



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

Product Name: Wanbo Projector

Trade Mark: wanbo

Test Model: Mozart 1S

FCC ID: 2A7PI-MOZART1S

Environmental Conditions

Temperature:	23.5℃
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	9.040	2407.480	2416.520	0.5	PASS
11B	Ant2	2412	9.080	2407.440	2416.520	0.5	PASS
11B	Ant1	2437	8.520	2432.960	2441.480	0.5	PASS
11B	Ant2	2437	9.000	2432.480	2441.480	0.5	PASS
11B	Ant1	2462	9.080	2457.440	2466.520	0.5	PASS
11B	Ant2	2462	9.040	2457.480	2466.520	0.5	PASS
11G	Ant1	2412	15.000	2404.480	2419.480	0.5	PASS
11G	Ant2	2412	15.000	2404.480	2419.480	0.5	PASS
11G	Ant1	2437	15.120	2429.400	2444.520	0.5	PASS
11G	Ant2	2437	14.400	2429.480	2443.880	0.5	PASS
11G	Ant1	2462	15.400	2454.440	2469.840	0.5	PASS
11G	Ant2	2462	15.040	2454.480	2469.520	0.5	PASS
11N20MIMO	Ant1	2412	15.440	2404.120	2419.560	0.5	PASS
11N20MIMO	Ant2	2412	16.040	2404.120	2420.160	0.5	PASS
11N20MIMO	Ant1	2437	16.000	2429.440	2445.440	0.5	PASS
11N20MIMO	Ant2	2437	15.080	2429.440	2444.520	0.5	PASS
11N20MIMO	Ant1	2462	16.240	2454.440	2470.680	0.5	PASS
11N20MIMO	Ant2	2462	16.280	2454.120	2470.400	0.5	PASS
11N40MIMO	Ant1	2422	35.040	2404.480	2439.520	0.5	PASS
11N40MIMO	Ant2	2422	35.040	2404.480	2439.520	0.5	PASS
11N40MIMO	Ant1	2437	35.040	2419.480	2454.520	0.5	PASS
11N40MIMO	Ant2	2437	35.040	2419.480	2454.520	0.5	PASS
11N40MIMO	Ant1	2452	35.120	2434.400	2469.520	0.5	PASS





11N40MIMO	Ant2	2452	35.680	2433.840	2469.520	0.5	PASS
-----------	------	------	--------	----------	----------	-----	------

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



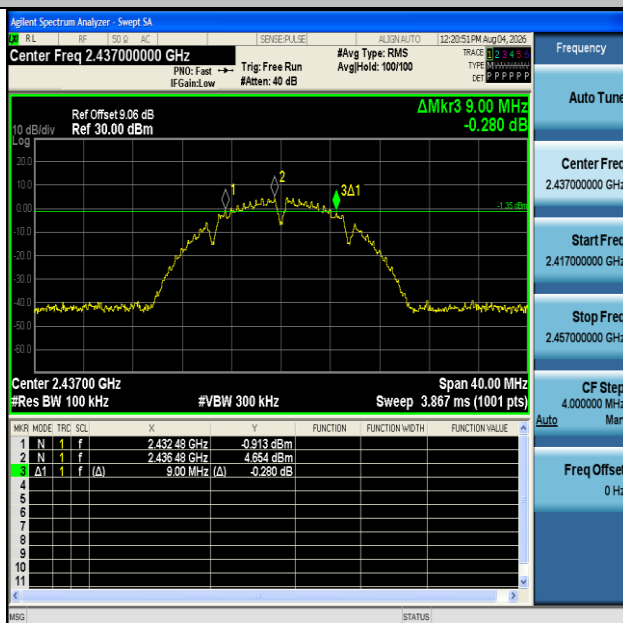


Test Graphs





11B-Ant1-2437-PASS



11B-Ant2-2437-PASS



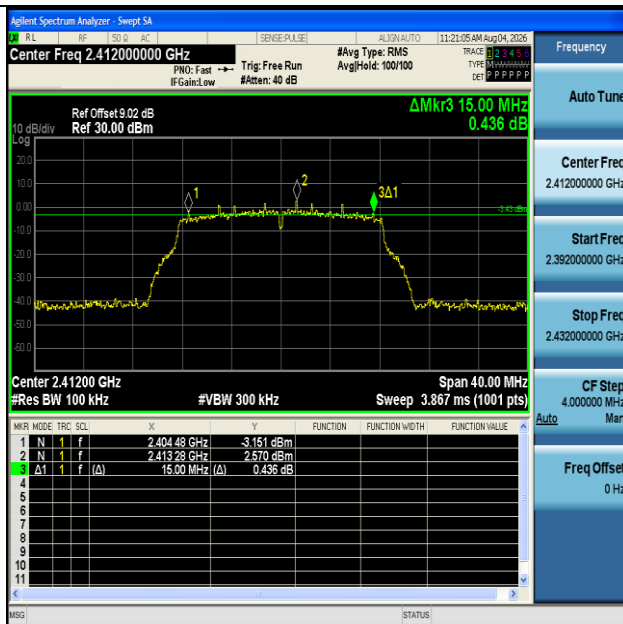


11B-Ant1-2462-PASS



11B-Ant2-2462-PASS



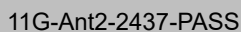
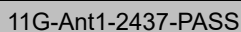


