

FCC Appendix RF Test Data for 2.4GWIFI

FCC ID : 2BVVS-GEN4-ESP32S

Company : 4D SYSTEMS PTY LTD

EUT : GEN4-ESP32 Series Intelligent Display Module

Model Number : GEN4-ESP32-32CT-CLB

Report No. : CTA26042801001

Reviewed By : Eric Wang

Appendix A: DTS Bandwidth

Test Result

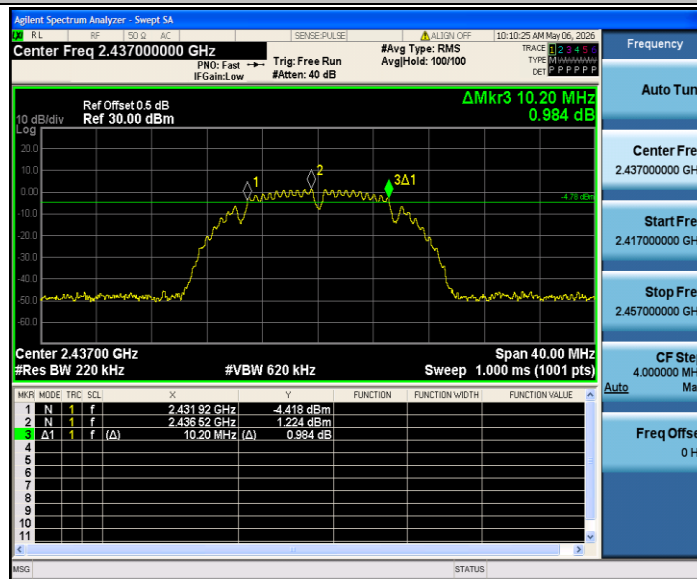
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	10.200	2406.920	2417.120	0.5	PASS
		2437	10.200	2431.920	2442.120	0.5	PASS
		2462	10.240	2456.920	2467.160	0.5	PASS
11G	Ant1	2412	15.480	2404.360	2419.840	0.5	PASS
		2437	15.880	2429.080	2444.960	0.5	PASS
		2462	15.920	2454.040	2469.960	0.5	PASS
11N20SISO	Ant1	2412	16.520	2404.120	2420.640	0.5	PASS
		2437	16.920	2428.680	2445.600	0.5	PASS
		2462	17.000	2453.480	2470.480	0.5	PASS
11N40SISO	Ant1	2422	36.080	2404.080	2440.160	0.5	PASS
		2437	35.520	2419.480	2455.000	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



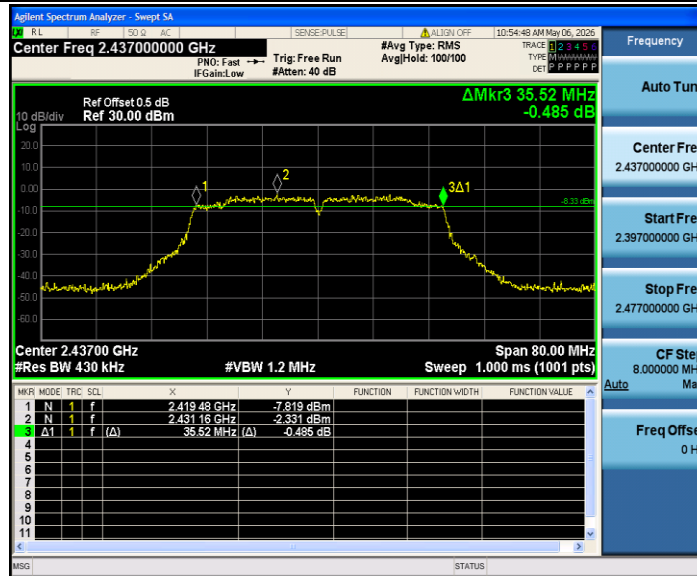
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



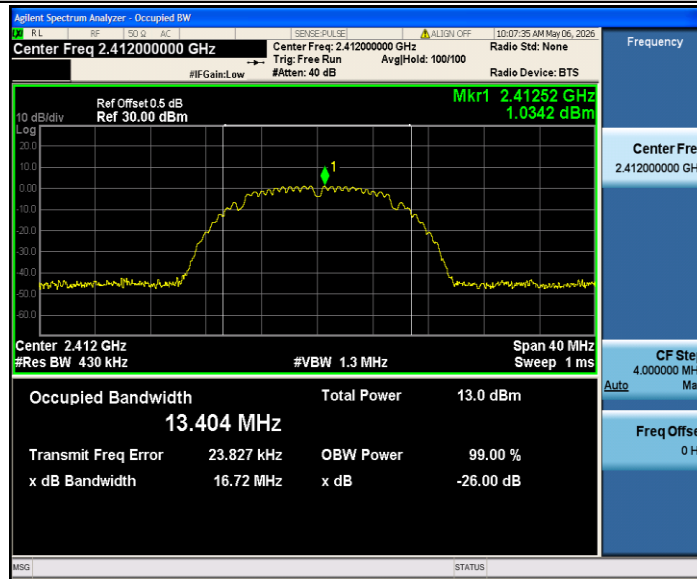
Appendix B: Occupied Channel Bandwidth

Test Result

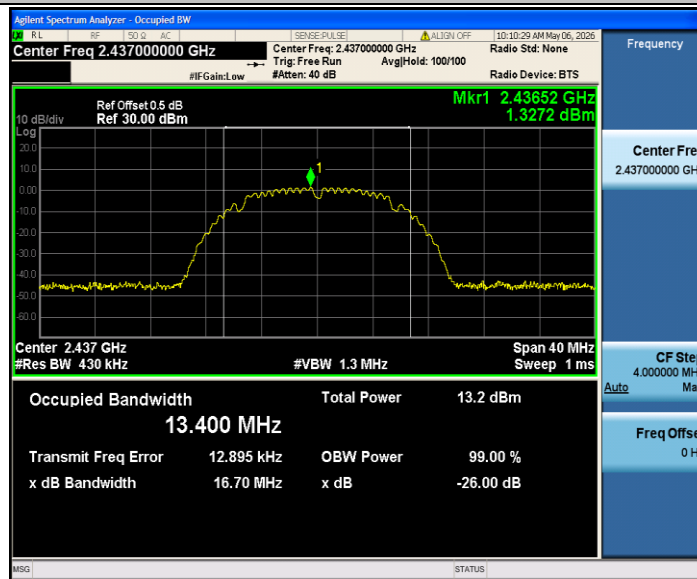
TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	13.404	2405.3218	2418.7258	---	---
		2437	13.400	2430.3129	2443.7129	---	---
		2462	13.411	2455.3041	2468.7151	---	---
11G	Ant1	2412	16.762	2403.6942	2420.4562	---	---
		2437	16.762	2428.6297	2445.3917	---	---
		2462	16.828	2453.6053	2470.4333	---	---
11N20SISO	Ant1	2412	17.885	2403.0830	2420.9680	---	---
		2437	17.911	2428.0764	2445.9874	---	---
		2462	17.899	2453.0929	2470.9919	---	---
11N40SISO	Ant1	2422	36.043	2404.0629	2440.1059	---	---
		2437	35.995	2419.1353	2455.1303	---	---
		2452	36.103	2434.0615	2470.1645	---	---

