

FCC Appendix RF Test Data

FCC ID : 2AAMS-X15-S

Company: : SHENZHEN NST INDUSTRY AND TRADE CO.,LTD

EUT : laptop

Model Number : X15-S

Report No. : CTA25041000802

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	0.957	2401.544	2402.501	---	---
		2441	0.954	2440.547	2441.501	---	---
		2480	0.942	2479.553	2480.495	---	---
2DH5	Ant1	2402	1.275	2401.379	2402.654	---	---
		2441	1.278	2440.382	2441.660	---	---
		2480	1.278	2479.382	2480.660	---	---
3DH5	Ant1	2402	1.311	2401.358	2402.669	---	---
		2441	1.263	2440.388	2441.651	---	---
		2480	1.299	2479.361	2480.660	---	---

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

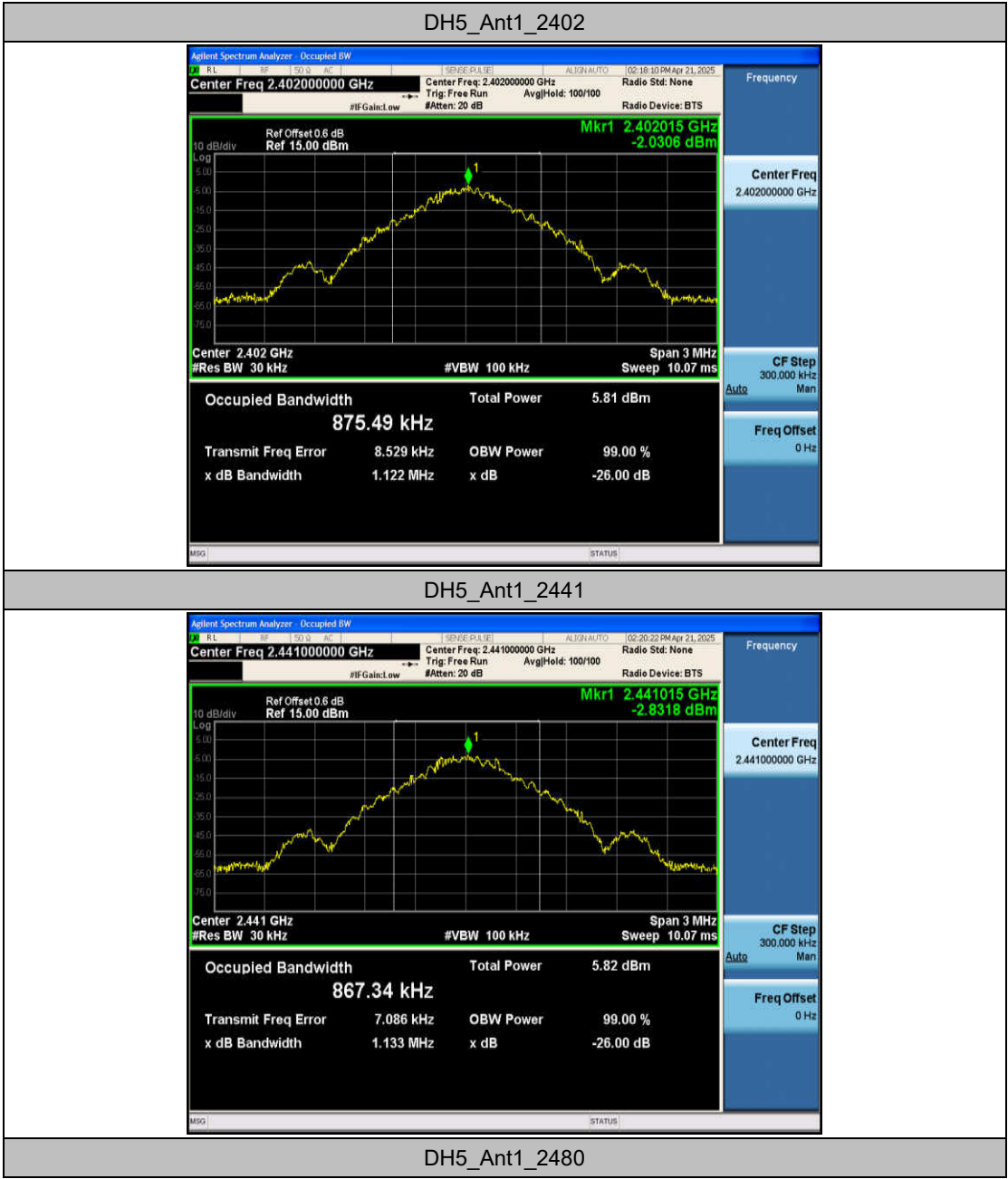


Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.87549	2401.5708	2402.4463	---	---
		2441	0.86734	2440.5734	2441.4408	---	---
		2480	0.86812	2479.5739	2480.4421	---	---
2DH5	Ant1	2402	1.1889	2401.4157	2402.6046	---	---
		2441	1.1913	2440.4149	2441.6062	---	---
		2480	1.1917	2479.4161	2480.6078	---	---
3DH5	Ant1	2402	1.1863	2401.4171	2402.6034	---	---
		2441	1.1833	2440.4212	2441.6045	---	---
		2480	1.1927	2479.4143	2480.6070	---	---

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	0.12	≤20.97	PASS
		2441	-0.11	≤20.97	PASS
		2480	-0.15	≤20.97	PASS
2DH5	Ant1	2402	-0.70	≤20.97	PASS
		2441	-0.91	≤20.97	PASS
		2480	-0.94	≤20.97	PASS
3DH5	Ant1	2402	-0.31	≤20.97	PASS
		2441	-0.55	≤20.97	PASS
		2480	-0.60	≤20.97	PASS

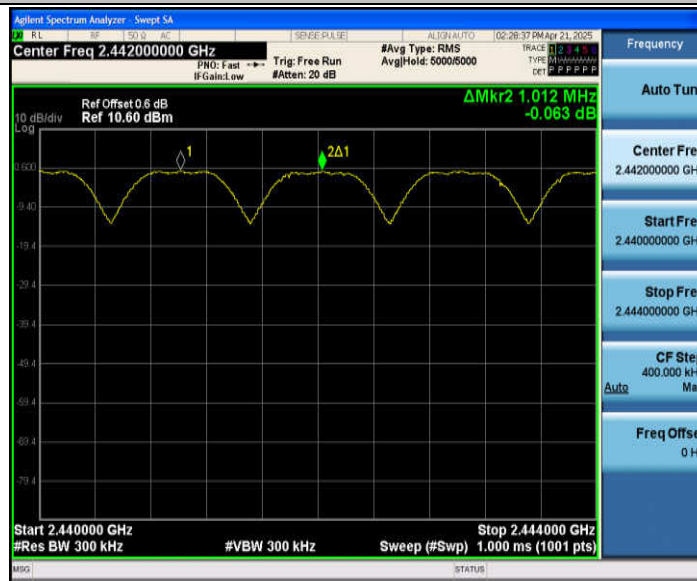
Appendix D: Carrier frequency separation

Test Result

TestMode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.012	≥ 0.638	PASS
2DH5	Ant1	Hop	0.984	≥ 0.852	PASS
3DH5	Ant1	Hop	1	≥ 0.874	PASS

