



Appendix A

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Projector

Test Model: J19

Environmental Conditions

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



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A.1 DTS Bandwidth

Test Result

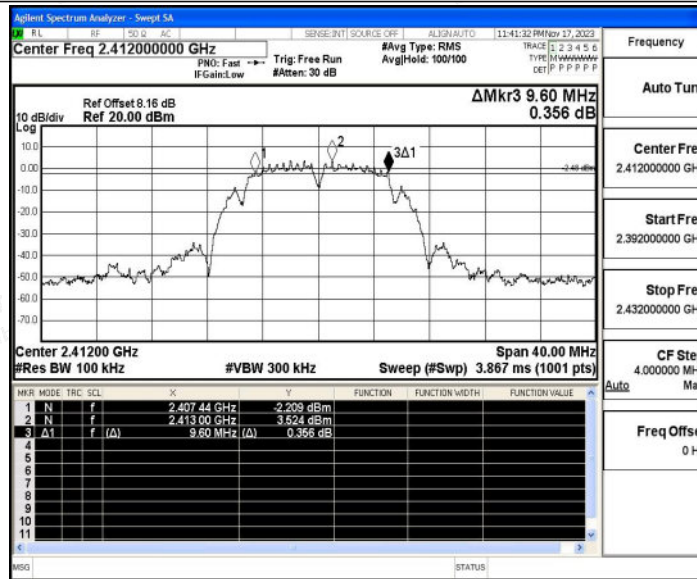
TestMode	Antenna	Freq(MHz)	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.600	2407.440	2417.040	0.5	PASS
		2437	10.040	2431.960	2442.000	0.5	PASS
		2462	9.560	2456.960	2466.520	0.5	PASS
11G	Ant1	2412	16.320	2403.840	2420.160	0.5	PASS
		2437	16.320	2428.840	2445.160	0.5	PASS
		2462	15.920	2453.880	2469.800	0.5	PASS
11N20SISO	Ant1	2412	16.680	2403.640	2420.320	0.5	PASS
		2437	16.600	2428.680	2445.280	0.5	PASS
		2462	17.000	2453.360	2470.360	0.5	PASS



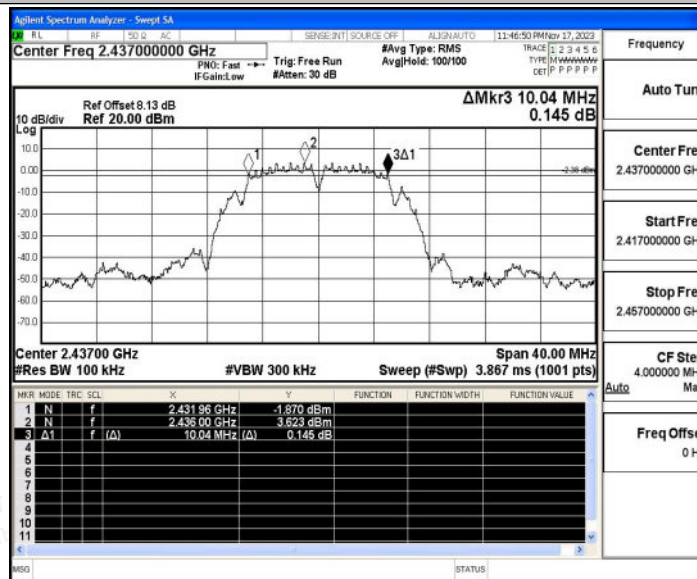


Test Graphs

11B_Ant1_2412



11B_Ant1_2437



11B_Ant1_2462

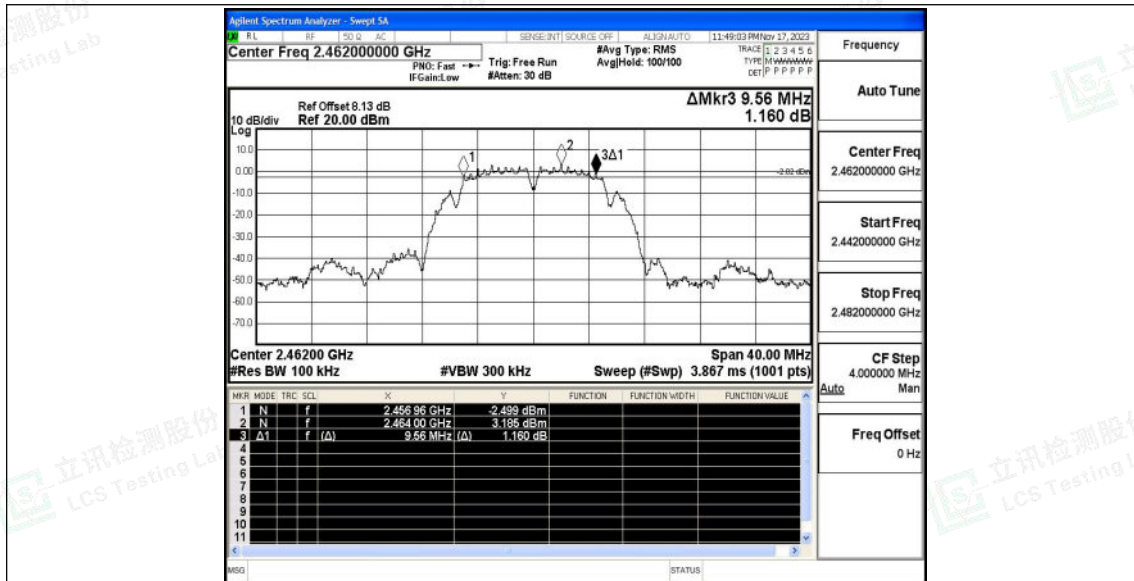


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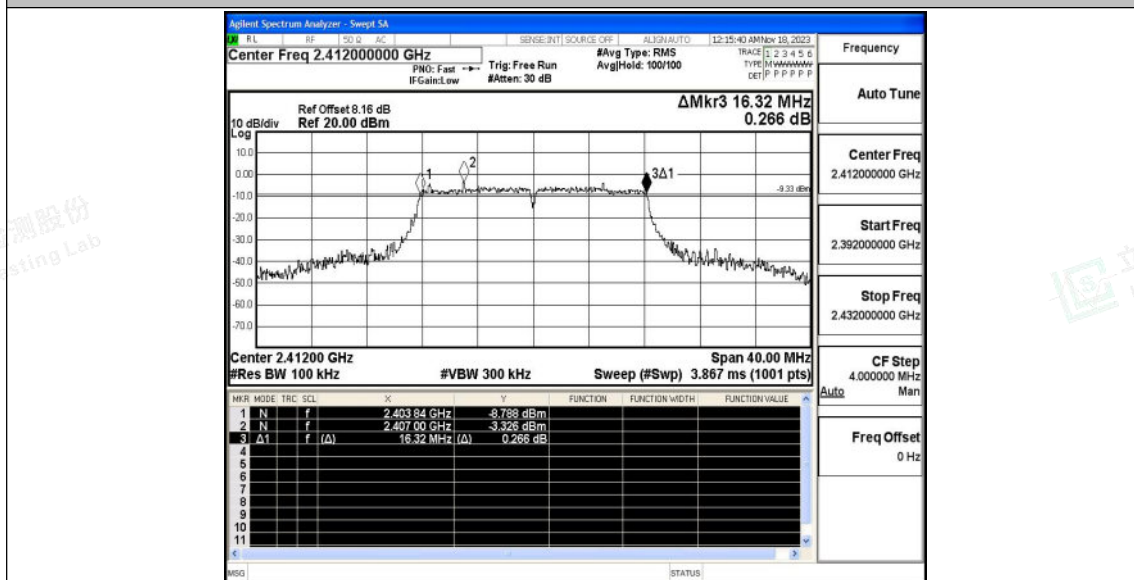
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11G_Ant1_2412



11G_Ant1_2437

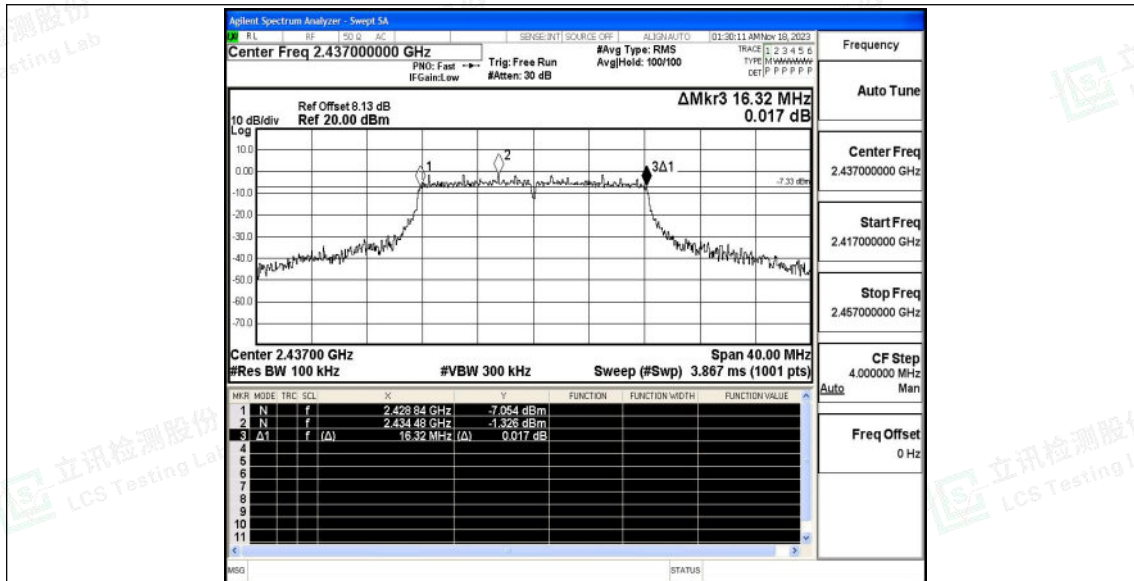


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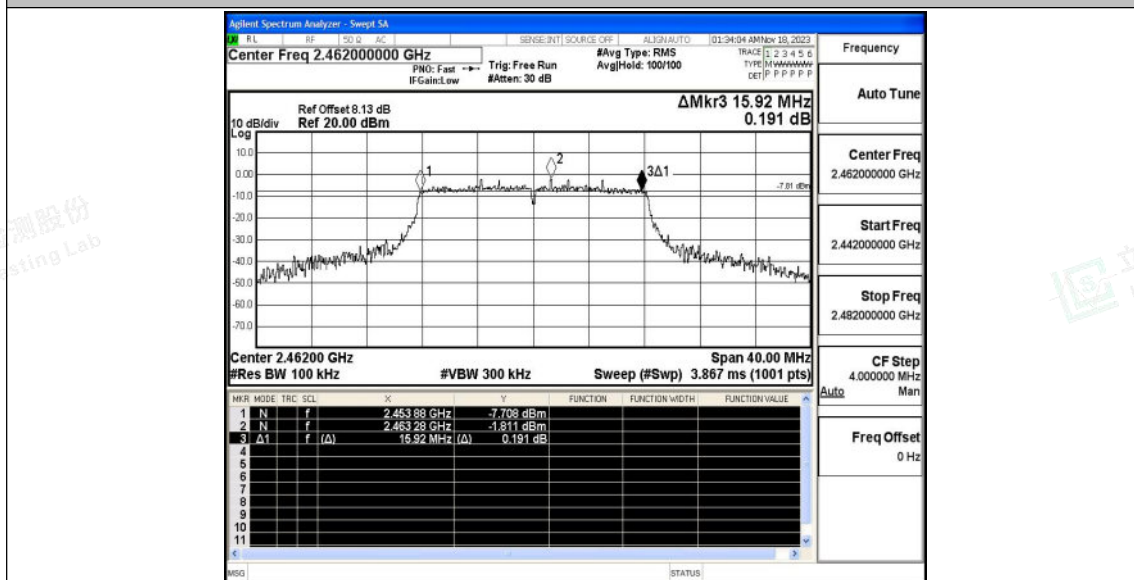
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11G_Ant1_2462



11N20SISO_Ant1_2412

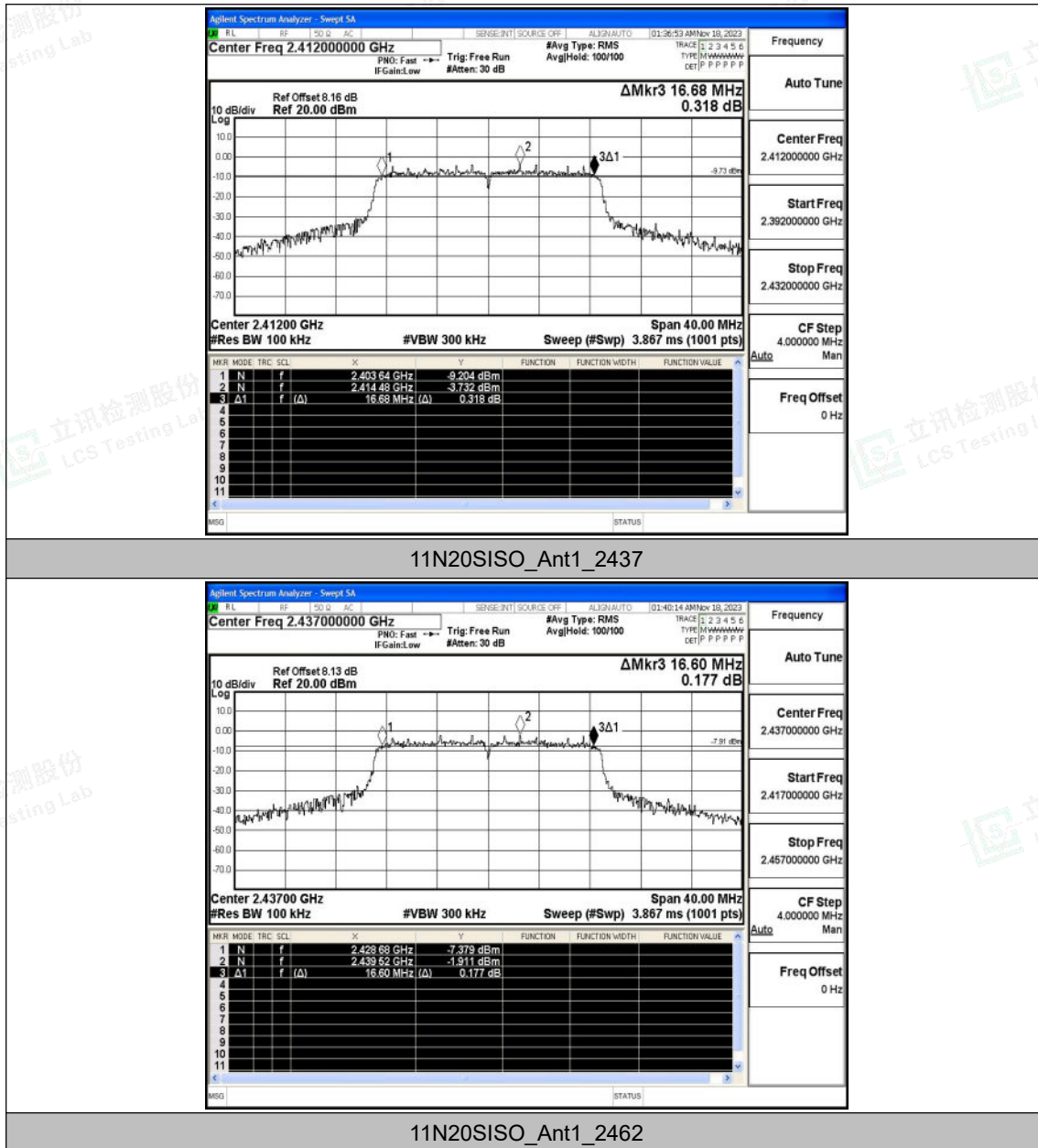


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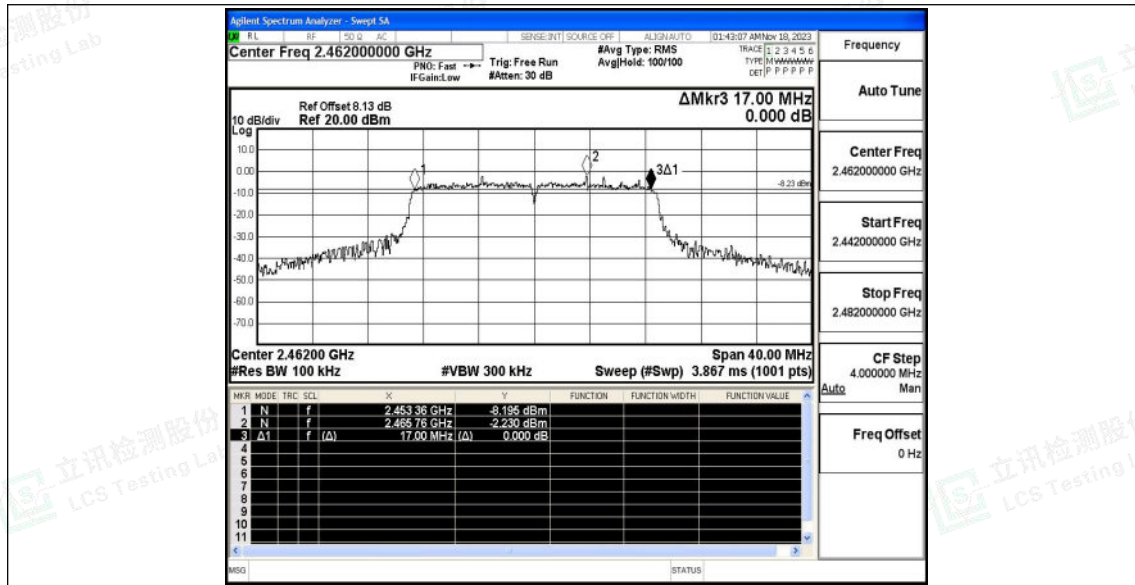


