



Appendix A

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: 5G ODU

Test Model: NR610-Q

Environmental Conditions

Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Paddi Chen





A.1 DTS Bandwidth

Test Result

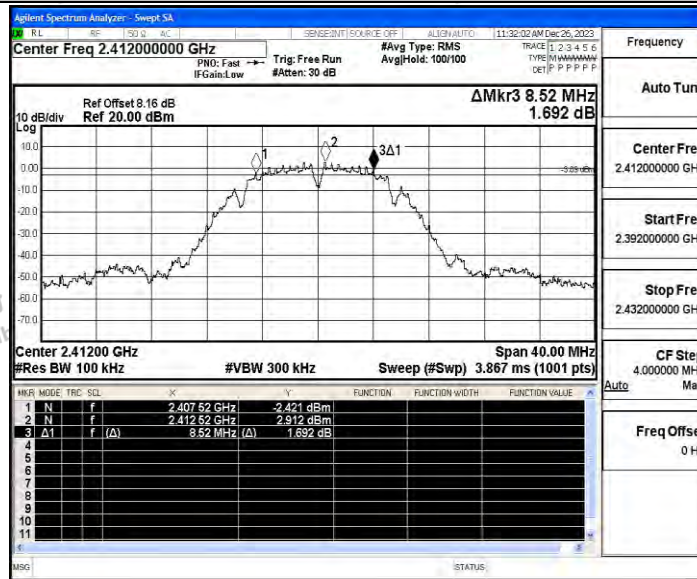
TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant	2412	8.520	2407.520	2416.040	0.5	PASS
		2437	9.080	2432.440	2441.520	0.5	PASS
		2462	10.000	2457.000	2467.000	0.5	PASS
11G	Ant	2412	15.360	2404.520	2419.880	0.5	PASS
		2437	16.360	2428.800	2445.160	0.5	PASS
		2462	16.280	2453.840	2470.120	0.5	PASS
11N20SISO	Ant	2412	14.840	2404.680	2419.520	0.5	PASS
		2437	16.920	2428.480	2445.400	0.5	PASS
		2462	15.080	2454.440	2469.520	0.5	PASS
11N40SISO	Ant	2422	32.480	2407.040	2439.520	0.5	PASS
		2437	32.560	2421.960	2454.520	0.5	PASS
		2452	33.840	2435.680	2469.520	0.5	PASS



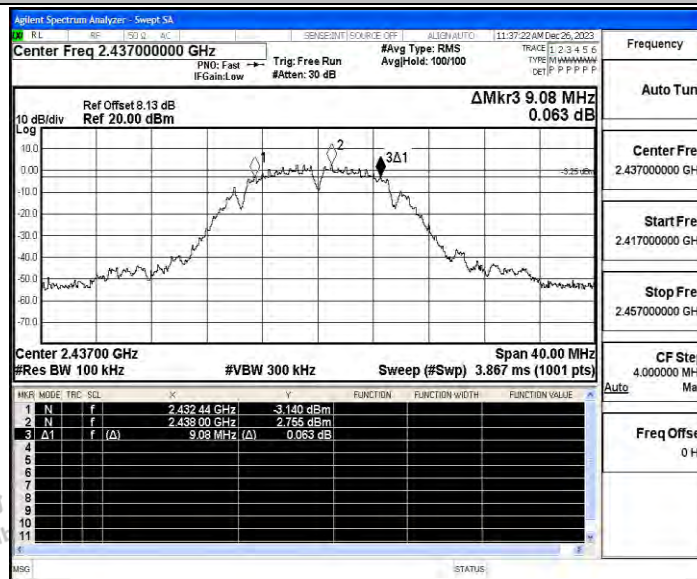


Test Graphs

11B_Ant_2412

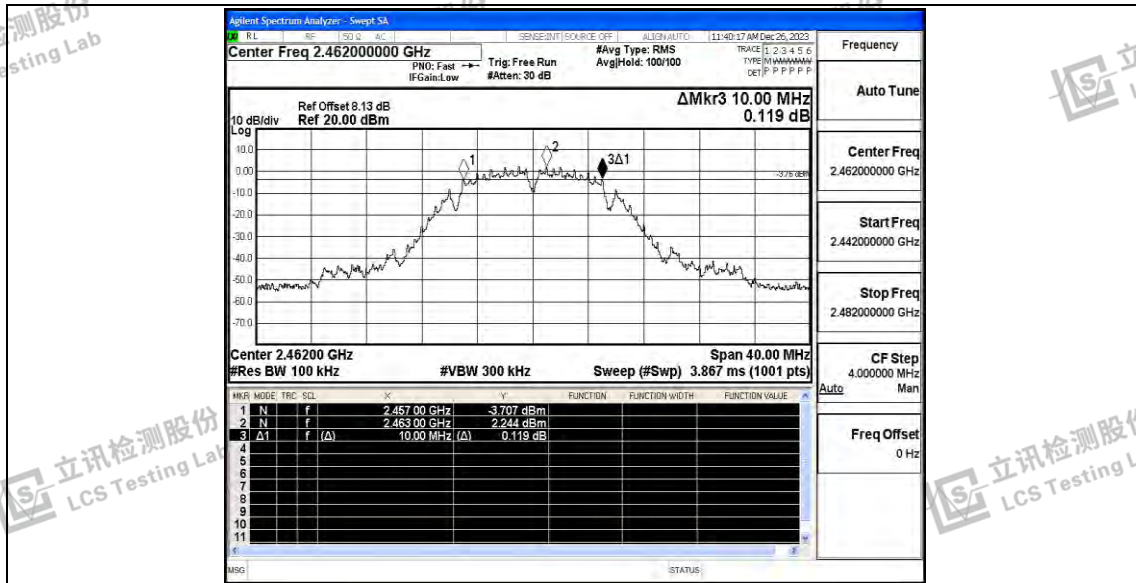


11B_Ant_2437

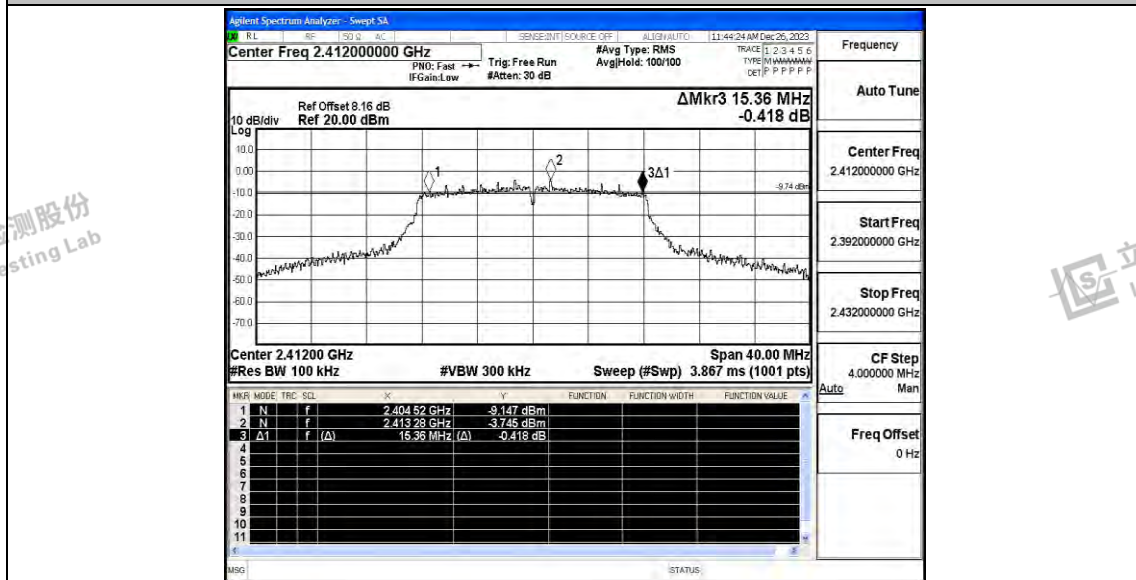


11B_Ant_2462



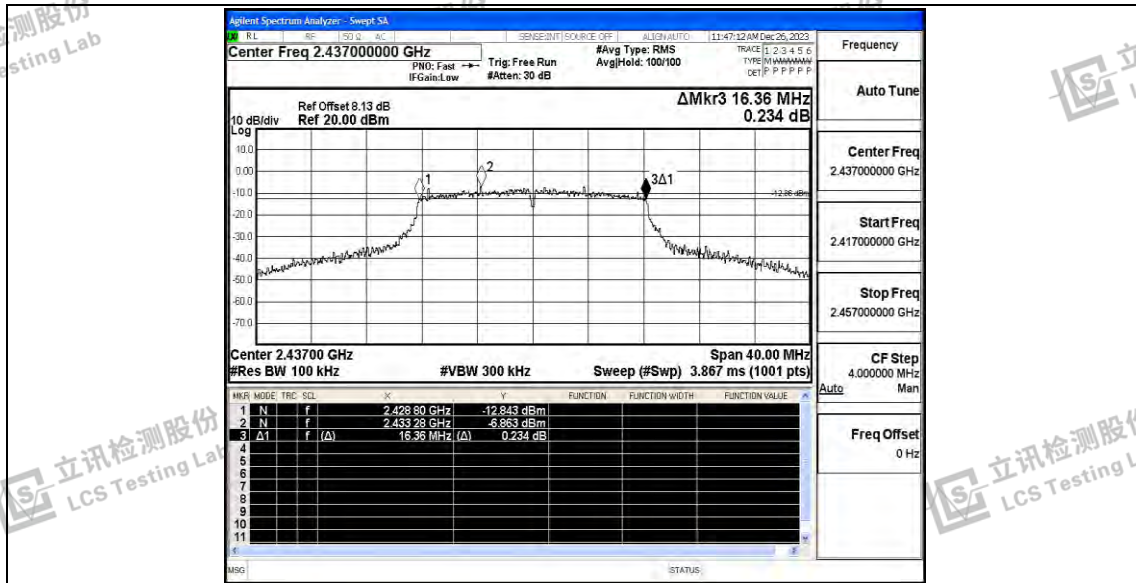


11G_Ant_2412

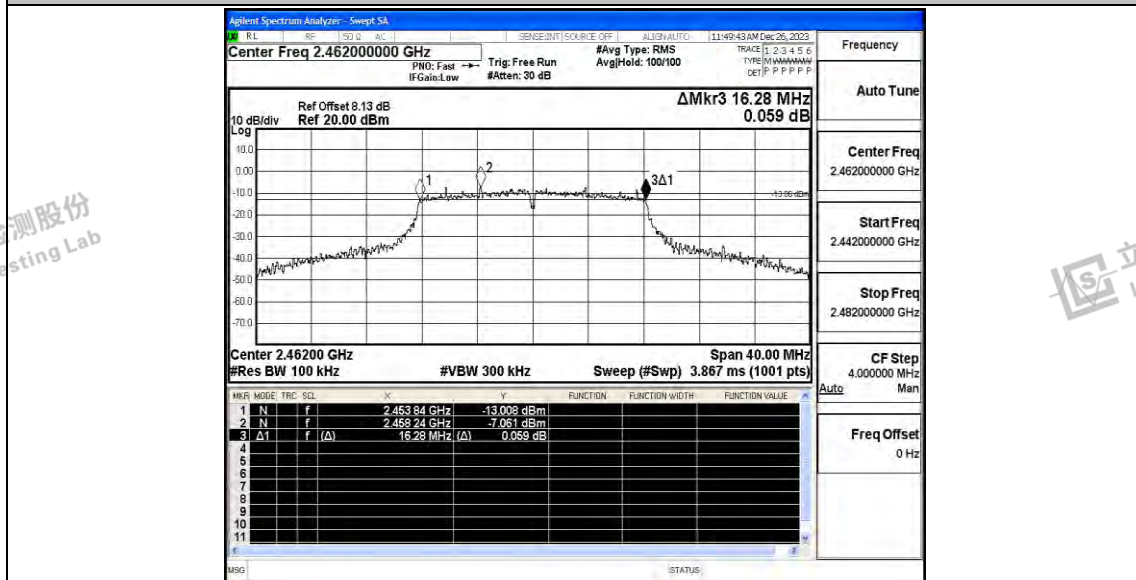


11G_Ant_2437



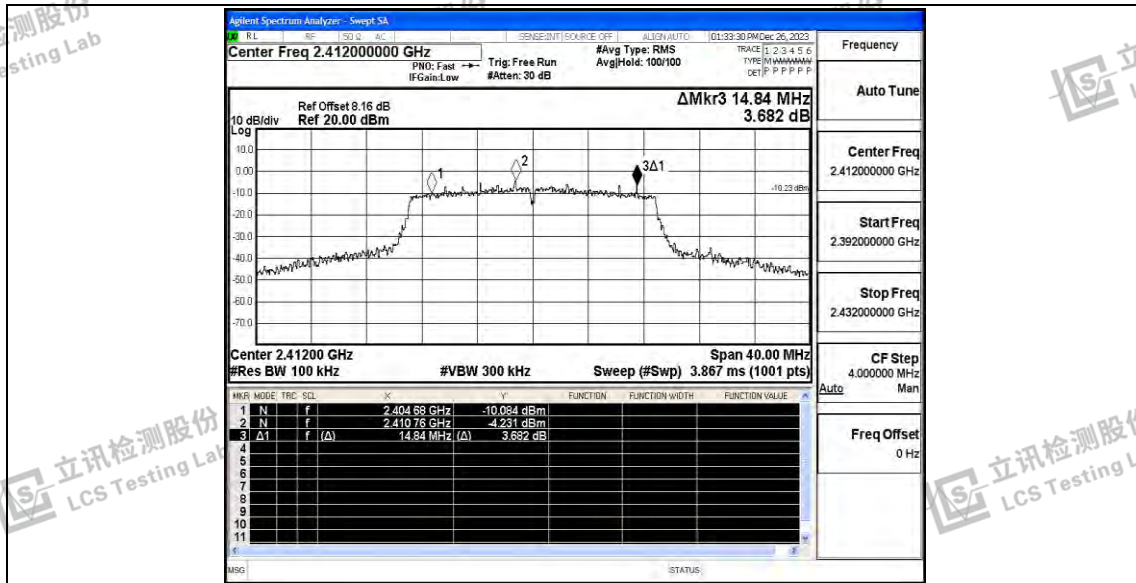


11G_Ant_2462

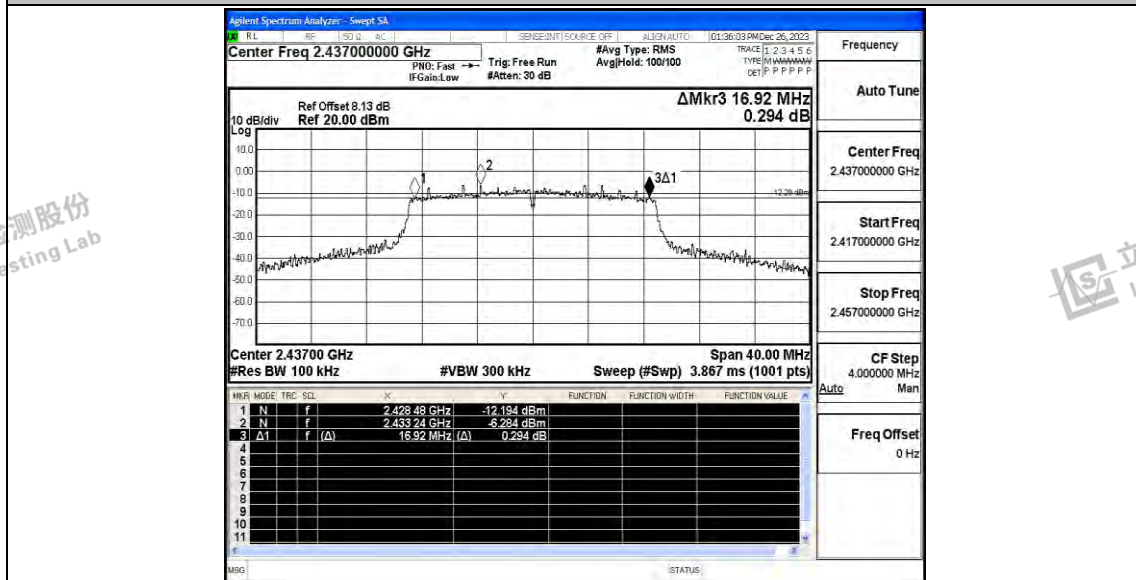


11N20SISO_Ant_2412



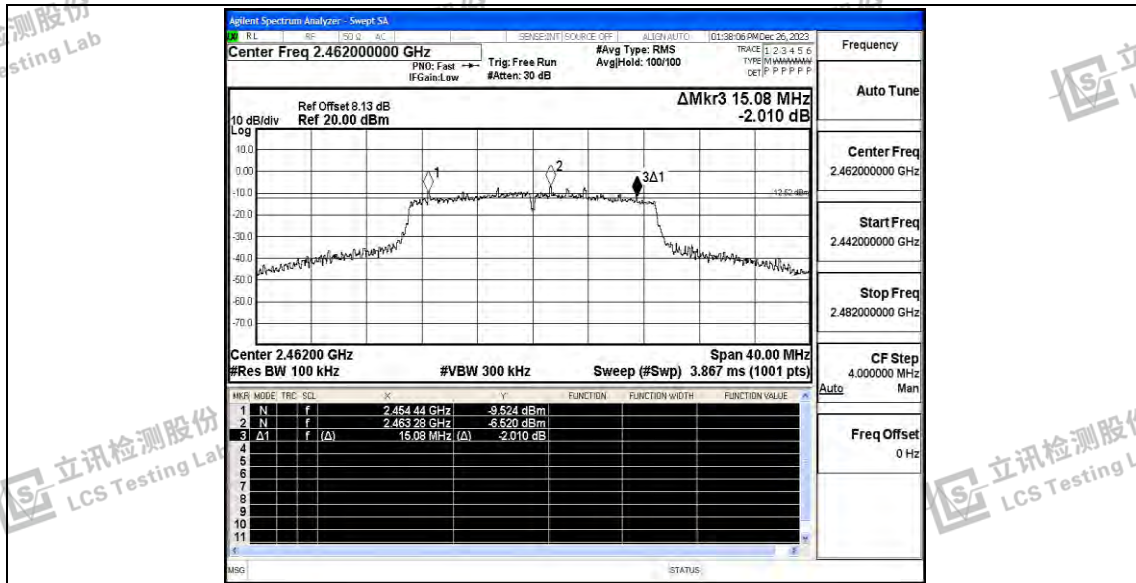


11N20SISO_Ant_2437

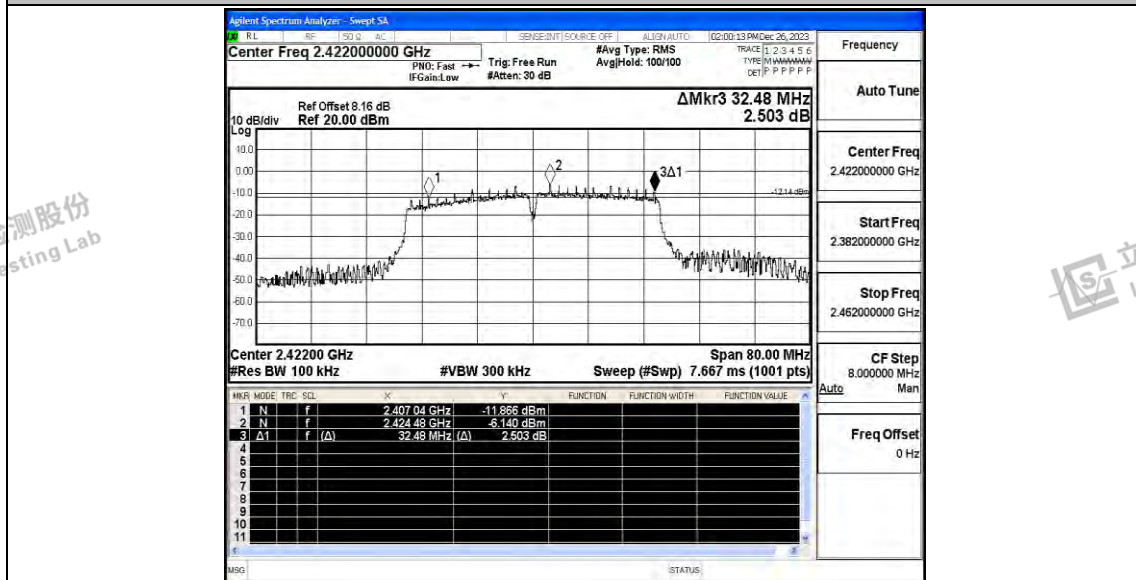


11N20SISO_Ant_2462



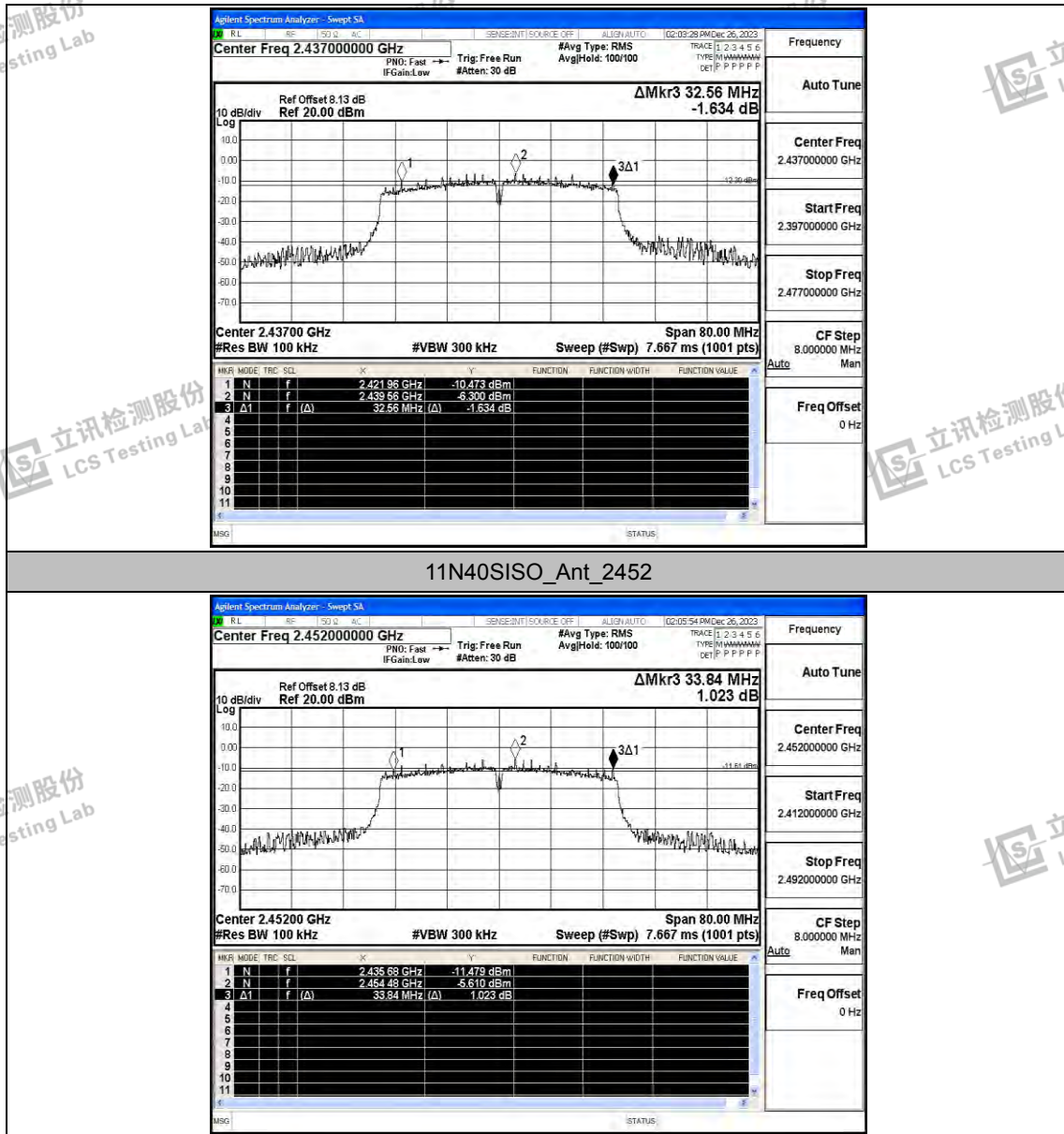


11N40SISO_Ant_2422



11N40SISO_Ant_2437







A.2 Maximum conducted output power

Test Result Peak

TestMode	Antenna	Freq(MHz)	Peak Power[dBm]	Conducted Limit[dBm]	Verdict
11B	Ant	2412	14.56	≤30.00	PASS
		2437	14.63	≤30.00	PASS
		2462	13.83	≤30.00	PASS
11G	Ant	2412	12.92	≤30.00	PASS
		2437	11.78	≤30.00	PASS
		2462	11.22	≤30.00	PASS
11N20SISO	Ant	2412	12.91	≤30.00	PASS
		2437	11.73	≤30.00	PASS
		2462	10.45	≤30.00	PASS
11N40SISO	Ant	2422	12.99	≤30.00	PASS
		2437	13.10	≤30.00	PASS
		2452	13.11	≤30.00	PASS





