

Appendix for WiFi

Product Name: 2.4 GHz Wi-Fi module
Model No: ESP32-WROOM-32UE

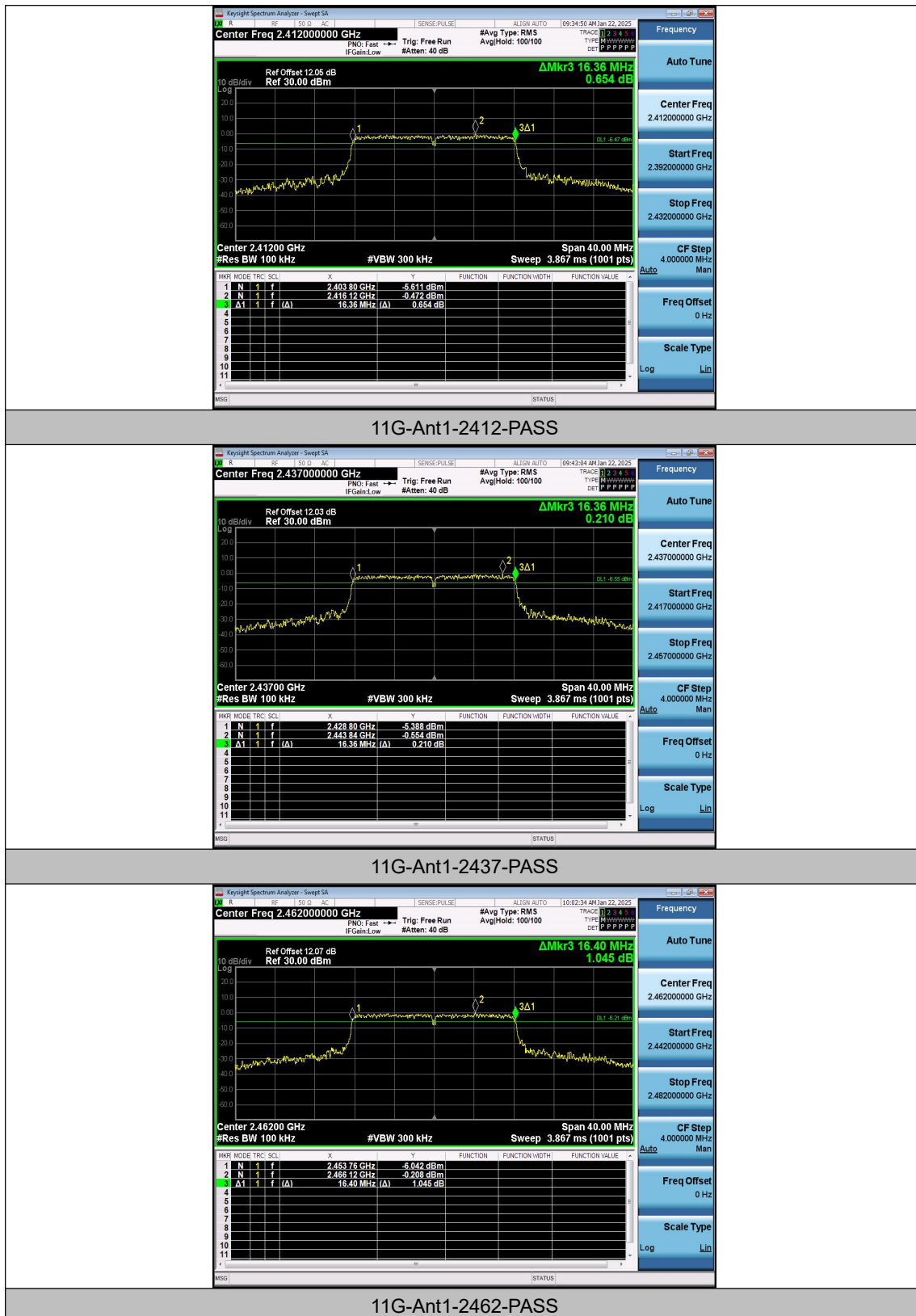
Appendix A: DTS Bandwidth

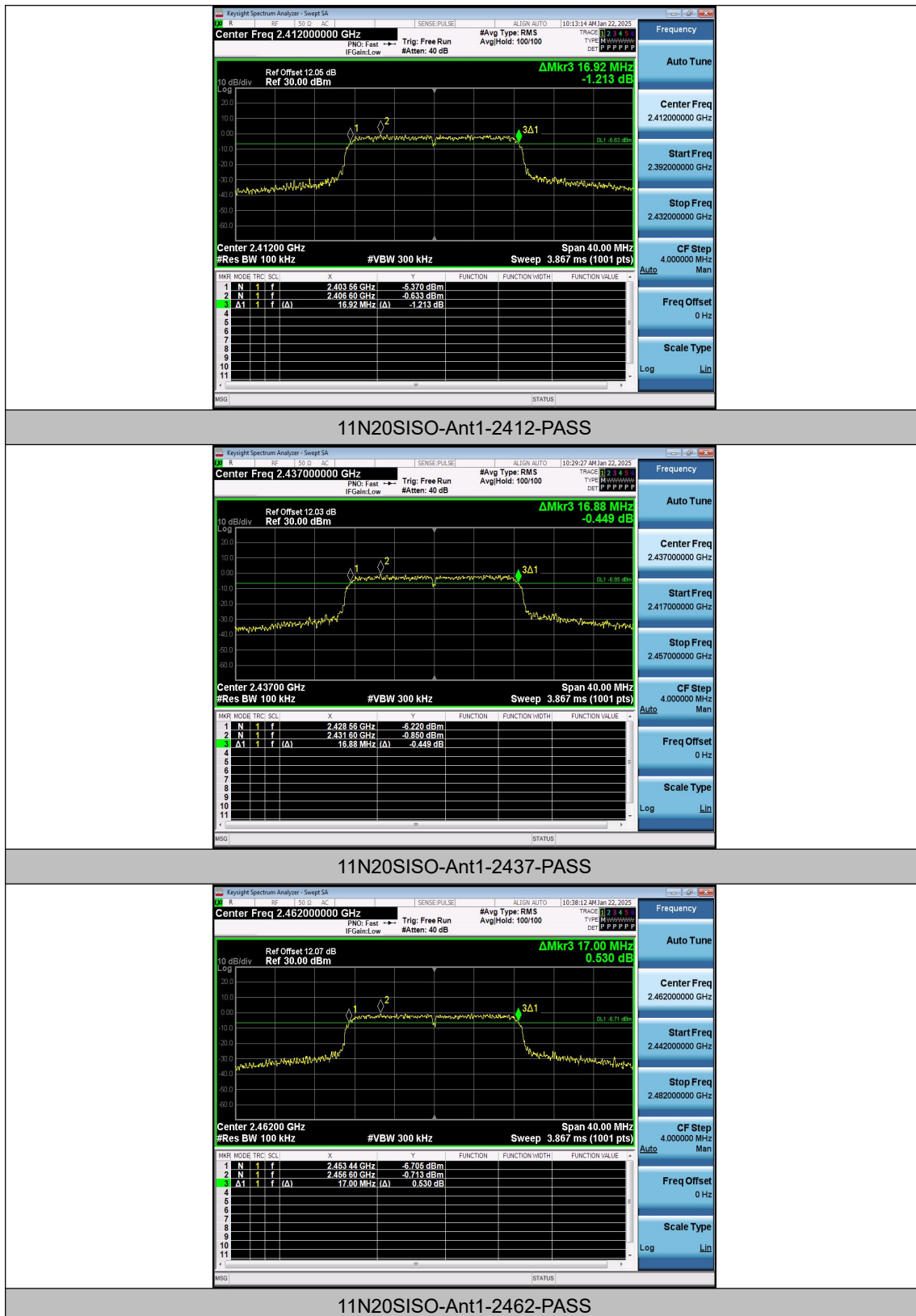
Test Result

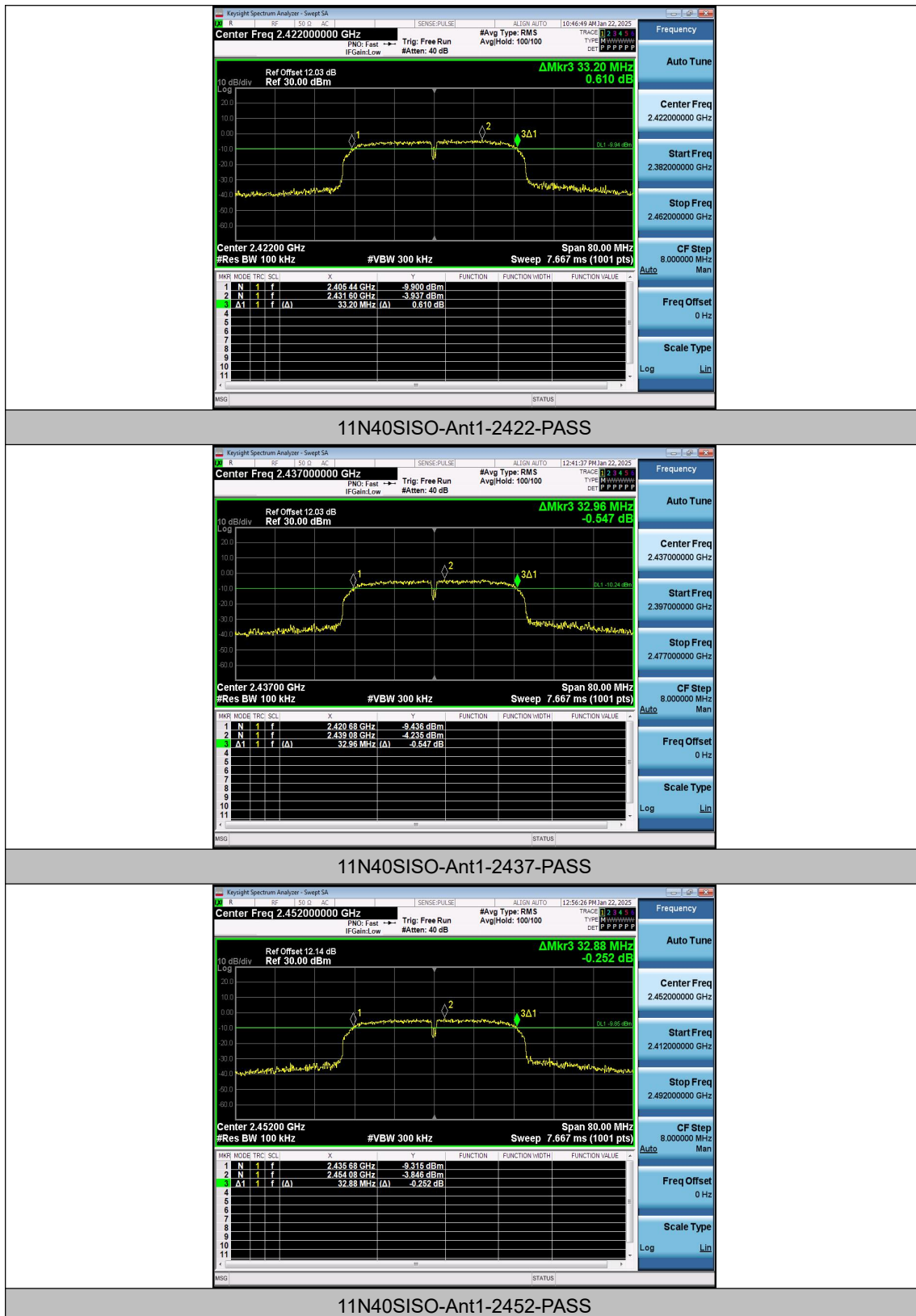
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.520	2407.000	2416.520	0.5	PASS
11B	Ant1	2437	9.080	2432.440	2441.520	0.5	PASS
11B	Ant1	2462	8.840	2457.400	2466.240	0.5	PASS
11G	Ant1	2412	16.360	2403.800	2420.160	0.5	PASS
11G	Ant1	2437	16.360	2428.800	2445.160	0.5	PASS
11G	Ant1	2462	16.400	2453.760	2470.160	0.5	PASS
11N20SISO	Ant1	2412	16.920	2403.560	2420.480	0.5	PASS
11N20SISO	Ant1	2437	16.880	2428.560	2445.440	0.5	PASS
11N20SISO	Ant1	2462	17.000	2453.440	2470.440	0.5	PASS
11N40SISO	Ant1	2422	33.200	2405.440	2438.640	0.5	PASS
11N40SISO	Ant1	2437	32.960	2420.680	2453.640	0.5	PASS
11N40SISO	Ant1	2452	32.880	2435.680	2468.560	0.5	PASS

