

Appendix RF Test Data for 2.4GWIFI

FCC ID : 2BCLR-XH-C3F

Company : ShenZhen Sparkleiot Technology CO., LTD

EUT : WiFi module

Model Number : XH-C3F

Report No. : CTA25090401101

Reviewed By : Eric Wang

Appendix A: DTS Bandwidth

Test Result

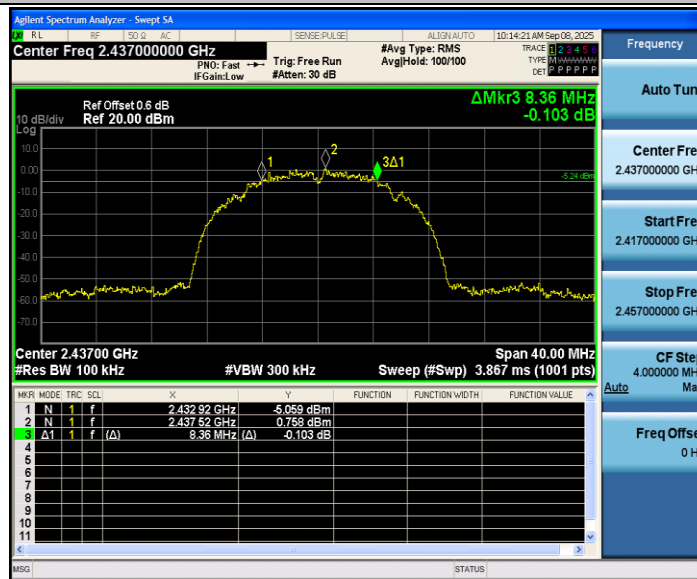
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.600	2407.960	2416.560	0.5	PASS
		2437	8.360	2432.920	2441.280	0.5	PASS
		2462	9.040	2457.480	2466.520	0.5	PASS
11G	Ant1	2412	16.480	2403.800	2420.280	0.5	PASS
		2437	16.480	2428.800	2445.280	0.5	PASS
		2462	16.480	2453.800	2470.280	0.5	PASS
11N20SISO	Ant1	2412	17.560	2403.240	2420.800	0.5	PASS
		2437	17.400	2428.400	2445.800	0.5	PASS
		2462	17.240	2453.440	2470.680	0.5	PASS
11N40SISO	Ant1	2422	33.120	2405.760	2438.880	0.5	PASS
		2437	33.920	2420.360	2454.280	0.5	PASS
		2452	33.920	2435.120	2469.040	0.5	PASS

