

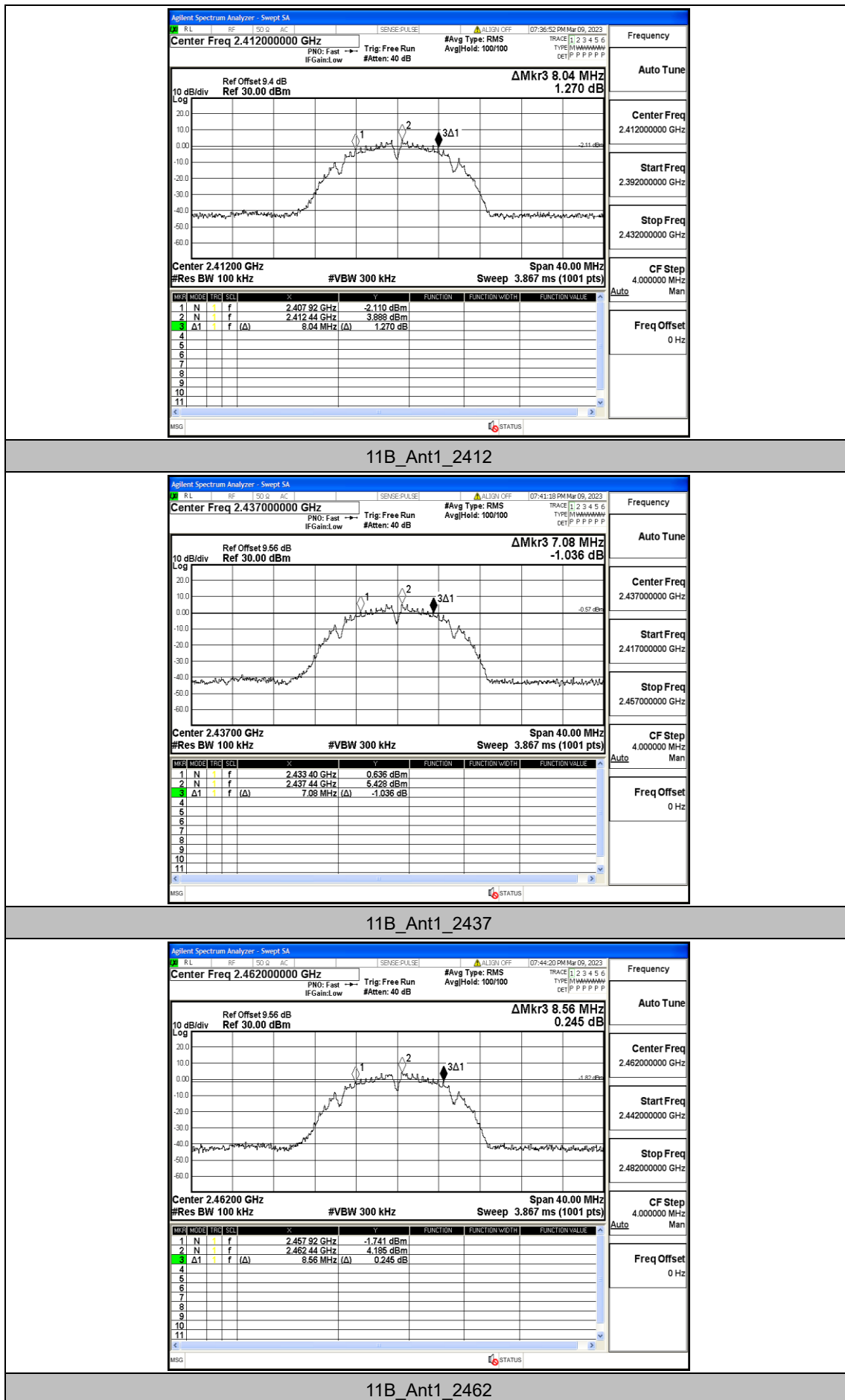
Appendix Test Data for WLAN(2.4G) (Conducted Measurement)**Product Name: projector****Trade Mark: umiio****Test Model: A007****FCC ID: 2BAHIA007****Environmental Conditions**

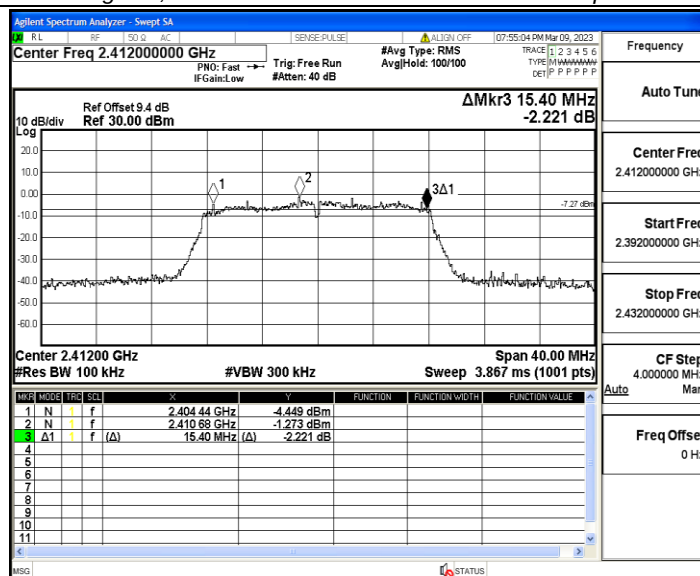
Temperature:	25.5°C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

Appendix A: DTS Bandwidth**Test Result**

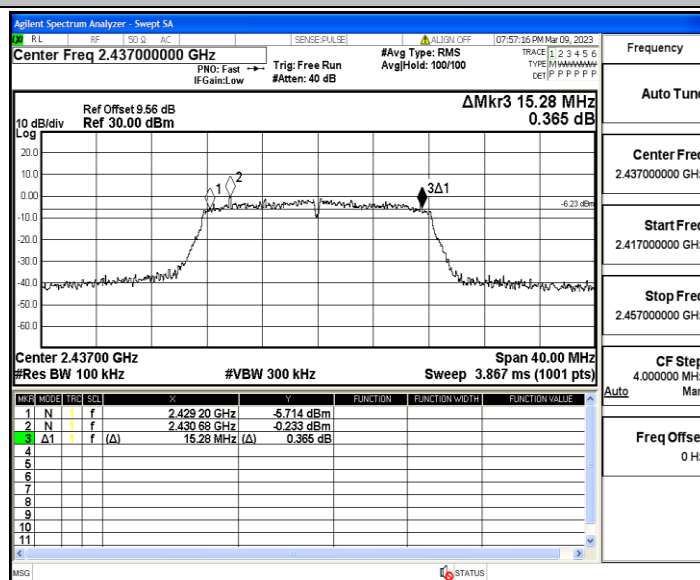
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.040	2407.920	2415.960	0.5	PASS
		2437	7.080	2433.400	2440.480	0.5	PASS
		2462	8.560	2457.920	2466.480	0.5	PASS
11G	Ant1	2412	15.400	2404.440	2419.840	0.5	PASS
		2437	15.280	2429.200	2444.480	0.5	PASS
		2462	16.000	2454.080	2470.080	0.5	PASS
11N20SISO	Ant1	2412	15.000	2404.480	2419.480	0.5	PASS
		2437	14.480	2429.960	2444.440	0.5	PASS
		2462	15.080	2454.400	2469.480	0.5	PASS
11N40SISO	Ant1	2422	30.080	2408.160	2438.240	0.5	PASS
		2437	35.120	2419.400	2454.520	0.5	PASS
		2452	35.120	2434.400	2469.520	0.5	PASS

Test Graphs

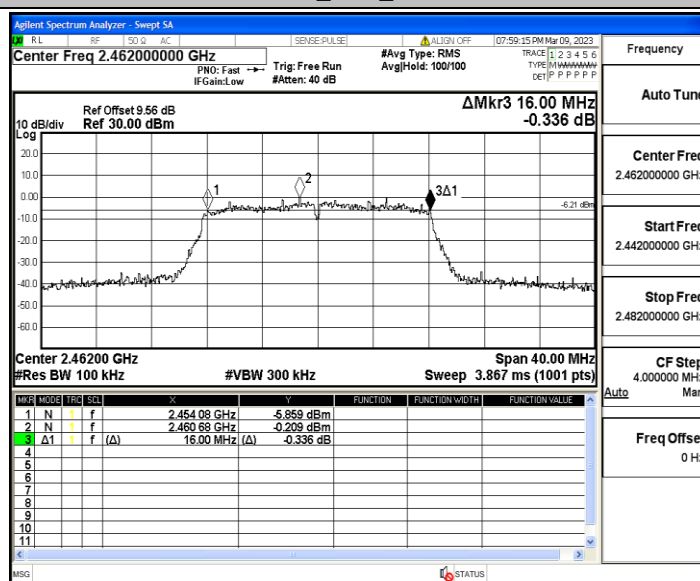




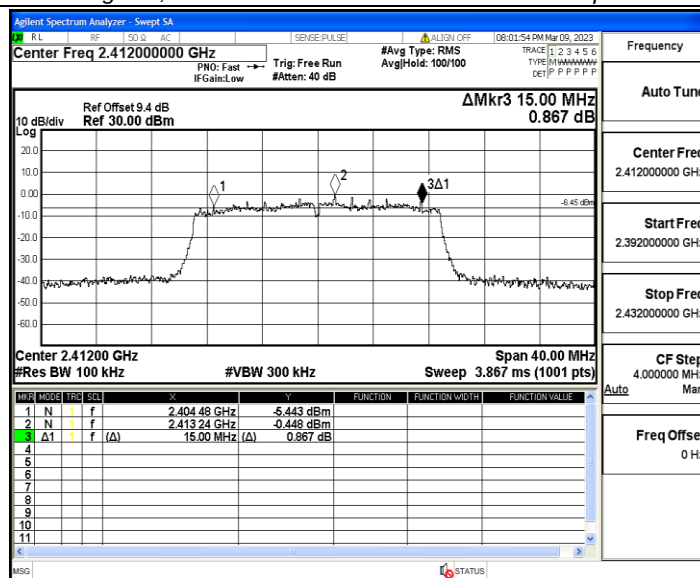
11G_Ant1_2412



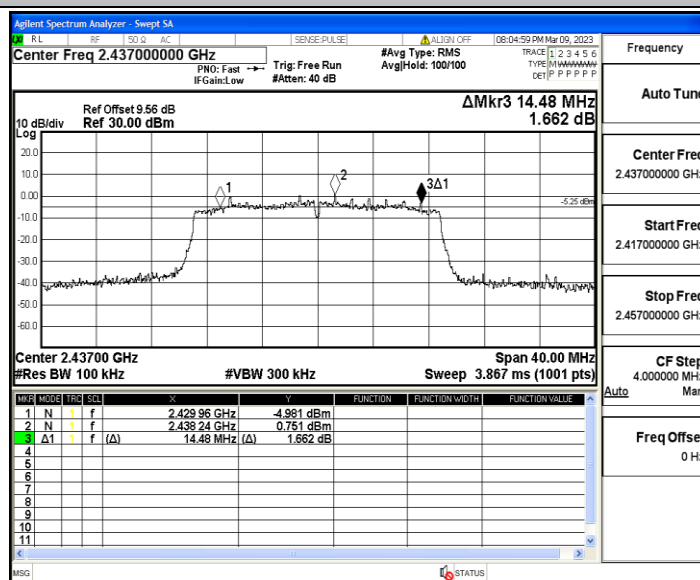
11G_Ant1_2437



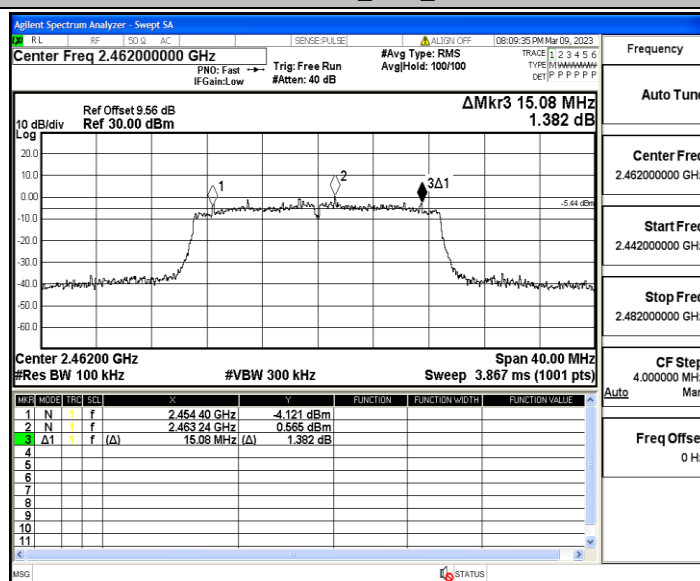
11G_Ant1_2462



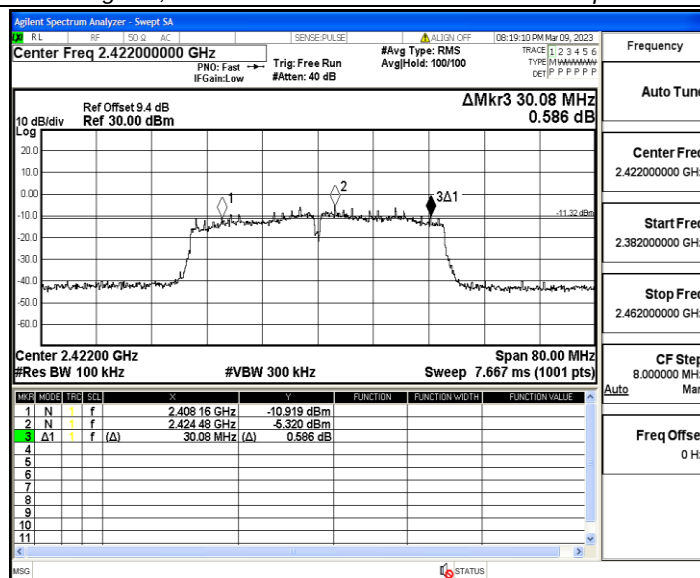
11N20SISO_Ant1_2412



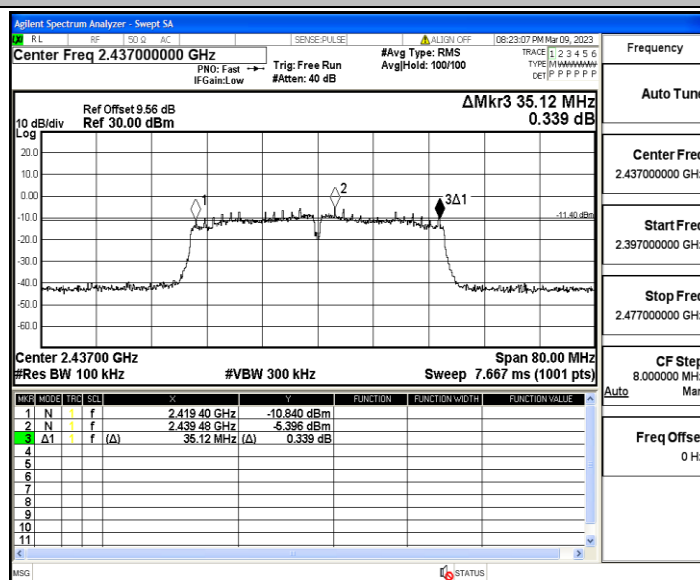
11N20SISO_Ant1_2437



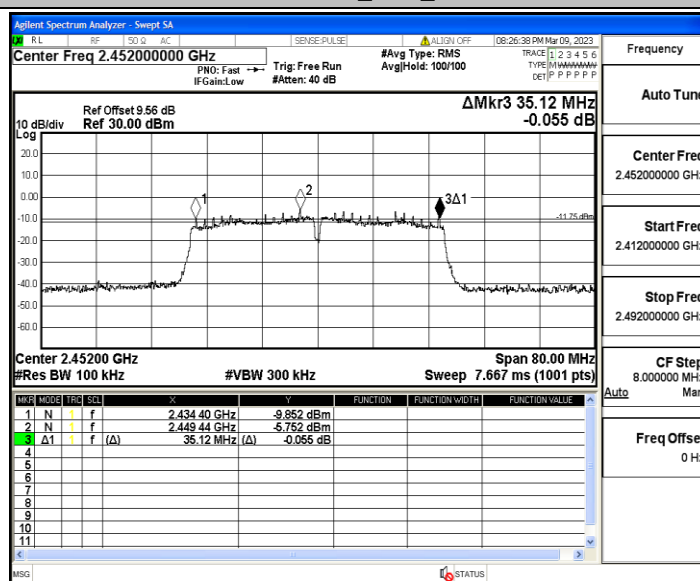
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



