FCC Appendix RF Test Data for 2.4GWIFI

Company:	**:**	**Promaster Electronic LLC**
EUT	**:**	**Wireless CPAA adaptor**
FCC ID	**:**	**2A6P9-KPAIB01**
Model Number	**:**	**KPWCA-101**
Report No.	**:**	**CTA25052700603**
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	9.480	2407.040	2416.520	0.5	PASS
		2437	9.560	2432.000	2441.560	0.5	PASS
		2462	9.120	2456.960	2466.080	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	16.280	2453.880	2470.160	0.5	PASS
11N20SISO	Ant1	2412	16.200	2404.440	2420.640	0.5	PASS
		2437	15.920	2429.440	2445.360	0.5	PASS
		2462	16.280	2454.240	2470.520	0.5	PASS
11N40SISO	Ant1	2422	35.520	2404.480	2440.000	0.5	PASS
		2437	35.120	2419.480	2454.600	0.5	PASS
		2452	35.280	2434.240	2469.520	0.5	PASS

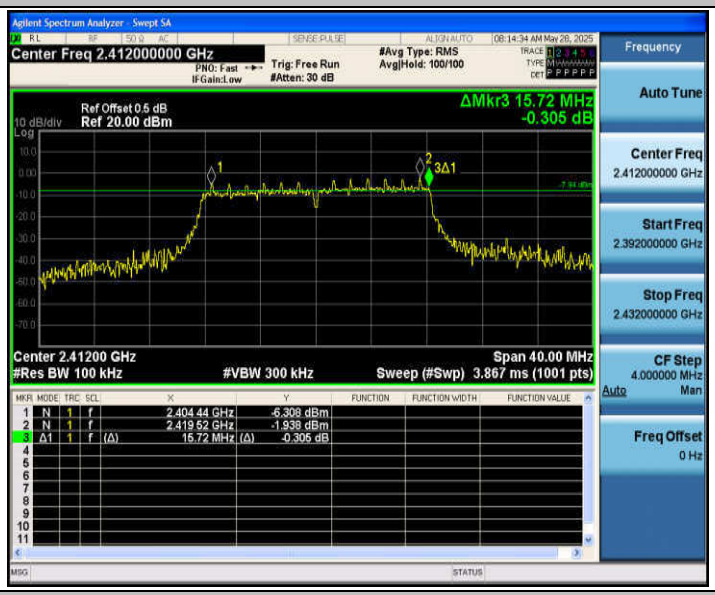
Test Graphs

11B_Ant1_2412

11B_Ant1_2437

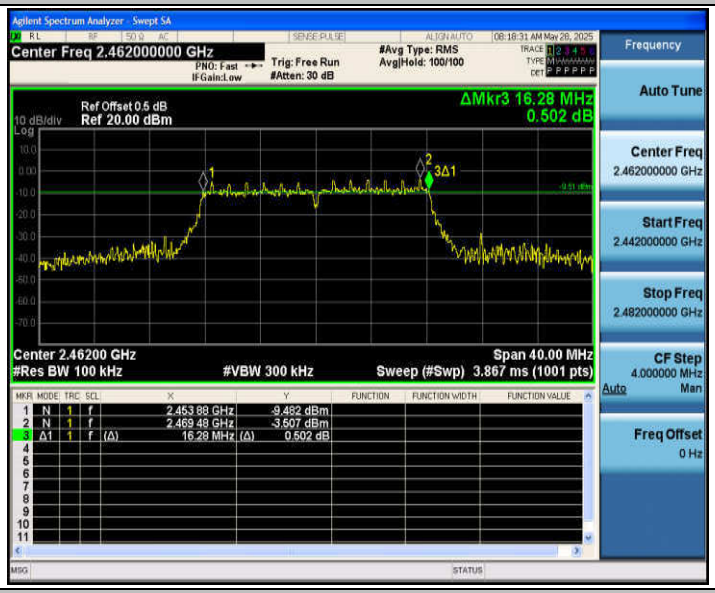
11B_Ant1_2462

11G_Ant1_2412



11G_Ant1_2437

11G_Ant1_2462

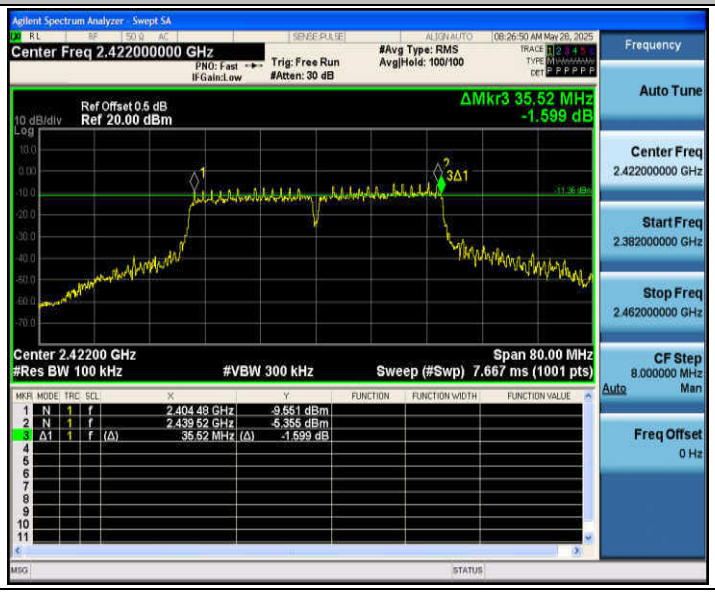


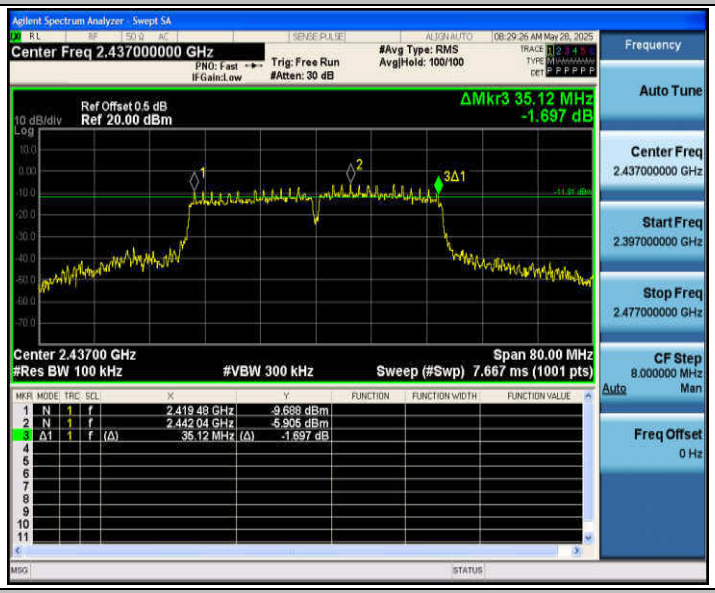
11N20SISO_Ant1_2412

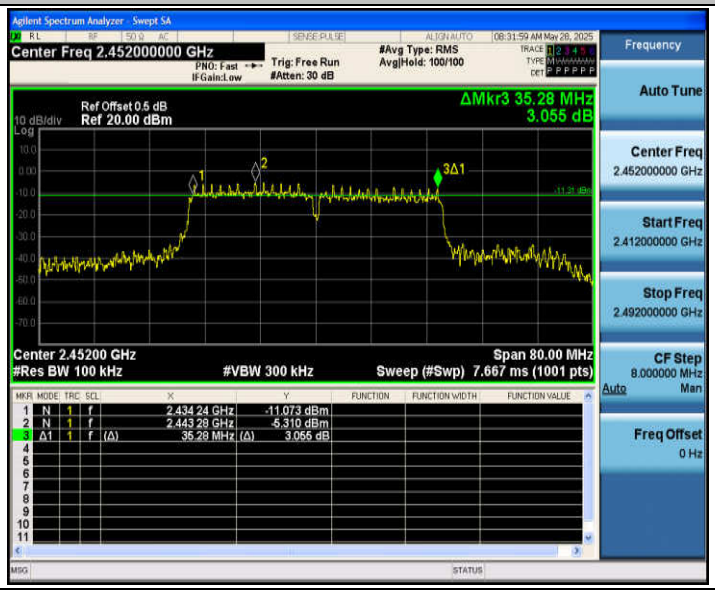
11N20SISO_Ant1_2437

11N20SISO_Ant1_2462

11N40SISO_Ant1_2422



11N40SISO_Ant1_2437


11N40SISO_Ant1_2452


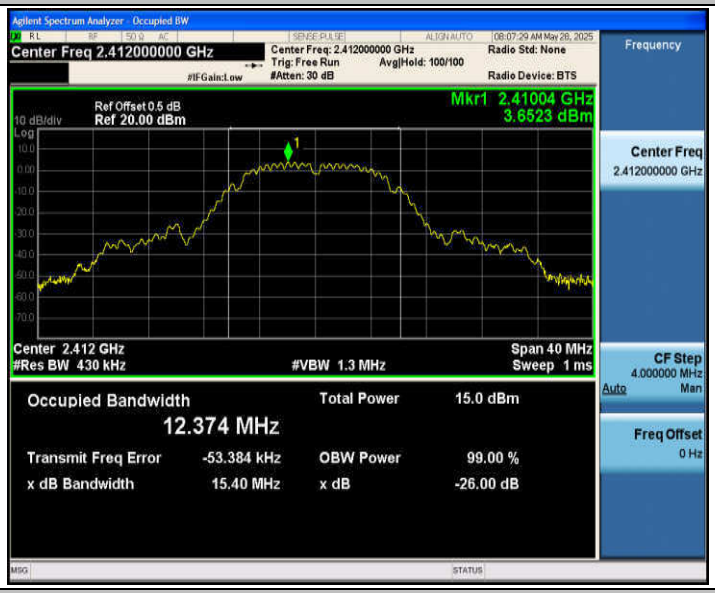
Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	12.374	2405.7596	2418.1336	---	---
		2437	11.675	2430.9876	2442.6626	---	---
		2462	12.724	2455.4403	2468.1643	---	---
11G	Ant1	2412	16.811	2403.7560	2420.5670	---	---
		2437	16.614	2428.8246	2445.4386	---	---
		2462	16.875	2453.6574	2470.5324	---	---
11N20SISO	Ant1	2412	17.844	2403.2598	2421.1038	---	---
		2437	17.605	2428.3499	2445.9549	---	---
		2462	17.956	2453.2024	2471.1584	---	---
11N40SISO	Ant1	2422	36.292	2404.1994	2440.4914	---	---
		2437	36.044	2419.0728	2455.1168	---	---
		2452	36.517	2433.7505	2470.2675	---	---