Test Graphs

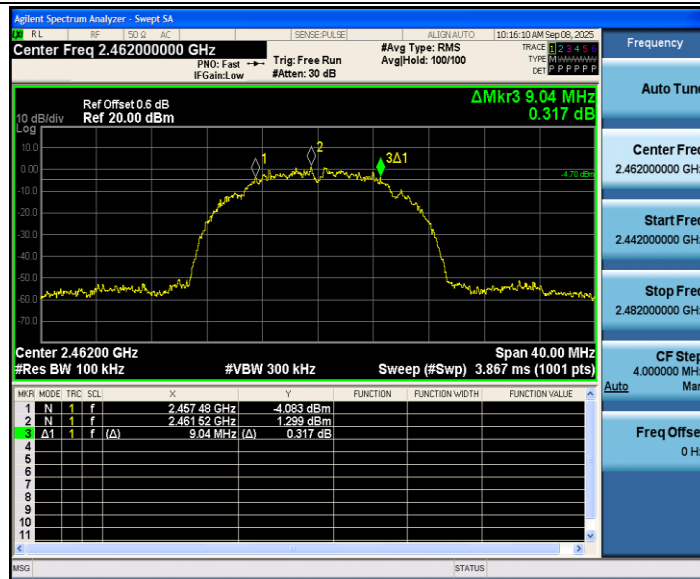
11B_Ant1_2412



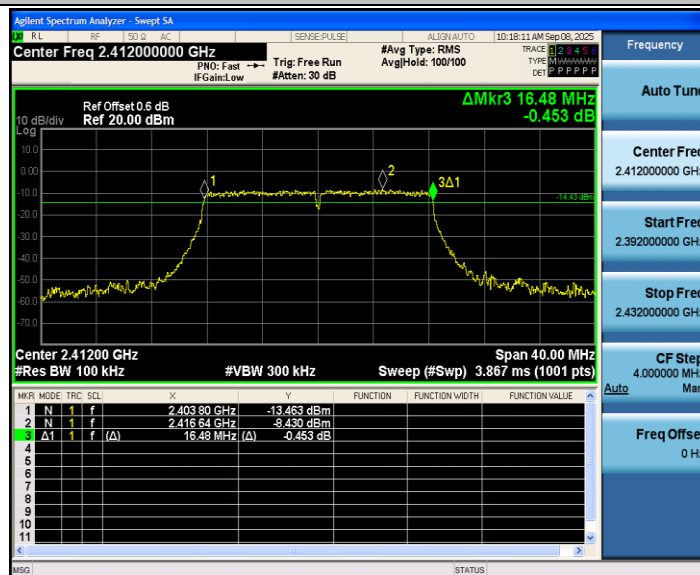
11B_Ant1_2437



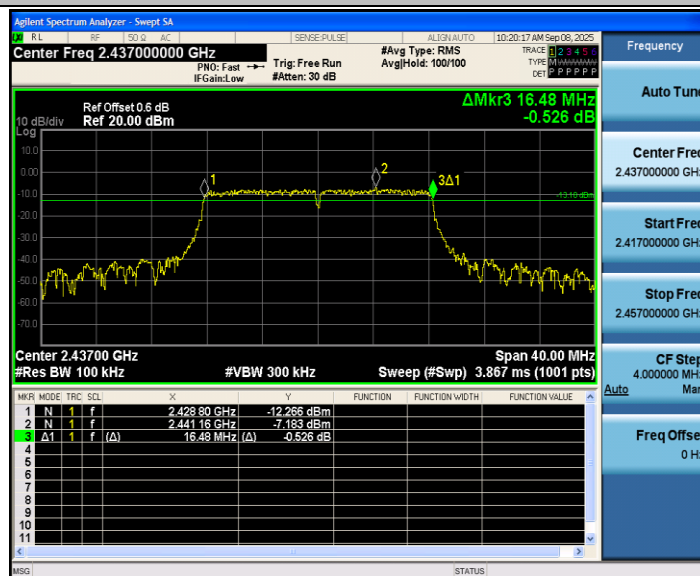
11B_Ant1_2462



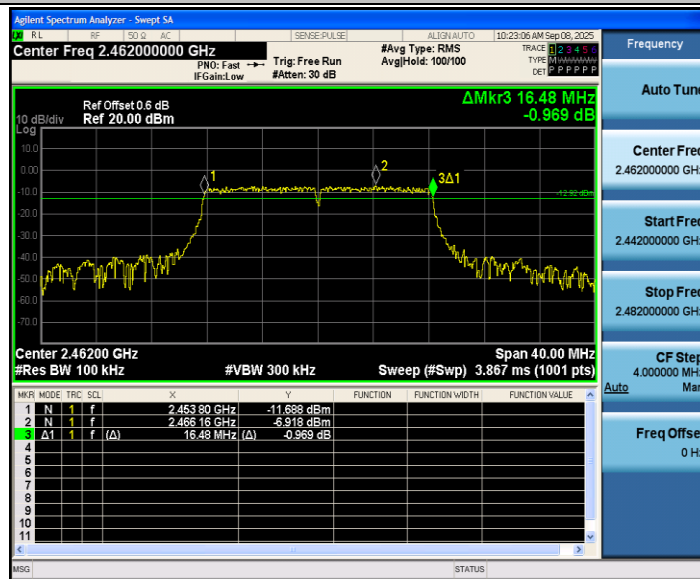
11G_Ant1_2412



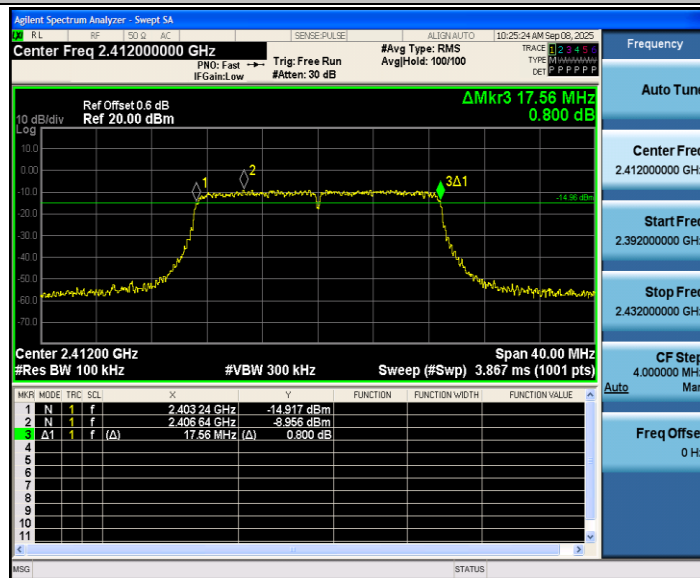
11G_Ant1_2437



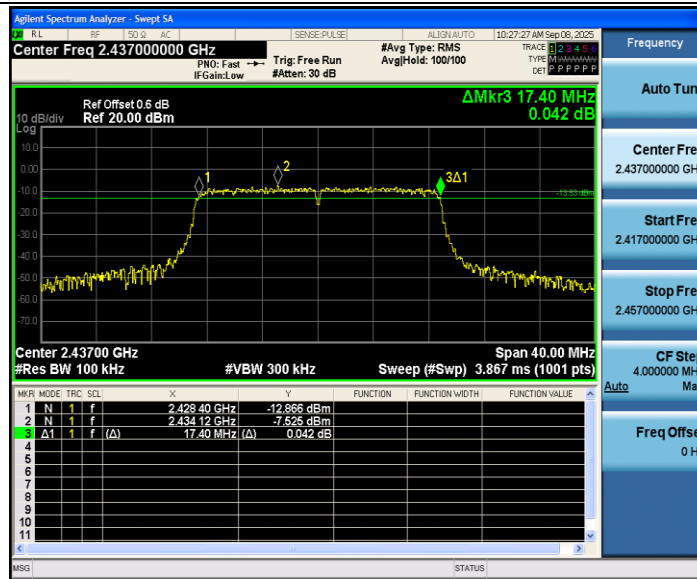
11G_Ant1_2462



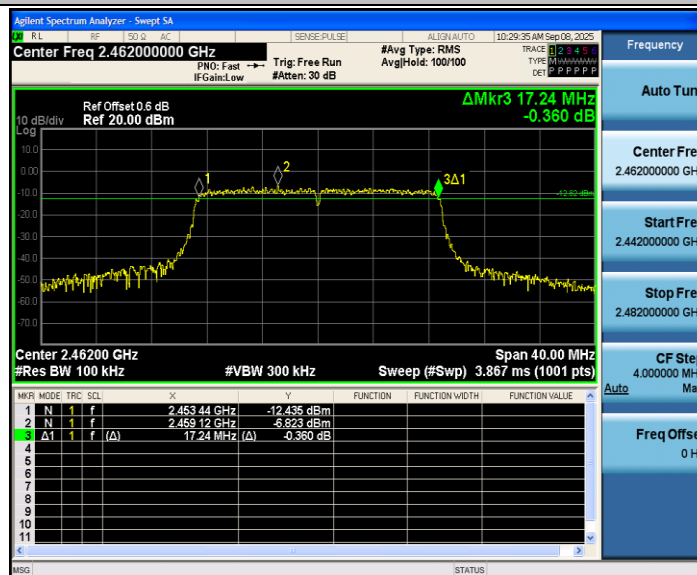
11N20SISO_Ant1_2412



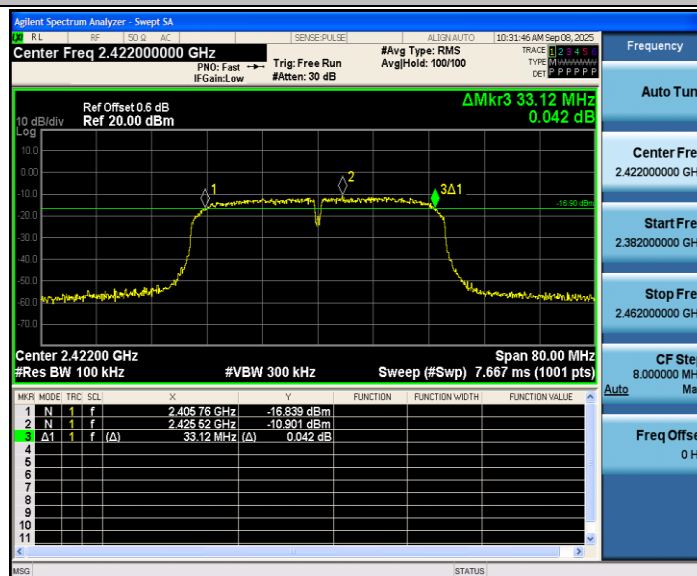
11N20SISO_Ant1_2437



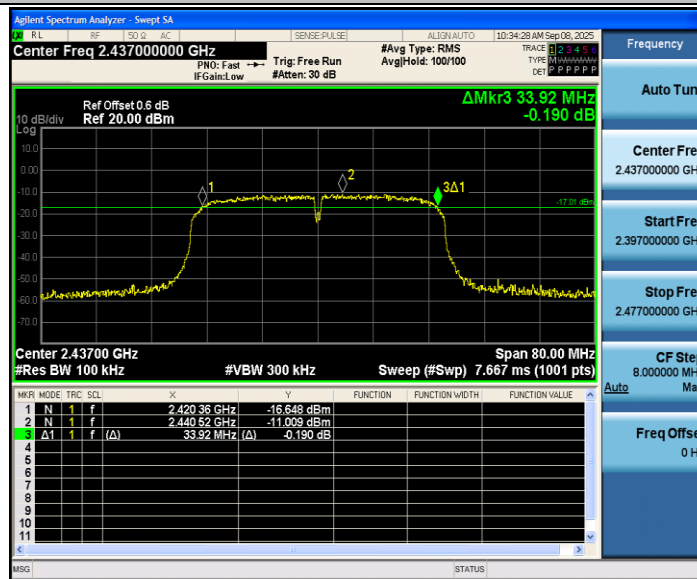
11N20SISO_Ant1_2462



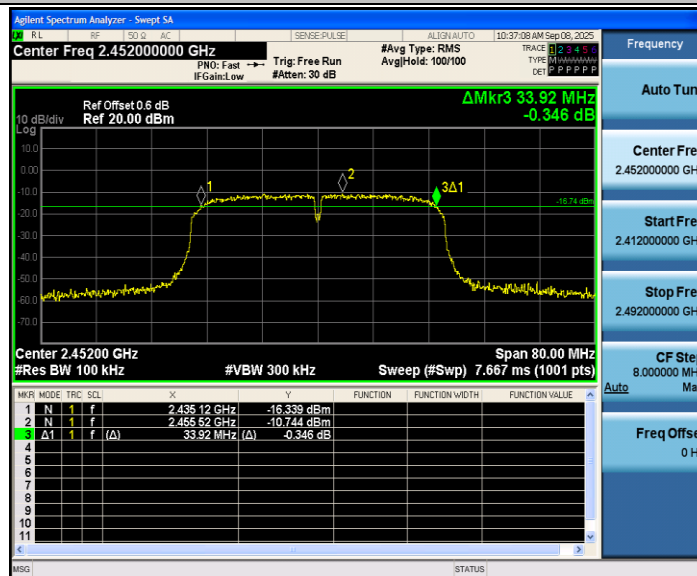
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



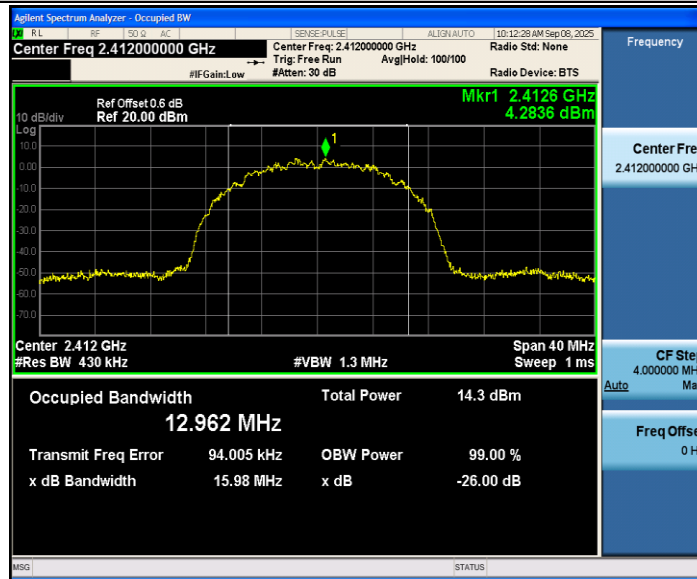
