

FCC Appendix RF Test Data for 2.4GWIFI

FCC ID : 2BXS-K-H1PRO

Company : Shenzhen Zontek IoT Co., Ltd.

EUT : Smart Lock

Model Number : H1 Pro

Report No. : CTA26081700702

Reviewed By : Eric Wang

FCC Appendix RF Test Data for 2.4GWIFI ESP32-C5

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	15.800	2404.080	2419.880	0.5	PASS
		2437	15.560	2429.240	2444.800	0.5	PASS
		2462	15.760	2454.280	2470.040	0.5	PASS
11N20SISO	Ant1	2412	15.960	2404.440	2420.400	0.5	PASS
		2437	17.200	2428.440	2445.640	0.5	PASS
		2462	17.000	2453.640	2470.640	0.5	PASS
11N40SISO	Ant1	2422	35.680	2404.320	2440.000	0.5	PASS
		2437	35.040	2419.720	2454.760	0.5	PASS
		2452	35.520	2434.640	2470.160	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



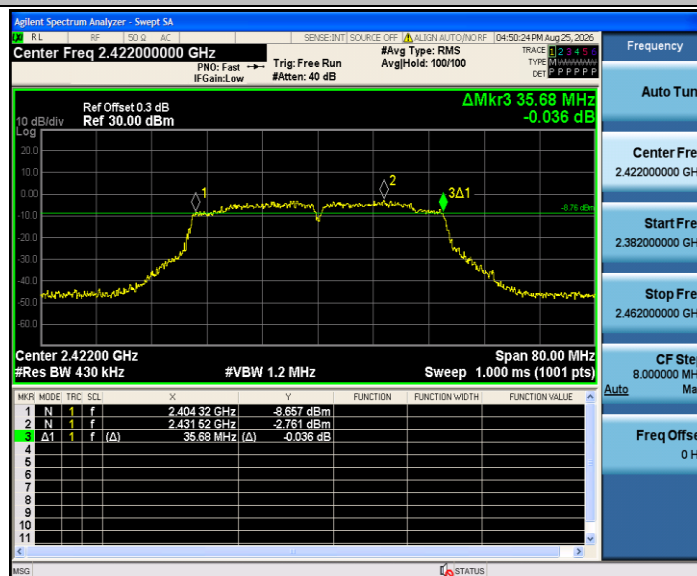
11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



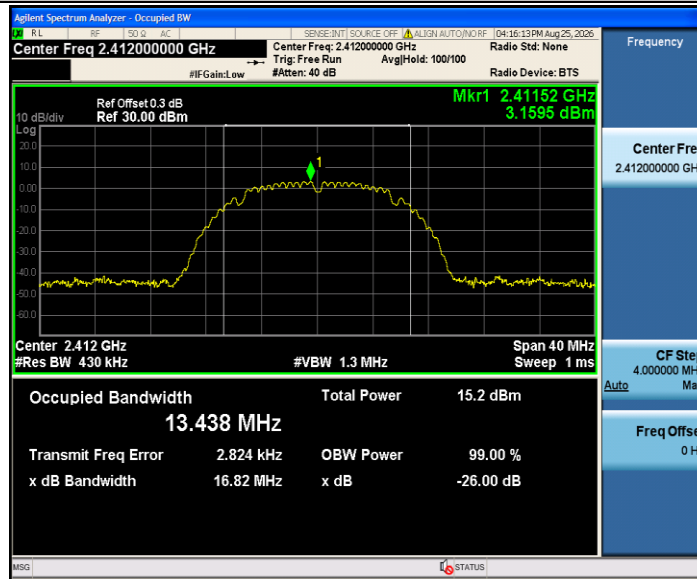
Appendix B: Occupied Channel Bandwidth

Test Result

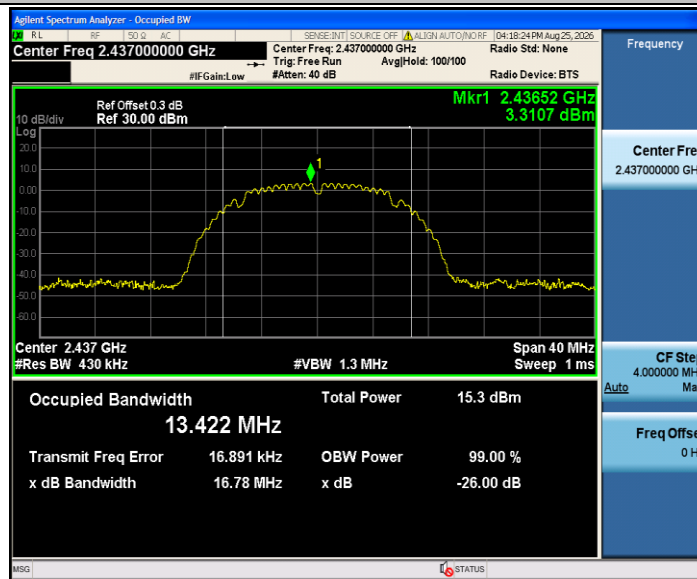
TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	13.438	2405.2838	2418.7218	---	---
		2437	13.422	2430.3059	2443.7279	---	---
		2462	13.426	2455.3092	2468.7352	---	---
11G	Ant1	2412	16.824	2403.6143	2420.4383	---	---
		2437	16.885	2428.5864	2445.4714	---	---
		2462	16.819	2453.6185	2470.4375	---	---
11N20SISO	Ant1	2412	17.958	2403.0623	2421.0203	---	---
		2437	17.941	2428.0401	2445.9811	---	---
		2462	17.862	2453.0709	2470.9329	---	---
11N40SISO	Ant1	2422	36.042	2404.1414	2440.1834	---	---
		2437	36.104	2419.0922	2455.1962	---	---
		2452	36.007	2434.1307	2470.1377	---	---

