

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

Product Name: NucBox4

Trade Mark: GMKtec,GMKTEC

Test Model: KB4

FCC ID: 2AXUD-KB4

Environmental Conditions

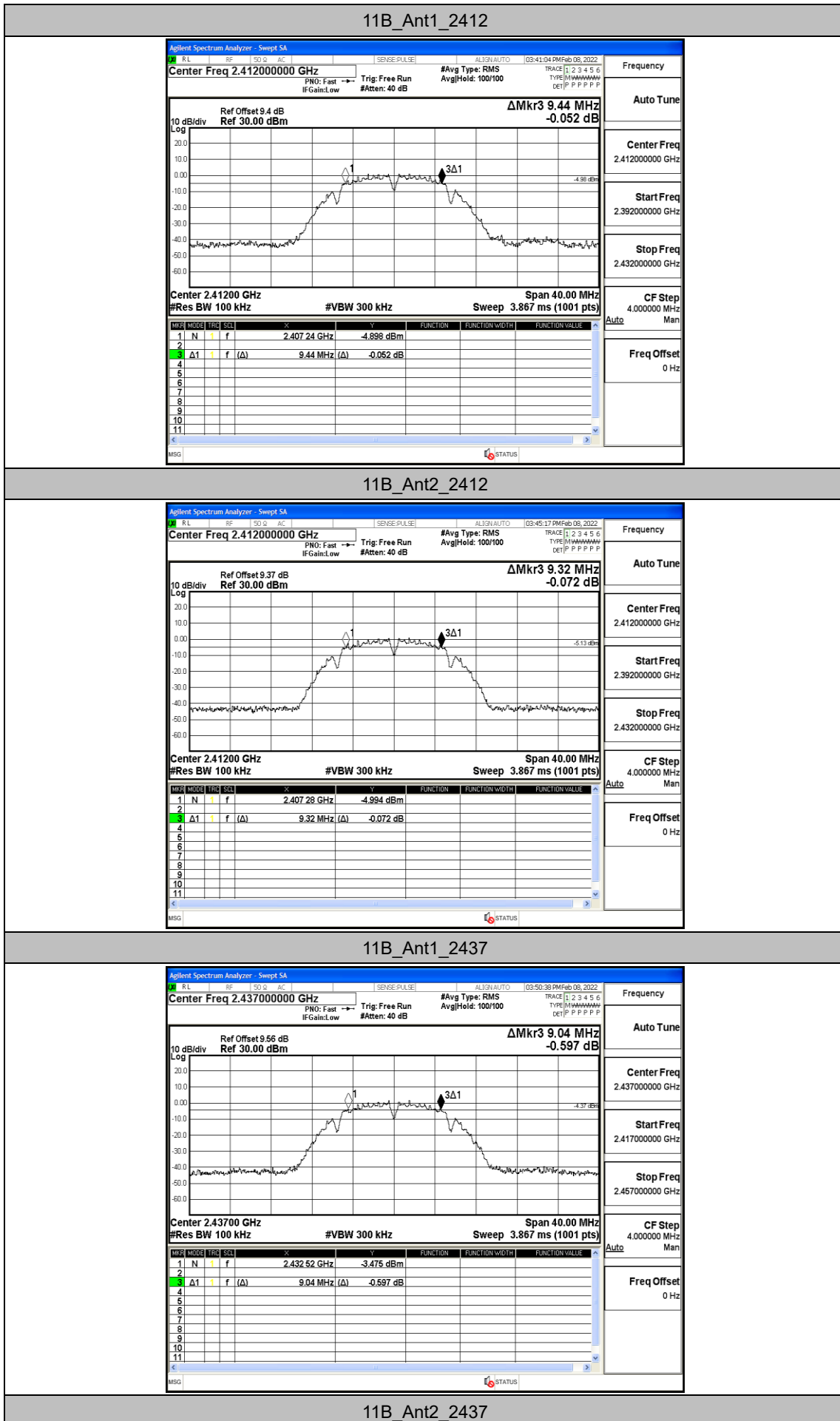
Temperature:	25.5°C
Relative Humidity:	55%
ATM Pressure:	100.0 kPa
Test Engineer:	Anna Hu
Supervised by:	Hugo Chen
NOTE	N/A

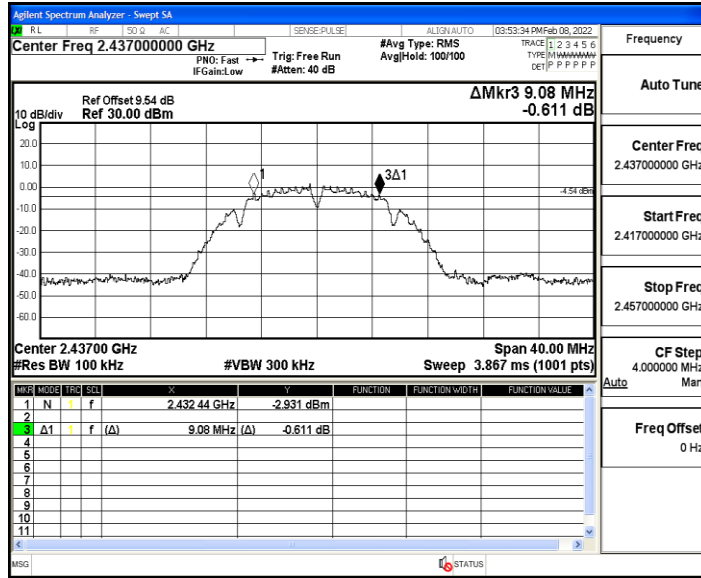
Appendix A: DTS Bandwidth

Test Result

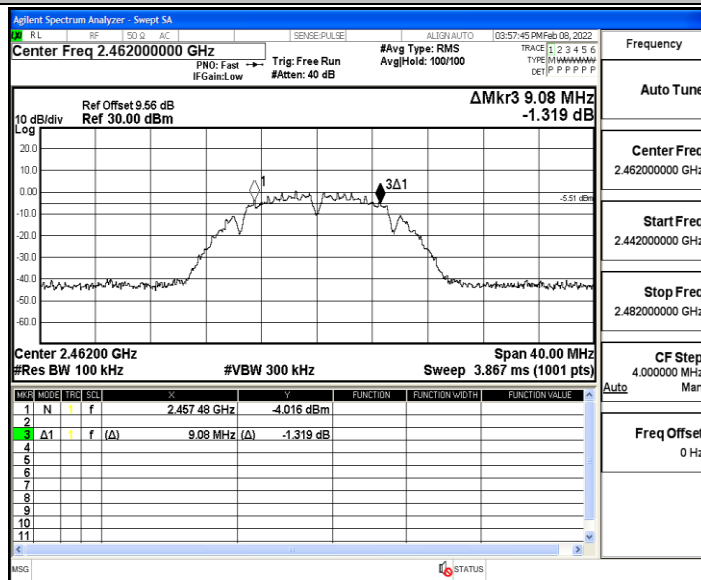
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.440	2407.240	2416.680	0.5	PASS
	Ant2	2412	9.320	2407.280	2416.600	0.5	PASS
	Ant1	2437	9.040	2432.520	2441.560	0.5	PASS
	Ant2	2437	9.080	2432.440	2441.520	0.5	PASS
	Ant1	2462	9.080	2457.480	2466.560	0.5	PASS
	Ant2	2462	9.080	2457.440	2466.520	0.5	PASS
11G	Ant1	2412	14.200	2405.680	2419.880	0.5	PASS
	Ant2	2412	15.080	2404.440	2419.520	0.5	PASS
	Ant1	2437	15.040	2429.480	2444.520	0.5	PASS
	Ant2	2437	15.280	2429.280	2444.560	0.5	PASS
	Ant1	2462	15.040	2454.440	2469.480	0.5	PASS
	Ant2	2462	15.040	2454.440	2469.480	0.5	PASS
11N20MIMO	Ant1	2412	14.360	2406.000	2420.360	0.5	PASS
	Ant2	2412	13.880	2404.440	2418.320	0.5	PASS
	Ant1	2437	13.200	2429.440	2442.640	0.5	PASS
	Ant2	2437	15.120	2429.400	2444.520	0.5	PASS
	Ant1	2462	13.280	2456.280	2469.560	0.5	PASS
	Ant2	2462	14.960	2454.520	2469.480	0.5	PASS
11N40MIMO	Ant1	2422	35.120	2404.400	2439.520	0.5	PASS
	Ant2	2422	35.120	2404.400	2439.520	0.5	PASS
	Ant1	2437	35.040	2419.480	2454.520	0.5	PASS
	Ant2	2437	35.040	2419.480	2454.520	0.5	PASS
	Ant1	2452	34.960	2434.480	2469.440	0.5	PASS
	Ant2	2452	34.960	2434.560	2469.520	0.5	PASS