Appendix B: Occupied Channel Bandwidth

Test Result

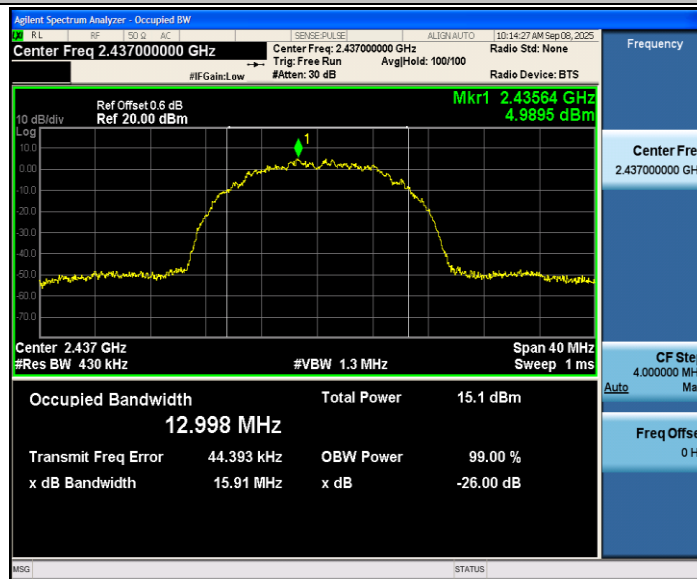
TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	12.962	2405.6130	2418.5750	---	---
		2437	12.998	2430.5454	2443.5434	---	---
		2462	13.000	2455.5106	2468.5106	---	---
11G	Ant1	2412	16.580	2403.7520	2420.3320	---	---
		2437	16.549	2428.7693	2445.3183	---	---
		2462	16.591	2453.7417	2470.3327	---	---
11N20SISO	Ant1	2412	17.421	2403.3472	2420.7682	---	---
		2437	17.456	2428.3031	2445.7591	---	---
		2462	17.458	2453.3090	2470.7670	---	---
11N40SISO	Ant1	2422	34.789	2404.7661	2439.5551	---	---
		2437	34.725	2419.8396	2454.5646	---	---
		2452	34.802	2434.7196	2469.5216	---	---

