

Appendix B

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Portable Power Station

Test Model: Alpha2000

Environmental Conditions

Temperature:	23.8 ° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Suichao Lai
Supervised by:	Yan Chen

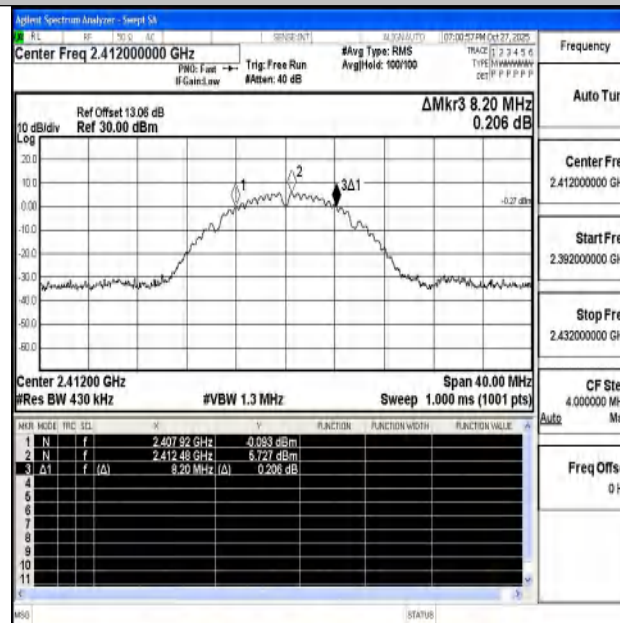
B.1 -6dB Bandwidth

Test Result

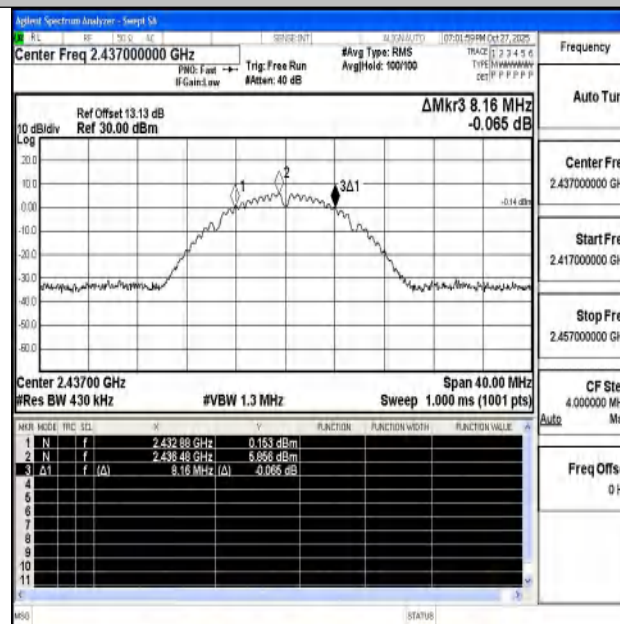
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.200	2407.920	2416.120	0.5	PASS
11B	Ant1	2437	8.160	2432.880	2441.040	0.5	PASS
11B	Ant1	2462	8.200	2457.880	2466.080	0.5	PASS
11G	Ant1	2412	16.120	2404.080	2420.200	0.5	PASS
11G	Ant1	2437	16.080	2428.920	2445.000	0.5	PASS
11G	Ant1	2462	16.280	2453.840	2470.120	0.5	PASS
11N20SISO	Ant1	2412	16.680	2403.880	2420.560	0.5	PASS
11N20SISO	Ant1	2437	17.360	2428.360	2445.720	0.5	PASS
11N20SISO	Ant1	2462	17.240	2453.320	2470.560	0.5	PASS
11N40SISO	Ant1	2422	35.760	2404.000	2439.760	0.5	PASS
11N40SISO	Ant1	2437	34.320	2419.880	2454.200	0.5	PASS
11N40SISO	Ant1	2452	35.600	2433.920	2469.520	0.5	PASS

