

FCC Appendix RF Test Data for 2.4GWIFI

FCC ID : 2A3ZO-020

Company : Hong Kong Etech Groups Ltd.

EUT : Smart Outdoor Plug

Model Number : ETS-C-020 (MPP4-1002-BLK)

Report No. : CTA25092301402

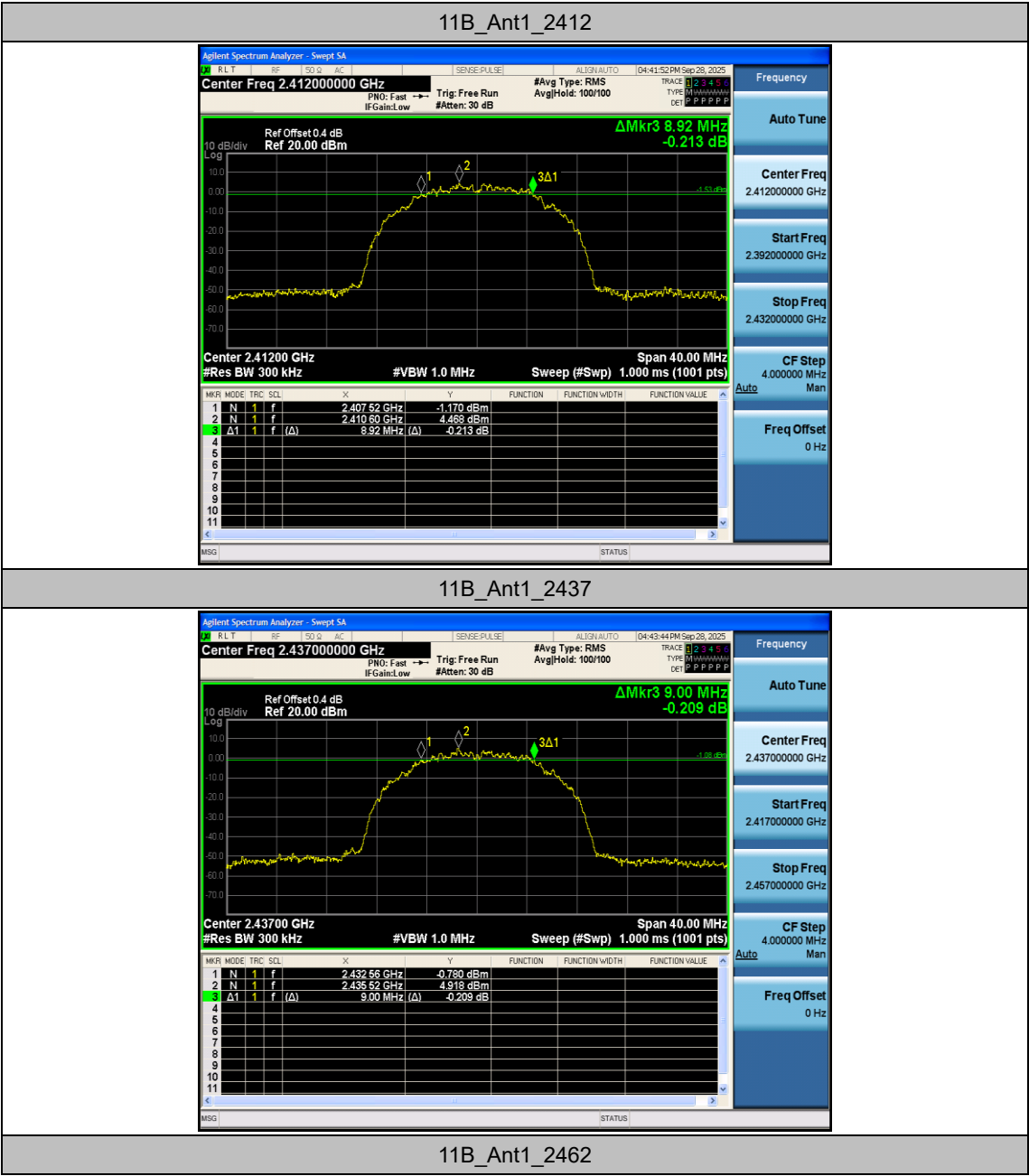
Reviewed By : Eric Wang

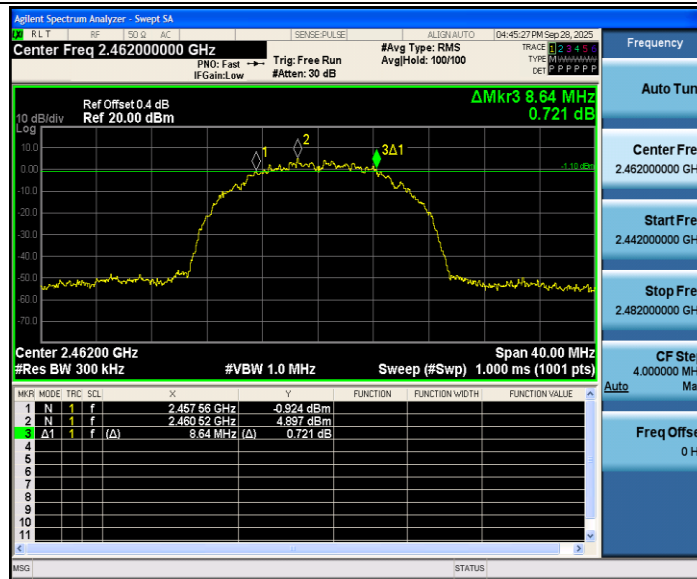
Appendix A: DTS Bandwidth

Test Result

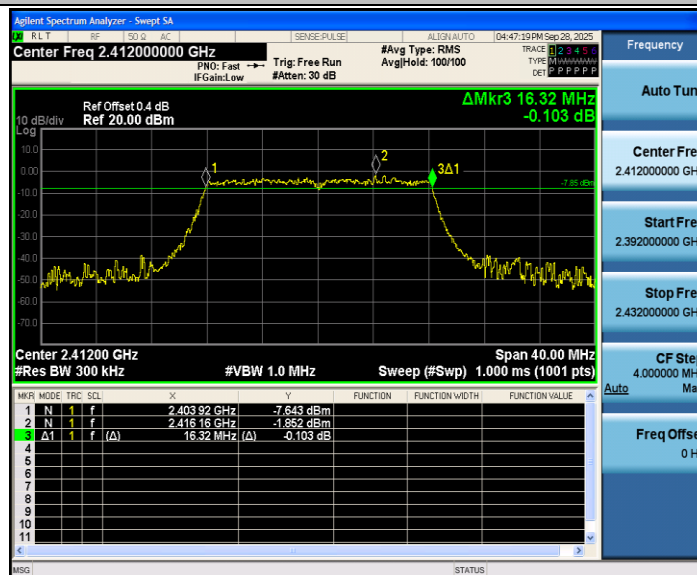
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.920	2407.520	2416.440	0.5	PASS
		2437	9.000	2432.560	2441.560	0.5	PASS
		2462	8.640	2457.560	2466.200	0.5	PASS
11G	Ant1	2412	16.320	2403.920	2420.240	0.5	PASS
		2437	16.320	2428.920	2445.240	0.5	PASS
		2462	16.400	2453.840	2470.240	0.5	PASS
11N20SISO	Ant1	2412	17.120	2403.480	2420.600	0.5	PASS
		2437	17.320	2428.360	2445.680	0.5	PASS
		2462	17.280	2453.400	2470.680	0.5	PASS

