



Appendix A

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Mini Projector

Test Model: D062

Environmental Conditions

Temperature:	23.5° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Ling Zhu
Supervised by:	Li Huan





A.1 DTS Bandwidth

Test Result

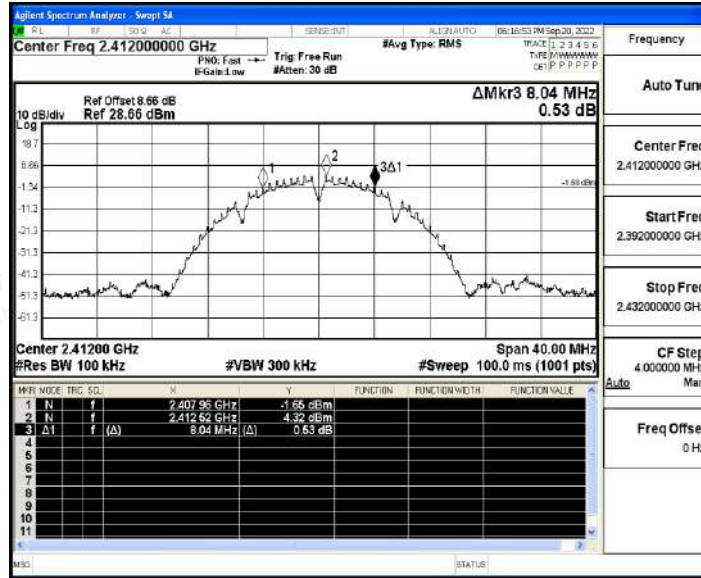
TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.040	2407.960	2416.000	0.5	PASS
		2437	8.000	2433.000	2441.000	0.5	PASS
		2462	8.040	2458.000	2466.040	0.5	PASS
11G	Ant1	2412	15.120	2404.440	2419.560	0.5	PASS
		2437	15.080	2429.440	2444.520	0.5	PASS
		2462	15.400	2454.480	2469.880	0.5	PASS
11N20SISO	Ant1	2412	15.320	2404.440	2419.760	0.5	PASS
		2437	15.120	2429.440	2444.560	0.5	PASS
		2462	15.120	2454.440	2469.560	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	35.040	2434.480	2469.520	0.5	PASS



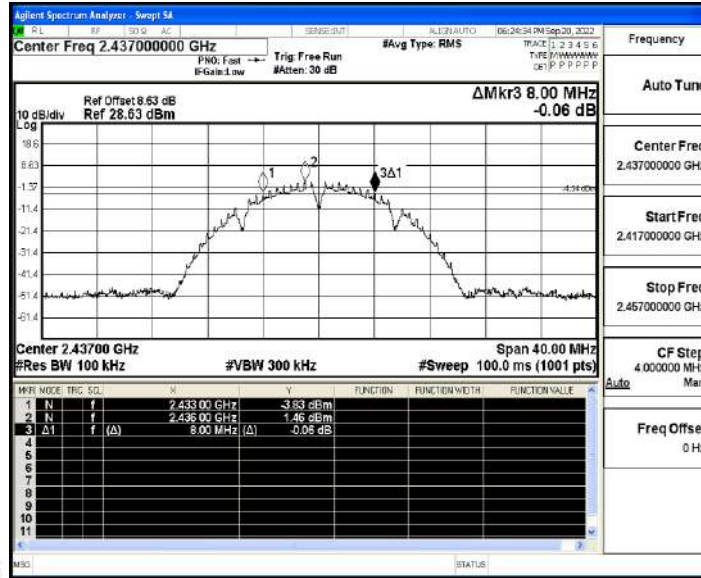


Test Graphs

11B_Ant1_2412

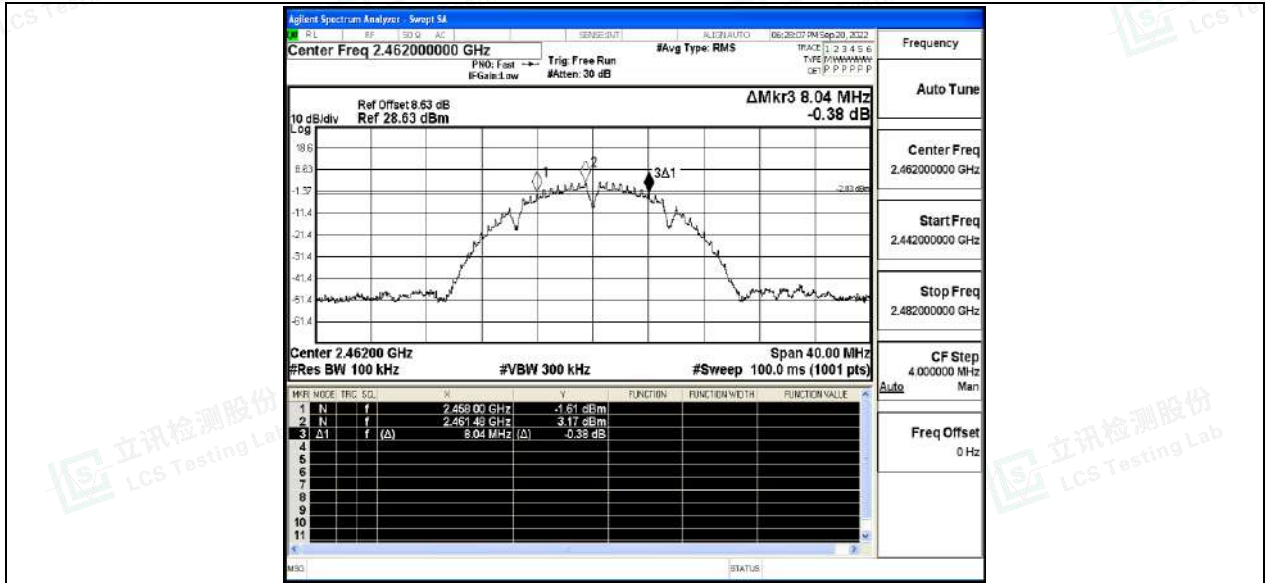


11B_Ant1_2437

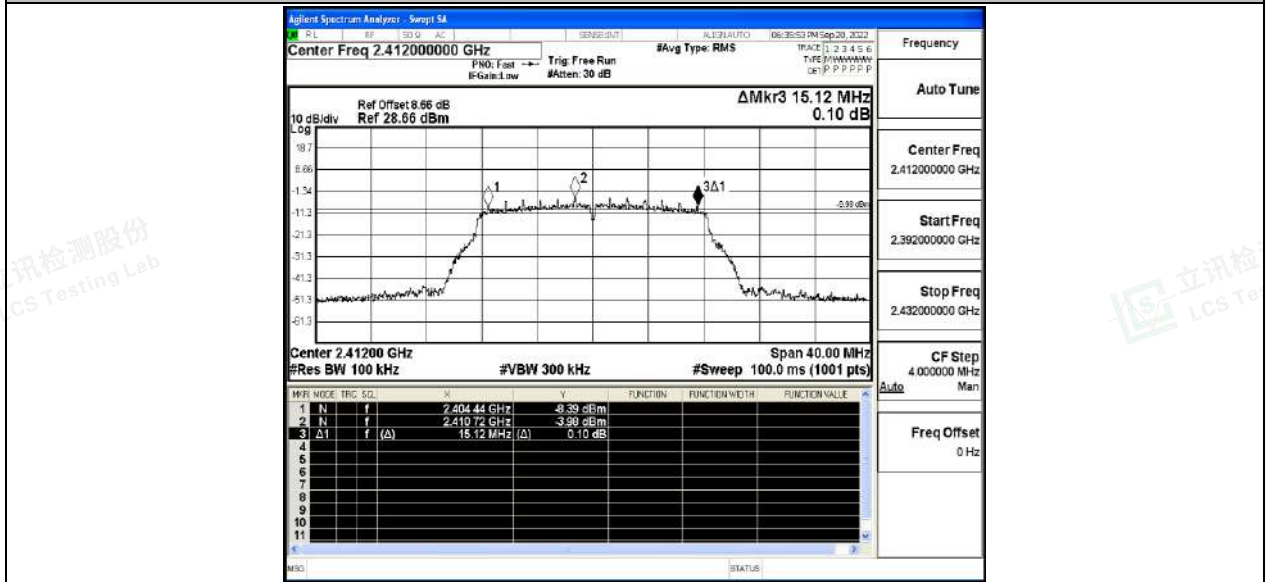


11B_Ant1_2462



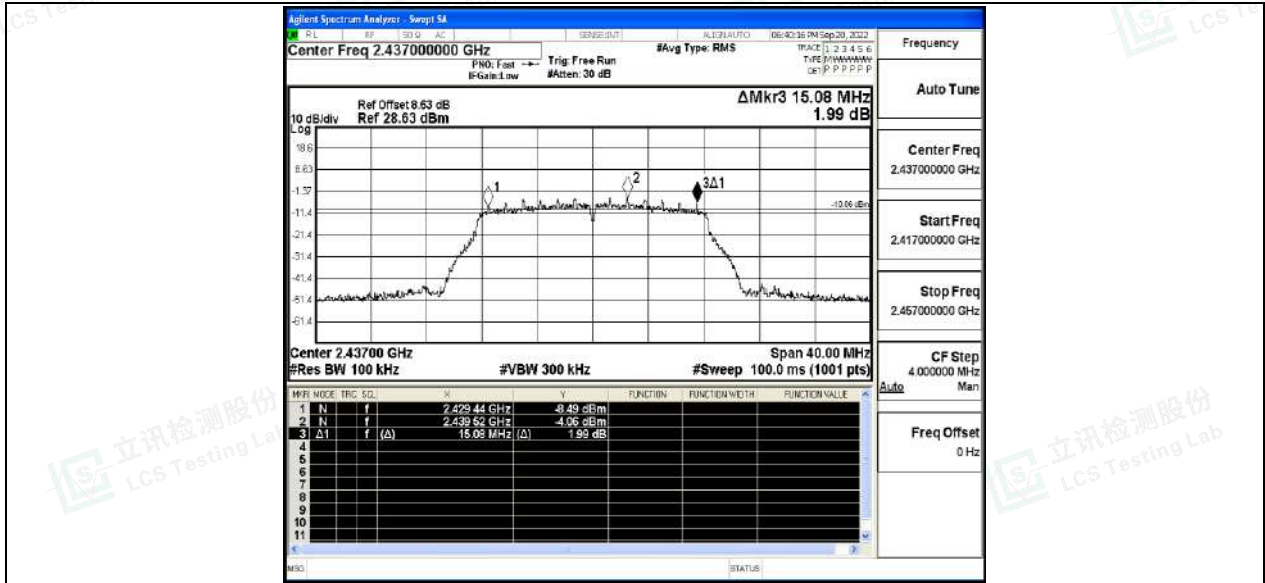


11G_Ant1_2412

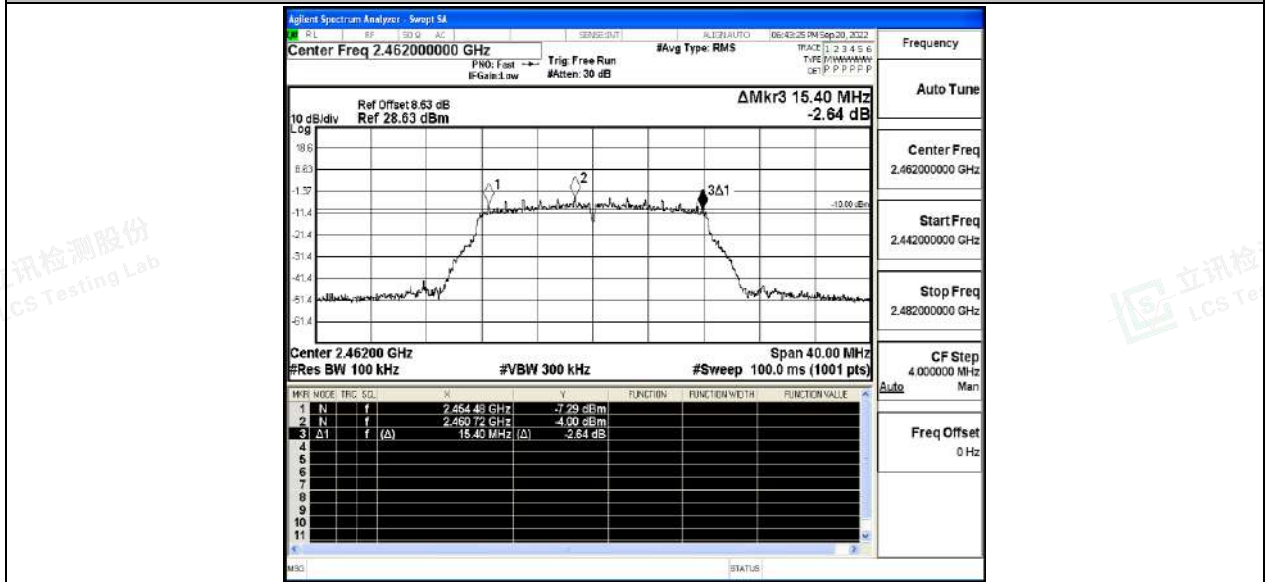


11G_Ant1_2437



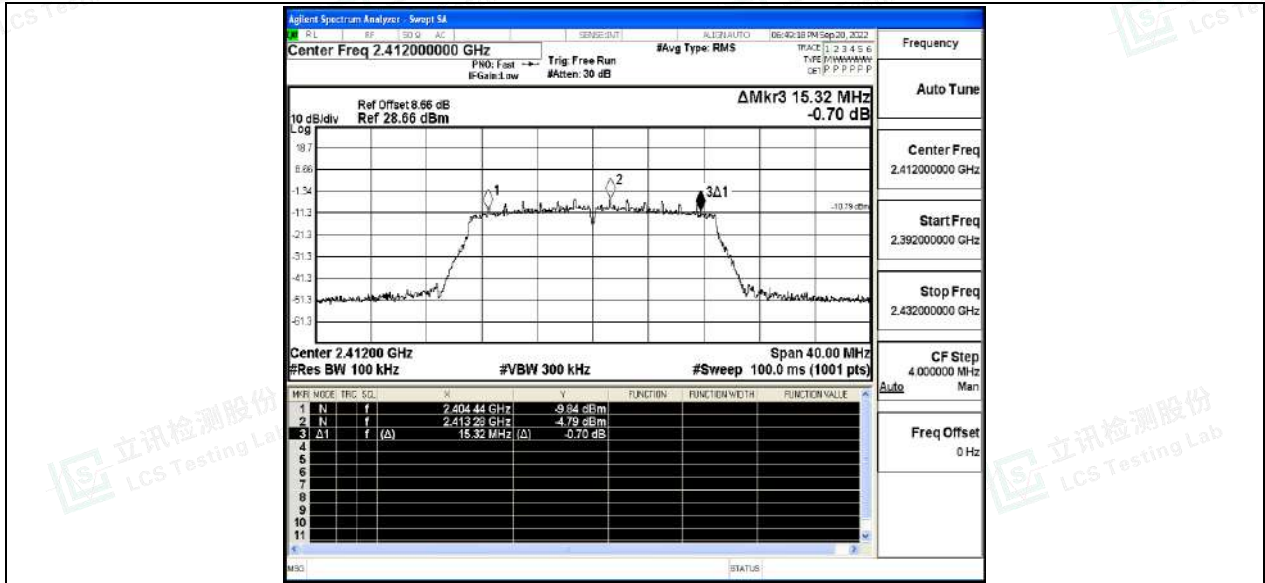


11G_Ant1_2462

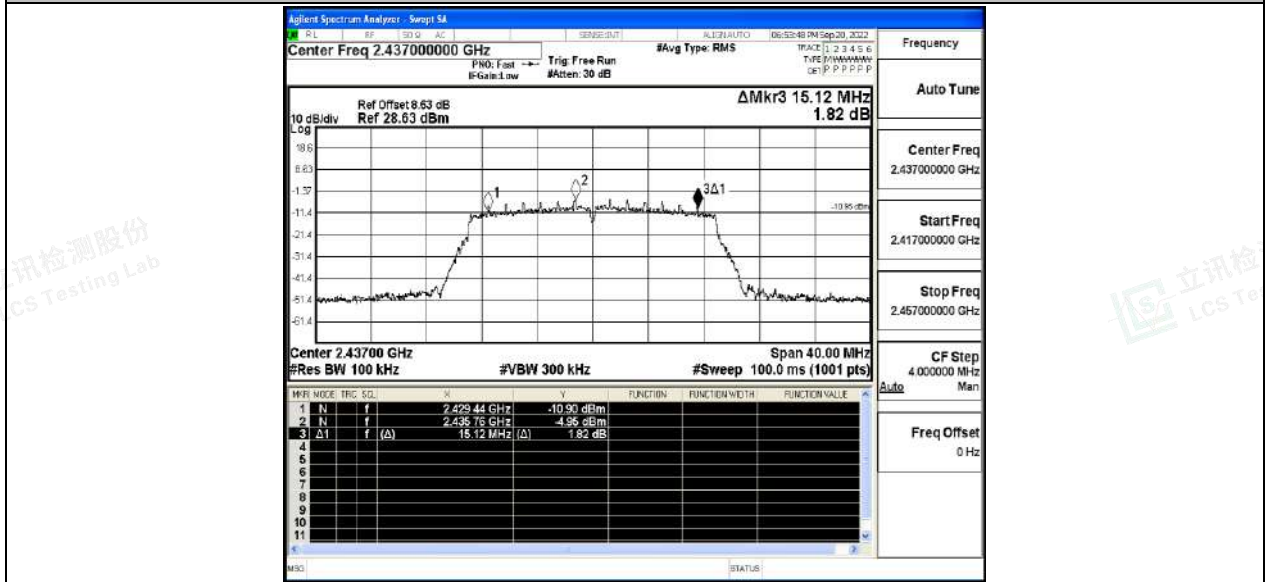


11N20SISO_Ant1_2412



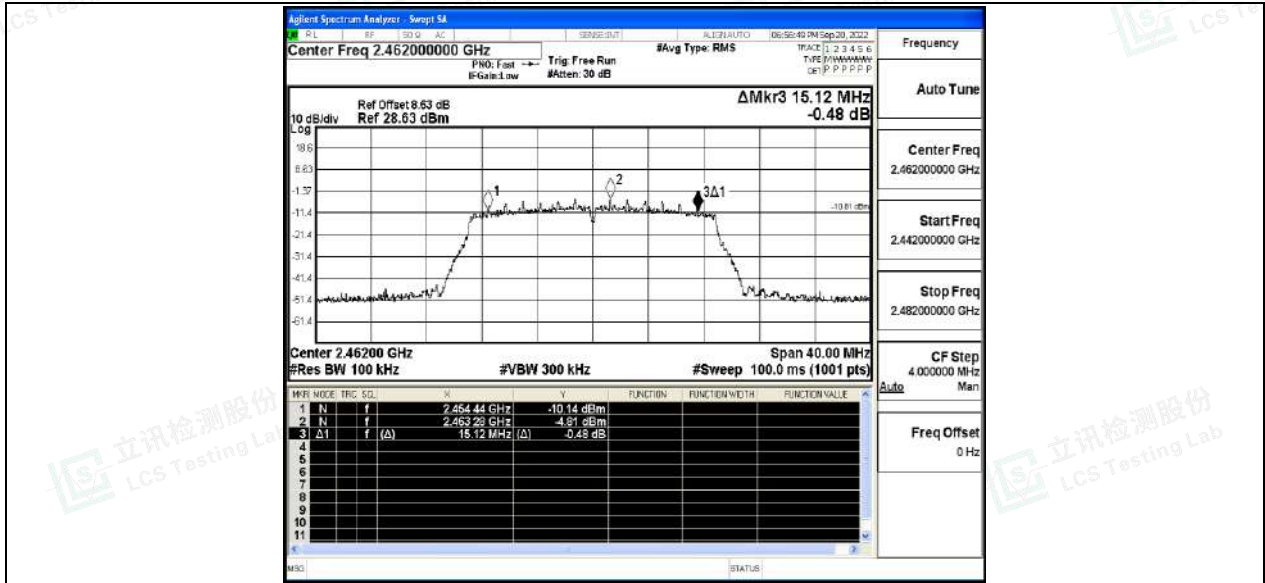


11N20SISO_Ant1_2437

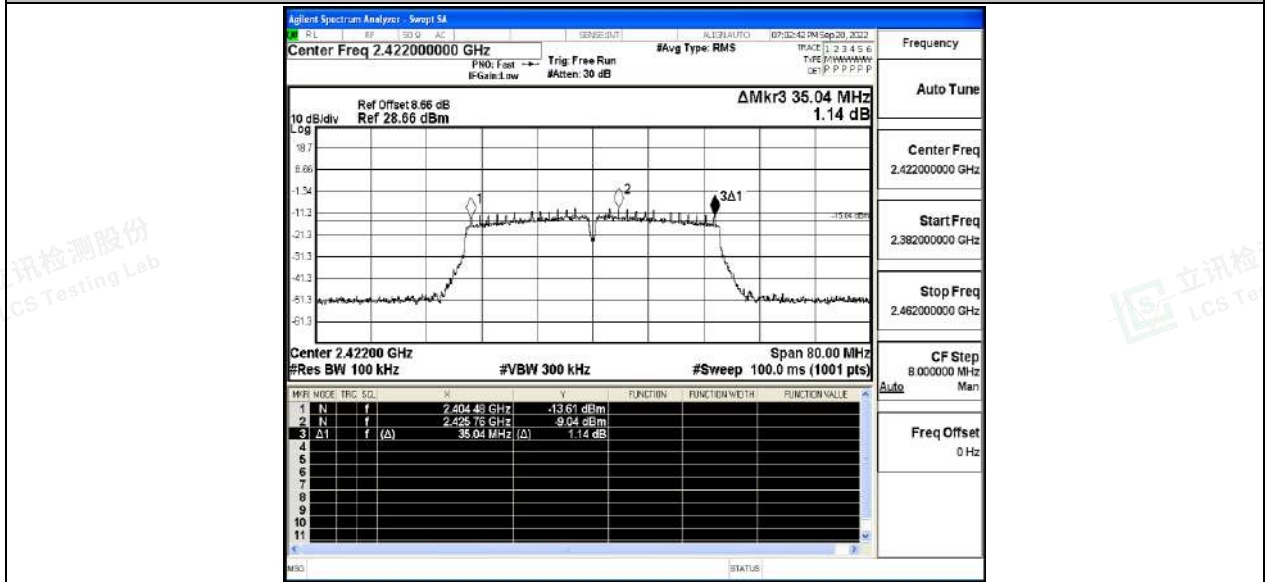


11N20SISO_Ant1_2462



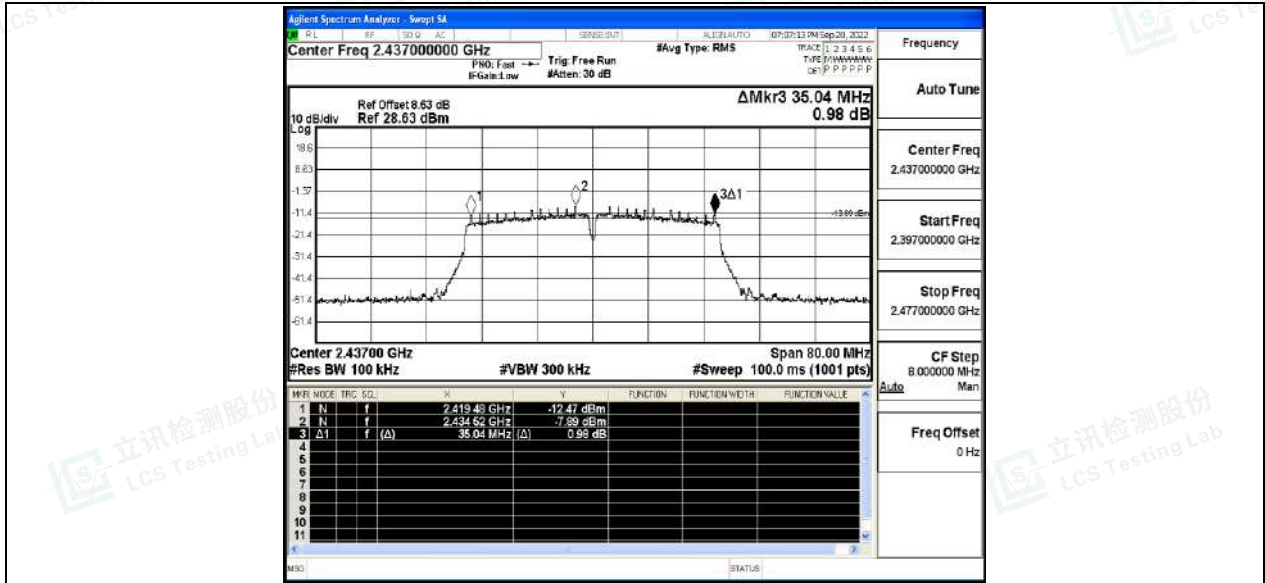


11N40SISO_Ant1_2422

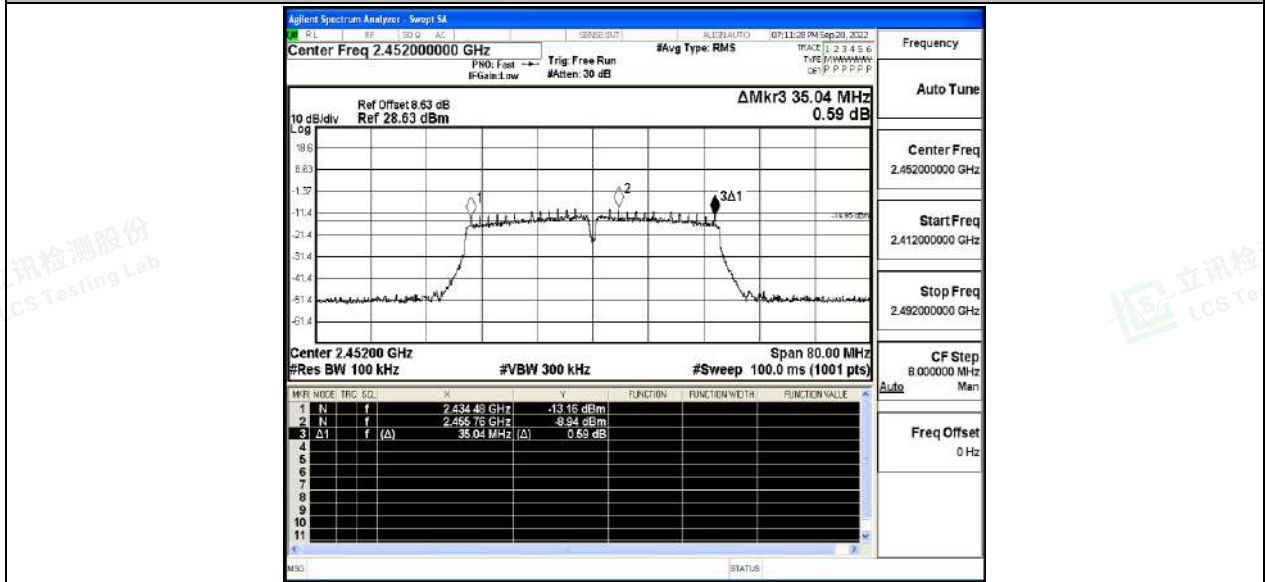


11N40SISO_Ant1_2437





11N40SISO_Ant1_2452





A.2 Maximum conducted output power

Test Result Peak

TestMode	Antenna	Freq(MHz)	Peak Power[dBm]	Conducted Limit[dBm]	Verdict
11B	Ant1	2412	15.72	≤30.00	PASS
		2437	15.08	≤30.00	PASS
		2462	15.10	≤30.00	PASS
11G	Ant1	2412	14.83	≤30.00	PASS
		2437	14.76	≤30.00	PASS
		2462	14.74	≤30.00	PASS
11N20SISO	Ant1	2412	13.79	≤30.00	PASS
		2437	13.74	≤30.00	PASS
		2462	13.85	≤30.00	PASS
11N40SISO	Ant1	2422	12.49	≤30.00	PASS
		2437	12.32	≤30.00	PASS
		2452	12.40	≤30.00	PASS