Test Graphs

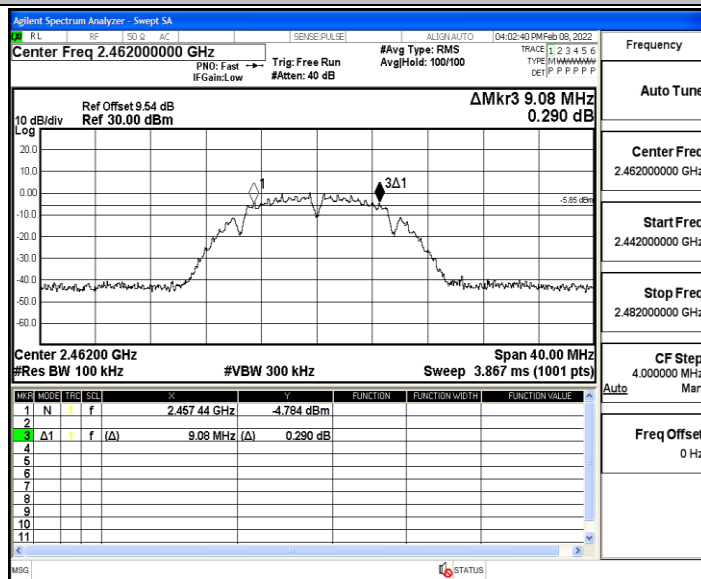




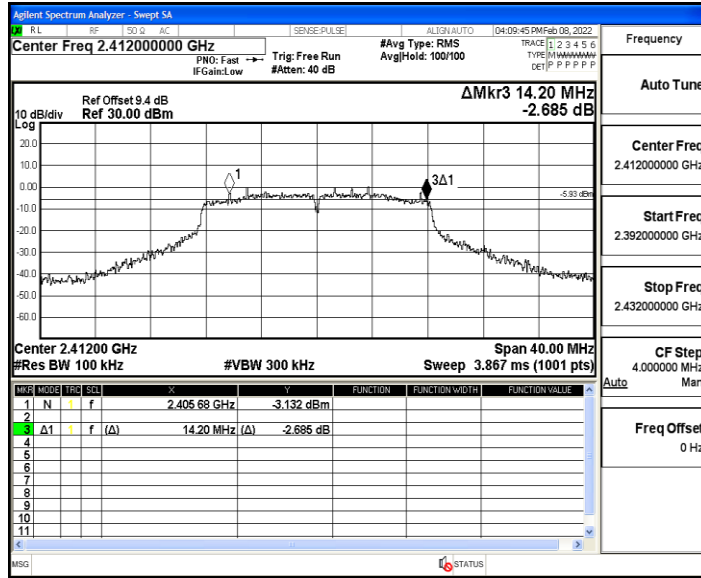
11B_Ant1_2462



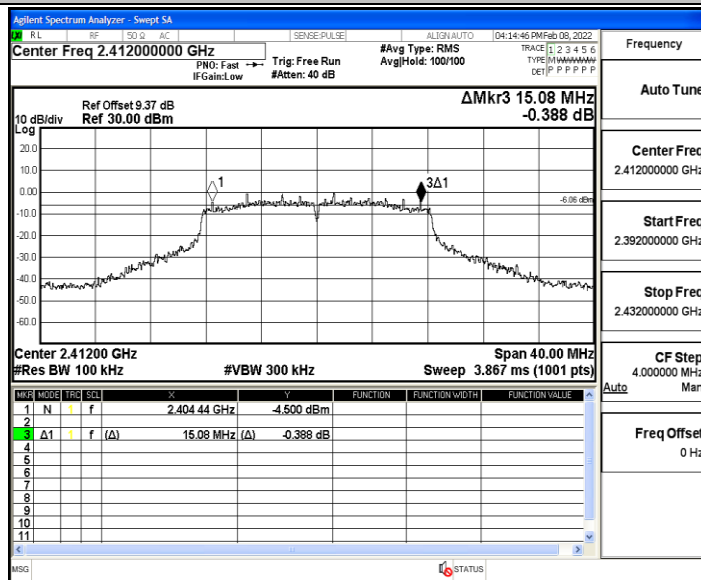
11B_Ant2_2462



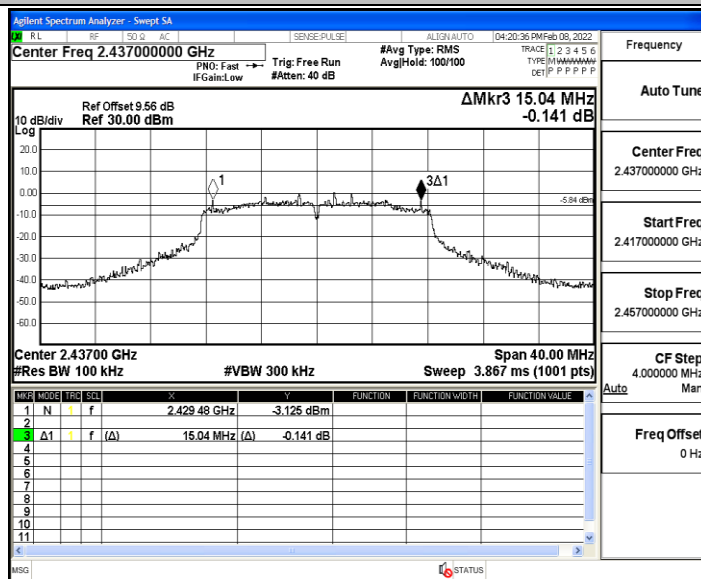
11G_Ant1_2412



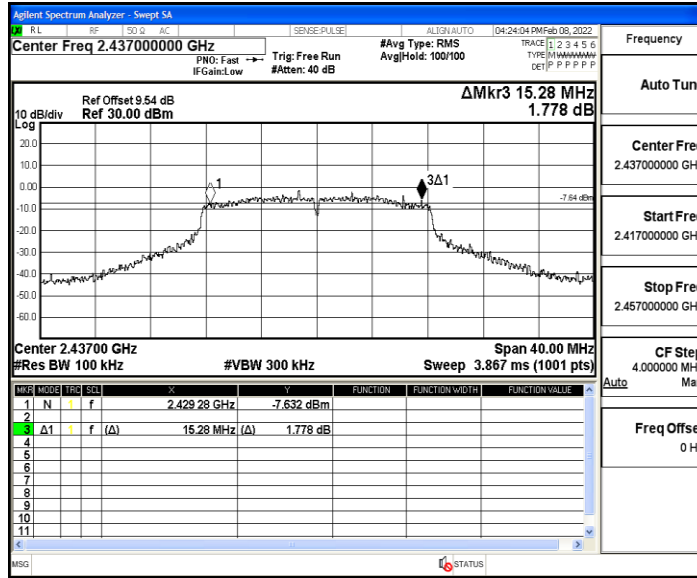
11G_Ant2_2412



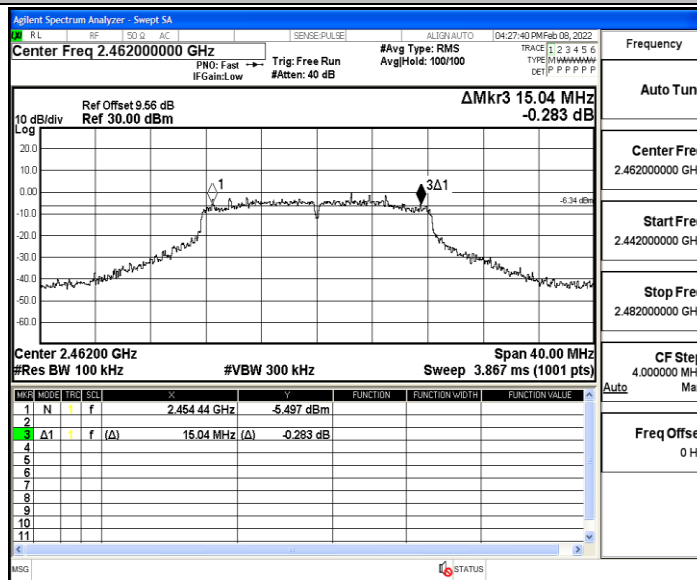
11G_Ant1_2437



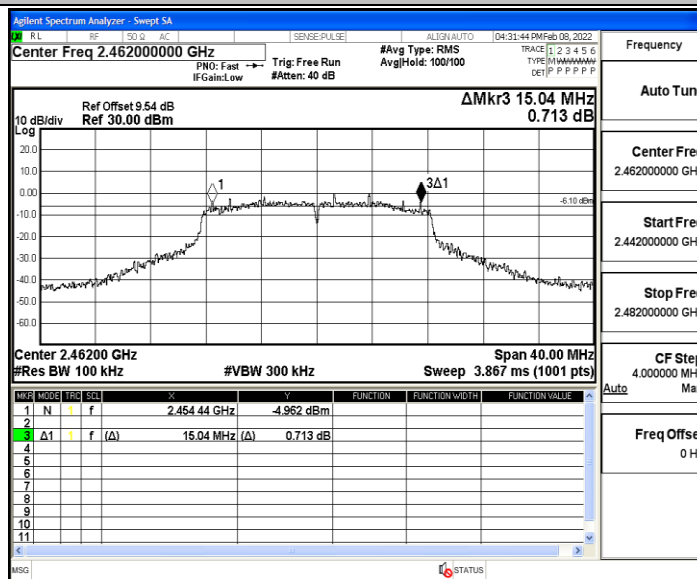
11G_Ant2_2437



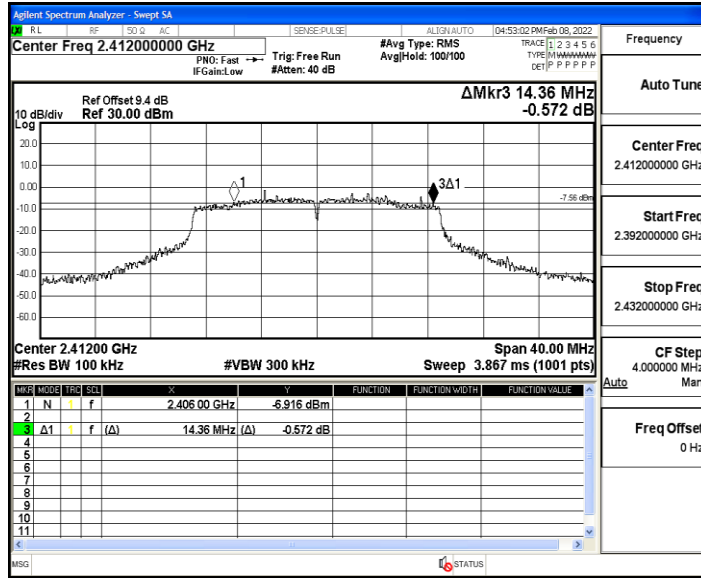
11G_Ant1_2462



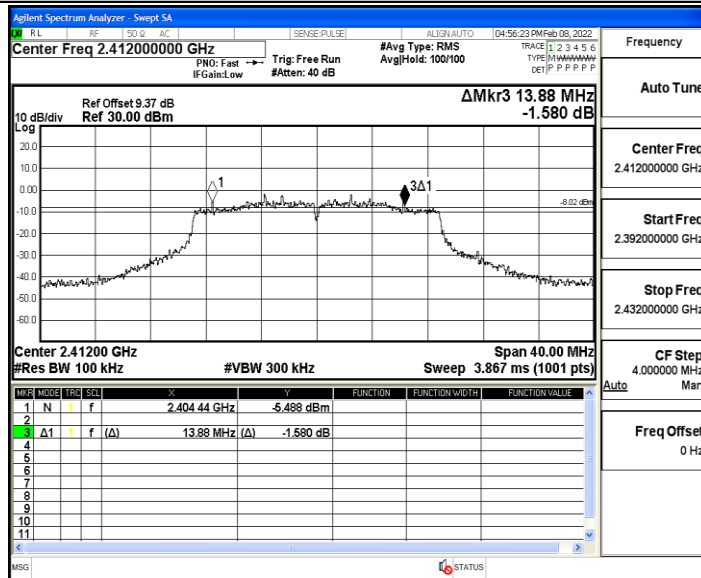
11G_Ant2_2462



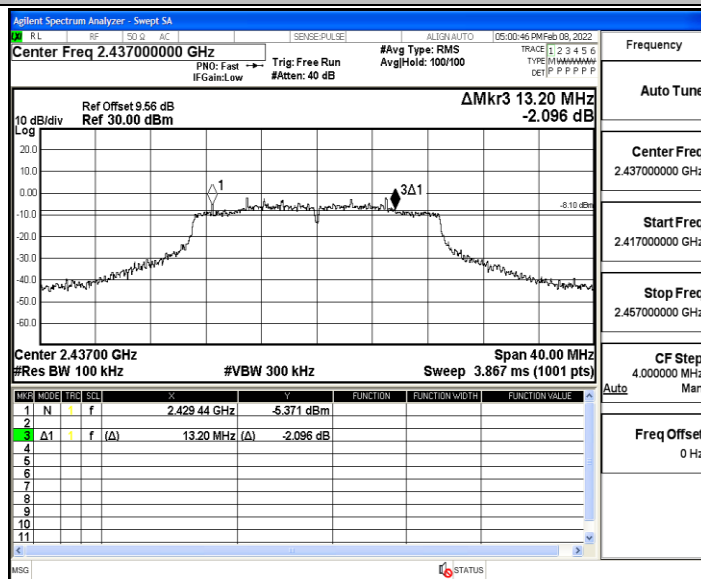
11N20MIMO_Ant1_2412



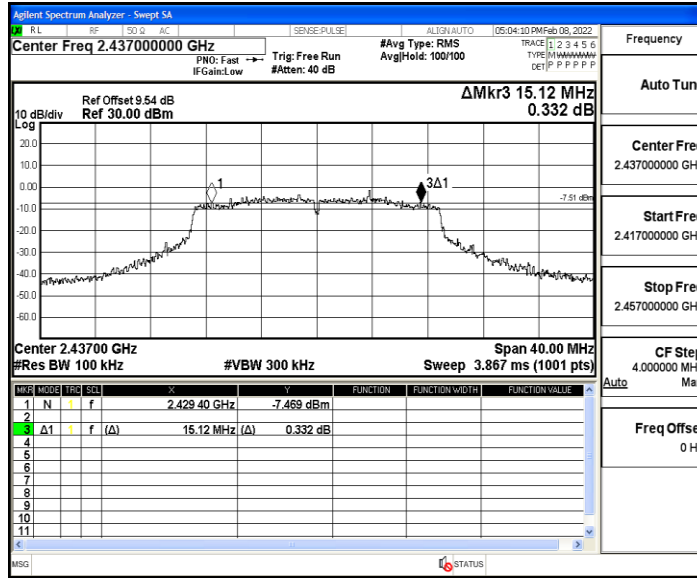
11N20MIMO_Ant2_2412



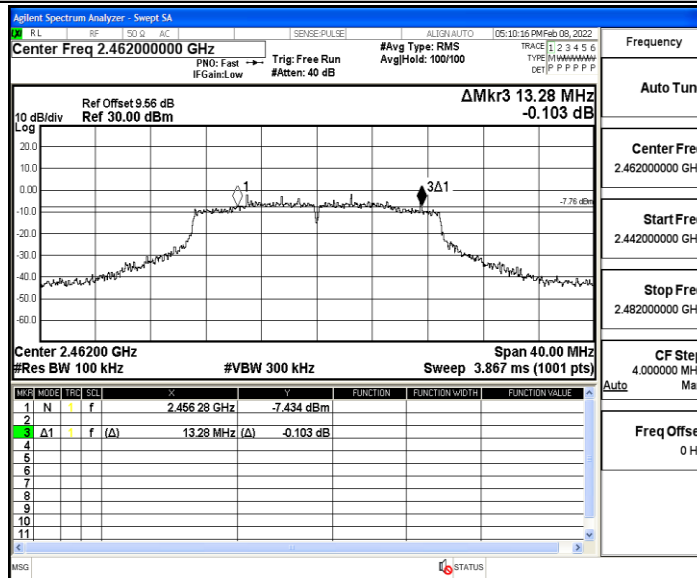
11N20MIMO_Ant1_2437



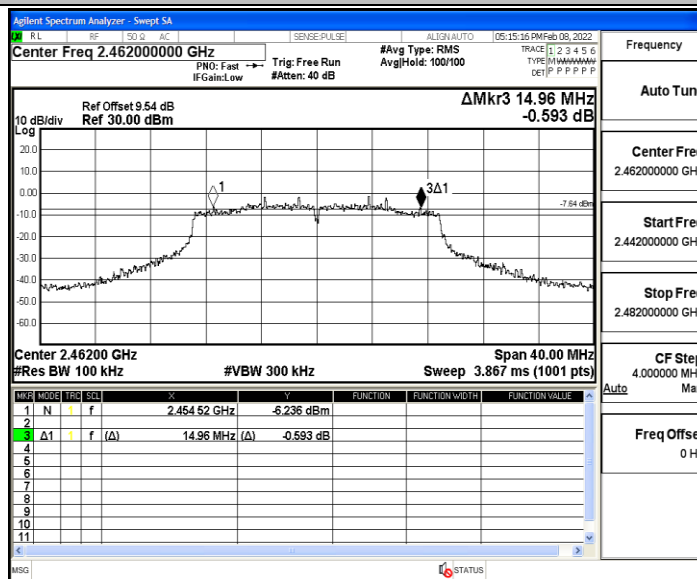
11N20MIMO_Ant2_2437



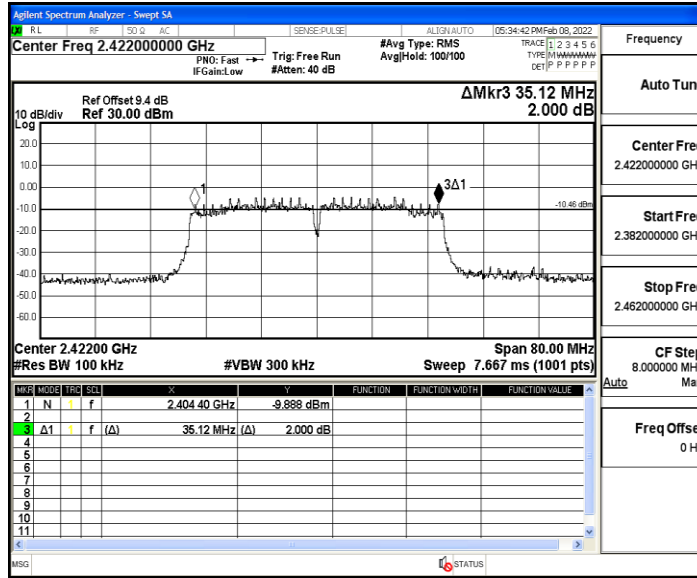
11N20MIMO_Ant1_2462



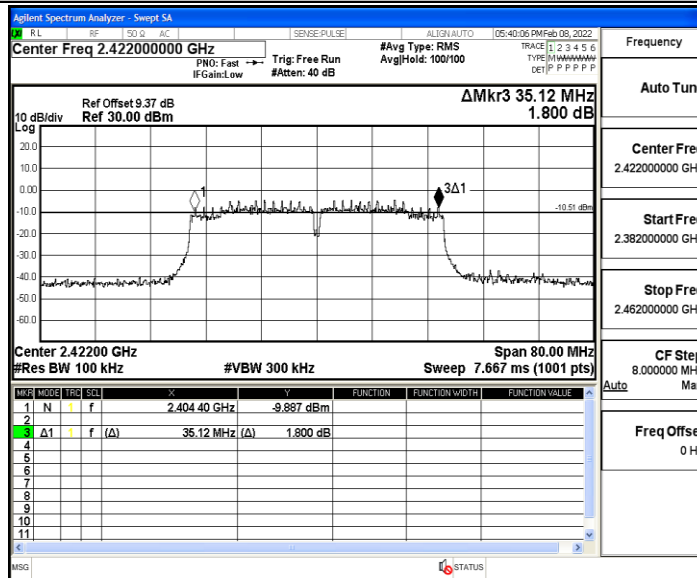
11N20MIMO_Ant2_2462



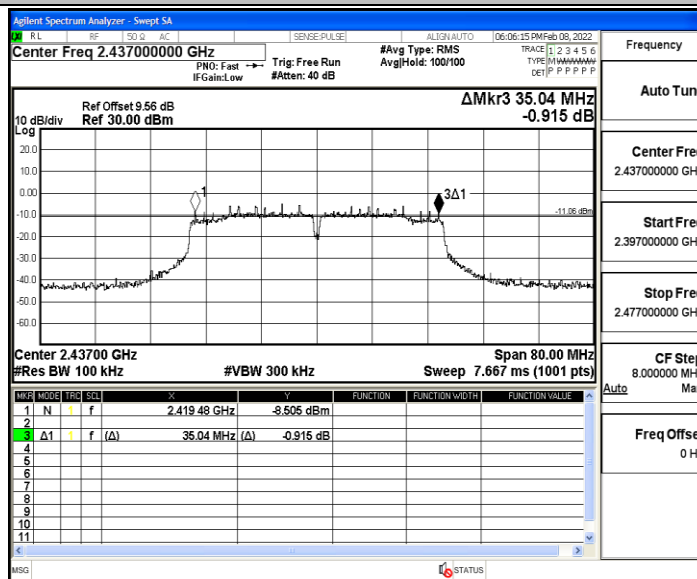
11N40MIMO_Ant1_2422



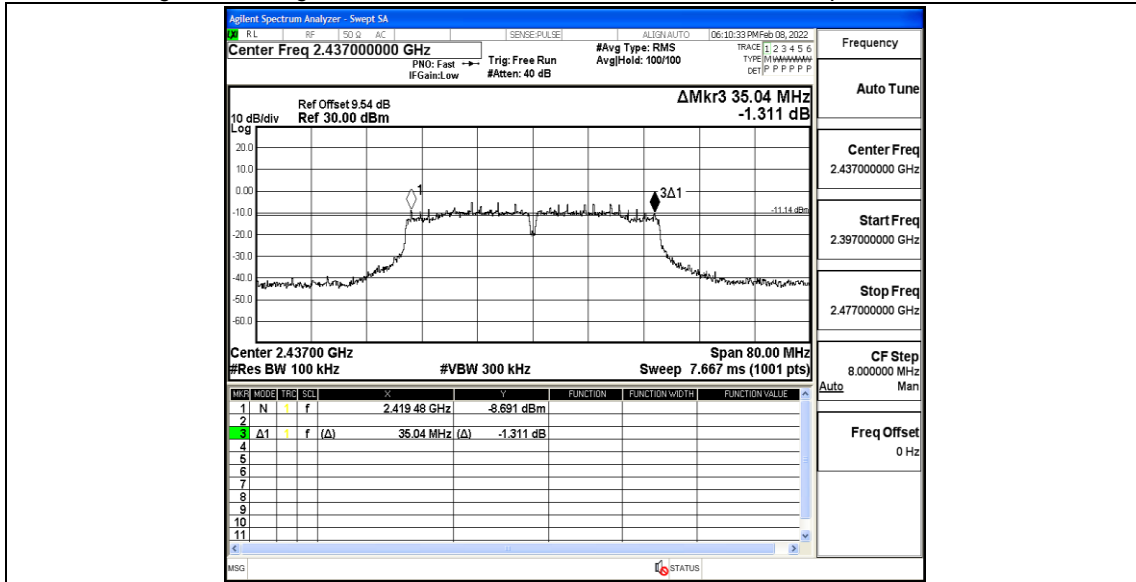
11N40MIMO_Ant2_2422



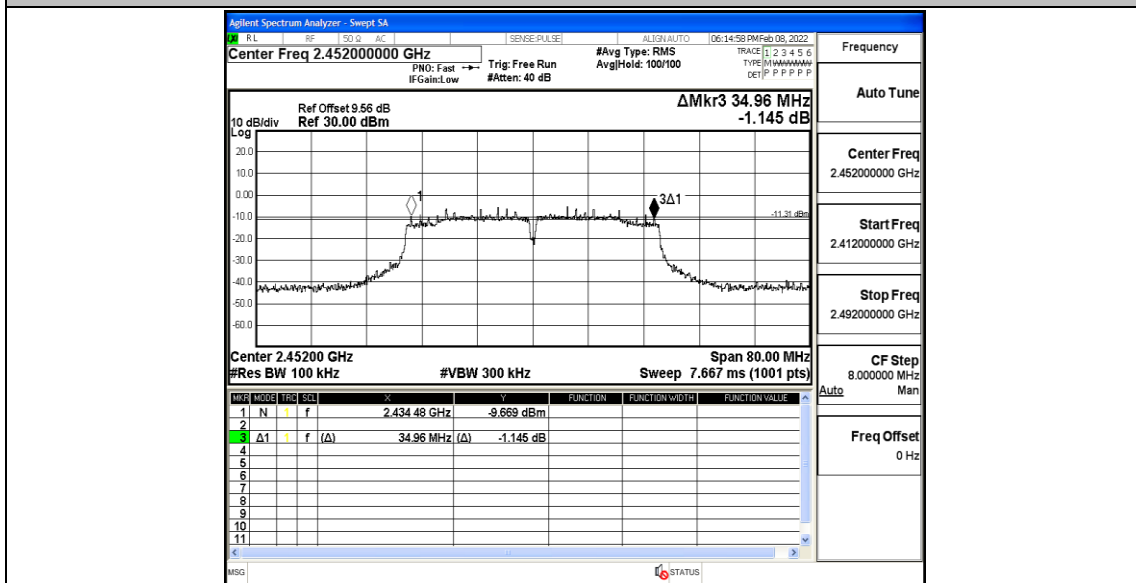
11N40MIMO_Ant1_2437



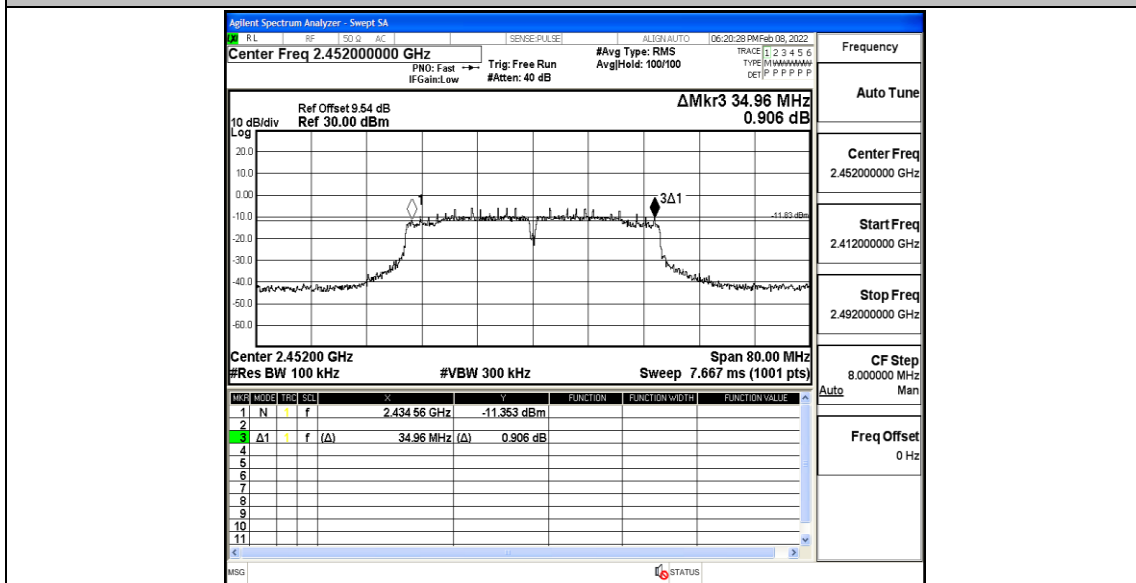
11N40MIMO_Ant2_2437



11N40MIMO_Ant1_2452



11N40MIMO_Ant2_2452

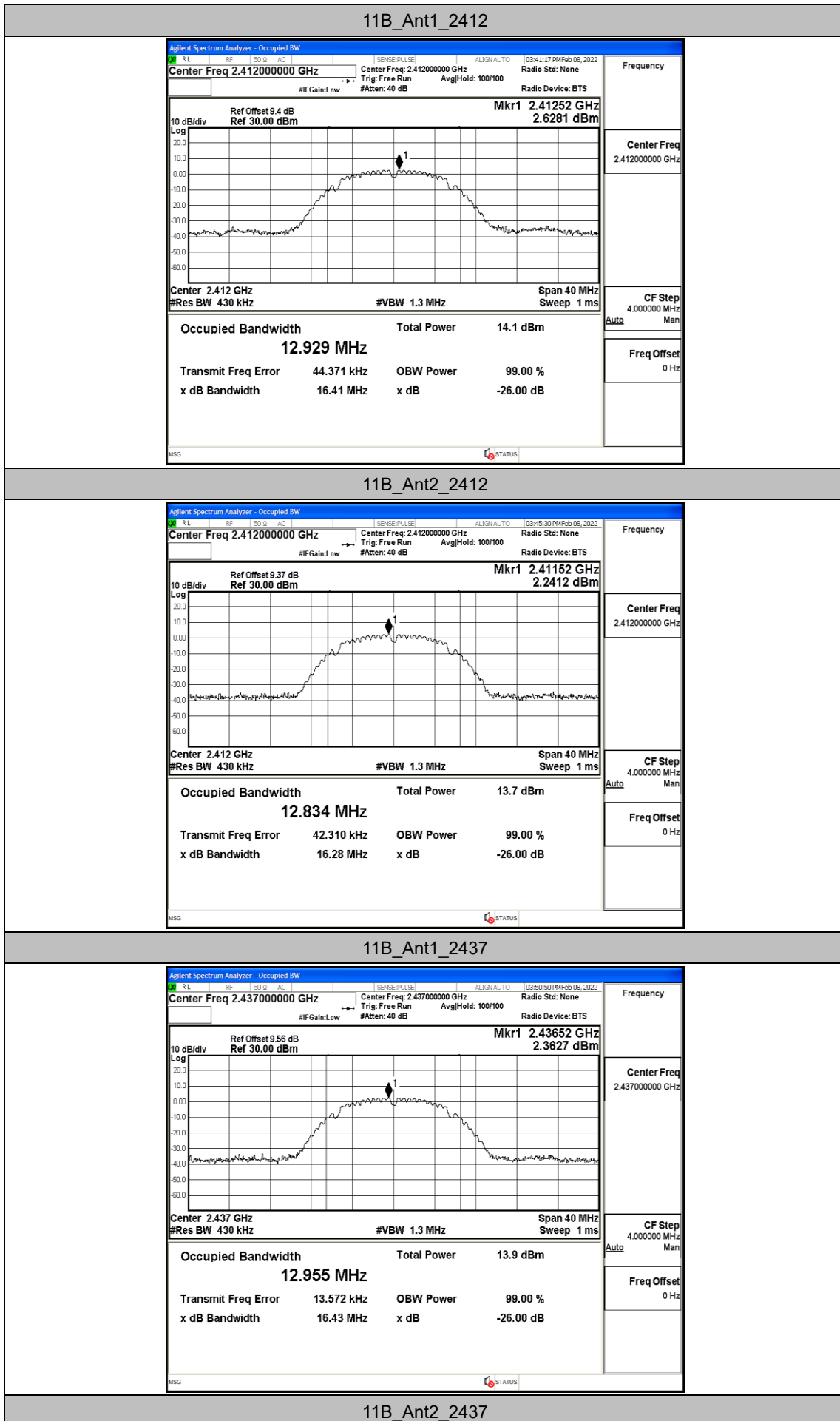


