



Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Wireless Adapter

Test Model: CF-WU818N V2

Environmental Conditions

Temperature:	23.8° C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Nick Peng
	<i>Nick Peng</i>
Supervised by:	Taylor Hu
	<i>Taylor Hu</i>





A.1 DTS Bandwidth

Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.040	2407.960	2416.000	0.5	PASS
		2437	8.520	2433.000	2441.520	0.5	PASS
		2462	8.000	2458.000	2466.000	0.5	PASS
11G	Ant1	2412	15.120	2404.440	2419.560	0.5	PASS
		2437	15.080	2429.480	2444.560	0.5	PASS
		2462	15.640	2454.120	2469.760	0.5	PASS
11N20SISO	Ant1	2412	16.320	2404.440	2420.760	0.5	PASS
		2437	15.320	2429.440	2444.760	0.5	PASS
		2462	15.000	2454.520	2469.520	0.5	PASS
11N40SISO	Ant1	2422	35.040	2404.480	2439.520	0.5	PASS
		2437	35.040	2419.480	2454.520	0.5	PASS
		2452	33.840	2435.680	2469.520	0.5	PASS



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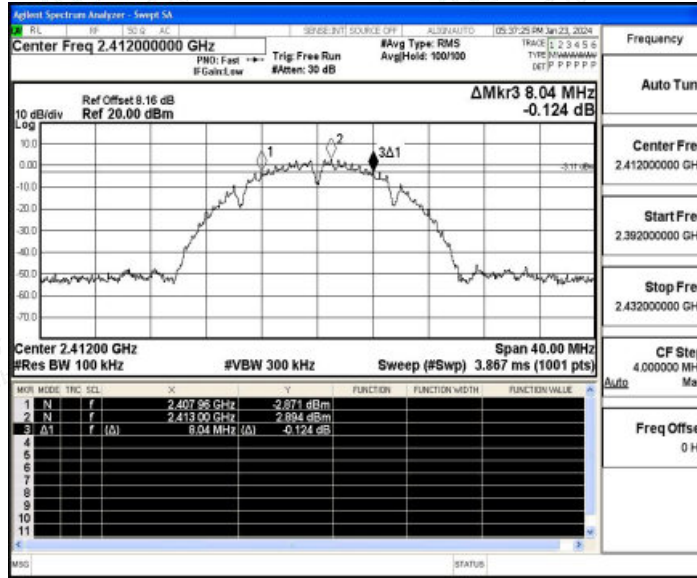
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

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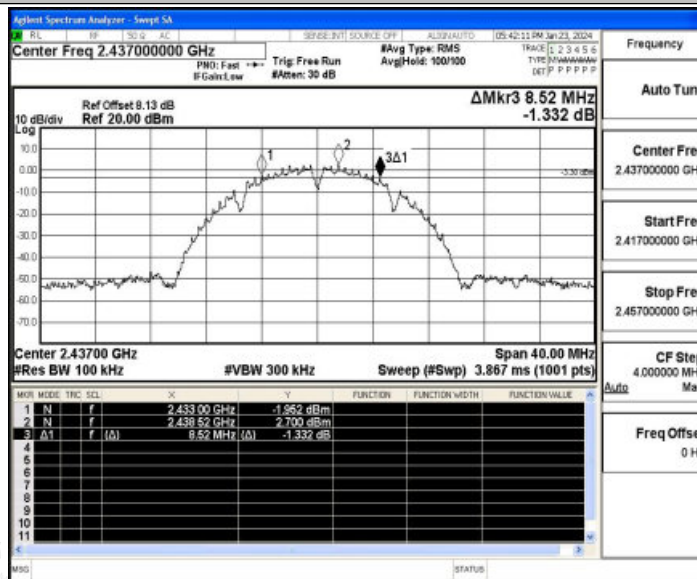


Test Graphs

11B_Ant1_2412

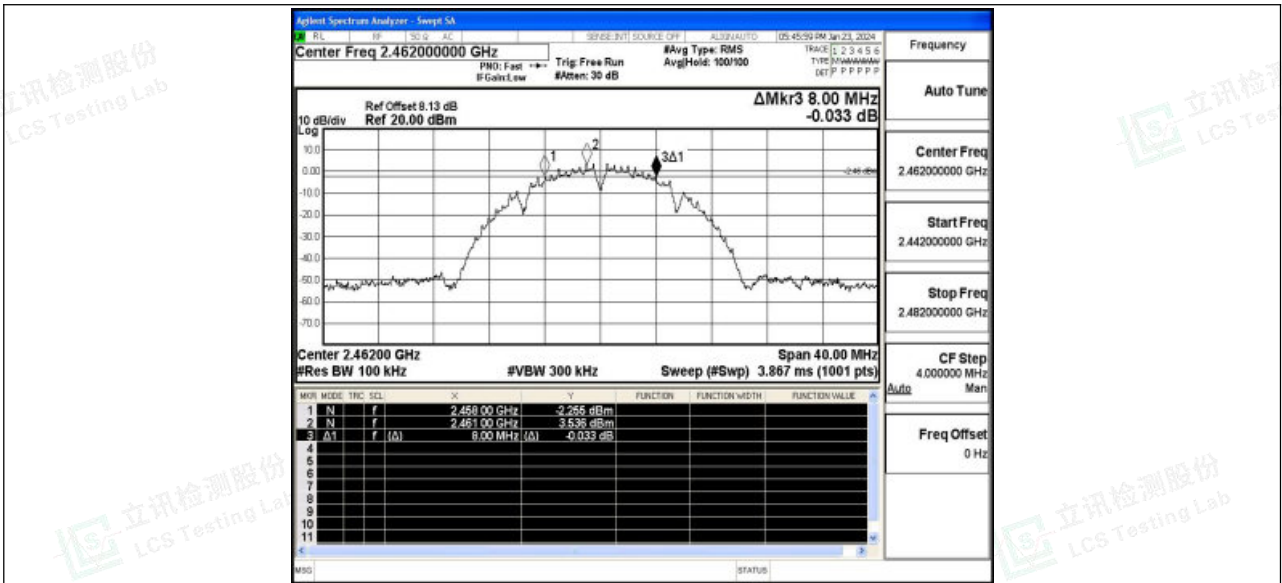


11B_Ant1_2437

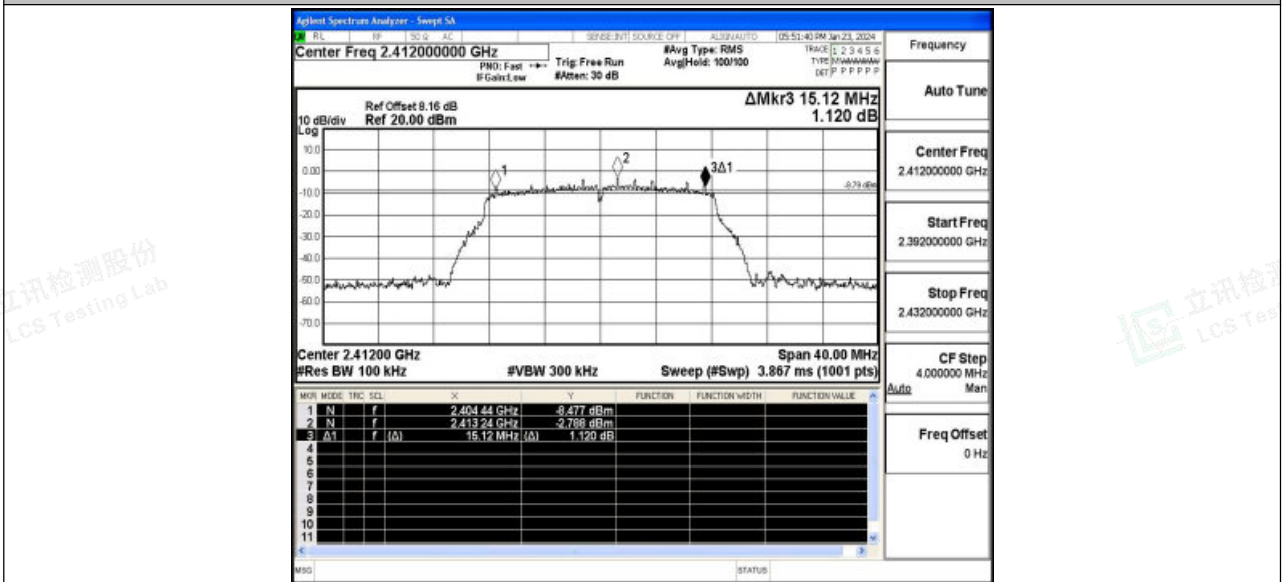


11B_Ant1_2462

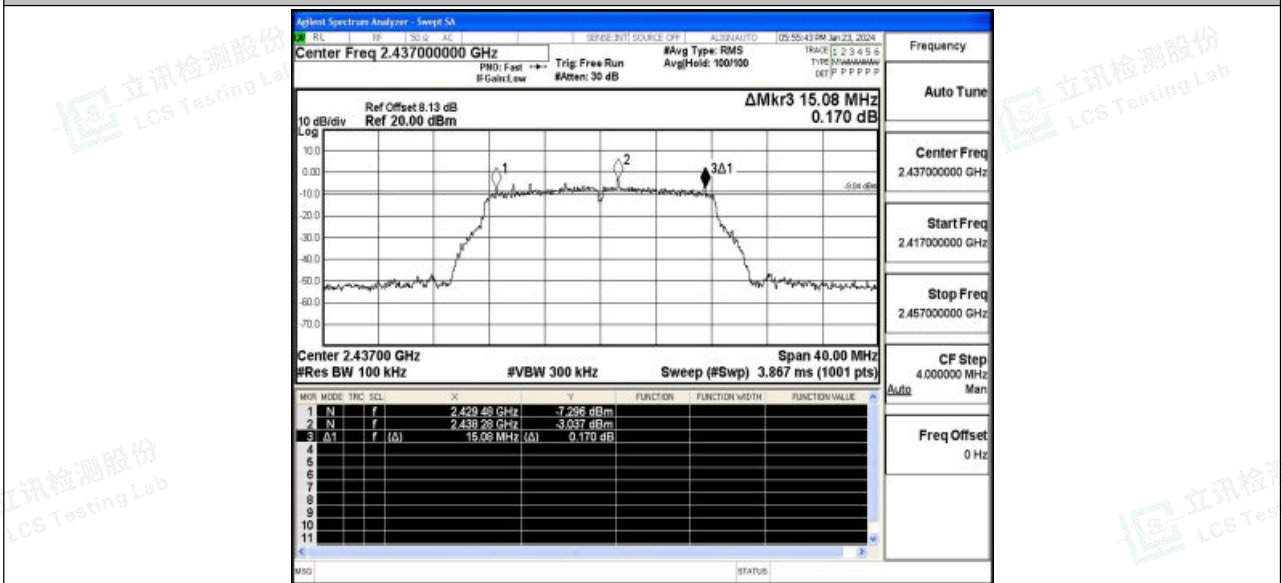




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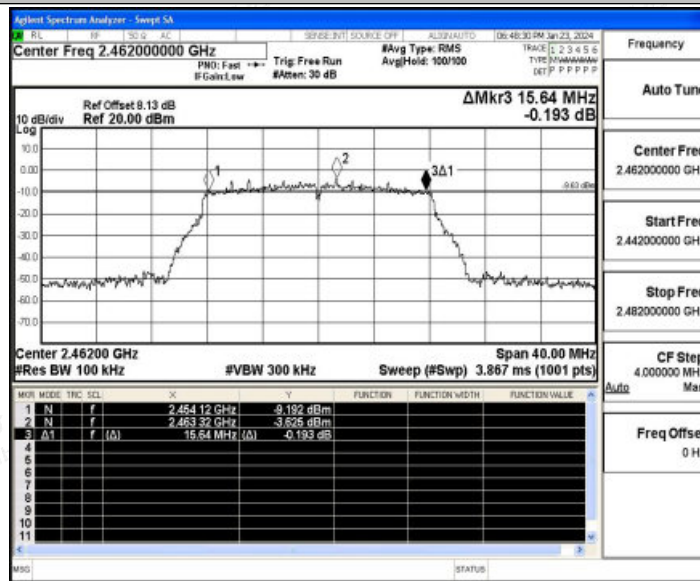


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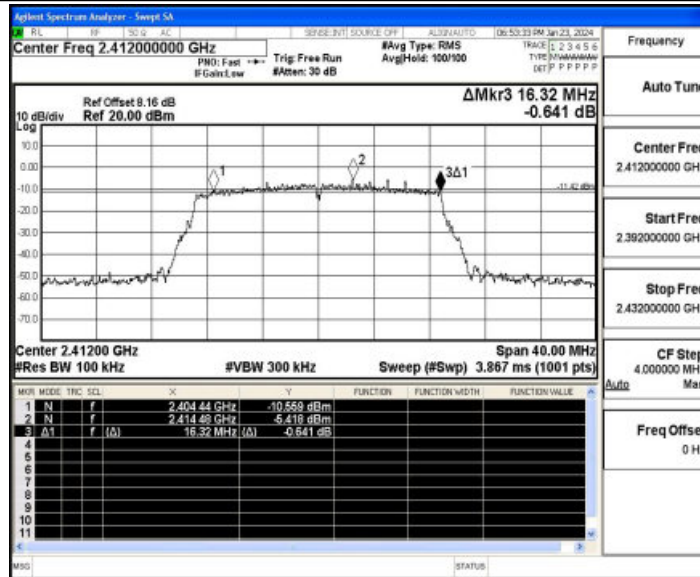




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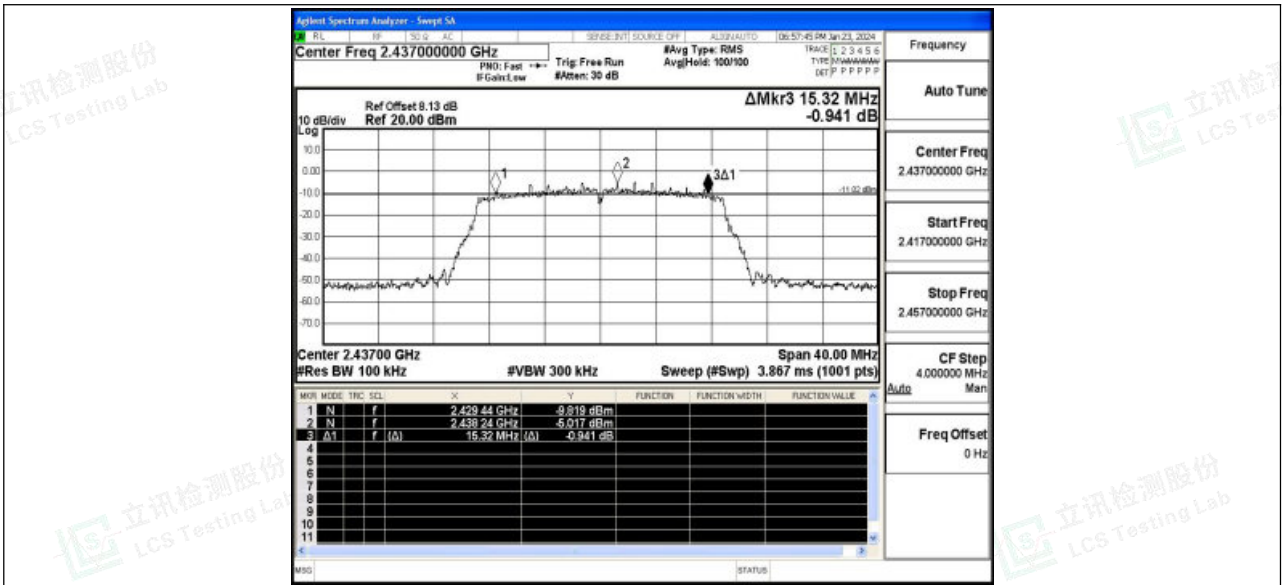


11N20SISO_Ant1_2412

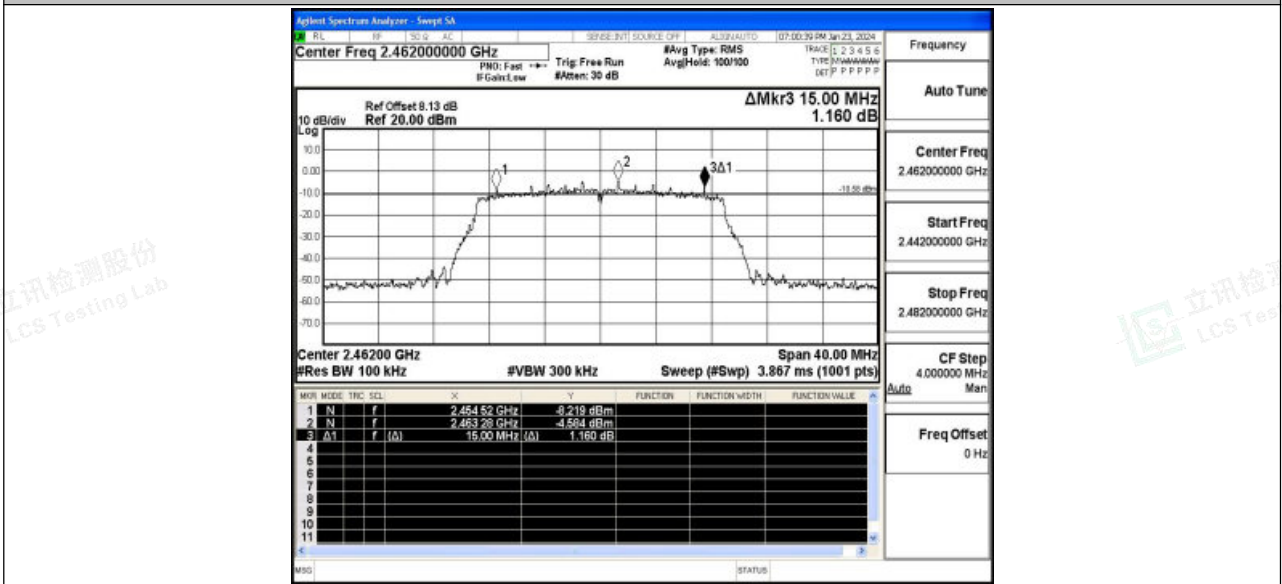


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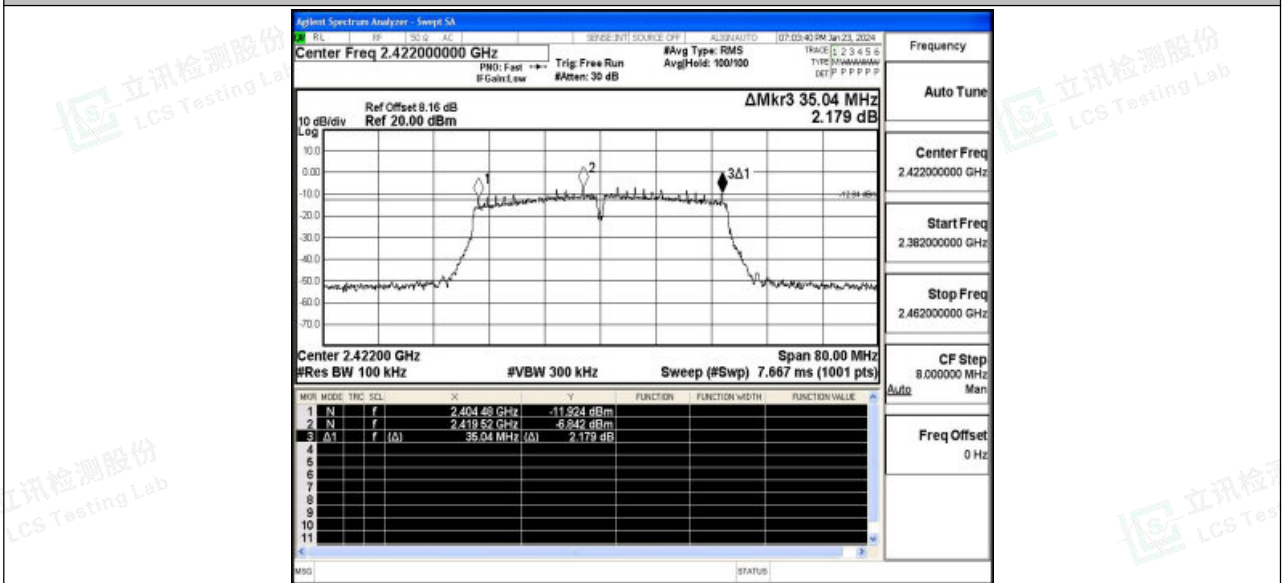




11N20SISO_Ant1_2462

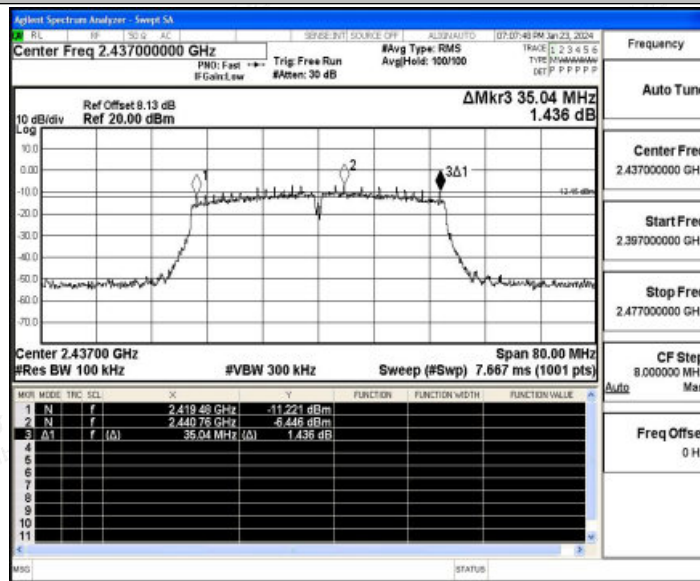


11N40SISO_Ant1_2422

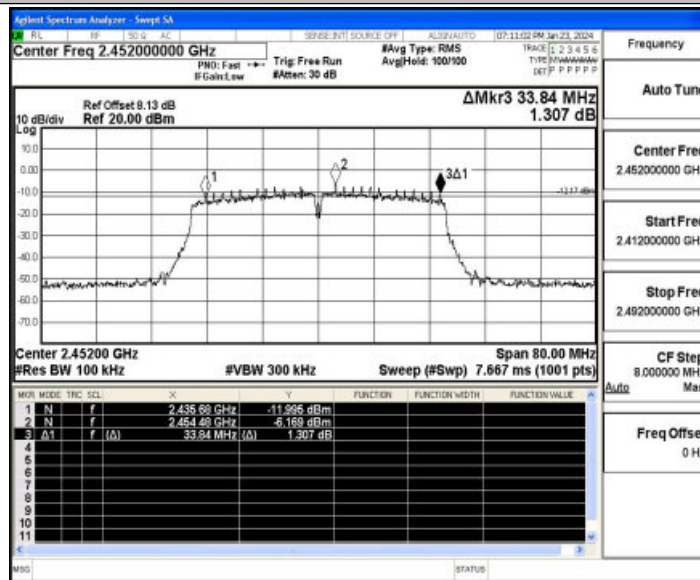




11N40SISO_Ant1_2437



11N40SISO_Ant1_2452





A.2 Maximum conducted output power

Test Result Peak

TestMode	Antenna	Freq(MHz)	Peak Power[dBm]	Conducted Limit[dBm]	Verdict
11B	Ant1	2412	14.23	≤30.00	PASS
		2437	14.29	≤30.00	PASS
		2462	14.54	≤30.00	PASS
11G	Ant1	2412	13.76	≤30.00	PASS
		2437	13.45	≤30.00	PASS
		2462	13.68	≤30.00	PASS
11N20SISO	Ant1	2412	12.52	≤30.00	PASS
		2437	12.38	≤30.00	PASS
		2462	12.39	≤30.00	PASS
11N40SISO	Ant1	2422	12.80	≤30.00	PASS
		2437	12.91	≤30.00	PASS
		2452	12.83	≤30.00	PASS