11G-Ant1-2412-PASS



11G-Ant2-2412-PASS





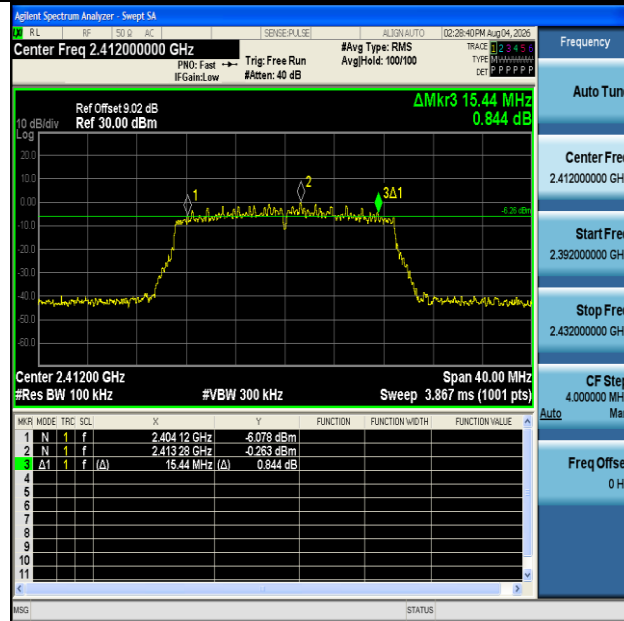


11G-Ant1-2462-PASS

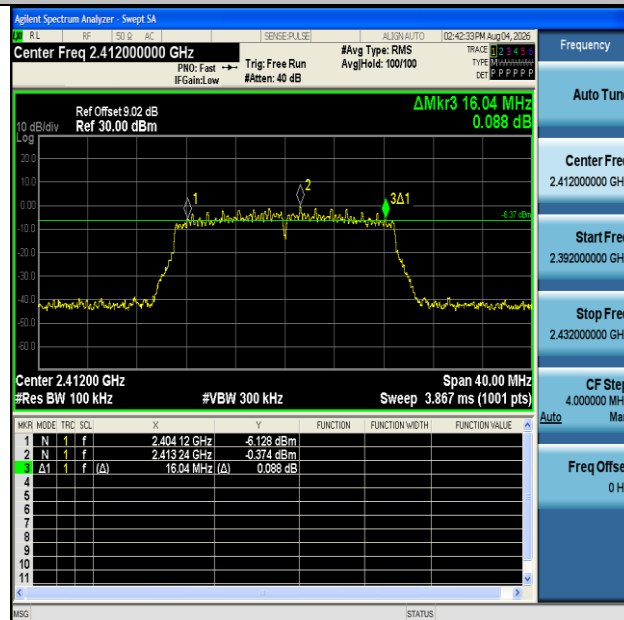


11G-Ant2-2462-PASS





11N20MIMO-Ant1-2412-PASS

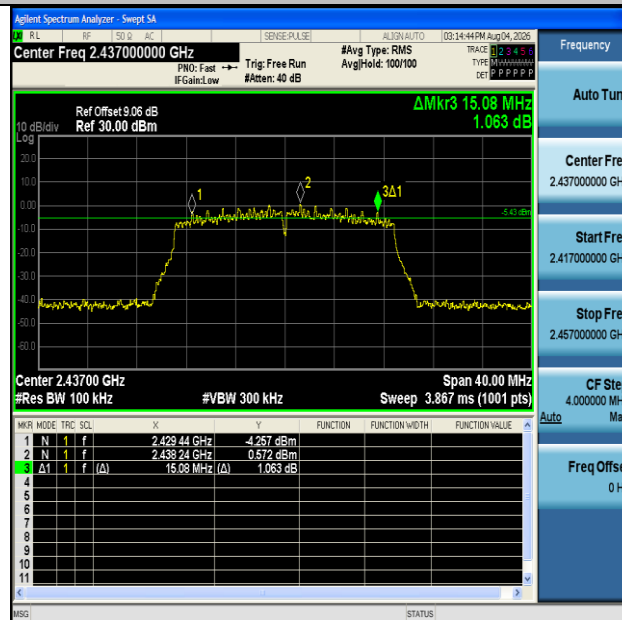


11N20MIMO-Ant2-2412-PASS



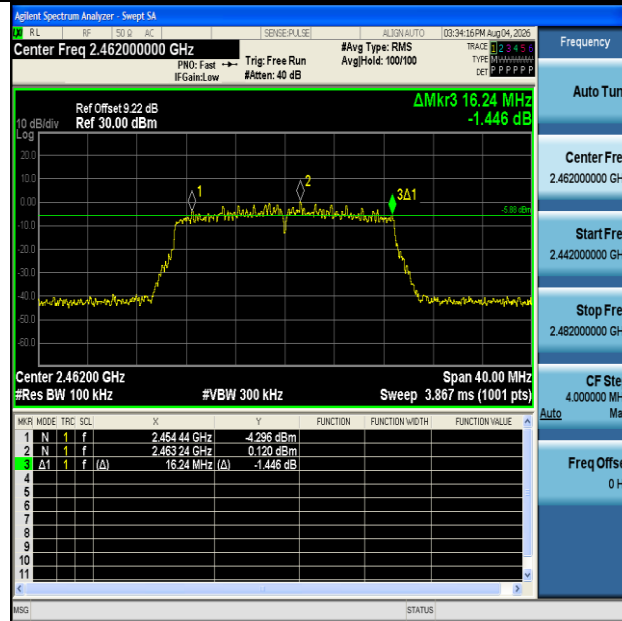


11N20MIMO-Ant1-2437-PASS

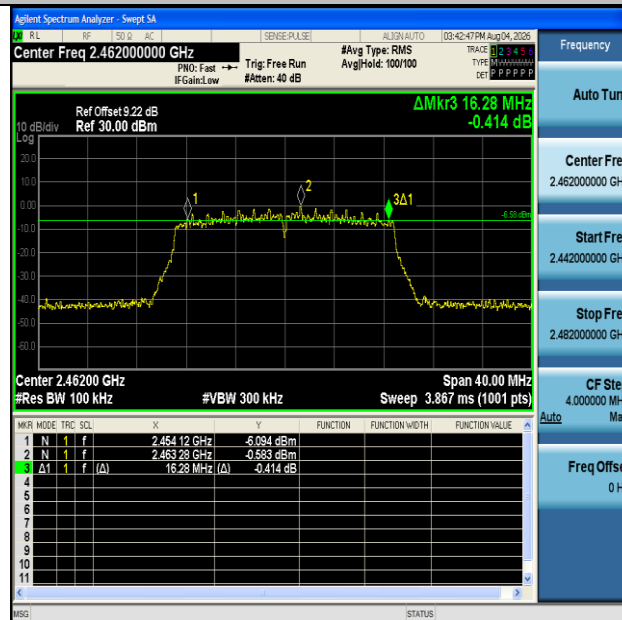


11N20MIMO-Ant2-2437-PASS



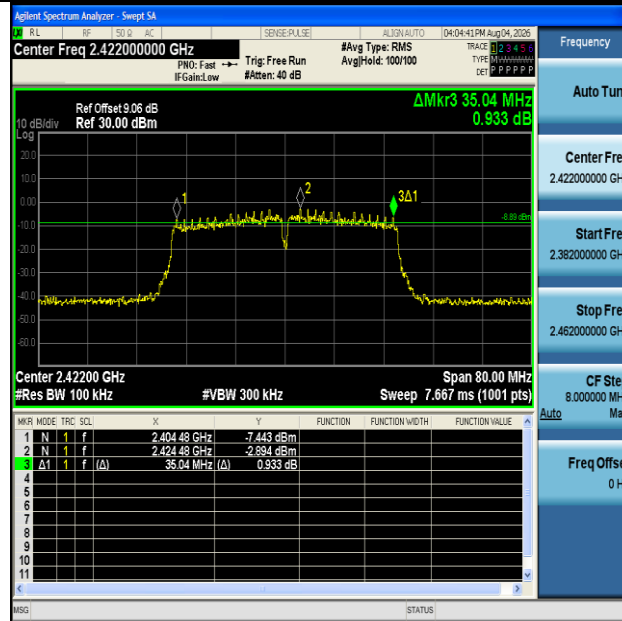


11N20MIMO-Ant1-2462-PASS

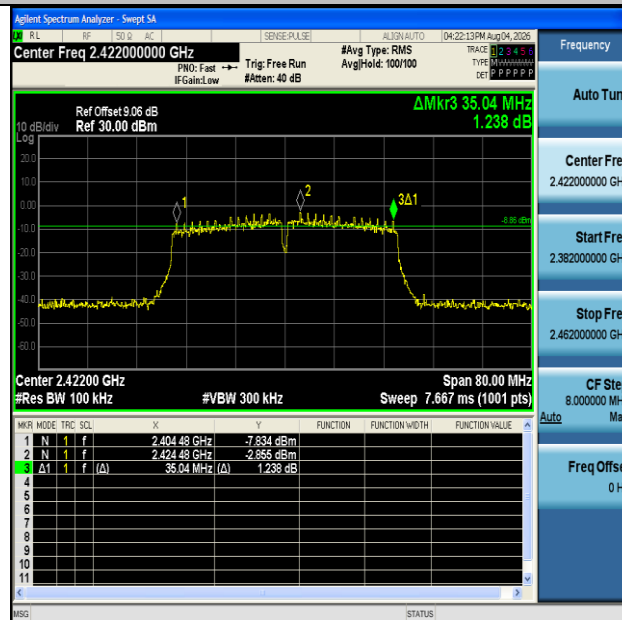


11N20MIMO-Ant2-2462-PASS



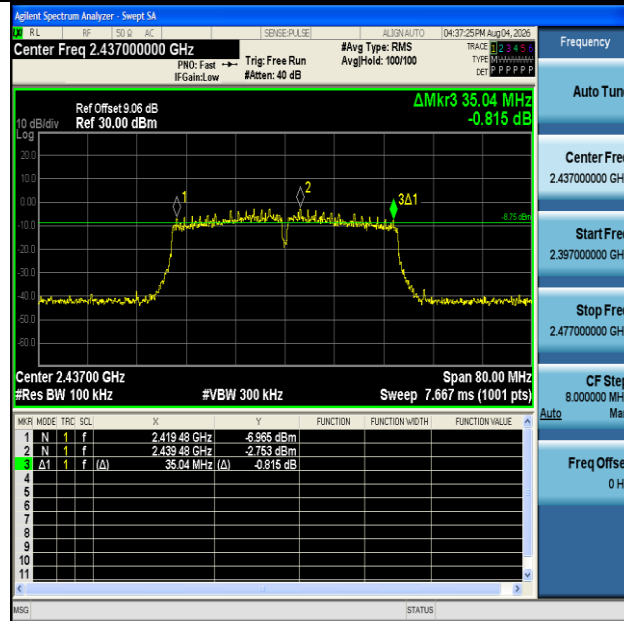


11N40MIMO-Ant1-2422-PASS

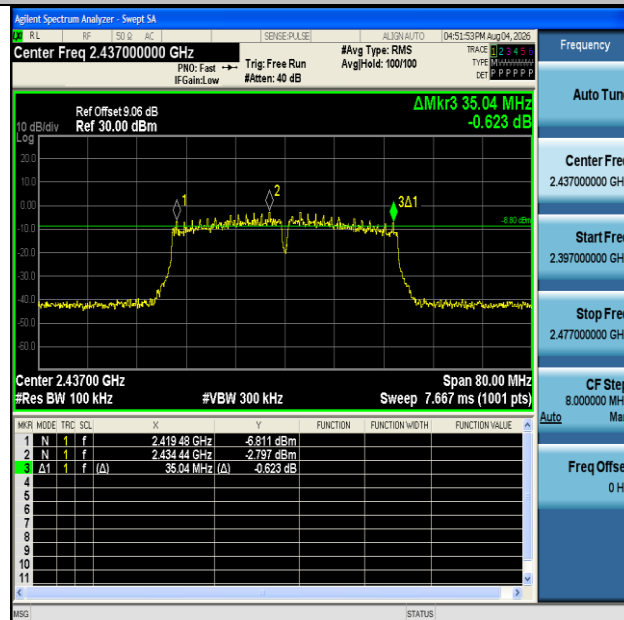


11N40MIMO-Ant2-2422-PASS



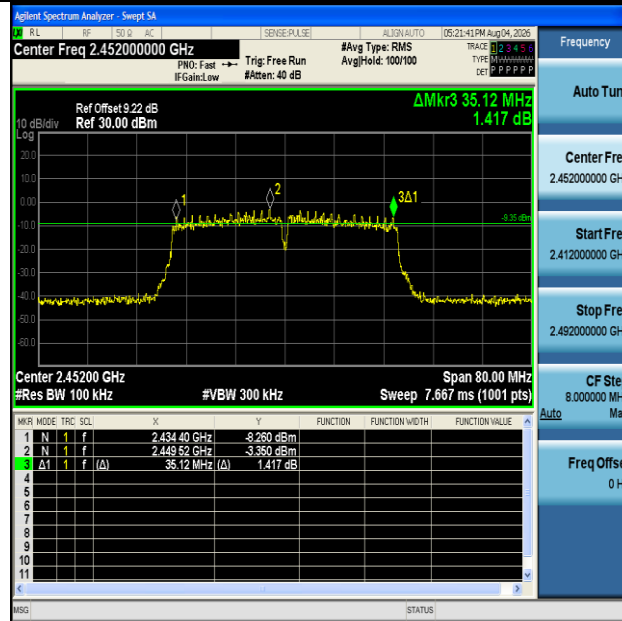


11N40MIMO-Ant1-2437-PASS

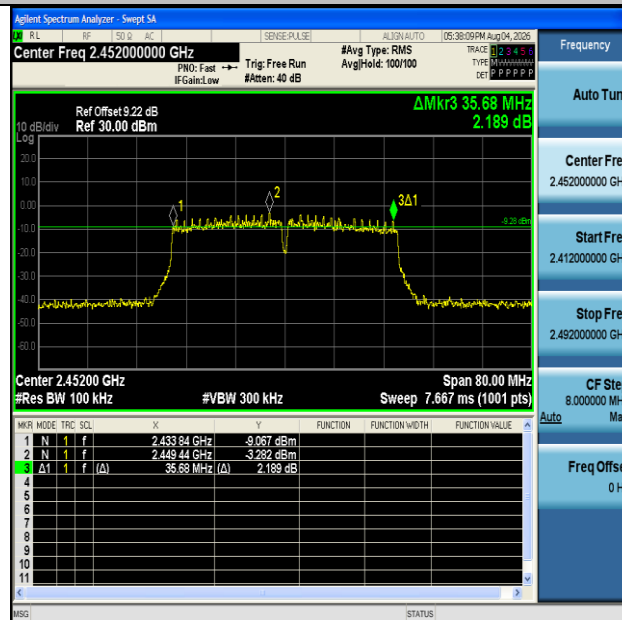


11N40MIMO-Ant2-2437-PASS





11N40MIMO-Ant1-2452-PASS



11N40MIMO-Ant2-2452-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	13.427	2405.3343	2418.7613	---	---
11B	Ant2	2412	13.504	2405.2955	2418.7995	---	---
11B	Ant1	2437	13.339	2430.3017	2443.6407	---	---
11B	Ant2	2437	13.355	2430.2845	2443.6395	---	---
11B	Ant1	2462	13.498	2455.2966	2468.7946	---	---
11B	Ant2	2462	13.483	2455.3032	2468.7862	---	---
11G	Ant1	2412	16.949	2403.5108	2420.4598	---	---
11G	Ant2	2412	16.651	2403.6912	2420.3422	---	---
11G	Ant1	2437	16.743	2428.5623	2445.3053	---	---
11G	Ant2	2437	16.590	2428.6573	2445.2473	---	---
11G	Ant1	2462	16.869	2453.5809	2470.4499	---	---
11G	Ant2	2462	16.651	2453.6915	2470.3425	---	---
11N20MIMO	Ant1	2412	17.701	2403.1912	2420.8922	---	---
11N20MIMO	Ant2	2412	17.702	2403.1691	2420.8711	---	---
11N20MIMO	Ant1	2437	17.669	2428.2125	2445.8815	---	---
11N20MIMO	Ant2	2437	17.654	2428.1960	2445.8500	---	---
11N20MIMO	Ant1	2462	17.744	2453.1793	2470.9233	---	---
11N20MIMO	Ant2	2462	17.717	2453.1843	2470.9013	---	---
11N40MIMO	Ant1	2422	36.152	2404.0684	2440.2204	---	---
11N40MIMO	Ant2	2422	36.125	2404.0775	2440.2025	---	---
11N40MIMO	Ant1	2437	36.037	2419.0512	2455.0882	---	---
11N40MIMO	Ant2	2437	36.071	2418.9738	2455.0448	---	---
11N40MIMO	Ant1	2452	36.259	2433.9428	2470.2018	---	---
11N40MIMO	Ant2	2452	36.249	2433.9019	2470.1509	---	---

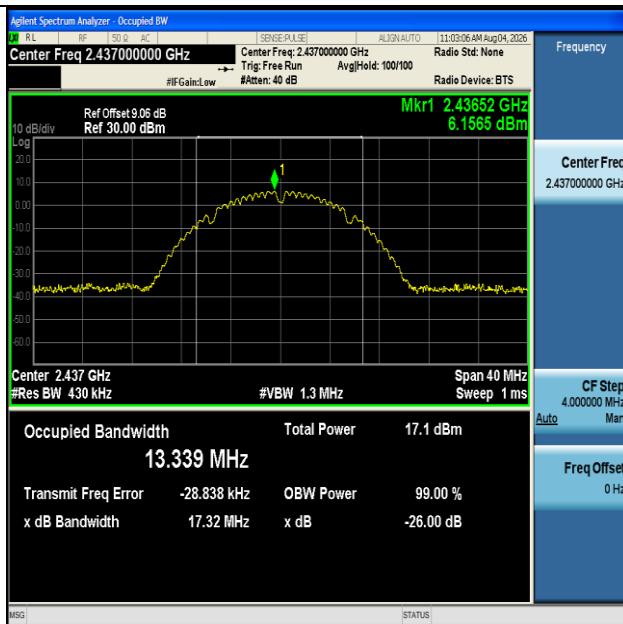
Note: offset(dB) = cable loss(dB) + attenuator factor(dB)



