



Appendix B

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: LED lamp

Test Model: TSZ9BR30-LD011-CEC

Environmental Conditions

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





B.1 DTS Bandwidth

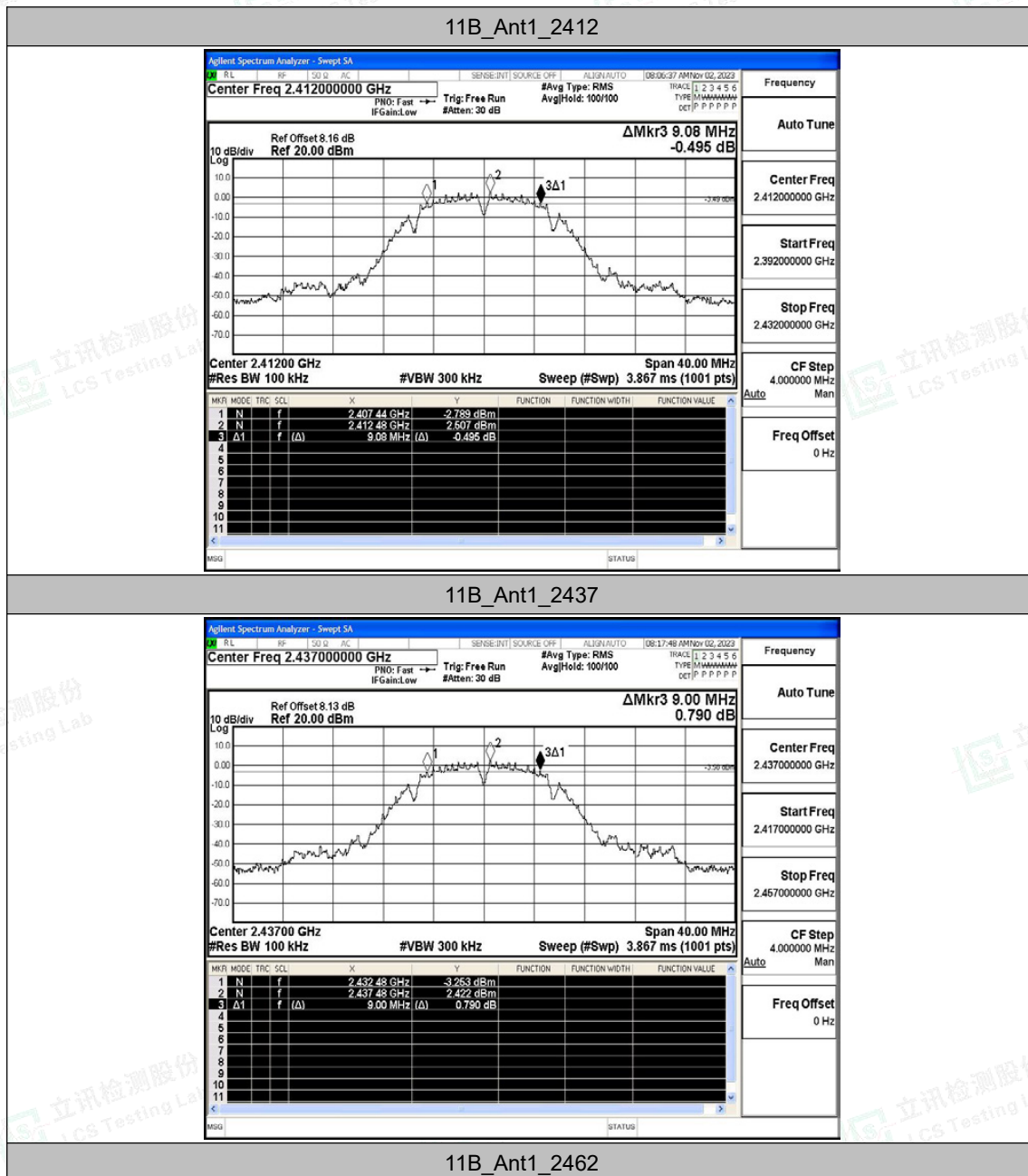
Test Result

TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.080	2407.440	2416.520	0.5	PASS
		2437	9.000	2432.480	2441.480	0.5	PASS
		2462	9.080	2457.440	2466.520	0.5	PASS
11G	Ant1	2412	16.320	2403.840	2420.160	0.5	PASS
		2437	16.400	2428.800	2445.200	0.5	PASS
		2462	16.360	2453.800	2470.160	0.5	PASS
11N20SISO	Ant1	2412	17.600	2403.200	2420.800	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	36.000	2404.160	2440.160	0.5	PASS
		2437	36.080	2418.840	2454.920	0.5	PASS
		2452	35.680	2434.160	2469.840	0.5	PASS





Test Graphs

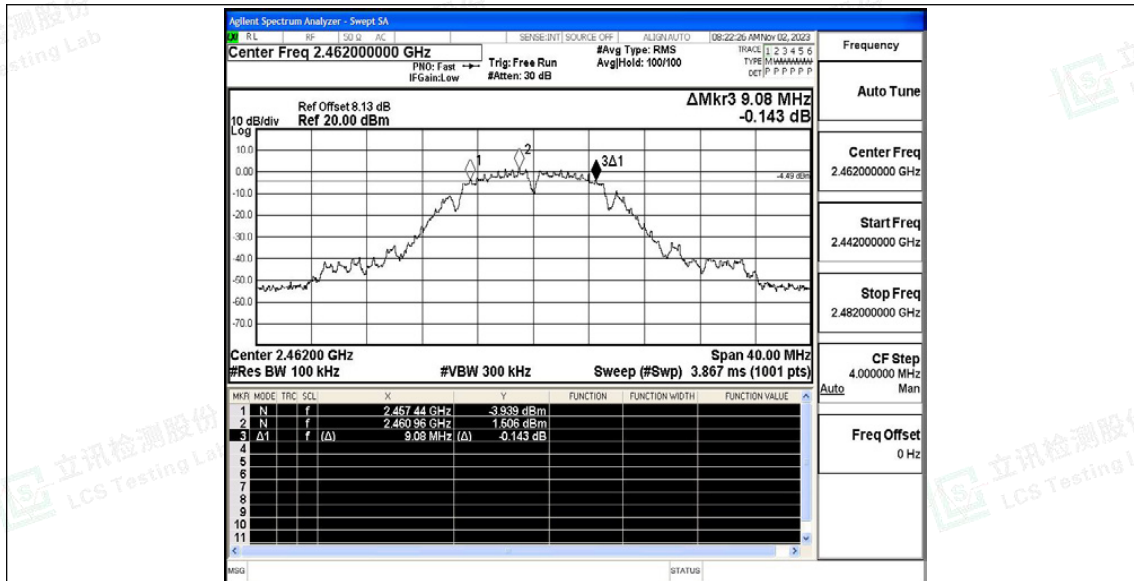


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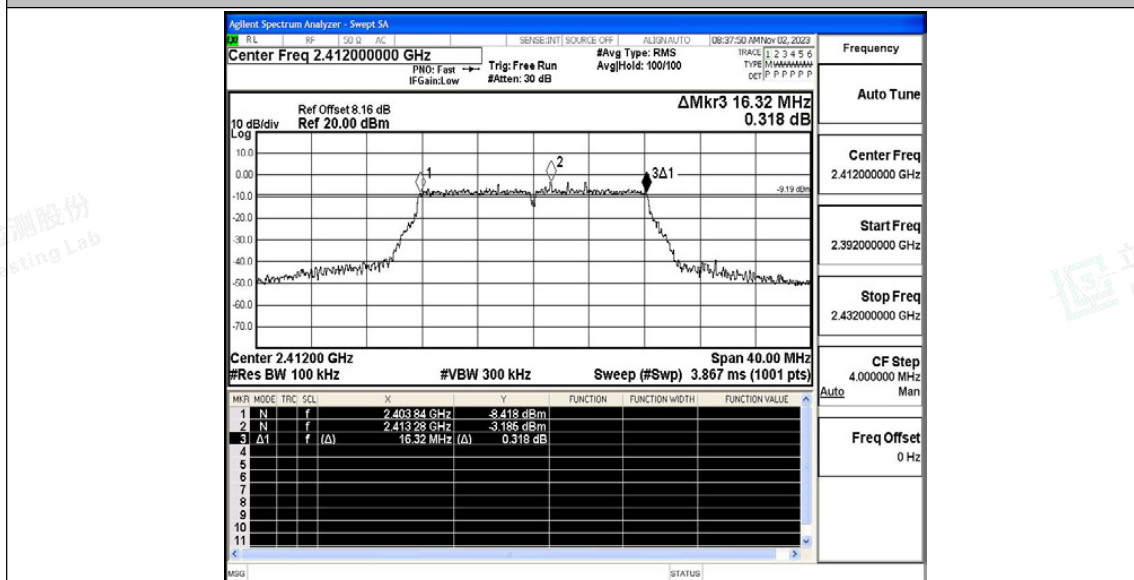
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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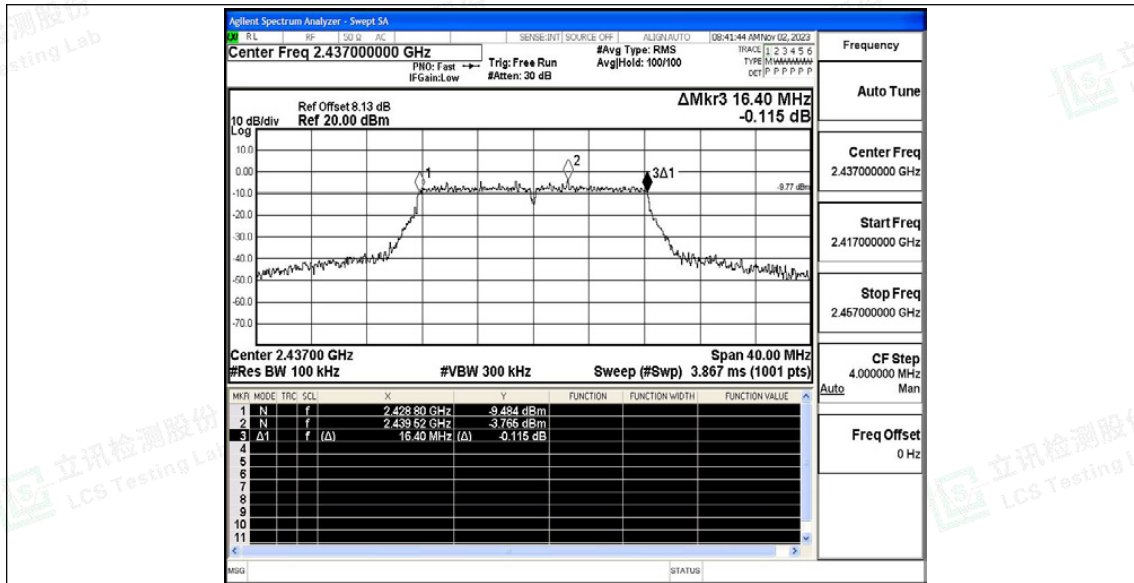


