



Appendix A

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Permanent Outdoor Eaves Lights

Test Model: L-PO108C1

Environmental Conditions

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





A.1 DTS Bandwidth

Test Result

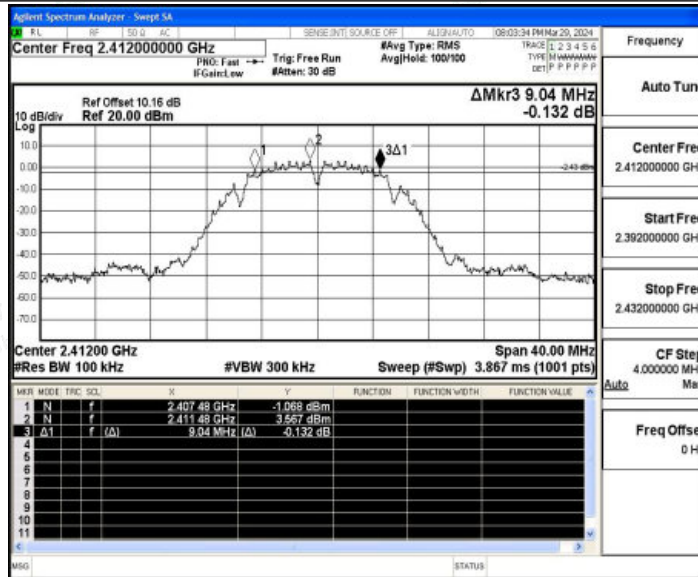
TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.040	2407.480	2416.520	0.5	PASS
		2437	9.560	2431.960	2441.520	0.5	PASS
		2462	9.040	2457.480	2466.520	0.5	PASS
11G	Ant1	2412	16.320	2403.840	2420.160	0.5	PASS
		2437	16.360	2428.800	2445.160	0.5	PASS
		2462	16.320	2453.840	2470.160	0.5	PASS
11N20SISO	Ant1	2412	17.640	2403.200	2420.840	0.5	PASS
		2437	17.600	2428.200	2445.800	0.5	PASS
		2462	17.600	2453.200	2470.800	0.5	PASS
11N40SISO	Ant1	2422	35.680	2404.080	2439.760	0.5	PASS
		2437	35.840	2419.080	2454.920	0.5	PASS
		2452	35.840	2434.080	2469.920	0.5	PASS



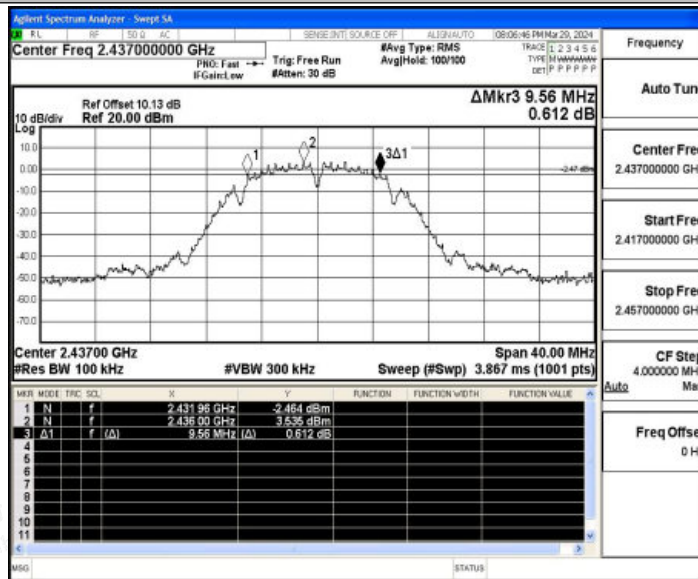


Test Graphs

11B_Ant1_2412

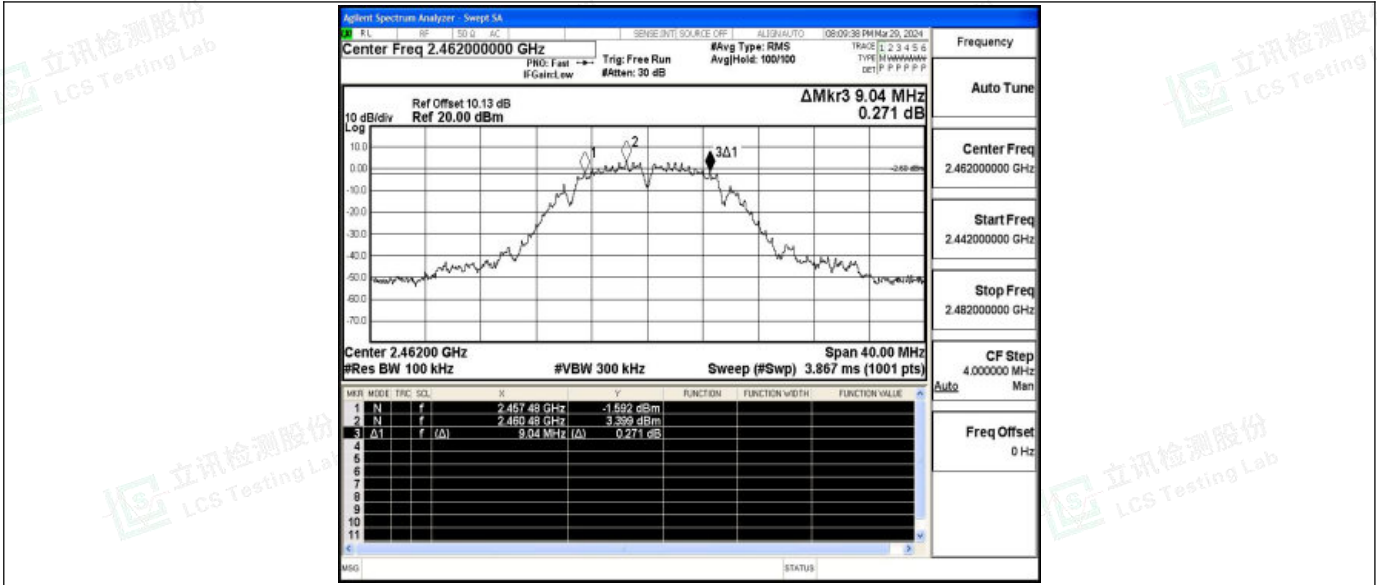


11B_Ant1_2437

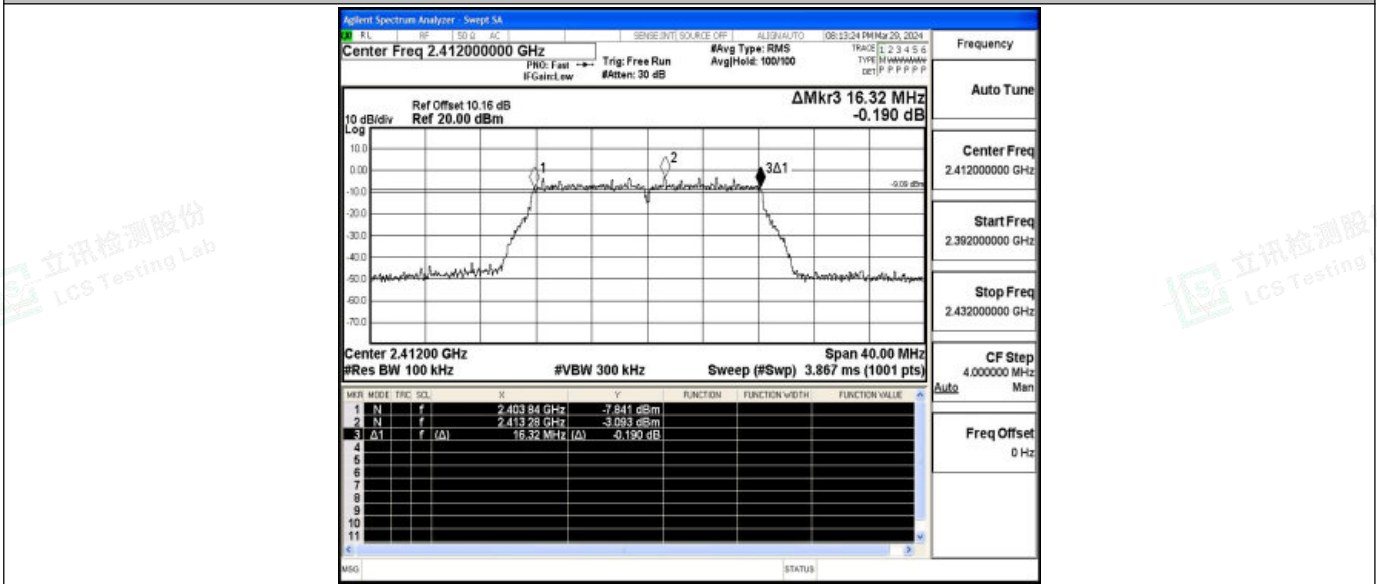


11B_Ant1_2462



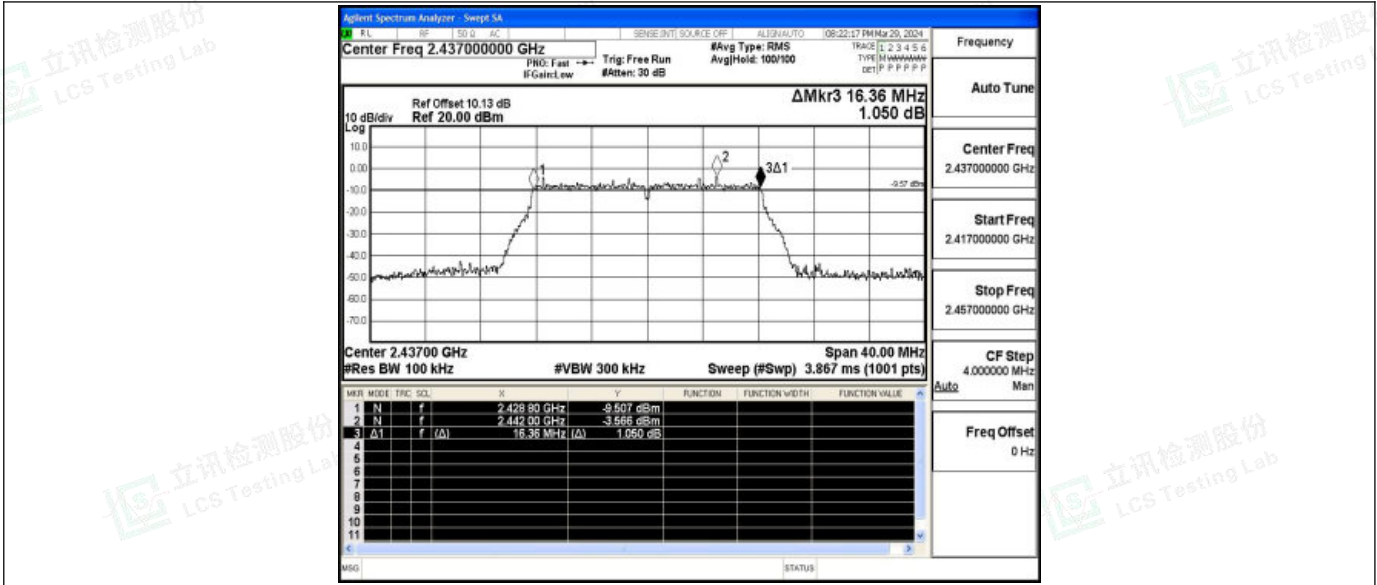


11G_Ant1_2412

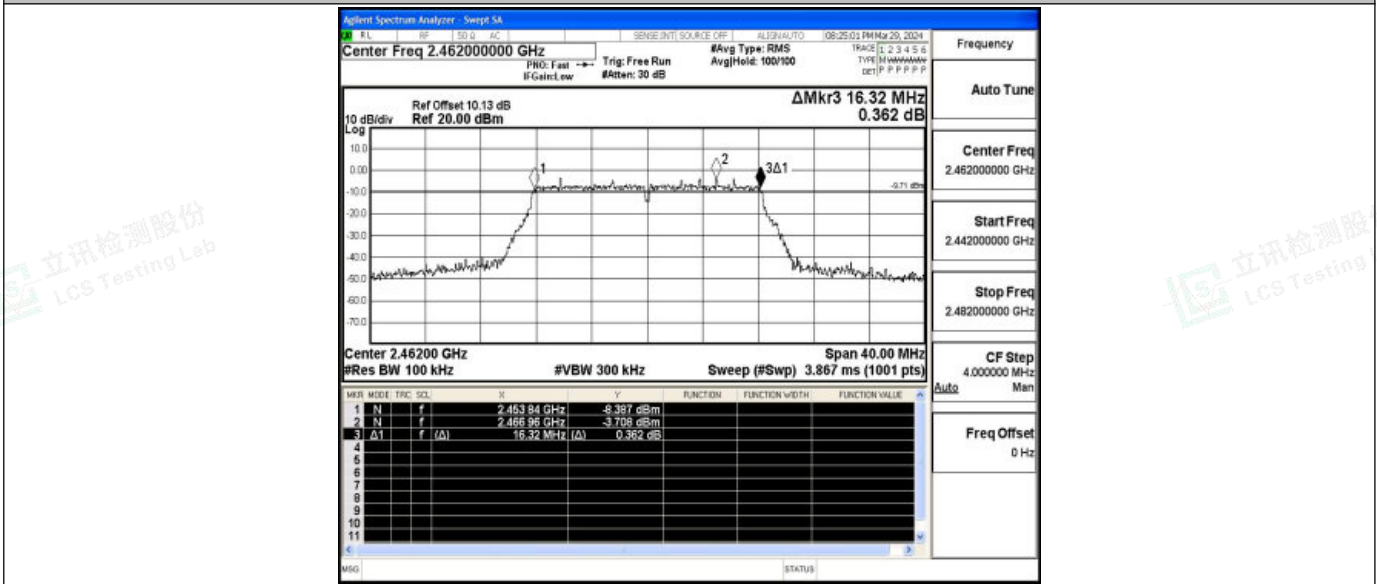


11G_Ant1_2437



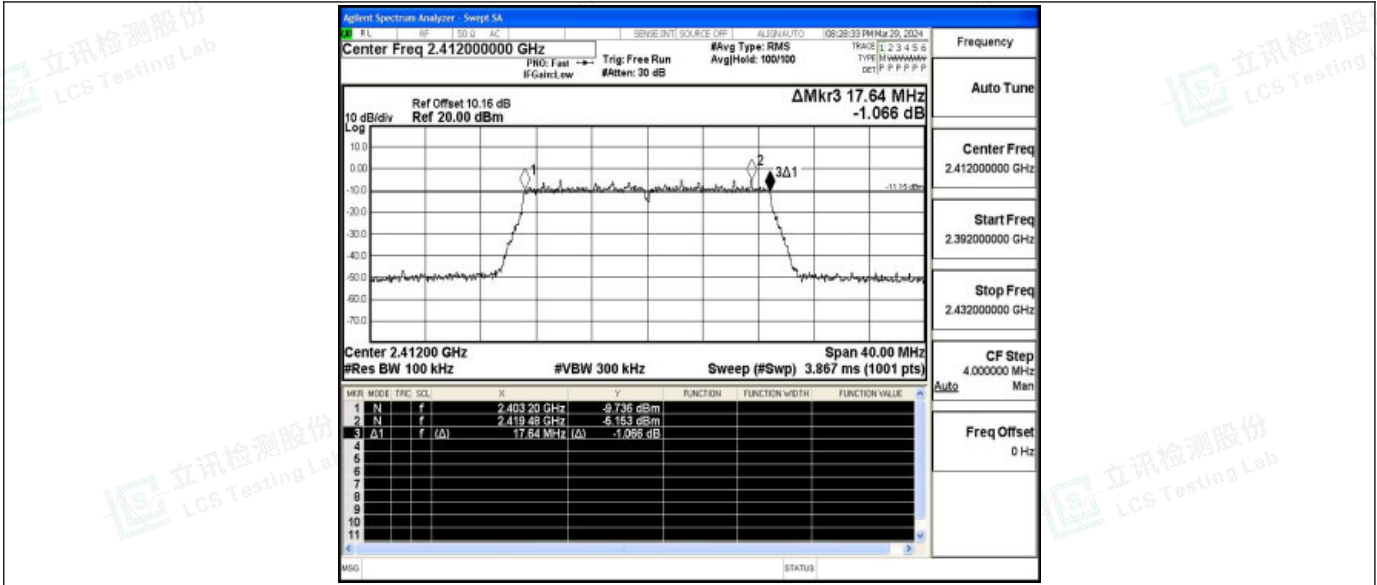


11G_Ant1_2462

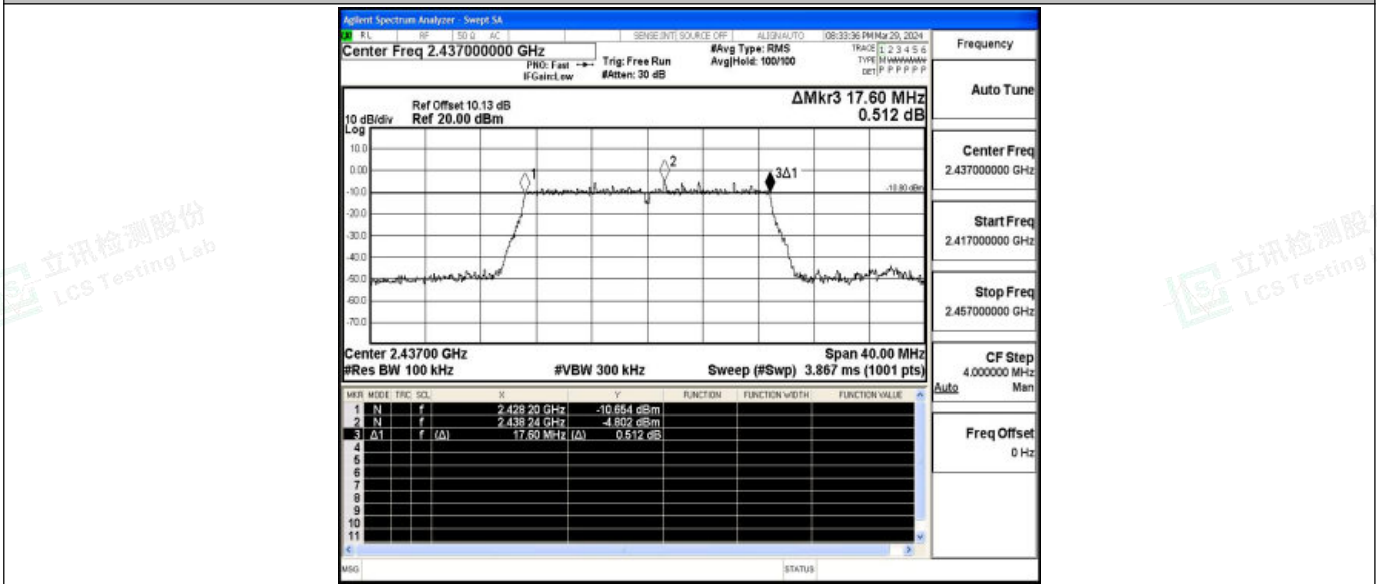


11N20SISO_Ant1_2412



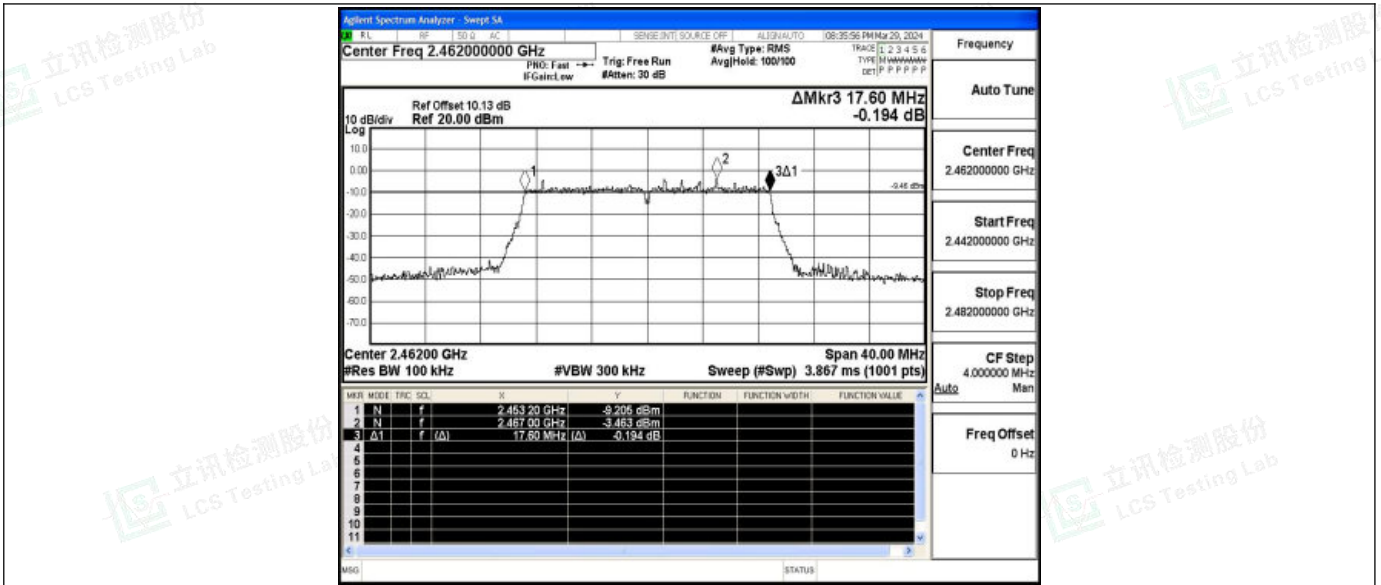


11N20SISO_Ant1_2437

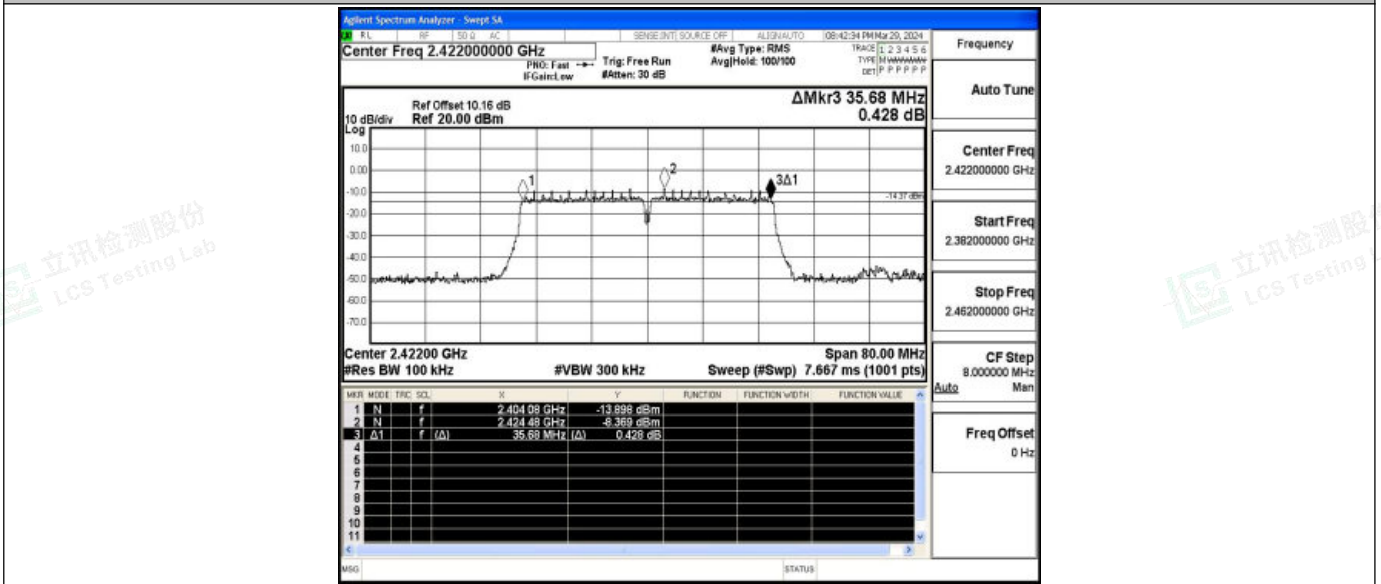


11N20SISO_Ant1_2462



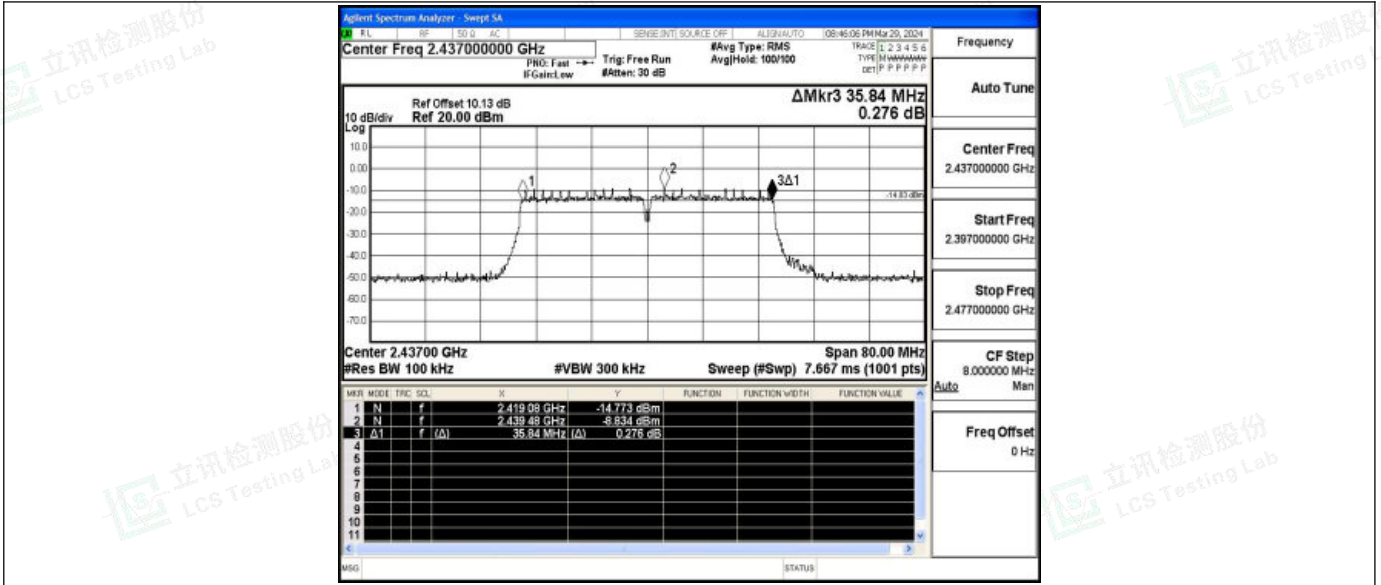


11N40SISO_Ant1_2422

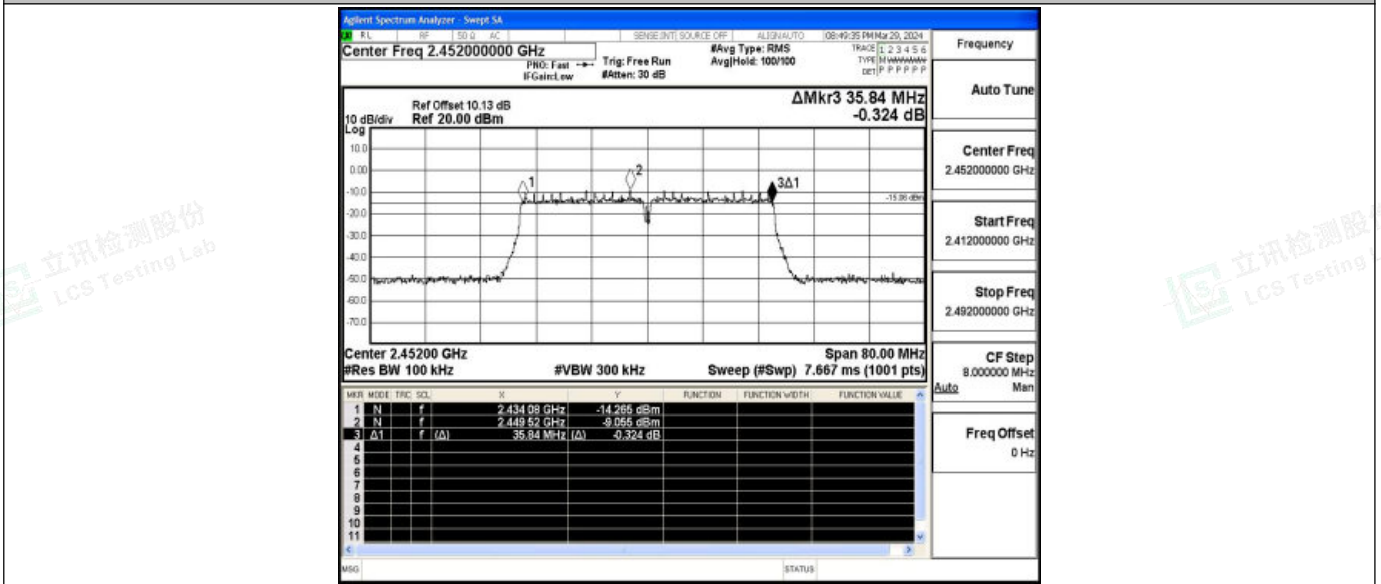


11N40SISO_Ant1_2437





11N40SISO_Ant1_2452





A.2 Maximum Peak conducted output power

Test Result

TestMode	Antenna	Freq(MHz)	Set Power	Peak Power[dBm]	Conducted Limit[dBm]	Verdict
11B	Ant1	2412	---	15.43	≤30.00	PASS
		2437	---	15.57	≤30.00	PASS
		2462	---	15.27	≤30.00	PASS
11G	Ant1	2412	---	14.55	≤30.00	PASS
		2437	---	14.17	≤30.00	PASS
		2462	---	14.42	≤30.00	PASS
11N20SISO	Ant1	2412	---	13.21	≤30.00	PASS
		2437	---	12.82	≤30.00	PASS
		2462	---	12.58	≤30.00	PASS
11N40SISO	Ant1	2422	---	12.02	≤30.00	PASS
		2437	---	11.75	≤30.00	PASS
		2452	---	11.38	≤30.00	PASS