Test Graphs

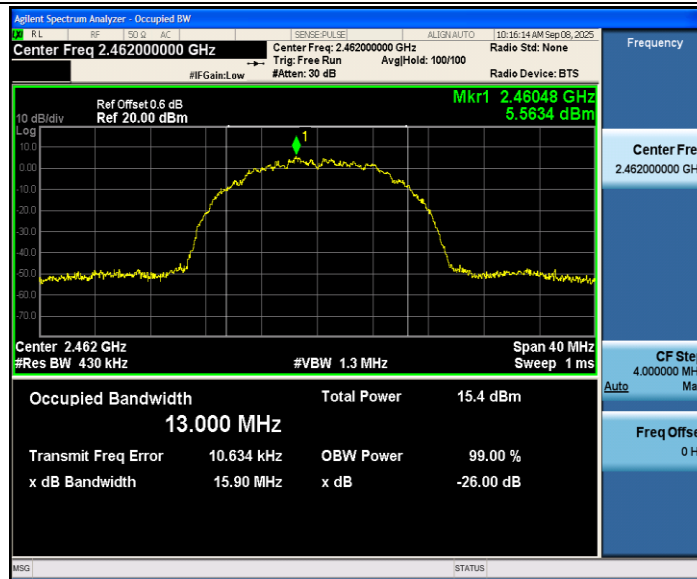
11B_Ant1_2412



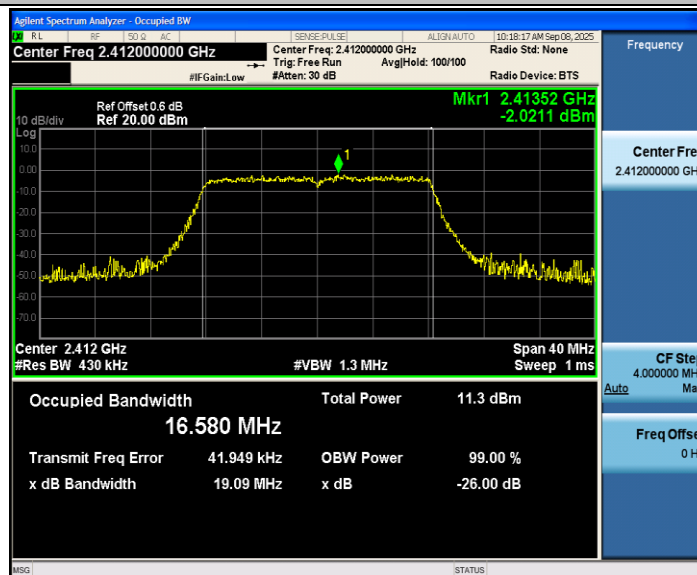
11B_Ant1_2437



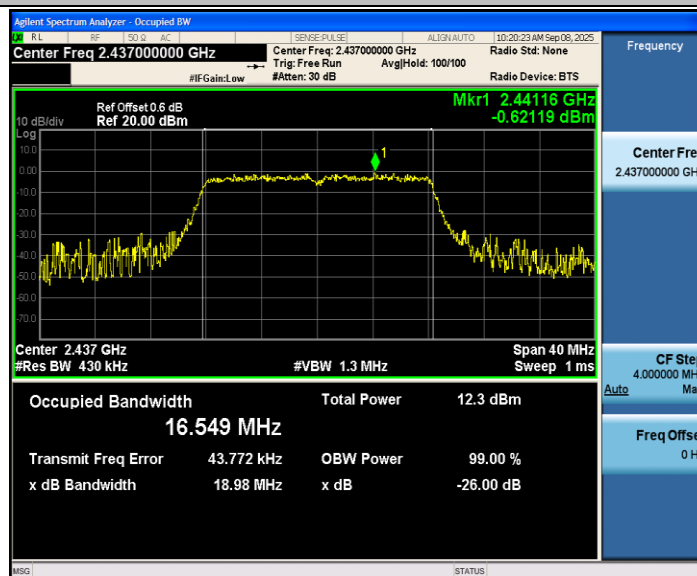
11B_Ant1_2462



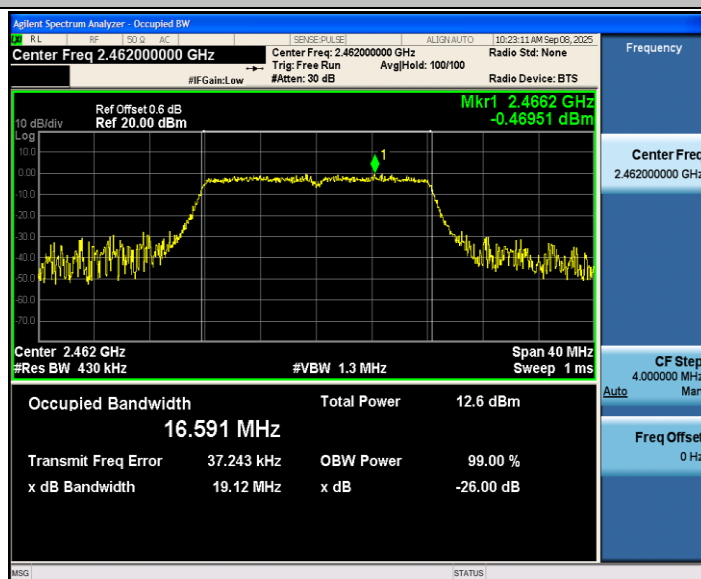
11G_Ant1_2412



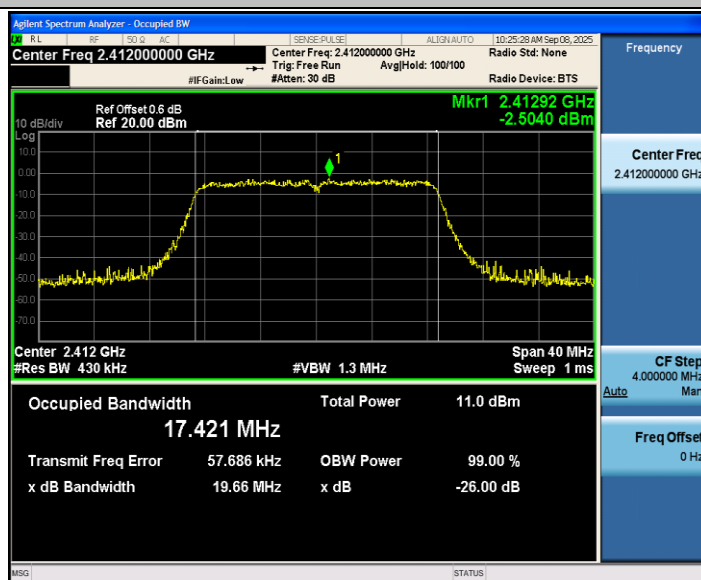
11G_Ant1_2437



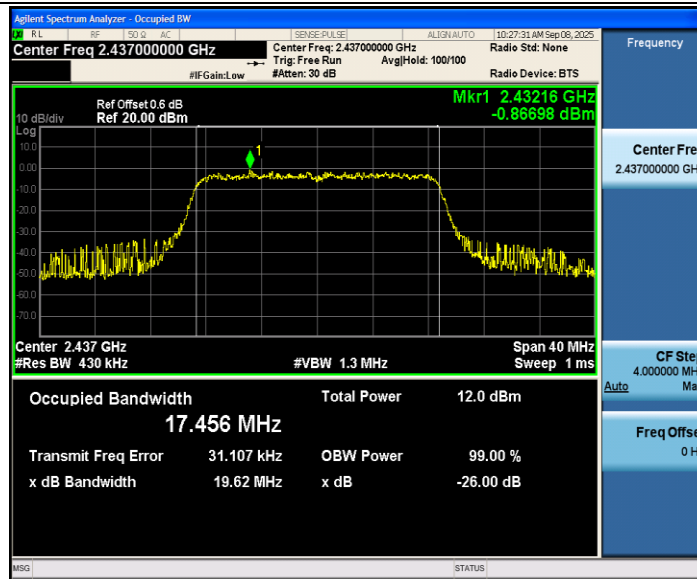
11G_Ant1_2462



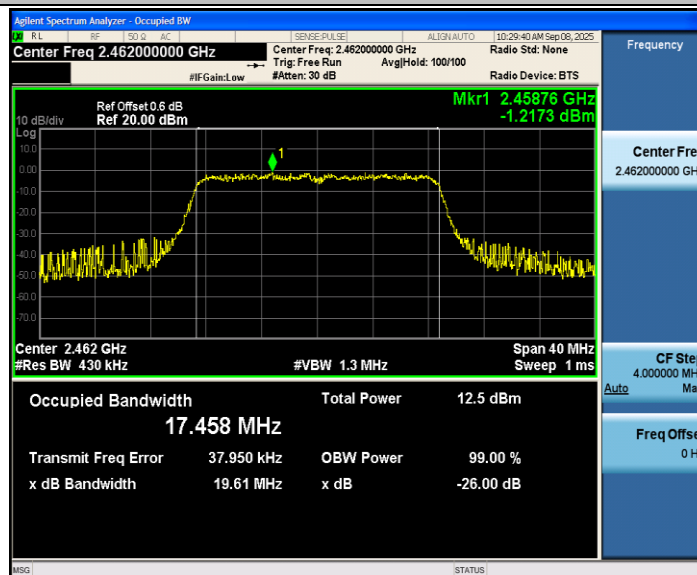
11N20SISO_Ant1_2412



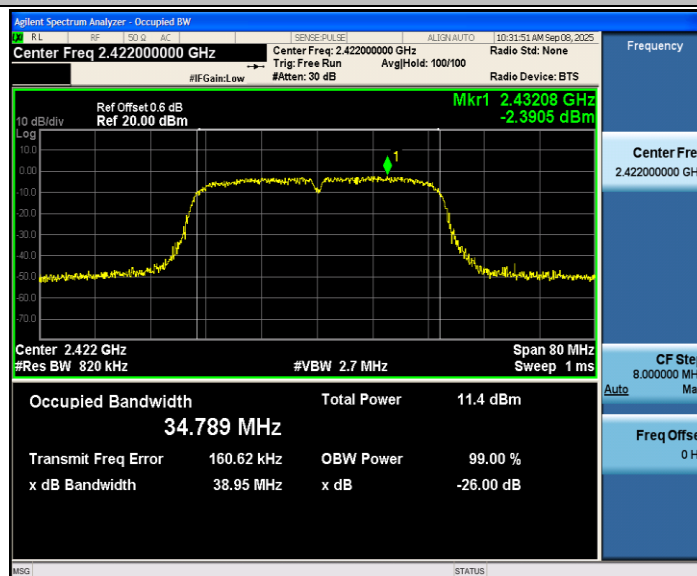
11N20SISO_Ant1_2437



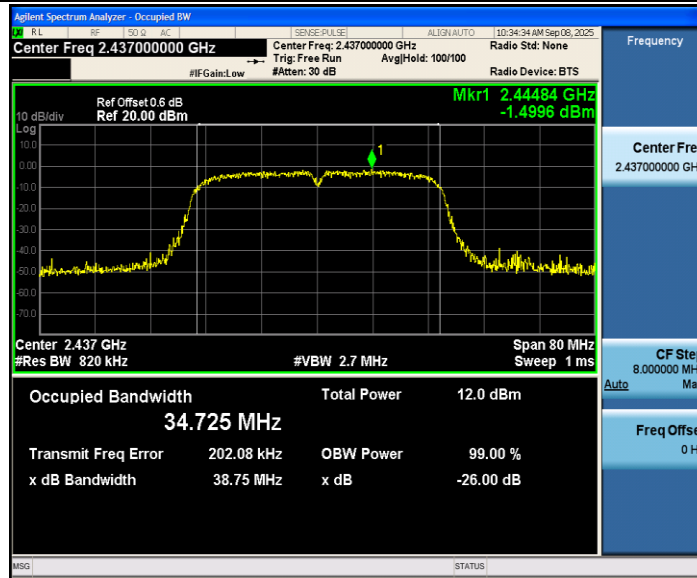
11N20SISO_Ant1_2462



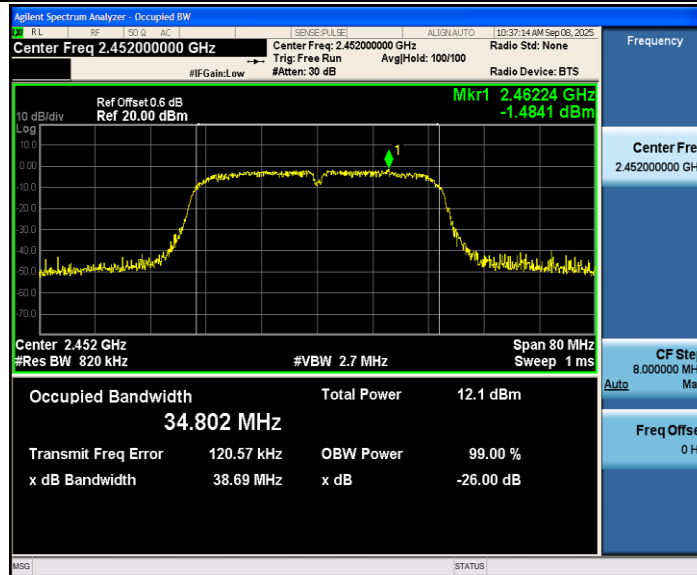
11N40SISO_Ant1_2422



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	13.69	≤30.00	PASS
		2437	14.44	≤30.00	PASS
		2462	14.96	≤30.00	PASS
11G	Ant1	2412	12.22	≤30.00	PASS
		2437	13.14	≤30.00	PASS
		2462	13.45	≤30.00	PASS
11N20SISO	Ant1	2412	12.24	≤30.00	PASS
		2437	13.22	≤30.00	PASS
		2462	13.63	≤30.00	PASS
11N40SISO	Ant1	2422	11.65	≤30.00	PASS
		2437	12.24	≤30.00	PASS
		2452	12.41	≤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	-15.17	≤8.00	PASS
		2437	-14.56	≤8.00	PASS
		2462	-14.21	≤8.00	PASS
11G	Ant1	2412	-22.27	≤8.00	PASS
		2437	-21.37	≤8.00	PASS
		2462	-20.94	≤8.00	PASS
11N20SISO	Ant1	2412	-21.99	≤8.00	PASS
		2437	-21.05	≤8.00	PASS
		2462	-20.67	≤8.00	PASS
11N40SISO	Ant1	2422	-23.52	≤8.00	PASS
		2437	-23.10	≤8.00	PASS
		2452	-22.02	≤8.00	PASS

