



Appendix Test Data for WLAN(2. 4G) (Conducted Measurement)

Product Name: Thermal Receipt Printer

Trade Mark: Snaprint

Test Model: TD80

FCC ID: 2BTUD-TD80

Environmental Conditions

Temperature:	23.5°C
Relative Humidity:	58%
ATM Pressure:	100.0 kPa
Test Engineer:	Allen Lai
Supervised by:	Max Zhang
NOTE	N/A

Appendix A: DTS Bandwidth

Test Result

Test Mode	Antenna	Frequency [MHz]	DTS BW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11B	Ant1	2412	9.080	2407.480	2416.560	0.5	PASS
11B	Ant1	2437	10.040	2431.960	2442.000	0.5	PASS
11B	Ant1	2462	7.800	2457.960	2465.760	0.5	PASS
11G	Ant1	2412	16.520	2403.720	2420.240	0.5	PASS
11G	Ant1	2437	16.400	2428.760	2445.160	0.5	PASS
11G	Ant1	2462	16.360	2453.800	2470.160	0.5	PASS
11N20SISO	Ant1	2412	17.720	2403.120	2420.840	0.5	PASS
11N20SISO	Ant1	2437	17.280	2428.200	2445.480	0.5	PASS
11N20SISO	Ant1	2462	17.200	2453.520	2470.720	0.5	PASS
11N40SISO	Ant1	2422	35.680	2403.840	2439.520	0.5	PASS
11N40SISO	Ant1	2437	36.320	2418.840	2455.160	0.5	PASS
11N40SISO	Ant1	2452	35.600	2434.400	2470.000	0.5	PASS

Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



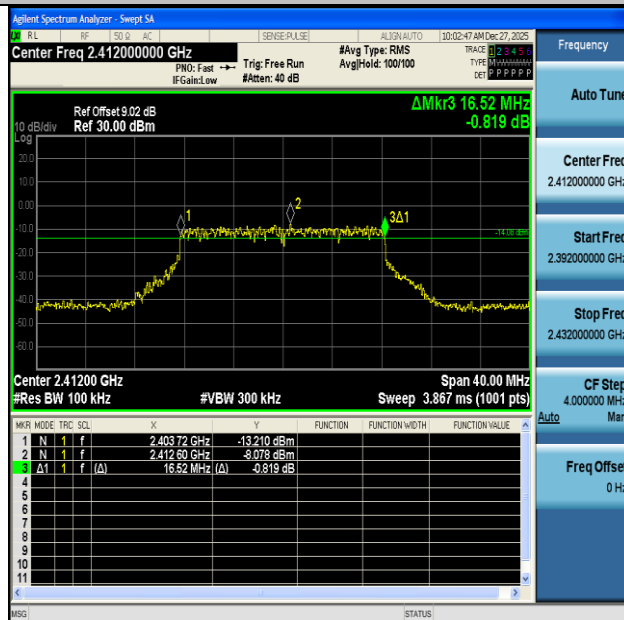


Test Graphs





11B-Ant1-2462-PASS



11G-Ant1-2412-PASS



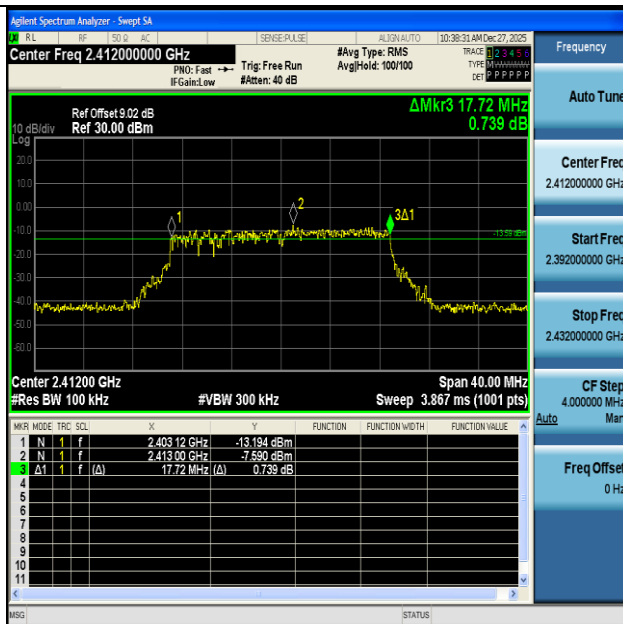


11G-Ant1-2437-PASS

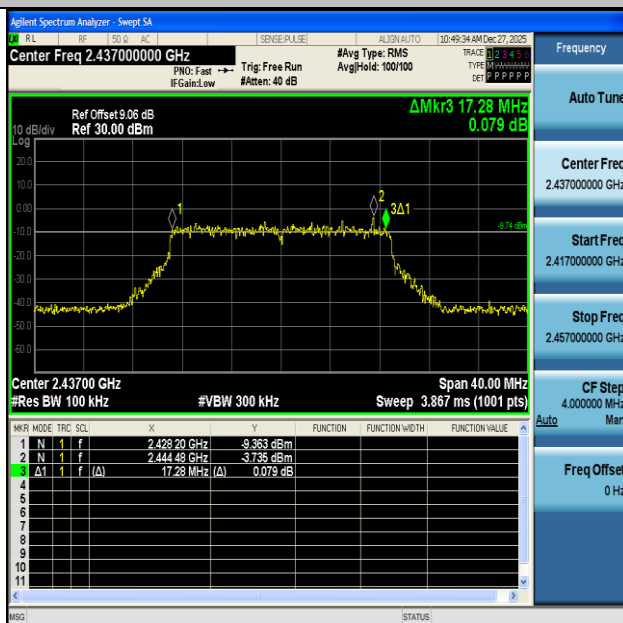


11G-Ant1-2462-PASS



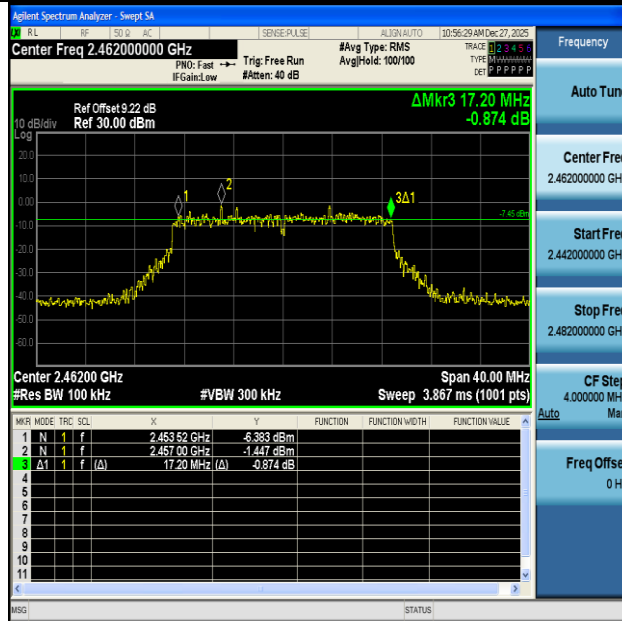


11N20SISO-Ant1-2412-PASS

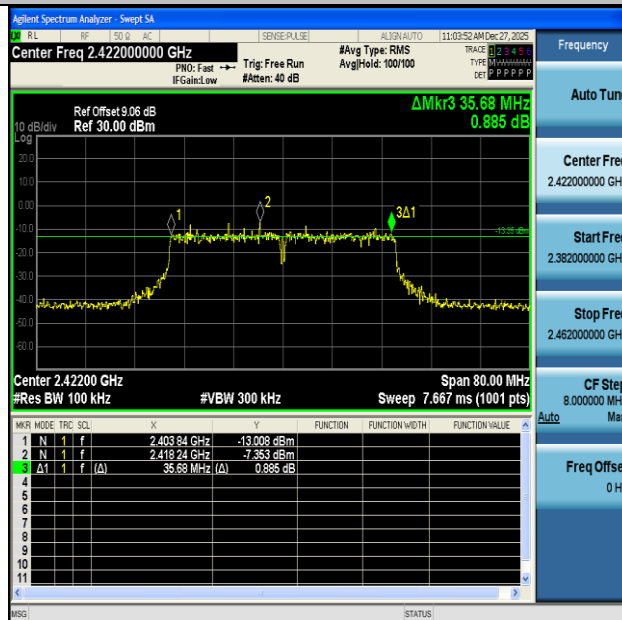


11N20SISO-Ant1-2437-PASS



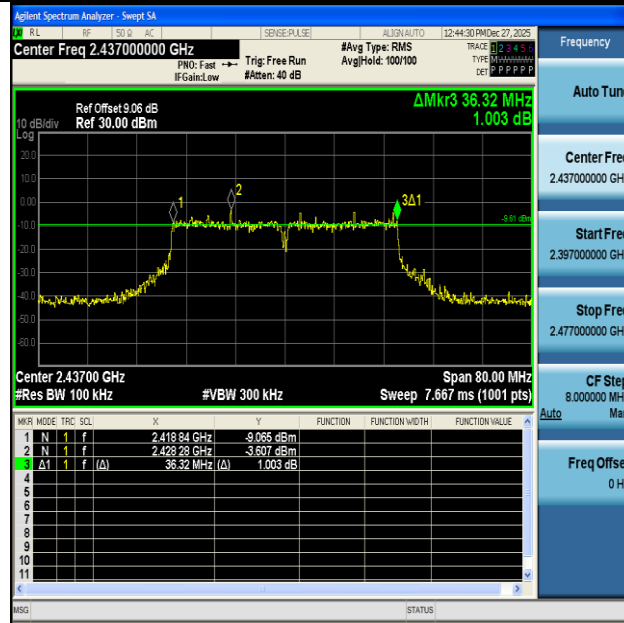


11N20SISO-Ant1-2462-PASS

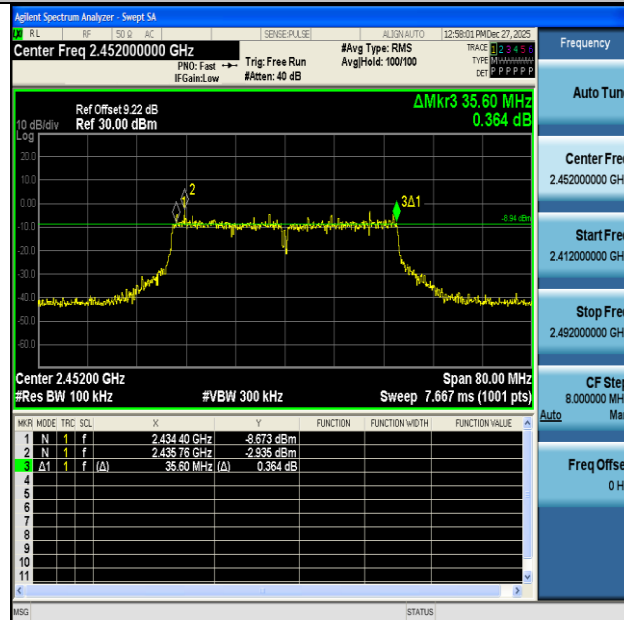


11N40SISO-Ant1-2422-PASS





11N40SISO-Ant1-2437-PASS



11N40SISO-Ant1-2452-PASS





Appendix B: Occupied Channel Bandwidth

Test Result

Test Mode	Antenna	Channel Frequency [MHz]	OCB [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11B	Ant1	2412	13.347	2405.3983	2418.7453	---	---
11B	Ant1	2437	13.345	2430.3514	2443.6964	---	---
11B	Ant1	2462	13.325	2455.3773	2468.7023	---	---
11G	Ant1	2412	17.127	2403.5294	2420.6564	---	---
11G	Ant1	2437	17.130	2428.4470	2445.5770	---	---
11G	Ant1	2462	17.118	2453.4651	2470.5831	---	---
11N20SISO	Ant1	2412	18.090	2402.9688	2421.0588	---	---
11N20SISO	Ant1	2437	17.993	2428.0800	2446.0730	---	---
11N20SISO	Ant1	2462	18.215	2452.9596	2471.1746	---	---
11N40SISO	Ant1	2422	36.807	2403.6880	2440.4950	---	---
11N40SISO	Ant1	2437	36.952	2418.5986	2455.5506	---	---
11N40SISO	Ant1	2452	37.080	2433.6422	2470.7222	---	---

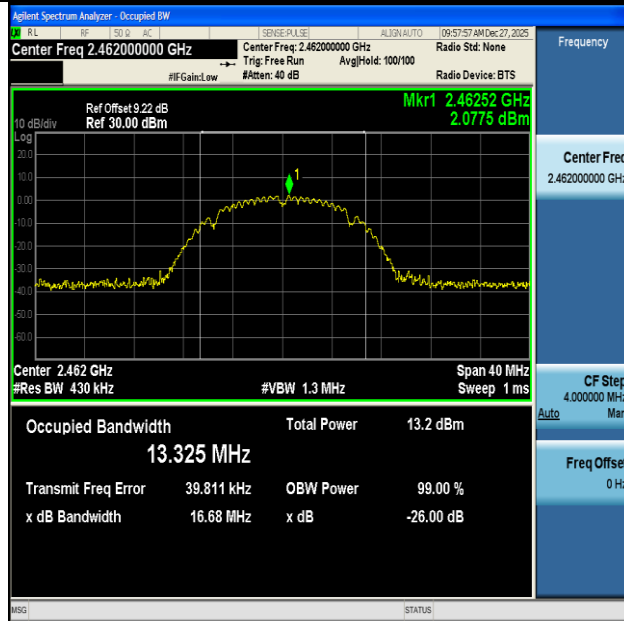
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