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A.3 Maximum power spectral density

Test Result

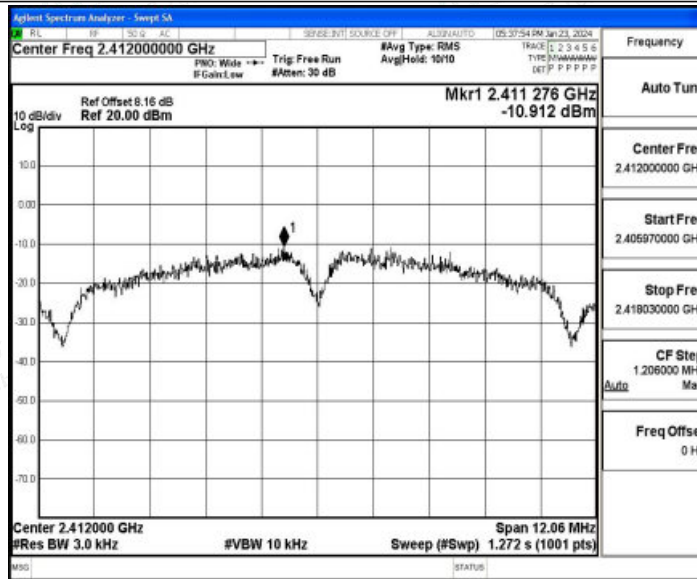
TestMode	Antenna	Freq(MHz)	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant1	2412	-10.91	≤8.00	PASS
		2437	-11.23	≤8.00	PASS
		2462	-11.13	≤8.00	PASS
11G	Ant1	2412	-17.16	≤8.00	PASS
		2437	-17.26	≤8.00	PASS
		2462	-16.90	≤8.00	PASS
11N20SISO	Ant1	2412	-17.78	≤8.00	PASS
		2437	-16.27	≤8.00	PASS
		2462	-17.07	≤8.00	PASS
11N40SISO	Ant1	2422	-20.46	≤8.00	PASS
		2437	-18.01	≤8.00	PASS
		2452	-17.65	≤8.00	PASS



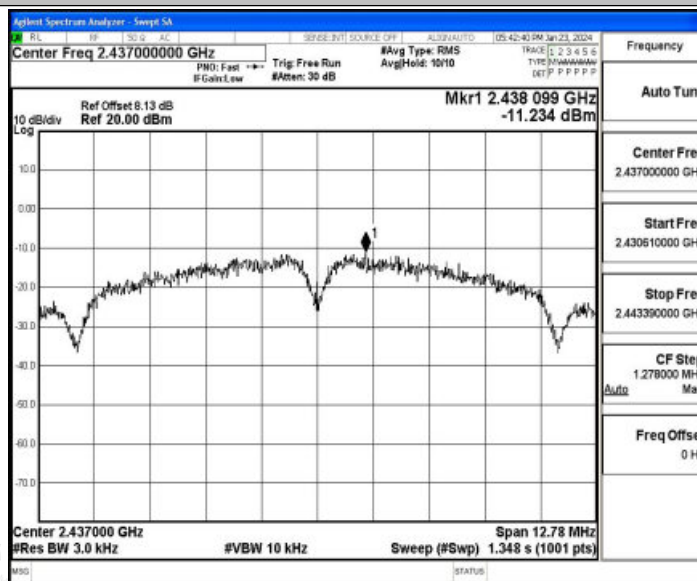


Test Graphs

11B_Ant1_2412

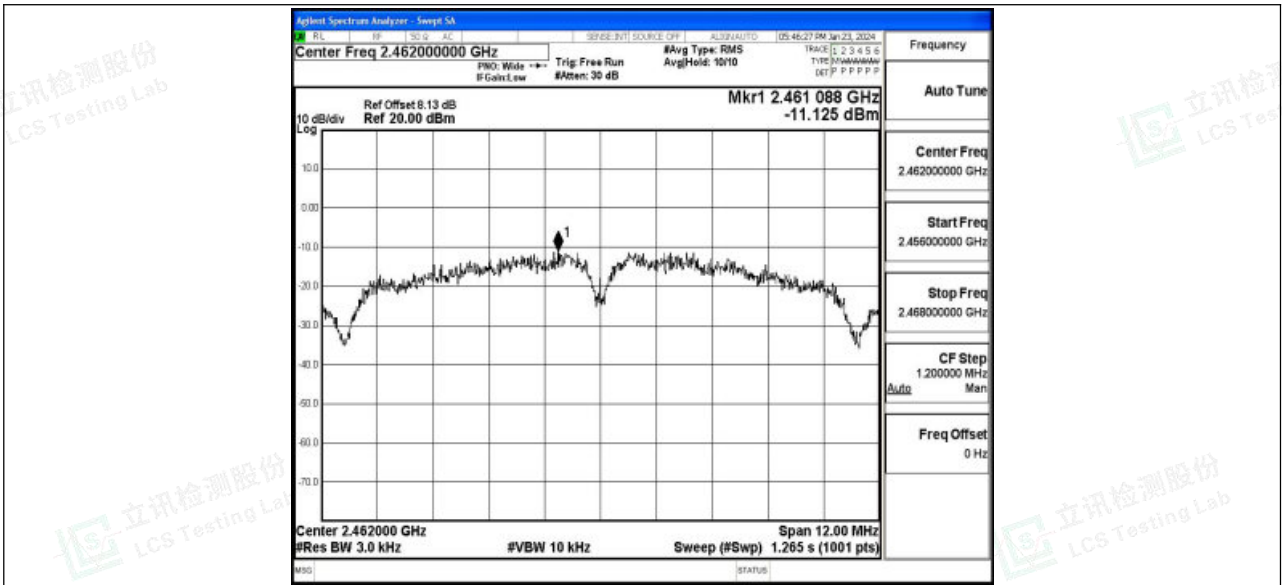


11B_Ant1_2437

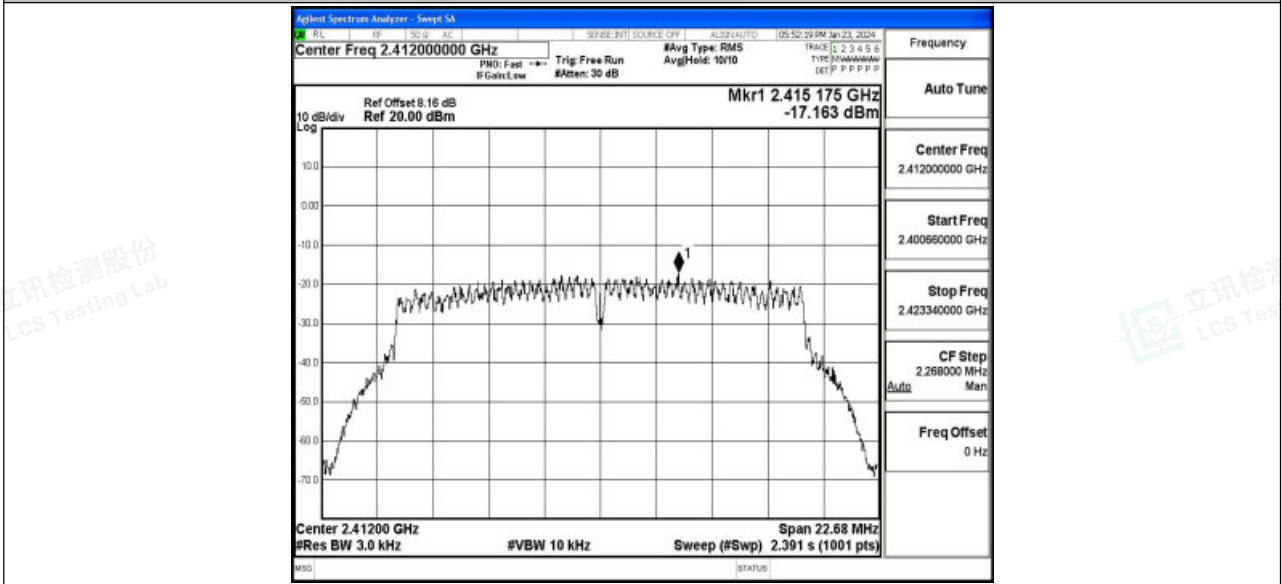


11B_Ant1_2462

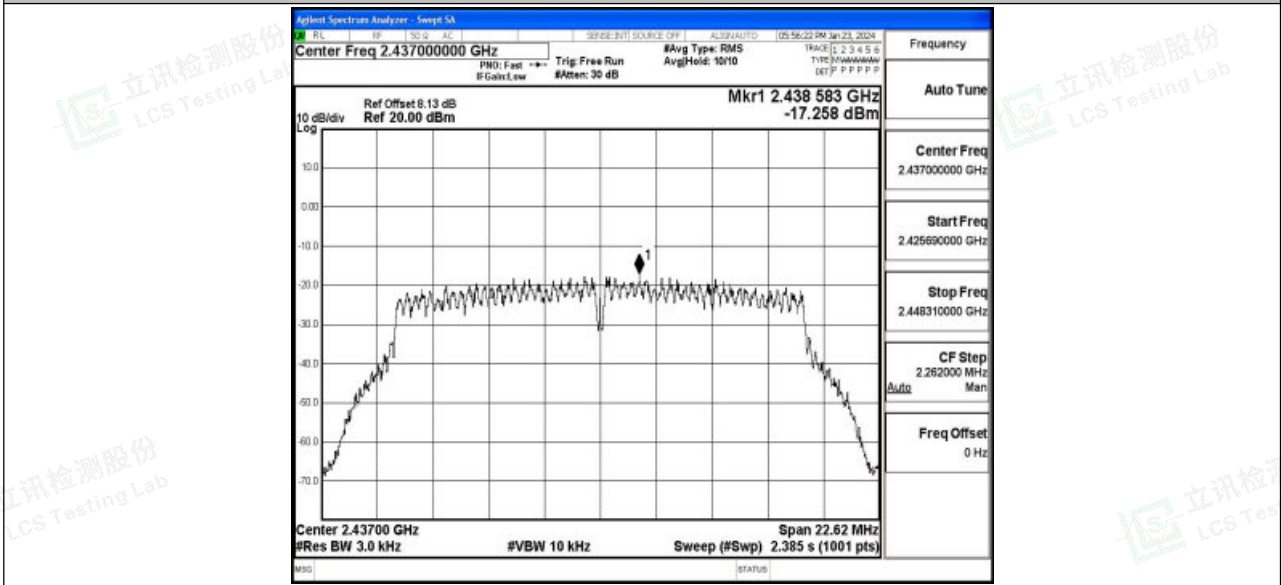




11G_Ant1_2412

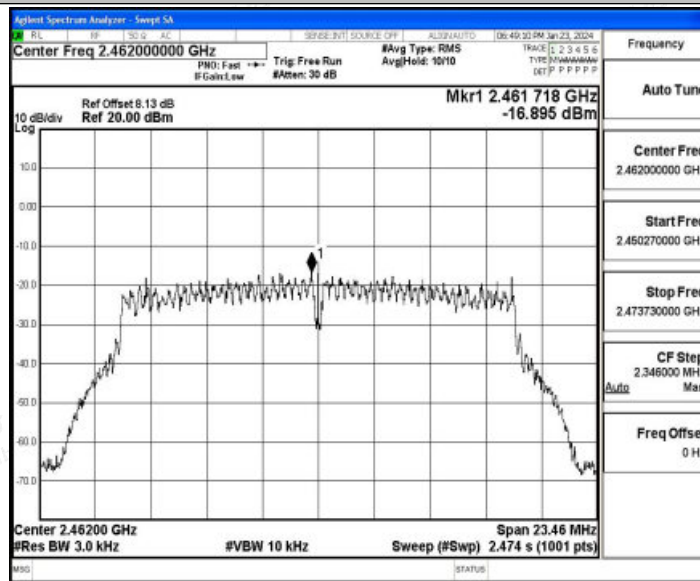


11G_Ant1_2437

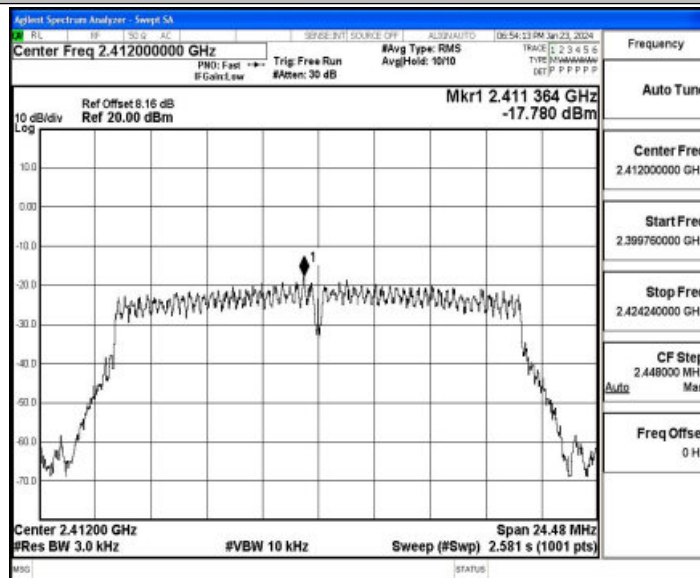




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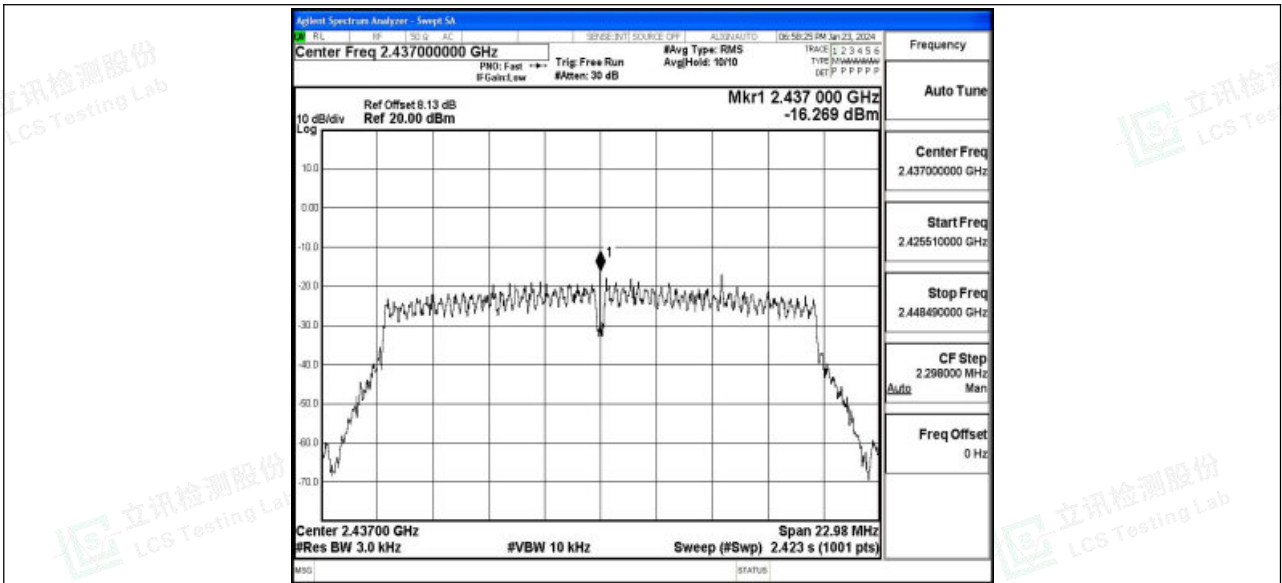


11N20SISO_Ant1_2412

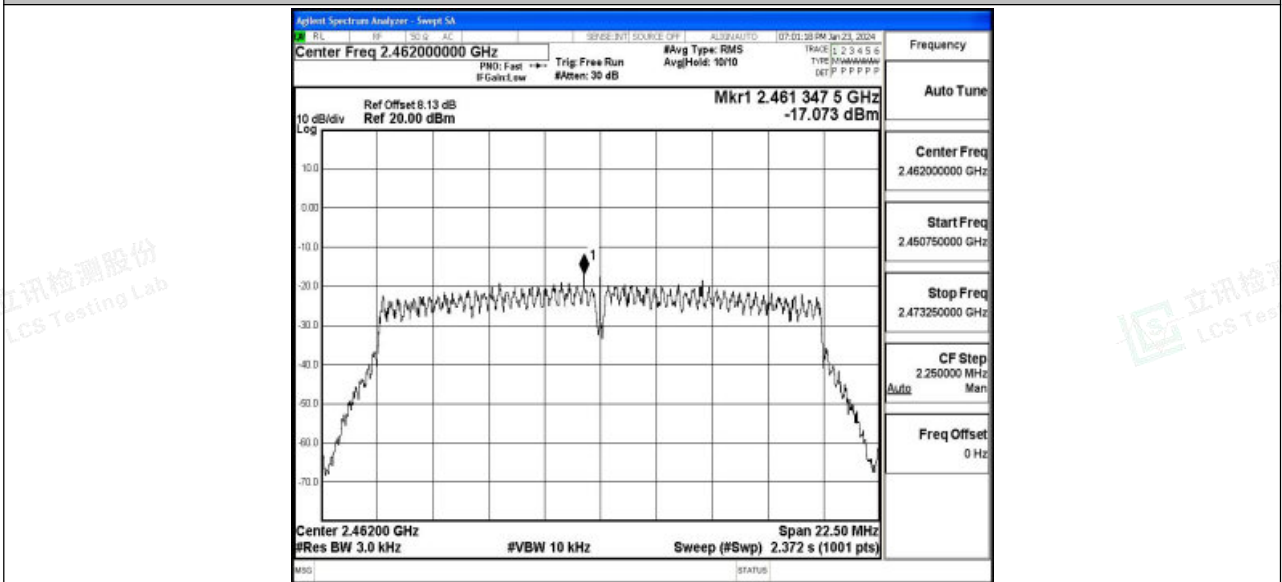


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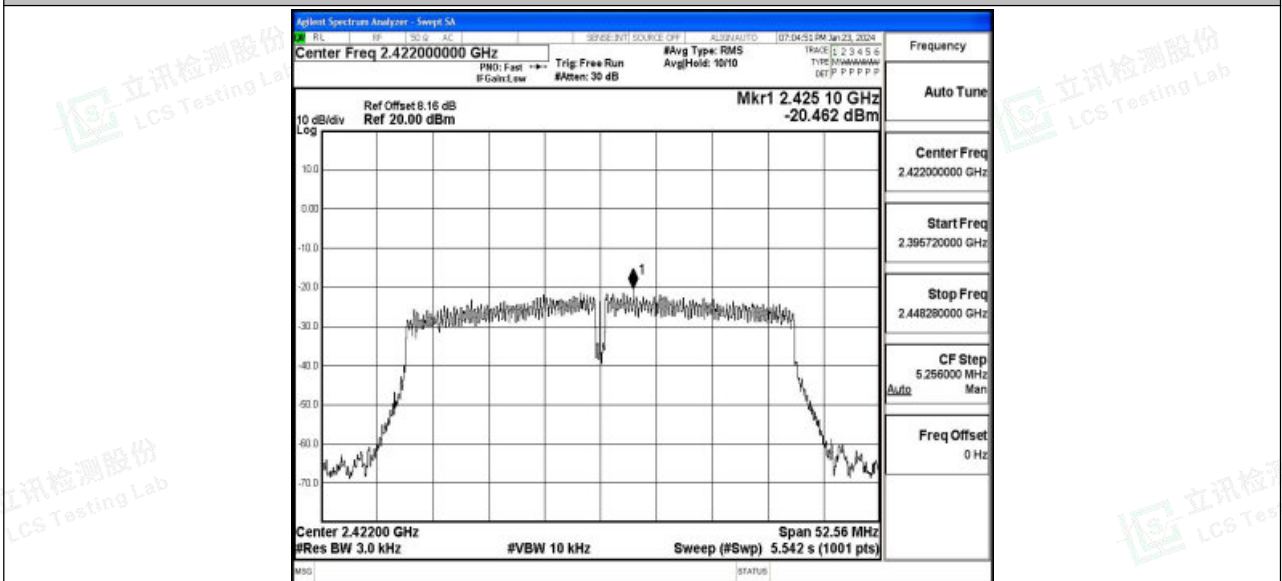




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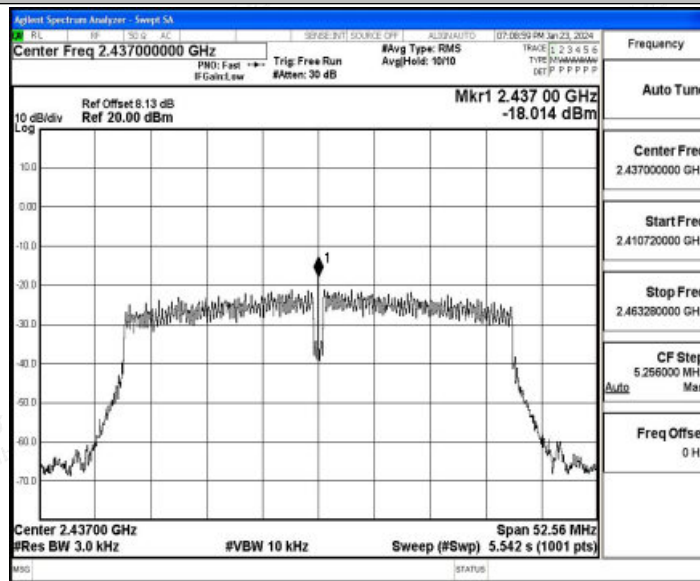


