



Appendix A

RF Test Data for 2.4GWIFI (Conducted Measurement)

Product Name: Wifi piggy board

Test Model: T52030

Environmental Conditions

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



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A.1 -6dB Bandwidth

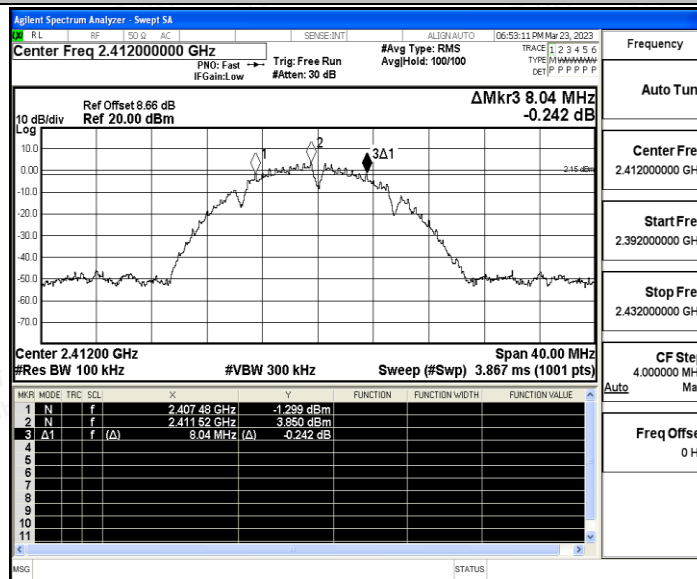
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant	2412	8.040	2407.480	2415.520	0.5	PASS
		2437	7.600	2433.440	2441.040	0.5	PASS
		2462	7.560	2457.960	2465.520	0.5	PASS
11G	Ant	2412	11.320	2404.480	2415.800	0.5	PASS
		2437	15.000	2429.520	2444.520	0.5	PASS
		2462	15.080	2454.480	2469.560	0.5	PASS
11N20SISO	Ant	2412	11.640	2404.160	2415.800	0.5	PASS
		2437	17.040	2428.480	2445.520	0.5	PASS
		2462	16.520	2453.880	2470.400	0.5	PASS



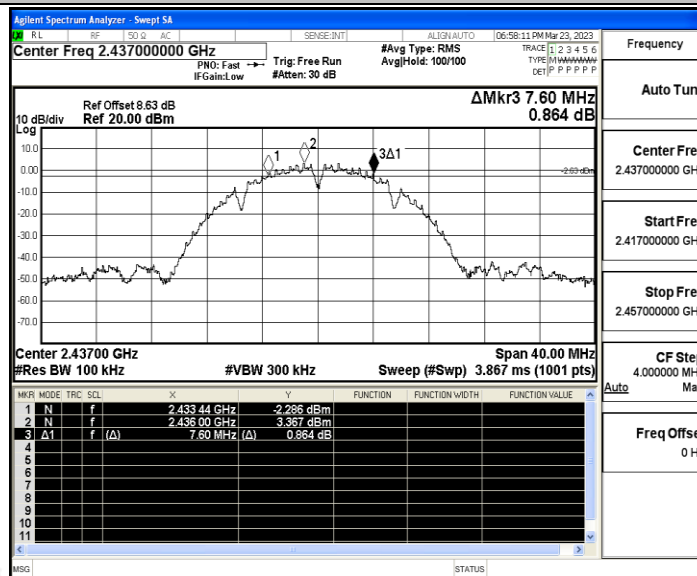
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11B_Ant_2412

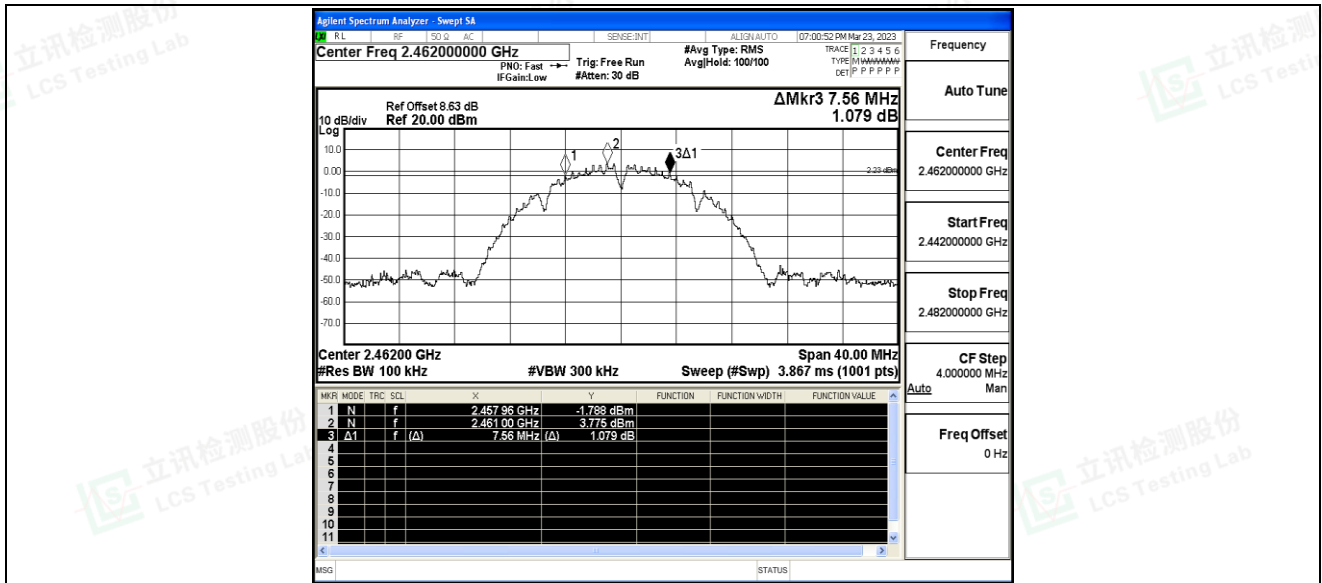


11B_Ant_2437

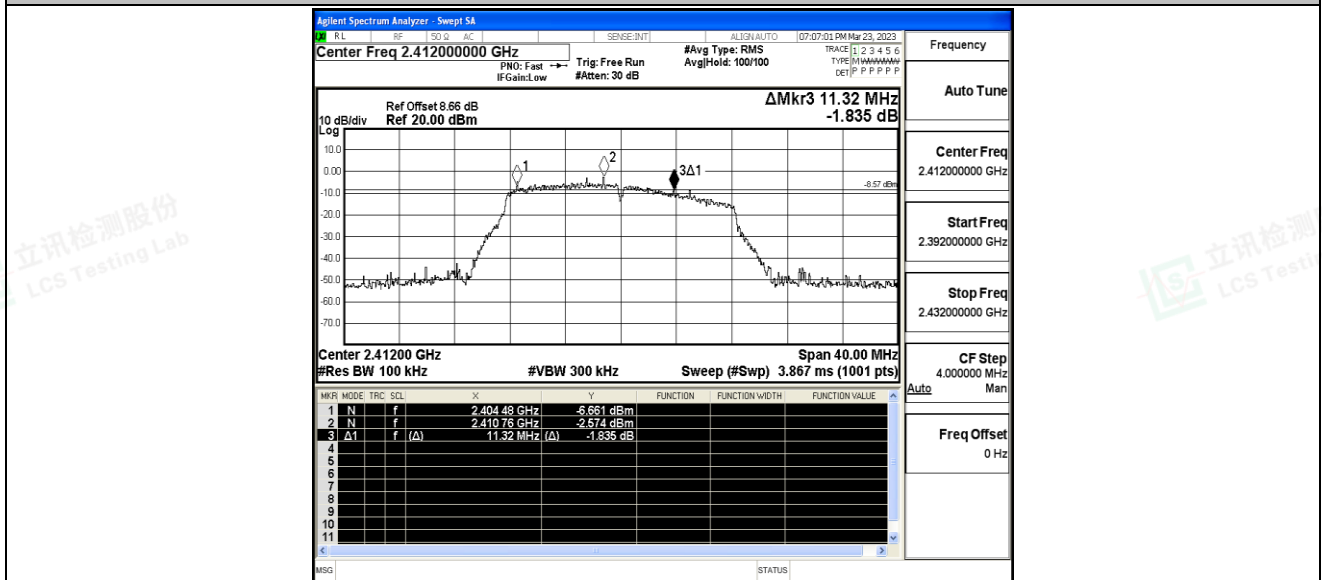


11B_Ant_2462



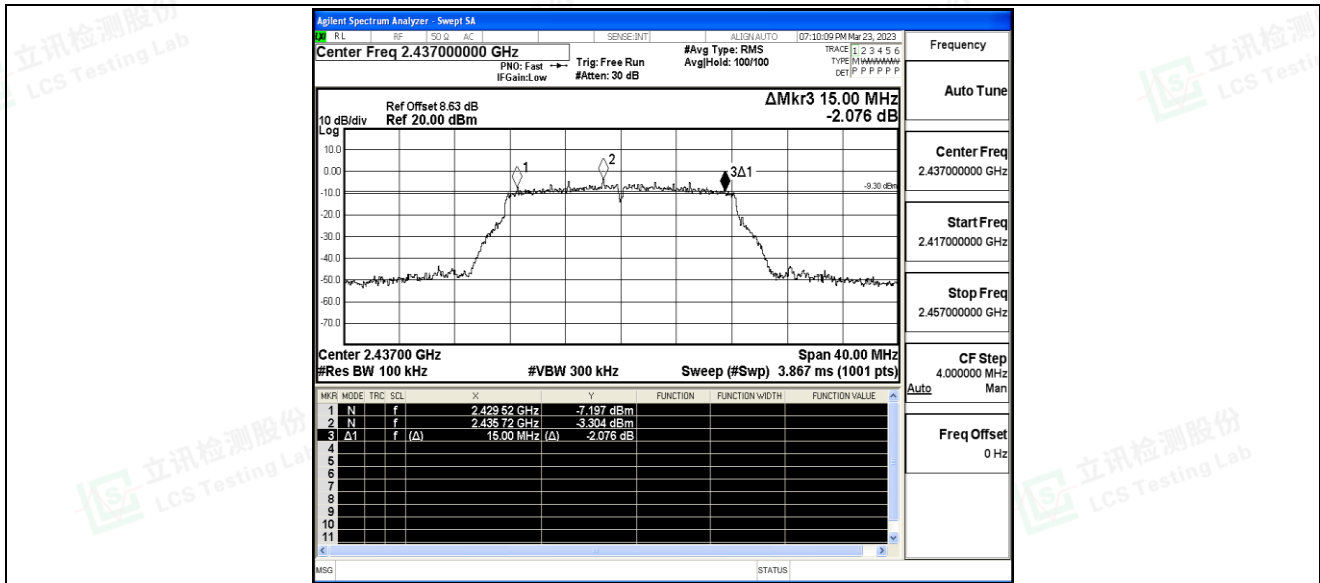


11G_Ant_2412

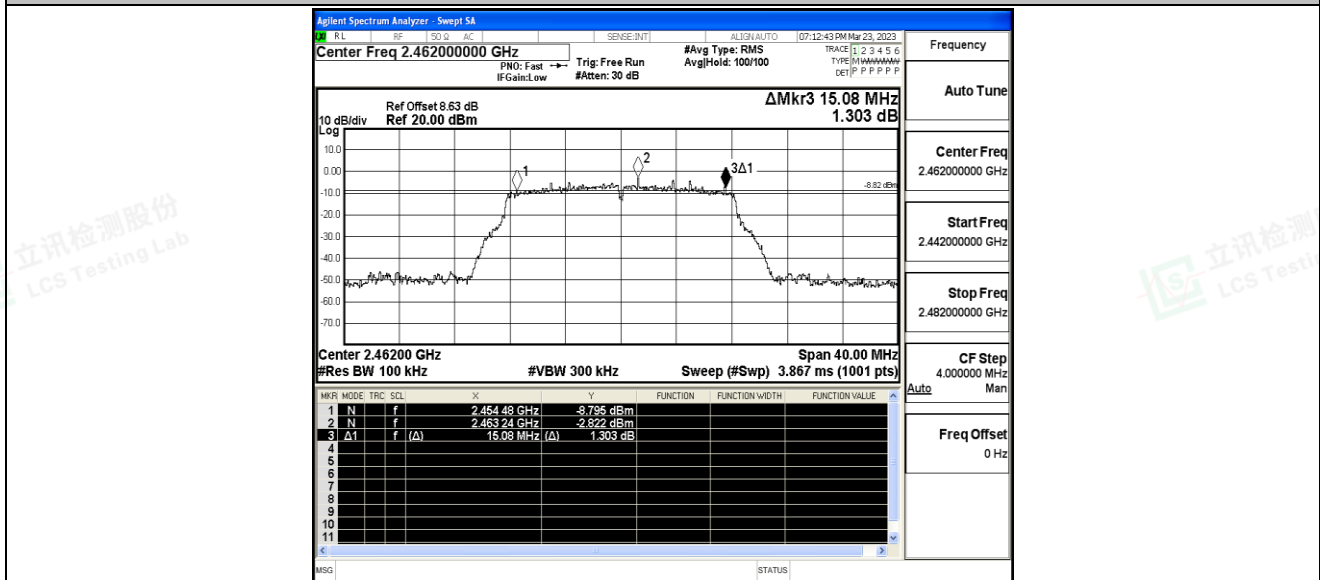


11G_Ant_2437



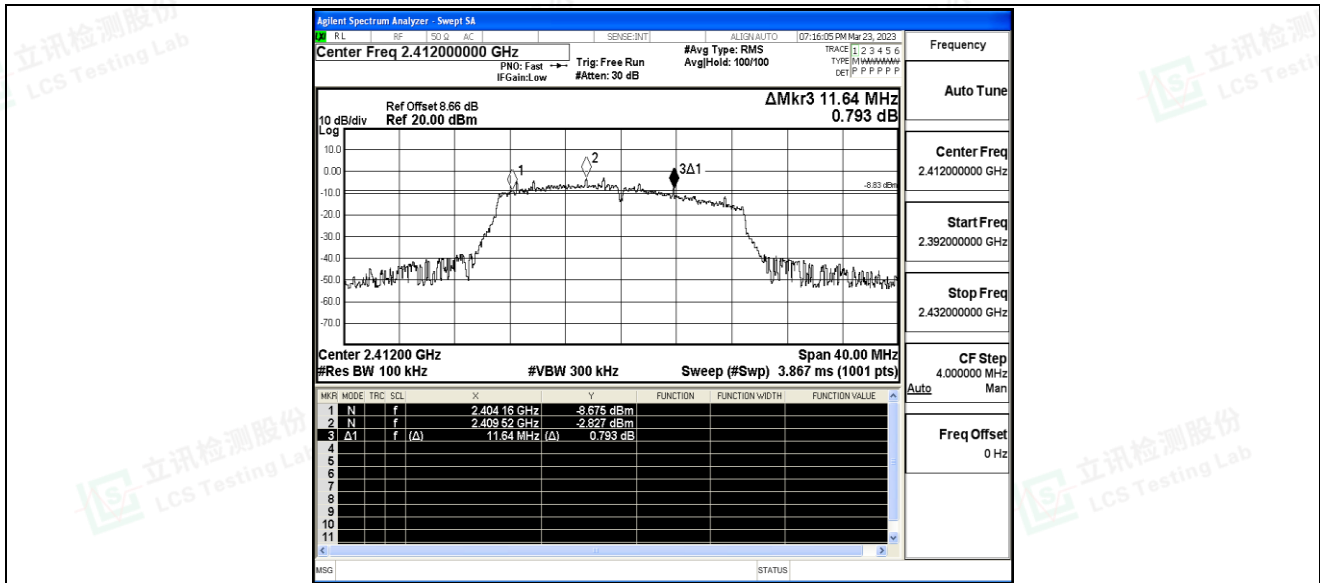


11G_Ant_2462

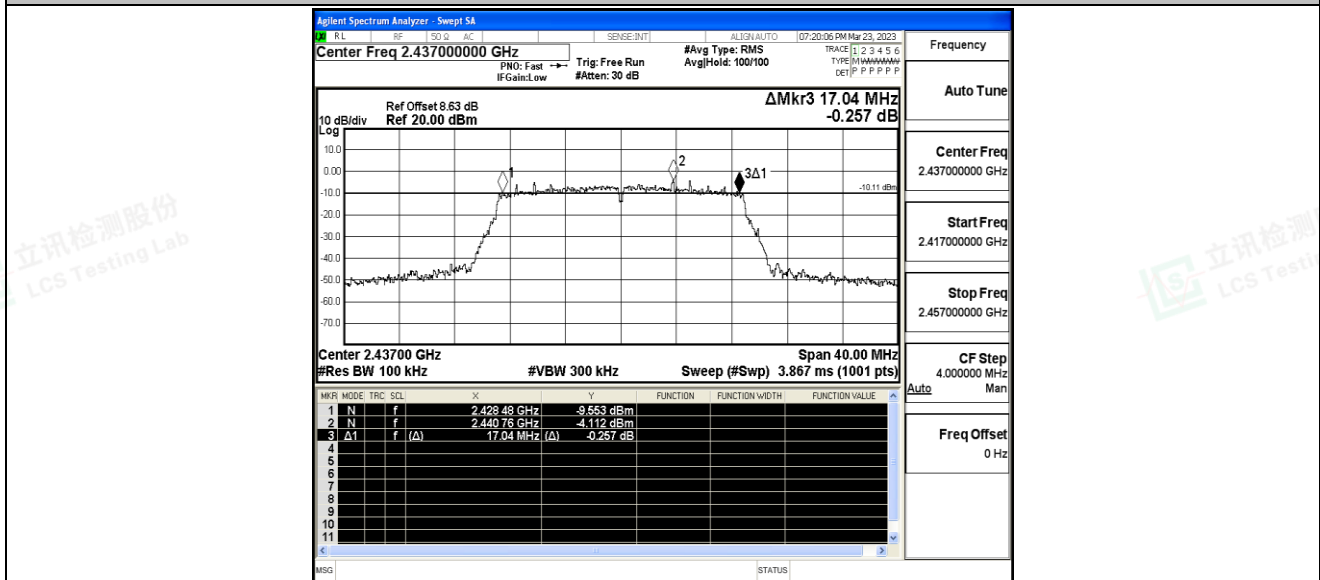


11N20SISO_Ant_2412



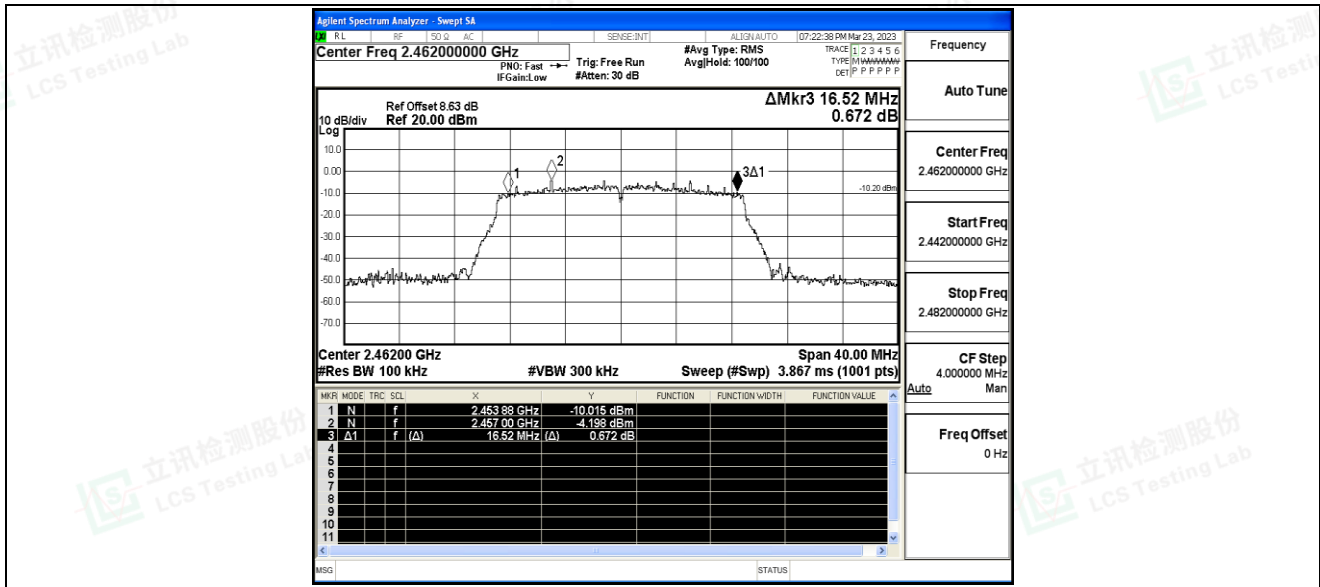


11N20SISO_Ant_2437



11N20SISO_Ant_2462







A.2 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant	15.21	30	Pass
NVNT	b	2437	Ant	14.15	30	Pass
NVNT	b	2462	Ant	15.34	30	Pass
NVNT	g	2412	Ant	14.43	30	Pass
NVNT	g	2437	Ant	14.56	30	Pass
NVNT	g	2462	Ant	13.79	30	Pass
NVNT	n20	2412	Ant	14.36	30	Pass
NVNT	n20	2437	Ant	14.54	30	Pass
NVNT	n20	2462	Ant	14.31	30	Pass