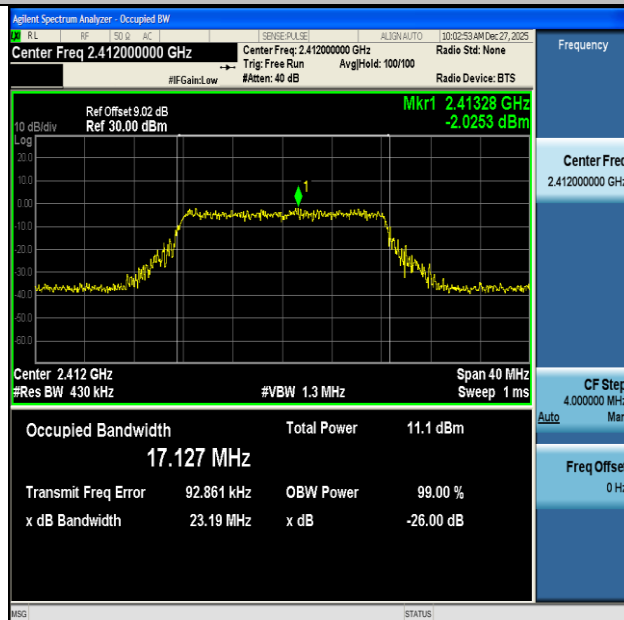


Test Graphs



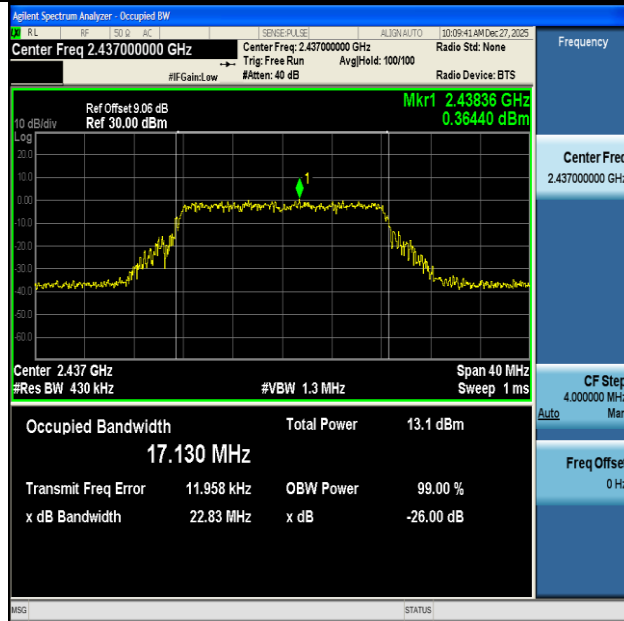


11B-Ant1-2462

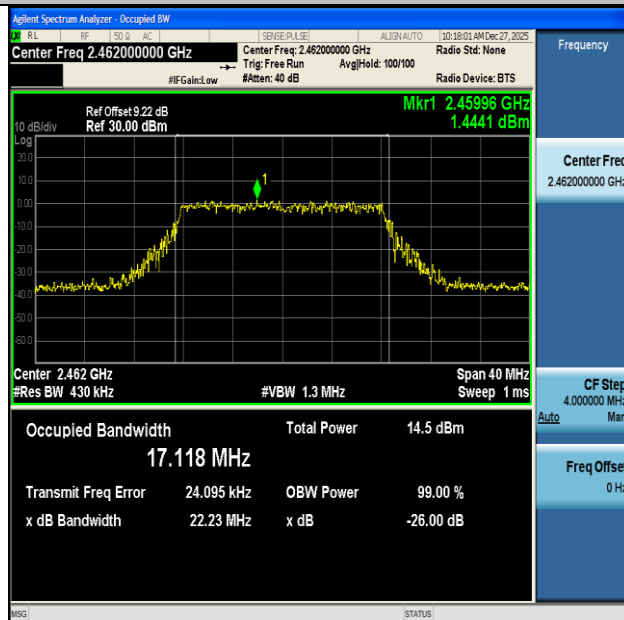


11G-Ant1-2412



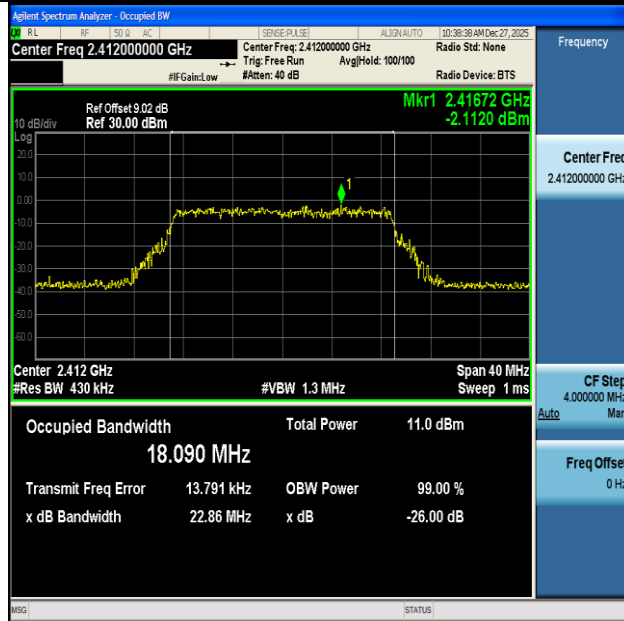


11G-Ant1-2437

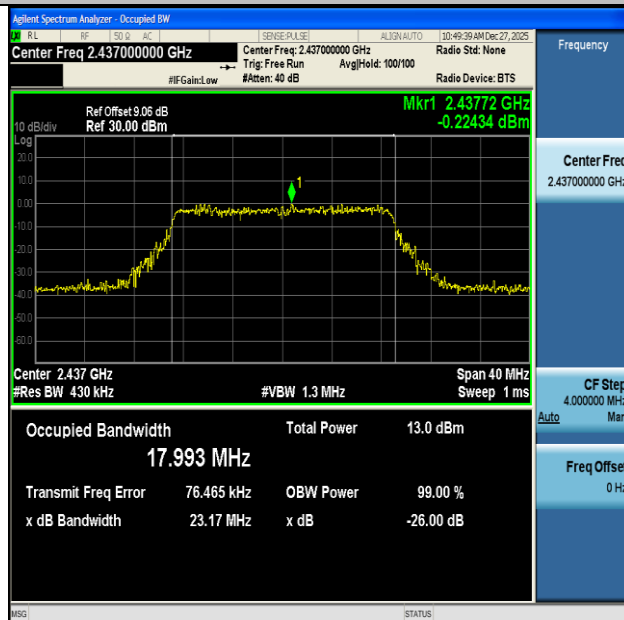


11G-Ant1-2462



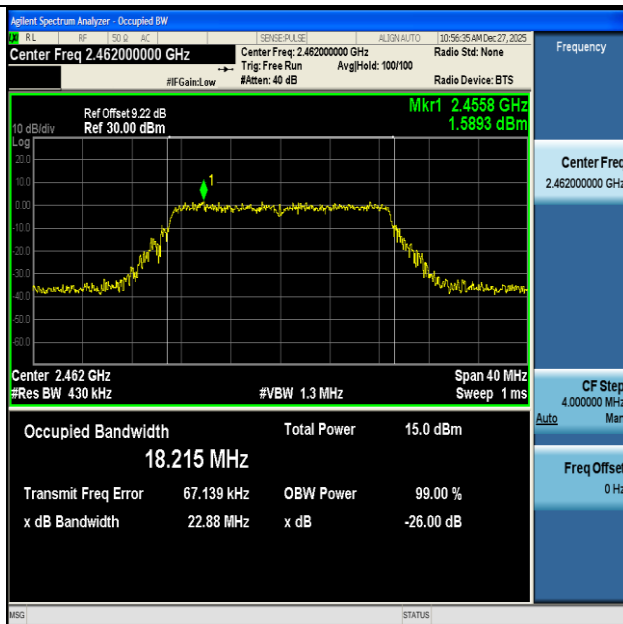


11N20SISO-Ant1-2412

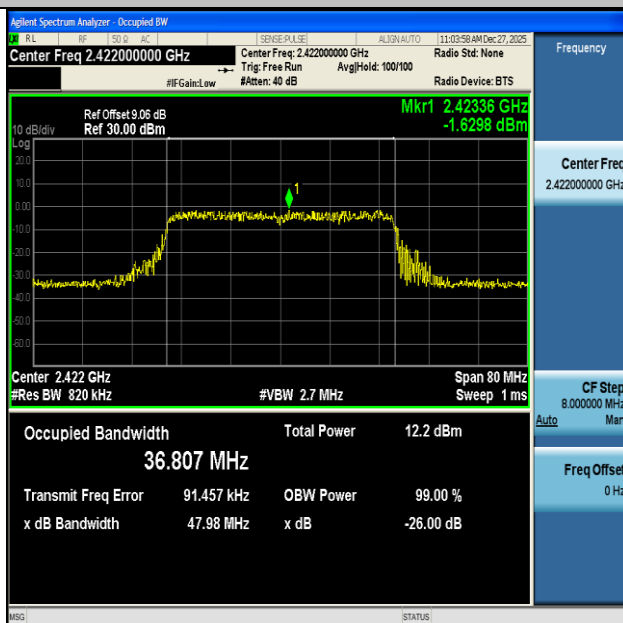


11N20SISO-Ant1-2437



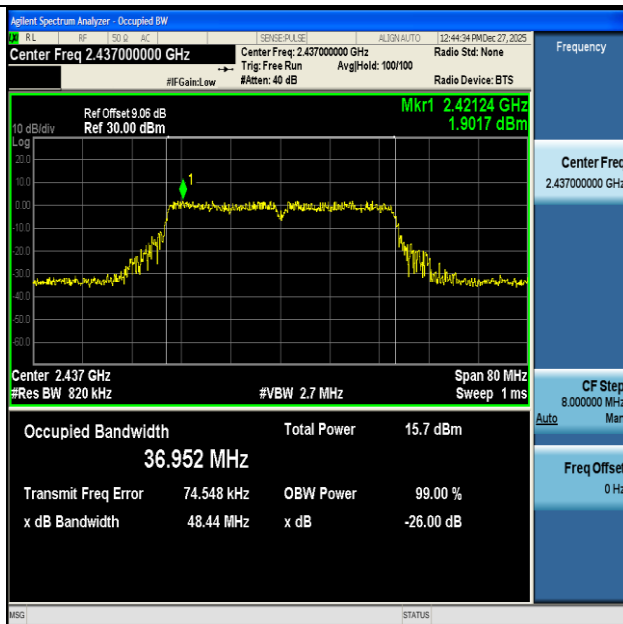


11N20SISO-Ant1-2462

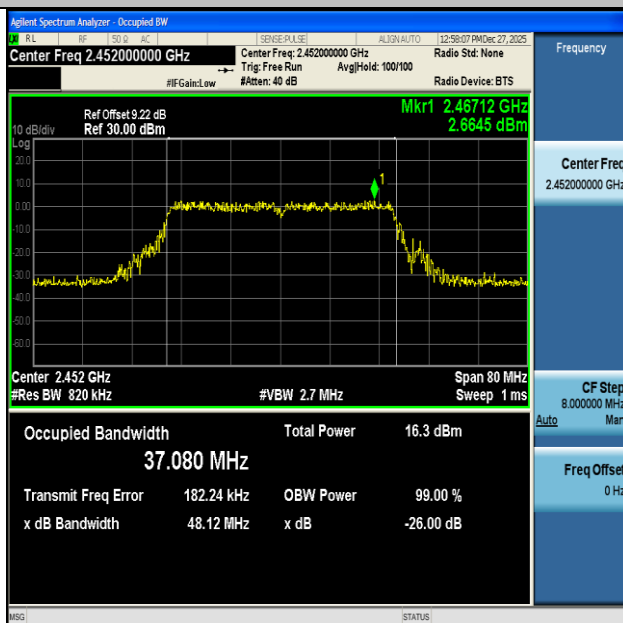


11N40SISO-Ant1-2422





11N40SISO-Ant1-2437



11N40SISO-Ant1-2452





Appendix C-2: Maximum Peak conducted output power

Test Result

Test Mode	Antenna	Frequency [MHz]	Conducted Power [dBm]	Conducted Limit [dBm]	Verdict
11B	Ant1	2412	13.95	≤30.00	PASS
11B	Ant1	2437	14.27	≤30.00	PASS
11B	Ant1	2462	12.42	≤30.00	PASS
11G	Ant1	2412	11.61	≤30.00	PASS
11G	Ant1	2437	13.87	≤30.00	PASS
11G	Ant1	2462	15.66	≤30.00	PASS
11N20SISO	Ant1	2412	11.98	≤30.00	PASS
11N20SISO	Ant1	2437	13.80	≤30.00	PASS
11N20SISO	Ant1	2462	15.65	≤30.00	PASS
11N40SISO	Ant1	2422	12.18	≤30.00	PASS
11N40SISO	Ant1	2437	15.84	≤30.00	PASS
11N40SISO	Ant1	2452	16.14	≤30.00	PASS