Test Graphs

11B_Ant1_2412



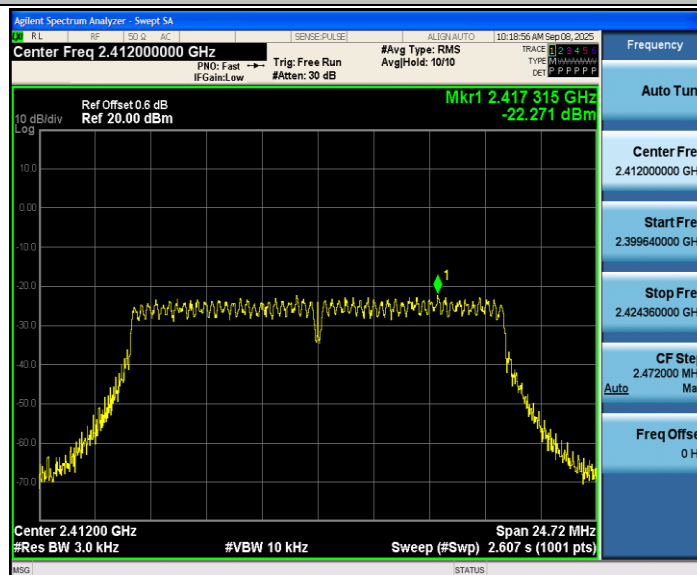
11B_Ant1_2437



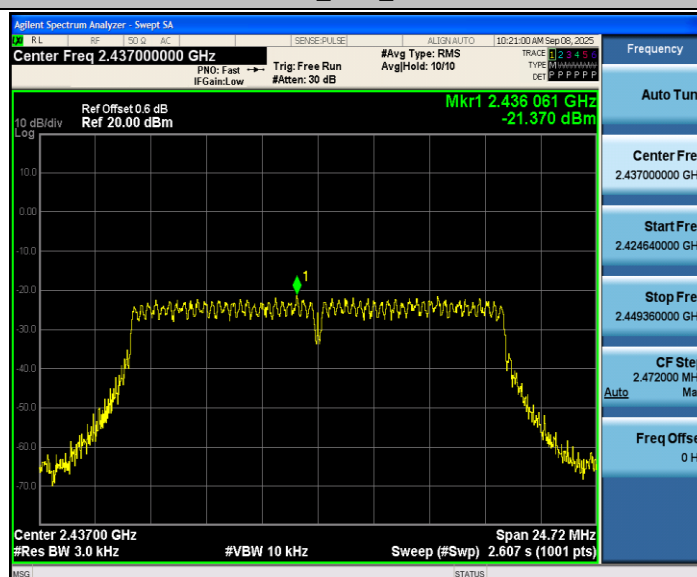
11B_Ant1_2462



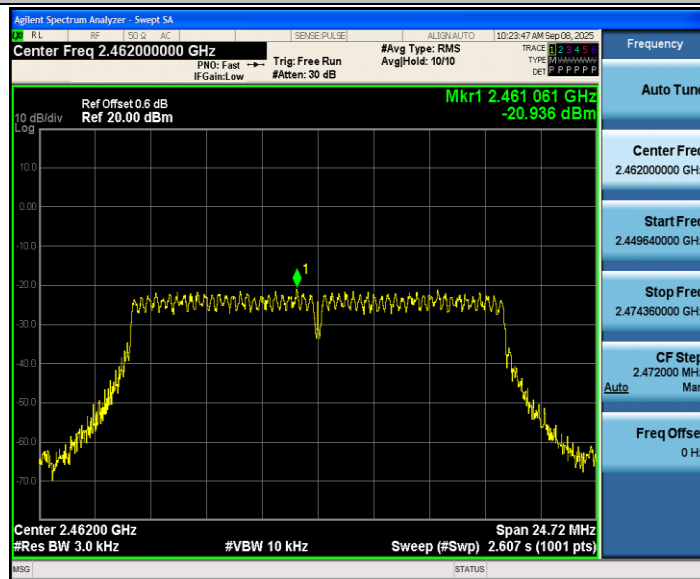
11G_Ant1_2412



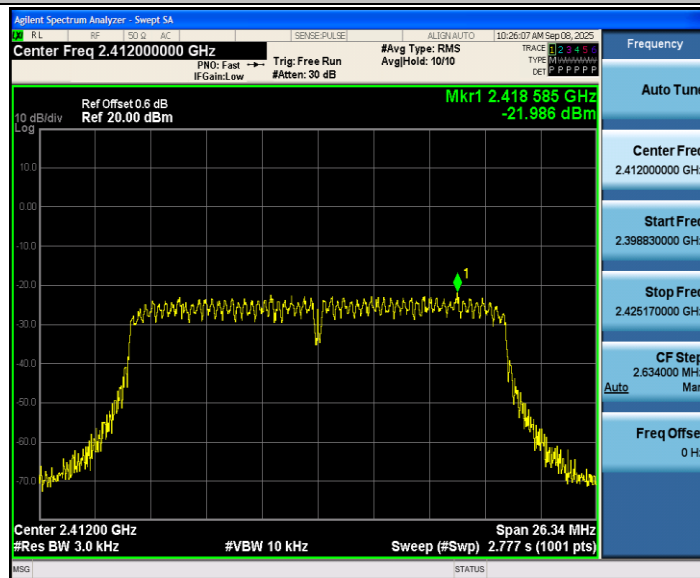
11G_Ant1_2437



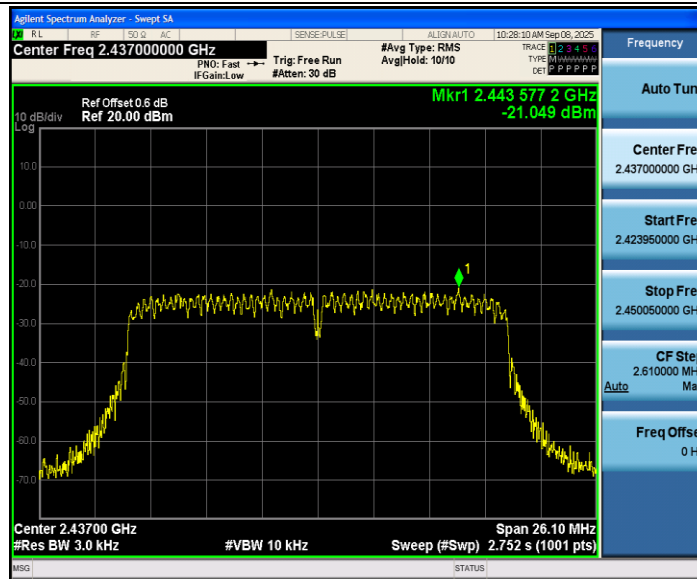
11G_Ant1_2462



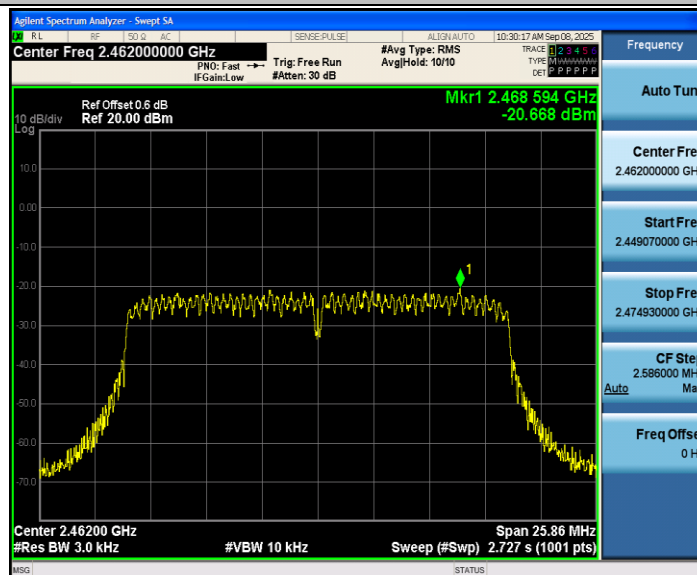
11N20SISO_Ant1_2412



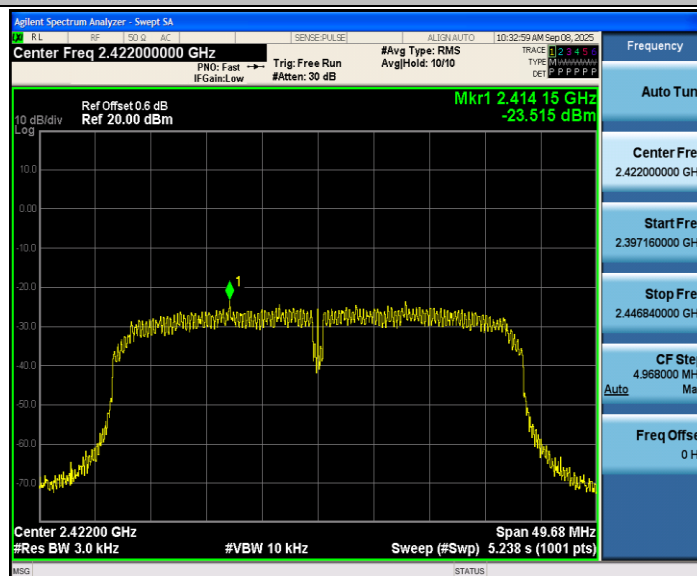
11N20SISO_Ant1_2437



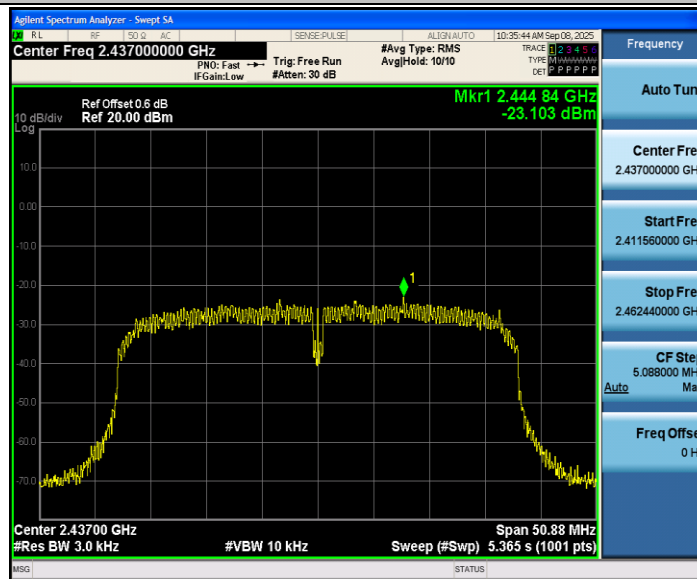
11N20SISO_Ant1_2462



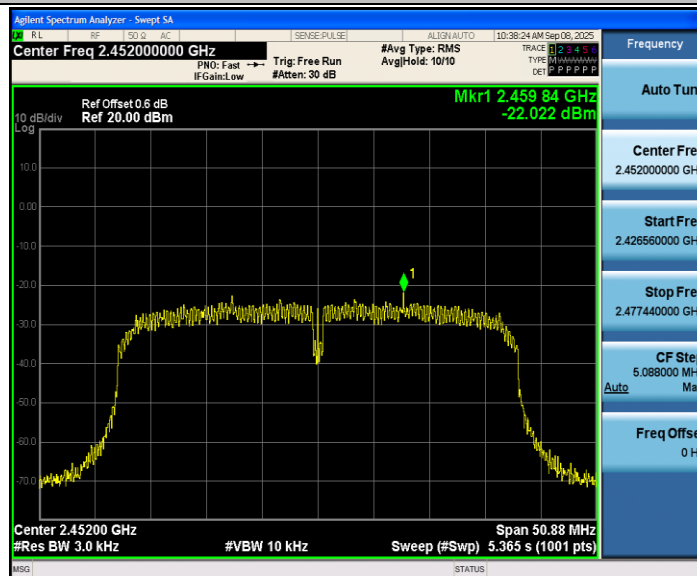
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



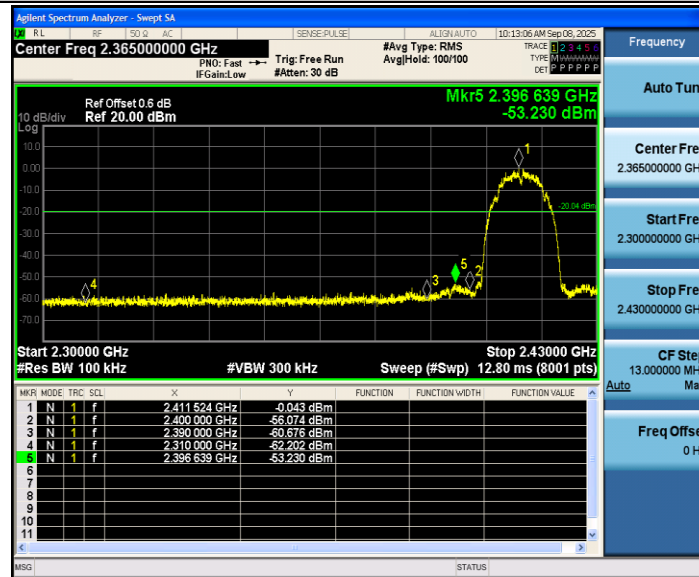
Appendix E: Band edge measurements

Test Result

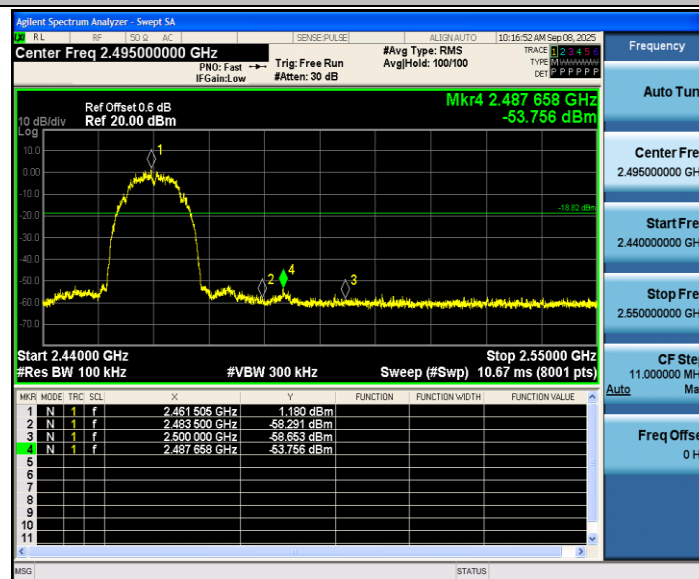
TestMode	Antenna	Channel Name	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	-0.04	-53.23	≤-20.04	PASS
		High	2462	1.18	-53.76	≤-18.82	PASS
11G	Ant1	Low	2412	-7.99	-49.64	≤-27.99	PASS
		High	2462	-6.81	-48.33	≤-26.81	PASS
11N20SISO	Ant1	Low	2412	-8.45	-50.76	≤-28.45	PASS
		High	2462	-7.07	-54.22	≤-27.07	PASS
11N40SISO	Ant1	Low	2422	-11.06	-51.29	≤-31.06	PASS
		High	2452	-10.69	-52.87	≤-30.69	PASS