Test Graphs

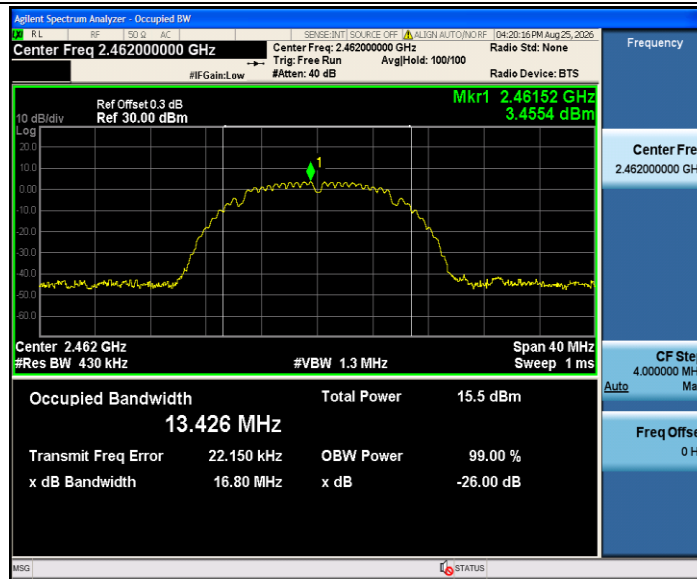
11B_Ant1_2412



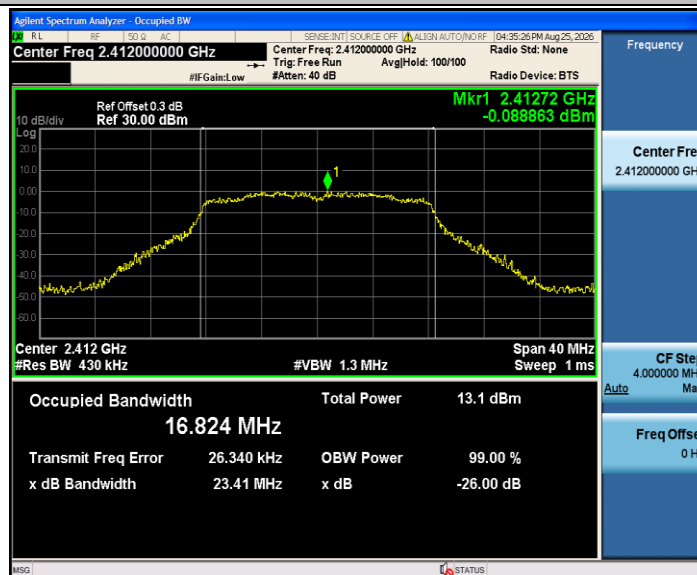
11B_Ant1_2437



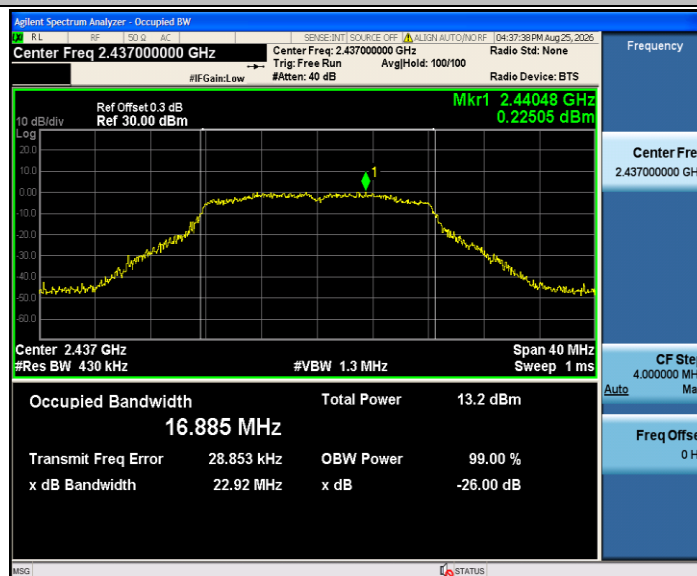
11B_Ant1_2462



11G_Ant1_2412



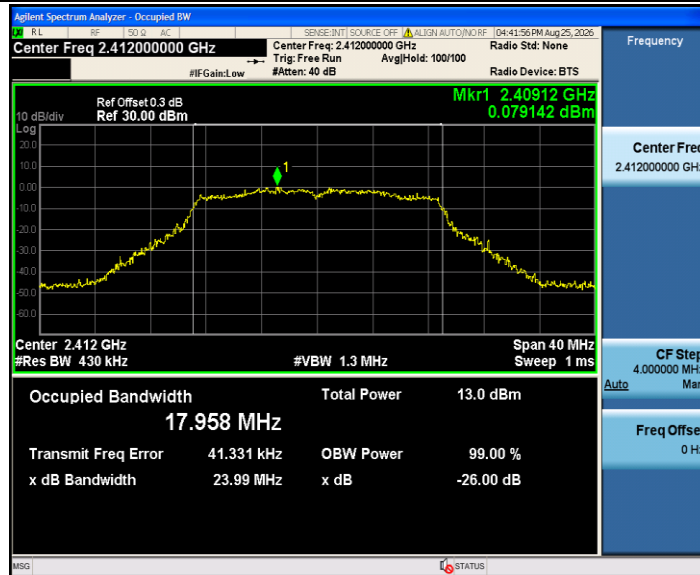
11G_Ant1_2437



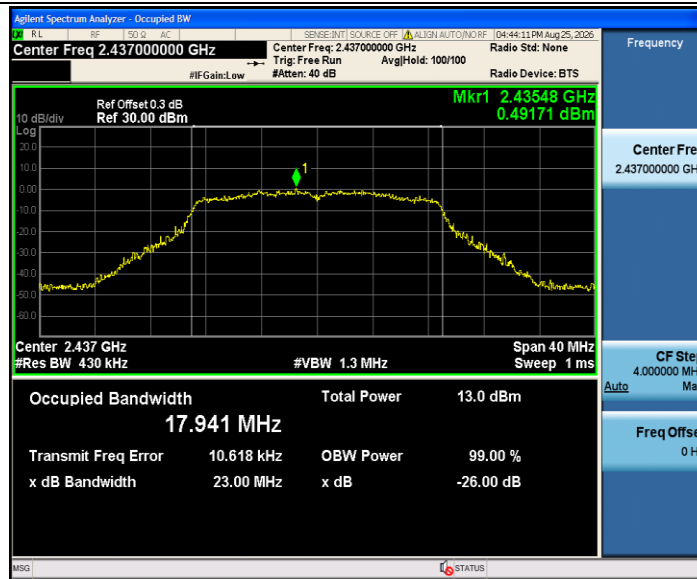
11G_Ant1_2462



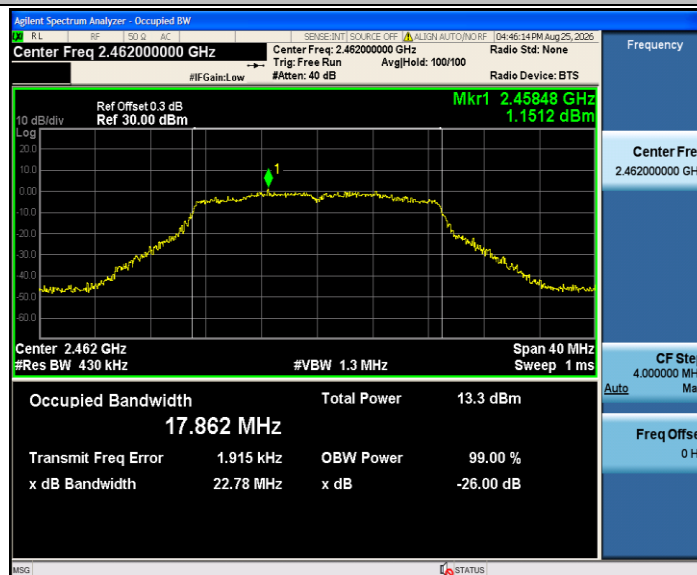
11N20SISO_Ant1_2412



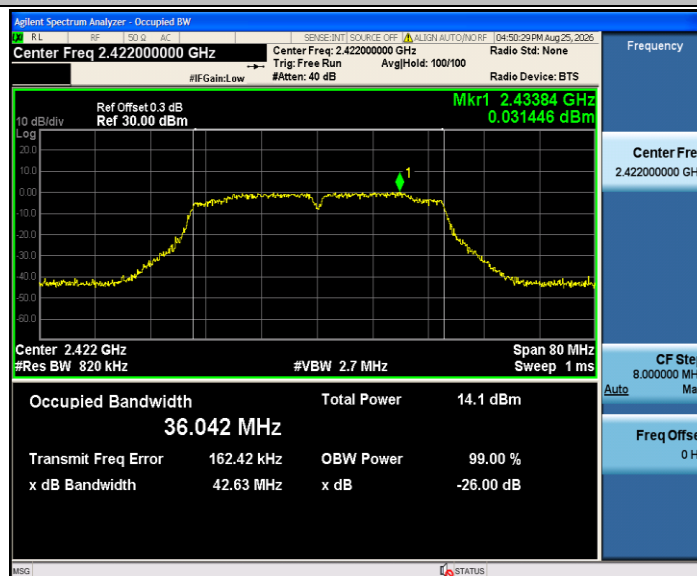
11N20SISO_Ant1_2437



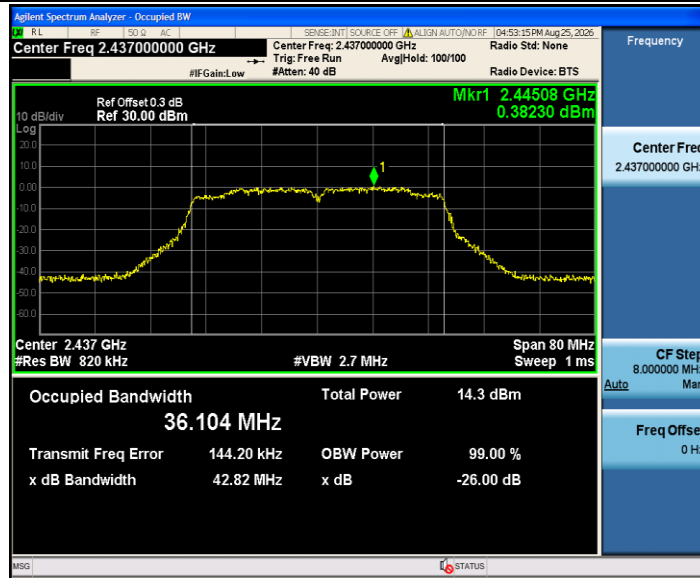
11N20SISO_Ant1_2462



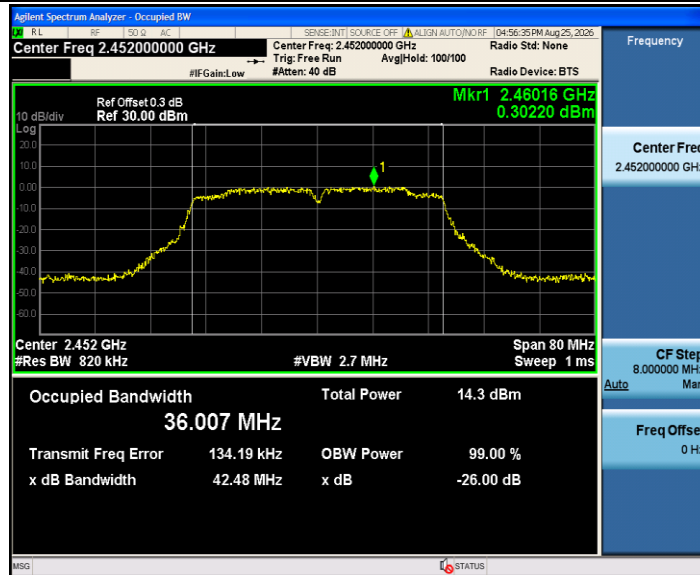
11N40SISO_Ant1_2422



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	14.82	≤30.00	PASS
		2437	14.86	≤30.00	PASS
		2462	15.10	≤30.00	PASS
11G	Ant1	2412	13.99	≤30.00	PASS