A.3 Maximum power spectral density

Test Result

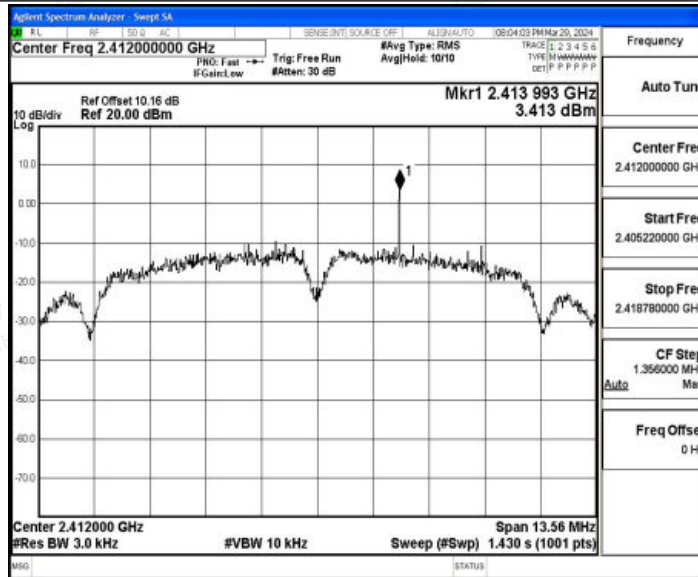
TestMode	Antenna	Freq(MHz)	Result [dBm/3-100kHz]	Limit [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant1	2412	3.41	≤8.00	---	PASS
		2437	-9.87	≤8.00	---	PASS
		2462	-10.10	≤8.00	---	PASS
11G	Ant1	2412	-16.43	≤8.00	---	PASS
		2437	-16.64	≤8.00	---	PASS
		2462	-17.39	≤8.00	---	PASS
11N20SISO	Ant1	2412	-17.89	≤8.00	---	PASS
		2437	-19.12	≤8.00	---	PASS
		2462	-17.78	≤8.00	---	PASS
11N40SISO	Ant1	2422	-21.85	≤8.00	---	PASS
		2437	-19.78	≤8.00	---	PASS
		2452	-19.23	≤8.00	---	PASS



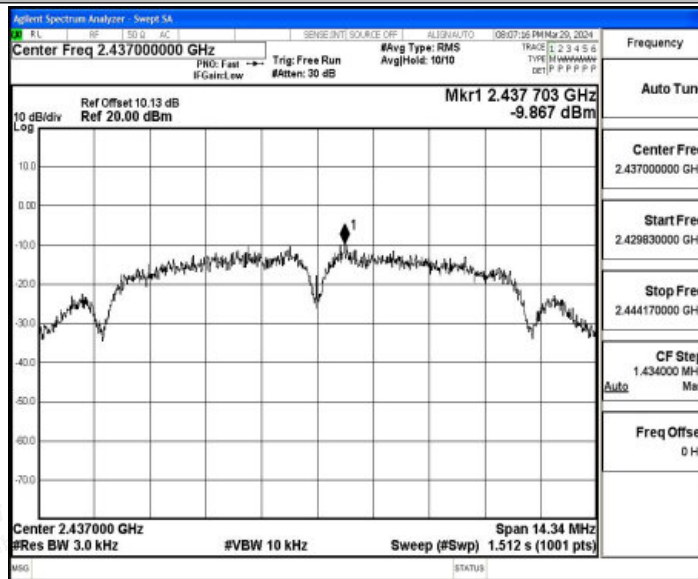


Test Graphs

11B_Ant1_2412

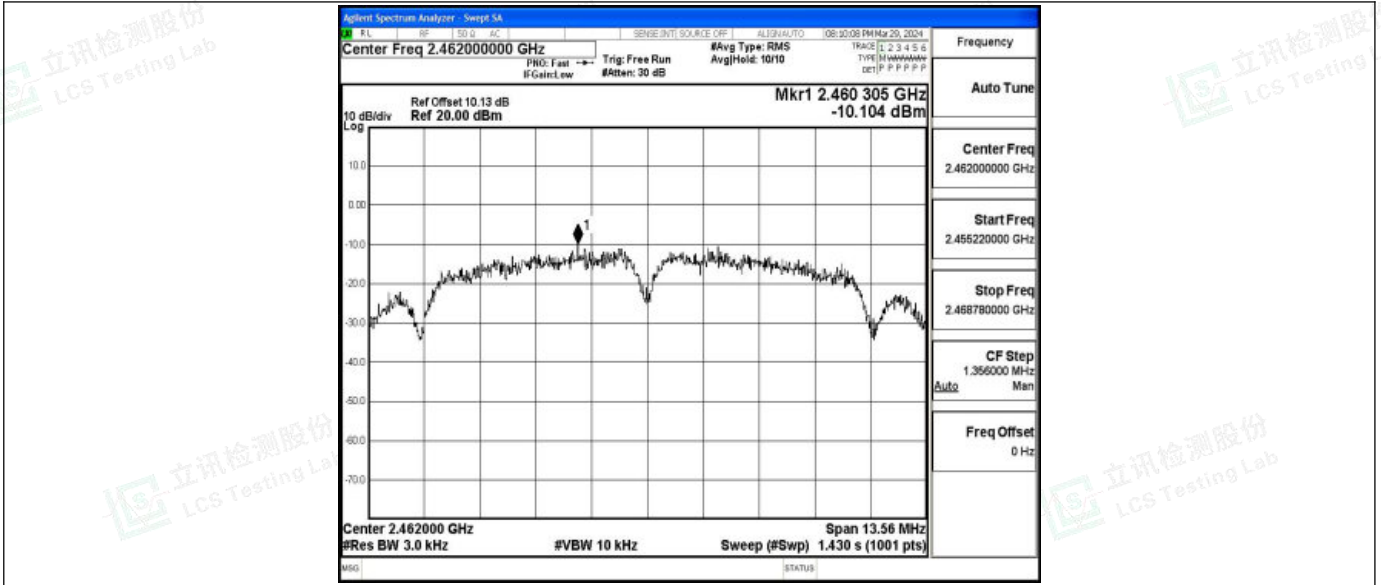


11B_Ant1_2437

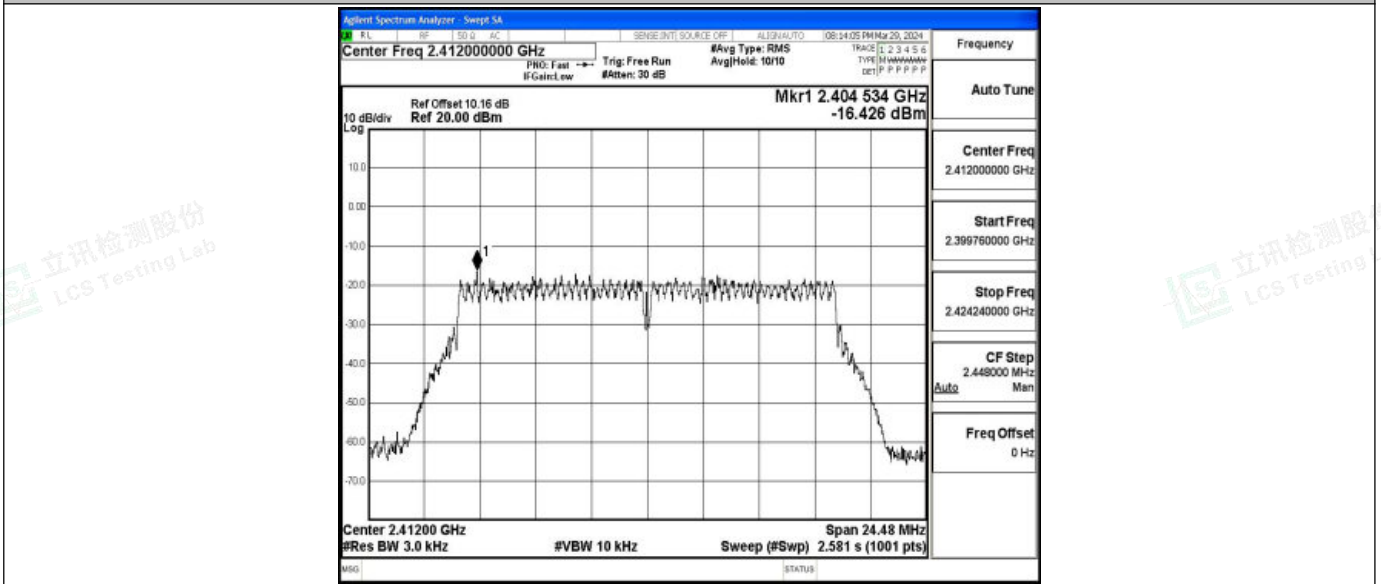


11B_Ant1_2462



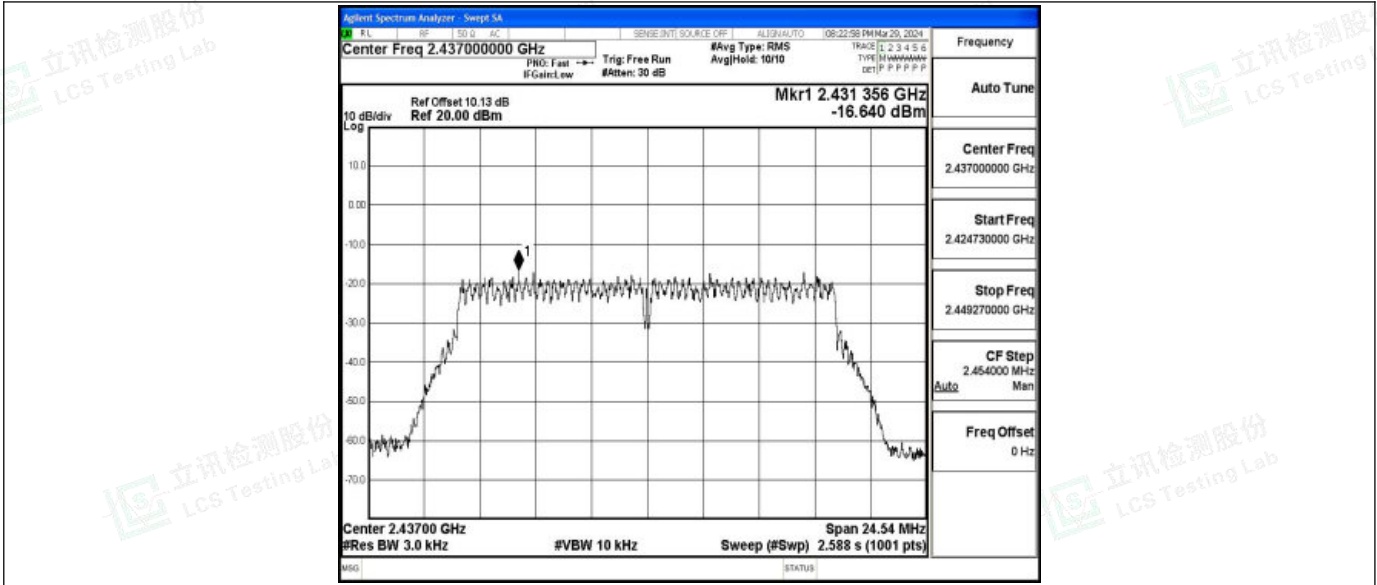


11G_Ant1_2412

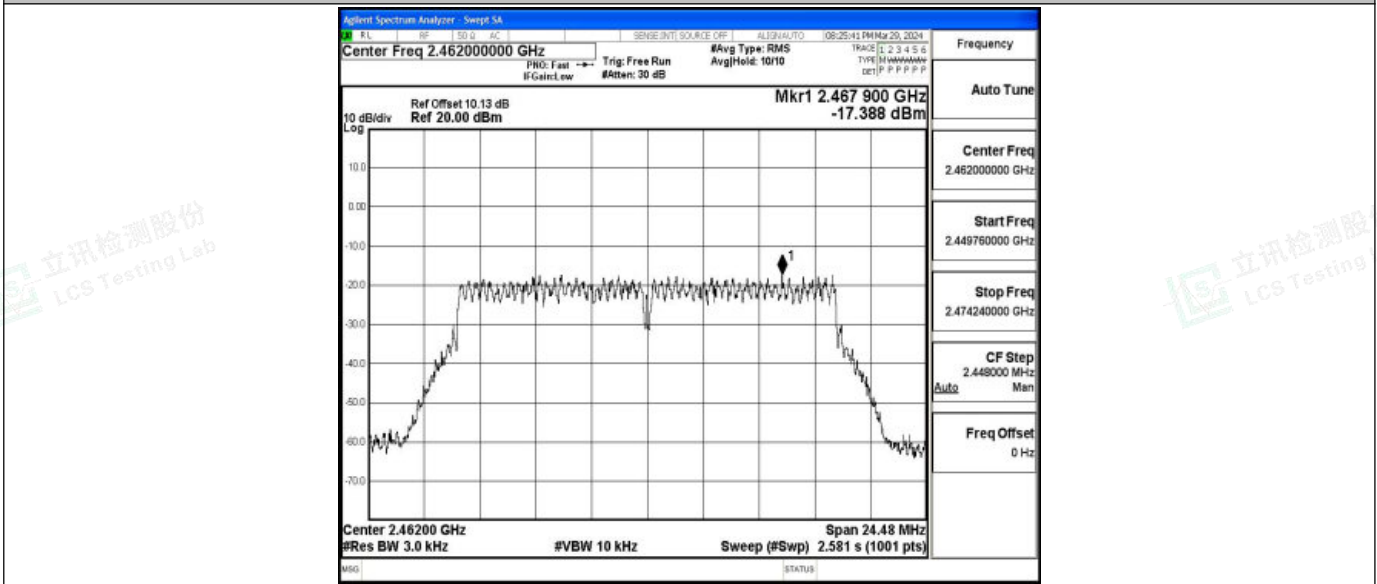


11G_Ant1_2437



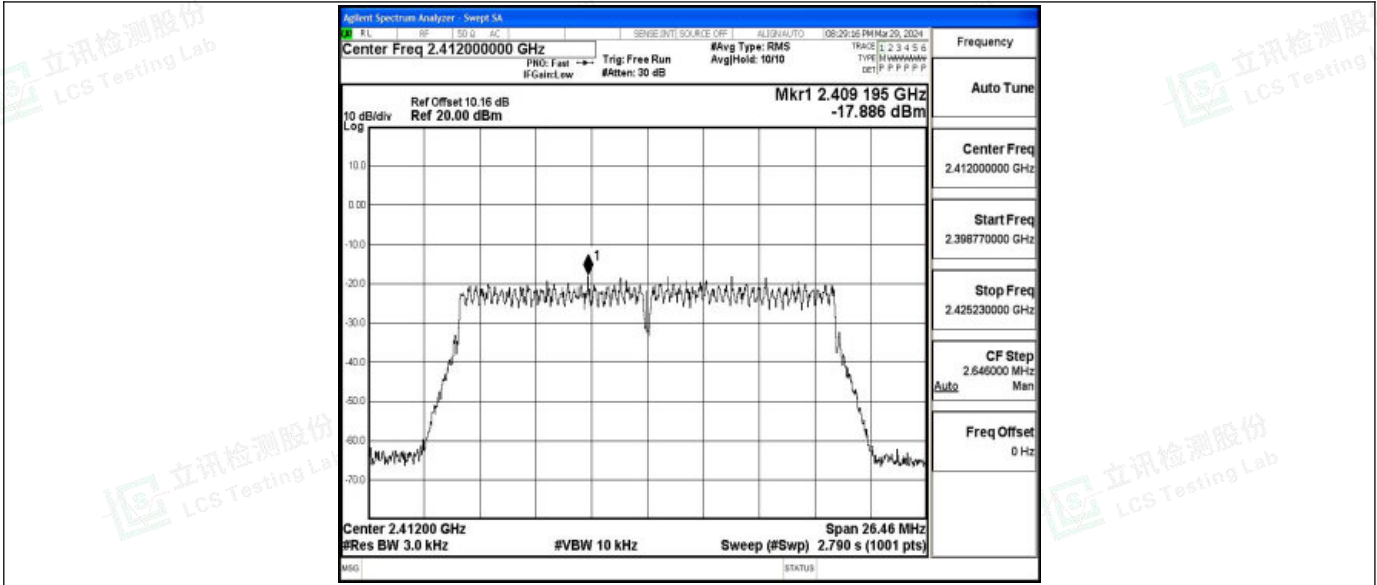


11G_Ant1_2462

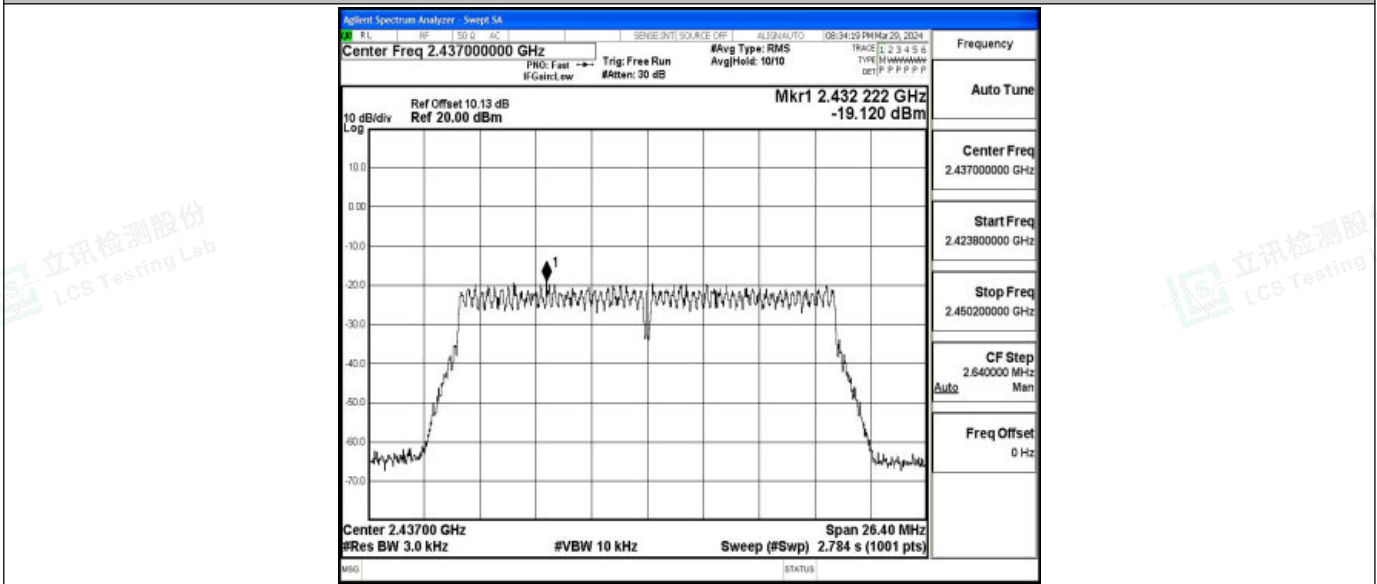


11N20SISO_Ant1_2412



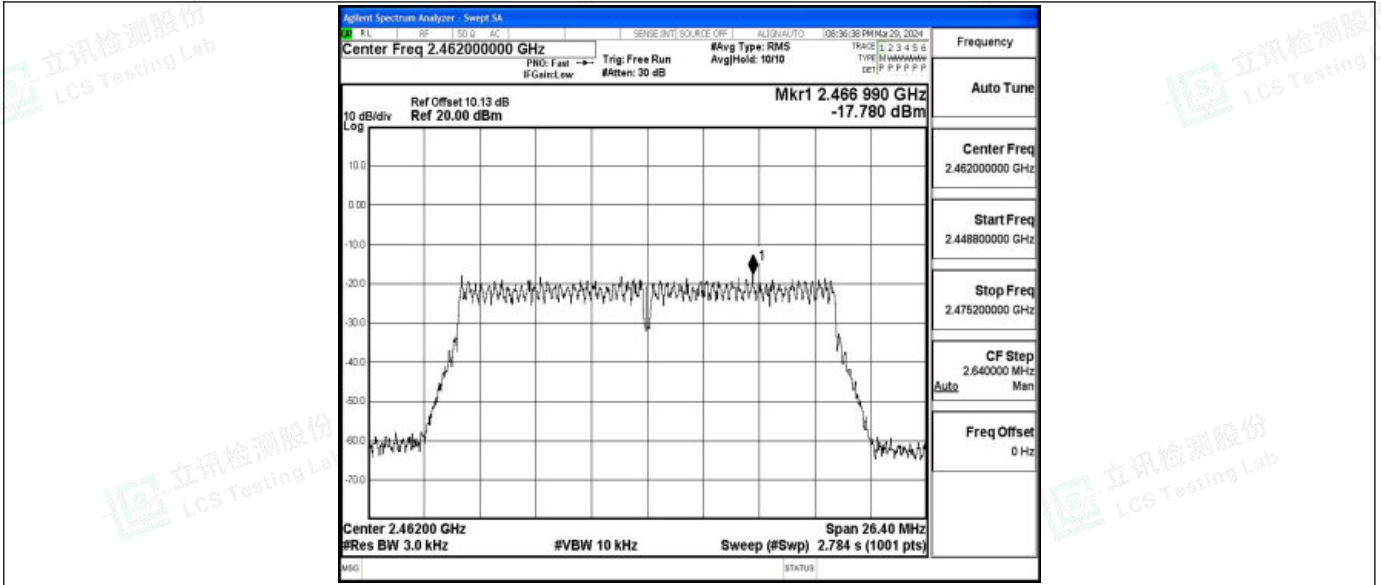


11N20SISO_Ant1_2437

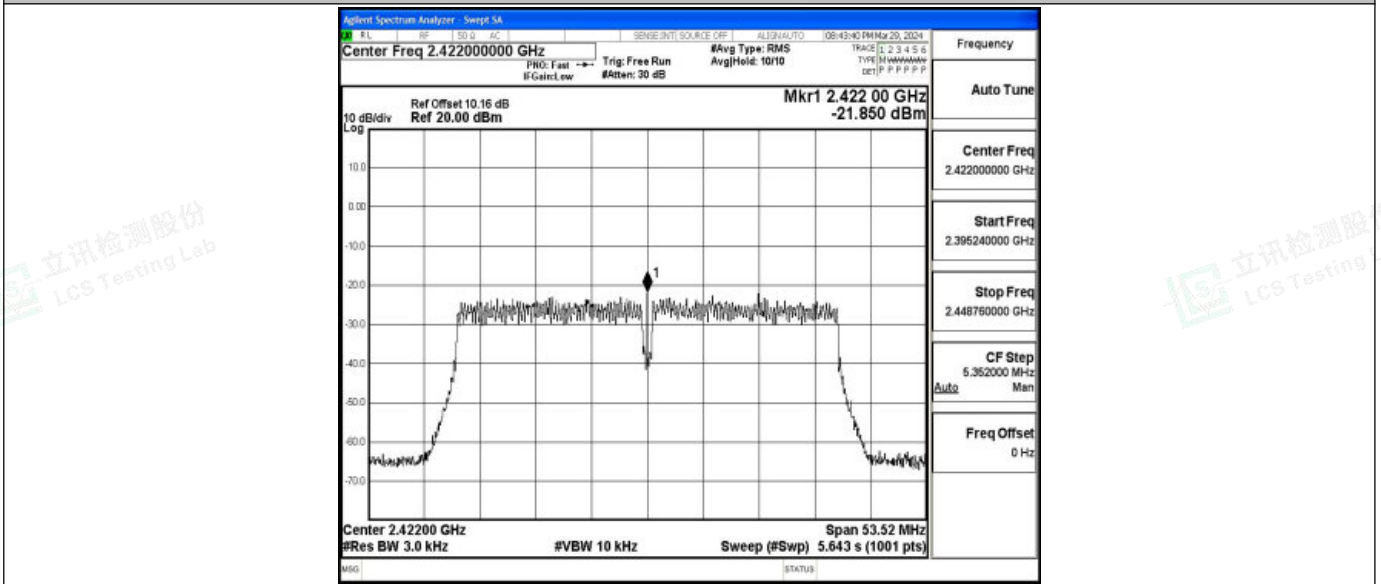


11N20SISO_Ant1_2462



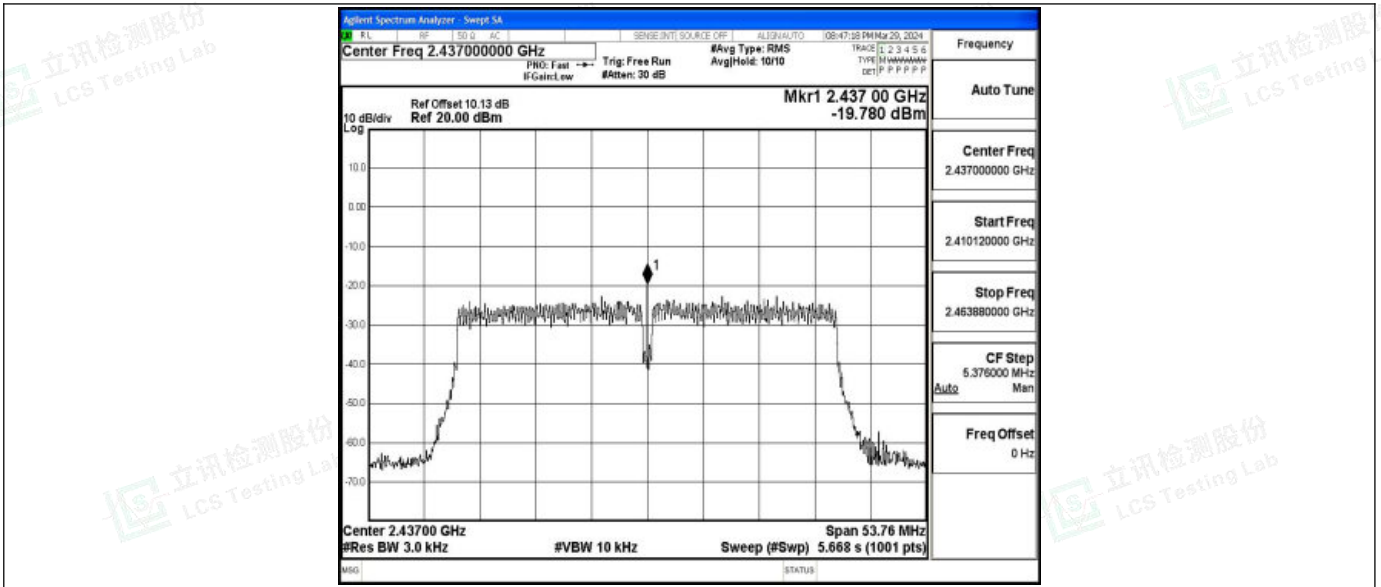


11N40SISO_Ant1_2422

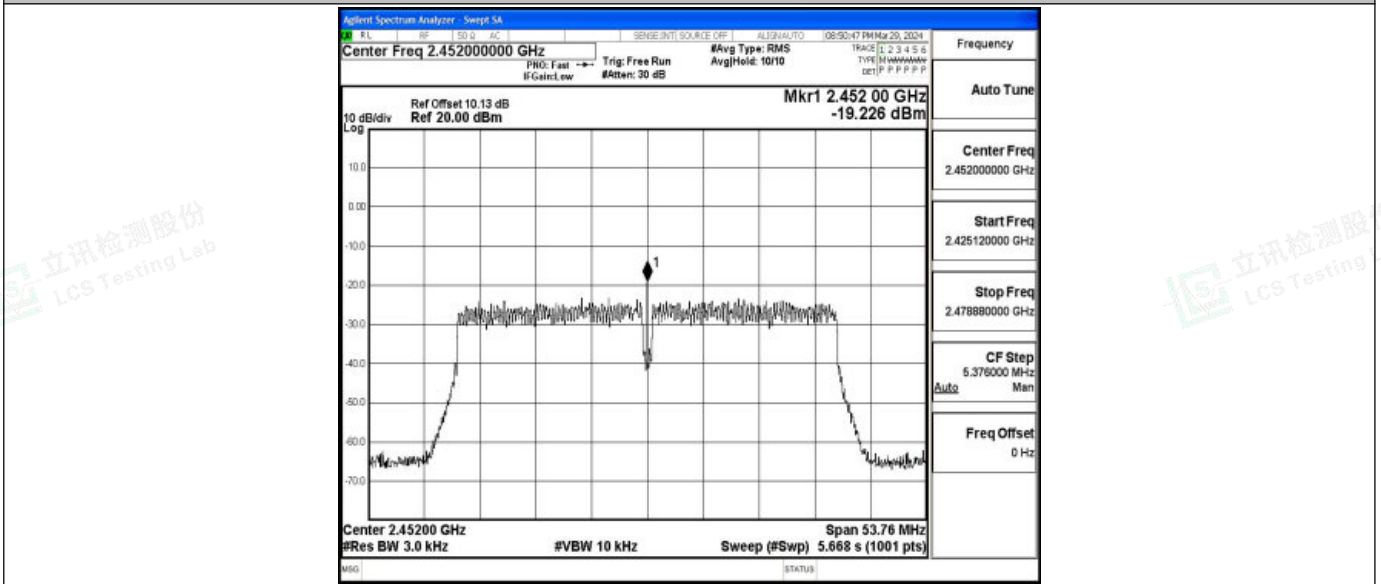


11N40SISO_Ant1_2437





11N40SISO_Ant1_2452





A.4 Band edge measurements

Test Result

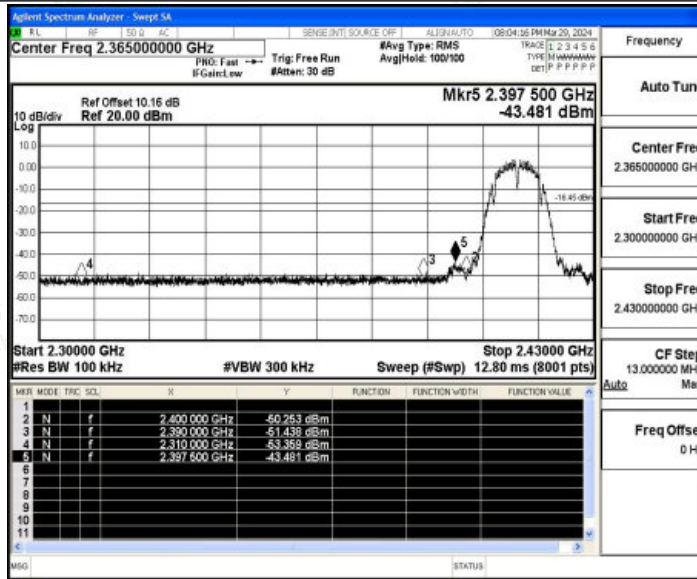
TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	3.55	-43.48	≤-16.45	PASS
		High	2462	3.20	-47.9	≤-16.8	PASS
11G	Ant1	Low	2412	-3.28	-42.27	≤-23.28	PASS
		High	2462	-2.85	-47.63	≤-22.85	PASS
11N20SISO	Ant1	Low	2412	-4.26	-47.08	≤-24.26	PASS
		High	2462	-3.78	-39.26	≤-23.78	PASS
11N40SISO	Ant1	Low	2422	-8.31	-47.42	≤-28.31	PASS
		High	2452	-9.06	-47.21	≤-29.06	PASS



