

Appendix B for 2.4GWIFI Test Data

Product Name: SwitchBot Relay Switch

Test Model: W5502300

Environmental Conditions

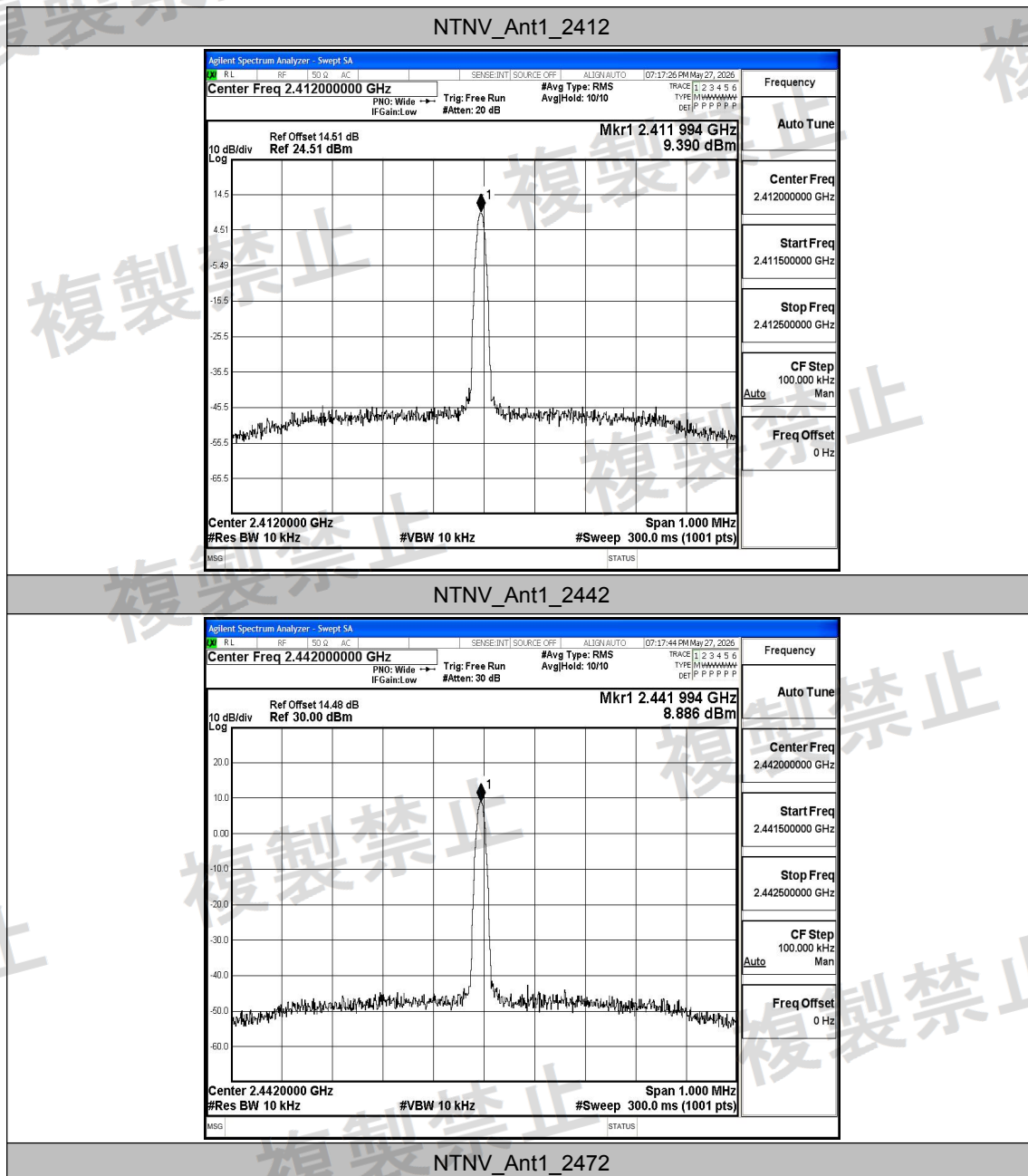
Temperature:	23.4°C
Relative Humidity:	54.8%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

B.1 Frequency Error

Test Result

TestCondition	TestMode	Antenna	Freq(MHz)	Result[ppm]	Limit[ppm]	Verdict
NTNV	Frequency Error	Ant1	2412	-2.48756	±50	PASS
			2442	-2.45700	±50	PASS
			2472	-2.42718	±50	PASS
		Ant1	2422	-2.47729	±50	PASS
			2462	-2.43704	±50	PASS

