

Appendix B

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Smart Camera

Test Model: ATUSW3CR

Environmental Conditions

Temperature:	24.9°C
Relative Humidity:	52.5%
ATM Pressure:	100.0 kPa
Test Engineer:	Suichao Lai
Supervised by:	Yan Chen

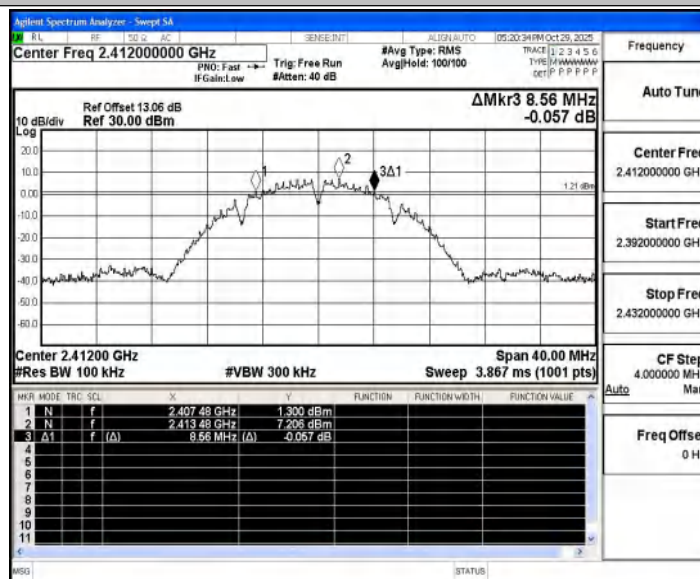
B.1 -6dB Bandwidth

Test Result

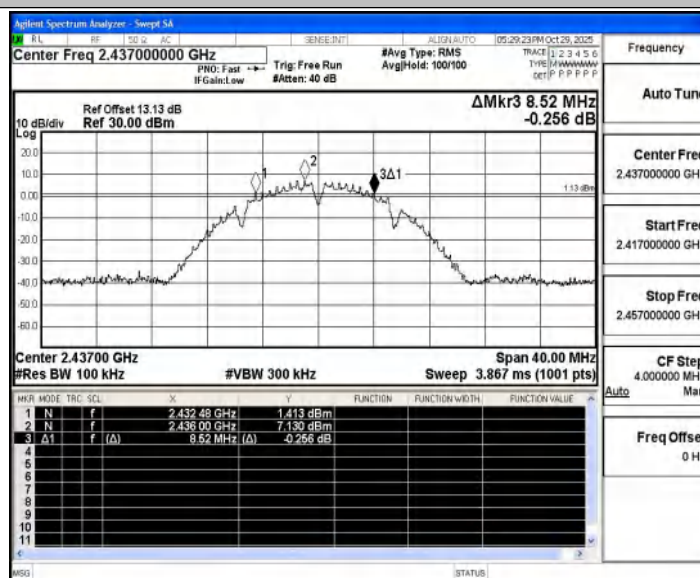
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.560	2407.480	2416.040	0.5	PASS
		2437	8.520	2432.480	2441.000	0.5	PASS
		2462	8.040	2457.960	2466.000	0.5	PASS
11G	Ant1	2412	16.280	2403.840	2420.120	0.5	PASS
		2437	15.680	2428.880	2444.560	0.5	PASS
		2462	15.760	2454.440	2470.200	0.5	PASS
11N20SISO	Ant1	2412	16.880	2403.240	2420.120	0.5	PASS
		2437	15.040	2429.480	2444.520	0.5	PASS
		2462	17.320	2453.440	2470.760	0.5	PASS