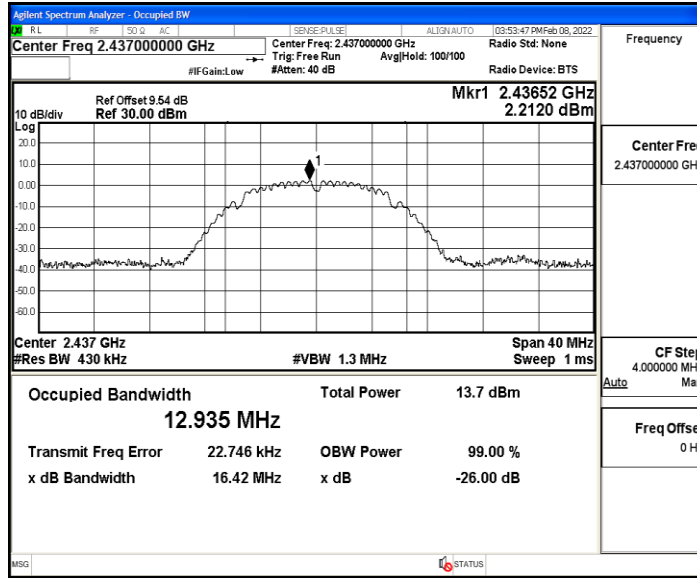
Appendix B: Occupied Channel Bandwidth

Test Result

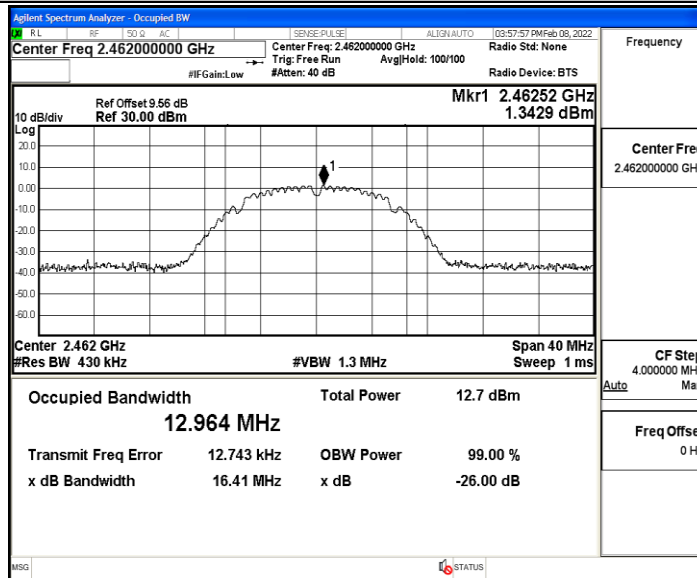
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	12.929	2405.580	2418.509	---	PASS
	Ant2	2412	12.834	2405.625	2418.459	---	PASS
	Ant1	2437	12.955	2430.536	2443.491	---	PASS
	Ant2	2437	12.935	2430.555	2443.490	---	PASS
	Ant1	2462	12.964	2455.531	2468.495	---	PASS
	Ant2	2462	12.968	2455.525	2468.493	---	PASS
11G	Ant1	2412	16.858	2403.623	2420.481	---	PASS
	Ant2	2412	16.813	2403.607	2420.420	---	PASS
	Ant1	2437	16.840	2428.636	2445.476	---	PASS
	Ant2	2437	16.801	2428.608	2445.409	---	PASS
	Ant1	2462	16.850	2453.574	2470.424	---	PASS
	Ant2	2462	16.734	2453.665	2470.399	---	PASS
11N20MIMO	Ant1	2412	18.024	2403.022	2421.046	---	PASS
	Ant2	2412	17.879	2403.095	2420.974	---	PASS
	Ant1	2437	18.020	2427.984	2446.004	---	PASS
	Ant2	2437	18.017	2428.023	2446.040	---	PASS
	Ant1	2462	17.998	2453.035	2471.033	---	PASS
	Ant2	2462	17.972	2453.025	2470.997	---	PASS
11N40MIMO	Ant1	2422	36.097	2404.045	2440.142	---	PASS
	Ant2	2422	36.041	2404.083	2440.124	---	PASS
	Ant1	2437	36.249	2418.995	2455.244	---	PASS
	Ant2	2437	36.214	2418.996	2455.210	---	PASS
	Ant1	2452	36.211	2433.937	2470.148	---	PASS
	Ant2	2452	36.199	2433.953	2470.152	---	PASS

