

Appendix Test Data for WLAN(2.4G) (Conducted Measurement)

Product Name: Outdoor LoRa Gateway

Trade Mark: Dusun

Test Model: DSGW-014

FCC ID: 2AUXBDSGW-014

Environmental Conditions

Temperature:	22.7℃
Relative Humidity:	56%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

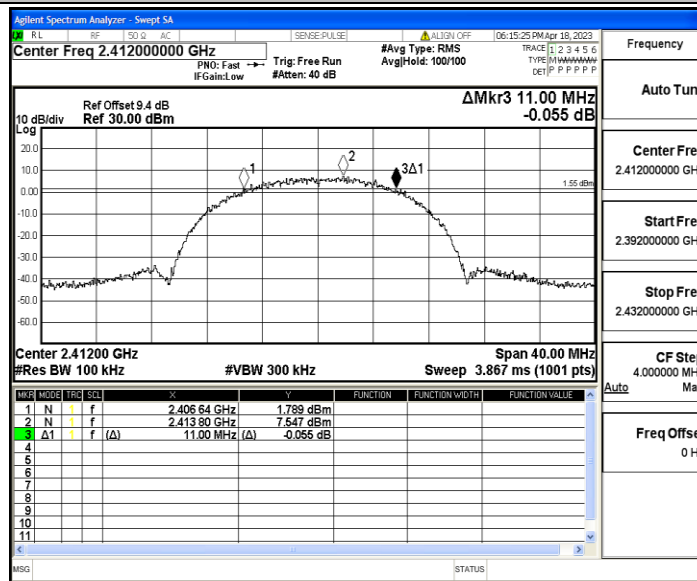
Appendix A: DTS Bandwidth

Test Result

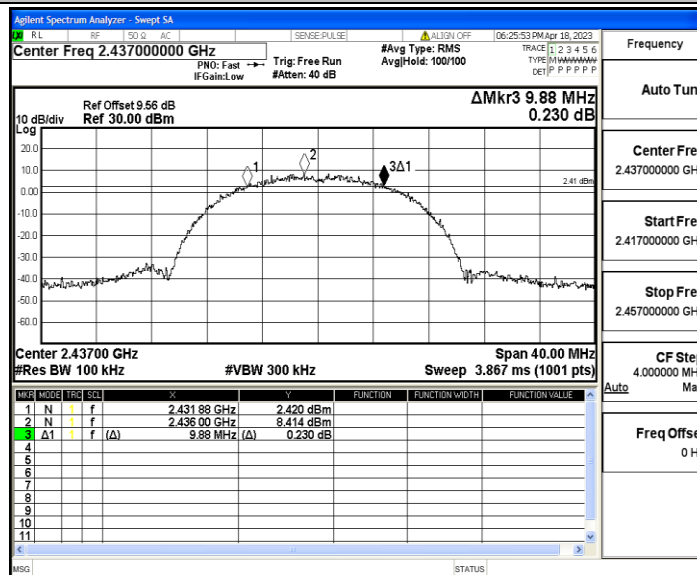
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	11.000	2406.640	2417.640	0.5	PASS
		2437	9.880	2431.880	2441.760	0.5	PASS
		2462	10.360	2457.000	2467.360	0.5	PASS
11G	Ant1	2412	16.320	2403.840	2420.160	0.5	PASS
		2437	15.920	2428.840	2444.760	0.5	PASS
		2462	16.280	2453.880	2470.160	0.5	PASS
11N20SISO	Ant1	2412	17.280	2403.480	2420.760	0.5	PASS
		2437	16.640	2428.480	2445.120	0.5	PASS
		2462	17.120	2453.640	2470.760	0.5	PASS
11N40SISO	Ant1	2422	16.640	2423.200	2439.840	0.5	PASS
		2437	35.360	2419.240	2454.600	0.5	PASS
		2452	35.520	2434.080	2469.600	0.5	PASS

Test Graphs

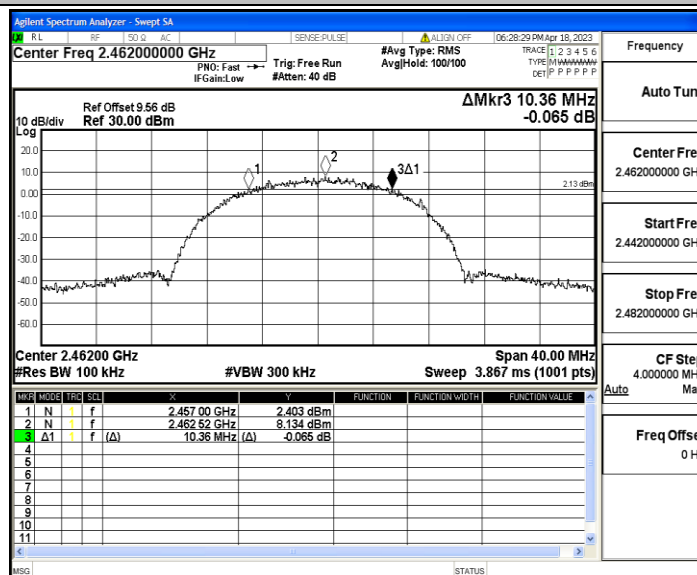
11B_Ant1_2412



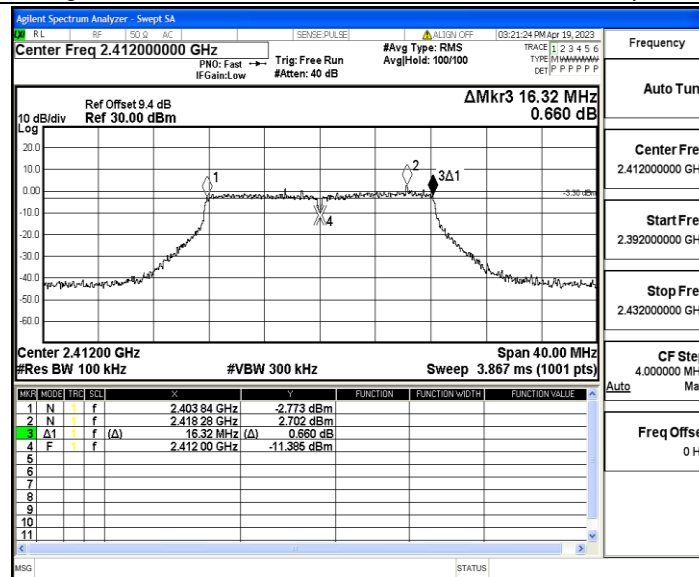
11B_Ant1_2437



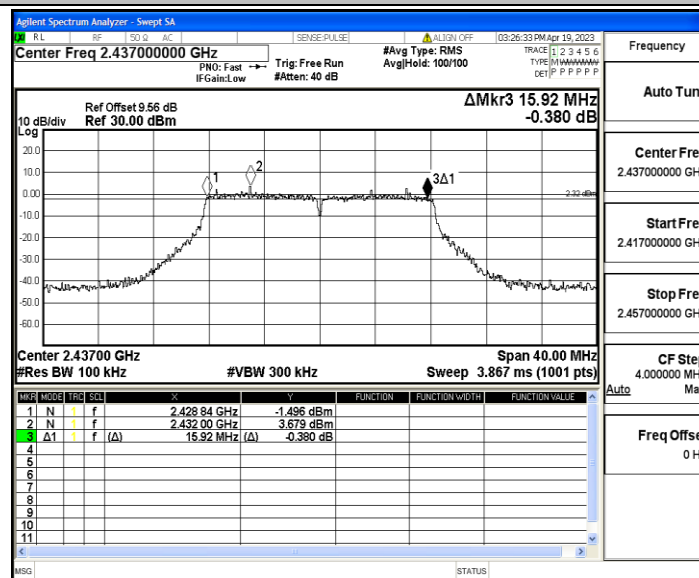
11B_Ant1_2462



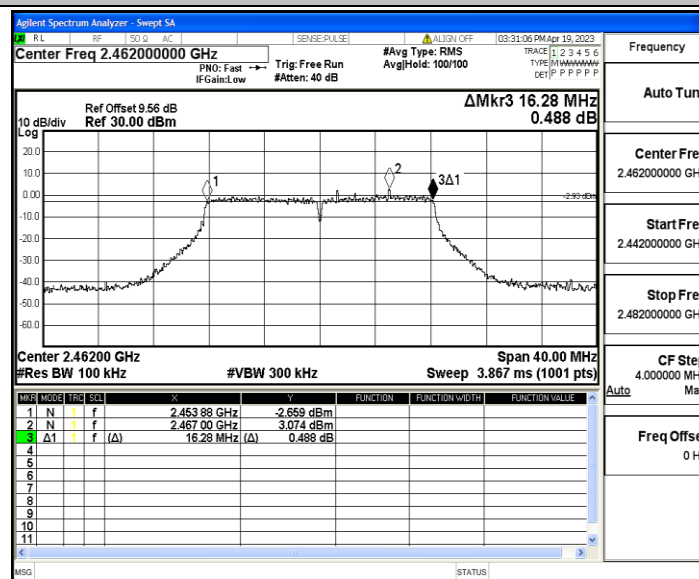
11G_Ant1_2412



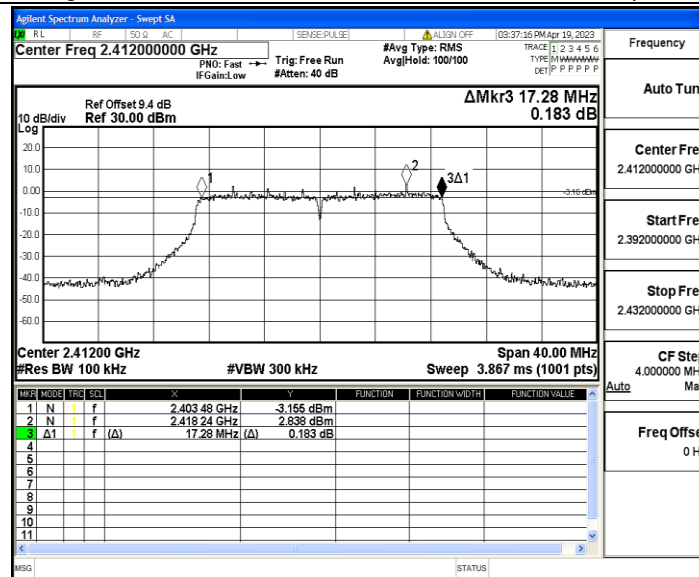
11G_Ant1_2437



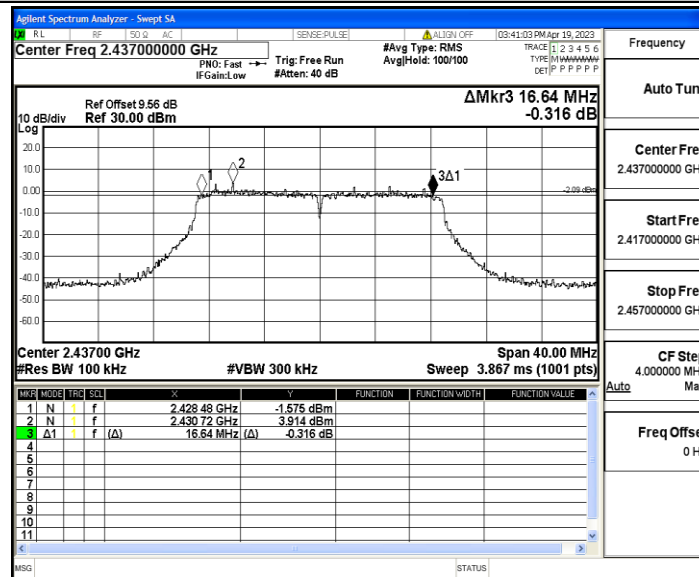
11G_Ant1_2462



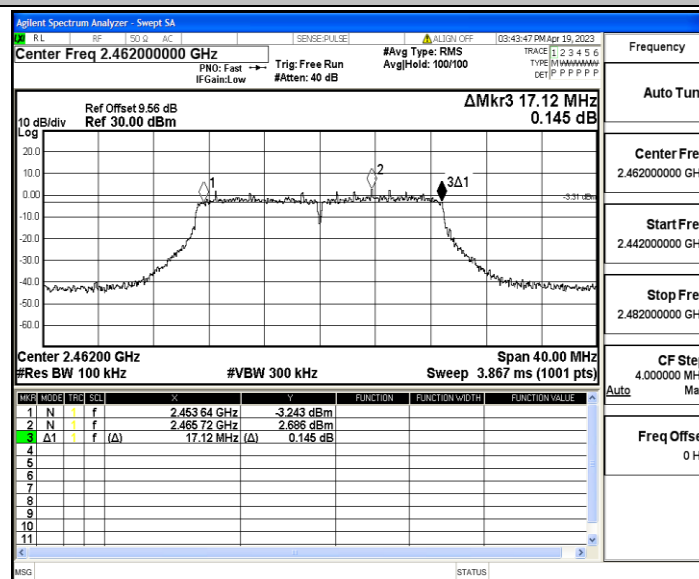
11N20SISO_Ant1_2412



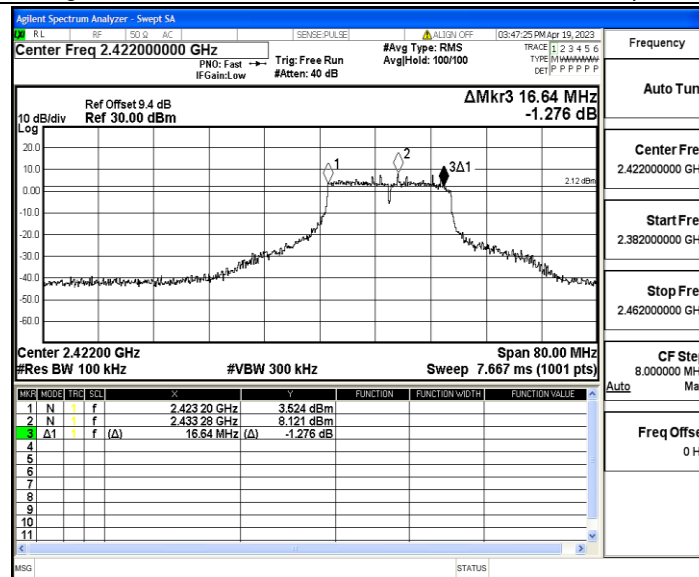
11N20SISO_Ant1_2437



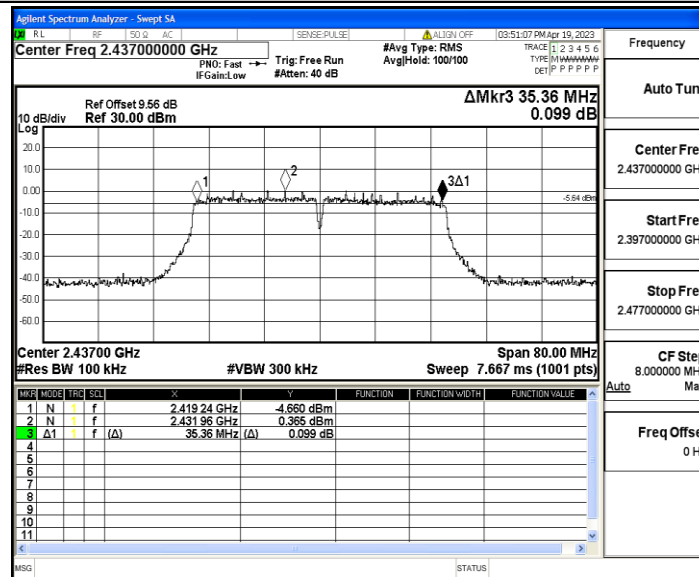
11N20SISO_Ant1_2462



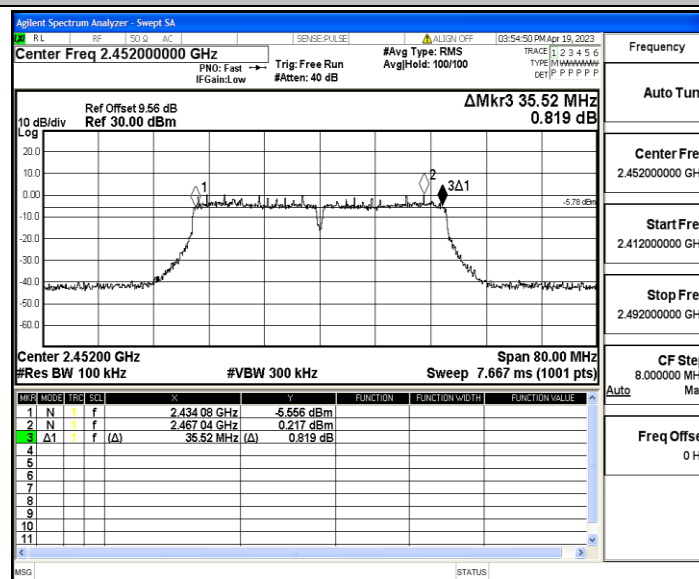
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