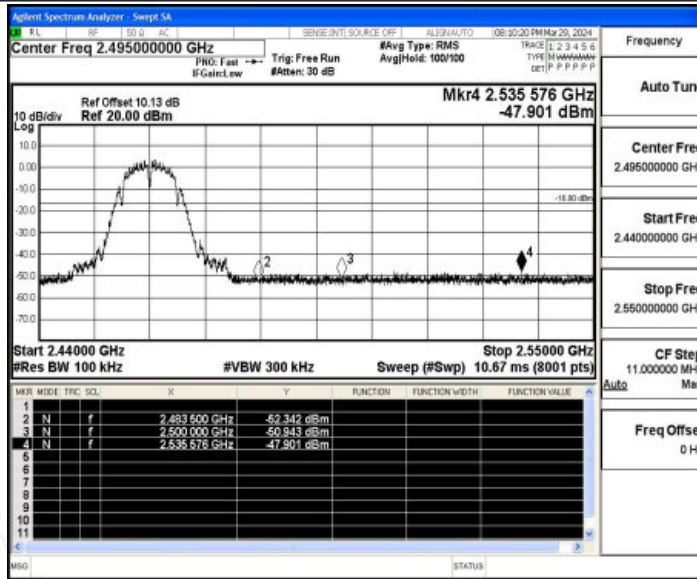


Test Graphs

11B_Ant1_Low_2412

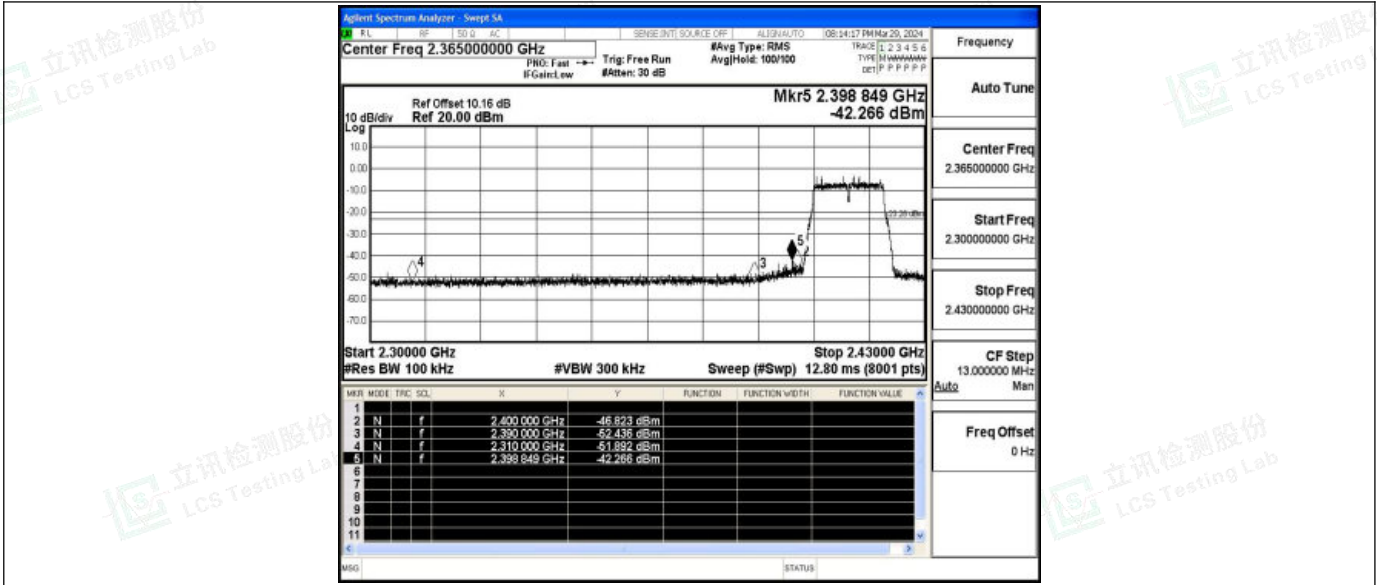


11B_Ant1_High_2462

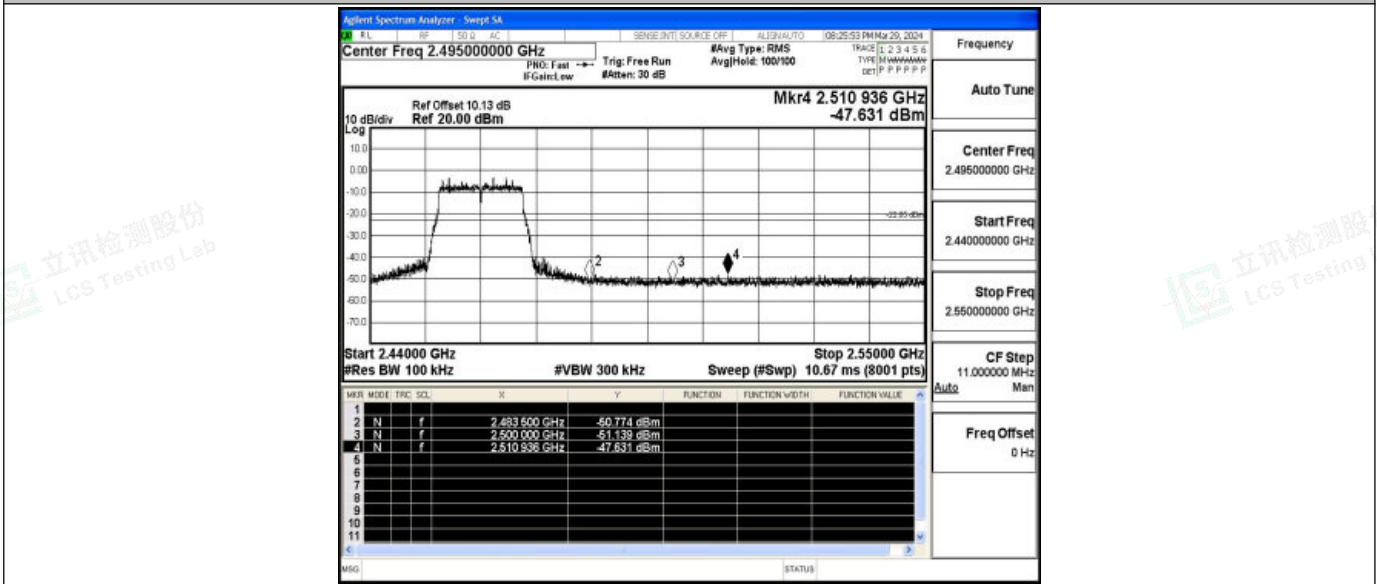


11G_Ant1_Low_2412



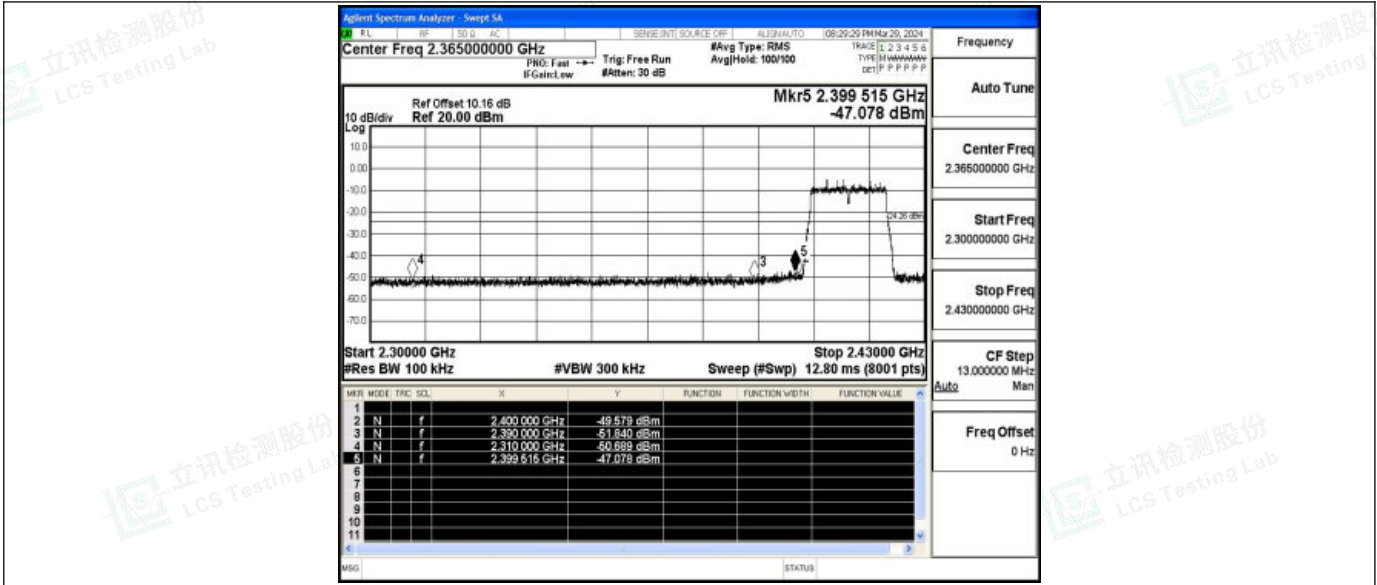


11G_Ant1_High_2462

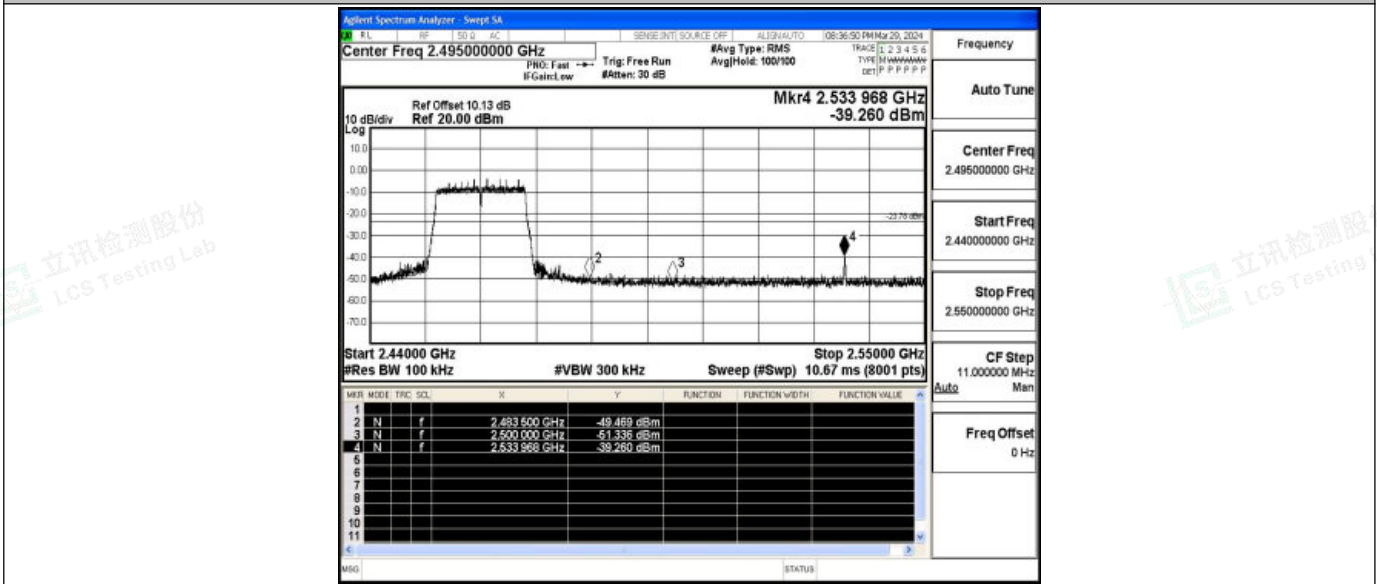


11N20SISO_Ant1_Low_2412



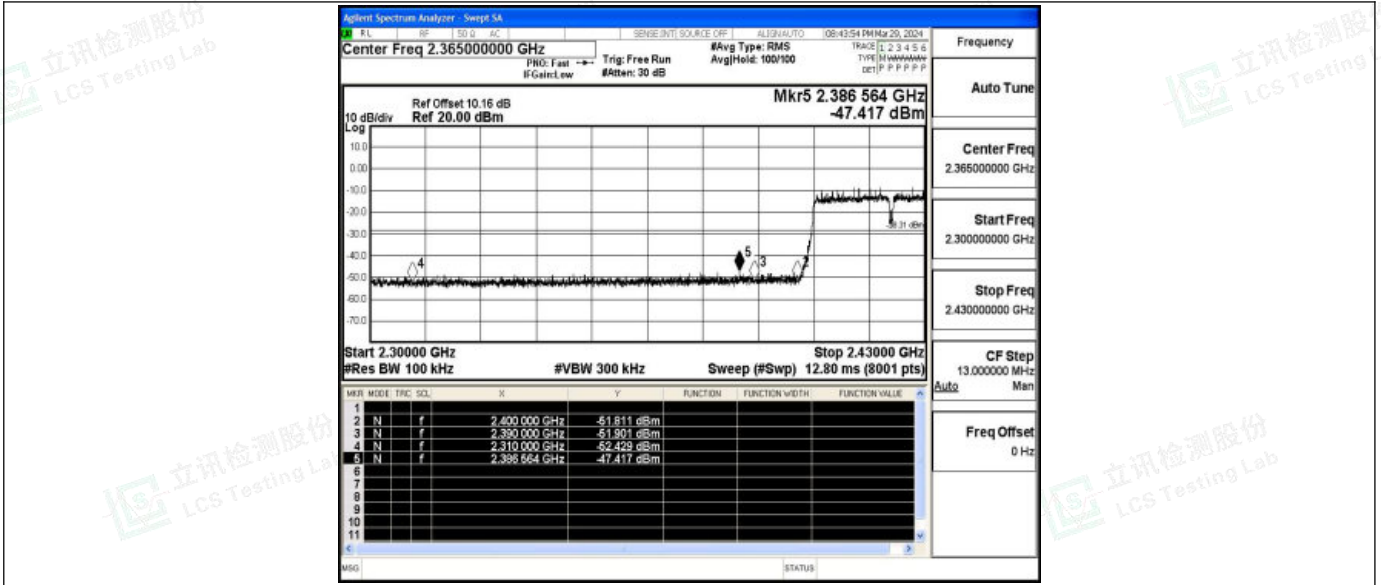


11N20SISO_Ant1_High_2462

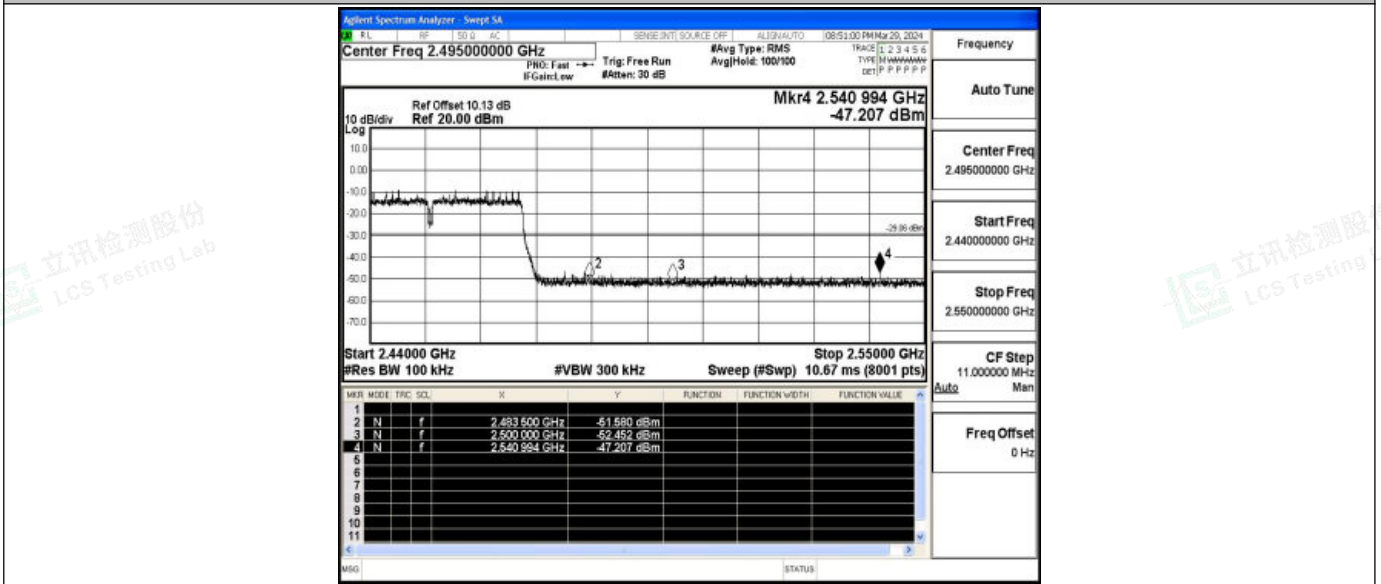


11N40SISO_Ant1_Low_2422





11N40SISO_Ant1_High_2452





A.5 Conducted Spurious Emission

Test Result

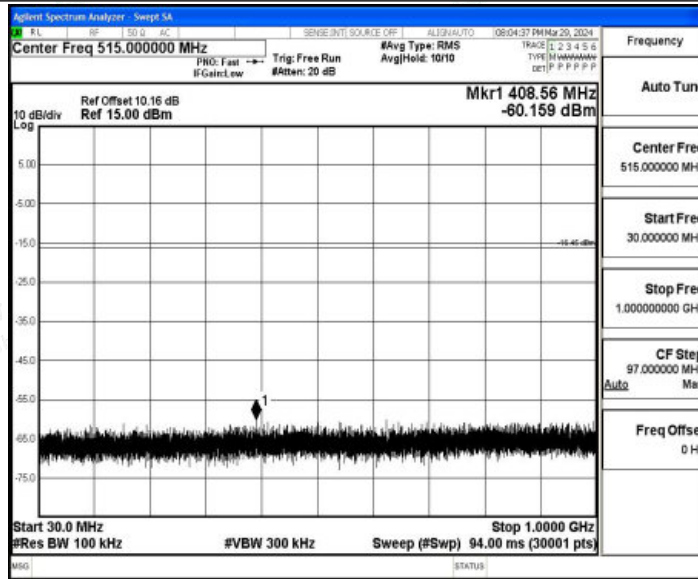
TestMode	Antenna	Freq(MHz)	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	30~1000	3.55	-60.16	≤-16.45	PASS
			1000~26500	3.55	-47.36	≤-16.45	PASS
		2437	30~1000	2.83	-59.45	≤-17.17	PASS
			1000~26500	2.83	-47.67	≤-17.17	PASS
		2462	30~1000	3.20	-59.54	≤-16.8	PASS
			1000~26500	3.20	-46.75	≤-16.8	PASS
11G	Ant1	2412	30~1000	-3.28	-59.44	≤-23.28	PASS
			1000~26500	-3.28	-46.81	≤-23.28	PASS
		2437	30~1000	-4.23	-60.35	≤-24.23	PASS
			1000~26500	-4.23	-46.49	≤-24.23	PASS
		2462	30~1000	-2.85	-59.05	≤-22.85	PASS
			1000~26500	-2.85	-47.48	≤-22.85	PASS
11N20SISO	Ant1	2412	30~1000	-4.26	-59.45	≤-24.26	PASS
			1000~26500	-4.26	-46.75	≤-24.26	PASS
		2437	30~1000	-5.66	-59.8	≤-25.66	PASS
			1000~26500	-5.66	-47.28	≤-25.66	PASS
		2462	30~1000	-3.78	-59.62	≤-23.78	PASS
			1000~26500	-3.78	-47.05	≤-23.78	PASS
11N40SISO	Ant1	2422	30~1000	-8.31	-60.07	≤-28.31	PASS
			1000~26500	-8.31	-46.52	≤-28.31	PASS
		2437	30~1000	-8.93	-59.99	≤-28.93	PASS
			1000~26500	-8.93	-46.75	≤-28.93	PASS
		2452	30~1000	-9.06	-60.05	≤-29.06	PASS
			1000~26500	-9.06	-47.19	≤-29.06	PASS