Test Graphs

DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop

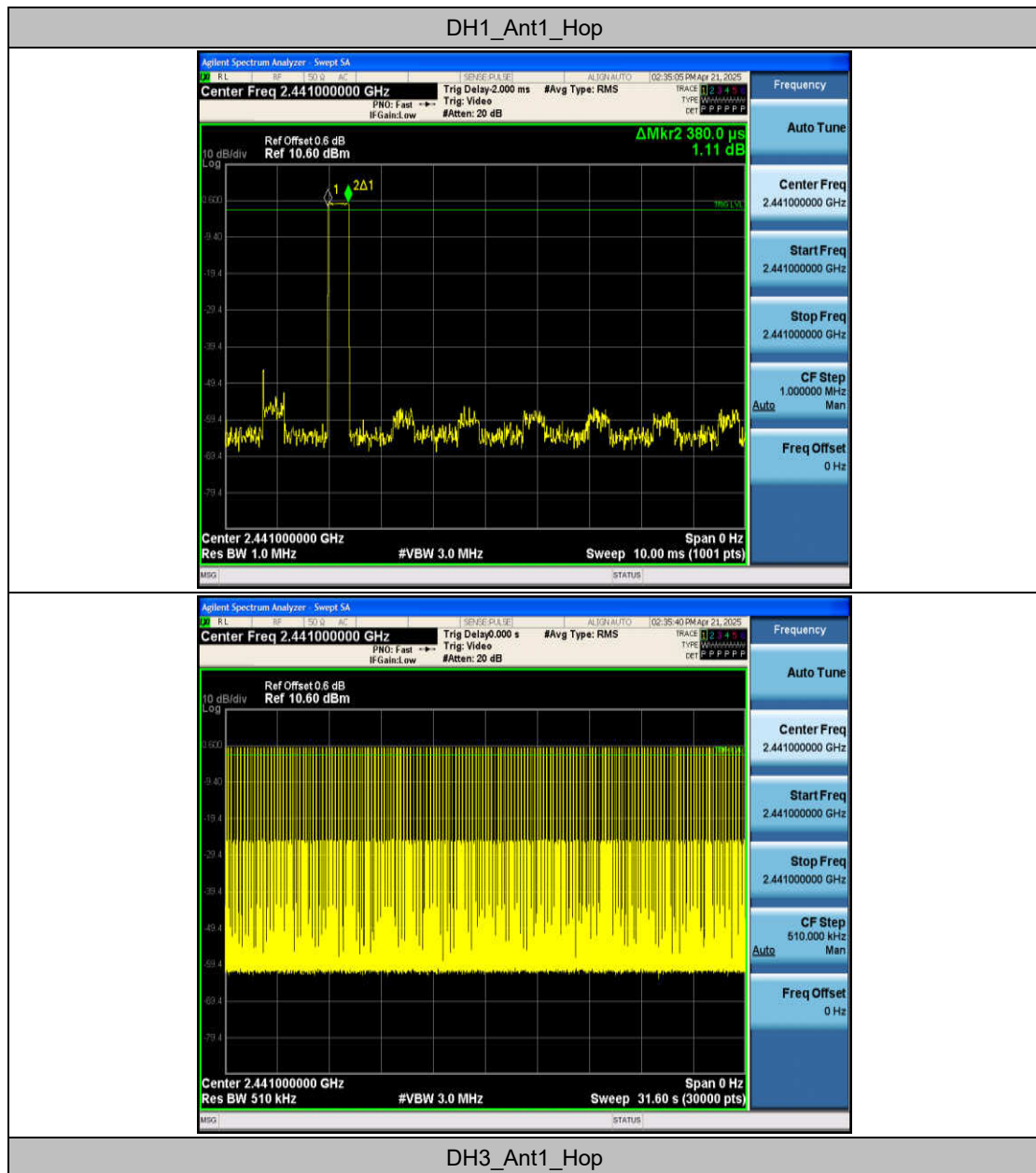


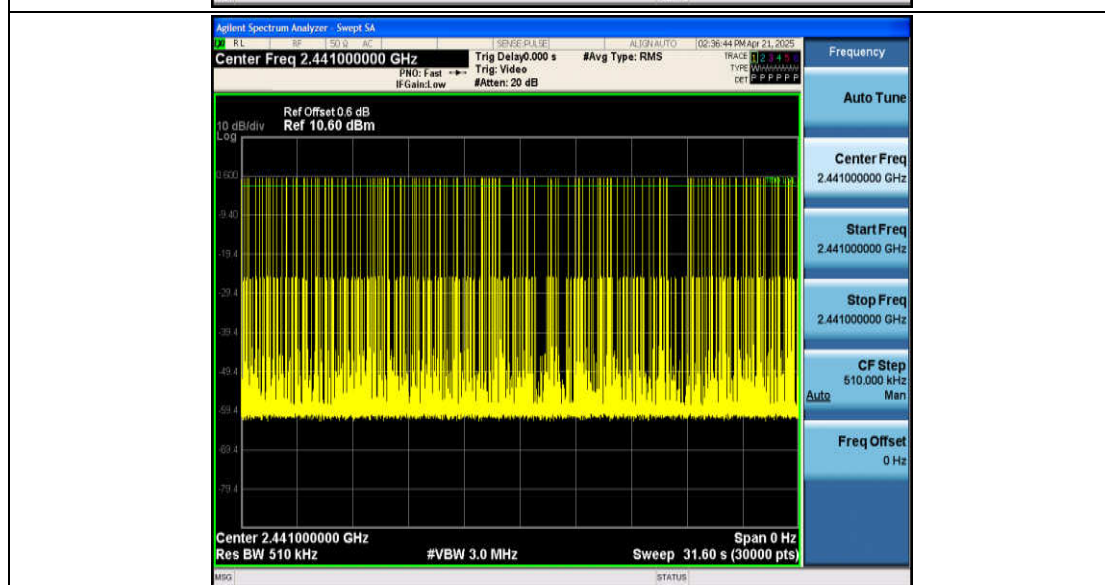
Appendix E: Time of occupancy

Test Result

TestMode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.380	319	0.121	≤0.4	PASS
DH3	Ant1	Hop	1.640	160	0.262	≤0.4	PASS
DH5	Ant1	Hop	2.890	109	0.315	≤0.4	PASS
2DH1	Ant1	Hop	0.400	319	0.128	≤0.4	PASS
2DH3	Ant1	Hop	1.650	166	0.274	≤0.4	PASS
2DH5	Ant1	Hop	2.900	115	0.334	≤0.4	PASS
3DH1	Ant1	Hop	0.400	317	0.127	≤0.4	PASS
3DH3	Ant1	Hop	1.650	156	0.257	≤0.4	PASS
3DH5	Ant1	Hop	2.900	101	0.293	≤0.4	PASS

