

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



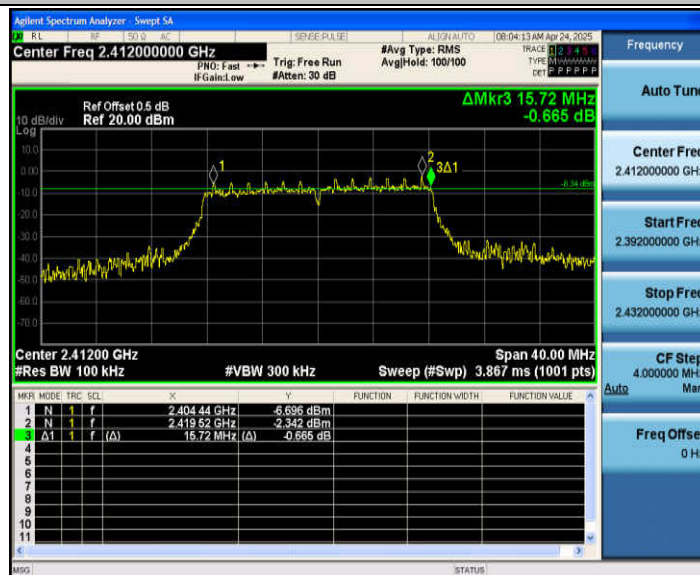
11B_Ant1_2437



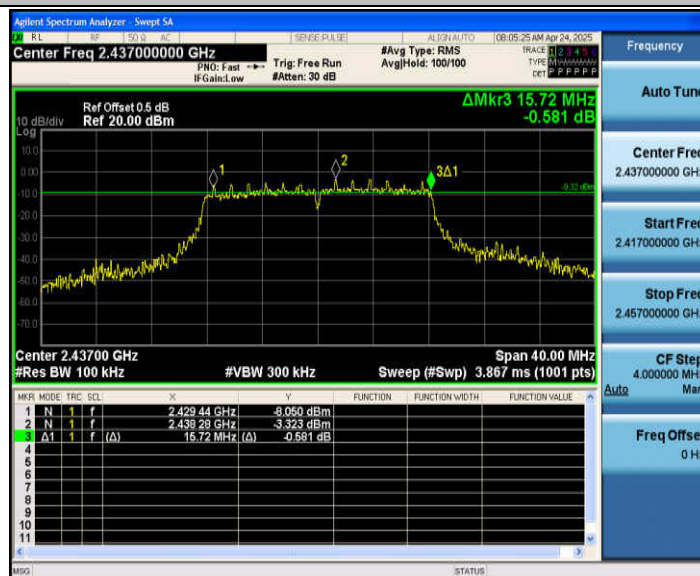
11B_Ant1_2462



11G_Ant1_2412



11G_Ant1_2437



11G_Ant1_2462



11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



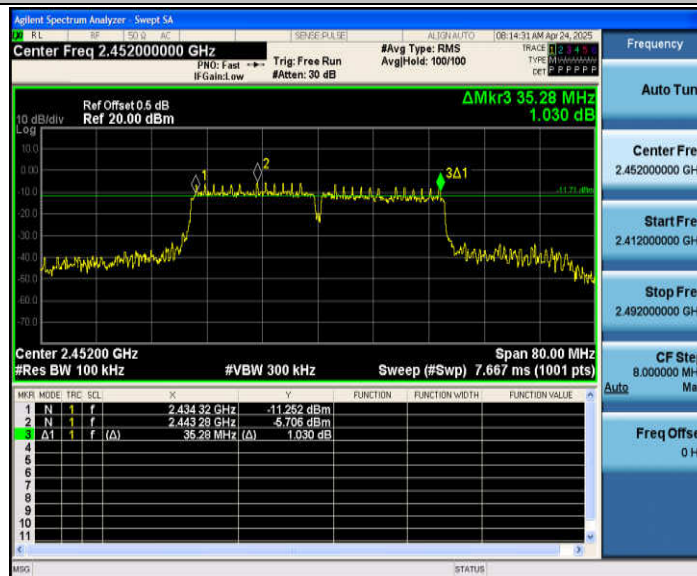
11N40SISO_Ant1_2422



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



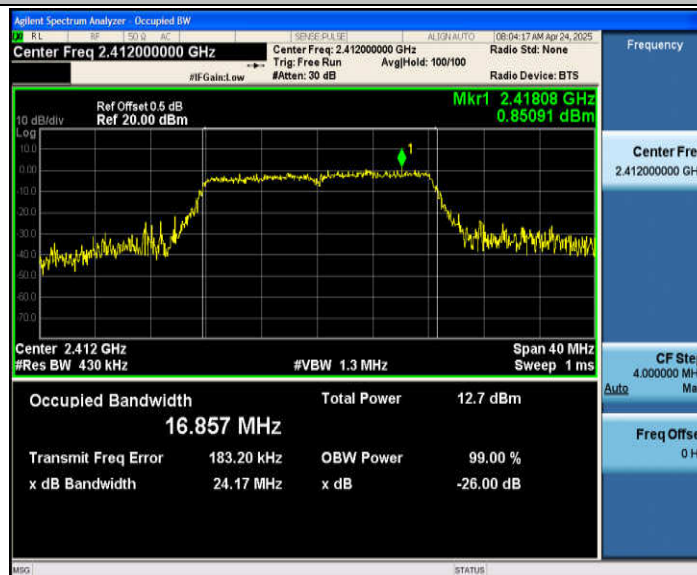
11B_Ant1_2437



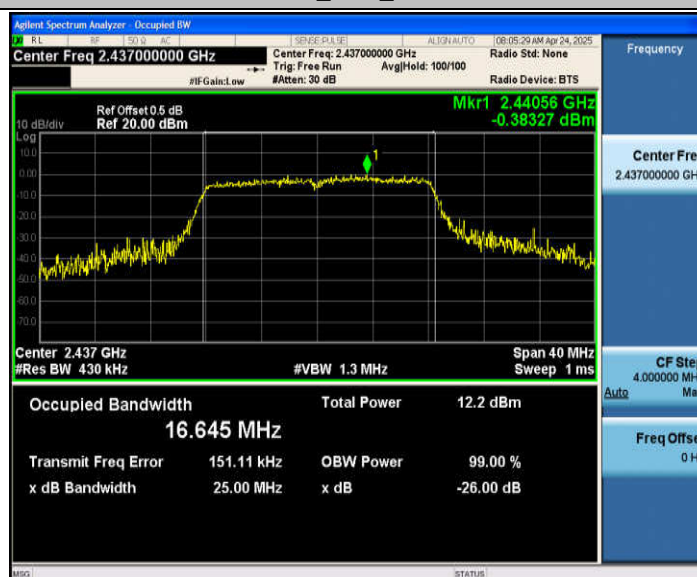
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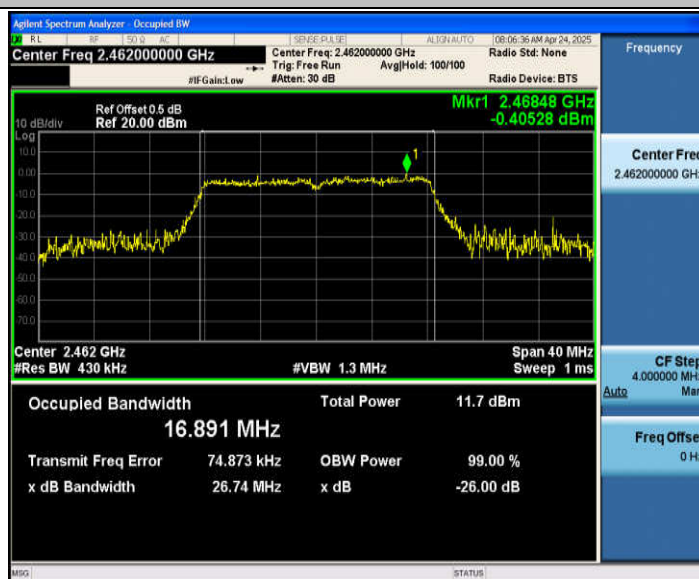
11G_Ant1_2412