A.3 Maximum Power Spectral Density Level

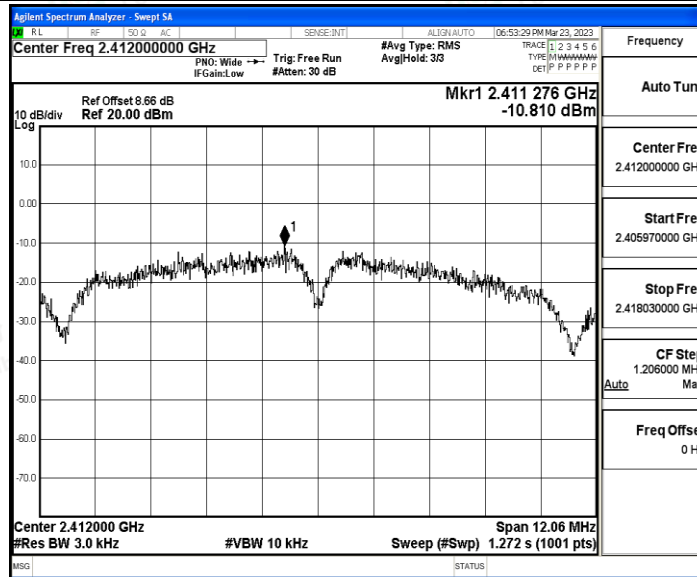
TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant	2412	-10.81	≤8.00	PASS
		2437	-10.64	≤8.00	PASS
		2462	-10.55	≤8.00	PASS
11G	Ant	2412	-16.61	≤8.00	PASS
		2437	-17.14	≤8.00	PASS
		2462	-17.08	≤8.00	PASS
11N20SISO	Ant	2412	-15.74	≤8.00	PASS
		2437	-18.28	≤8.00	PASS
		2462	-15.94	≤8.00	PASS



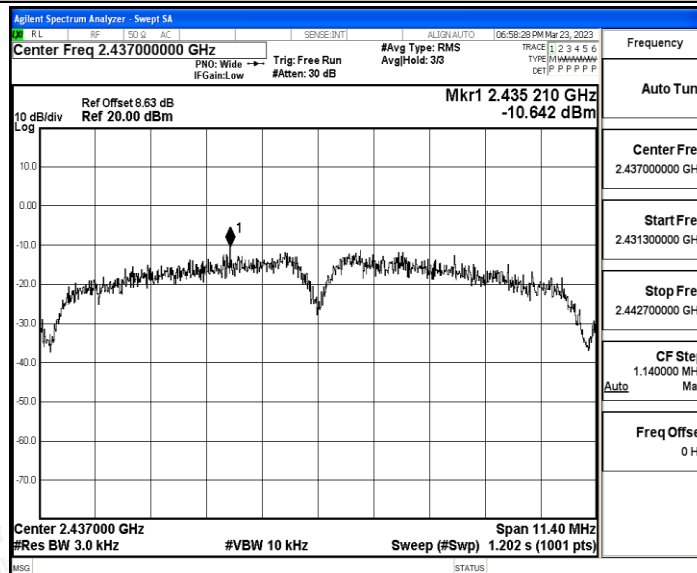
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11B_Ant_2412

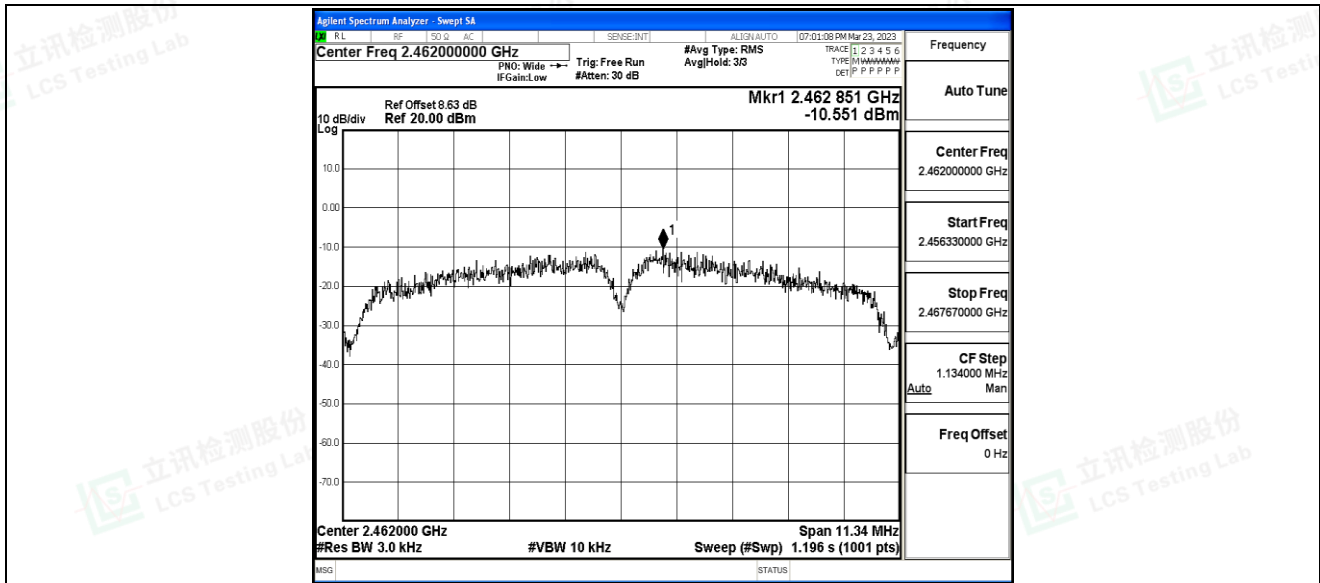


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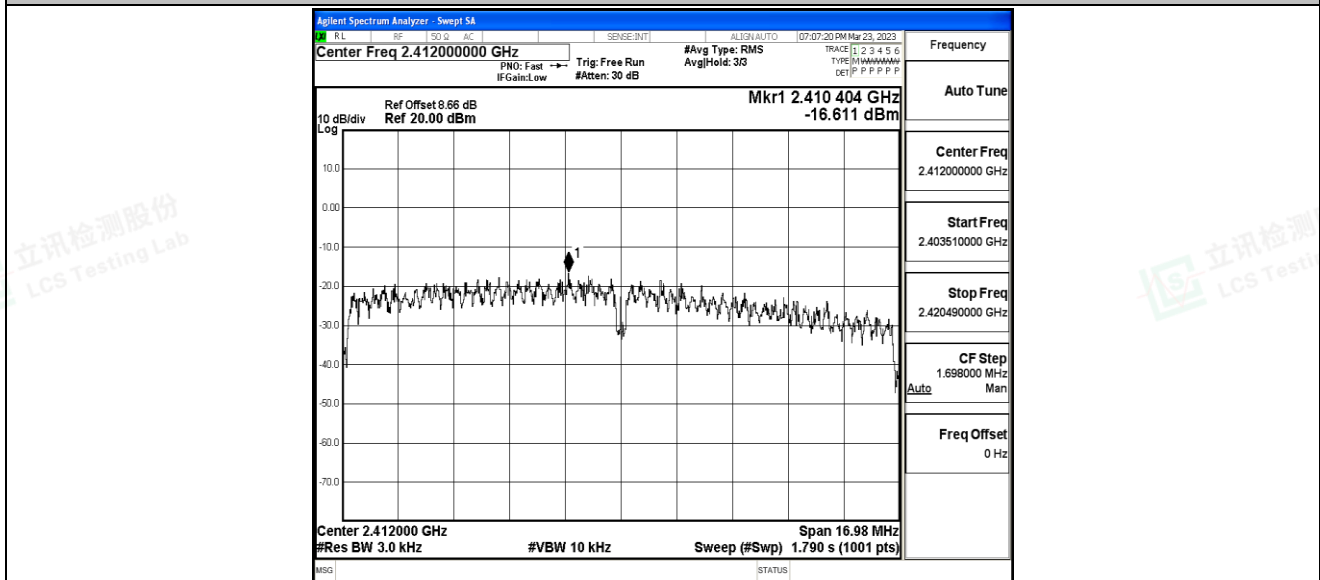