Test Graphs

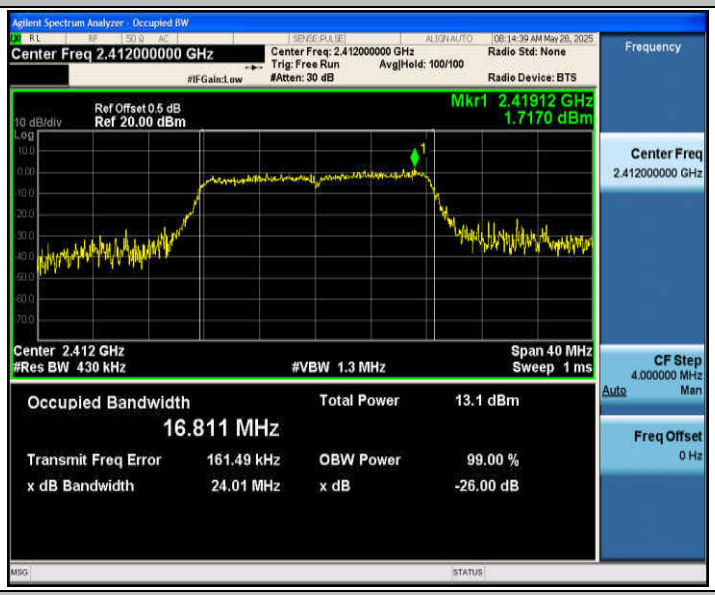
11B_Ant1_2412



11B_Ant1_2437

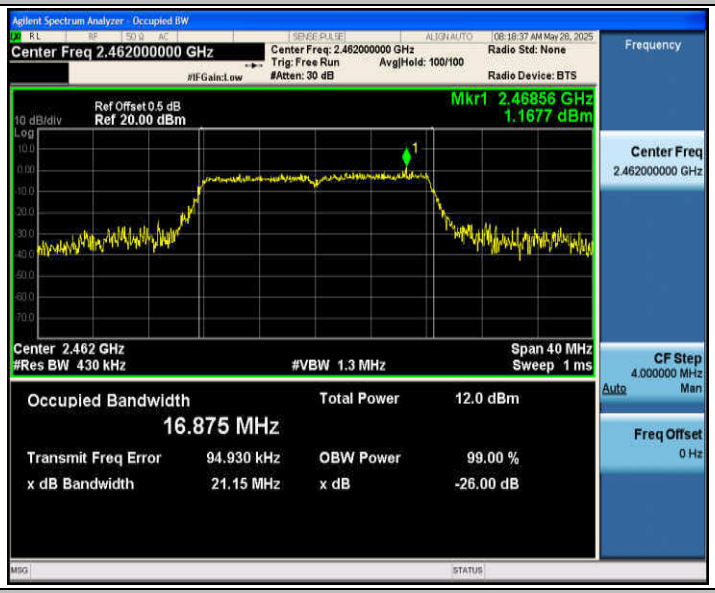
11B_Ant1_2462

11G_Ant1_2412



11G_Ant1_2437

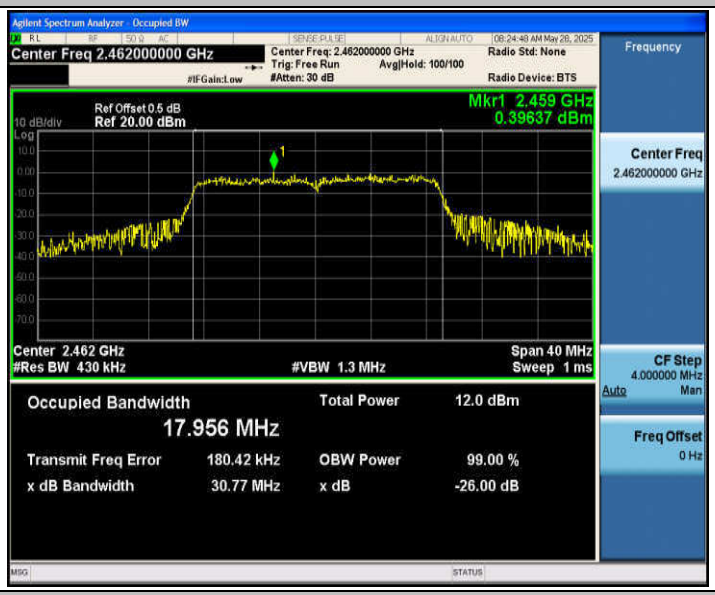
11G_Ant1_2462



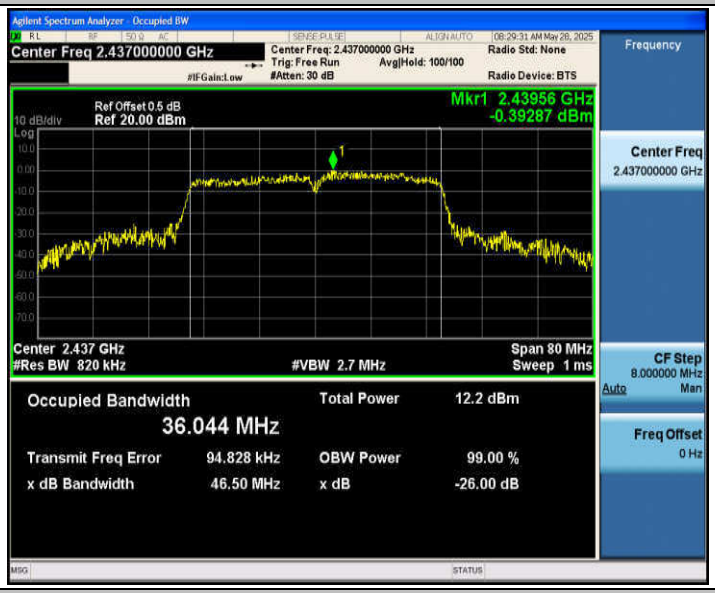
11N20SISO_Ant1_2412

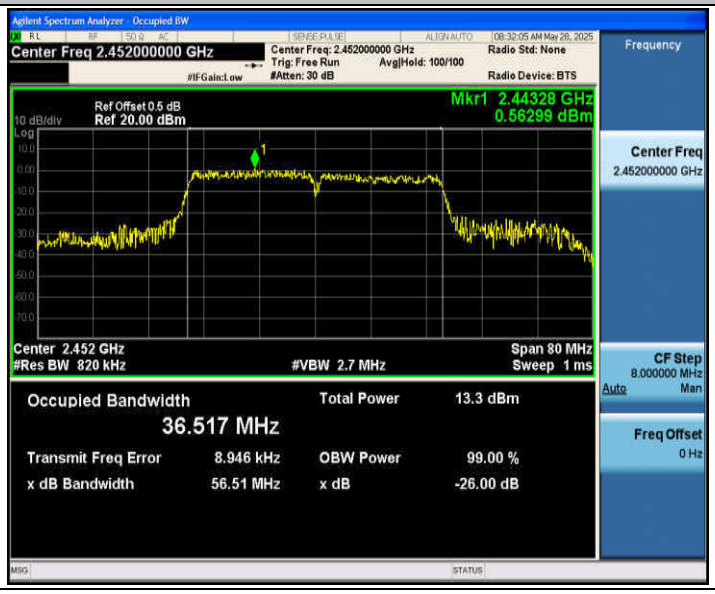
11N20SISO_Ant1_2437

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	14.92	≤30.00	PASS
		2437	13.92	≤30.00	PASS
		2462	13.81	≤30.00	PASS
11G	Ant1	2412	13.62	≤30.00	PASS
		2437	13.01	≤30.00	PASS
		2462	12.76	≤30.00	PASS
11N20SISO	Ant1	2412	13.67	≤30.00	PASS
		2437	12.87	≤30.00	PASS
		2462	12.47	≤30.00	PASS
11N40SISO	Ant1	2422	12.94	≤30.00	PASS
		2437	12.28	≤30.00	PASS
		2452	13.37	≤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	-10.98	≤8.00	PASS
		2437	-11.22	≤8.00	PASS
		2462	-12.25	≤8.00	PASS
11G	Ant1	2412	-18.30	≤8.00	PASS
		2437	-18.82	≤8.00	PASS
		2462	-18.41	≤8.00	PASS
11N20SISO	Ant1	2412	-18.52	≤8.00	PASS
		2437	-18.34	≤8.00	PASS
		2462	-20.26	≤8.00	PASS
11N40SISO	Ant1	2422	-22.19	≤8.00	PASS
		2437	-21.61	≤8.00	PASS
		2452	-21.06	≤8.00	PASS