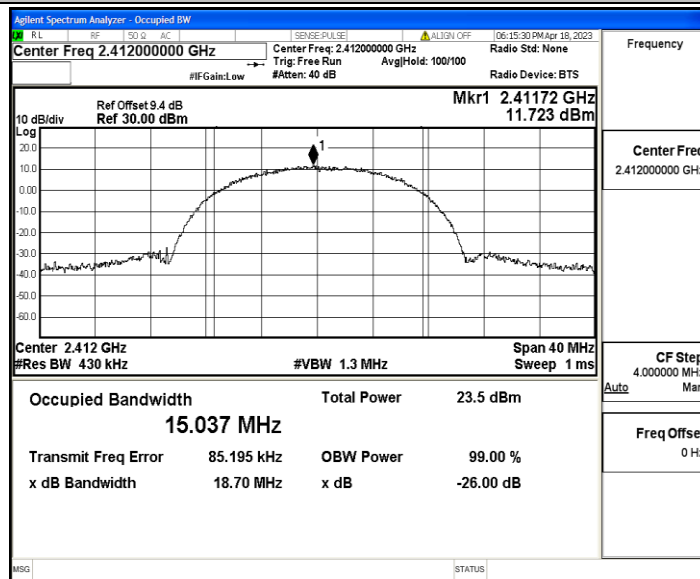
Appendix B: Occupied Channel Bandwidth

Test Result

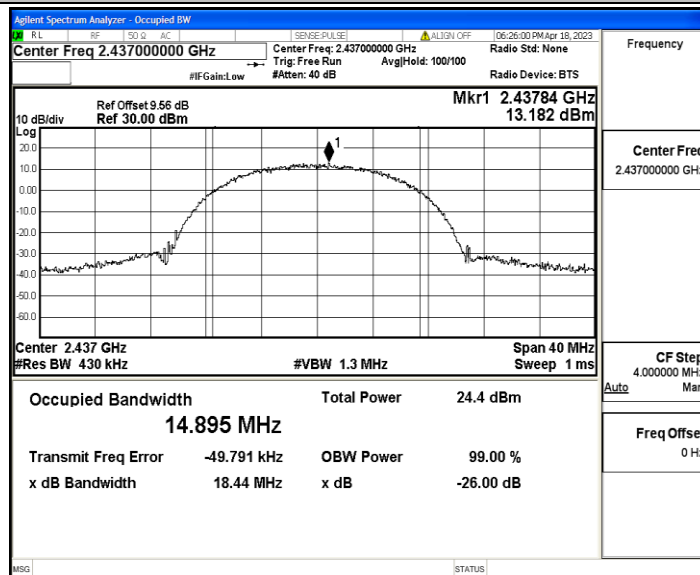
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	15.037	2404.5667	2419.6037	---	---
		2437	14.895	2429.5027	2444.3977	---	---
		2462	14.972	2454.6200	2469.5920	---	---
11G	Ant1	2412	16.978	2403.6130	2420.5910	---	---
		2437	16.898	2428.5000	2445.3980	---	---
		2462	17.020	2453.5647	2470.5847	---	---
11N20SISO	Ant1	2412	18.035	2403.0956	2421.1306	---	---
		2437	17.863	2428.0462	2445.9092	---	---
		2462	17.955	2453.0726	2471.0276	---	---
11N40SISO	Ant1	2422	18.783	2422.3223	2441.1053	---	---
		2437	36.278	2418.8788	2455.1568	---	---
		2452	36.608	2433.7711	2470.3791	---	---

Test Graphs

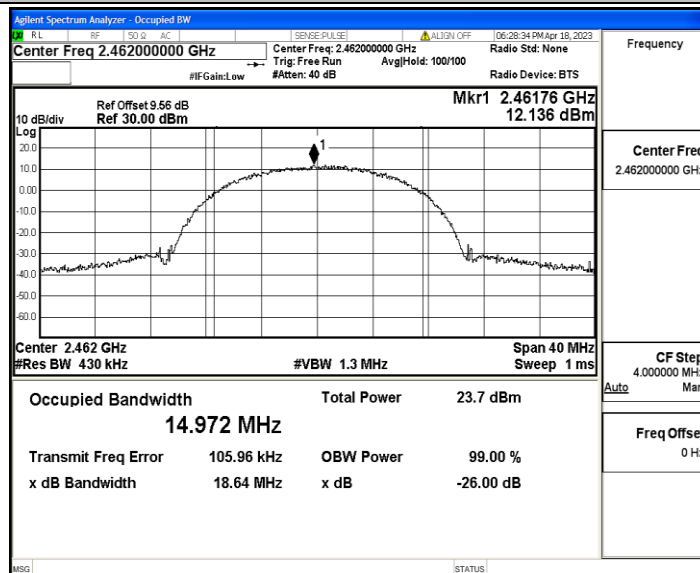
11B_Ant1_2412



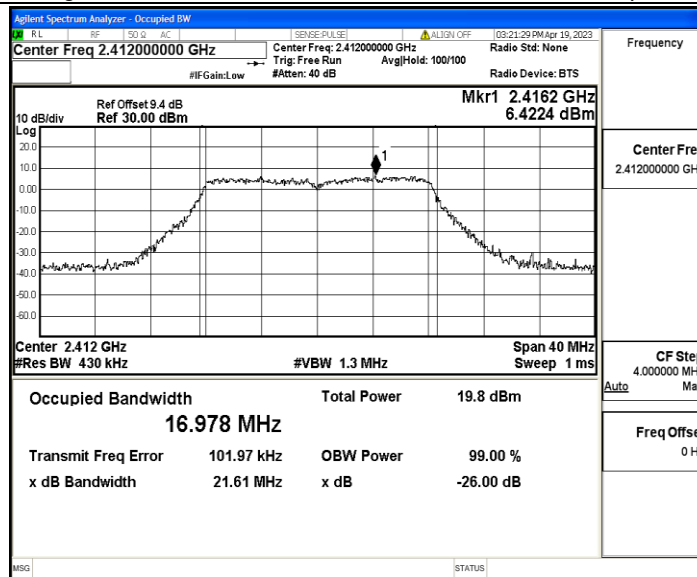
11B_Ant1_2437



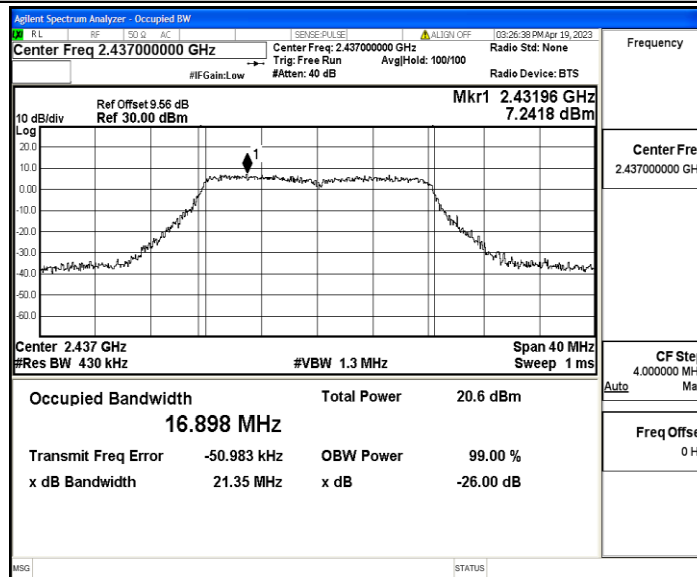
11B_Ant1_2462



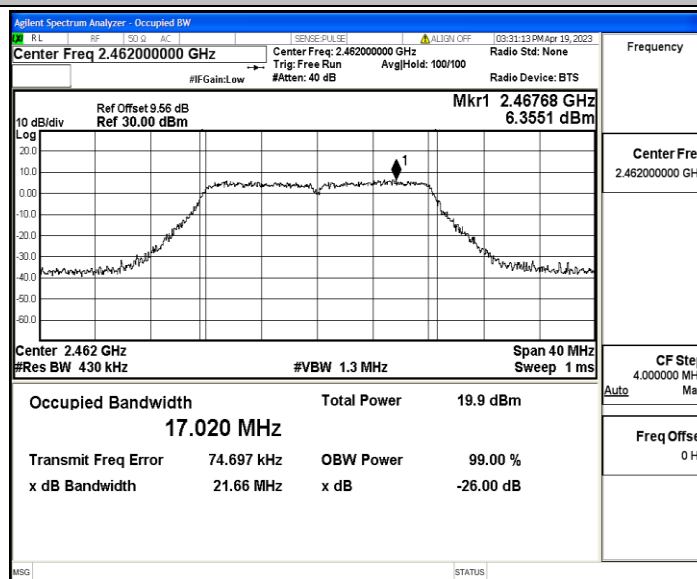
11G_Ant1_2412



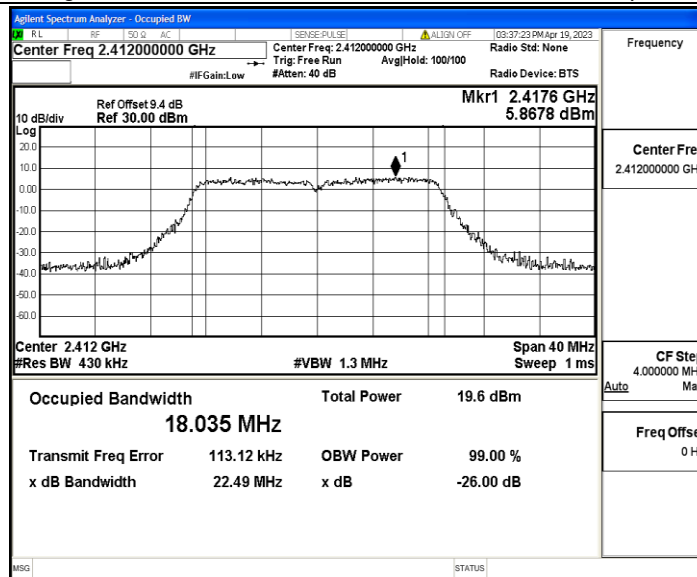
11G_Ant1_2437



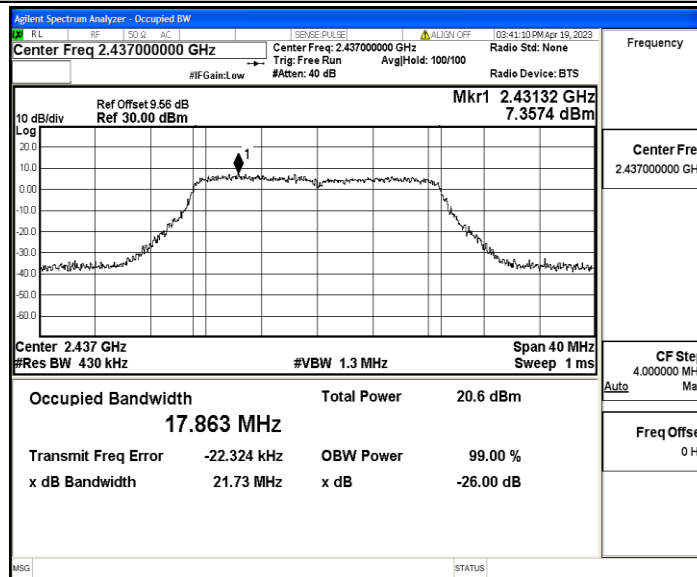
11G_Ant1_2462



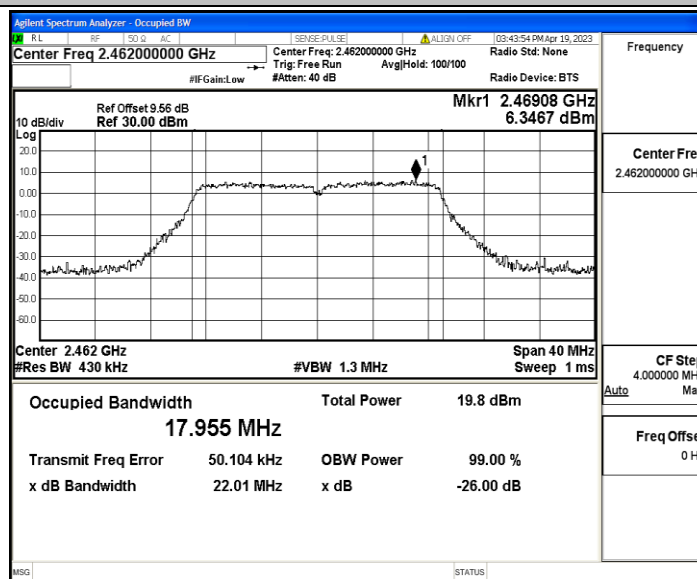
11N20SISO_Ant1_2412



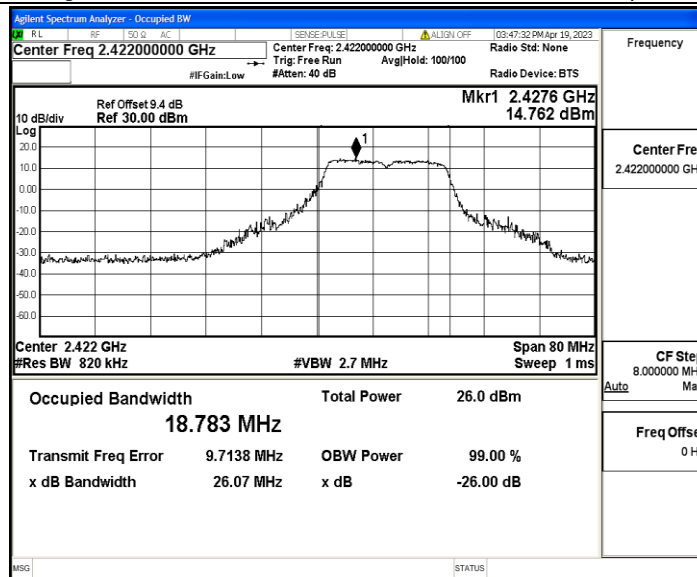
11N20SISO_Ant1_2437



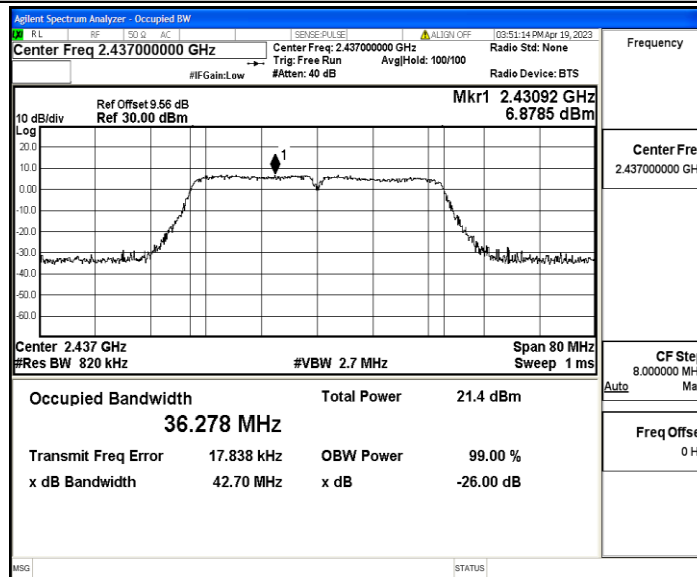
11N20SISO_Ant1_2462



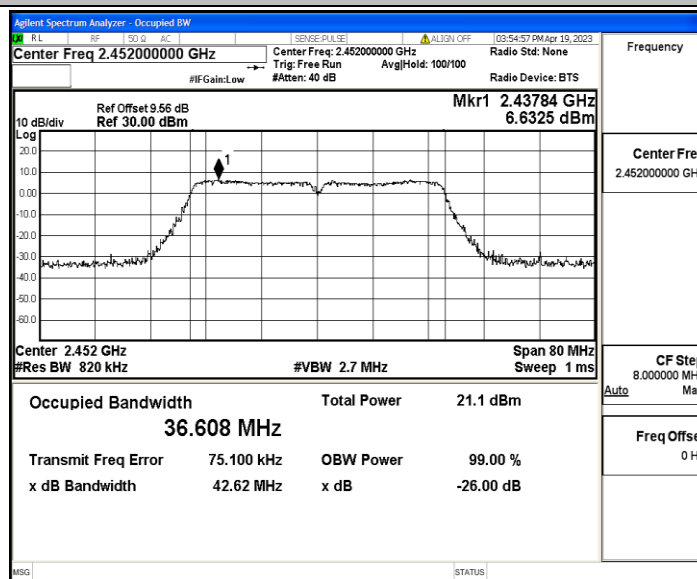
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