Test Graphs

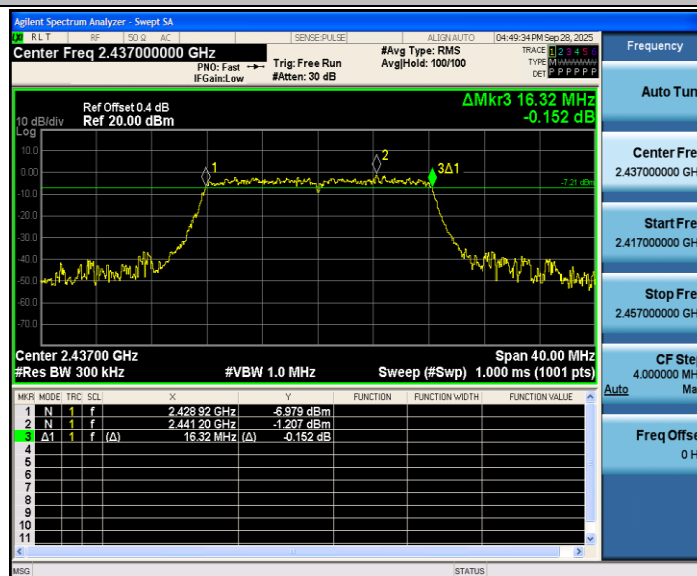




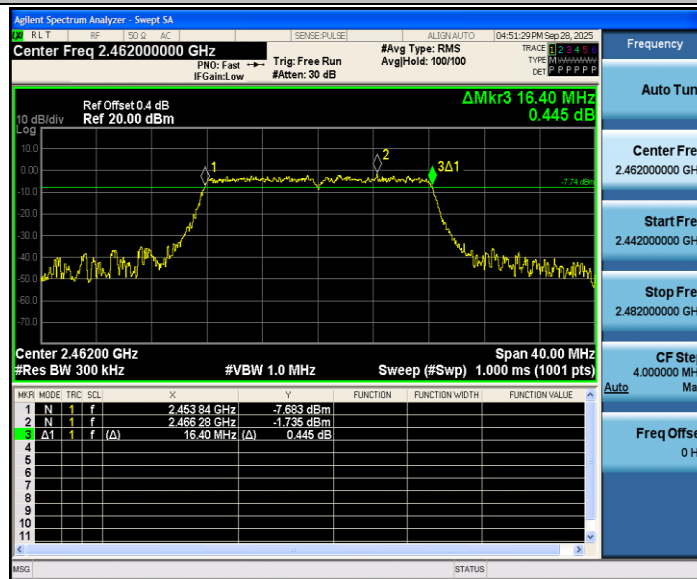
11G_Ant1_2412



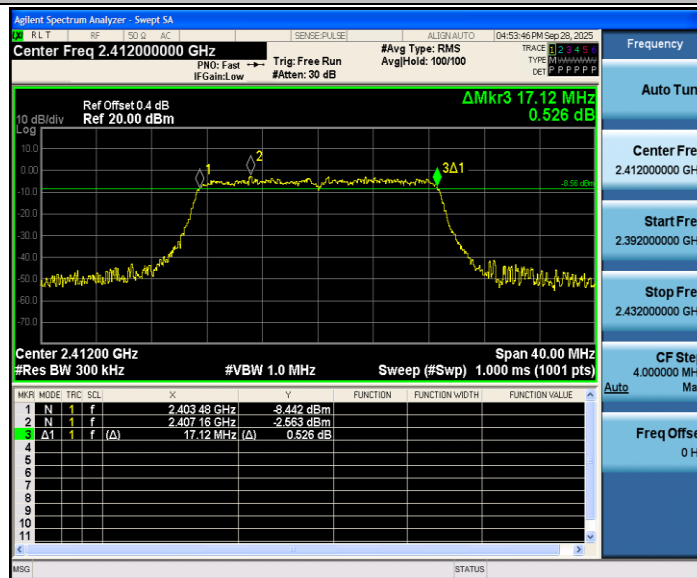
11G_Ant1_2437



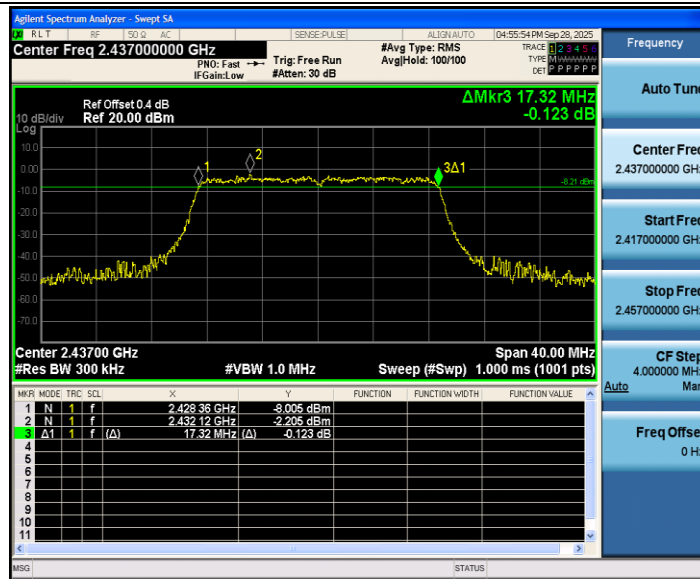
11G_Ant1_2462



11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



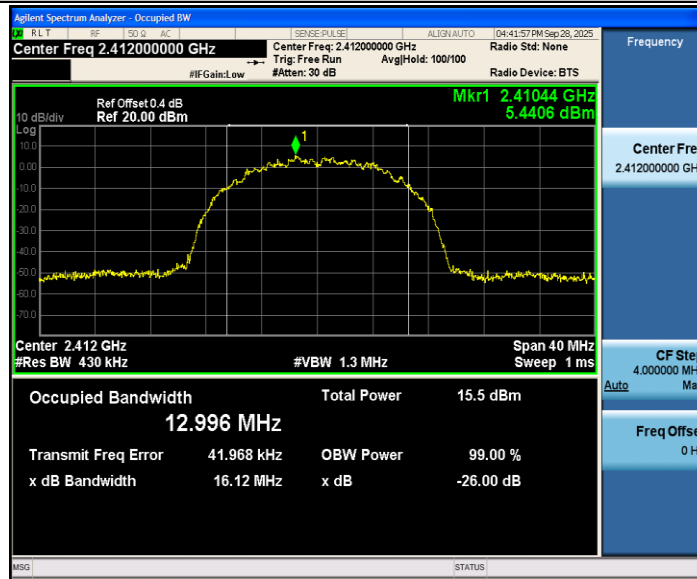
Appendix B: Occupied Channel Bandwidth

Test Result

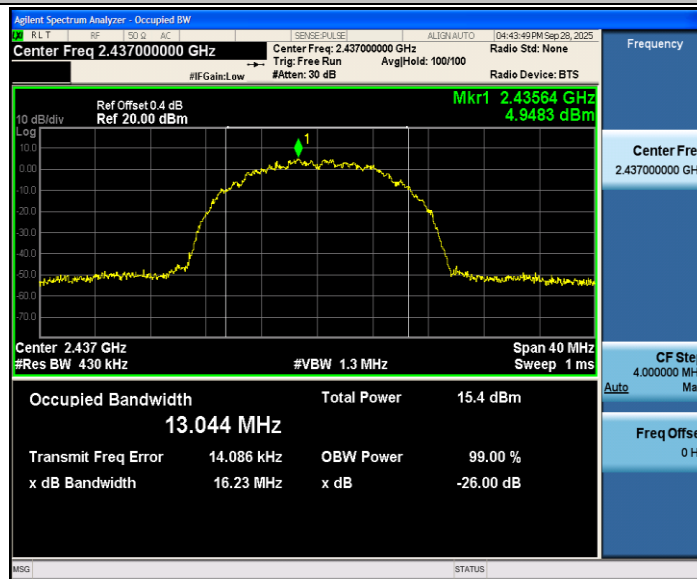
TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	12.996	2405.5440	2418.5400	---	---
		2437	13.044	2430.4921	2443.5361	---	---
		2462	12.957	2455.5312	2468.4882	---	---
11G	Ant1	2412	16.572	2403.7589	2420.3309	---	---
		2437	16.574	2428.7408	2445.3148	---	---
		2462	16.618	2453.7239	2470.3419	---	---
11N20SISO	Ant1	2412	17.433	2403.3342	2420.7672	---	---
		2437	17.424	2428.3362	2445.7602	---	---
		2462	17.458	2453.3026	2470.7606	---	---