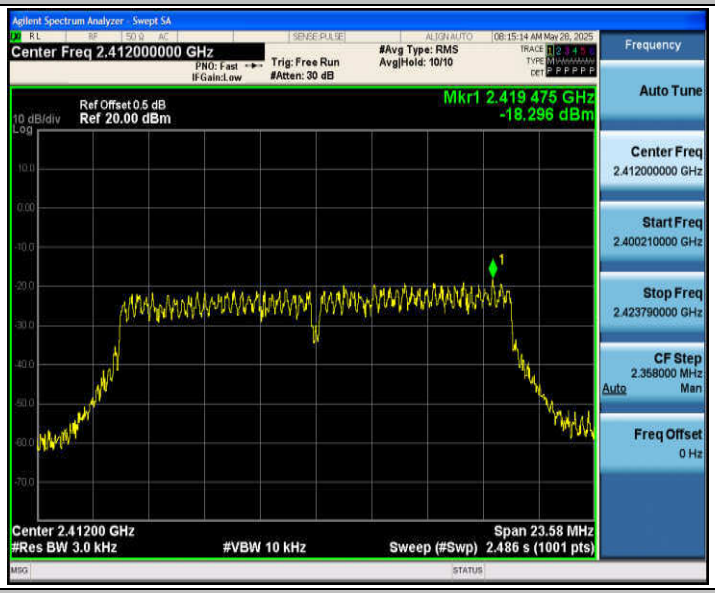
Test Graphs

11B_Ant1_2412

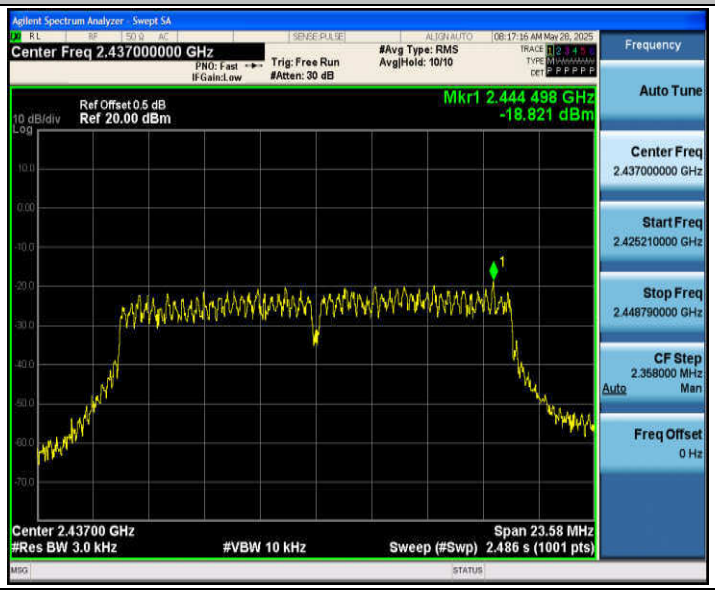
11B_Ant1_2437

11B_Ant1_2462

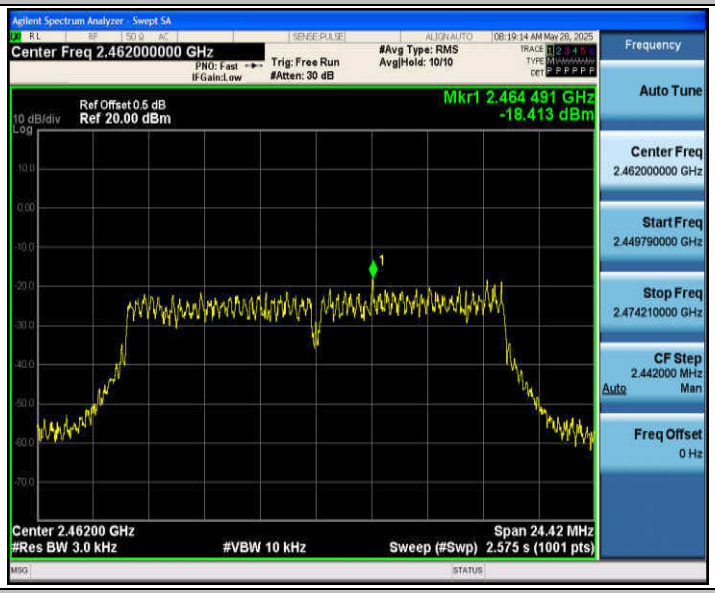
11G_Ant1_2412



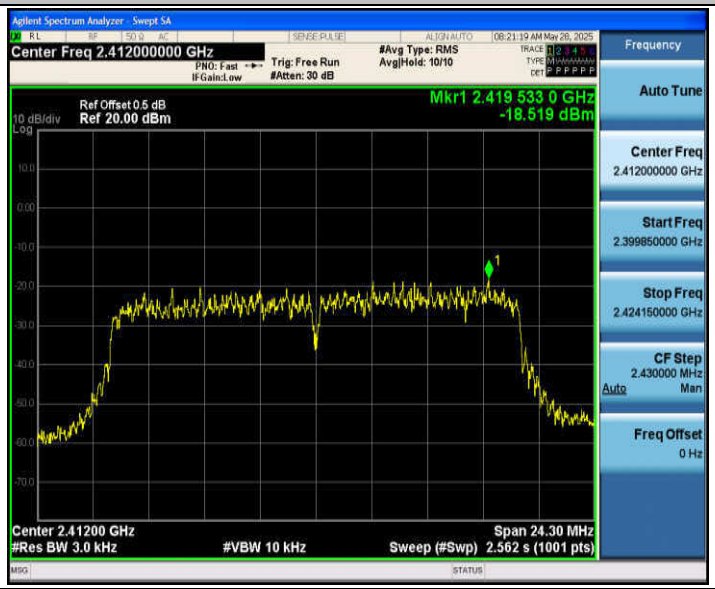
11G_Ant1_2437



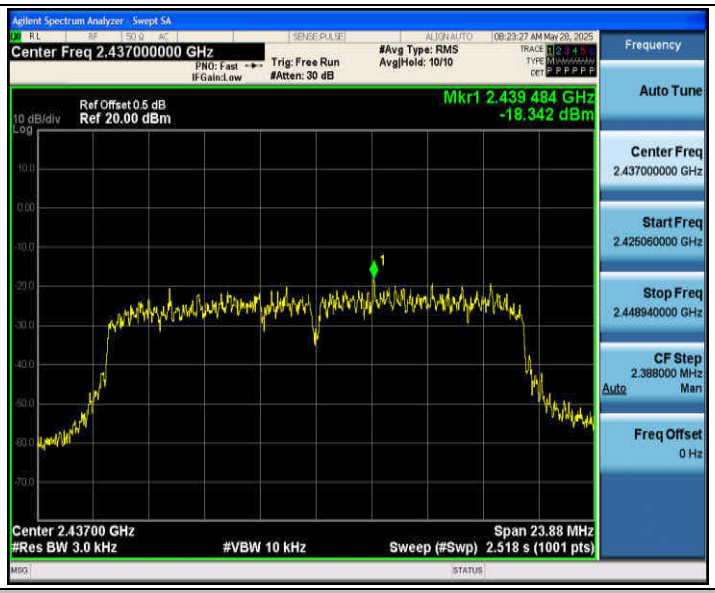
11G_Ant1_2462



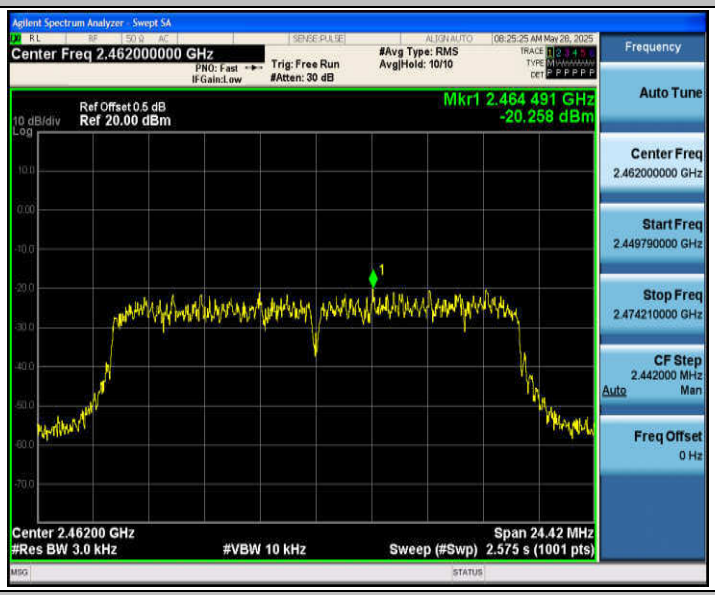
11N20SISO_Ant1_2412



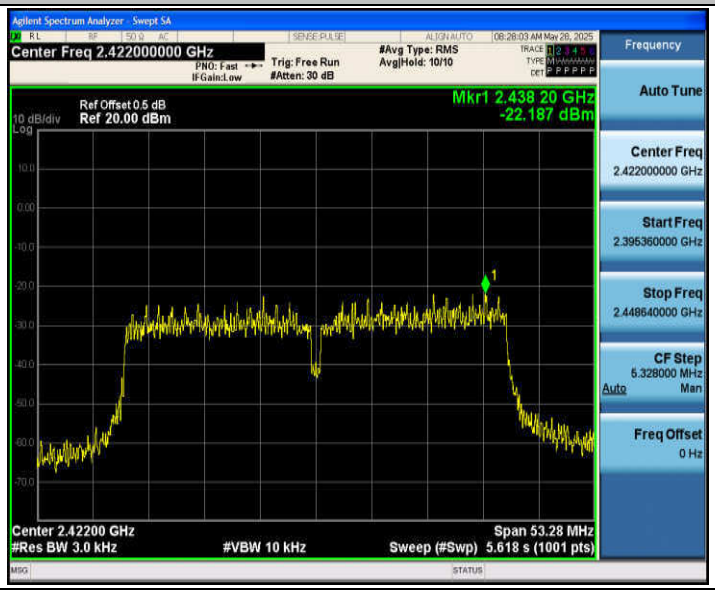
11N20SISO_Ant1_2437

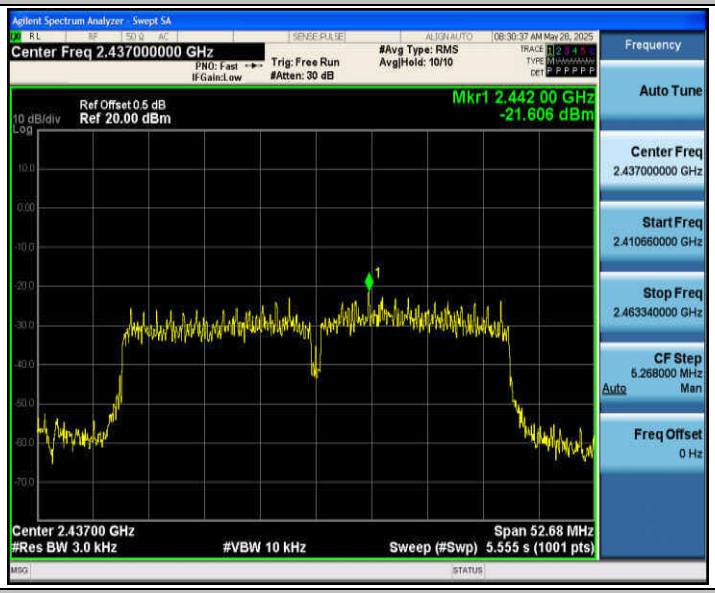


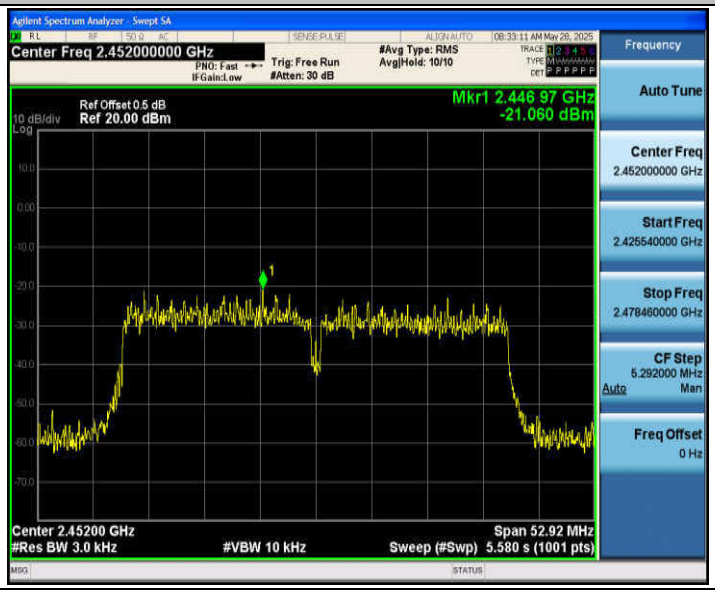
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437


11N40SISO_Ant1_2452


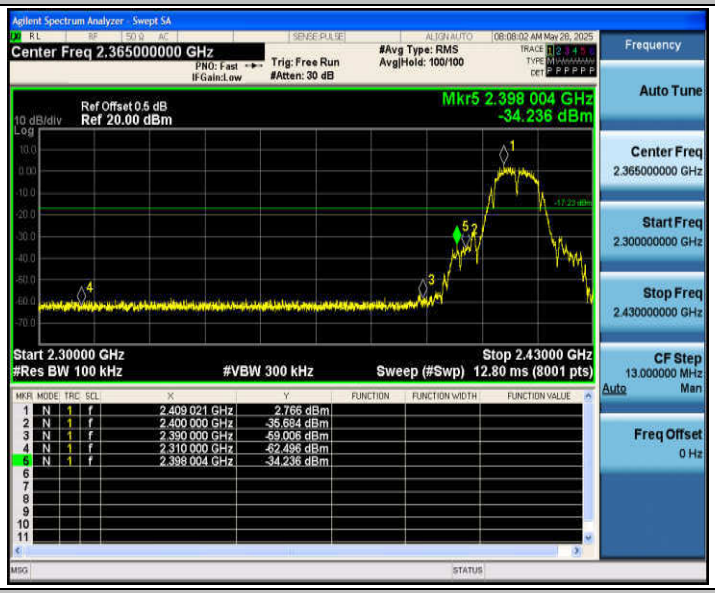
Appendix E: Band edge measurements

Test Result

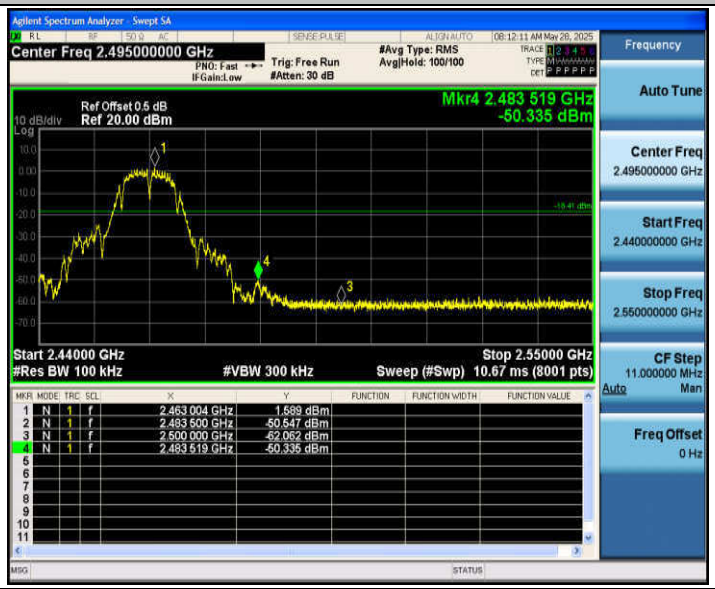
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	2.77	-34.24	≤-17.23	PASS
		High	2462	1.59	-50.34	≤-18.41	PASS
11G	Ant1	Low	2412	-1.99	-36.18	≤-21.99	PASS
		High	2462	-3.33	-40.41	≤-23.33	PASS
11N20SISO	Ant1	Low	2412	-1.89	-36.1	≤-21.89	PASS
		High	2462	-3.26	-38.95	≤-23.26	PASS
11N40SISO	Ant1	Low	2422	-5.50	-39.13	≤-25.5	PASS
		High	2452	-5.20	-34.9	≤-25.2	PASS