Test Graphs

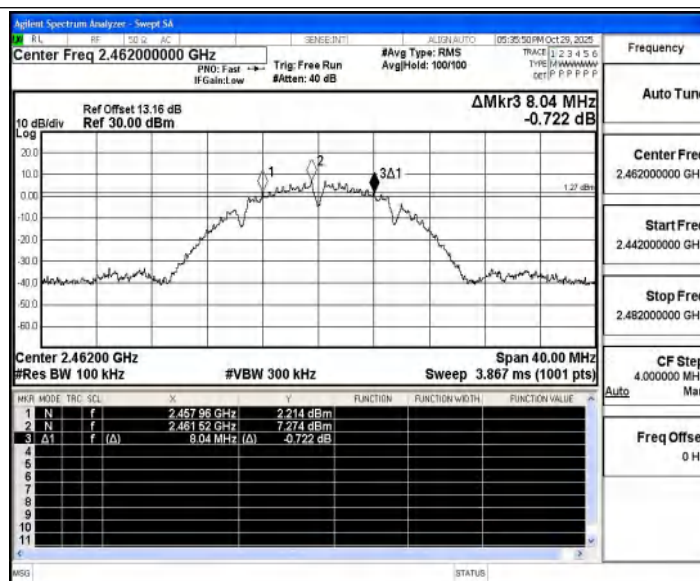
11B_Ant1_2412



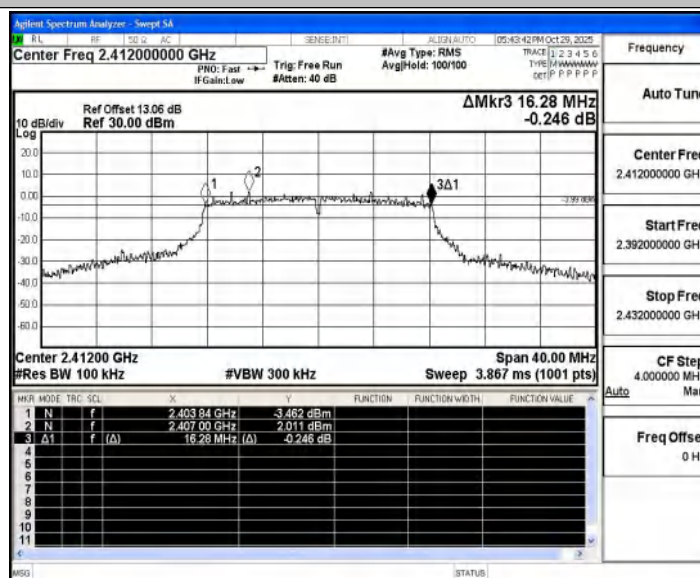
11B_Ant1_2437



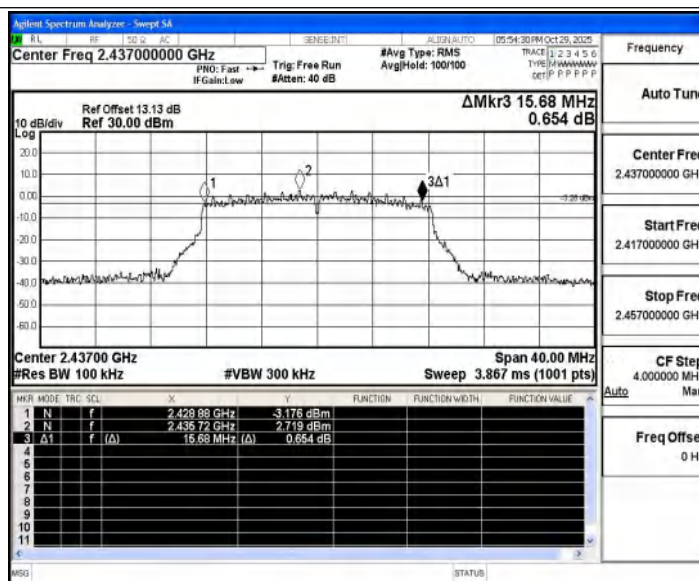
11B_Ant1_2462



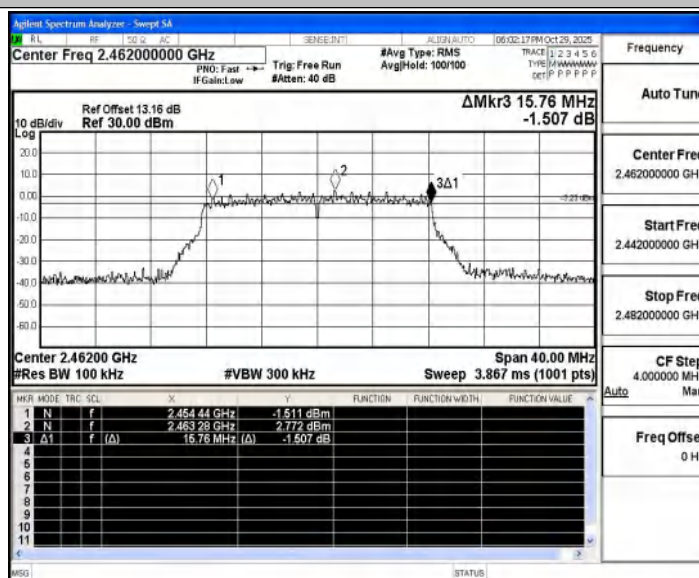
11G_Ant1_2412



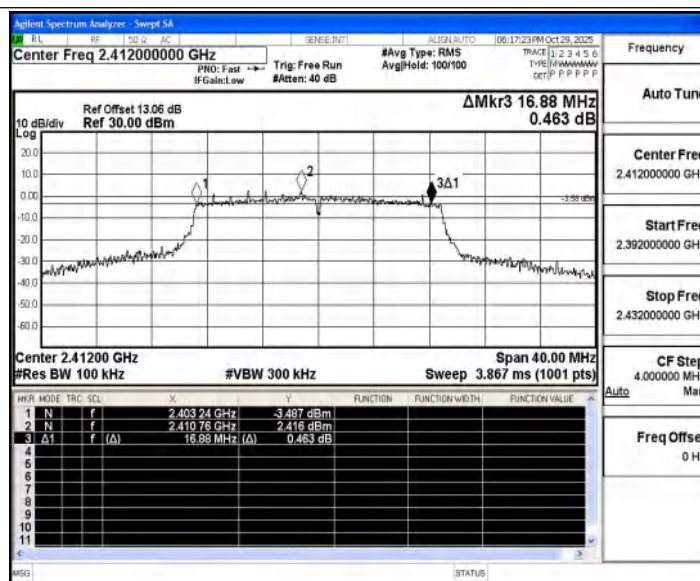
11G_Ant1_2437



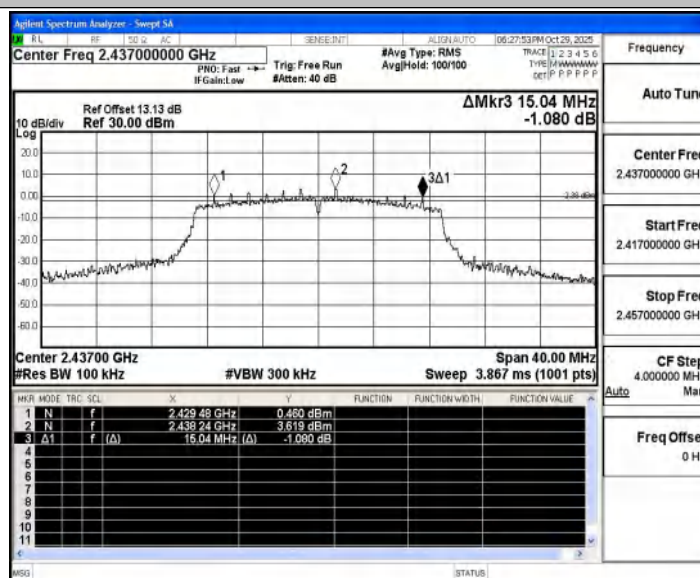
11G_Ant1_2462



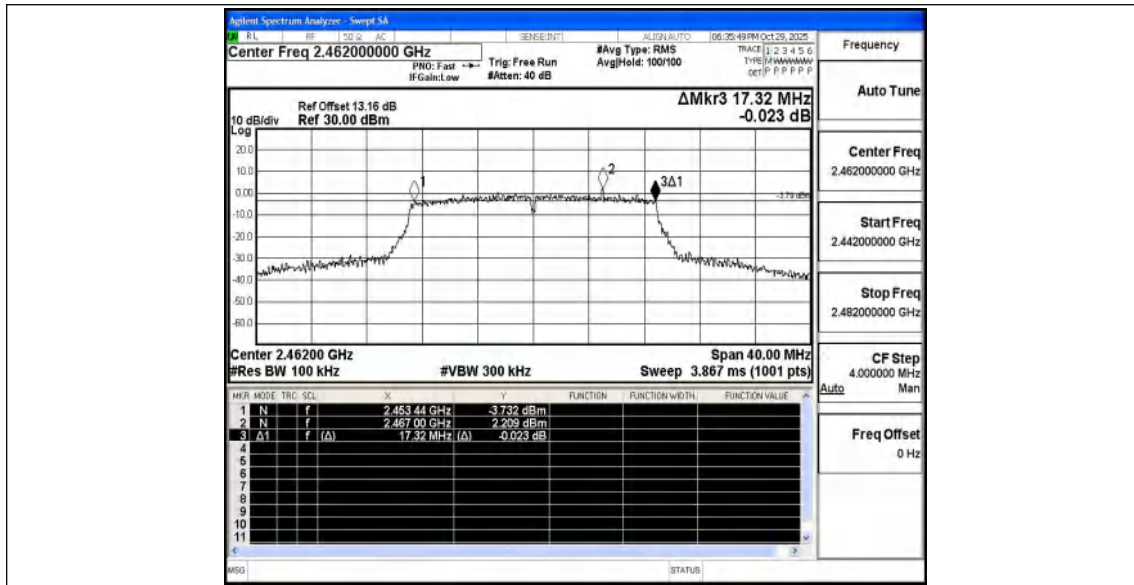
11N20SISO_Ant1_2412



11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



B.2 Maximum Peak Conducted Output Power

Test Result Peak

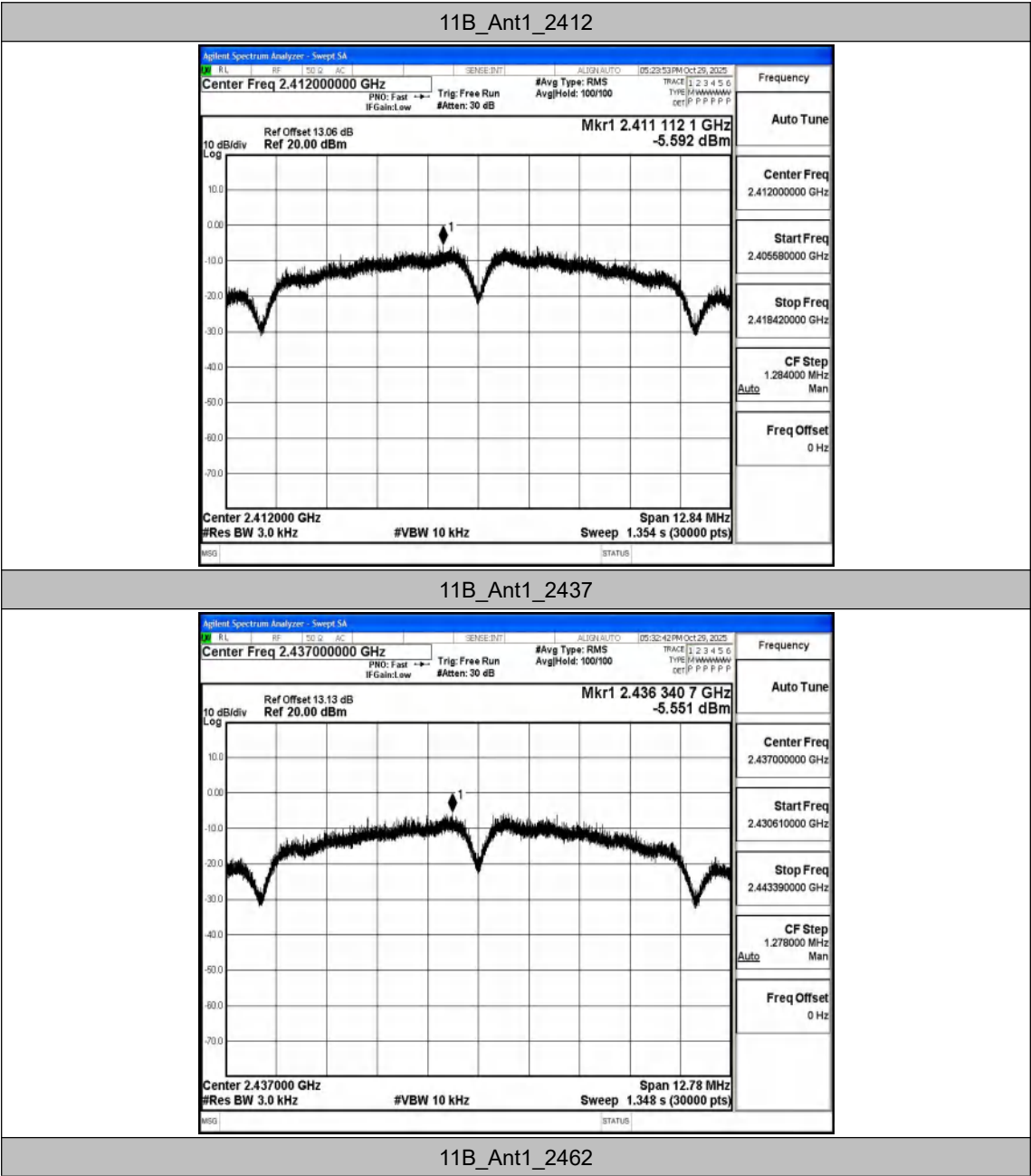
TestMode	Antenna	Frequency[MHz]	Set Power	Peak Power[dBm]	Conducted Limit[dBm]	Verdict
11B	Ant1	2412	NA	14.85	≤30.00	PASS