11B_Ant_2462



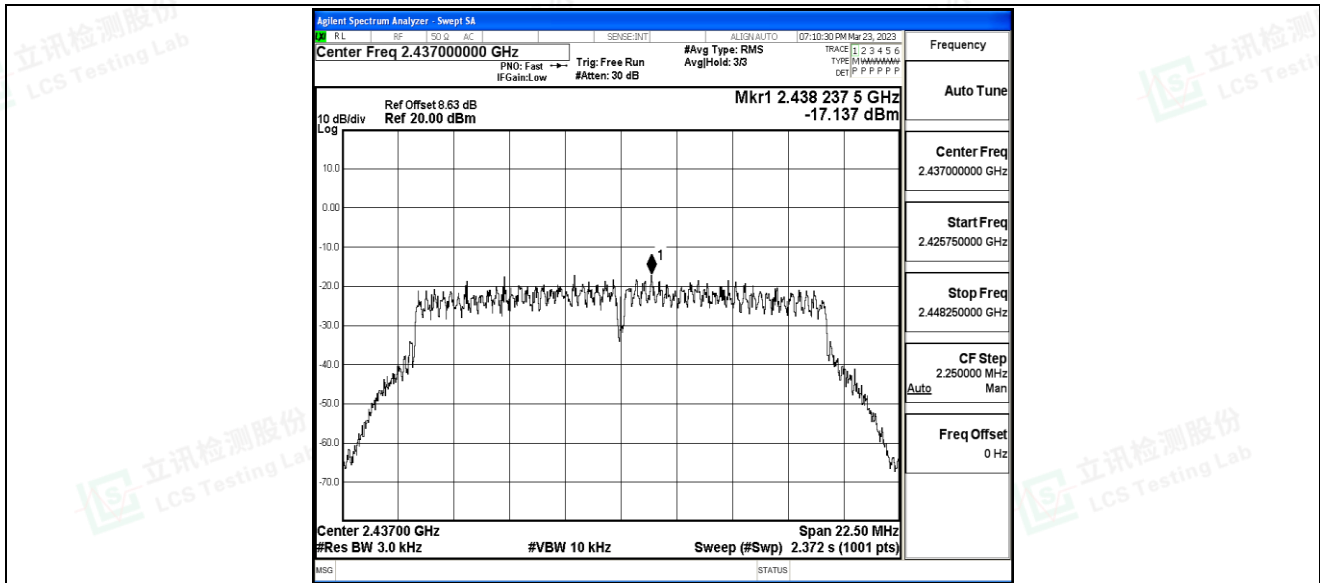


11G_Ant_2412

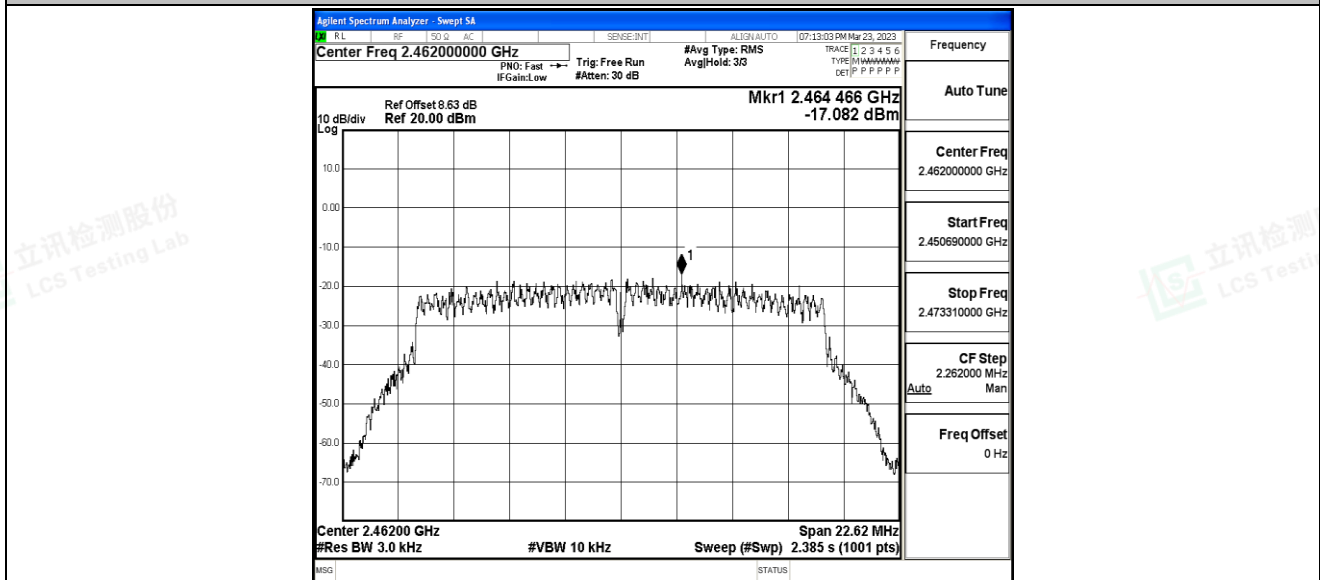


11G_Ant_2437



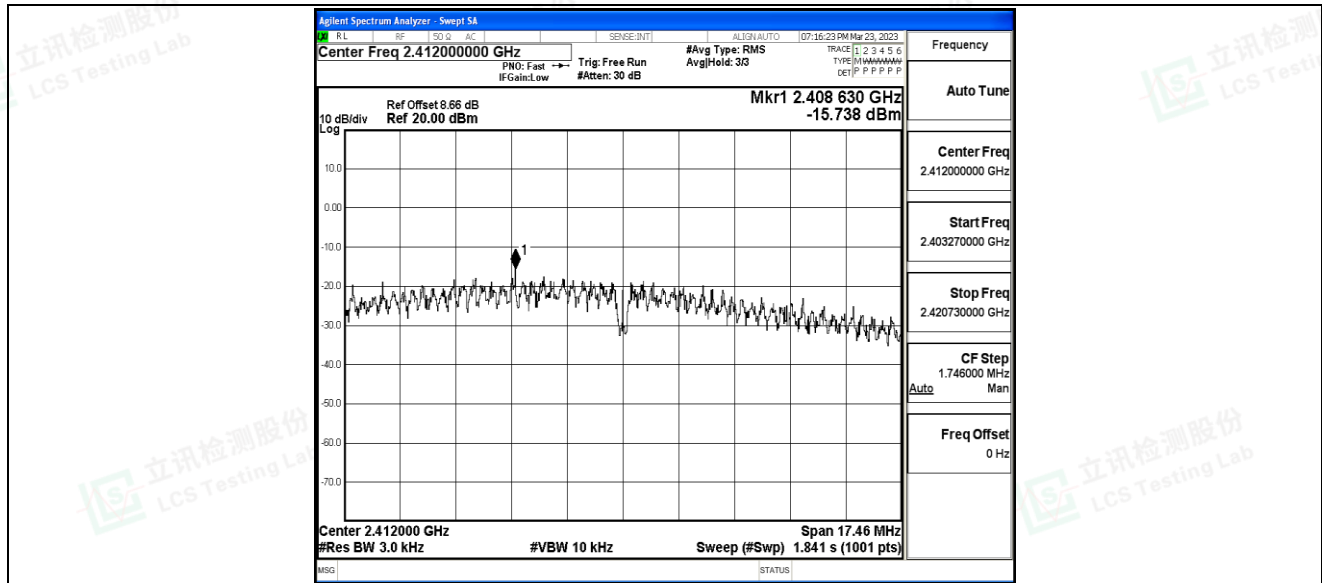


11G_Ant_2462

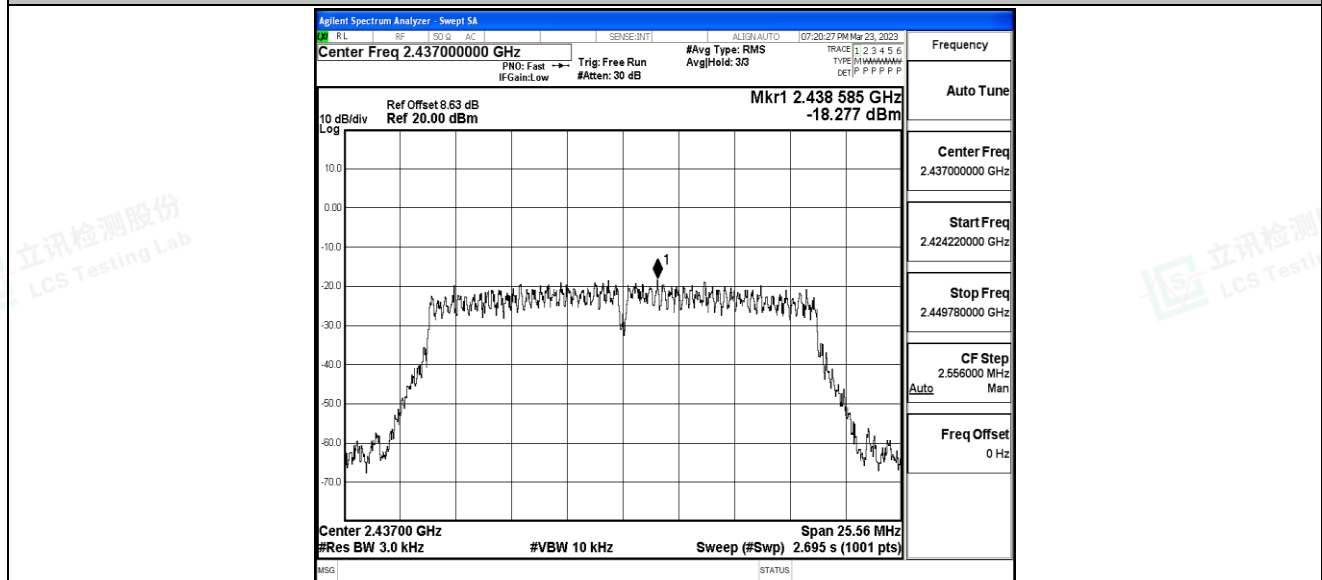


11N20SISO_Ant_2412



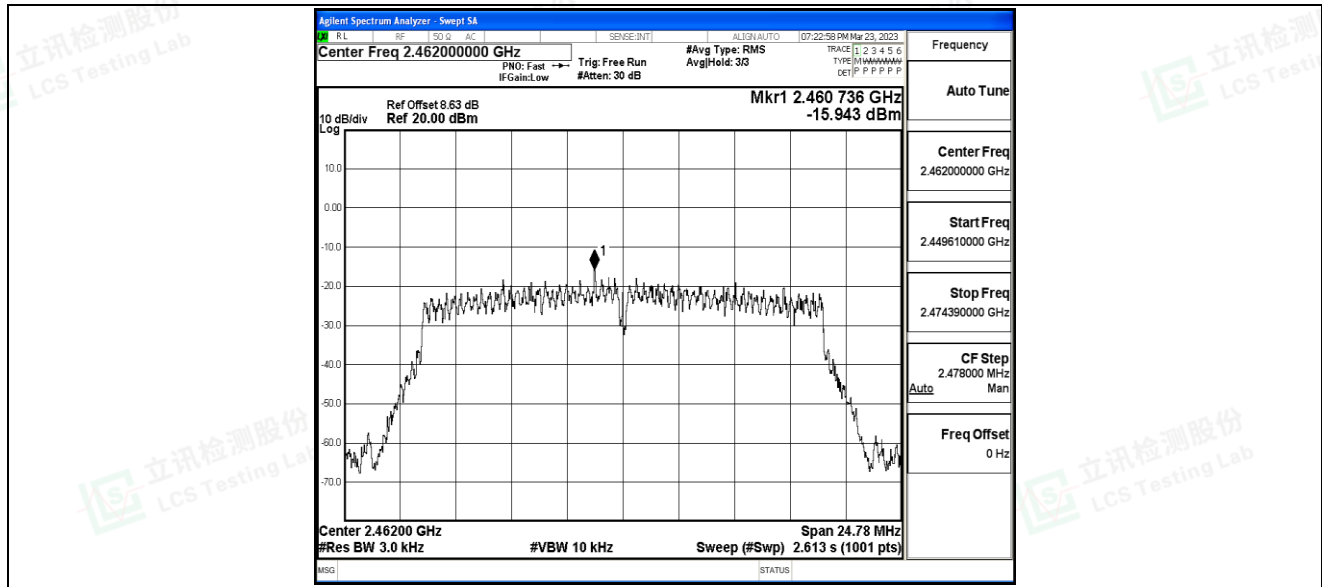


11N20SISO_Ant_2437



11N20SISO_Ant_2462





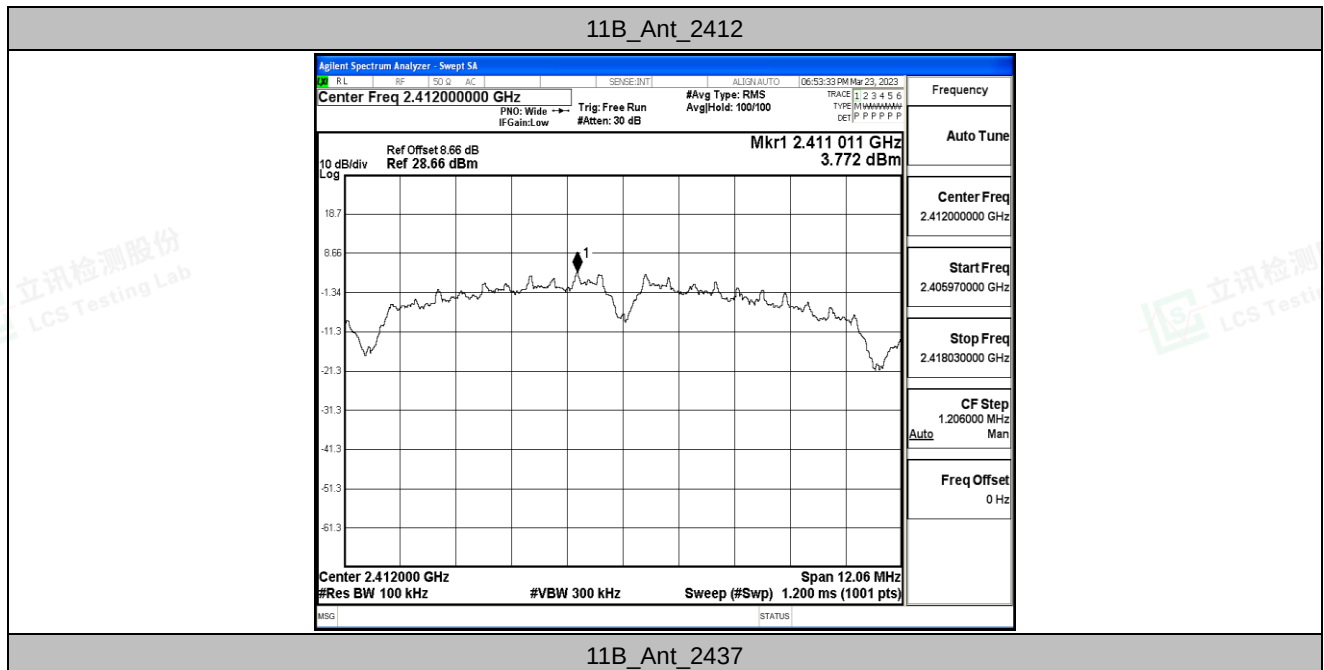


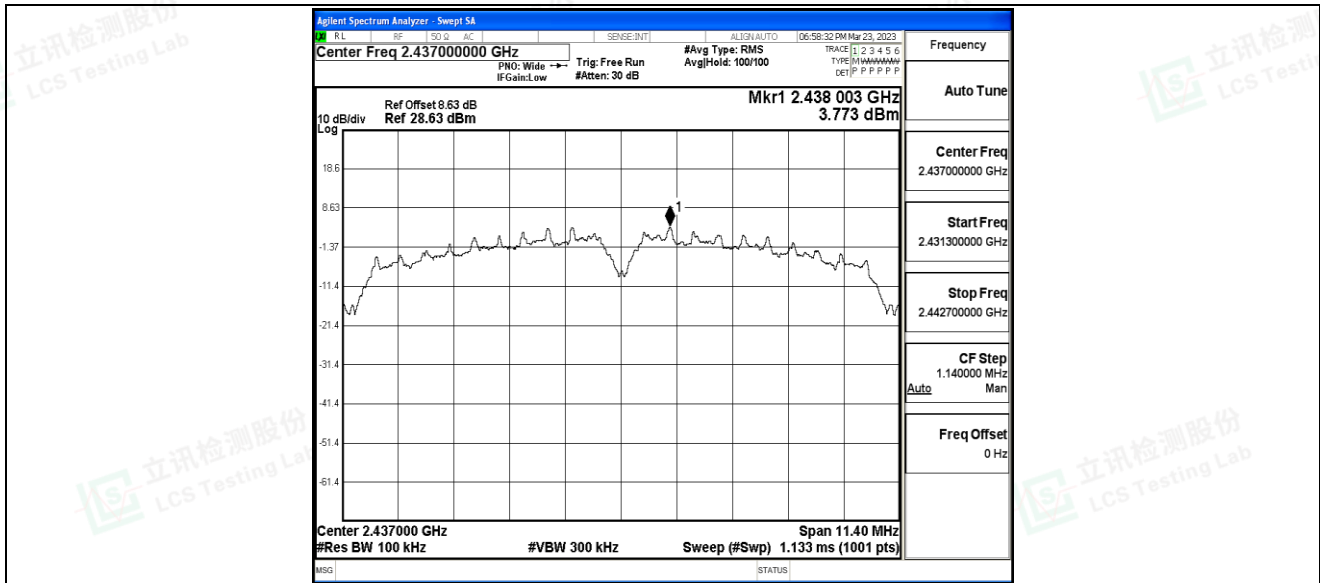
A.4 Band Edge

Reference level measurement

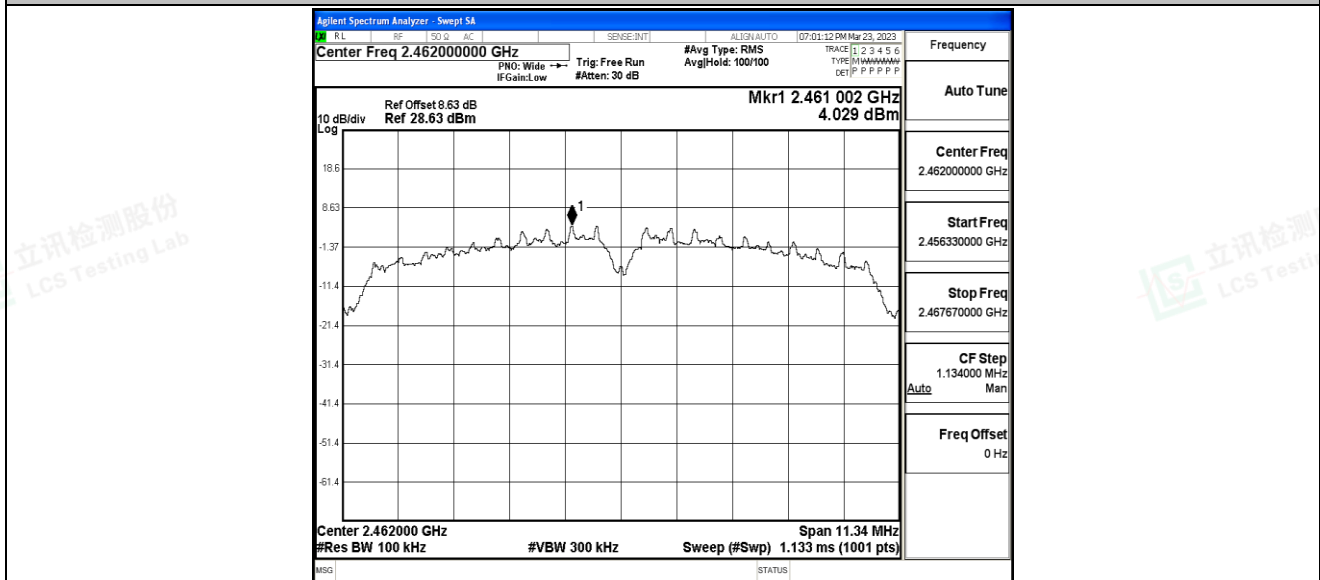
TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant	Low	2412	3.77	-45.84	≤-16.23	PASS
		High	2462	4.03	-48.62	≤-15.97	PASS
11G	Ant	Low	2412	-2.56	-43.38	≤-22.56	PASS
		High	2462	-4.27	-48.35	≤-24.27	PASS
11N20SISO	Ant	Low	2412	-3.09	-39.39	≤-23.09	PASS
		High	2462	-3.03	-48.63	≤-23.03	PASS

Test Graphs



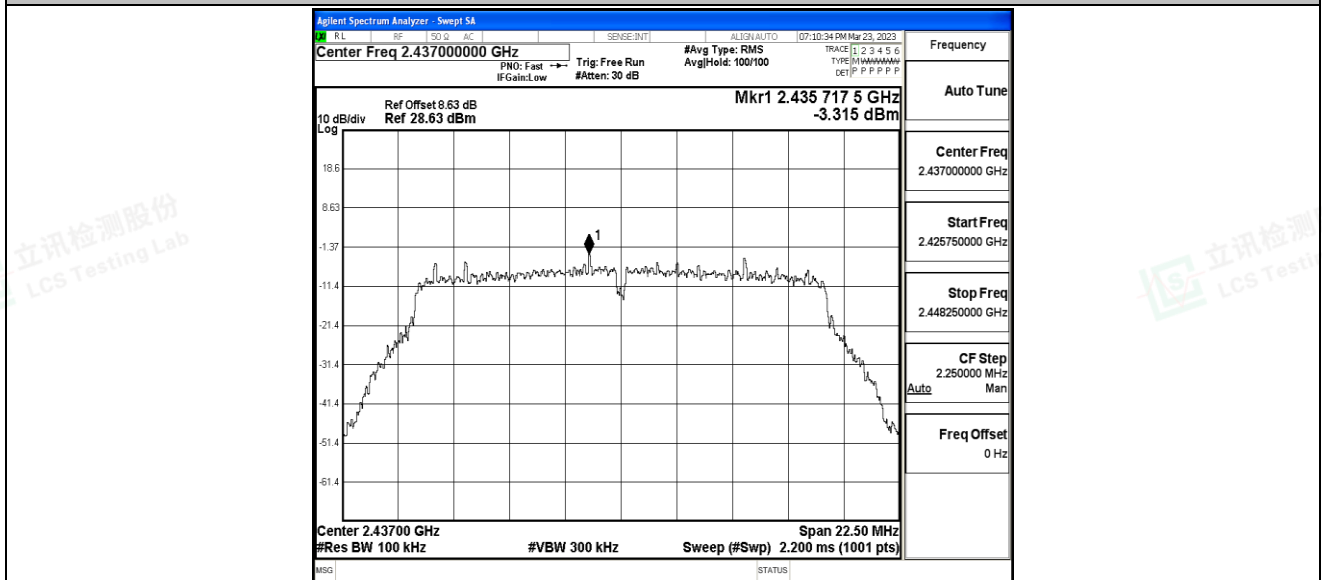
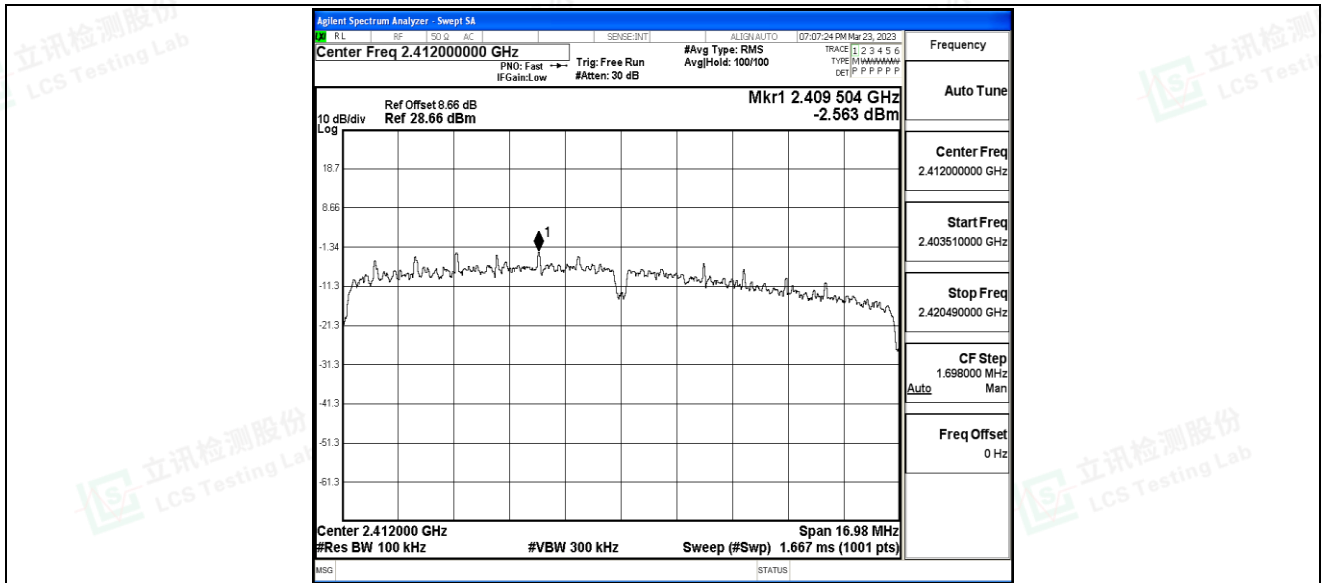


