

FCC Appendix RF Test Data

FCC ID : 2BCLR-XH-C5E

Company : ShenZhen Sparkleiot Technology CO., LTD

EUT : WiFi module

Model Number : XH-C5E

Report No. : CTA25091002401

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	9.080	2407.520	2416.600	0.5	PASS
		2437	9.520	2432.000	2441.520	0.5	PASS
		2462	8.600	2457.960	2466.560	0.5	PASS
11G	Ant1	2412	15.720	2404.440	2420.160	0.5	PASS
		2437	15.840	2428.880	2444.720	0.5	PASS
		2462	15.920	2454.280	2470.200	0.5	PASS
11N20SISO	Ant1	2412	16.080	2404.440	2420.520	0.5	PASS
		2437	16.760	2428.480	2445.240	0.5	PASS
		2462	16.920	2453.720	2470.640	0.5	PASS
11N40SISO	Ant1	2422	35.120	2404.480	2439.600	0.5	PASS
		2437	35.200	2419.480	2454.680	0.5	PASS
		2452	35.760	2433.840	2469.600	0.5	PASS

Test Graphs

11B_Ant1_2412



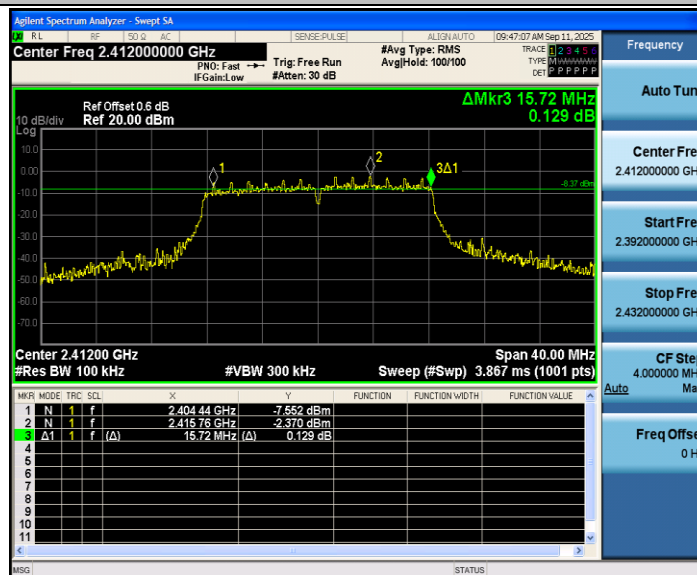
11B_Ant1_2437



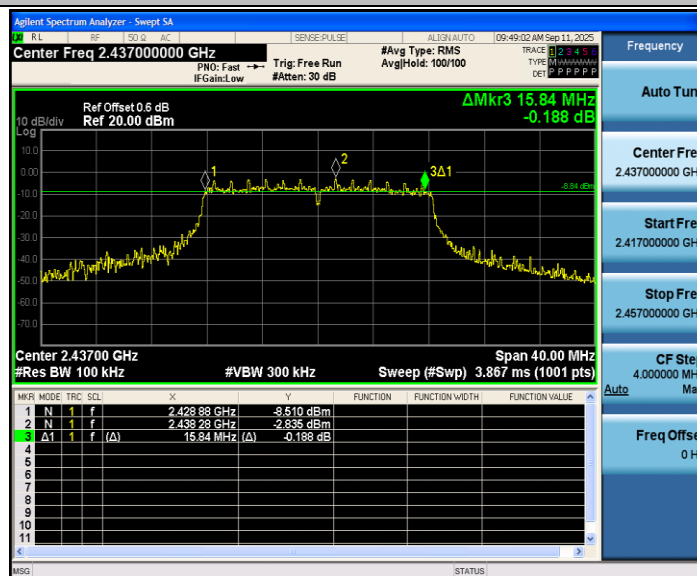
11B_Ant1_2462



11G_Ant1_2412



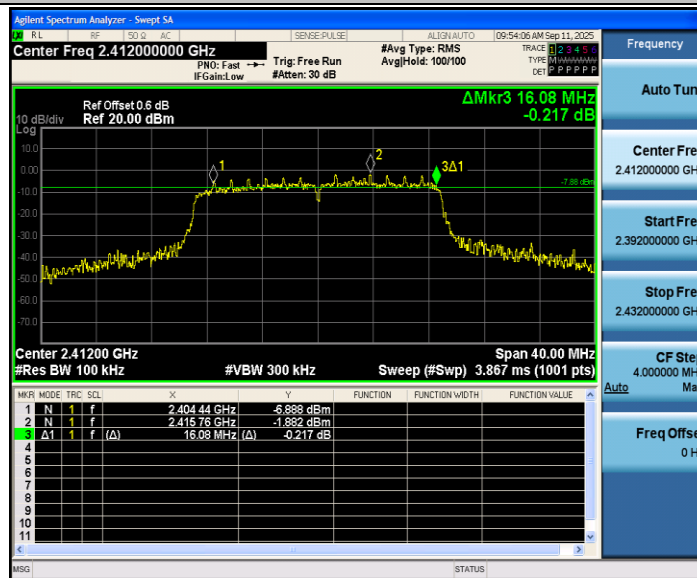
11G_Ant1_2437



11G_Ant1_2462



