



Appendix A

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Multi-function projector

Test Model: NeoPix 122

Environmental Conditions

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





A.1 DTS Bandwidth

Test Result

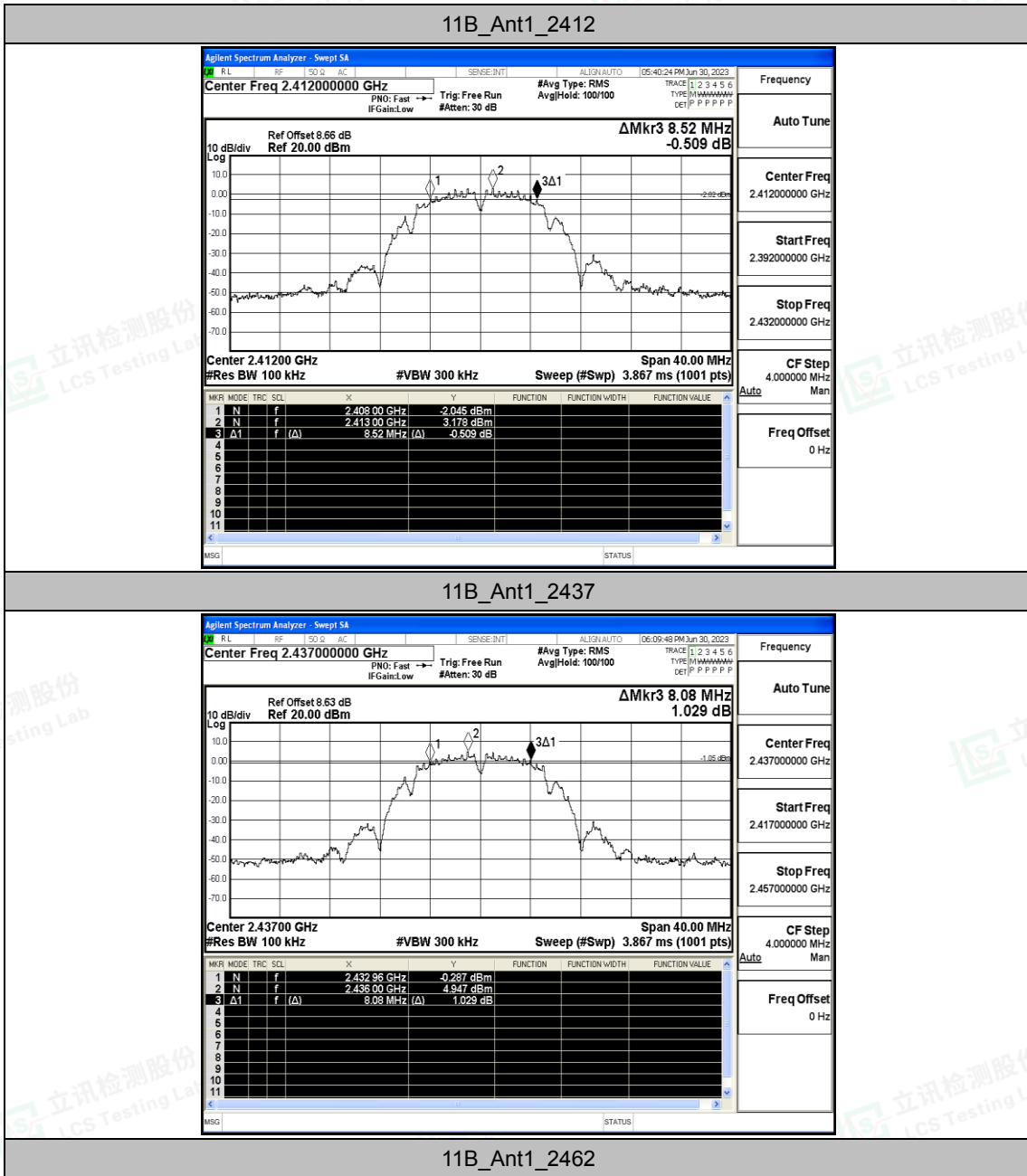
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	8.520	2408.000	2416.520	0.5	PASS
		2437	8.080	2432.960	2441.040	0.5	PASS
		2462	8.560	2457.960	2466.520	0.5	PASS
11G	Ant1	2412	15.440	2404.720	2420.160	0.5	PASS
		2437	15.840	2429.080	2444.920	0.5	PASS
		2462	16.320	2453.840	2470.160	0.5	PASS
11N20SISO	Ant1	2412	16.840	2403.640	2420.480	0.5	PASS
		2437	16.560	2428.520	2445.080	0.5	PASS
		2462	16.800	2453.680	2470.480	0.5	PASS

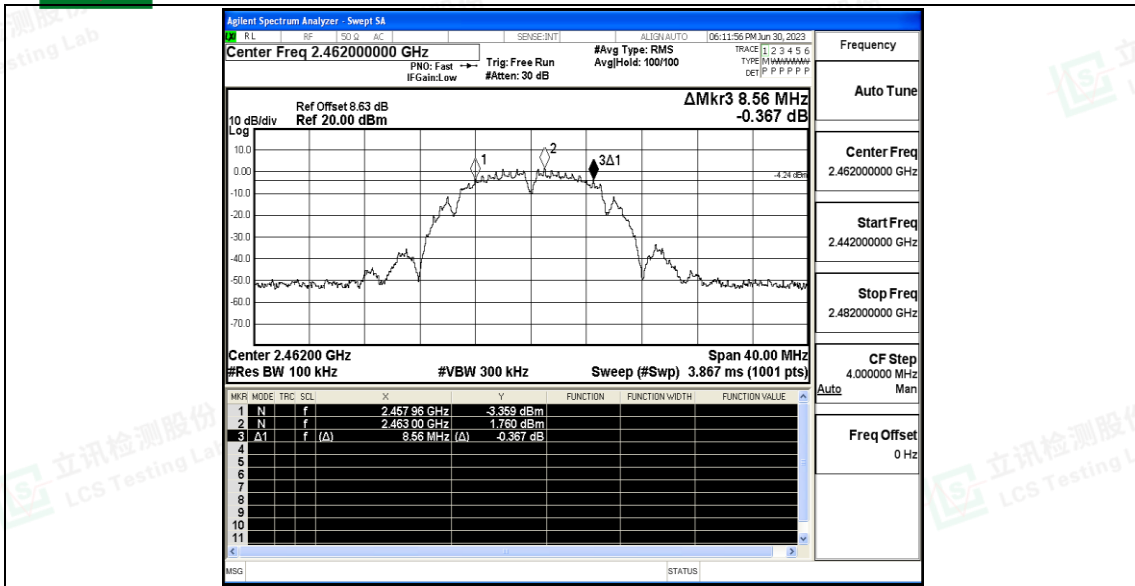


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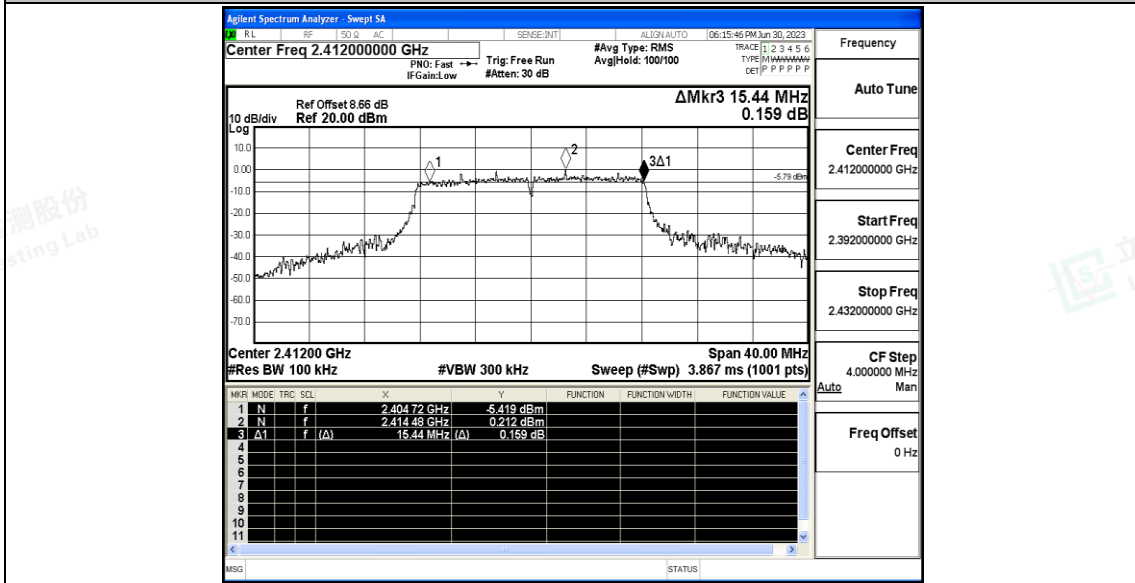