Test Graphs

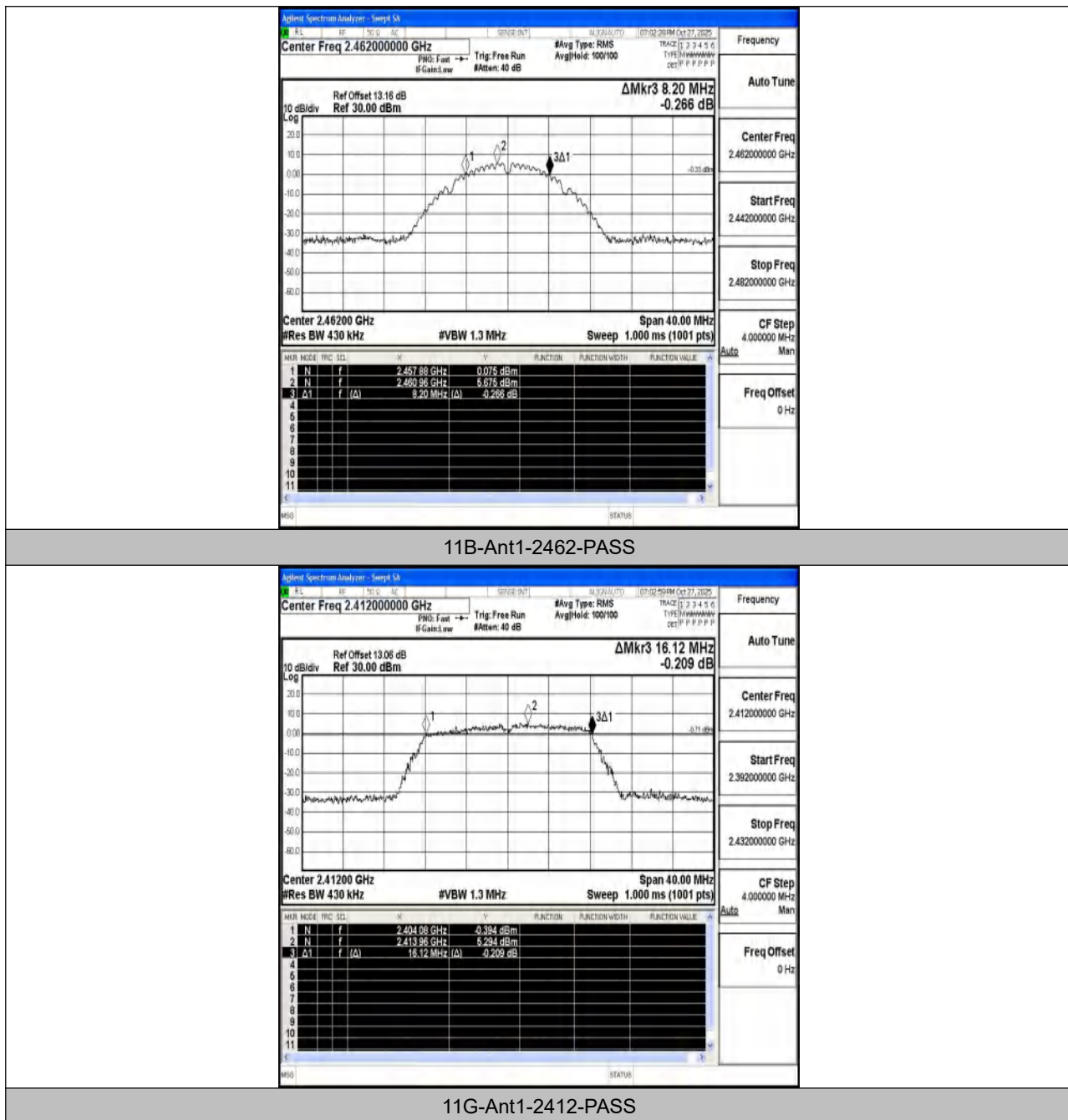
11B_Ant1_2412

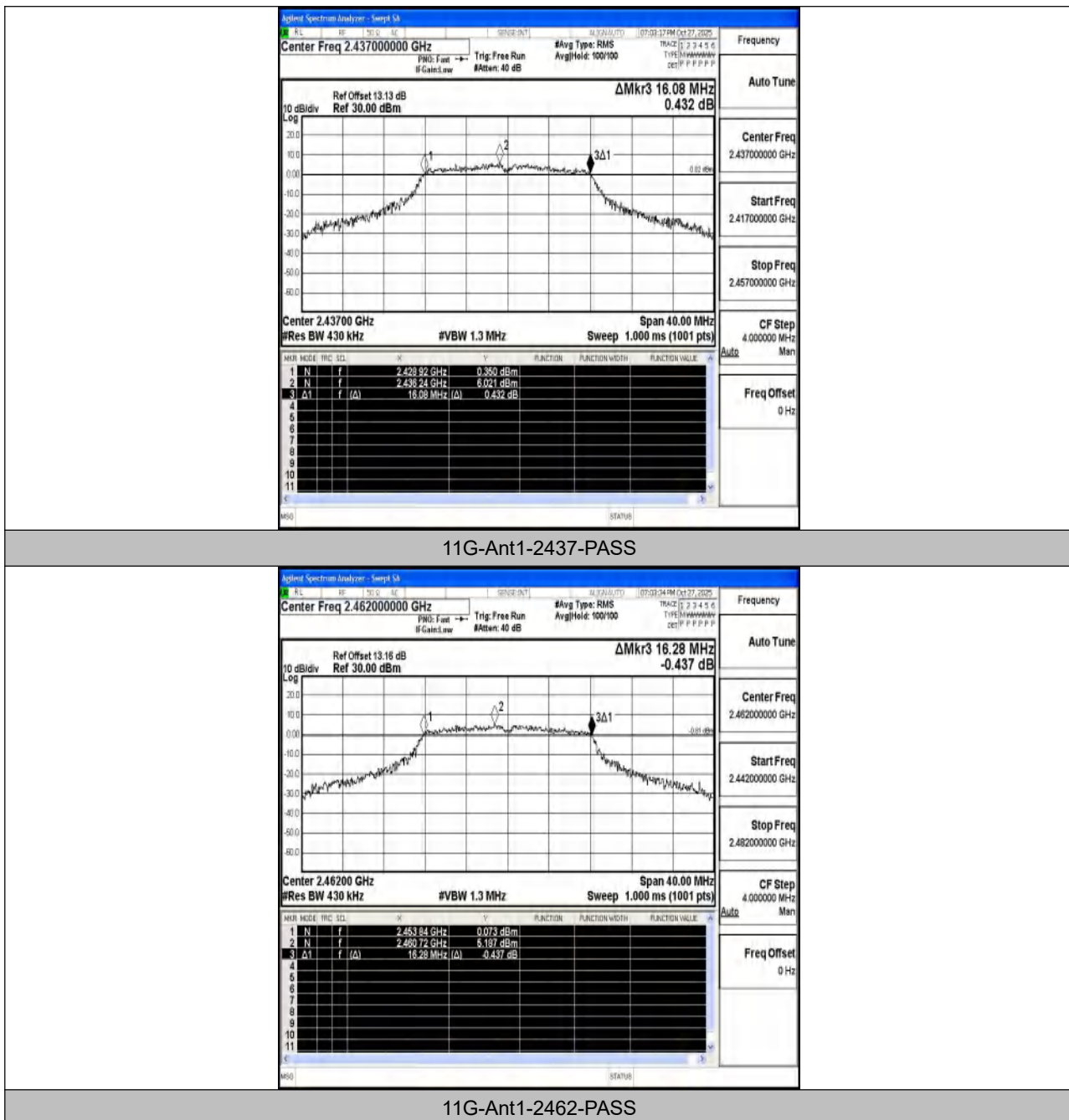


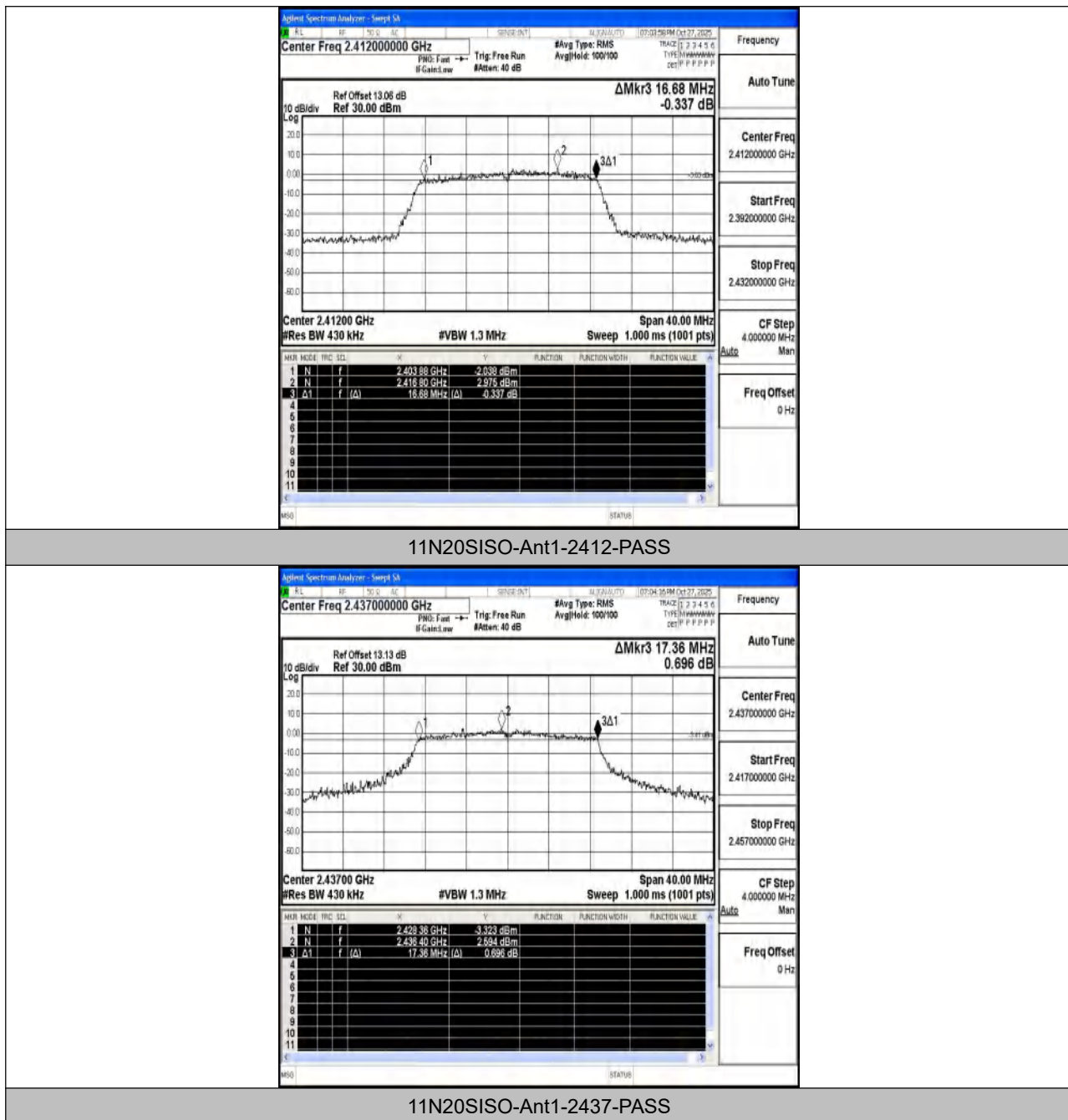
11B-Ant1-2412-PASS

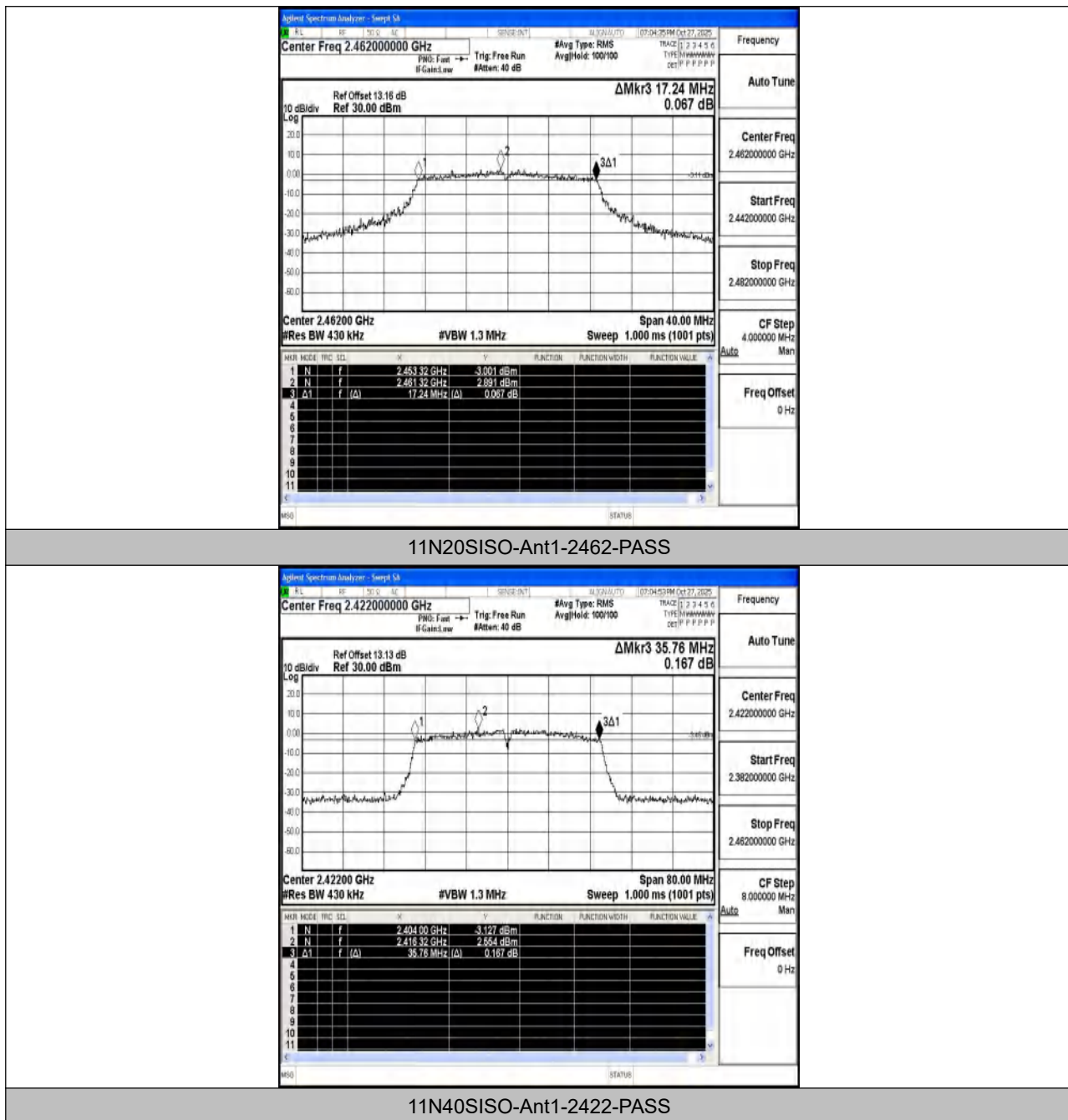


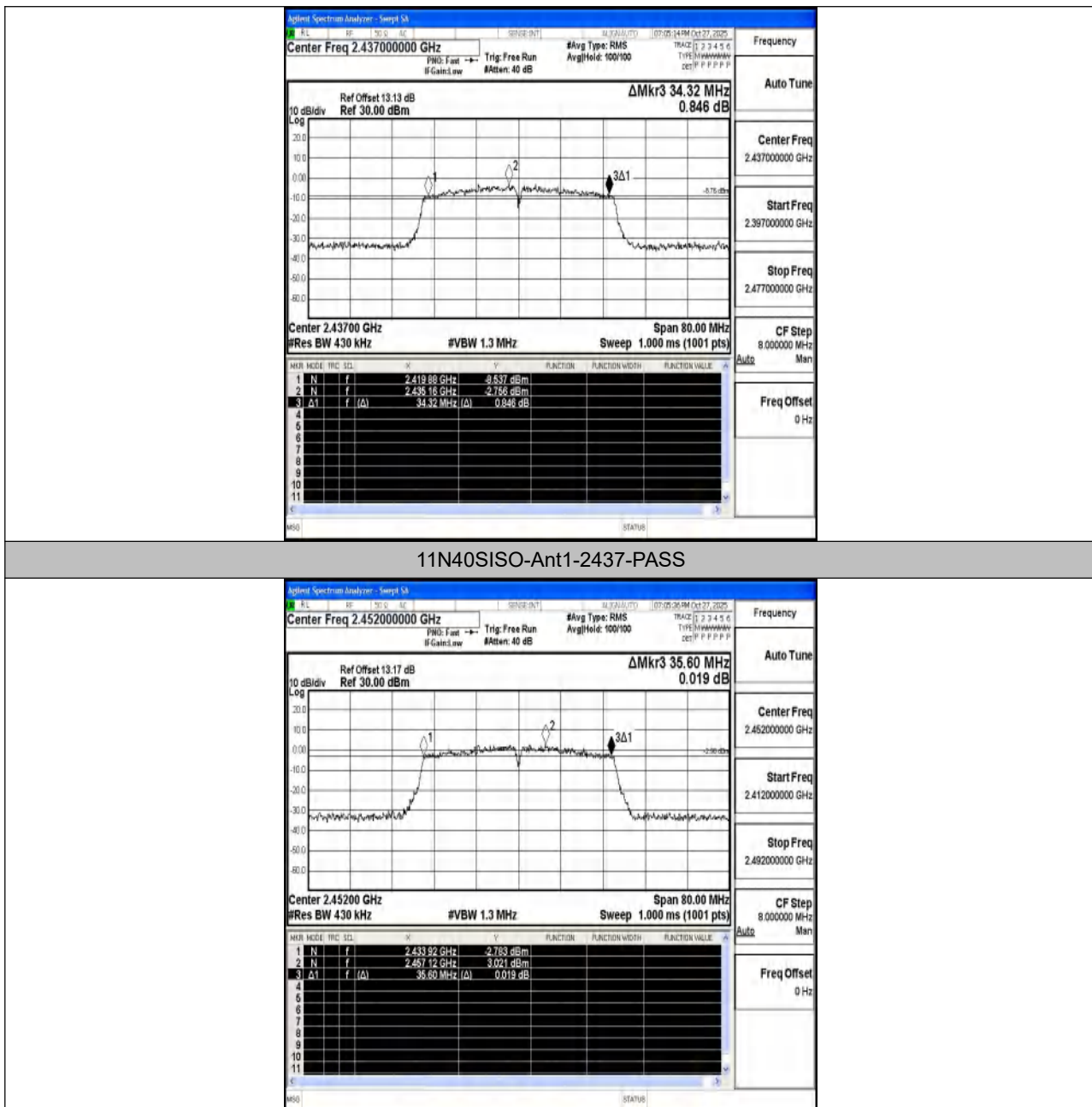
11B-Ant1-2437-PASS











B.2 Maximum Conducted Output Power

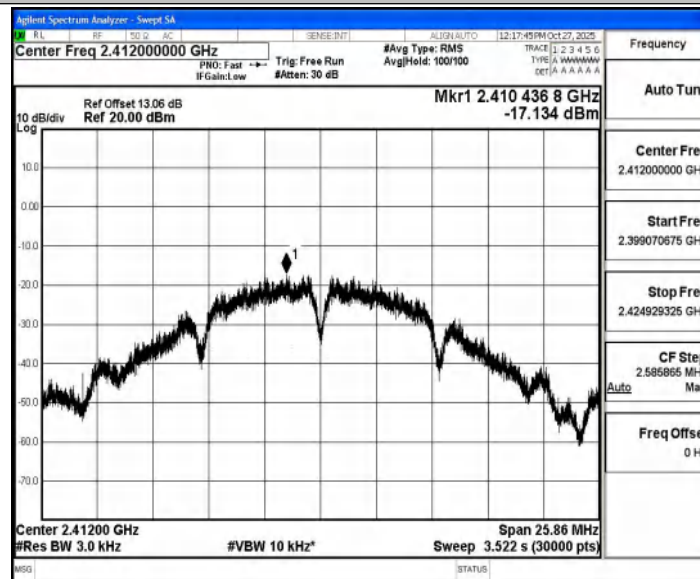
Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	13.79	30	Pass
NVNT	b	2437	Ant1	11.95	30	Pass
NVNT	b	2462	Ant1	15.62	30	Pass
NVNT	g	2412	Ant1	13.07	30	Pass
NVNT	g	2437	Ant1	11.47	30	Pass
NVNT	g	2462	Ant1	15.38	30	Pass
NVNT	n20	2412	Ant1	13.20	30	Pass
NVNT	n20	2437	Ant1	11.65	30	Pass
NVNT	n20	2462	Ant1	15.33	30	Pass
NVNT	n40	2422	Ant1	12.96	30	Pass
NVNT	n40	2437	Ant1	12.08	30	Pass
NVNT	n40	2452	Ant1	13.45	30	Pass

B.3 Maximum Power Spectral Density Level

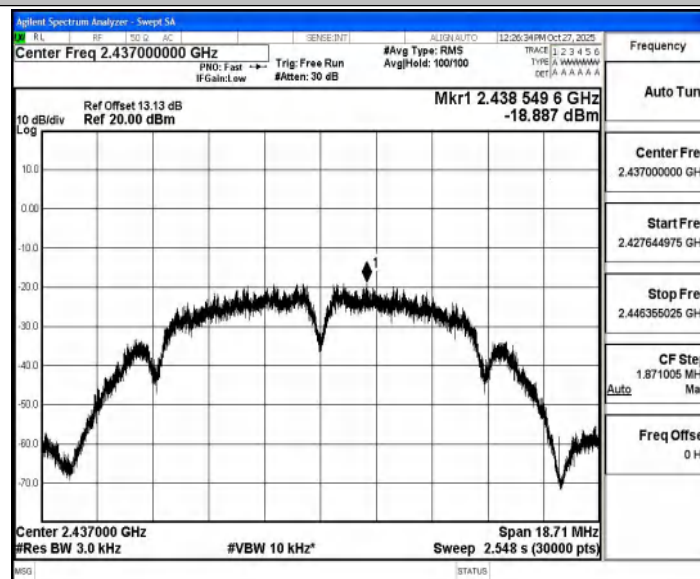
Condition	Mode	Frequency (MHz)	Antenna	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant1	-16.79	8	Pass
NVNT	b	2437	Ant1	-18.55	8	Pass
NVNT	b	2462	Ant1	-13.13	8	Pass
NVNT	g	2412	Ant1	-15.14	8	Pass
NVNT	g	2437	Ant1	-17.61	8	Pass
NVNT	g	2462	Ant1	-13.61	8	Pass
NVNT	n20	2412	Ant1	-16.29	8	Pass
NVNT	n20	2437	Ant1	-17.76	8	Pass
NVNT	n20	2462	Ant1	-13.25	8	Pass
NVNT	n40	2422	Ant1	-16.76	8	Pass
NVNT	n40	2437	Ant1	-18.98	8	Pass
NVNT	n40	2452	Ant1	-16.24	8	Pass