A.3 Maximum power spectral density

Test Result

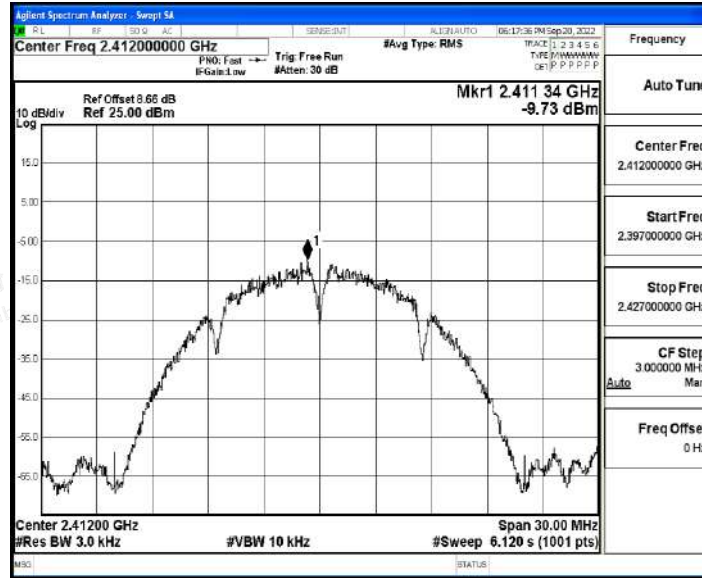
TestMode	Antenna	Freq(MHz)	Result [dBm/3kHz]	Limit [dBm/3kHz]	Gain [dBi]	EIRP [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant1	2412	-9.73	≤8.00	0.00	-9.73	---	PASS
		2437	-12.98	≤8.00	0.00	-12.98	---	PASS
		2462	-10.86	≤8.00	0.00	-10.86	---	PASS
11G	Ant1	2412	-18.6	≤8.00	0.00	-18.60	---	PASS
		2437	-18.91	≤8.00	0.00	-18.91	---	PASS
		2462	-18.28	≤8.00	0.00	-18.28	---	PASS
11N20SISO	Ant1	2412	-19.62	≤8.00	0.00	-19.62	---	PASS
		2437	-20.13	≤8.00	0.00	-20.13	---	PASS
		2462	-19.23	≤8.00	0.00	-19.23	---	PASS
11N40SISO	Ant1	2422	-23.77	≤8.00	0.00	-23.77	---	PASS
		2437	-23.12	≤8.00	0.00	-23.12	---	PASS
		2452	-24.27	≤8.00	0.00	-24.27	---	PASS



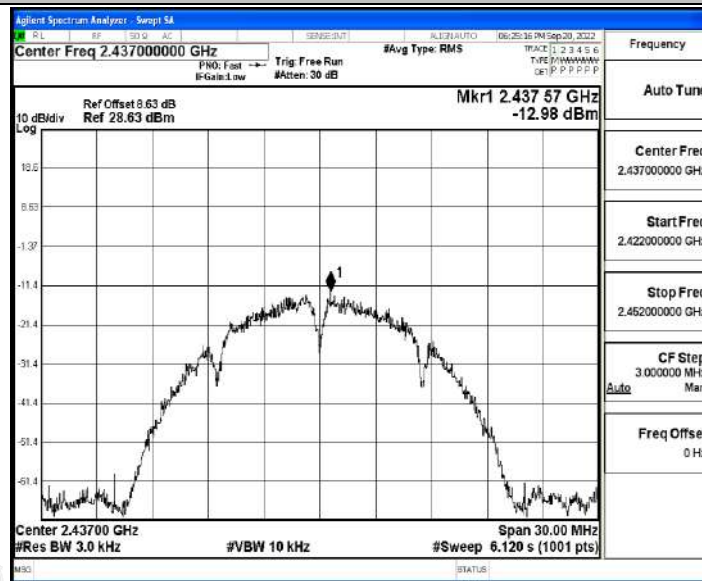


Test Graphs

11B_Ant1_2412

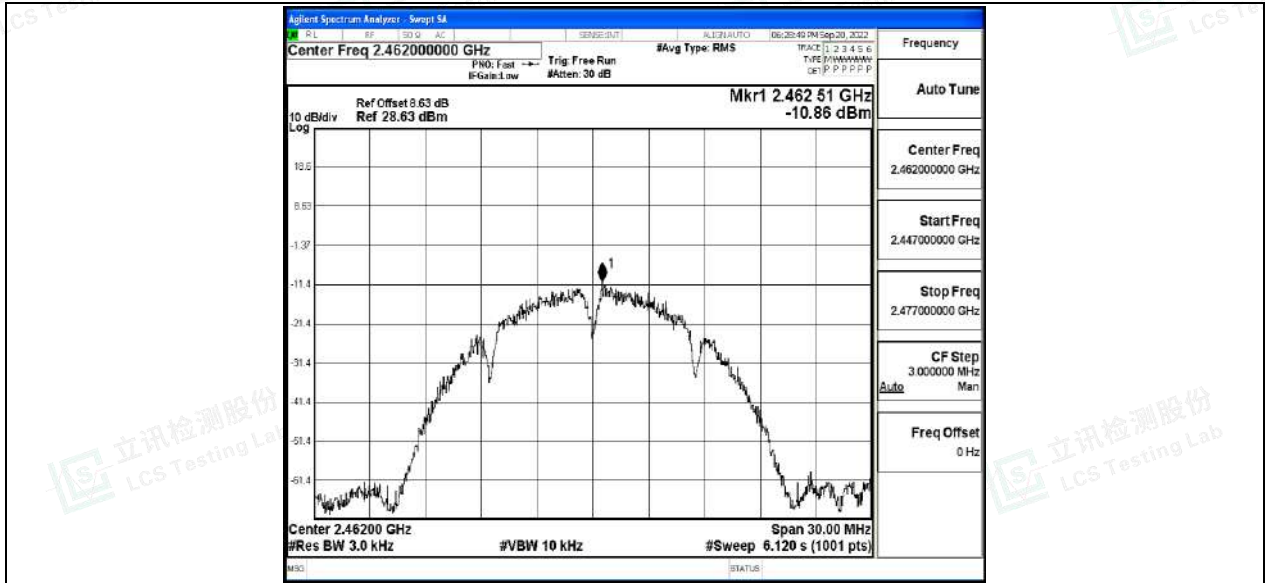


11B_Ant1_2437

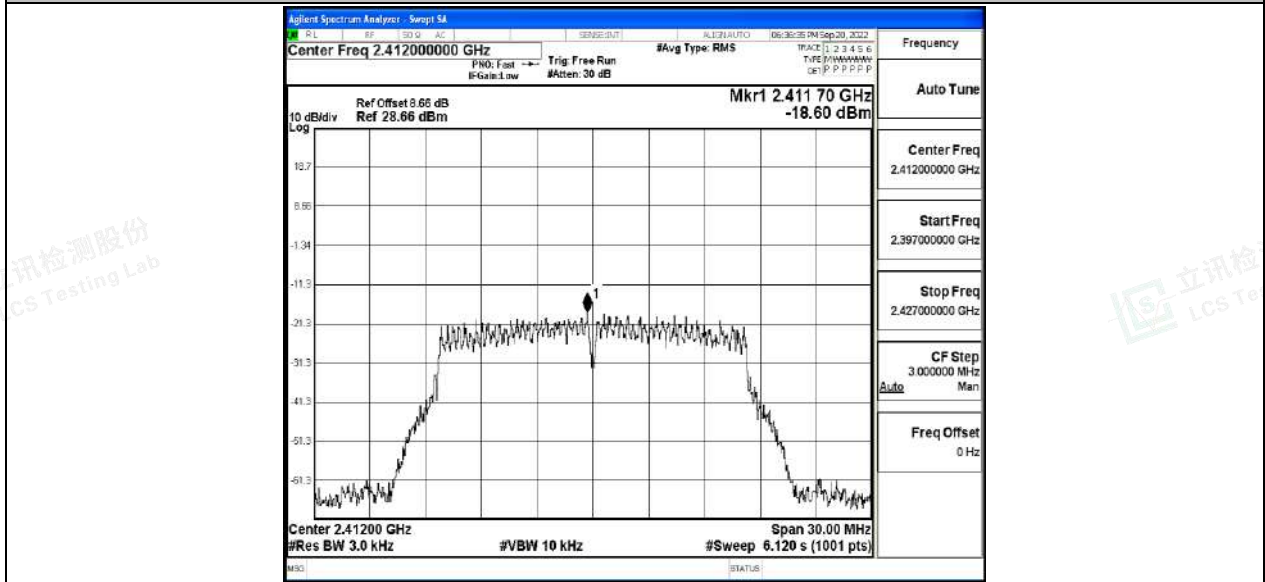


11B_Ant1_2462



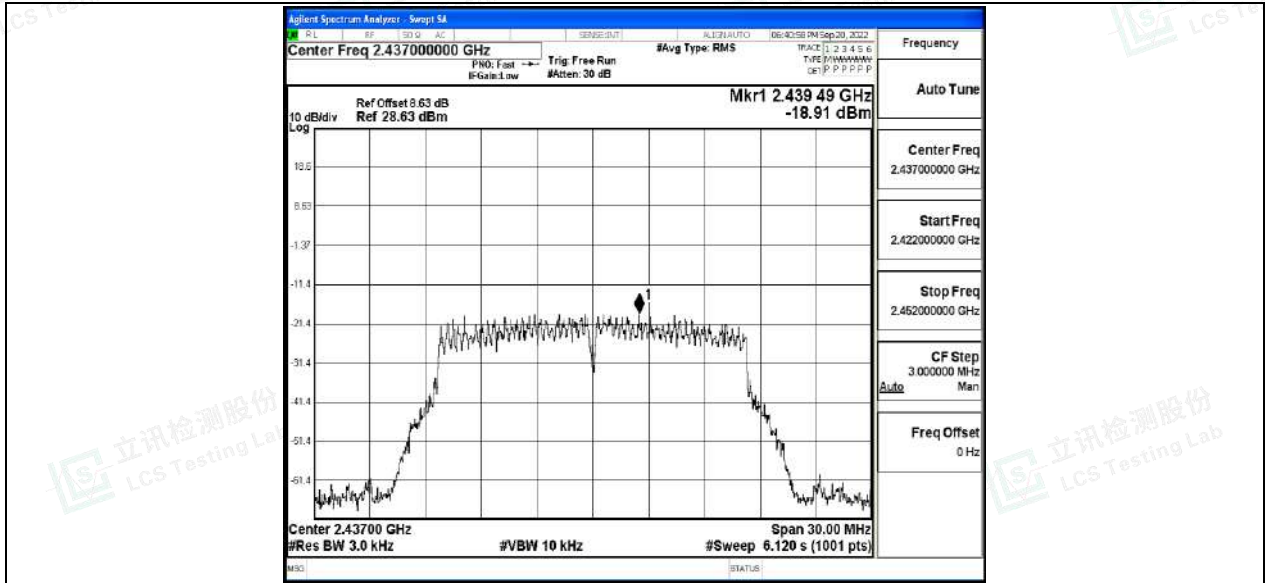


11G_Ant1_2412

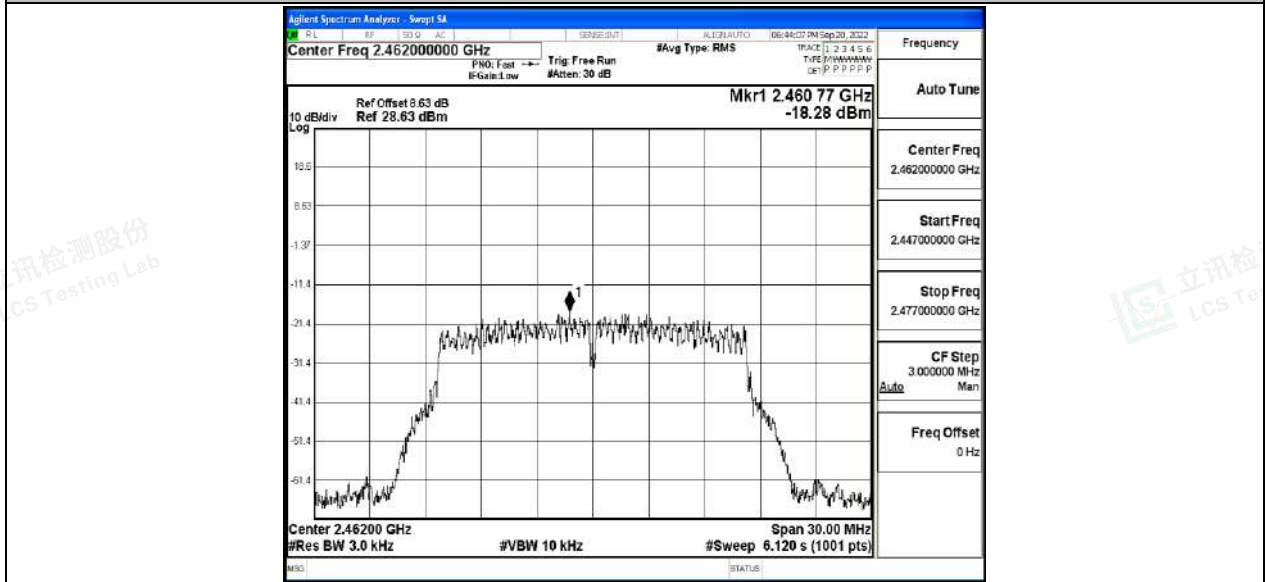


11G_Ant1_2437



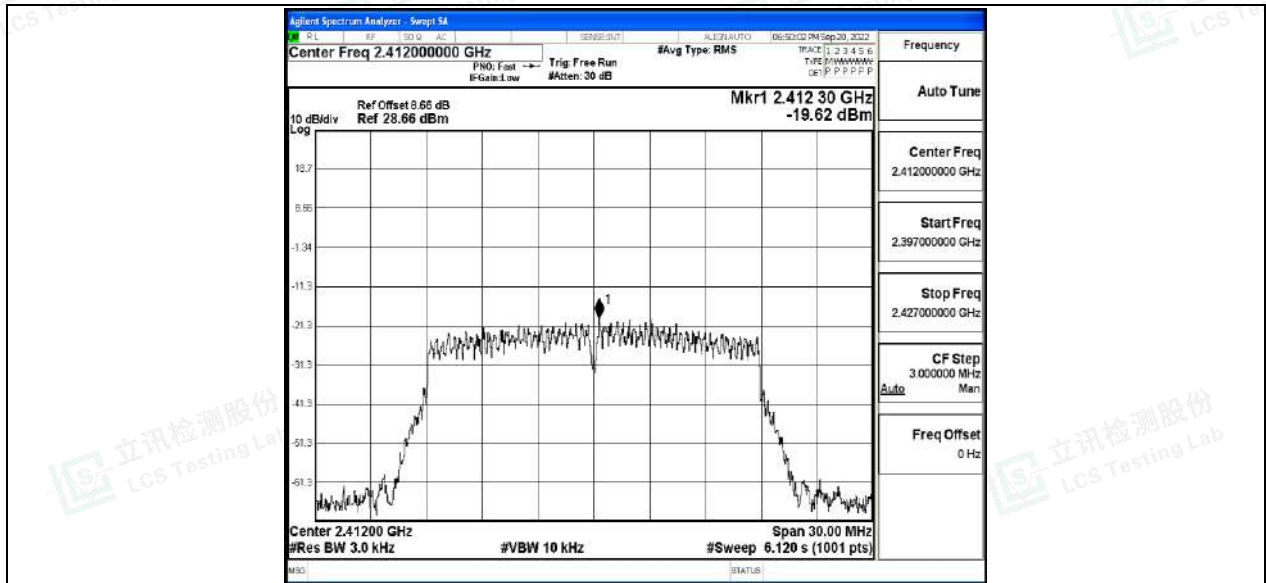


11G_Ant1_2462

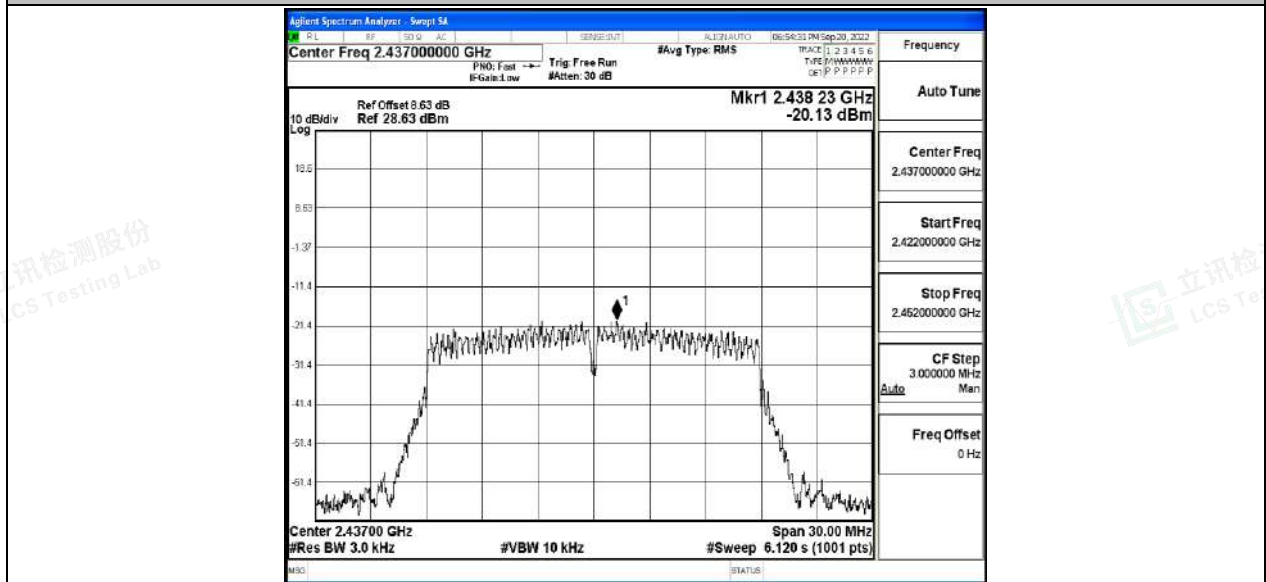


11N20SISO_Ant1_2412



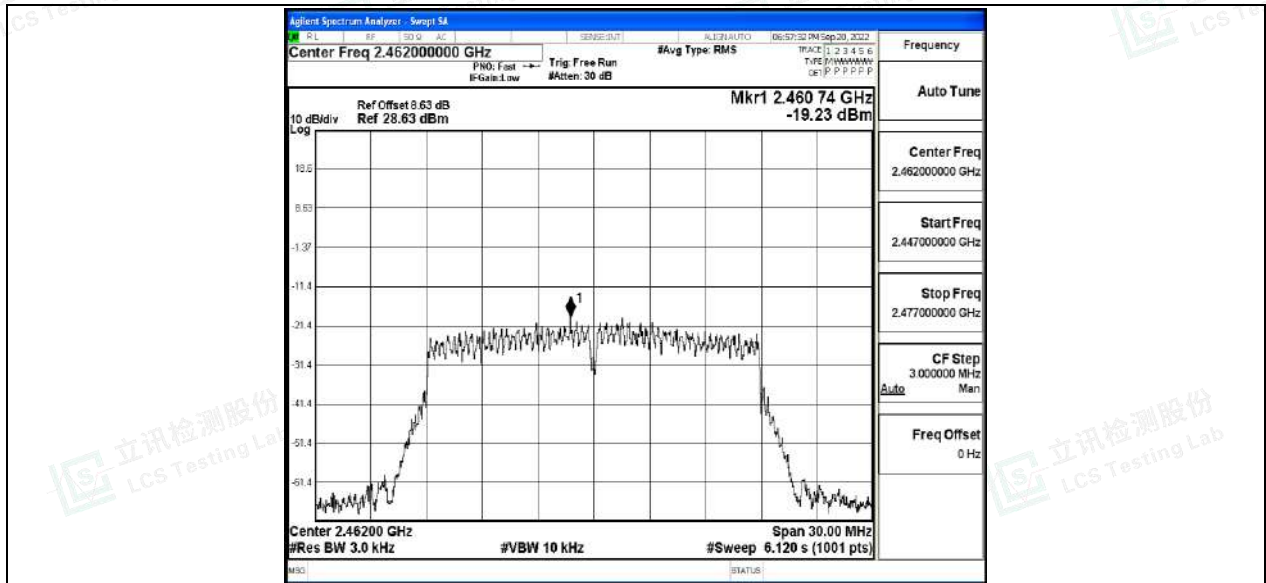


11N20SISO_Ant1_2437

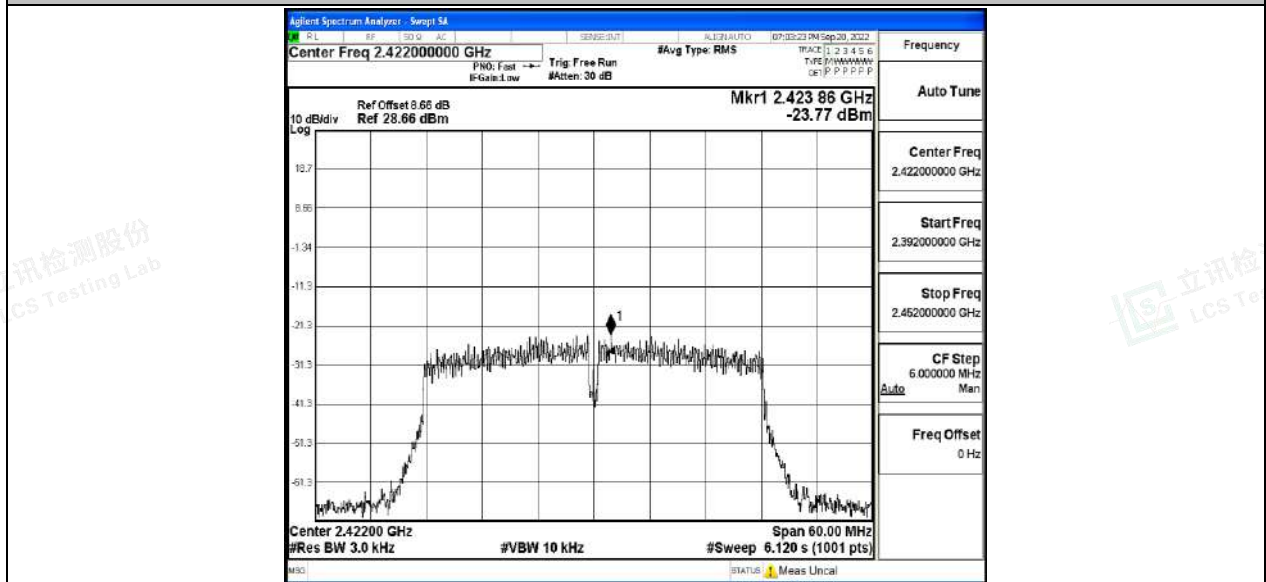


11N20SISO_Ant1_2462



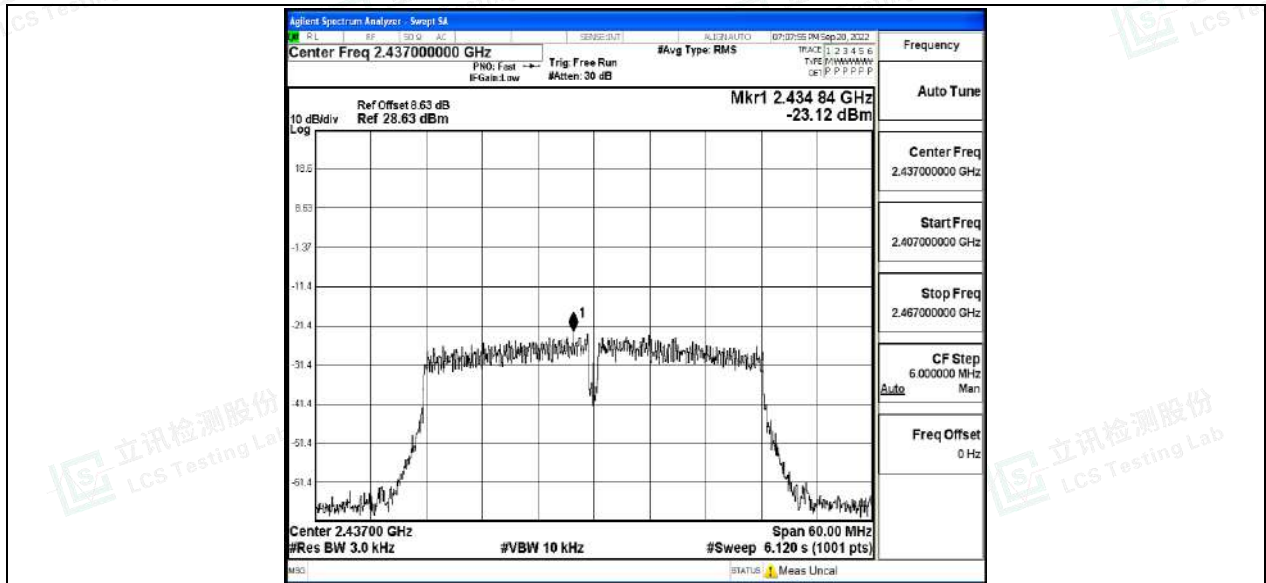


11N40SISO_Ant1_2422

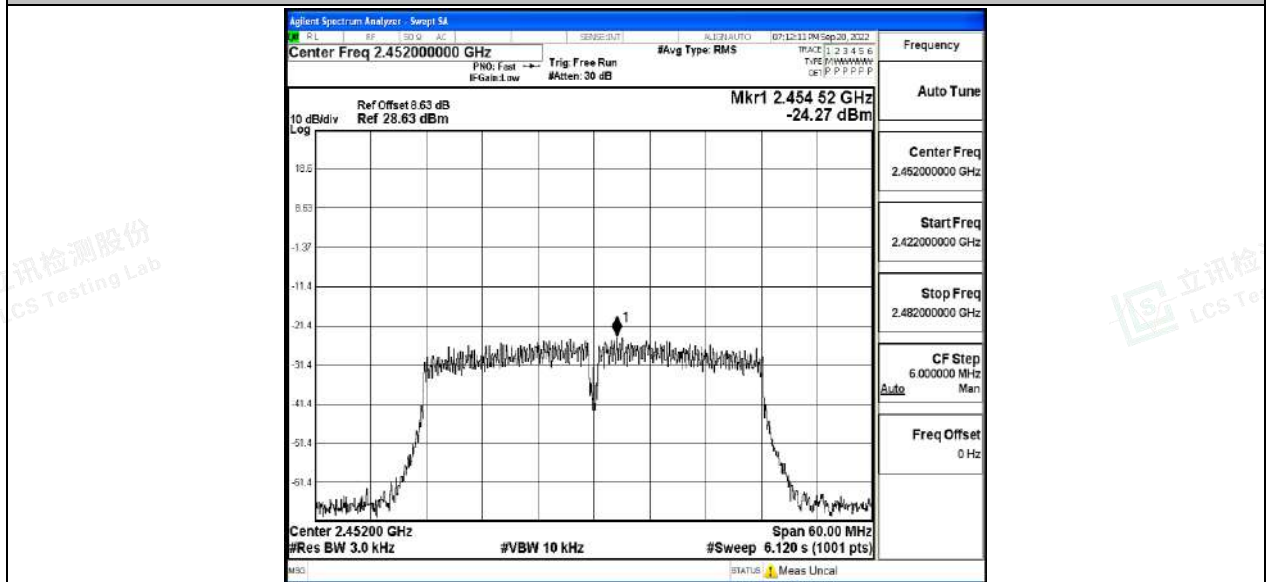


11N40SISO_Ant1_2437





11N40SISO_Ant1_2452





A.4 Band edge measurements

Test Result

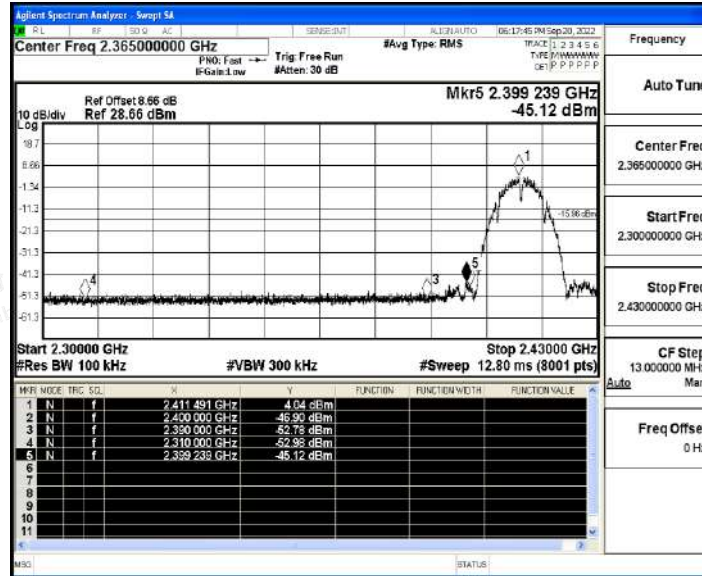
TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	4.04	-45.12	≤-15.96	PASS
		High	2462	3.12	-47.81	≤-16.88	PASS
11G	Ant1	Low	2412	-5.10	-45.25	≤-25.1	PASS
		High	2462	-4.16	-48.72	≤-24.16	PASS
11N20SISO	Ant1	Low	2412	-5.09	-47.05	≤-25.09	PASS
		High	2462	-5.64	-48.45	≤-25.64	PASS
11N40SISO	Ant1	Low	2422	-9.20	-48.41	≤-29.2	PASS
		High	2452	-8.90	-48.39	≤-28.9	PASS