Test Graphs

11B_Ant1_Low_2412

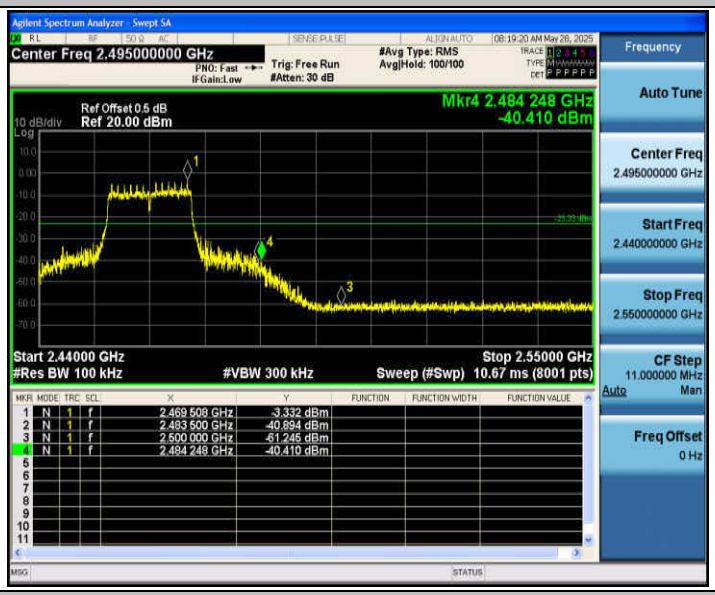


11B_Ant1_High_2462

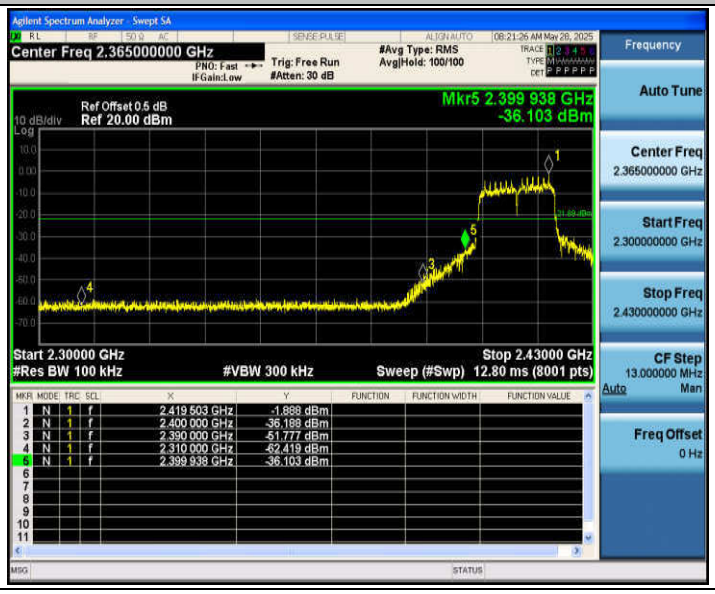


11G_Ant1_Low_2412

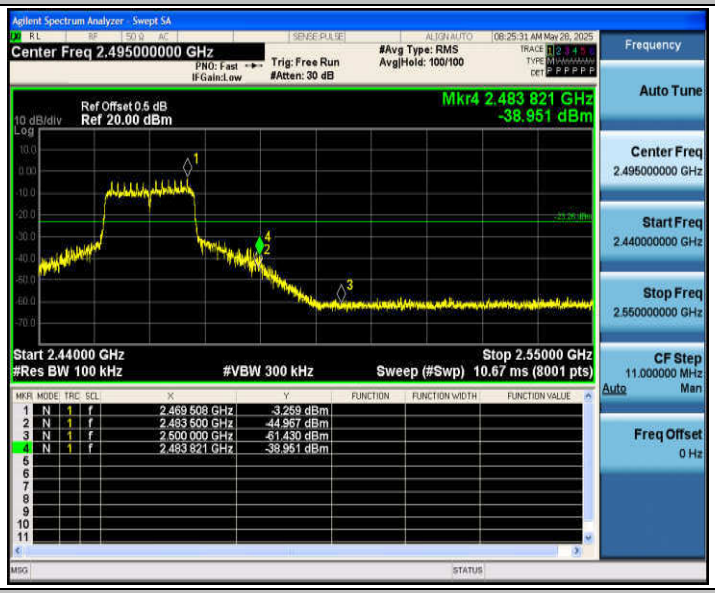
11G_Ant1_High_2462



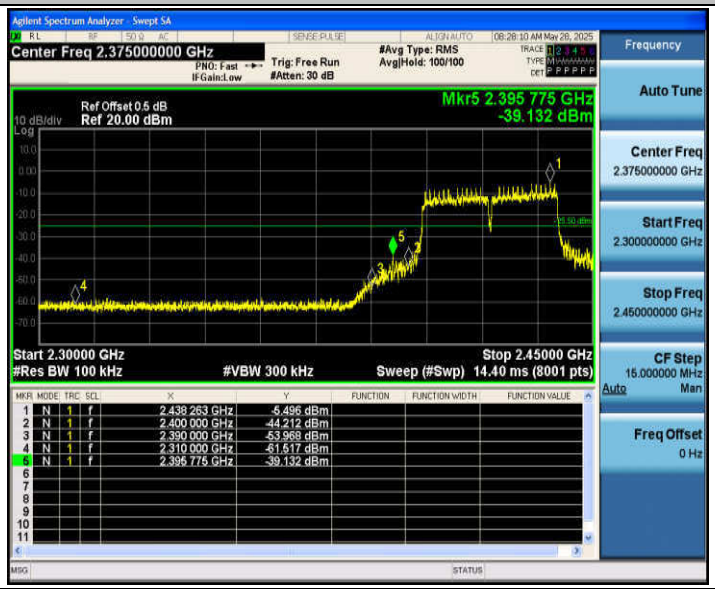
11N20SISO_Ant1_Low_2412



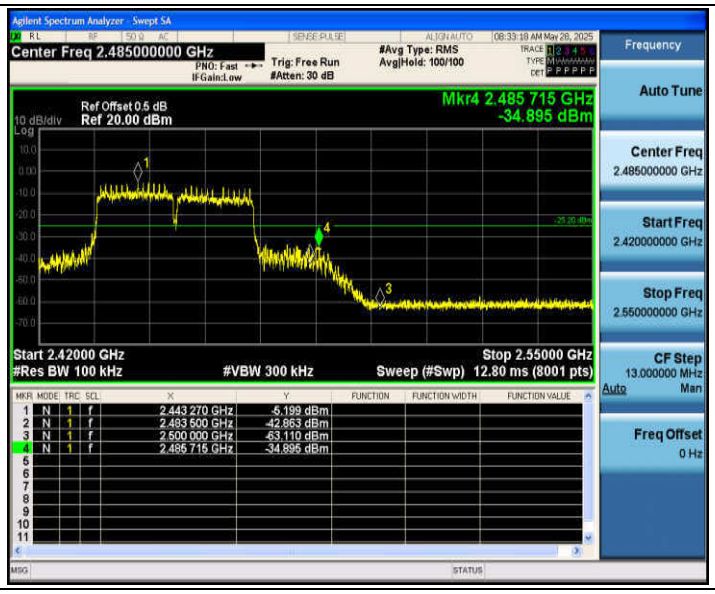
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452

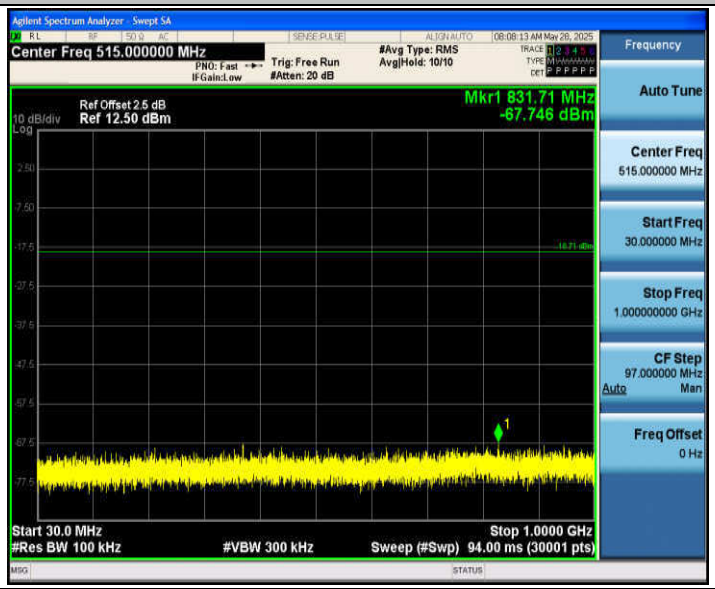

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.485000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 100/100
08:33:18 AM May 26, 2025
Ref Offset 0.5 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr4 2.485 715 GHz
-34.895 dBm
Start 2.42000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 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 2.443 270 GHz -5.199 dBm
2 N 1 f 2.483 500 GHz -42.863 dBm
3 N 1 f 2.500 000 GHz -63.110 dBm
4 N 1 f 2.485 715 GHz -34.895 dBm
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
MSG
STATUS

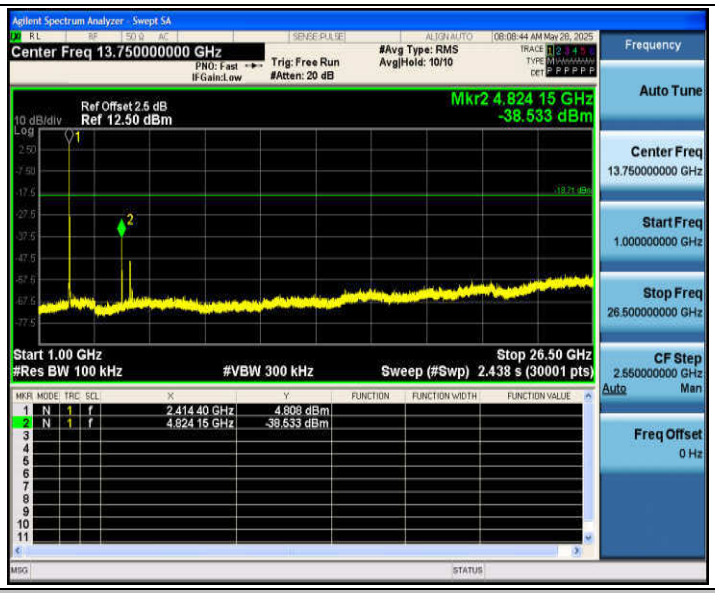
Appendix F: Conducted Spurious Emission

Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	1.29	1.29	---	PASS
			30~1000	1.29	-67.75	≤-18.71	PASS
			1000~26500	1.29	-38.53	≤-18.71	PASS
		2437	Reference	0.56	0.56	---	PASS
			30~1000	0.56	-67.64	≤-19.44	PASS
			1000~26500	0.56	-36.71	≤-19.44	PASS
		2462	Reference	-0.46	-0.46	---	PASS
			30~1000	-0.46	-67.65	≤-20.46	PASS
			1000~26500	-0.46	-30.62	≤-20.46	PASS
11G	Ant1	2412	Reference	-2.76	-2.76	---	PASS
			30~1000	-2.76	-67.95	≤-22.76	PASS
			1000~26500	-2.76	-51.1	≤-22.76	PASS
		2437	Reference	-3.12	-3.12	---	PASS
			30~1000	-3.12	-67.64	≤-23.12	PASS
			1000~26500	-3.12	-49.25	≤-23.12	PASS
		2462	Reference	-5.15	-5.15	---	PASS
			30~1000	-5.15	-67.76	≤-25.15	PASS
			1000~26500	-5.15	-46.03	≤-25.15	PASS
11N20SISO	Ant1	2412	Reference	-3.93	-3.93	---	PASS
			30~1000	-3.93	-67.4	≤-23.93	PASS
			1000~26500	-3.93	-50.04	≤-23.93	PASS
		2437	Reference	-2.97	-2.97	---	PASS
			30~1000	-2.97	-67.07	≤-22.97	PASS
			1000~26500	-2.97	-51.33	≤-22.97	PASS
		2462	Reference	-3.37	-3.37	---	PASS
			30~1000	-3.37	-67.96	≤-23.37	PASS
			1000~26500	-3.37	-43.57	≤-23.37	PASS
11N40SISO	Ant1	2422	Reference	-5.40	-5.40	---	PASS
			30~1000	-5.40	-68.2	≤-25.4	PASS
			1000~26500	-5.40	-43.56	≤-25.4	PASS
		2437	Reference	-6.28	-6.28	---	PASS
			30~1000	-6.28	-68.04	≤-26.28	PASS
			1000~26500	-6.28	-51.41	≤-26.28	PASS
		2452	Reference	-5.60	-5.60	---	PASS
			30~1000	-5.60	-67.41	≤-25.6	PASS
			1000~26500	-5.60	-50.54	≤-25.6	PASS