		2437	14.03	≤30.00	PASS
		2462	14.33	≤30.00	PASS
11N20SISO	Ant1	2412	13.58	≤30.00	PASS
		2437	14.02	≤30.00	PASS
		2462	14.17	≤30.00	PASS
11N40SISO	Ant1	2422	14.15	≤30.00	PASS
		2437	14.33	≤30.00	PASS
		2452	14.45	≤30.00	PASS

Appendix D: Maximum power spectral density

Test Result

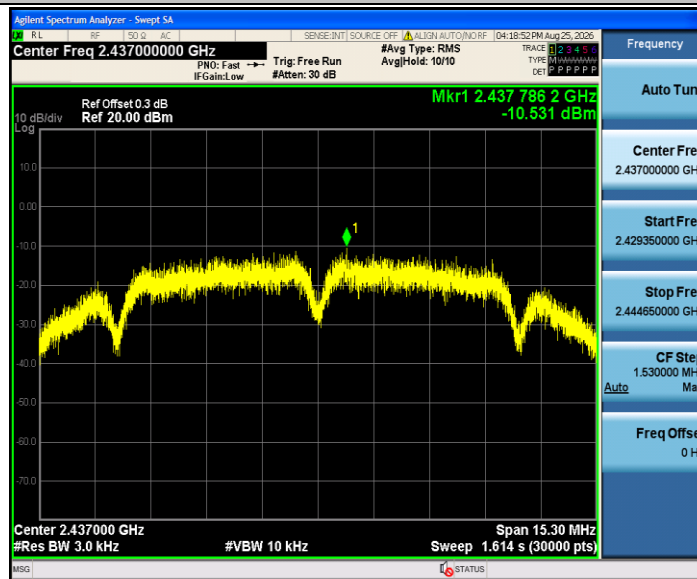
TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-11.24	≤8.00	PASS
		2437	-10.53	≤8.00	PASS
		2462	-10.60	≤8.00	PASS
11G	Ant1	2412	-18.22	≤8.00	PASS
		2437	-17.27	≤8.00	PASS
		2462	-17.15	≤8.00	PASS
11N20SISO	Ant1	2412	-16.81	≤8.00	PASS
		2437	-16.47	≤8.00	PASS
		2462	-17.51	≤8.00	PASS
11N40SISO	Ant1	2422	-20.24	≤8.00	PASS
		2437	-20.87	≤8.00	PASS
		2452	-19.65	≤8.00	PASS