Note: offset(dB) = cable loss(dB) + attenuator factor(dB) + Duty Cycle Factor(dB)





Appendix C-2: Maximum Average conducted output power

Test Result

Test Mode	Antenna	Frequency [MHz]	Conducted Power [dBm]	Conducted Limit [dBm]	Verdict
11B	Ant1	2412	11.87	≤30.00	PASS
11B	Ant1	2437	9.98	≤30.00	PASS
11B	Ant1	2462	10.94	≤30.00	PASS
11G	Ant1	2412	12.32	≤30.00	PASS
11G	Ant1	2437	9.22	≤30.00	PASS
11G	Ant1	2462	11.34	≤30.00	PASS
11N20SISO	Ant1	2412	10.94	≤30.00	PASS
11N20SISO	Ant1	2437	10.76	≤30.00	PASS
11N20SISO	Ant1	2462	11.23	≤30.00	PASS
11N40SISO	Ant1	2422	10.68	≤30.00	PASS
11N40SISO	Ant1	2437	11.84	≤30.00	PASS
11N40SISO	Ant1	2452	11.42	≤30.00	PASS

Note: offset(dB) = cable loss(dB) + attenuator factor(dB) + Duty Cycle Factor(dB)





Appendix D: Maximum Average power spectral density

Test Result

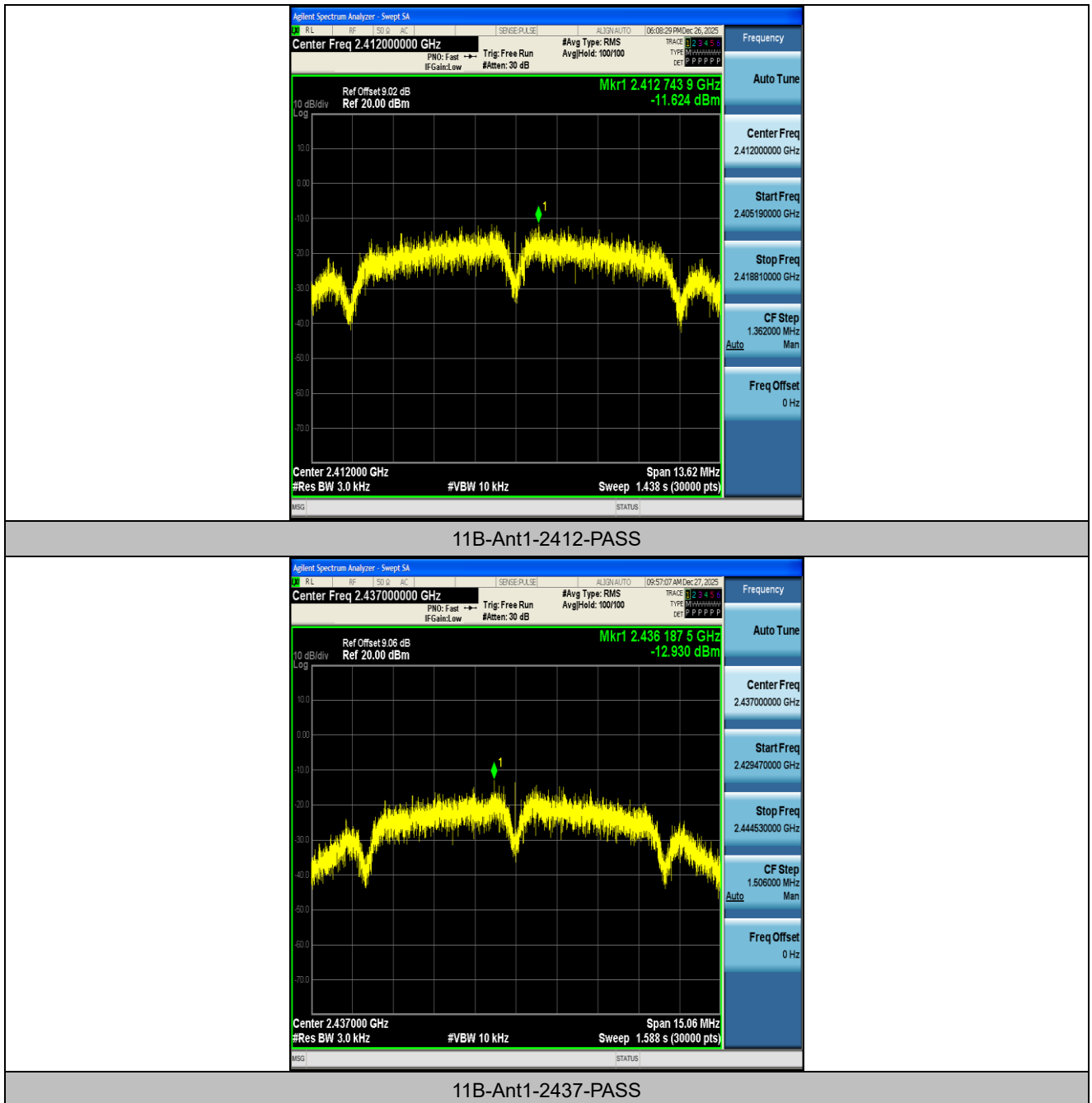
Test Mode	Antenna	Frequency [MHz]	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant1	2412	-11.62	≤8.00	PASS
11B	Ant1	2437	-12.93	≤8.00	PASS
11B	Ant1	2462	-12.58	≤8.00	PASS
11G	Ant1	2412	-14.54	≤8.00	PASS
11G	Ant1	2437	-14.97	≤8.00	PASS
11G	Ant1	2462	-13.64	≤8.00	PASS
11N20SISO	Ant1	2412	-14.53	≤8.00	PASS
11N20SISO	Ant1	2437	-14.29	≤8.00	PASS
11N20SISO	Ant1	2462	-13.79	≤8.00	PASS
11N40SISO	Ant1	2422	-13.37	≤8.00	PASS
11N40SISO	Ant1	2437	-14.49	≤8.00	PASS
11N40SISO	Ant1	2452	-13.15	≤8.00	PASS

Note: offset(dB) = cable loss(dB) + attenuator factor(dB) + Duty Cycle Factor(dB)