11G_Ant1_2412

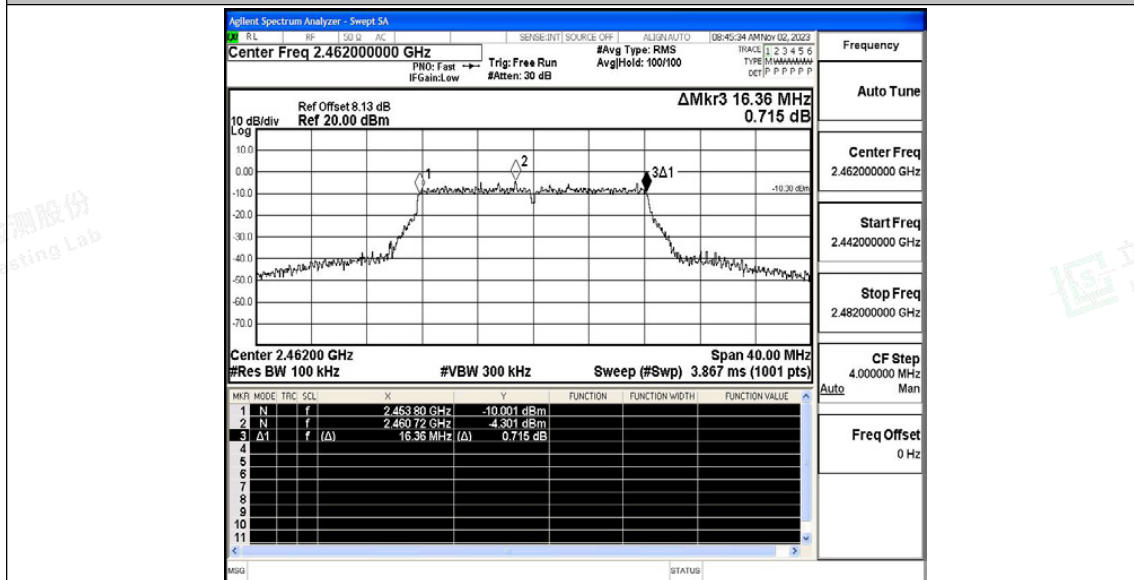


11G_Ant1_2437



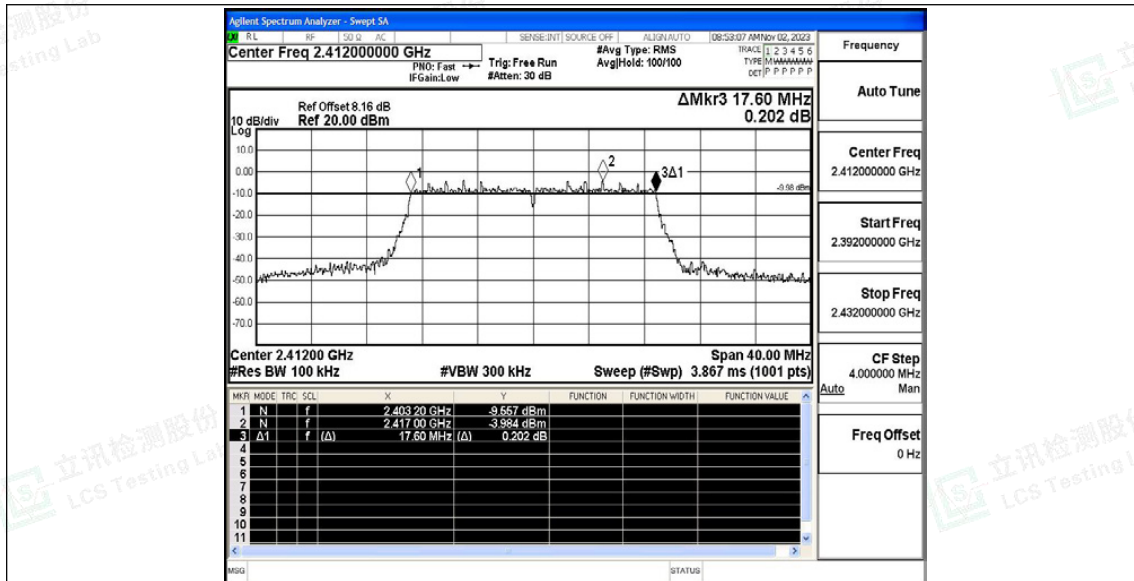


11G_Ant1_2462

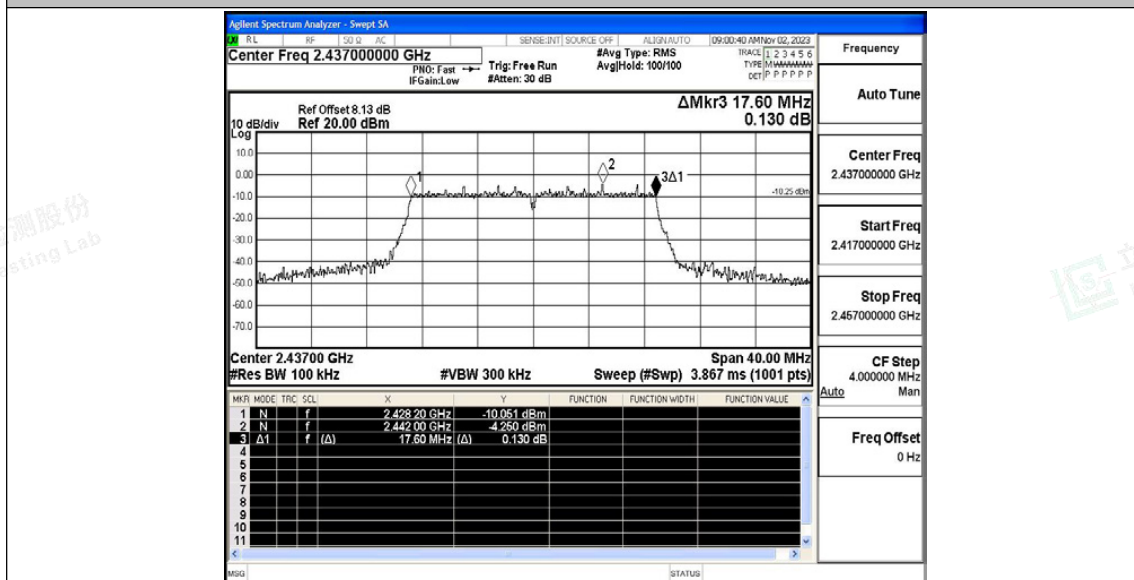


11N20SISO_Ant1_2412



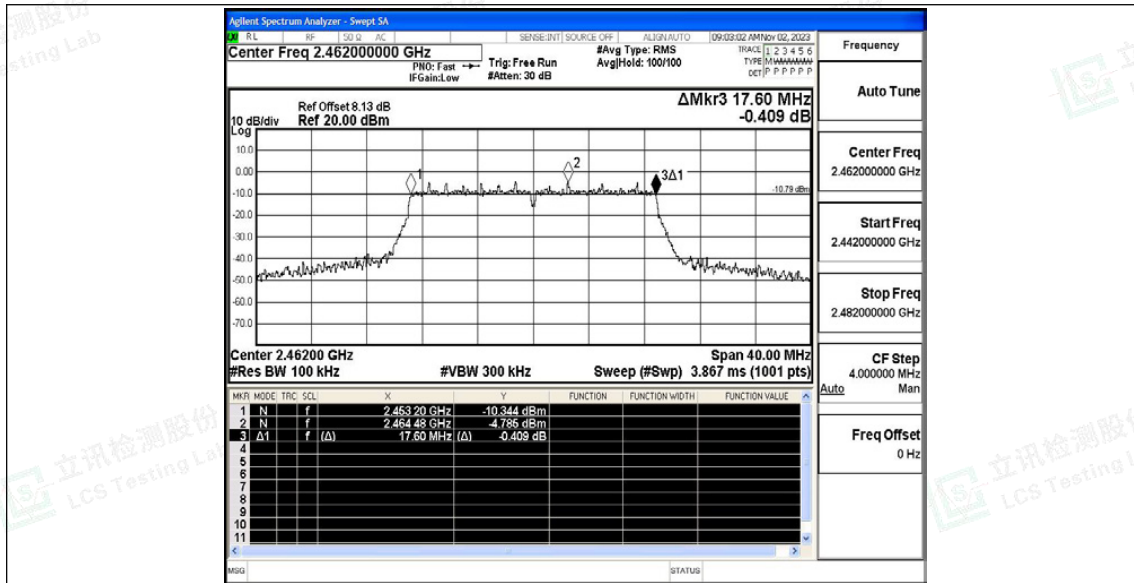


11N20SISO_Ant1_2437

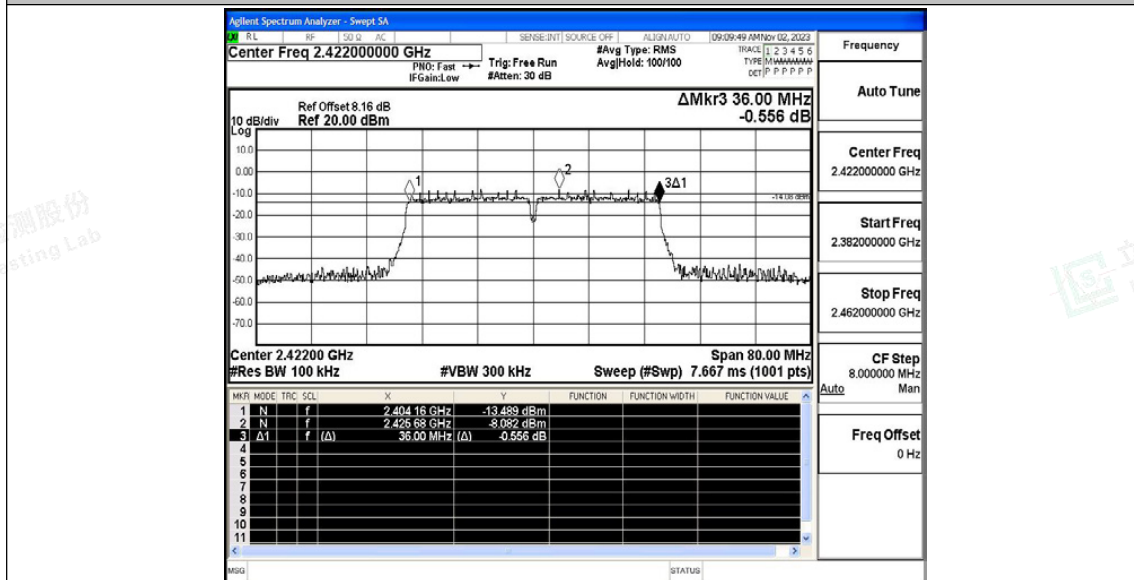


11N20SISO_Ant1_2462



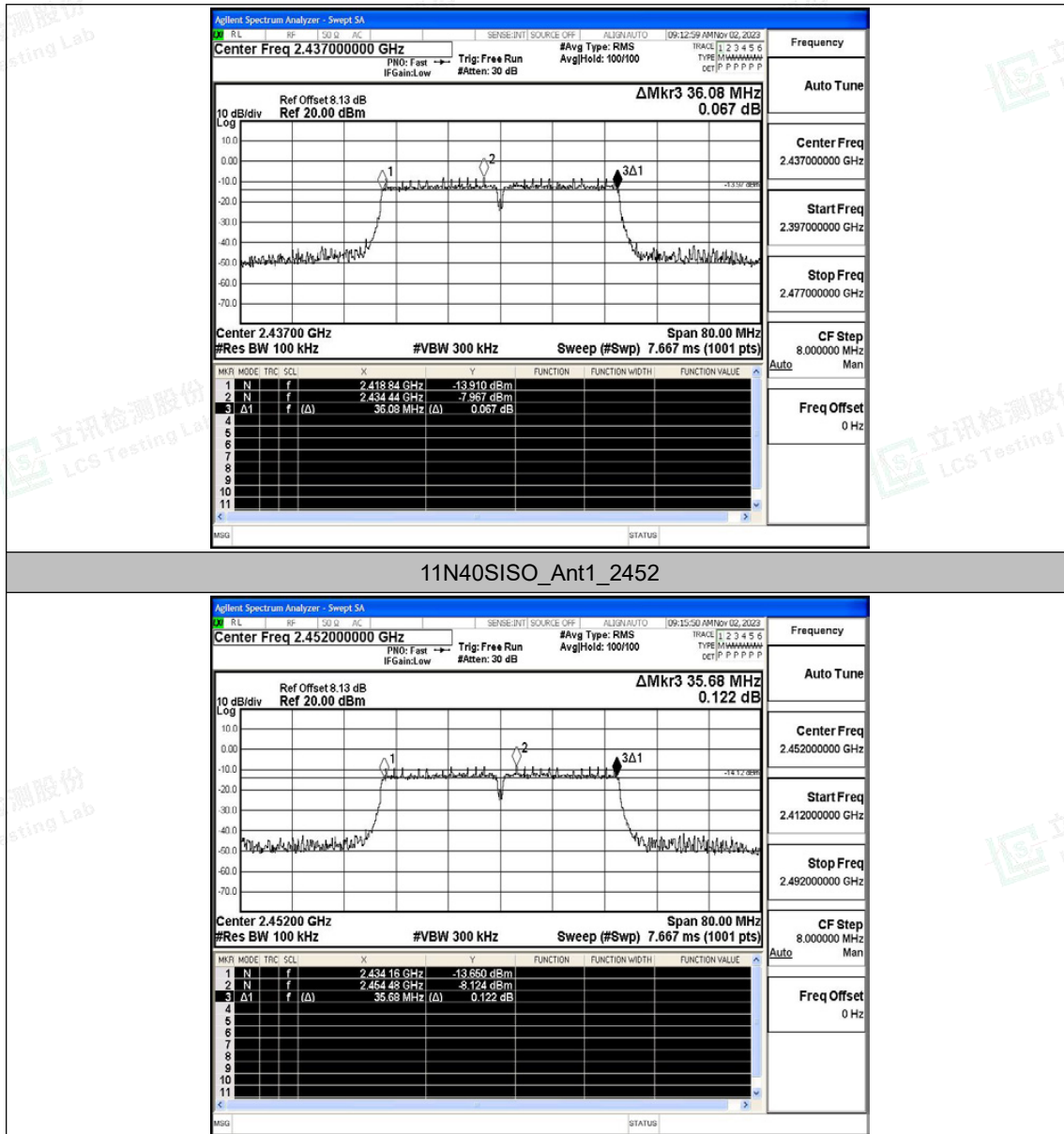


11N40SISO_Ant1_2422



11N40SISO_Ant1_2437





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B.2 Occupied Channel Bandwidth

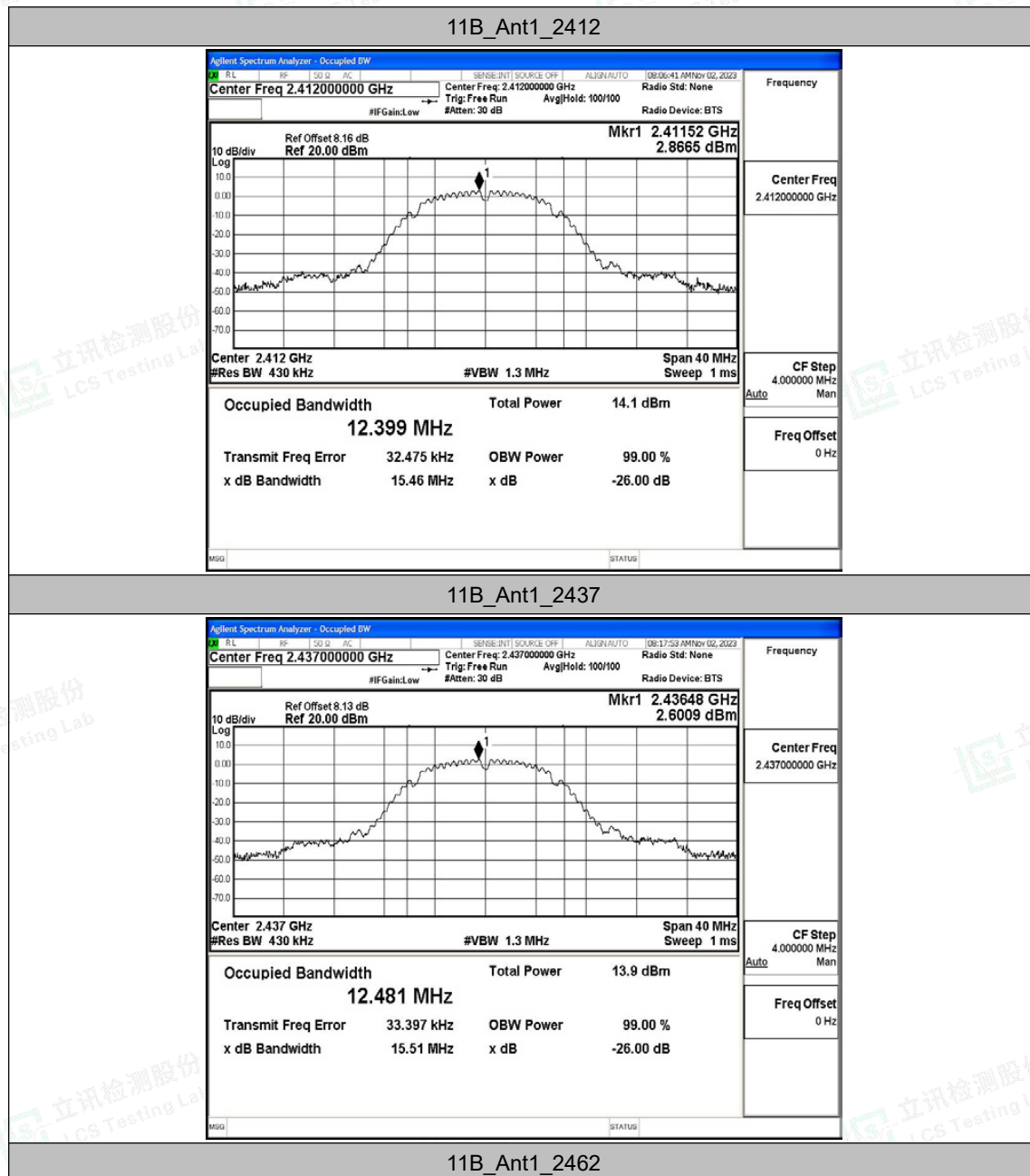
Test Result

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	12.399	2405.8330	2418.2320	---	---
		2437	12.481	2430.7929	2443.2739	---	---
		2462	12.585	2455.7496	2468.3346	---	---
11G	Ant1	2412	17.062	2403.5128	2420.5748	---	---
		2437	17.093	2428.4475	2445.5405	---	---
		2462	17.079	2453.4526	2470.5316	---	---
11N20SISO	Ant1	2412	17.915	2403.0609	2420.9759	---	---
		2437	17.884	2428.0728	2445.9568	---	---
		2462	17.940	2453.0426	2470.9826	---	---
11N40SISO	Ant1	2422	36.285	2403.8828	2440.1678	---	---
		2437	36.268	2418.9034	2455.1714	---	---
		2452	36.309	2433.9030	2470.2120	---	---





Test Graphs

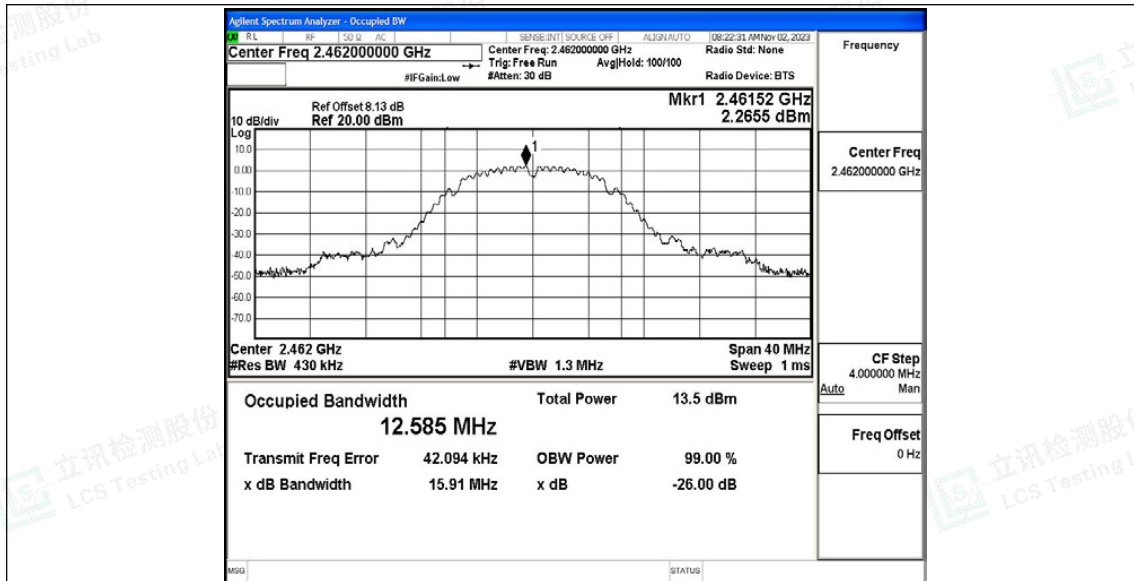


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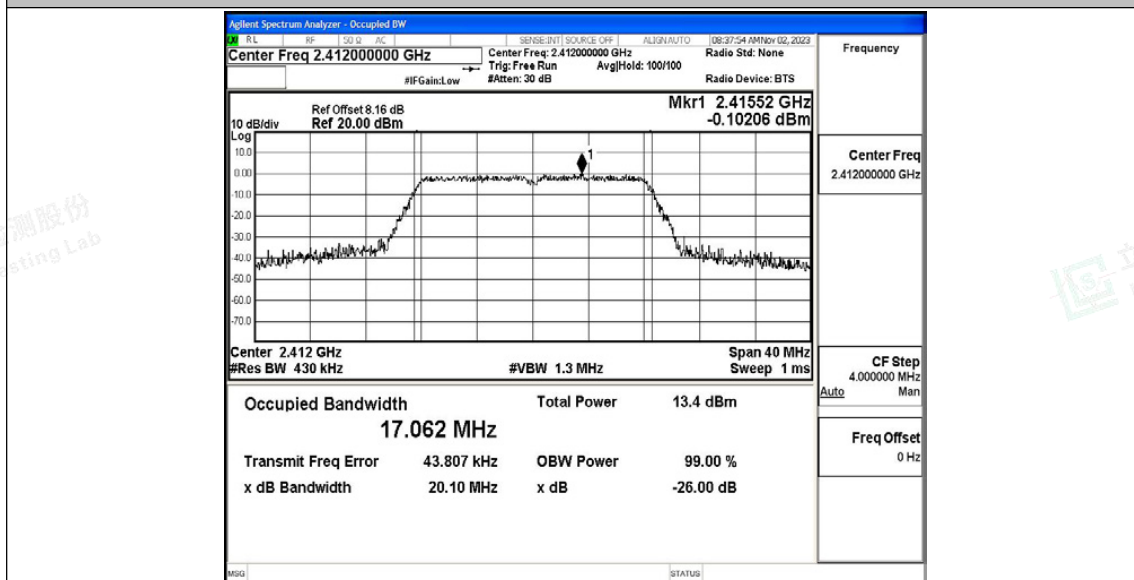
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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11G_Ant1_2412



11G_Ant1_2437

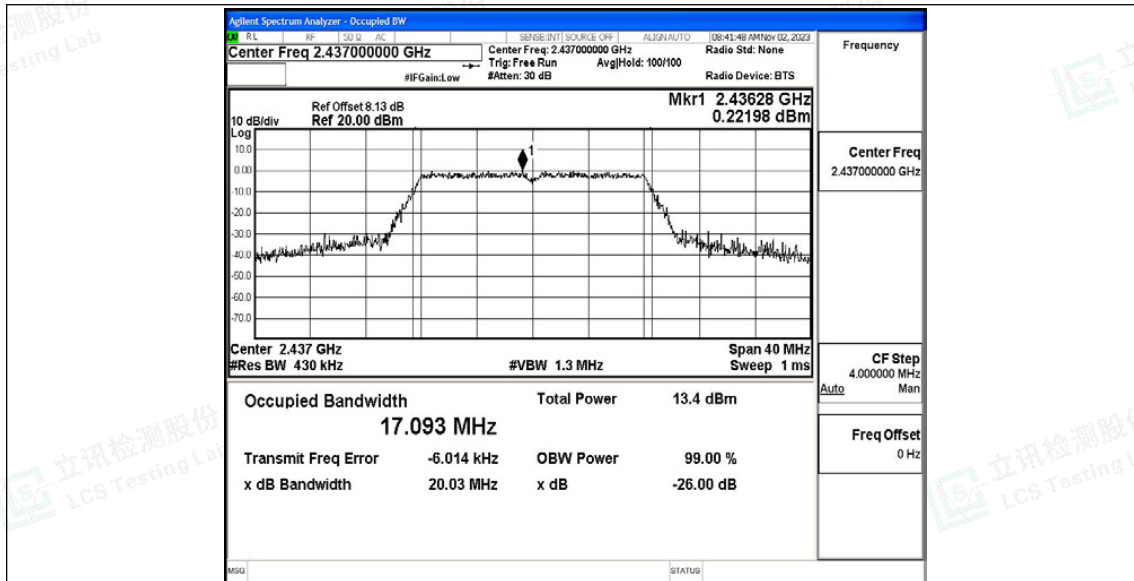


Shenzhen LCS Compliance Testing Laboratory Ltd.

