
FCC Appendix RF Test Data for 2.4GWIFI

FCC ID : 2BVVS-GEN4-ESP32C

Company : 4D SYSTEMS PTY LTD

EUT : GEN4-ESP32 Series Intelligent Display Module

Model Number : GEN4-ESP32-70CT-CLB

Report No. : CTA26042801101

Reviewed By : Eric Wang

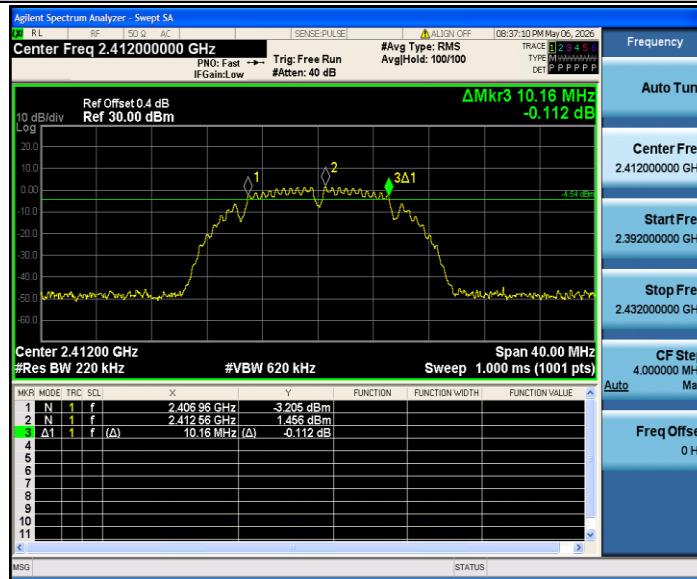
Appendix A: DTS Bandwidth

Test Result

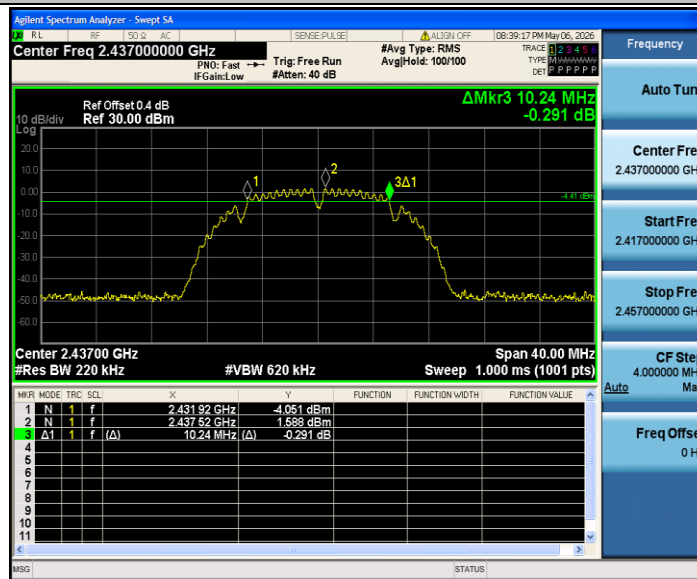
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	10.160	2406.960	2417.120	0.5	PASS
		2437	10.240	2431.920	2442.160	0.5	PASS
		2462	10.200	2456.920	2467.120	0.5	PASS
11G	Ant1	2412	15.720	2404.280	2420.000	0.5	PASS
		2437	15.640	2429.040	2444.680	0.5	PASS
		2462	15.680	2454.120	2469.800	0.5	PASS
11N20SISO	Ant1	2412	16.760	2403.680	2420.440	0.5	PASS
		2437	15.800	2429.440	2445.240	0.5	PASS
		2462	16.920	2453.520	2470.440	0.5	PASS
11N40SISO	Ant1	2422	35.680	2404.320	2440.000	0.5	PASS
		2437	35.360	2419.560	2454.920	0.5	PASS
		2452	35.280	2434.560	2469.840	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



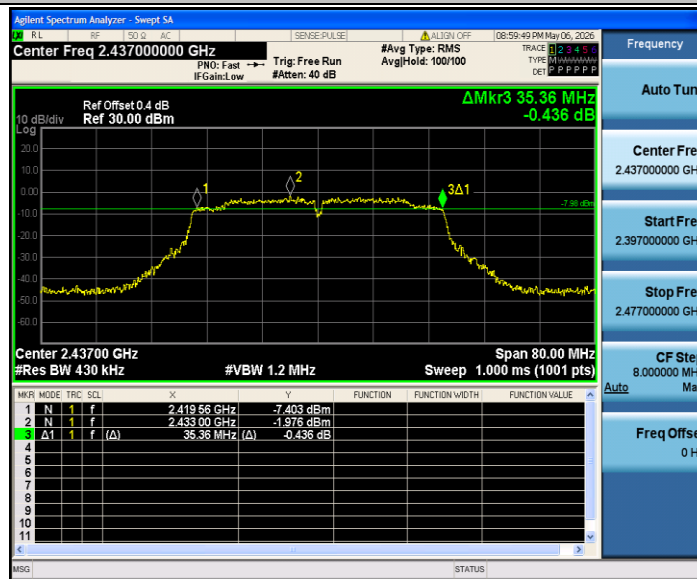
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



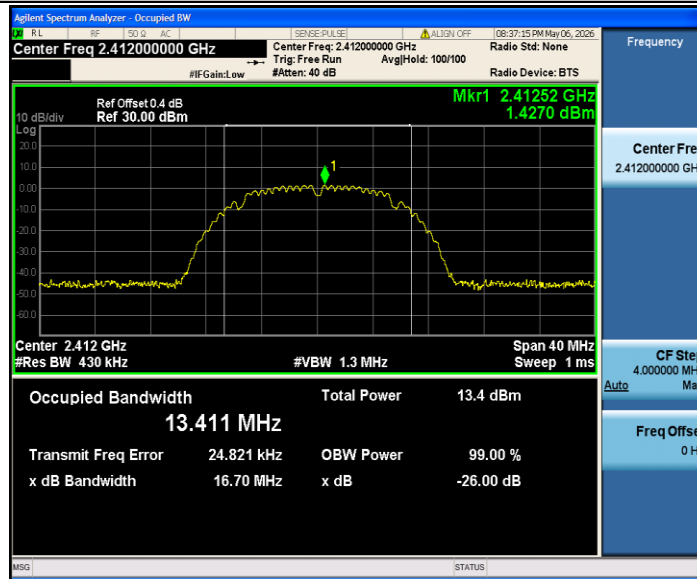
Appendix B: Occupied Channel Bandwidth

Test Result

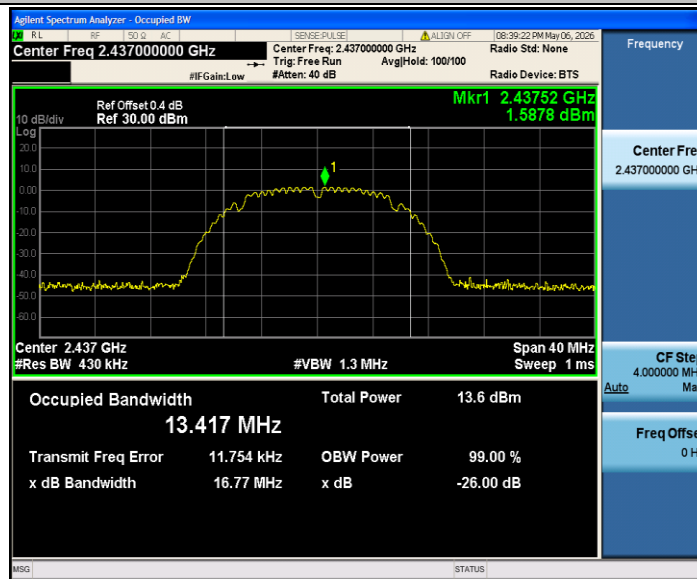
TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	13.411	2405.3193	2418.7303	---	---
		2437	13.417	2430.3033	2443.7203	---	---
		2462	13.420	2455.3005	2468.7205	---	---
11G	Ant1	2412	16.762	2403.6903	2420.4523	---	---
		2437	16.801	2428.6477	2445.4487	---	---
		2462	16.799	2453.6262	2470.4252	---	---
11N20SISO	Ant1	2412	17.842	2403.0925	2420.9345	---	---
		2437	17.917	2428.0530	2445.9700	---	---
		2462	17.878	2453.0771	2470.9551	---	---
11N40SISO	Ant1	2422	36.045	2404.0949	2440.1399	---	---
		2437	36.049	2419.0859	2455.1349	---	---
		2452	36.115	2434.0666	2470.1816	---	---

