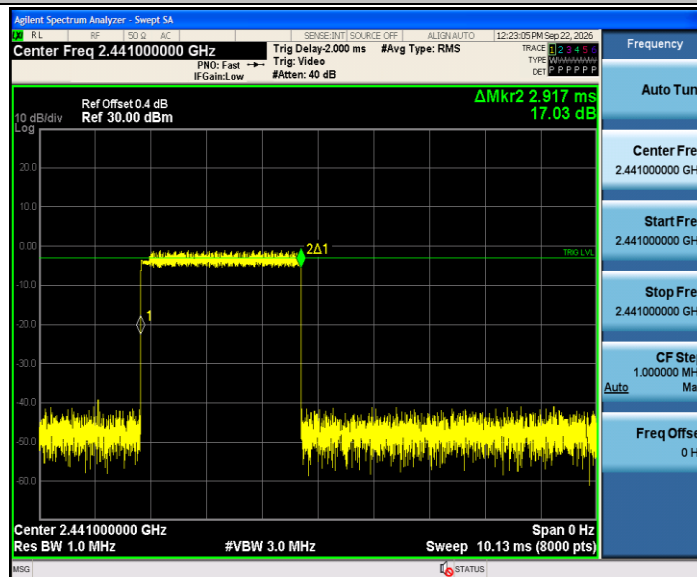
3DH1_Ant1_Hop

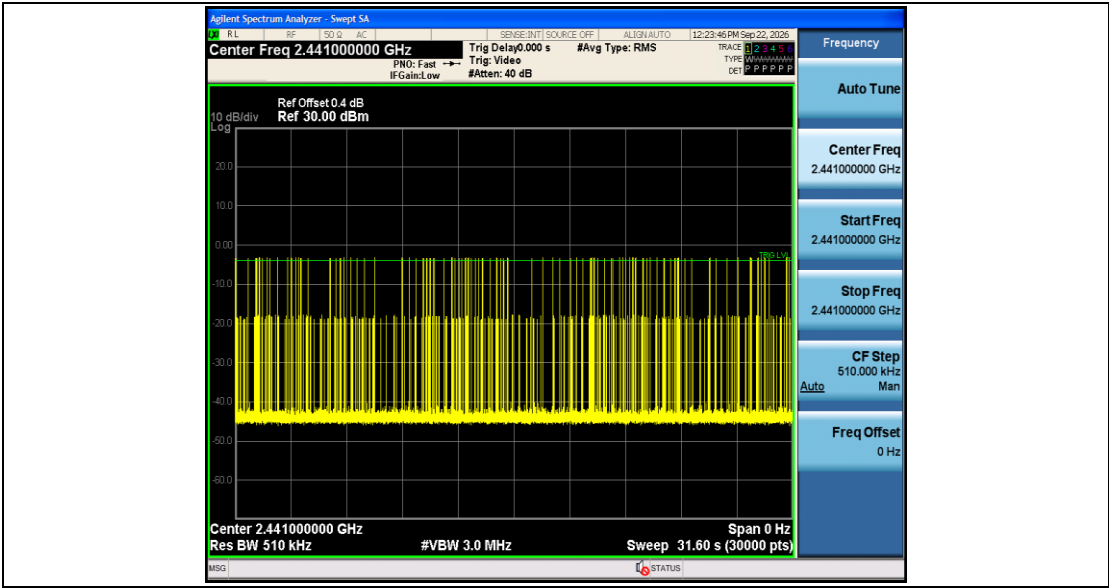


3DH3_Ant1_Hop



3DH5_Ant1_Hop



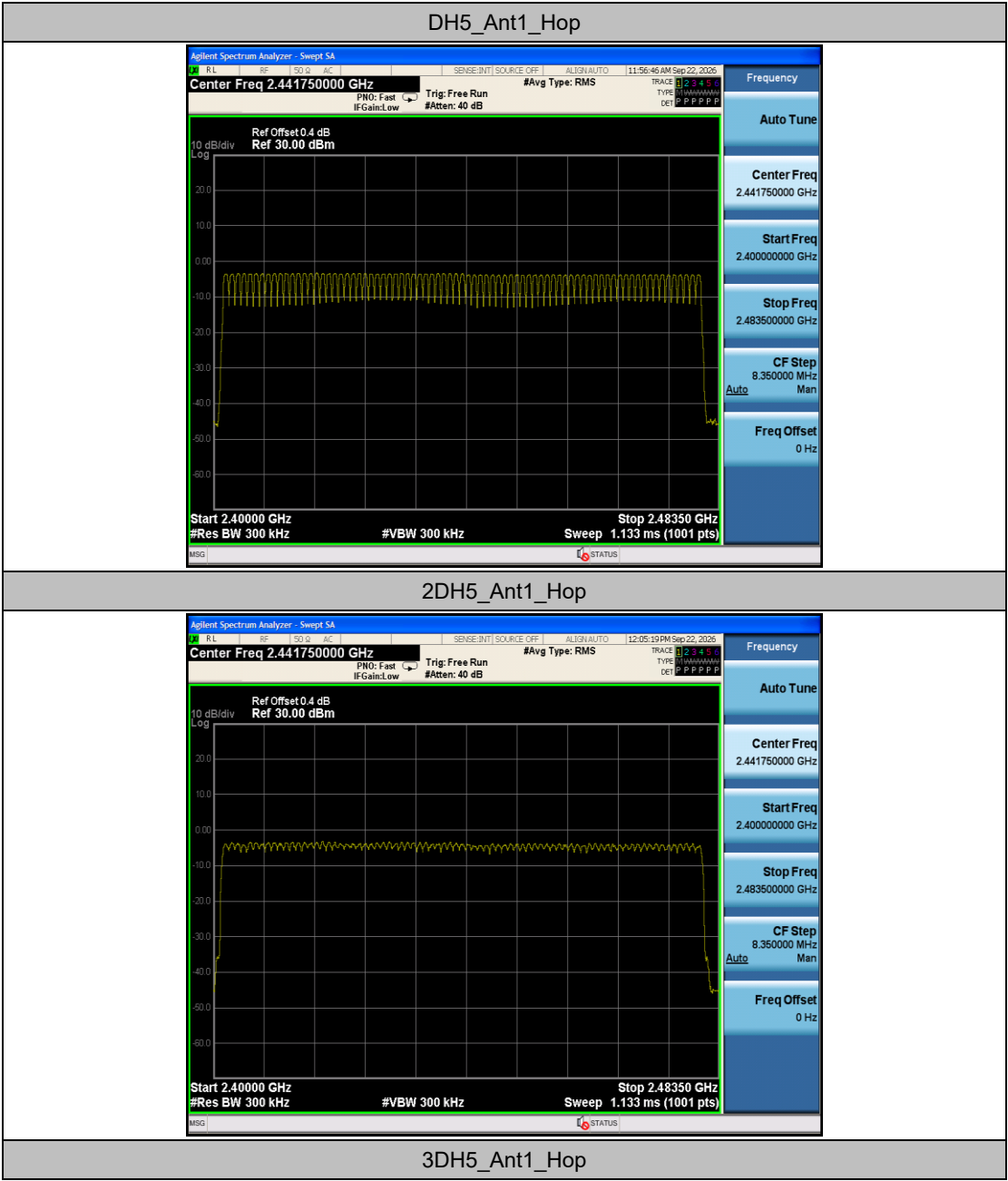


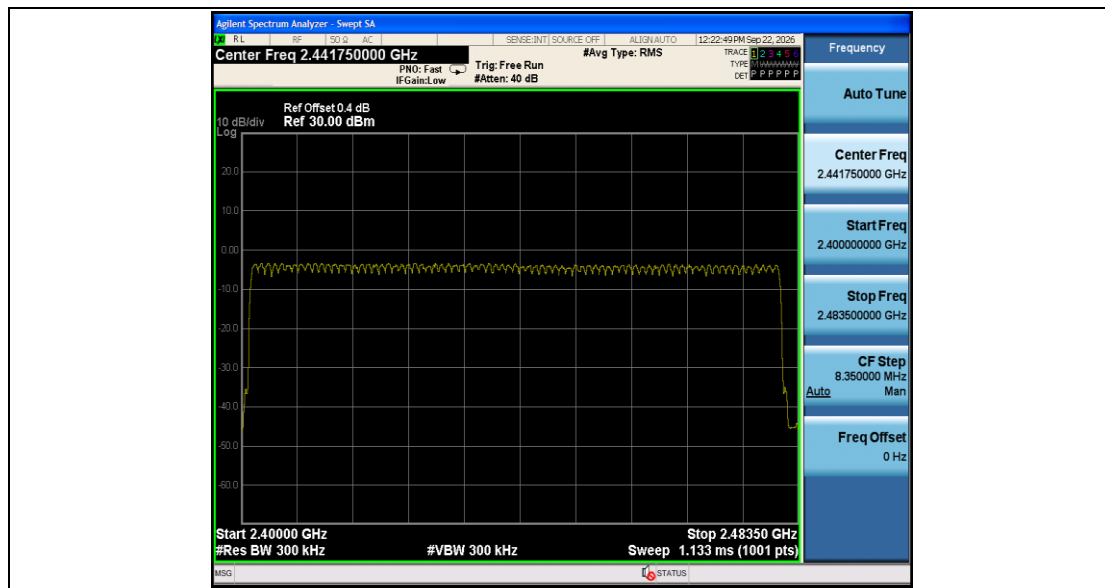
Appendix F: Number of hopping channels

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



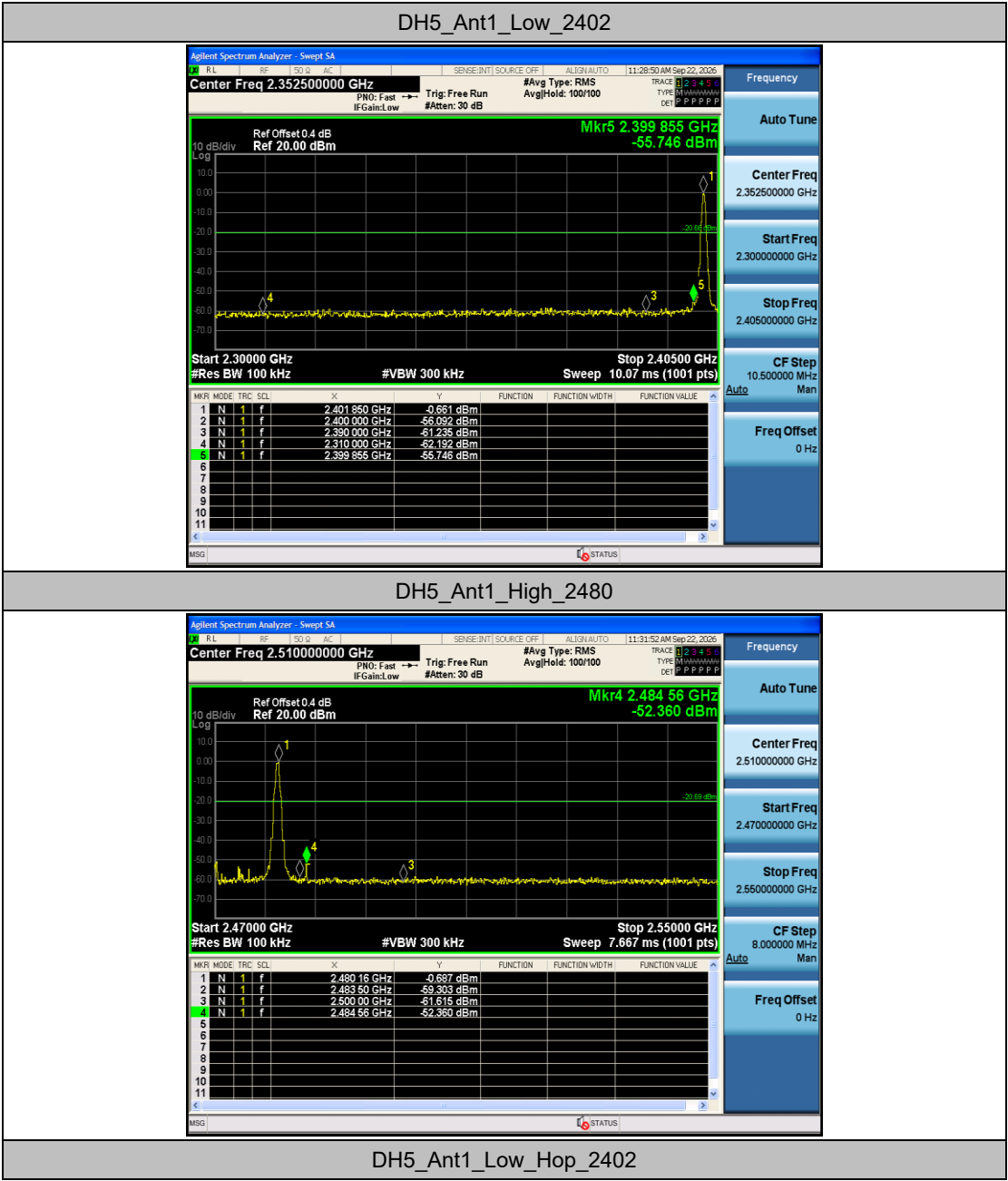