11G_Ant1_2437



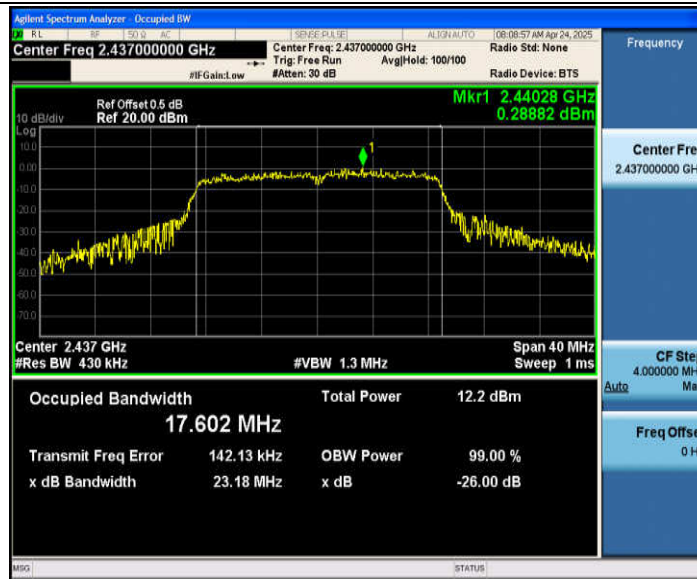
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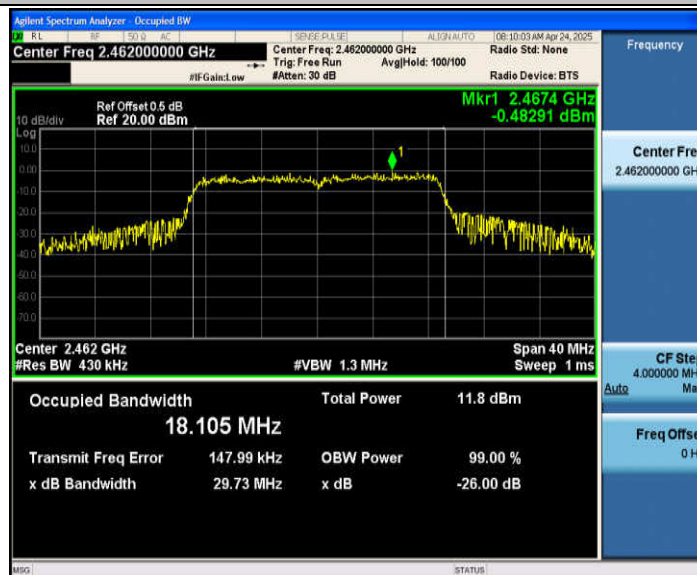
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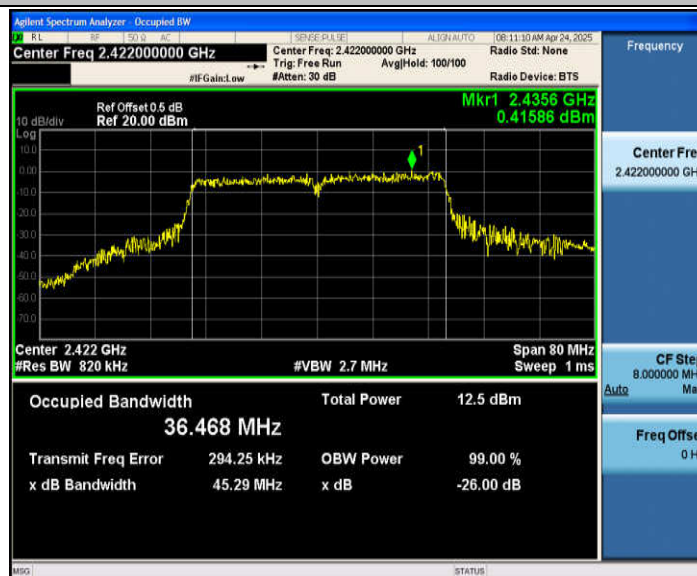
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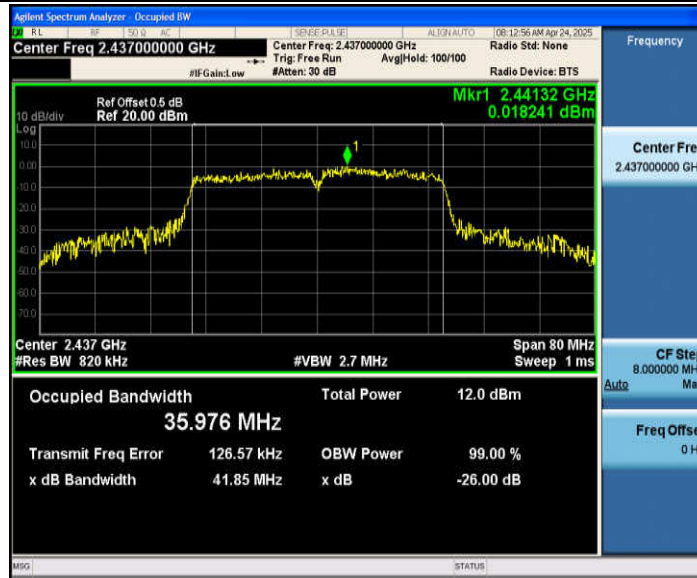
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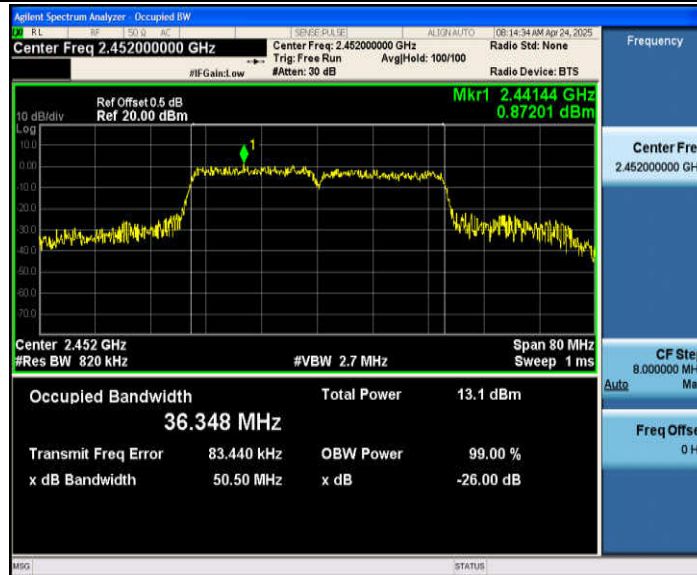
11N40SISO_Ant1_2422



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



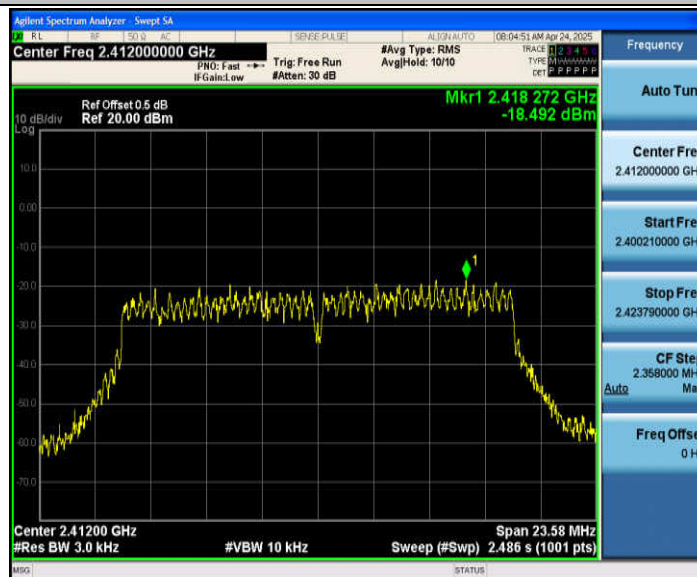
11B_Ant1_2437



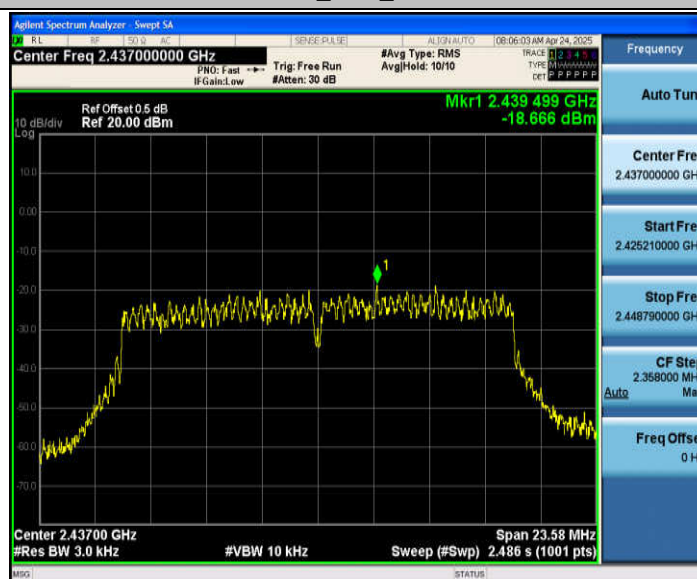
11B_Ant1_2462



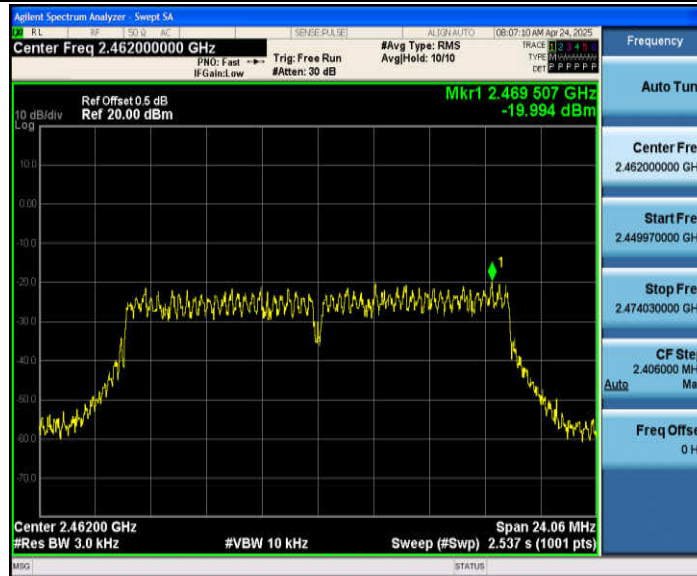
11G_Ant1_2412



11G_Ant1_2437



11G_Ant1_2462



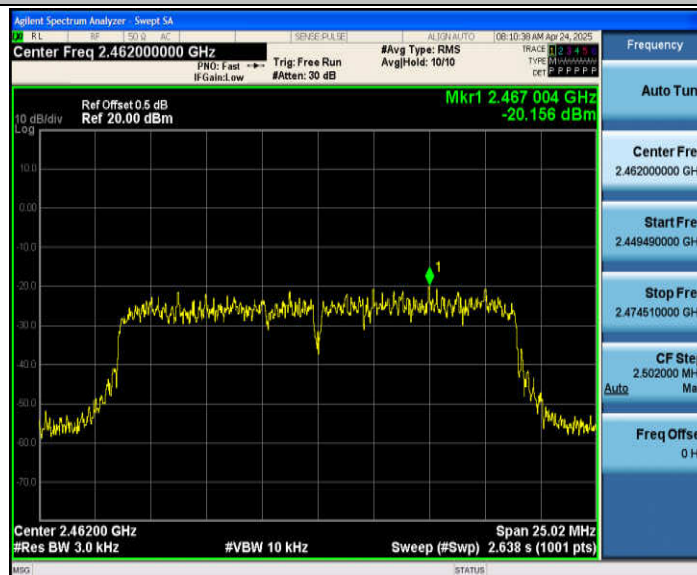
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