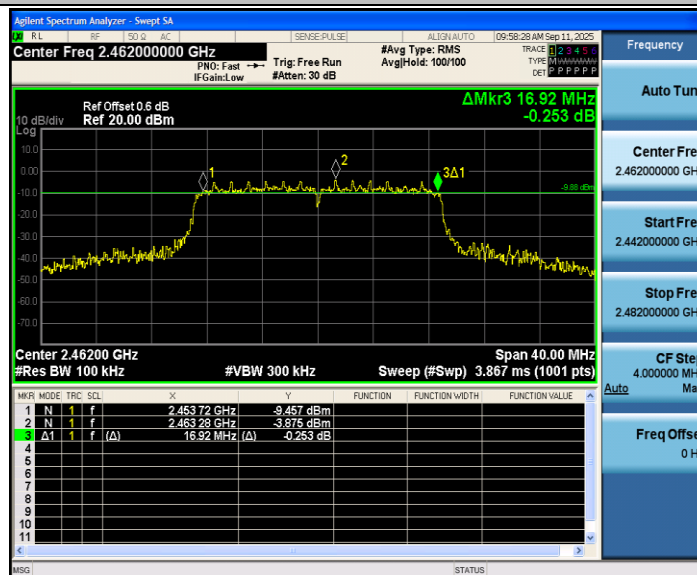
11N20SISO_Ant1_2412



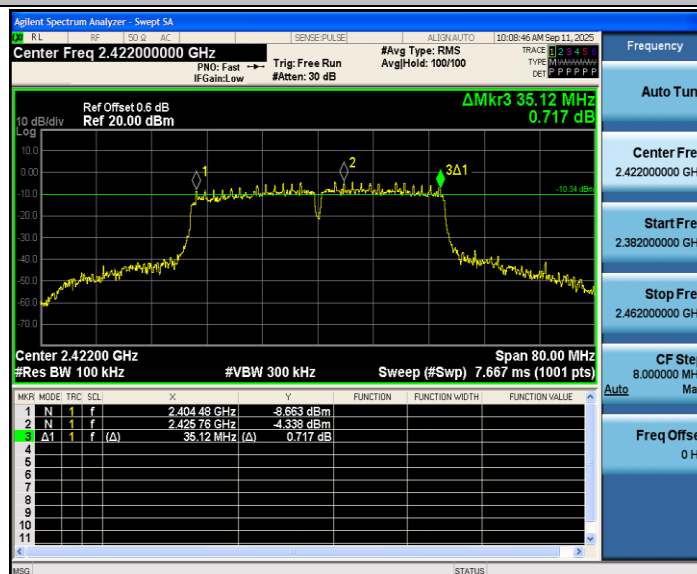
11N20SISO_Ant1_2437



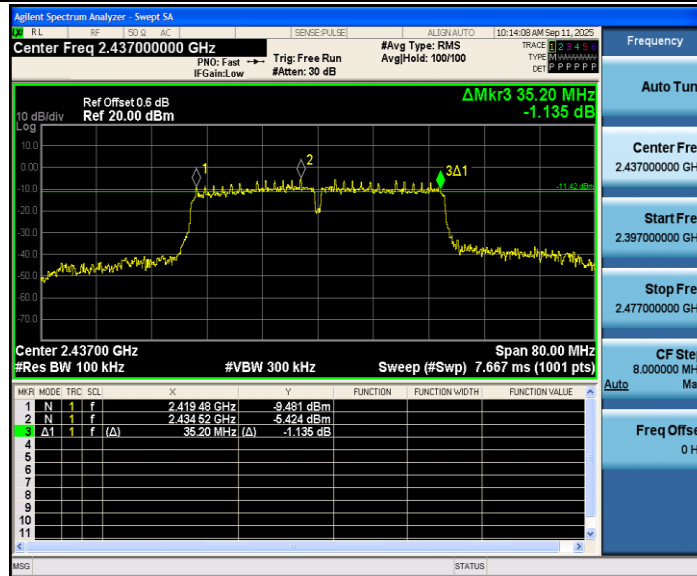
11N20SISO_Ant1_2462



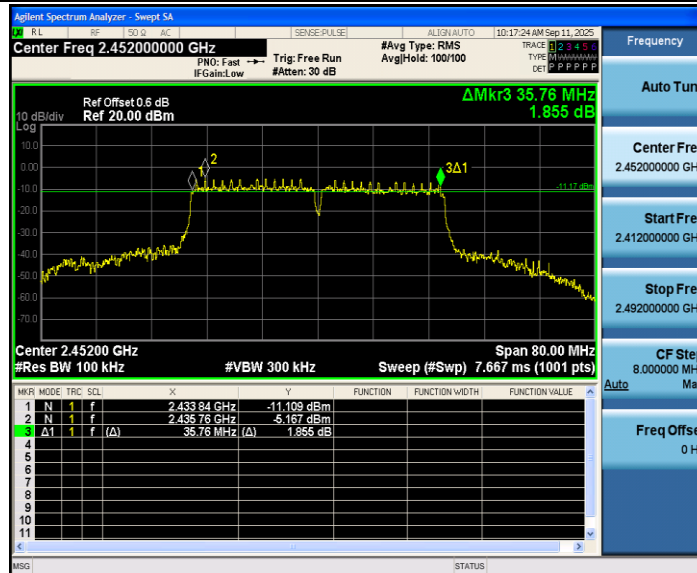
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



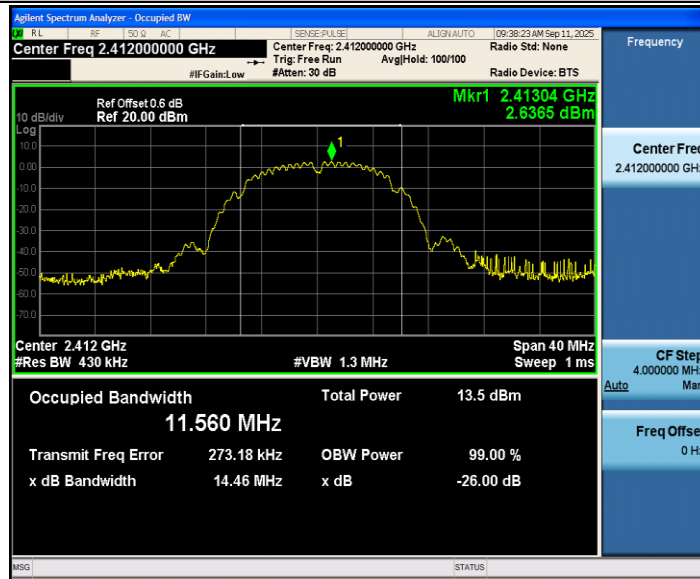
Appendix B: Occupied Channel Bandwidth

Test Result

TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	11.560	2406.4932	2418.0532	---	---
		2437	11.686	2431.1210	2442.8070	---	---
		2462	11.863	2456.1428	2468.0058	---	---
11G	Ant1	2412	16.633	2403.8507	2420.4837	---	---
		2437	16.662	2428.6704	2445.3324	---	---
		2462	16.872	2453.7206	2470.5926	---	---
11N20SISO	Ant1	2412	17.595	2403.3371	2420.9321	---	---
		2437	17.612	2428.2020	2445.8140	---	---
		2462	17.675	2453.2130	2470.8880	---	---
11N40SISO	Ant1	2422	35.998	2404.2262	2440.2242	---	---
		2437	36.166	2419.1370	2455.3030	---	---
		2452	36.448	2433.7881	2470.2361	---	---