A.3 Maximum power spectral density

Test Result

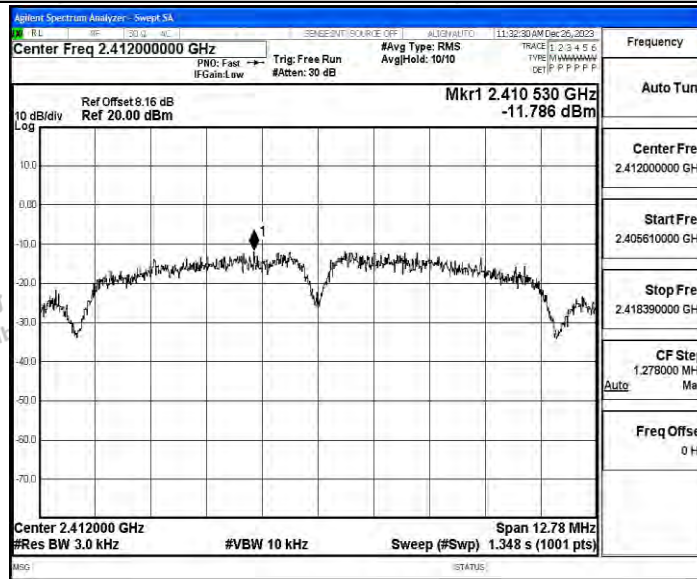
TestMode	Antenna	Freq(MHz)	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant	2412	-11.79	≤8.00	PASS
		2437	-10.25	≤8.00	PASS
		2462	-7.6	≤8.00	PASS
11G	Ant	2412	-17.19	≤8.00	PASS
		2437	-17.55	≤8.00	PASS
		2462	-19.65	≤8.00	PASS
11N20SISO	Ant	2412	-17.8	≤8.00	PASS
		2437	-19.75	≤8.00	PASS
		2462	-20.43	≤8.00	PASS
11N40SISO	Ant	2422	-19.43	≤8.00	PASS
		2437	-16.59	≤8.00	PASS
		2452	-16.47	≤8.00	PASS



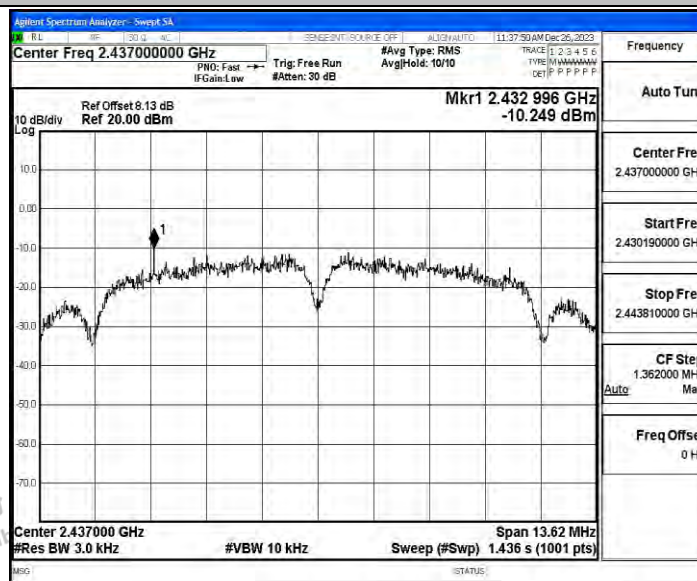


Test Graphs

11B_Ant_2412

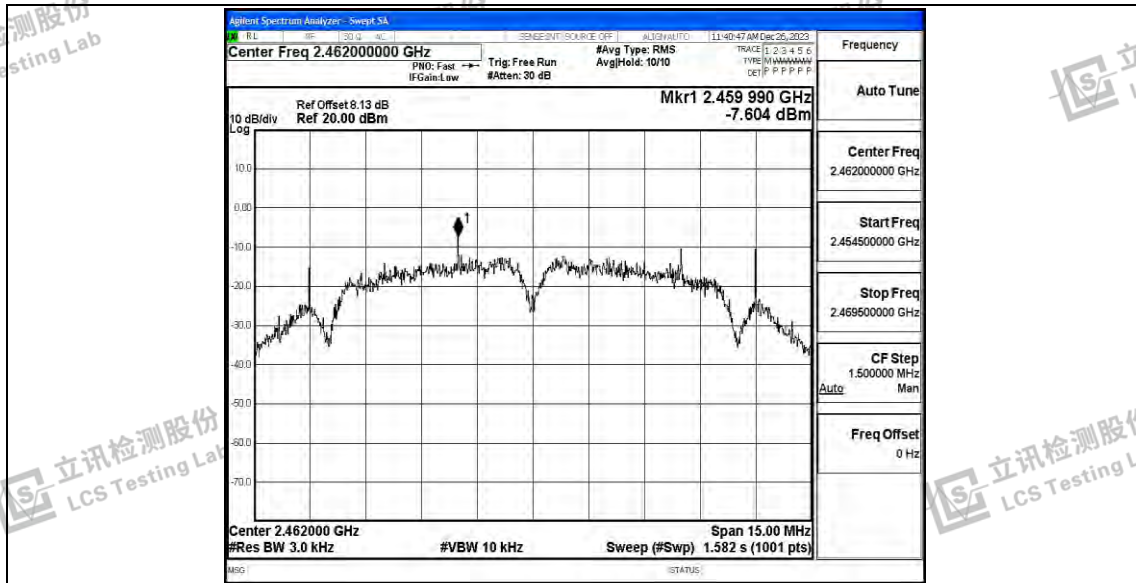


11B_Ant_2437

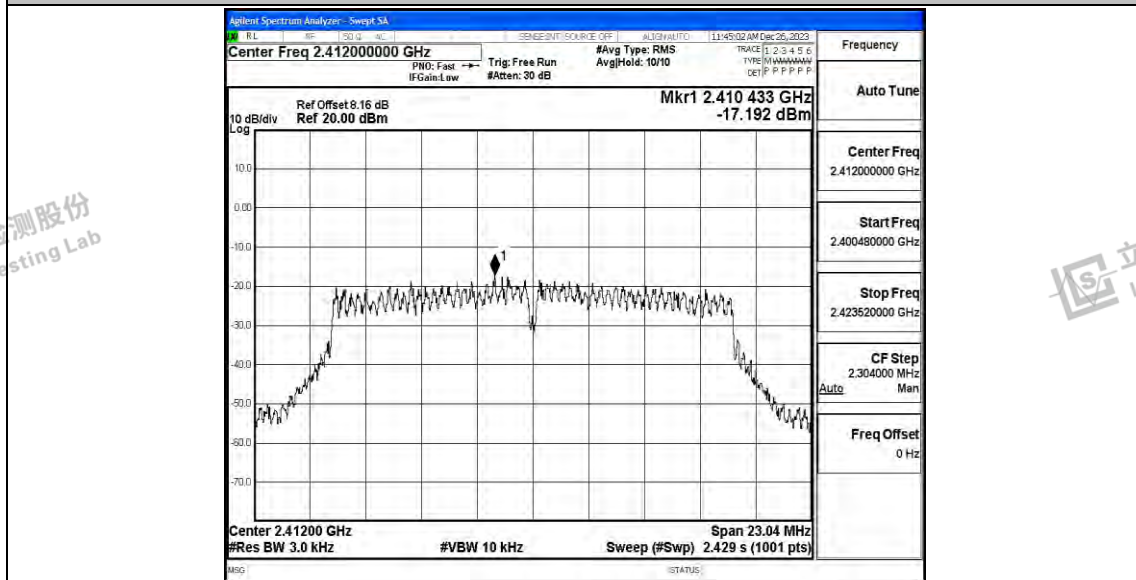


11B_Ant_2462



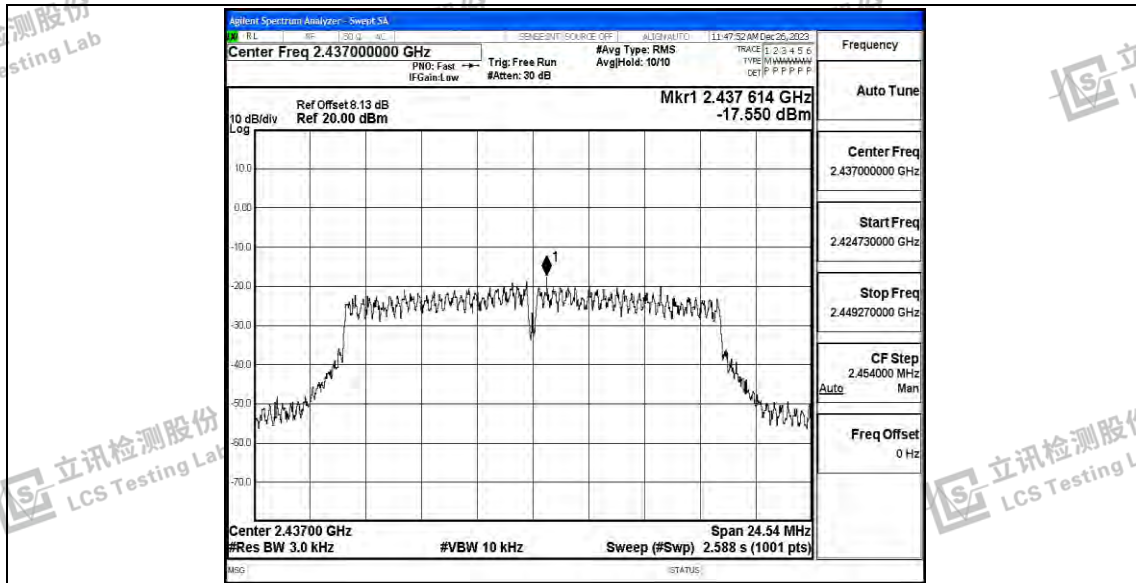


11G_Ant_2412

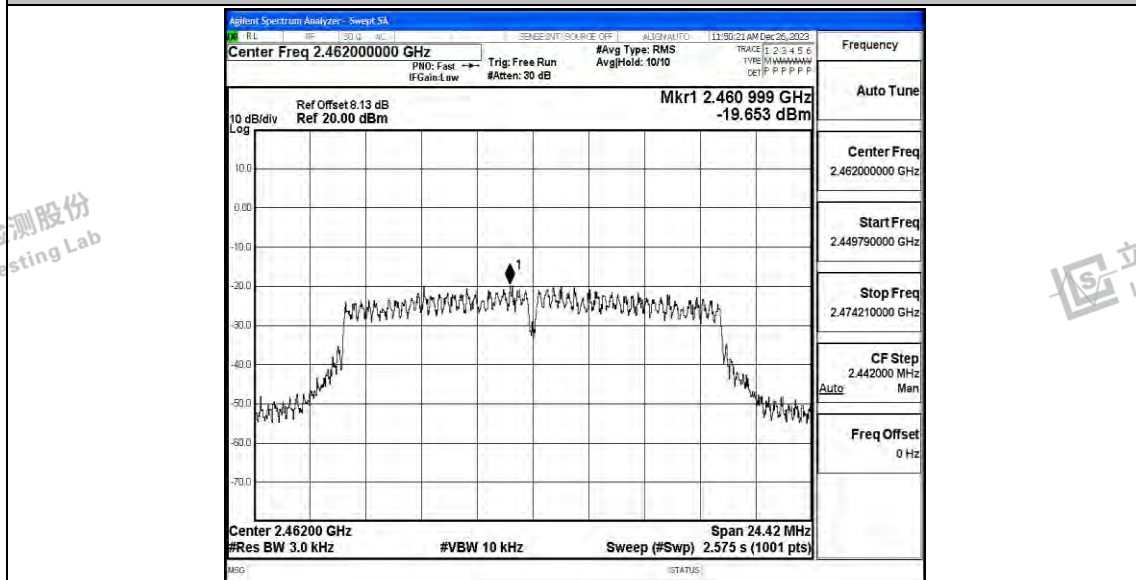


11G_Ant_2437



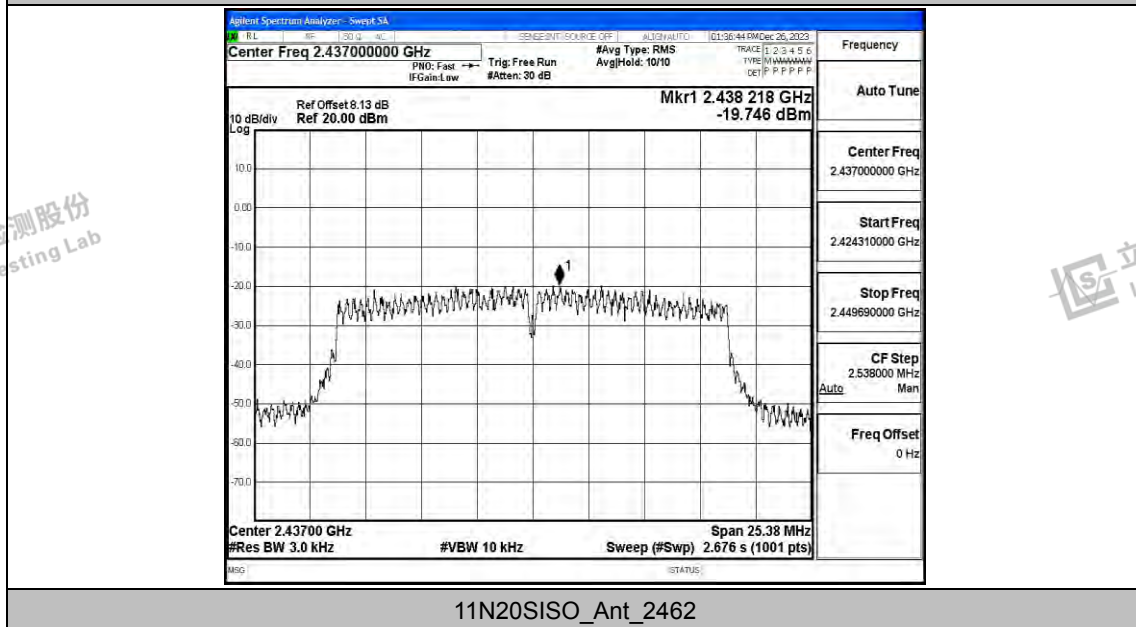
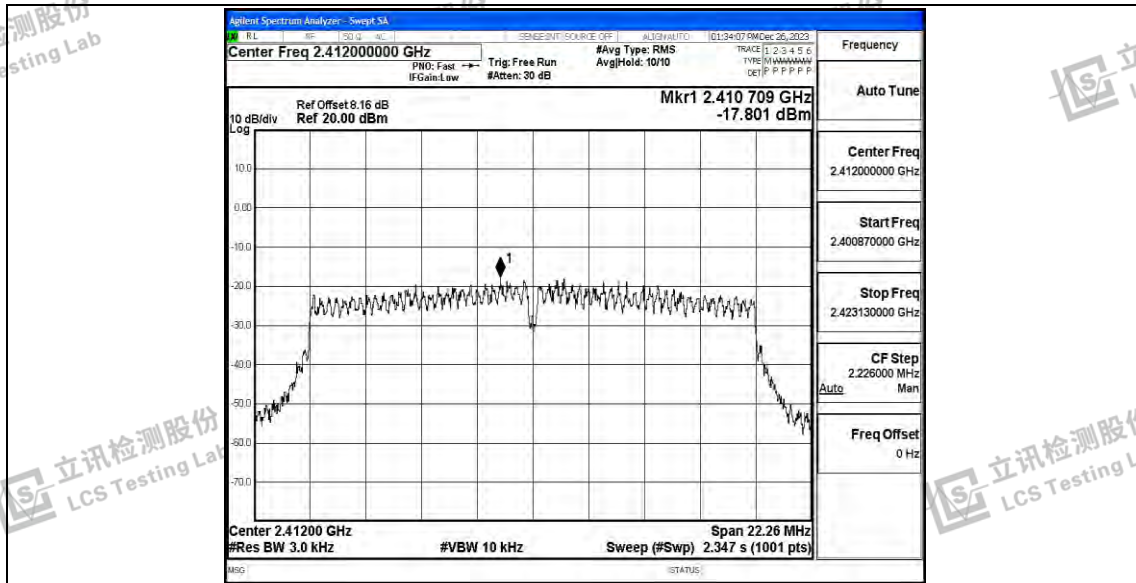


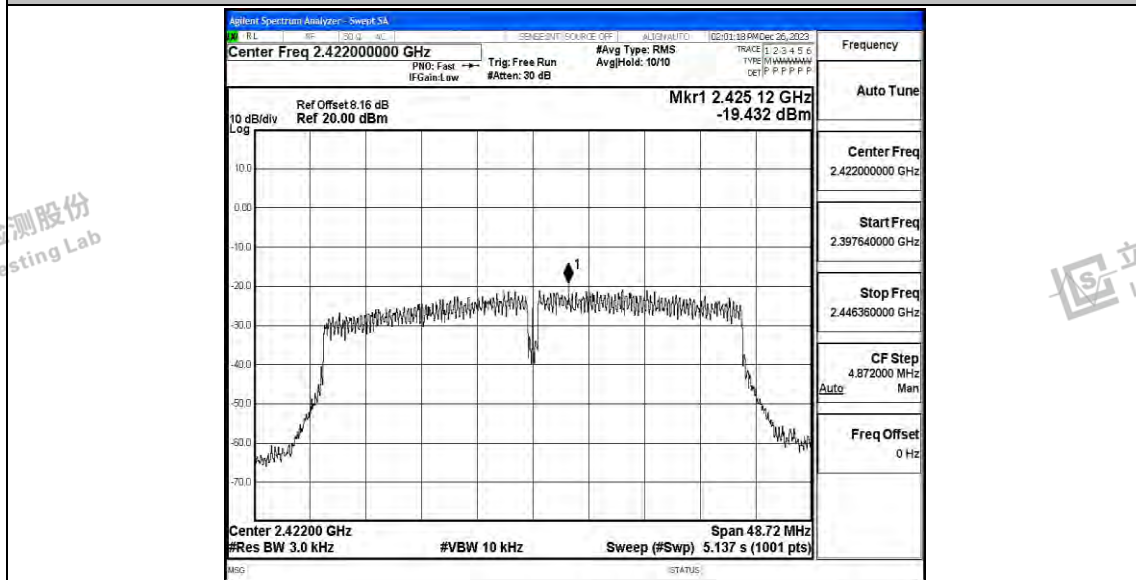
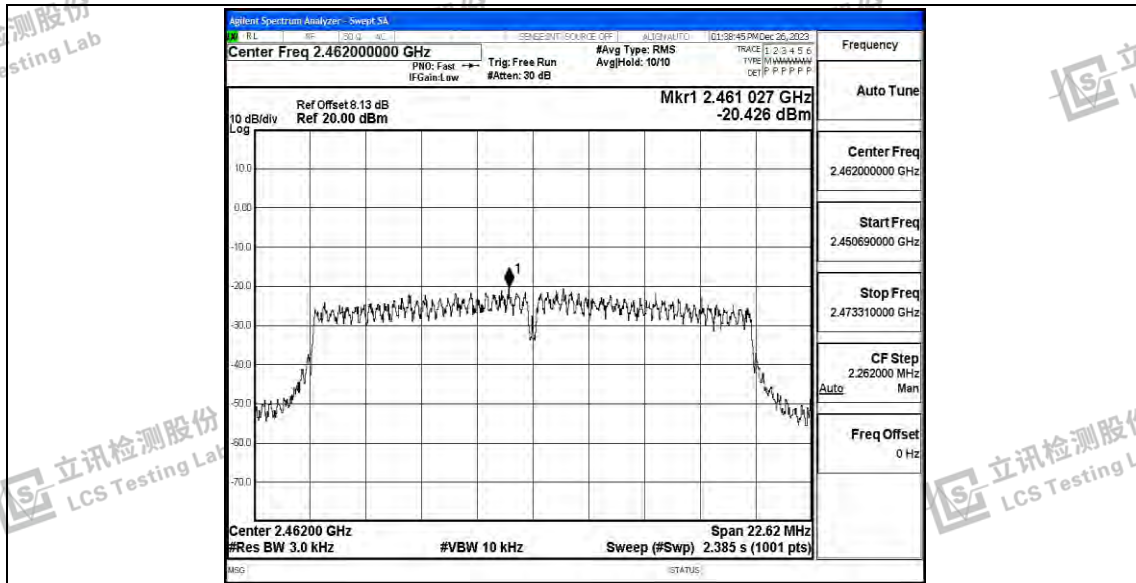
11G_Ant_2462

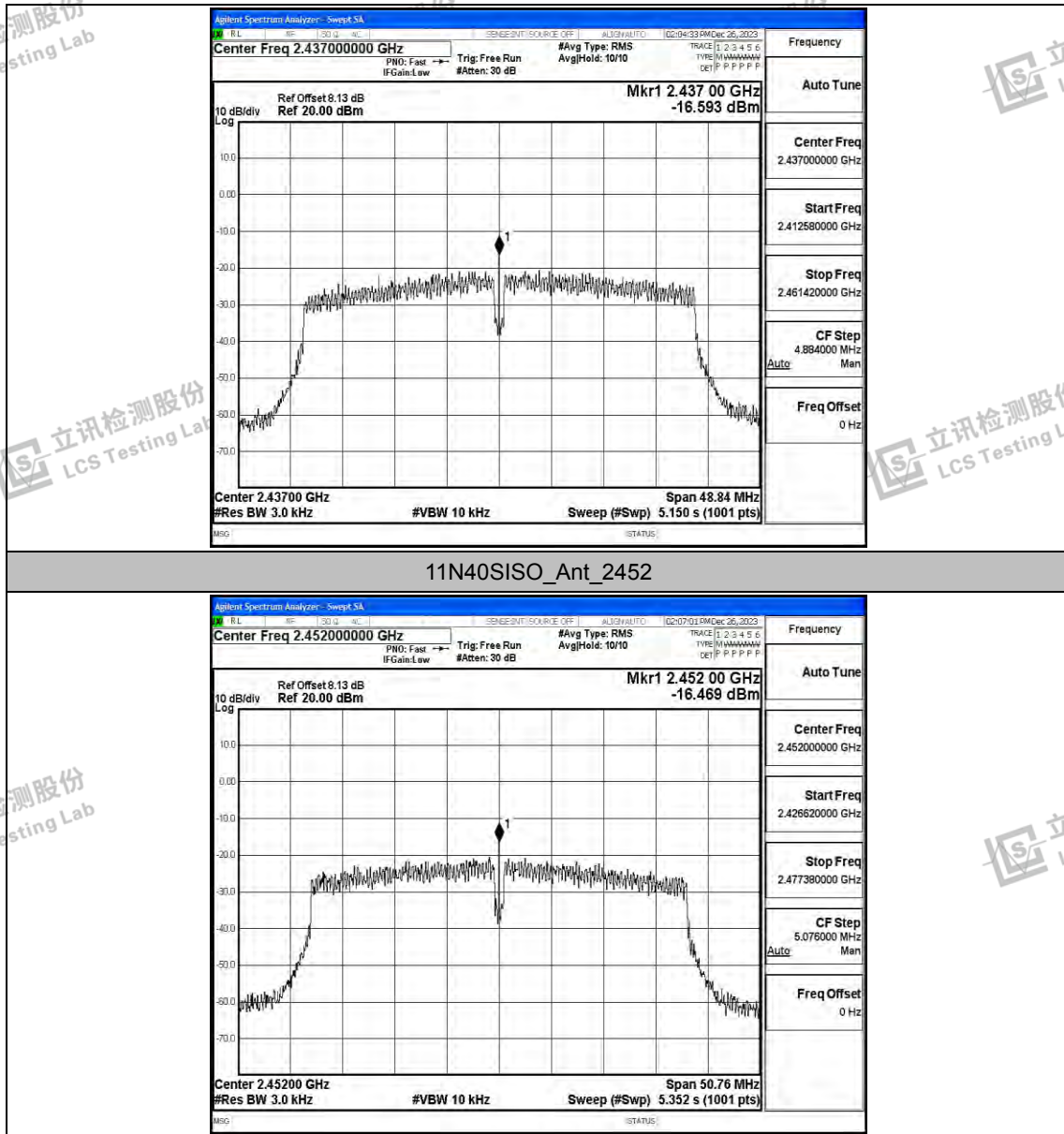


11N20SISO_Ant_2412











A.4 Band edge measurements

Test Result

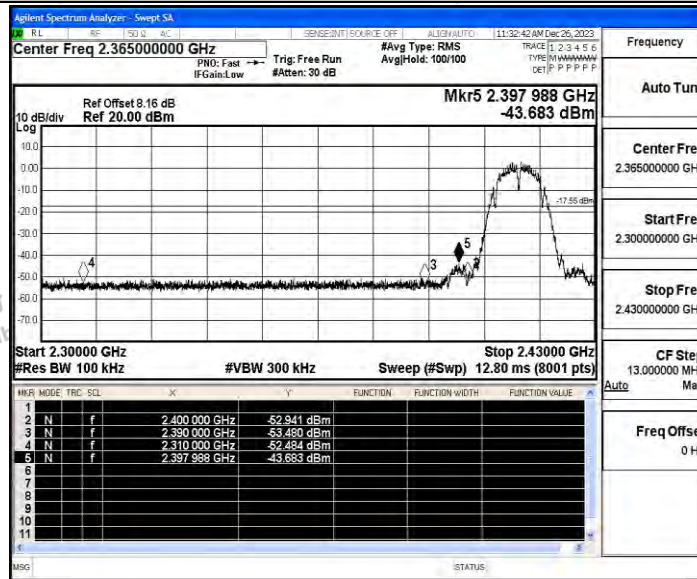
TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant	Low	2412	2.45	-43.68	≤-17.55	PASS
		High	2462	2.17	-49.96	≤-17.83	PASS
11G	Ant	Low	2412	-4.71	-35.91	≤-24.71	PASS
		High	2462	-6.06	-47.19	≤-26.06	PASS
11N20SISO	Ant	Low	2412	-3.66	-34.25	≤-23.66	PASS
		High	2462	-6.19	-47.4	≤-26.19	PASS
11N40SISO	Ant	Low	2422	-6.22	-41.23	≤-26.22	PASS
		High	2452	-6.09	-41.87	≤-26.09	PASS