Test Graphs



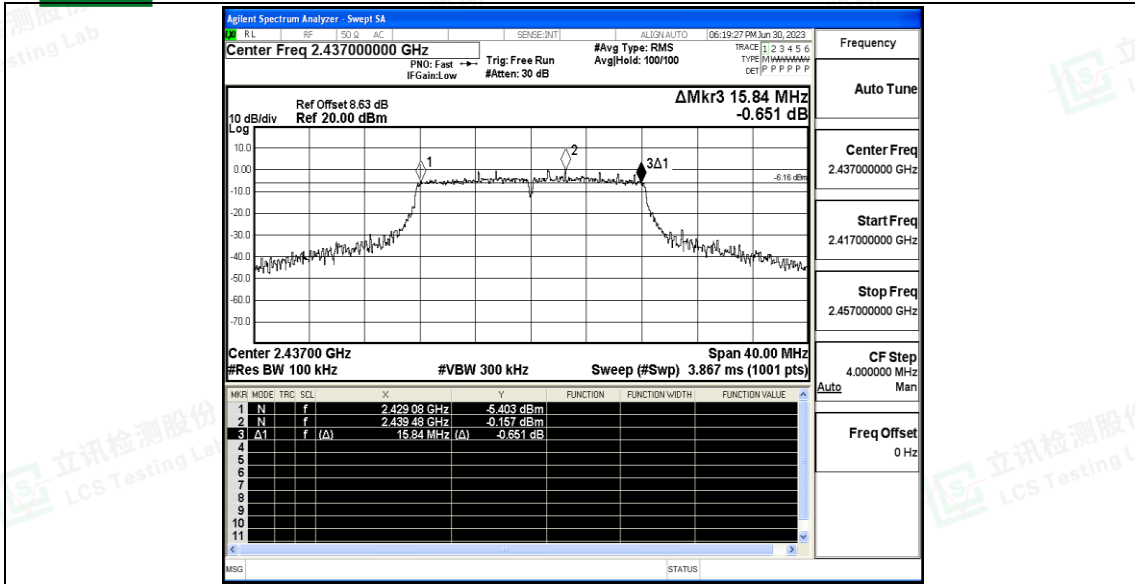


11G_Ant1_2412

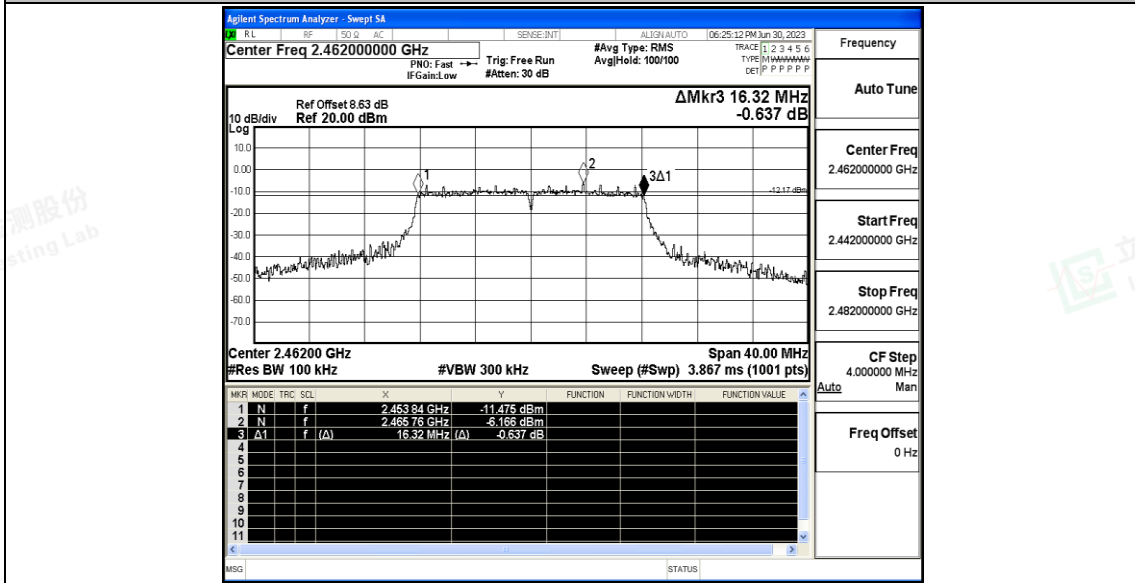


11G_Ant1_2437



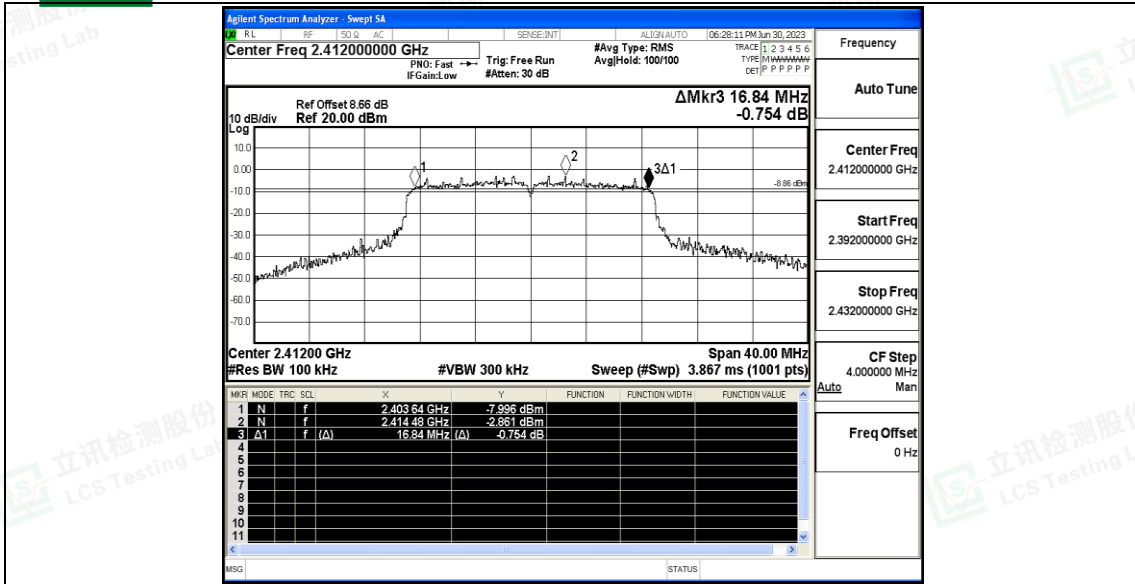


11G_Ant1_2462

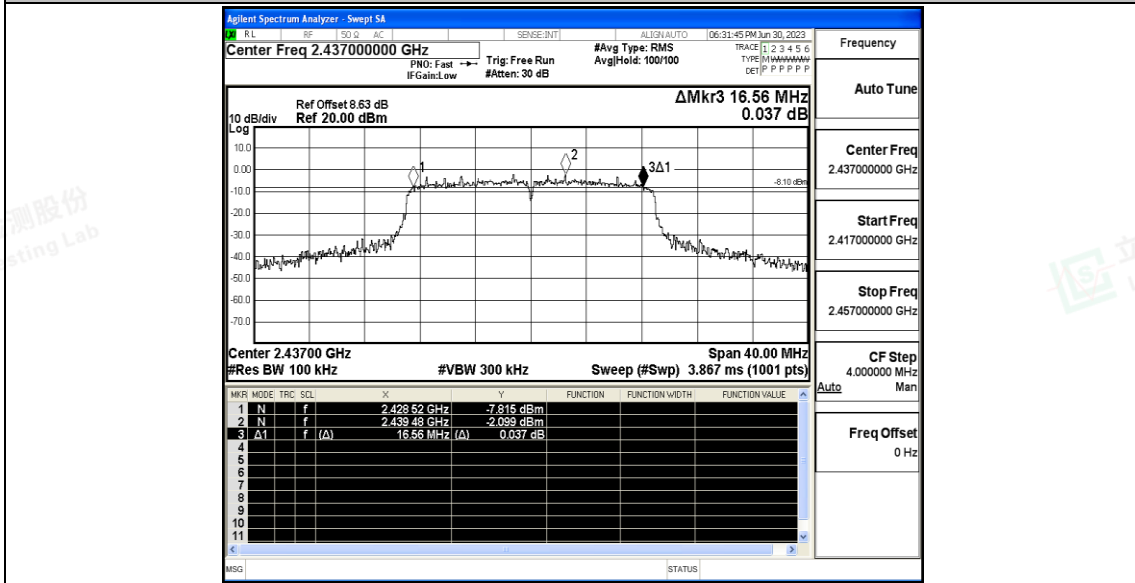


11N20SISO_Ant1_2412



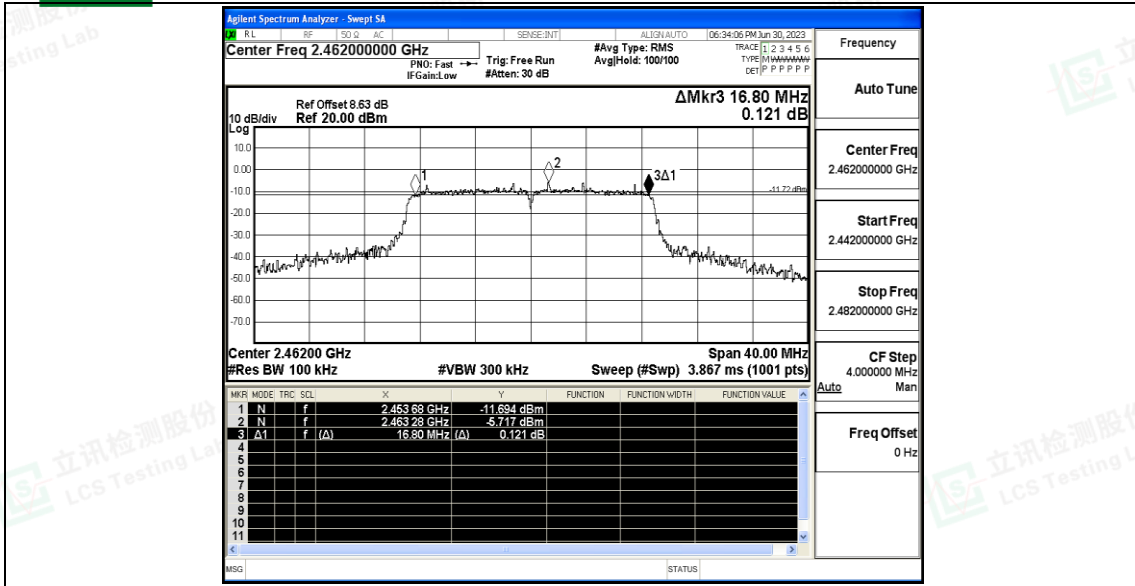


11N20SISO_Ant1_2437



11N20SISO_Ant1_2462





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A.2 Maximum conducted output power

Test Result Peak

TestMode	Antenna	Frequency[MHz]	Peak Power[dBm]	Conducted Limit[dBm]	Verdict
11B	Ant1	2412	14.36	≤30.00	PASS
		2437	14.44	≤30.00	PASS
		2462	13.04	≤30.00	PASS
11G	Ant1	2412	14.56	≤30.00	PASS
		2437	14.27	≤30.00	PASS
		2462	13.09	≤30.00	PASS
11N20SISO	Ant1	2412	14.42	≤30.00	PASS
		2437	14.66	≤30.00	PASS
		2462	13.64	≤30.00	PASS





A.3 Maximum power spectral density

Test Result

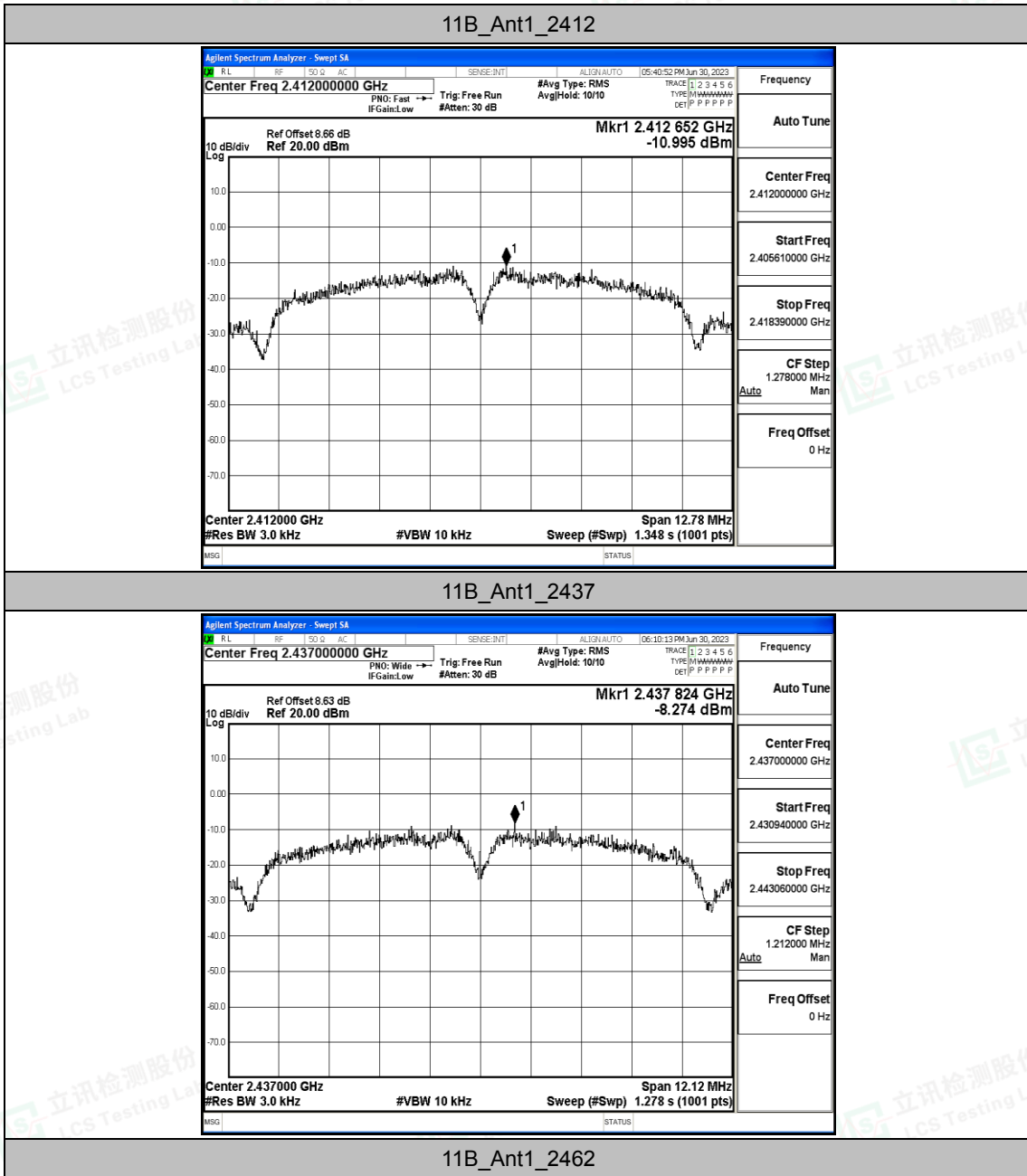
TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-11	≤8.00	PASS
		2437	-8.27	≤8.00	PASS
		2462	-9.04	≤8.00	PASS
11G	Ant1	2412	-17.37	≤8.00	PASS
		2437	-18.17	≤8.00	PASS
		2462	-18.48	≤8.00	PASS
11N20SISO	Ant1	2412	-17.22	≤8.00	PASS
		2437	-16.32	≤8.00	PASS
		2462	-18.15	≤8.00	PASS

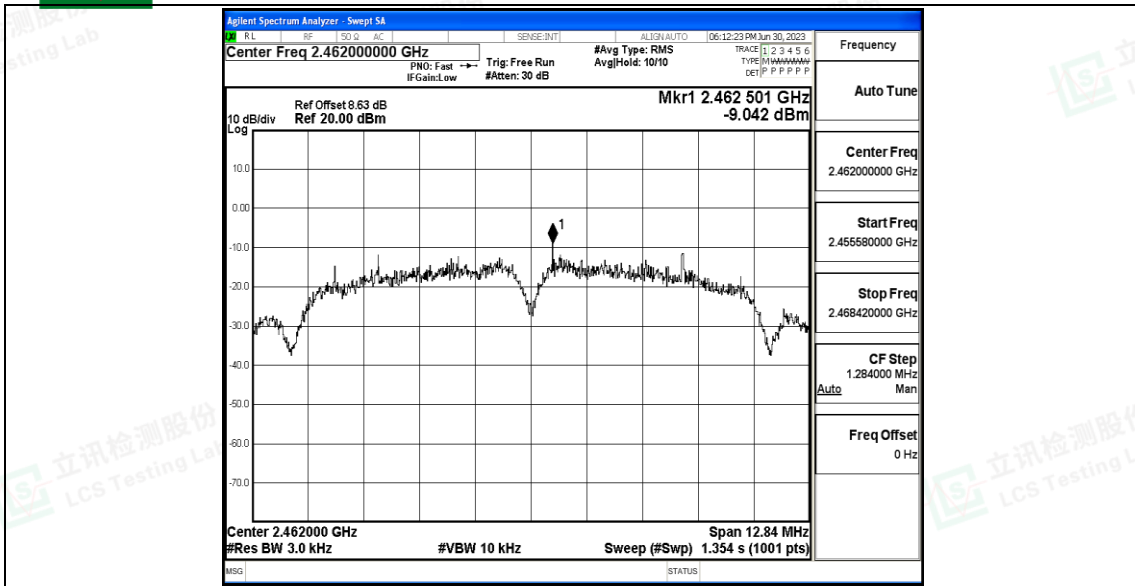


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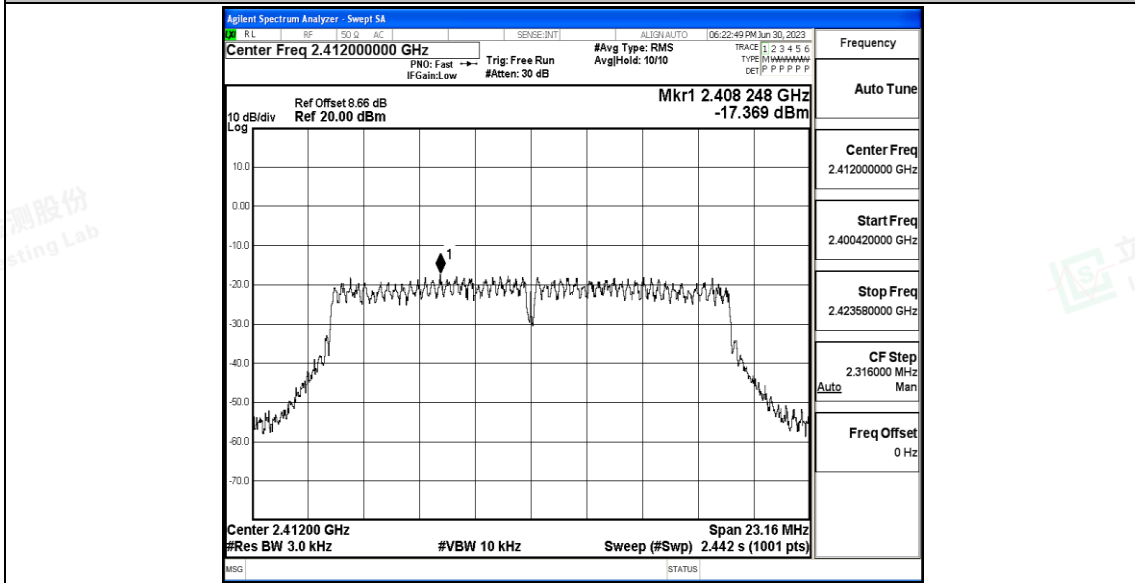


