

Appendix B

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Natura iCon MAX

Test Model: Natura iCon MAX

Environmental Conditions

Temperature:	23.0°C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

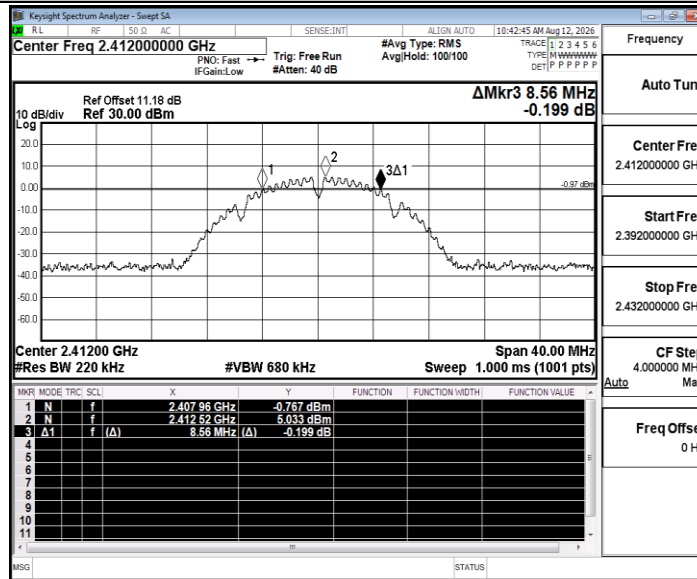
B.1 6dB Bandwidth

Test Result

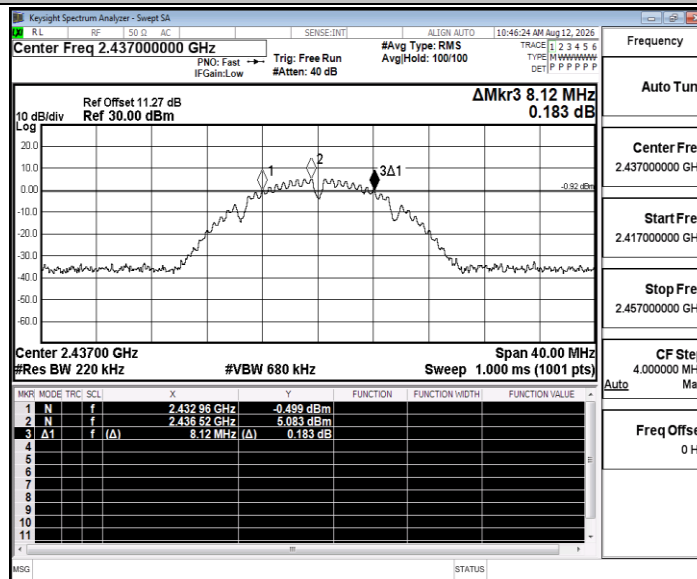
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.560	2407.960	2416.520	0.5	PASS
		2437	8.120	2432.960	2441.080	0.5	PASS
		2462	8.120	2457.960	2466.080	0.5	PASS
11G	Ant1	2412	16.320	2403.840	2420.160	0.5	PASS
		2437	16.280	2428.880	2445.160	0.5	PASS
		2462	16.000	2454.000	2470.000	0.5	PASS
11N20SISO	Ant1	2412	17.520	2403.280	2420.800	0.5	PASS
		2437	17.480	2428.240	2445.720	0.5	PASS
		2462	17.000	2453.360	2470.360	0.5	PASS