Appendix C: Maximum conducted output power

Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	17.33	≤30.00	PASS
		2437	18.23	≤30.00	PASS
		2462	17.48	≤30.00	PASS
11G	Ant1	2412	13.75	≤30.00	PASS
		2437	14.73	≤30.00	PASS
		2462	14.01	≤30.00	PASS
11N20SISO	Ant1	2412	14.08	≤30.00	PASS
		2437	14.65	≤30.00	PASS
		2462	13.84	≤30.00	PASS
11N40SISO	Ant1	2422	19.22	≤30.00	PASS
		2437	14.85	≤30.00	PASS
		2452	14.35	≤30.00	PASS

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

Appendix D: Maximum power spectral density

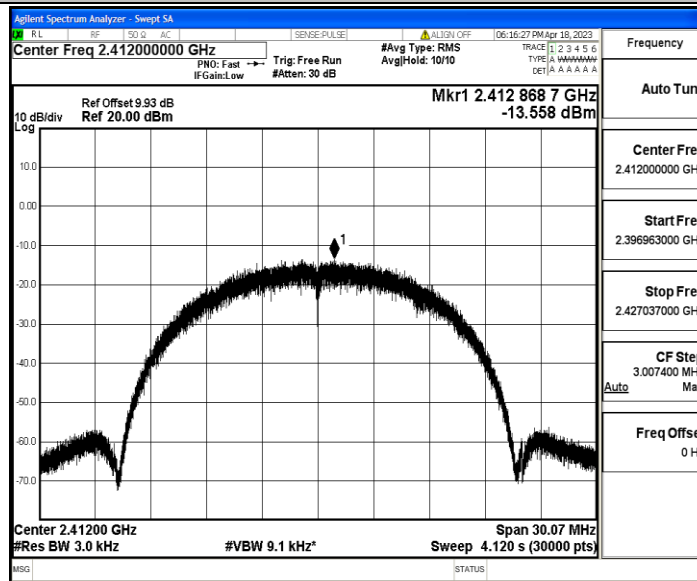
Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-13.56	≤8.00	PASS
		2437	-12.03	≤8.00	PASS
		2462	-13.12	≤8.00	PASS
11G	Ant1	2412	-15.38	≤8.00	PASS
		2437	-15.76	≤8.00	PASS
		2462	-16.37	≤8.00	PASS
11N20SISO	Ant1	2412	-15.89	≤8.00	PASS
		2437	-16.04	≤8.00	PASS
		2462	-16.94	≤8.00	PASS
11N40SISO	Ant1	2422	-11.54	≤8.00	PASS
		2437	-18.5	≤8.00	PASS
		2452	-18.61	≤8.00	PASS

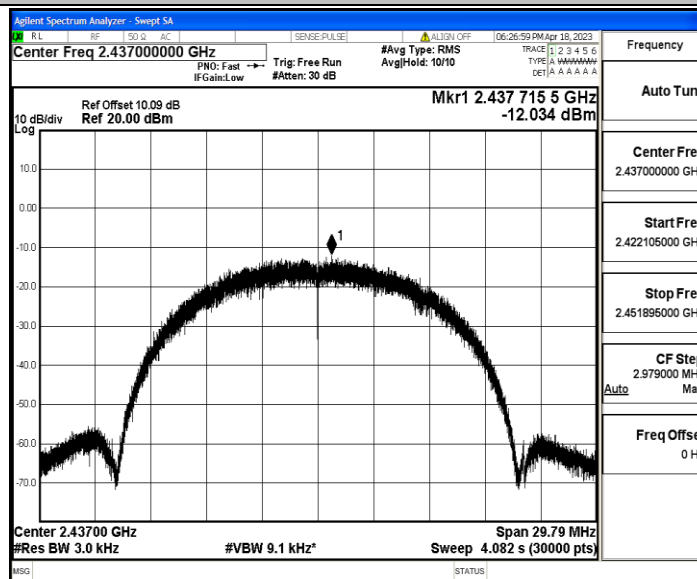
Note: The Duty Cycle Factor is compensated in the test result.

Test Graphs

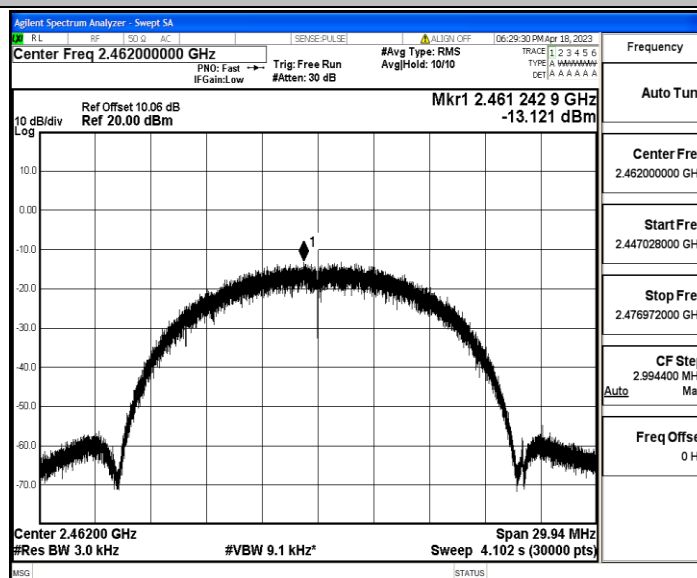
11B_Ant1_2412



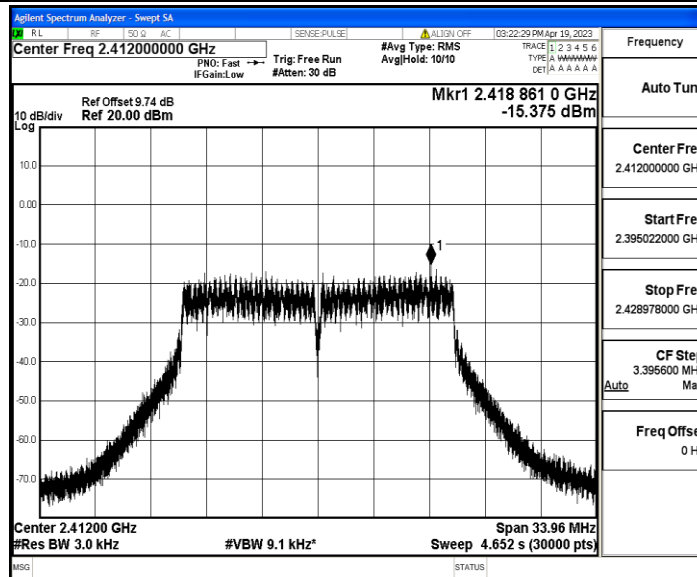
11B_Ant1_2437



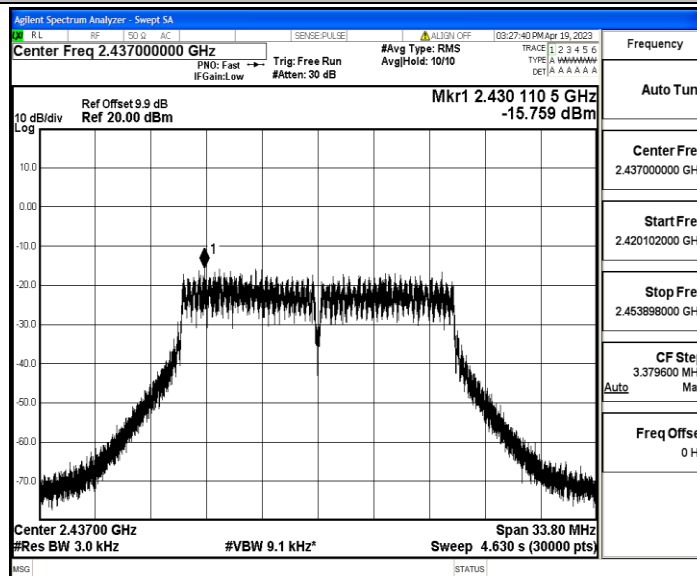
11B_Ant1_2462



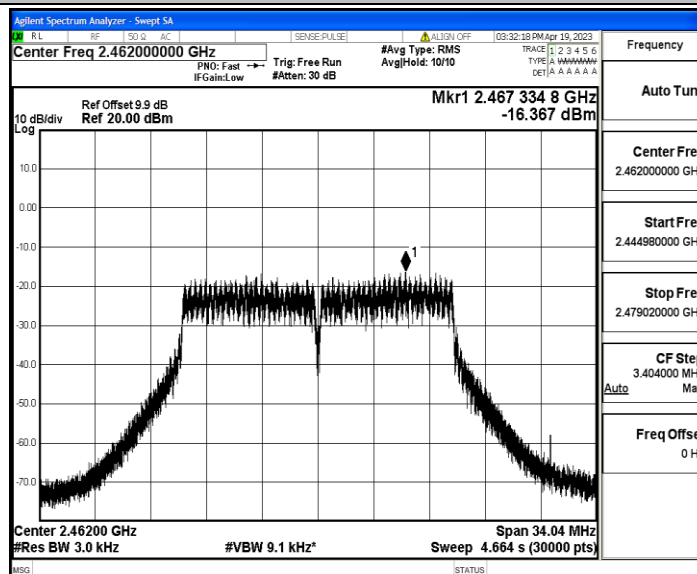
11G_Ant1_2412



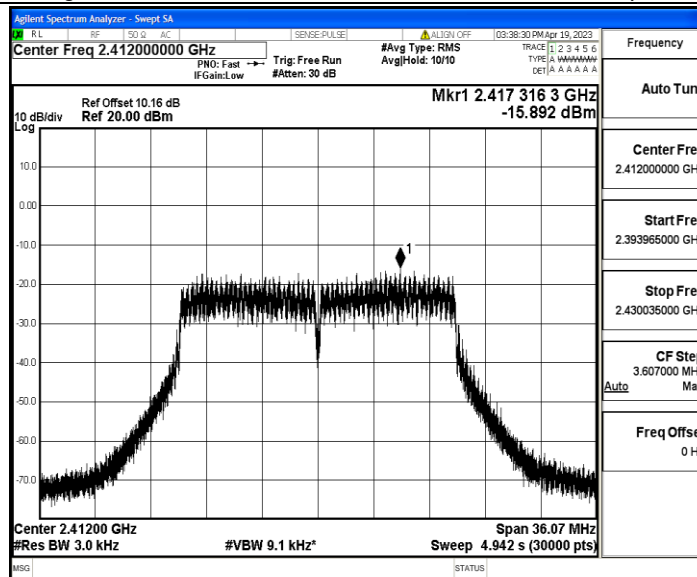
11G_Ant1_2437



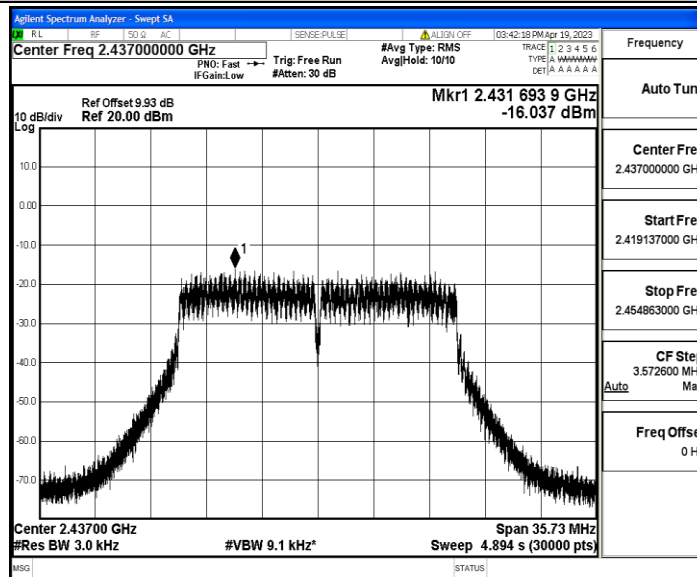
11G_Ant1_2462



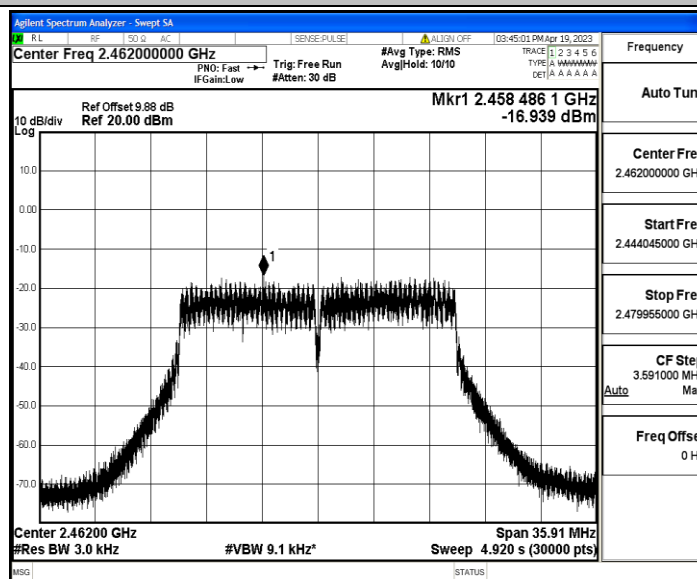
11N20SISO_Ant1_2412



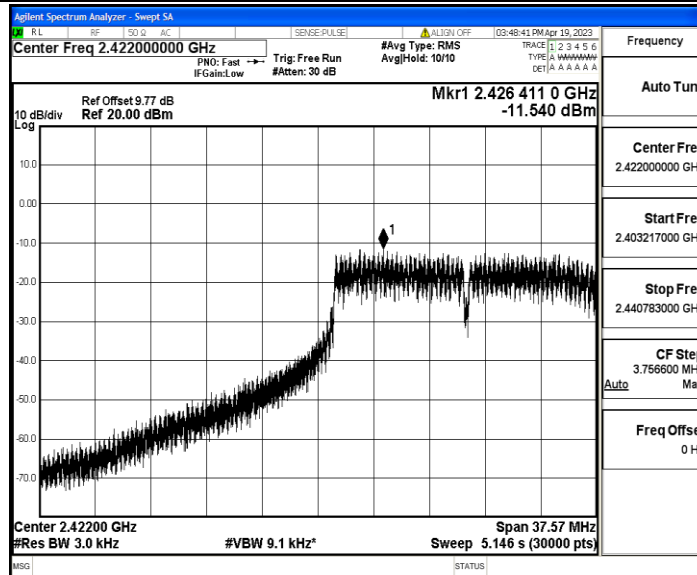
11N20SISO_Ant1_2437



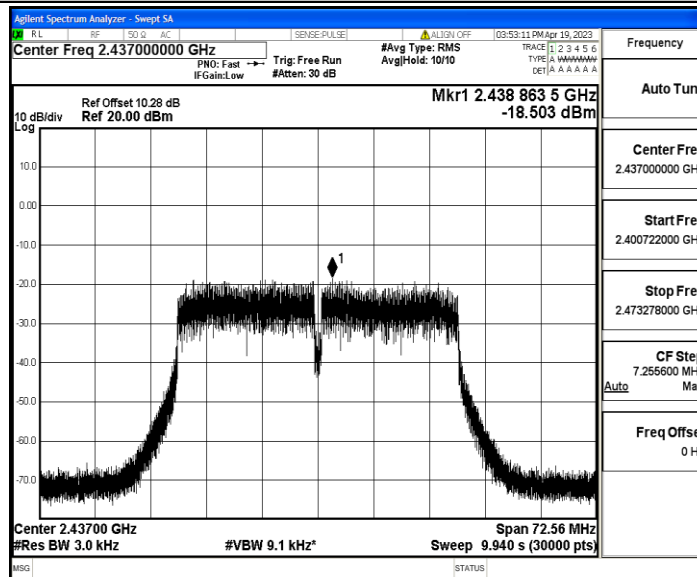
11N20SISO_Ant1_2462



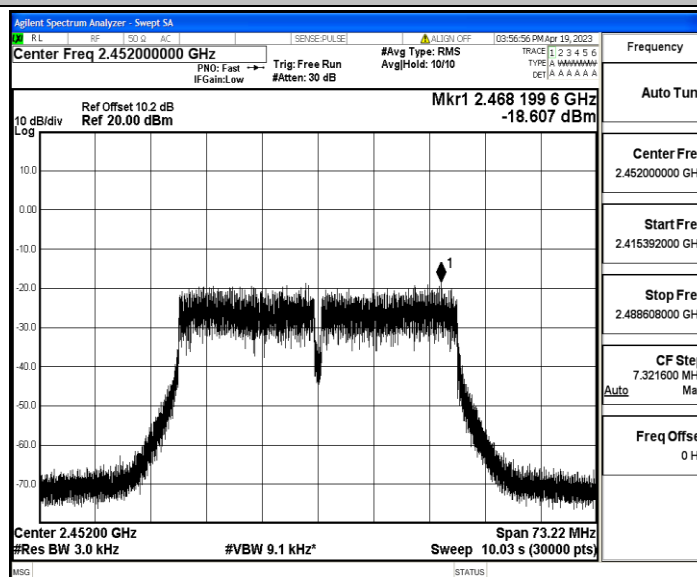
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