Test Graphs

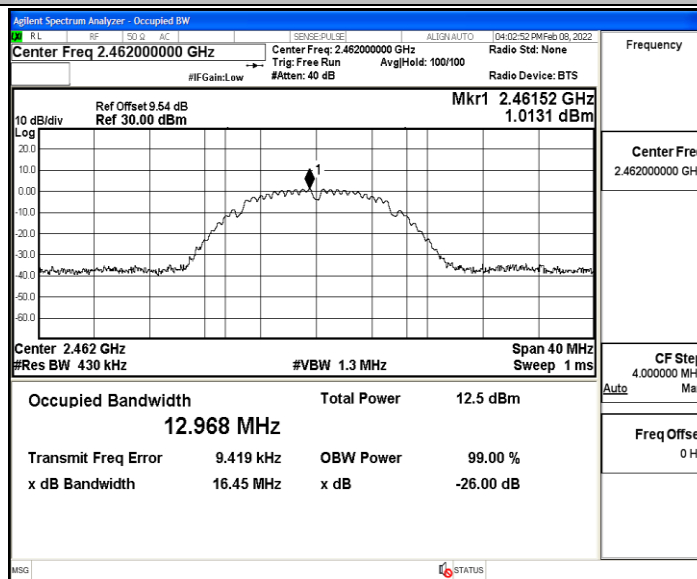




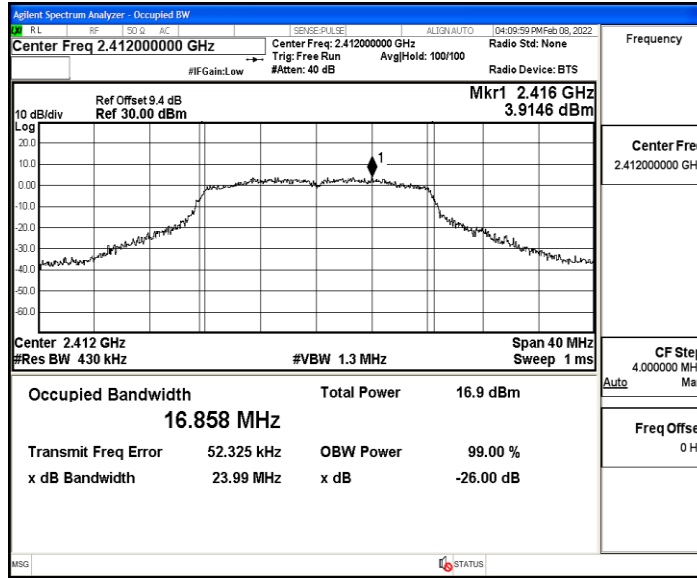
11B_Ant1_2462



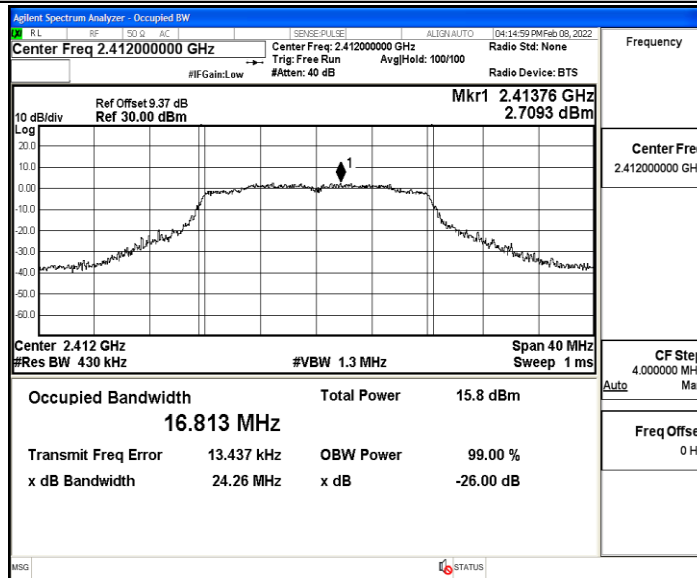
11B_Ant2_2462



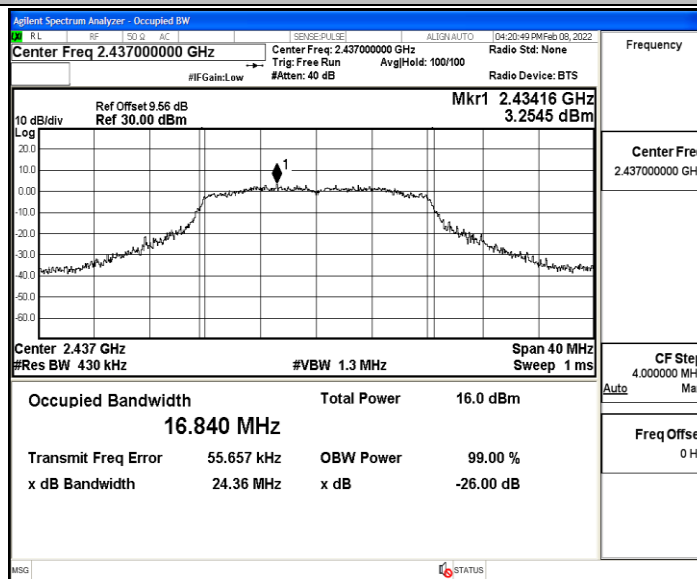
11G_Ant1_2412



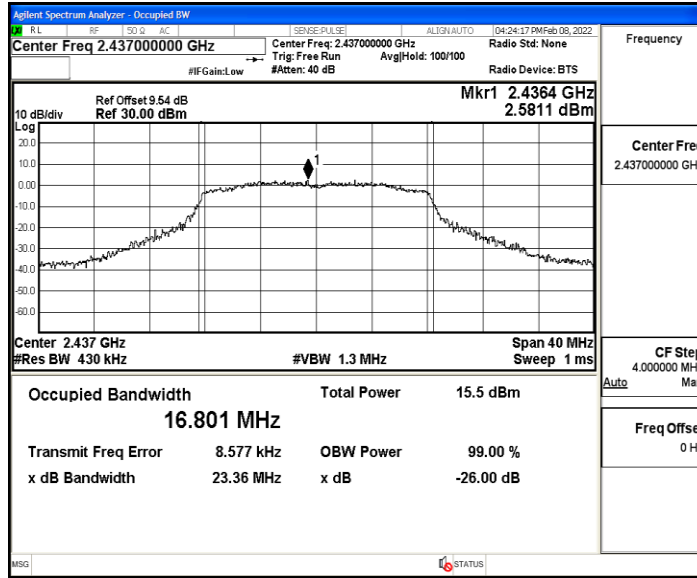
11G_Ant2_2412



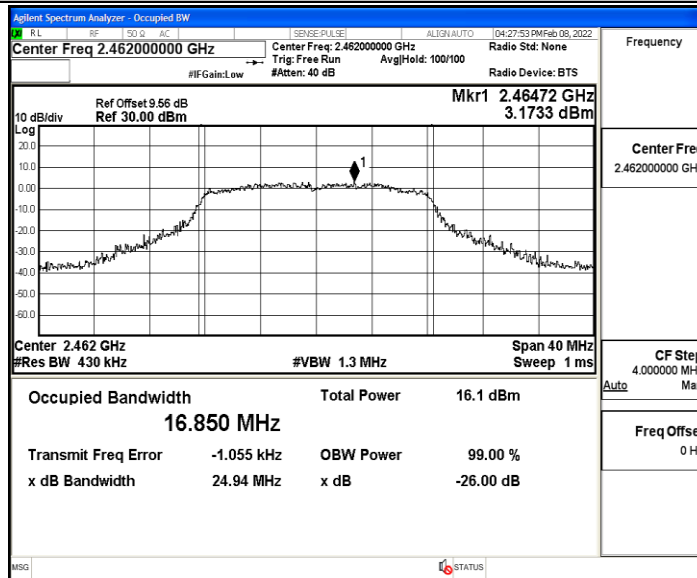
11G_Ant1_2437



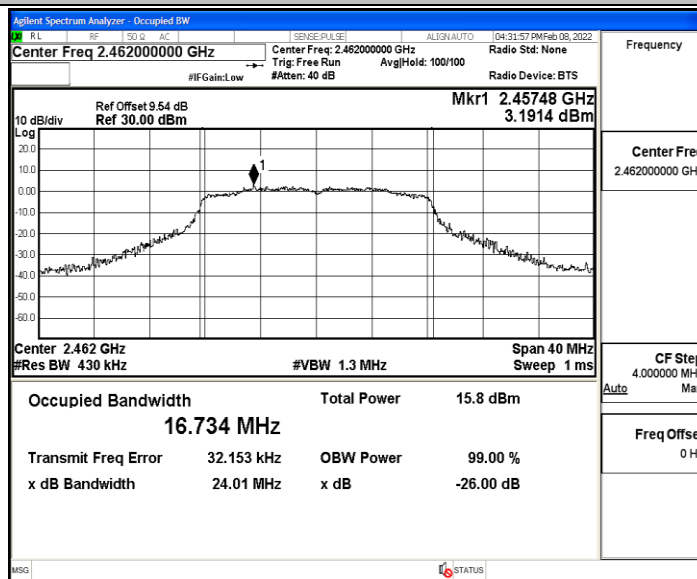
11G_Ant2_2437



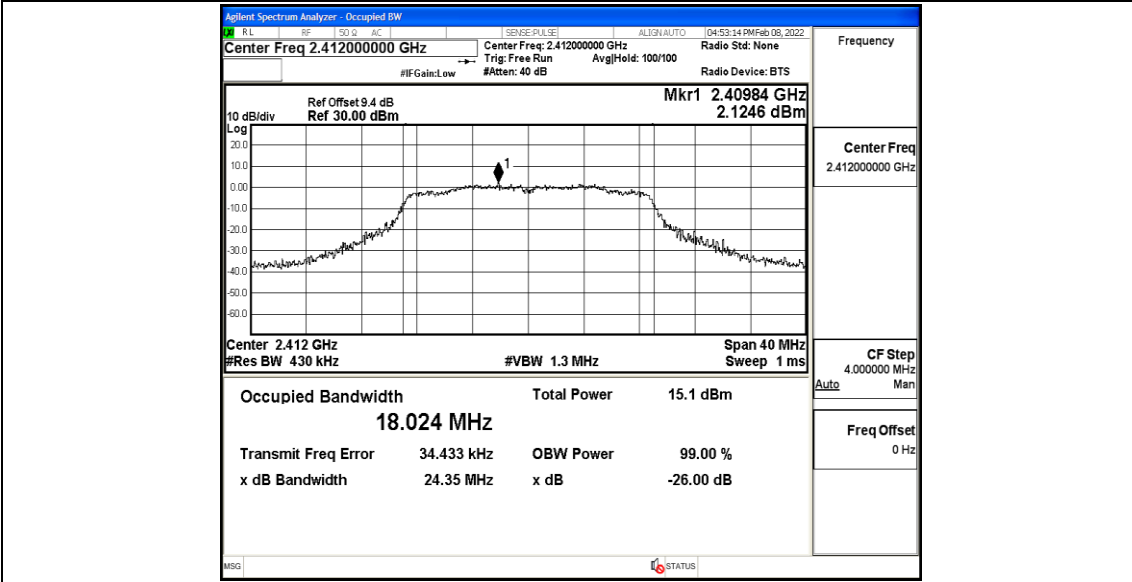
11G_Ant1_2462



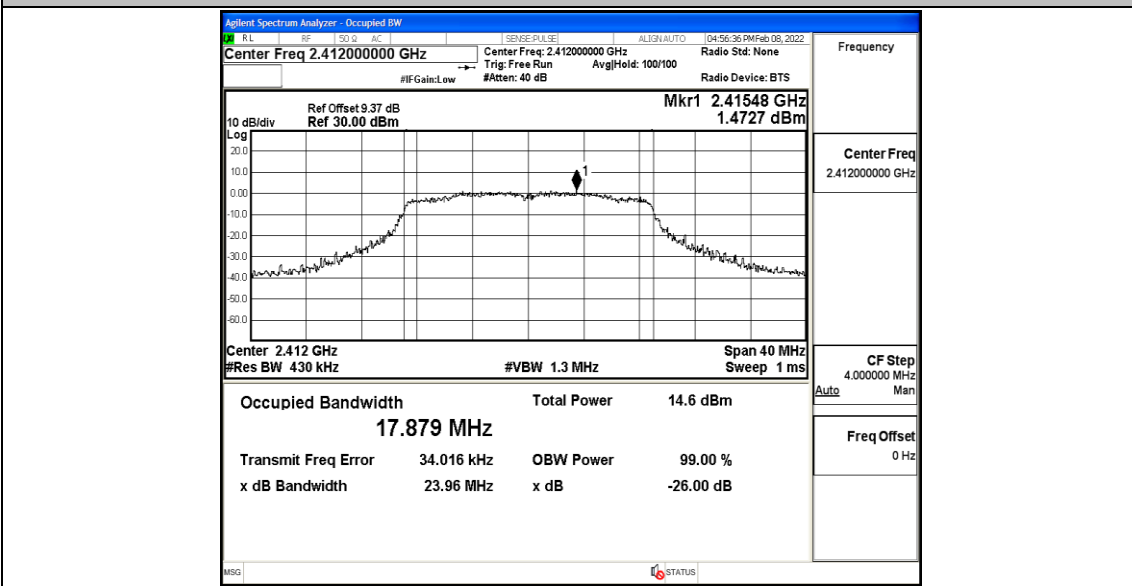
11G_Ant2_2462



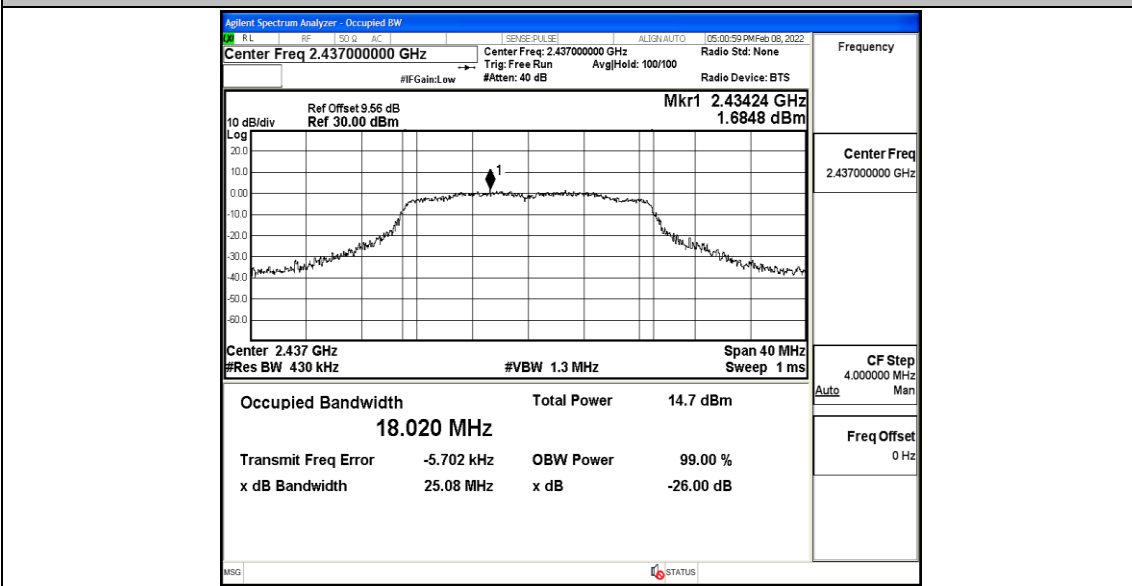
11N20MIMO_Ant1_2412



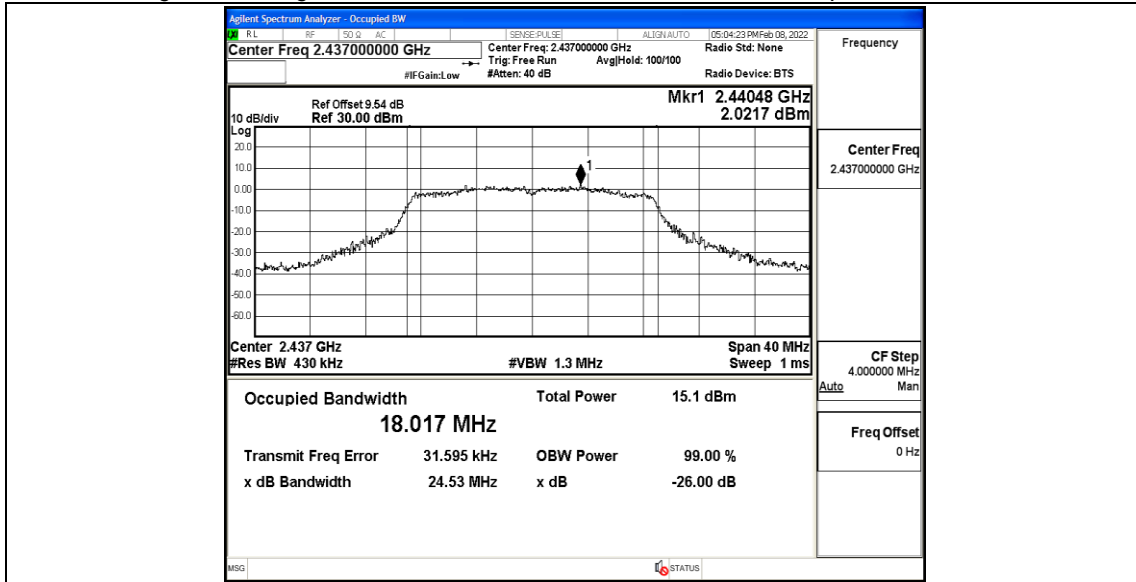
11N20MIMO_Ant2_2412



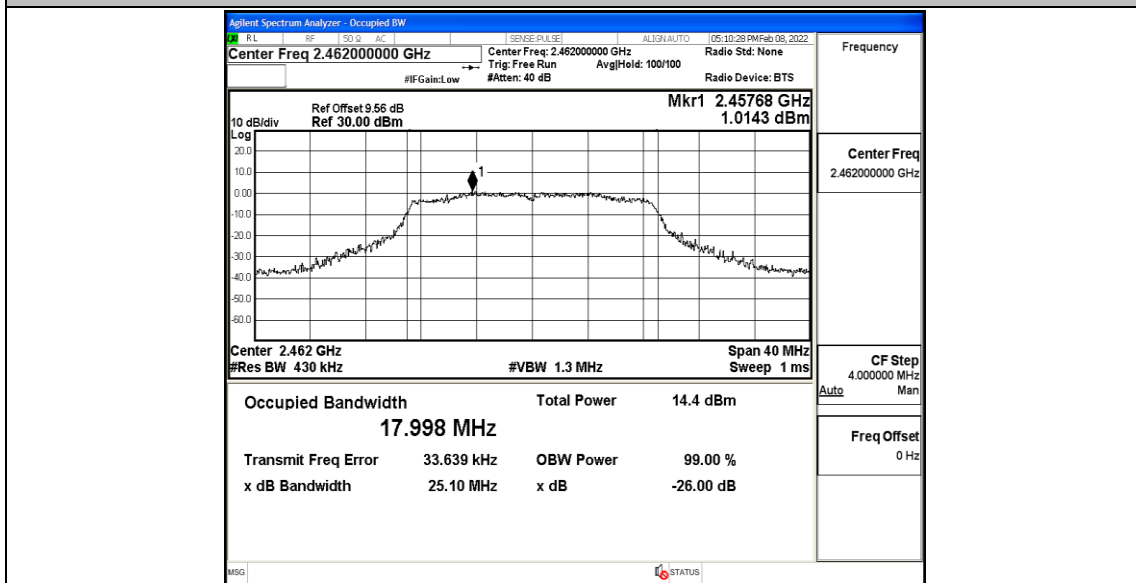
11N20MIMO_Ant1_2437



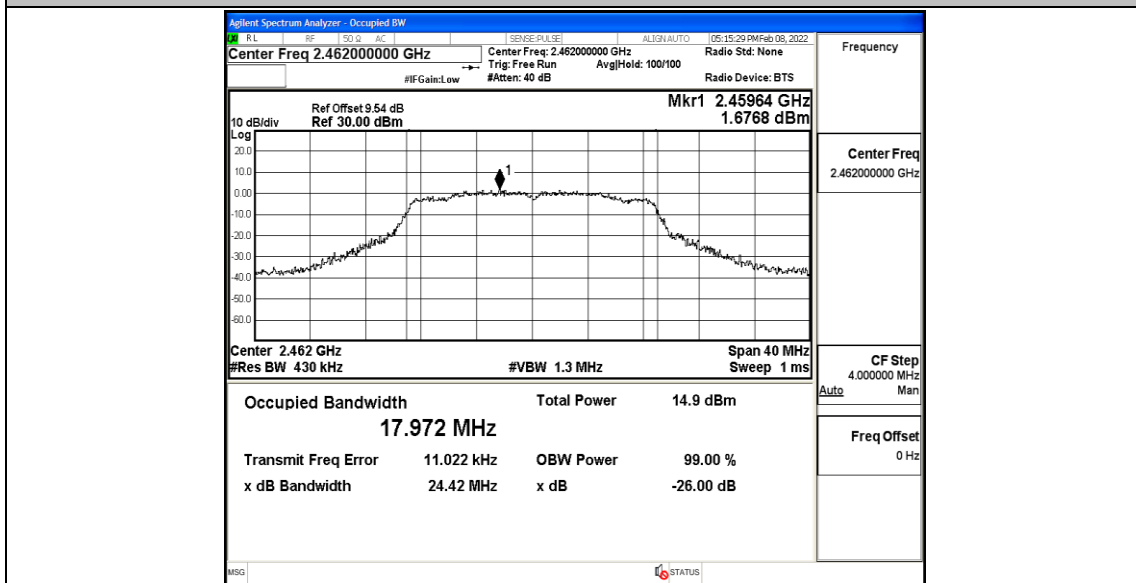
11N20MIMO_Ant2_2437



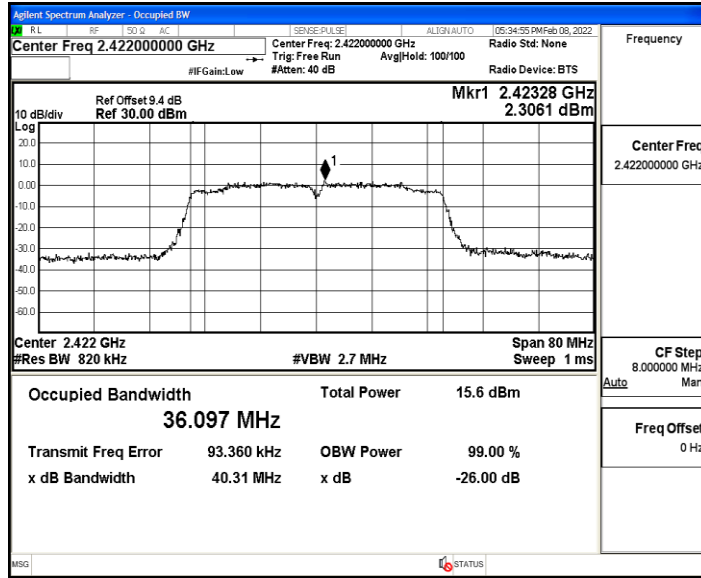
11N20MIMO_Ant1_2462



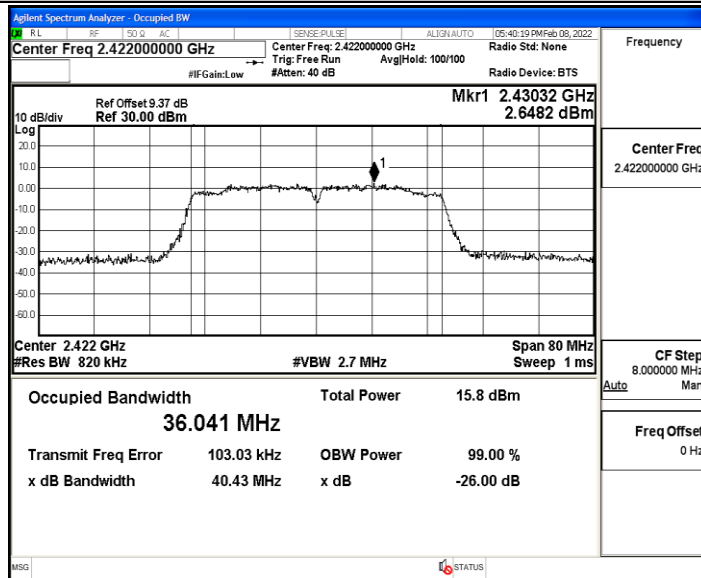
11N20MIMO_Ant2_2462



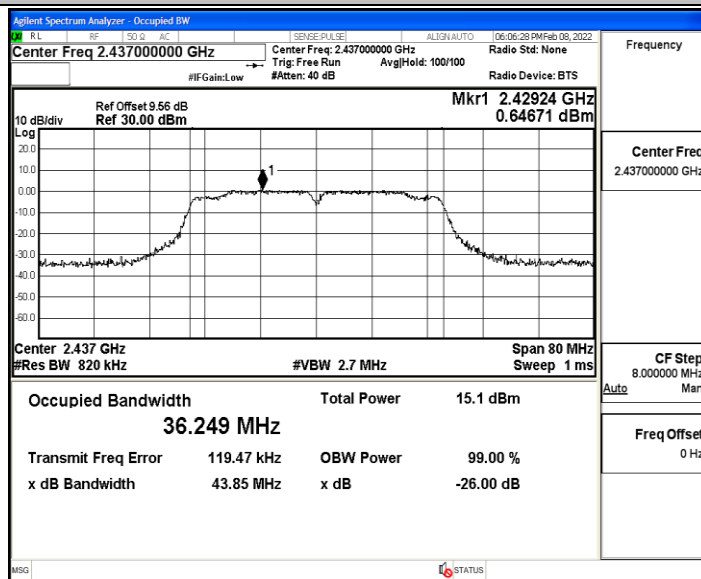
11N40MIMO_Ant1_2422



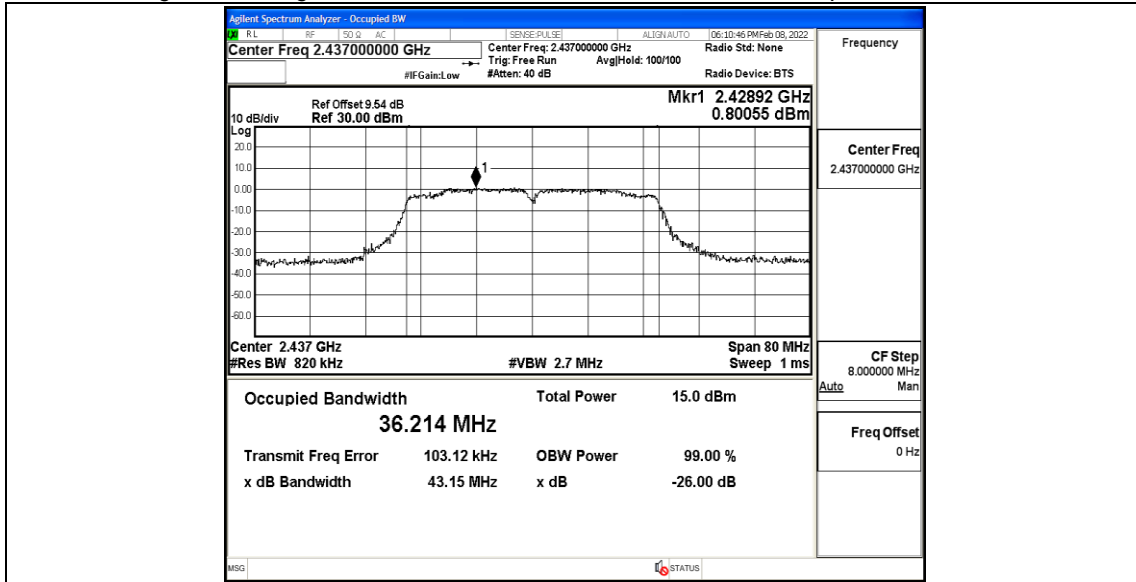
11N40MIMO_Ant2_2422



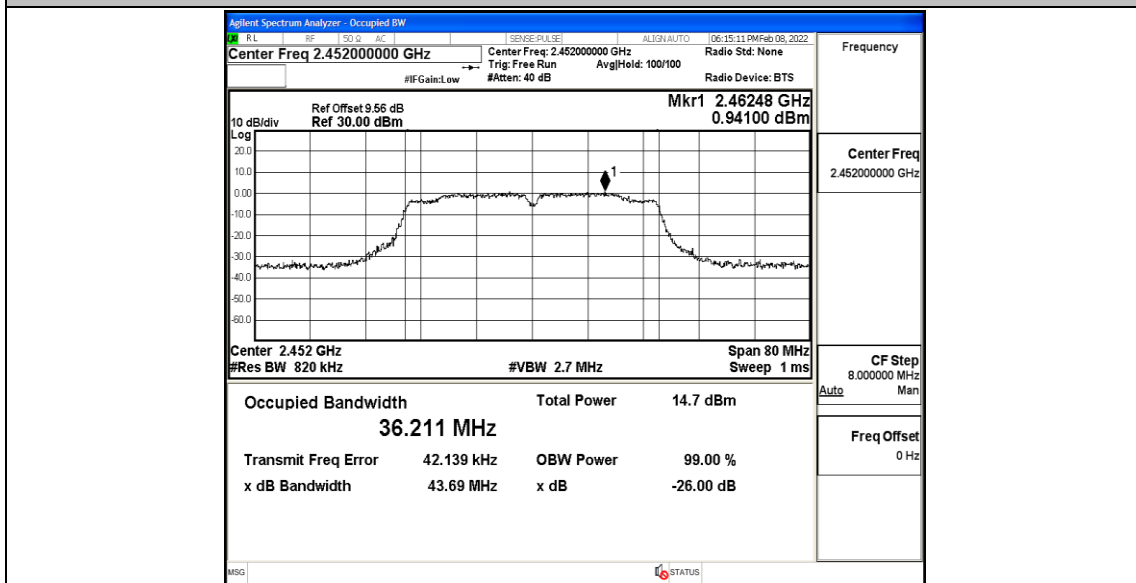
11N40MIMO_Ant1_2437



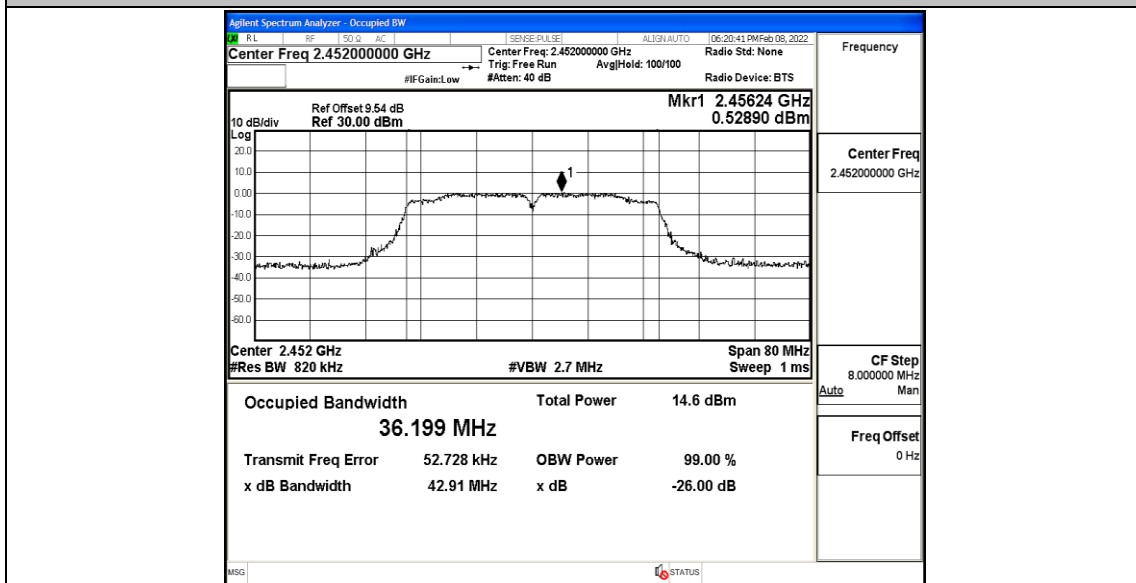
11N40MIMO_Ant2_2437



11N40MIMO_Ant1_2452



11N40MIMO_Ant2_2452



Appendix C: Maximum conducted output power

Test Result

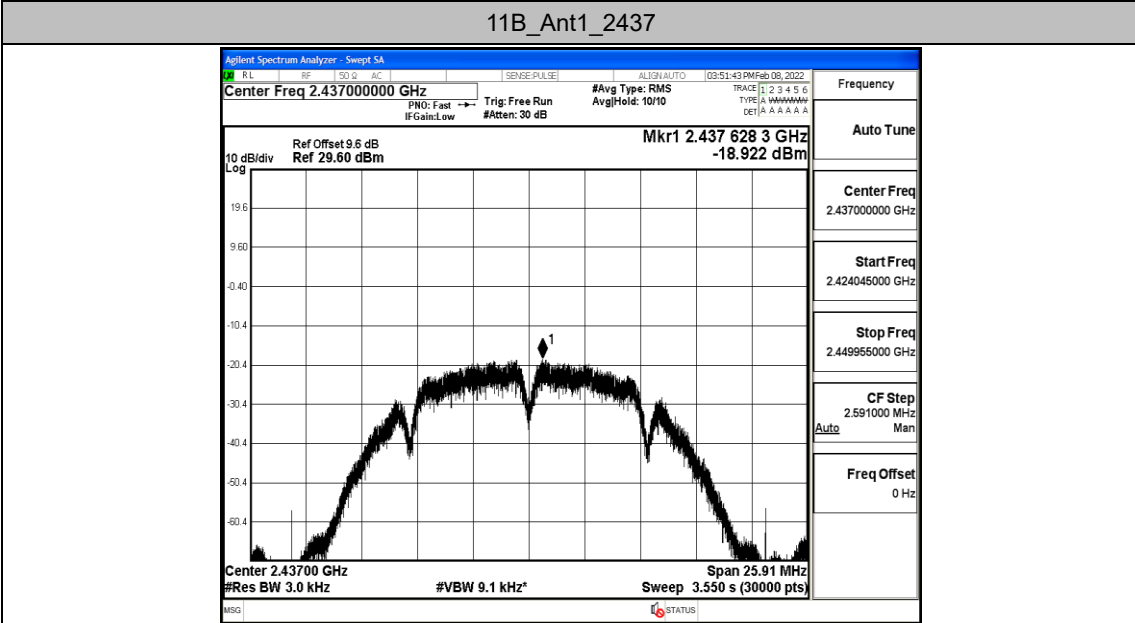
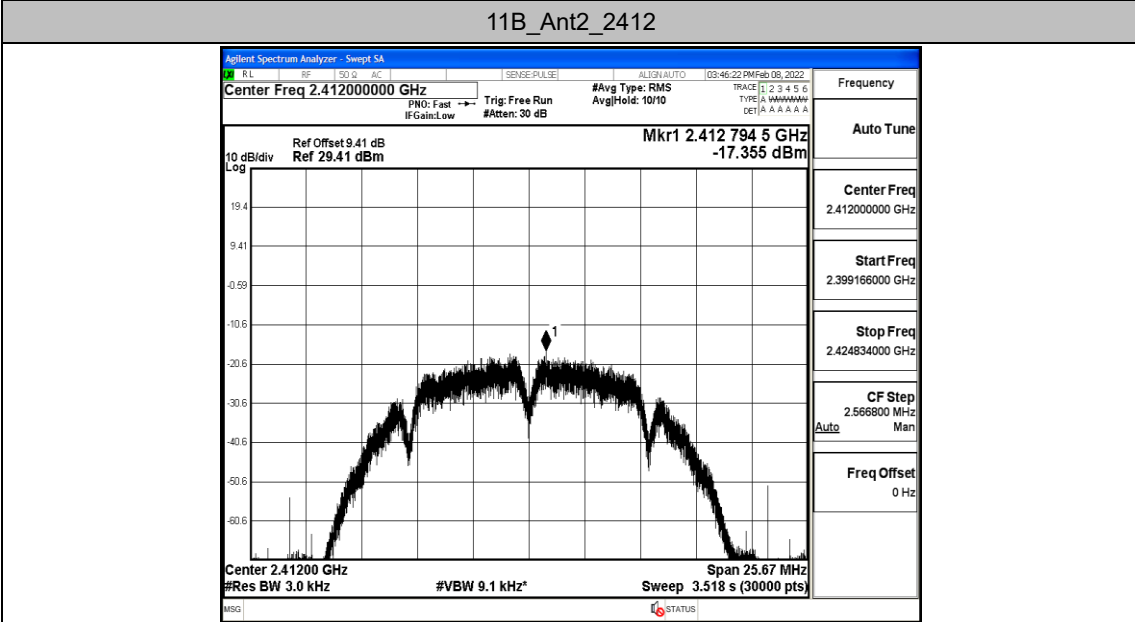
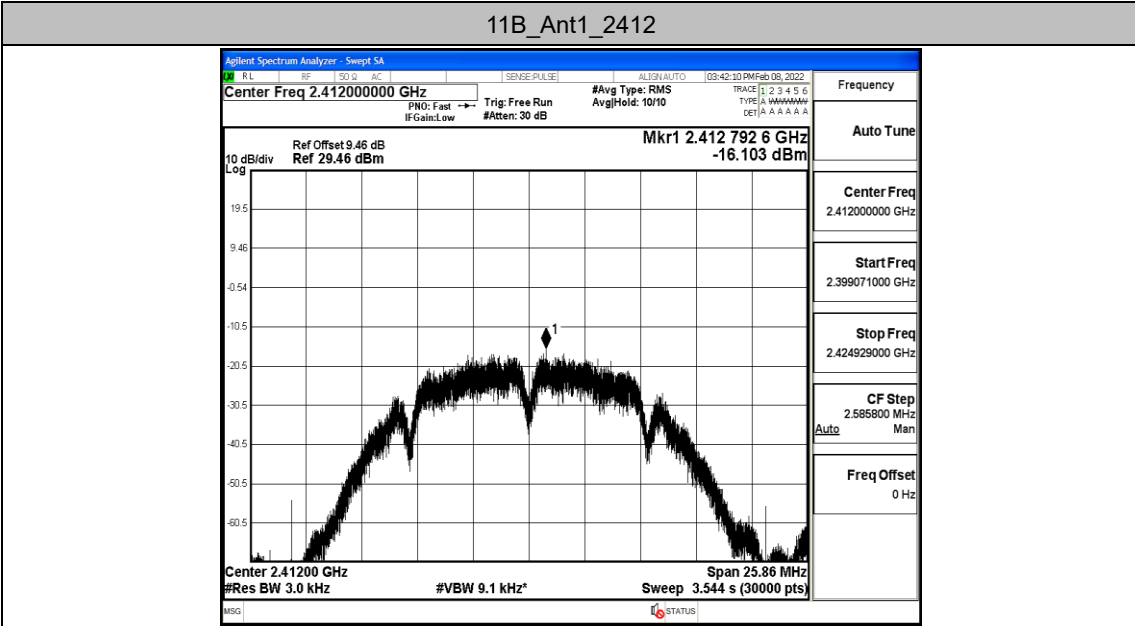
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	11.21	≤30	PASS
	Ant2	2412	10.66	≤30	PASS
	Ant1	2437	10.97	≤30	PASS
	Ant2	2437	10.68	≤30	PASS
	Ant1	2462	10.93	≤30	PASS
	Ant2	2462	11.20	≤30	PASS