Test Graphs

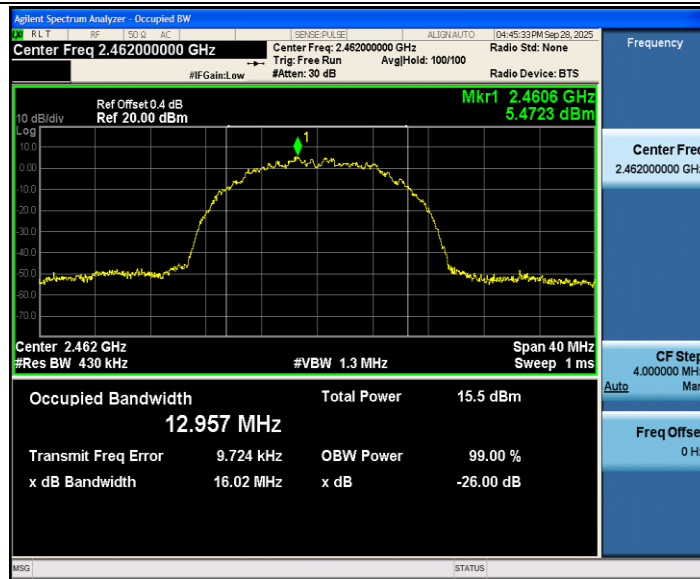
11B_Ant1_2412



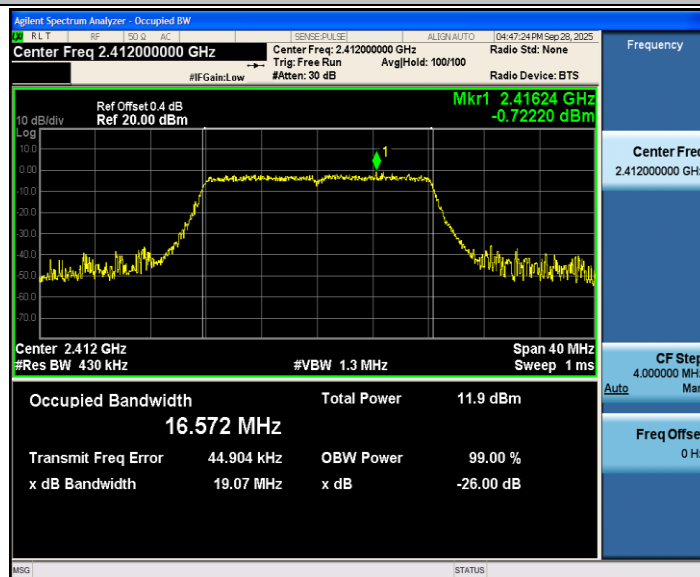
11B_Ant1_2437



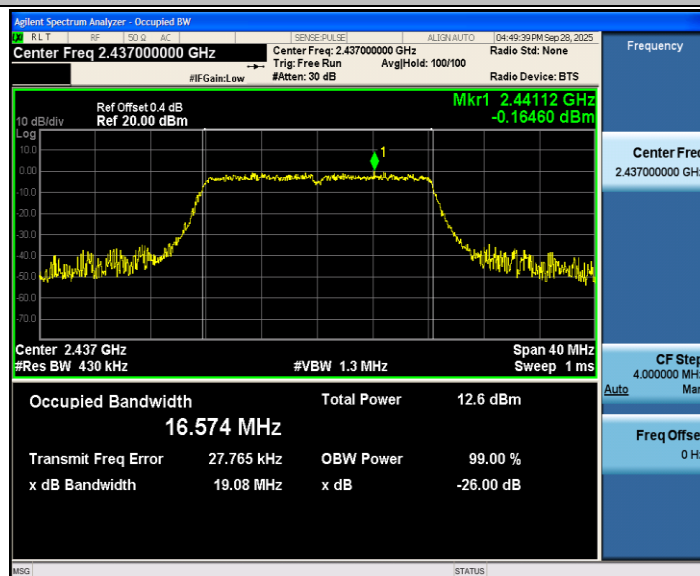
11B_Ant1_2462



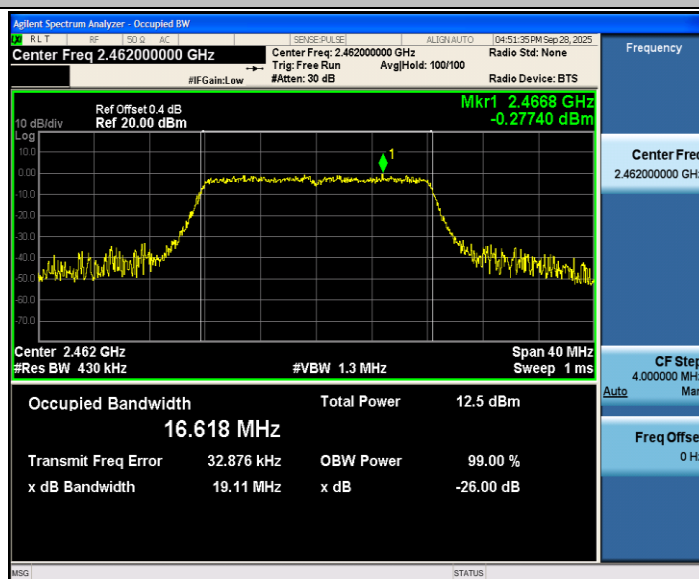
11G_Ant1_2412



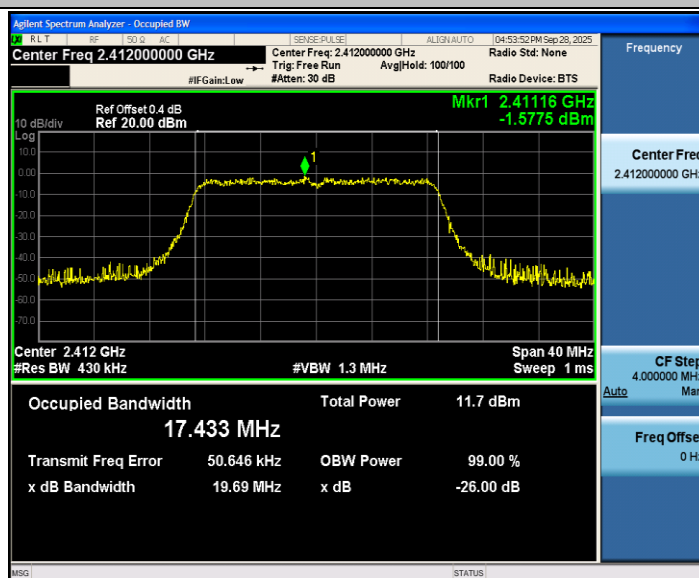
11G_Ant1_2437



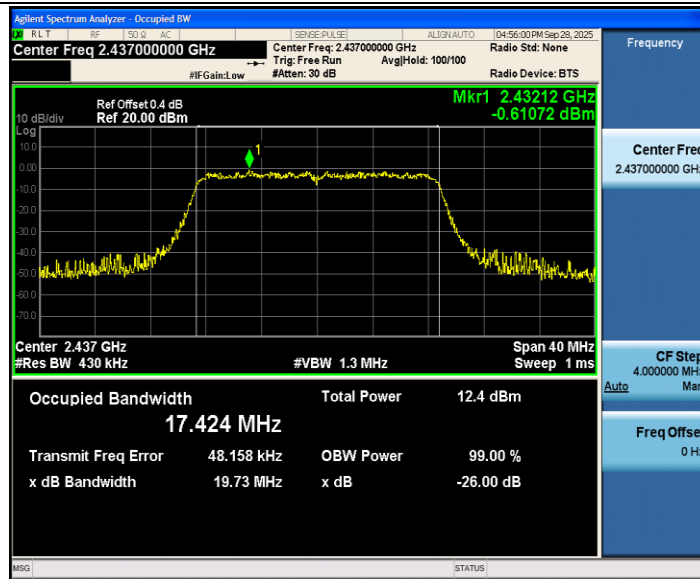
11G_Ant1_2462



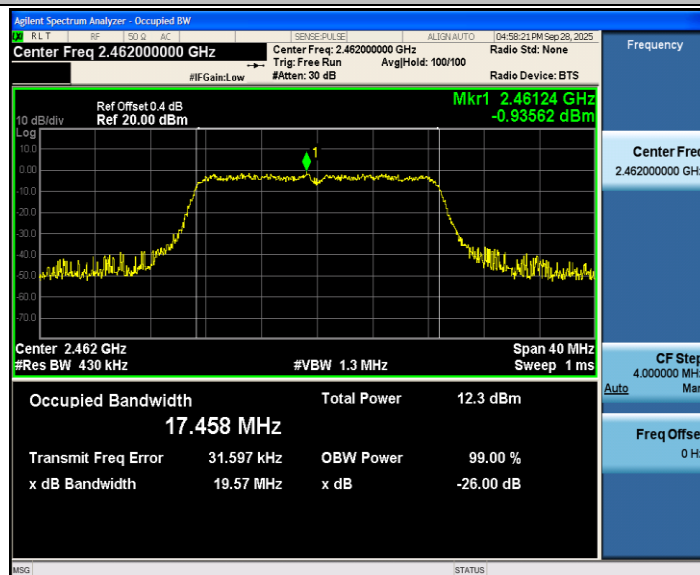
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