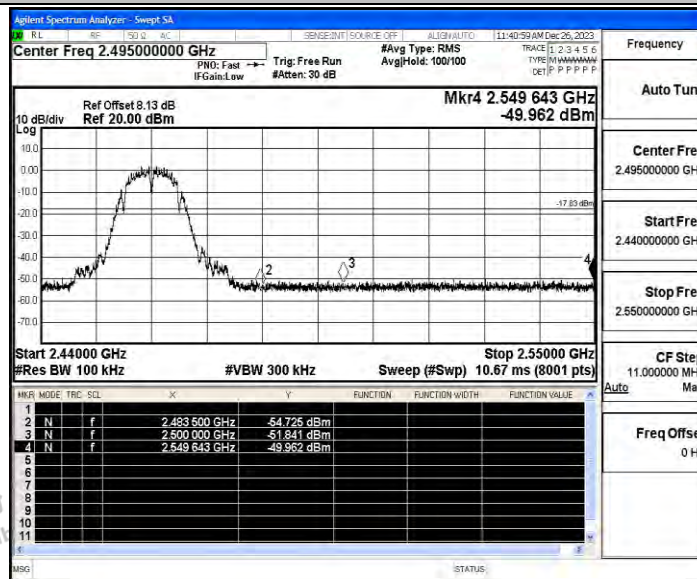


Test Graphs

11B_Ant_Low_2412

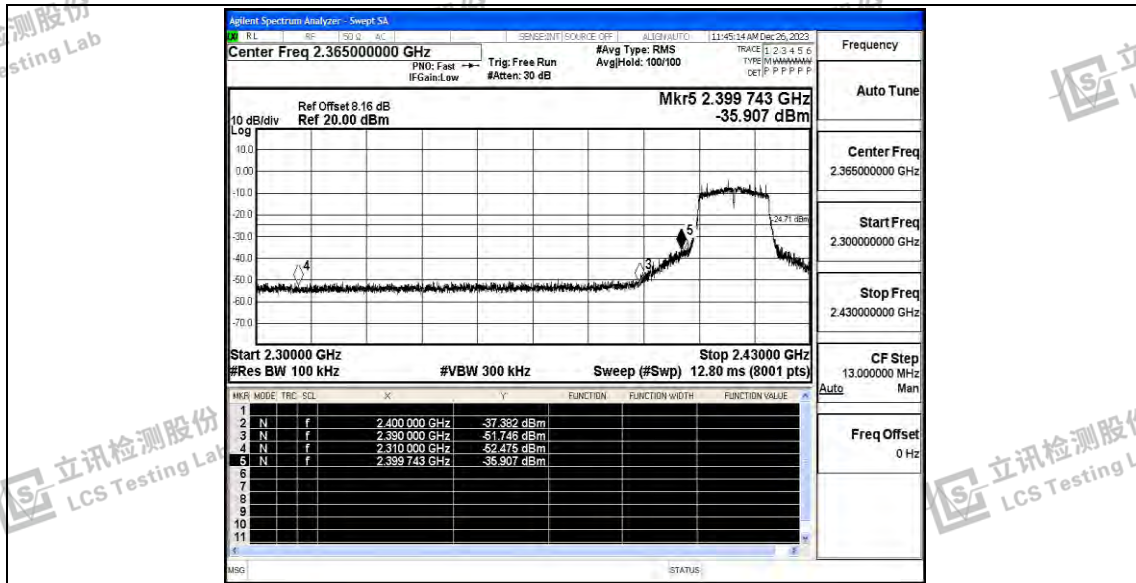


11B_Ant_High_2462

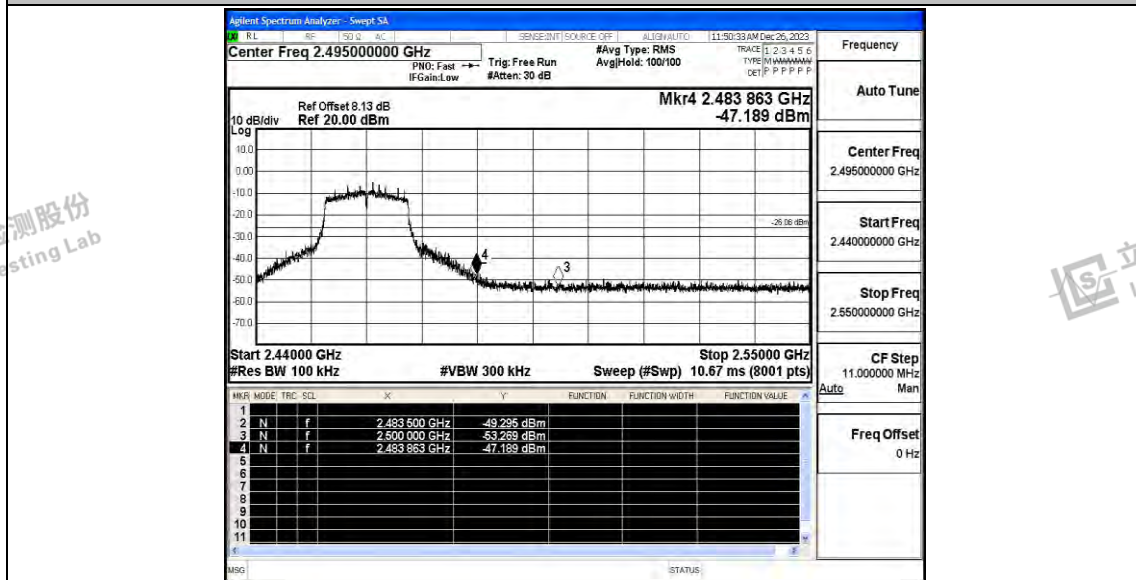


11G_Ant_Low_2412



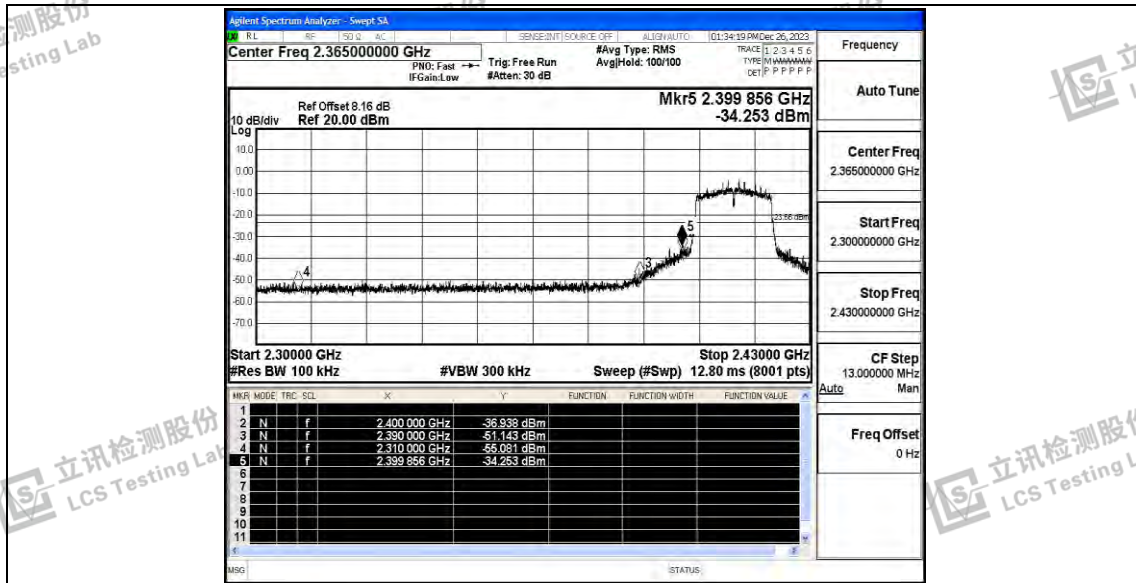


11G_Ant_High_2462

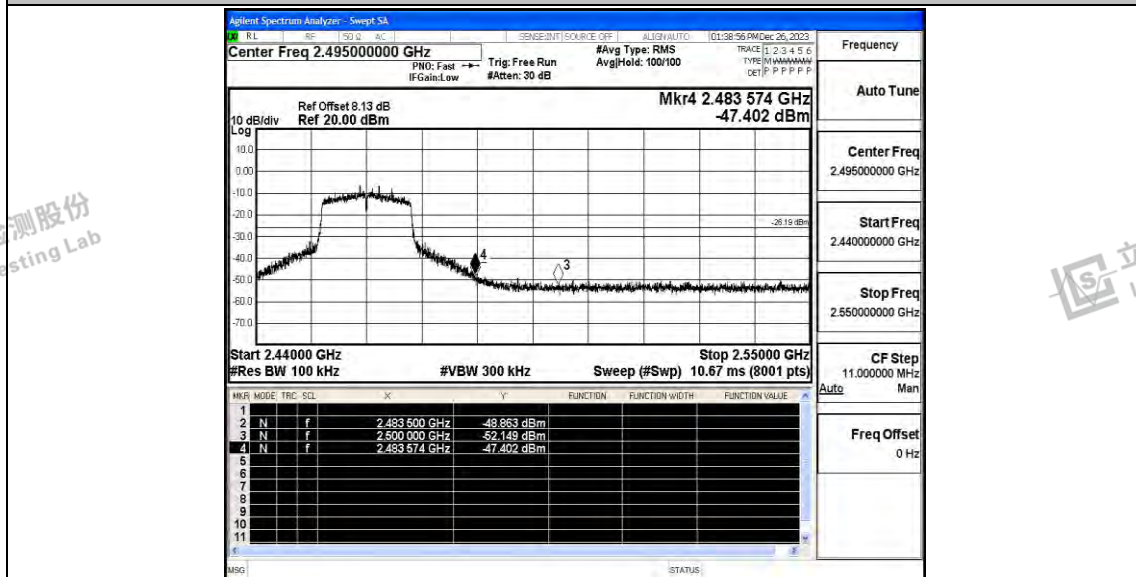


11N20SISO_Ant_Low_2412



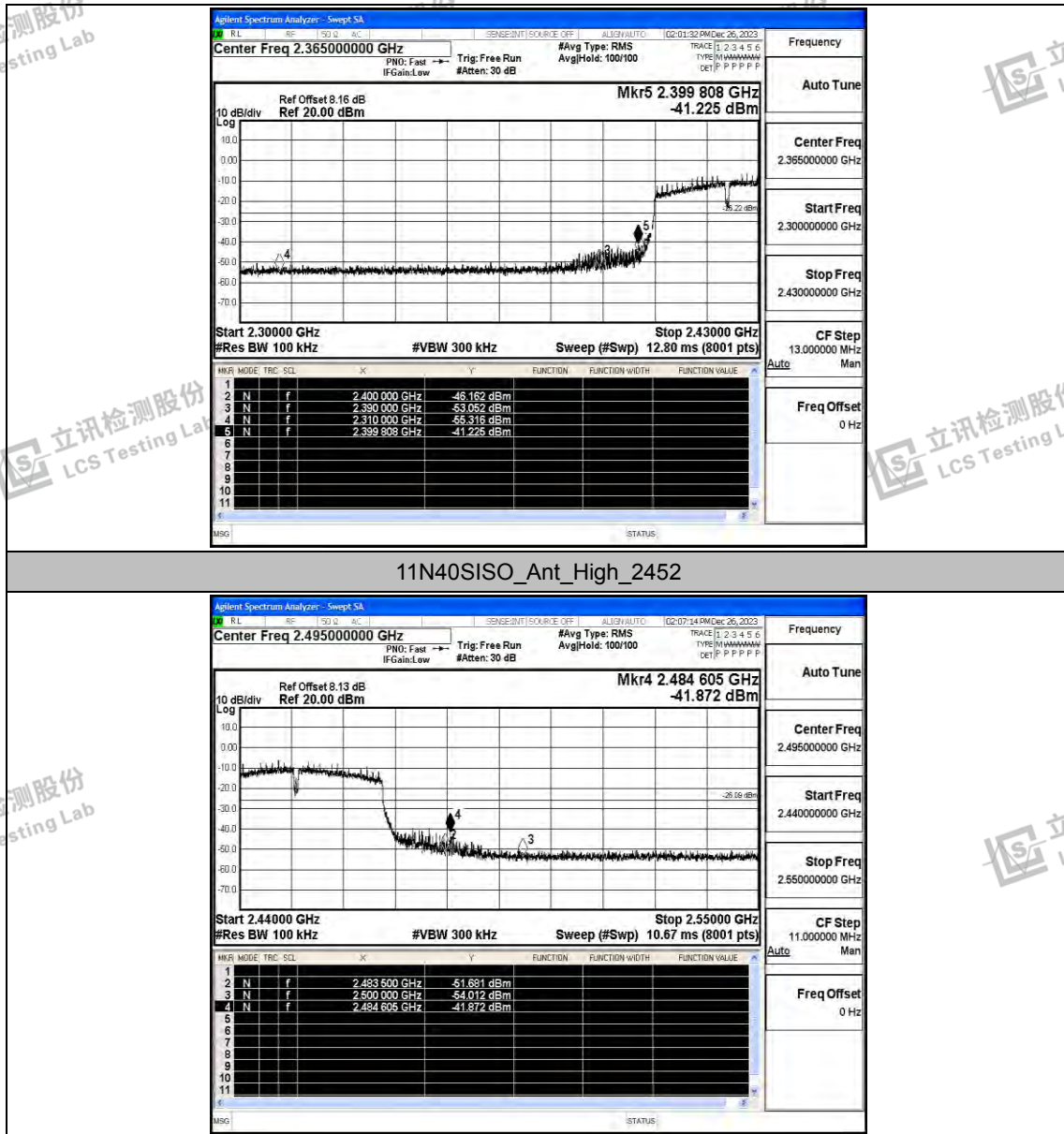


11N20SISO_Ant_High_2462



11N40SISO_Ant_Low_2422







A.5 Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant	2412	30~1000	2.45	-61.81	≤-17.55	PASS
			1000~26500	2.45	-48.71	≤-17.55	PASS
		2437	30~1000	2.59	-61.77	≤-17.41	PASS
			1000~26500	2.59	-48.55	≤-17.41	PASS
		2462	30~1000	2.17	-61.57	≤-17.83	PASS
			1000~26500	2.17	-48.66	≤-17.83	PASS
11G	Ant	2412	30~1000	-4.71	-47.9	≤-24.71	PASS
			1000~26500	-4.71	-44.26	≤-24.71	PASS
		2437	30~1000	-6.12	-47.69	≤-26.12	PASS
			1000~26500	-6.12	-44.87	≤-26.12	PASS
		2462	30~1000	-6.06	-50.27	≤-26.06	PASS
			1000~26500	-6.06	-43.47	≤-26.06	PASS
11N20SISO	Ant	2412	30~1000	-3.66	-48.41	≤-23.66	PASS
			1000~26500	-3.66	-41.63	≤-23.66	PASS
		2437	30~1000	-5.27	-48.01	≤-25.27	PASS
			1000~26500	-5.27	-41.49	≤-25.27	PASS
		2462	30~1000	-6.19	-52.3	≤-26.19	PASS
			1000~26500	-6.19	-48.57	≤-26.19	PASS
11N40SISO	Ant	2422	30~1000	-6.22	-61.87	≤-26.22	PASS
			1000~26500	-6.22	-48.14	≤-26.22	PASS
		2437	30~1000	-5.91	-61.12	≤-25.91	PASS
			1000~26500	-5.91	-49.42	≤-25.91	PASS
		2452	30~1000	-6.09	-61.24	≤-26.09	PASS
			1000~26500	-6.09	-49.65	≤-26.09	PASS



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

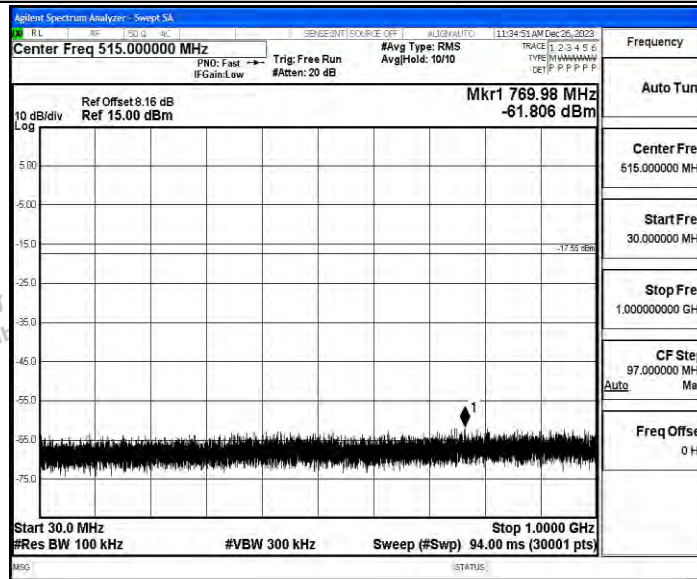
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