Test Graphs

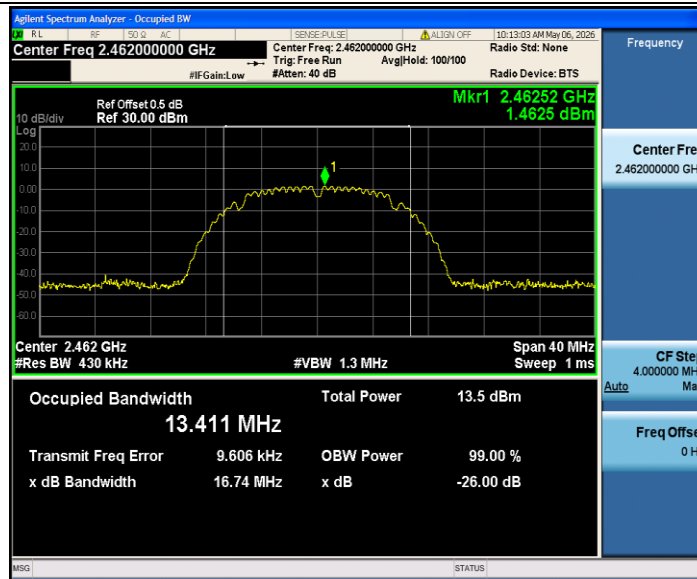
11B_Ant1_2412



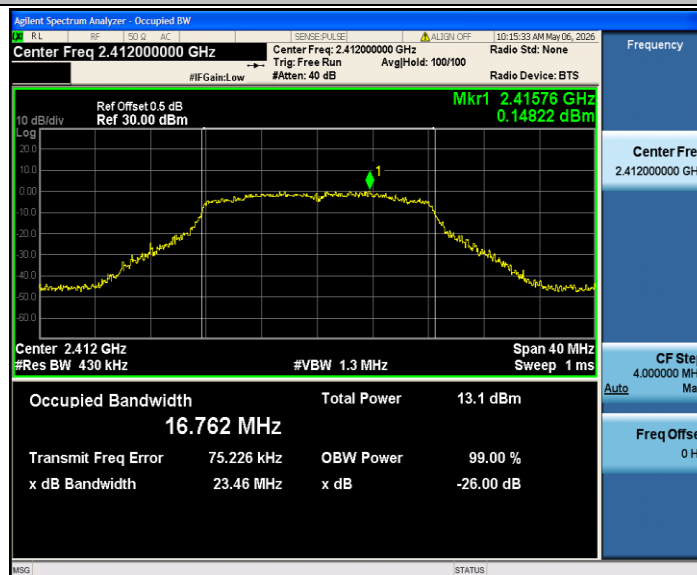
11B_Ant1_2437



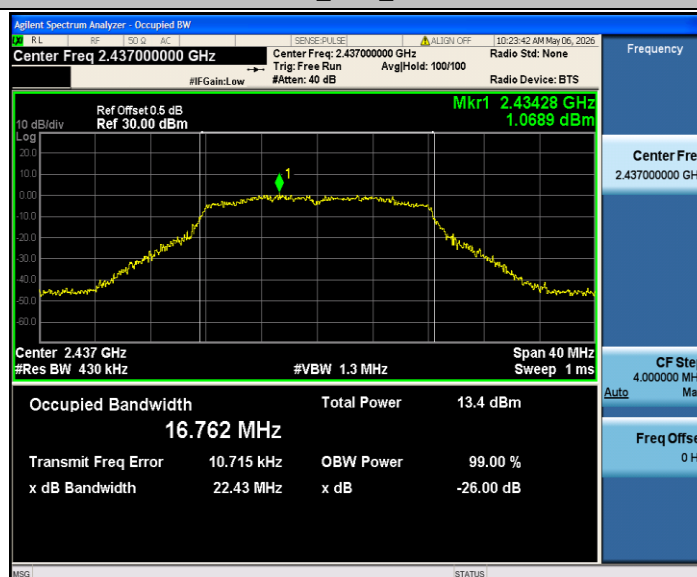
11B_Ant1_2462



11G_Ant1_2412



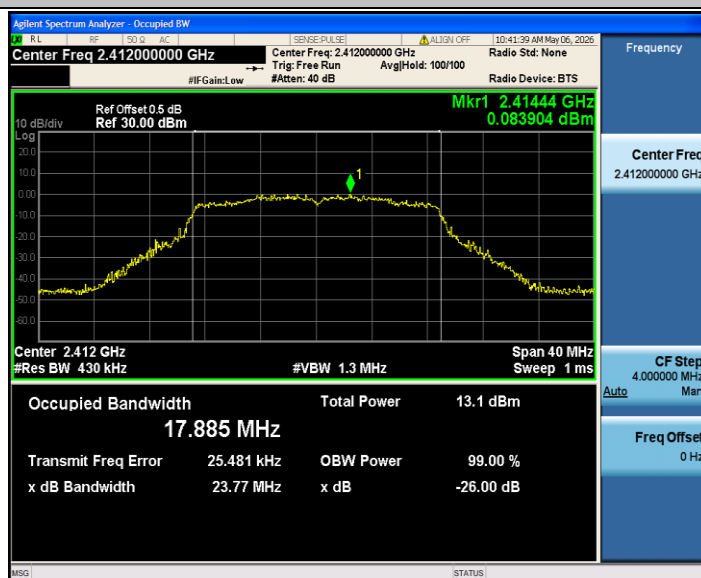
11G_Ant1_2437



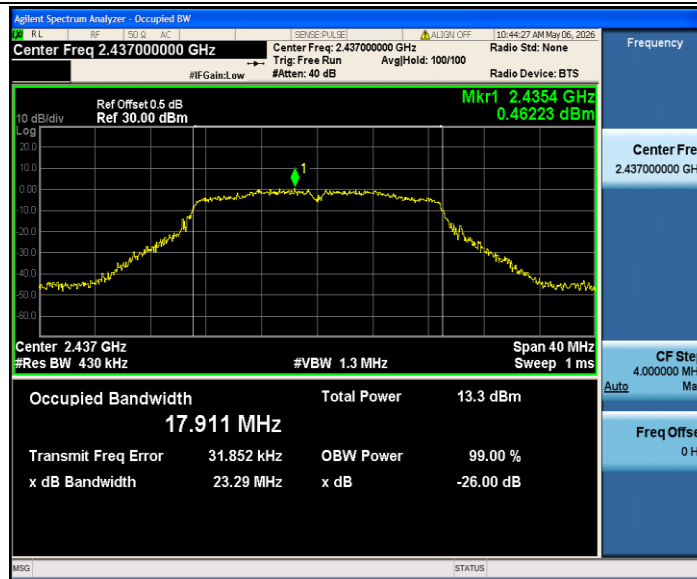
11G_Ant1_2462



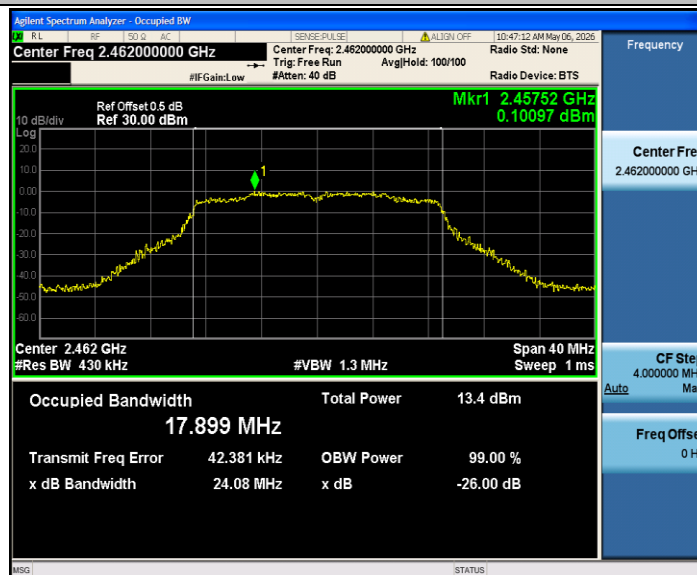
11N20SISO_Ant1_2412



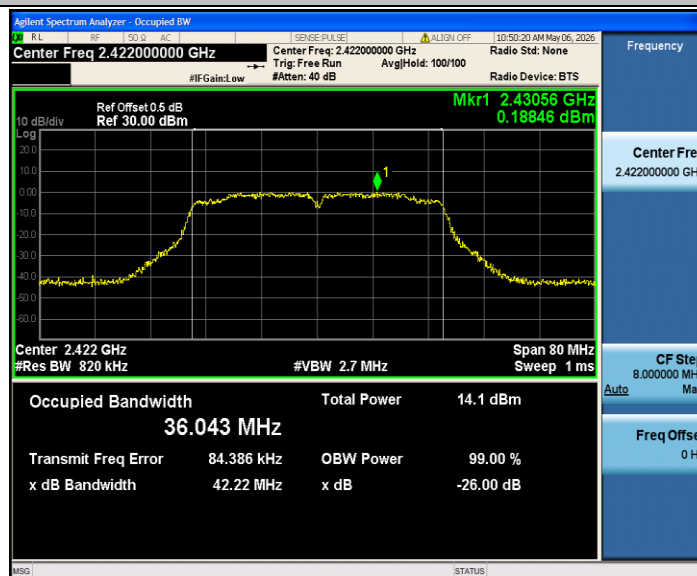
11N20SISO_Ant1_2437



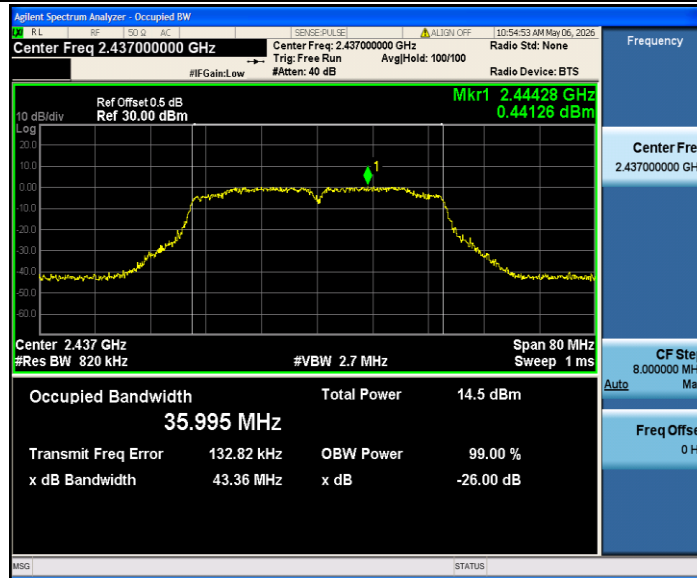
11N20SISO_Ant1_2462



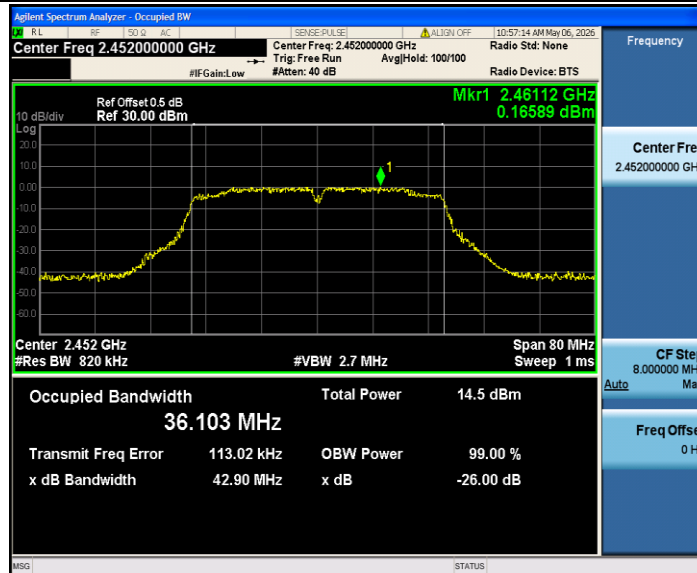
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



Appendix C: Maximum conducted output power

Test Result

Test Mode	Antenna	Frequency[M Hz]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	12.70	≤30.00	PASS
		2437	12.87	≤30.00	PASS
		2462	13.04	≤30.00	PASS
11G	Ant1	2412	13.99	≤30.00	PASS
		2437	14.30	≤30.00	PASS
		2462	14.48	≤30.00	PASS
11N20SISO	Ant1	2412	13.90	≤30.00	PASS
		2437	14.18	≤30.00	PASS
		2462	14.42	≤30.00	PASS
11N40SISO	Ant1	2422	14.35	≤30.00	PASS
		2437	14.77	≤30.00	PASS
		2452	14.64	≤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	-13.59	≤8.00	PASS
		2437	-12.92	≤8.00	PASS
		2462	-13.21	≤8.00	PASS
11G	Ant1	2412	-17.71	≤8.00	PASS
		2437	-17.32	≤8.00	PASS
		2462	-17.62	≤8.00	PASS
11N20SISO	Ant1	2412	-17.86	≤8.00	PASS
		2437	-15.31	≤8.00	PASS
		2462	-16.28	≤8.00	PASS
11N40SISO	Ant1	2422	-19.41	≤8.00	PASS
		2437	-20.08	≤8.00	PASS
		2452	-20.54	≤8.00	PASS