Test Graphs

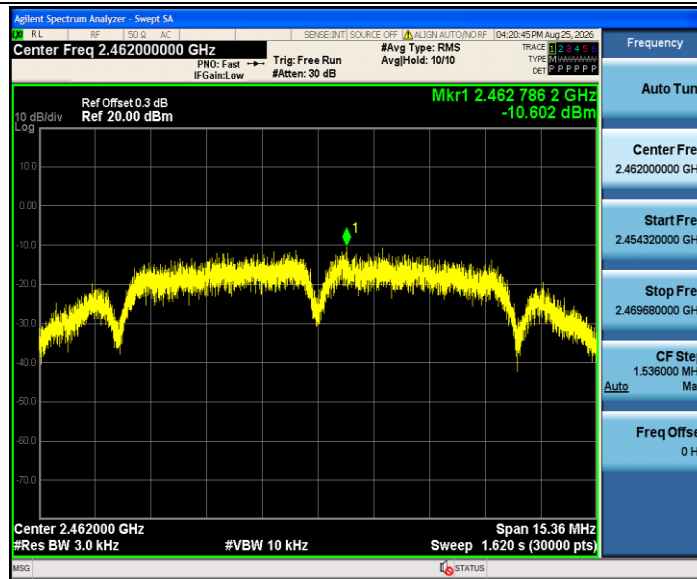
11B_Ant1_2412



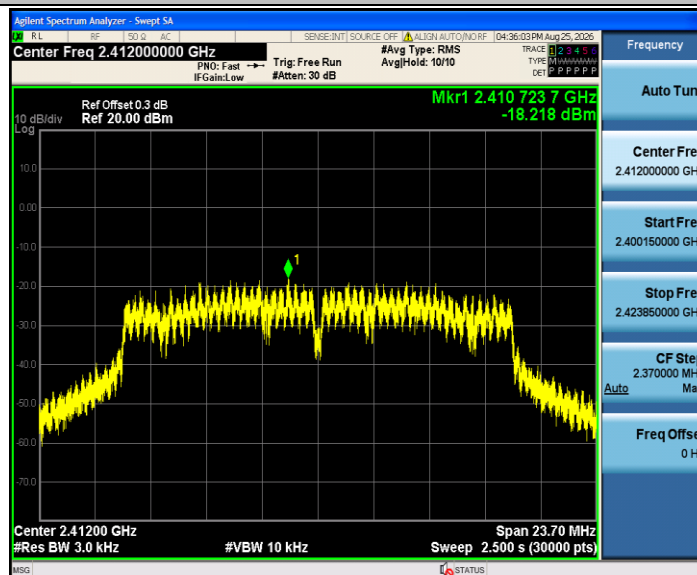
11B_Ant1_2437



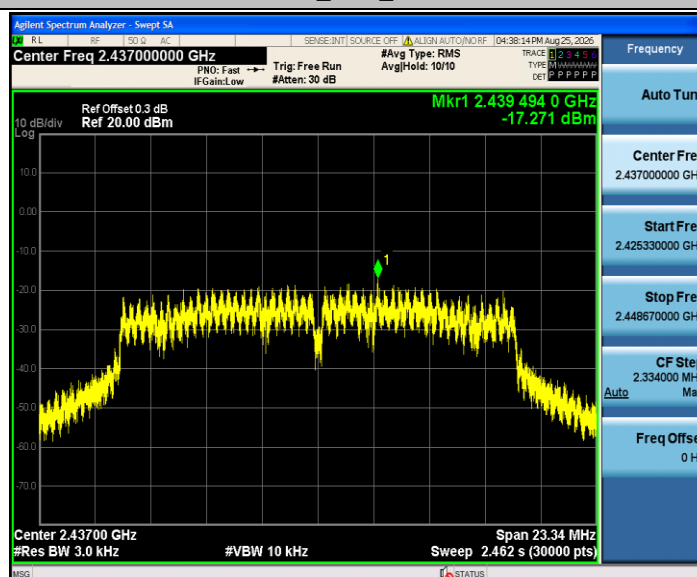
11B_Ant1_2462



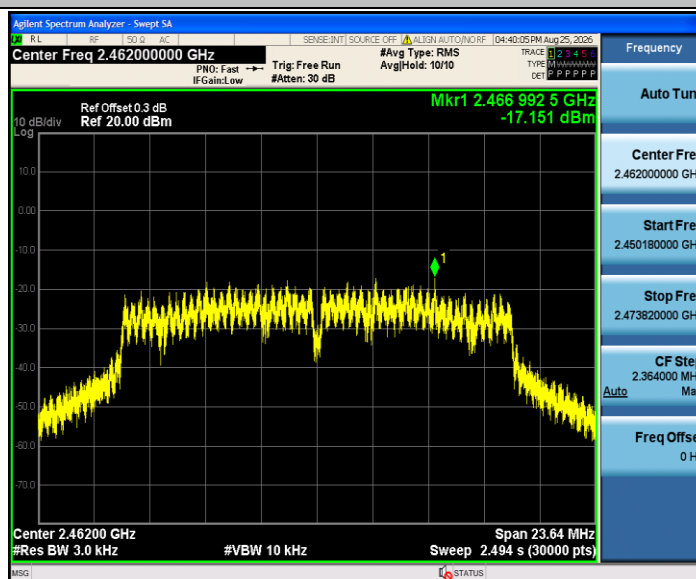
11G_Ant1_2412



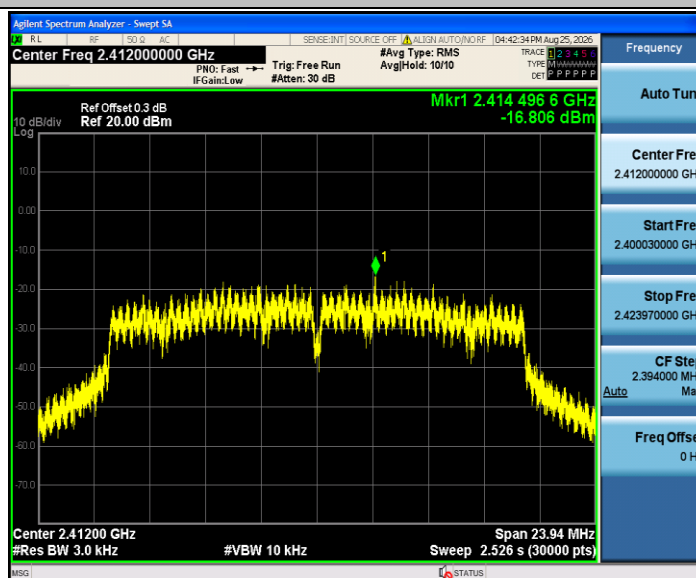
11G_Ant1_2437



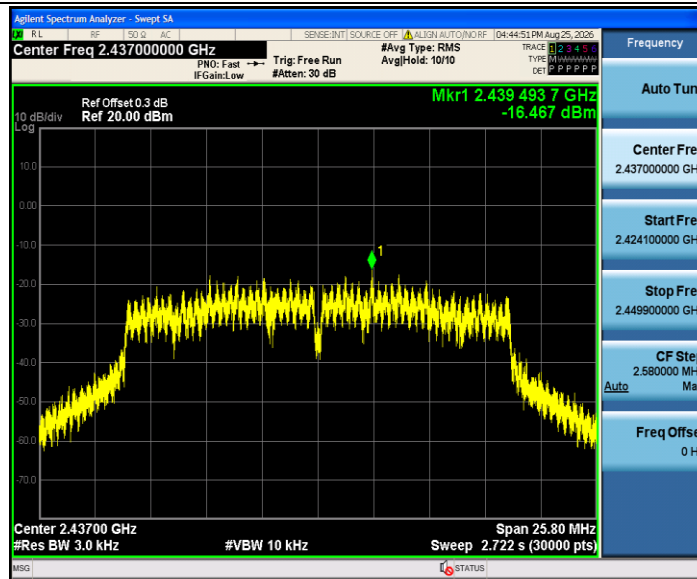
11G_Ant1_2462



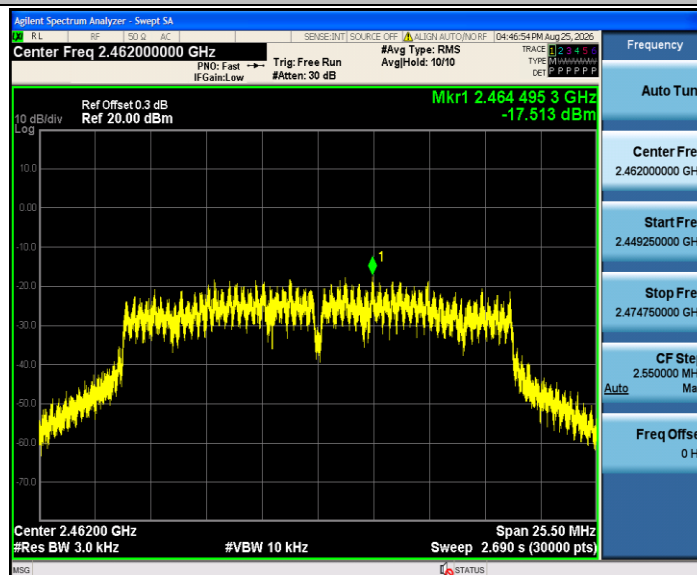
11N20SISO_Ant1_2412



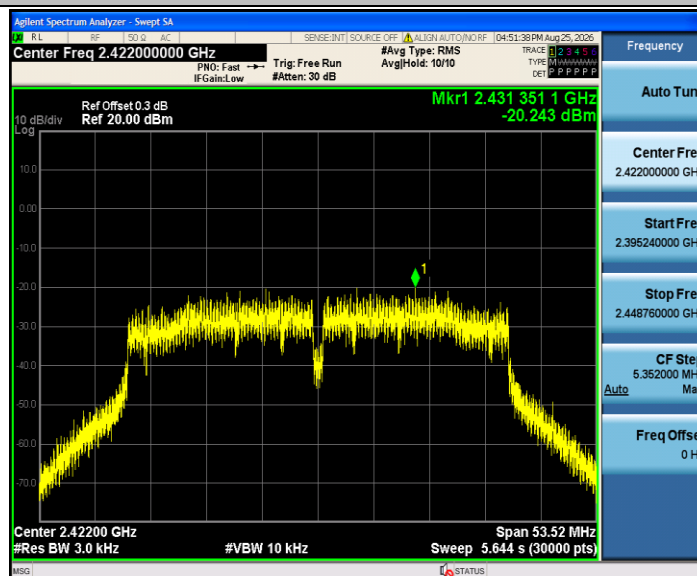
11N20SISO_Ant1_2437



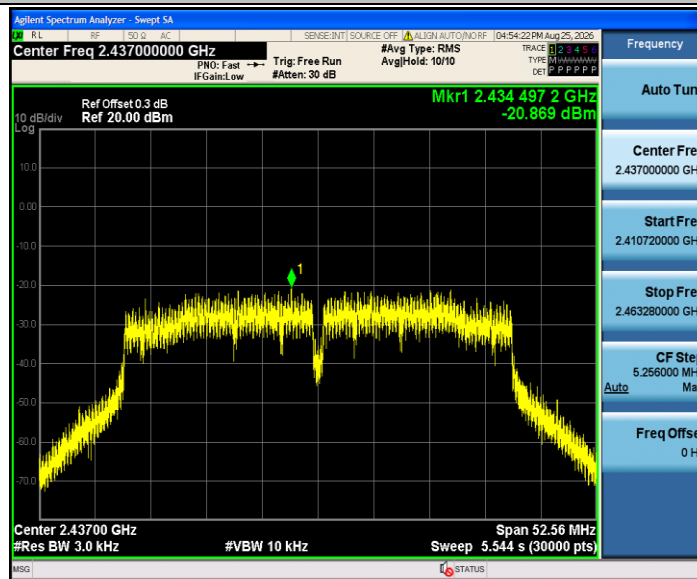
11N20SISO_Ant1_2462



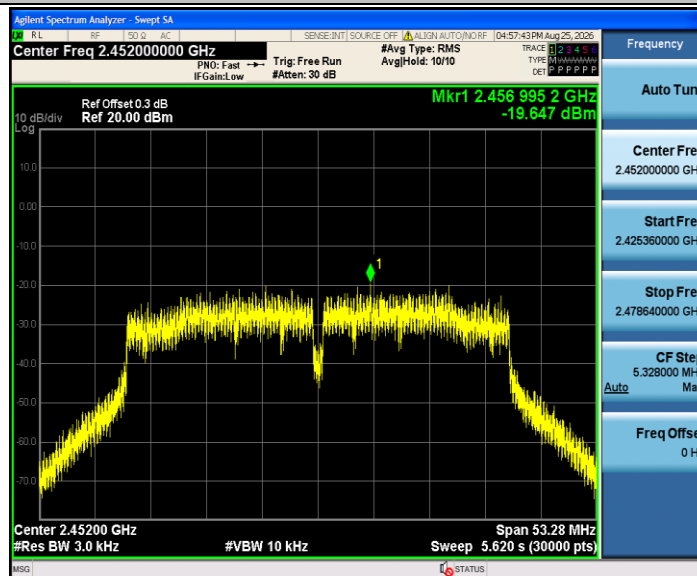
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