Appendix C: Maximum conducted output power

Test Result Peak

Test Mode	Antenna	Frequency[MHz]	Peak power [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	14.92	≤30.00	PASS
		2437	14.88	≤30.00	PASS
		2462	14.91	≤30.00	PASS
11G	Ant1	2412	12.75	≤30.00	PASS
		2437	13.22	≤30.00	PASS
		2462	13.36	≤30.00	PASS
11N20SISO	Ant1	2412	12.90	≤30.00	PASS
		2437	13.46	≤30.00	PASS
		2462	13.59	≤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	-14.54	≤8.00	PASS
		2437	-14.18	≤8.00	PASS
		2462	-13.91	≤8.00	PASS
11G	Ant1	2412	-21.73	≤8.00	PASS
		2437	-21.09	≤8.00	PASS
		2462	-21.09	≤8.00	PASS
11N20SISO	Ant1	2412	-21.54	≤8.00	PASS
		2437	-20.88	≤8.00	PASS
		2462	-20.86	≤8.00	PASS

Test Graphs

11B_Ant1_2412



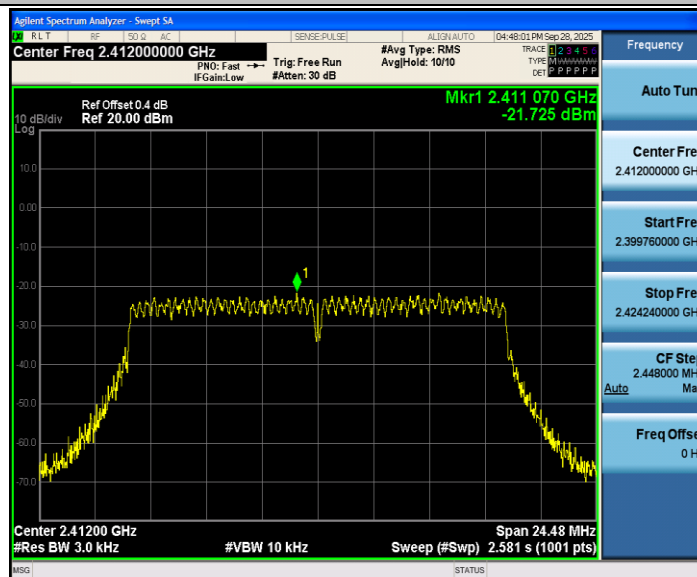
11B_Ant1_2437



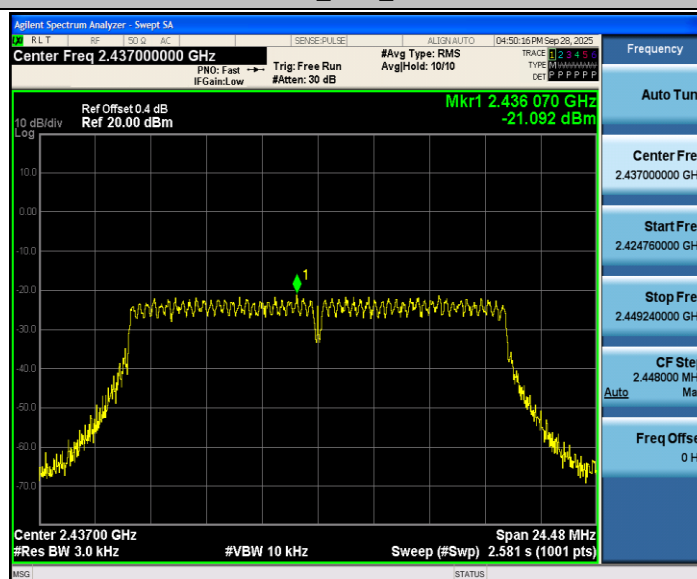
11B_Ant1_2462



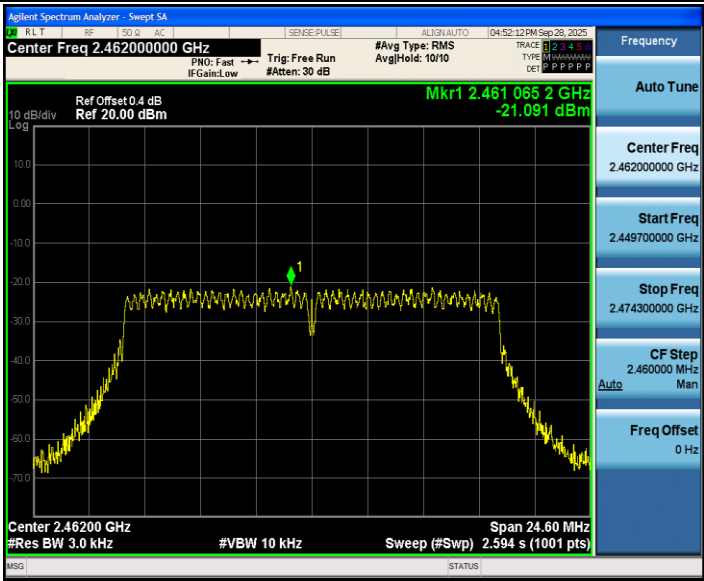
11G_Ant1_2412



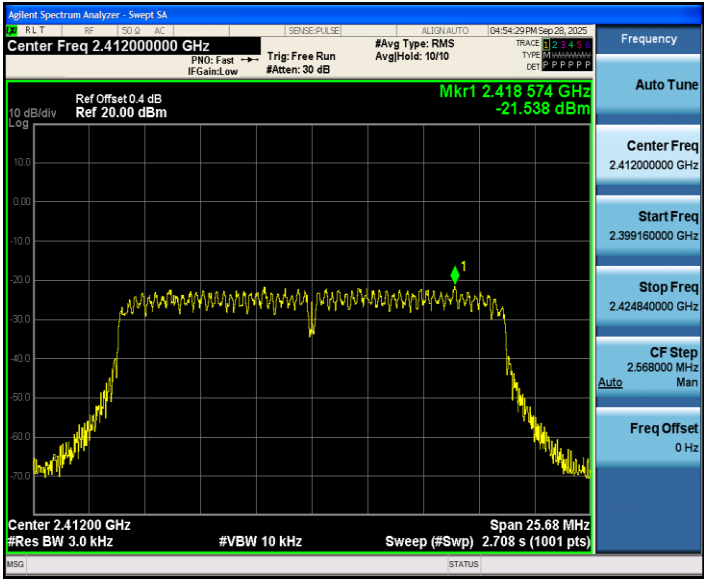
11G_Ant1_2437



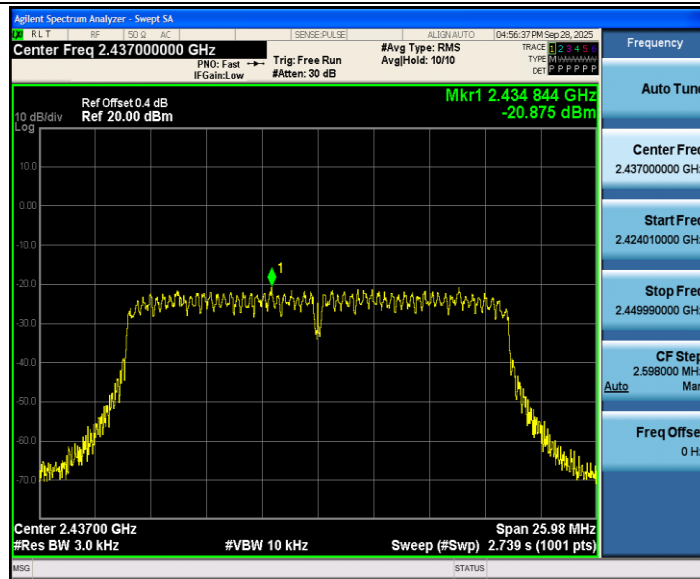
11G_Ant1_2462



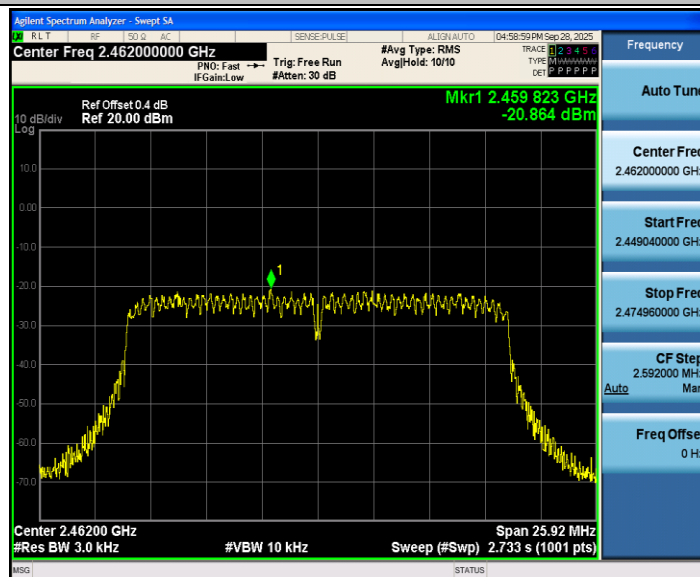
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



