FCC Appendix RF Test Data of Module 2

FCC ID	**:**	**2BO56-ZA001**
Company:	**:**	**Shenzhen Xingbiao Hang Technology Co., Ltd.**
EUT	**:**	**Dual WiFi three-in-one closed small system**
Model Number	**:**	**ZA001**
Report No.	**:**	**CTA25041800503**
Reviewed By	**:**	**Eric Wang**

Appendix A: DTS Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.560	2407.000	2416.560	0.5	PASS
		2437	9.560	2431.960	2441.520	0.5	PASS
		2462	9.520	2457.000	2466.520	0.5	PASS
11G	Ant1	2412	15.720	2404.440	2420.160	0.5	PASS
		2437	15.720	2429.440	2445.160	0.5	PASS
		2462	16.040	2454.120	2470.160	0.5	PASS
11N20SISO	Ant1	2412	16.080	2404.440	2420.520	0.5	PASS
		2437	15.440	2429.440	2444.880	0.5	PASS
		2462	16.680	2453.960	2470.640	0.5	PASS
11N40SISO	Ant1	2422	35.600	2404.480	2440.080	0.5	PASS
		2437	35.120	2419.480	2454.600	0.5	PASS
		2452	35.280	2434.320	2469.600	0.5	PASS

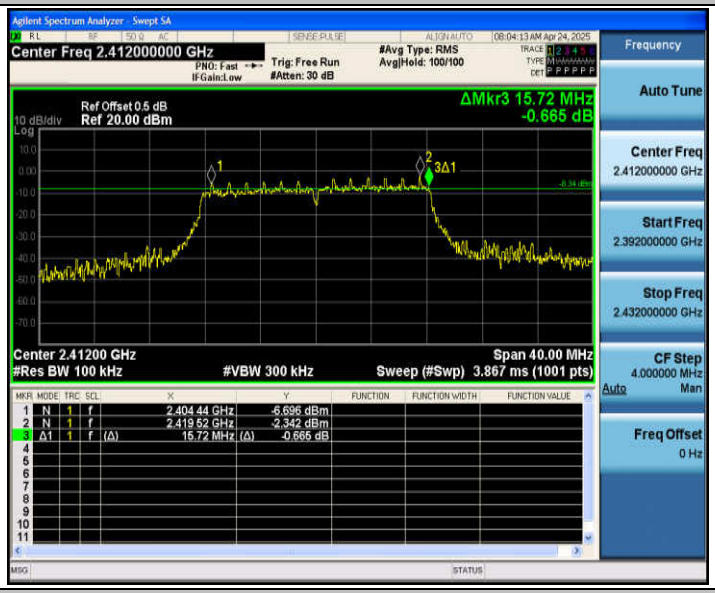
Test Graphs

11B_Ant1_2412

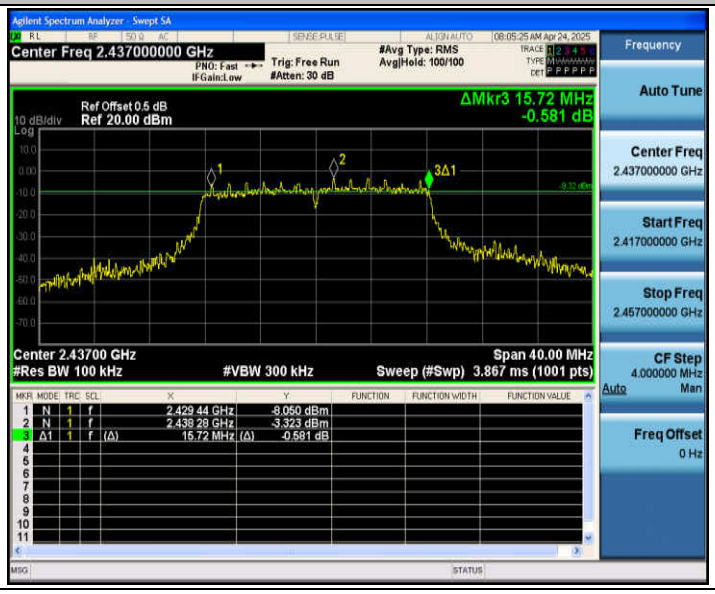
11B_Ant1_2437

11B_Ant1_2462

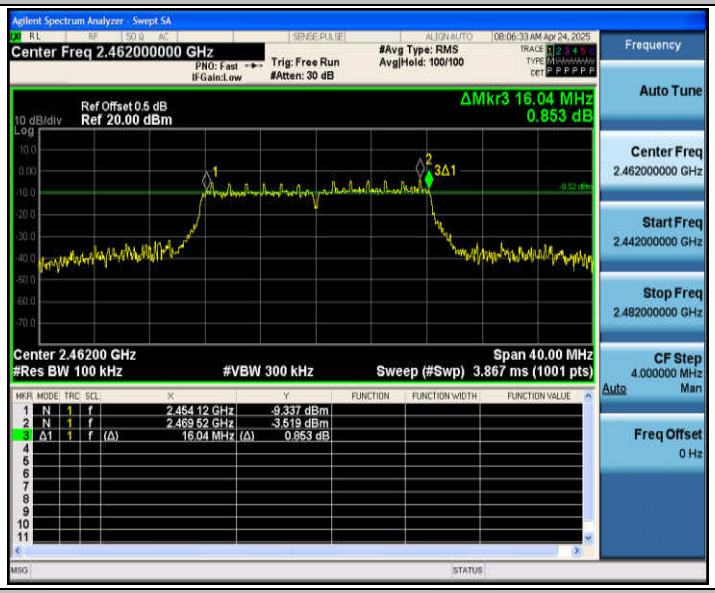
11G_Ant1_2412



11G_Ant1_2437

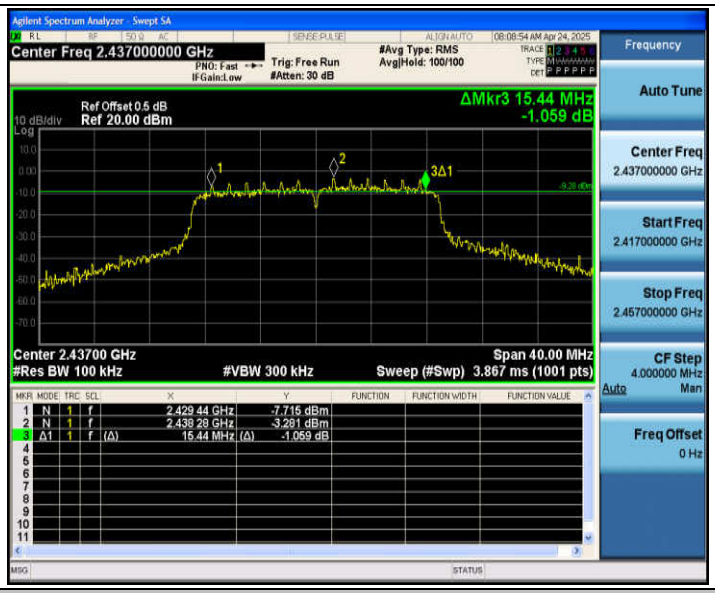


11G_Ant1_2462

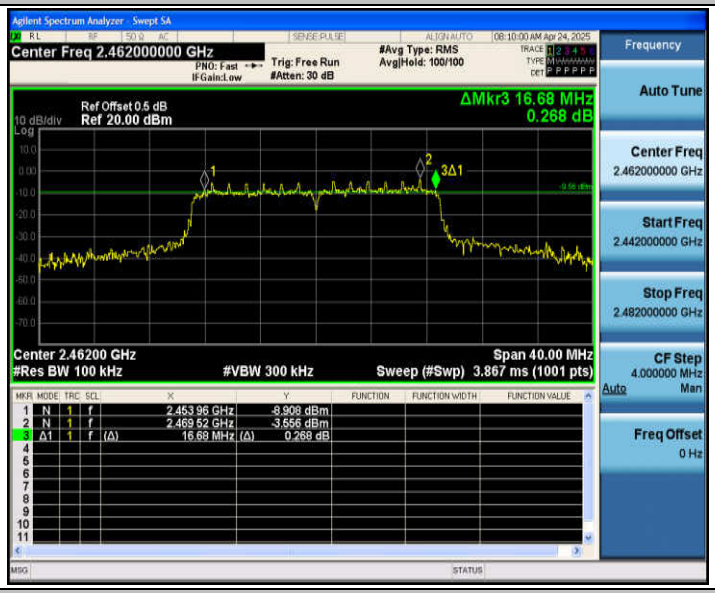


11N20SISO_Ant1_2412

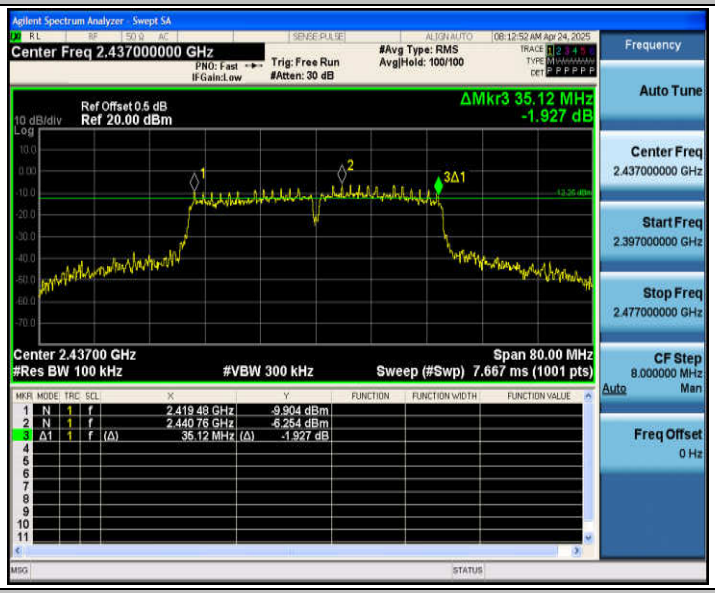
11N20SISO_Ant1_2437

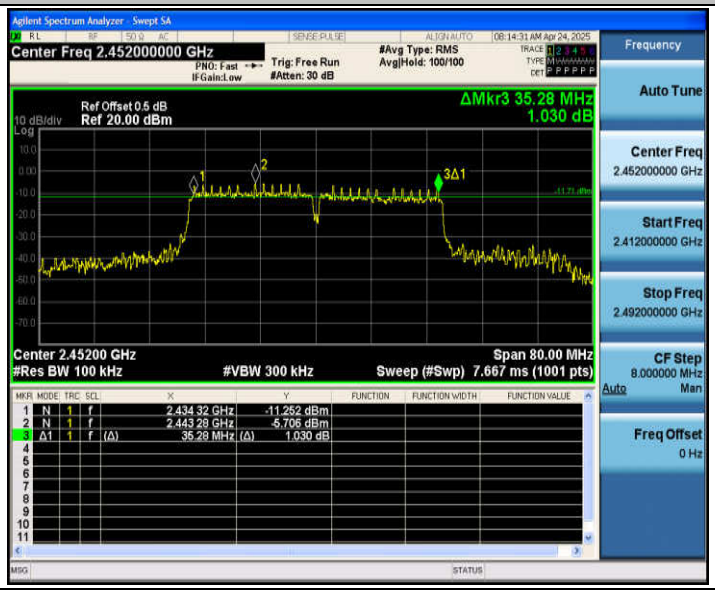


11N20SISO_Ant1_2462



11N40SISO_Ant1_2422

11N40SISO_Ant1_2437


11N40SISO_Ant1_2452


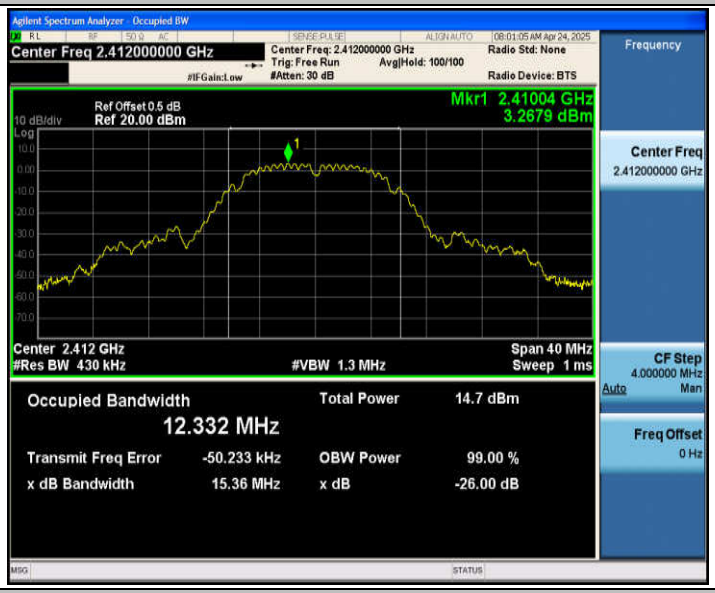
Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	12.332	2405.7838	2418.1158	---	---
		2437	11.582	2430.9986	2442.5806	---	---
		2462	12.697	2455.4691	2468.1661	---	---
11G	Ant1	2412	16.857	2403.7547	2420.6117	---	---
		2437	16.645	2428.8286	2445.4736	---	---
		2462	16.891	2453.6294	2470.5204	---	---
11N20SISO	Ant1	2412	17.892	2403.2451	2421.1371	---	---
		2437	17.602	2428.3411	2445.9431	---	---
		2462	18.105	2453.0955	2471.2005	---	---
11N40SISO	Ant1	2422	36.468	2404.0603	2440.5283	---	---
		2437	35.976	2419.1386	2455.1146	---	---
		2452	36.348	2433.9094	2470.2574	---	---