Test Graphs









Appendix B: Maximum conducted output power

Test Result

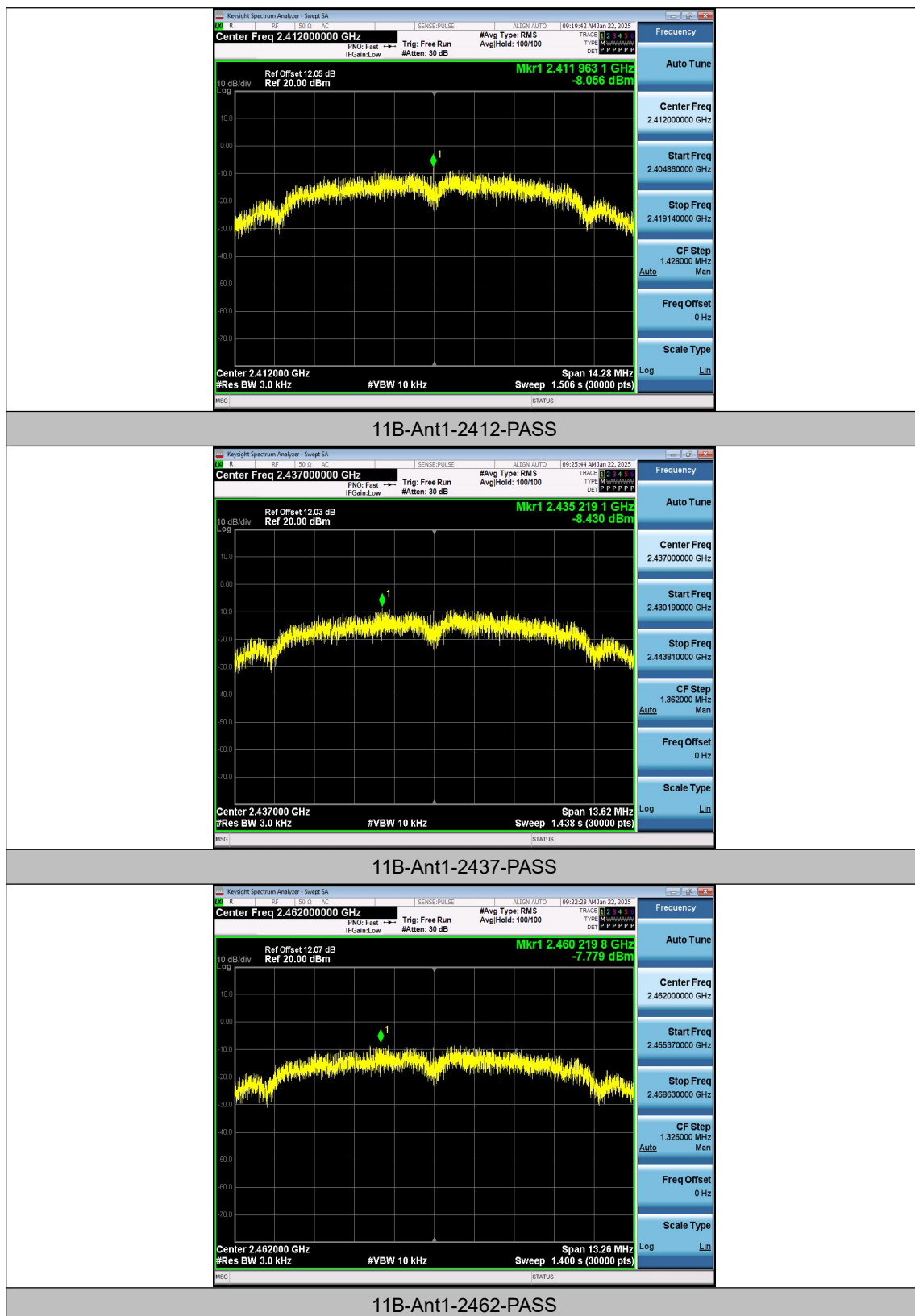
TestMode	Antenna	Frequency [MHz]	Peak Power[dBm]	Conducted Limit[dBm]	Verdict
11B	Ant1	2412	15.82	≤30.00	PASS
11B	Ant1	2437	15.74	≤30.00	PASS
11B	Ant1	2462	16.02	≤30.00	PASS
11G	Ant1	2412	14.00	≤30.00	PASS
11G	Ant1	2437	13.82	≤30.00	PASS
11G	Ant1	2462	14.23	≤30.00	PASS
11N20SISO	Ant1	2412	13.81	≤30.00	PASS
11N20SISO	Ant1	2437	13.63	≤30.00	PASS
11N20SISO	Ant1	2462	13.85	≤30.00	PASS
11N40SISO	Ant1	2422	13.24	≤30.00	PASS
11N40SISO	Ant1	2437	13.08	≤30.00	PASS
11N40SISO	Ant1	2452	13.09	≤30.00	PASS