Test Graphs

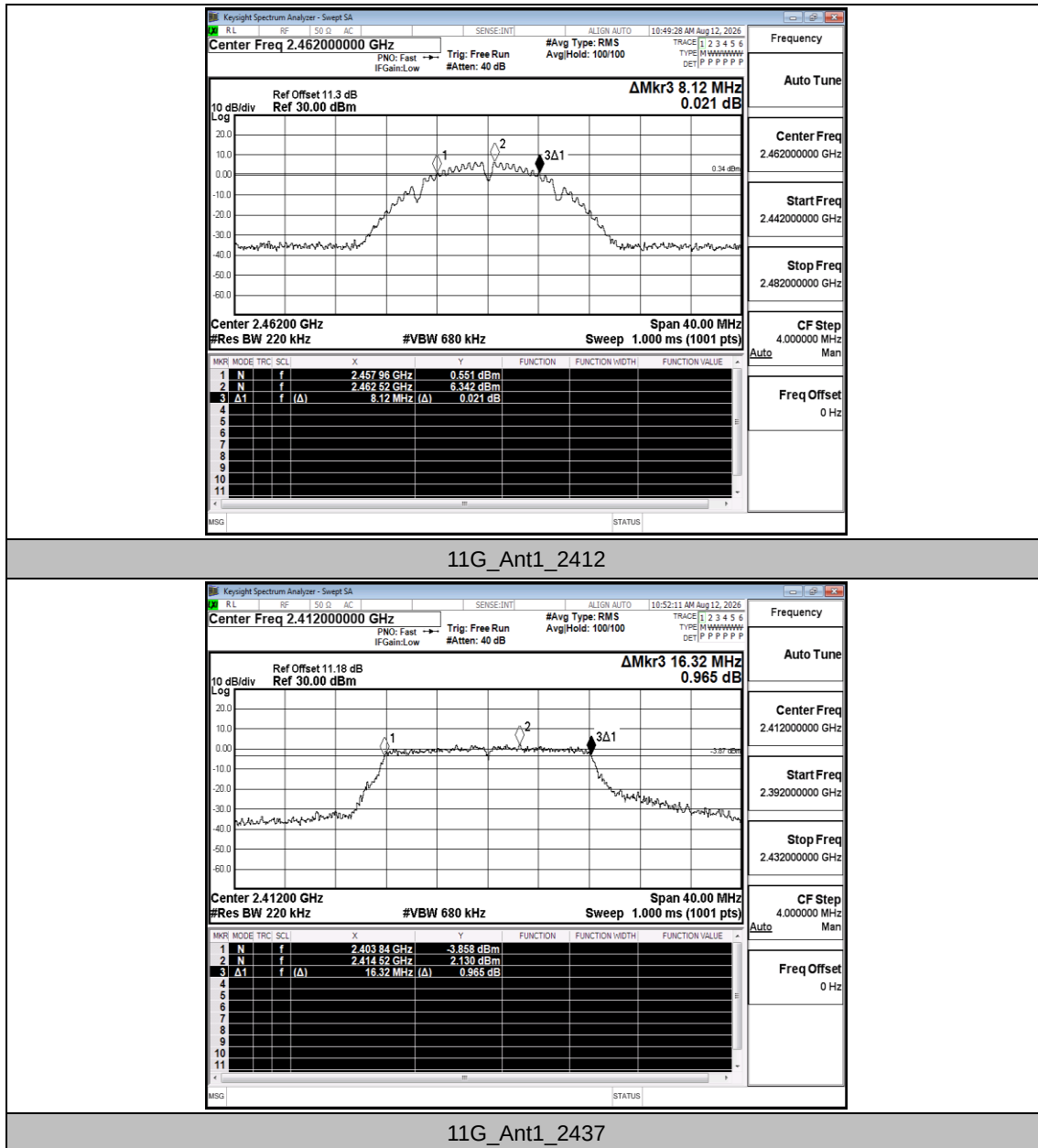
11B_Ant1_2412

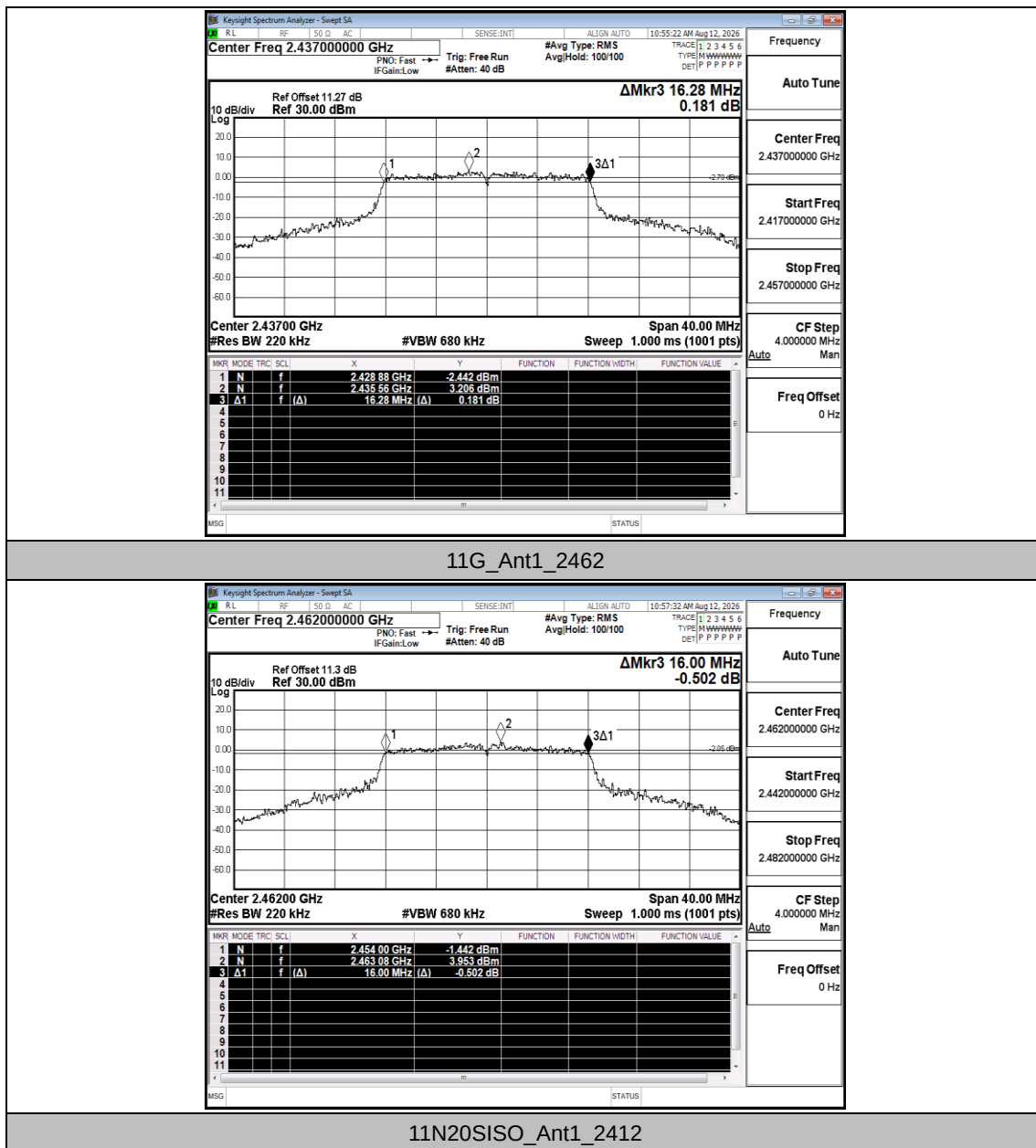


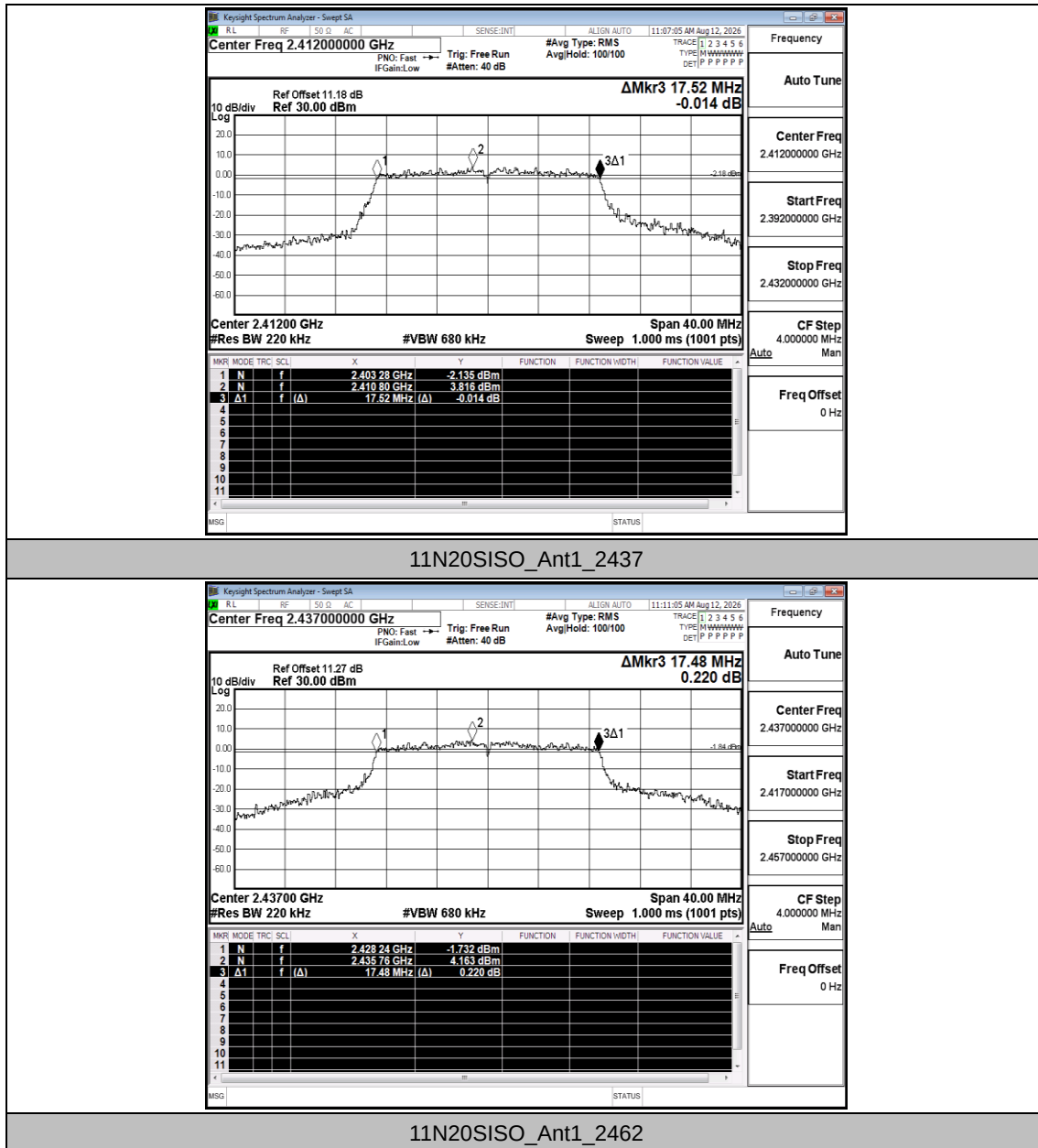
11B_Ant1_2437

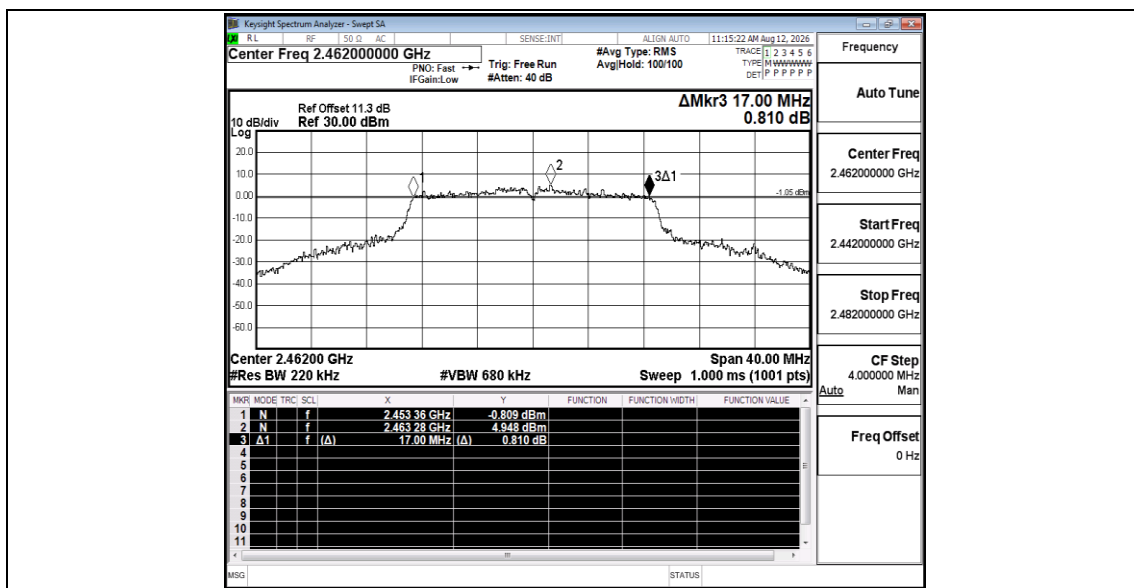


11B_Ant1_2462









B.2 Maximum Average conducted output power

Test Result

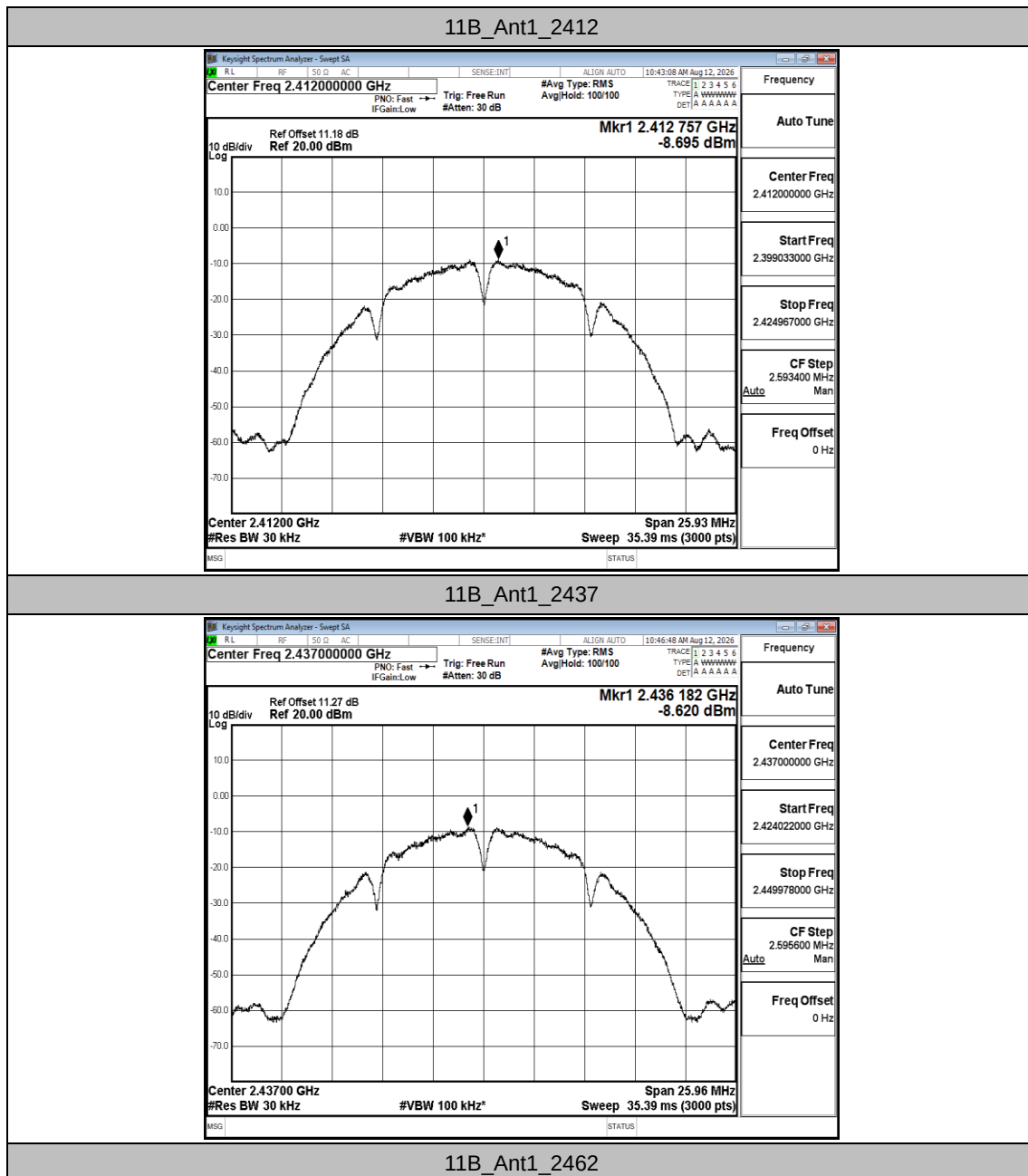
TestMode	Antenna	Frequency [MHz]	Measured Power	DC Factor [dB]	AV Power [dBm]	Conducted Limit[dBm]	Verdict
11B	Ant1	2412	12.33	0.11	12.44	≤30.00	PASS
		2437	11.28	0.11	11.39	≤30.00	PASS
		2462	12.31	0.11	12.42	≤30.00	PASS
11G	Ant1	2412	11.48	0.61	12.09	≤30.00	PASS
		2437	12.01	0.58	12.59	≤30.00	PASS
		2462	12.12	0.61	12.73	≤30.00	PASS
11N20SISO	Ant1	2412	13.03	0.65	13.68	≤30.00	PASS
		2437	13.10	0.62	13.72	≤30.00	PASS
		2462	13.18	0.65	13.83	≤30.00	PASS