Test Graphs

11B_Ant1_2412



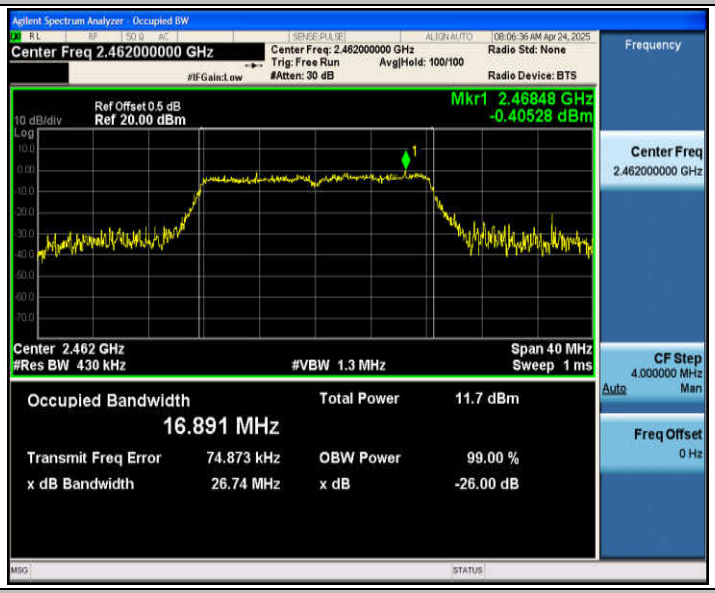
11B_Ant1_2437

11B_Ant1_2462

11G_Ant1_2412

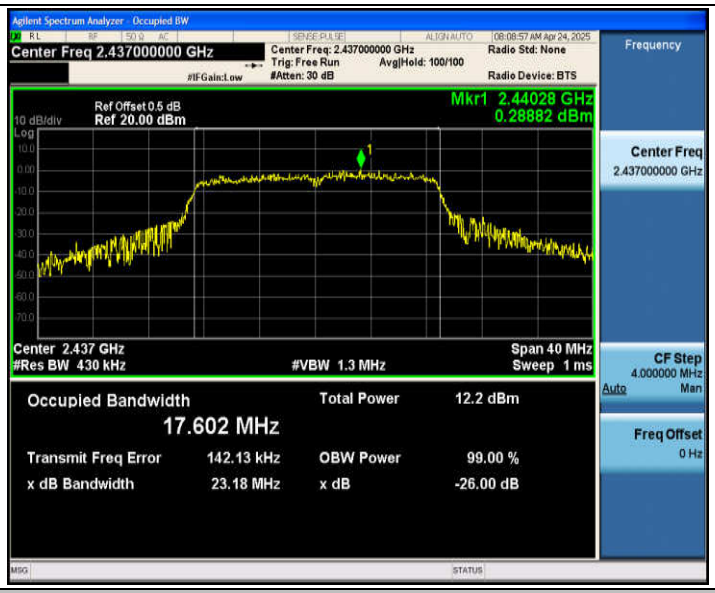
11G_Ant1_2437

11G_Ant1_2462

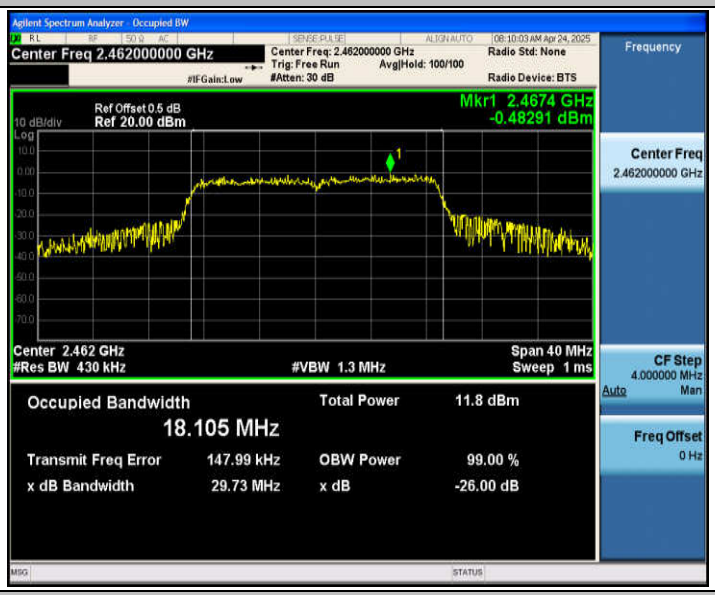


11N20SISO_Ant1_2412

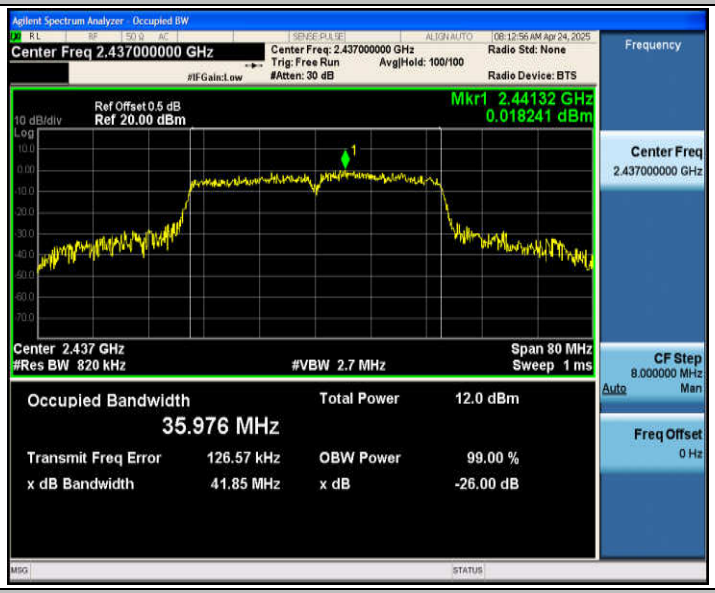
11N20SISO_Ant1_2437

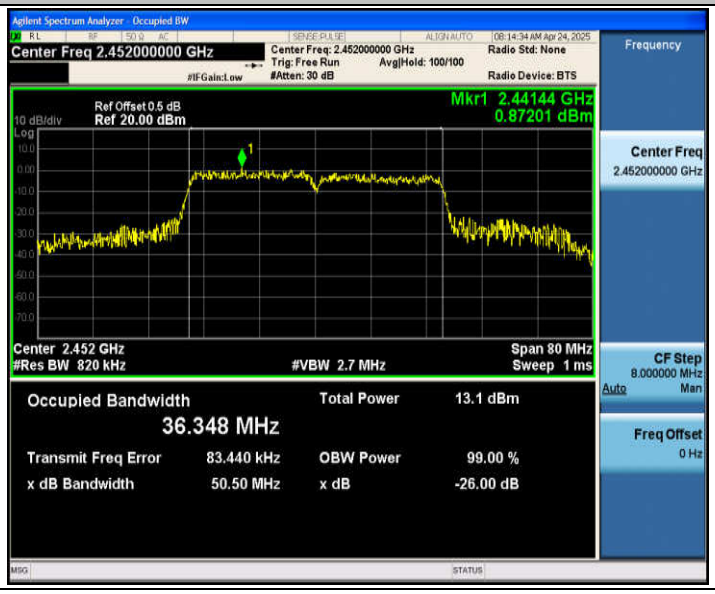


11N20SISO_Ant1_2462



11N40SISO_Ant1_2422

11N40SISO_Ant1_2437


11N40SISO_Ant1_2452


Appendix C: Maximum conducted output power

Test Result Peak

Test Mode	Antenna	Frequency[MHz]	Peak power [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	14.57	≤30.00	PASS
		2437	13.50	≤30.00	PASS
		2462	13.68	≤30.00	PASS
11G	Ant1	2412	13.39	≤30.00	PASS
		2437	12.81	≤30.00	PASS
		2462	12.41	≤30.00	PASS
11N20SISO	Ant1	2412	13.31	≤30.00	PASS
		2437	12.71	≤30.00	PASS
		2462	12.34	≤30.00	PASS
11N40SISO	Ant1	2422	12.76	≤30.00	PASS
		2437	12.19	≤30.00	PASS
		2452	13.19	≤30.00	PASS

Appendix D: Maximum power spectral density

Test Result

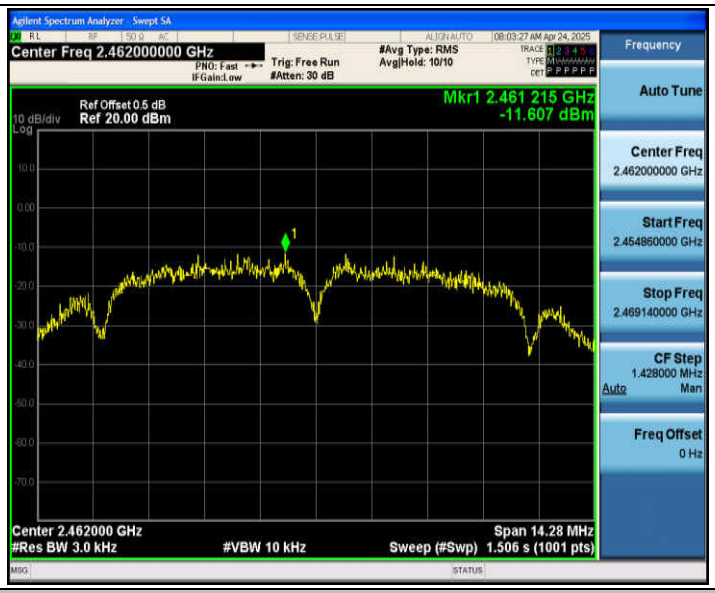
TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-11.20	≤8.00	PASS
		2437	-12.06	≤8.00	PASS
		2462	-11.61	≤8.00	PASS
11G	Ant1	2412	-18.49	≤8.00	PASS
		2437	-18.67	≤8.00	PASS
		2462	-19.99	≤8.00	PASS
11N20SISO	Ant1	2412	-18.71	≤8.00	PASS
		2437	-19.62	≤8.00	PASS
		2462	-20.16	≤8.00	PASS
11N40SISO	Ant1	2422	-21.61	≤8.00	PASS
		2437	-21.72	≤8.00	PASS
		2452	-21.68	≤8.00	PASS