Test Graphs

11B_Ant1_2412



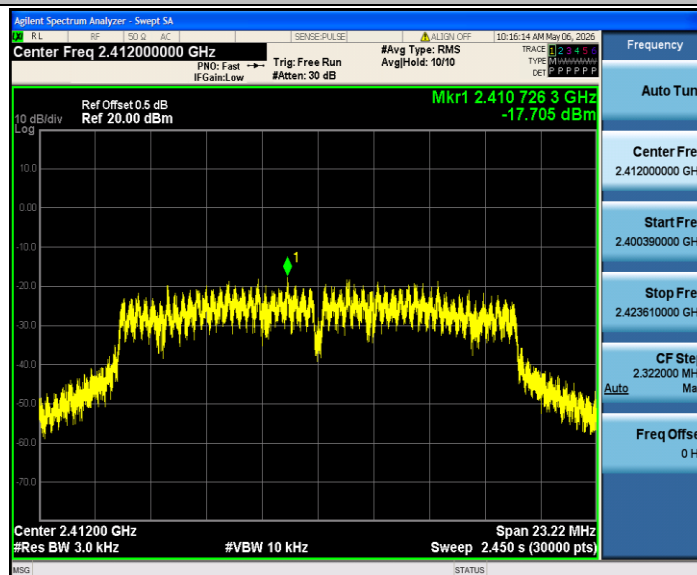
11B_Ant1_2437



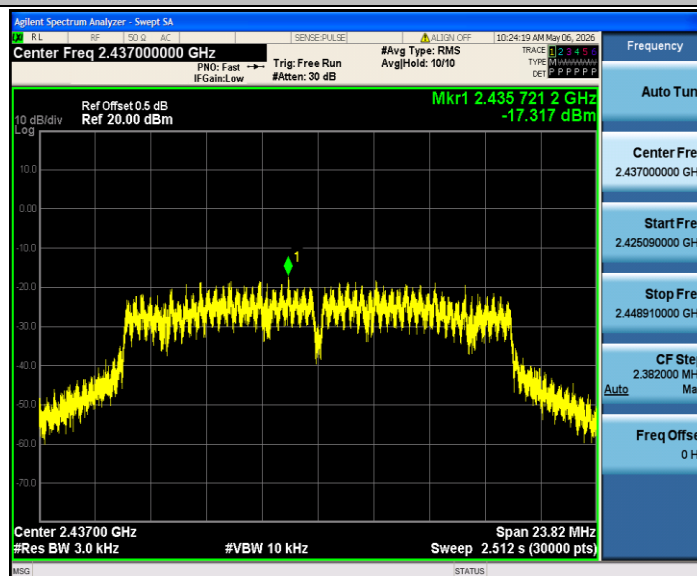
11B_Ant1_2462



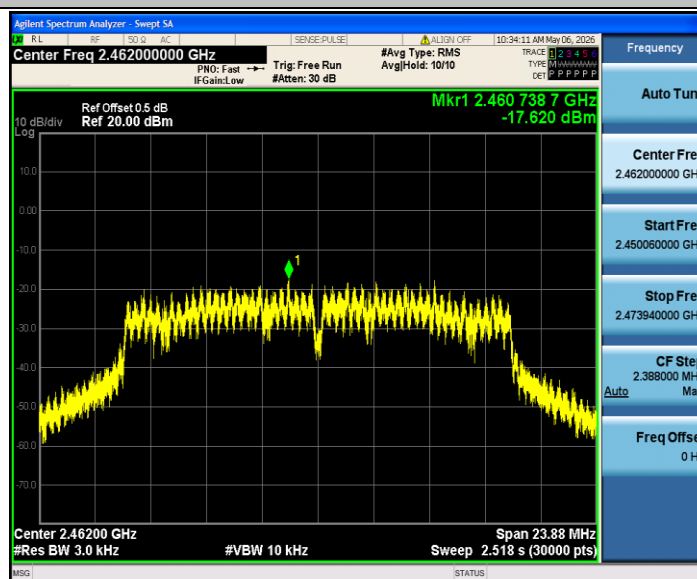
11G_Ant1_2412



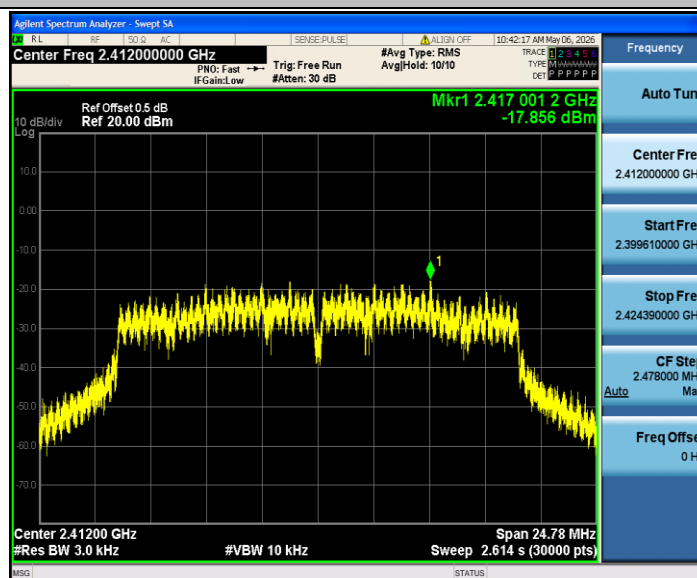
11G_Ant1_2437



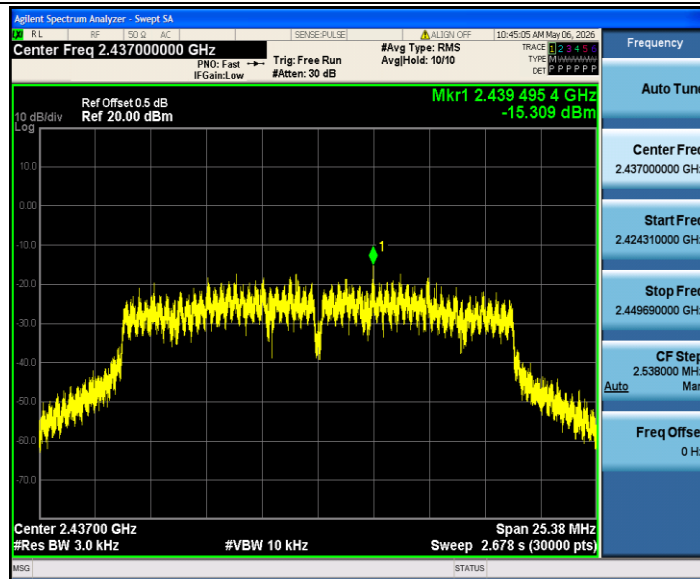
11G_Ant1_2462



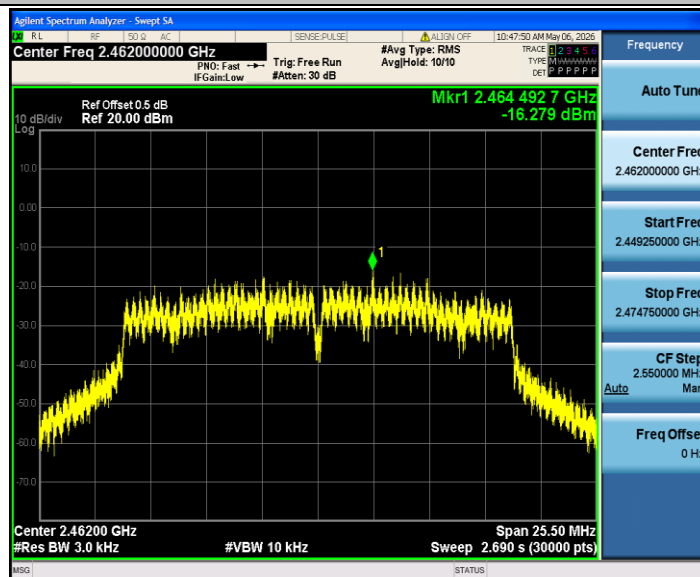
11N20SISO_Ant1_2412



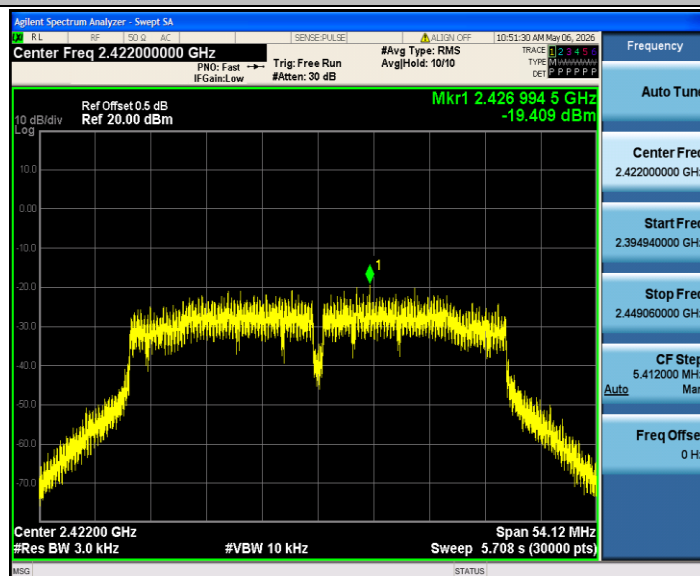
11N20SISO_Ant1_2437



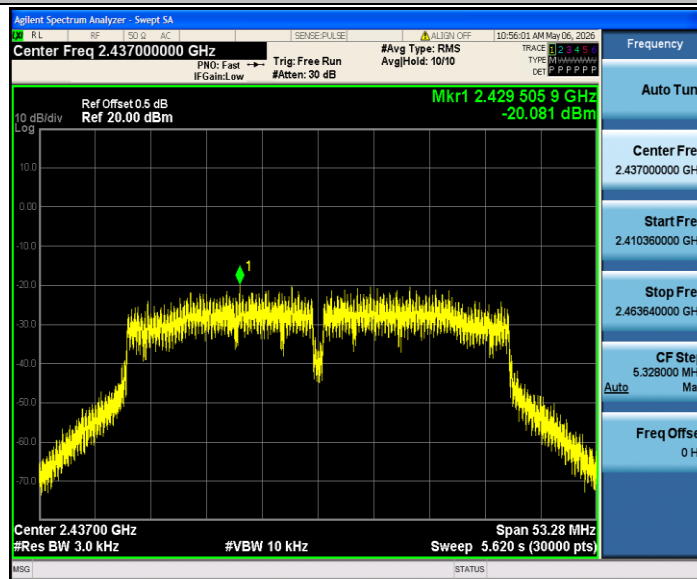
11N20SISO_Ant1_2462



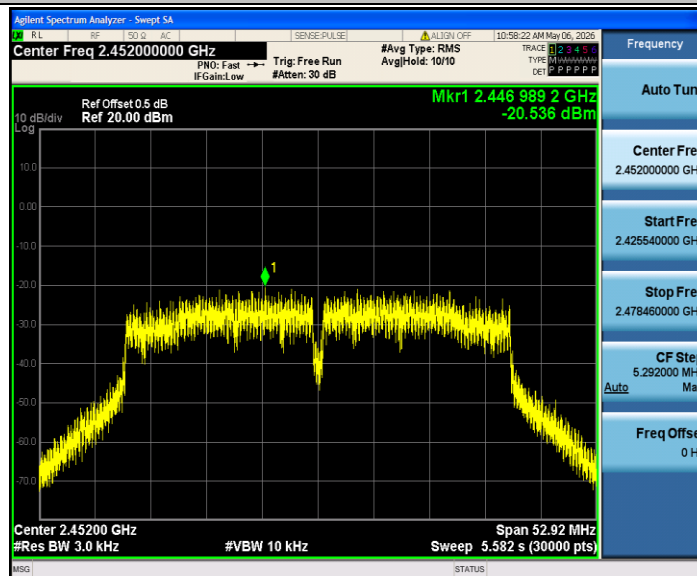
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