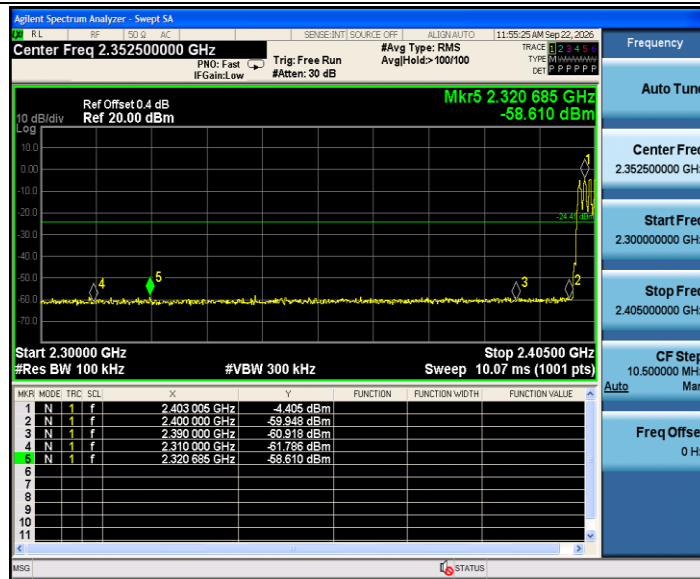
Appendix G: Band edge measurements

Test Result

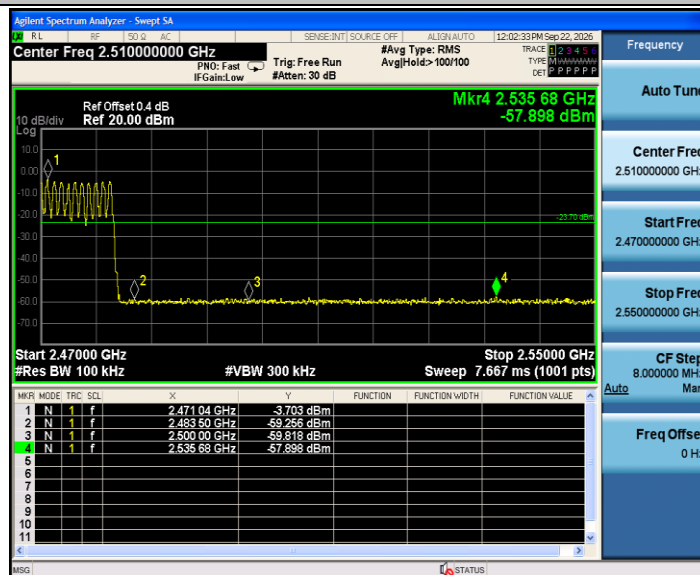
TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-0.66	-55.75	≤ -20.66	PASS
		High	2480	-0.69	-52.36	≤ -20.69	PASS
		Low	Hop_2402	-4.41	-58.61	≤ -24.41	PASS
		High	Hop_2480	-3.70	-57.9	≤ -23.7	PASS
2DH5	Ant1	Low	2402	-6.30	-58.25	≤ -26.3	PASS
		High	2480	-4.49	-57.62	≤ -24.49	PASS
		Low	Hop_2402	-6.78	-58.1	≤ -26.78	PASS
		High	Hop_2480	-6.12	-58.02	≤ -26.12	PASS
3DH5	Ant1	Low	2402	-4.00	-58.17	≤ -24	PASS
		High	2480	-3.72	-56.12	≤ -23.72	PASS
		Low	Hop_2402	-5.40	-57.85	≤ -25.4	PASS
		High	Hop_2480	-5.33	-57.43	≤ -25.33	PASS