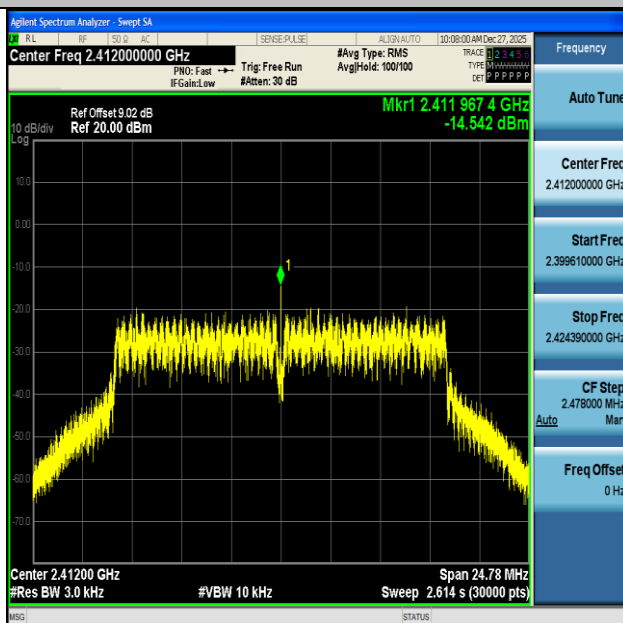


Test Graphs



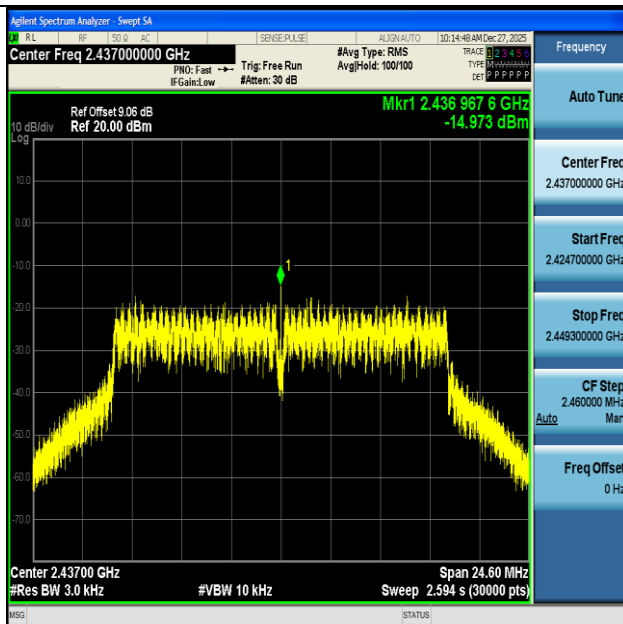


11B-Ant1-2462-PASS

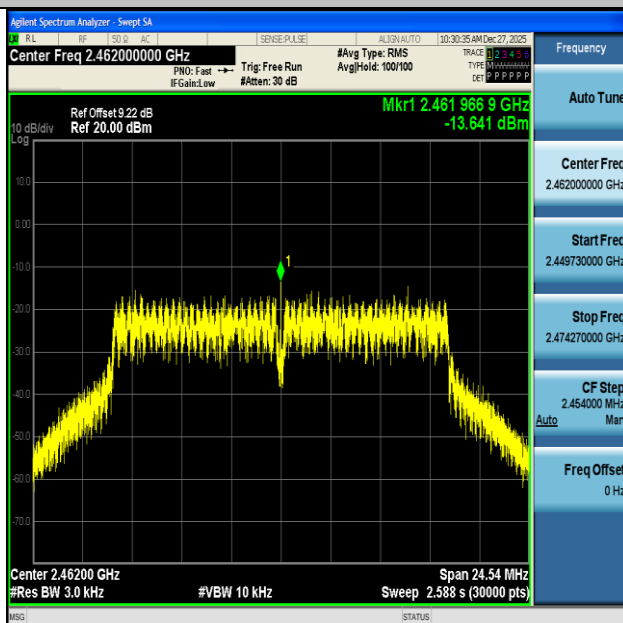


11G-Ant1-2412-PASS



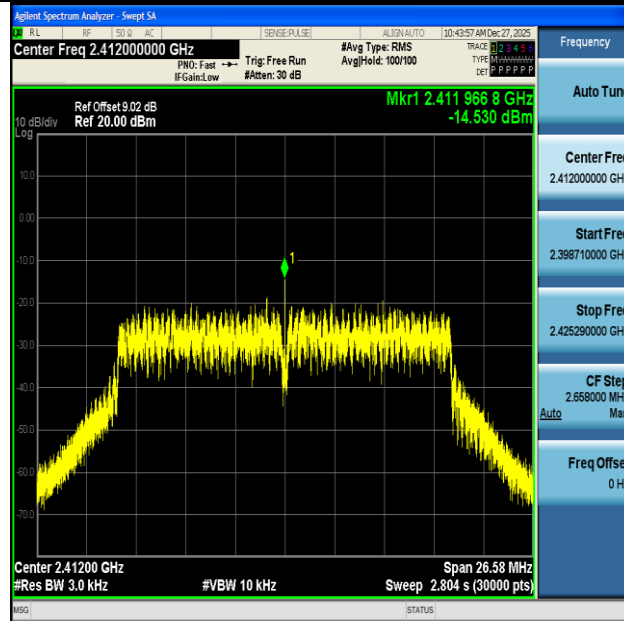


11G-Ant1-2437-PASS

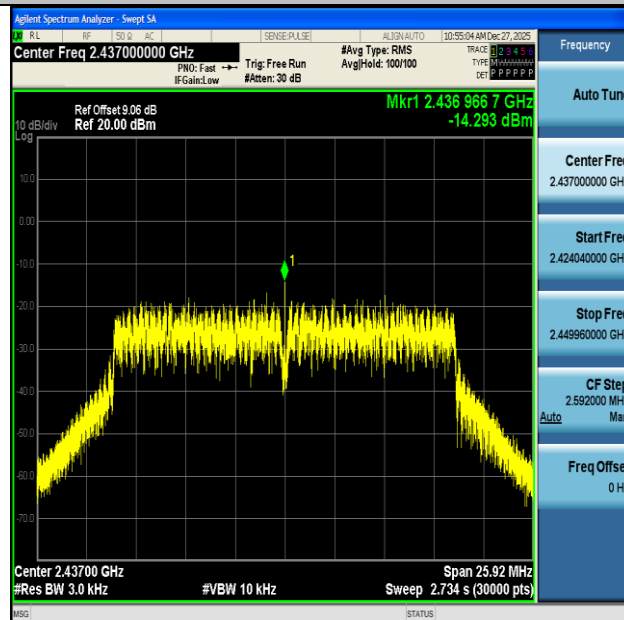


11G-Ant1-2462-PASS



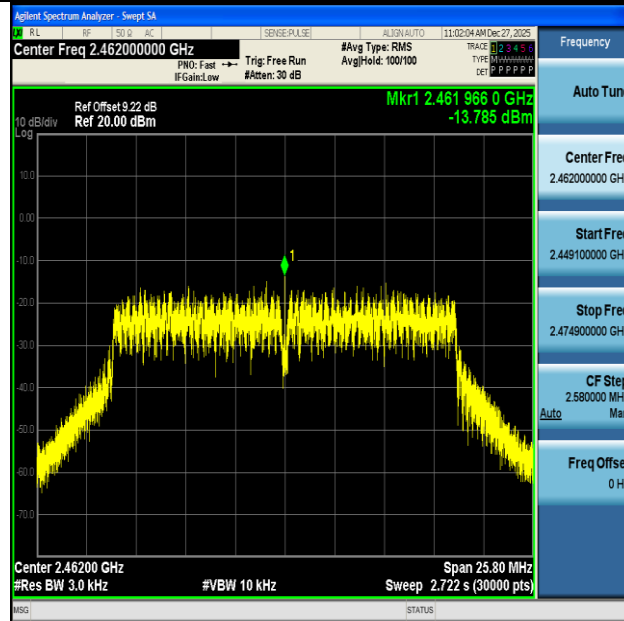


11N20SISO-Ant1-2412-PASS

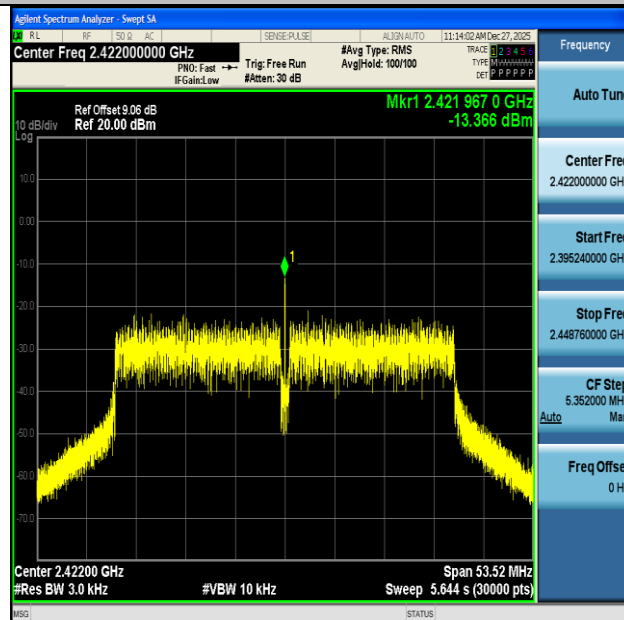


11N20SISO-Ant1-2437-PASS



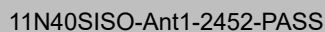
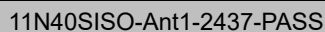


11N20SISO-Ant1-2462-PASS



11N40SISO-Ant1-2422-PASS







Appendix E: Band edge measurements

Test Result

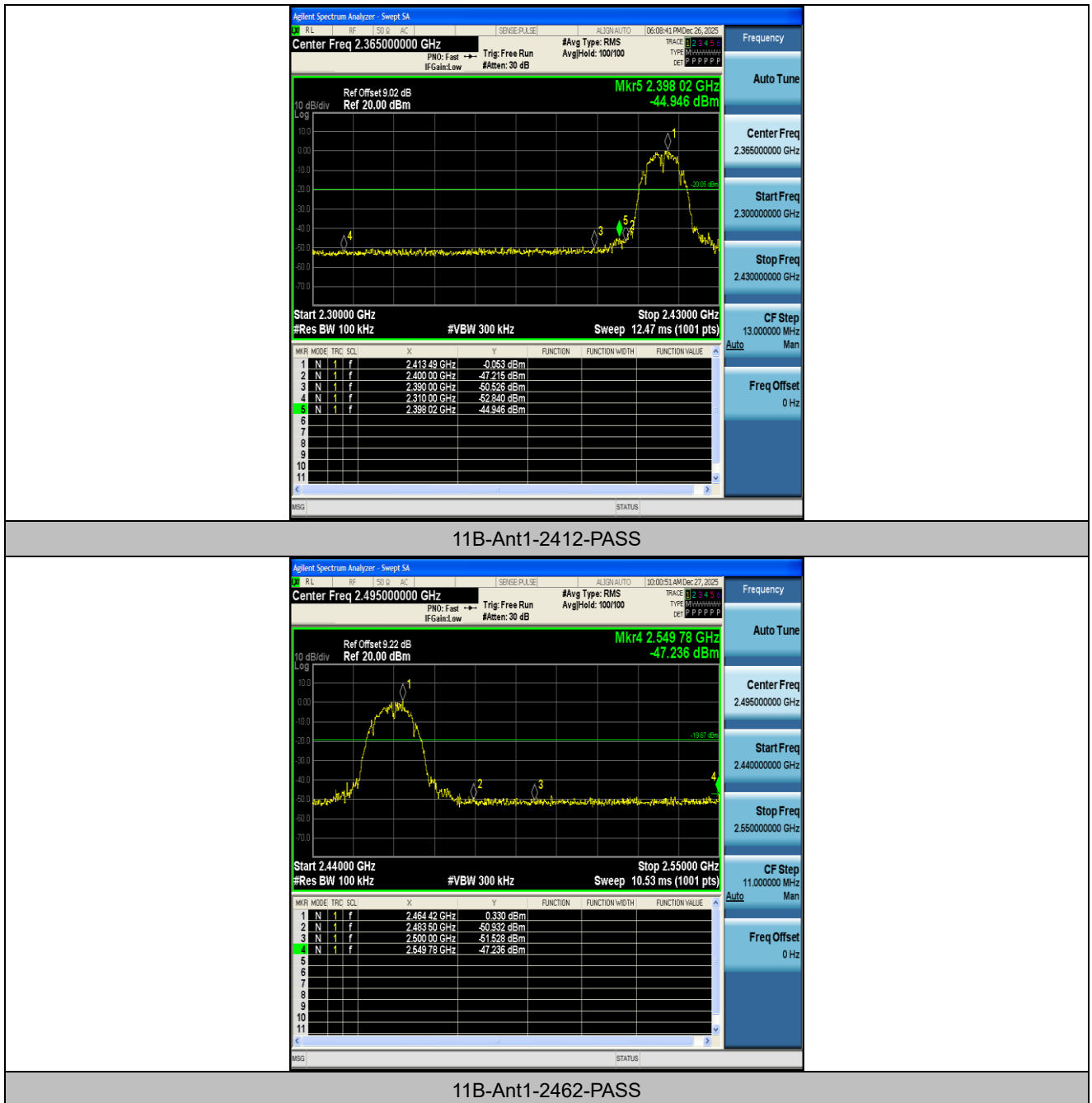
Test Mode	Antenna	Ch. Name	Frequency.[MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	Low	2412	-0.05	-44.95	≤ -20.05	PASS
11B	Ant1	High	2462	0.33	-47.24	≤ -19.67	PASS
11G	Ant1	Low	2412	-5.30	-40.2	≤ -25.3	PASS
11G	Ant1	High	2462	-2.32	-48.01	≤ -22.32	PASS
11N20SISO	Ant1	Low	2412	-7.58	-41.38	≤ -27.58	PASS
11N20SISO	Ant1	High	2462	-3.46	-47.45	≤ -23.46	PASS
11N40SISO	Ant1	Low	2422	-7.80	-34.4	≤ -27.8	PASS
11N40SISO	Ant1	High	2452	-3.36	-41.77	≤ -23.36	PASS

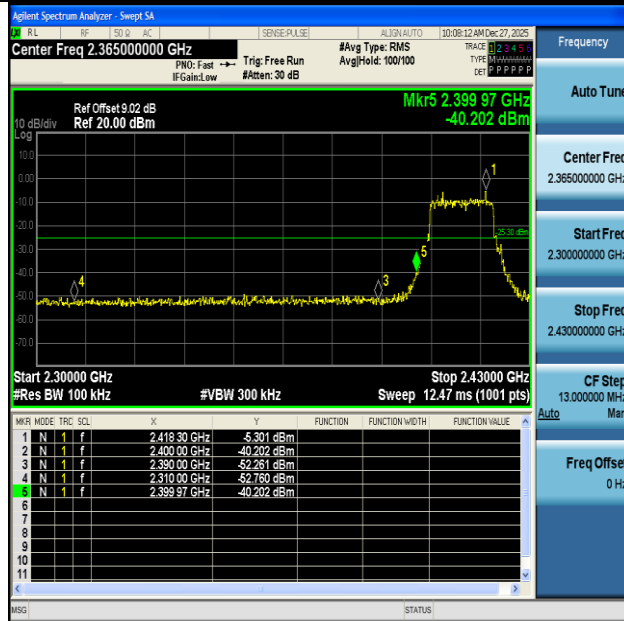
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)