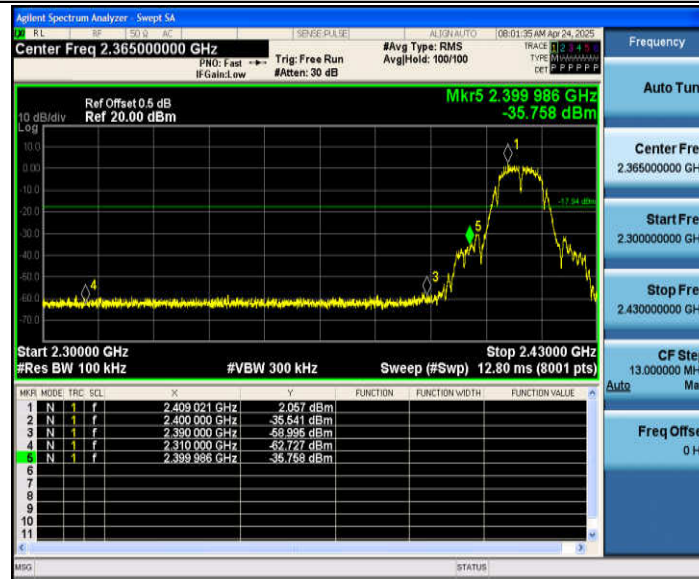
Appendix E: Band edge measurements

Test Result

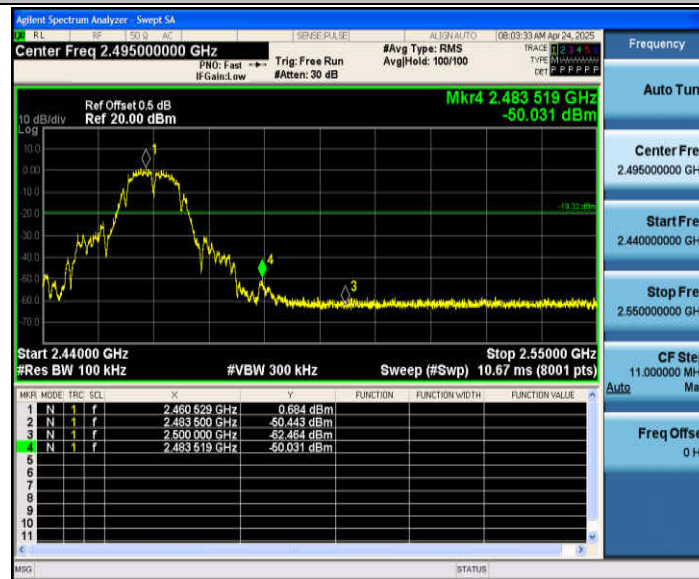
TestMode	Antenna	Channel Name	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	2.06	-35.76	≤-17.94	PASS
		High	2462	0.68	-50.03	≤-19.32	PASS
11G	Ant1	Low	2412	-2.39	-36.25	≤-22.39	PASS
		High	2462	-3.56	-35.54	≤-23.56	PASS
11N20SISO	Ant1	Low	2412	-2.29	-36.03	≤-22.29	PASS
		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



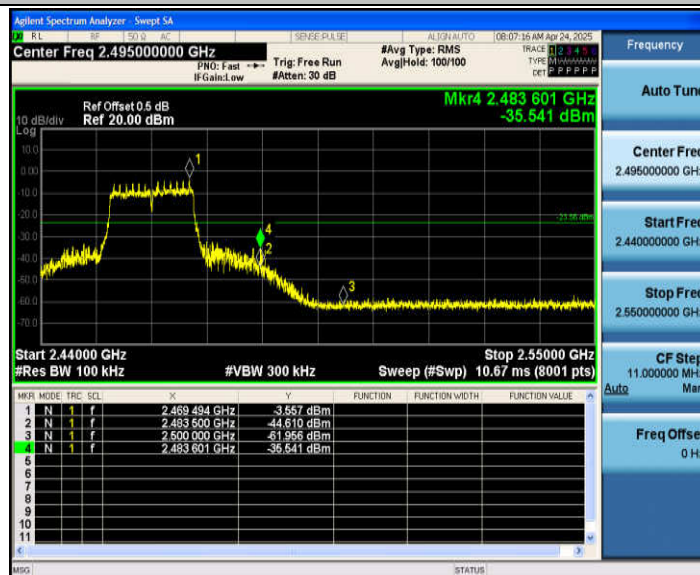
11B_Ant1_High_2462



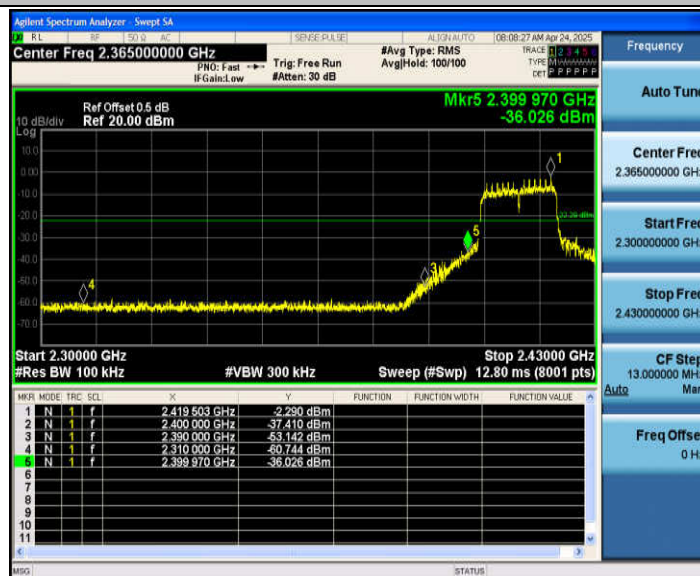
11G_Ant1_Low_2412



11G_Ant1_High_2462



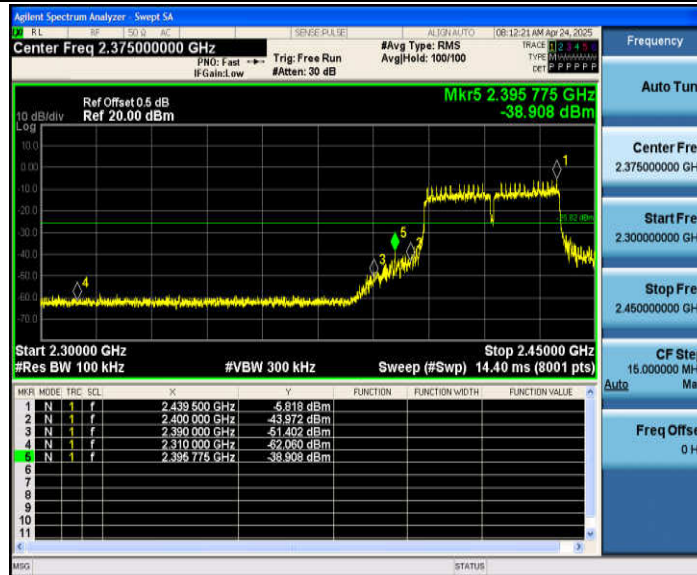
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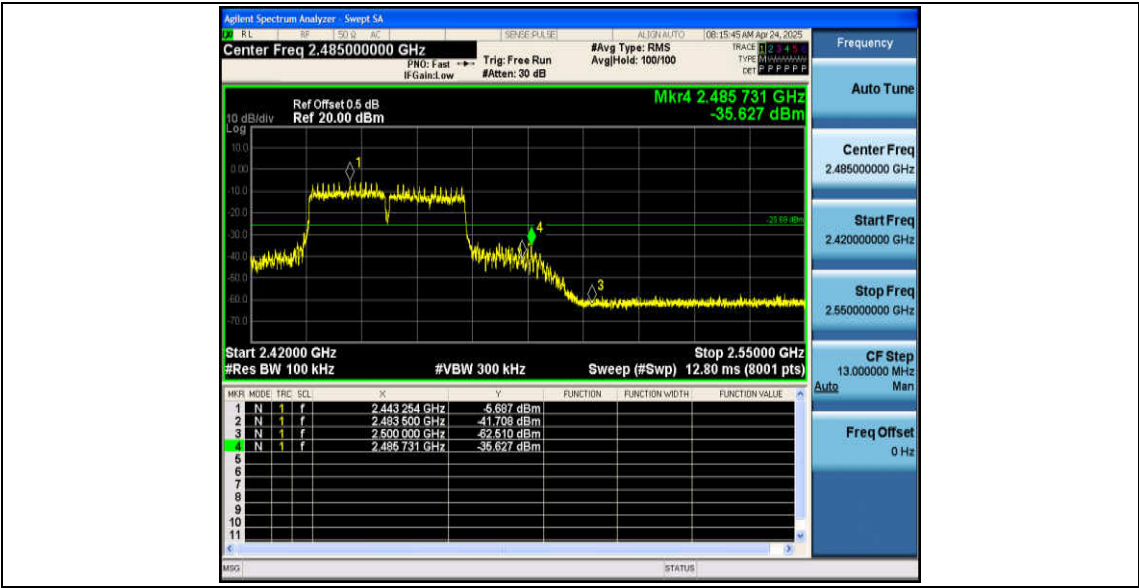
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452



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

11B_Ant1_2412_0~Reference

Agilent Spectrum Analyzer - Sweep SA

Center Freq 2.41200000 GHz

Ref Offset 2.5 dB
Ref 22.50 dBm

Mkr1 2.409 51 GHz
4.054 dBm

10 dB/div
Log

Center Freq 2.41200000 GHz

Start Freq 2.397000000 GHz

Stop Freq 2.427000000 GHz

CF Step 3.000000 MHz

Freq Offset 0 Hz

Center Freq 2.41200 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep (#Swp) 2.933 ms (1001 pts)