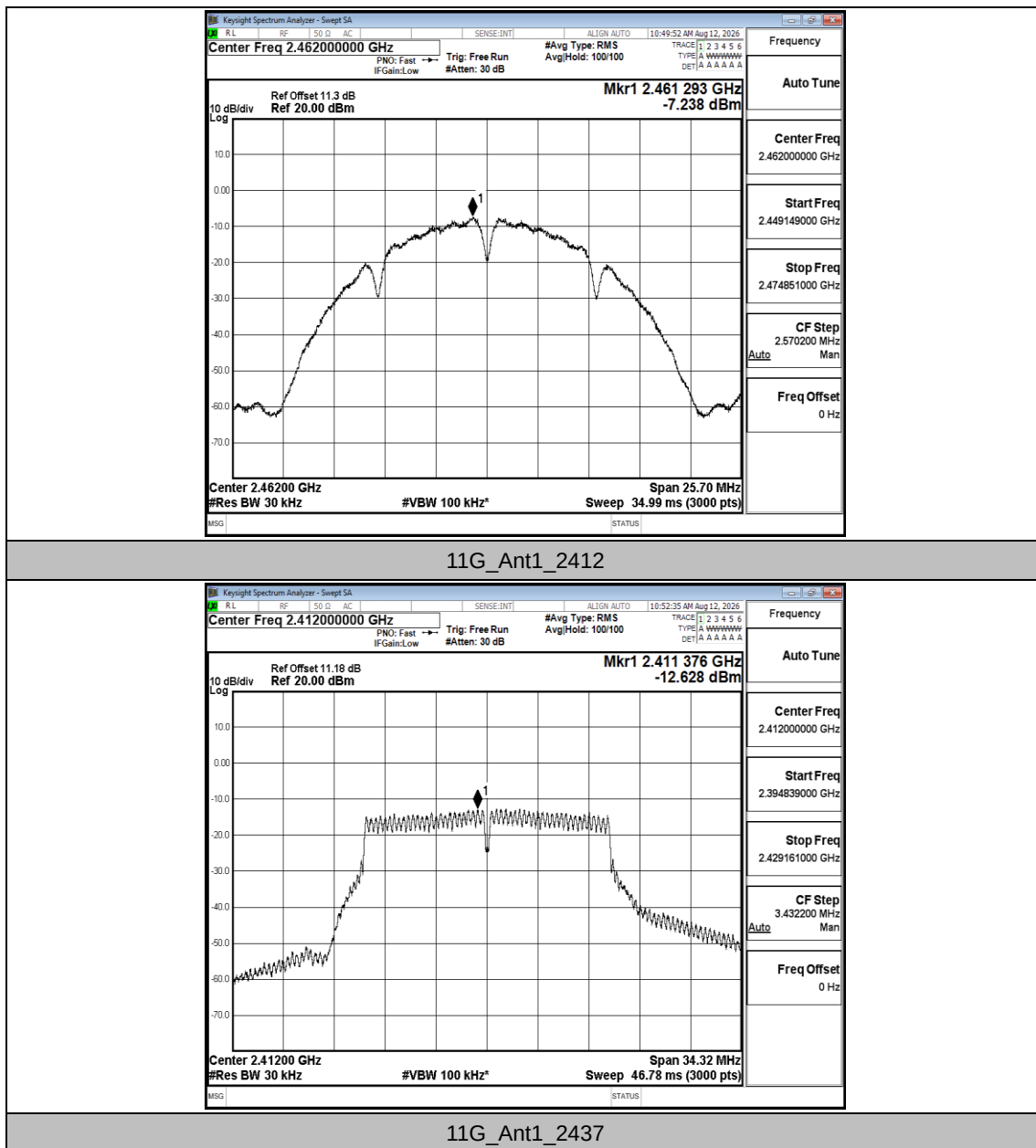
B.3 Maximum power spectral density

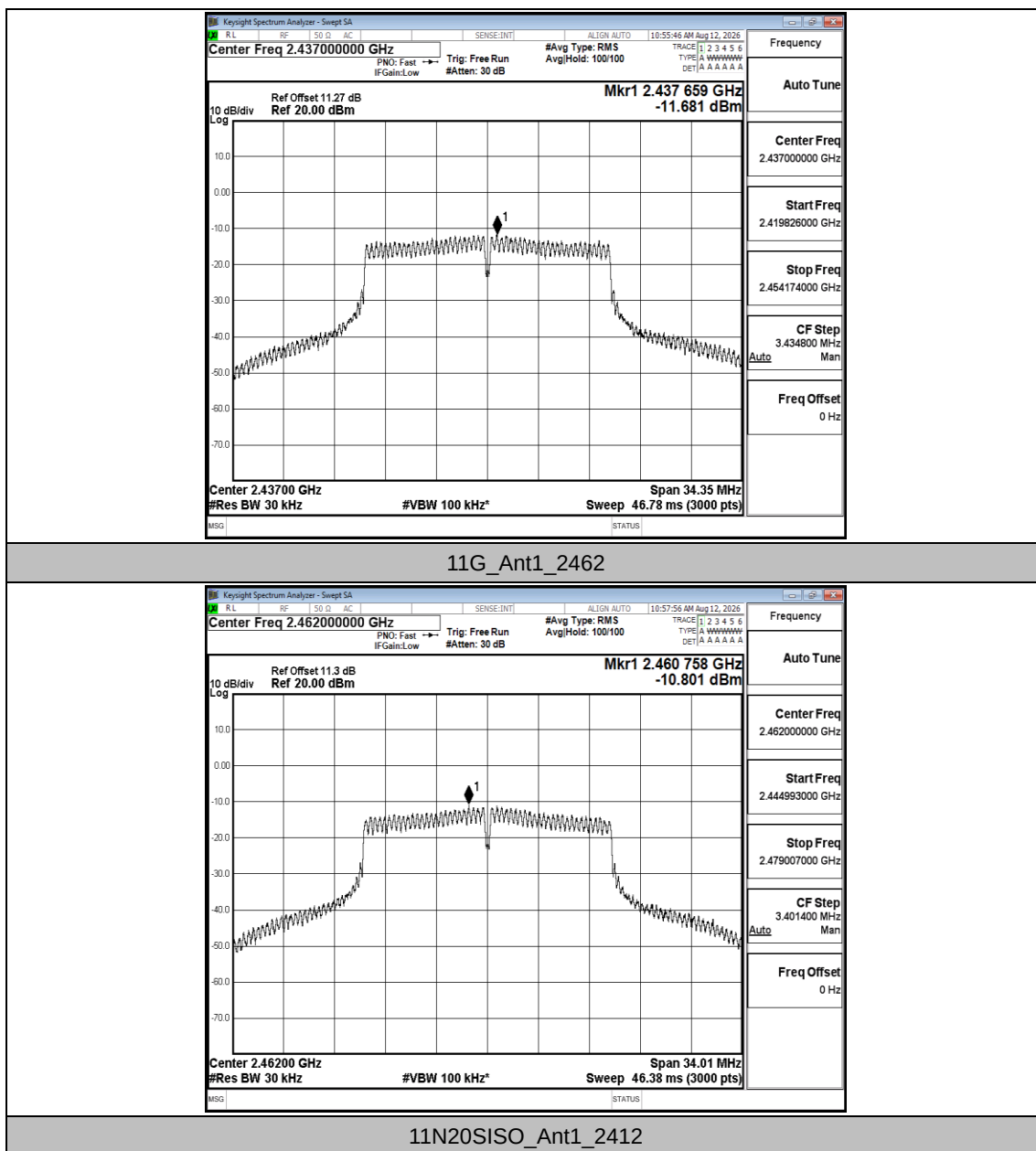
Test Result

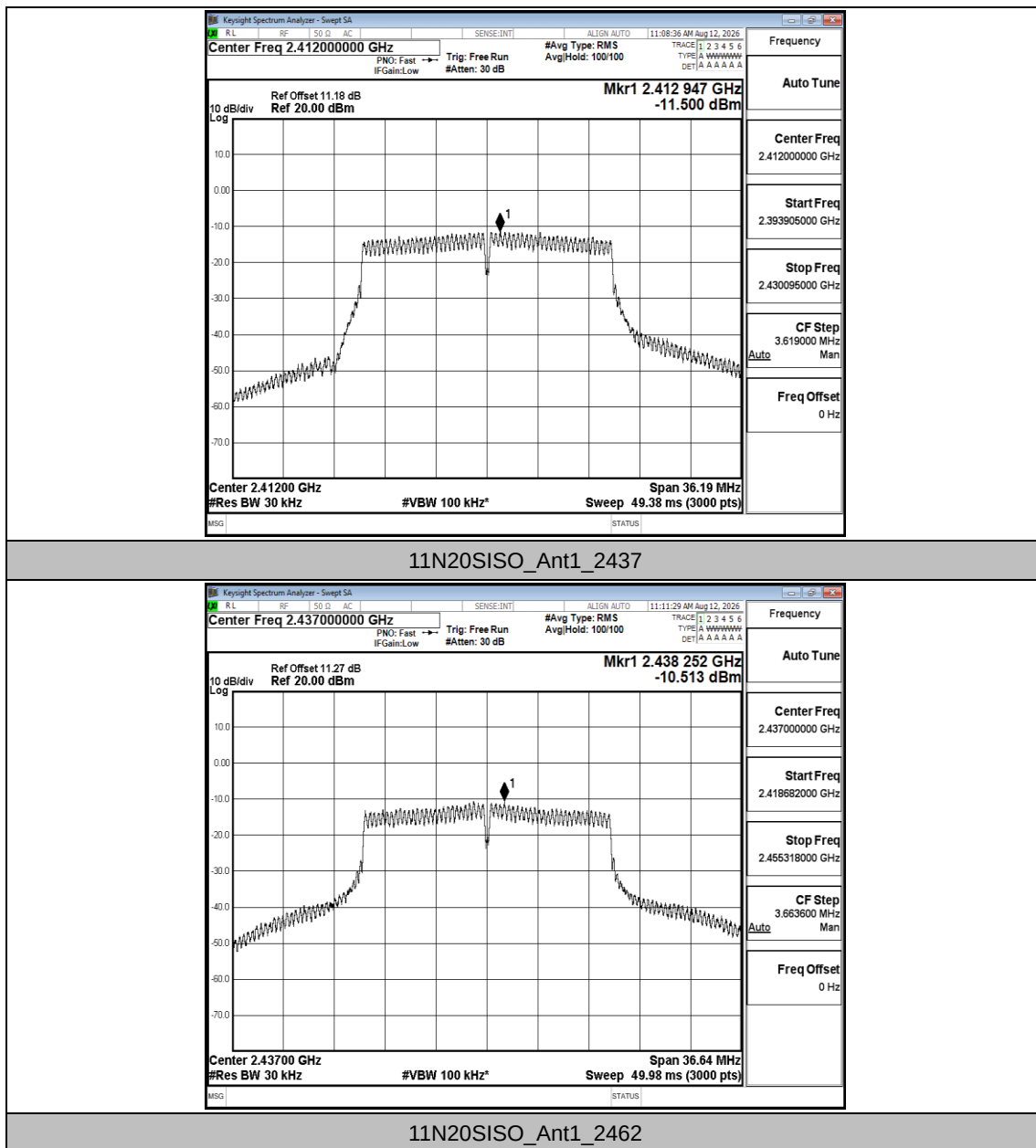
TestMode	Antenna	Frequency [MHz]	Measured PSD [dBm/30kHz]	DC Factor [dB]	Result [dBm/30kHz]	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant1	2412	-8.7	0.11	-8.59	-18.59	≤8.00	PASS
		2437	-8.62	0.11	-8.51	-18.51	≤8.00	PASS
		2462	-7.24	0.11	-7.13	-17.13	≤8.00	PASS
11G	Ant1	2412	-12.63	0.61	-12.02	-22.02	≤8.00	PASS
		2437	-11.68	0.58	-11.10	-21.10	≤8.00	PASS
		2462	-10.8	0.61	-10.19	-20.19	≤8.00	PASS
11N20SISO	Ant1	2412	-11.5	0.65	-10.85	-20.85	≤8.00	PASS
		2437	-10.51	0.62	-9.89	-19.89	≤8.00	PASS
		2462	-9.56	0.65	-8.91	-18.91	≤8.00	PASS

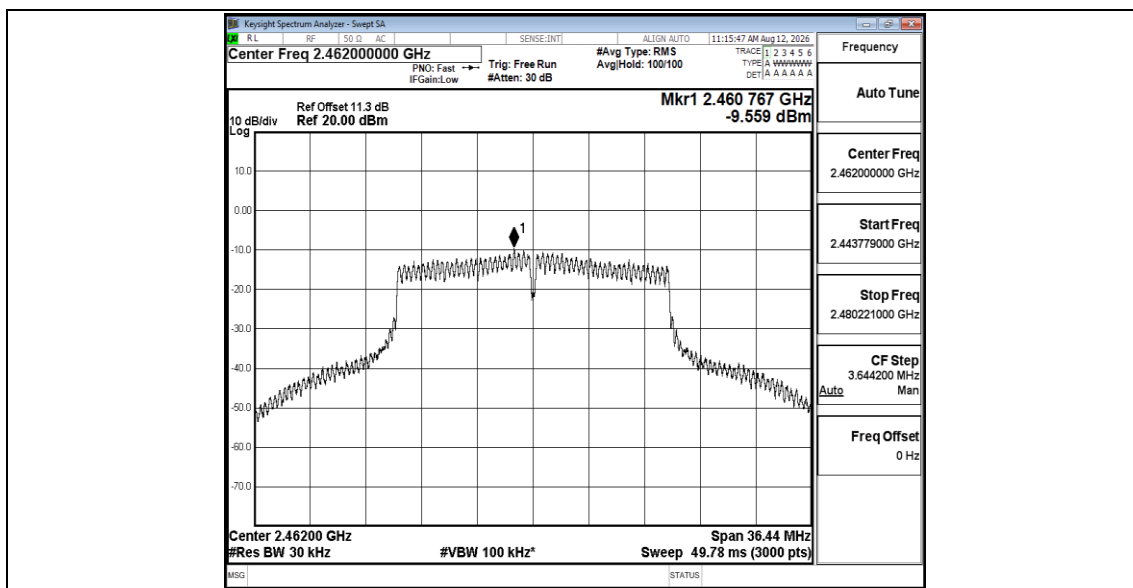
Test Graphs









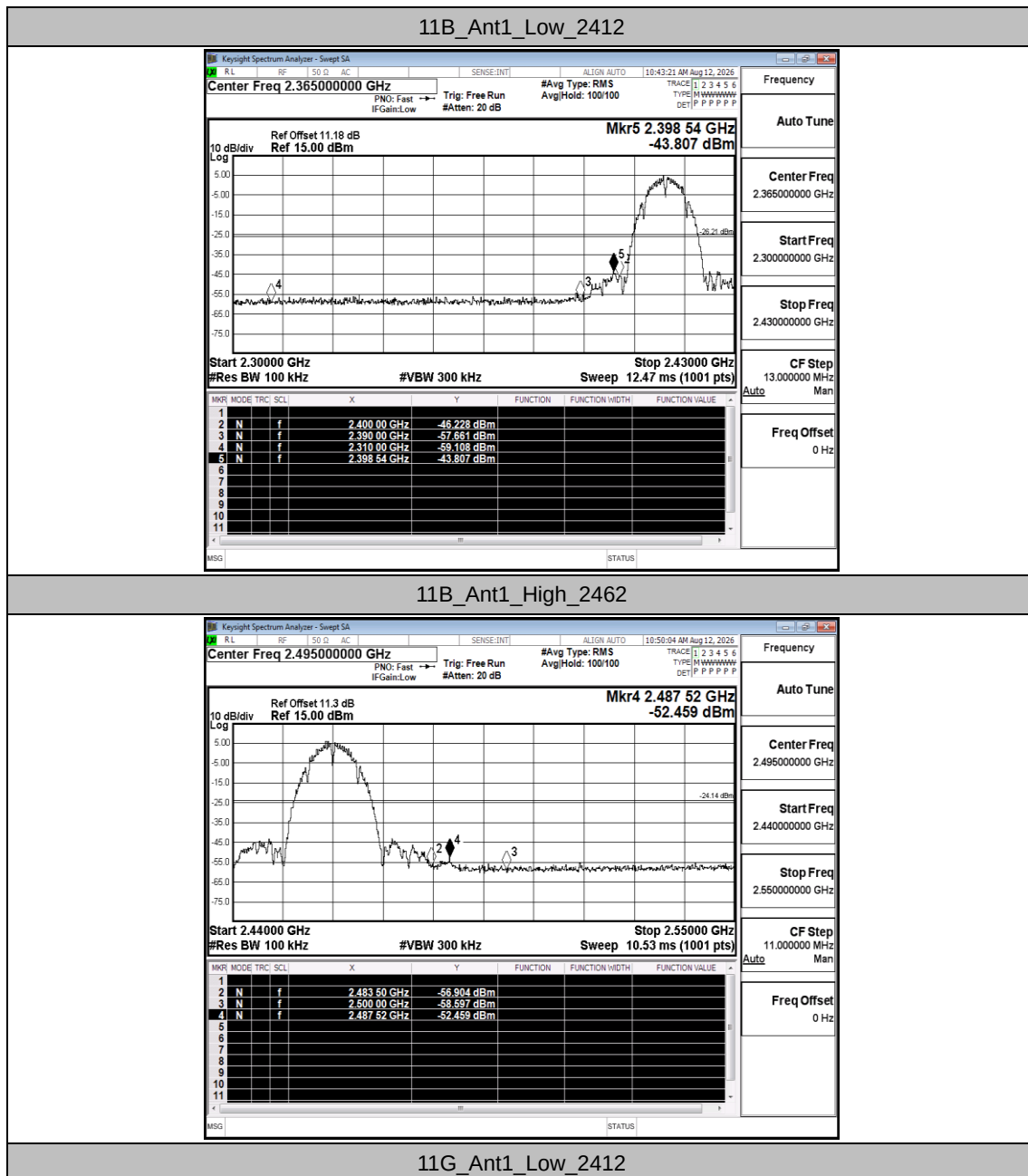


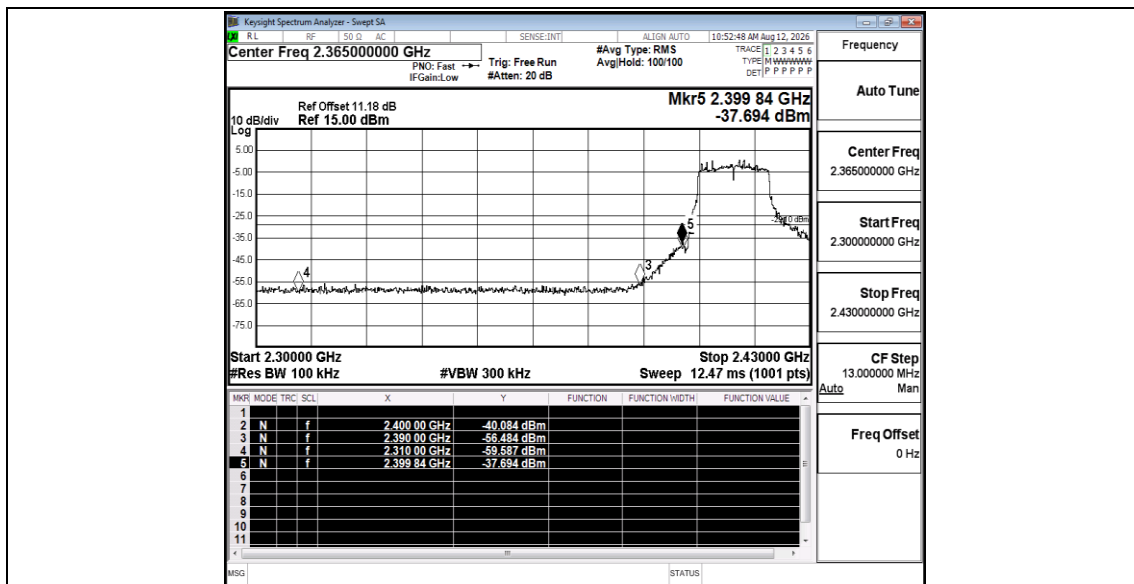
B.4 Band edge measurements

Test Result

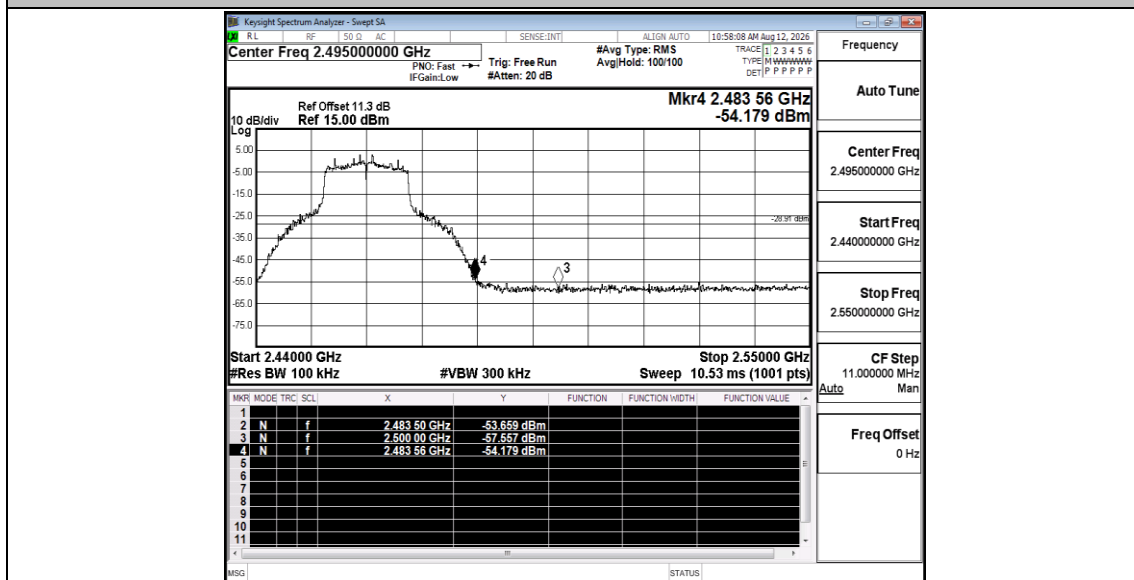
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	3.79	-43.81	≤ -26.21	PASS
		High	2462	5.86	-52.46	≤ -24.14	PASS
11G	Ant1	Low	2412	0.90	-37.69	≤ -29.1	PASS
		High	2462	1.09	-54.18	≤ -28.91	PASS
11N20SISO	Ant1	Low	2412	3.66	-32.24	≤ -26.34	PASS
		High	2462	3.15	-50.1	≤ -26.85	PASS