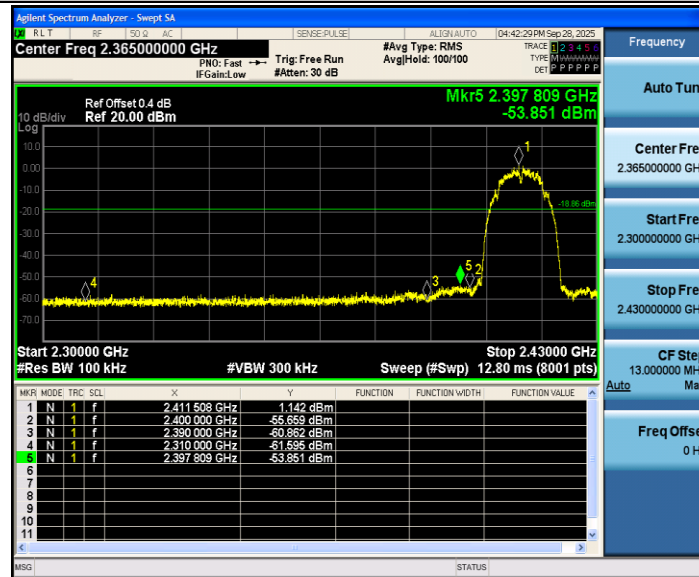
Appendix E: Band edge measurements

Test Result

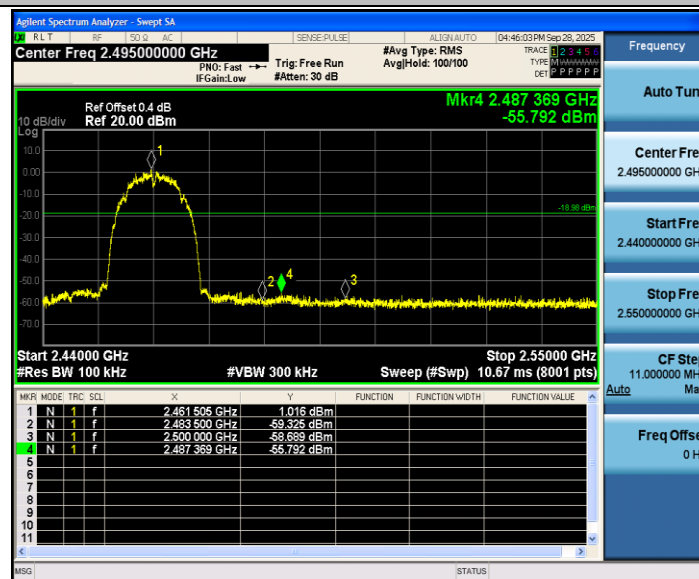
TestMode	Antenna	Channel Name	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	1.14	-53.85	≤-18.86	PASS
		High	2462	1.02	-55.79	≤-18.98	PASS
11G	Ant1	Low	2412	-7.97	-47.15	≤-27.97	PASS
		High	2462	-7.14	-54.06	≤-27.14	PASS
11N20SISO	Ant1	Low	2412	-7.99	-49.78	≤-27.99	PASS
		High	2462	-6.72	-53.9	≤-26.72	PASS