Test Graphs

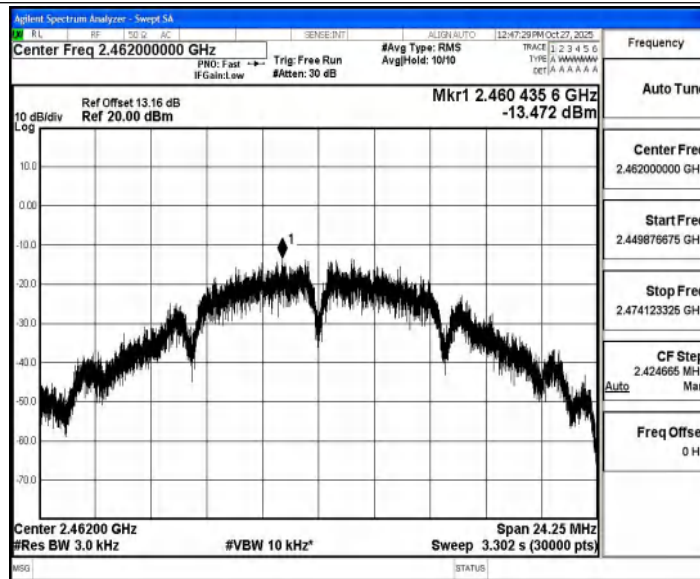
11B_Ant1_2412



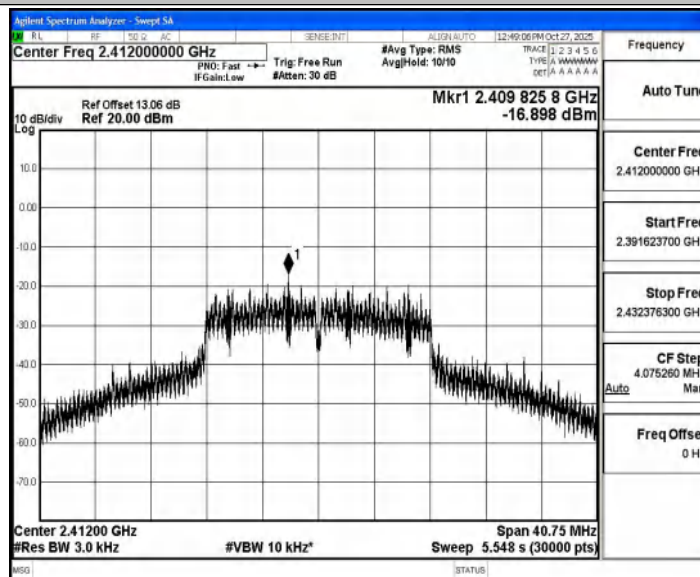
11B_Ant1_2437



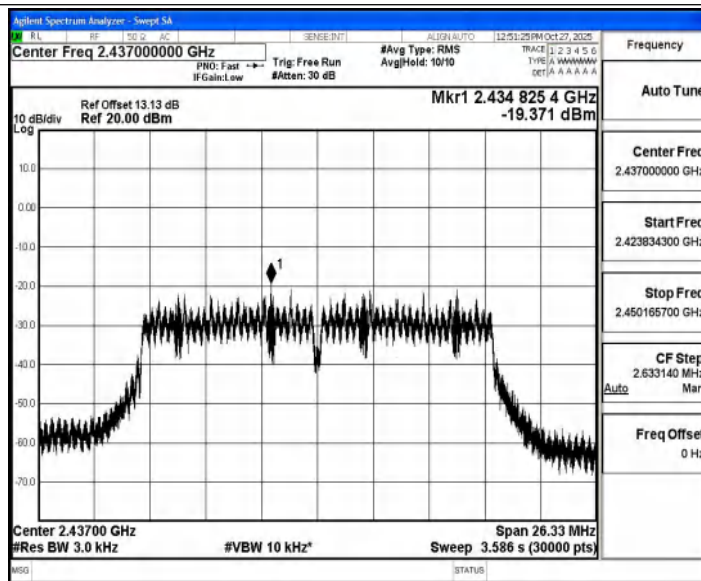
11B_Ant1_2462



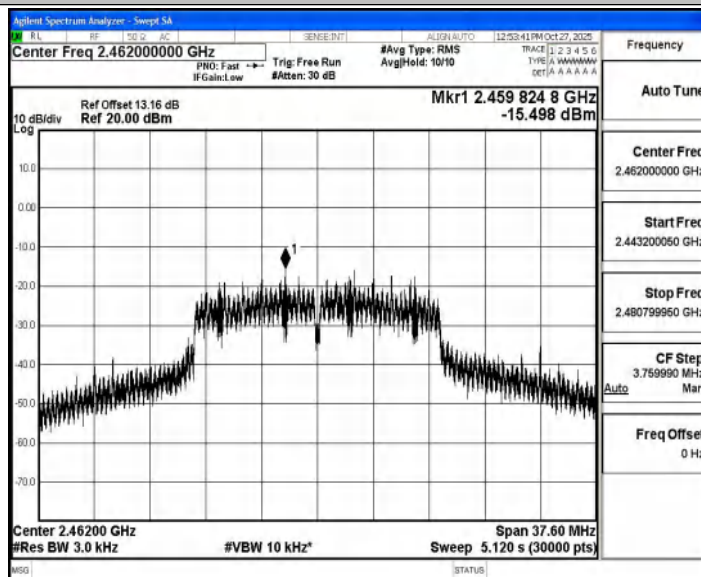
11G_Ant1_2412



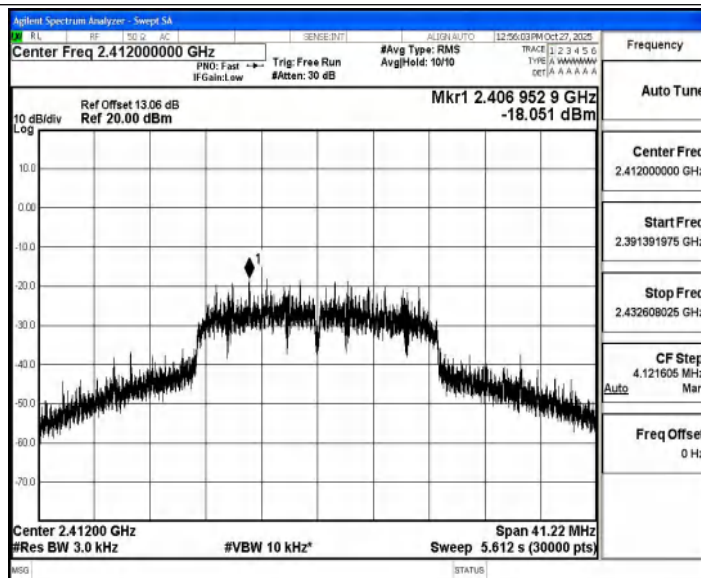
11G_Ant1_2437



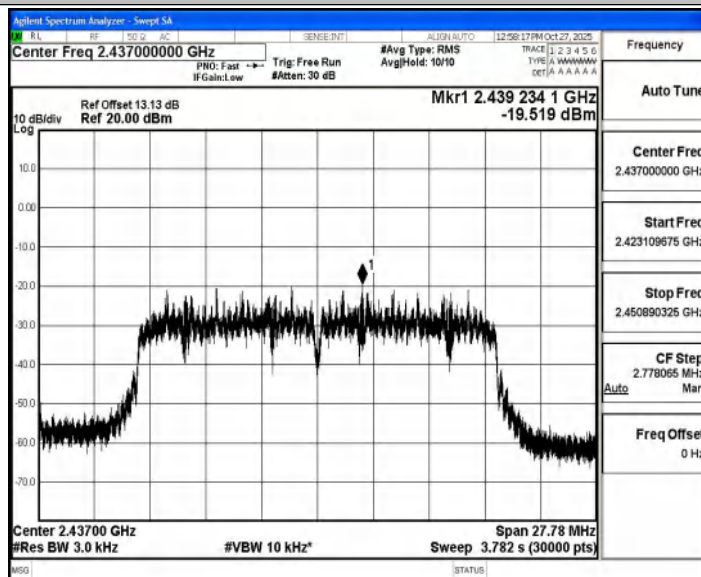
11G_Ant1_2462



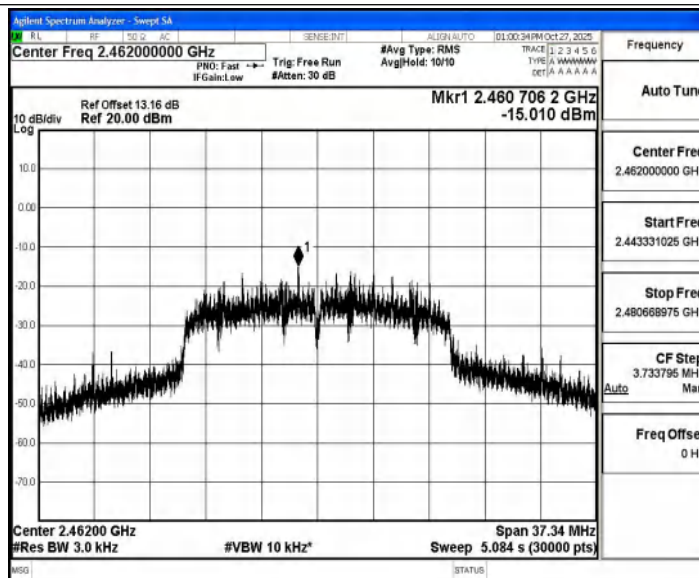
11N20SISO_Ant1_2412



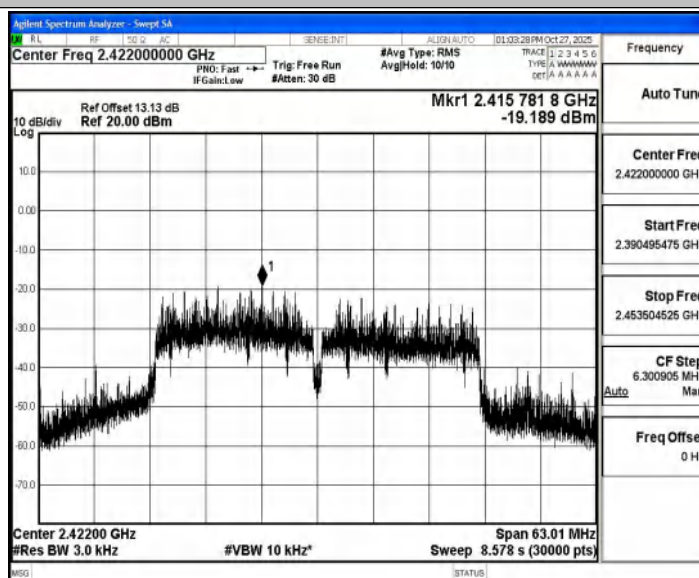
11N20SISO_Ant1_2437



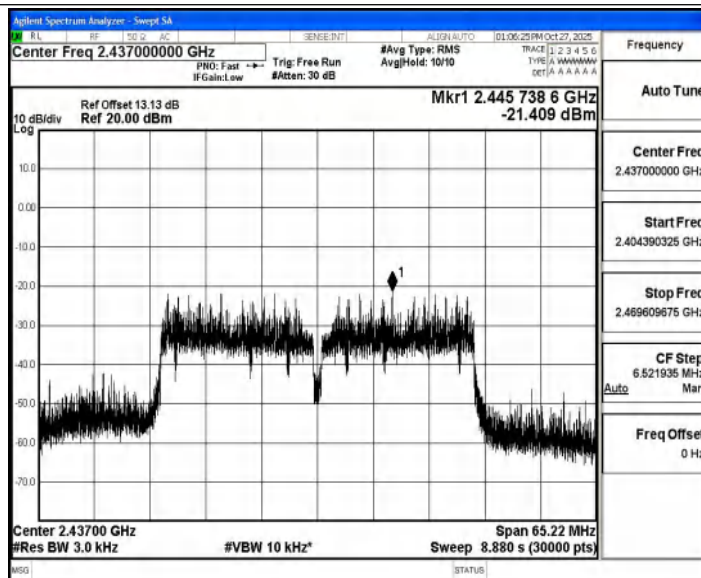
11N20SISO_Ant1_2462



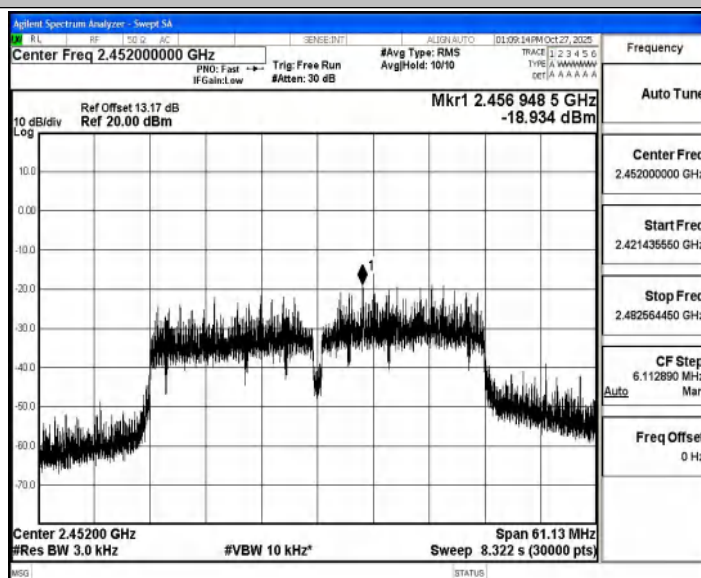
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



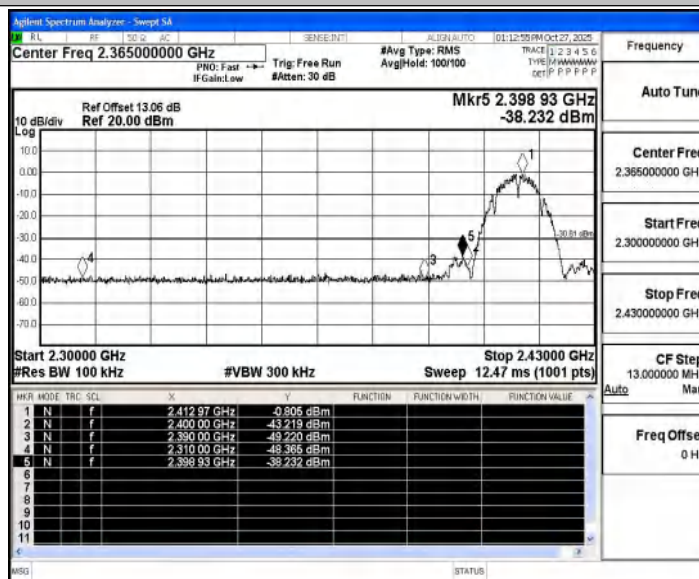
B.4 Band Edge

Test Result

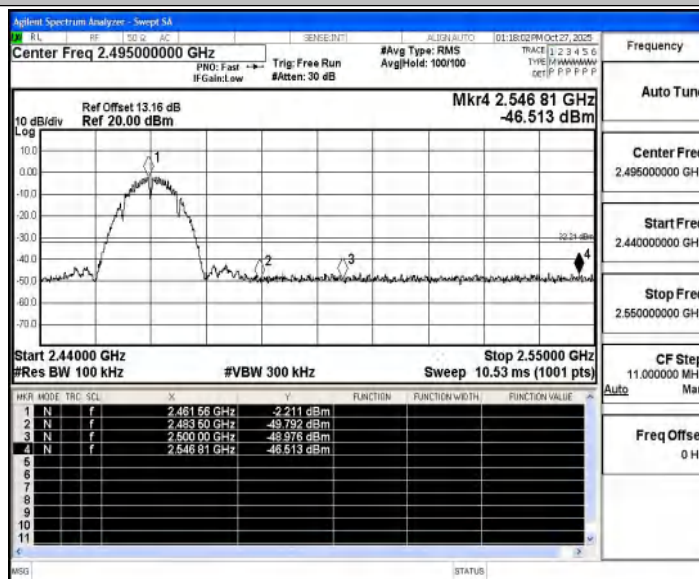
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	-0.81	-38.23	≤ -30.81	PASS
		High	2462	-2.21	-46.51	≤ -32.21	PASS
11G	Ant1	Low	2412	-5.14	-37.16	≤ -35.14	PASS
		High	2462	-5.30	-45.81	≤ -35.3	PASS
11N20SISO	Ant1	Low	2412	-5.85	-38.87	≤ -35.85	PASS
		High	2462	-6.19	-46.1	≤ -36.19	PASS
11N40SISO	Ant1	Low	2422	-9.21	-44.52	≤ -39.21	PASS
		High	2452	-10.80	-45.76	≤ -40.8	PASS