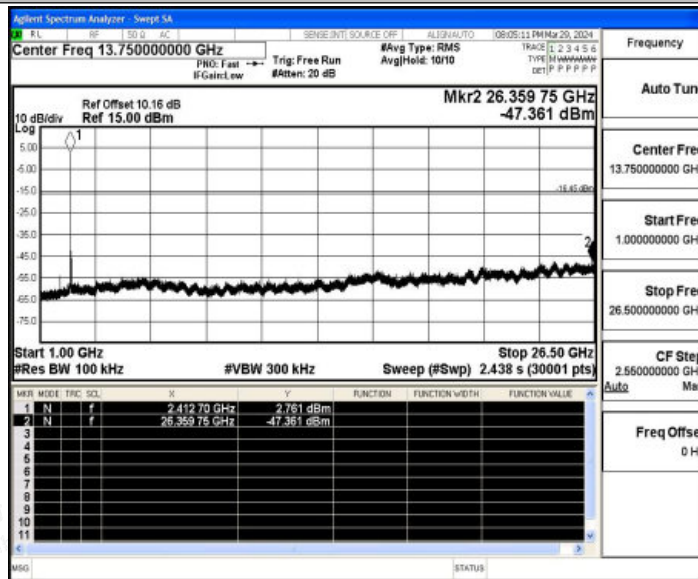


Test Graphs

11B_Ant1_2412_30~1000

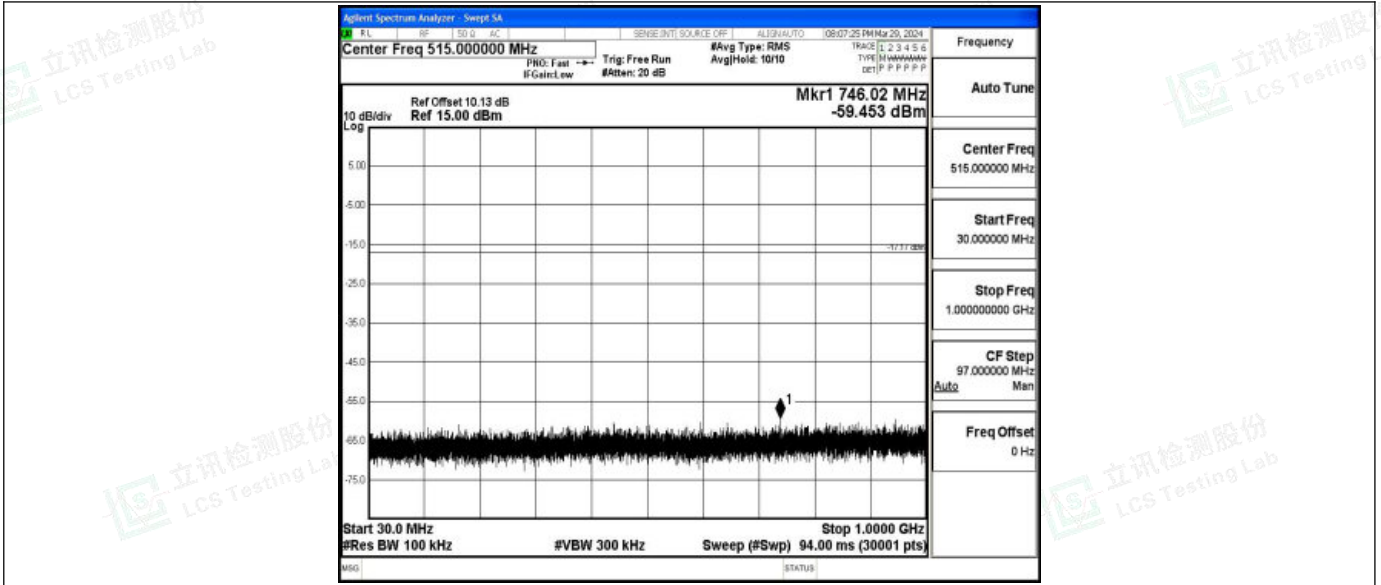


11B_Ant1_2412_1000~26500

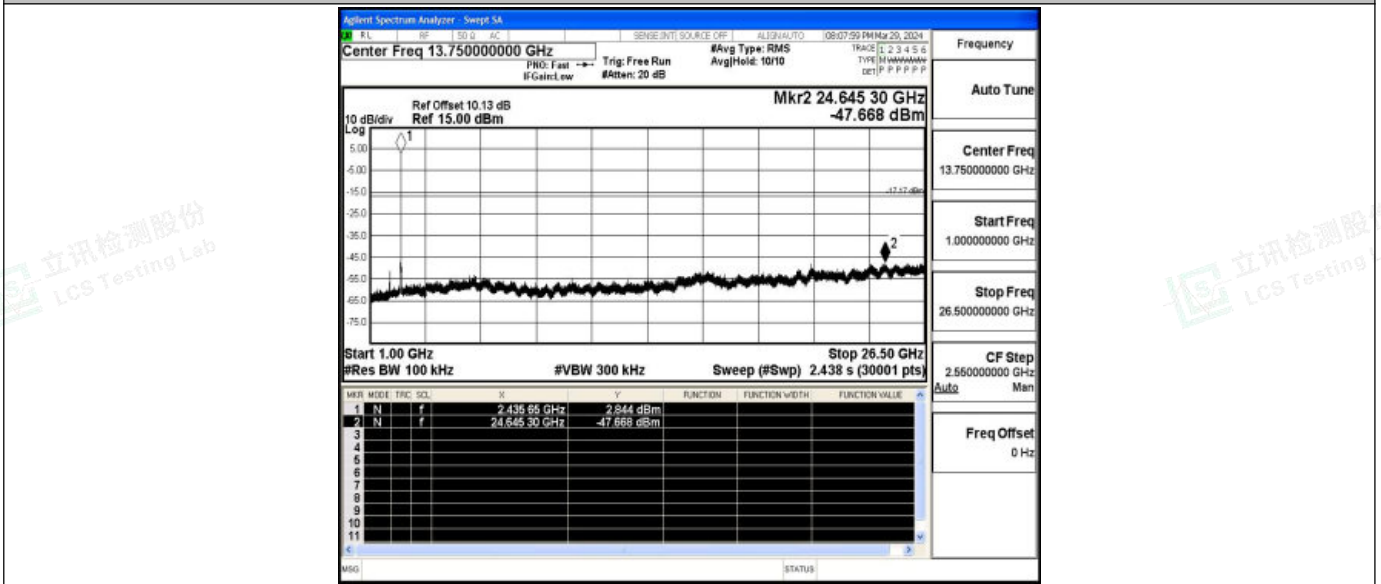


11B_Ant1_2437_30~1000



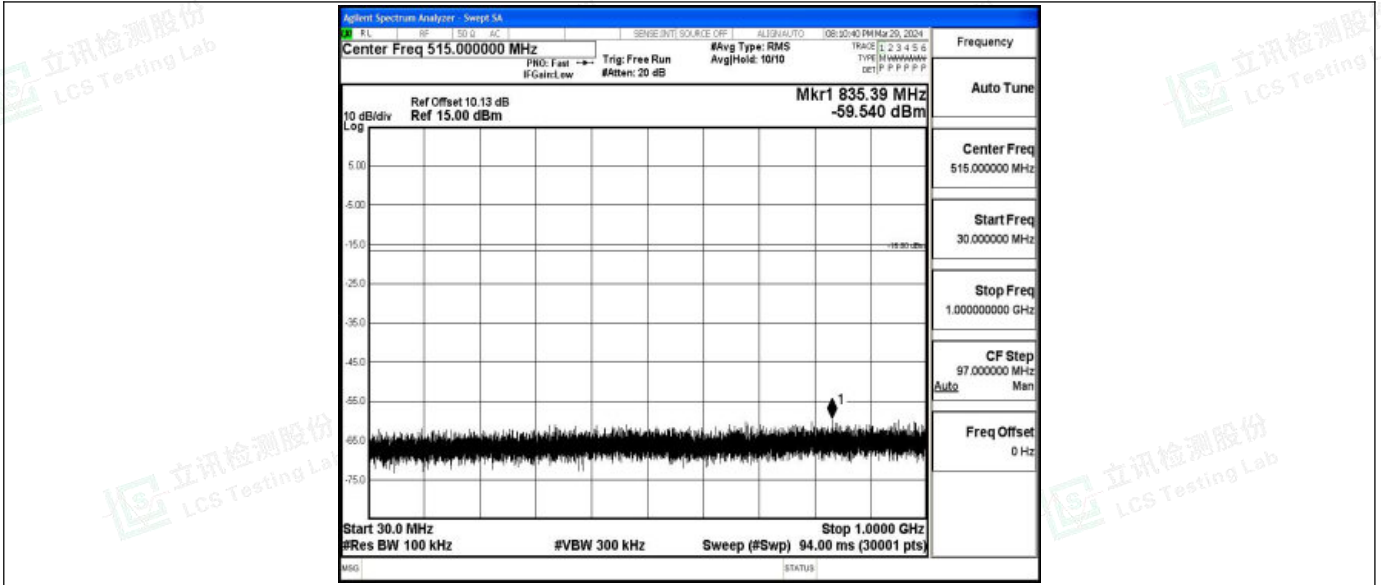


11B_Ant1_2437_1000~26500

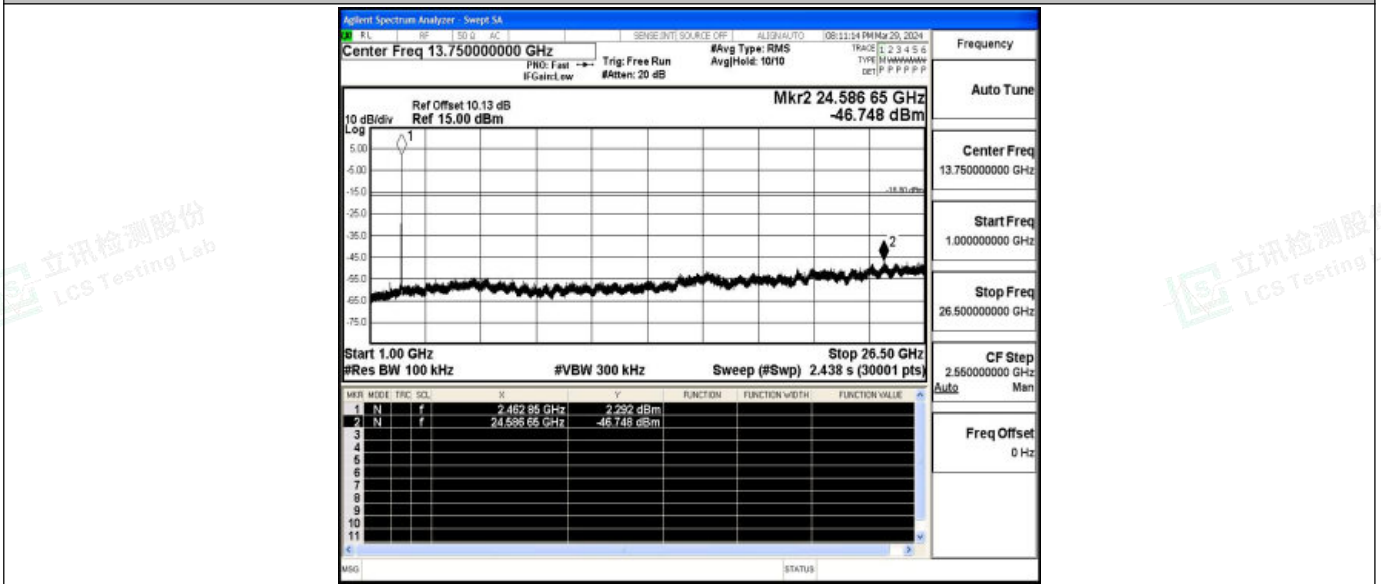


11B_Ant1_2462_30~1000



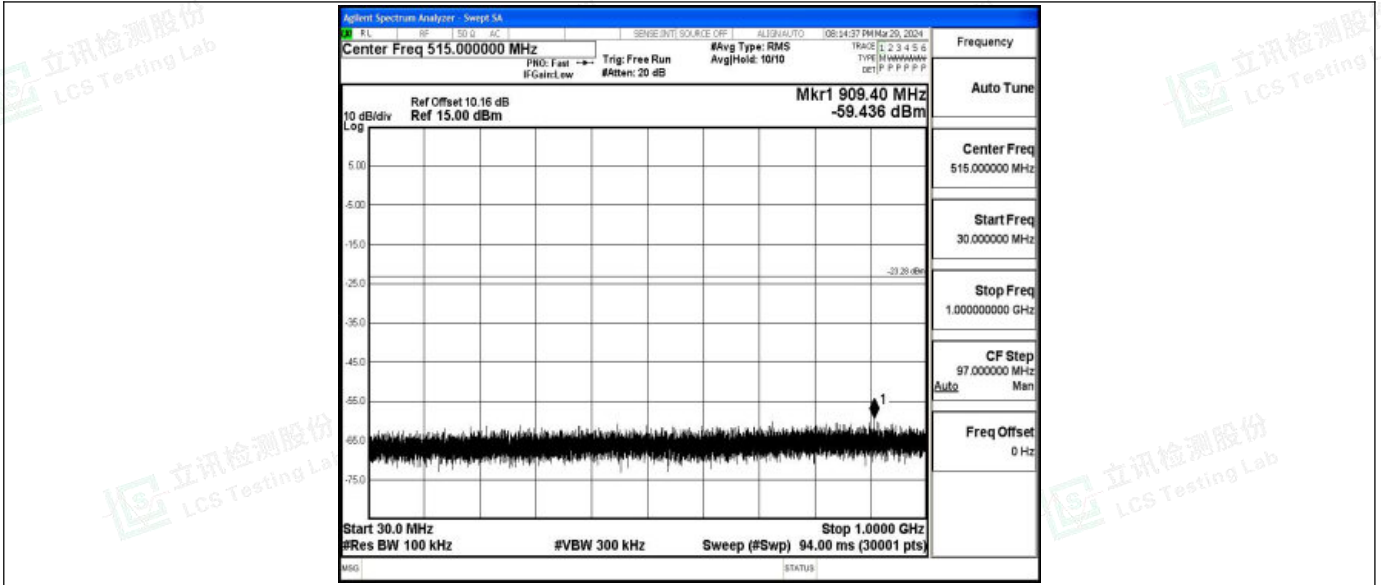


11B_Ant1_2462_1000~26500

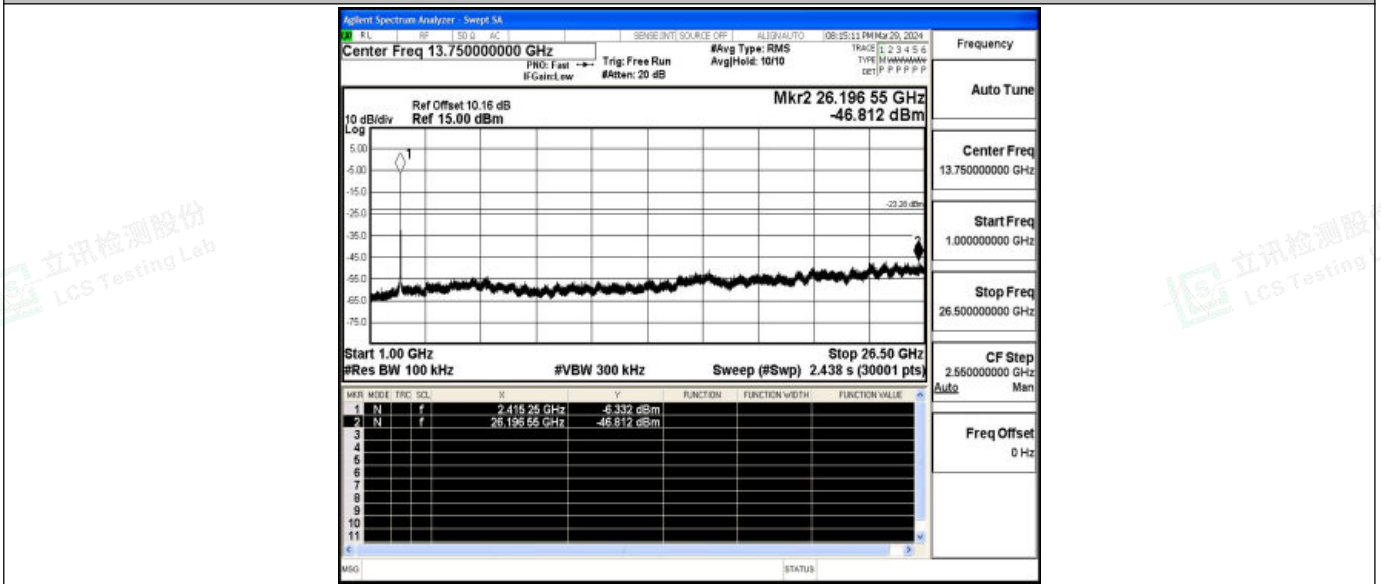


11G_Ant1_2412_30~1000



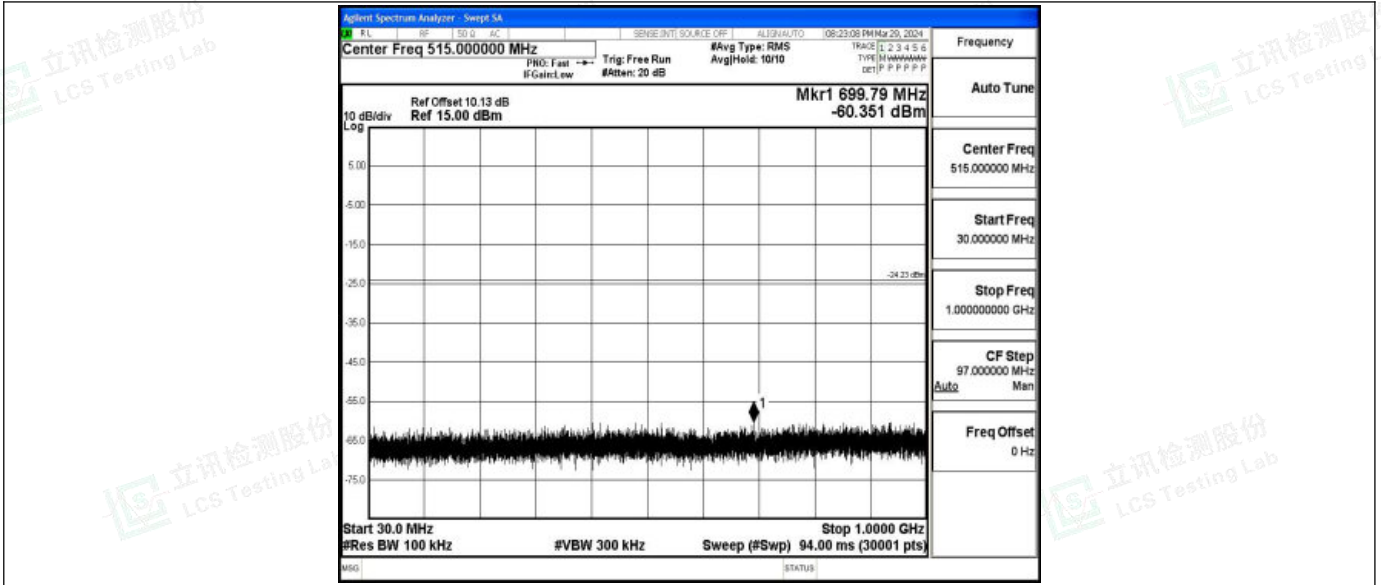


11G_Ant1_2412_1000~26500

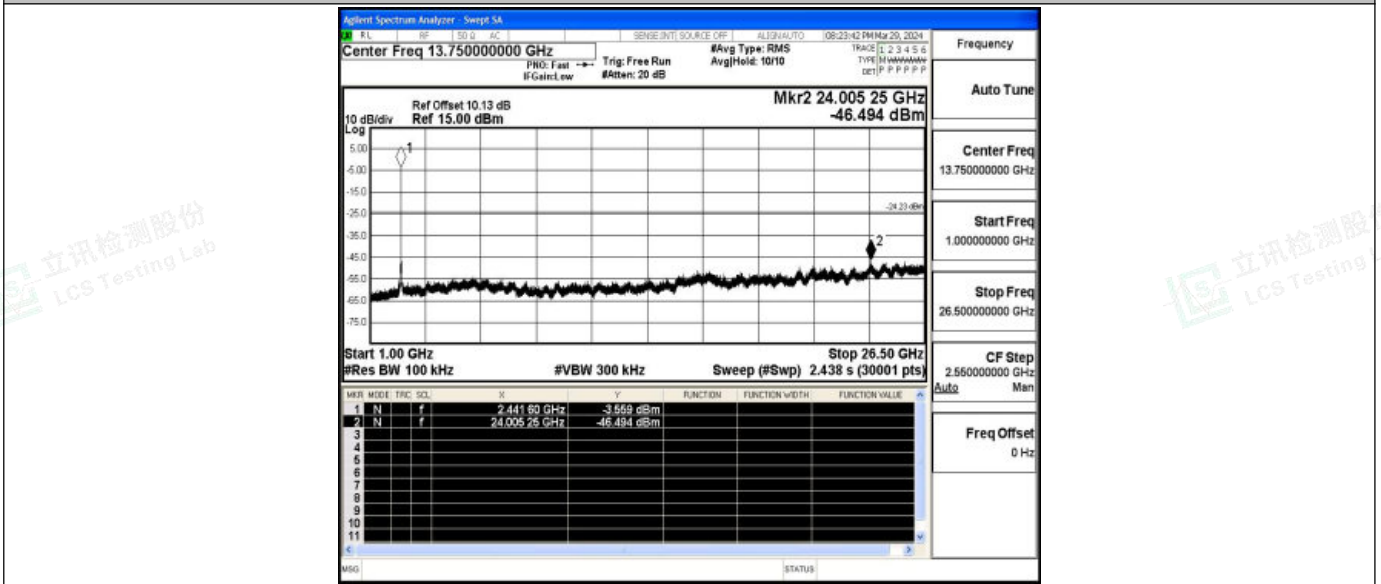


11G_Ant1_2437_30~1000



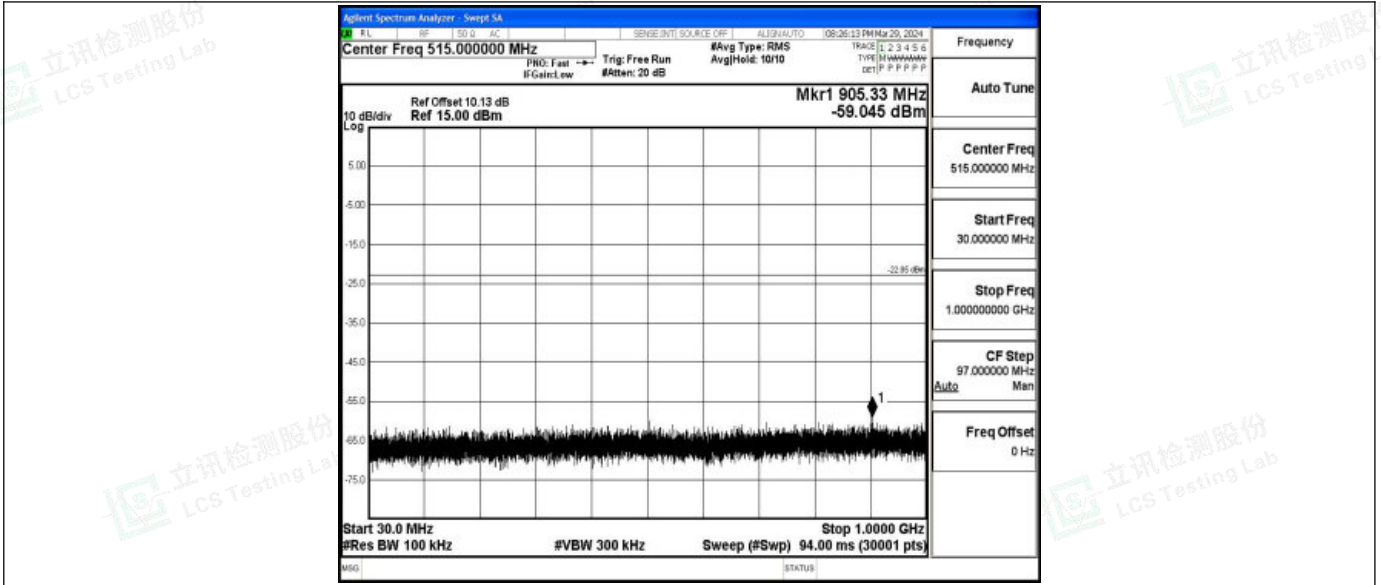


11G_Ant1_2437_1000~26500

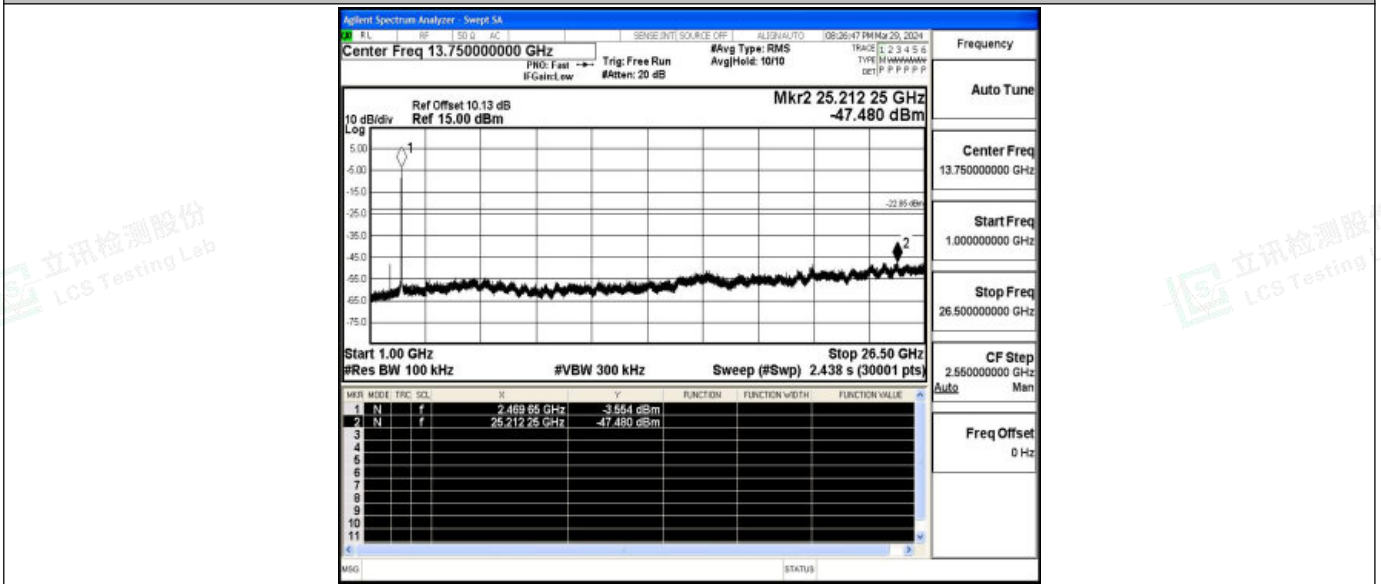


11G_Ant1_2462_30~1000



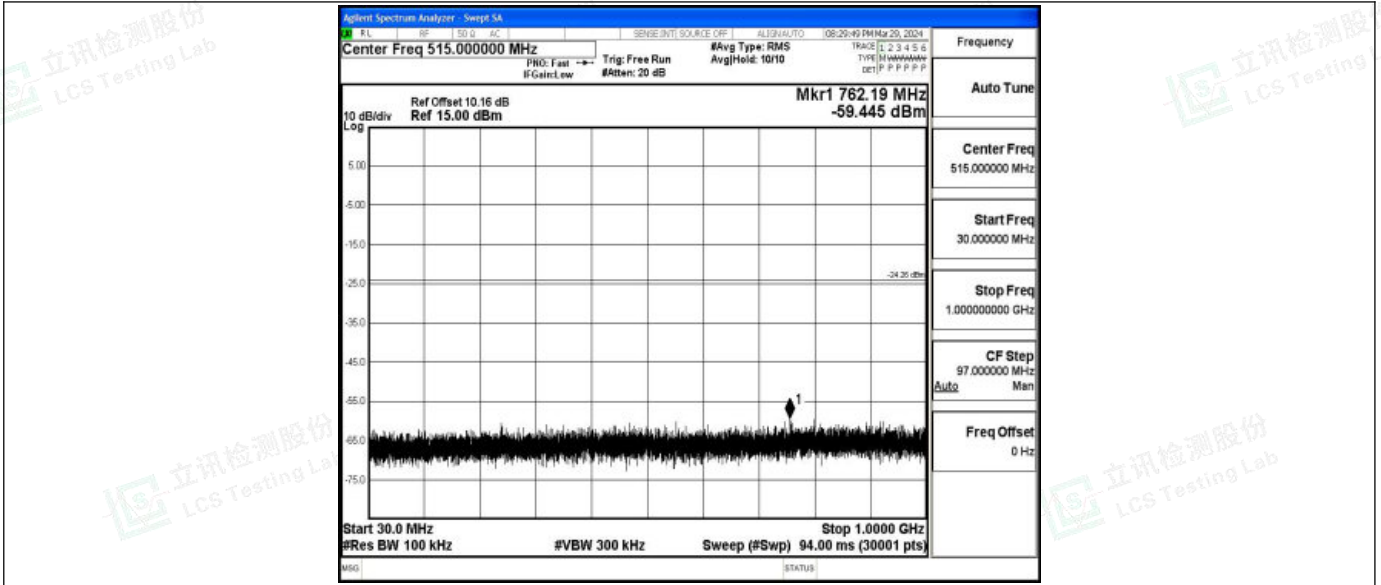


11G_Ant1_2462_1000~26500

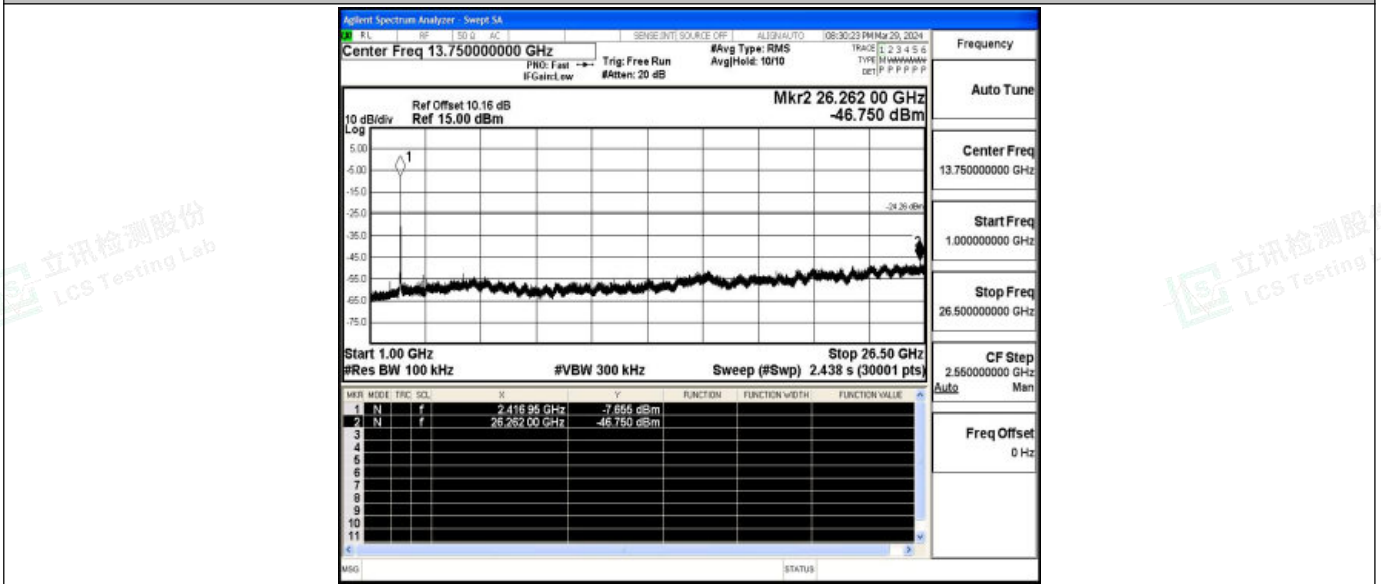


11N20SISO_Ant1_2412_30~1000



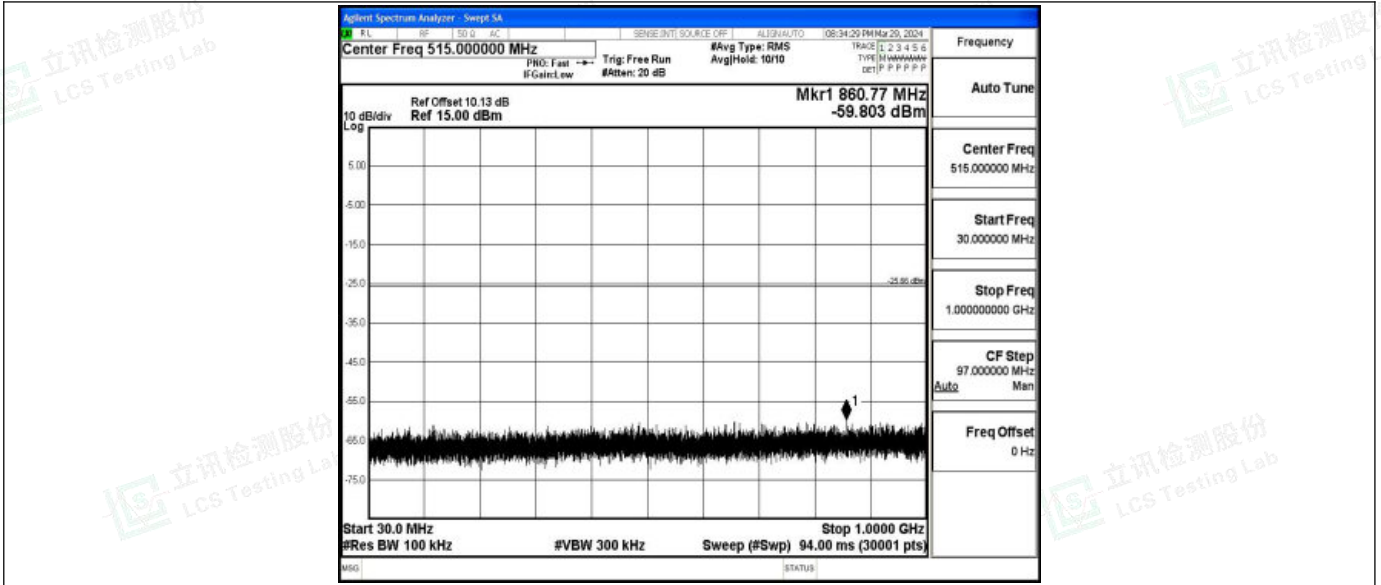


11N20SISO_Ant1_2412_1000~26500

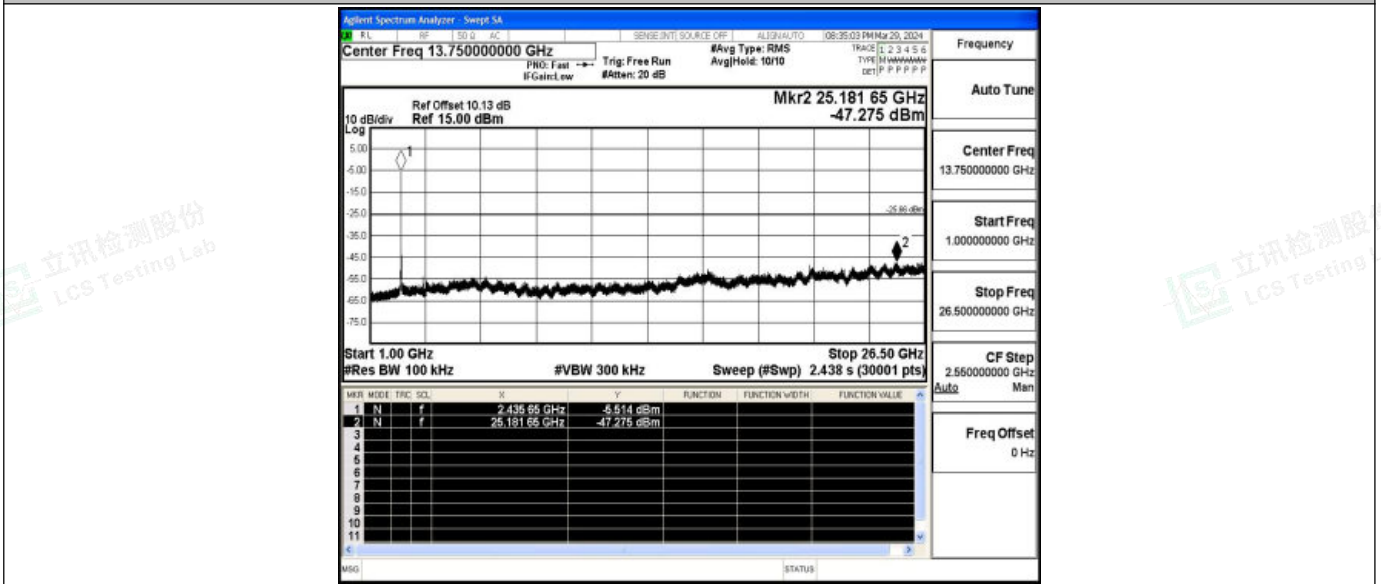


11N20SISO_Ant1_2437_30~1000