Test Graphs

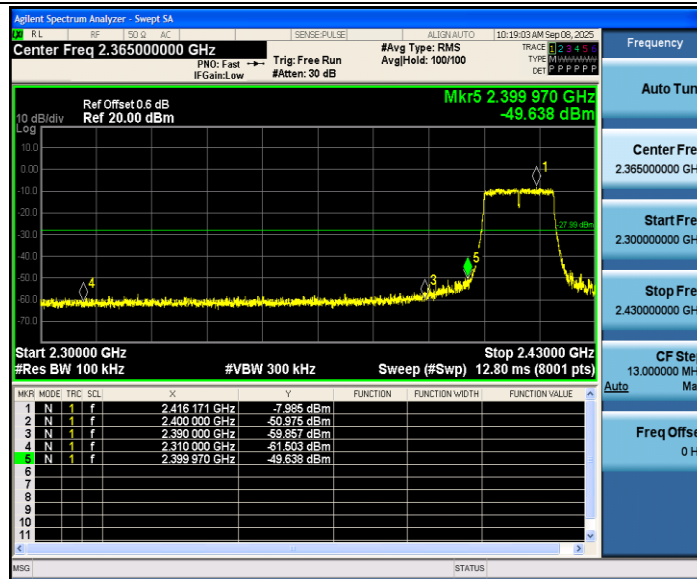
11B_Ant1_Low_2412



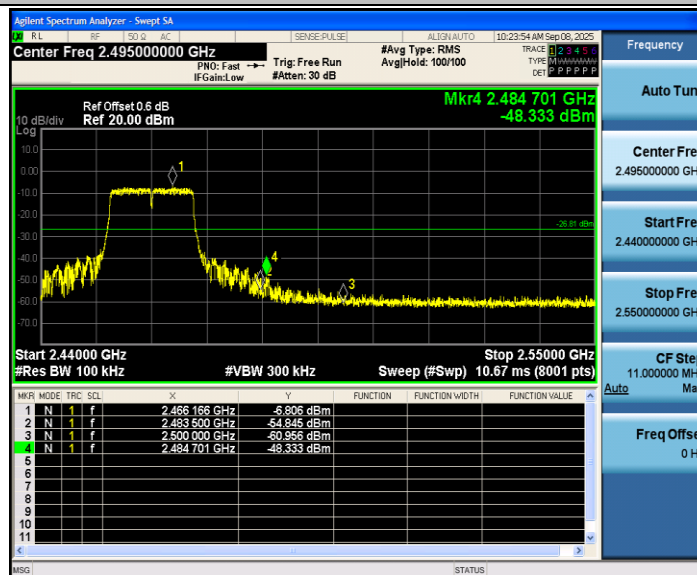
11B_Ant1_High_2462



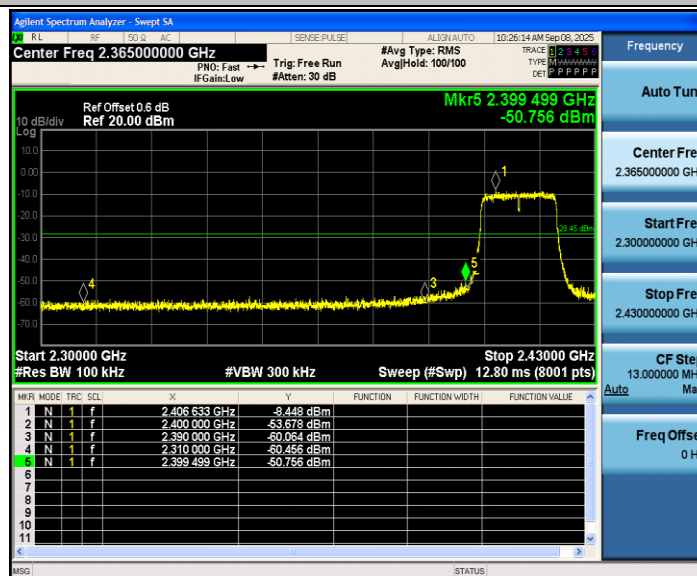
11G_Ant1_Low_2412



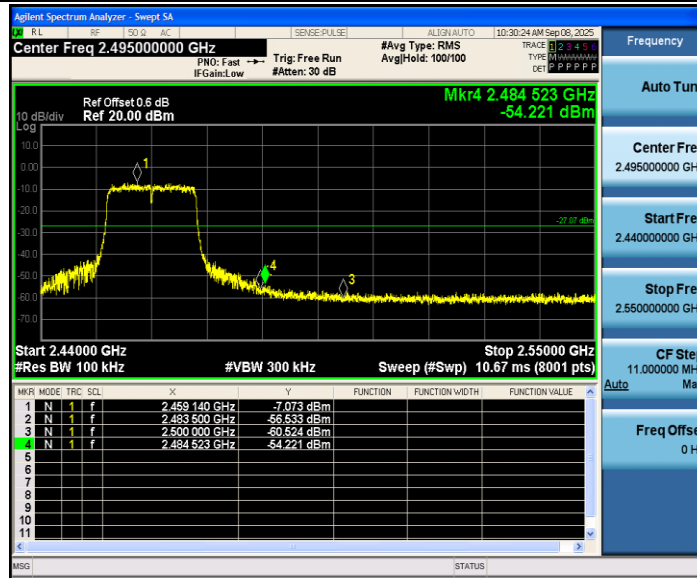
11G_Ant1_High_2462



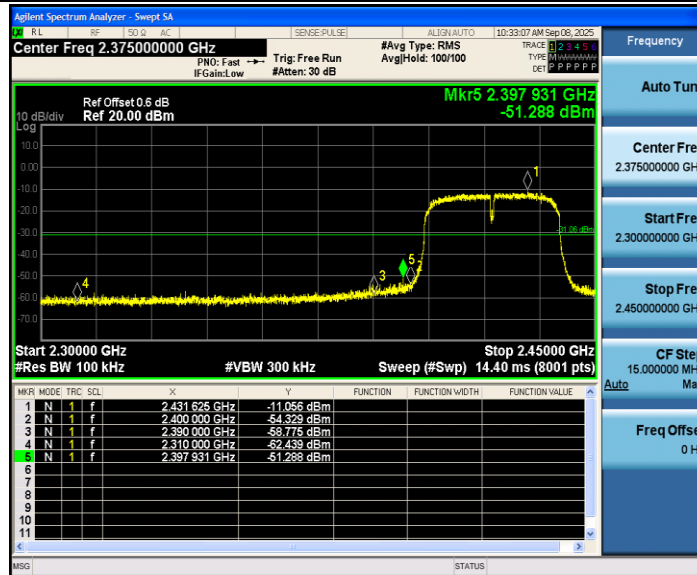
11N20SISO_Ant1_Low_2412



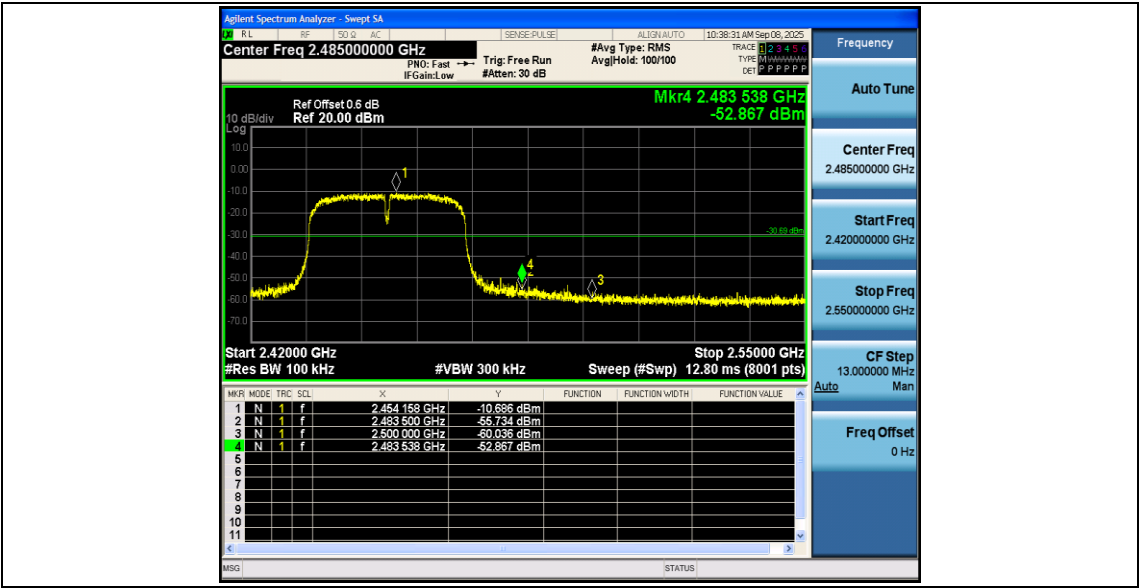
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452



Appendix F: Conducted Spurious Emission

Test Result

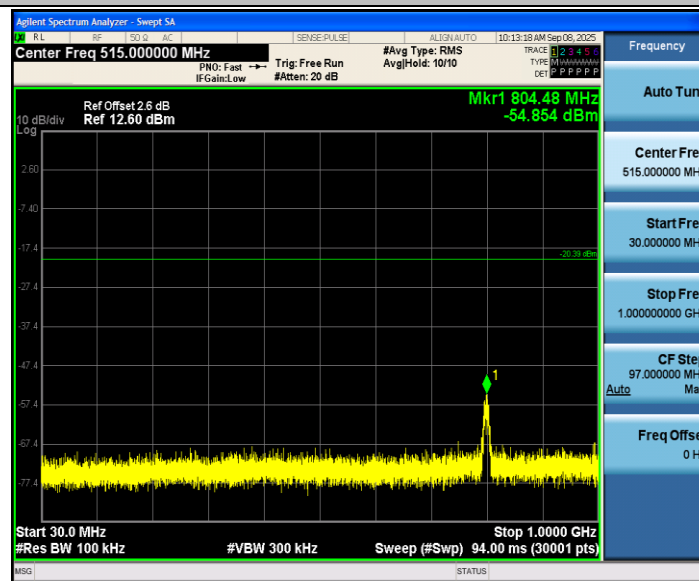
TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	-0.39	-0.39	---	PASS
			30~1000	-0.39	-54.85	≤-20.39	PASS
			1000~26500	-0.39	-44.05	≤-20.39	PASS
		2437	Reference	-0.61	-0.61	---	PASS
			30~1000	-0.61	-55.39	≤-20.61	PASS
			1000~26500	-0.61	-44.74	≤-20.61	PASS
		2462	Reference	-1.01	-1.01	---	PASS
			30~1000	-1.01	-54.91	≤-21.01	PASS
			1000~26500	-1.01	-44.83	≤-21.01	PASS
11G	Ant1	2412	Reference	-8.36	-8.36	---	PASS
			30~1000	-8.36	-60.37	≤-28.36	PASS
			1000~26500	-8.36	-43.6	≤-28.36	PASS
		2437	Reference	-7.17	-7.17	---	PASS
			30~1000	-7.17	-60.26	≤-27.17	PASS
			1000~26500	-7.17	-44.35	≤-27.17	PASS
		2462	Reference	-7.59	-7.59	---	PASS
			30~1000	-7.59	-58.86	≤-27.59	PASS
			1000~26500	-7.59	-45.03	≤-27.59	PASS
11N20SISO	Ant1	2412	Reference	-8.98	-8.98	---	PASS
			30~1000	-8.98	-60.15	≤-28.98	PASS
			1000~26500	-8.98	-43.89	≤-28.98	PASS
		2437	Reference	-8.30	-8.30	---	PASS
			30~1000	-8.30	-60.75	≤-28.3	PASS
			1000~26500	-8.30	-44.43	≤-28.3	PASS
		2462	Reference	-7.86	-7.86	---	PASS
			30~1000	-7.86	-60.15	≤-27.86	PASS
			1000~26500	-7.86	-44.94	≤-27.86	PASS
11N40SISO	Ant1	2422	Reference	-11.28	-11.28	---	PASS
			30~1000	-11.28	-62.27	≤-31.28	PASS
			1000~26500	-11.28	-44.1	≤-31.28	PASS
		2437	Reference	-11.64	-11.64	---	PASS
			30~1000	-11.64	-61.88	≤-31.64	PASS
			1000~26500	-11.64	-44.51	≤-31.64	PASS
		2452	Reference	-10.96	-10.96	---	PASS
			30~1000	-10.96	-62.64	≤-30.96	PASS
			1000~26500	-10.96	-44.67	≤-30.96	PASS