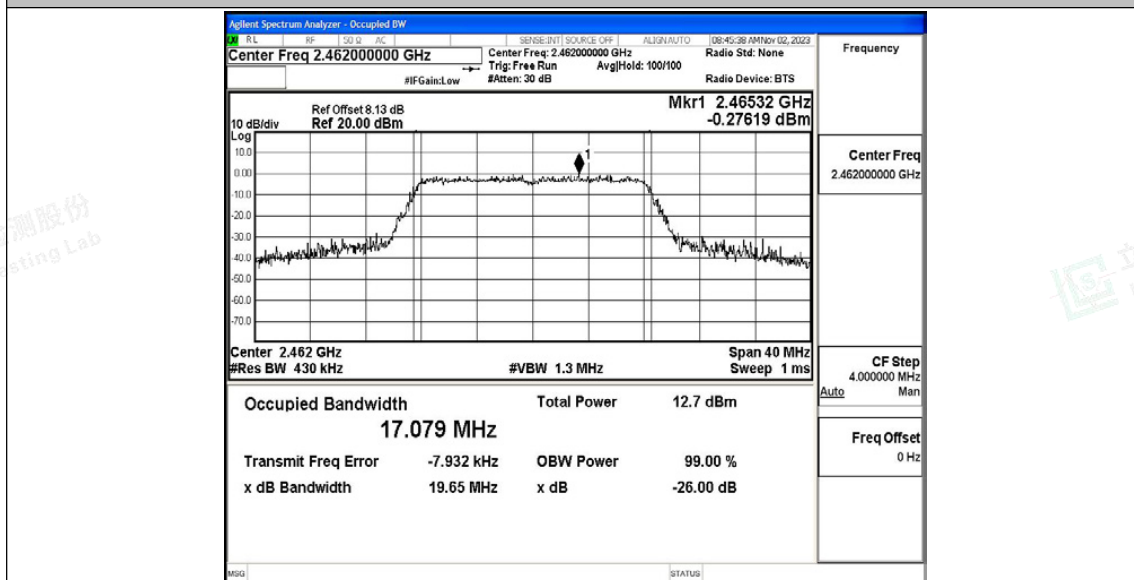
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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11G_Ant1_2462



11N20SISO_Ant1_2412

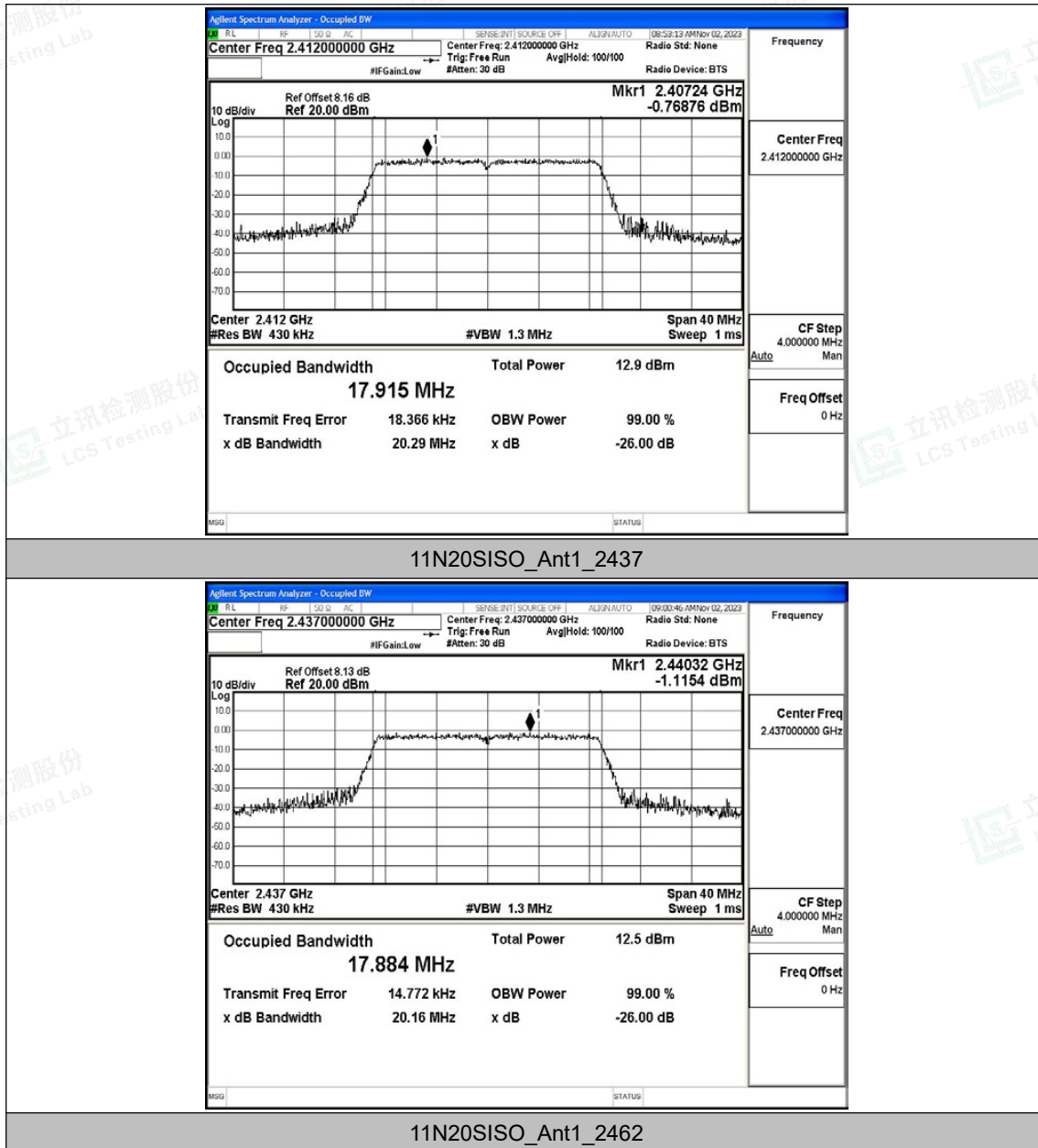


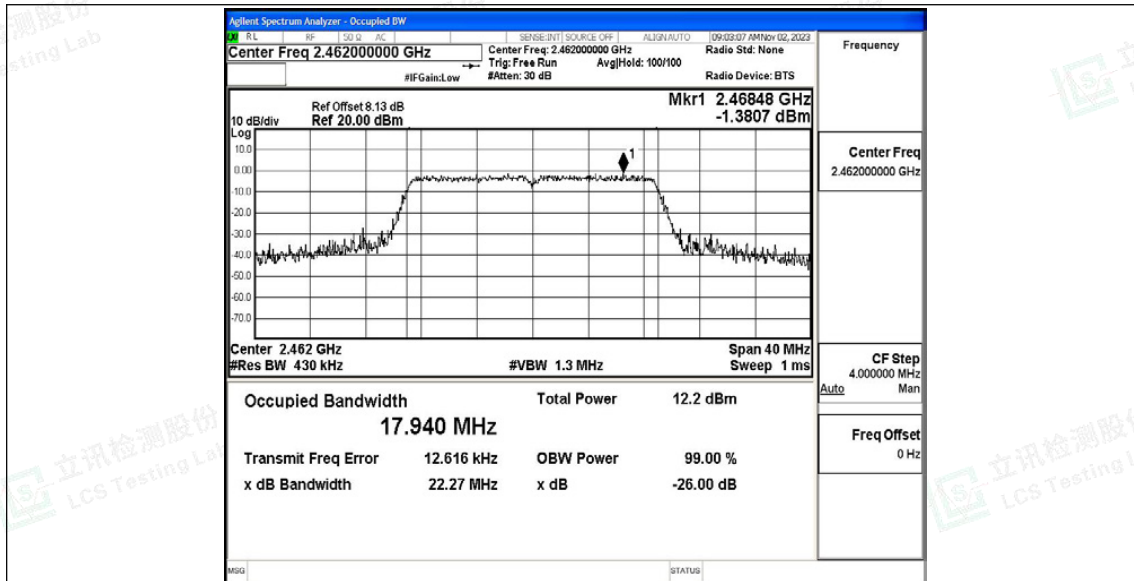
Shenzhen LCS Compliance Testing Laboratory Ltd.

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

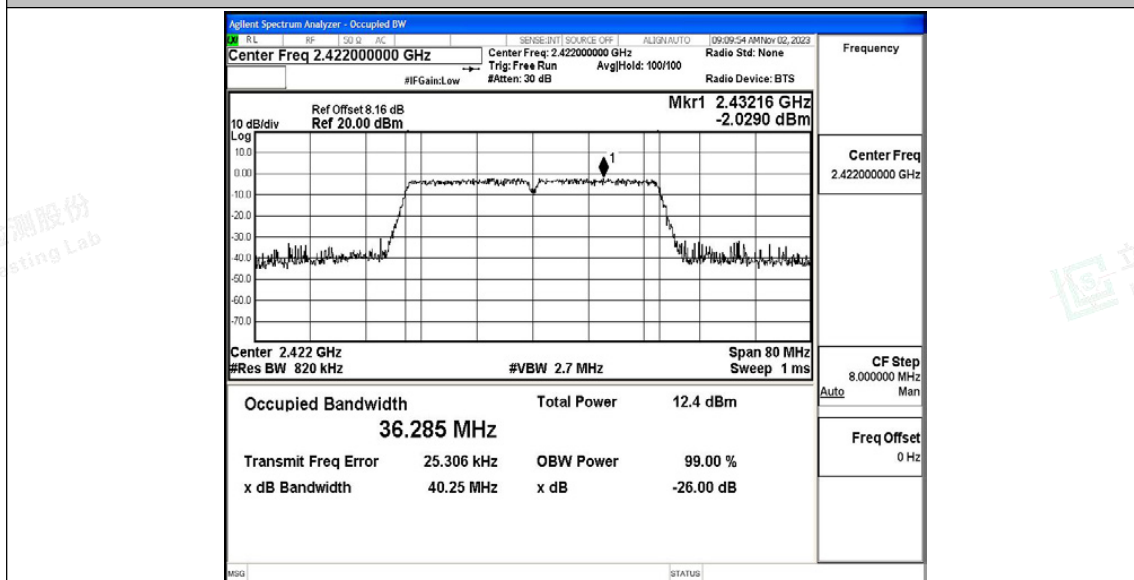
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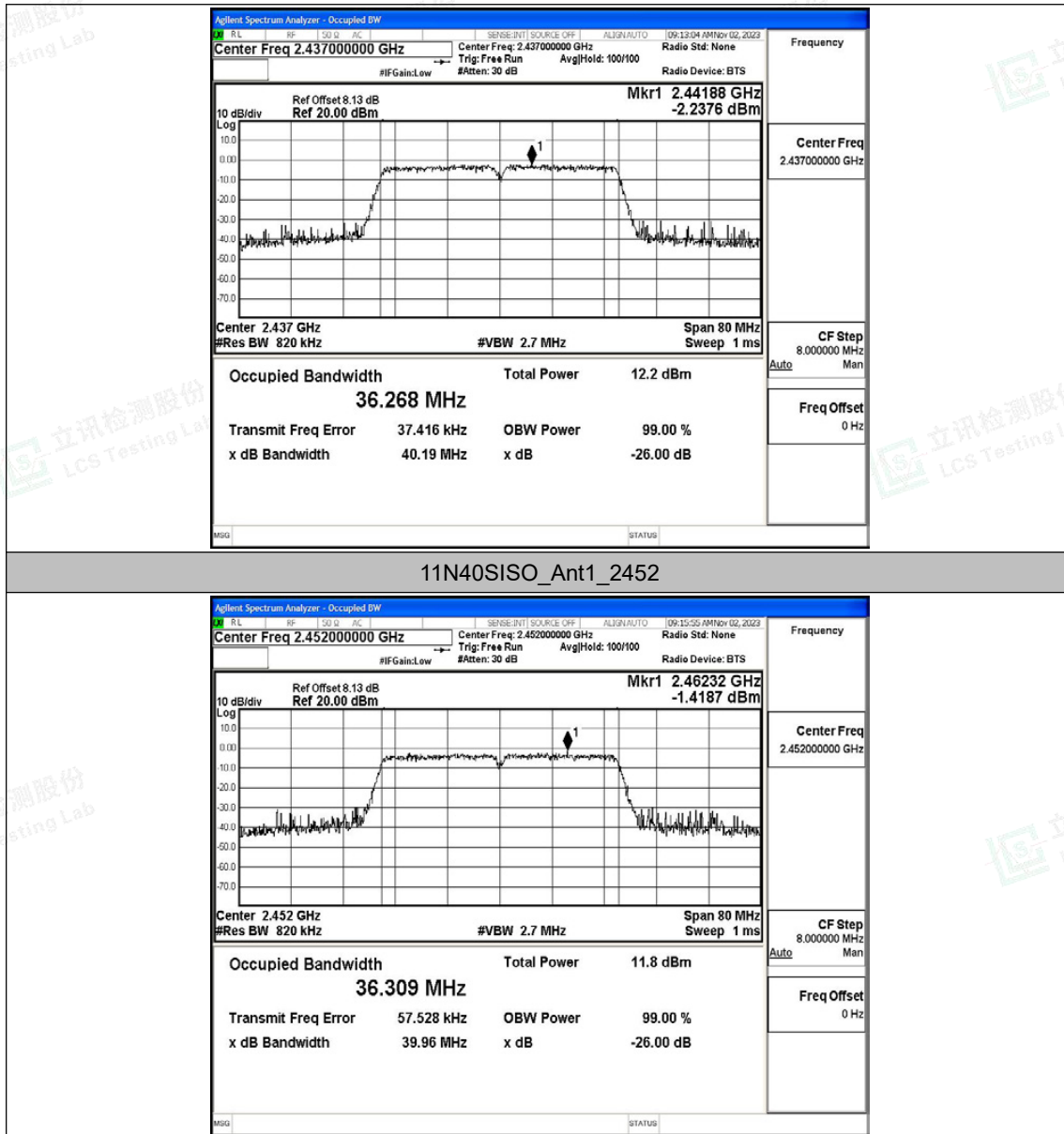


11N40SISO_Ant1_2422



11N40SISO_Ant1_2437







B.3 Maximum conducted output power and e.i.r.p.

Test Result Peak

TestMode	Antenna	Freq (MHz)	Peak Power[dBm]	Conducted Limit[dBm]	Antenna gain[dBi]	EIRP [dBm]	EIRP Limit[dBm]	Verdict
11B	Ant1	2412	14.32	≤30.00	1.2	15.52	≤36.00	PASS
		2437	14.08	≤30.00	1.2	15.28	≤36.00	PASS
		2462	13.76	≤30.00	1.2	14.96	≤36.00	PASS
11G	Ant1	2412	14.43	≤30.00	1.2	15.63	≤36.00	PASS
		2437	14.32	≤30.00	1.2	15.52	≤36.00	PASS
		2462	13.59	≤30.00	1.2	14.79	≤36.00	PASS
11N20SISO	Ant1	2412	13.92	≤30.00	1.2	15.12	≤36.00	PASS
		2437	13.42	≤30.00	1.2	14.62	≤36.00	PASS
		2462	13.19	≤30.00	1.2	14.39	≤36.00	PASS
11N40SISO	Ant1	2422	12.74	≤30.00	1.2	13.94	≤36.00	PASS
		2437	12.60	≤30.00	1.2	13.8	≤36.00	PASS
		2452	12.21	≤30.00	1.2	13.41	≤36.00	PASS





B.4 Maximum power spectral density

Test Result

TestMode	Antenna	Freq(MHz)	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant1	2412	-10.69	≤8.00	PASS
		2437	-11.22	≤8.00	PASS
		2462	-11.18	≤8.00	PASS
11G	Ant1	2412	-17.51	≤8.00	PASS
		2437	-17.43	≤8.00	PASS
		2462	-17.73	≤8.00	PASS
11N20SISO	Ant1	2412	-18.03	≤8.00	PASS
		2437	-17.6	≤8.00	PASS
		2462	-17.51	≤8.00	PASS
11N40SISO	Ant1	2422	-20.95	≤8.00	PASS
		2437	-21.76	≤8.00	PASS
		2452	-22.11	≤8.00	PASS