Test Graphs



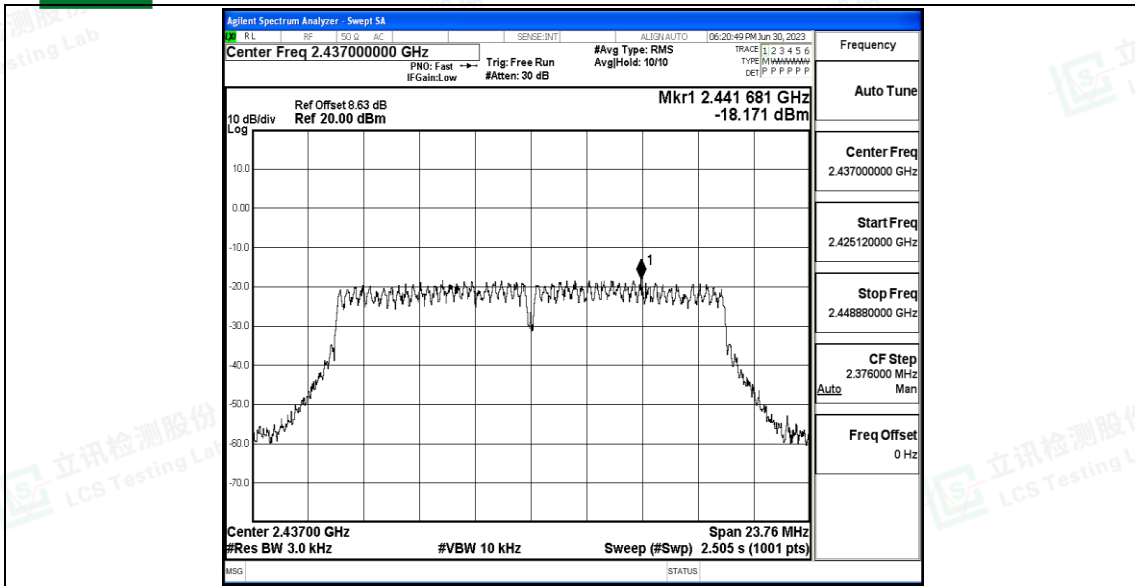


11G_Ant1_2412

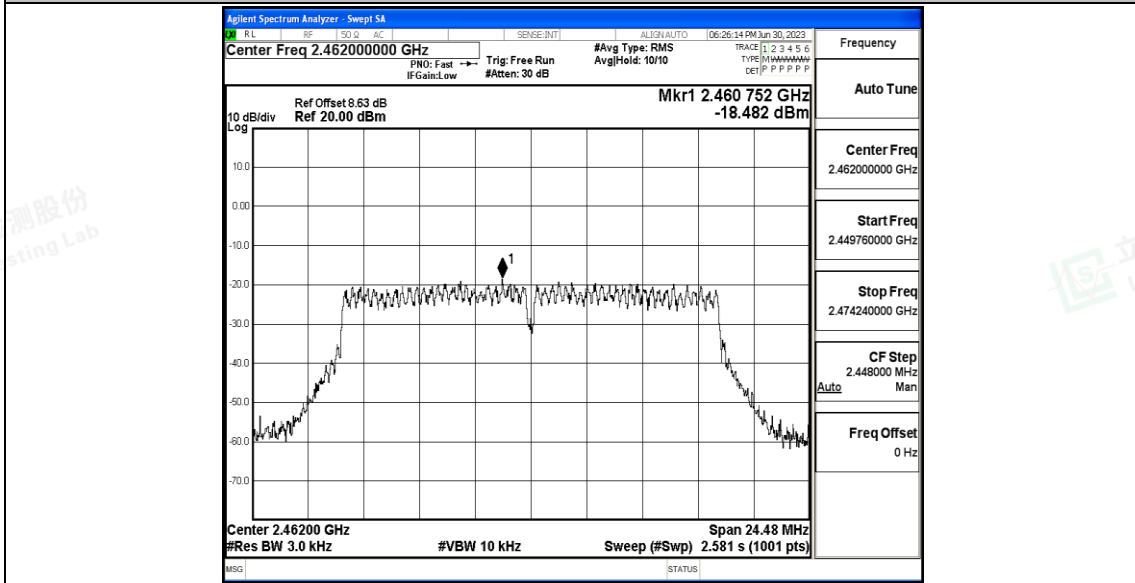


11G_Ant1_2437



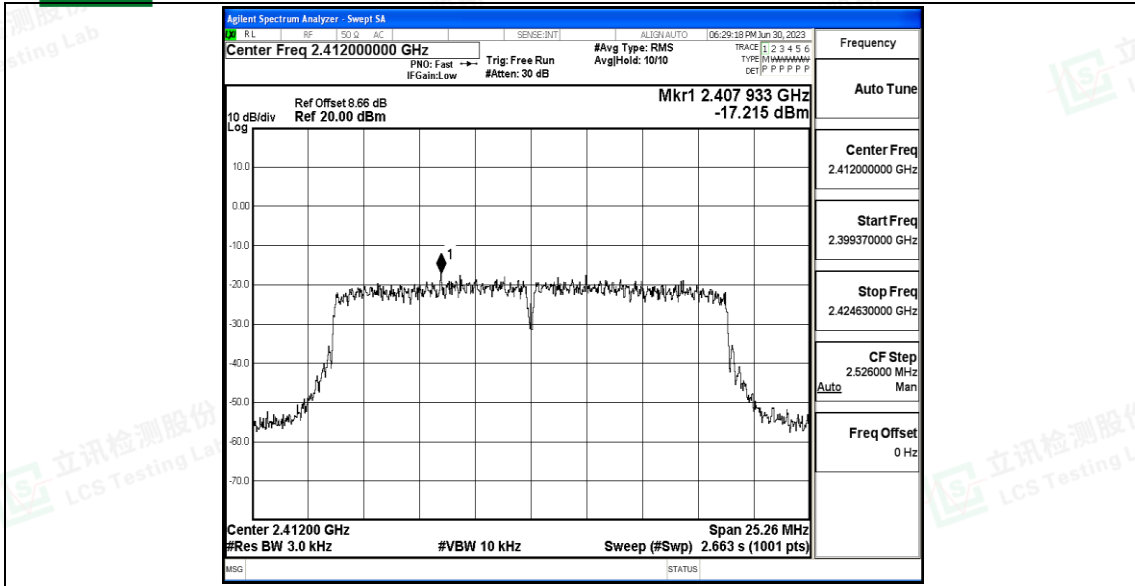


11G_Ant1_2462

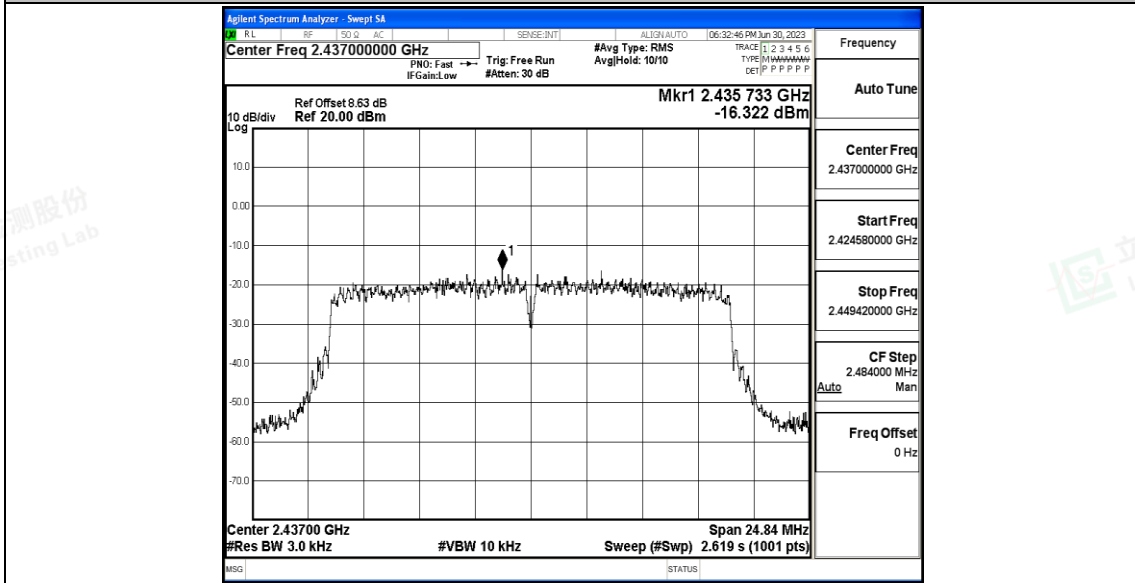


11N20SISO_Ant1_2412



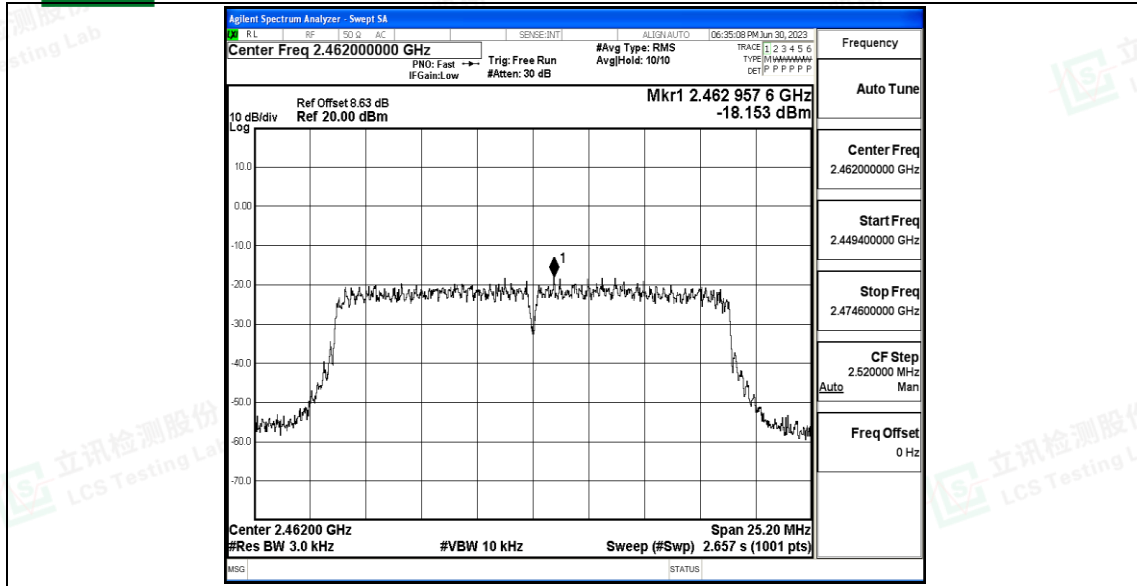


11N20SISO_Ant1_2437



11N20SISO_Ant1_2462





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A.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	2.91	-44.47	≤-17.09	PASS
		High	2462	1.64	-48.85	≤-18.36	PASS
11G	Ant1	Low	2412	-1.91	-34.93	≤-21.91	PASS
		High	2462	-4.49	-48.71	≤-24.49	PASS
11N20SISO	Ant1	Low	2412	-3.36	-34.93	≤-23.36	PASS
		High	2462	-4.70	-48.36	≤-24.7	PASS



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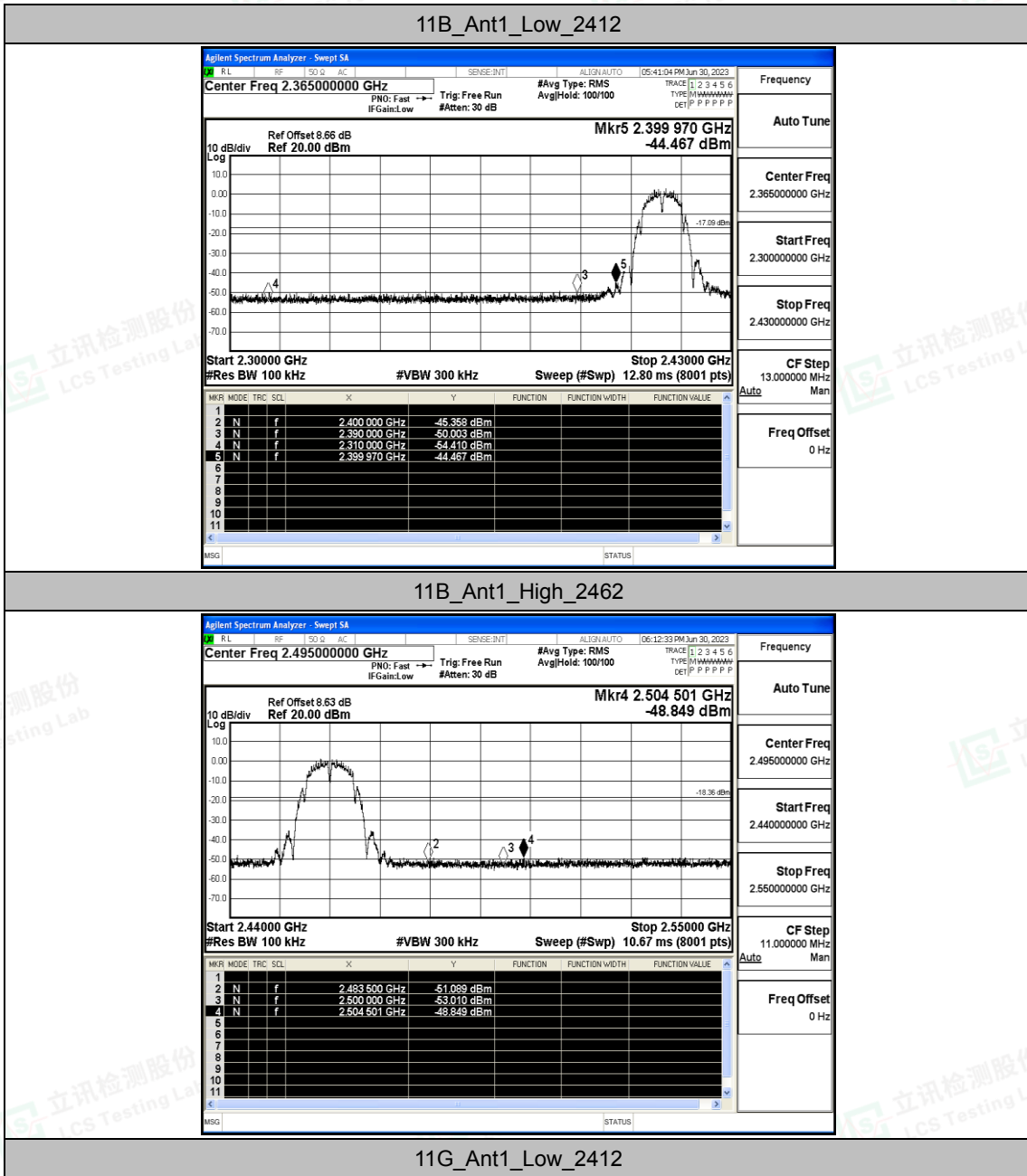
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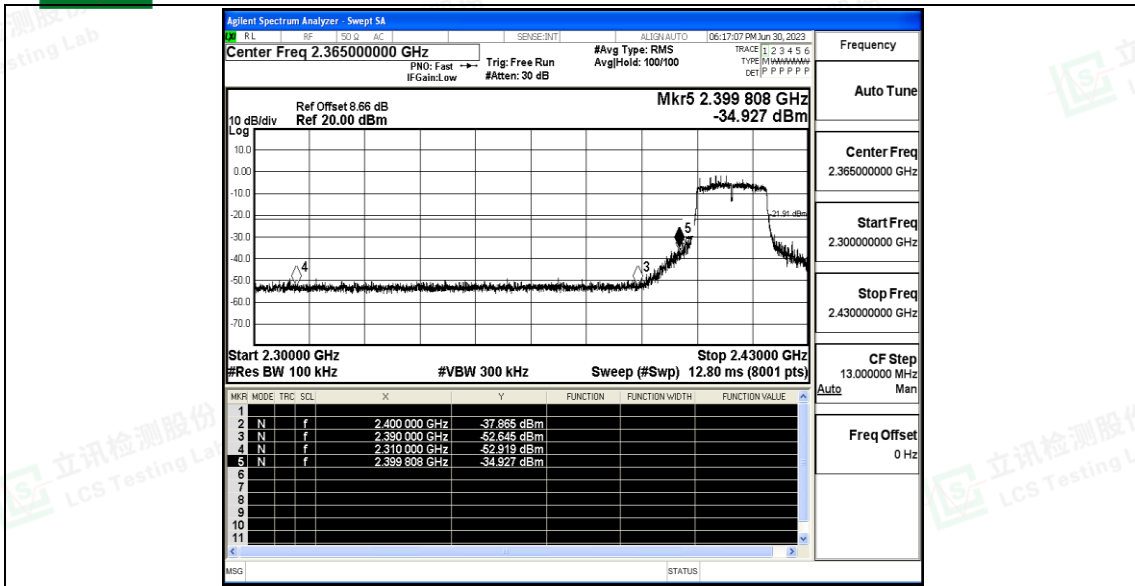
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

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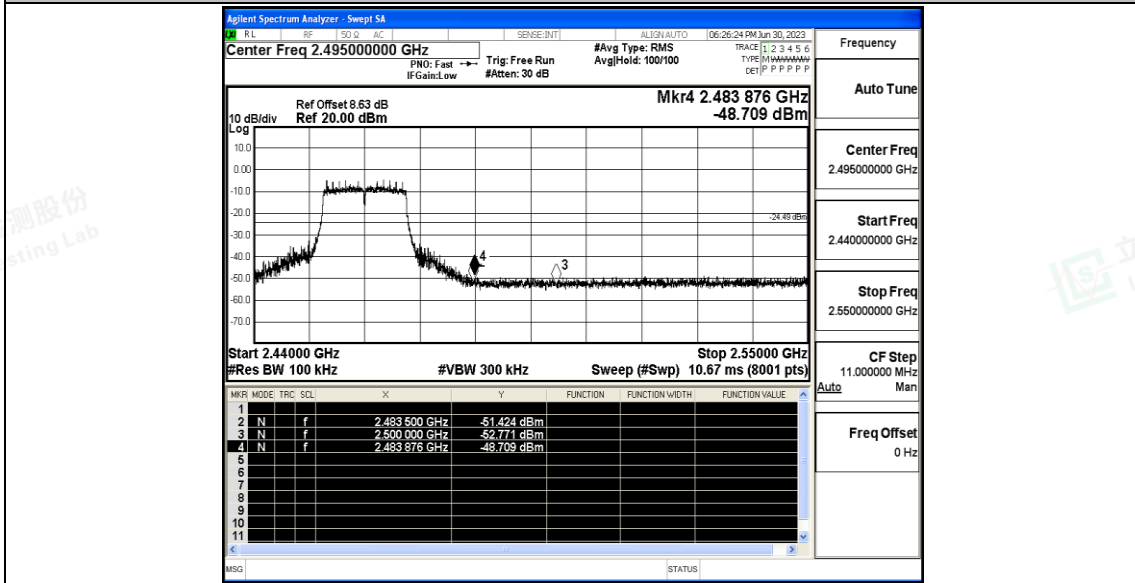