Test Graphs

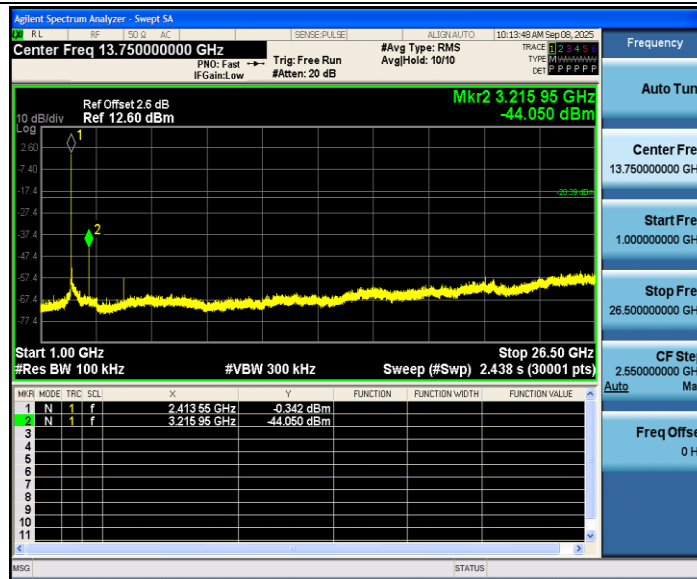
11B_Ant1_2412_0~Reference



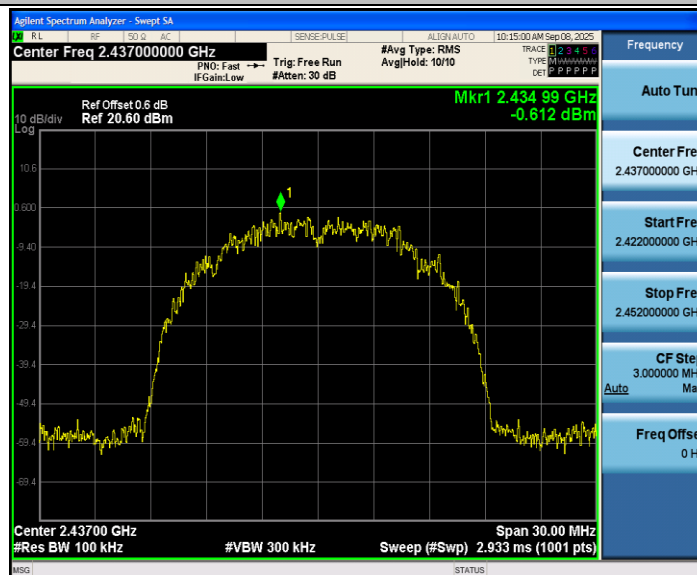
11B_Ant1_2412_30~1000



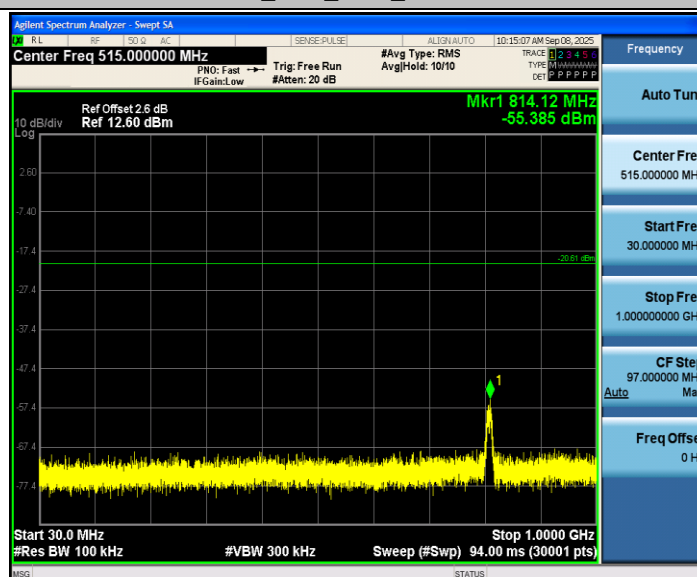
11B_Ant1_2412_1000~26500



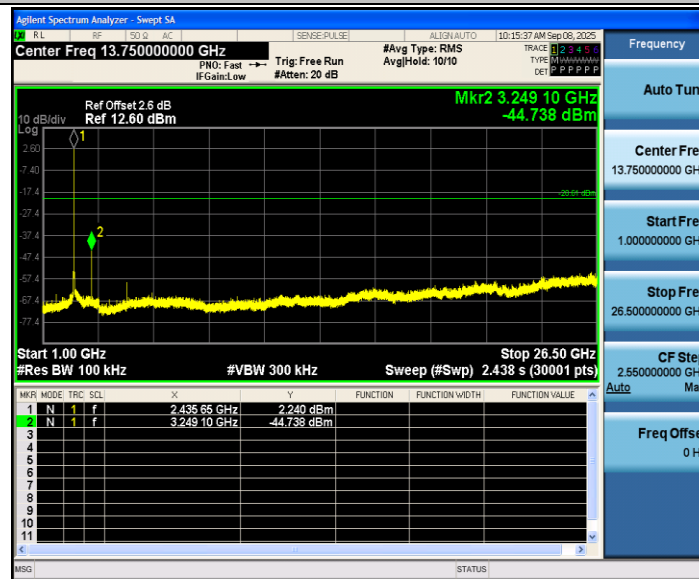
11B_Ant1_2437_0~Reference



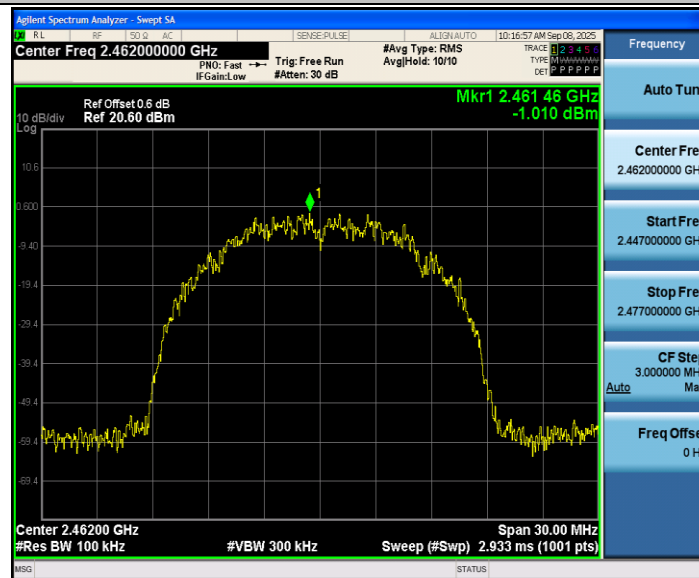
11B_Ant1_2437_30~1000



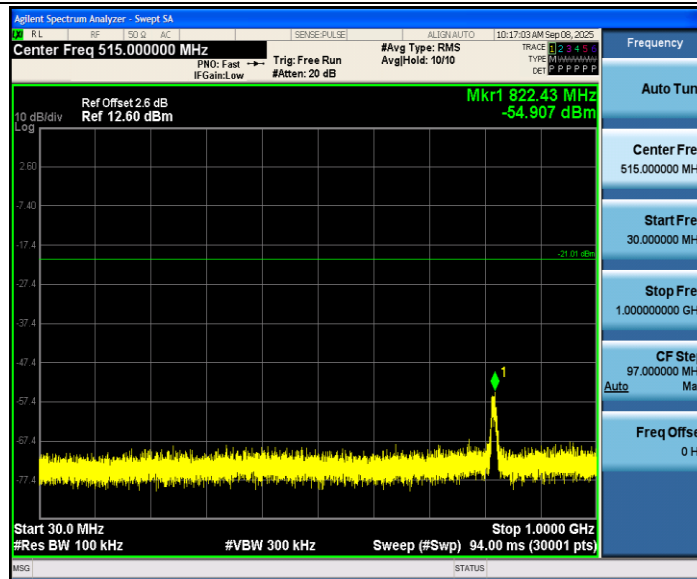
11B_Ant1_2437_1000~26500



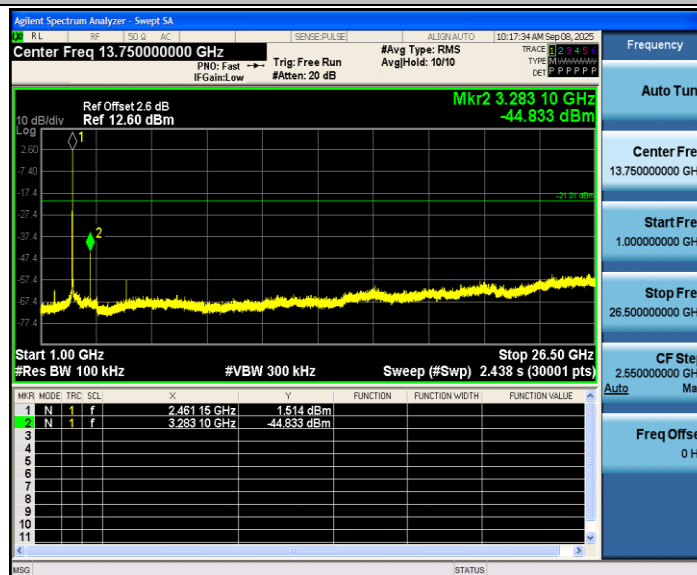
11B_Ant1_2462_0~Reference



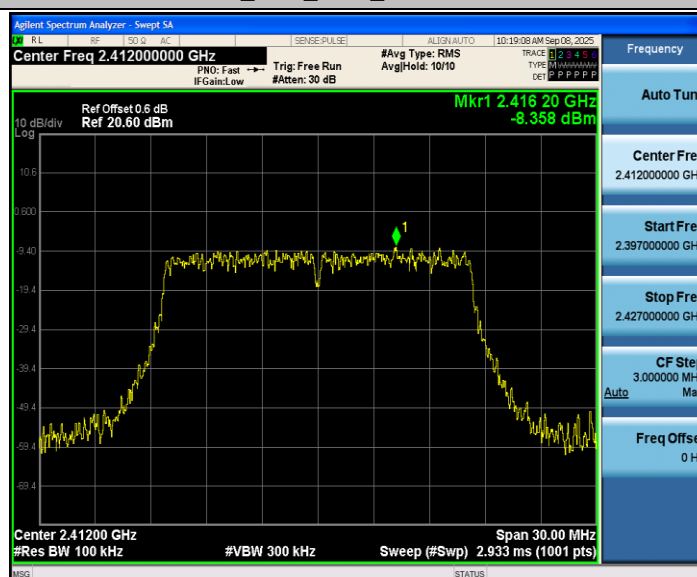
11B_Ant1_2462_30~1000



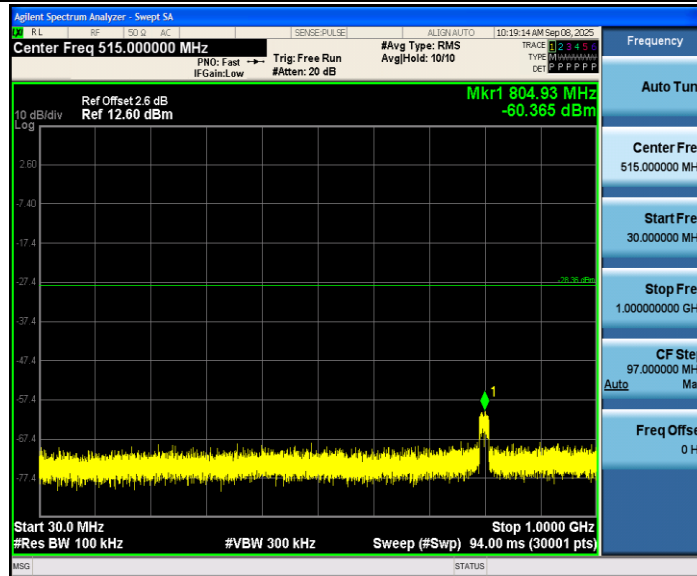