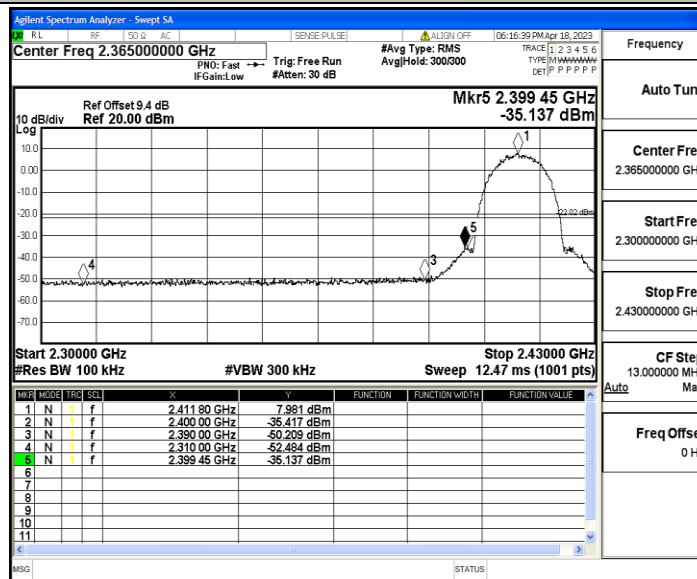
Appendix E: Band edge measurements

Test Result

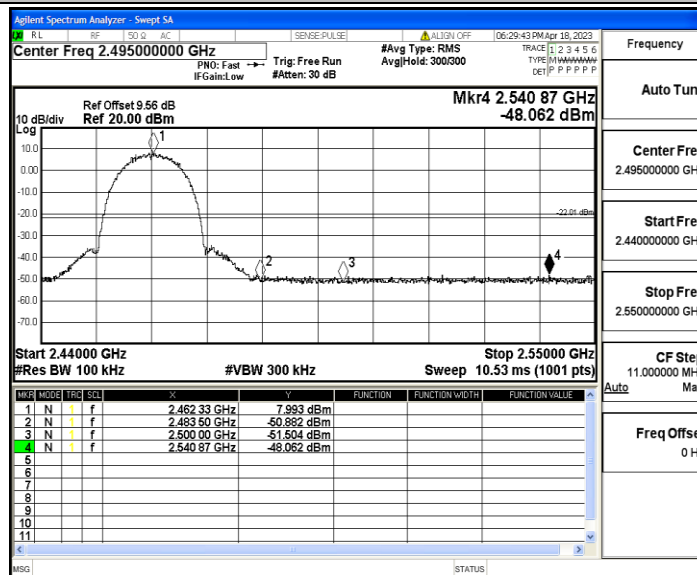
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	7.98	-35.14	≤ -22.02	PASS
		High	2462	7.99	-48.06	≤ -22.01	PASS
11G	Ant1	Low	2412	2.45	-36.53	≤ -27.55	PASS
		High	2462	2.74	-48.53	≤ -27.26	PASS
11N20SISO	Ant1	Low	2412	2.91	-35.62	≤ -27.09	PASS
		High	2462	3.21	-45.65	≤ -26.79	PASS
11N40SISO	Ant1	Low	2422	8.30	-43.46	≤ -21.7	PASS
		High	2452	0.18	-43.18	≤ -29.83	PASS

Test Graphs

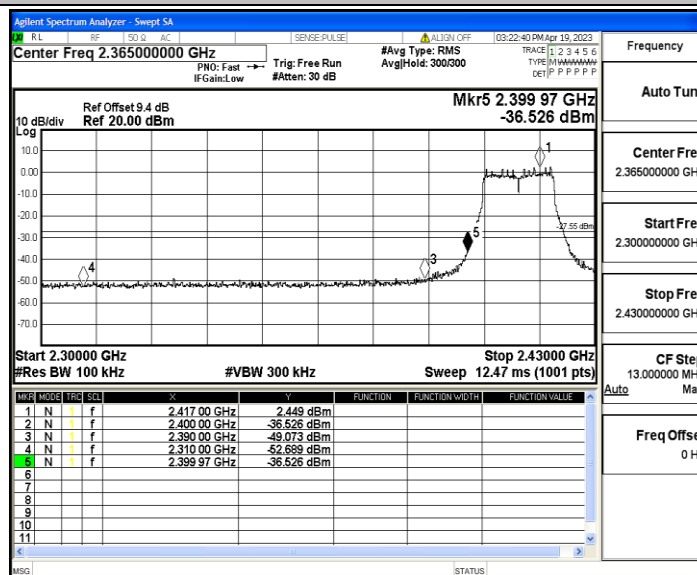
11B_Ant1_Low_2412



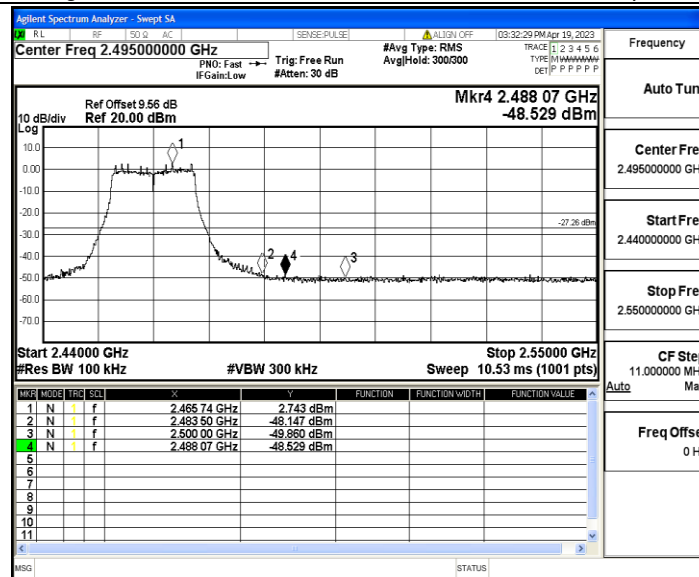
11B_Ant1_High_2462



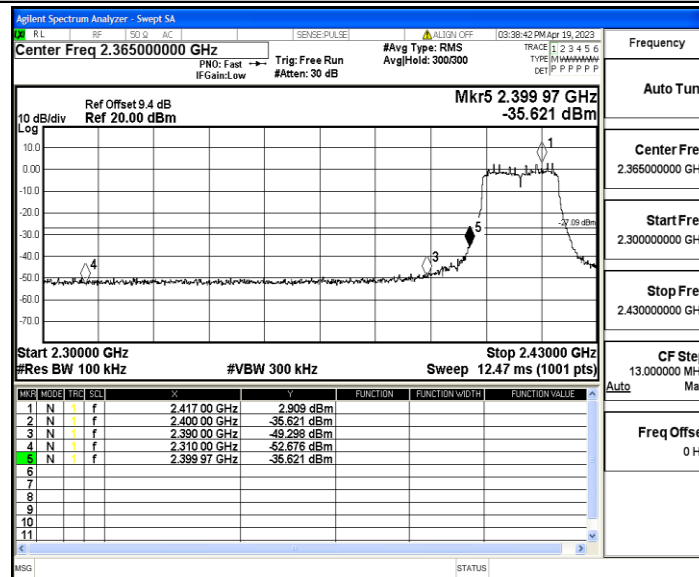
11G_Ant1_Low_2412



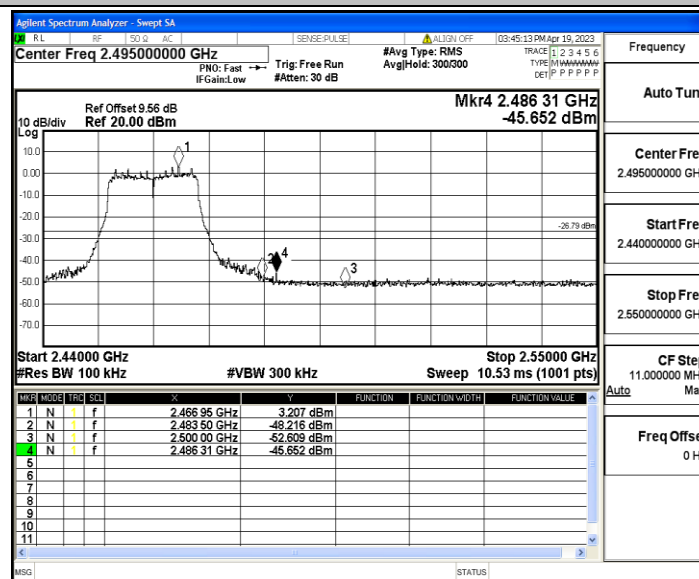
11G_Ant1_High_2462



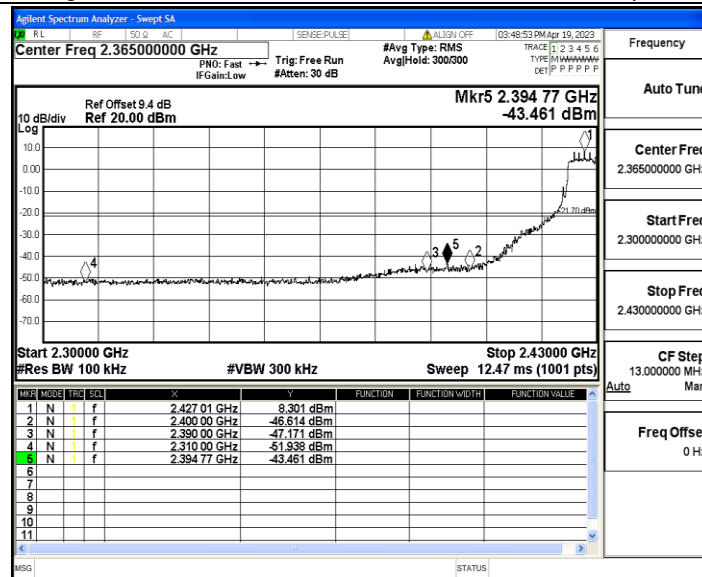
11N20SISO_Ant1_Low_2412



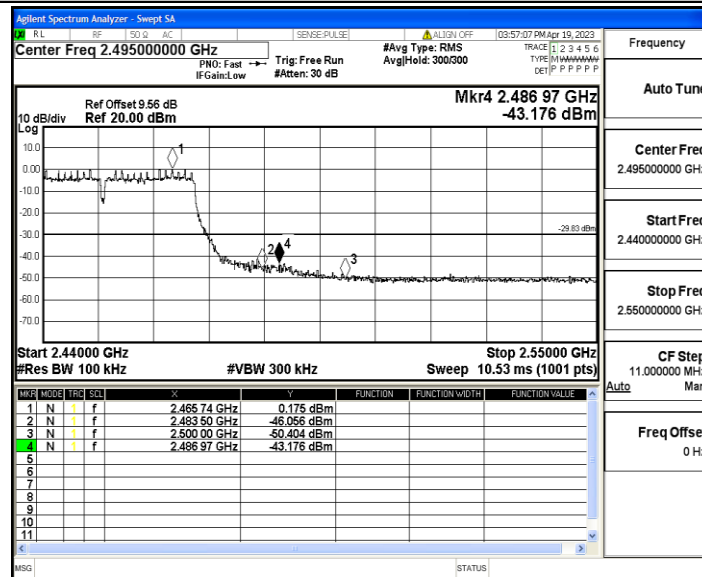
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452



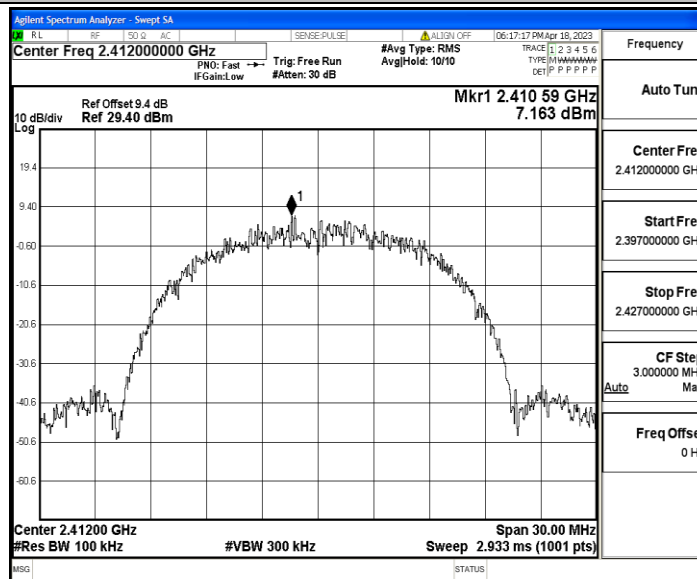
Appendix F: Conducted Spurious Emission

Test Result

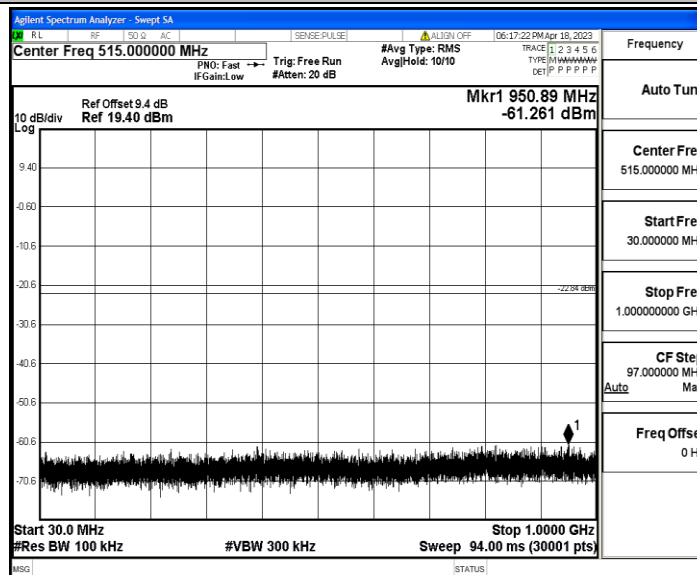
TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	7.16	7.16	---	PASS
			30~1000	7.16	-61.26	≤-22.84	PASS
			1000~26500	7.16	-51.06	≤-22.84	PASS
		2437	Reference	7.40	7.40	---	PASS
			30~1000	7.40	-60.71	≤-22.6	PASS
			1000~26500	7.40	-51.16	≤-22.6	PASS
		2462	Reference	6.87	6.87	---	PASS
			30~1000	6.87	-60.45	≤-23.13	PASS
			1000~26500	6.87	-51.62	≤-23.13	PASS
11G	Ant1	2412	Reference	-0.23	-0.23	---	PASS
			30~1000	-0.23	-61.13	≤-30.23	PASS
			1000~26500	-0.23	-47.62	≤-30.23	PASS
		2437	Reference	2.68	2.68	---	PASS
			30~1000	2.68	-59.71	≤-27.32	PASS
			1000~26500	2.68	-51.73	≤-27.32	PASS
		2462	Reference	-0.51	-0.51	---	PASS
			30~1000	-0.51	-60.49	≤-30.51	PASS
			1000~26500	-0.51	-52.08	≤-30.51	PASS
11N20SISO	Ant1	2412	Reference	-0.23	-0.23	---	PASS
			30~1000	-0.23	-61.02	≤-30.23	PASS
			1000~26500	-0.23	-52.25	≤-30.23	PASS
		2437	Reference	-0.04	-0.04	---	PASS
			30~1000	-0.04	-59.89	≤-30.04	PASS
			1000~26500	-0.04	-52.34	≤-30.04	PASS
		2462	Reference	1.90	1.90	---	PASS
			30~1000	1.90	-59.84	≤-28.1	PASS
			1000~26500	1.90	-50.96	≤-28.1	PASS
11N40SISO	Ant1	2422	Reference	7.16	7.16	---	PASS
			30~1000	7.16	-60.01	≤-22.84	PASS
			1000~26500	7.16	-52.52	≤-22.84	PASS
		2437	Reference	0.14	0.14	---	PASS
			30~1000	0.14	-60.6	≤-29.86	PASS
			1000~26500	0.14	-52.24	≤-29.86	PASS
		2452	Reference	0.10	0.10	---	PASS
			30~1000	0.10	-60.38	≤-29.9	PASS
			1000~26500	0.10	-51.96	≤-29.9	PASS