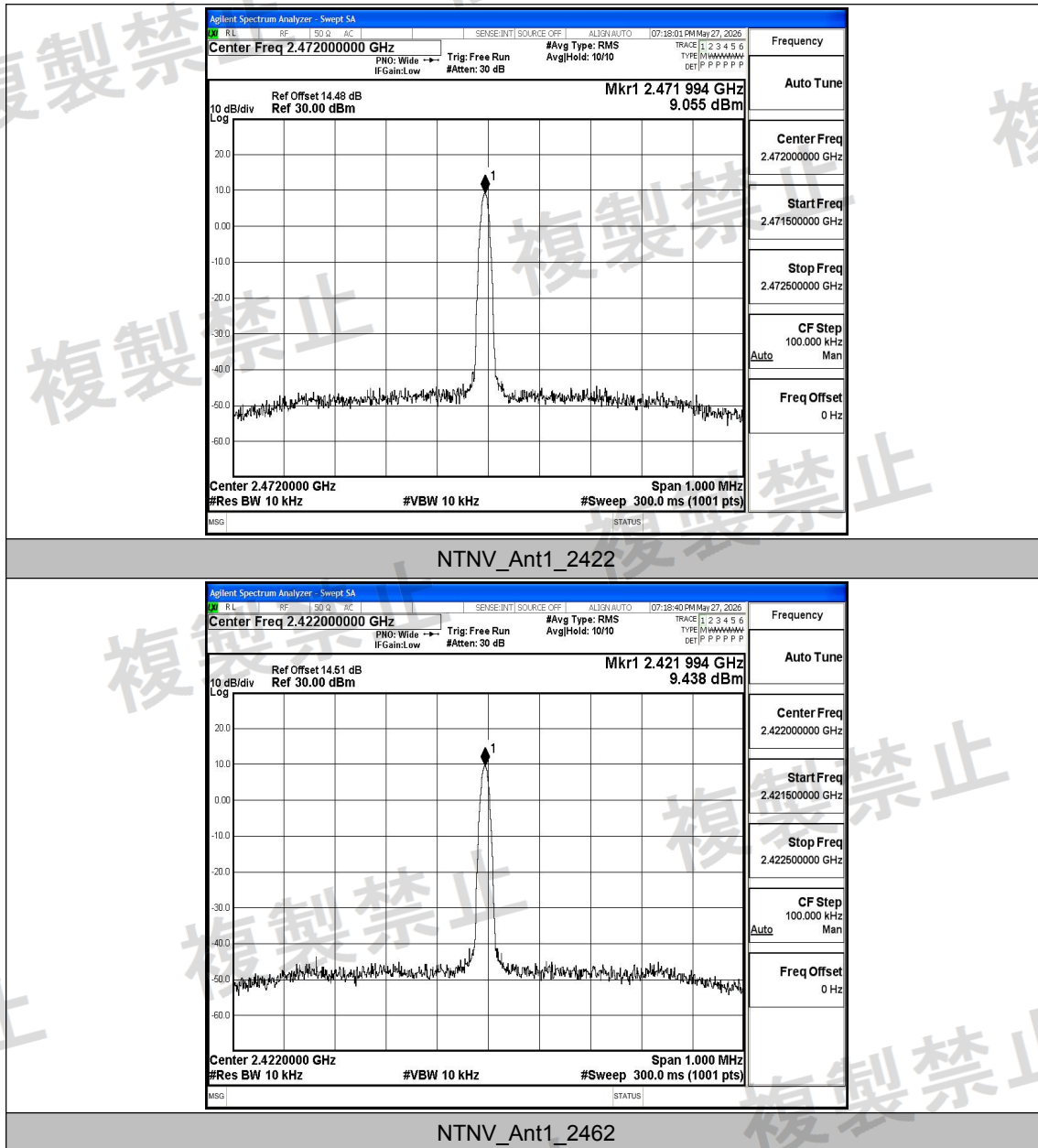
Test Graphs

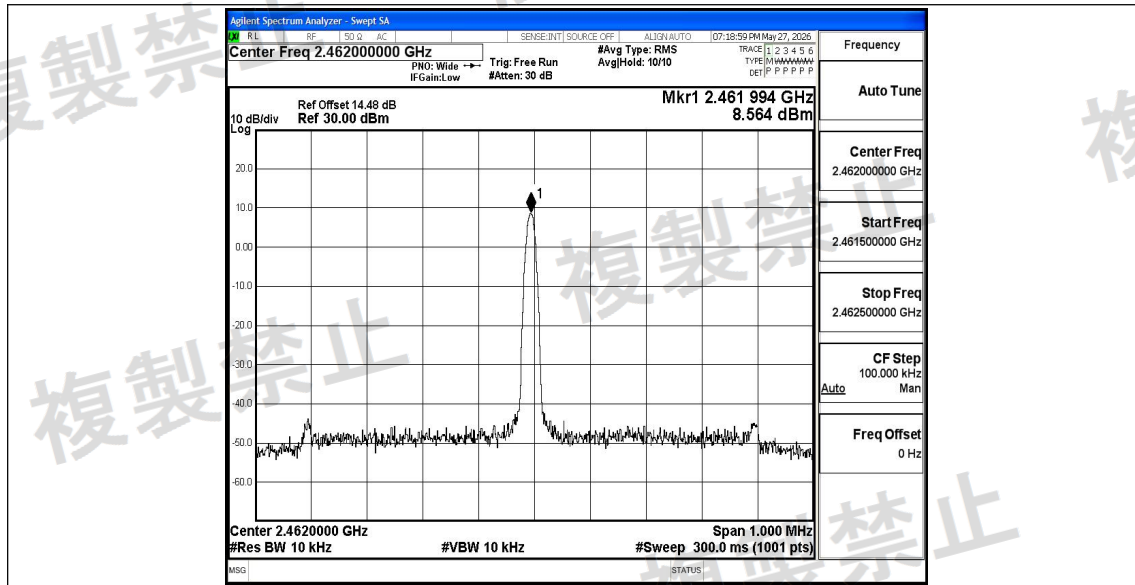


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B.2 Antenna Power

Test Result

Antenna Power							
Test Condition	Test Mode	Antenna	Freq(MHz)	Result (dBm/MHz)	Result (mW/MHz)	Limit (mW/MHz)	Verdict
NTNV	11B	Ant1	2412	8.23	6.6527	≤10	PASS
			2442	7.19	5.2360	≤10	PASS
			2472	8.34	6.8234	≤10	PASS
	11G	Ant1	2412	6.58	4.5499	≤10	PASS
			2442	7.67	5.8479	≤10	PASS
			2472	7.63	5.7943	≤10	PASS
	11N20SI SO	Ant1	2412	6.75	4.7315	≤10	PASS
			2442	6.44	4.4055	≤10	PASS
			2472	6.57	4.5394	≤10	PASS
	11N40SI SO	Ant1	2422	5.42	3.4834	≤5	PASS
			2442	5.55	3.5892	≤5	PASS
			2462	5.72	3.7325	≤5	PASS