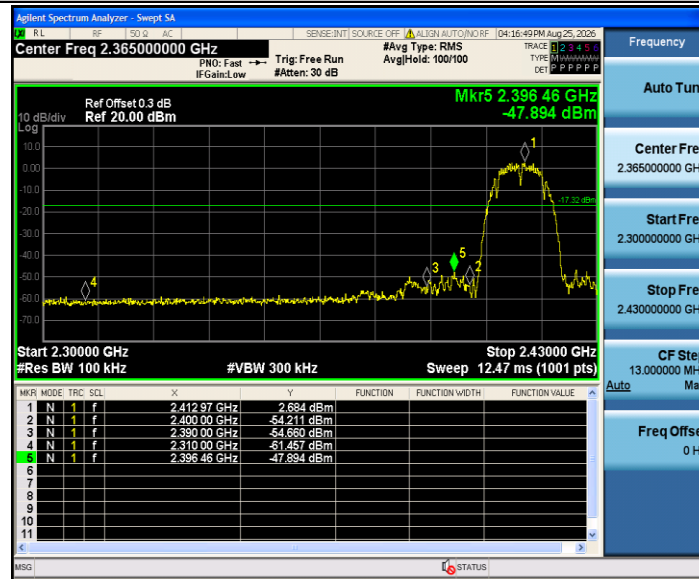
Appendix E: Band edge measurements

Test Result

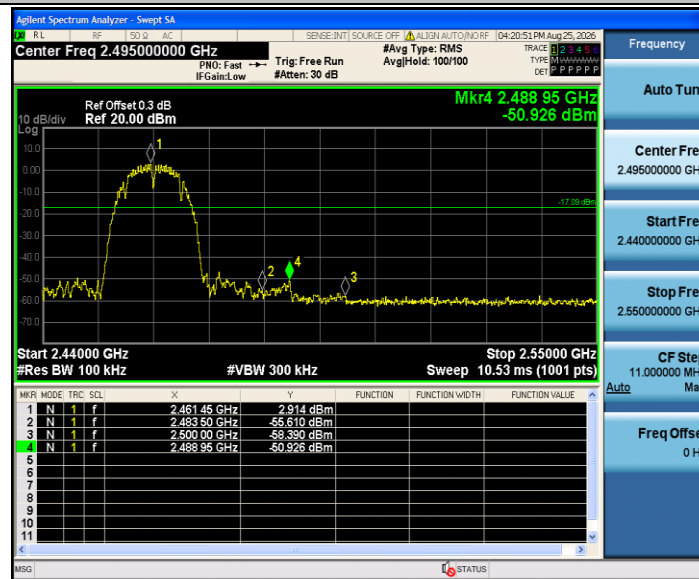
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	2.68	-47.89	≤ -17.32	PASS
		High	2462	2.91	-50.93	≤ -17.09	PASS
11G	Ant1	Low	2412	-2.36	-35.01	≤ -22.36	PASS
		High	2462	-2.31	-57.35	≤ -22.31	PASS
11N20SISO	Ant1	Low	2412	-2.69	-33.73	≤ -22.69	PASS
		High	2462	-2.09	-58.31	≤ -22.09	PASS
11N40SISO	Ant1	Low	2422	-5.68	-34.2	≤ -25.68	PASS
		High	2452	-5.43	-57.48	≤ -25.43	PASS