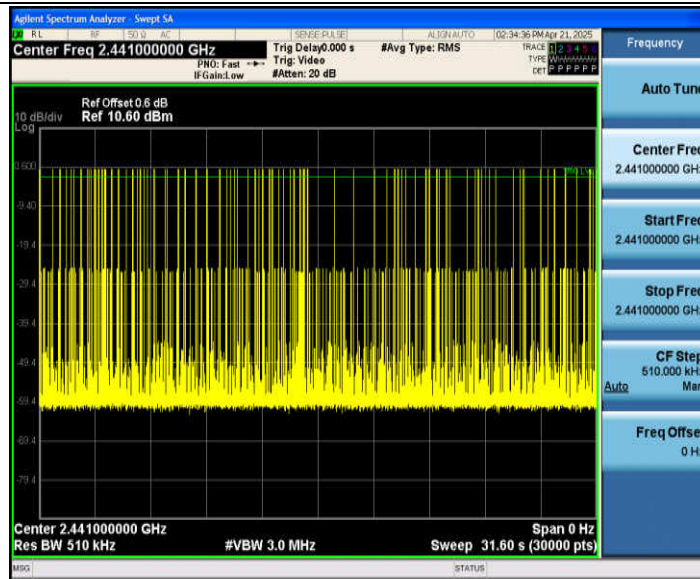
Test Graphs



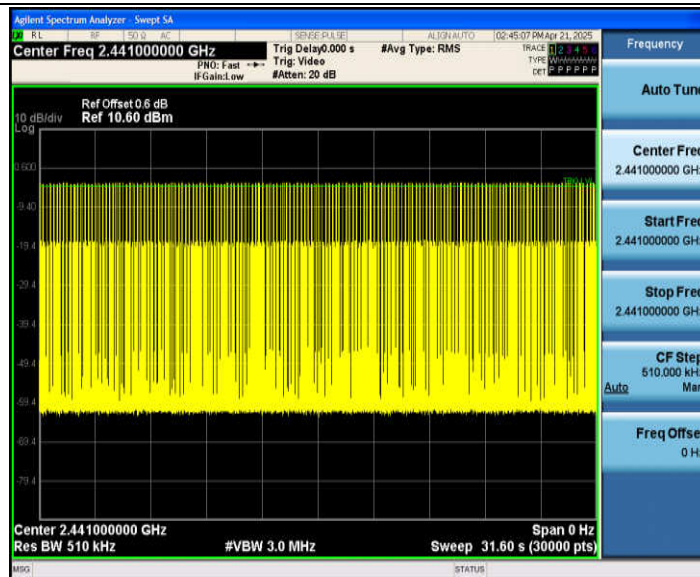


DH5_Ant1_Hop

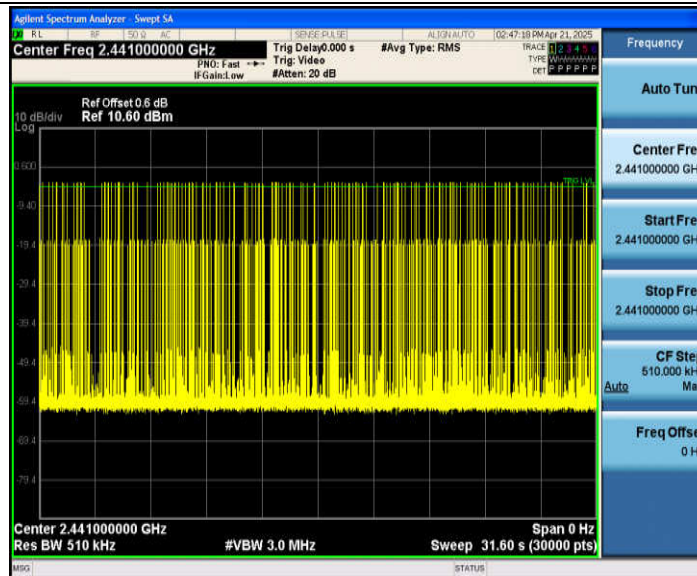




2DH1_Ant1_Hop

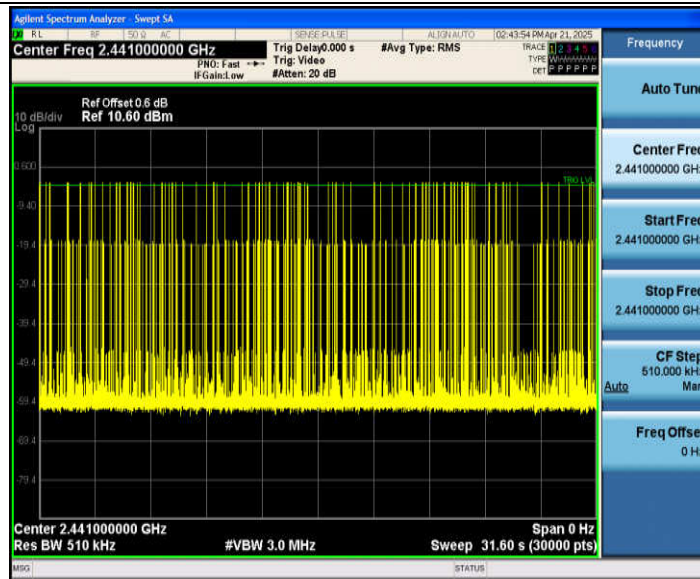


2DH3_Ant1_Hop

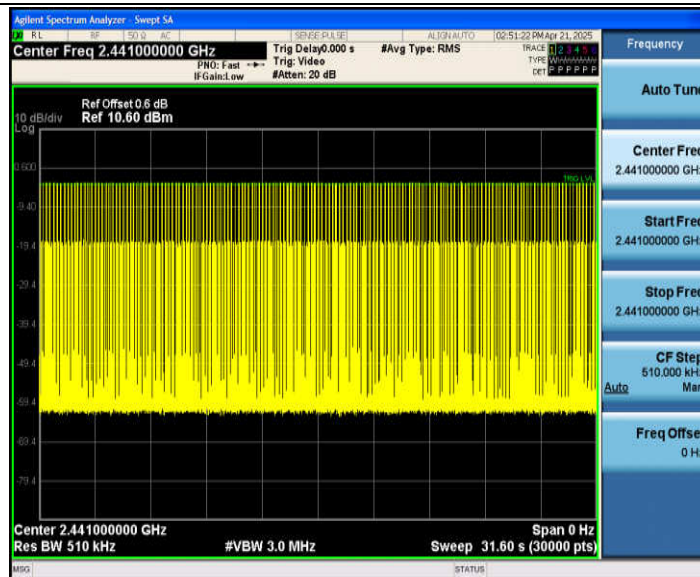


2DH5_Ant1_Hop

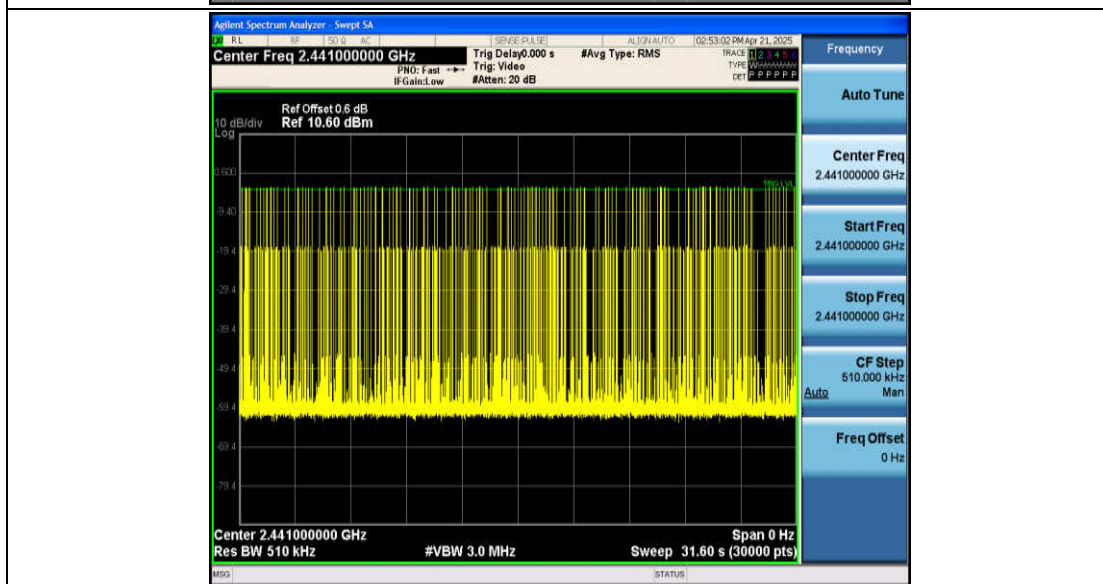




3DH1_Ant1_Hop

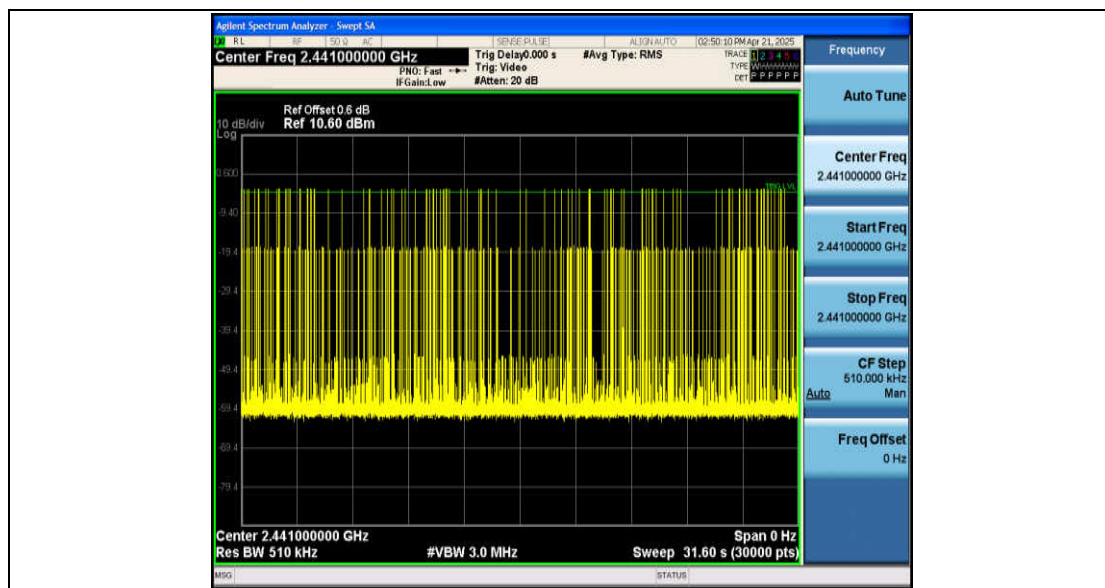


3DH3_Ant1_Hop



3DH5_Ant1_Hop





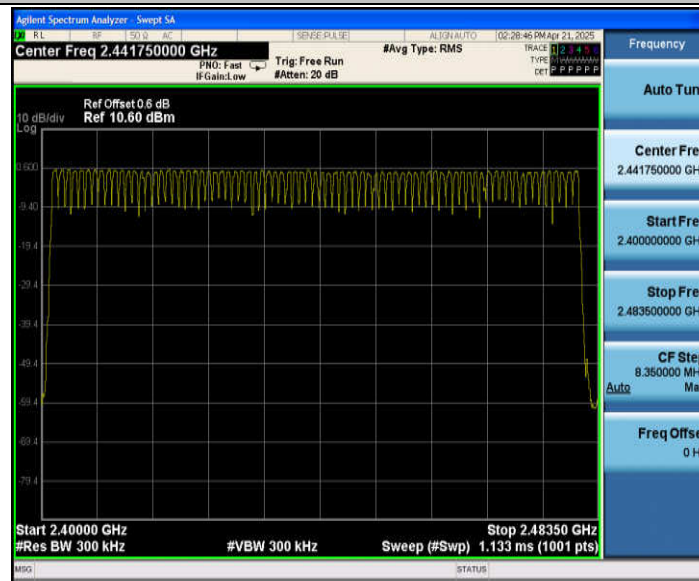
Appendix F: Number of hopping channels

Test Result

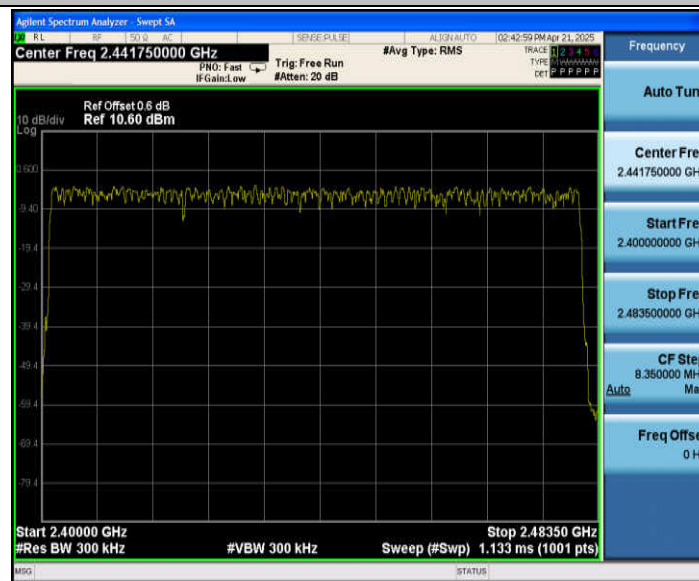
TestMode	Antenna	Freq(MHz)	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS
3DH5	Ant1	Hop	79	≥15	PASS

Test Graphs

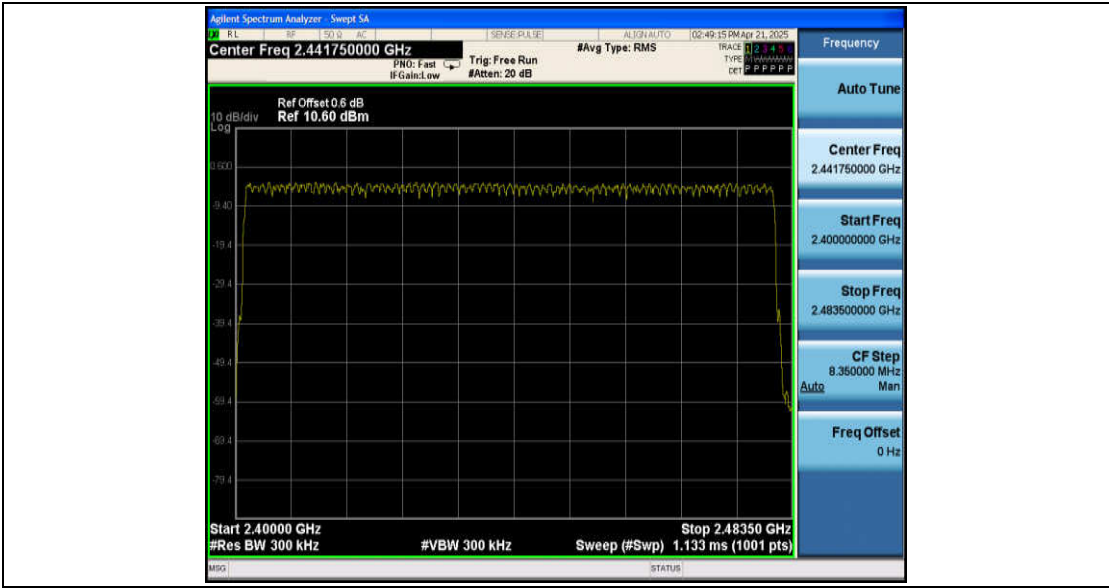
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop



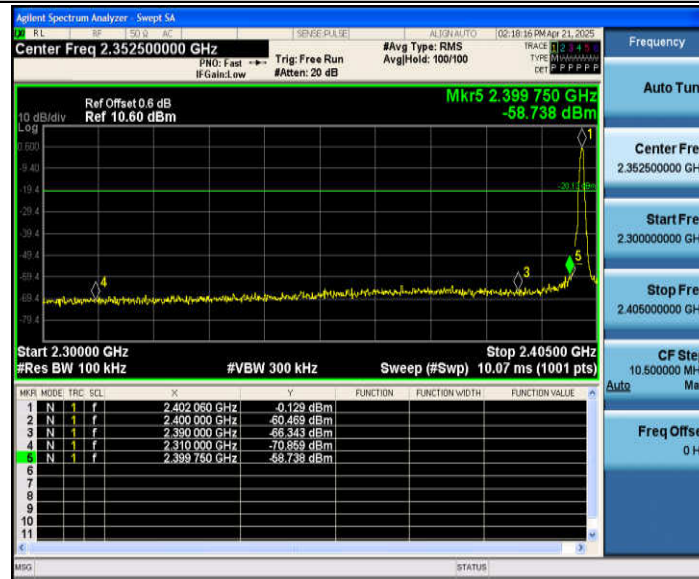
Appendix G: Band edge measurements

Test Result

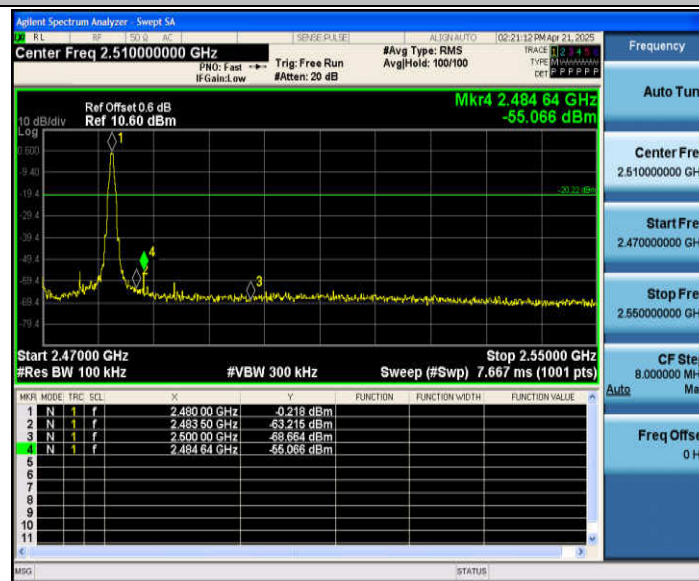
TestMode	Antenna	ChName	Freq(MHz)	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-0.13	-58.74	≤-20.13	PASS
		High	2480	-0.22	-55.07	≤-20.22	PASS
		Low	Hop_2402	-0.92	-60.39	≤-20.92	PASS
		High	Hop_2480	-0.65	-64.41	≤-20.65	PASS
2DH5	Ant1	Low	2402	-4.10	-55.34	≤-24.1	PASS
		High	2480	-3.62	-63.09	≤-23.62	PASS
		Low	Hop_2402	-3.26	-61.94	≤-23.26	PASS
		High	Hop_2480	-3.76	-64.6	≤-23.76	PASS
3DH5	Ant1	Low	2402	-6.01	-60.64	≤-26.01	PASS
		High	2480	-3.86	-62.45	≤-23.86	PASS
		Low	Hop_2402	-6.37	-57.55	≤-26.37	PASS
		High	Hop_2480	-4.86	-63.88	≤-24.86	PASS