Test Graphs

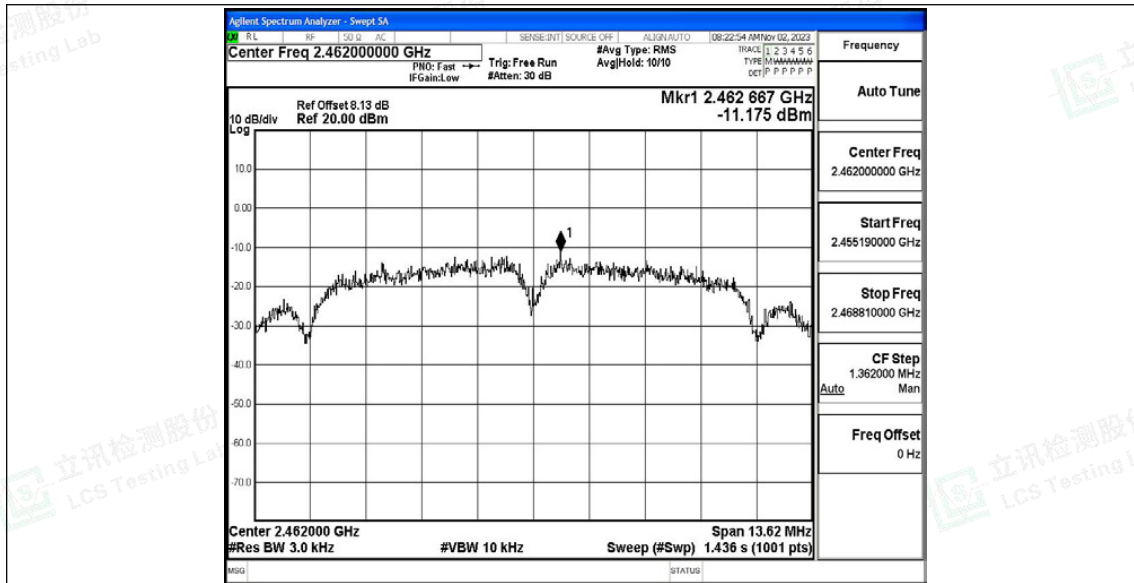


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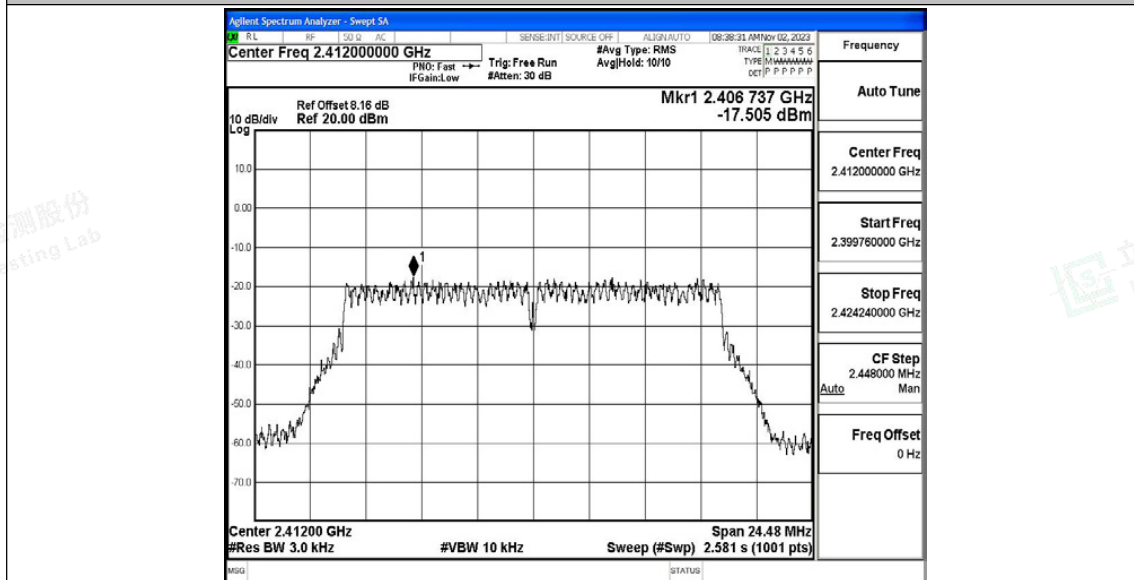
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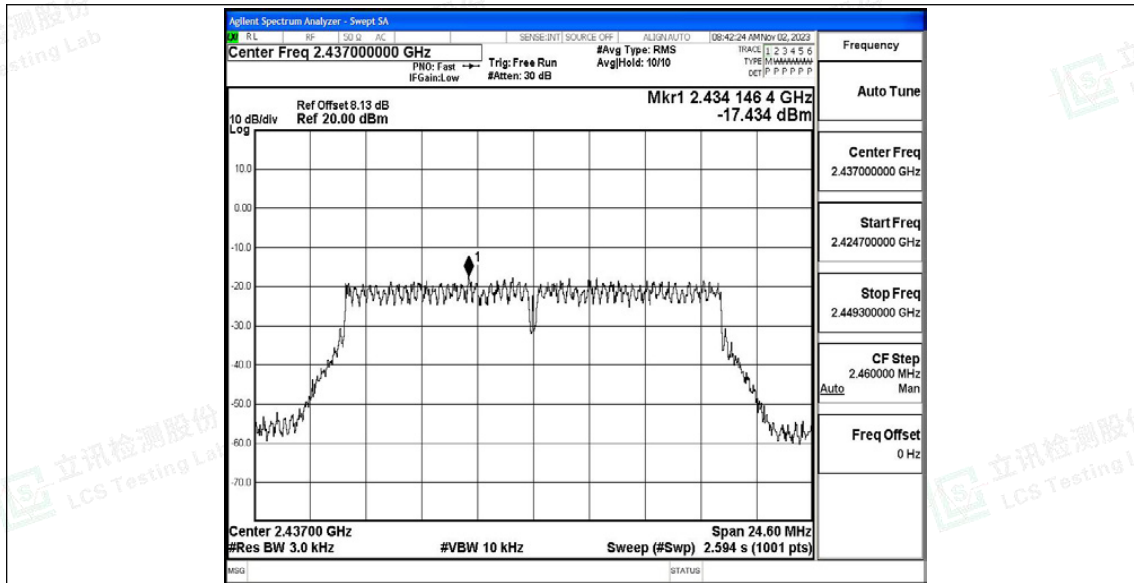


11G_Ant1_2412

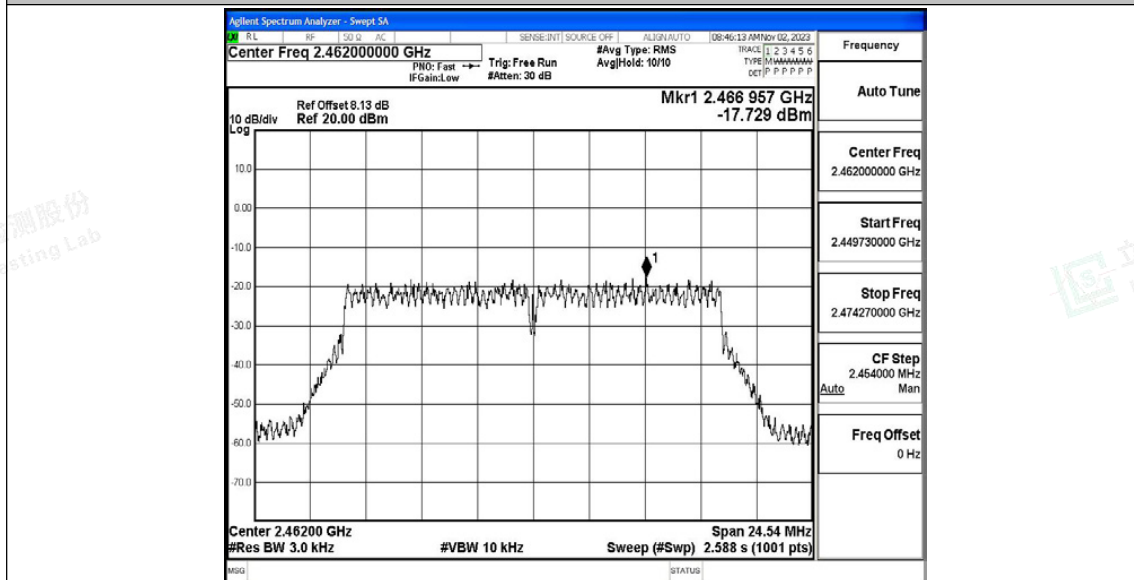


11G_Ant1_2437



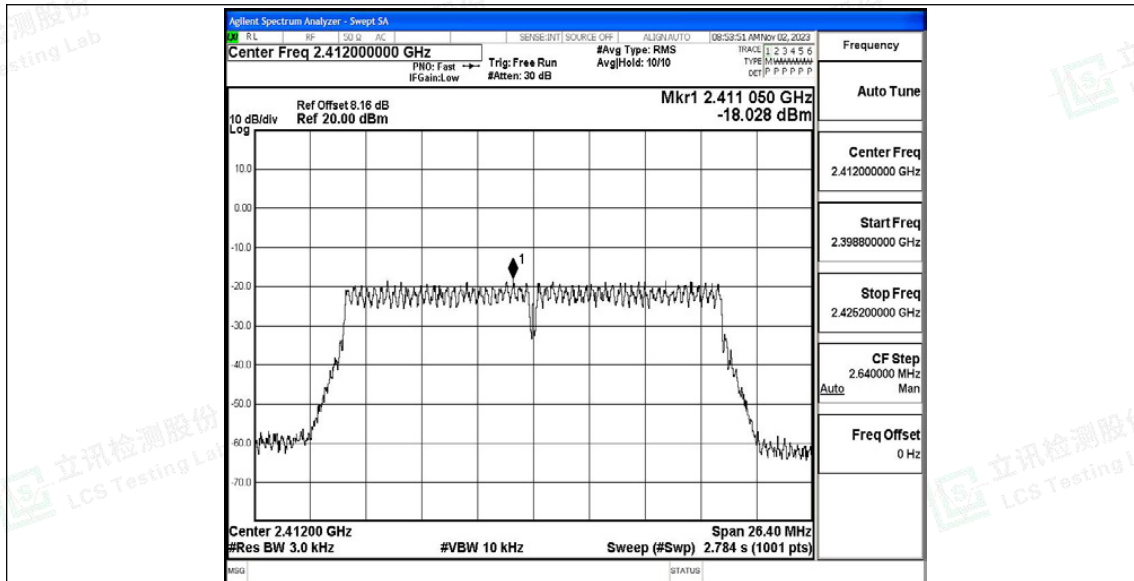


11G_Ant1_2462

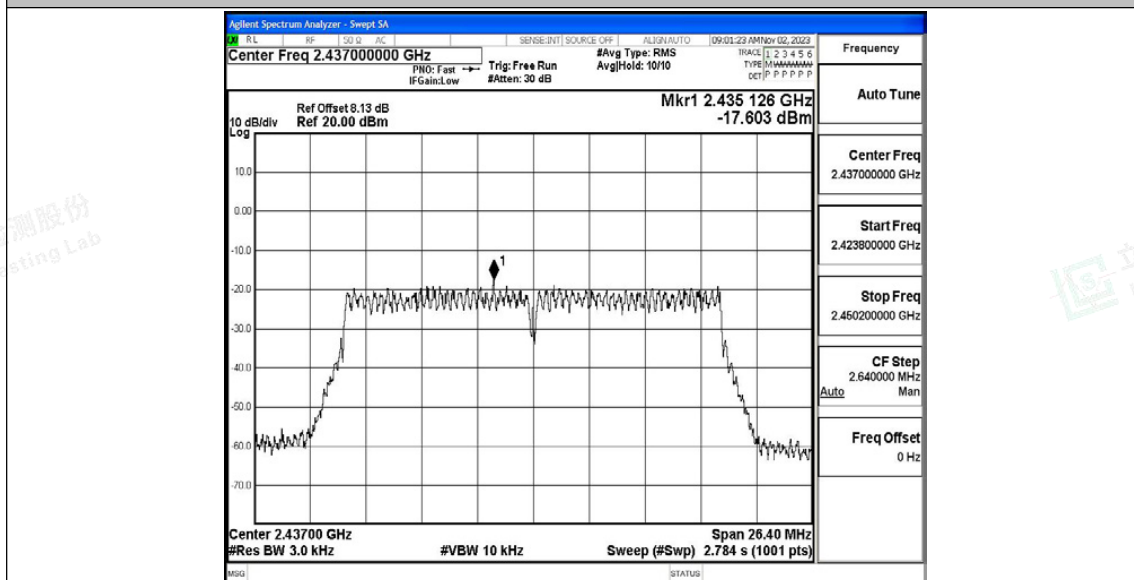


11N20SISO_Ant1_2412



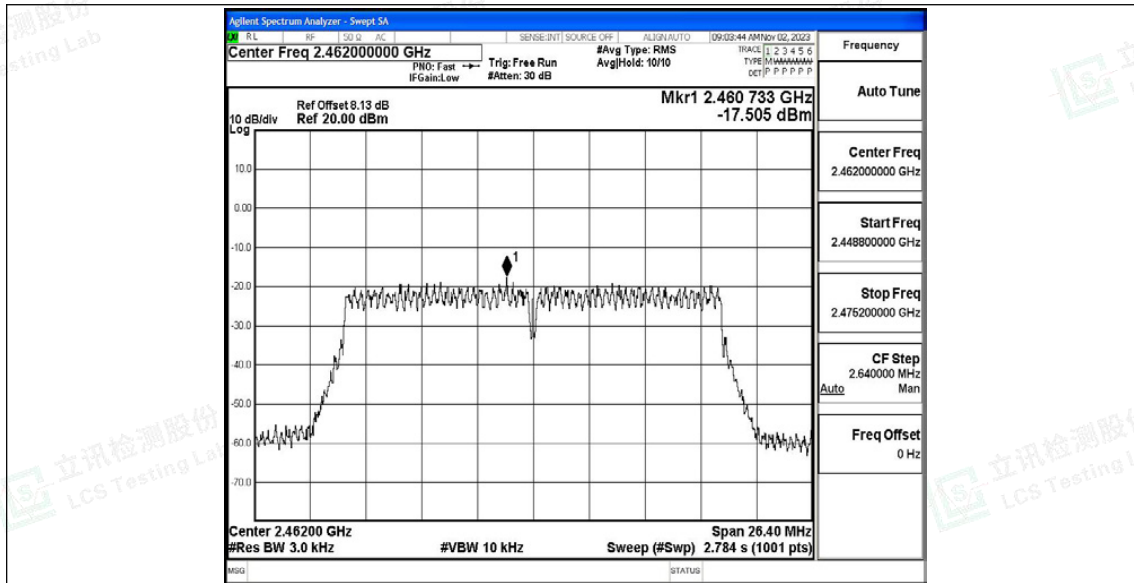


11N20SISO_Ant1_2437

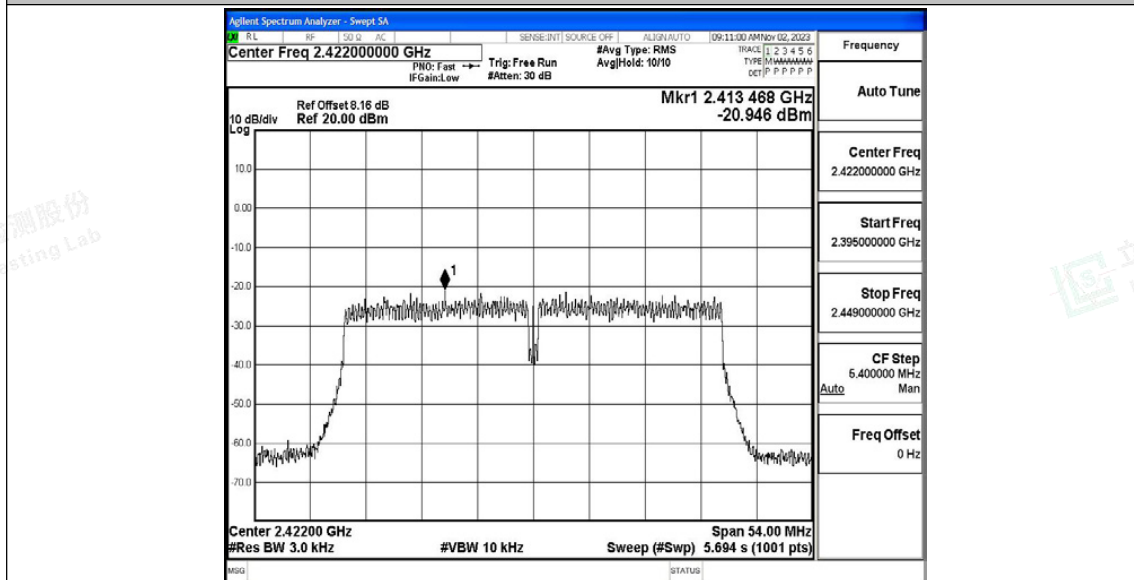


11N20SISO_Ant1_2462



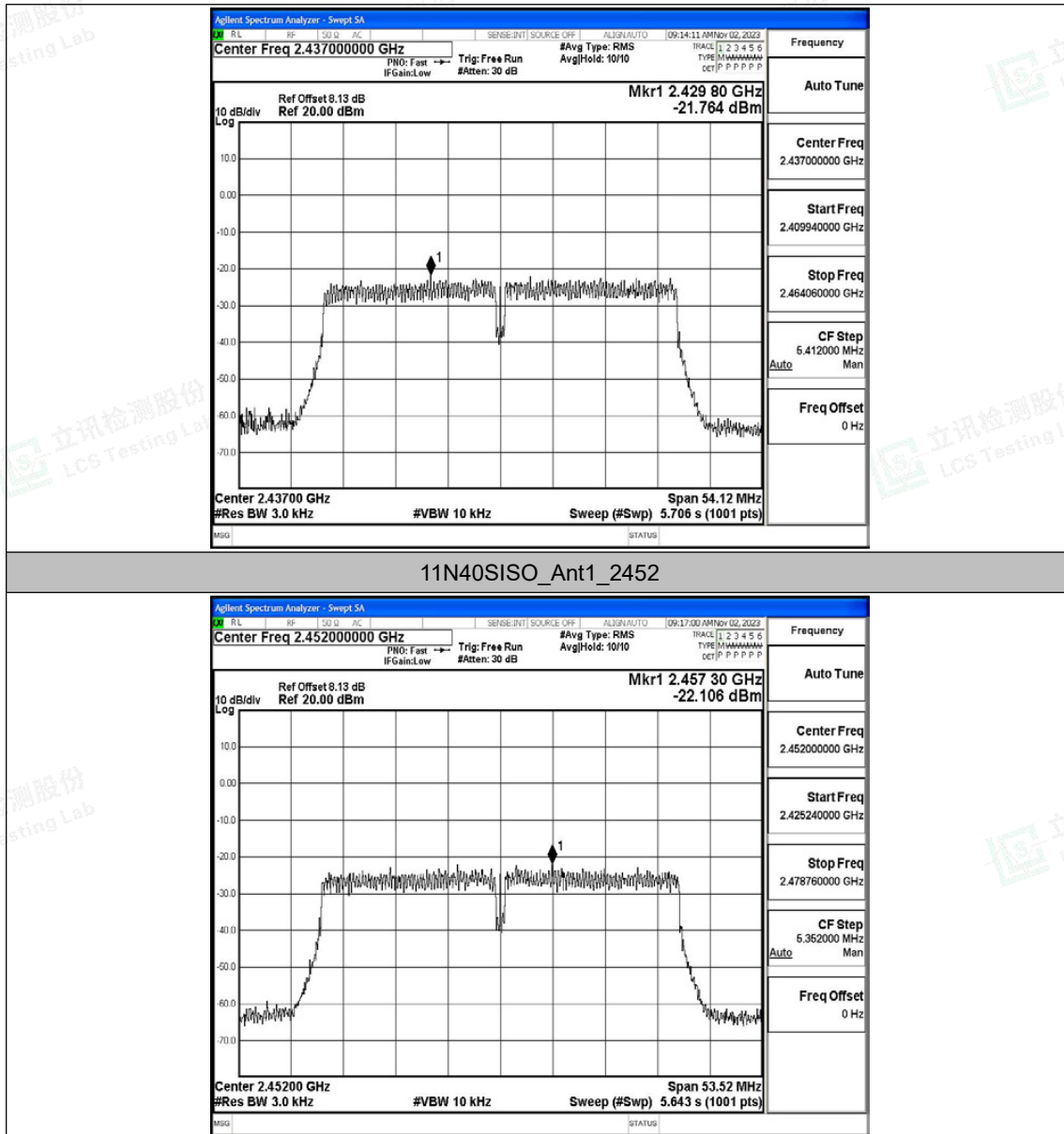


11N40SISO_Ant1_2422



11N40SISO_Ant1_2437







B.5 Band edge measurements

Reference level measurement_Test Result

TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
11B	Ant1	2412	2412.99	2.73
		2437	2437.51	1.81
		2462	2460.99	1.83
11G	Ant1	2412	2416.97	-3.67
		2437	2438.23	-3.10
		2462	2455.72	-4.48
11N20SISO	Ant1	2412	2413.24	-3.54
		2437	2439.51	-4.54
		2462	2463.21	-4.58
11N40SISO	Ant1	2422	2424.48	-7.63
		2437	2434.51	-7.80
		2452	2449.48	-8.15