Test Graphs



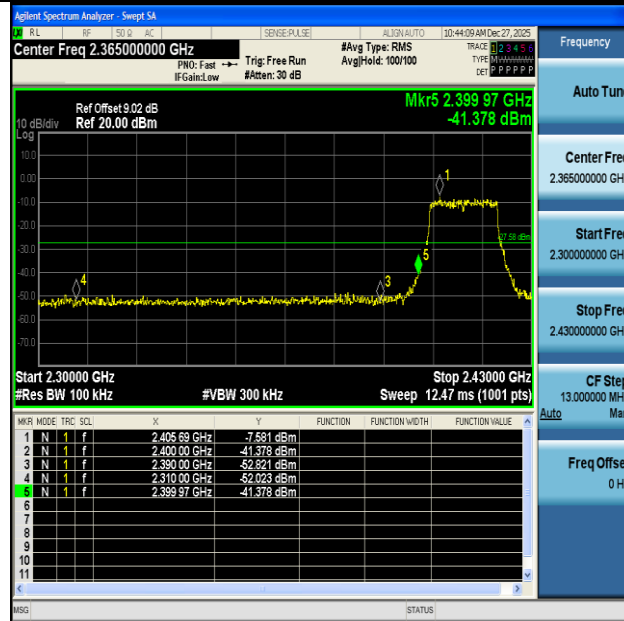


11G-Ant1-2412-PASS

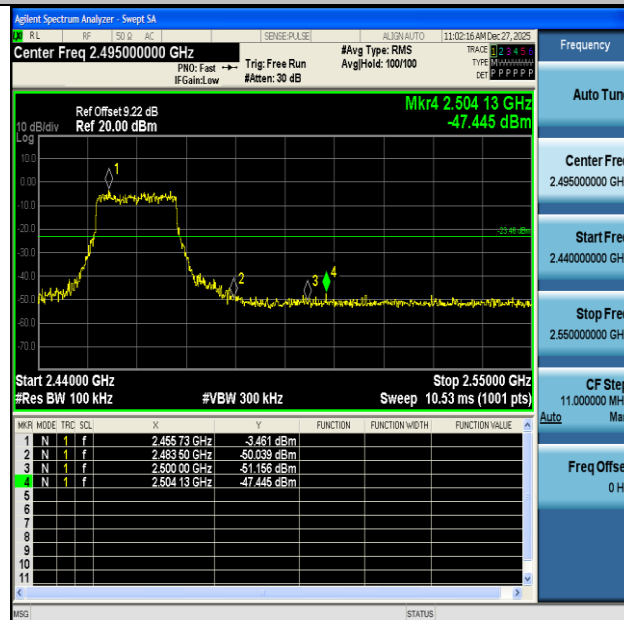


11G-Ant1-2462-PASS





11N20SISO-Ant1-2412-PASS

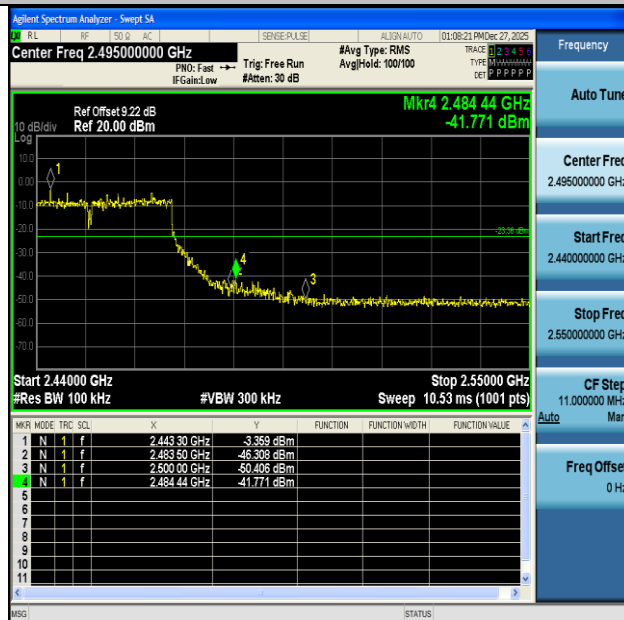


11N20SISO-Ant1-2462-PASS





11N40SISO-Ant1-2422-PASS



11N40SISO-Ant1-2452-PASS





Appendix F: Conducted Spurious Emission

Test Result

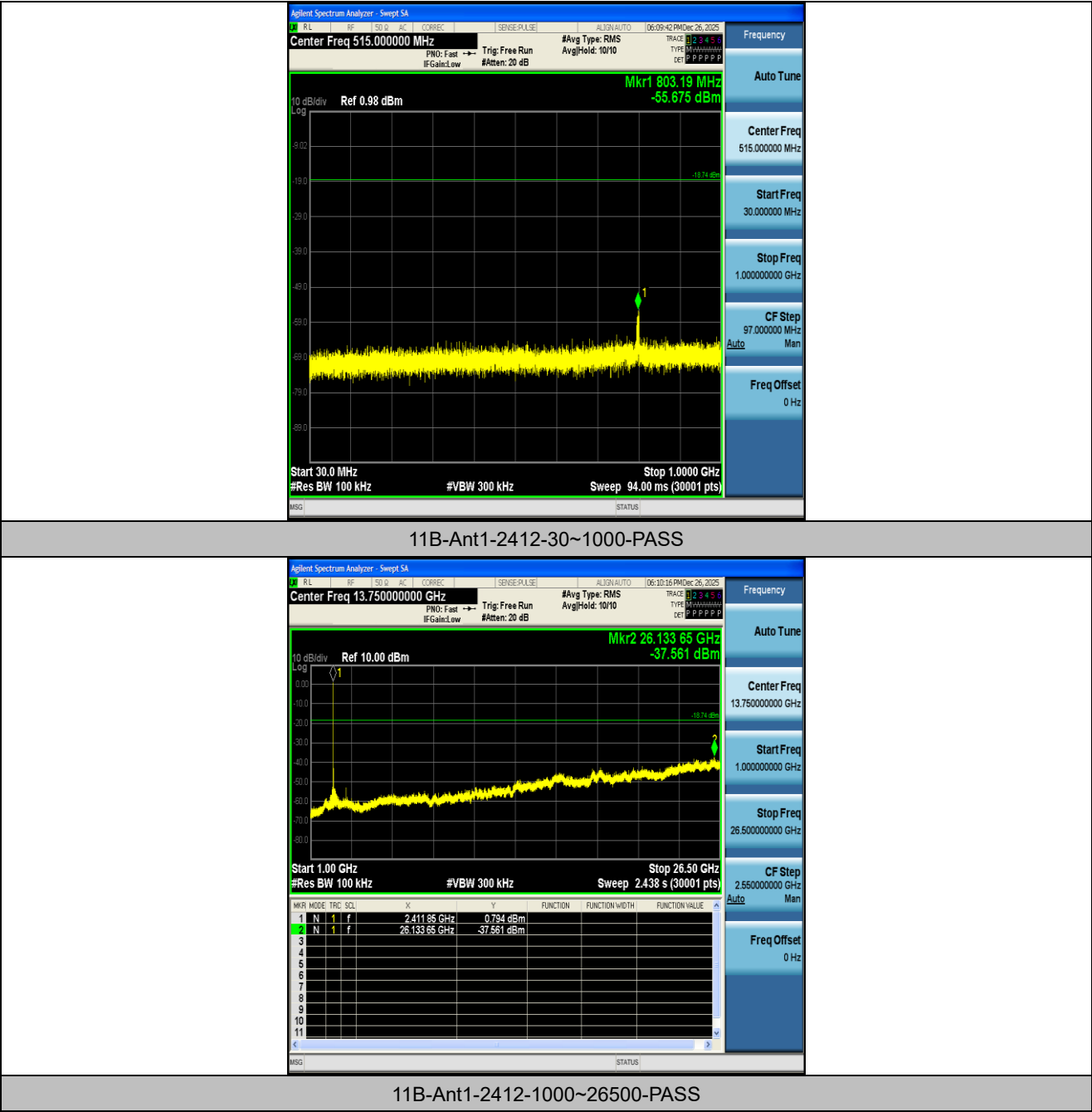
Test Mode	Antenna	Frequency [MHz]	Freq. Range [Mhz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	30~1000	1.26	-55.68	≤-18.74	PASS
11B	Ant1	2412	1000~26500	1.26	-37.56	≤-18.74	PASS
11B	Ant1	2437	30~1000	0.70	-55.57	≤-19.3	PASS
11B	Ant1	2437	1000~26500	0.70	-38.19	≤-19.3	PASS
11B	Ant1	2462	30~1000	-0.02	-56.28	≤-20.02	PASS
11B	Ant1	2462	1000~26500	-0.02	-37.67	≤-20.02	PASS
11G	Ant1	2412	30~1000	-5.77	-59.4	≤-25.77	PASS
11G	Ant1	2412	1000~26500	-5.77	-38.58	≤-25.77	PASS
11G	Ant1	2437	30~1000	-3.55	-59.53	≤-23.55	PASS
11G	Ant1	2437	1000~26500	-3.55	-37.81	≤-23.55	PASS
11G	Ant1	2462	30~1000	-3.83	-59.32	≤-23.83	PASS
11G	Ant1	2462	1000~26500	-3.83	-37.99	≤-23.83	PASS
11N20SISO	Ant1	2412	30~1000	-5.81	-60.32	≤-25.81	PASS
11N20SISO	Ant1	2412	1000~26500	-5.81	-37.61	≤-25.81	PASS
11N20SISO	Ant1	2437	30~1000	-3.22	-60.35	≤-23.22	PASS
11N20SISO	Ant1	2437	1000~26500	-3.22	-37.28	≤-23.22	PASS
11N20SISO	Ant1	2462	30~1000	-1.88	-55.5	≤-21.88	PASS
11N20SISO	Ant1	2462	1000~26500	-1.88	-37.99	≤-21.88	PASS
11N40SISO	Ant1	2422	30~1000	-7.94	-62.28	≤-27.94	PASS
11N40SISO	Ant1	2422	1000~26500	-7.94	-37.85	≤-27.94	PASS
11N40SISO	Ant1	2437	30~1000	-3.24	-61.22	≤-23.24	PASS
11N40SISO	Ant1	2437	1000~26500	-3.24	-38.16	≤-23.24	PASS
11N40SISO	Ant1	2452	30~1000	-3.55	-57.84	≤-23.55	PASS
11N40SISO	Ant1	2452	1000~26500	-3.55	-37.43	≤-23.55	PASS

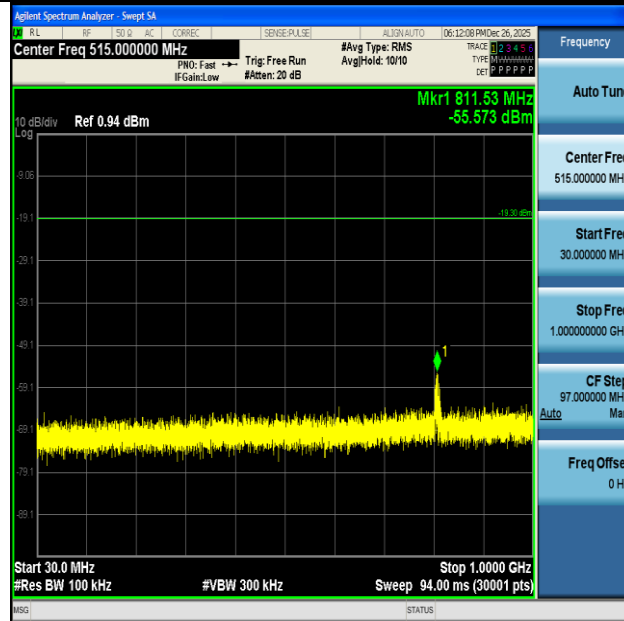
Note: offset(dB) in Reference test plots = cable loss(dB) + attenuator factor(dB); For spurious emissions plots from 30MHz to 26.5GHz, the cable loss and attenuator factors have been set in the 'Input Correction' of the Spectrum Analyzer during the test.