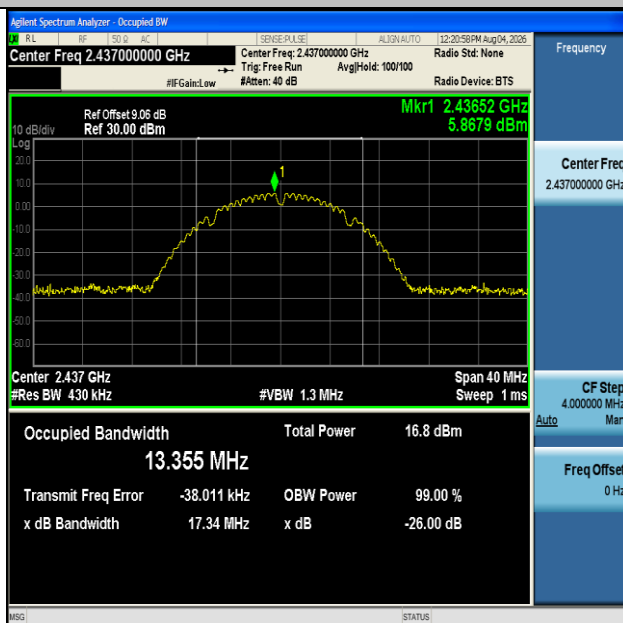


Test Graphs



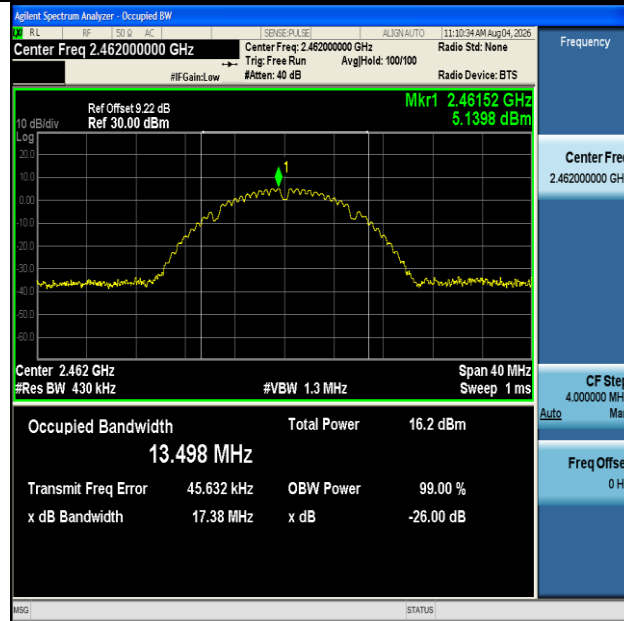


11B-Ant1-2437

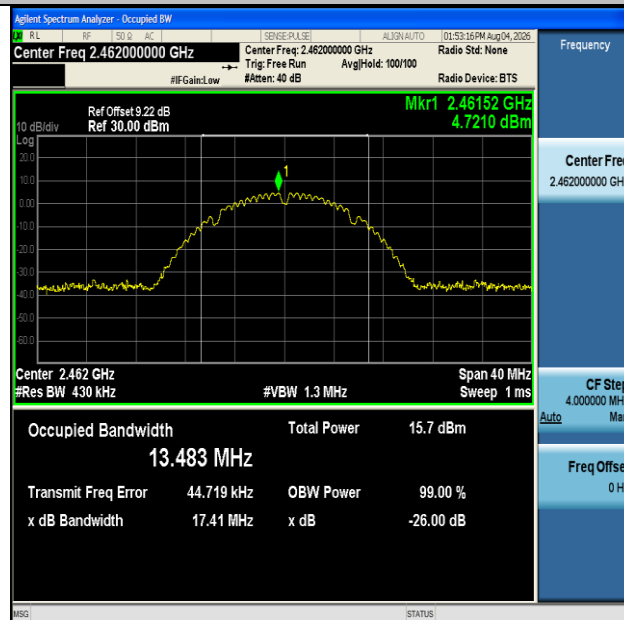


11B-Ant2-2437



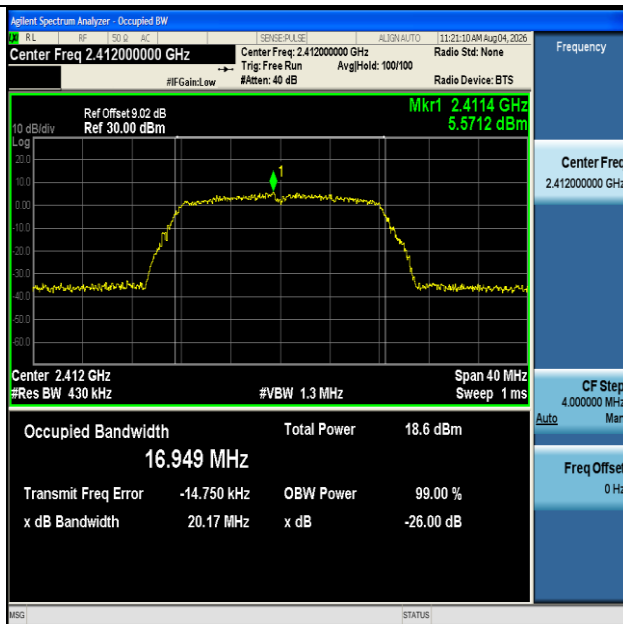


11B-Ant1-2462

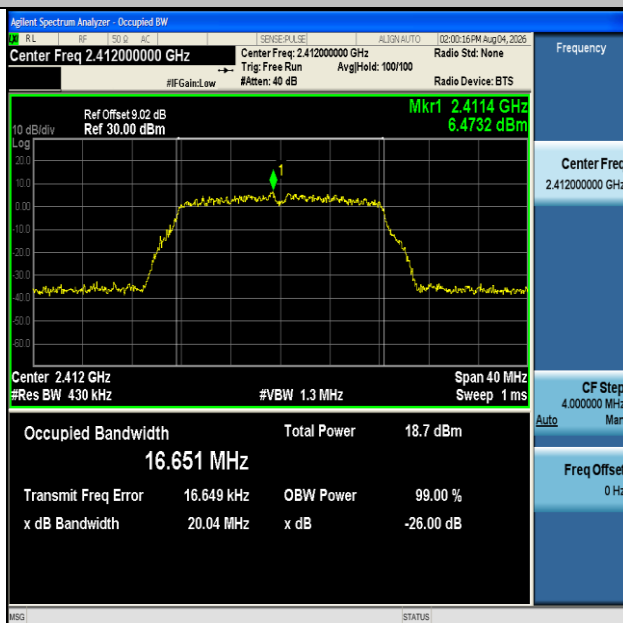


11B-Ant2-2462



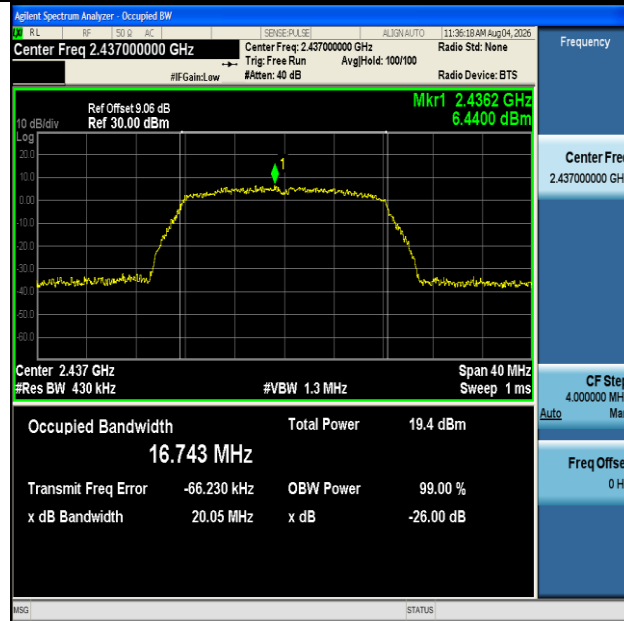


11G-Ant1-2412

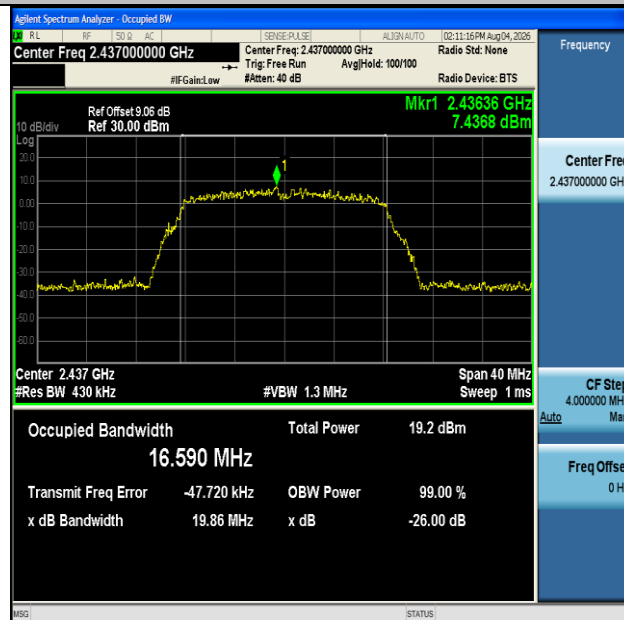


11G-Ant2-2412



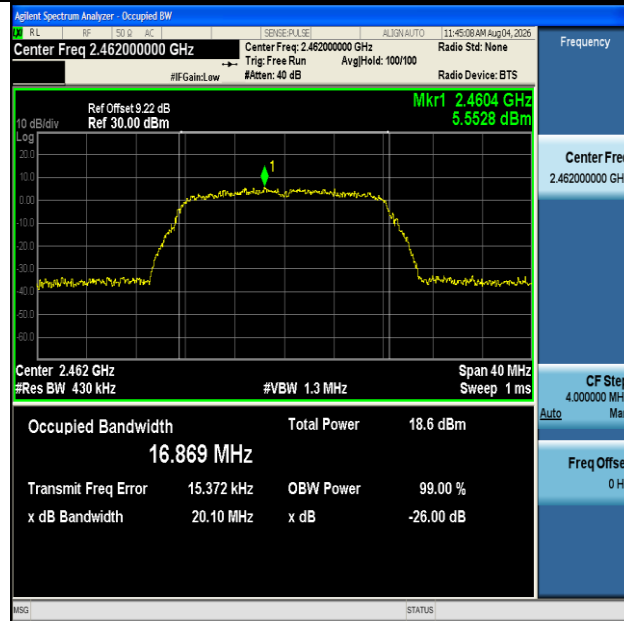


11G-Ant1-2437

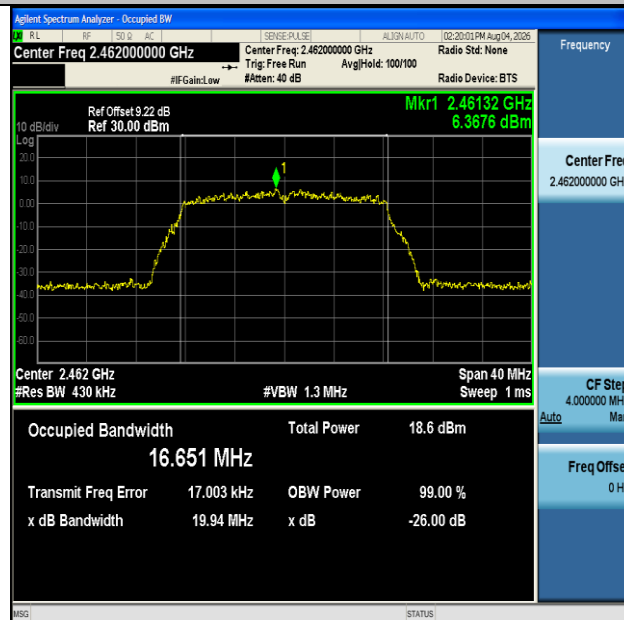


11G-Ant2-2437



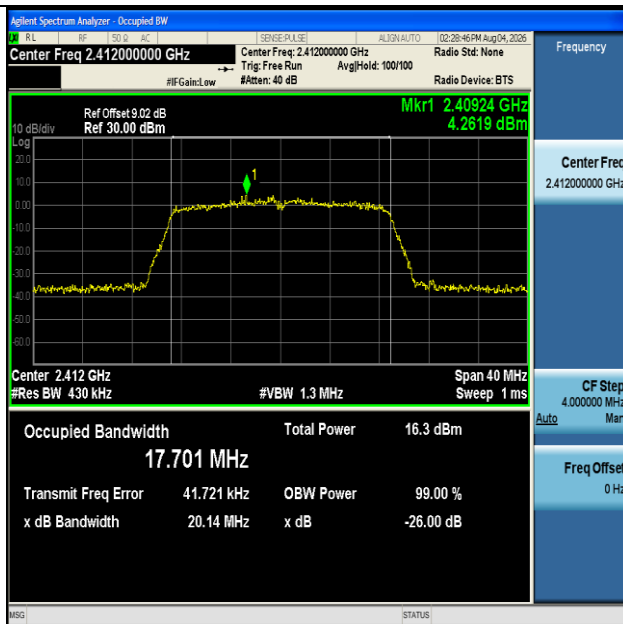


11G-Ant1-2462

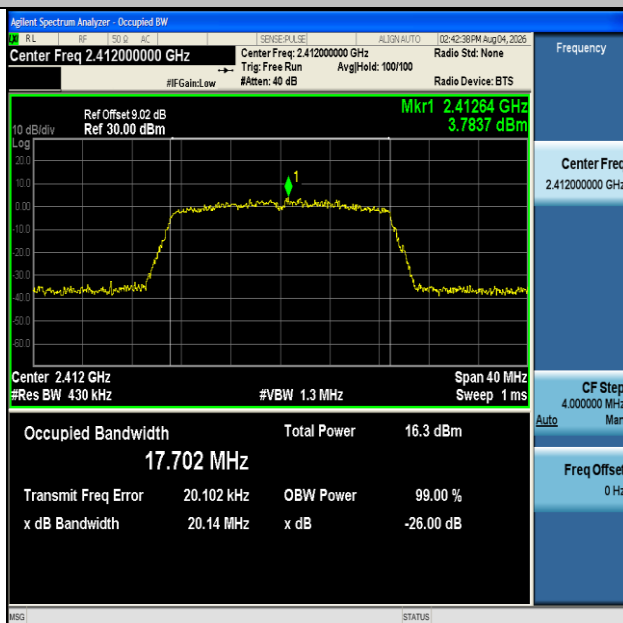


11G-Ant2-2462



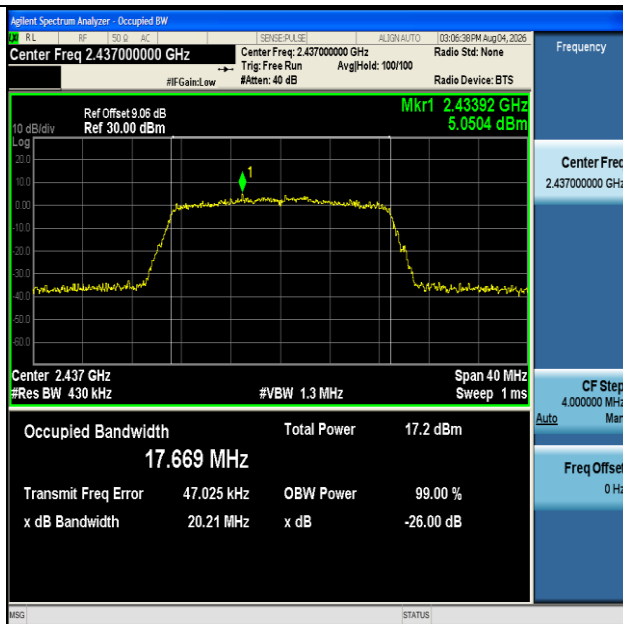


11N20MIMO-Ant1-2412

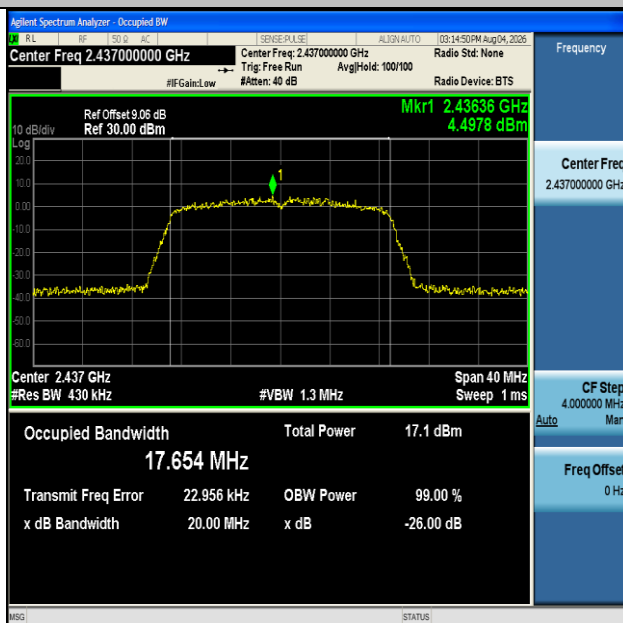


11N20MIMO-Ant2-2412



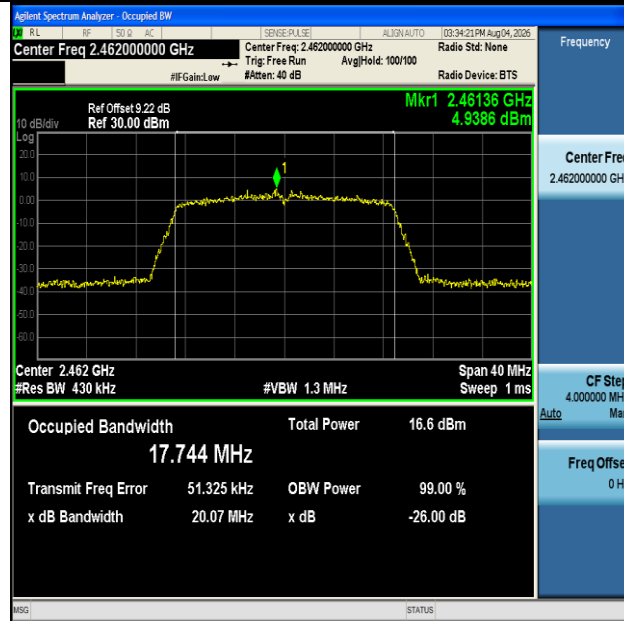


11N20MIMO-Ant1-2437

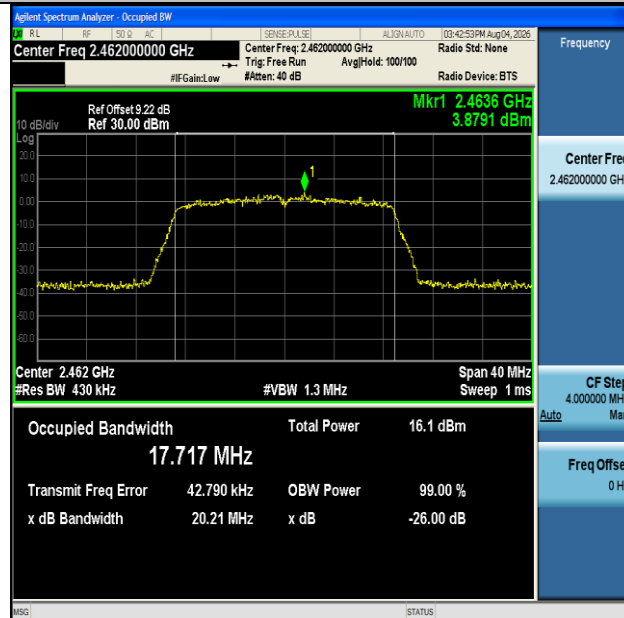


11N20MIMO-Ant2-2437



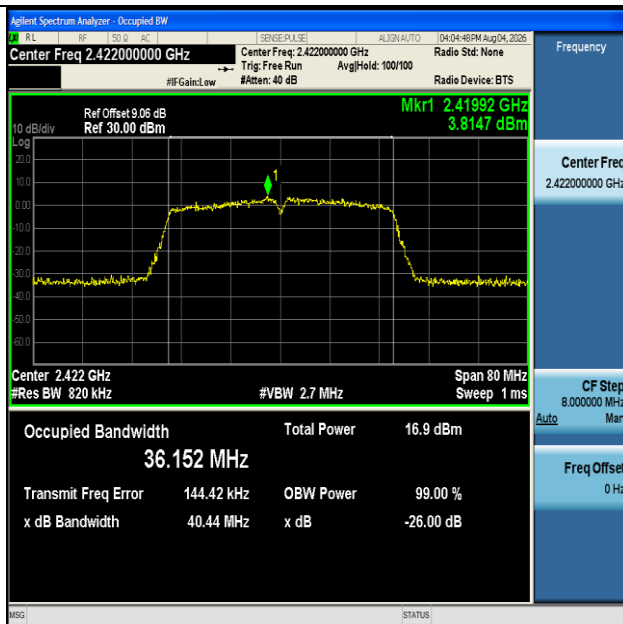


11N20MIMO-Ant1-2462

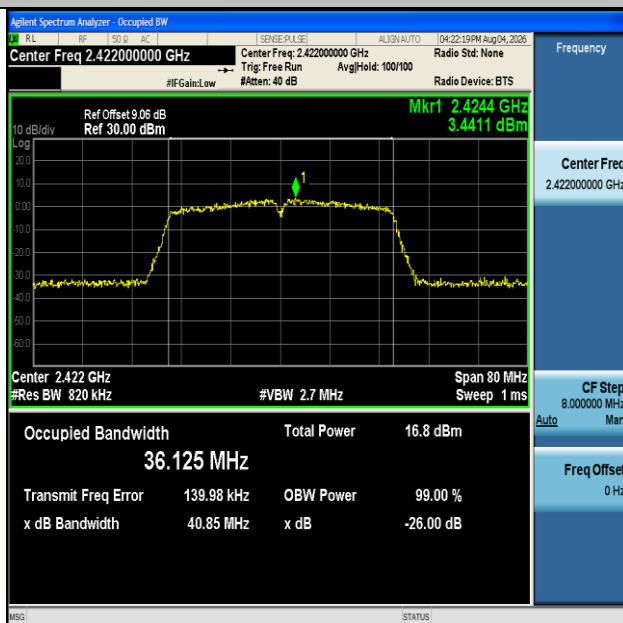


11N20MIMO-Ant2-2462



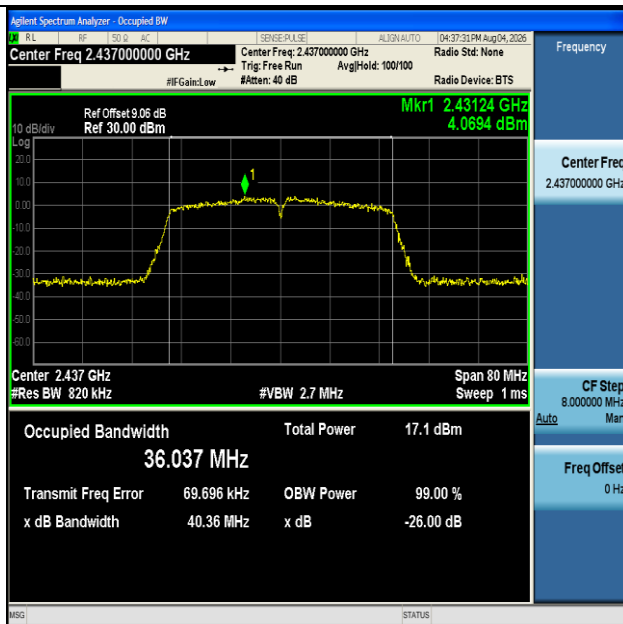


11N40MIMO-Ant1-2422

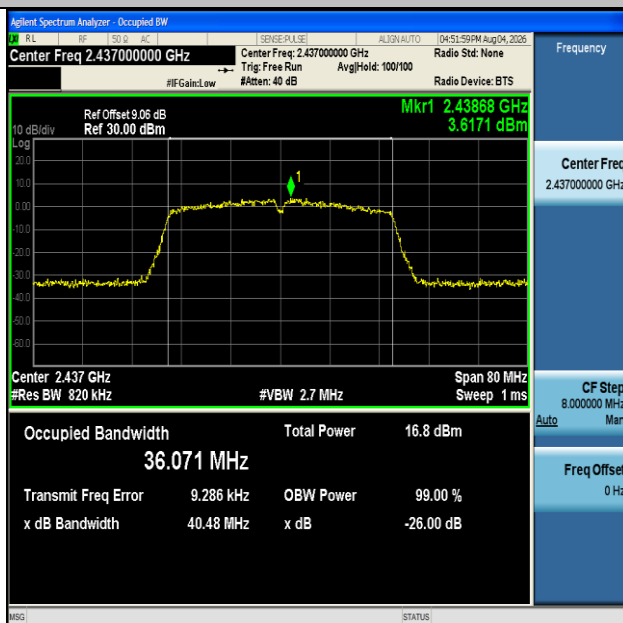


11N40MIMO-Ant2-2422





11N40MIMO-Ant1-2437

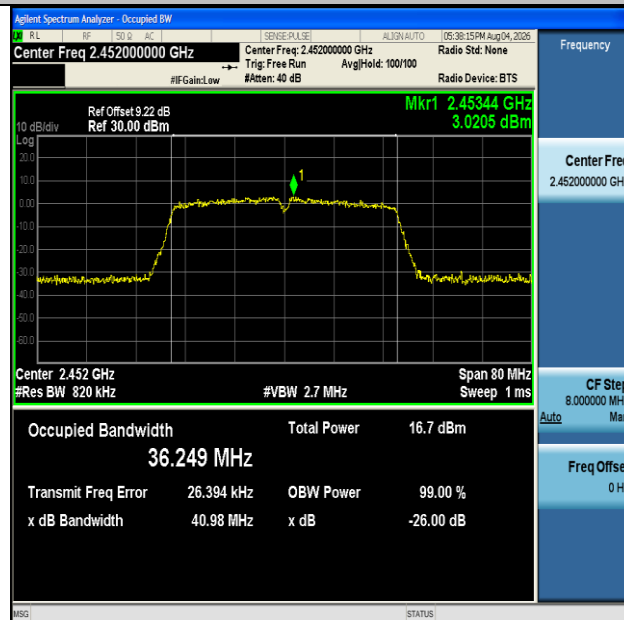


11N40MIMO-Ant2-2437





11N40MIMO-Ant1-2452



11N40MIMO-Ant2-2452





Appendix C: Maximum Average conducted output power

Test Result

Test Mode	Antenna	Frequency [MHz]	Conducted Power [dBm]	Conducted Limit [dBm]	Verdict
11B	Ant1	2412	12.90	≤30.00	PASS
11B	Ant2	2412	12.55	≤30.00	PASS
11B	Ant1	2437	14.12	≤30.00	PASS
11B	Ant2	2437	13.84	≤30.00	PASS
11B	Ant1	2462	13.23	≤30.00	PASS
11B	Ant2	2462	12.76	≤30.00	PASS
11G	Ant1	2412	12.63	≤30.00	PASS
11G	Ant2	2412	12.32	≤30.00	PASS
11G	Ant1	2437	13.35	≤30.00	PASS
11G	Ant2	2437	12.90	≤30.00	PASS
11G	Ant1	2462	12.55	≤30.00	PASS
11G	Ant2	2462	12.30	≤30.00	PASS
11N20MIMO	Ant1	2412	9.84	≤30.00	PASS