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A.2 Maximum conducted output power

Test Result Peak

TestMode	Antenna	Freq(MHz)	Peak Power[dBm]	Conducted Limit[dBm]	Verdict
11B	Ant1	2412	15.54	≤30.00	PASS
		2437	15.70	≤30.00	PASS
		2462	15.46	≤30.00	PASS
11G	Ant1	2412	14.72	≤30.00	PASS
		2437	16.46	≤30.00	PASS
		2462	15.57	≤30.00	PASS
11N20SISO	Ant1	2412	13.82	≤30.00	PASS
		2437	15.61	≤30.00	PASS
		2462	15.45	≤30.00	PASS





A.3 Maximum power spectral density

Test Result

TestMode	Antenna	Freq(MHz)	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant1	2412	-10.2	≤8.00	PASS
		2437	-9.98	≤8.00	PASS
		2462	-9.97	≤8.00	PASS
11G	Ant1	2412	-16.87	≤8.00	PASS
		2437	-14.98	≤8.00	PASS
		2462	-16.06	≤8.00	PASS
11N20SISO	Ant1	2412	-18.04	≤8.00	PASS
		2437	-15.78	≤8.00	PASS
		2462	-17.38	≤8.00	PASS

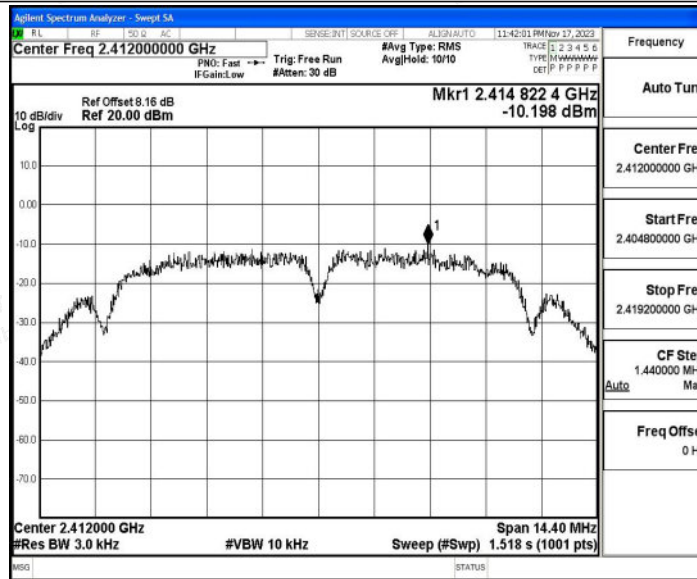




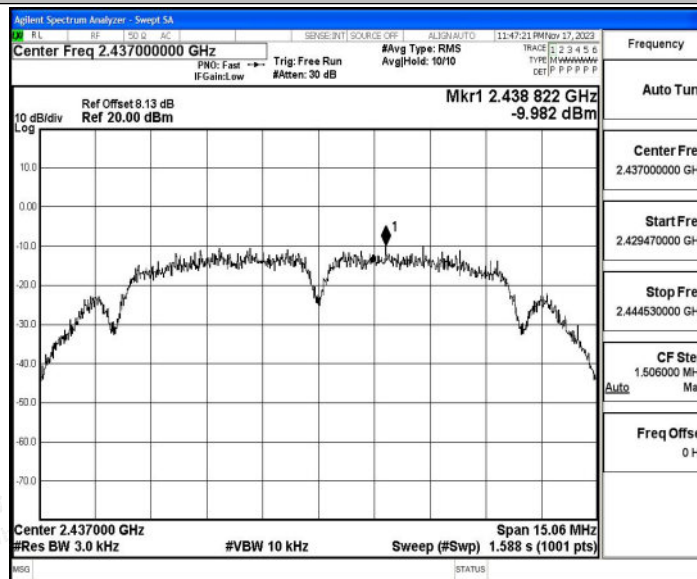
LC SA-4103007EA

Test Graphs

11B_Ant1_2412



11B_Ant1_2437



11B_Ant1_2462



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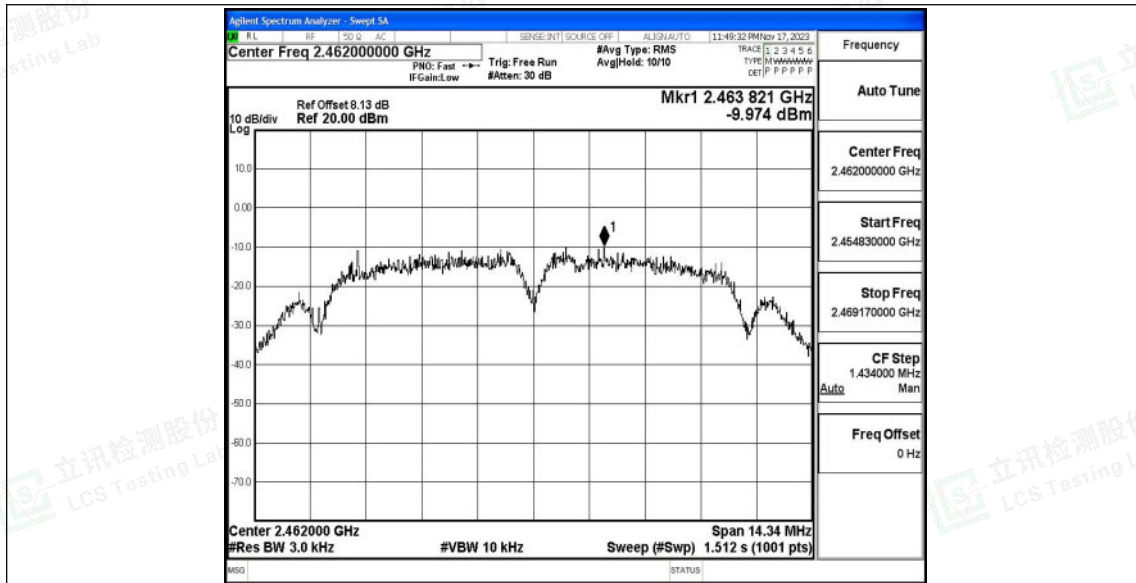
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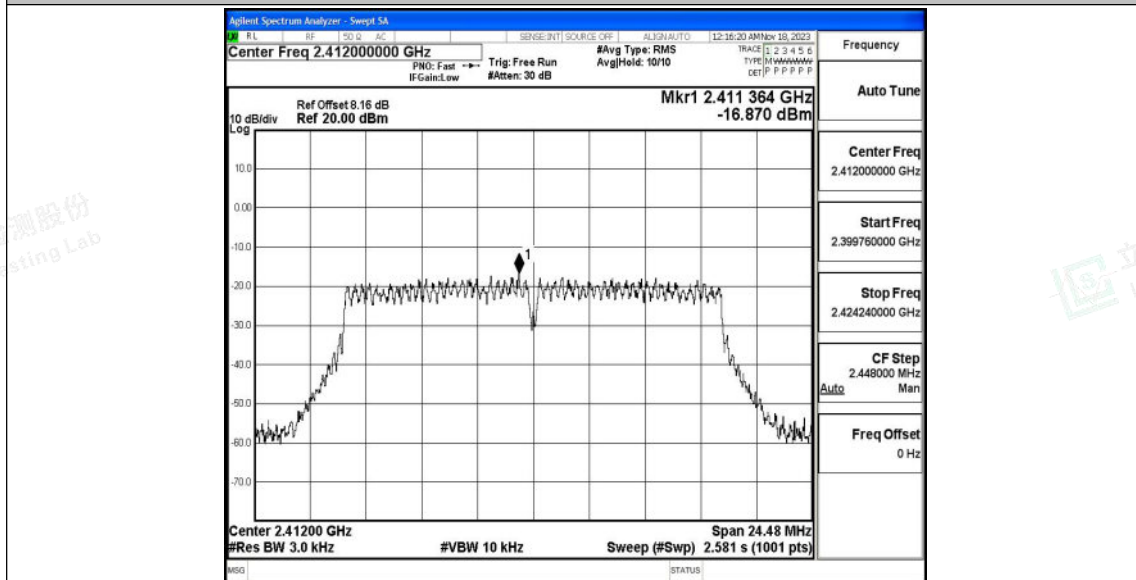
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LC SA 2013007EA



11G_Ant1_2412

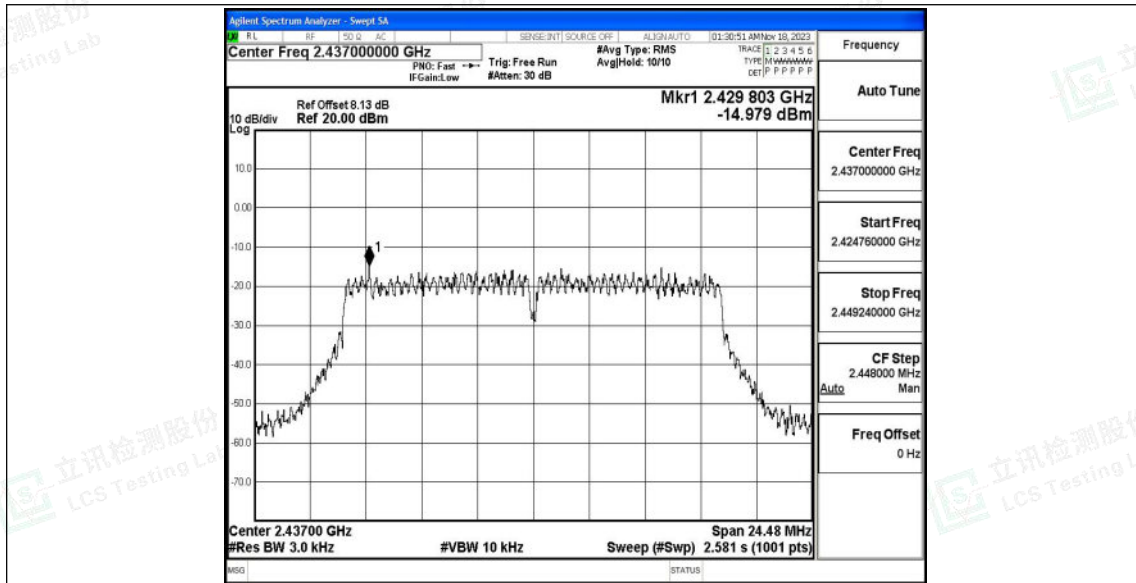


11G_Ant1_2437

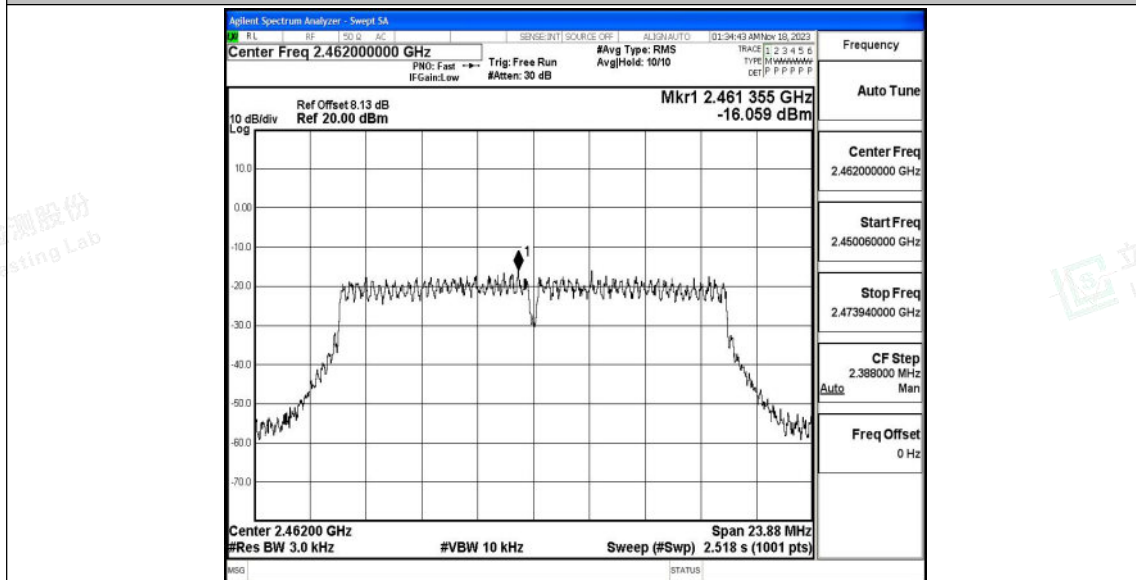




LC SA 3007EA



11G_Ant1_2462

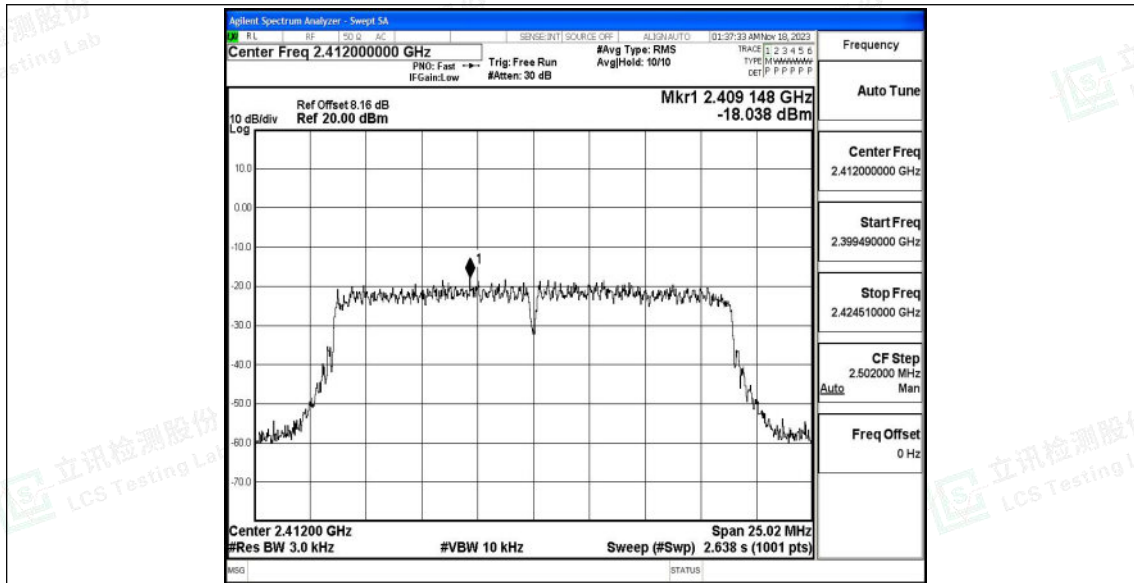


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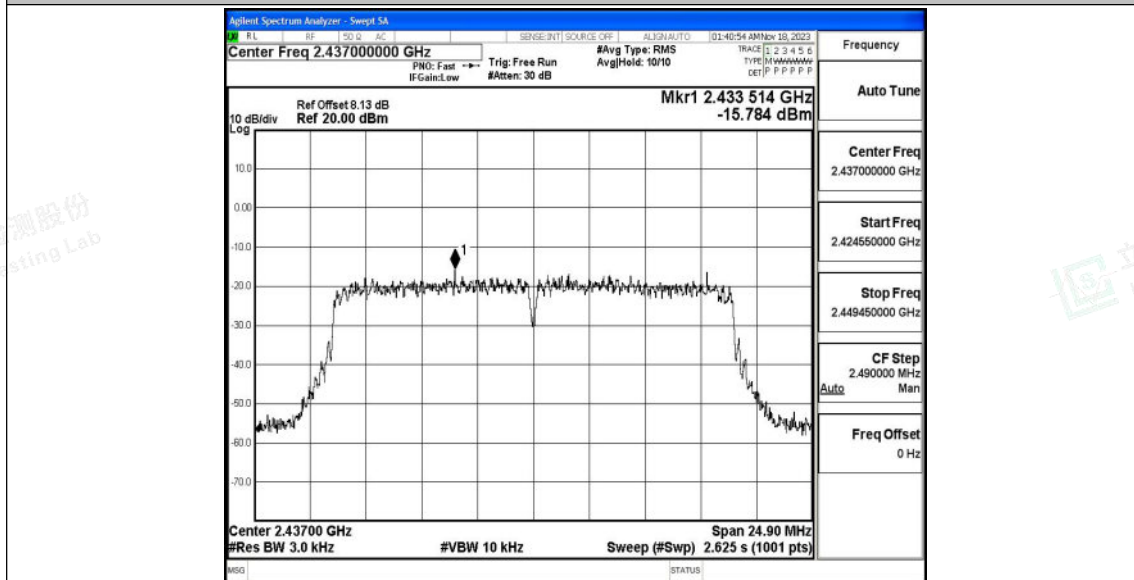