Test Graphs

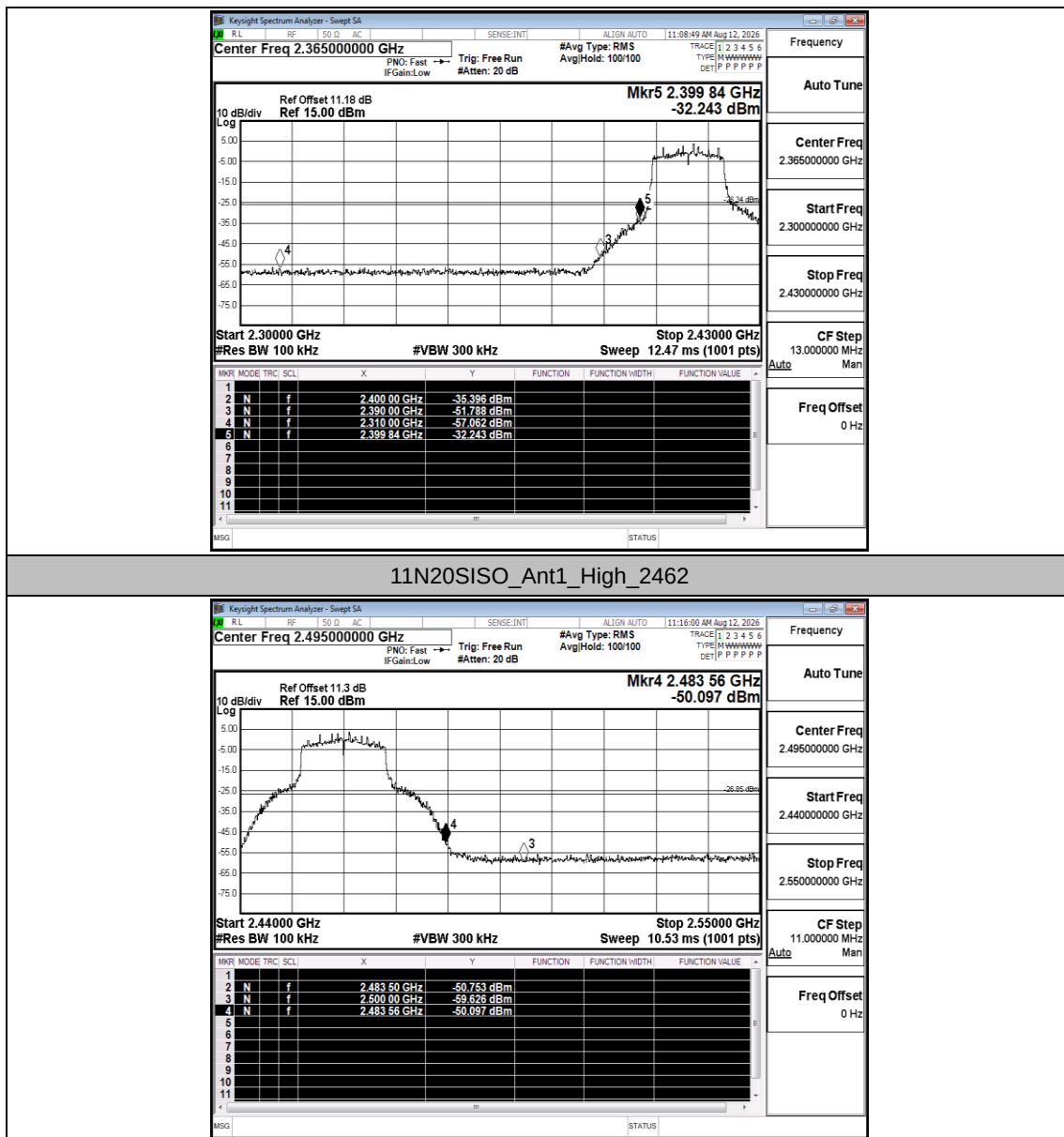




11G_Ant1_High_2462



11N20SISO_Ant1_Low_2412

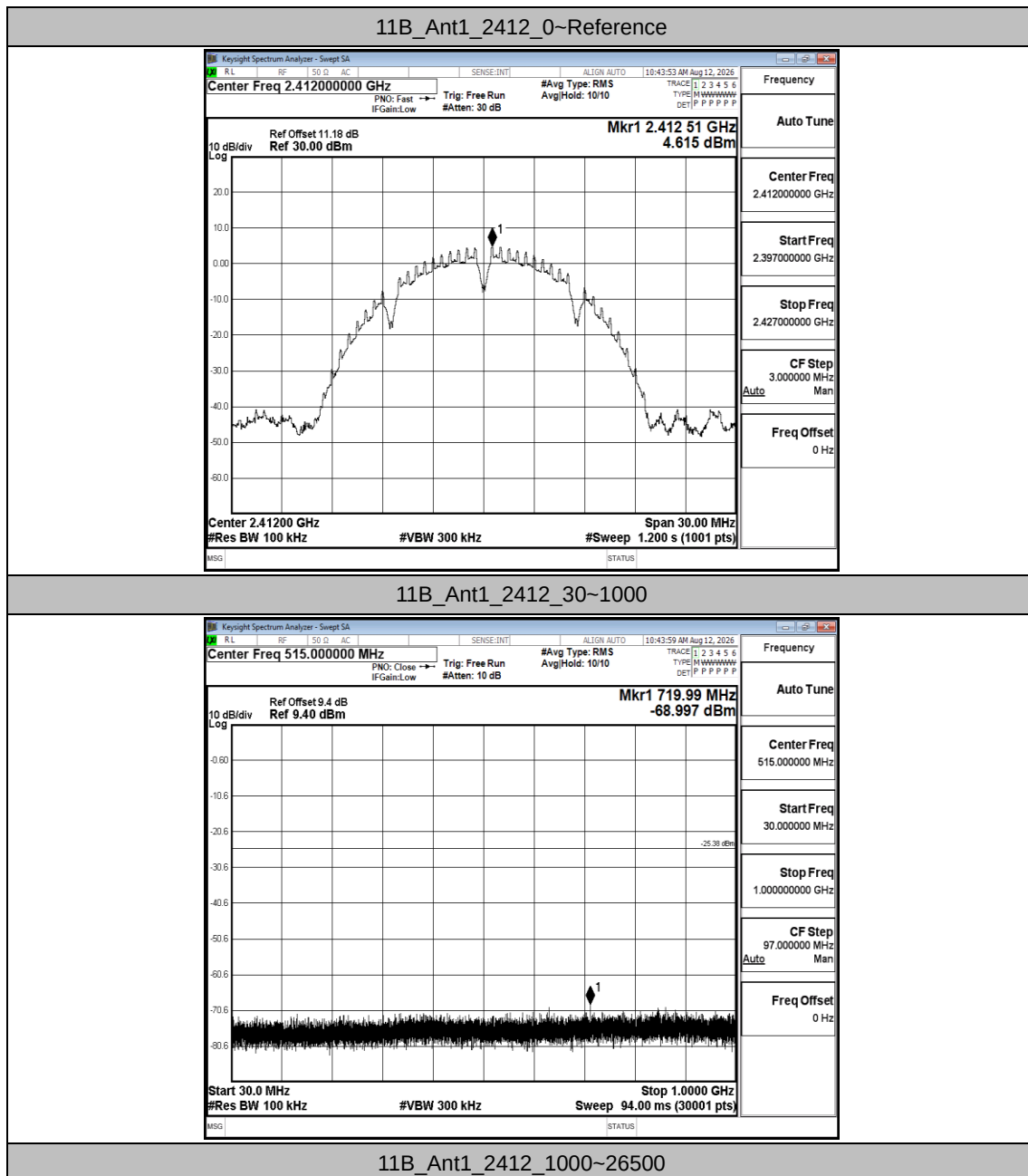


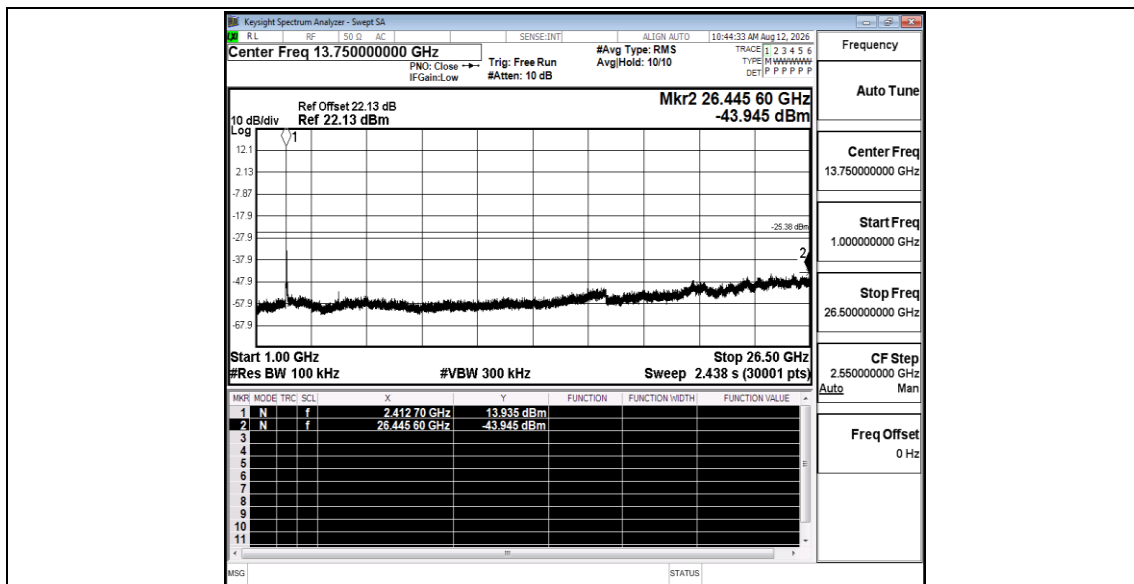
B.5 Conducted Spurious Emission

Test Result

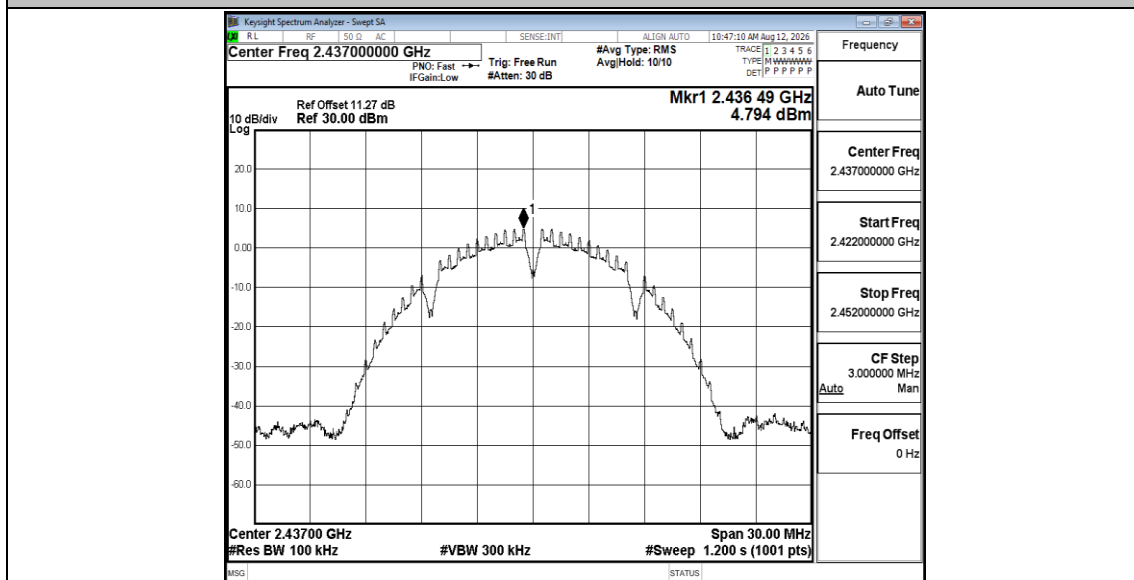
TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	4.62	4.62	---	PASS
			30~1000	4.62	-69	≤-25.38	PASS
			1000~26500	4.62	-43.95	≤-25.38	PASS
		2437	Reference	4.79	4.79	---	PASS
			30~1000	4.79	-67.57	≤-25.21	PASS
			1000~26500	4.79	-44.35	≤-25.21	PASS
		2462	Reference	6.09	6.09	---	PASS
			30~1000	6.09	-68.9	≤-23.91	PASS
			1000~26500	6.09	-44.74	≤-23.91	PASS
11G	Ant1	2412	Reference	1.33	1.33	---	PASS
			30~1000	1.33	-67.38	≤-28.67	PASS
			1000~26500	1.33	-43.85	≤-28.67	PASS
		2437	Reference	2.44	2.44	---	PASS
			30~1000	2.44	-66.84	≤-27.56	PASS
			1000~26500	2.44	-44.71	≤-27.56	PASS
		2462	Reference	2.75	2.75	---	PASS
			30~1000	2.75	-68.59	≤-27.25	PASS
			1000~26500	2.75	-44.78	≤-27.25	PASS
11N20SISO	Ant1	2412	Reference	2.97	2.97	---	PASS
			30~1000	2.97	-67.88	≤-27.03	PASS
			1000~26500	2.97	-44.03	≤-27.03	PASS
		2437	Reference	3.54	3.54	---	PASS
			30~1000	3.54	-68.86	≤-26.46	PASS
			1000~26500	3.54	-45.09	≤-26.46	PASS
		2462	Reference	3.75	3.75	---	PASS
			30~1000	3.75	-66.38	≤-26.25	PASS
			1000~26500	3.75	-43.91	≤-26.25	PASS