11N20MIMO	Ant2	2412	9.60	≤30.00	PASS
11N20MIMO	total	2412	12.73	≤30.00	PASS
11N20MIMO	Ant1	2437	11.03	≤30.00	PASS
11N20MIMO	Ant2	2437	10.46	≤30.00	PASS
11N20MIMO	total	2437	13.76	≤30.00	PASS
11N20MIMO	Ant1	2462	10.37	≤30.00	PASS
11N20MIMO	Ant2	2462	9.67	≤30.00	PASS
11N20MIMO	total	2462	13.04	≤30.00	PASS
11N40MIMO	Ant1	2422	9.85	≤30.00	PASS
11N40MIMO	Ant2	2422	9.70	≤30.00	PASS
11N40MIMO	total	2422	12.79	≤30.00	PASS
11N40MIMO	Ant1	2437	10.04	≤30.00	PASS
11N40MIMO	Ant2	2437	10.11	≤30.00	PASS
11N40MIMO	total	2437	13.09	≤30.00	PASS
11N40MIMO	Ant1	2452	10.04	≤30.00	PASS
11N40MIMO	Ant2	2452	9.96	≤30.00	PASS
11N40MIMO	total	2452	13.01	≤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

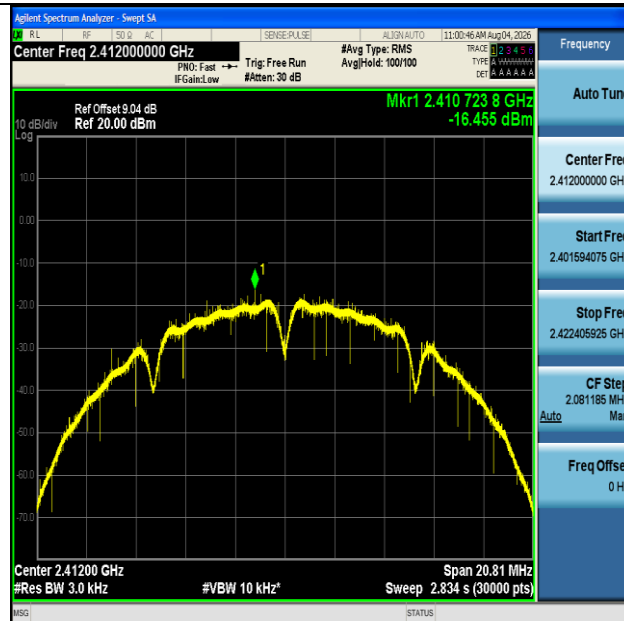
Test Mode	Antenna	Frequency [MHz]	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant1	2412	-16.46	≤8.00	PASS
11B	Ant2	2412	-16.05	≤8.00	PASS
11B	Ant1	2437	-14.50	≤8.00	PASS
11B	Ant2	2437	-13.78	≤8.00	PASS
11B	Ant1	2462	-12.47	≤8.00	PASS
11B	Ant2	2462	-14.75	≤8.00	PASS
11G	Ant1	2412	-19.51	≤8.00	PASS
11G	Ant2	2412	-19.49	≤8.00	PASS
11G	Ant1	2437	-23.10	≤8.00	PASS
11G	Ant2	2437	-18.81	≤8.00	PASS
11G	Ant1	2462	-22.19	≤8.00	PASS
11G	Ant2	2462	-27.14	≤8.00	PASS
11N20MIMO	Ant1	2412	-20.19	≤8.00	PASS
11N20MIMO	Ant2	2412	-18.39	≤8.00	PASS
11N20MIMO	total	2412	-16.19	≤7.50	PASS
11N20MIMO	Ant1	2437	-17.81	≤8.00	PASS
11N20MIMO	Ant2	2437	-19.19	≤8.00	PASS
11N20MIMO	total	2437	-15.44	≤7.50	PASS
11N20MIMO	Ant1	2462	-18.41	≤8.00	PASS
11N20MIMO	Ant2	2462	-22.99	≤8.00	PASS
11N20MIMO	total	2462	-17.11	≤7.50	PASS
11N40MIMO	Ant1	2422	-19.48	≤8.00	PASS
11N40MIMO	Ant2	2422	-18.65	≤8.00	PASS
11N40MIMO	total	2422	-16.03	≤7.50	PASS
11N40MIMO	Ant1	2437	-19.33	≤8.00	PASS
11N40MIMO	Ant2	2437	-18.21	≤8.00	PASS
11N40MIMO	total	2437	-15.72	≤7.50	PASS
11N40MIMO	Ant1	2452	-19.27	≤8.00	PASS
11N40MIMO	Ant2	2452	-18.40	≤8.00	PASS
11N40MIMO	total	2452	-15.80	≤7.50	PASS