Test Graphs

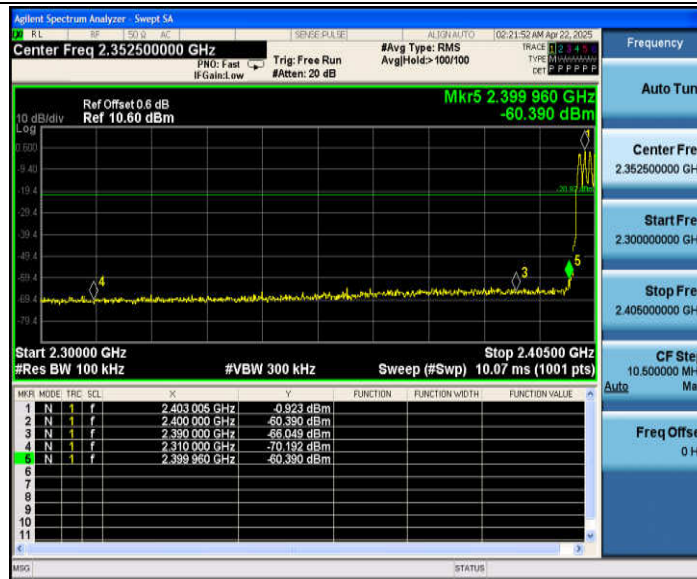
DH5_Ant1_Low_2402



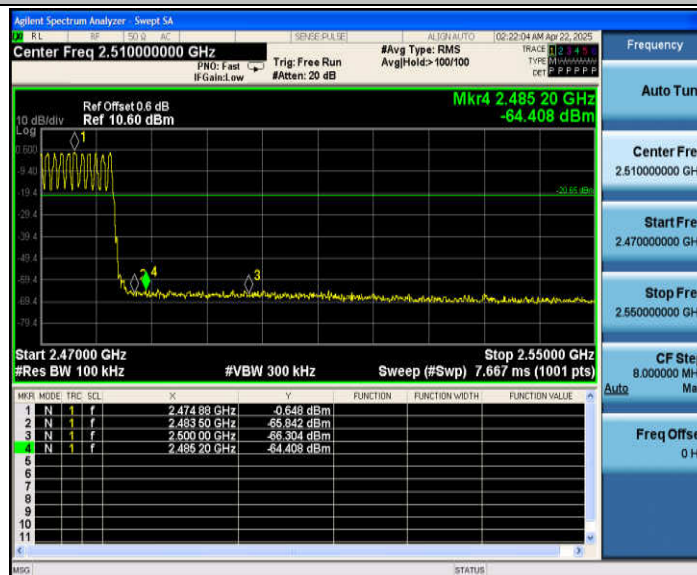
DH5_Ant1_High_2480



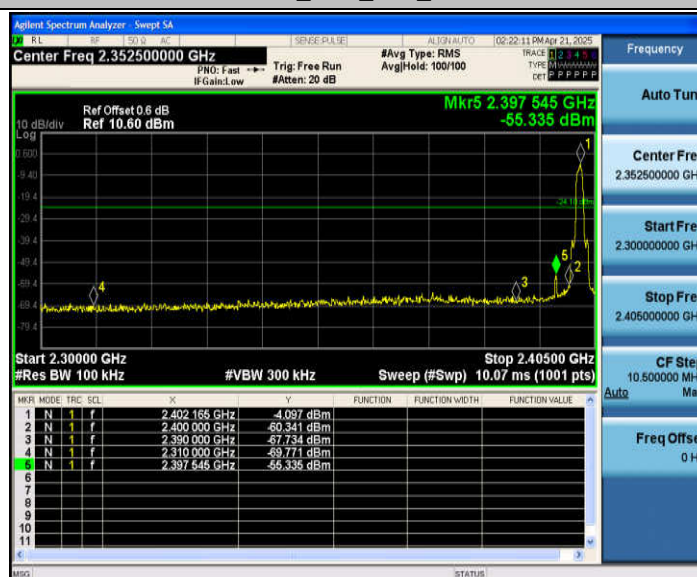
DH5_Ant1_Low_Hop_2402



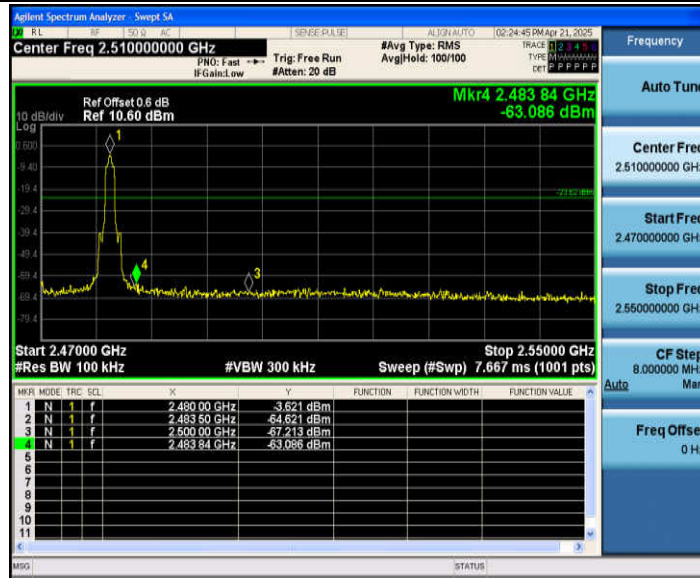
DH5_Ant1_High_Hop_2480



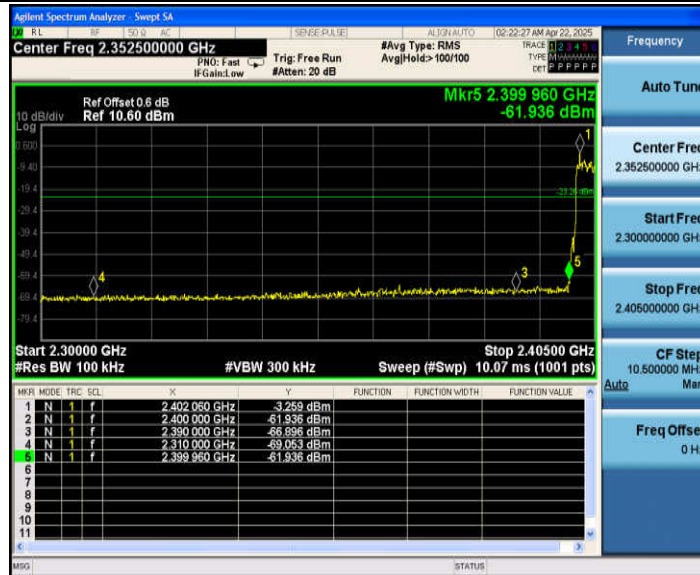
2DH5_Ant1_Low_2402



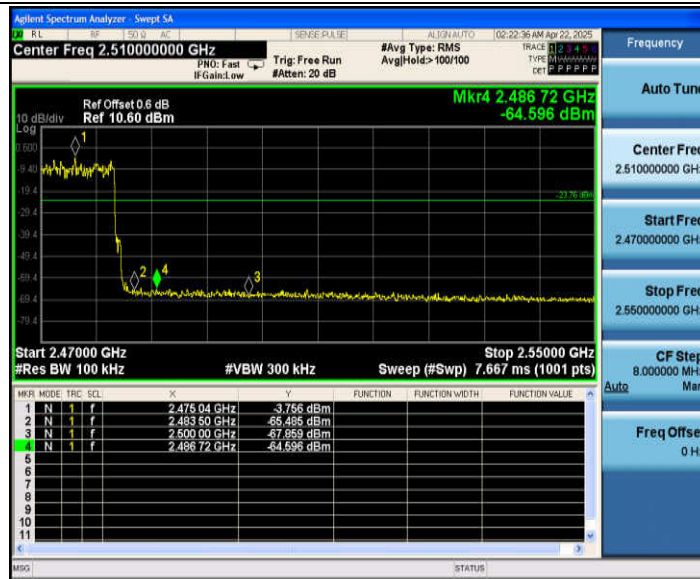
2DH5_Ant1_High_2480



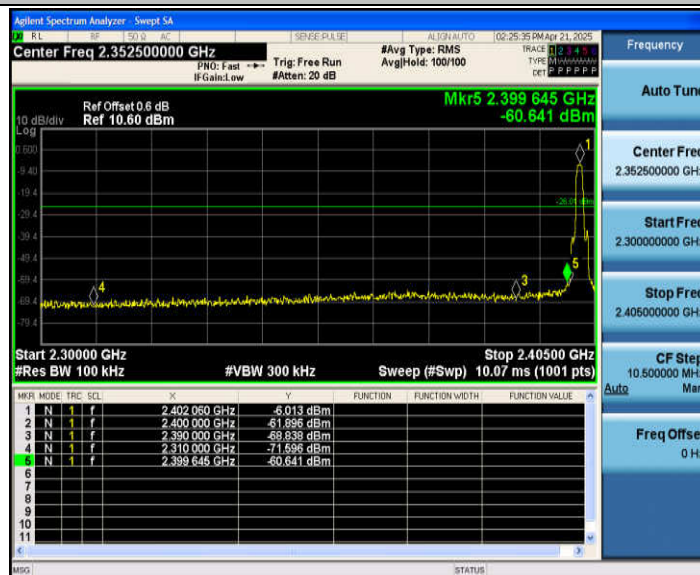
2DH5_Ant1_Low_Hop_2402



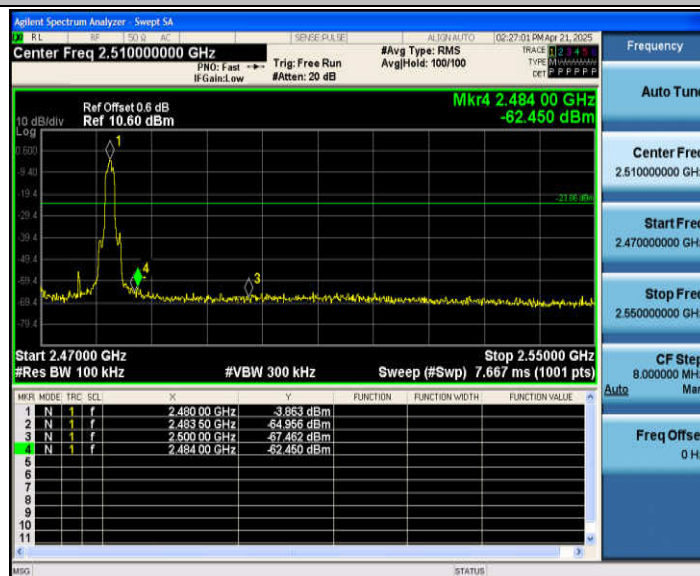
2DH5_Ant1_High_Hop_2480



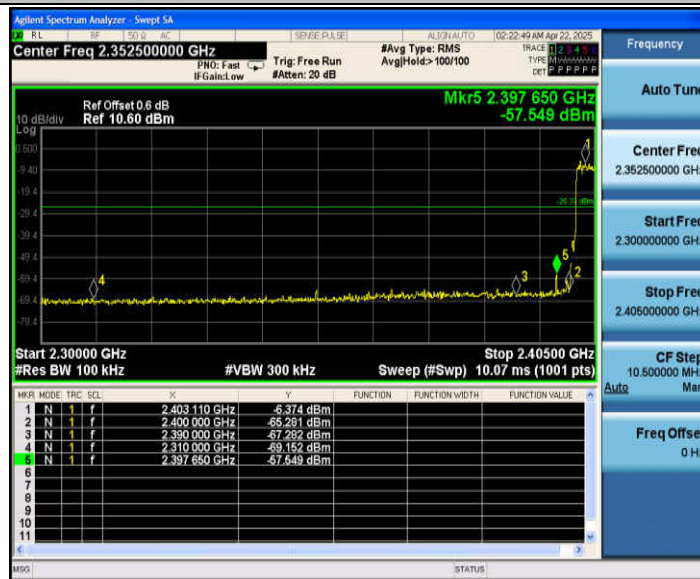
3DH5_Ant1_Low_2402



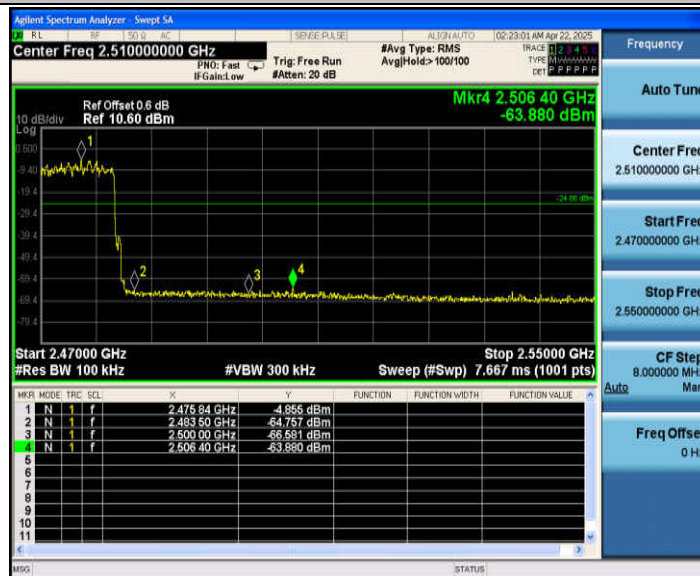
3DH5_Ant1_High_2480



3DH5_Ant1_Low_Hop_2402



3DH5_Ant1_High_Hop_2480



Appendix H: Conducted Spurious Emission

Test Result

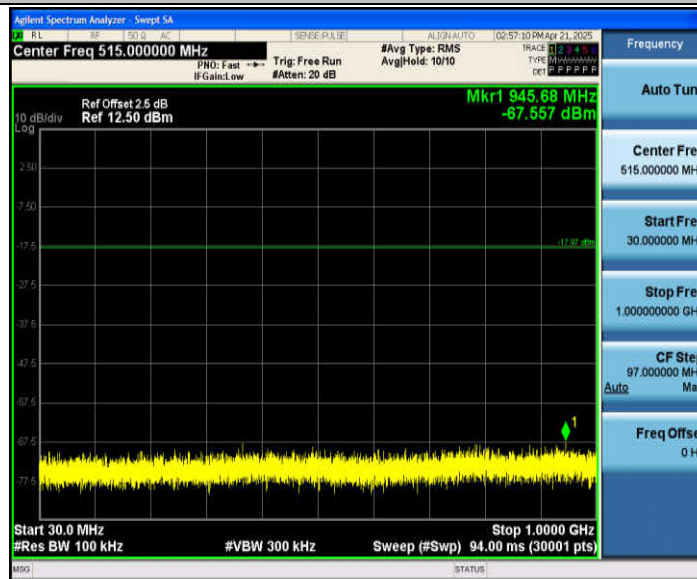
TestMode	Antenna	Freq(MHz)	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	2.03	2.03	---	PASS
			30~1000	2.03	-67.56	≤-17.97	PASS