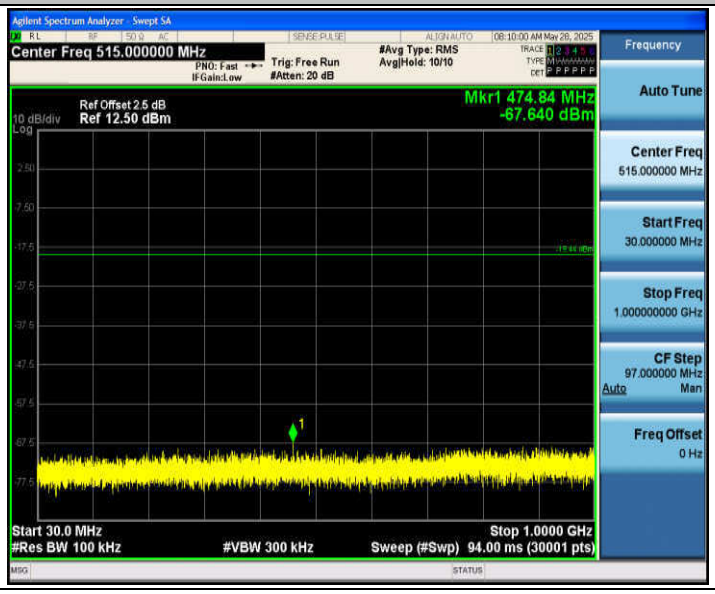
Test Graphs

11B_Ant1_2412_0~Reference
11B_Ant1_2412_30~1000

11B_Ant1_2412_1000~26500

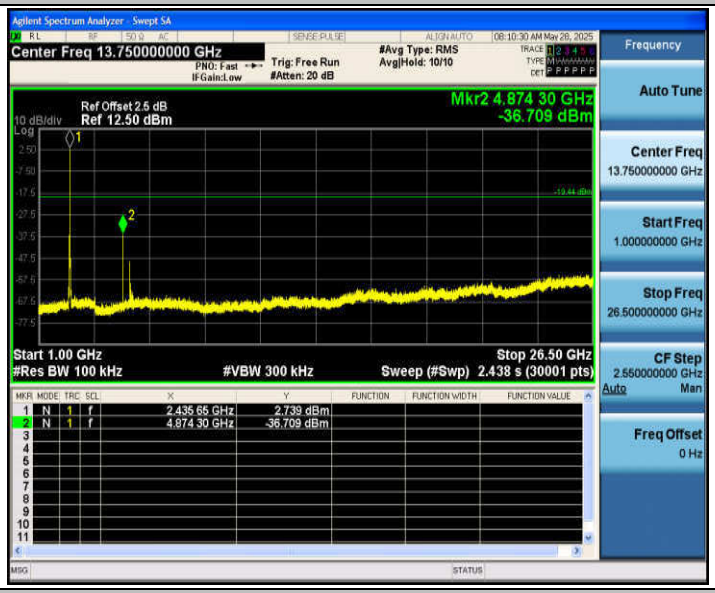


11B_Ant1_2437_0~Reference

11B_Ant1_2437_30~1000

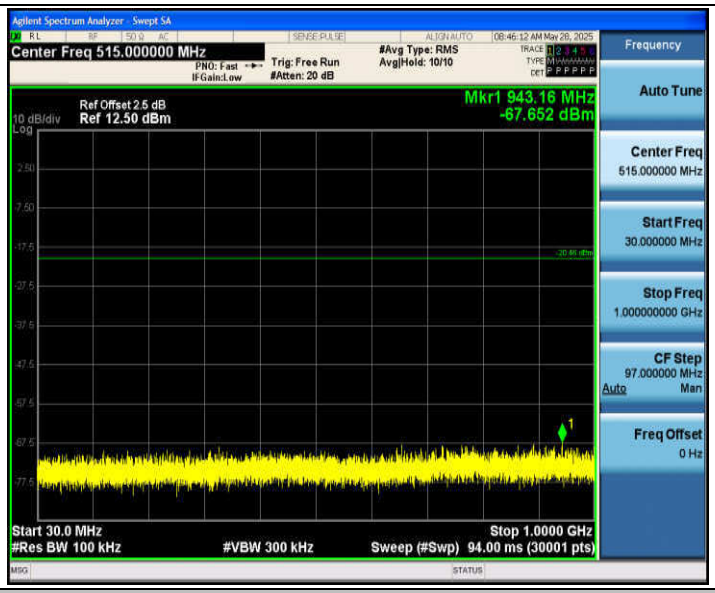


11B_Ant1_2437_1000~26500



11B_Ant1_2462_0~Reference

11B_Ant1_2462_30~1000



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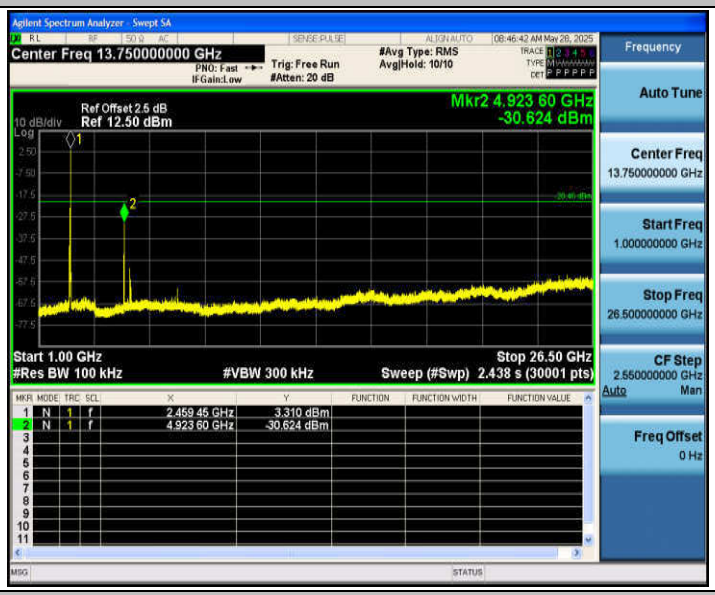
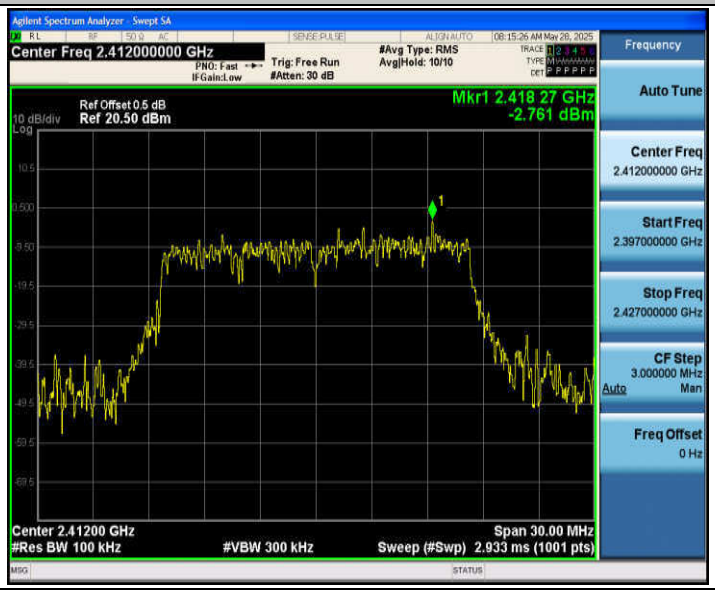


11G_Ant1_2412_0~Reference



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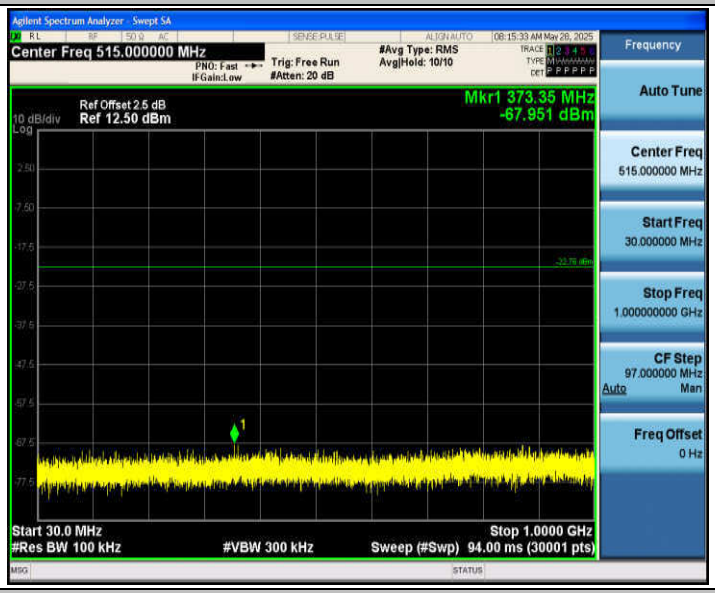

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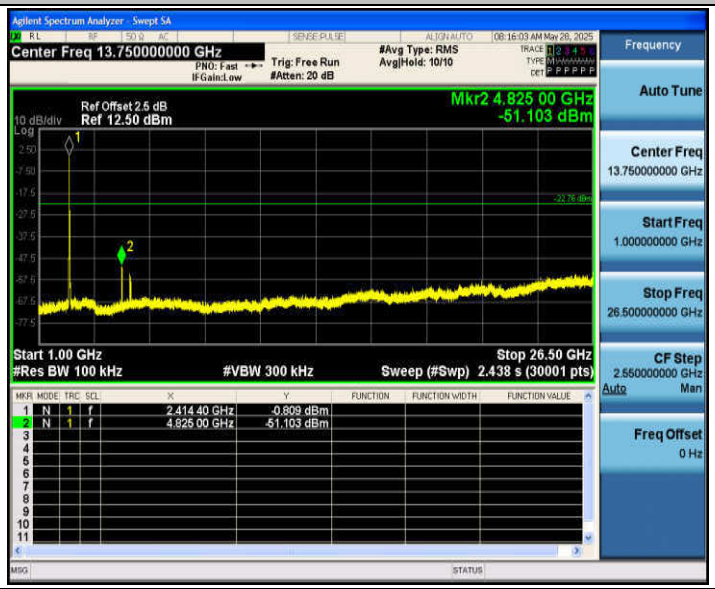

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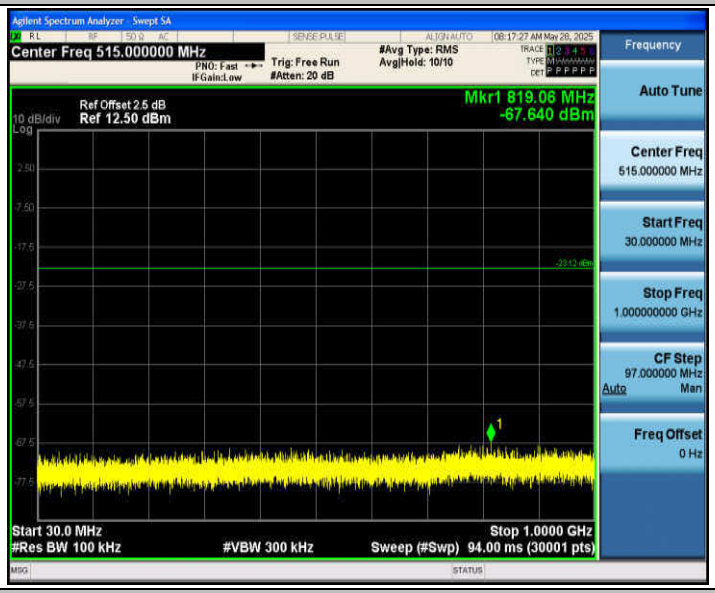

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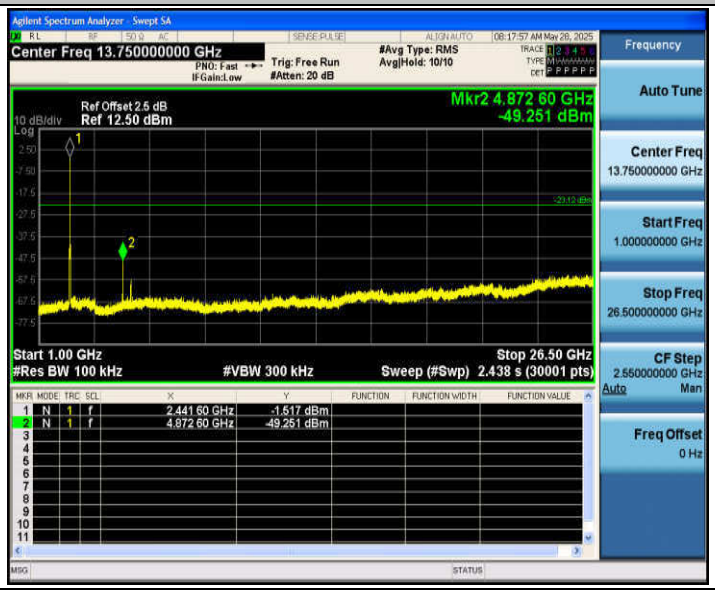

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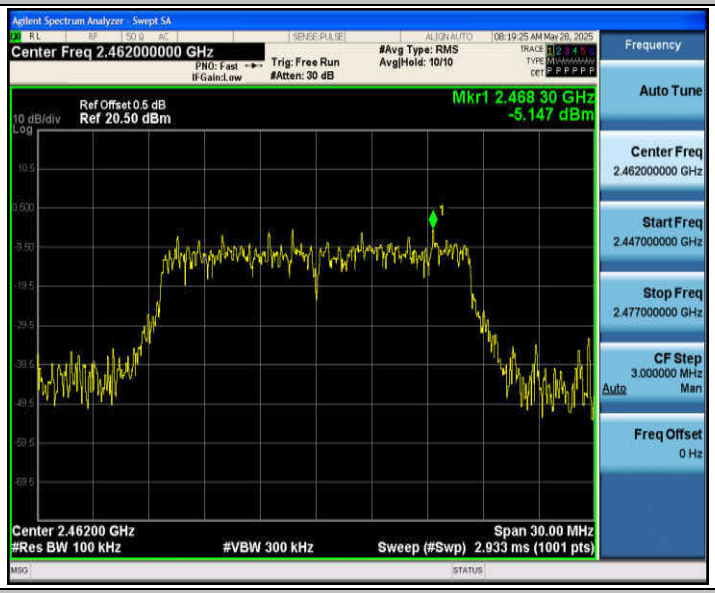

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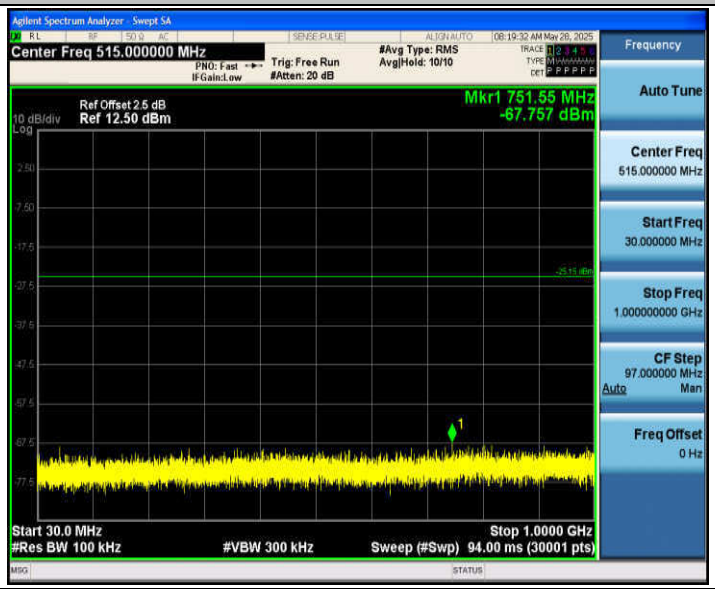

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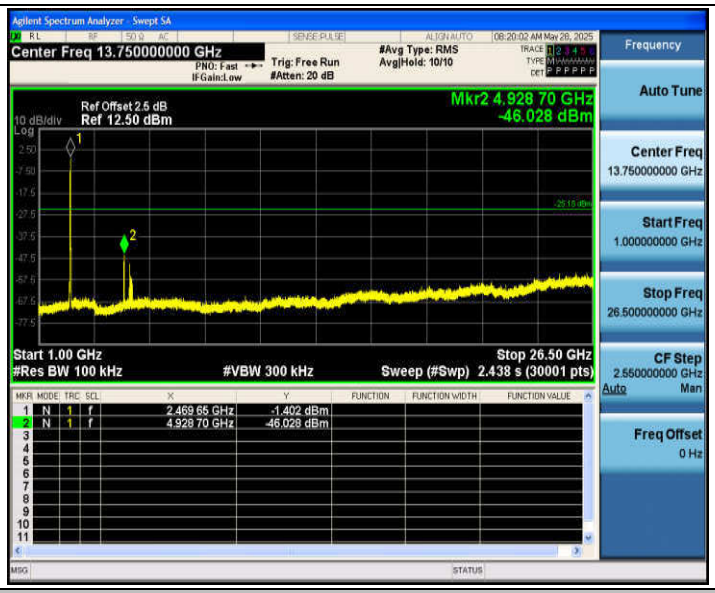

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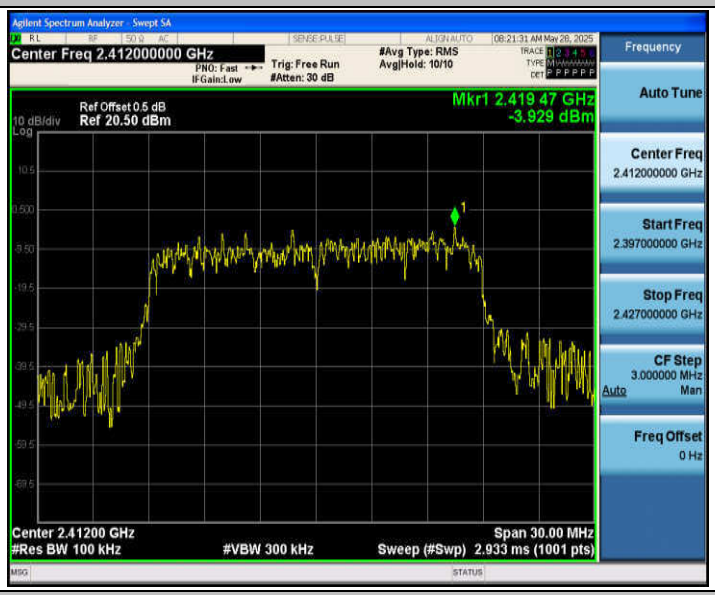