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

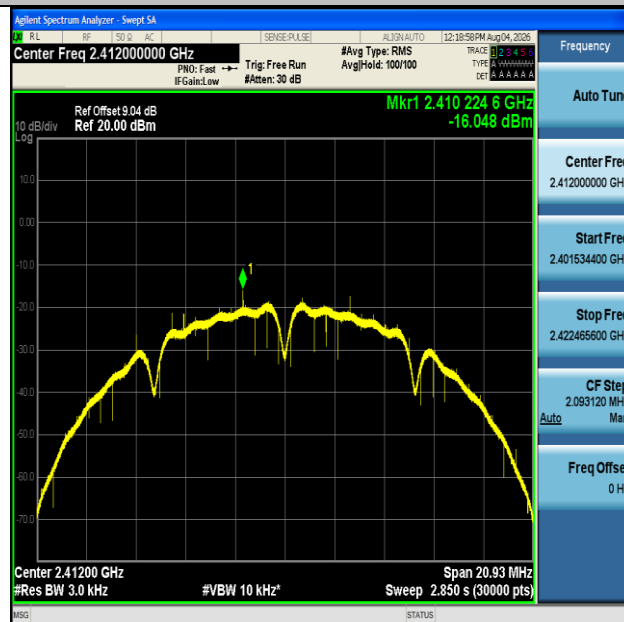




Test Graphs

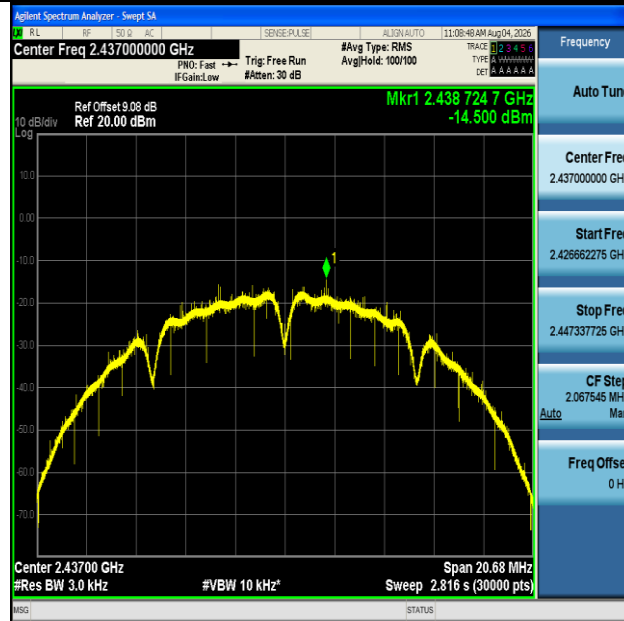


11B-Ant1-2412-PASS

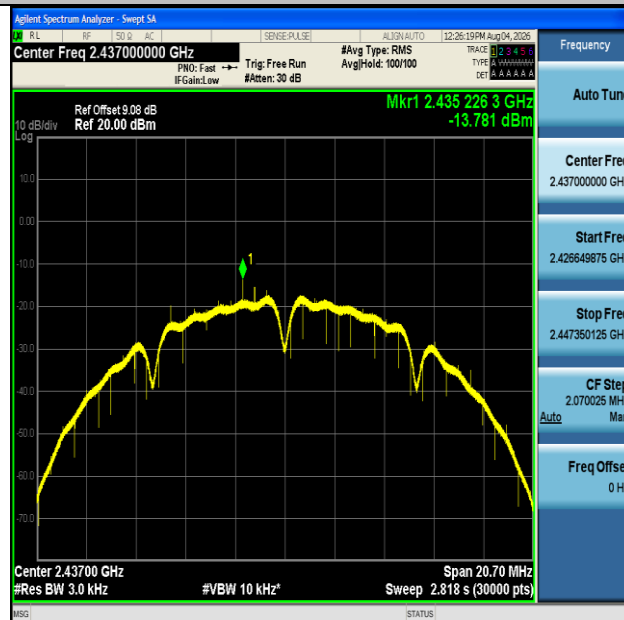


11B-Ant2-2412-PASS



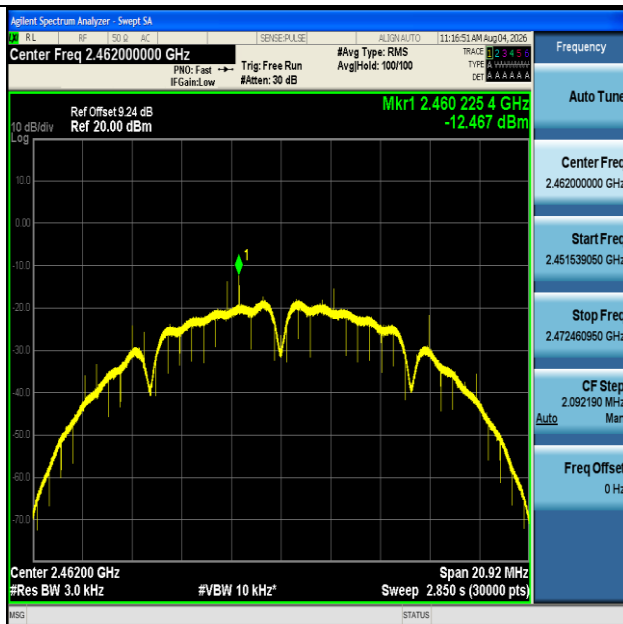


11B-Ant1-2437-PASS

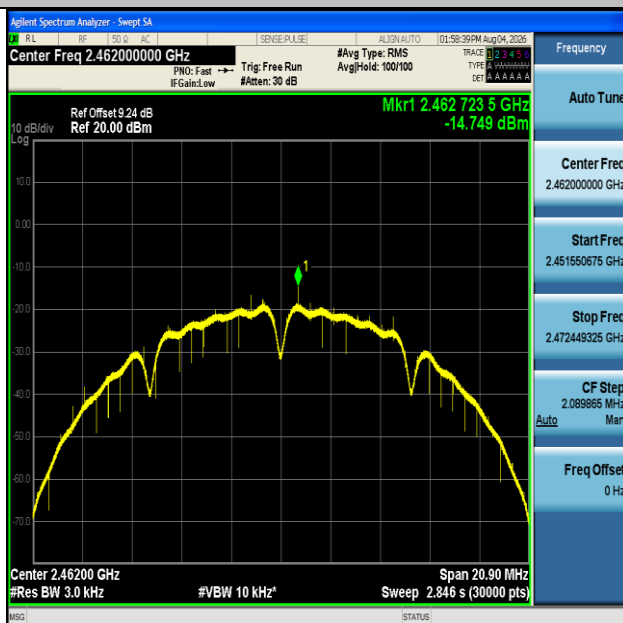


11B-Ant2-2437-PASS



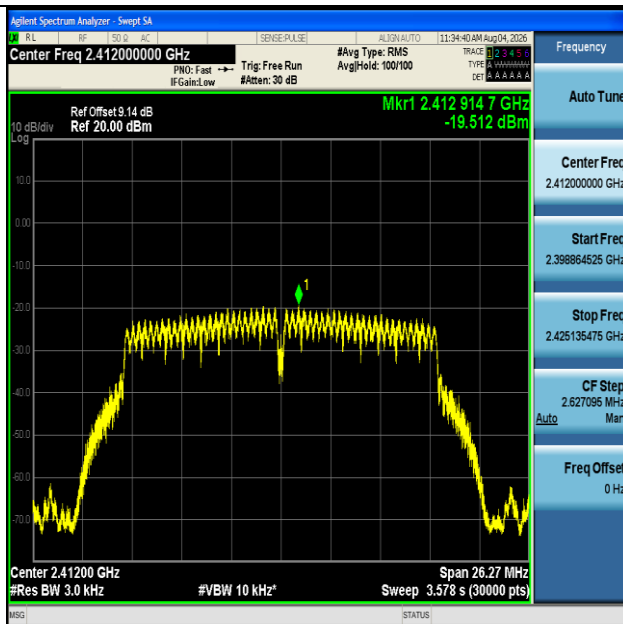


11B-Ant1-2462-PASS

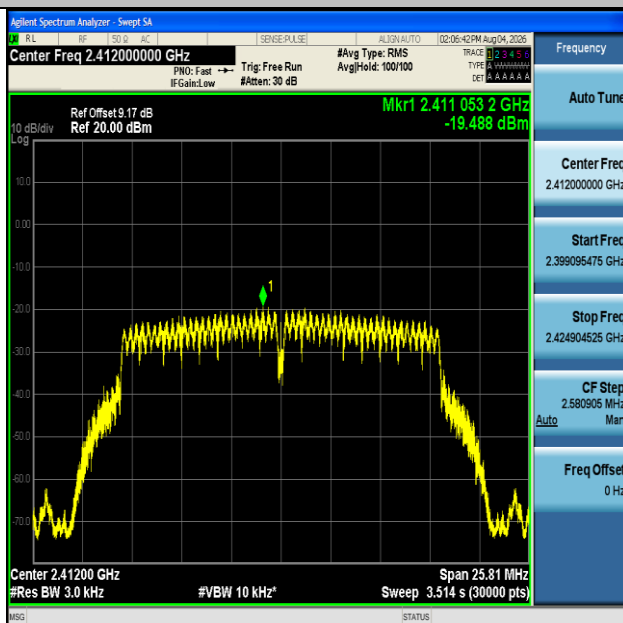


11B-Ant2-2462-PASS



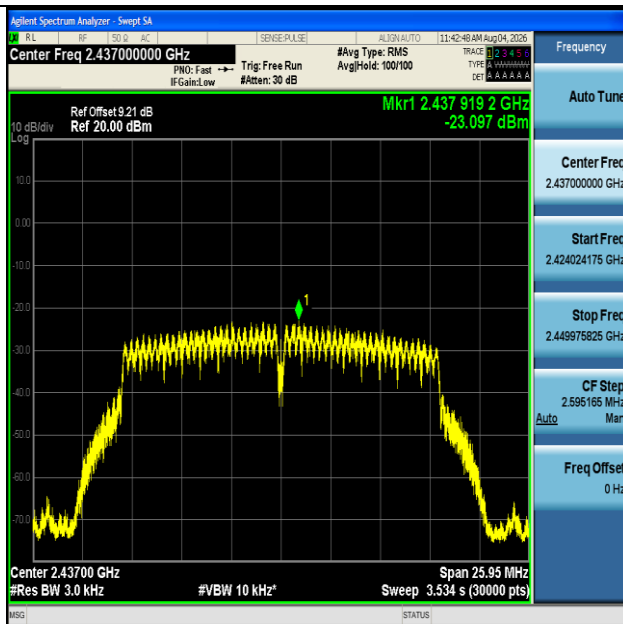


11G-Ant1-2412-PASS

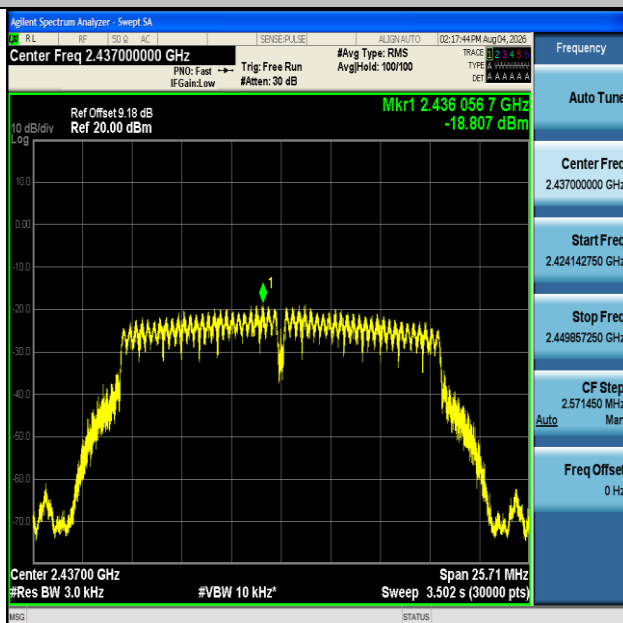


11G-Ant2-2412-PASS



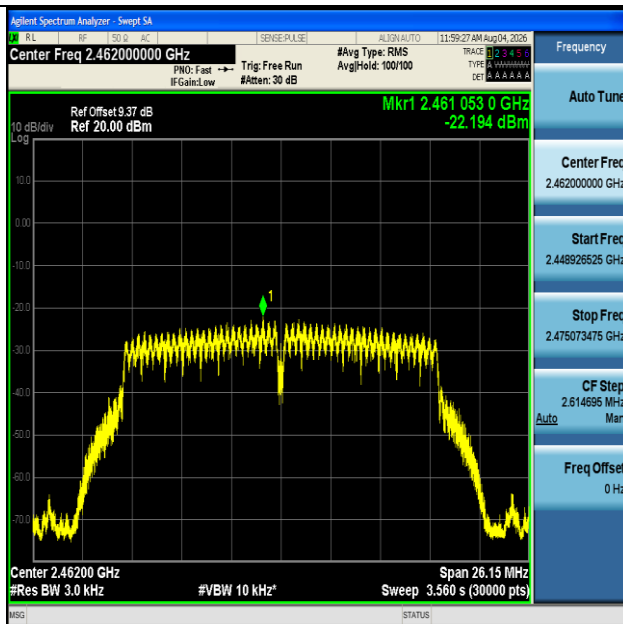


11G-Ant1-2437-PASS

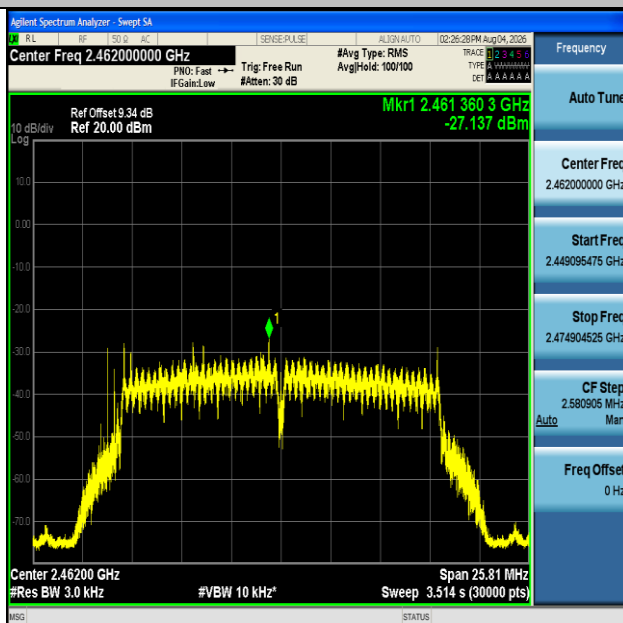


11G-Ant2-2437-PASS



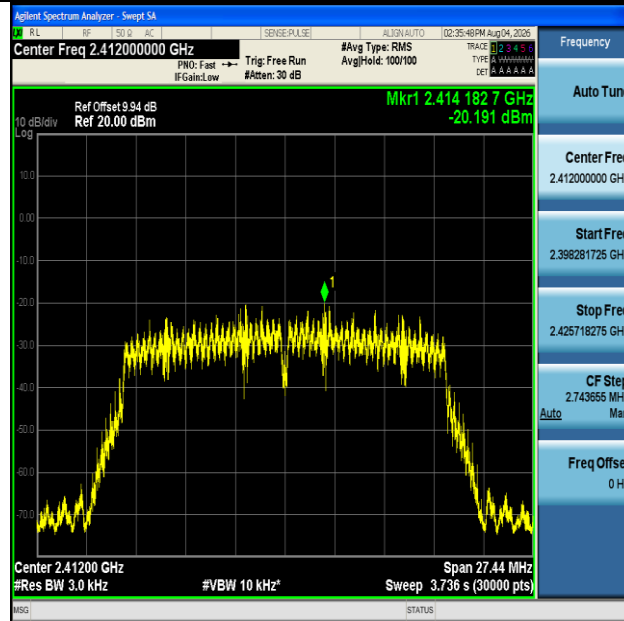


11G-Ant1-2462-PASS

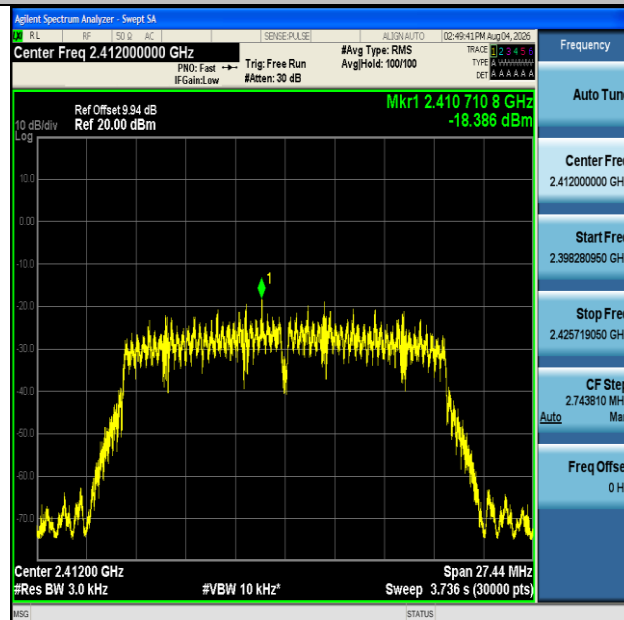