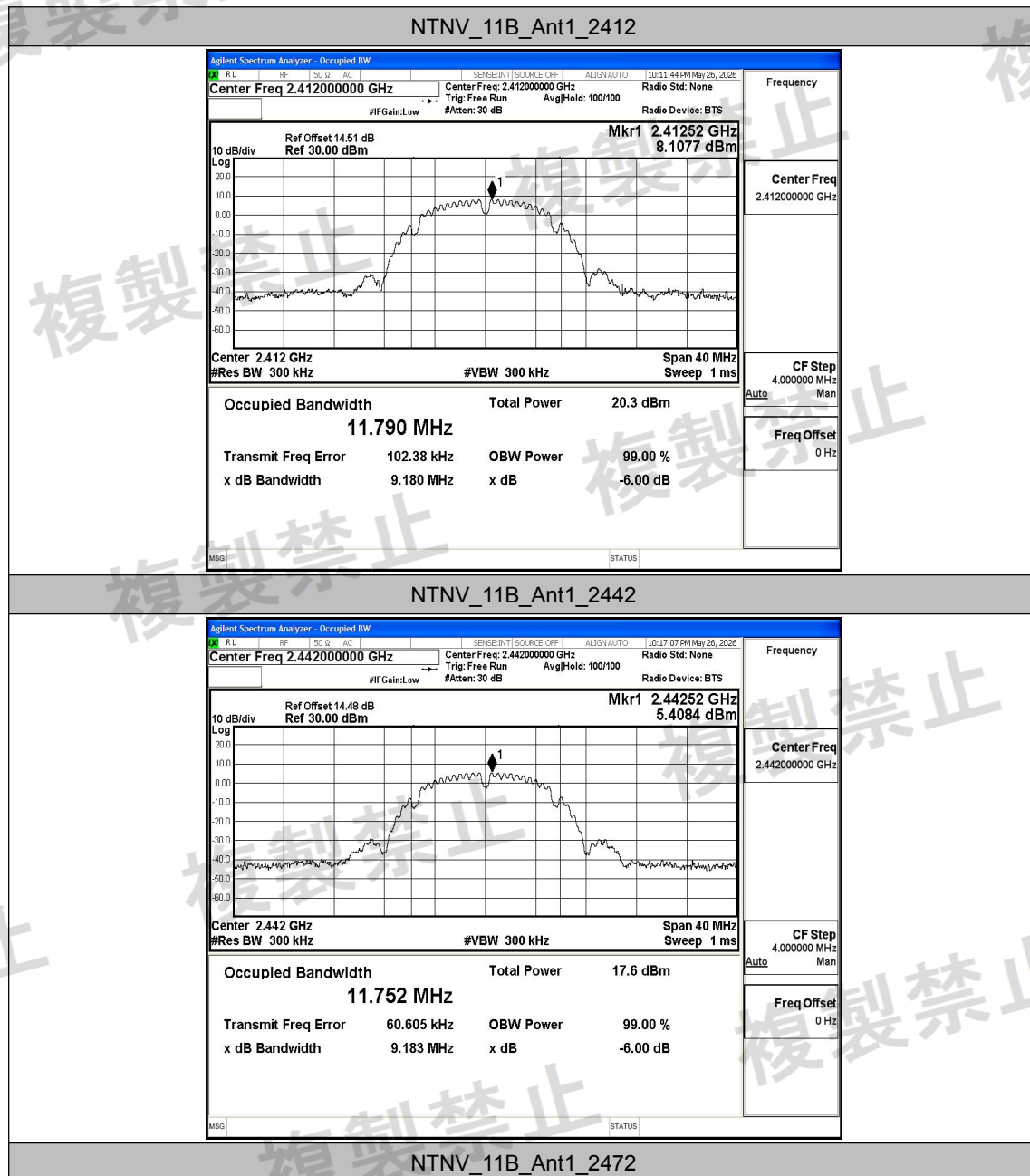
Tolerance								
Test Condition	Test Mode	Antenna	Freq(MHz)	Power [mW/MHz]	RatedPower [mW/MHz]	Result (%)	Limit (%)	Verdict
NTNV	11B	Ant1	2412	6.6527	7.0	-4.96	+20	PASS
			2442	5.2360	7.0	-25.20	+20	PASS
			2472	6.8234	7.0	-2.52	+20	PASS
	11G	Ant1	2412	4.5499	6.0	-24.17	+20	PASS
			2442	5.8479	6.0	-2.54	+20	PASS
			2472	5.7943	6.0	-3.43	+20	PASS
	11N20SI SO	Ant1	2412	4.7315	5.0	-5.37	+20	PASS
			2442	4.4055	5.0	-11.89	+20	PASS
			2472	4.5394	5.0	-9.21	+20	PASS
	11N40SI SO	Ant1	2422	3.4834	4.0	-12.92	+20	PASS
			2442	3.5892	4.0	-10.27	+20	PASS
			2462	3.7325	4.0	-6.69	+20	PASS

B.3 Occupied Bandwidth

Test Result

TestCondition	TestMode	Antenna	Freq(MHz)	Result [MHz]	Limit [MHz]	Verdict
NTNV	11B	Ant1	2412	11.790	≤26	PASS
			2442	11.752	≤26	PASS
			2472	11.724	≤26	PASS
	11G	Ant1	2412	16.554	≤26	PASS
			2442	16.644	≤26	PASS
			2472	16.577	≤26	PASS
	11N20SISO	Ant1	2412	17.613	≤26	PASS
			2442	17.560	≤26	PASS
			2472	17.610	≤26	PASS
	11N40SISO	Ant1	2422	36.053	26-40	PASS
			2442	35.886	26-40	PASS
			2462	36.169	26-40	PASS