11G	Ant1	2412	10.84	≤30	PASS
	Ant2	2412	9.98	≤30	PASS
	Ant1	2437	9.87	≤30	PASS
	Ant2	2437	9.52	≤30	PASS
	Ant1	2462	10.02	≤30	PASS
	Ant2	2462	9.99	≤30	PASS
11N20MIMO	Ant1	2412	8.99	≤30	PASS
	Ant2	2412	8.55	≤30	PASS
	total	2412	11.8	≤30	PASS
	Ant1	2437	8.64	≤30	PASS
	Ant2	2437	9.05	≤30	PASS
	total	2437	11.9	≤30	PASS
	Ant1	2462	8.24	≤30	PASS
	Ant2	2462	8.84	≤30	PASS
	total	2462	11.6	≤30	PASS
11N40MIMO	Ant1	2422	8.73	≤30	PASS
	Ant2	2422	9.00	≤30	PASS
	total	2422	11.9	≤30	PASS
	Ant1	2437	8.15	≤30	PASS
	Ant2	2437	8.04	≤30	PASS
	total	2437	11.1	≤30	PASS
	Ant1	2452	7.73	≤30	PASS
	Ant2	2452	7.65	≤30	PASS
	total	2452	10.7	≤30	PASS

Appendix D: Maximum power spectral density

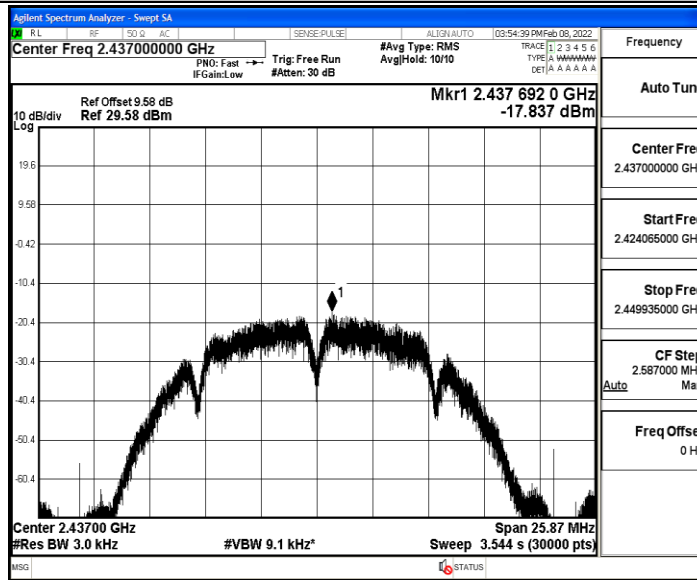
Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-16.1	≤8	PASS
	Ant2	2412	-17.36	≤8	PASS
	Ant1	2437	-18.92	≤8	PASS
	Ant2	2437	-17.84	≤8	PASS
	Ant1	2462	-18.61	≤8	PASS
	Ant2	2462	-19.44	≤8	PASS
11G	Ant1	2412	-20.69	≤8	PASS
	Ant2	2412	-21.68	≤8	PASS
	Ant1	2437	-21.22	≤8	PASS
	Ant2	2437	-21.94	≤8	PASS
	Ant1	2462	-21.85	≤8	PASS
	Ant2	2462	-21.26	≤8	PASS
11N20MIMO	Ant1	2412	-22.25	≤8	PASS
	Ant2	2412	-22.52	≤8	PASS
	total	2412	-19.37	≤8	PASS
	Ant1	2437	-22.77	≤8	PASS
	Ant2	2437	-22.41	≤8	PASS
	total	2437	-19.58	≤8	PASS
	Ant1	2462	-23.24	≤8	PASS
	Ant2	2462	-22.63	≤8	PASS
	total	2462	-19.91	≤8	PASS
11N40MIMO	Ant1	2422	-20.7	≤8	PASS
	Ant2	2422	-19.56	≤8	PASS
	total	2422	-17.08	≤8	PASS
	Ant1	2437	-23.02	≤8	PASS
	Ant2	2437	-23.63	≤8	PASS
	total	2437	-20.30	≤8	PASS
	Ant1	2452	-25.56	≤8	PASS
	Ant2	2452	-23.64	≤8	PASS
	total	2452	-21.48	≤8	PASS