Test Graphs

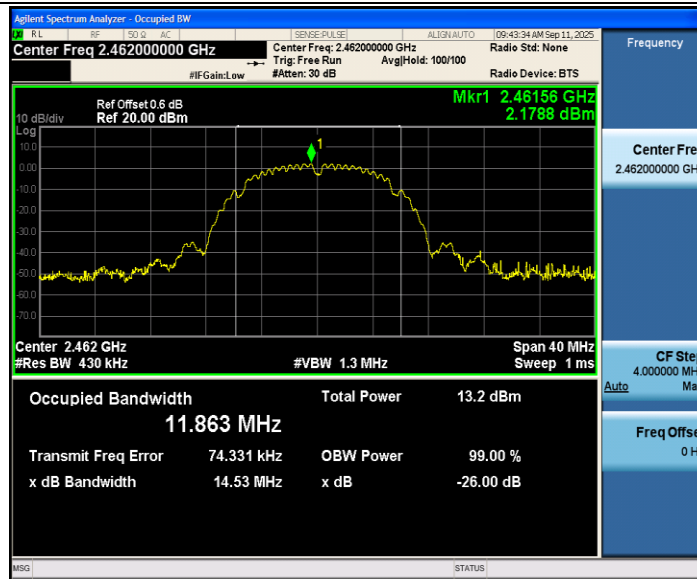
11B_Ant1_2412



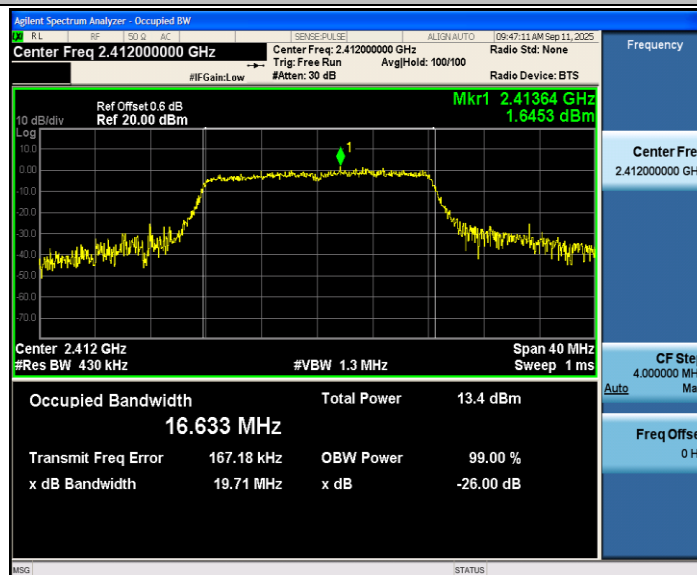
11B_Ant1_2437



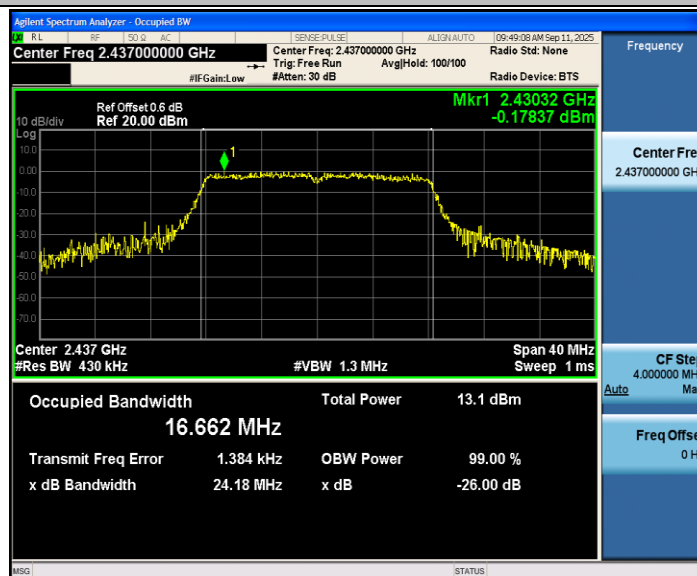
11B_Ant1_2462



11G_Ant1_2412



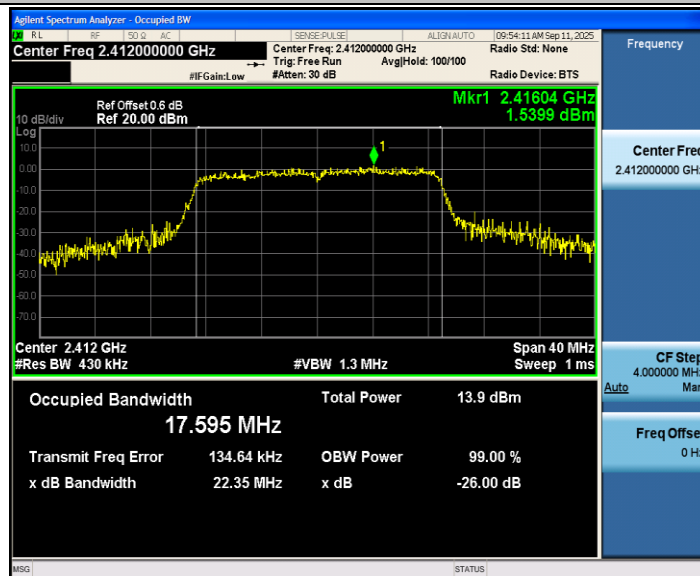
11G_Ant1_2437



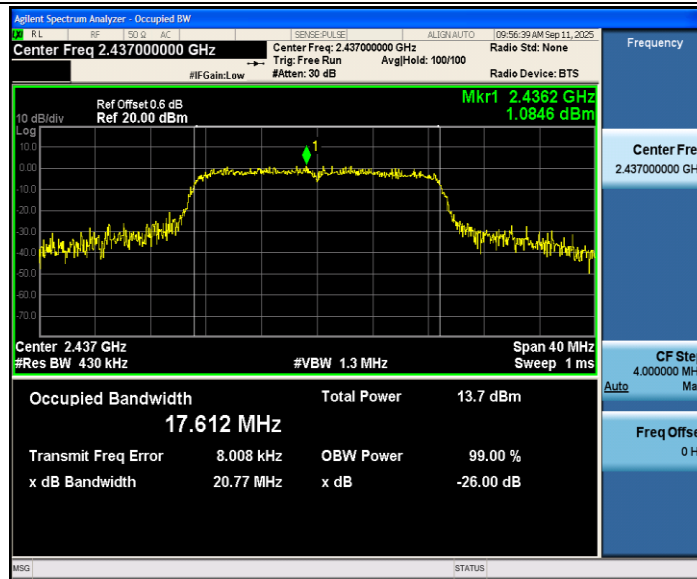
11G_Ant1_2462



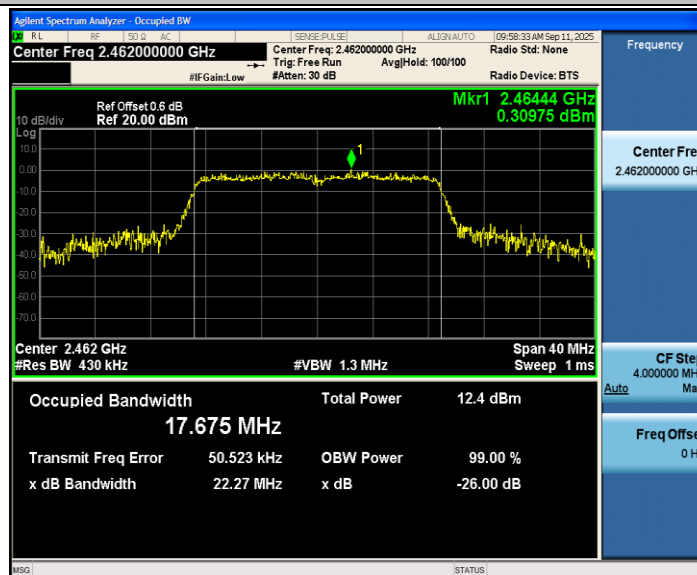
11N20SISO_Ant1_2412



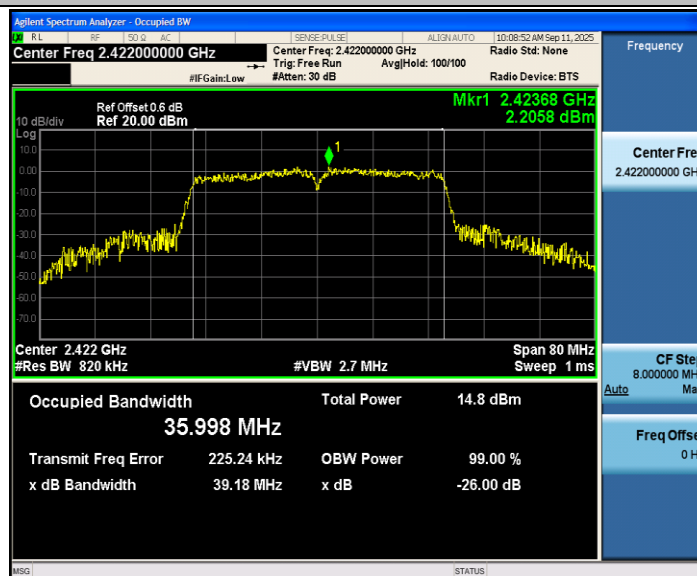
11N20SISO_Ant1_2437



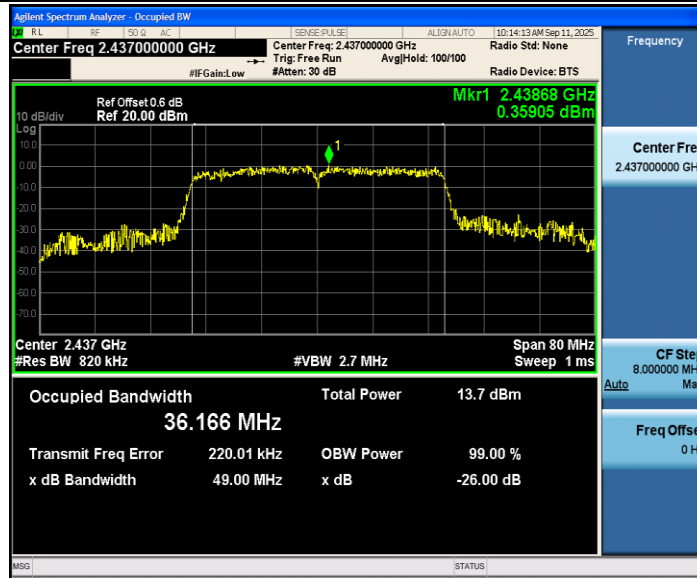
11N20SISO_Ant1_2462



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	13.43	≤30.00	PASS
		2437	13.34	≤30.00	PASS
		2462	13.27	≤30.00	PASS
11G	Ant1	2412	14.00	≤30.00	PASS
		2437	13.64	≤30.00	PASS
		2462	14.79	≤30.00	PASS
11N20SISO	Ant1	2412	14.52	≤30.00	PASS
		2437	14.57	≤30.00	PASS
		2462	13.28	≤30.00	PASS
11N40SISO	Ant1	2422	14.99	≤30.00	PASS
		2437	14.13	≤30.00	PASS
		2452	14.44	≤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	-11.68	≤8.00	PASS
		2437	-12.10	≤8.00	PASS
		2462	-11.97	≤8.00	PASS
11G	Ant1	2412	-16.87	≤8.00	PASS
		2437	-17.81	≤8.00	PASS
		2462	-16.65	≤8.00	PASS
11N20SISO	Ant1	2412	-17.15	≤8.00	PASS
		2437	-16.95	≤8.00	PASS
		2462	-17.94	≤8.00	PASS
11N40SISO	Ant1	2422	-18.68	≤8.00	PASS
		2437	-17.89	≤8.00	PASS
		2452	-18.94	≤8.00	PASS