Test Graphs

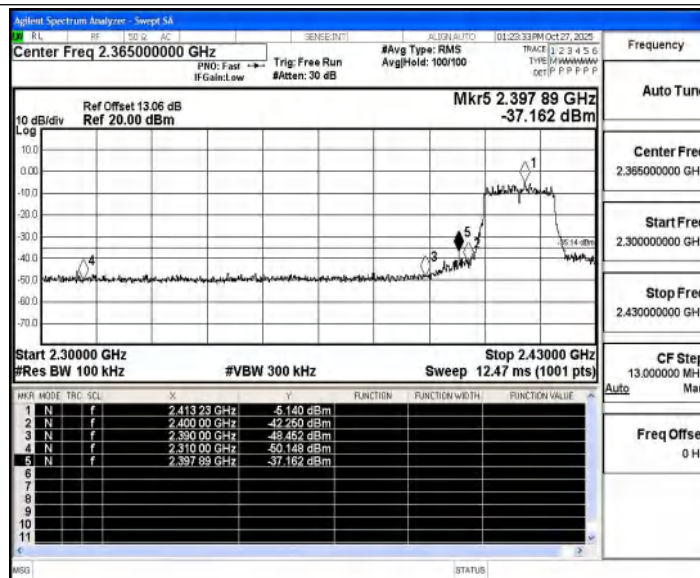
11B_Ant1_Low_2412



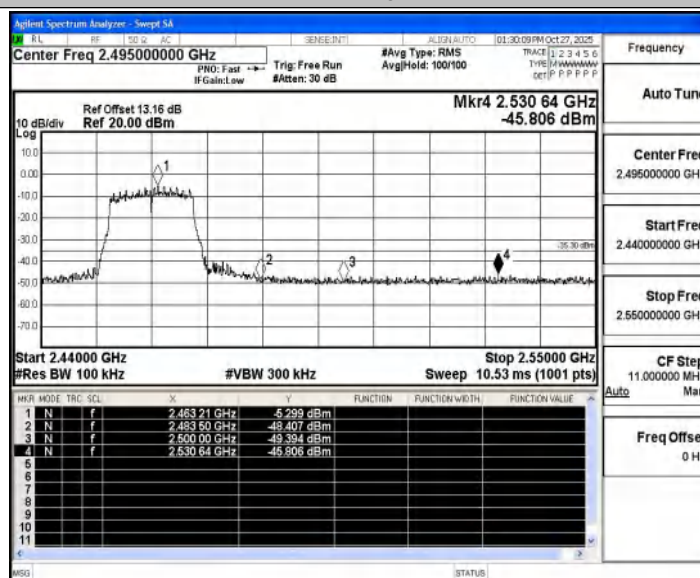
11B_Ant1_High_2462



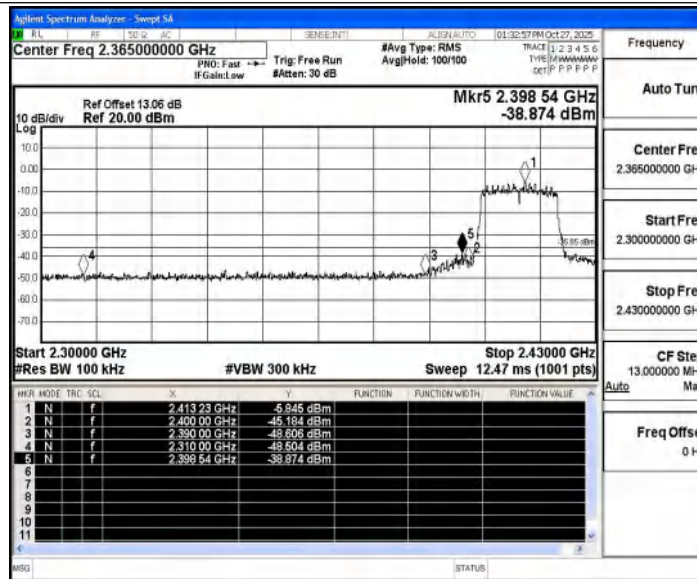
11G_Ant1_Low_2412



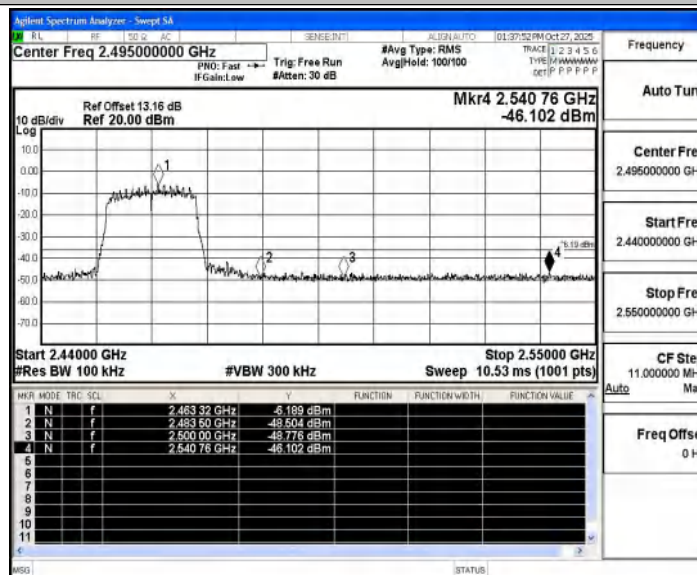
11G_Ant1_High_2462



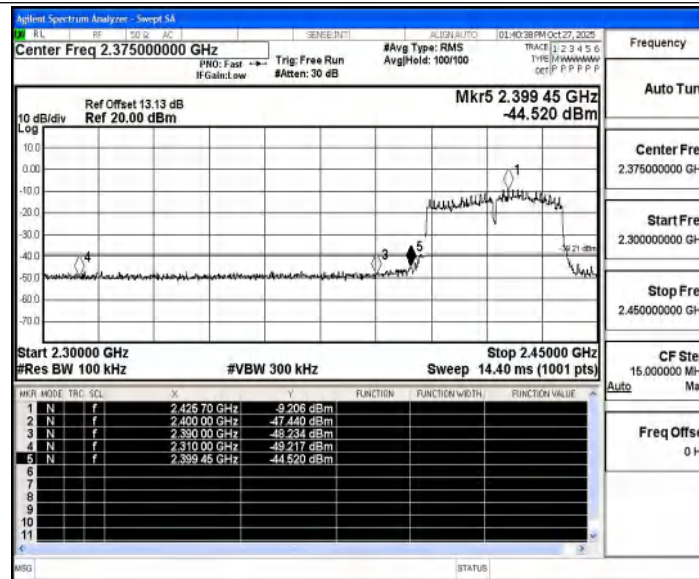
11N20SISO_Ant1_Low_2412



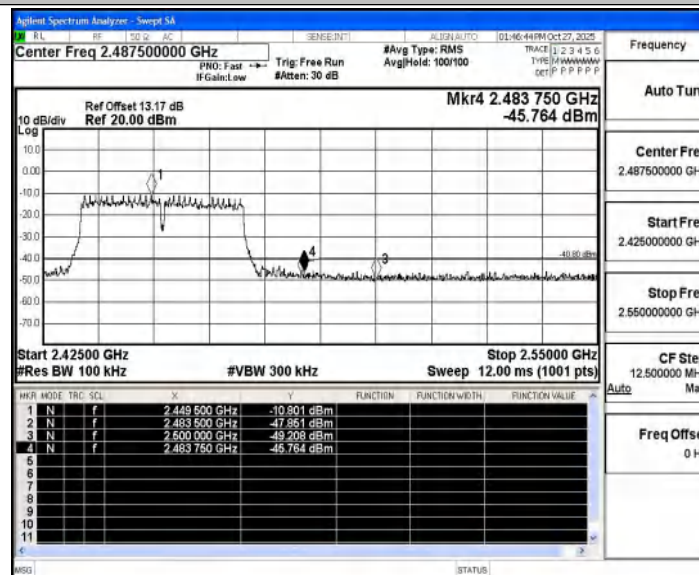
11N20SISO_Ant1_High_2462



11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452



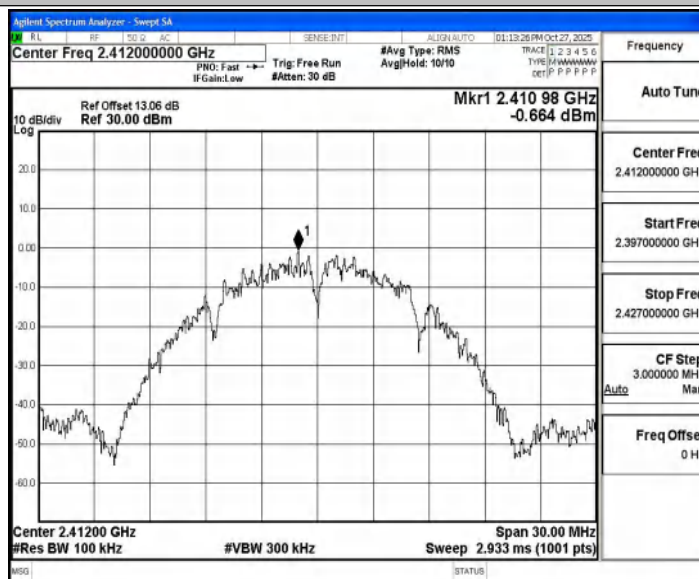
B.5 Conducted RF Spurious Emission

Test Result

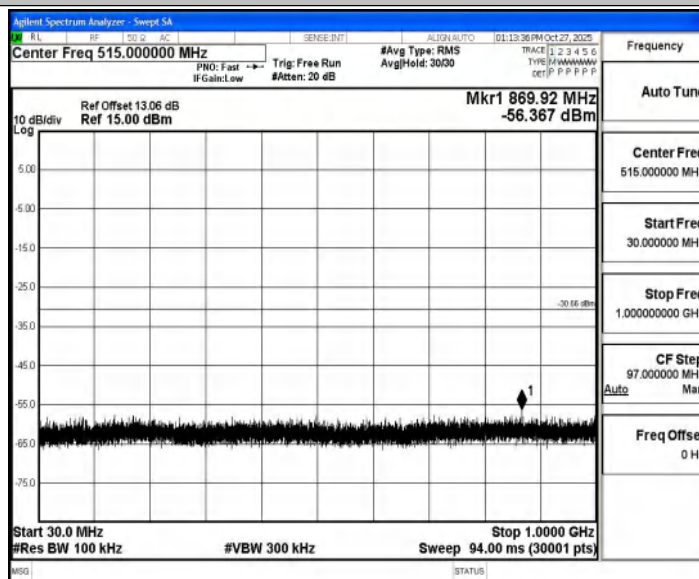
TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	-0.66	-0.66	---	PASS
			30~1000	-0.66	-56.37	≤-30.66	PASS
			1000~26500	-0.66	-43.96	≤-30.66	PASS
		2437	Reference	-2.37	-2.37	---	PASS
			30~1000	-2.37	-56.81	≤-32.37	PASS
			1000~26500	-2.37	-43.89	≤-32.37	PASS
		2462	Reference	-3.31	-3.31	---	PASS
			30~1000	-3.31	-56.14	≤-33.31	PASS
			1000~26500	-3.31	-43.88	≤-33.31	PASS
11G	Ant1	2412	Reference	-6.02	-6.02	---	PASS
			30~1000	-6.02	-56.82	≤-36.02	PASS
			1000~26500	-6.02	-39.51	≤-36.02	PASS
		2437	Reference	-6.15	-6.15	---	PASS
			30~1000	-6.15	-56.75	≤-36.15	PASS
			1000~26500	-6.15	-43.72	≤-36.15	PASS
		2462	Reference	-6.62	-6.62	---	PASS
			30~1000	-6.62	-56.71	≤-36.62	PASS
			1000~26500	-6.62	-43.44	≤-36.62	PASS
11N20SISO	Ant1	2412	Reference	-5.78	-5.78	---	PASS
			30~1000	-5.78	-57.08	≤-35.78	PASS
			1000~26500	-5.78	-44.13	≤-35.78	PASS
		2437	Reference	-6.28	-6.28	---	PASS
			30~1000	-6.28	-56.92	≤-36.28	PASS
			1000~26500	-6.28	-44.32	≤-36.28	PASS
		2462	Reference	-6.61	-6.61	---	PASS
			30~1000	-6.61	-56.81	≤-36.61	PASS
			1000~26500	-6.61	-43.29	≤-36.61	PASS
11N40SISO	Ant1	2422	Reference	-9.61	-9.61	---	PASS
			30~1000	-9.61	-56.22	≤-39.61	PASS
			1000~26500	-9.61	-44.09	≤-39.61	PASS
		2437	Reference	-9.04	-9.04	---	PASS
			30~1000	-9.04	-56.84	≤-39.04	PASS
			1000~26500	-9.04	-43.71	≤-39.04	PASS
		2452	Reference	-10.91	-10.91	---	PASS
			30~1000	-10.91	-56.94	≤-40.91	PASS
			1000~26500	-10.91	-43.92	≤-40.91	PASS