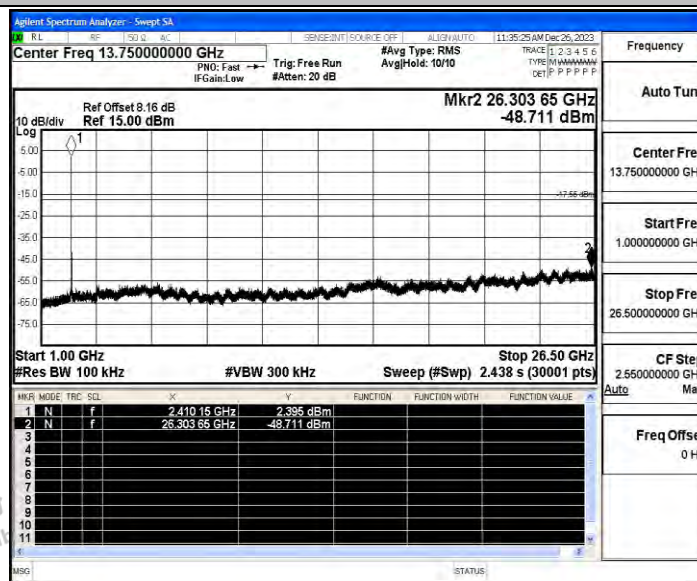


Test Graphs

11B_Ant_2412_30~1000

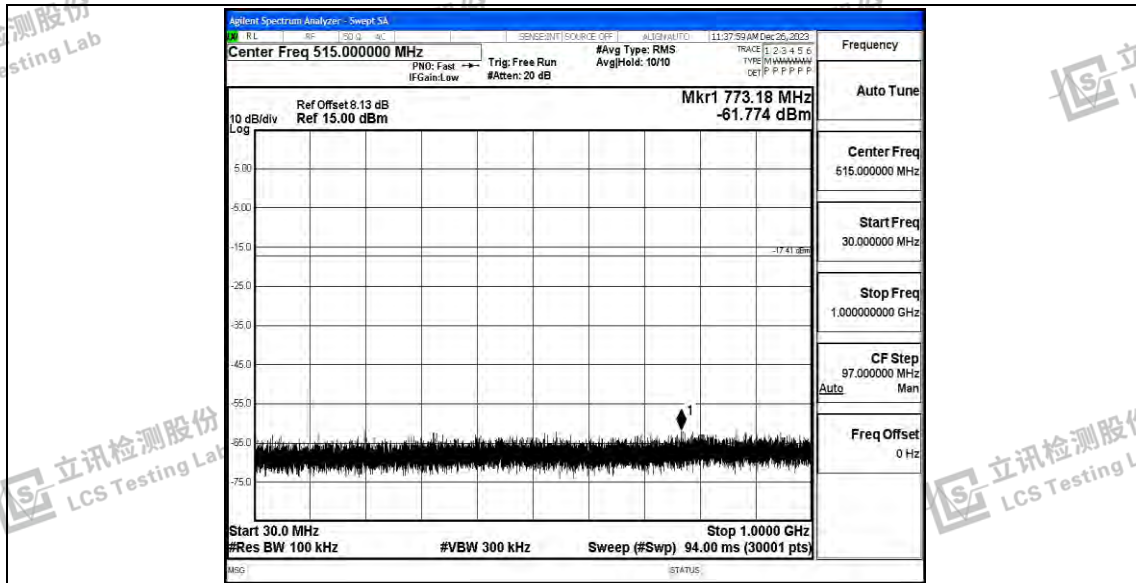


11B_Ant_2412_1000~26500

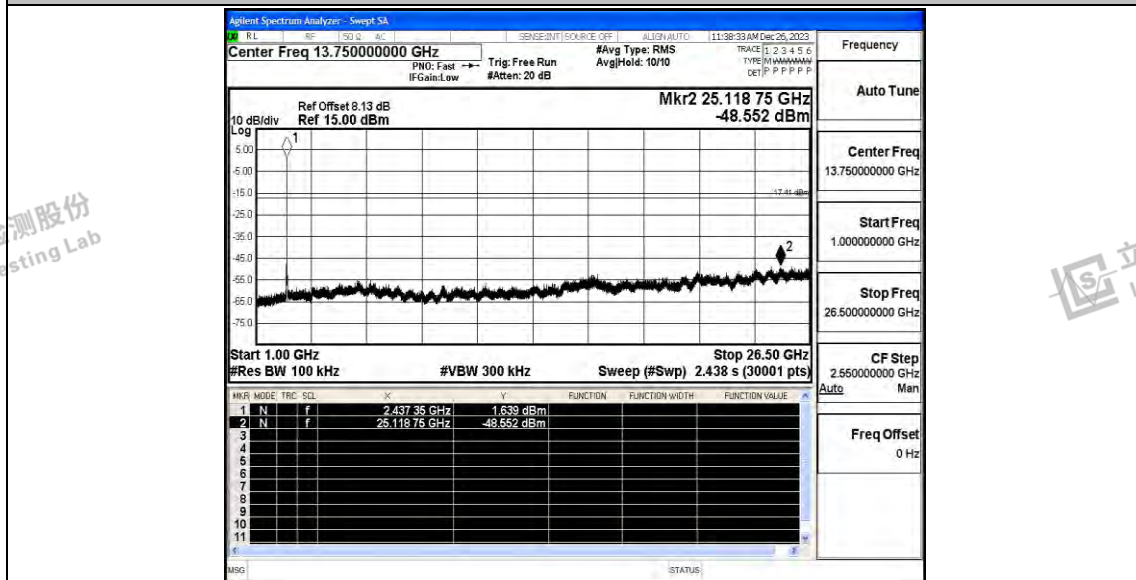


11B_Ant_2437_30~1000



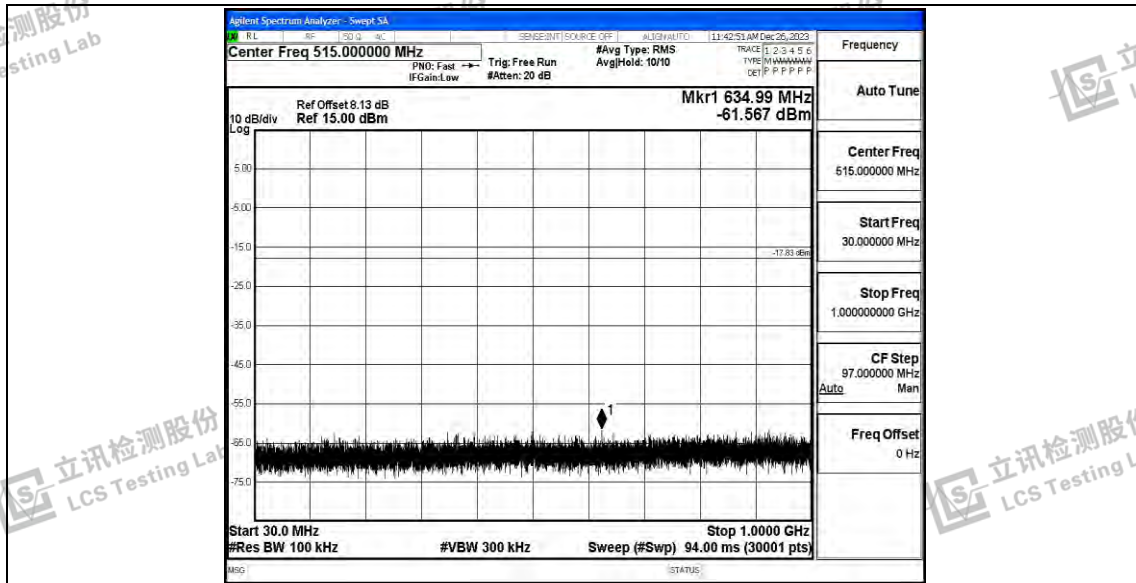


11B_Ant_2437_1000~26500

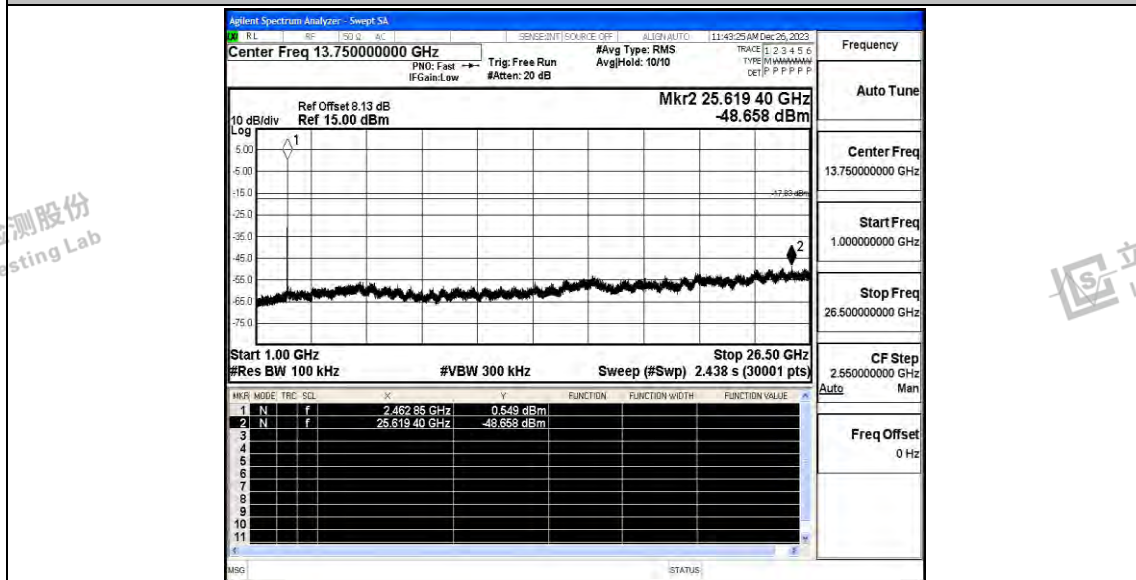


11B_Ant_2462_30~1000



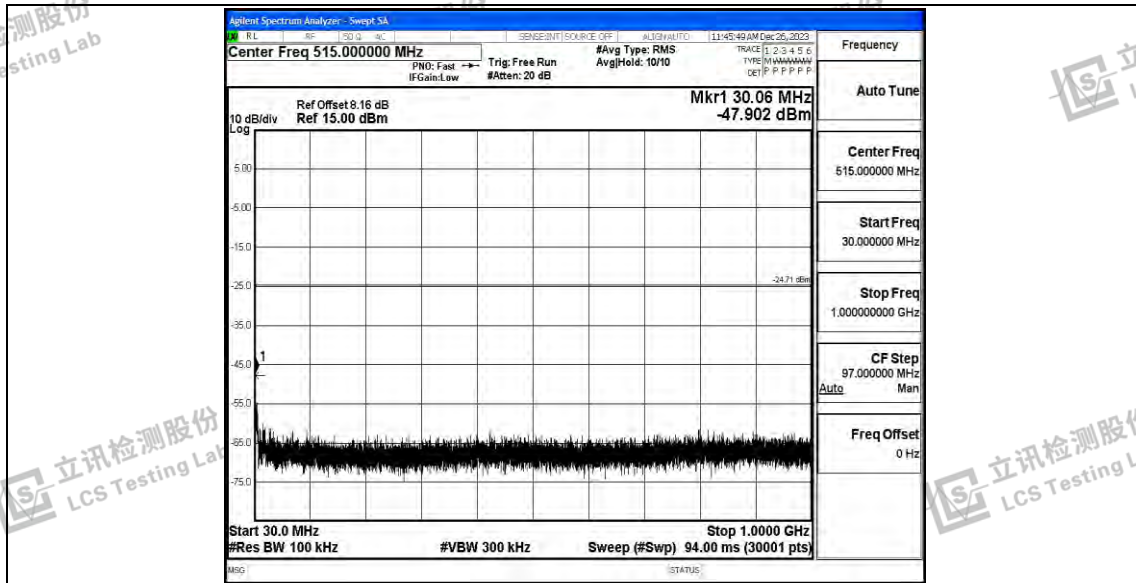


11B_Ant_2462_1000~26500

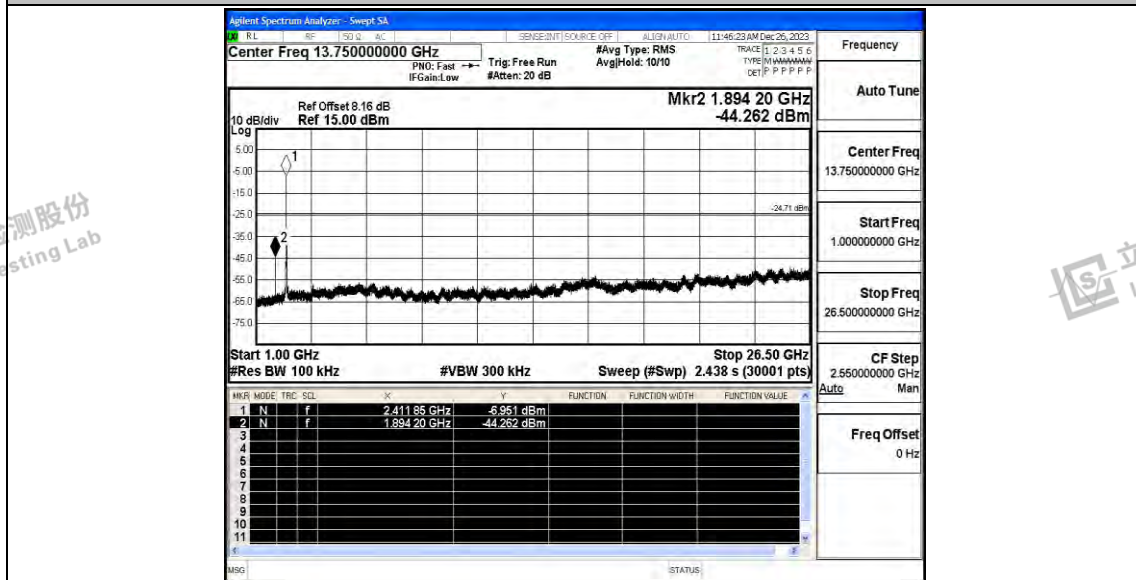


11G_Ant_2412_30~1000



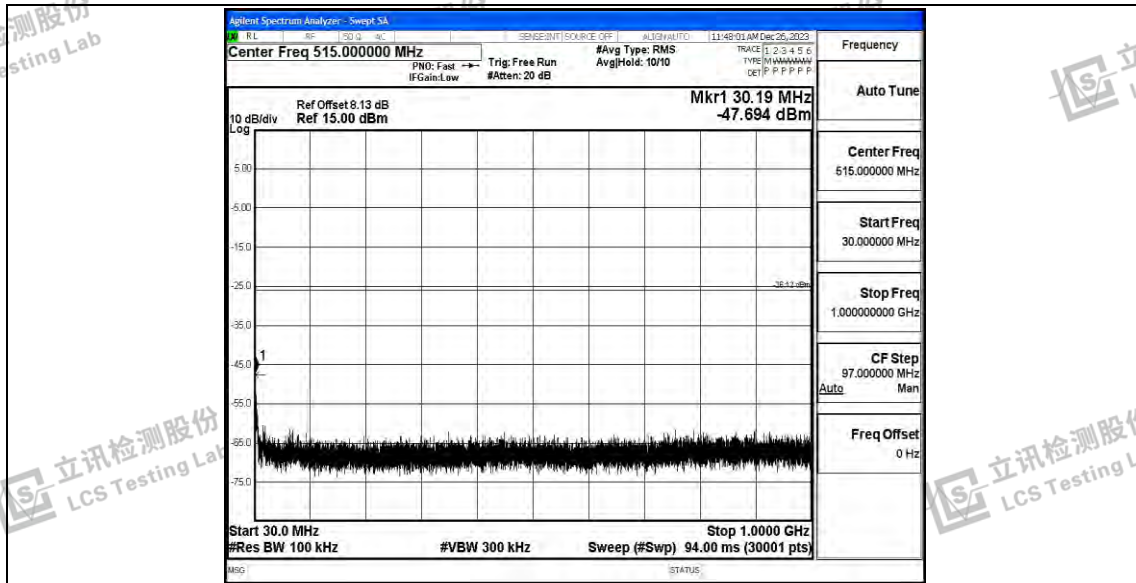


11G_Ant_2412_1000~26500

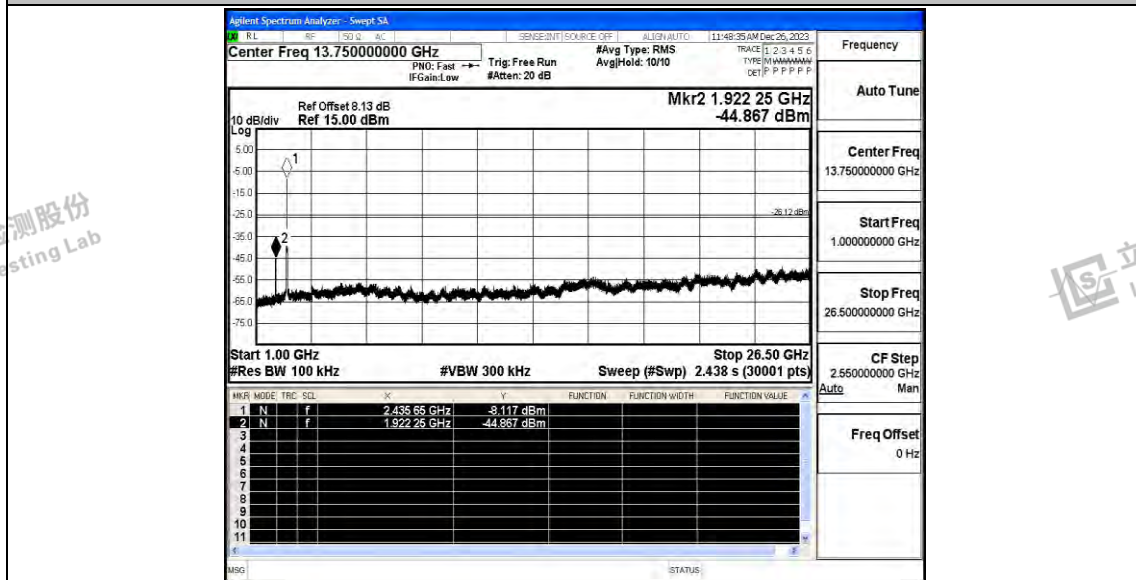


11G_Ant_2437_30~1000



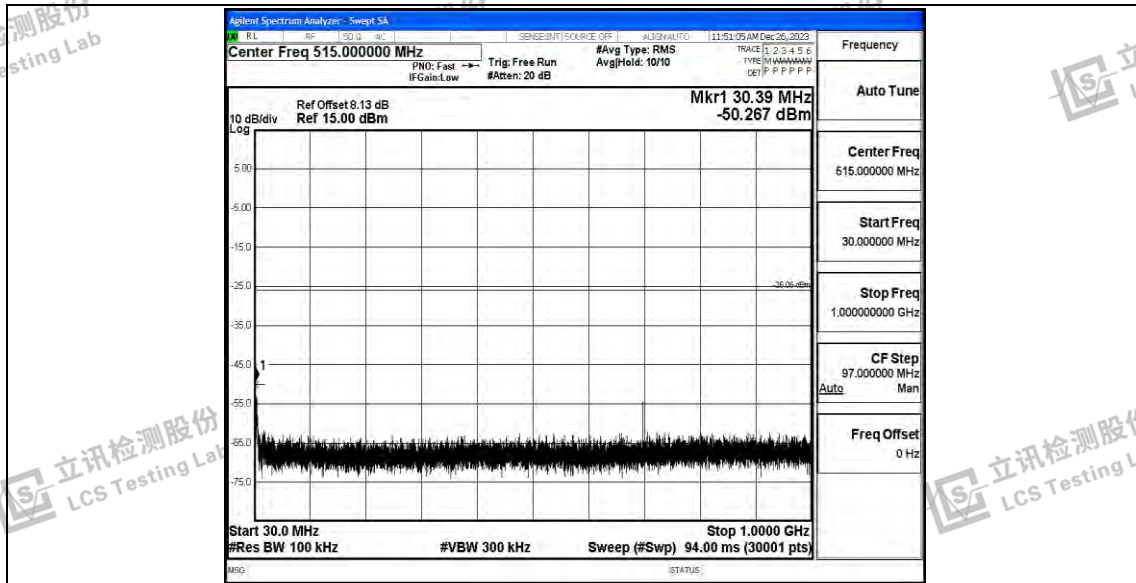


11G_Ant_2437_1000~26500

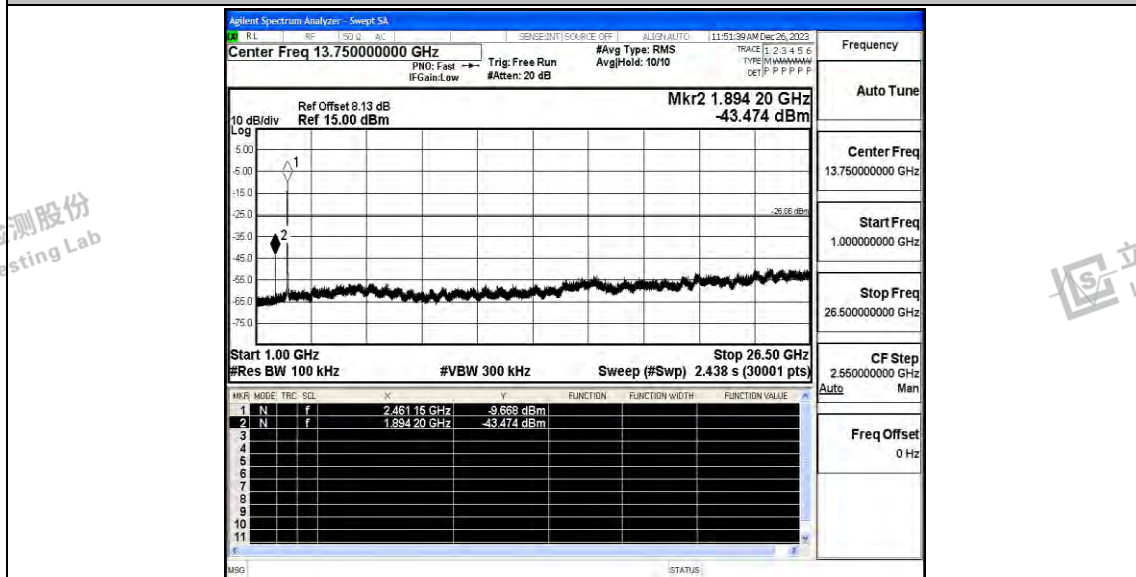


11G_Ant_2462_30~1000



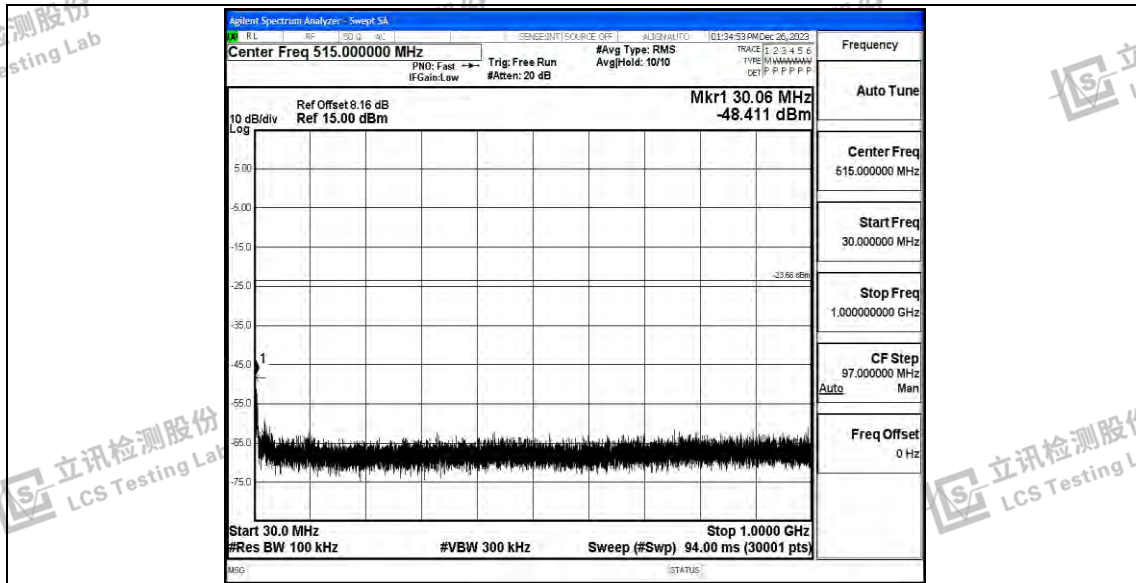


11G_Ant_2462_1000~26500

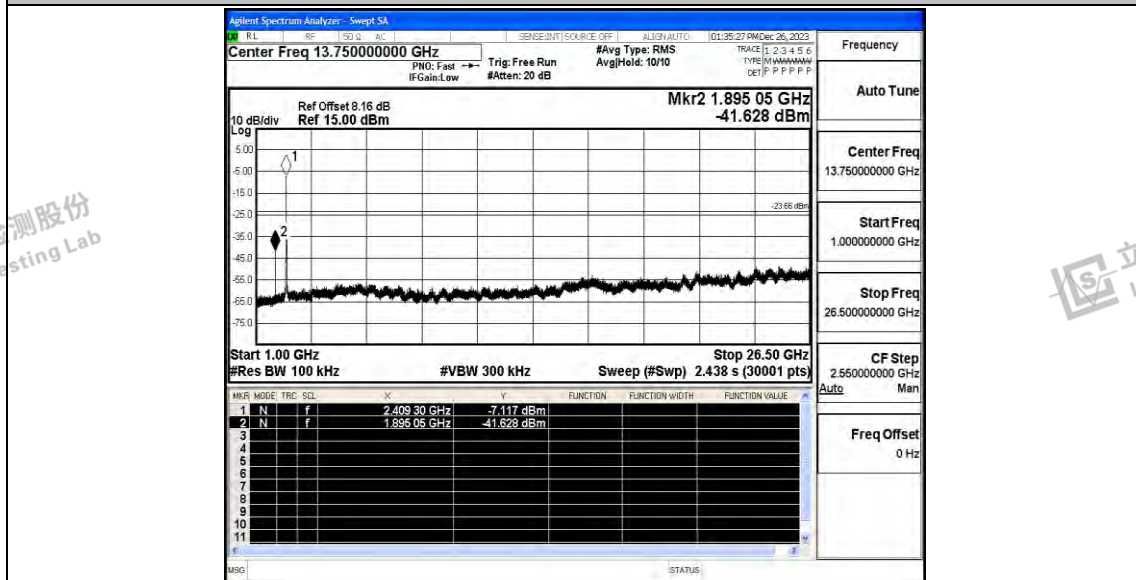


11N20SISO_Ant_2412_30~1000



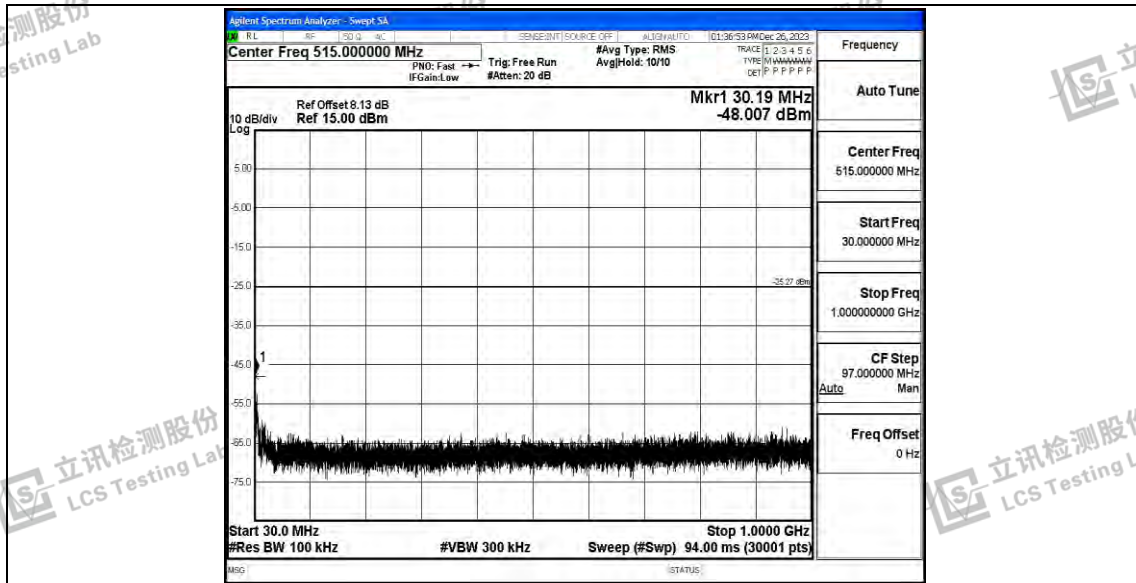


11N20SISO_Ant_2412_1000~26500

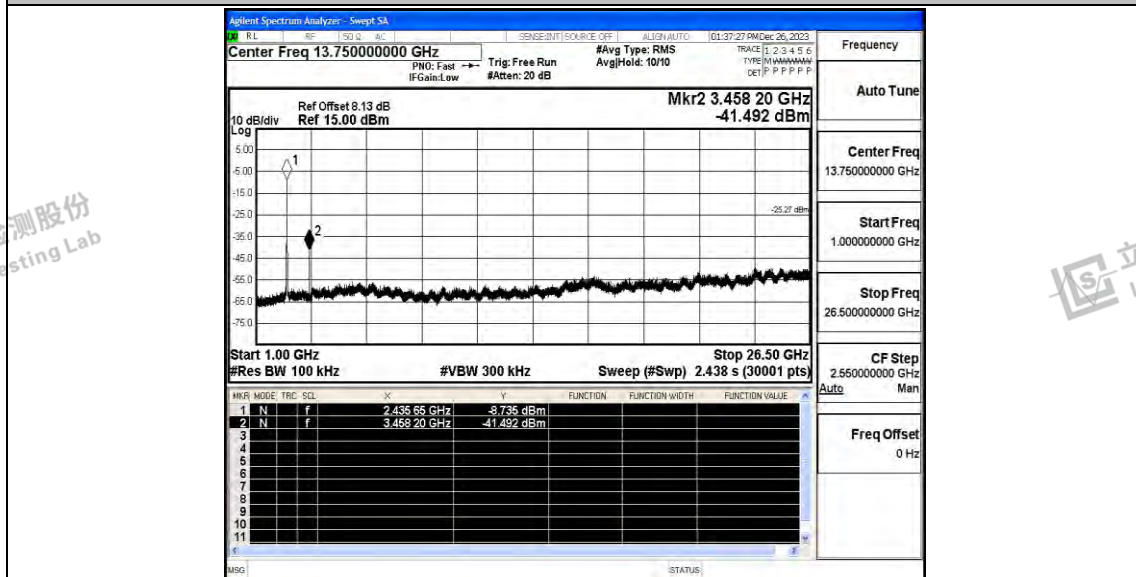


11N20SISO_Ant_2437_30~1000



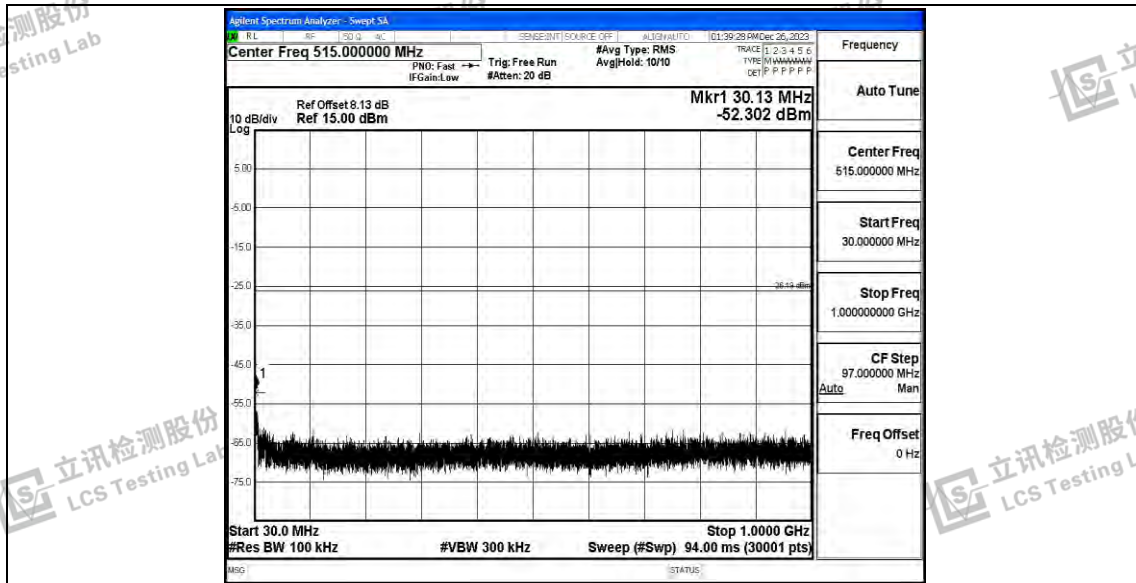