Test Graphs

11B_Ant1_2412



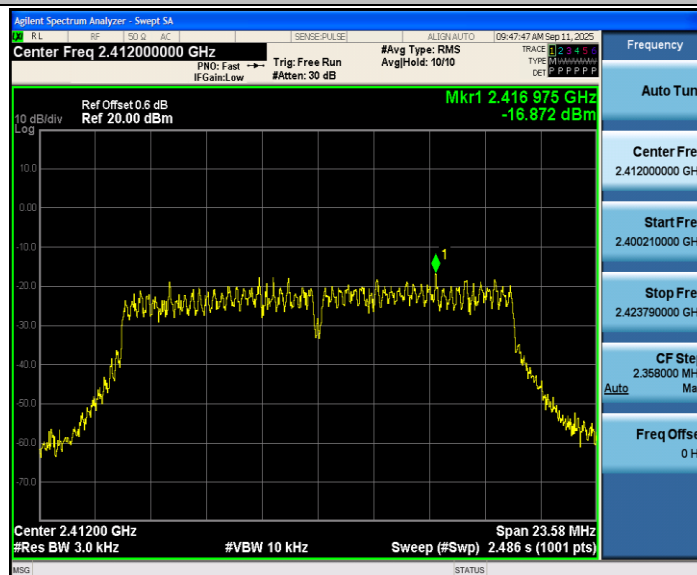
11B_Ant1_2437



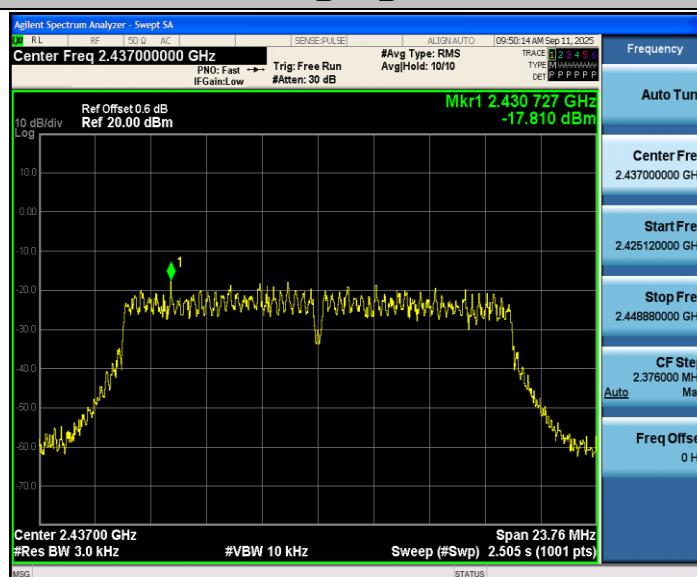
11B_Ant1_2462



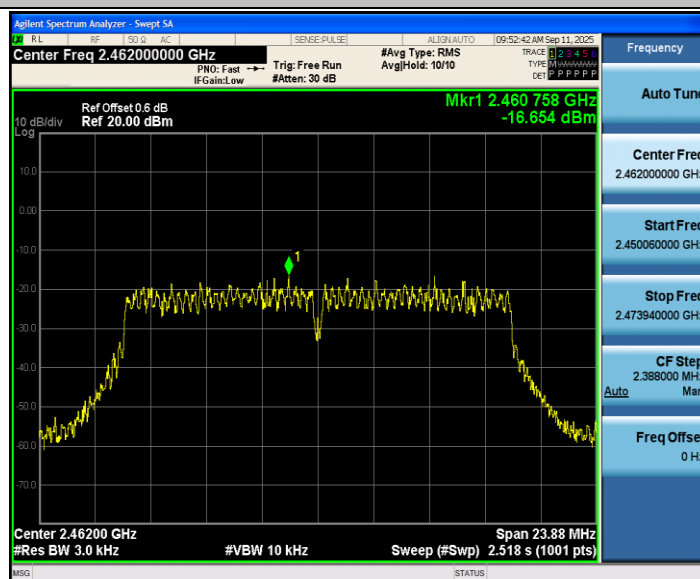
11G_Ant1_2412



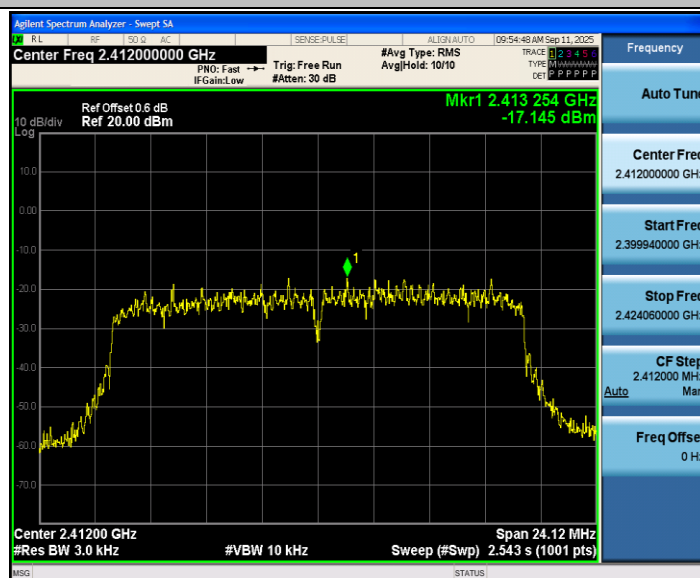
11G_Ant1_2437



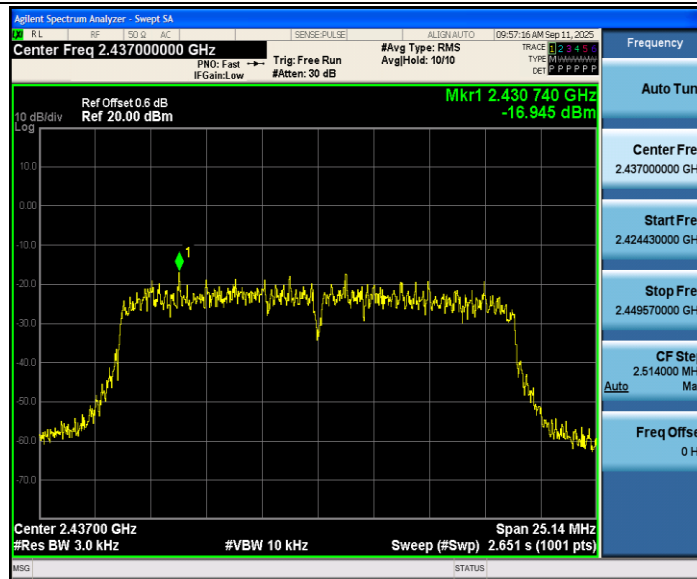
11G_Ant1_2462



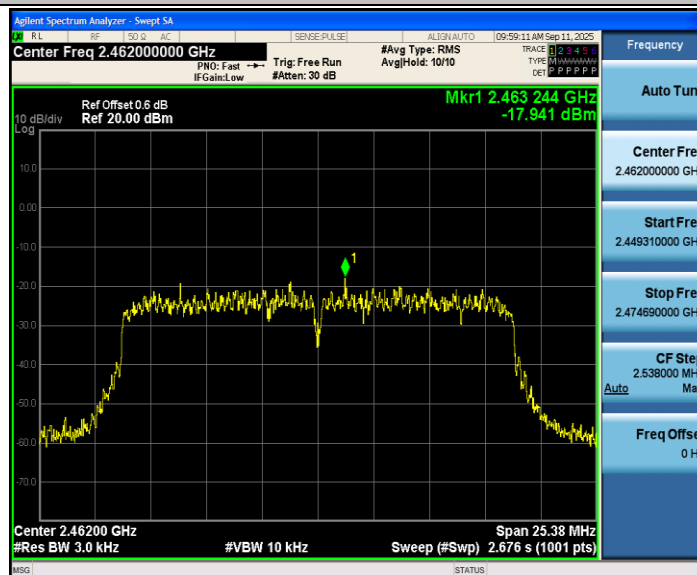
11N20SISO_Ant1_2412



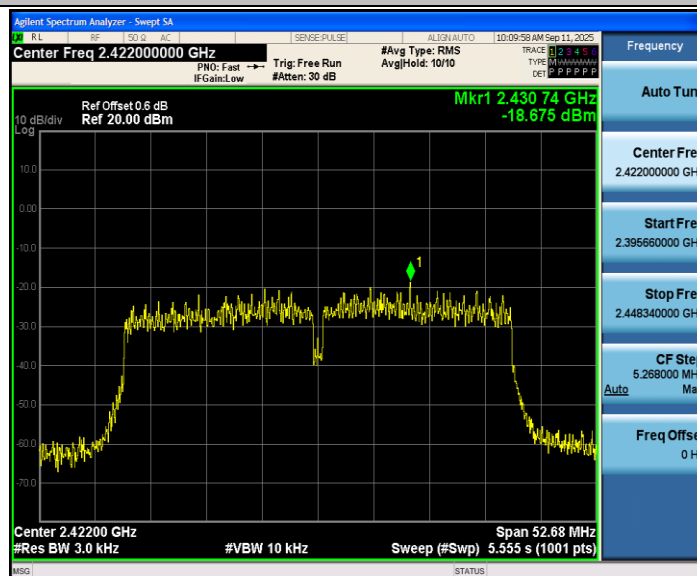
11N20SISO_Ant1_2437



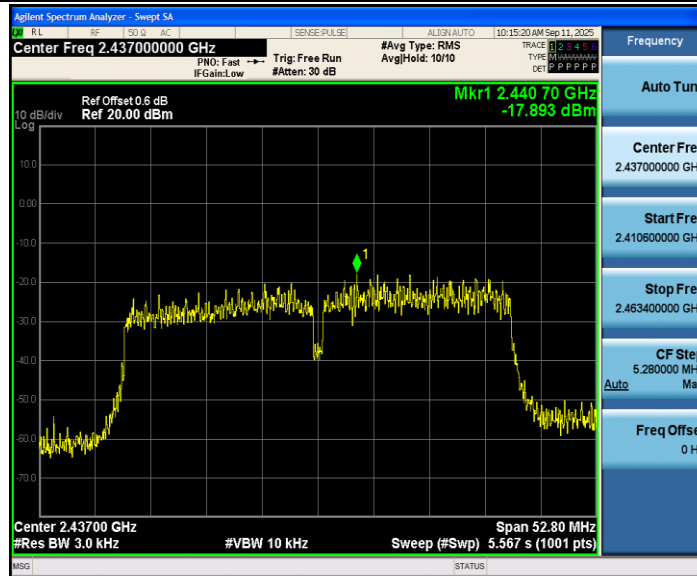
11N20SISO_Ant1_2462



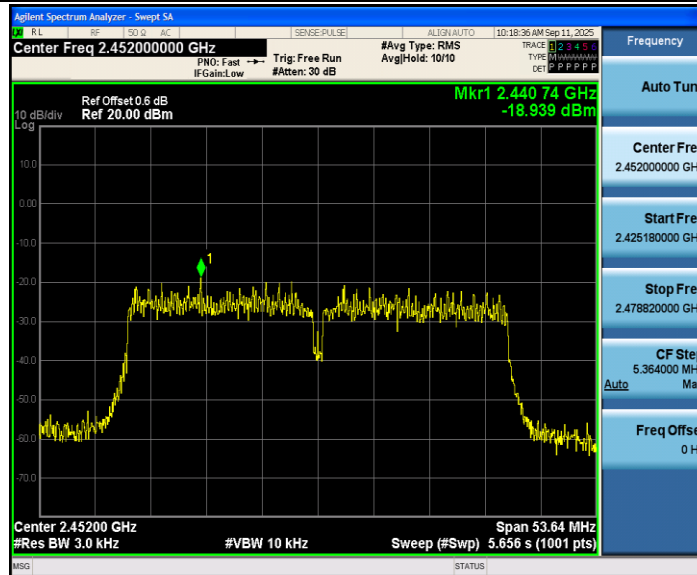
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