Test Graphs

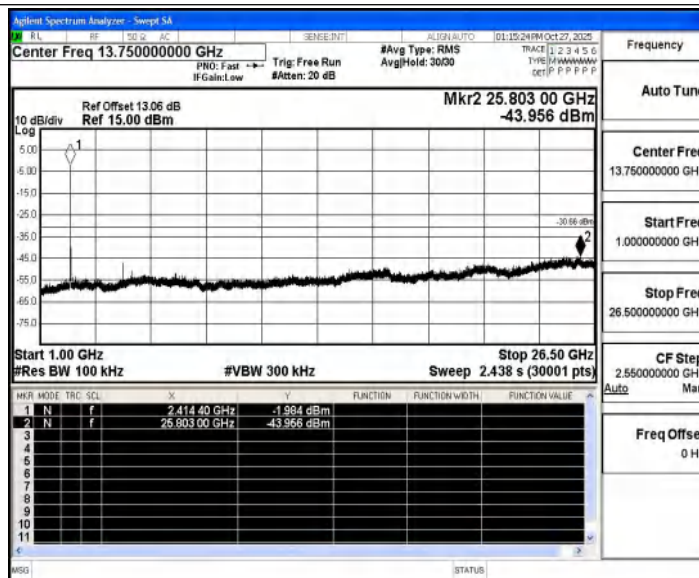
11B_Ant1_2412_0~Reference



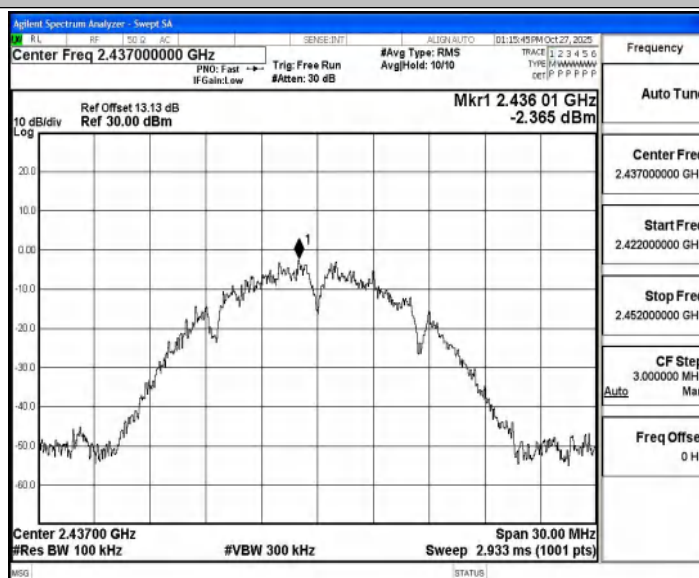
11B_Ant1_2412_30~1000



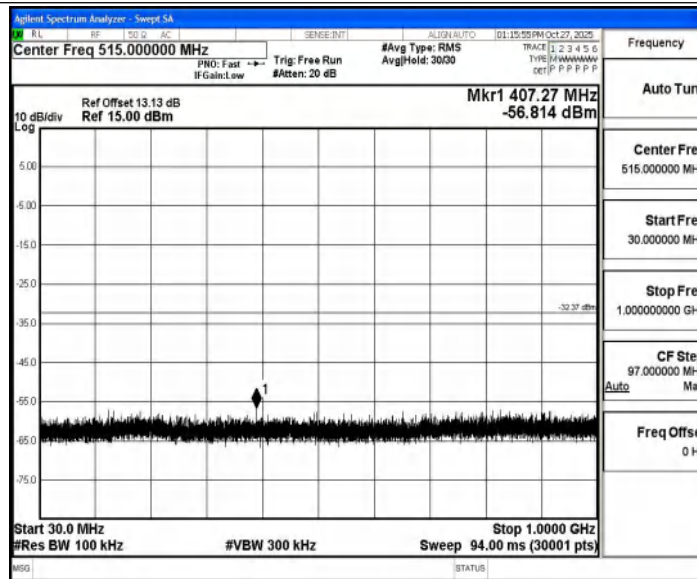
11B_Ant1_2412_1000~26500



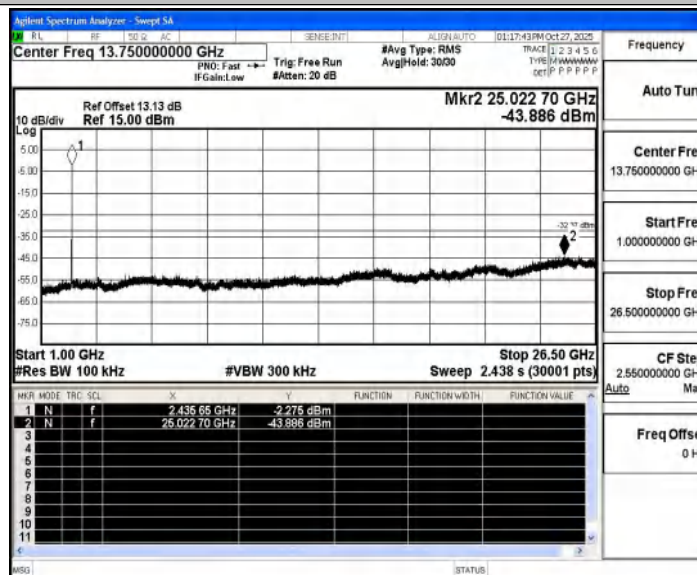
11B_Ant1_2437_0~Reference



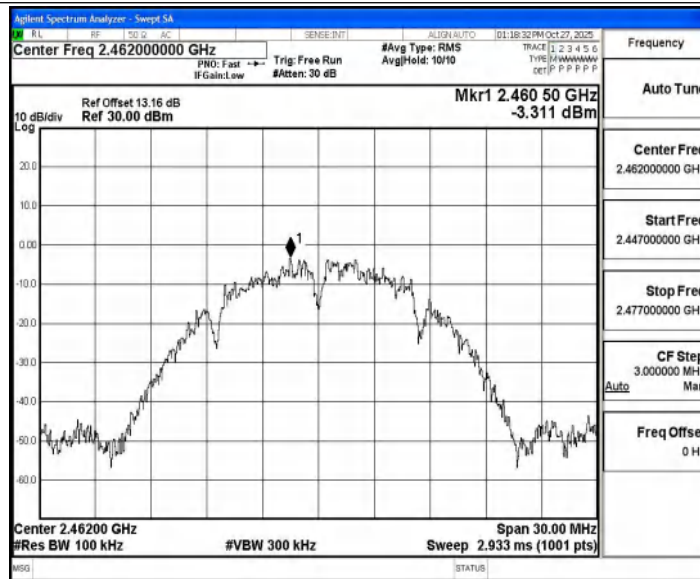
11B_Ant1_2437_30~1000



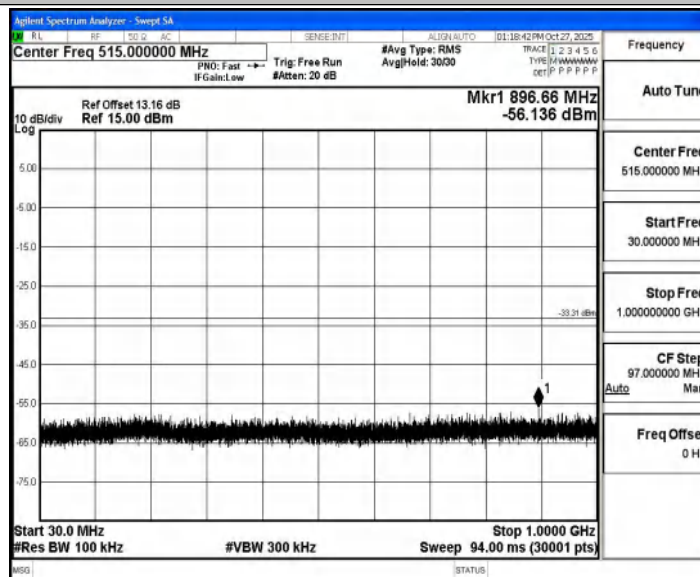
11B_Ant1_2437_1000~26500



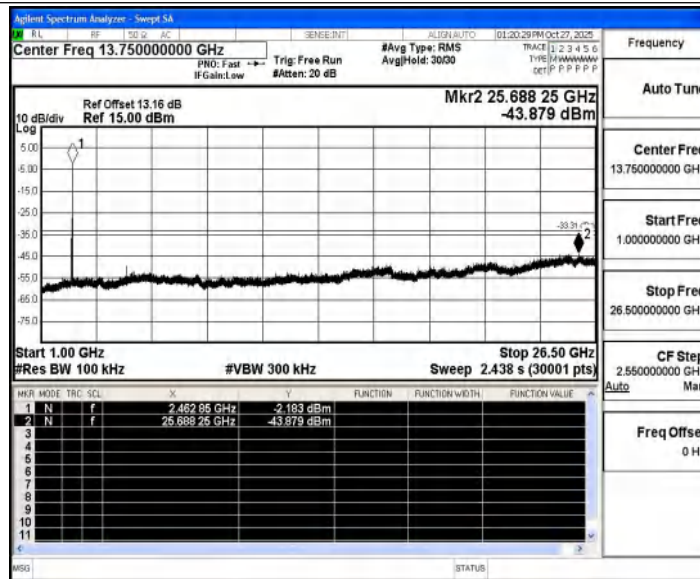
11B_Ant1_2462_0~Reference



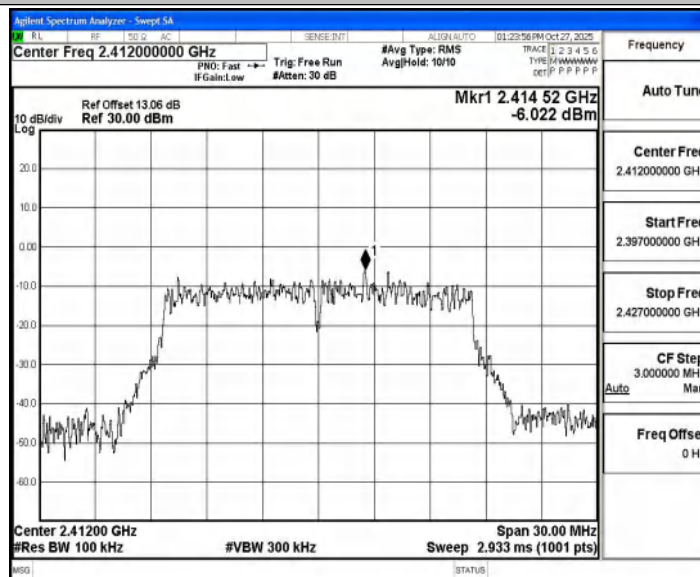
11B_Ant1_2462_30~1000



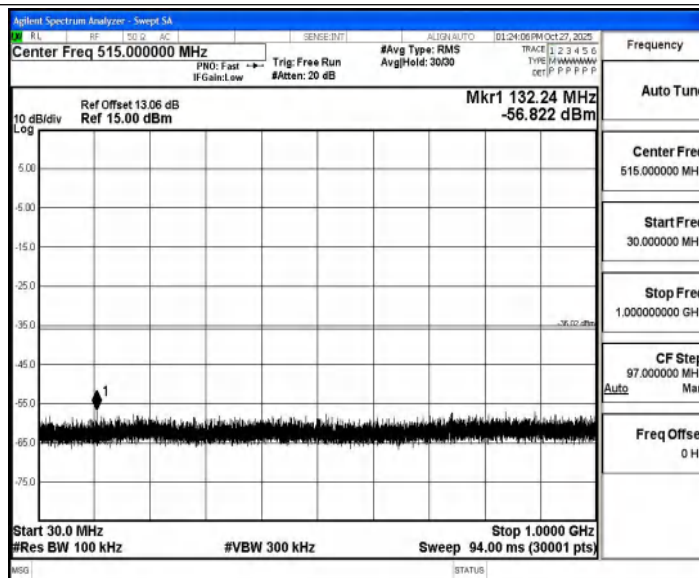
11B_Ant1_2462_1000~26500



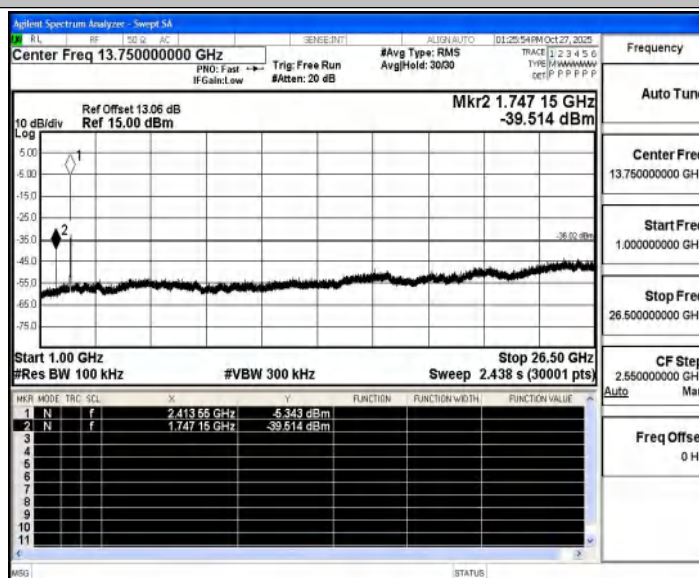
11G_Ant1_2412_0~Reference



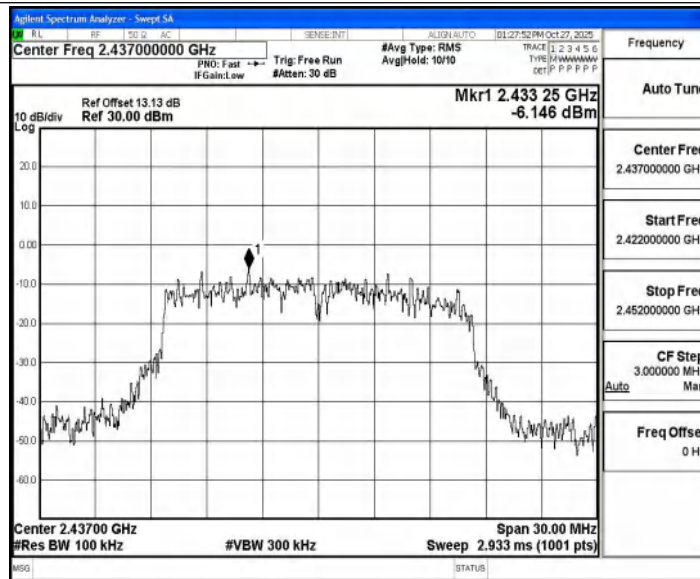
11G_Ant1_2412_30~1000



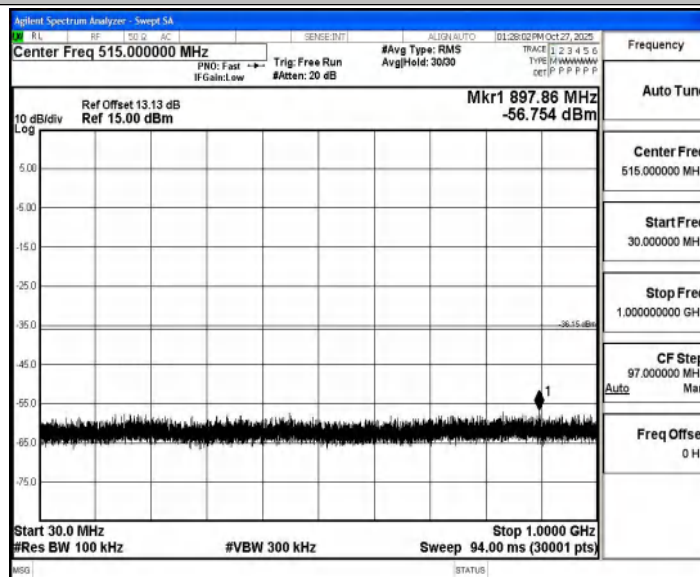
11G_Ant1_2412_1000~26500



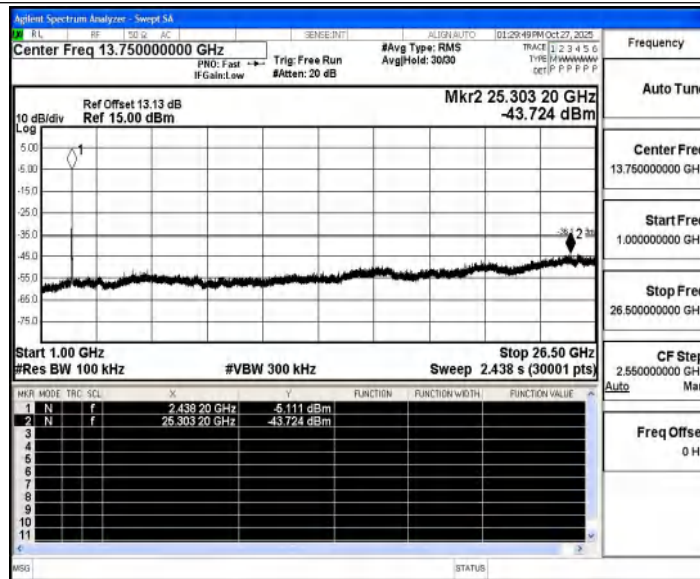
11G_Ant1_2437_0~Reference



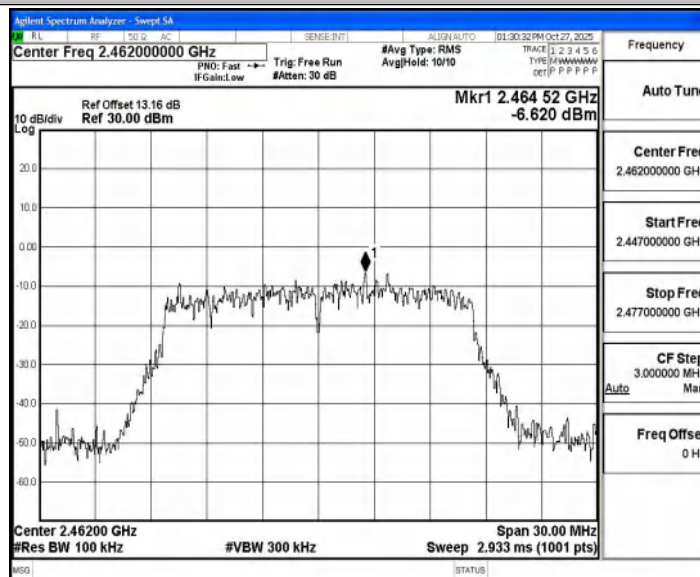
11G_Ant1_2437_30~1000



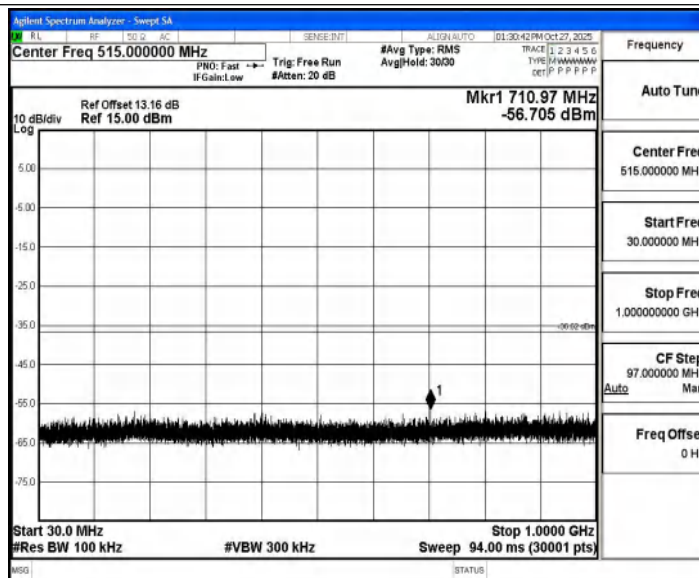
11G_Ant1_2437_1000~26500



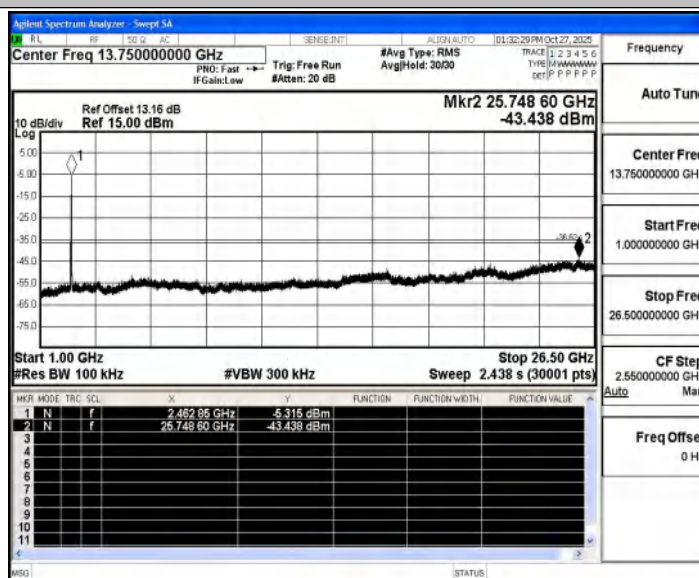
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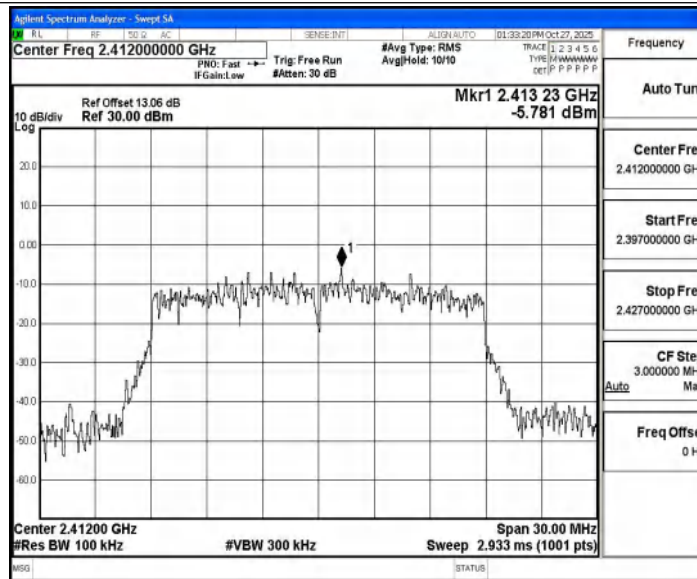
11G_Ant1_2462_30~1000