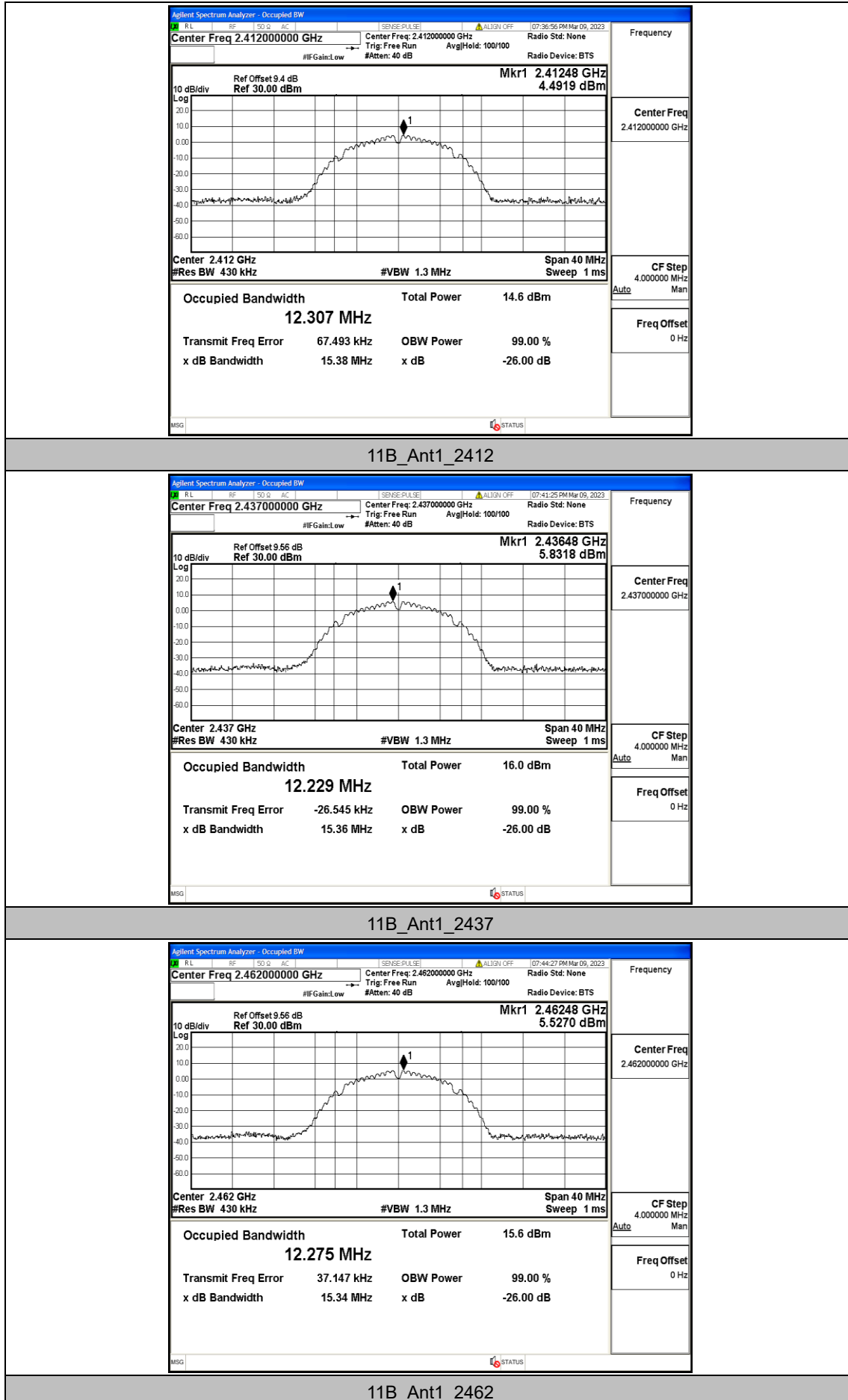
11N40SISO_Ant1_2452

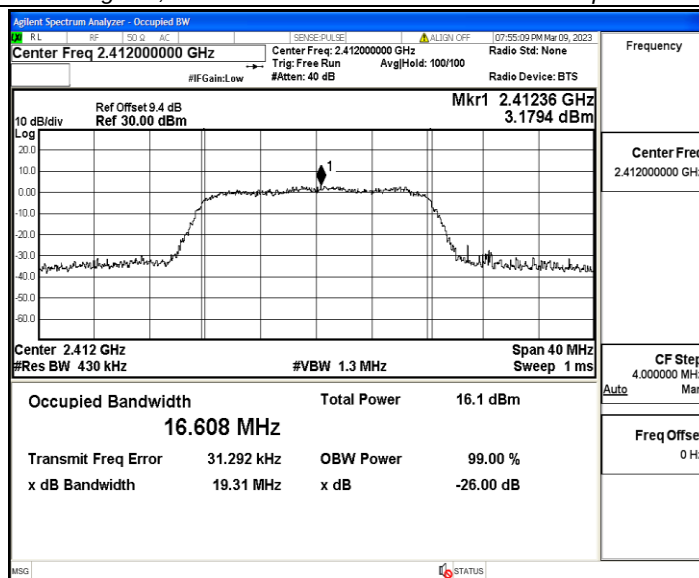
Appendix B: Occupied Channel Bandwidth

Test Result

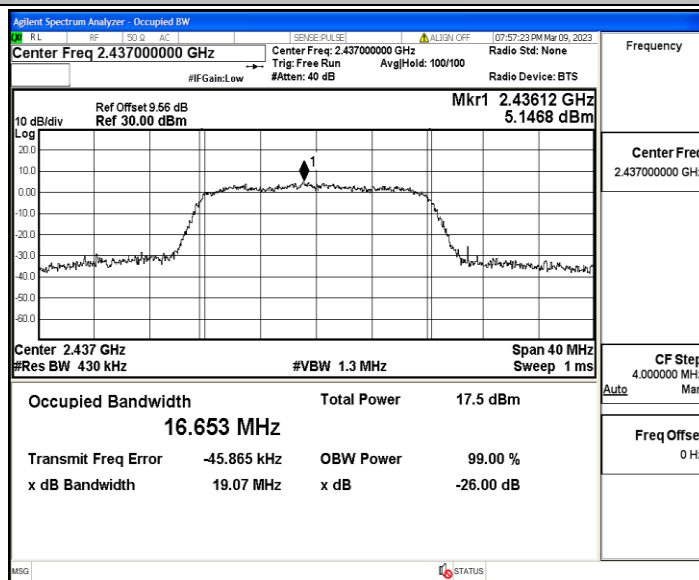
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	12.307	2405.9140	2418.2210	---	---
		2437	12.229	2430.8590	2443.0880	---	---
		2462	12.275	2455.8997	2468.1747	---	---
11G	Ant1	2412	16.608	2403.7273	2420.3353	---	---
		2437	16.653	2428.6276	2445.2806	---	---
		2462	16.656	2453.6998	2470.3558	---	---
11N20SISO	Ant1	2412	17.665	2403.1747	2420.8397	---	---
		2437	17.604	2428.1513	2445.7553	---	---
		2462	17.644	2453.1635	2470.8075	---	---
11N40SISO	Ant1	2422	35.983	2404.1496	2440.1326	---	---
		2437	35.989	2419.0490	2455.0380	---	---
		2452	36.163	2433.9597	2470.1227	---	---

Test Graphs

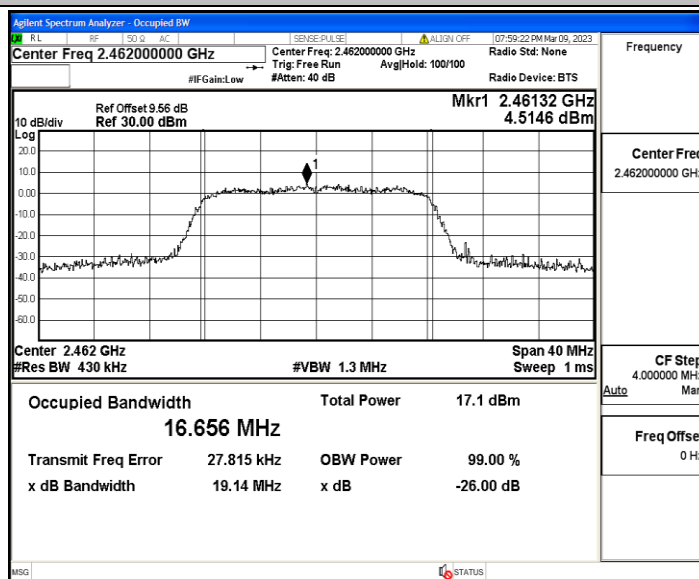




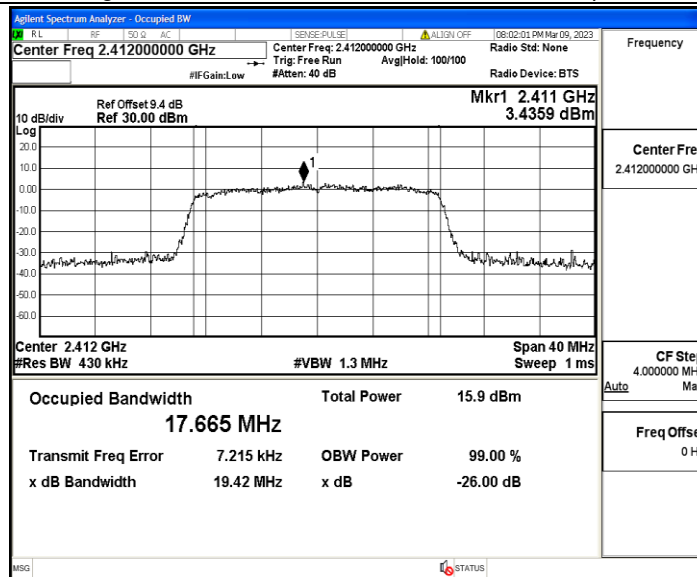
11G_Ant1_2412



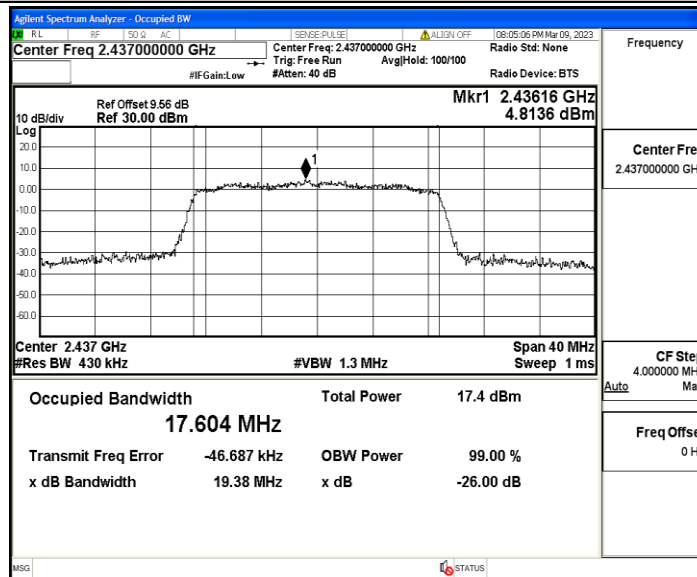
11G_Ant1_2437



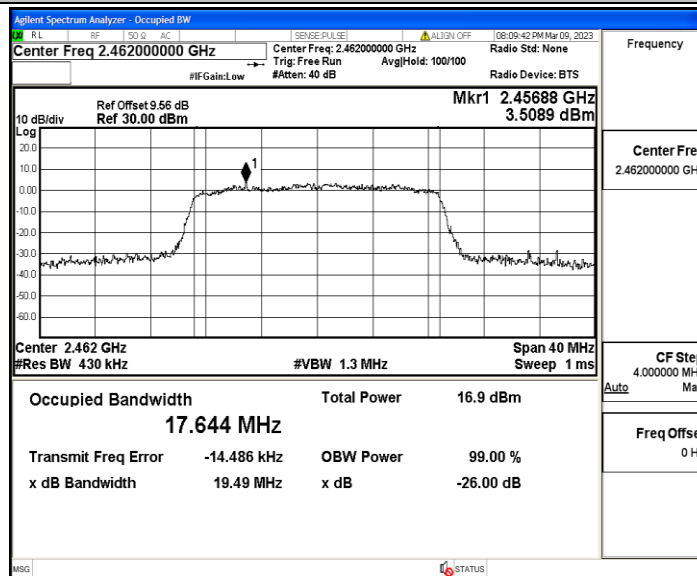
11G_Ant1_2462



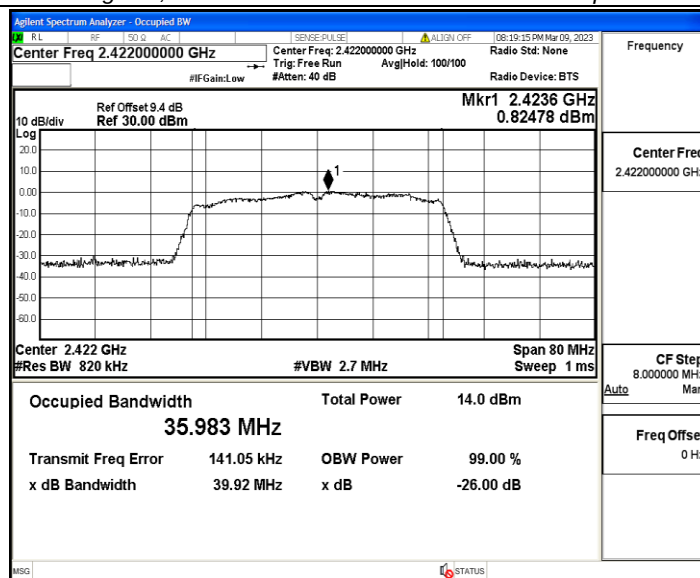
11N20SISO_Ant1_2412



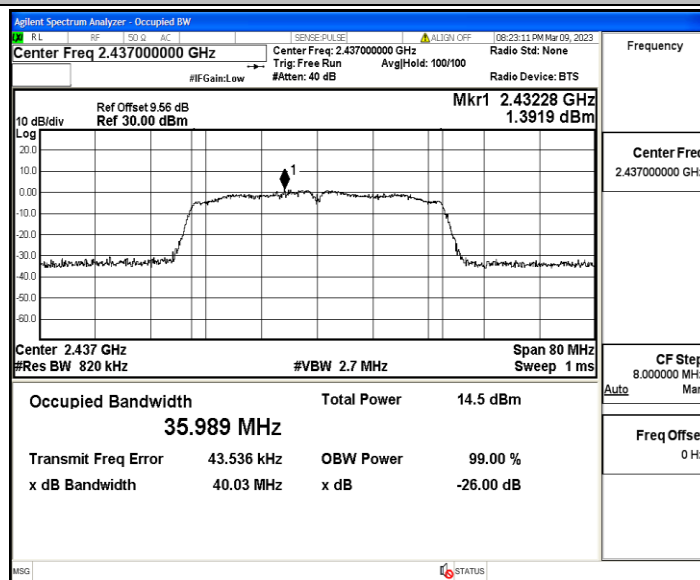
11N20SISO_Ant1_2437



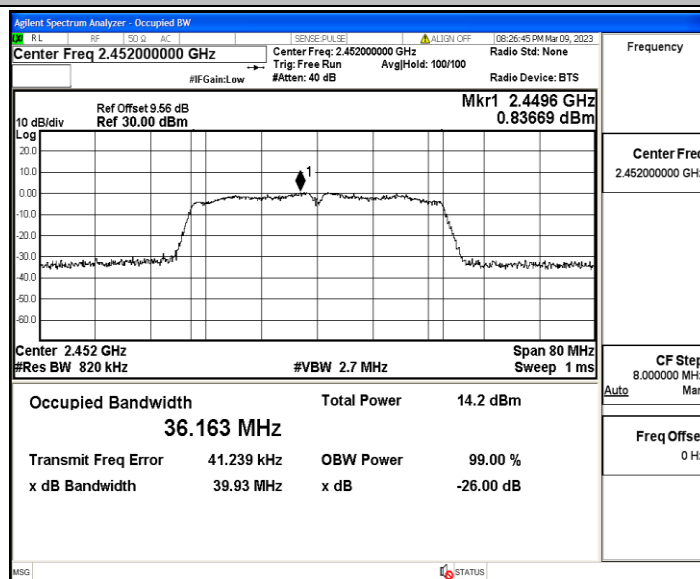
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452

Appendix C: Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	11.46	≤30.00	PASS
		2437	13.14	≤30.00	PASS
		2462	12.62	≤30.00	PASS
11G	Ant1	2412	9.99	≤30.00	PASS
		2437	11.38	≤30.00	PASS
		2462	10.97	≤30.00	PASS
11N20SISO	Ant1	2412	9.89	≤30.00	PASS
		2437	11.32	≤30.00	PASS
		2462	10.82	≤30.00	PASS
11N40SISO	Ant1	2422	7.14	≤30.00	PASS
		2437	7.50	≤30.00	PASS
		2452	7.28	≤30.00	PASS

Note: The Duty Cycle Factor is compensated in the test result.