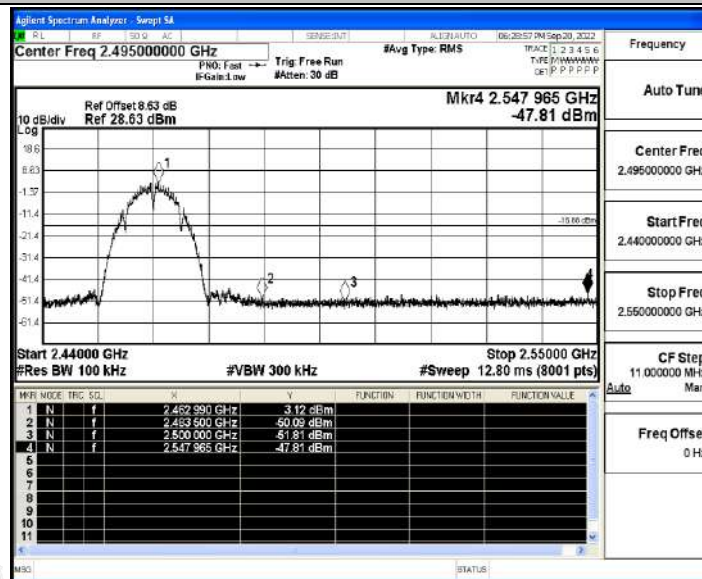


Test Graphs

11B_Ant1_Low_2412

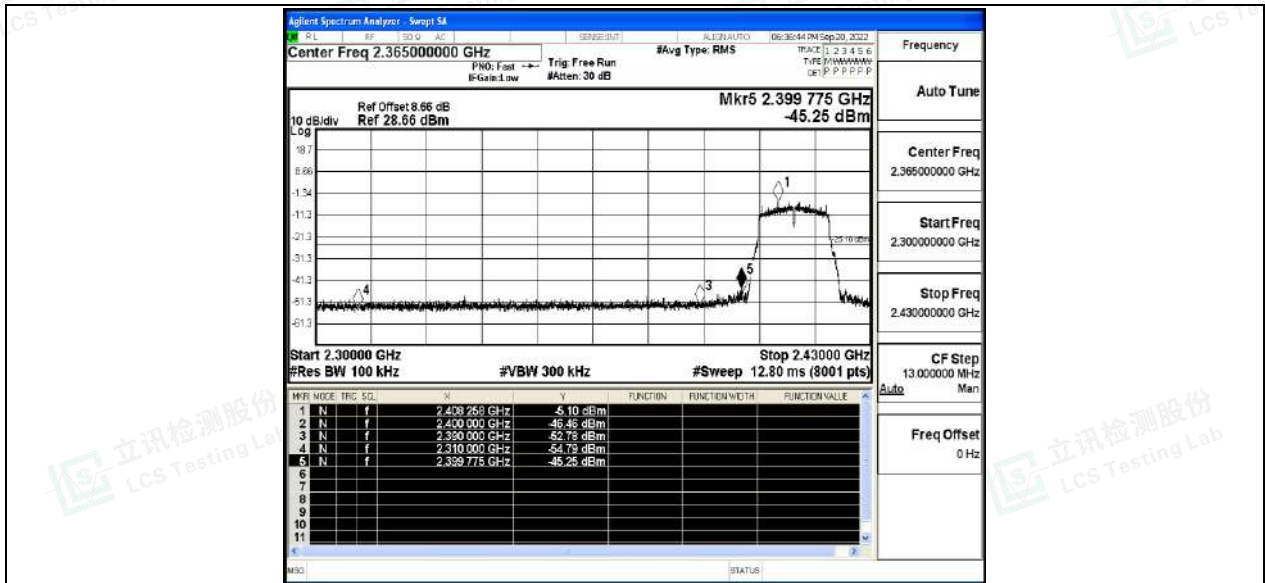


11B_Ant1_High_2462

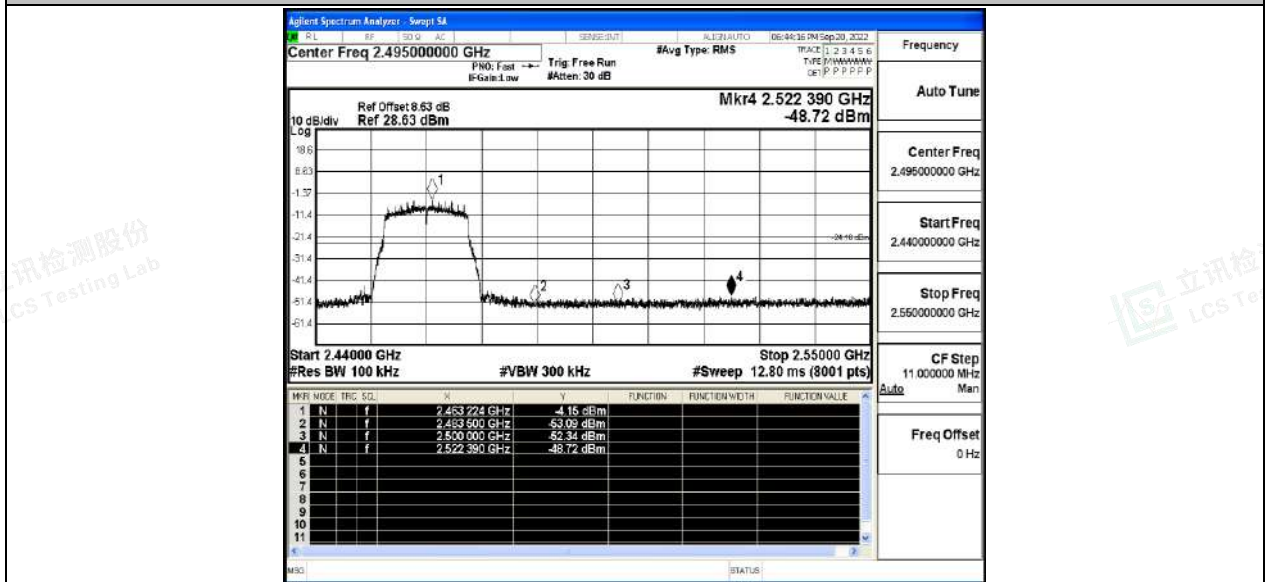


11G_Ant1_Low_2412



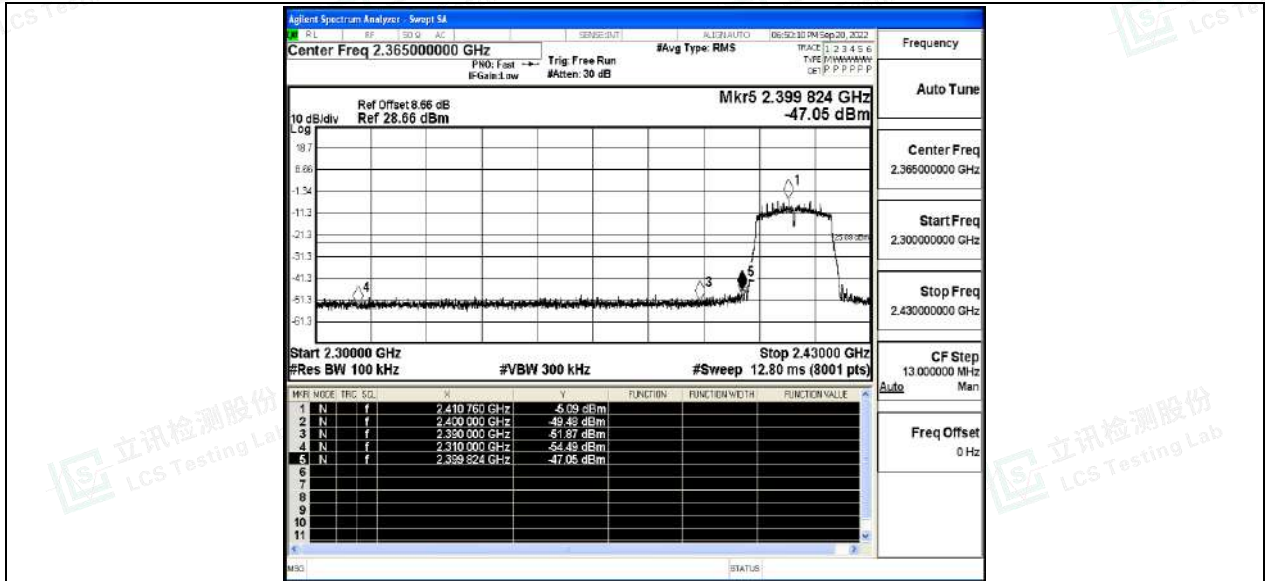


11G_Ant1_High_2462

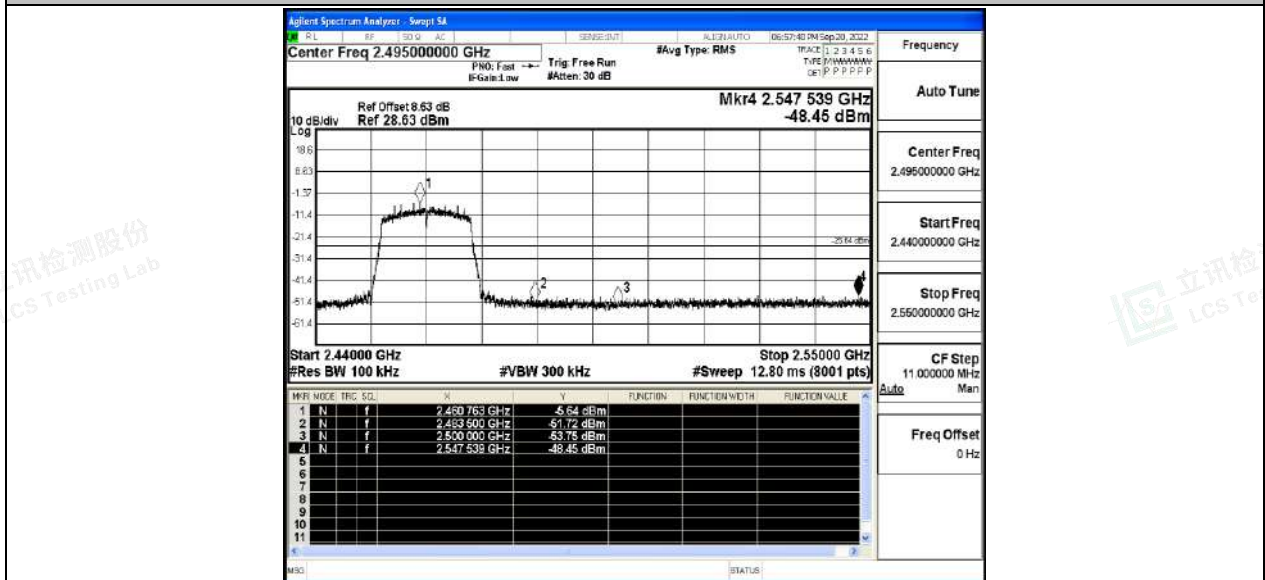


11N20SISO_Ant1_Low_2412



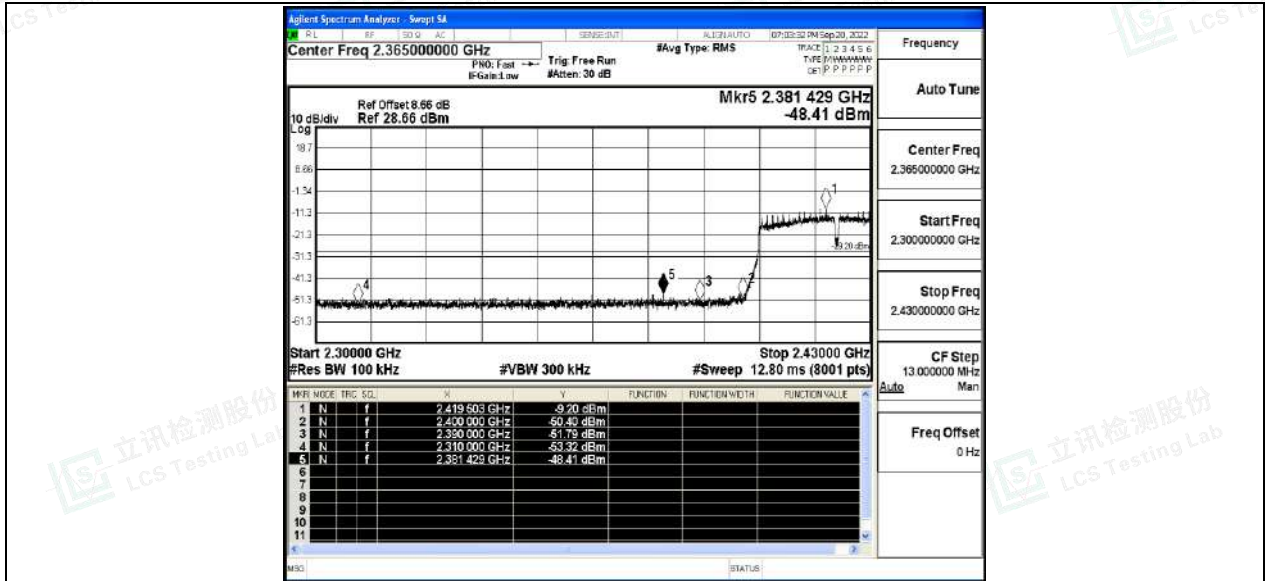


11N20SISO_Ant1_High_2462

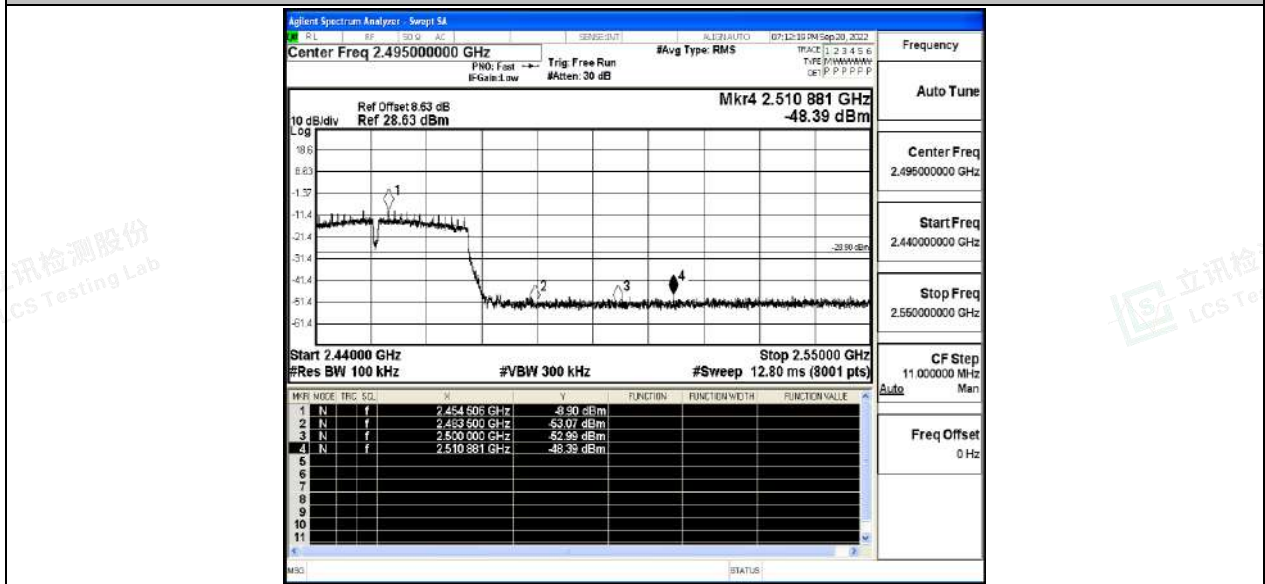


11N40SISO_Ant1_Low_2422





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	Reference	3.38	3.38	---	PASS
			30~1000	3.38	-61	≤-16.62	PASS
			1000~26500	3.38	-46.17	≤-16.62	PASS
		2437	Reference	0.78	0.78	---	PASS
			30~1000	0.78	-60.03	≤-19.22	PASS
			1000~26500	0.78	-46.05	≤-19.22	PASS
		2462	Reference	1.47	1.47	---	PASS
			30~1000	1.47	-60.46	≤-18.53	PASS
			1000~26500	1.47	-45.86	≤-18.53	PASS
11G	Ant1	2412	Reference	-6.77	-6.77	---	PASS
			30~1000	-6.77	-60.22	≤-26.77	PASS
			1000~26500	-6.77	-46.4	≤-26.77	PASS
		2437	Reference	-5.51	-5.51	---	PASS
			30~1000	-5.51	-60.29	≤-25.51	PASS
			1000~26500	-5.51	-45.86	≤-25.51	PASS
		2462	Reference	-6.58	-6.58	---	PASS
			30~1000	-6.58	-59.96	≤-26.58	PASS
			1000~26500	-6.58	-46.23	≤-26.58	PASS
11N20SISO	Ant1	2412	Reference	-7.87	-7.87	---	PASS
			30~1000	-7.87	-60.68	≤-27.87	PASS
			1000~26500	-7.87	-45.76	≤-27.87	PASS
		2437	Reference	-6.89	-6.89	---	PASS
			30~1000	-6.89	-60.4	≤-26.89	PASS
			1000~26500	-6.89	-45.86	≤-26.89	PASS
		2462	Reference	-8.08	-8.08	---	PASS
			30~1000	-8.08	-60.29	≤-28.08	PASS
			1000~26500	-8.08	-45.91	≤-28.08	PASS
11N40SISO	Ant1	2422	Reference	-9.72	-9.72	---	PASS
			30~1000	-9.72	-60.53	≤-29.72	PASS
			1000~26500	-9.72	-44.94	≤-29.72	PASS
		2437	Reference	-8.88	-8.88	---	PASS
			30~1000	-8.88	-60.47	≤-28.88	PASS
			1000~26500	-8.88	-46.27	≤-28.88	PASS
		2452	Reference	-9.68	-9.68	---	PASS
			30~1000	-9.68	-60.3	≤-29.68	PASS
			1000~26500	-9.68	-45.86	≤-29.68	PASS



Shenzhen LCS Compliance Testing Laboratory Ltd.

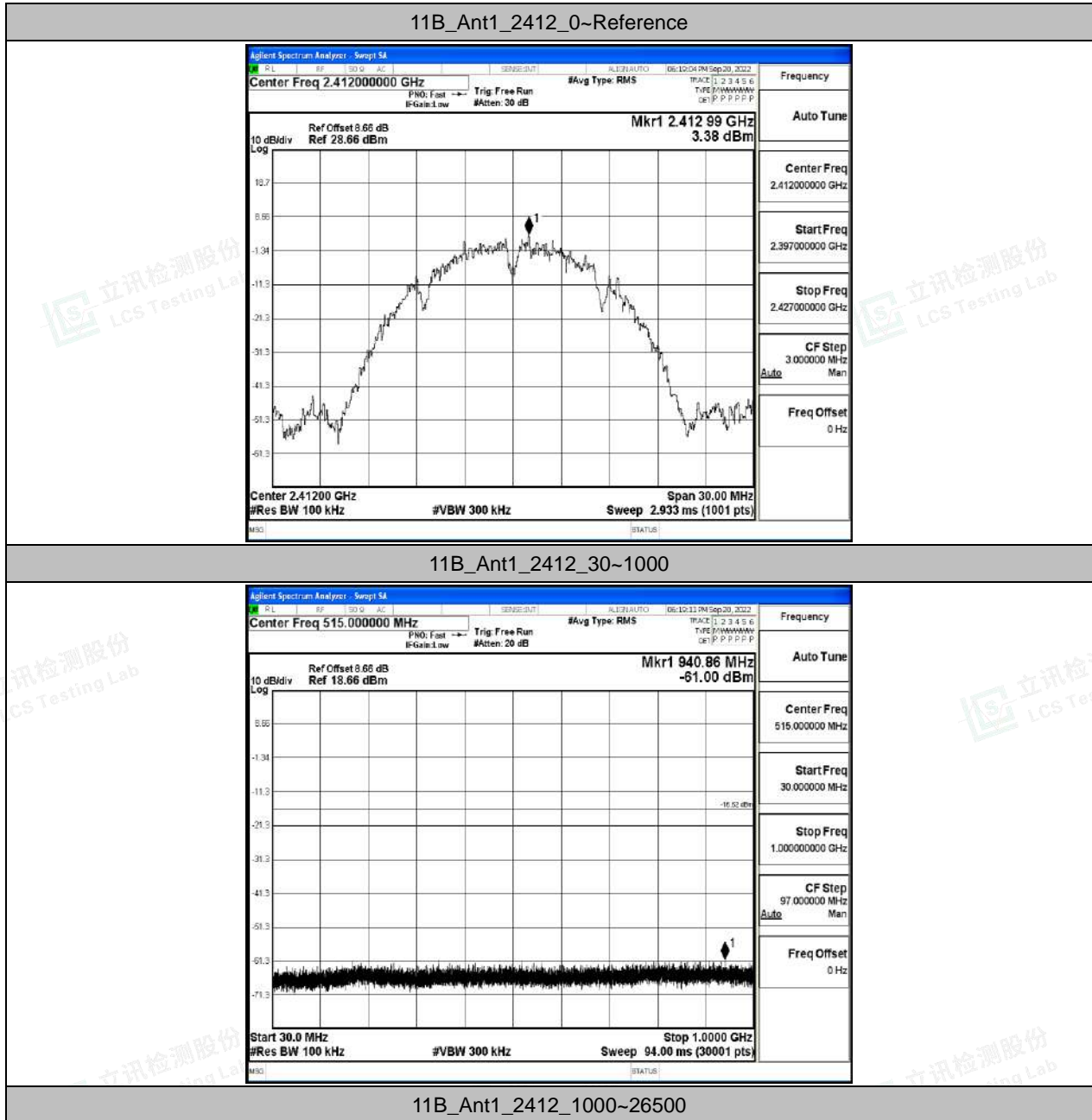
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

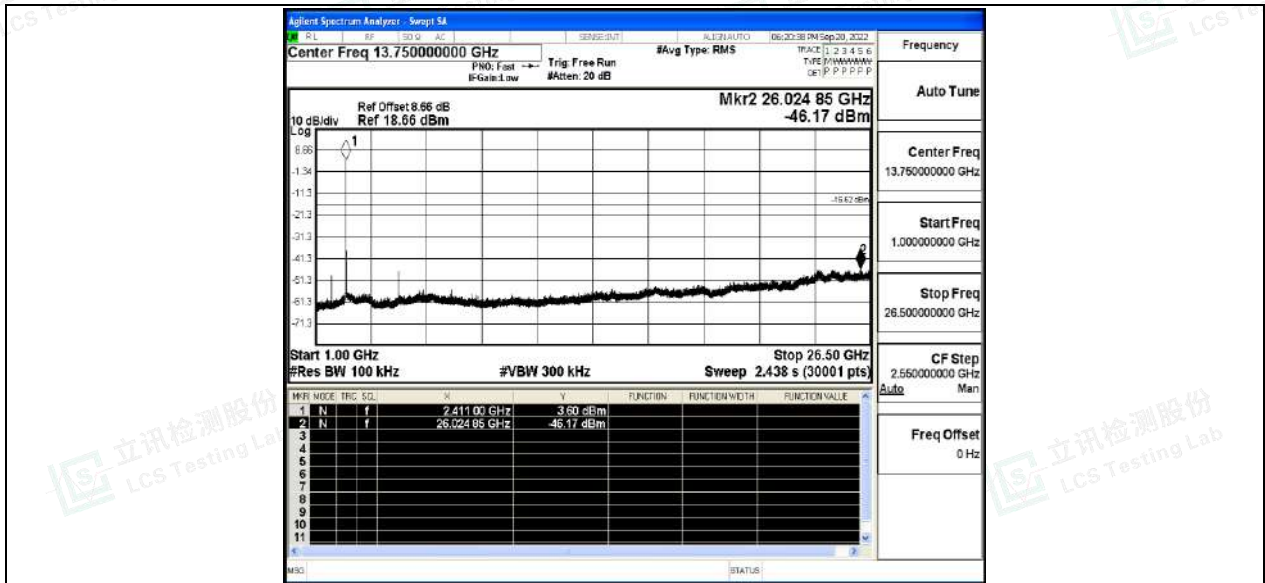
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