		2437	NA	15.98	≤30.00	PASS
		2462	NA	14.98	≤30.00	PASS
11G	Ant1	2412	NA	14.21	≤30.00	PASS
		2437	NA	14.29	≤30.00	PASS
		2462	NA	14.40	≤30.00	PASS
11N20SISO	Ant1	2412	NA	14.14	≤30.00	PASS
		2437	NA	14.52	≤30.00	PASS
		2462	NA	14.43	≤30.00	PASS

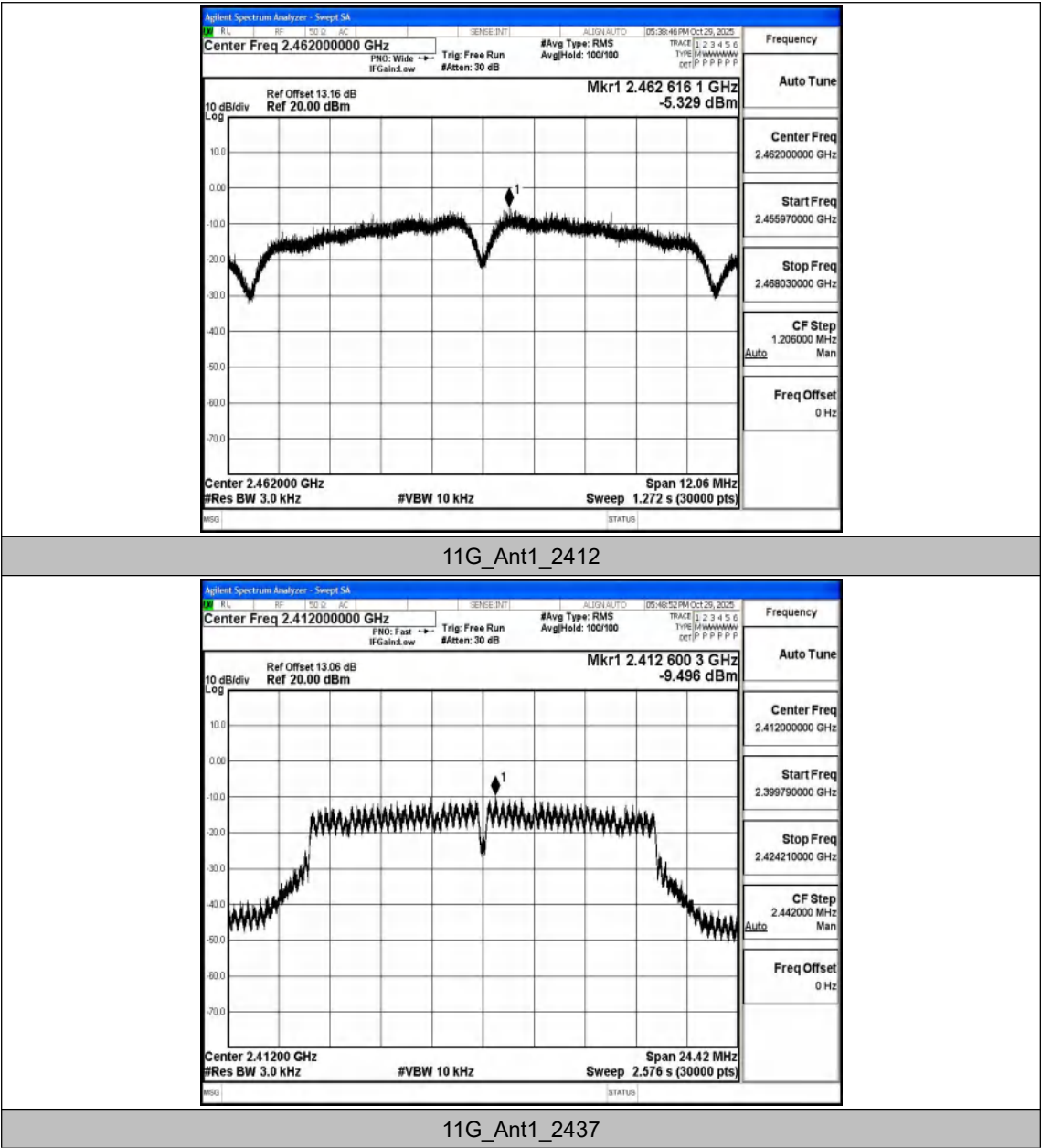
B.3 Maximum power spectral density

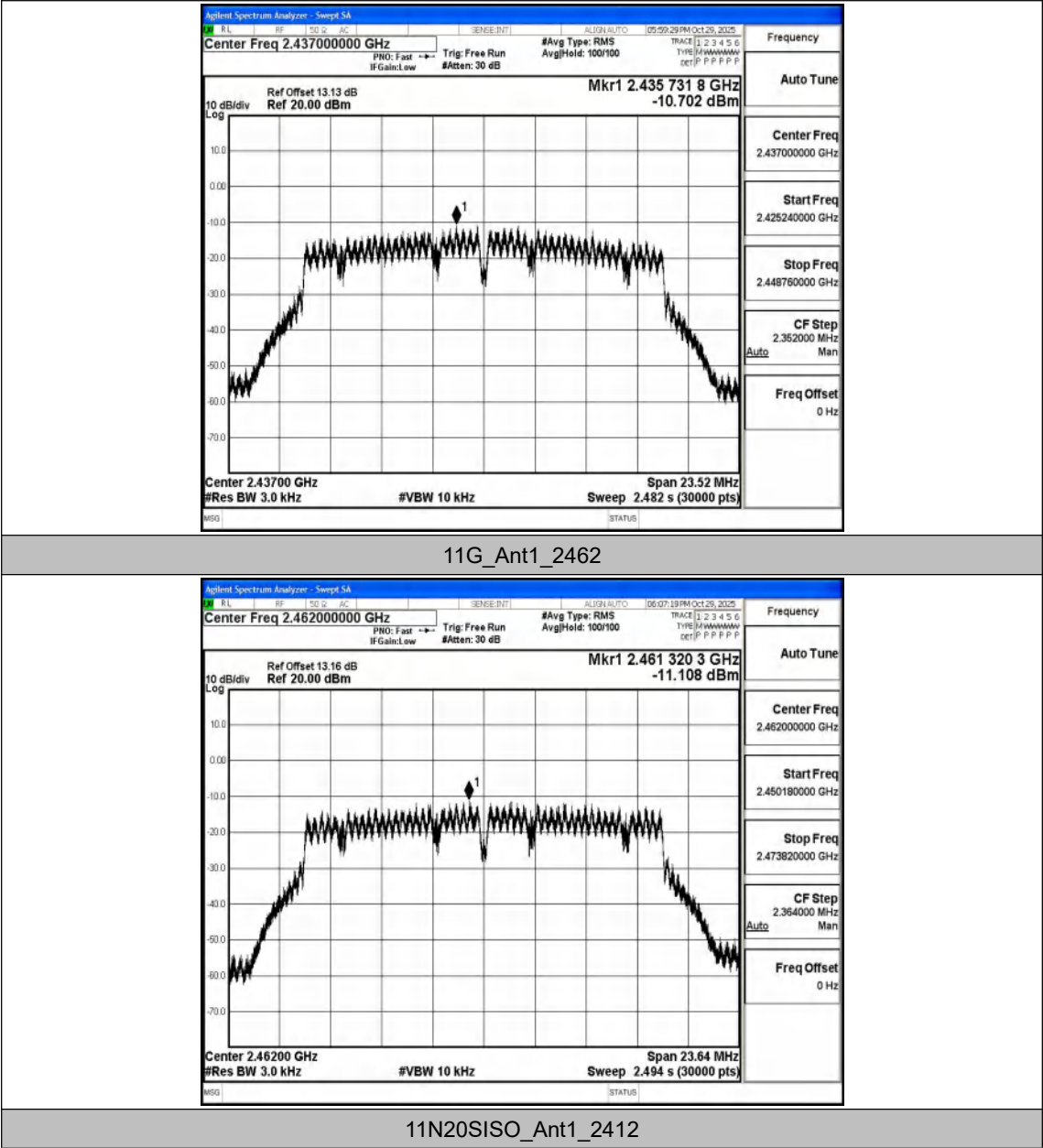
Test Result

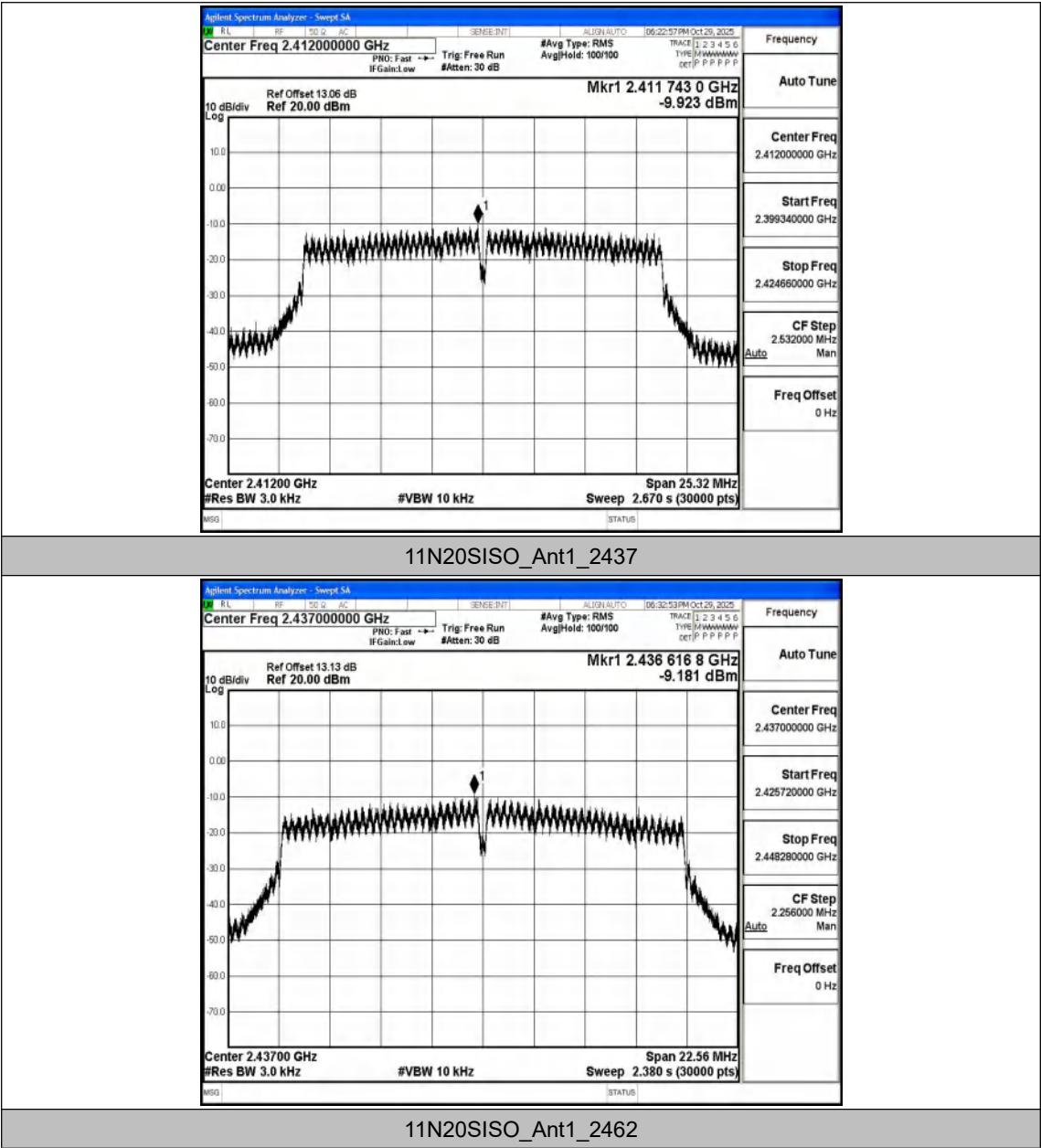
TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-5.59	≤8.00	PASS
		2437	-5.55	≤8.00	PASS
		2462	-5.33	≤8.00	PASS
11G	Ant1	2412	-9.50	≤8.00	PASS
		2437	-10.70	≤8.00	PASS
		2462	-11.11	≤8.00	PASS
11N20SISO	Ant1	2412	-9.92	≤8.00	PASS
		2437	-9.18	≤8.00	PASS
		2462	-9.18	≤8.00	PASS