LC SA 403007EA



11N20SISO_Ant1_2437

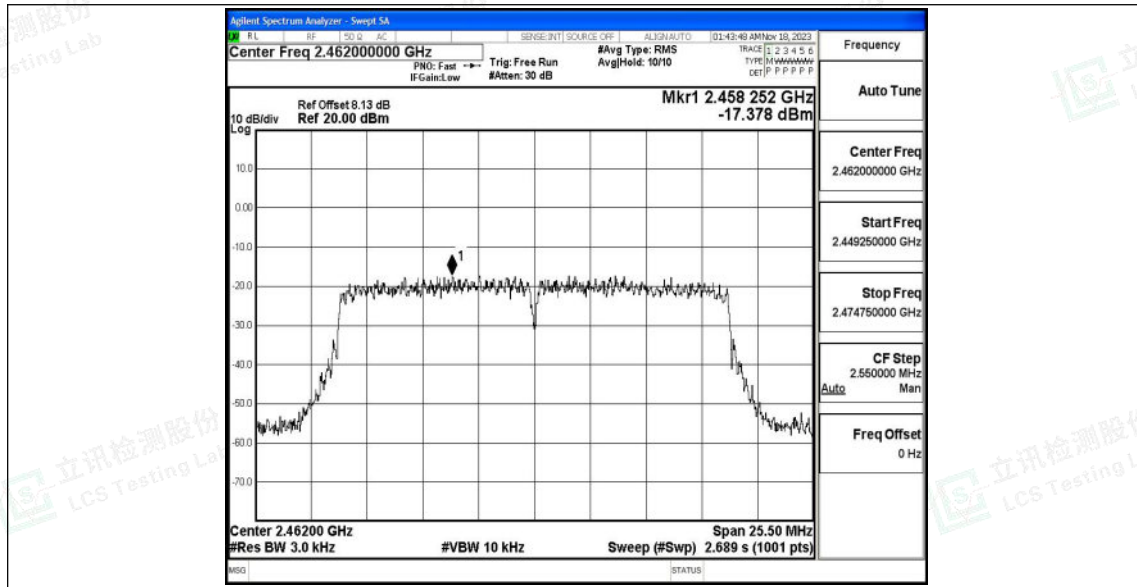


11N20SISO_Ant1_2462





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A.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	Low	2412	3.45	-44.65	≤ -16.55	PASS
		High	2462	3.39	-48.41	≤ -16.61	PASS
11G	Ant1	Low	2412	-3.08	-34.91	≤ -23.08	PASS
		High	2462	-2.59	-46.51	≤ -22.59	PASS
11N20SISO	Ant1	Low	2412	-3.32	-34.84	≤ -23.32	PASS
		High	2462	-2.34	-46.81	≤ -22.34	PASS

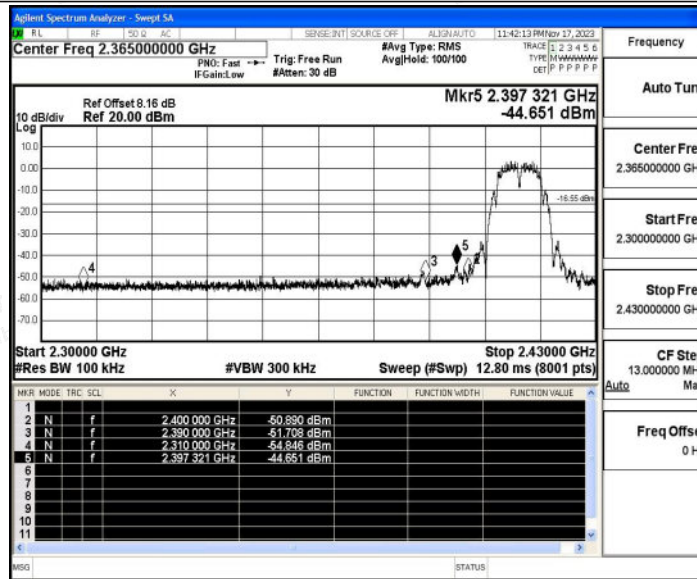




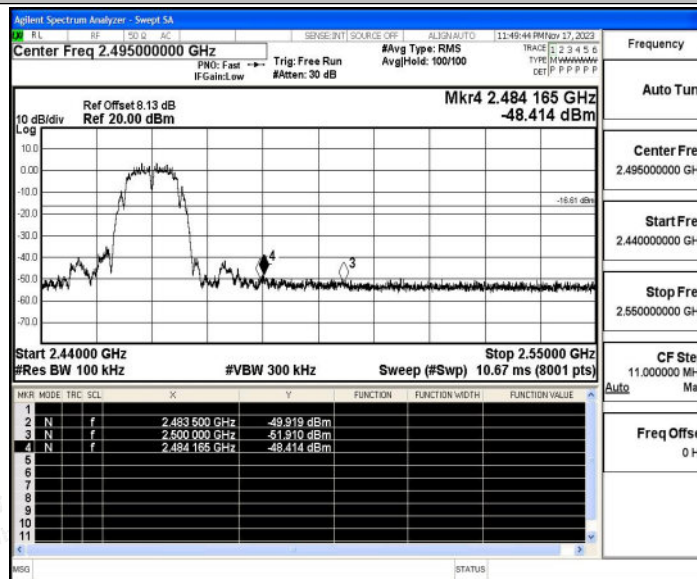
LC SA-M403007EA

Test Graphs

11B_Ant1_Low_2412



11B_Ant1_High_2462



11G_Ant1_Low_2412



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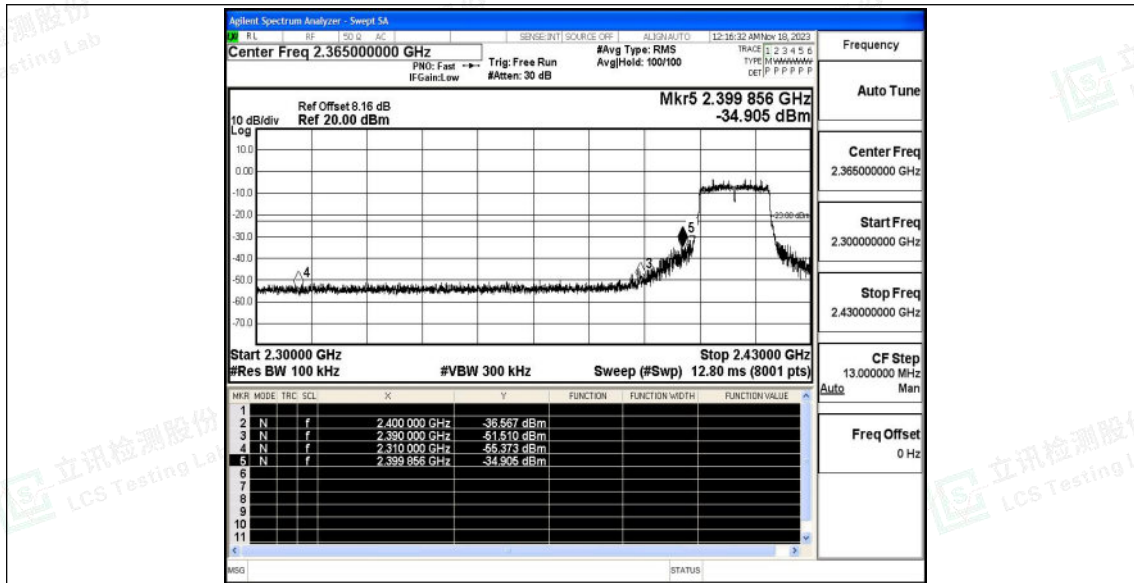
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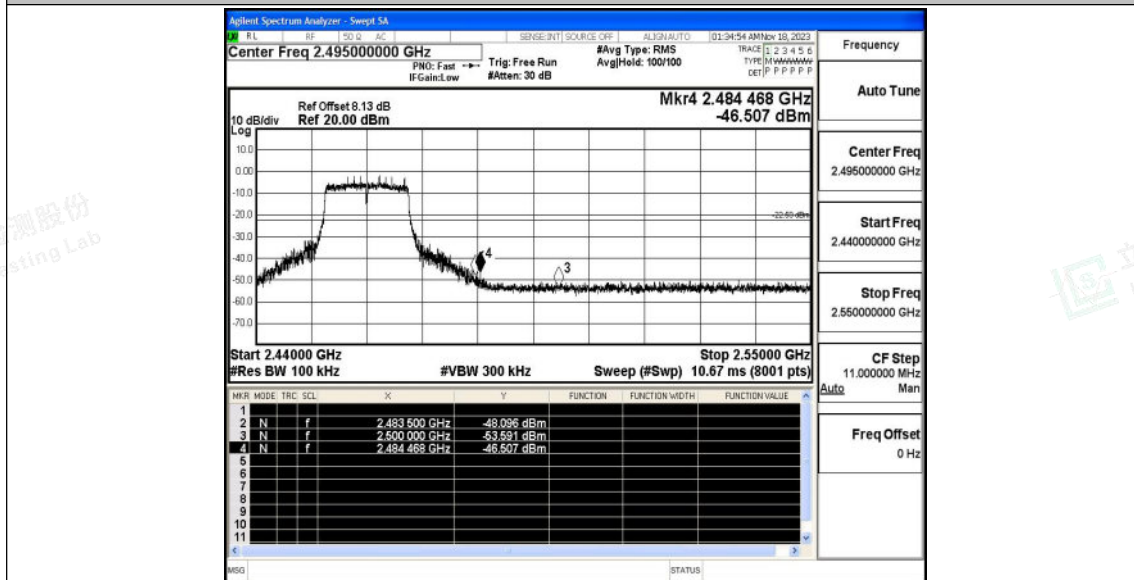
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LC-SA-2013007EA



11G_Ant1_High_2462



11N20SISO_Ant1_Low_2412



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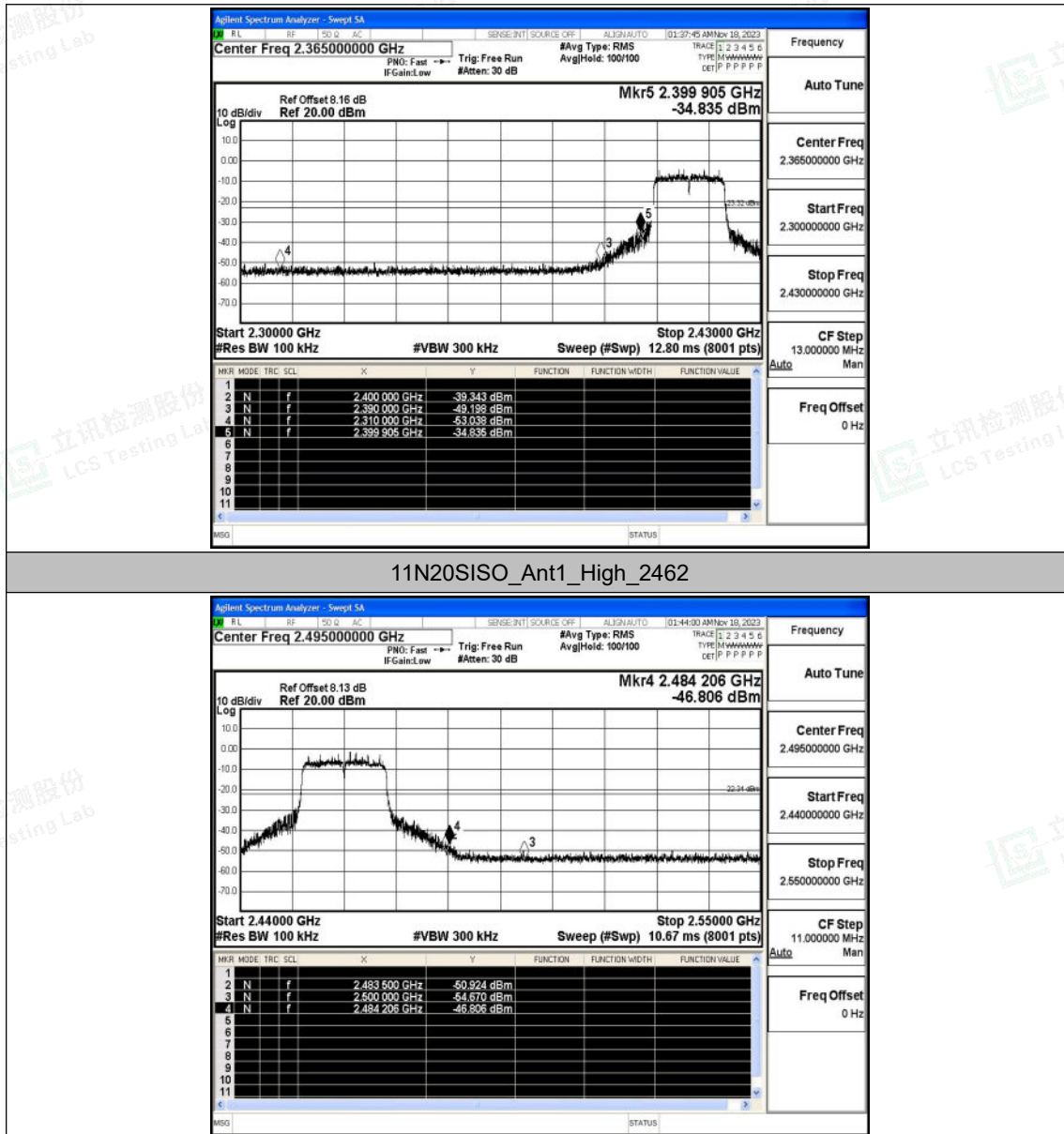
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A.5 Conducted Spurious Emission

Test Result

TestMode	Antenna	Freq(MHz)	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	30~1000	3.45	-61.61	≤-16.55	PASS
			1000~26500	3.45	-35.04	≤-16.55	PASS
		2437	30~1000	3.64	-62.11	≤-16.36	PASS
			1000~26500	3.64	-48.85	≤-16.36	PASS
		2462	30~1000	3.39	-60.68	≤-16.61	PASS
			1000~26500	3.39	-49.04	≤-16.61	PASS
11G	Ant1	2412	30~1000	-3.08	-61.11	≤-23.08	PASS
			1000~26500	-3.08	-49.09	≤-23.08	PASS
		2437	30~1000	-1.06	-61.43	≤-21.06	PASS
			1000~26500	-1.06	-49.07	≤-21.06	PASS
		2462	30~1000	-2.59	-61.2	≤-22.59	PASS
			1000~26500	-2.59	-49.42	≤-22.59	PASS
11N20SISO	Ant1	2412	30~1000	-3.32	-61.76	≤-23.32	PASS
			1000~26500	-3.32	-49.78	≤-23.32	PASS
		2437	30~1000	-1.93	-61.62	≤-21.93	PASS
			1000~26500	-1.93	-49.14	≤-21.93	PASS
		2462	30~1000	-2.34	-62.2	≤-22.34	PASS
			1000~26500	-2.34	-49.23	≤-22.34	PASS