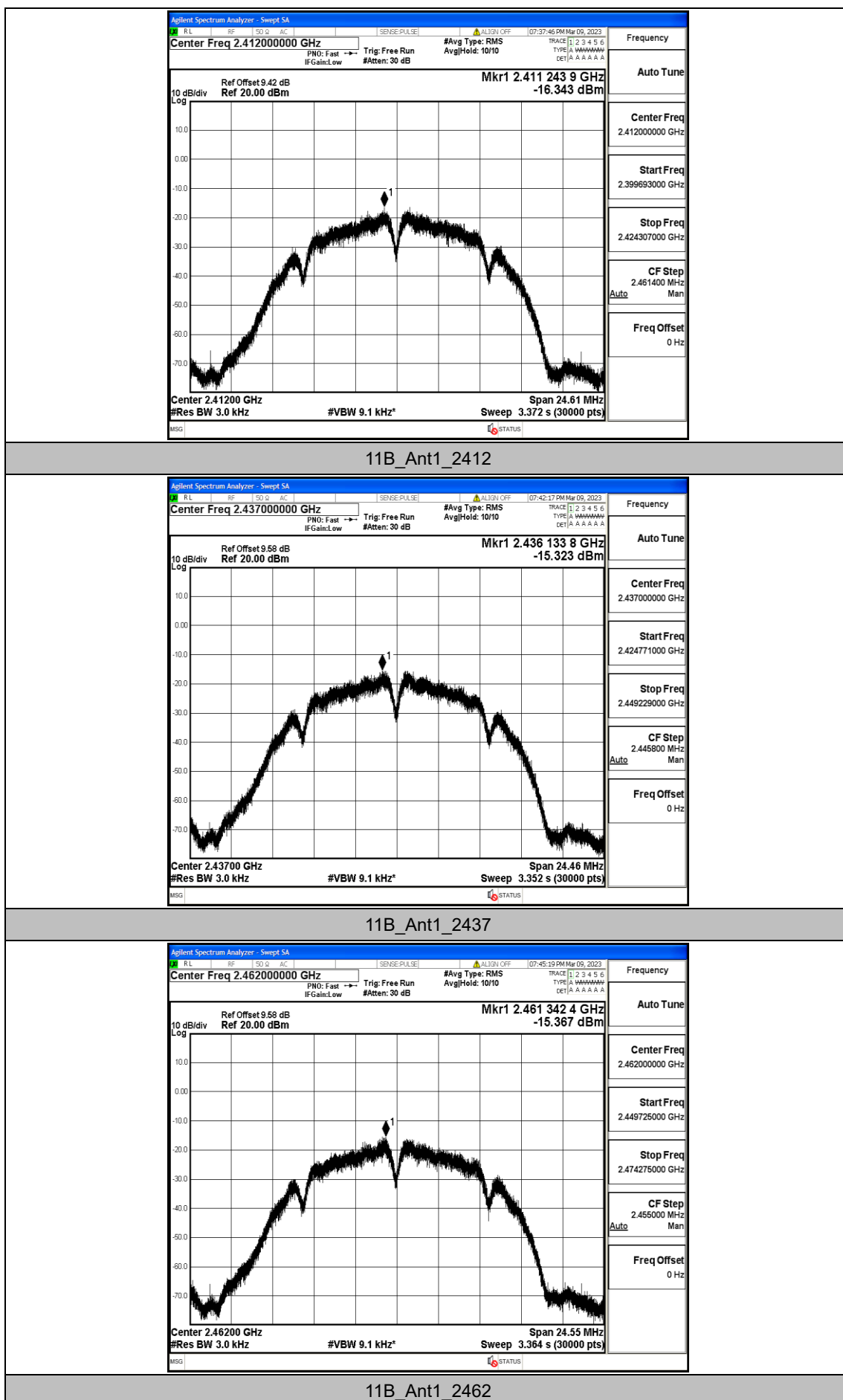
Appendix D: Maximum power spectral density

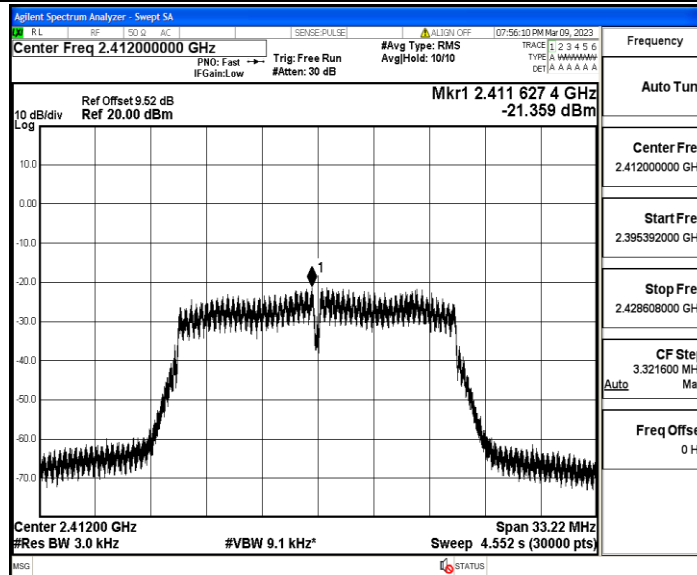
Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-16.34	≤8.00	PASS
		2437	-15.32	≤8.00	PASS
		2462	-15.37	≤8.00	PASS
11G	Ant1	2412	-21.36	≤8.00	PASS
		2437	-18.87	≤8.00	PASS
		2462	-19.83	≤8.00	PASS
11N20SISO	Ant1	2412	-21.48	≤8.00	PASS
		2437	-19.25	≤8.00	PASS
		2462	-19.32	≤8.00	PASS
11N40SISO	Ant1	2422	-25.98	≤8.00	PASS
		2437	-26.64	≤8.00	PASS
		2452	-26.63	≤8.00	PASS

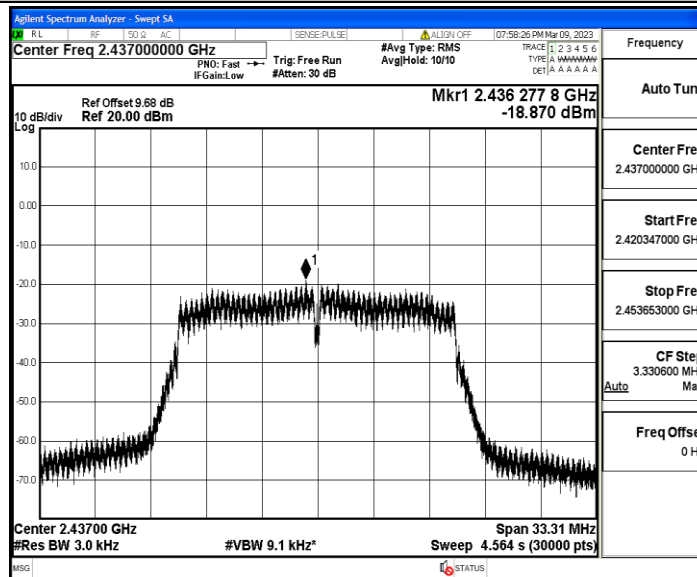
Note: The Duty Cycle Factor is compensated in the test result.

Test Graphs

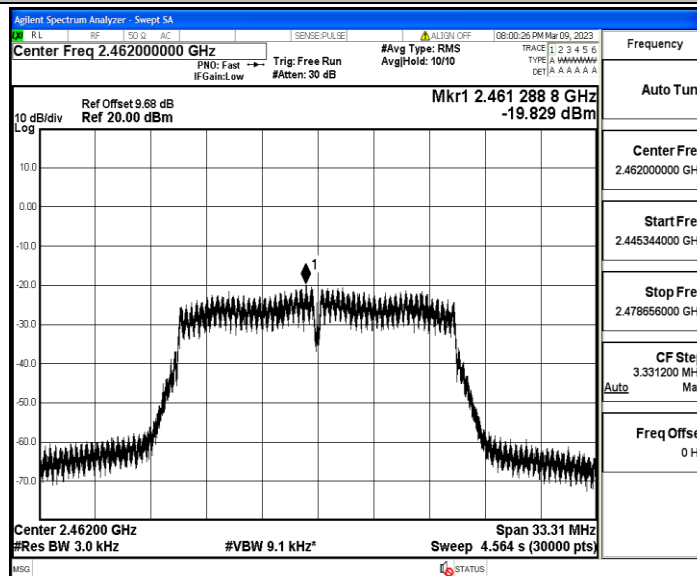




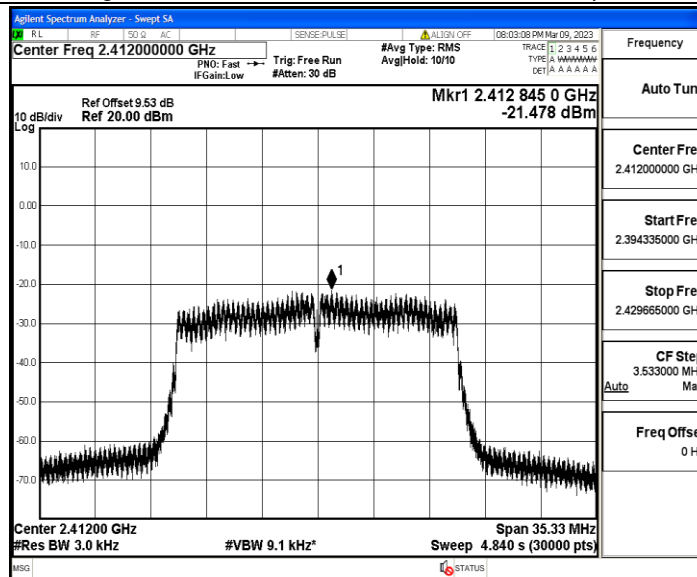
11G_Ant1_2412



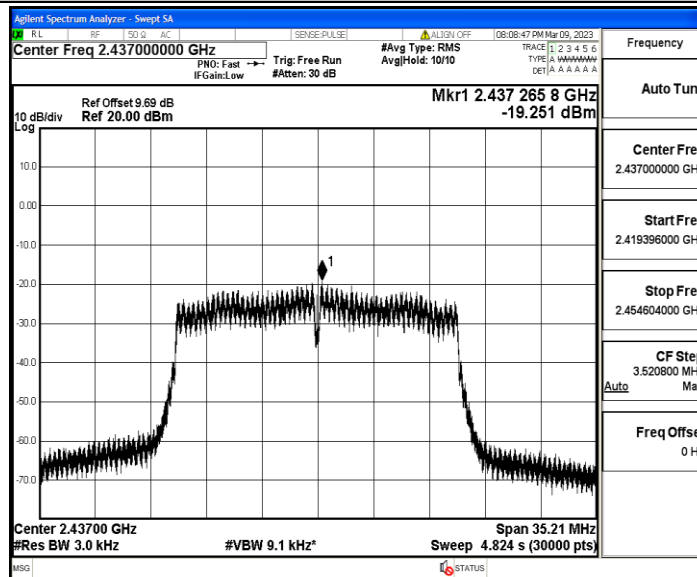
11G_Ant1_2437



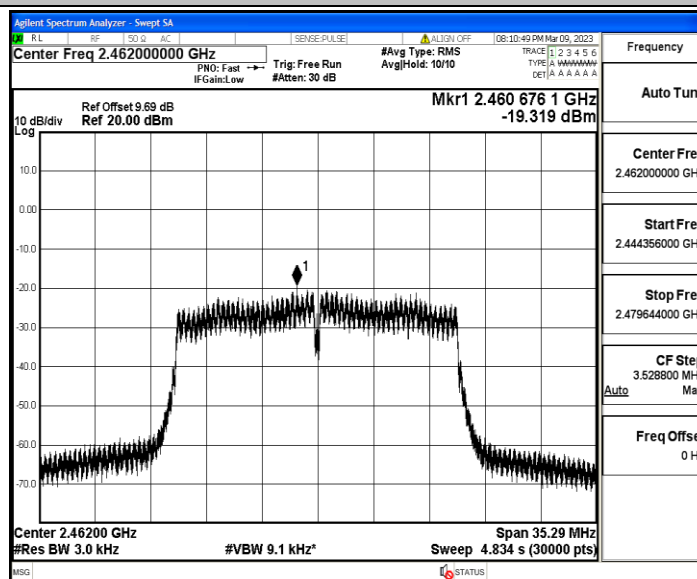
11G_Ant1_2462



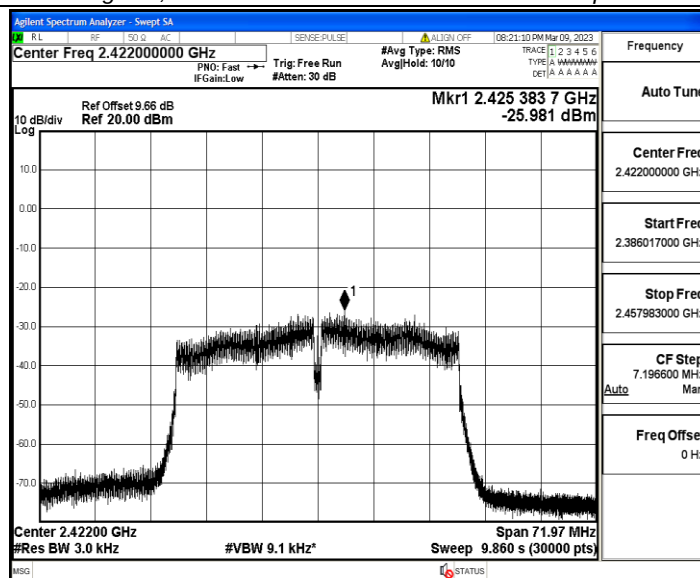
11N20SISO_Ant1_2412



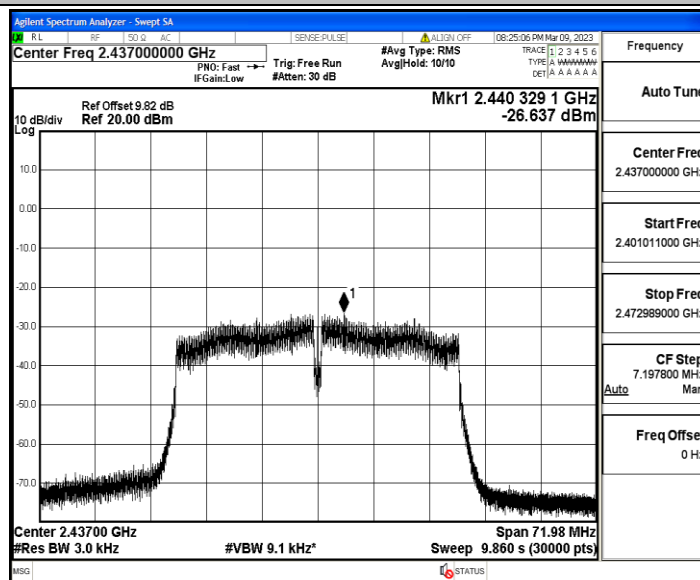
11N20SISO_Ant1_2437



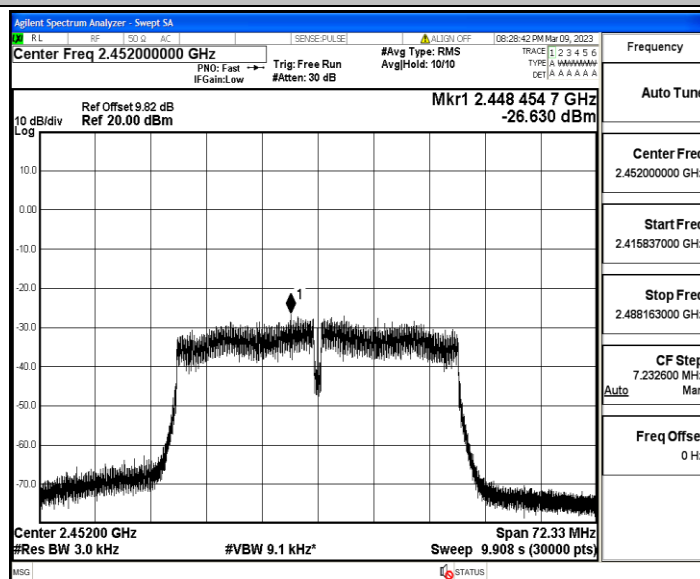
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