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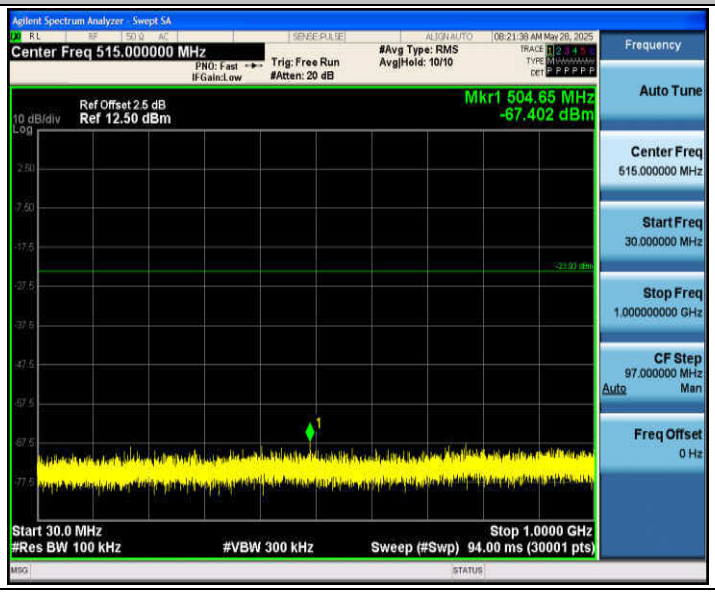

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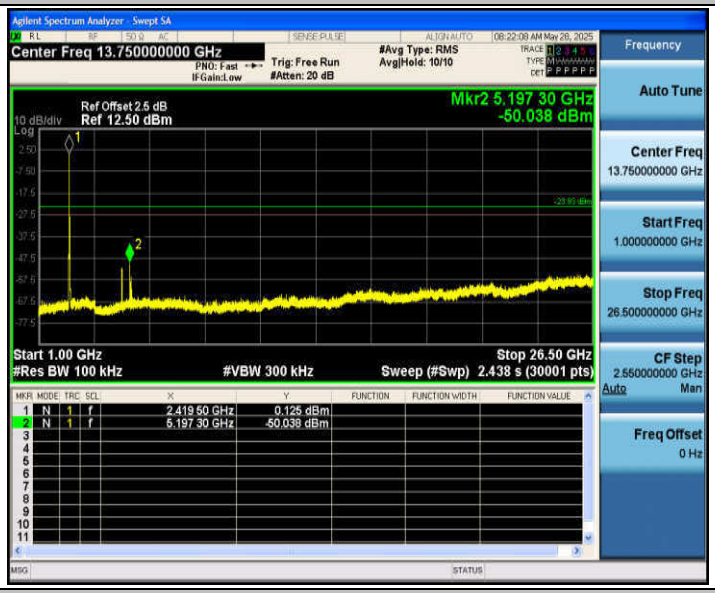

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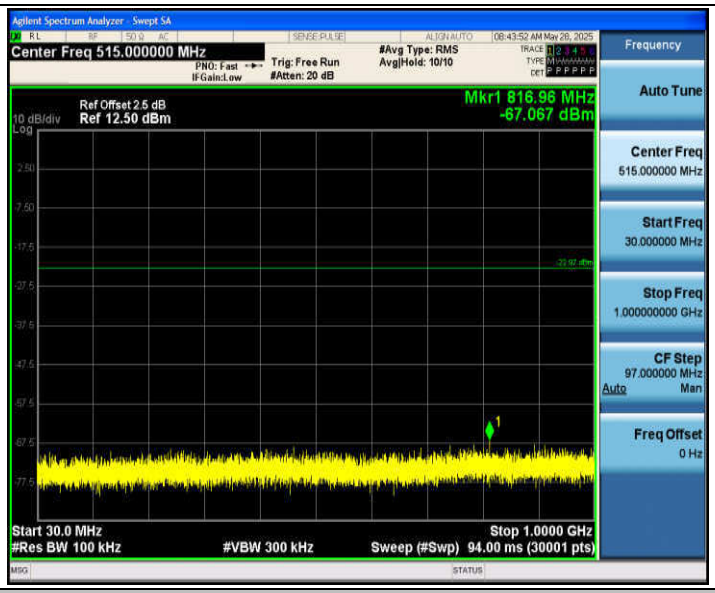
11N20SISO_Ant1_2437_30~1000



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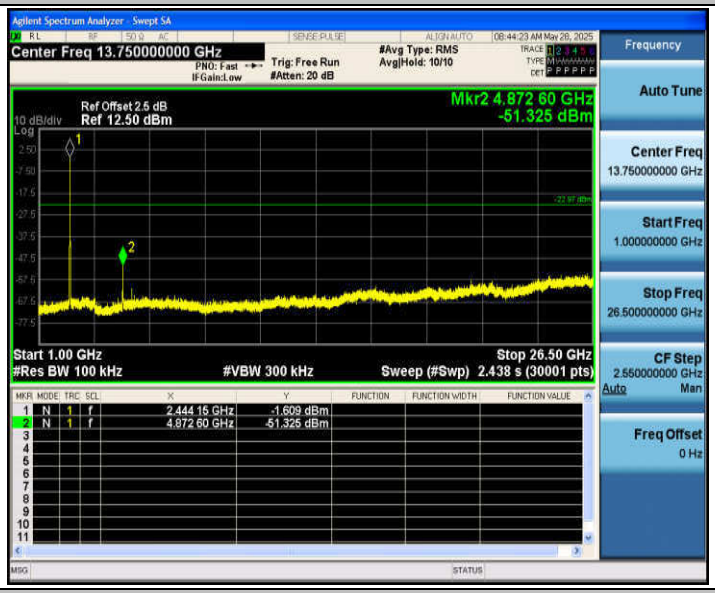

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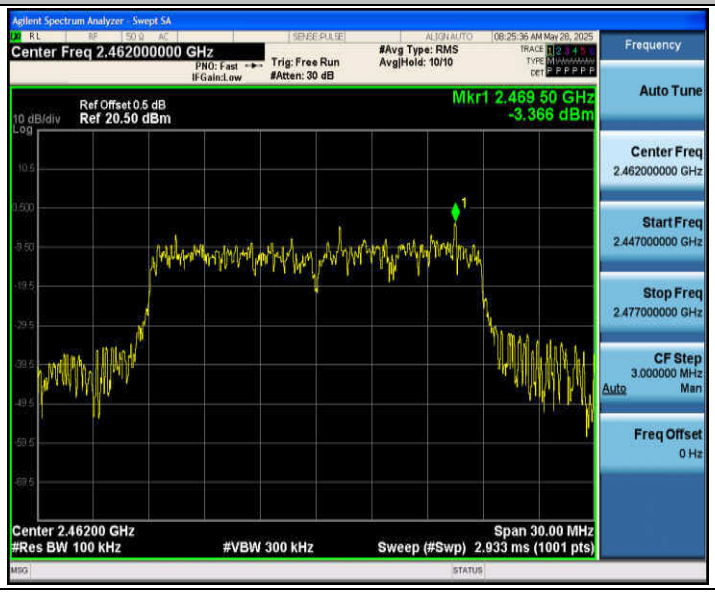

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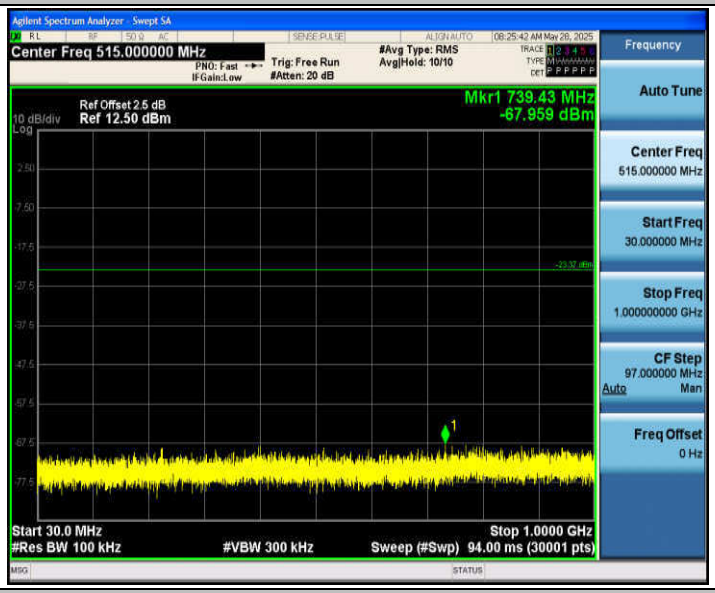

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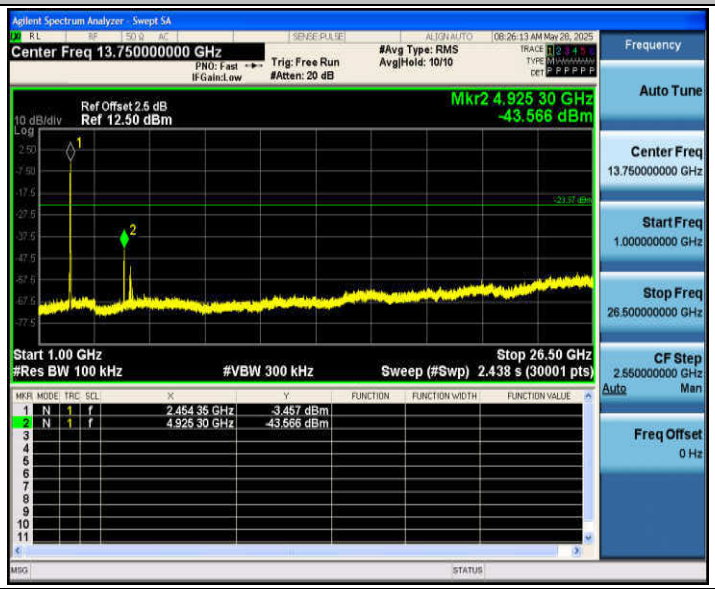

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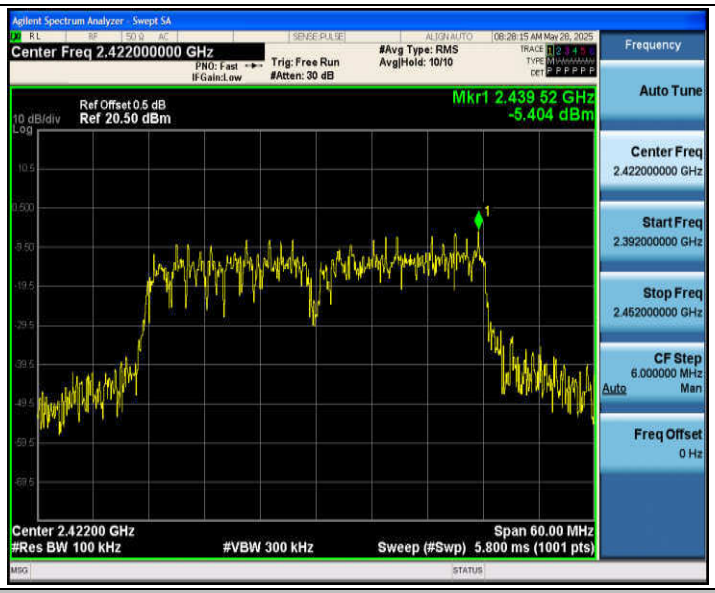

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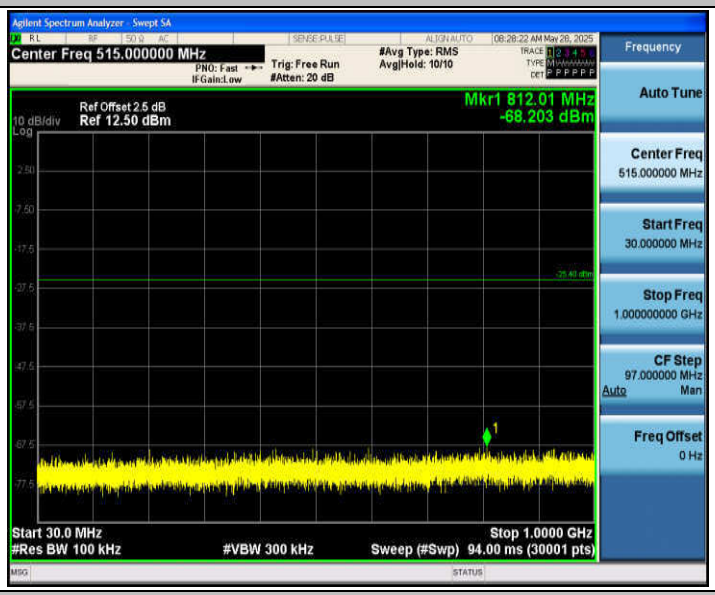