Test Graphs

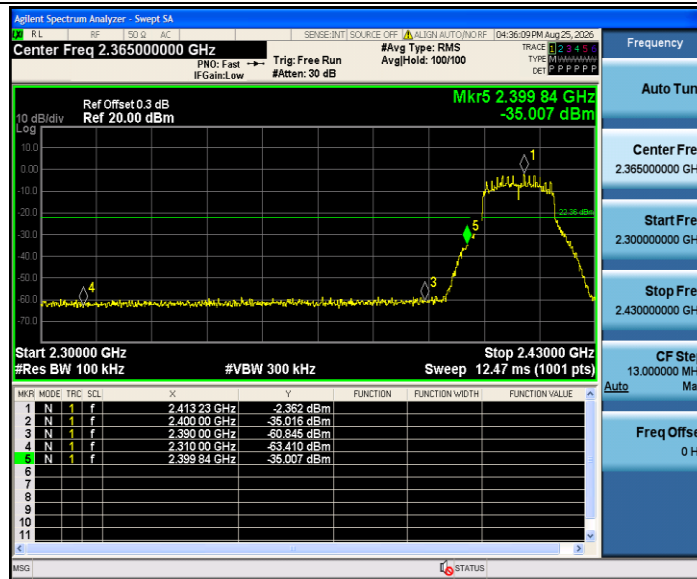
11B_Ant1_Low_2412



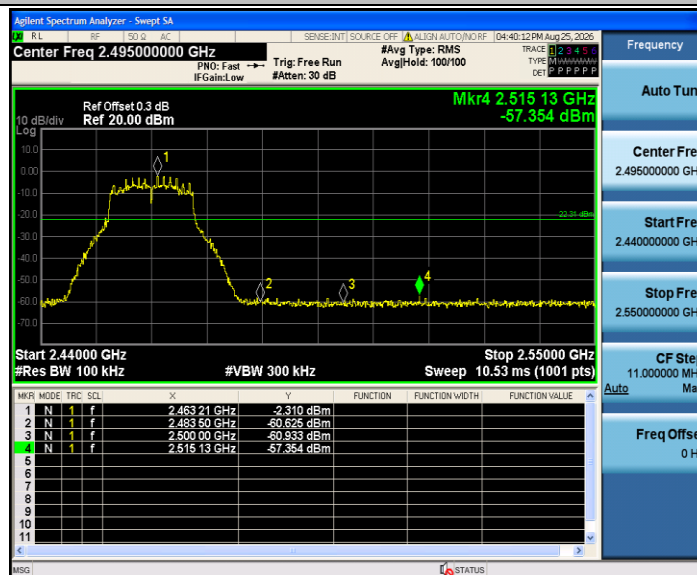
11B_Ant1_High_2462



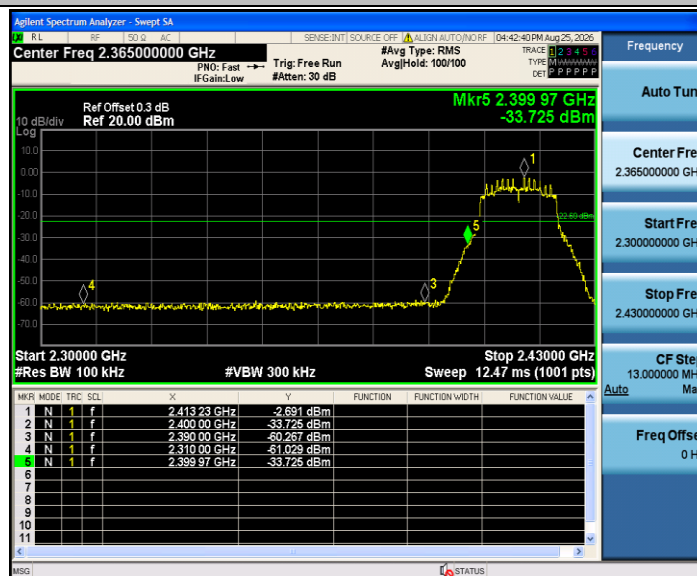
11G_Ant1_Low_2412



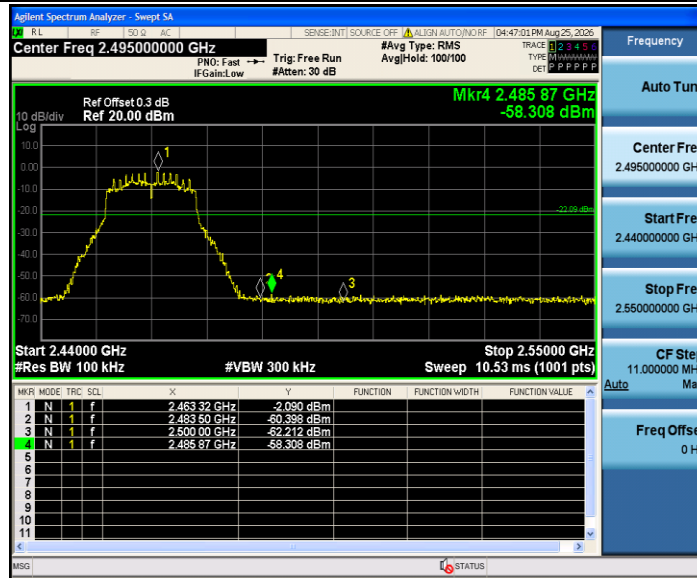
11G_Ant1_High_2462



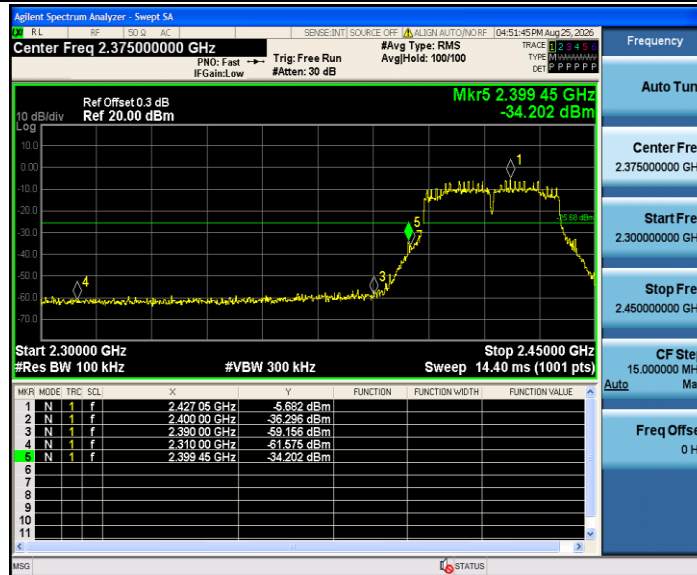
11N20SISO_Ant1_Low_2412



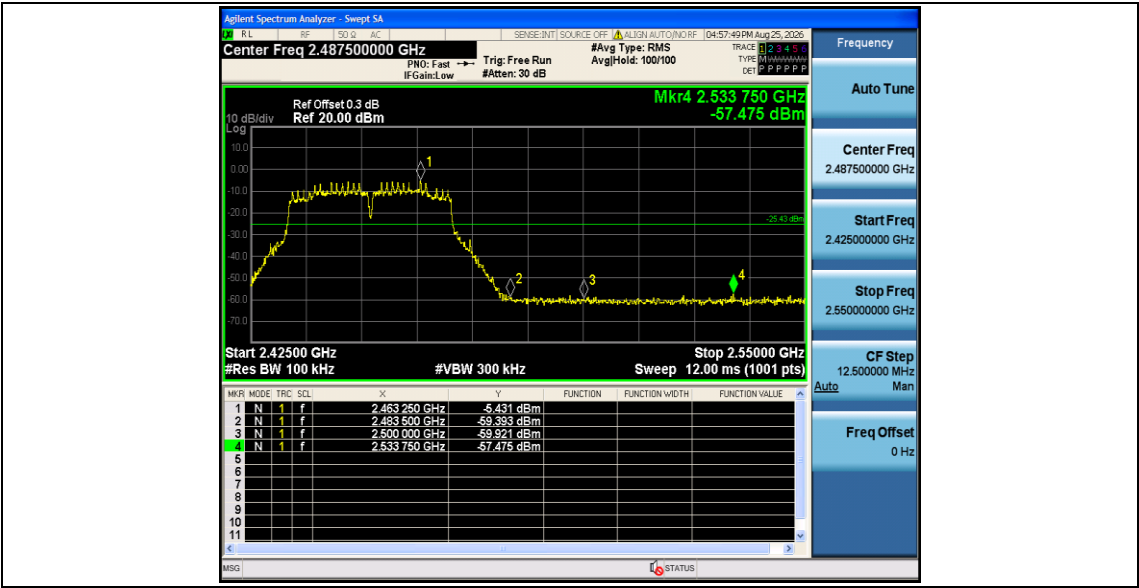
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452



Appendix F: Conducted Spurious Emission

Test Result

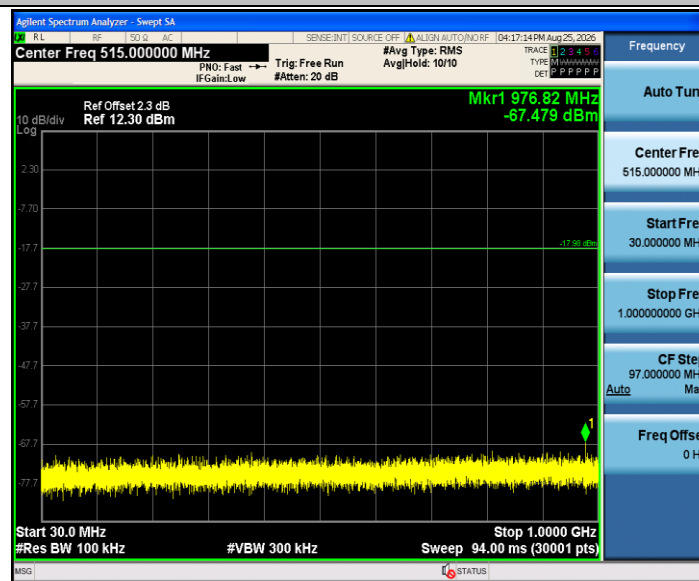
TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	2.02	2.02	---	PASS
			30~1000	2.02	-67.48	≤-17.98	PASS
			1000~26500	2.02	-46.79	≤-17.98	PASS
		2437	Reference	2.00	2.00	---	PASS
			30~1000	2.00	-69.41	≤-18	PASS
			1000~26500	2.00	-46.37	≤-18	PASS
		2462	Reference	1.56	1.56	---	PASS
			30~1000	1.56	-69.03	≤-18.44	PASS
			1000~26500	1.56	-47.06	≤-18.44	PASS
11G	Ant1	2412	Reference	-2.65	-2.65	---	PASS
			30~1000	-2.65	-68.89	≤-22.65	PASS
			1000~26500	-2.65	-46.46	≤-22.65	PASS
		2437	Reference	-3.53	-3.53	---	PASS
			30~1000	-3.53	-68.91	≤-23.53	PASS
			1000~26500	-3.53	-45.8	≤-23.53	PASS
		2462	Reference	-2.08	-2.08	---	PASS
			30~1000	-2.08	-68.96	≤-22.08	PASS
			1000~26500	-2.08	-46.33	≤-22.08	PASS
11N20SISO	Ant1	2412	Reference	-2.42	-2.42	---	PASS
			30~1000	-2.42	-69.14	≤-22.42	PASS
			1000~26500	-2.42	-47.34	≤-22.42	PASS
		2437	Reference	-3.38	-3.38	---	PASS
			30~1000	-3.38	-69.27	≤-23.38	PASS
			1000~26500	-3.38	-46.97	≤-23.38	PASS
		2462	Reference	-2.14	-2.14	---	PASS
			30~1000	-2.14	-68.26	≤-22.14	PASS
			1000~26500	-2.14	-46.25	≤-22.14	PASS
11N40SISO	Ant1	2422	Reference	-6.08	-6.08	---	PASS
			30~1000	-6.08	-68.14	≤-26.08	PASS
			1000~26500	-6.08	-46.86	≤-26.08	PASS
		2437	Reference	-5.39	-5.39	---	PASS
			30~1000	-5.39	-69.54	≤-25.39	PASS
			1000~26500	-5.39	-45.77	≤-25.39	PASS
		2452	Reference	-6.02	-6.02	---	PASS
			30~1000	-6.02	-69.07	≤-26.02	PASS
			1000~26500	-6.02	-46.94	≤-26.02	PASS