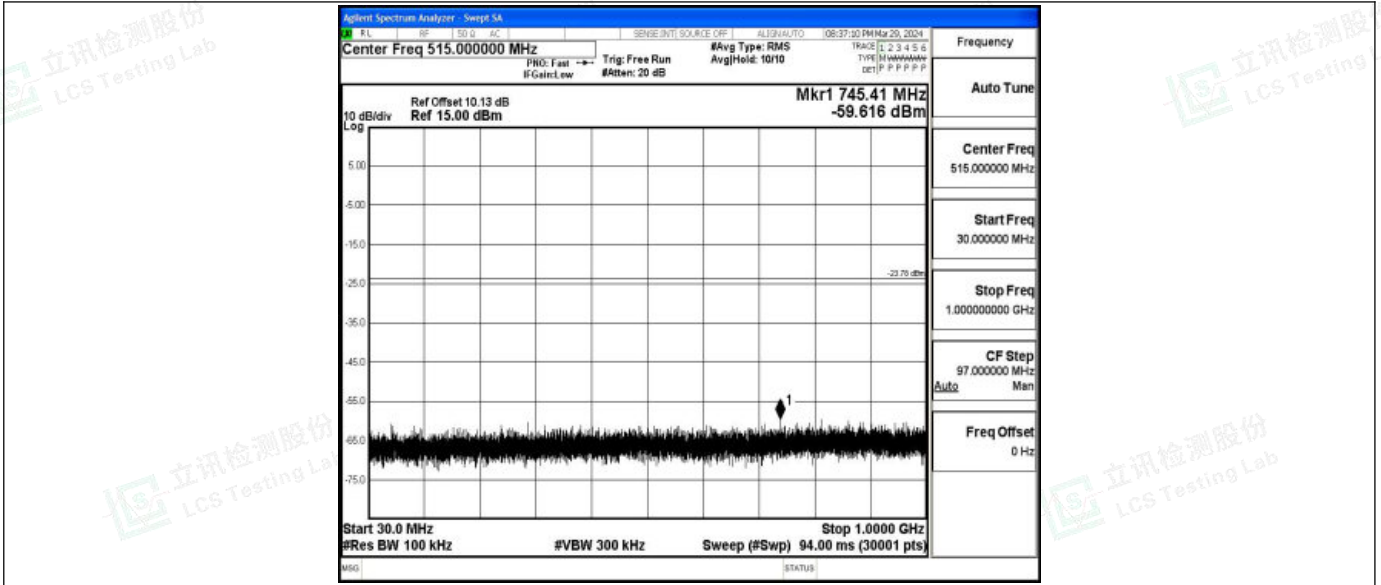


11N20SISO_Ant1_2437_1000~26500

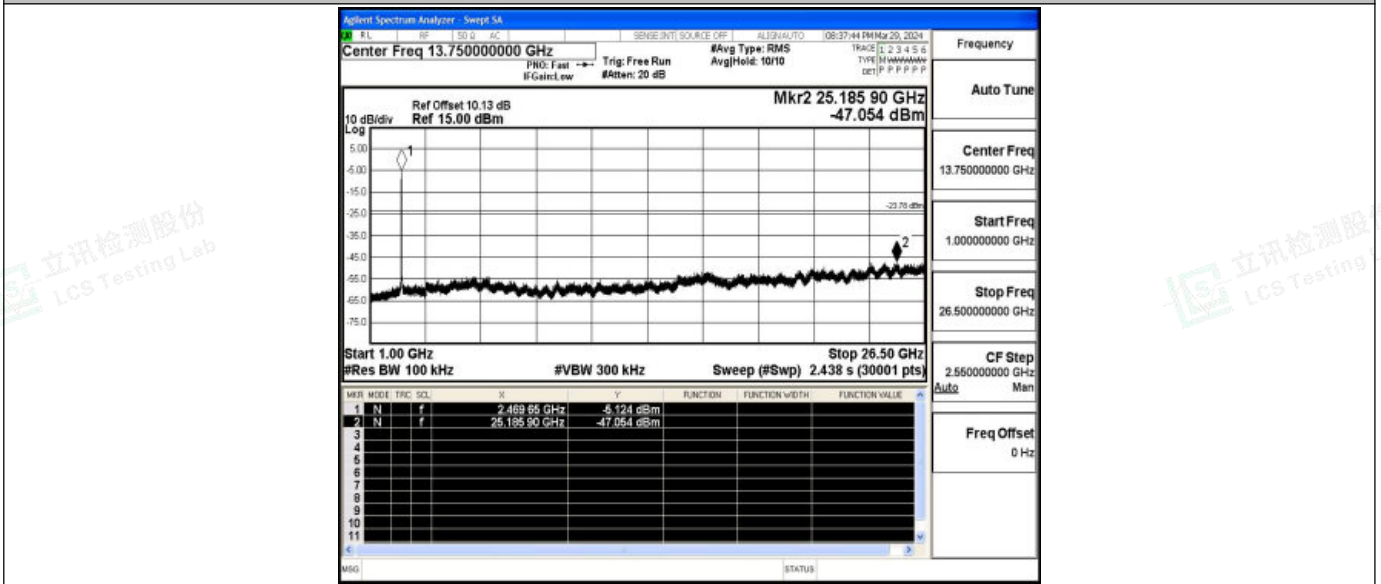


11N20SISO_Ant1_2462_30~1000



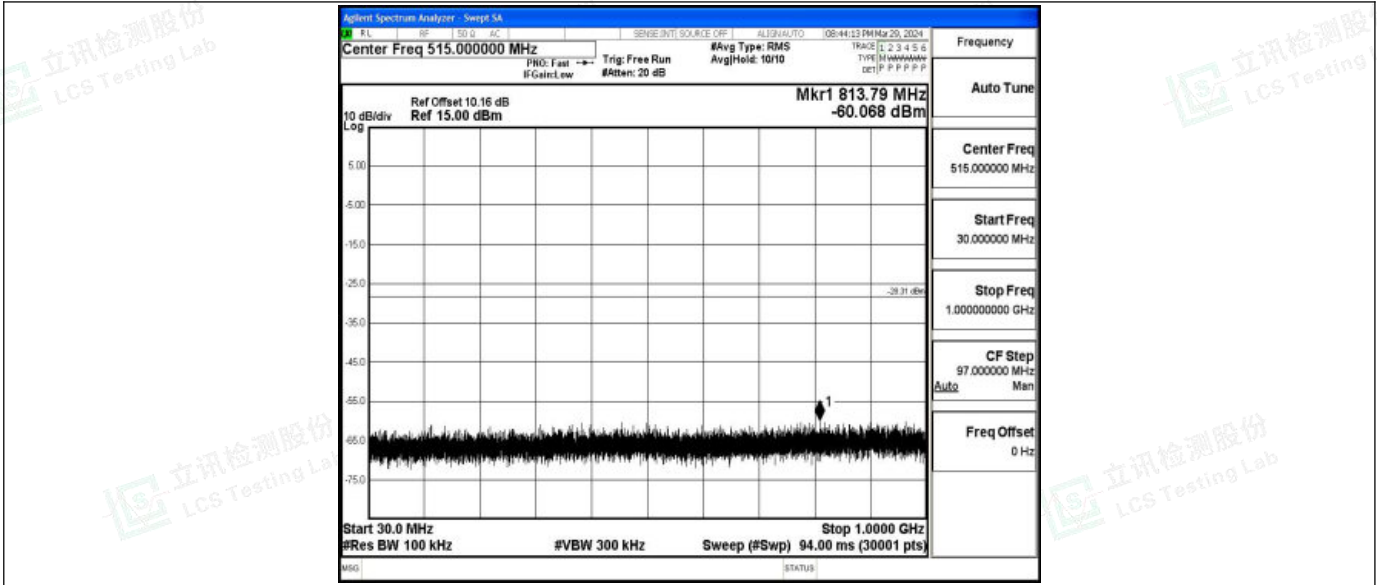


11N20SISO_Ant1_2462_1000~26500

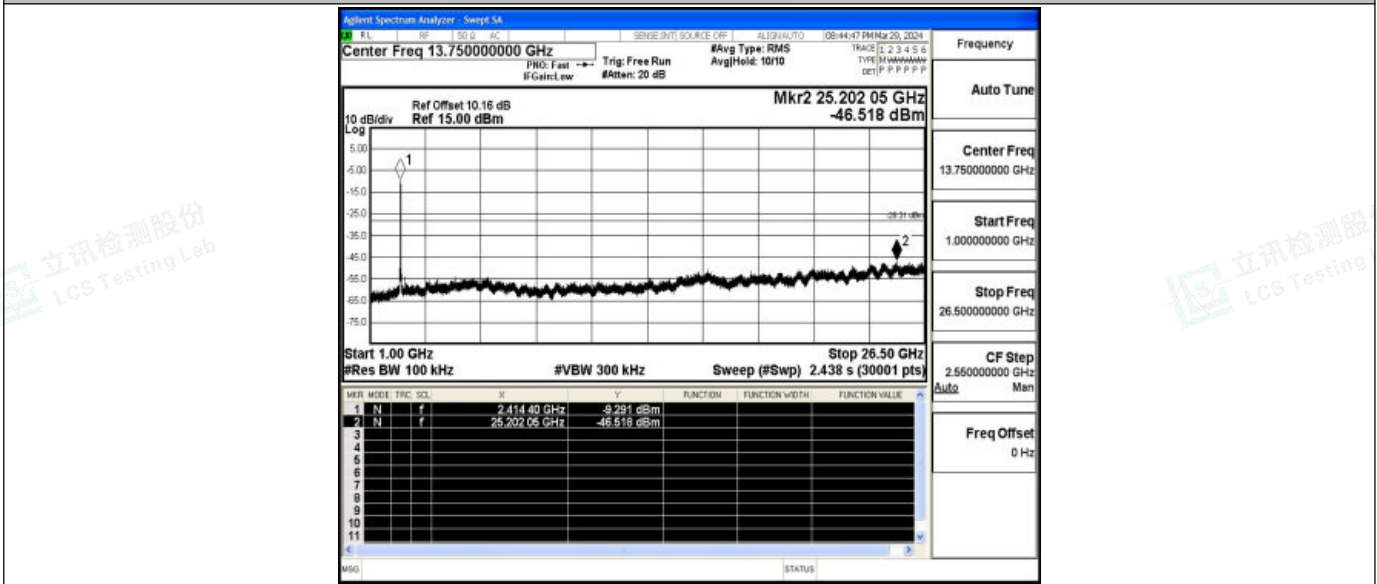


11N40SISO_Ant1_2422_30~1000



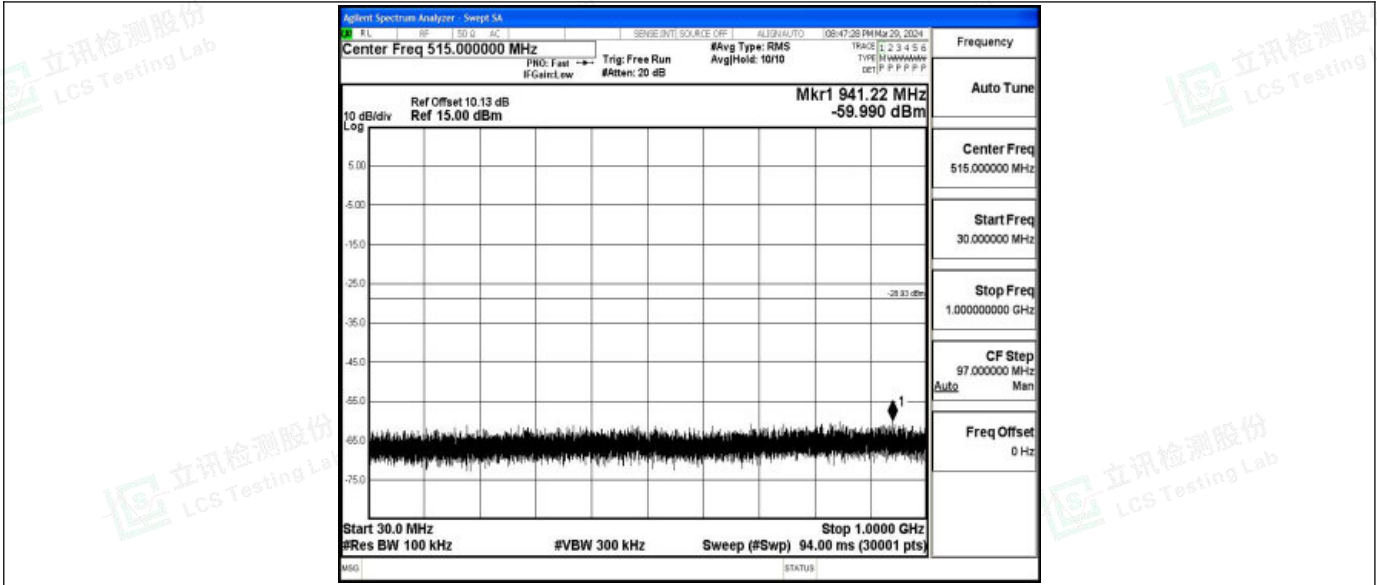


11N40SISO_Ant1_2422_1000~26500

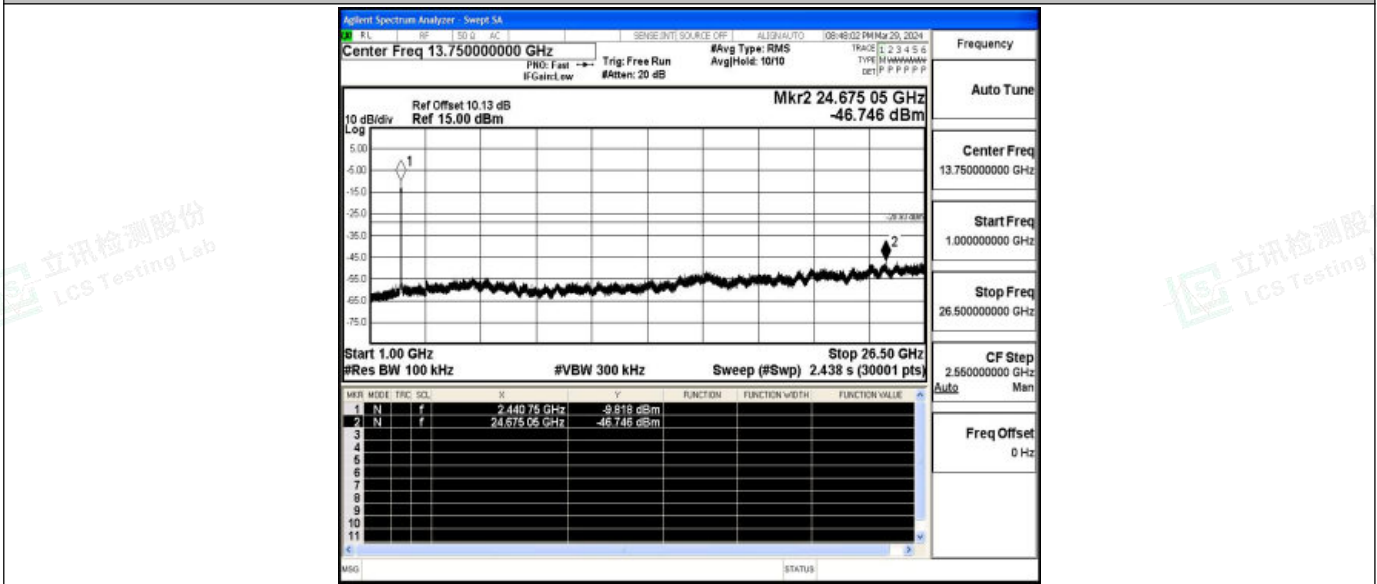


11N40SISO_Ant1_2437_30~1000



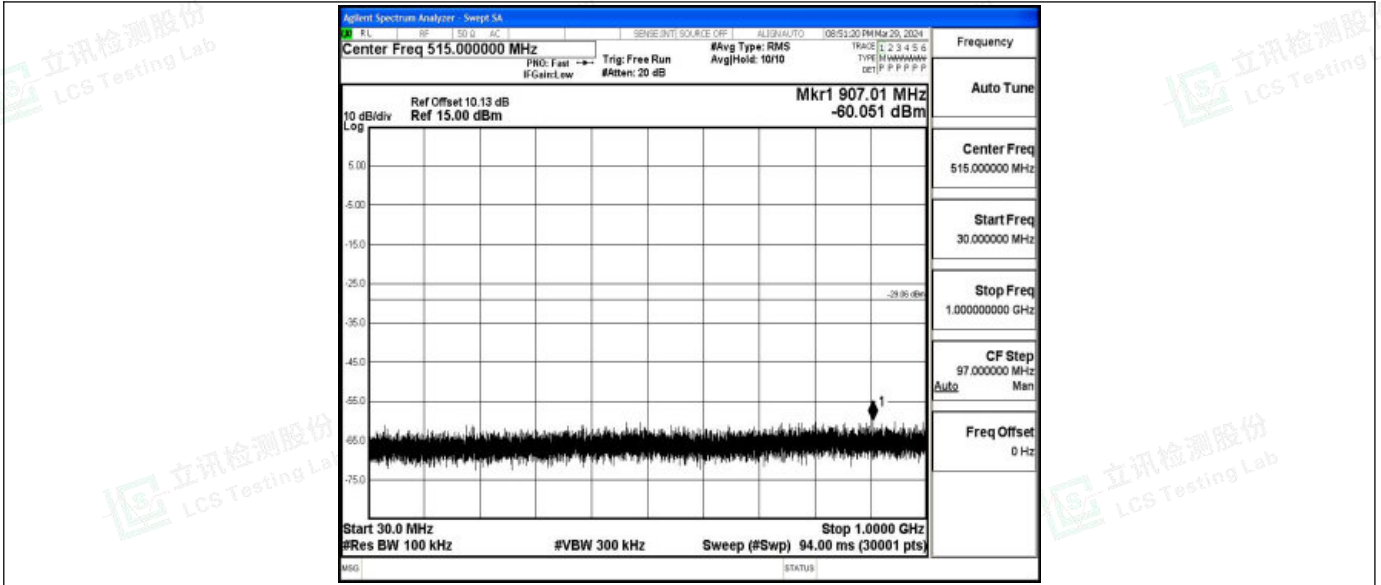


11N40SISO_Ant1_2437_1000~26500

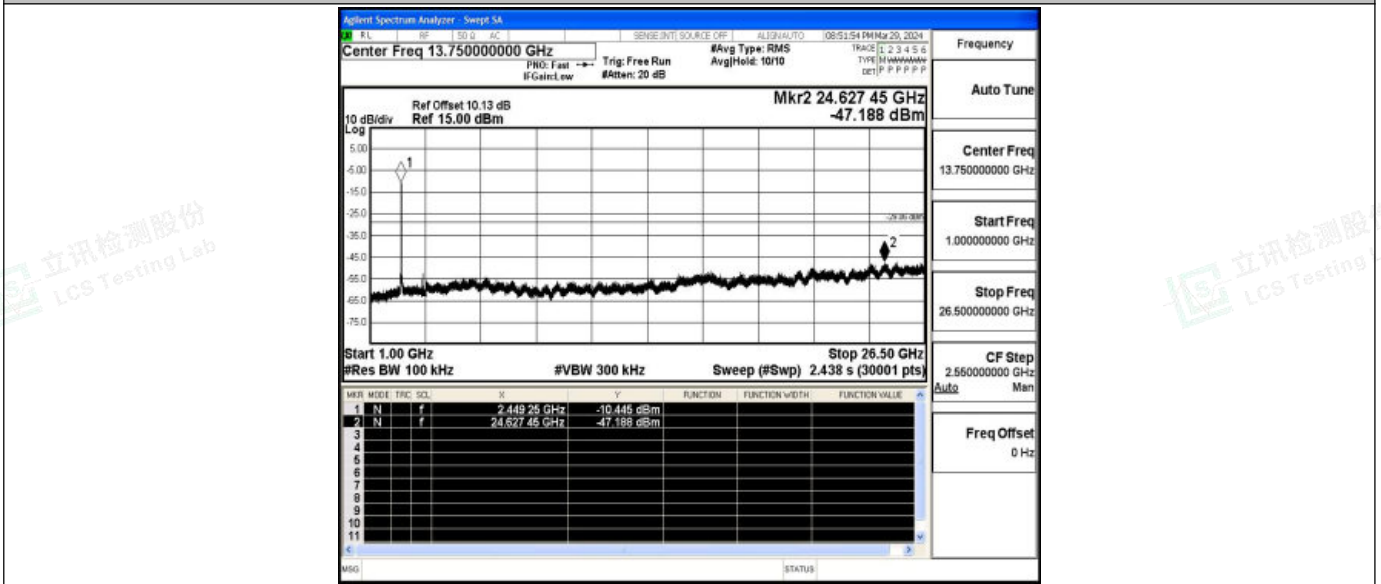


11N40SISO_Ant1_2452_30~1000





11N40SISO_Ant1_2452_1000~26500





Reference level measurement

Test Result

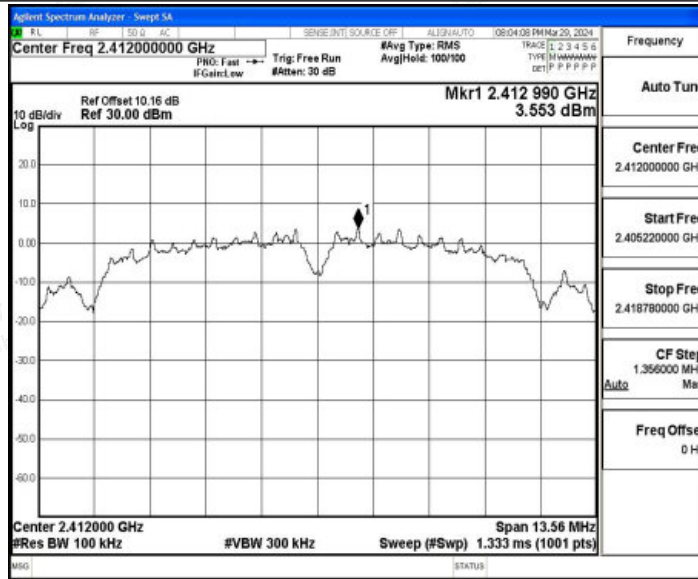
TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
11B	Ant1	2412	2412.99	3.55
		2437	2437.52	2.83
		2462	2460.49	3.20
11G	Ant1	2412	2414.50	-3.28
		2437	2431.97	-4.23
		2462	2463.25	-2.85
11N20SISO	Ant1	2412	2413.27	-4.26
		2437	2431.96	-5.66
		2462	2469.50	-3.78
11N40SISO	Ant1	2422	2424.52	-8.31
		2437	2442.00	-8.93
		2452	2449.47	-9.06