11N40SISO_Ant1_2422

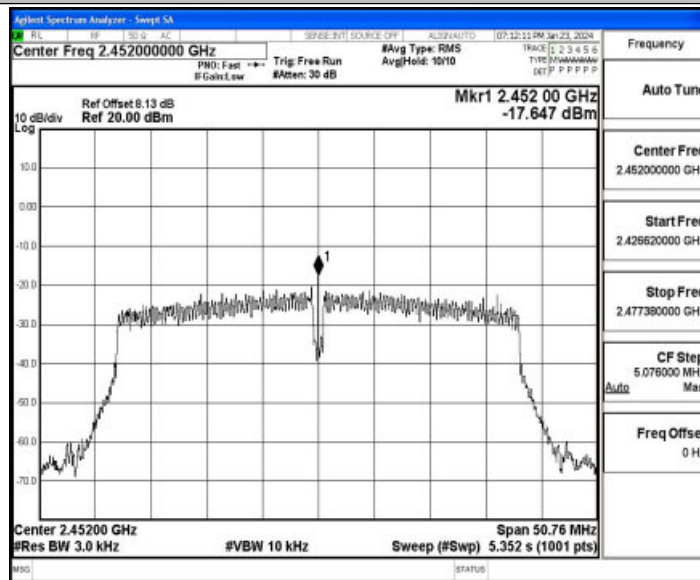




11N40SISO_Ant1_2437



11N40SISO_Ant1_2452





A.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	3.07	-47.86	≤-16.93	PASS
		High	2462	3.19	-50.04	≤-16.81	PASS
11G	Ant1	Low	2412	-3.84	-47.29	≤-23.84	PASS
		High	2462	-4.12	-49.46	≤-24.12	PASS
11N20SISO	Ant1	Low	2412	-4.34	-48.27	≤-24.34	PASS
		High	2462	-4.51	-49.89	≤-24.51	PASS
11N40SISO	Ant1	Low	2422	-6.54	-47.73	≤-26.54	PASS
		High	2452	-6.16	-49.93	≤-26.16	PASS



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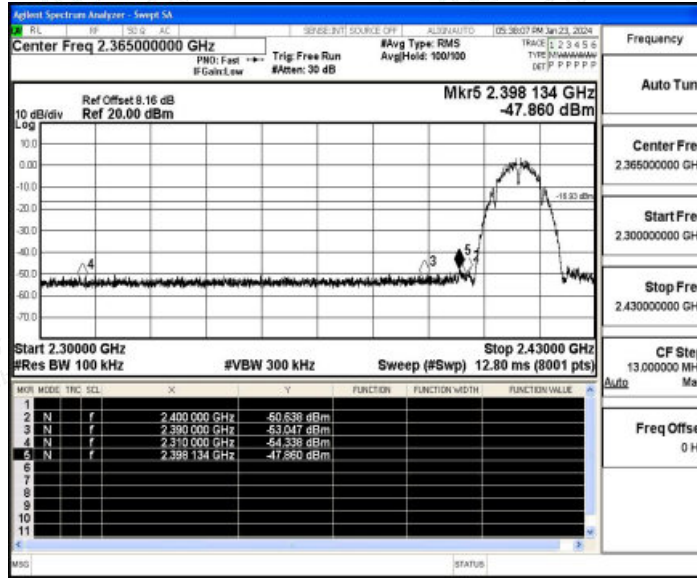
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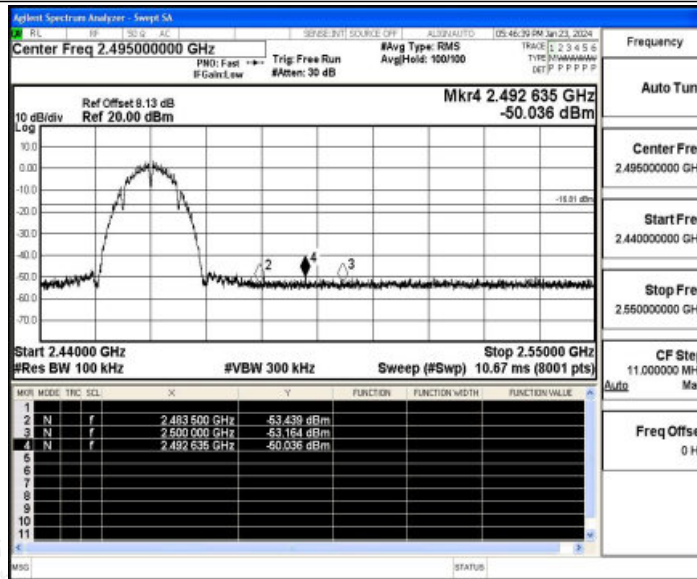


Test Graphs

11B_Ant1_Low_2412

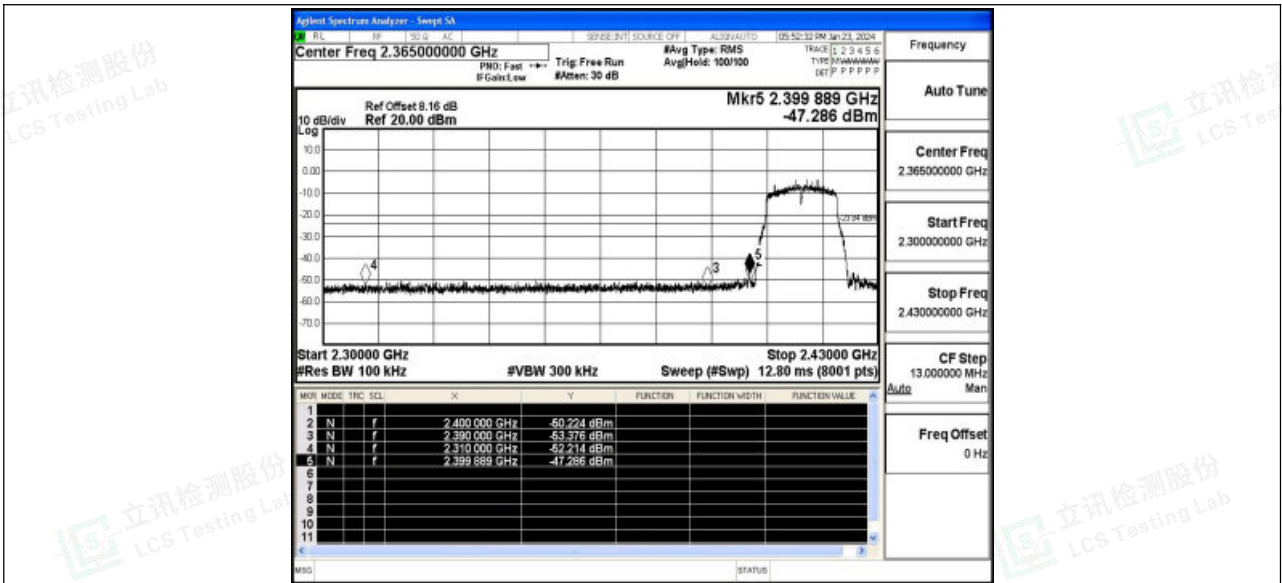


11B_Ant1_High_2462

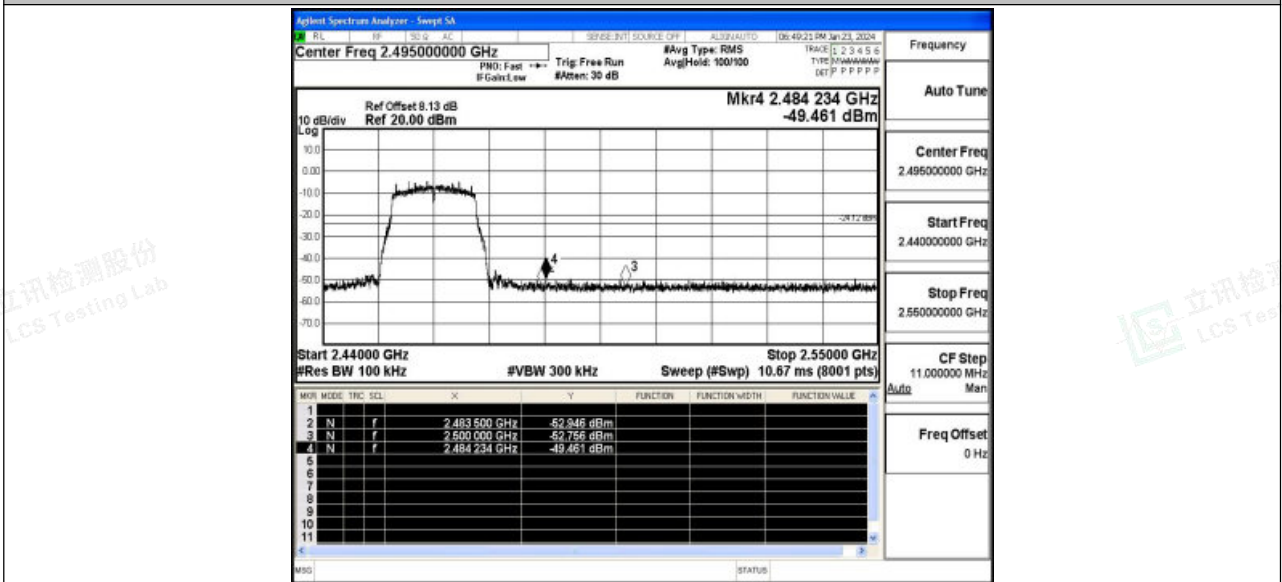


11G_Ant1_Low_2412

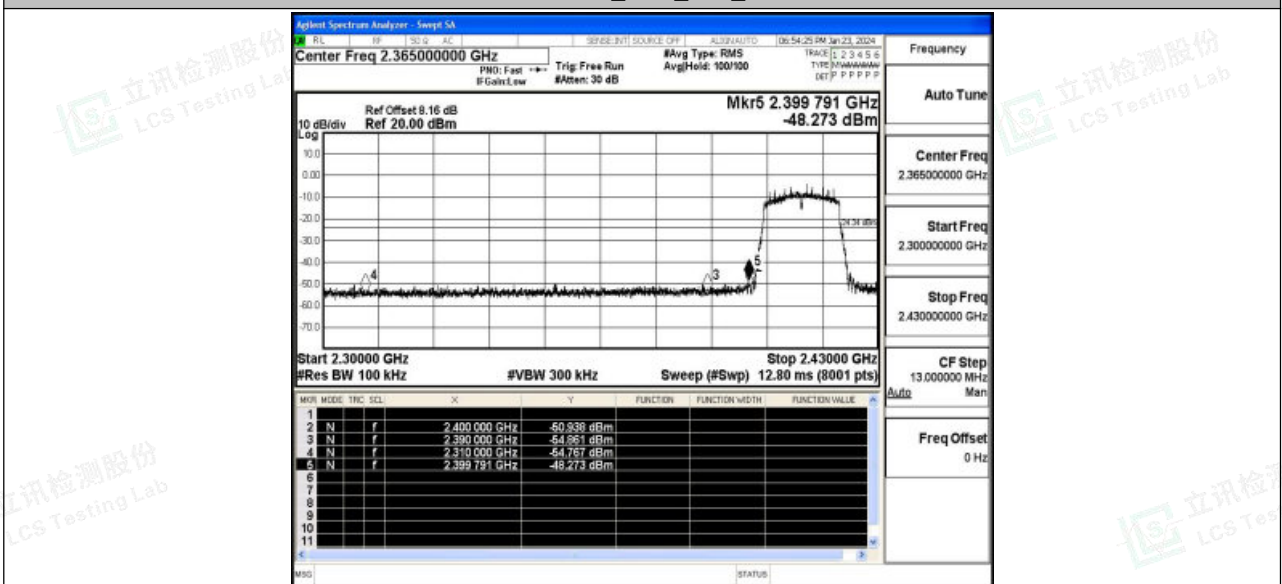




11G_Ant1_High_2462

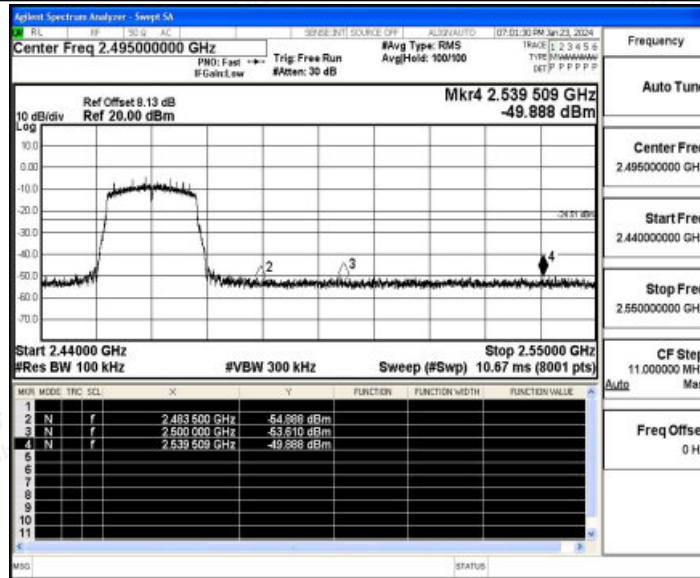


11N20SISO_Ant1_Low_2412

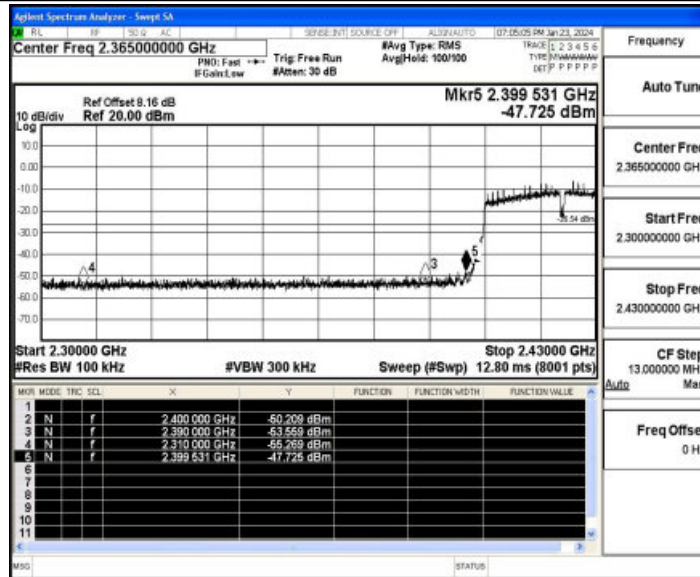




11N20SISO_Ant1_High_2462

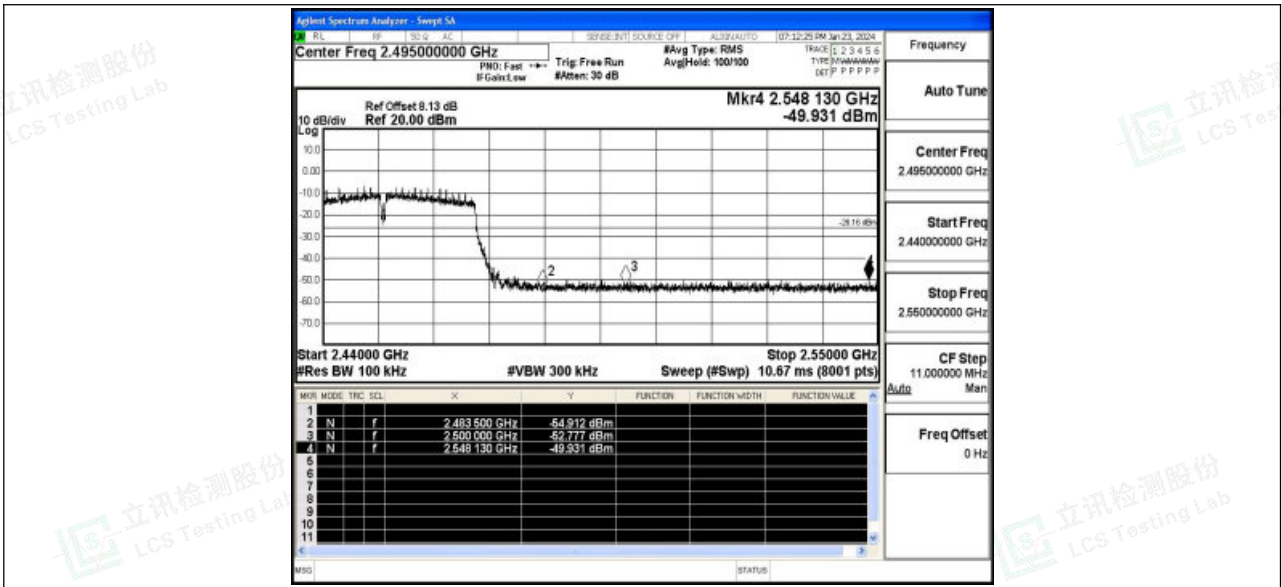


11N40SISO_Ant1_Low_2422



11N40SISO_Ant1_High_2452





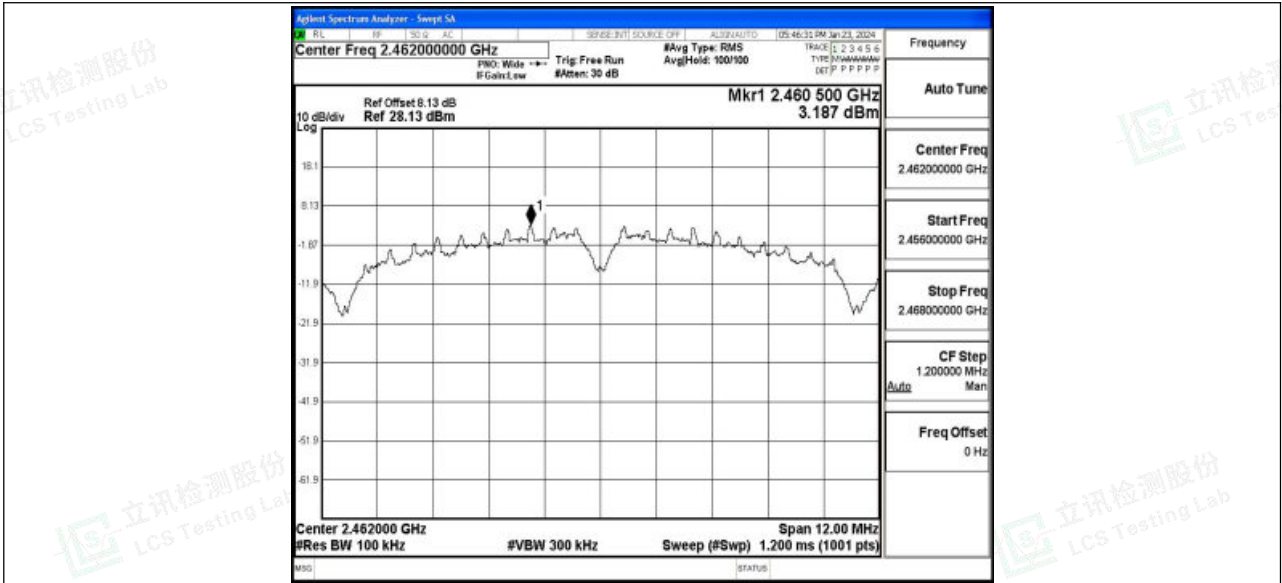


Reference level measurement

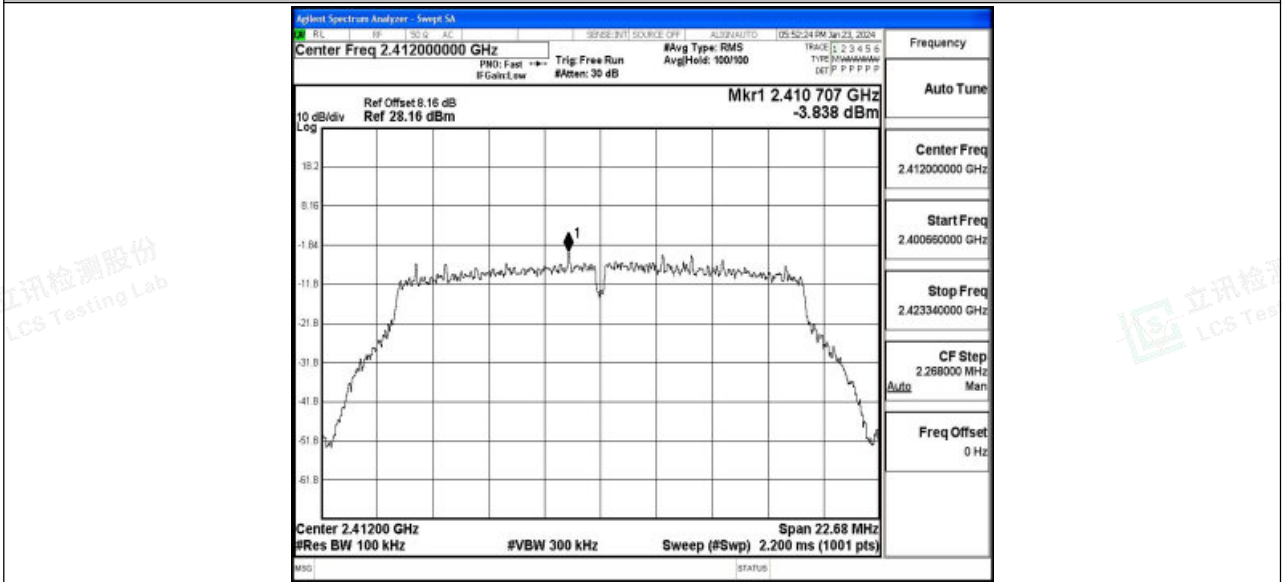
Test Result

TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
11B	Ant1	2412	2413.00	3.07
		2437	2435.50	2.80
		2462	2460.50	3.19
11G	Ant1	2412	2410.71	-3.84
		2437	2440.78	-4.54
		2462	2456.98	-4.12
11N20SISO	Ant1	2412	2414.50	-4.34
		2437	2438.29	-4.55
		2462	2463.31	-4.51
11N40SISO	Ant1	2422	2424.47	-6.54
		2437	2443.25	-7.18
		2452	2449.51	-6.16