Test Graphs

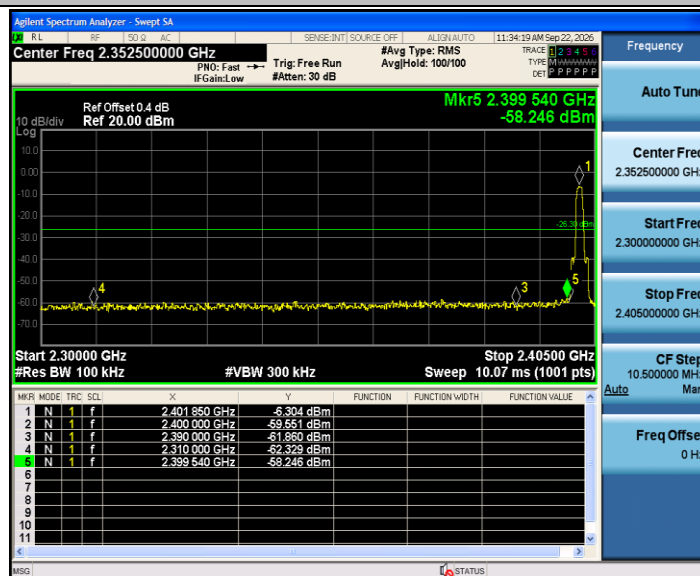




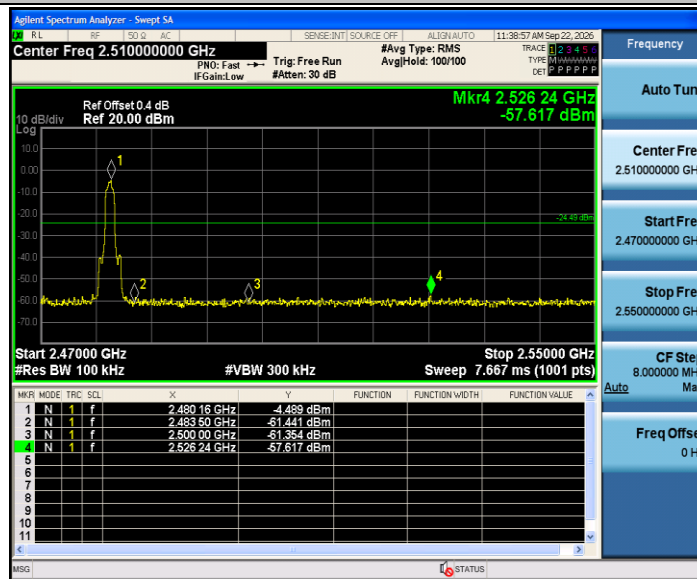
DH5_Ant1_High_Hop_2480



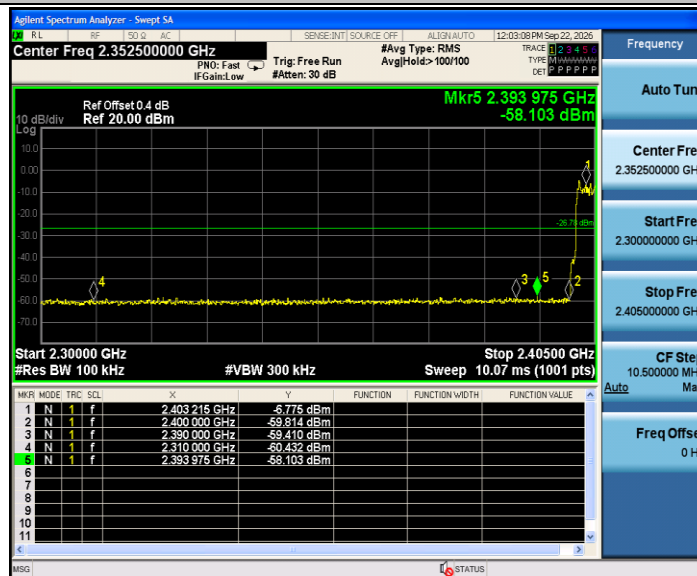
2DH5_Ant1_Low_2402



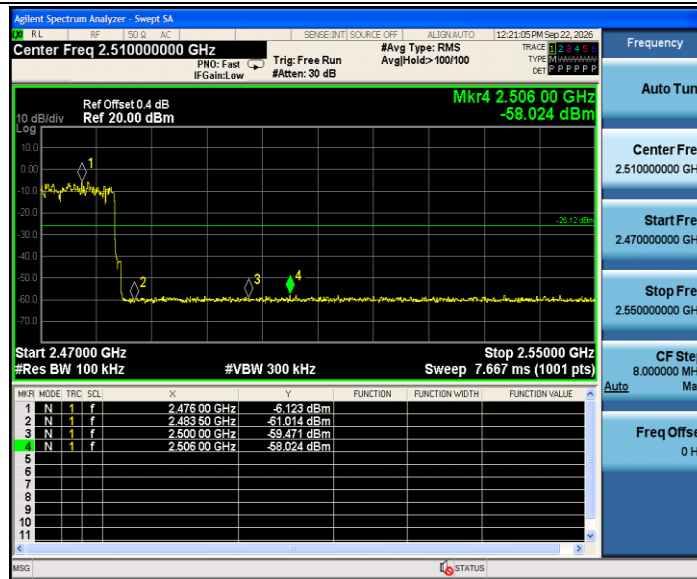
2DH5_Ant1_High_2480



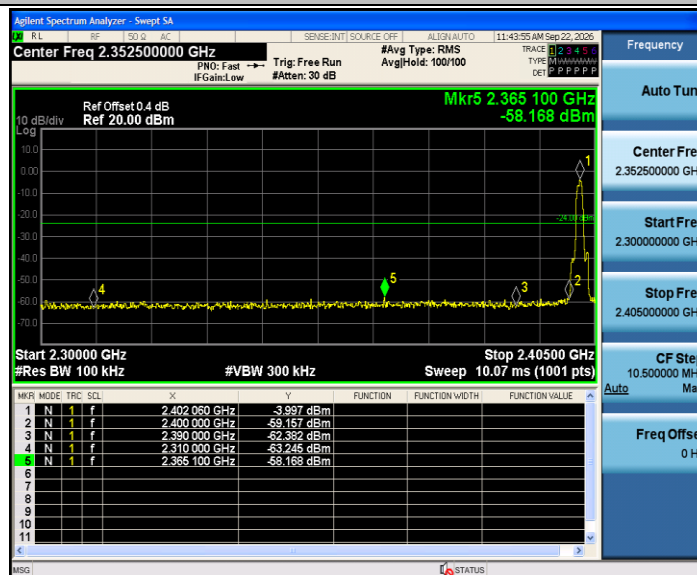
2DH5_Ant1_Low_Hop_2402



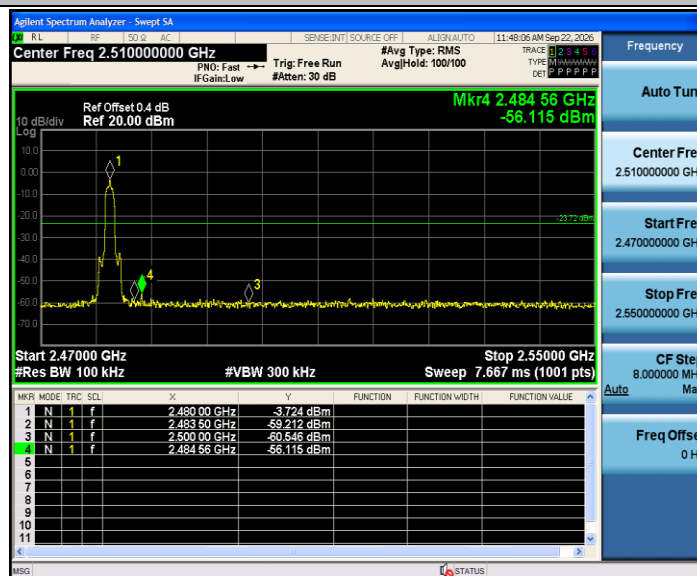
2DH5_Ant1_High_Hop_2480



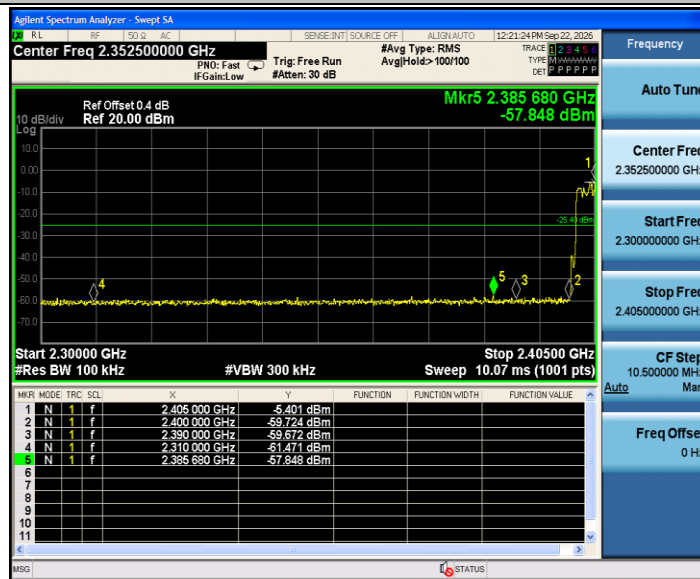
3DH5_Ant1_Low_2402



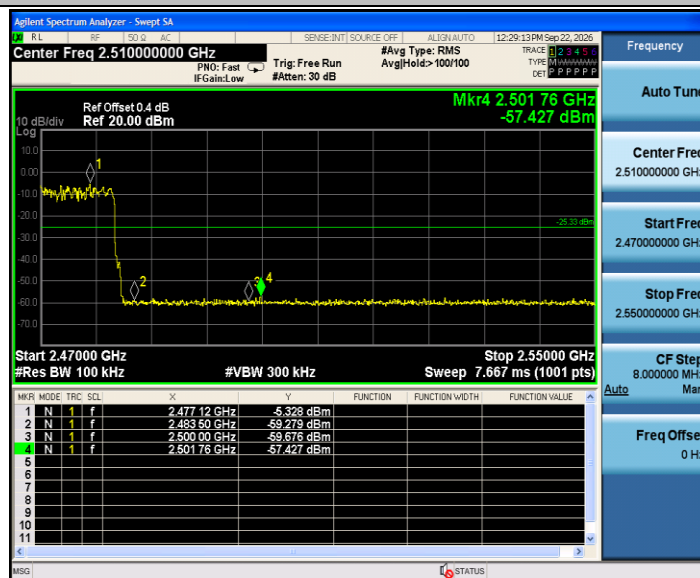
3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480



Appendix H: Conducted Spurious Emission