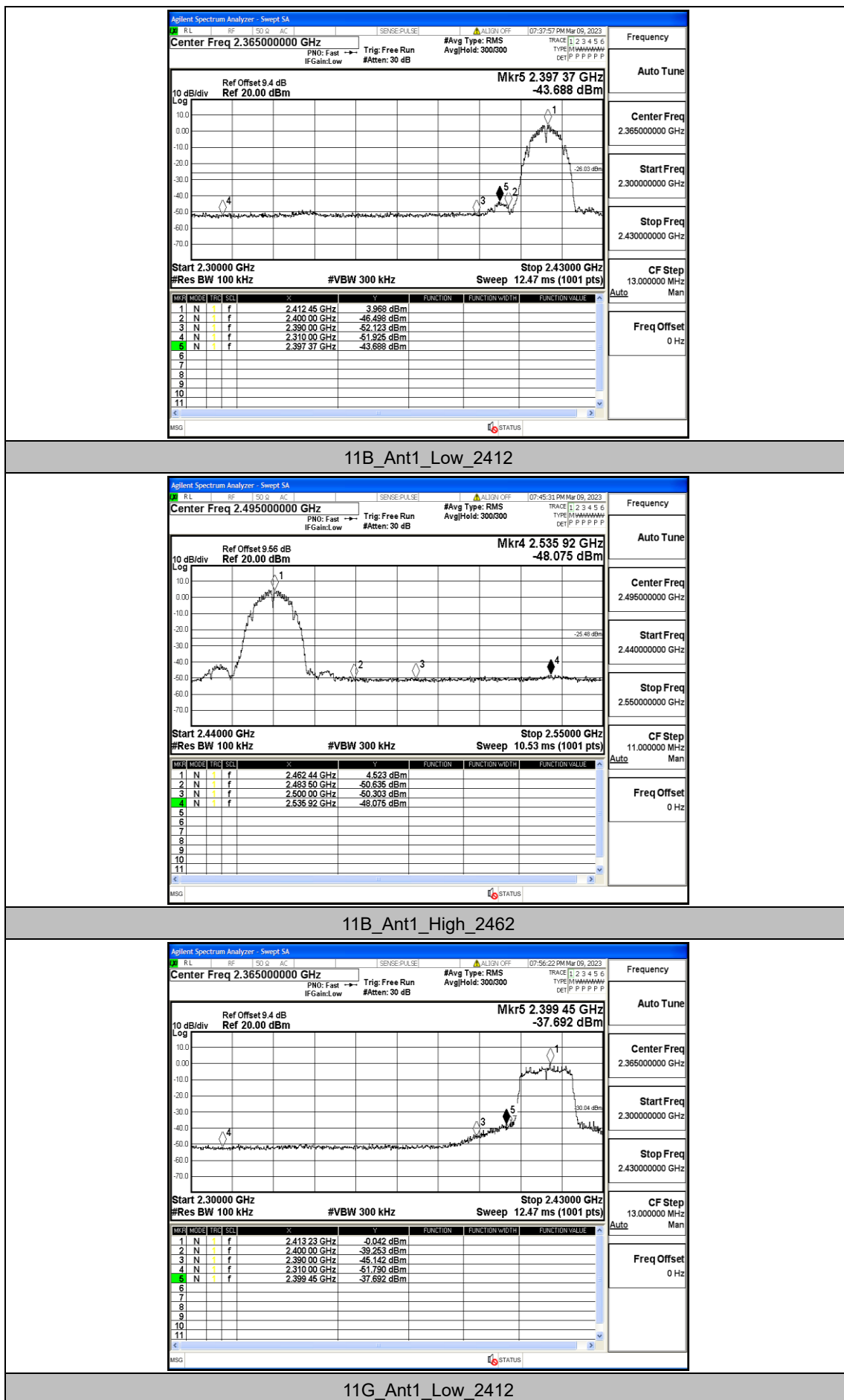
11N40SISO_Ant1_2452

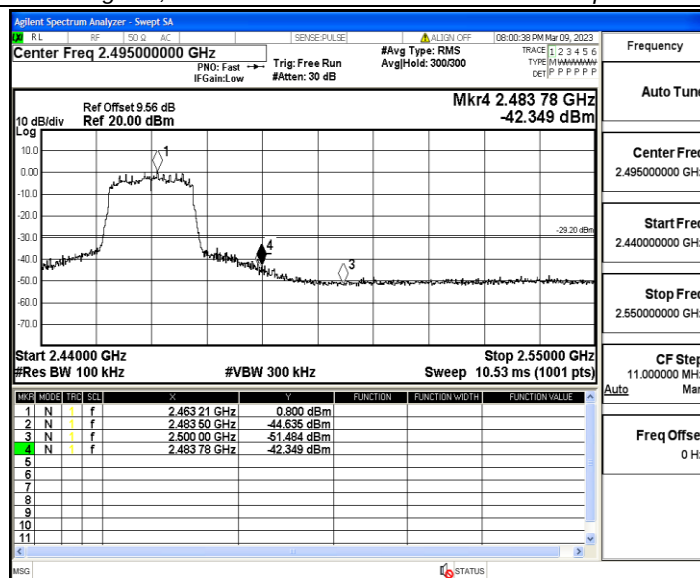
Appendix E: Band edge measurements

Test Result

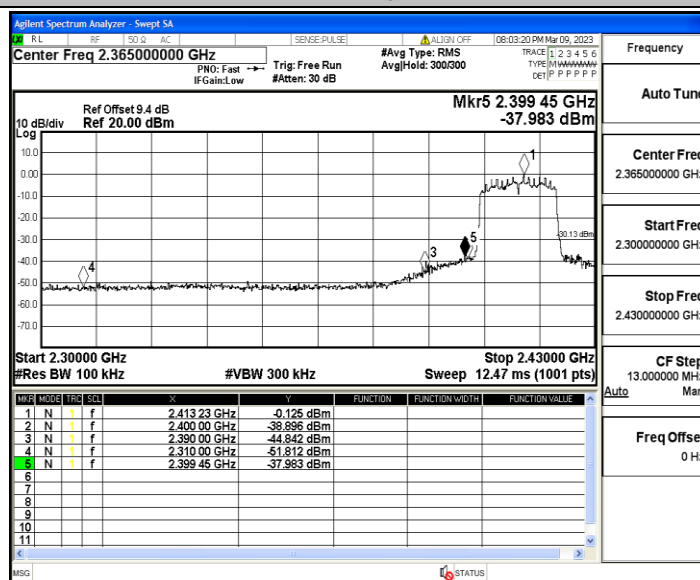
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	3.97	-43.69	≤ -26.03	PASS
		High	2462	4.52	-48.08	≤ -25.48	PASS
11G	Ant1	Low	2412	-0.04	-37.69	≤ -30.04	PASS
		High	2462	0.80	-42.35	≤ -29.2	PASS
11N20SISO	Ant1	Low	2412	-0.13	-37.98	≤ -30.13	PASS
		High	2462	0.90	-42.38	≤ -29.1	PASS
11N40SISO	Ant1	Low	2422	-5.25	-42.73	≤ -35.25	PASS
		High	2452	-5.95	-48.41	≤ -35.95	PASS