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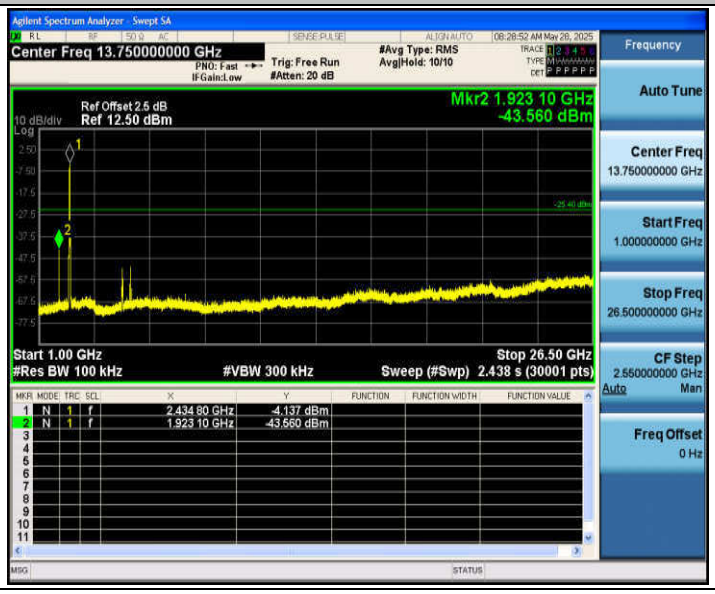

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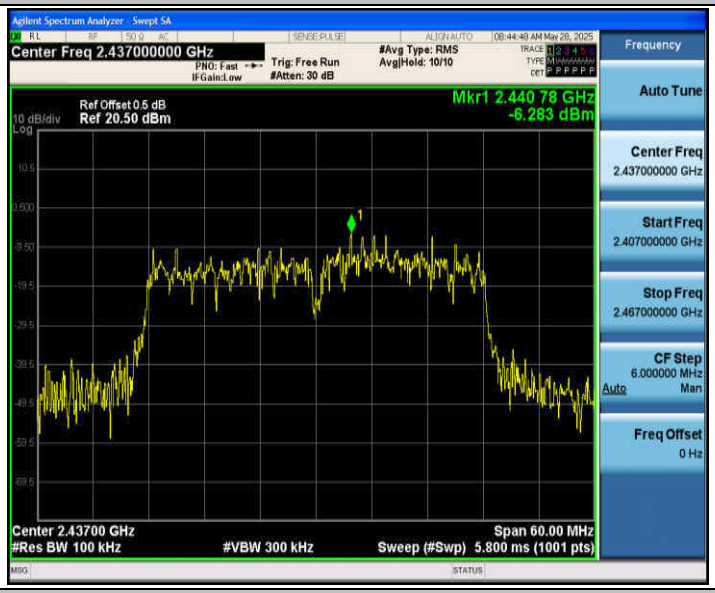

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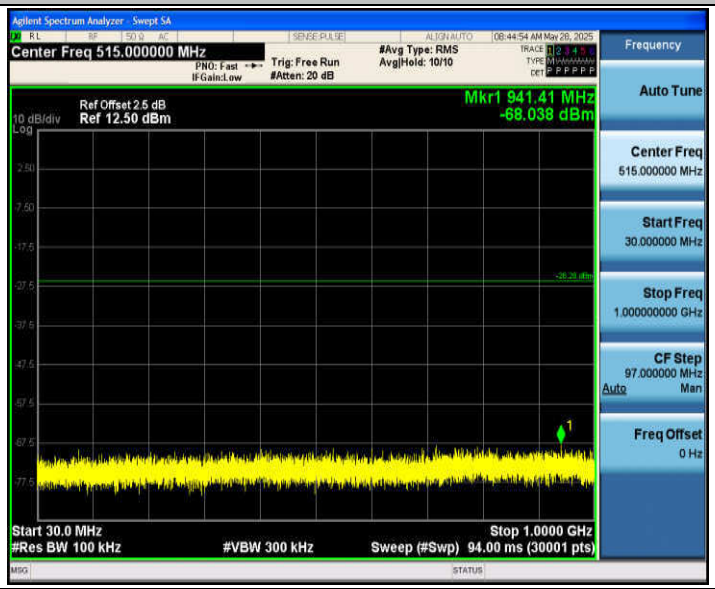

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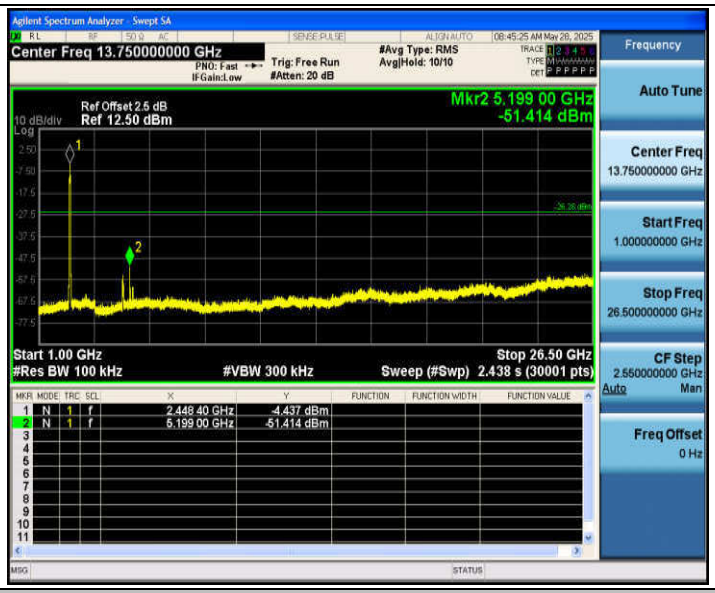

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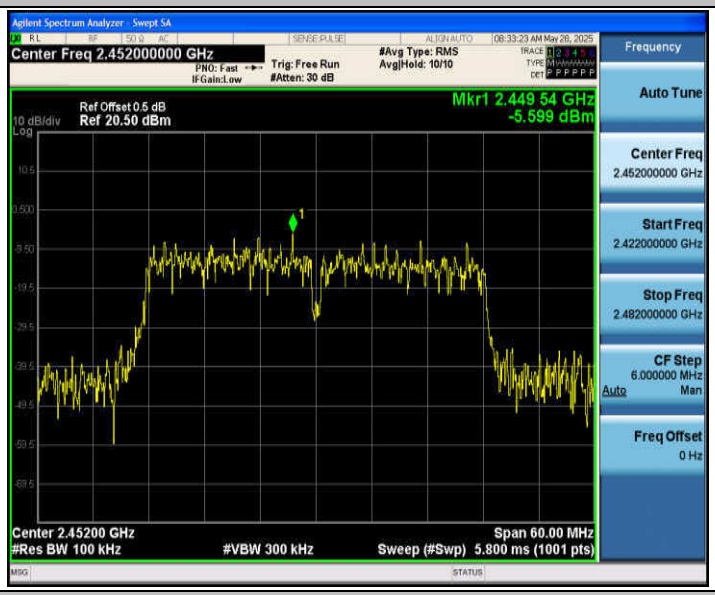

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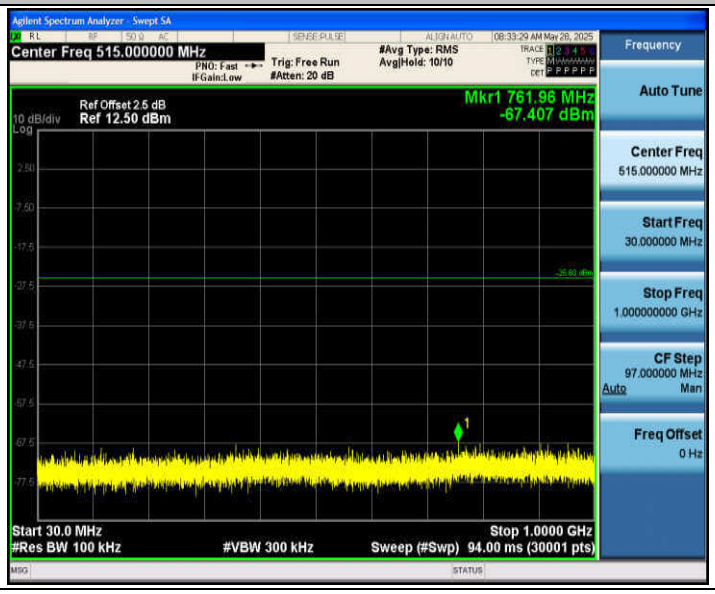

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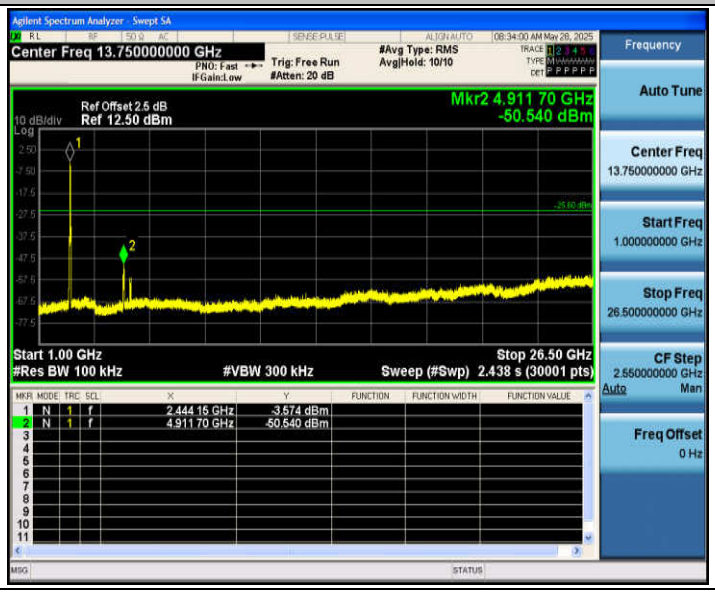
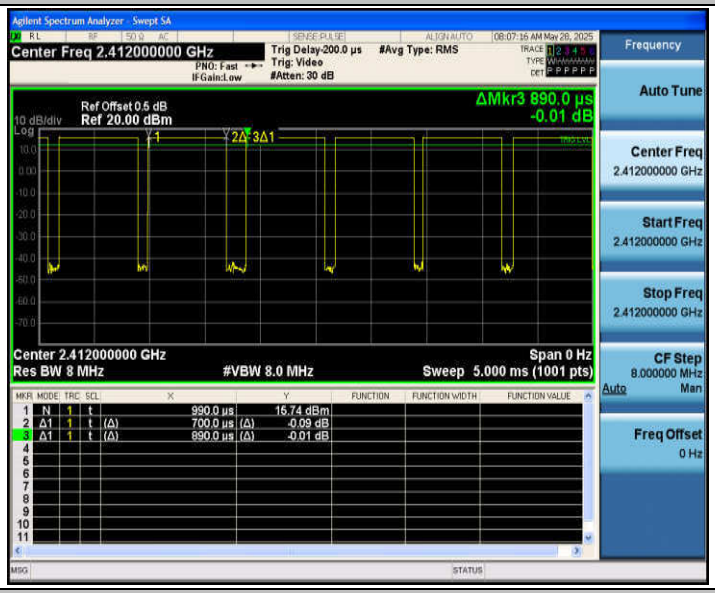


Appendix G: Duty Cycle

Test Result

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11B	Ant1	2412	0.70	0.89	78.65
		2437	0.71	0.93	76.34
		2462	0.71	0.88	80.68
11G	Ant1	2412	0.11	0.29	37.93
		2437	0.11	0.27	40.74
		2462	0.11	0.29	37.93
11N20SISO	Ant1	2412	0.11	0.33	33.33
		2437	0.11	0.30	36.67
		2462	0.11	0.30	36.67
11N40SISO	Ant1	2422	0.07	0.25	28.00
		2437	0.07	0.26	26.92
		2452	0.07	0.28	25.00

Test Graphs

11B_Ant1_2412

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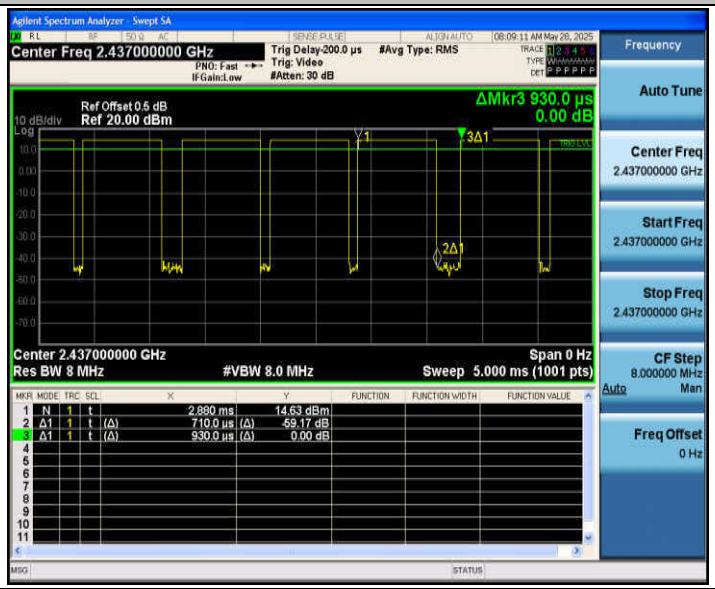
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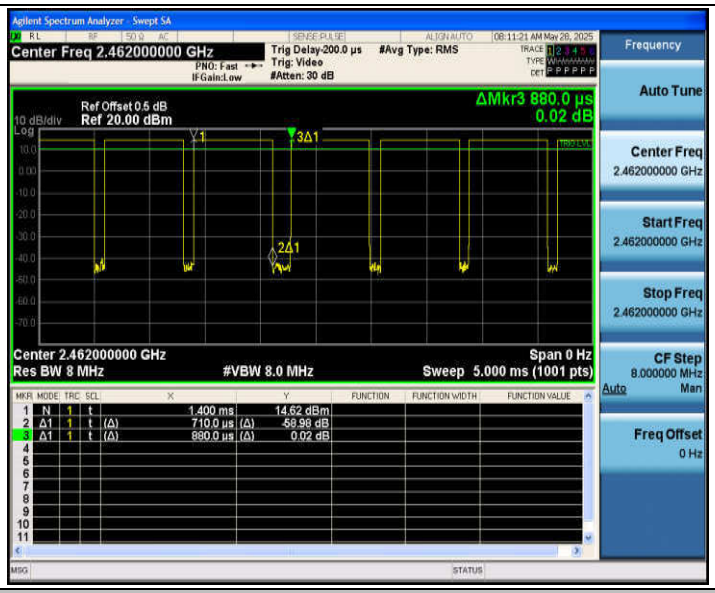