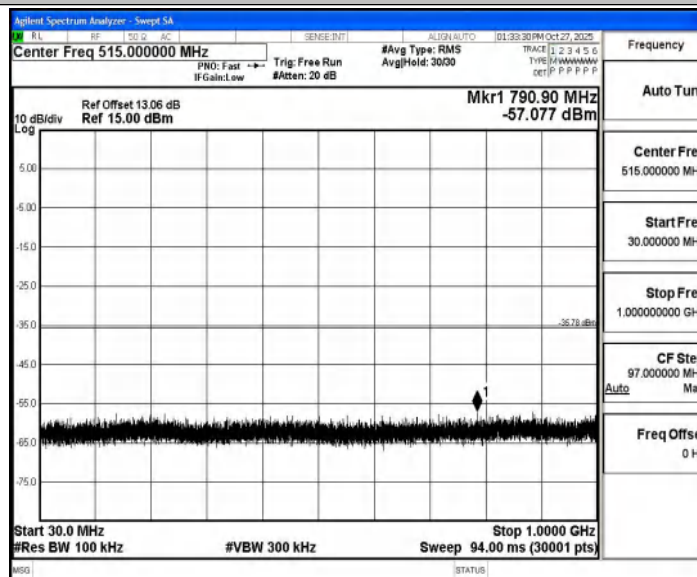
11G_Ant1_2462_1000~26500



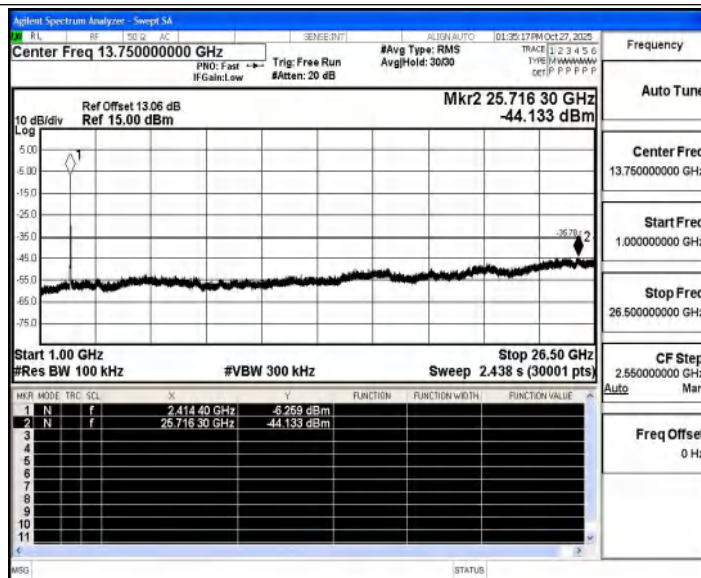
11N20SISO_Ant1_2412_0~Reference



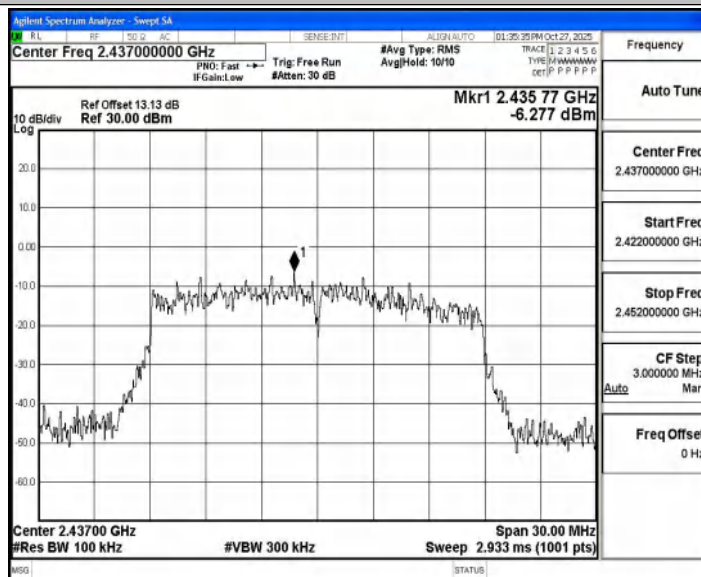
11N20SISO_Ant1_2412_30~1000



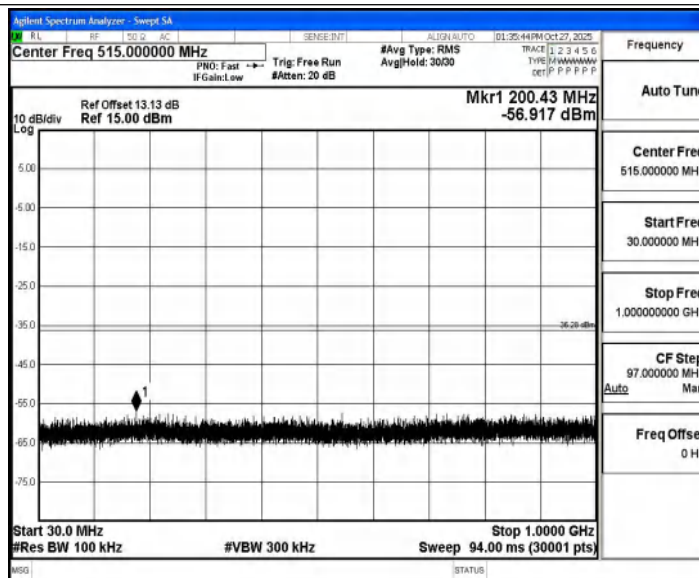
11N20SISO_Ant1_2412_1000~26500



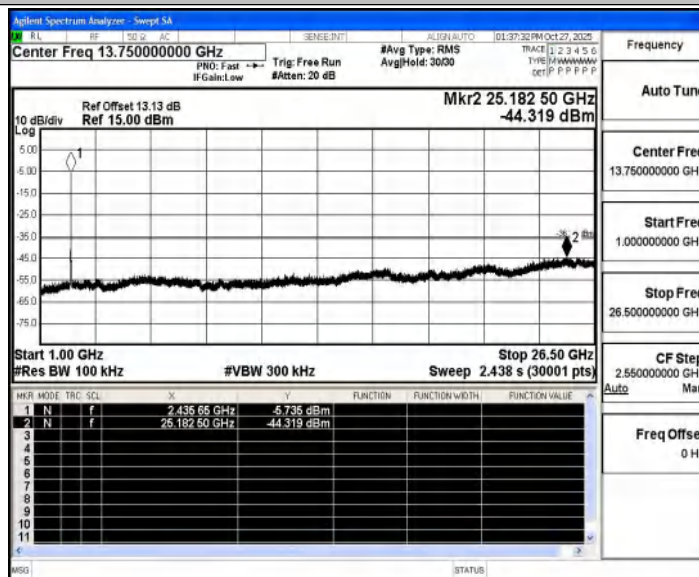
11N20SISO_Ant1_2437_0~Reference



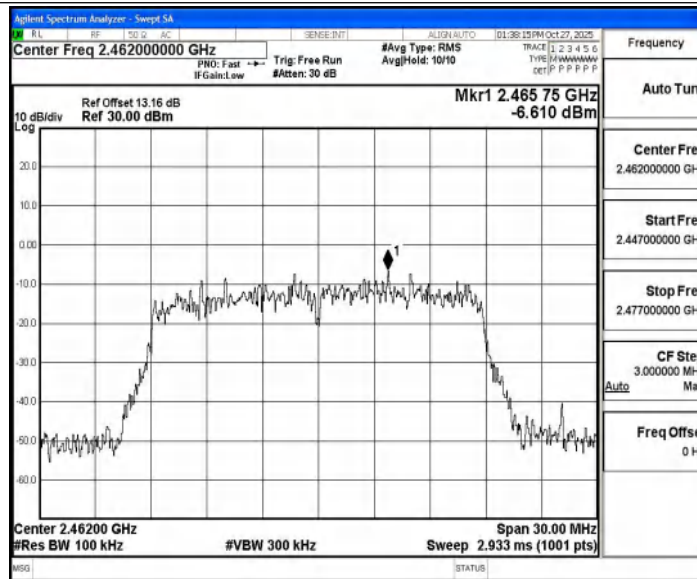
11N20SISO_Ant1_2437_30~1000



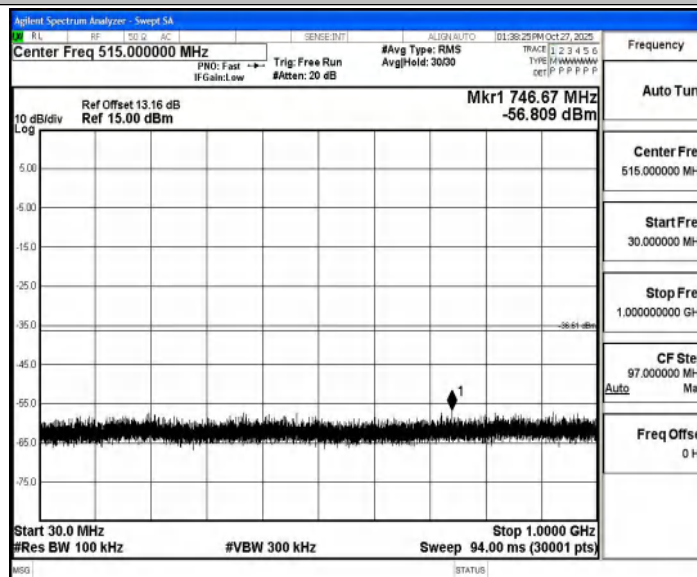
11N20SISO_Ant1_2437_1000~26500



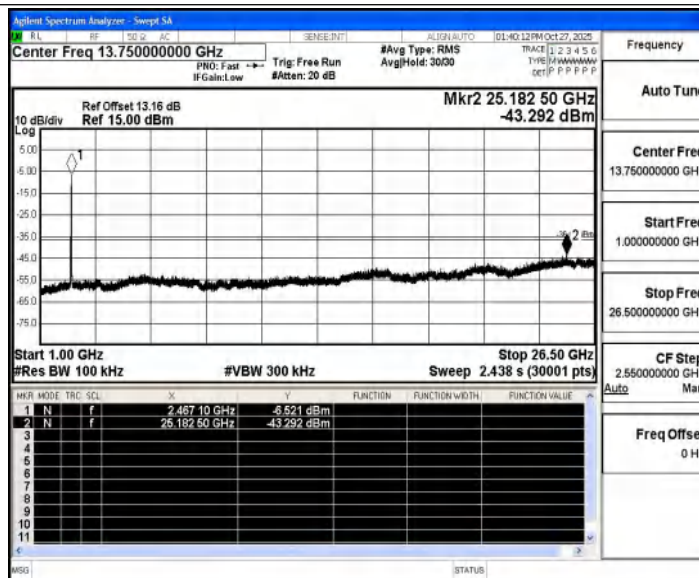
11N20SISO_Ant1_2462_0~Reference



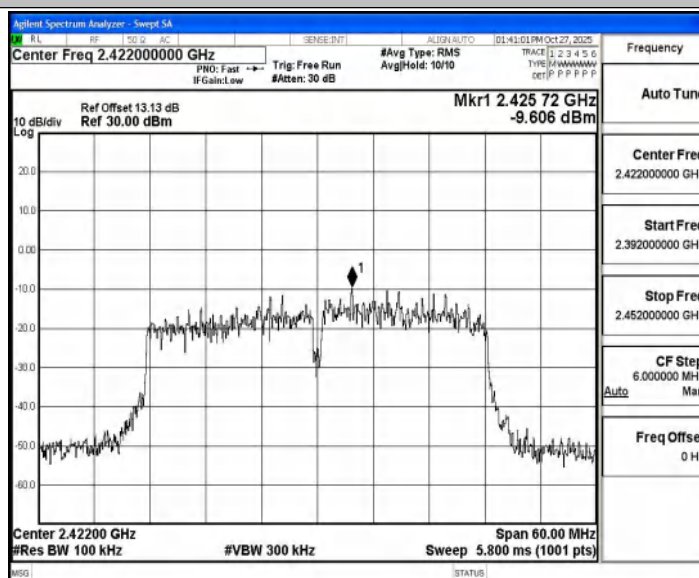
11N20SISO_Ant1_2462_30~1000



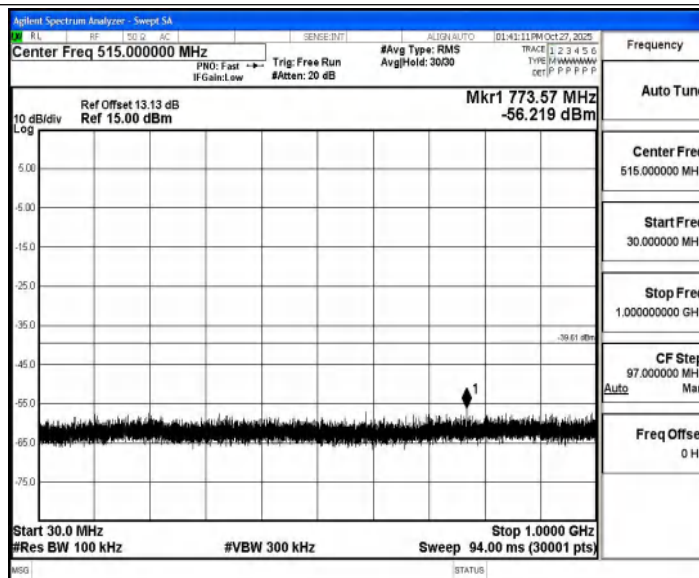
11N20SISO_Ant1_2462_1000~26500



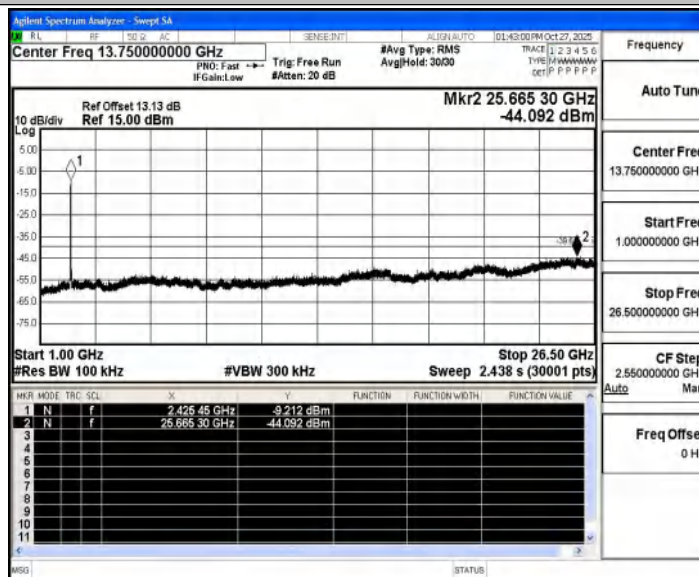
11N40SISO_Ant1_2422_0~Reference



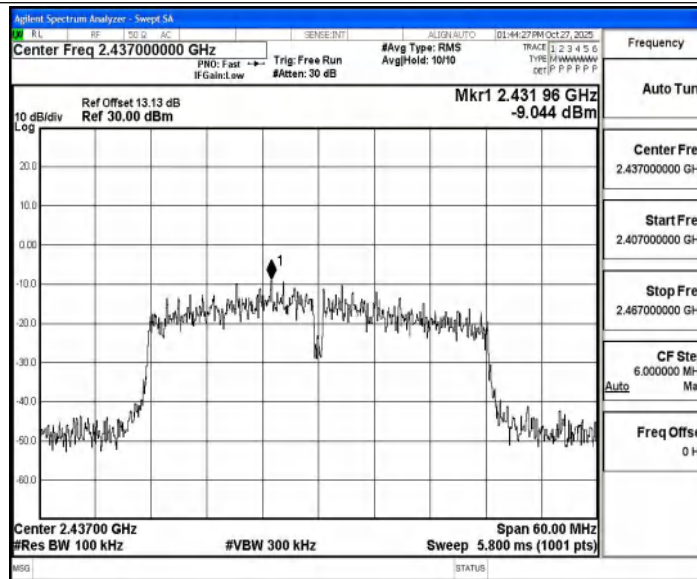
11N40SISO_Ant1_2422_30~1000



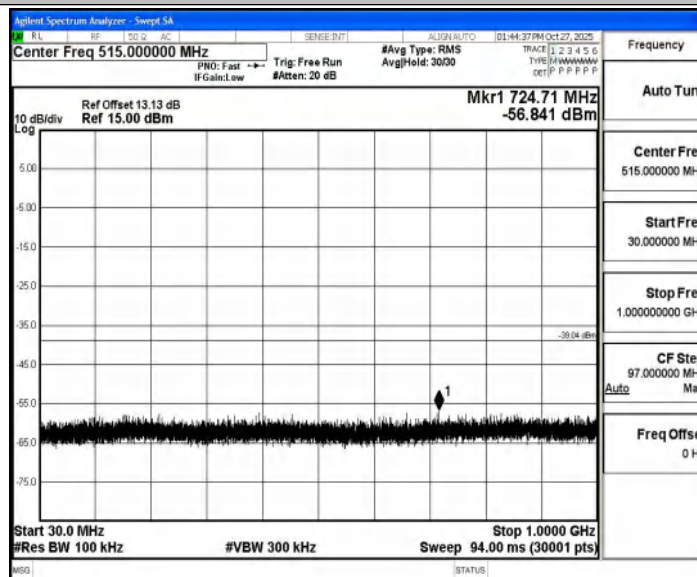
11N40SISO_Ant1_2422_1000~26500



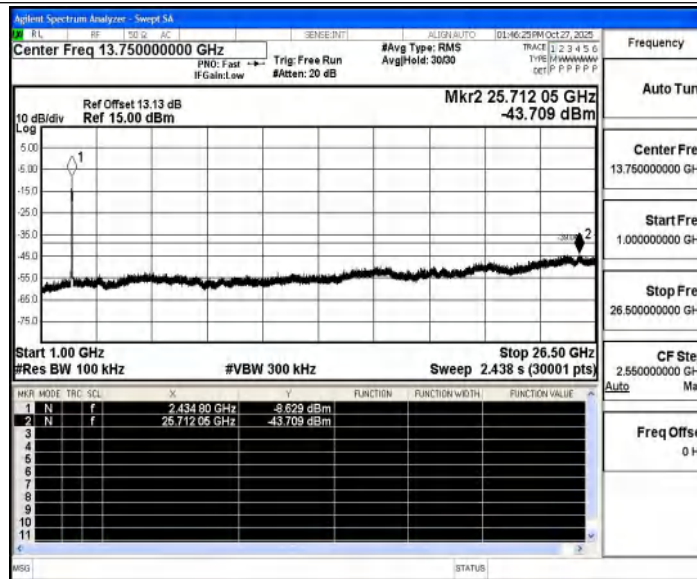
11N40SISO_Ant1_2437_0~Reference



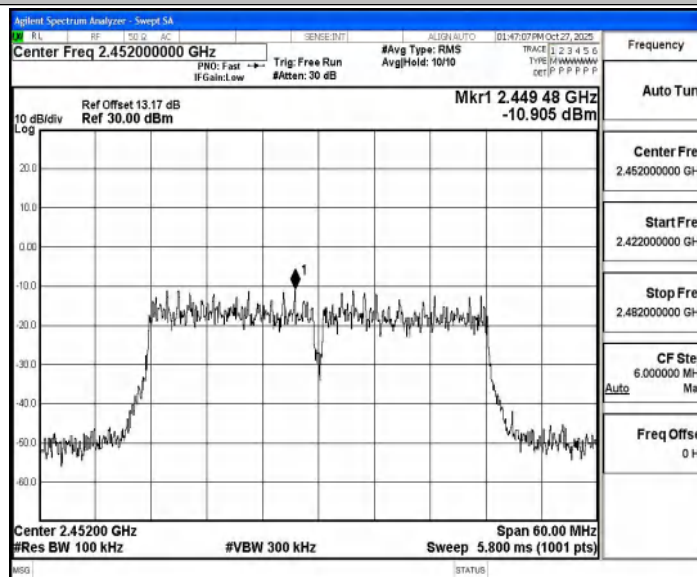
11N40SISO_Ant1_2437_30~1000



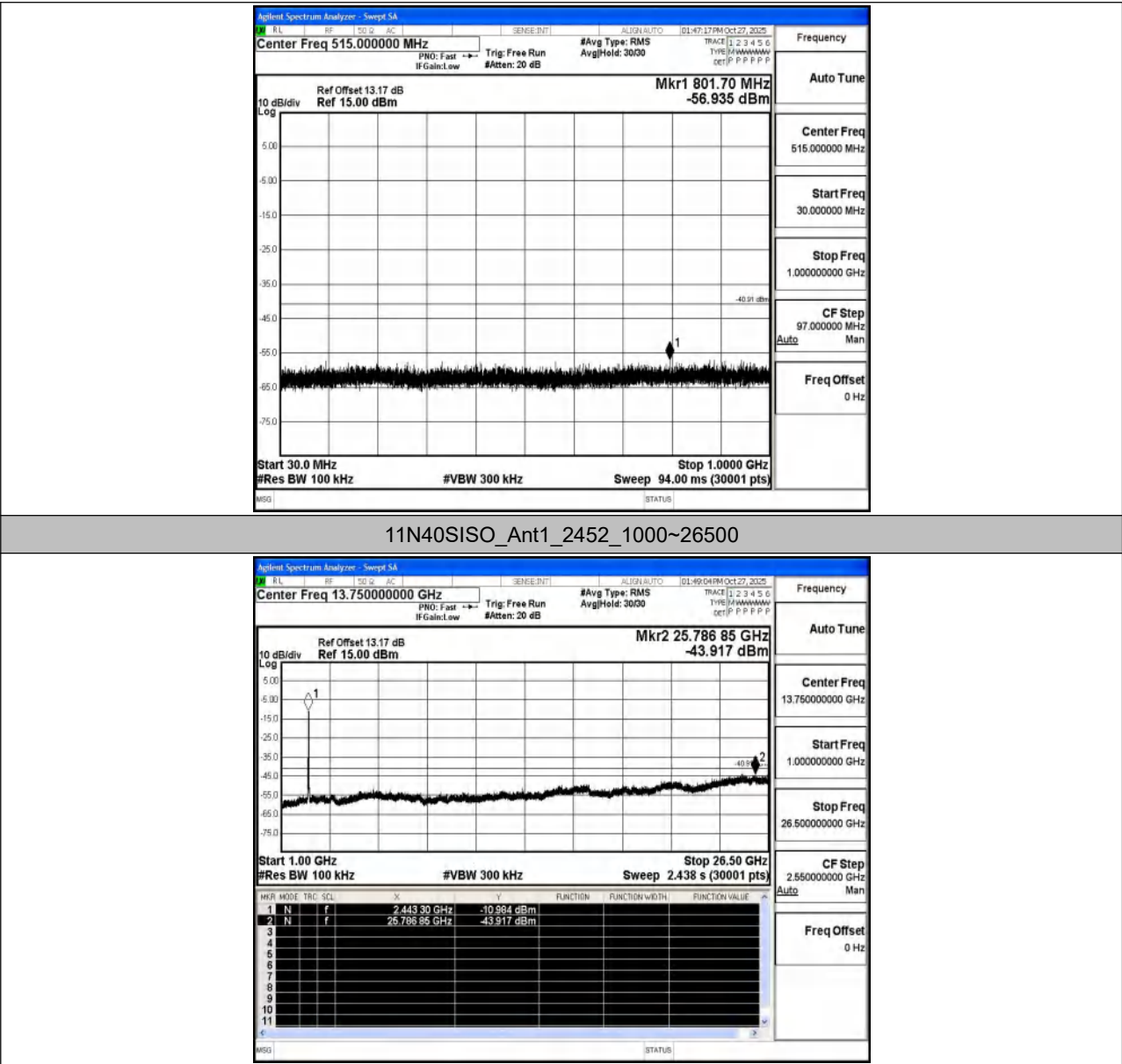
11N40SISO_Ant1_2437_1000~26500



11N40SISO_Ant1_2452_0~Reference



11N40SISO_Ant1_2452_30~1000



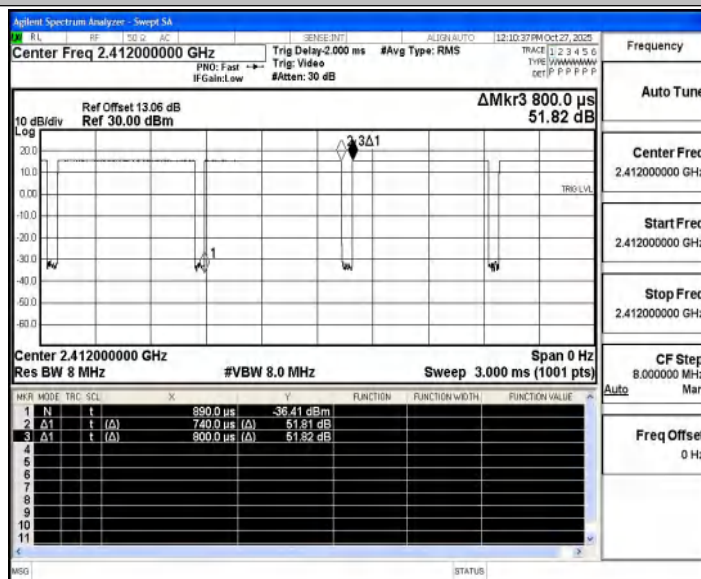
B.6 Duty Cycle

Test Result

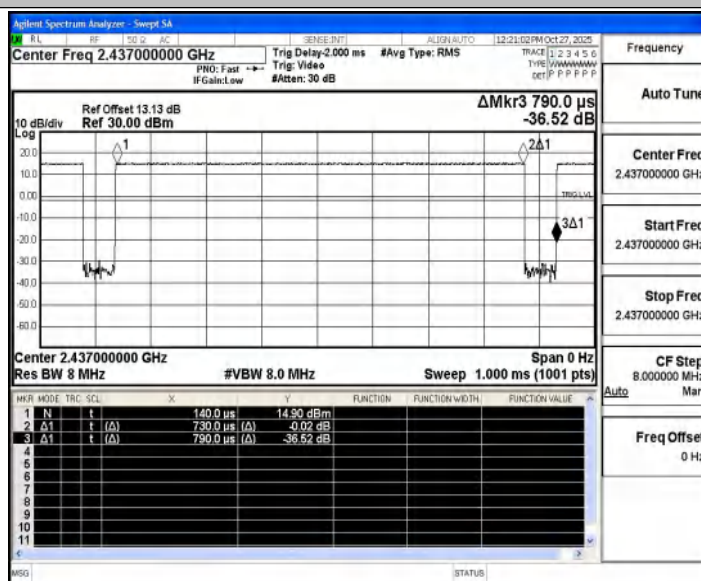
TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11B	Ant1	2412	0.74	0.80	92.50
		2437	0.73	0.79	92.41
		2462	0.73	0.79	92.41
11G	Ant1	2412	0.12	0.18	66.67
		2437	0.12	0.18	66.67
		2462	0.11	0.17	64.71
11N20SISO	Ant1	2412	0.12	0.18	66.67
		2437	0.12	0.18	66.67
		2462	0.12	0.18	66.67
11N40SISO	Ant1	2422	0.08	0.14	57.14
		2437	0.08	0.14	57.14
		2452	0.07	0.13	53.85