Test Graphs

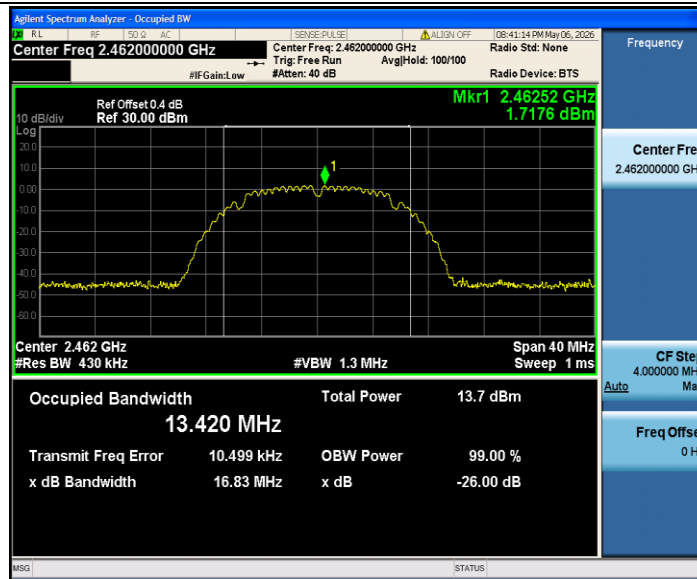
11B_Ant1_2412



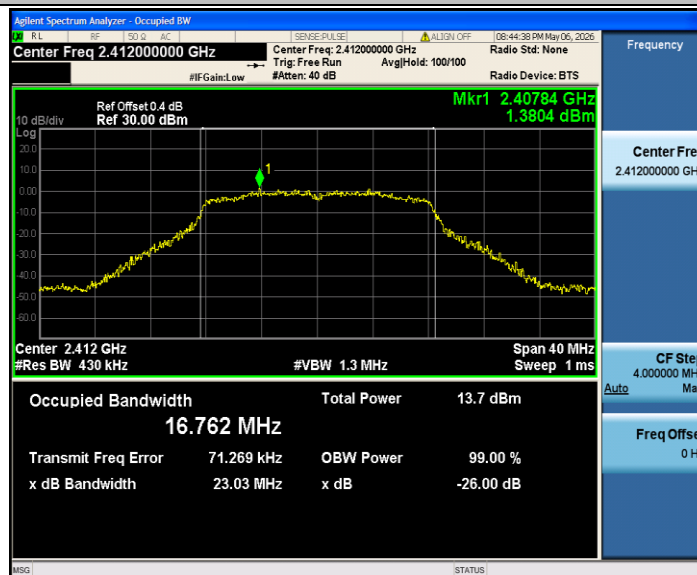
11B_Ant1_2437



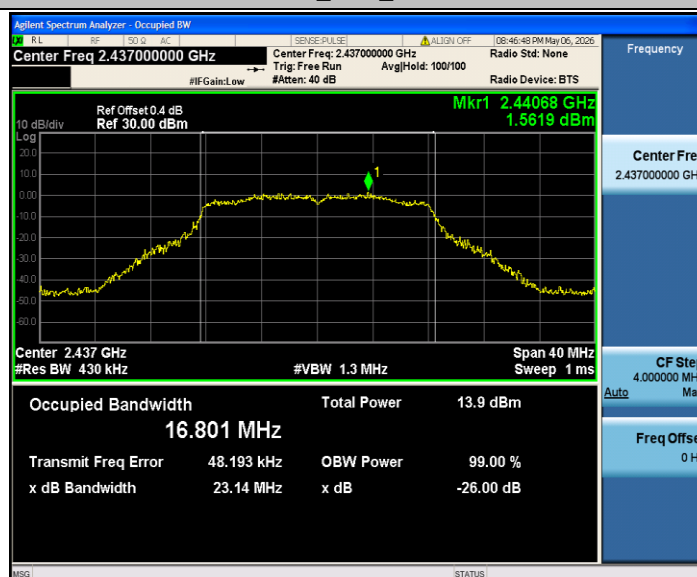
11B_Ant1_2462



11G_Ant1_2412



11G_Ant1_2437



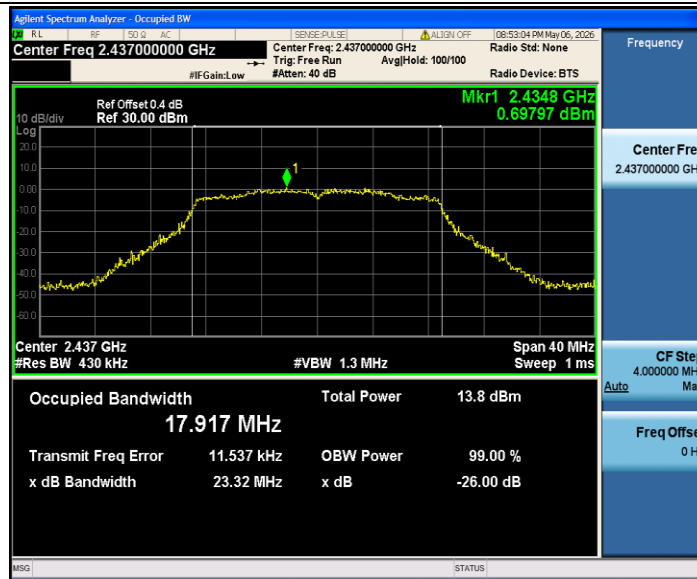
11G_Ant1_2462



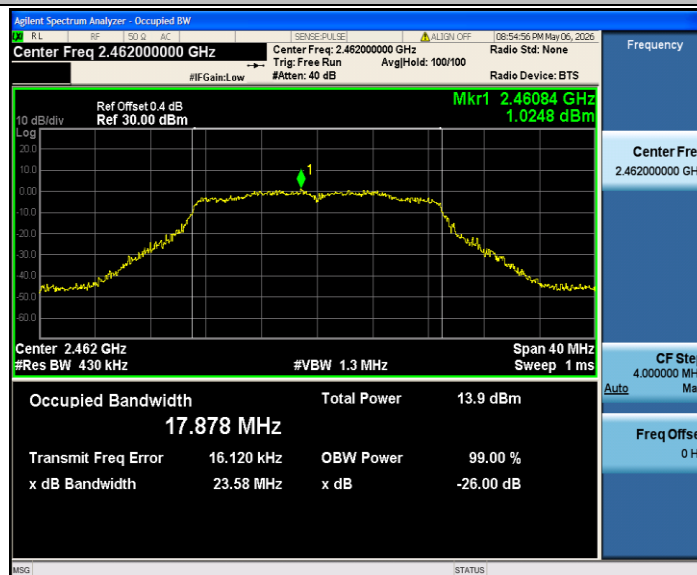
11N20SISO_Ant1_2412



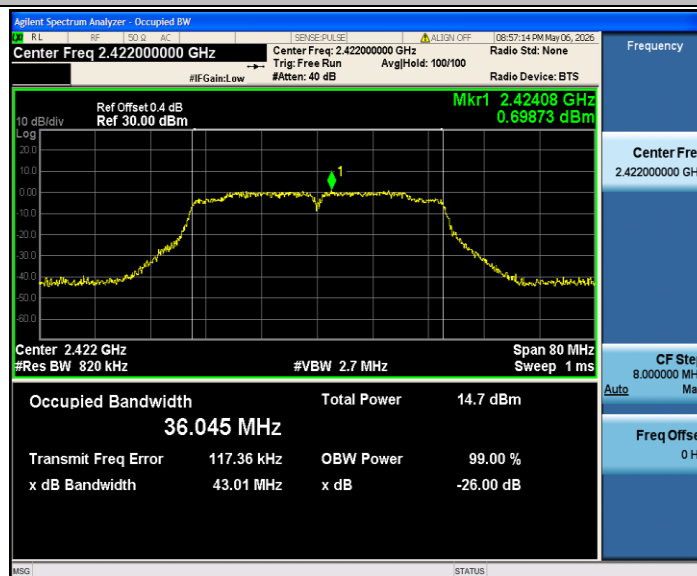
11N20SISO_Ant1_2437



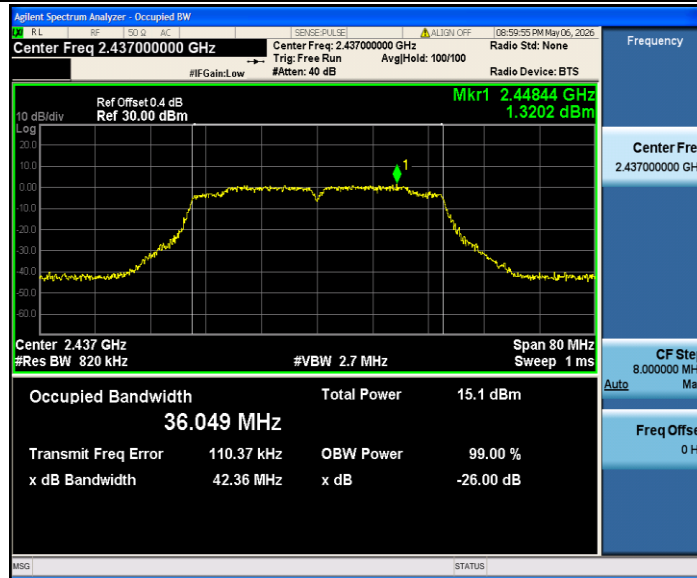
11N20SISO_Ant1_2462



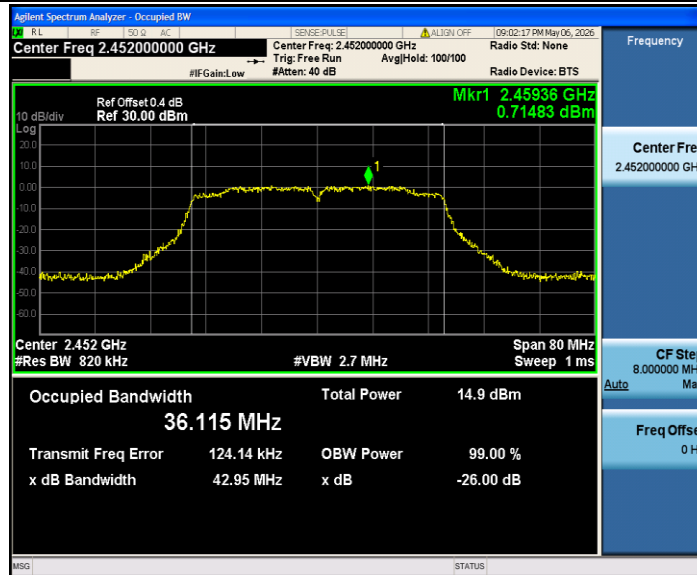
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



Appendix C: Maximum conducted output power

Test Result

Test Mode	Antenna	Frequency[MHz]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	12.97	≤30.00	PASS
		2437	13.22	≤30.00	PASS
		2462	13.29	≤30.00	PASS
11G	Ant1	2412	14.52	≤30.00	PASS
		2437	14.76	≤30.00	PASS
		2462	14.88	≤30.00	PASS
11N20SISO	Ant1	2412	14.48	≤30.00	PASS
		2437	14.47	≤30.00	PASS
		2462	14.81	≤30.00	PASS
11N40SISO	Ant1	2422	14.88	≤30.00	PASS
		2437	15.17	≤30.00	PASS
		2452	15.04	≤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	-13.68	≤8.00	PASS
		2437	-12.87	≤8.00	PASS
		2462	-12.16	≤8.00	PASS
11G	Ant1	2412	-16.98	≤8.00	PASS
		2437	-17.20	≤8.00	PASS
		2462	-17.23	≤8.00	PASS
11N20SISO	Ant1	2412	-16.47	≤8.00	PASS
		2437	-16.35	≤8.00	PASS
		2462	-16.91	≤8.00	PASS
11N40SISO	Ant1	2422	-19.60	≤8.00	PASS
		2437	-18.55	≤8.00	PASS
		2452	-18.89	≤8.00	PASS