Test Graphs

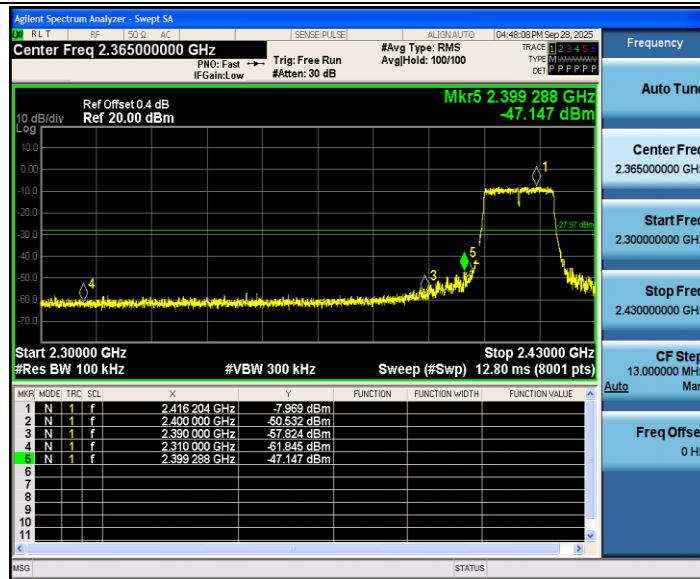
11B_Ant1_Low_2412



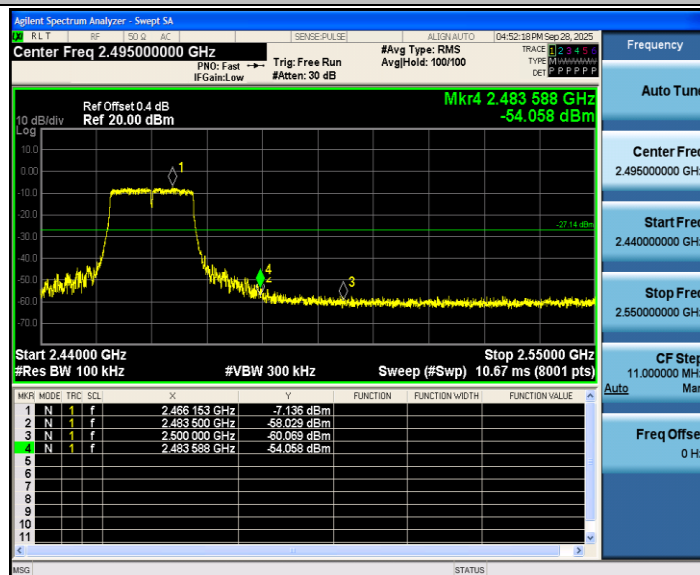
11B_Ant1_High_2462



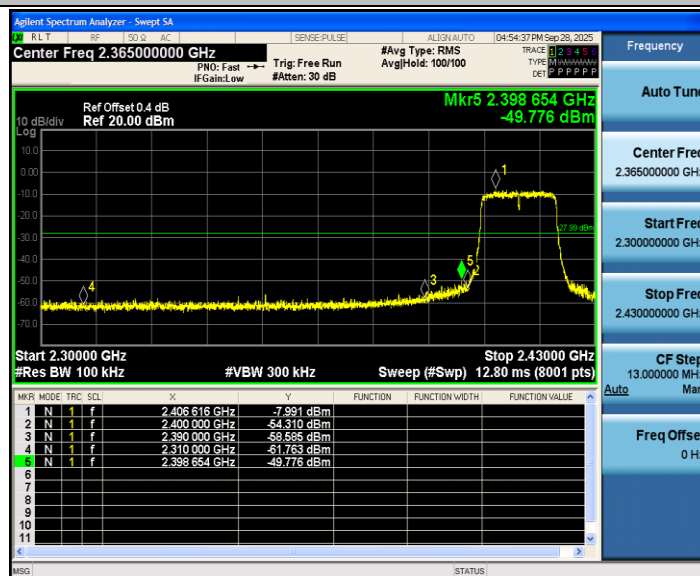
11G_Ant1_Low_2412



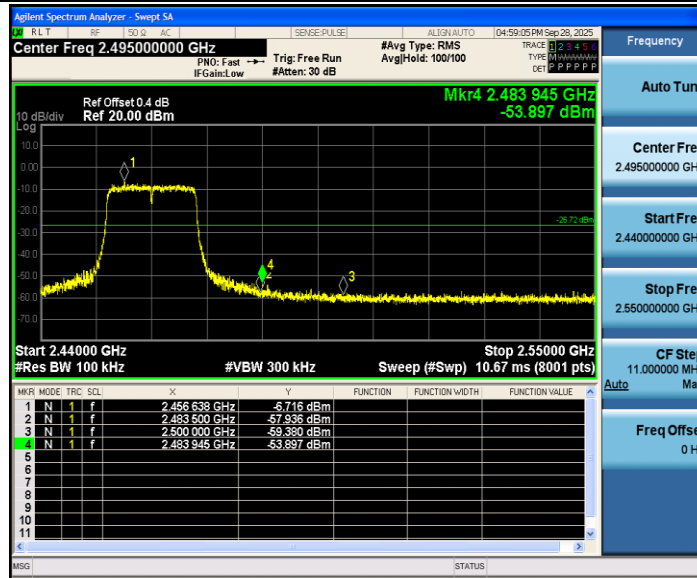
11G_Ant1_High_2462



11N20SISO_Ant1_Low_2412



11N20SISO_Ant1_High_2462



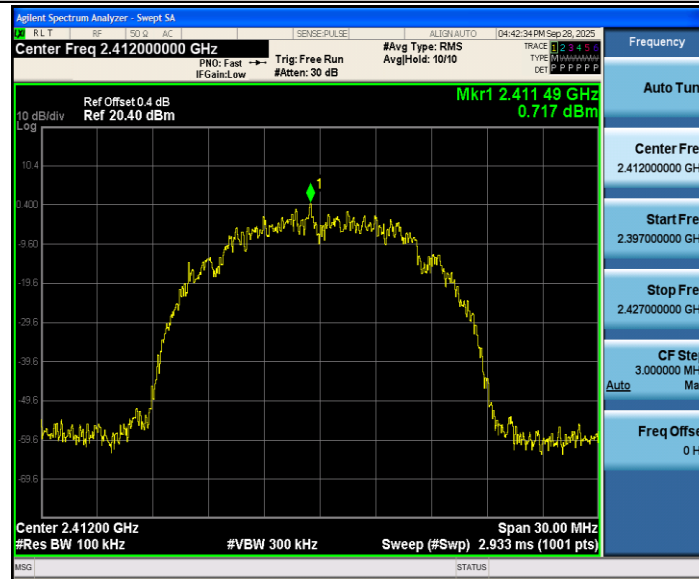
Appendix F: Conducted Spurious Emission

Test Result

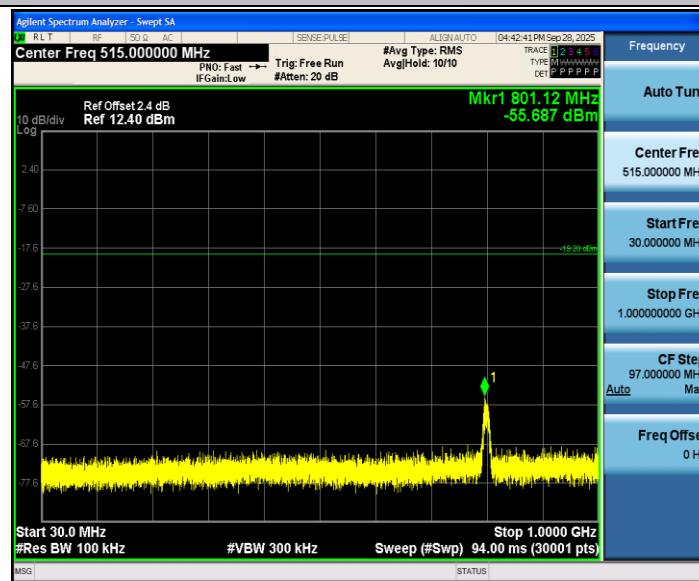
TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	0.72	0.72	---	PASS
			30~1000	0.72	-55.69	≤-19.28	PASS
			1000~26500	0.72	-43.62	≤-19.28	PASS
		2437	Reference	0.63	0.63	---	PASS
			30~1000	0.63	-55.13	≤-19.37	PASS
			1000~26500	0.63	-44.32	≤-19.37	PASS
		2462	Reference	-0.76	-0.76	---	PASS
			30~1000	-0.76	-55.43	≤-20.76	PASS
			1000~26500	-0.76	-44.98	≤-20.76	PASS
11G	Ant1	2412	Reference	-7.42	-7.42	---	PASS
			30~1000	-7.42	-60.3	≤-27.42	PASS
			1000~26500	-7.42	-43.52	≤-27.42	PASS
		2437	Reference	-7.58	-7.58	---	PASS
			30~1000	-7.58	-60.13	≤-27.58	PASS
			1000~26500	-7.58	-44.09	≤-27.58	PASS
		2462	Reference	-7.02	-7.02	---	PASS
			30~1000	-7.02	-60.14	≤-27.02	PASS
			1000~26500	-7.02	-44.78	≤-27.02	PASS
11N20SISO	Ant1	2412	Reference	-8.69	-8.69	---	PASS
			30~1000	-8.69	-59.5	≤-28.69	PASS
			1000~26500	-8.69	-43.56	≤-28.69	PASS
		2437	Reference	-7.50	-7.50	---	PASS
			30~1000	-7.50	-60.28	≤-27.5	PASS
			1000~26500	-7.50	-43.95	≤-27.5	PASS
		2462	Reference	-7.66	-7.66	---	PASS
			30~1000	-7.66	-60.41	≤-27.66	PASS
			1000~26500	-7.66	-44.71	≤-27.66	PASS