11N20SISO_Ant_2437_1000~26500

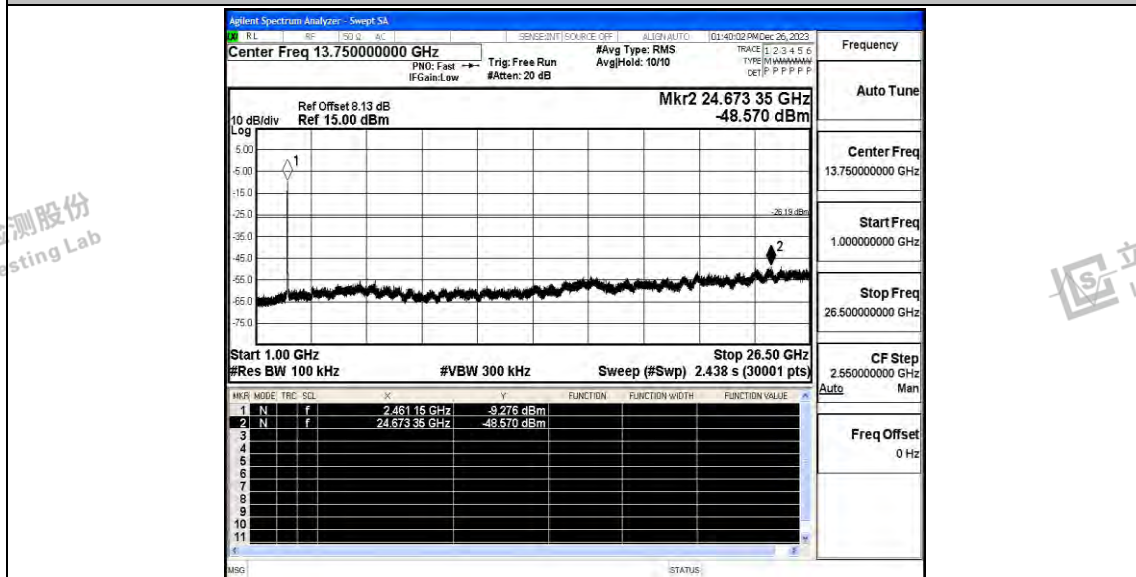


11N20SISO_Ant_2462_30~1000



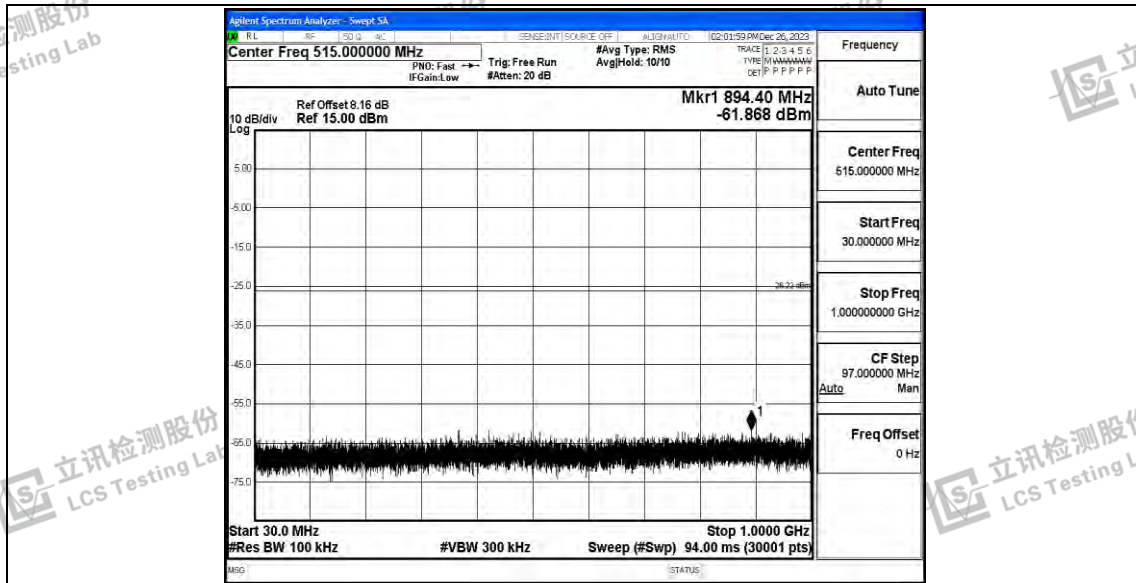


11N20SISO_Ant_2462_1000~26500

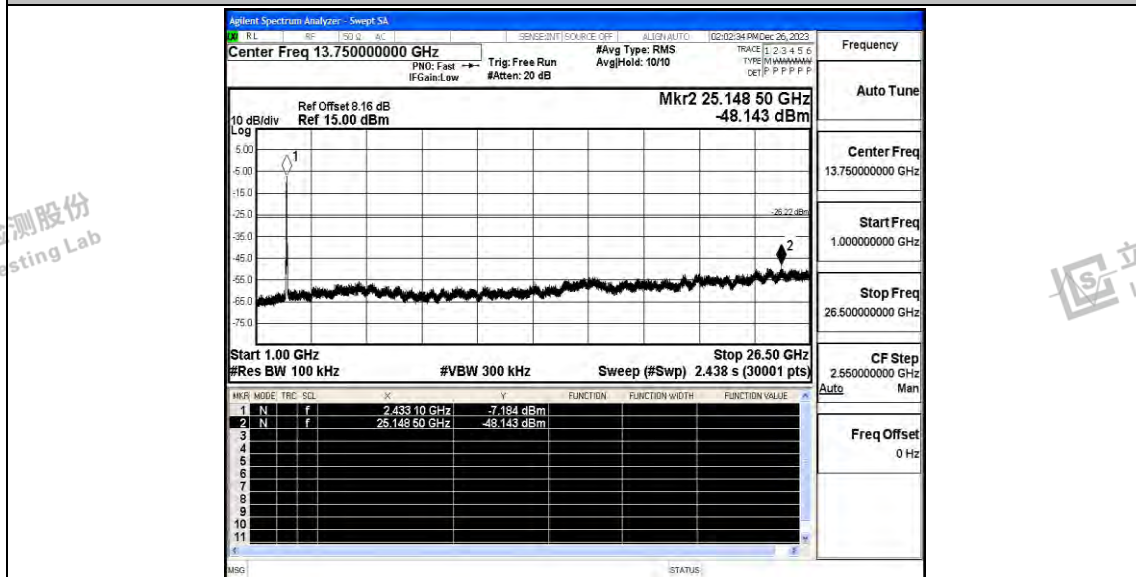


11N40SISO_Ant_2422_30~1000



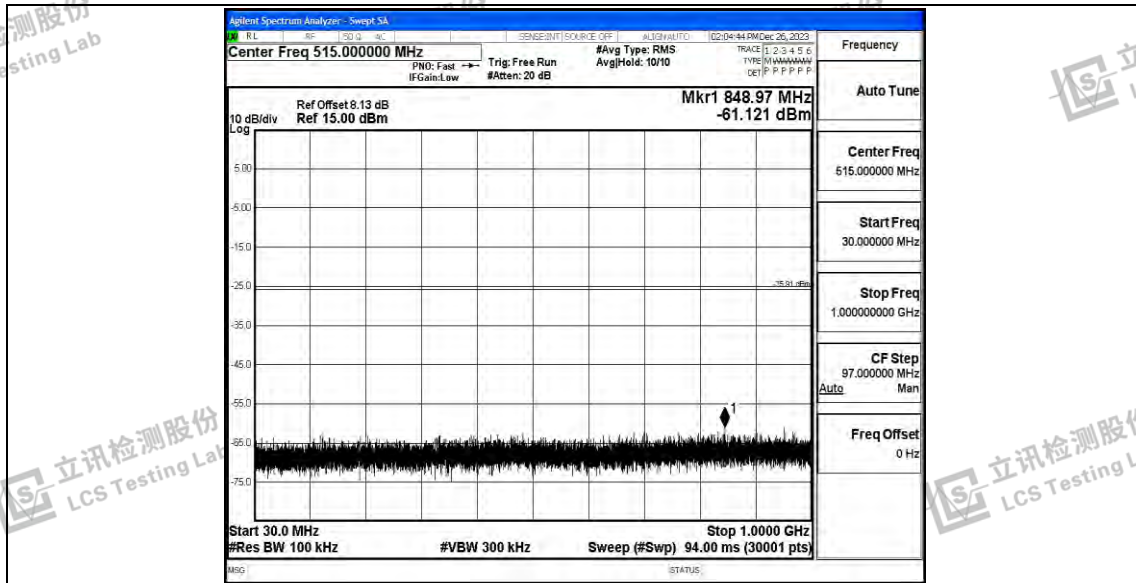


11N40SISO_Ant_2422_1000~26500

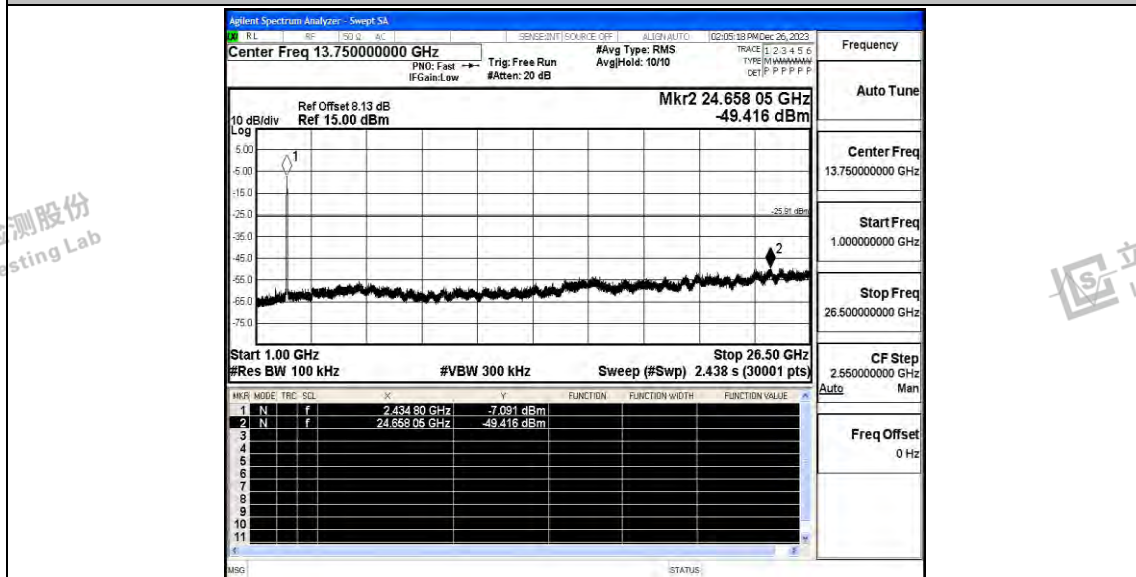


11N40SISO_Ant_2437_30~1000



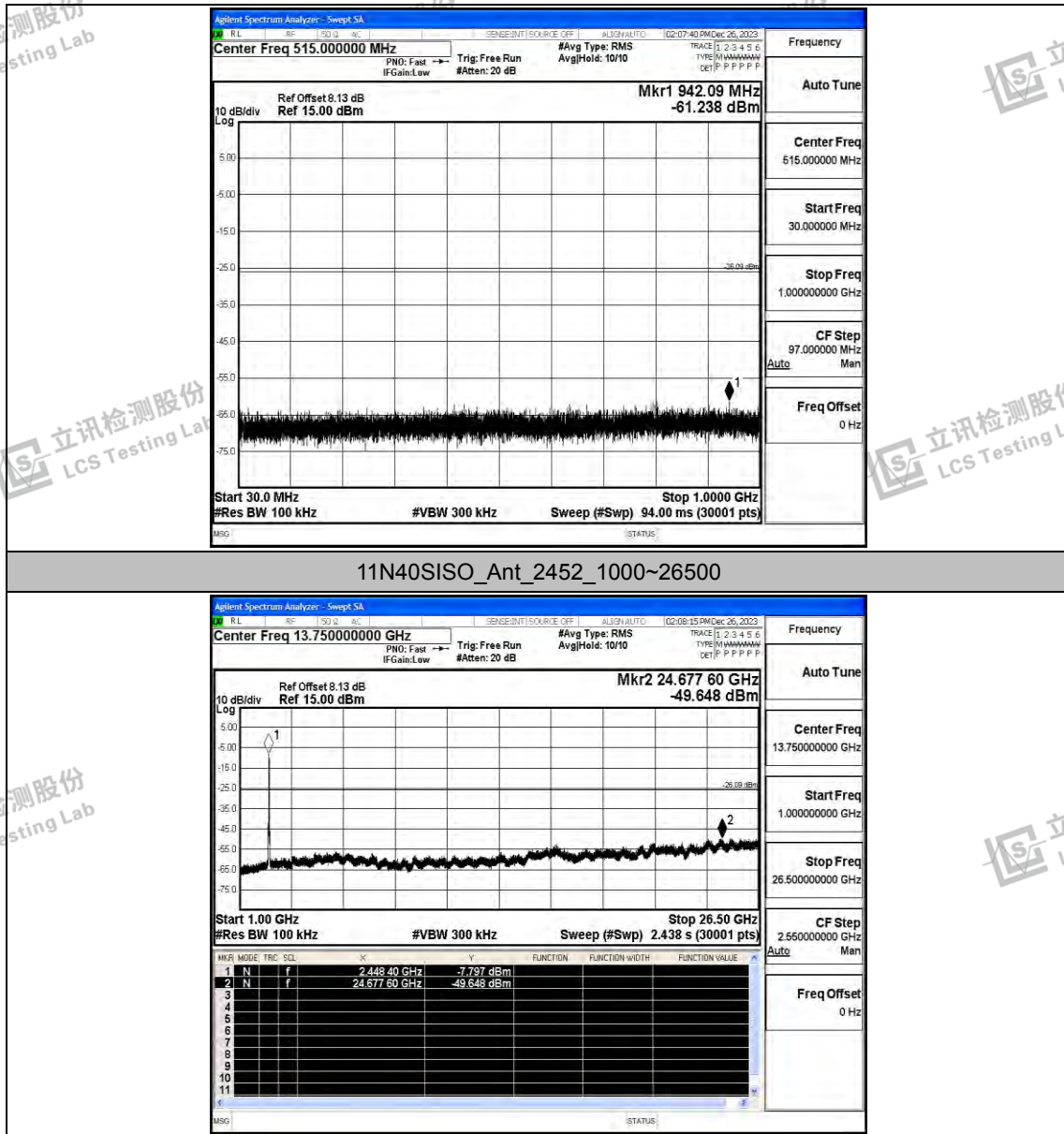


11N40SISO_Ant_2437_1000~26500



11N40SISO_Ant_2452_30~1000







Reference level measurement

Test Result

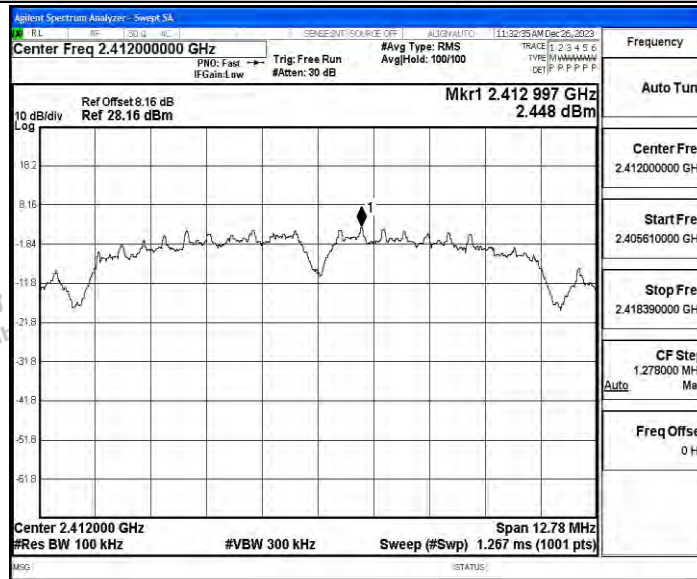
TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
11B	Ant	2412	2413.00	2.45
		2437	2435.49	2.59
		2462	2461.00	2.17
11G	Ant	2412	2414.51	-4.71
		2437	2434.50	-6.12
		2462	2460.75	-6.06
11N20SISO	Ant	2412	2413.25	-3.66
		2437	2435.71	-5.27
		2462	2460.71	-6.19
11N40SISO	Ant	2422	2424.48	-6.22
		2437	2440.76	-5.91
		2452	2448.24	-6.09



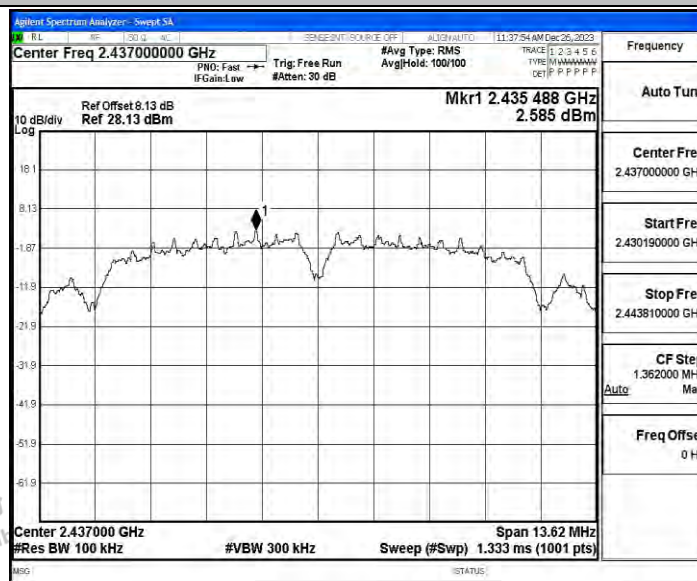


Test Graphs

11B_Ant_2412

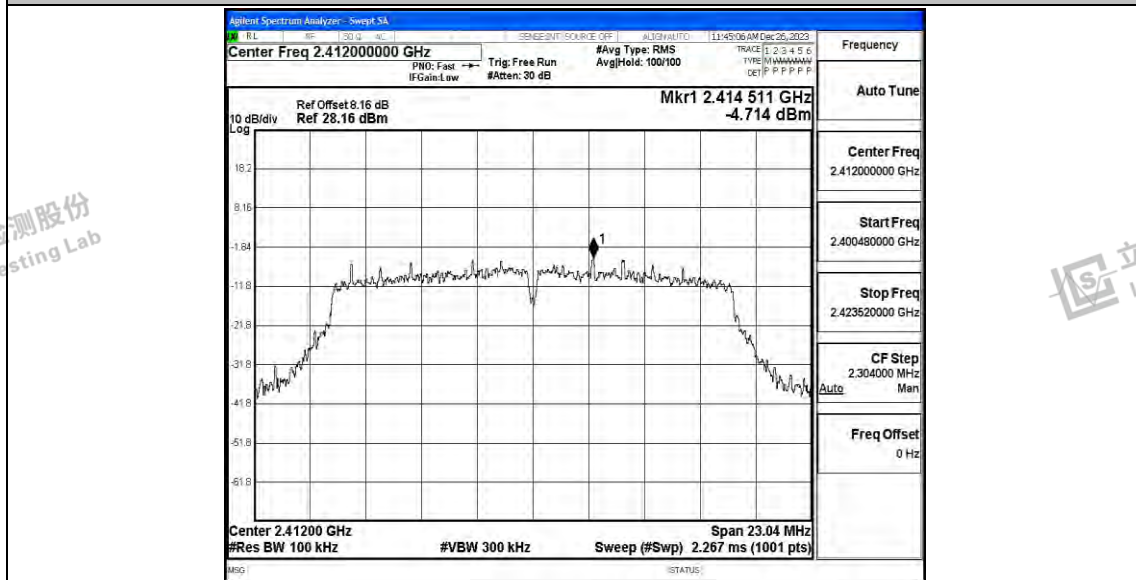
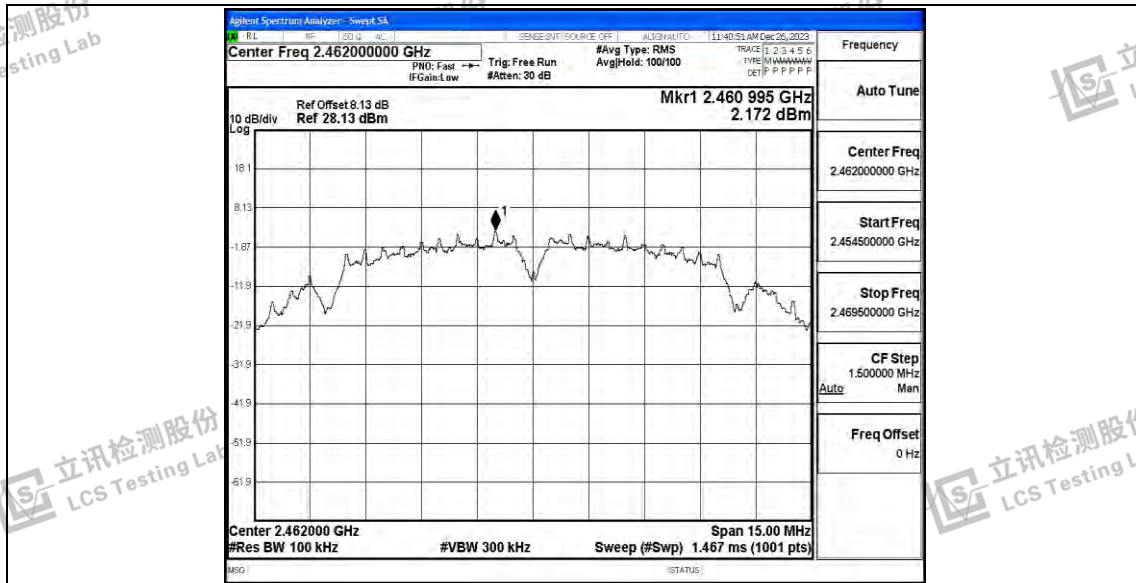