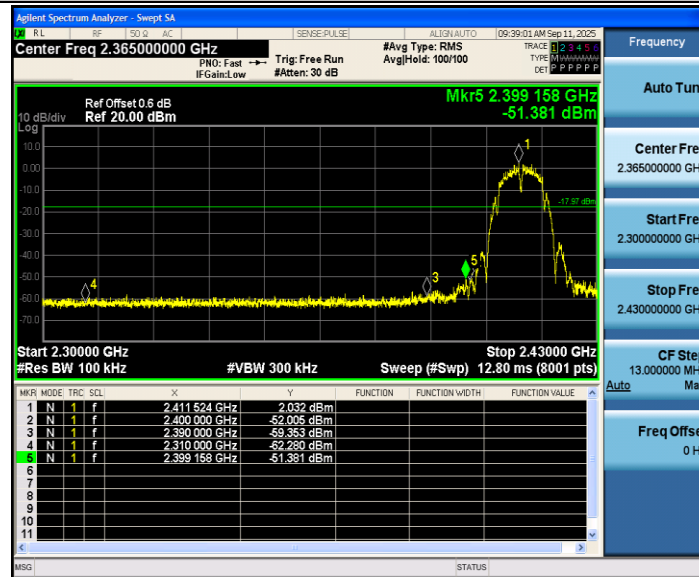
Appendix E: Band edge measurements

Test Result

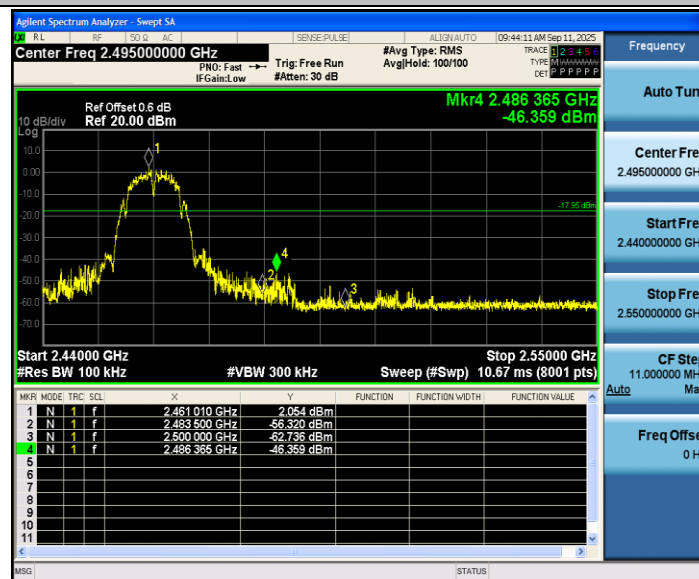
TestMode	Antenna	Channel Name	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	2.03	-51.38	≤-17.97	PASS
		High	2462	2.05	-46.36	≤-17.95	PASS
11G	Ant1	Low	2412	-2.40	-36.76	≤-22.4	PASS
		High	2462	-2.01	-45.48	≤-22.01	PASS
11N20SISO	Ant1	Low	2412	-2.06	-35.71	≤-22.06	PASS
		High	2462	-3.59	-47.3	≤-23.59	PASS
11N40SISO	Ant1	Low	2422	-7.25	-43.8	≤-27.25	PASS
		High	2452	-5.18	-46.38	≤-25.18	PASS