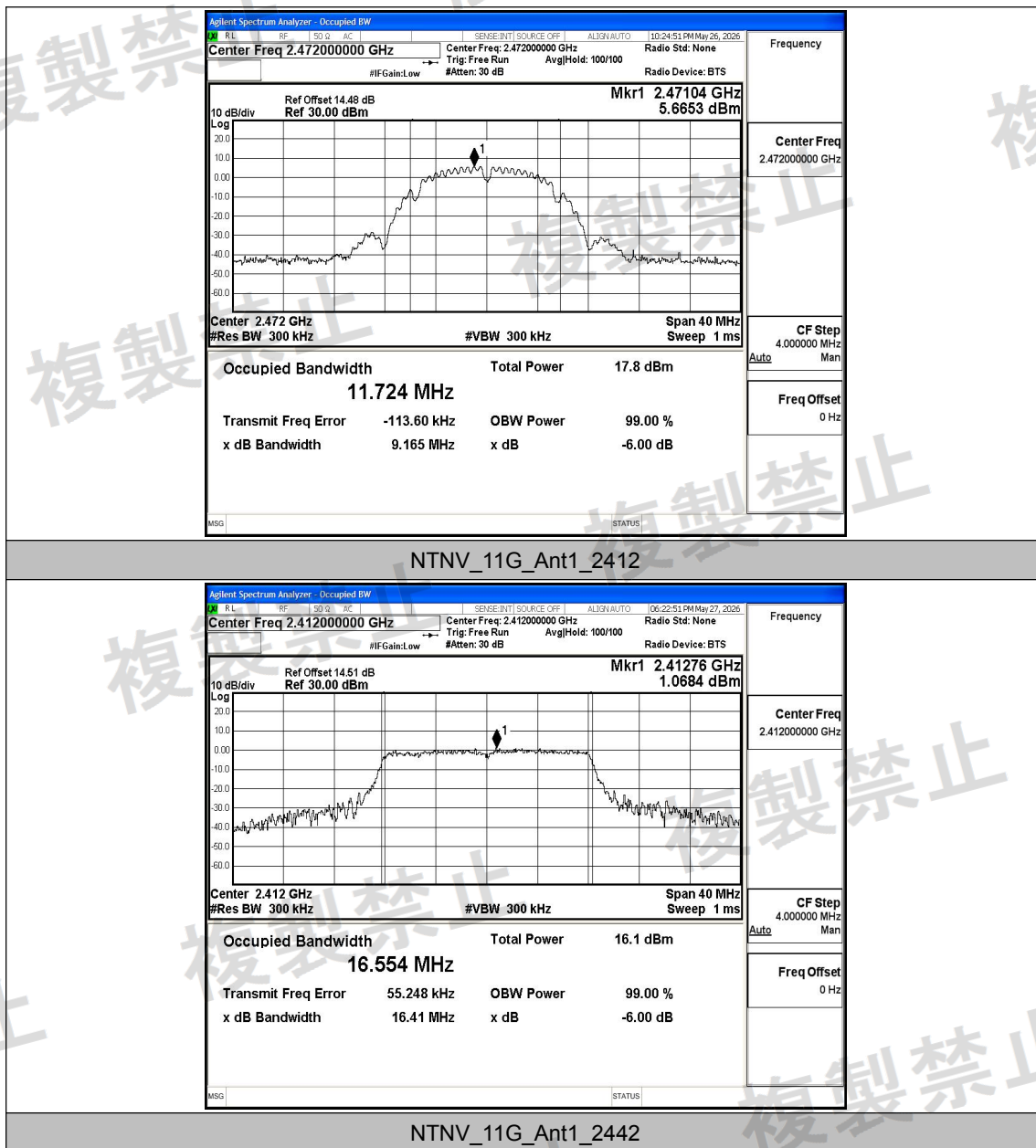
Test Graphs

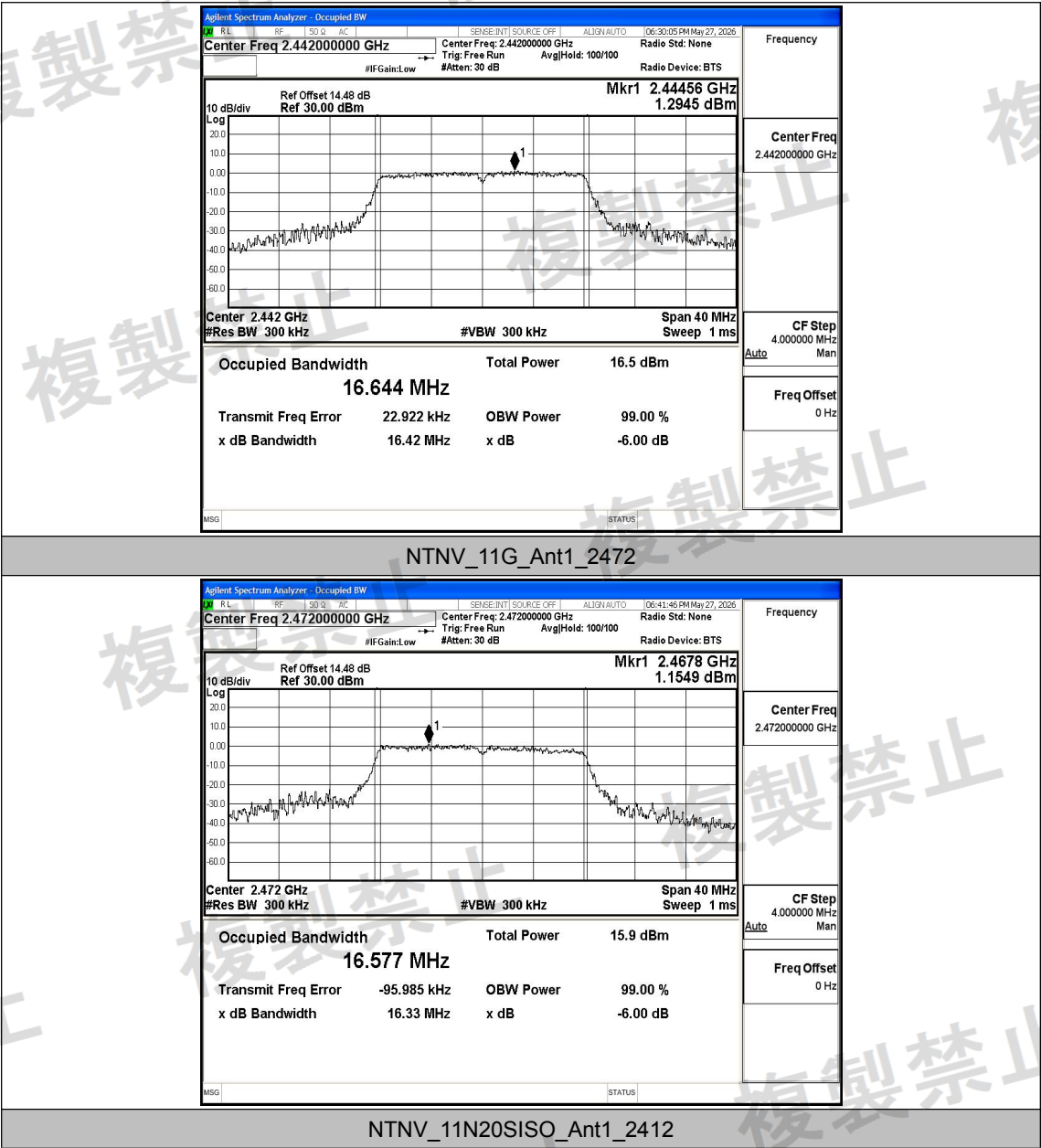


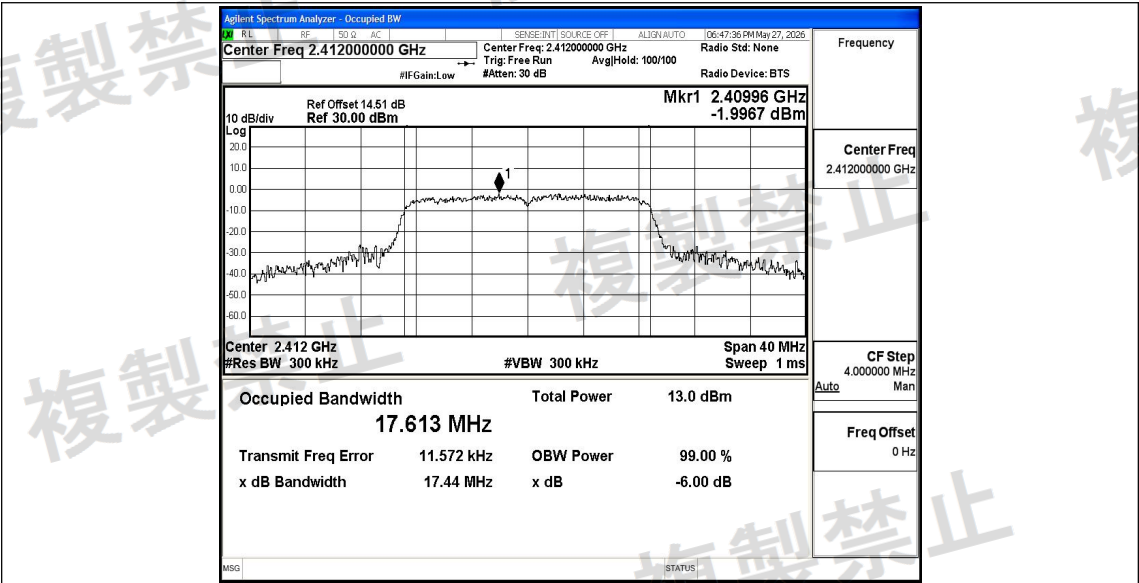
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