Test Graphs



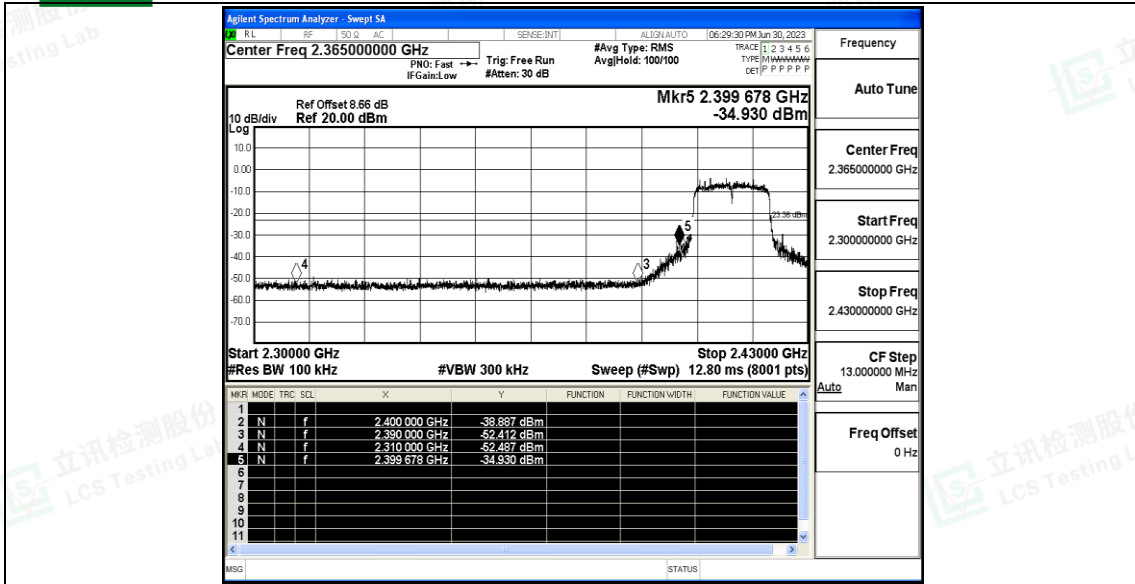


11G_Ant1_High_2462

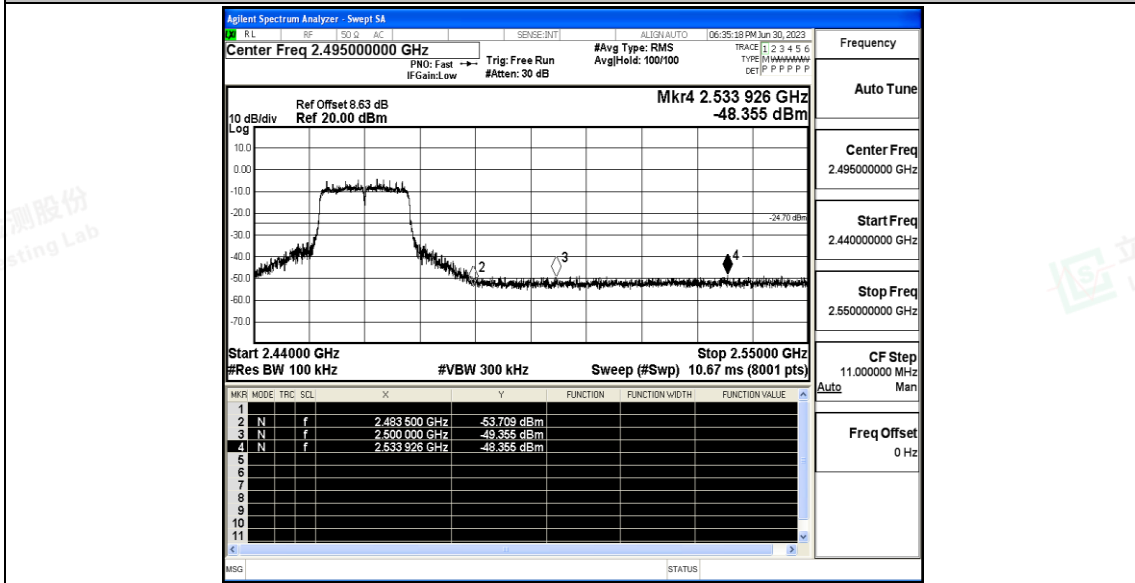


11N20SISO_Ant1_Low_2412





11N20SISO_Ant1_High_2462





A.5 Conducted Spurious Emission

Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	30~1000	2.91	-60.38	≤-17.09	PASS
			1000~26500	2.91	-46.93	≤-17.09	PASS
		2437	30~1000	4.82	-60.42	≤-15.18	PASS
			1000~26500	4.82	-46.38	≤-15.18	PASS
		2462	30~1000	1.64	-61.51	≤-18.36	PASS
			1000~26500	1.64	-46.38	≤-18.36	PASS
11G	Ant1	2412	30~1000	-1.91	-61.04	≤-21.91	PASS
			1000~26500	-1.91	-46.69	≤-21.91	PASS
		2437	30~1000	-3.02	-60.94	≤-23.02	PASS
			1000~26500	-3.02	-46.22	≤-23.02	PASS
		2462	30~1000	-4.49	-60.62	≤-24.49	PASS
			1000~26500	-4.49	-46.38	≤-24.49	PASS
11N20SISO	Ant1	2412	30~1000	-3.36	-60.19	≤-23.36	PASS
			1000~26500	-3.36	-46.9	≤-23.36	PASS
		2437	30~1000	-2.93	-60.89	≤-22.93	PASS
			1000~26500	-2.93	-46.86	≤-22.93	PASS
		2462	30~1000	-4.70	-60.48	≤-24.7	PASS
			1000~26500	-4.70	-46.54	≤-24.7	PASS



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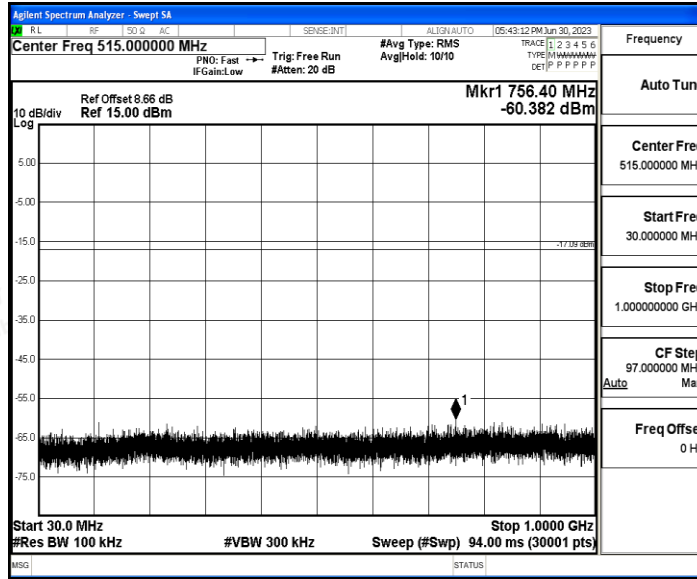
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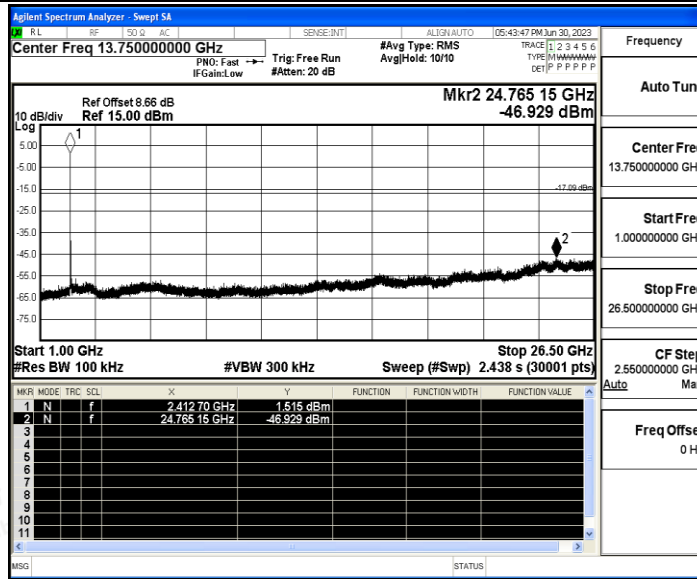