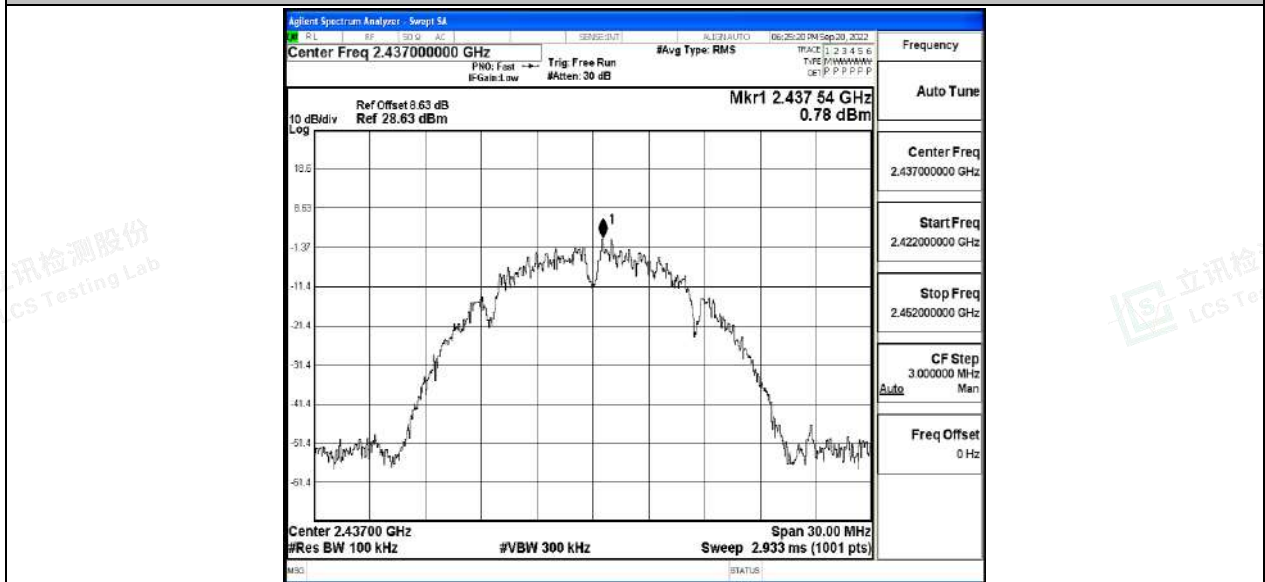


Test Graphs



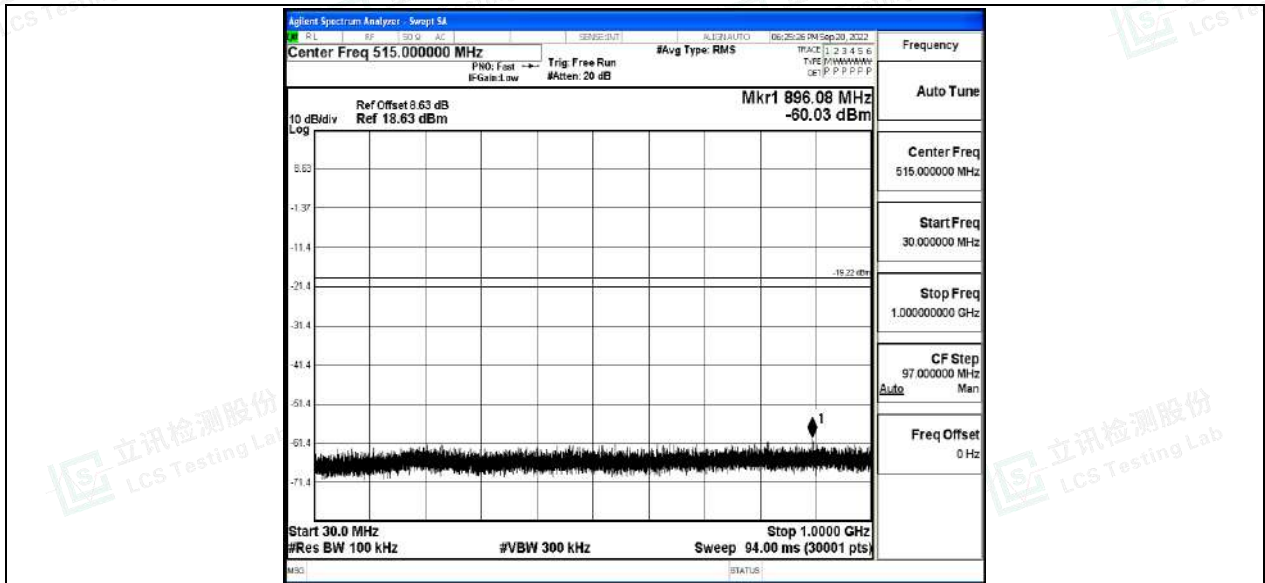


11B_Ant1_2437_0~Reference

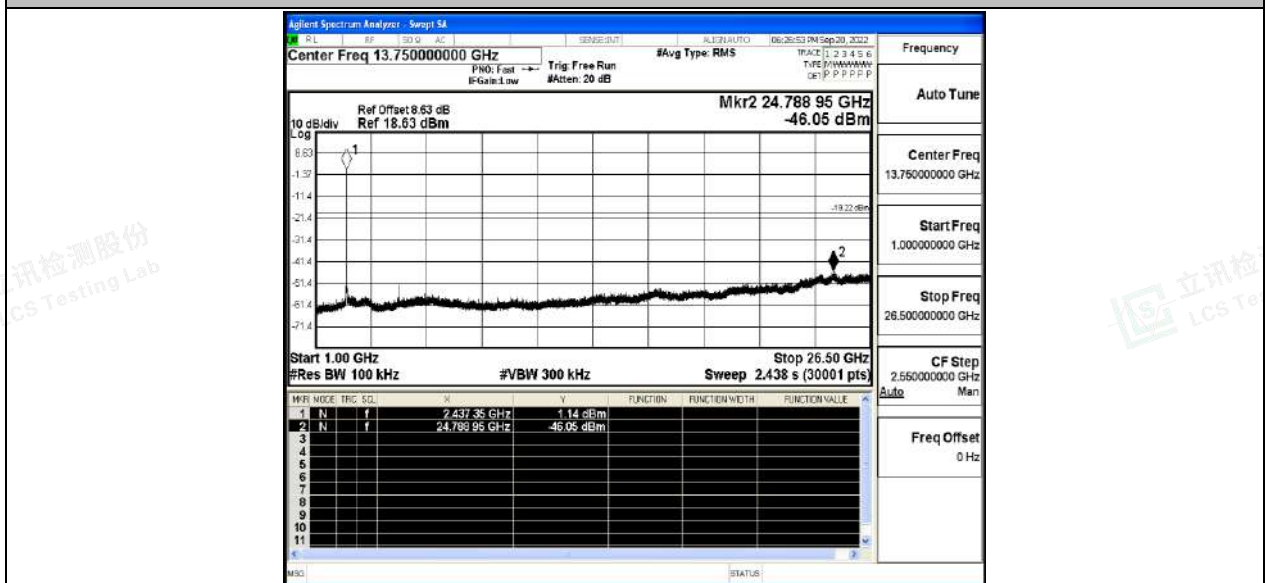


11B_Ant1_2437_30~100



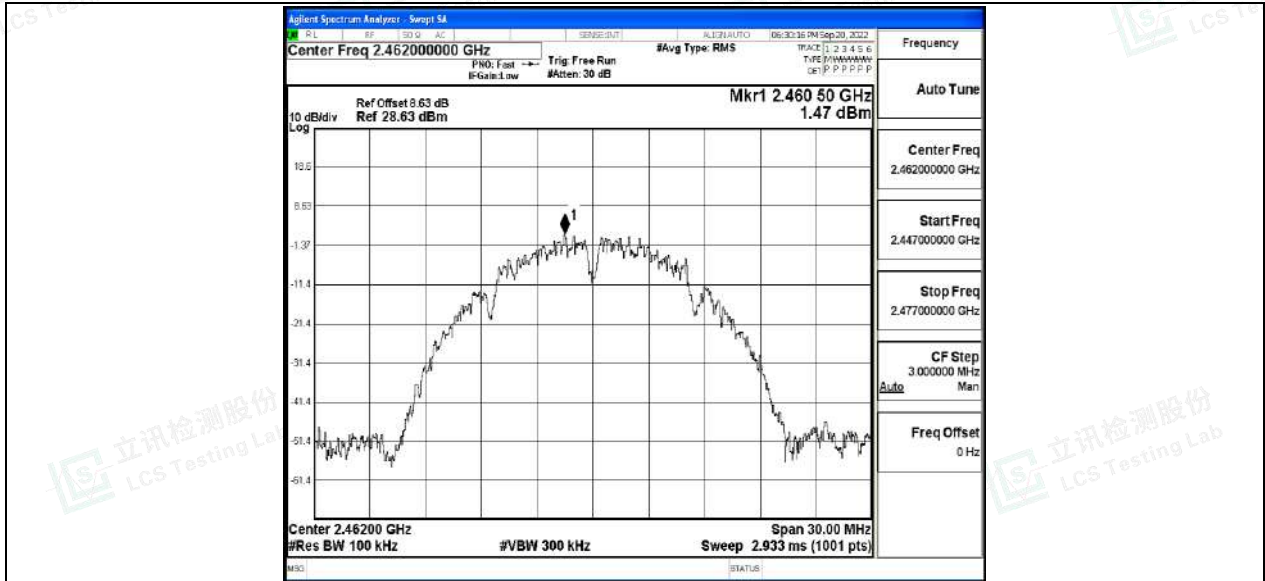


11B_Ant1_2437_1000-26500

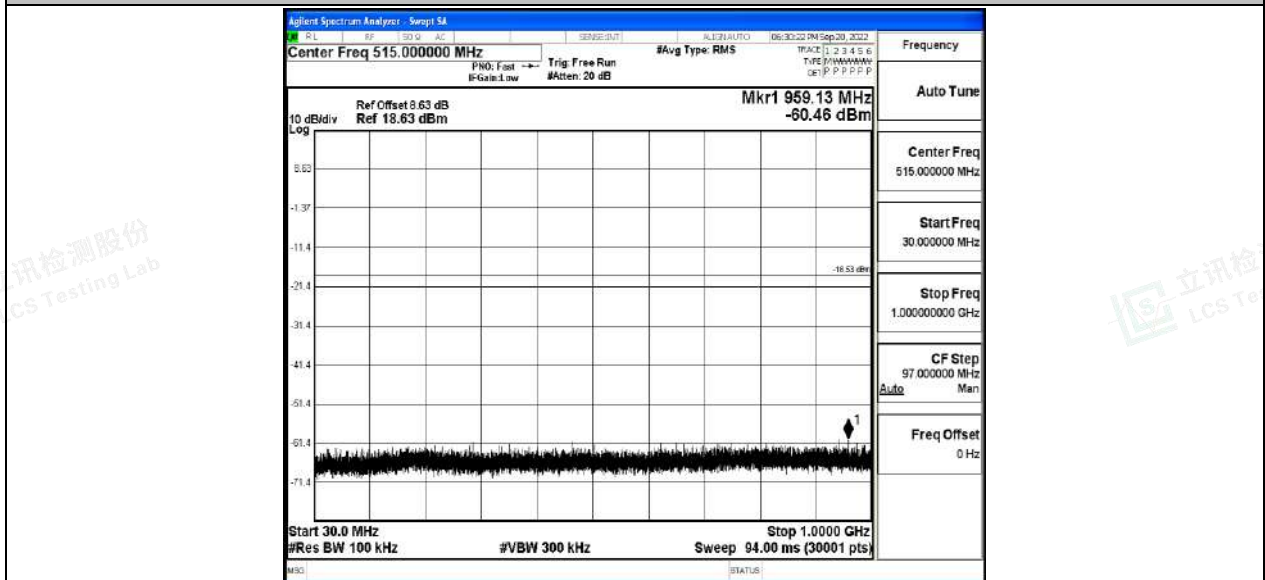


11B_Ant1_2462_0~Reference



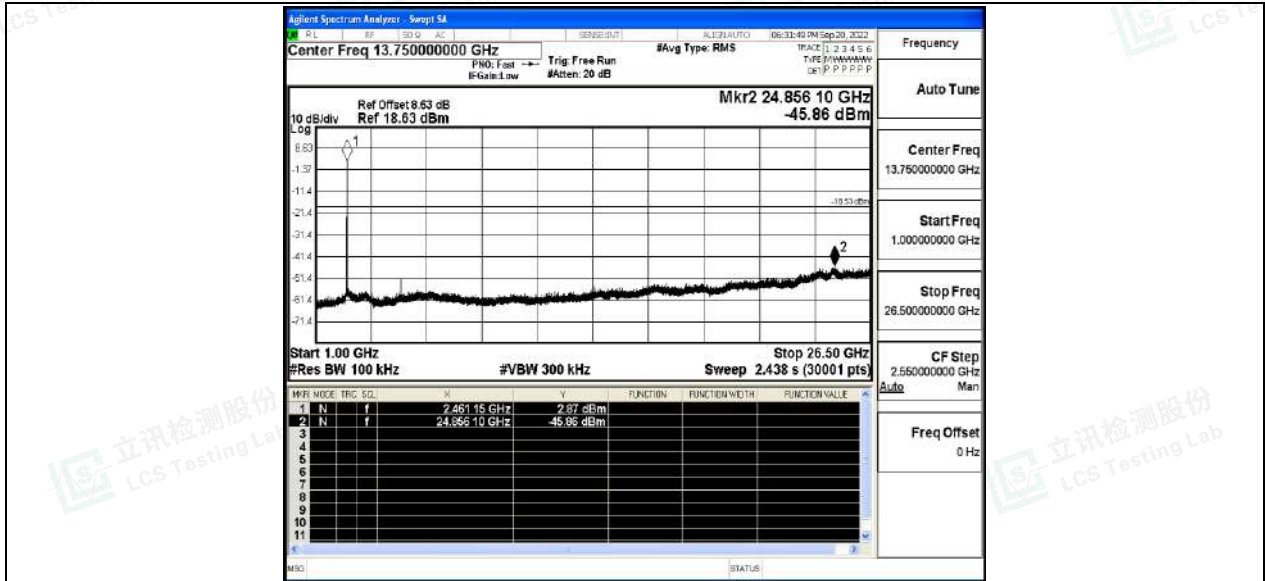


11B_Ant1_2462_30~1000

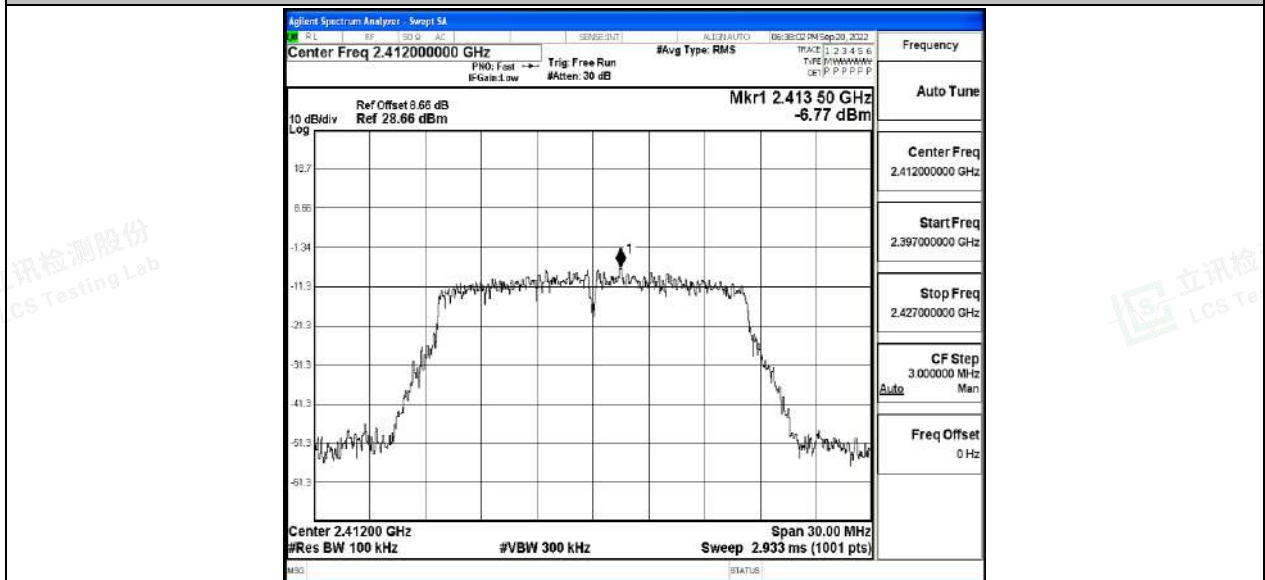


11B_Ant1_2462_1000~26500



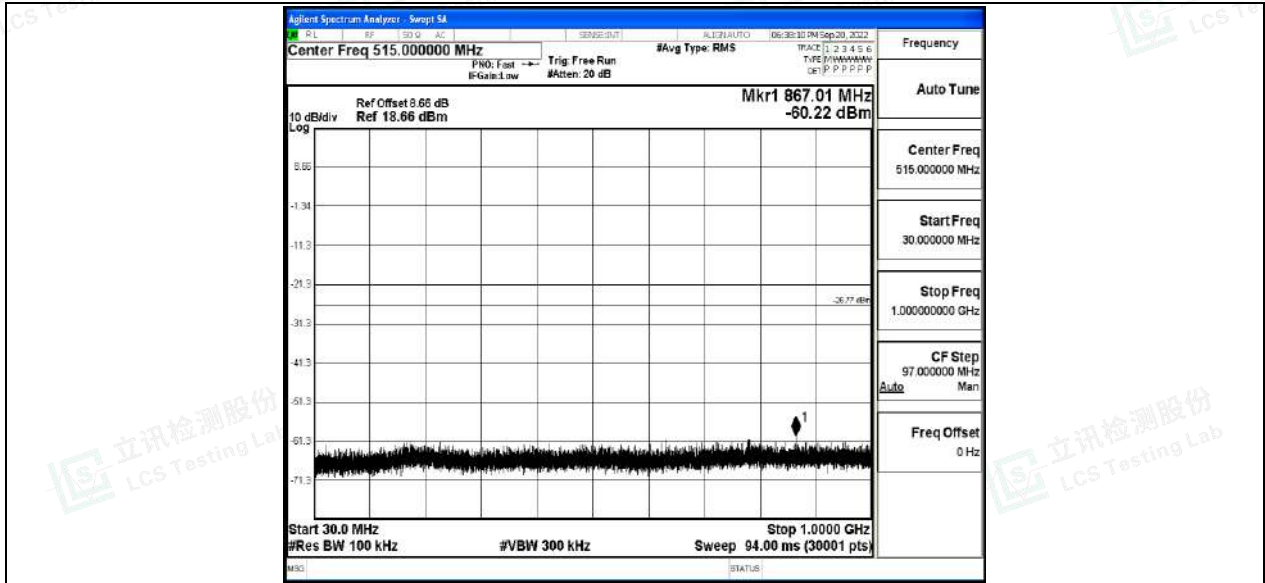


11G_Ant1_2412_0~Reference

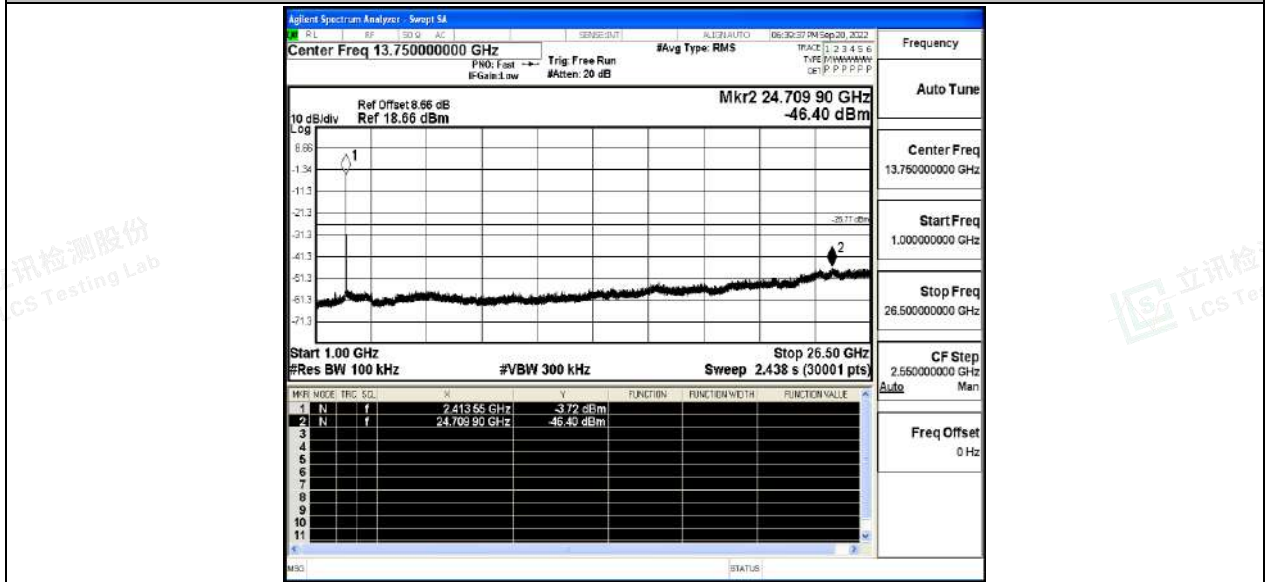


11G_Ant1_2412_30~1000



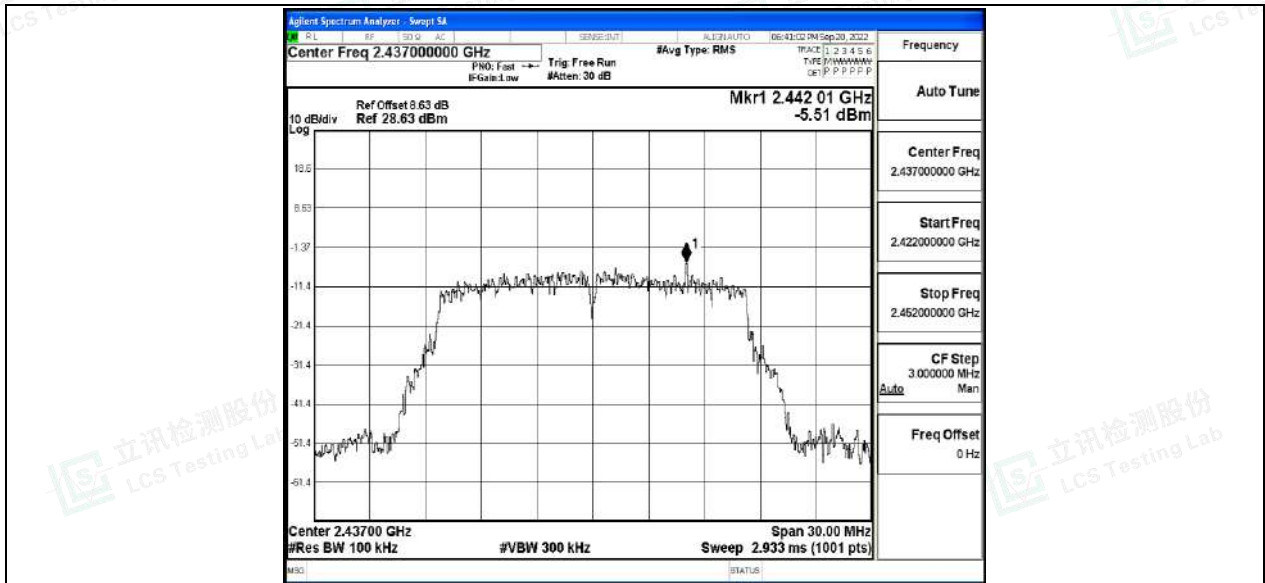


11G_Ant1_2412_1000~26500

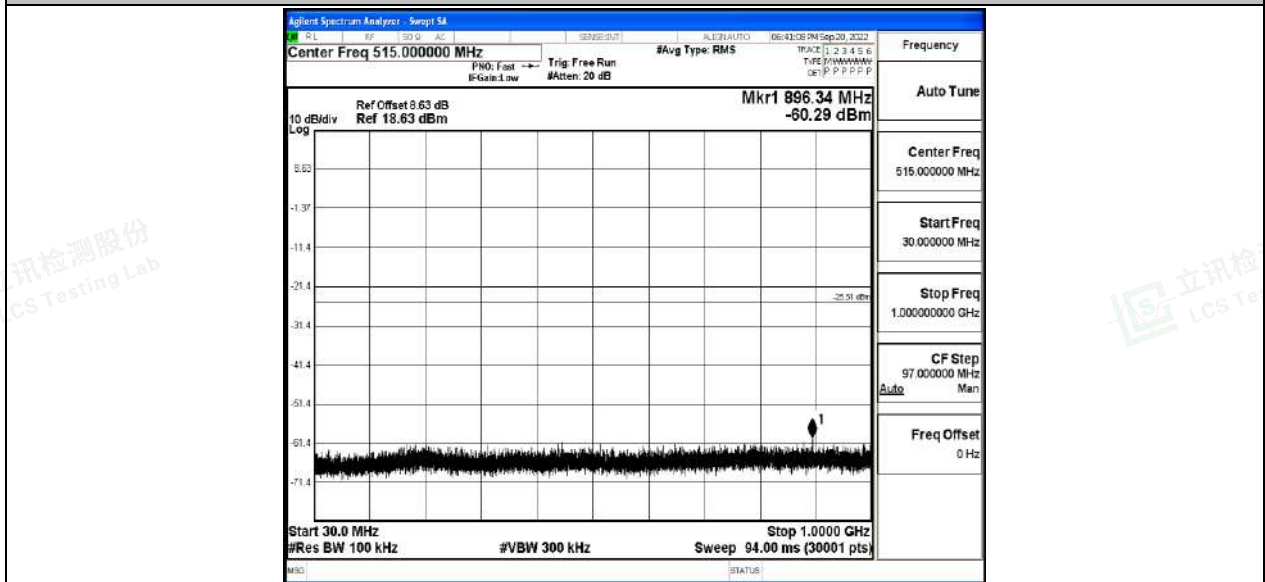


11G_Ant1_2437_0~Reference



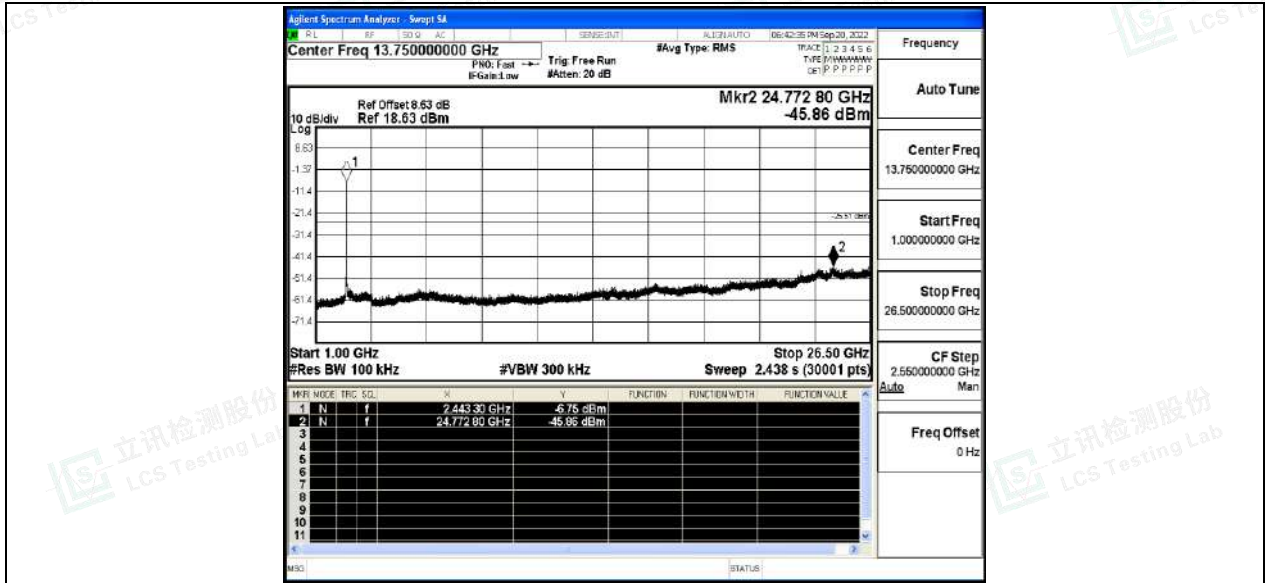


11G_Ant1_2437_30~1000

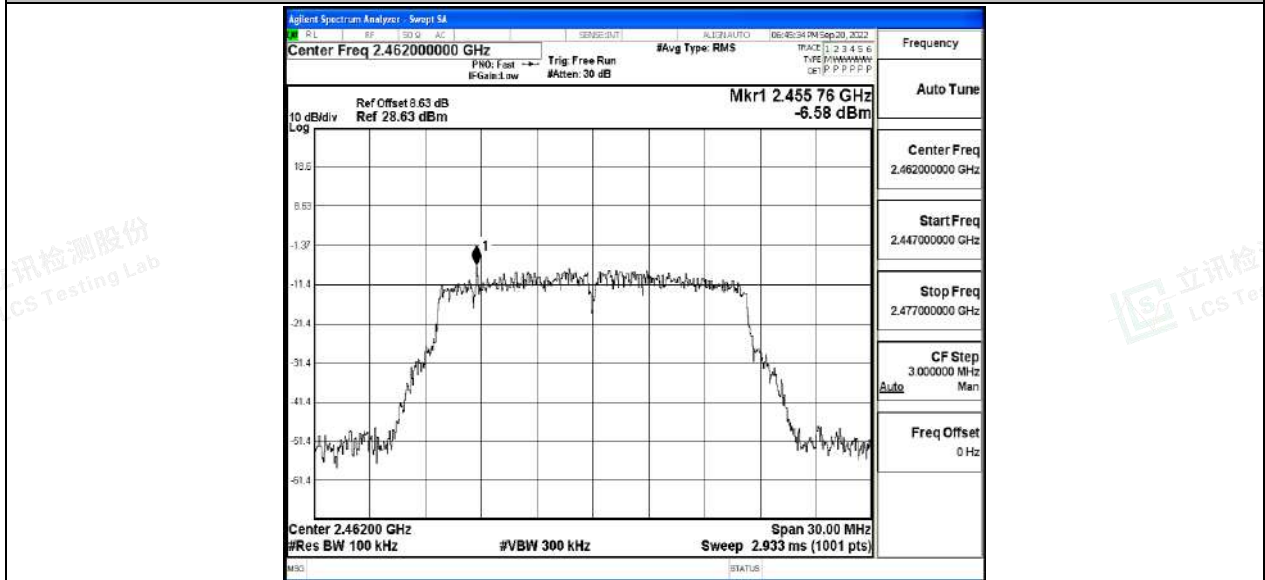


11G_Ant1_2437_1000~26500



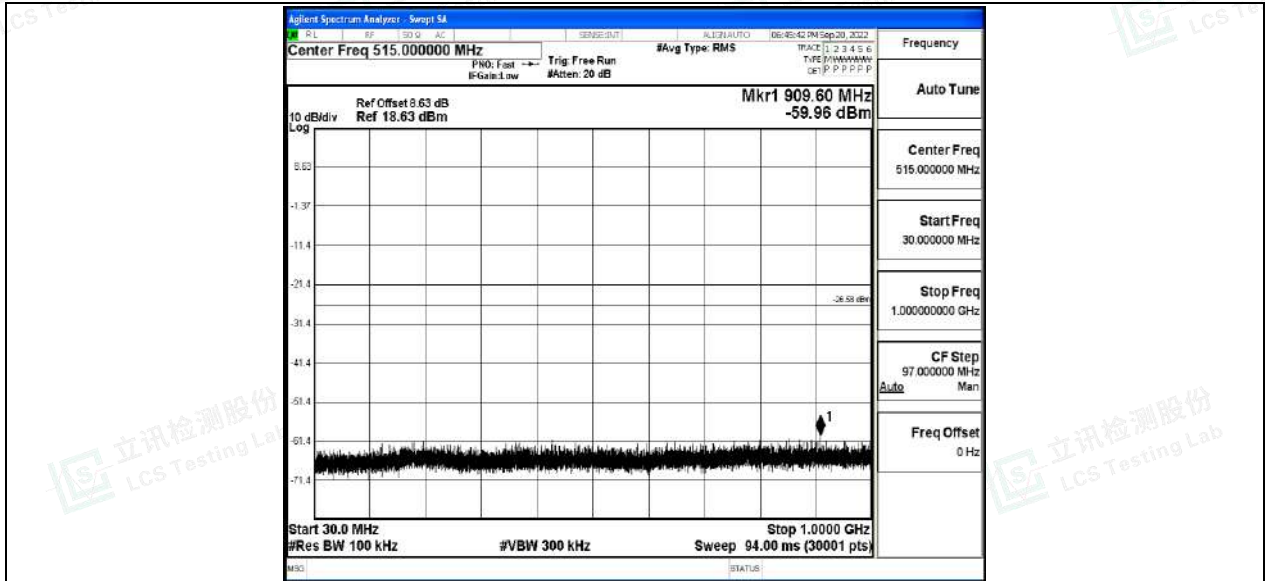


11G_Ant1_2462_0~Reference

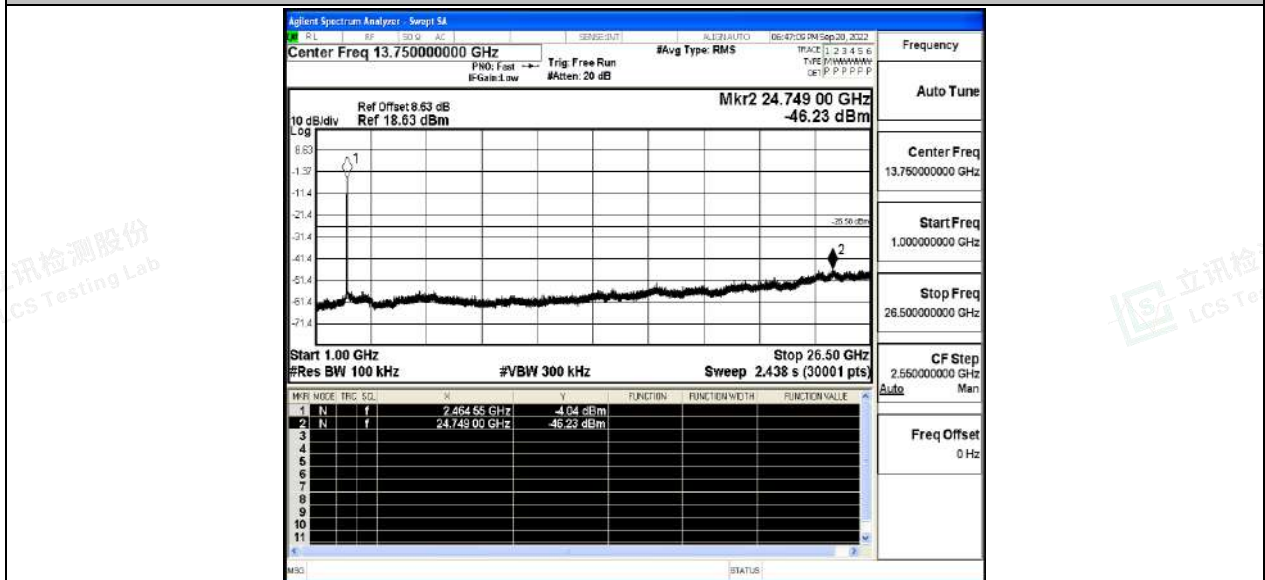