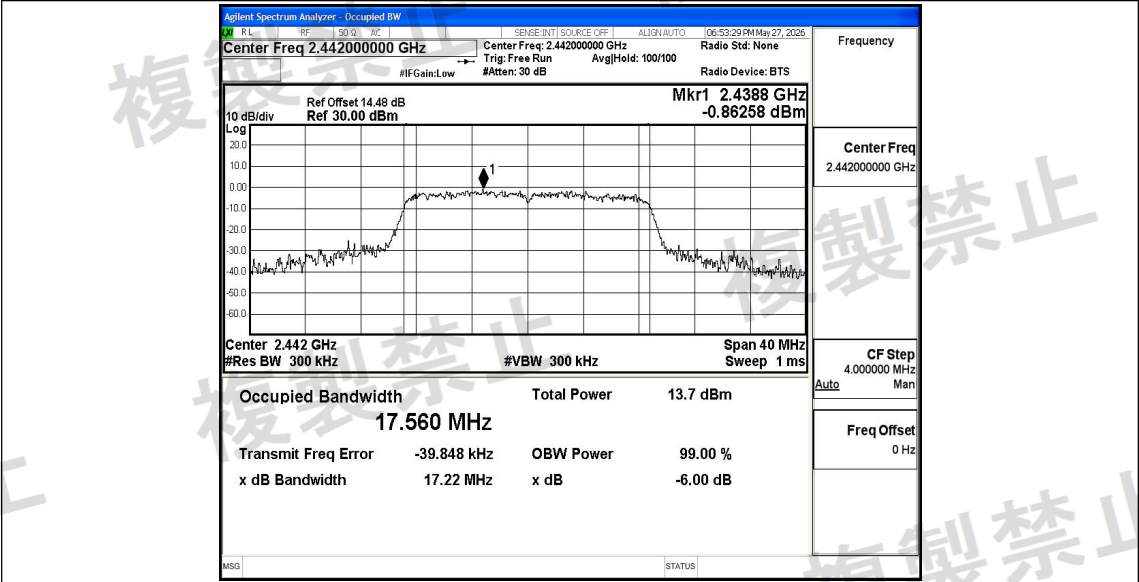
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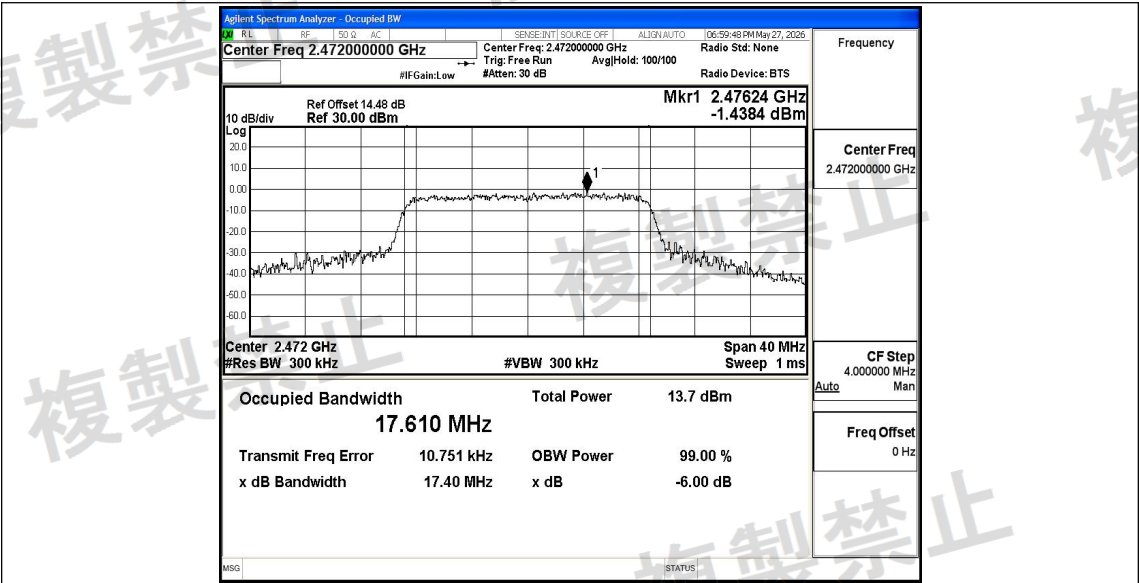