Test Graphs

11B_Ant1_2412_30~1000

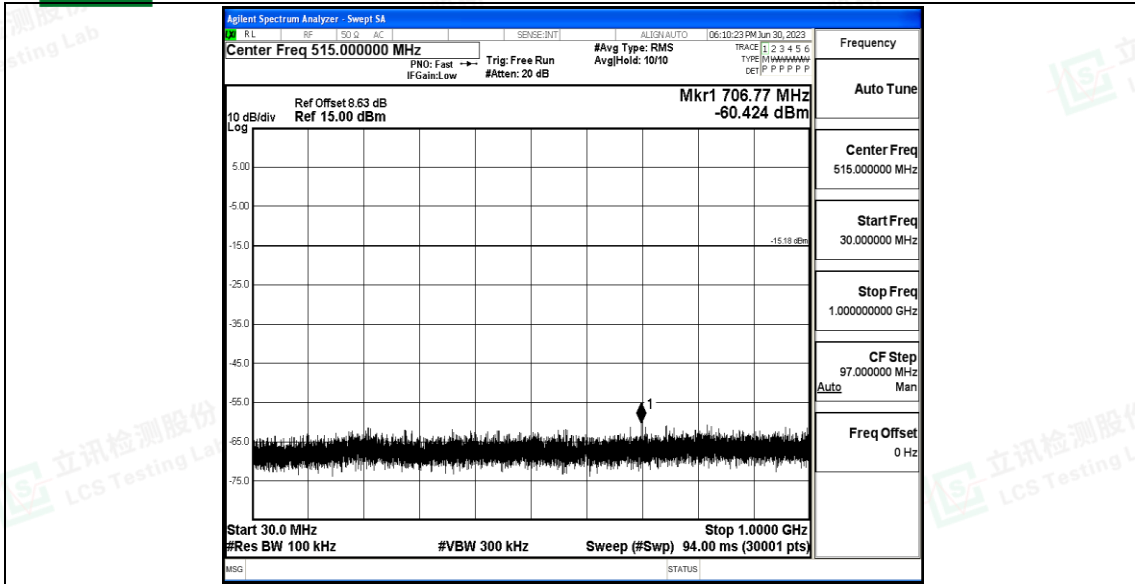


11B_Ant1_2412_1000~26500

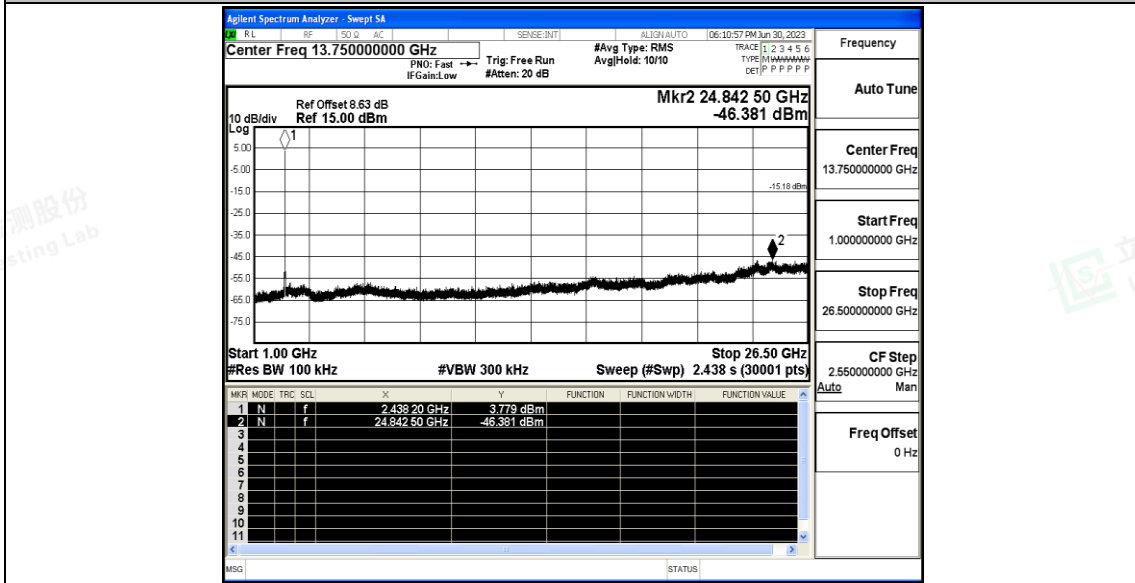


11B_Ant1_2437_30~1000



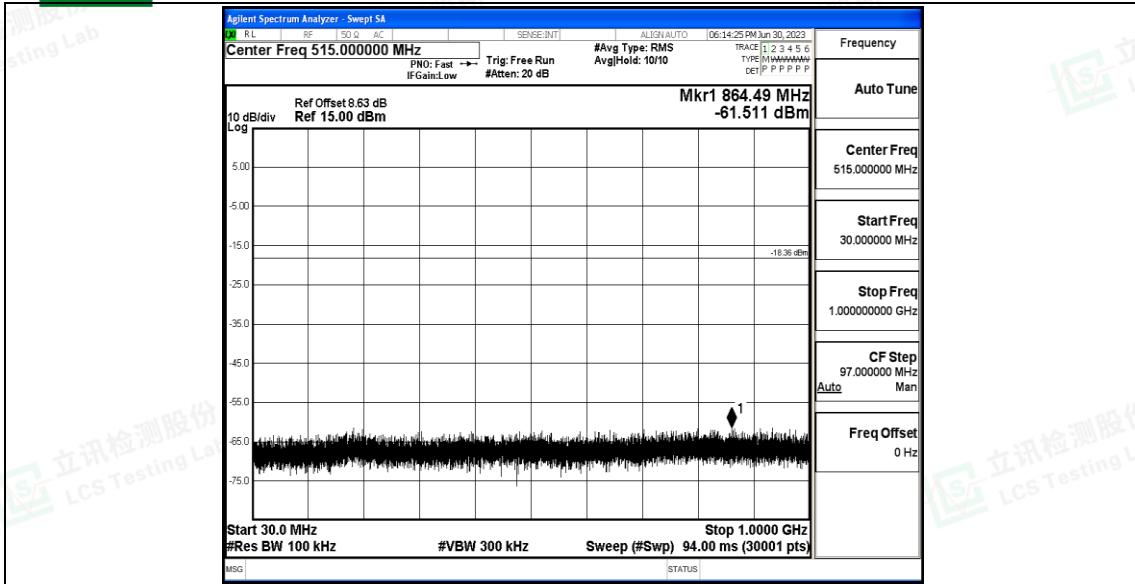


11B_Ant1_2437_1000~26500

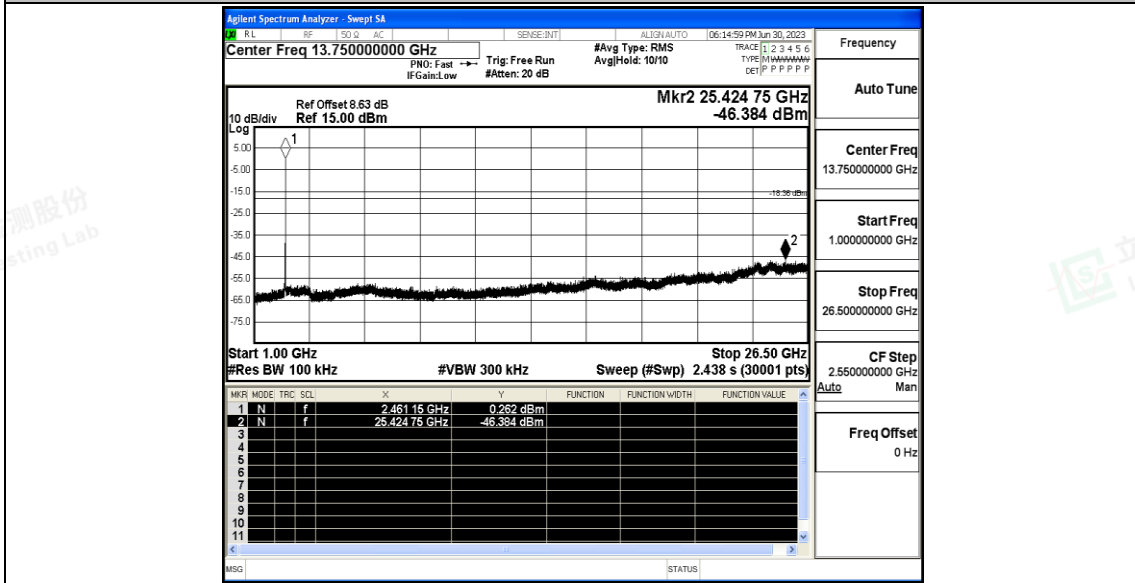


11B_Ant1_2462_30~1000



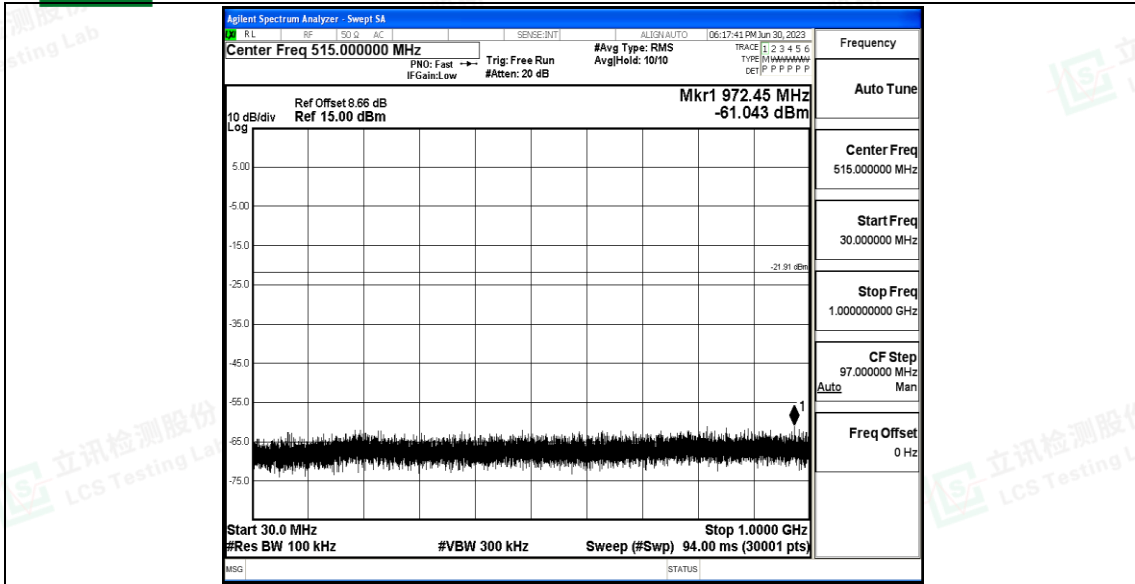


11B_Ant1_2462_1000~26500

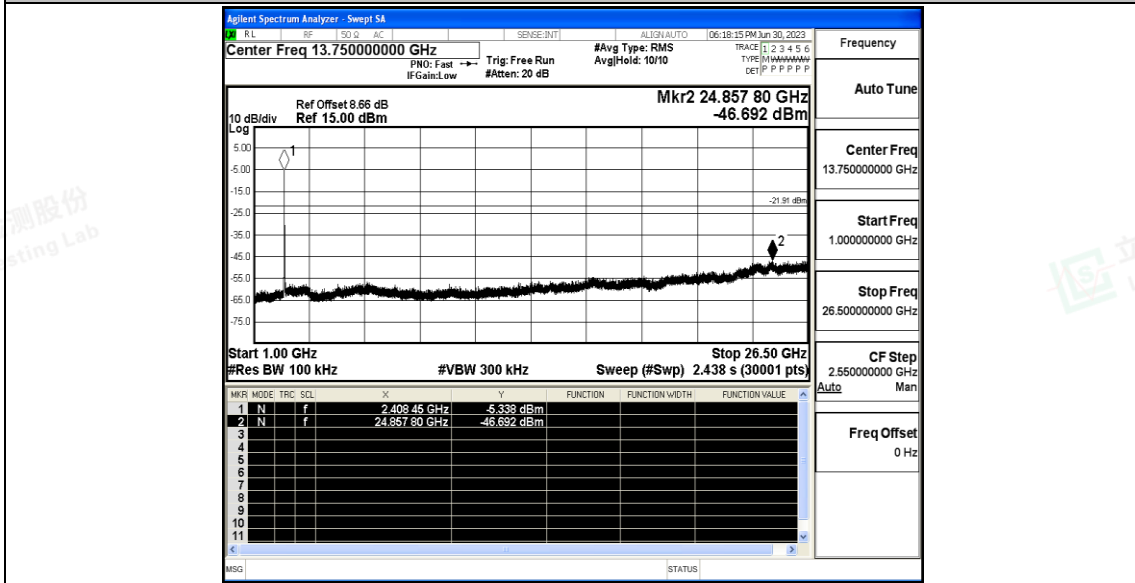


11G_Ant1_2412_30~1000





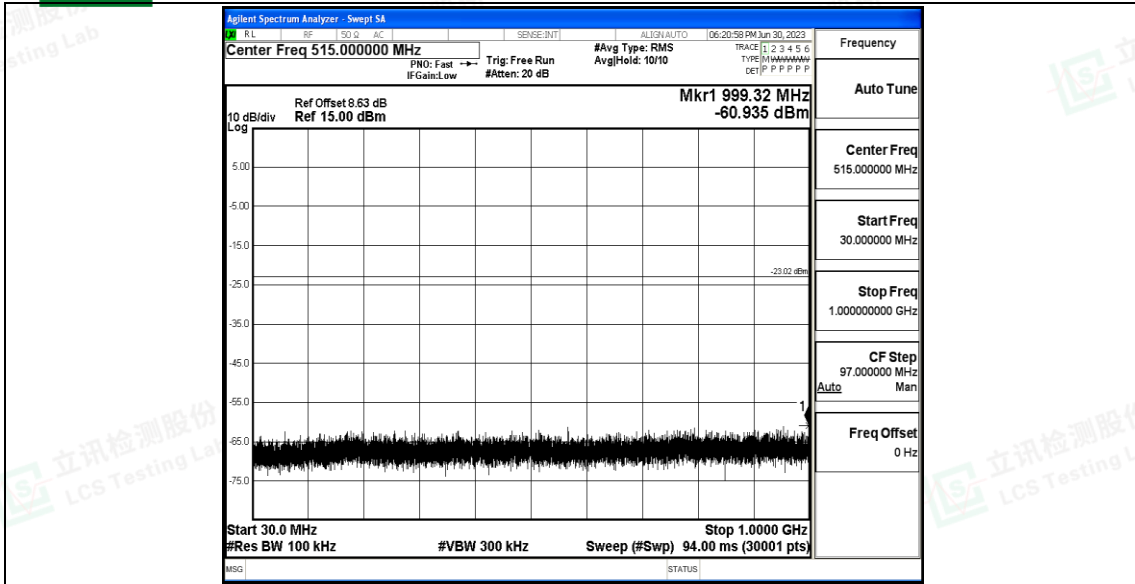
11G_Ant1_2412_1000~26500



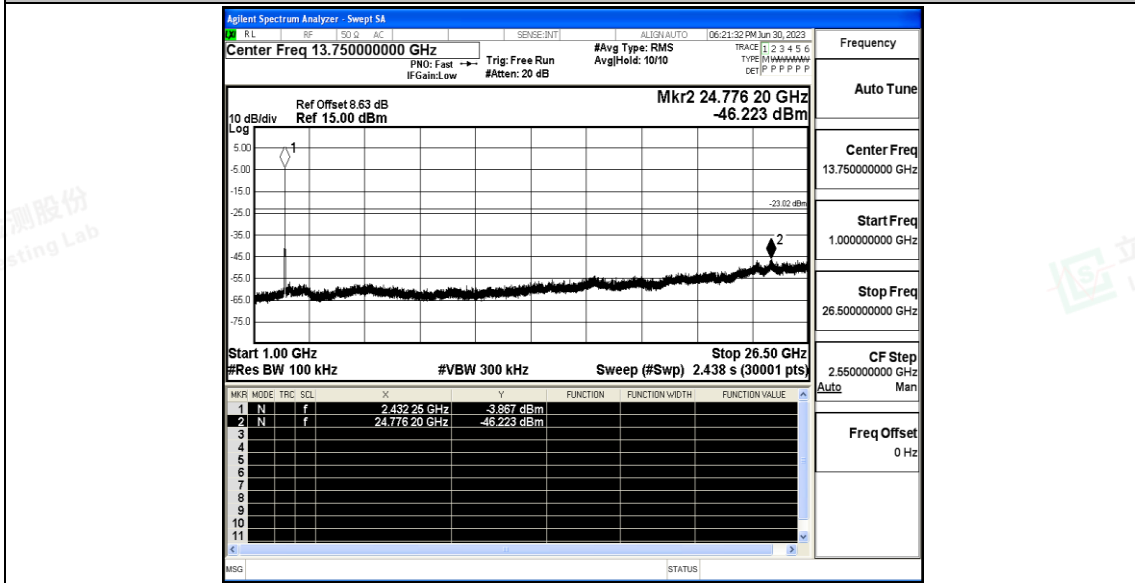
11G_Ant1_2437_30~1000



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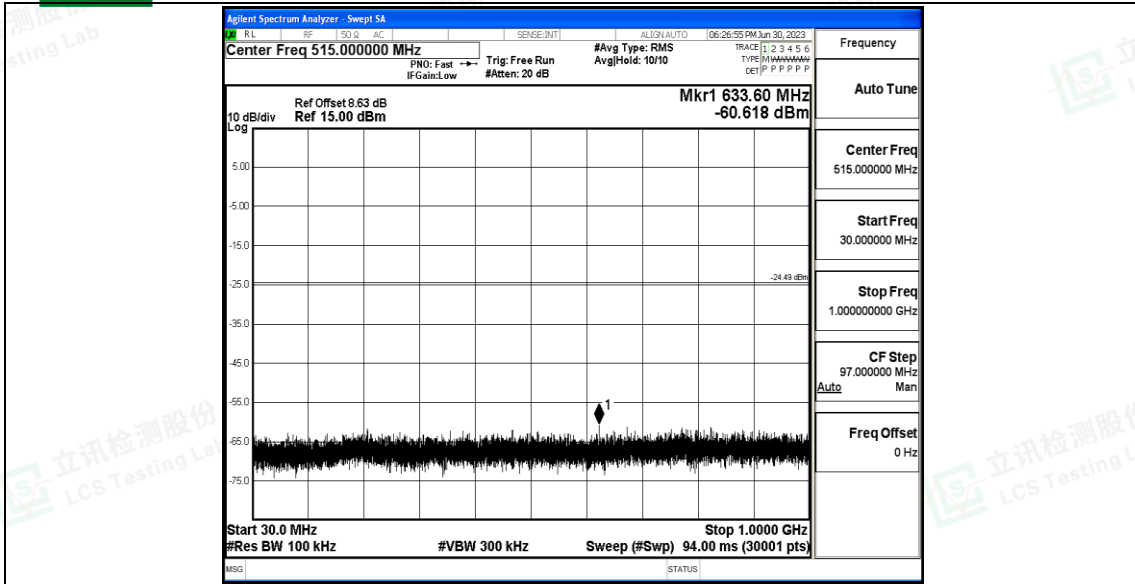
11G_Ant1_2437_1000~26500



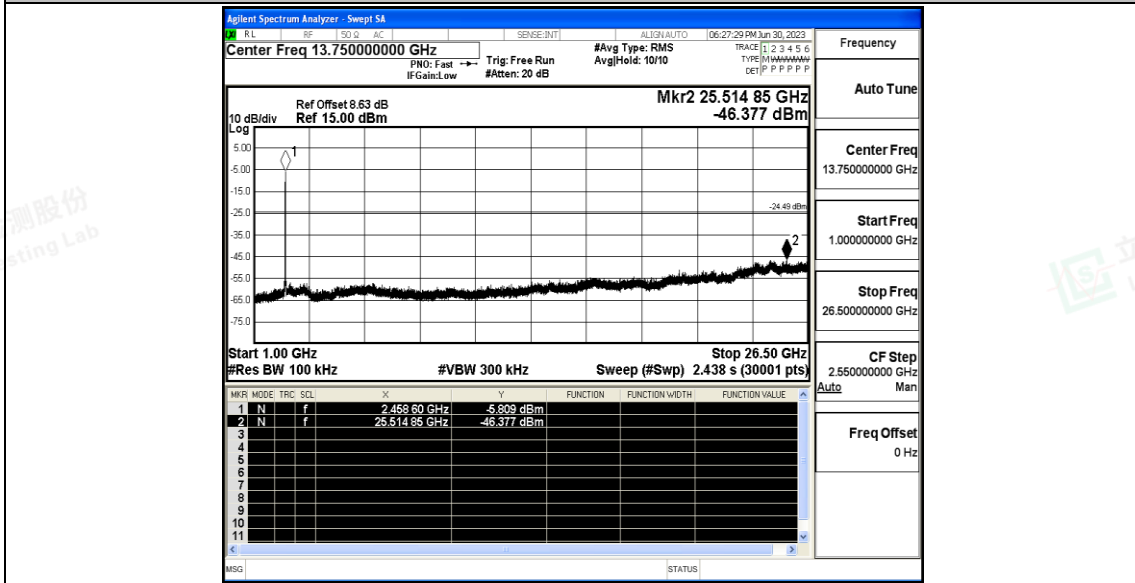
11G_Ant1_2462_30~1000



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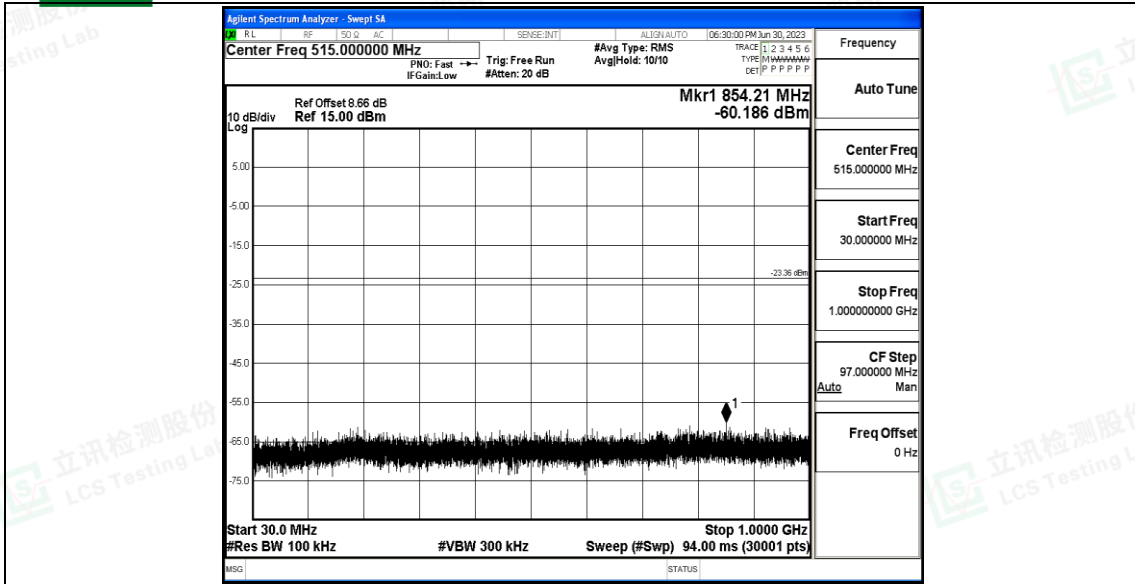