Test Graphs

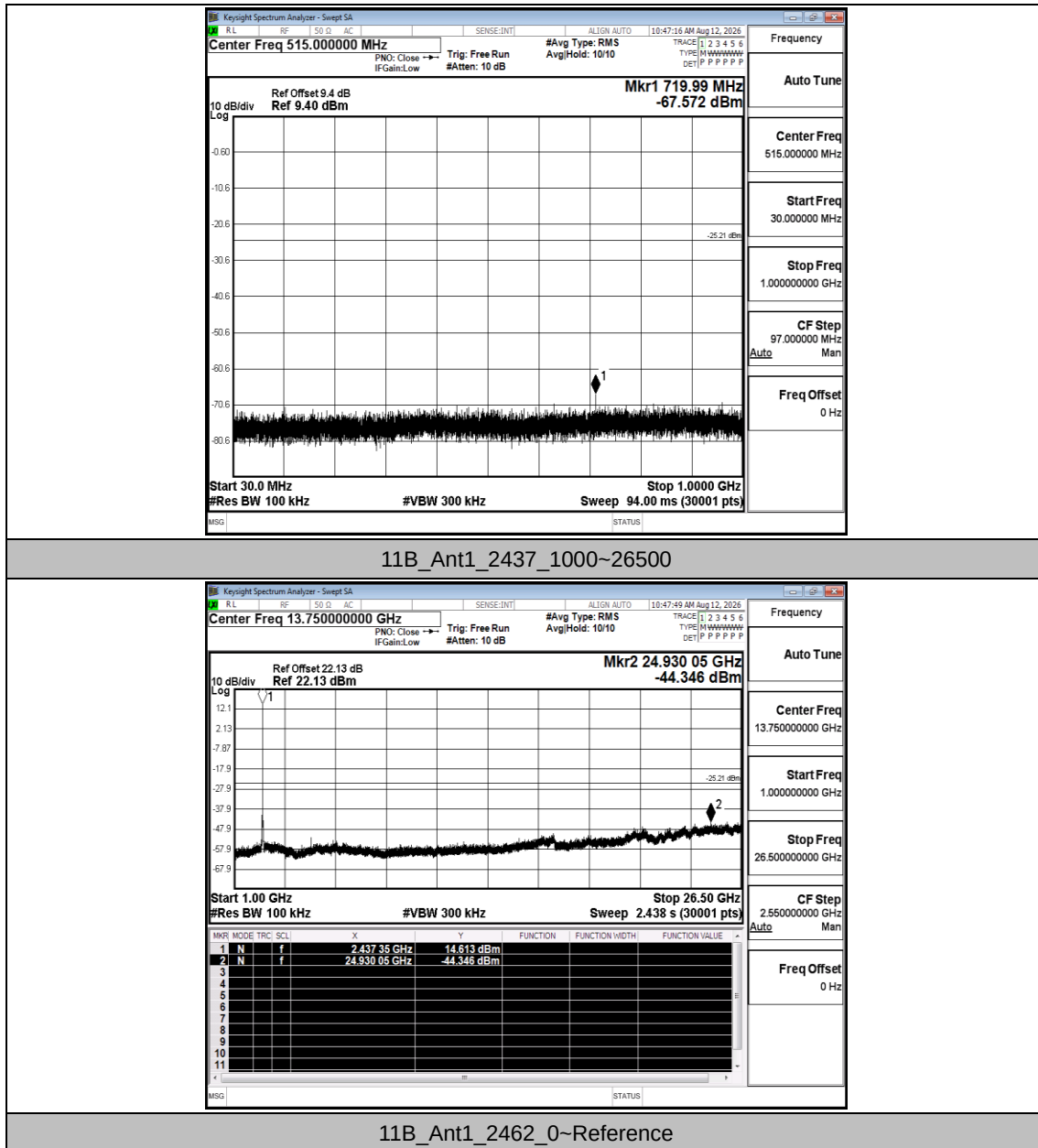


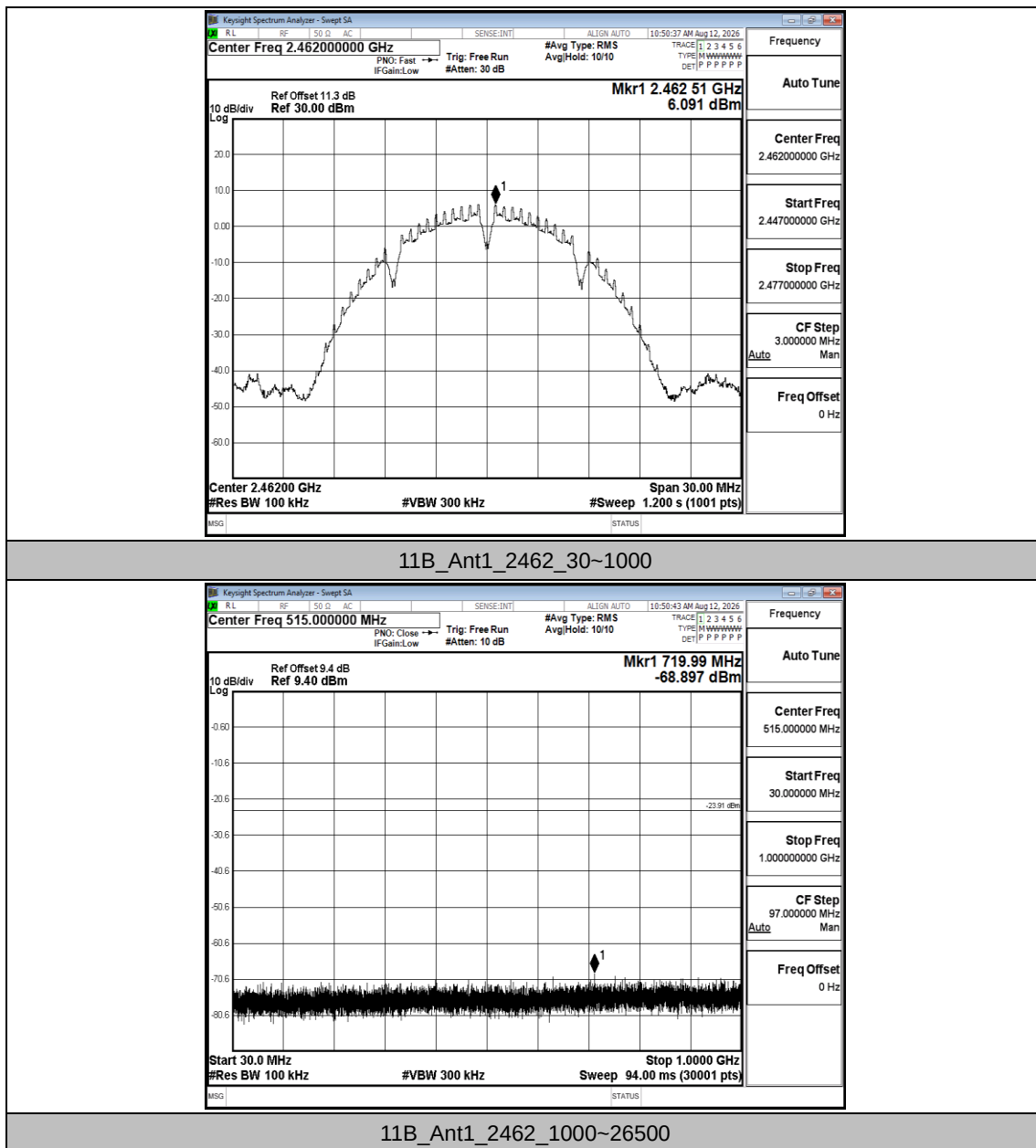


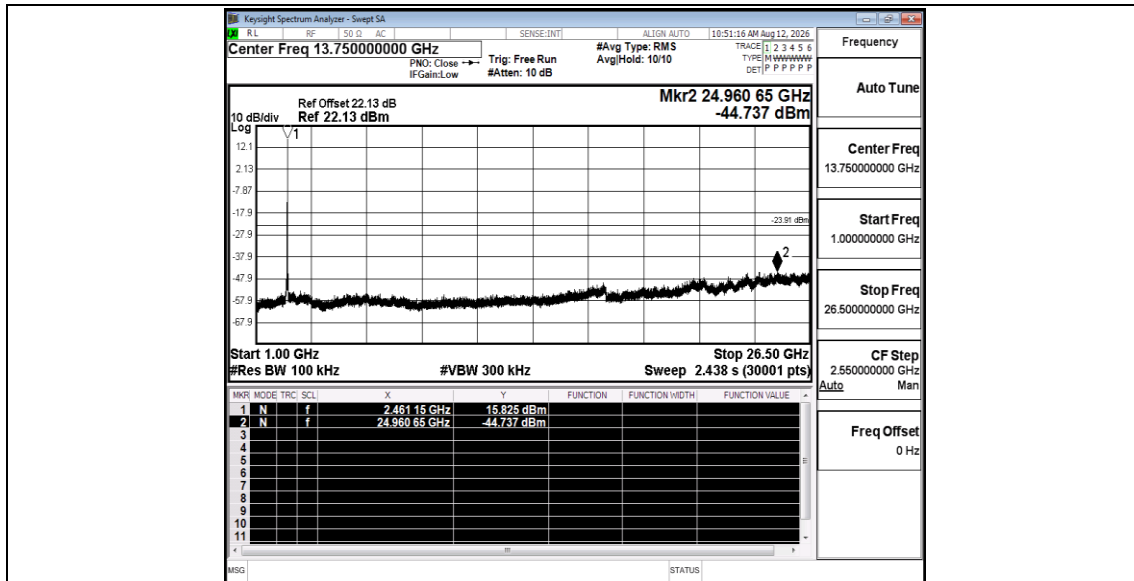
11B_Ant1_2437_0~Reference



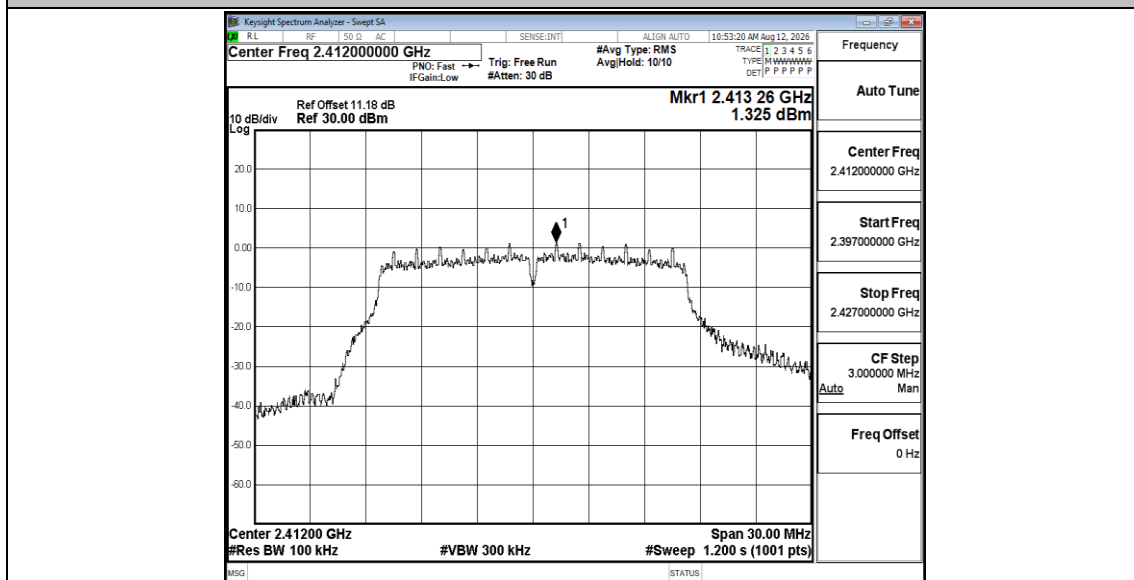
11B_Ant1_2437_30~1000



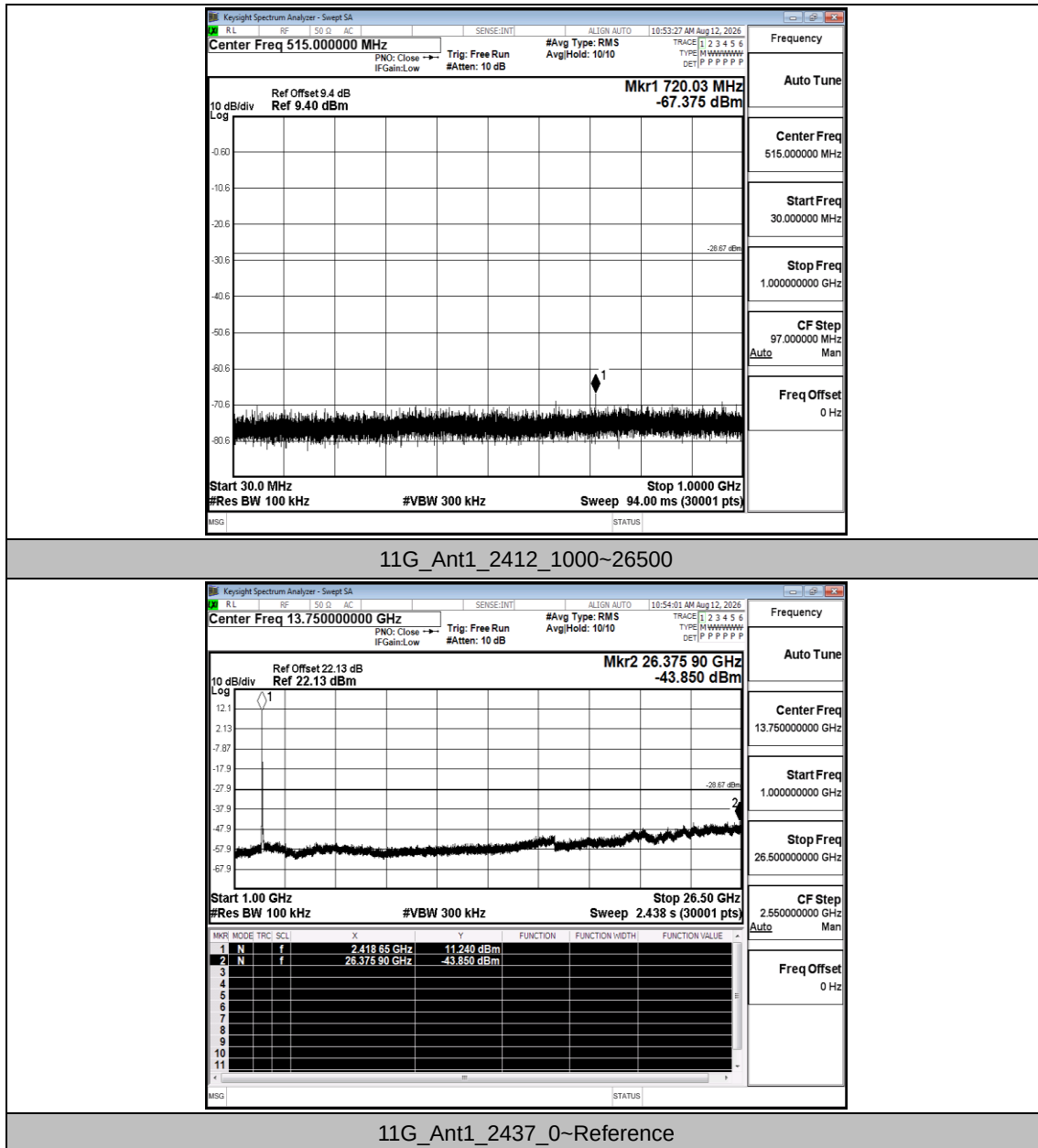


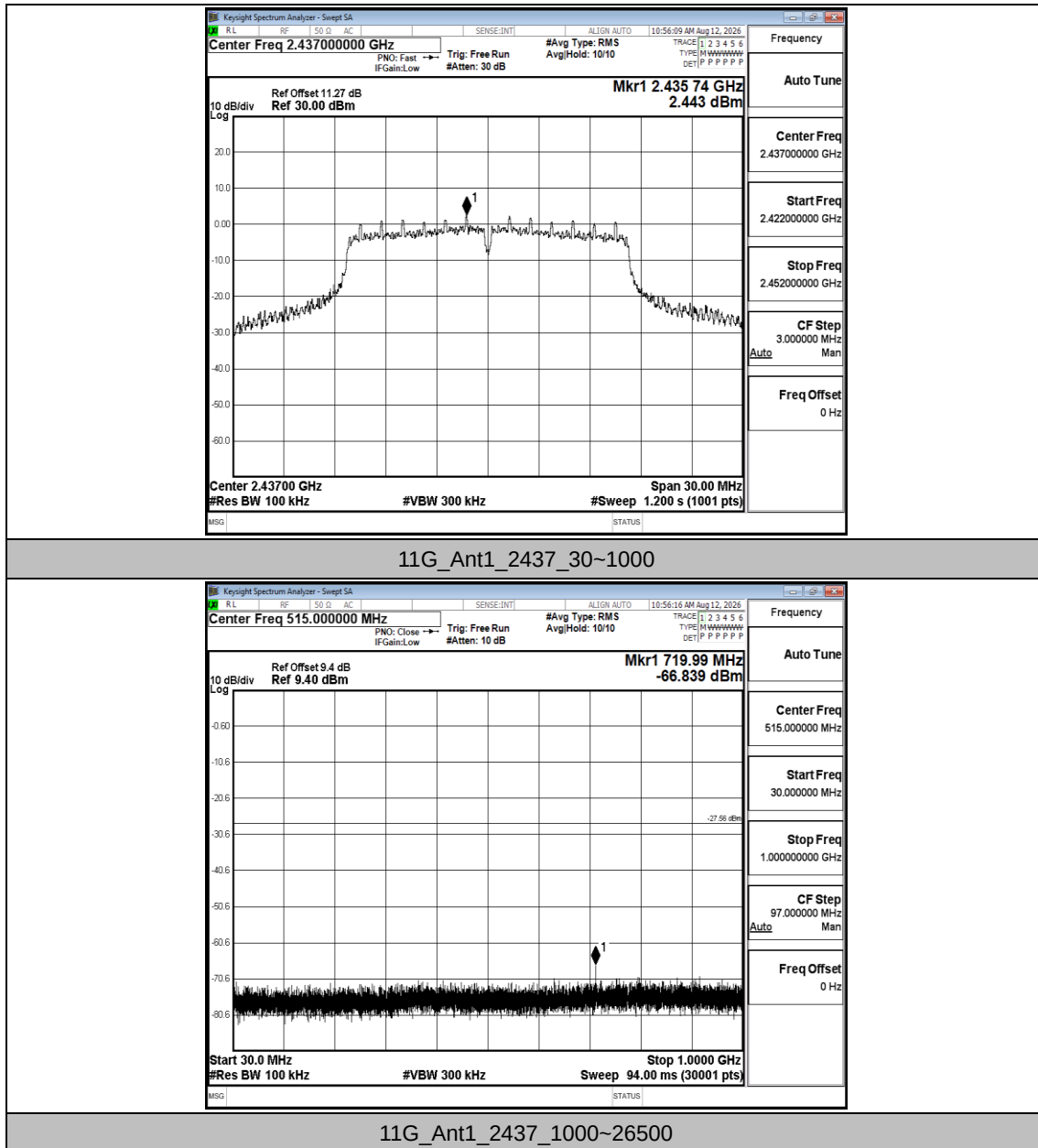


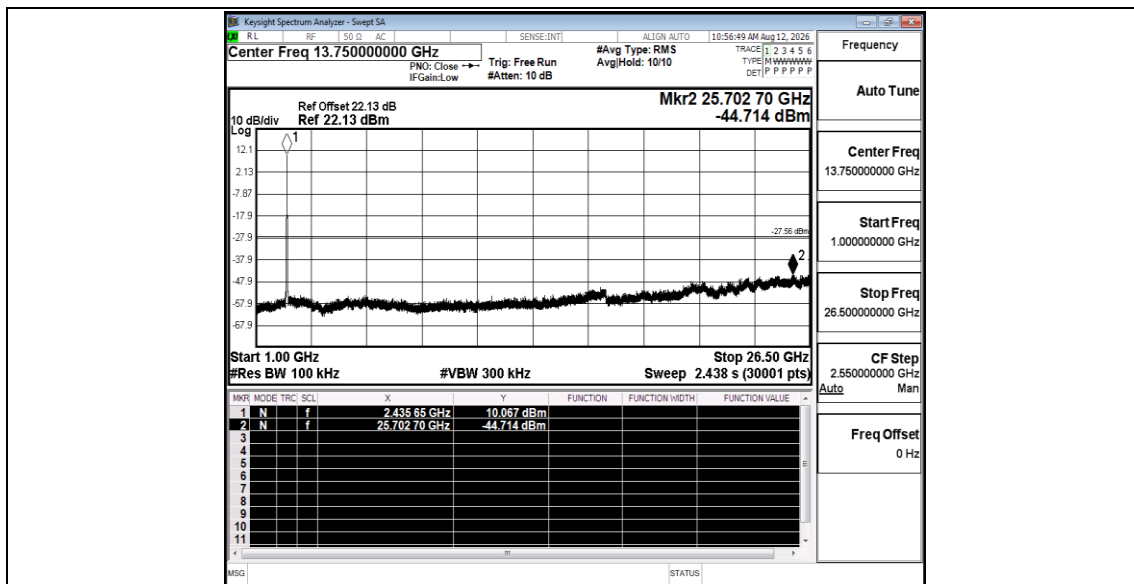
11G_Ant1_2412_0~Reference



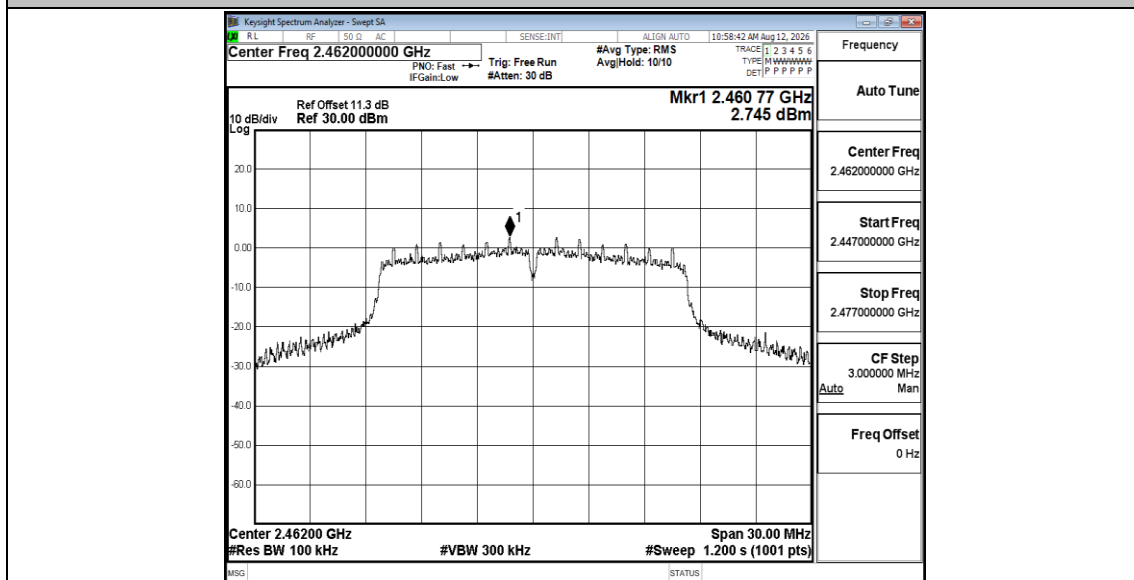
11G_Ant1_2412_30~1000



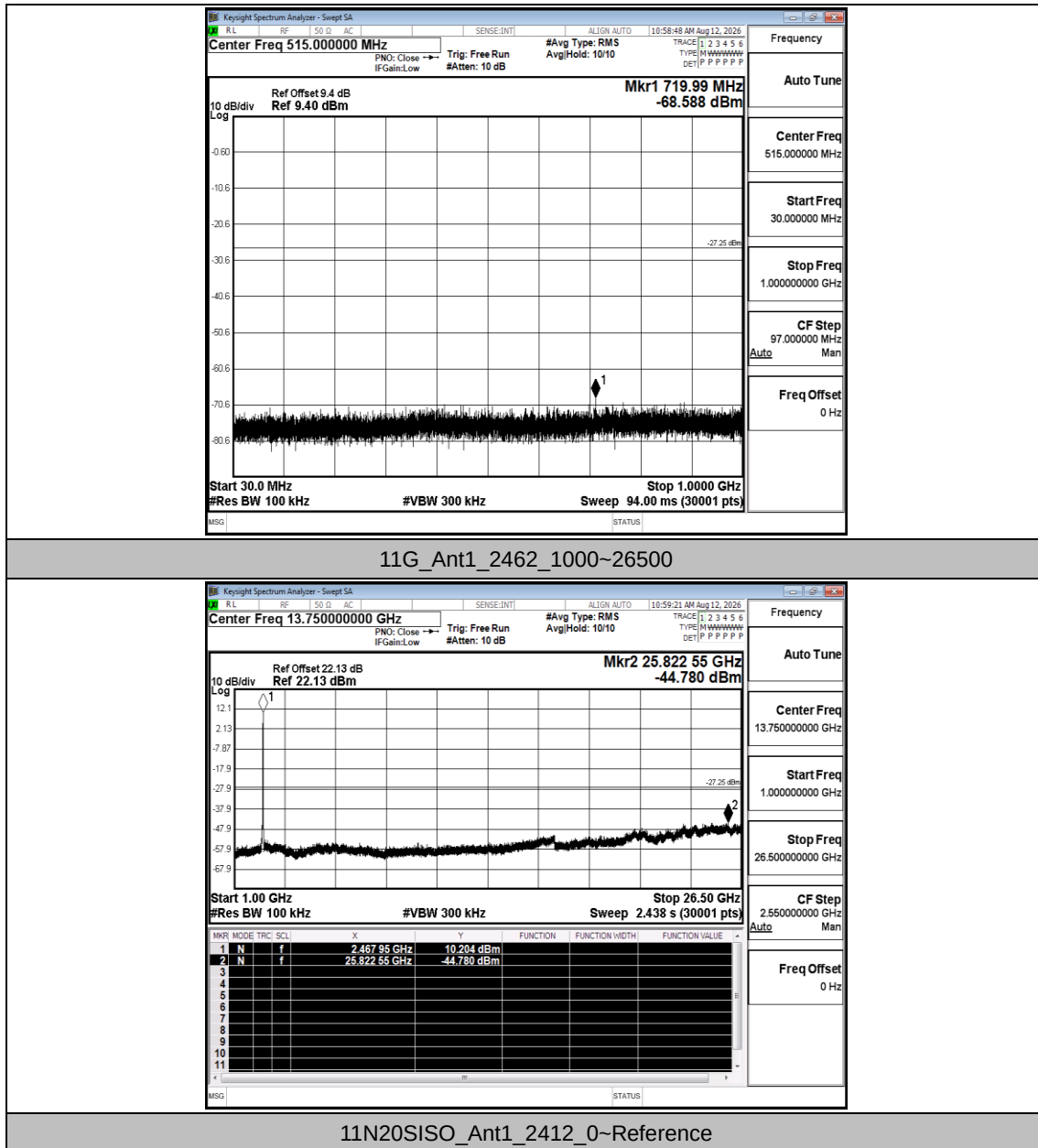


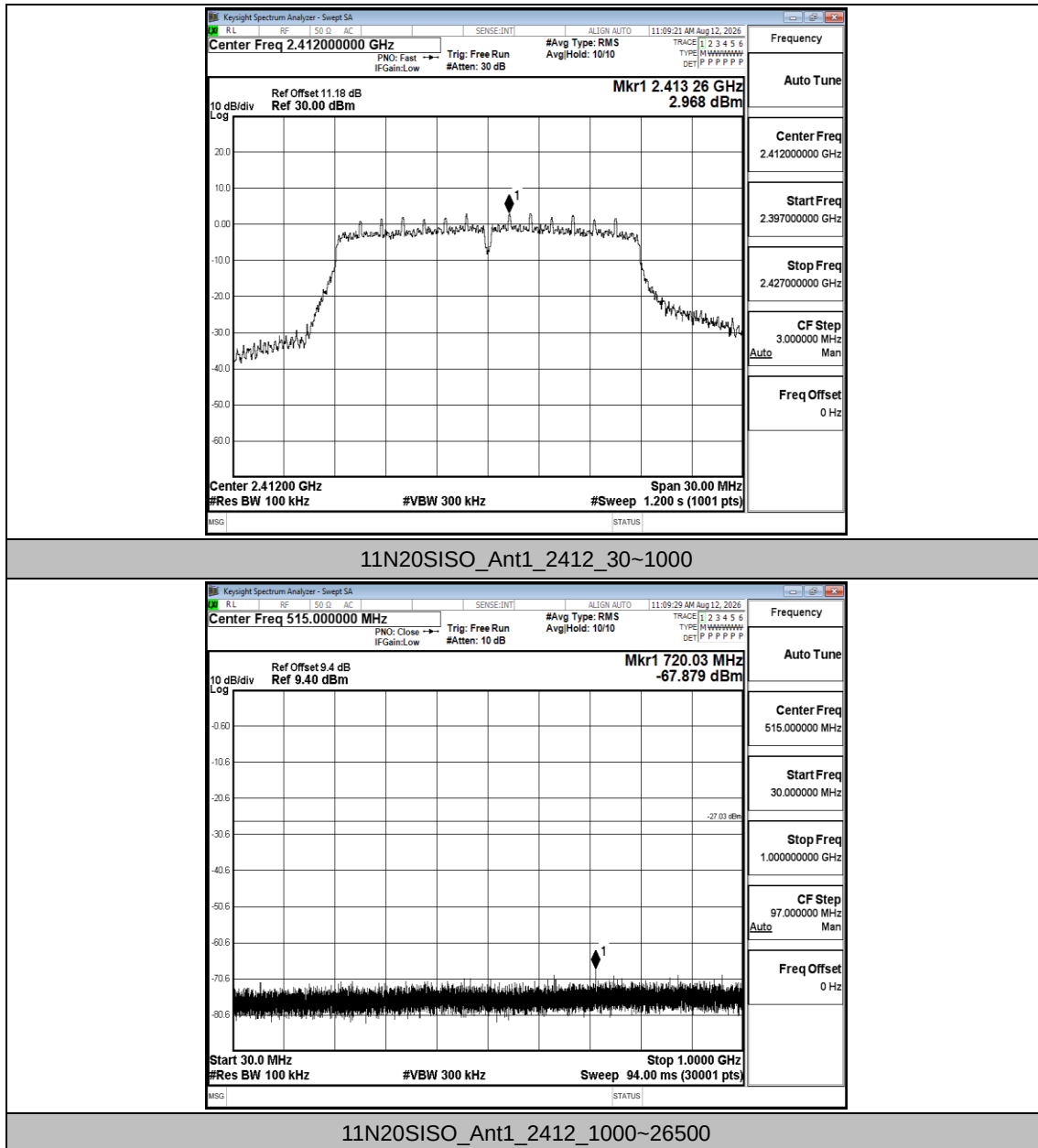


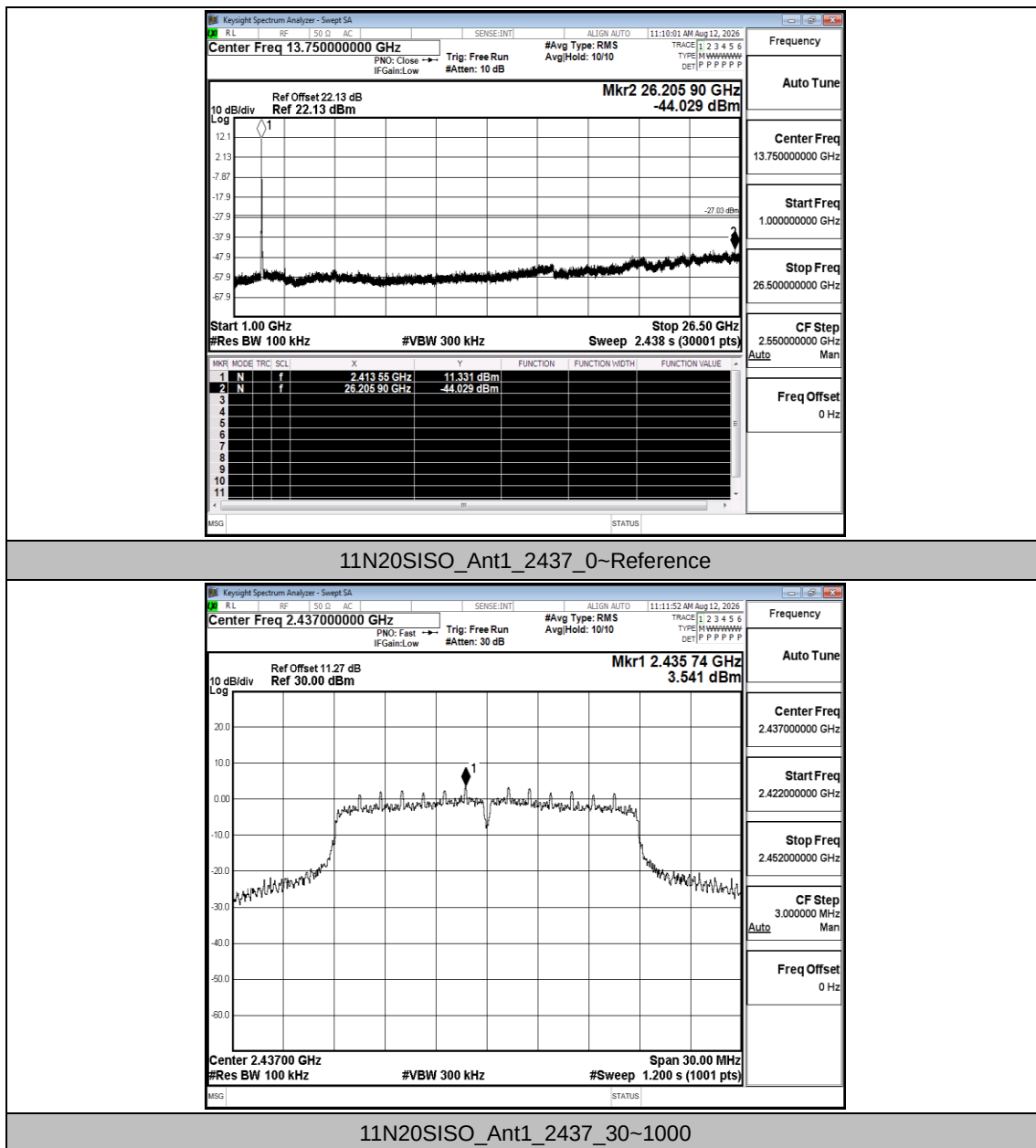
11G_Ant1_2462_0~Reference

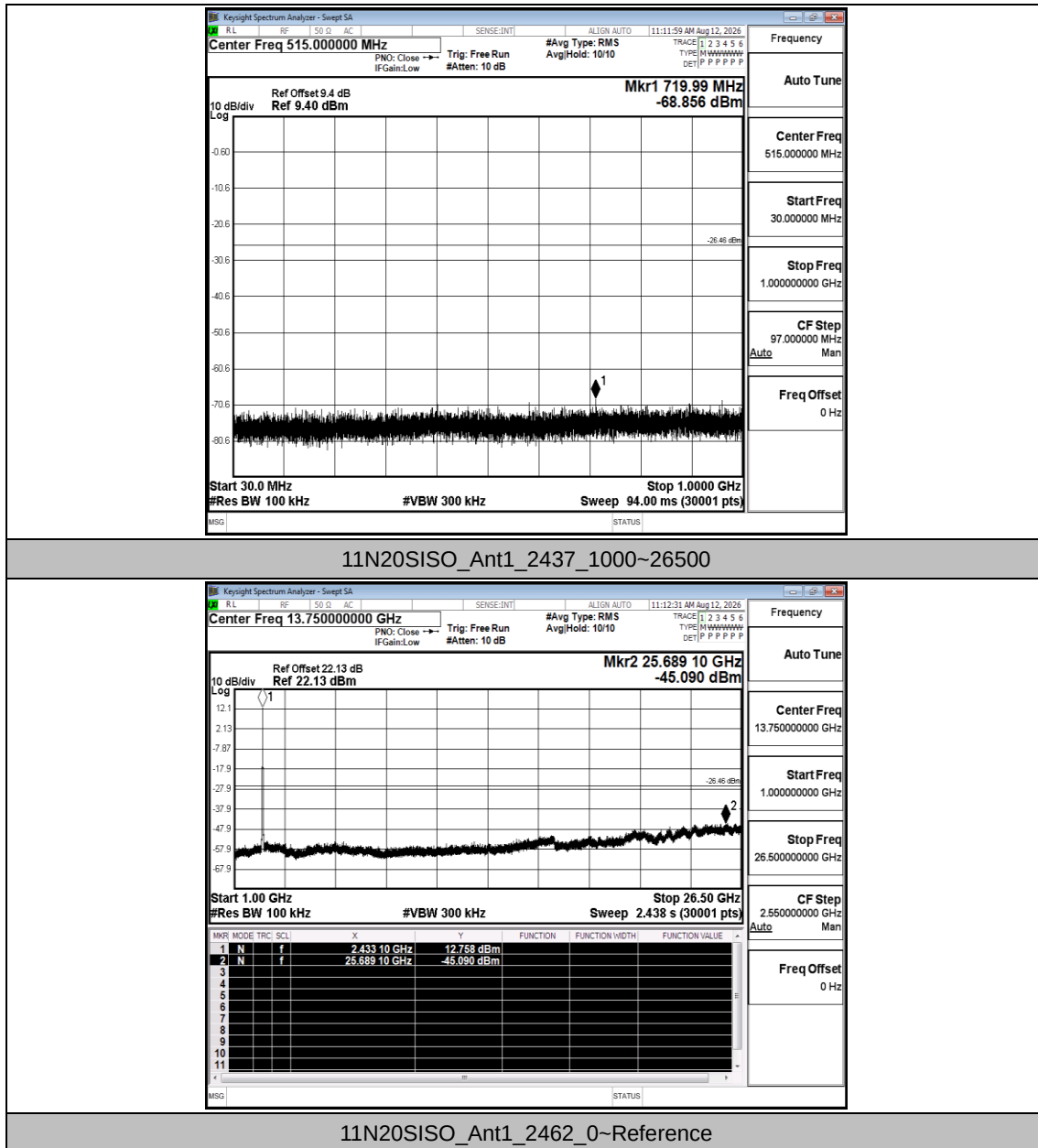


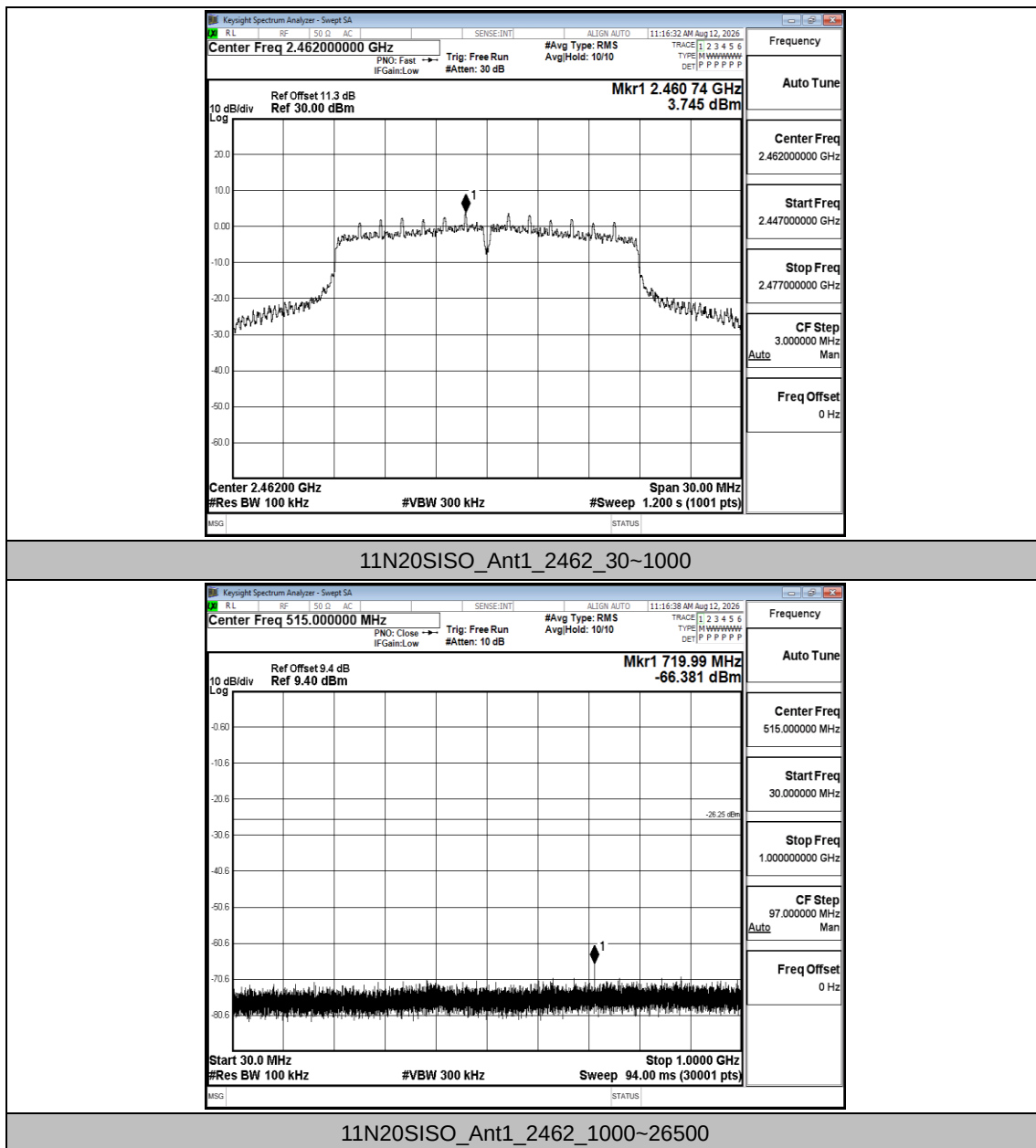
11G_Ant1_2462_30~1000

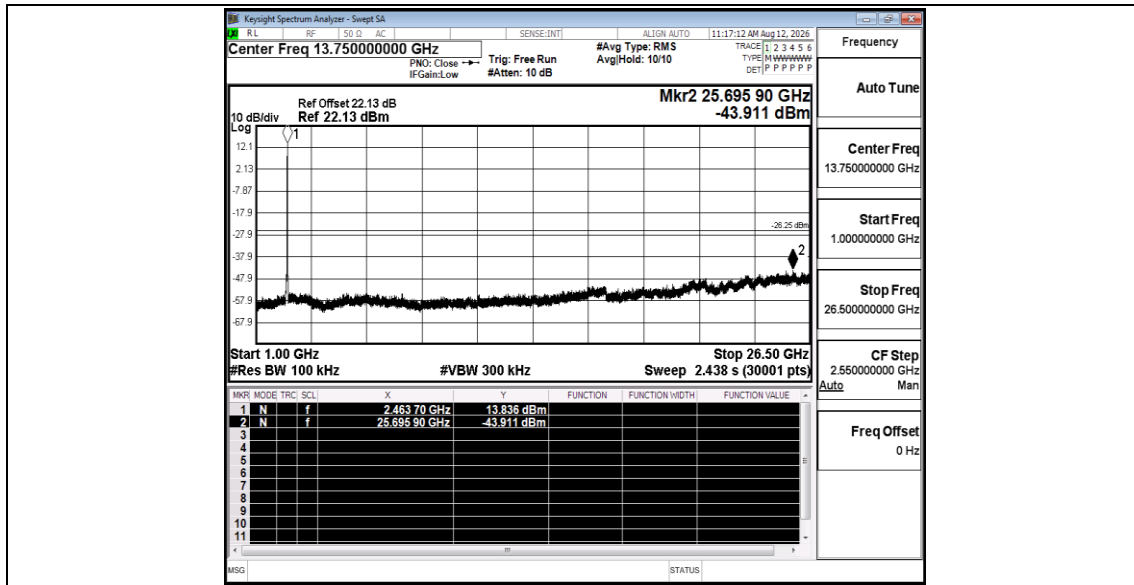










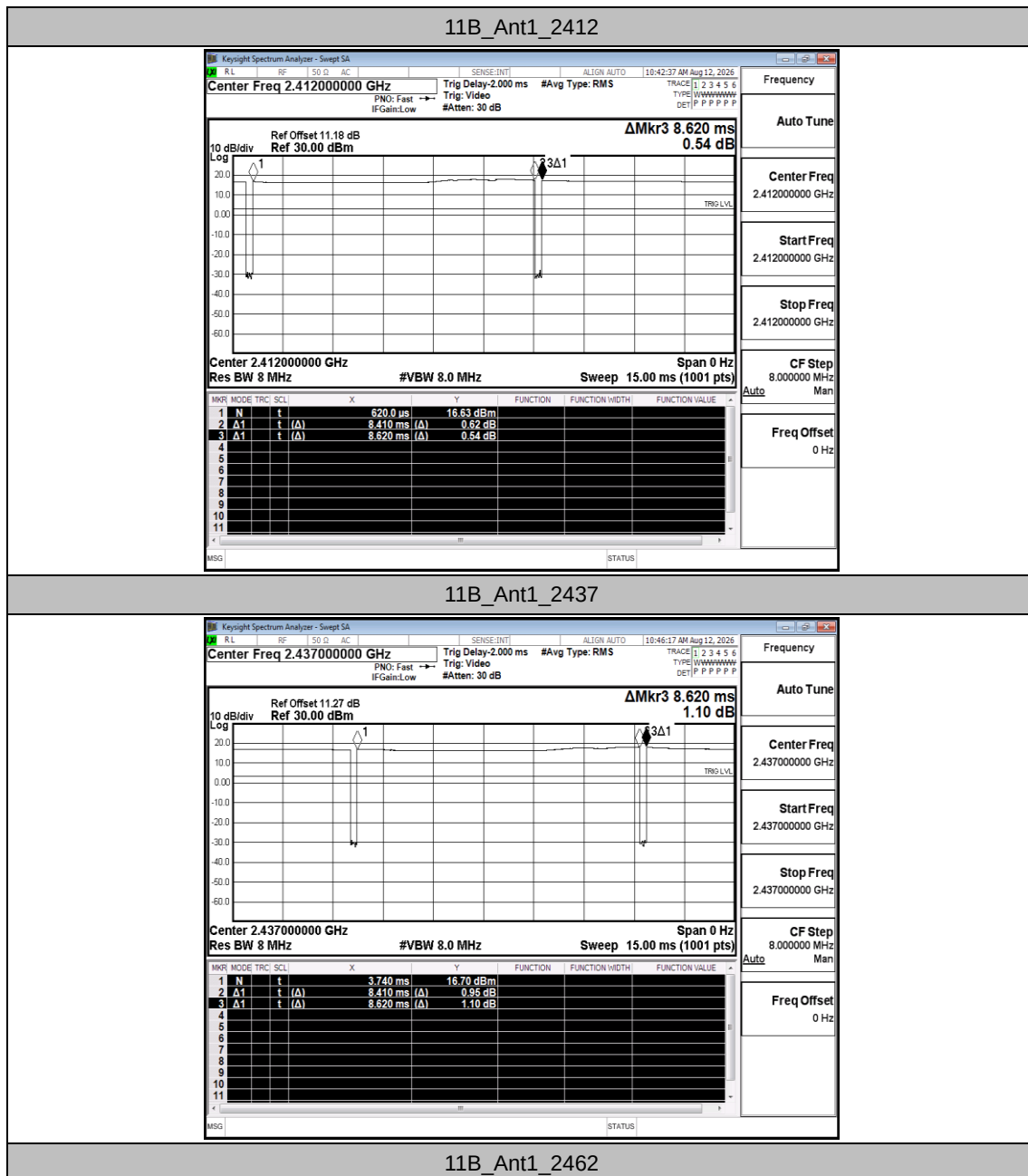


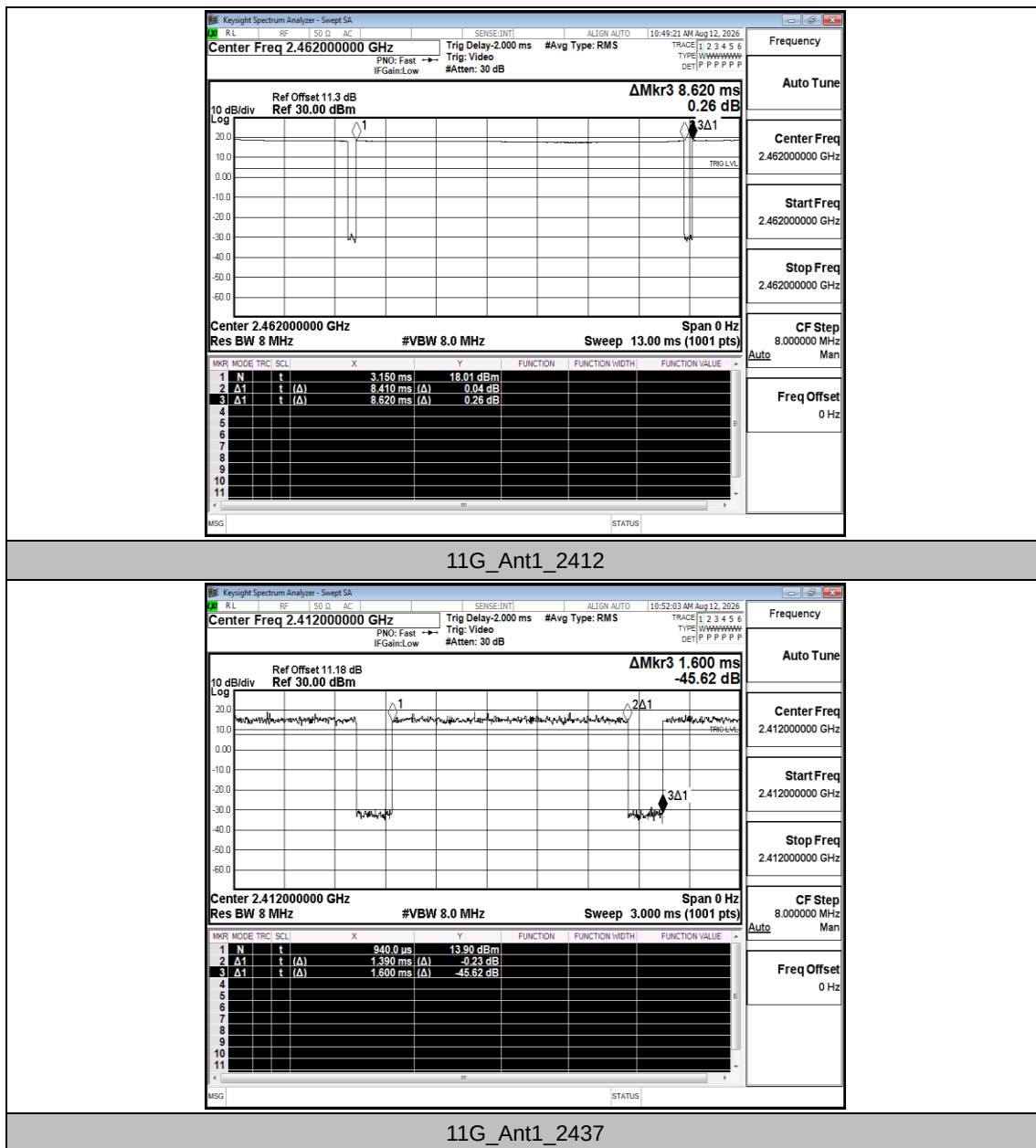
B.6 Duty Cycle

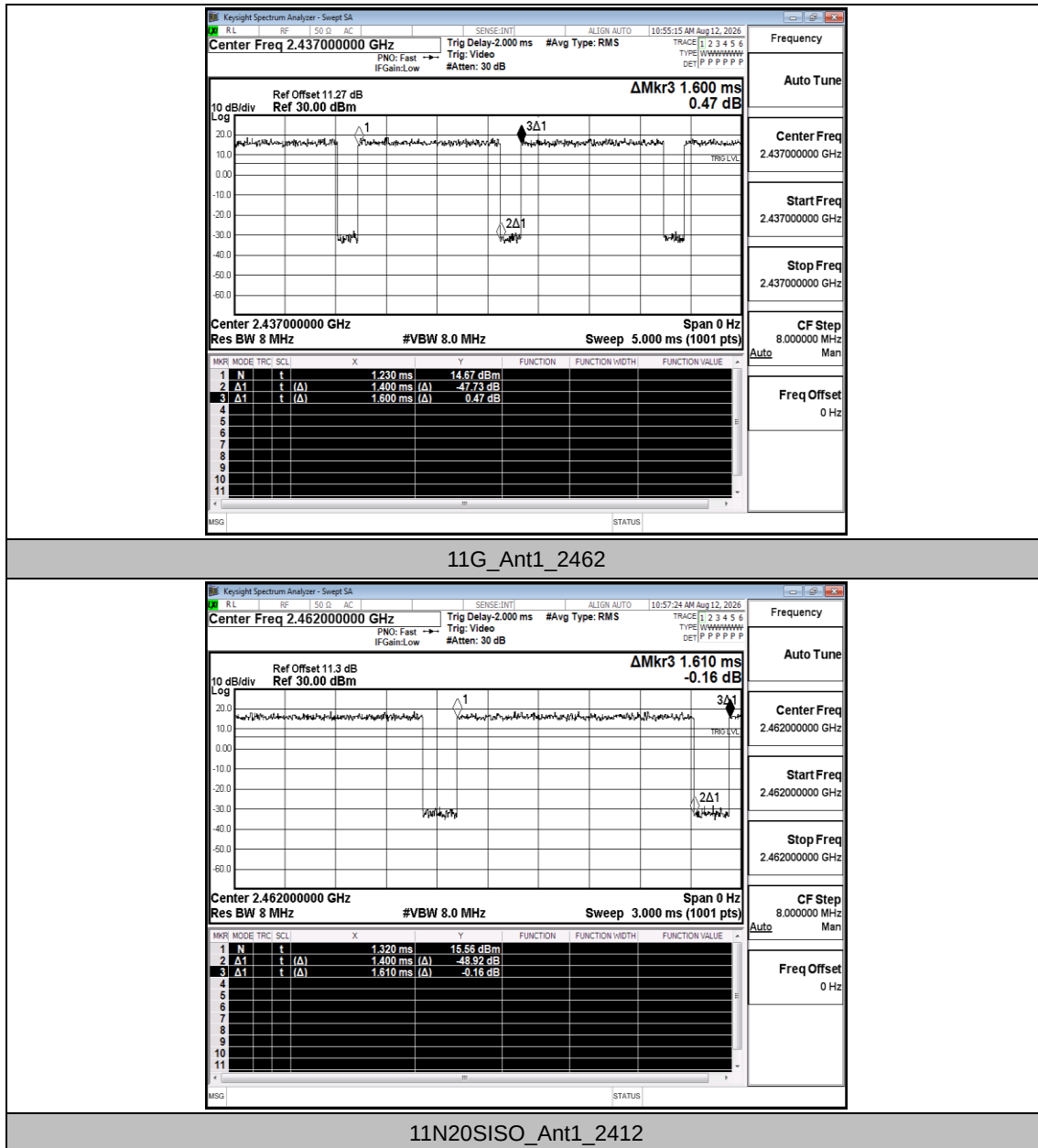
Test Result