Test Graphs

11B_Ant1_2412



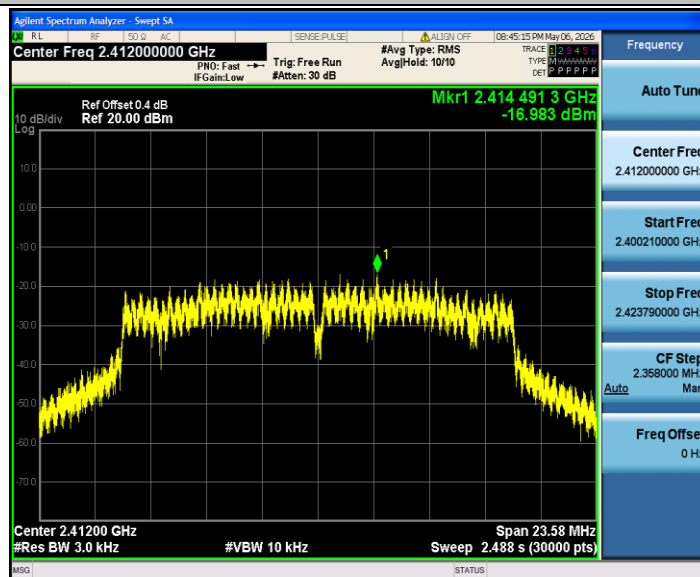
11B_Ant1_2437



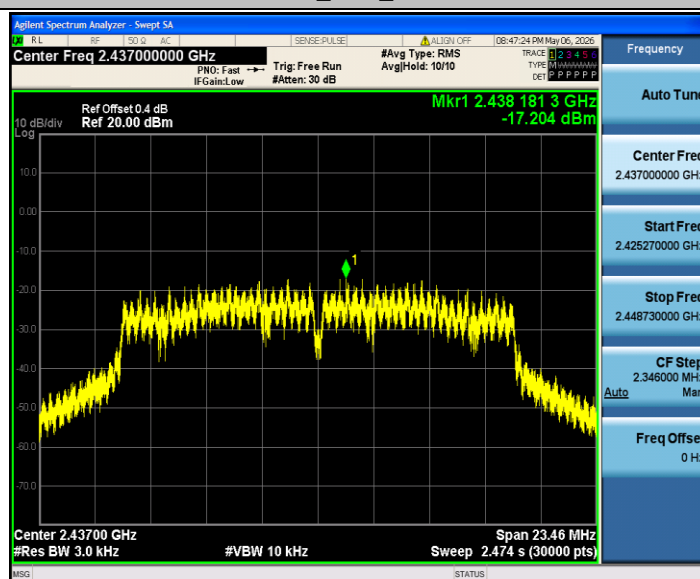
11B_Ant1_2462



11G_Ant1_2412



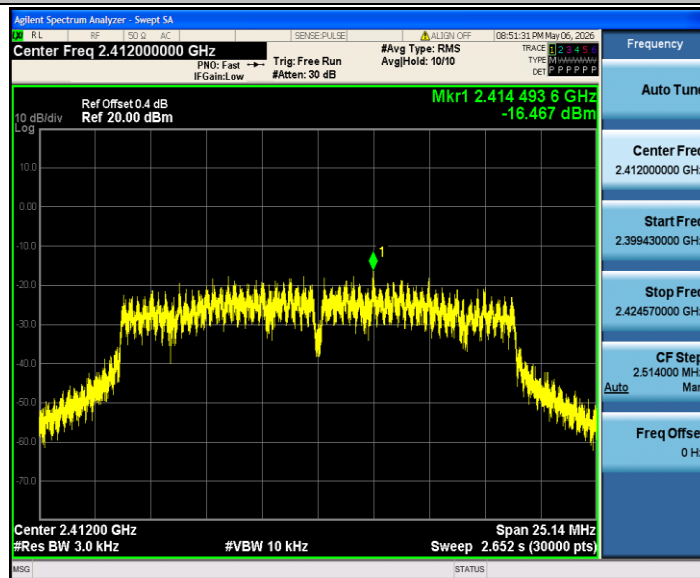
11G_Ant1_2437



11G_Ant1_2462



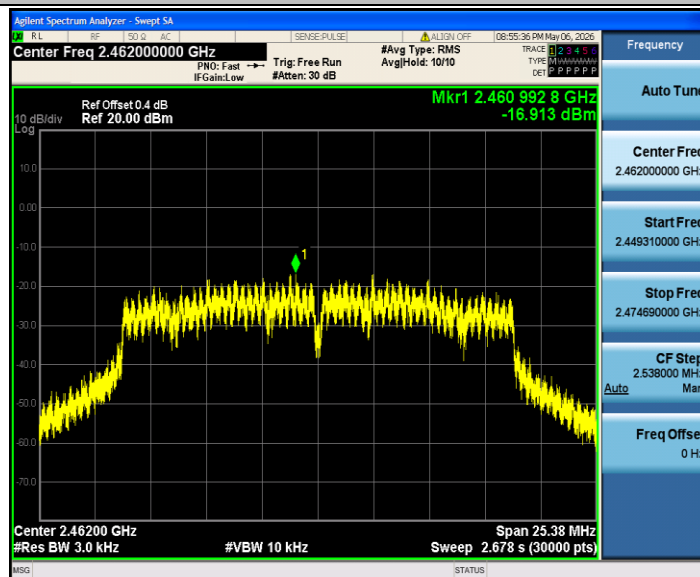
11N20SISO_Ant1_2412



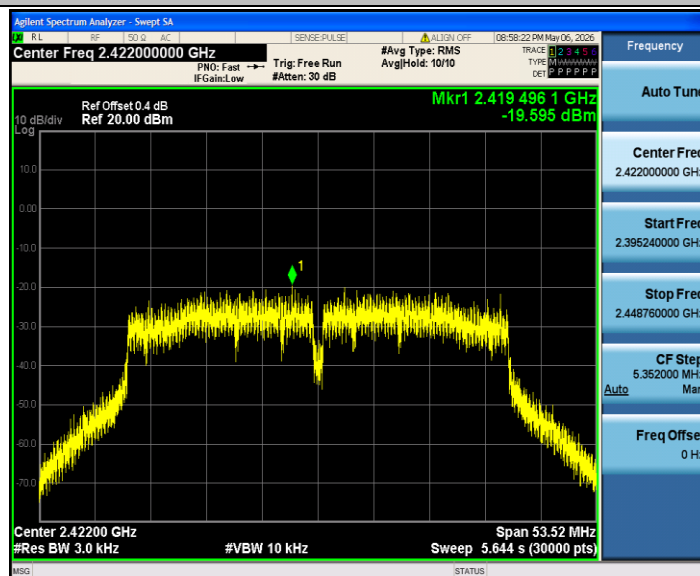
11N20SISO_Ant1_2437



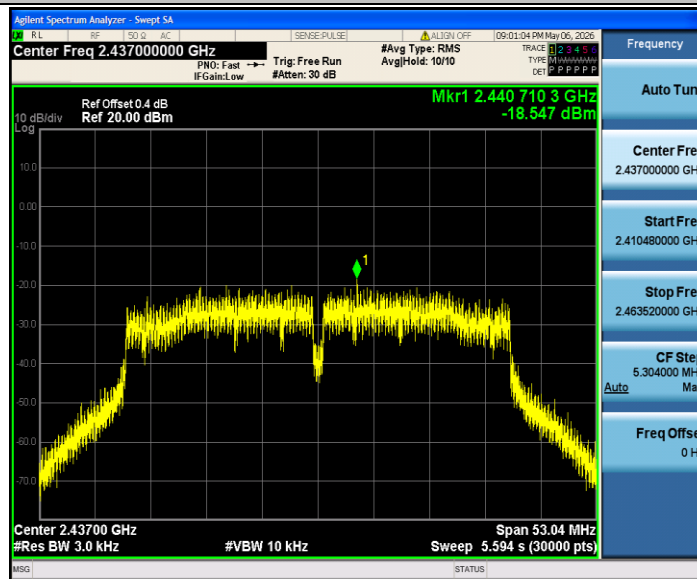
11N20SISO_Ant1_2462



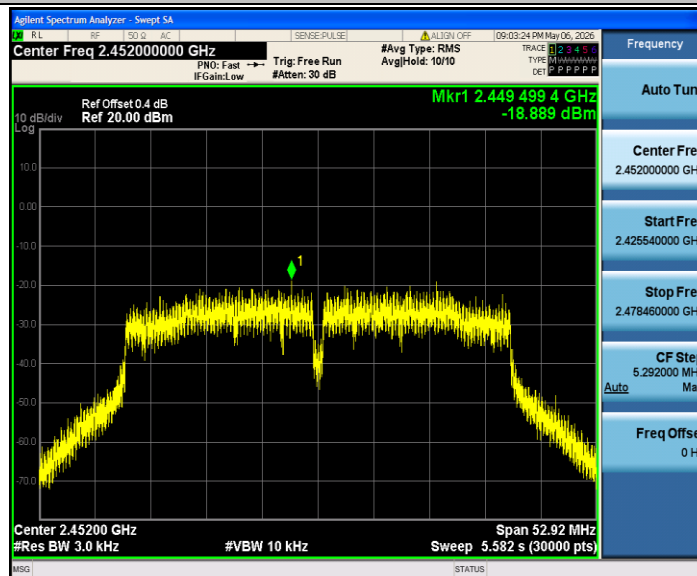
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