Test Graphs

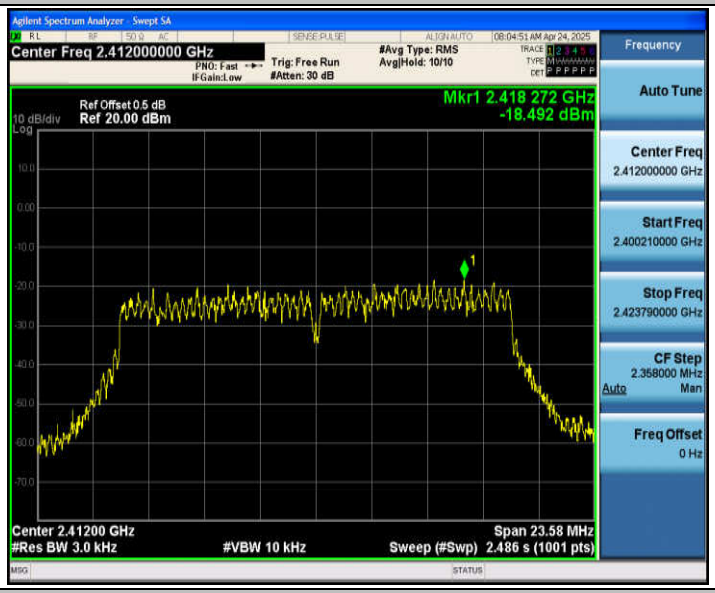
11B_Ant1_2412

11B_Ant1_2437

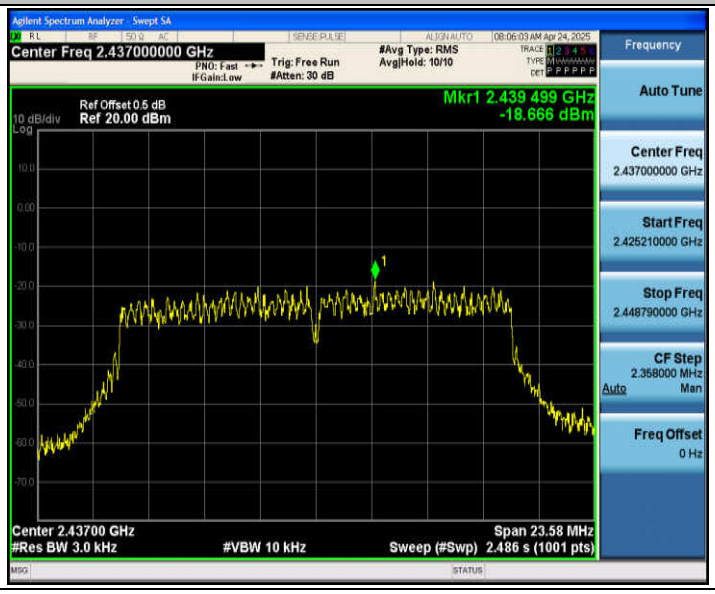
11B_Ant1_2462



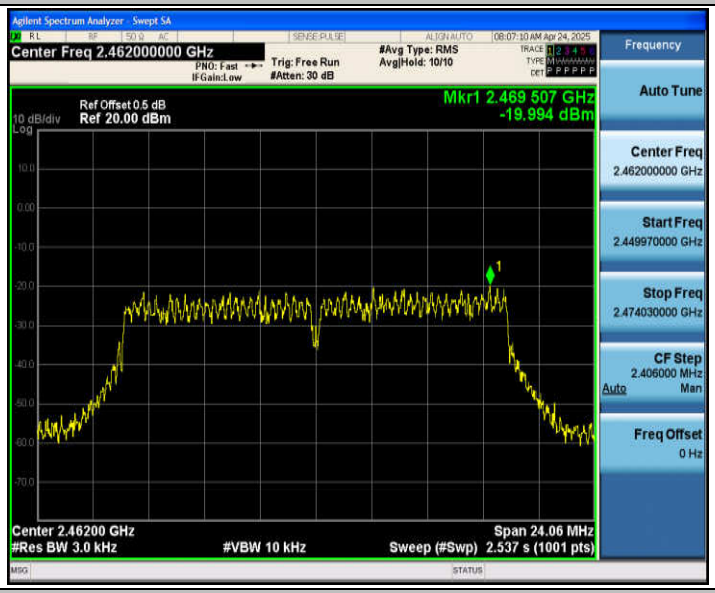
11G_Ant1_2412



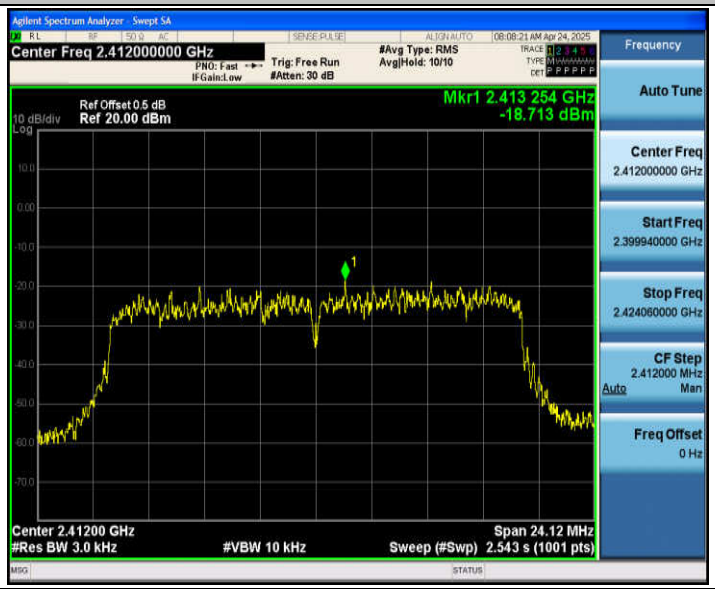
11G_Ant1_2437



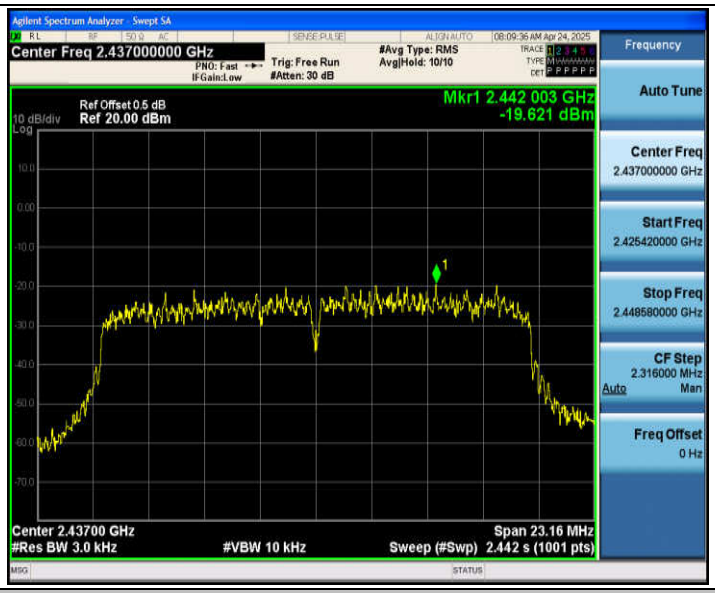
11G_Ant1_2462



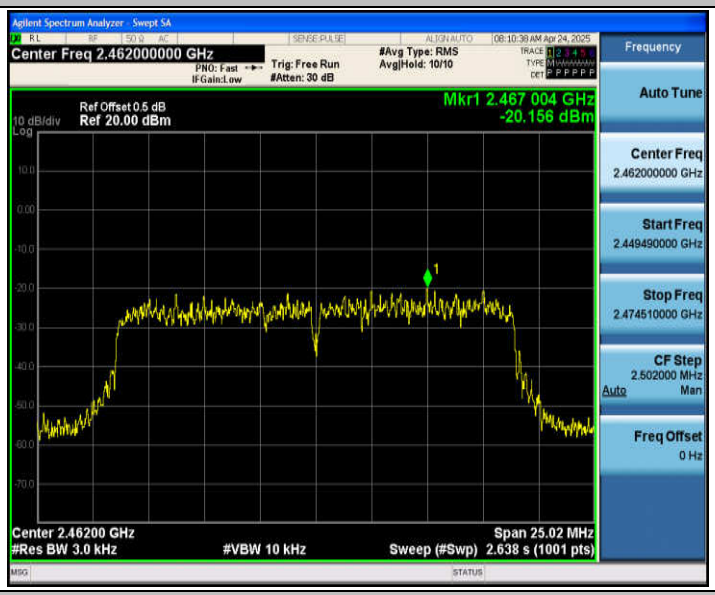
11N20SISO_Ant1_2412



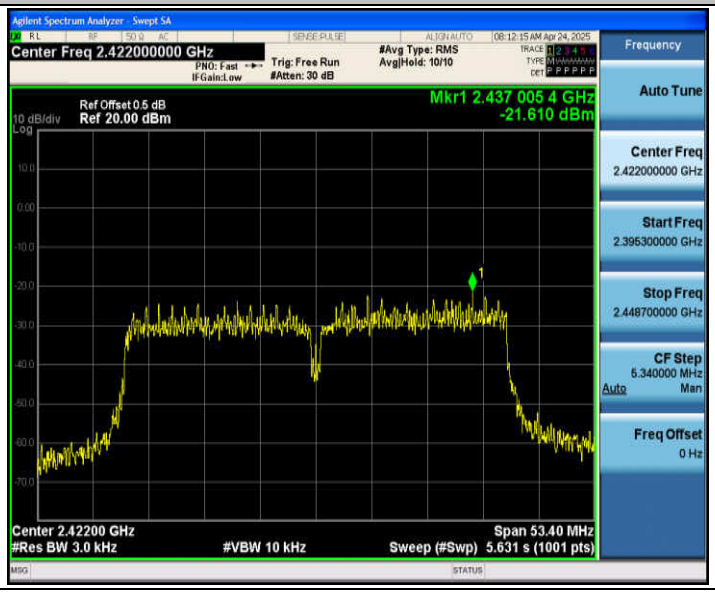
11N20SISO_Ant1_2437

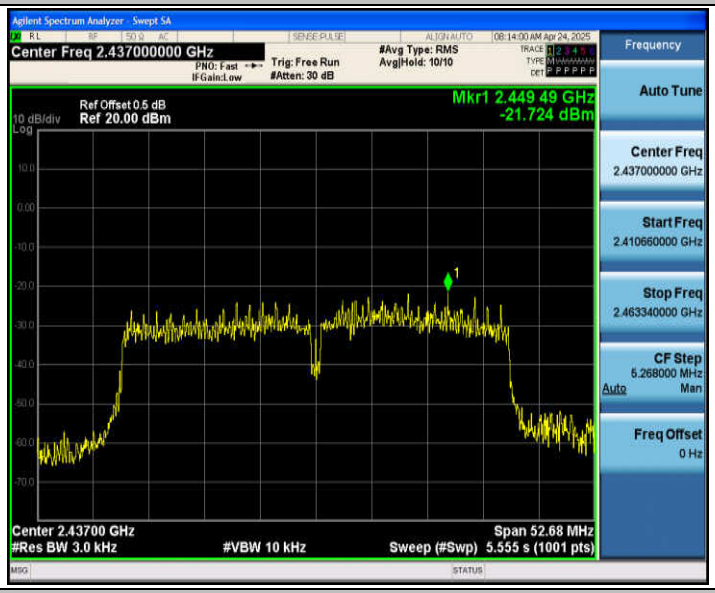


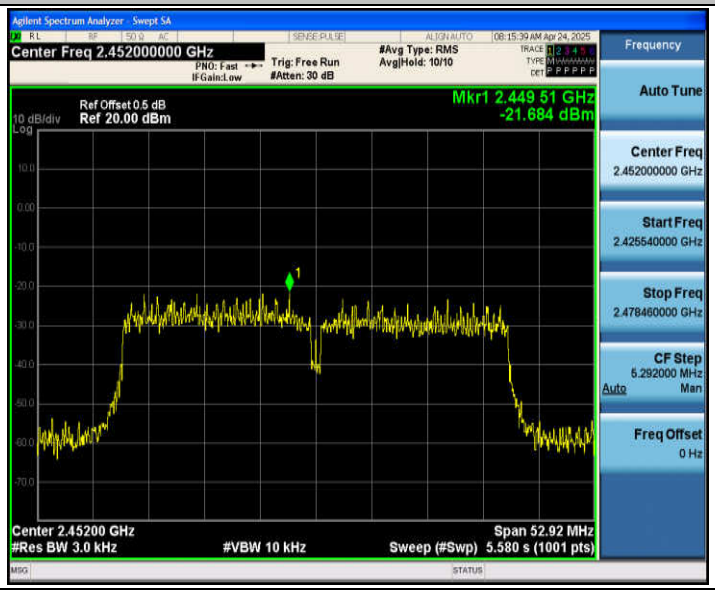
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437


11N40SISO_Ant1_2452


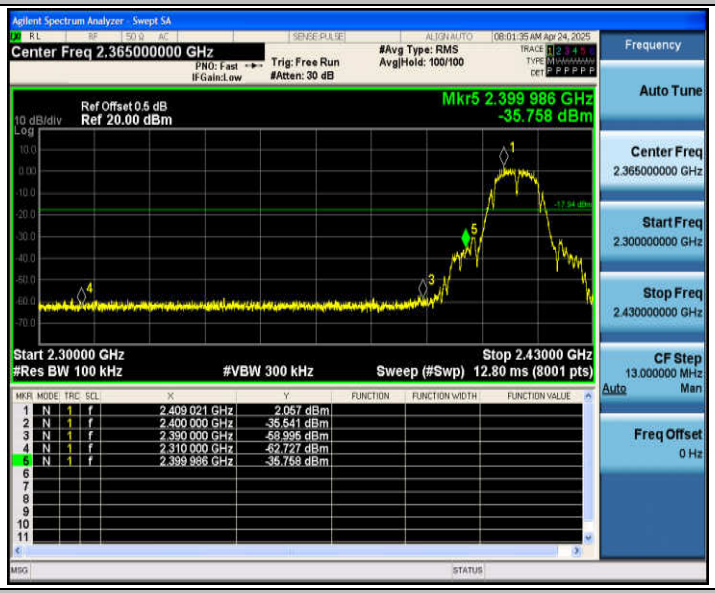
Appendix E: Band edge measurements

Test Result

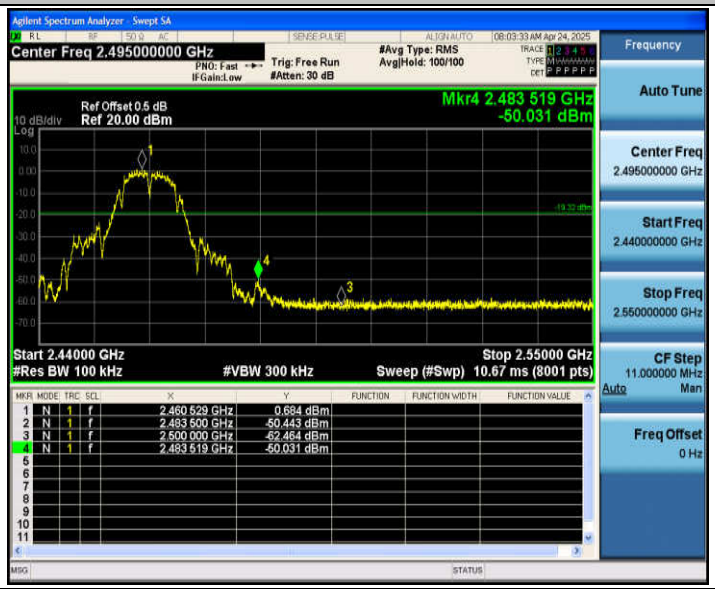
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	2.06	-35.76	≤-17.94	PASS
		High	2462	0.68	-50.03	≤-19.32	PASS
11G	Ant1	Low	2412	-2.39	-36.25	≤-22.39	PASS
		High	2462	-3.56	-35.54	≤-23.56	PASS
11N20SISO	Ant1	Low	2412	-2.29	-36.03	≤-22.29	PASS
		High	2462	-3.55	-38.52	≤-23.55	PASS
11N40SISO	Ant1	Low	2422	-5.82	-38.91	≤-25.82	PASS
		High	2452	-5.69	-35.63	≤-25.69	PASS