11B_Ant1_2412_30~1000

Agilent Spectrum Analyzer - Sweep SA

Center Freq 515.000000 MHz

Ref Offset 2.5 dB
Ref 12.50 dBm

Mkr1 360.38 MHz
-66.996 dBm

10 dB/div
Log

Center Freq 515.000000 MHz

Start Freq 30.000000 MHz

Stop Freq 1.000000000 GHz

CF Step 97.000000 MHz

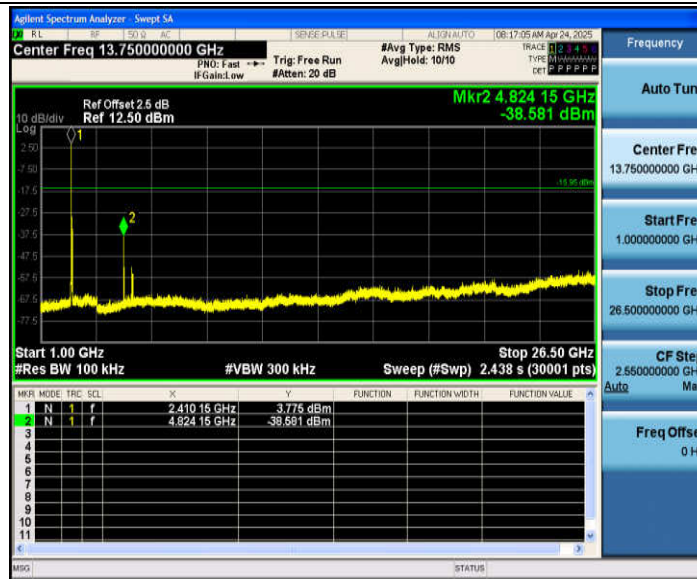
Freq Offset 0 Hz

Start 30.0 MHz

#Res BW 100 kHz

#VBW 300 kHz

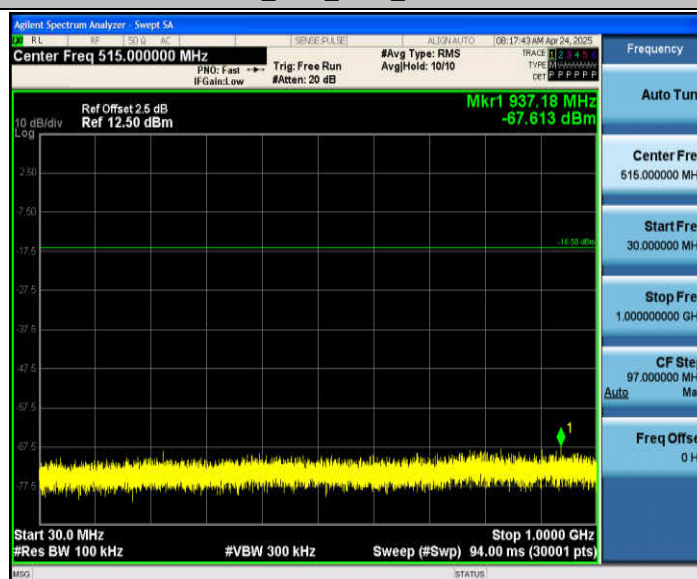
Sweep (#Swp) 94.00 ms (30001 pts)



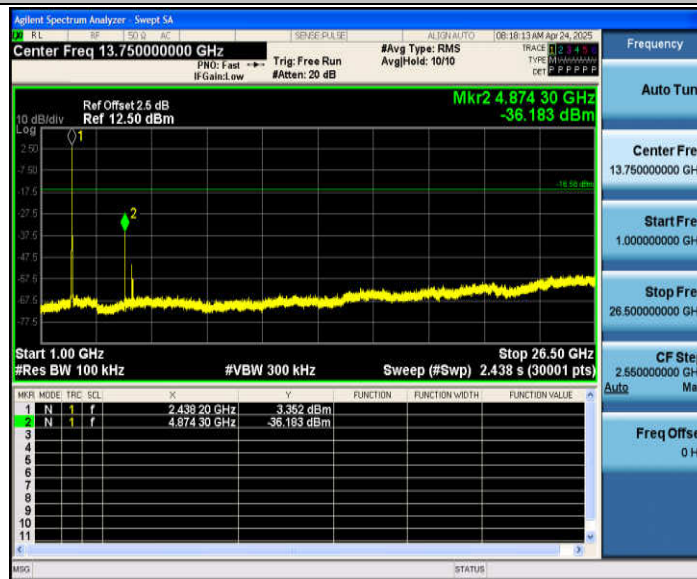
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11B_Ant1_2437_30~1000



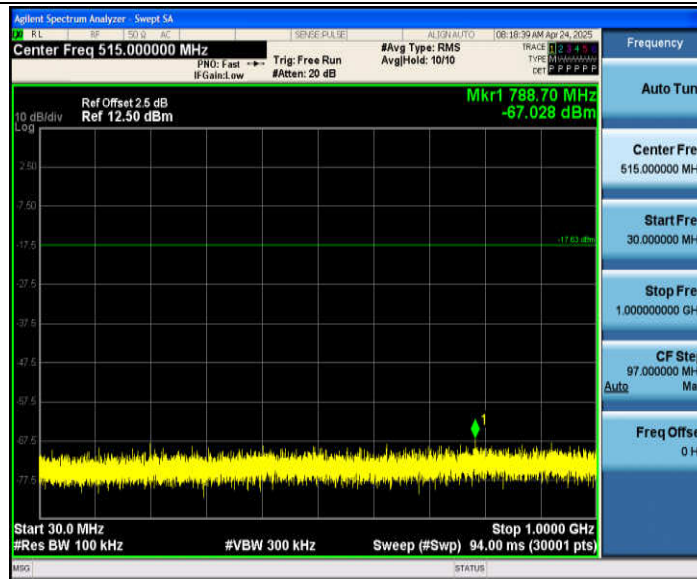
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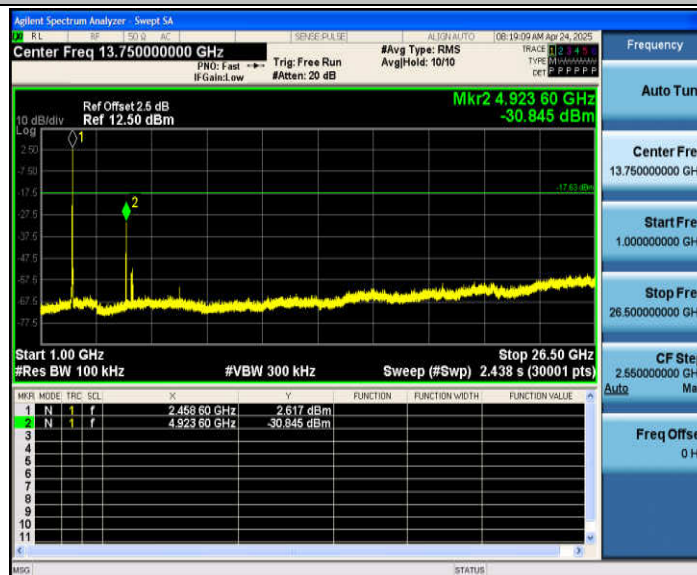
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11B_Ant1_2462_30~1000



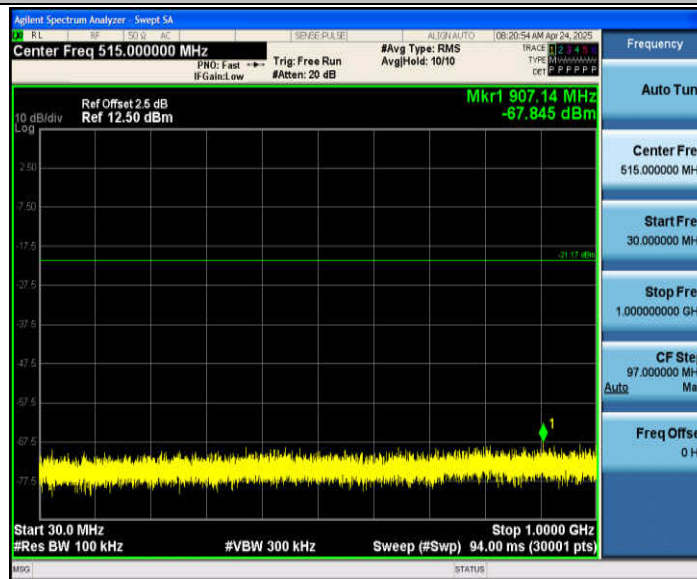
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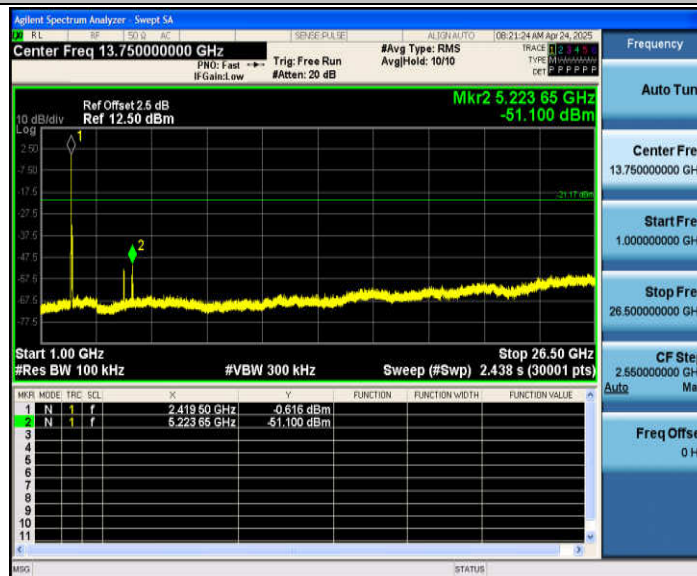
11G_Ant1_2412_0~Reference