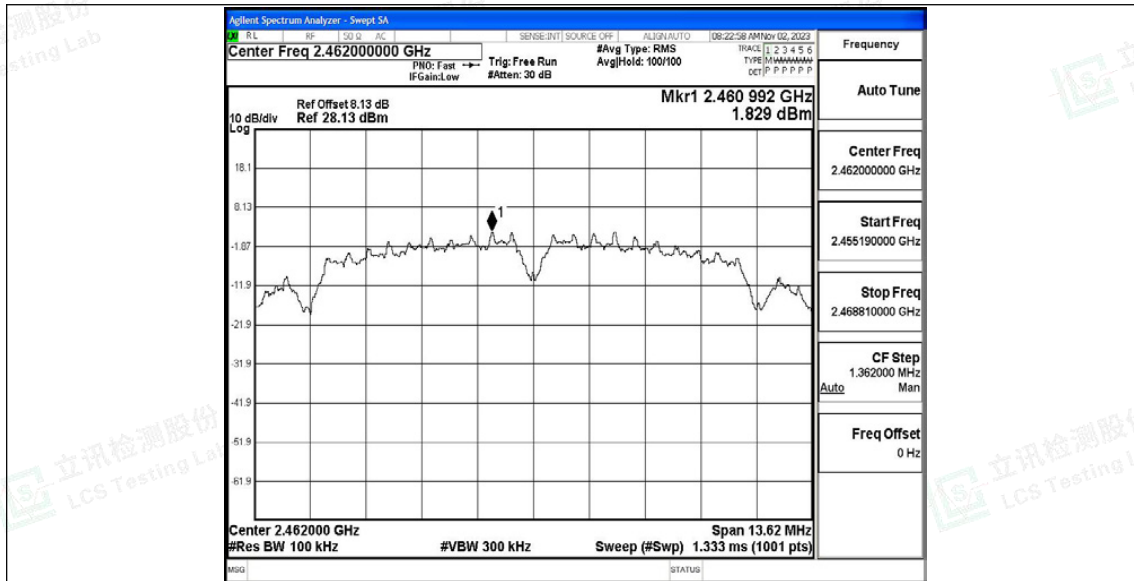
Band edge measurements_Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	2.73	-42.71	≤-17.27	PASS
		High	2462	1.83	-49.76	≤-18.17	PASS
11G	Ant1	Low	2412	-3.67	-40.15	≤-23.67	PASS
		High	2462	-4.48	-48.39	≤-24.48	PASS
11N20SISO	Ant1	Low	2412	-3.54	-41.36	≤-23.54	PASS
		High	2462	-4.58	-48.12	≤-24.58	PASS
11N40SISO	Ant1	Low	2422	-7.63	-43.01	≤-27.63	PASS
		High	2452	-8.15	-43.12	≤-28.15	PASS