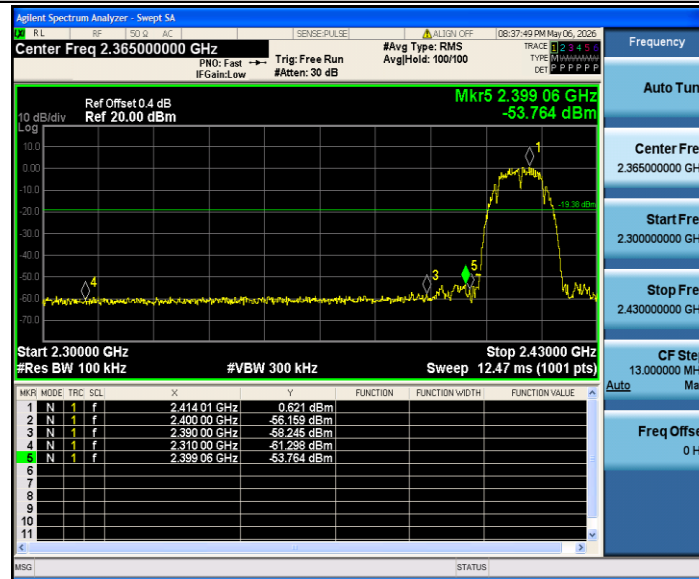
Appendix E: Band edge measurements

Test Result

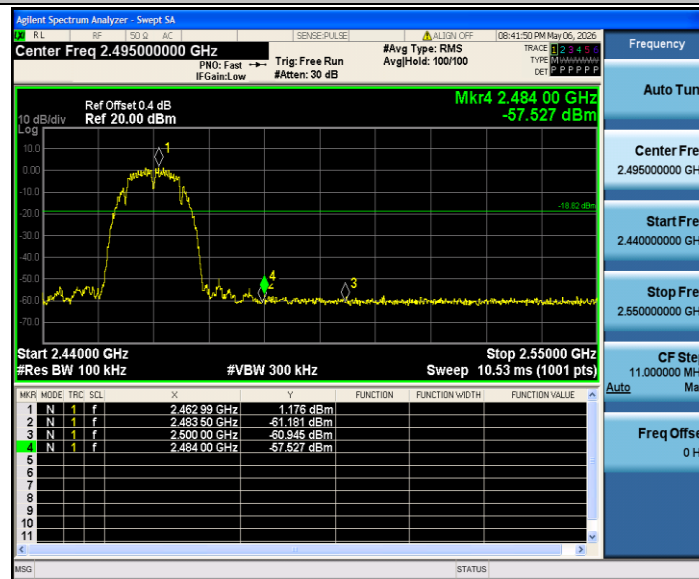
TestMode	Antenna	Channel Name	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	0.62	-53.76	≤-19.38	PASS
		High	2462	1.18	-57.53	≤-18.82	PASS
11G	Ant1	Low	2412	-1.85	-33.48	≤-21.85	PASS
		High	2462	-1.49	-57.36	≤-21.49	PASS
11N20SISO	Ant1	Low	2412	-2.31	-32.81	≤-22.31	PASS
		High	2462	-1.50	-57.25	≤-21.5	PASS
11N40SISO	Ant1	Low	2422	-5.12	-32.89	≤-25.12	PASS
		High	2452	-4.84	-56.92	≤-24.84	PASS

Test Graphs

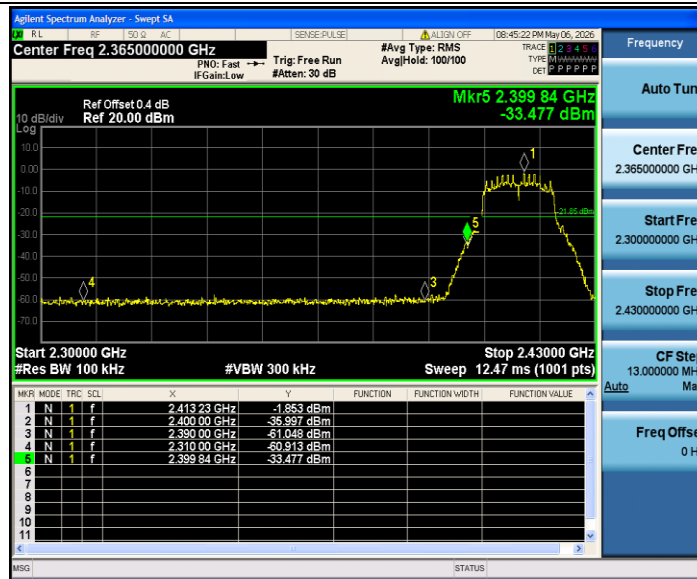
11B_Ant1_Low_2412



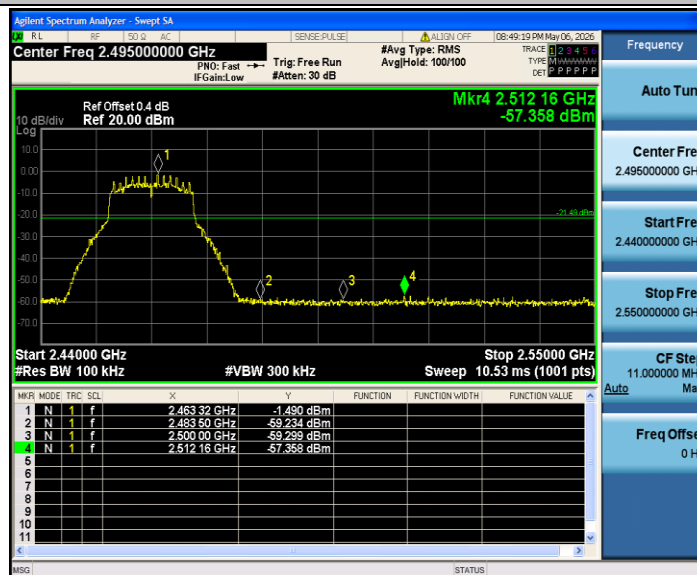
11B_Ant1_High_2462



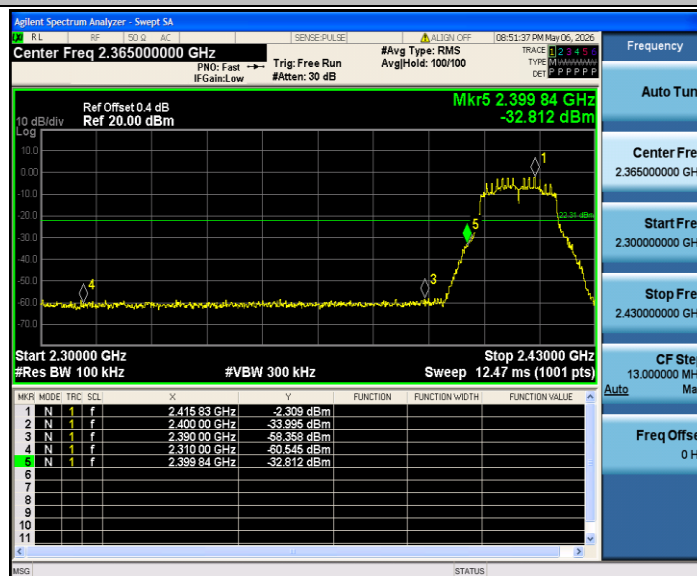
11G_Ant1_Low_2412



11G_Ant1_High_2462



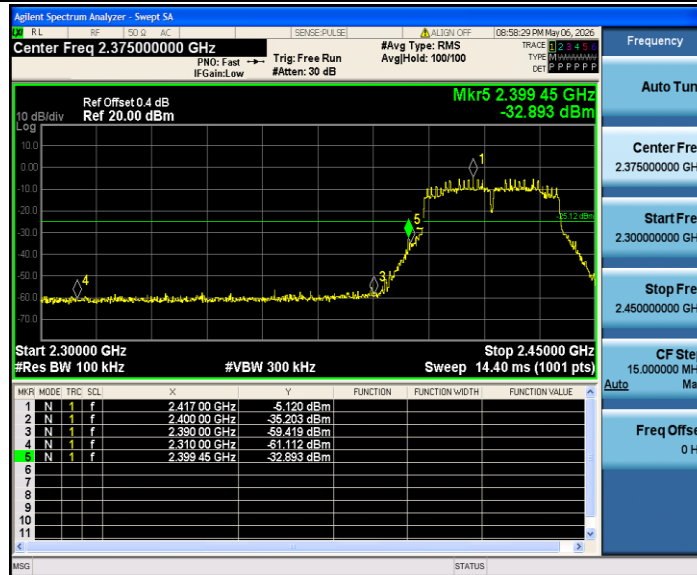
11N20SISO_Ant1_Low_2412



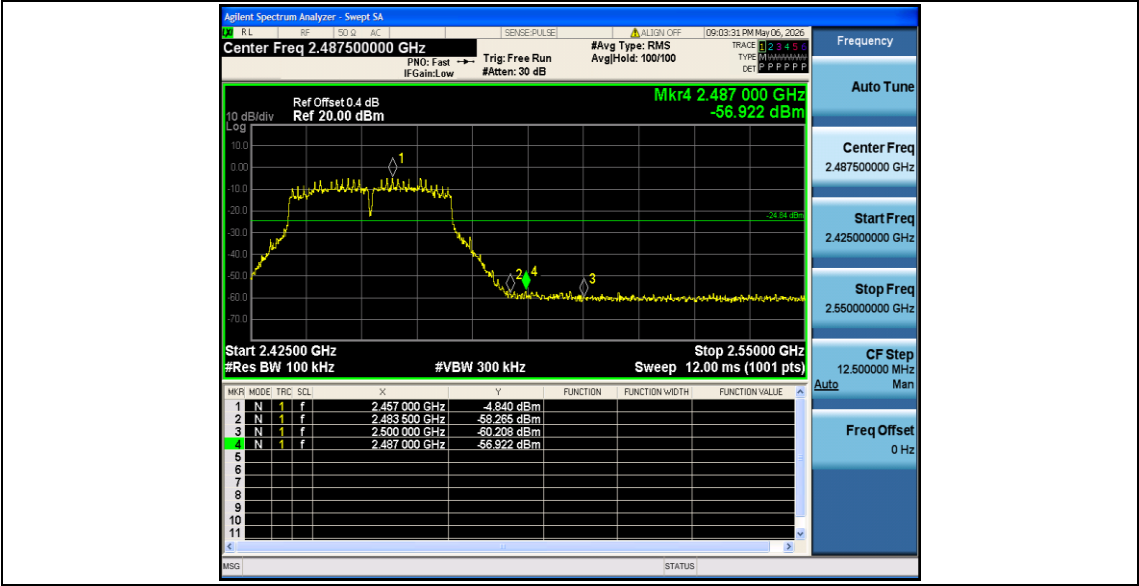
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452