11G-Ant2-2462-PASS



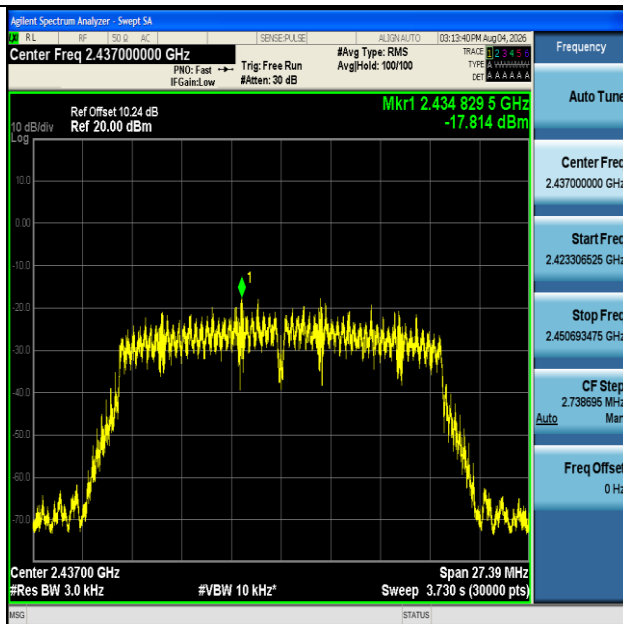


11N20MIMO-Ant1-2412-PASS

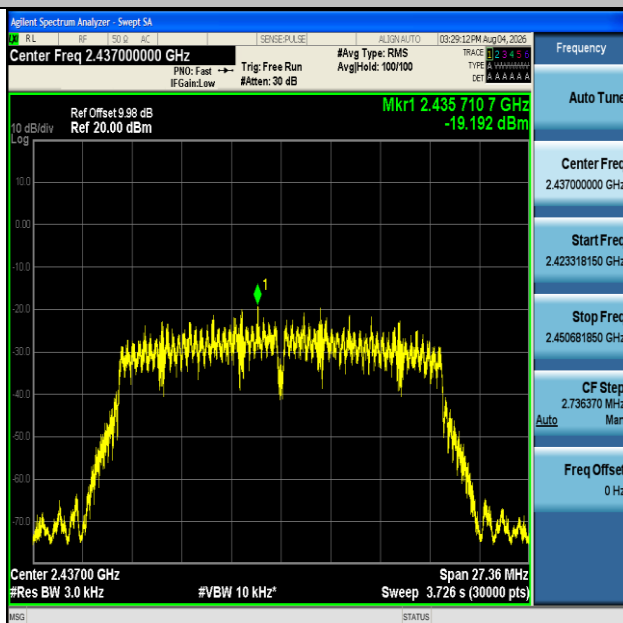


11N20MIMO-Ant2-2412-PASS



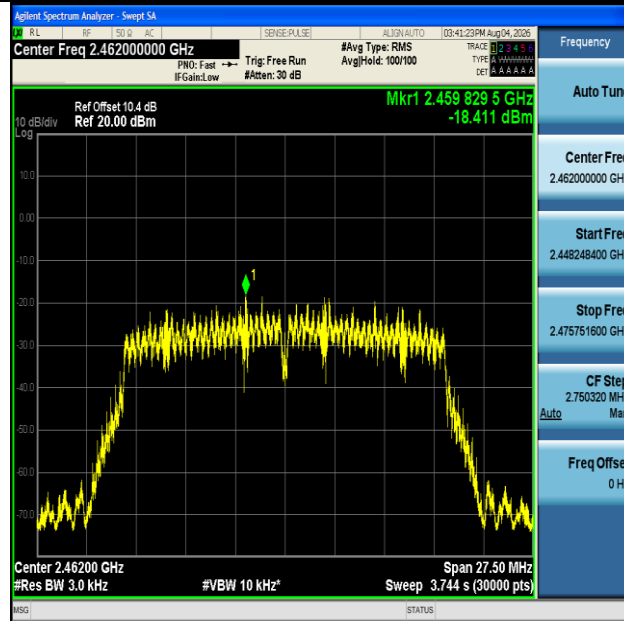


11N20MIMO-Ant1-2437-PASS

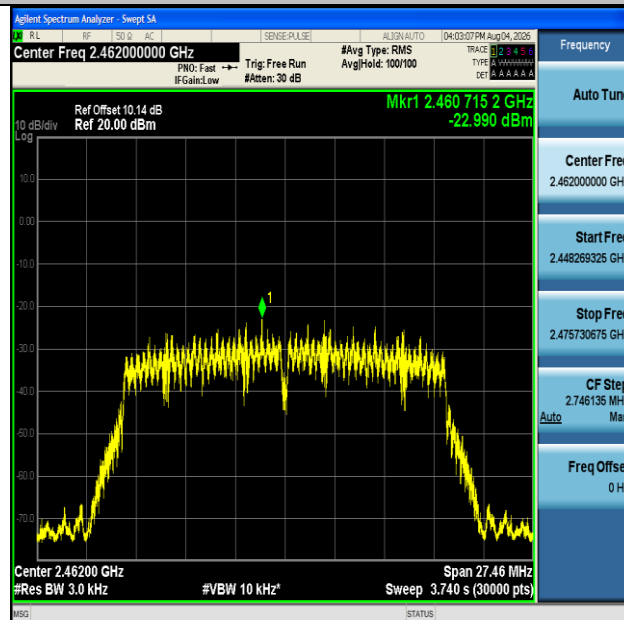


11N20MIMO-Ant2-2437-PASS



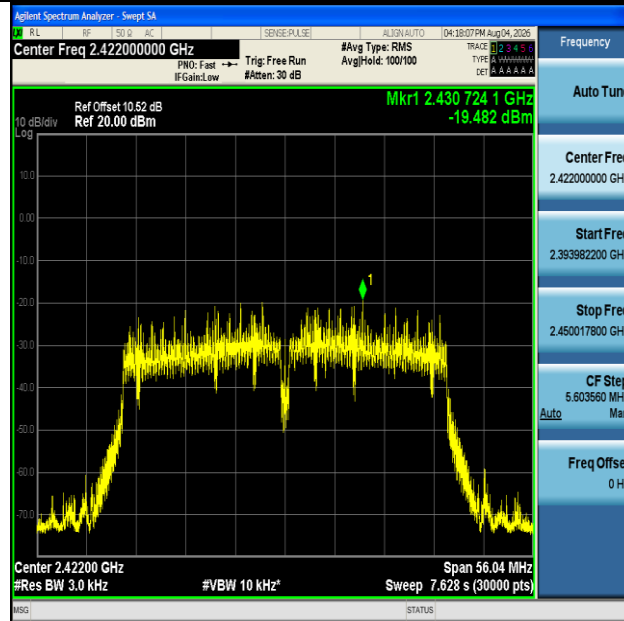


11N20MIMO-Ant1-2462-PASS

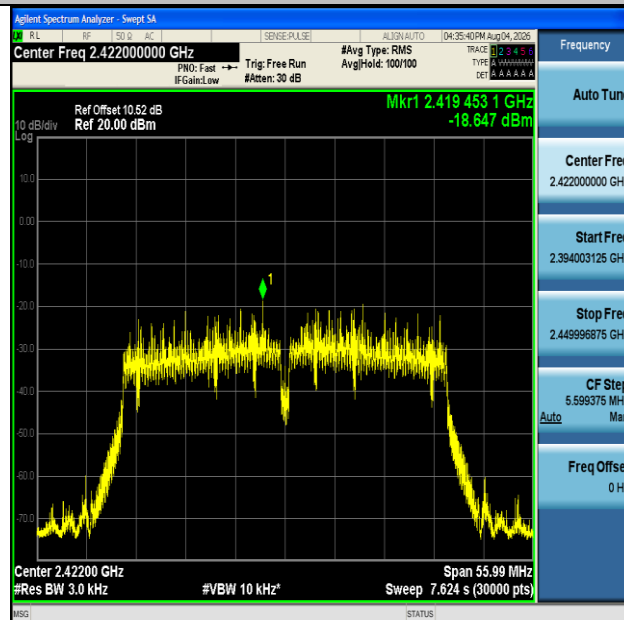


11N20MIMO-Ant2-2462-PASS



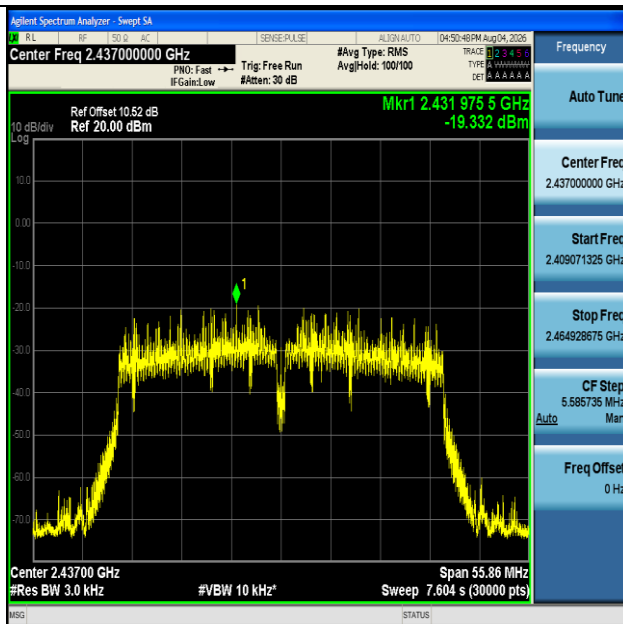


11N40MIMO-Ant1-2422-PASS

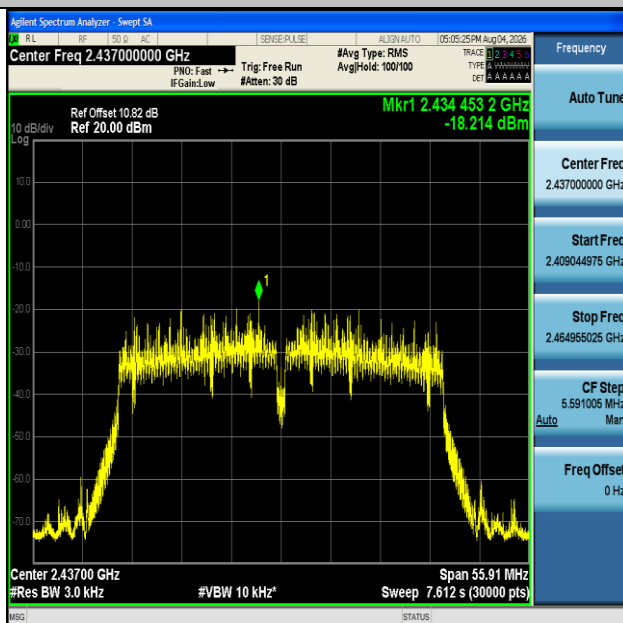


11N40MIMO-Ant2-2422-PASS



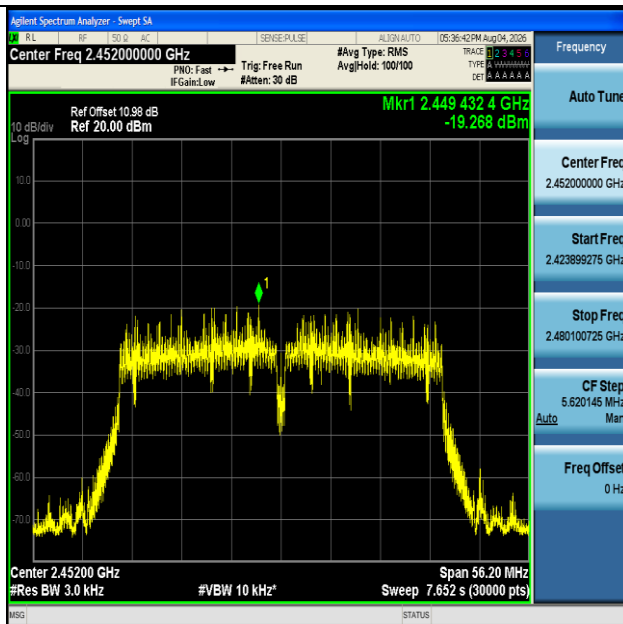


11N40MIMO-Ant1-2437-PASS

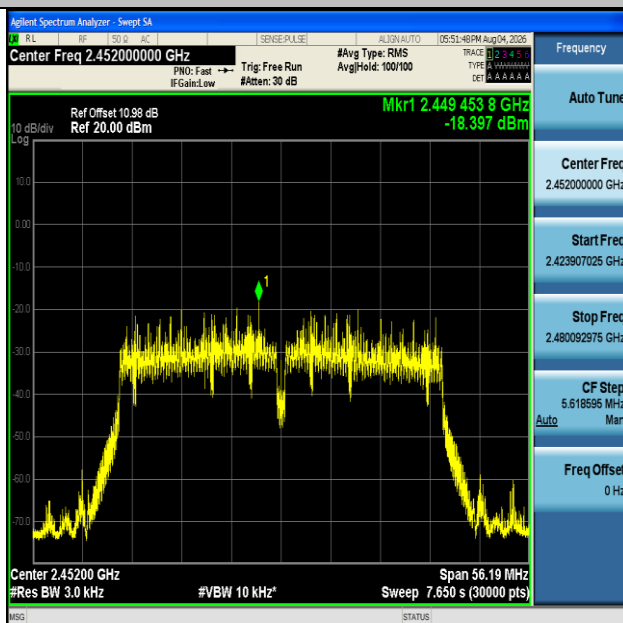


11N40MIMO-Ant2-2437-PASS





11N40MIMO-Ant1-2452-PASS



11N40MIMO-Ant2-2452-PASS





Appendix E: Band edge measurements

Test Result

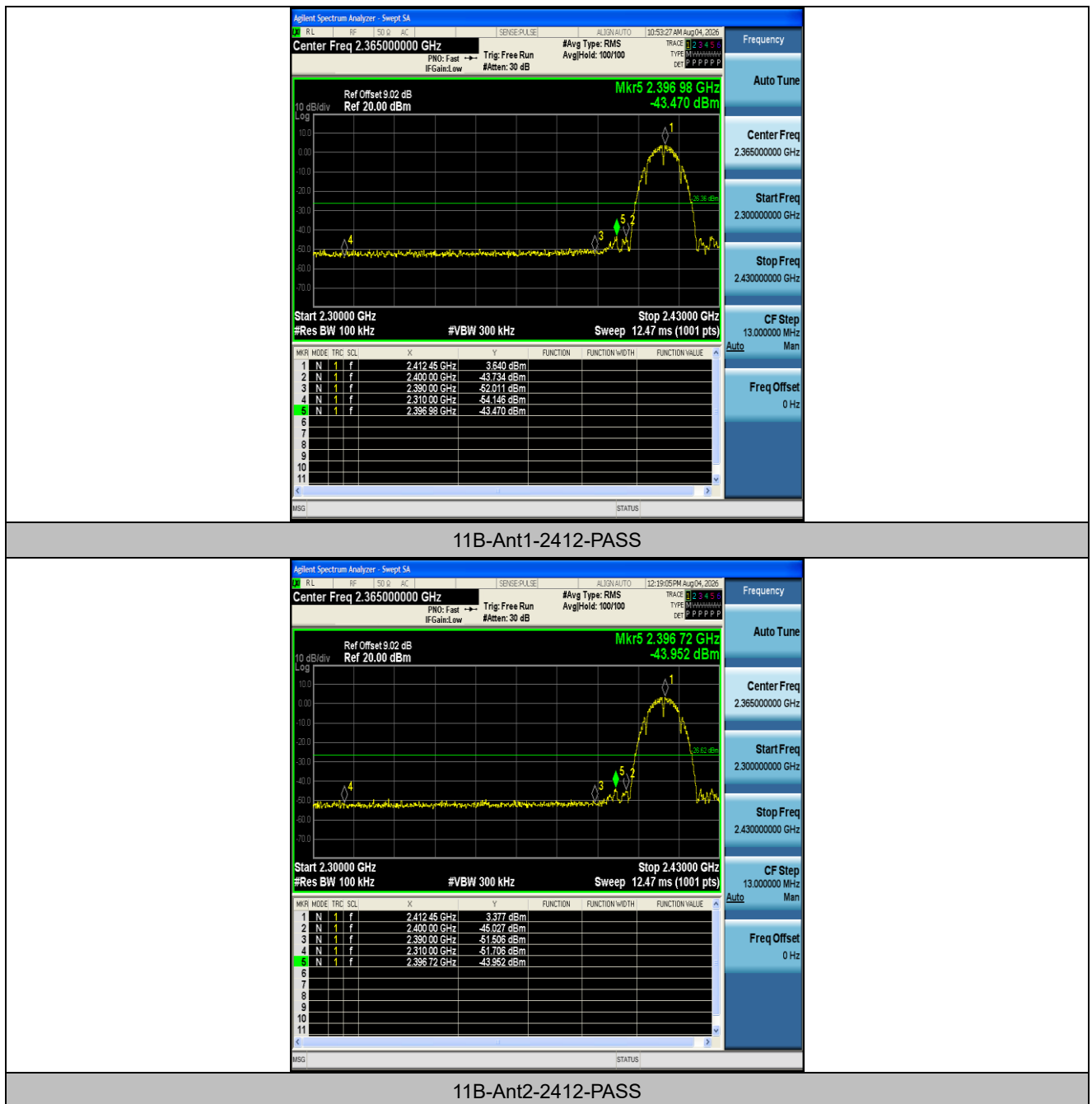