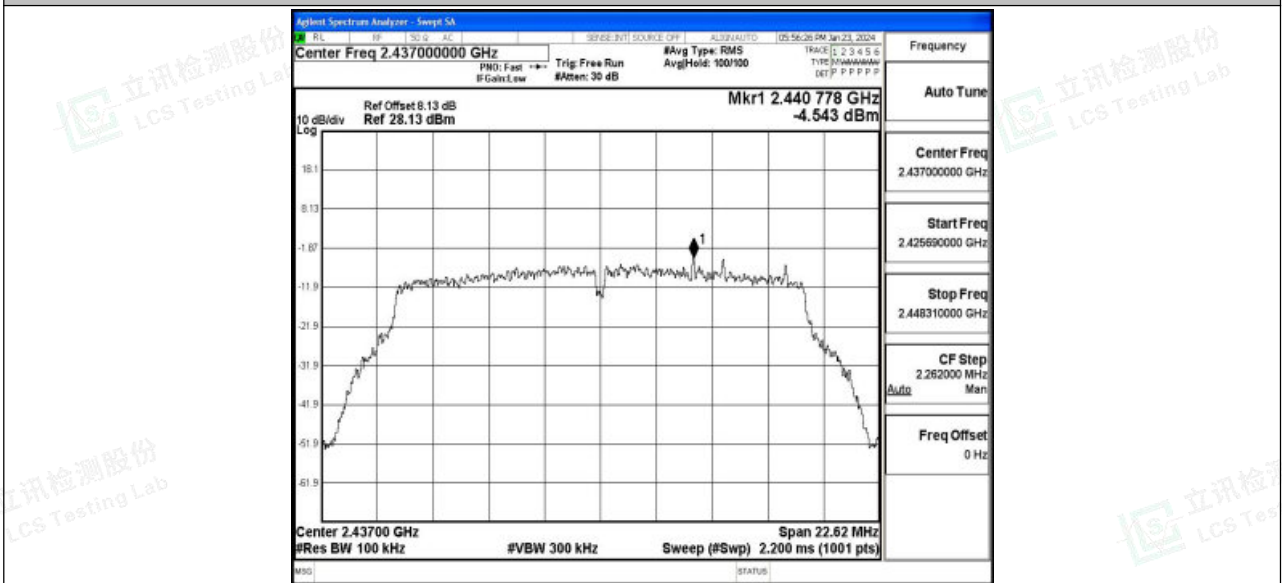




11G_Ant1_2412

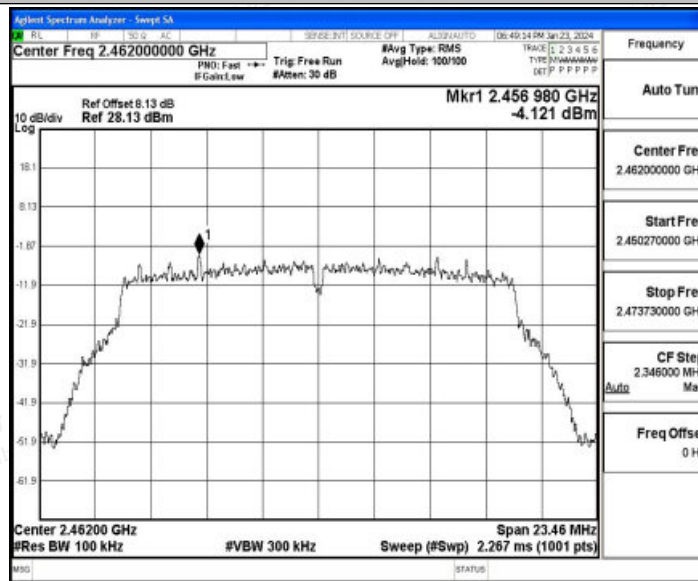


11G_Ant1_2437

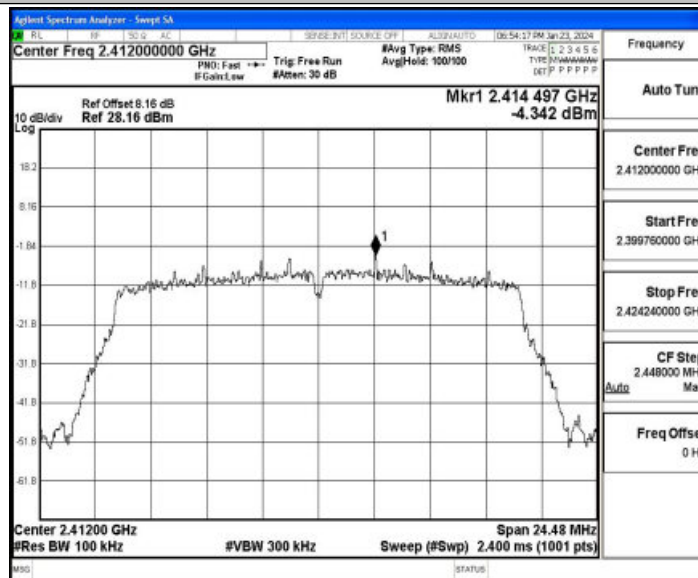




11G_Ant1_2462

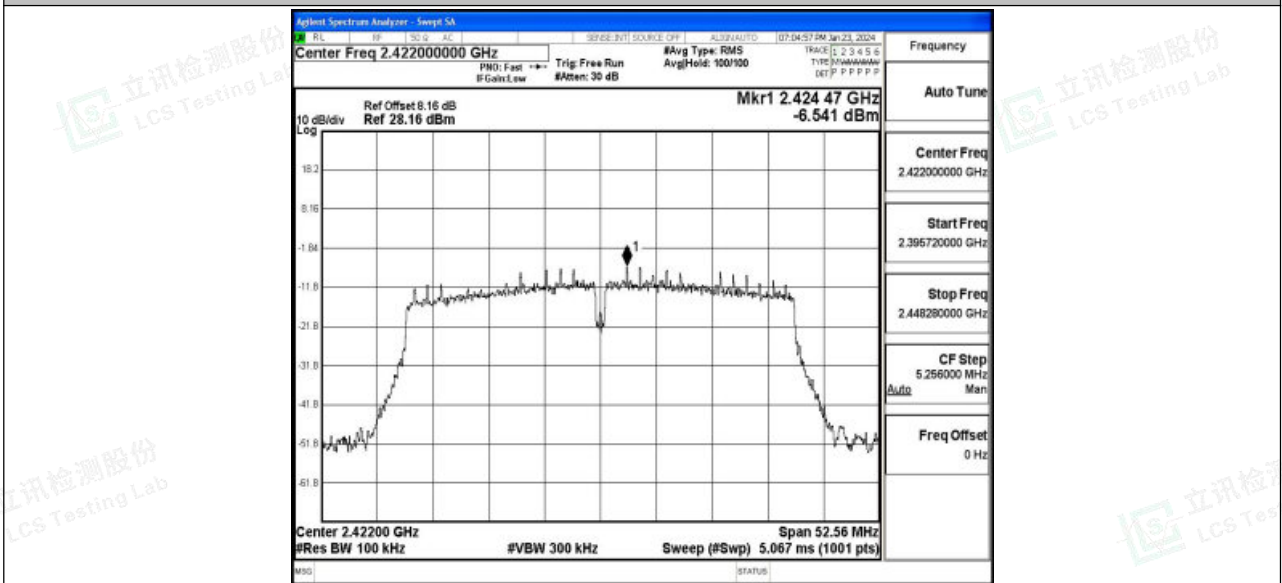
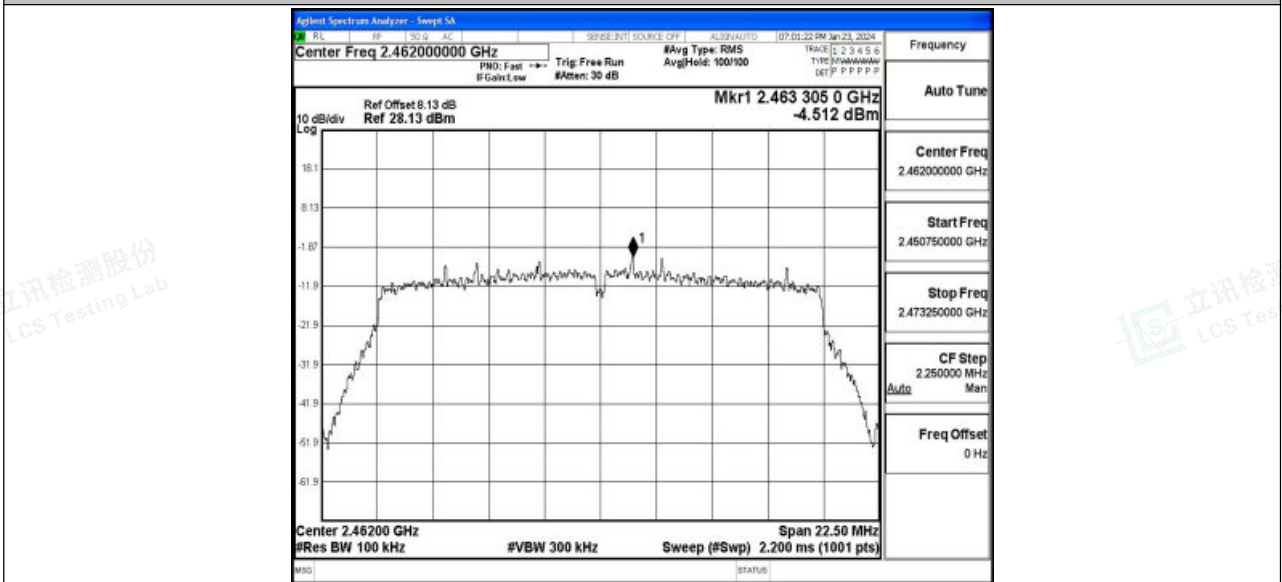
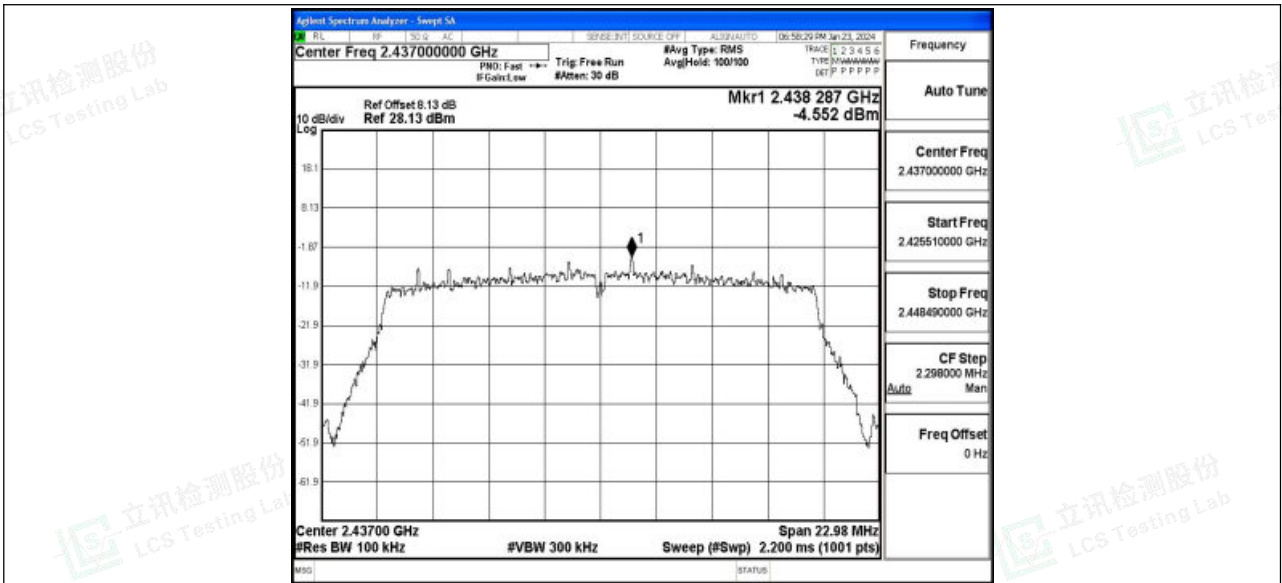


11N20SISO_Ant1_2412



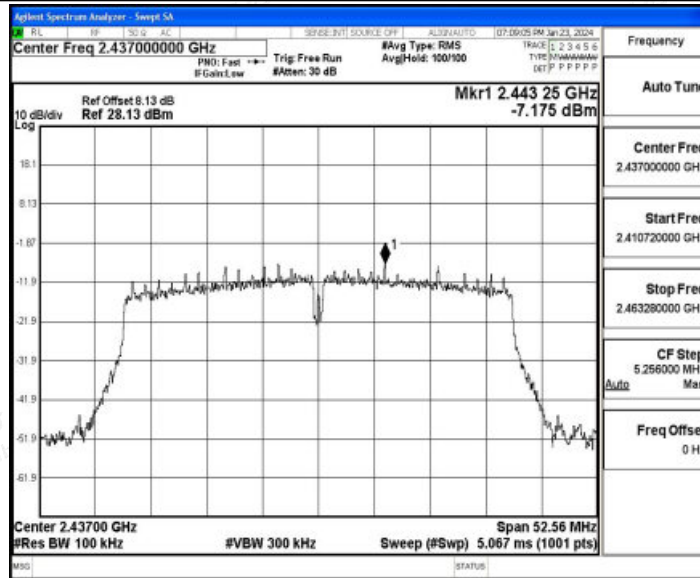
11N20SISO_Ant1_2437



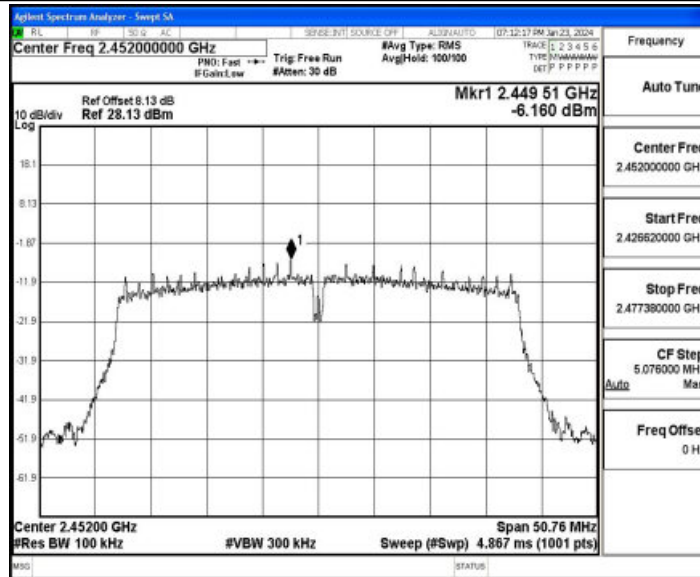




11N40SISO_Ant1_2437



11N40SISO_Ant1_2452





A.5 Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	30~1000	3.07	-60.82	≤-16.93	PASS
			1000~26500	3.07	-48.53	≤-16.93	PASS
		2437	30~1000	2.80	-61.24	≤-17.2	PASS
			1000~26500	2.80	-48.52	≤-17.2	PASS
		2462	30~1000	3.19	-60.75	≤-16.81	PASS
			1000~26500	3.19	-49.23	≤-16.81	PASS
11G	Ant1	2412	30~1000	-3.84	-61.64	≤-23.84	PASS
			1000~26500	-3.84	-48.77	≤-23.84	PASS
		2437	30~1000	-4.54	-61.68	≤-24.54	PASS
			1000~26500	-4.54	-48.48	≤-24.54	PASS
		2462	30~1000	-4.12	-61.58	≤-24.12	PASS
			1000~26500	-4.12	-49.2	≤-24.12	PASS
11N20SISO	Ant1	2412	30~1000	-4.34	-61.64	≤-24.34	PASS
			1000~26500	-4.34	-49.03	≤-24.34	PASS
		2437	30~1000	-4.55	-61.43	≤-24.55	PASS
			1000~26500	-4.55	-49.03	≤-24.55	PASS
		2462	30~1000	-4.51	-61.71	≤-24.51	PASS
			1000~26500	-4.51	-49.67	≤-24.51	PASS
11N40SISO	Ant1	2422	30~1000	-6.54	-61.75	≤-26.54	PASS
			1000~26500	-6.54	-48.69	≤-26.54	PASS
		2437	30~1000	-7.18	-61.79	≤-27.18	PASS
			1000~26500	-7.18	-48.45	≤-27.18	PASS
		2452	30~1000	-6.16	-61.61	≤-26.16	PASS
			1000~26500	-6.16	-48.7	≤-26.16	PASS



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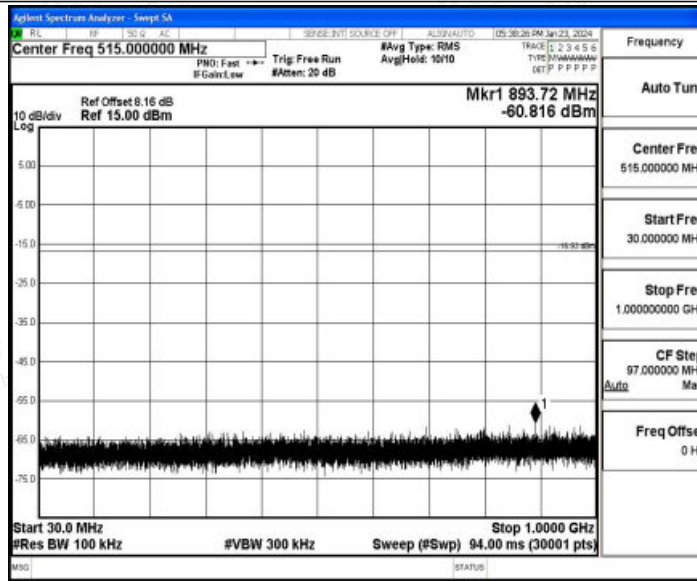
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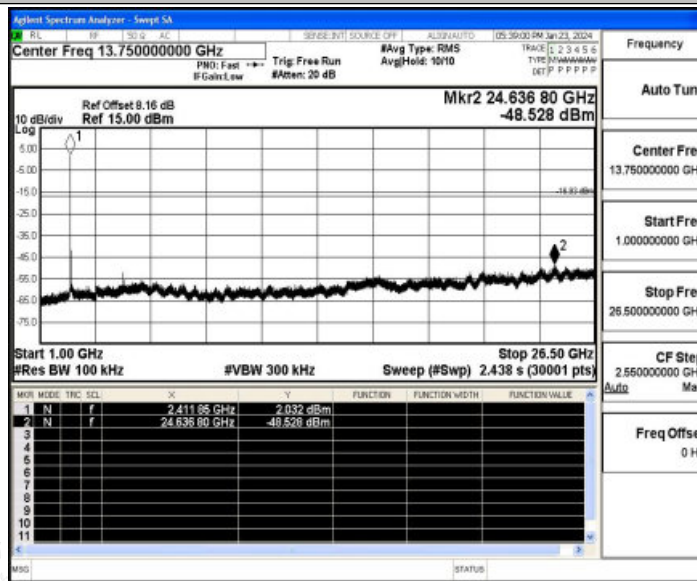