Test Graphs

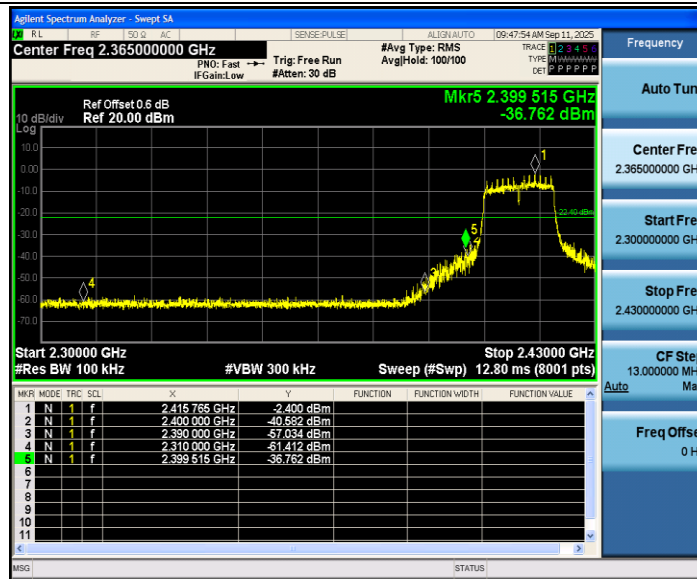
11B_Ant1_Low_2412



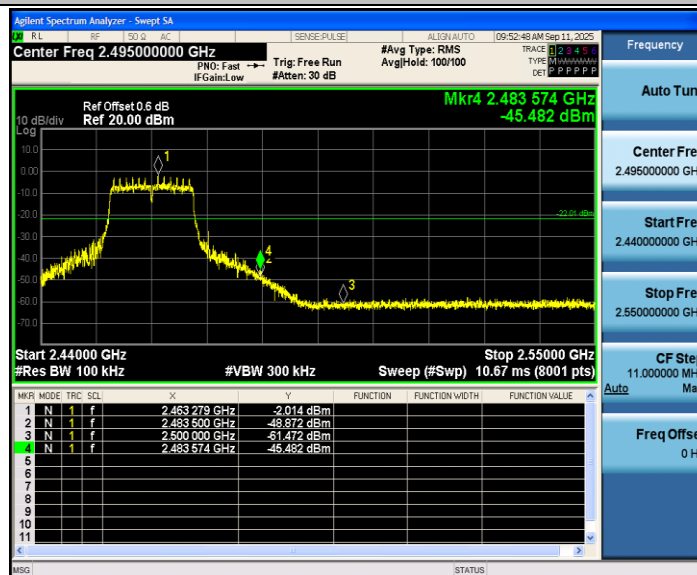
11B_Ant1_High_2462



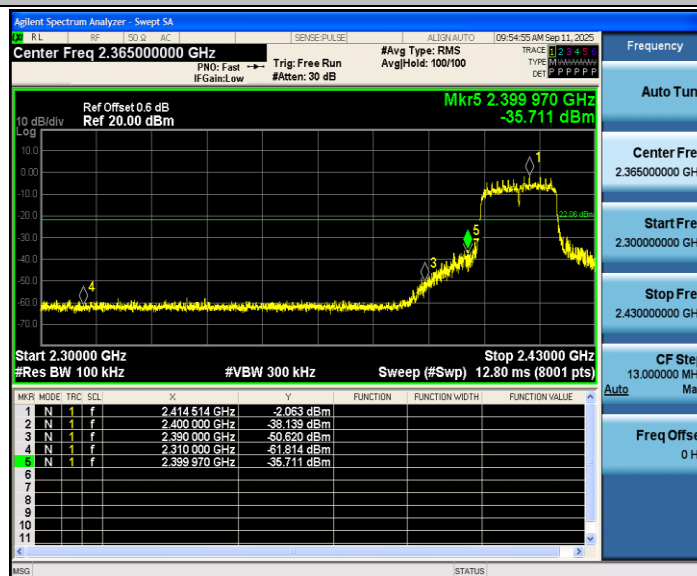
11G_Ant1_Low_2412



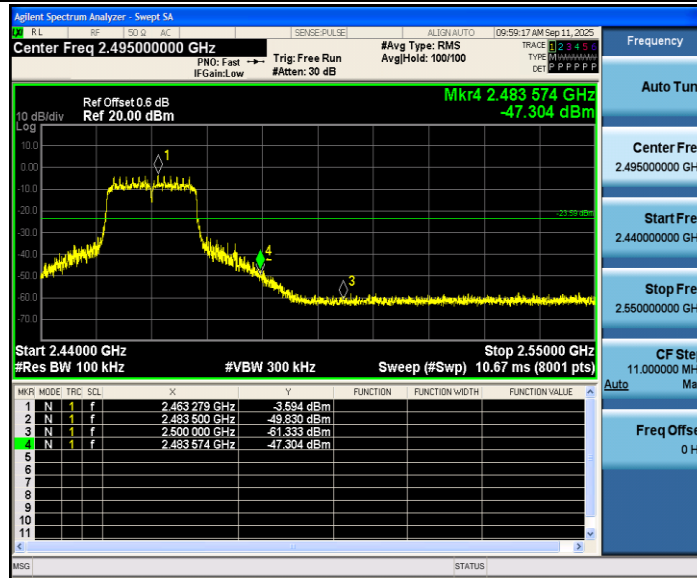
11G_Ant1_High_2462



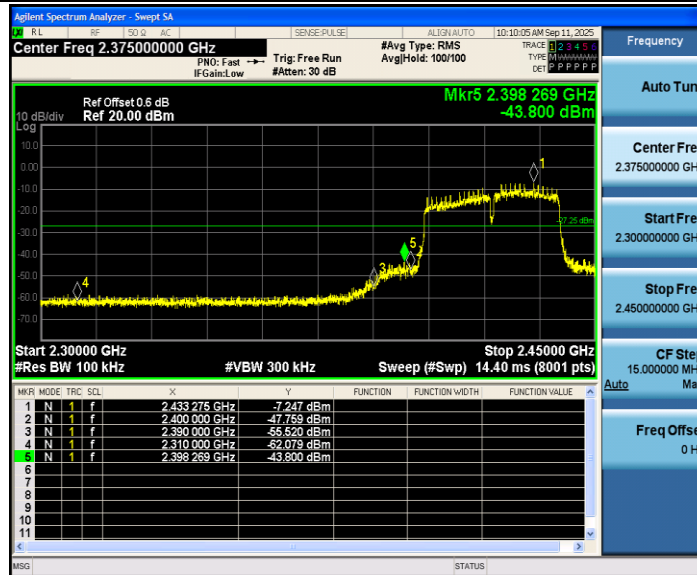
11N20SISO_Ant1_Low_2412



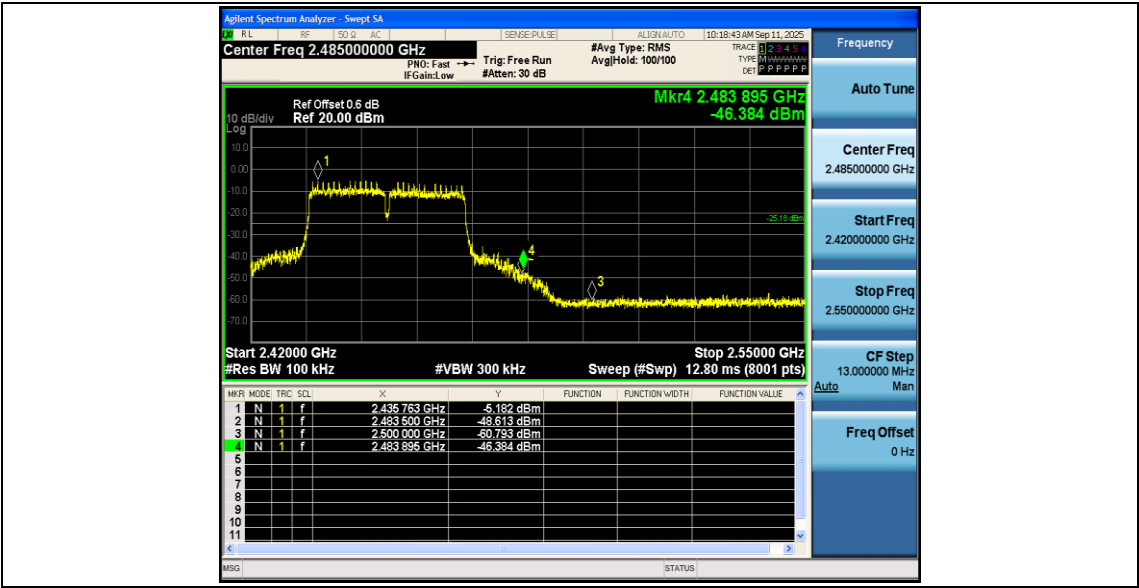
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452



Appendix F: Conducted Spurious Emission

Test Result

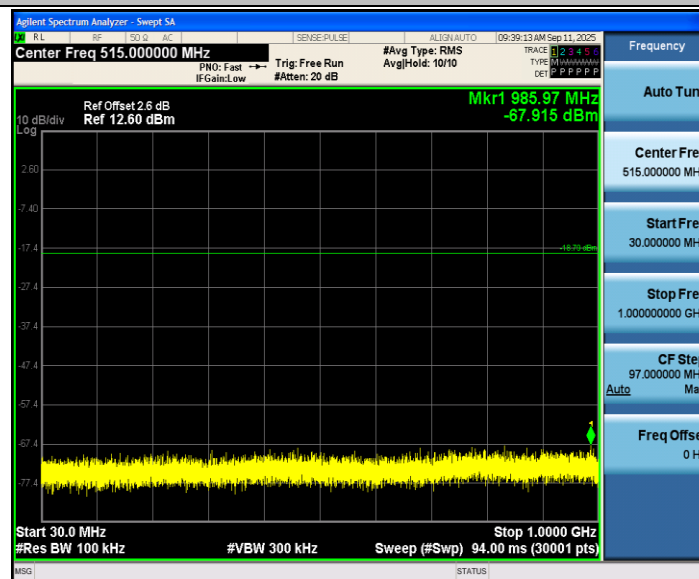
TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	1.21	1.21	---	PASS
			30~1000	1.21	-67.92	≤-18.79	PASS
			1000~26500	1.21	-54.69	≤-18.79	PASS
		2437	Reference	1.66	1.66	---	PASS
			30~1000	1.66	-67.39	≤-18.34	PASS
			1000~26500	1.66	-54.68	≤-18.34	PASS
		2462	Reference	-4.09	-4.09	---	PASS
			30~1000	-4.09	-53.89	≤-24.09	PASS
			1000~26500	-4.09	-55.24	≤-24.09	PASS
11G	Ant1	2412	Reference	-2.56	-2.56	---	PASS
			30~1000	-2.56	-67.06	≤-22.56	PASS
			1000~26500	-2.56	-54.89	≤-22.56	PASS
		2437	Reference	-4.04	-4.04	---	PASS
			30~1000	-4.04	-68	≤-24.04	PASS
			1000~26500	-4.04	-53.86	≤-24.04	PASS
		2462	Reference	-2.74	-2.74	---	PASS
			30~1000	-2.74	-67.34	≤-22.74	PASS
			1000~26500	-2.74	-54.21	≤-22.74	PASS
11N20SISO	Ant1	2412	Reference	-2.37	-2.37	---	PASS
			30~1000	-2.37	-66.92	≤-22.37	PASS
			1000~26500	-2.37	-54.8	≤-22.37	PASS
		2437	Reference	-5.70	-5.70	---	PASS
			30~1000	-5.70	-52.82	≤-25.7	PASS
			1000~26500	-5.70	-54.72	≤-25.7	PASS
		2462	Reference	-4.22	-4.22	---	PASS
			30~1000	-4.22	-67.85	≤-24.22	PASS
			1000~26500	-4.22	-54.59	≤-24.22	PASS
11N40SISO	Ant1	2422	Reference	-7.19	-7.19	---	PASS
			30~1000	-7.19	-53.1	≤-27.19	PASS
			1000~26500	-7.19	-50.77	≤-27.19	PASS
		2437	Reference	-1.74	-1.74	---	PASS
			30~1000	-1.74	-67.21	≤-21.74	PASS
			1000~26500	-1.74	-55.17	≤-21.74	PASS
		2452	Reference	-5.63	-5.63	---	PASS
			30~1000	-5.63	-51.61	≤-25.63	PASS
			1000~26500	-5.63	-54.51	≤-25.63	PASS