Test Result

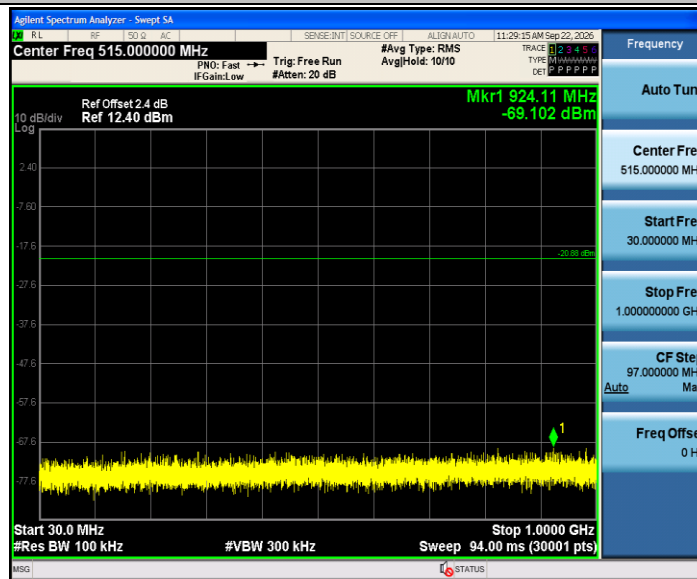
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	-0.88	-0.88	---	PASS
			30~1000	-0.88	-69.1	≤-20.88	PASS
			1000~26500	-0.88	-41.07	≤-20.88	PASS
		2441	Reference	-1.20	-1.20	---	PASS
			30~1000	-1.20	-69.39	≤-21.2	PASS
			1000~26500	-1.20	-42.42	≤-21.2	PASS
		2480	Reference	-0.77	-0.77	---	PASS
			30~1000	-0.77	-69.1	≤-20.77	PASS
			1000~26500	-0.77	-43.2	≤-20.77	PASS
2DH5	Ant1	2402	Reference	-4.81	-4.81	---	PASS
			30~1000	-4.81	-69.52	≤-24.81	PASS
			1000~26500	-4.81	-46.7	≤-24.81	PASS
		2441	Reference	-6.85	-6.85	---	PASS
			30~1000	-6.85	-69.08	≤-26.85	PASS
			1000~26500	-6.85	-46.63	≤-26.85	PASS
		2480	Reference	-6.07	-6.07	---	PASS
			30~1000	-6.07	-69.26	≤-26.07	PASS
			1000~26500	-6.07	-46.83	≤-26.07	PASS
3DH5	Ant1	2402	Reference	-4.10	-4.10	---	PASS
			30~1000	-4.10	-68.29	≤-24.1	PASS
			1000~26500	-4.10	-45.18	≤-24.1	PASS
		2441	Reference	-6.20	-6.20	---	PASS
			30~1000	-6.20	-69.1	≤-26.2	PASS
			1000~26500	-6.20	-46.51	≤-26.2	PASS
		2480	Reference	-4.43	-4.43	---	PASS
			30~1000	-4.43	-68.78	≤-24.43	PASS
			1000~26500	-4.43	-47	≤-24.43	PASS