			1000~26500	2.03	-44.22	≤-17.97	PASS
		2441	Reference	0.82	0.82	---	PASS
			30~1000	0.82	-67.43	≤-19.18	PASS
			1000~26500	0.82	-45.24	≤-19.18	PASS
		2480	Reference	0.50	0.50	---	PASS
			30~1000	0.50	-68.02	≤-19.5	PASS
			1000~26500	0.50	-44.42	≤-19.5	PASS
2DH5	Ant1	2402	Reference	-3.14	-3.14	---	PASS
			30~1000	-3.14	-67.92	≤-23.14	PASS
			1000~26500	-3.14	-49.05	≤-23.14	PASS
		2441	Reference	-1.87	-1.87	---	PASS
			30~1000	-1.87	-68.5	≤-21.87	PASS
			1000~26500	-1.87	-47.24	≤-21.87	PASS
		2480	Reference	-4.29	-4.29	---	PASS
			30~1000	-4.29	-67.12	≤-24.29	PASS
			1000~26500	-4.29	-50.81	≤-24.29	PASS
3DH5	Ant1	2402	Reference	-3.66	-3.66	---	PASS
			30~1000	-3.66	-67.89	≤-23.66	PASS
			1000~26500	-3.66	-50.22	≤-23.66	PASS
		2441	Reference	-4.44	-4.44	---	PASS
			30~1000	-4.44	-67.62	≤-24.44	PASS
			1000~26500	-4.44	-49.55	≤-24.44	PASS
		2480	Reference	-4.47	-4.47	---	PASS
			30~1000	-4.47	-67.08	≤-24.47	PASS
			1000~26500	-4.47	-50.07	≤-24.47	PASS