Test Graphs

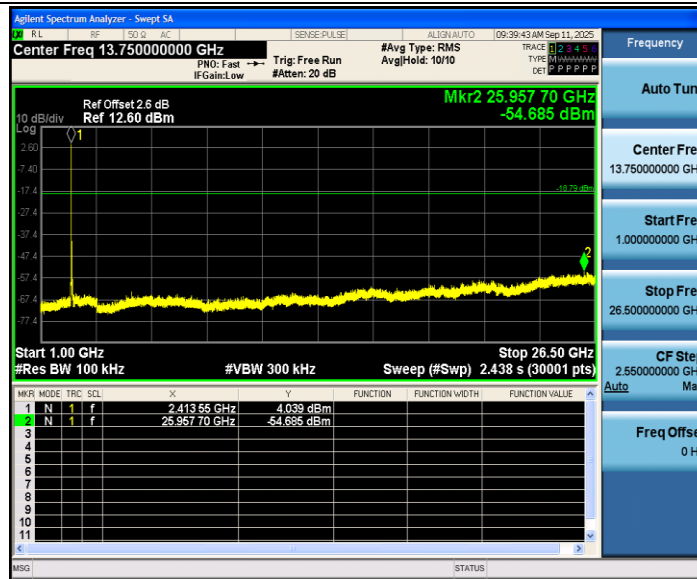
11B_Ant1_2412_0~Reference



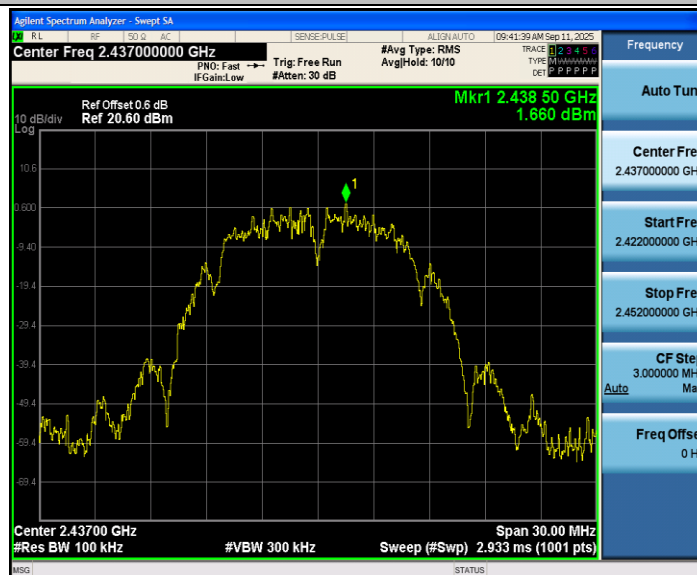
11B_Ant1_2412_30~1000



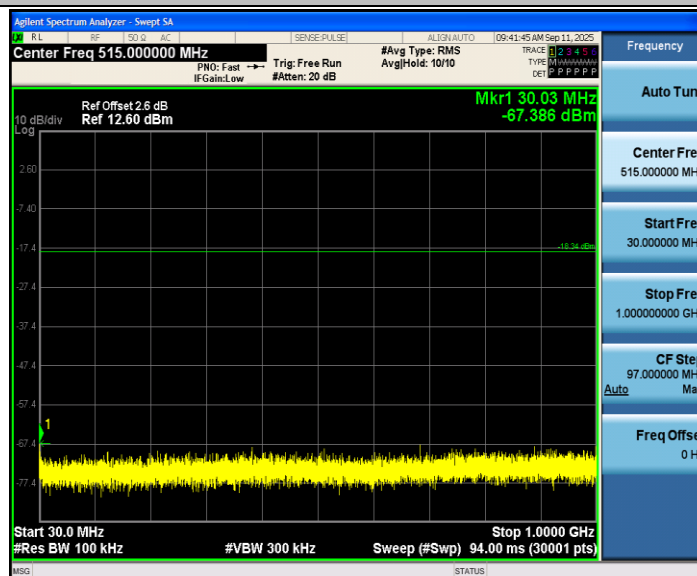
11B_Ant1_2412_1000~26500



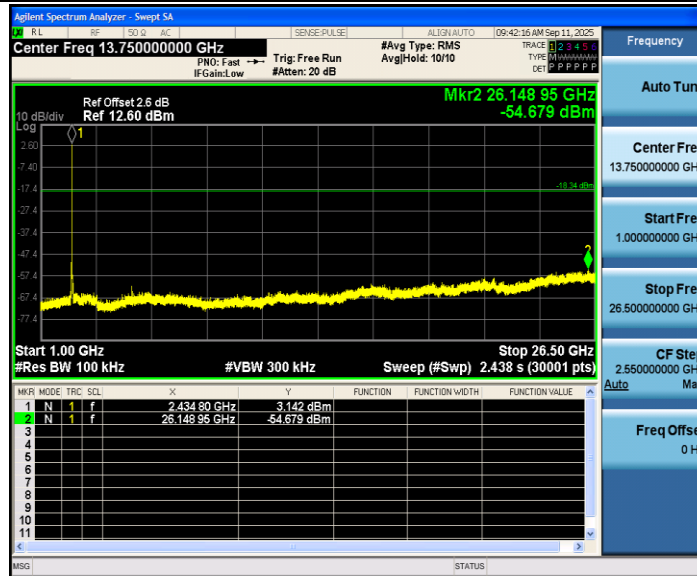
11B_Ant1_2437_0~Reference



11B_Ant1_2437_30~1000



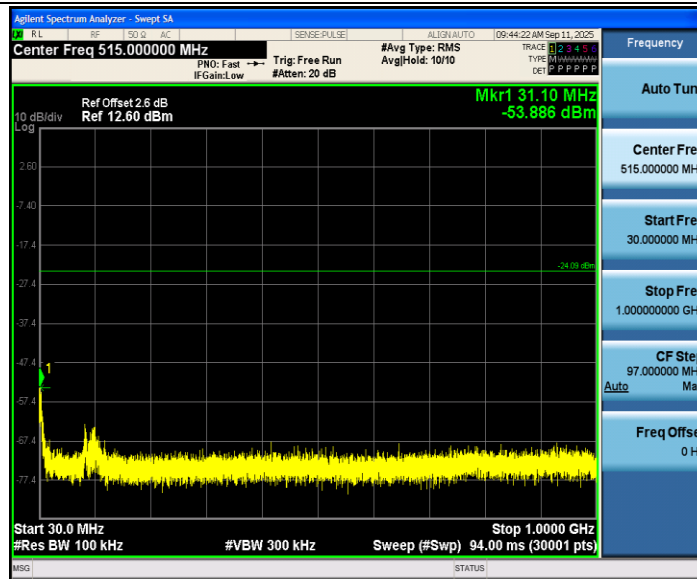
11B_Ant1_2437_1000~26500



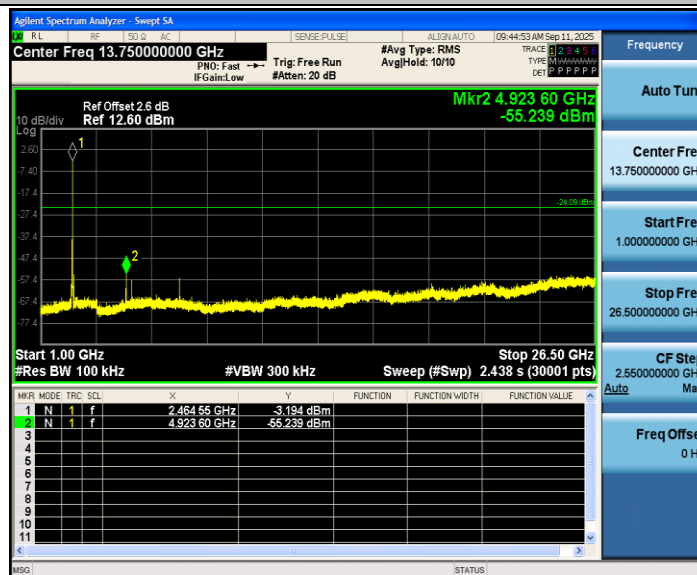
11B_Ant1_2462_0~Reference



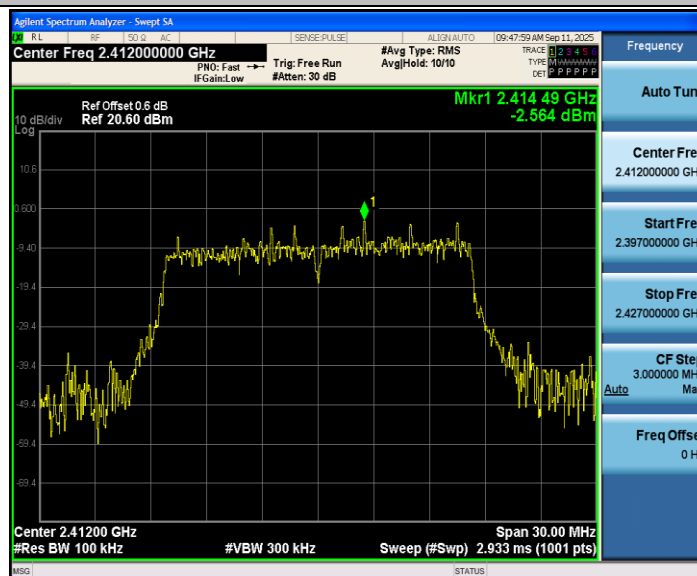
11B_Ant1_2462_30~1000



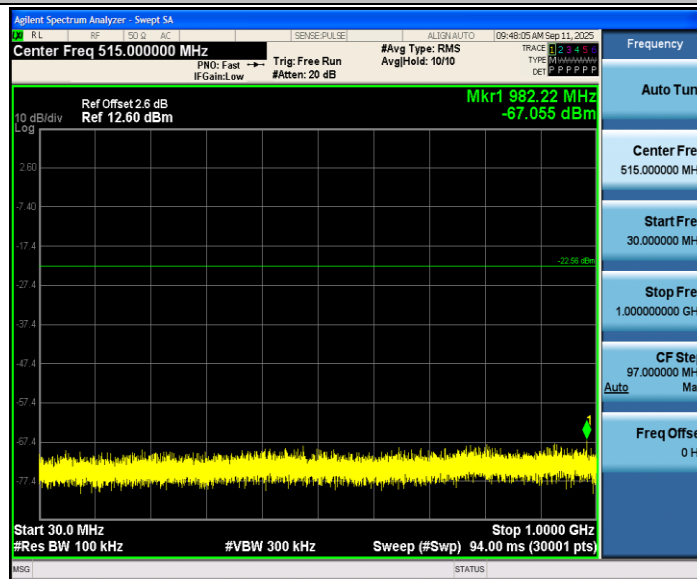
11B_Ant1_2462_1000~26500