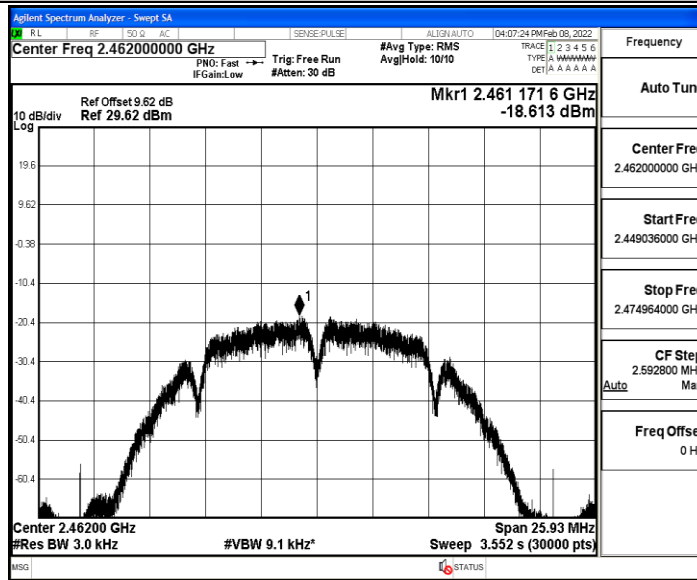
Test Graphs



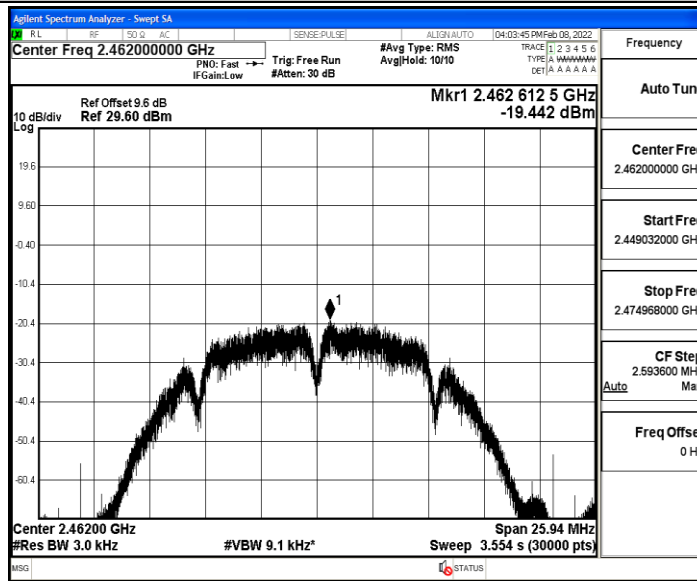
11B_Ant2_2437



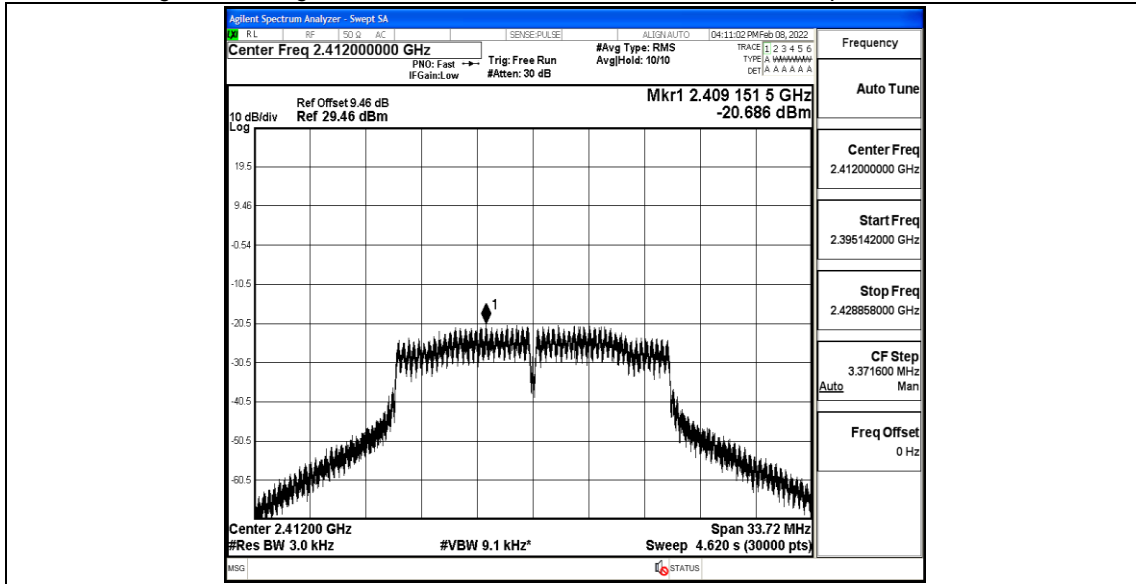
11B_Ant1_2462



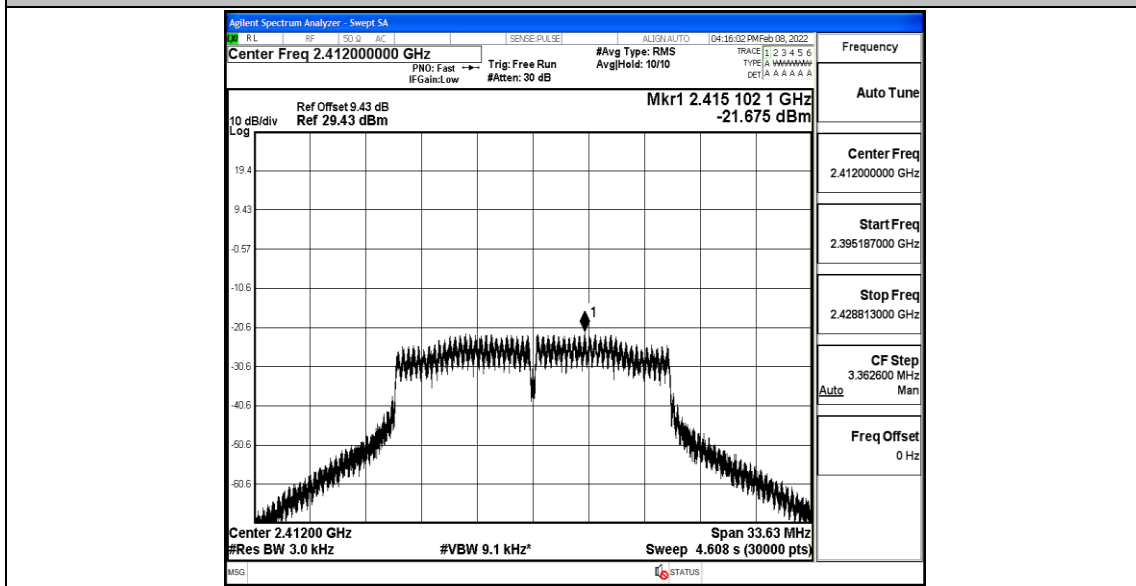
11B_Ant2_2462



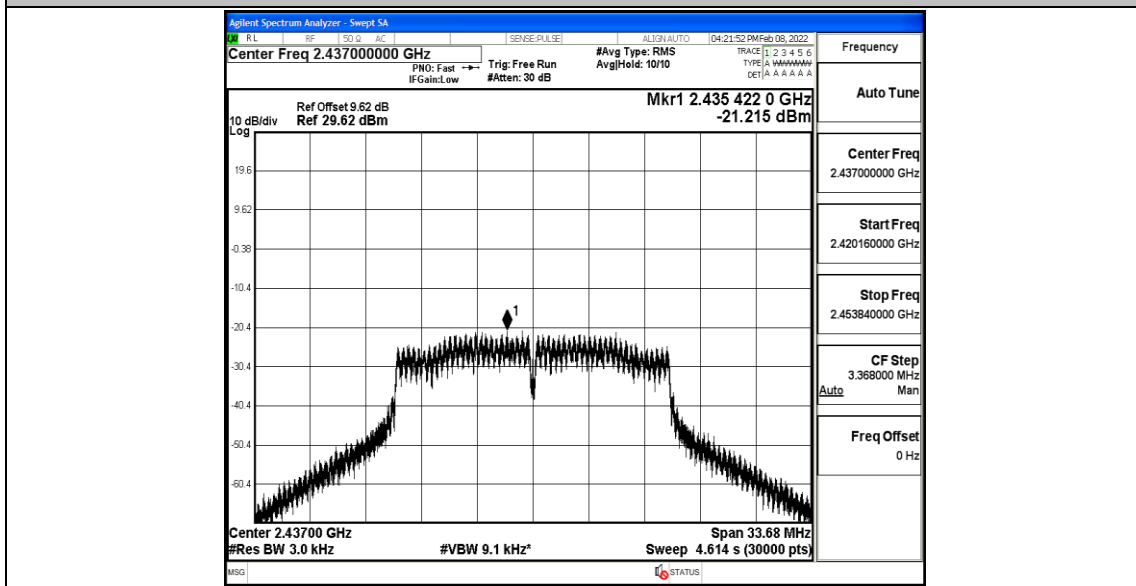
11G_Ant1_2412



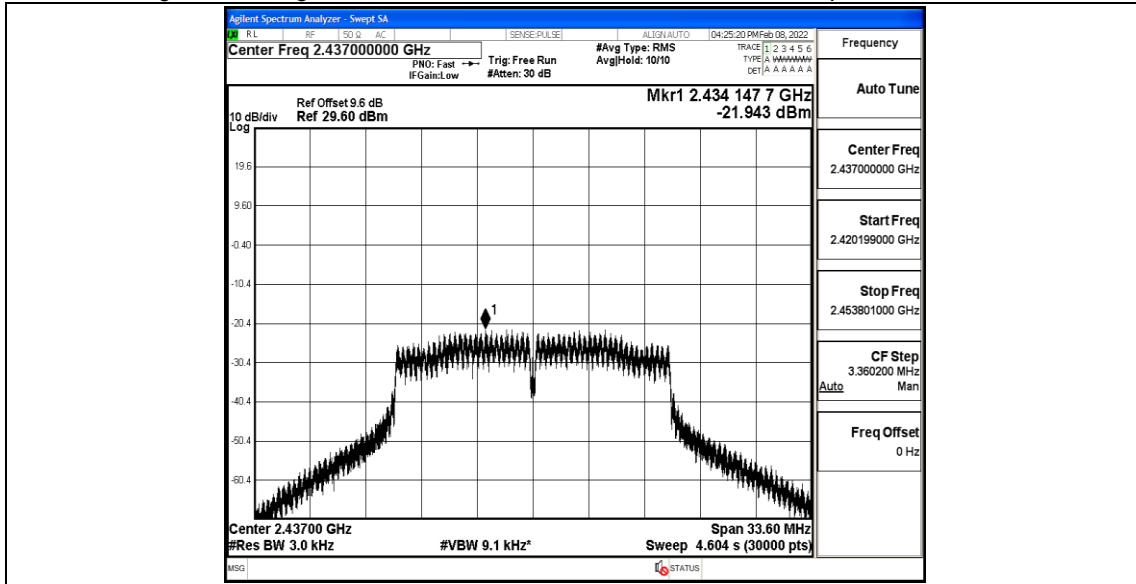
11G_Ant2_2412



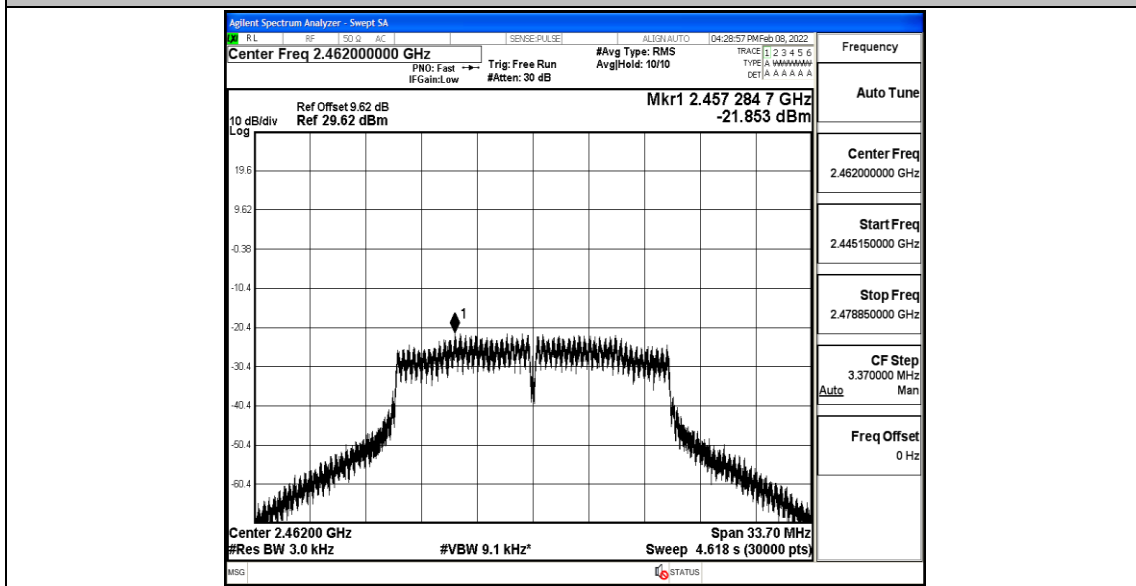
11G_Ant1_2437



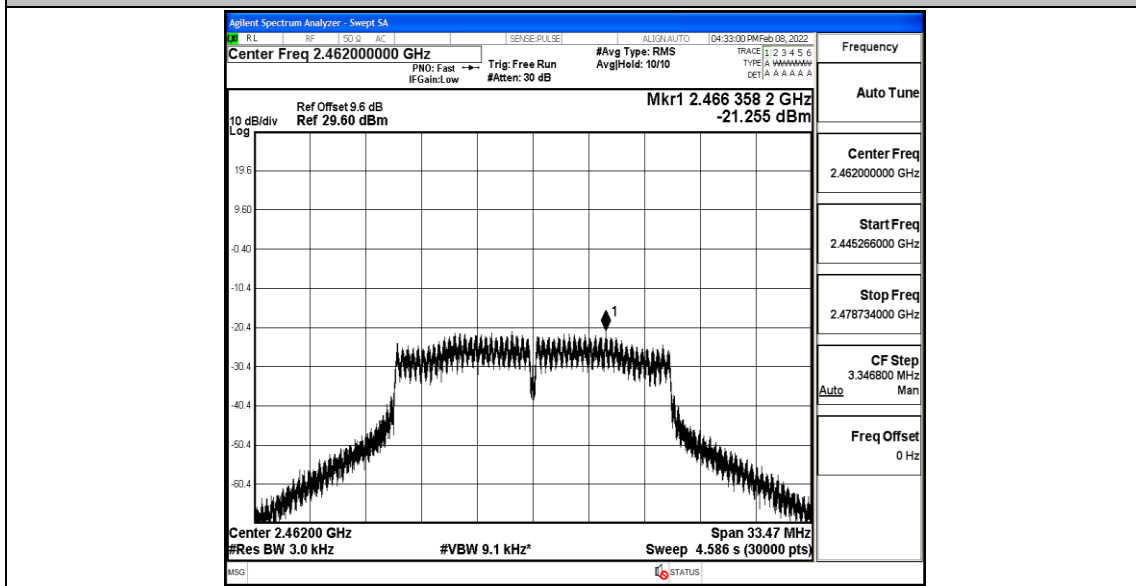
11G_Ant2_2437



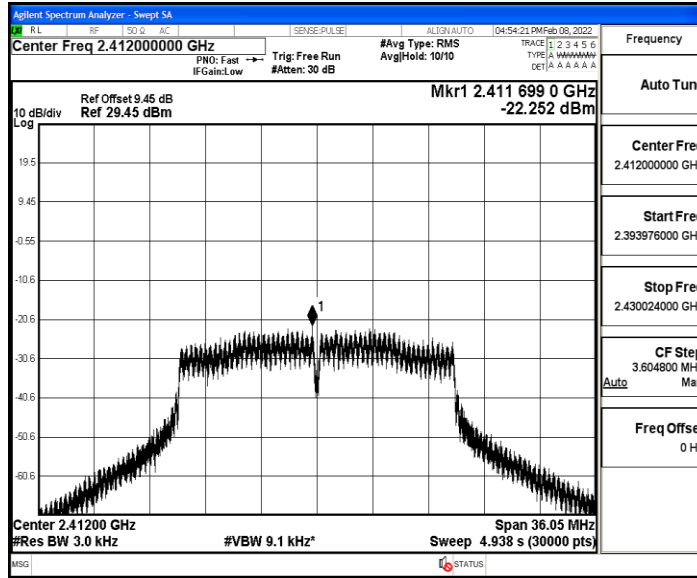
11G_Ant1_2462



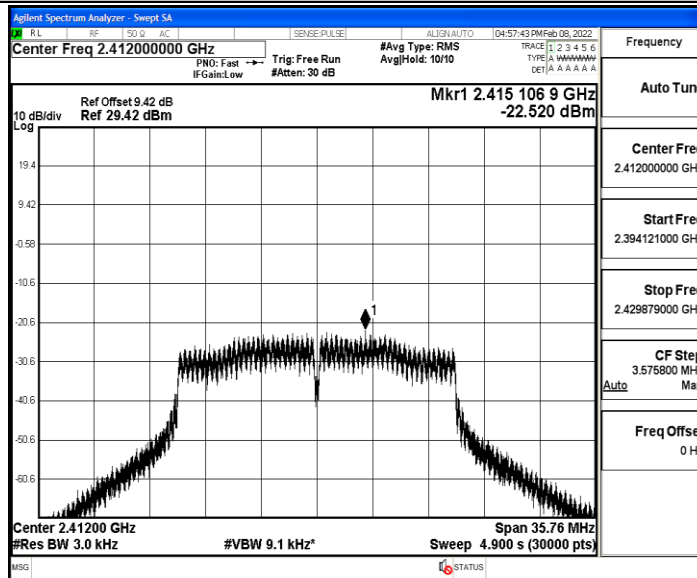
11G_Ant2_2462



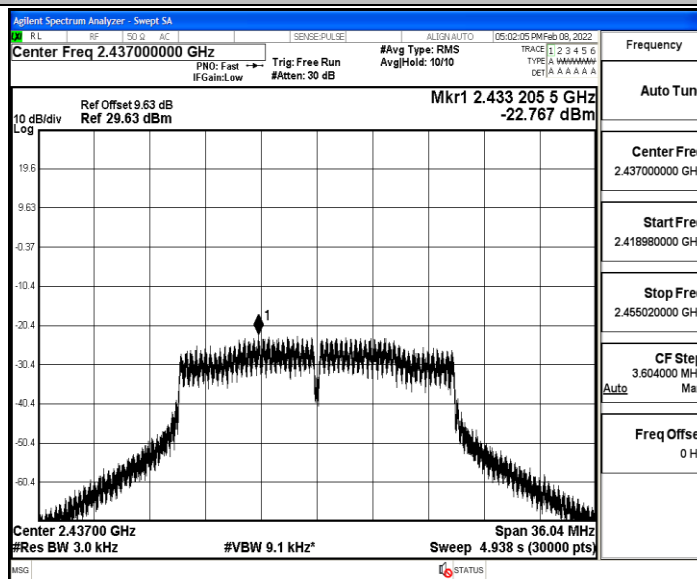
11N20MIMO_Ant1_2412



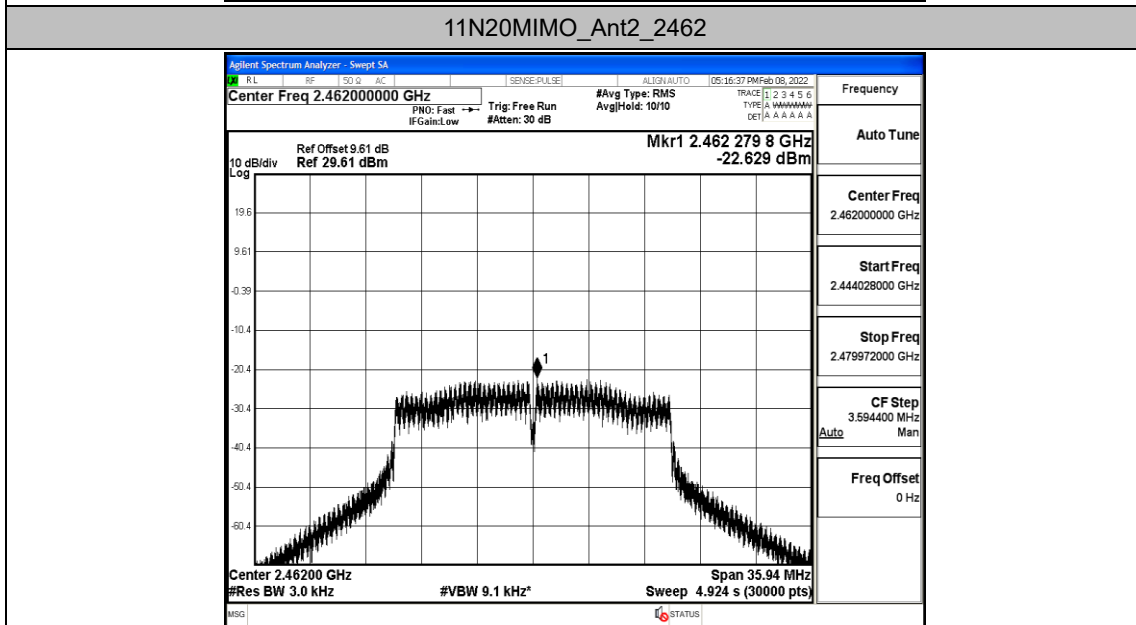
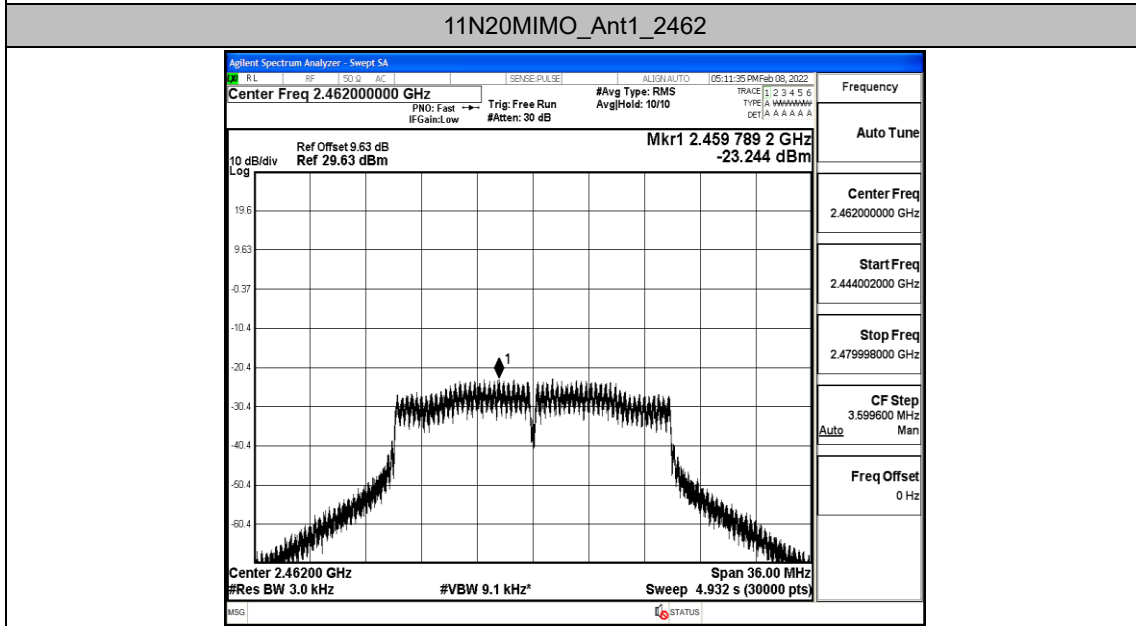
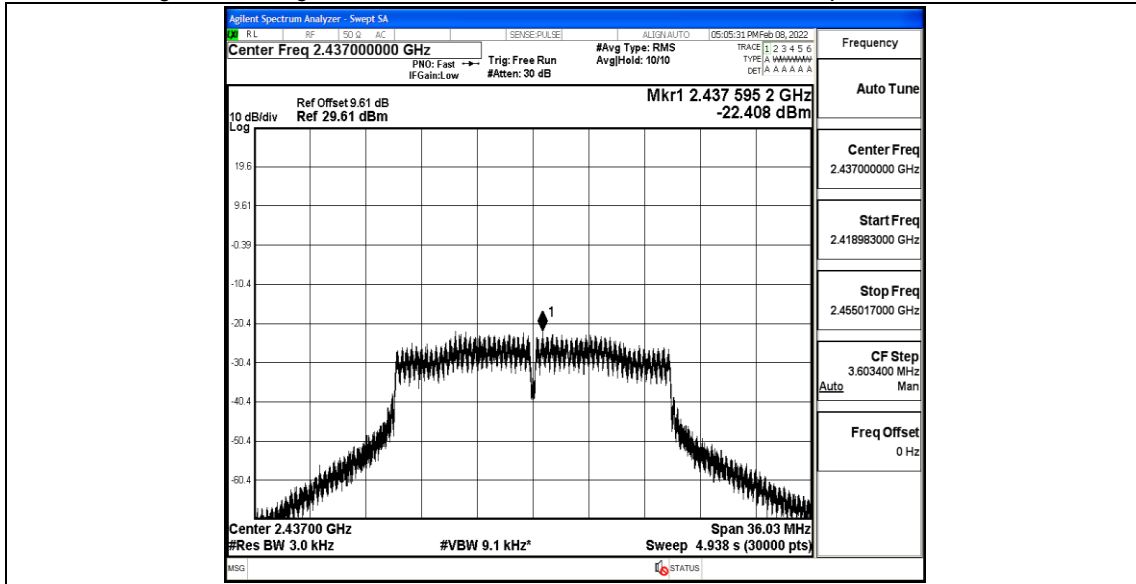
11N20MIMO_Ant2_2412