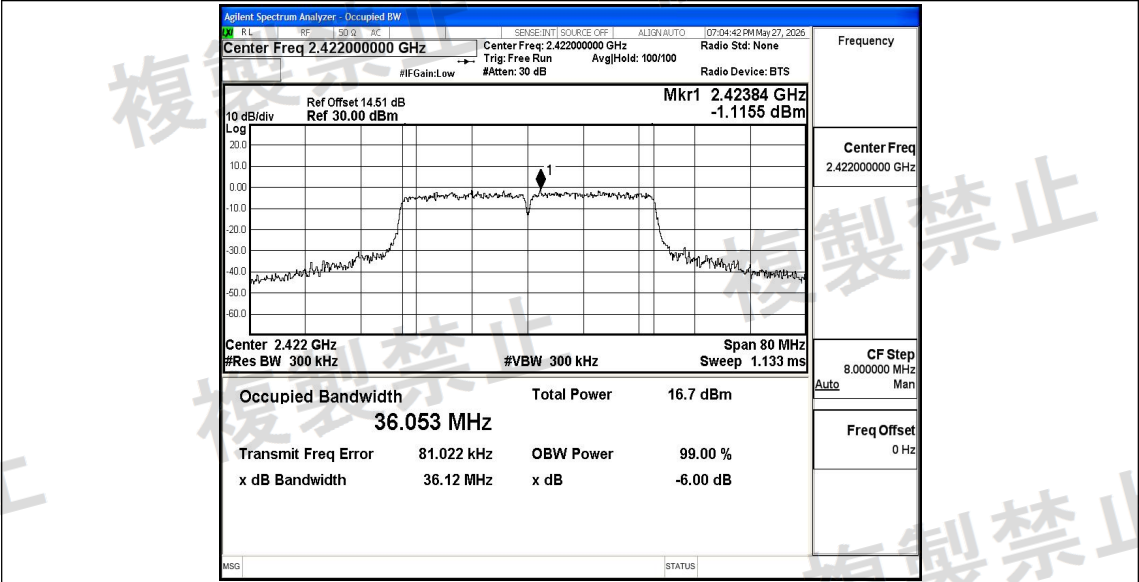
NTNV_11N20SISO_Ant1_2442



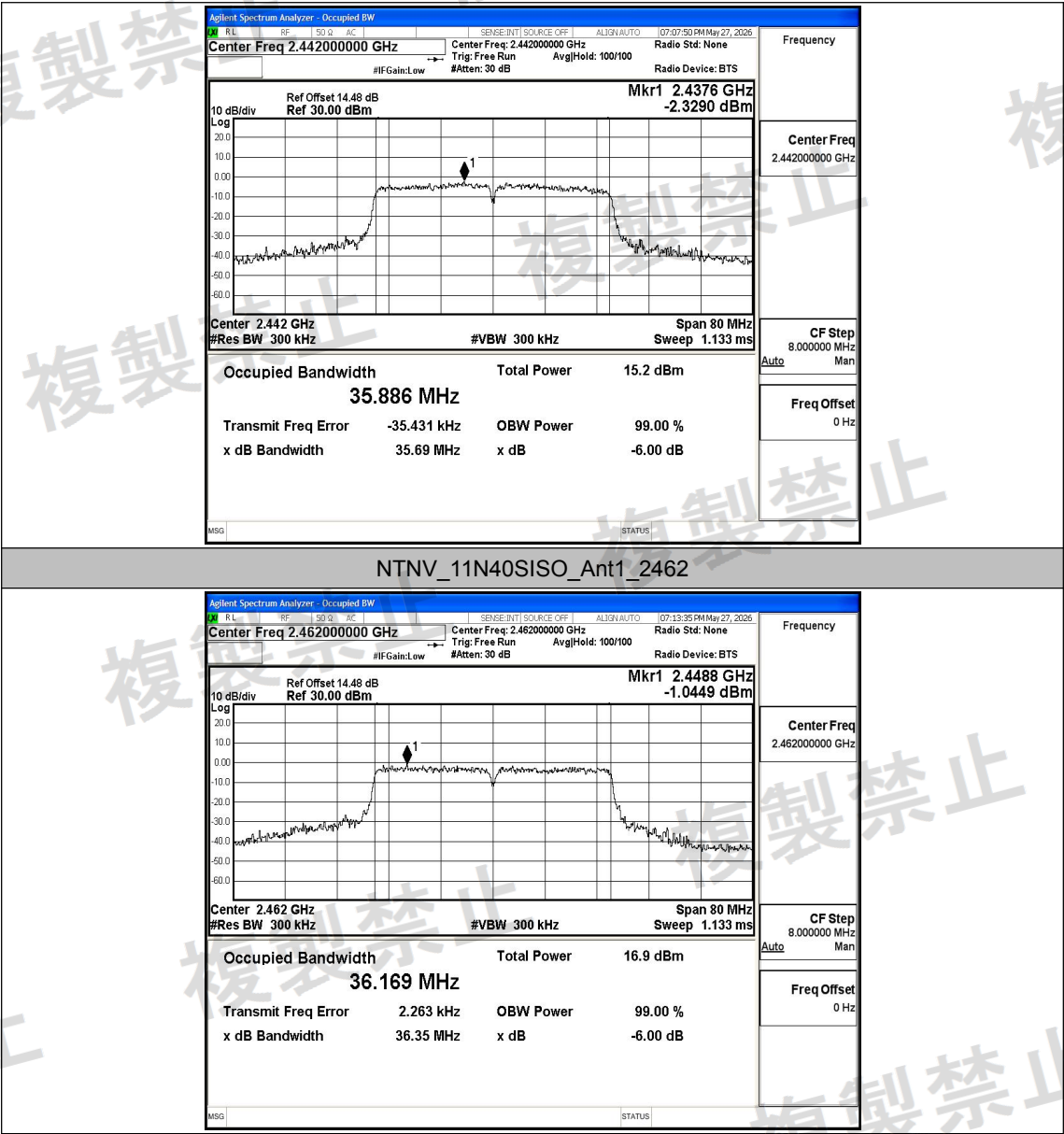
NTNV_11N20SISO_Ant1_2472



NTNV_11N40SISO_Ant1_2422



NTNV_11N40SISO_Ant1_2442

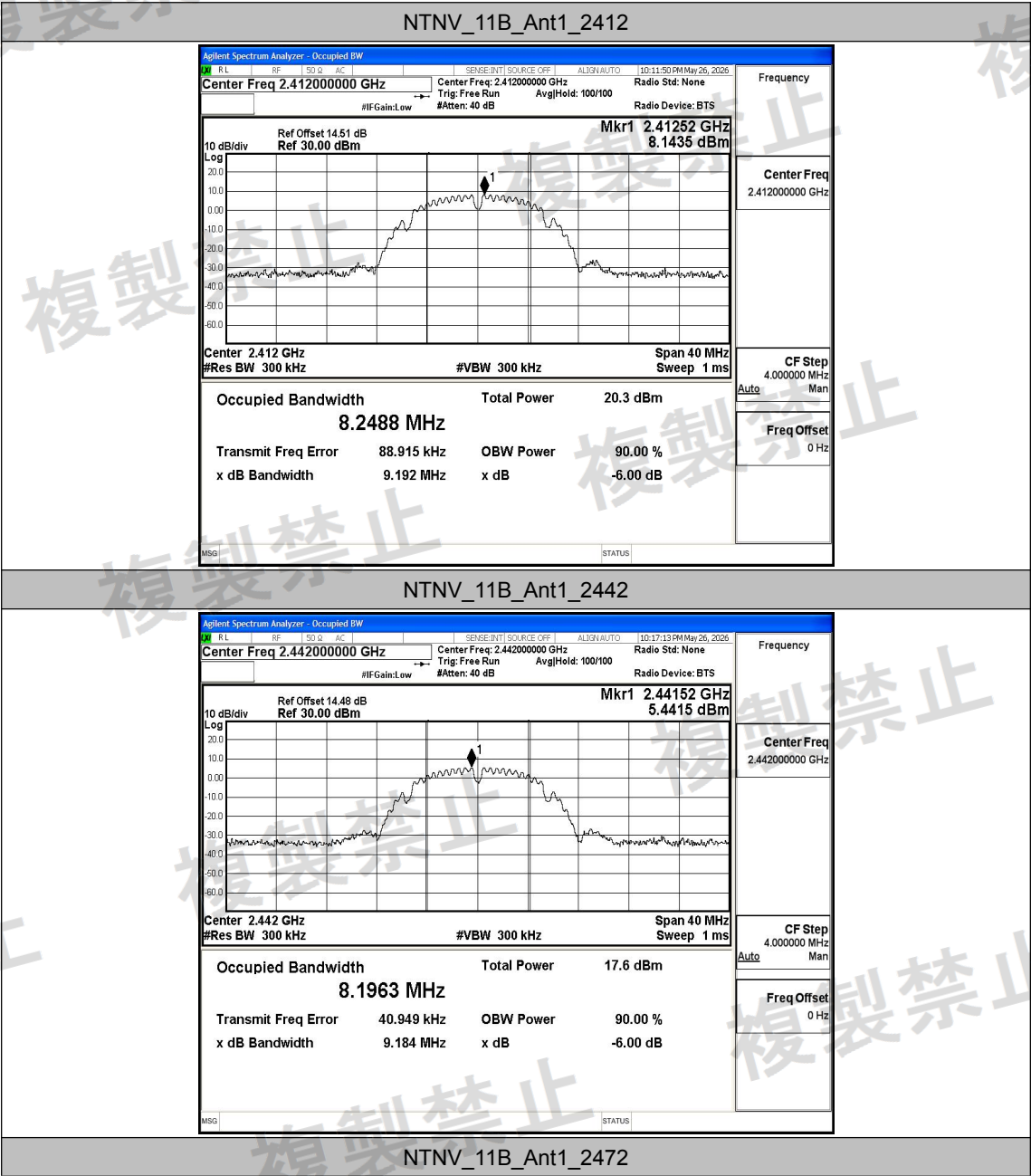


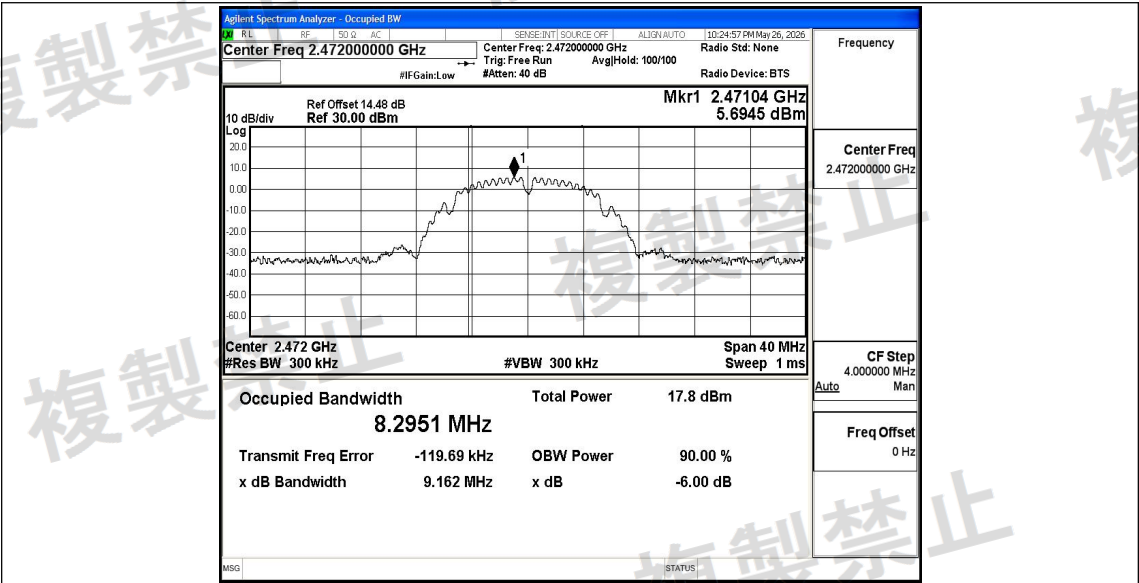