Test Graphs

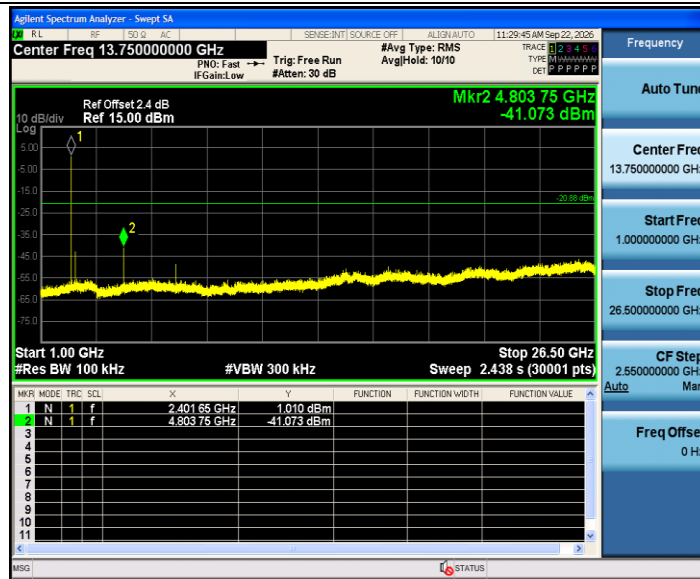
DH5_Ant1_2402_0~Reference



DH5_Ant1_2402_30~1000



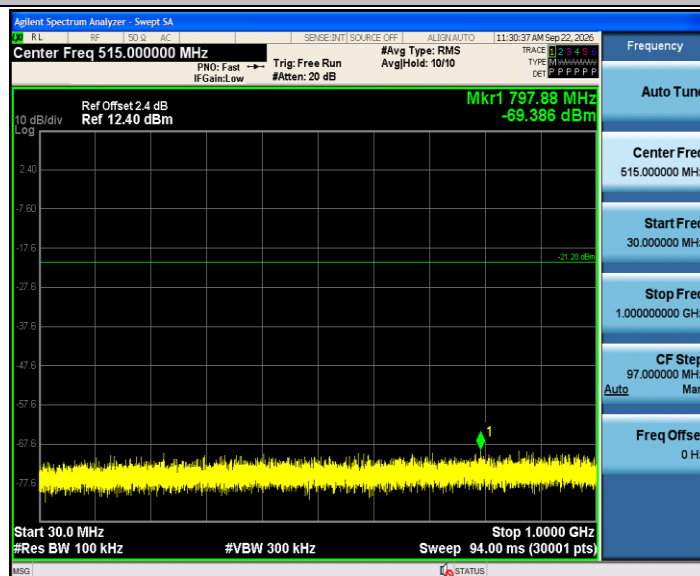
DH5_Ant1_2402_1000~26500



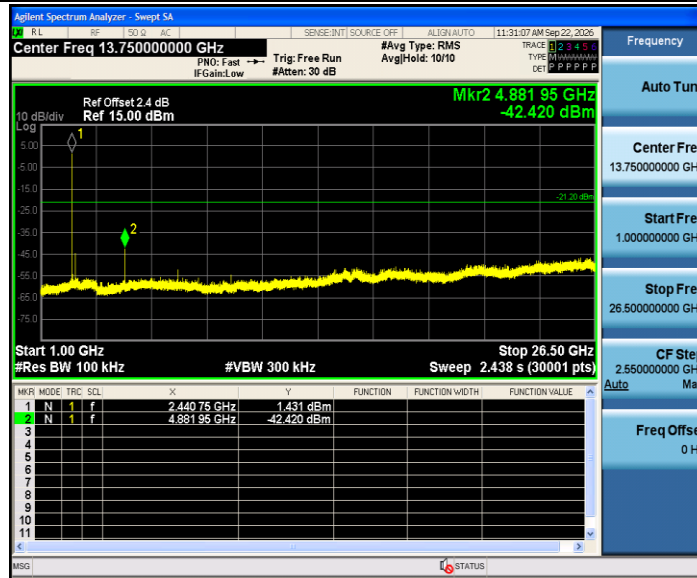
DH5_Ant1_2441_0~Reference



DH5_Ant1_2441_30~1000



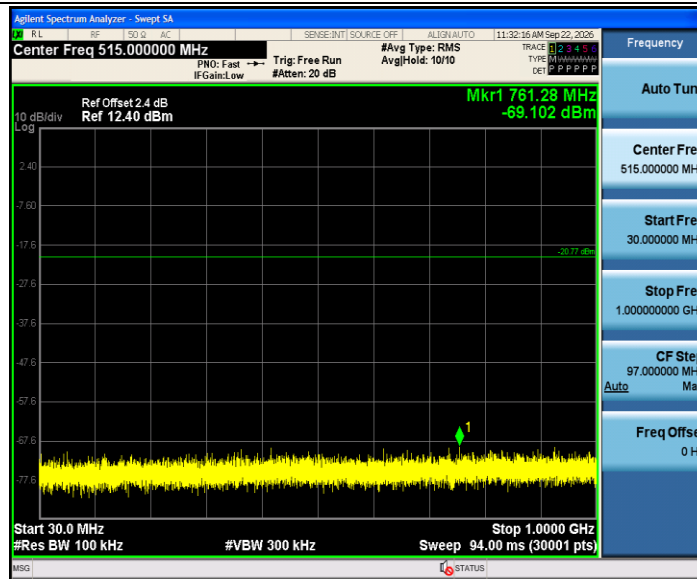
DH5_Ant1_2441_1000~26500