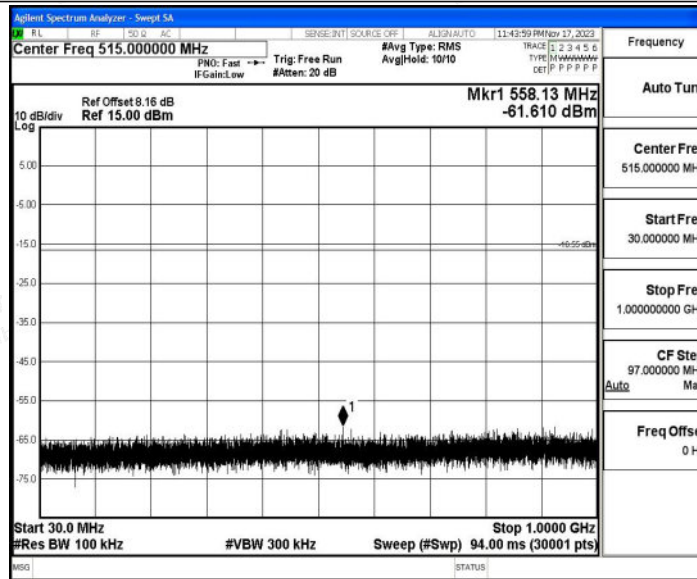




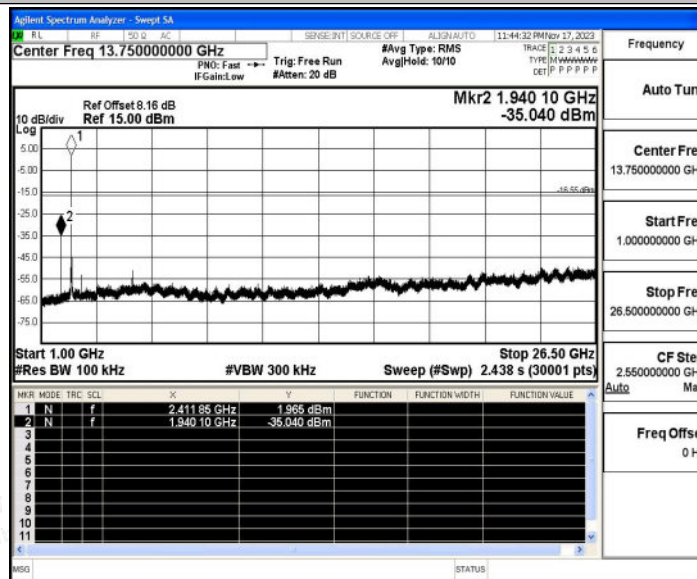
LCSA-403007EA

Test Graphs

11B_Ant1_2412_30~1000



11B_Ant1_2412_1000~26500



11B_Ant1_2437_30~1000



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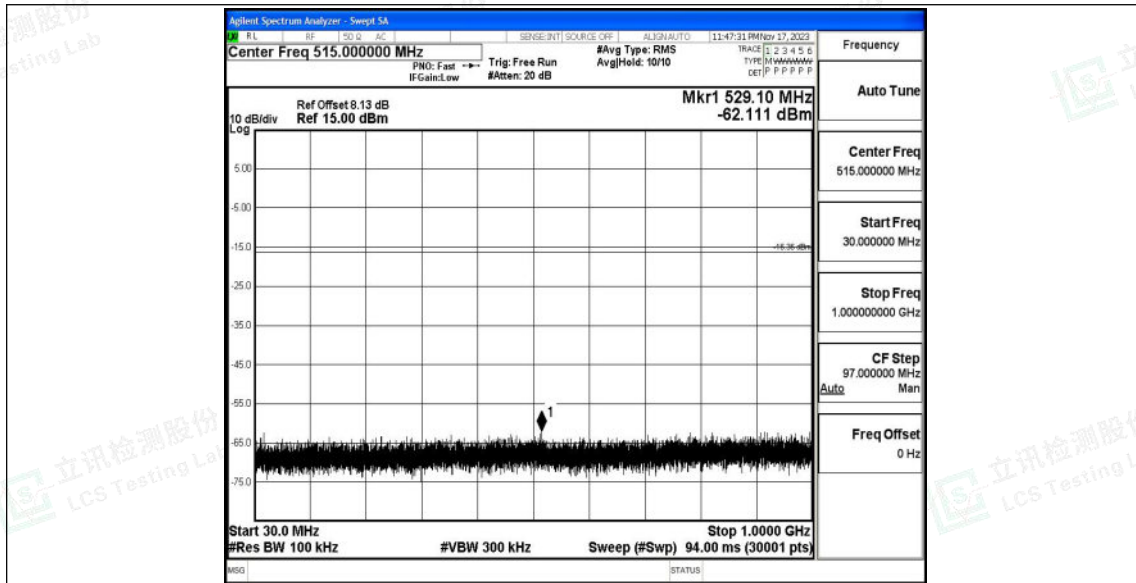
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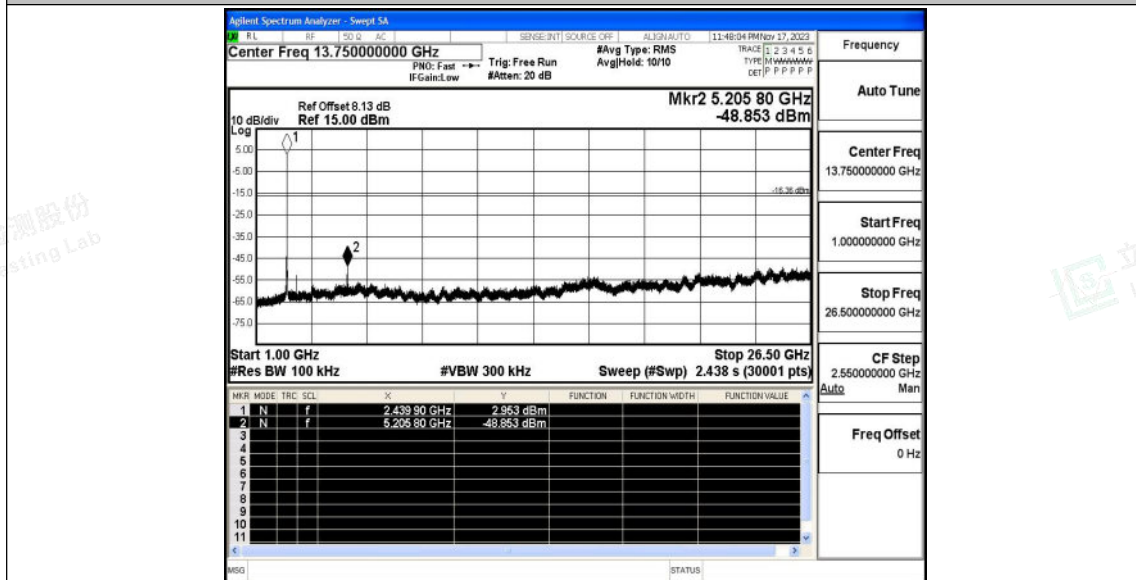
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11B_Ant1_2437_1000~26500

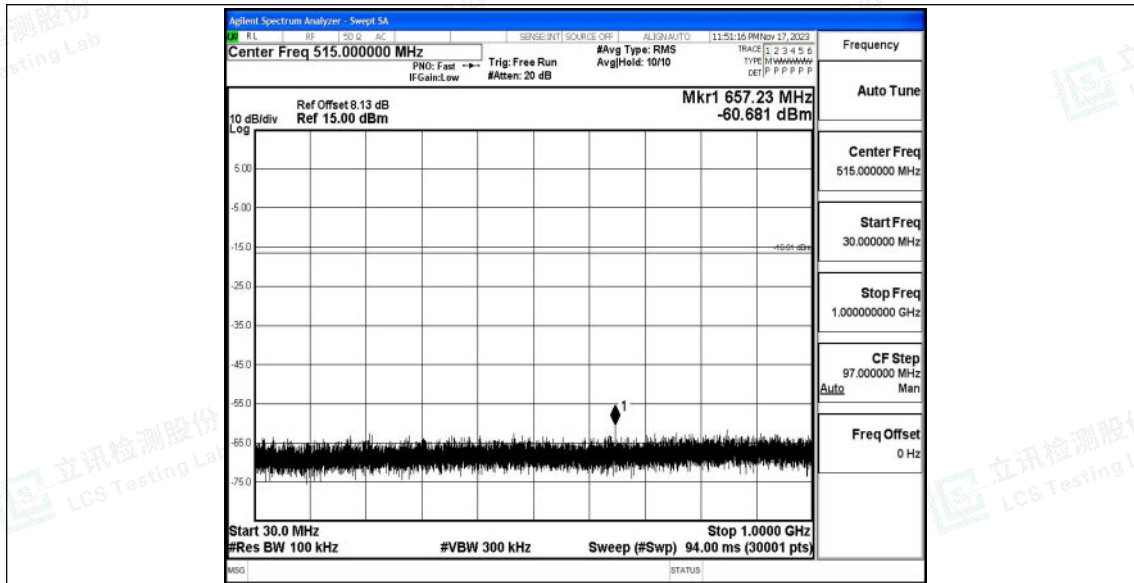


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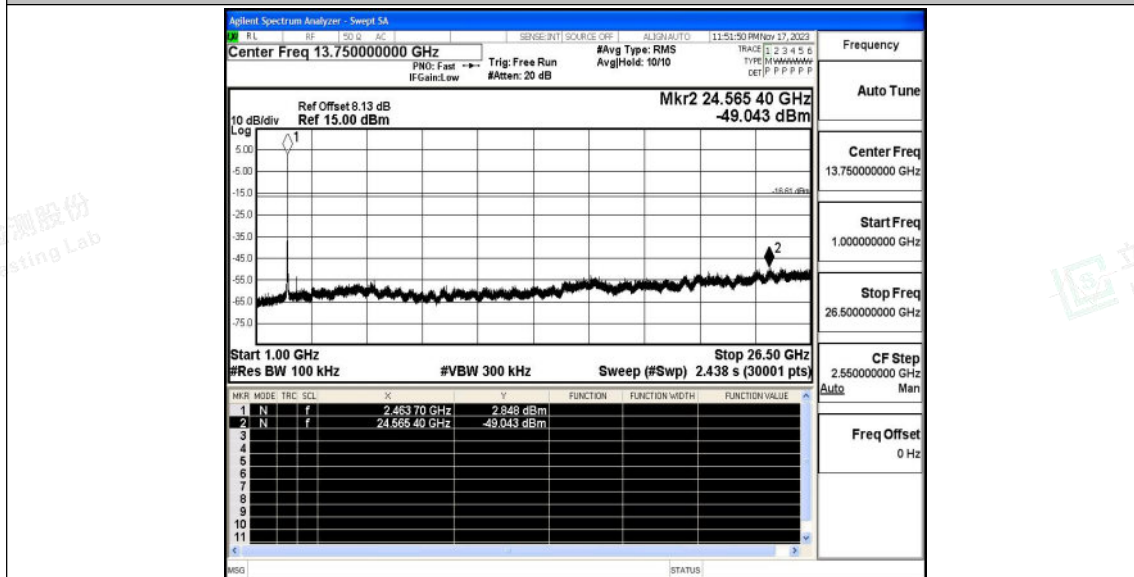




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11B_Ant1_2462_1000~26500

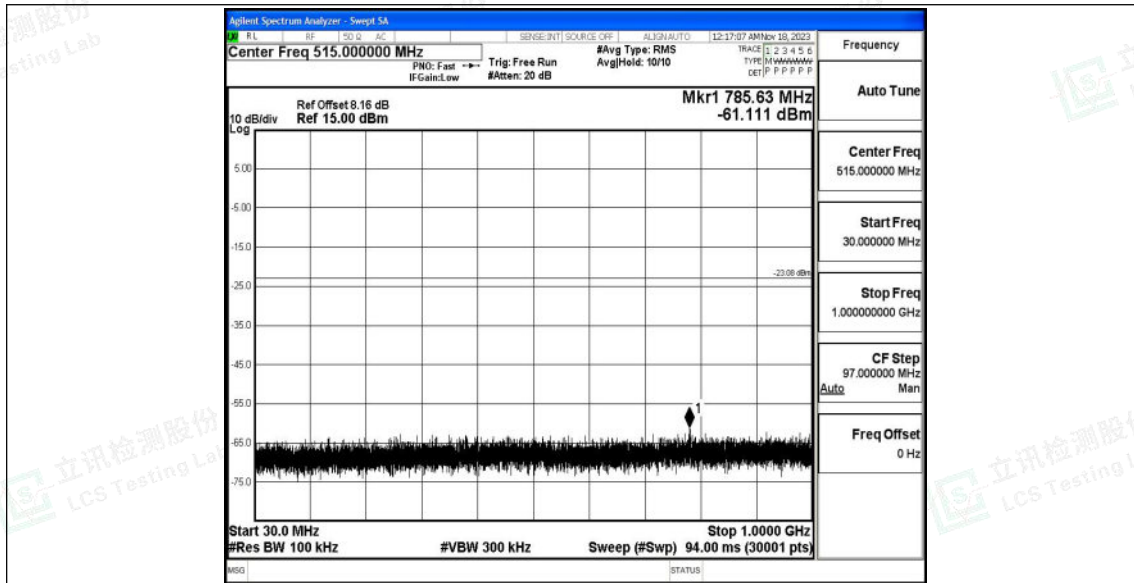


11G_Ant1_2412_30~1000

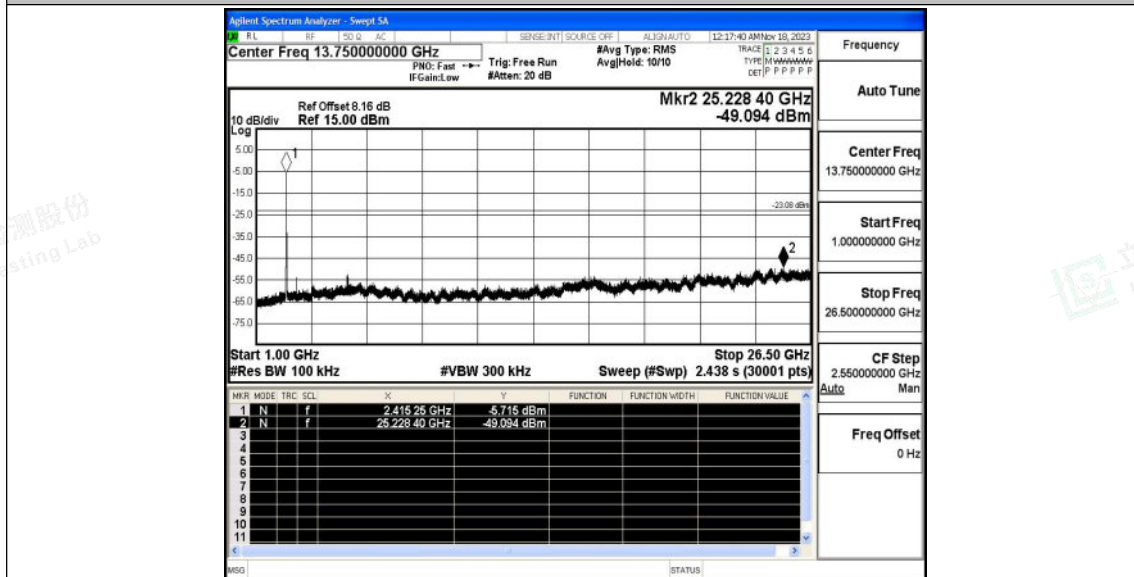




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11G_Ant1_2412_1000~26500



11G_Ant1_2437_30~1000



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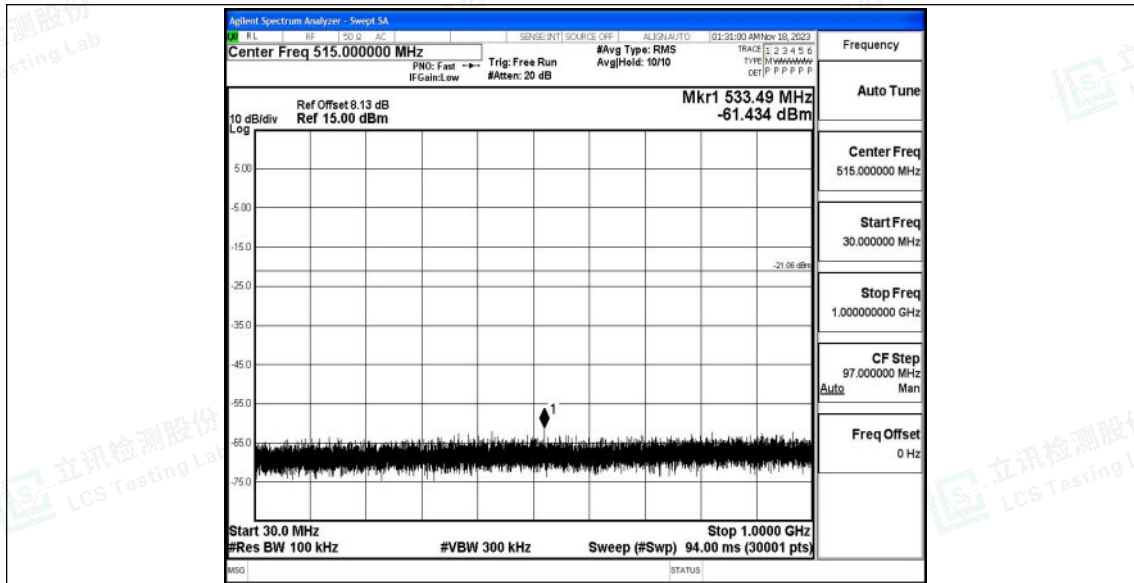
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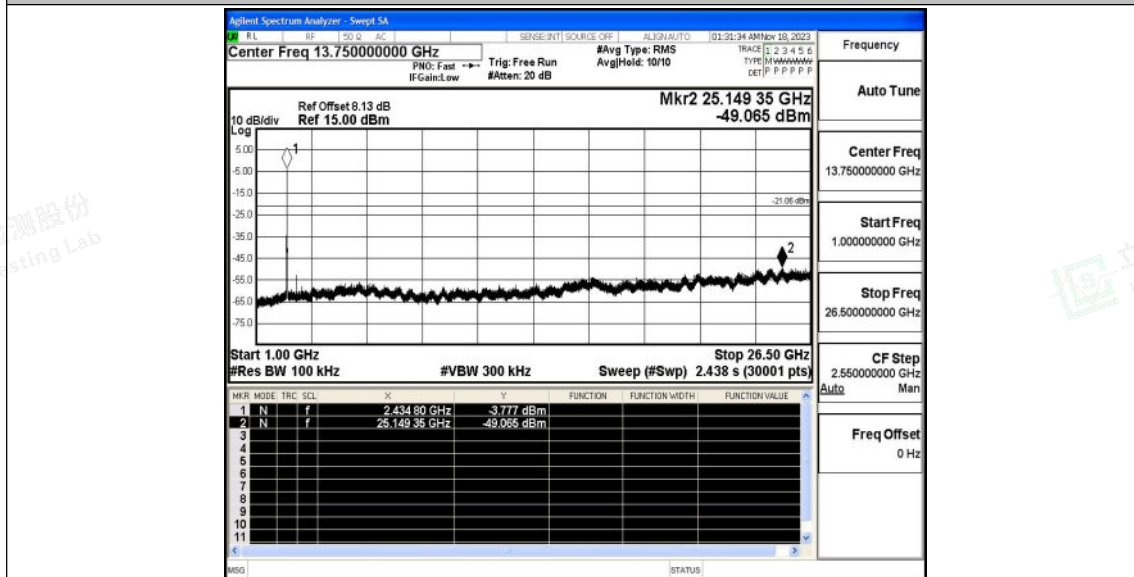
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11G_Ant1_2437_1000~26500