Test Graphs

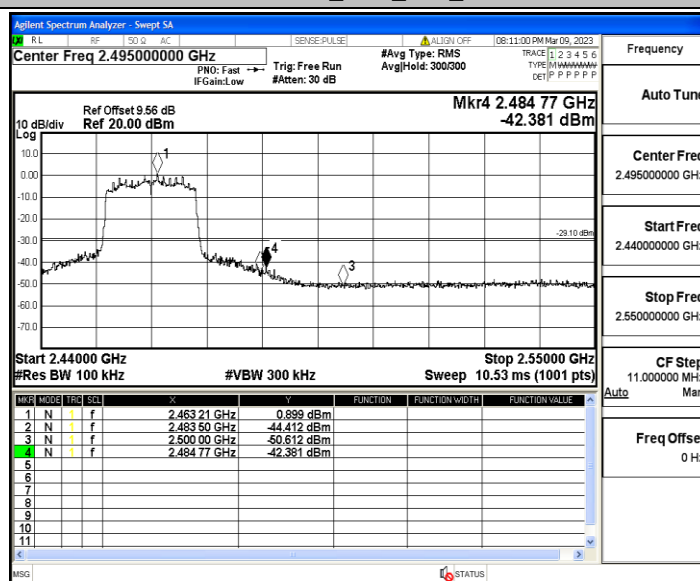




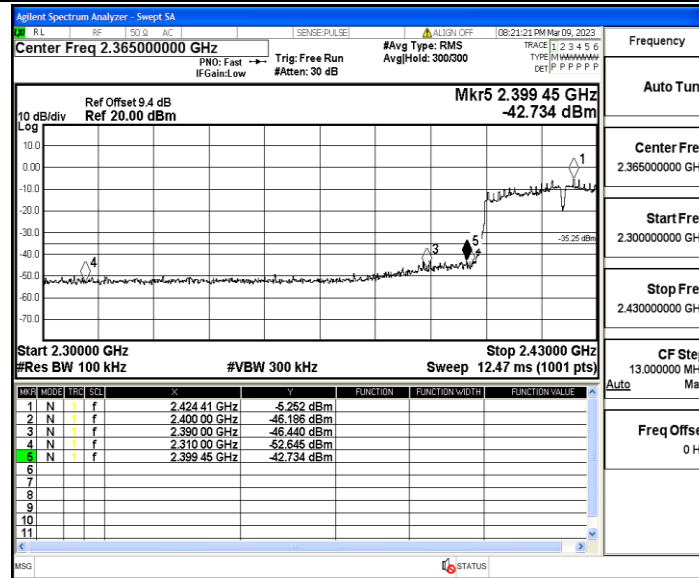
11G_Ant1_High_2462



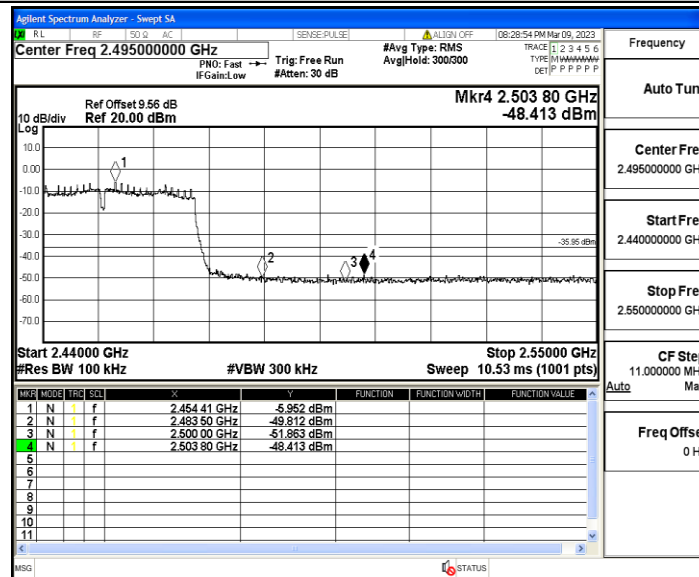
11N20SISO_Ant1_Low_2412



11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



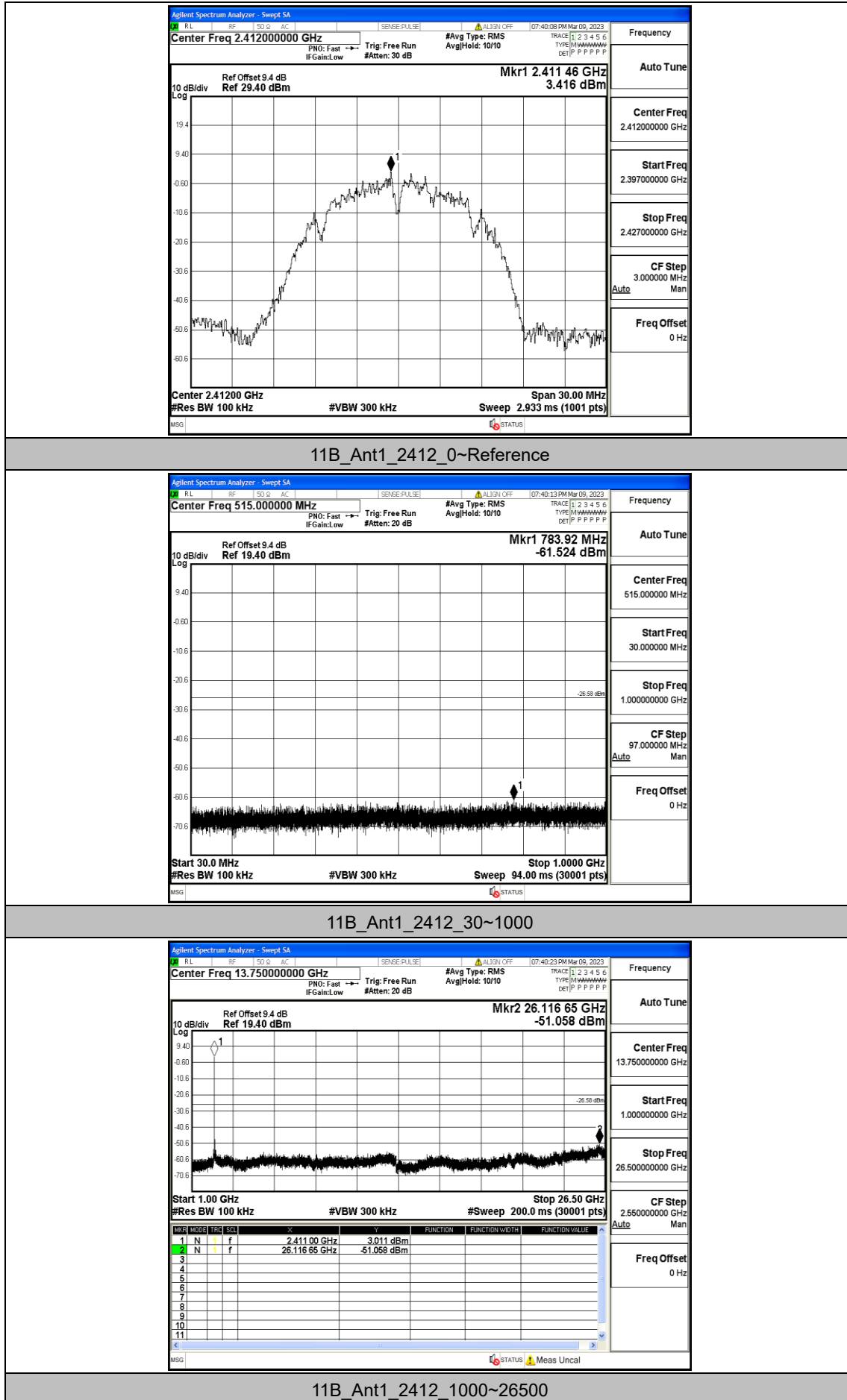
11N40SISO_Ant1_High_2452

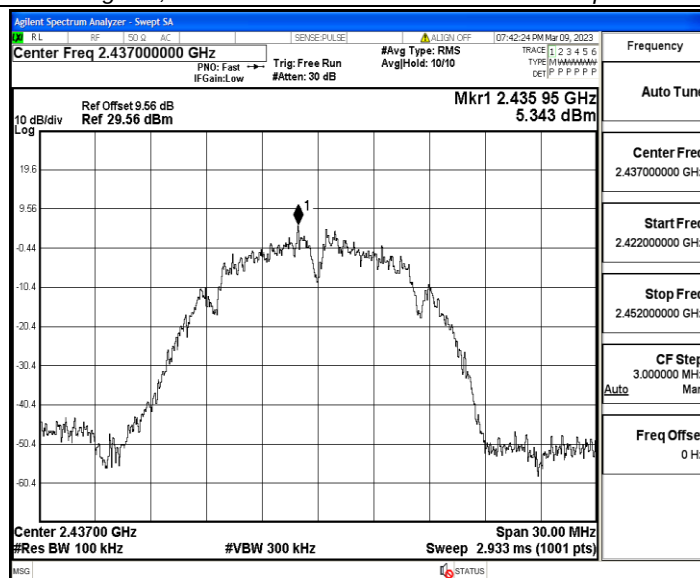
Appendix F: Conducted Spurious Emission

Test Result

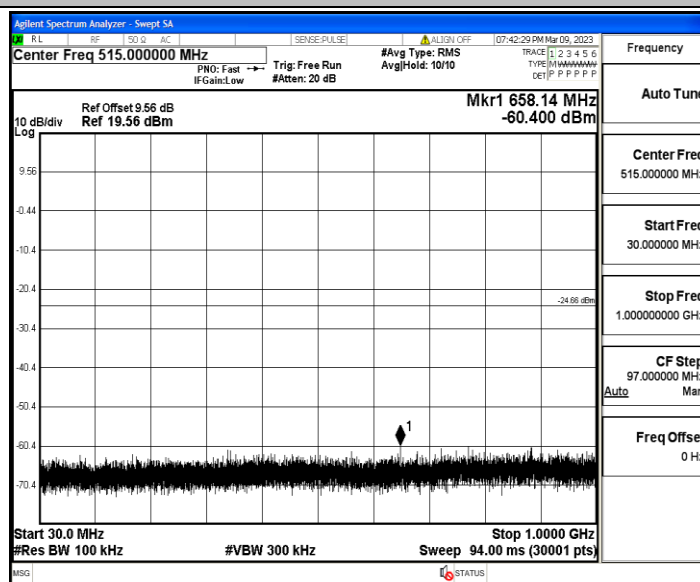
TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	3.42	3.42	---	PASS
			30~1000	3.42	-61.52	≤-26.58	PASS
			1000~26500	3.42	-51.06	≤-26.58	PASS
		2437	Reference	5.34	5.34	---	PASS
			30~1000	5.34	-60.4	≤-24.66	PASS
			1000~26500	5.34	-50.86	≤-24.66	PASS
		2462	Reference	2.47	2.47	---	PASS
			30~1000	2.47	-60.45	≤-27.53	PASS
			1000~26500	2.47	-49.66	≤-27.53	PASS
11G	Ant1	2412	Reference	-4.06	-4.06	---	PASS
			30~1000	-4.06	-61.15	≤-34.06	PASS
			1000~26500	-4.06	-50.96	≤-34.06	PASS
		2437	Reference	-2.74	-2.74	---	PASS
			30~1000	-2.74	-61.32	≤-32.74	PASS
			1000~26500	-2.74	-49.2	≤-32.74	PASS
		2462	Reference	-1.37	-1.37	---	PASS
			30~1000	-1.37	-60.75	≤-31.37	PASS
			1000~26500	-1.37	-50.83	≤-31.37	PASS
11N20SISO	Ant1	2412	Reference	-2.59	-2.59	---	PASS
			30~1000	-2.59	-61.55	≤-32.59	PASS
			1000~26500	-2.59	-50.35	≤-32.59	PASS
		2437	Reference	1.22	1.22	---	PASS
			30~1000	1.22	-60.77	≤-28.78	PASS
			1000~26500	1.22	-50.41	≤-28.78	PASS
		2462	Reference	-3.05	-3.05	---	PASS
			30~1000	-3.05	-61.11	≤-33.05	PASS
			1000~26500	-3.05	-50.87	≤-33.05	PASS
11N40SISO	Ant1	2422	Reference	-7.77	-7.77	---	PASS
			30~1000	-7.77	-61.27	≤-37.77	PASS
			1000~26500	-7.77	-50.2	≤-37.77	PASS
		2437	Reference	-7.17	-7.17	---	PASS
			30~1000	-7.17	-60.89	≤-37.17	PASS
			1000~26500	-7.17	-50.48	≤-37.17	PASS
		2452	Reference	-6.38	-6.38	---	PASS
			30~1000	-6.38	-60.48	≤-36.38	PASS
			1000~26500	-6.38	-50.76	≤-36.38	PASS