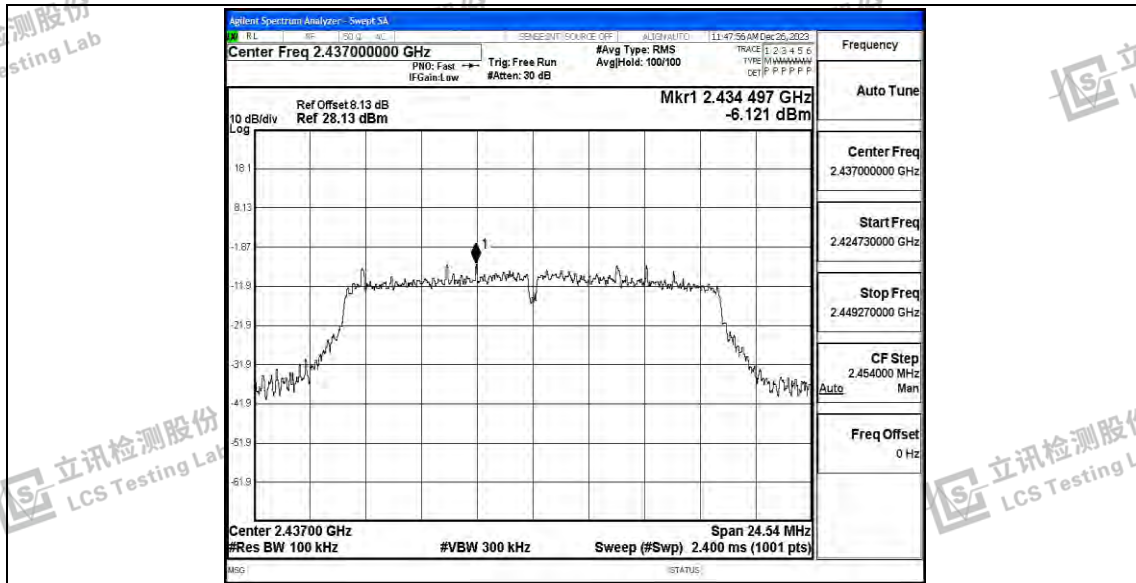
11B_Ant_2437



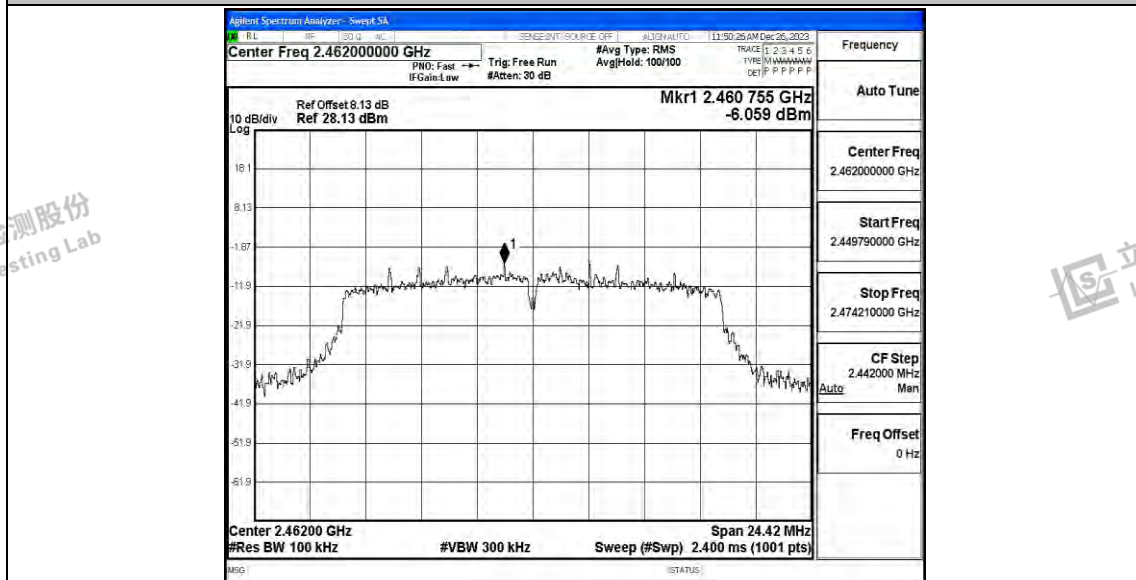
11B_Ant_2462





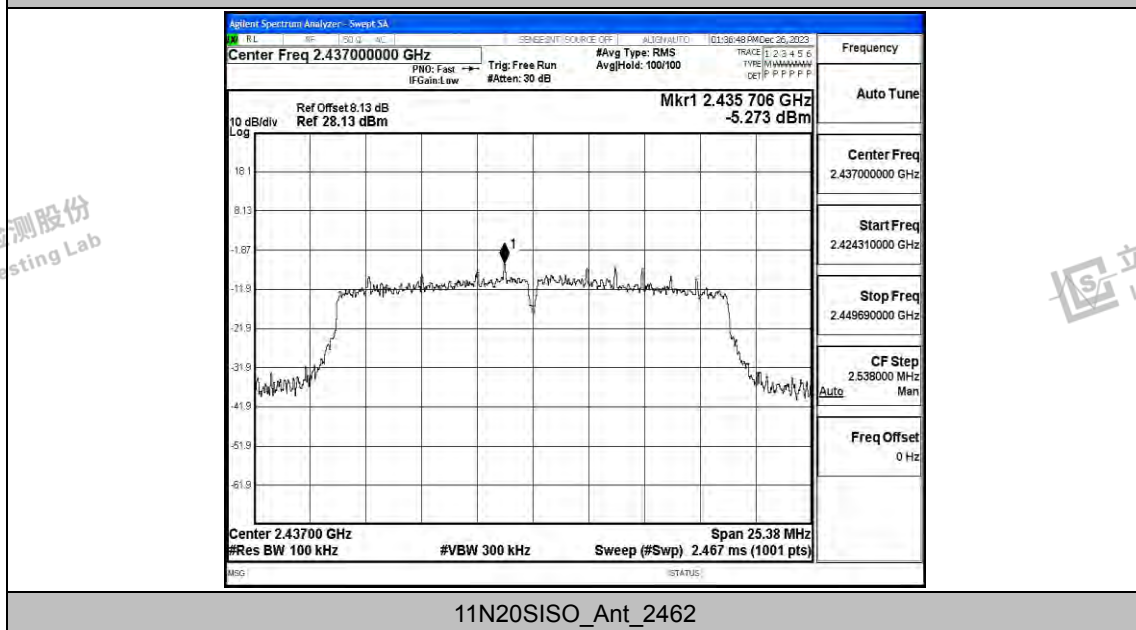
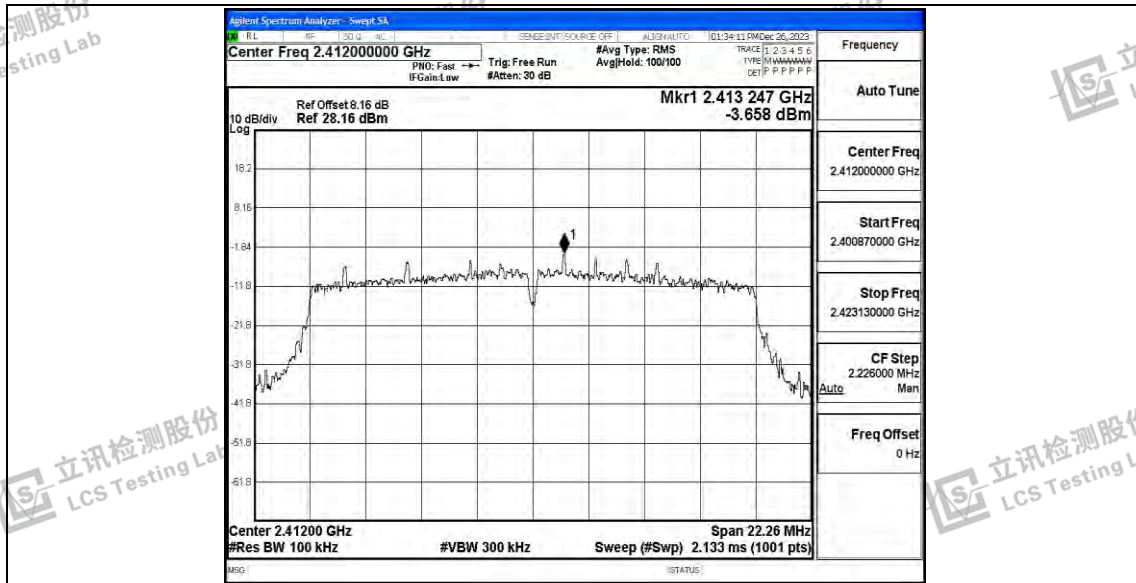


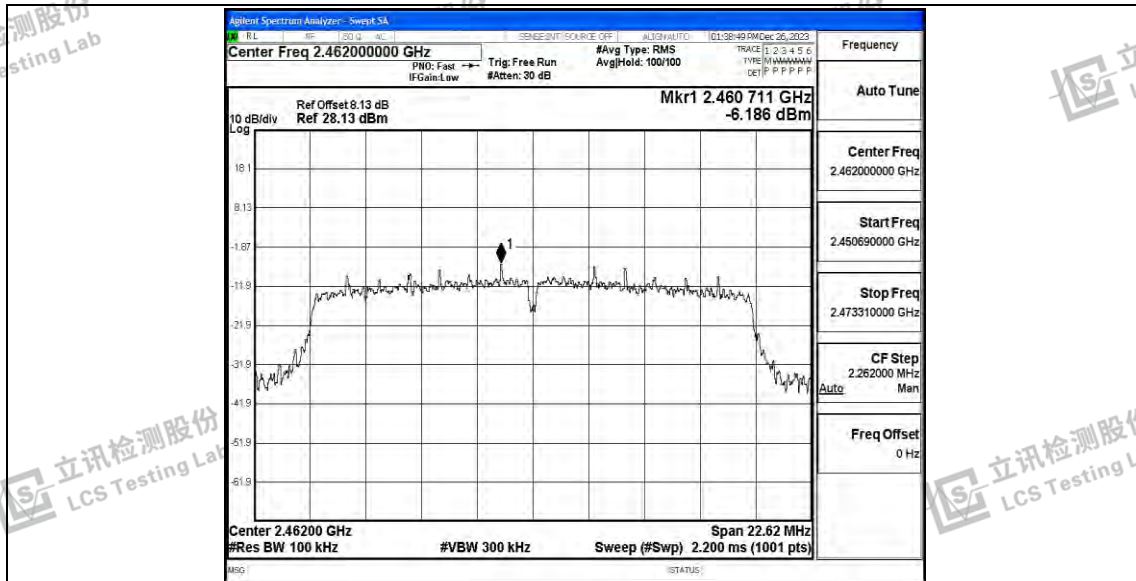
11G_Ant_2462



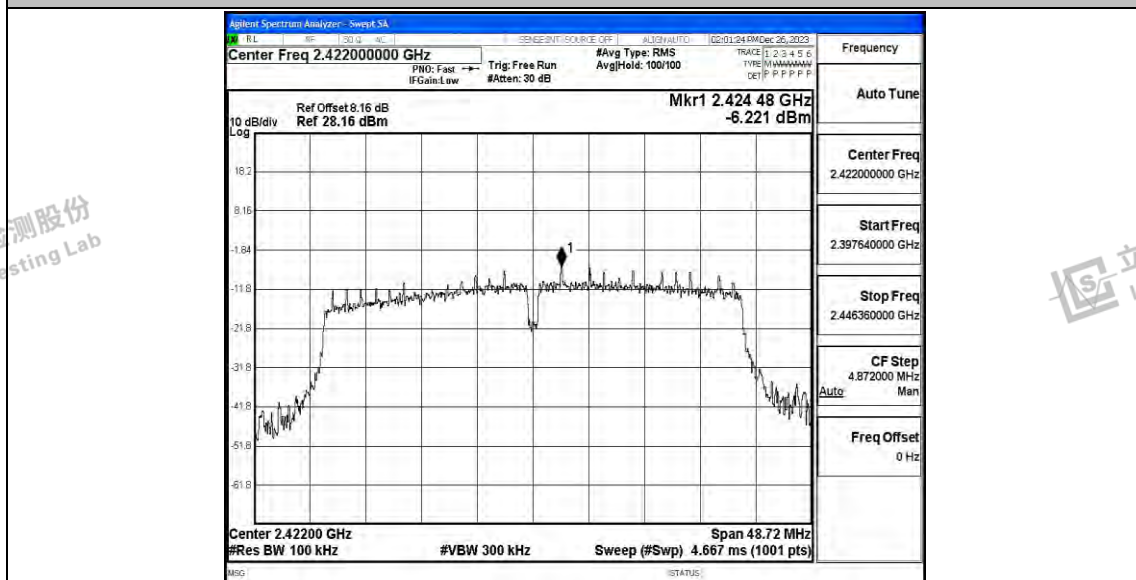
11N20SISO_Ant_2412





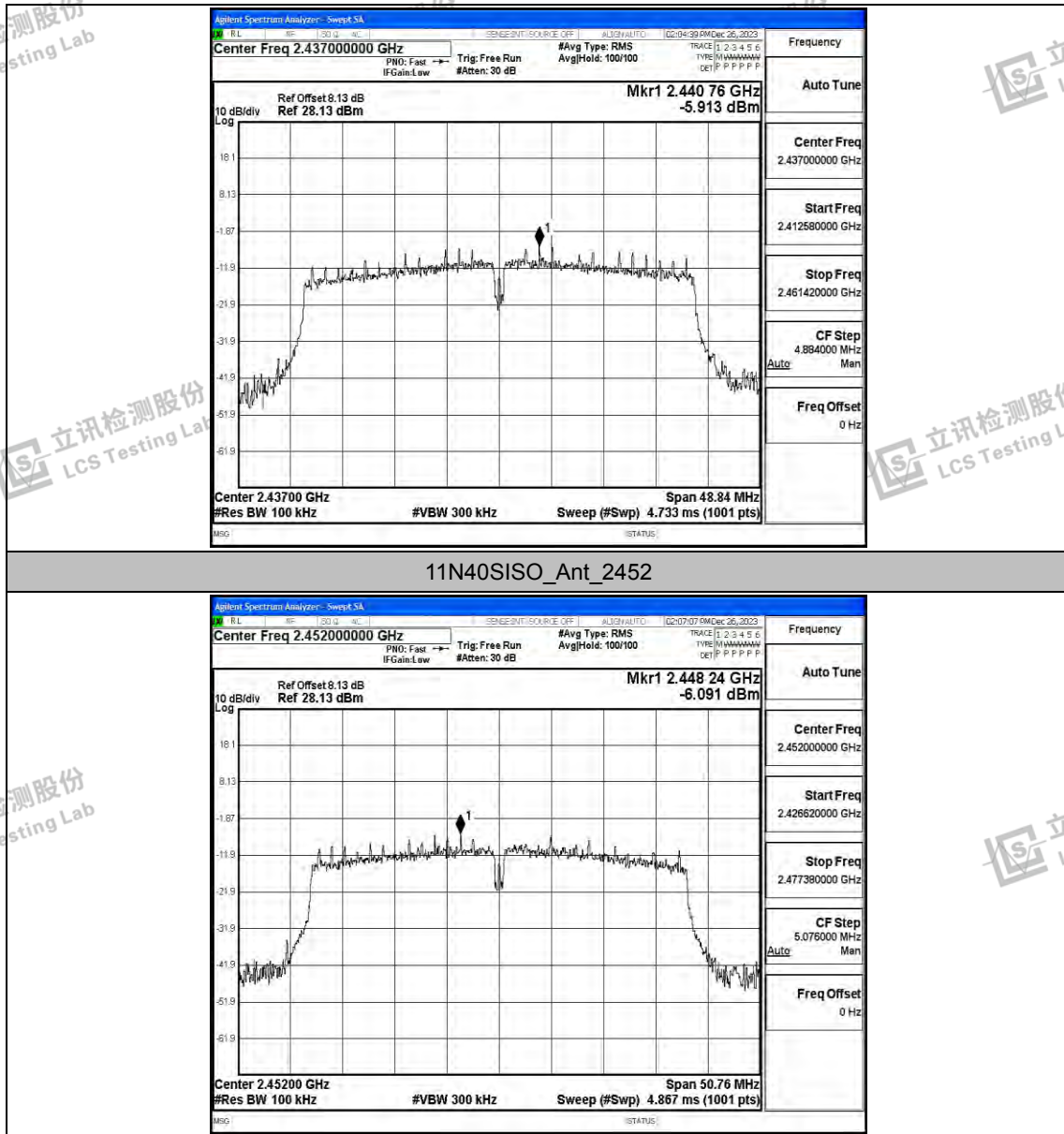


11N40SISO_Ant_2422



11N40SISO_Ant_2437







A.6 Duty Cycle

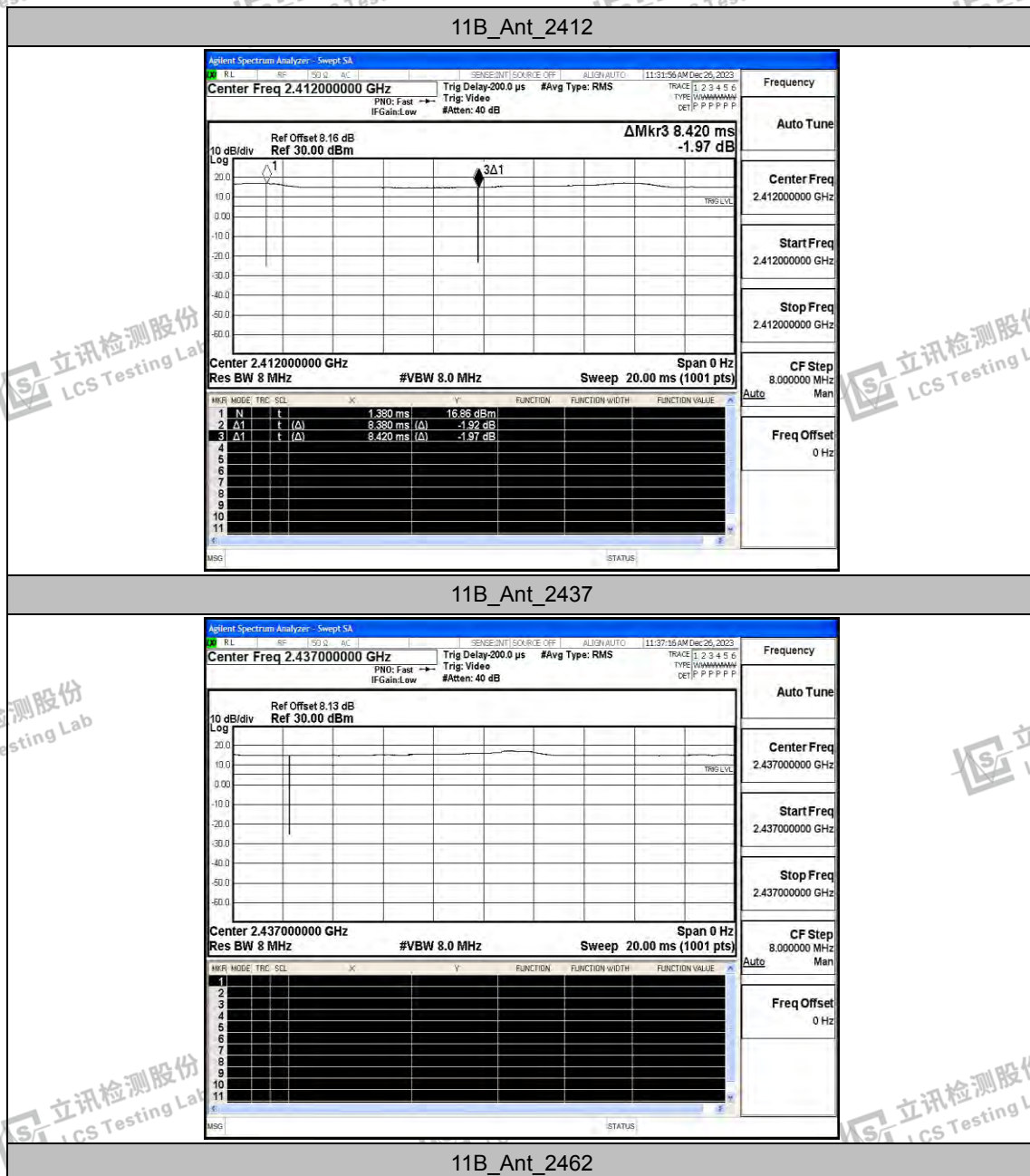
Test Result

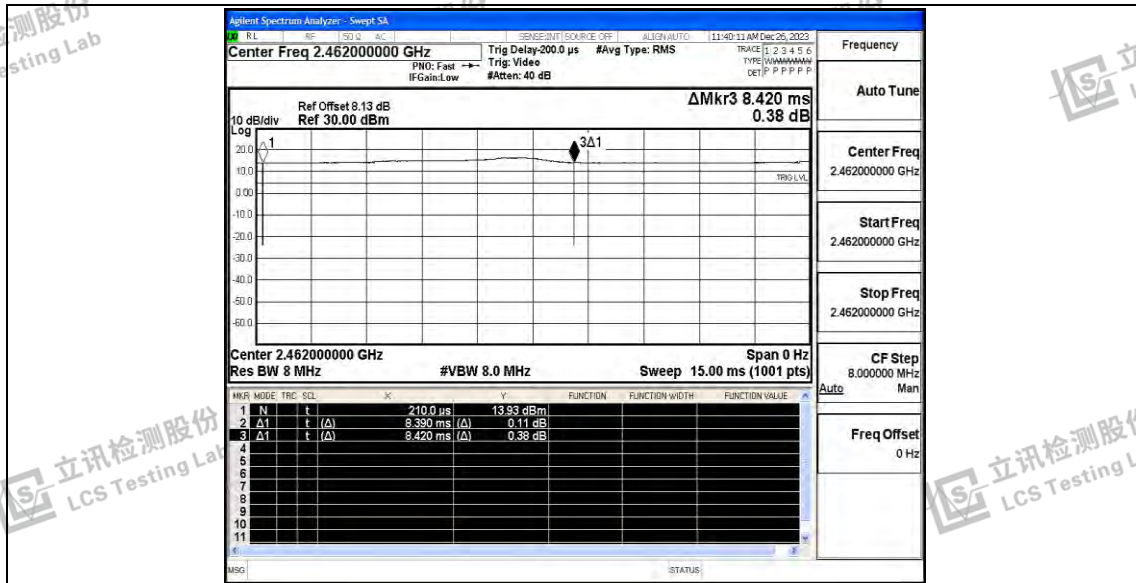
TestMode	Antenna	Freq(MHz)	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor	1/T Factor[kHz]	Verdict
11B	Ant	2412	8.38	8.42	99.52	0.02	0.12	---
		2437	20.00	20.00	100.00	0.00	0.05	---
		2462	8.39	8.42	99.64	0.02	0.12	---
11G	Ant	2412	1.39	1.43	97.20	0.12	0.72	---
		2437	1.39	1.42	97.89	0.09	0.72	---
		2462	1.39	1.43	97.20	0.12	0.72	---
11N20SISO	Ant	2412	1.30	1.33	97.74	0.10	0.77	---
		2437	1.30	1.34	97.01	0.13	0.77	---
		2462	1.30	1.33	97.74	0.10	0.77	---
11N40SISO	Ant	2422	0.65	0.69	94.20	0.26	1.54	---
		2437	0.65	0.69	94.20	0.26	1.54	---
		2452	0.65	0.69	94.20	0.26	1.54	---