11G_Ant1_2462_30~1000



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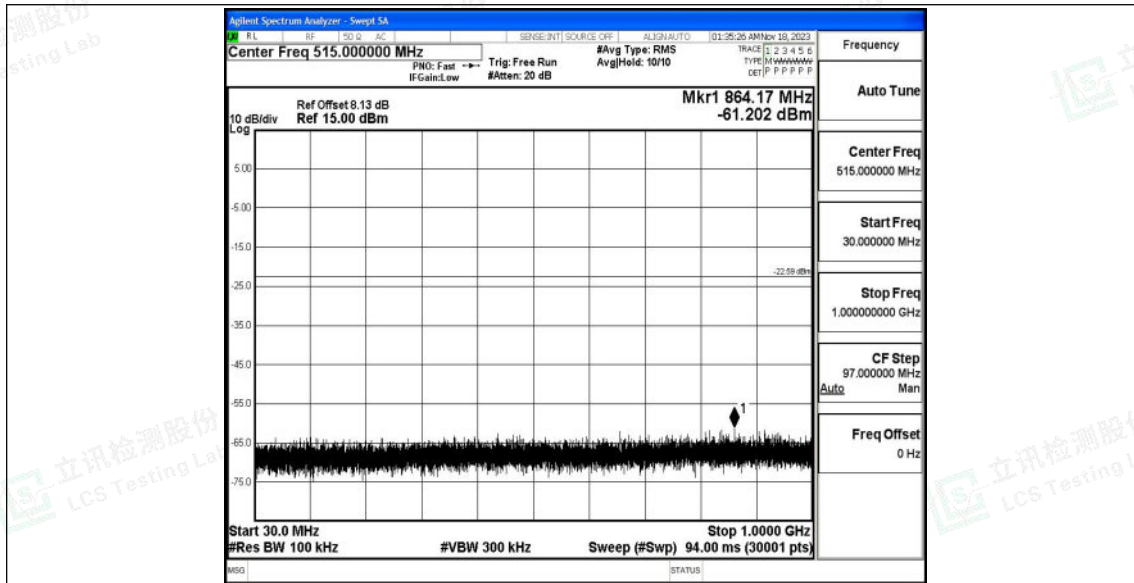
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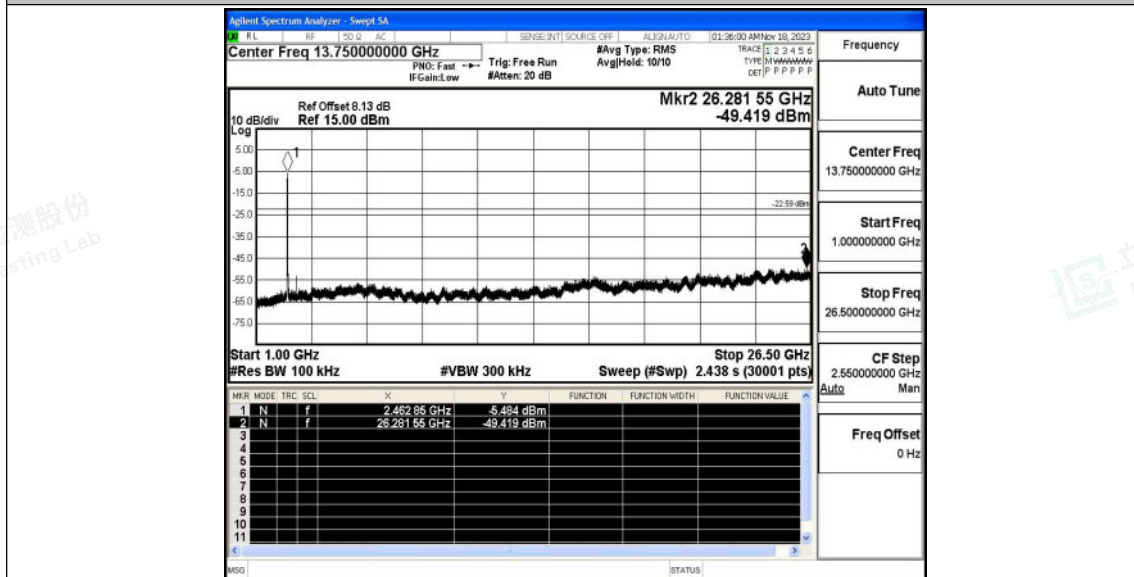
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11G_Ant1_2462_1000~26500



11N20SISO_Ant1_2412_30~1000



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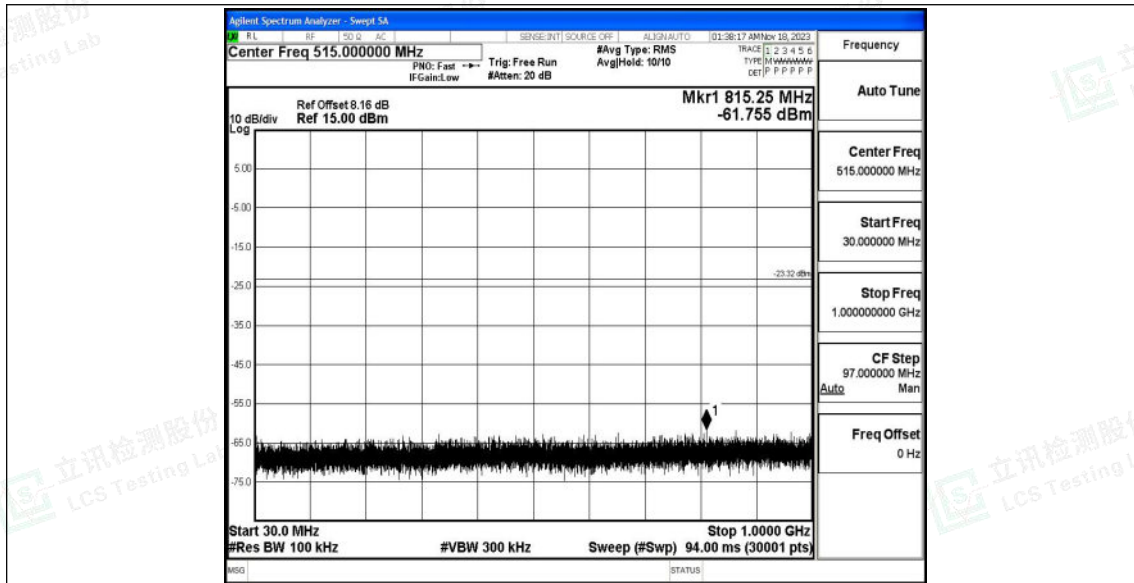
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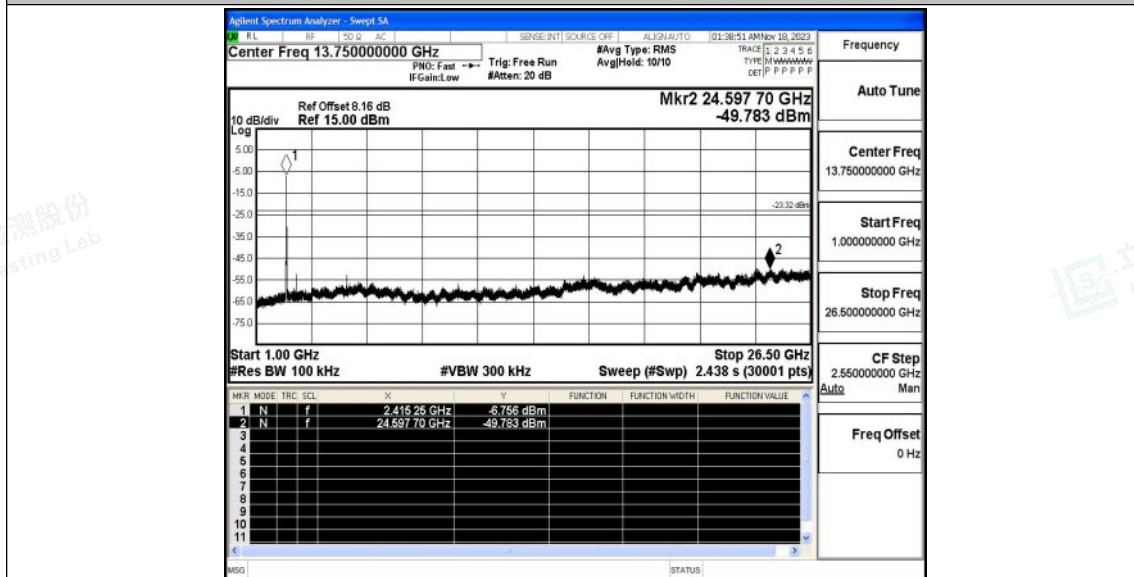
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11N20SISO_Ant1_2412_1000~26500



11N20SISO_Ant1_2437_30~1000



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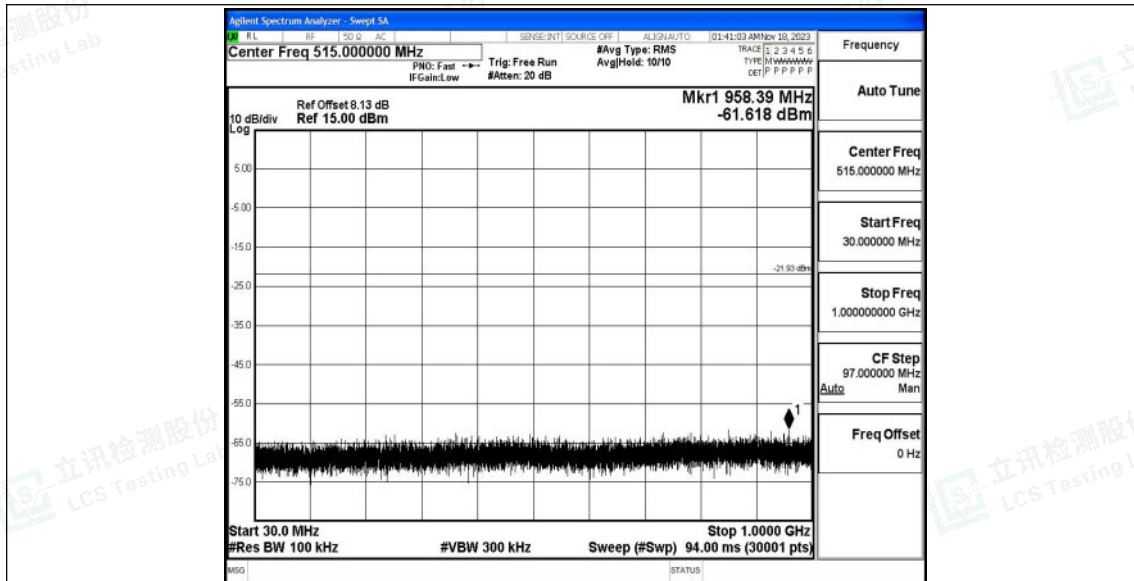
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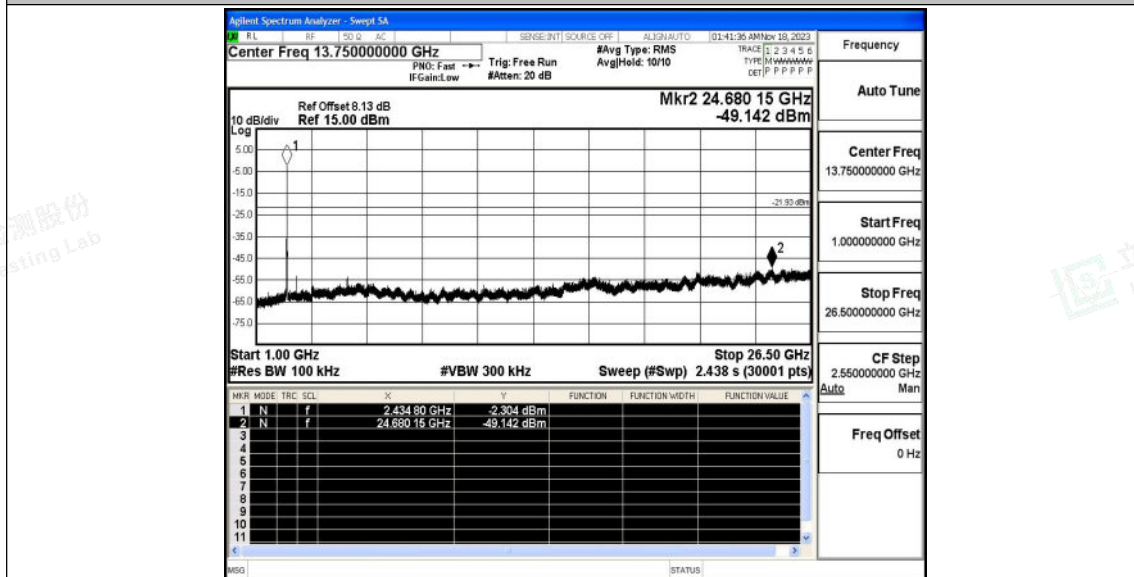
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11N20SISO_Ant1_2437_1000~26500