11G_Ant1_2462_1000~26500

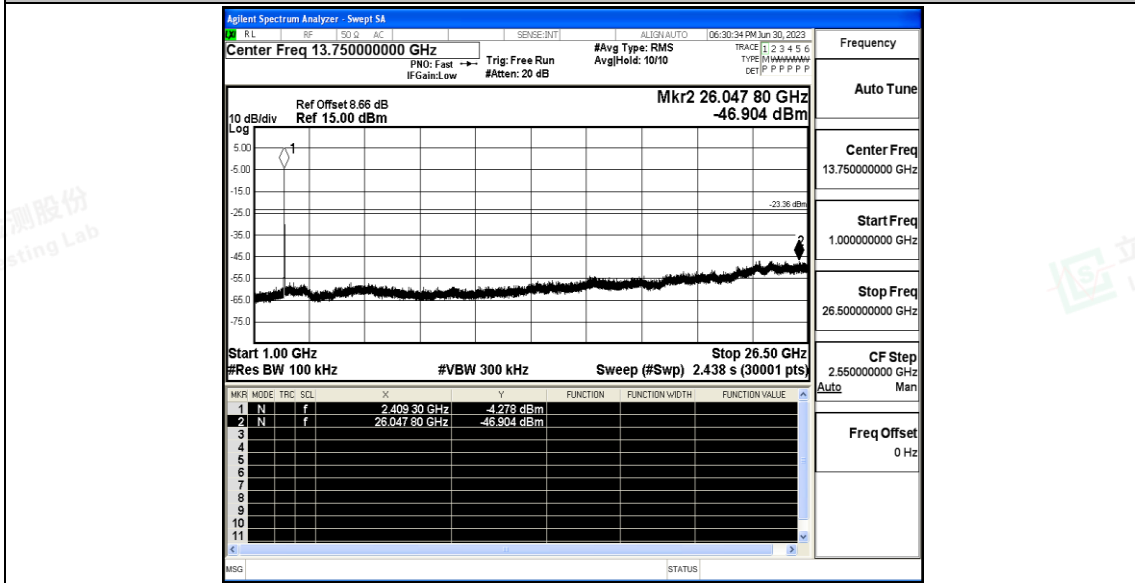


11N20SISO_Ant1_2412_30~1000



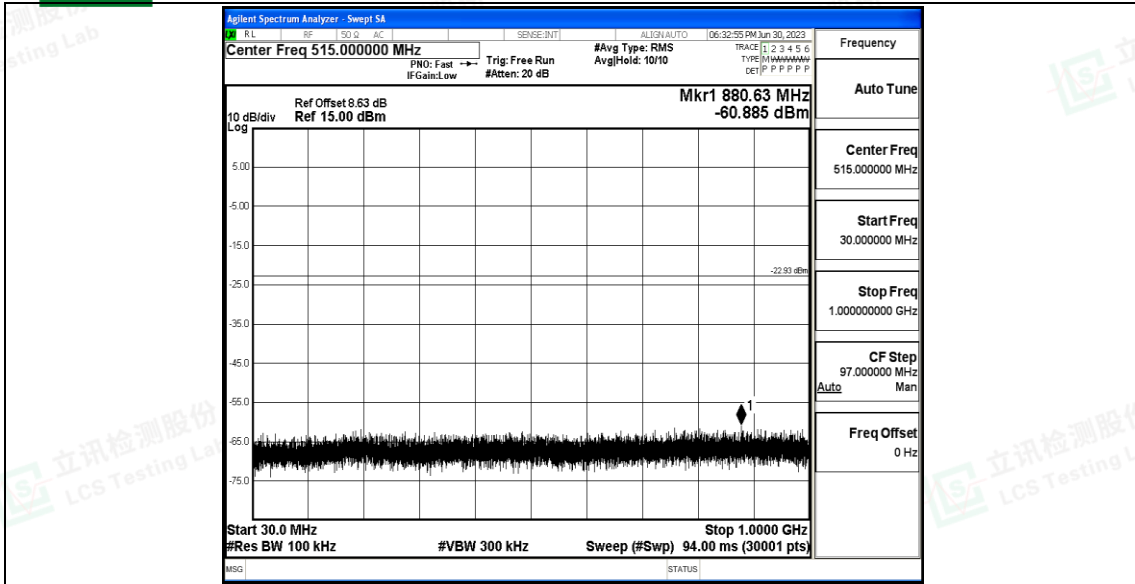


11N20SISO_Ant1_2412_1000~26500

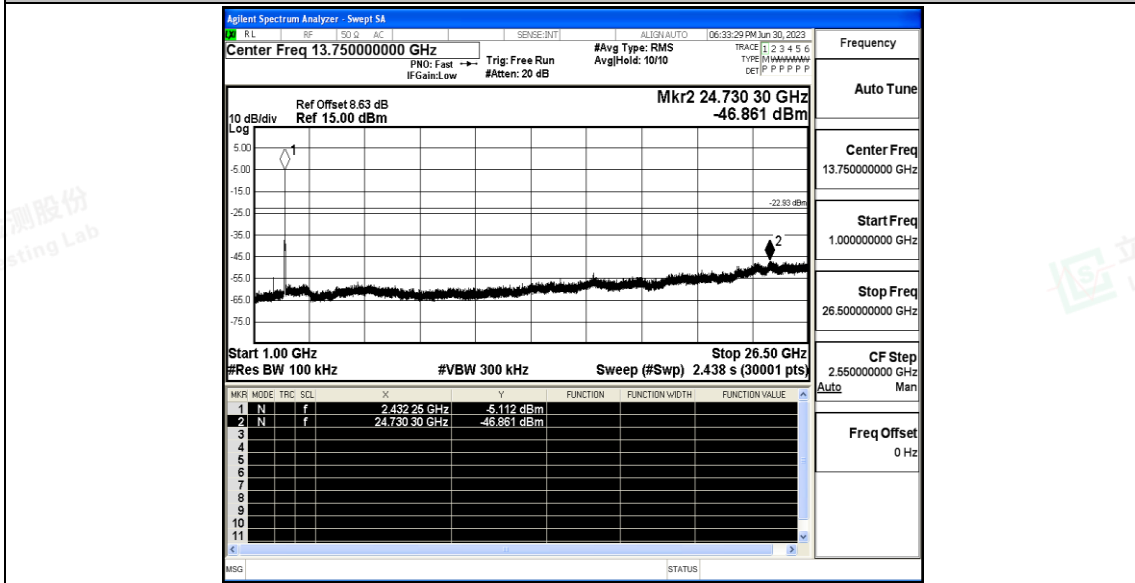


11N20SISO_Ant1_2437_30~1000



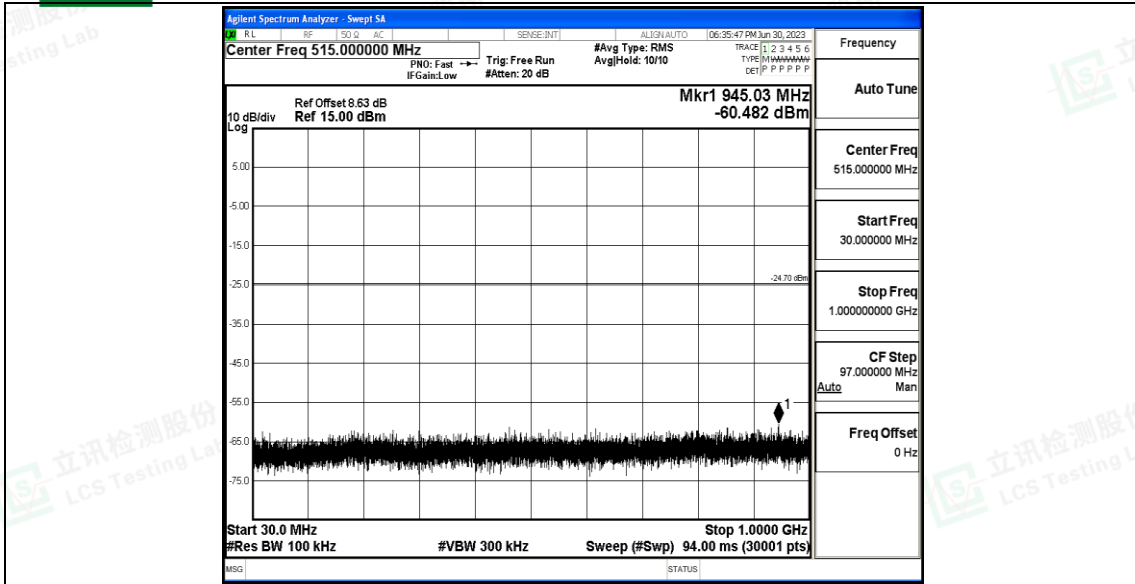


11N20SISO_Ant1_2437_1000~26500

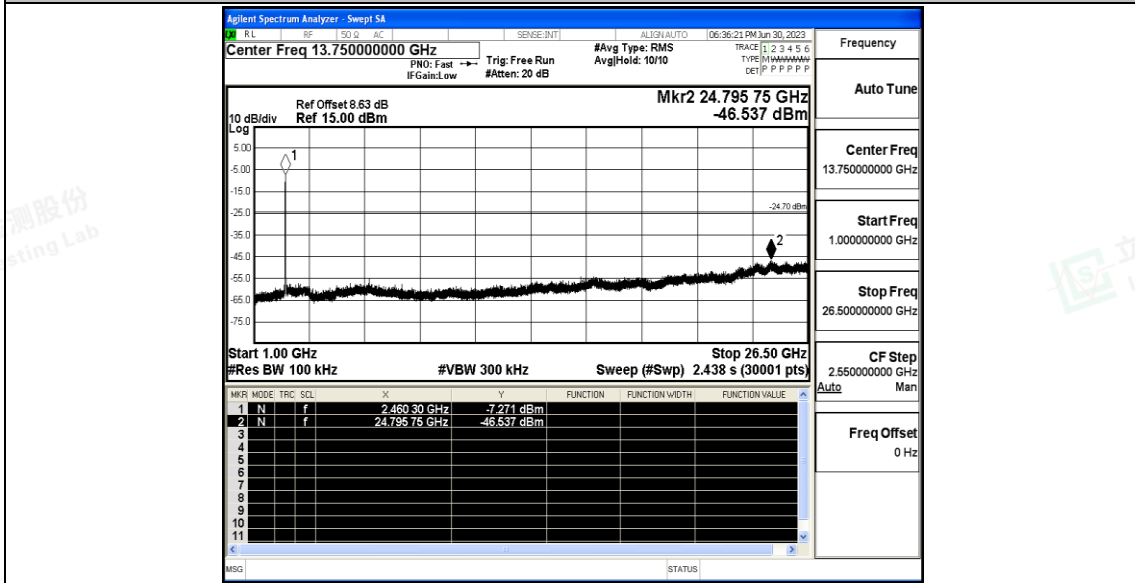


11N20SISO_Ant1_2462_30~1000





11N20SISO_Ant1_2462_1000~26500



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A.6 Duty Cycle

Test Result

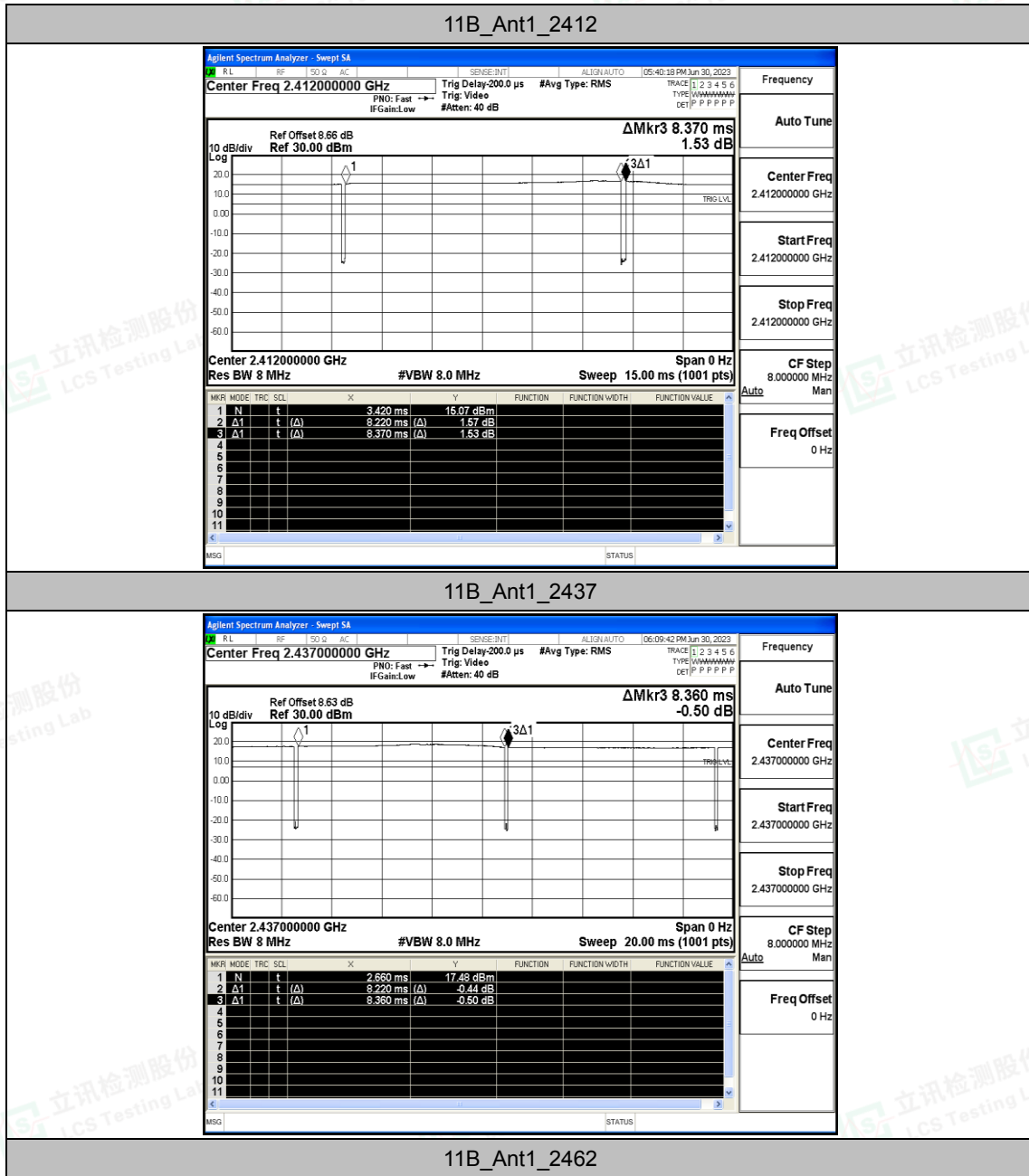
TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11B	Ant1	2412	8.22	8.37	98.21
		2437	8.22	8.36	98.33
		2462	8.22	8.36	98.33
11G	Ant1	2412	1.36	1.50	90.67
		2437	1.36	1.51	90.07
		2462	1.36	1.51	90.07
11N20SISO	Ant1	2412	1.15	1.29	89.15
		2437	1.15	1.29	89.15
		2462	1.15	1.29	89.15

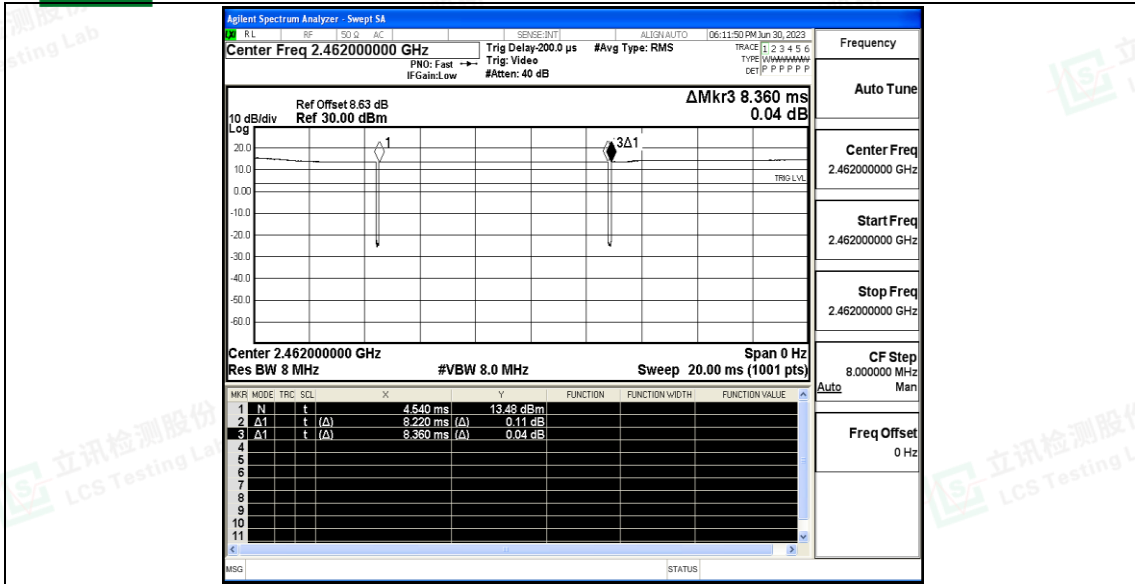


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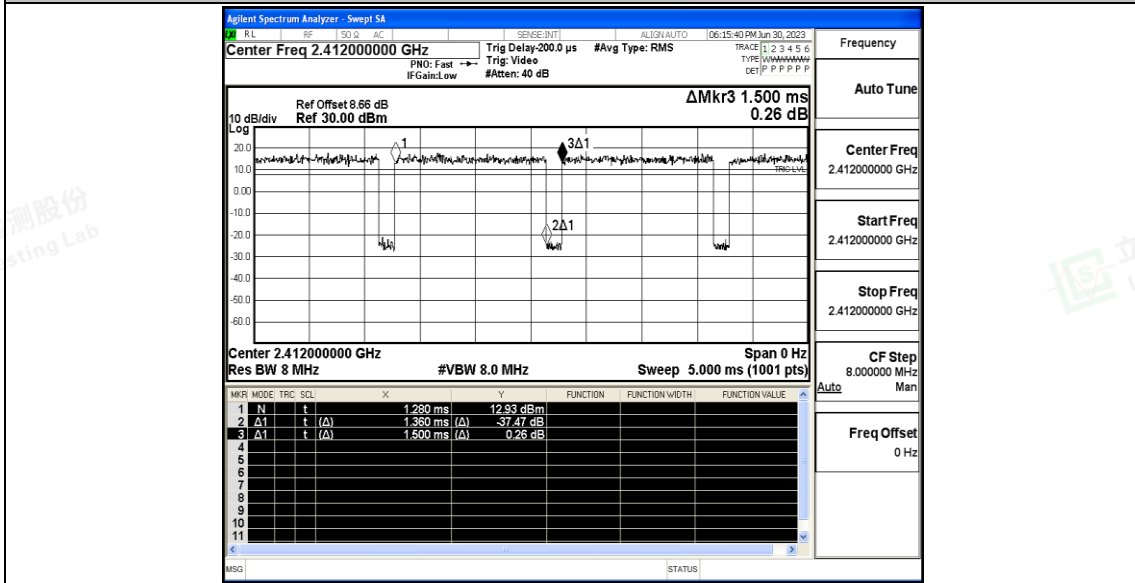