Test Graphs

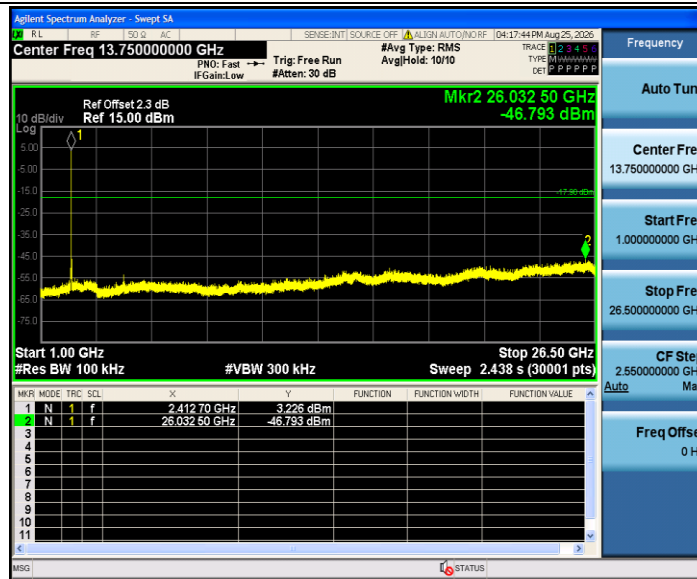
11B_Ant1_2412_0~Reference



11B_Ant1_2412_30~1000



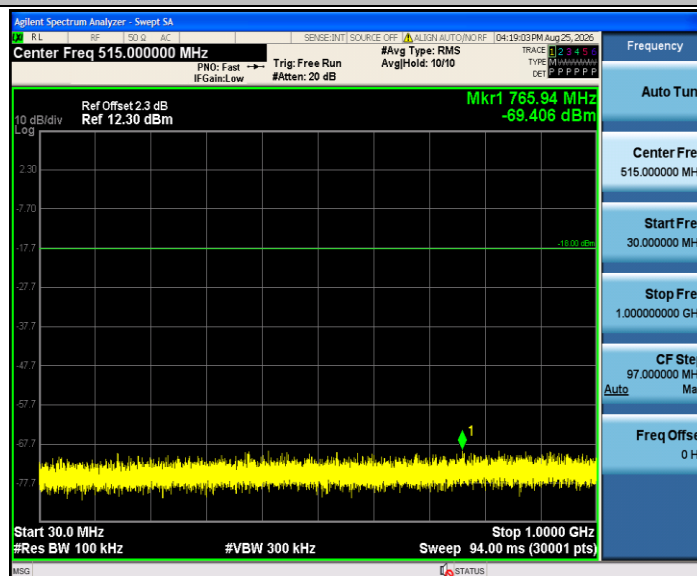
11B_Ant1_2412_1000~26500



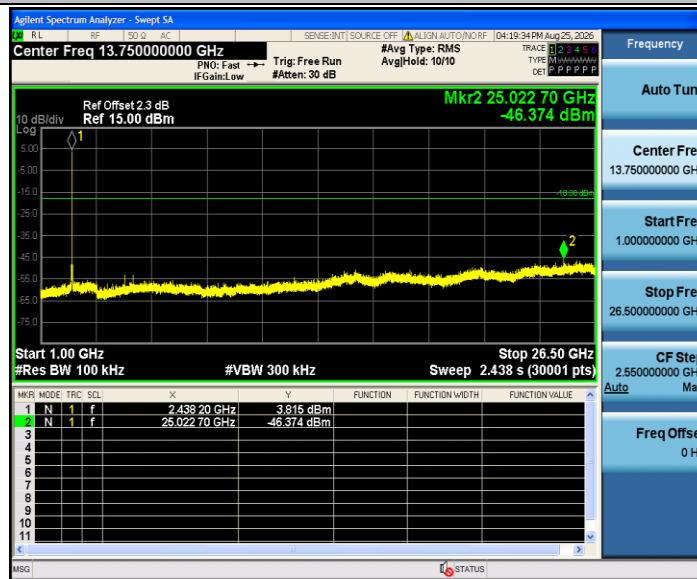
11B_Ant1_2437_0~Reference



11B_Ant1_2437_30~1000



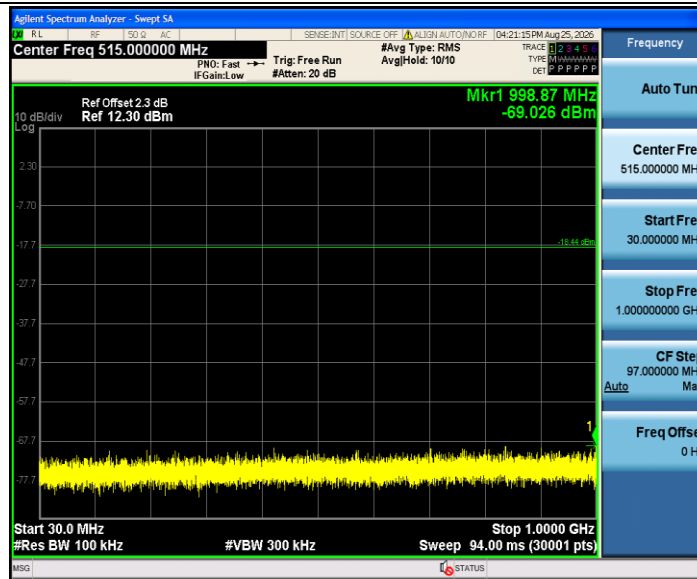
11B_Ant1_2437_1000~26500



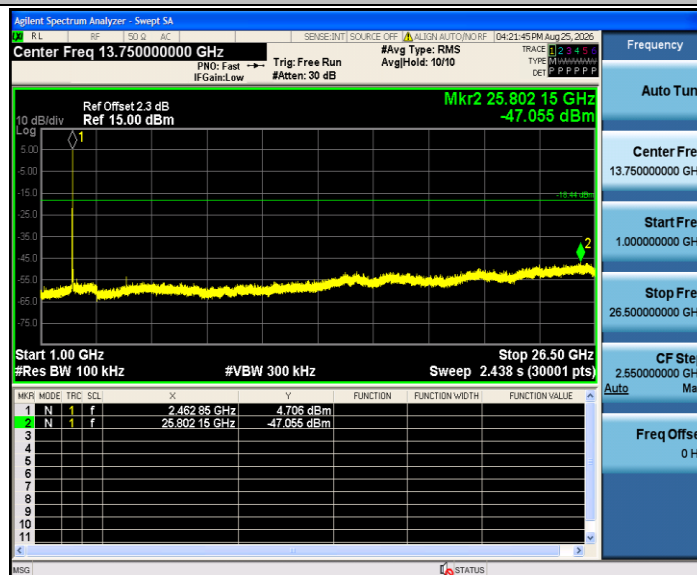
11B_Ant1_2462_0~Reference



11B_Ant1_2462_30~1000



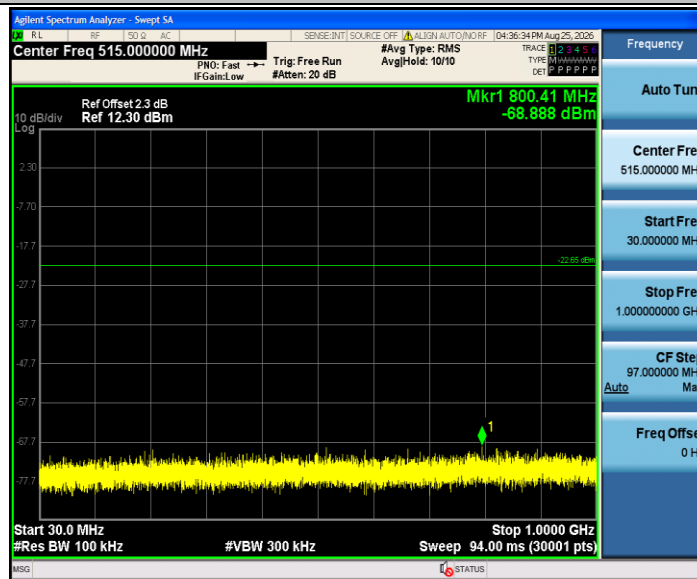
11B_Ant1_2462_1000~26500



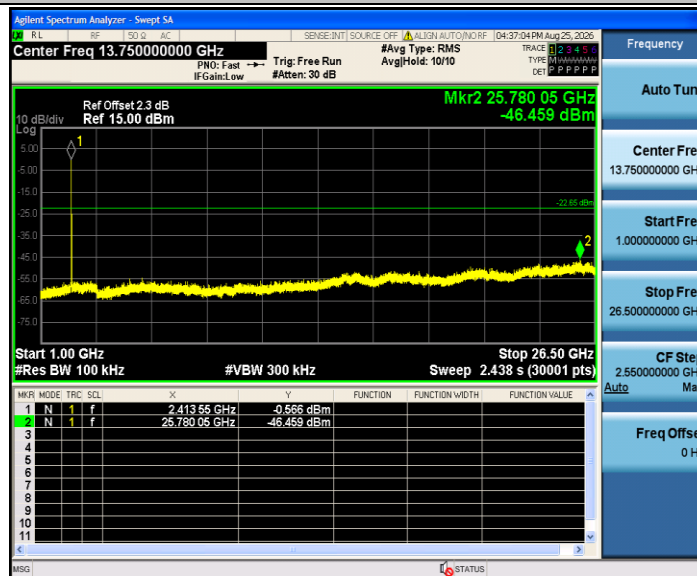