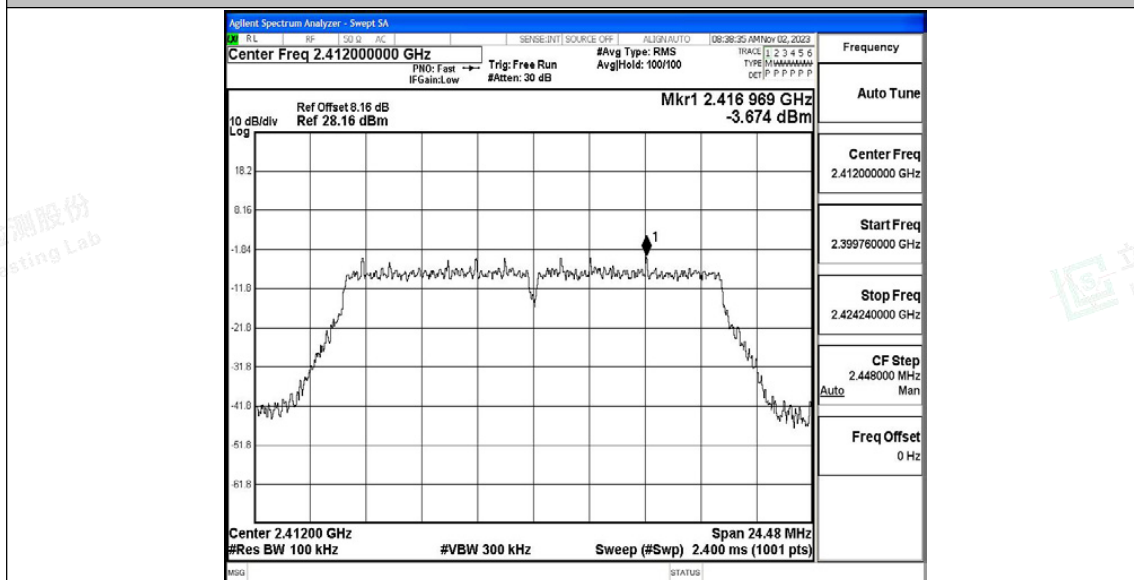


Reference level measurement_Test Graphs



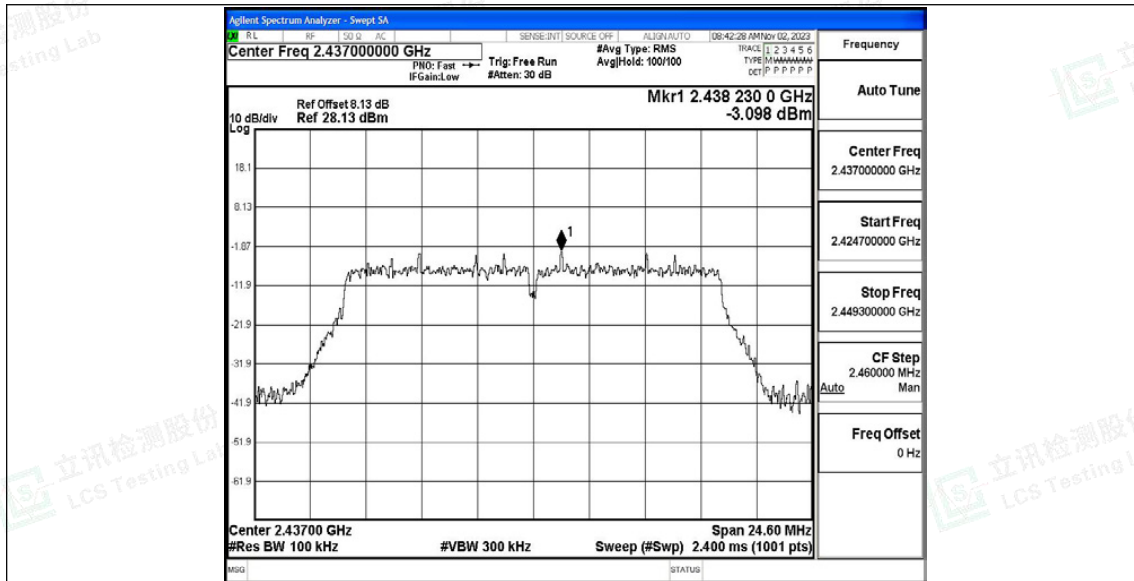


11G_Ant1_2412

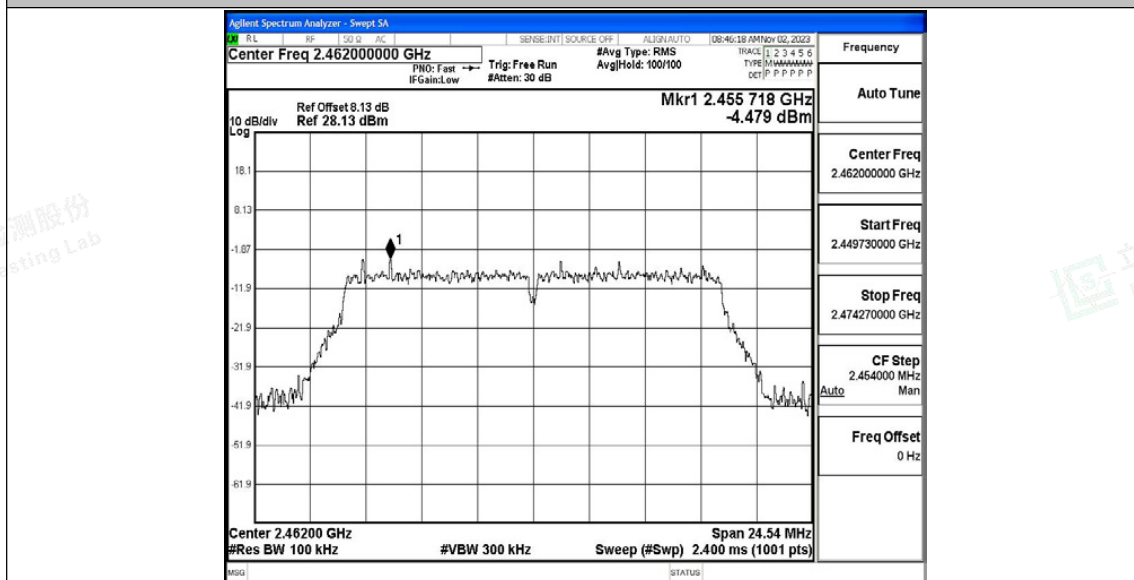


11G_Ant1_2437



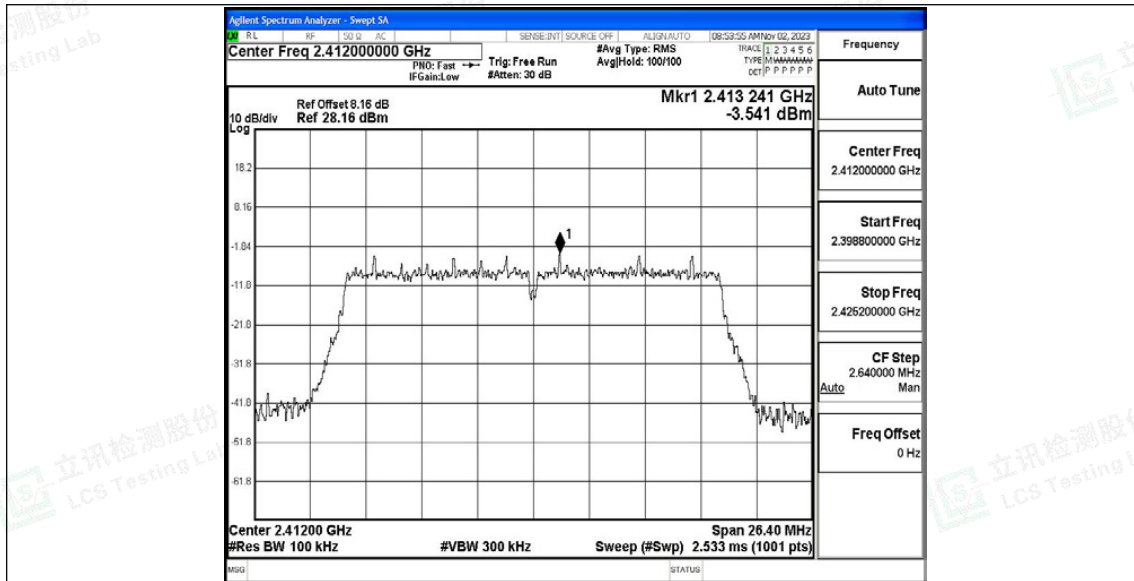


11G_Ant1_2462

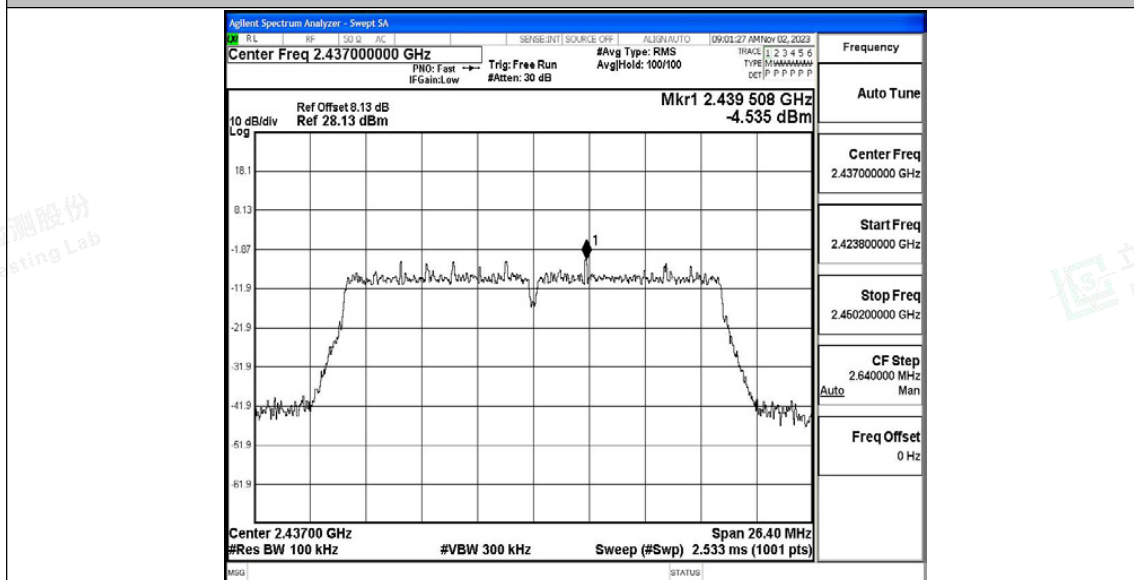


11N20SISO_Ant1_2412



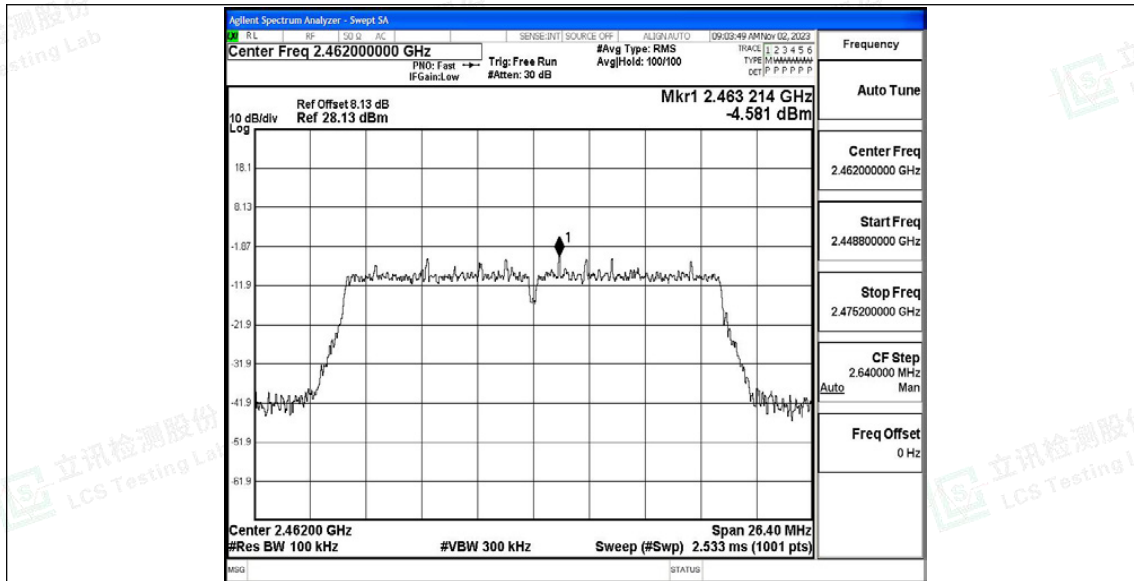


11N20SISO_Ant1_2437

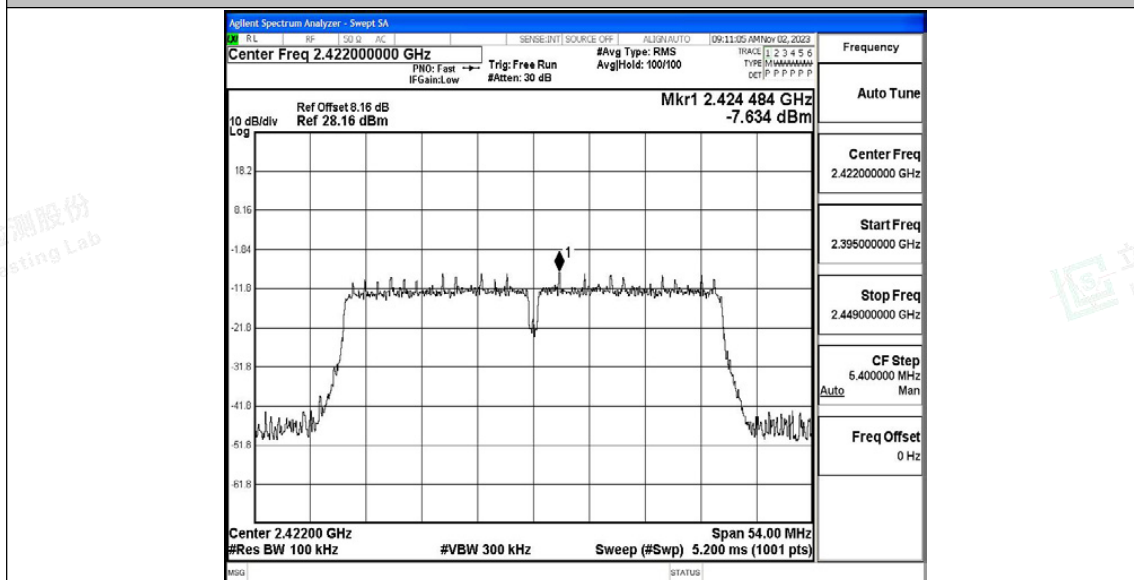


11N20SISO_Ant1_2462



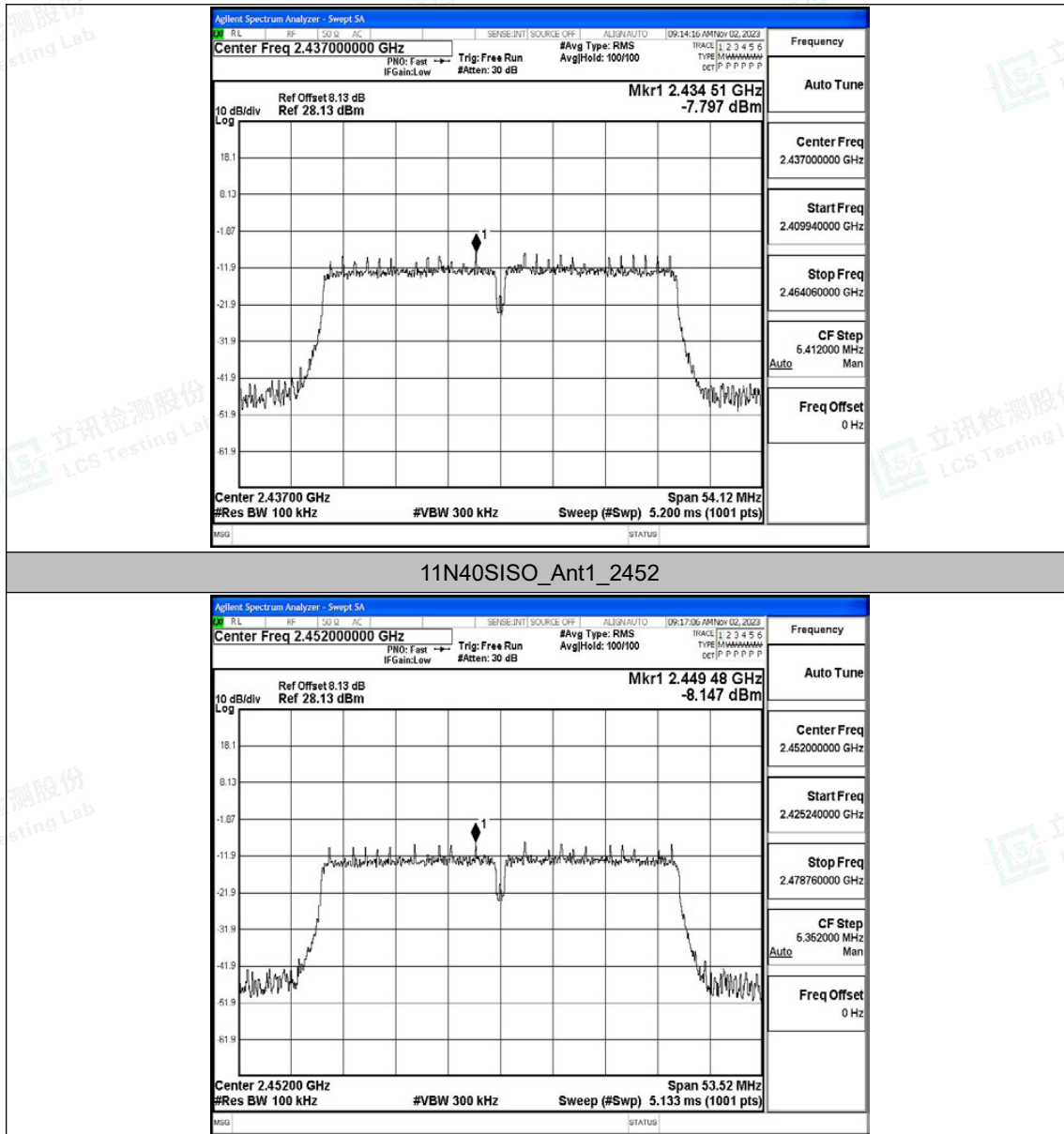


11N40SISO_Ant1_2422



11N40SISO_Ant1_2437

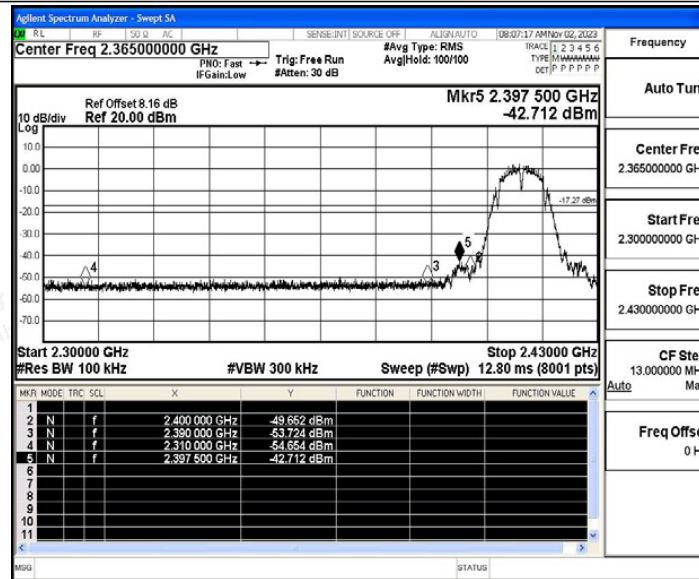




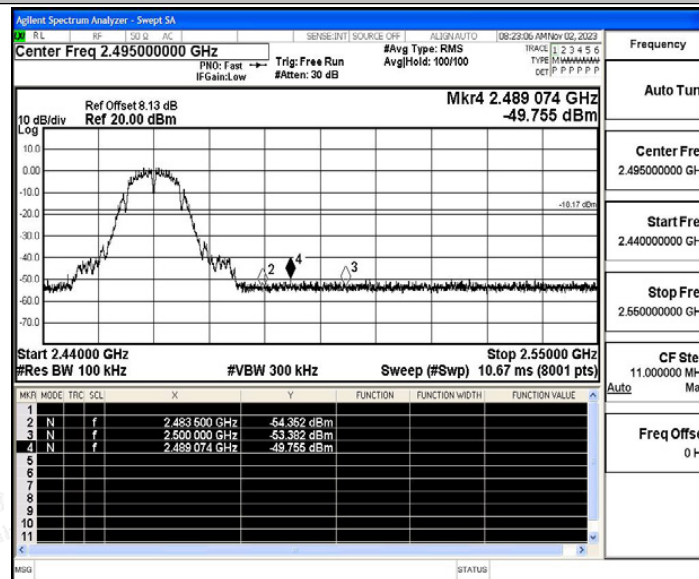


Band edge measurements_Test Graphs

11B_Ant1_Low_2412



11B_Ant1_High_2462



11G_Ant1_Low_2412

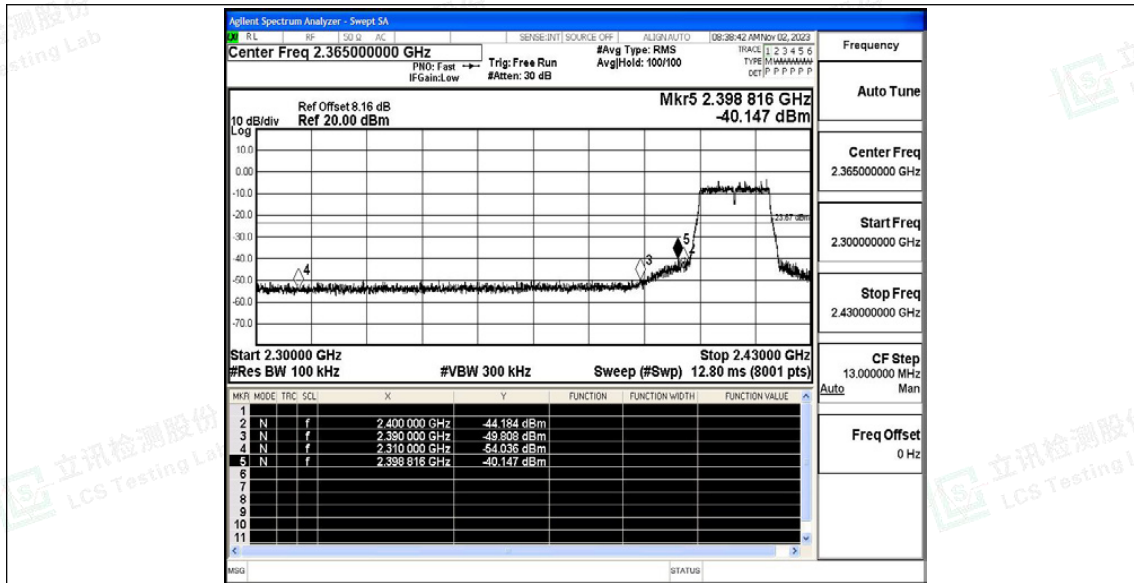


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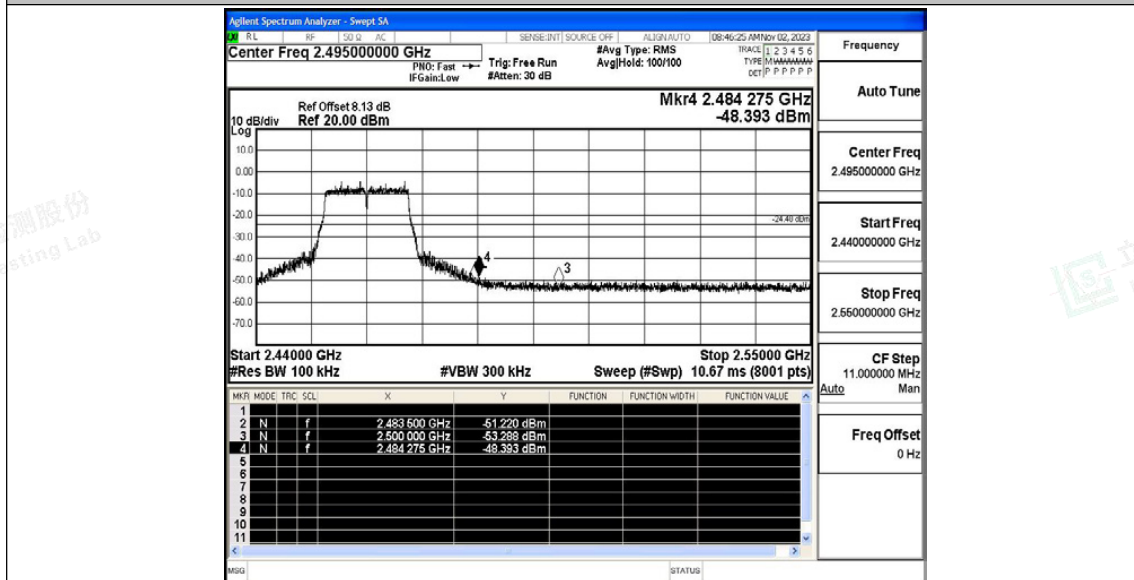
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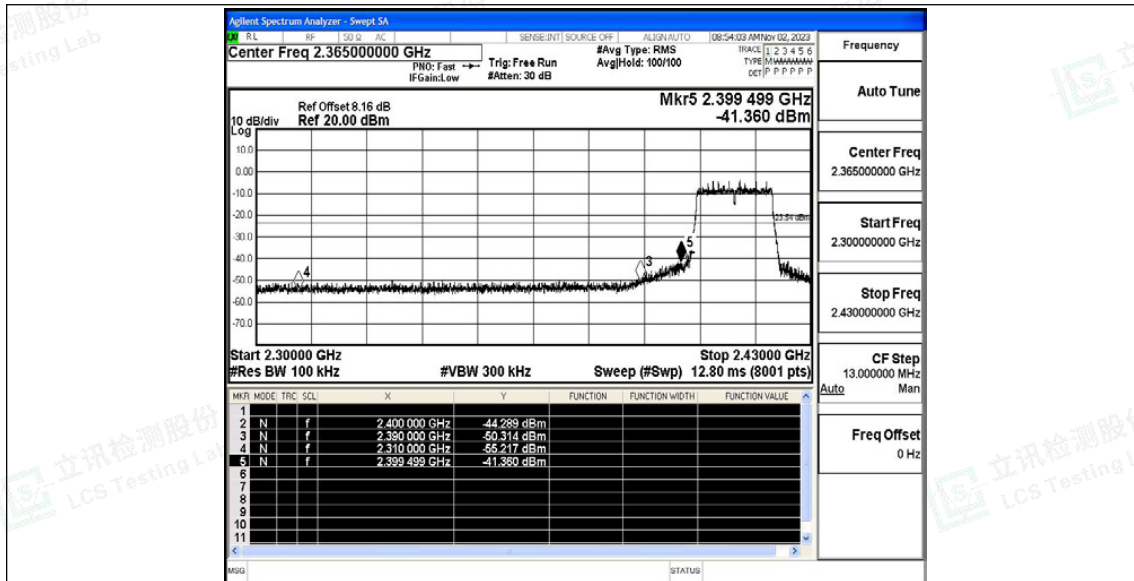


11G_Ant1_High_2462

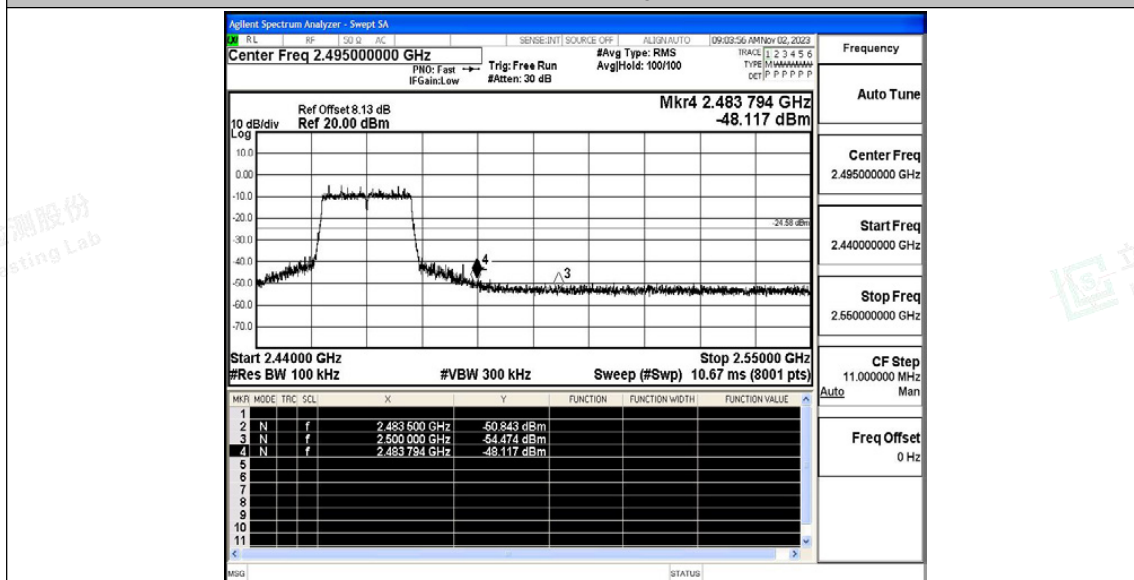


11N20SISO_Ant1_Low_2412



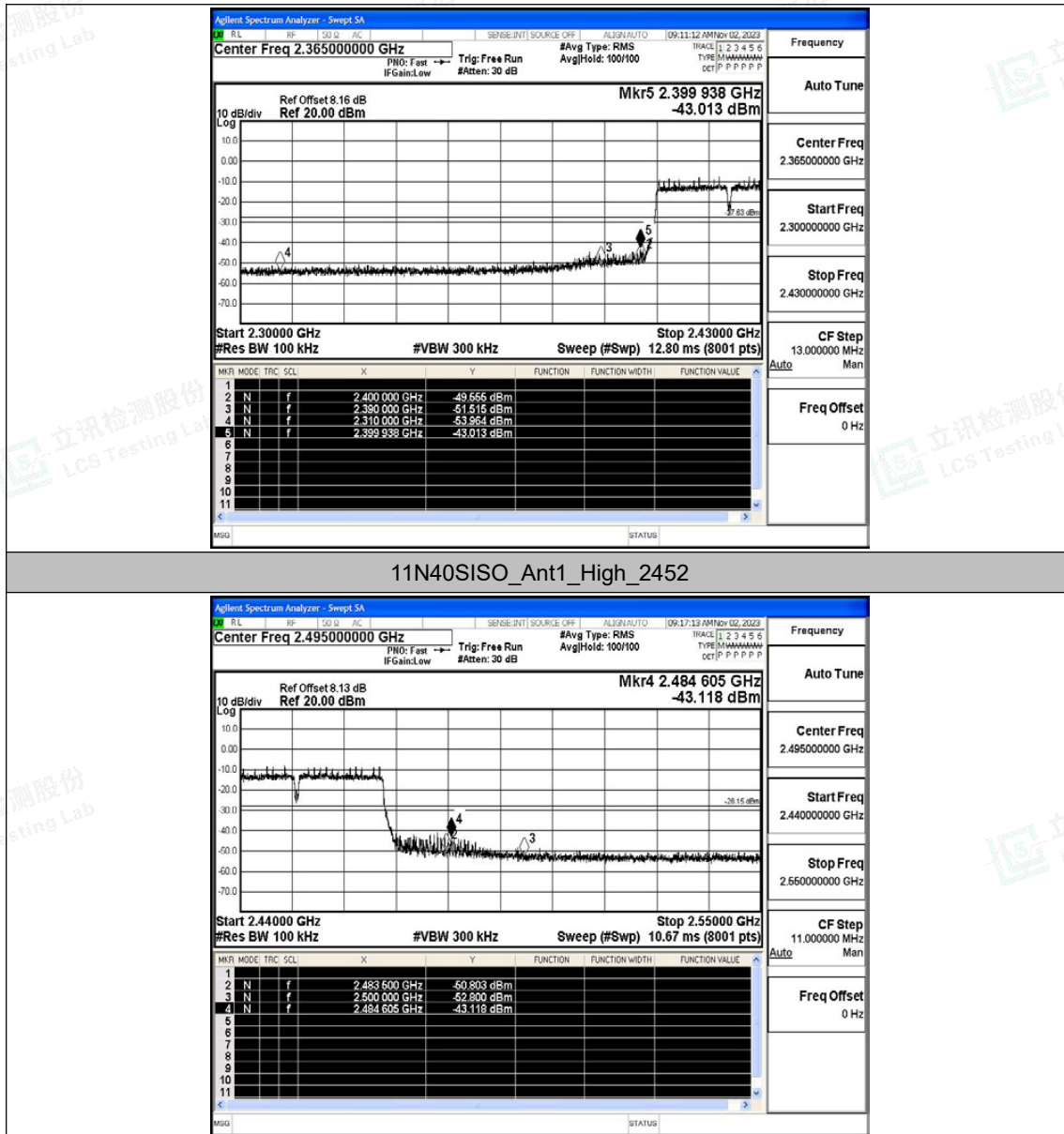


11N20ISO_Ant1_High_2462



11N40ISO_Ant1_Low_2422







B.6 Conducted Spurious Emission

Reference level measurement_Test Result

TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
11B	Ant1	2412	2412.99	2.73
		2437	2437.51	1.81
		2462	2460.99	1.83
11G	Ant1	2412	2416.97	-3.67
		2437	2438.23	-3.10
		2462	2455.72	-4.48
11N20SISO	Ant1	2412	2413.24	-3.54
		2437	2439.51	-4.54
		2462	2463.21	-4.58
11N40SISO	Ant1	2422	2424.48	-7.63
		2437	2434.51	-7.80
		2452	2449.48	-8.15