Test Graphs

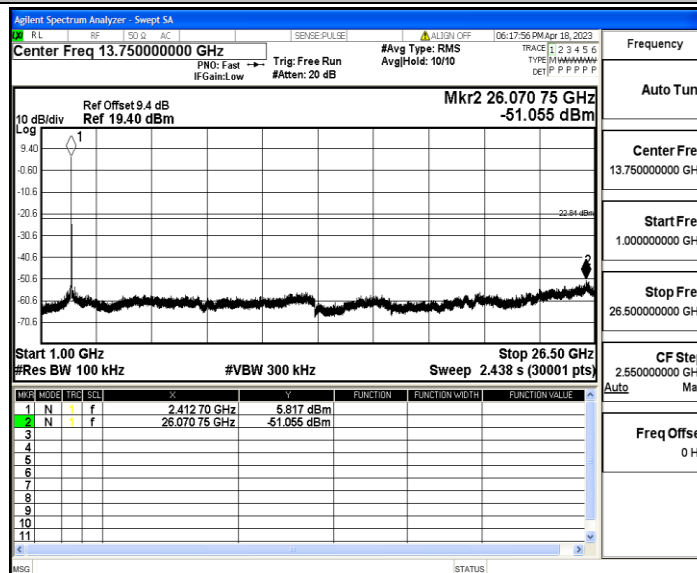
11B_Ant1_2412_0~Reference



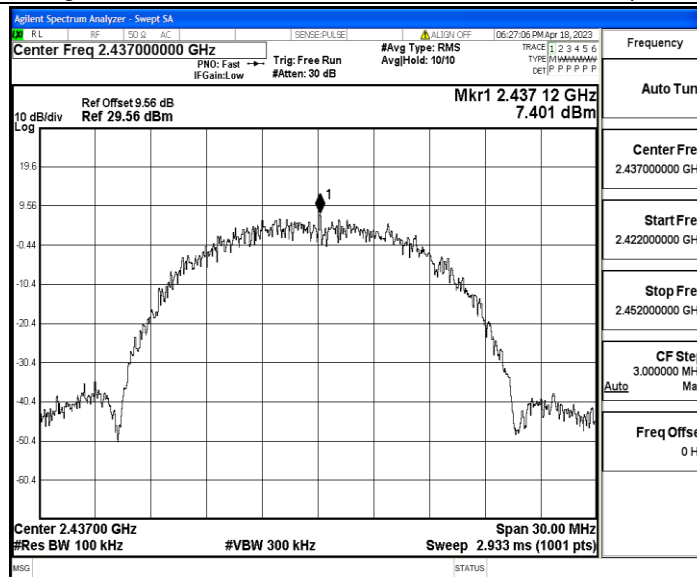
11B_Ant1_2412_30~1000



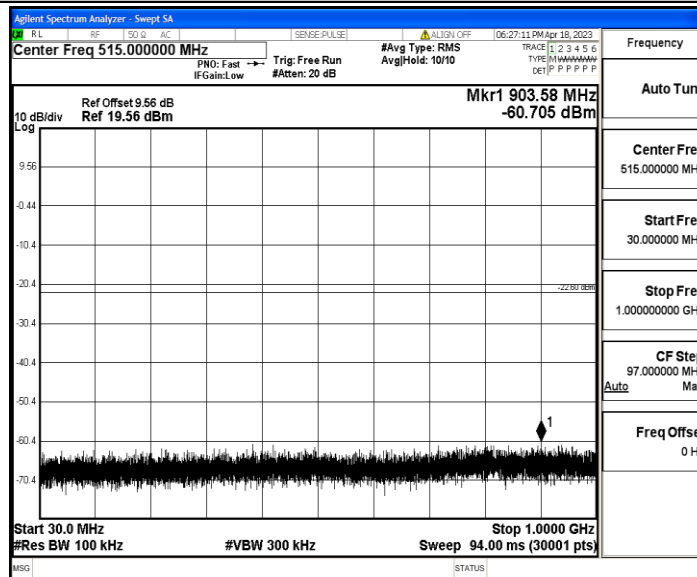
11B_Ant1_2412_1000~26500



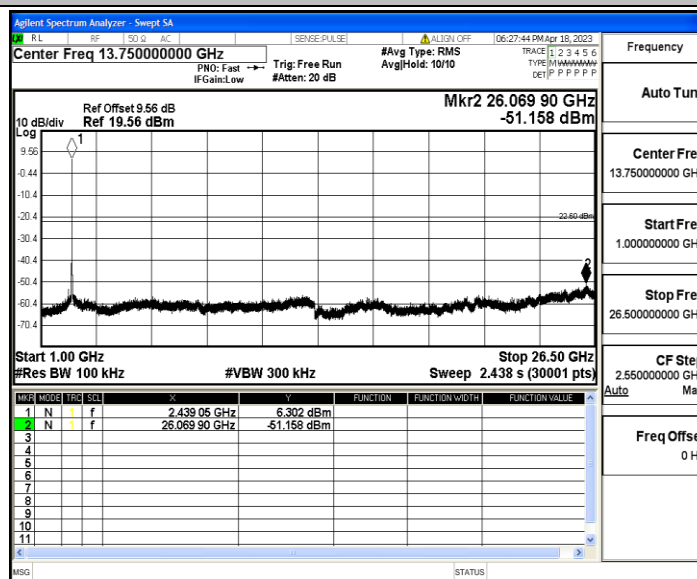
11B_Ant1_2437_0~Reference



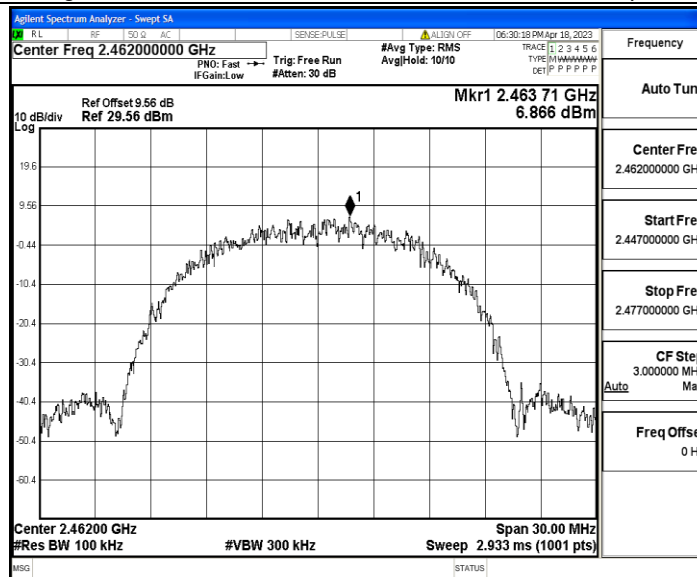
11B_Ant1_2437_30~1000



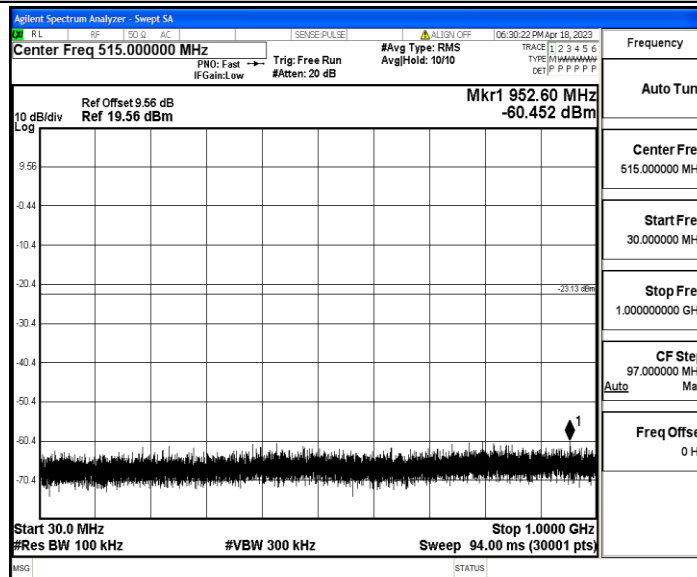
11B_Ant1_2437_1000~26500



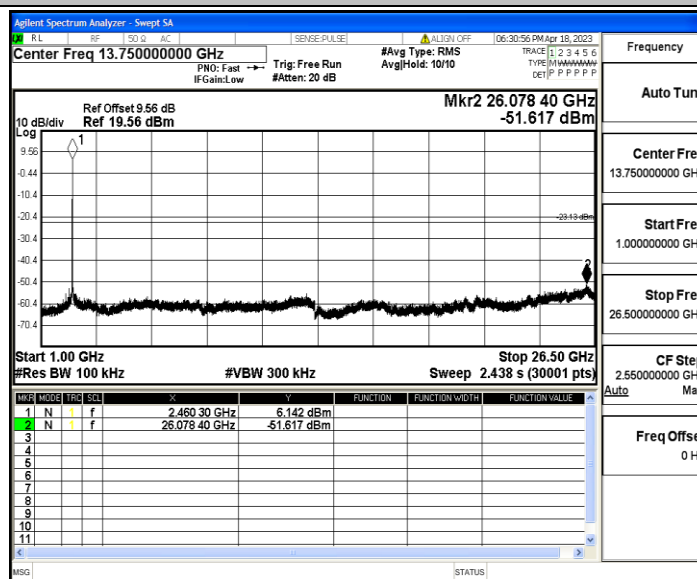
11B_Ant1_2462_0~Reference



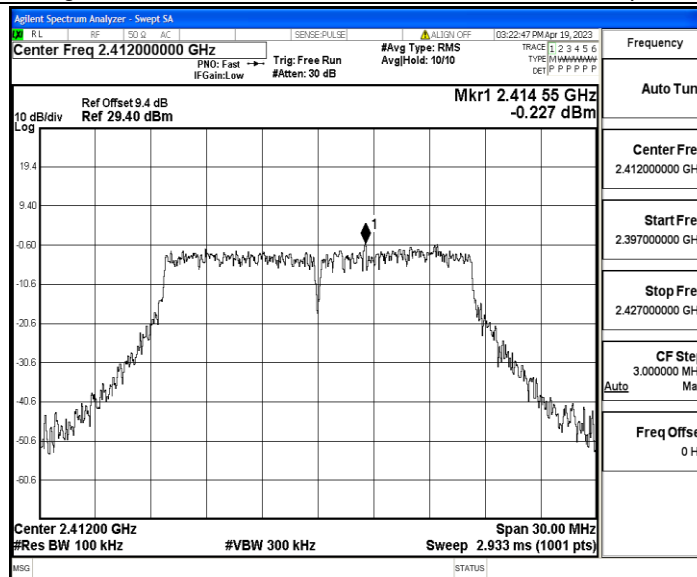
11B_Ant1_2462_30~1000



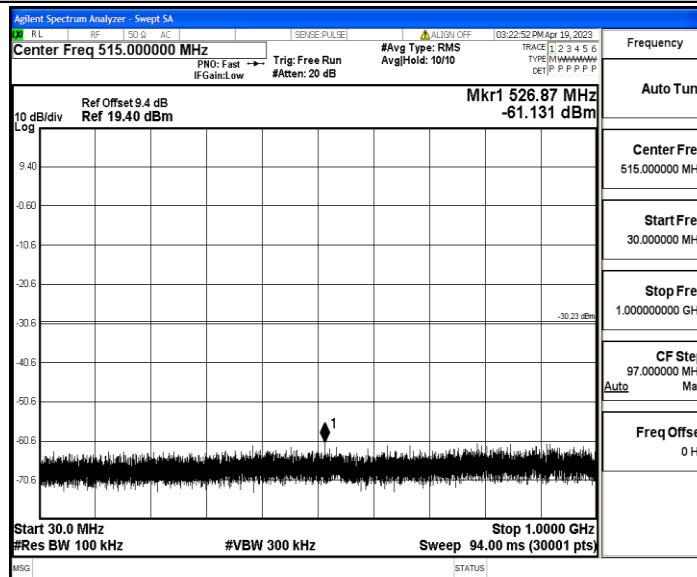
11B_Ant1_2462_1000~26500



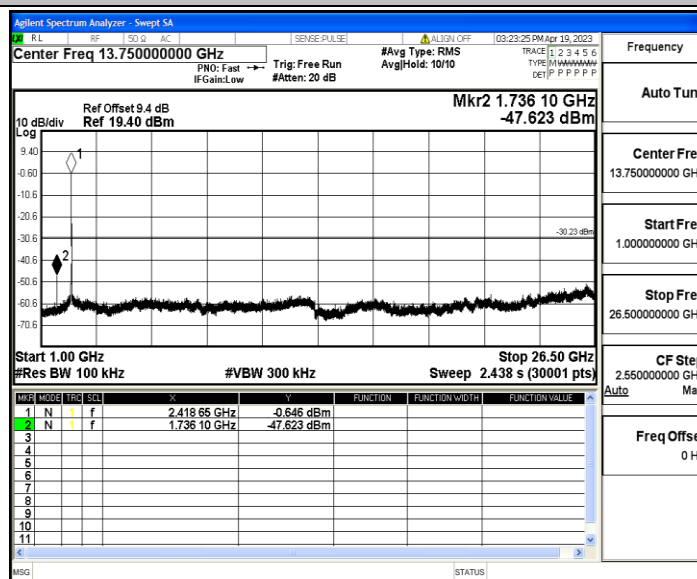
11G_Ant1_2412_0~Reference