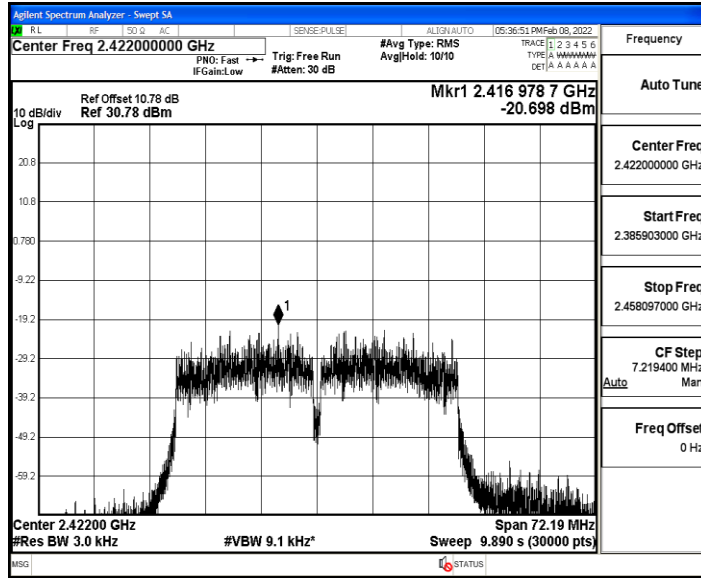


11N20MIMO_Ant1_2437

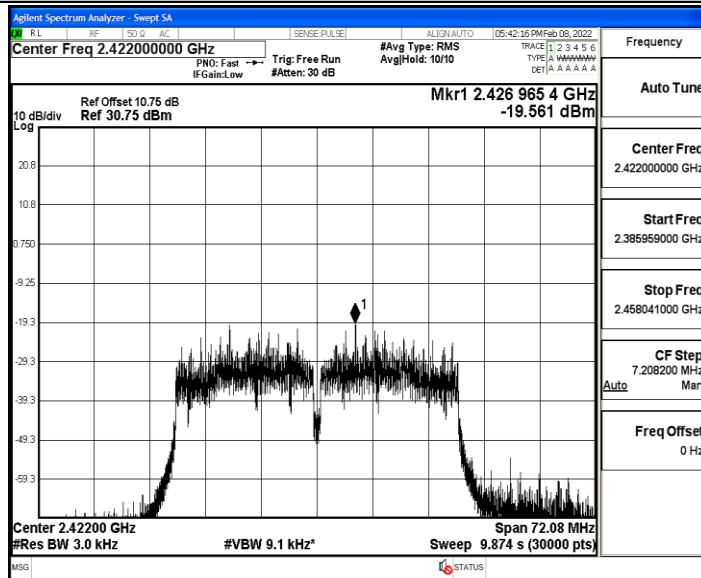


11N20MIMO_Ant2_2437

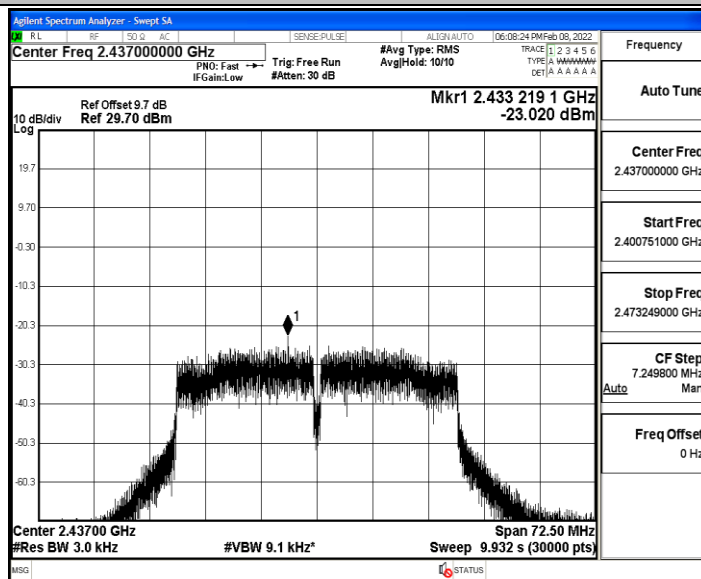




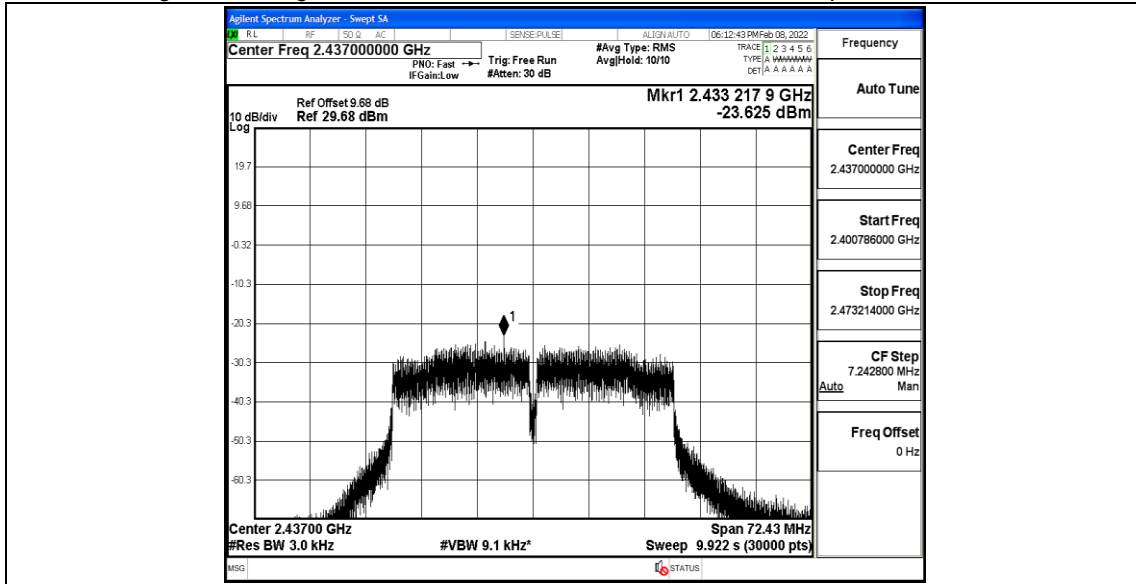
11N40MIMO_Ant2_2422



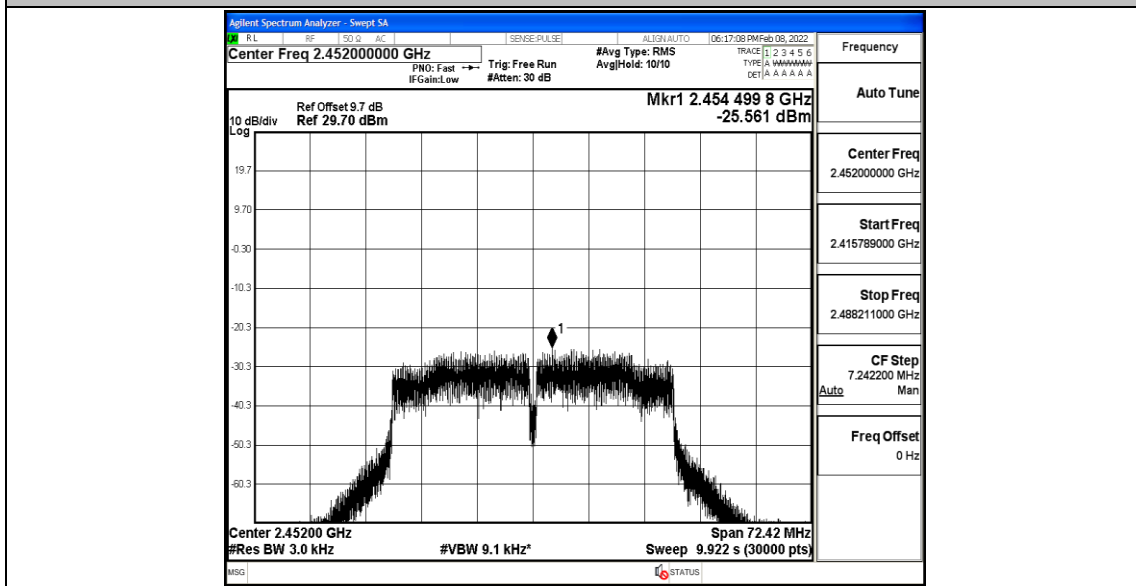
11N40MIMO_Ant1_2437



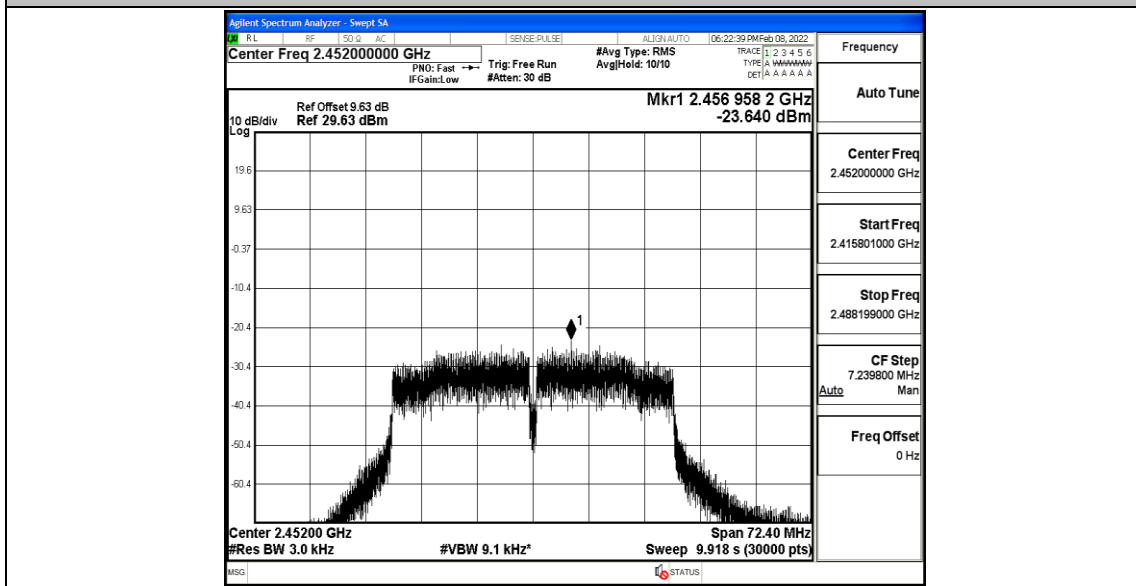
11N40MIMO_Ant2_2437



11N40MIMO_Ant1_2452



11N40MIMO_Ant2_2452

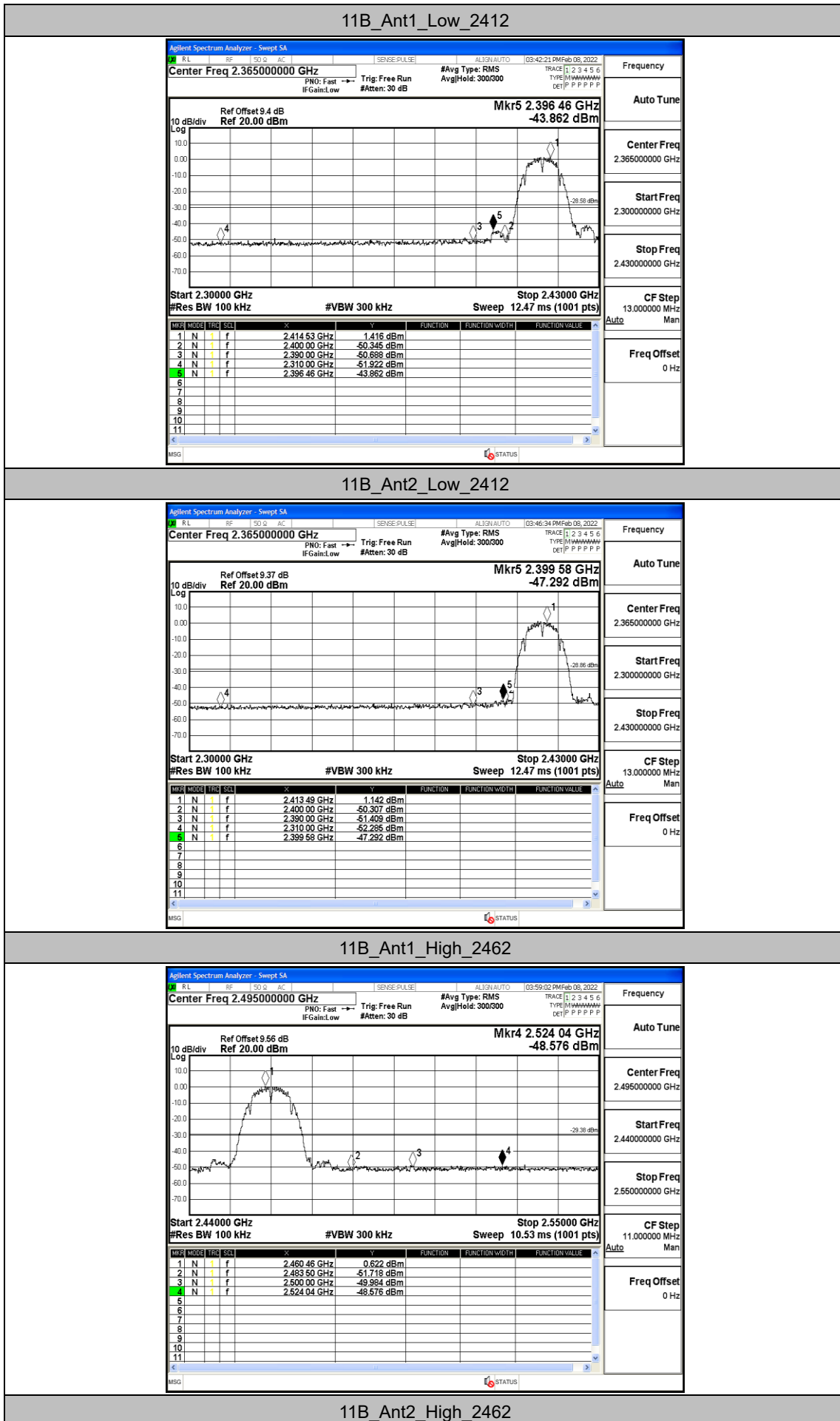


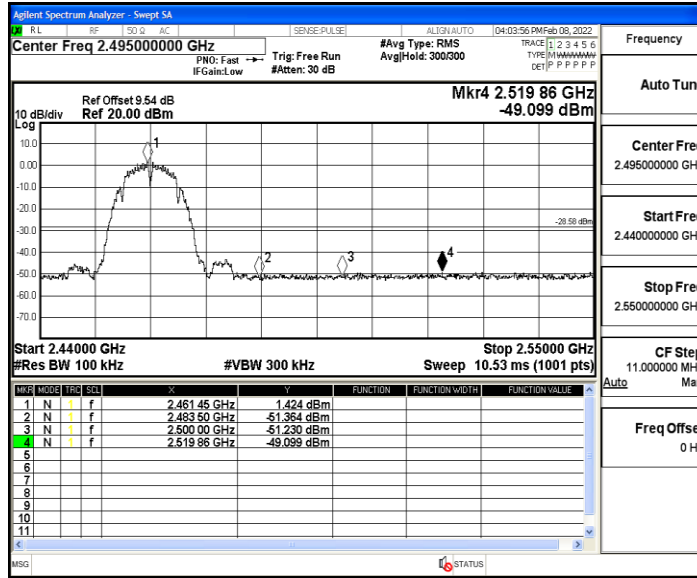
Appendix E: Band edge measurements

Test Result

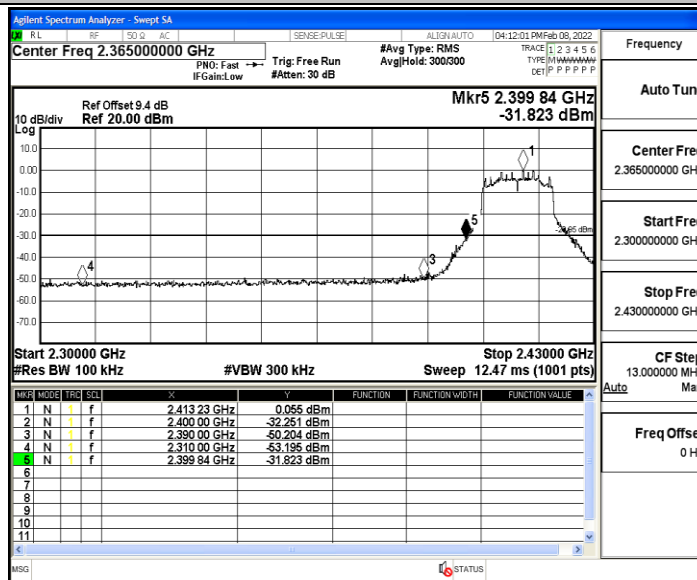
TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	1.42	-43.86	≤-28.58	PASS
	Ant2	Low	2412	1.14	-47.29	≤-28.86	PASS
	Ant1	High	2462	0.62	-48.58	≤-29.38	PASS
	Ant2	High	2462	1.42	-49.1	≤-28.58	PASS
11G	Ant1	Low	2412	0.06	-31.82	≤-29.95	PASS
	Ant2	Low	2412	-0.18	-31.33	≤-30.18	PASS
	Ant1	High	2462	0.09	-47.25	≤-29.91	PASS
	Ant2	High	2462	-0.17	-47.46	≤-30.17	PASS
11N20MIMO	Ant1	Low	2412	-2.12	-32.58	≤-32.12	PASS
	Ant2	Low	2412	-1.43	-32.26	≤-31.43	PASS
	Ant1	High	2462	-1.10	-48.03	≤-31.1	PASS
	Ant2	High	2462	-1.05	-48.19	≤-31.05	PASS
11N40MIMO	Ant1	Low	2422	-4.15	-43.18	≤-34.15	PASS
	Ant2	Low	2422	-4.37	-45.11	≤-34.37	PASS
	Ant1	High	2452	-5.39	-46.78	≤-35.39	PASS
	Ant2	High	2452	-5.41	-40.83	≤-35.41	PASS