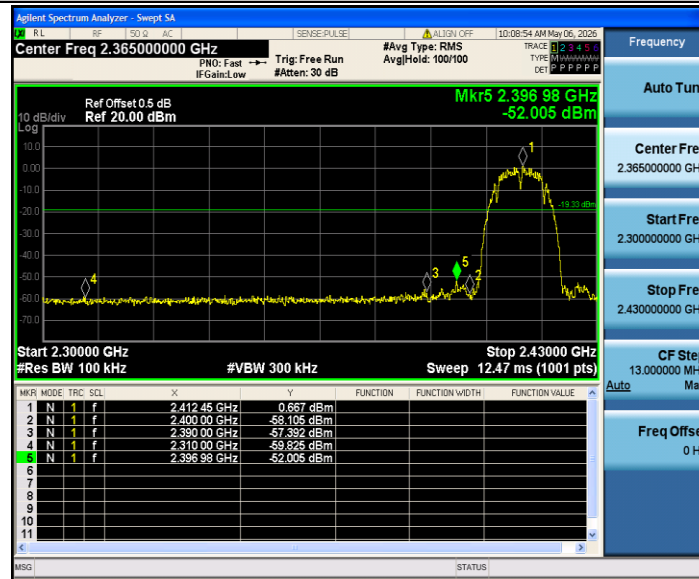
Appendix E: Band edge measurements

Test Result

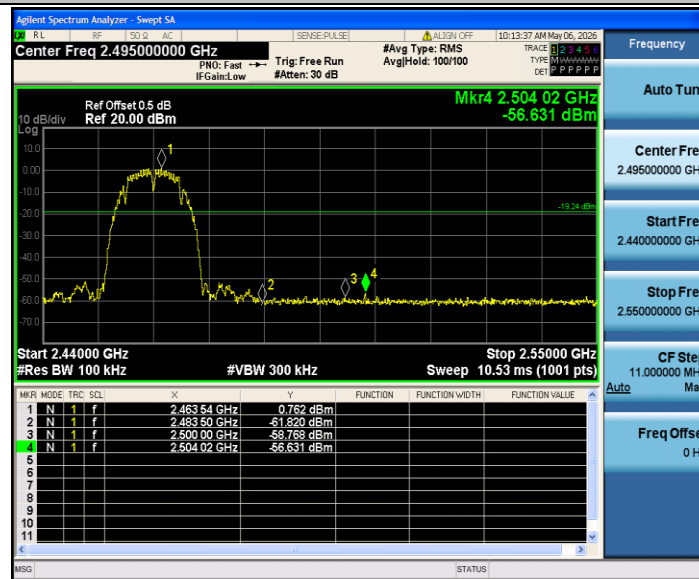
TestMode	Antenna	Channel Name	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	0.67	-52.01	≤-19.33	PASS
		High	2462	0.76	-56.63	≤-19.24	PASS
11G	Ant1	Low	2412	-2.42	-34.68	≤-22.42	PASS
		High	2462	-2.42	-57.76	≤-22.42	PASS
11N20SISO	Ant1	Low	2412	-2.64	-34.73	≤-22.64	PASS
		High	2462	-2.02	-57.56	≤-22.02	PASS
11N40SISO	Ant1	Low	2422	-5.68	-35.25	≤-25.68	PASS
		High	2452	-5.45	-57.52	≤-25.45	PASS

