



Appendix B

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Treadmill

Test Model: BA04

Environmental Conditions

Temperature:	23.8 ° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Eason Zhou
Supervised by:	Nick Peng



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
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B.1 DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	10.080	2406.960	2417.040	0.5	PASS
		2437	9.560	2431.960	2441.520	0.5	PASS
		2462	9.560	2456.960	2466.520	0.5	PASS
11G	Ant1	2412	16.080	2404.080	2420.160	0.5	PASS
		2437	16.360	2428.800	2445.160	0.5	PASS
		2462	16.280	2453.840	2470.120	0.5	PASS
11N20SISO	Ant1	2412	16.840	2403.640	2420.480	0.5	PASS
		2437	16.800	2428.400	2445.200	0.5	PASS
		2462	16.840	2453.400	2470.240	0.5	PASS
11N40SISO	Ant1	2422	35.200	2404.320	2439.520	0.5	PASS
		2437	35.520	2419.000	2454.520	0.5	PASS
		2452	35.600	2434.000	2469.600	0.5	PASS



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

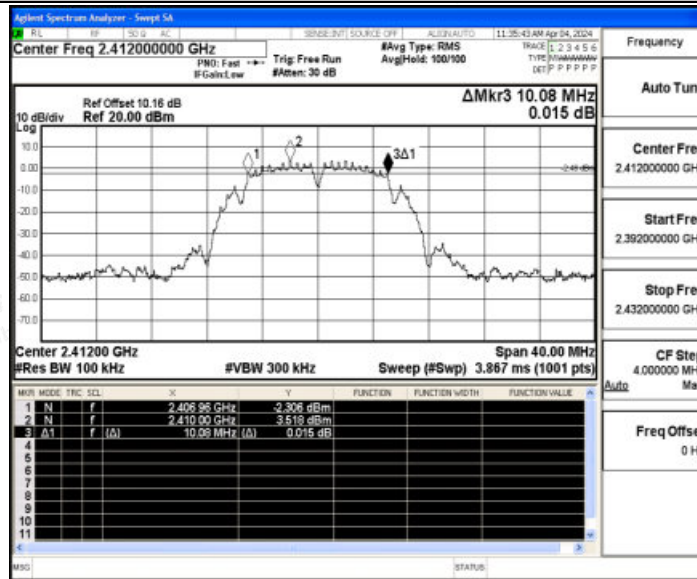
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

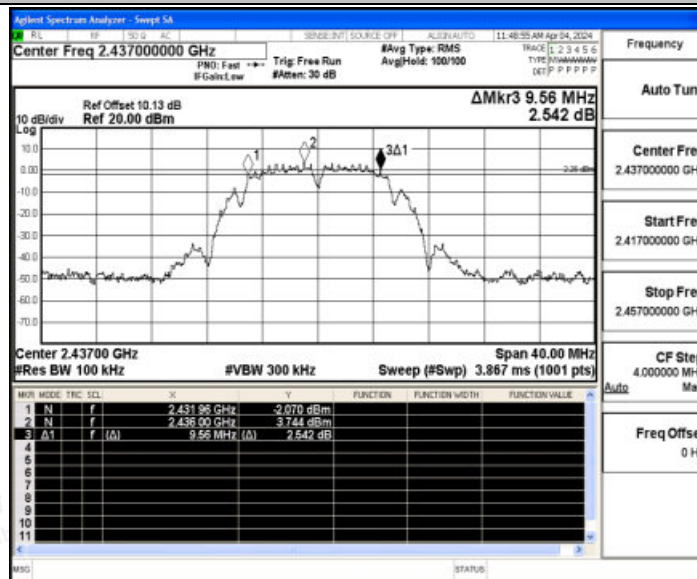


Test Graphs

11B_Ant1_2412

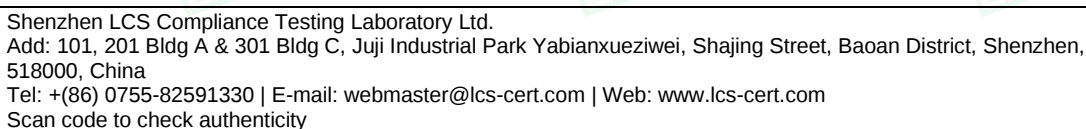


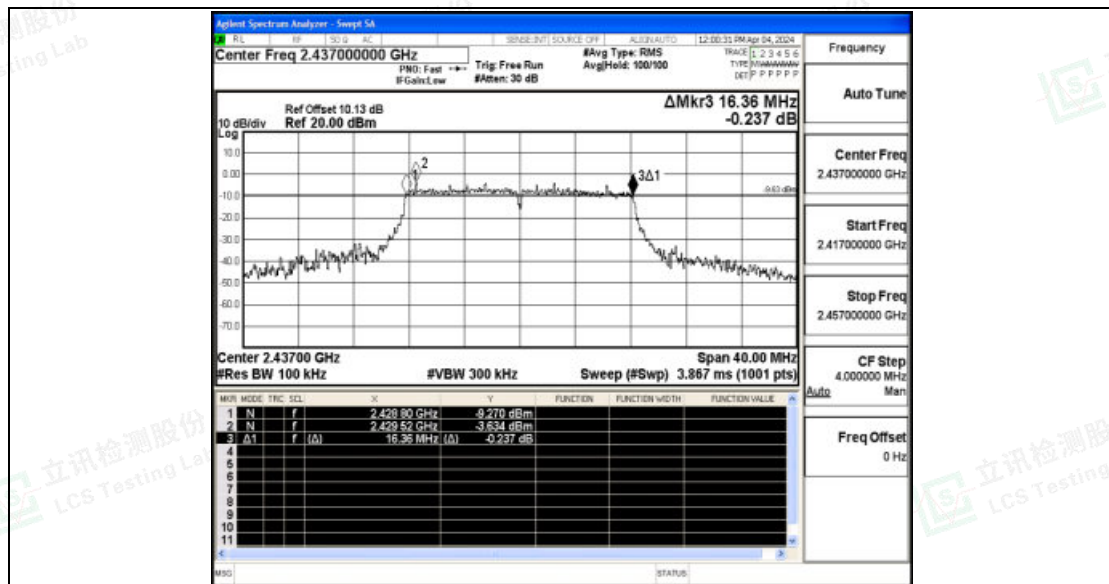
11B_Ant1_2437



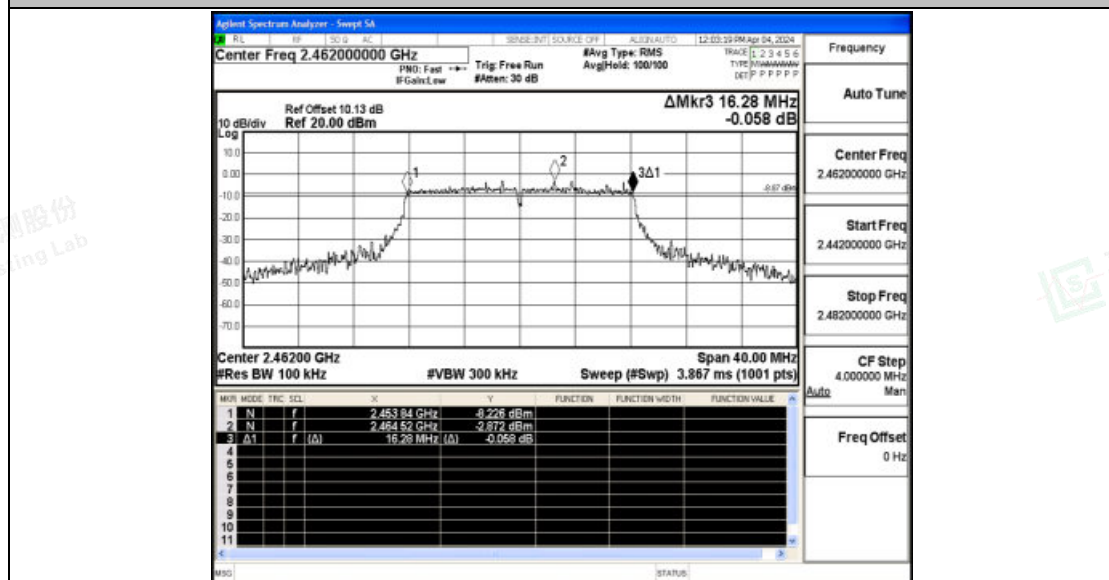
11B_Ant1_2462





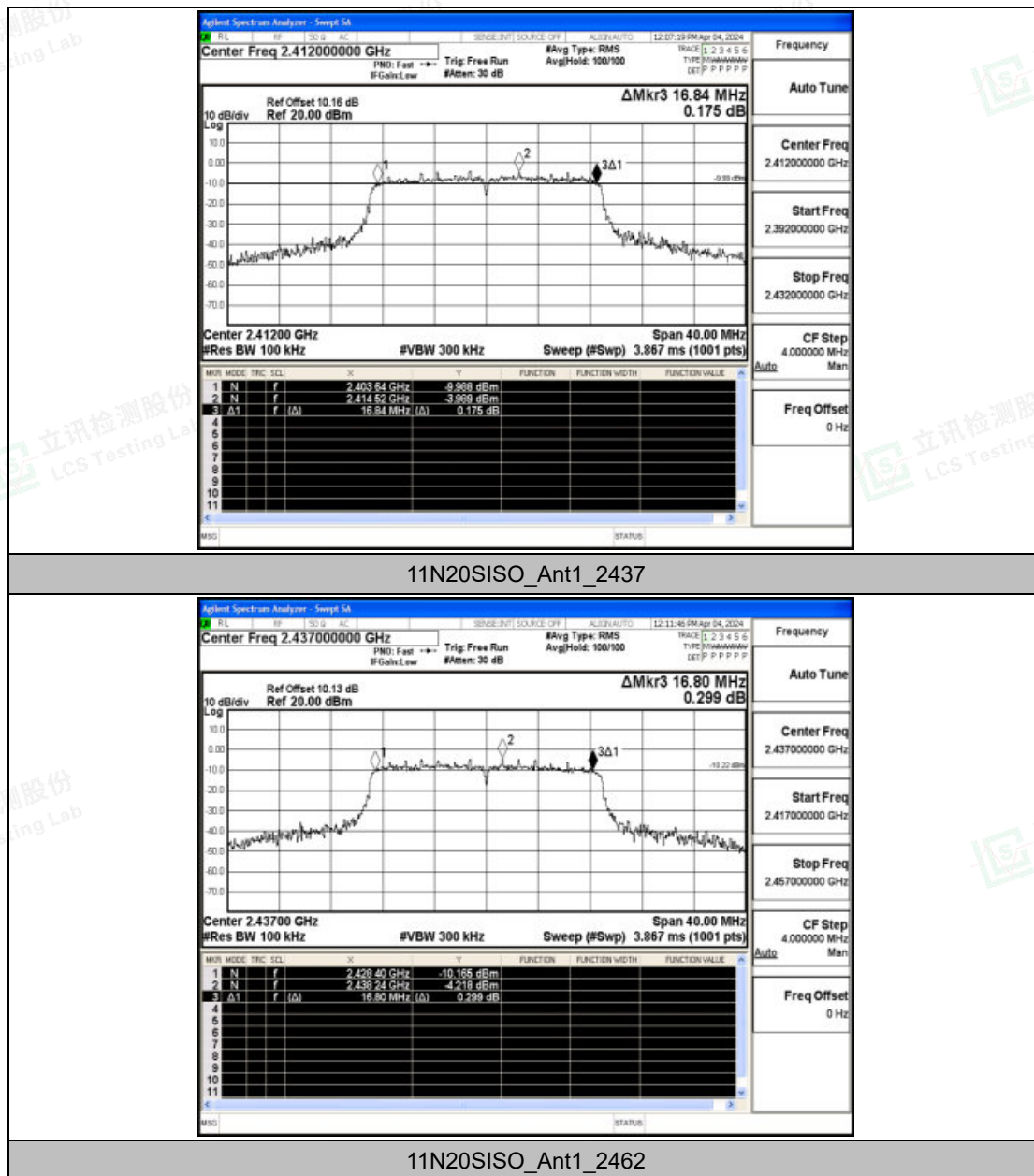


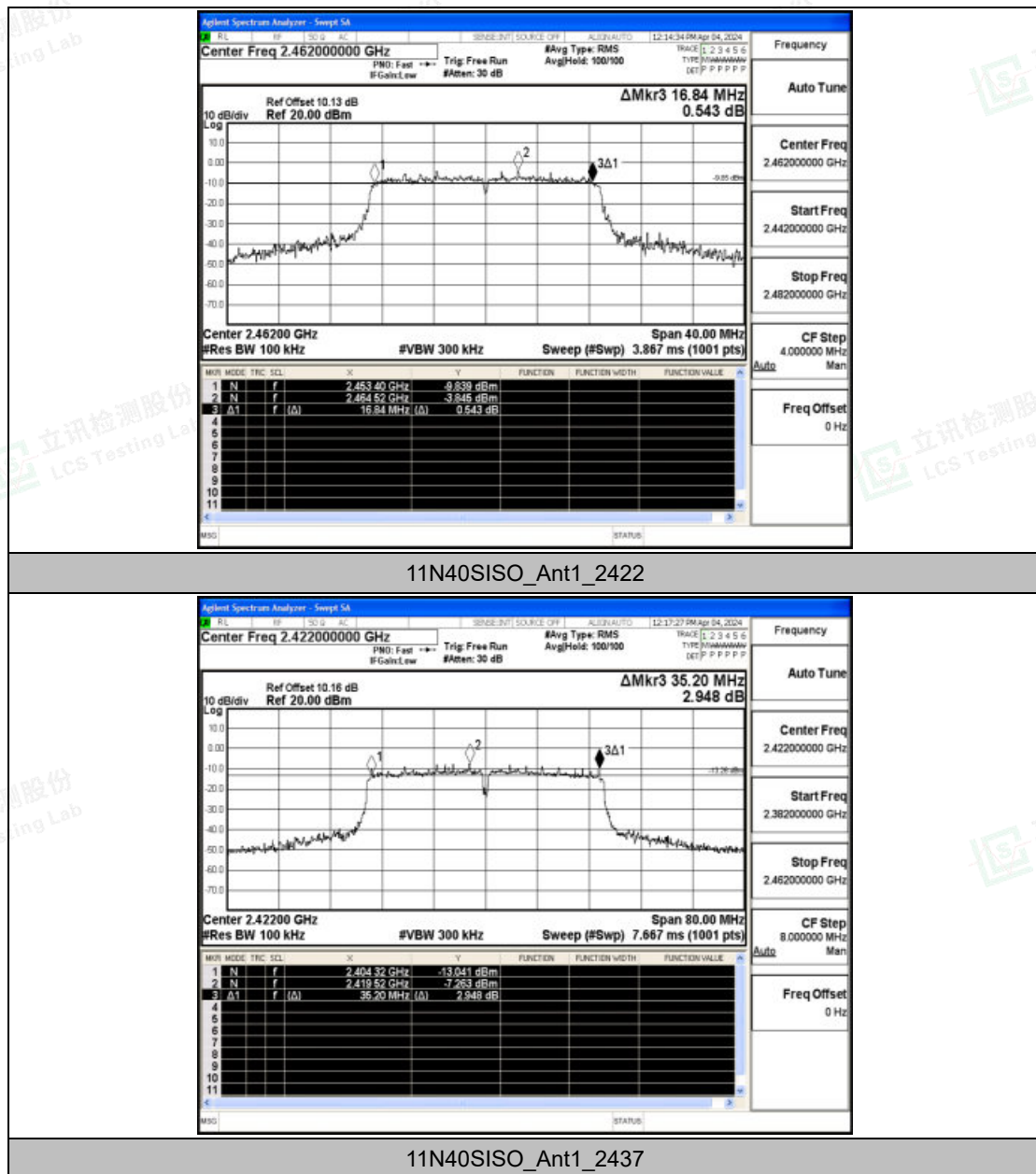
11G_Ant1_2462

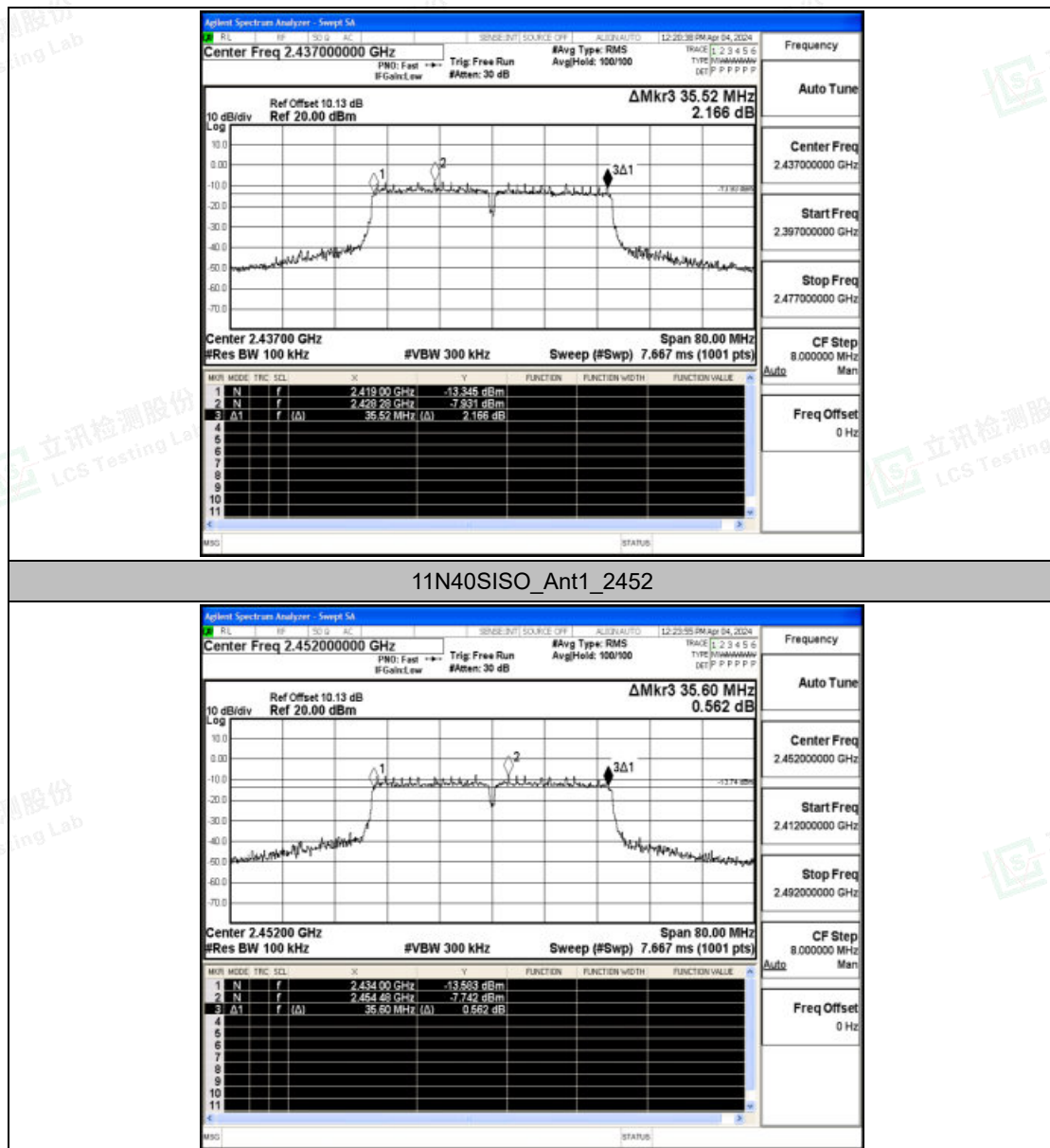


11N20SISO_Ant1_2412











B.2 Maximum conducted output power

Test Result

TestMode	Antenna	Freq(MHz)	Peak Power[dBm]	Conducted Limit[dBm]	Verdict
11B	Ant1	2412	15.54	≤30.00	PASS
		2437	15.97	≤30.00	PASS
		2462	15.64	≤30.00	PASS
11G	Ant1	2412	14.90	≤30.00	PASS
		2437	14.12	≤30.00	PASS
		2462	14.74	≤30.00	PASS
11N20SISO	Ant1	2412	13.67	≤30.00	PASS
		2437	13.05	≤30.00	PASS
		2462	13.69	≤30.00	PASS
11N40SISO	Ant1	2422	12.53	≤30.00	PASS
		2437	12.05	≤30.00	PASS
		2452	12.57	≤30.00	PASS



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Scan code to check authenticity



B.3 Maximum power spectral density

Test Result

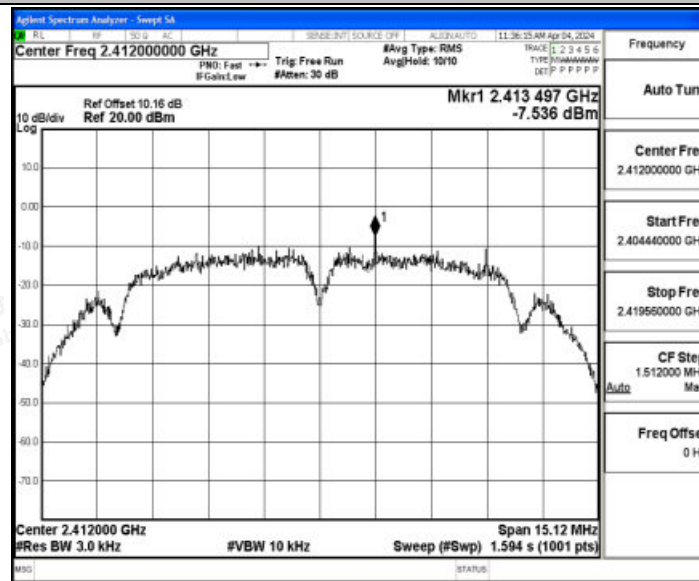
TestMode	Antenna	Freq(MHz)	Result [dBm/3-100kHz]	Limit [dBm/3kHz]	Gain [dBi]	EIRP [dBm/3-100kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant1	2412	-7.54	≤8.00	3.26	-4.28	---	PASS
		2437	-9.45	≤8.00	3.26	-6.19	---	PASS
		2462	-10.69	≤8.00	3.26	-7.43	---	PASS
11G	Ant1	2412	-17.21	≤8.00	3.26	-13.95	---	PASS
		2437	-18.26	≤8.00	3.26	-15.00	---	PASS
		2462	-17.16	≤8.00	3.26	-13.90	---	PASS
11N20SISO	Ant1	2412	-18.19	≤8.00	3.26	-14.93	---	PASS
		2437	-17.75	≤8.00	3.26	-14.49	---	PASS
		2462	-17.55	≤8.00	3.26	-14.29	---	PASS
11N40SISO	Ant1	2422	-22.49	≤8.00	3.26	-19.23	---	PASS
		2437	-22.86	≤8.00	3.26	-19.60	---	PASS
		2452	-22.97	≤8.00	3.26	-19.71	---	PASS