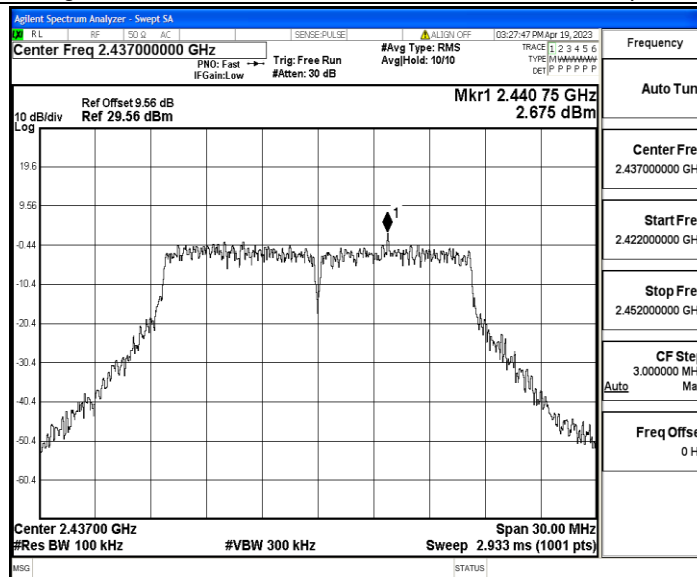
11G_Ant1_2412_30~1000



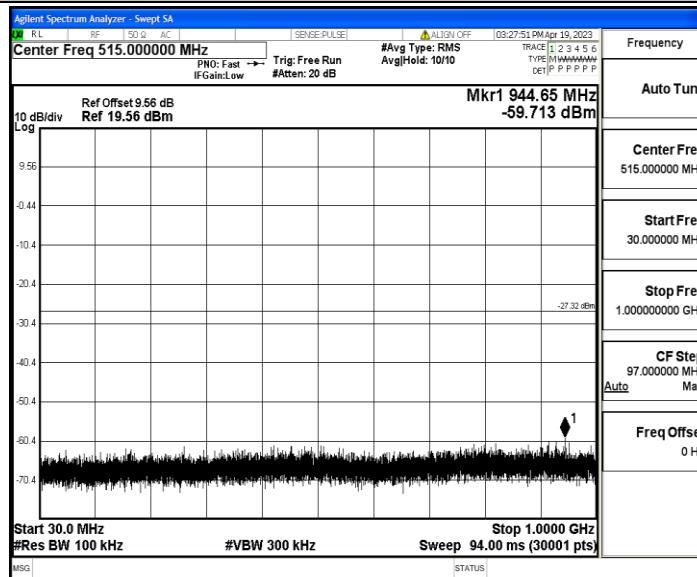
11G_Ant1_2412_1000~26500



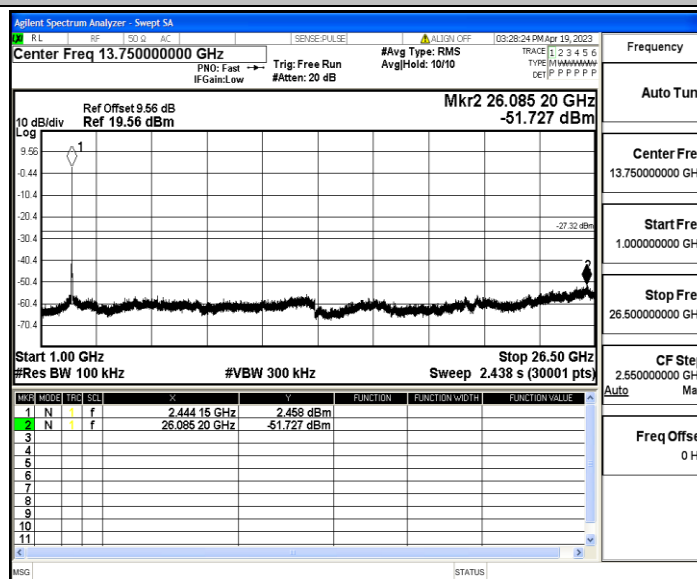
11G_Ant1_2437_0~Reference



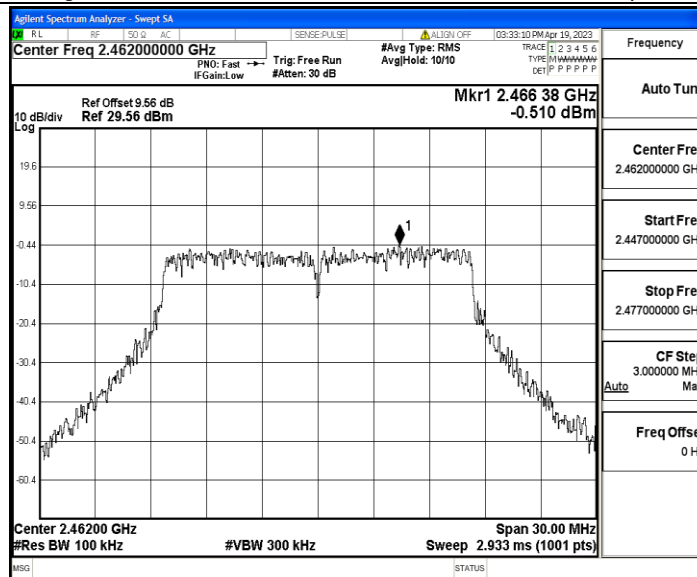
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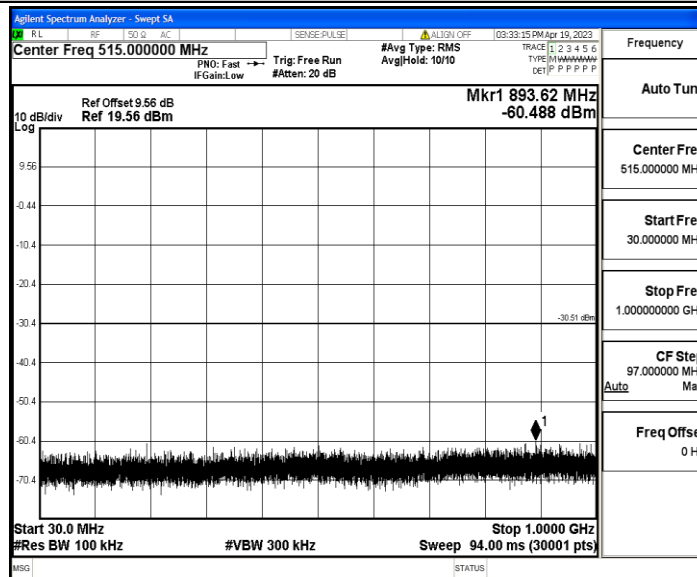
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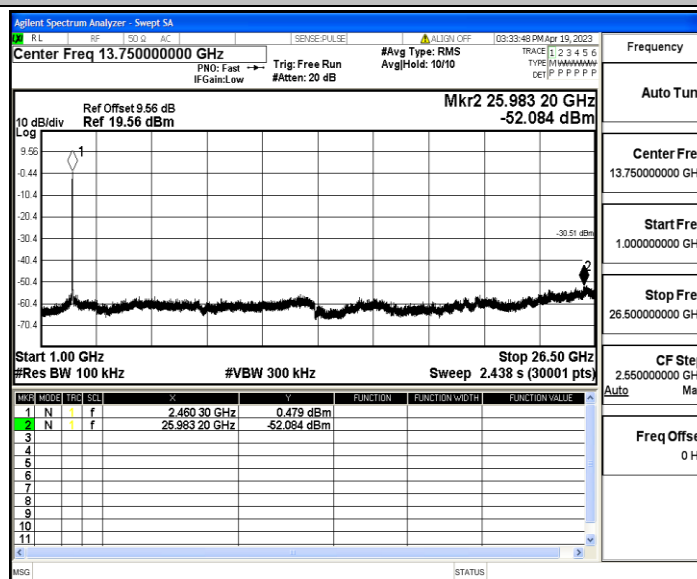
11G_Ant1_2462_0~Reference



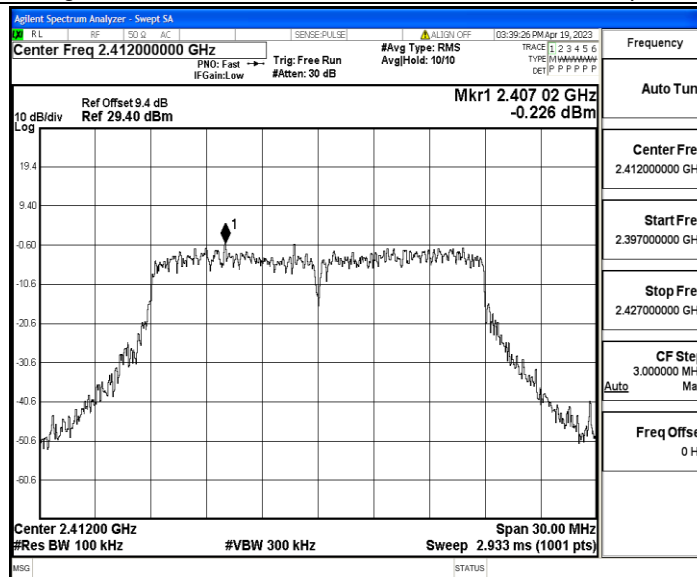
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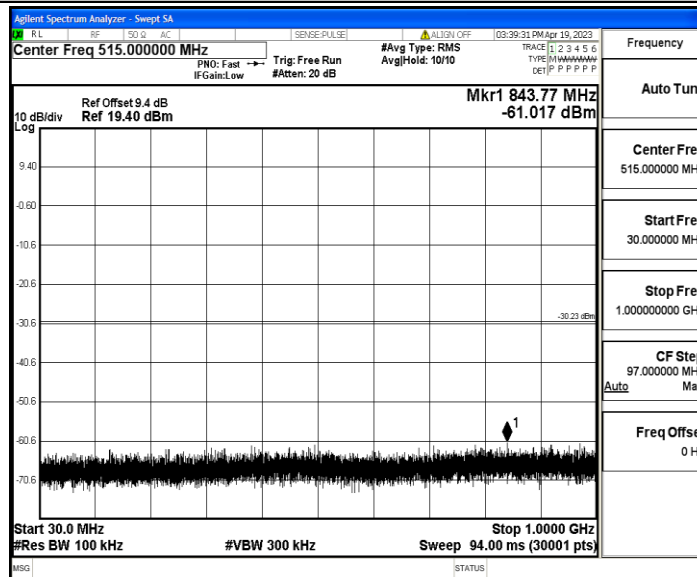
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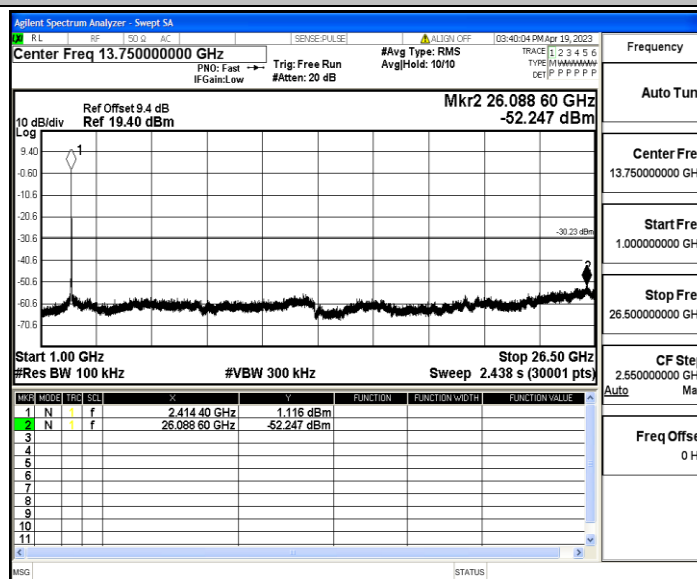
11N20SISO_Ant1_2412_0~Reference