Test Graphs

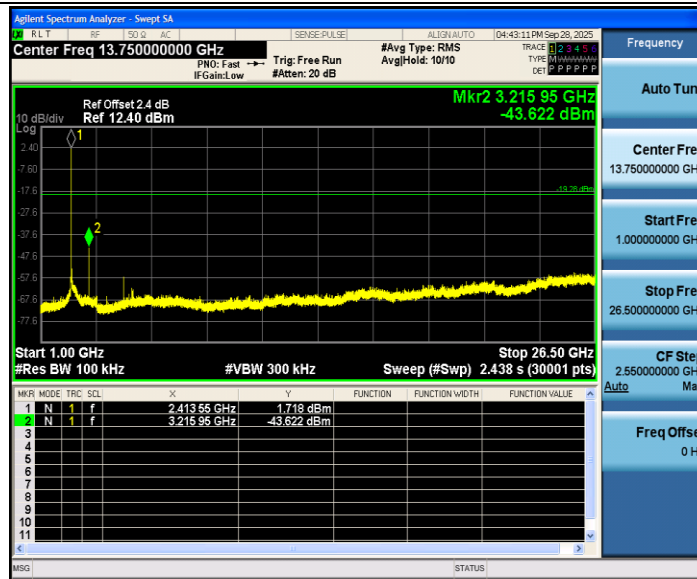
11B_Ant1_2412_0~Reference



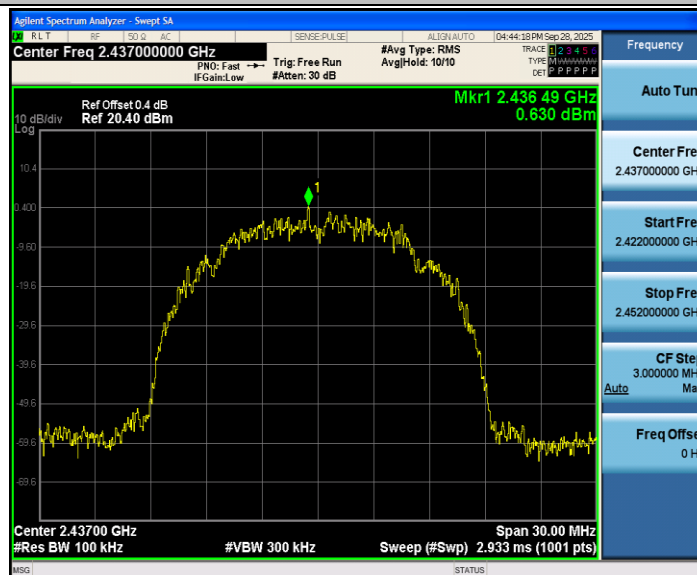
11B_Ant1_2412_30~1000



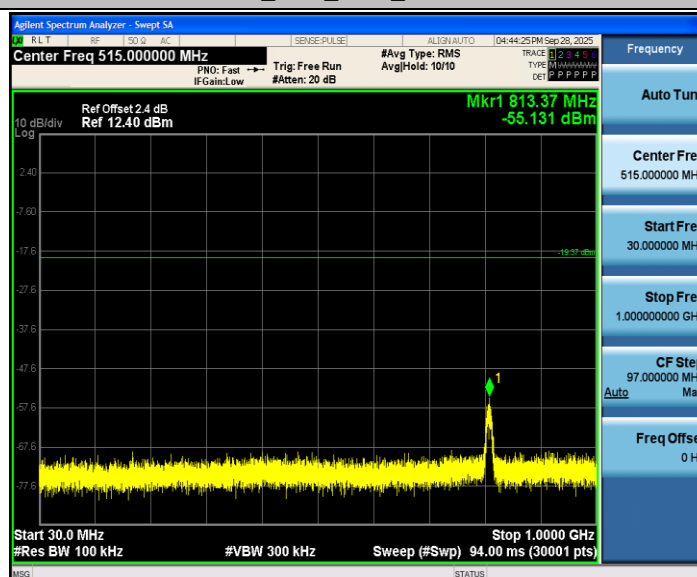
11B_Ant1_2412_1000~26500



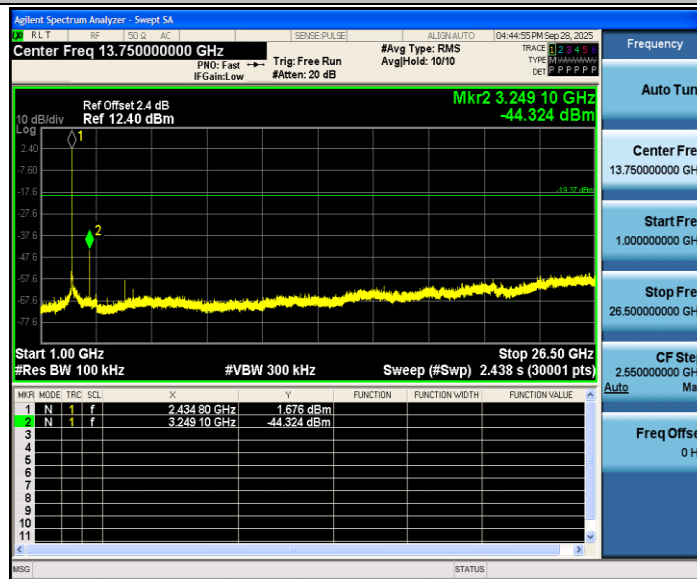
11B_Ant1_2437_0~Reference



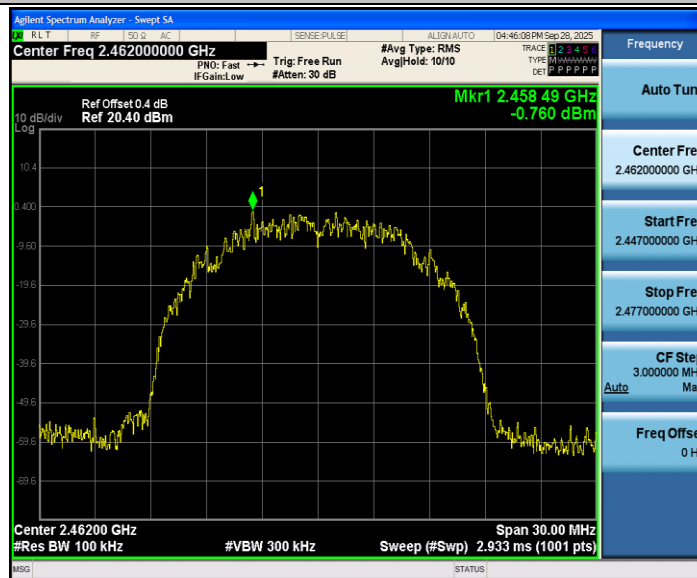
11B_Ant1_2437_30~1000



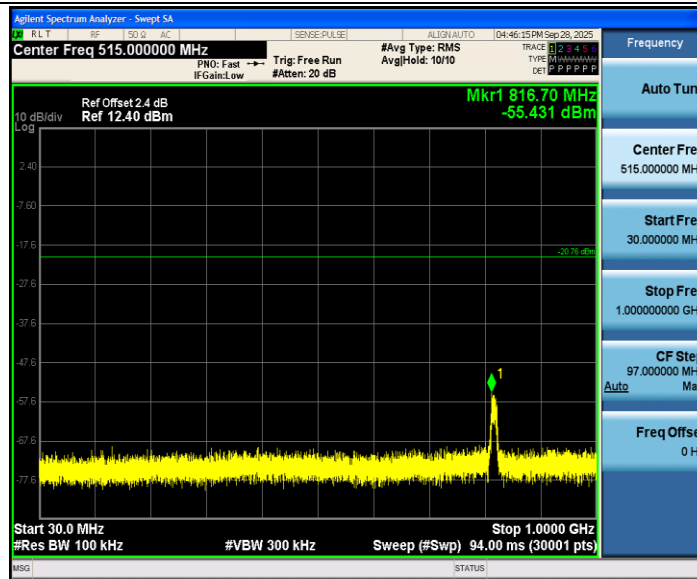
11B_Ant1_2437_1000~26500



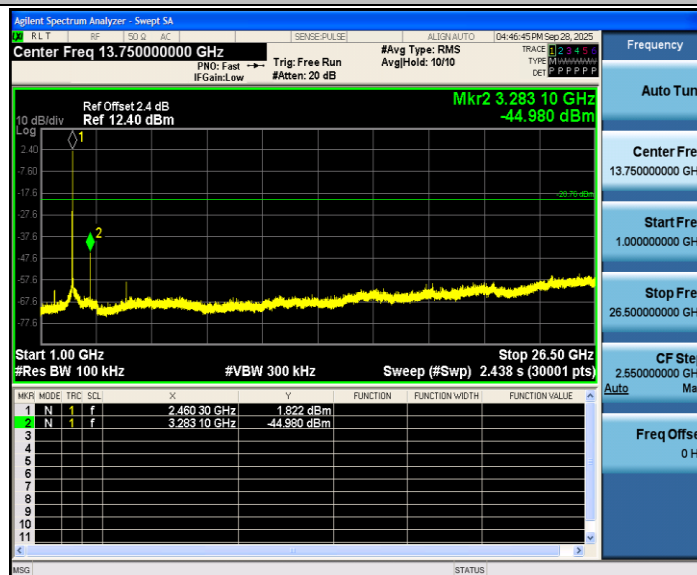
11B_Ant1_2462_0~Reference



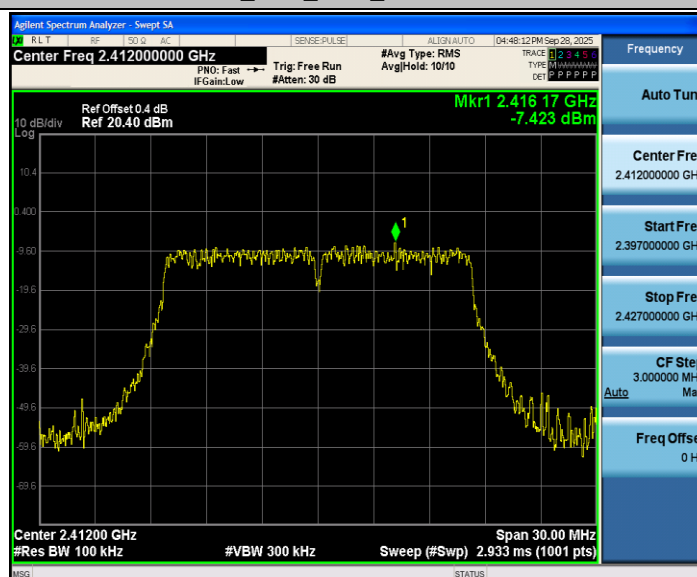
11B_Ant1_2462_30~1000



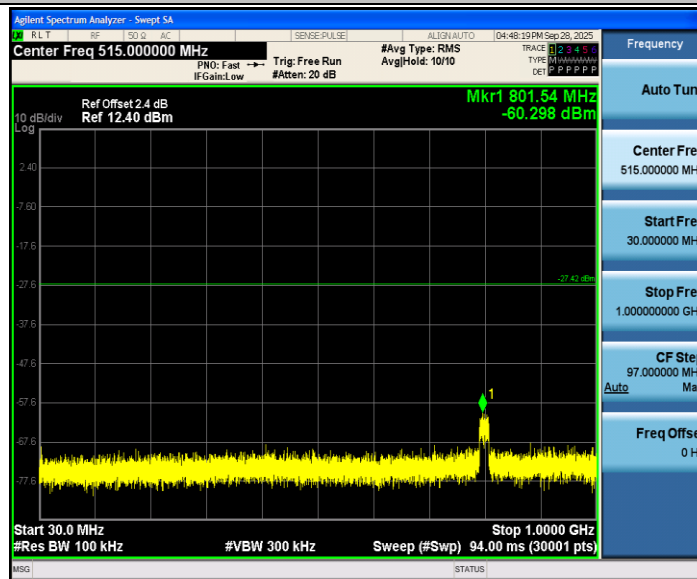