Test Graphs

11B_Ant1_2412_30~1000

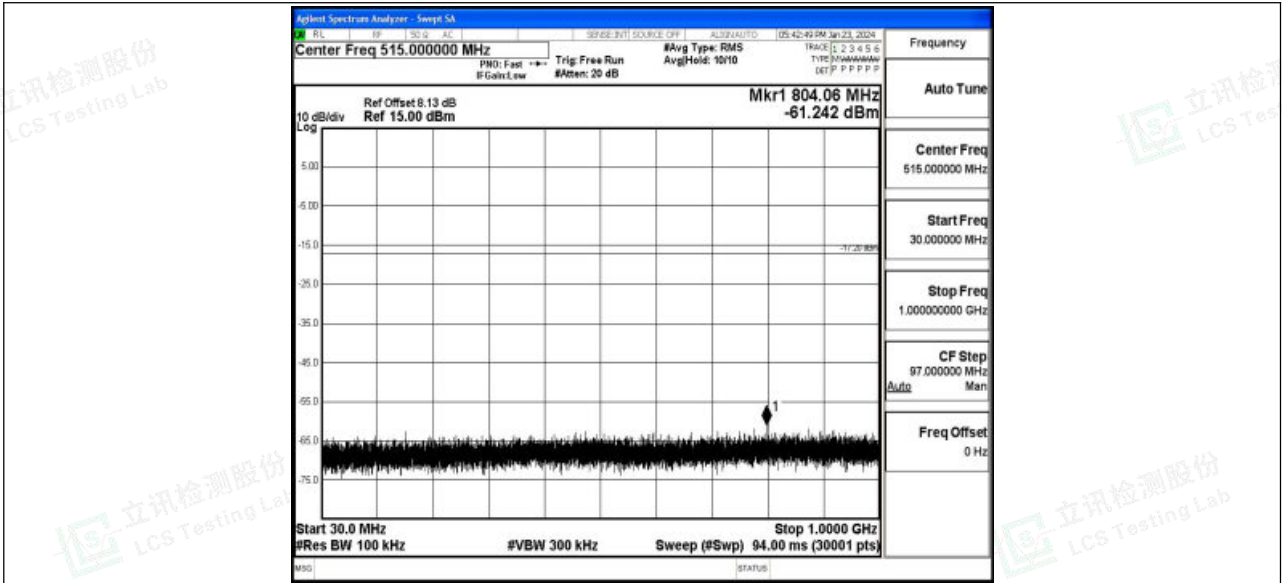


11B_Ant1_2412_1000~26500

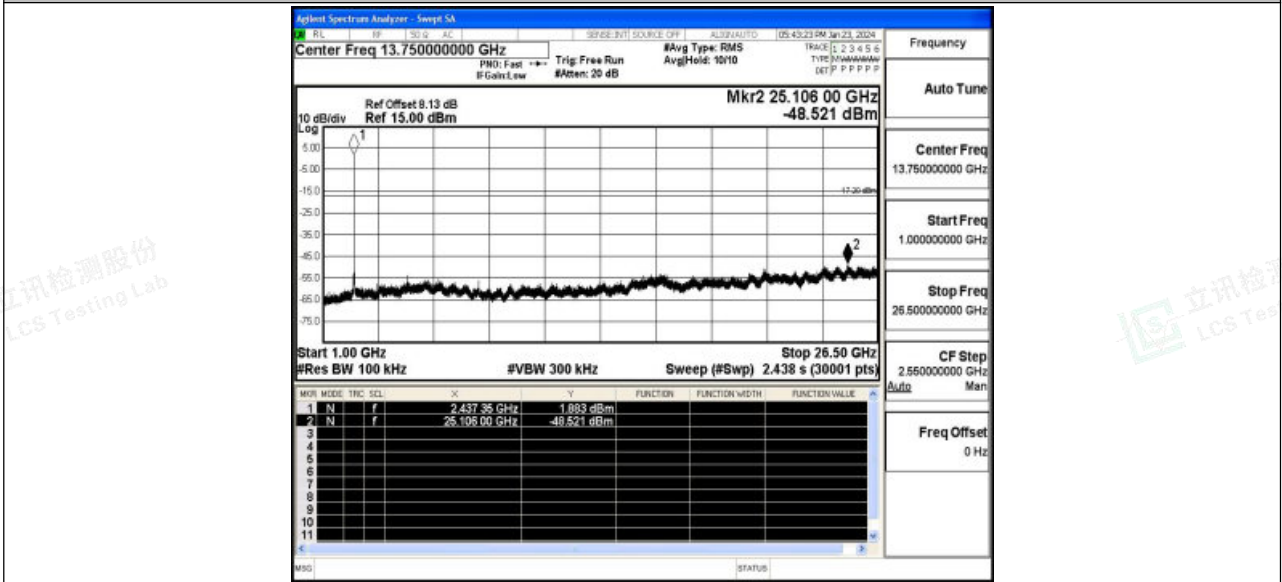


11B_Ant1_2437_30~1000

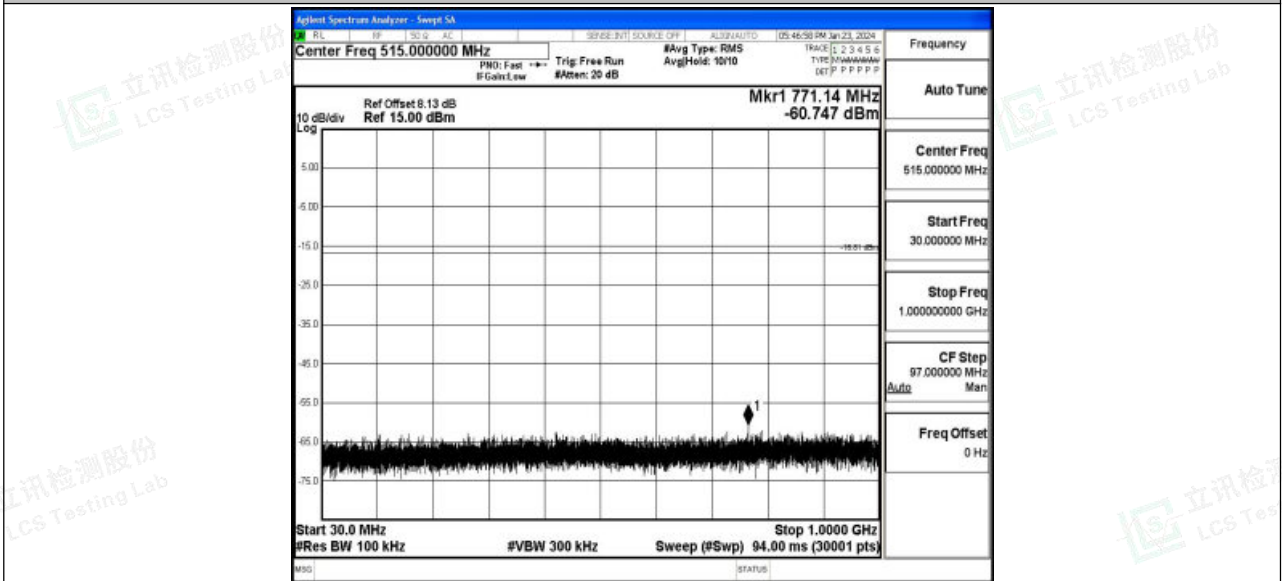




11B_Ant1_2437_1000~26500

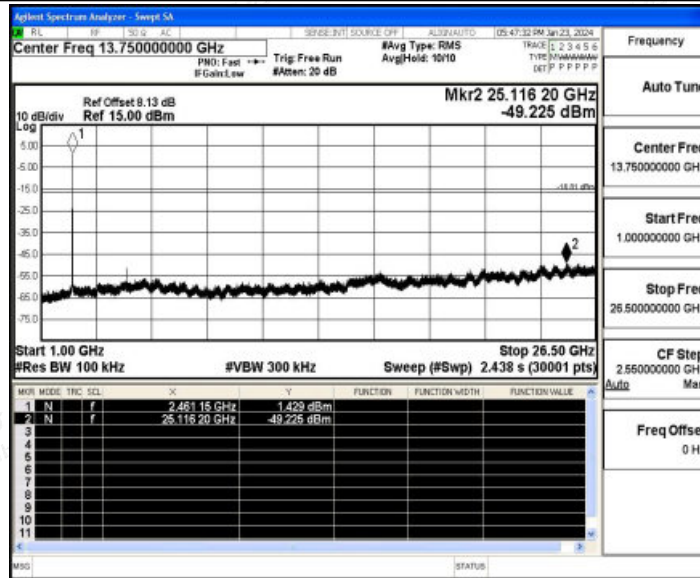


11B_Ant1_2462_30~1000

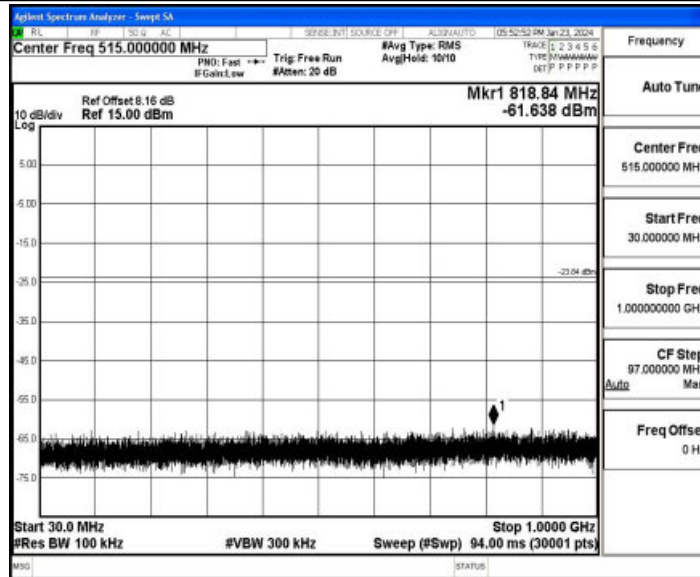




11B_Ant1_2462_1000~26500

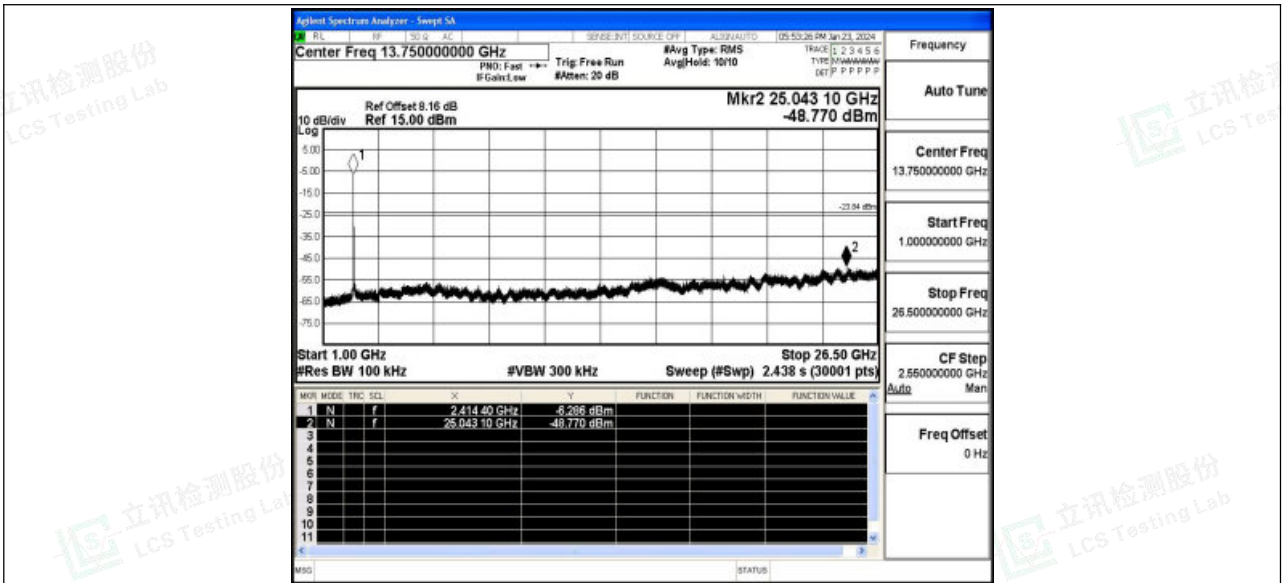


11G_Ant1_2412_30~1000

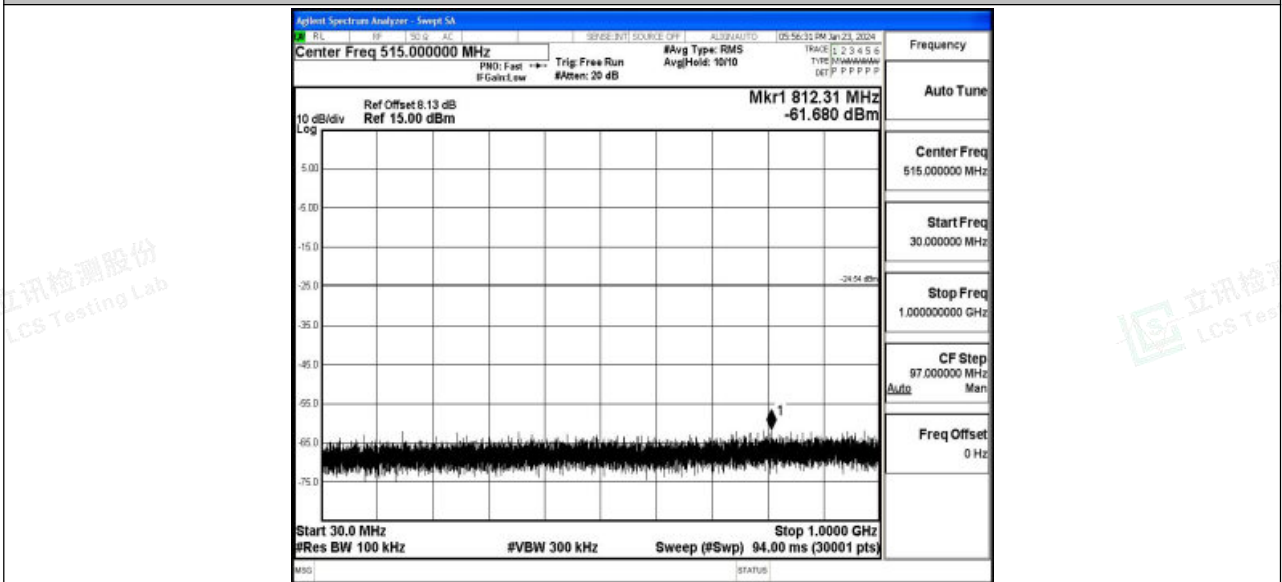


11G_Ant1_2412_1000~26500

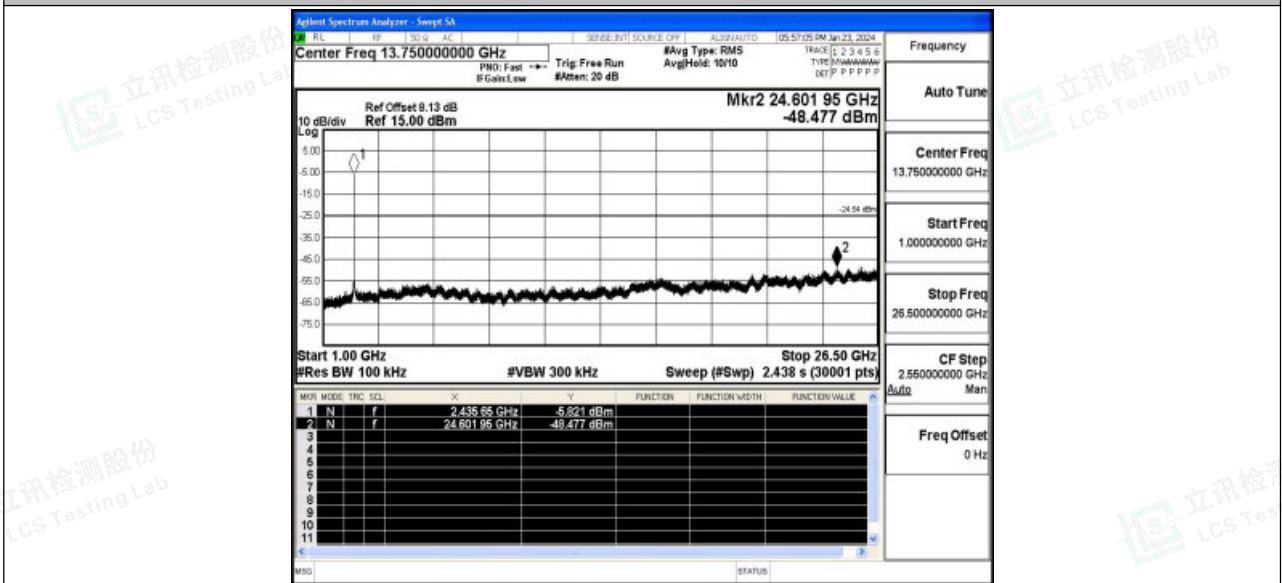




11G_Ant1_2437_30~1000

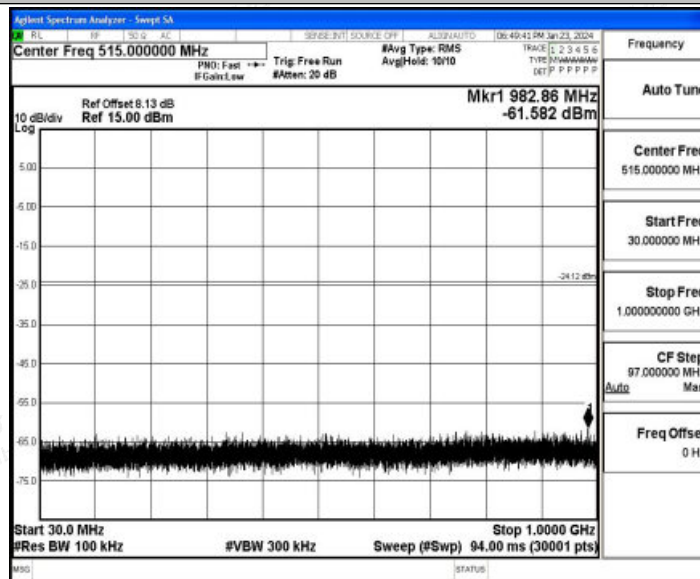


11G_Ant1_2437_1000~26500

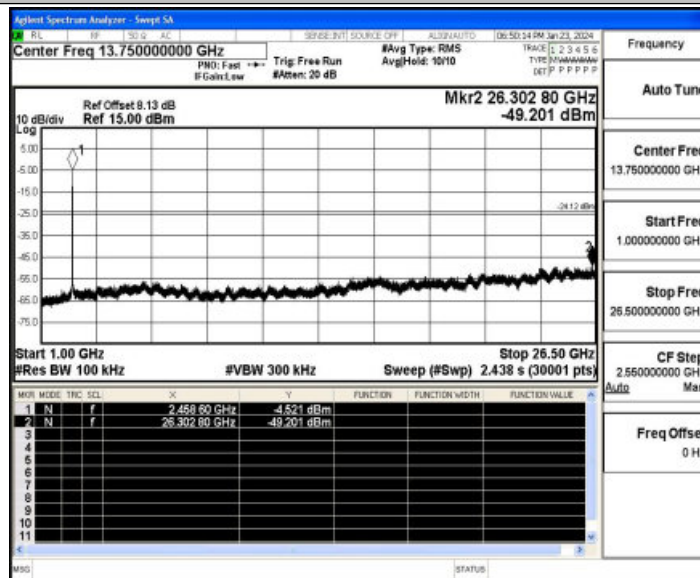




11G_Ant1_2462_30~1000

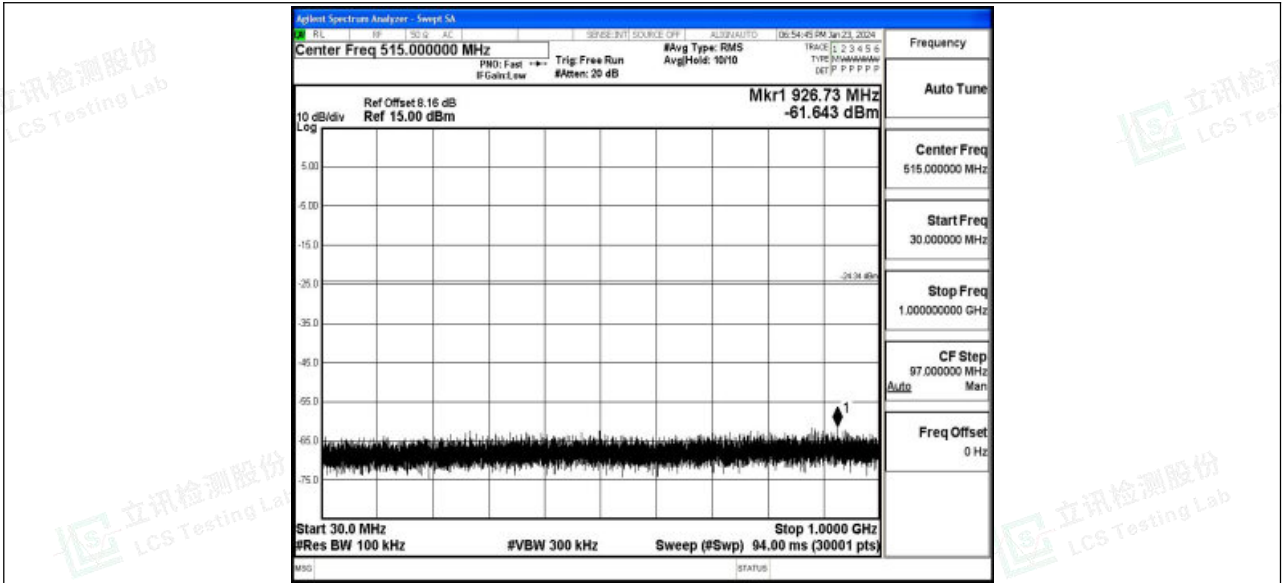


11G_Ant1_2462_1000~26500

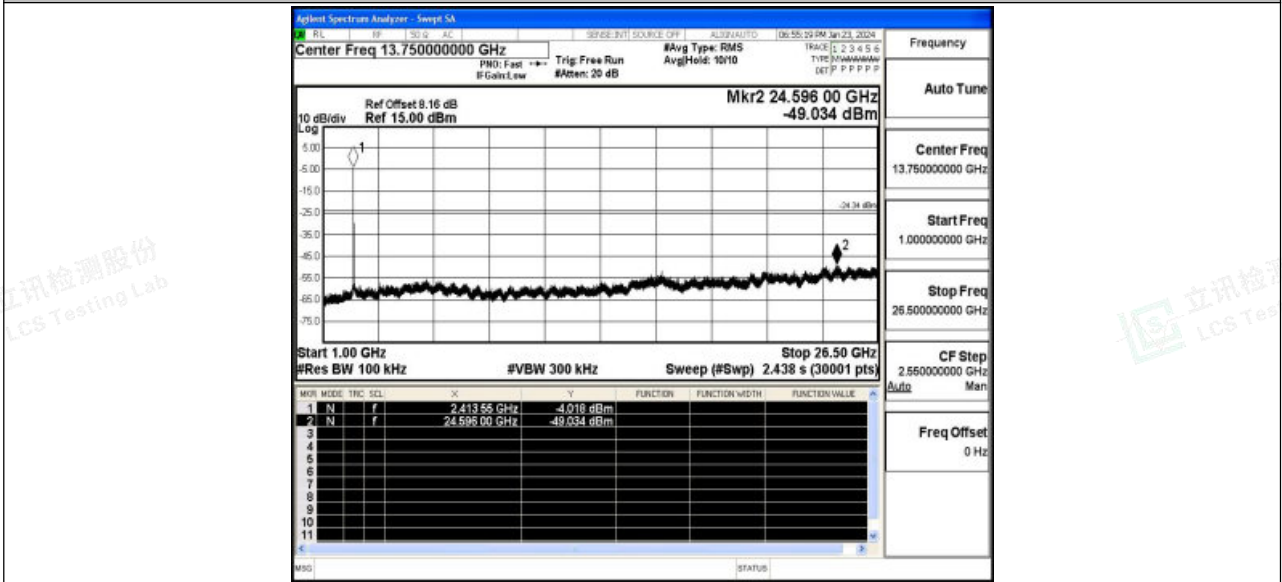


11N20SISO_Ant1_2412_30~1000

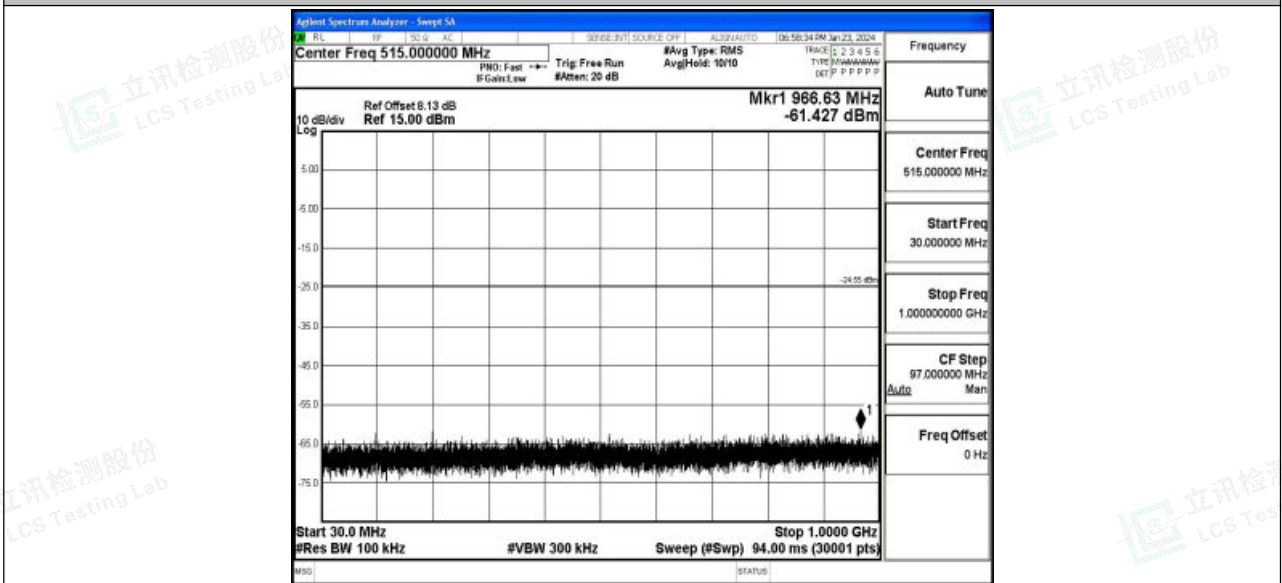




11N20SISO_Ant1_2412_1000~26500

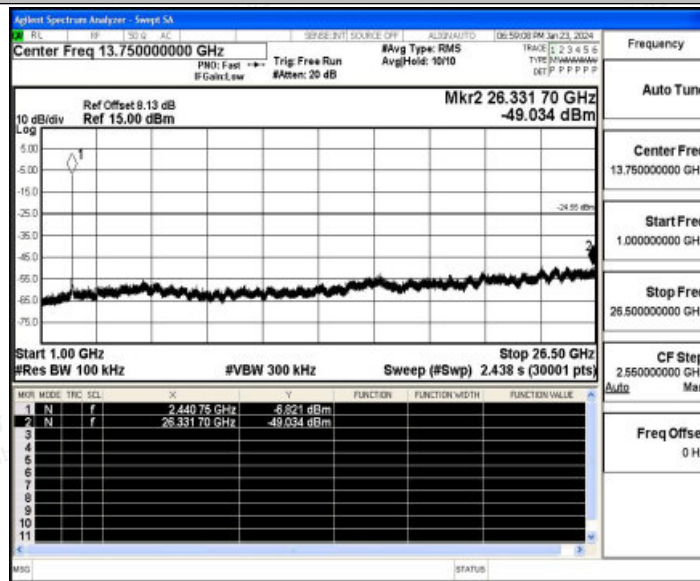


11N20SISO_Ant1_2437_30~1000

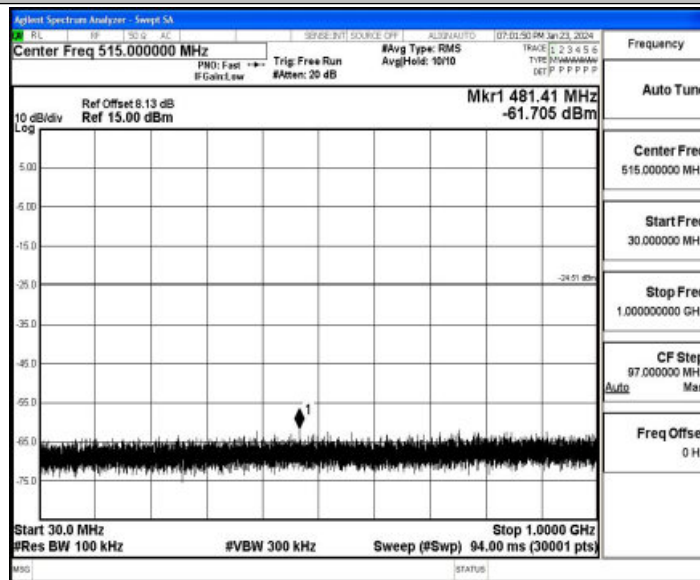




11N20SISO_Ant1_2437_1000~26500

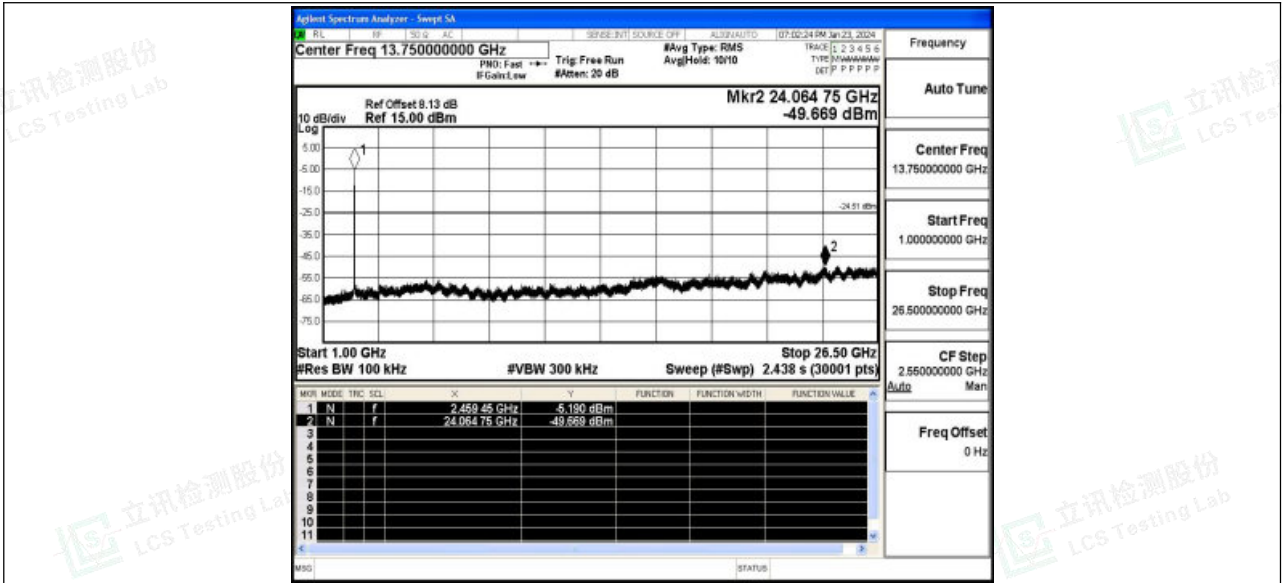


11N20SISO_Ant1_2462_30~1000