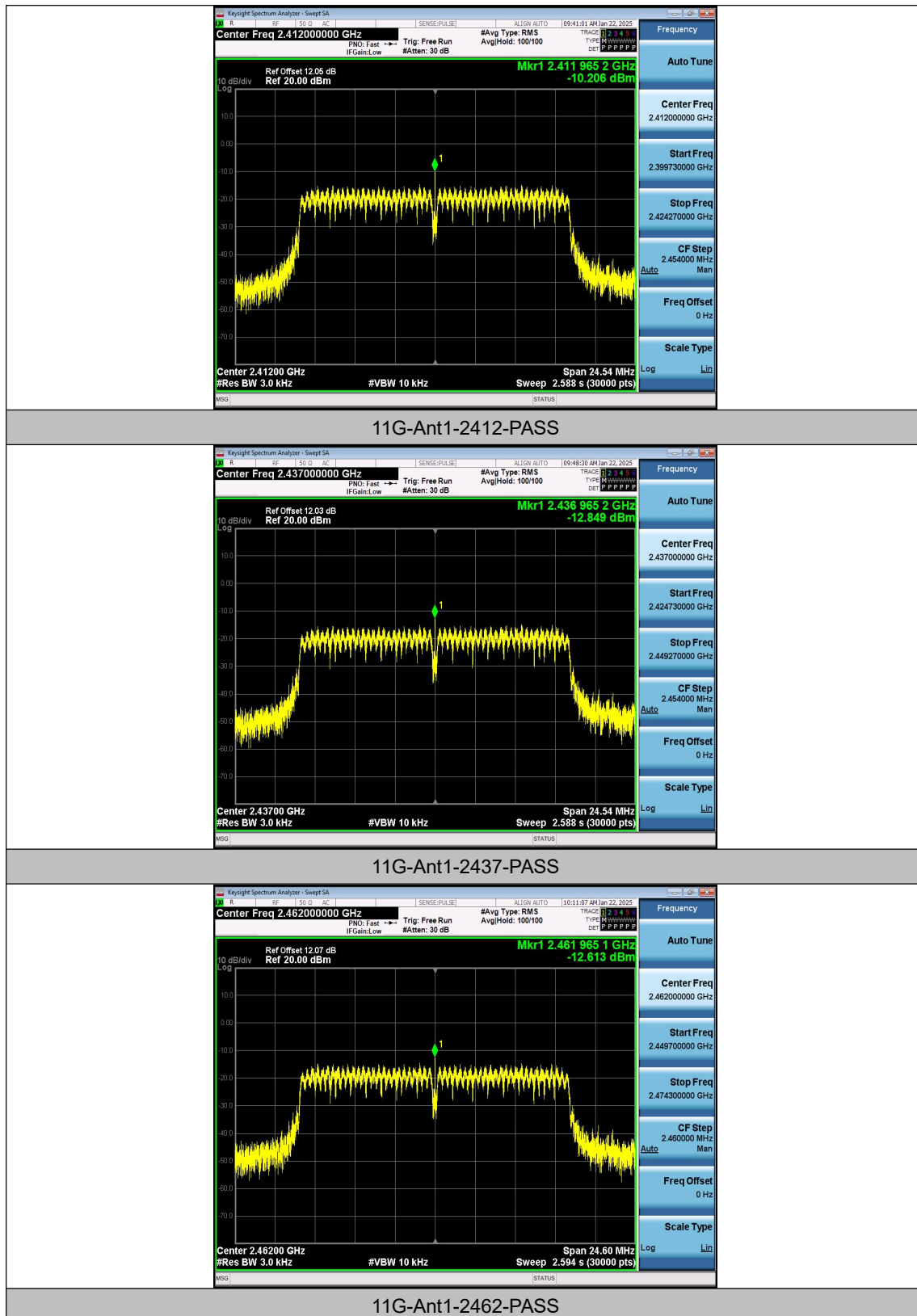
Appendix C: Maximum power spectral density