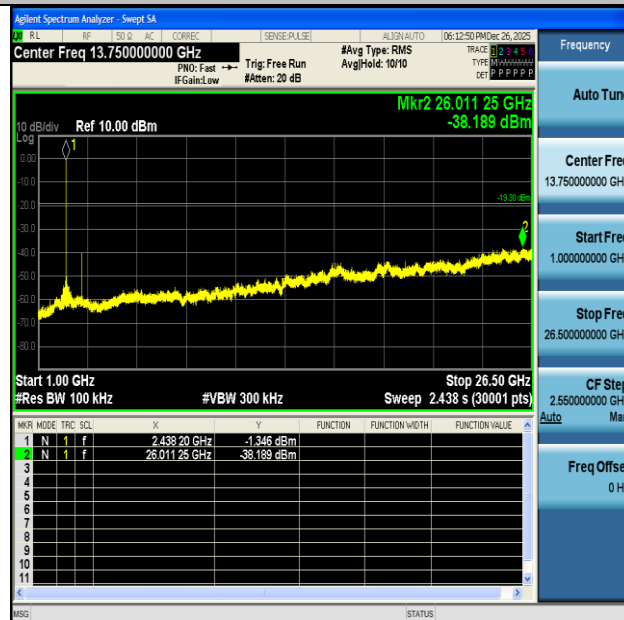


Test Graphs



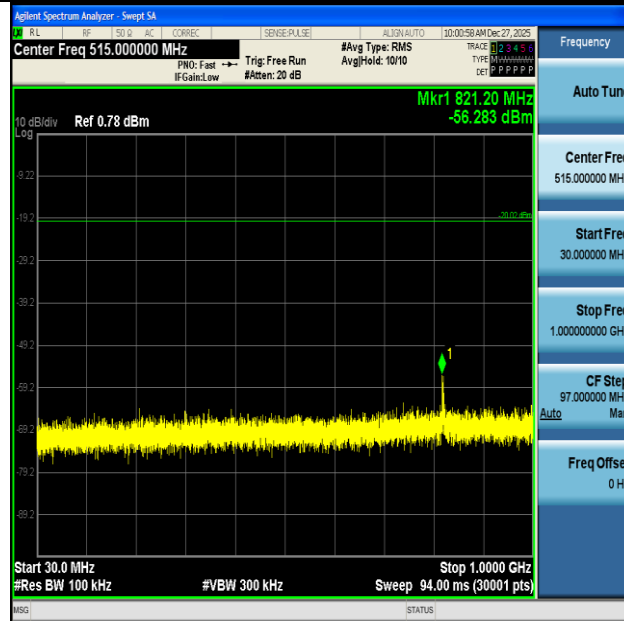


11B-Ant1-2437-30~1000-PASS

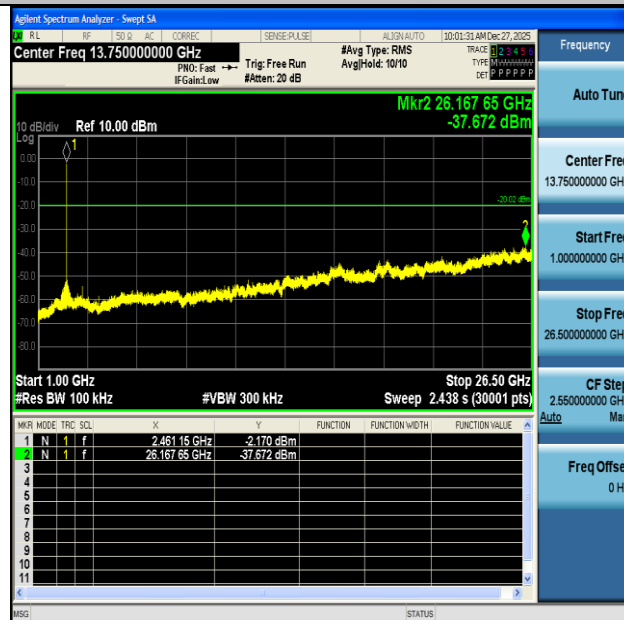


11B-Ant1-2437-1000~26500-PASS



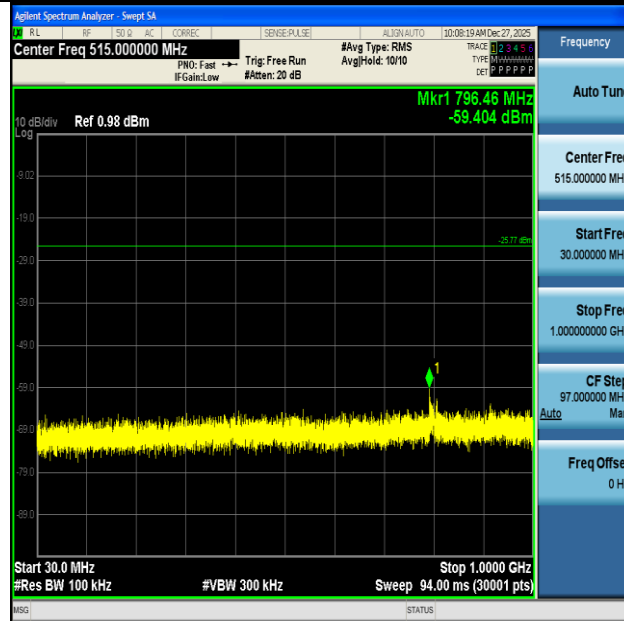


11B-Ant1-2462-30~1000-PASS

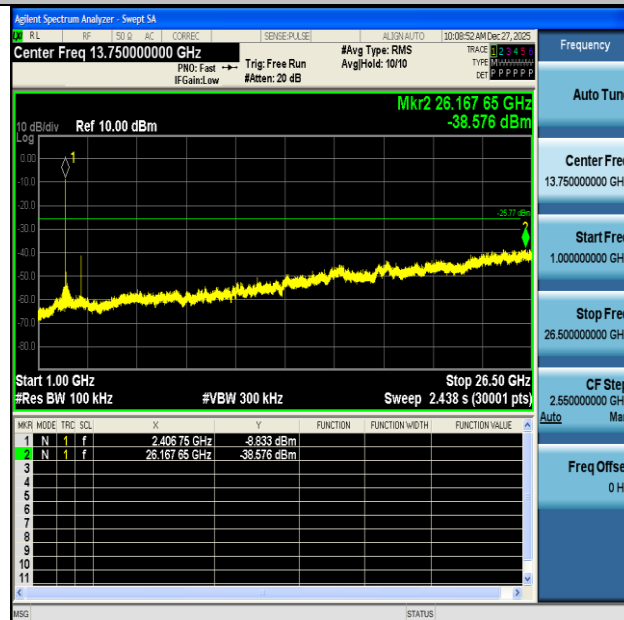


11B-Ant1-2462-1000~26500-PASS





11G-Ant1-2412-30~1000-PASS

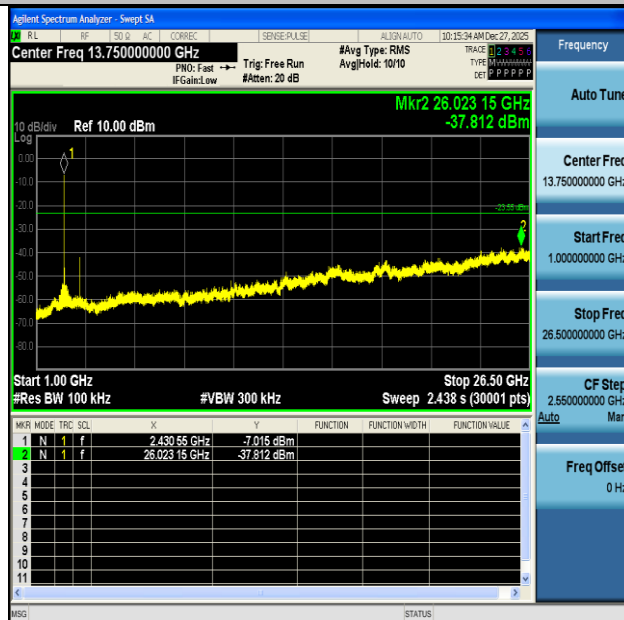


11G-Ant1-2412-1000~26500-PASS



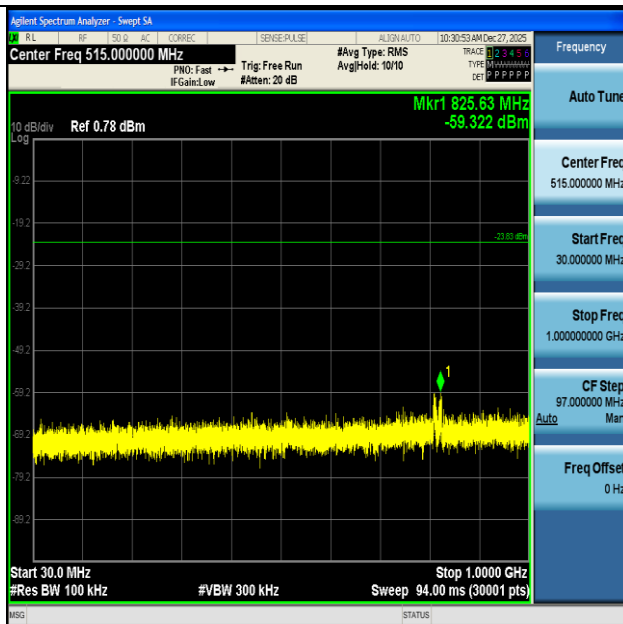


11G-Ant1-2437-30~1000-PASS

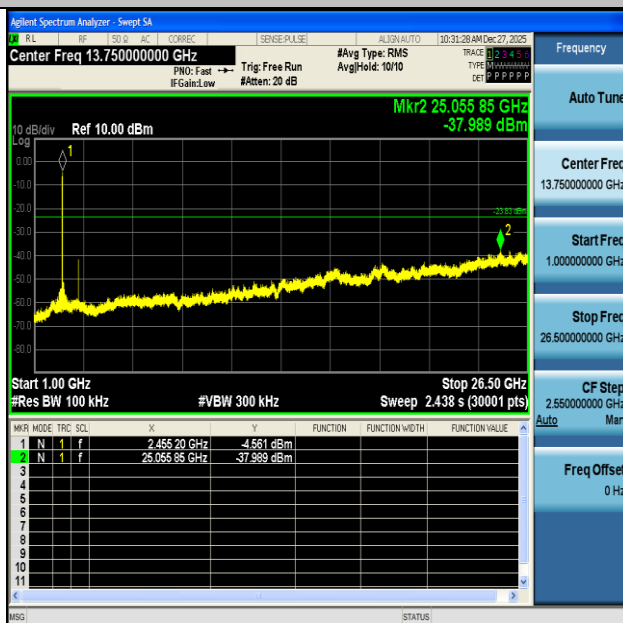


11G-Ant1-2437-1000~26500-PASS



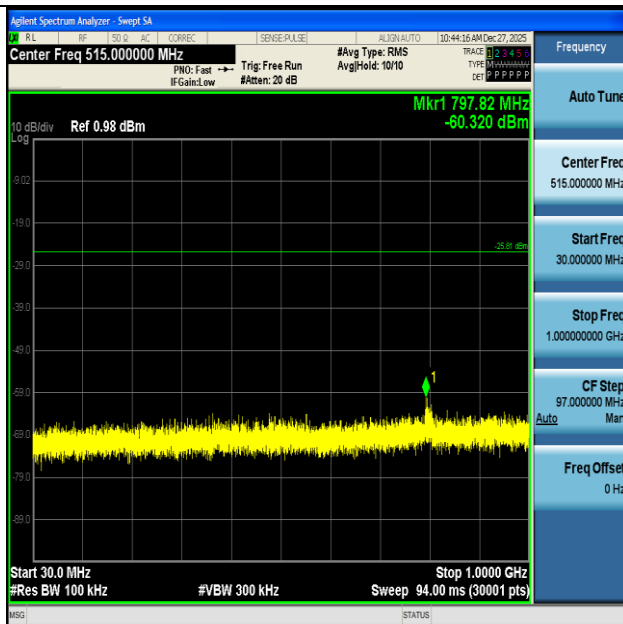


11G-Ant1-2462-30~1000-PASS

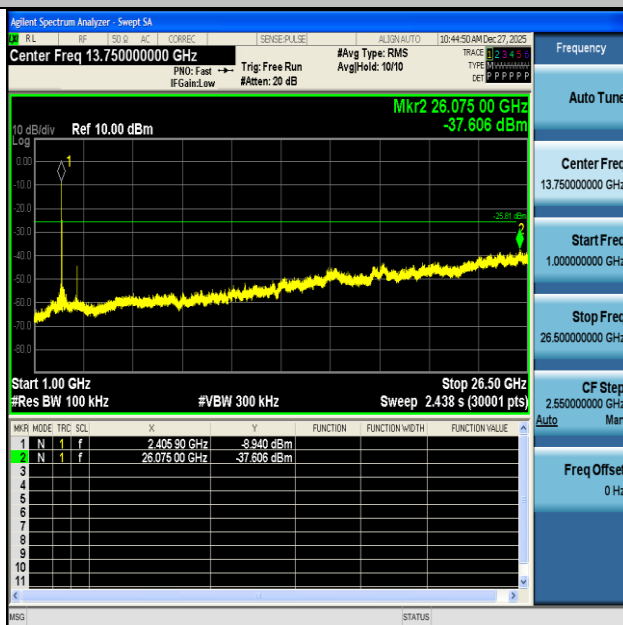


11G-Ant1-2462-1000~26500-PASS



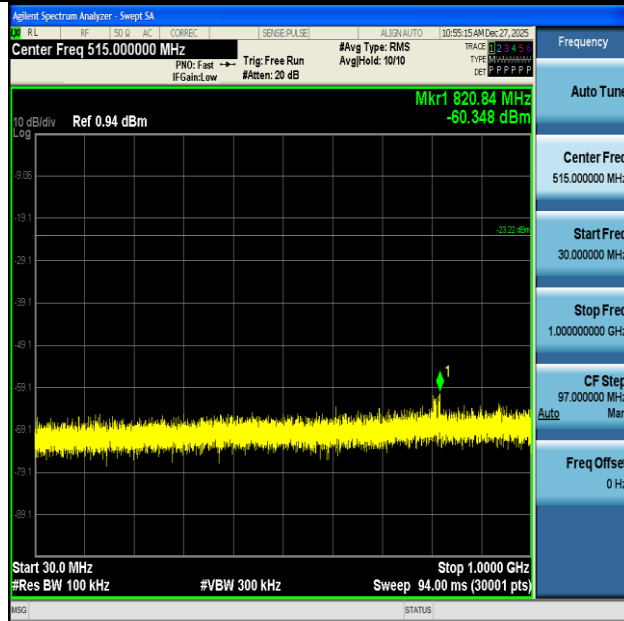


11N20SISO-Ant1-2412-30~1000-PASS

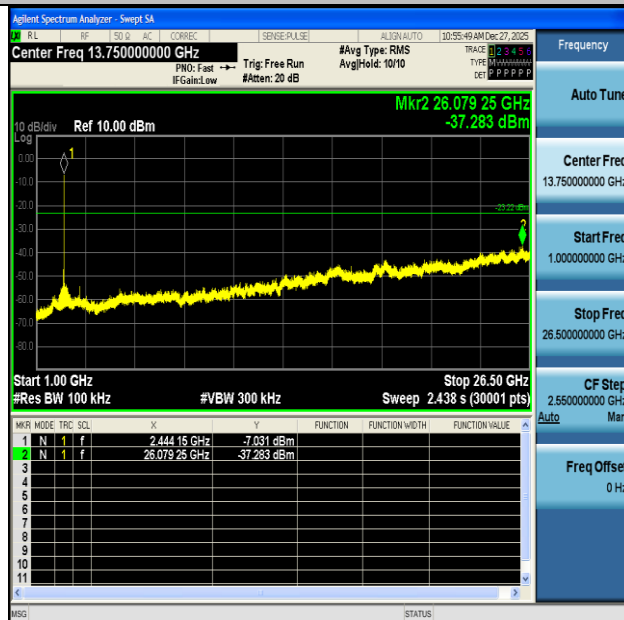


11N20SISO-Ant1-2412-1000~26500-PASS



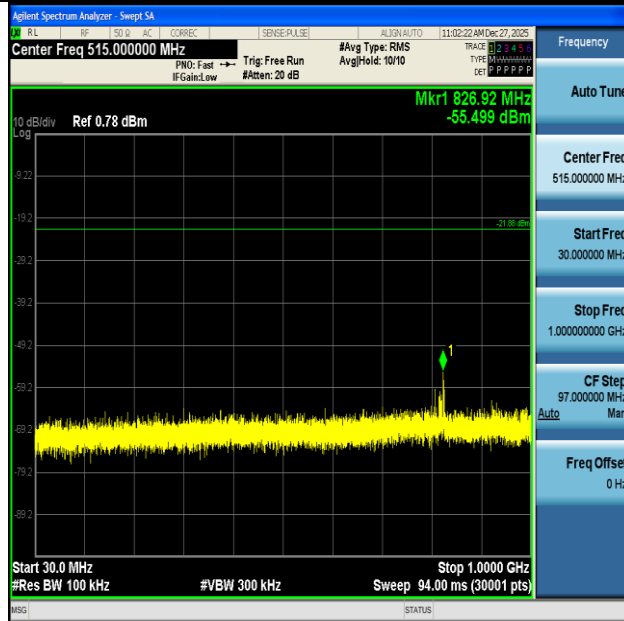


11N20SISO-Ant1-2437-30~1000-PASS

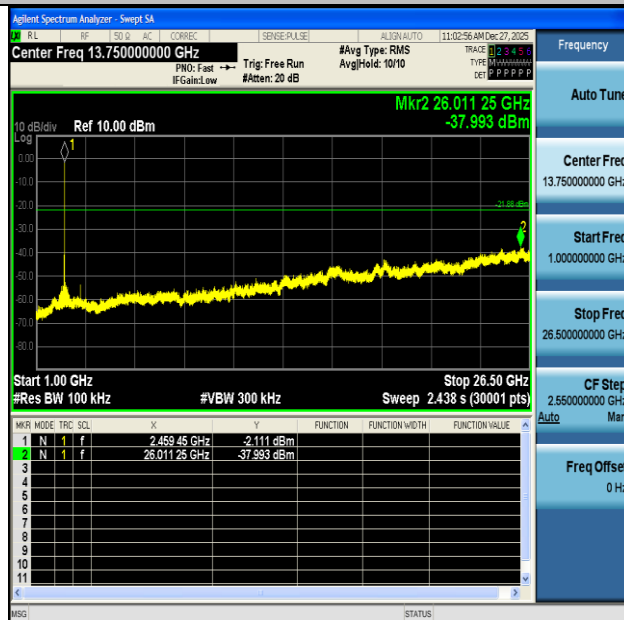


11N20SISO-Ant1-2437-1000~26500-PASS



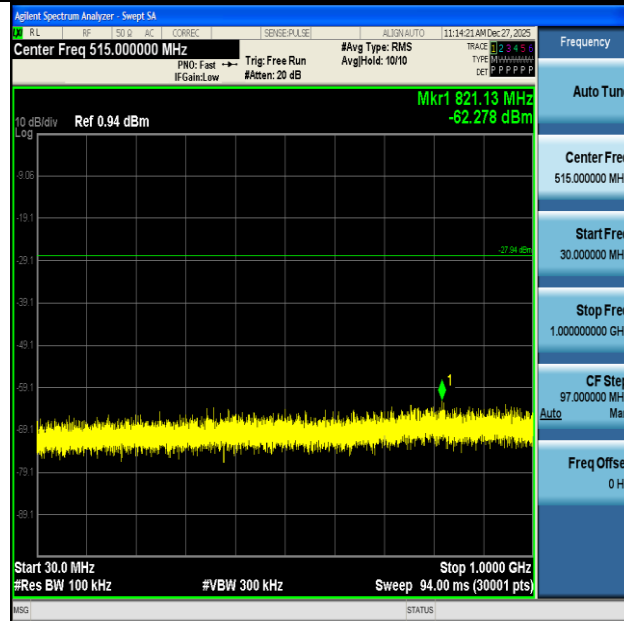