11G_Ant1_2412_30~1000



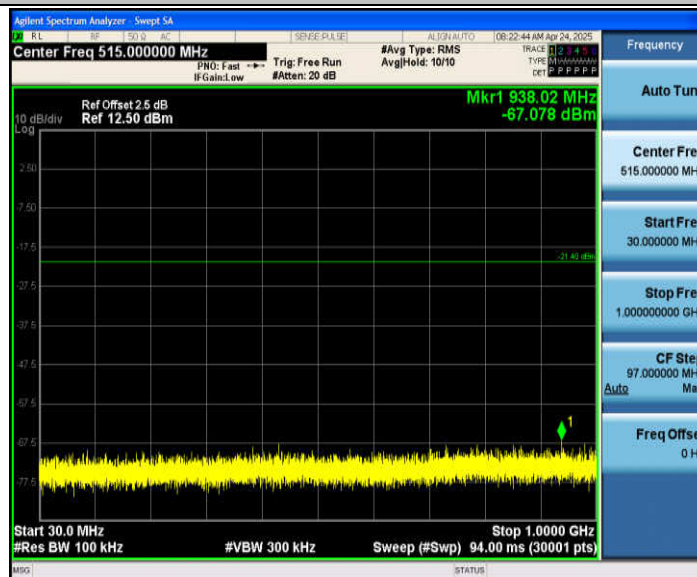
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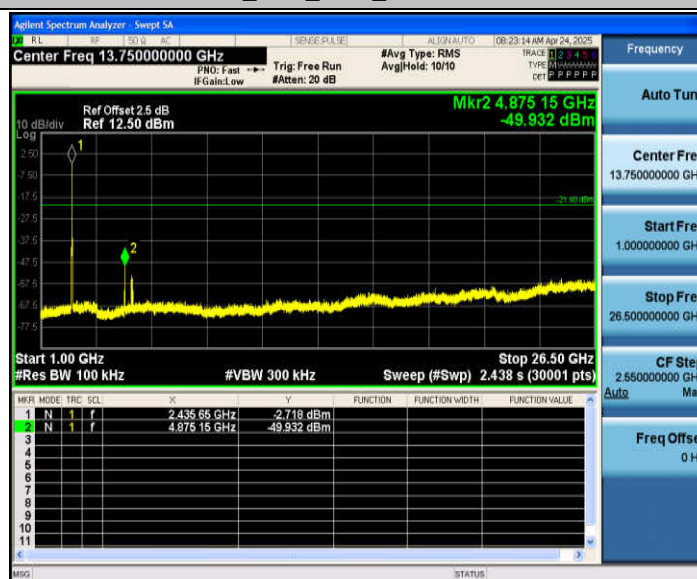
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11G_Ant1_2437_30~1000



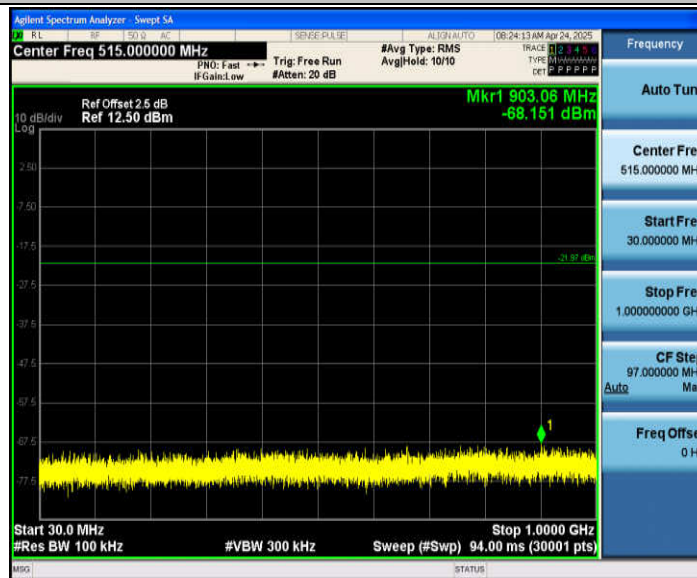
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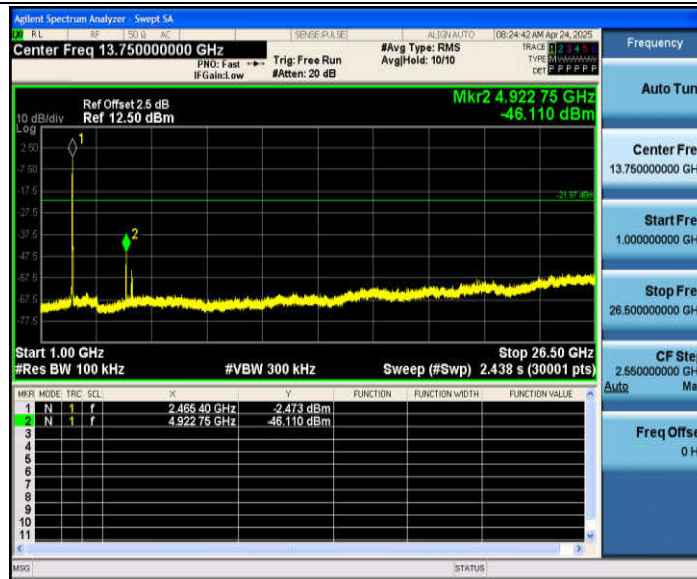
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11G_Ant1_2462_30~1000



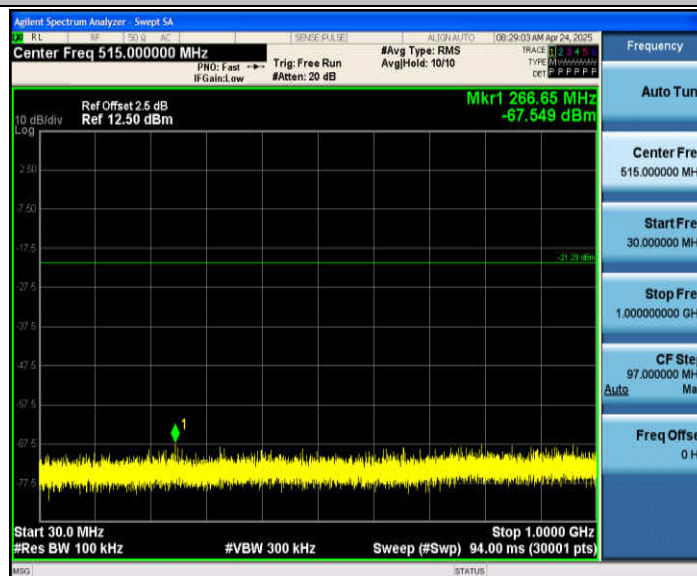
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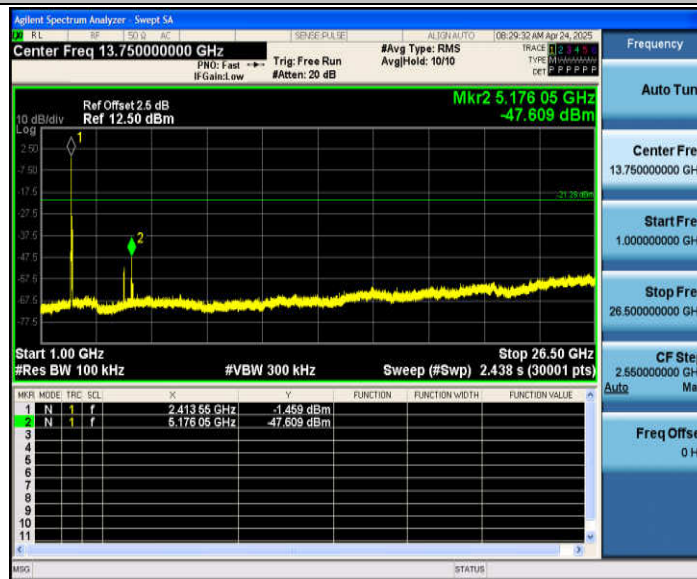
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11N20SISO_Ant1_2412_30~1000



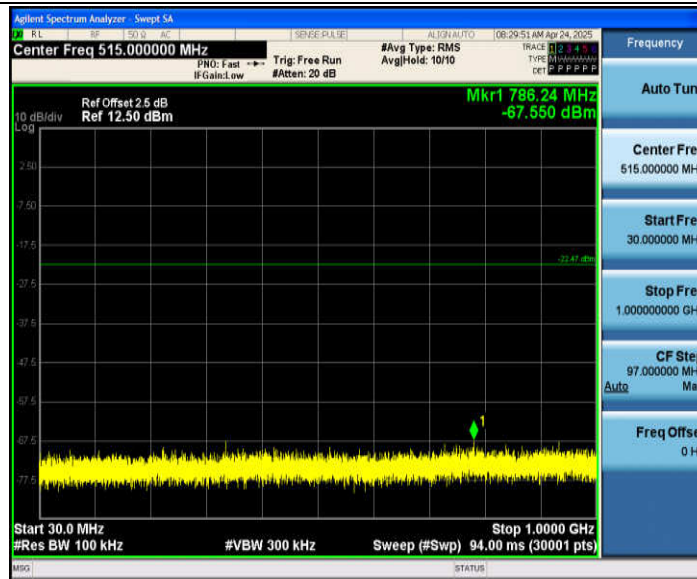
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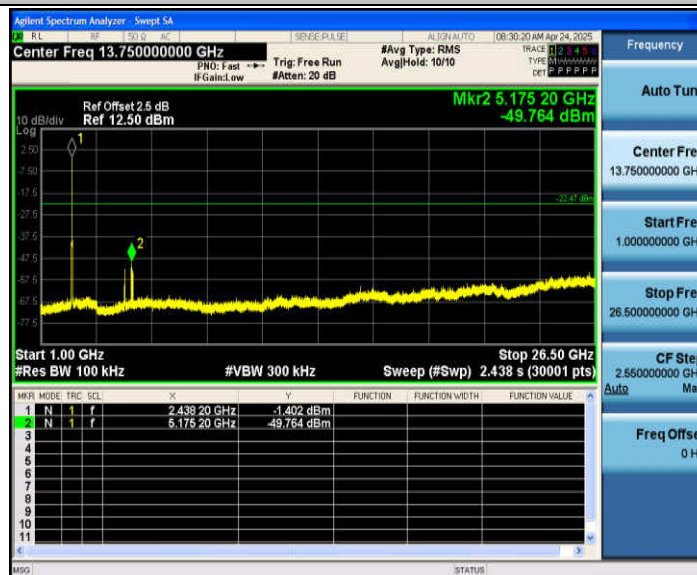
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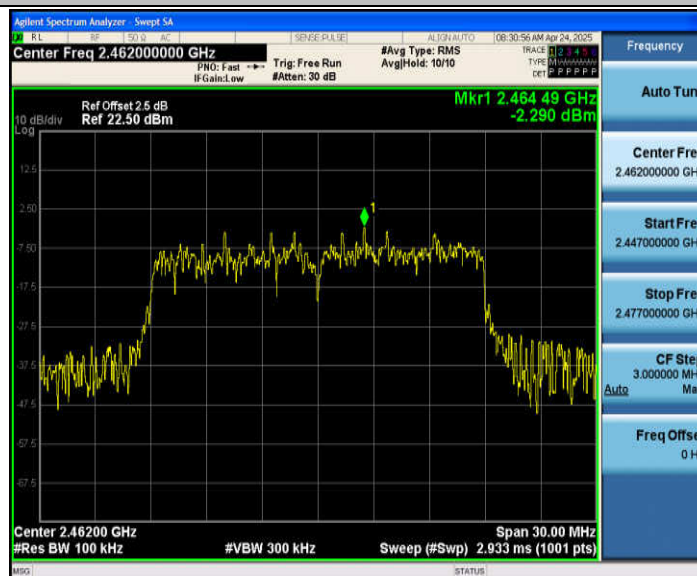
11N20SISO_Ant1_2437_30~1000