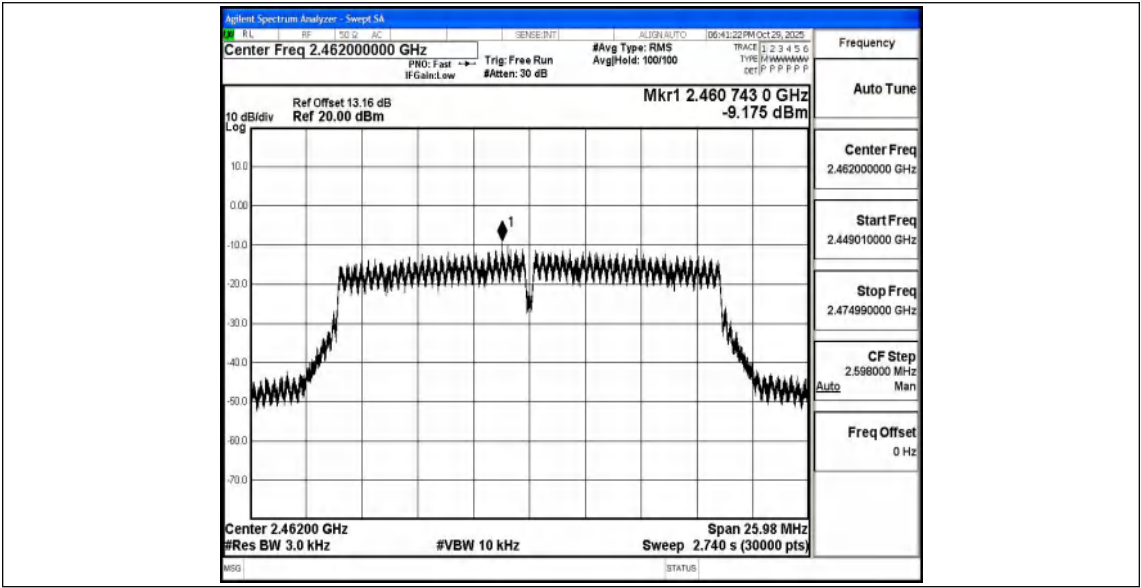
Test Graphs









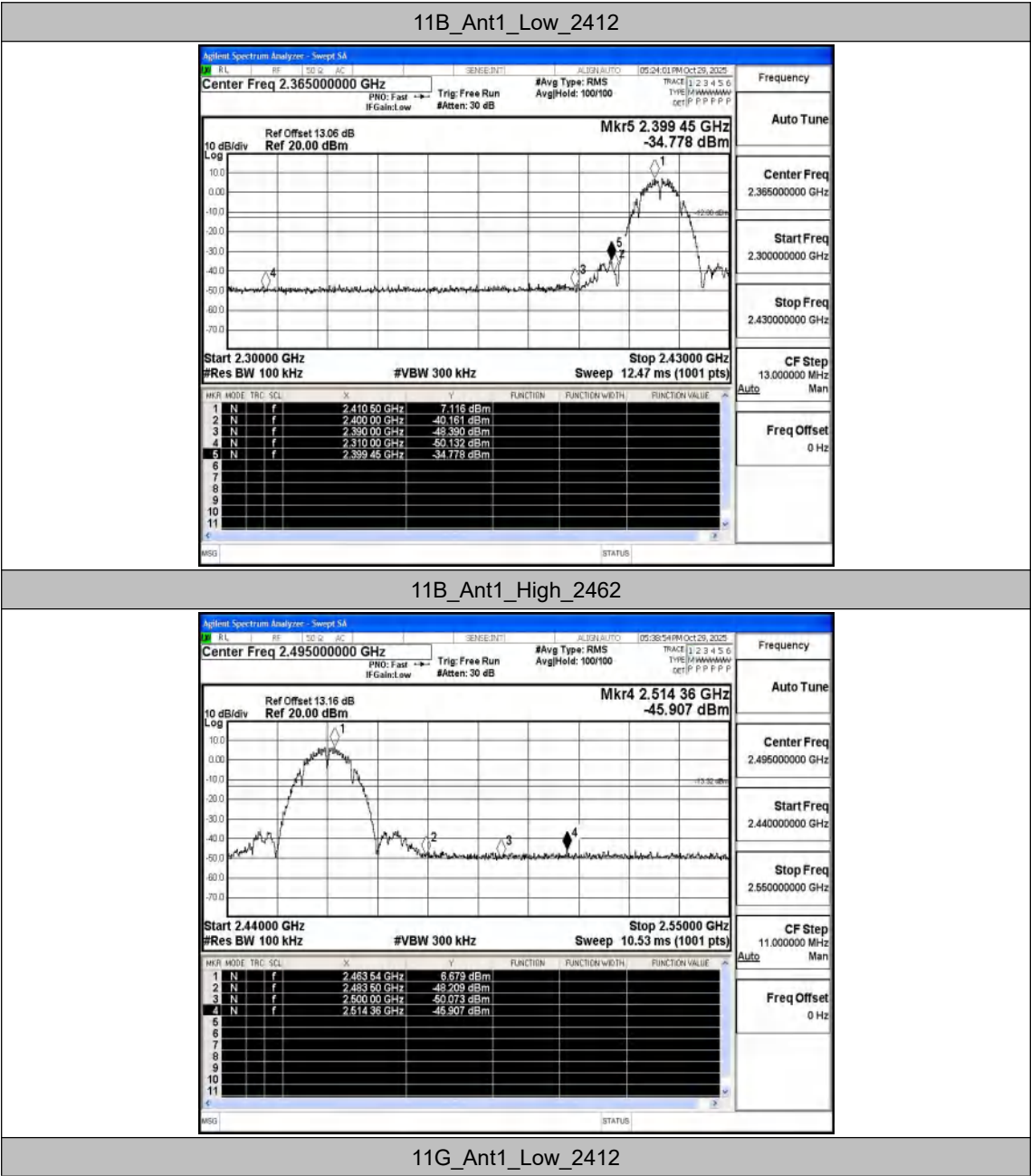


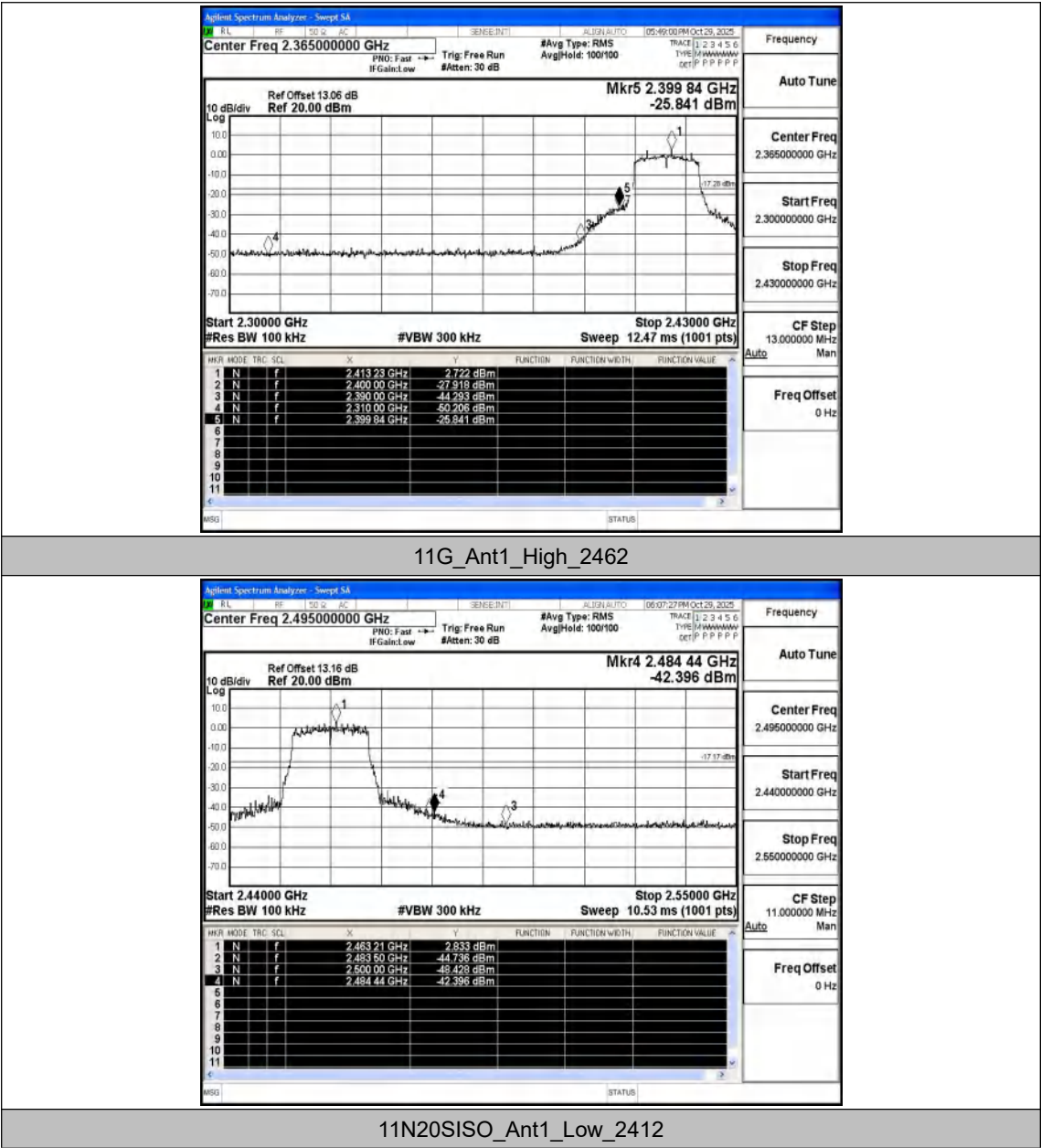
B.4 Band edge measurements

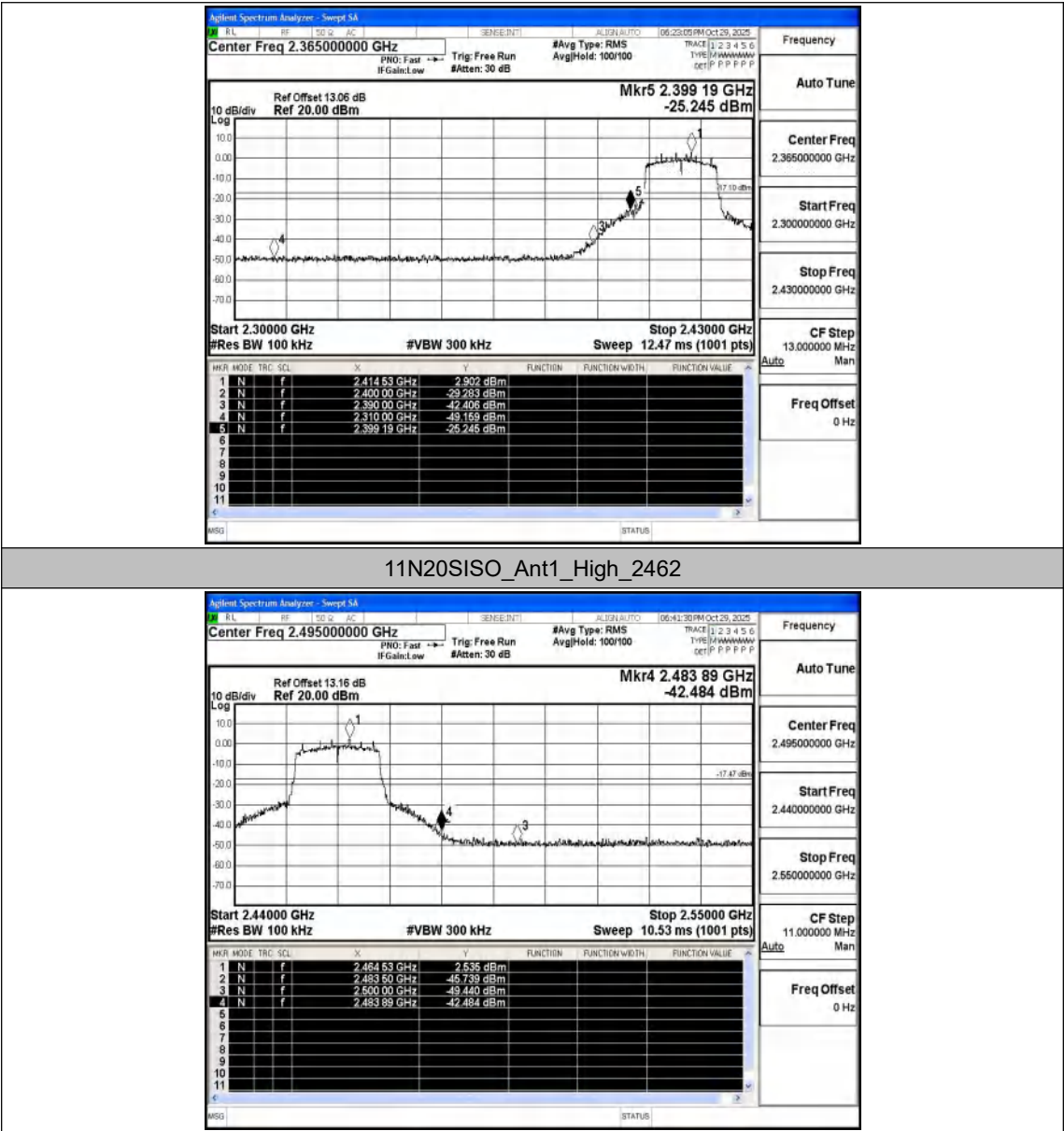
Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	7.12	-34.78	≤ -12.88	PASS
		High	2462	6.68	-45.91	≤ -13.32	PASS
11G	Ant1	Low	2412	2.72	-25.84	≤ -17.28	PASS
		High	2462	2.83	-42.4	≤ -17.17	PASS
11N20SISO	Ant1	Low	2412	2.90	-25.25	≤ -17.1	PASS
		High	2462	2.54	-42.48	≤ -17.47	PASS