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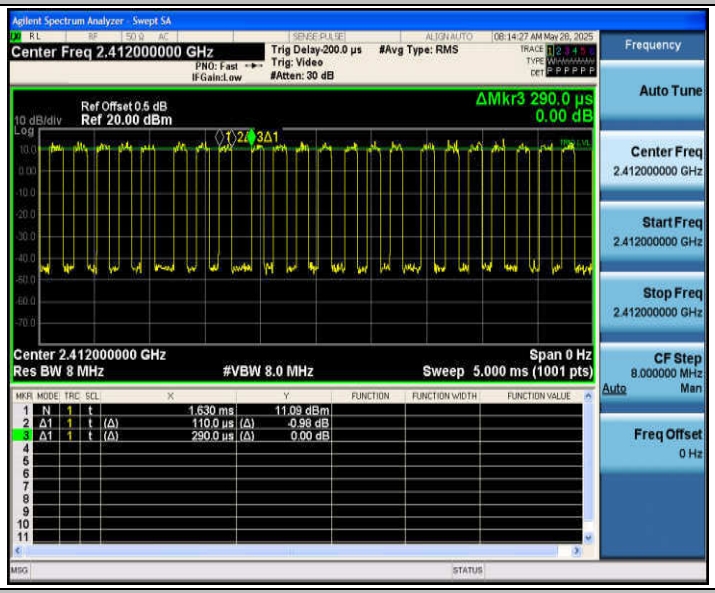

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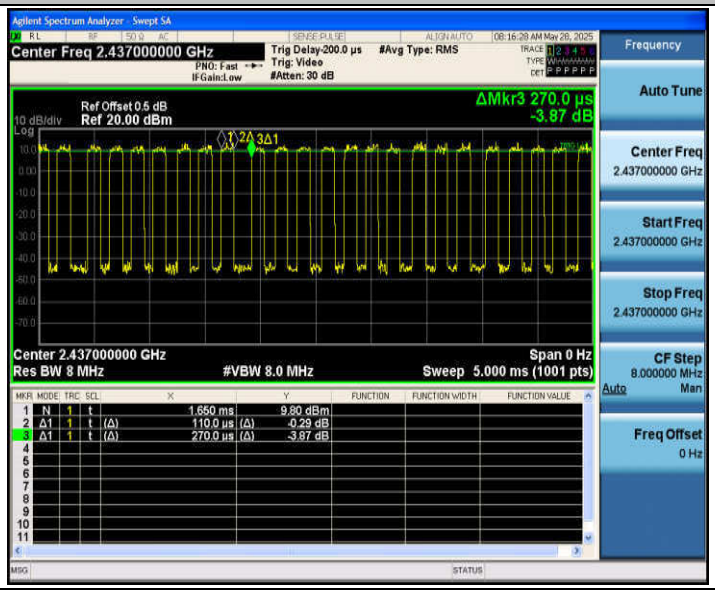

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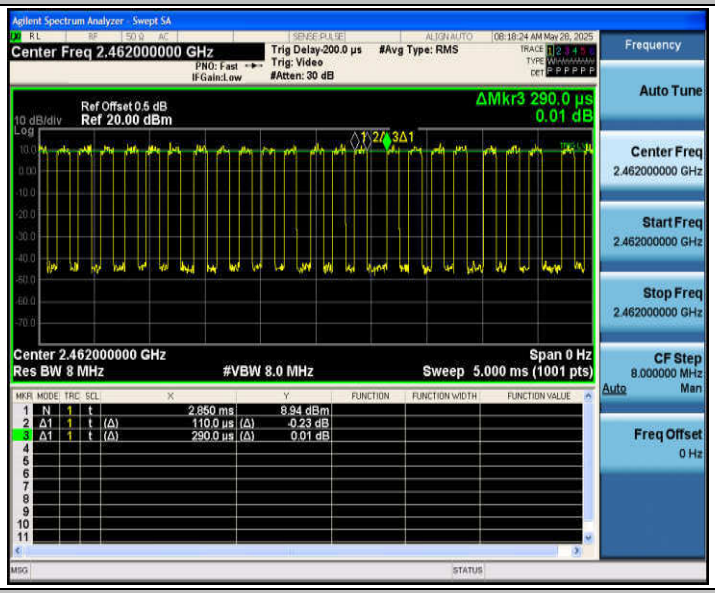

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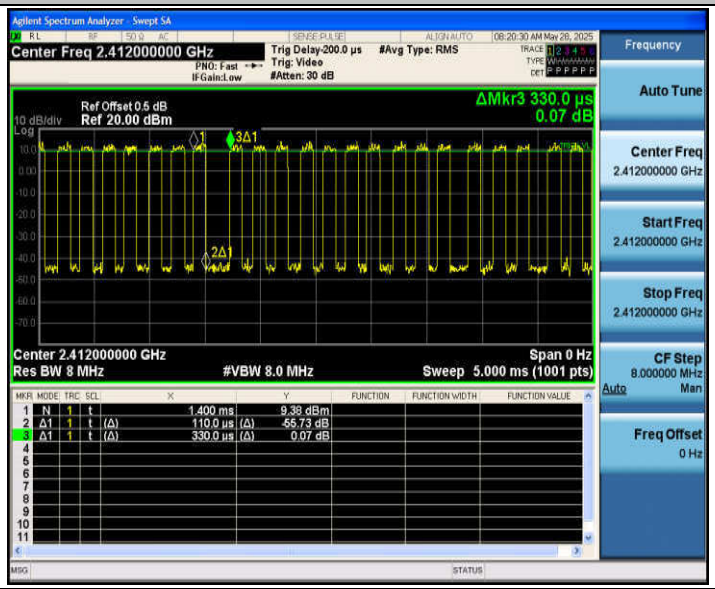

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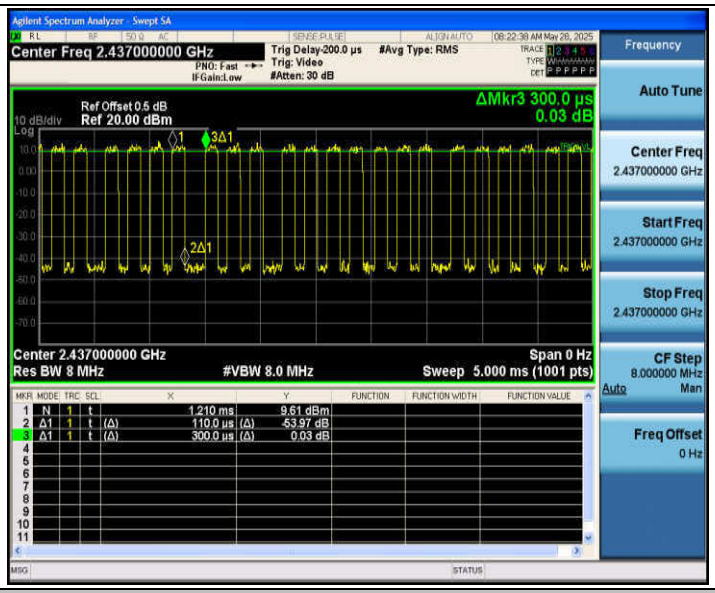

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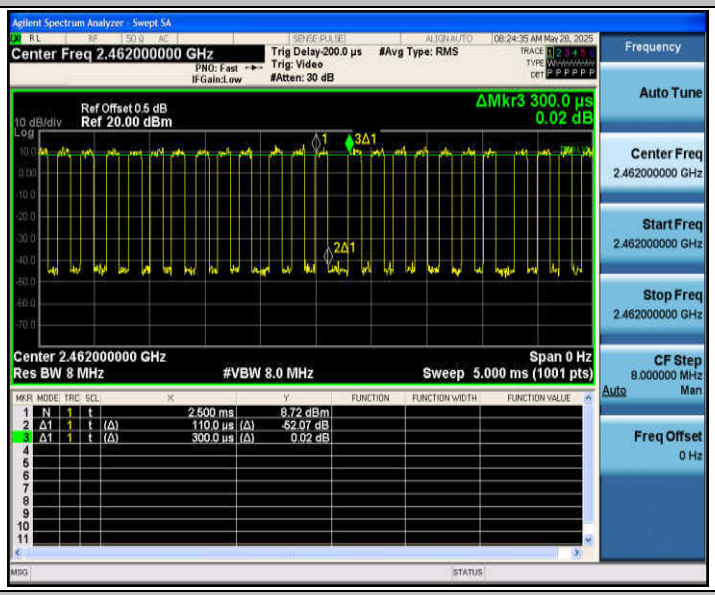

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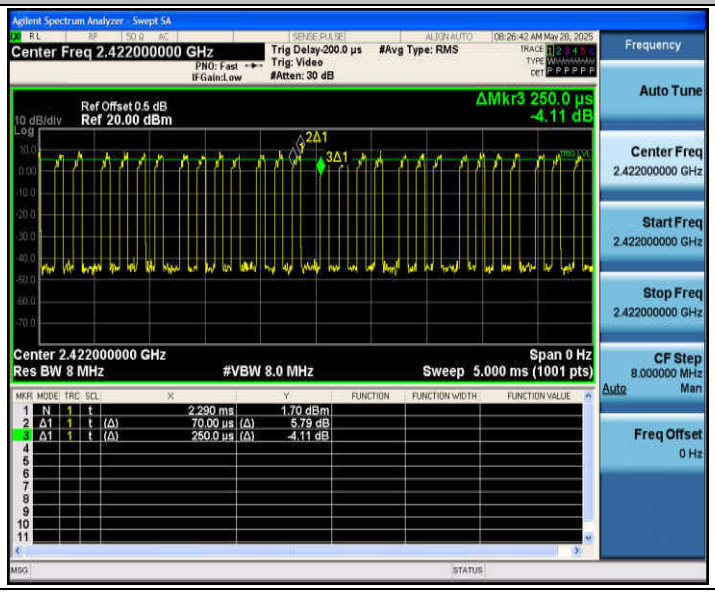

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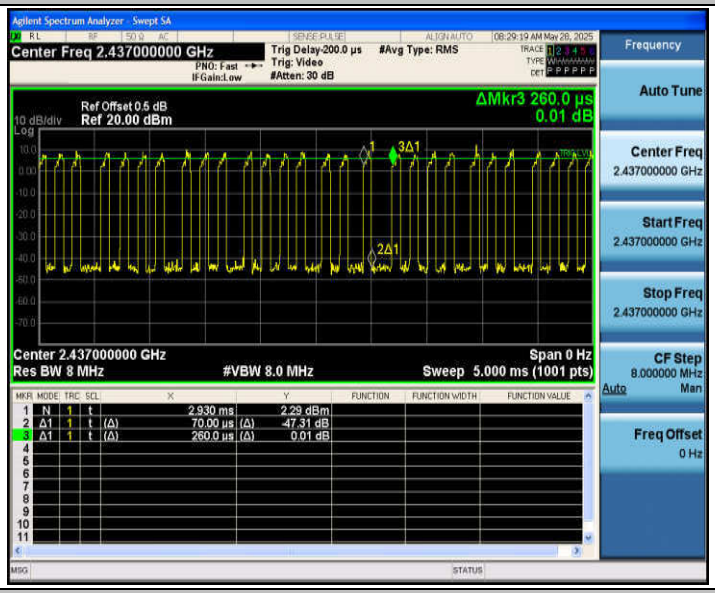
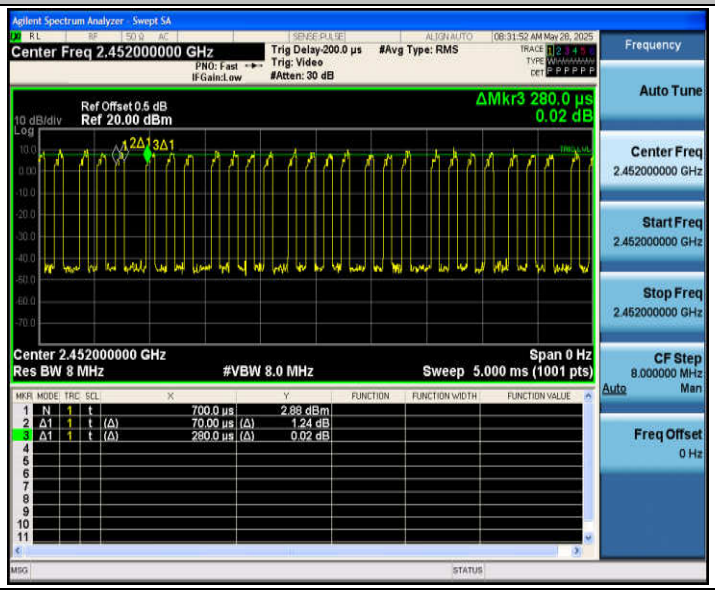
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