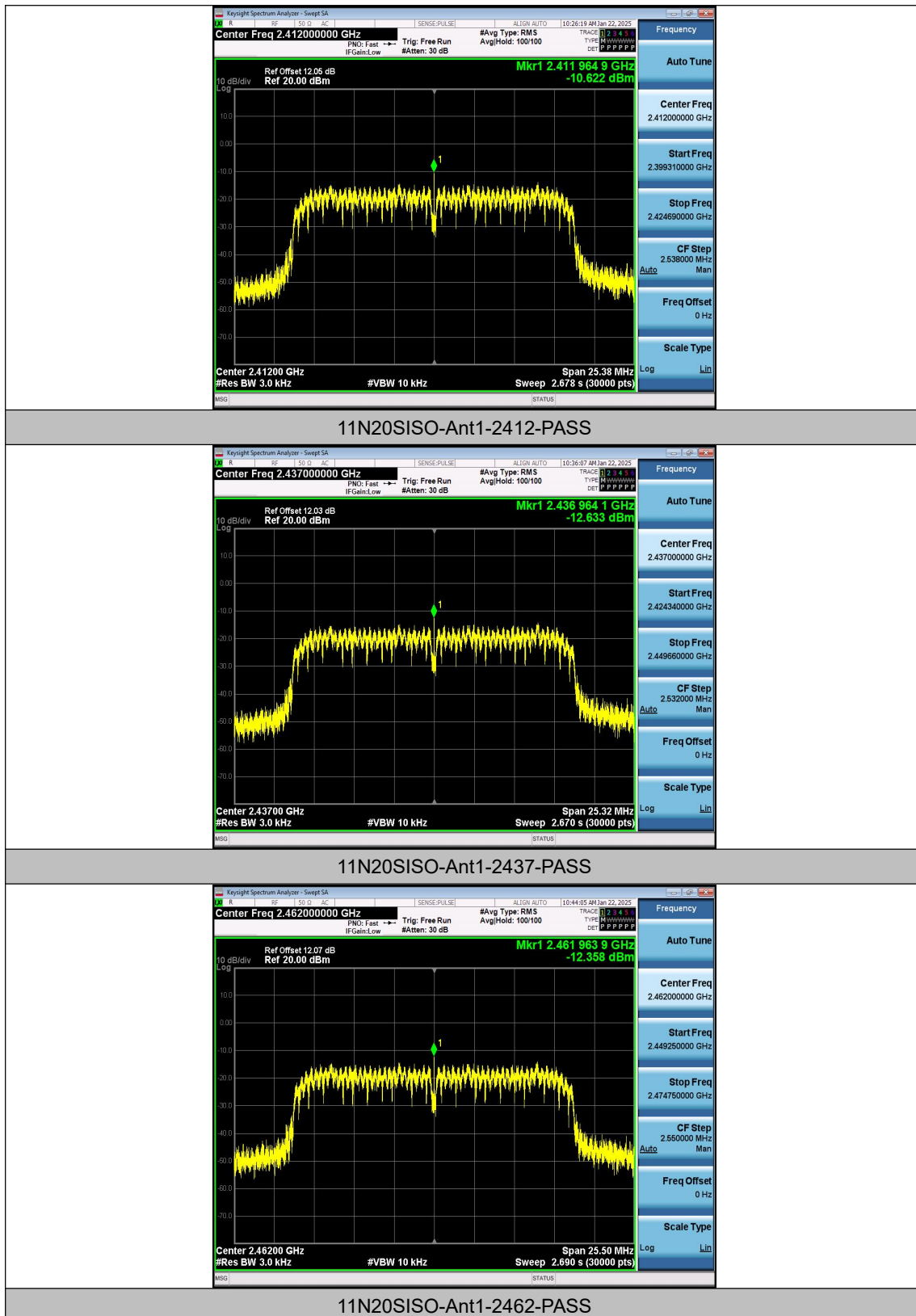
Test Result

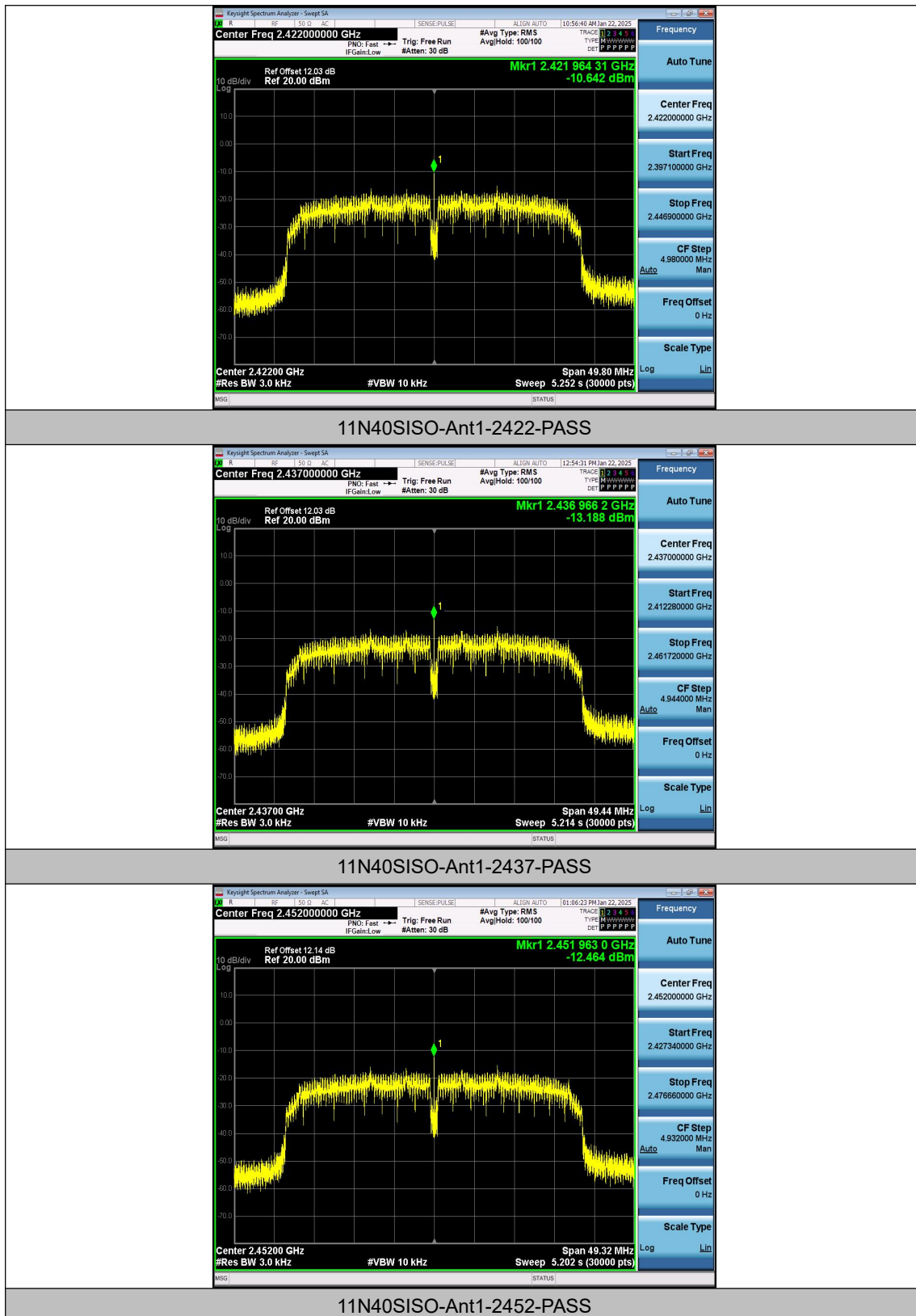
TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-8.06	≤8.00	PASS
11B	Ant1	2437	-8.43	≤8.00	PASS
11B	Ant1	2462	-7.78	≤8.00	PASS
11G	Ant1	2412	-10.21	≤8.00	PASS
11G	Ant1	2437	-12.85	≤8.00	PASS
11G	Ant1	2462	-12.61	≤8.00	PASS
11N20SISO	Ant1	2412	-10.62	≤8.00	PASS
11N20SISO	Ant1	2437	-12.63	≤8.00	PASS
11N20SISO	Ant1	2462	-12.36	≤8.00	PASS
11N40SISO	Ant1	2422	-10.64	≤8.00	PASS
11N40SISO	Ant1	2437	-13.19	≤8.00	PASS
11N40SISO	Ant1	2452	-12.46	≤8.00	PASS