Test Graphs





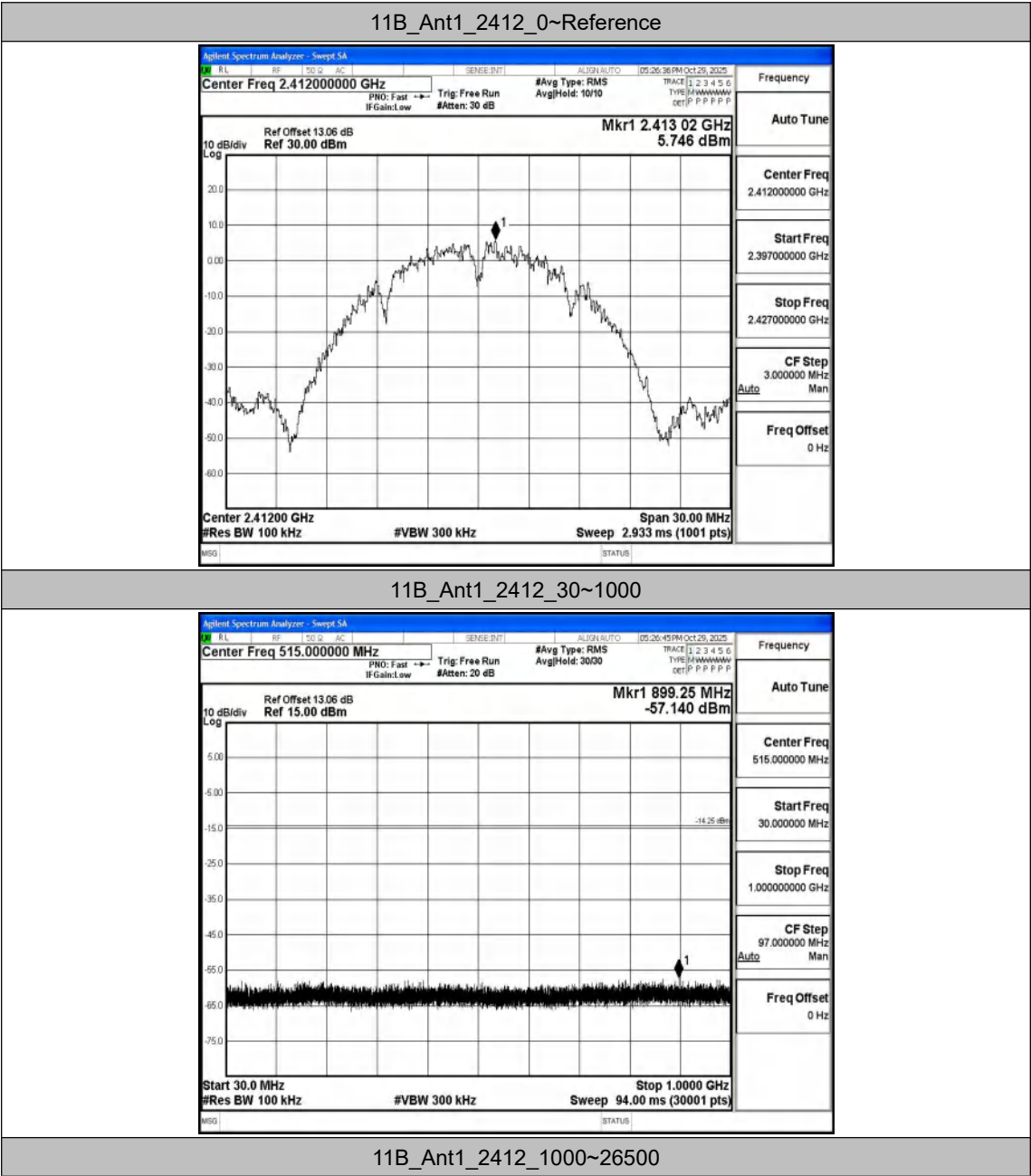


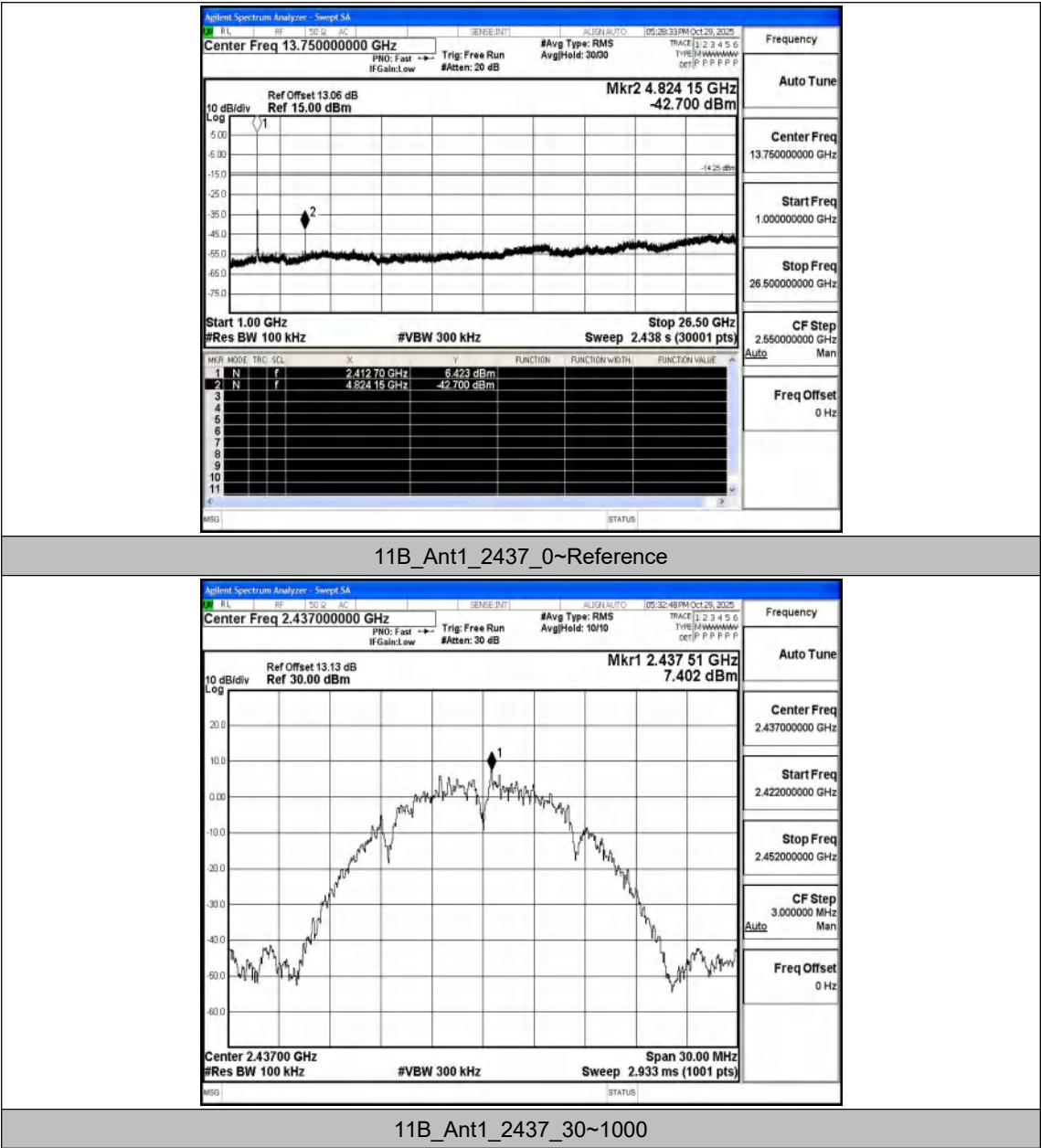
B.5 Conducted Spurious Emission

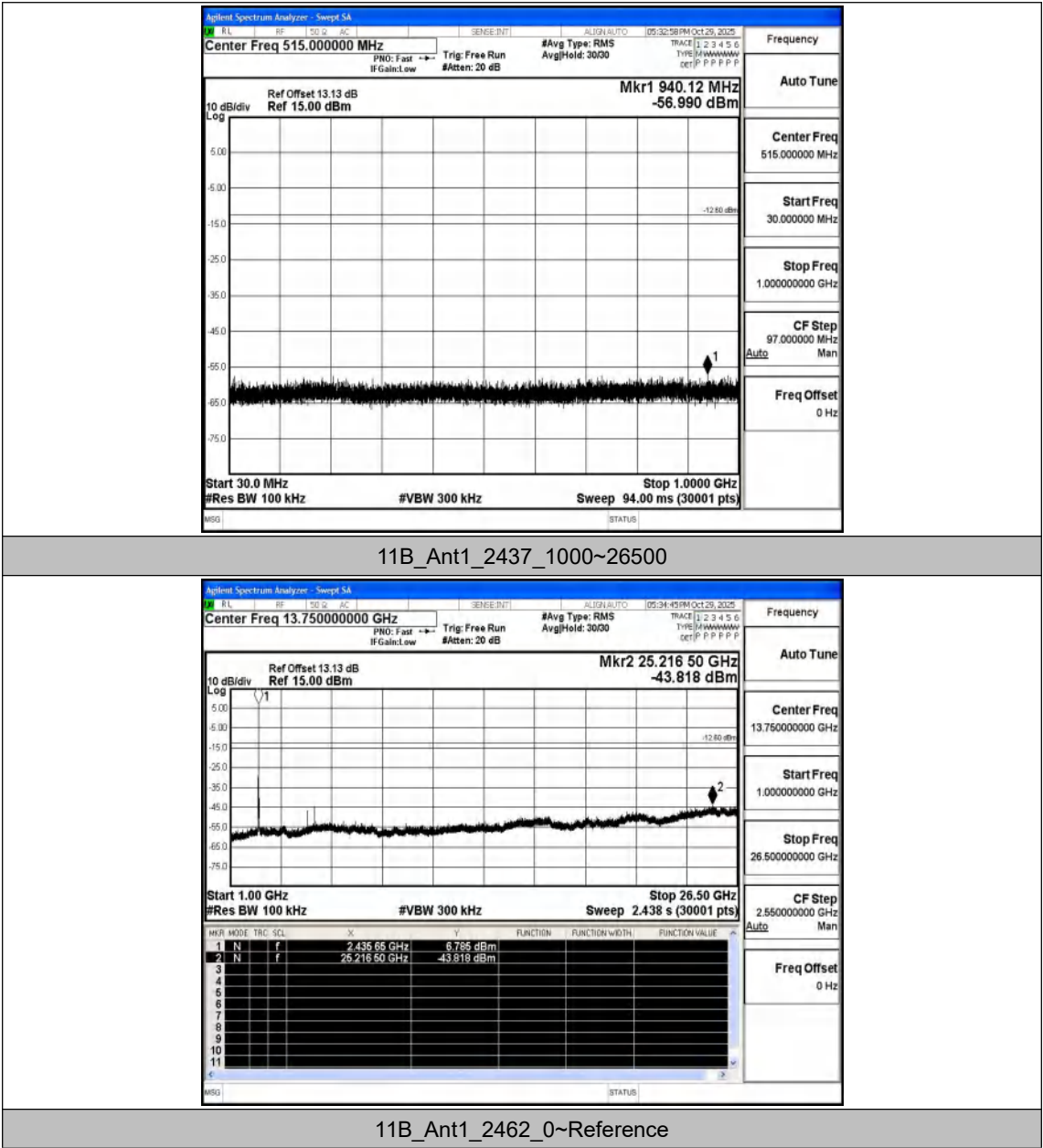
Test Result

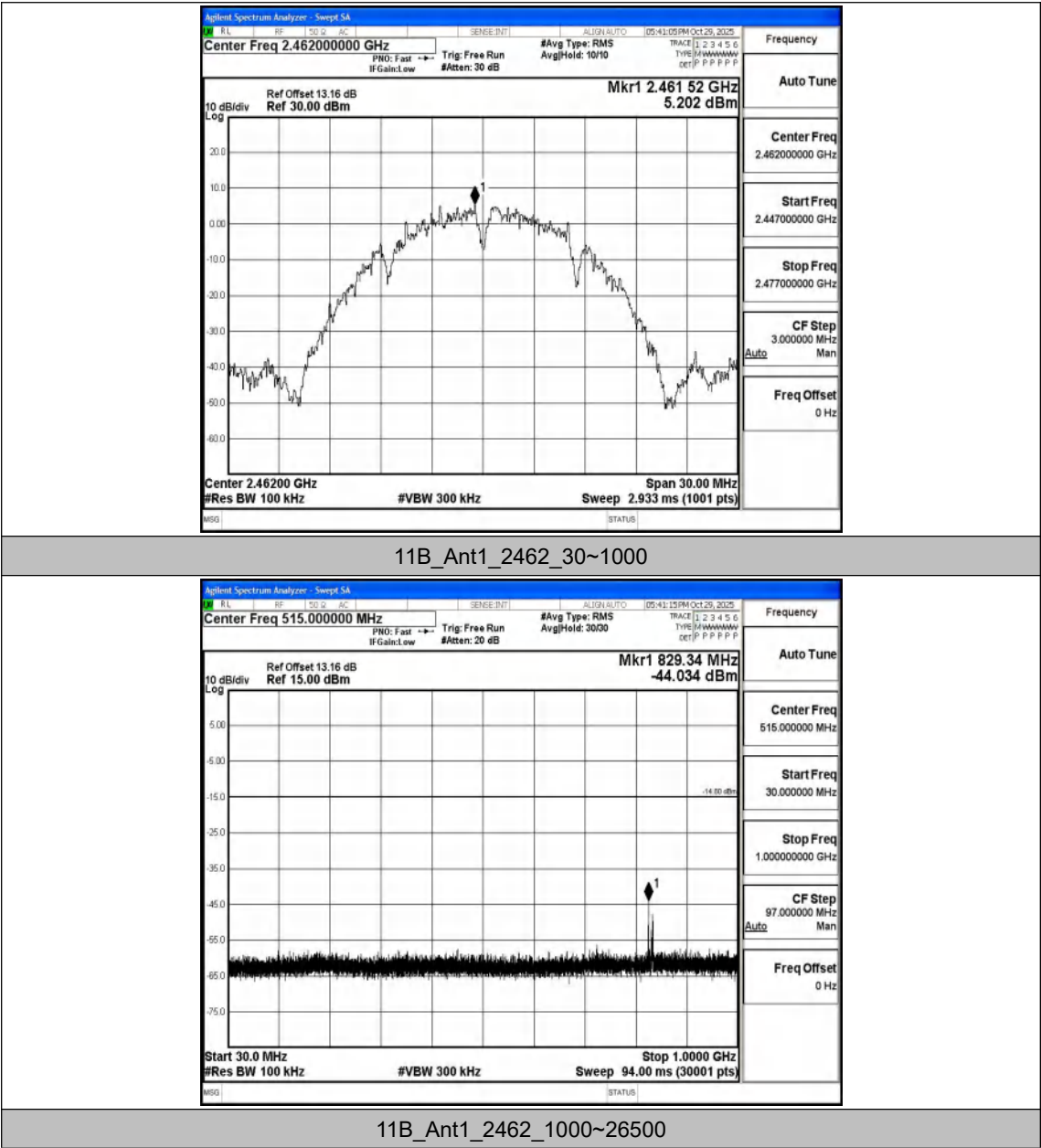
TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	5.75	5.75	---	PASS
			30~1000	5.75	-57.14	≤-14.25	PASS
			1000~26500	5.75	-42.7	≤-14.25	PASS
		2437	Reference	7.40	7.40	---	PASS
			30~1000	7.40	-56.99	≤-12.6	PASS
			1000~26500	7.40	-43.82	≤-12.6	PASS
		2462	Reference	5.20	5.20	---	PASS
			30~1000	5.20	-44.03	≤-14.8	PASS
			1000~26500	5.20	-42.9	≤-14.8	PASS
11G	Ant1	2412	Reference	2.37	2.37	---	PASS
			30~1000	2.37	-34.88	≤-17.63	PASS
			1000~26500	2.37	-44.32	≤-17.63	PASS
		2437	Reference	2.08	2.08	---	PASS
			30~1000	2.08	-42.01	≤-17.92	PASS
			1000~26500	2.08	-43.65	≤-17.92	PASS
		2462	Reference	-4.63	-4.63	---	PASS
			30~1000	-4.63	-56.8	≤-24.63	PASS
			1000~26500	-4.63	-42.93	≤-24.63	PASS
11N20SISO	Ant1	2412	Reference	0.49	0.49	---	PASS
			30~1000	0.49	-56.66	≤-19.51	PASS
			1000~26500	0.49	-43.54	≤-19.51	PASS
		2437	Reference	-0.50	-0.50	---	PASS
			30~1000	-0.50	-32.9	≤-20.5	PASS
			1000~26500	-0.50	-43.51	≤-20.5	PASS
		2462	Reference	-3.70	-3.70	---	PASS
			30~1000	-3.70	-55.21	≤-23.7	PASS
			1000~26500	-3.70	-41.34	≤-23.7	PASS