11B_Ant1_2462_1000~26500



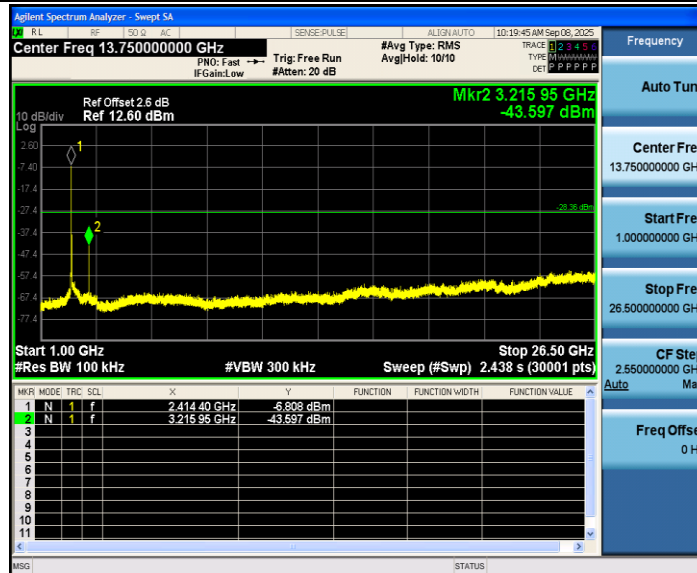
11G_Ant1_2412_0~Reference



11G_Ant1_2412_30~1000



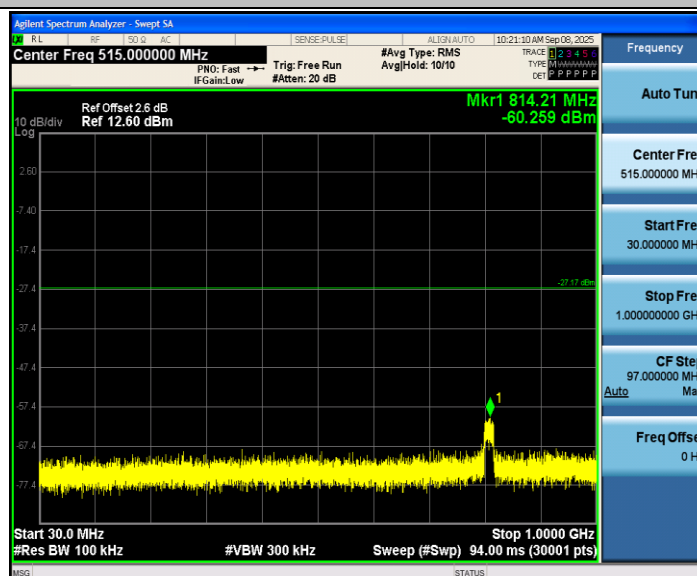
11G_Ant1_2412_1000~26500



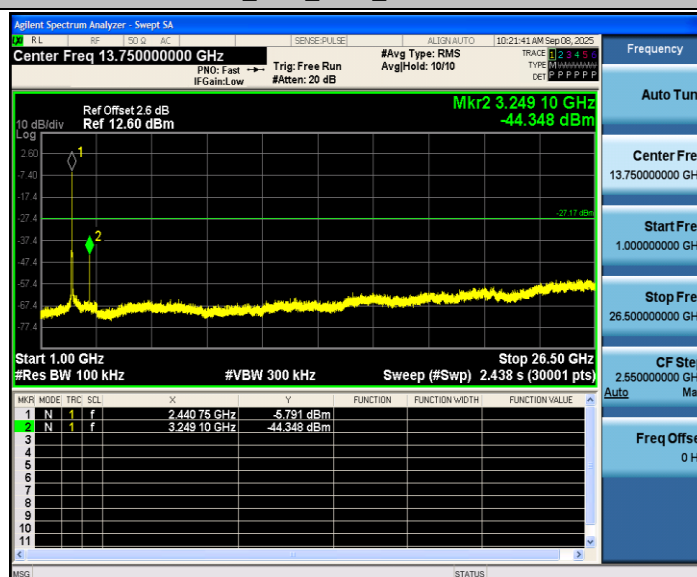
11G_Ant1_2437_0~Reference



11G_Ant1_2437_30~1000



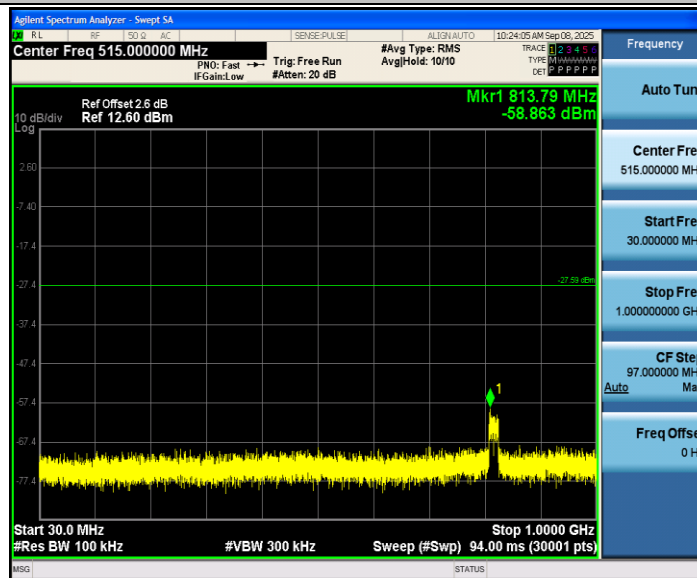
11G_Ant1_2437_1000~26500



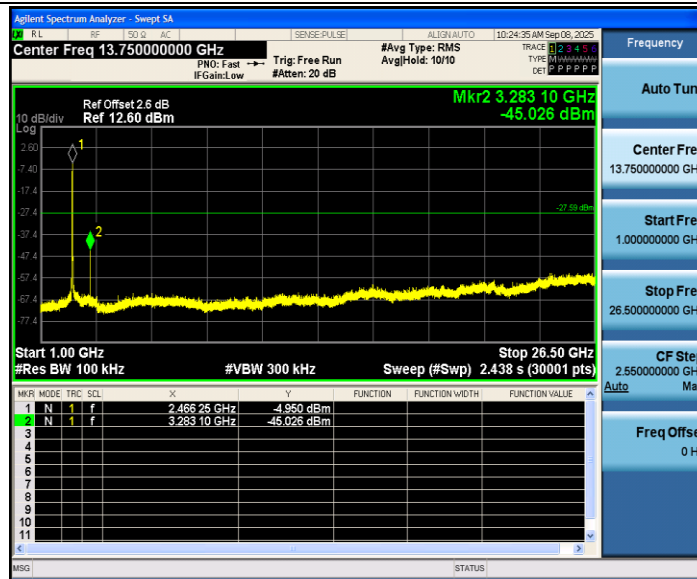
11G_Ant1_2462_0~Reference



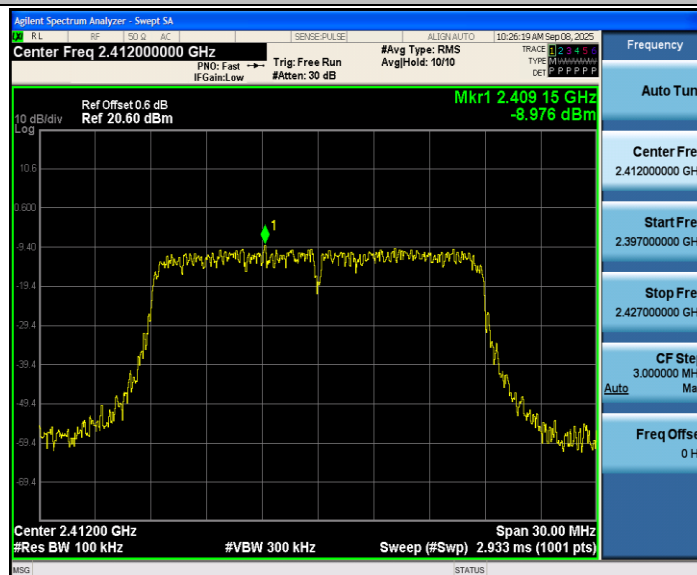
11G_Ant1_2462_30~1000



11G_Ant1_2462_1000~26500



11N20SISO_Ant1_2412_0~Reference



11N20SISO_Ant1_2412_30~1000