Test Graphs

11B_Ant1_Low_2412

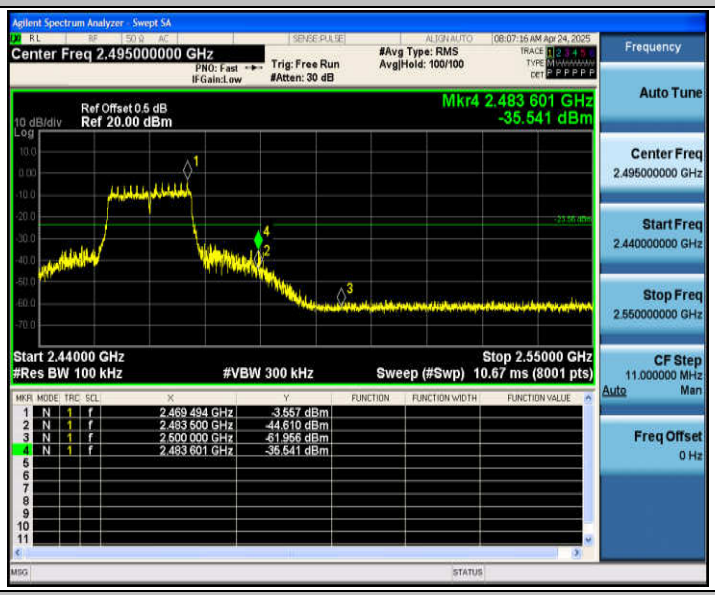


11B_Ant1_High_2462

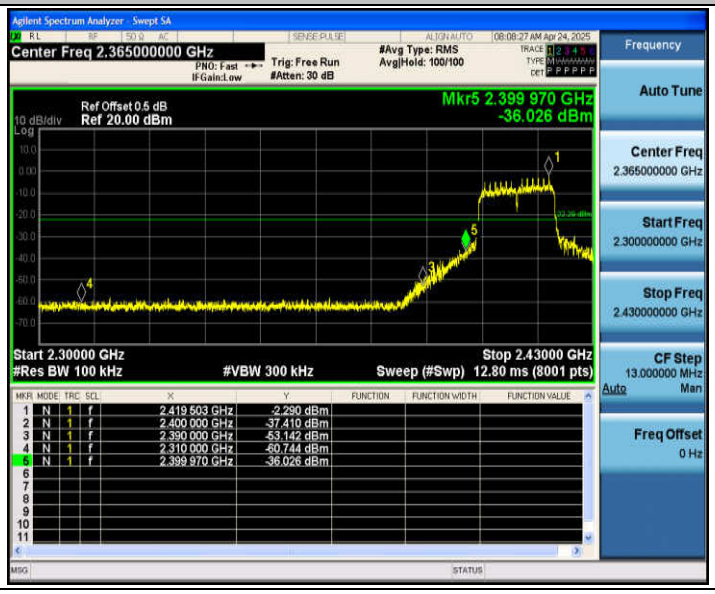


11G_Ant1_Low_2412

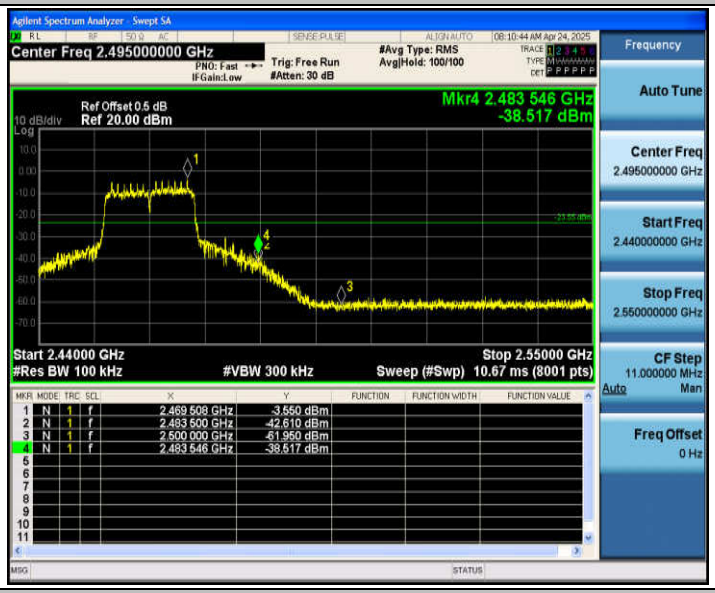
11G_Ant1_High_2462



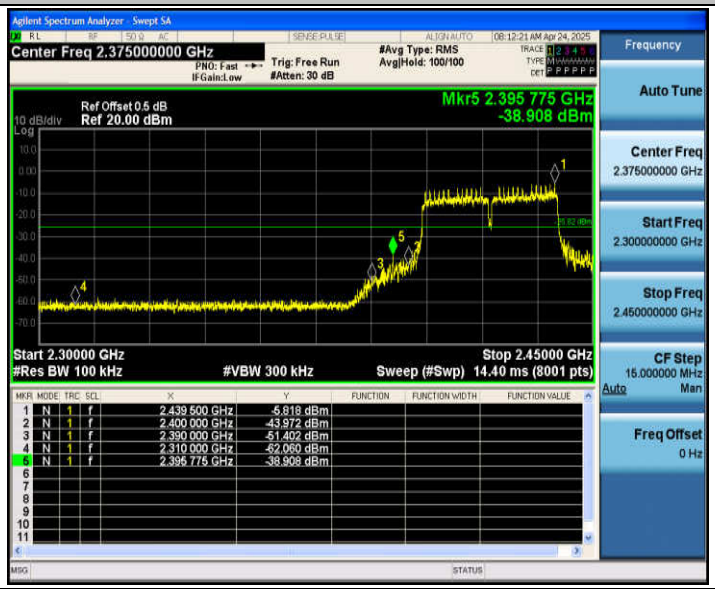
11N20SISO_Ant1_Low_2412



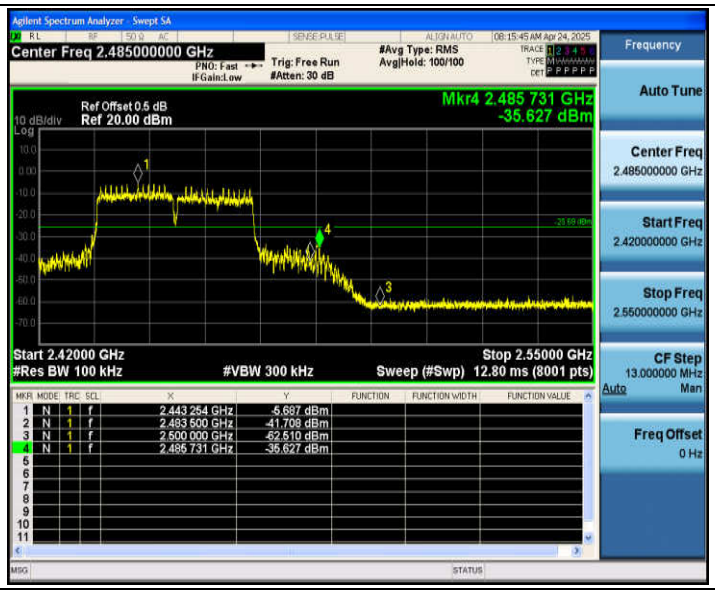
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.485000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 100/100
08:15:45 AM Apr 24, 2025
Frequency
Auto Tune
Center Freq
2.485000000 GHz
Start Freq
2.420000000 GHz
Stop Freq
2.550000000 GHz
CF Step
13.000000 MHz
Auto
Man
Freq Offset
0 Hz
Ref Offset 0.5 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr4 2.485 731 GHz
-35.627 dBm
Start 2.42000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.55000 GHz
Sweep (#Swp) 12.80 ms (8001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.443 254 GHz -5.687 dBm
2 N 1 f 2.483 500 GHz -41.708 dBm
3 N 1 f 2.500 000 GHz -62.510 dBm
4 N 1 f 2.485 731 GHz -35.627 dBm
MSG
STATUS

Appendix F: Conducted Spurious Emission

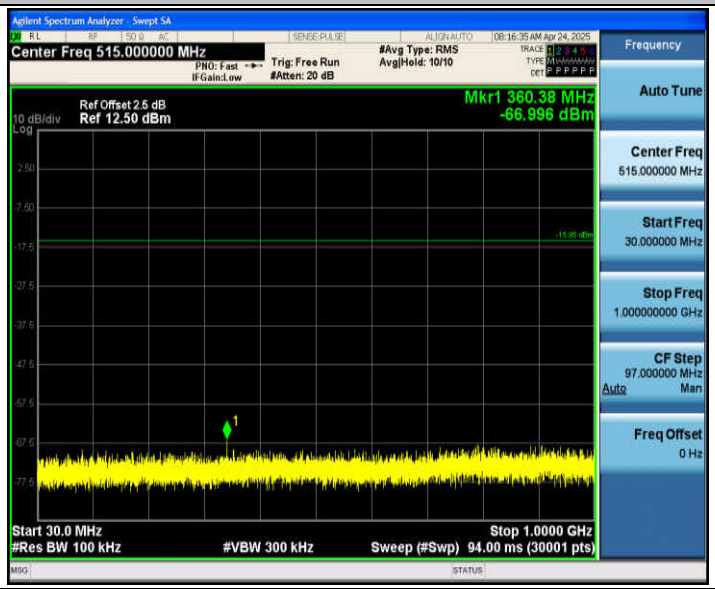
Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	4.05	4.05	---	PASS
			30~1000	4.05	-67	≤-15.95	PASS
			1000~26500	4.05	-38.58	≤-15.95	PASS
		2437	Reference	3.42	3.42	---	PASS
			30~1000	3.42	-67.61	≤-16.58	PASS
			1000~26500	3.42	-36.18	≤-16.58	PASS
		2462	Reference	2.37	2.37	---	PASS
			30~1000	2.37	-67.03	≤-17.63	PASS
			1000~26500	2.37	-30.85	≤-17.63	PASS
11G	Ant1	2412	Reference	-1.17	-1.17	---	PASS
			30~1000	-1.17	-67.85	≤-21.17	PASS
			1000~26500	-1.17	-51.1	≤-21.17	PASS
		2437	Reference	-1.40	-1.40	---	PASS
			30~1000	-1.40	-67.08	≤-21.4	PASS
			1000~26500	-1.40	-49.93	≤-21.4	PASS
		2462	Reference	-1.97	-1.97	---	PASS
			30~1000	-1.97	-68.15	≤-21.97	PASS
			1000~26500	-1.97	-46.11	≤-21.97	PASS
11N20SISO	Ant1	2412	Reference	-1.29	-1.29	---	PASS
			30~1000	-1.29	-67.55	≤-21.29	PASS
			1000~26500	-1.29	-47.61	≤-21.29	PASS
		2437	Reference	-2.47	-2.47	---	PASS
			30~1000	-2.47	-67.55	≤-22.47	PASS
			1000~26500	-2.47	-49.76	≤-22.47	PASS
		2462	Reference	-2.29	-2.29	---	PASS
			30~1000	-2.29	-68.16	≤-22.29	PASS
			1000~26500	-2.29	-46.3	≤-22.29	PASS
11N40SISO	Ant1	2422	Reference	-5.23	-5.23	---	PASS
			30~1000	-5.23	-68.29	≤-25.23	PASS
			1000~26500	-5.23	-52.35	≤-25.23	PASS
		2437	Reference	-4.61	-4.61	---	PASS
			30~1000	-4.61	-67.87	≤-24.61	PASS
			1000~26500	-4.61	-53.68	≤-24.61	PASS
		2452	Reference	-3.96	-3.96	---	PASS
			30~1000	-3.96	-67.4	≤-23.96	PASS
			1000~26500	-3.96	-50.89	≤-23.96	PASS