11N20SISO_Ant1_2462_30~1000



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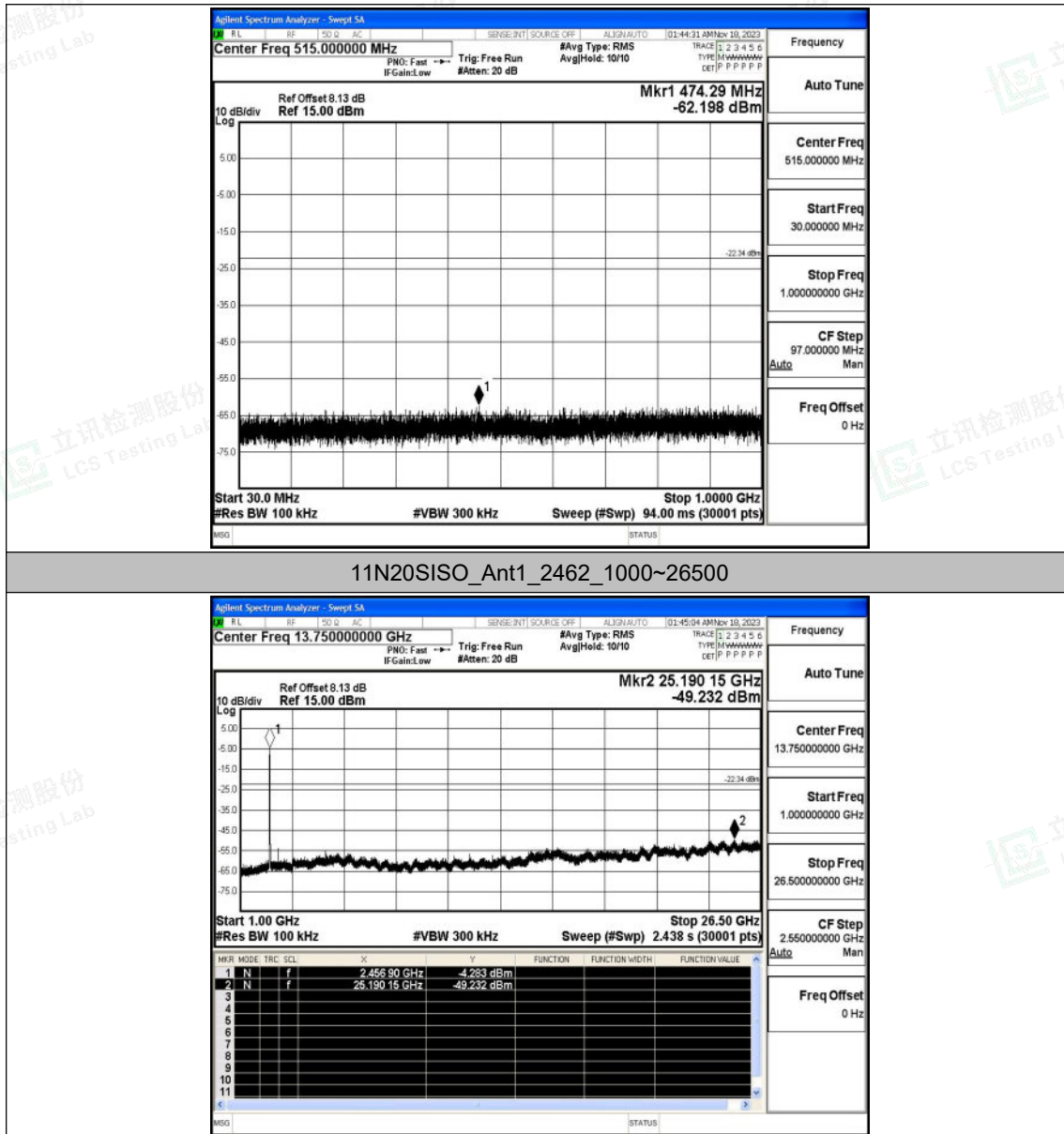
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A.6 Duty Cycle

Test Result

TestMode	Antenna	Freq(MHz)	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor	Verdict
11B	Ant1	2412	8.38	8.56	97.90	0.09	---
		2437	8.39	8.56	98.01	0.09	---
		2462	8.37	8.56	97.78	0.10	---
11G	Ant1	2412	1.40	1.64	85.37	0.69	---
		2437	1.39	1.65	84.24	0.74	---
		2462	1.39	1.59	87.42	0.58	---
11N20SISO	Ant1	2412	1.17	1.36	86.03	0.65	---
		2437	1.17	1.38	84.78	0.72	---
		2462	1.17	1.42	82.39	0.84	---

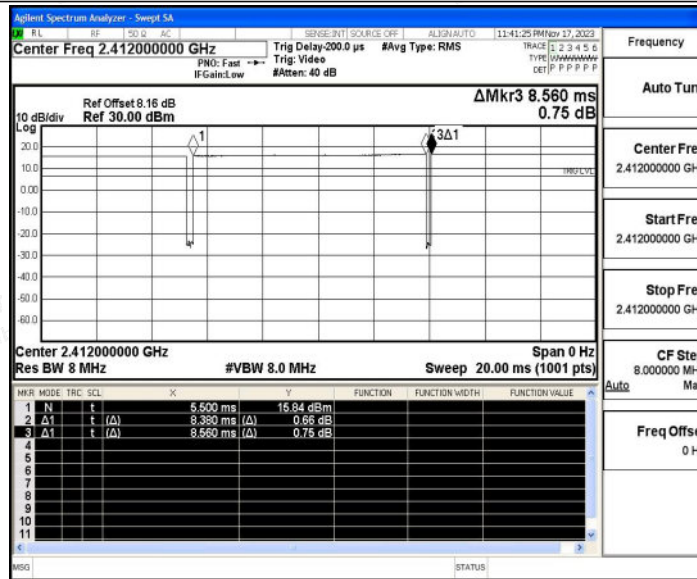




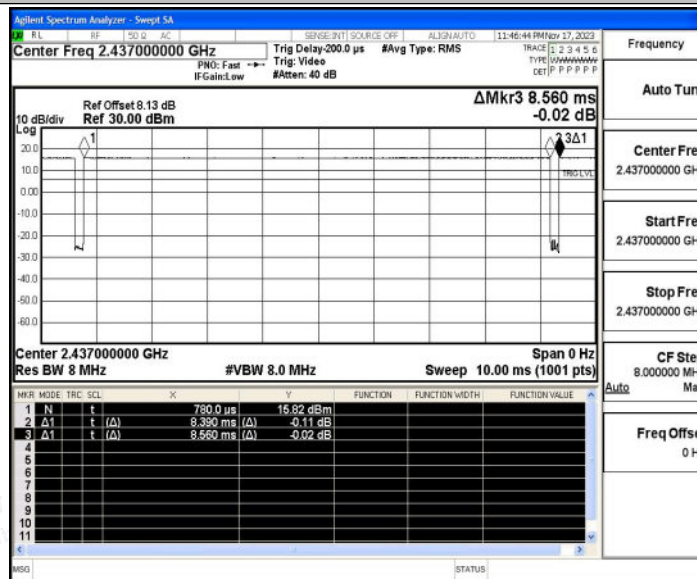
LC SA-M403007EA

Test Graphs

11B_Ant1_2412



11B_Ant1_2437



11B_Ant1_2462



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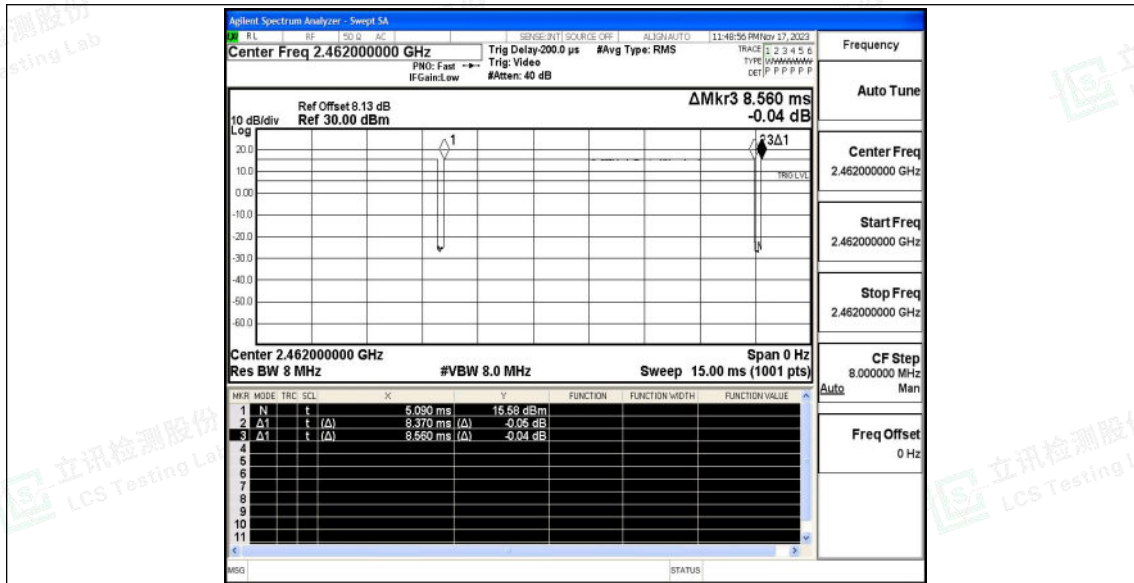
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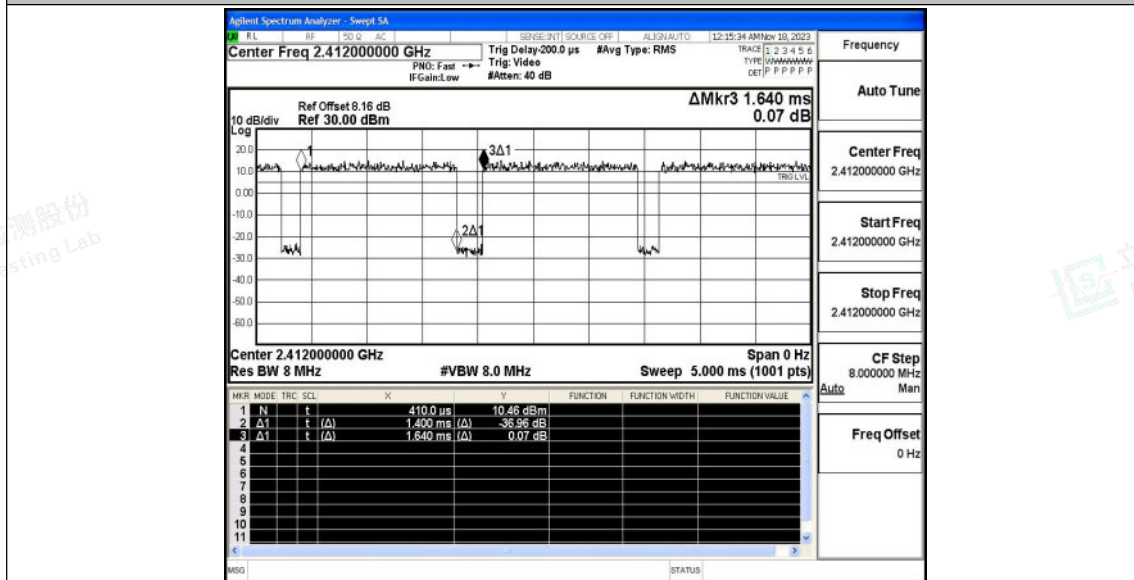
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LC SA 403007EA



11G_Ant1_2412



11G_Ant1_2437



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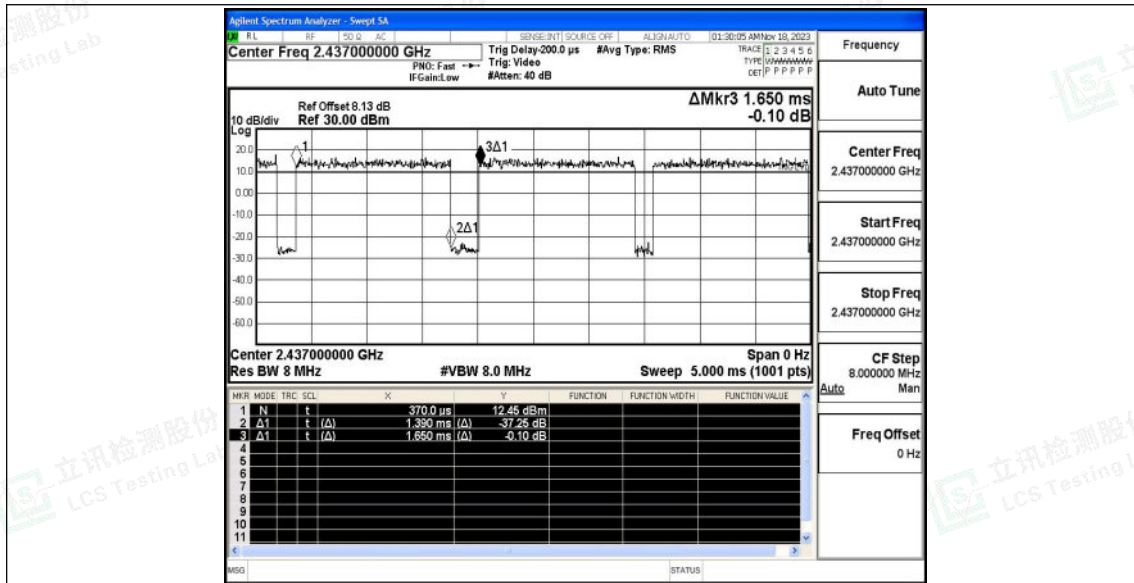
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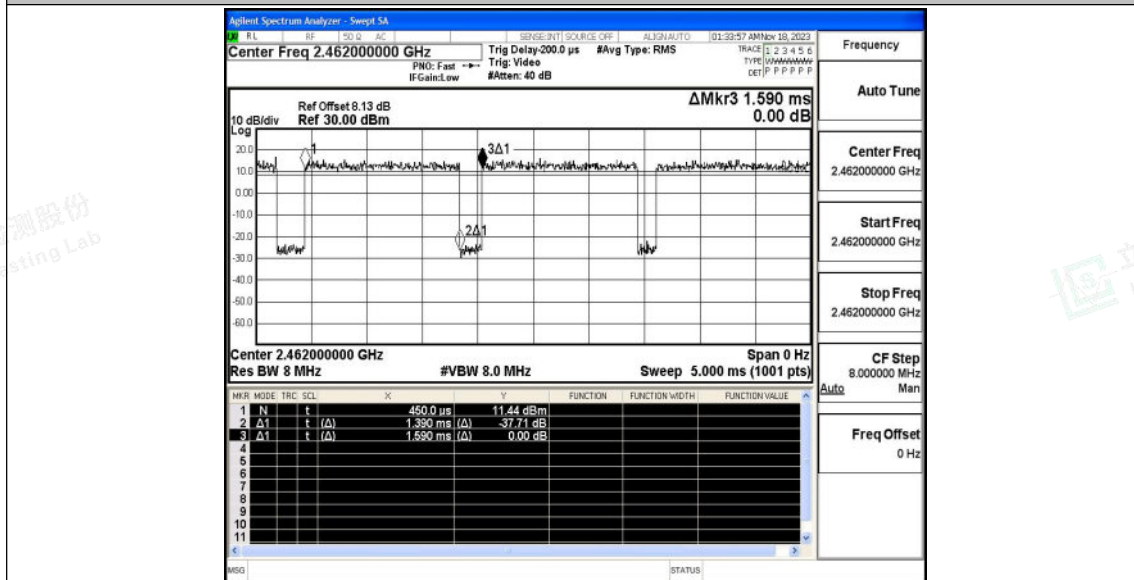
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11G_Ant1_2462



11N20SISO_Ant1_2412



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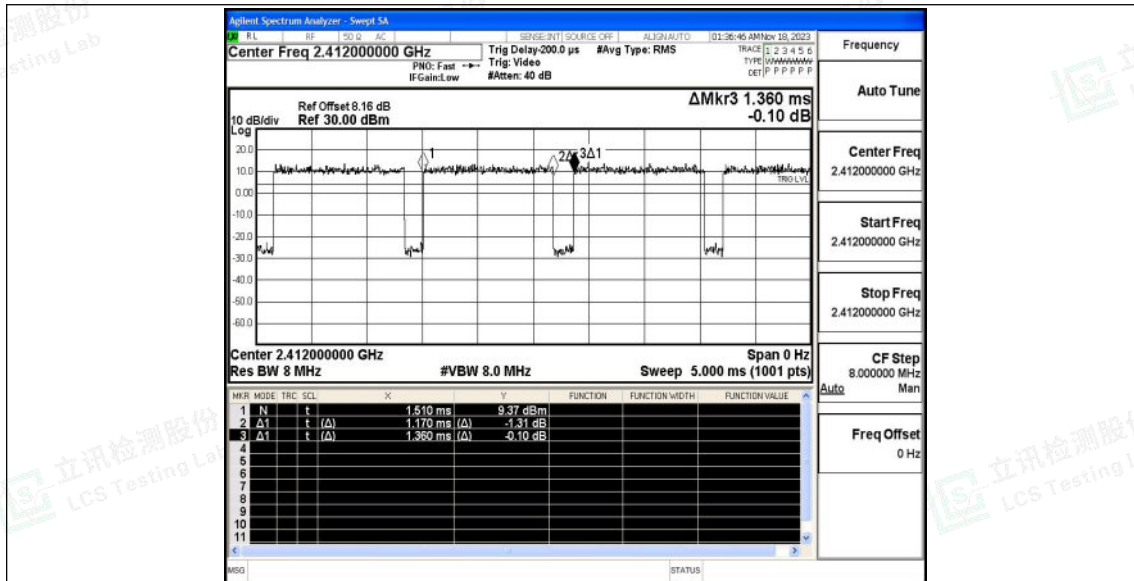
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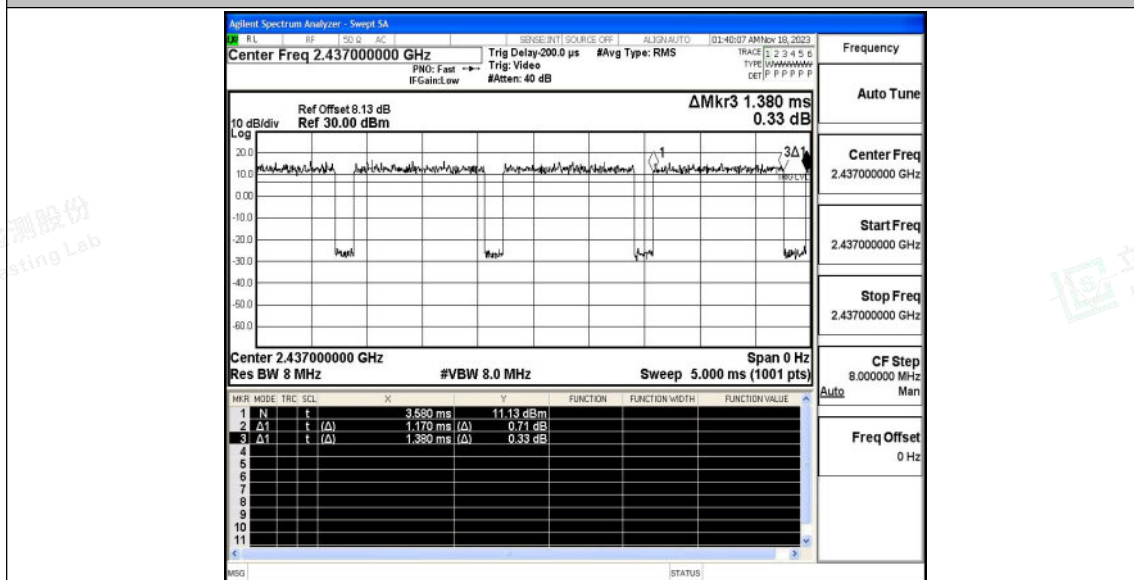
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11N20SISO_Ant1_2437