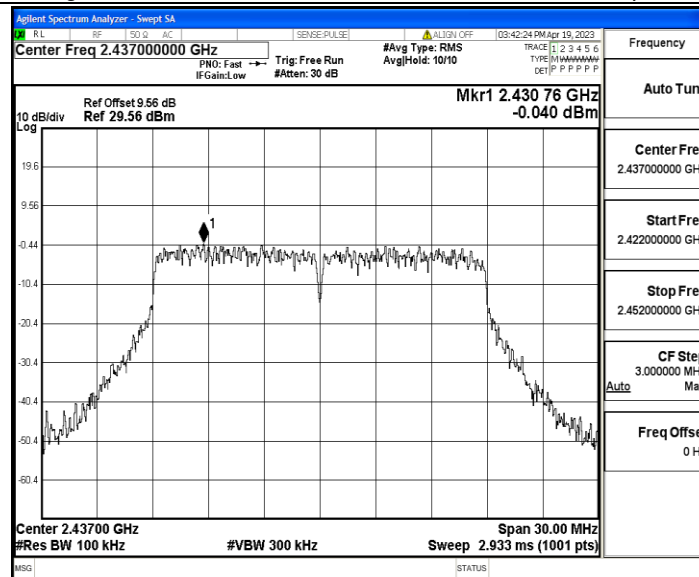
11N20SISO_Ant1_2412_30~1000



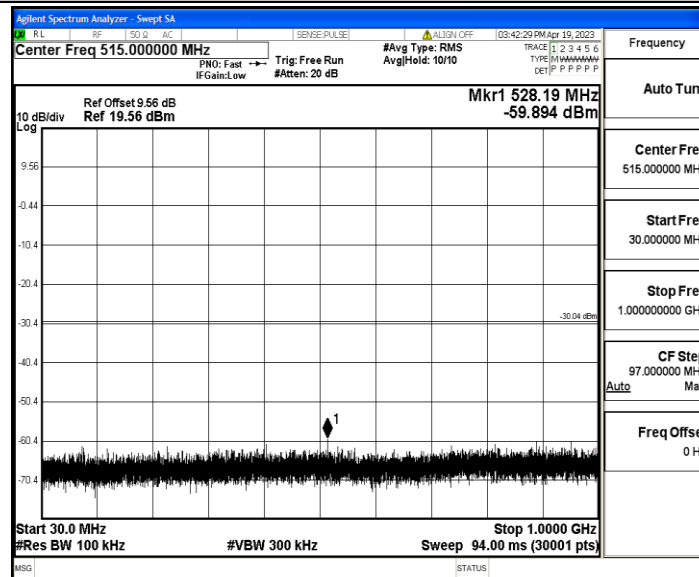
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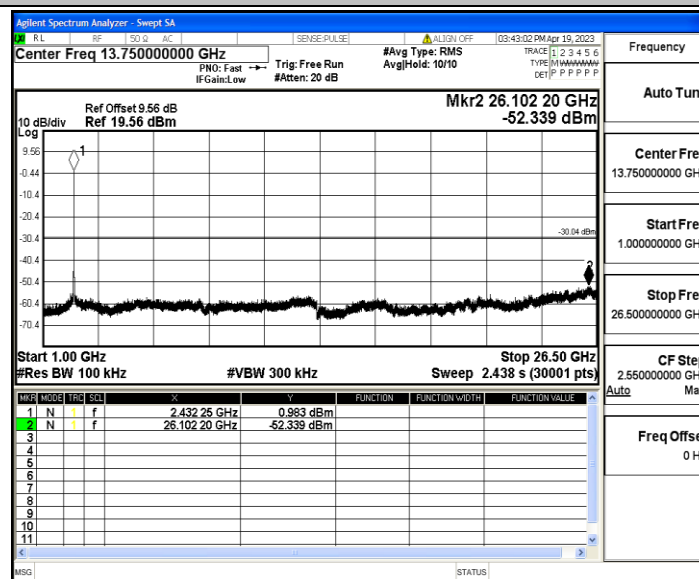
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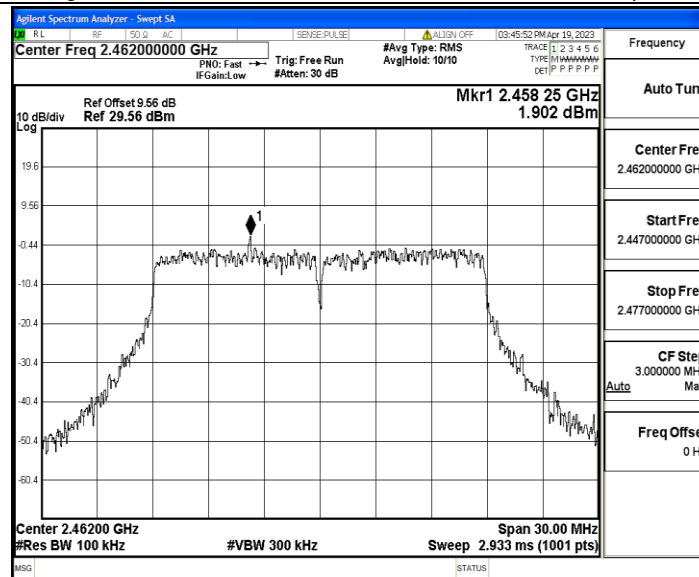
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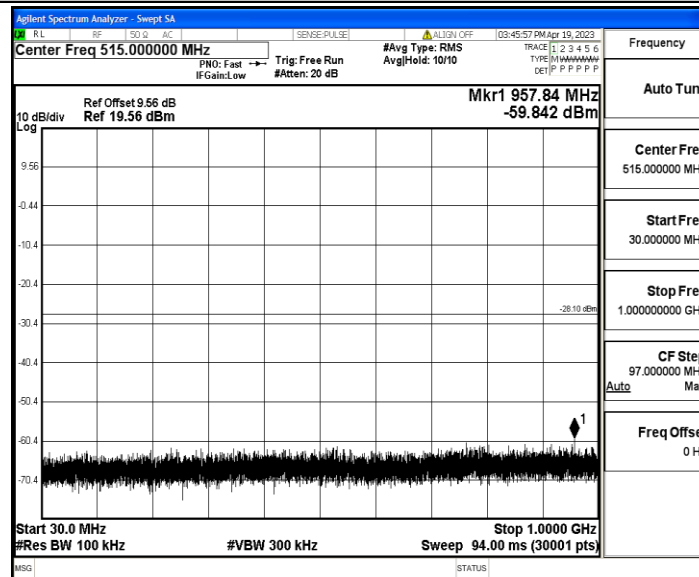
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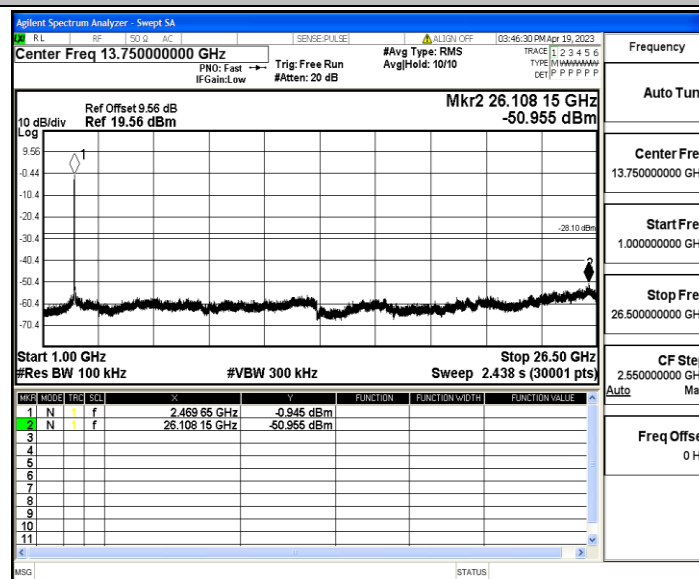
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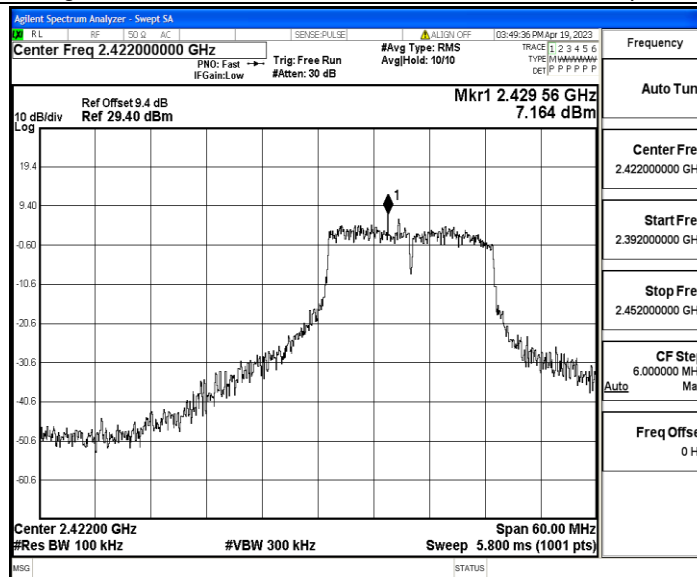
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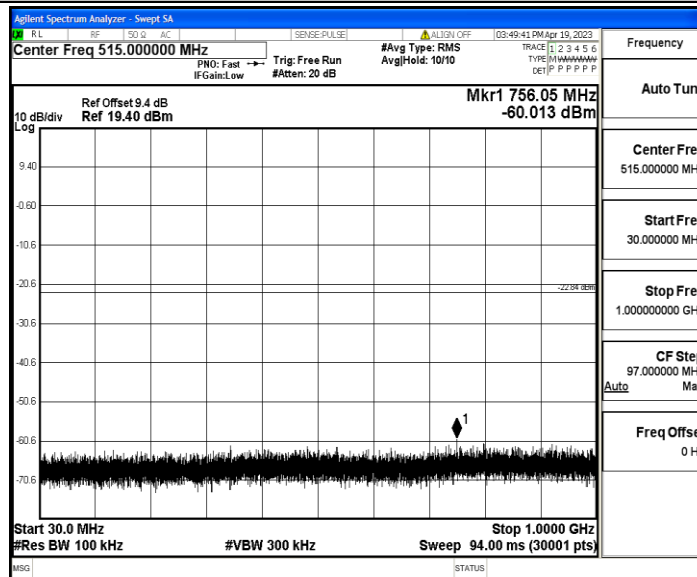
11N20SISO_Ant1_2462_1000~26500



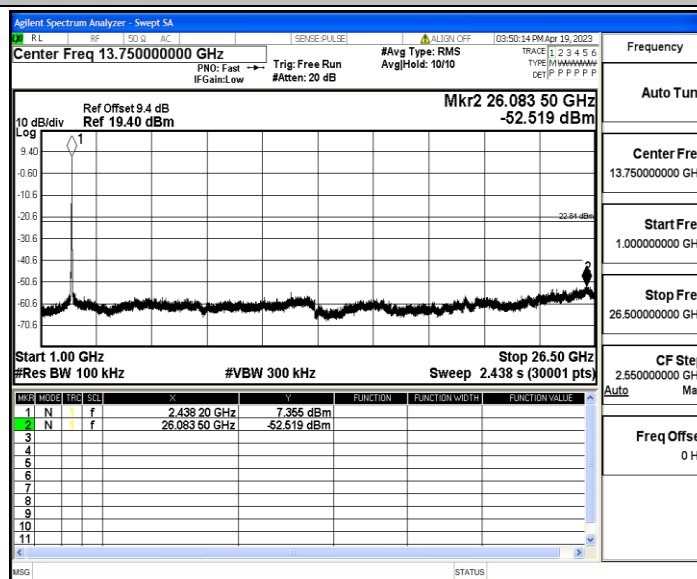
11N40SISO_Ant1_2422_0~Reference



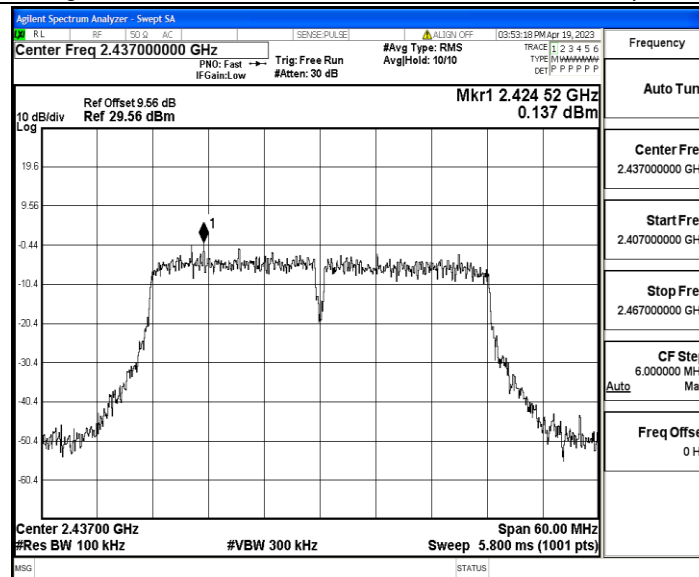
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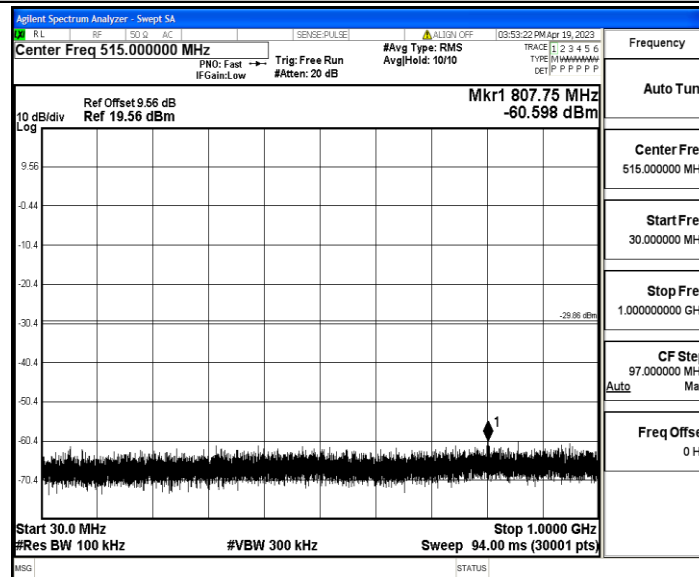
11N40SISO_Ant1_2422_1000~26500



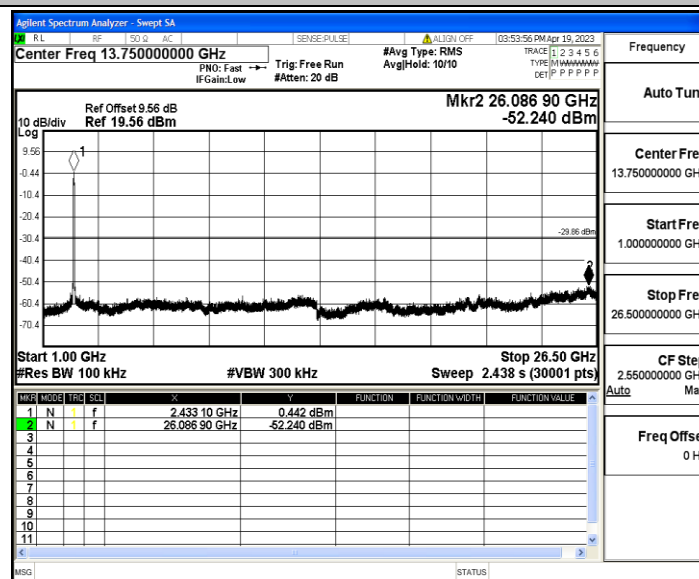
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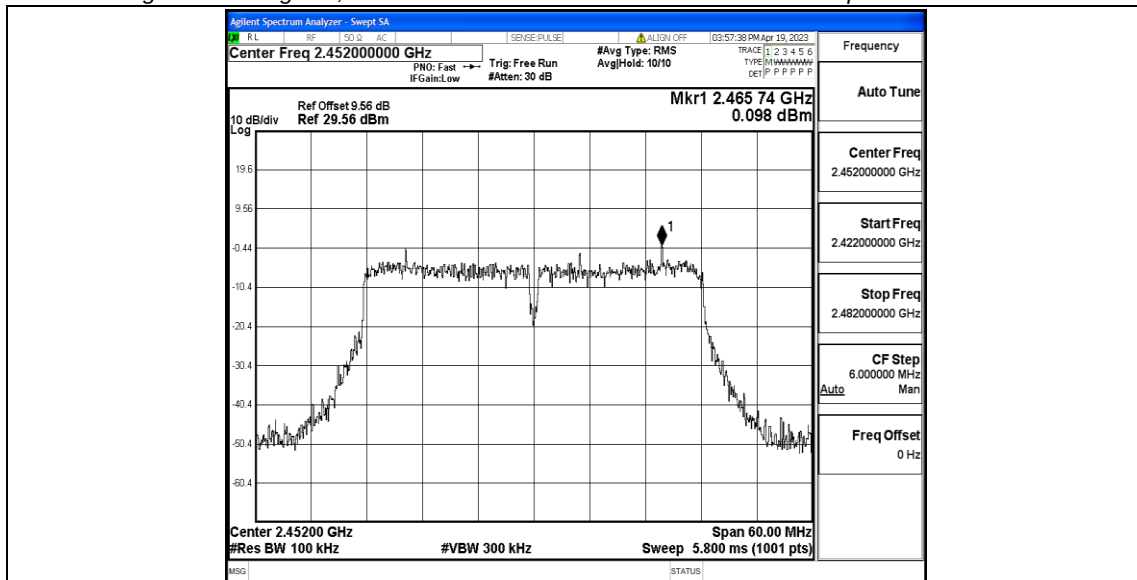
11N40SISO_Ant1_2437_30~1000