Test Graphs



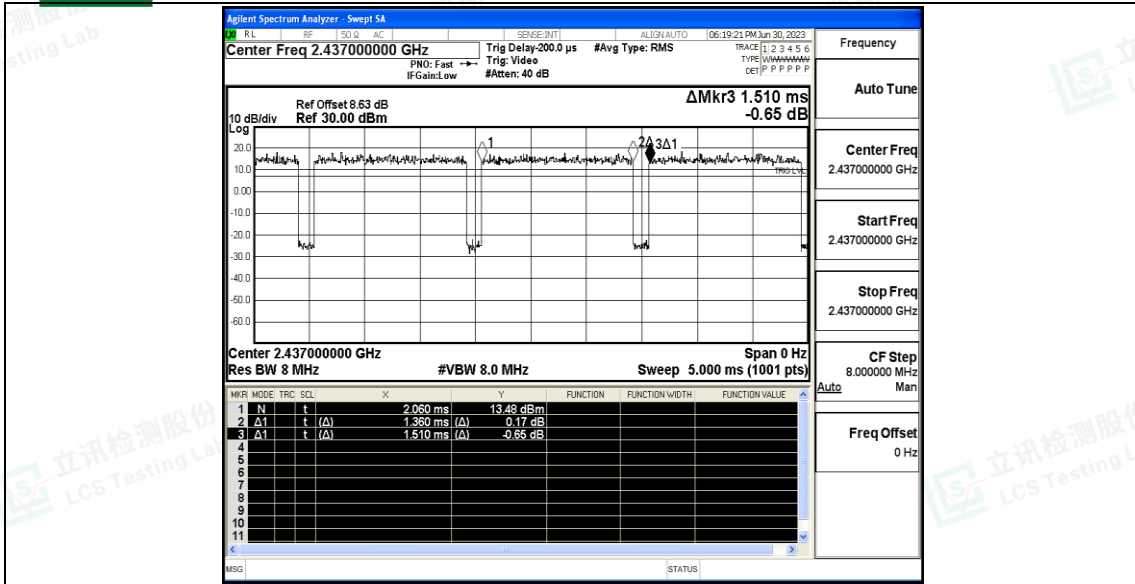


11G_Ant1_2412

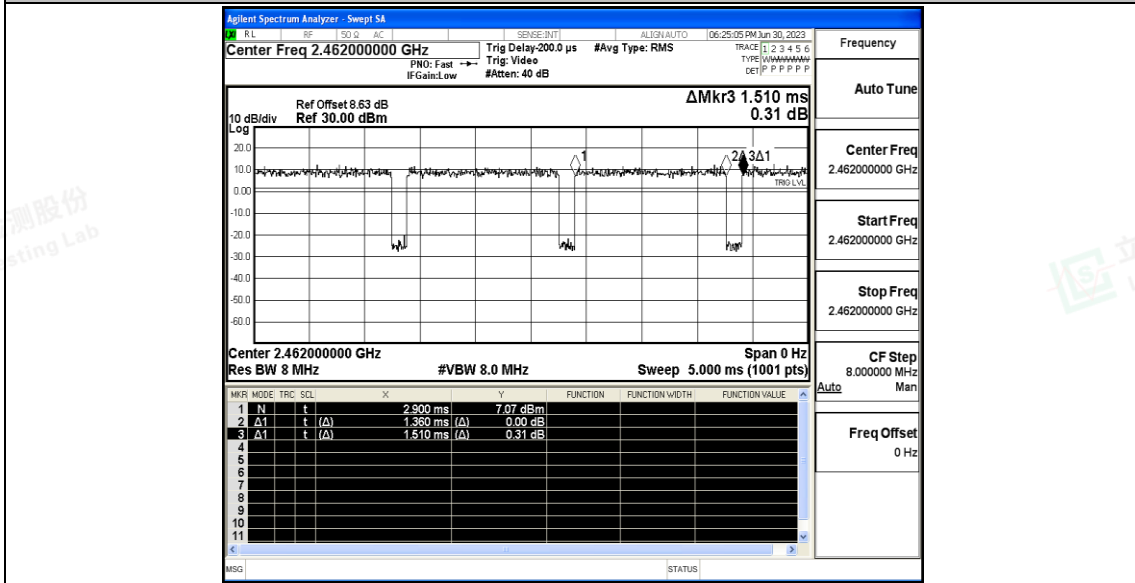


11G_Ant1_2437



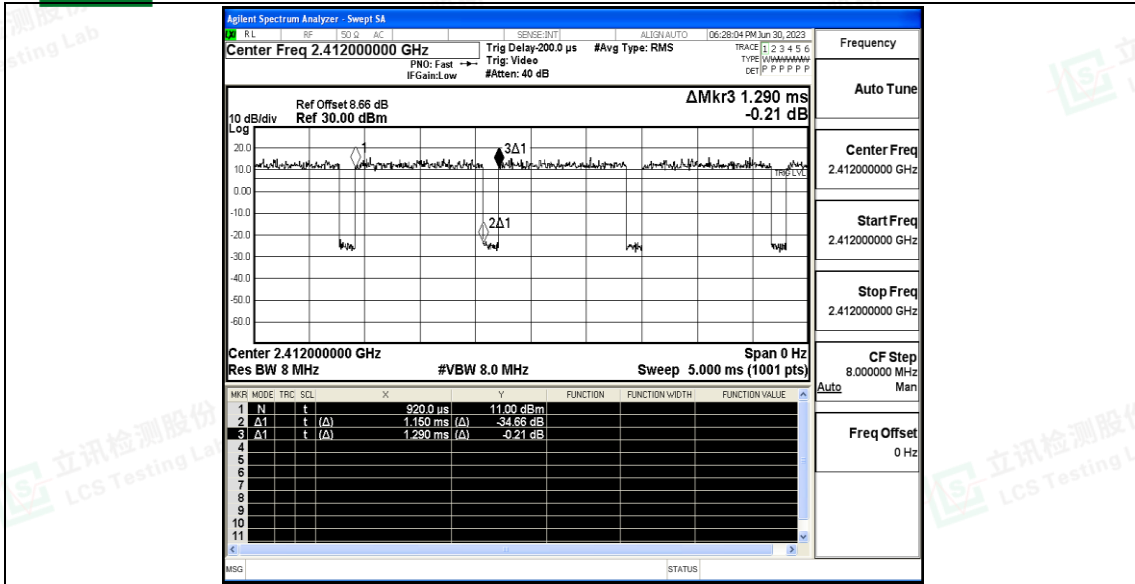


11G_Ant1_2462

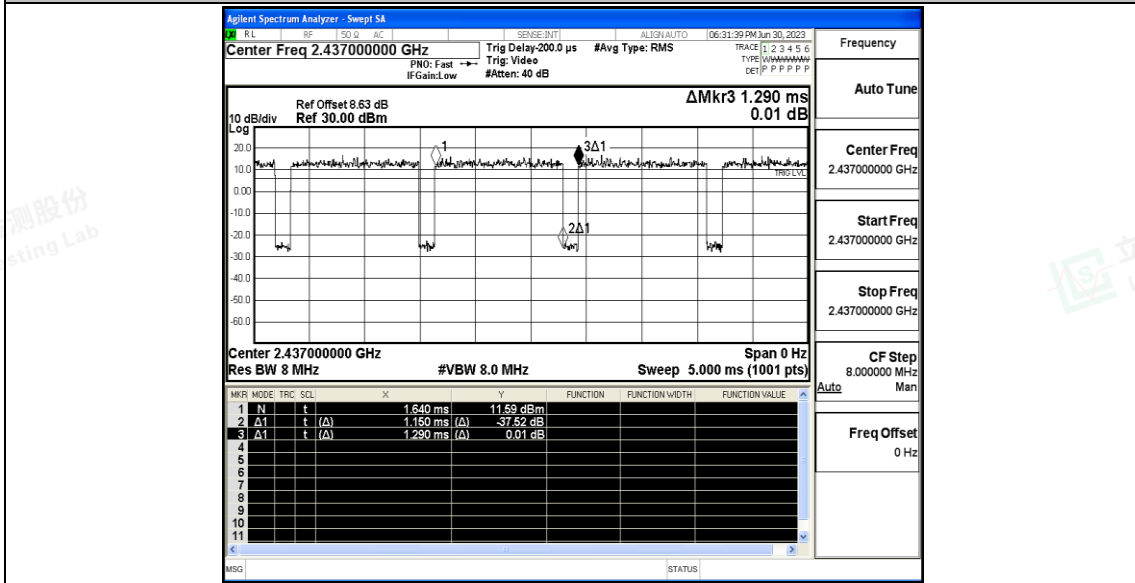


11N20SISO_Ant1_2412



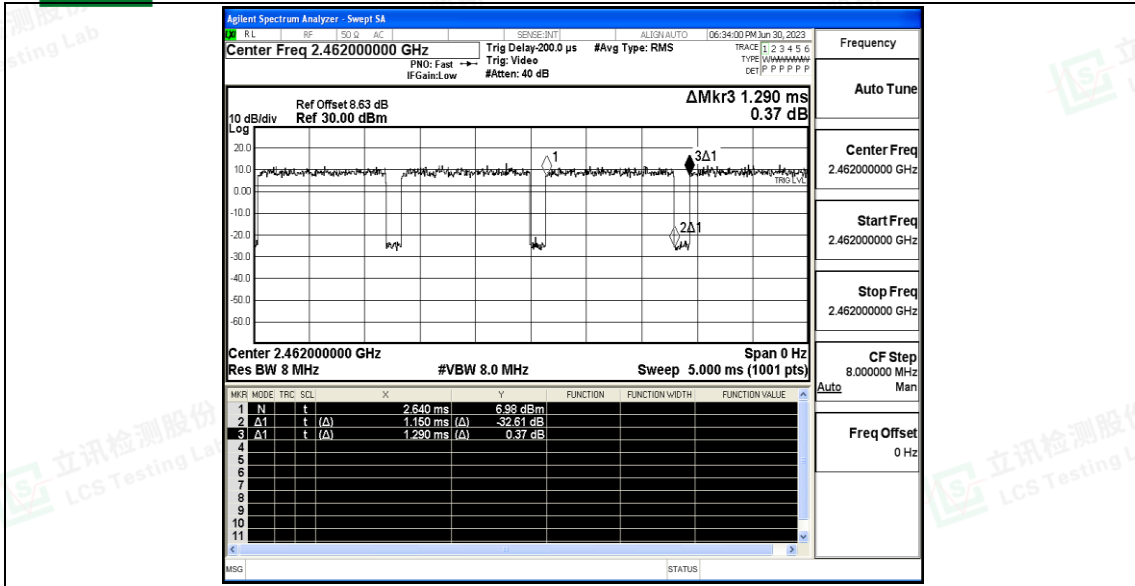


11N20SISO_Ant1_2437



11N20SISO_Ant1_2462





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A.7 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Frequency [MHz]	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
11B	Ant1	Low	2412	AV	2310.000	-48.59	≤-41.20	46.61	≤54	PASS
				AV	2388.920	-48.03	≤-41.20	47.17	≤54	PASS
				AV	2390.000	-48.03	≤-41.20	47.17	≤54	PASS
				Peak	2310.000	-41.75	≤-21.20	53.45	≤74	PASS
				Peak	2383.980	-38.6	≤-21.20	56.60	≤74	PASS
				Peak	2390.000	-42.28	≤-21.20	52.92	≤74	PASS
		High	2462	AV	2483.500	-47.73	≤-41.20	47.47	≤54	PASS
				AV	2499.180	-47.63	≤-41.20	47.57	≤54	PASS
				AV	2500.000	-47.64	≤-41.20	47.56	≤54	PASS
				Peak	2483.500	-41.57	≤-21.20	53.63	≤74	PASS
				Peak	2491.370	-38.5	≤-21.20	56.70	≤74	PASS
				Peak	2500.000	-41.81	≤-21.20	53.39	≤74	PASS
11G	Ant1	Low	2412	AV	2310.000	-47.95	≤-41.20	47.25	≤54	PASS
				AV	2389.960	-47.04	≤-41.20	48.16	≤54	PASS
				AV	2390.000	-47.04	≤-41.20	48.16	≤54	PASS
				Peak	2310.000	-43.86	≤-21.20	51.34	≤74	PASS
				Peak	2363.440	-38.29	≤-21.20	56.91	≤74	PASS
				Peak	2390.000	-41.65	≤-21.20	53.55	≤74	PASS
		High	2462	AV	2483.500	-46.58	≤-41.20	48.62	≤54	PASS
				AV	2483.890	-46.6	≤-41.20	48.60	≤54	PASS
				AV	2500.000	-47.05	≤-41.20	48.15	≤54	PASS
				Peak	2483.500	-36.9	≤-21.20	58.30	≤74	PASS
				Peak	2485.650	-34.91	≤-21.20	60.29	≤74	PASS
				Peak	2500.000	-40.42	≤-21.20	54.78	≤74	PASS
11N20SIS O	Ant1	Low	2412	AV	2310.000	-47.82	≤-41.20	47.38	≤54	PASS
				AV	2389.960	-46.86	≤-41.20	48.34	≤54	PASS
				AV	2390.000	-46.87	≤-41.20	48.33	≤54	PASS
				Peak	2310.000	-43	≤-21.20	52.20	≤74	PASS
				Peak	2368.250	-37.85	≤-21.20	57.35	≤74	PASS
				Peak	2390.000	-39.89	≤-21.20	55.31	≤74	PASS
		High	2462	AV	2483.500	-45.31	≤-41.20	49.89	≤54	PASS
				AV	2483.560	-45.54	≤-41.20	49.66	≤54	PASS
				AV	2500.000	-46.94	≤-41.20	48.26	≤54	PASS
				Peak	2483.500	-36.97	≤-21.20	58.23	≤74	PASS
				Peak	2486.750	-37.23	≤-21.20	57.97	≤74	PASS



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Scan code to check authenticity



			Peak	2500.000	-42.15	≤-21.20	53.05	≤74	PASS
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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.

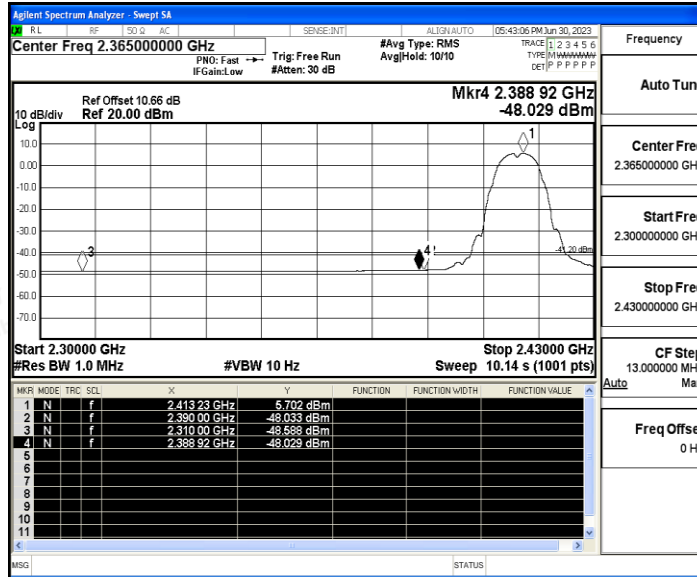


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 Scan code to check authenticity