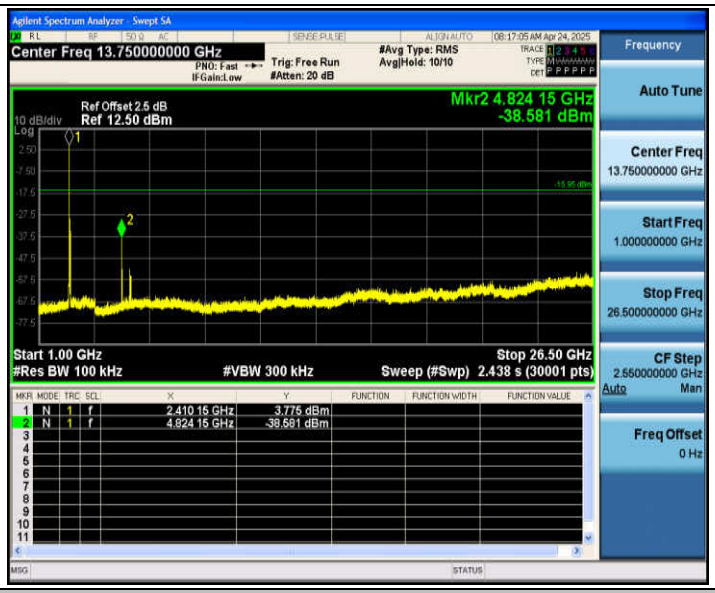
Test Graphs

11B_Ant1_2412_0~Reference

11B_Ant1_2412_30~1000

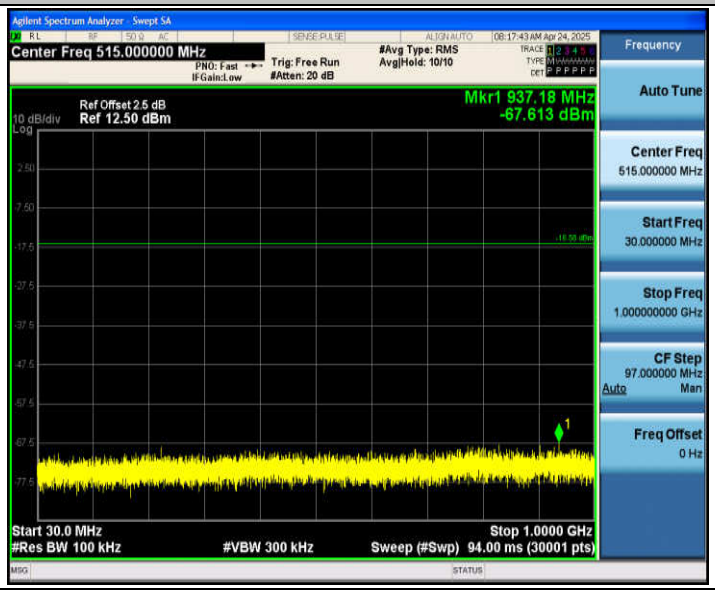


11B_Ant1_2412_1000~26500

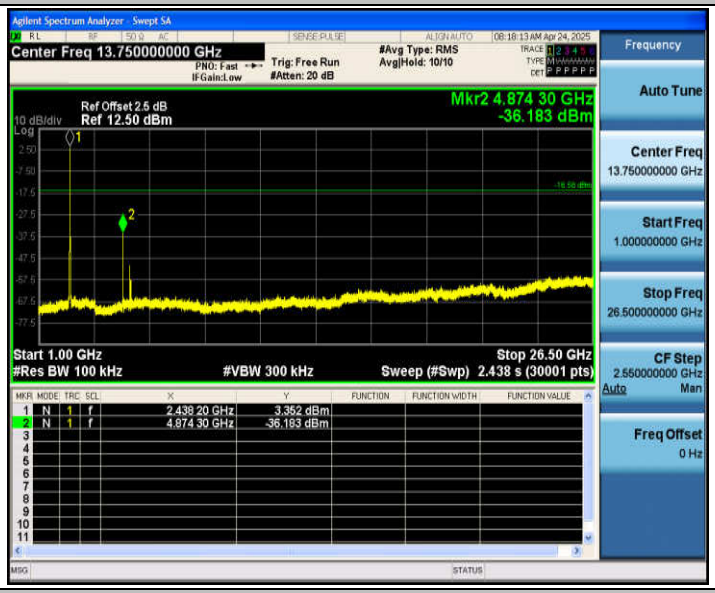


11B_Ant1_2437_0~Reference

11B_Ant1_2437_30~1000



11B_Ant1_2437_1000~26500



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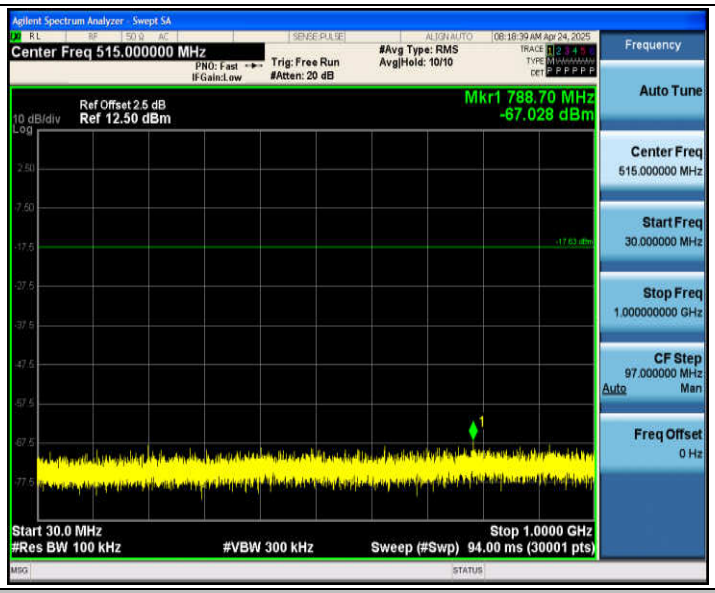
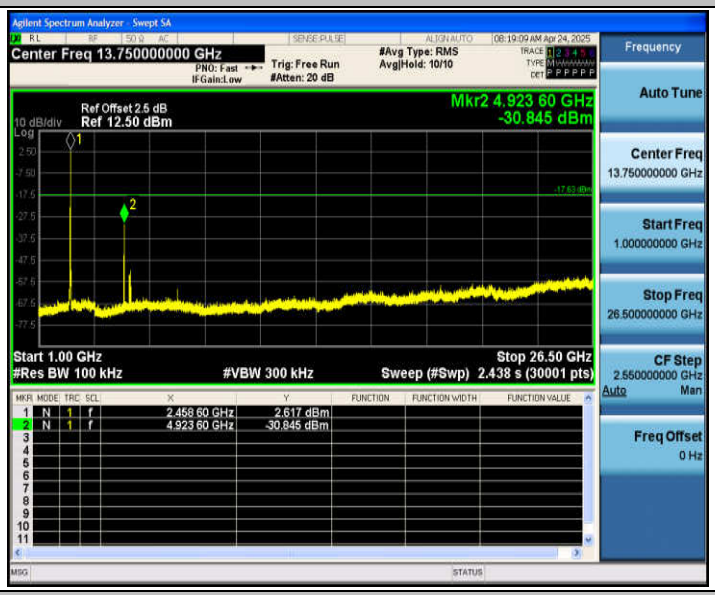


11B_Ant1_2462_1000~26500



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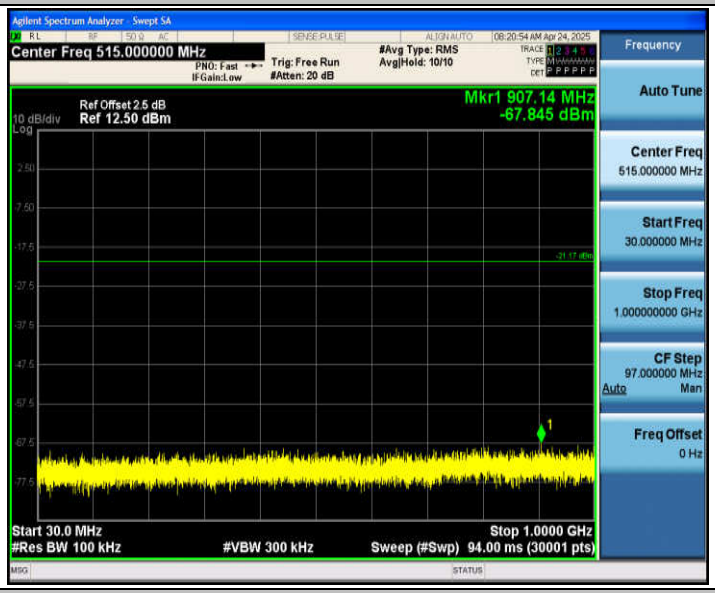

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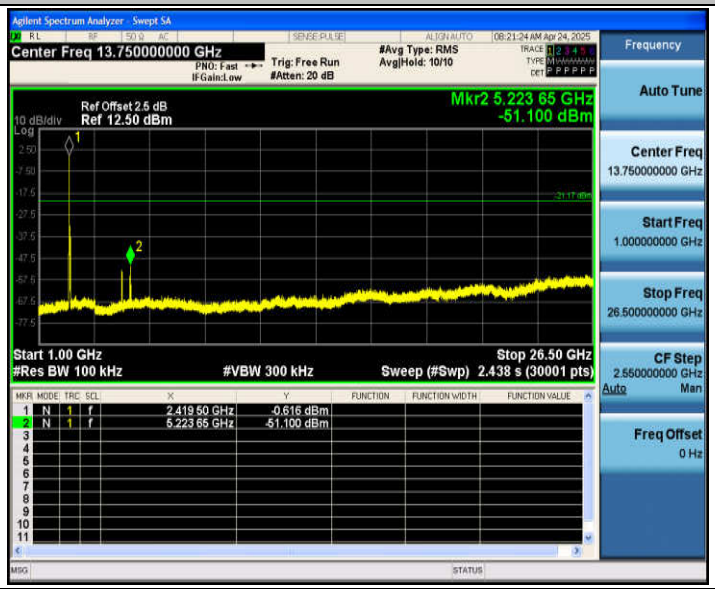

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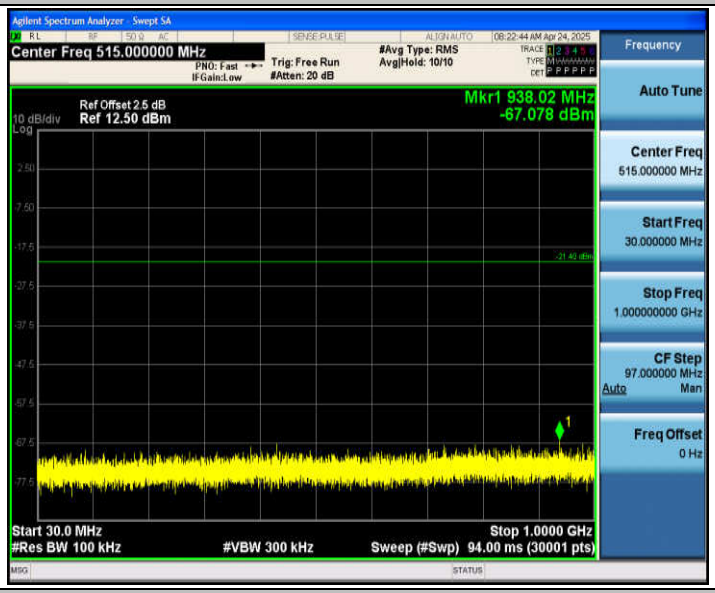

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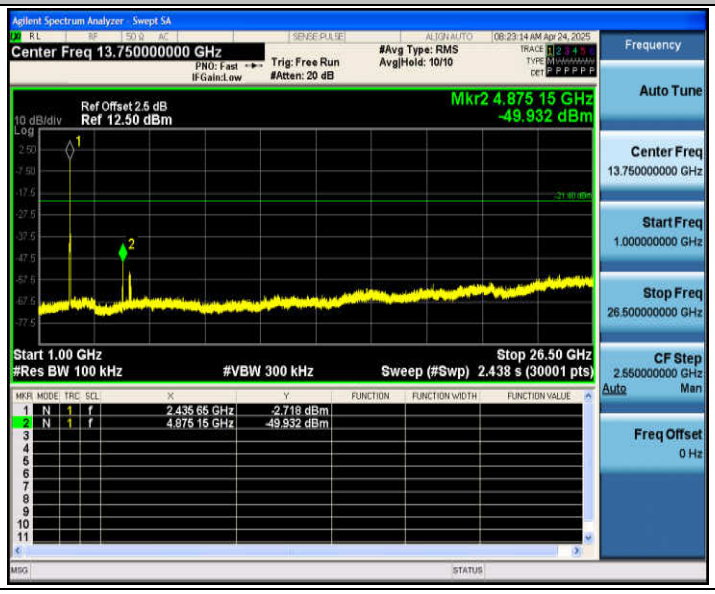

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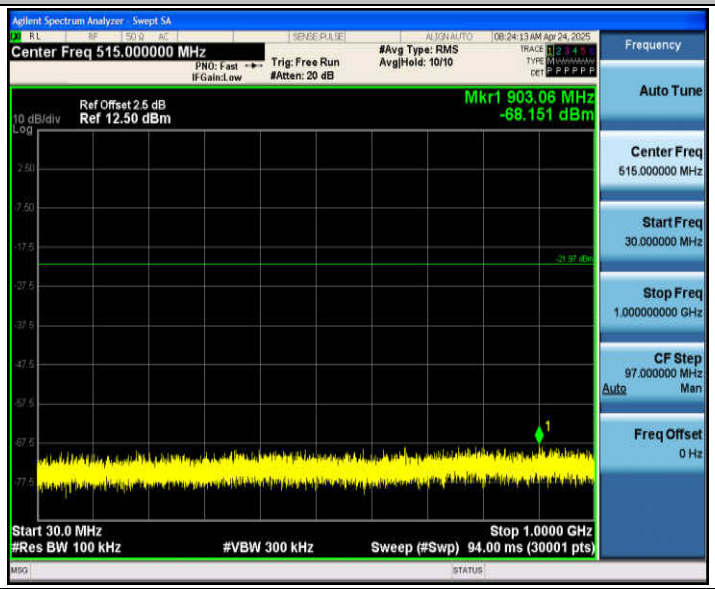

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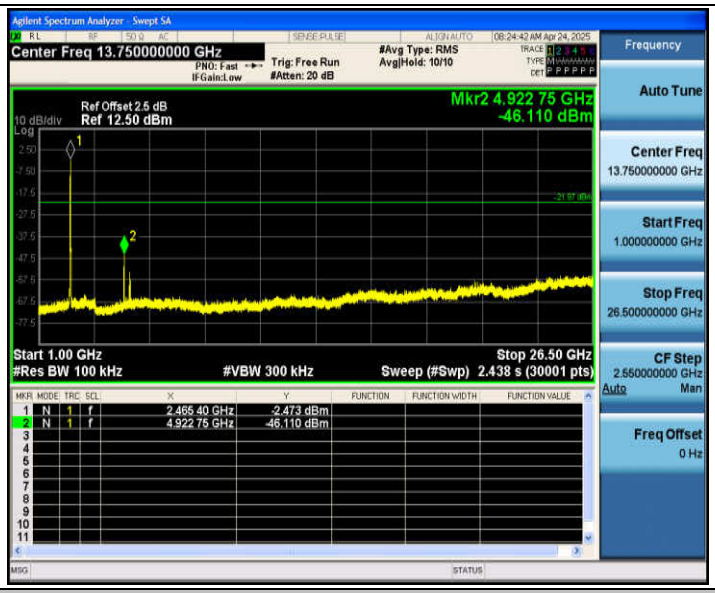