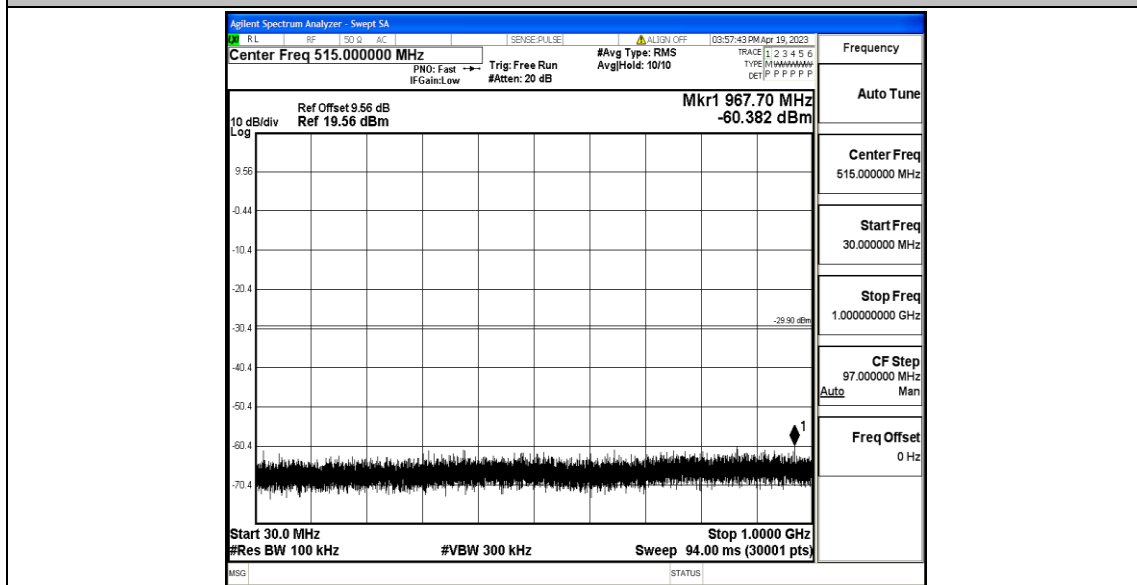
11N40SISO_Ant1_2437_1000~26500



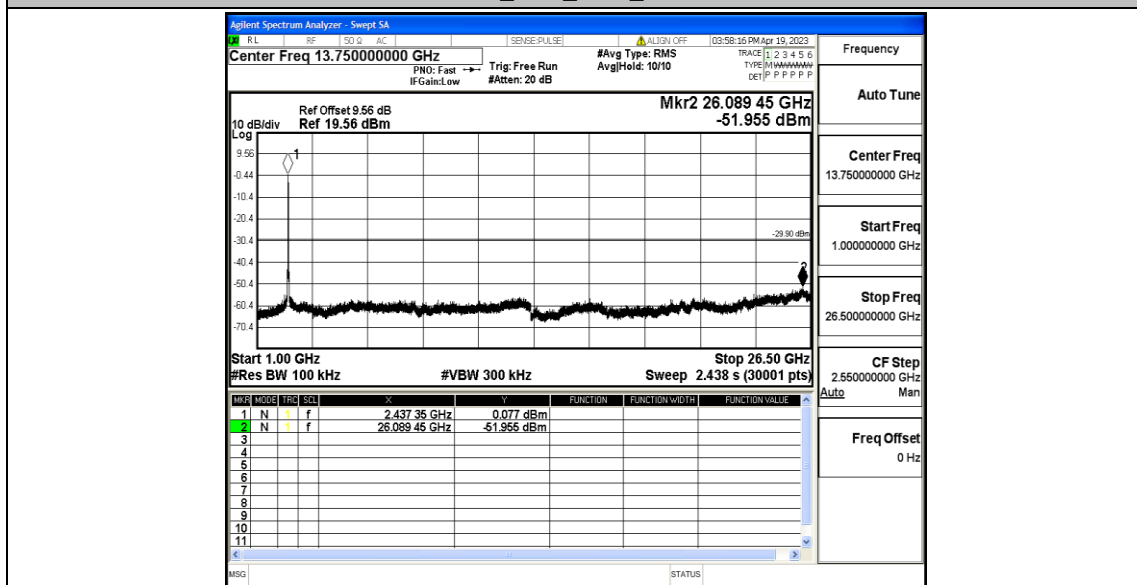
11N40SISO_Ant1_2452_0~Reference



11N40SISO_Ant1_2452_30~1000



11N40SISO_Ant1_2452_1000~26500



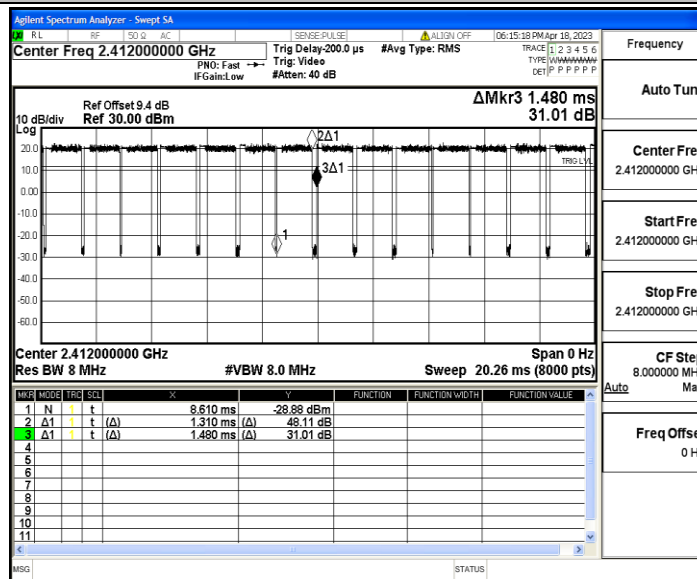
Appendix G: Duty Cycle

Test Result

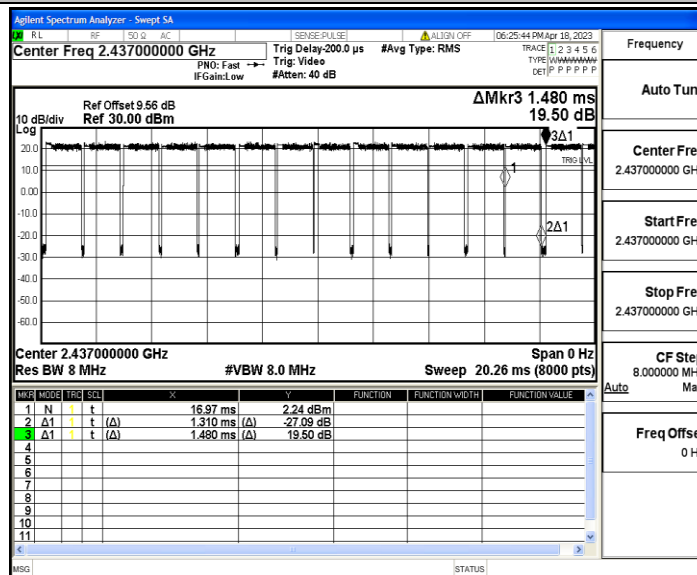
TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T[kHz]
11B	Ant1	2412	1.31	1.48	88.51	0.76
		2437	1.31	1.48	88.51	0.76
		2462	1.31	1.47	89.12	0.76
11G	Ant1	2412	2.06	2.23	92.38	0.49
		2437	2.07	2.24	92.41	0.48
		2462	2.07	2.24	92.41	0.48
11N20SISO	Ant1	2412	1.93	2.30	83.91	0.52
		2437	1.92	2.09	91.87	0.52
		2462	1.93	2.08	92.79	0.52
11N40SISO	Ant1	2422	1.92	2.09	91.87	0.52
		2437	0.94	1.11	84.68	1.06
		2452	0.95	1.10	86.36	1.05

Test Graphs

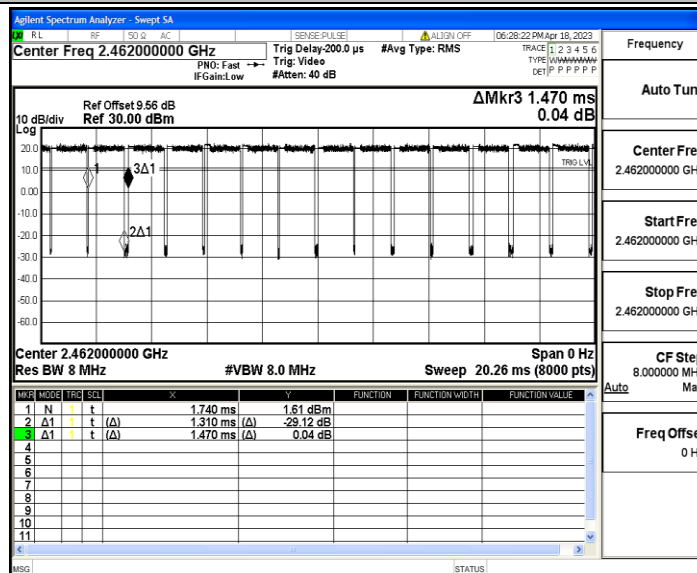
11B_Ant1_2412



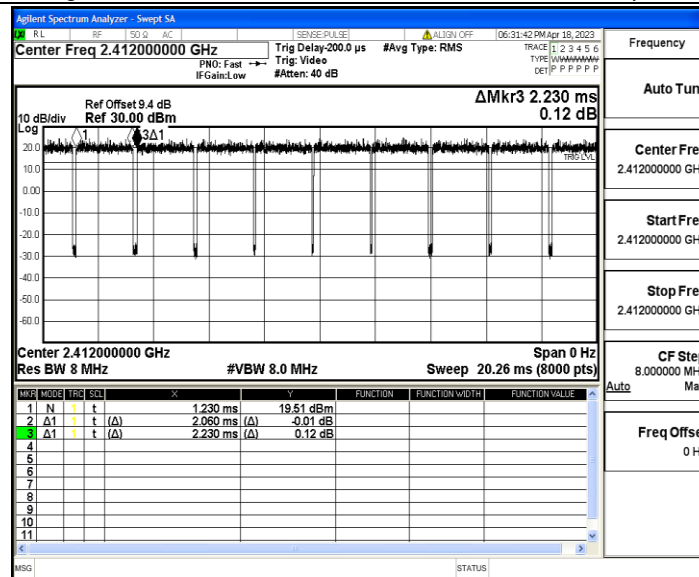
11B_Ant1_2437



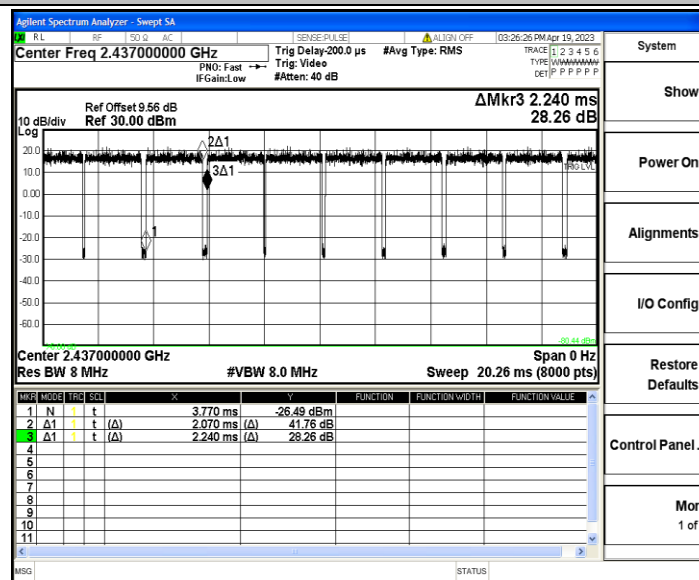
11B_Ant1_2462



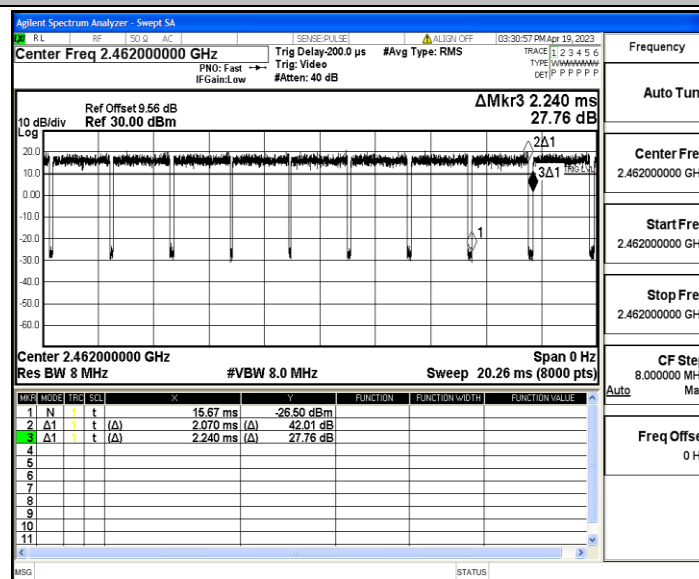
11G_Ant1_2412



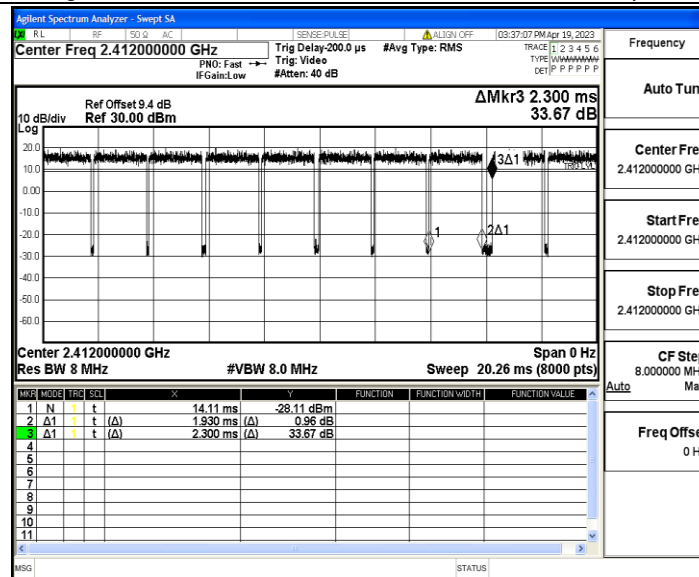
11G_Ant1_2437



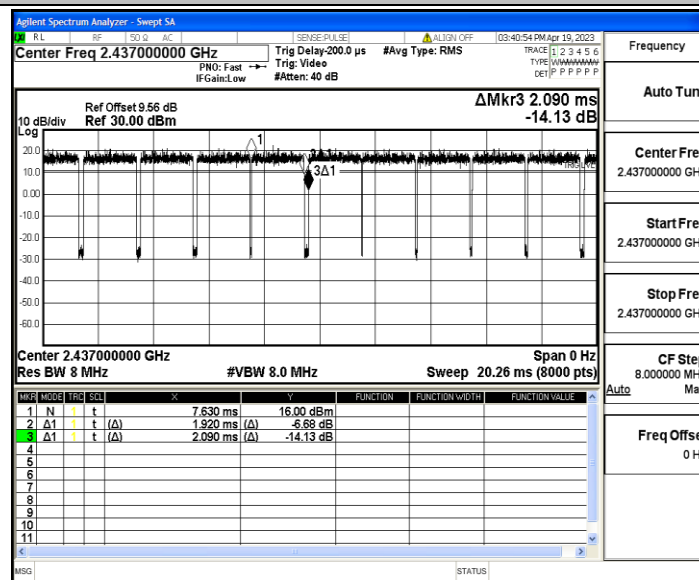
11G_Ant1_2462



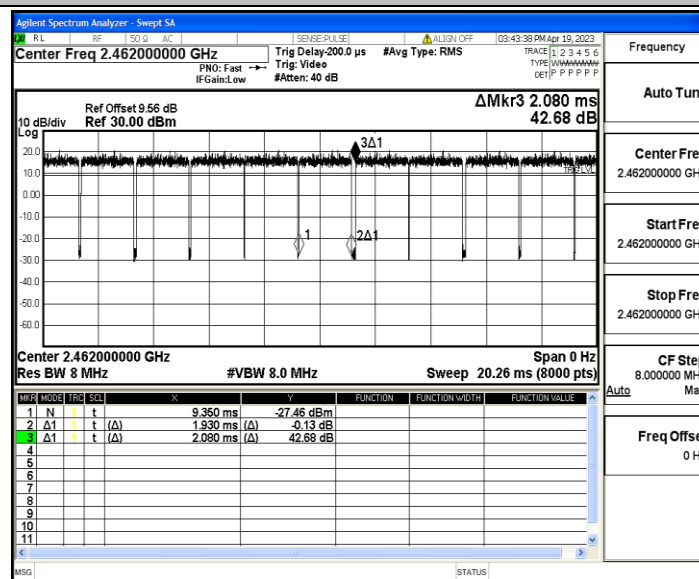
11N20SISO_Ant1_2412



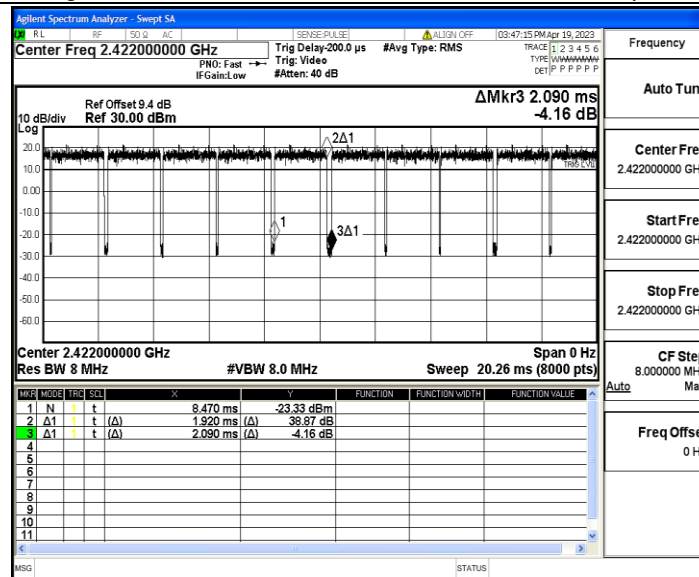
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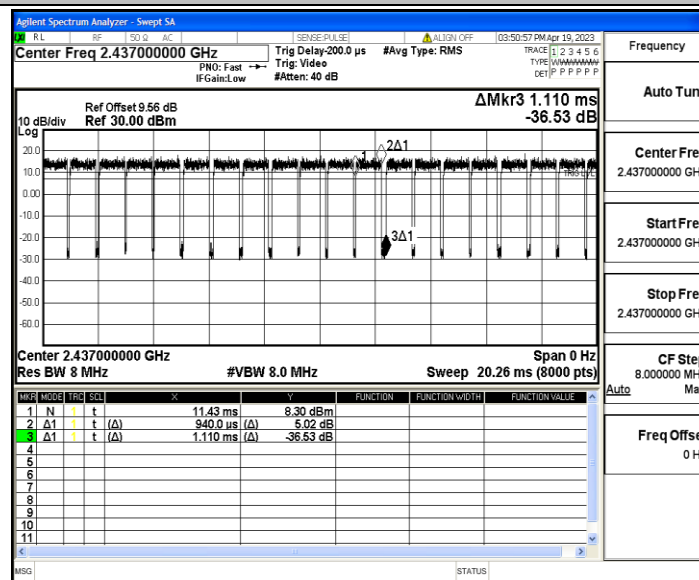
11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452