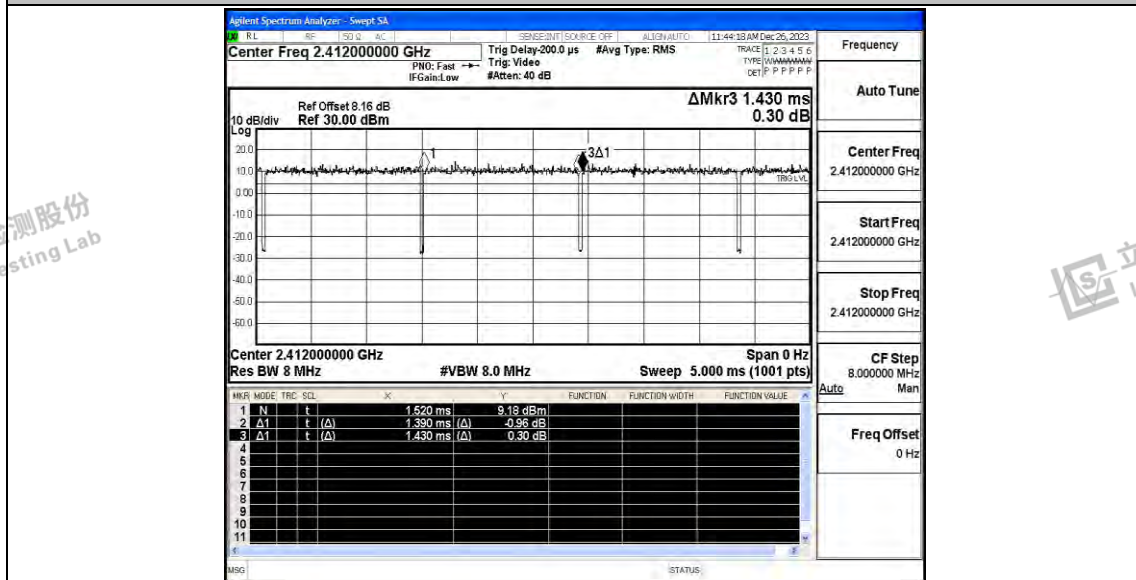


Test Graphs



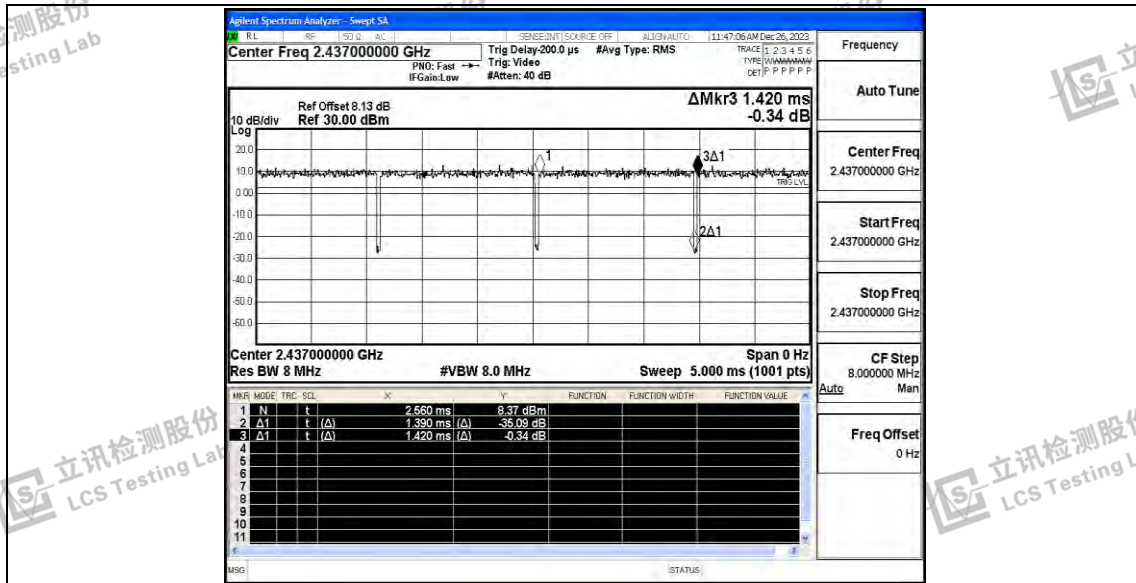


11G_Ant_2412

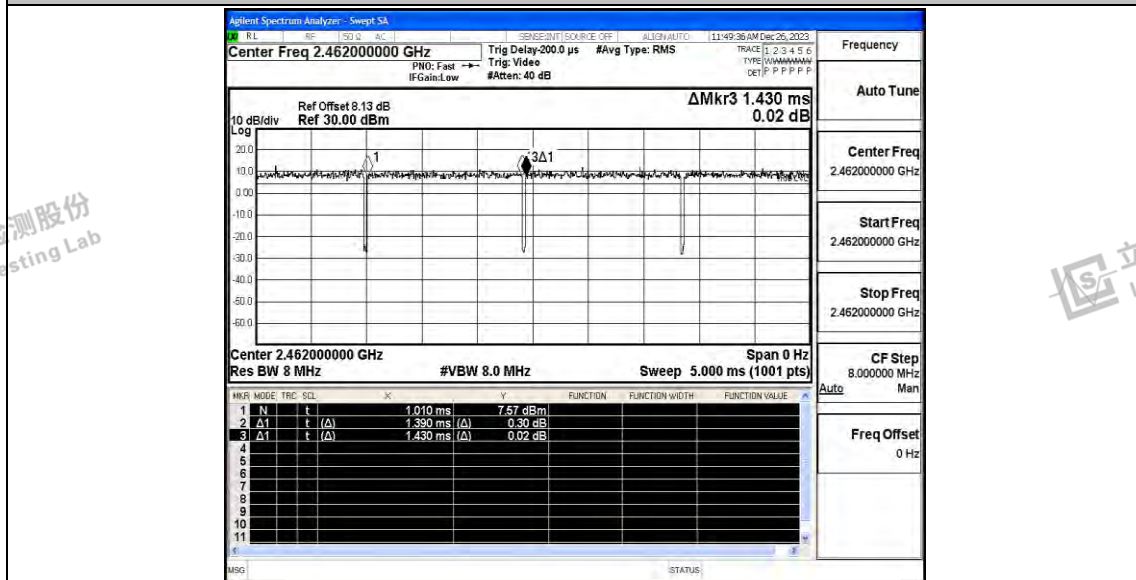


11G_Ant_2437



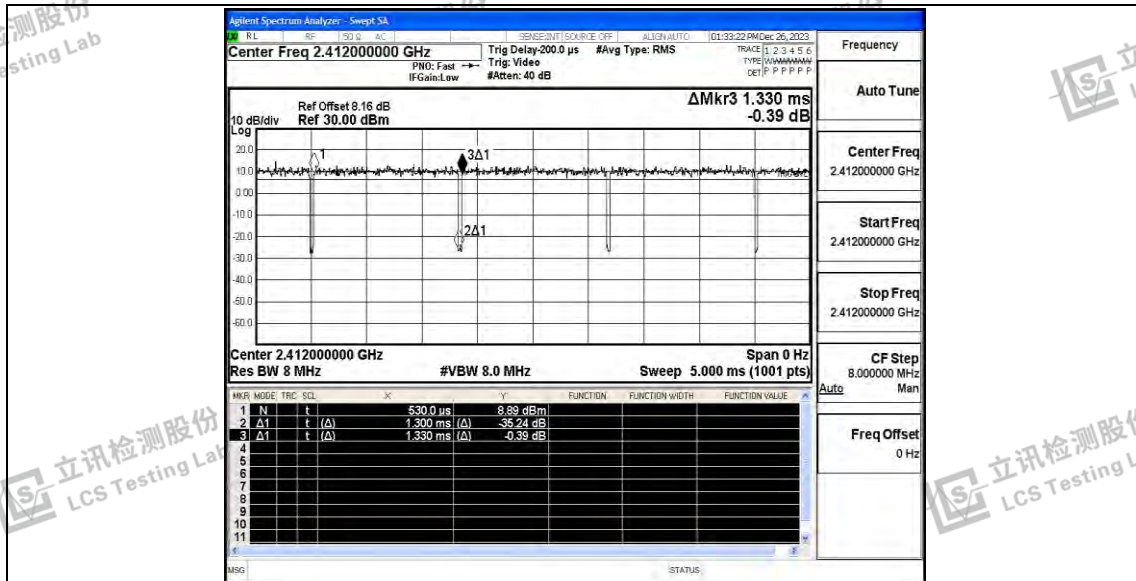


11G_Ant_2462

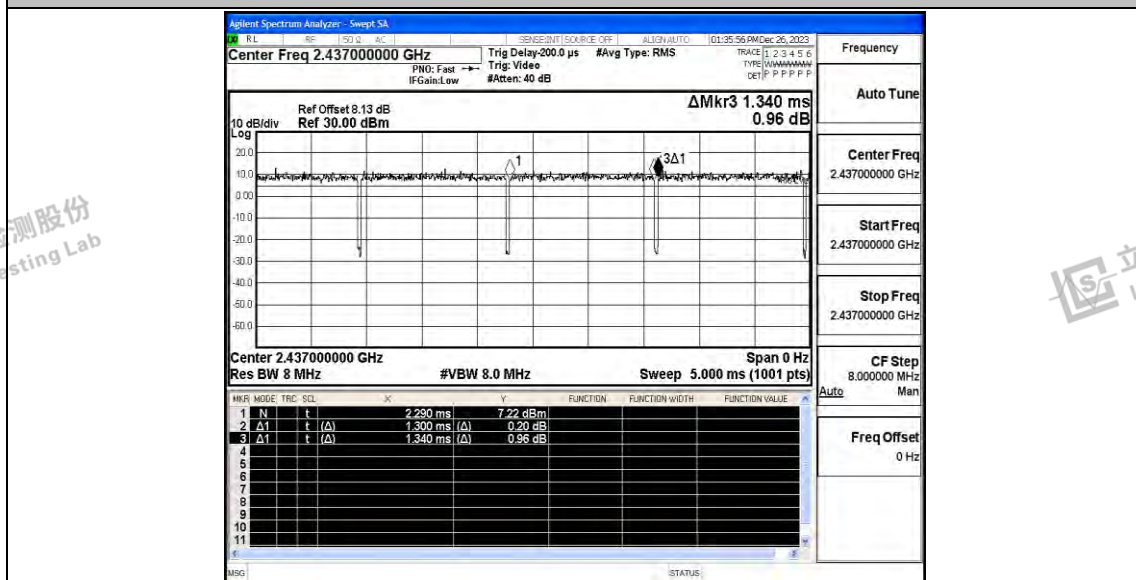


11N20SISO_Ant_2412



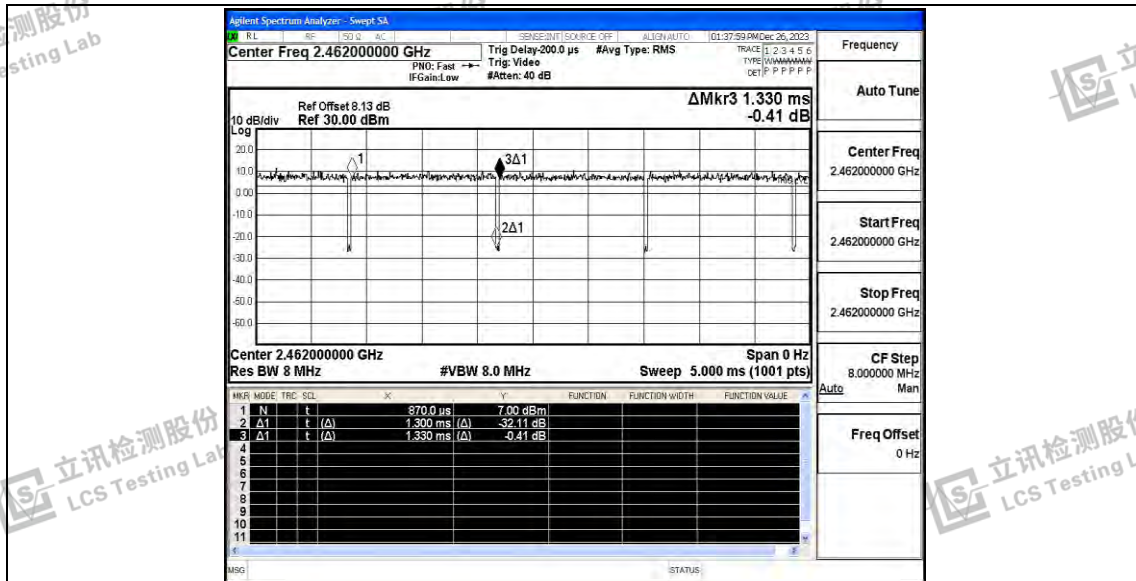


11N20SISO_Ant_2437

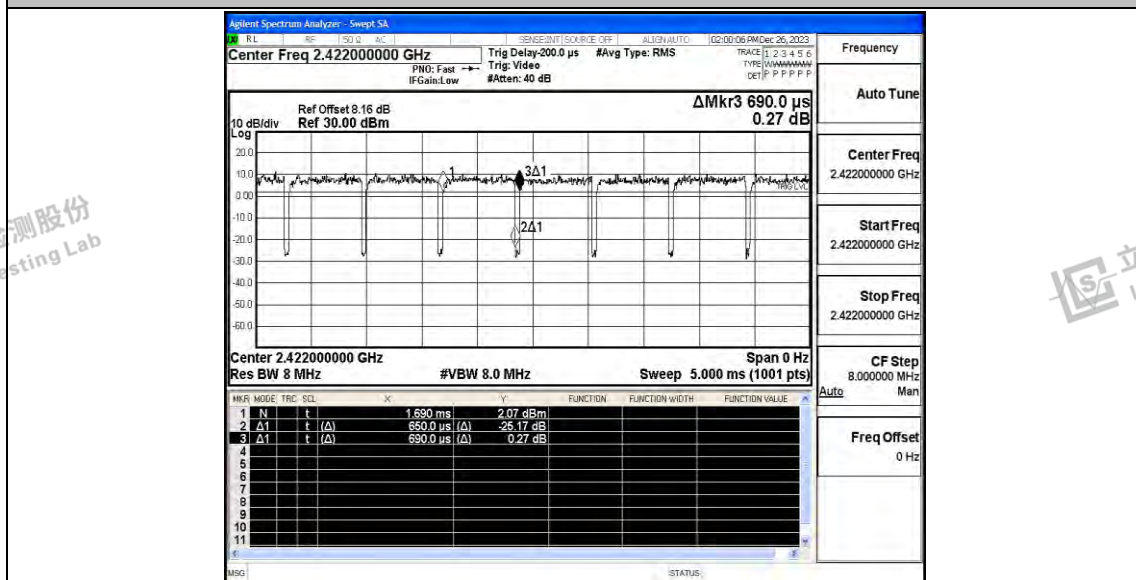


11N20SISO_Ant_2462



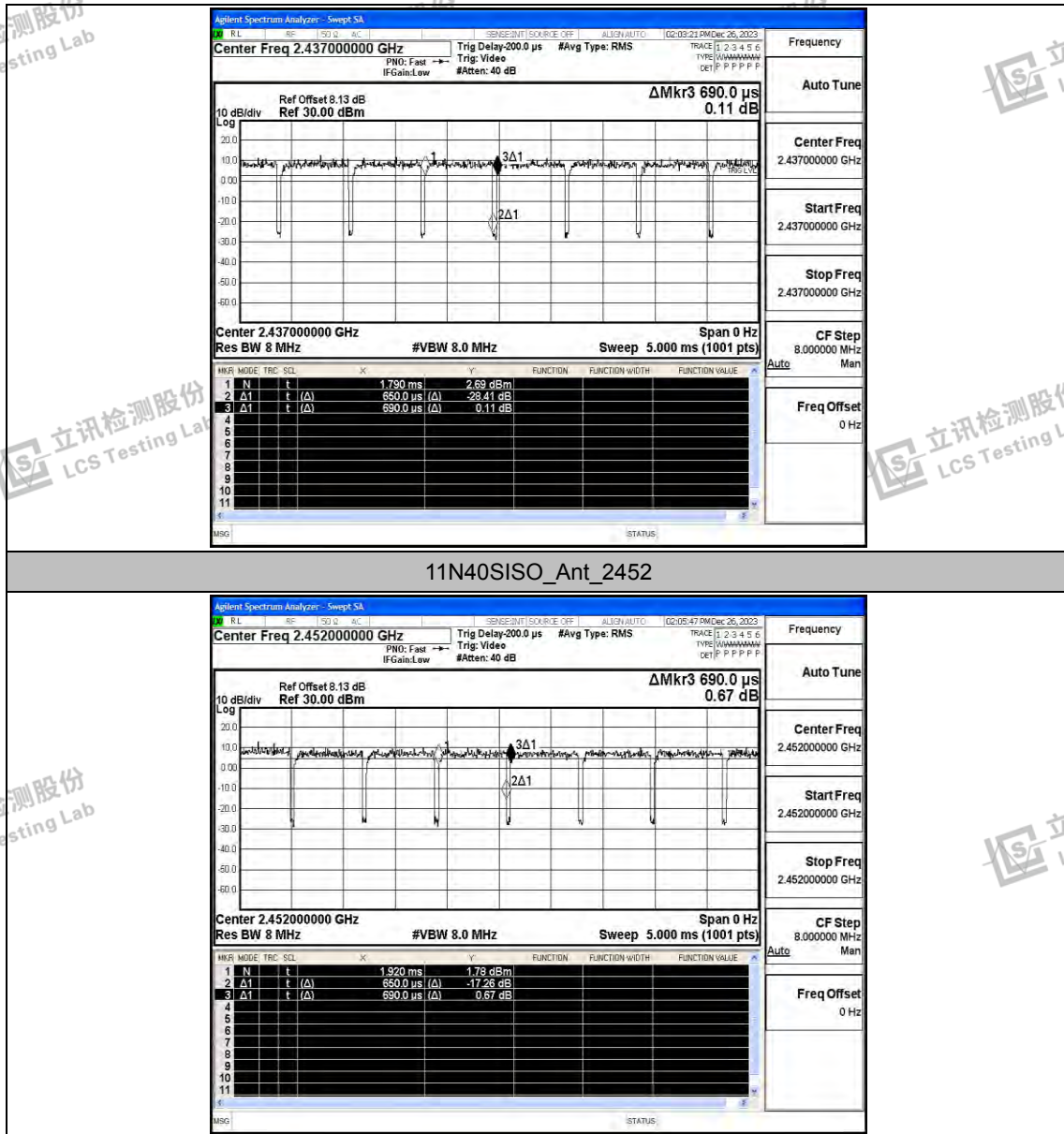


11N40ISO_Ant_2422



11N40ISO_Ant_2437







A.7 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
11B	Ant	Low	2412	AV	2310.000	-49.4	≤-41.20	45.80	≤54	PASS
				AV	2389.570	-48.46	≤-41.20	46.74	≤54	PASS
				AV	2390.000	-48.51	≤-41.20	46.69	≤54	PASS
				Peak	2310.000	-43.45	≤-21.20	51.75	≤74	PASS
				Peak	2384.240	-39.66	≤-21.20	55.54	≤74	PASS
				Peak	2390.000	-42.12	≤-21.20	53.08	≤74	PASS
		High	2462	AV	2483.500	-48.63	≤-41.20	46.57	≤54	PASS
				AV	2483.560	-48.64	≤-41.20	46.56	≤54	PASS
				AV	2500.000	-48.84	≤-41.20	46.36	≤54	PASS
				Peak	2483.500	-39.65	≤-21.20	55.55	≤74	PASS
				Peak	2484.880	-38.46	≤-21.20	56.74	≤74	PASS
				Peak	2500.000	-42.32	≤-21.20	52.88	≤74	PASS
11G	Ant	Low	2412	AV	2310.000	-48.72	≤-41.20	46.48	≤54	PASS
				AV	2389.960	-44.76	≤-41.20	50.44	≤54	PASS
				AV	2390.000	-44.76	≤-41.20	50.44	≤54	PASS
				Peak	2310.000	-42.62	≤-21.20	52.58	≤74	PASS
				Peak	2388.530	-35.3	≤-21.20	59.90	≤74	PASS
				Peak	2390.000	-39.44	≤-21.20	55.76	≤74	PASS
		High	2462	AV	2483.500	-43.54	≤-41.20	51.66	≤54	PASS
				AV	2483.560	-43.92	≤-41.20	51.28	≤54	PASS
				AV	2500.000	-48.04	≤-41.20	47.16	≤54	PASS
				Peak	2483.500	-36.12	≤-21.20	59.08	≤74	PASS
				Peak	2483.560	-37.35	≤-21.20	57.85	≤74	PASS
				Peak	2500.000	-43.82	≤-21.20	51.38	≤74	PASS
11N20SIS O	Ant	Low	2412	AV	2310.000	-48.79	≤-41.20	46.41	≤54	PASS
				AV	2389.960	-44.16	≤-41.20	51.04	≤54	PASS
				AV	2390.000	-44.16	≤-41.20	51.04	≤54	PASS
				Peak	2310.000	-42.71	≤-21.20	52.49	≤74	PASS
				Peak	2389.310	-36.58	≤-21.20	58.62	≤74	PASS
				Peak	2390.000	-36.67	≤-21.20	58.53	≤74	PASS
		High	2462	AV	2483.500	-43.42	≤-41.20	51.78	≤54	PASS
				AV	2483.560	-43.53	≤-41.20	51.67	≤54	PASS
				AV	2500.000	-48.11	≤-41.20	47.09	≤54	PASS
				Peak	2483.500	-36.82	≤-21.20	58.38	≤74	PASS
				Peak	2484.000	-34.53	≤-21.20	60.67	≤74	PASS





11N40SIS O	Ant	Low	2422	Peak	2500.000	-42.84	≤-21.20	52.36	≤74	PASS
				AV	2310.000	-48.76	≤-41.20	46.44	≤54	PASS
				AV	2389.830	-44.66	≤-41.20	50.54	≤54	PASS
				AV	2390.000	-45.16	≤-41.20	50.04	≤54	PASS
				Peak	2310.000	-43.4	≤-21.20	51.80	≤74	PASS
				Peak	2389.570	-26.99	≤-21.20	68.21	≤74	PASS
				Peak	2390.000	-40.57	≤-21.20	54.63	≤74	PASS
		High	2452	AV	2483.500	-42.81	≤-41.20	52.39	≤54	PASS
				AV	2483.670	-42.78	≤-41.20	52.42	≤54	PASS
				AV	2500.000	-48.1	≤-41.20	47.10	≤54	PASS
				Peak	2483.500	-36.93	≤-21.20	58.27	≤74	PASS
				Peak	2484.990	-26	≤-21.20	69.20	≤74	PASS
				Peak	2500.000	-41.78	≤-21.20	53.42	≤74	PASS

Note:

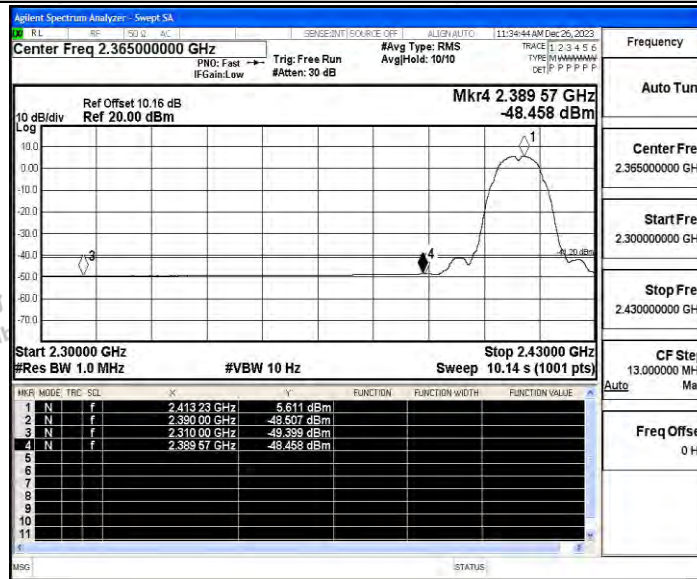
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