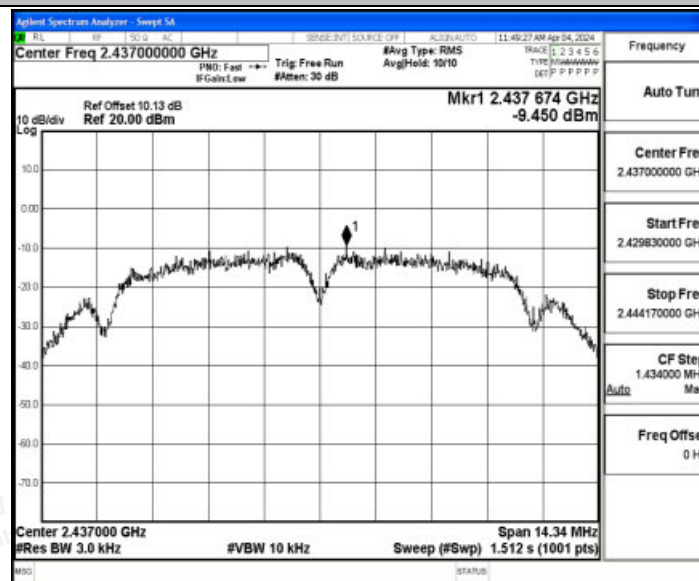


Test Graphs

11B_Ant1_2412

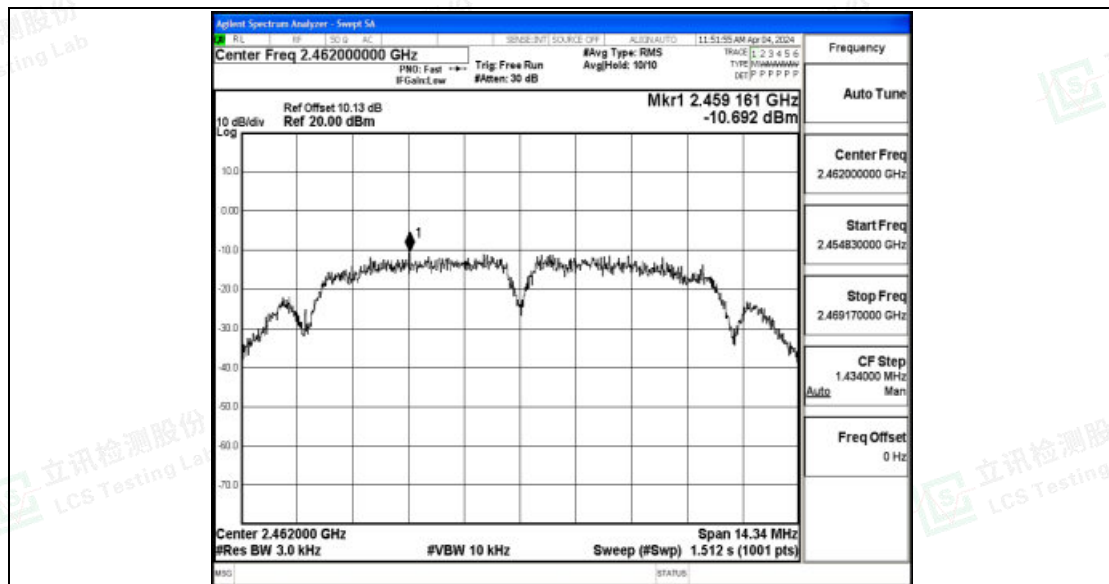


11B_Ant1_2437

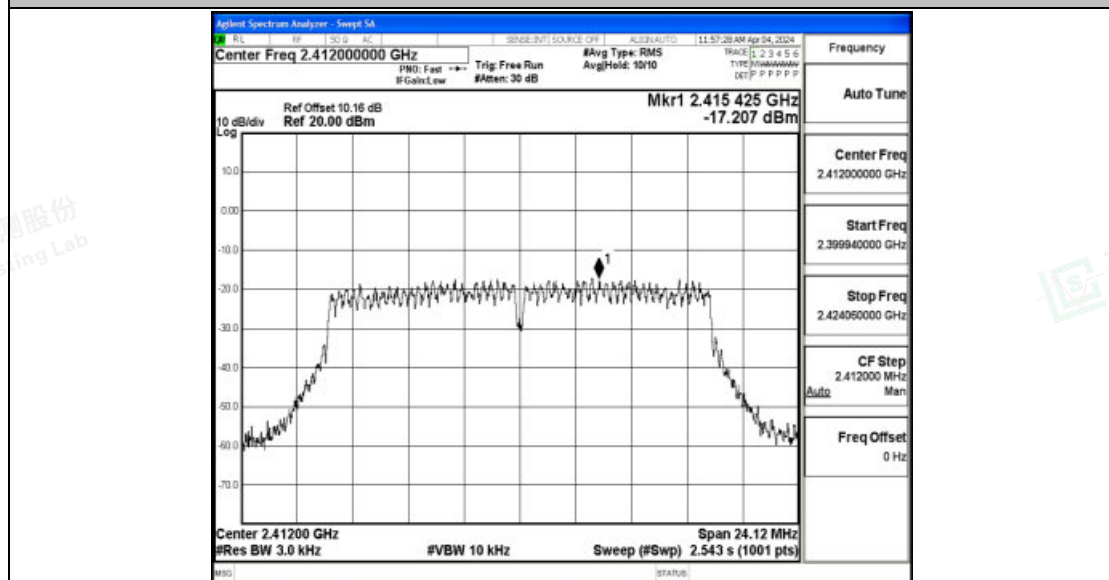


11B_Ant1_2462



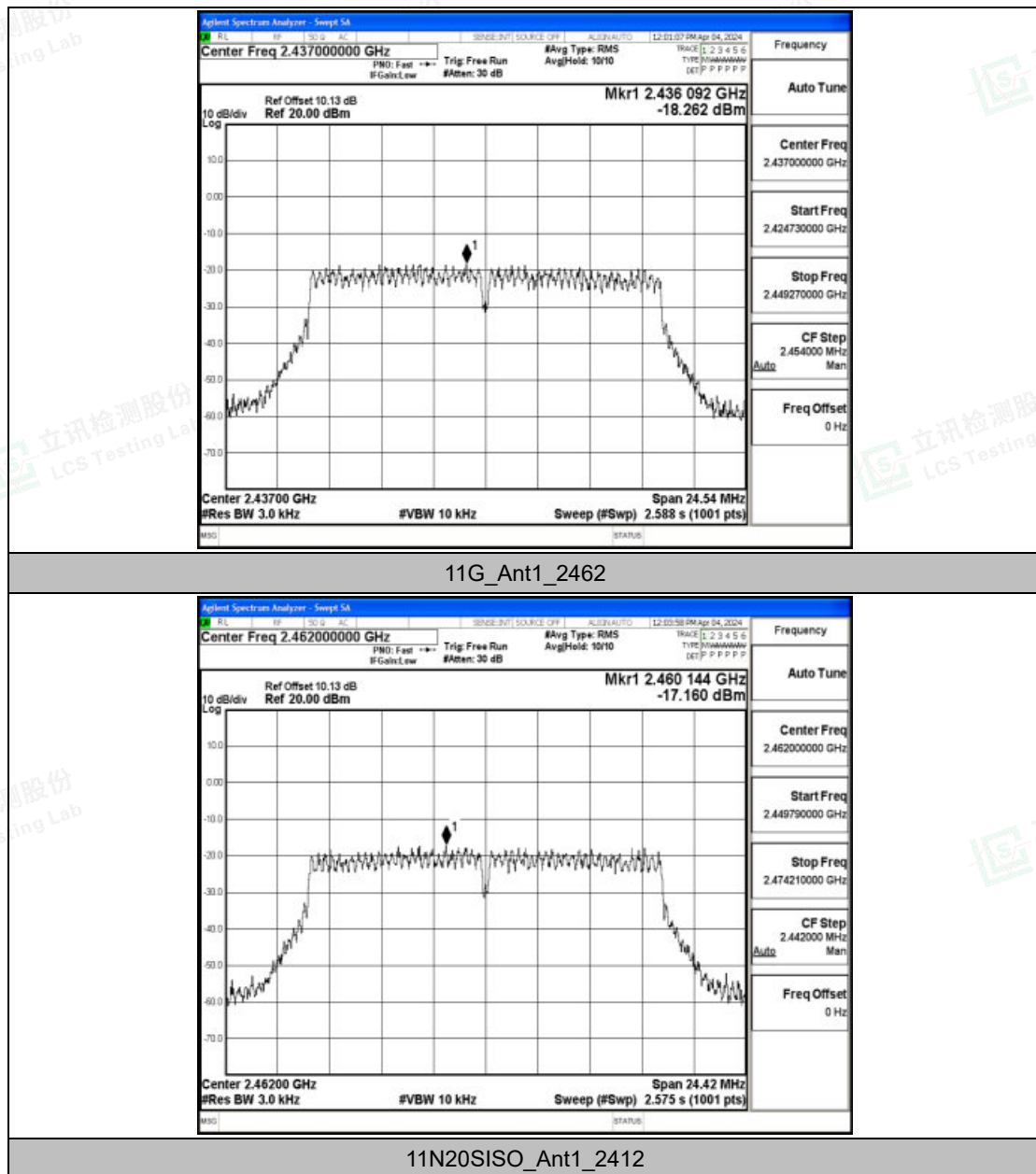


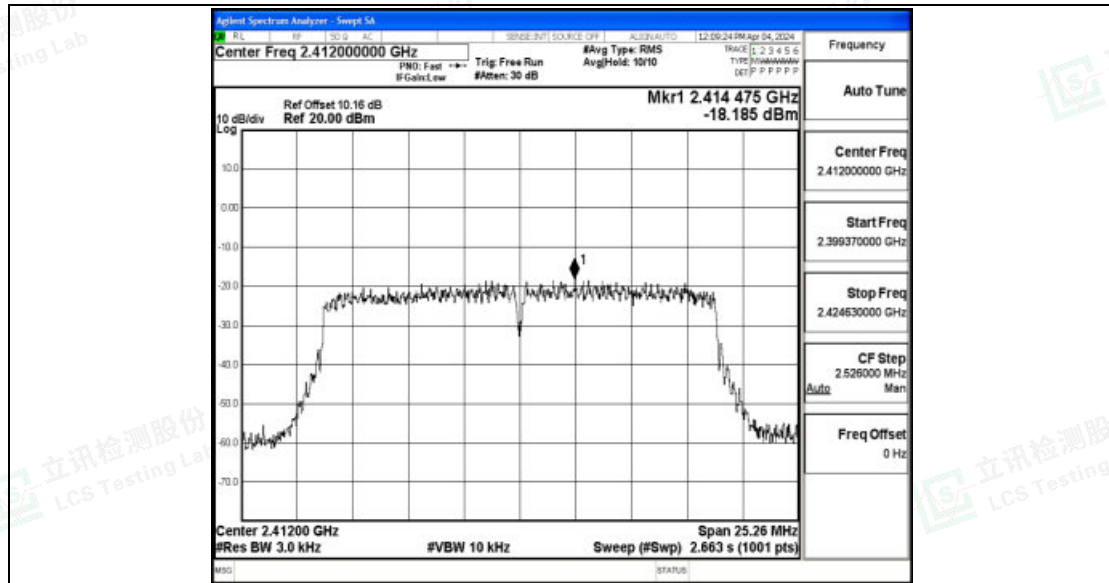
11G_Ant1_2412



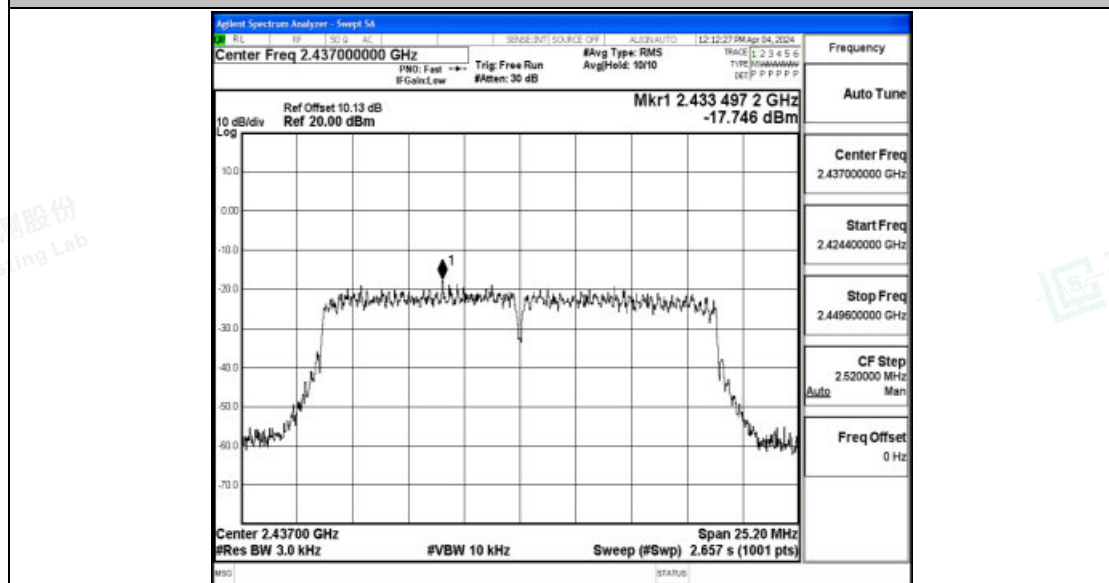
11G_Ant1_2437





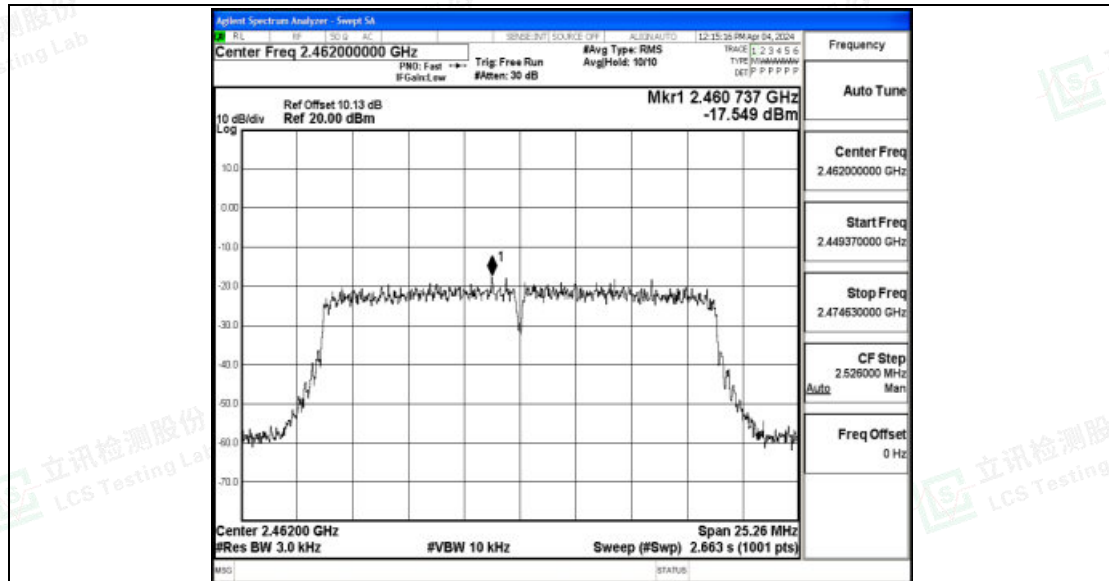


11N20SISO_Ant1_2437

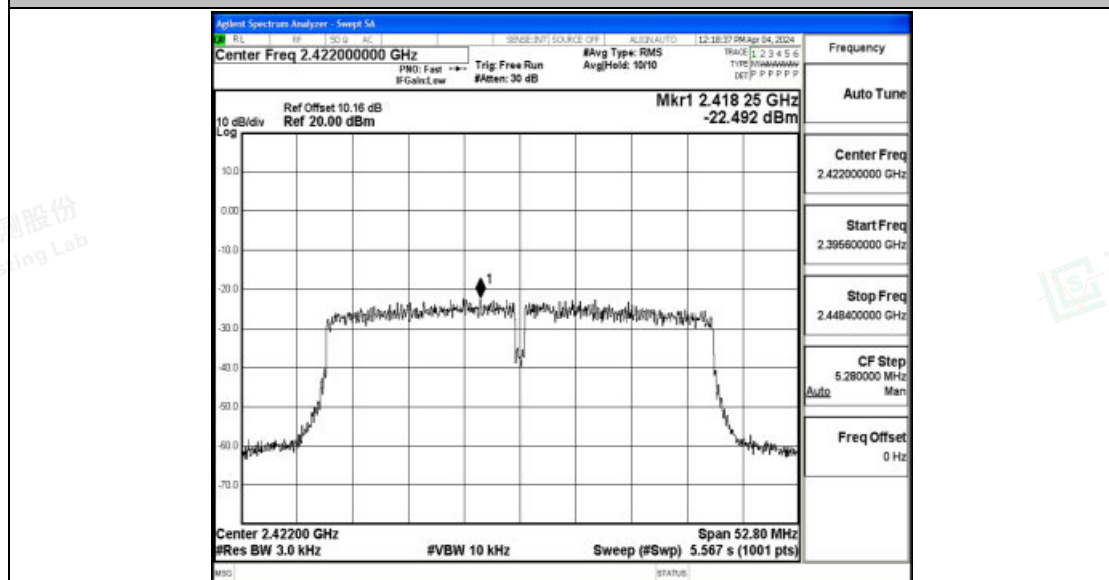


11N20SISO_Ant1_2462



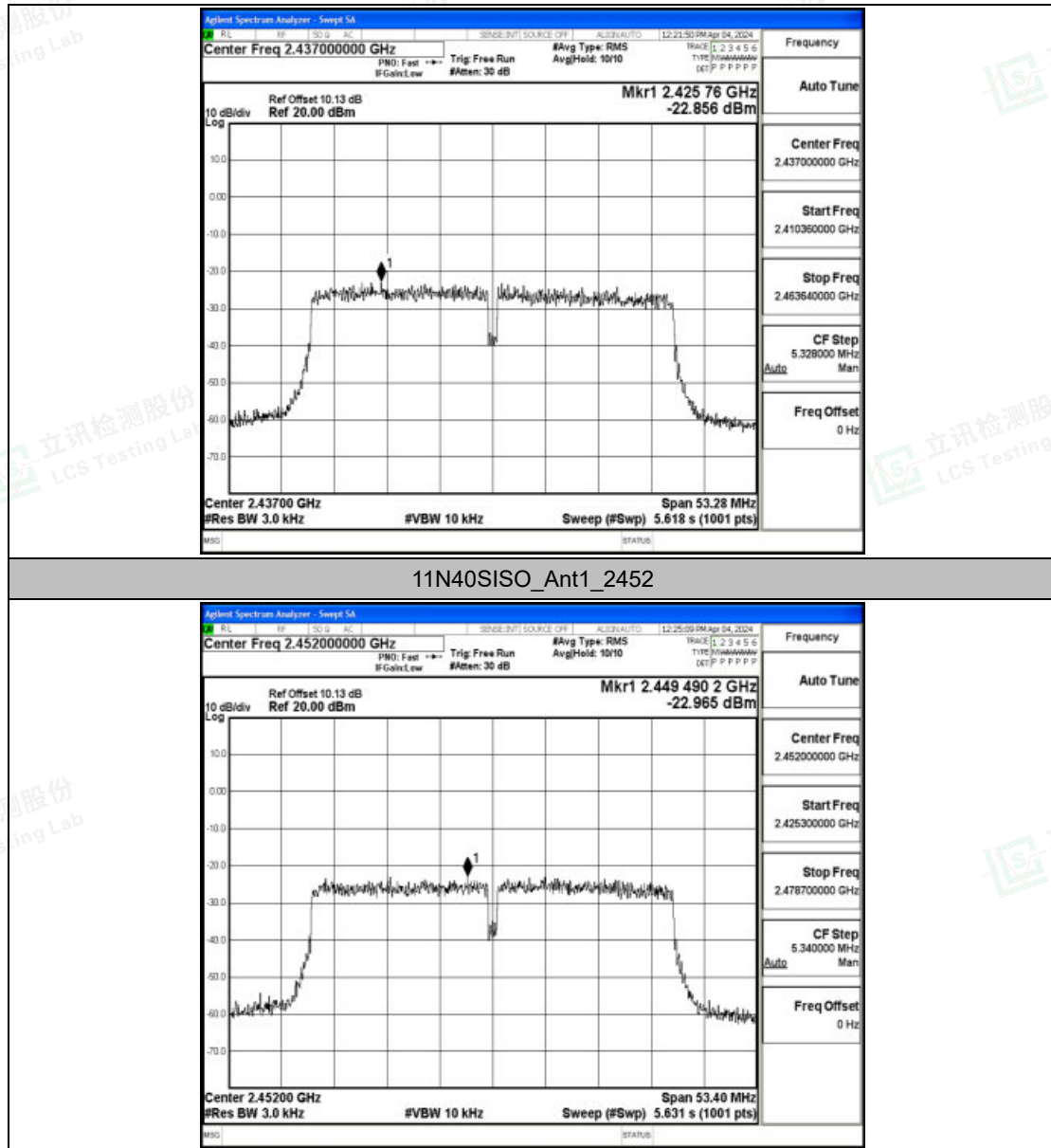


11N40SISO_Ant1_2422



11N40SISO_Ant1_2437







B.4 Band edge measurements

Test Result

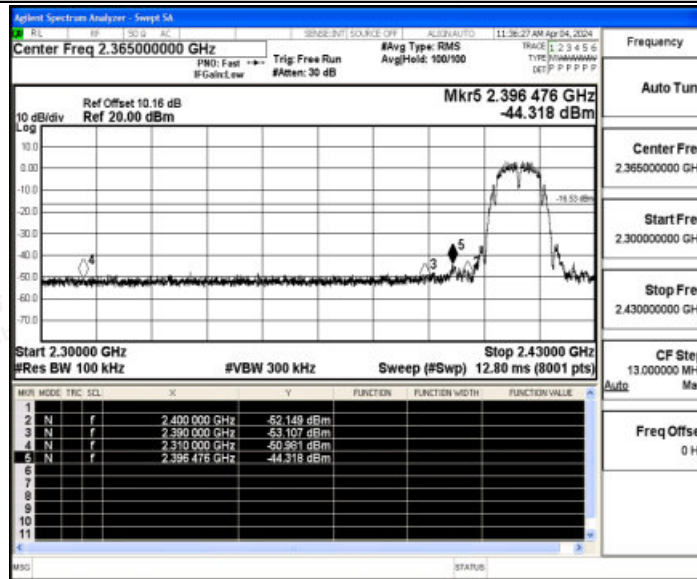
TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	3.47	-44.32	≤-16.53	PASS
		High	2462	3.40	-44.67	≤-16.6	PASS
11G	Ant1	Low	2412	-2.37	-34.38	≤-22.37	PASS
		High	2462	-2.32	-46.13	≤-22.32	PASS
11N20SISO	Ant1	Low	2412	-3.26	-35.65	≤-23.26	PASS
		High	2462	-3.66	-46.73	≤-23.66	PASS
11N40SISO	Ant1	Low	2422	-7.22	-39.81	≤-27.22	PASS
		High	2452	-7.76	-45.24	≤-27.76	PASS