11N20SISO_Ant1_2462



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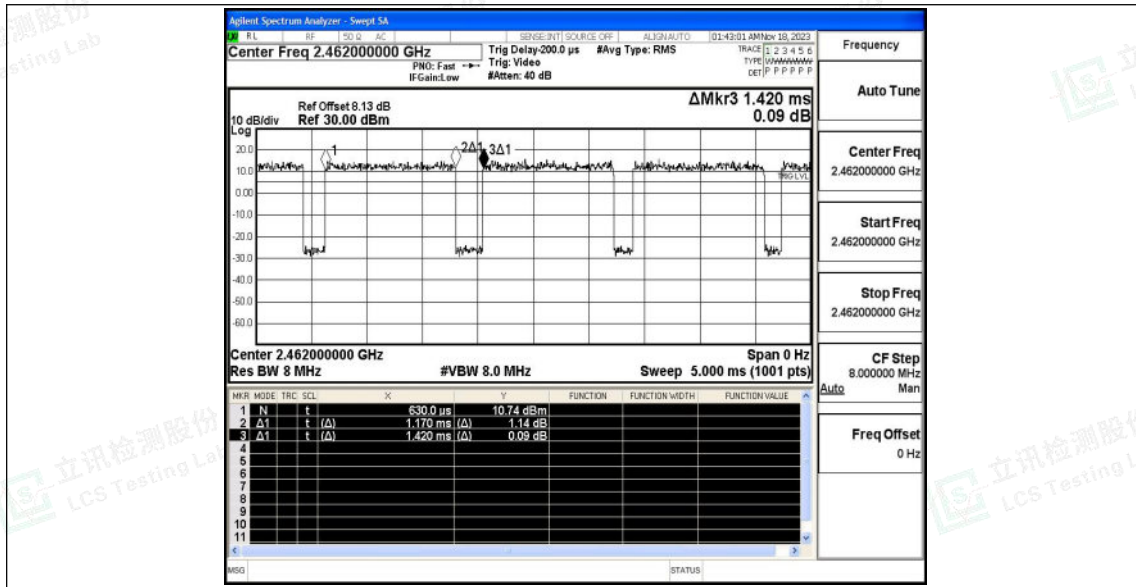
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A.7 Emissions in Restricted Bands

Test Result

TestMode	Antenna	ChName	Freq(MHz)	Detector	Freq [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
11B	Ant1	Low	2412	AV	2310.000	-49.26	≤-41.20	45.94	≤54	PASS
				AV	2389.440	-44.03	≤-41.20	51.17	≤54	PASS
				AV	2390.000	-44.92	≤-41.20	50.28	≤54	PASS
				Peak	2310.000	-43.69	≤-21.20	51.51	≤74	PASS
				Peak	2389.440	-37.84	≤-21.20	57.36	≤74	PASS
				Peak	2390.000	-39.37	≤-21.20	55.83	≤74	PASS
		High	2462	AV	2483.500	-46.41	≤-41.20	48.79	≤54	PASS
				AV	2484.330	-45.68	≤-41.20	49.52	≤54	PASS
				AV	2500.000	-47.58	≤-41.20	47.62	≤54	PASS
				Peak	2483.500	-38.46	≤-21.20	56.74	≤74	PASS
				Peak	2487.740	-38.28	≤-21.20	56.92	≤74	PASS
				Peak	2500.000	-41.62	≤-21.20	53.58	≤74	PASS
11G	Ant1	Low	2412	AV	2310.000	-49.01	≤-41.20	46.19	≤54	PASS
				AV	2389.570	-45.83	≤-41.20	49.37	≤54	PASS
				AV	2390.000	-46.12	≤-41.20	49.08	≤54	PASS
				Peak	2310.000	-44.47	≤-21.20	50.73	≤74	PASS
				Peak	2388.270	-35.81	≤-21.20	59.39	≤74	PASS
				Peak	2390.000	-38.66	≤-21.20	56.54	≤74	PASS
		High	2462	AV	2483.500	-45.34	≤-41.20	49.86	≤54	PASS
				AV	2483.670	-45.24	≤-41.20	49.96	≤54	PASS
				AV	2500.000	-48.34	≤-41.20	46.86	≤54	PASS
				Peak	2483.500	-37.21	≤-21.20	57.99	≤74	PASS
				Peak	2483.670	-28.37	≤-21.20	66.83	≤74	PASS
				Peak	2500.000	-42.37	≤-21.20	52.83	≤74	PASS
11N20SIS O	Ant1	Low	2412	AV	2310.000	-48.95	≤-41.20	46.25	≤54	PASS
				AV	2389.700	-45.69	≤-41.20	49.51	≤54	PASS
				AV	2390.000	-46.01	≤-41.20	49.19	≤54	PASS
				Peak	2310.000	-42.5	≤-21.20	52.70	≤74	PASS
				Peak	2388.400	-32.48	≤-21.20	62.72	≤74	PASS
				Peak	2390.000	-41.38	≤-21.20	53.82	≤74	PASS
		High	2462	AV	2483.500	-43.14	≤-41.20	52.06	≤54	PASS
				AV	2483.560	-43.35	≤-41.20	51.85	≤54	PASS
				AV	2500.000	-48.25	≤-41.20	46.95	≤54	PASS
				Peak	2483.500	-31.24	≤-21.20	63.96	≤74	PASS
				Peak	2484.330	-32.92	≤-21.20	62.28	≤74	PASS



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				Peak	2500.000	-42.9	≤-21.20	52.30	≤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.

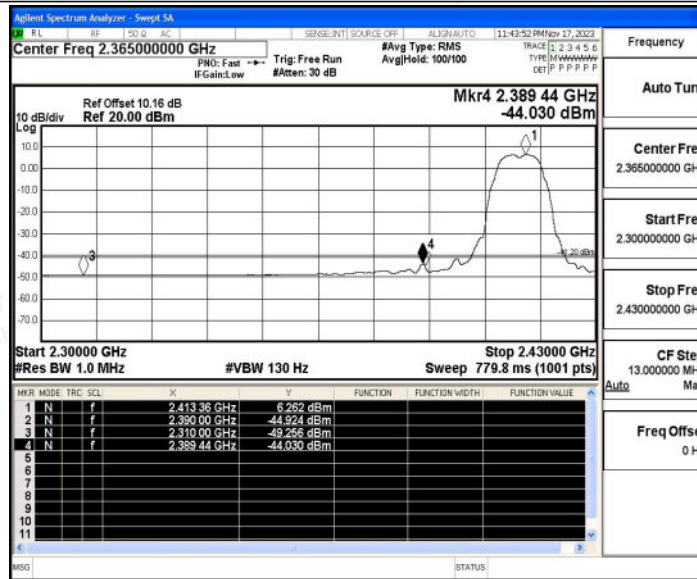




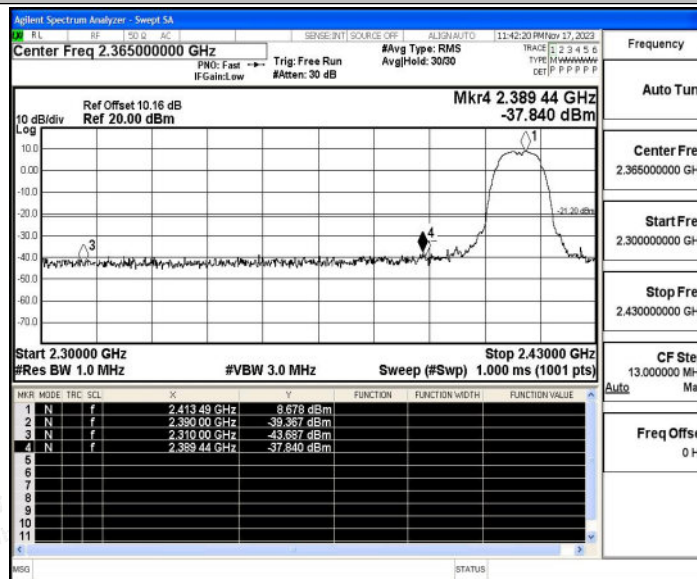
LC SA-M403007EA

Test Graphs

11B_Ant1_Low_2412_AV



11B_Ant1_Low_2412_Peak



11B_Ant1_High_2462_AV



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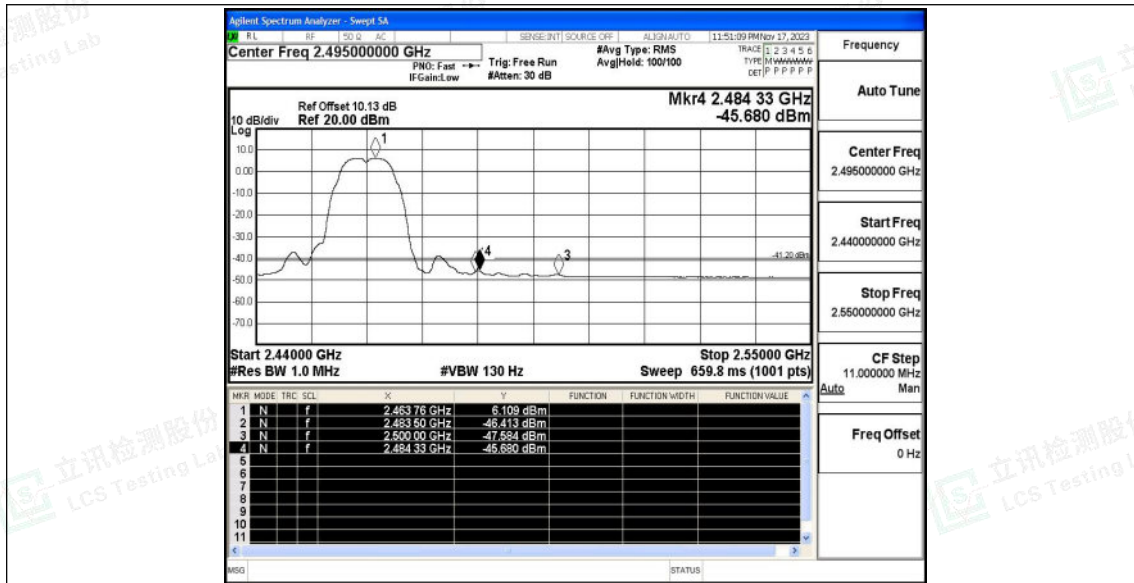
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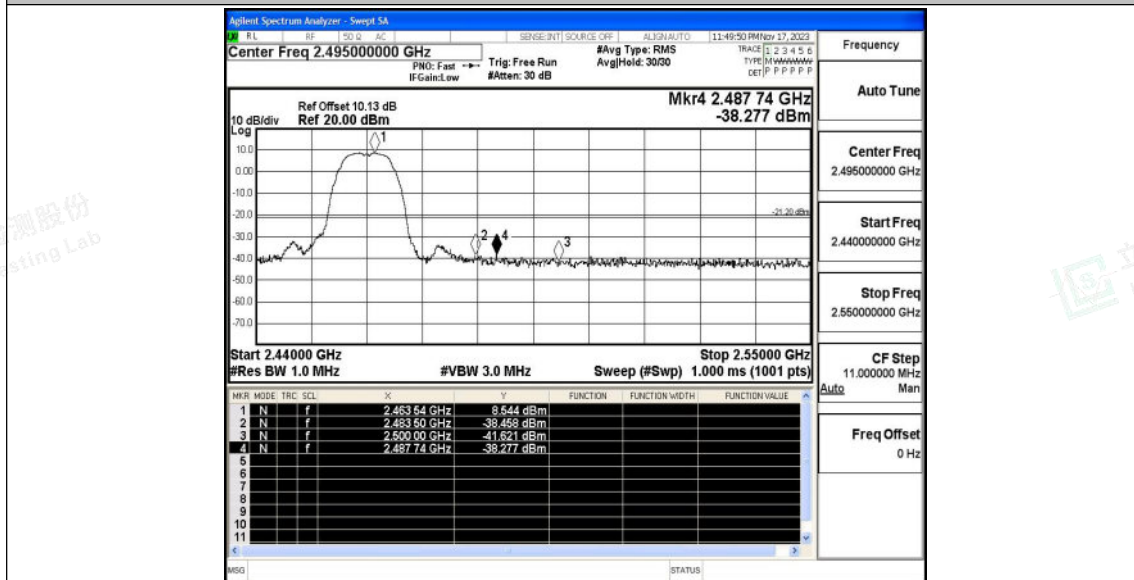
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LC SA 403007EA



11B_Ant1_High_2462_Peak



11G_Ant1_Low_2412_AV



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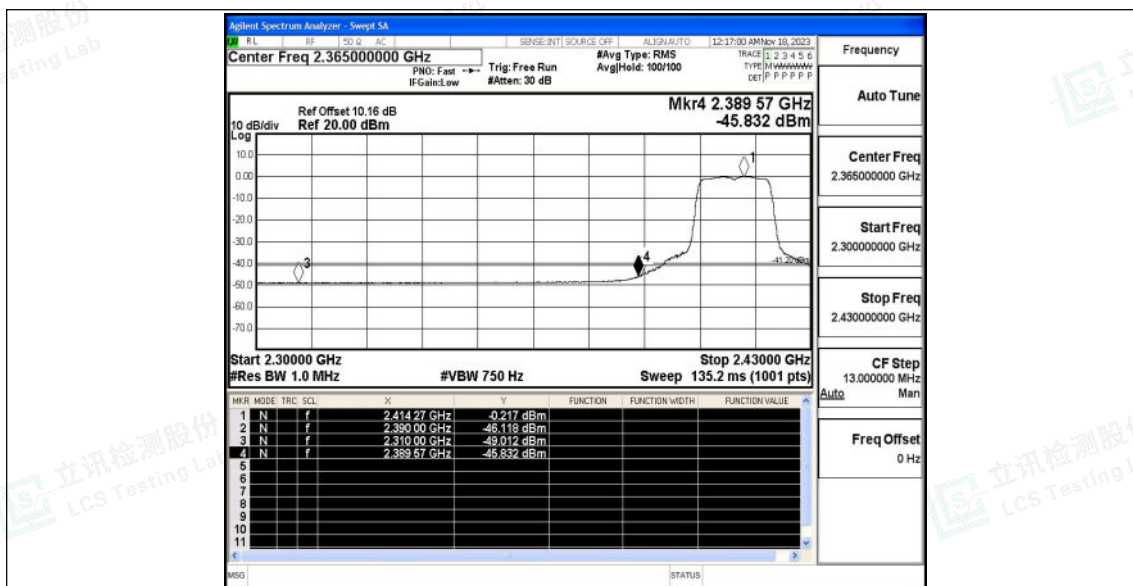
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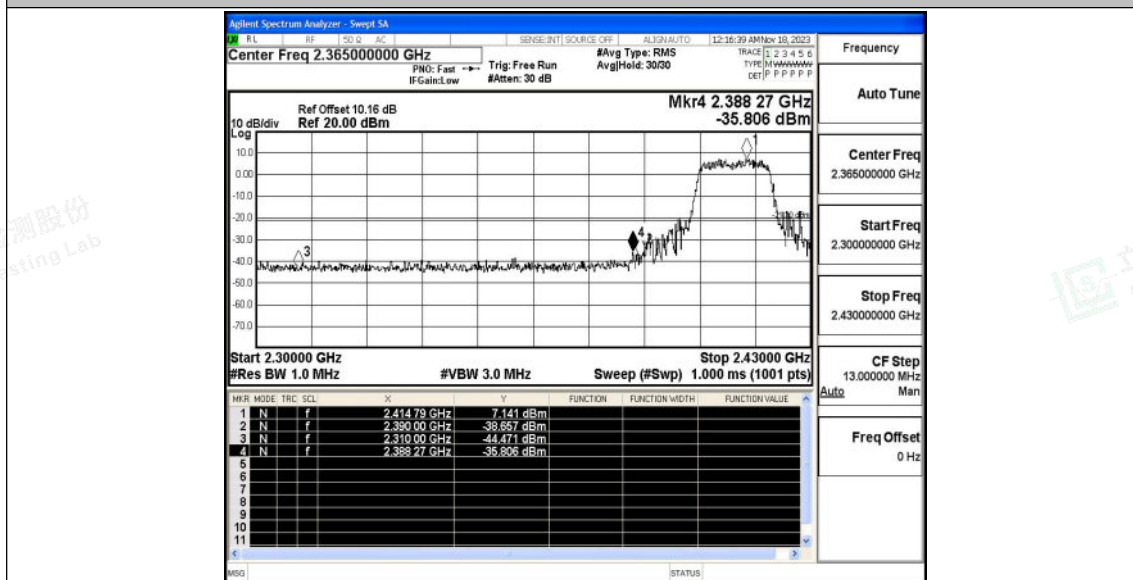
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LCSA-2023007EA