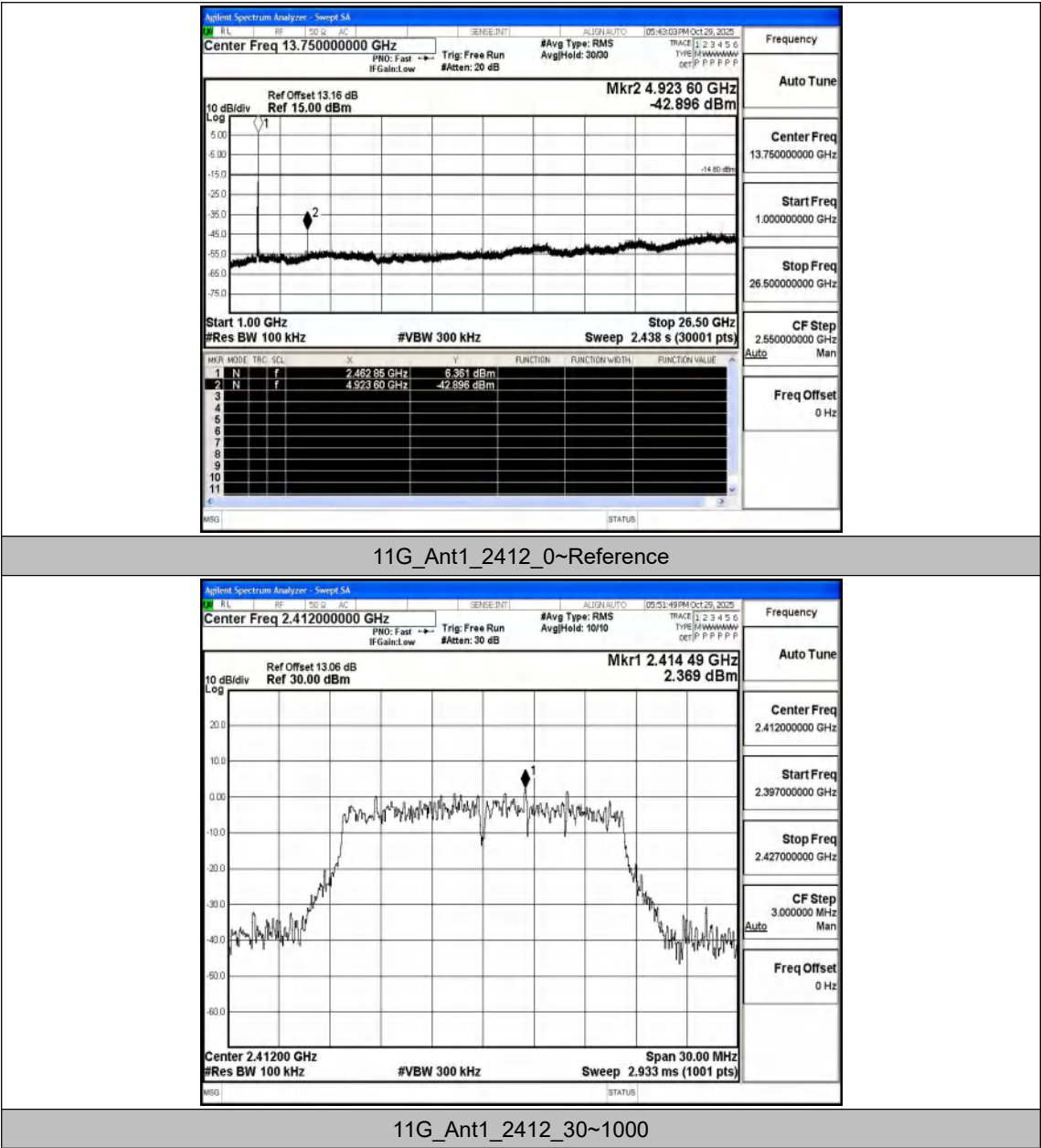
Test Graphs



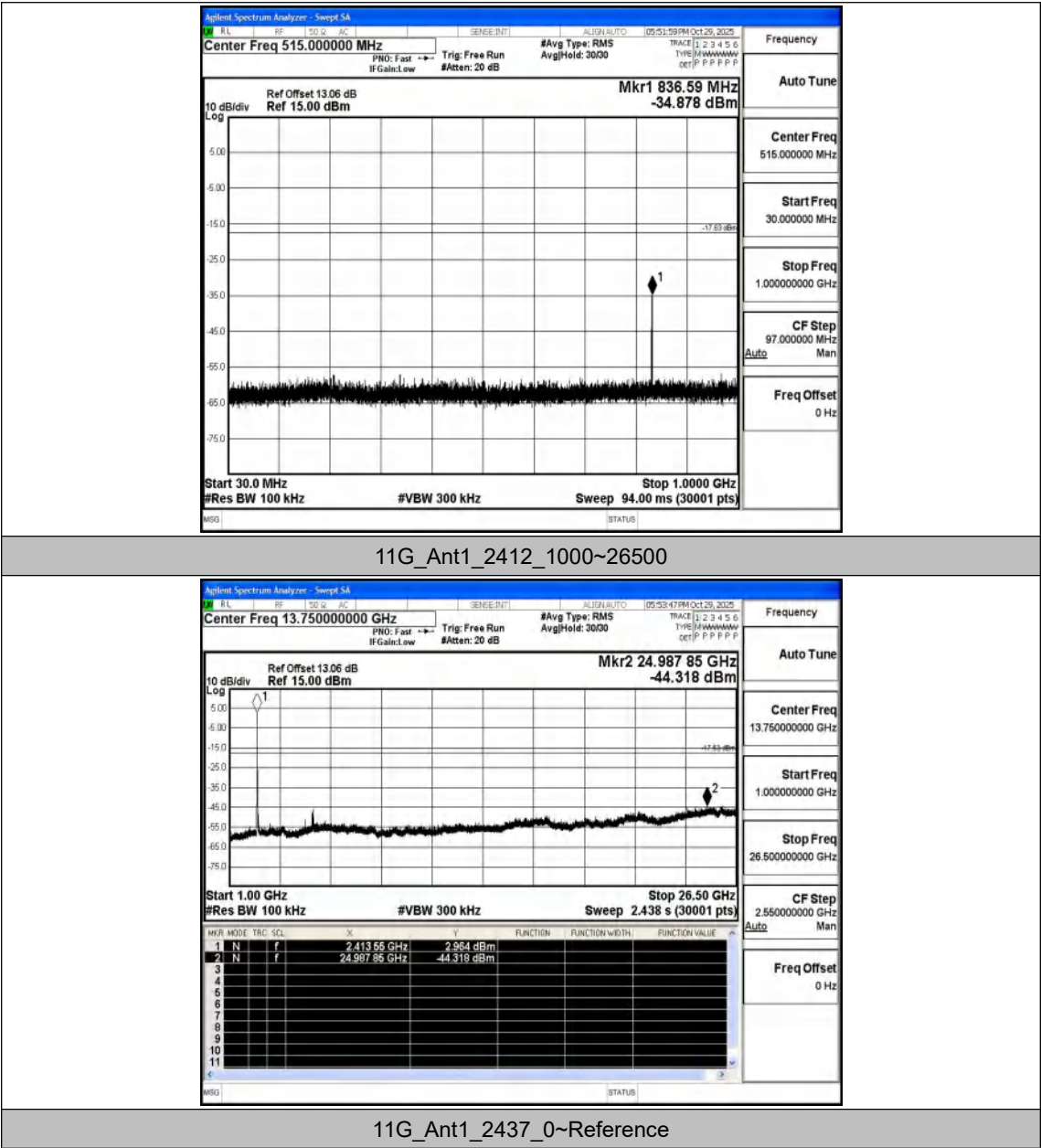


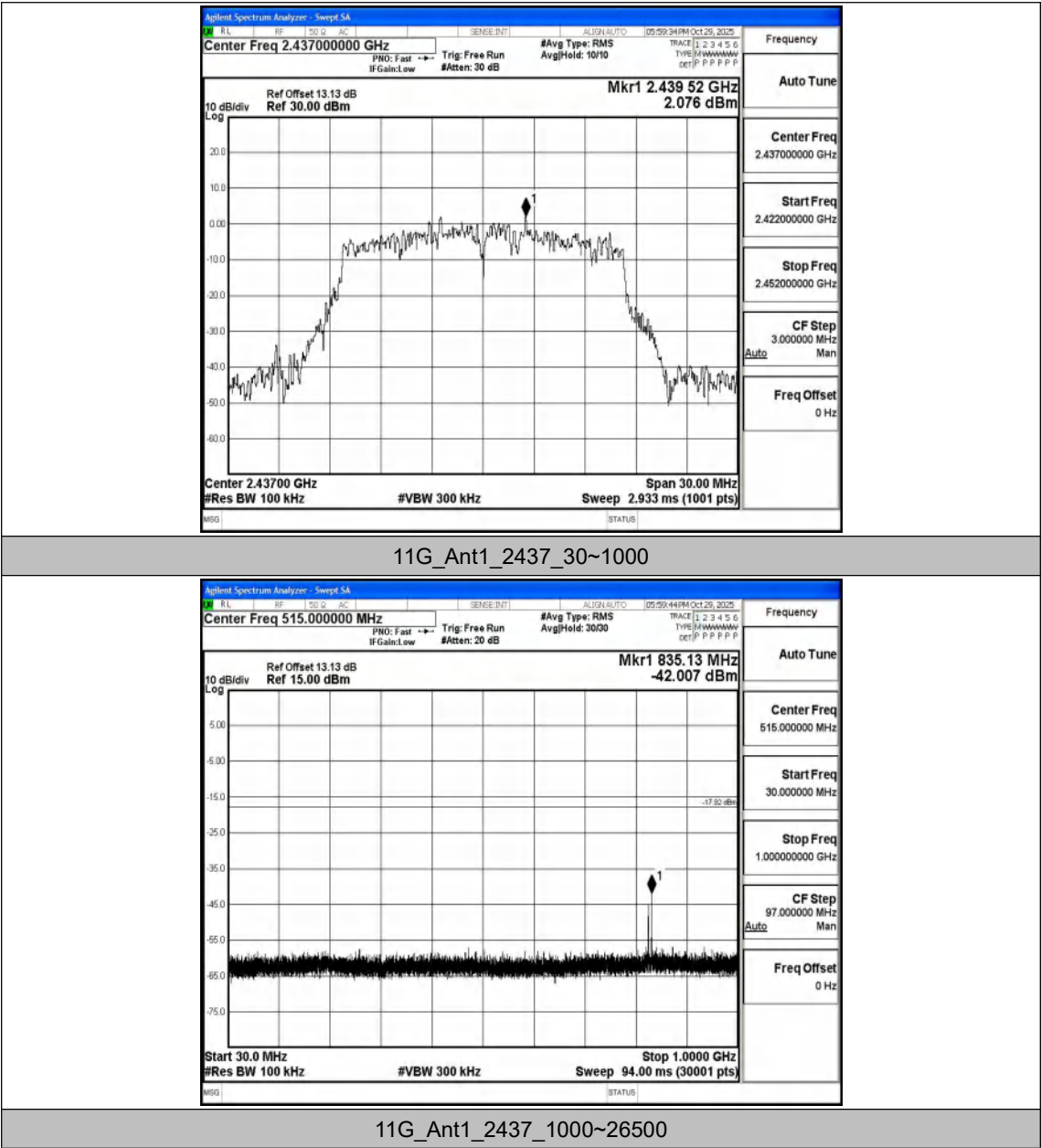


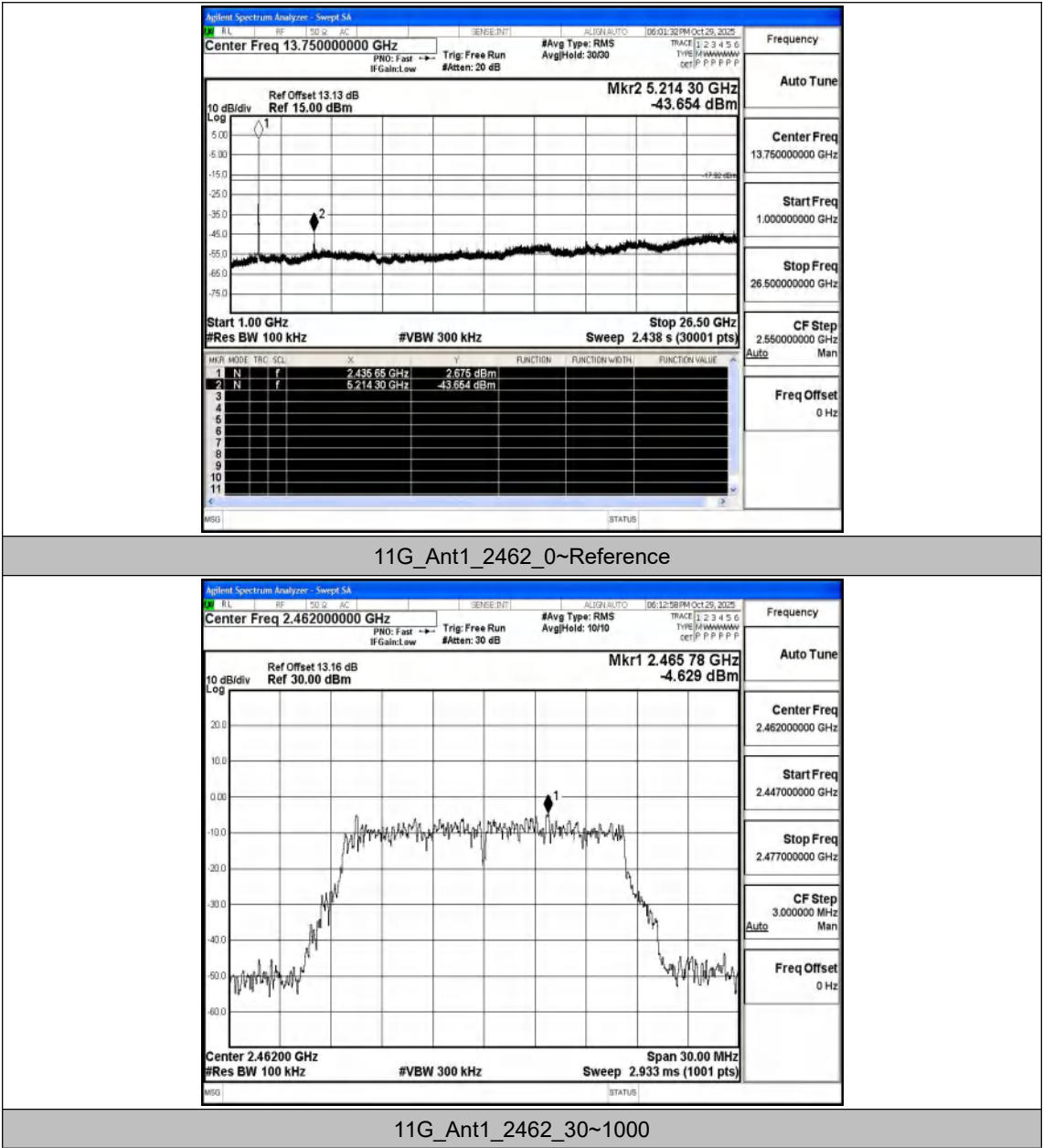


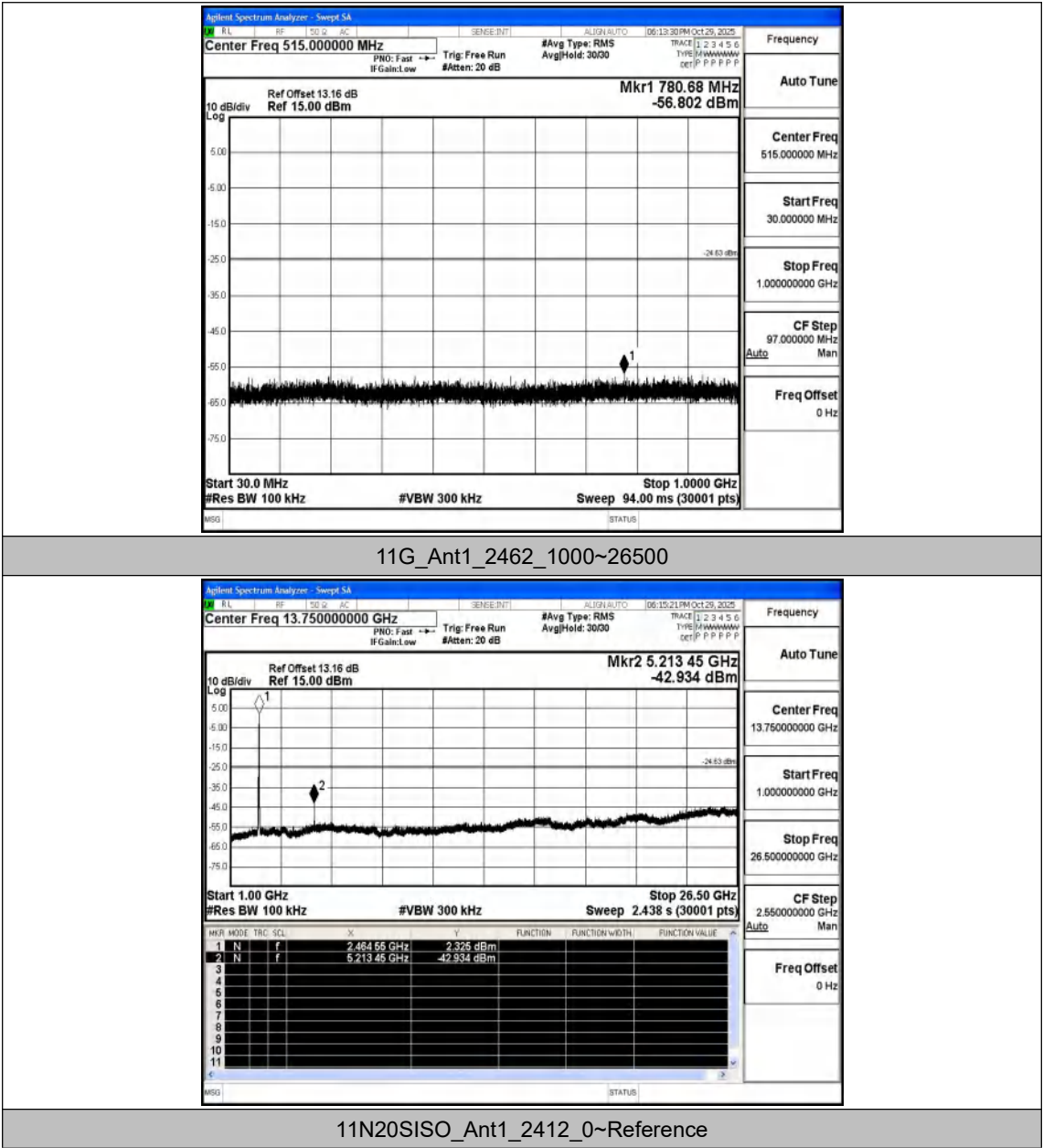


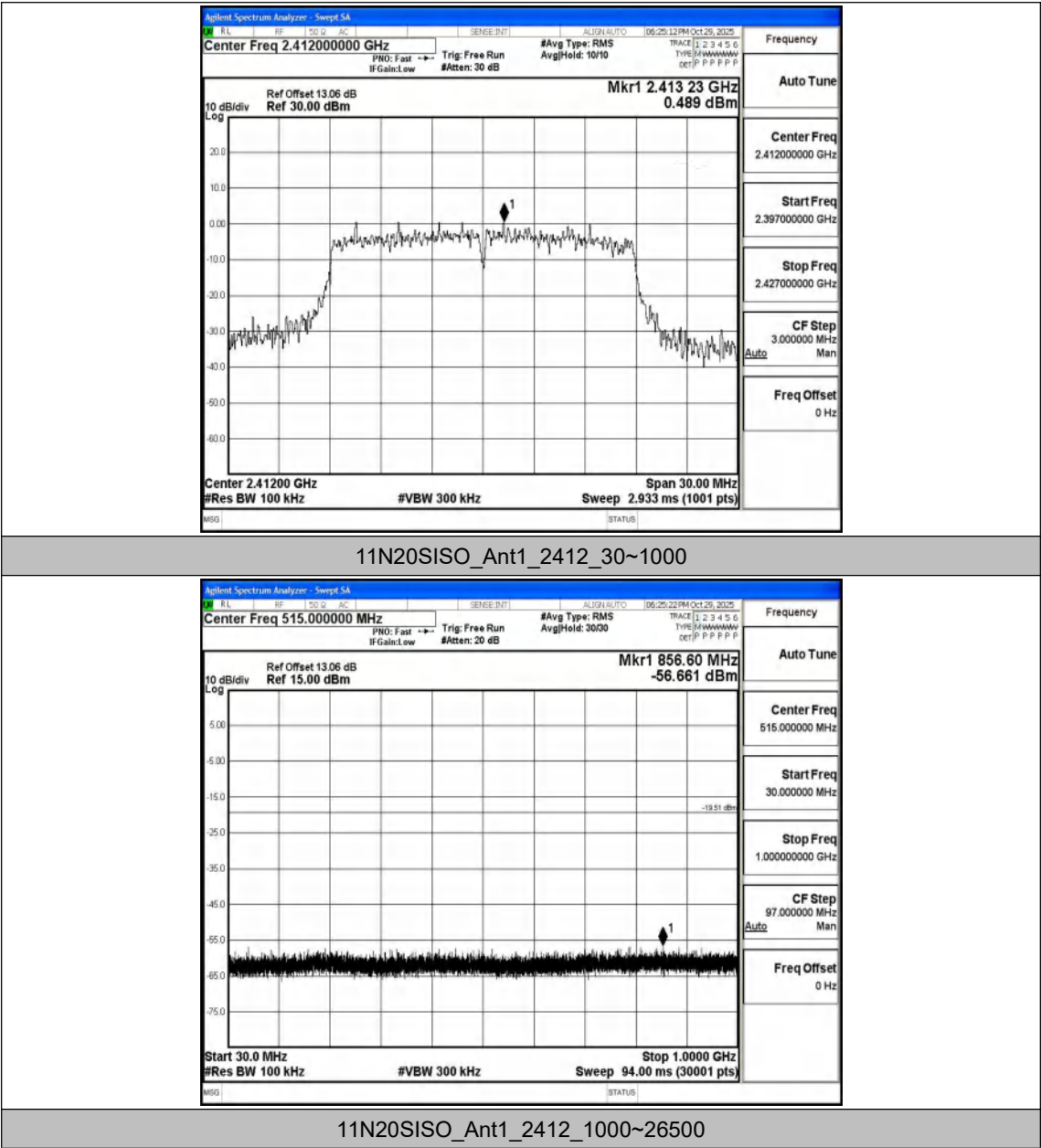
11G_Ant1_2412_30~1000

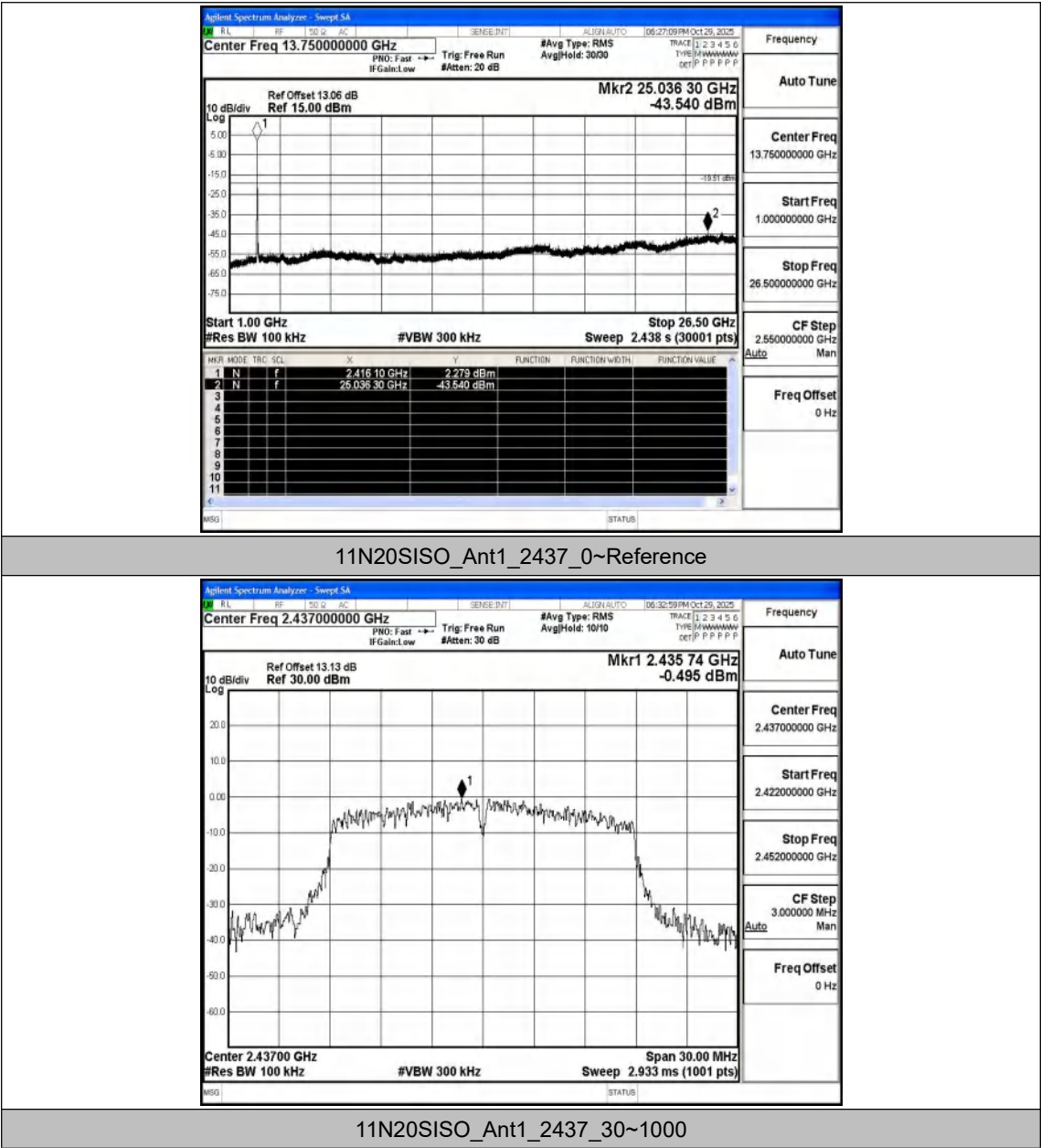


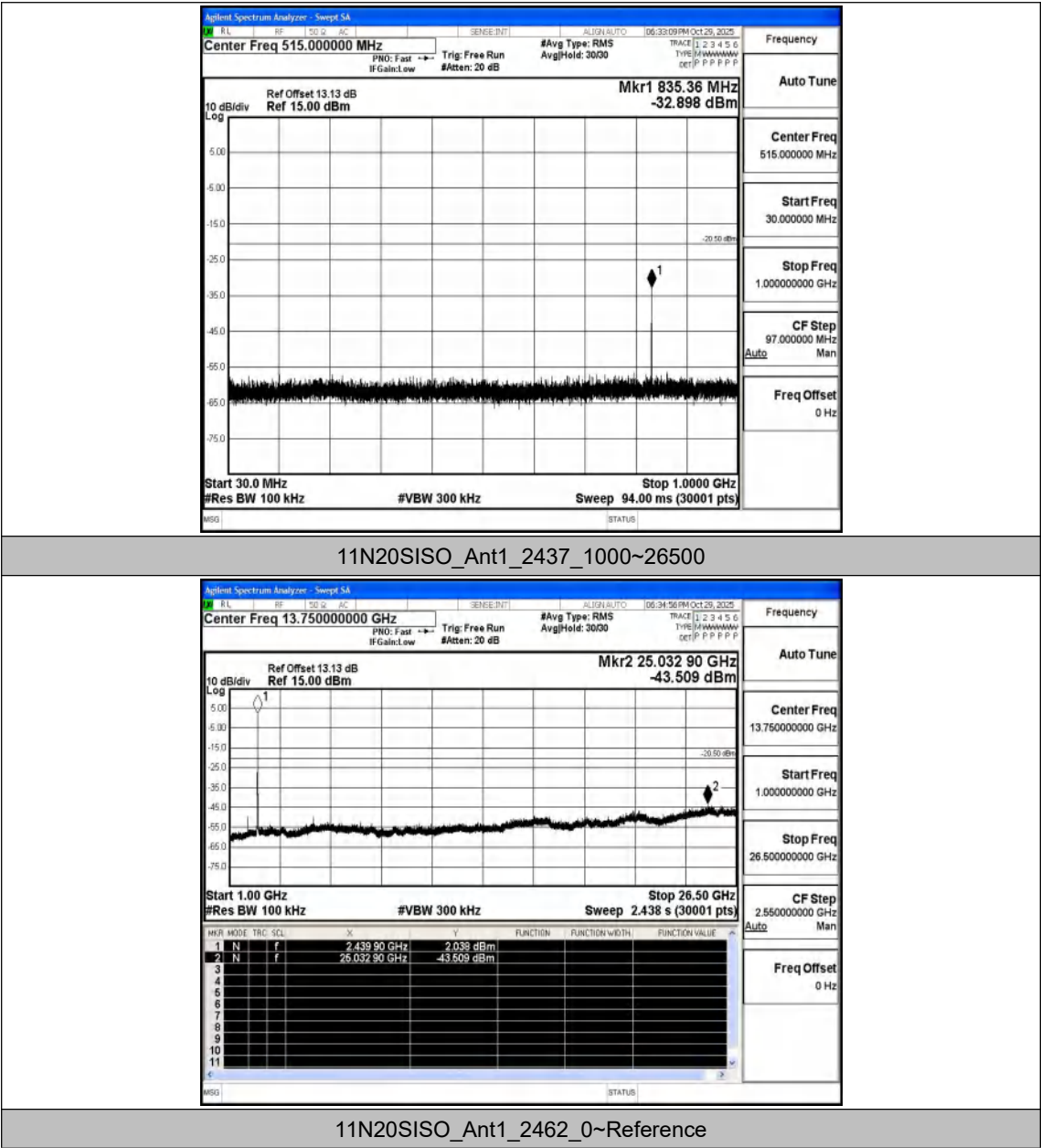


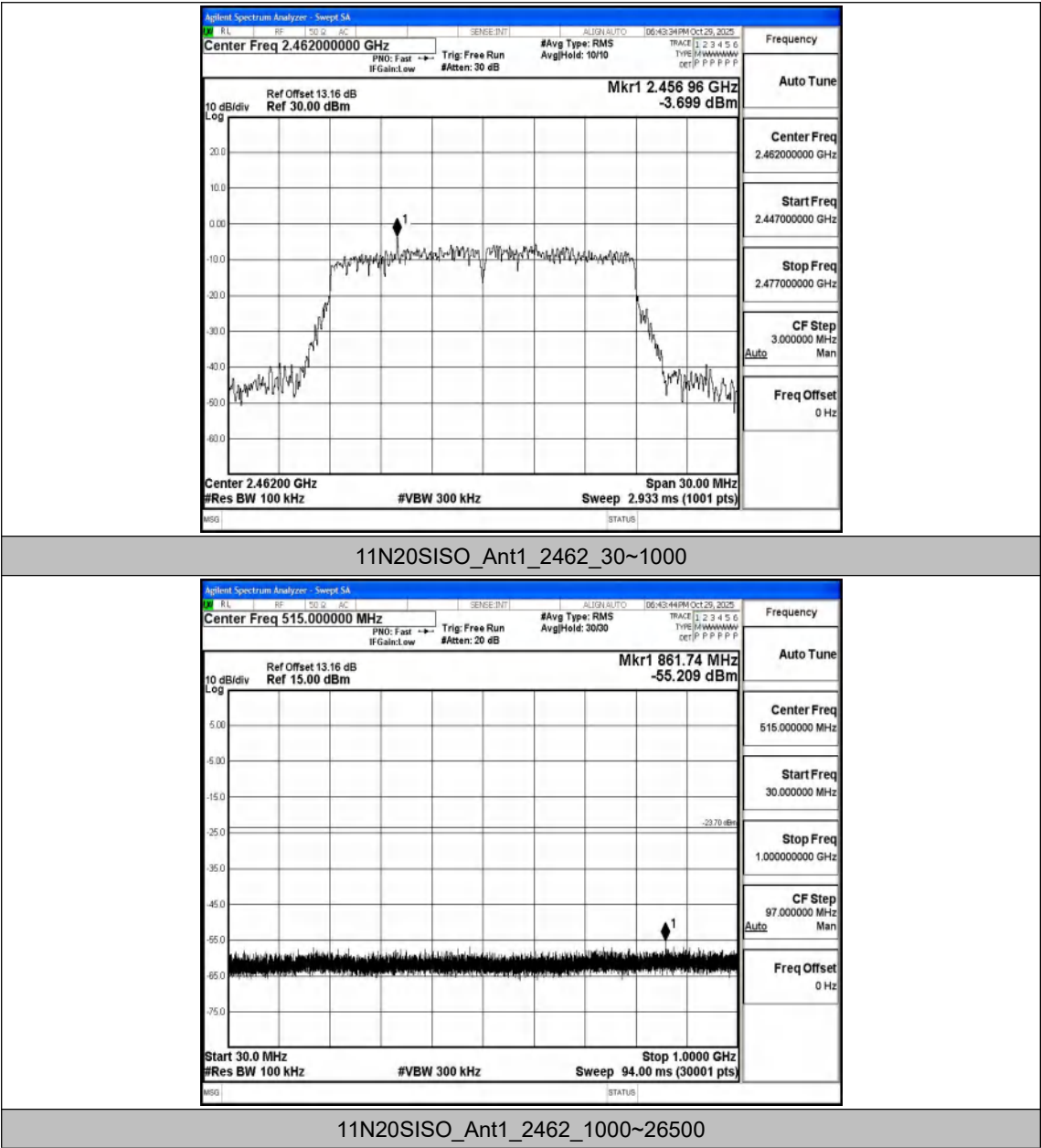


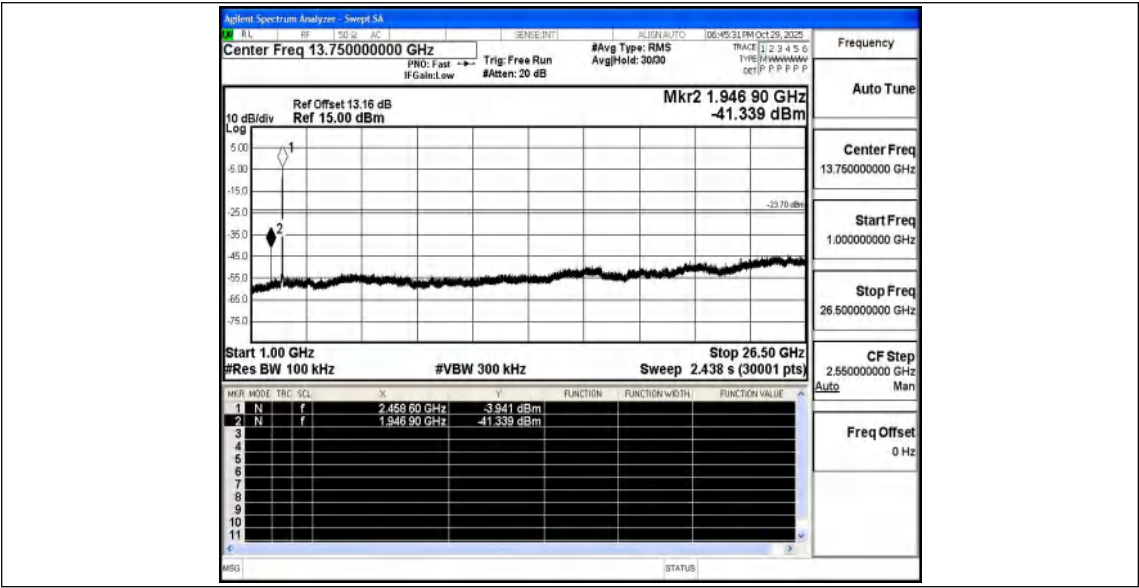










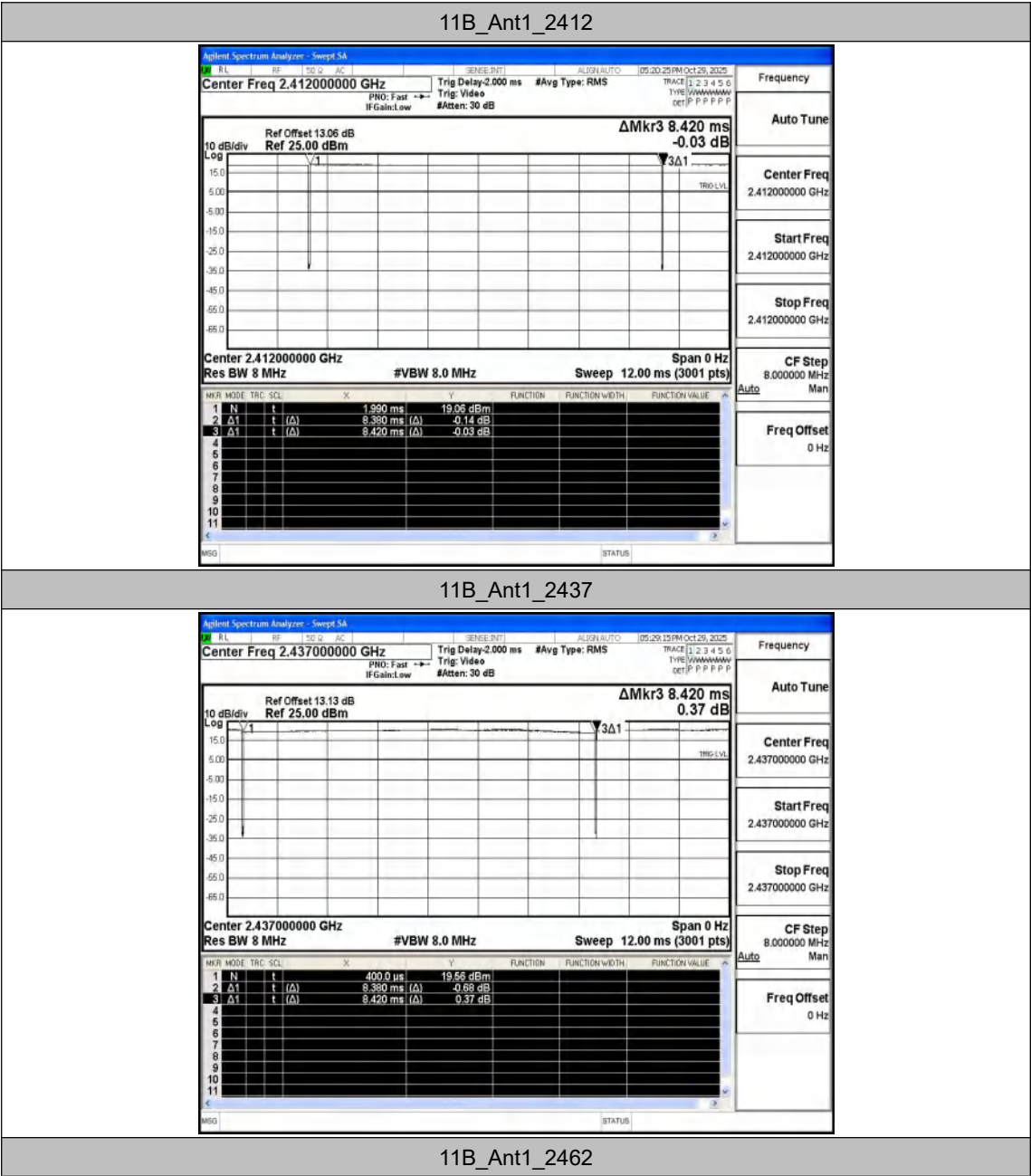


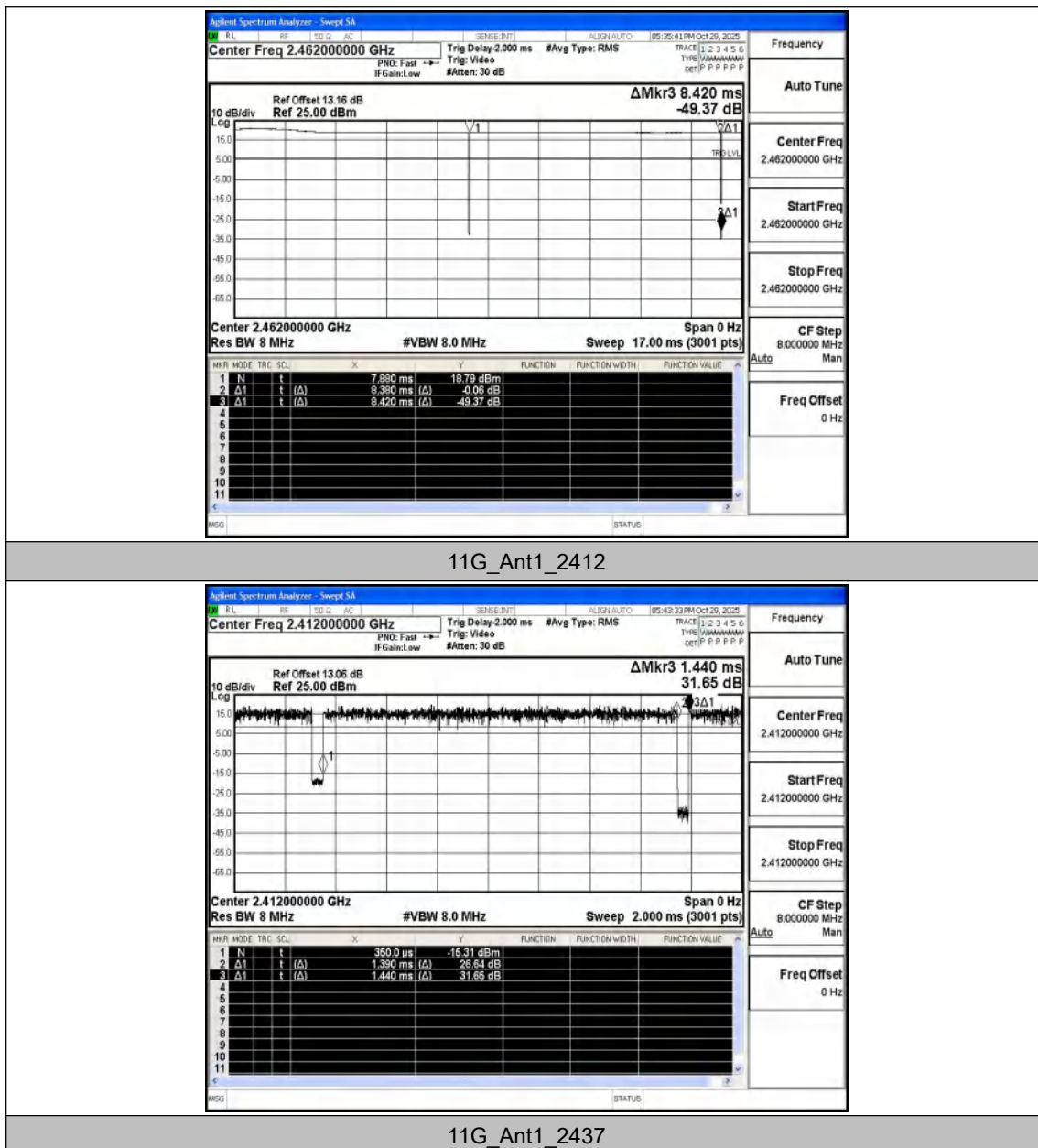
B.6 Duty Cycle

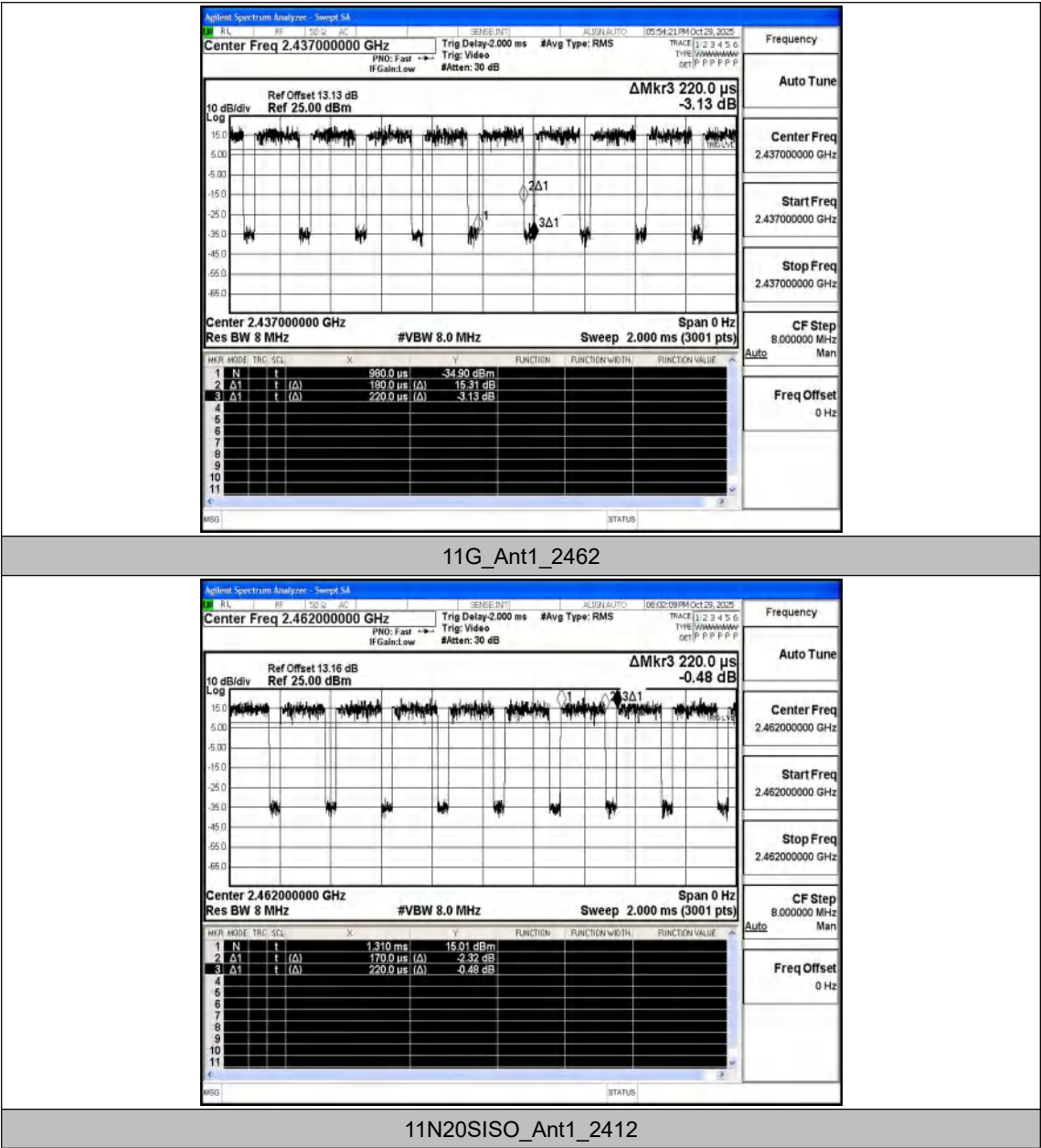
Test Result

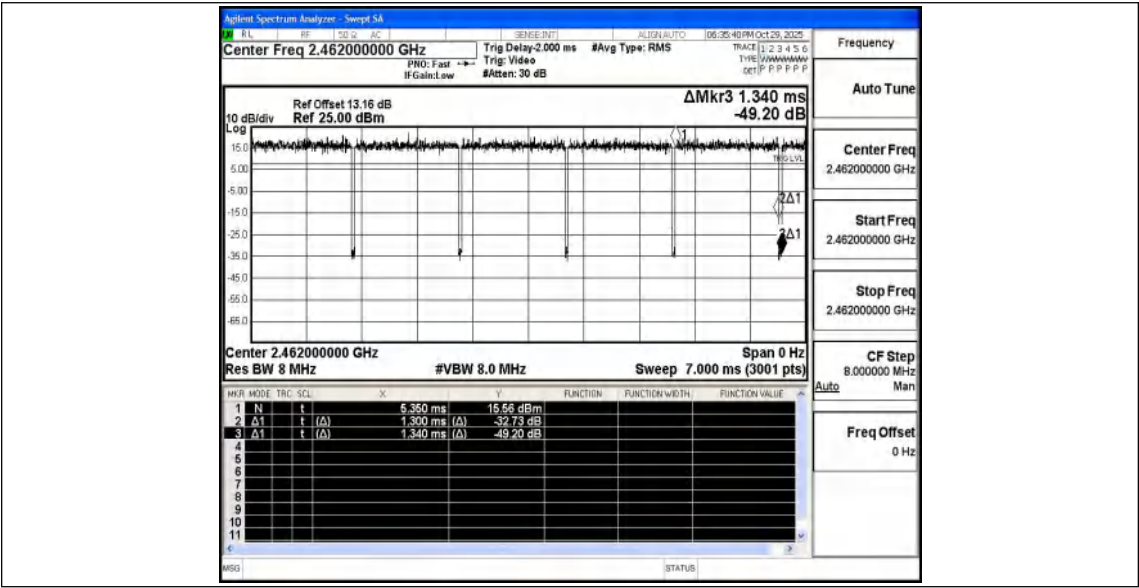
TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11B	Ant1	2412	8.38	8.42	99.52
		2437	8.38	8.42	99.52
		2462	8.38	8.42	99.52
11G	Ant1	2412	1.39	1.44	96.53
		2437	0.18	0.22	81.82
		2462	0.17	0.22	77.27
11N20SISO	Ant1	2412	1.30	1.35	96.30
		2437	1.30	1.34	97.01
		2462	1.30	1.34	97.01

Test Graphs