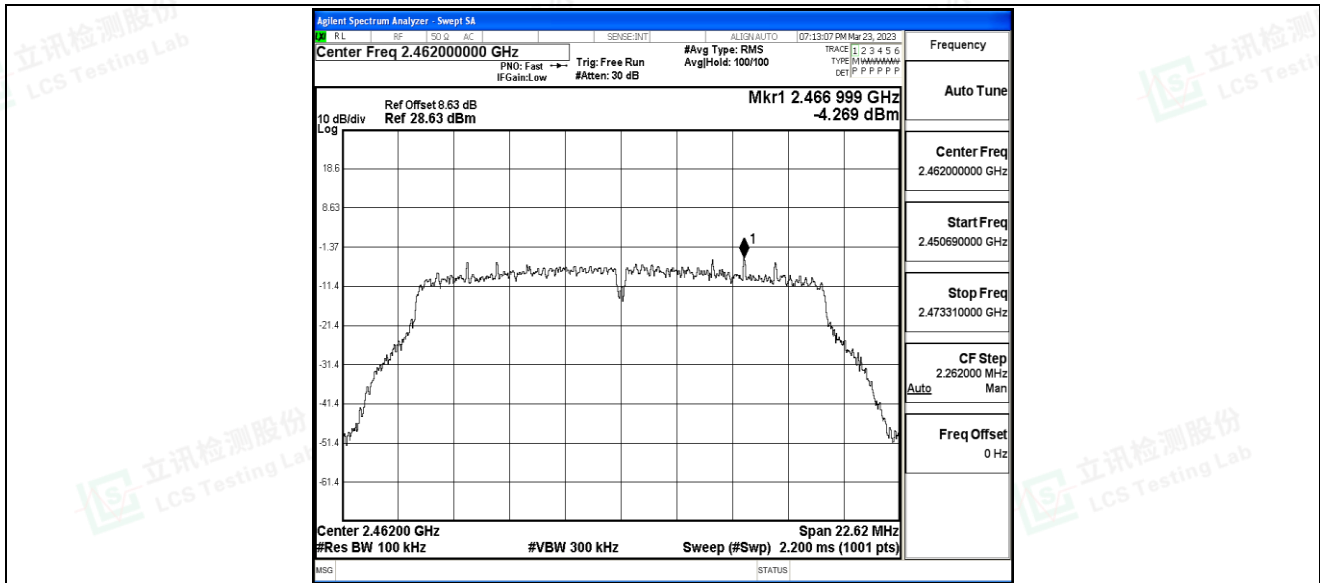
11B_Ant_2462



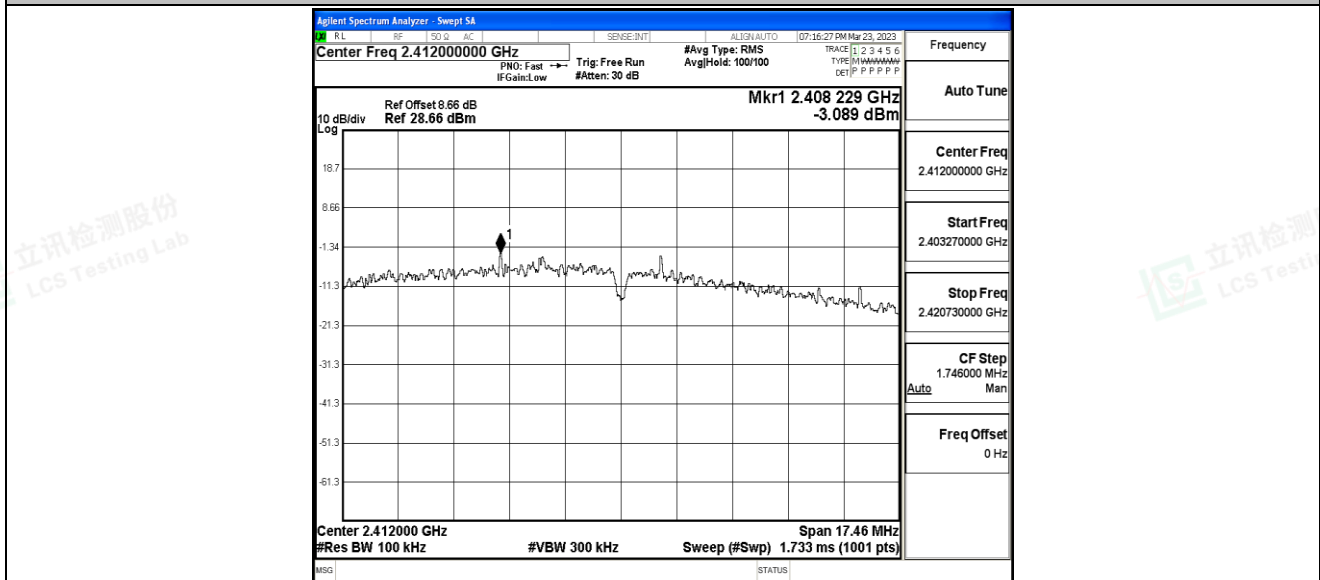
11G_Ant_2412





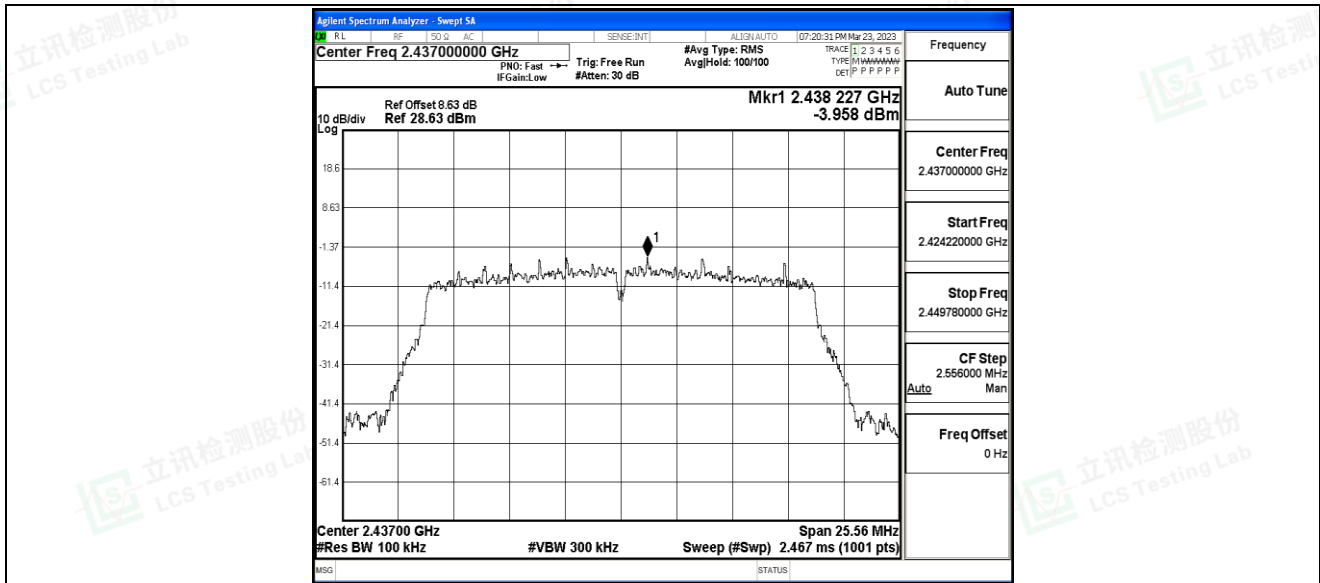


11N20SISO_Ant_2412

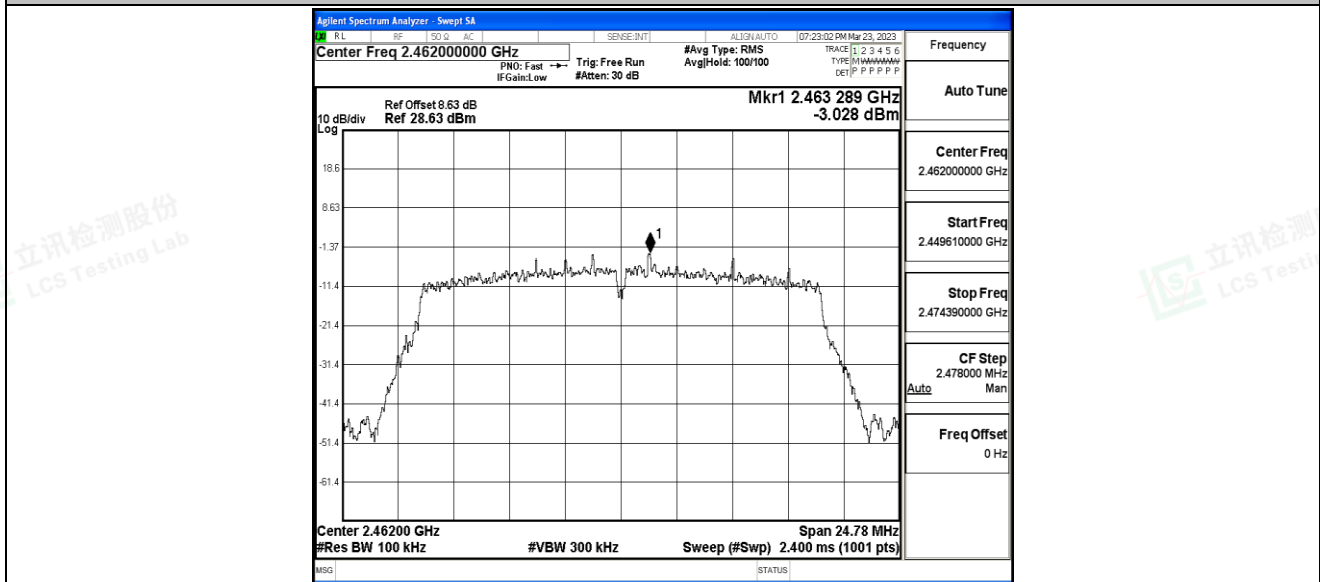


11N20SISO_Ant_2437



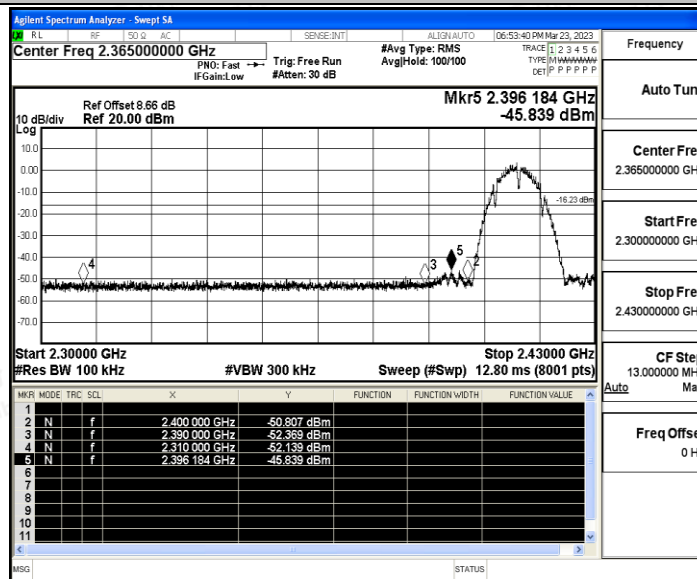


11N20SISO_Ant_2462

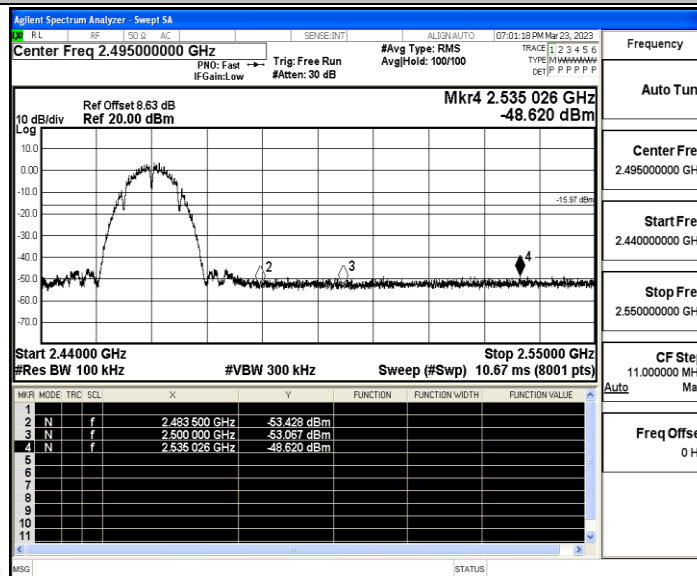




11B_Ant_Low_2412

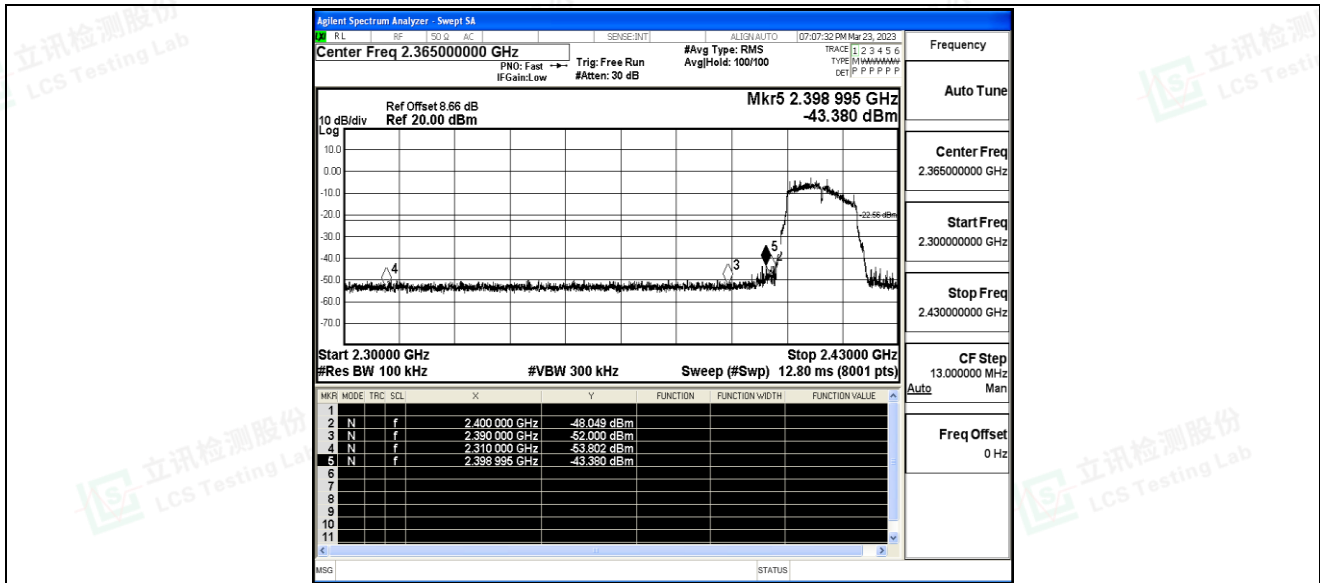


11B_Ant_High_2462

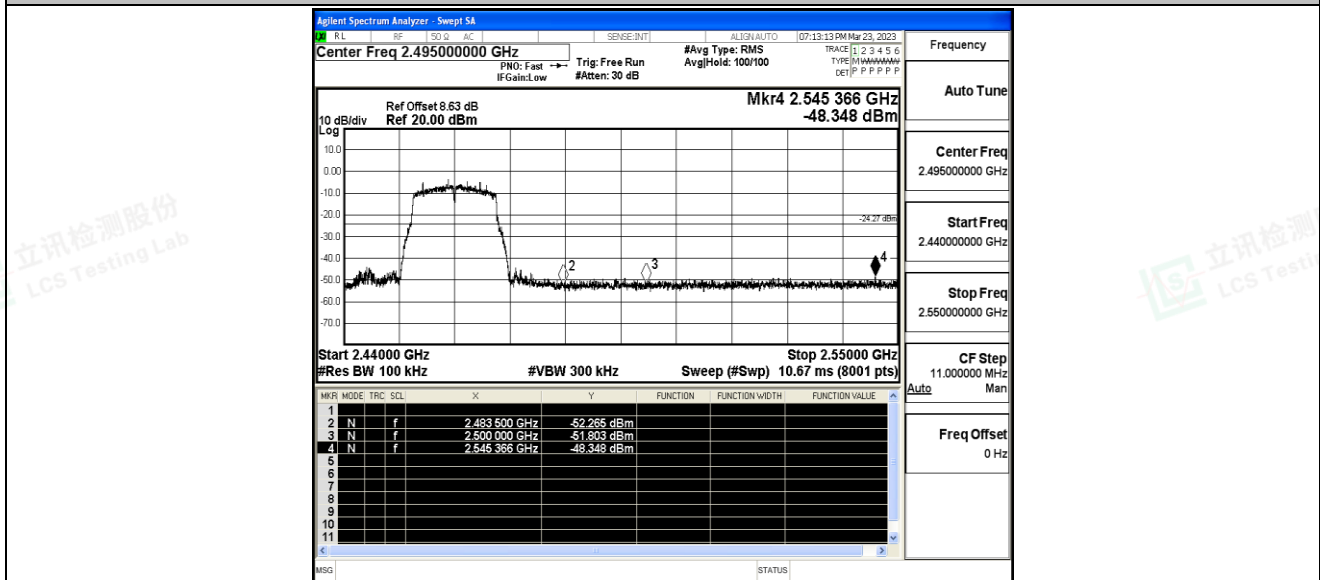


11G_Ant_Low_2412



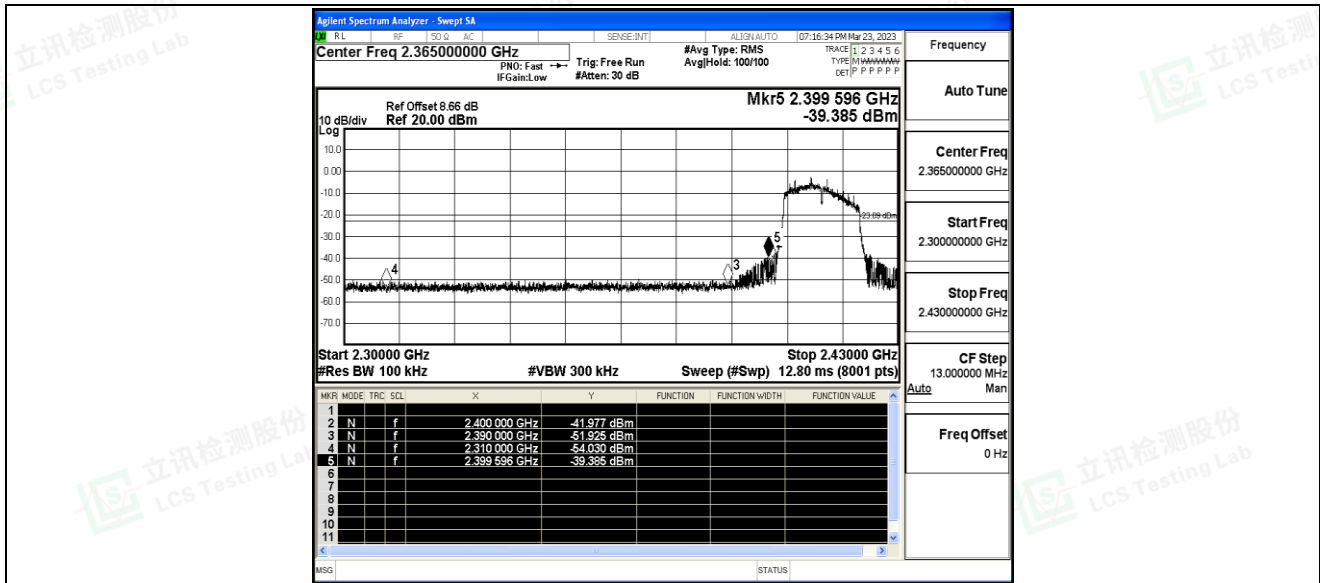


11G_Ant_High_2462

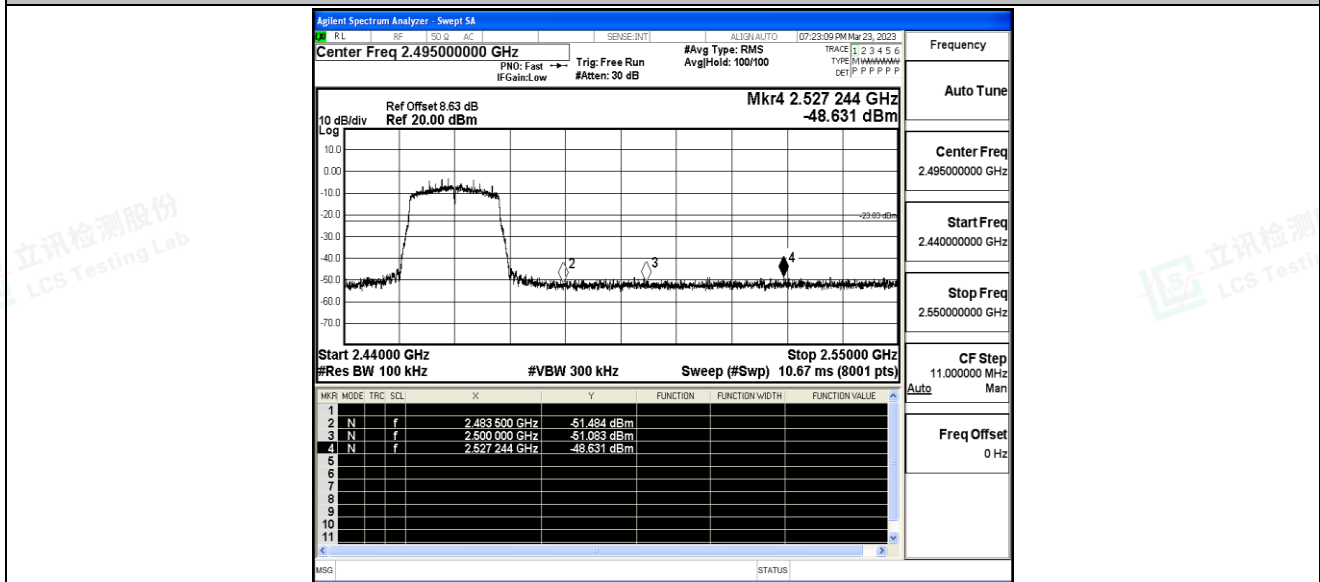


11N20SISO_Ant_Low_2412





11N20SISO_Ant_High_2462





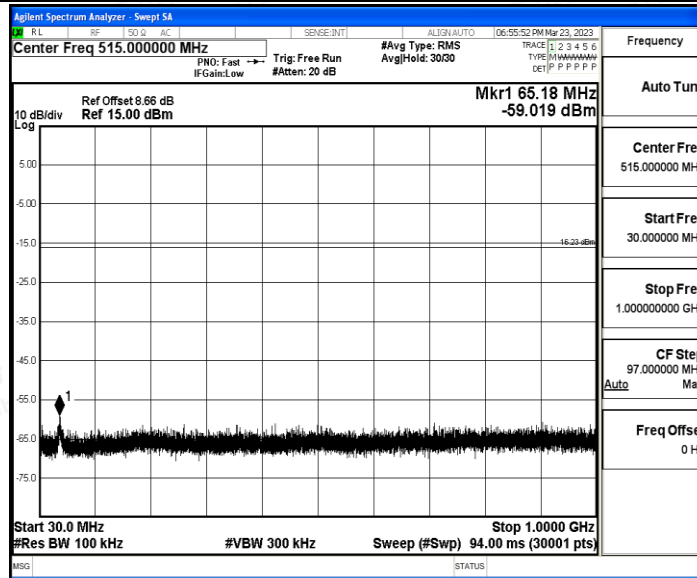
A.5 Conducted RF Spurious Emission

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant	2412	30~1000	3.77	-59.02	≤-16.23	PASS
			1000~26500	3.77	-45.7	≤-16.23	PASS
		2437	30~1000	3.77	-59.34	≤-16.23	PASS
			1000~26500	3.77	-46.42	≤-16.23	PASS
		2462	30~1000	4.03	-60.11	≤-15.97	PASS
			1000~26500	4.03	-46.37	≤-15.97	PASS
11G	Ant	2412	30~1000	-2.56	-59.83	≤-22.56	PASS
			1000~26500	-2.56	-45.63	≤-22.56	PASS
		2437	30~1000	-3.32	-59.48	≤-23.32	PASS
			1000~26500	-3.32	-46.66	≤-23.32	PASS
		2462	30~1000	-4.27	-60.21	≤-24.27	PASS
			1000~26500	-4.27	-46.31	≤-24.27	PASS
11N20SISO	Ant	2412	30~1000	-3.09	-59.53	≤-23.09	PASS
			1000~26500	-3.09	-46.2	≤-23.09	PASS
		2437	30~1000	-3.96	-60.02	≤-23.96	PASS
			1000~26500	-3.96	-45.76	≤-23.96	PASS
		2462	30~1000	-3.03	-60.22	≤-23.03	PASS
			1000~26500	-3.03	-46.52	≤-23.03	PASS