Test Graphs

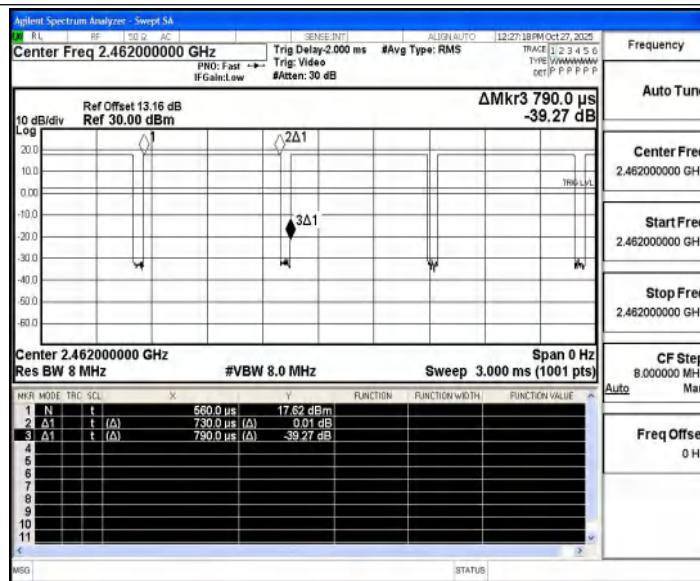
11B_Ant1_2412



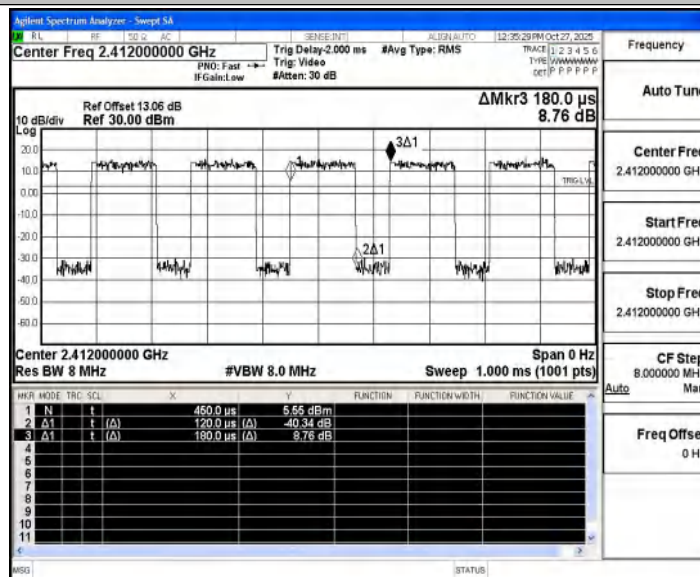
11B_Ant1_2437



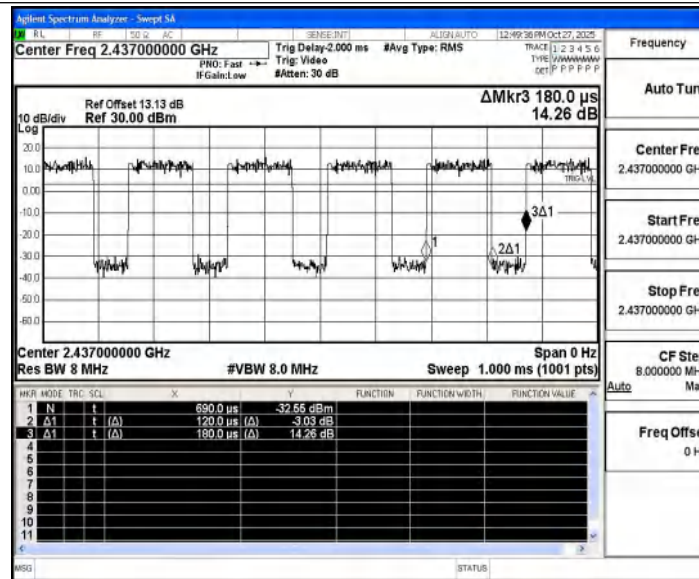
11B_Ant1_2462



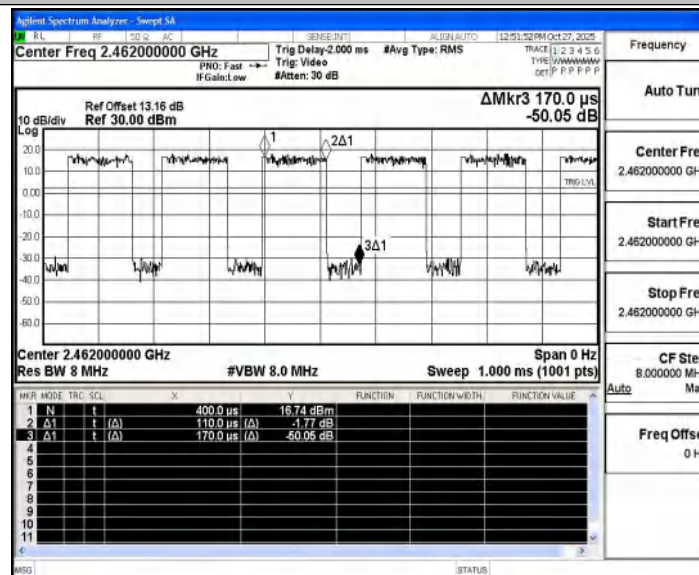
11G_Ant1_2412



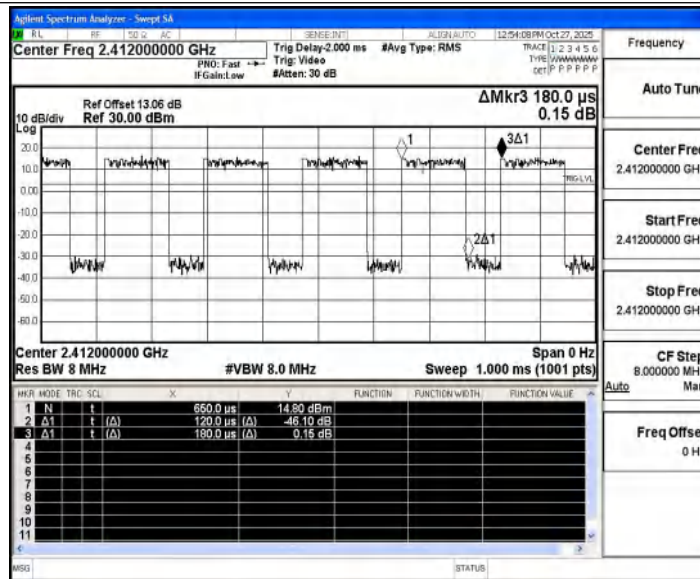
11G_Ant1_2437



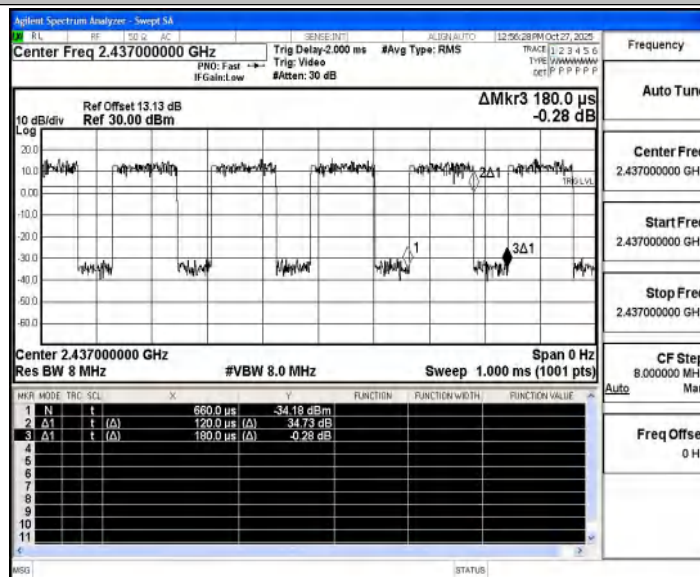
11G_Ant1_2462



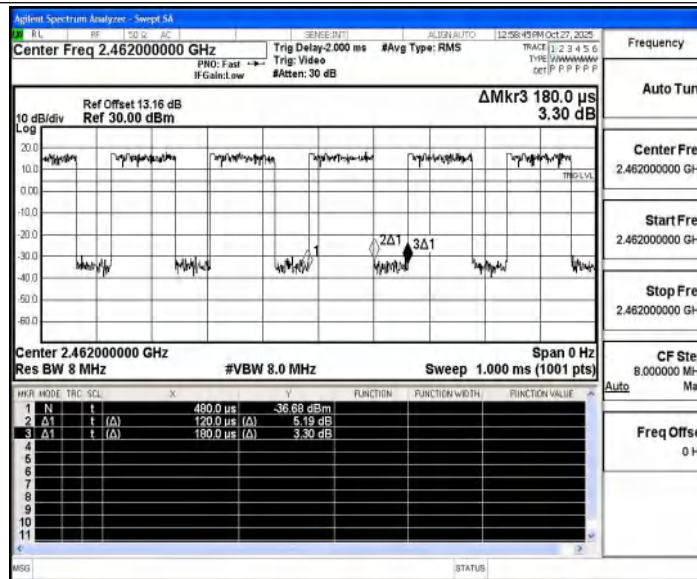
11N20SISO_Ant1_2412



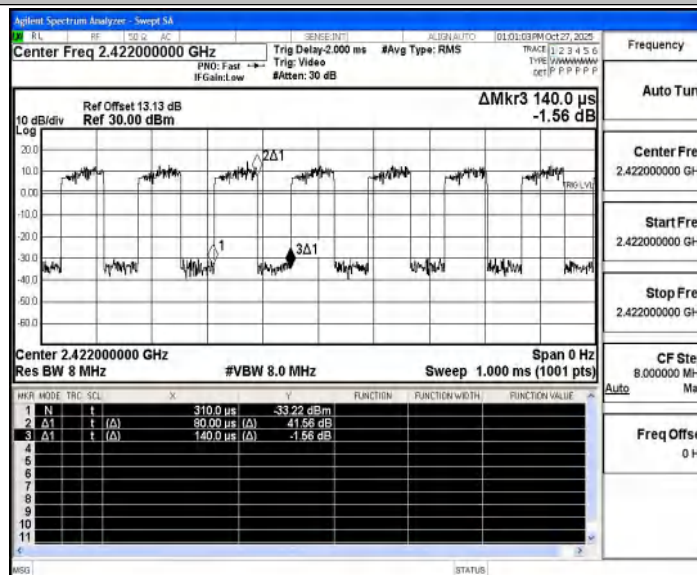
11N20SISO_Ant1_2437



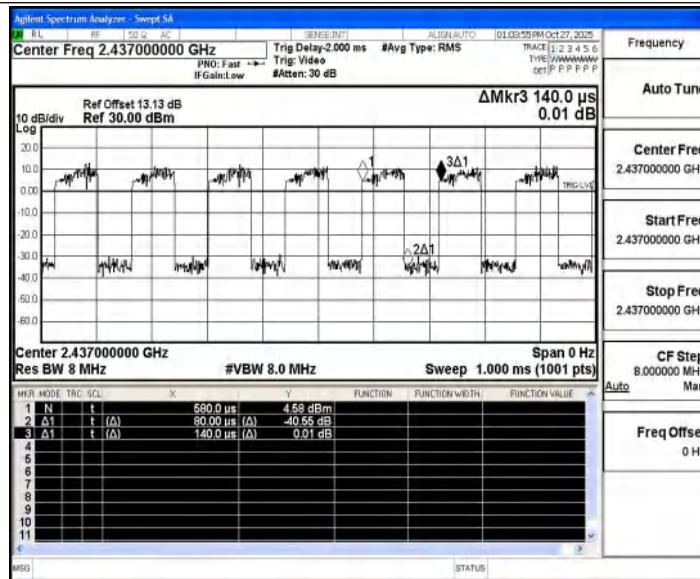
11N20SISO_Ant1_2462



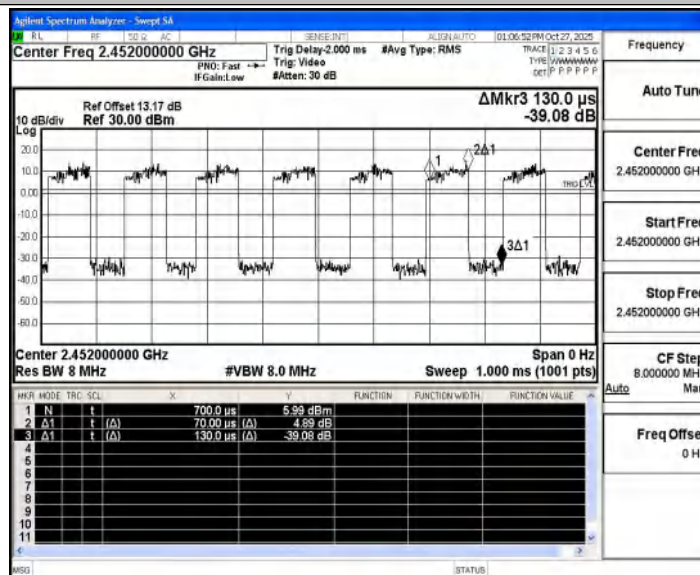
11N40SISO_Ant1_2422



11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



B.7 Restrict Band

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	-45.12	≤-41.20	50.08	≤54	PASS
				AV	2386.450	-44.27	≤-41.20	50.93	≤54	PASS
				AV	2390.000	-44.39	≤-41.20	50.81	≤54	PASS
				Peak	2310.000	-39.06	≤-21.20	56.14	≤74	PASS
				Peak	2371.110	-34.86	≤-21.20	60.34	≤74	PASS
				Peak	2390.000	-36.35	≤-21.20	58.85	≤74	PASS
		High	2462	AV	2483.500	-44.53	≤-41.20	50.67	≤54	PASS
				AV	2487.740	-44.18	≤-41.20	51.02	≤54	PASS
				AV	2500.000	-44.6	≤-41.20	50.60	≤54	PASS
				Peak	2483.500	-37.52	≤-21.20	57.68	≤74	PASS
				Peak	2491.370	-34.4	≤-21.20	60.80	≤74	PASS
				Peak	2500.000	-37.49	≤-21.20	57.71	≤74	PASS
11G	Ant1	Low	2412	AV	2310.000	-44.17	≤-41.20	51.03	≤54	PASS
				AV	2388.920	-41.91	≤-41.20	53.29	≤54	PASS
				AV	2390.000	-42.34	≤-41.20	52.86	≤54	PASS
				Peak	2310.000	-39.55	≤-21.20	55.65	≤74	PASS
				Peak	2389.310	-34.64	≤-21.20	60.56	≤74	PASS
				Peak	2390.000	-37.33	≤-21.20	57.87	≤74	PASS
		High	2462	AV	2483.500	-42.25	≤-41.20	52.95	≤54	PASS
				AV	2483.560	-41.79	≤-41.20	53.41	≤54	PASS
				AV	2500.000	-43.74	≤-41.20	51.46	≤54	PASS
				Peak	2483.500	-36.78	≤-21.20	58.42	≤74	PASS
				Peak	2484.220	-34.65	≤-21.20	60.55	≤74	PASS
				Peak	2500.000	-38.37	≤-21.20	56.83	≤74	PASS
11N20SIS O	Ant1	Low	2412	AV	2310.000	-44.24	≤-41.20	50.96	≤54	PASS
				AV	2389.700	-42.1	≤-41.20	53.10	≤54	PASS
				AV	2390.000	-42.3	≤-41.20	52.90	≤54	PASS
				Peak	2310.000	-36.16	≤-21.20	59.04	≤74	PASS
				Peak	2389.700	-34.1	≤-21.20	61.10	≤74	PASS
				Peak	2390.000	-37.3	≤-21.20	57.90	≤74	PASS
		High	2462	AV	2483.500	-42.55	≤-41.20	52.65	≤54	PASS
				AV	2484.770	-42.11	≤-41.20	53.09	≤54	PASS
				AV	2500.000	-43.36	≤-41.20	51.84	≤54	PASS
				Peak	2483.500	-35.97	≤-21.20	59.23	≤74	PASS
				Peak	2488.290	-35.17	≤-21.20	60.03	≤74	PASS
				Peak	2500.000	-36.99	≤-21.20	58.21	≤74	PASS
11N40SIS	Ant1	Low	2422	AV	2310.000	-43.42	≤-41.20	51.78	≤54	PASS

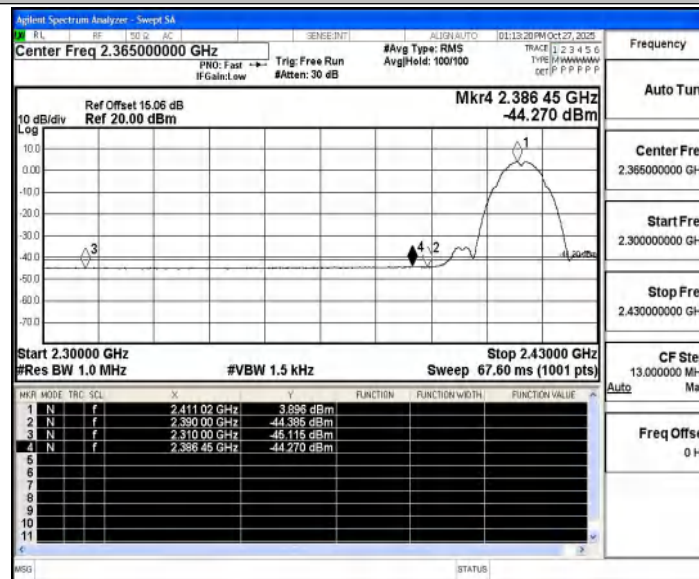
O				AV	2389.700	-41.76	≤-41.20	53.44	≤54	PASS
				AV	2390.000	-42.59	≤-41.20	52.61	≤54	PASS
				Peak	2310.000	-38.24	≤-21.20	56.96	≤74	PASS
				Peak	2339.000	-34.99	≤-21.20	60.21	≤74	PASS
				Peak	2390.000	-36.7	≤-21.20	58.50	≤74	PASS
		High	2452	AV	2483.500	-42.47	≤-41.20	52.73	≤54	PASS
				AV	2484.875	-41.64	≤-41.20	53.56	≤54	PASS
				AV	2500.000	-43.16	≤-41.20	52.04	≤54	PASS
				Peak	2483.500	-36.54	≤-21.20	58.66	≤74	PASS
				Peak	2484.875	-33.14	≤-21.20	62.06	≤74	PASS
				Peak	2500.000	-37.5	≤-21.20	57.70	≤74	PASS