Test Graphs

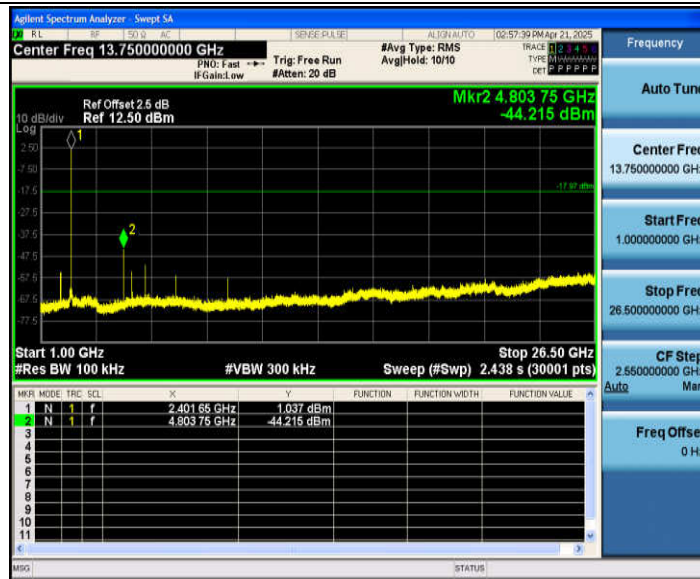
DH5_Ant1_2402_0~Reference



DH5_Ant1_2402_30~1000



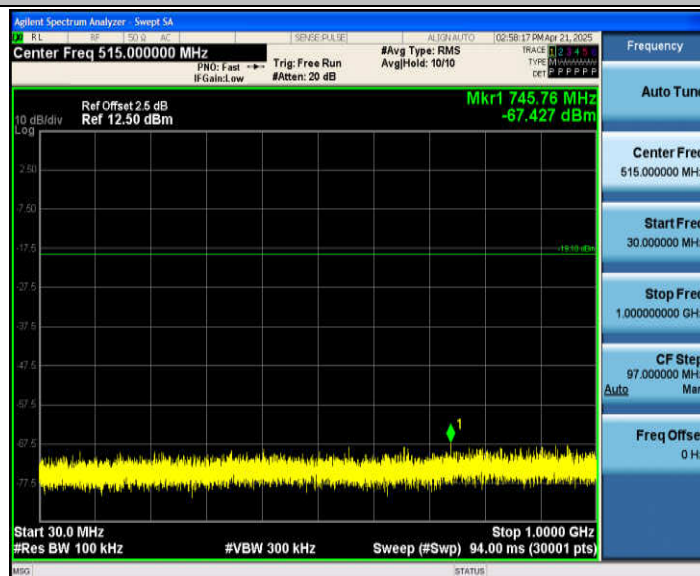
DH5_Ant1_2402_1000~26500



DH5_Ant1_2441_0~Reference



DH5_Ant1_2441_30~1000



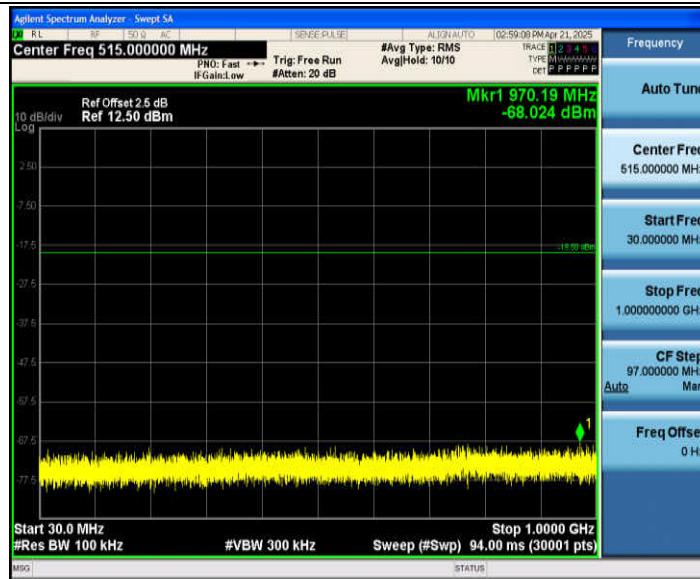
DH5_Ant1_2441_1000~26500



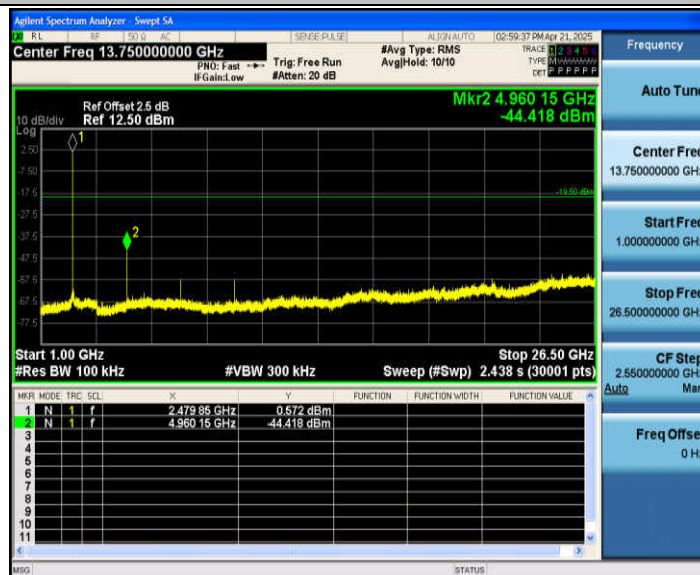
DH5_Ant1_2480_0~Reference



DH5_Ant1_2480_30~1000



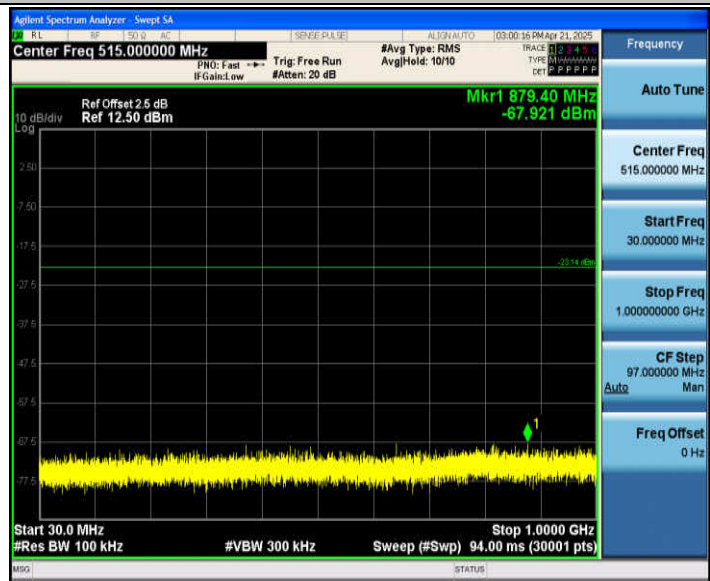
DH5_Ant1_2480_1000~26500



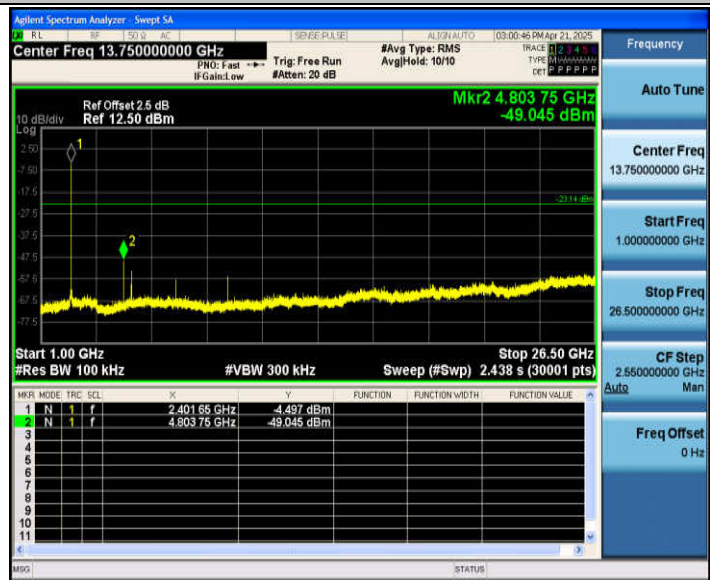
2DH5_Ant1_2402_0~Reference



2DH5_Ant1_2402_30~1000



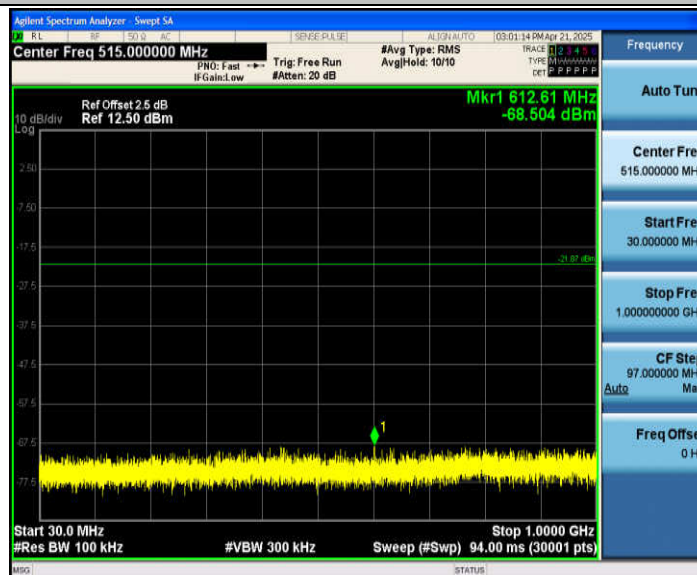
2DH5_Ant1_2402_1000~26500



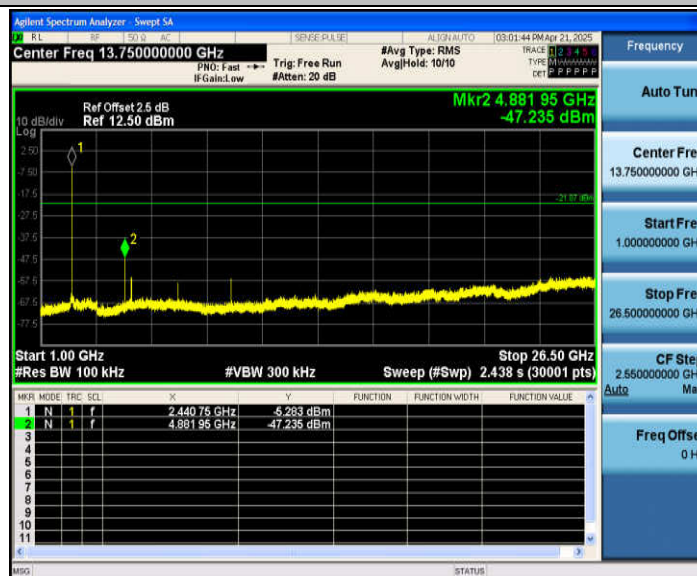
2DH5_Ant1_2441_0~Reference



2DH5_Ant1_2441_30~1000



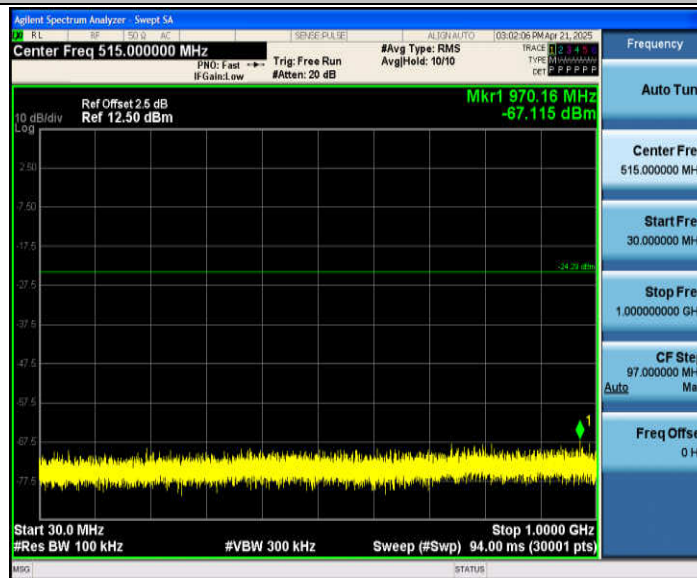
2DH5_Ant1_2441_1000~26500



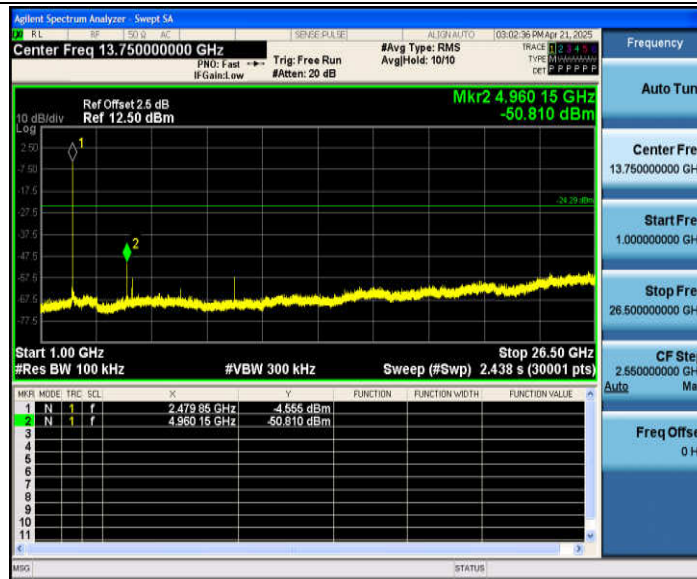
2DH5_Ant1_2480_0~Reference



2DH5_Ant1_2480_30~1000



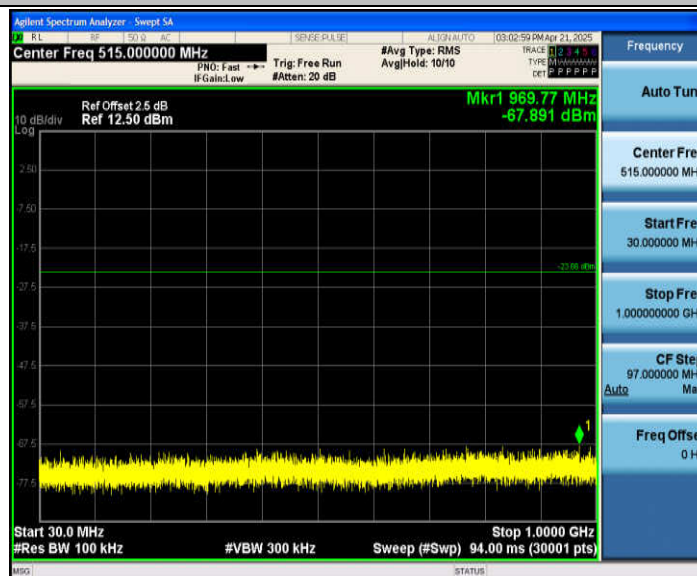
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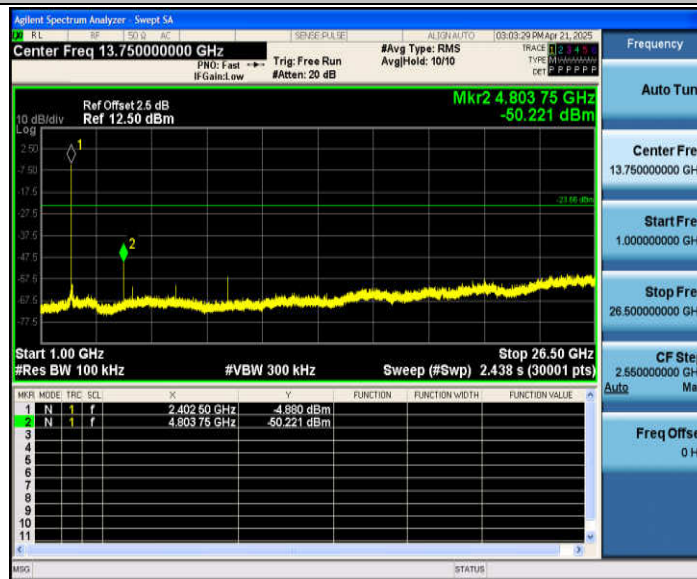
3DH5_Ant1_2402_0~Reference