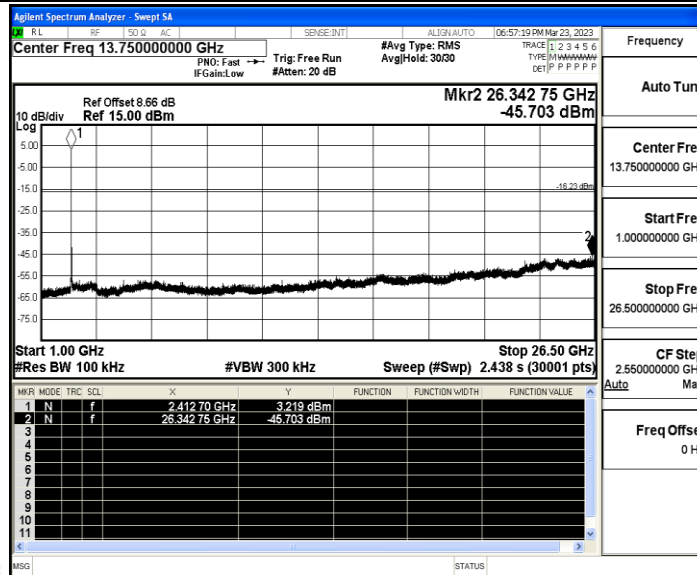




11B_Ant_2412_30~1000

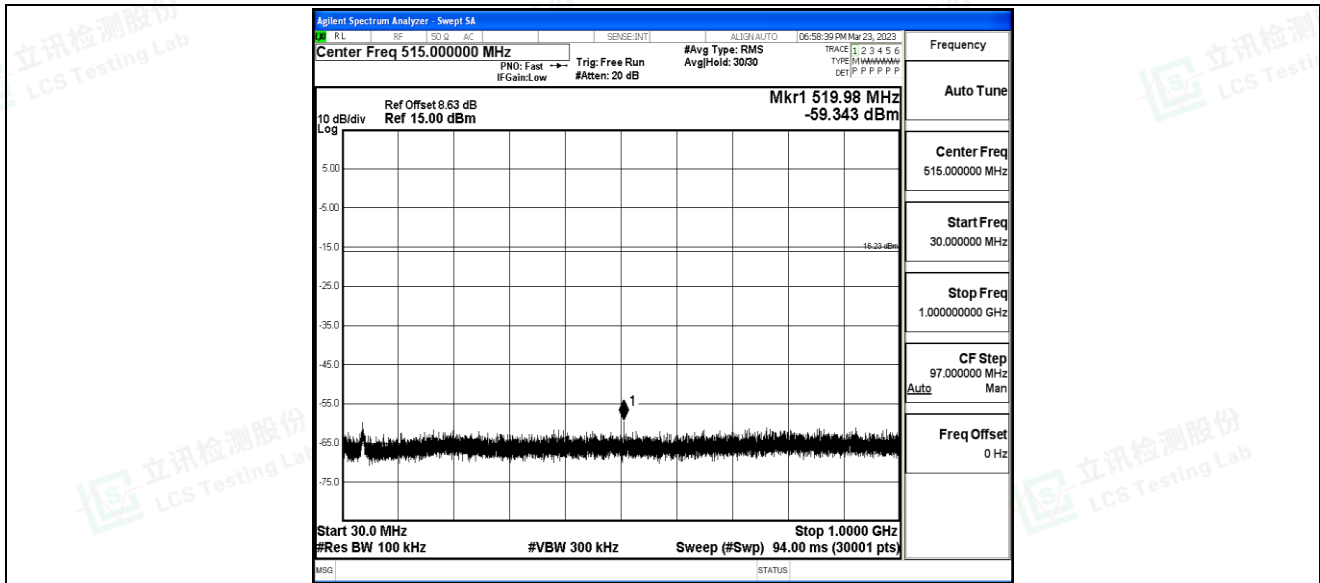


11B_Ant_2412_1000~26500

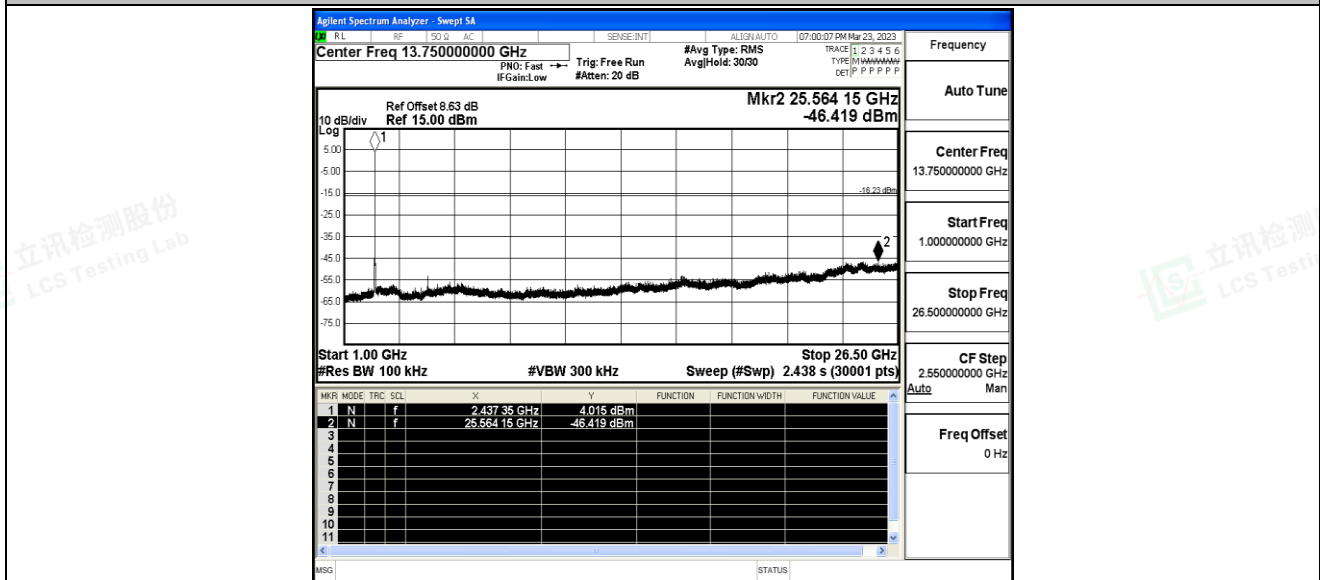


11B_Ant_2437_30~1000



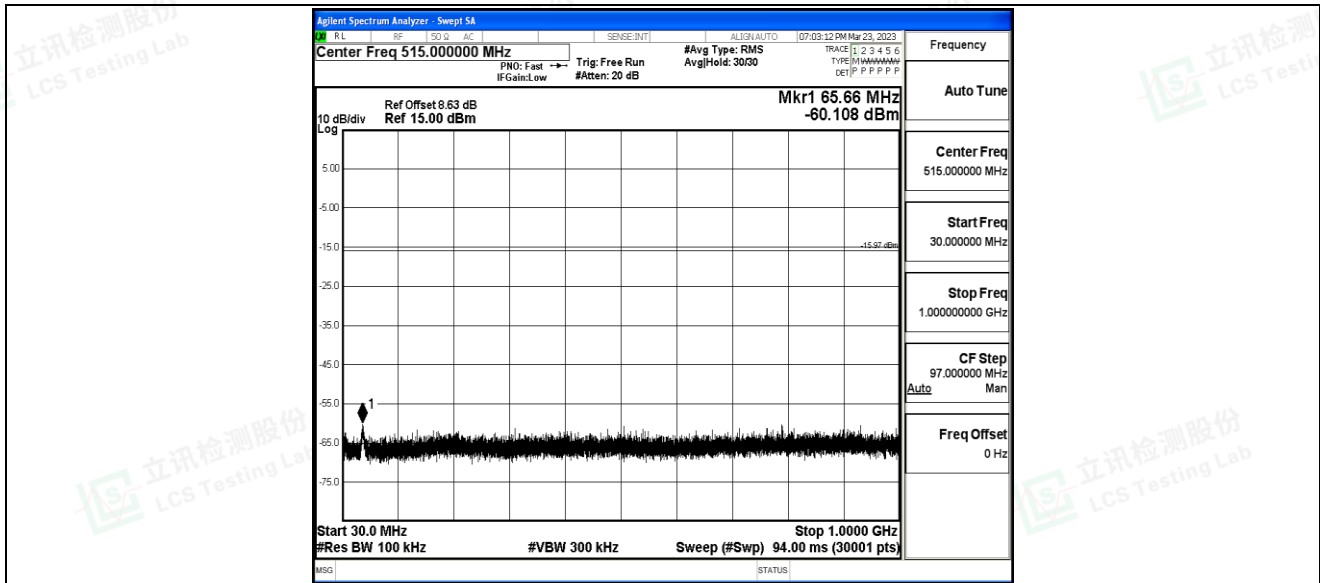


11B_Ant_2437_1000~26500

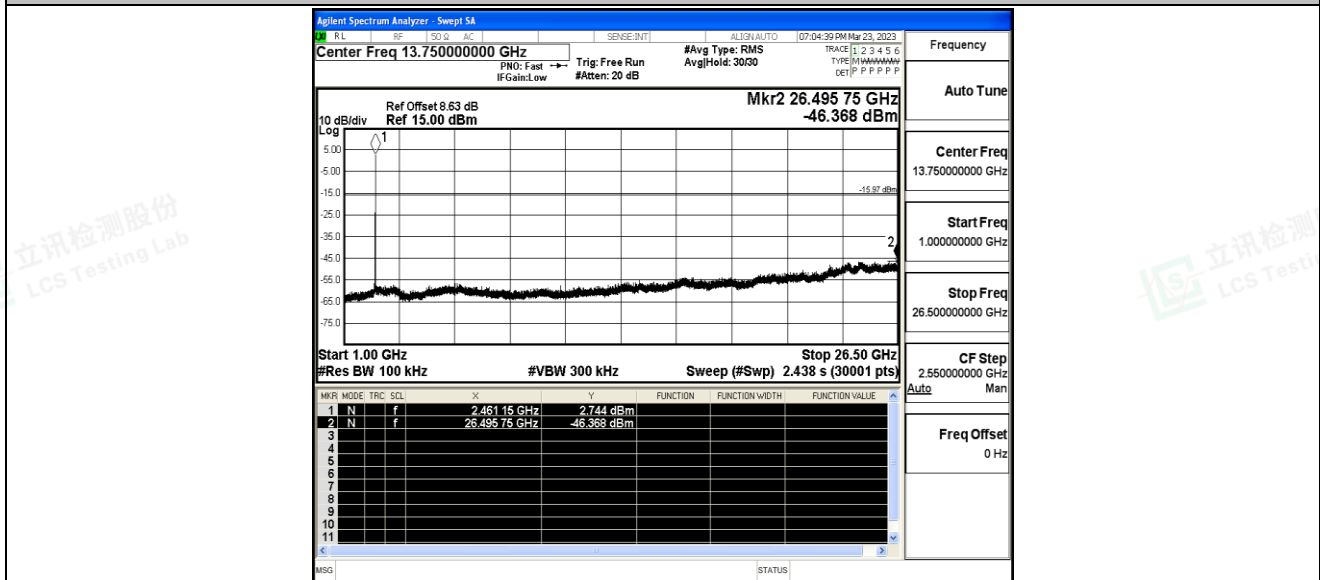


11B_Ant_2462_30~1000



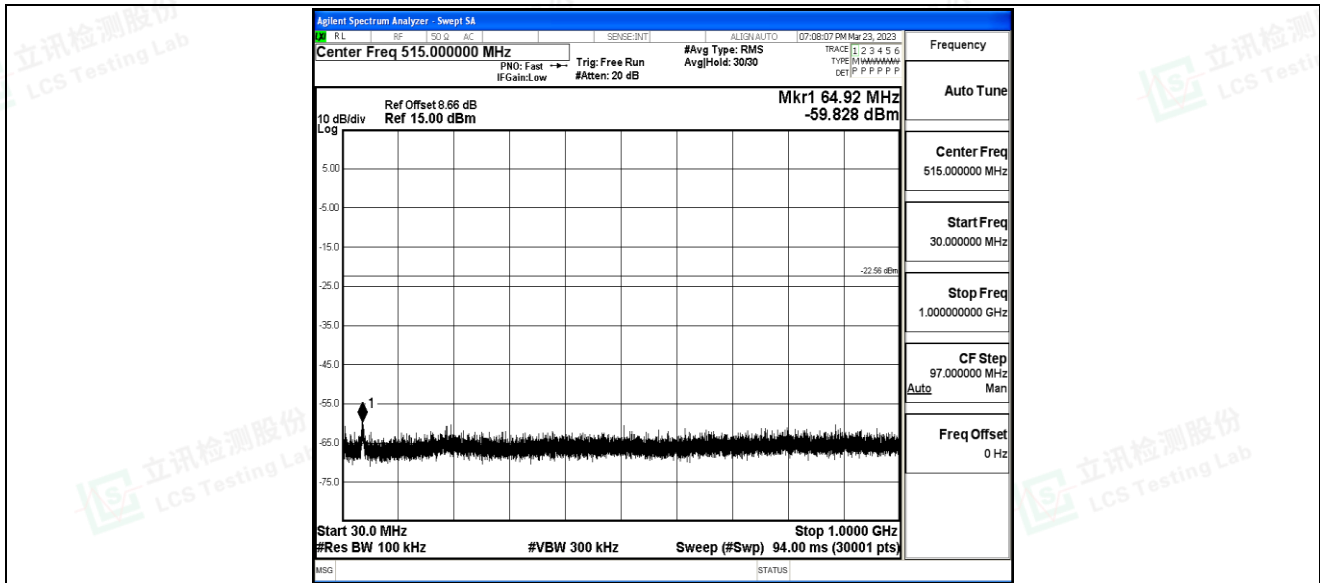


11B_Ant_2462_1000~26500

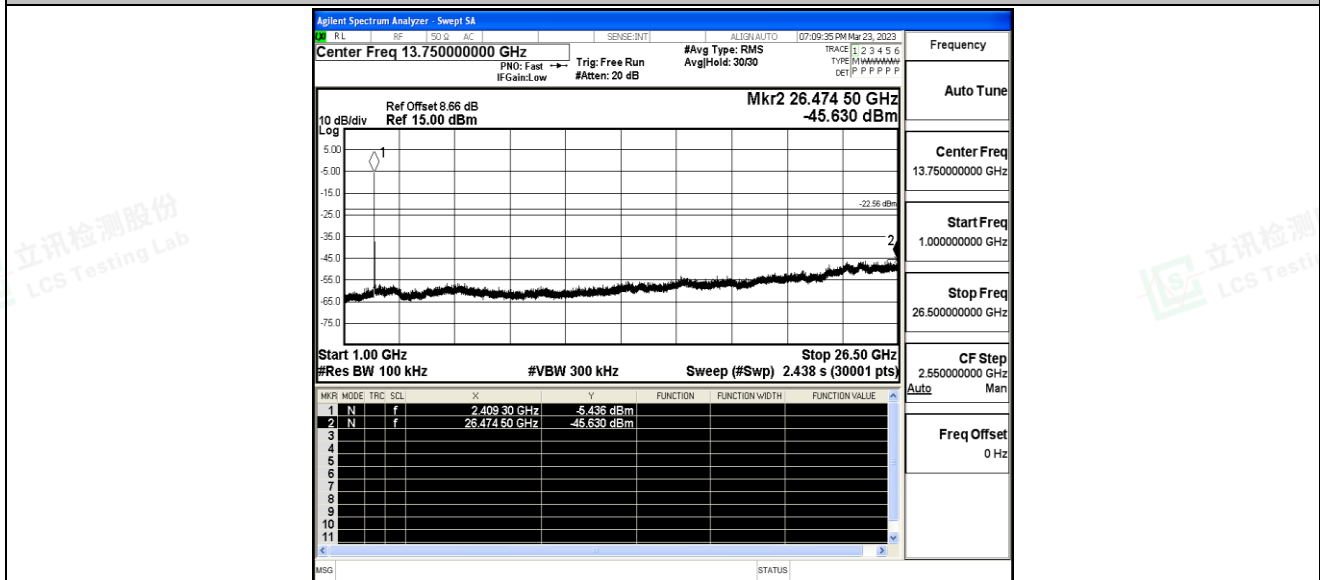


11G_Ant_2412_30~1000



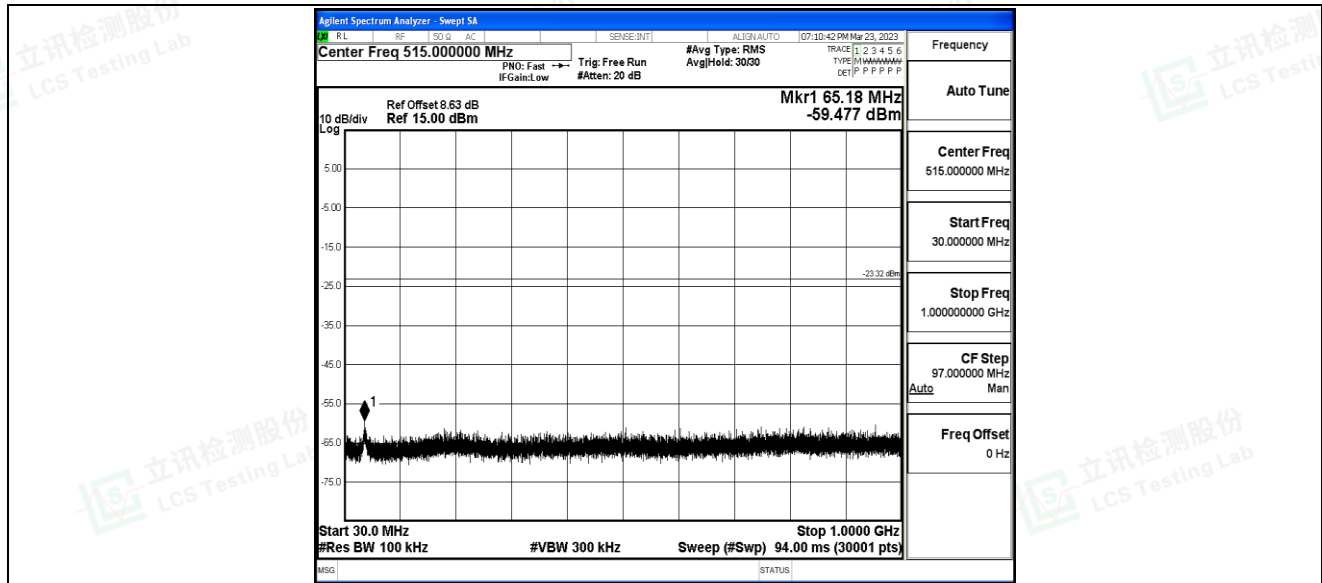


11G_Ant_2412_1000~26500

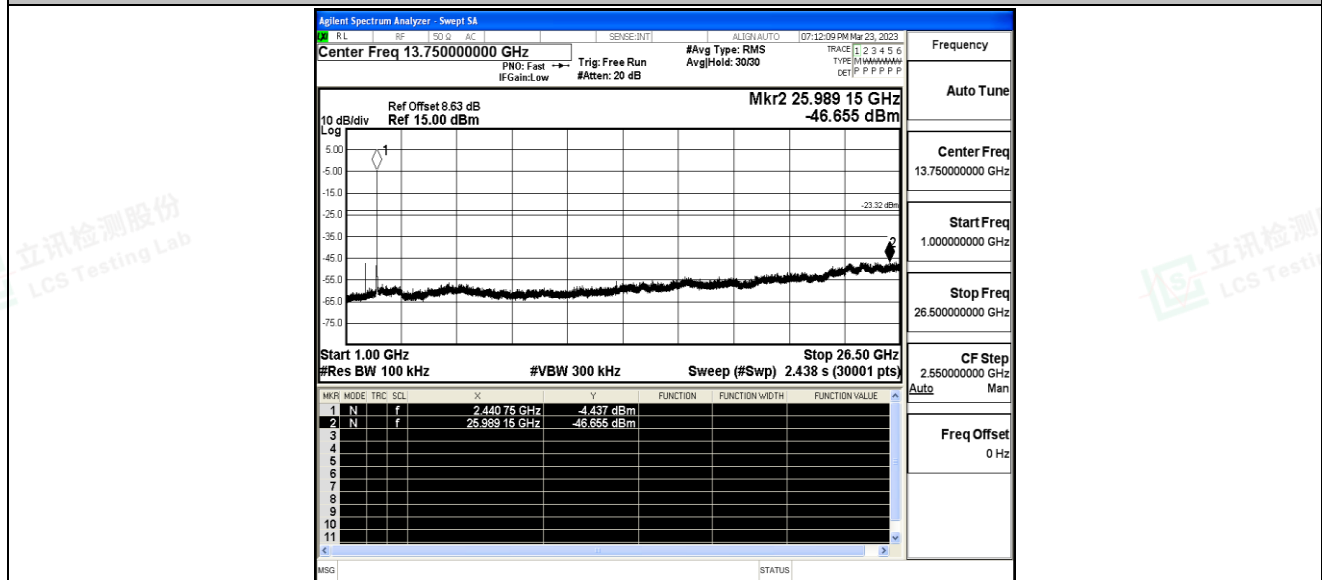


11G_Ant_2437_30~1000



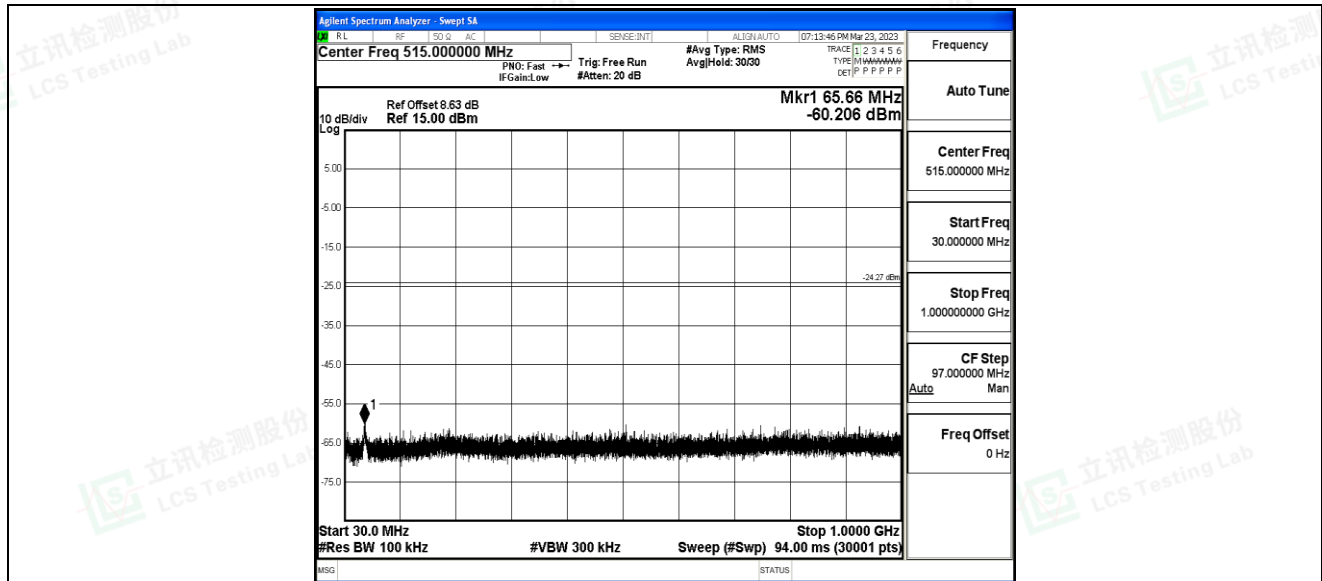


11G_Ant_2437_1000~26500

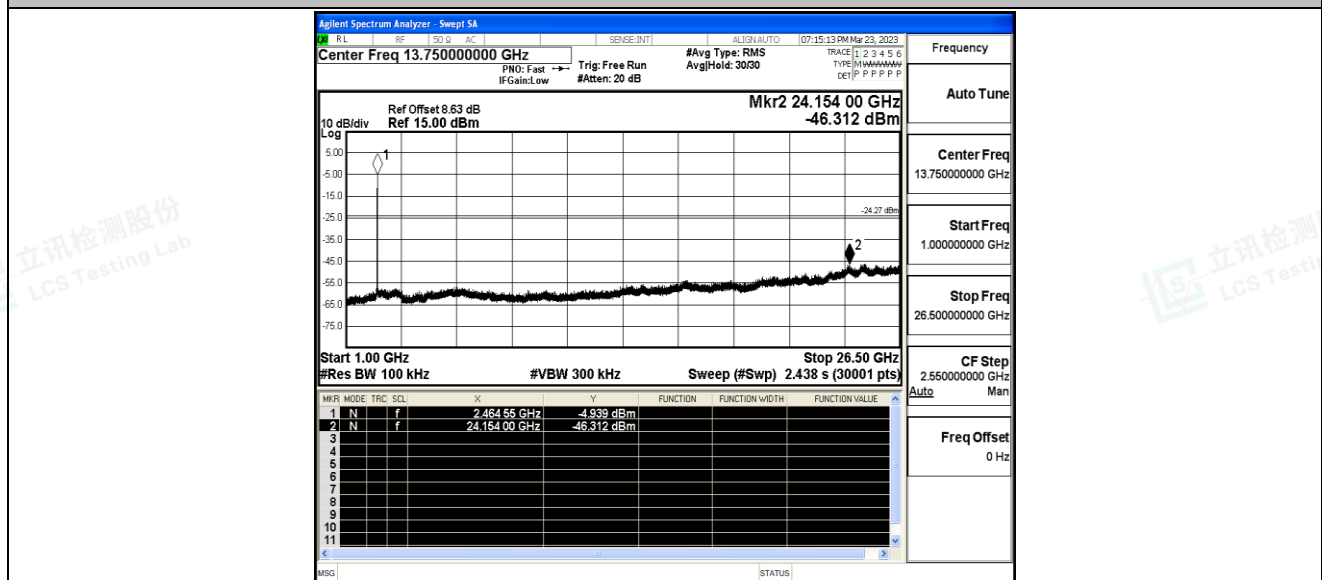


11G_Ant_2462_30~1000



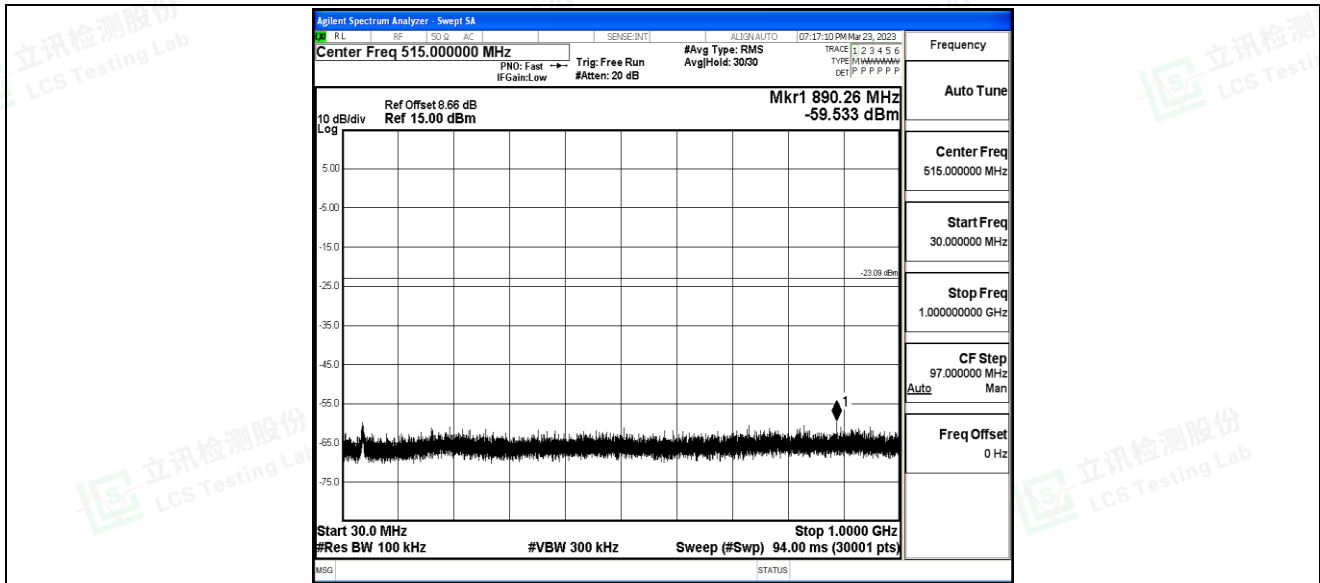


11G_Ant_2462_1000~26500