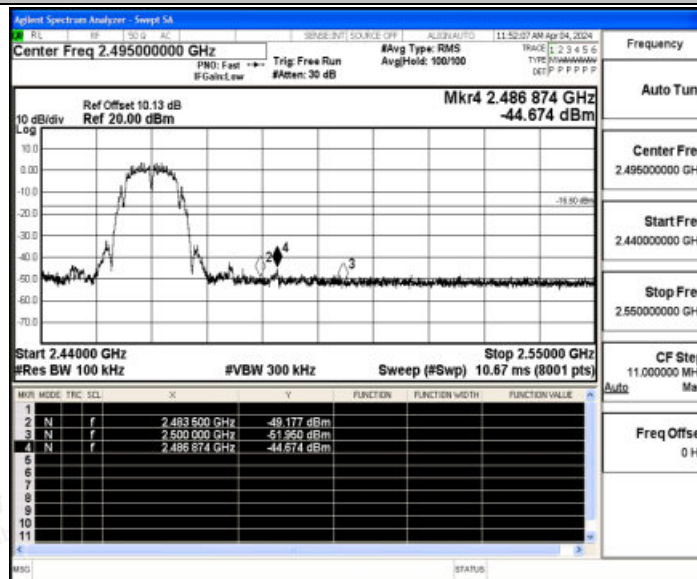


Test Graphs

11B_Ant1_Low_2412

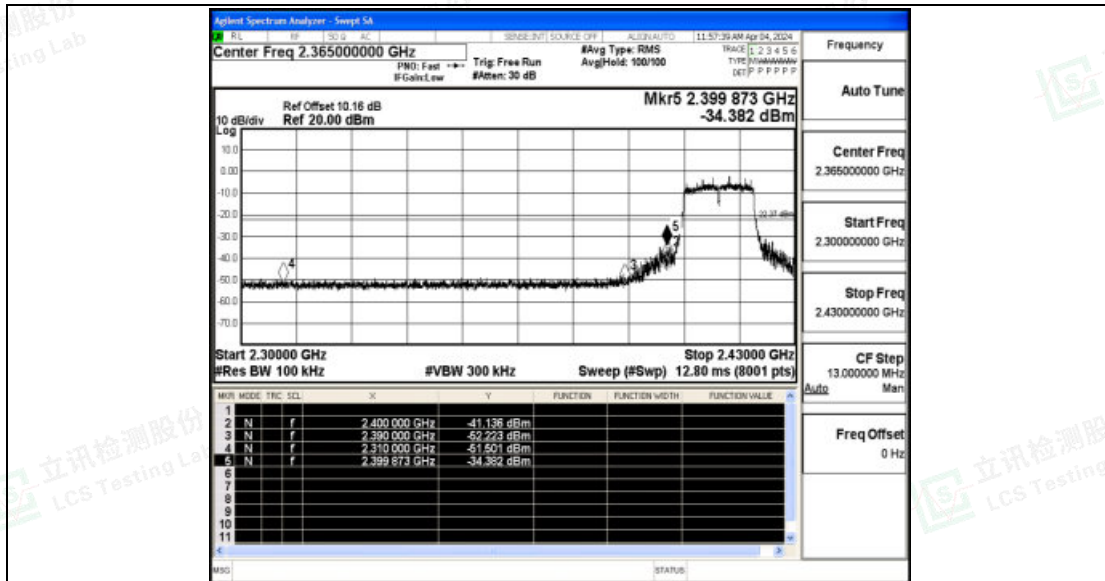


11B_Ant1_High_2462

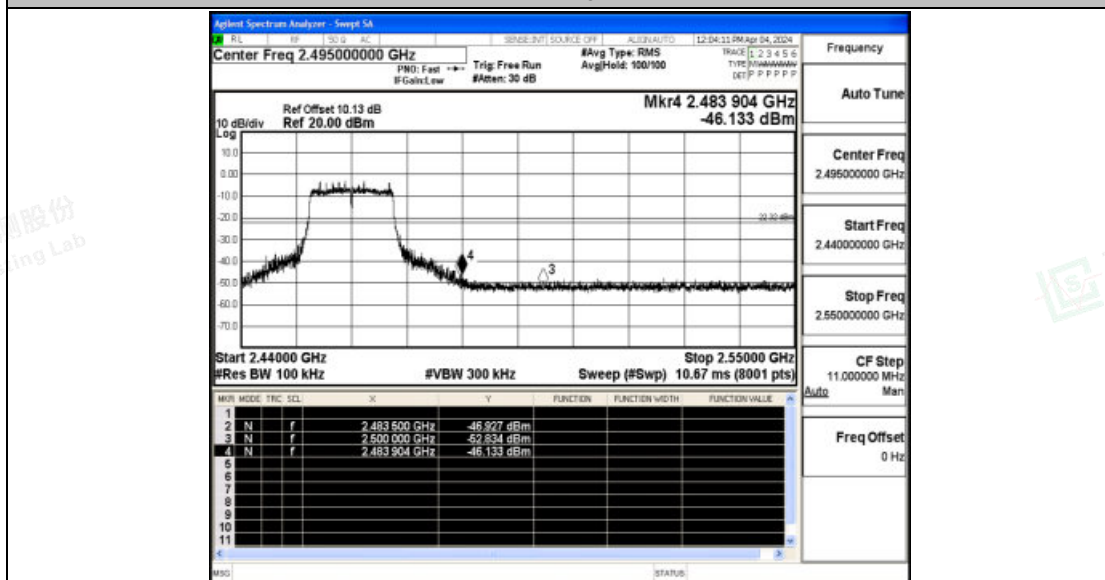


11G_Ant1_Low_2412



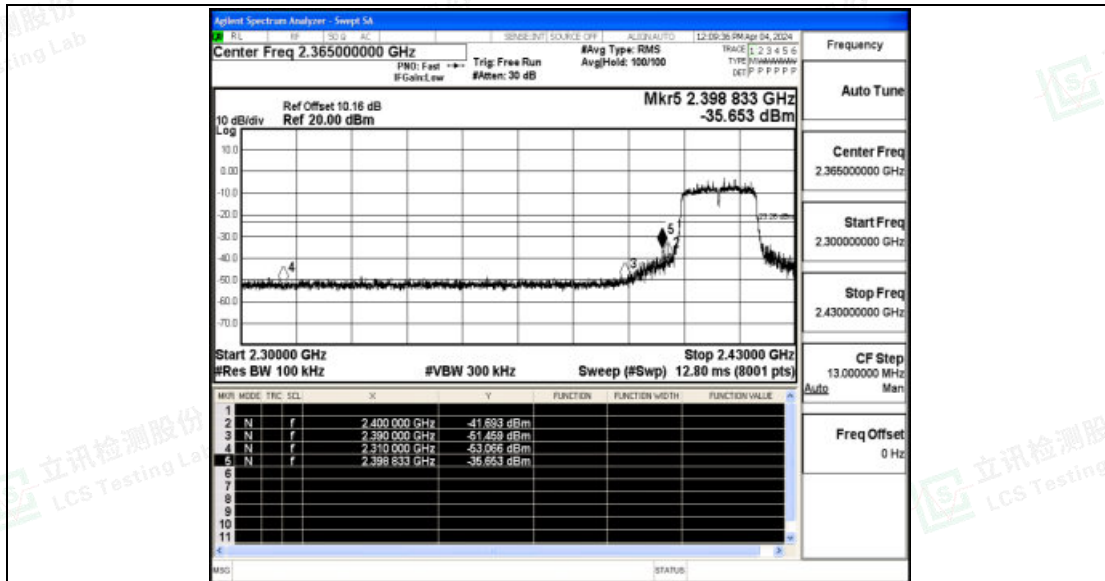


11G_Ant1_High_2462

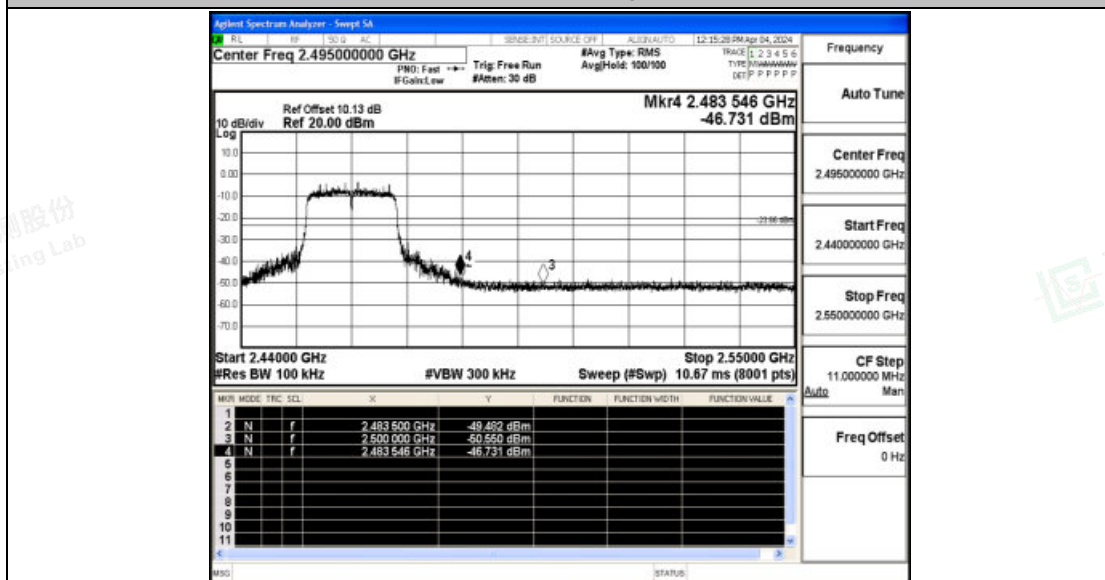


11N20SISO_Ant1_Low_2412



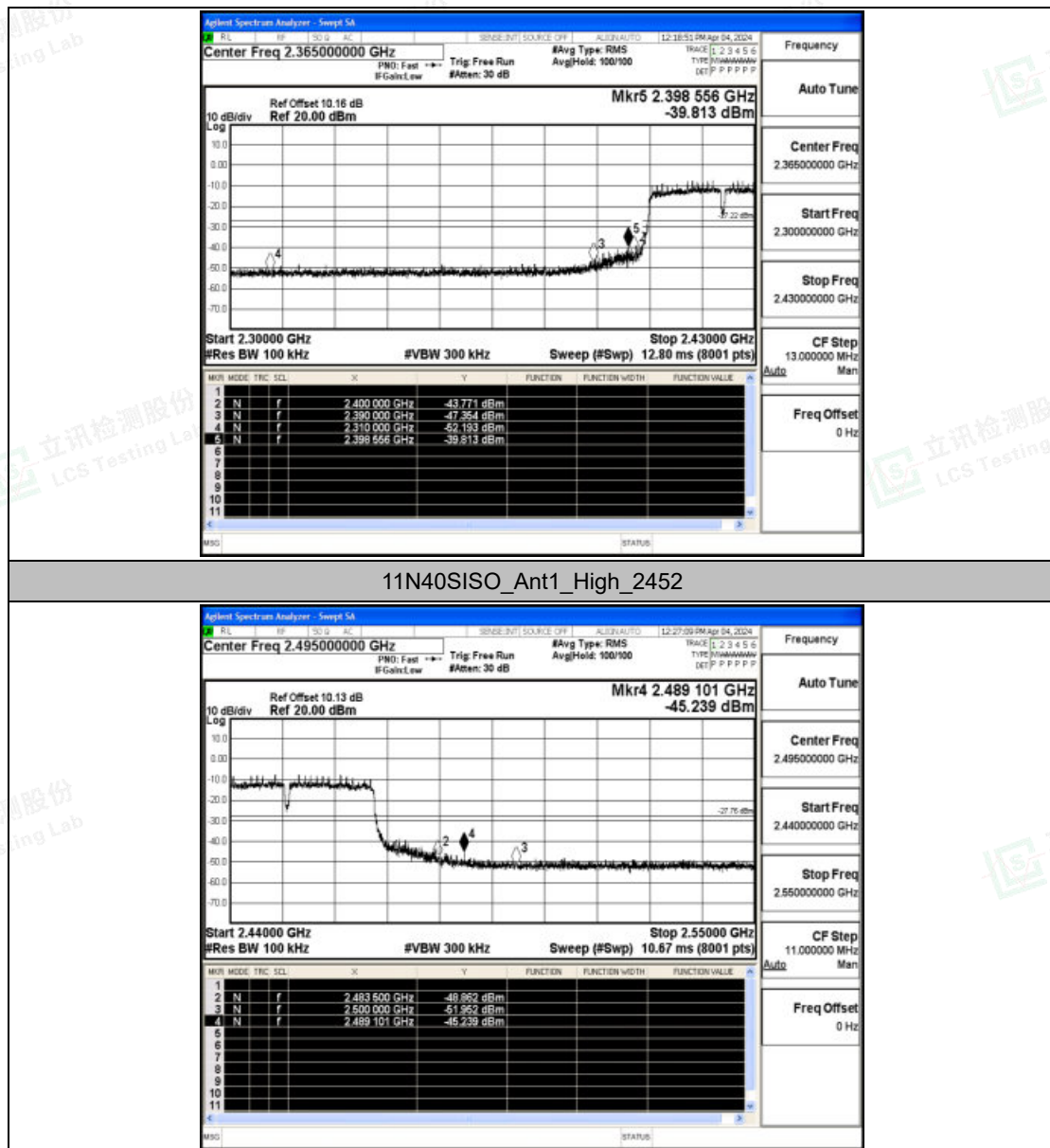


11N20ISO_Ant1_High_2462



11N40ISO_Ant1_Low_2422







B.5 Conducted Spurious Emission

Test Result

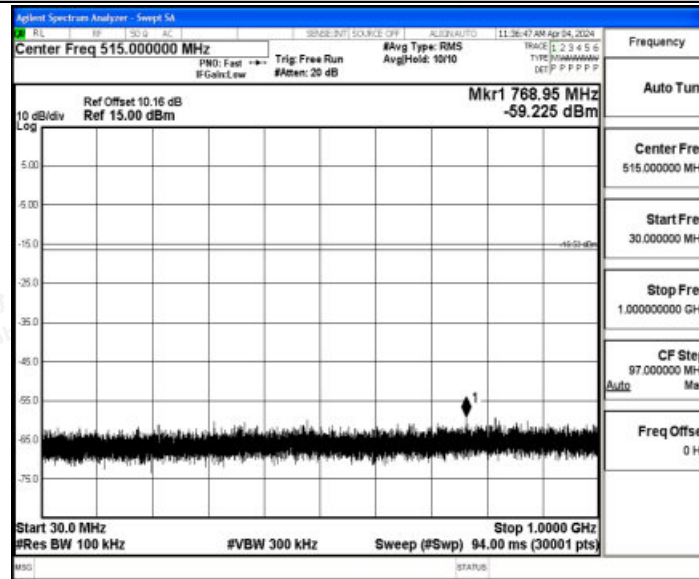
TestMode	Antenna	Freq(MHz)	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	30~1000	3.47	-59.23	≤-16.53	PASS
			1000~26500	3.47	-47.12	≤-16.53	PASS
		2437	30~1000	3.90	-60.07	≤-16.1	PASS
			1000~26500	3.90	-47.64	≤-16.1	PASS
		2462	30~1000	3.40	-59.75	≤-16.6	PASS
			1000~26500	3.40	-47.07	≤-16.6	PASS
11G	Ant1	2412	30~1000	-2.37	-59.41	≤-22.37	PASS
			1000~26500	-2.37	-46.99	≤-22.37	PASS
		2437	30~1000	-3.47	-58.64	≤-23.47	PASS
			1000~26500	-3.47	-46.99	≤-23.47	PASS
		2462	30~1000	-2.32	-59.32	≤-22.32	PASS
			1000~26500	-2.32	-47.07	≤-22.32	PASS
11N20SISO	Ant1	2412	30~1000	-3.26	-59.53	≤-23.26	PASS
			1000~26500	-3.26	-47.47	≤-23.26	PASS
		2437	30~1000	-4.50	-60.02	≤-24.5	PASS
			1000~26500	-4.50	-47	≤-24.5	PASS
		2462	30~1000	-3.66	-60	≤-23.66	PASS
			1000~26500	-3.66	-45.99	≤-23.66	PASS
11N40SISO	Ant1	2422	30~1000	-7.22	-59.85	≤-27.22	PASS
			1000~26500	-7.22	-46.99	≤-27.22	PASS
		2437	30~1000	-8.11	-59.69	≤-28.11	PASS
			1000~26500	-8.11	-47.39	≤-28.11	PASS
		2452	30~1000	-7.76	-59.41	≤-27.76	PASS
			1000~26500	-7.76	-46.47	≤-27.76	PASS