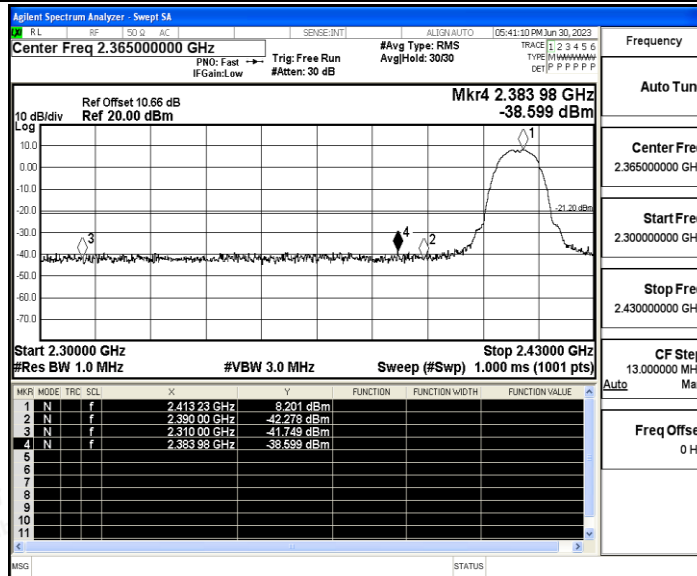


Test Graphs

11B_Ant1_Low_2412_AV

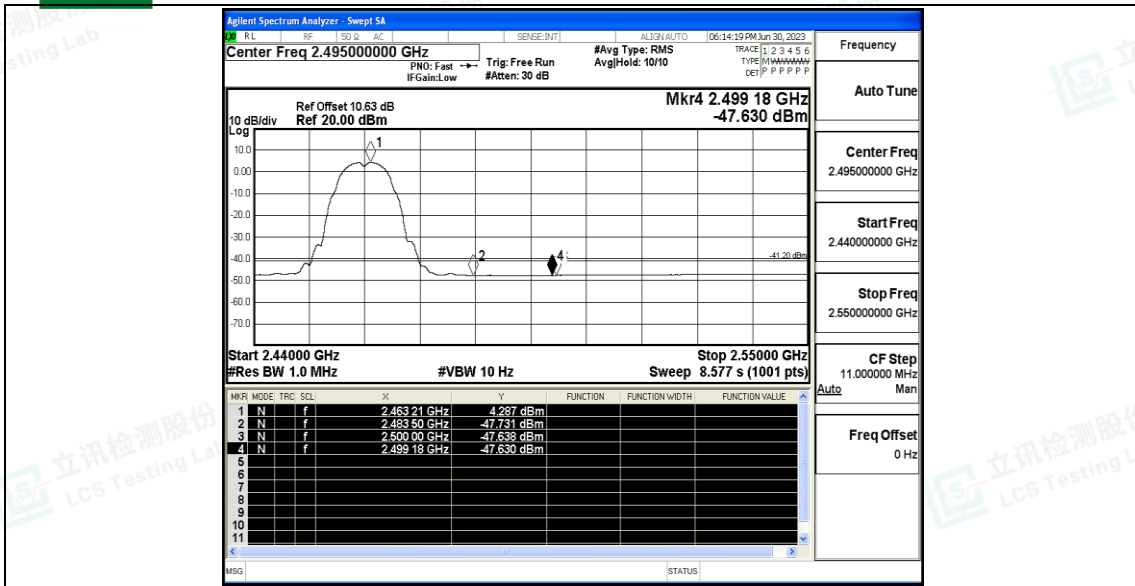


11B_Ant1_Low_2412_Peak

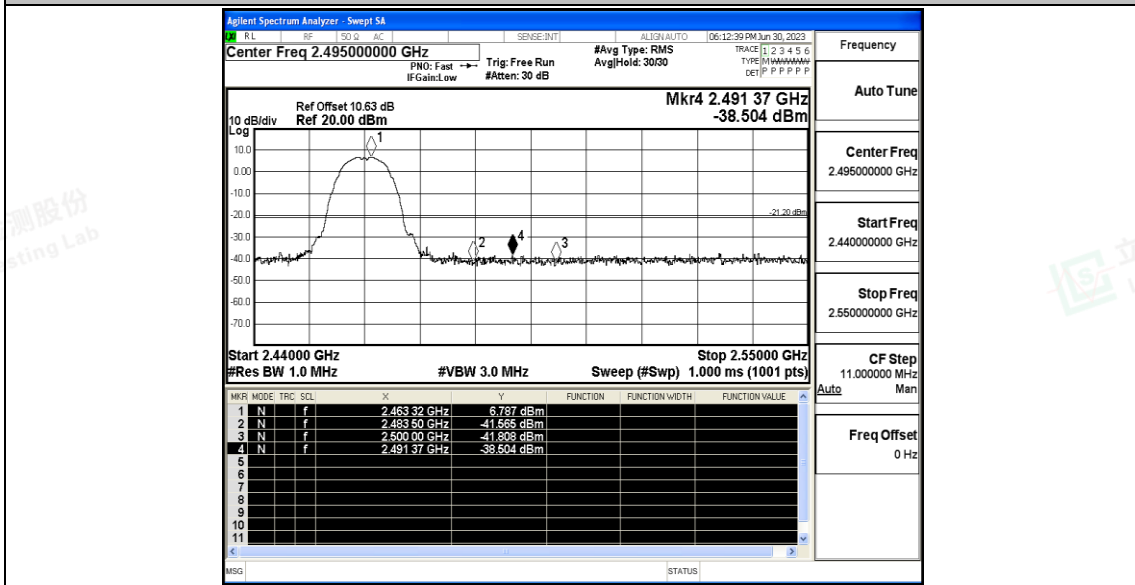


11B_Ant1_High_2462_AV



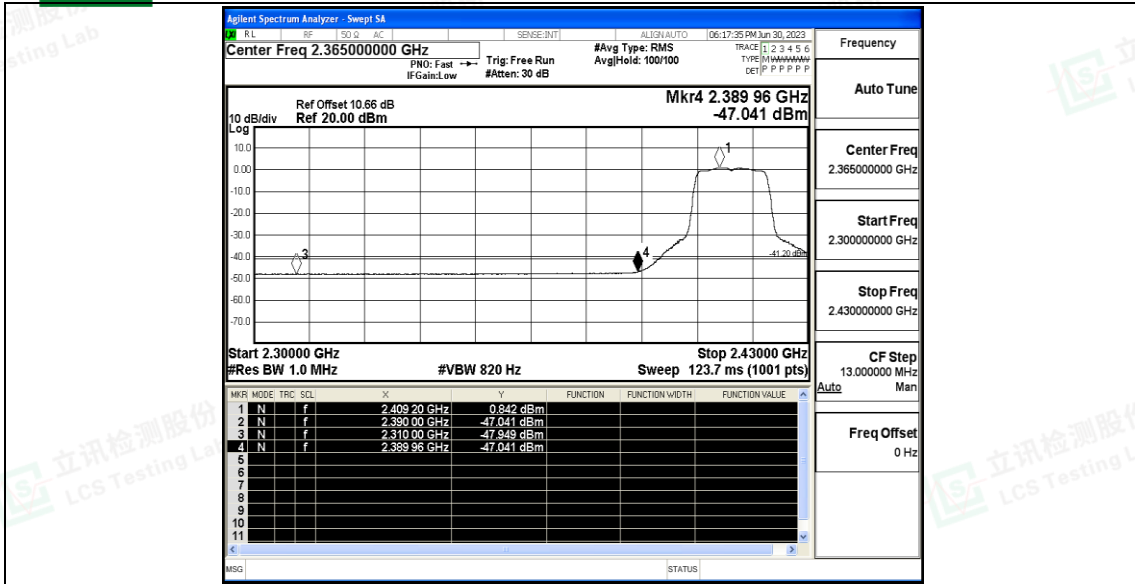


11B_Ant1_High_2462_Peak

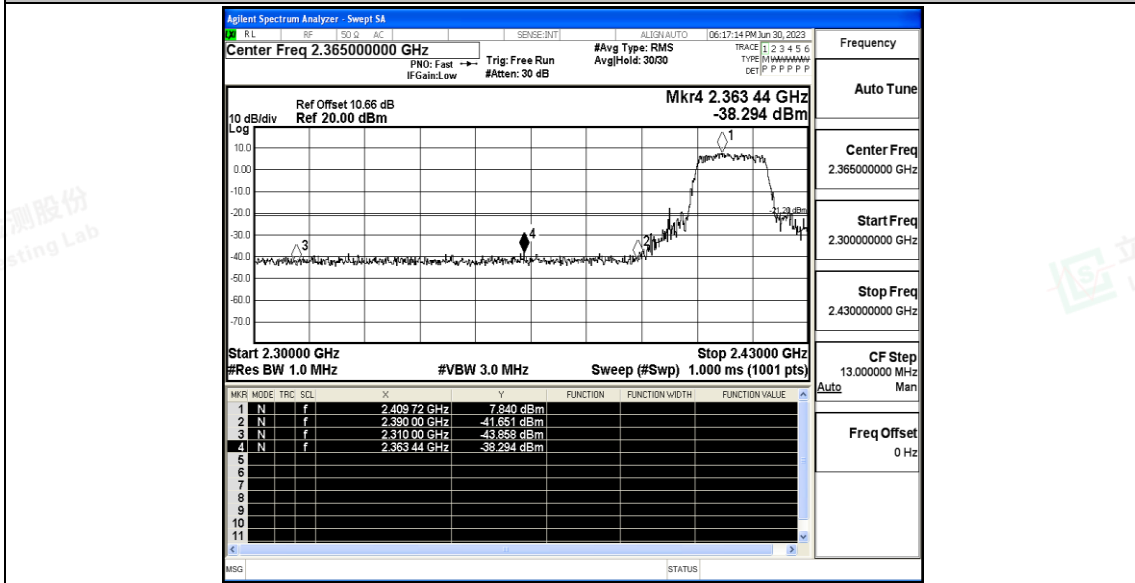


11G_Ant1_Low_2412_AV



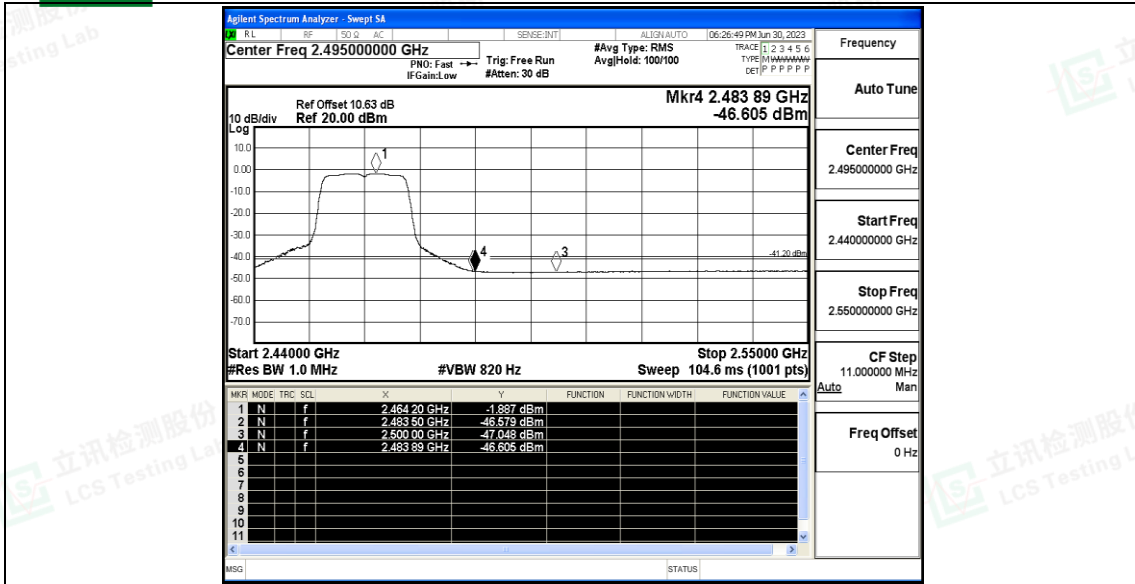


11G_Ant1_Low_2412_Peak

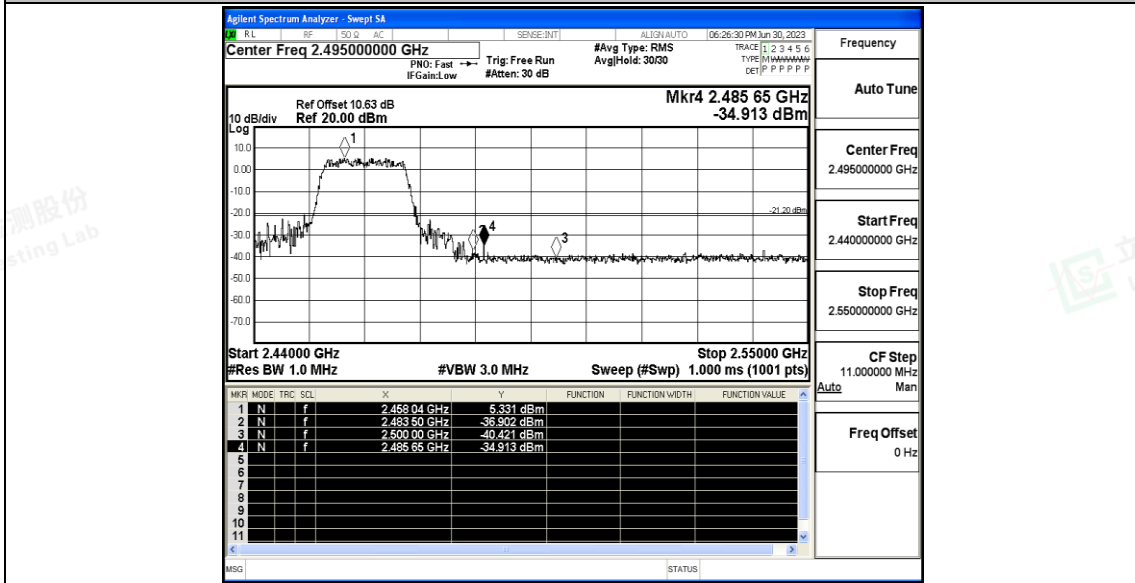


11G_Ant1_High_2462_AV



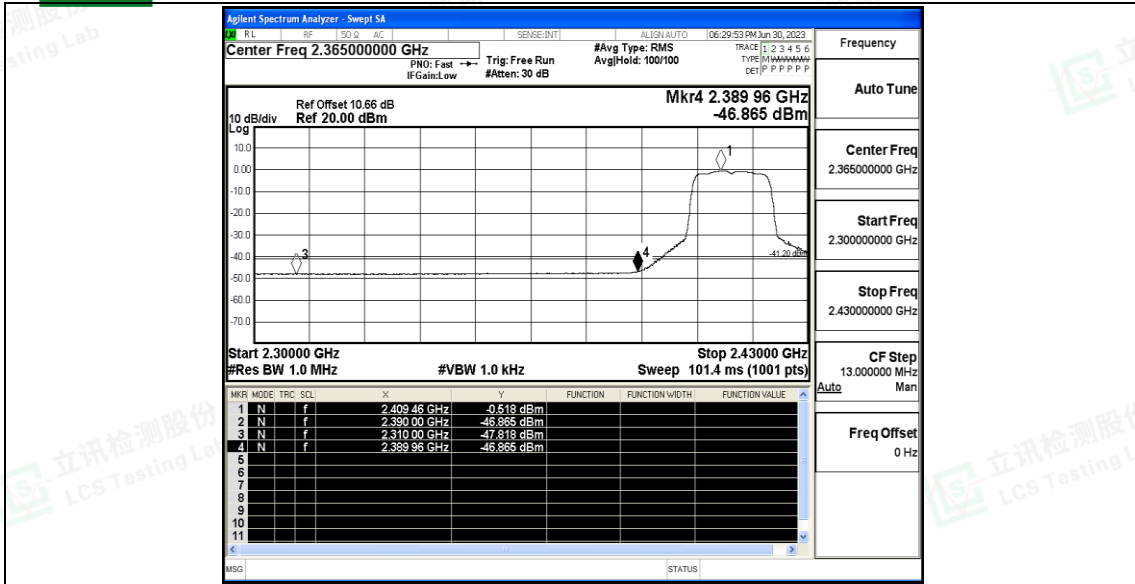


11G_Ant1_High_2462_Peak

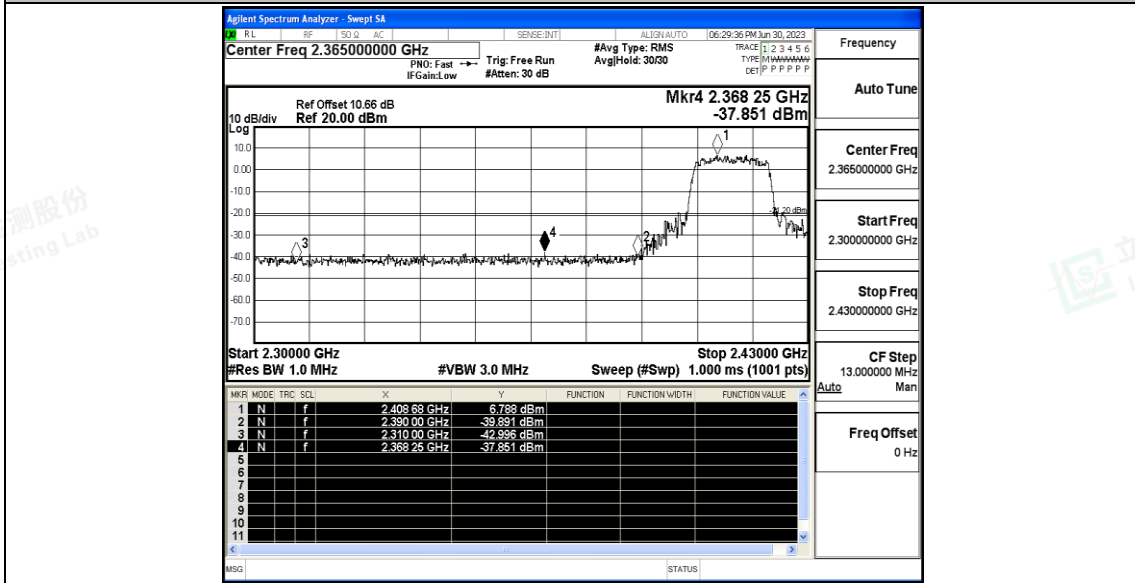


11N20SISO_Ant1_Low_2412_AV



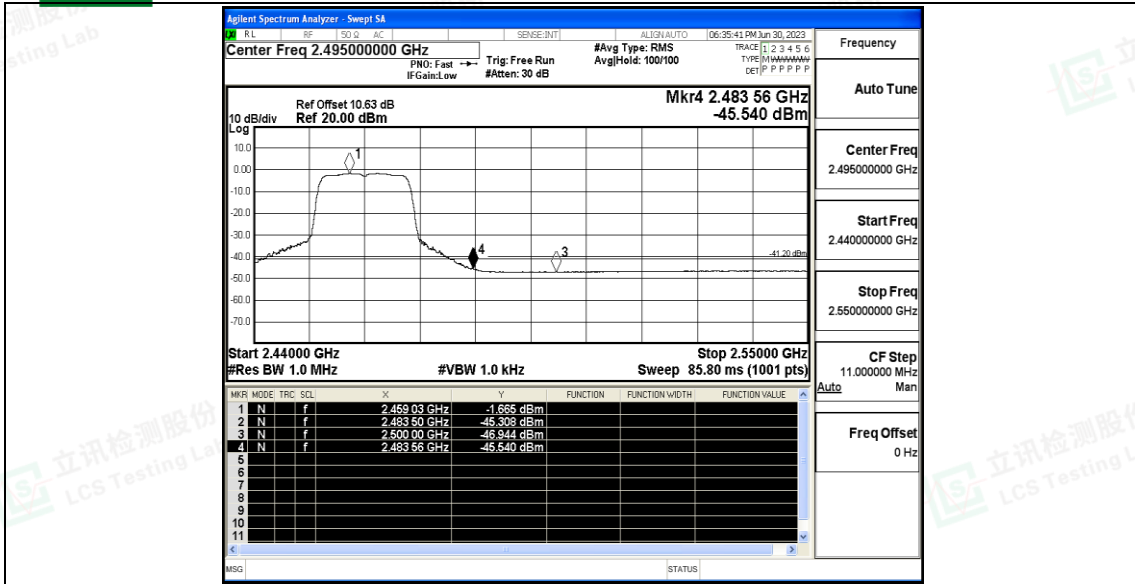


11N20SISO_Ant1_Low_2412_Peak



11N20SISO_Ant1_High_2462_AV





11N20SISO_Ant1_High_2462_Peak