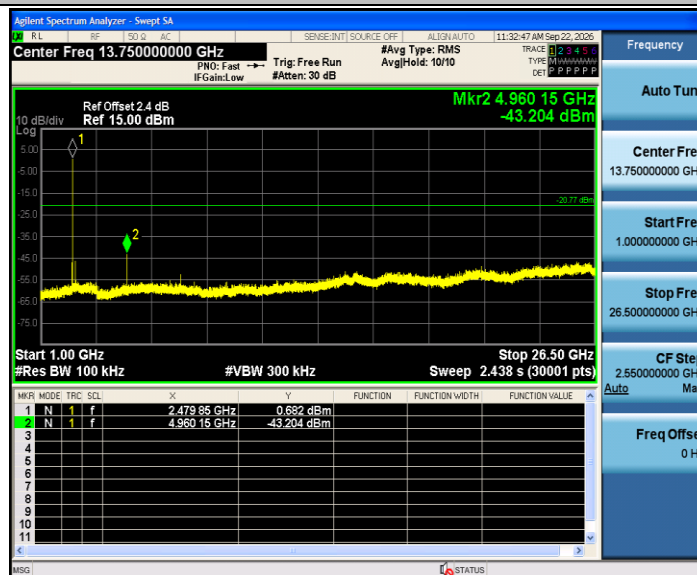
DH5_Ant1_2480_0~Reference



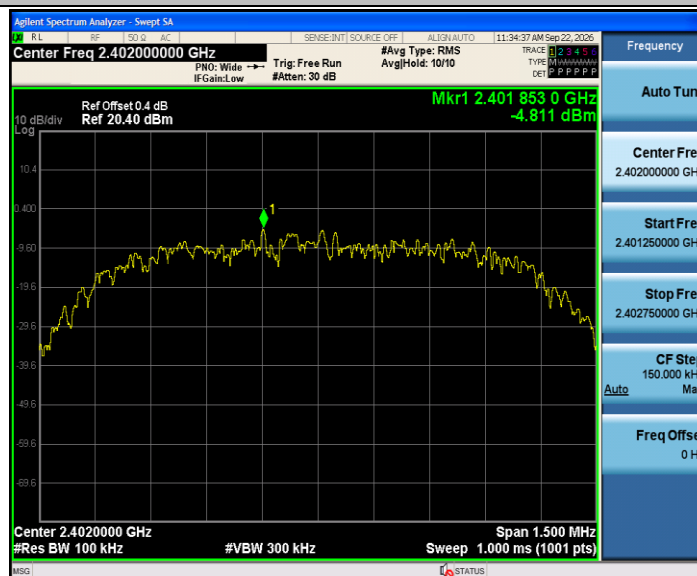
DH5_Ant1_2480_30~1000



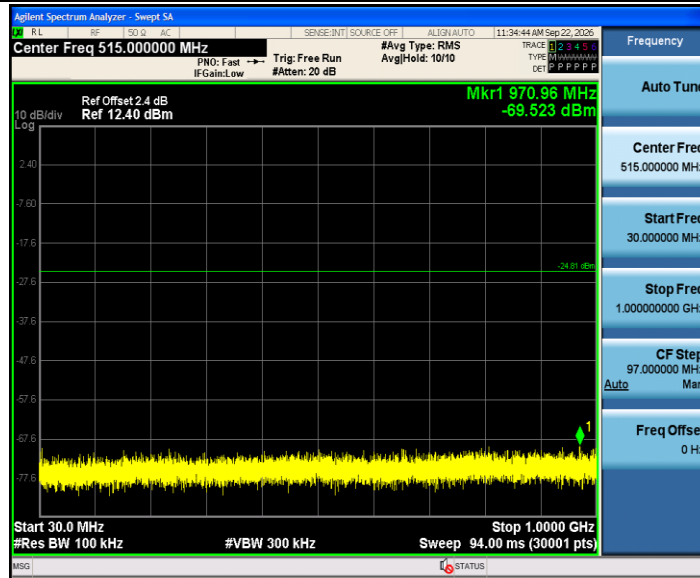
DH5_Ant1_2480_1000~26500



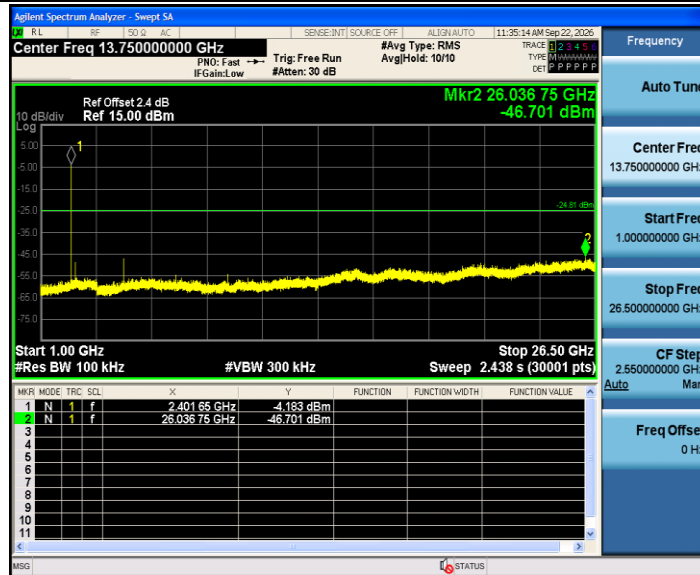
2DH5_Ant1_2402_0~Reference



2DH5_Ant1_2402_30~1000



2DH5_Ant1_2402_1000~26500



2DH5_Ant1_2441_0~Reference