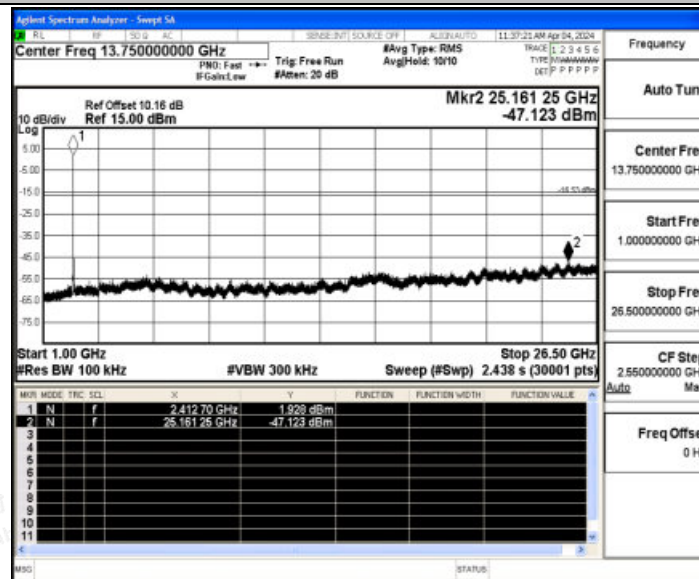


Test Graphs

11B_Ant1_2412_30~1000

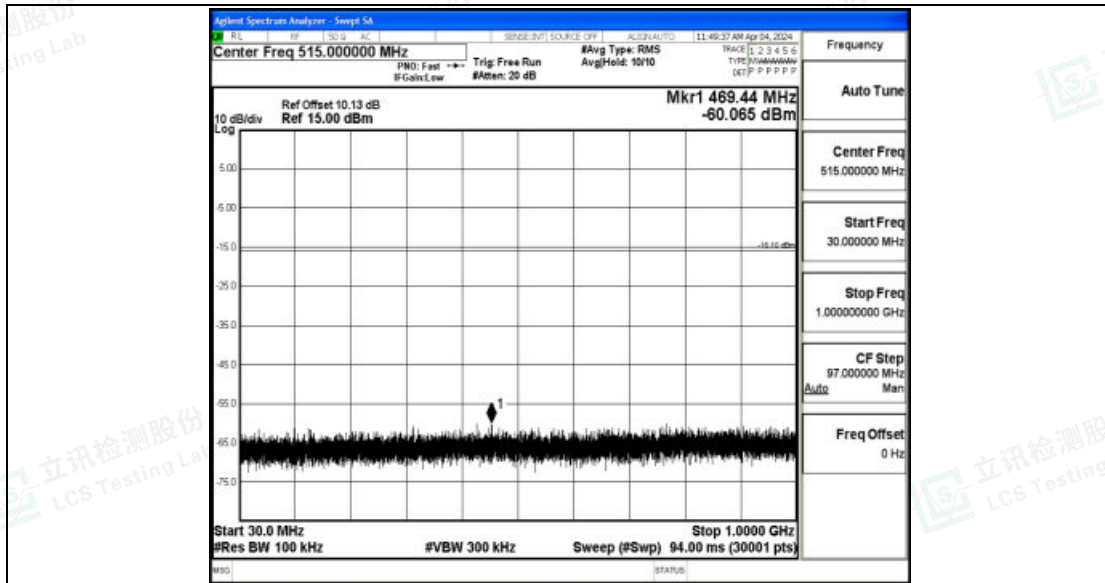


11B_Ant1_2412_1000~26500

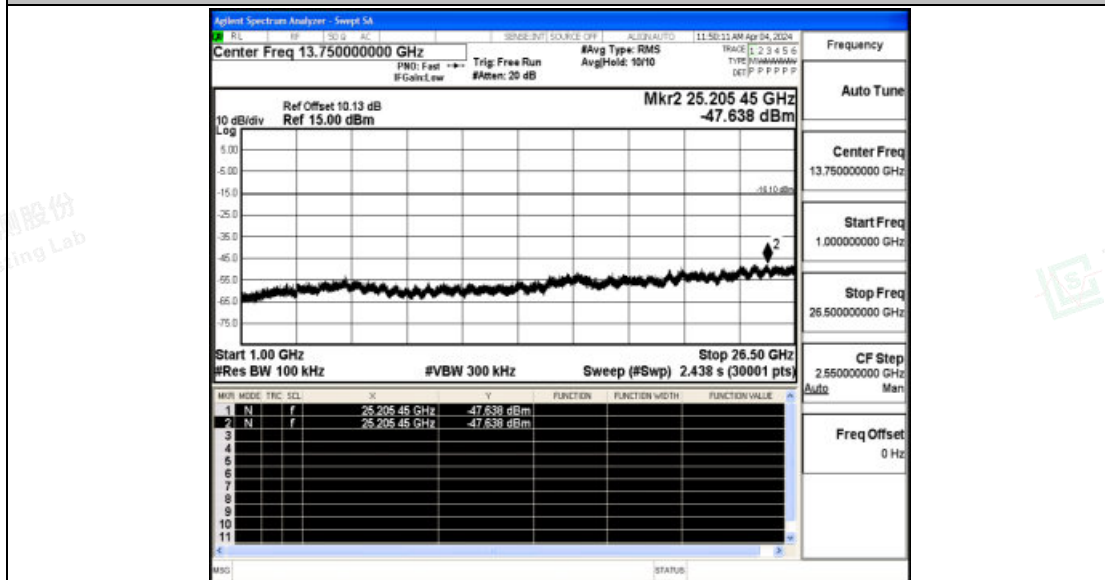


11B_Ant1_2437_30~1000



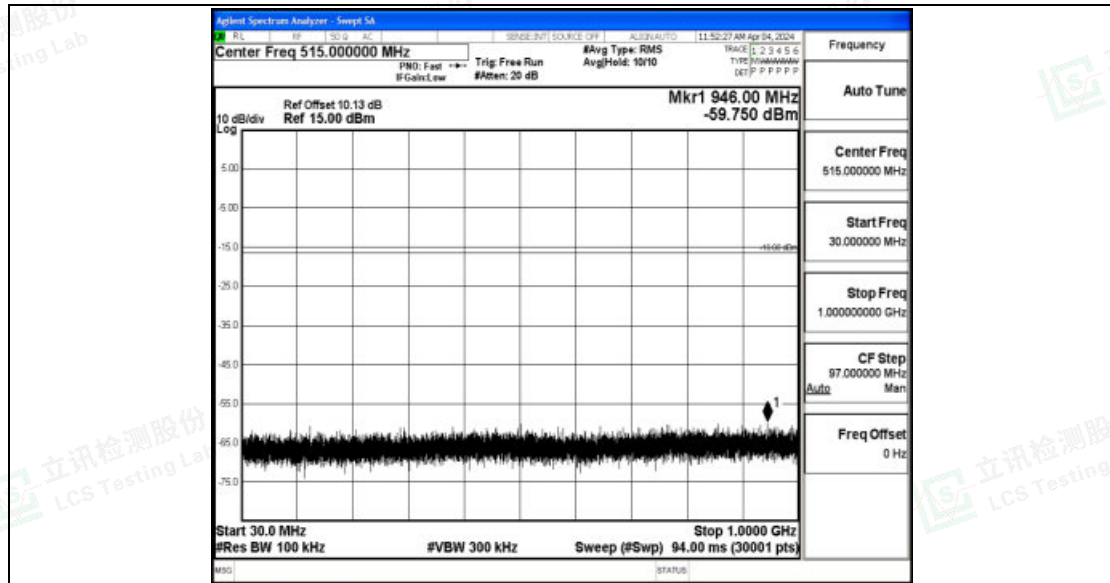


11B_Ant1_2437_1000~26500

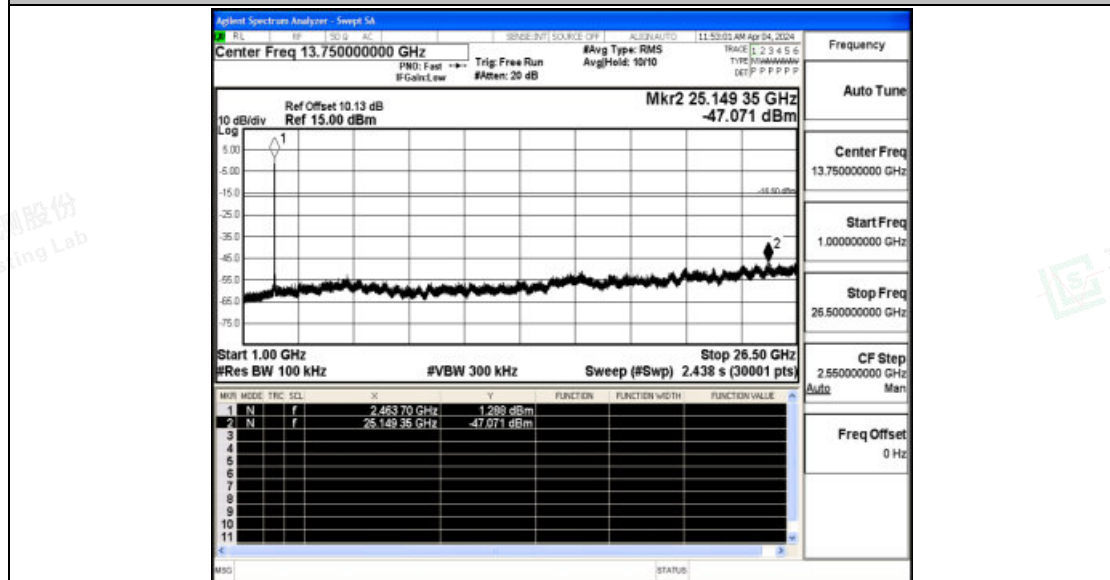


11B_Ant1_2462_30~1000



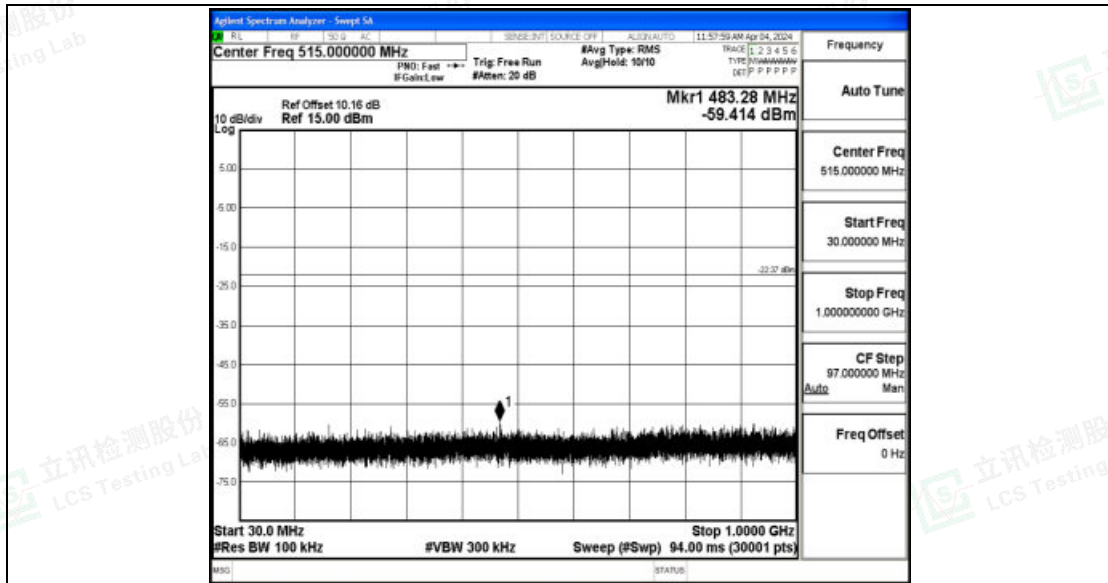


11B_Ant1_2462_1000~26500

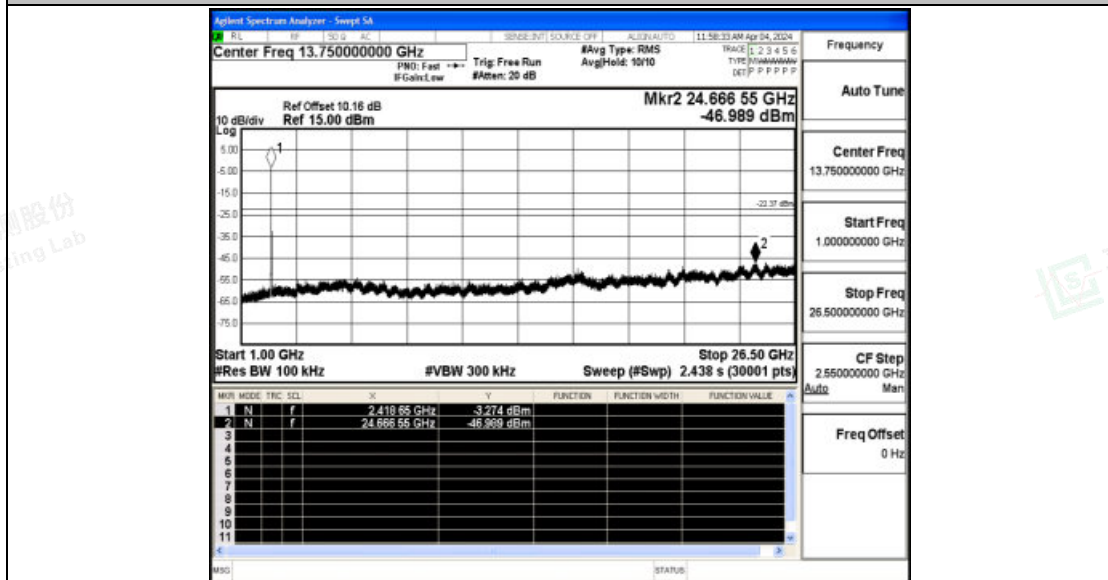


11G_Ant1_2412_30~1000



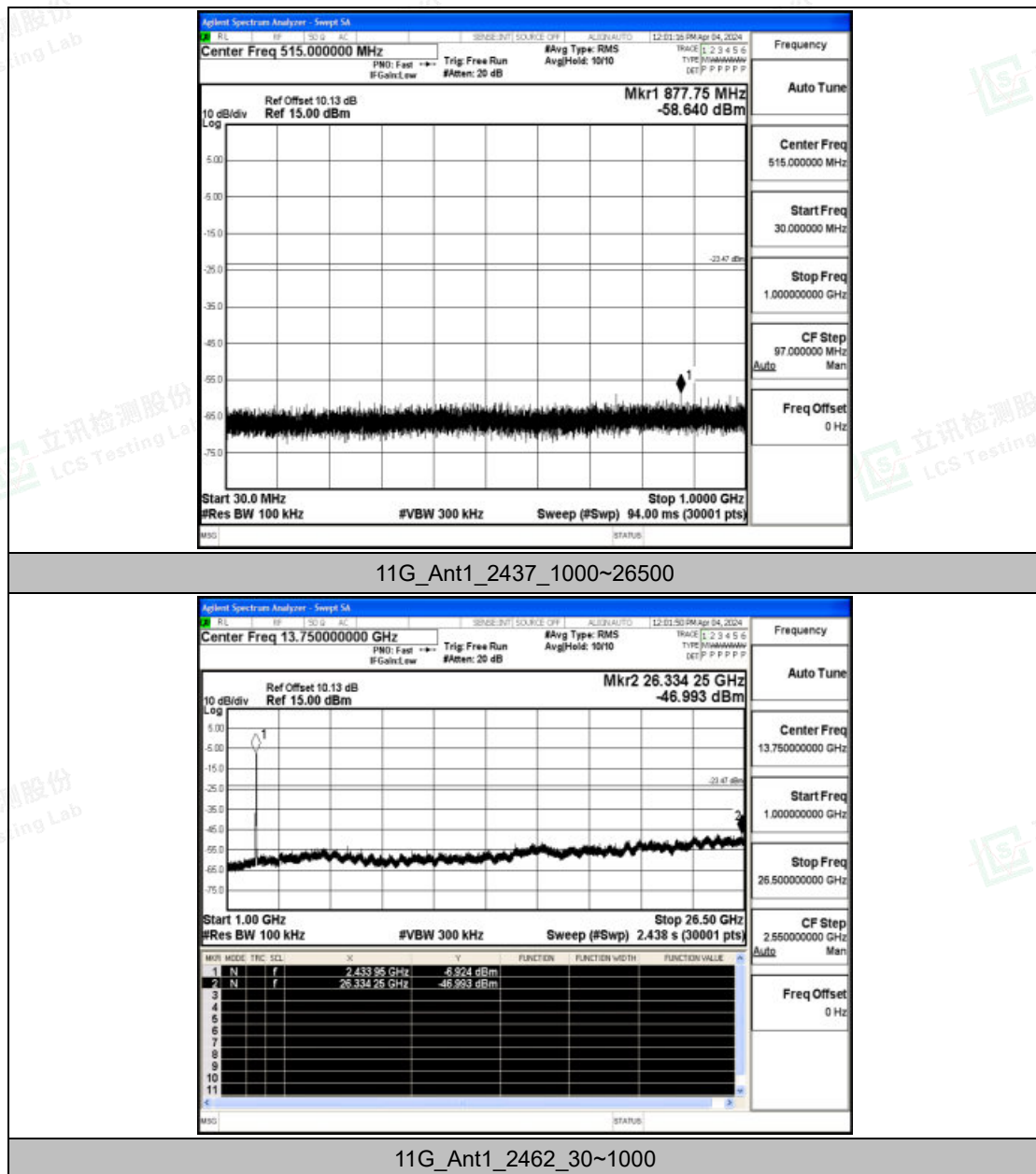


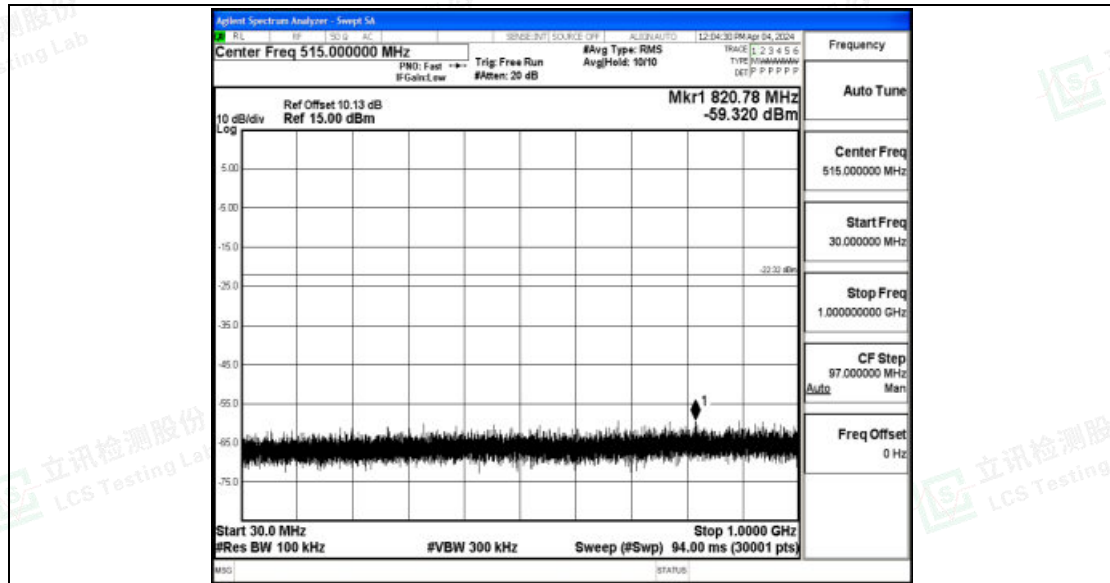
11G_Ant1_2412_1000~26500



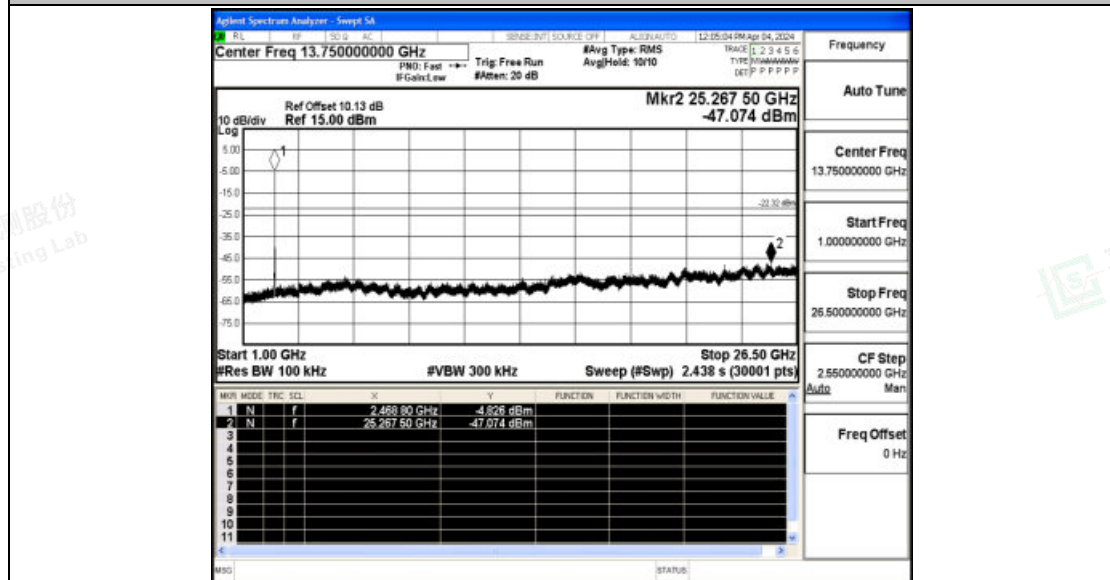
11G_Ant1_2437_30~1000





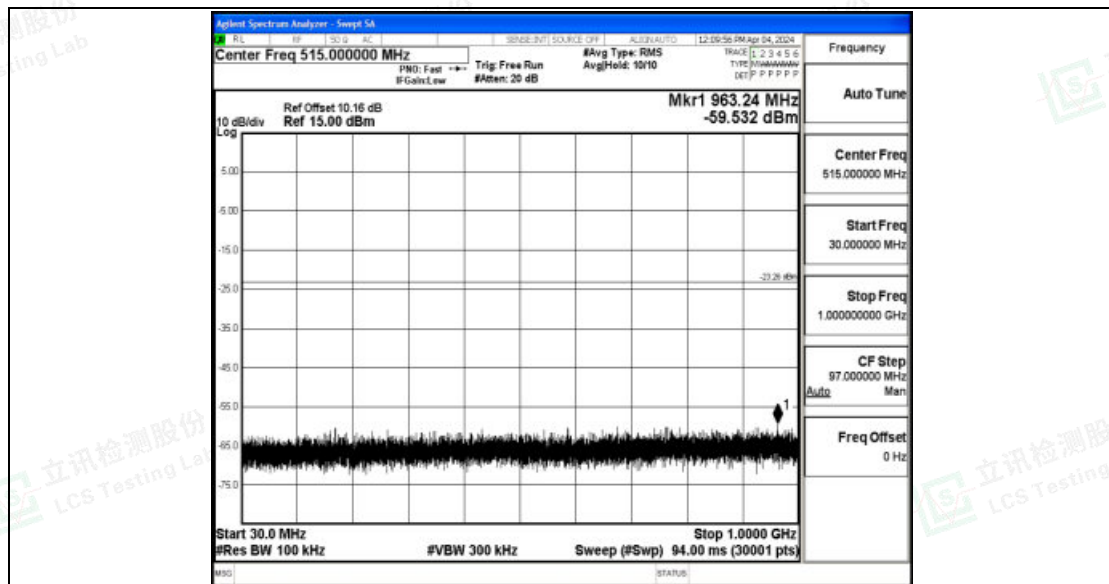


11G_Ant1_2462_1000~26500

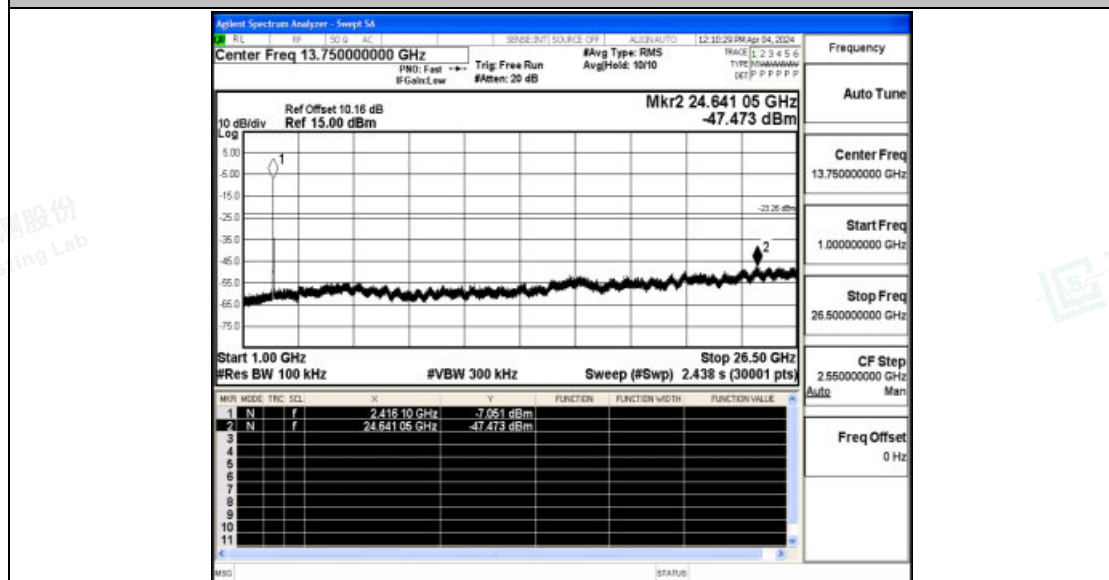


11N20SISO_Ant1_2412_30~1000



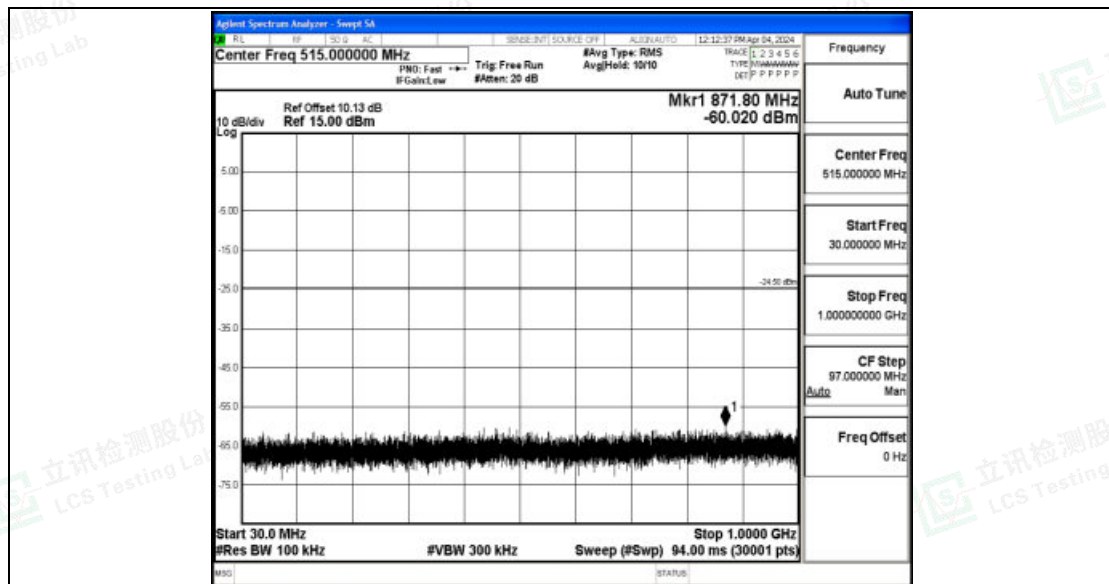


11N20SISO_Ant1_2412_1000~26500

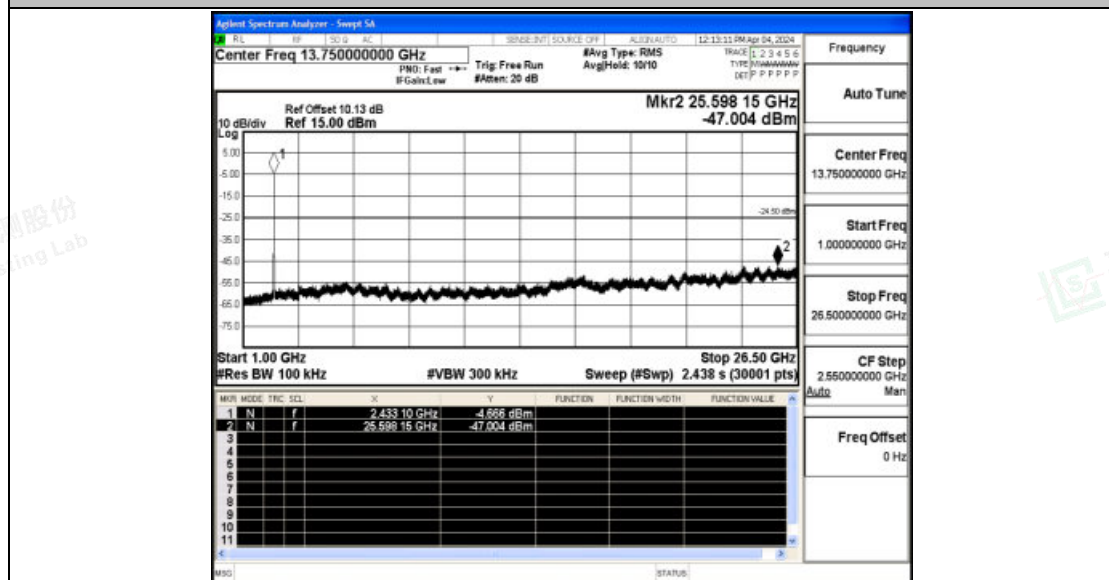


11N20SISO_Ant1_2437_30~1000