Test Mode	Antenna	Ch. Name	Frequency.[MHz]	Ref. Level [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	Low	2412	3.64	-43.47	≤-26.36	PASS
11B	Ant2	Low	2412	3.38	-43.95	≤-26.62	PASS
11B	Ant1	High	2462	3.93	-48.18	≤-26.07	PASS
11B	Ant2	High	2462	3.54	-47.32	≤-26.46	PASS
11G	Ant1	Low	2412	1.09	-41.6	≤-28.91	PASS
11G	Ant2	Low	2412	2.33	-43.36	≤-27.67	PASS
11G	Ant1	High	2462	2.73	-47.52	≤-27.27	PASS
11G	Ant2	High	2462	0.80	-48.19	≤-29.2	PASS
11N20MIMO	Ant1	Low	2412	0.04	-43.33	≤-29.96	PASS
11N20MIMO	Ant2	Low	2412	-0.29	-45.03	≤-30.29	PASS
11N20MIMO	Ant1	High	2462	0.21	-48.84	≤-29.79	PASS
11N20MIMO	Ant2	High	2462	-0.16	-48.42	≤-30.16	PASS
11N40MIMO	Ant1	Low	2422	-3.10	-43.3	≤-33.1	PASS
11N40MIMO	Ant2	Low	2422	-2.88	-43.43	≤-32.88	PASS
11N40MIMO	Ant1	High	2452	-3.52	-46.65	≤-33.52	PASS
11N40MIMO	Ant2	High	2452	-3.31	-46.74	≤-33.31	PASS