Test Graphs

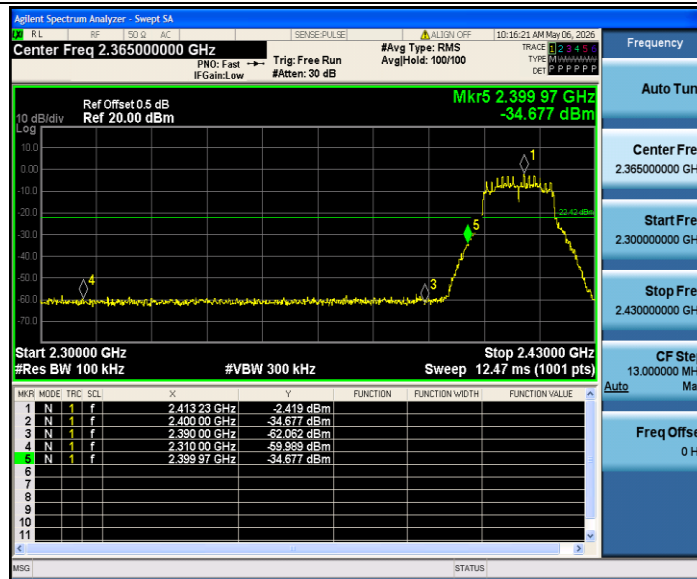
11B_Ant1_Low_2412



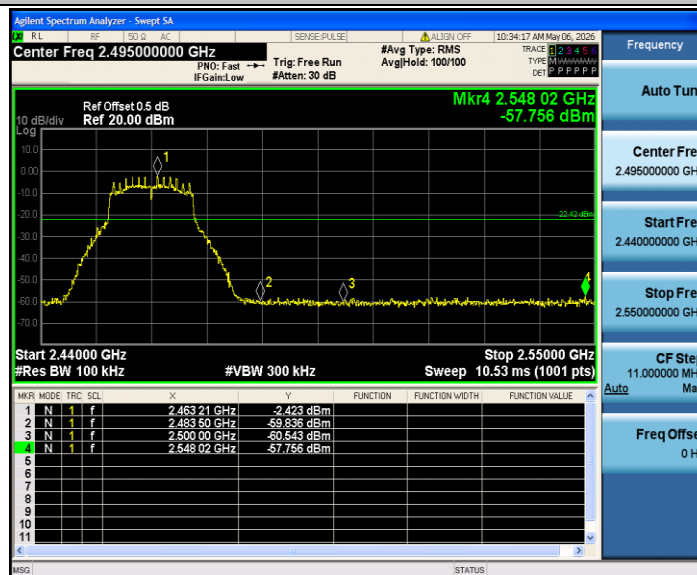
11B_Ant1_High_2462



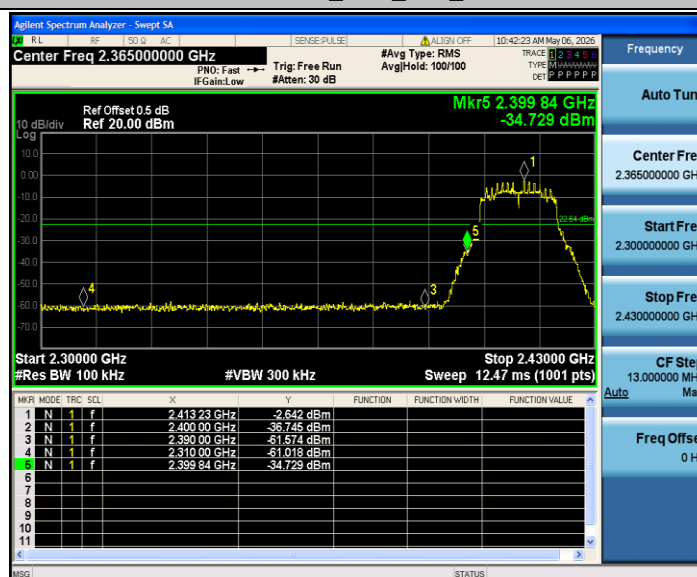
11G_Ant1_Low_2412



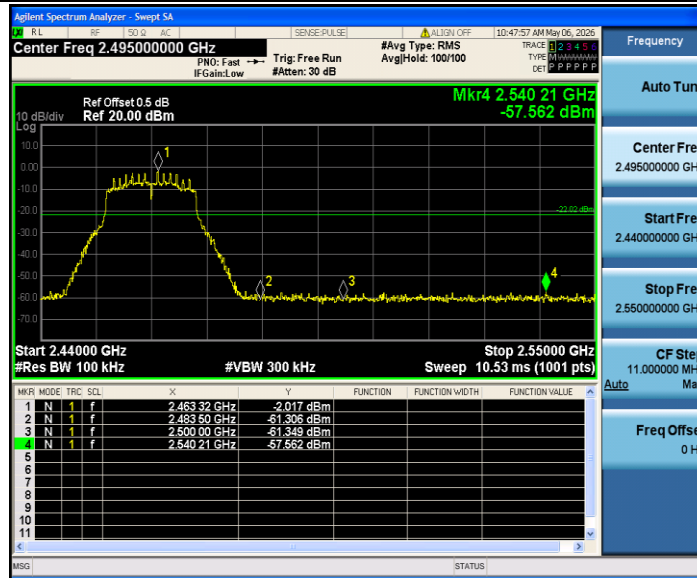
11G_Ant1_High_2462



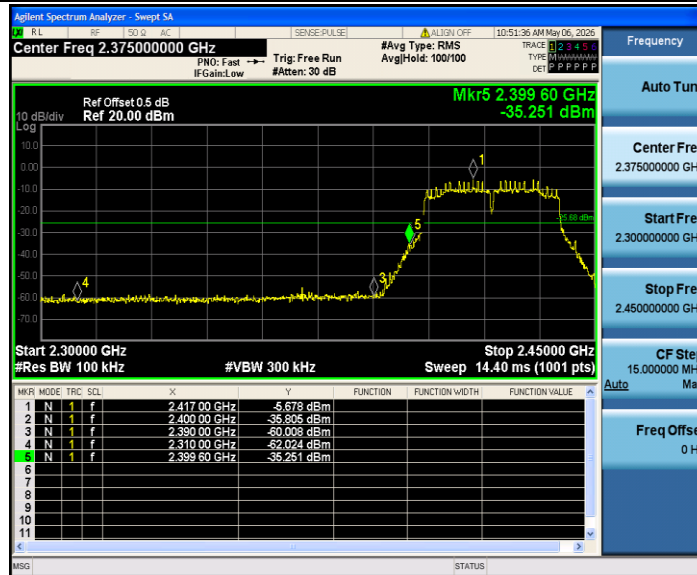
11N20SISO_Ant1_Low_2412



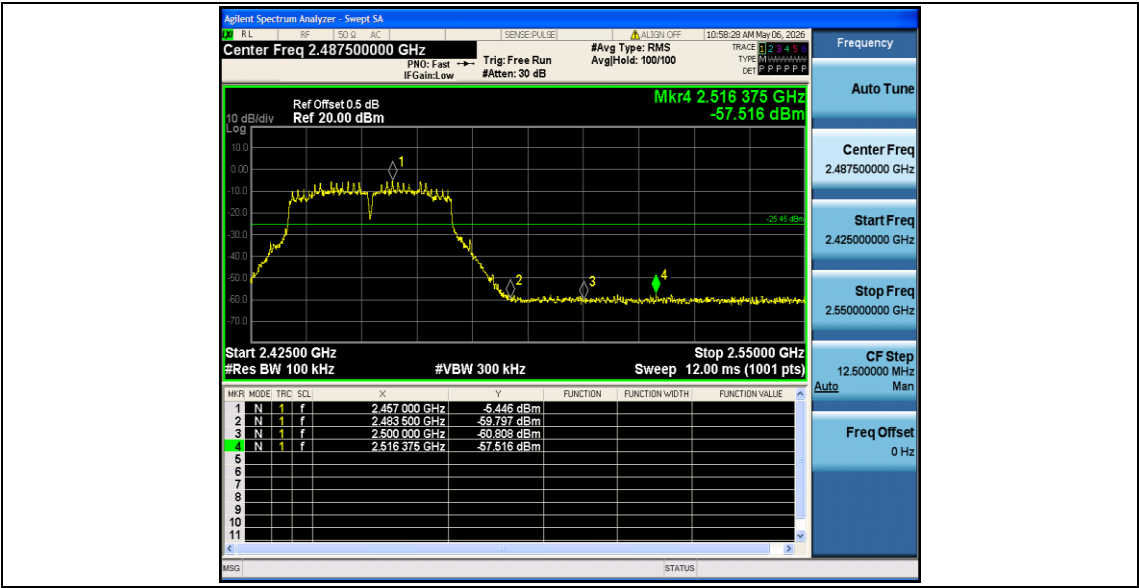
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452



Appendix F: Conducted Spurious Emission

Test Result

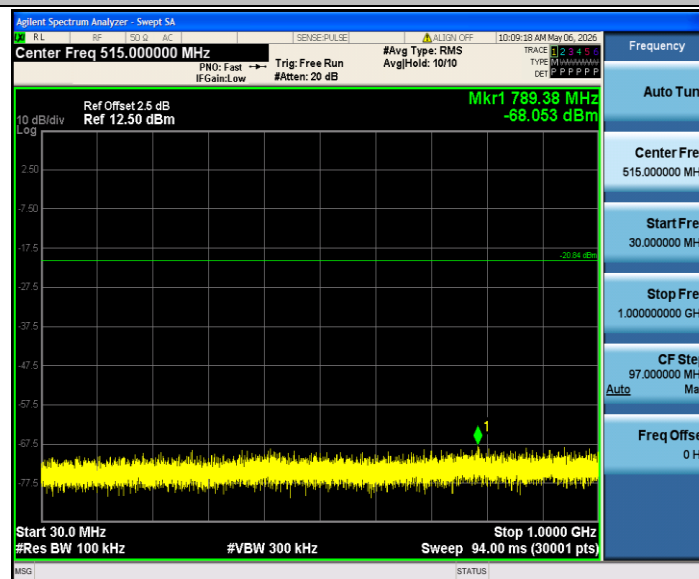
TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	-0.84	-0.84	---	PASS
			30~1000	-0.84	-68.05	≤-20.84	PASS
			1000~26500	-0.84	-54.86	≤-20.84	PASS
		2437	Reference	-0.14	-0.14	---	PASS
			30~1000	-0.14	-67.32	≤-20.14	PASS
			1000~26500	-0.14	-53.57	≤-20.14	PASS
		2462	Reference	-0.11	-0.11	---	PASS
			30~1000	-0.11	-68.21	≤-20.11	PASS
			1000~26500	-0.11	-54.79	≤-20.11	PASS
11G	Ant1	2412	Reference	-2.94	-2.94	---	PASS
			30~1000	-2.94	-68.3	≤-22.94	PASS
			1000~26500	-2.94	-55.37	≤-22.94	PASS
		2437	Reference	-2.95	-2.95	---	PASS
			30~1000	-2.95	-68.07	≤-22.95	PASS
			1000~26500	-2.95	-54.78	≤-22.95	PASS
		2462	Reference	-3.80	-3.80	---	PASS
			30~1000	-3.80	-67.62	≤-23.8	PASS
			1000~26500	-3.80	-55.38	≤-23.8	PASS
11N20SISO	Ant1	2412	Reference	-4.52	-4.52	---	PASS
			30~1000	-4.52	-67.97	≤-24.52	PASS
			1000~26500	-4.52	-55.07	≤-24.52	PASS
		2437	Reference	-3.54	-3.54	---	PASS
			30~1000	-3.54	-67.8	≤-23.54	PASS
			1000~26500	-3.54	-55.4	≤-23.54	PASS
		2462	Reference	-2.71	-2.71	---	PASS
			30~1000	-2.71	-67.94	≤-22.71	PASS
			1000~26500	-2.71	-55.45	≤-22.71	PASS
11N40SISO	Ant1	2422	Reference	-5.80	-5.80	---	PASS
			30~1000	-5.80	-51.82	≤-25.8	PASS
			1000~26500	-5.80	-54.85	≤-25.8	PASS
		2437	Reference	-6.19	-6.19	---	PASS
			30~1000	-6.19	-67.95	≤-26.19	PASS
			1000~26500	-6.19	-53.99	≤-26.19	PASS
		2452	Reference	-5.93	-5.93	---	PASS
			30~1000	-5.93	-67.97	≤-25.93	PASS
			1000~26500	-5.93	-55.25	≤-25.93	PASS