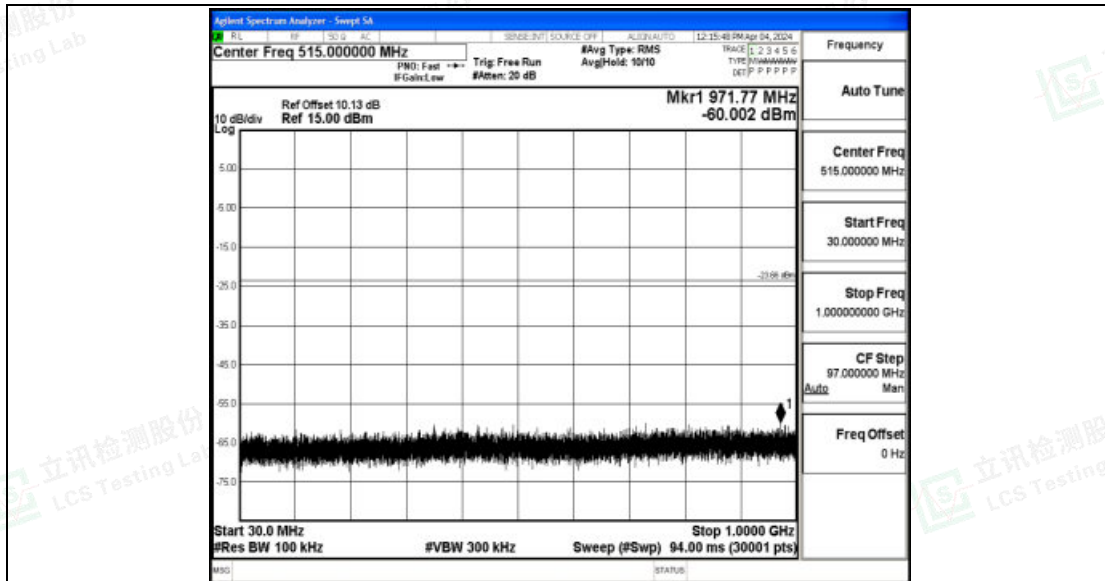


11N20SISO_Ant1_2437_1000~26500

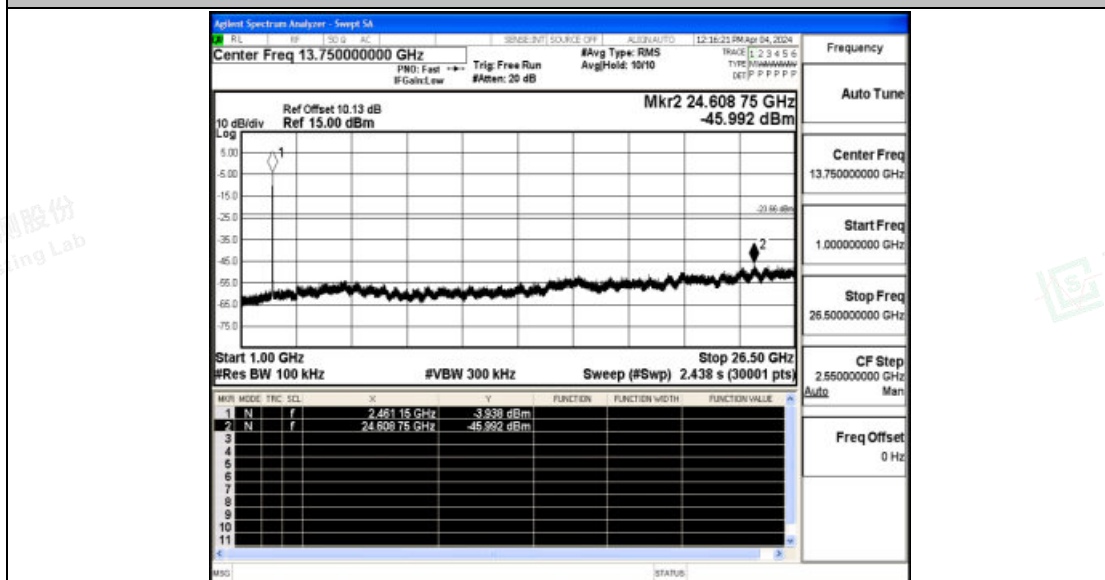


11N20SISO_Ant1_2462_30~1000



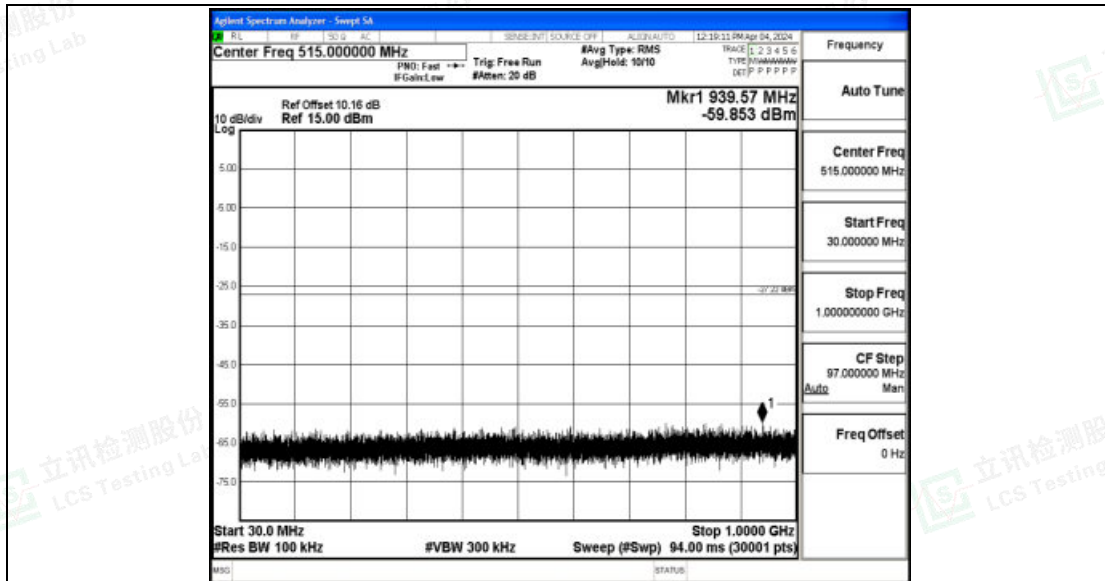


11N20SISO_Ant1_2462_1000~26500

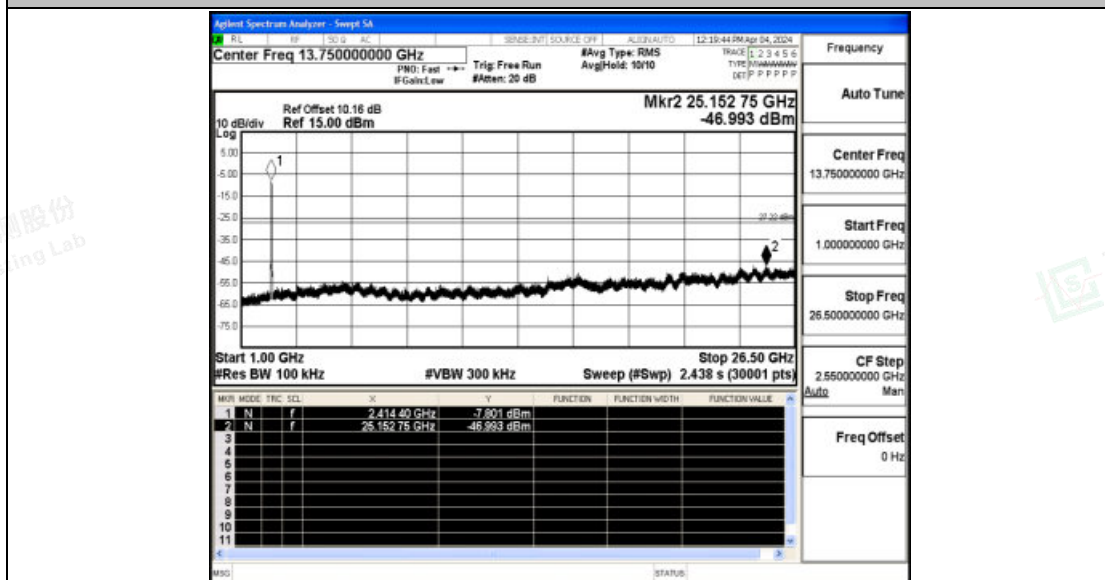


11N40SISO_Ant1_2422_30~1000



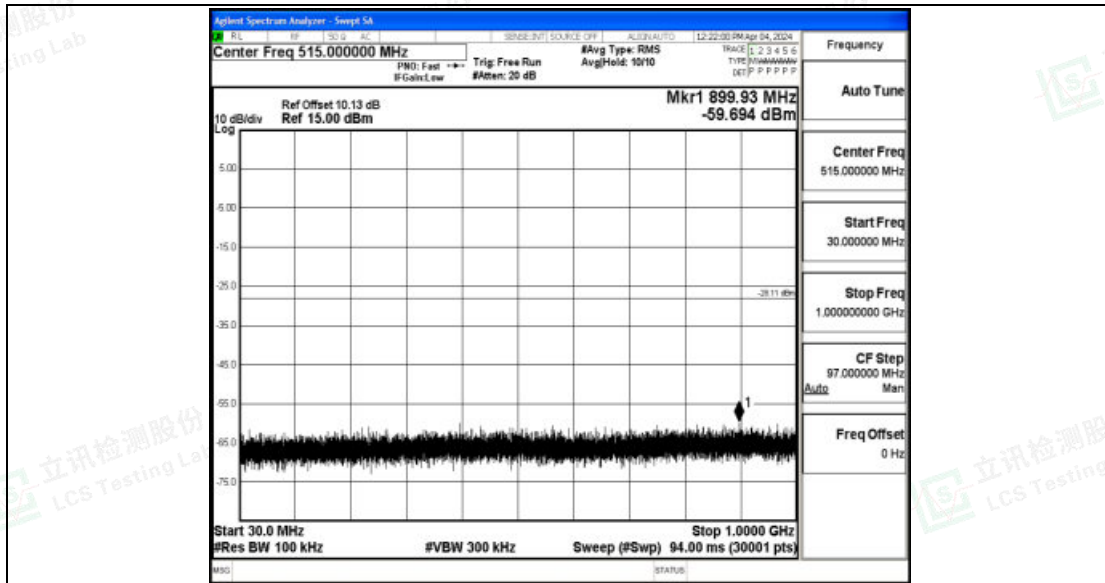


11N40SISO_Ant1_2422_1000~26500

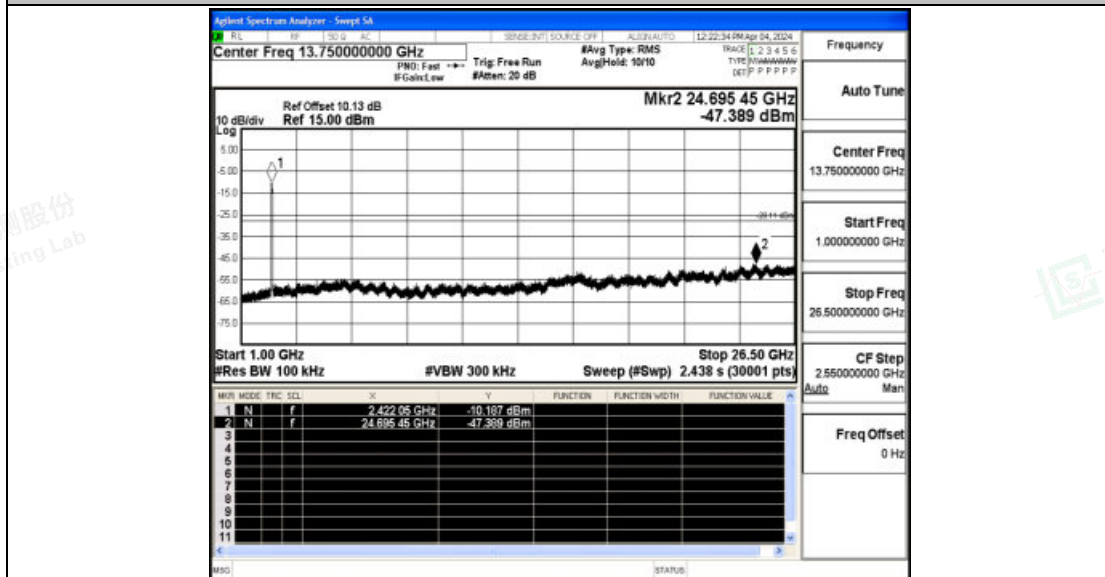


11N40SISO_Ant1_2437_30~1000



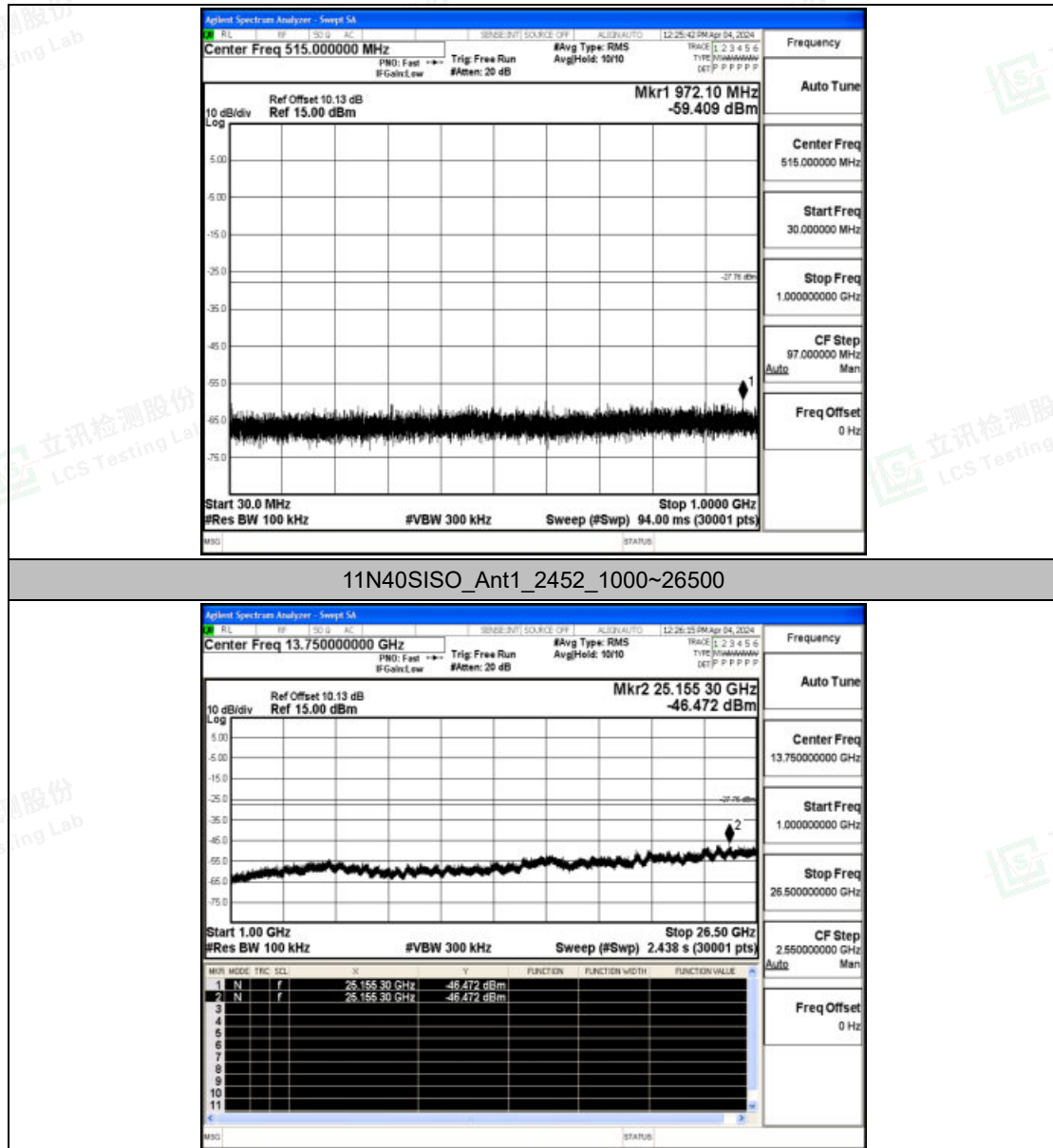


11N40SISO_Ant1_2437_1000~26500



11N40SISO_Ant1_2452_30~1000







Reference level measurement

Test Result

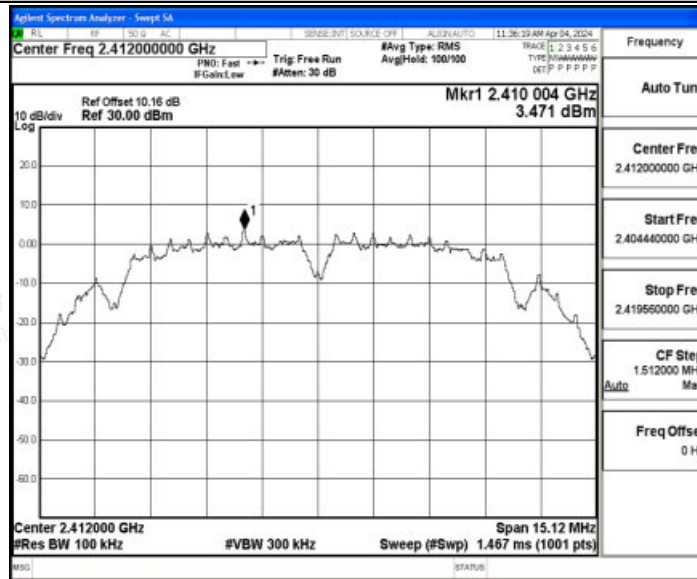
TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
11B	Ant1	2412	2410.00	3.47
		2437	2437.99	3.90
		2462	2463.99	3.40
11G	Ant1	2412	2414.48	-2.37
		2437	2433.25	-3.47
		2462	2463.27	-2.32
11N20SISO	Ant1	2412	2413.29	-3.26
		2437	2430.73	-4.50
		2462	2463.24	-3.66
11N40SISO	Ant1	2422	2419.52	-7.22
		2437	2429.49	-8.11
		2452	2454.51	-7.76