11B_Ant1_2462_1000~26500



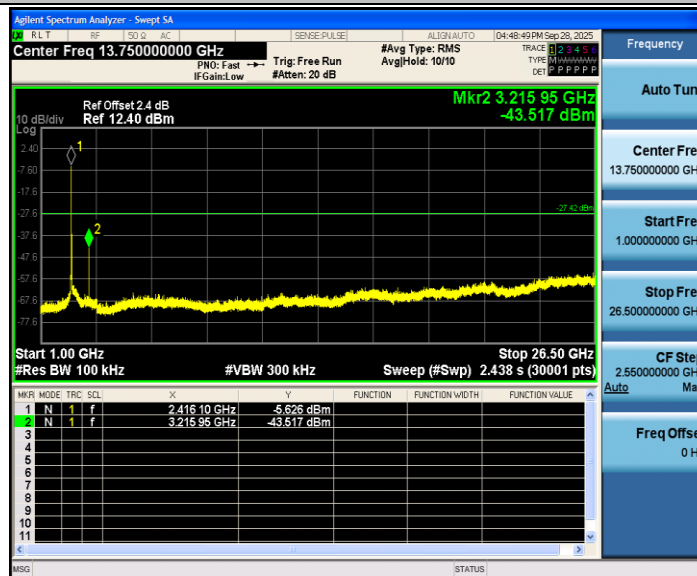
11G_Ant1_2412_0~Reference



11G_Ant1_2412_30~1000



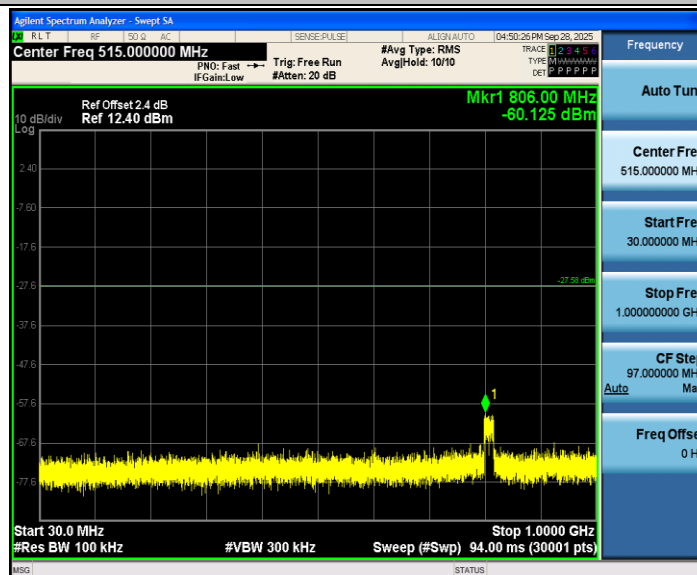
11G_Ant1_2412_1000~26500



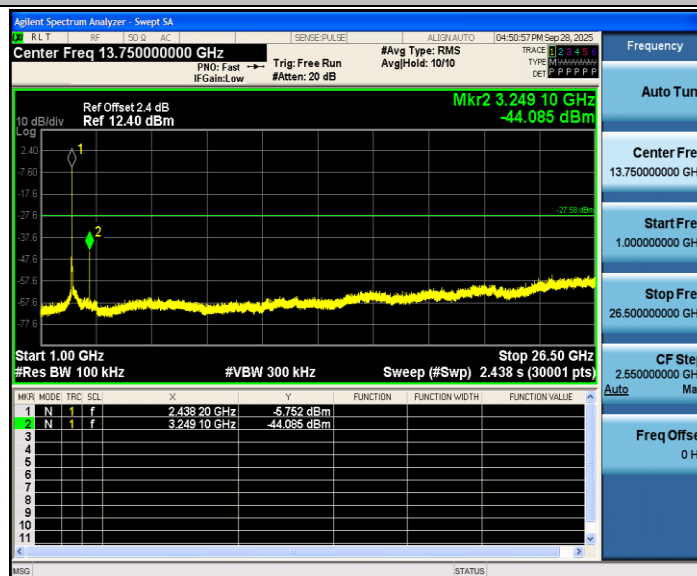
11G_Ant1_2437_0~Reference



11G_Ant1_2437_30~1000



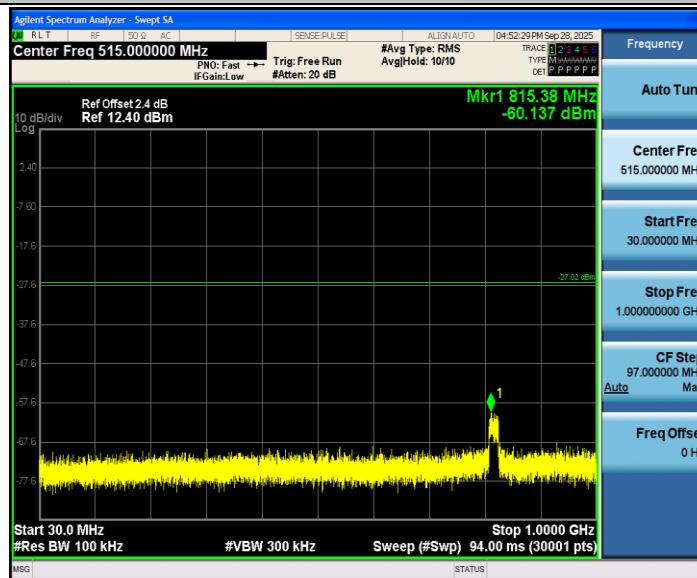
11G_Ant1_2437_1000~26500



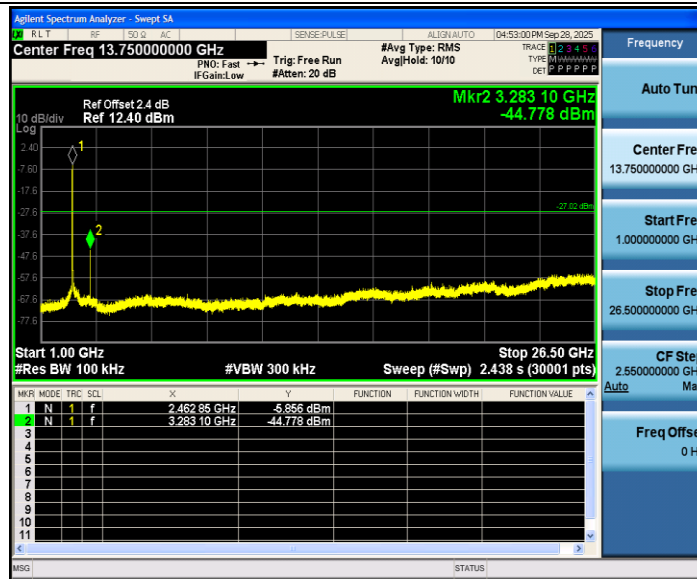
11G_Ant1_2462_0~Reference



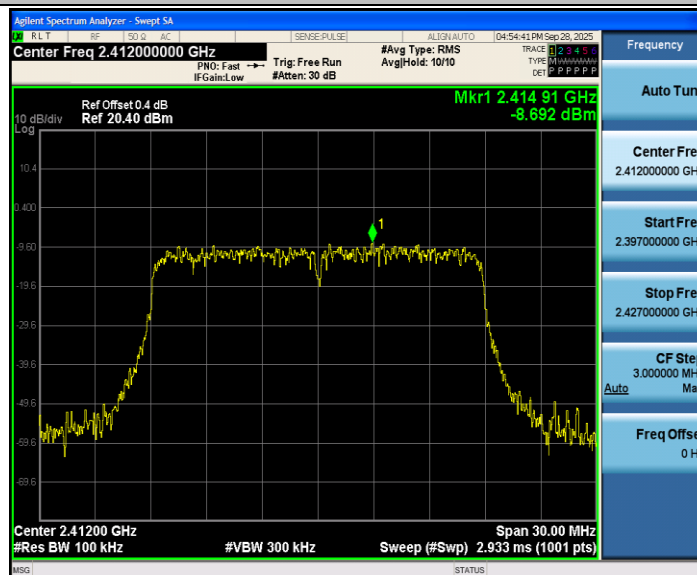
11G_Ant1_2462_30~1000



11G_Ant1_2462_1000~26500



11N20SISO_Ant1_2412_0~Reference



11N20SISO_Ant1_2412_30~1000