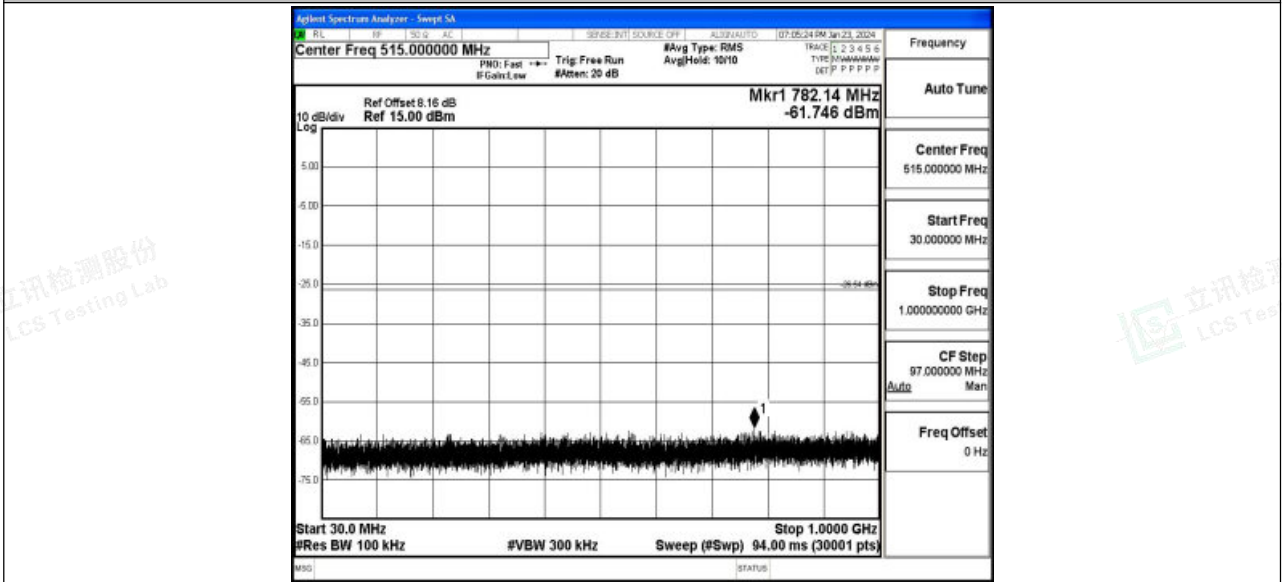


11N20SISO_Ant1_2462_1000~26500

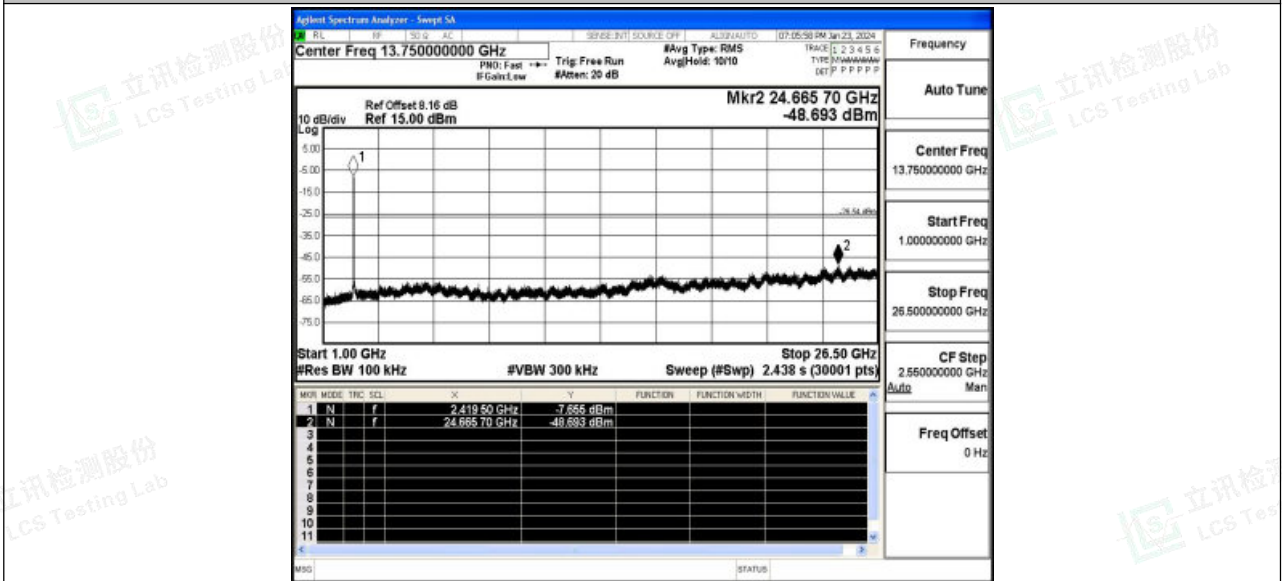




11N40SISO_Ant1_2422_30~1000

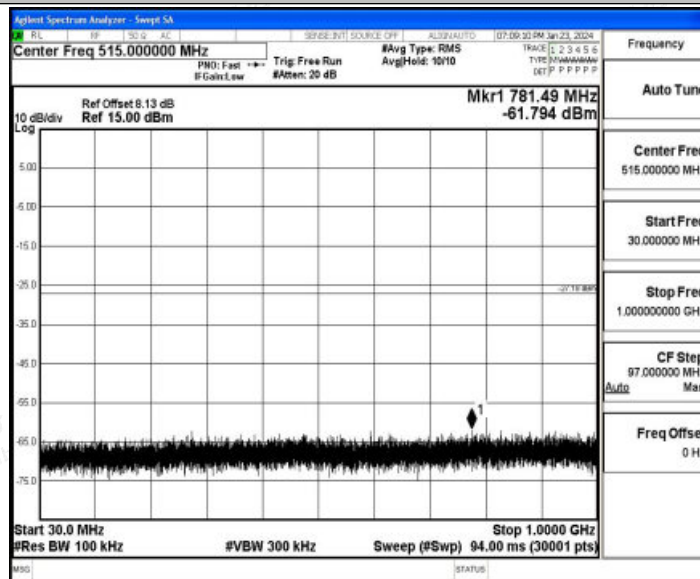


11N40SISO_Ant1_2422_1000~26500

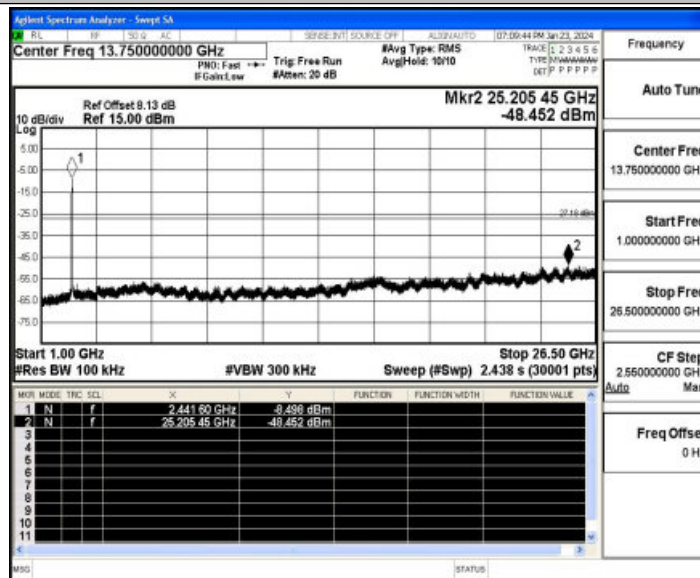




11N40SISO_Ant1_2437_30~1000

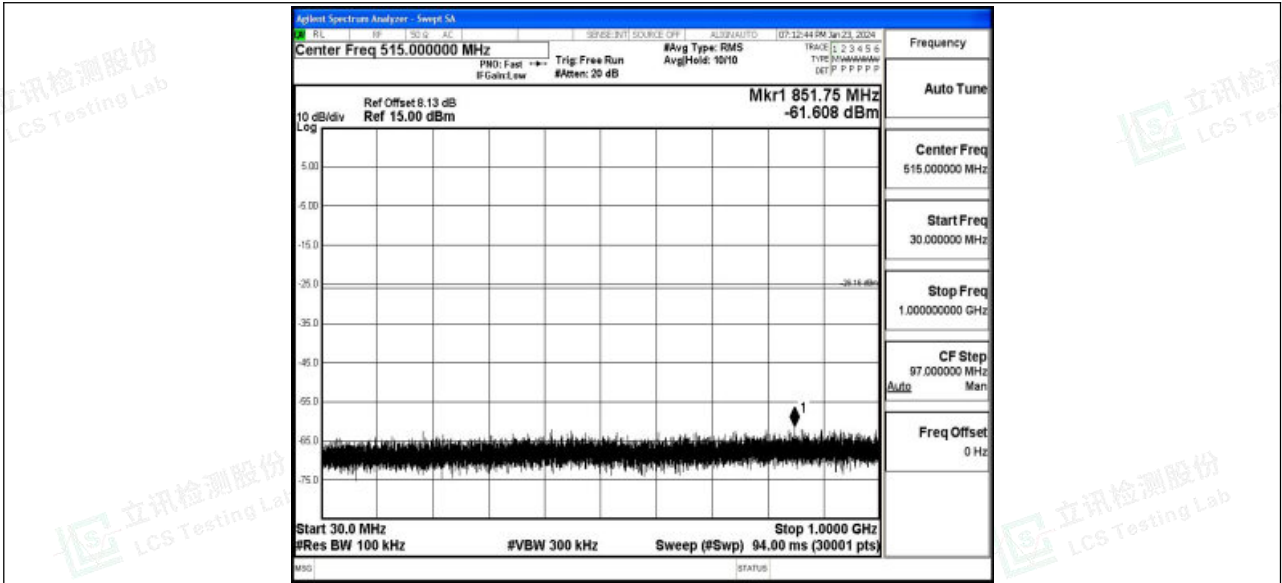


11N40SISO_Ant1_2437_1000~26500

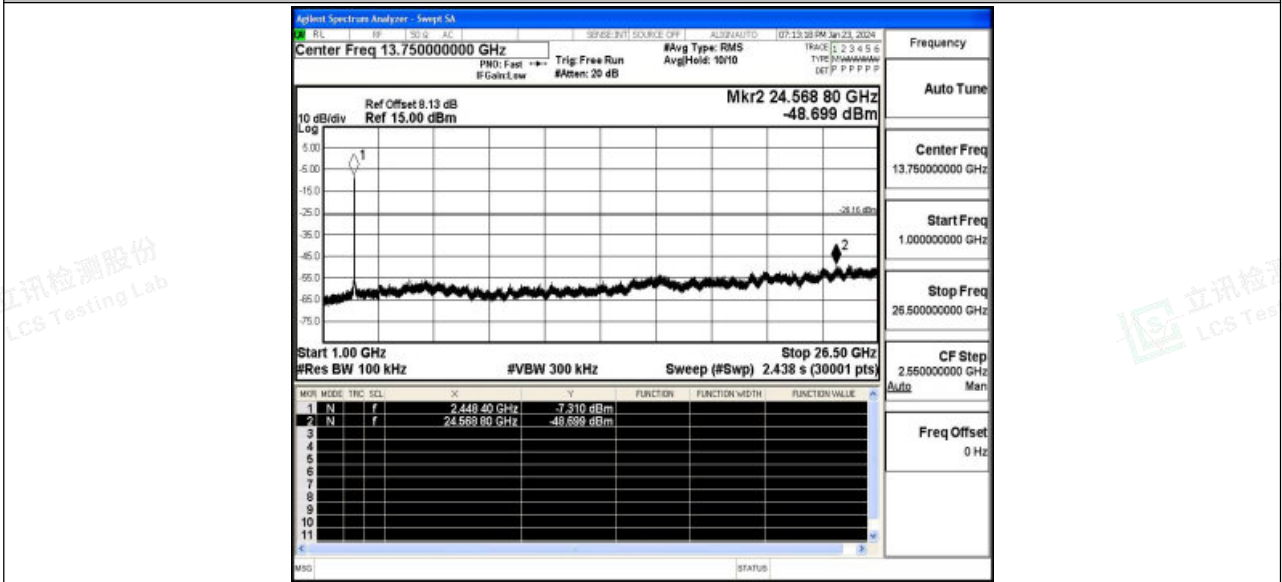


11N40SISO_Ant1_2452_30~1000





11N40SISO_Ant1_2452_1000~26500





A.6 Duty Cycle

Test Result

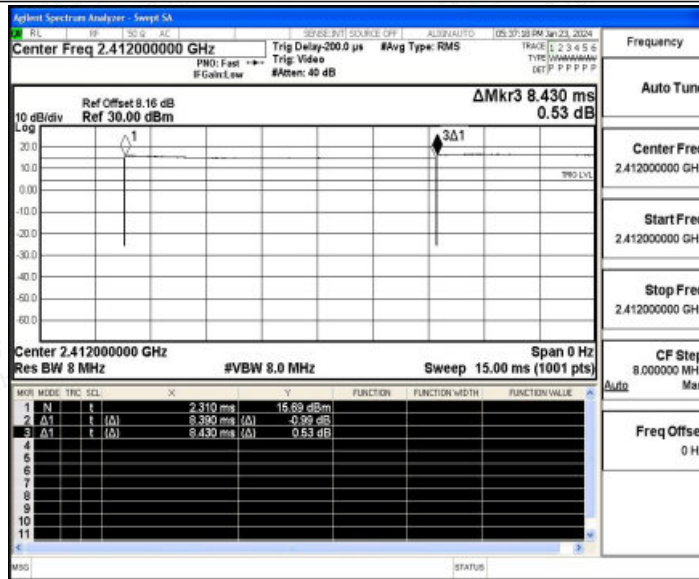
TestMode	Antenna	Freq(MHz)	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor	1/T Factor[kHz]	Verdict
11B	Ant1	2412	8.39	8.43	99.53	0.02	0.12	---
		2437	8.39	8.42	99.64	0.02	0.12	---
		2462	8.38	8.43	99.41	0.03	0.12	---
11G	Ant1	2412	1.39	1.43	97.20	0.12	0.72	---
		2437	1.40	1.44	97.22	0.12	0.71	---
		2462	1.39	1.44	96.53	0.15	0.72	---
11N20SISO	Ant1	2412	1.30	1.34	97.01	0.13	0.77	---
		2437	1.30	1.34	97.01	0.13	0.77	---
		2462	1.30	1.34	97.01	0.13	0.77	---
11N40SISO	Ant1	2422	0.65	0.69	94.20	0.26	1.54	---
		2437	0.64	0.69	92.75	0.33	1.56	---
		2452	0.65	0.69	94.20	0.26	1.54	---