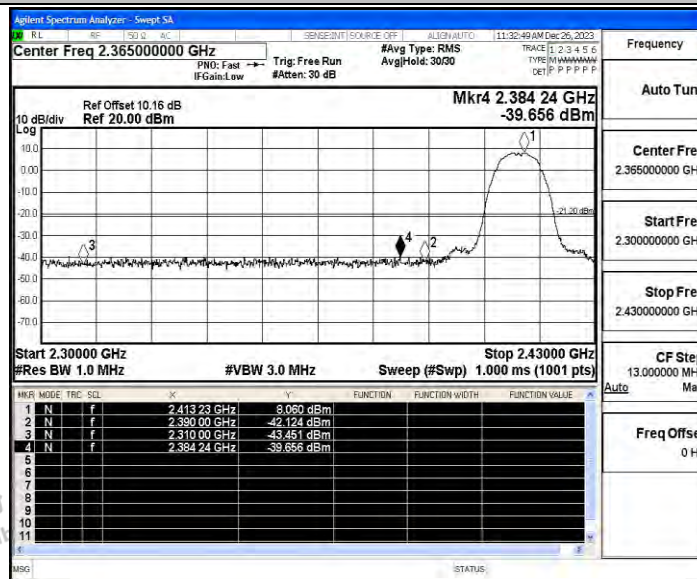


Test Graphs

11B_Ant_Low_2412_AV

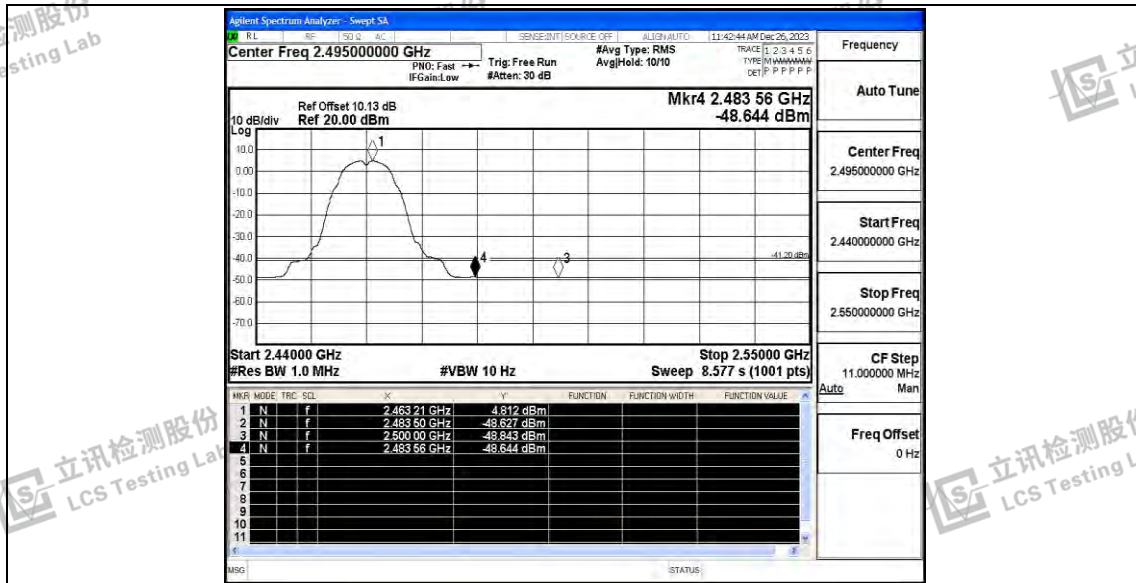


11B_Ant_Low_2412_Peak

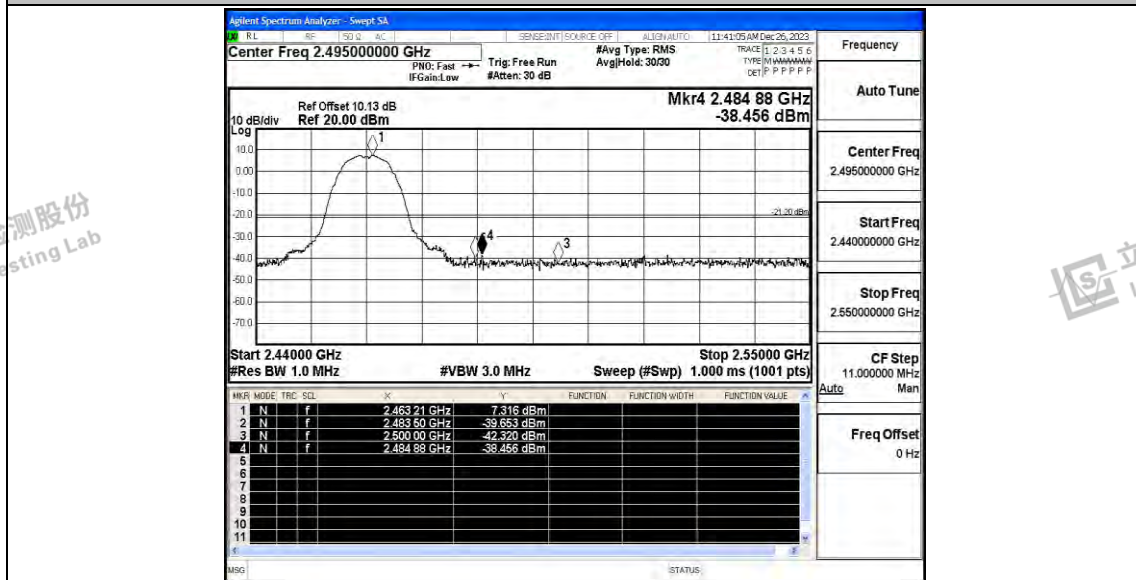


11B_Ant_High_2462_AV



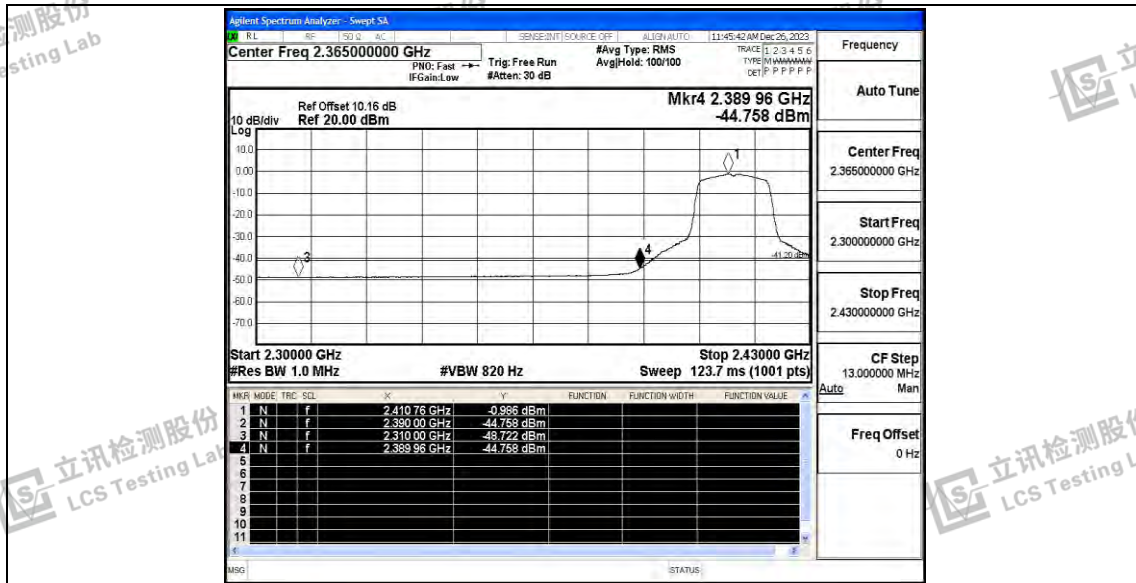


11B_Ant_High_2462_Peak

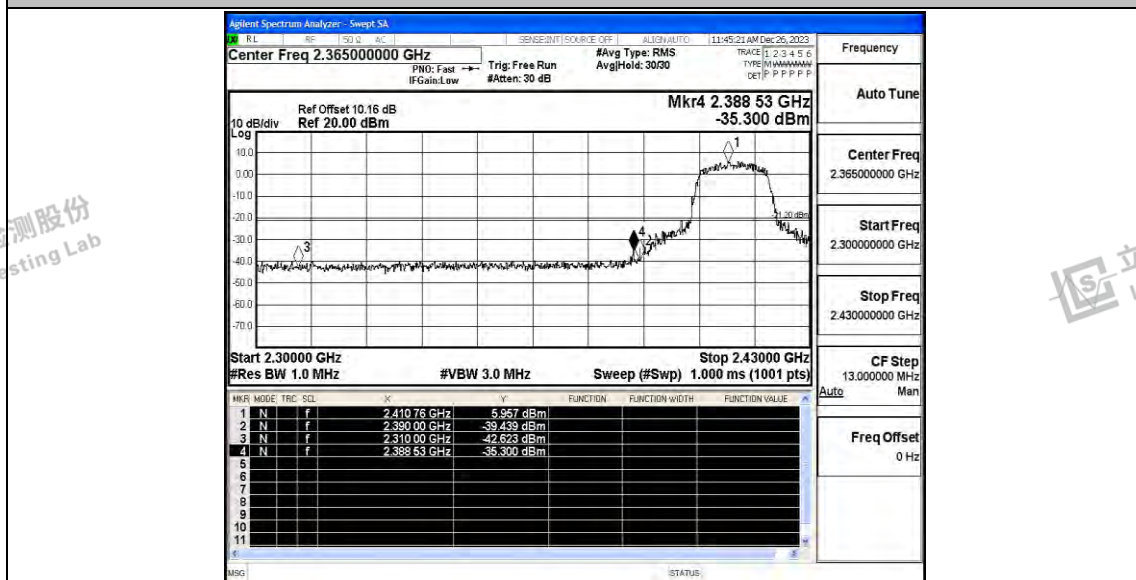


11G_Ant_Low_2412_AV



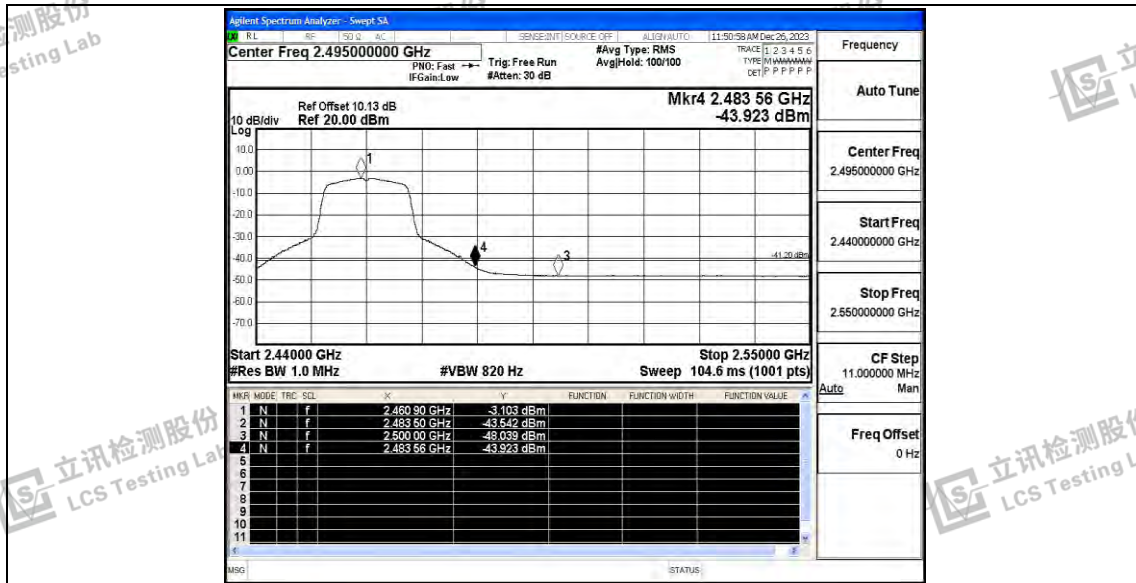


11G_Ant_Low_2412_Peak

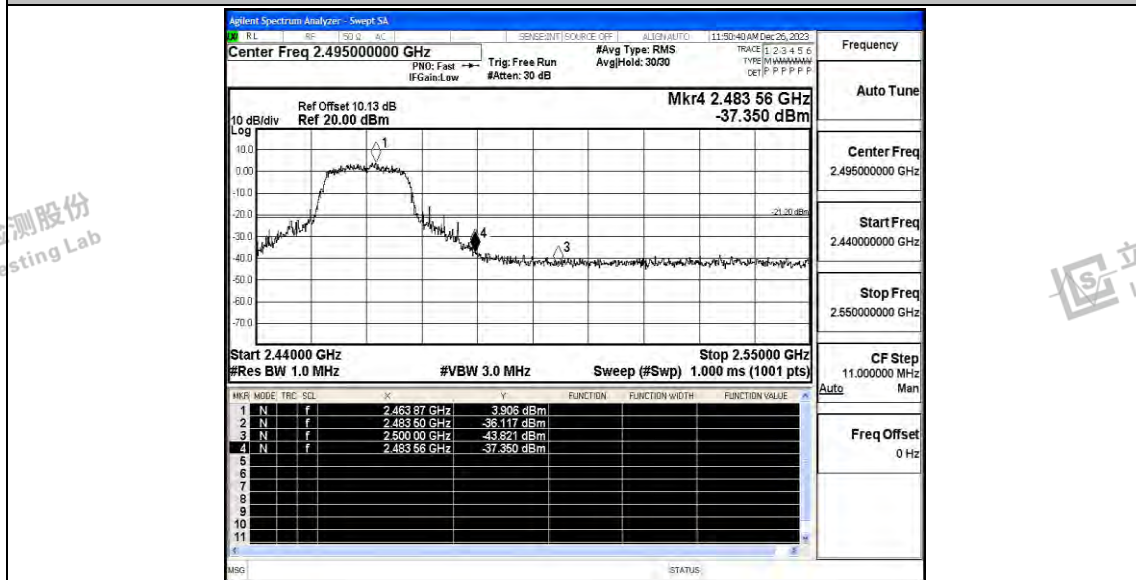


11G_Ant_High_2462_AV



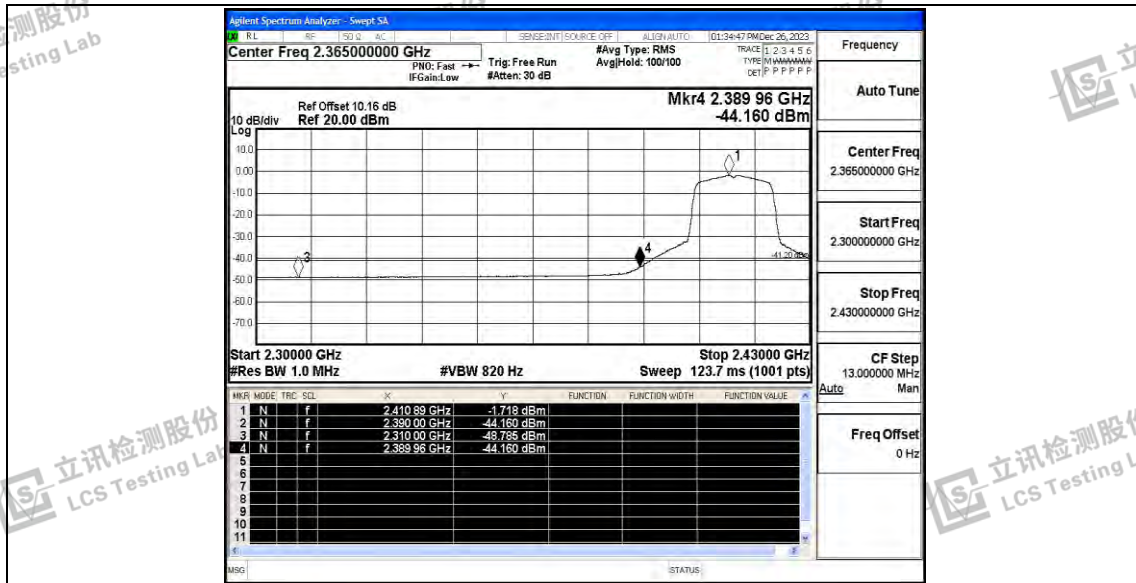


11G_Ant_High_2462_Peak

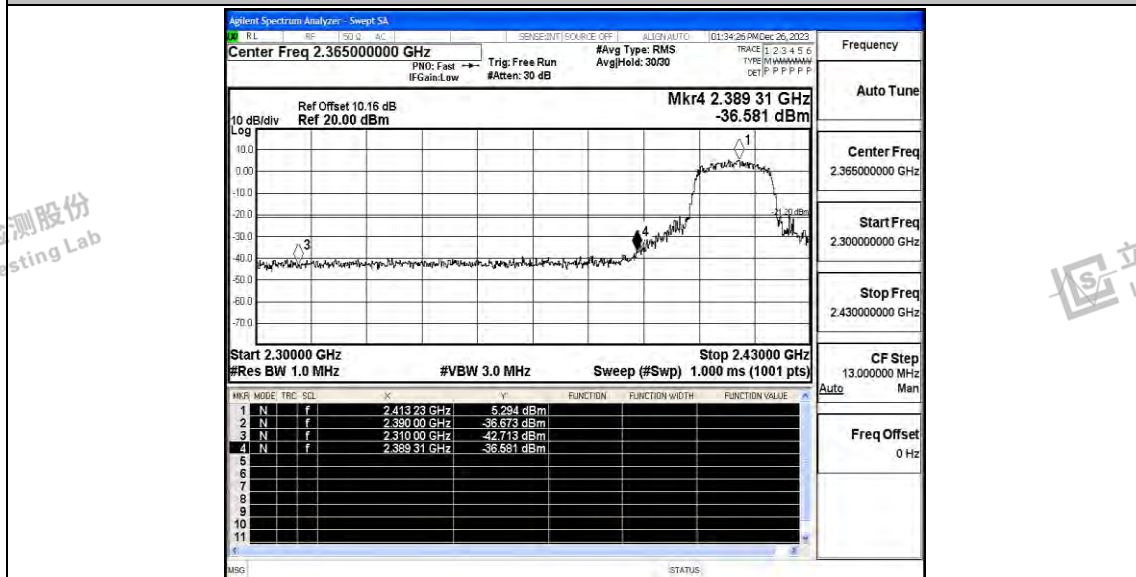


11N20SISO_Ant_Low_2412_AV



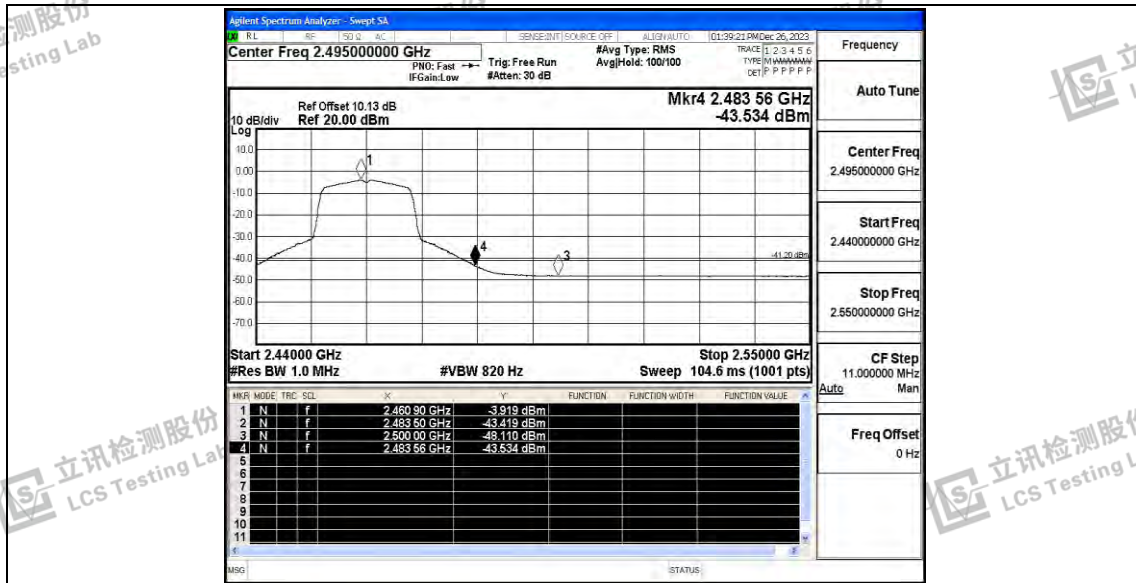


11N20SISO_Ant_Low_2412_Peak

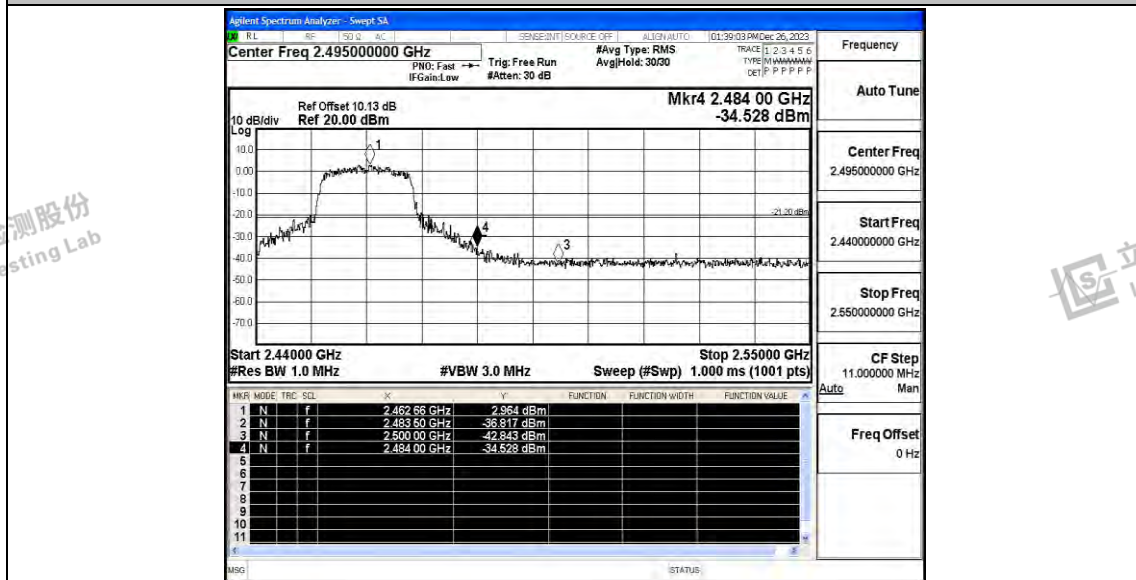


11N20SISO_Ant_High_2462_AV



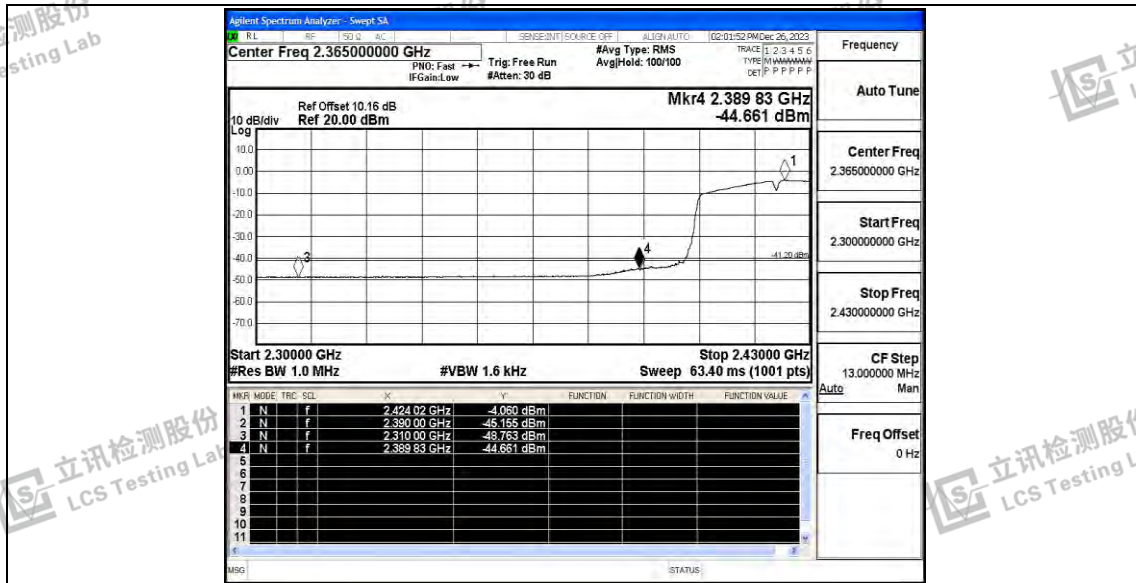


11N20ISO_Ant_High_2462_Peak

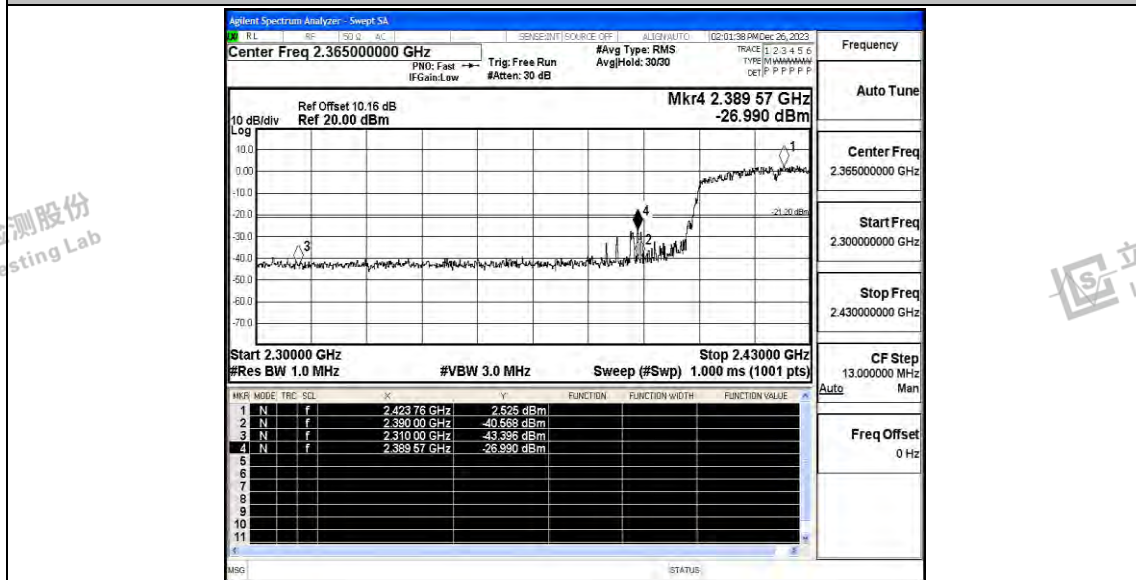


11N40SISO_Ant_Low_2422_AV





11N40SISO_Ant_Low_2422_Peak



11N40SISO_Ant_High_2452_AV