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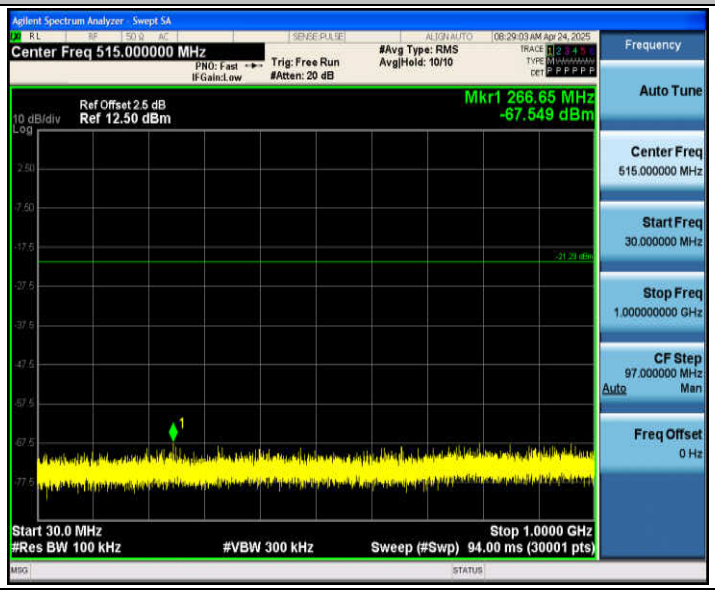

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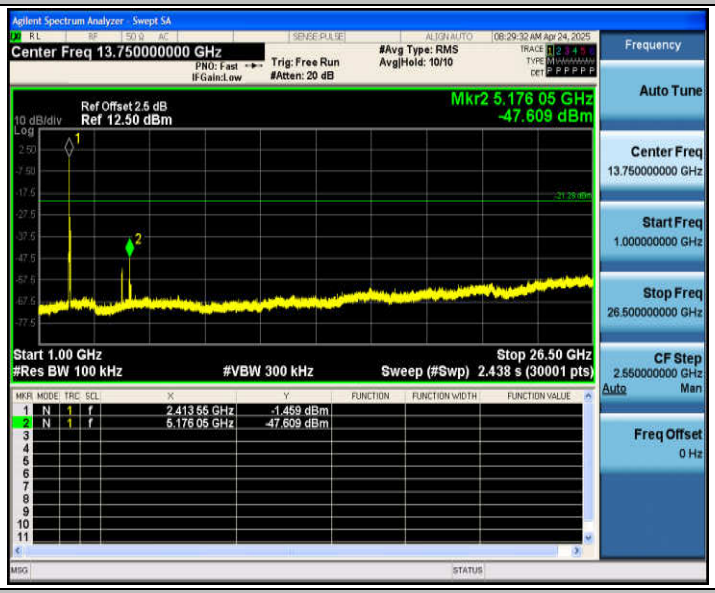

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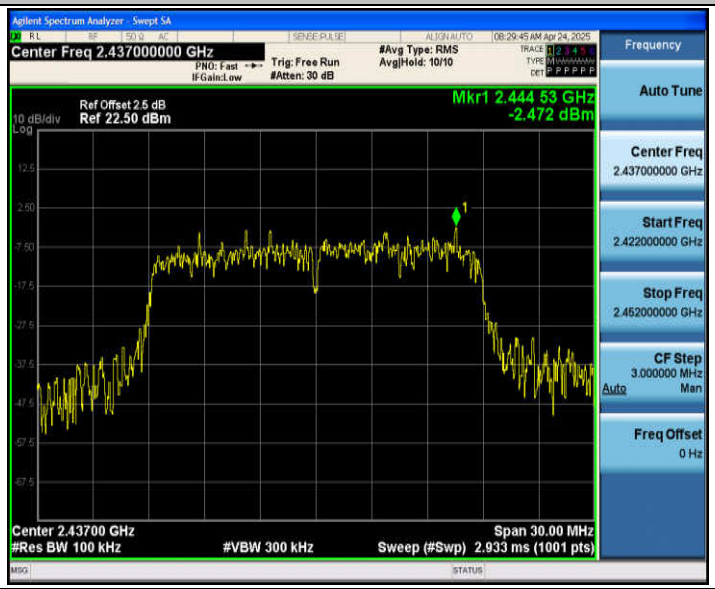

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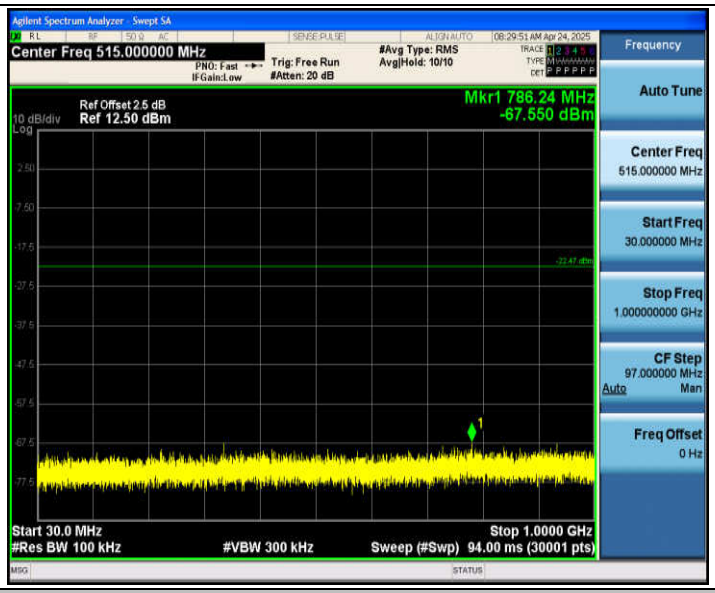

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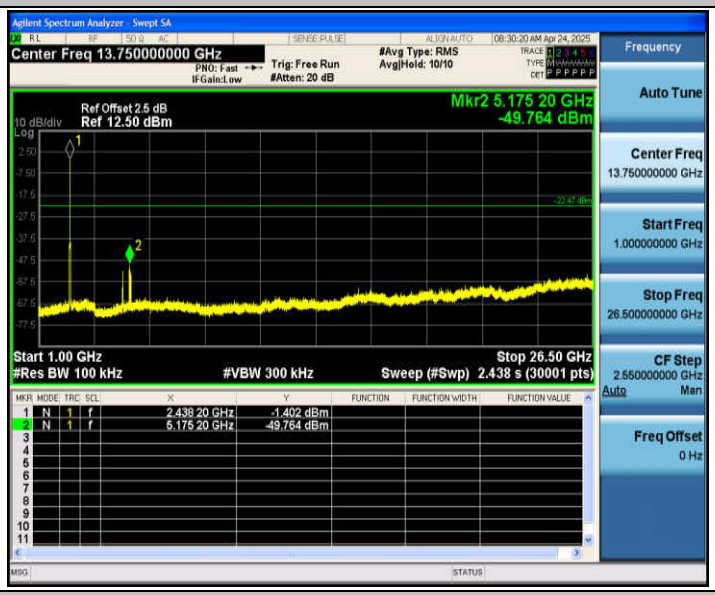

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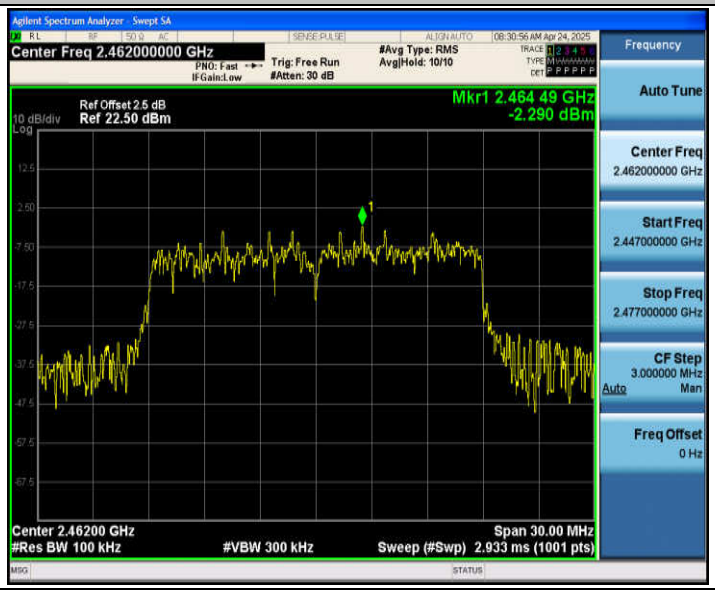

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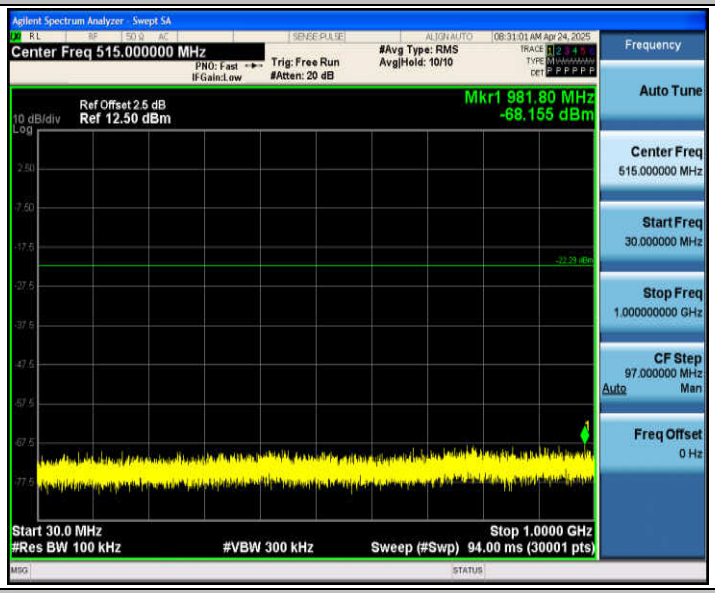

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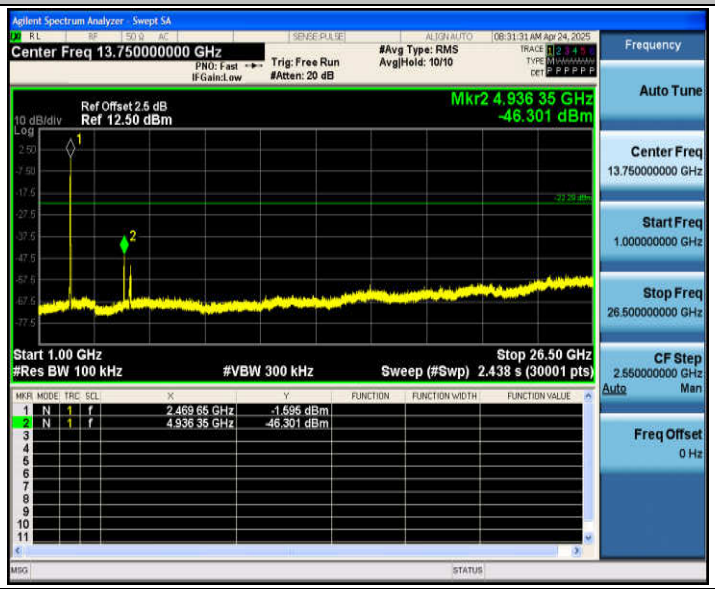

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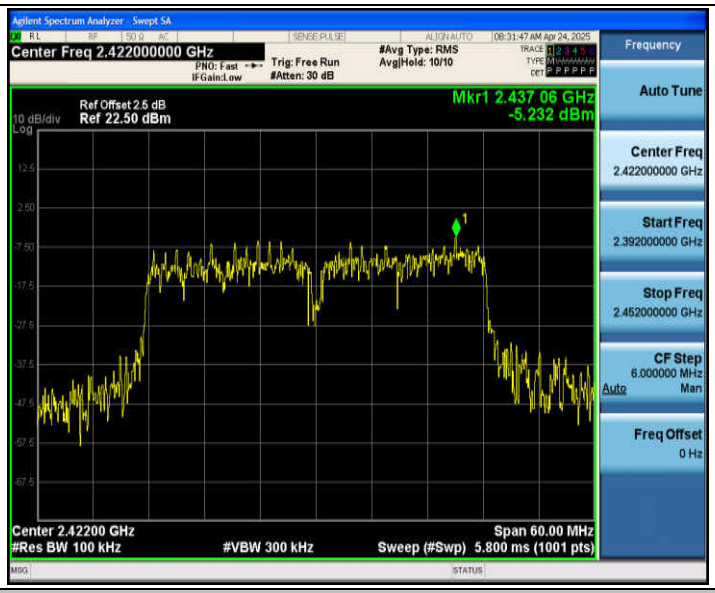

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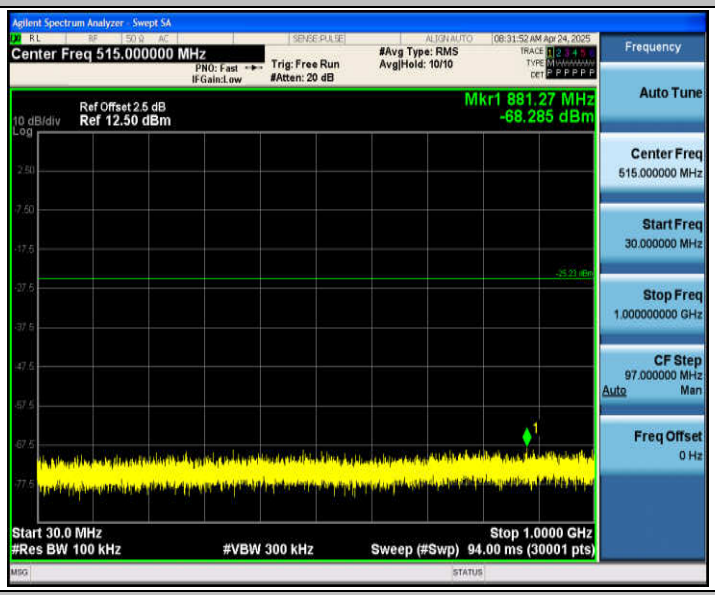