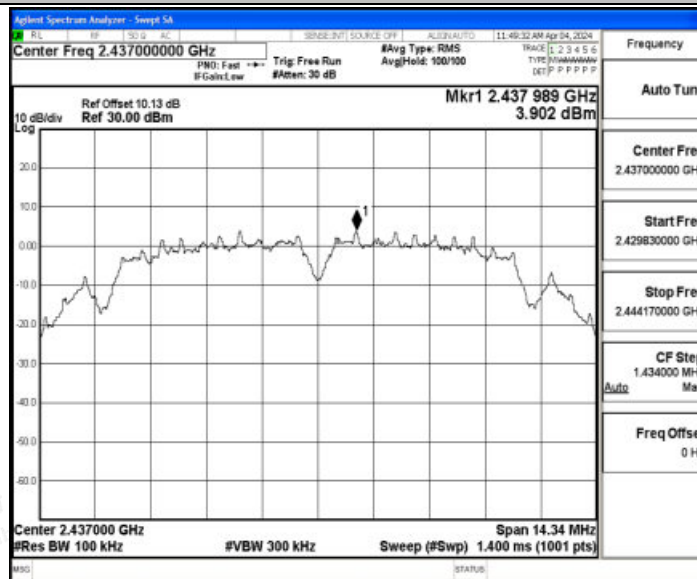


Test Graphs

11B_Ant1_2412

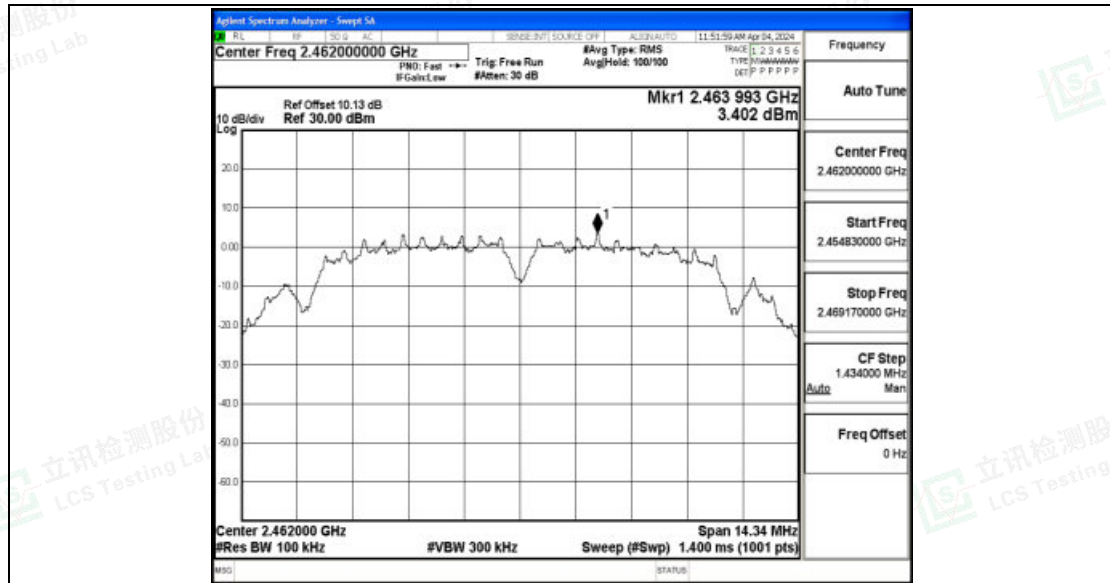


11B_Ant1_2437

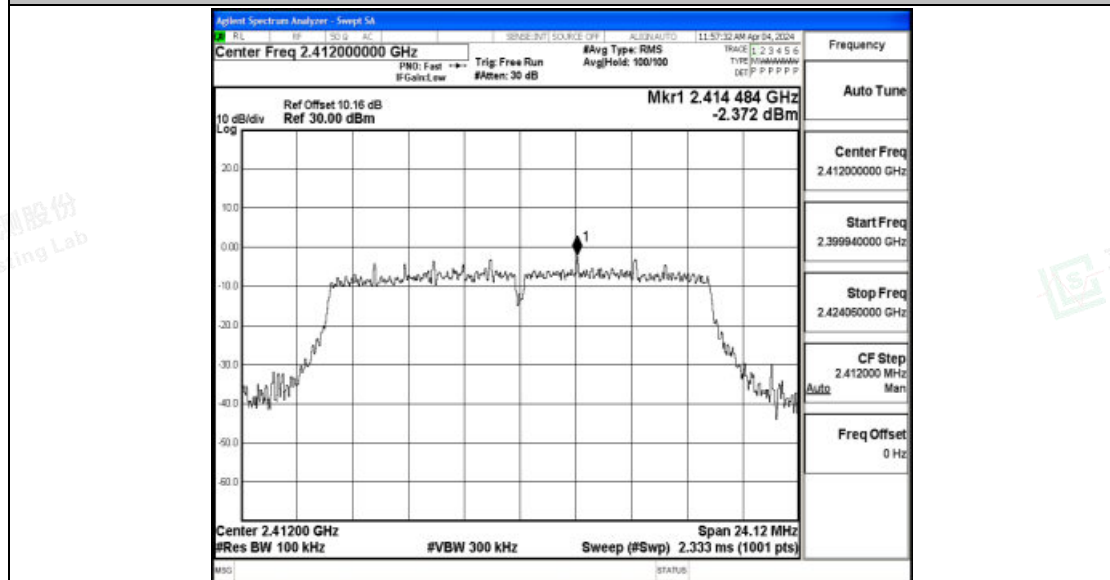


11B_Ant1_2462



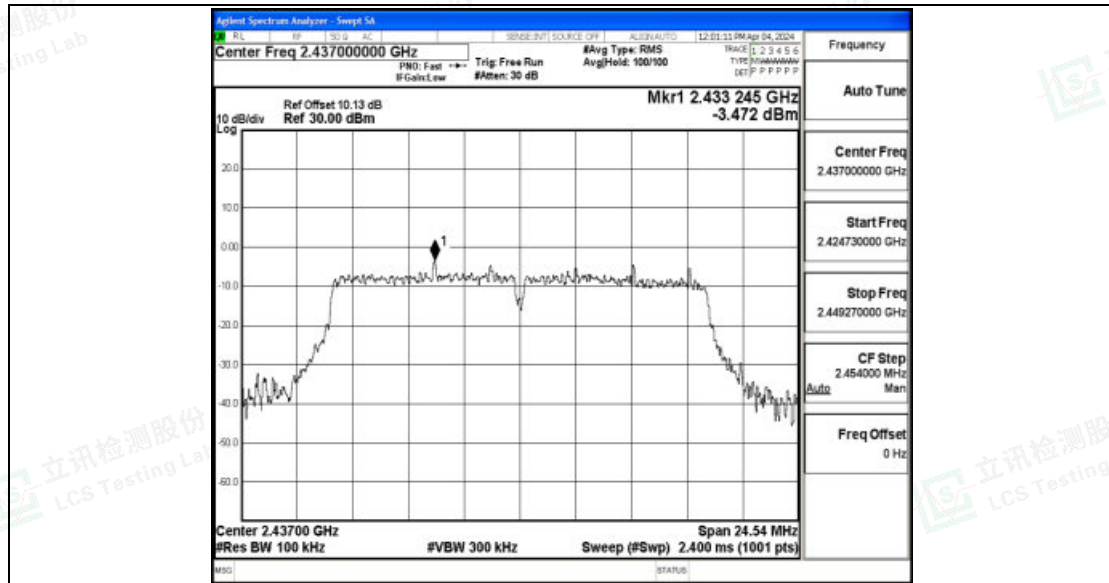


11G_Ant1_2412

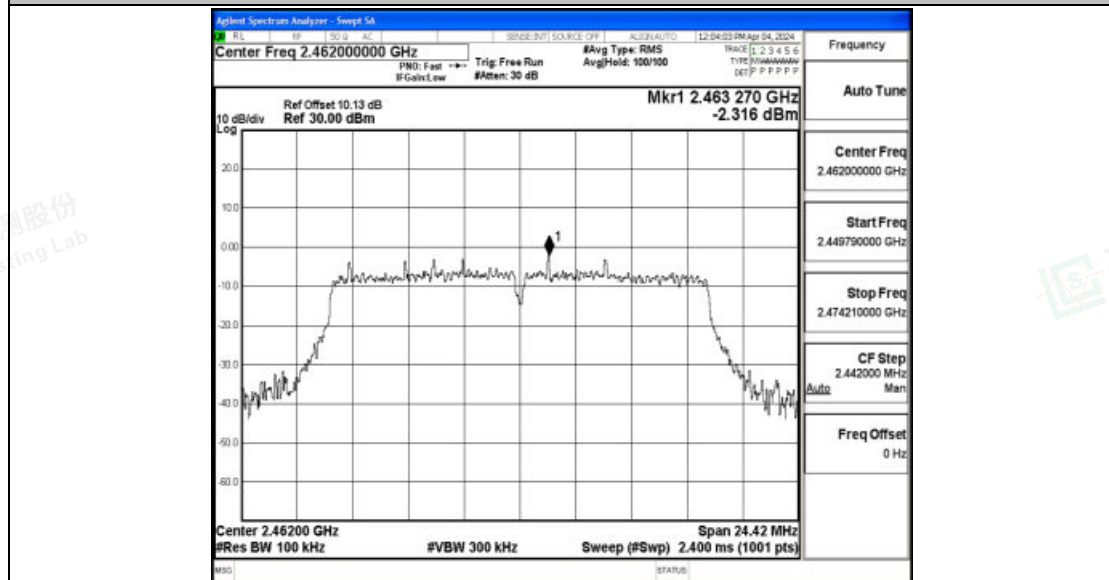


11G_Ant1_2437



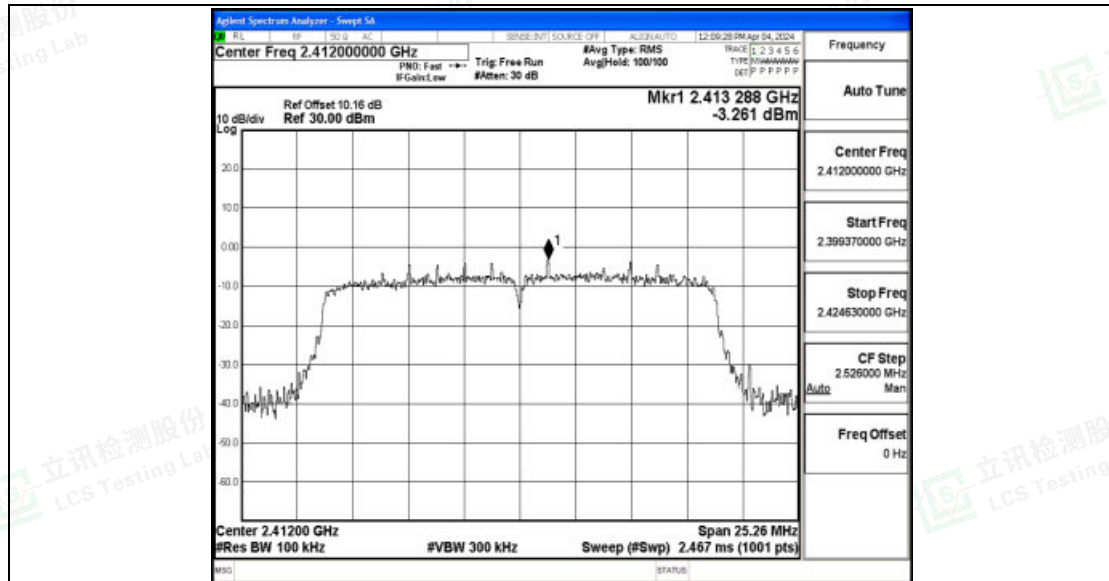


11G_Ant1_2462

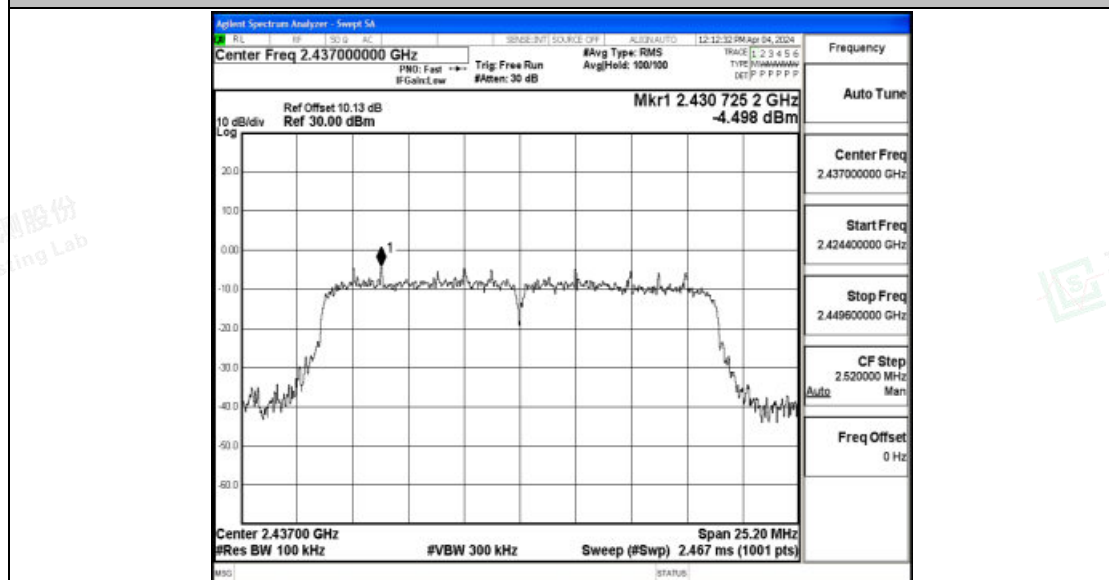


11N20SISO_Ant1_2412



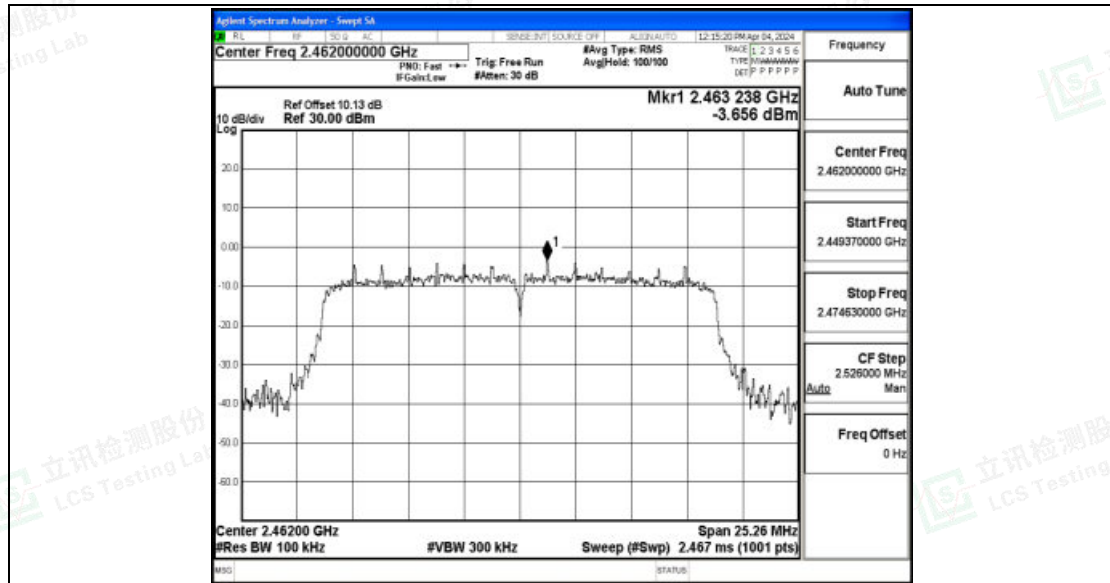


11N20SISO_Ant1_2437

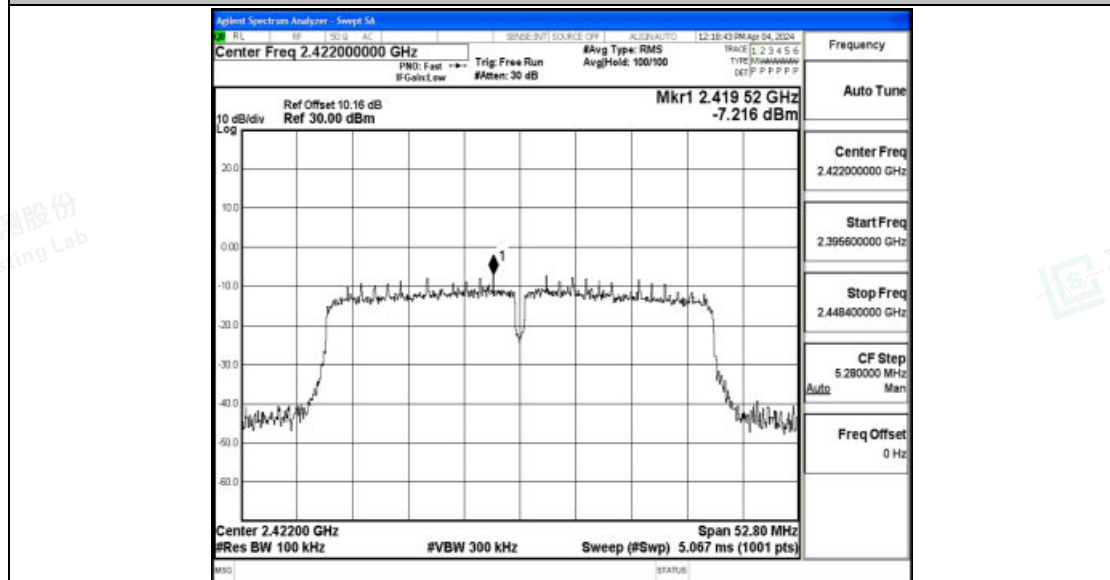


11N20SISO_Ant1_2462



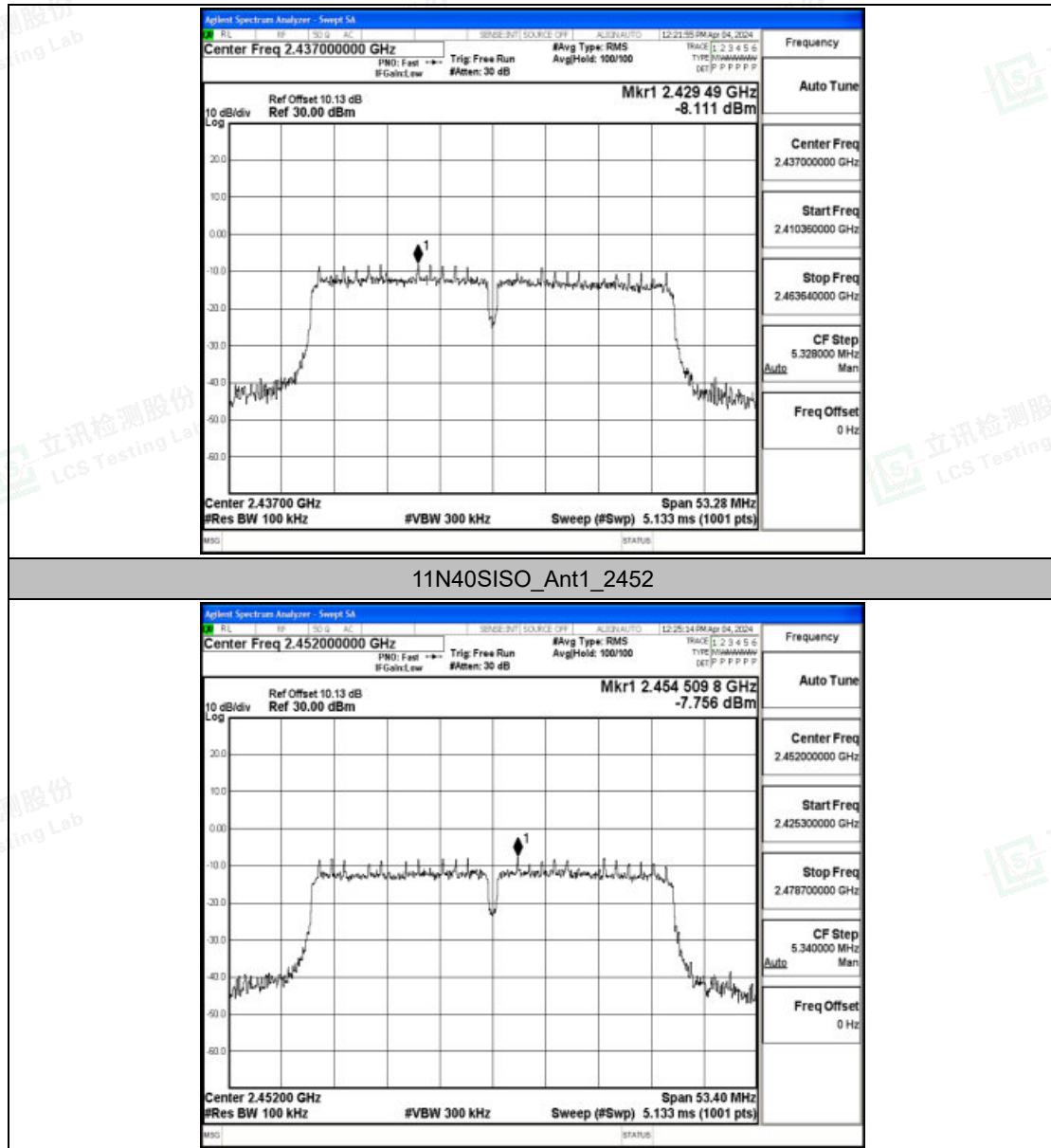


11N40SISO_Ant1_2422



11N40SISO_Ant1_2437







B.6 Duty Cycle

Test Result

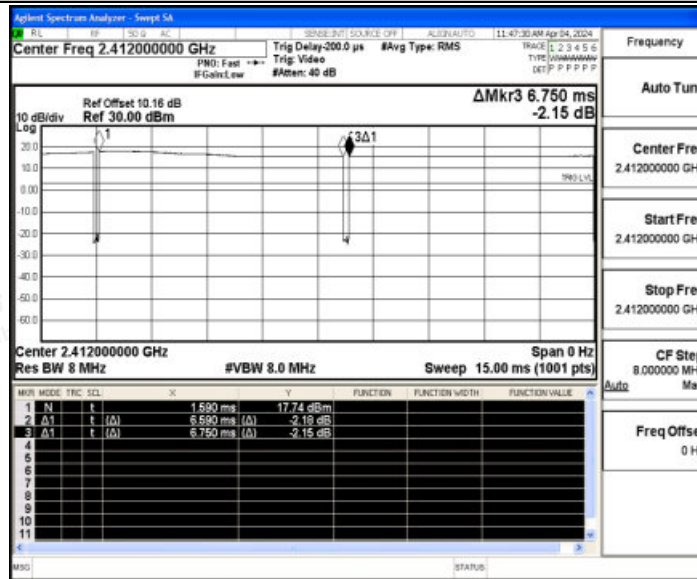
TestMode	Antenna	Freq(MHz)	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor	Verdict
11B	Ant1	2412	6.59	6.75	97.63	0.10	---
		2437	6.59	6.75	97.63	0.10	---
		2462	6.58	6.76	97.34	0.12	---
11G	Ant1	2412	1.09	1.26	86.51	0.63	---
		2437	1.09	1.26	86.51	0.63	---
		2462	1.09	1.28	85.16	0.70	---
11N20SISO	Ant1	2412	0.92	1.09	84.40	0.74	---
		2437	0.92	1.11	82.88	0.82	---
		2462	0.93	1.10	84.55	0.73	---
11N40SISO	Ant1	2422	0.47	0.73	64.38	1.91	---
		2437	0.46	0.74	62.16	2.06	---
		2452	0.47	0.71	66.20	1.79	---