Note:

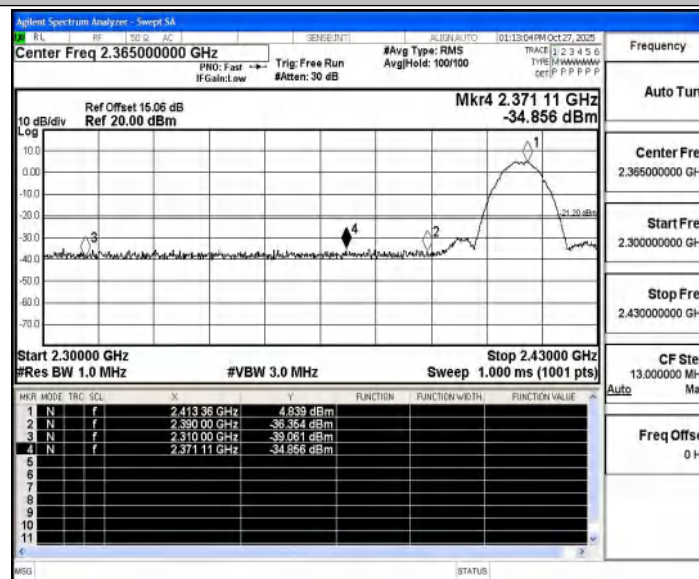
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

Test Graphs

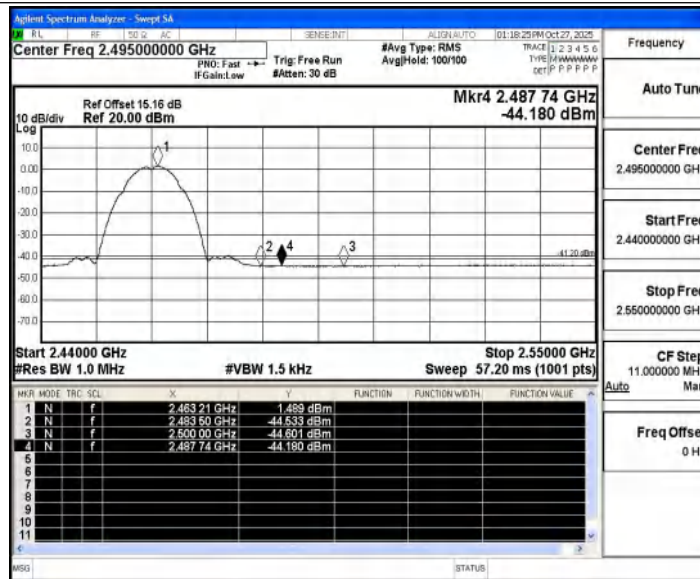
11B_Ant1_Low_2412_AV



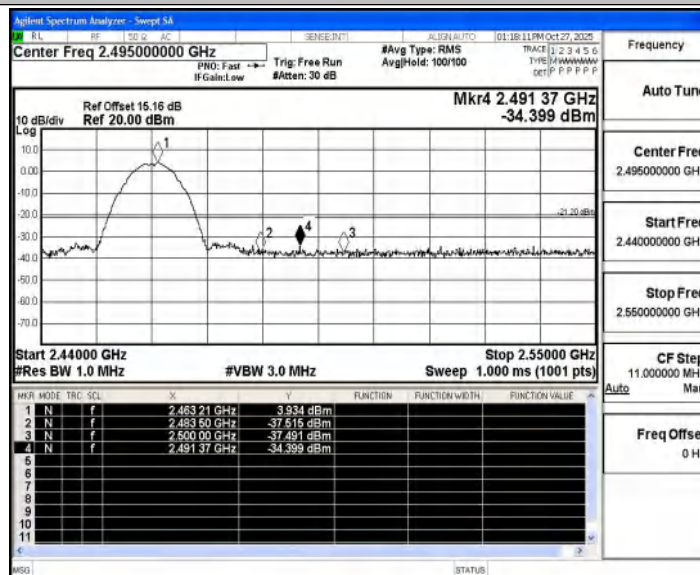
11B_Ant1_Low_2412_Peak



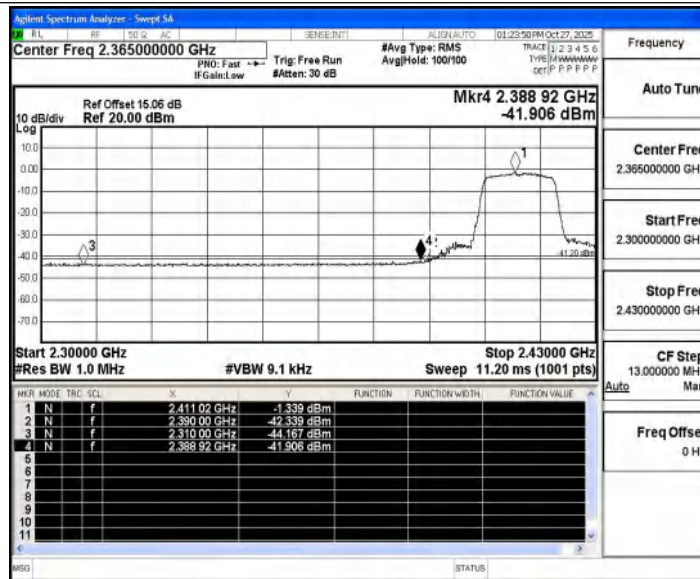
11B_Ant1_High_2462_AV



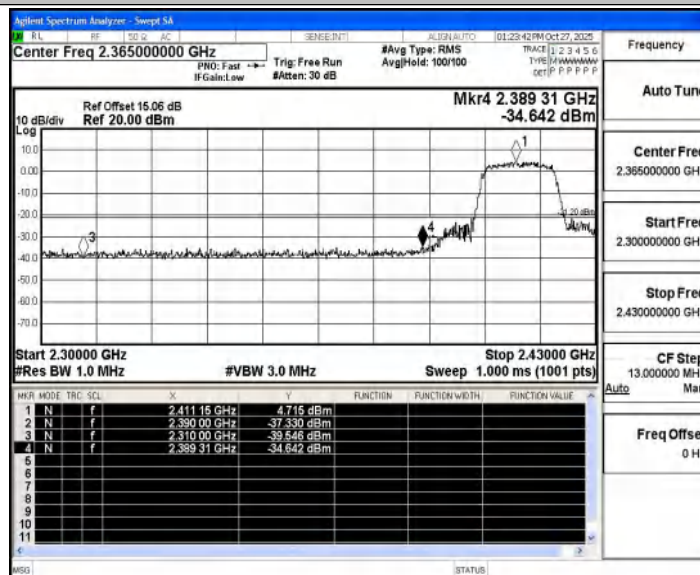
11B_Ant1_High_2462_Peak



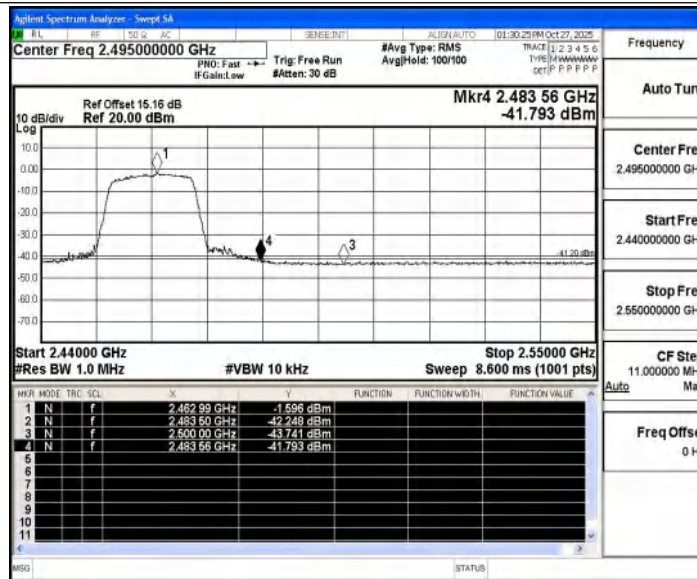
11G_Ant1_Low_2412_AV



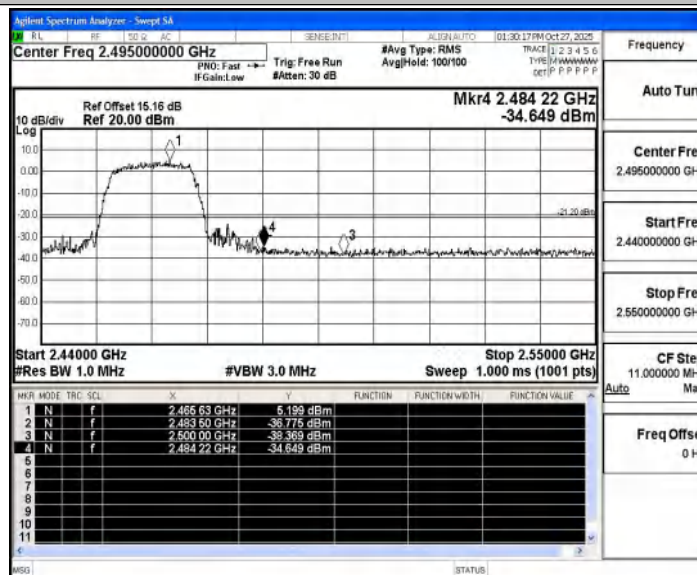
11G_Ant1_Low_2412_Peak



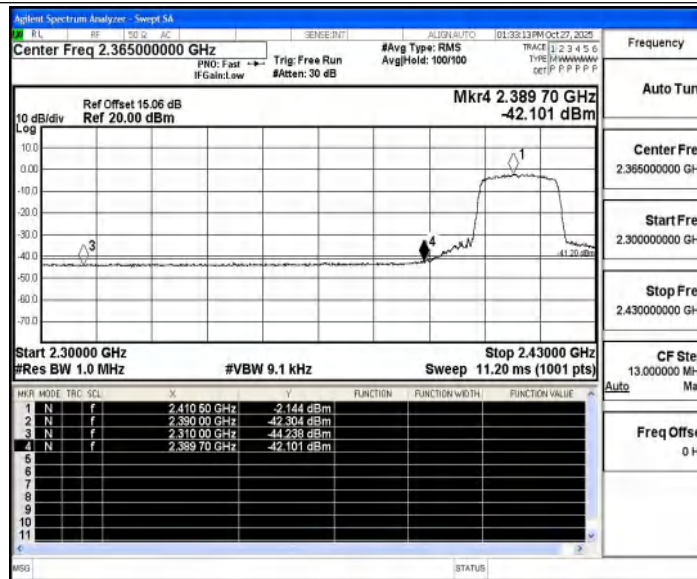
11G_Ant1_High_2462_AV



11G_Ant1_High_2462_Peak



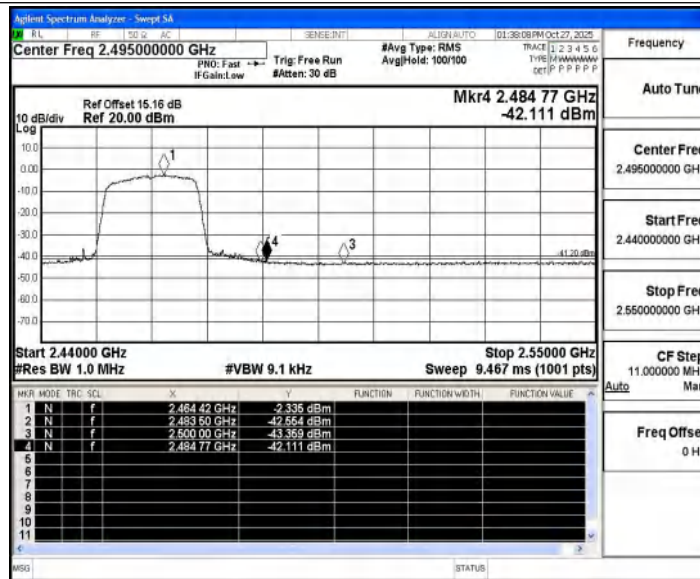
11N20SISO_Ant1_Low_2412_AV



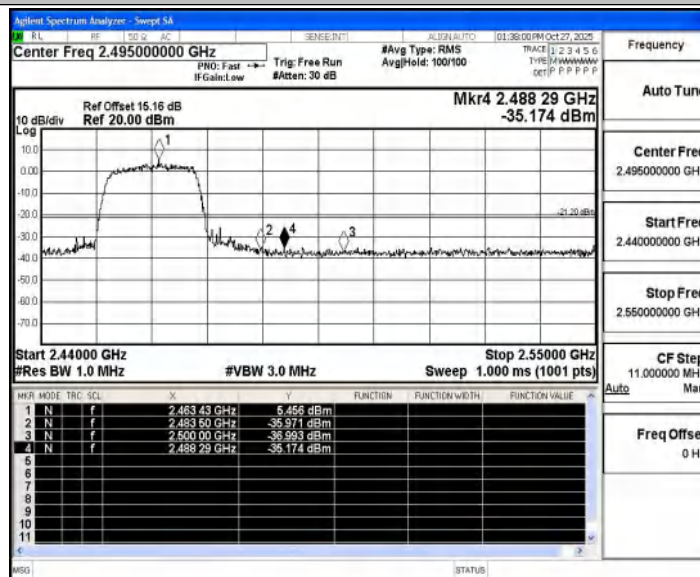
11N20SISO_Ant1_Low_2412_Peak



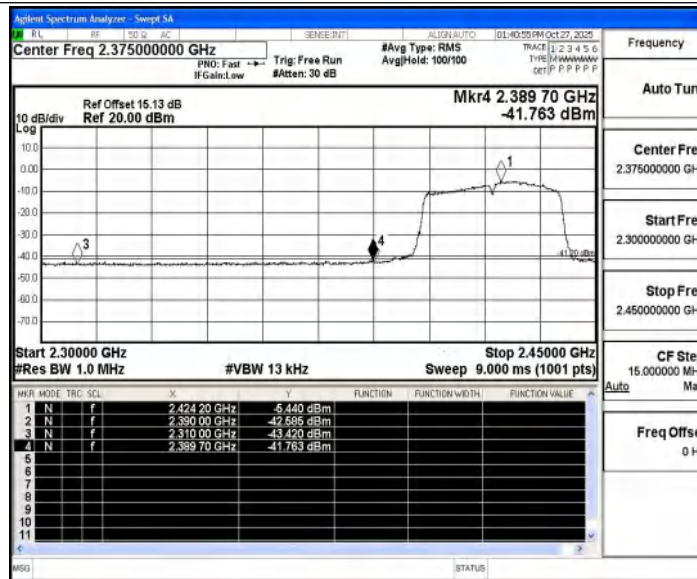
11N20SISO_Ant1_High_2462_AV



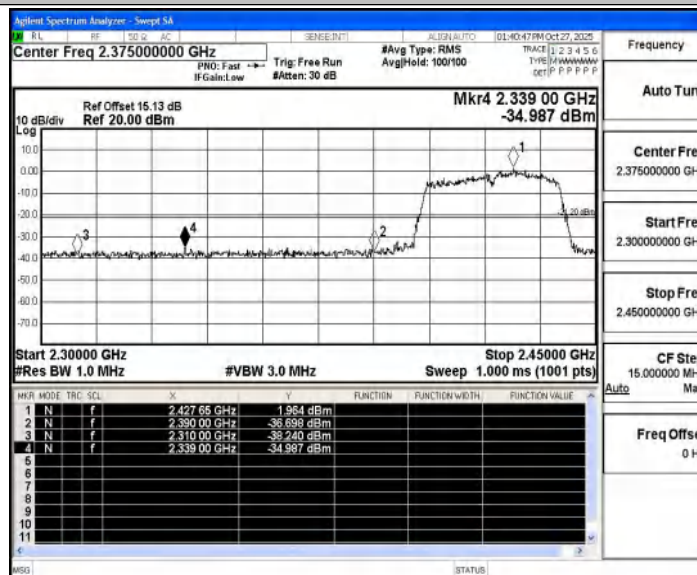
11N20SISO_Ant1_High_2462_Peak



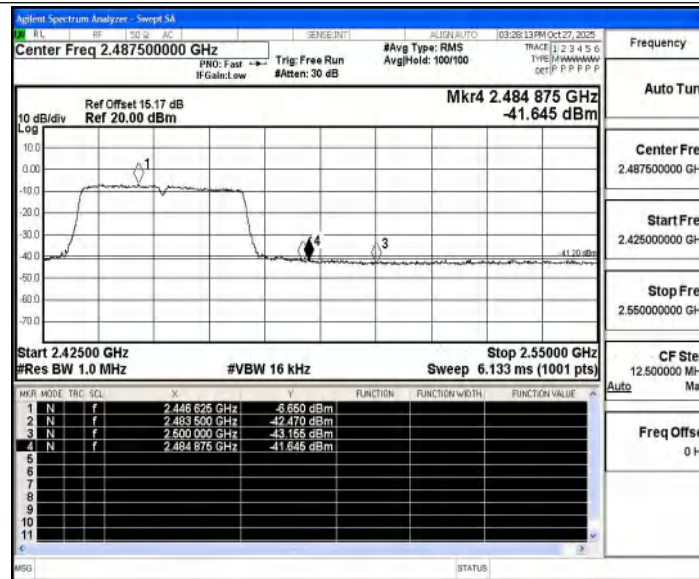
11N40SISO_Ant1_Low_2422_AV



11N40SISO_Ant1_Low_2422_Peak



11N40SISO_Ant1_High_2452_AV



11N40SISO_Ant1_High_2452_Peak