Test Graphs

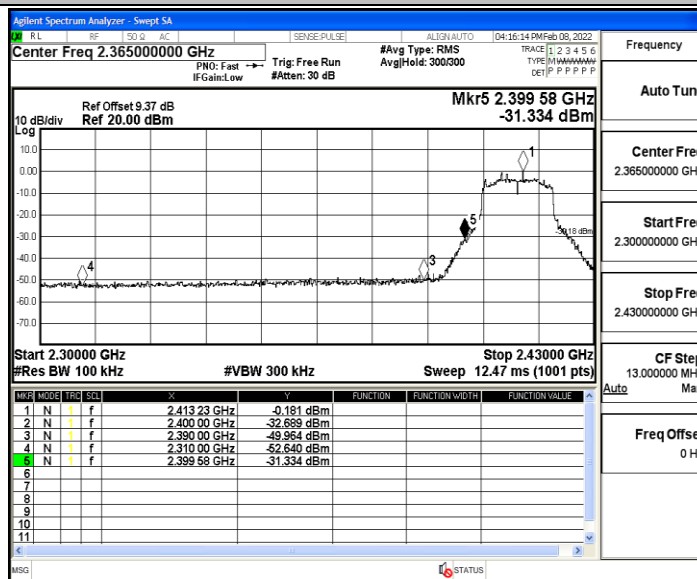




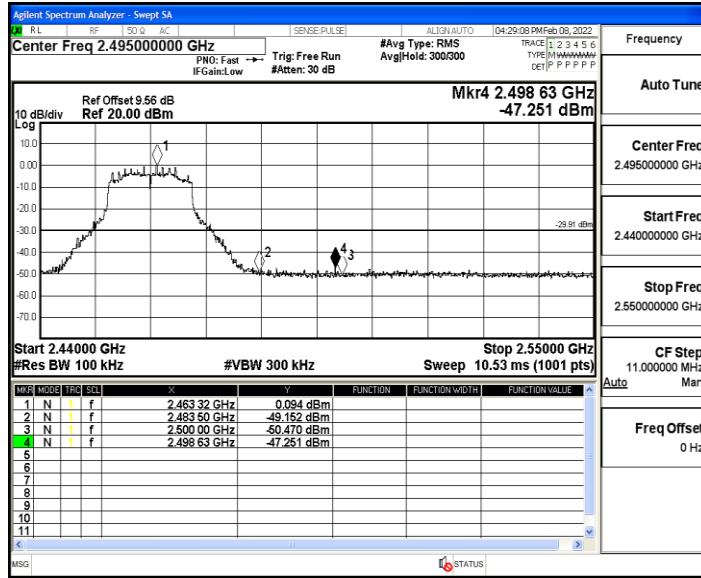
11G_Ant1_Low_2412



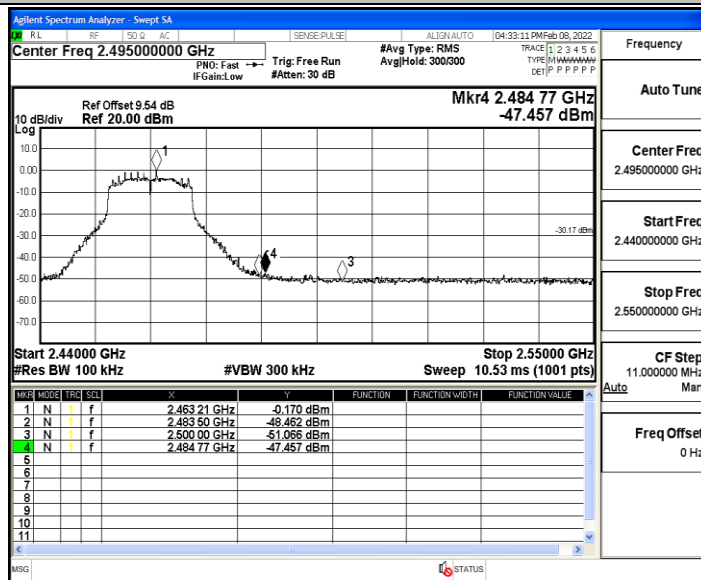
11G_Ant2_Low_2412



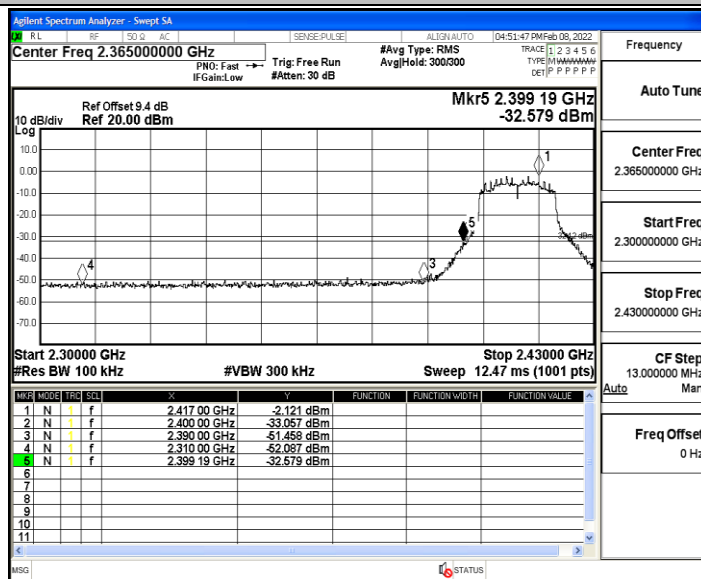
11G_Ant1_High_2462



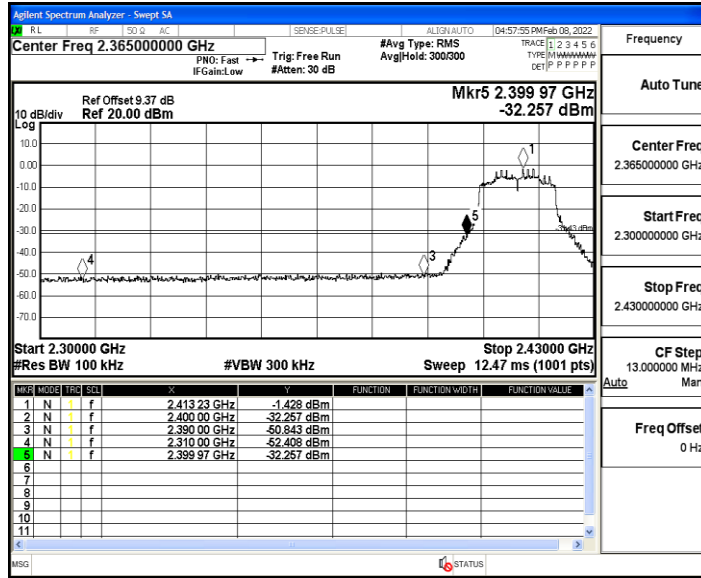
11G_Ant2_High_2462



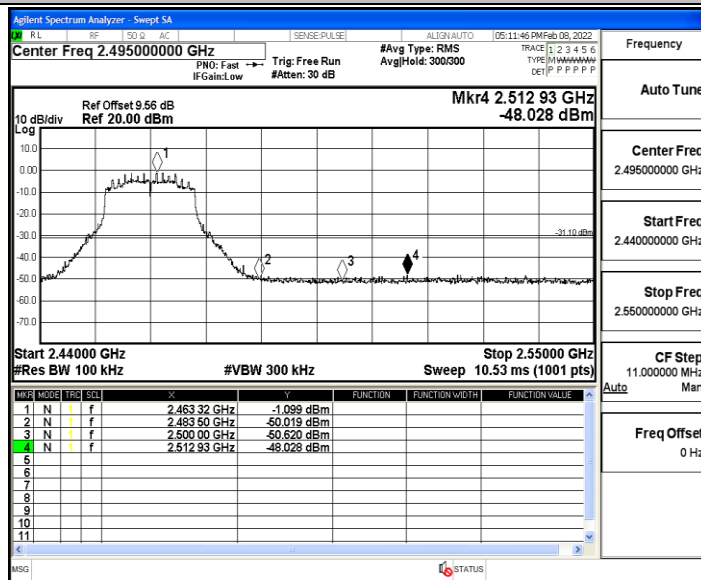
11N20MIMO_Ant1_Low_2412



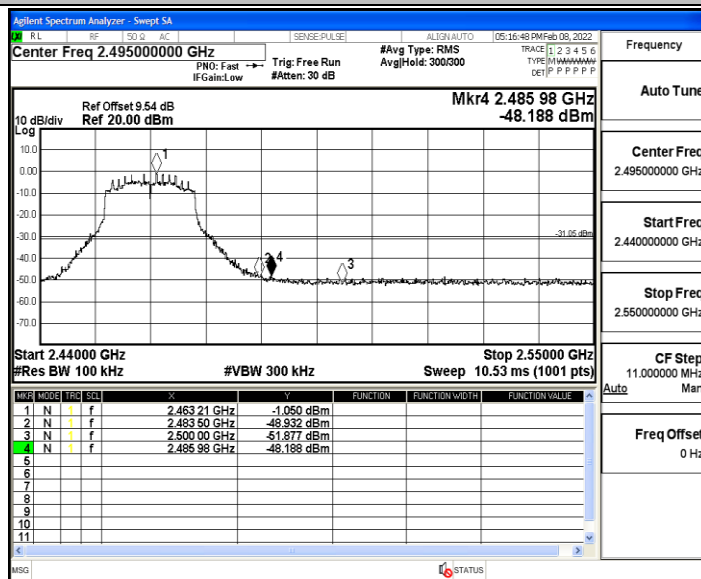
11N20MIMO_Ant2_Low_2412



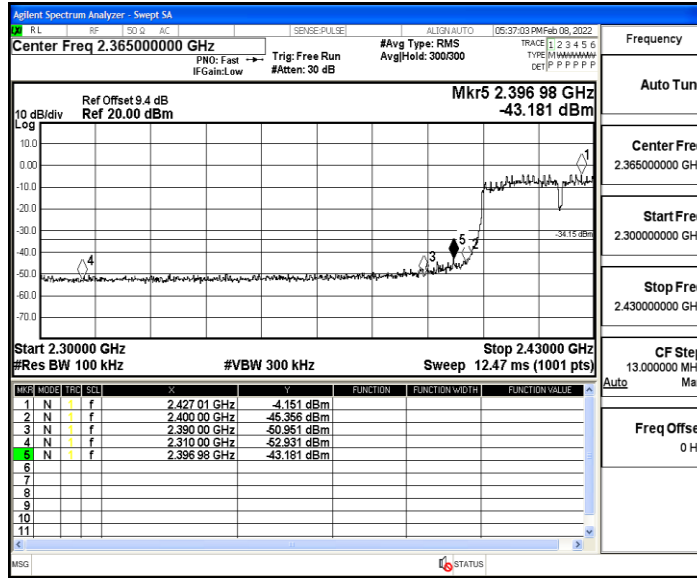
11N20MIMO_Ant1_High_2462



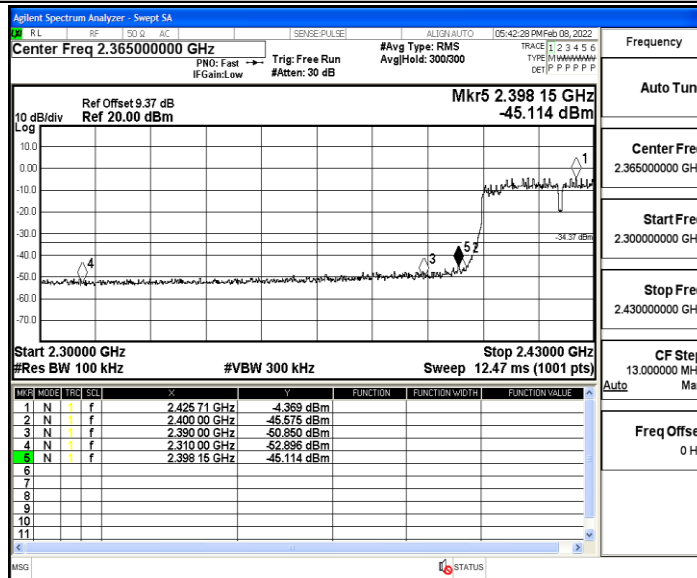
11N20MIMO_Ant2_High_2462



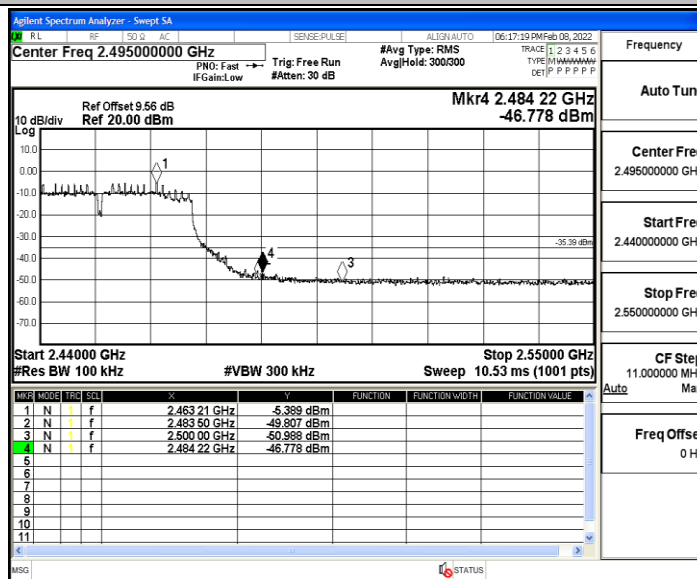
11N40MIMO_Ant1_Low_2422



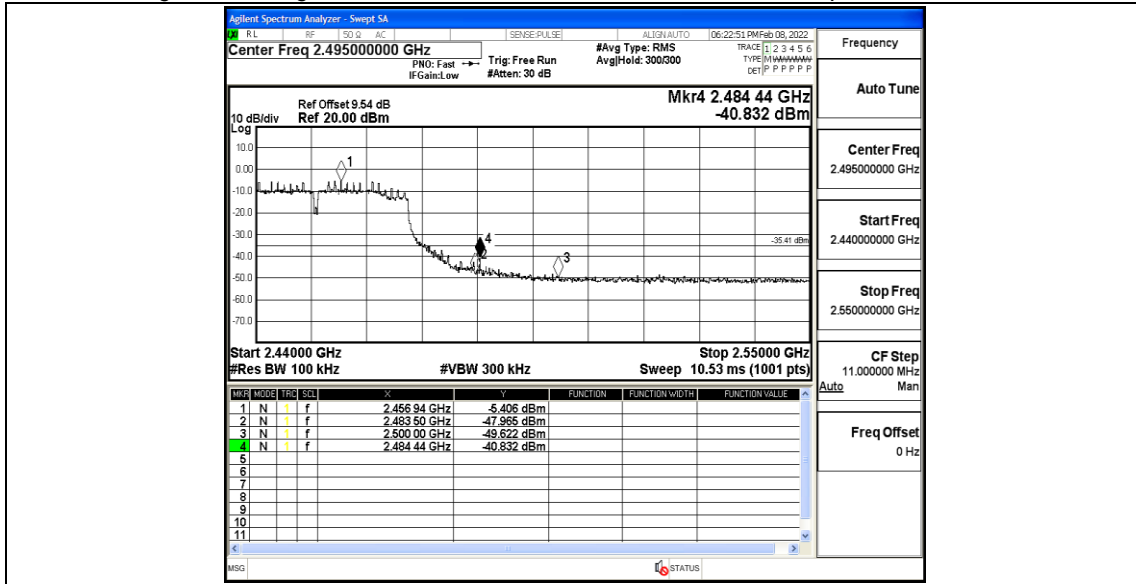
11N40MIMO_Ant2_Low_2422



11N40MIMO_Ant1_High_2452



11N40MIMO_Ant2_High_2452



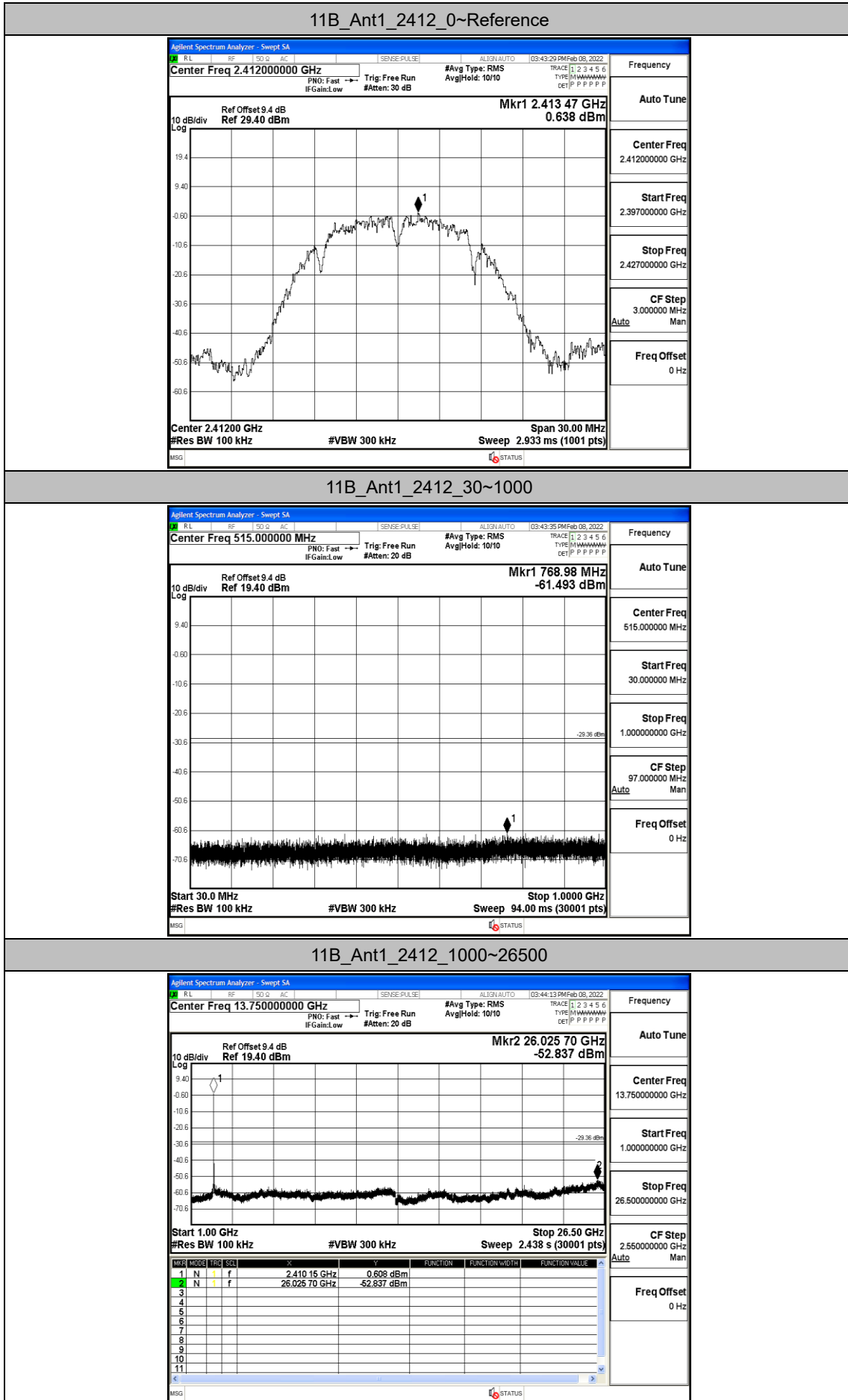
Appendix F: Conducted Spurious Emission

Test Result

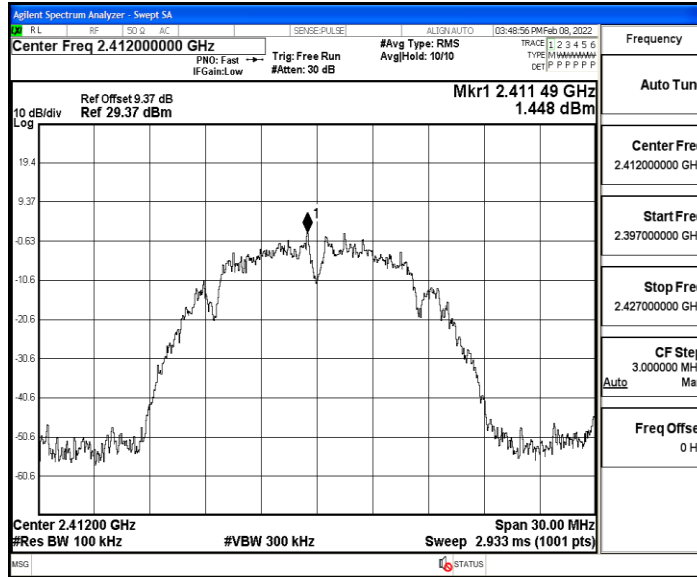
TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict	
11B	Ant1	2412	Reference	0.64	0.64	---	PASS	
			30~1000	0.64	-61.49	≤-29.36	PASS	
			1000~26500	0.64	-52.84	≤-29.36	PASS	
	Ant2	2412	Reference	1.45	1.45	---	PASS	
			30~1000	1.45	-61.18	≤-28.55	PASS	
			1000~26500	1.45	-53.32	≤-28.55	PASS	
	Ant1	2437	Reference	1.81	1.81	---	PASS	
			30~1000	1.81	-61.51	≤-28.19	PASS	
			1000~26500	1.81	-52.17	≤-28.19	PASS	
	Ant2	2437	Reference	0.43	0.43	---	PASS	
			30~1000	0.43	-61.75	≤-29.57	PASS	
			1000~26500	0.43	-52.53	≤-29.57	PASS	
	Ant1	2462	Reference	-0.75	-0.75	---	PASS	
			30~1000	-0.75	-61.32	≤-30.75	PASS	
			1000~26500	-0.75	-52.51	≤-30.75	PASS	
	Ant2	2462	Reference	0.75	0.75	---	PASS	
			30~1000	0.75	-60.97	≤-29.25	PASS	
			1000~26500	0.75	-50.92	≤-29.25	PASS	
	11G	Ant1	2412	Reference	-3.93	-3.93	---	PASS
				30~1000	-3.93	-61.34	≤-33.93	PASS
				1000~26500	-3.93	-52.08	≤-33.93	PASS
		Ant2	2412	Reference	-4.18	-4.18	---	PASS
				30~1000	-4.18	-61.31	≤-34.18	PASS
				1000~26500	-4.18	-52.67	≤-34.18	PASS
Ant1		2437	Reference	-1.86	-1.86	---	PASS	
			30~1000	-1.86	-61.07	≤-31.86	PASS	
			1000~26500	-1.86	-52.05	≤-31.86	PASS	
Ant2		2437	Reference	-3.90	-3.90	---	PASS	
			30~1000	-3.90	-61.21	≤-33.9	PASS	
			1000~26500	-3.90	-51.96	≤-33.9	PASS	
Ant1		2462	Reference	-3.55	-3.55	---	PASS	
			30~1000	-3.55	-60.87	≤-33.55	PASS	
			1000~26500	-3.55	-51.04	≤-33.55	PASS	
Ant2		2462	Reference	-3.92	-3.92	---	PASS	
			30~1000	-3.92	-61.17	≤-33.92	PASS	
			1000~26500	-3.92	-51.93	≤-33.92	PASS	
11N20MIMO		Ant1	2412	Reference	-3.88	-3.88	---	PASS
				30~1000	-3.88	-61.28	≤-33.88	PASS
				1000~26500	-3.88	-52.26	≤-33.88	PASS
		Ant2	2412	Reference	-5.52	-5.52	---	PASS

TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict	
			30~1000	-5.52	-61.13	≤-35.52	PASS	
			1000~26500	-5.52	-52.41	≤-35.52	PASS	
	Ant1	2437	Reference	-4.93	-4.93	---	PASS	
			30~1000	-4.93	-61.47	≤-34.93	PASS	
			1000~26500	-4.93	-52.59	≤-34.93	PASS	
	Ant2	2437	Reference	-5.23	-5.23	---	PASS	
			30~1000	-5.23	-61.09	≤-35.23	PASS	
			1000~26500	-5.23	-52.14	≤-35.23	PASS	
	Ant1	2462	Reference	-3.74	-3.74	---	PASS	
			30~1000	-3.74	-61.2	≤-33.74	PASS	
			1000~26500	-3.74	-53.13	≤-33.74	PASS	
	Ant2	2462	Reference	-2.31	-2.31	---	PASS	
			30~1000	-2.31	-61.3	≤-32.31	PASS	
			1000~26500	-2.31	-52.23	≤-32.31	PASS	
	11N40MIMO	Ant1	2422	Reference	-4.45	-4.45	---	PASS
				30~1000	-4.45	-60.65	≤-34.45	PASS
				1000~26500	-4.45	-52.42	≤-34.45	PASS
		Ant2	2422	Reference	-7.31	-7.31	---	PASS
30~1000				-7.31	-61.8	≤-37.31	PASS	
1000~26500				-7.31	-52.36	≤-37.31	PASS	
Ant1		2437	Reference	-5.96	-5.96	---	PASS	
			30~1000	-5.96	-61.65	≤-35.96	PASS	
			1000~26500	-5.96	-52.6	≤-35.96	PASS	
Ant2		2437	Reference	-6.61	-6.61	---	PASS	
			30~1000	-6.61	-61.24	≤-36.61	PASS	
			1000~26500	-6.61	-52.15	≤-36.61	PASS	
Ant1		2452	Reference	-7.61	-7.61	---	PASS	
			30~1000	-7.61	-60.39	≤-37.61	PASS	
			1000~26500	-7.61	-52.18	≤-37.61	PASS	
Ant2		2452	Reference	-5.91	-5.91	---	PASS	
			30~1000	-5.91	-60.72	≤-35.91	PASS	
			1000~26500	-5.91	-52.22	≤-35.91	PASS	

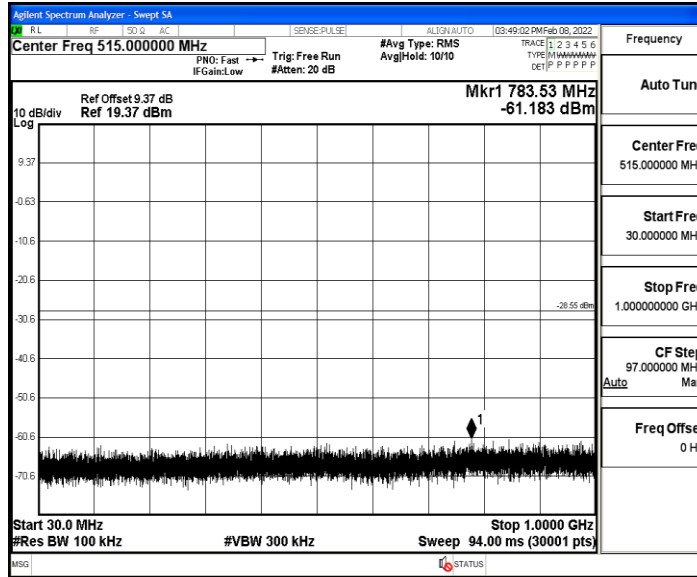
Test Graphs



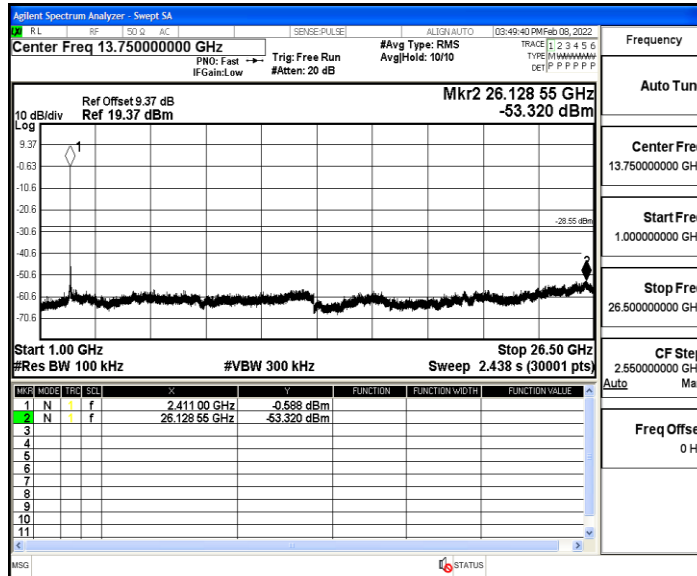
11B_Ant2_2412_0~Reference



11B_Ant2_2412_30~1000



11B_Ant2_2412_1000~26500



11B_Ant1_2437_0~Reference