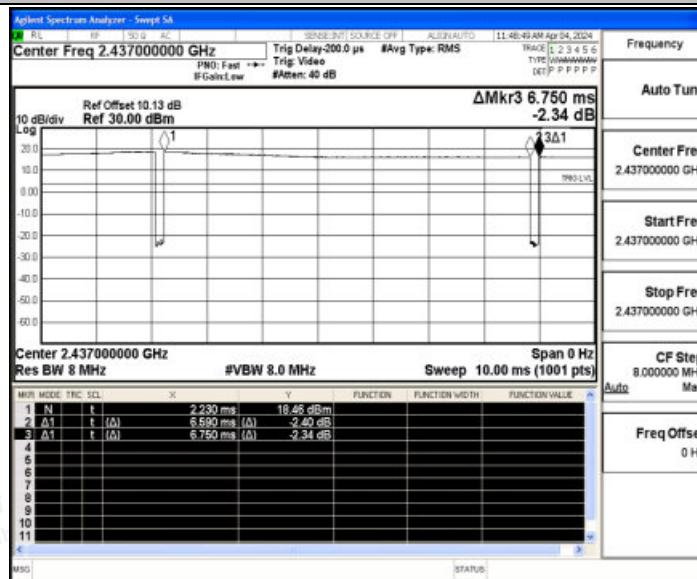


Test Graphs

11B_Ant1_2412

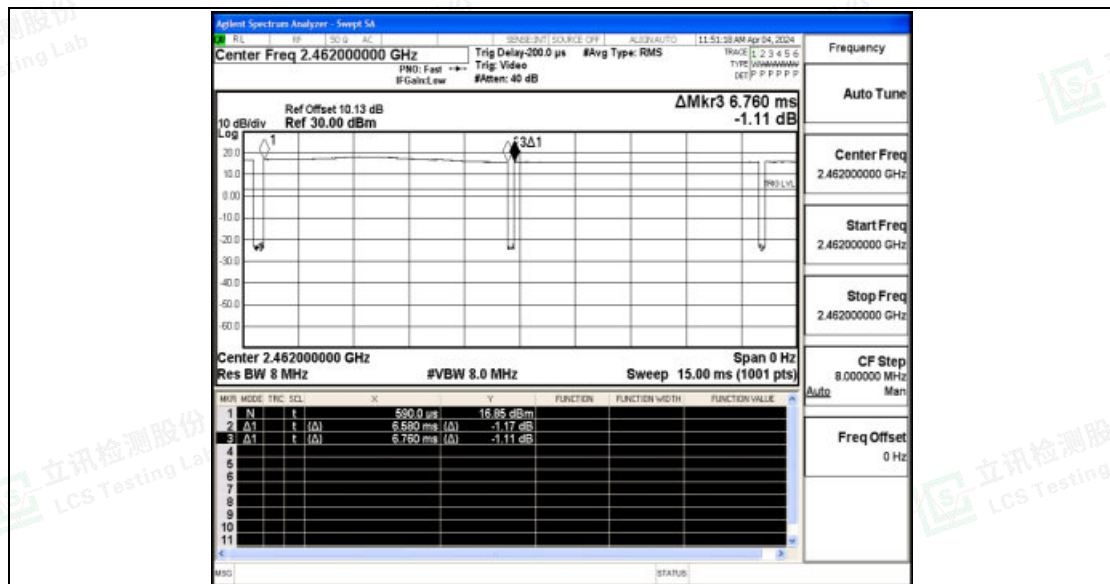


11B_Ant1_2437



11B_Ant1_2462



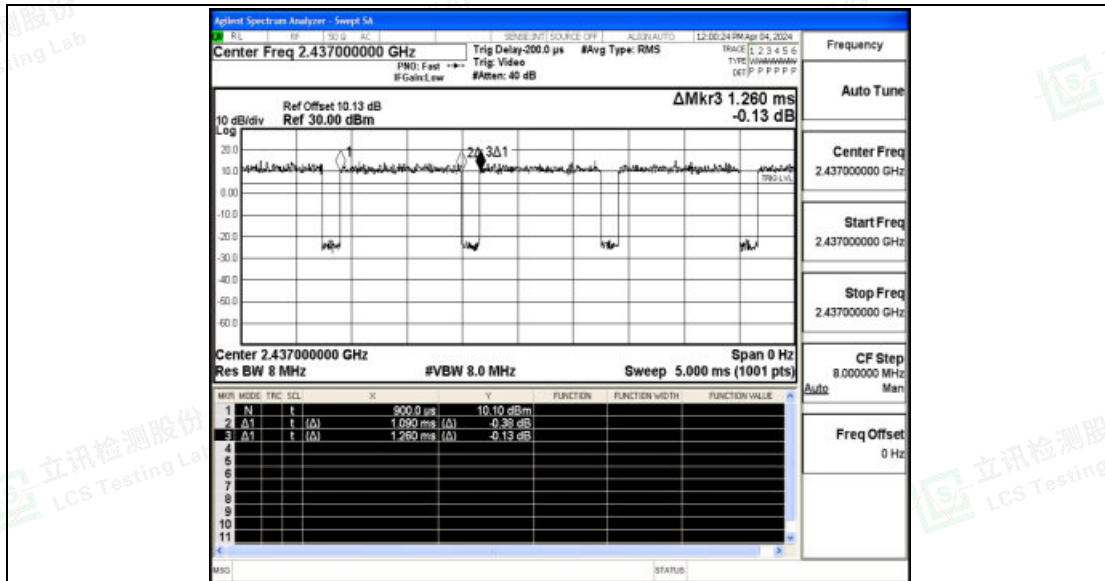


11G_Ant1_2412

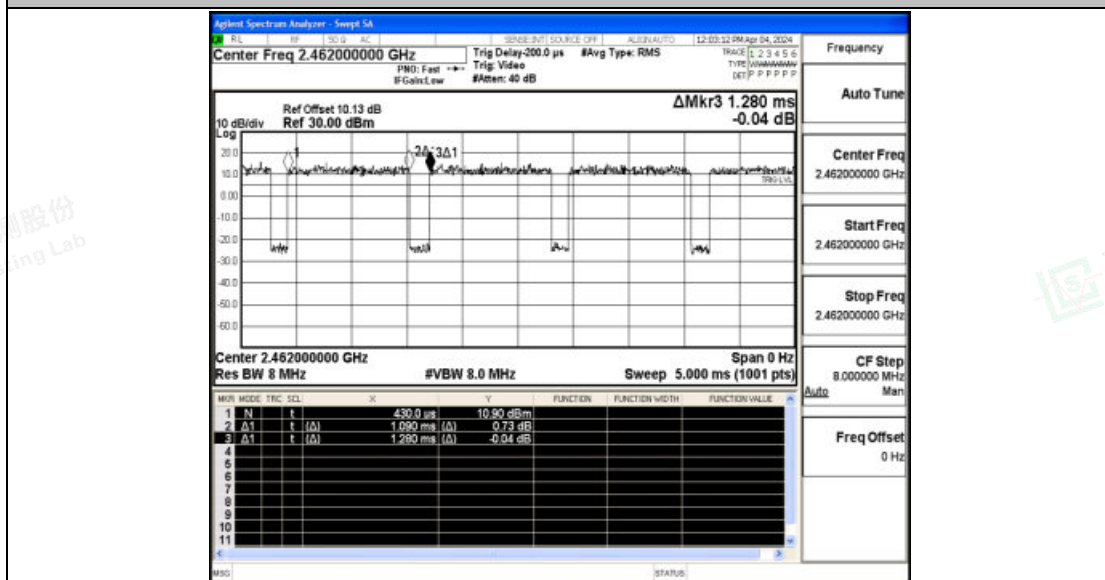


11G_Ant1_2437



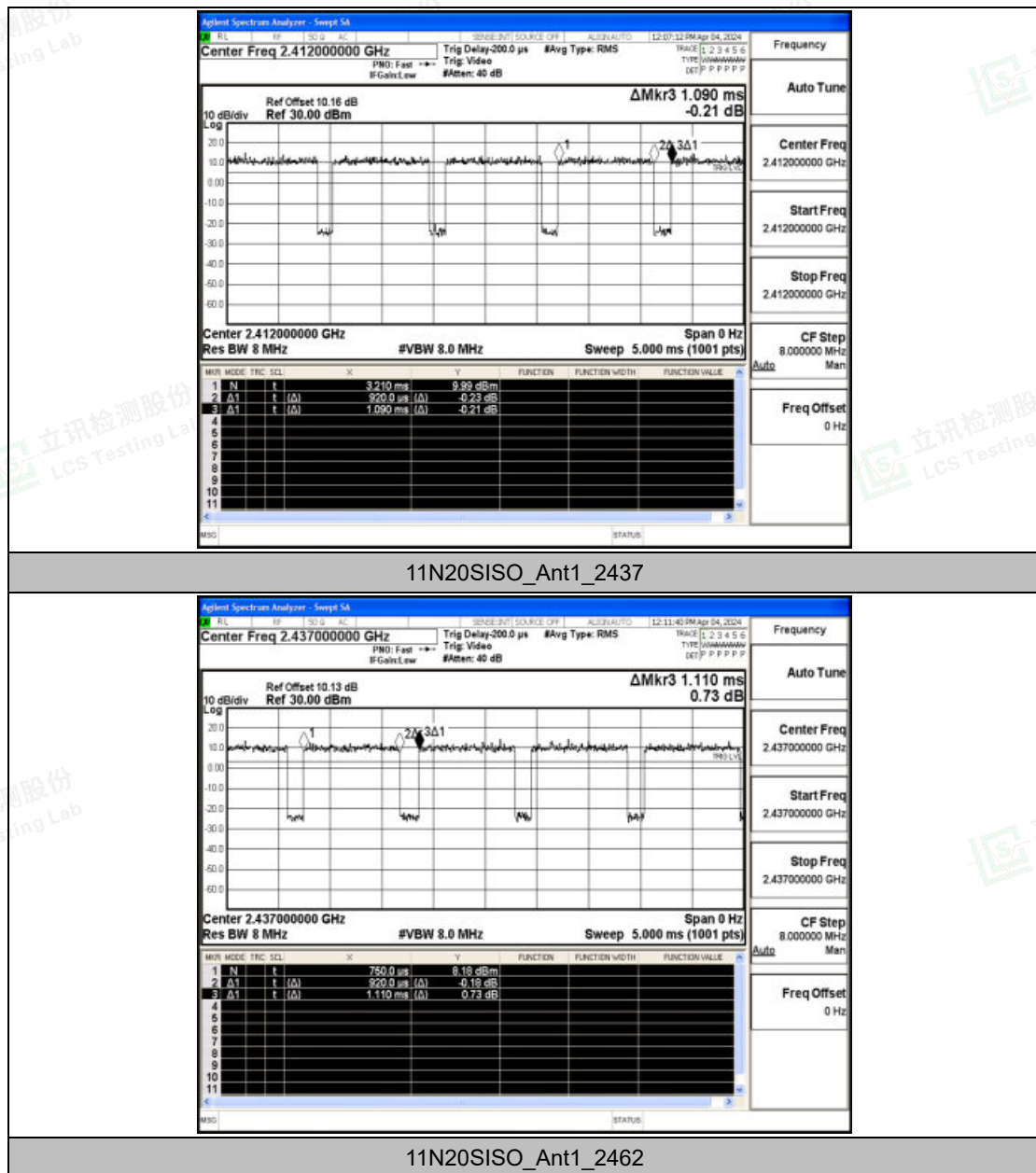


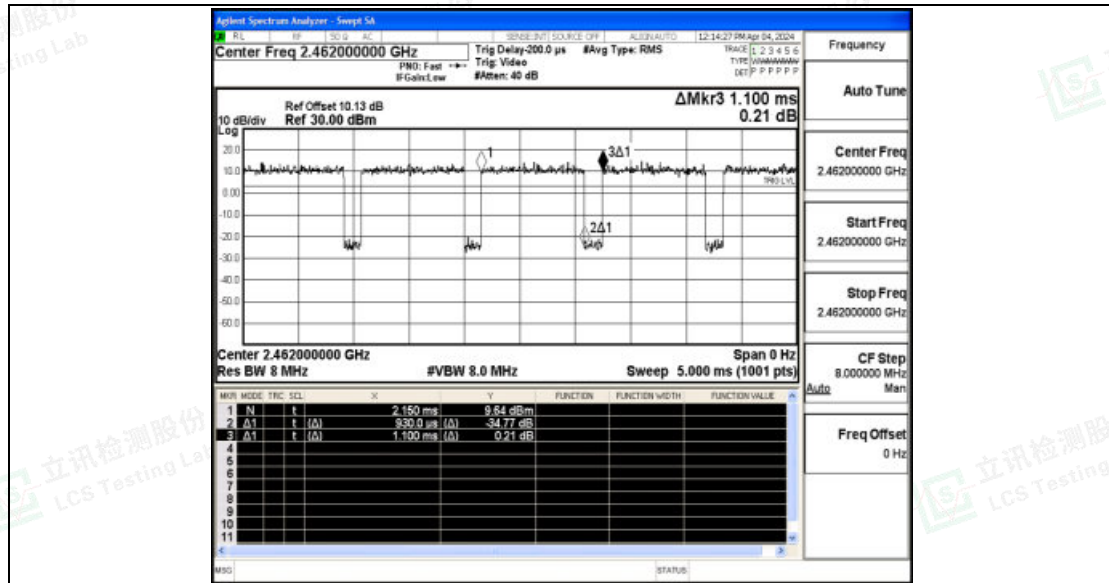
11G_Ant1_2462



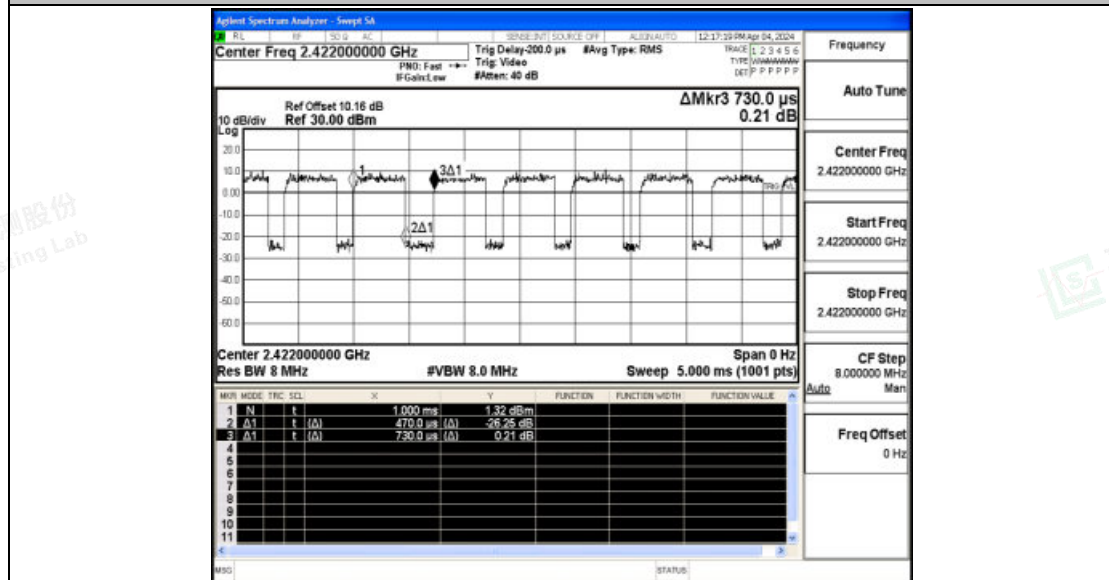
11N20SISO_Ant1_2412





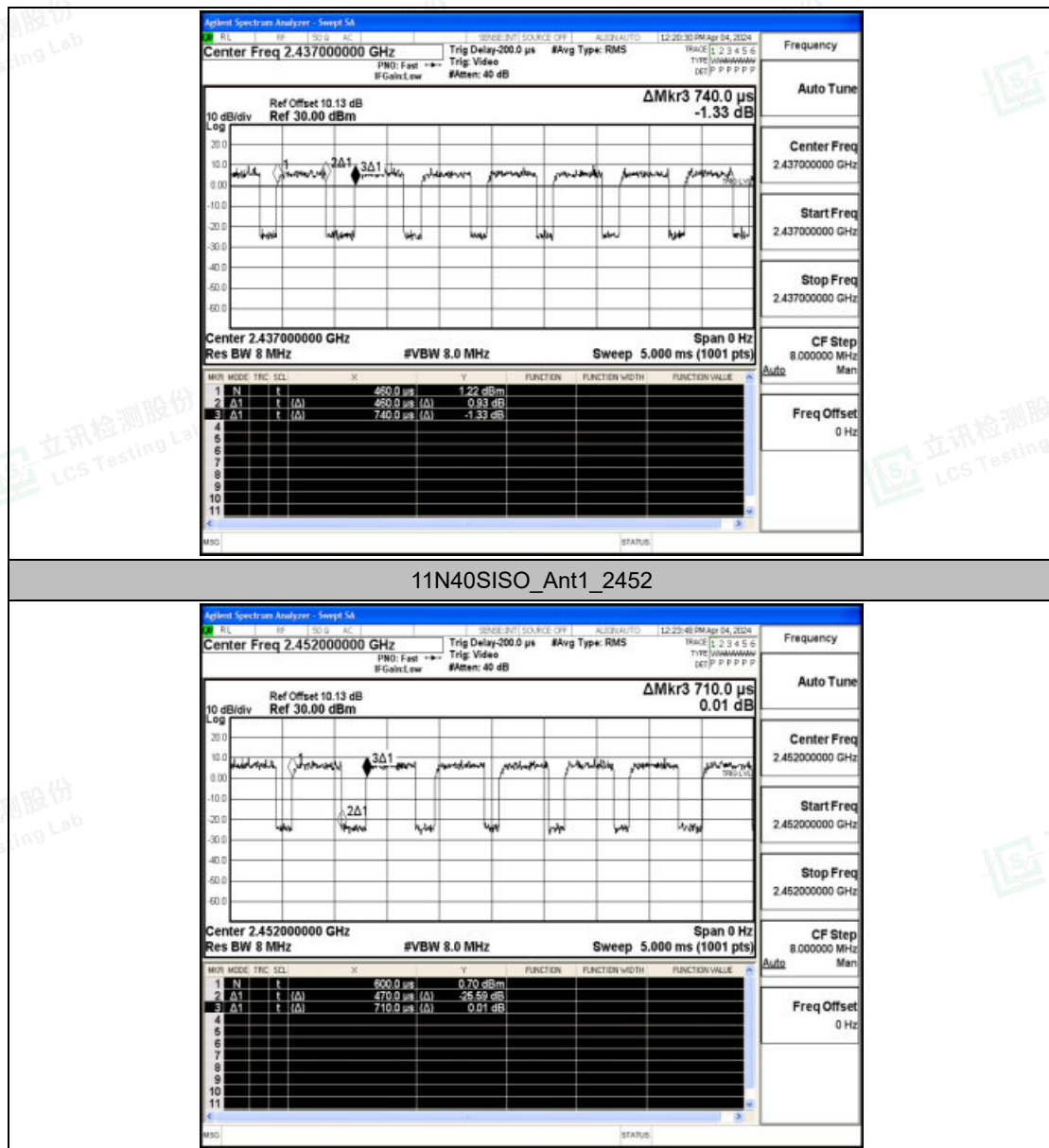


11N40SISO_Ant1_2422



11N40SISO_Ant1_2437







B.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	Ant1	Low	2412	AV	2310.000	-46.56	≤-41.20	48.64	≤54	PASS
				AV	2389.180	-44.52	≤-41.20	50.68	≤54	PASS
				AV	2390.000	-44.83	≤-41.20	50.37	≤54	PASS
				Peak	2310.000	-38.96	≤-21.20	56.24	≤74	PASS
				Peak	2389.830	-35.15	≤-21.20	60.05	≤74	PASS
				Peak	2390.000	-36.13	≤-21.20	59.07	≤74	PASS
		High	2462	AV	2483.500	-45.67	≤-41.20	49.53	≤54	PASS
				AV	2486.530	-42.77	≤-41.20	52.43	≤54	PASS
				AV	2500.000	-45.34	≤-41.20	49.86	≤54	PASS
				Peak	2483.500	-35.68	≤-21.20	59.52	≤74	PASS
				Peak	2487.300	-34.17	≤-21.20	61.03	≤74	PASS
				Peak	2500.000	-37.95	≤-21.20	57.25	≤74	PASS
11G	Ant1	Low	2412	AV	2310.000	-45.67	≤-41.20	49.53	≤54	PASS
				AV	2388.530	-44.47	≤-41.20	50.73	≤54	PASS
				AV	2390.000	-45.37	≤-41.20	49.83	≤54	PASS
				Peak	2310.000	-38.97	≤-21.20	56.23	≤74	PASS
				Peak	2389.960	-33.56	≤-21.20	61.64	≤74	PASS
				Peak	2390.000	-33.56	≤-21.20	61.64	≤74	PASS
		High	2462	AV	2483.500	-45.1	≤-41.20	50.10	≤54	PASS
				AV	2483.670	-43.97	≤-41.20	51.23	≤54	PASS
				AV	2500.000	-45.44	≤-41.20	49.76	≤54	PASS
				Peak	2483.500	-33.51	≤-21.20	61.69	≤74	PASS
				Peak	2484.550	-31.92	≤-21.20	63.28	≤74	PASS
				Peak	2500.000	-37.39	≤-21.20	57.81	≤74	PASS
11N20SI SO	Ant1	Low	2412	AV	2310.000	-46.11	≤-41.20	49.09	≤54	PASS
				AV	2383.070	-44.63	≤-41.20	50.57	≤54	PASS
				AV	2390.000	-45.04	≤-41.20	50.16	≤54	PASS
				Peak	2310.000	-39.09	≤-21.20	56.11	≤74	PASS
				Peak	2389.830	-33.53	≤-21.20	61.67	≤74	PASS
				Peak	2390.000	-33.54	≤-21.20	61.66	≤74	PASS
		High	2462	AV	2483.500	-44.36	≤-41.20	50.84	≤54	PASS
				AV	2484.000	-43.67	≤-41.20	51.53	≤54	PASS
				AV	2500.000	-45.35	≤-41.20	49.85	≤54	PASS
				Peak	2483.500	-31.41	≤-21.20	63.79	≤74	PASS
				Peak	2484.000	-29.34	≤-21.20	65.86	≤74	PASS





11N40SI SO	Ant1	Low	2422	Peak	2500.000	-36.94	≤ -21.20	58.26	≤ 74	PASS
				AV	2310.000	-44.69	≤ -41.20	50.51	≤ 54	PASS
				AV	2389.440	-41.57	≤ -41.20	53.63	≤ 54	PASS
				AV	2390.000	-43.41	≤ -41.20	51.79	≤ 54	PASS
				Peak	2310.000	-36.92	≤ -21.20	58.28	≤ 74	PASS
				Peak	2387.230	-28.44	≤ -21.20	66.76	≤ 74	PASS
		High	2452	Peak	2390.000	-33.09	≤ -21.20	62.11	≤ 74	PASS
				AV	2483.500	-42.16	≤ -41.20	53.04	≤ 54	PASS
				AV	2484.880	-41.76	≤ -41.20	53.44	≤ 54	PASS
				AV	2500.000	-44.5	≤ -41.20	50.70	≤ 54	PASS
				Peak	2483.500	-33.44	≤ -21.20	61.76	≤ 74	PASS
				Peak	2483.780	-30.53	≤ -21.20	64.67	≤ 74	PASS
				Peak	2500.000	-37.33	≤ -21.20	57.87	≤ 74	PASS

Note:

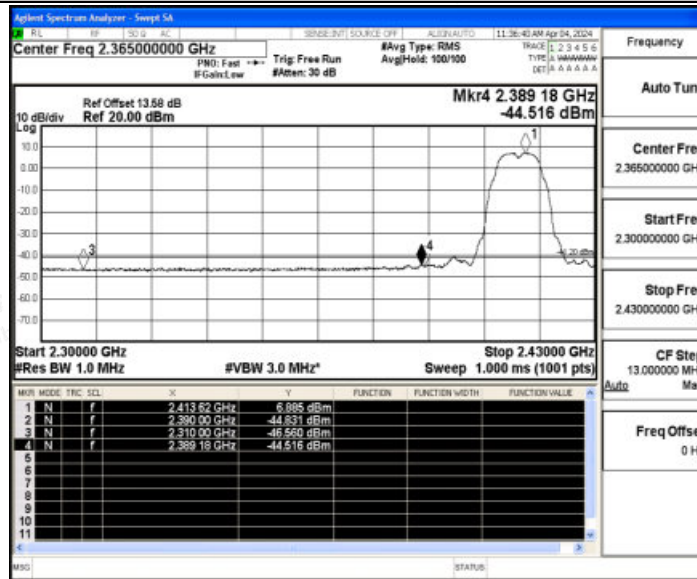
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