Test Graphs







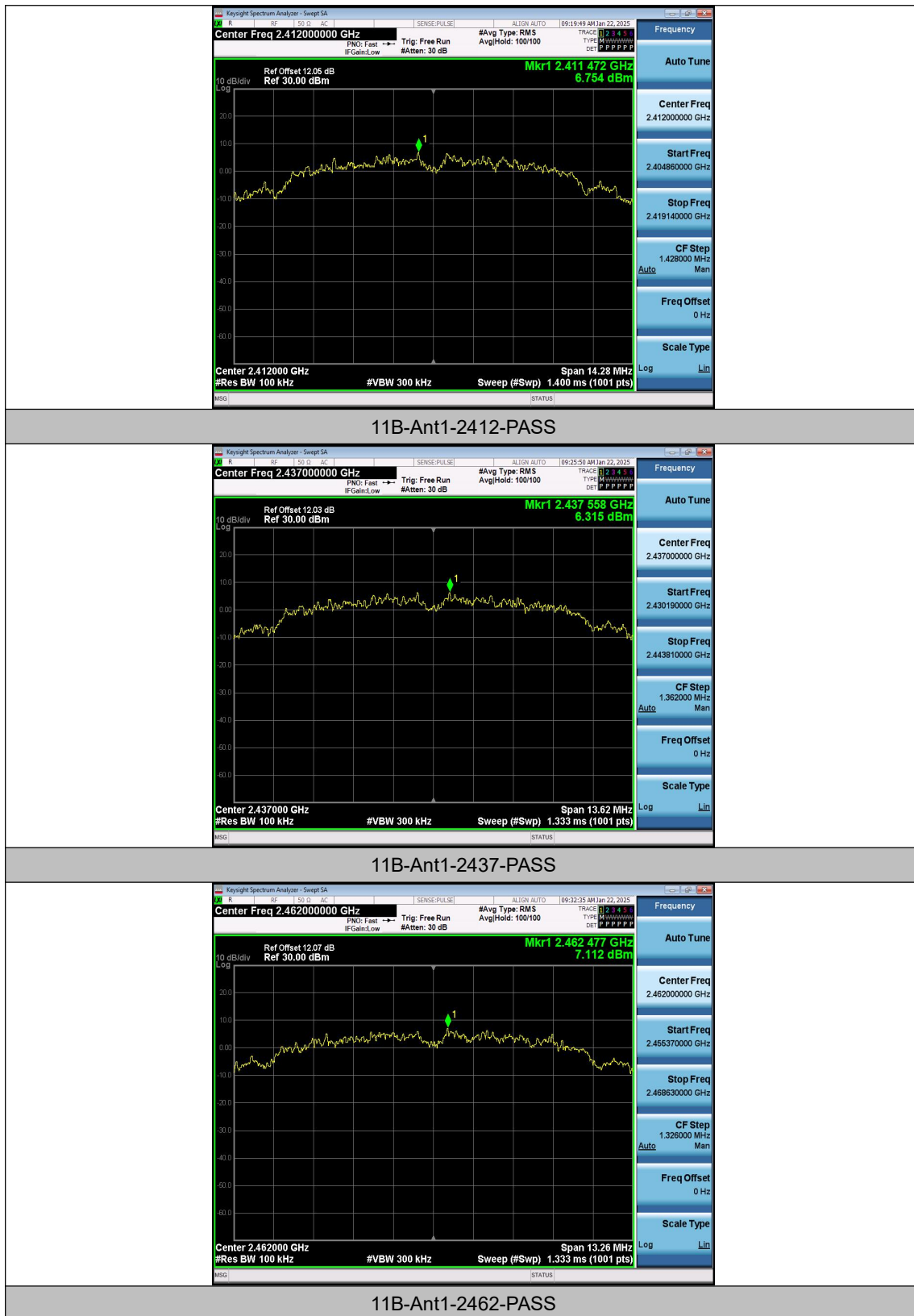


Appendix D: Reference level measurement

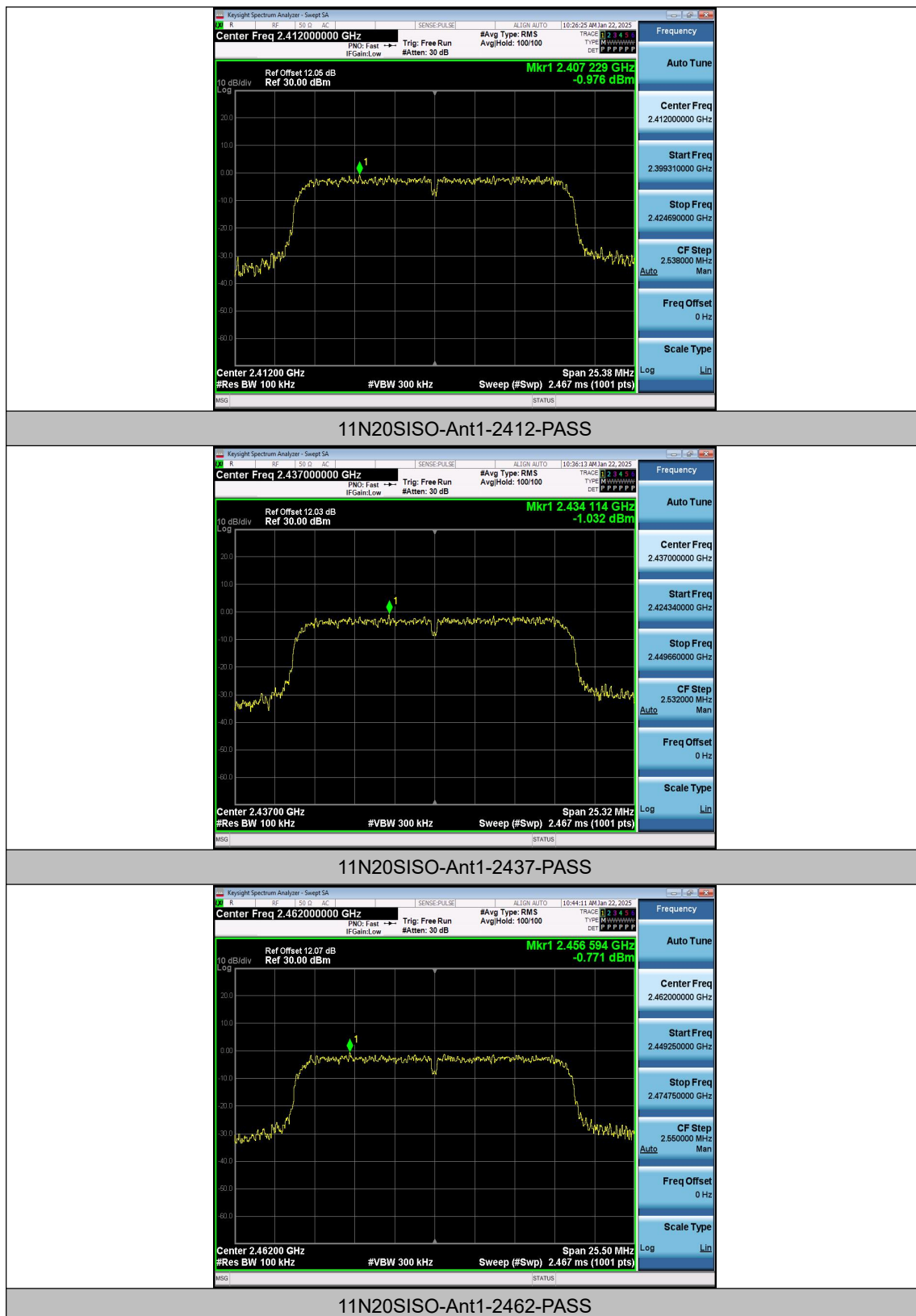
Test Result

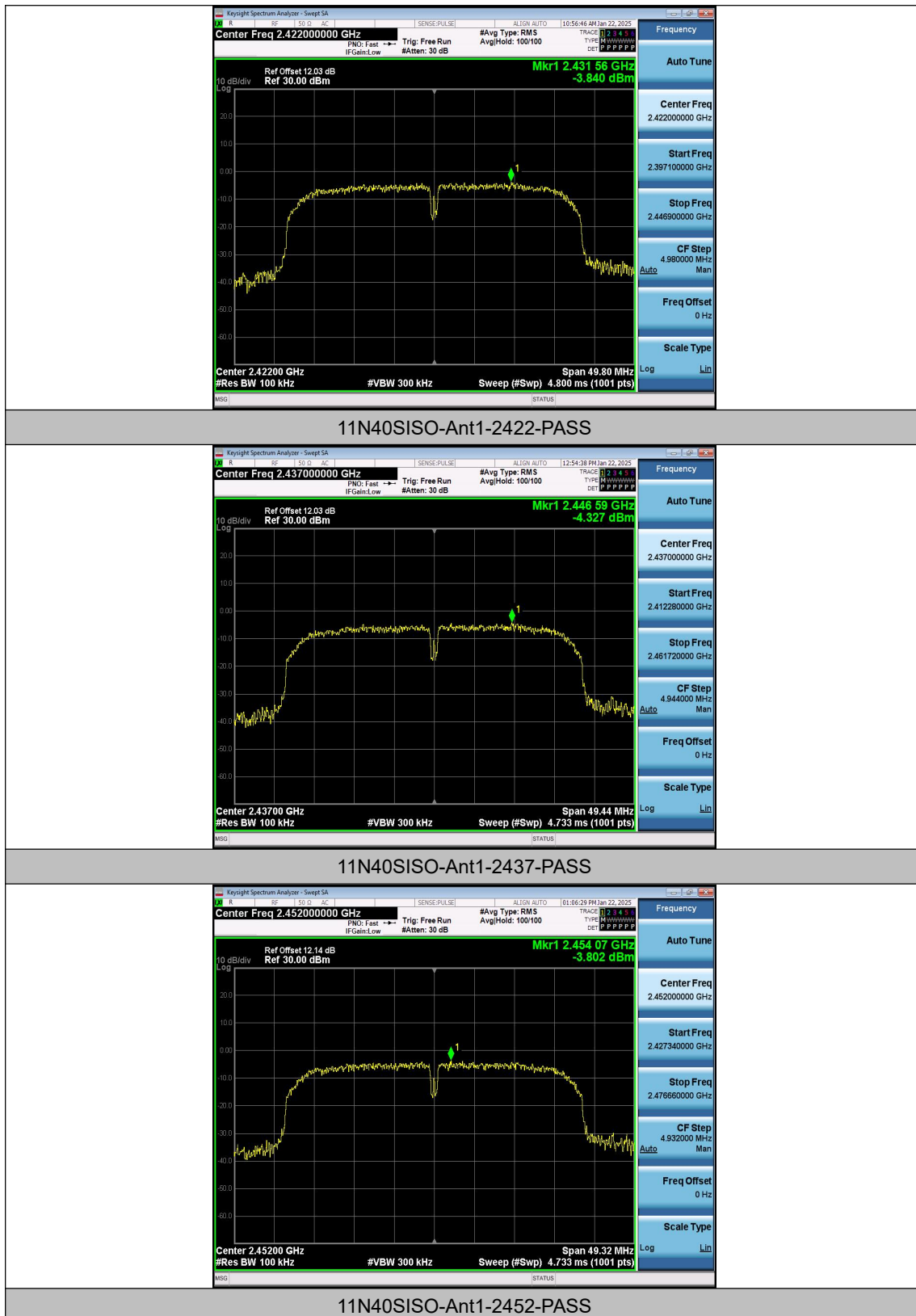
TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
11B	Ant1	2412	2411.47	6.75
11B	Ant1	2437	2437.56	6.32
11B	Ant1	2462	2462.48	7.11
11G	Ant1	2412	2416.15	-0.52
11G	Ant1	2437	2441.12	-0.72
11G	Ant1	2462	2466.13	-0.38
11N20SISO	Ant1	2412	2407.23	-0.98
11N20SISO	Ant1	2437	2434.11	-1.03
11N20SISO	Ant1	2462	2456.59	-0.77
11N40SISO	Ant1	2422	2431.56	-3.84
11N40SISO	Ant1	2437	2446.59	-4.33
11N40SISO	Ant1	2452	2454.07	-3.80

Test Graphs









Appendix E: Band edge measurements

Test Result

TestMode	Antenna	ChName	Frequency [MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	6.75	-40.54	≤-13.25	PASS
11B	Ant1	High	2462	7.11	-46.33	≤-12.89	PASS
11G	Ant1	Low	2412	-0.52	-28.59	≤-20.52	PASS
11G	Ant1	High	2462	-0.38	-39.35	≤-20.38	PASS
11N20SISO	Ant1	Low	2412	-0.98	-33.02	≤-20.98	PASS
11N20SISO	Ant1	High	2462	-0.77	-38.2	≤-20.77	PASS
11N40SISO	Ant1	Low	2422	-3.84	-36.56	≤-23.84	PASS
11N40SISO	Ant1	High	2452	-3.80	-36.24	≤-23.8	PASS