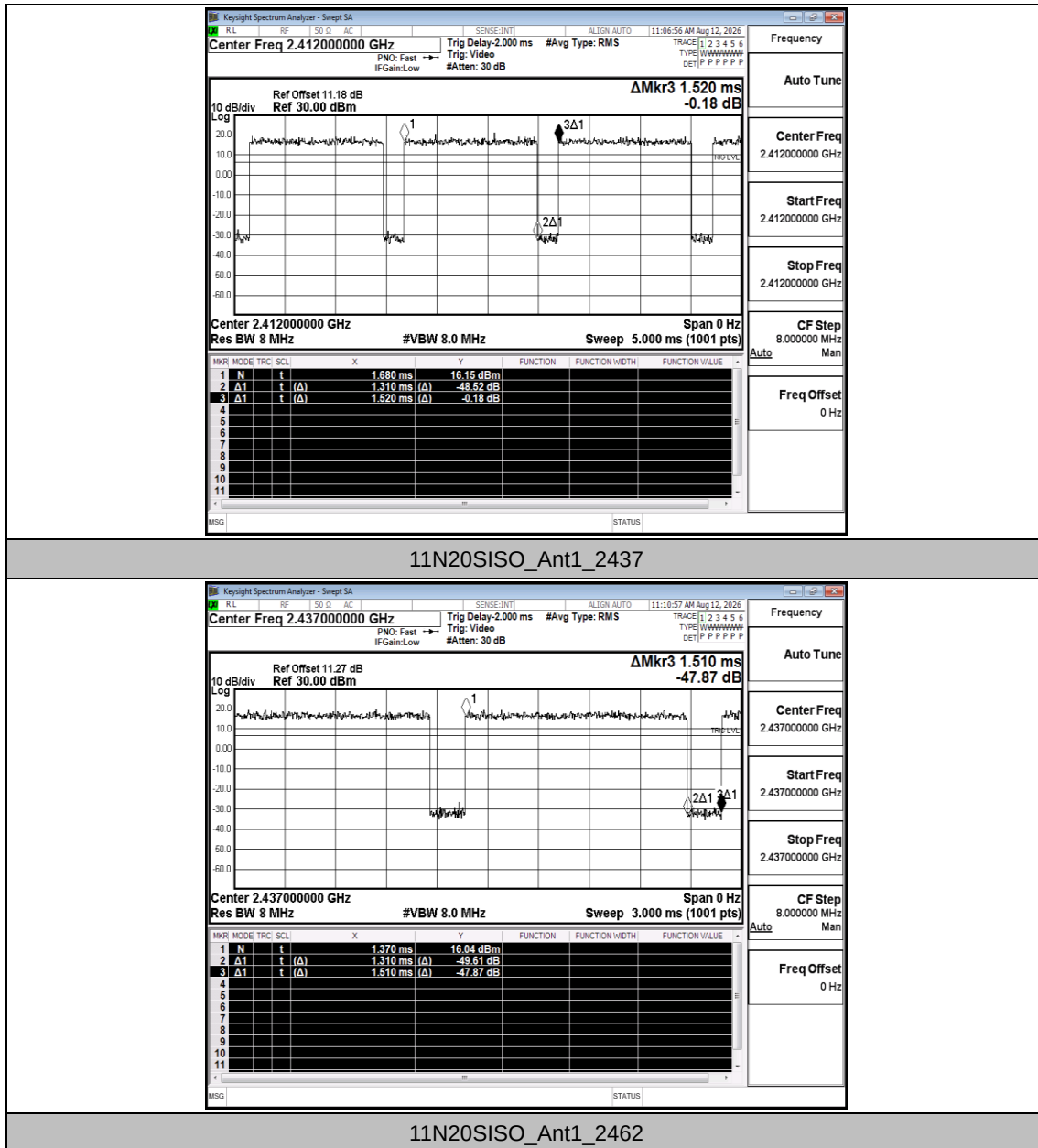
TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	xFactor
11B	Ant1	2412	8.41	8.62	97.56	0.11
		2437	8.41	8.62	97.56	0.11
		2462	8.41	8.62	97.56	0.11
11G	Ant1	2412	1.39	1.60	86.88	0.61
		2437	1.40	1.60	87.50	0.58
		2462	1.40	1.61	86.96	0.61
11N20SISO	Ant1	2412	1.31	1.52	86.18	0.65
		2437	1.31	1.51	86.75	0.62
		2462	1.31	1.52	86.18	0.65

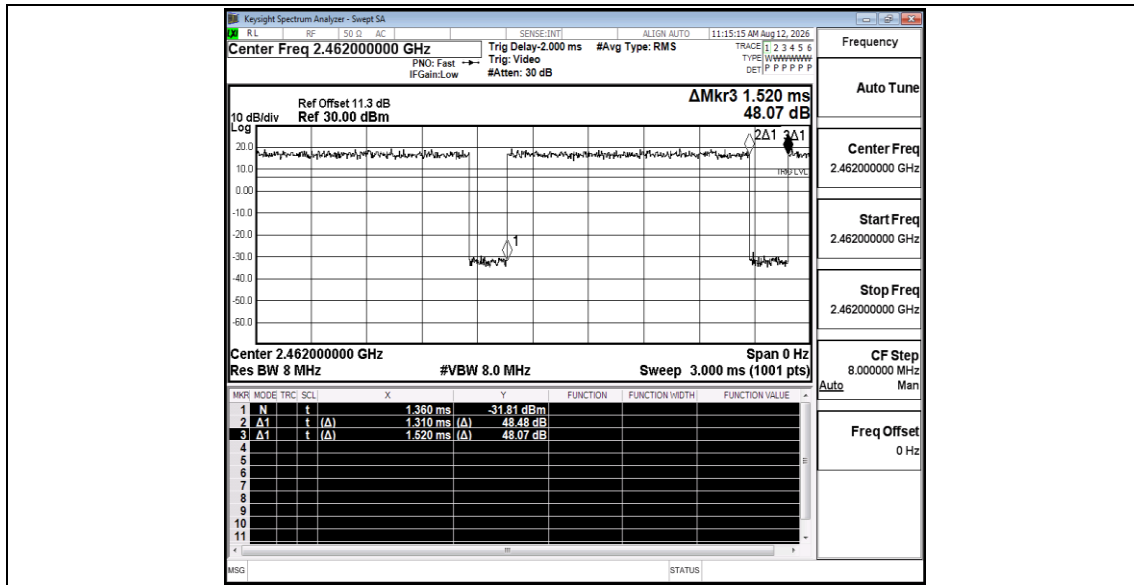
Test Graphs











B.7 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Frequency [MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Gain [dBi]	DC Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
11B	Ant1	Low	2412	AV	2310.000	-57.59	≤-43.31	2.00	0.11	39.72	≤54	PASS
				AV	2389.440	-54.75	≤-43.31	2.00	0.11	42.56	≤54	PASS
				AV	2390.000	-56.2	≤-43.31	2.00	0.11	41.11	≤54	PASS
				Peak	2310.000	-50.22	≤-23.20	2.00	0.00	46.98	≤74	PASS
				Peak	2389.440	-46.26	≤-23.20	2.00	0.00	50.94	≤74	PASS