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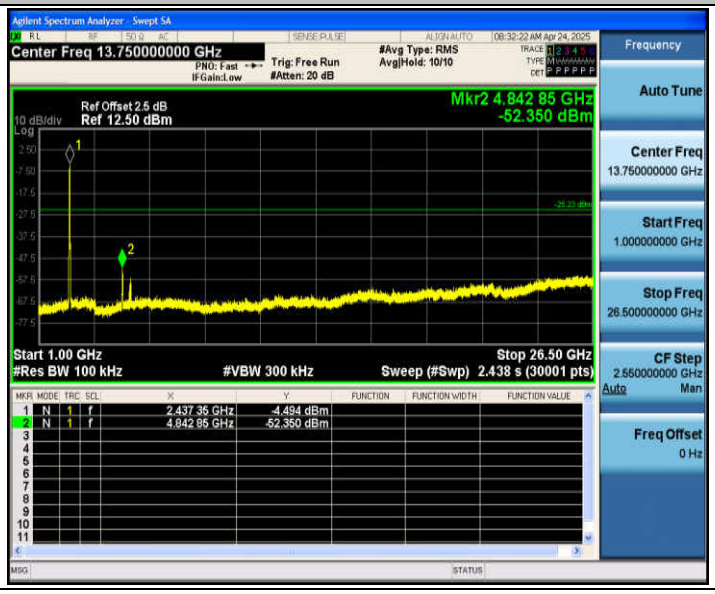

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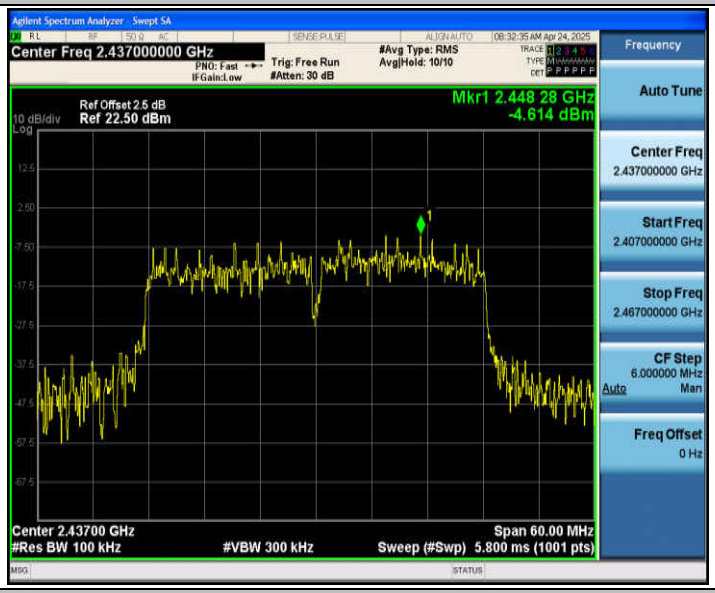

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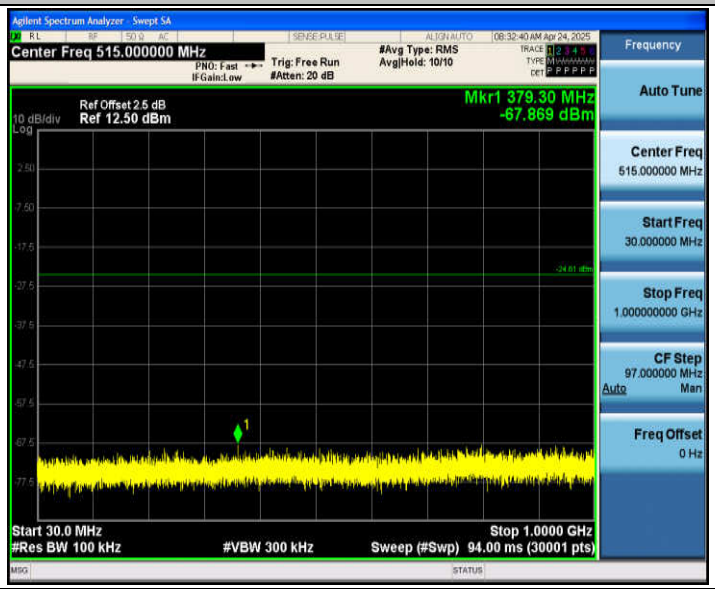

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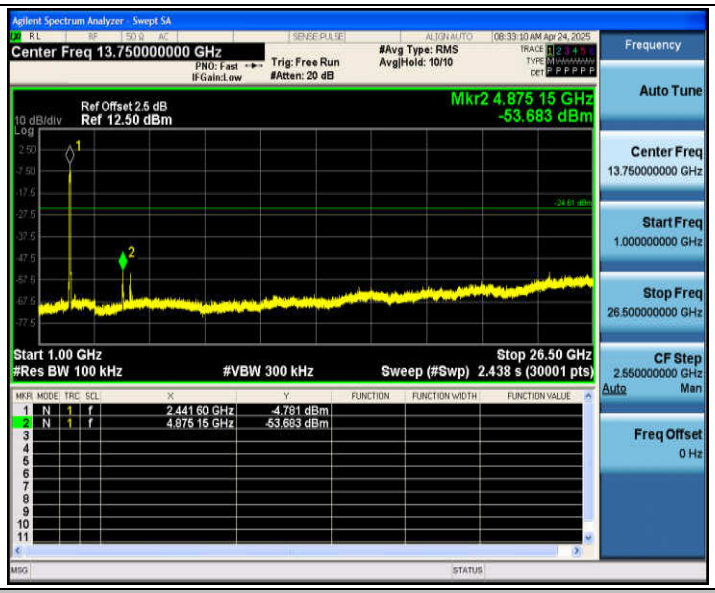
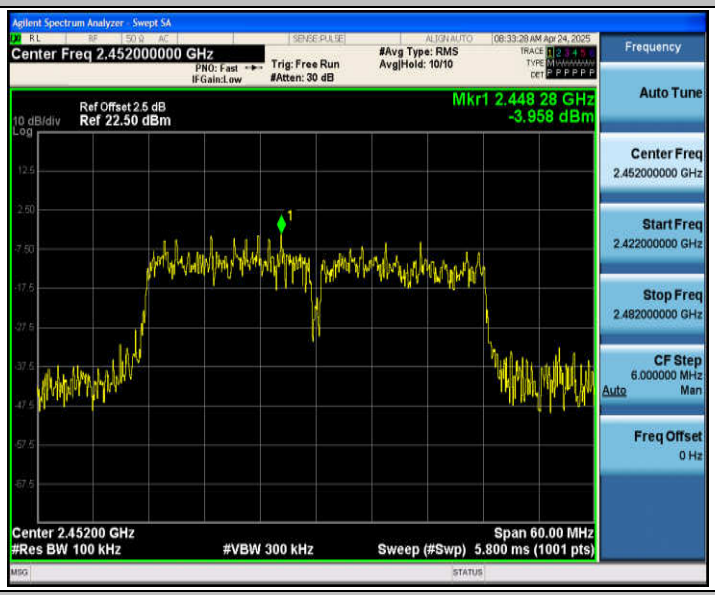


11N40SISO_Ant1_2452_0~Reference



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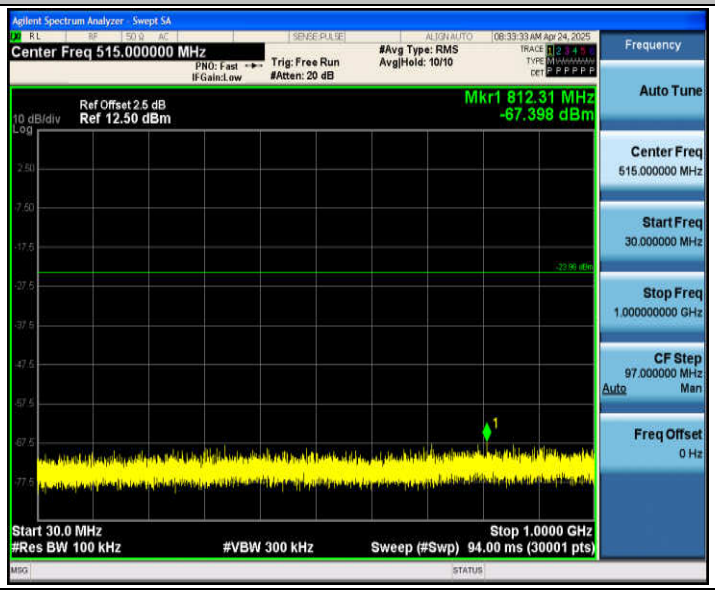

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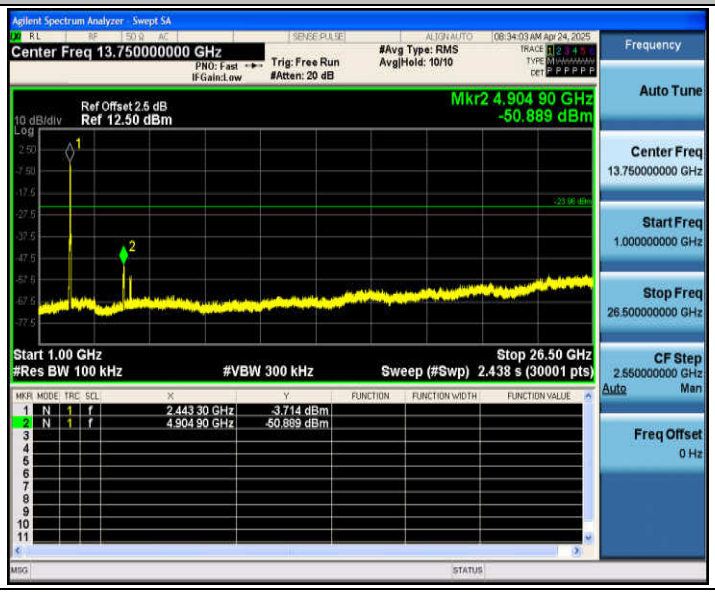
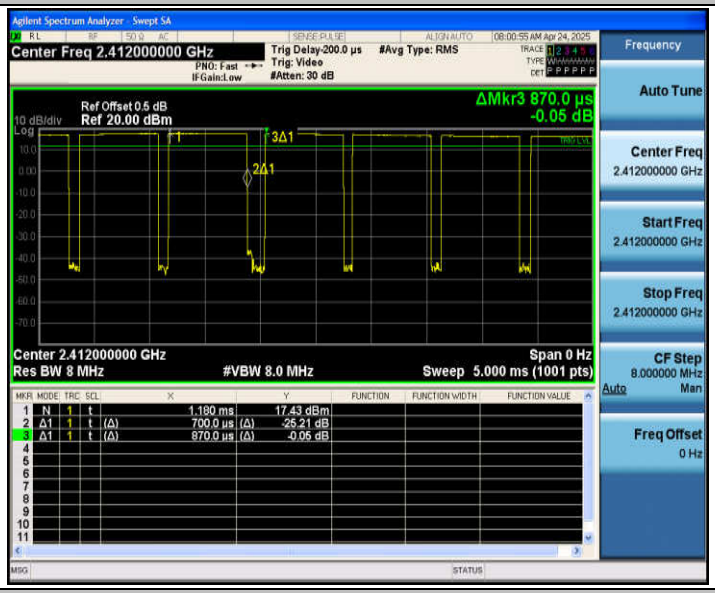


Appendix G: Duty Cycle

Test Result

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11B	Ant1	2412	0.70	0.87	80.46
		2437	0.70	0.87	80.46
		2462	0.71	0.87	81.61
11G	Ant1	2412	0.11	0.26	42.31
		2437	0.11	0.27	40.74
		2462	0.11	0.29	37.93
11N20SISO	Ant1	2412	0.11	0.31	35.48
		2437	0.11	0.30	36.67
		2462	0.11	0.28	39.29
11N40SISO	Ant1	2422	0.07	0.25	28.00
		2437	0.07	0.28	25.00
		2452	0.07	0.24	29.17

Test Graphs

11B_Ant1_2412

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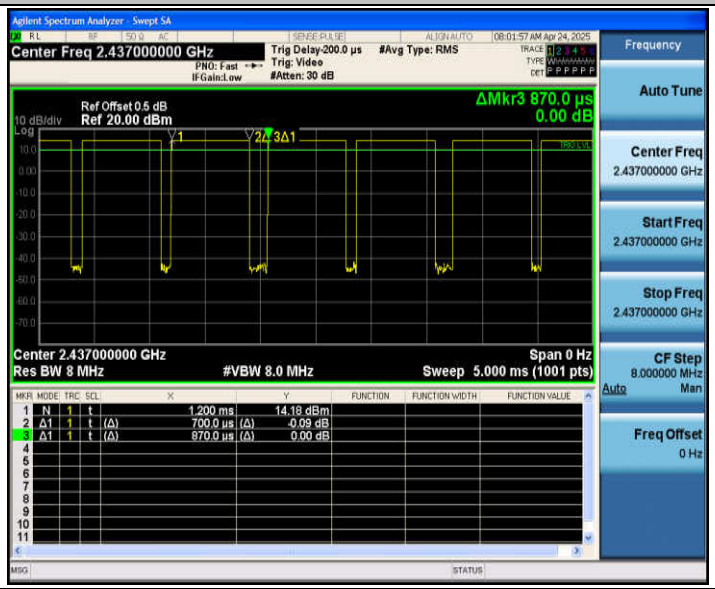
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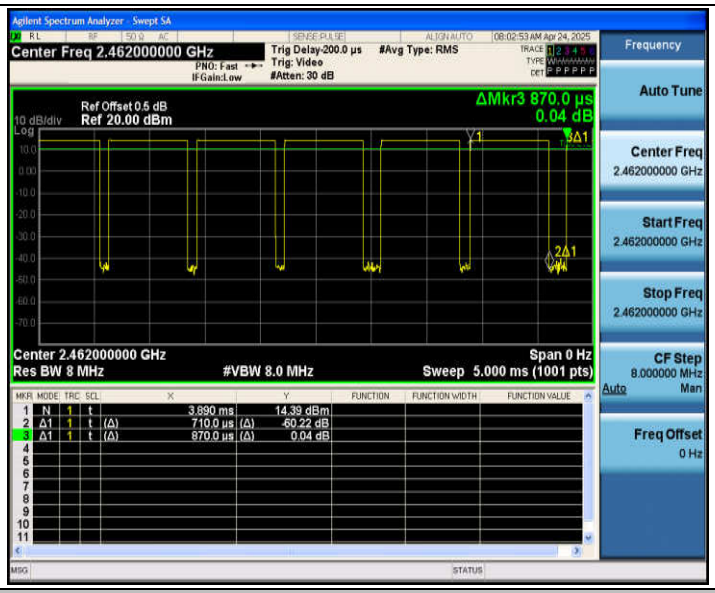