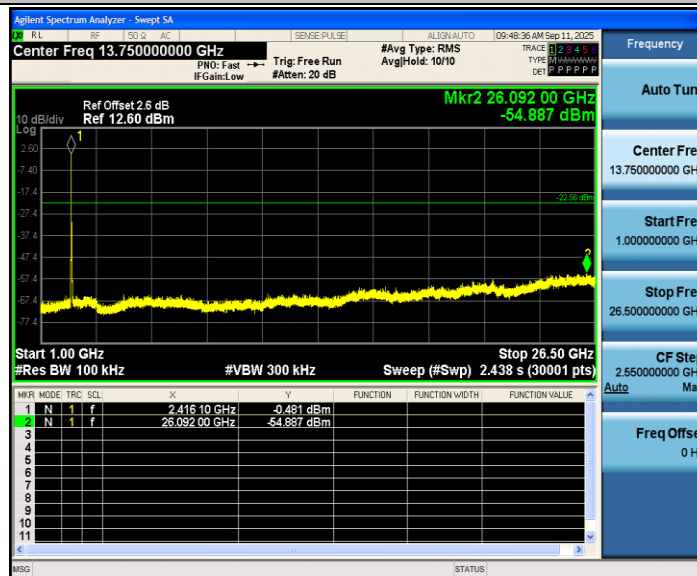
11G_Ant1_2412_0~Reference



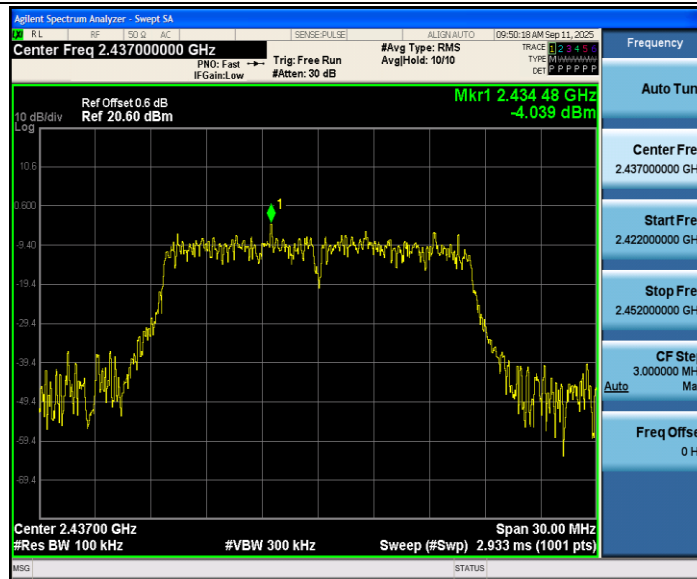
11G_Ant1_2412_30~1000



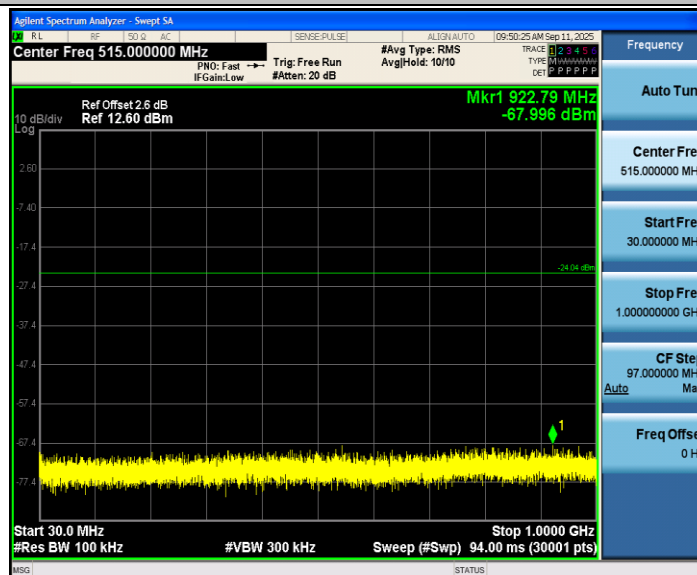
11G_Ant1_2412_1000~26500



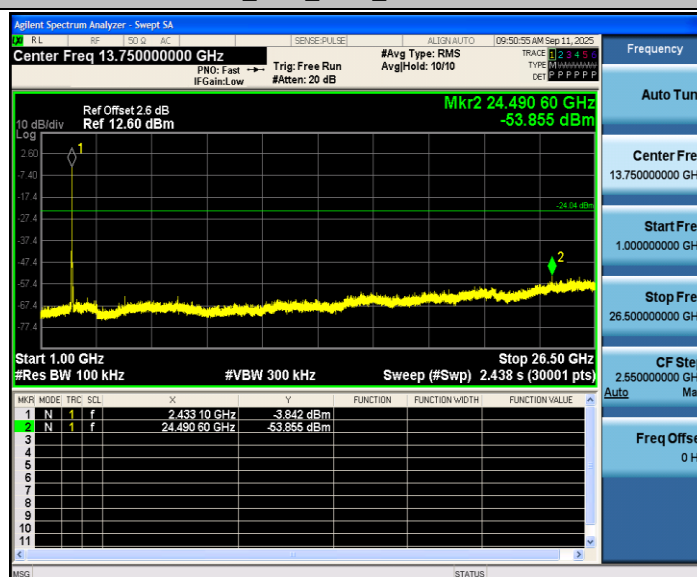
11G_Ant1_2437_0~Reference



11G_Ant1_2437_30~1000



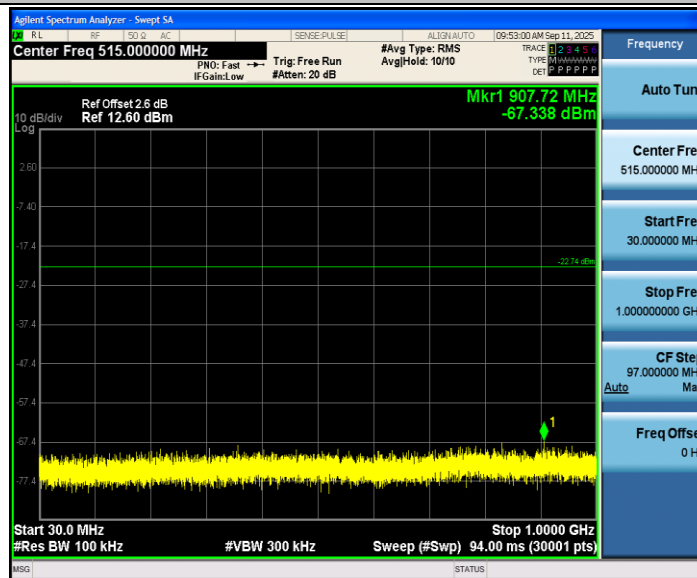
11G_Ant1_2437_1000~26500



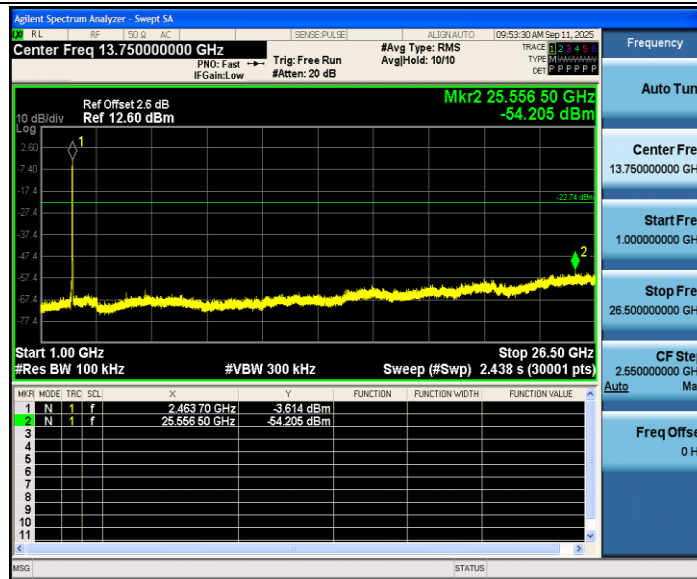
11G_Ant1_2462_0~Reference



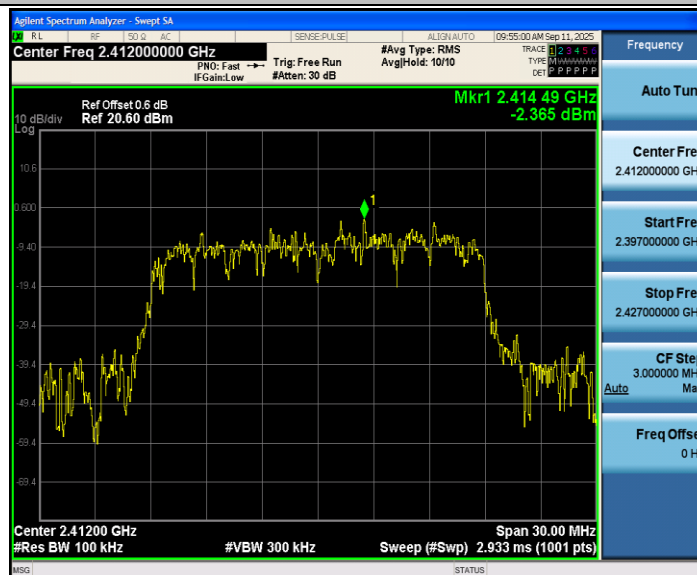
11G_Ant1_2462_30~1000



11G_Ant1_2462_1000~26500



11N20SISO_Ant1_2412_0~Reference



11N20SISO_Ant1_2412_30~1000