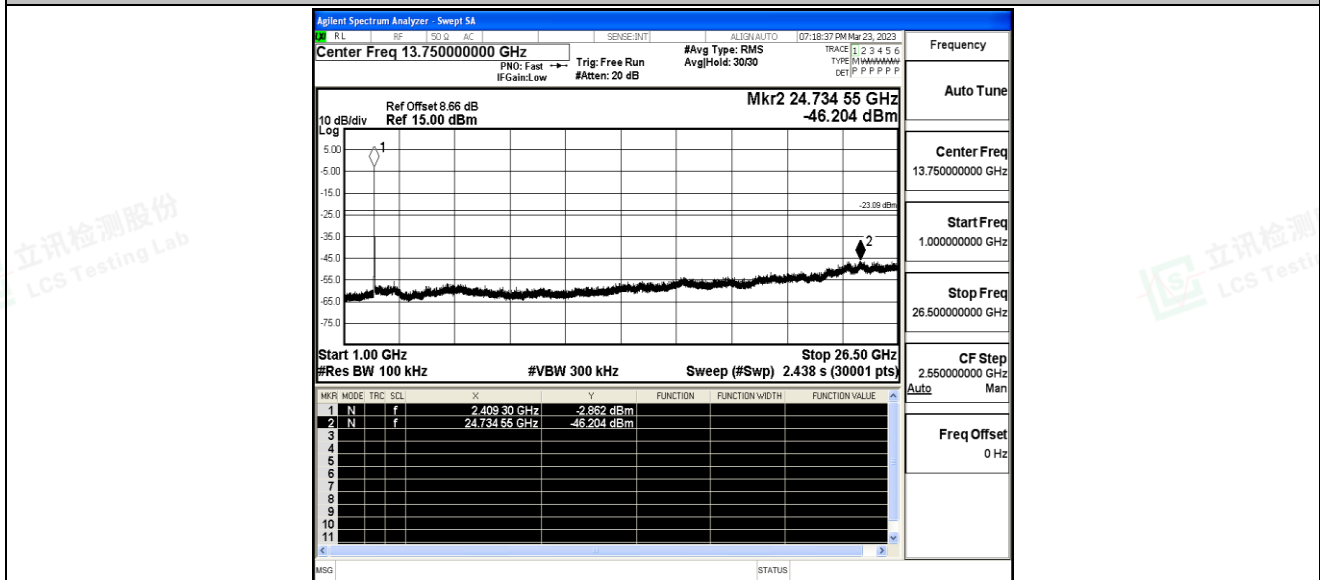


11N20SISO_Ant_2412_30~1000



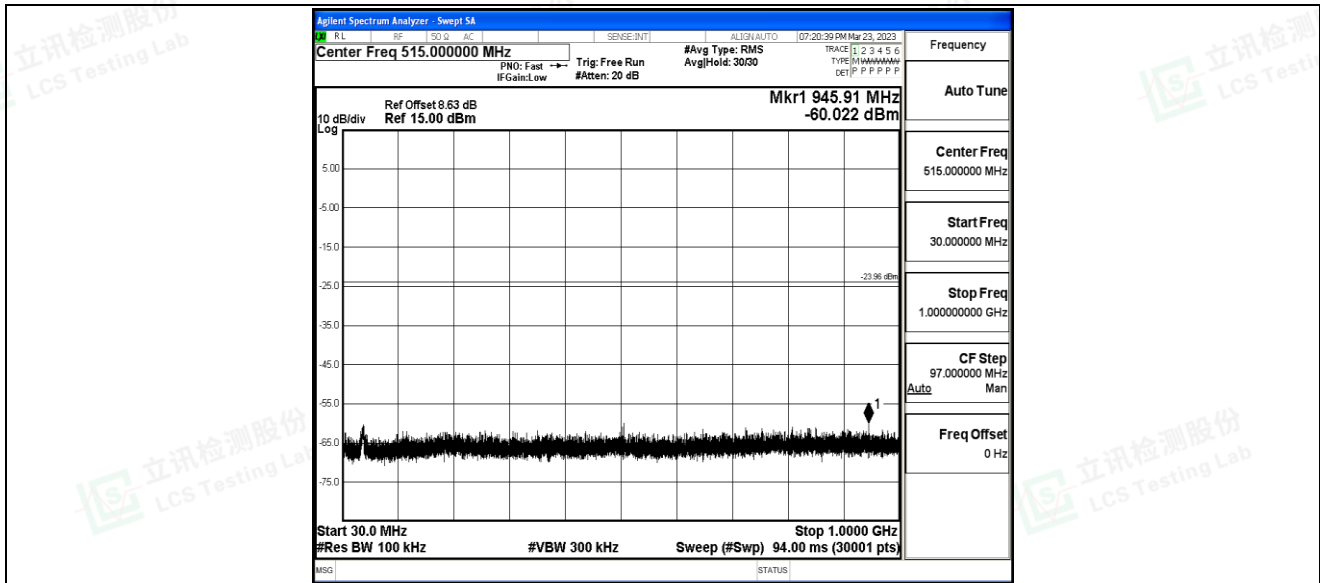


11N20SISO_Ant_2412_1000~26500

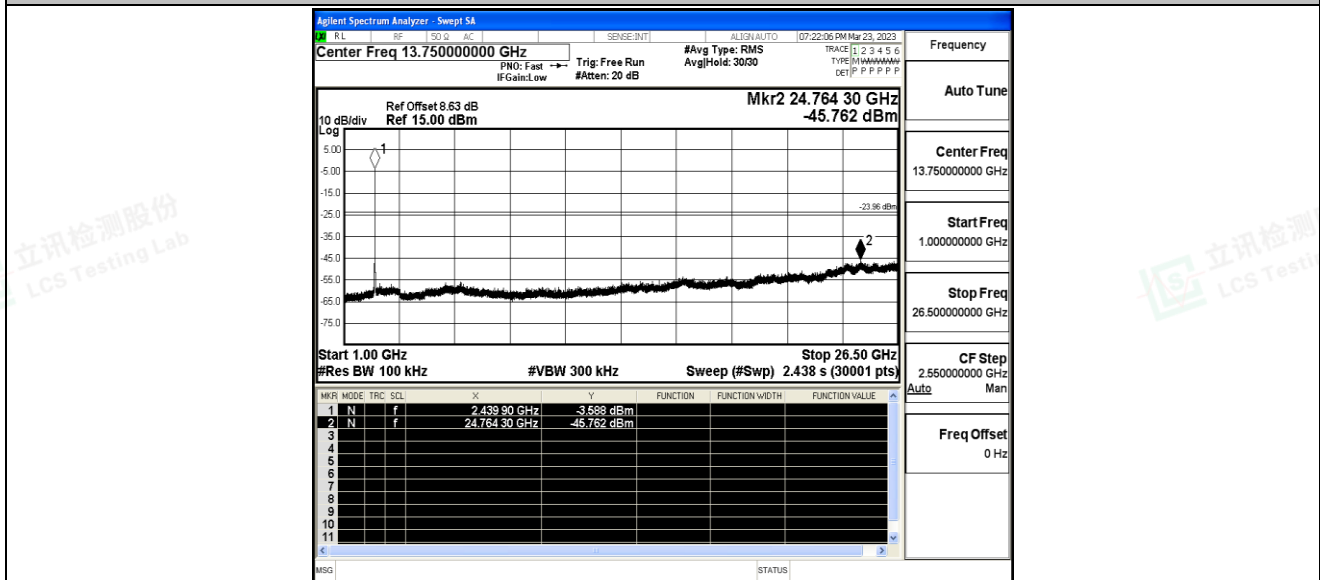


11N20SISO_Ant_2437_30~1000



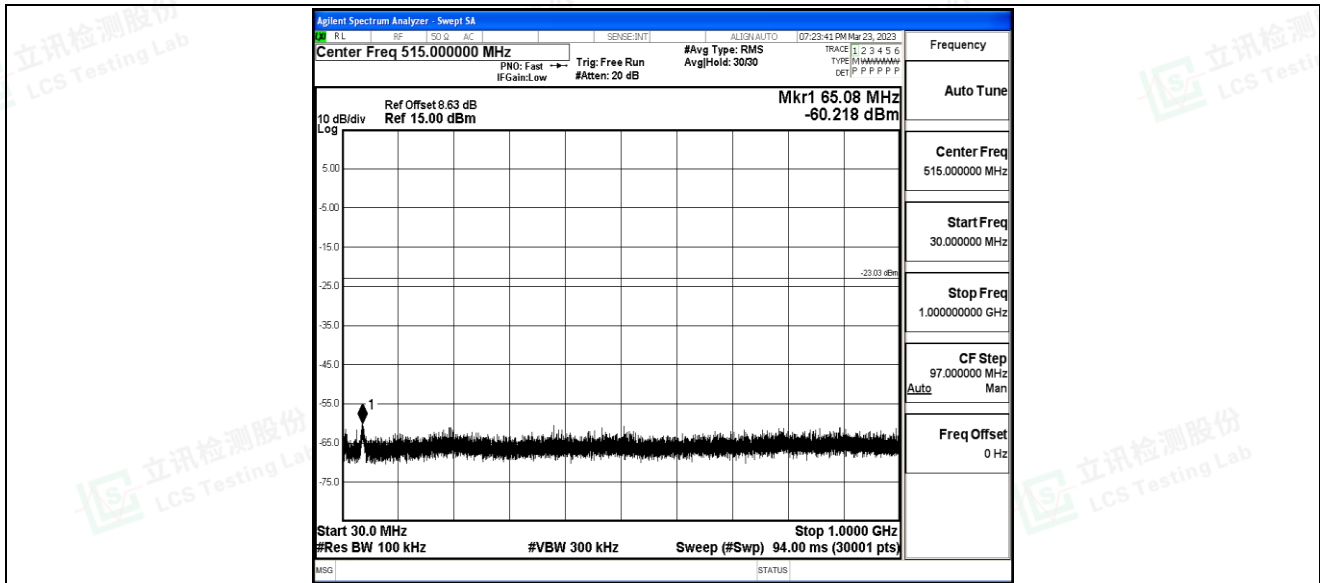


11N20SISO_Ant_2437_1000~26500

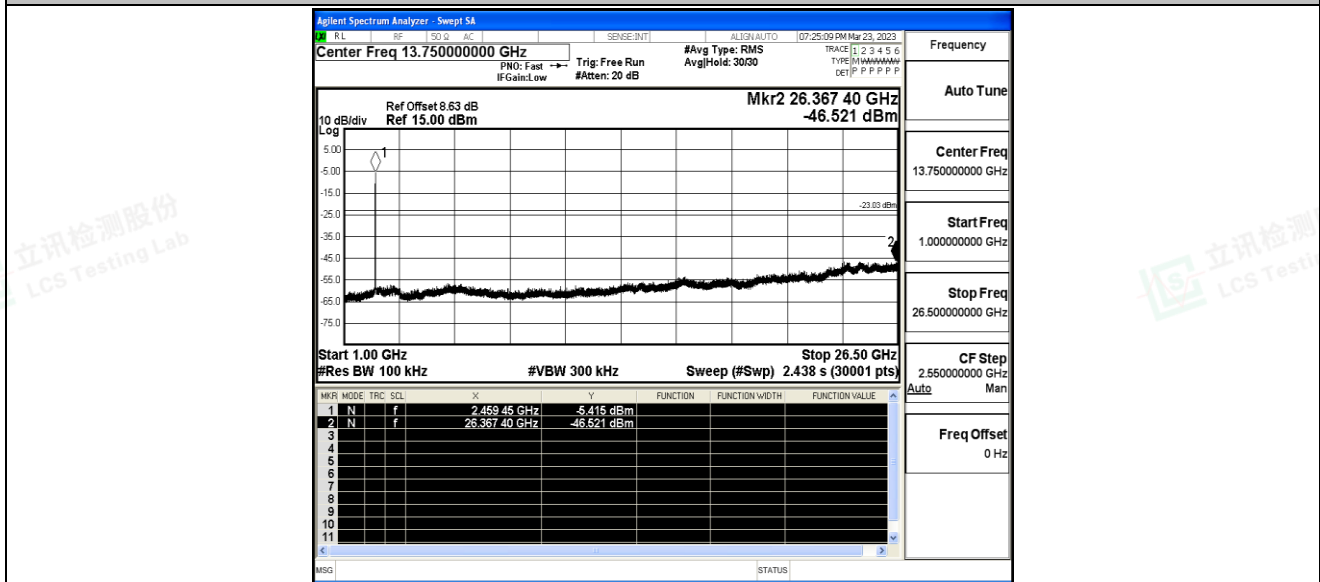


11N20SISO_Ant_2462_30~1000





11N20SISO_Ant_2462_1000~26500





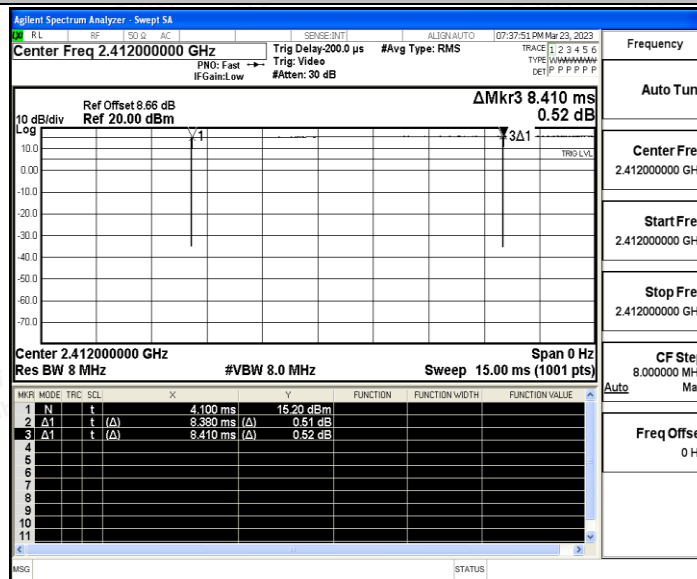
A.6 Duty Cycle

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T (KHz)
11B	Ant	2412	8.38	8.41	99.64	0.12
		2437	8.39	8.42	99.64	0.12
		2462	8.38	8.41	99.64	0.12
11G	Ant	2412	1.39	1.43	97.20	0.72
		2437	1.39	1.42	97.89	0.72
		2462	1.39	1.42	97.89	0.72
11N20SISO	Ant	2412	1.30	1.33	97.74	0.77
		2437	1.30	1.33	97.74	0.77
		2462	1.30	1.34	97.01	0.77