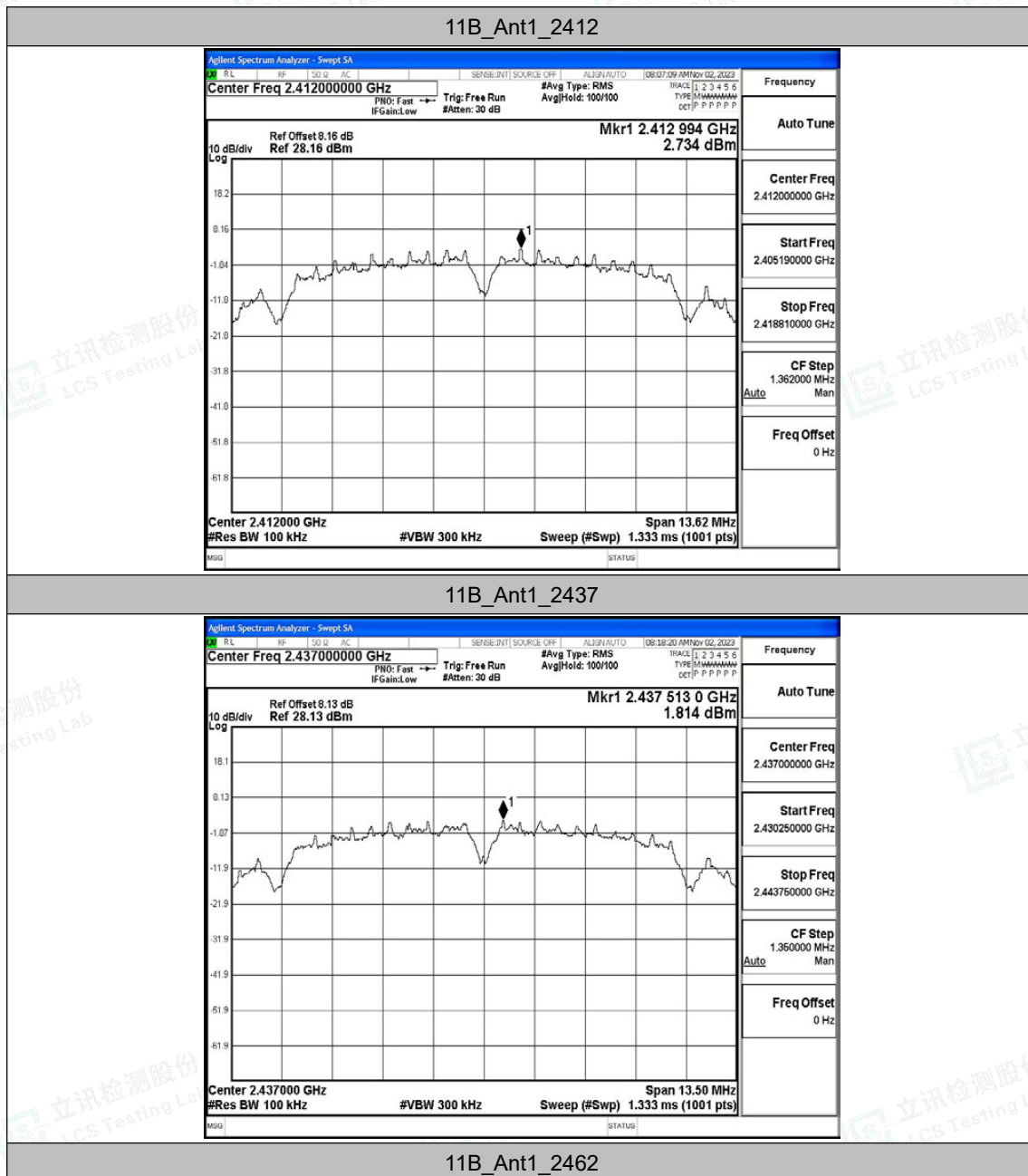
**Conducted Spurious Emission_Test Result**

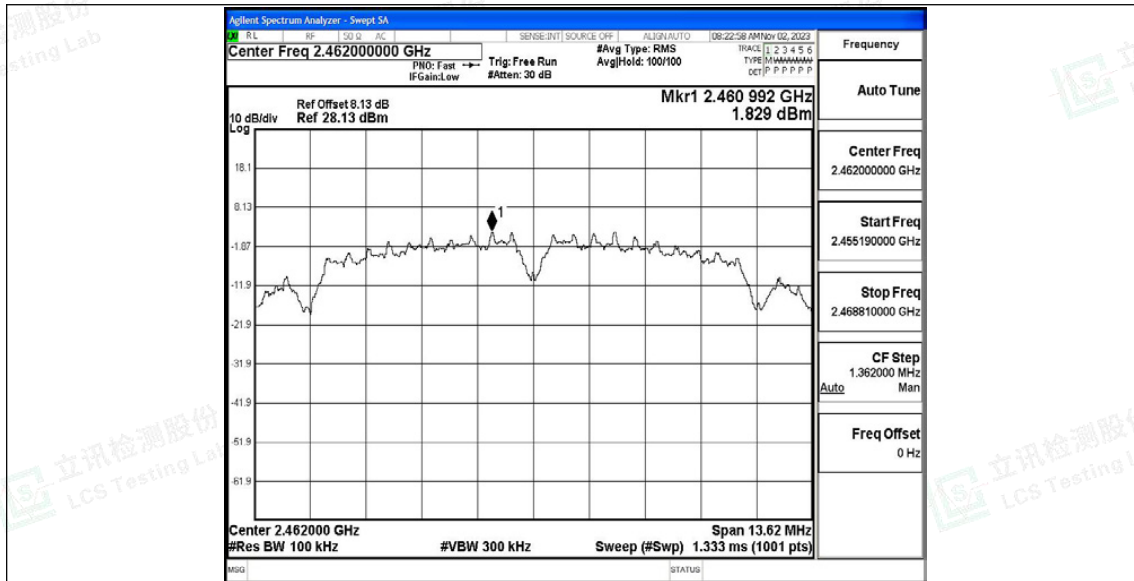
TestMode	Antenna	Freq(MHz)	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	30~1000	2.73	-61.67	≤-17.27	PASS
			1000~26500	2.73	-49.25	≤-17.27	PASS
		2437	30~1000	1.81	-61.87	≤-18.19	PASS
			1000~26500	1.81	-49.29	≤-18.19	PASS
		2462	30~1000	1.83	-61.06	≤-18.17	PASS
			1000~26500	1.83	-49.09	≤-18.17	PASS
11G	Ant1	2412	30~1000	-3.67	-61.3	≤-23.67	PASS
			1000~26500	-3.67	-48.79	≤-23.67	PASS
		2437	30~1000	-3.10	-61.49	≤-23.1	PASS
			1000~26500	-3.10	-48.39	≤-23.1	PASS
		2462	30~1000	-4.48	-61.56	≤-24.48	PASS
			1000~26500	-4.48	-49.13	≤-24.48	PASS
11N20SISO	Ant1	2412	30~1000	-3.54	-60.91	≤-23.54	PASS
			1000~26500	-3.54	-49.05	≤-23.54	PASS
		2437	30~1000	-4.54	-60.54	≤-24.54	PASS
			1000~26500	-4.54	-49.2	≤-24.54	PASS
		2462	30~1000	-4.58	-61.27	≤-24.58	PASS
			1000~26500	-4.58	-49.21	≤-24.58	PASS
11N40SISO	Ant1	2422	30~1000	-7.63	-60.91	≤-27.63	PASS
			1000~26500	-7.63	-49.24	≤-27.63	PASS
		2437	30~1000	-7.80	-59.75	≤-27.8	PASS
			1000~26500	-7.80	-49.6	≤-27.8	PASS
		2452	30~1000	-8.15	-60.99	≤-28.15	PASS
			1000~26500	-8.15	-49.05	≤-28.15	PASS