11G_Ant1_2462_30~1000



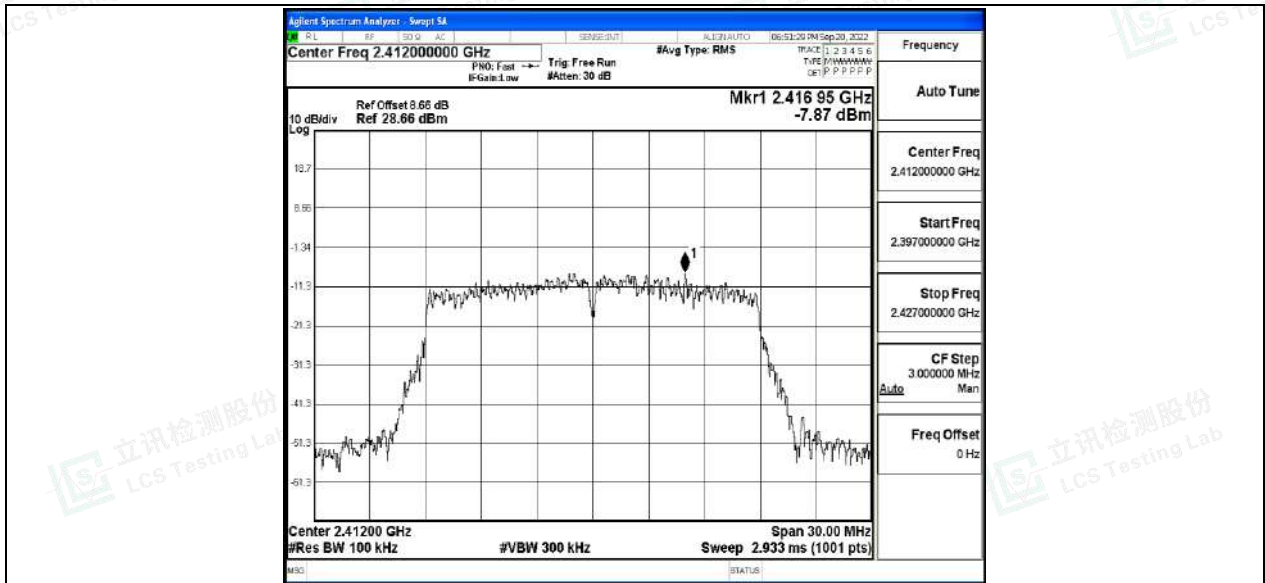


11G_Ant1_2462_1000-26500

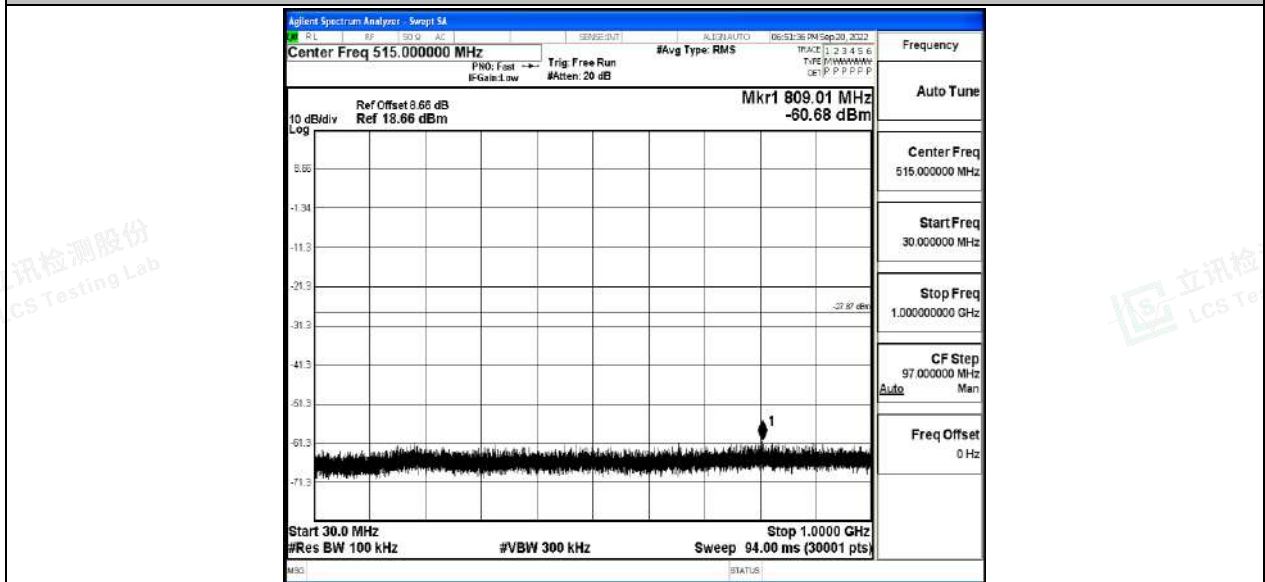


11N20SISO_Ant1_2412_0-Reference



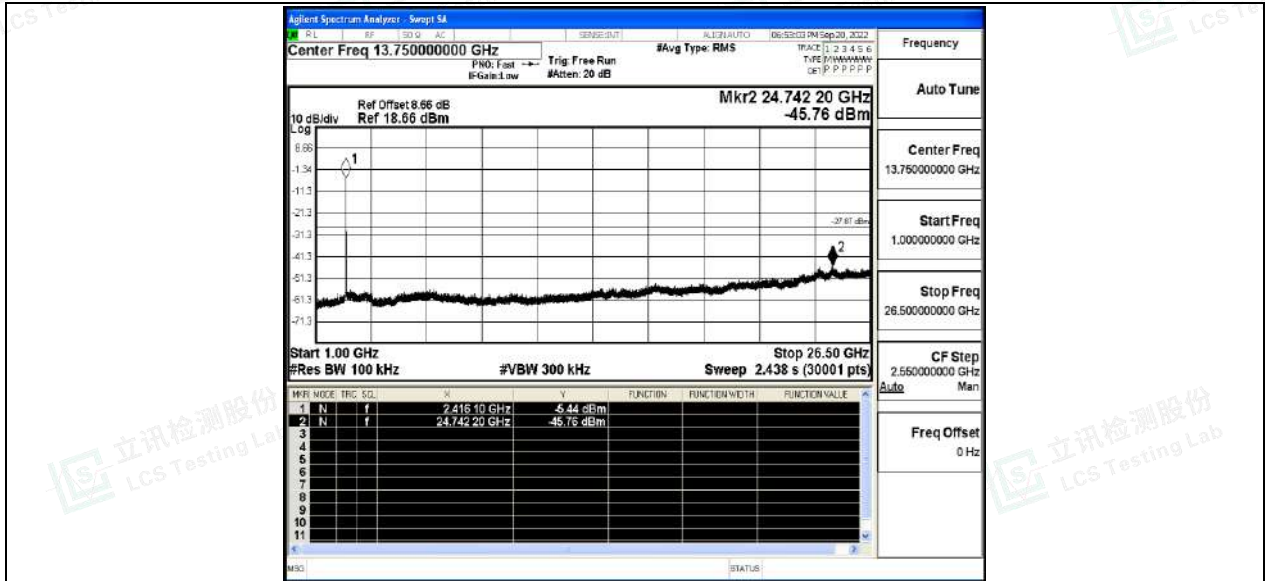


11N20SISO_Ant1_2412_30~1000

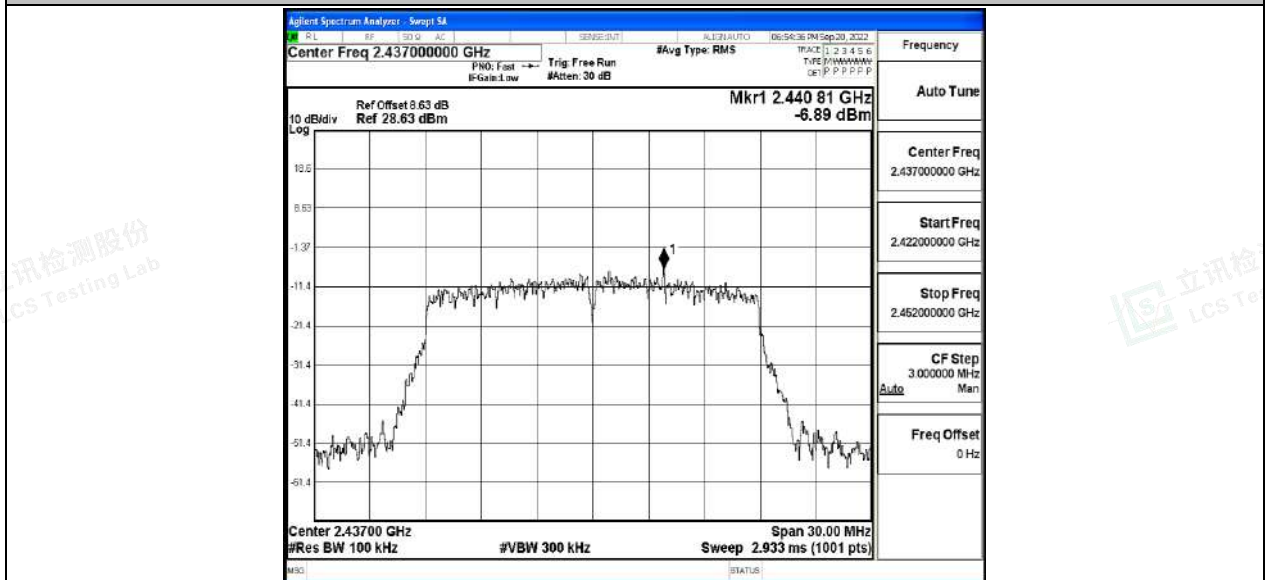


11N20SISO_Ant1_2412_1000~26500



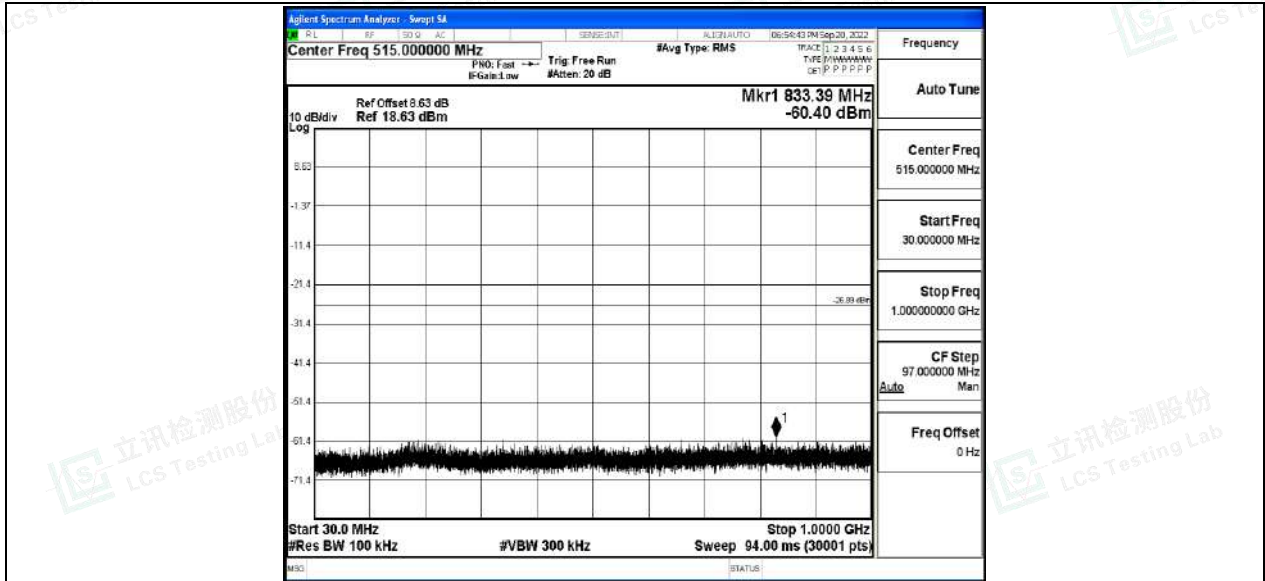


11N20SISO_Ant1_2437_0-Reference

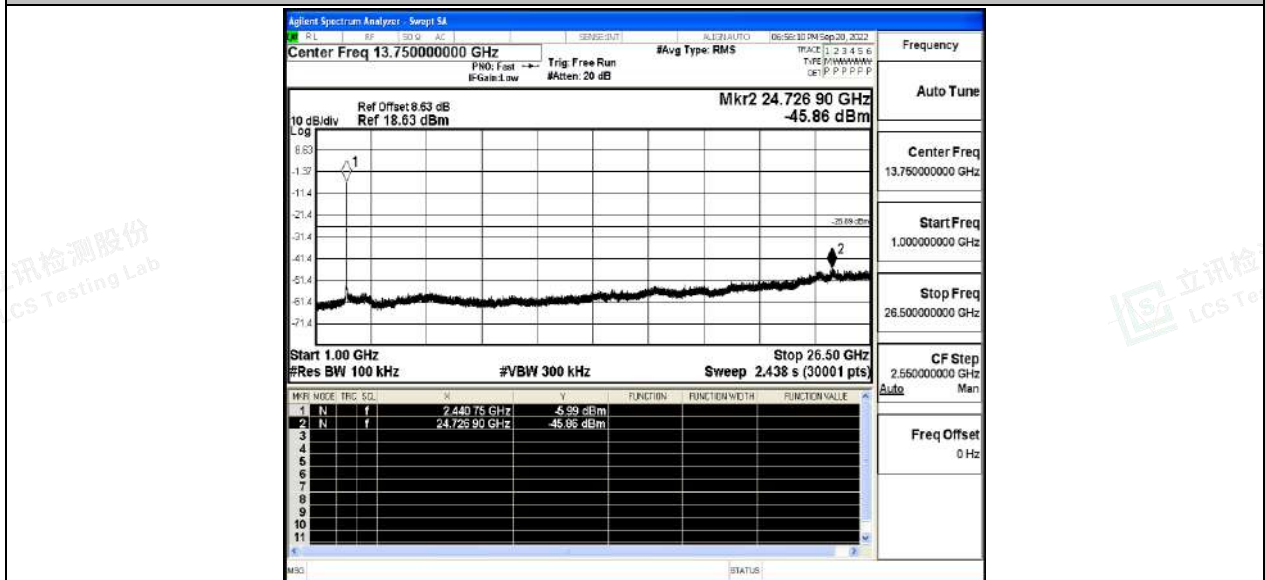


11N20SISO_Ant1_2437_30-1000



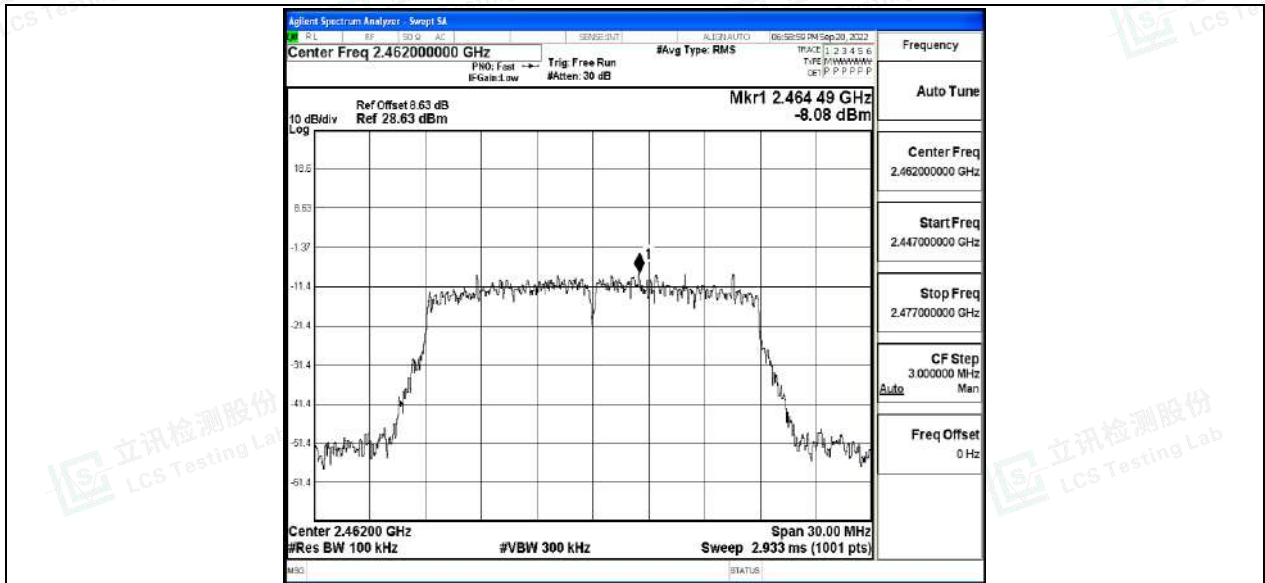


11N20SISO_Ant1_2437_1000~26500

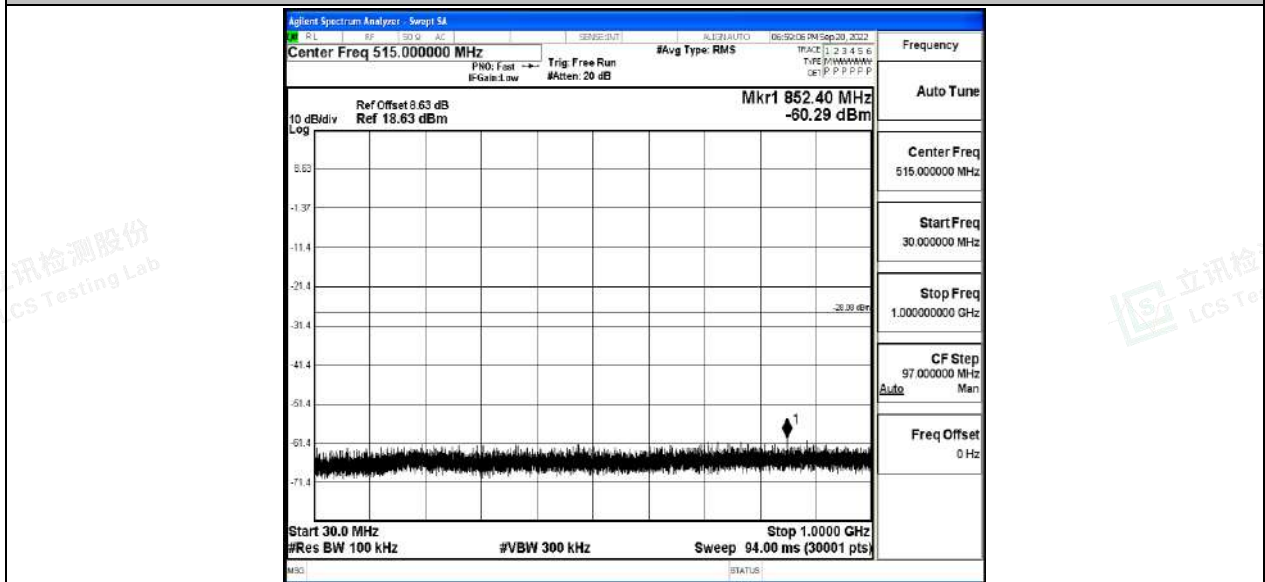


11N20SISO_Ant1_2462_0~Reference



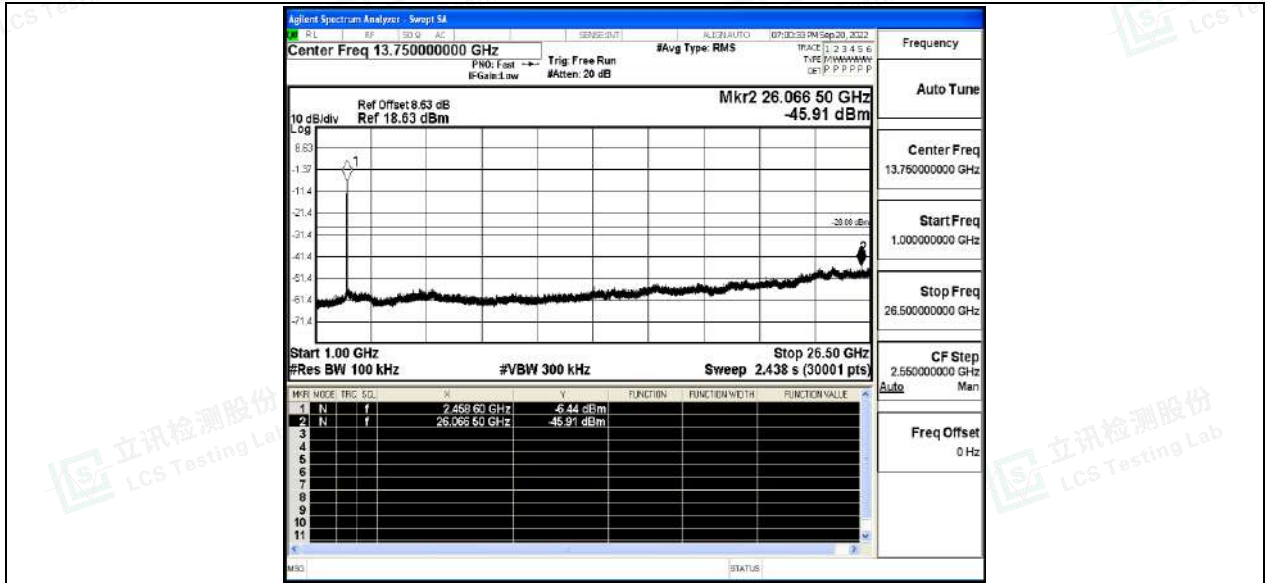


11N20SISO_Ant1_2462_30~1000

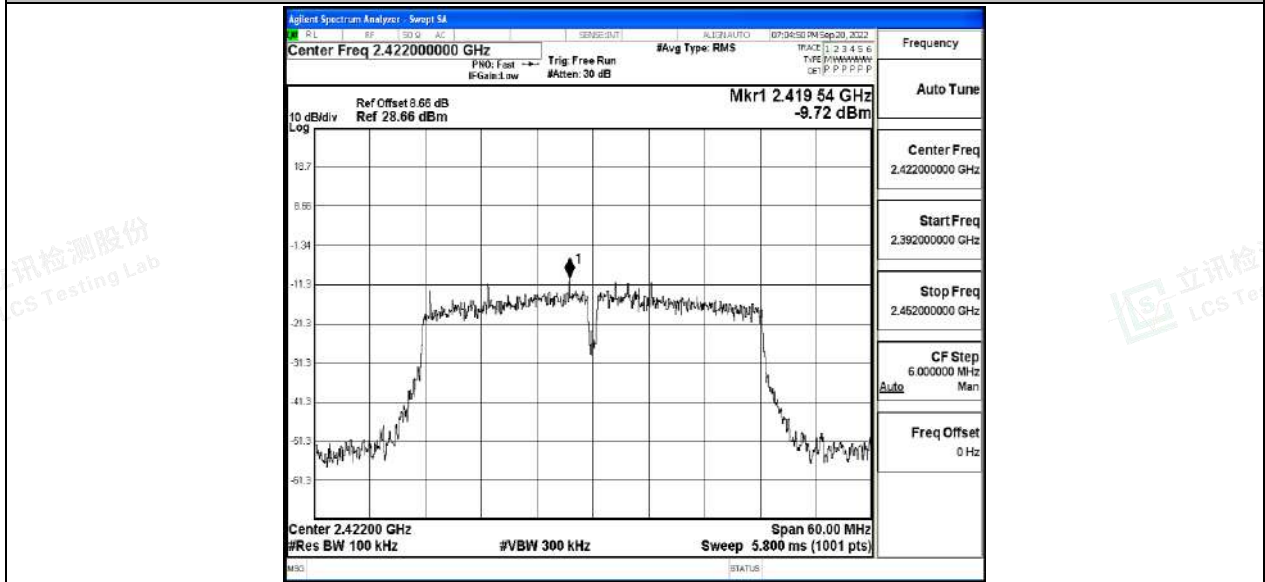


11N20SISO_Ant1_2462_1000~26500



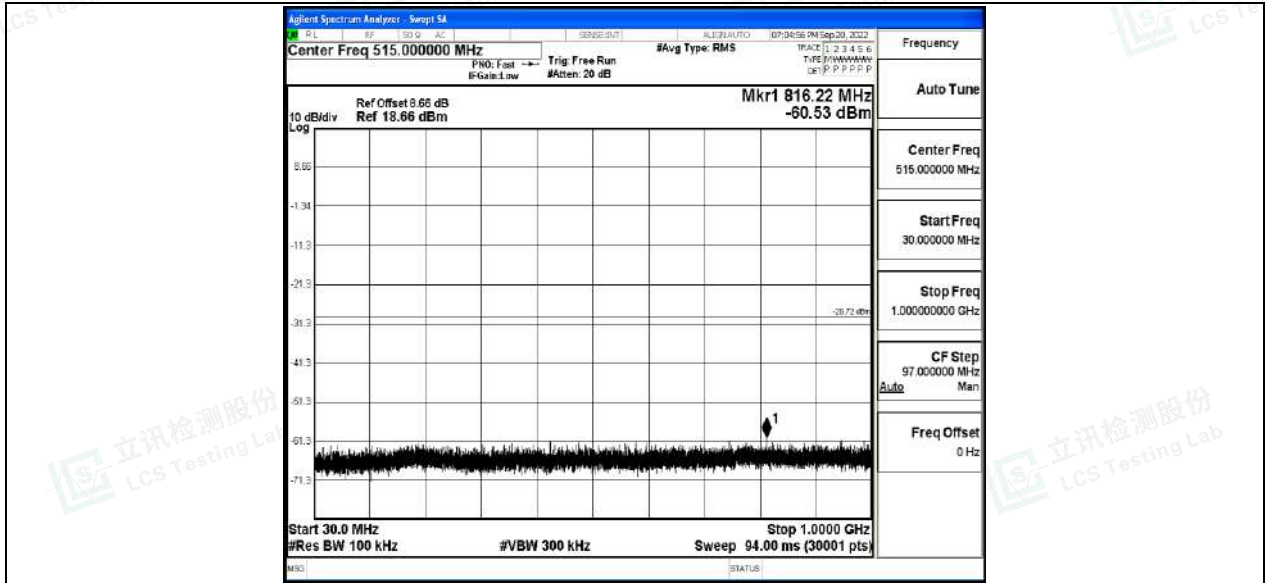


11N40SISO_Ant1_2422_0-Reference

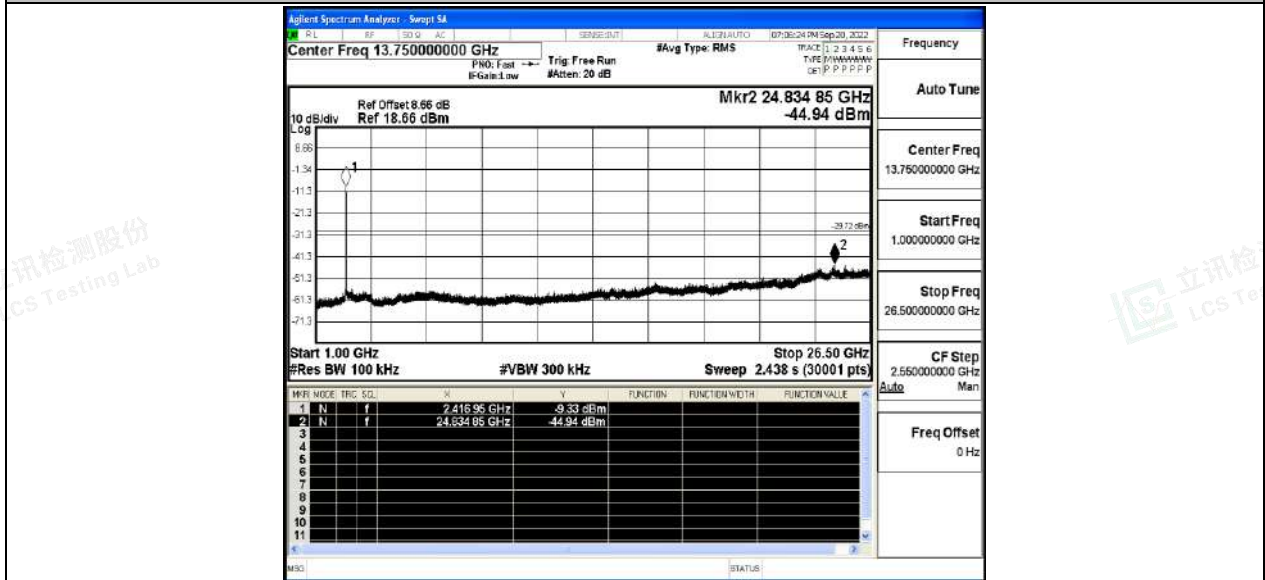


11N40SISO_Ant1_2422_30~1000



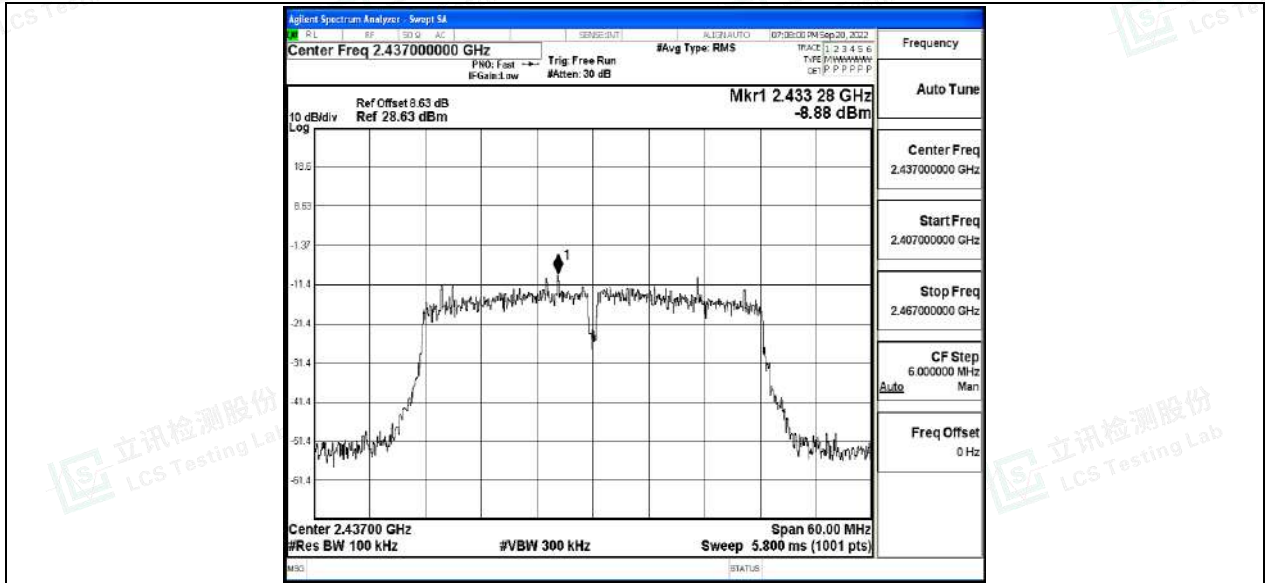