Appendix F: Conducted Spurious Emission

Test Result

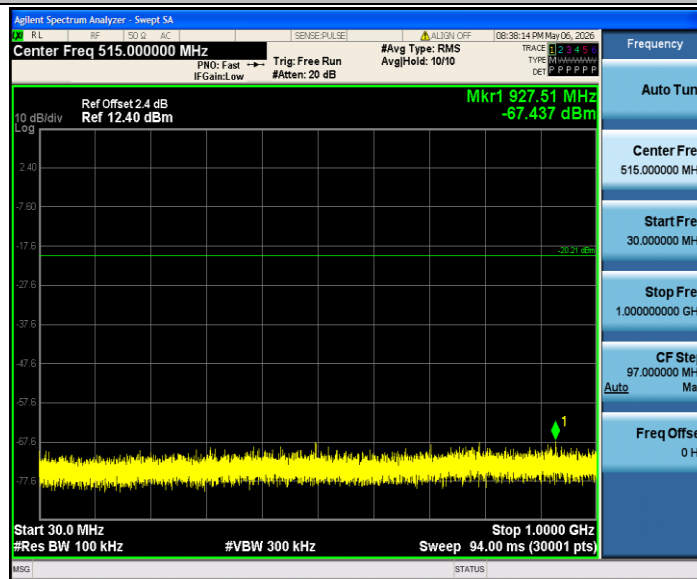
TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	-0.21	-0.21	---	PASS
			30~1000	-0.21	-67.44	≤-20.21	PASS
			1000~26500	-0.21	-55.06	≤-20.21	PASS
		2437	Reference	0.61	0.61	---	PASS
			30~1000	0.61	-68.23	≤-19.39	PASS
			1000~26500	0.61	-54.79	≤-19.39	PASS
		2462	Reference	0.37	0.37	---	PASS
			30~1000	0.37	-68.55	≤-19.63	PASS
			1000~26500	0.37	-55.46	≤-19.63	PASS
11G	Ant1	2412	Reference	-2.35	-2.35	---	PASS
			30~1000	-2.35	-67.8	≤-22.35	PASS
			1000~26500	-2.35	-55.17	≤-22.35	PASS
		2437	Reference	-2.34	-2.34	---	PASS
			30~1000	-2.34	-67.8	≤-22.34	PASS
			1000~26500	-2.34	-54.79	≤-22.34	PASS
		2462	Reference	-1.76	-1.76	---	PASS
			30~1000	-1.76	-67.59	≤-21.76	PASS
			1000~26500	-1.76	-55.39	≤-21.76	PASS
11N20SISO	Ant1	2412	Reference	-2.45	-2.45	---	PASS
			30~1000	-2.45	-67.12	≤-22.45	PASS
			1000~26500	-2.45	-54.77	≤-22.45	PASS
		2437	Reference	-2.93	-2.93	---	PASS
			30~1000	-2.93	-67.06	≤-22.93	PASS
			1000~26500	-2.93	-55.09	≤-22.93	PASS
		2462	Reference	-2.11	-2.11	---	PASS
			30~1000	-2.11	-68.23	≤-22.11	PASS
			1000~26500	-2.11	-55.34	≤-22.11	PASS
11N40SISO	Ant1	2422	Reference	-5.78	-5.78	---	PASS
			30~1000	-5.78	-67.92	≤-25.78	PASS
			1000~26500	-5.78	-54.6	≤-25.78	PASS
		2437	Reference	-4.98	-4.98	---	PASS
			30~1000	-4.98	-67.94	≤-24.98	PASS
			1000~26500	-4.98	-55.84	≤-24.98	PASS
		2452	Reference	-4.92	-4.92	---	PASS
			30~1000	-4.92	-67.87	≤-24.92	PASS
			1000~26500	-4.92	-55.61	≤-24.92	PASS