Test Graphs

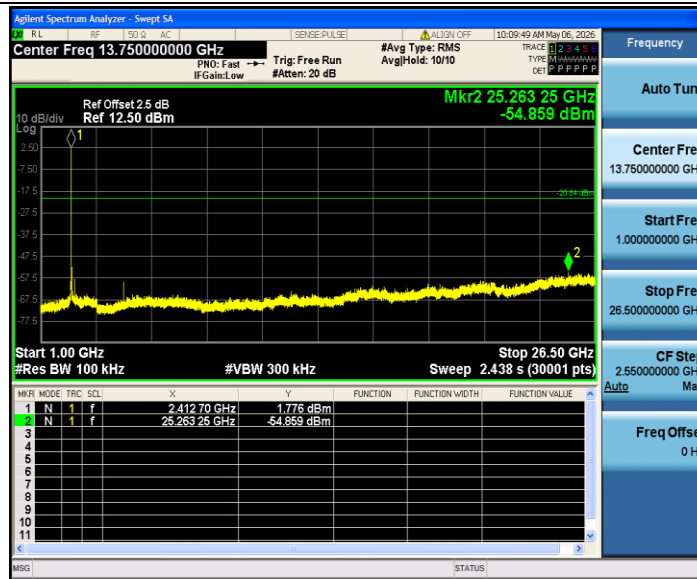
11B_Ant1_2412_0~Reference



11B_Ant1_2412_30~1000



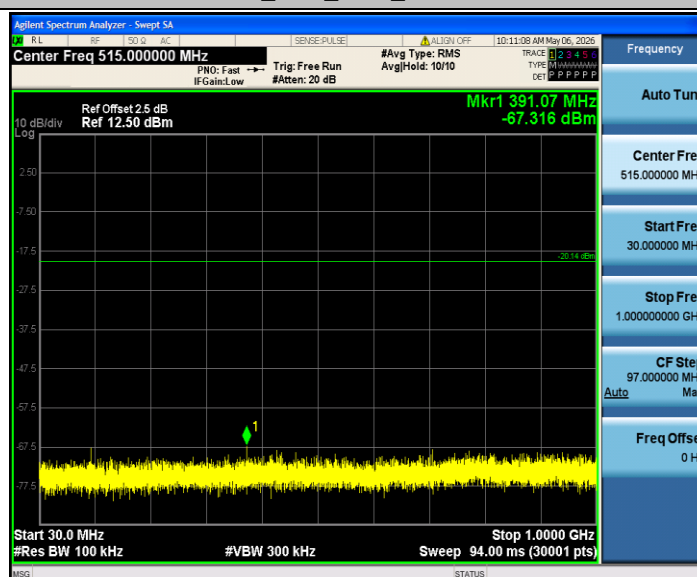
11B_Ant1_2412_1000~26500



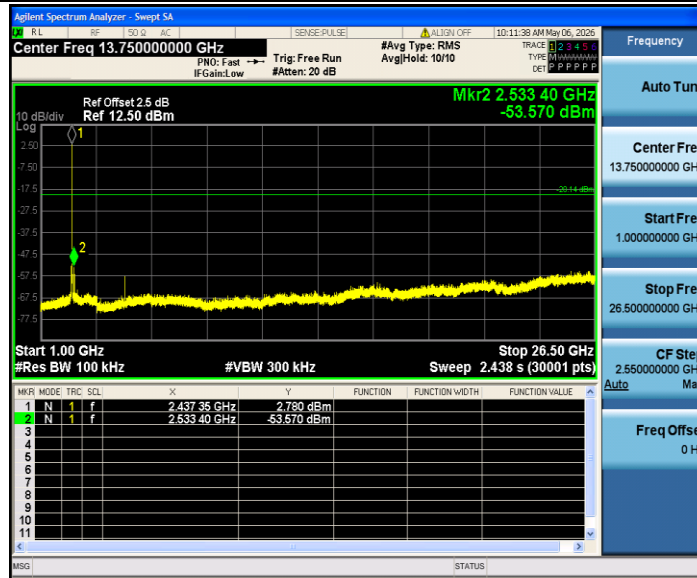
11B_Ant1_2437_0~Reference



11B_Ant1_2437_30~1000



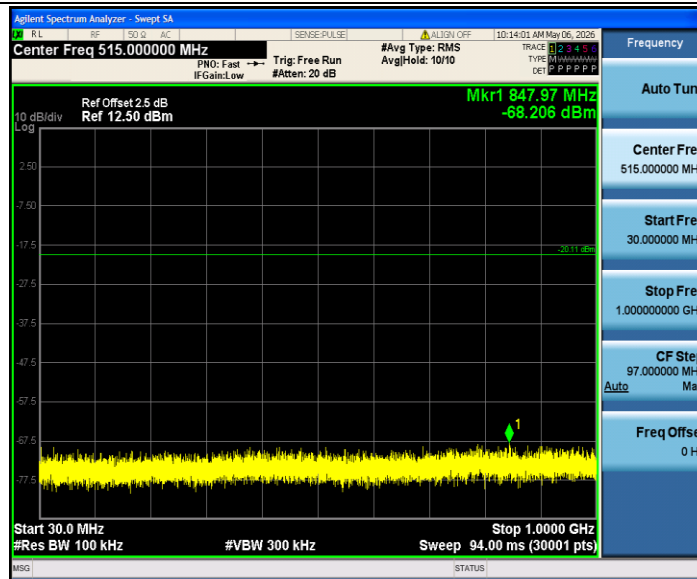
11B_Ant1_2437_1000~26500



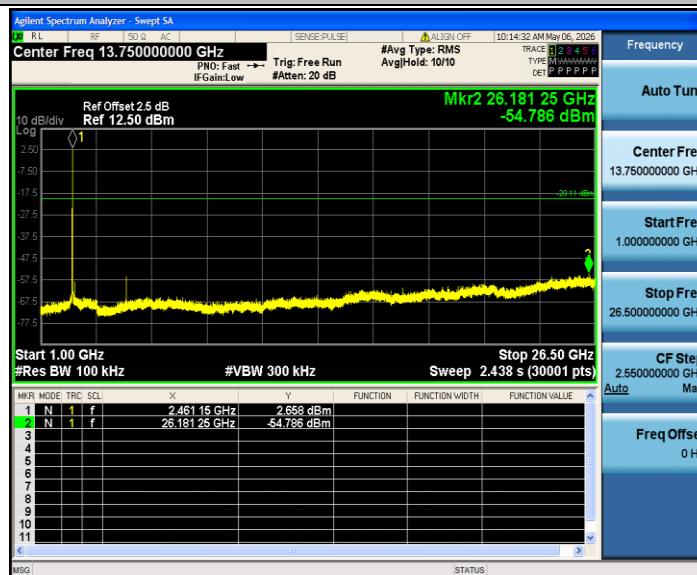
11B_Ant1_2462_0~Reference



11B_Ant1_2462_30~1000



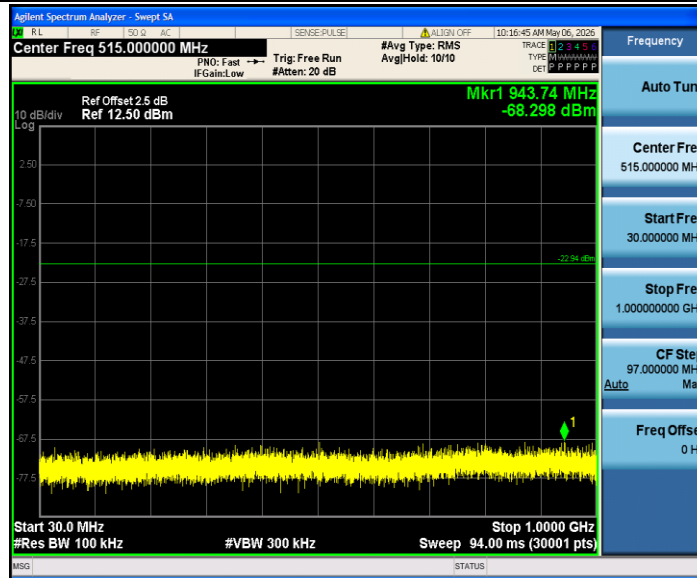
11B_Ant1_2462_1000~26500



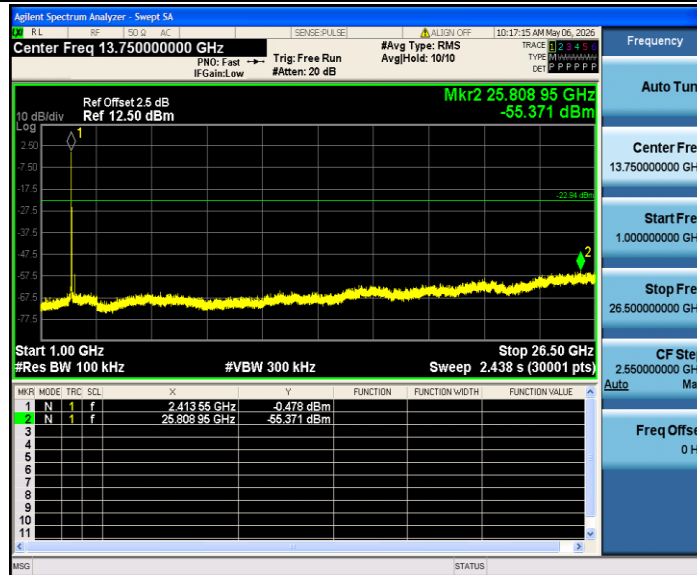