11G_Ant1_Low_2412_Peak



11G_Ant1_High_2462_AV



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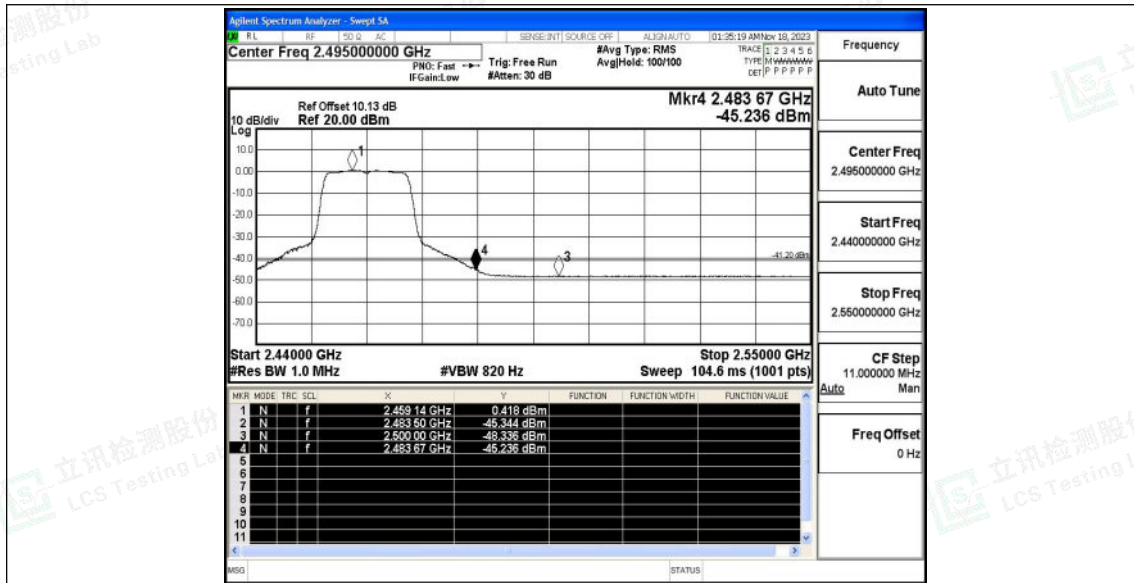
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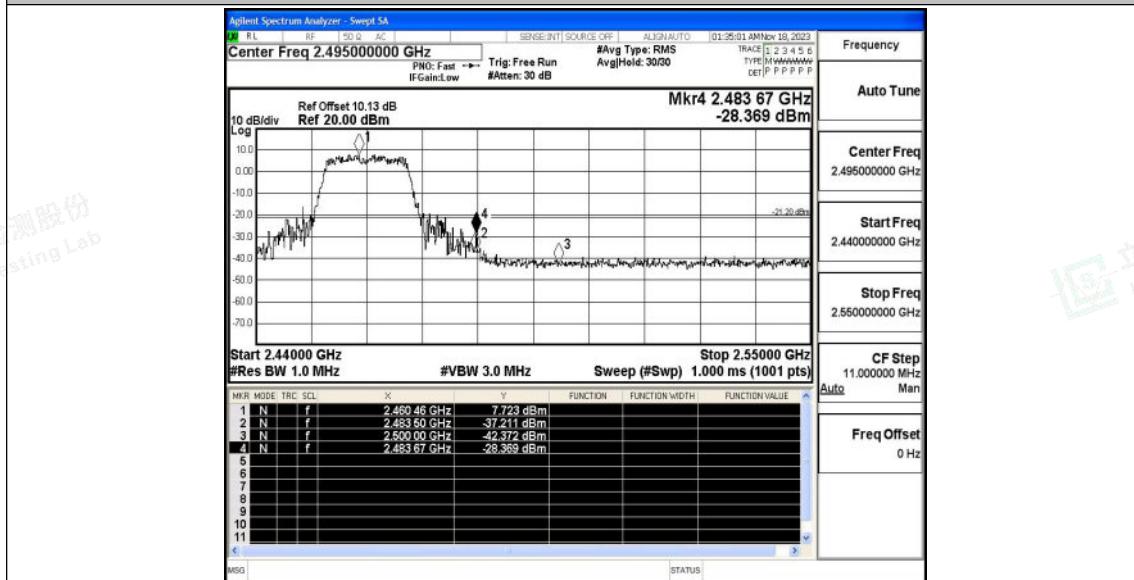
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11G_Ant1_High_2462_Peak



11N20SISO_Ant1_Low_2412_AV



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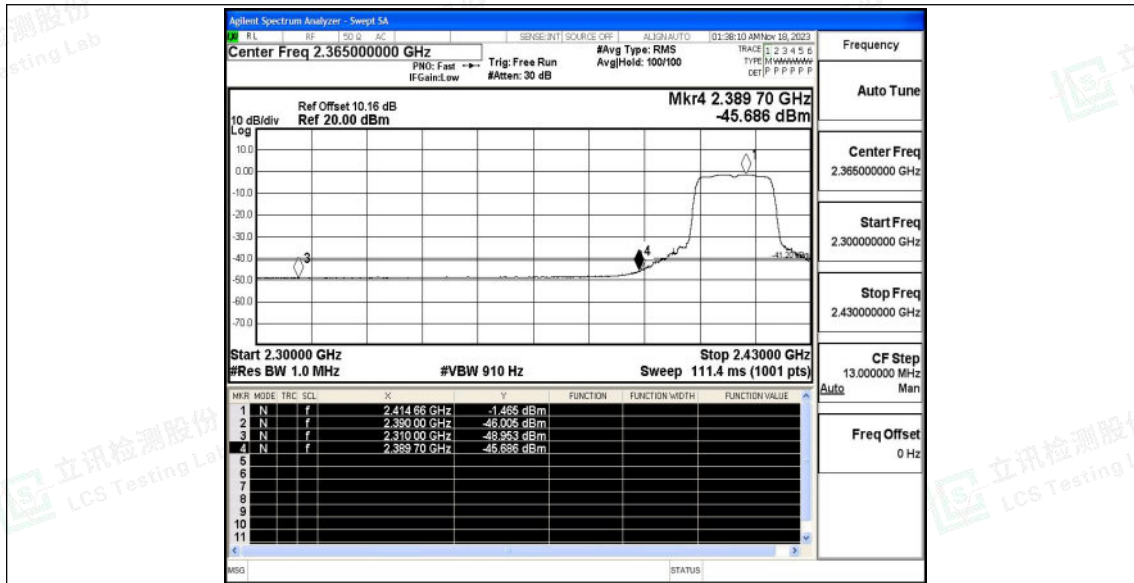
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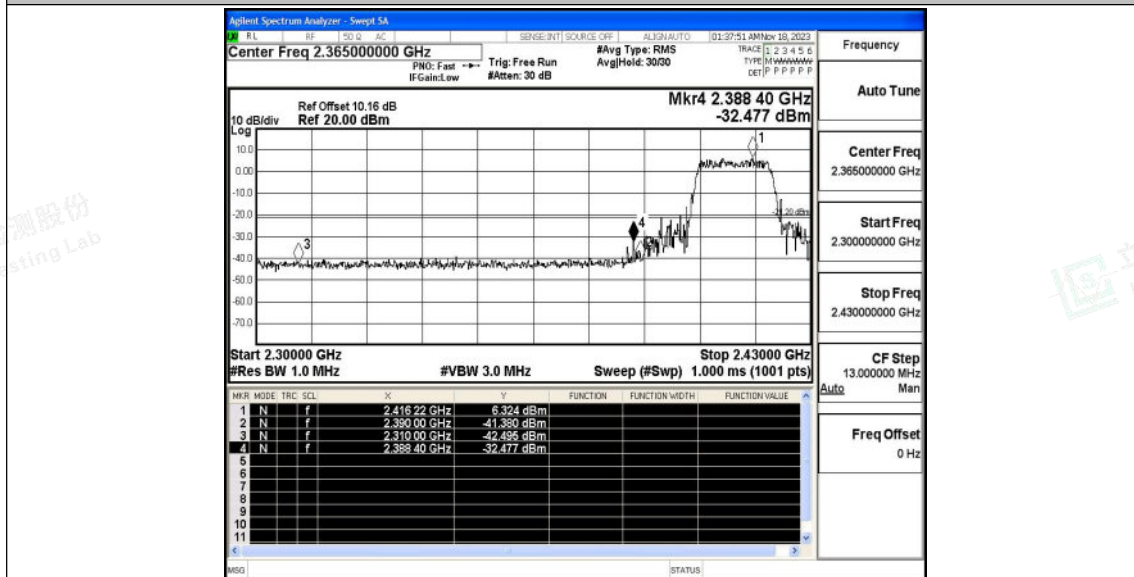
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LCSA-2023007EA



11N20SISO_Ant1_Low_2412_Peak

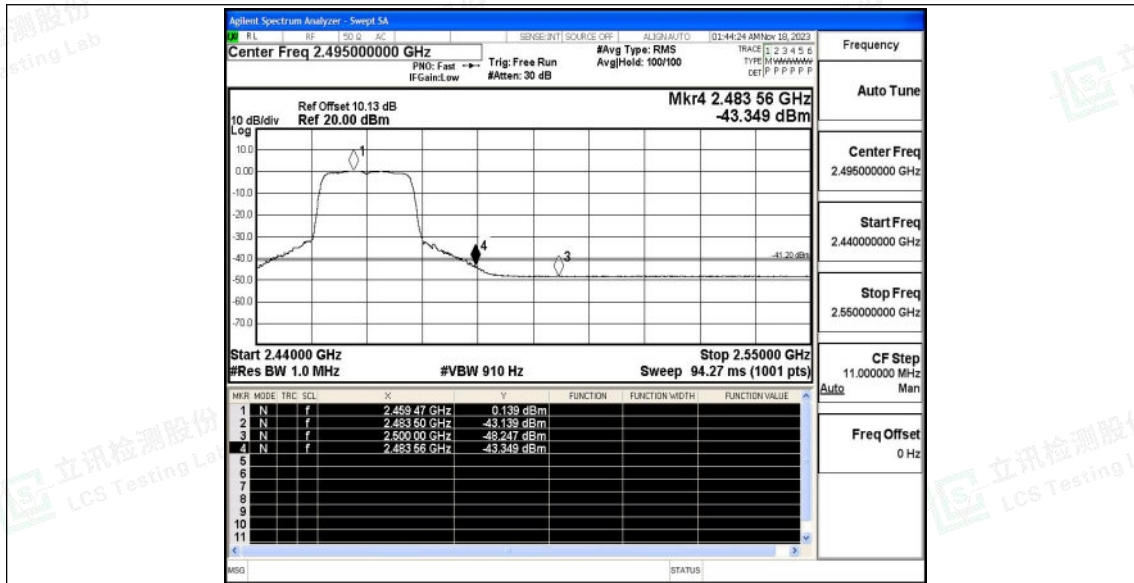


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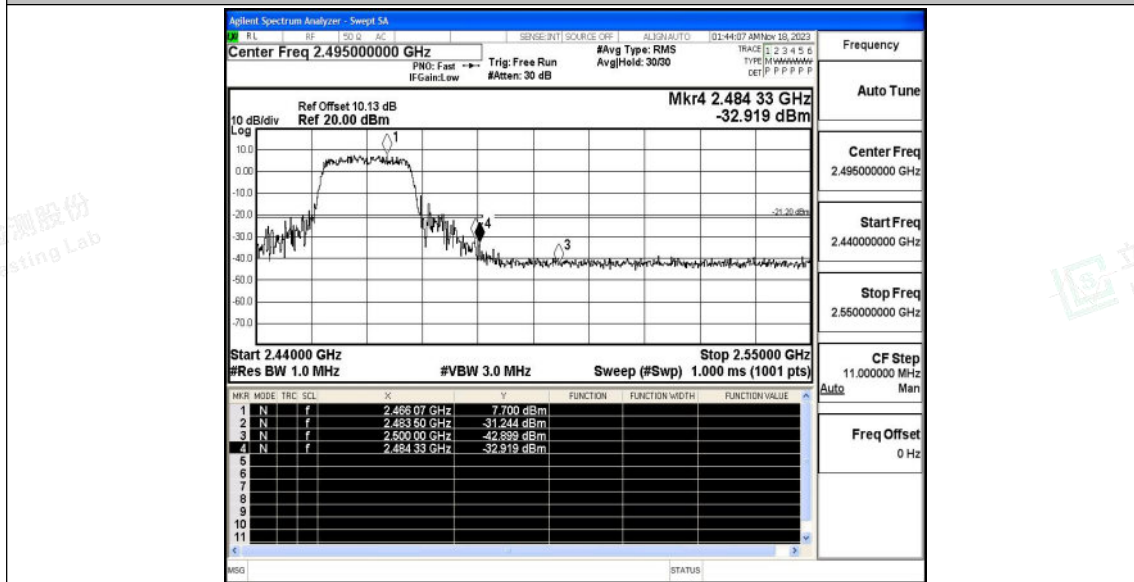




LC-SA-M403007EA



11N20SISO_Ant1_High_2462_Peak



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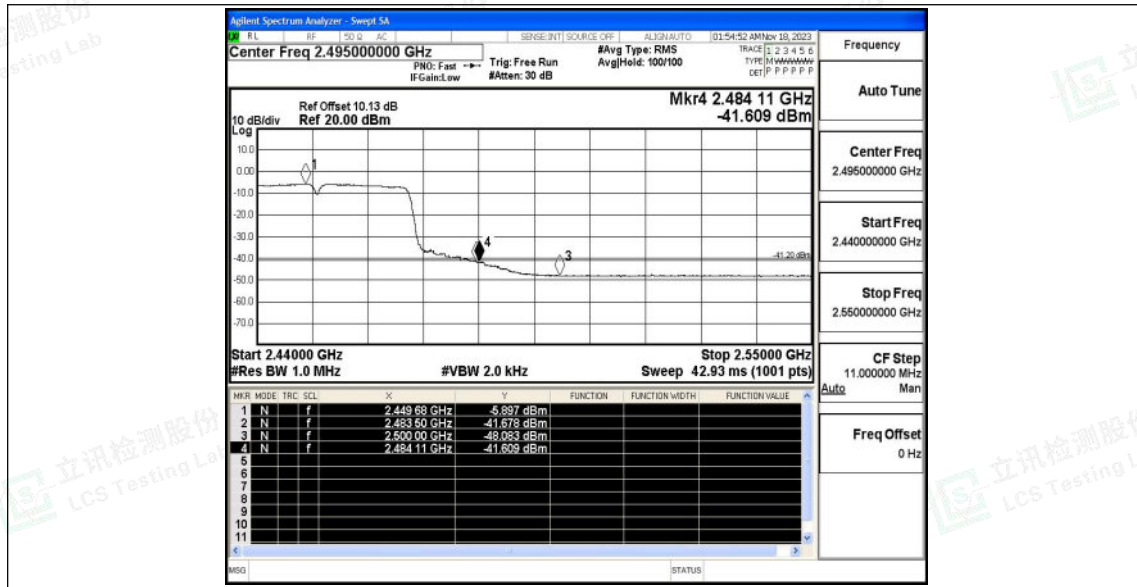
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