11N40SISO_Ant1_2422_1000~26500

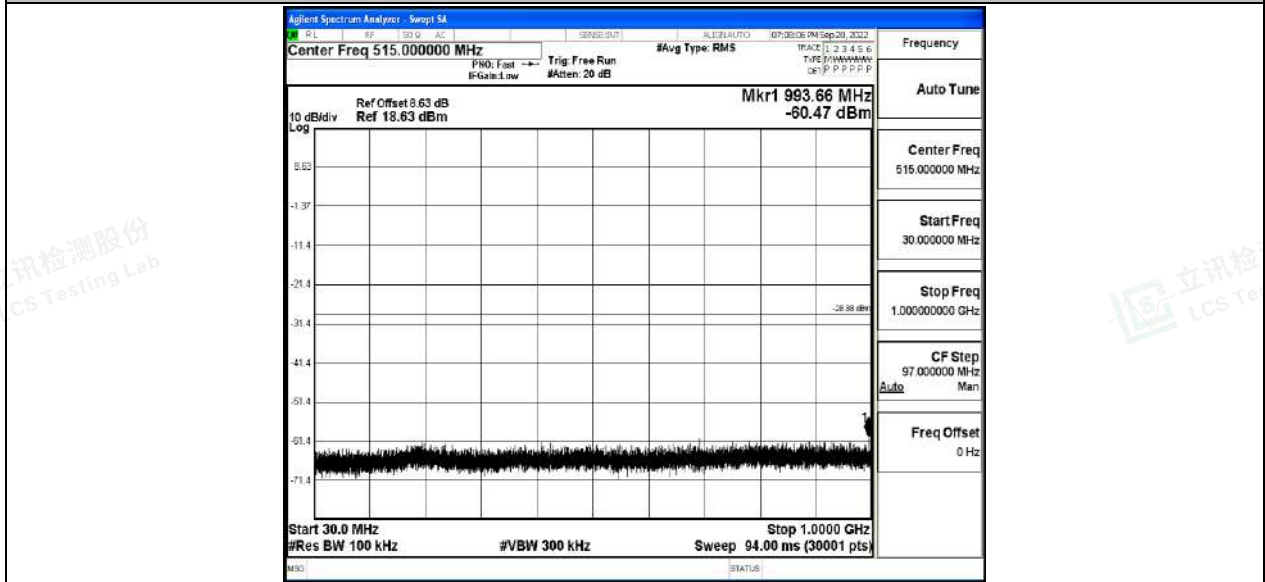


11N40SISO_Ant1_2437_0~Reference



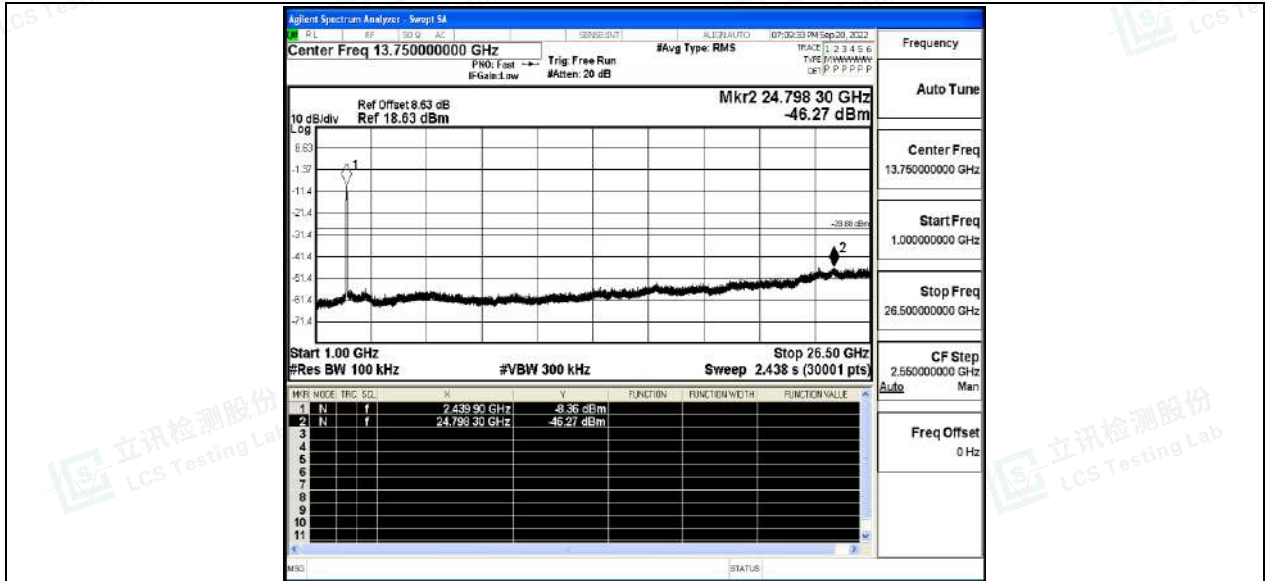


11N40SISO_Ant1_2437_30~1000

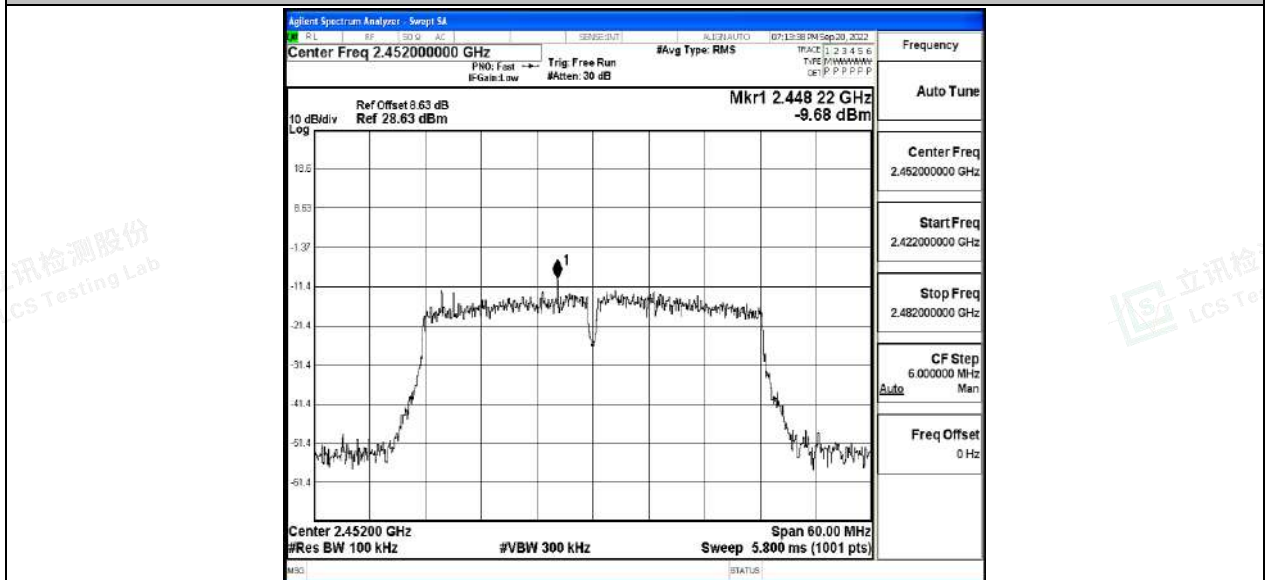


11N40SISO_Ant1_2437_1000~26500



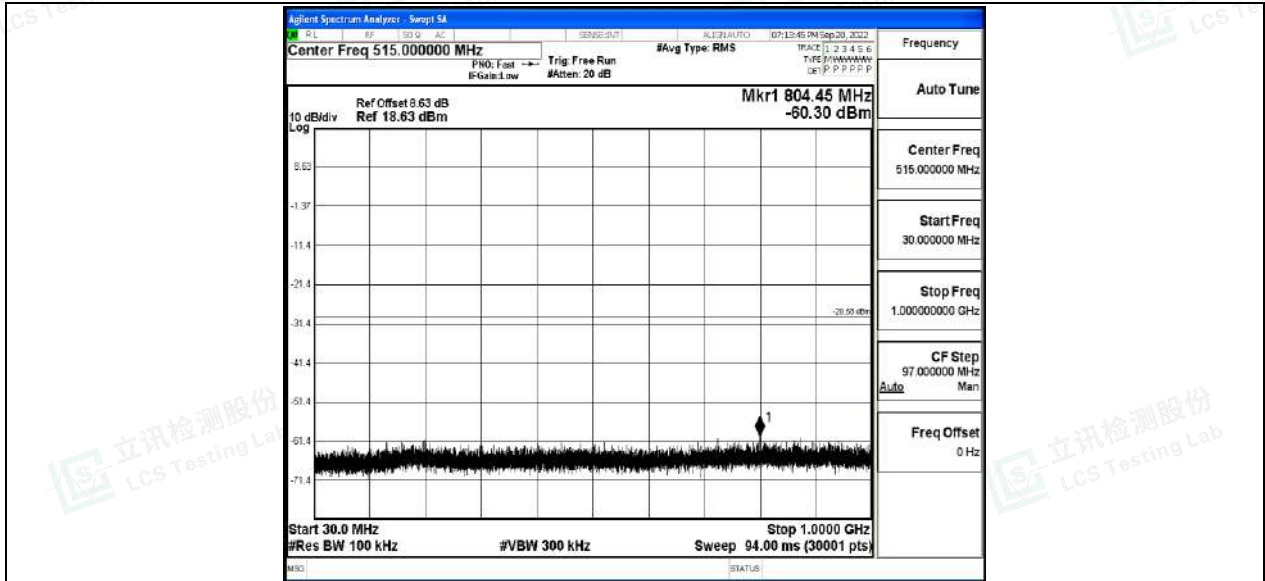


11N40SISO_Ant1_2452_0-Reference

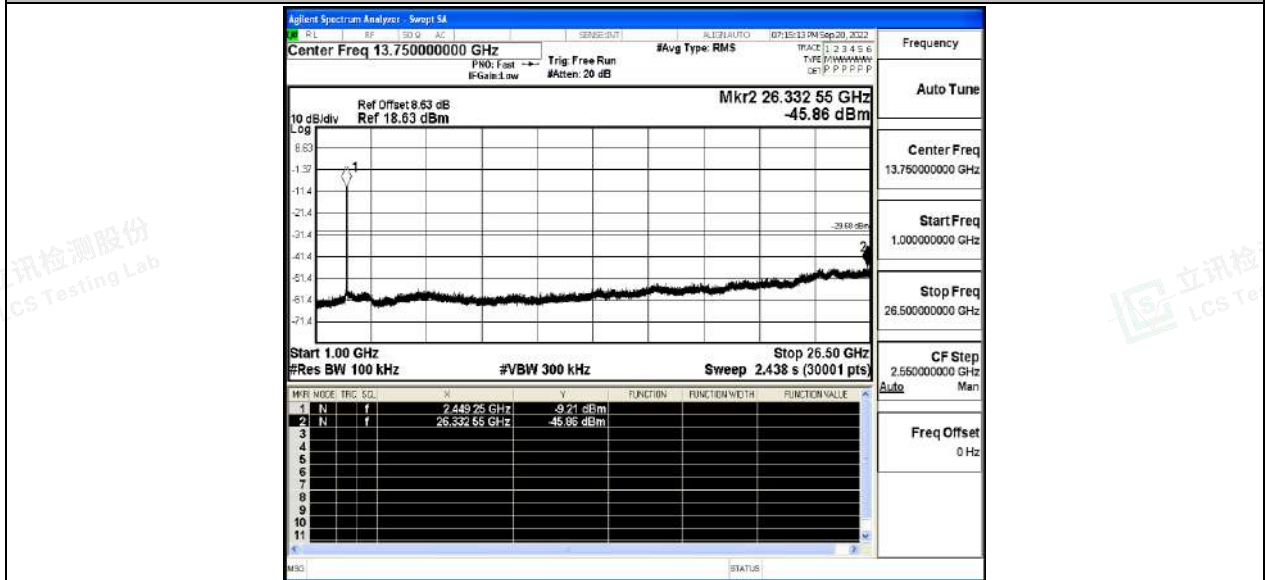


11N40SISO_Ant1_2452_30~1000





11N40SISO_Ant1_2452_1000~26500





A.6 Duty Cycle

Test Result

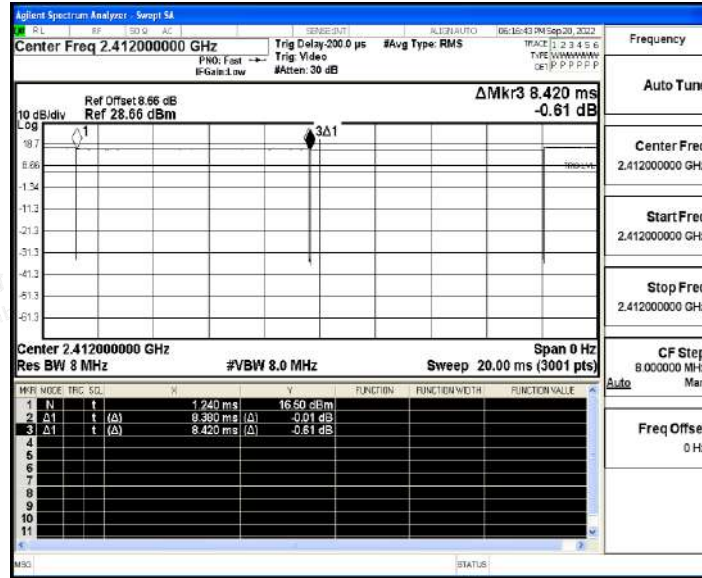
TestMode	Antenna	Freq(MHz)	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor	1/T
11B	Ant1	2412	8.38	8.42	99.52	0.02	0.12
		2437	8.38	8.42	99.52	0.02	0.12
		2462	8.39	8.42	99.64	0.02	0.12
11G	Ant1	2412	1.40	1.44	97.22	0.12	0.71
		2437	1.39	1.43	97.20	0.12	0.72
		2462	1.39	1.43	97.20	0.12	0.72
11N20SISO	Ant1	2412	1.30	1.35	96.30	0.16	0.77
		2437	1.30	1.35	96.30	0.16	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	0.65	0.69	94.20	0.26	1.54
		2452	0.64	0.69	92.75	0.33	1.56