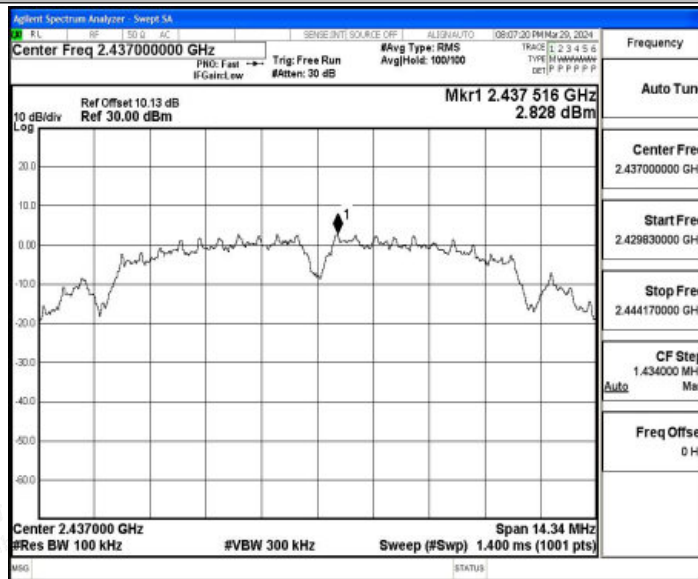


Test Graphs

11B_Ant1_2412

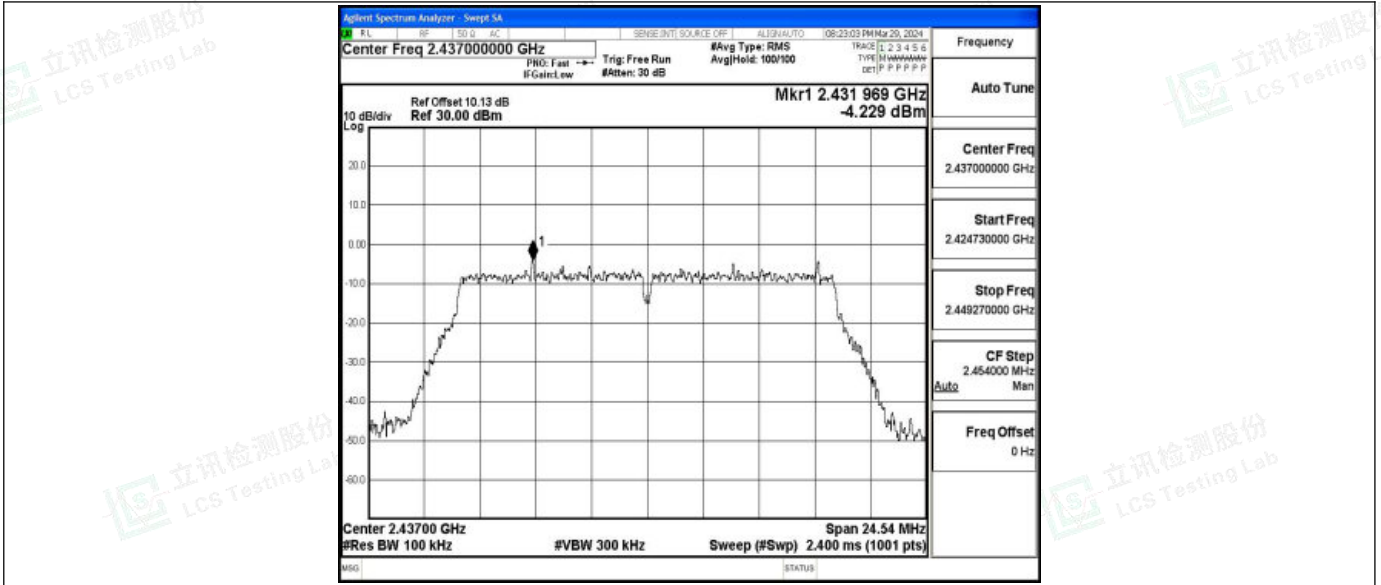


11B_Ant1_2437

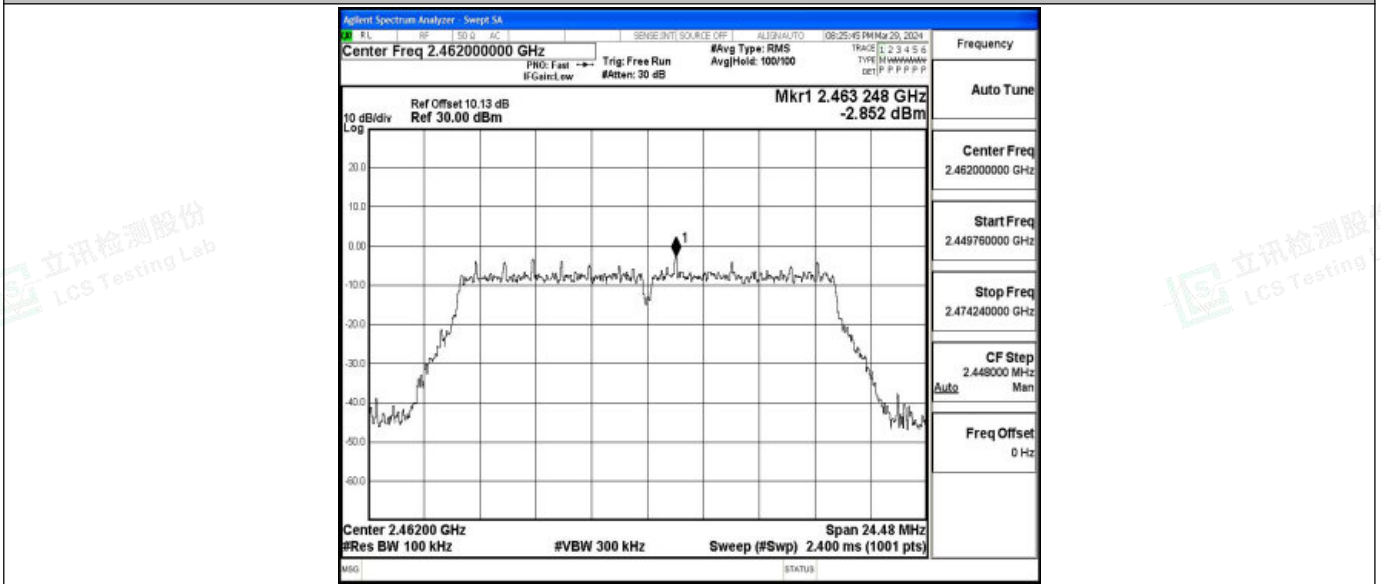


11B_Ant1_2462



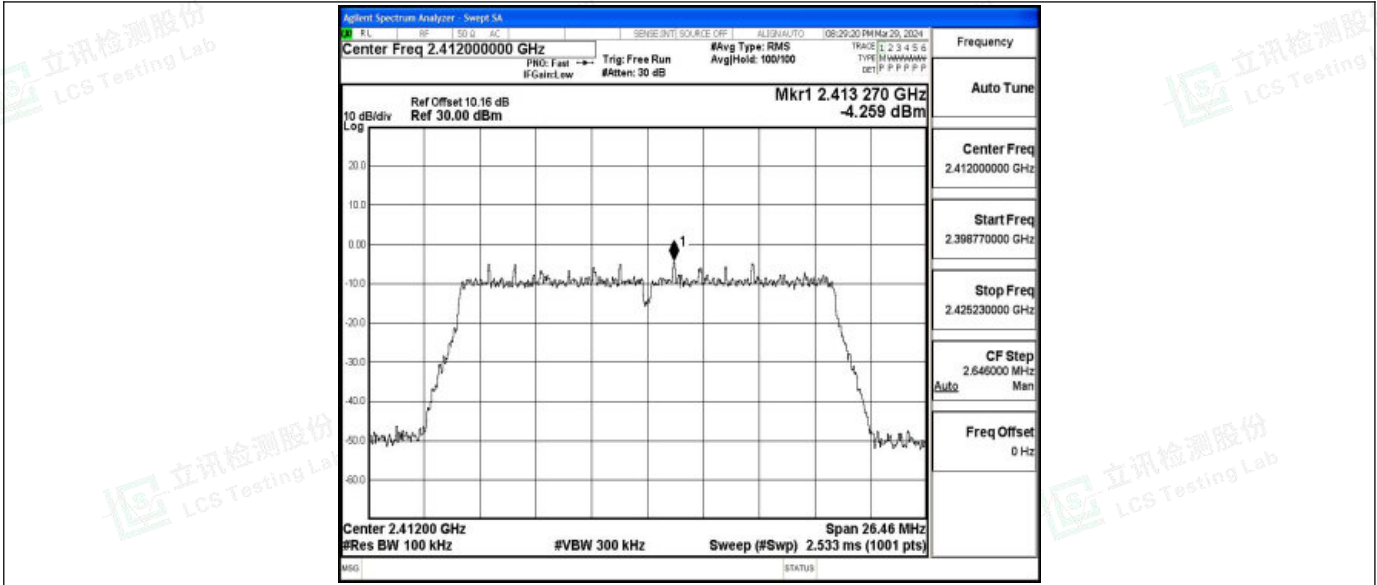


11G_Ant1_2462

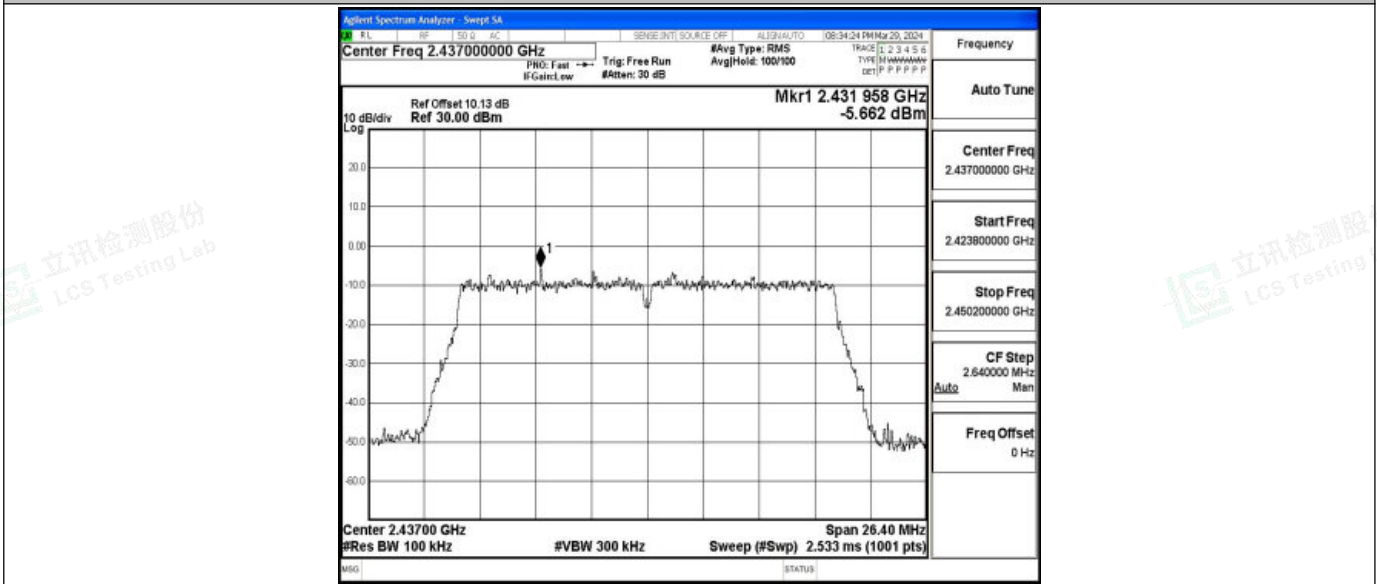


11N20SISO_Ant1_2412



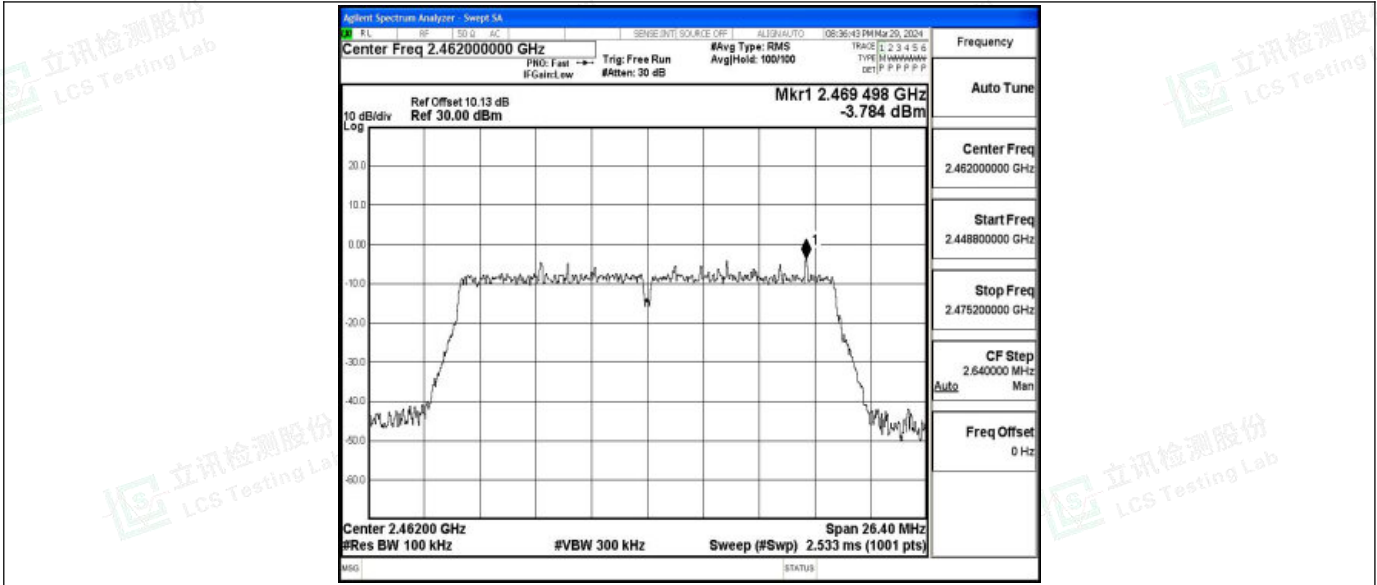


11N20SISO_Ant1_2437

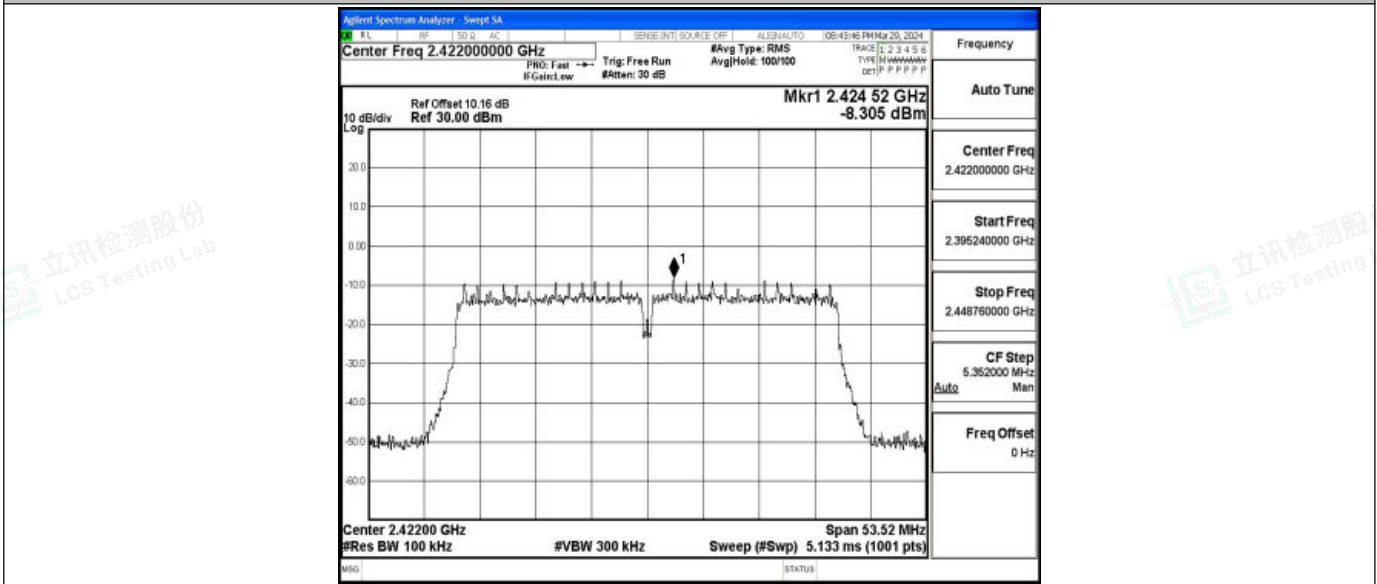


11N20SISO_Ant1_2462



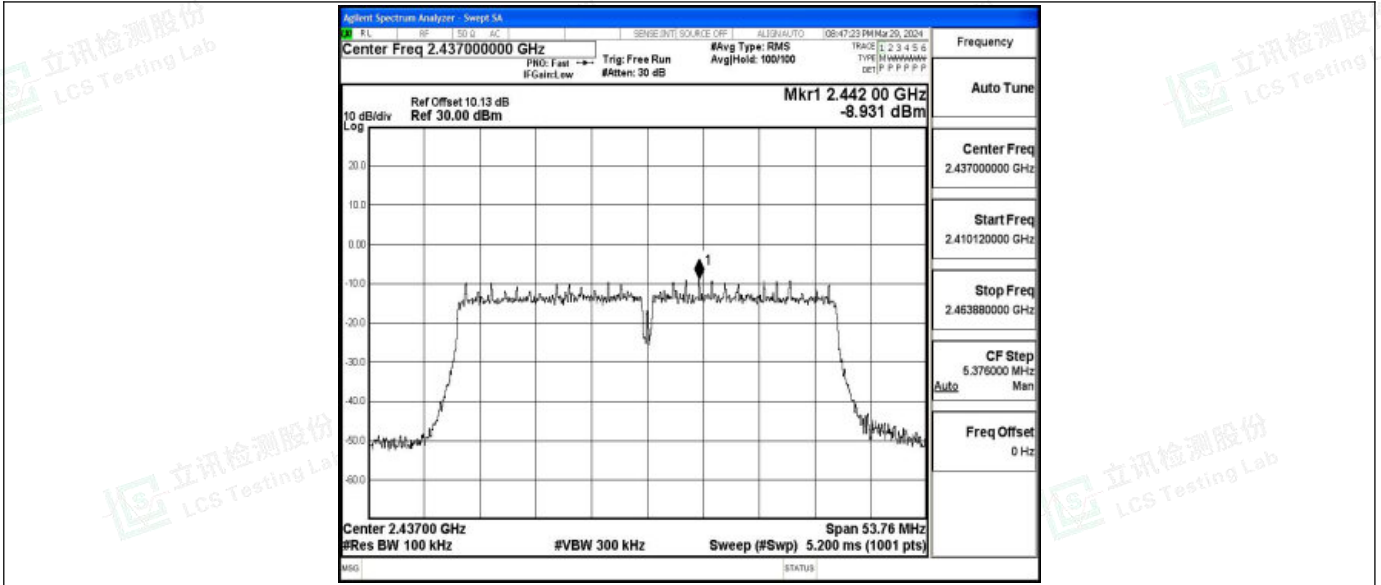


11N40SISO_Ant1_2422

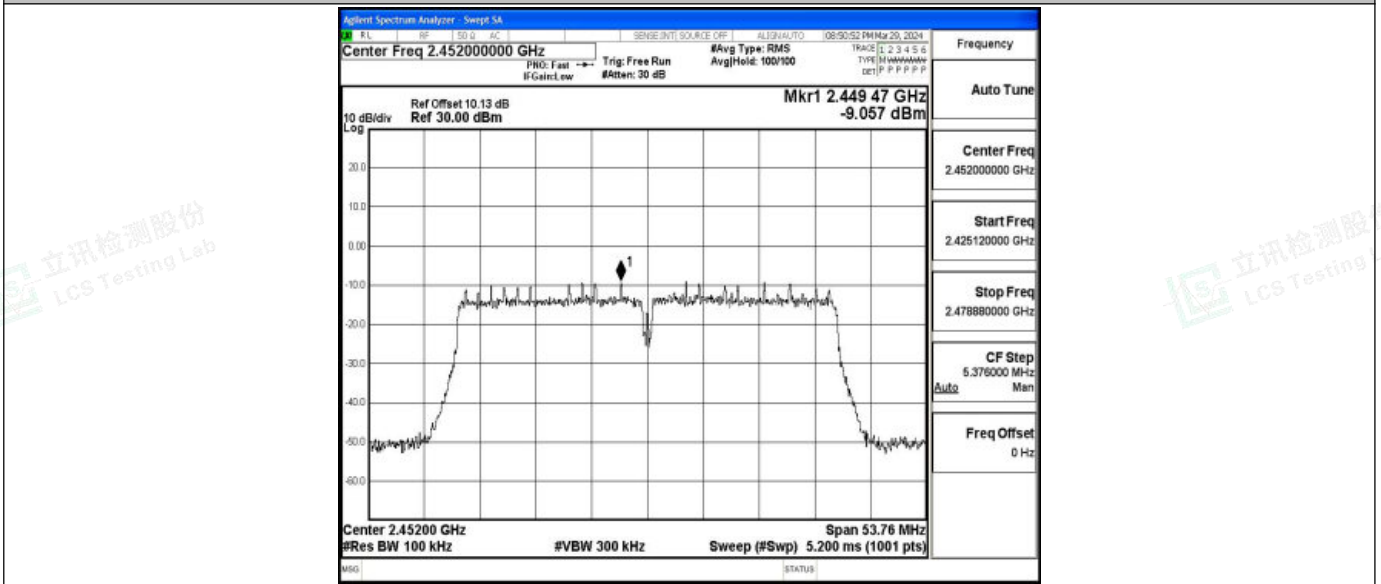


11N40SISO_Ant1_2437





11N40SISO_Ant1_2452





A.6 Duty Cycle

Test Result

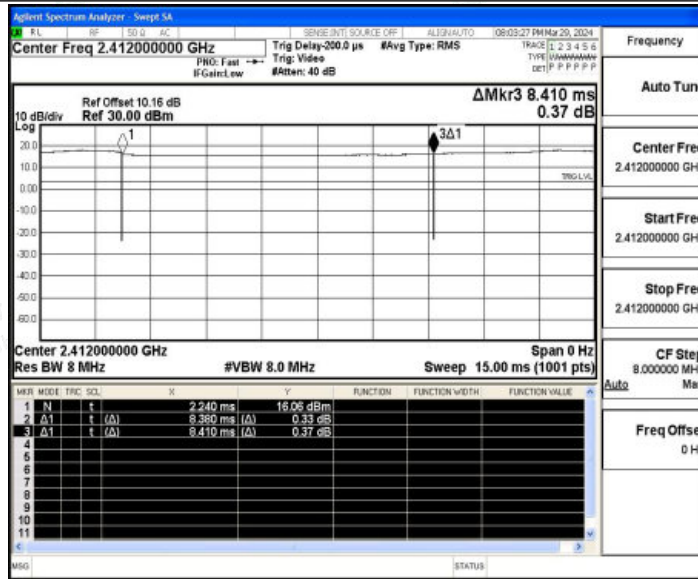
TestMode	Antenna	Freq(MHz)	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor	1/T Factor[kHz]	Verdict
11B	Ant1	2412	8.38	8.41	99.64	0.02	0.12	---
		2437	8.38	8.41	99.64	0.02	0.12	---
		2462	8.38	8.41	99.64	0.02	0.12	---
11G	Ant1	2412	1.39	1.43	97.20	0.12	0.72	---
		2437	1.39	1.43	97.20	0.12	0.72	---
		2462	1.39	1.42	97.89	0.09	0.72	---
11N20SISO	Ant1	2412	1.30	1.33	97.74	0.10	0.77	---
		2437	1.30	1.33	97.74	0.10	0.77	---
		2462	1.30	1.34	97.01	0.13	0.77	---
11N40SISO	Ant1	2422	0.65	0.68	95.59	0.20	1.54	---
		2437	0.65	0.68	95.59	0.20	1.54	---
		2452	0.64	0.68	94.12	0.26	1.56	---