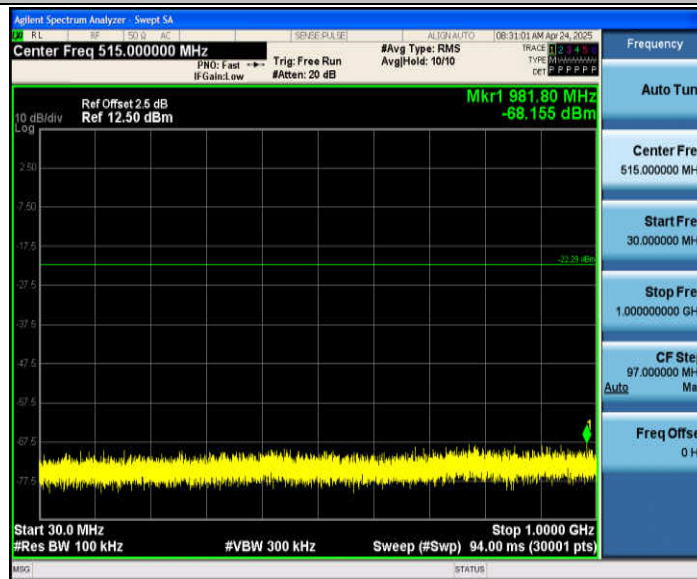
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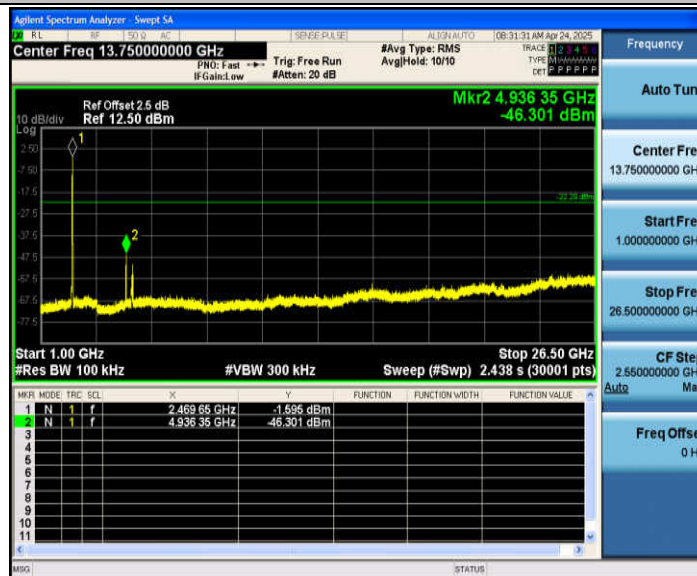
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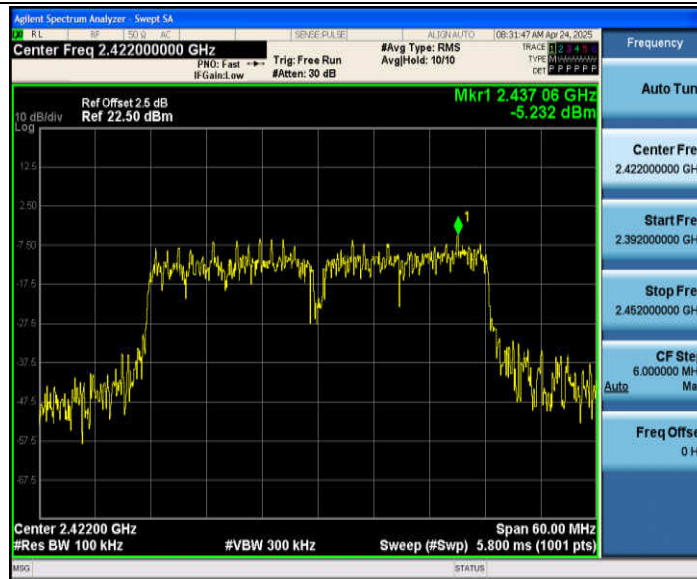
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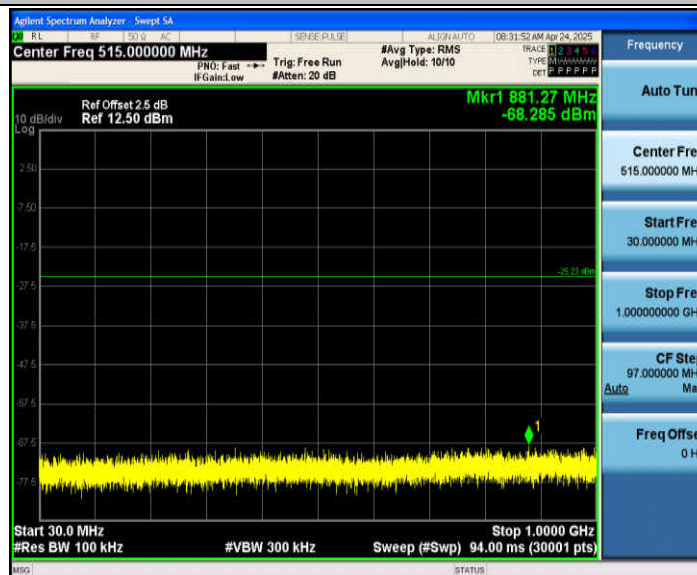
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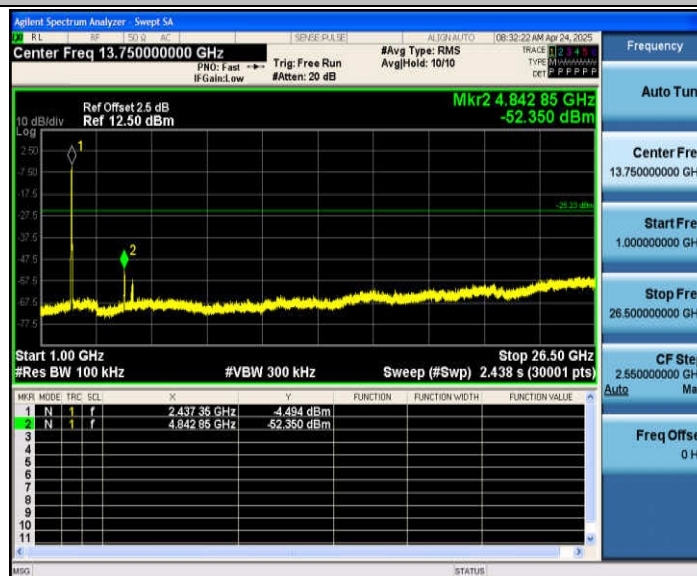
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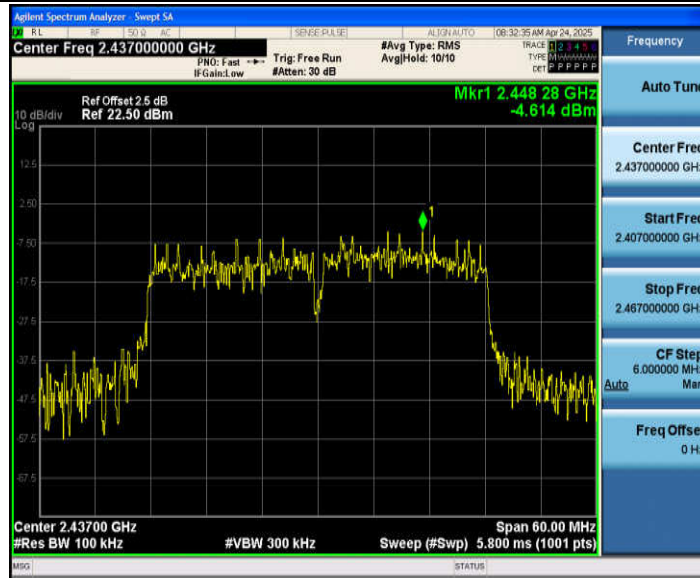
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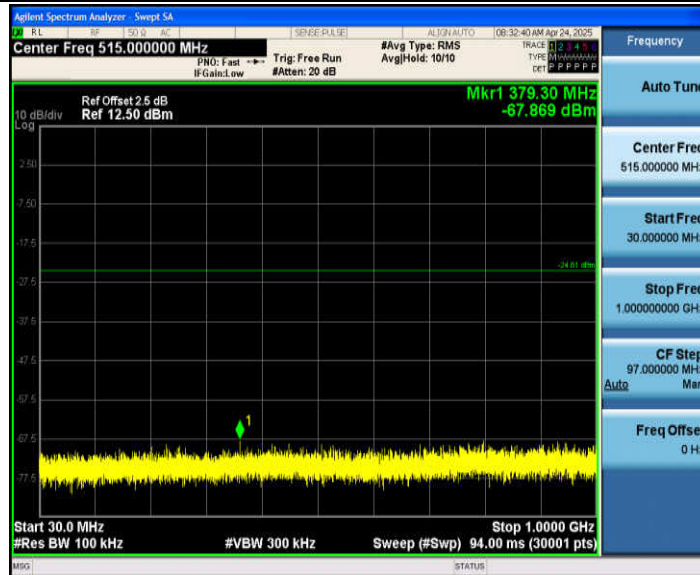
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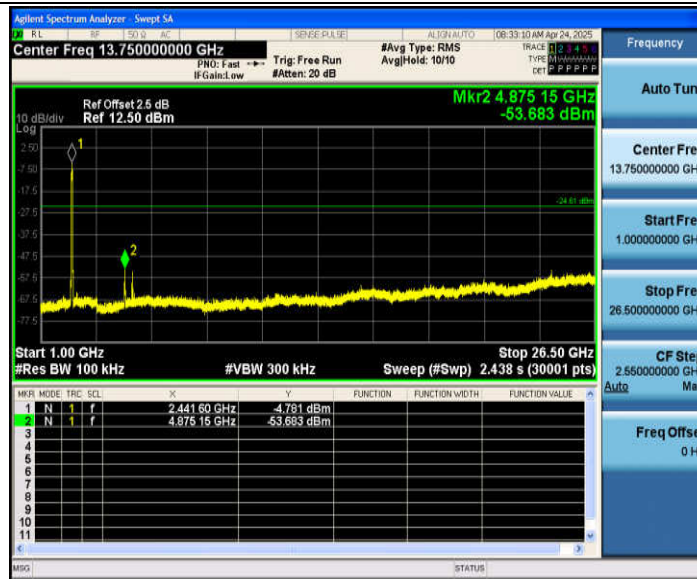
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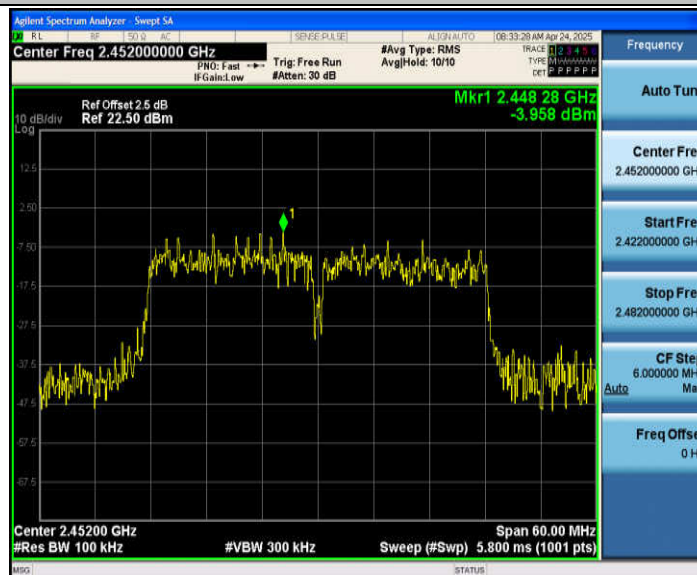
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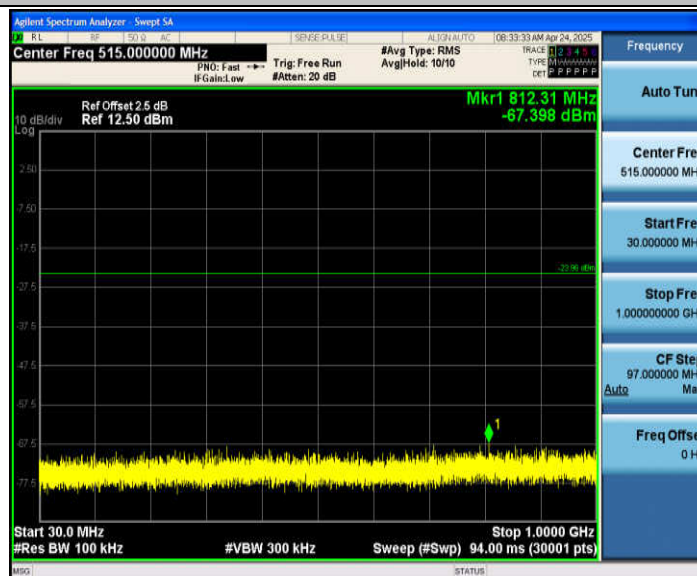
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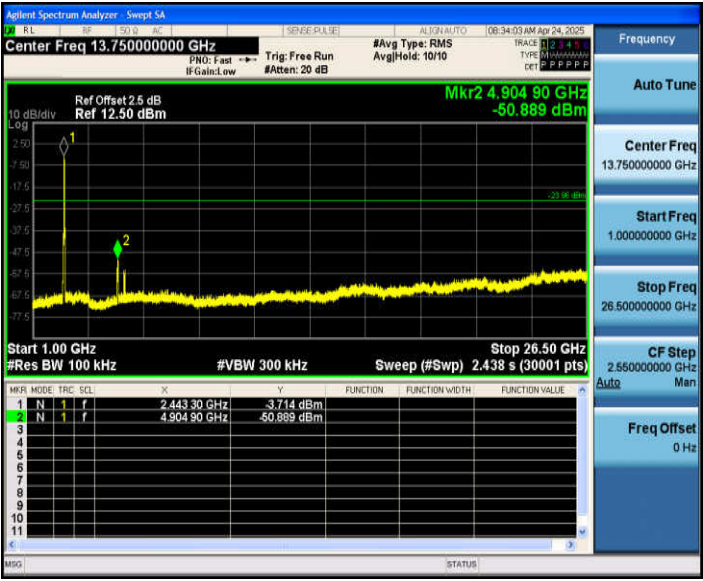
11N40ISO_Ant1_2452_0~Reference