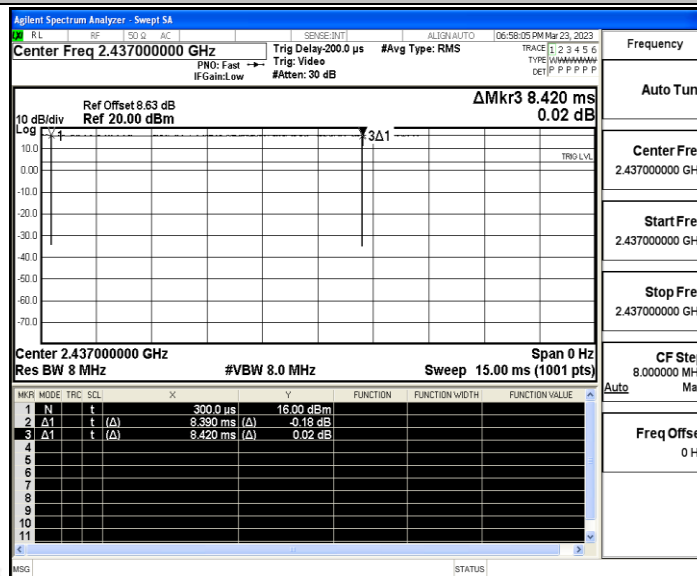


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11B_Ant_2412

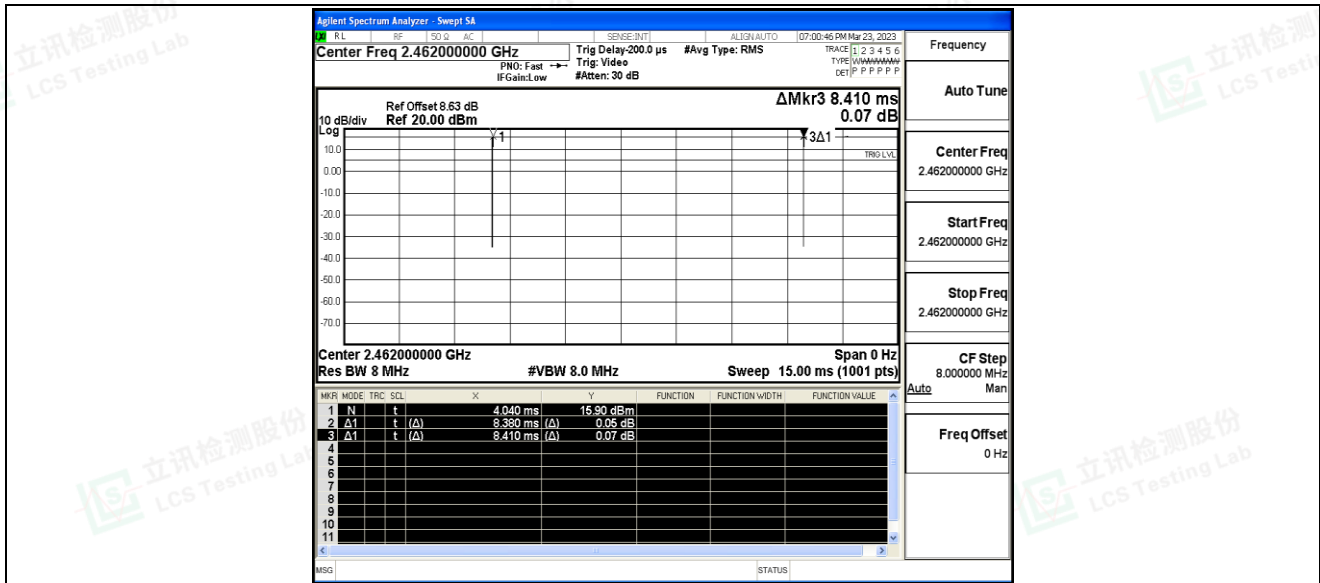


11B_Ant_2437

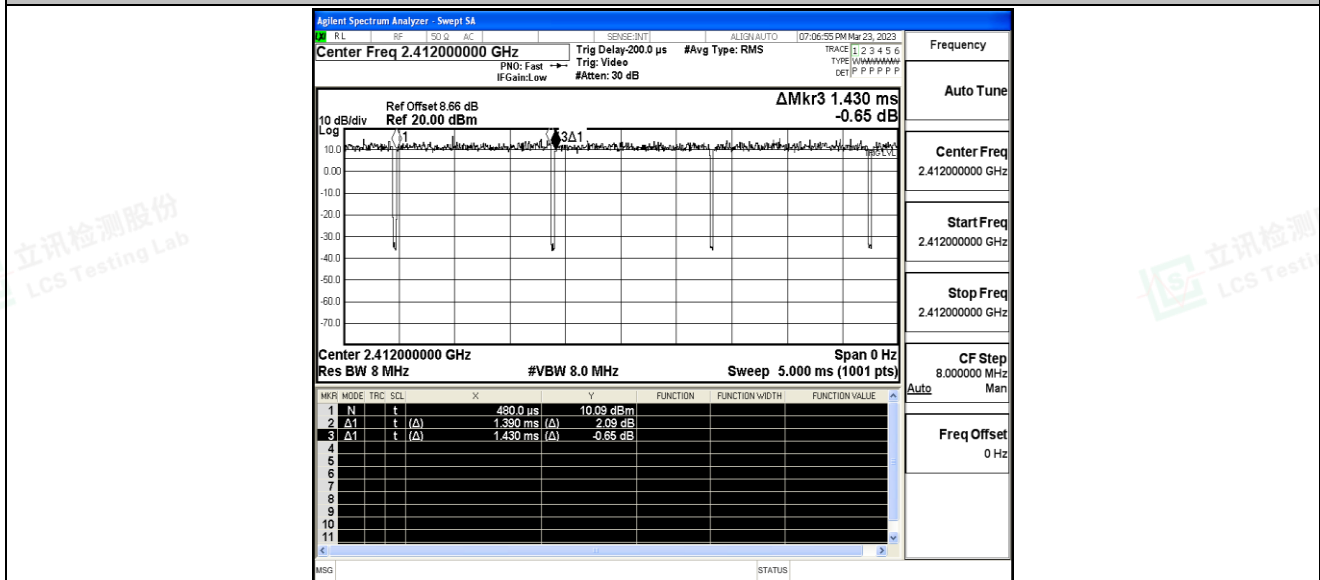


11B_Ant_2462



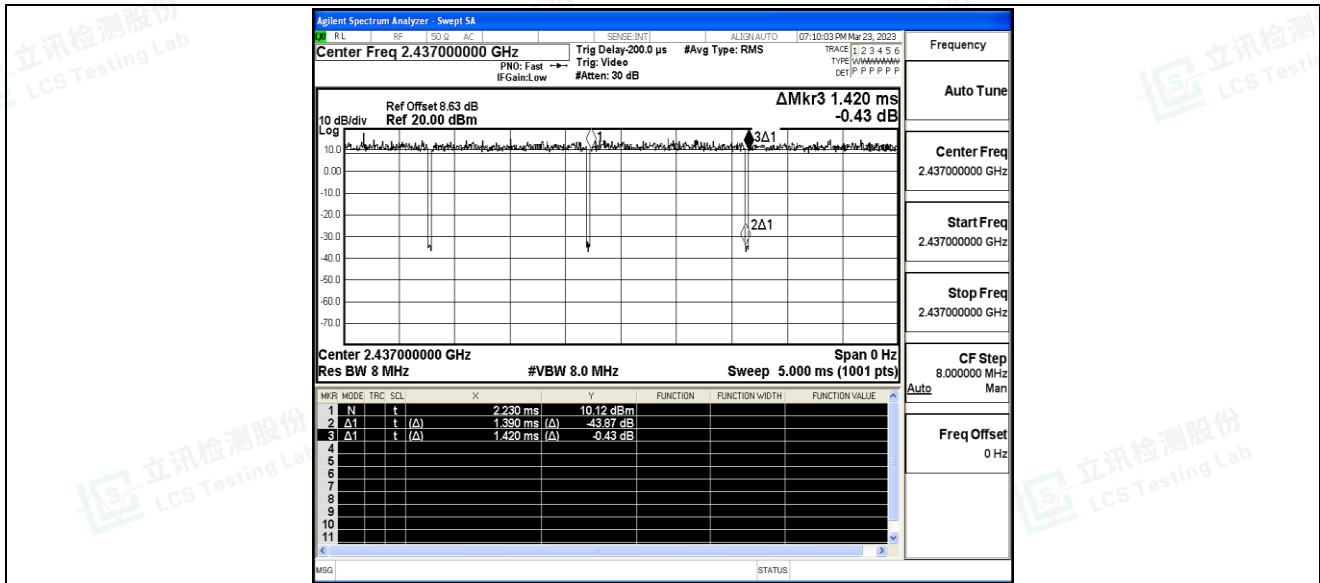


11G_Ant_2412

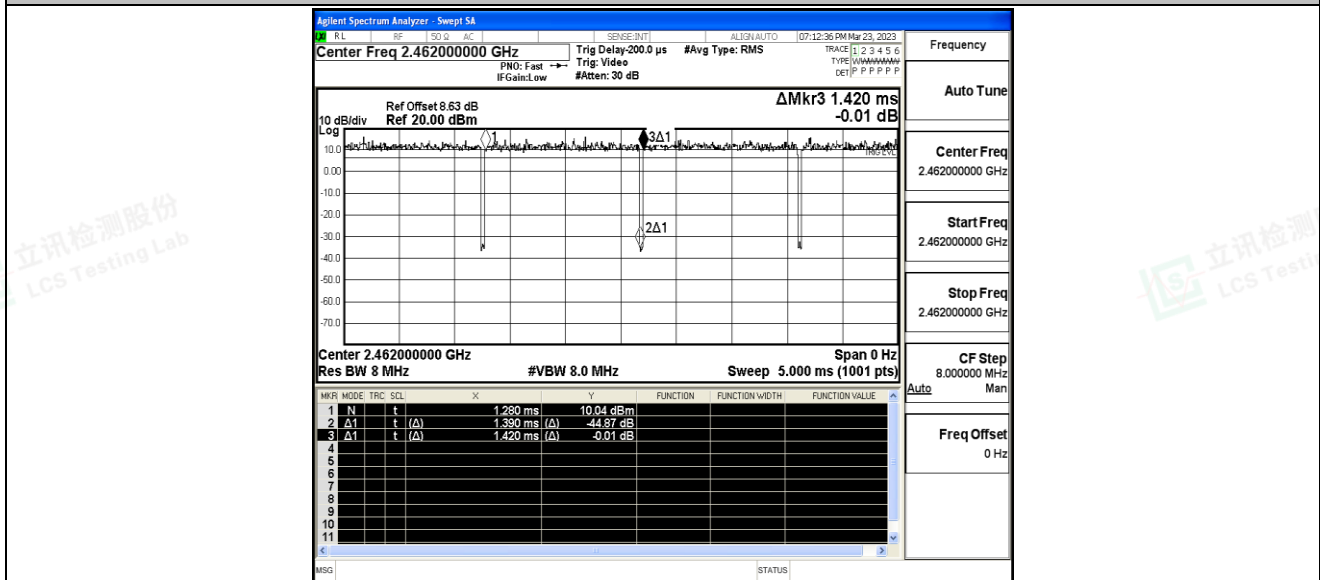


11G_Ant_2437



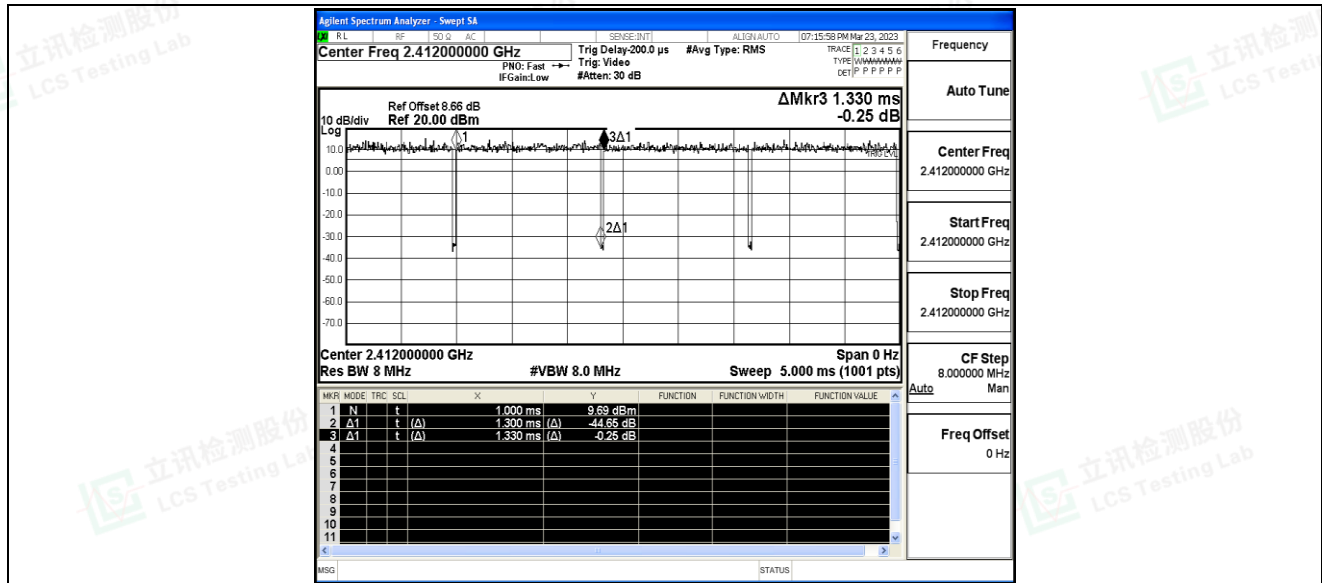


11G_Ant_2462

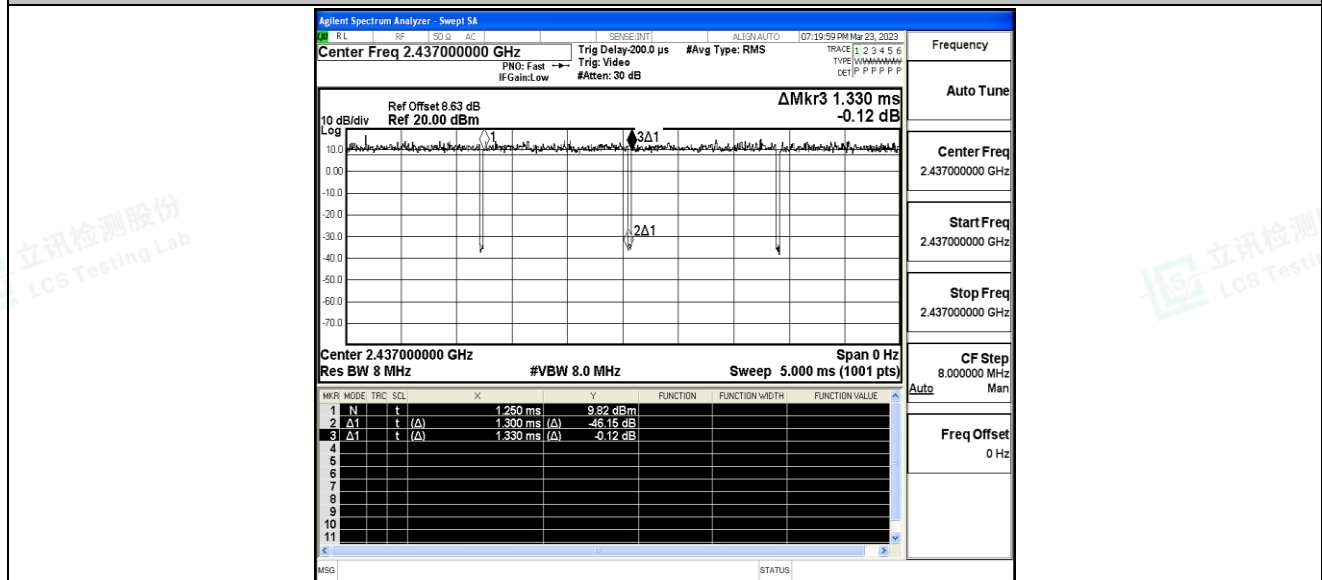


11N20SISO_Ant_2412



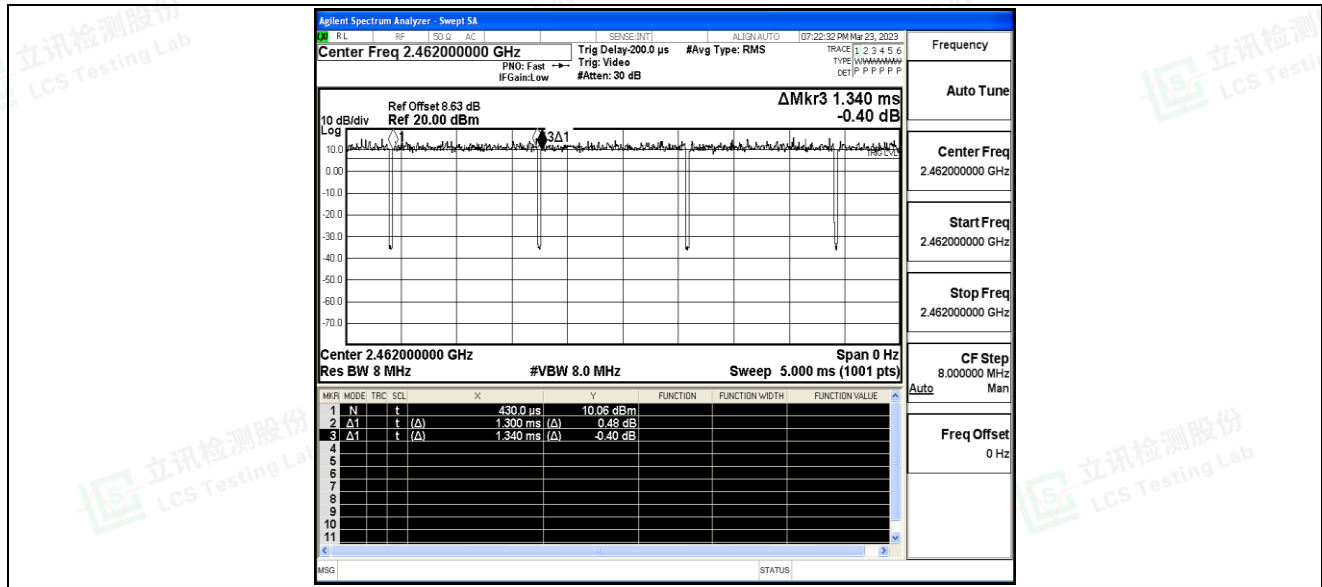


11N20SISO_Ant_2437



11N20SISO_Ant_2462







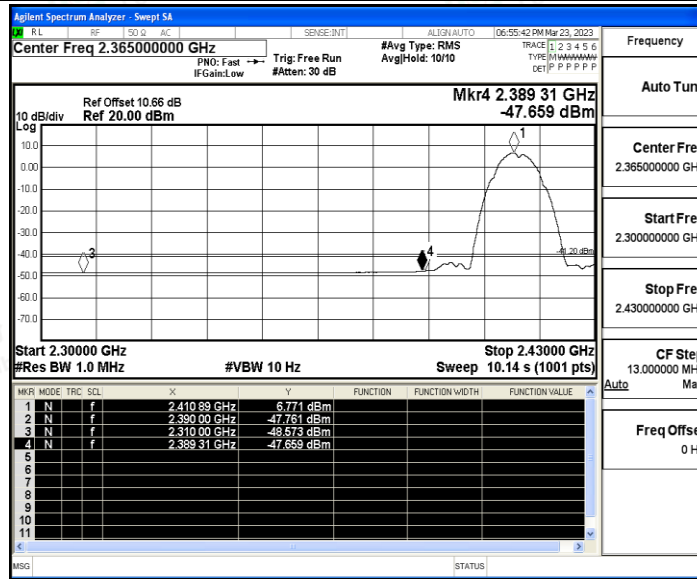
A.7 Restrict Band

TestMode	ChName	Frequency[MHz]	Detector	Freq [MHz]	Result [dBm]	Antenna Gain	Result [dBUV/m]	Limit [dBUV/m]	Verdict
11B	Low	2412	AV	2310.000	-48.57	2.0	48.66	≤54	PASS
			AV	2389.310	-47.66	2.0	49.57	≤54	PASS
			AV	2390.000	-47.76	2.0	49.47	≤54	PASS
			Peak	2310.000	-40.75	2.0	56.48	≤74	PASS
			Peak	2314.690	-37.41	2.0	59.82	≤74	PASS
			Peak	2390.000	-41.71	2.0	55.52	≤74	PASS
	High	2462	AV	2483.500	-47.65	2.0	49.58	≤54	PASS
			AV	2489.170	-47.57	2.0	49.66	≤54	PASS
			AV	2500.000	-47.62	2.0	49.61	≤54	PASS
			Peak	2483.500	-41.52	2.0	55.71	≤74	PASS
			Peak	2488.400	-37.79	2.0	59.44	≤74	PASS
			Peak	2500.000	-41.54	2.0	55.69	≤74	PASS
11G	Low	2412	AV	2310.000	-48.05	2.0	49.18	≤54	PASS
			AV	2383.070	-47.19	2.0	50.04	≤54	PASS
			AV	2390.000	-47.56	2.0	49.67	≤54	PASS
			Peak	2310.000	-41.68	2.0	55.55	≤74	PASS
			Peak	2356.680	-37.72	2.0	59.51	≤74	PASS
			Peak	2390.000	-40.64	2.0	56.59	≤74	PASS
	High	2462	AV	2483.500	-47.04	2.0	50.19	≤54	PASS