Test Graphs

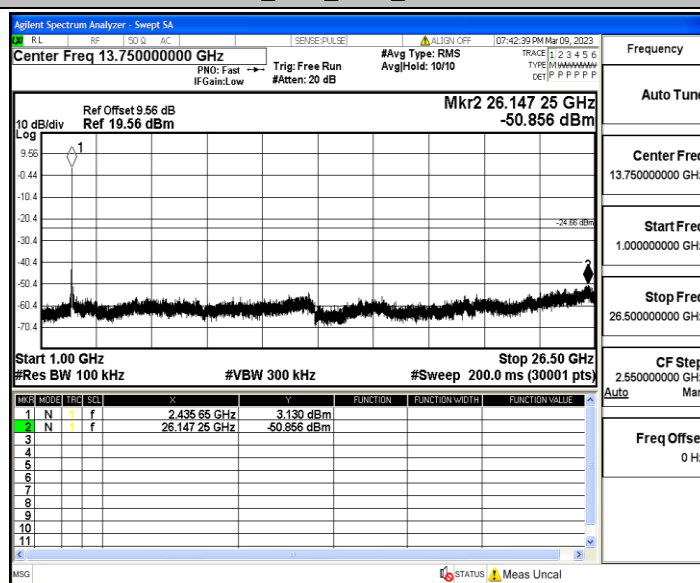




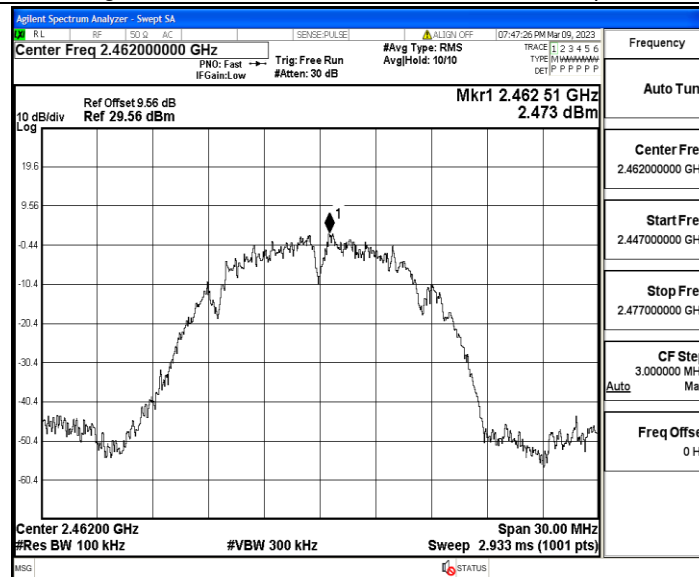
11B_Ant1_2437_0~Reference



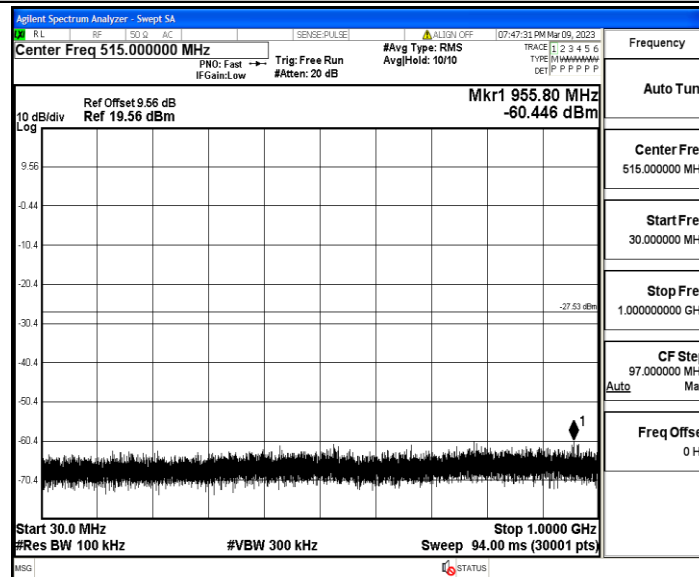
11B_Ant1_2437_30~1000



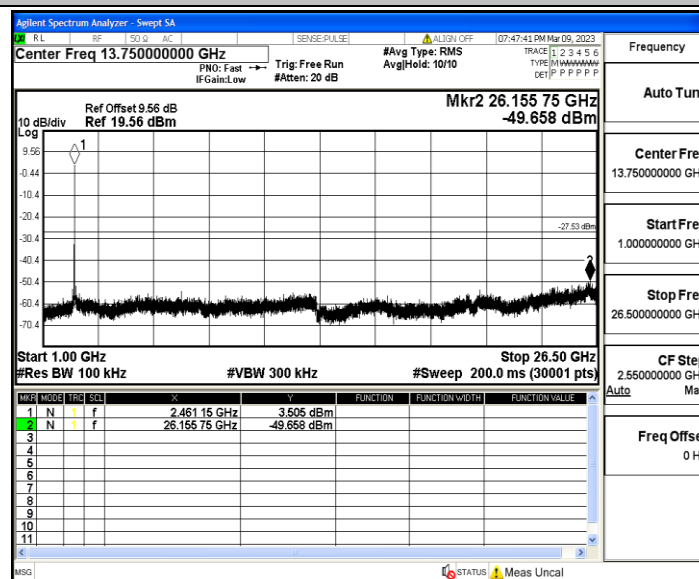
11B_Ant1_2437_1000~26500



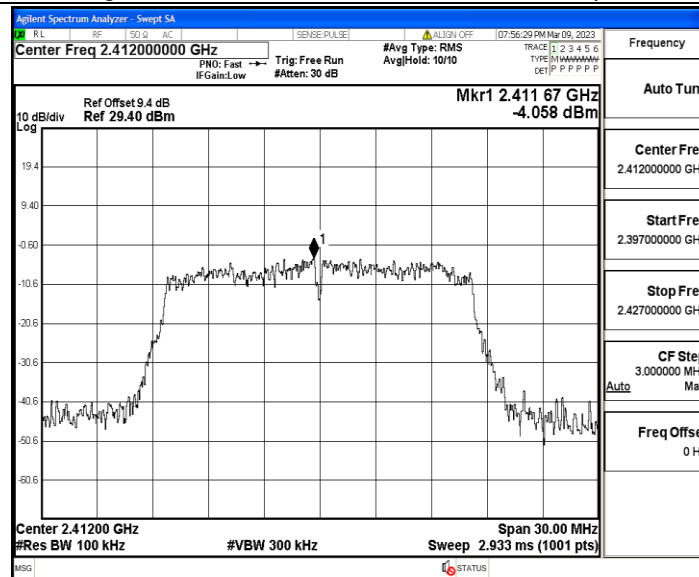
11B_Ant1_2462_0~Reference



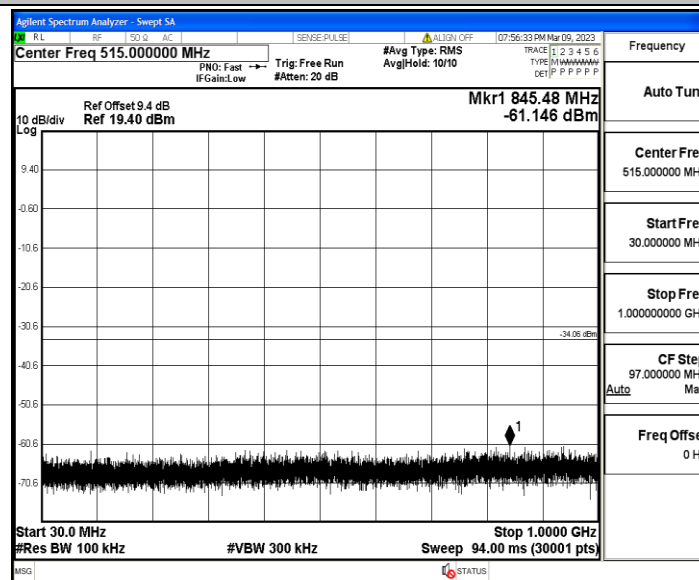
11B_Ant1_2462_30~1000



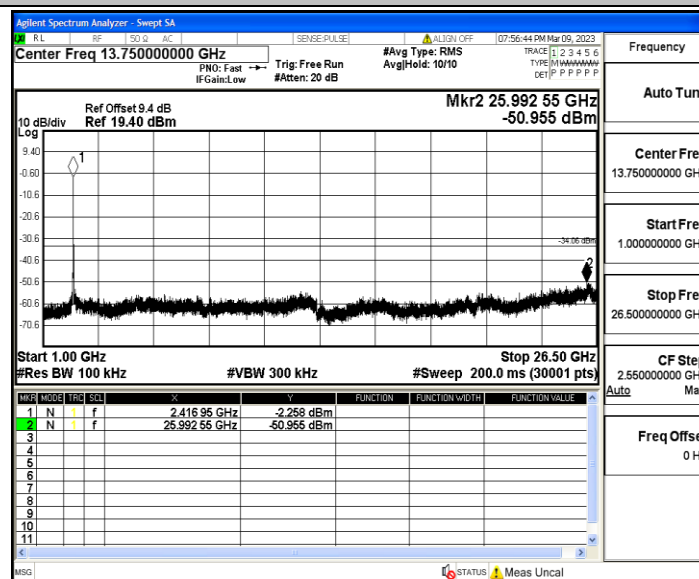
11B_Ant1_2462_1000~26500



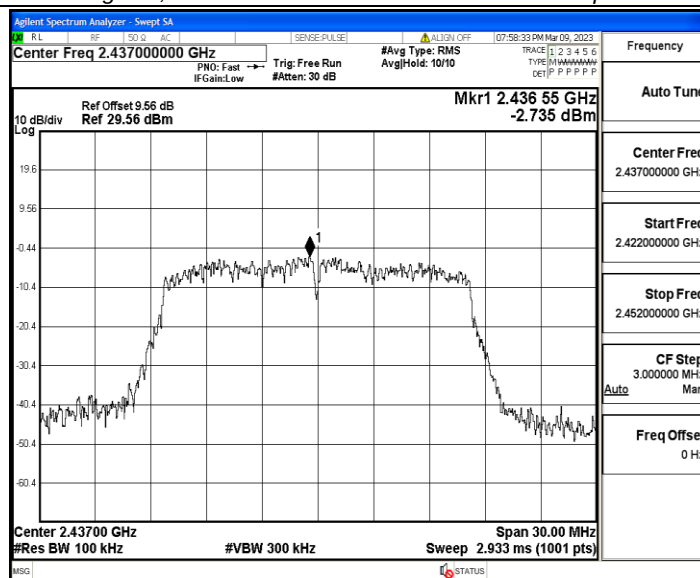
11G_Ant1_2412_0~Reference



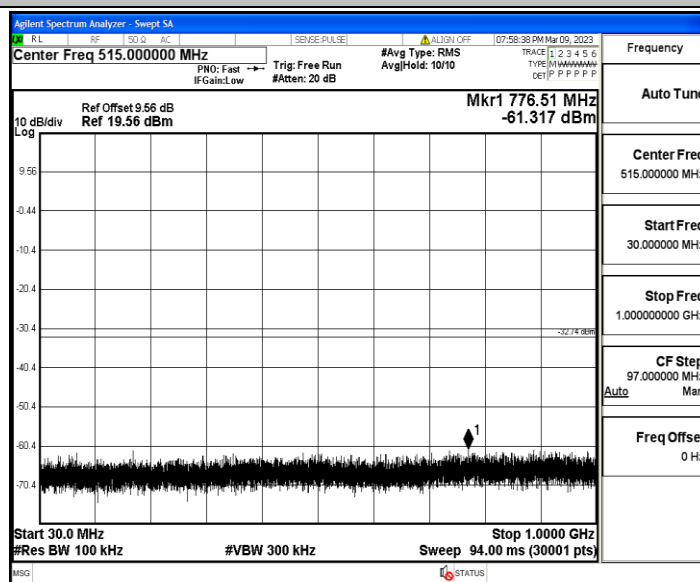
11G_Ant1_2412_30~1000



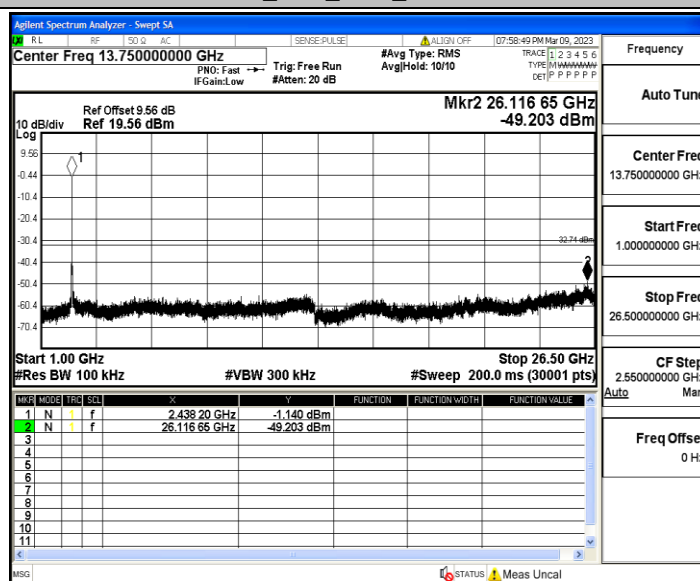
11G_Ant1_2412_1000~26500



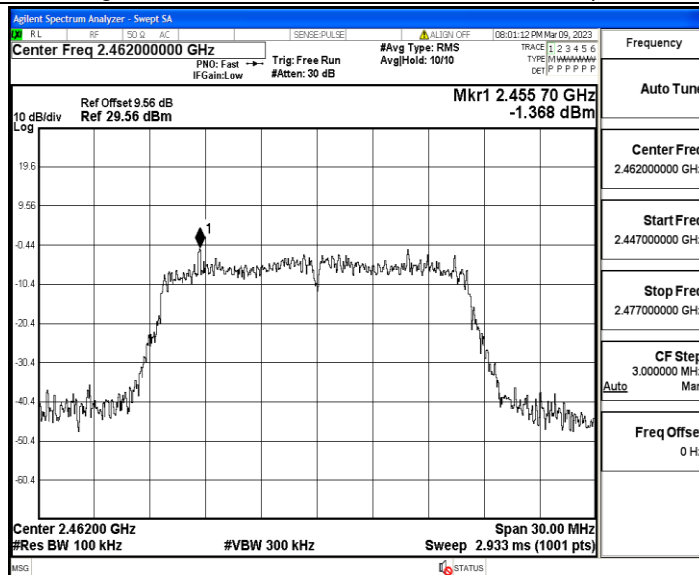
11G_Ant1_2437_0~Reference



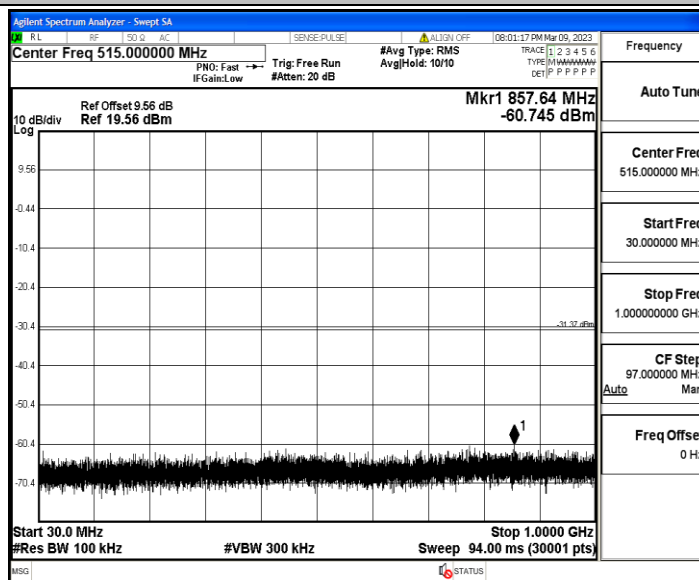
11G_Ant1_2437_30~1000



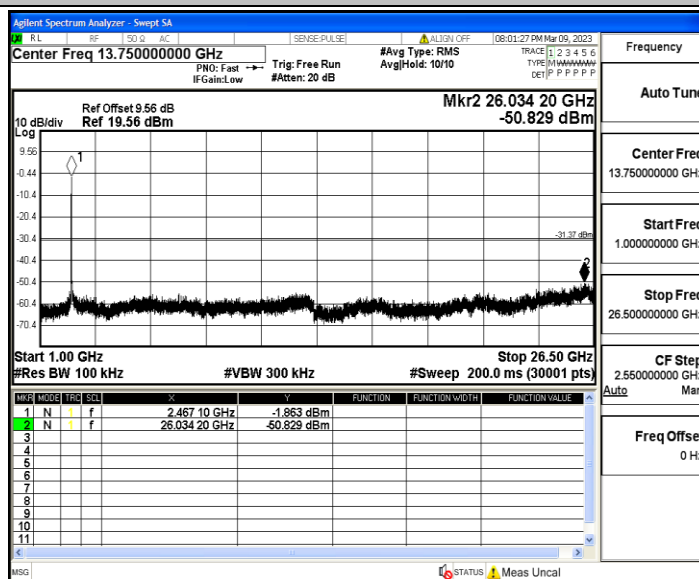
11G_Ant1_2437_1000~26500



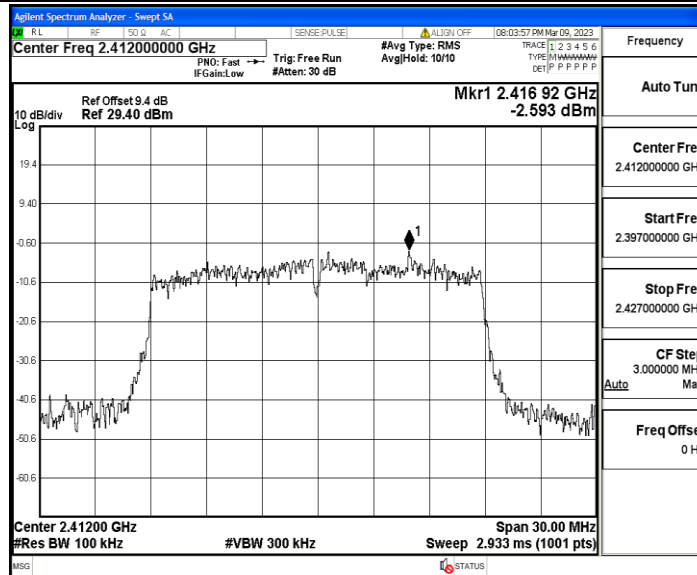
11G_Ant1_2462_0~Reference



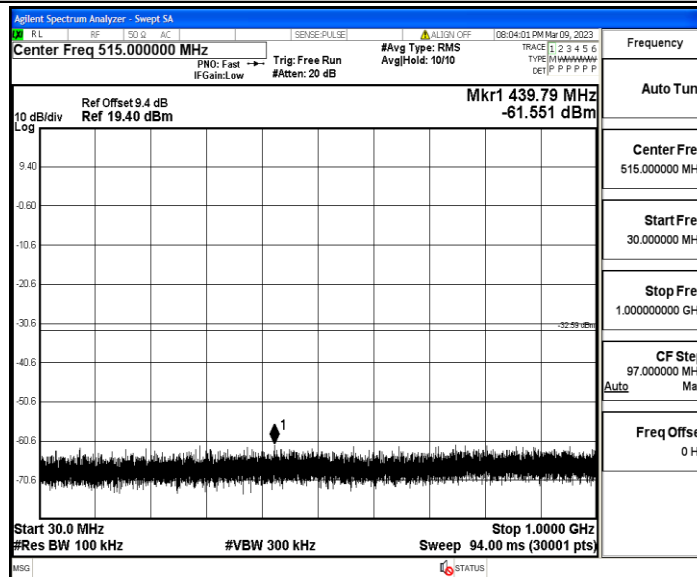
11G_Ant1_2462_30~1000



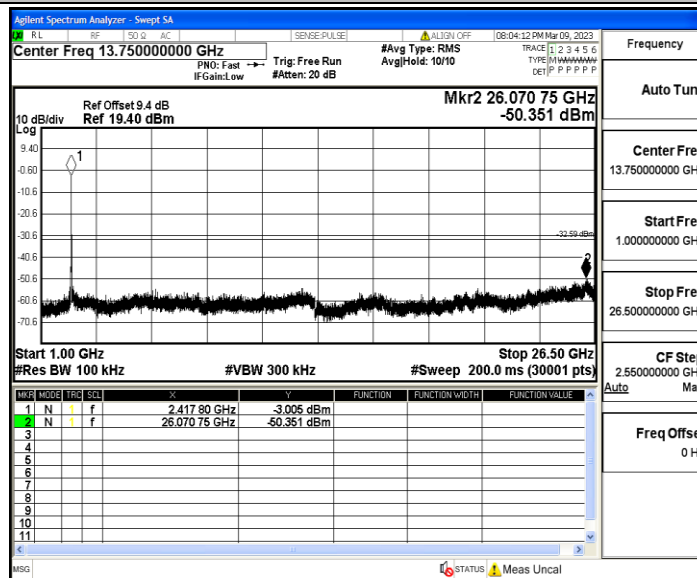
11G_Ant1_2462_1000~26500



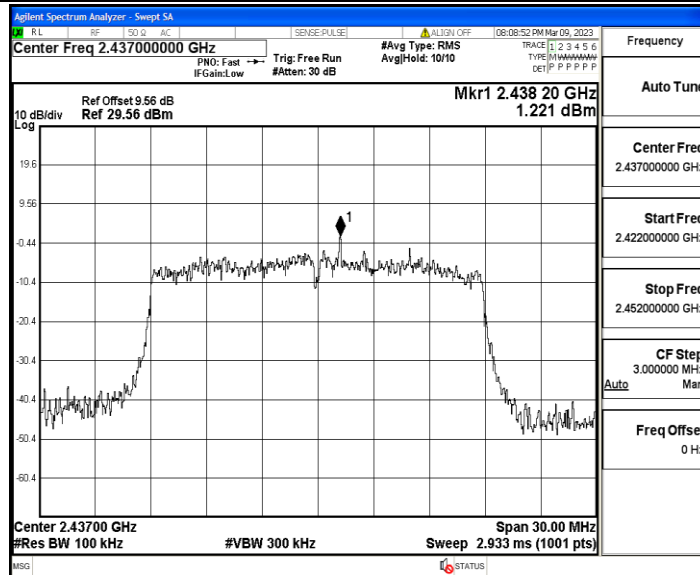
11N20SISO_Ant1_2412_0~Reference



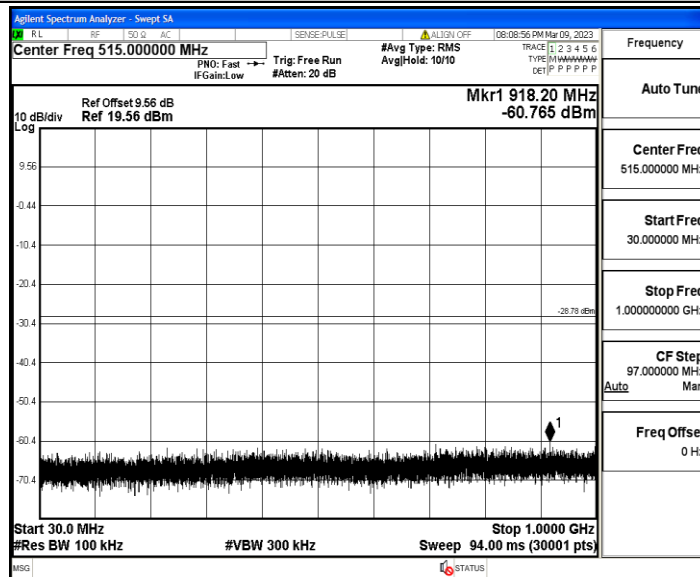
11N20SISO_Ant1_2412_30~1000



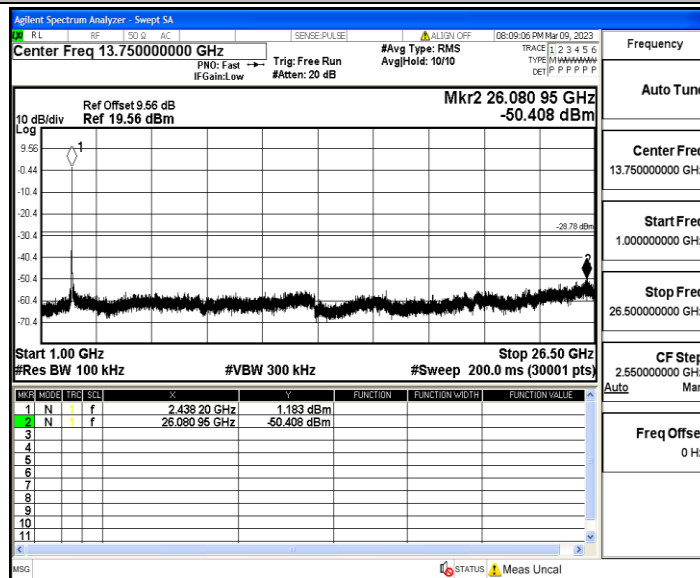
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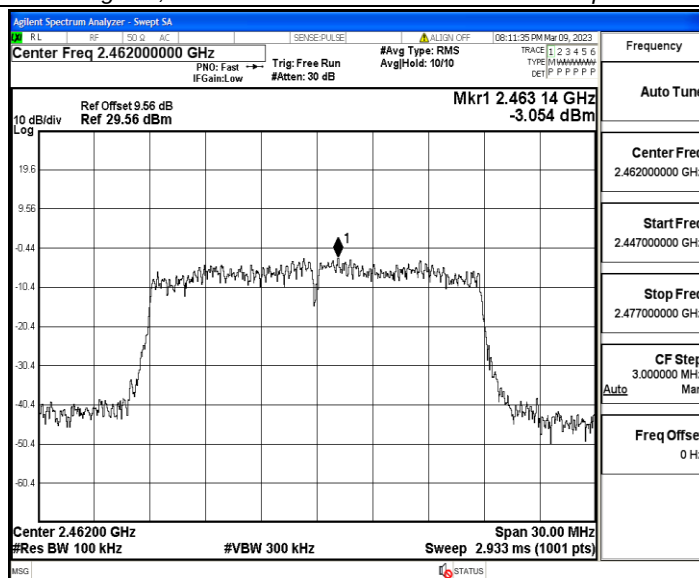
11N20SISO_Ant1_2437_0~Reference