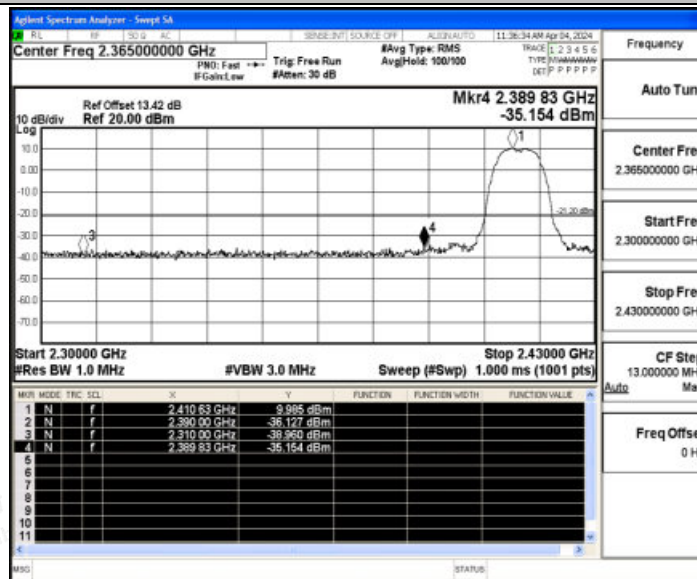


Test Graphs

11B_Ant1_Low_2412_AV

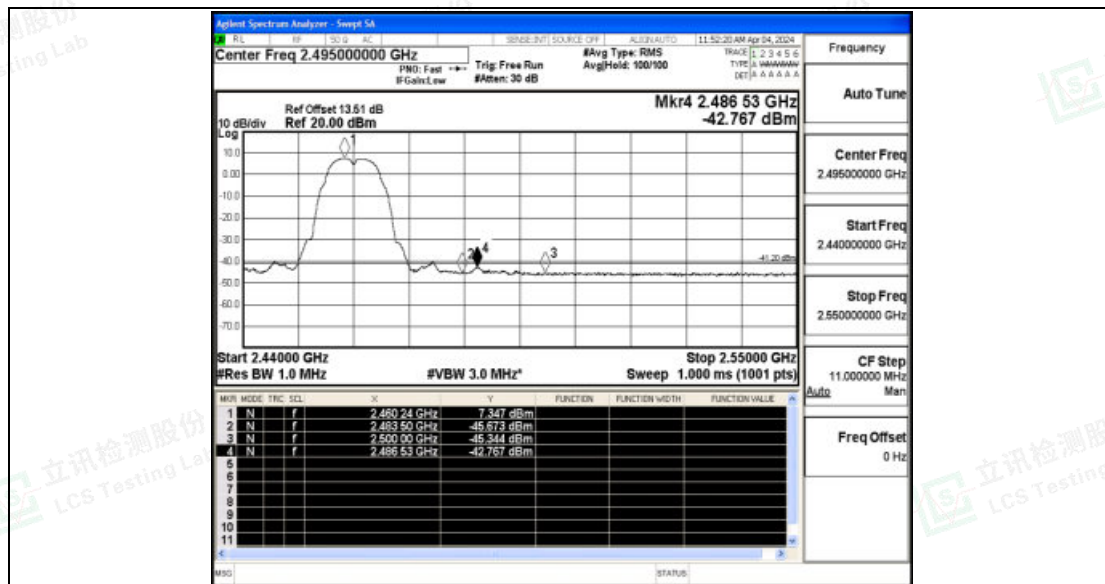


11B_Ant1_Low_2412_Peak

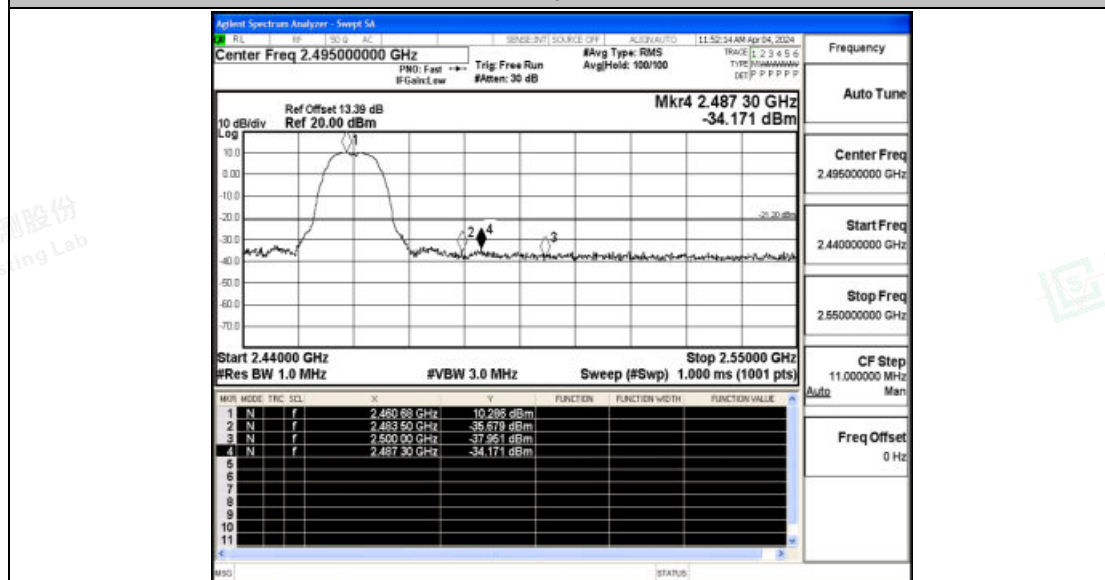


11B_Ant1_High_2462_AV



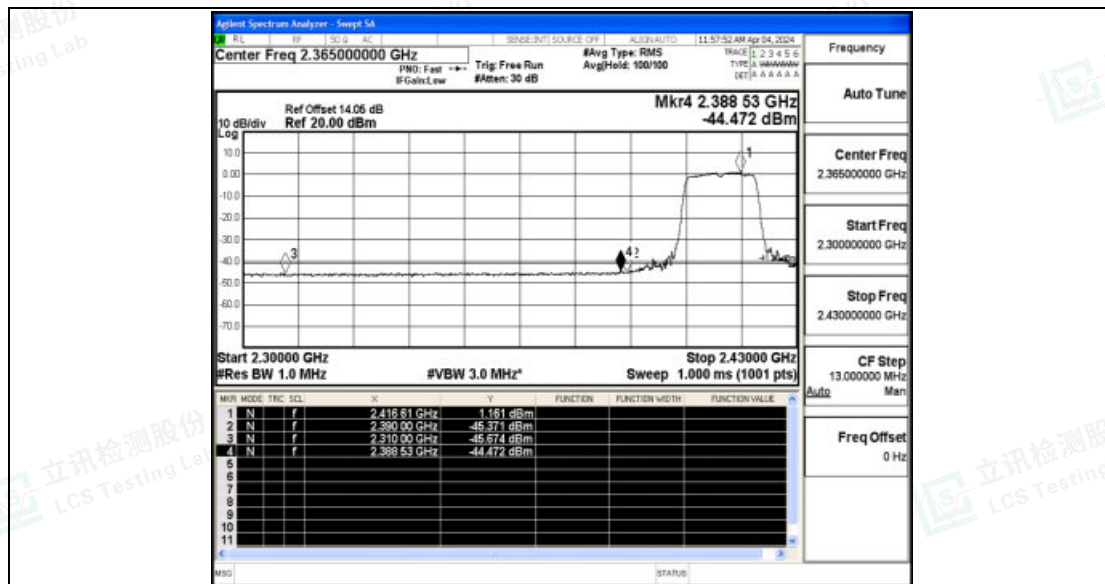


11B_Ant1_High_2462_Peak

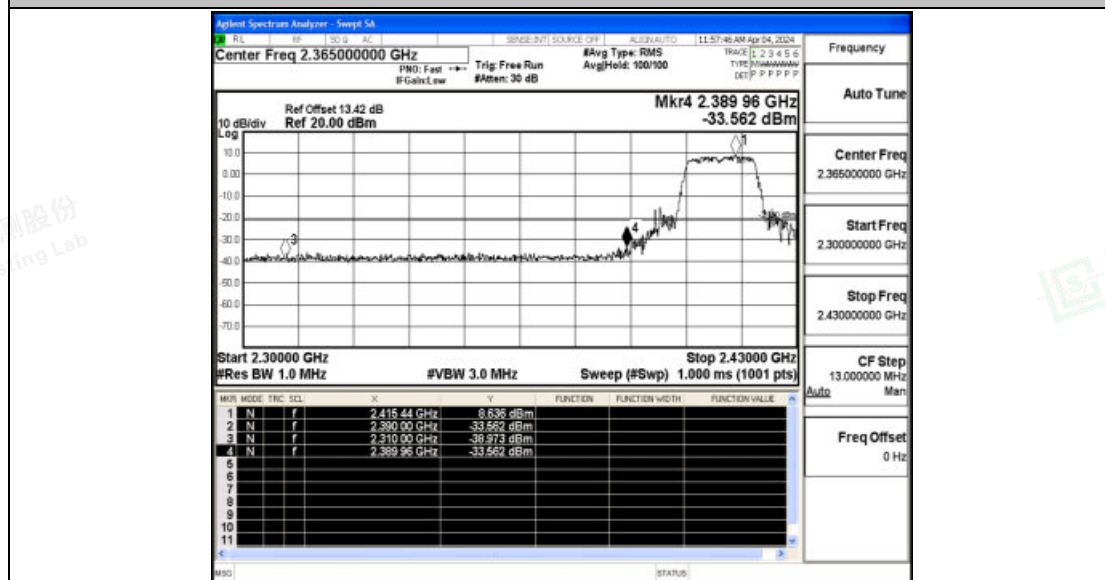


11G_Ant1_Low_2412_AV



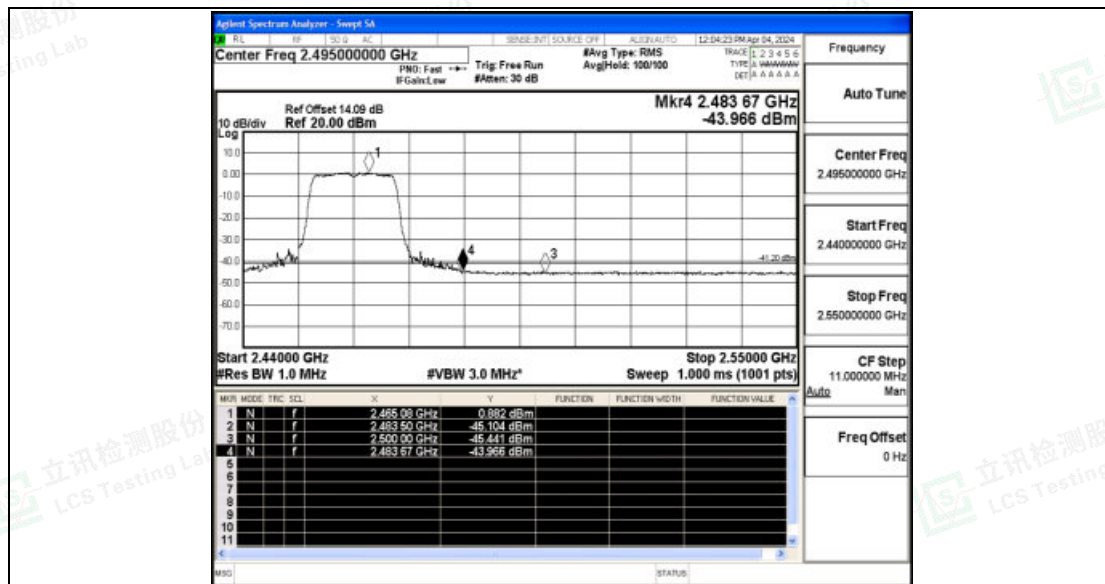


11G_Ant1_Low_2412_Peak

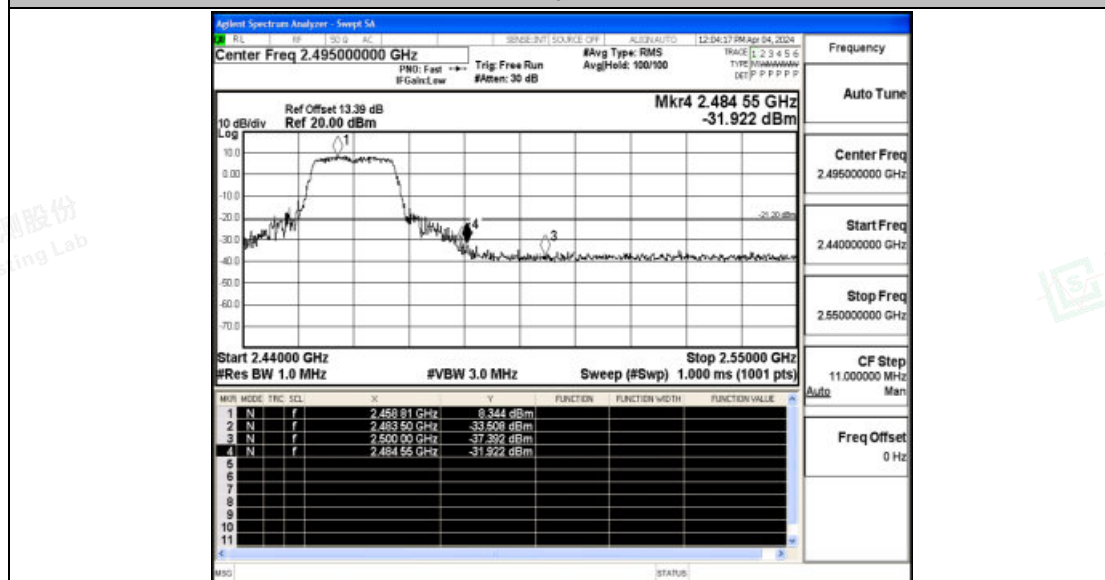


11G_Ant1_High_2462_AV



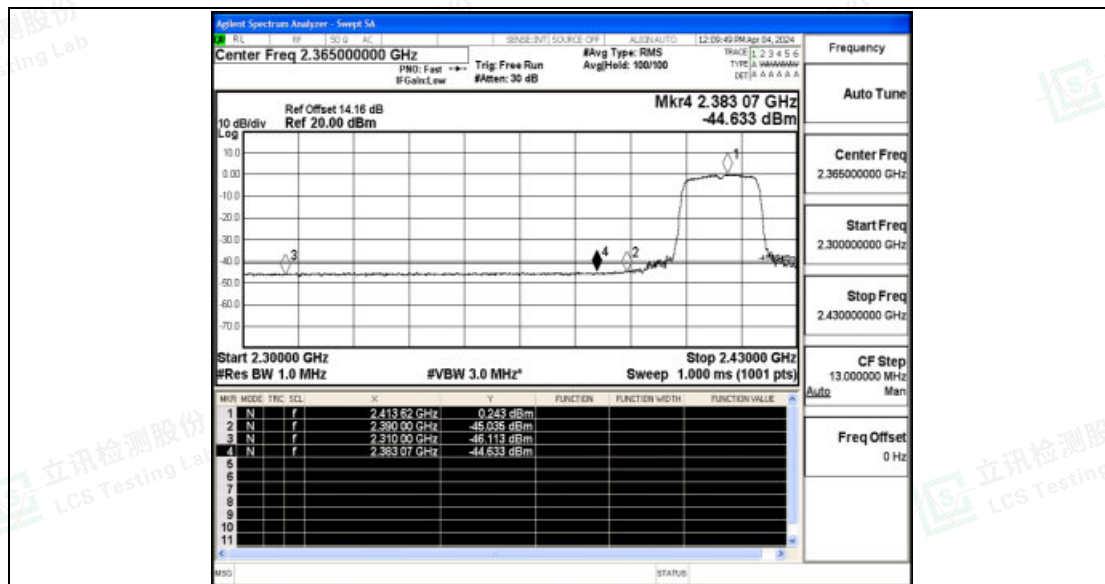


11G_Ant1_High_2462_Peak

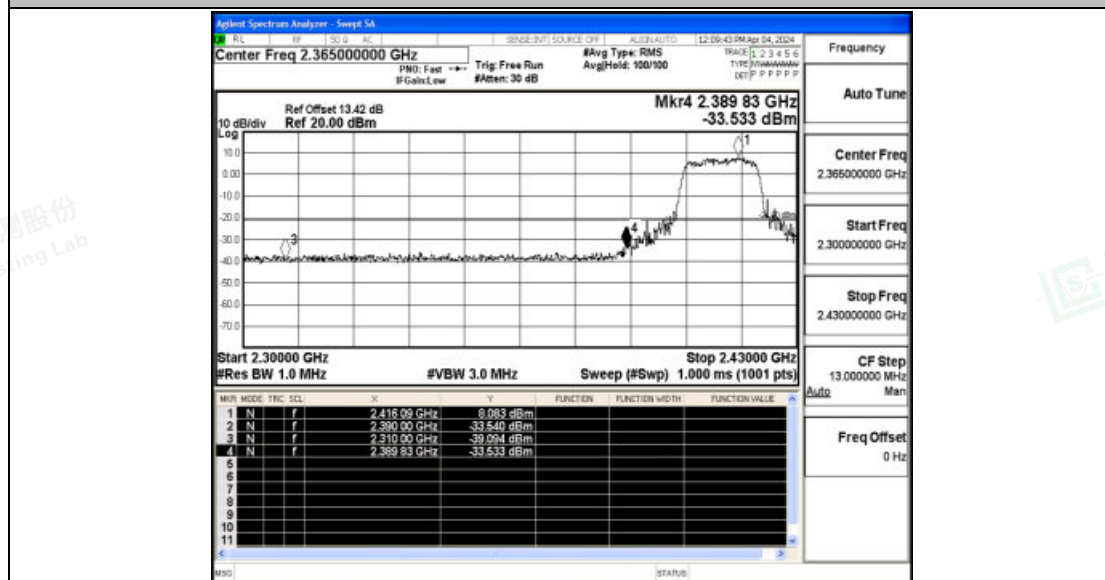


11N20SISO_Ant1_Low_2412_AV



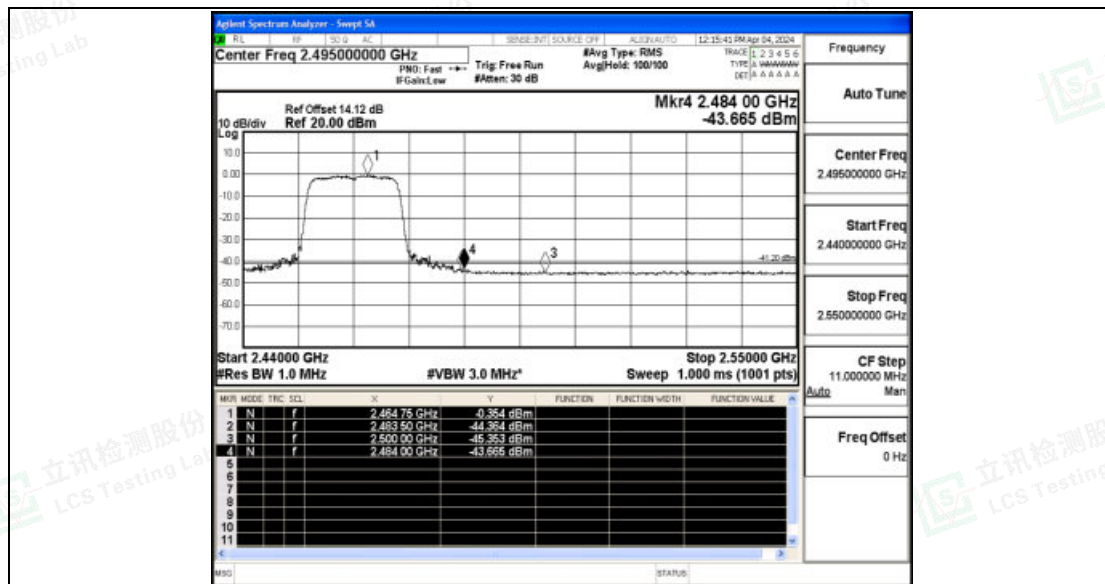


11N20SISO_Ant1_Low_2412_Peak

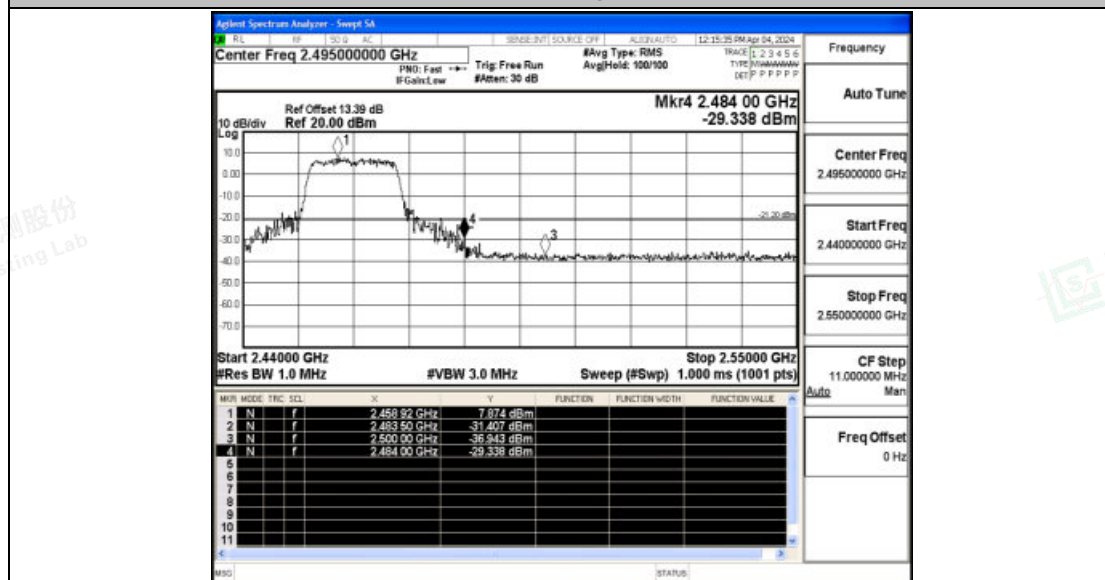


11N20SISO_Ant1_High_2462_AV



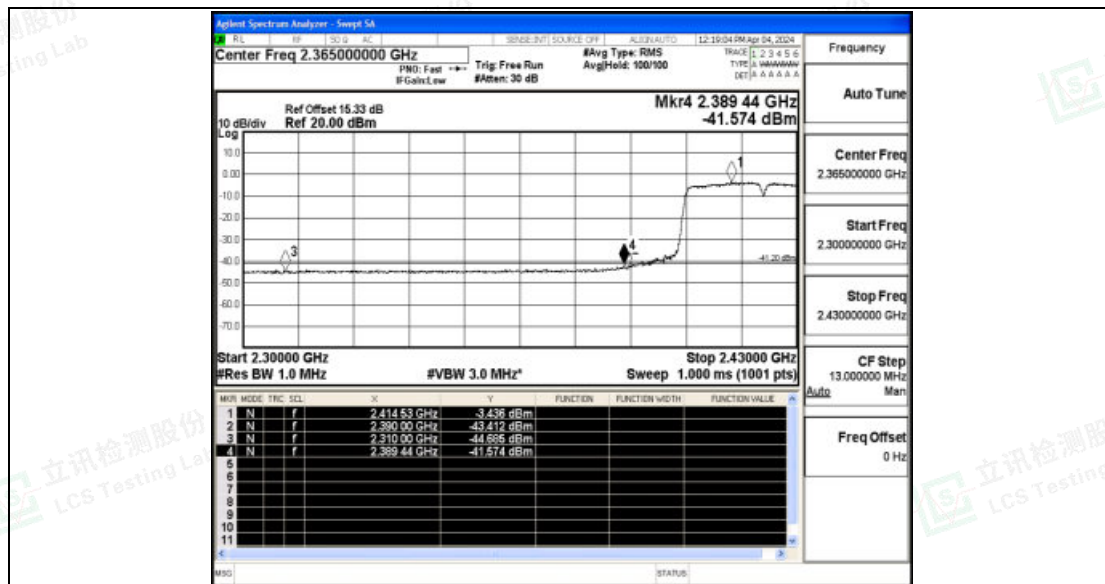


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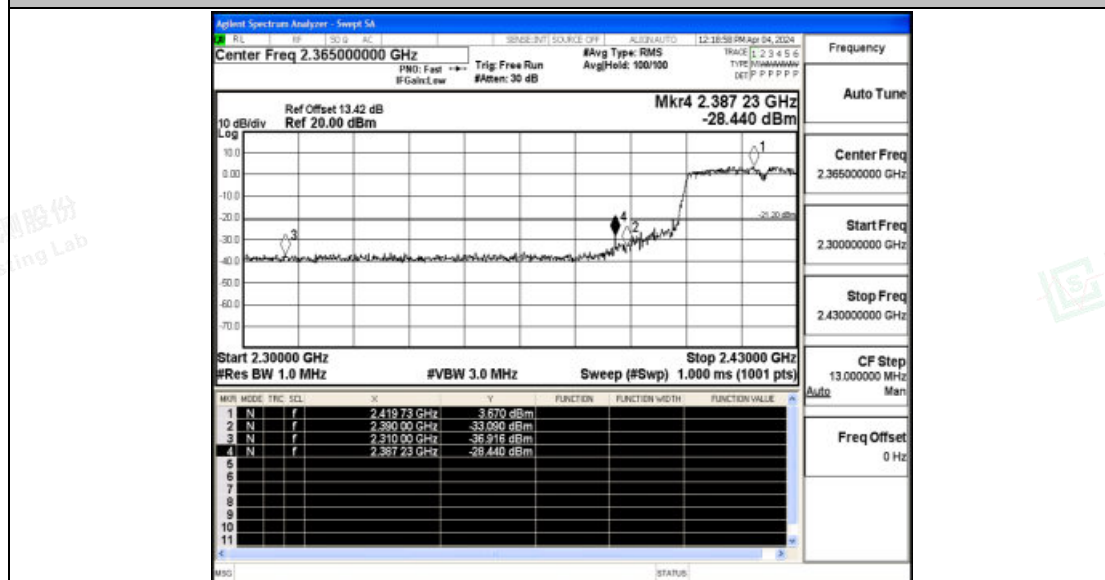


11N40SISO_Ant1_Low_2422_AV





11N40SISO_Ant1_Low_2422_Peak



11N40SISO_Ant1_High_2452_AV