11G_Ant1_2412_0~Reference



11G_Ant1_2412_30~1000



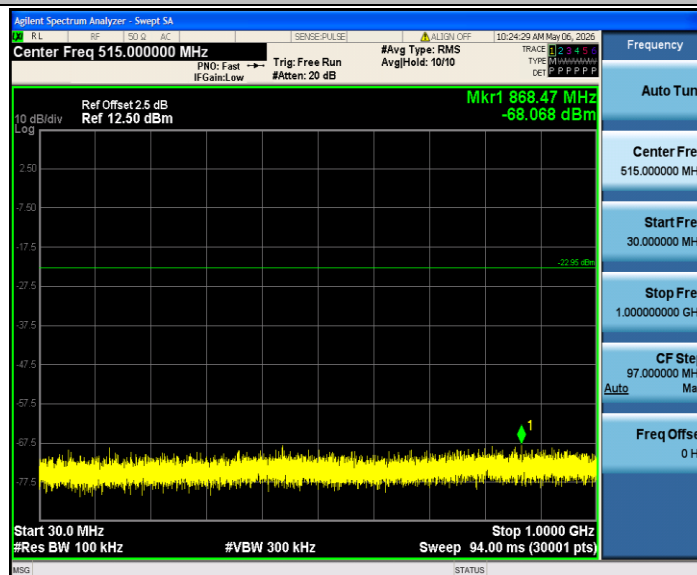
11G_Ant1_2412_1000~26500



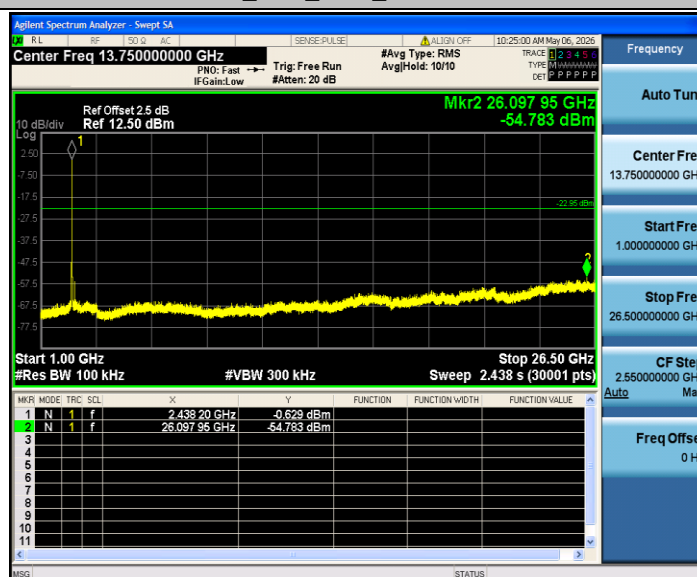
11G_Ant1_2437_0~Reference



11G_Ant1_2437_30~1000



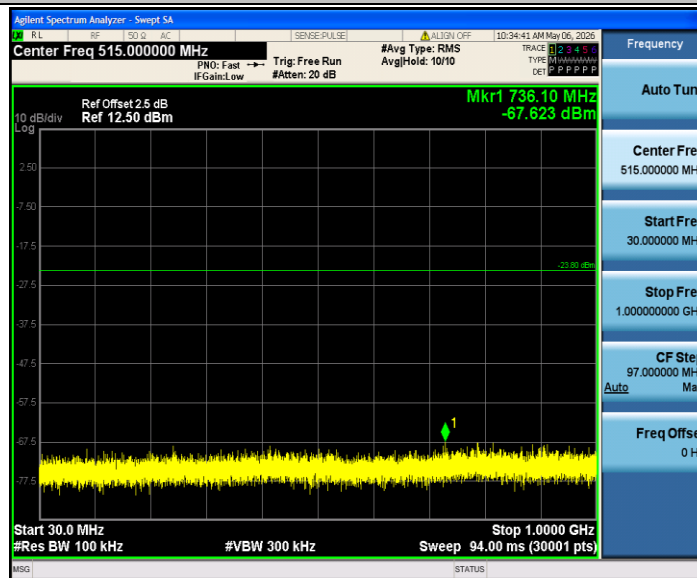
11G_Ant1_2437_1000~26500



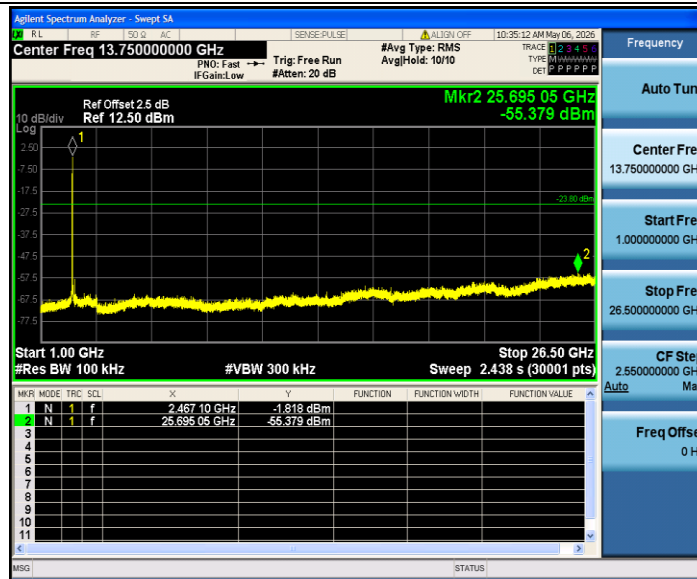
11G_Ant1_2462_0~Reference



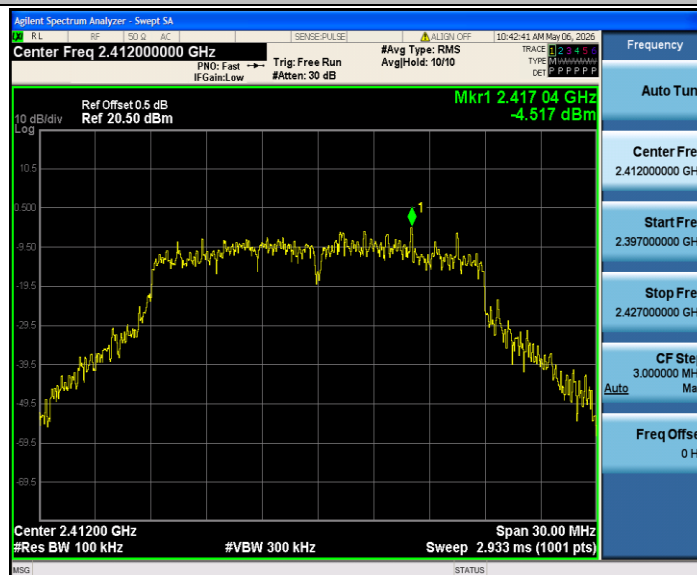
11G_Ant1_2462_30~1000



11G_Ant1_2462_1000~26500



11N20SISO_Ant1_2412_0~Reference



11N20SISO_Ant1_2412_30~1000