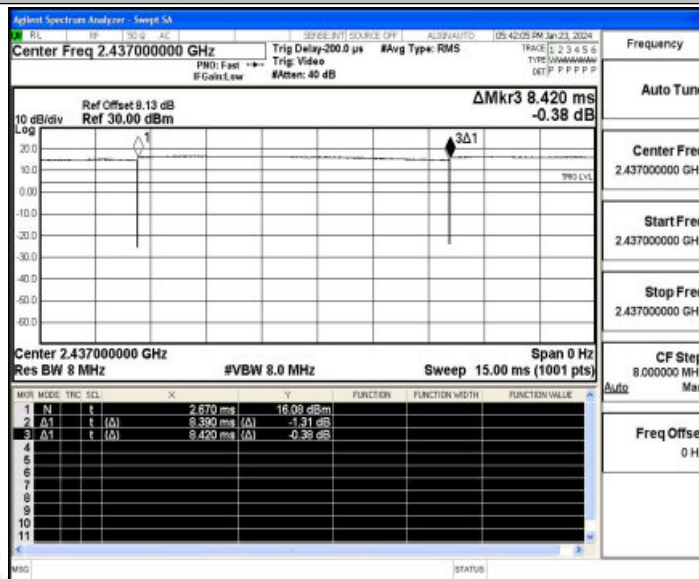


Test Graphs

11B_Ant1_2412

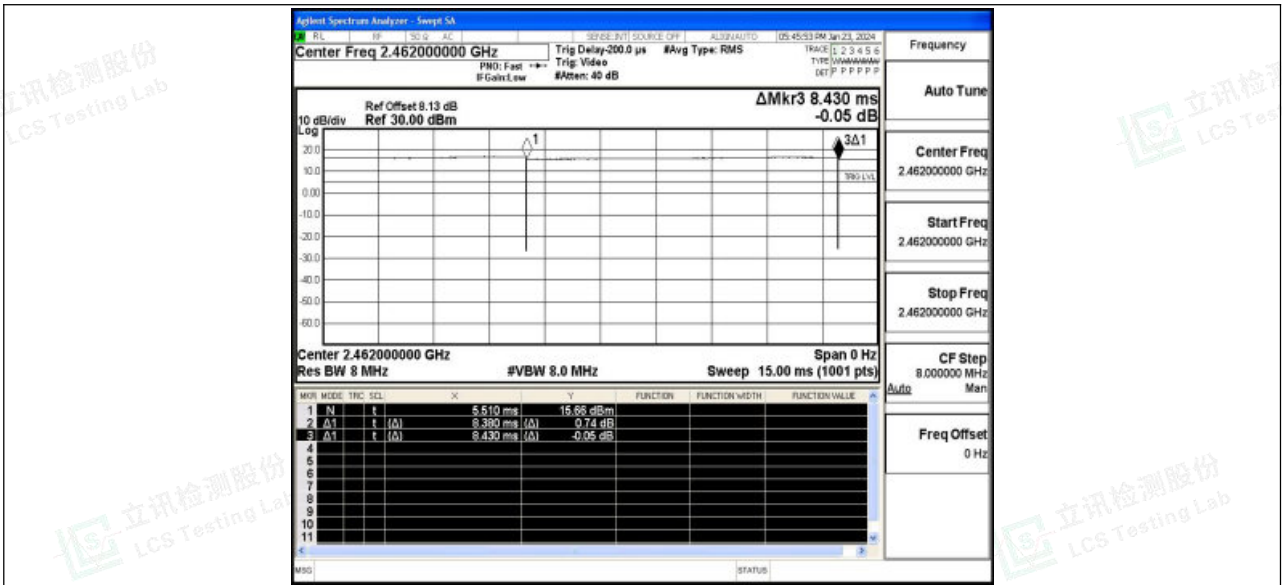


11B_Ant1_2437

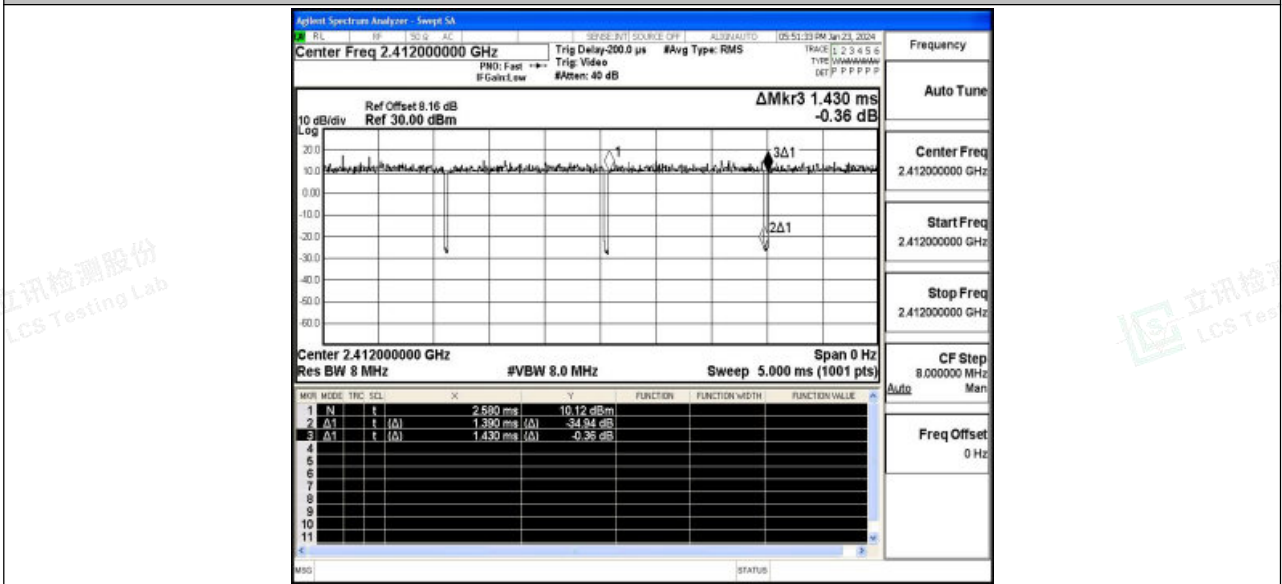


11B_Ant1_2462

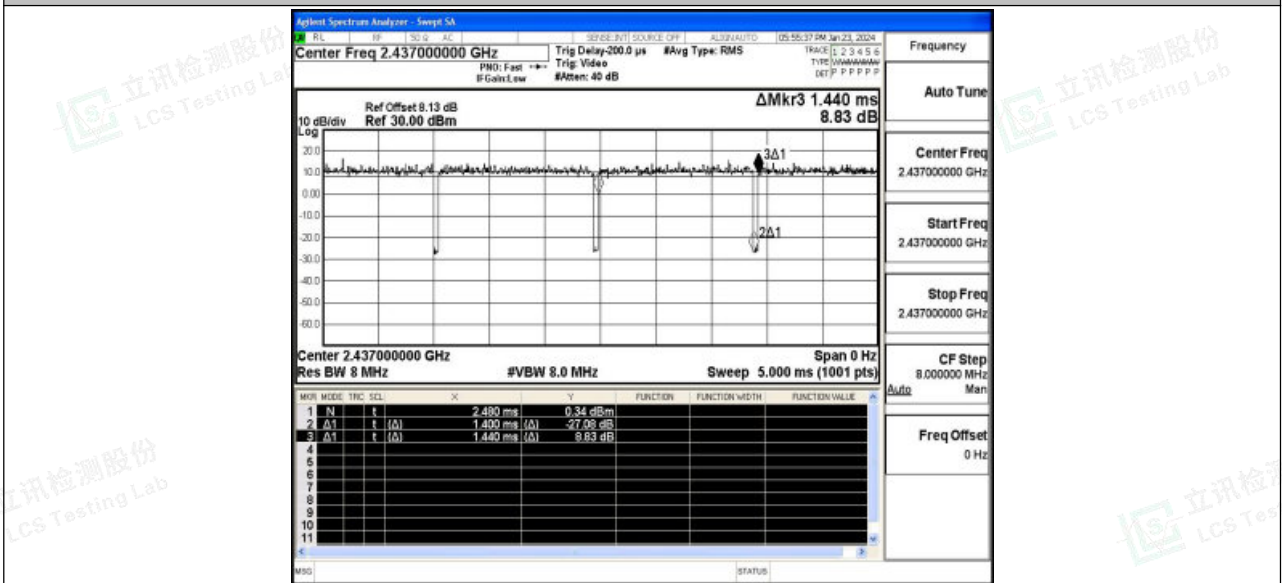




11G_Ant1_2412

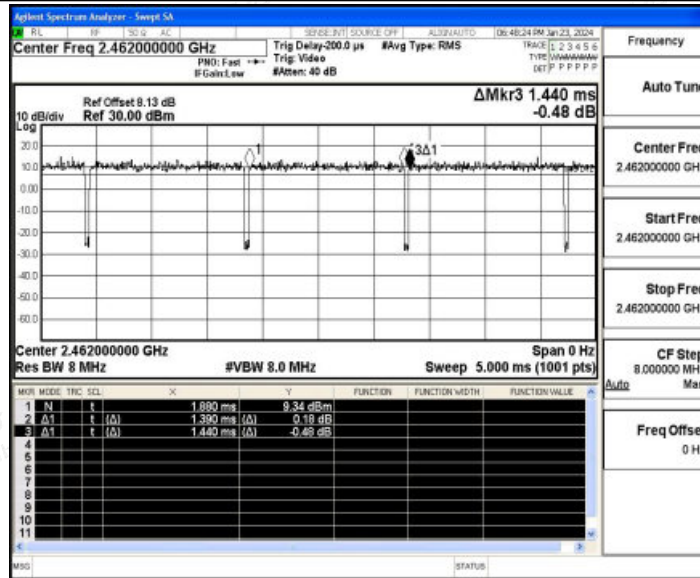


11G_Ant1_2437

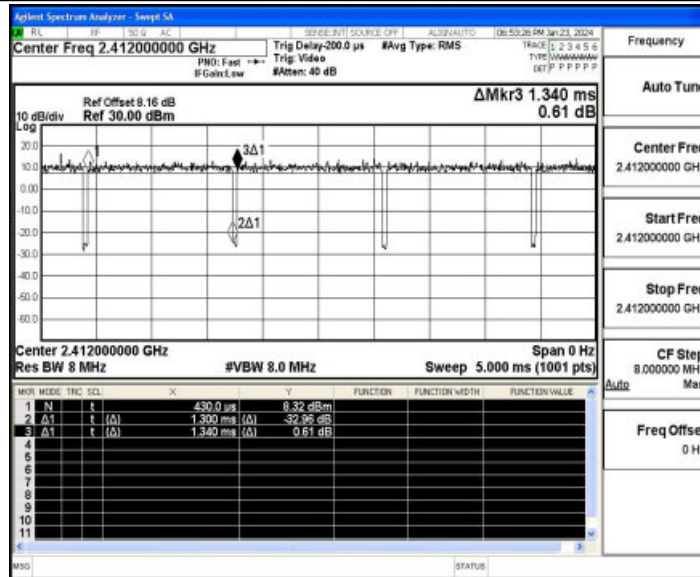




11G_Ant1_2462

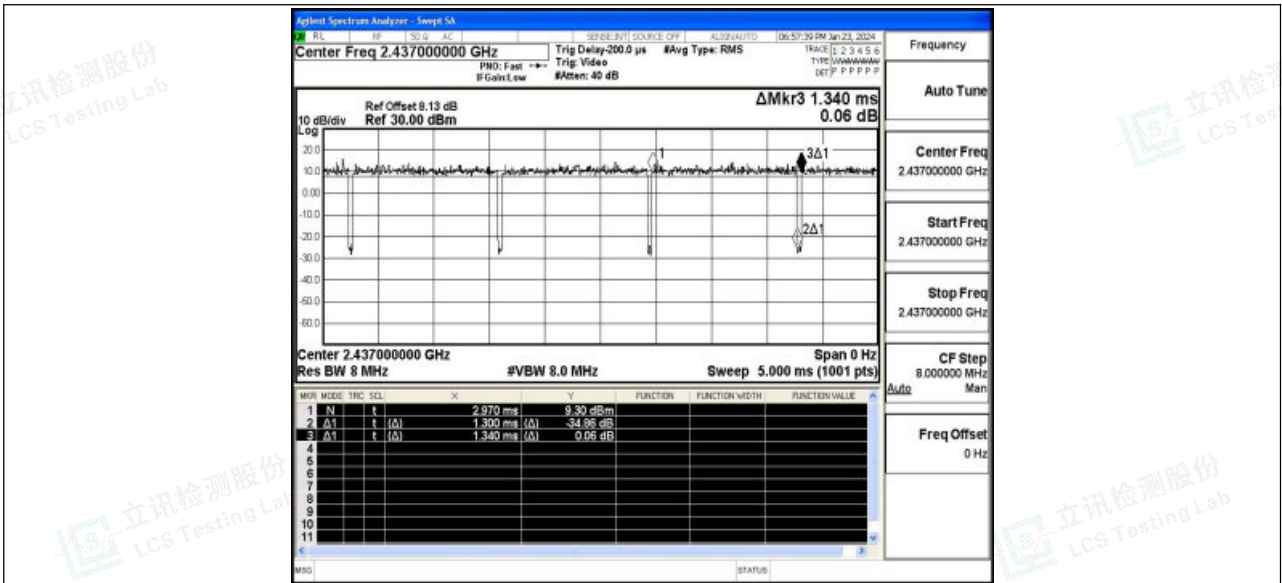


11N20SISO_Ant1_2412

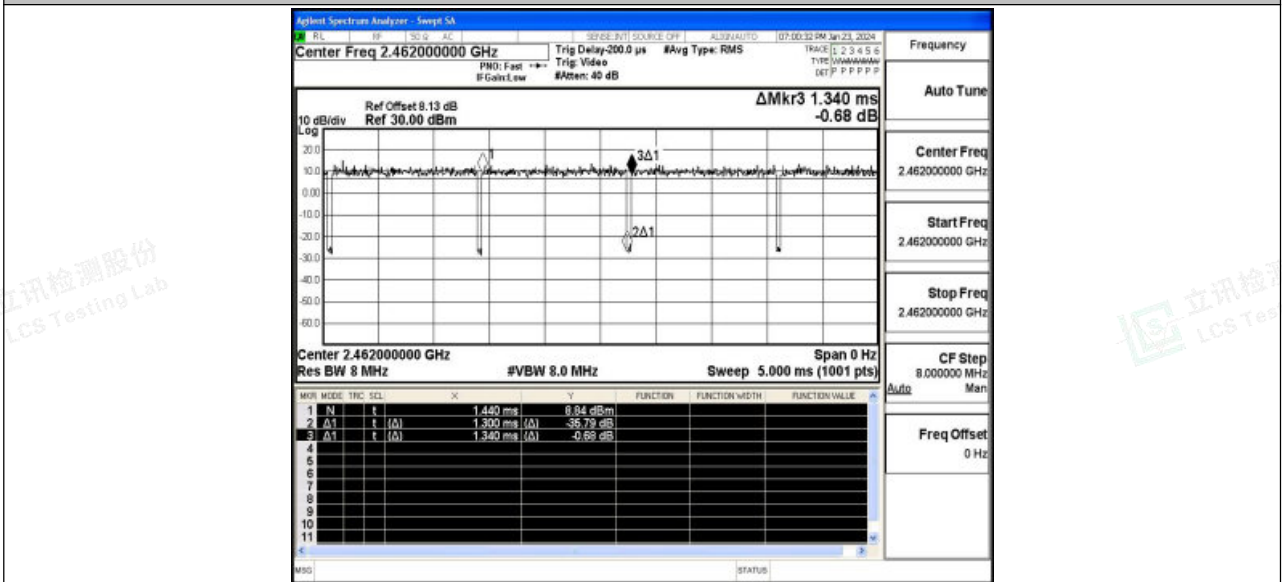


11N20SISO_Ant1_2437

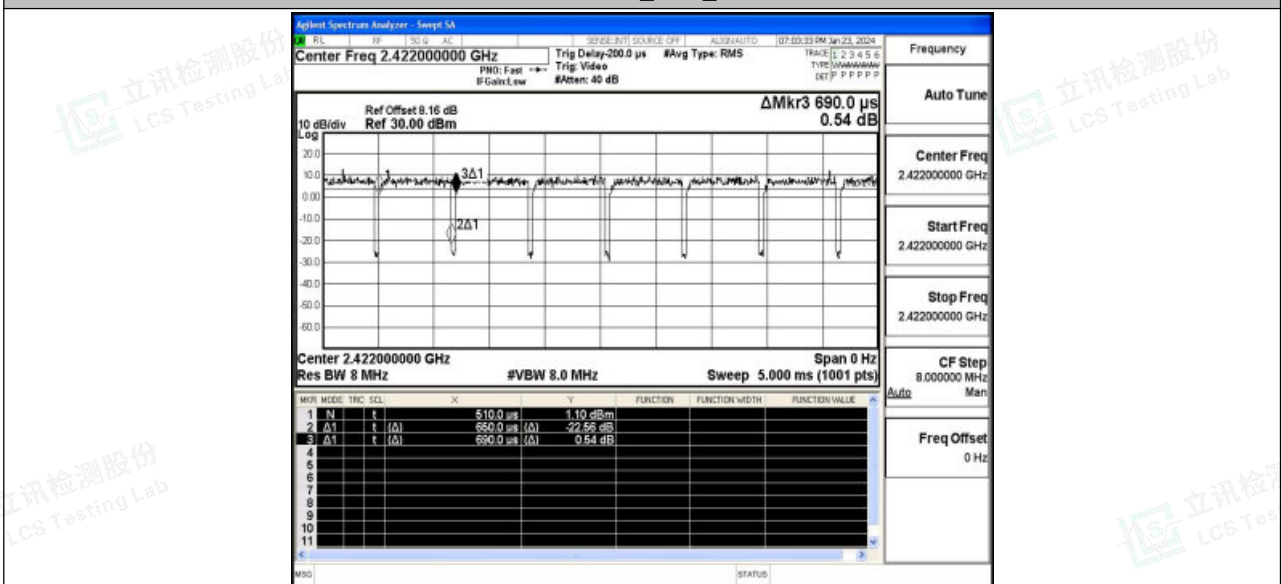




11N20SISO_Ant1_2462



11N40SISO_Ant1_2422





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	Ant1	Low	2412	AV	2310.000	-49.41	≤-41.20	45.79	≤54	PASS
				AV	2374.100	-48.62	≤-41.20	46.58	≤54	PASS
				AV	2390.000	-49.51	≤-41.20	45.69	≤54	PASS
				Peak	2310.000	-41.95	≤-21.20	53.25	≤74	PASS
				Peak	2337.700	-38.73	≤-21.20	56.47	≤74	PASS
				Peak	2390.000	-42.73	≤-21.20	52.47	≤74	PASS
		High	2462	AV	2483.500	-49.53	≤-41.20	45.67	≤54	PASS
				AV	2487.080	-48.66	≤-41.20	46.54	≤54	PASS
				AV	2500.000	-49.16	≤-41.20	46.04	≤54	PASS
				Peak	2483.500	-42.03	≤-21.20	53.17	≤74	PASS
				Peak	2486.970	-38.87	≤-21.20	56.33	≤74	PASS
				Peak	2500.000	-40.73	≤-21.20	54.47	≤74	PASS
11G	Ant1	Low	2412	AV	2310.000	-50.3	≤-41.20	44.90	≤54	PASS
				AV	2387.230	-48.52	≤-41.20	46.68	≤54	PASS
				AV	2390.000	-48.84	≤-41.20	46.36	≤54	PASS
				Peak	2310.000	-40.74	≤-21.20	54.46	≤74	PASS
				Peak	2325.090	-37.88	≤-21.20	57.32	≤74	PASS
				Peak	2390.000	-41.41	≤-21.20	53.79	≤74	PASS
		High	2462	AV	2483.500	-49.23	≤-41.20	45.97	≤54	PASS
				AV	2491.370	-48.22	≤-41.20	46.98	≤54	PASS
				AV	2500.000	-48.79	≤-41.20	46.41	≤54	PASS
				Peak	2483.500	-40.3	≤-21.20	54.90	≤74	PASS
				Peak	2490.490	-38.52	≤-21.20	56.68	≤74	PASS
				Peak	2500.000	-42.71	≤-21.20	52.49	≤74	PASS
11N20SI SO	Ant1	Low	2412	AV	2310.000	-49.62	≤-41.20	45.58	≤54	PASS
				AV	2381.770	-48.56	≤-41.20	46.64	≤54	PASS
				AV	2390.000	-49.45	≤-41.20	45.75	≤54	PASS
				Peak	2310.000	-41.17	≤-21.20	54.03	≤74	PASS
				Peak	2386.710	-37.76	≤-21.20	57.44	≤74	PASS
				Peak	2390.000	-39.91	≤-21.20	55.29	≤74	PASS
		High	2462	AV	2483.500	-49.49	≤-41.20	45.71	≤54	PASS
				AV	2496.320	-48.37	≤-41.20	46.83	≤54	PASS
				AV	2500.000	-49.01	≤-41.20	46.19	≤54	PASS
				Peak	2483.500	-41.02	≤-21.20	54.18	≤74	PASS
				Peak	2498.850	-38.42	≤-21.20	56.78	≤74	PASS
				Peak	2500.000	-40.65	≤-21.20	54.55	≤74	PASS
11N40SI	Ant1	Low	2422	AV	2310.000	-49.13	≤-41.20	46.07	≤54	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



SO			AV	2389.830	-48.49	≤-41.20	46.71	≤54	PASS
			AV	2390.000	-48.97	≤-41.20	46.23	≤54	PASS
			Peak	2310.000	-40.88	≤-21.20	54.32	≤74	PASS
			Peak	2380.600	-38.59	≤-21.20	56.61	≤74	PASS
			Peak	2390.000	-40.56	≤-21.20	54.64	≤74	PASS
	High	2452	AV	2483.500	-48.88	≤-41.20	46.32	≤54	PASS
			AV	2495.220	-48.14	≤-41.20	47.06	≤54	PASS
			AV	2500.000	-48.56	≤-41.20	46.64	≤54	PASS
			Peak	2483.500	-41.02	≤-21.20	54.18	≤74	PASS
			Peak	2486.530	-37.64	≤-21.20	57.56	≤74	PASS
			Peak	2500.000	-41.2	≤-21.20	54.00	≤74	PASS

Note:

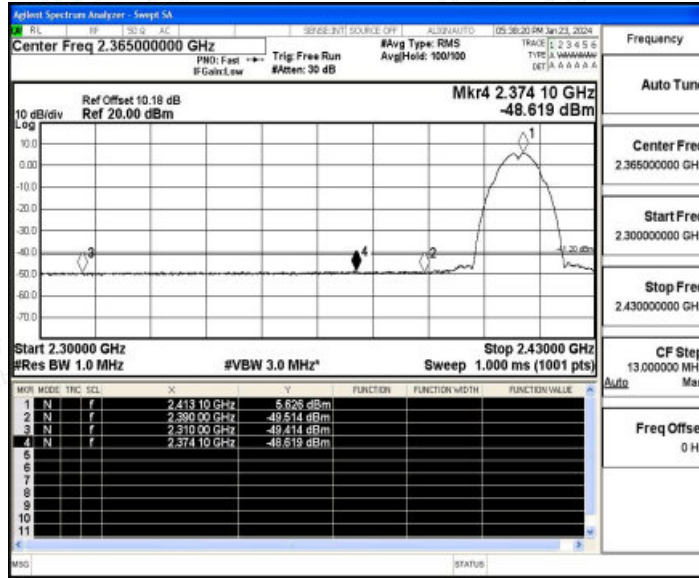
1. The Antenna Gain is compensated in the graph. The Correction Factor is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