11G_Ant1_2412_0~Reference



11G_Ant1_2412_30~1000



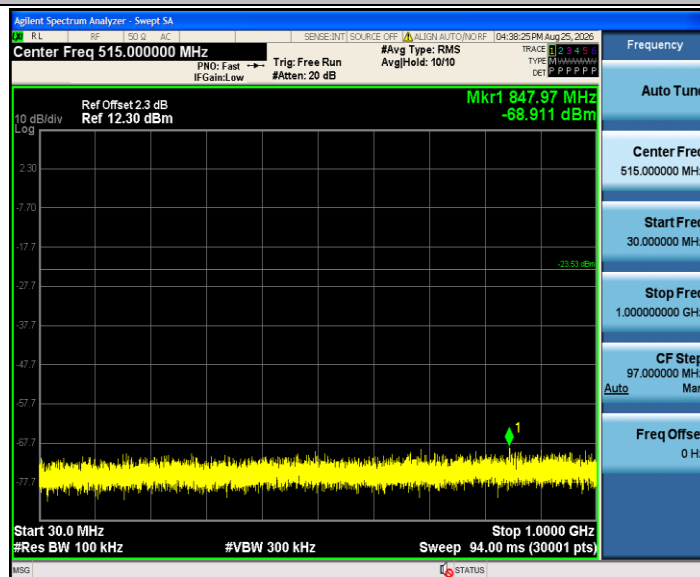
11G_Ant1_2412_1000~26500



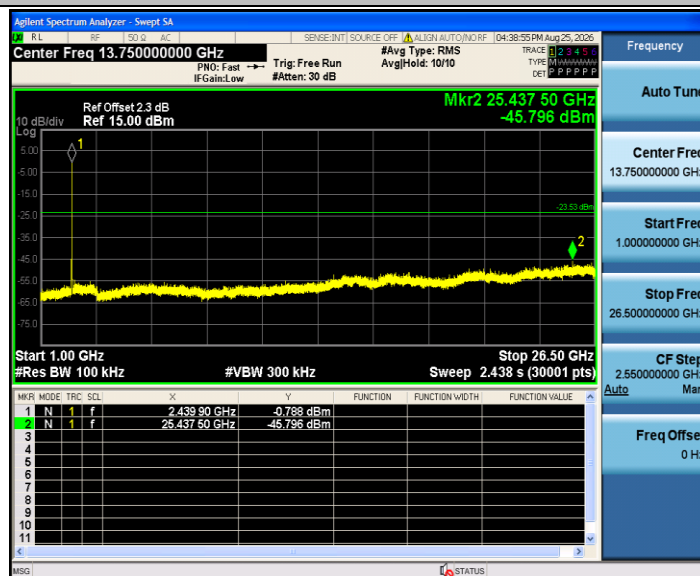
11G_Ant1_2437_0~Reference



11G_Ant1_2437_30~1000



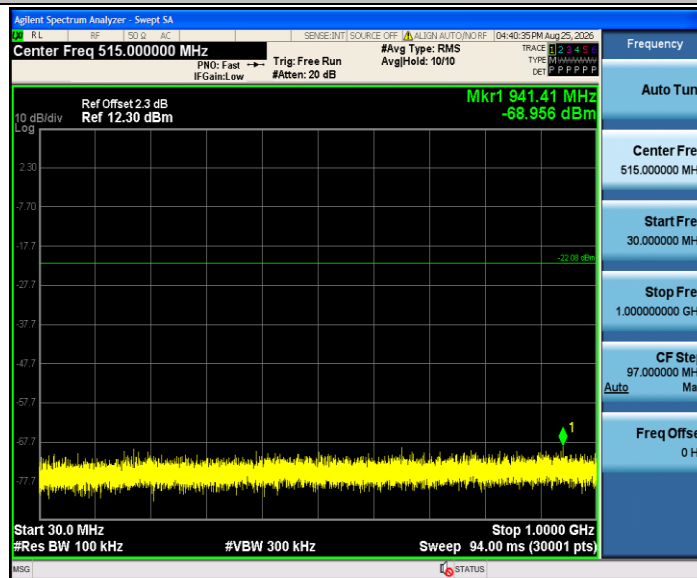
11G_Ant1_2437_1000~26500



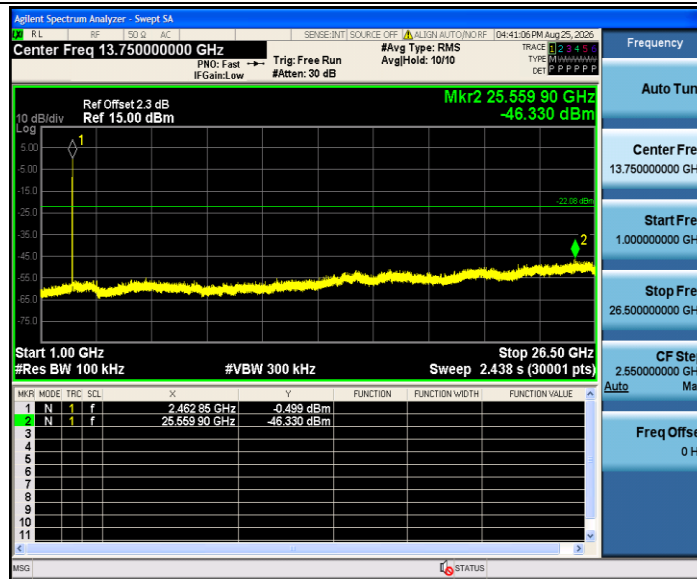
11G_Ant1_2462_0~Reference



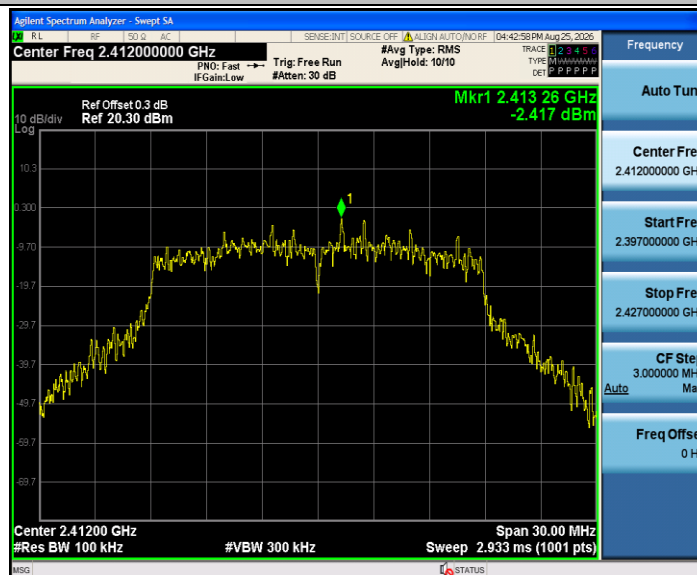
11G_Ant1_2462_30~1000



11G_Ant1_2462_1000~26500



11N20SISO_Ant1_2412_0~Reference



11N20SISO_Ant1_2412_30~1000