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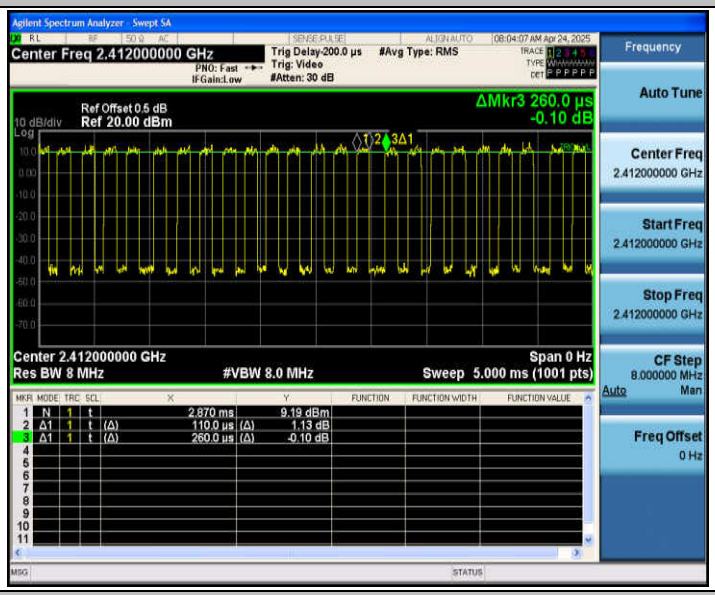

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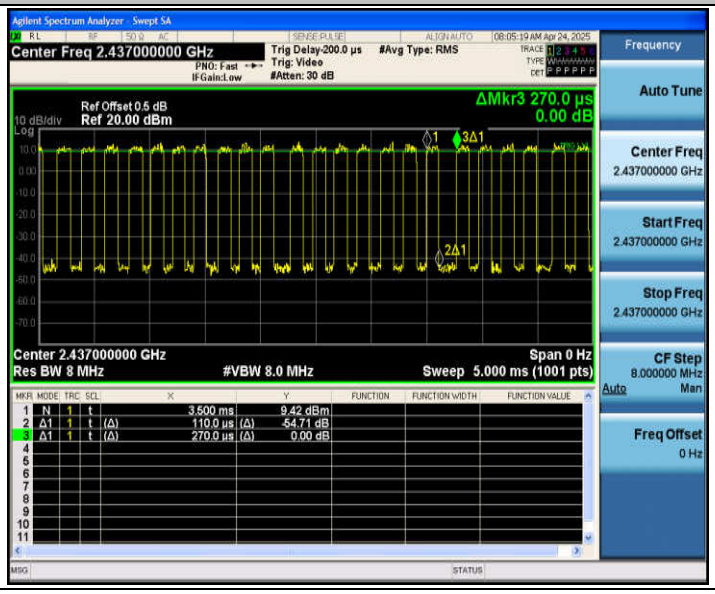

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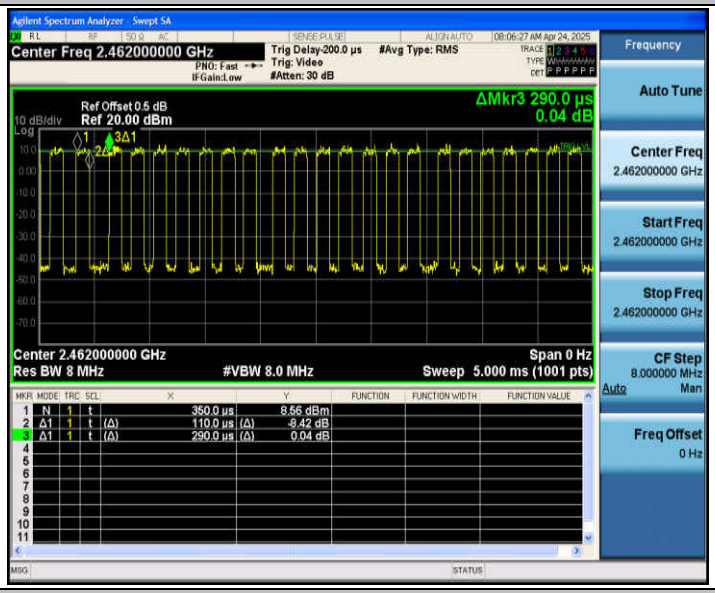

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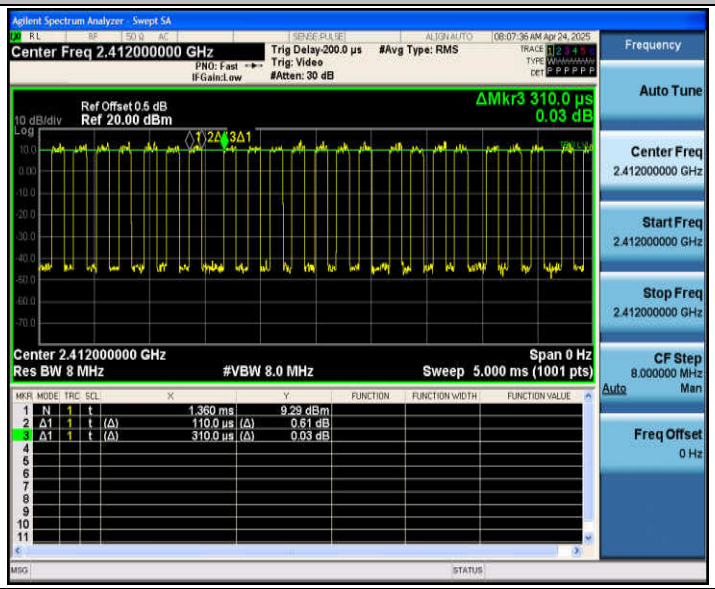

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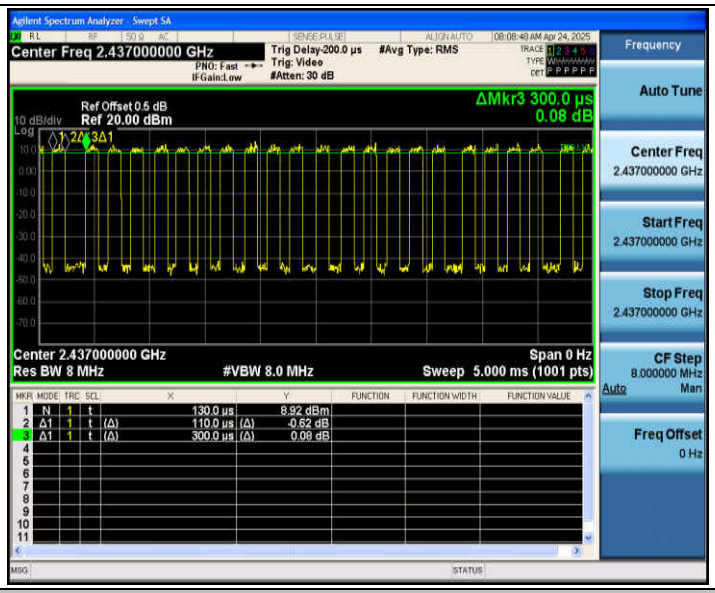

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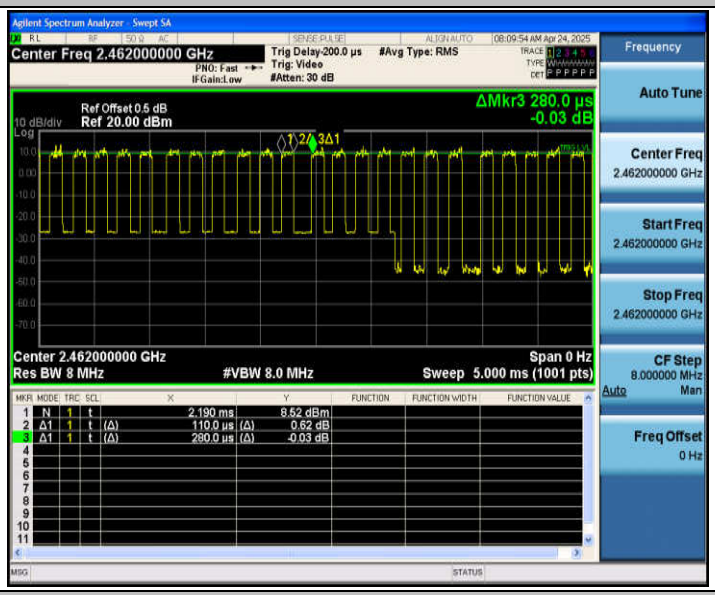

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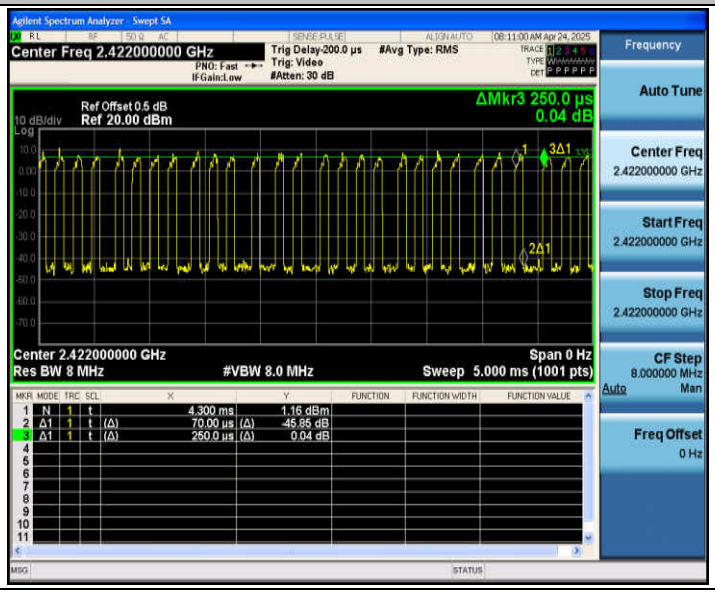

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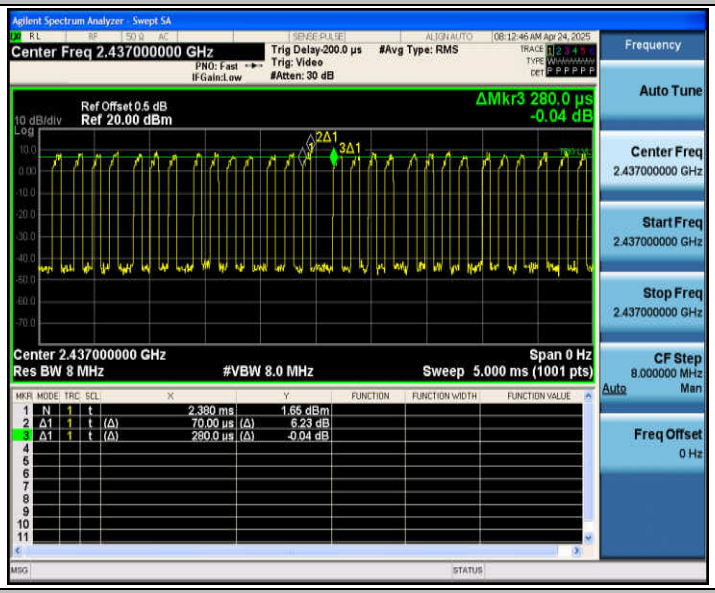
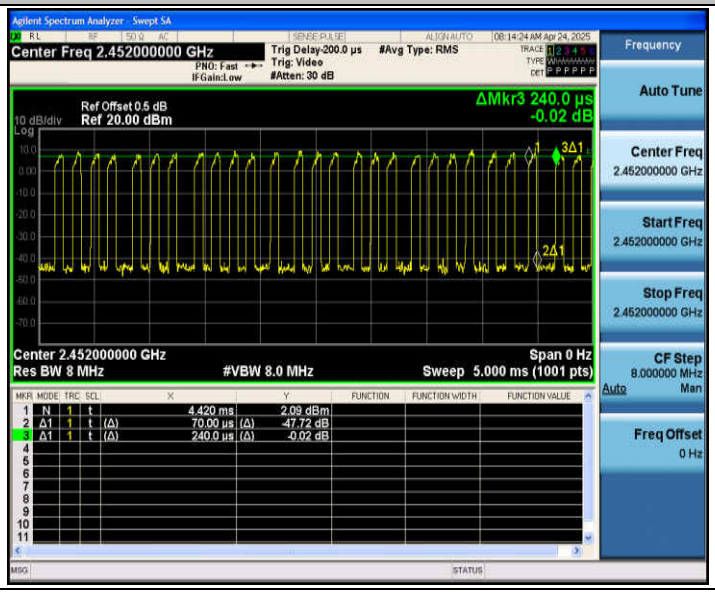
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