B.7 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Frequenc y[MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
11B	Ant1	Low	2412	AV	2310.000	-45.87	≤-41.20	49.33	≤54	PASS
				AV	2387.620	-44.31	≤-41.20	50.89	≤54	PASS
				AV	2390.000	-45	≤-41.20	50.20	≤54	PASS
				Peak	2310.000	-39.76	≤-21.20	55.44	≤74	PASS
				Peak	2372.410	-35.82	≤-21.20	59.38	≤74	PASS
				Peak	2390.000	-41.31	≤-21.20	53.89	≤74	PASS
		High	2462	AV	2483.500	-44.7	≤-41.20	50.50	≤54	PASS
				AV	2487.080	-44.52	≤-41.20	50.68	≤54	PASS
				AV	2500.000	-45.25	≤-41.20	49.95	≤54	PASS
				Peak	2483.500	-40.68	≤-21.20	54.52	≤74	PASS
				Peak	2487.740	-35.94	≤-21.20	59.26	≤74	PASS
				Peak	2500.000	-39.54	≤-21.20	55.66	≤74	PASS
11G	Ant1	Low	2412	AV	2310.000	-45.36	≤-41.20	49.84	≤54	PASS
				AV	2389.830	-41.71	≤-41.20	53.49	≤54	PASS
				AV	2390.000	-41.72	≤-41.20	53.48	≤54	PASS
				Peak	2310.000	-38.68	≤-21.20	56.52	≤74	PASS
				Peak	2389.310	-30.05	≤-21.20	65.15	≤74	PASS