11N20SISO-Ant1-2462-30~1000-PASS

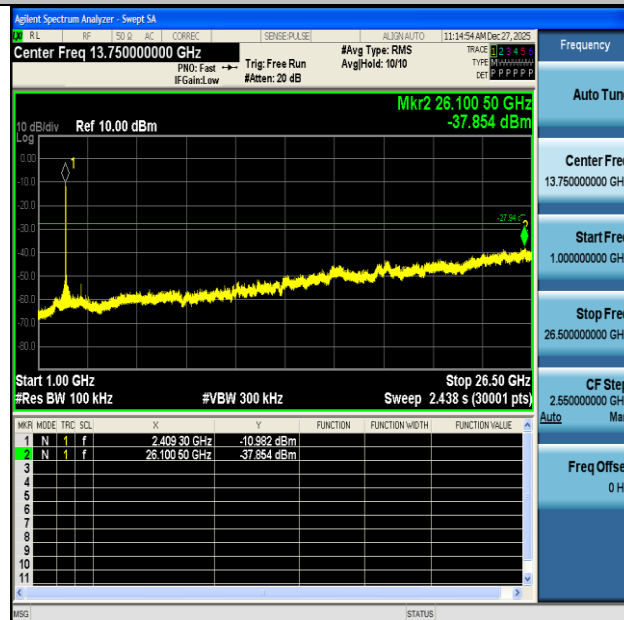


11N20SISO-Ant1-2462-1000~26500-PASS



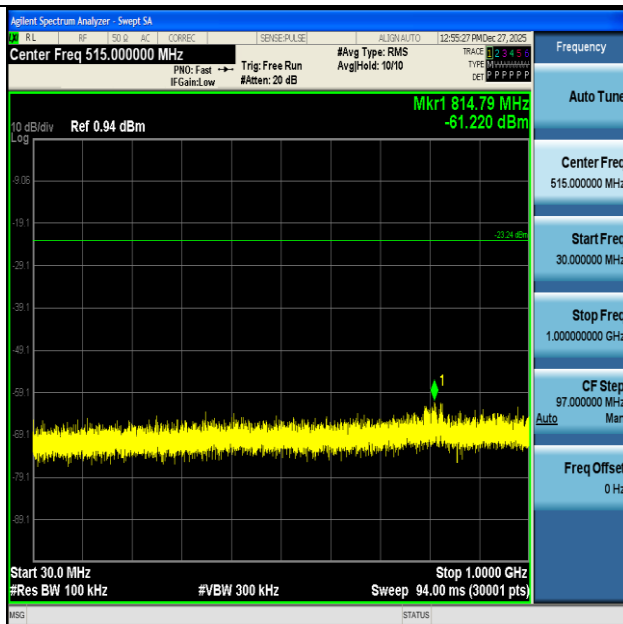


11N40SISO-Ant1-2422-30~1000-PASS

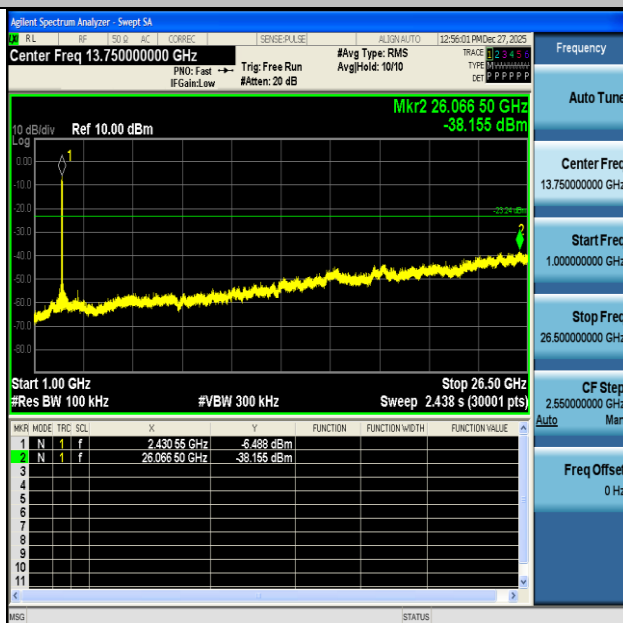


11N40SISO-Ant1-2422-1000~26500-PASS



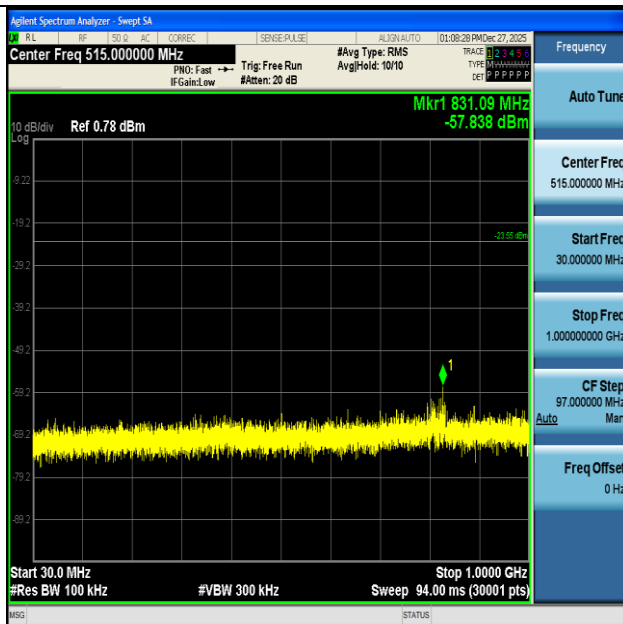


11N40SISO-Ant1-2437-30~1000-PASS

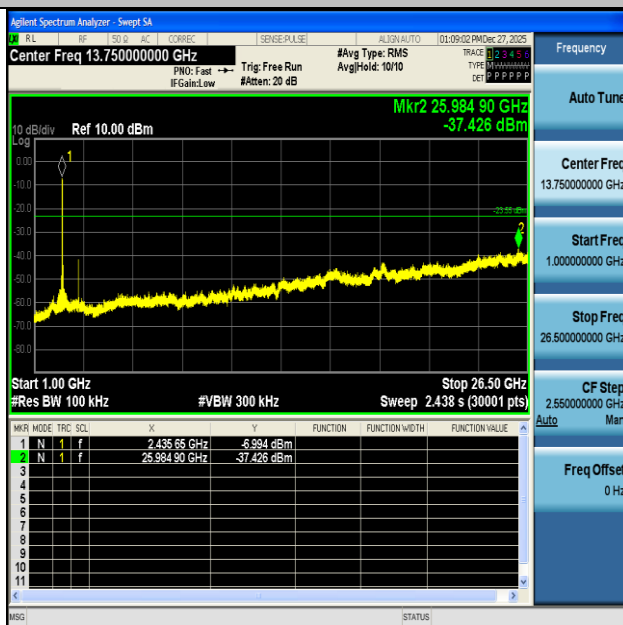


11N40SISO-Ant1-2437-1000~26500-PASS





11N40SISO-Ant1-2452-30~1000-PASS



11N40SISO-Ant1-2452-1000~26500-PASS





Appendix G: Duty Cycle

Test Result

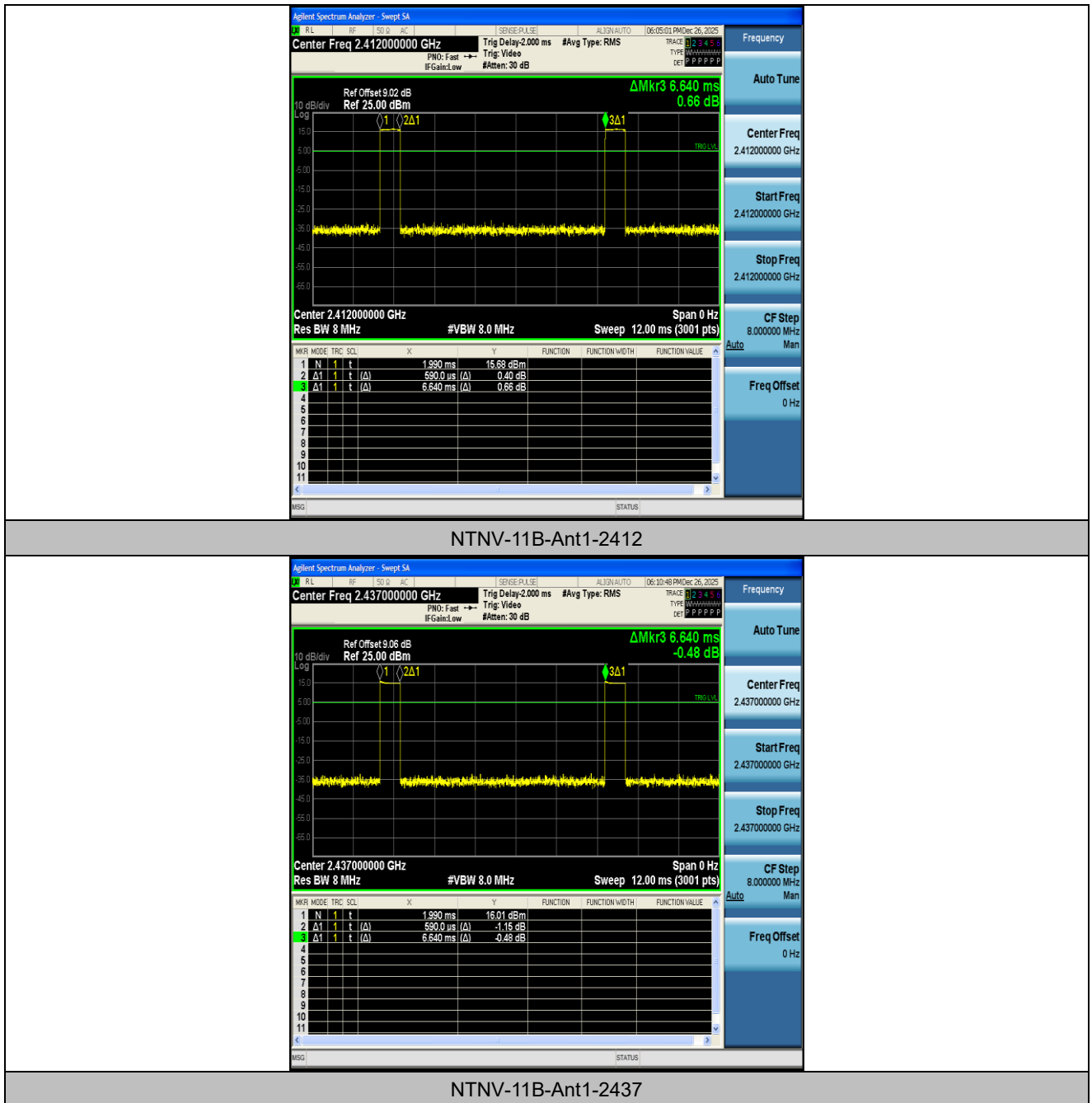
Test Mode	Antenna	Frequency [MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor
11B	Ant1	2412	0.59	6.64	8.89	10.51
11B	Ant1	2437	0.59	6.64	8.89	10.51
11B	Ant1	2462	0.59	6.64	8.89	10.51
11G	Ant1	2412	0.59	6.63	8.90	10.51
11G	Ant1	2437	0.59	6.63	8.90	10.51
11G	Ant1	2462	0.58	6.63	8.75	10.58
11N20SISO	Ant1	2412	0.56	6.61	8.47	10.72
11N20SISO	Ant1	2437	0.56	6.60	8.48	10.72
11N20SISO	Ant1	2462	0.56	6.61	8.47	10.72
11N40SISO	Ant1	2422	0.58	6.63	8.75	10.58
11N40SISO	Ant1	2437	0.58	6.62	8.76	10.57
11N40SISO	Ant1	2452	0.58	6.62	8.76	10.57