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



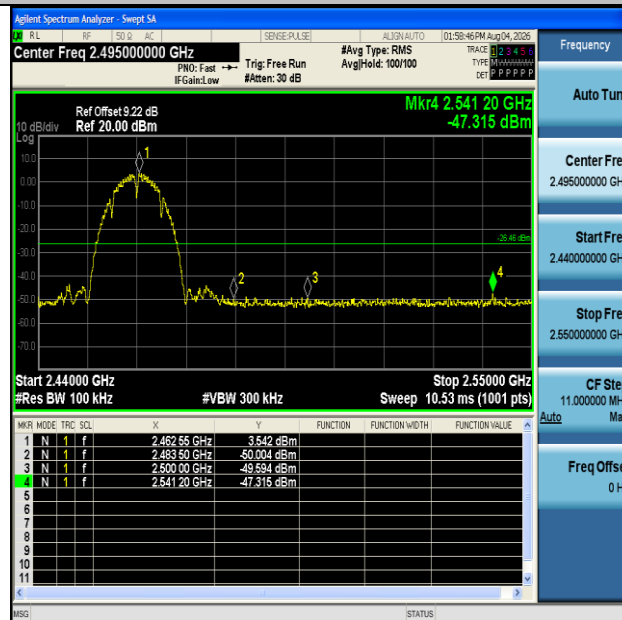


Test Graphs



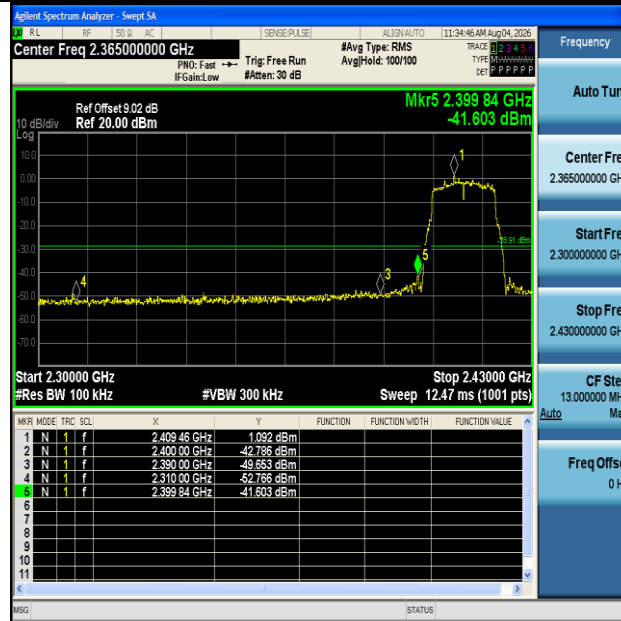


11B-Ant1-2462-PASS

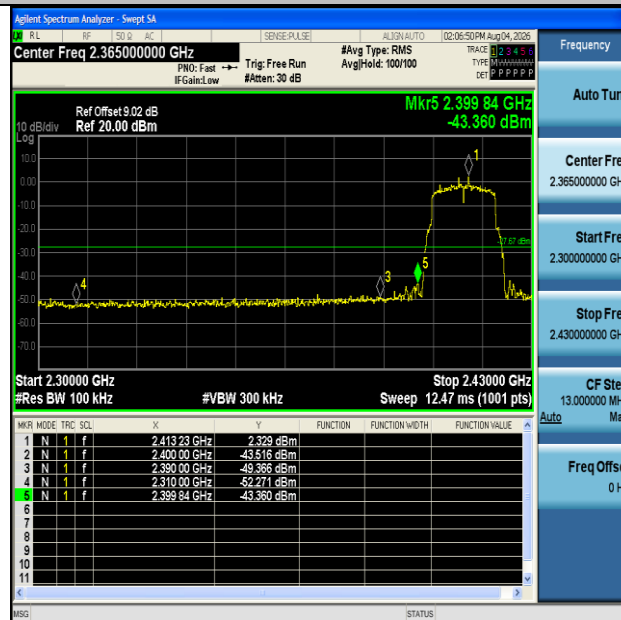


11B-Ant2-2462-PASS



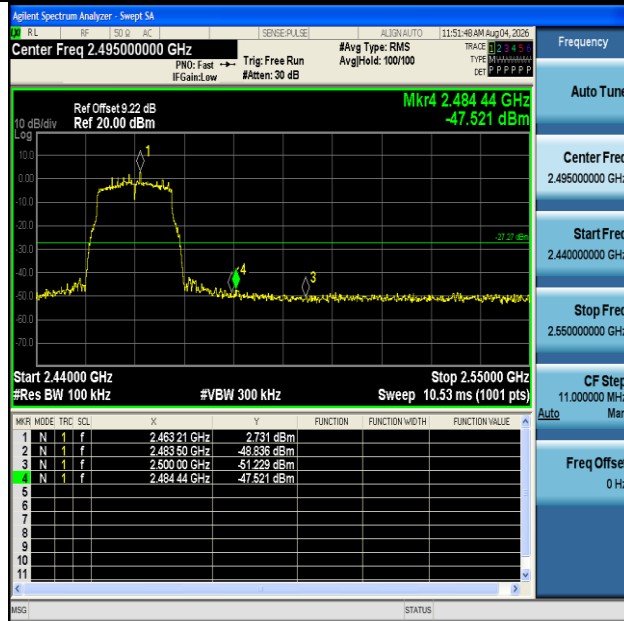


11G-Ant1-2412-PASS

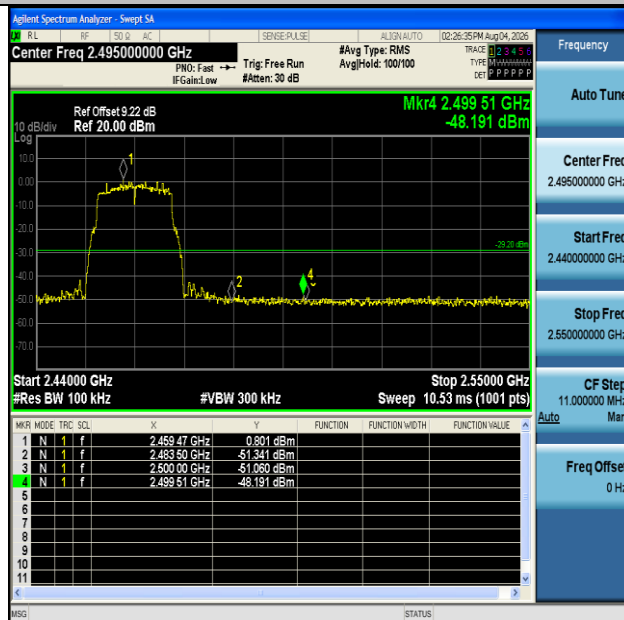


11G-Ant2-2412-PASS



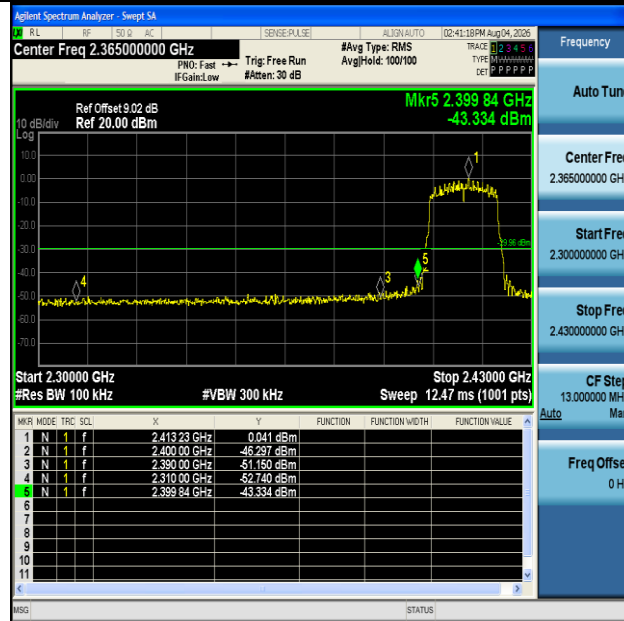


11G-Ant1-2462-PASS

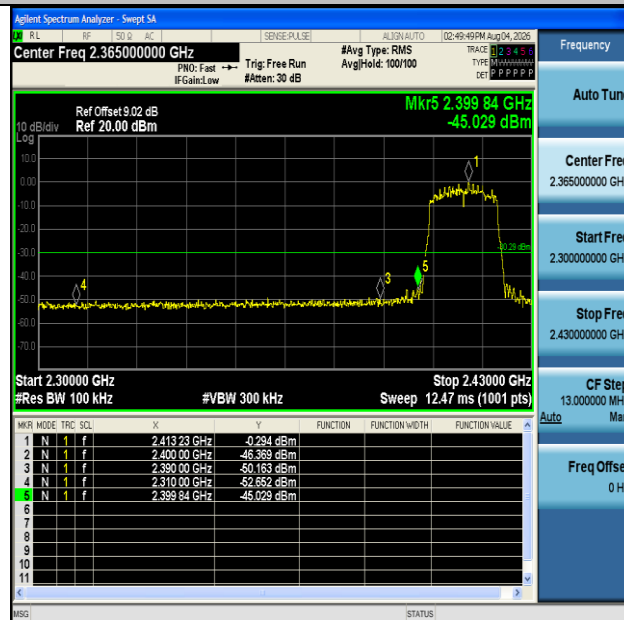


11G-Ant2-2462-PASS



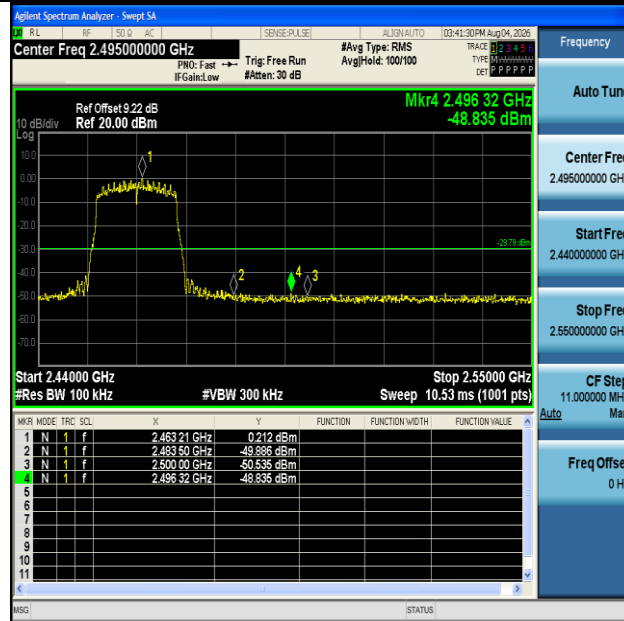


11N20MIMO-Ant1-2412-PASS

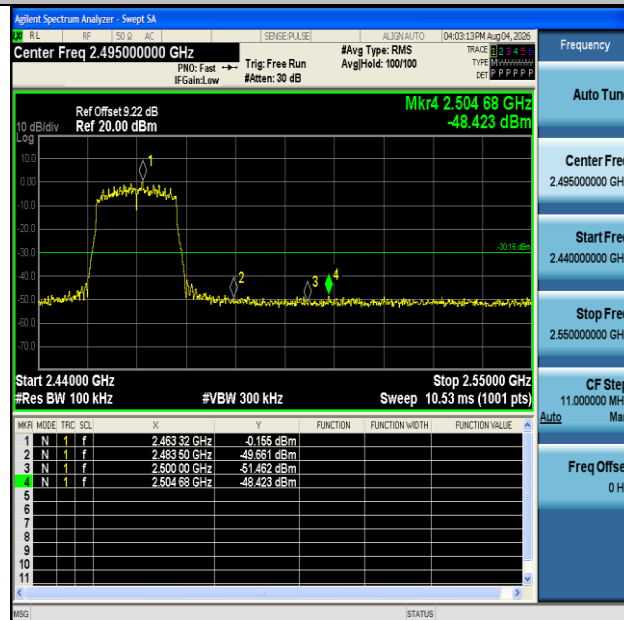


11N20MIMO-Ant2-2412-PASS





11N20MIMO-Ant1-2462-PASS

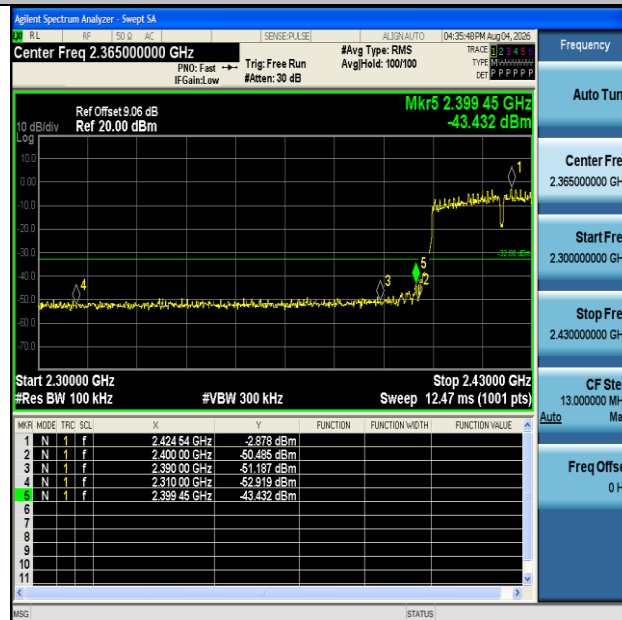


11N20MIMO-Ant2-2462-PASS





11N40MIMO-Ant1-2422-PASS

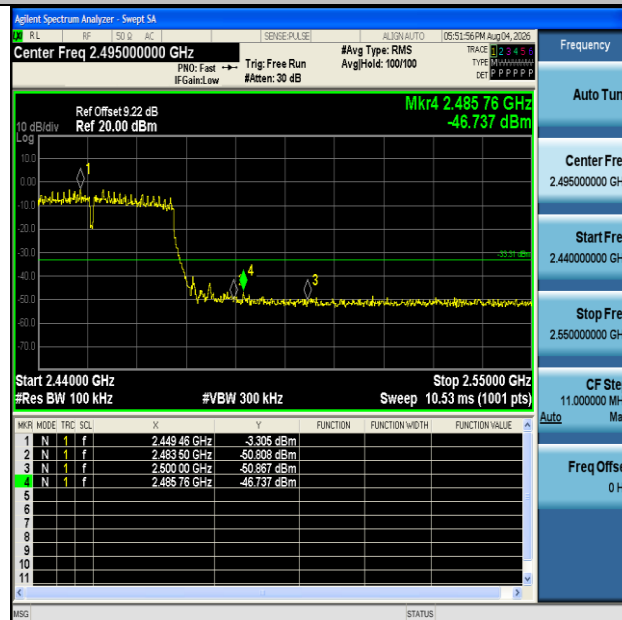


11N40MIMO-Ant2-2422-PASS





11N40MIMO-Ant1-2452-PASS



11N40MIMO-Ant2-2452-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	0~Reference	2.69	2.69	---	PASS
11B	Ant2	2412	0~Reference	3.26	3.26	---	PASS
11B	Ant1	2412	30~1000	2.69	-62.37	≤-27.31	PASS
11B	Ant2	2412	30~1000	3.26	-62.9	≤-26.74	PASS
11B	Ant1	2412	1000~26500	2.69	-37.84	≤-27.31	PASS
11B	Ant2	2412	1000~26500	3.26	-37.81	≤-26.74	PASS
11B	Ant1	2437	0~Reference	4.17	4.17	---	PASS
11B	Ant2	2437	0~Reference	3.79	3.79	---	PASS
11B	Ant1	2437	30~1000	4.17	-62.98	≤-25.83	PASS
11B	Ant2	2437	30~1000	3.79	-61.62	≤-26.21	PASS
11B	Ant1	2437	1000~26500	4.17	-38.02	≤-25.83	PASS
11B	Ant2	2437	1000~26500	3.79	-37.38	≤-26.21	PASS
11B	Ant1	2462	0~Reference	3.70	3.70	---	PASS
11B	Ant2	2462	0~Reference	3.47	3.47	---	PASS
11B	Ant1	2462	30~1000	3.70	-62.09	≤-26.3	PASS
11B	Ant2	2462	30~1000	3.47	-62.39	≤-26.53	PASS
11B	Ant1	2462	1000~26500	3.70	-37.41	≤-26.3	PASS
11B	Ant2	2462	1000~26500	3.47	-37.5	≤-26.53	PASS
11G	Ant1	2412	0~Reference	-1.40	-1.40	---	PASS
11G	Ant2	2412	0~Reference	0.88	0.88	---	PASS
11G	Ant1	2412	30~1000	-1.40	-62.94	≤-31.4	PASS
11G	Ant2	2412	30~1000	0.88	-63.1	≤-29.12	PASS
11G	Ant1	2412	1000~26500	-1.40	-37.22	≤-31.4	PASS
11G	Ant2	2412	1000~26500	0.88	-37.47	≤-29.12	PASS
11G	Ant1	2437	0~Reference	1.89	1.89	---	PASS
11G	Ant2	2437	0~Reference	-0.29	-0.29	---	PASS
11G	Ant1	2437	30~1000	1.89	-62.43	≤-28.11	PASS
11G	Ant2	2437	30~1000	-0.29	-62.5	≤-30.29	PASS
11G	Ant1	2437	1000~26500	1.89	-37.04	≤-28.11	PASS
11G	Ant2	2437	1000~26500	-0.29	-37.88	≤-30.29	PASS
11G	Ant1	2462	0~Reference	0.49	0.49	---	PASS
11G	Ant2	2462	0~Reference	0.14	0.14	---	PASS
11G	Ant1	2462	30~1000	0.49	-62.3	≤-29.51	PASS
11G	Ant2	2462	30~1000	0.14	-62.39	≤-29.86	PASS
11G	Ant1	2462	1000~26500	0.49	-36.66	≤-29.51	PASS
11G	Ant2	2462	1000~26500	0.14	-37.74	≤-29.86	PASS
11N20MIMO	Ant1	2412	0~Reference	-1.03	-1.03	---	PASS