				Peak	2390.000	-34.44	≤-21.20	60.76	≤74	PASS
		High	2462	AV	2483.500	-43.52	≤-41.20	51.68	≤54	PASS
				AV	2484.770	-43.13	≤-41.20	52.07	≤54	PASS
				AV	2500.000	-43.58	≤-41.20	51.62	≤54	PASS
				Peak	2483.500	-37.55	≤-21.20	57.65	≤74	PASS
				Peak	2489.500	-35.04	≤-21.20	60.16	≤74	PASS
				Peak	2500.000	-37.76	≤-21.20	57.44	≤74	PASS
11N20SIS O	Ant1	Low	2412	AV	2310.000	-45.39	≤-41.20	49.81	≤54	PASS
				AV	2389.830	-43.78	≤-41.20	51.42	≤54	PASS
				AV	2390.000	-43.78	≤-41.20	51.42	≤54	PASS
				Peak	2310.000	-39.4	≤-21.20	55.80	≤74	PASS
				Peak	2389.310	-35.03	≤-21.20	60.17	≤74	PASS
				Peak	2390.000	-36.72	≤-21.20	58.48	≤74	PASS
		High	2462	AV	2483.500	-44.01	≤-41.20	51.19	≤54	PASS
				AV	2483.780	-44.07	≤-41.20	51.13	≤54	PASS
				AV	2500.000	-44.63	≤-41.20	50.57	≤54	PASS
				Peak	2483.500	-37.38	≤-21.20	57.82	≤74	PASS
				Peak	2489.500	-35.36	≤-21.20	59.84	≤74	PASS
				Peak	2500.000	-36.91	≤-21.20	58.29	≤74	PASS

Note:

1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