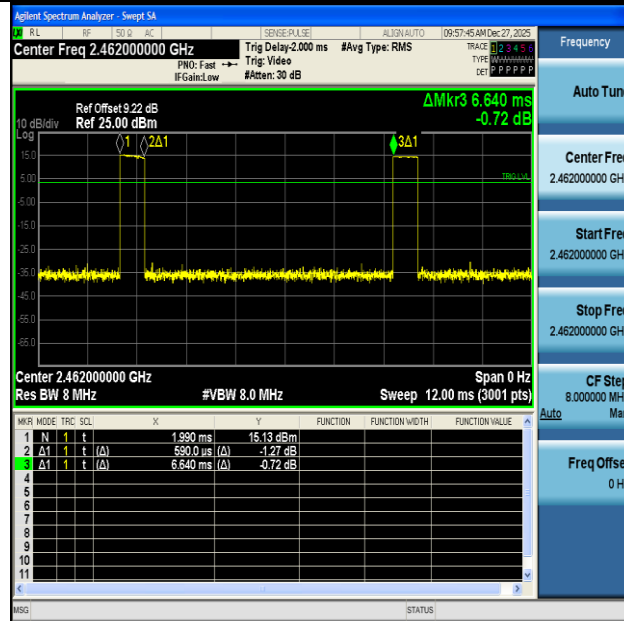
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



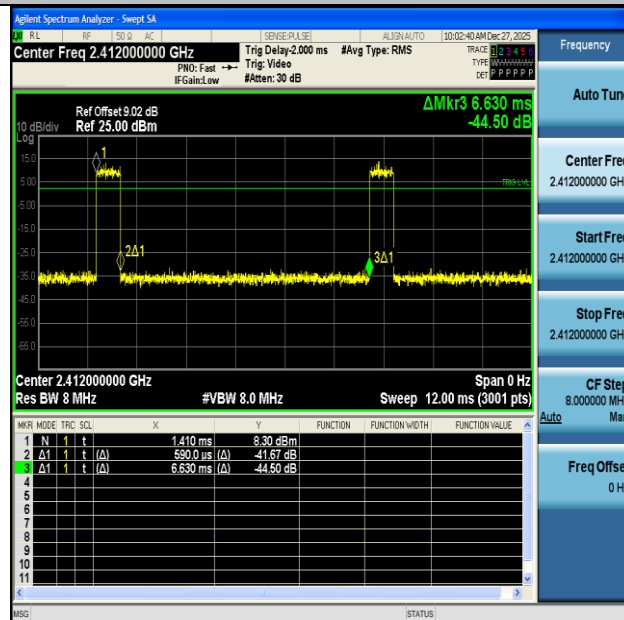


Test Graphs



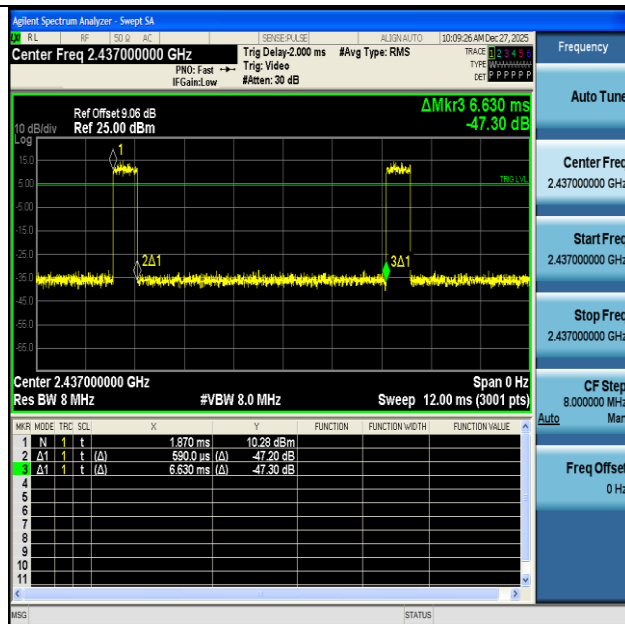


NTNV-11B-Ant1-2462

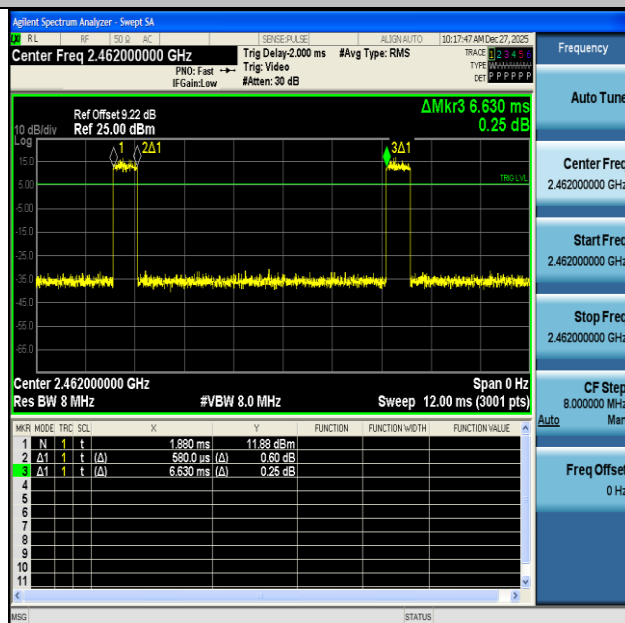


NTNV-11G-Ant1-2412



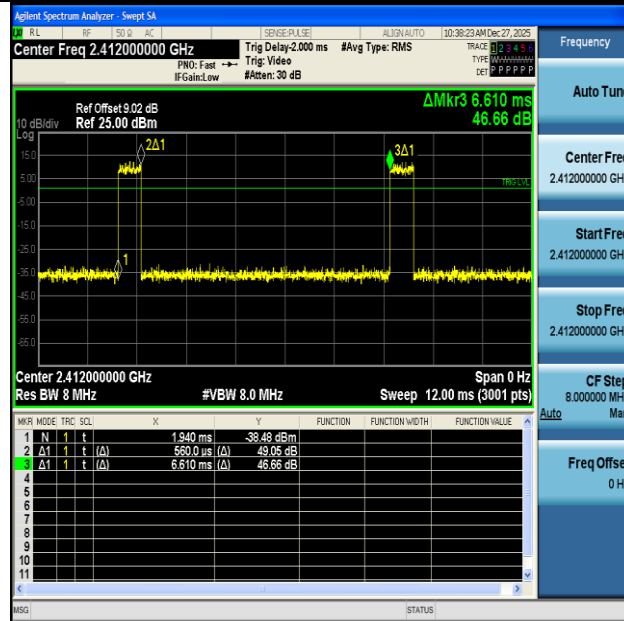


NTNV-11G-Ant1-2437

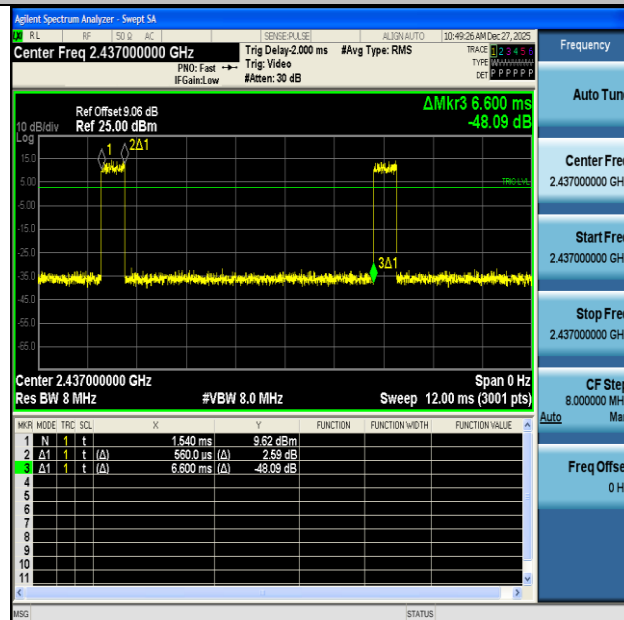


NTNV-11G-Ant1-2462



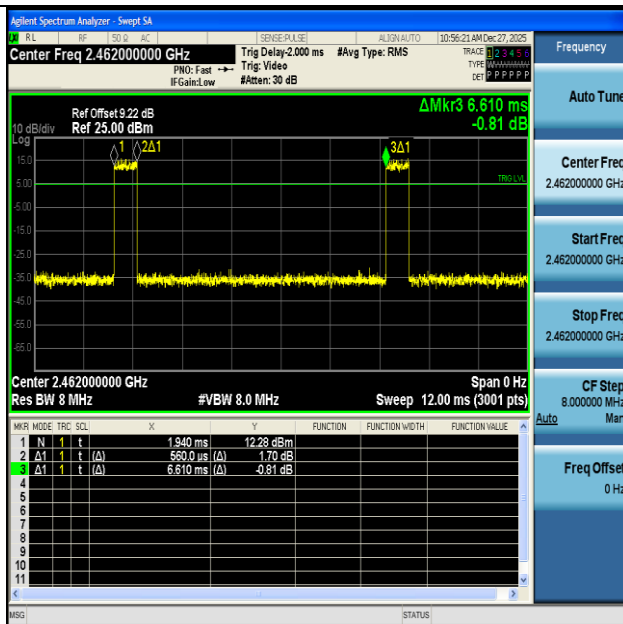


NTVN-11N20SISO-Ant1-2412

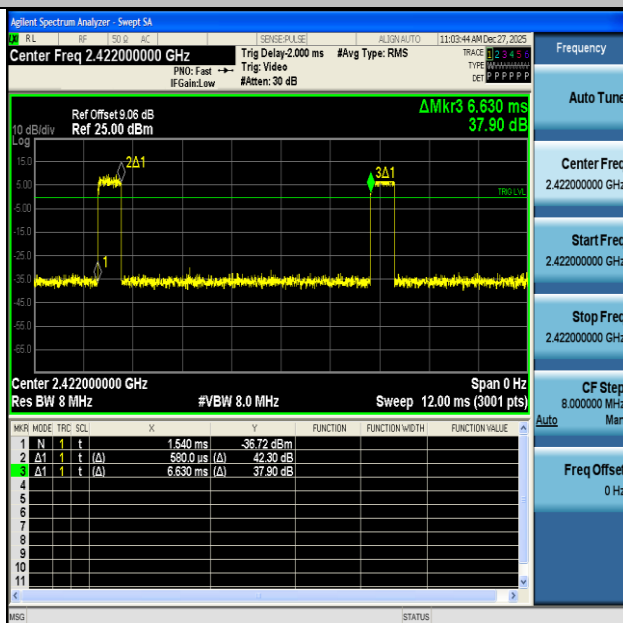


NTVN-11N20SISO-Ant1-2437



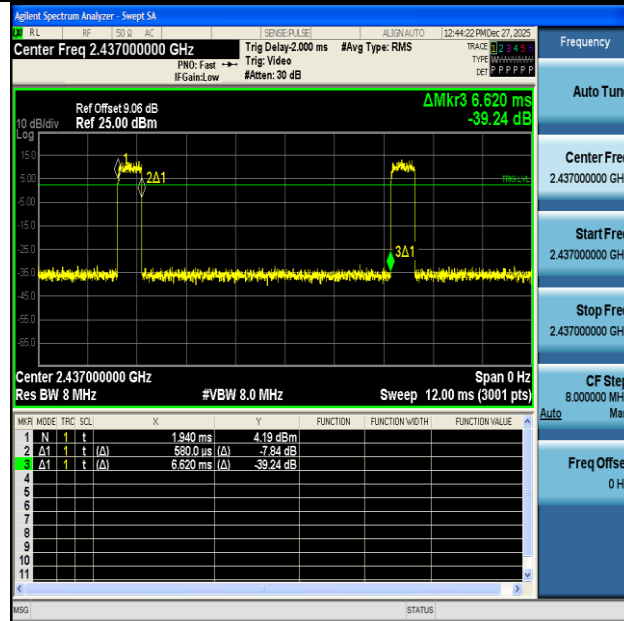


NTVN-11N20SISO-Ant1-2462

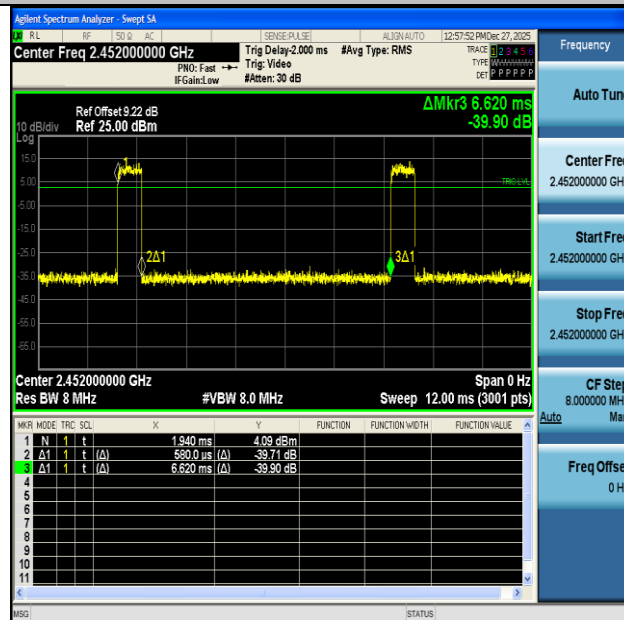


NTVN-11N40SISO-Ant1-2422





NTNV-11N40SISO-Ant1-2437



NTNV-11N40SISO-Ant1-2452