			AV	2485.100	-46.88	2.0	50.35	≤54	PASS
			AV	2500.000	-47.07	2.0	50.16	≤54	PASS
			Peak	2483.500	-41.57	2.0	55.66	≤74	PASS
			Peak	2496.430	-37.96	2.0	59.27	≤74	PASS
			Peak	2500.000	-42.44	2.0	54.79	≤74	PASS
11N20SISO	Low	2412	AV	2310.000	-48.03	2.0	49.20	≤54	PASS
			AV	2389.570	-47.23	2.0	50.00	≤54	PASS
			AV	2390.000	-47.6	2.0	49.63	≤54	PASS
			Peak	2310.000	-41.64	2.0	55.59	≤74	PASS
			Peak	2346.800	-37.27	2.0	59.96	≤74	PASS
			Peak	2390.000	-40.94	2.0	56.29	≤74	PASS
	High	2462	AV	2483.500	-46.98	2.0	50.25	≤54	PASS
			AV	2484.220	-46.88	2.0	50.35	≤54	PASS
			AV	2500.000	-47.07	2.0	50.16	≤54	PASS
			Peak	2483.500	-42.44	2.0	54.79	≤74	PASS
			Peak	2487.960	-38.73	2.0	58.50	≤74	PASS
			Peak	2500.000	-42.26	2.0	54.97	≤74	PASS

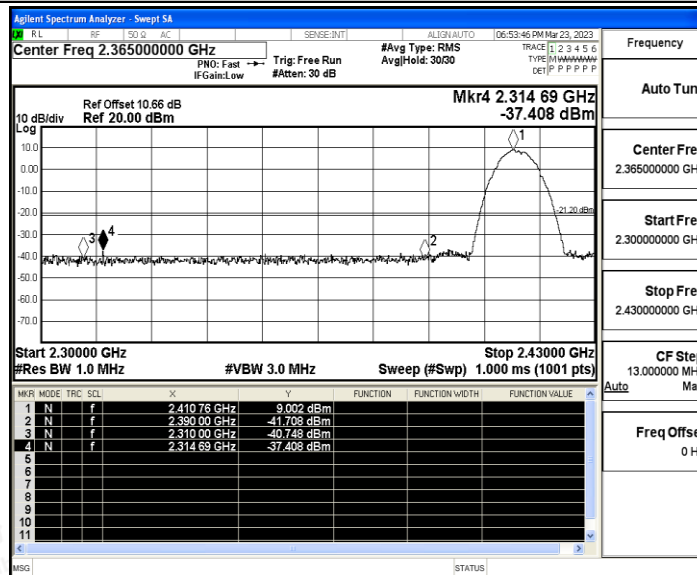




11B_Ant_Low_2412_AV

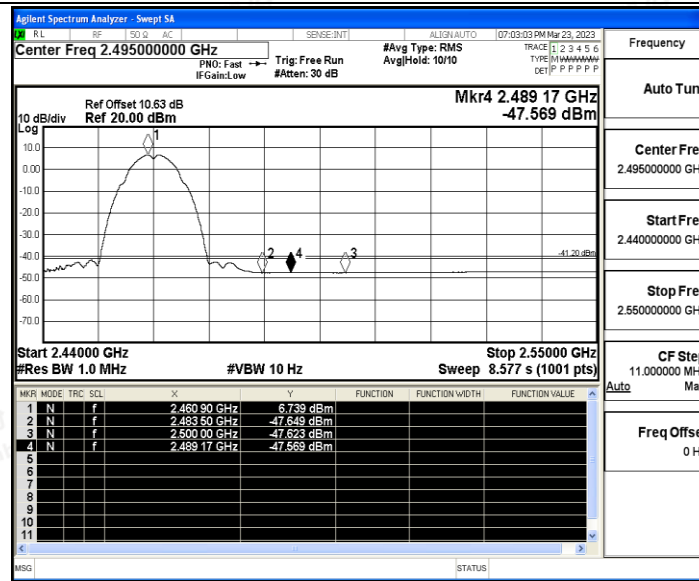


11B_Ant_Low_2412_Peak

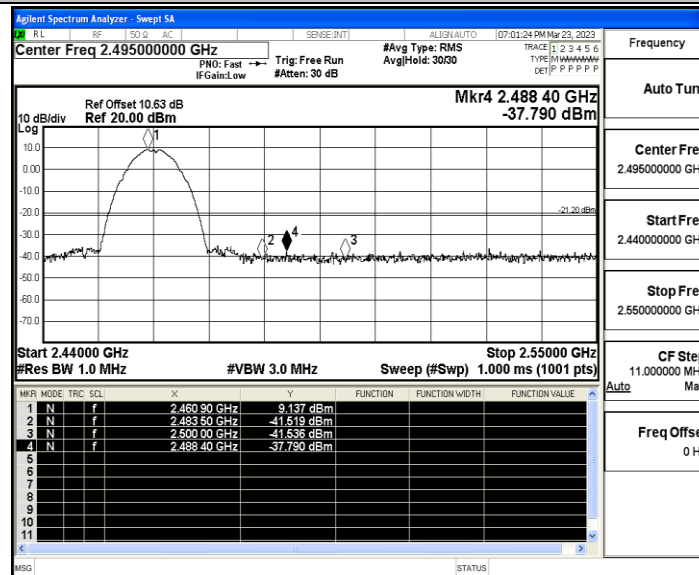


11B_Ant_High_2462_AV



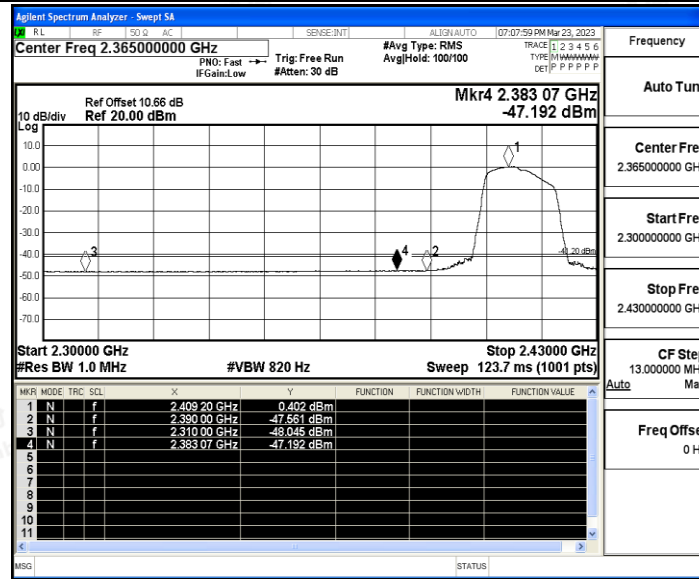


11B_Ant_High_2462_Peak

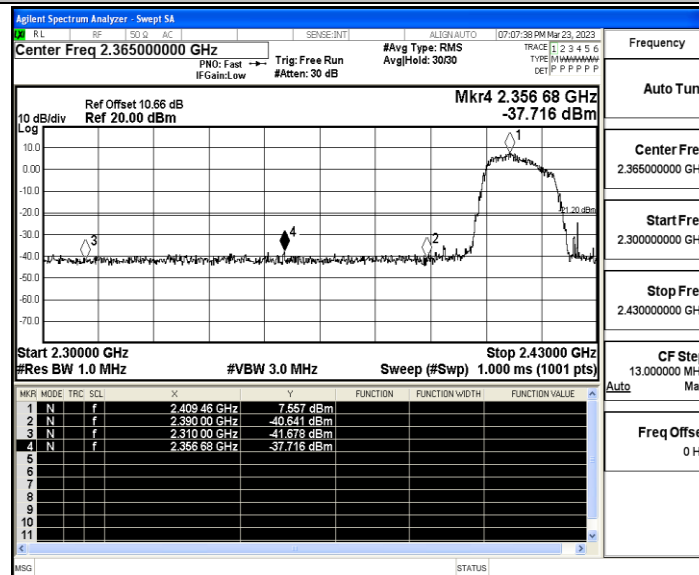


11G_Ant_Low_2412_AV



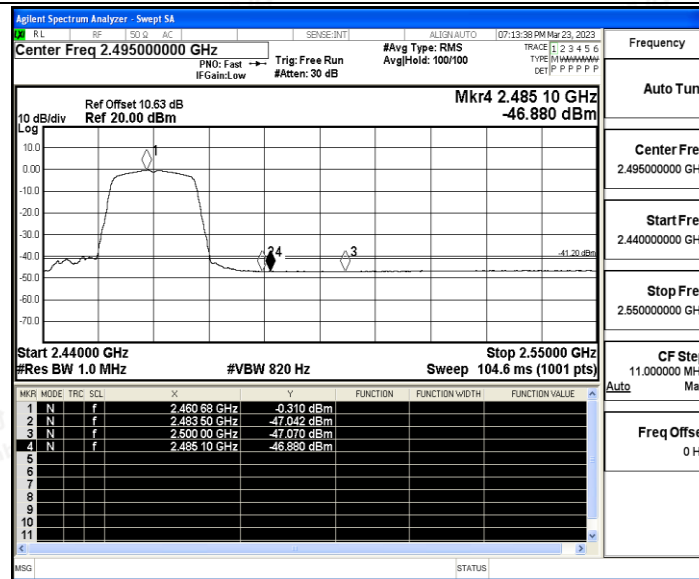


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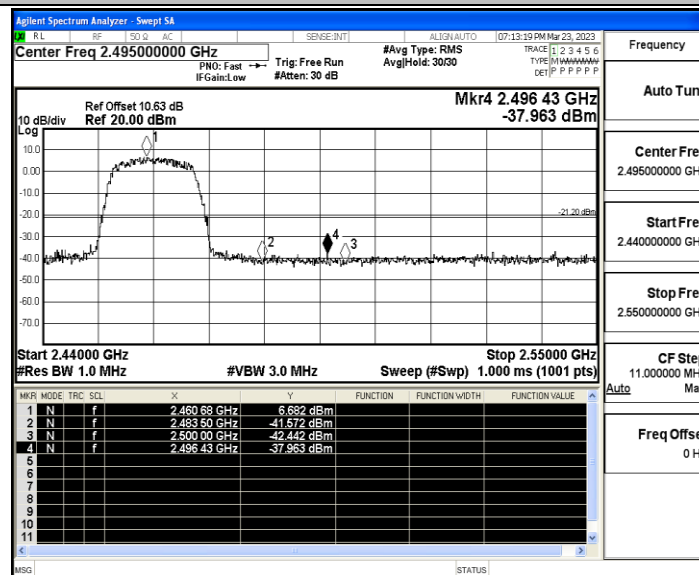


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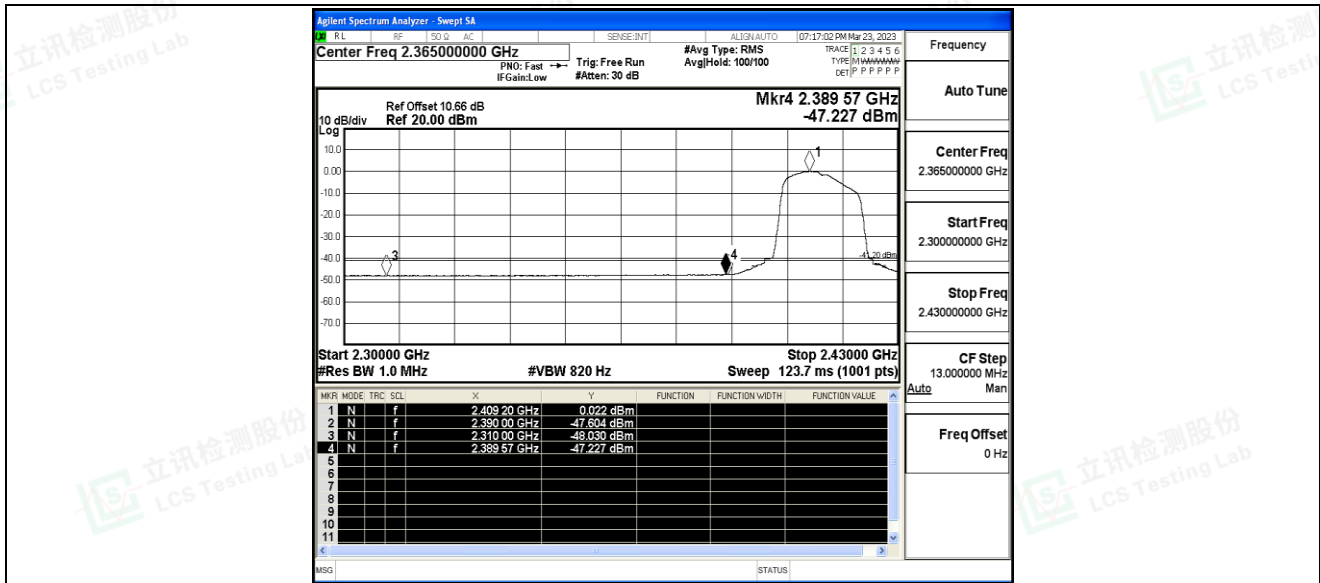


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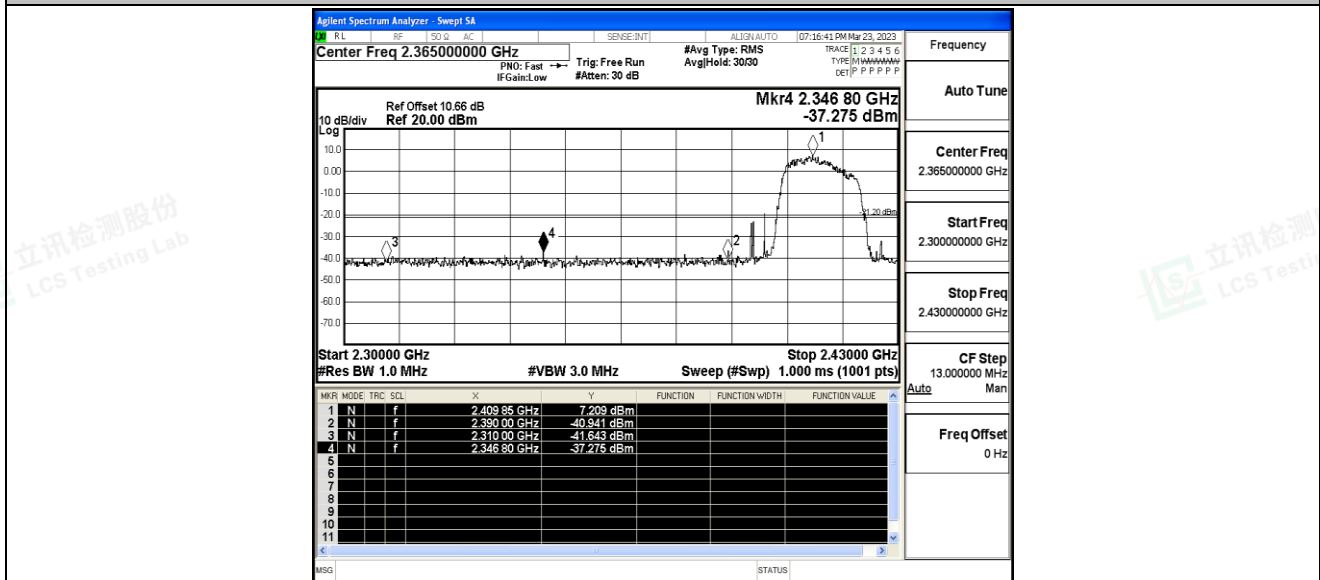


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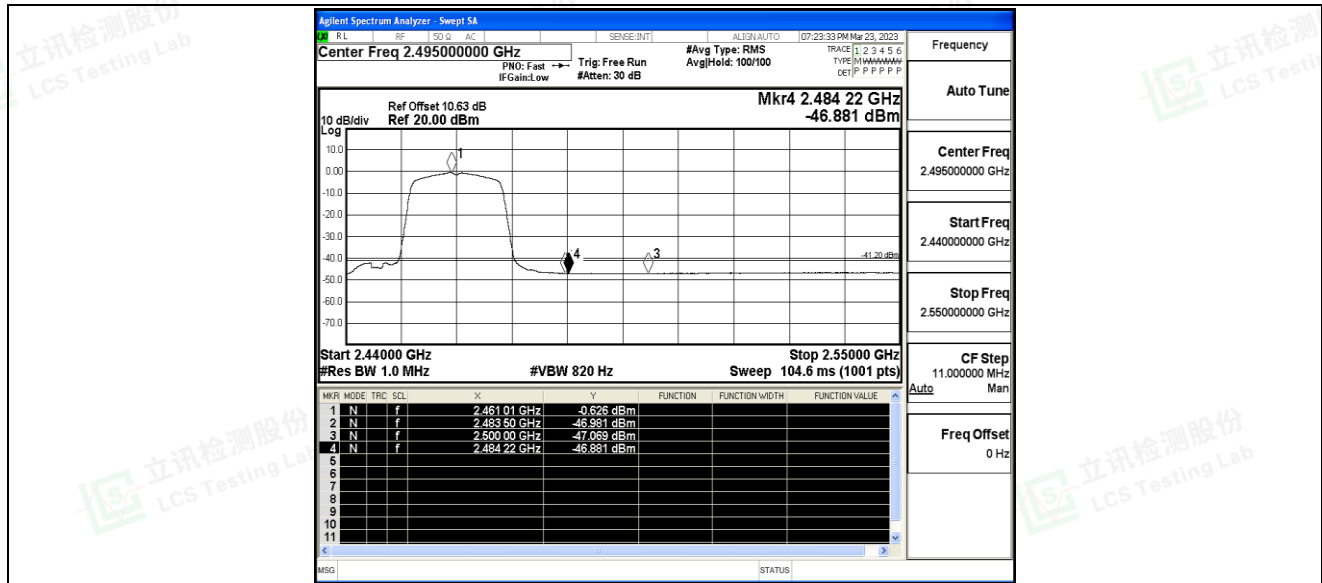


11N20SISO_Ant_Low_2412_Peak



11N20SISO_Ant_High_2462_AV





11N20SISO_Ant_High_2462_Peak