3DH5_Ant1_2402_30~1000



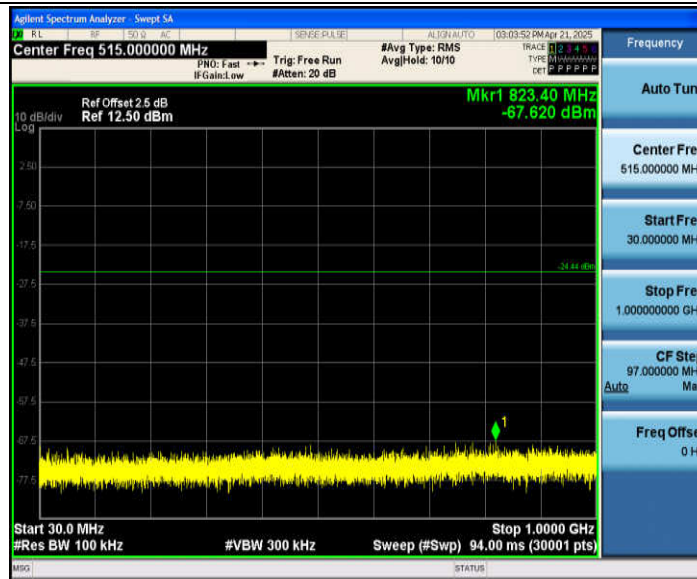
3DH5_Ant1_2402_1000~26500



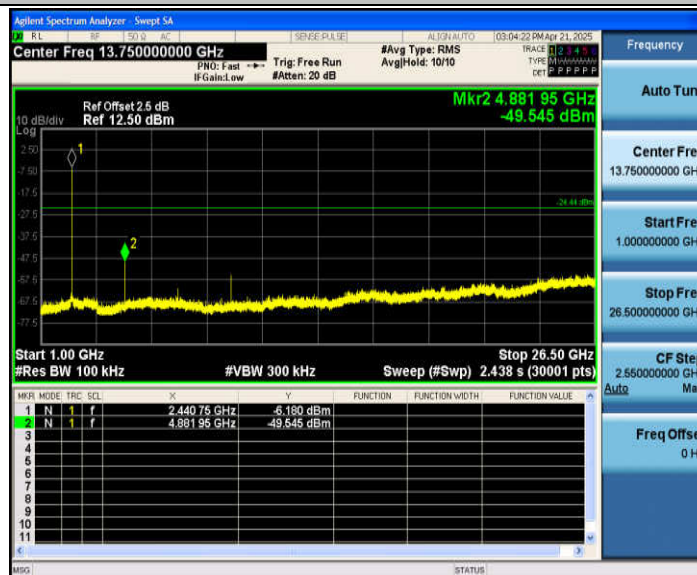
3DH5_Ant1_2441_0~Reference



3DH5_Ant1_2441_30~1000



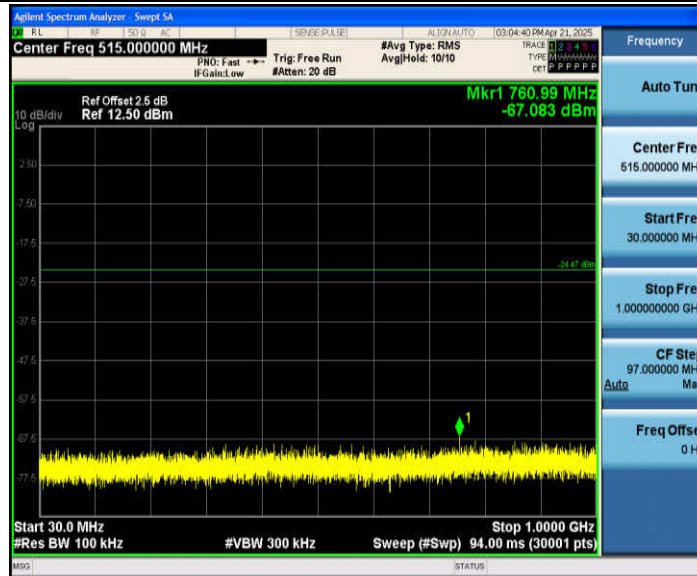
3DH5_Ant1_2441_1000~26500



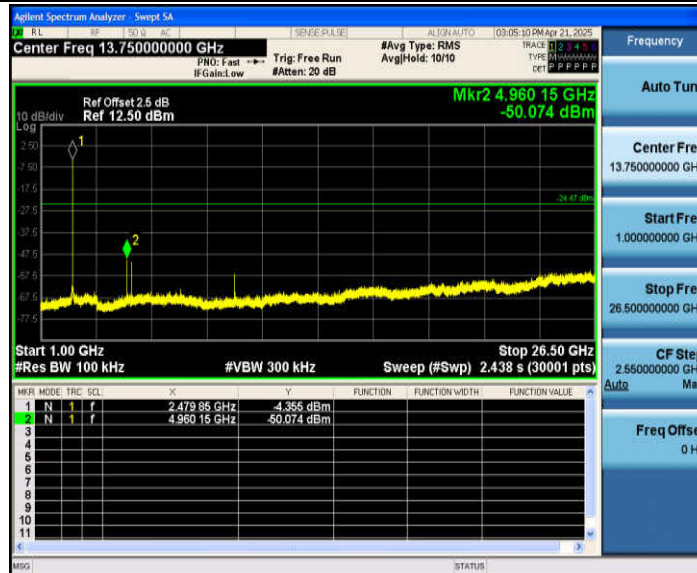
3DH5_Ant1_2480_0~Reference



3DH5_Ant1_2480_30~1000



3DH5_Ant1_2480_1000~26500



Appendix I: Duty Cycle

Test Result

TestMode	Antenna	Freq(MHz)	ON Time [ms]	Period [ms]	DC [%]	xFactor	Limit	Verdict
DH5	Ant1	2402	2.91	3.75	77.60	1.10	---	---
		2441	2.91	3.75	77.60	1.10	---	---
		2480	2.92	3.75	77.87	1.09	---	---
2DH5	Ant1	2402	2.92	3.75	77.87	1.09	---	---
		2441	2.92	3.75	77.87	1.09	---	---
		2480	2.92	3.75	77.87	1.09	---	---
3DH5	Ant1	2402	2.92	3.75	77.87	1.09	---	---
		2441	2.92	3.75	77.87	1.09	---	---
		2480	2.92	3.75	77.87	1.09	---	---

DH5_Ant1_2402

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.402000000 GHz

Trig Delay: 200.0 μ s

Avg Type: RMS

Ref Offset 0.6 dB

Ref 20.00 dBm

Δ Mkr3 3.750 ms

0.04 dB

Center 2.402000000 GHz

Res BW 8 MHz

#VBW 8.0 MHz

Sweep 10.00 ms (1001 pts)

Span 0 Hz

MNR	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	t	180.0 μ s	-3.88 dBm			
2	Δ 1	1	t	(Δ)	2.910 ms (Δ)	3.31 dB		
3	Δ 1	1	t	(Δ)	3.750 ms (Δ)	0.04 dB		

DH5_Ant1_2441

Agilent Spectrum Analyzer - Swept SA

Center Freq 2.441000000 GHz

Trig Delay: 200.0 μ s

Avg Type: RMS

Ref Offset 0.6 dB

Ref 20.00 dBm

Δ Mkr3 3.750 ms

0.05 dB

Center 2.441000000 GHz

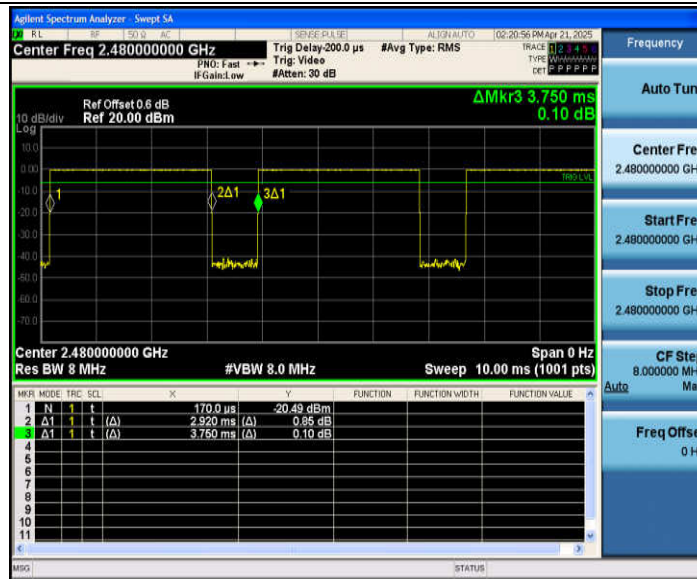
Res BW 8 MHz

#VBW 8.0 MHz

Sweep 10.00 ms (1001 pts)

Span 0 Hz

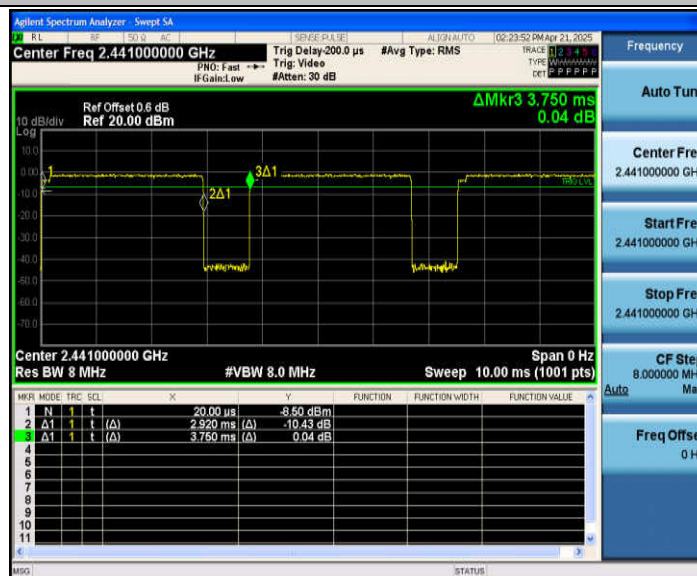
MNR	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	t	170.0 μ s	-8.42 dBm			
2	Δ 1	1	t	(Δ)	2.910 ms (Δ)	8.22 dB		
3	Δ 1	1	t	(Δ)	3.750 ms (Δ)	0.05 dB		

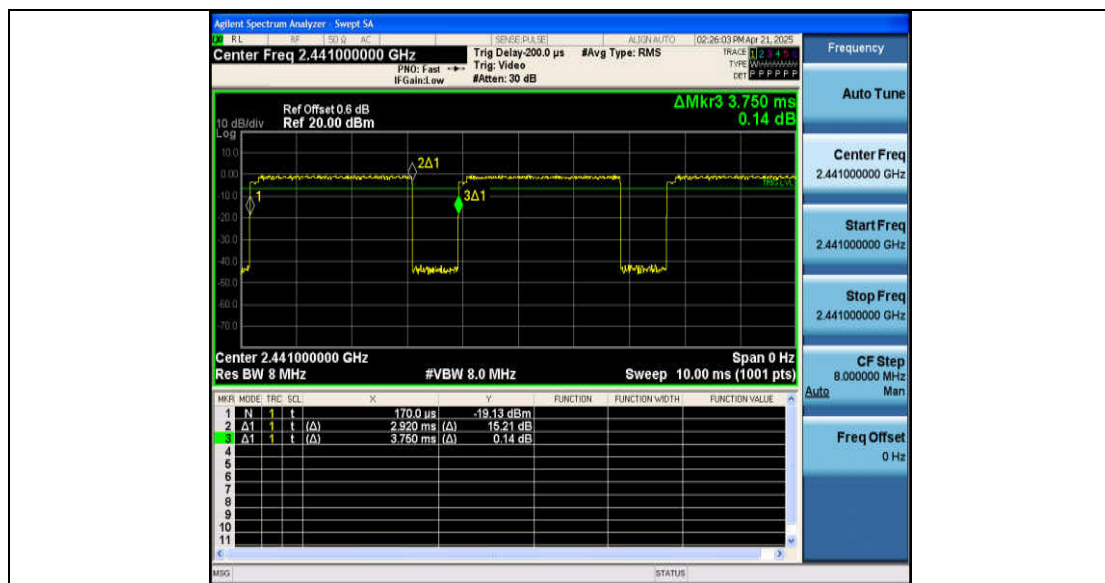


2DH5_Ant1_2402



2DH5_Ant1_2441





3DH5_Ant1_2480