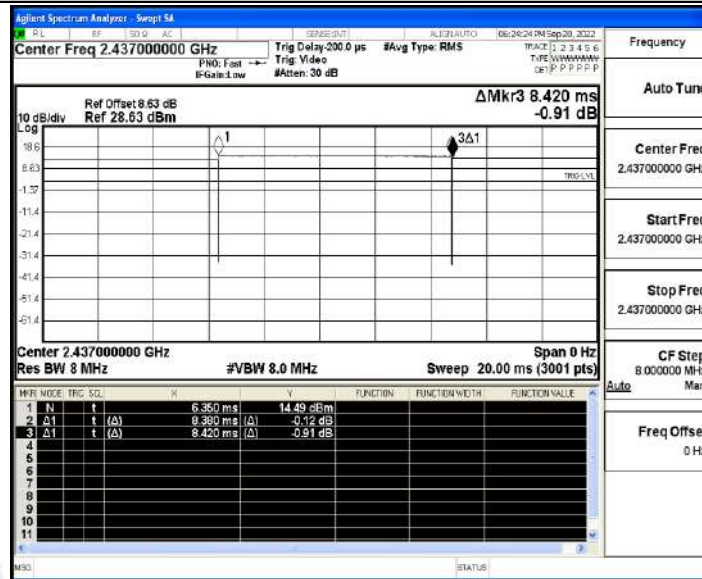


Test Graphs

11B_Ant1_2412

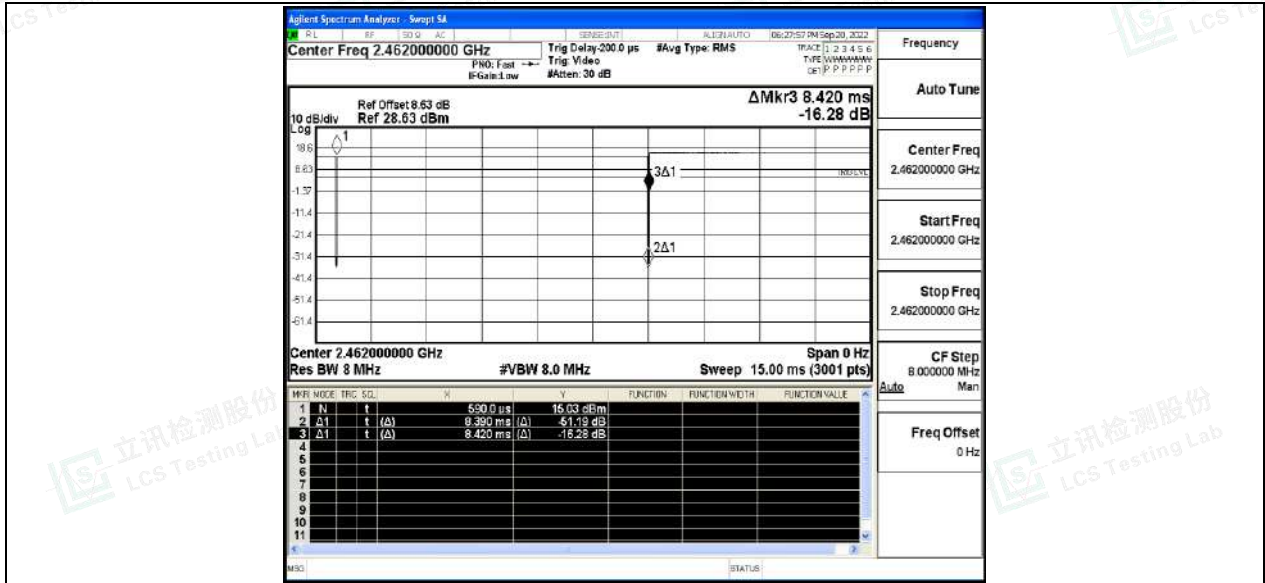


11B_Ant1_2437

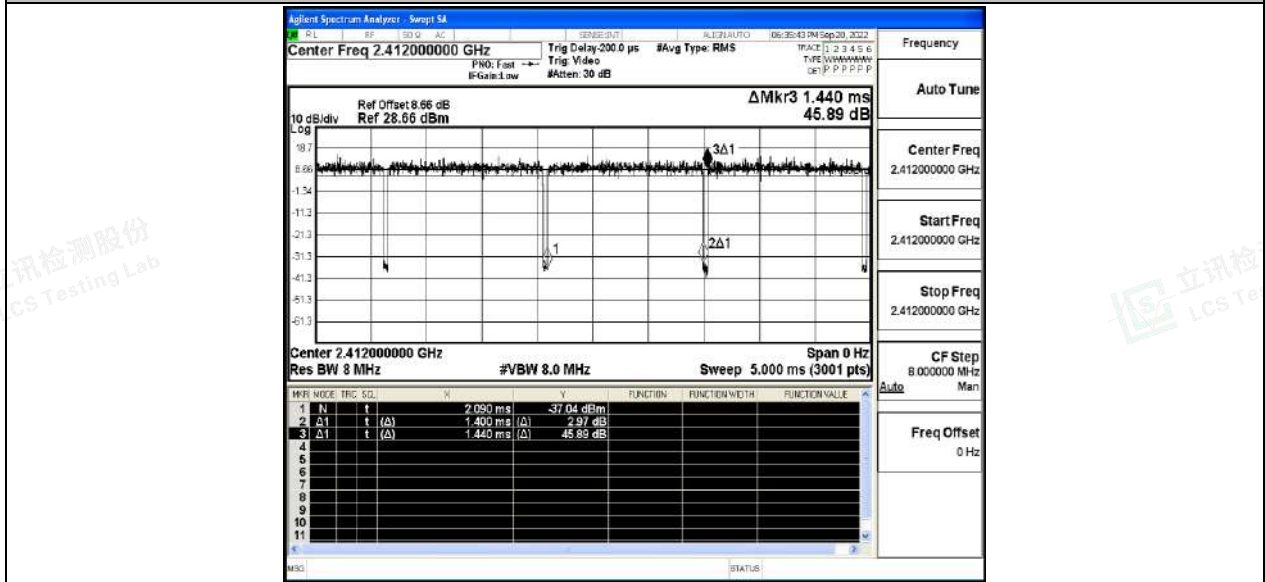


11B_Ant1_2462



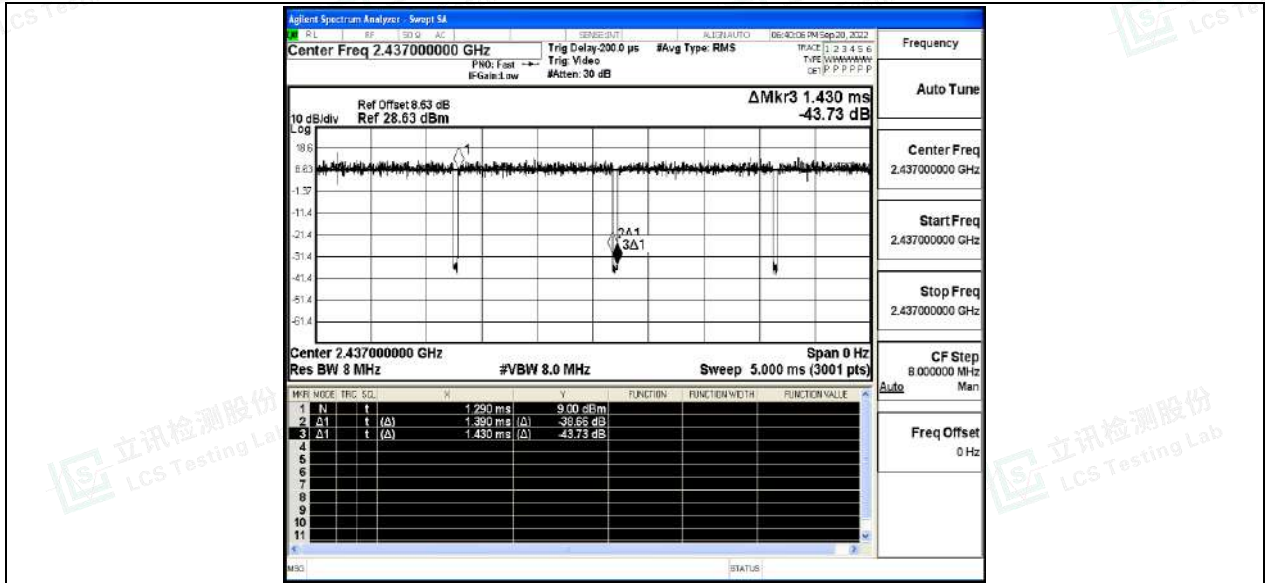


11G_Ant1_2412

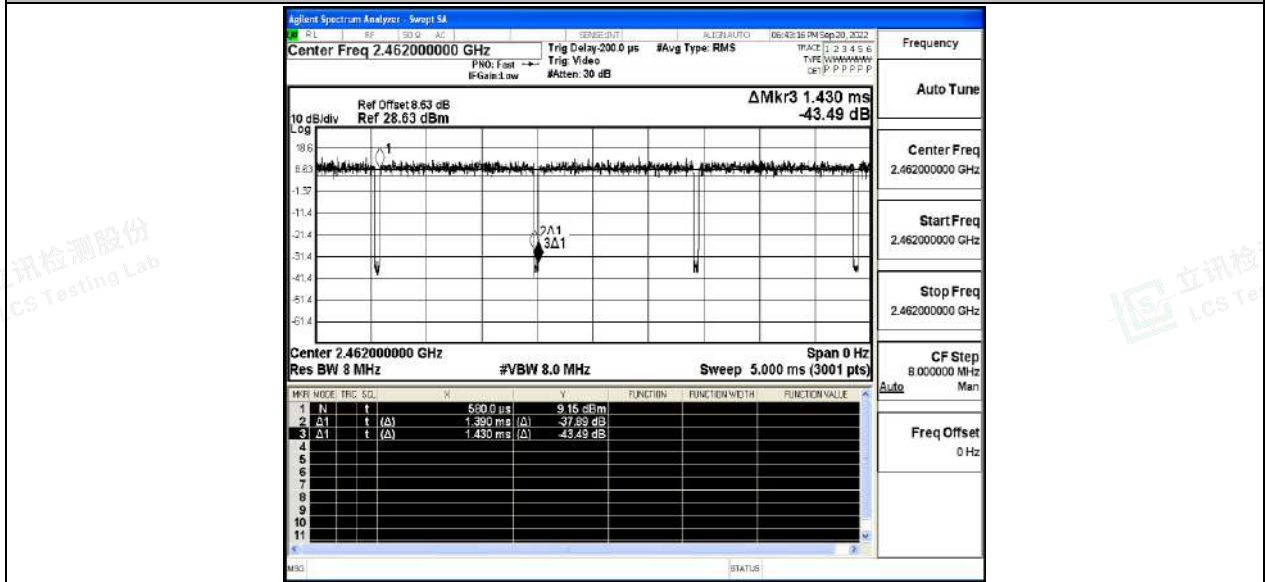


11G_Ant1_2437



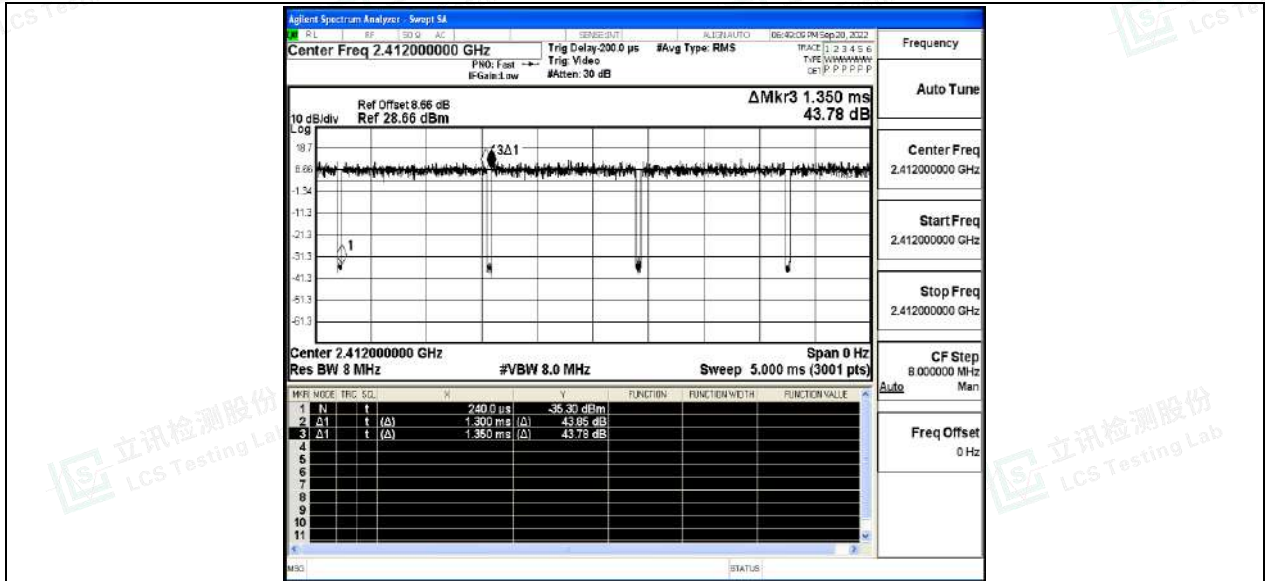


11G_Ant1_2462

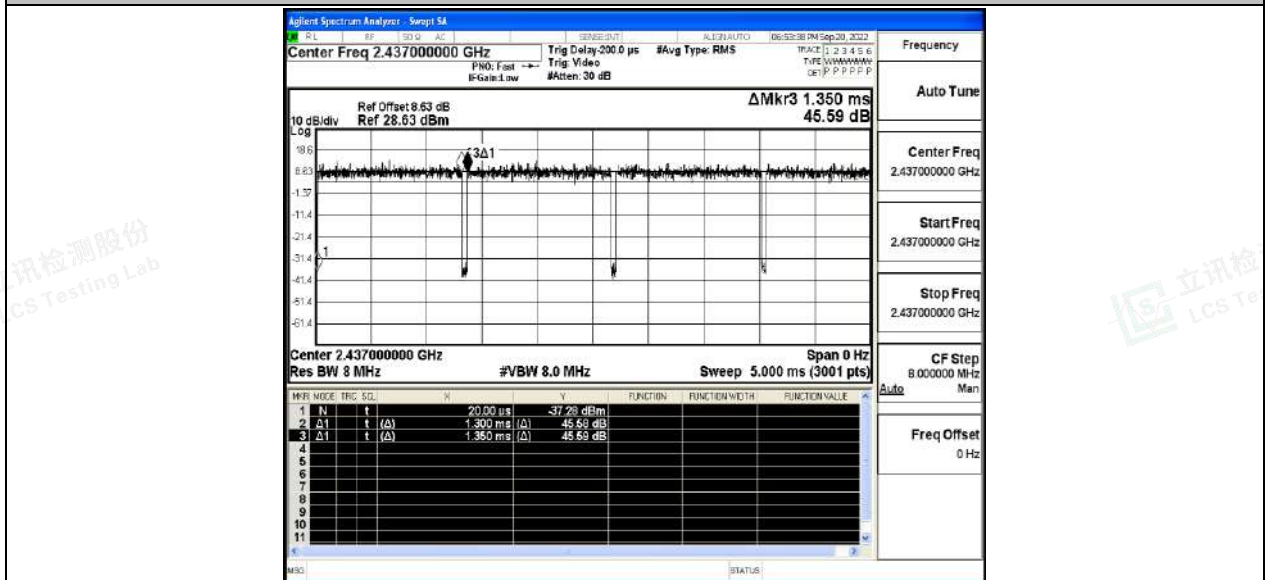


11N20SISO_Ant1_2412



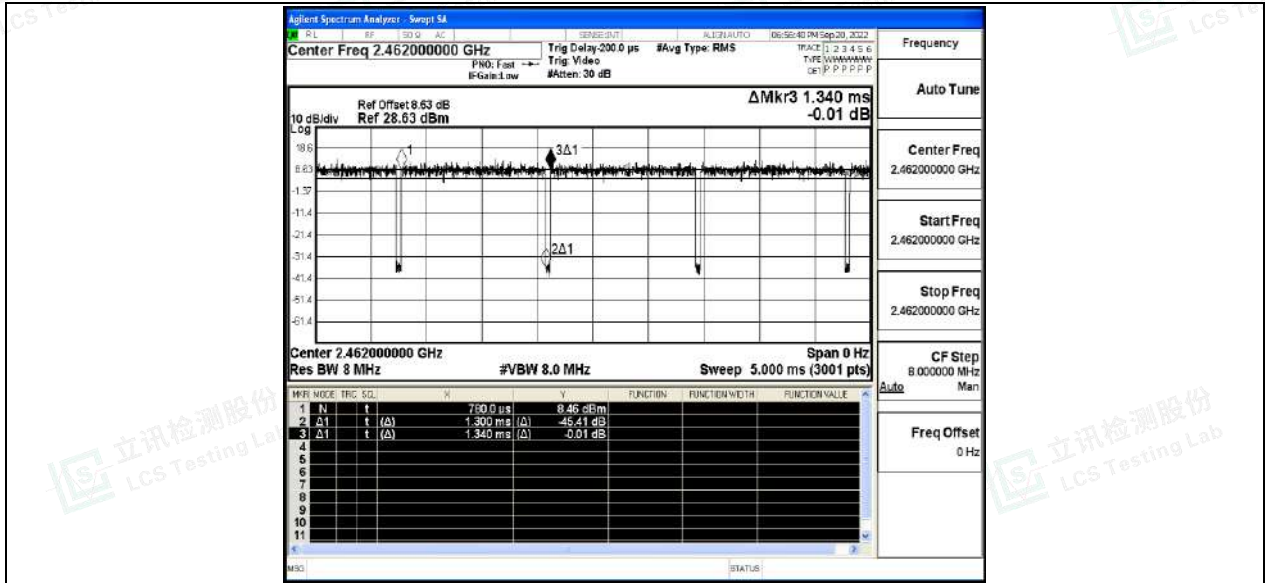


11N20SISO_Ant1_2437

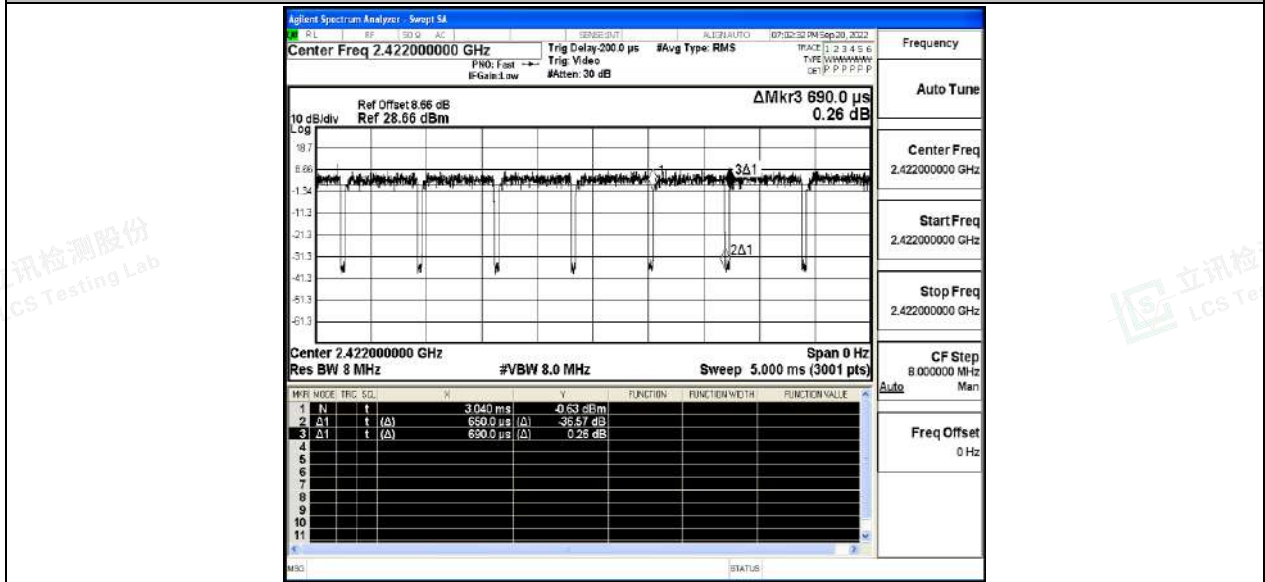


11N20SISO_Ant1_2462



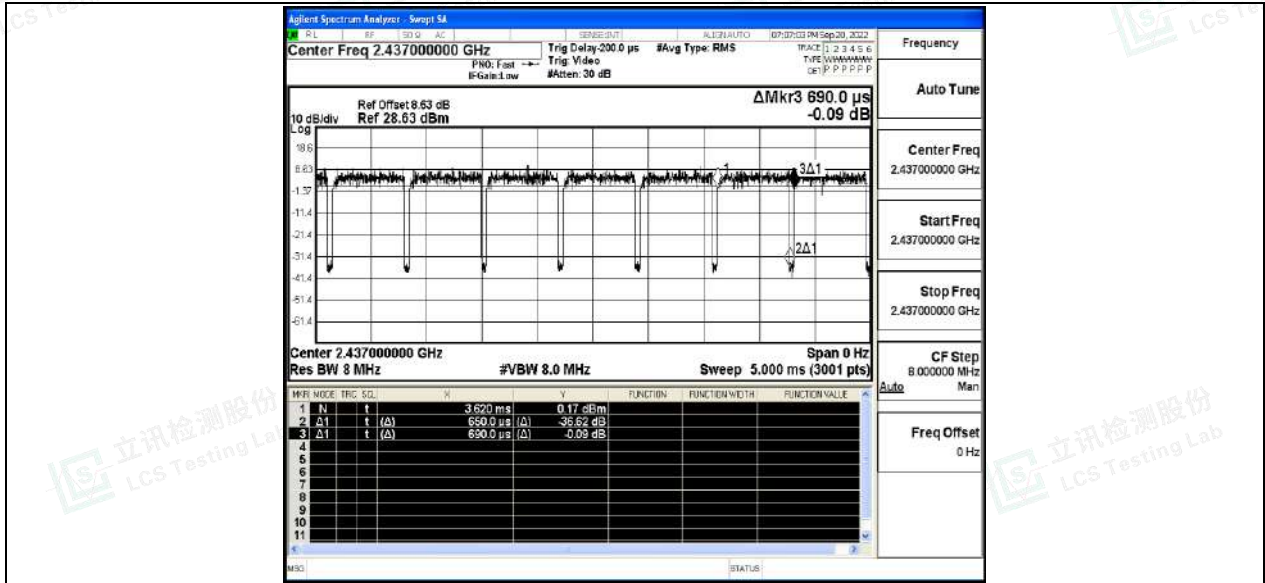


11N40SISO_Ant1_2422

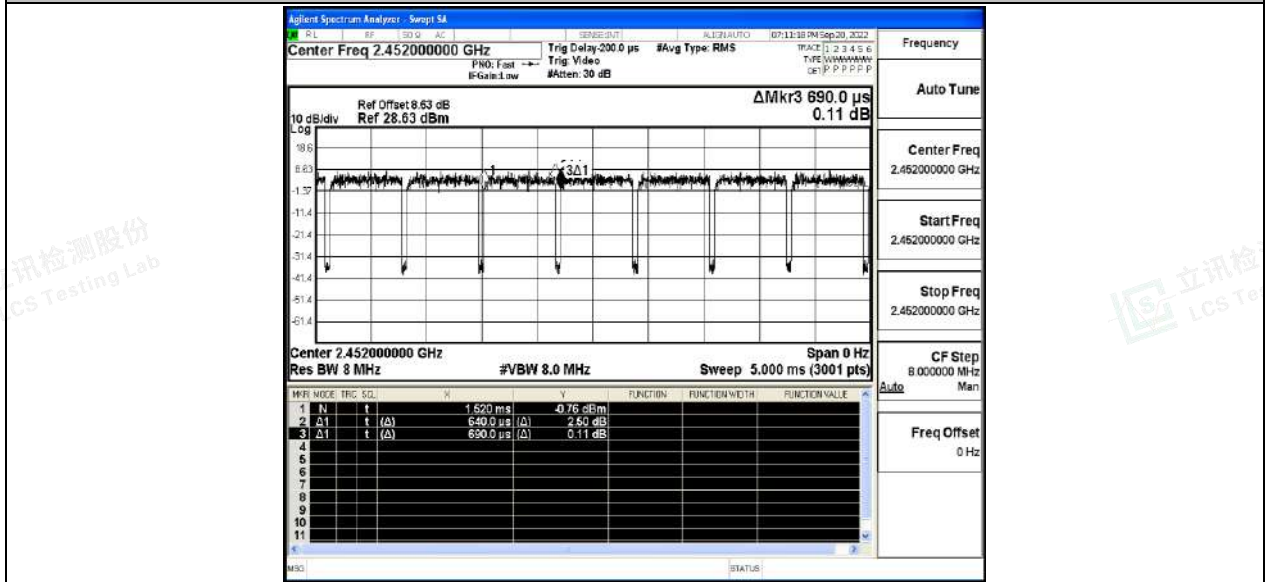


11N40SISO_Ant1_2437





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	-57.59	≤-41.20	37.61	≤54	PASS
				AV	2385.540	-54.06	≤-41.20	41.14	≤54	PASS
				AV	2390.000	-55.7	≤-41.20	39.50	≤54	PASS
				Peak	2310.000	-46.83	≤-21.20	48.37	≤74	PASS
				Peak	2384.630	-43.08	≤-21.20	52.12	≤74	PASS
				Peak	2390.000	-45.14	≤-21.20	50.06	≤74	PASS
		High	2462	AV	2483.500	-55.54	≤-41.20	39.66	≤54	PASS
				AV	2489.940	-55.02	≤-41.20	40.18	≤54	PASS
				AV	2500.000	-55.62	≤-41.20	39.58	≤54	PASS
				Peak	2483.500	-45.13	≤-21.20	50.07	≤74	PASS
				Peak	2490.490	-43.59	≤-21.20	51.61	≤74	PASS
				Peak	2500.000	-45.02	≤-21.20	50.18	≤74	PASS
11G	Ant1	Low	2412	AV	2310.000	-57.34	≤-41.20	37.86	≤54	PASS
				AV	2389.960	-54.66	≤-41.20	40.54	≤54	PASS
				AV	2390.000	-54.66	≤-41.20	40.54	≤54	PASS
				Peak	2310.000	-47.72	≤-21.20	47.48	≤74	PASS
				Peak	2389.960	-43.56	≤-21.20	51.64	≤74	PASS
				Peak	2390.000	-43.56	≤-21.20	51.64	≤74	PASS
		High	2462	AV	2483.500	-53.95	≤-41.20	41.25	≤54	PASS
				AV	2483.780	-53.79	≤-41.20	41.41	≤54	PASS
				AV	2500.000	-54.56	≤-41.20	40.64	≤54	PASS
				Peak	2483.500	-43.87	≤-21.20	51.33	≤74	PASS
				Peak	2485.320	-42.61	≤-21.20	52.59	≤74	PASS
				Peak	2500.000	-44.89	≤-21.20	50.31	≤74	PASS
11N20SISO	Ant1	Low	2412	AV	2310.000	-57.57	≤-41.20	37.63	≤54	PASS
				AV	2389.700	-54.78	≤-41.20	40.42	≤54	PASS
				AV	2390.000	-54.82	≤-41.20	40.38	≤54	PASS
				Peak	2310.000	-47.86	≤-21.20	47.34	≤74	PASS
				Peak	2389.830	-42.97	≤-21.20	52.23	≤74	PASS
				Peak	2390.000	-44.24	≤-21.20	50.96	≤74	PASS
		High	2462	AV	2483.500	-54.53	≤-41.20	40.67	≤54	PASS
				AV	2483.780	-54.6	≤-41.20	40.60	≤54	PASS
				AV	2500.000	-55.27	≤-41.20	39.93	≤54	PASS
				Peak	2483.500	-44.44	≤-21.20	50.76	≤74	PASS
				Peak	2483.670	-42.56	≤-21.20	52.64	≤74	PASS
				Peak	2500.000	-44.24	≤-21.20	50.96	≤74	PASS





11N40SISO	Ant1	Low	2422	AV	2310.000	-57.17	≤-41.20	38.03	≤54	PASS
				AV	2389.440	-54.61	≤-41.20	40.59	≤54	PASS
				AV	2390.000	-54.7	≤-41.20	40.50	≤54	PASS
				Peak	2310.000	-47.58	≤-21.20	47.62	≤74	PASS
				Peak	2389.440	-40.49	≤-21.20	54.71	≤74	PASS
				Peak	2390.000	-41.36	≤-21.20	53.84	≤74	PASS
	High	2452	AV	2483.500	-51.3	≤-41.20	43.90	≤54	PASS	
			AV	2484.220	-53.67	≤-41.20	41.53	≤54	PASS	
			AV	2500.000	-55.29	≤-41.20	39.91	≤54	PASS	
			Peak	2483.500	-41.4	≤-21.20	53.80	≤74	PASS	
			Peak	2483.670	-40.2	≤-21.20	55.00	≤74	PASS	
			Peak	2500.000	-45.63	≤-21.20	49.57	≤74	PASS	

Note:

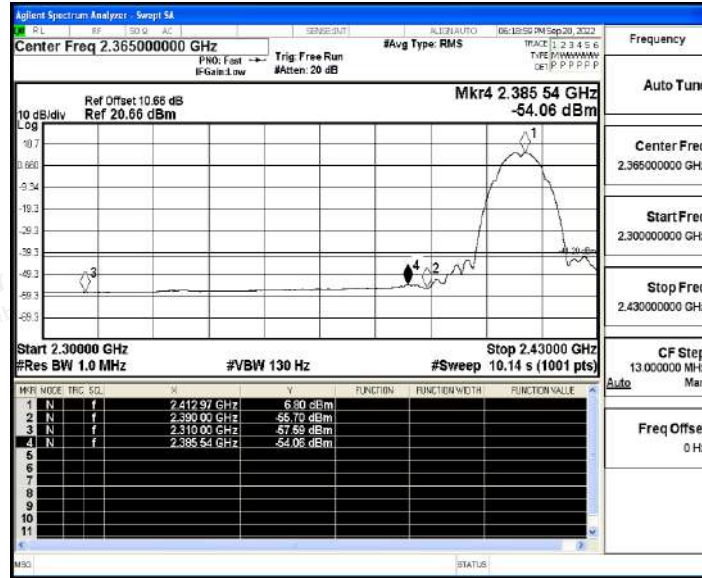
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