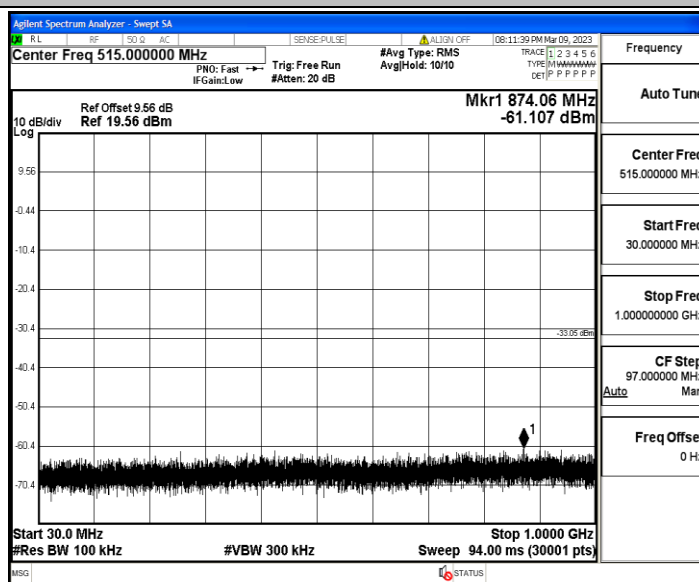
11N20SISO_Ant1_2437_30~1000



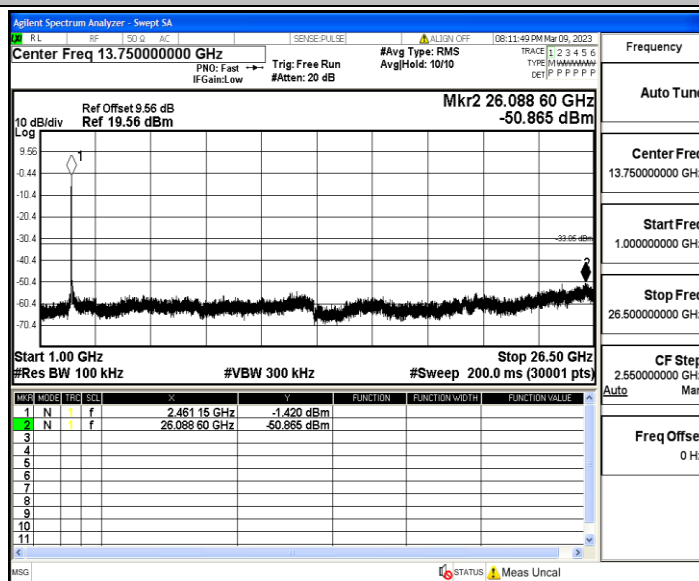
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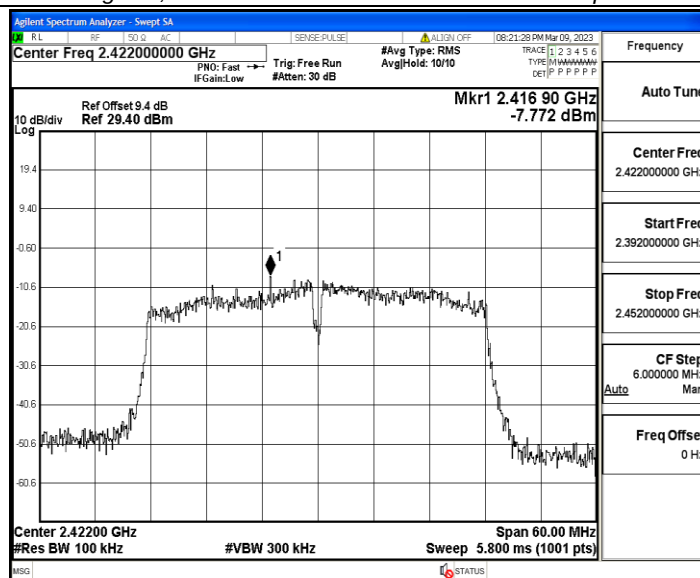
11N20SISO_Ant1_2462_0~Reference



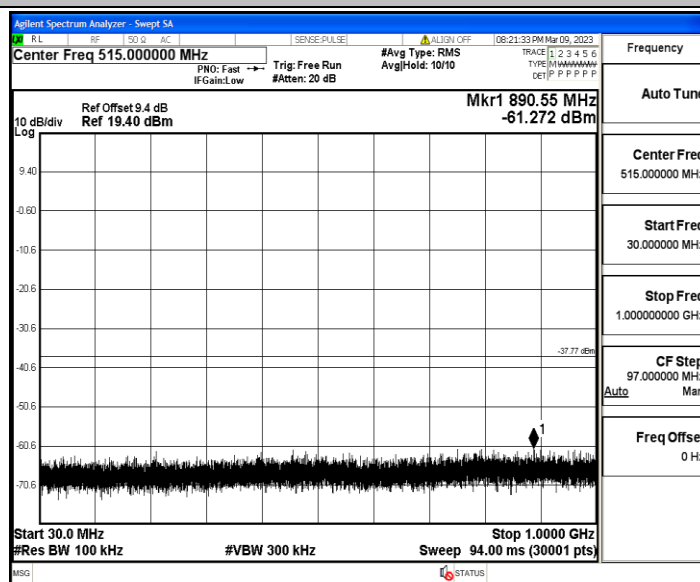
11N20SISO_Ant1_2462_30~1000



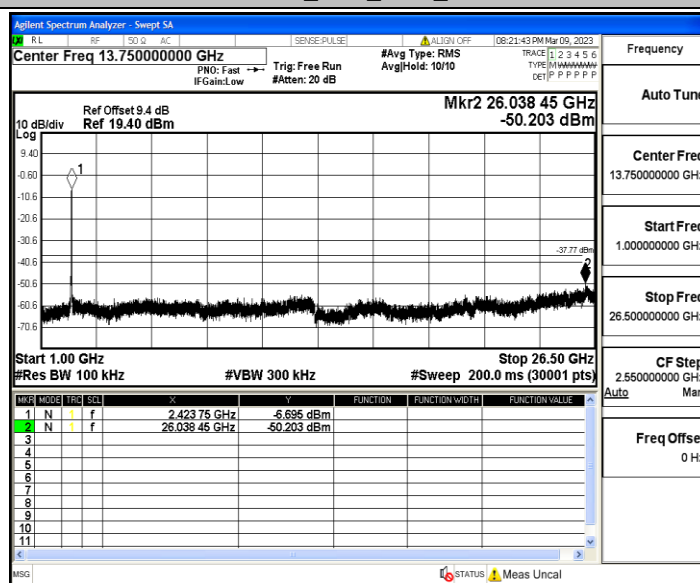
11N20SISO_Ant1_2462_1000~26500



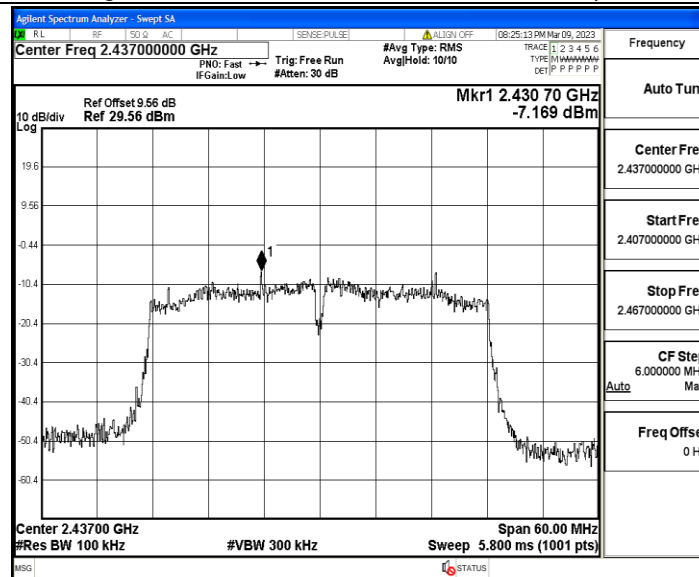
11N40SISO_Ant1_2422_0~Reference



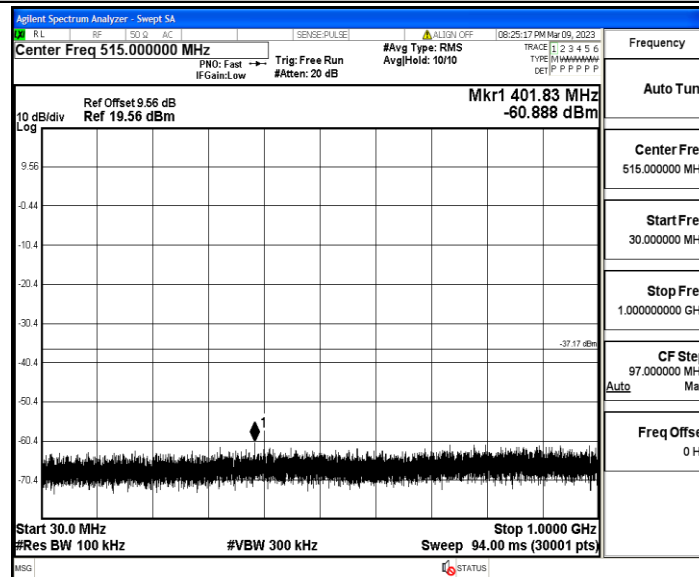
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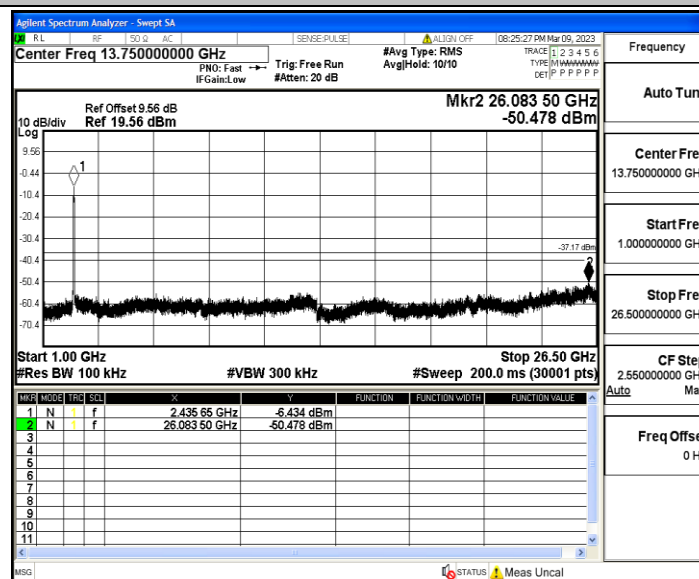
11N40SISO_Ant1_2422_1000~26500