Test Graphs

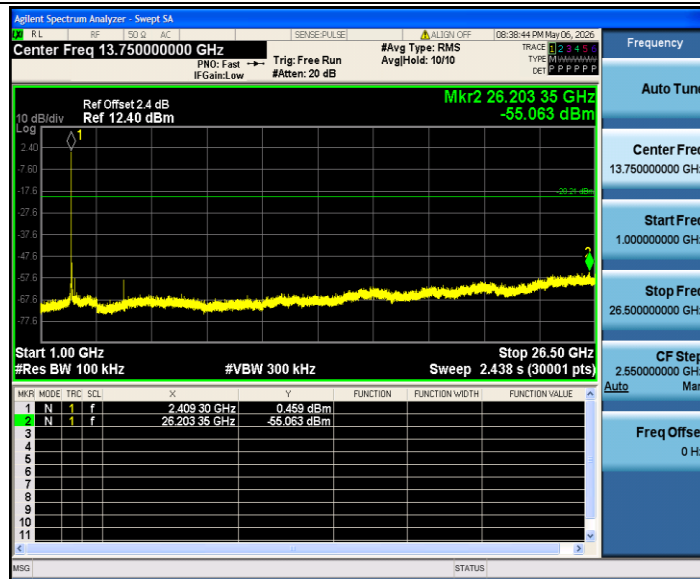
11B_Ant1_2412_0~Reference



11B_Ant1_2412_30~1000



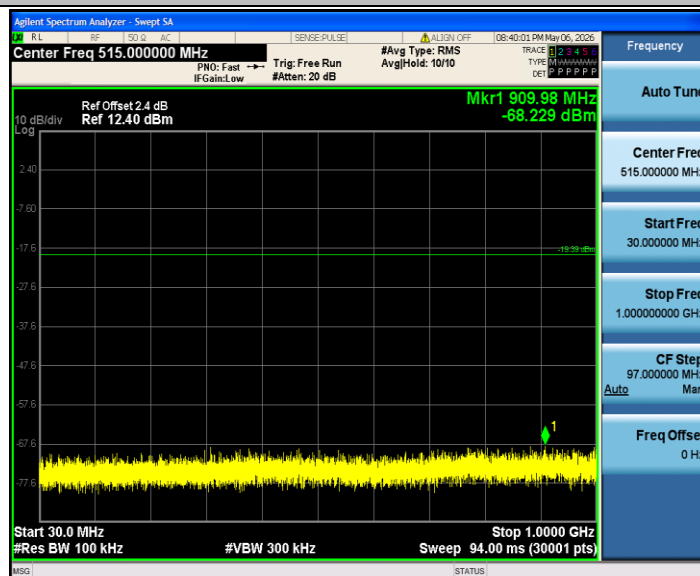
11B_Ant1_2412_1000~26500



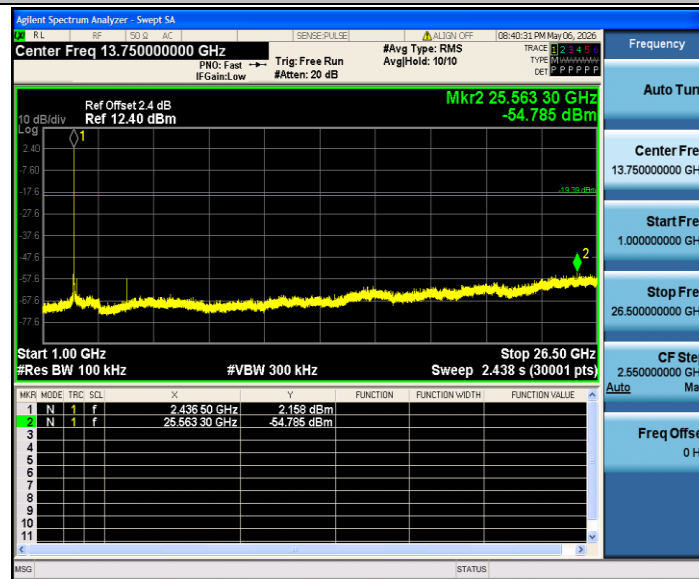
11B_Ant1_2437_0~Reference



11B_Ant1_2437_30~1000



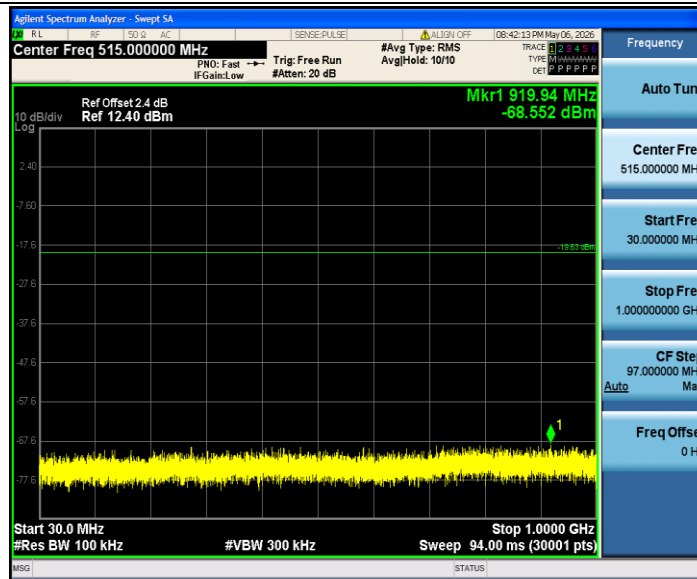
11B_Ant1_2437_1000~26500



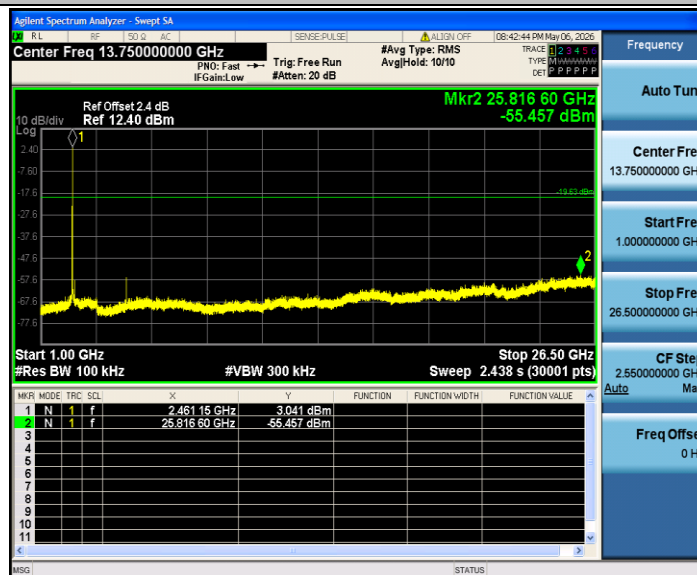
11B_Ant1_2462_0~Reference



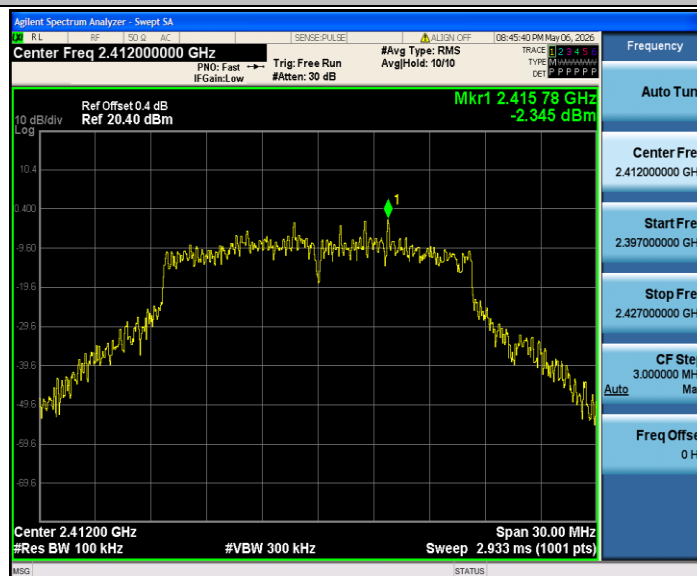
11B_Ant1_2462_30~1000



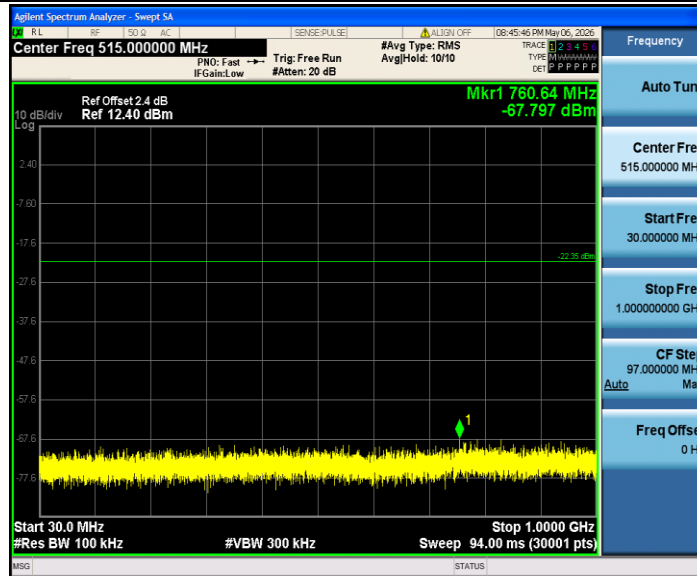
11B_Ant1_2462_1000~26500



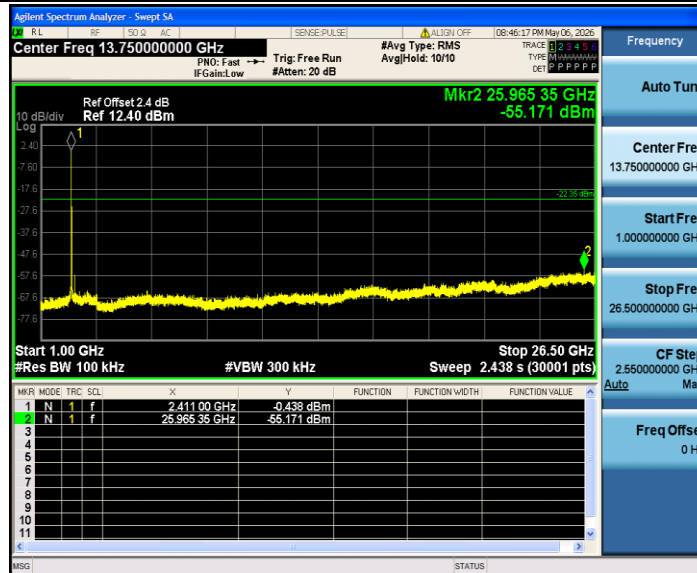
11G_Ant1_2412_0~Reference