11N40ISO_Ant1_2452_30~1000



11N40SISO_Ant1_2452_1000~26500



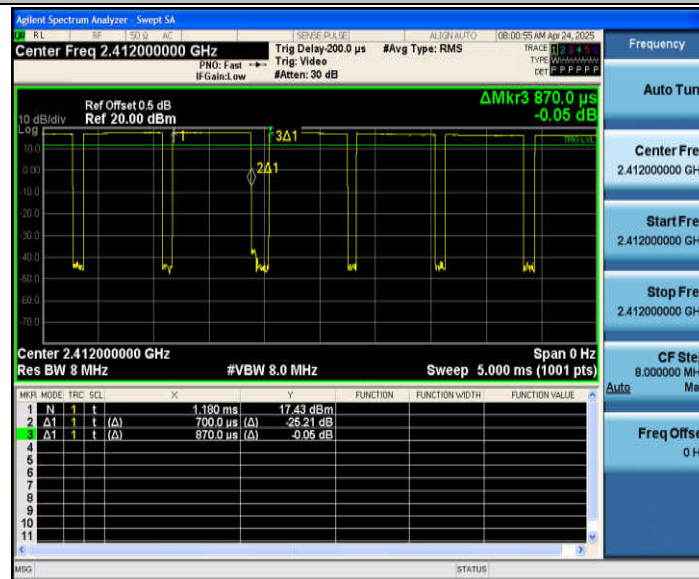
Appendix G: Duty Cycle

Test Result

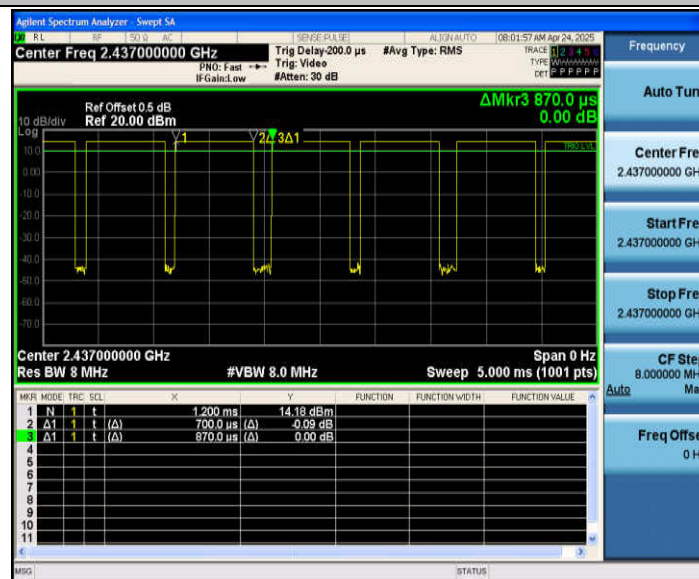
TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11B	Ant1	2412	0.70	0.87	80.46
		2437	0.70	0.87	80.46
		2462	0.71	0.87	81.61
11G	Ant1	2412	0.11	0.26	42.31
		2437	0.11	0.27	40.74
		2462	0.11	0.29	37.93
11N20SISO	Ant1	2412	0.11	0.31	35.48
		2437	0.11	0.30	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