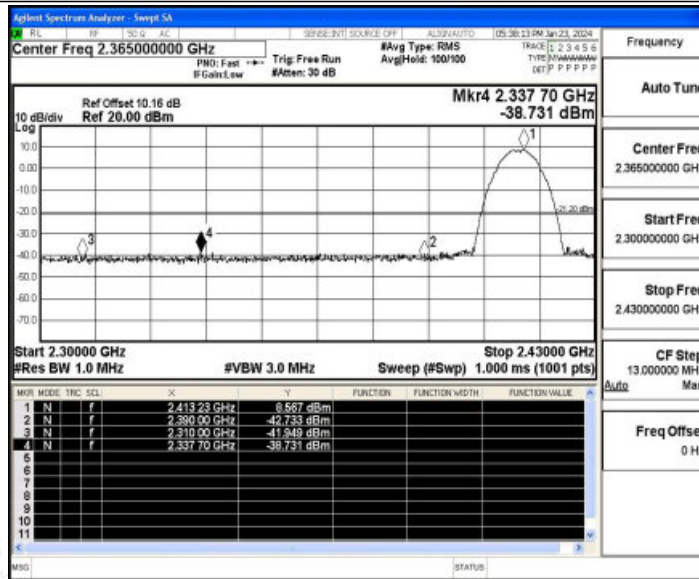


Test Graphs

11B_Ant1_Low_2412_AV

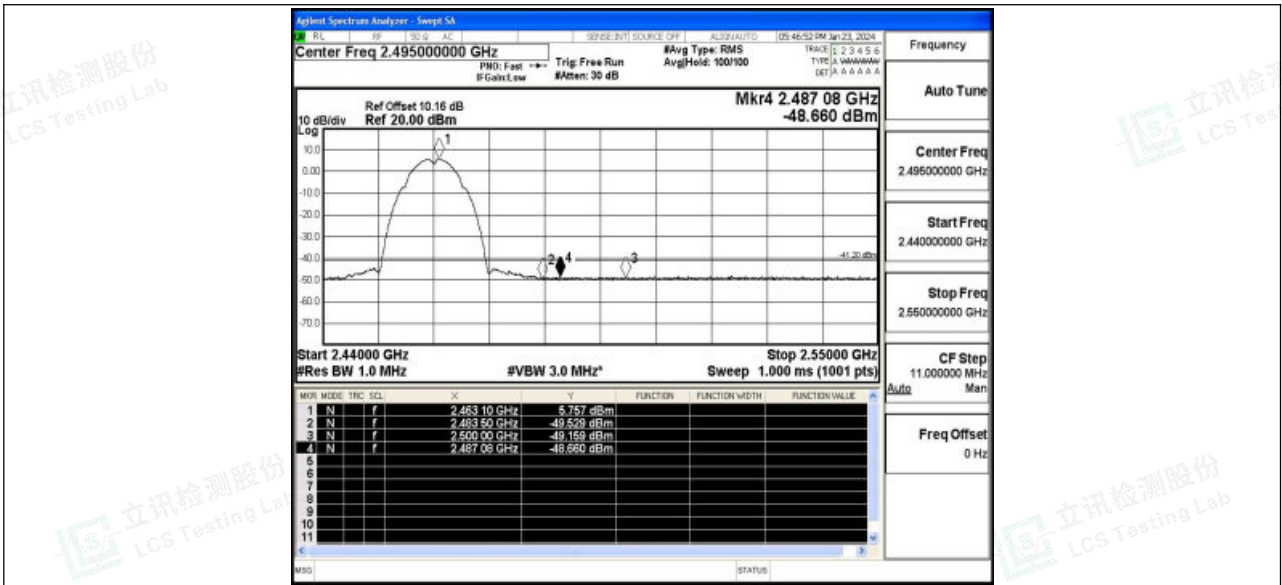


11B_Ant1_Low_2412_Peak

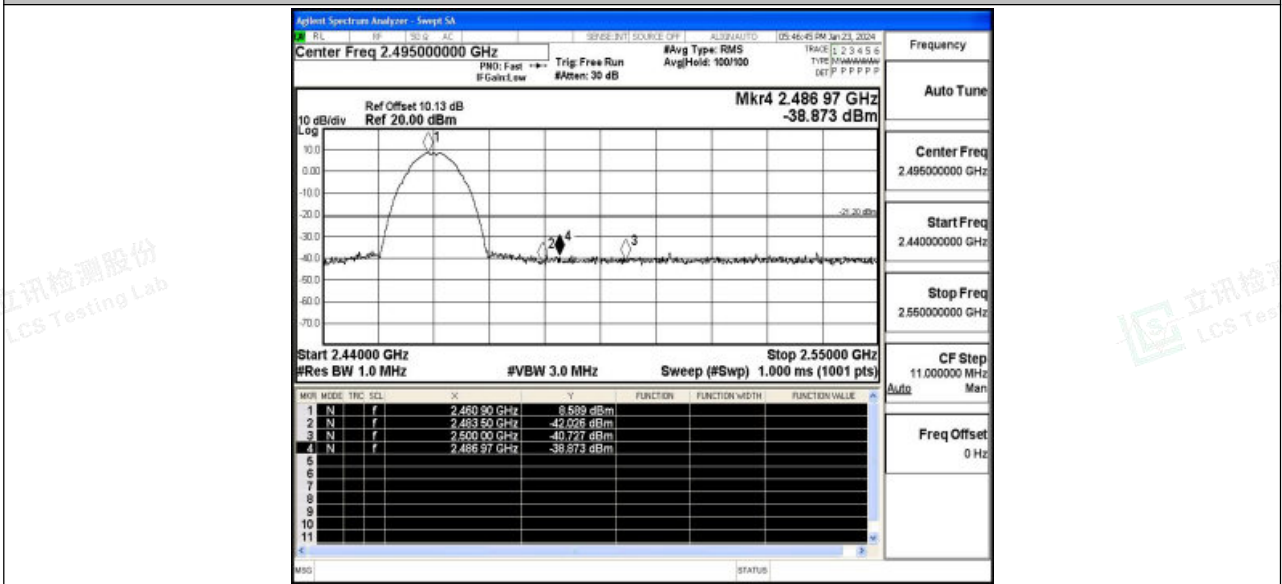


11B_Ant1_High_2462_AV

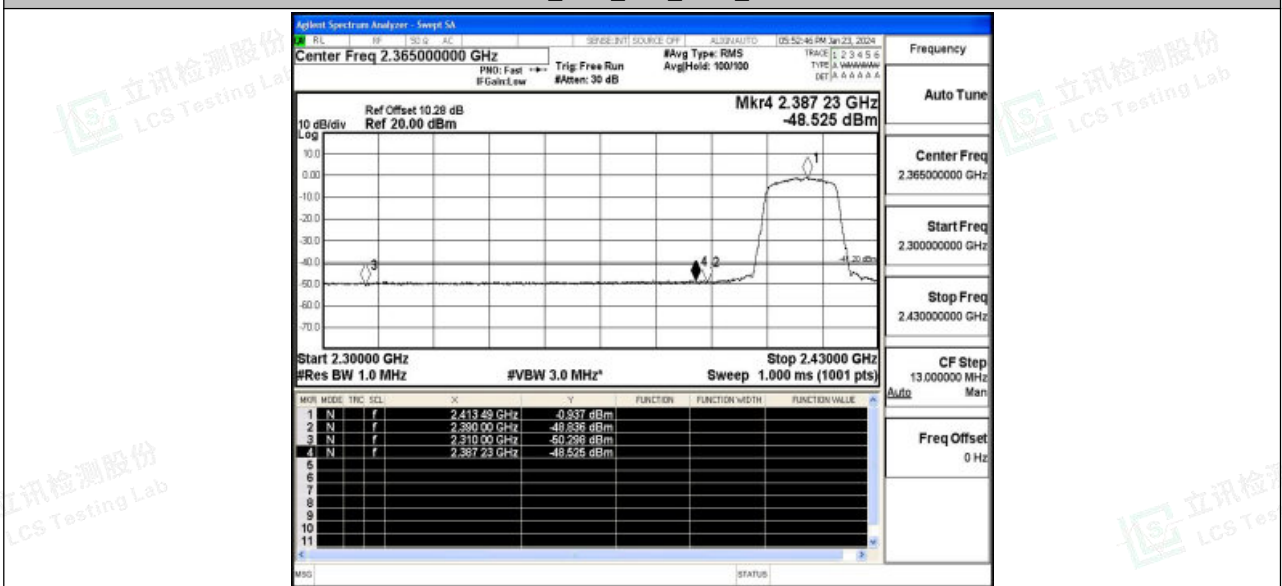




11B_Ant1_High_2462_Peak

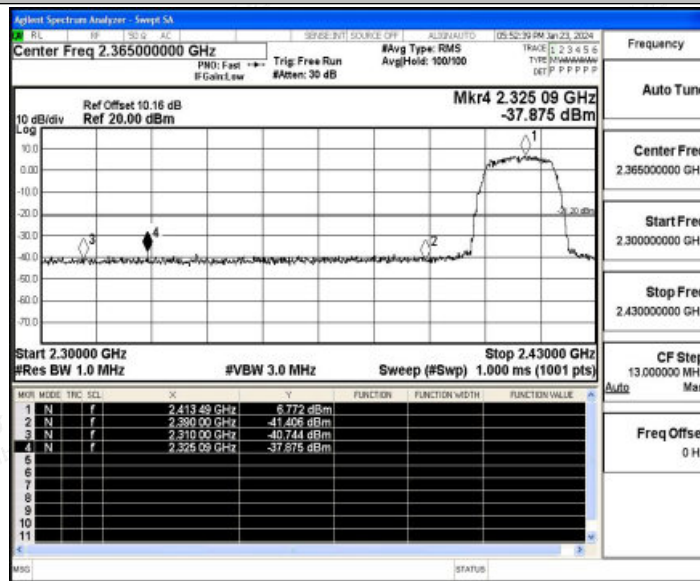


11G_Ant1_Low_2412_AV

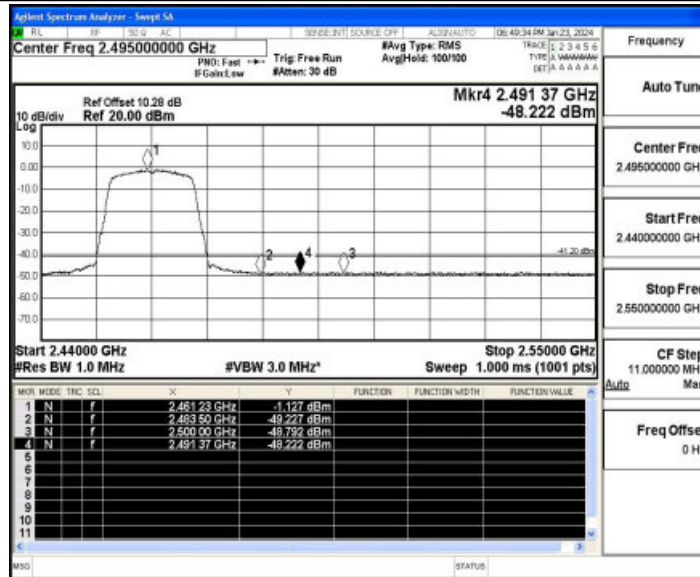




11G_Ant1_Low_2412_Peak

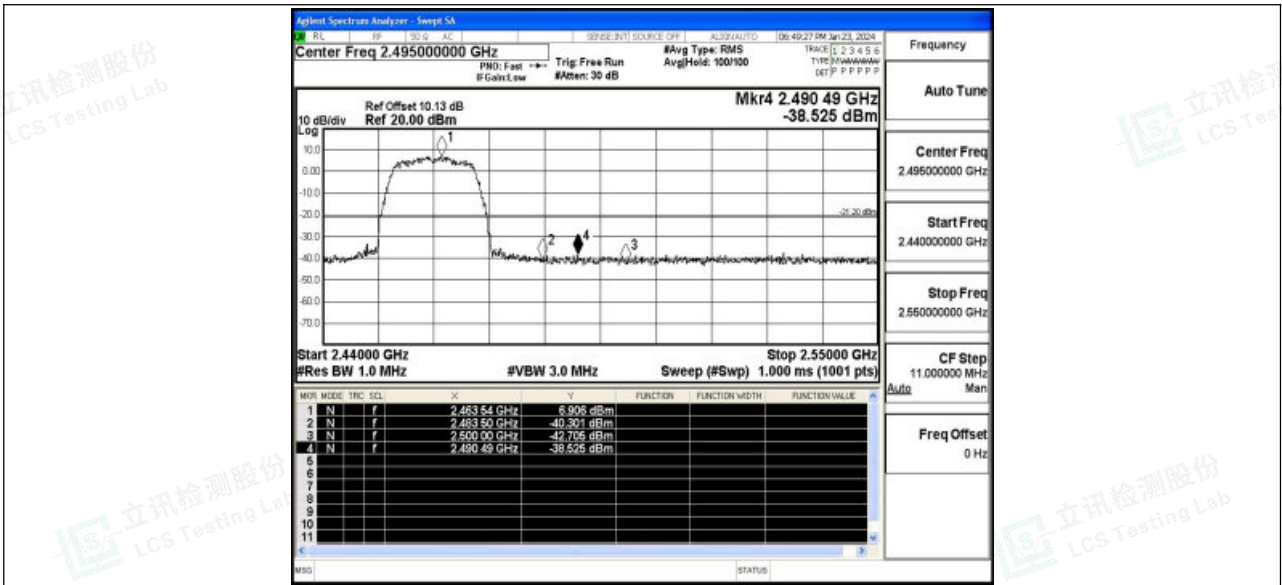


11G_Ant1_High_2462_AV

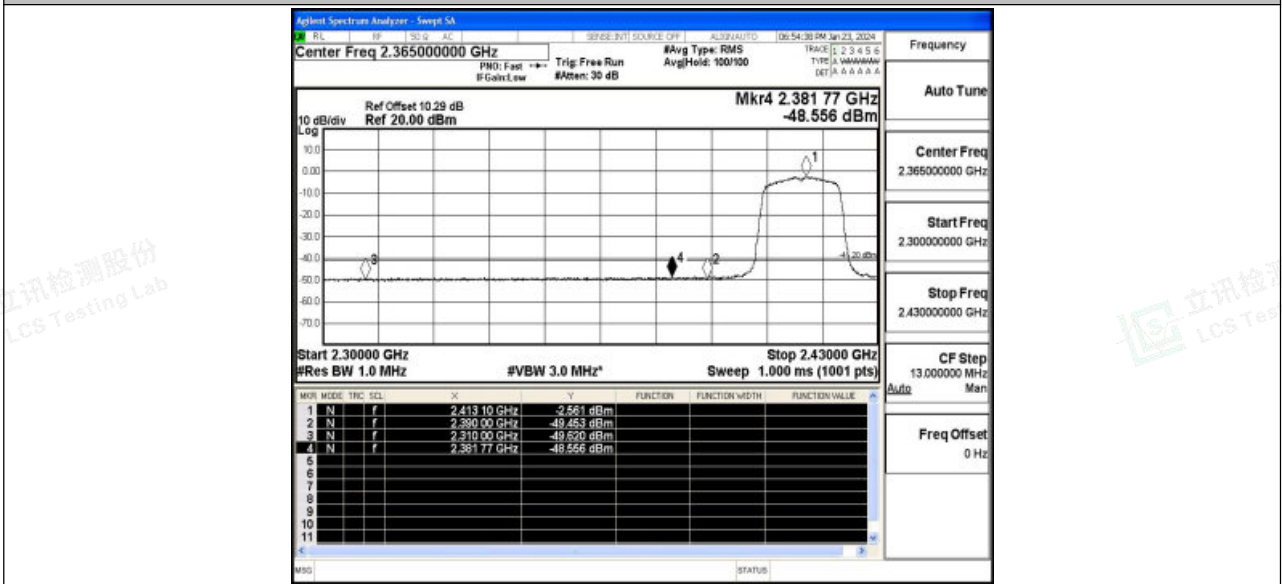


11G_Ant1_High_2462_Peak

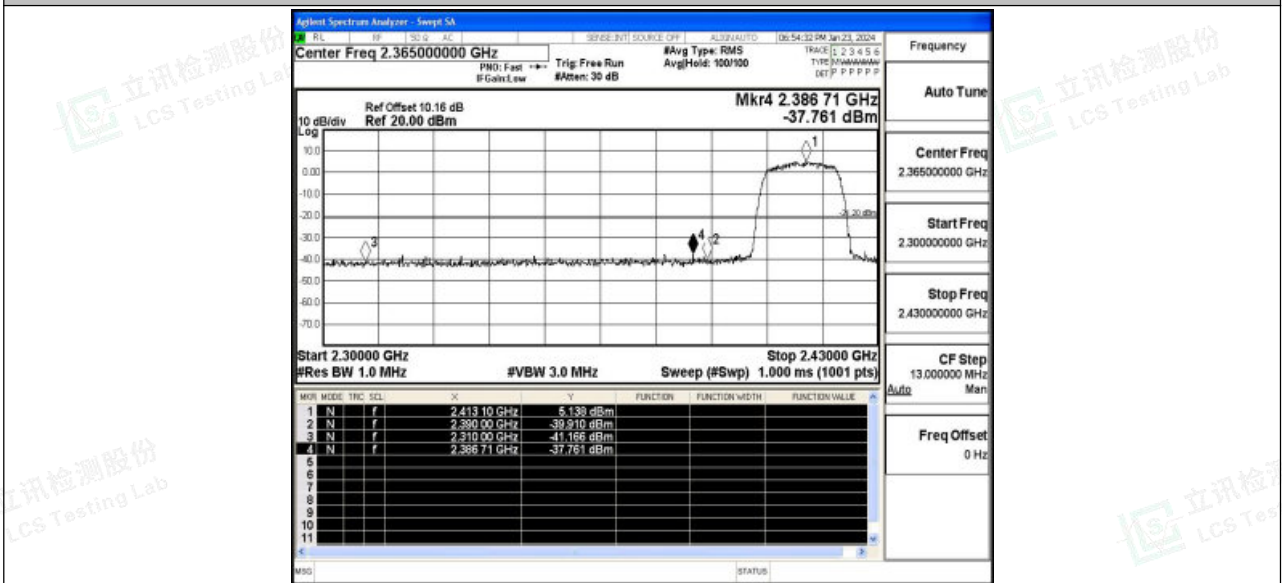




11N20SISO_Ant1_Low_2412_AV

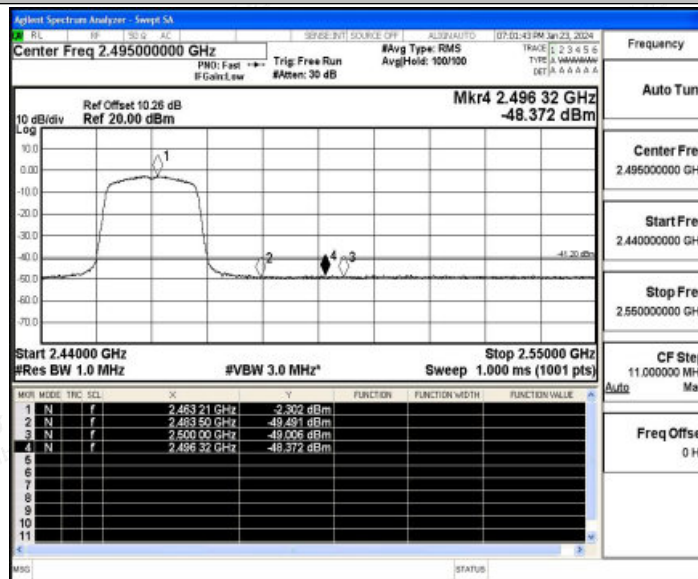


11N20SISO_Ant1_Low_2412_Peak

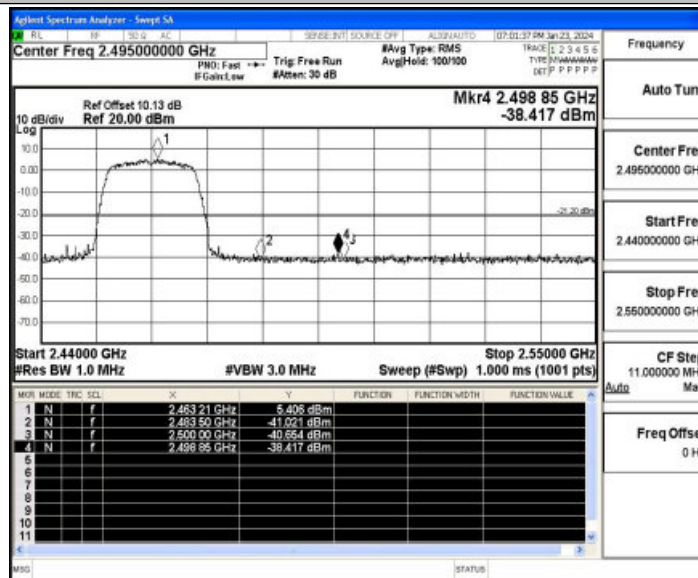




11N20SISO_Ant1_High_2462_AV

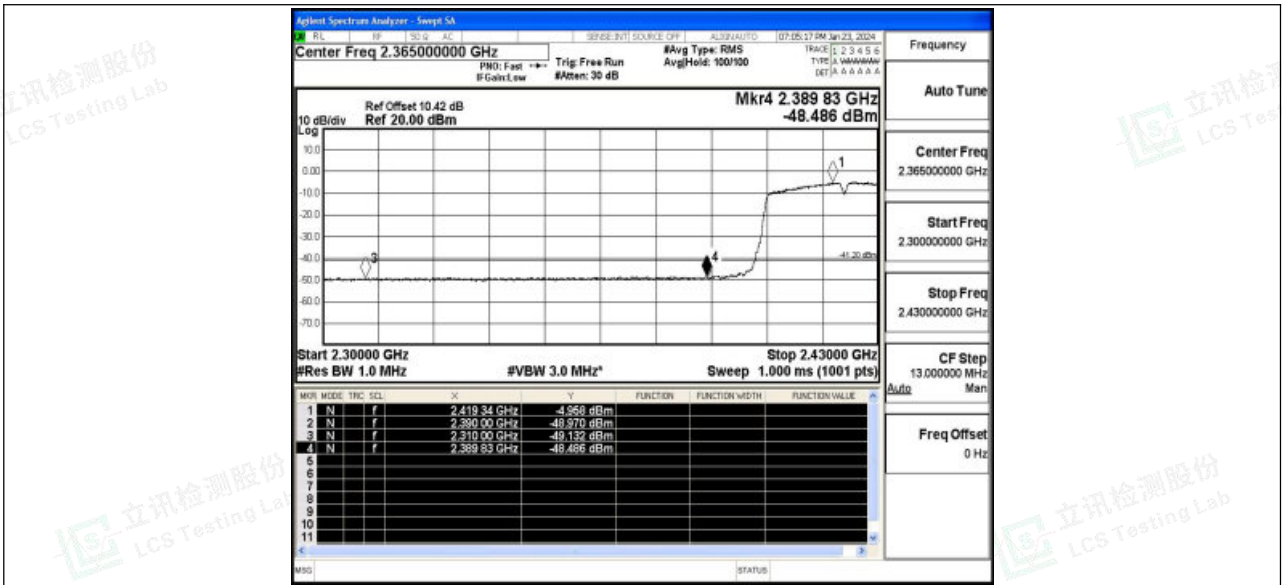


11N20SISO_Ant1_High_2462_Peak

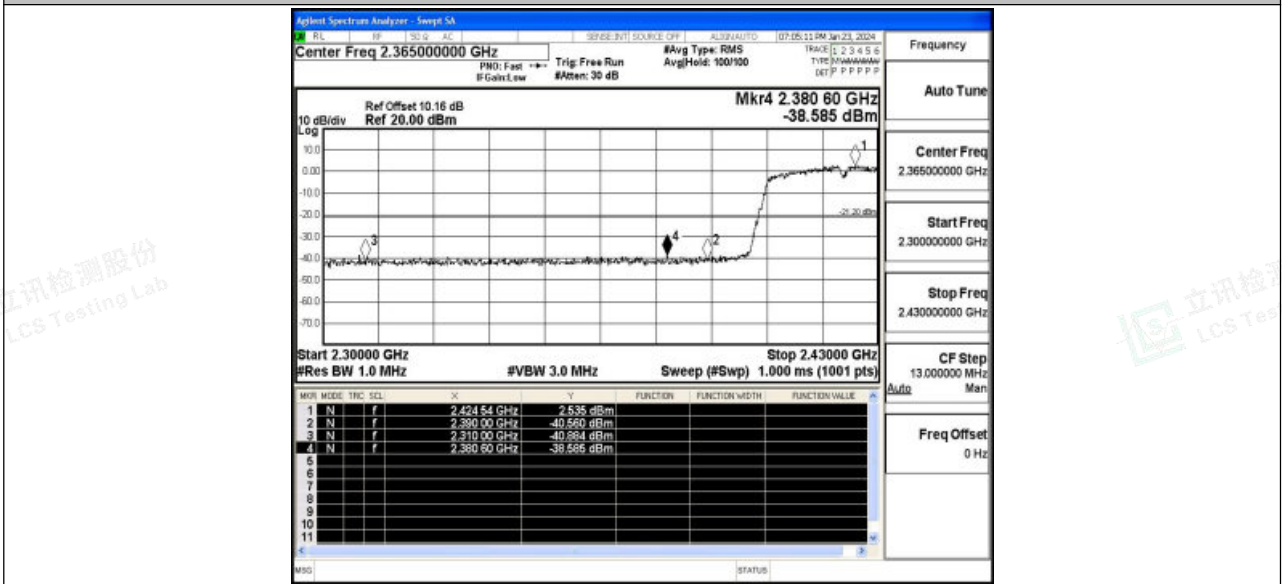


11N40SISO_Ant1_Low_2422_AV

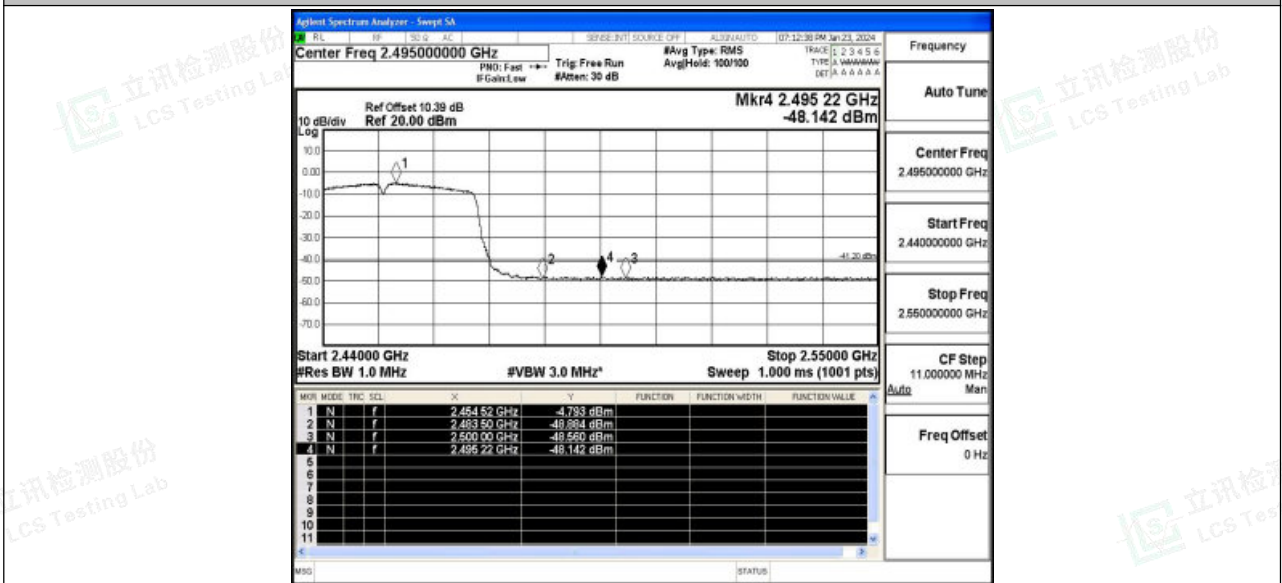




11N40SISO_Ant1_Low_2422_Peak



11N40SISO_Ant1_High_2452_AV





11N40SISO_Ant1_High_2452_Peak