11G_Ant1_2412_30~1000



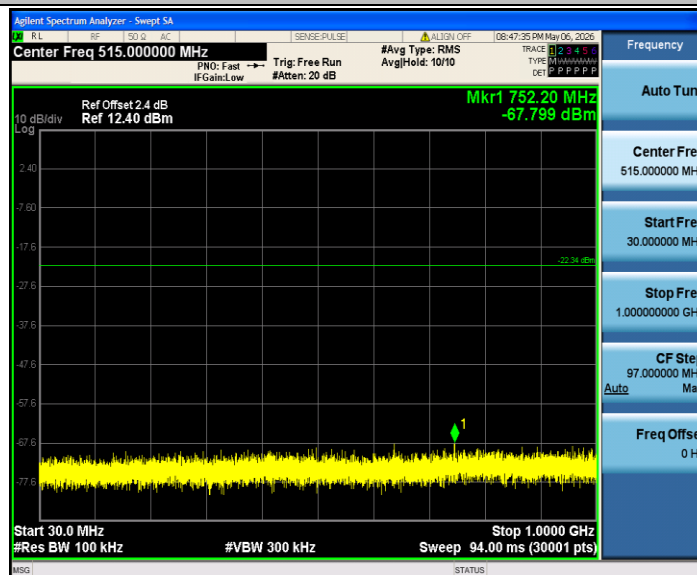
11G_Ant1_2412_1000~26500



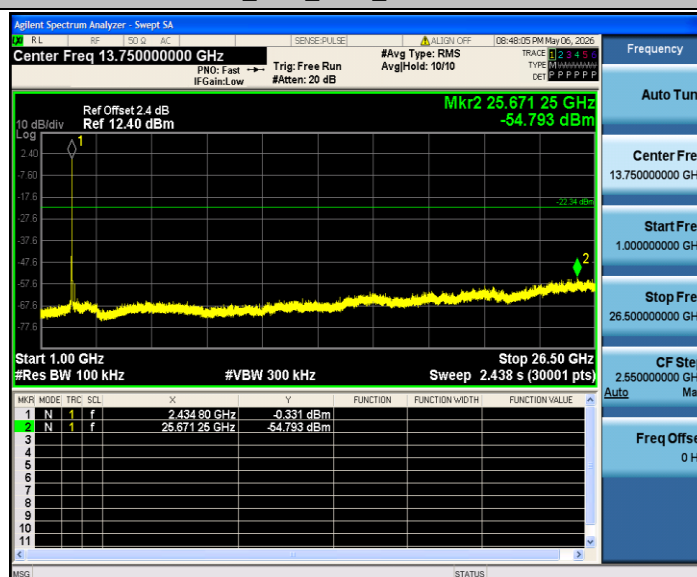
11G_Ant1_2437_0~Reference



11G_Ant1_2437_30~1000



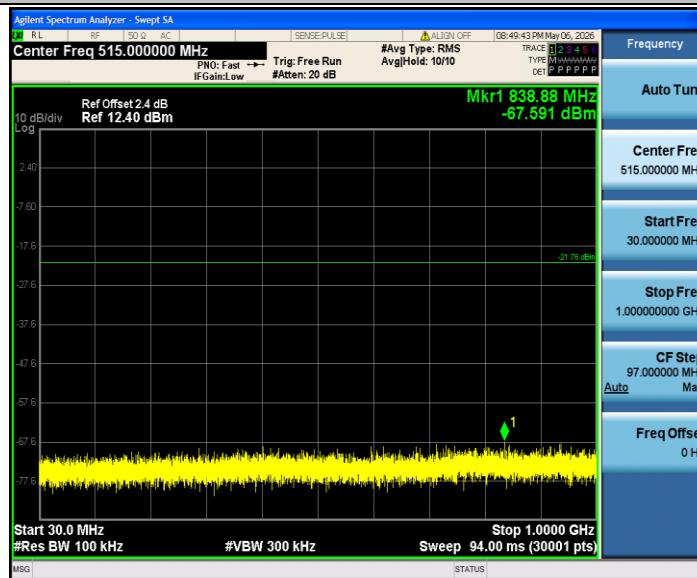
11G_Ant1_2437_1000~26500



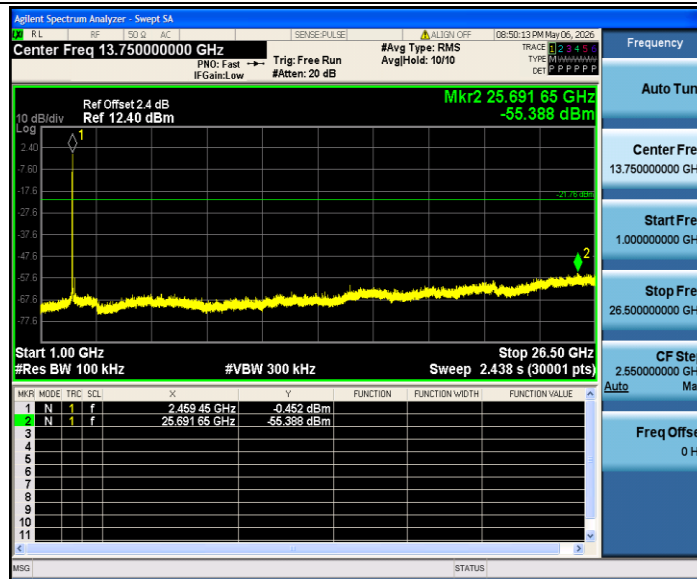
11G_Ant1_2462_0~Reference



11G_Ant1_2462_30~1000



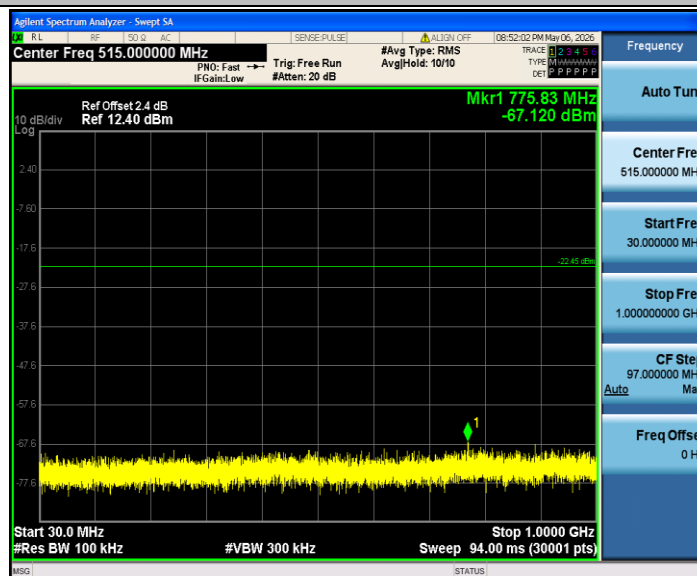
11G_Ant1_2462_1000~26500



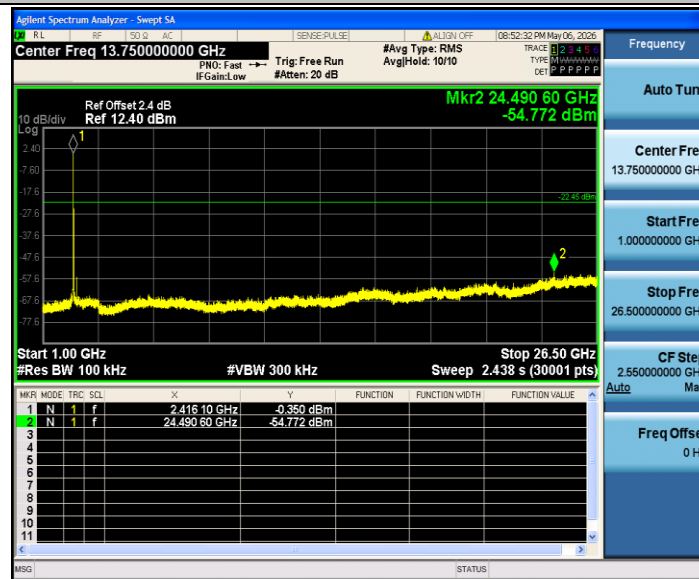
11N20SISO_Ant1_2412_0~Reference



11N20SISO_Ant1_2412_30~1000



11N20SISO_Ant1_2412_1000~26500



11N20SISO_Ant1_2437_0~Reference



11N20SISO_Ant1_2437_30~1000