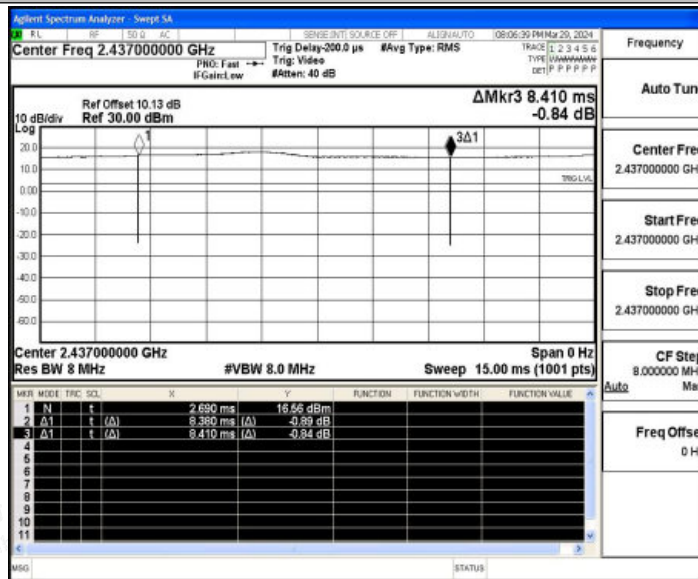


Test Graphs

11B_Ant1_2412

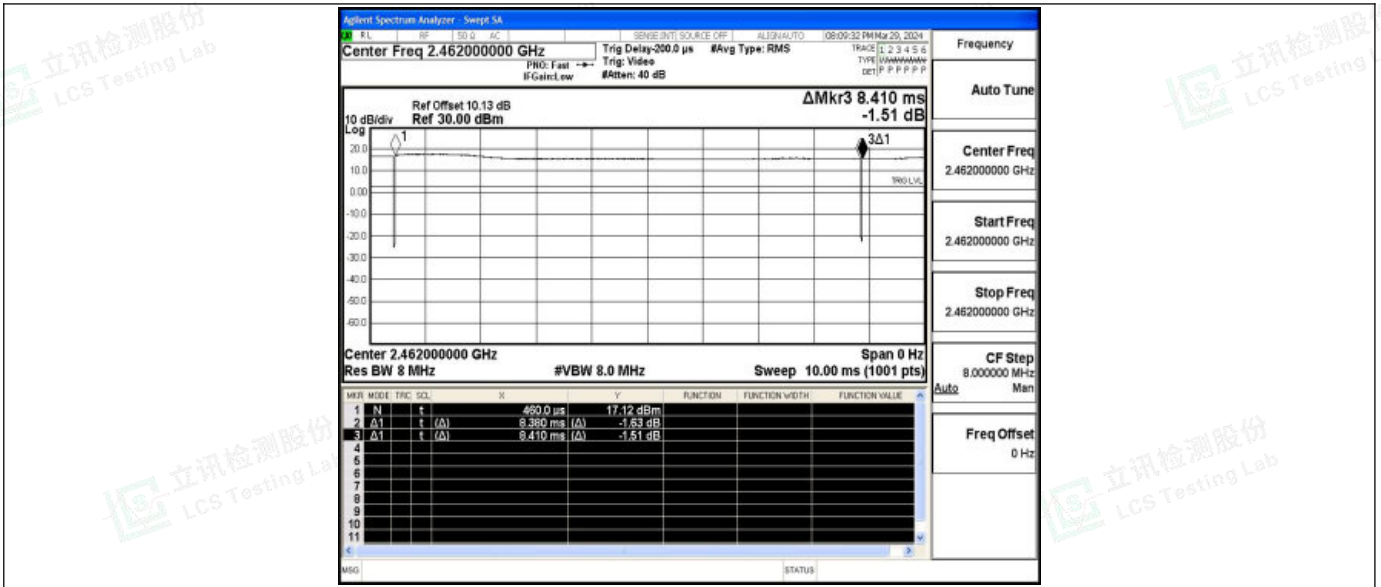


11B_Ant1_2437

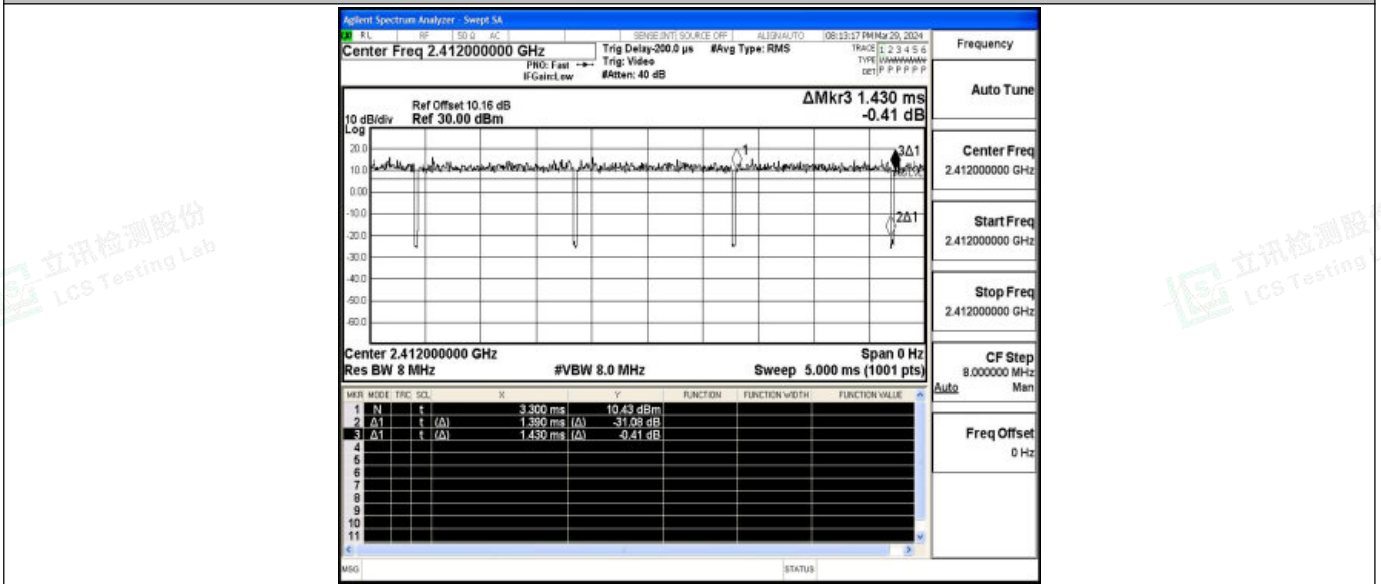


11B_Ant1_2462



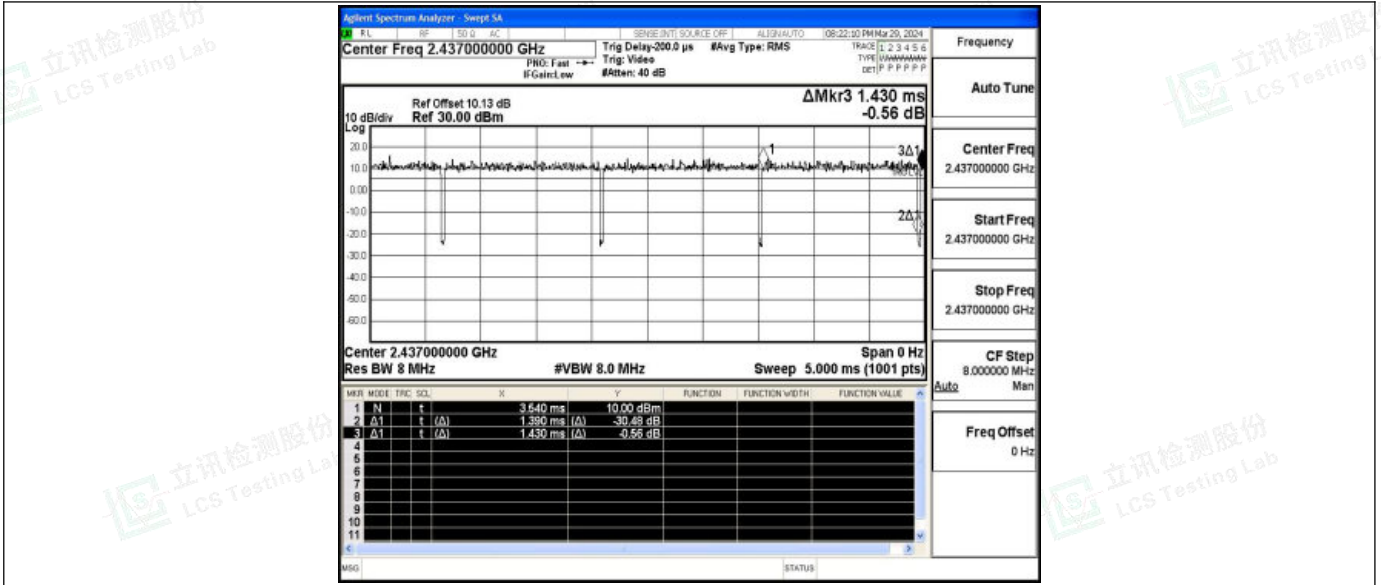


11G_Ant1_2412

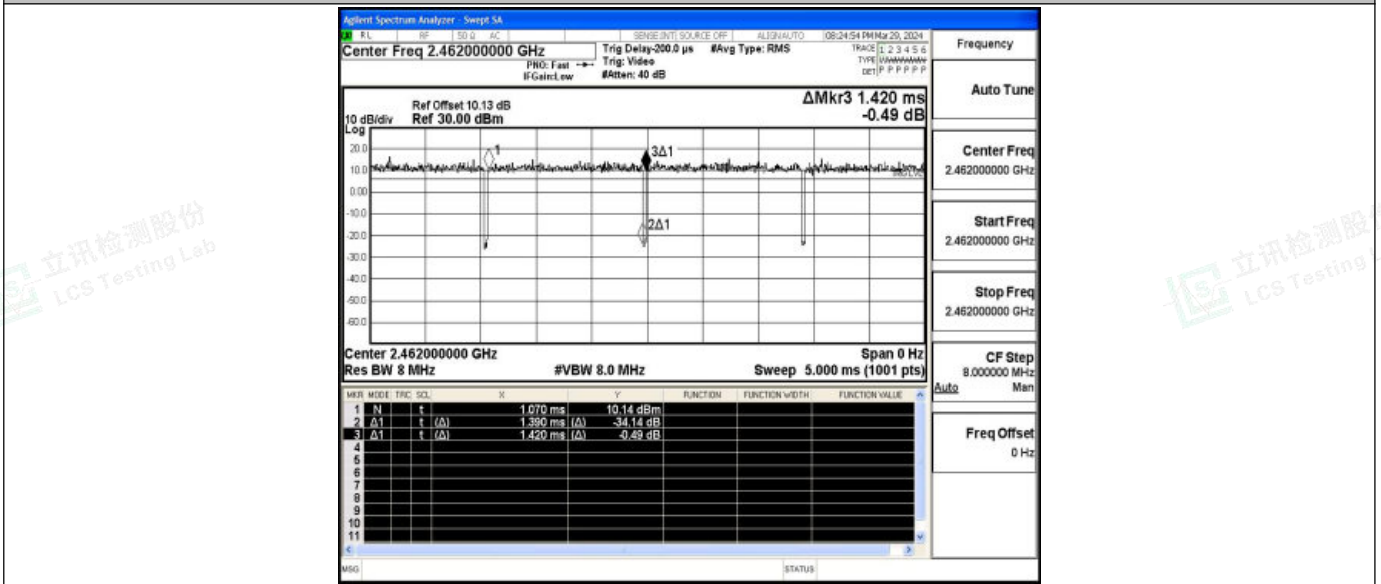


11G_Ant1_2437



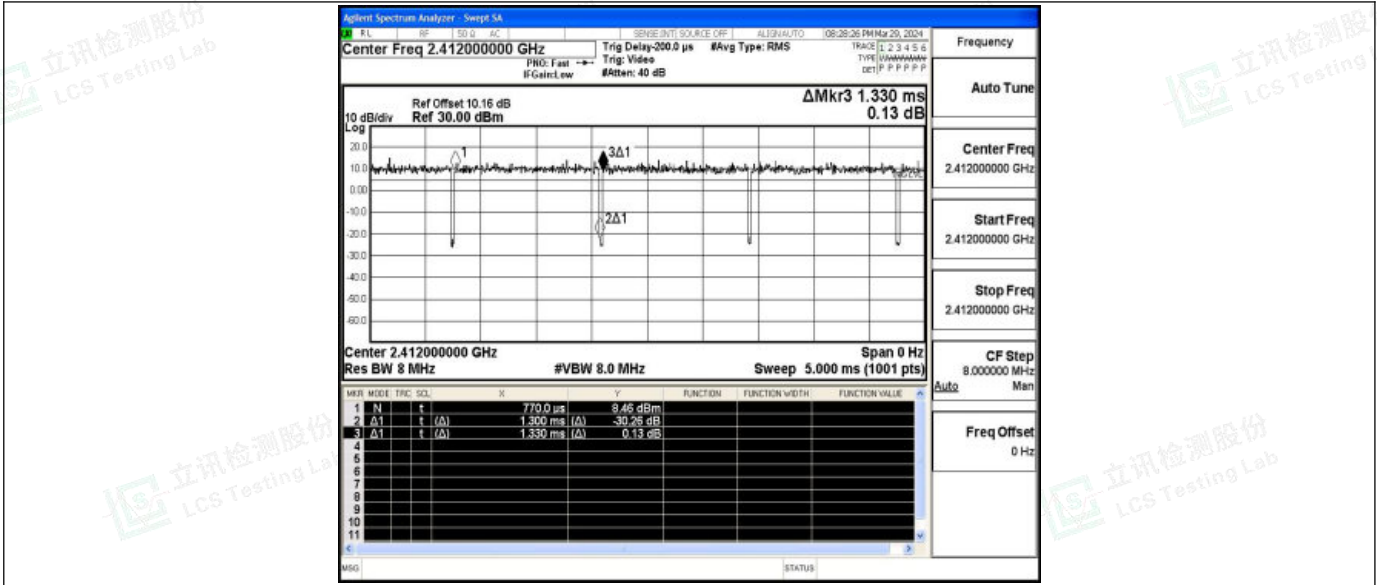


11G_Ant1_2462

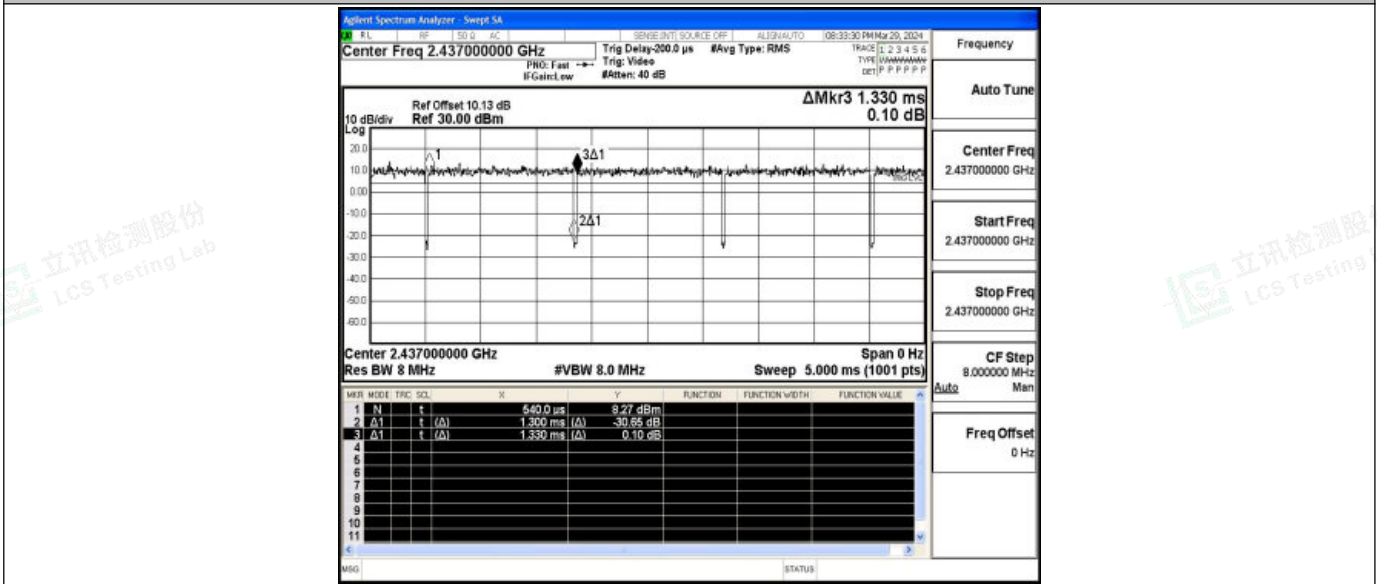


11N20SISO_Ant1_2412



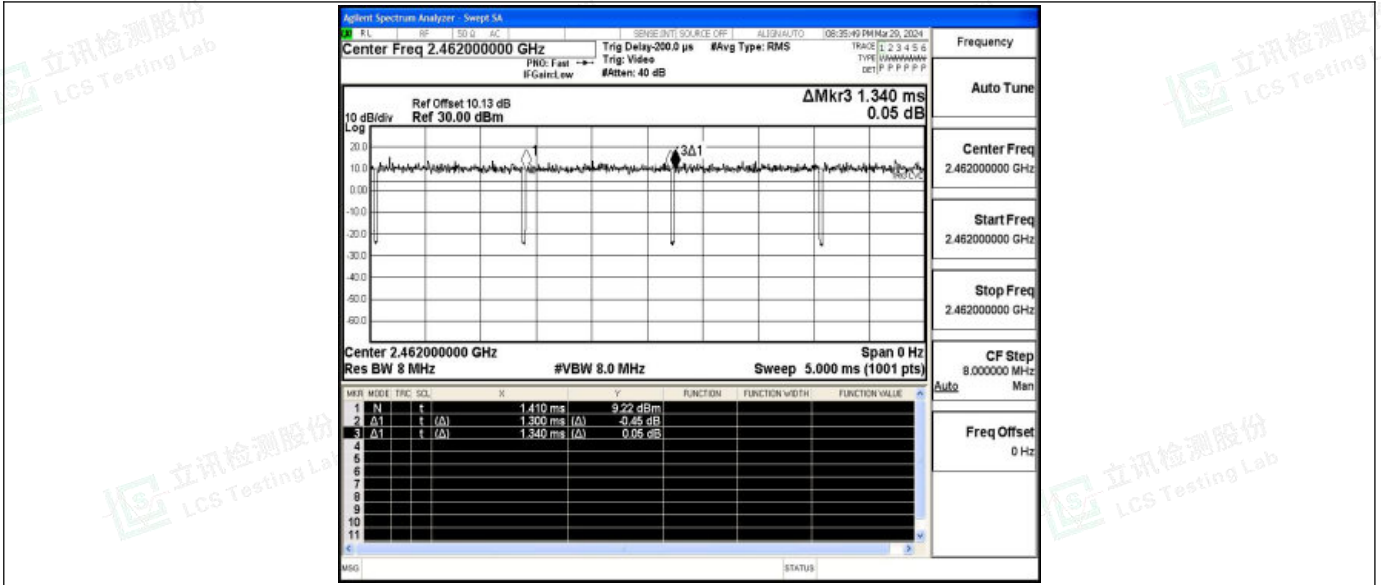


11N20SISO_Ant1_2437

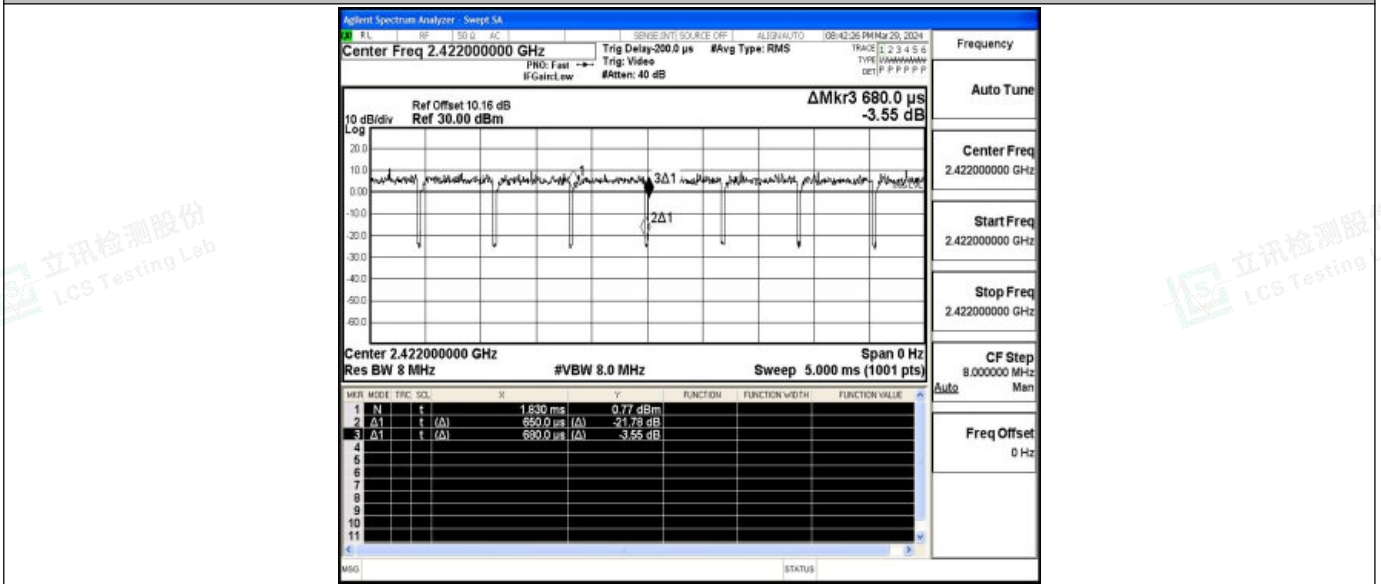


11N20SISO_Ant1_2462



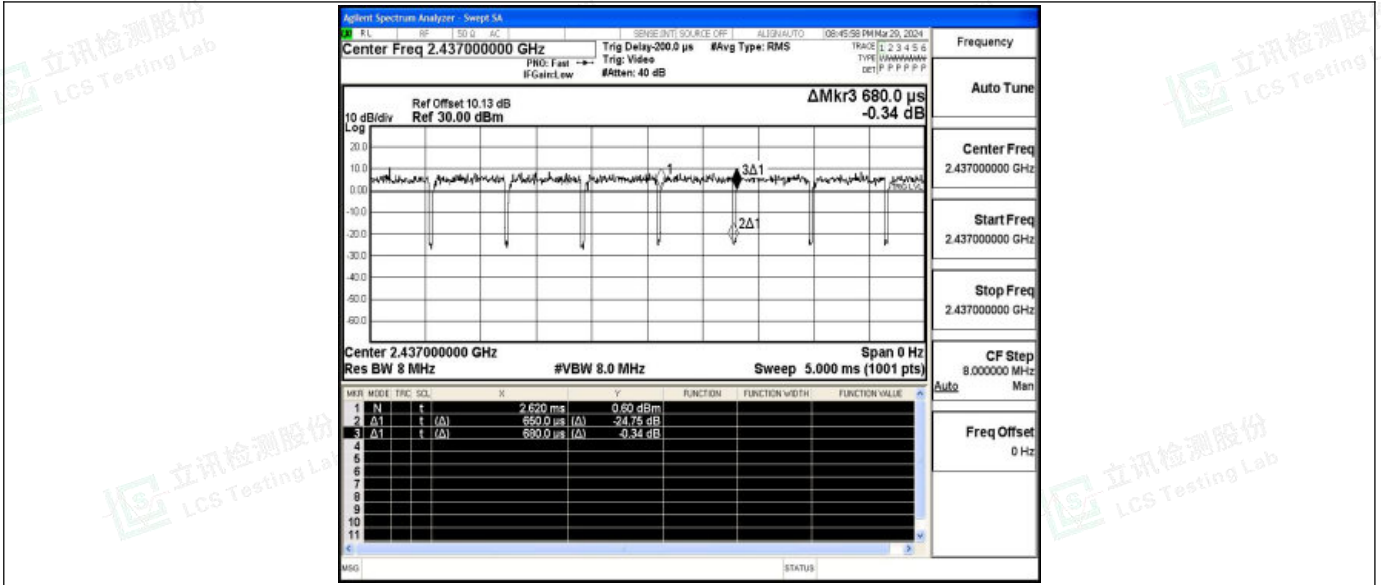


11N40SISO_Ant1_2422

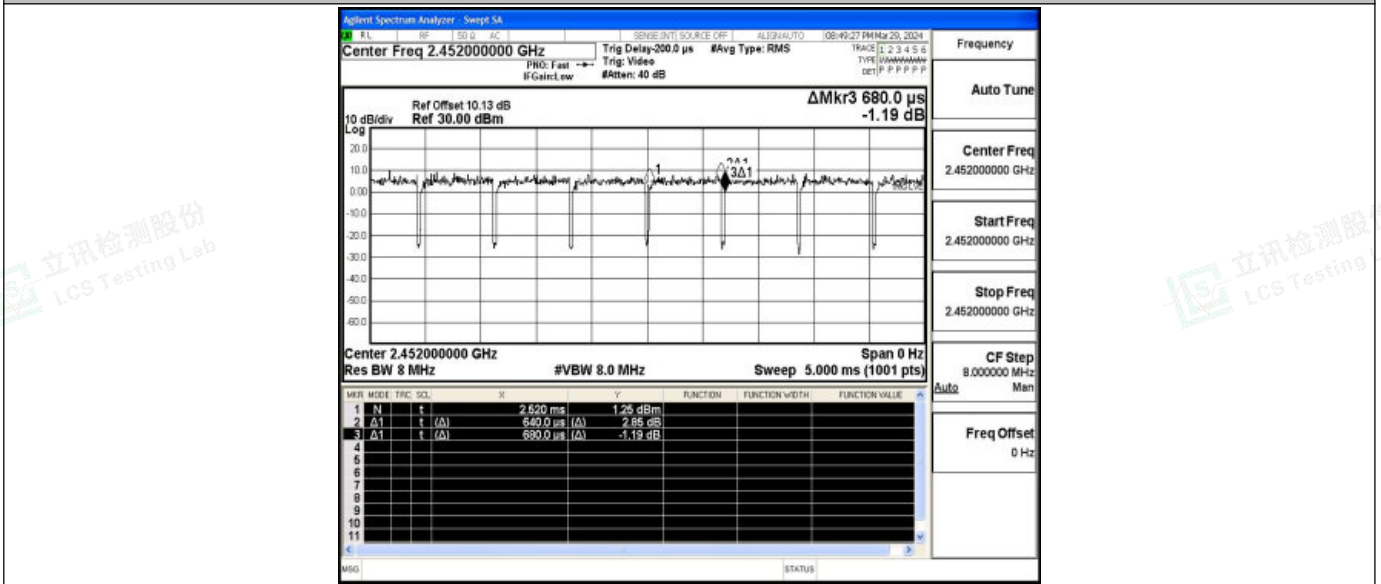


11N40SISO_Ant1_2437





11N40SISO_Ant1_2452





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	-48.27	≤-41.20	46.93	≤54	PASS
				AV	2388.920	-46.81	≤-41.20	48.39	≤54	PASS
				AV	2390.000	-47.41	≤-41.20	47.79	≤54	PASS
				Peak	2310.000	-40.09	≤-21.20	55.11	≤74	PASS
				Peak	2335.880	-36.9	≤-21.20	58.30	≤74	PASS
				Peak	2390.000	-38.75	≤-21.20	56.45	≤74	PASS
		High	2462	AV	2483.500	-47.53	≤-41.20	47.67	≤54	PASS
				AV	2484.330	-46.81	≤-41.20	48.39	≤54	PASS
				AV	2500.000	-47.73	≤-41.20	47.47	≤54	PASS
				Peak	2483.500	-40.74	≤-21.20	54.46	≤74	PASS
				Peak	2491.810	-36.49	≤-21.20	58.71	≤74	PASS
				Peak	2500.000	-40.37	≤-21.20	54.83	≤74	PASS
11G	Ant1	Low	2412	AV	2310.000	-47.63	≤-41.20	47.57	≤54	PASS
				AV	2387.100	-46	≤-41.20	49.20	≤54	PASS
				AV	2390.000	-47.14	≤-41.20	48.06	≤54	PASS
				Peak	2310.000	-40.18	≤-21.20	55.02	≤74	PASS
				Peak	2375.140	-36.34	≤-21.20	58.86	≤74	PASS
				Peak	2390.000	-37.23	≤-21.20	57.97	≤74	PASS
		High	2462	AV	2483.500	-46.83	≤-41.20	48.37	≤54	PASS
				AV	2485.980	-45.8	≤-41.20	49.40	≤54	PASS
				AV	2500.000	-47.07	≤-41.20	48.13	≤54	PASS
				Peak	2483.500	-38.94	≤-21.20	56.26	≤74	PASS
				Peak	2487.850	-36.02	≤-21.20	59.18	≤74	PASS
				Peak	2500.000	-39.73	≤-21.20	55.47	≤74	PASS
11N20SISO	Ant1	Low	2412	AV	2310.000	-47.22	≤-41.20	47.98	≤54	PASS
				AV	2385.800	-46.69	≤-41.20	48.51	≤54	PASS
				AV	2390.000	-47	≤-41.20	48.20	≤54	PASS
				Peak	2310.000	-39.29	≤-21.20	55.91	≤74	PASS
				Peak	2378.390	-36.93	≤-21.20	58.27	≤74	PASS
				Peak	2390.000	-39.8	≤-21.20	55.40	≤74	PASS
		High	2462	AV	2483.500	-46.38	≤-41.20	48.82	≤54	PASS
				AV	2484.550	-45.98	≤-41.20	49.22	≤54	PASS
				AV	2500.000	-47.19	≤-41.20	48.01	≤54	PASS
				Peak	2483.500	-36.89	≤-21.20	58.31	≤74	PASS
				Peak	2485.980	-35.38	≤-21.20	59.82	≤74	PASS





11N40SISO	Ant1	Low	2422	Peak	2500.000	-39.52	≤-21.20	55.68	≤74	PASS
				AV	2310.000	-47.66	≤-41.20	47.54	≤54	PASS
				AV	2388.790	-46.37	≤-41.20	48.83	≤54	PASS
				AV	2390.000	-46.86	≤-41.20	48.34	≤54	PASS
				Peak	2310.000	-39.97	≤-21.20	55.23	≤74	PASS
				Peak	2384.760	-36.59	≤-21.20	58.61	≤74	PASS
				Peak	2390.000	-39.95	≤-21.20	55.25	≤74	PASS
	High	2452	AV	2483.500	-47.1	≤-41.20	48.10	≤54	PASS	
			AV	2489.060	-46.19	≤-41.20	49.01	≤54	PASS	
			AV	2500.000	-46.99	≤-41.20	48.21	≤54	PASS	
			Peak	2483.500	-38.96	≤-21.20	56.24	≤74	PASS	
			Peak	2485.320	-34.51	≤-21.20	60.69	≤74	PASS	
			Peak	2500.000	-38.68	≤-21.20	56.52	≤74	PASS	

Note:

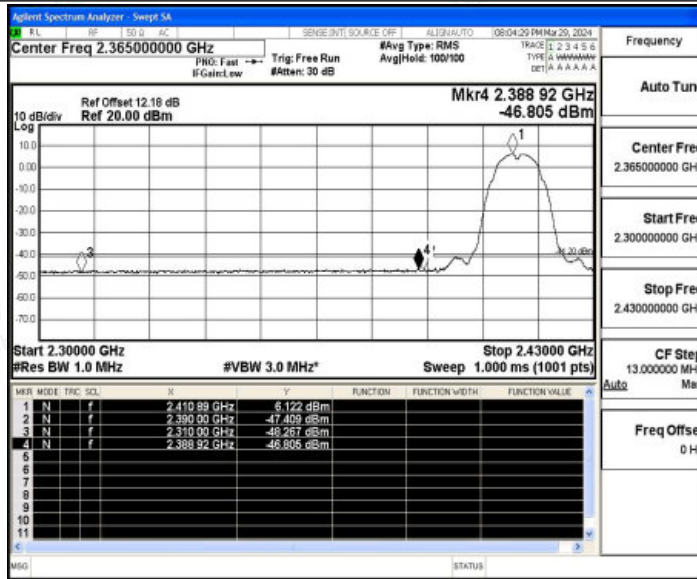
1. The Antenna Gain is compensated in the graph. The Correction Factor is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