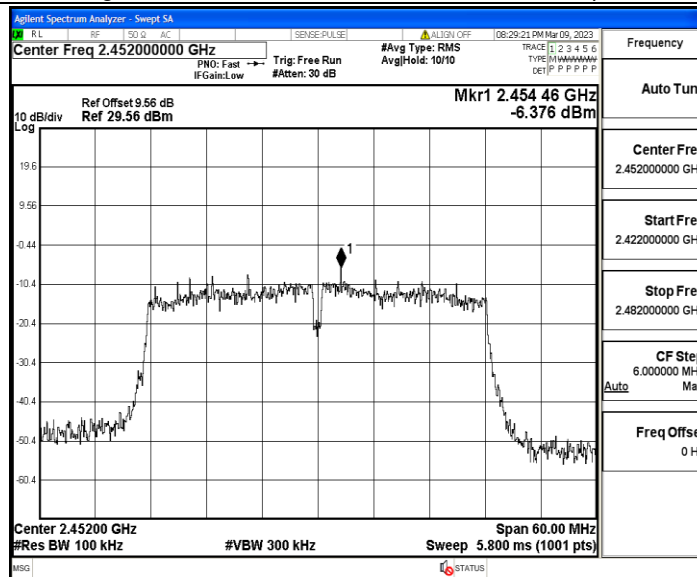
11N40SISO_Ant1_2437_0~Reference



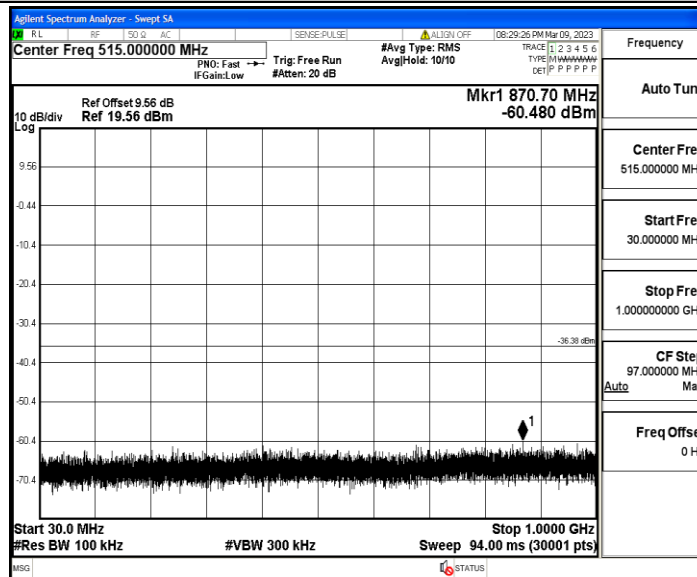
11N40SISO_Ant1_2437_30~1000



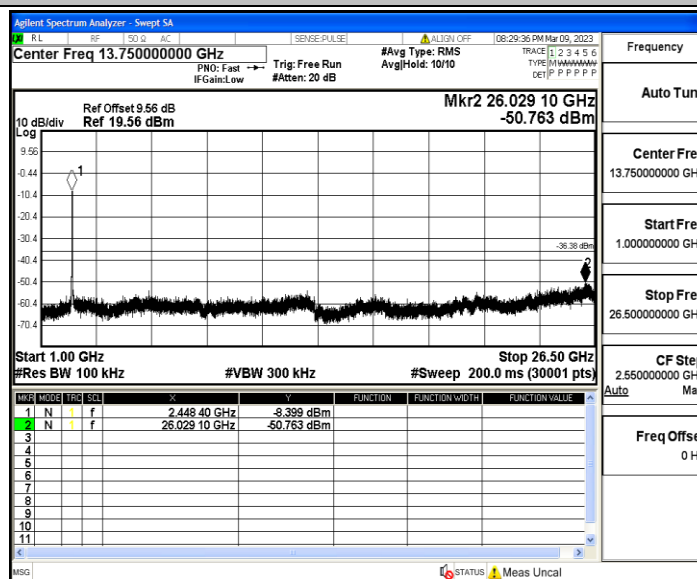
11N40SISO_Ant1_2437_1000~26500



11N40SISO_Ant1_2452_0~Reference



11N40SISO_Ant1_2452_30~1000



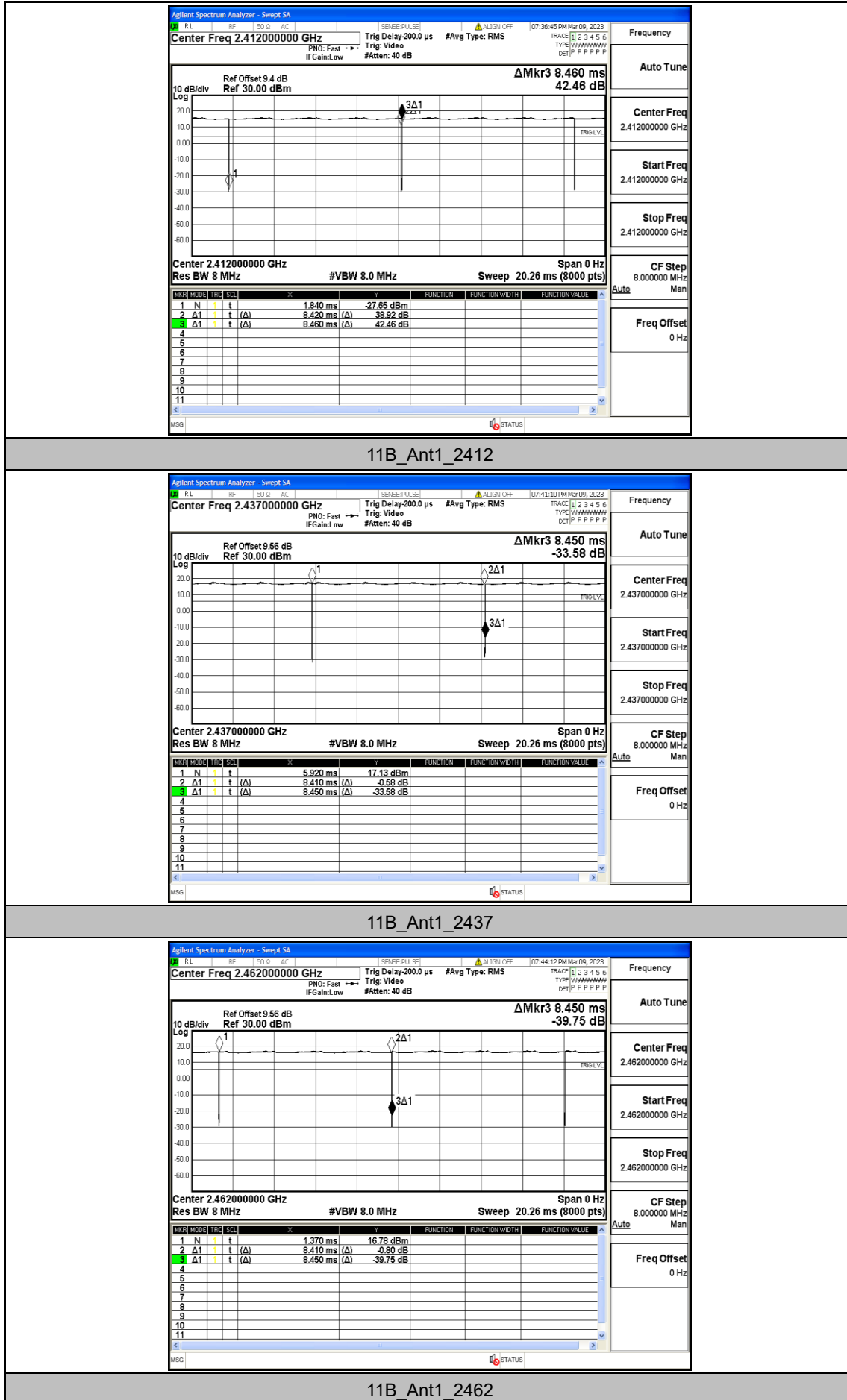
11N40SISO_Ant1_2452_1000~26500

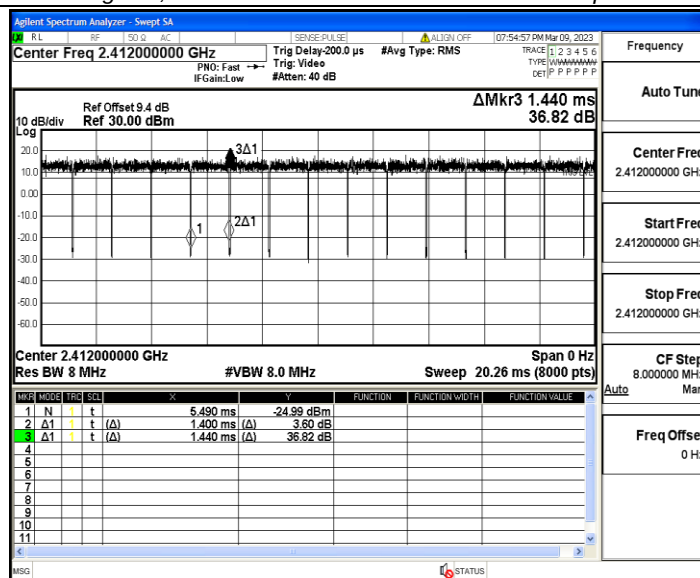
Appendix G: Duty Cycle

Test Result

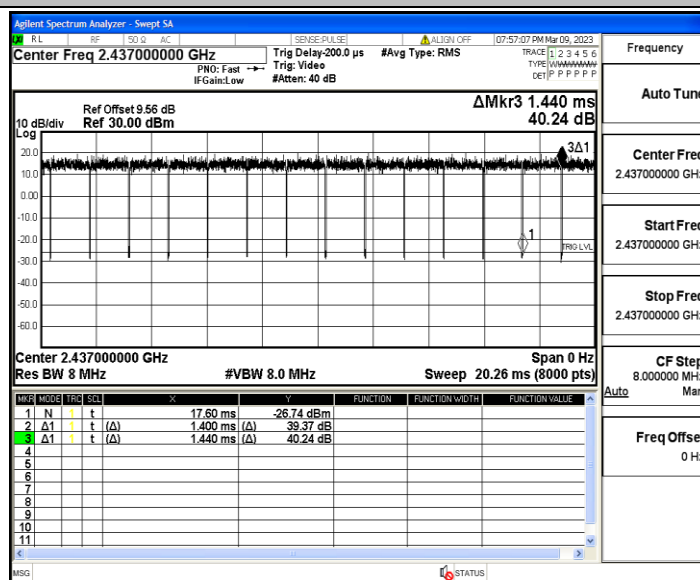
TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T
11B	Ant1	2412	8.42	8.46	99.53	0.12
		2437	8.41	8.45	99.53	0.12
		2462	8.41	8.45	99.53	0.12
11G	Ant1	2412	1.40	1.44	97.22	0.71
		2437	1.40	1.44	97.22	0.71
		2462	1.39	1.43	97.20	0.72
11N20SISO	Ant1	2412	1.30	1.34	97.01	0.77
		2437	1.30	1.34	97.01	0.77
		2462	1.31	1.35	97.04	0.76
11N40SISO	Ant1	2422	0.64	0.68	94.12	1.56
		2437	0.64	0.68	94.12	1.56
		2452	0.64	0.68	94.12	1.56

Test Graphs

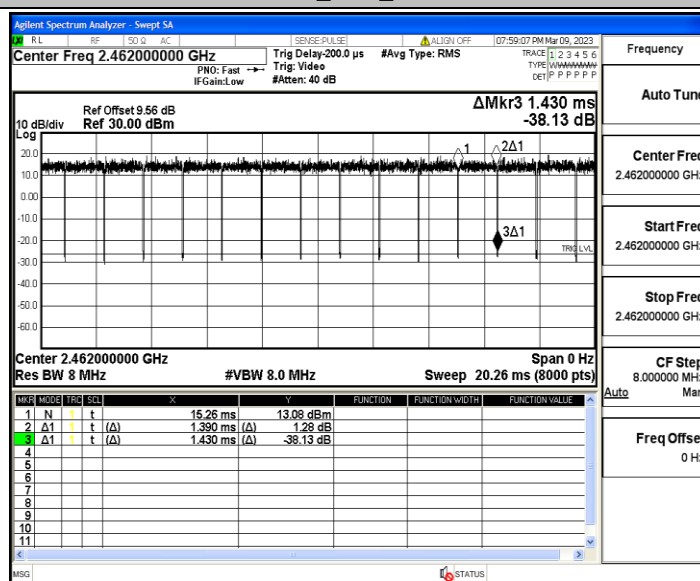




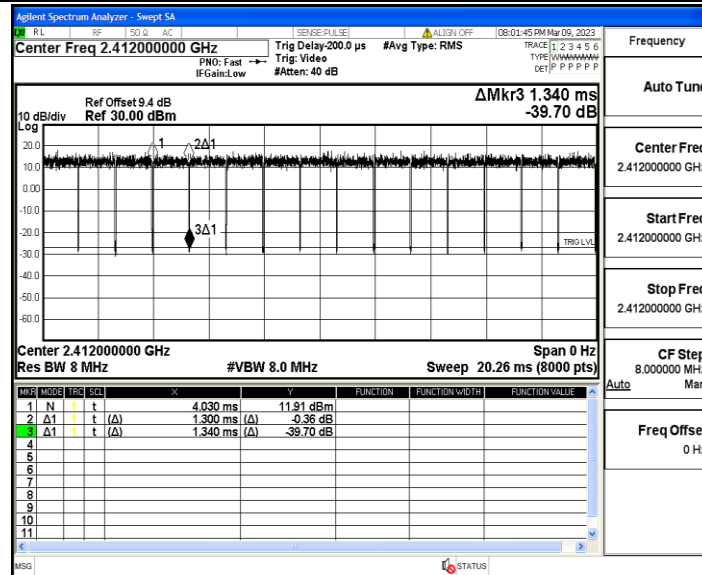
11G_Ant1_2412



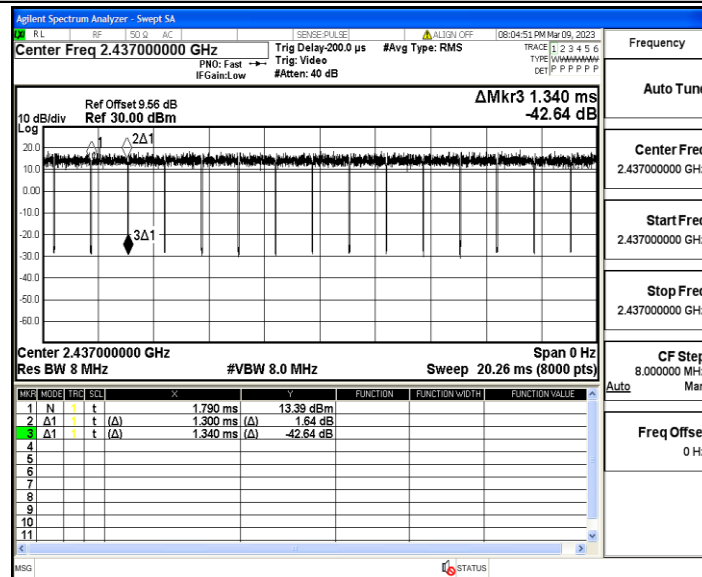
11G_Ant1_2437



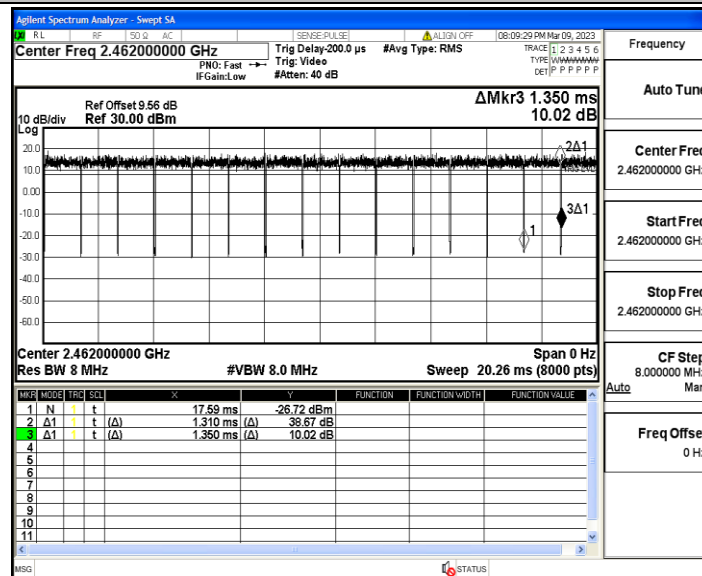
11G_Ant1_2462



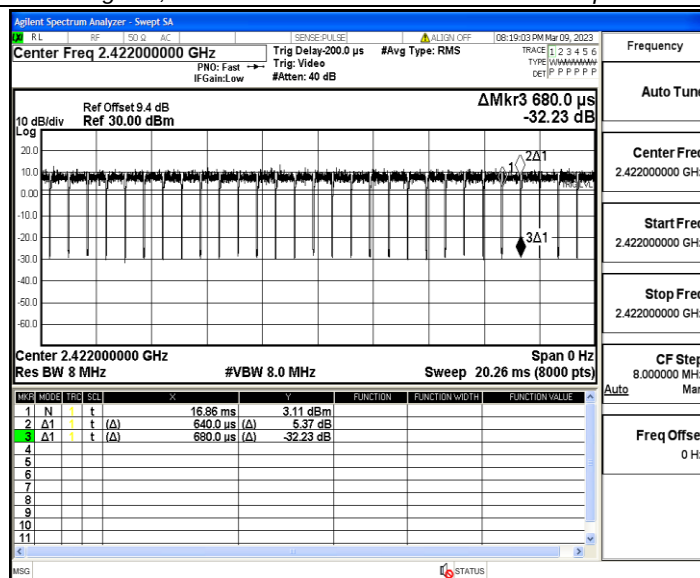
11N20SISO_Ant1_2412



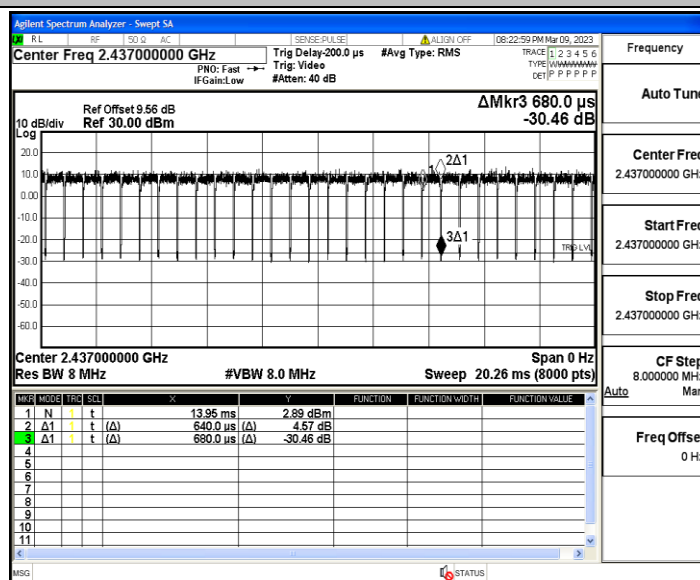
11N20SISO_Ant1_2437



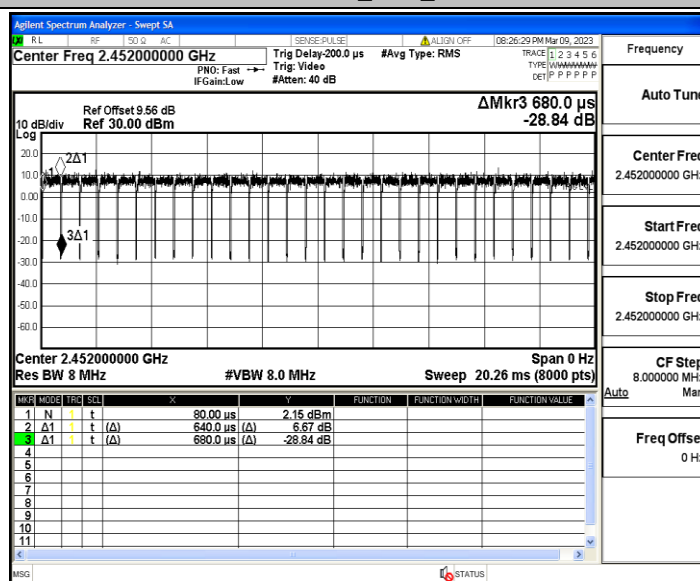
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452