				Peak	2390.000	-46.99	≤-23.20	2.00	0.00	50.21	≤74	PASS
		High	2462	AV	2483.500	-55.06	≤-43.31	2.00	0.11	42.25	≤54	PASS
				AV	2487.630	-53.26	≤-43.31	2.00	0.11	44.05	≤54	PASS
				AV	2500.000	-56.84	≤-43.31	2.00	0.11	40.47	≤54	PASS
				Peak	2483.500	-48.33	≤-23.20	2.00	0.00	48.87	≤74	PASS
				Peak	2486.310	-45.25	≤-23.20	2.00	0.00	51.95	≤74	PASS
				Peak	2500.000	-49.68	≤-23.20	2.00	0.00	47.52	≤74	PASS
11G	Ant1	Low	2412	AV	2310.000	-58.18	≤-43.81	2.00	0.61	39.63	≤54	PASS
				AV	2389.700	-55.27	≤-43.81	2.00	0.61	42.54	≤54	PASS
				AV	2390.000	-55.49	≤-43.81	2.00	0.61	42.32	≤54	PASS
				Peak	2310.000	-49.96	≤-23.20	2.00	0.00	47.24	≤74	PASS
				Peak	2389.050	-45.07	≤-23.20	2.00	0.00	52.13	≤74	PASS
				Peak	2390.000	-46.01	≤-23.20	2.00	0.00	51.19	≤74	PASS
		High	2462	AV	2483.500	-52.38	≤-43.81	2.00	0.61	45.43	≤54	PASS
				AV	2483.560	-52.45	≤-43.81	2.00	0.61	45.36	≤54	PASS
				AV	2500.000	-57.5	≤-43.81	2.00	0.61	40.31	≤54	PASS