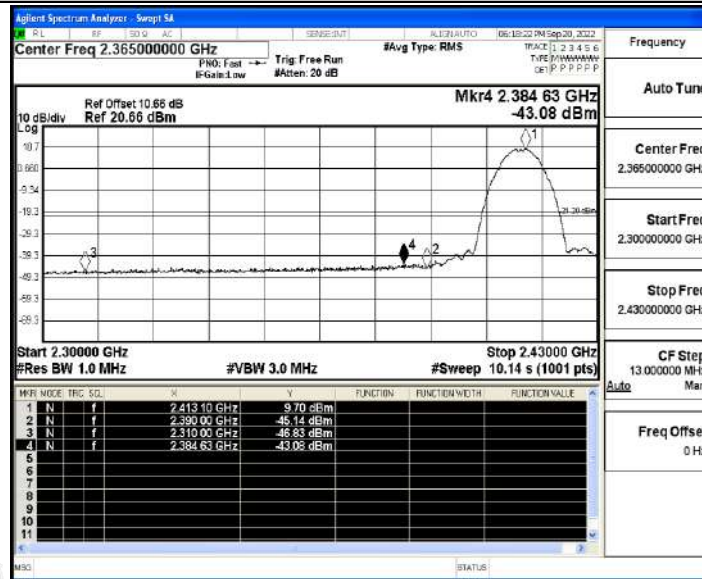


Test Graphs

11B_Ant1_Low_2412_AV

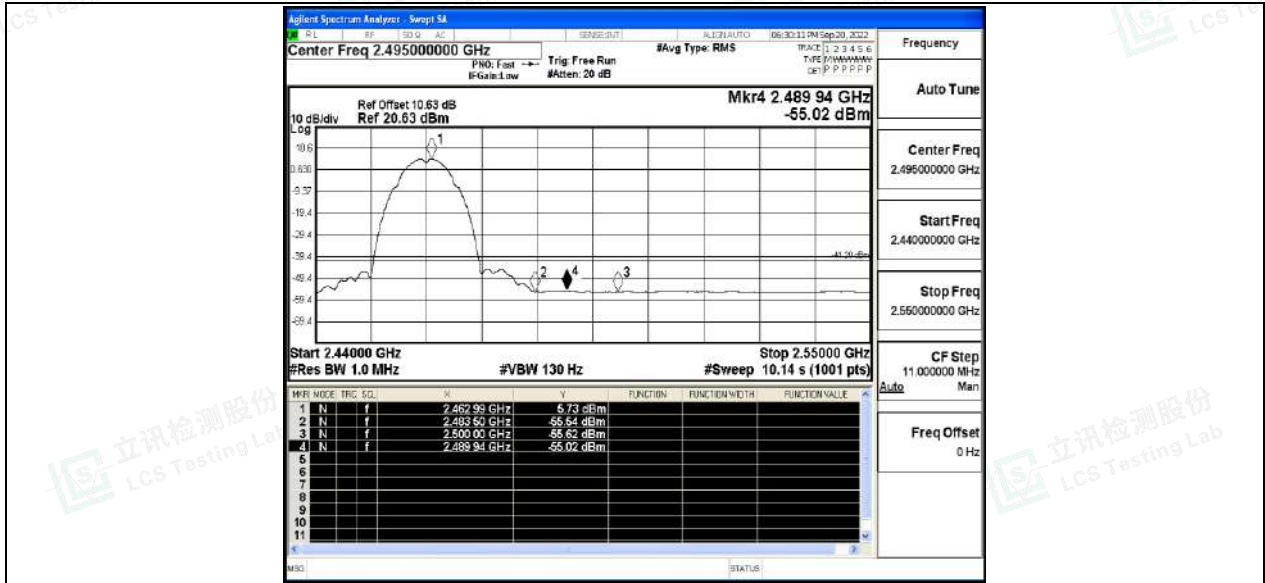


11B_Ant1_Low_2412_Peak

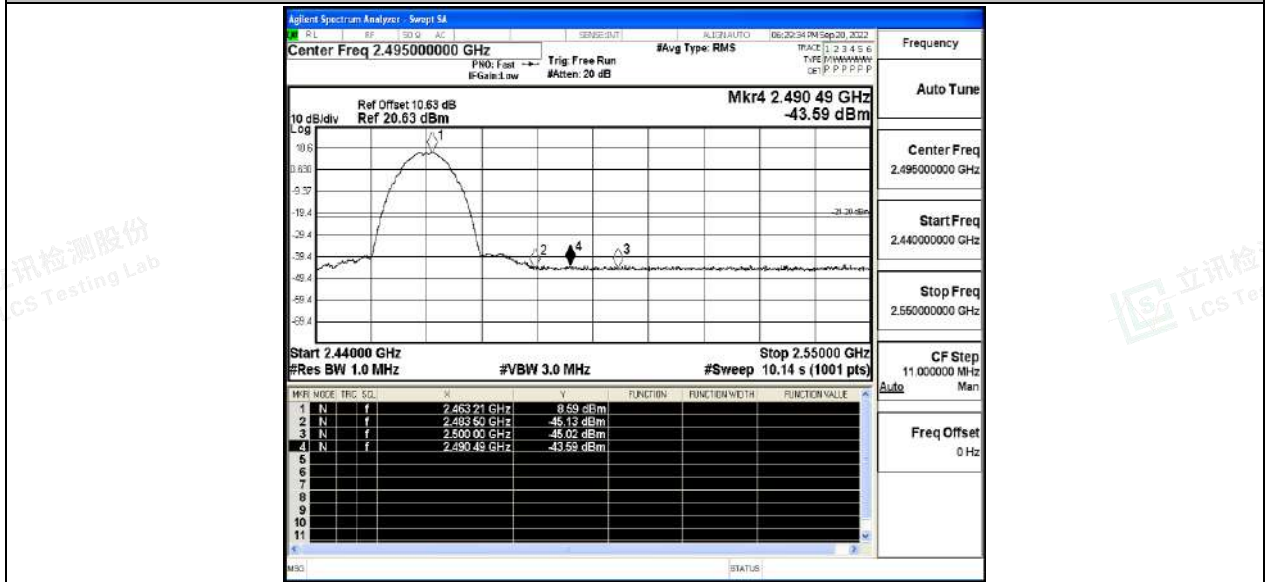


11B_Ant1_High_2462_AV



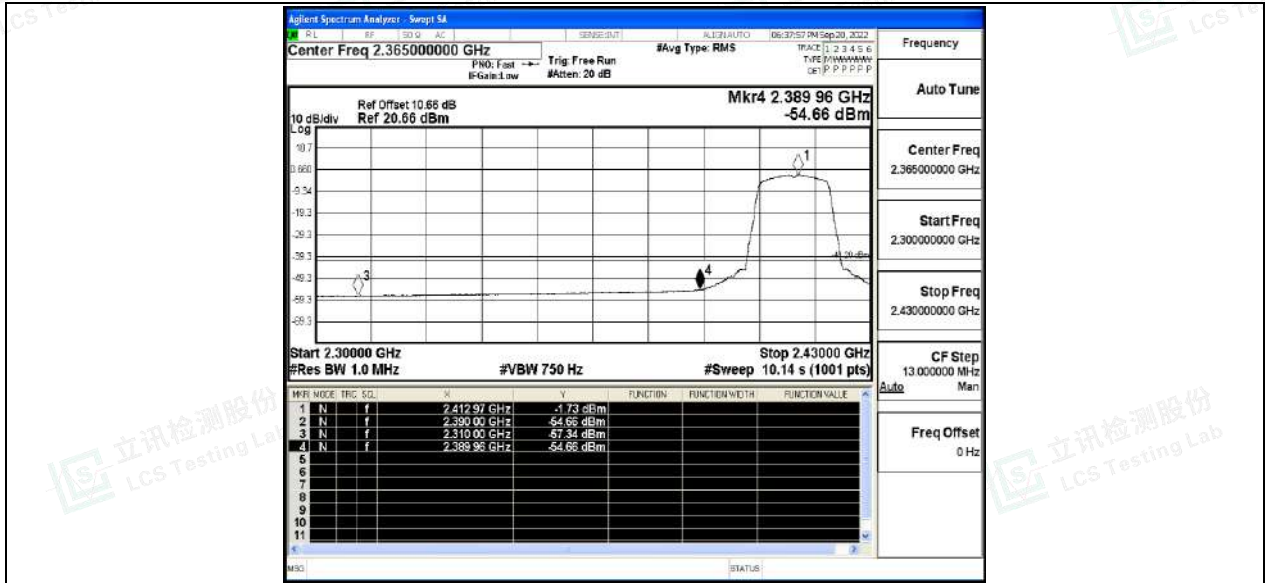


11B_Ant1_High_2462_Peak

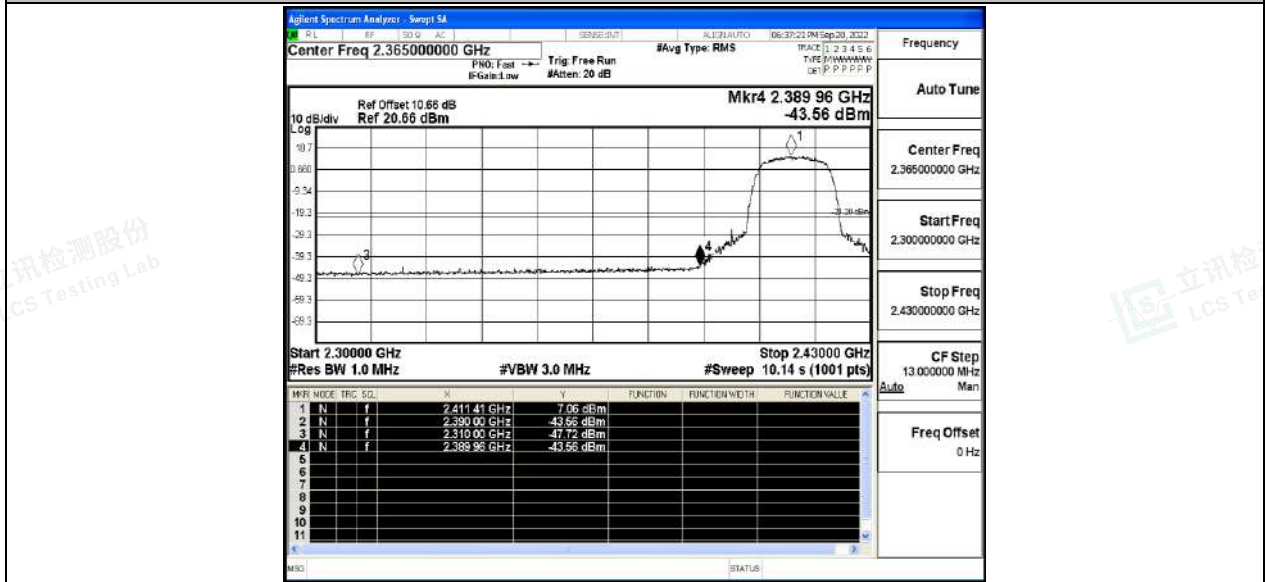


11G_Ant1_Low_2412_AV



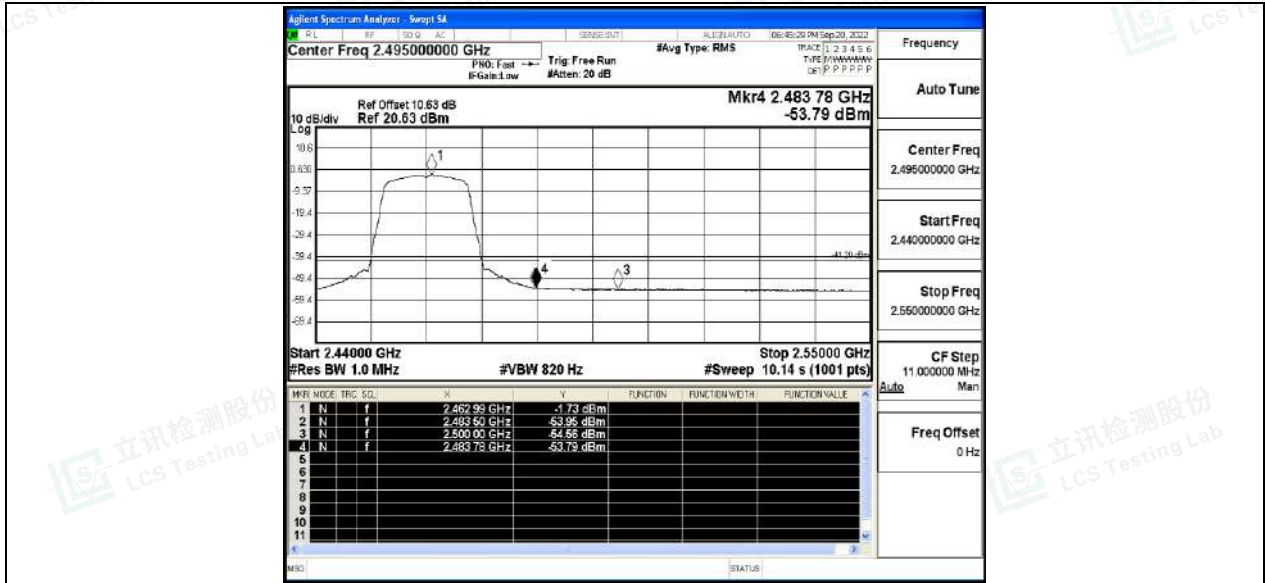


11G_Ant1_Low_2412_Peak

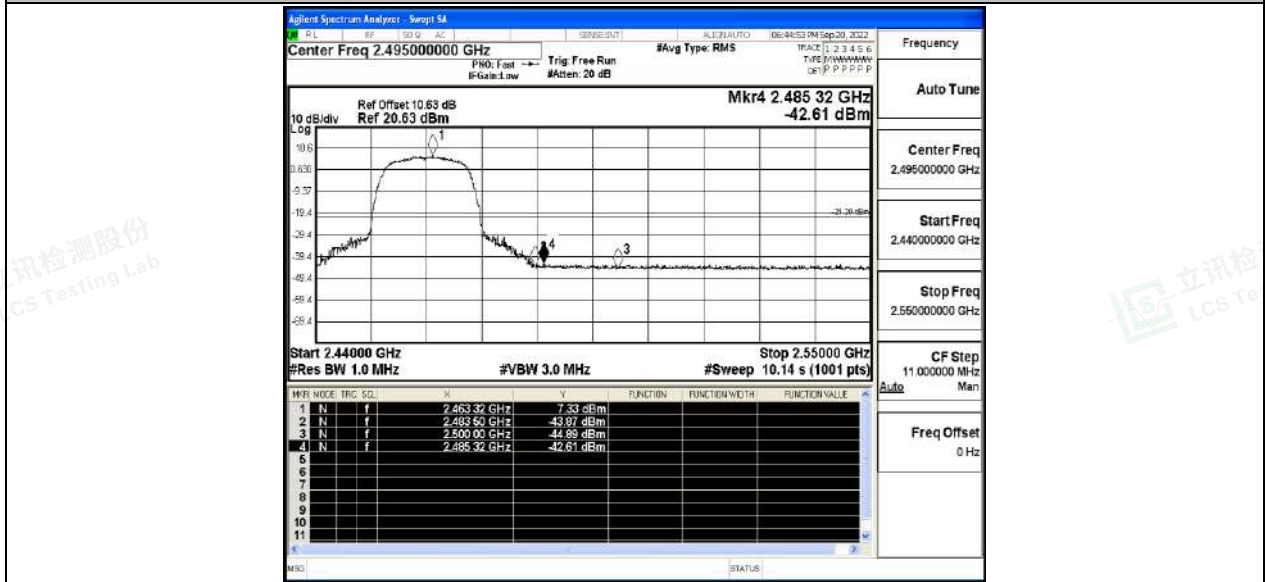


11G_Ant1_High_2462_AV



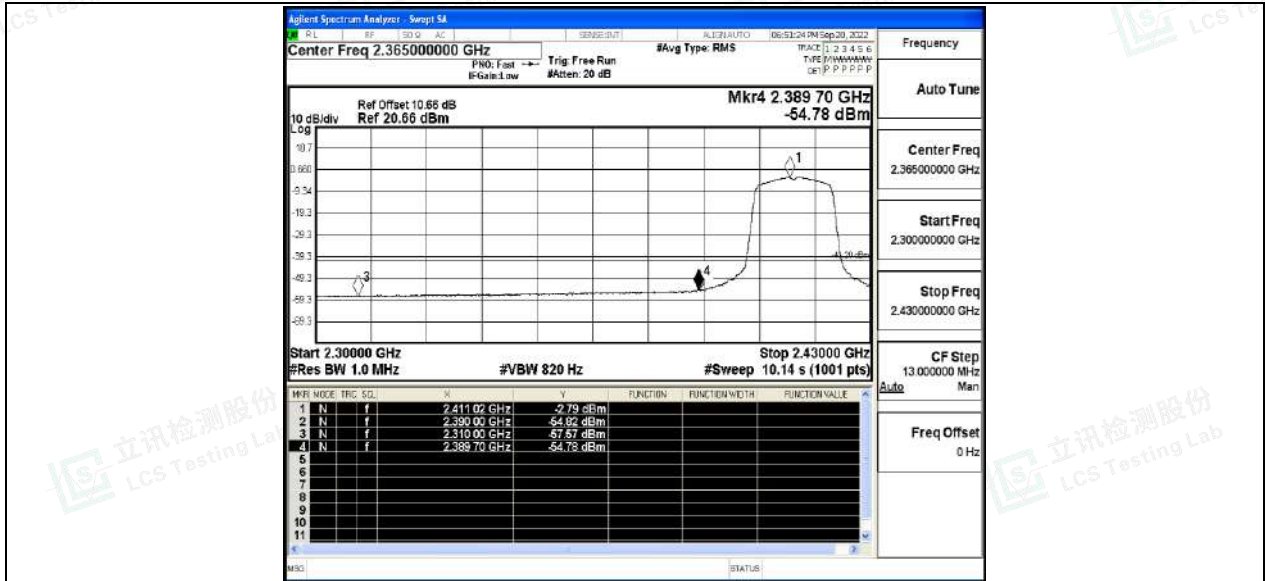


11G_Ant1_High_2462_Peak

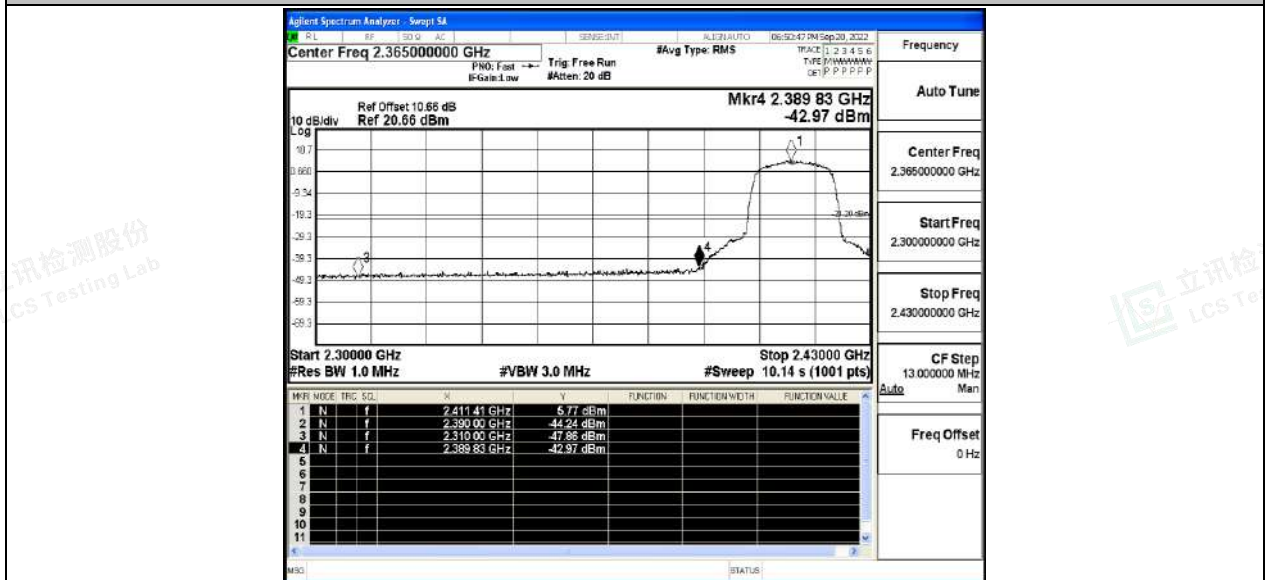


11N20SISO_Ant1_Low_2412_AV



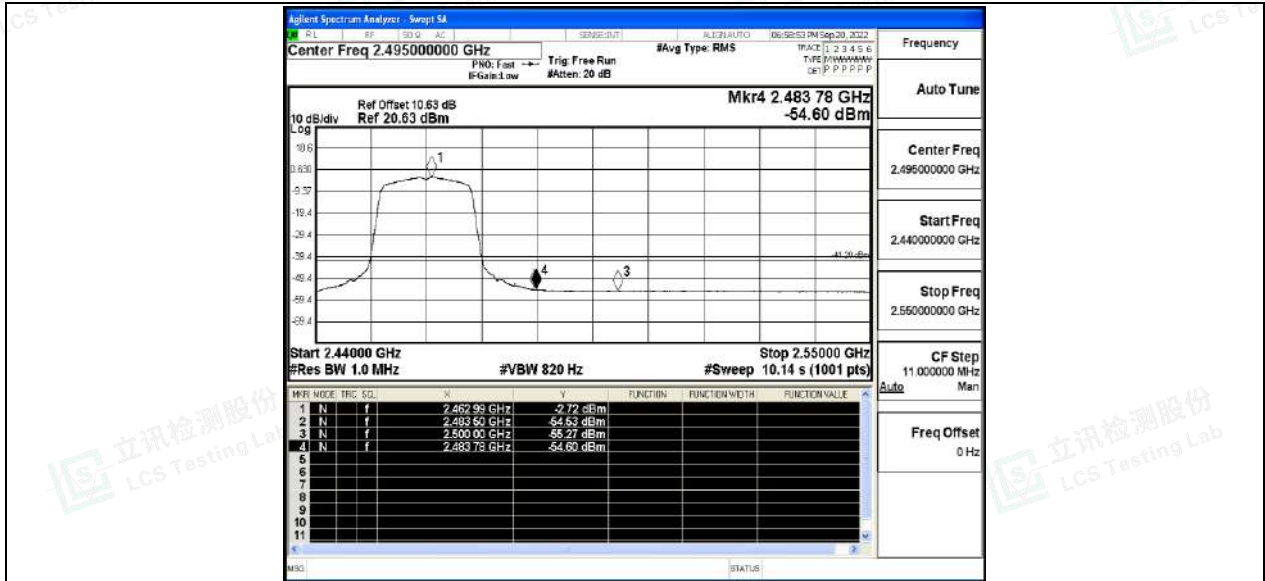


11N20SISO_Ant1_Low_2412_Peak

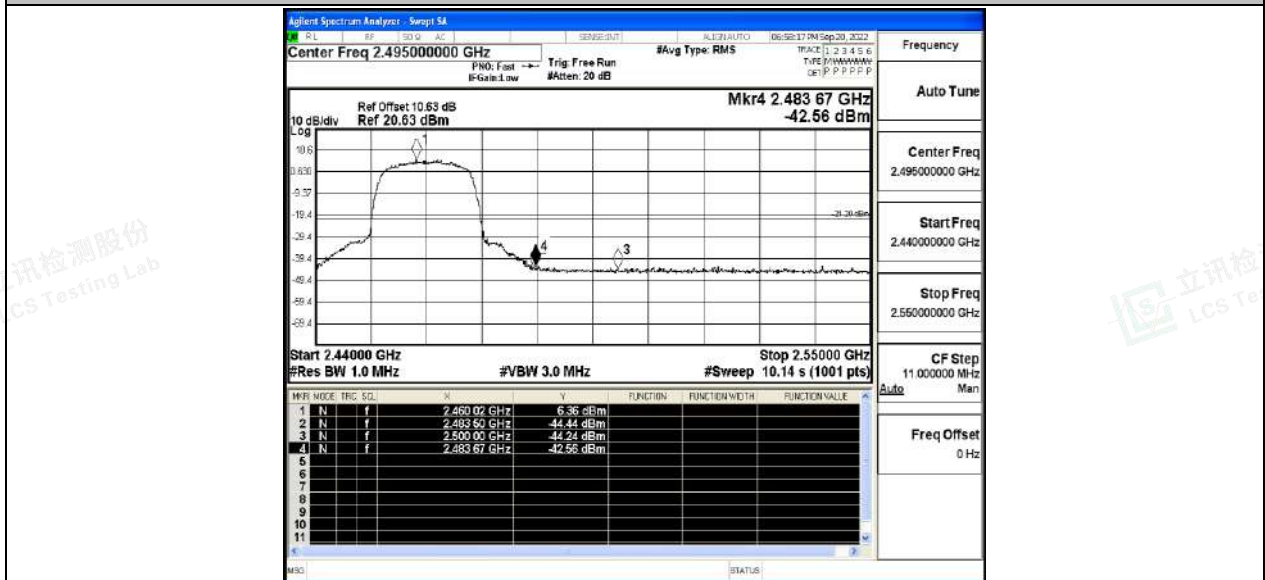


11N20SISO_Ant1_High_2462_AV



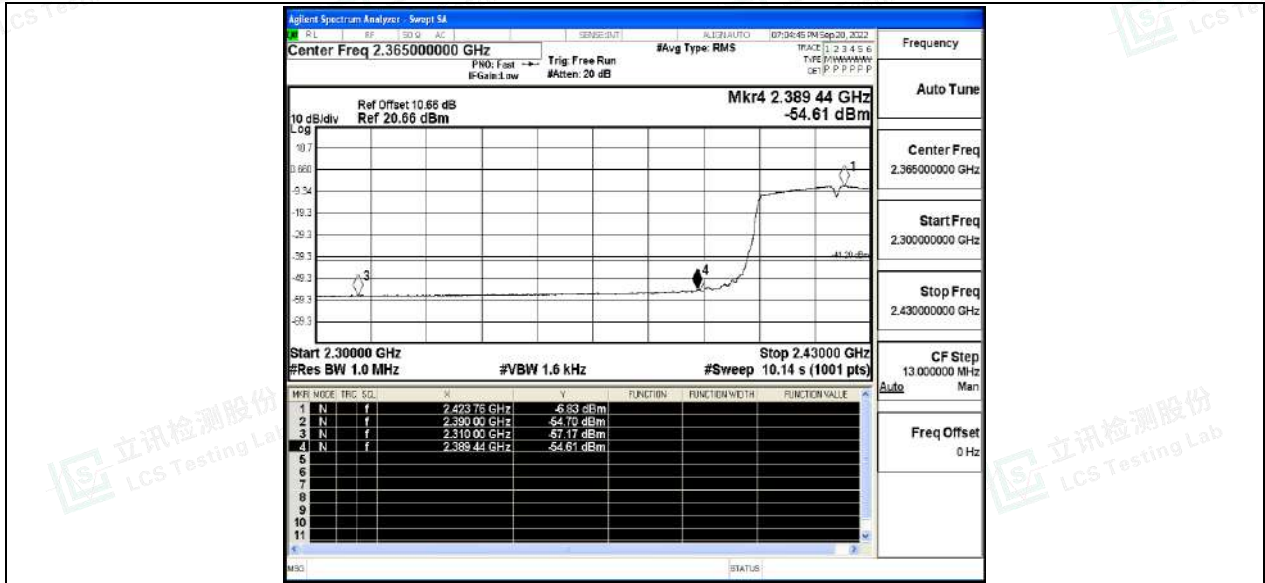


11N20SISO_Ant1_High_2462_Peak

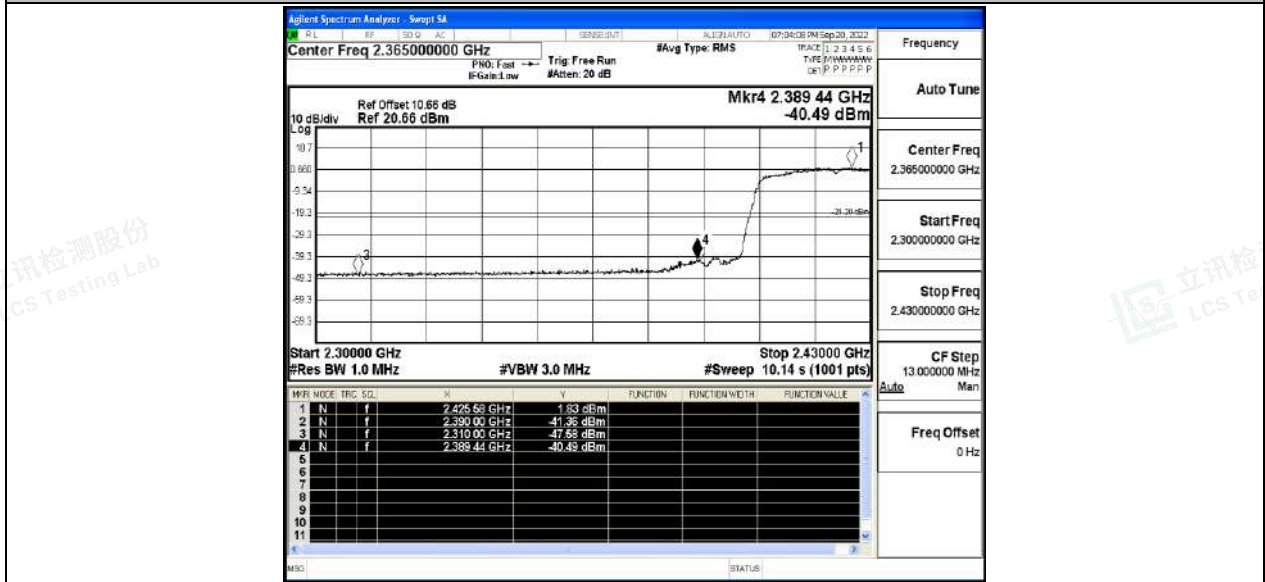


11N40SISO_Ant1_Low_2422_AV



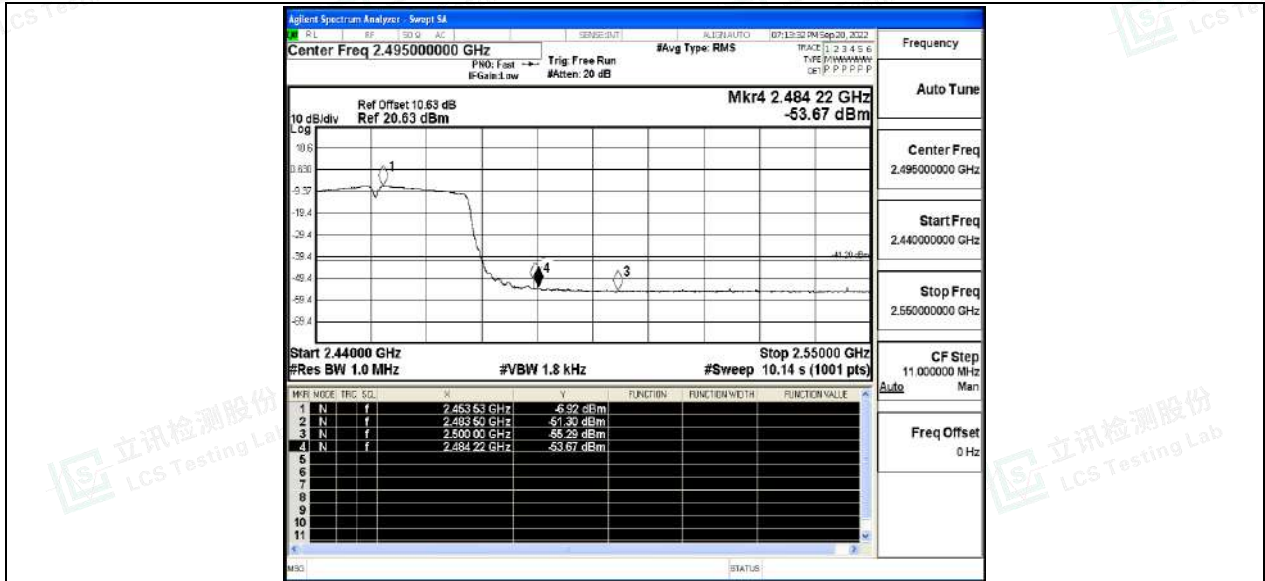


11N40SISO_Ant1_Low_2422_Peak



11N40SISO_Ant1_High_2452_AV





11N40SISO_Ant1_High_2452_Peak