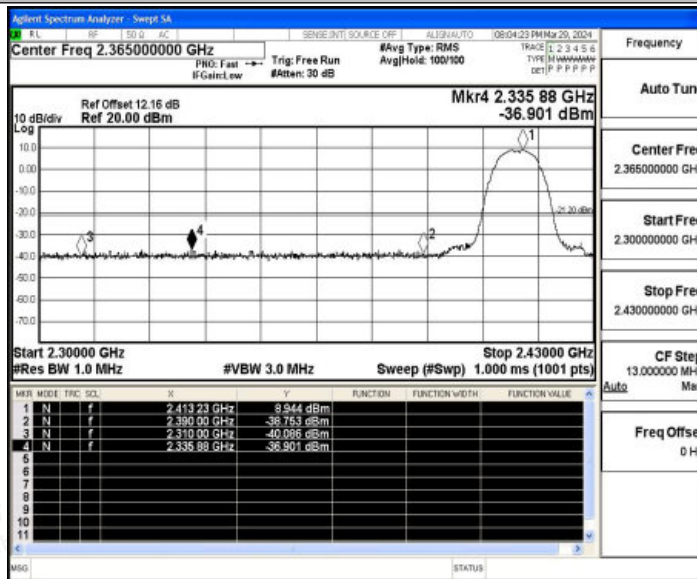


Test Graphs

11B_Ant1_Low_2412_AV

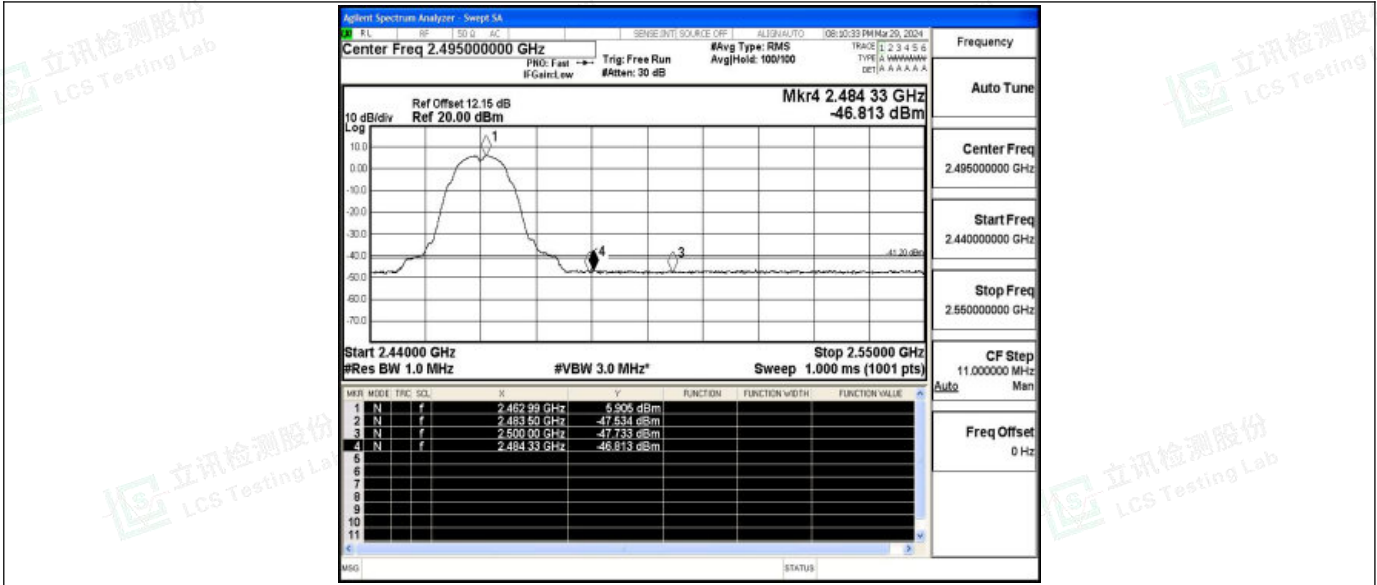


11B_Ant1_Low_2412_Peak

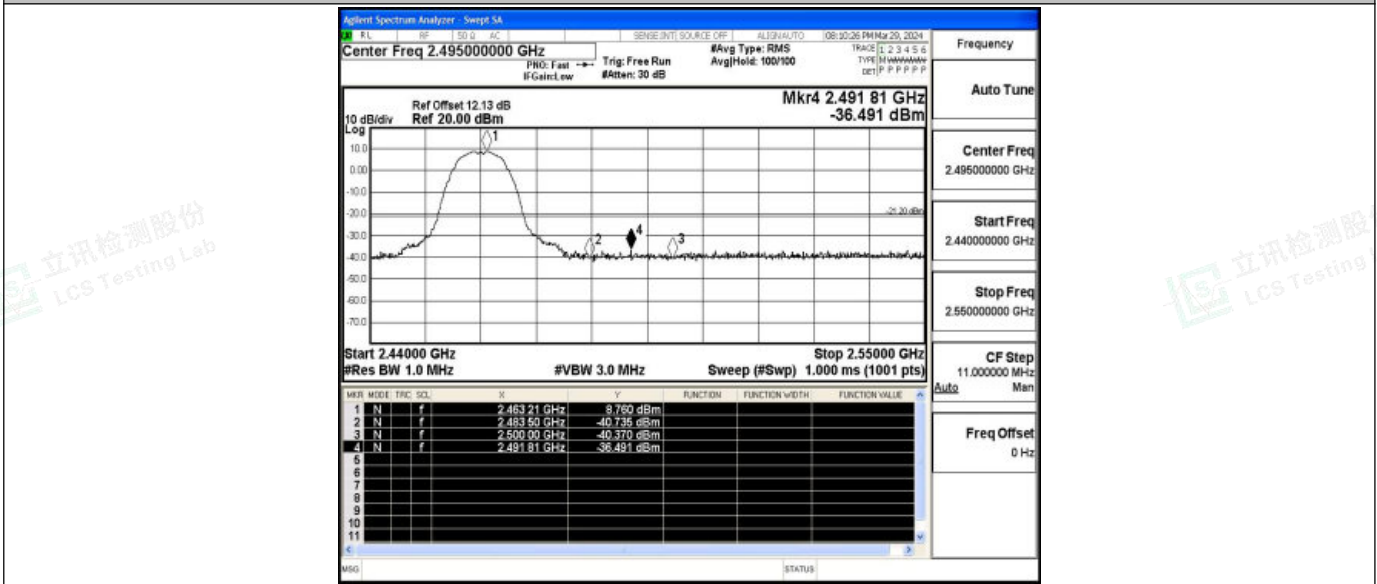


11B_Ant1_High_2462_AV



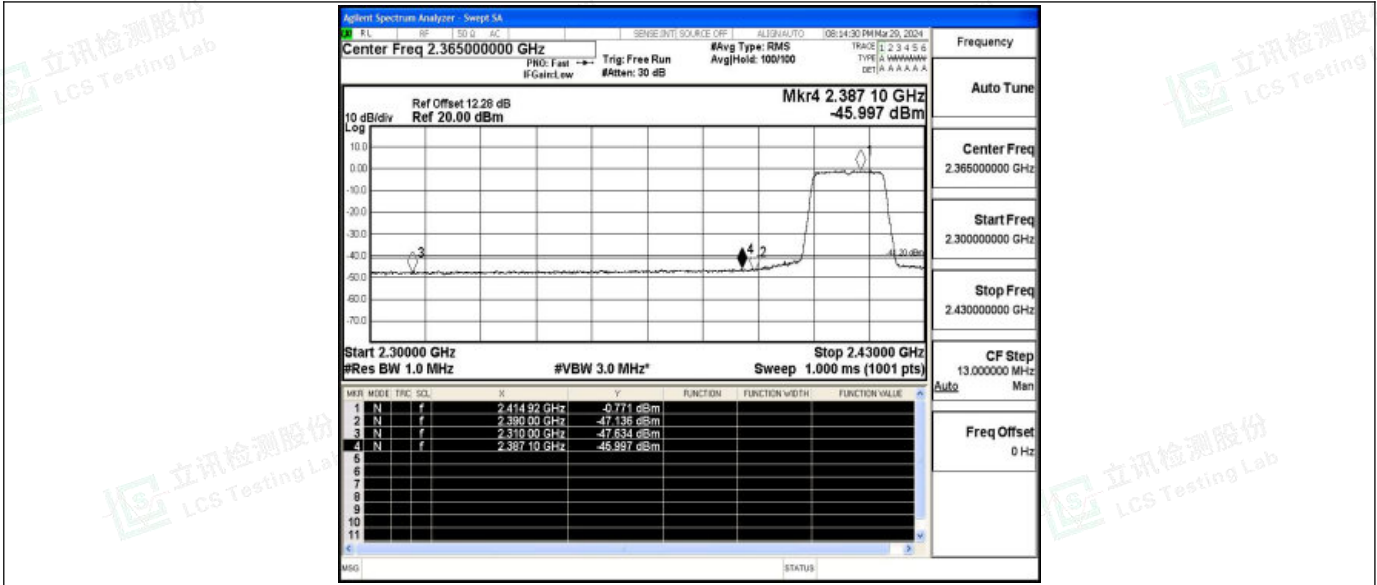


11B_Ant1_High_2462_Peak

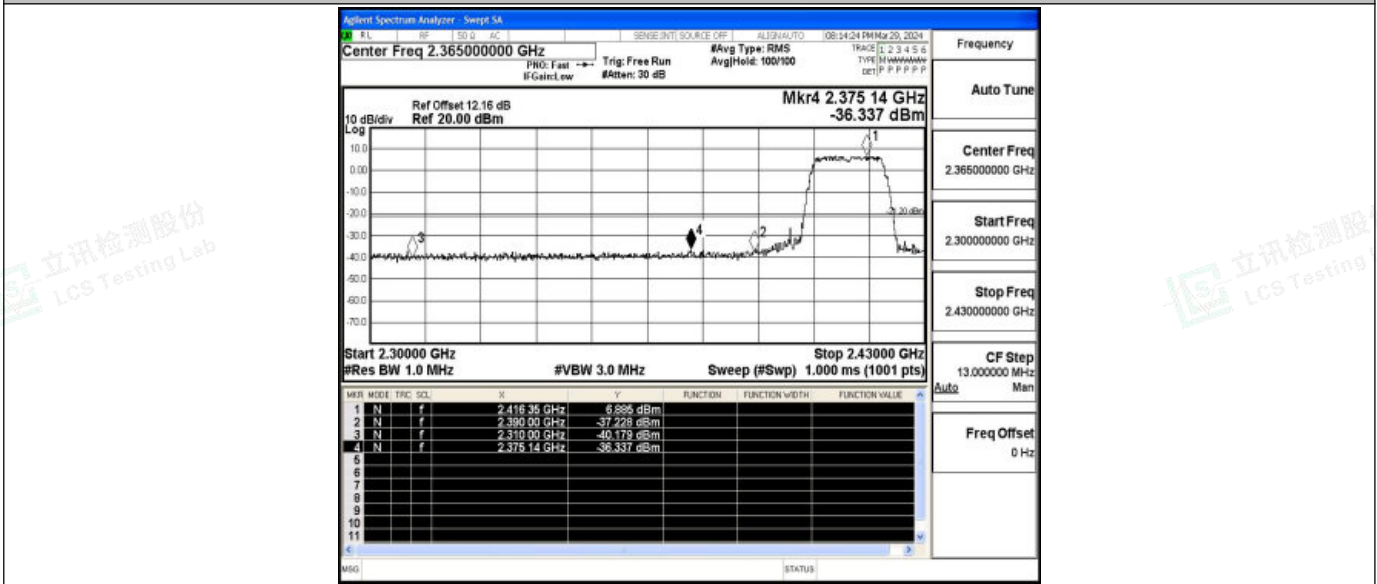


11G_Ant1_Low_2412_AV



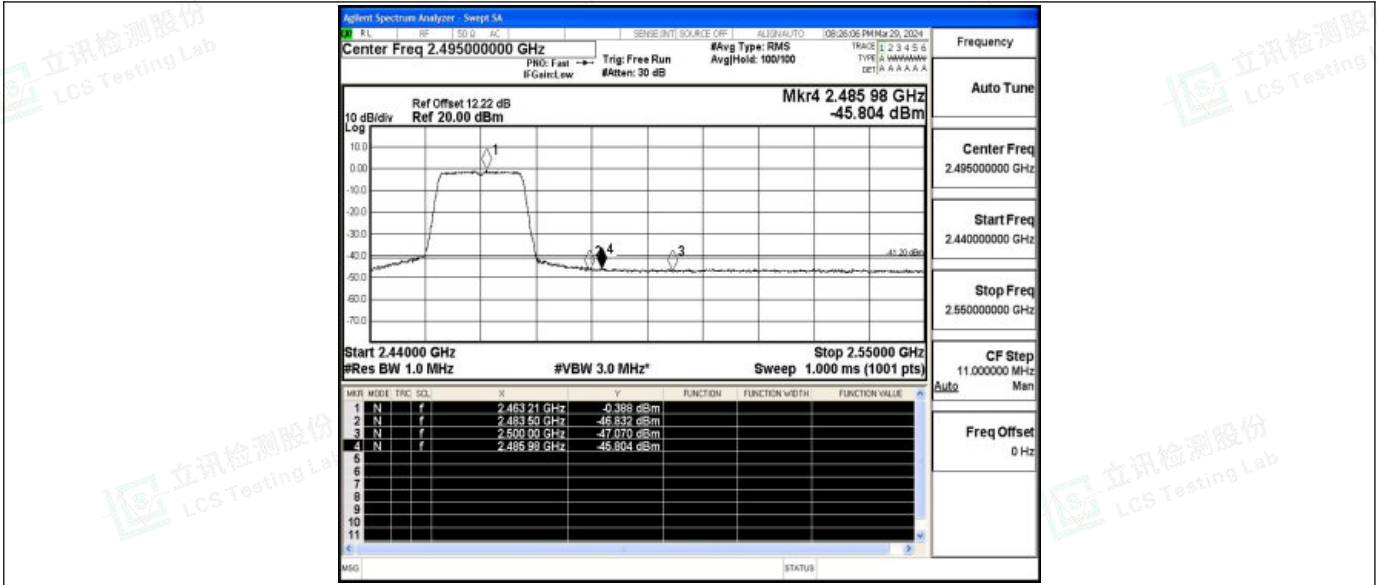


11G_Ant1_Low_2412_Peak

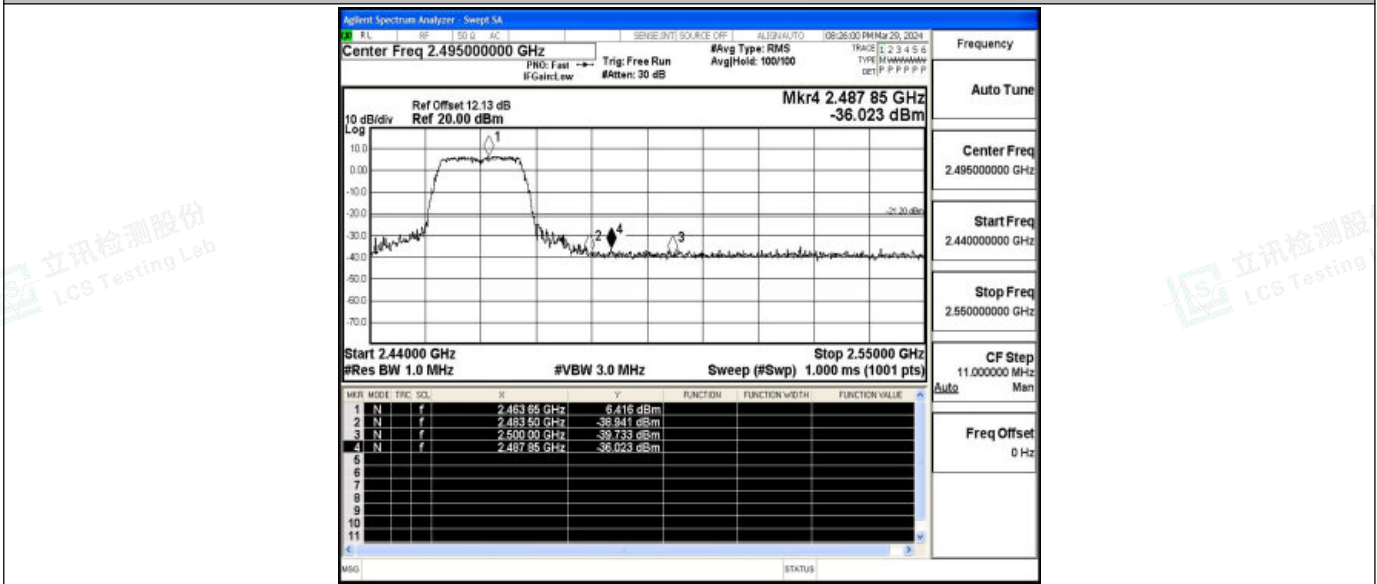


11G_Ant1_High_2462_AV



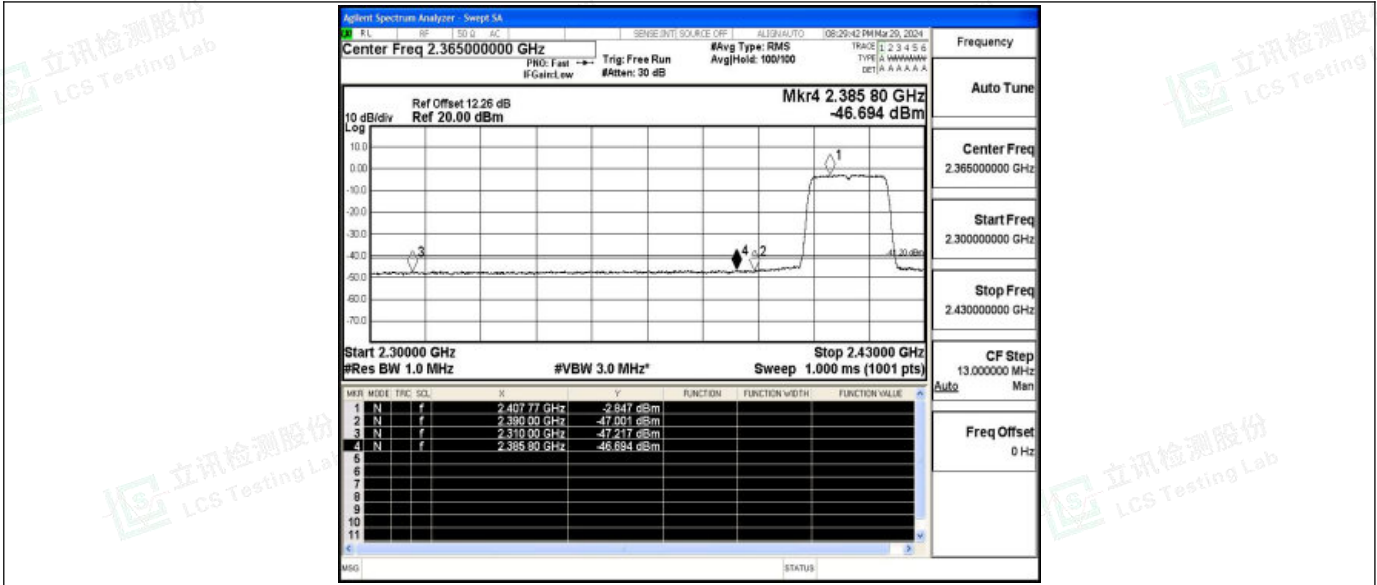


11G_Ant1_High_2462_Peak

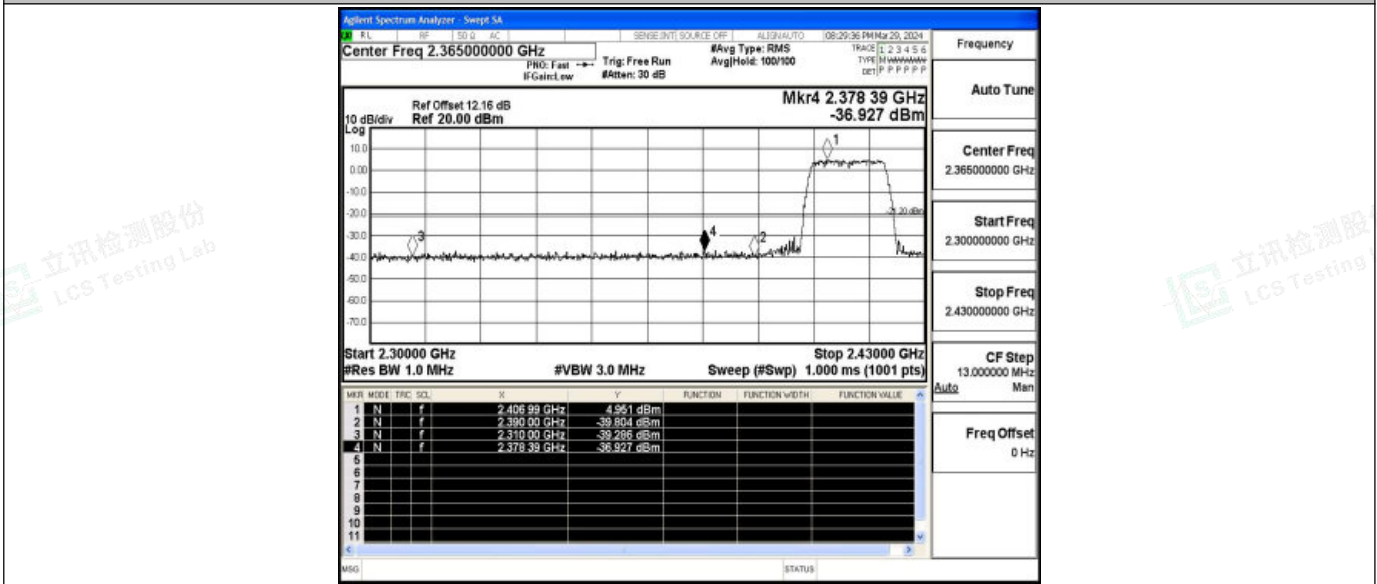


11N20SISO_Ant1_Low_2412_AV



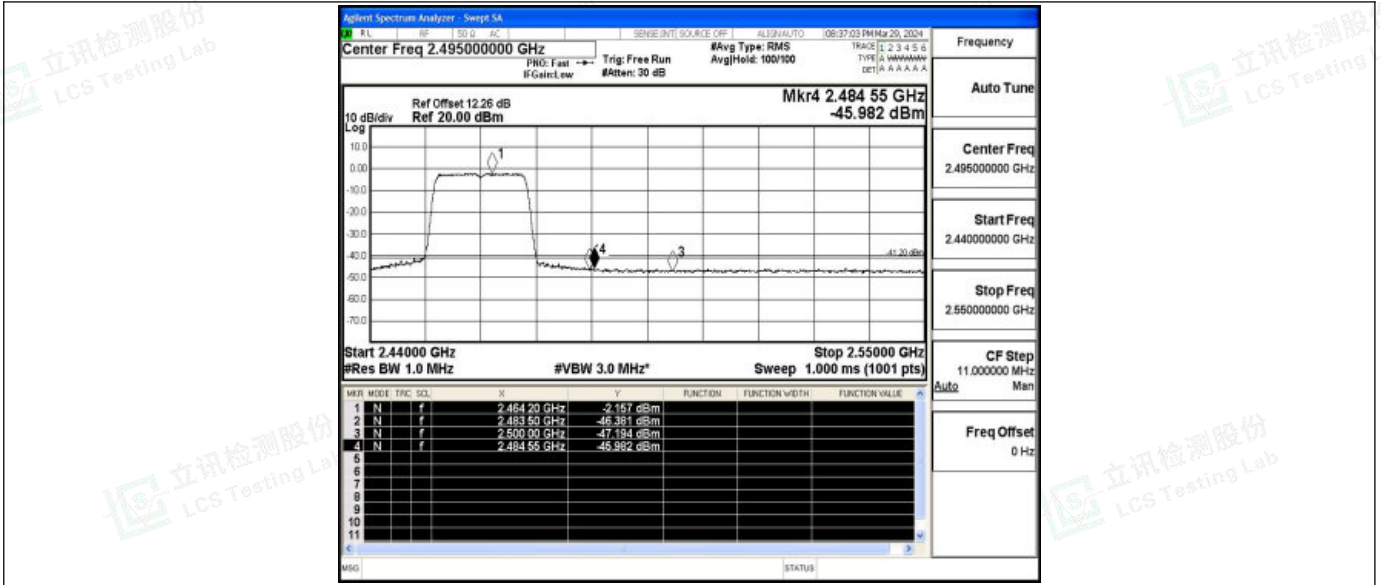


11N20SISO_Ant1_Low_2412_Peak

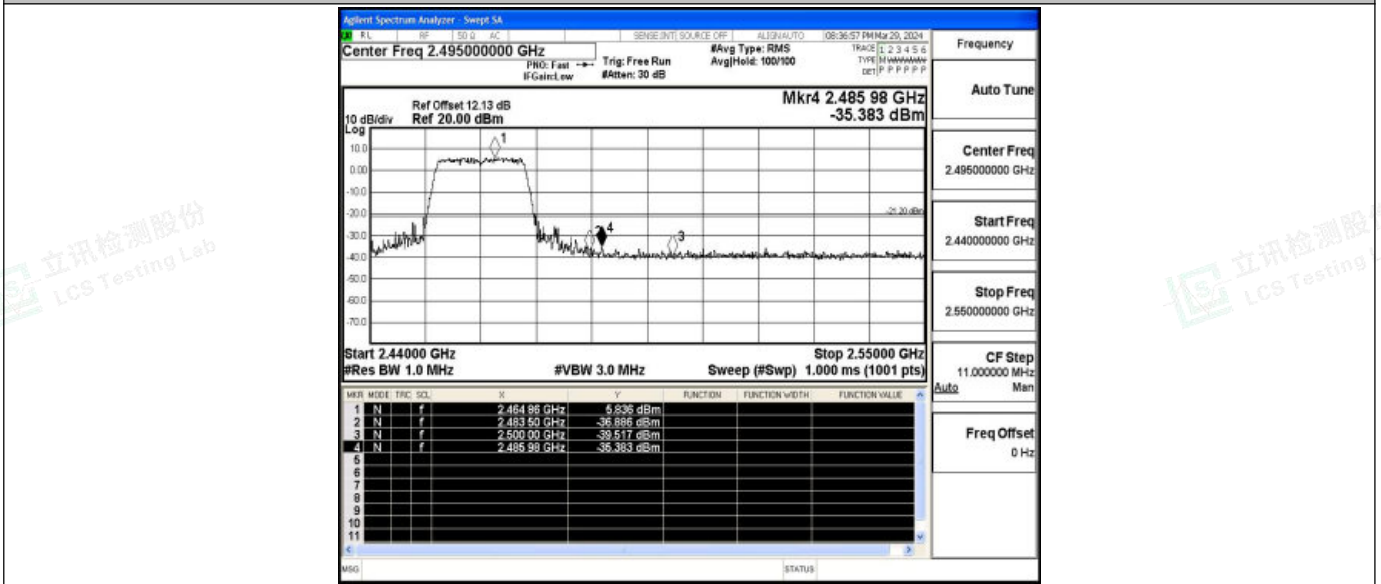


11N20SISO_Ant1_High_2462_AV



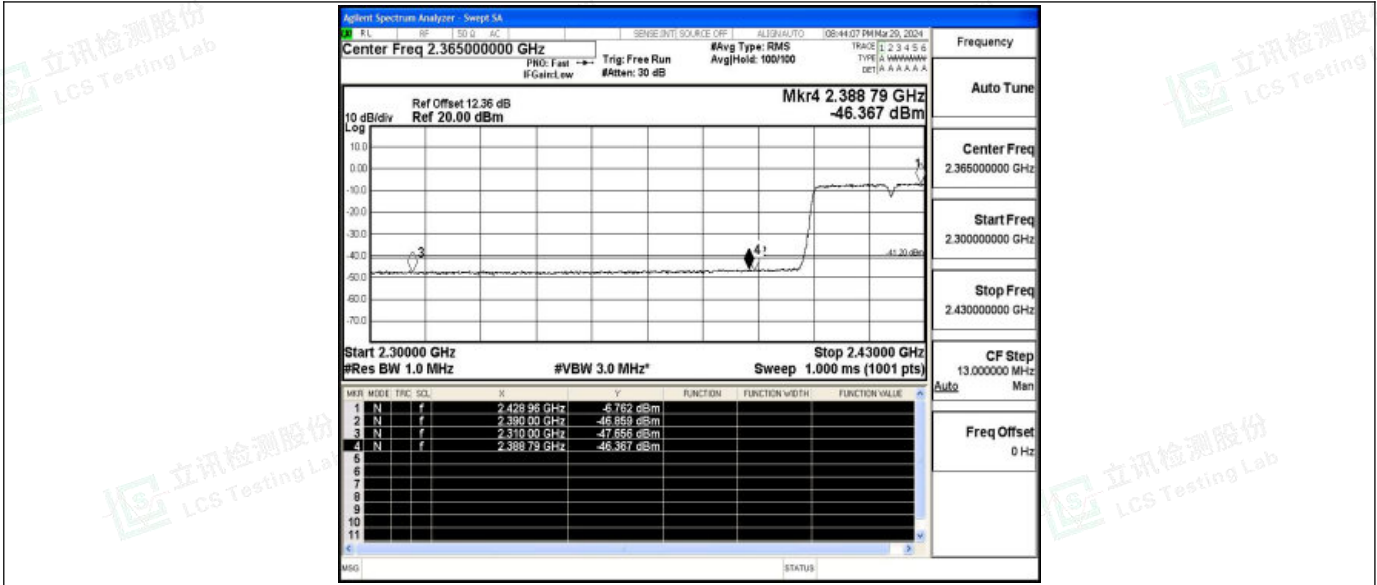


11N20SISO_Ant1_High_2462_Peak

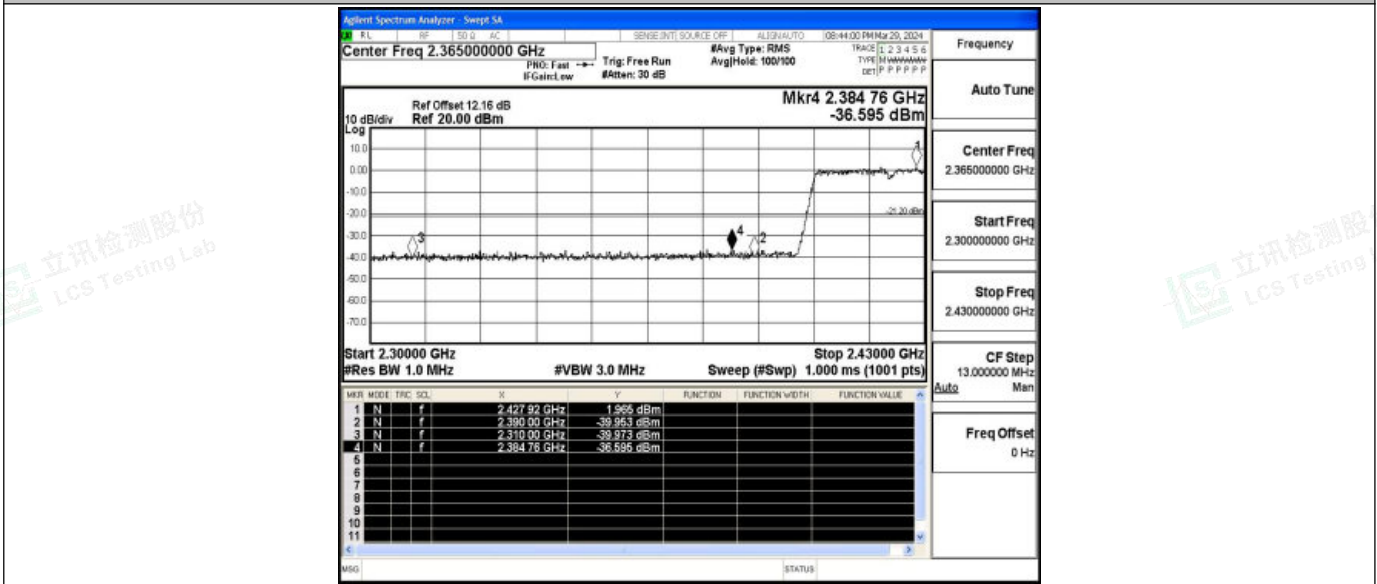


11N40SISO_Ant1_Low_2422_AV



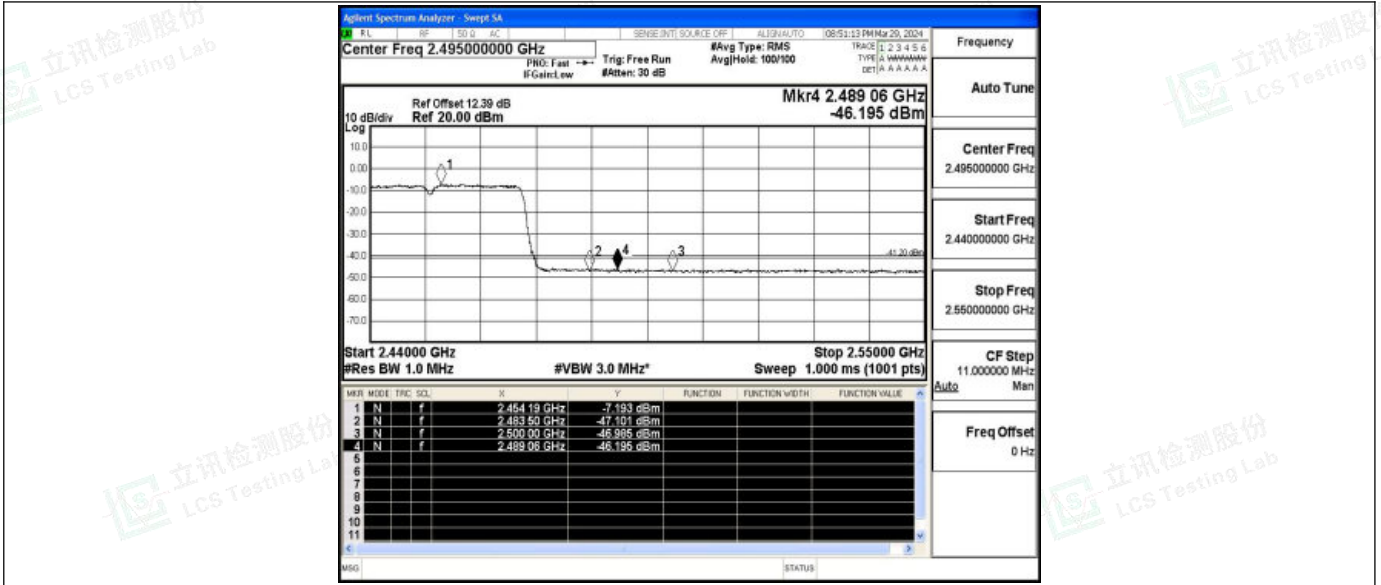


11N40SISO_Ant1_Low_2422_Peak



11N40SISO_Ant1_High_2452_AV





11N40SISO_Ant1_High_2452_Peak