				Peak	2483.500	-43.38	≤-23.20	2.00	0.00	53.82	≤74	PASS
				Peak	2483.670	-42.12	≤-23.20	2.00	0.00	55.08	≤74	PASS
				Peak	2500.000	-48	≤-23.20	2.00	0.00	49.20	≤74	PASS
11N20SISO	Ant1	Low	2412	AV	2310.000	-57.7	≤-43.85	2.00	0.65	40.15	≤54	PASS
				AV	2389.570	-51.78	≤-43.85	2.00	0.65	46.07	≤54	PASS
				AV	2390.000	-51.84	≤-43.85	2.00	0.65	46.01	≤54	PASS
				Peak	2310.000	-48.61	≤-23.20	2.00	0.00	48.59	≤74	PASS
				Peak	2389.960	-37.16	≤-23.20	2.00	0.00	60.04	≤74	PASS
				Peak	2390.000	-37.16	≤-23.20	2.00	0.00	60.04	≤74	PASS
		High	2462	AV	2483.500	-49.48	≤-43.85	2.00	0.65	48.37	≤54	PASS
				AV	2483.560	-49.91	≤-43.85	2.00	0.65	47.94	≤54	PASS
				AV	2500.000	-57.43	≤-43.85	2.00	0.65	40.42	≤54	PASS
				Peak	2483.500	-40.9	≤-23.20	2.00	0.00	56.30	≤74	PASS
				Peak	2483.560	-40.1	≤-23.20	2.00	0.00	57.10	≤74	PASS
				Peak	2500.000	-48.54	≤-23.20	2.00	0.00	48.66	≤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.