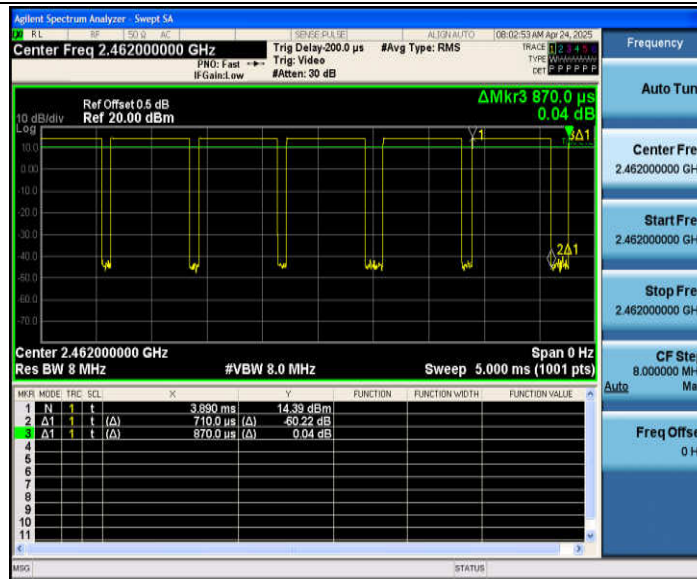
11B_Ant1_2412



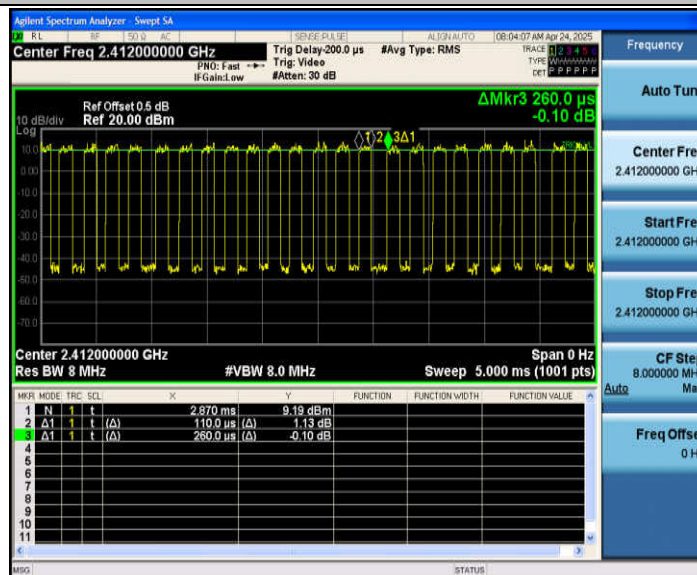
11B_Ant1_2437



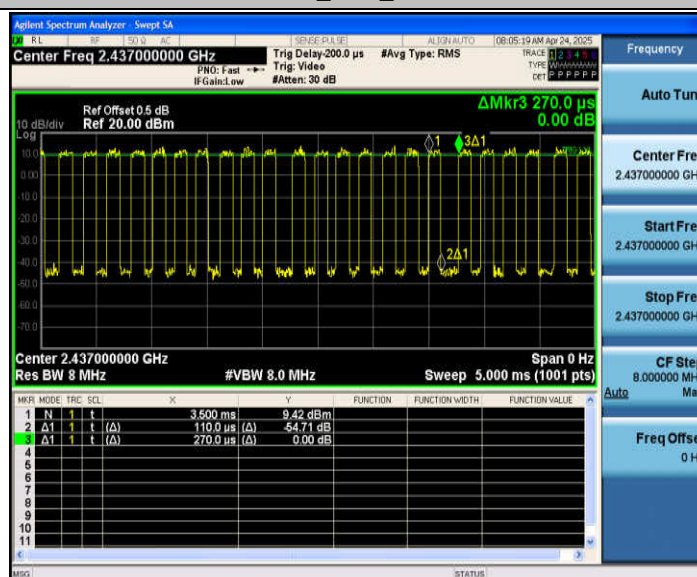
11B_Ant1_2462



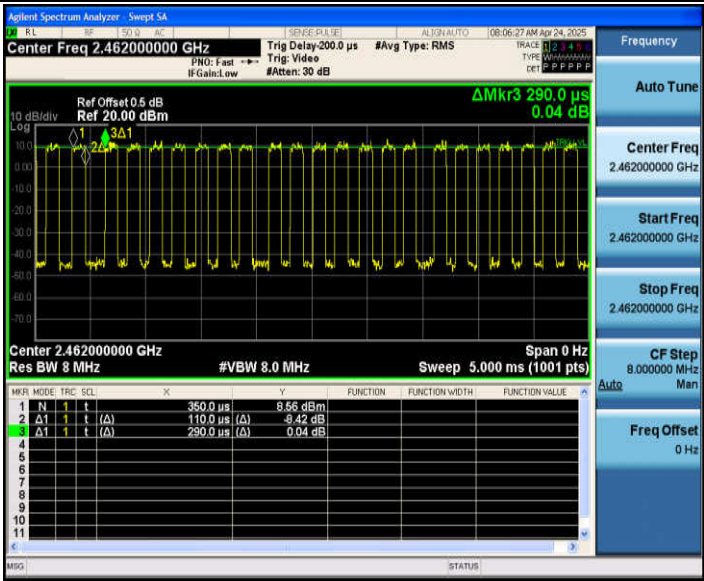
11G_Ant1_2412



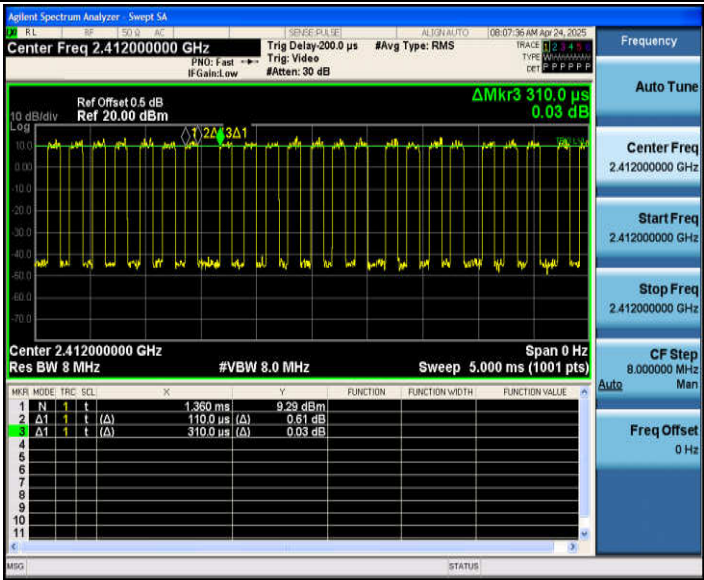
11G_Ant1_2437



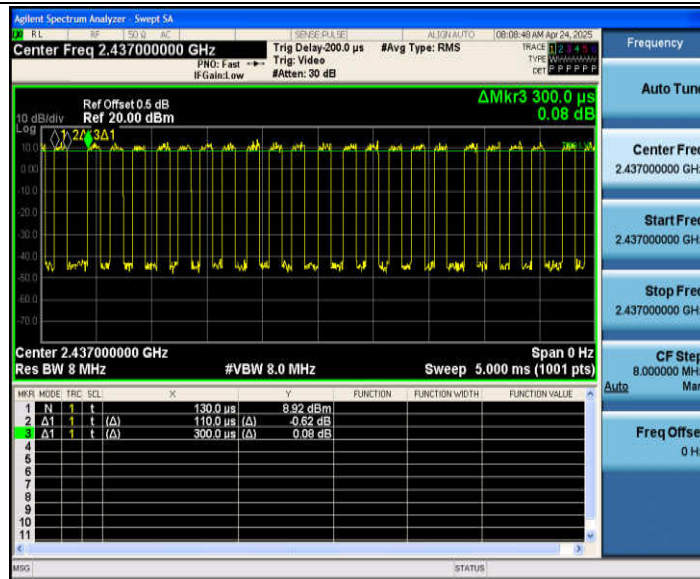
11G_Ant1_2462



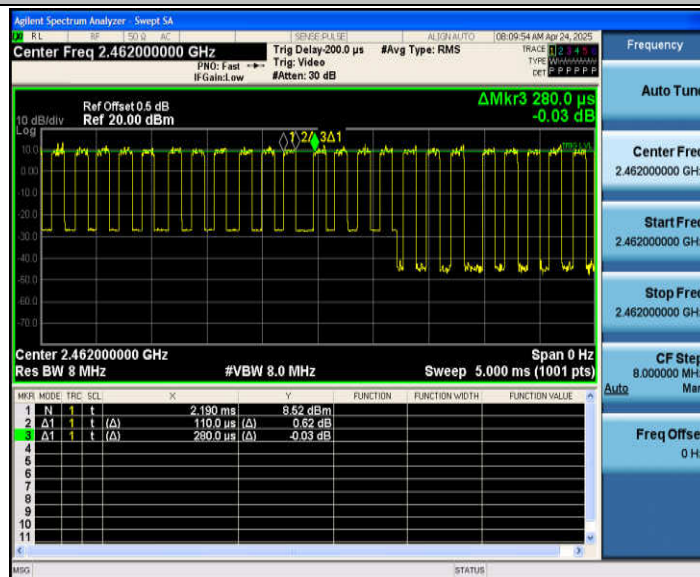
11N20SISO_Ant1_2412



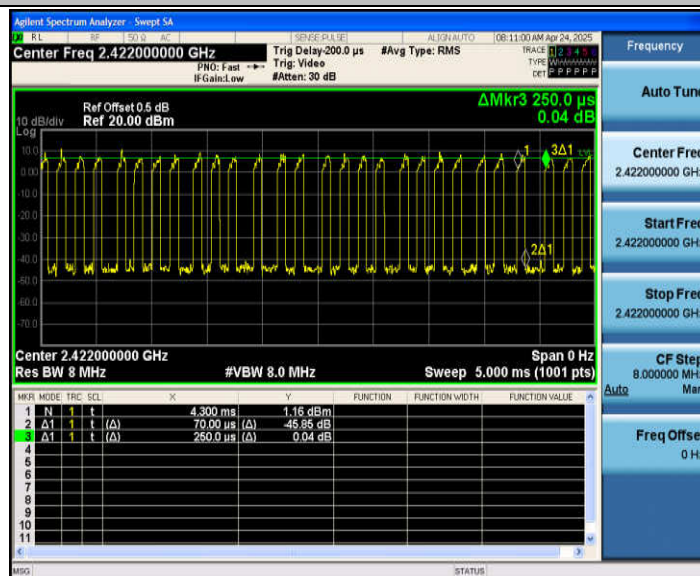
11N20SISO_Ant1_2437



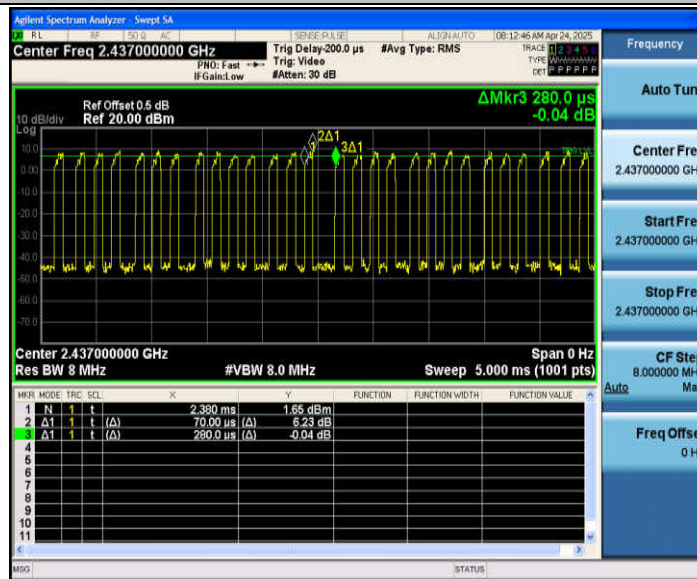
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452