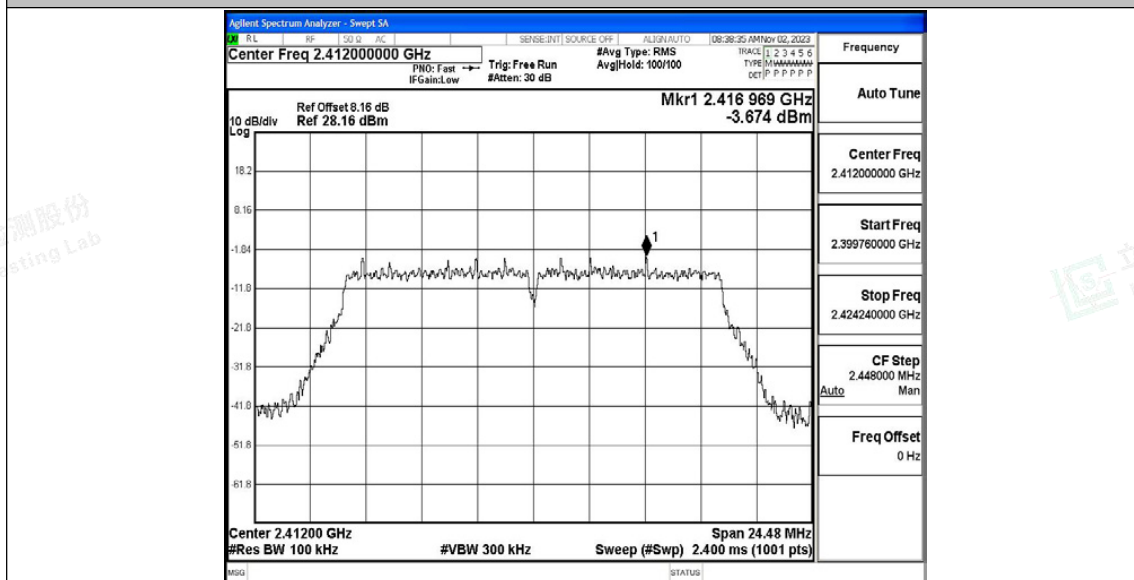


Reference level measurement_Test Graphs



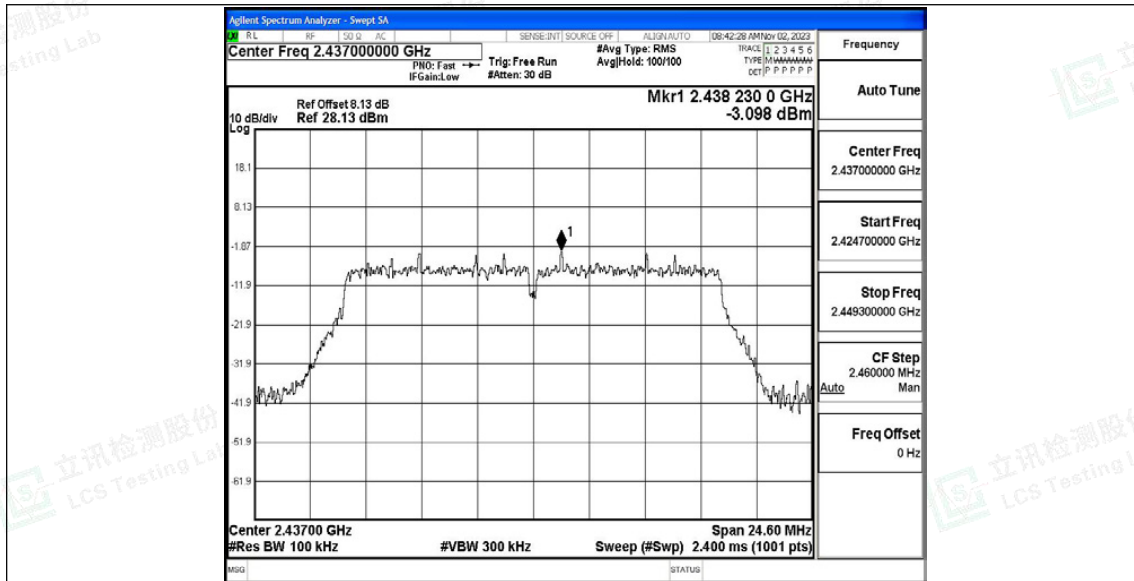


11G_Ant1_2412

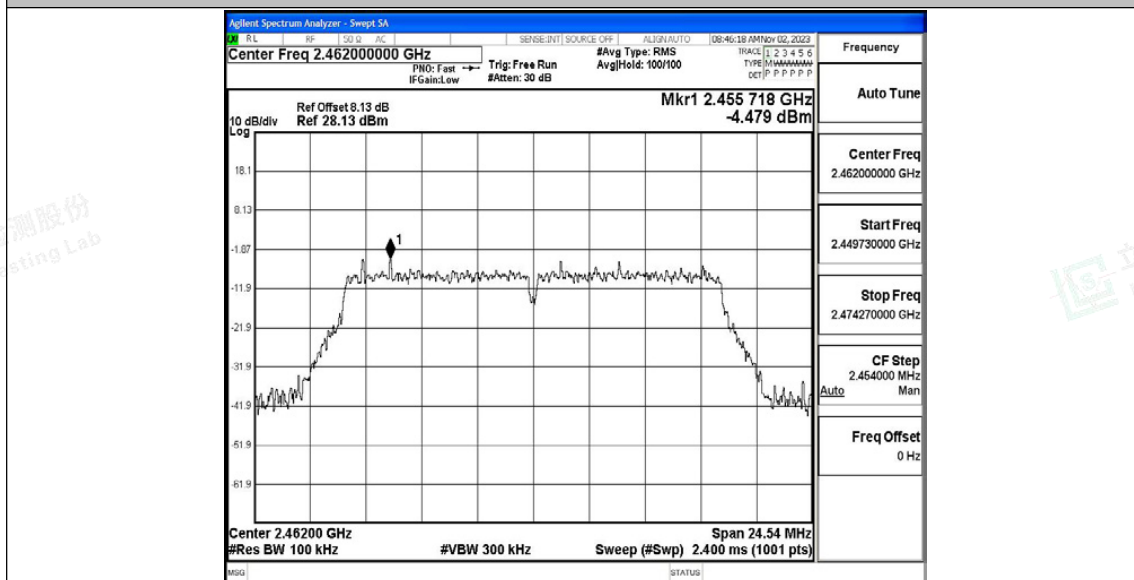


11G_Ant1_2437



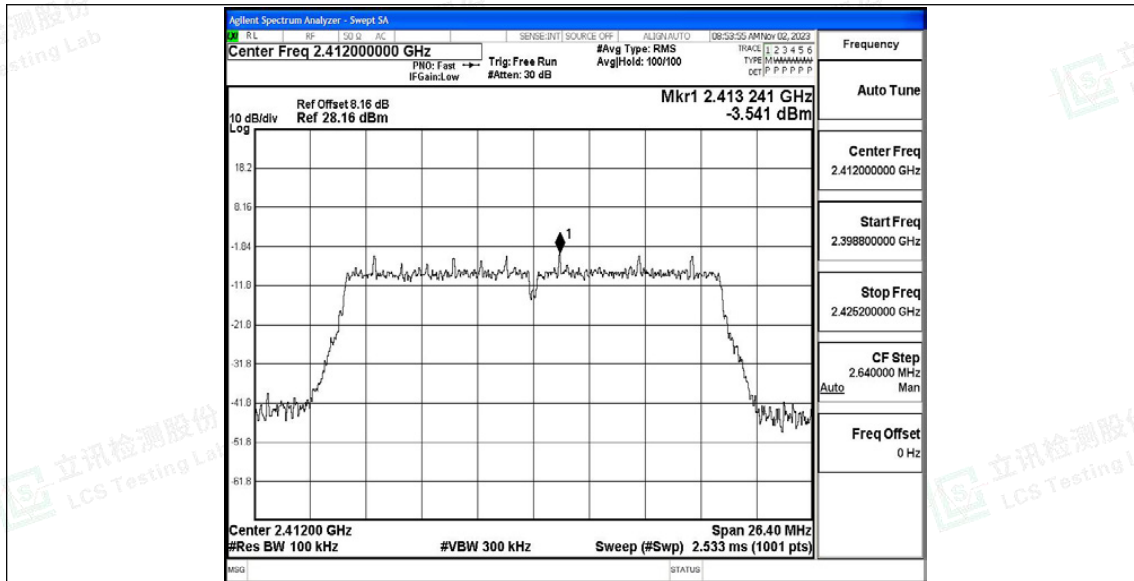


11G_Ant1_2462

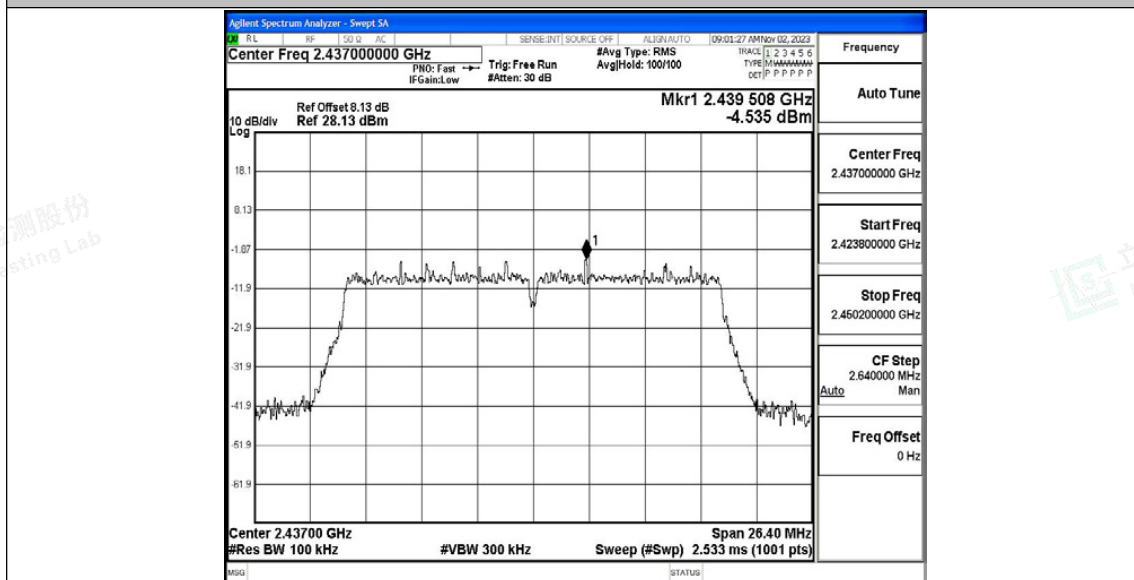


11N20SISO_Ant1_2412



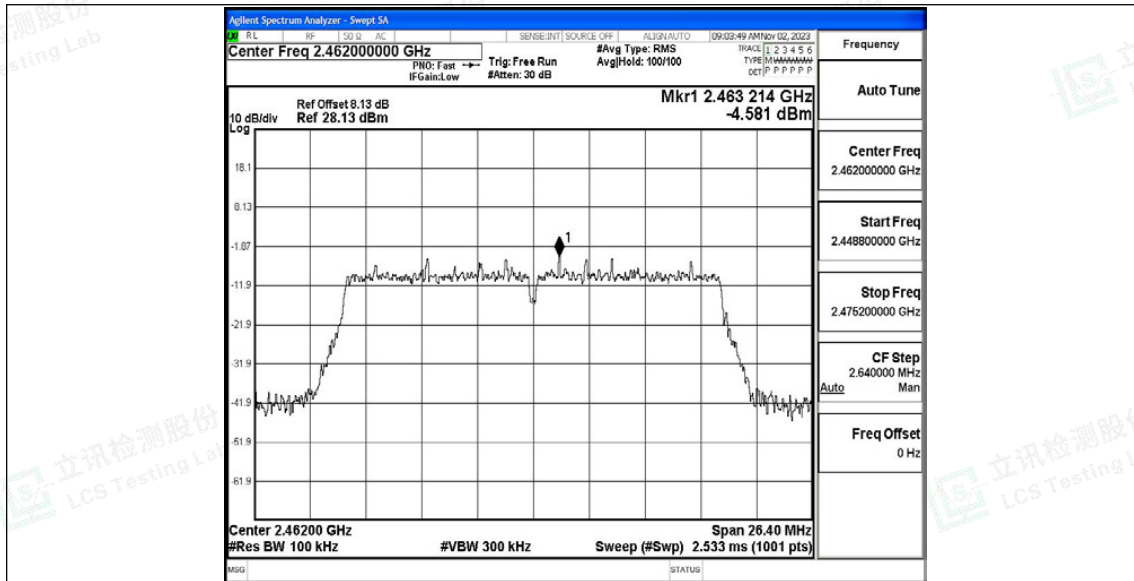


11N20SISO_Ant1_2437

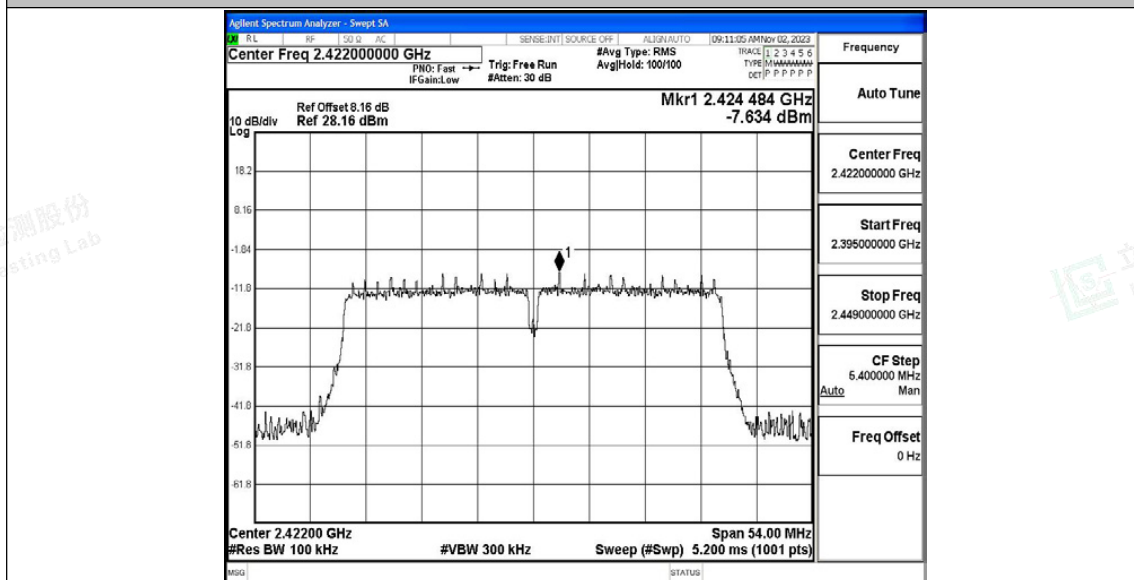


11N20SISO_Ant1_2462



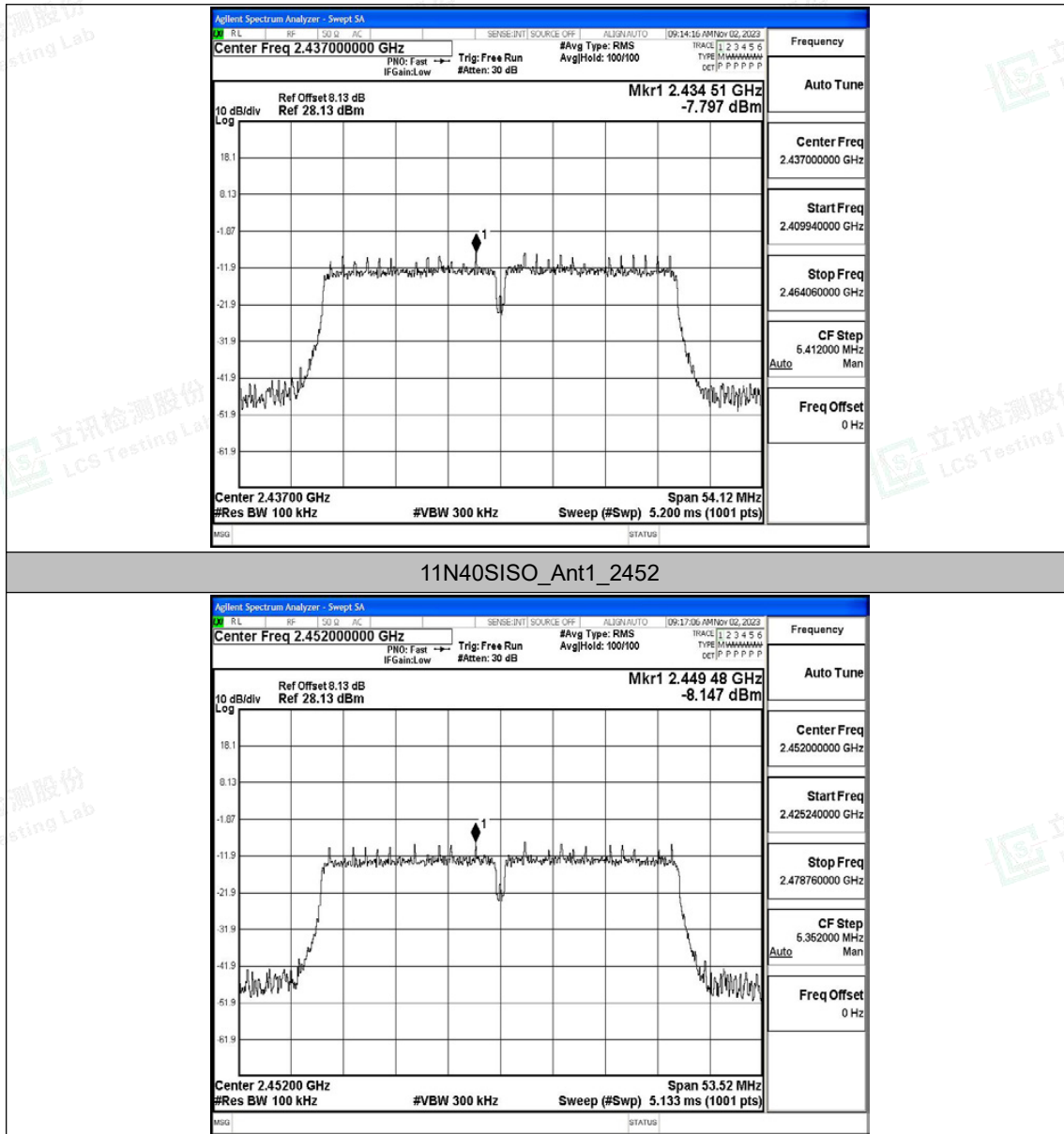


11N40SISO_Ant1_2422



11N40SISO_Ant1_2437

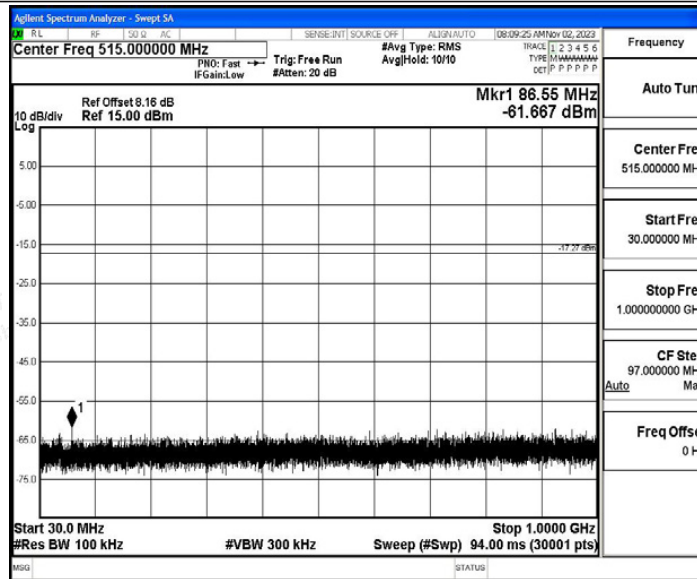




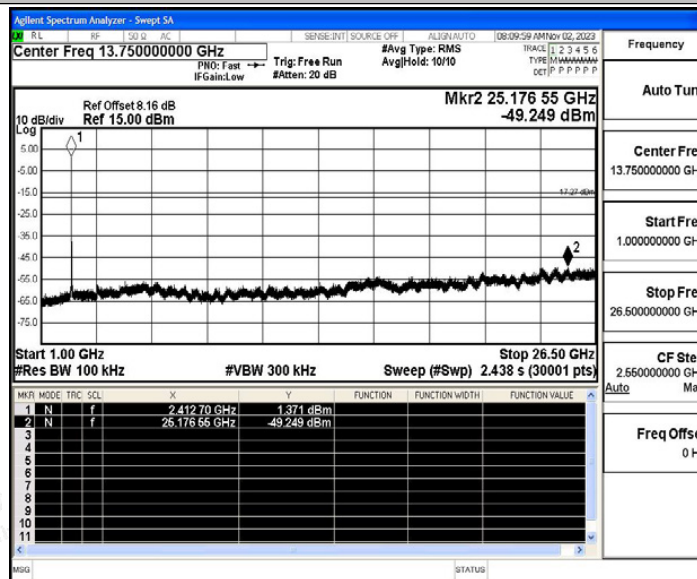


Conducted Spurious Emission_Test Graphs

11B_Ant1_2412_30~1000



11B_Ant1_2412_1000~26500



11B_Ant1_2437_30~1000

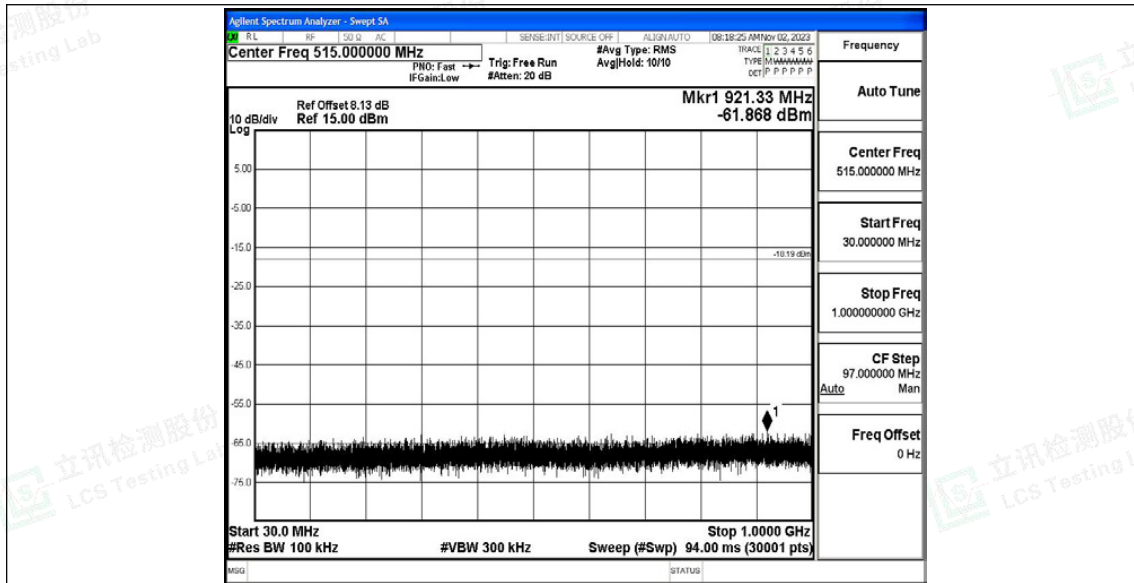


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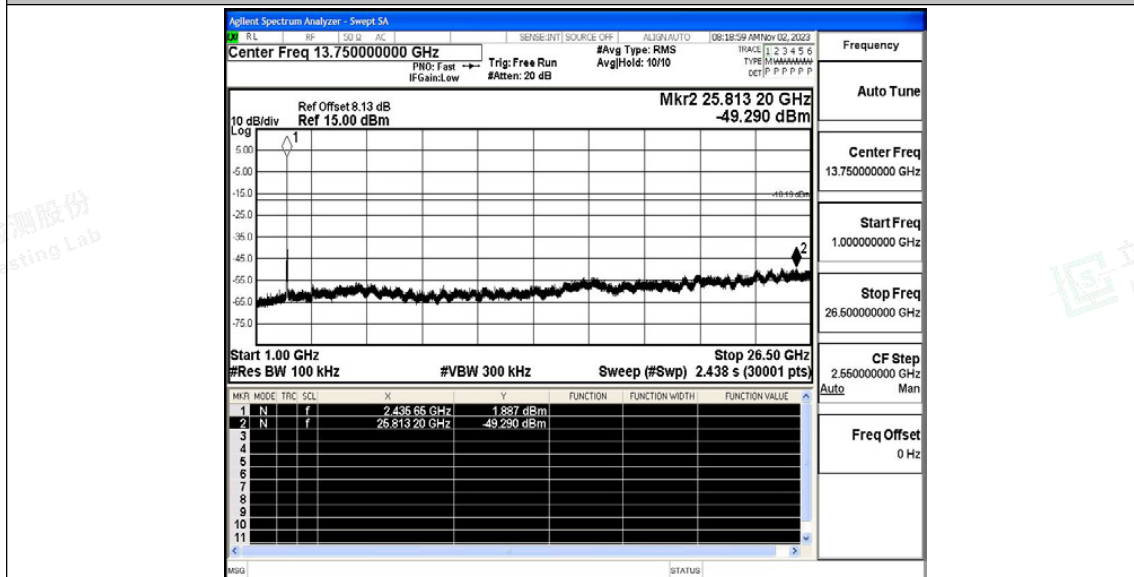
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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Scan code to check authenticity



11B_Ant1_2437_1000~26500



11B_Ant1_2462_30~1000