B.4 Spread Bandwidth

Test Result

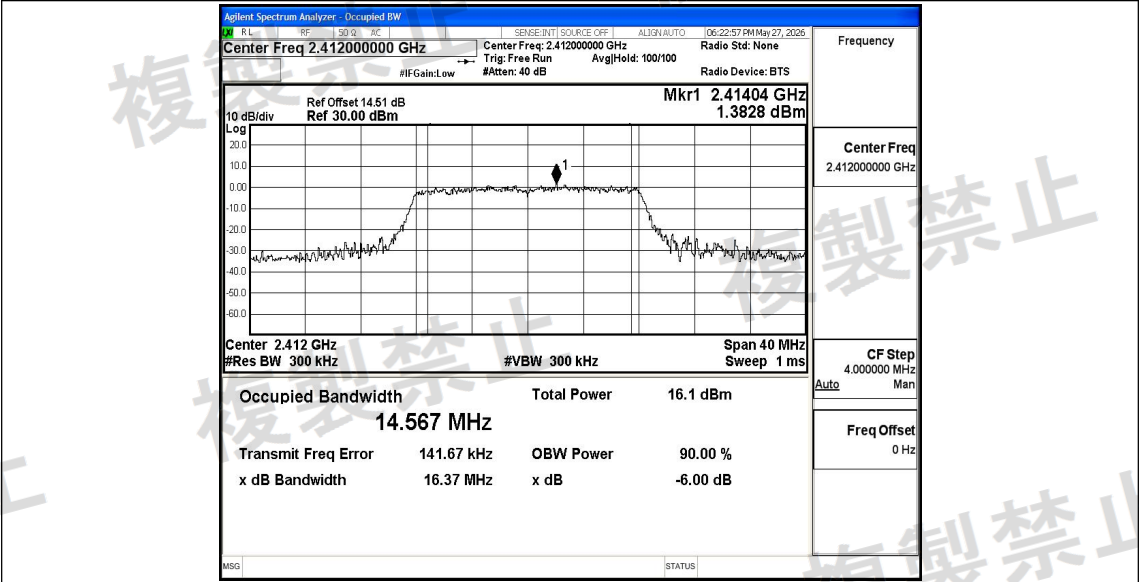
TestCondition	TestMode	Antenna	Freq(MHz)	Result [MHz]	Limit [MHz]	Verdict
NTNV	11B	Ant1	2412	8.249	≥0.5	PASS
			2442	8.196	≥0.5	PASS
			2472	8.295	≥0.5	PASS
	11G	Ant1	2412	14.567	≥0.5	PASS
			2442	14.656	≥0.5	PASS
			2472	14.517	≥0.5	PASS
	11N20SISO	Ant1	2412	15.364	≥0.5	PASS
			2442	15.246	≥0.5	PASS
			2472	15.301	≥0.5	PASS
	11N40SISO	Ant1	2422	32.251	≥0.5	PASS
			2442	31.334	≥0.5	PASS
			2462	32.840	≥0.5	PASS

Test Graphs

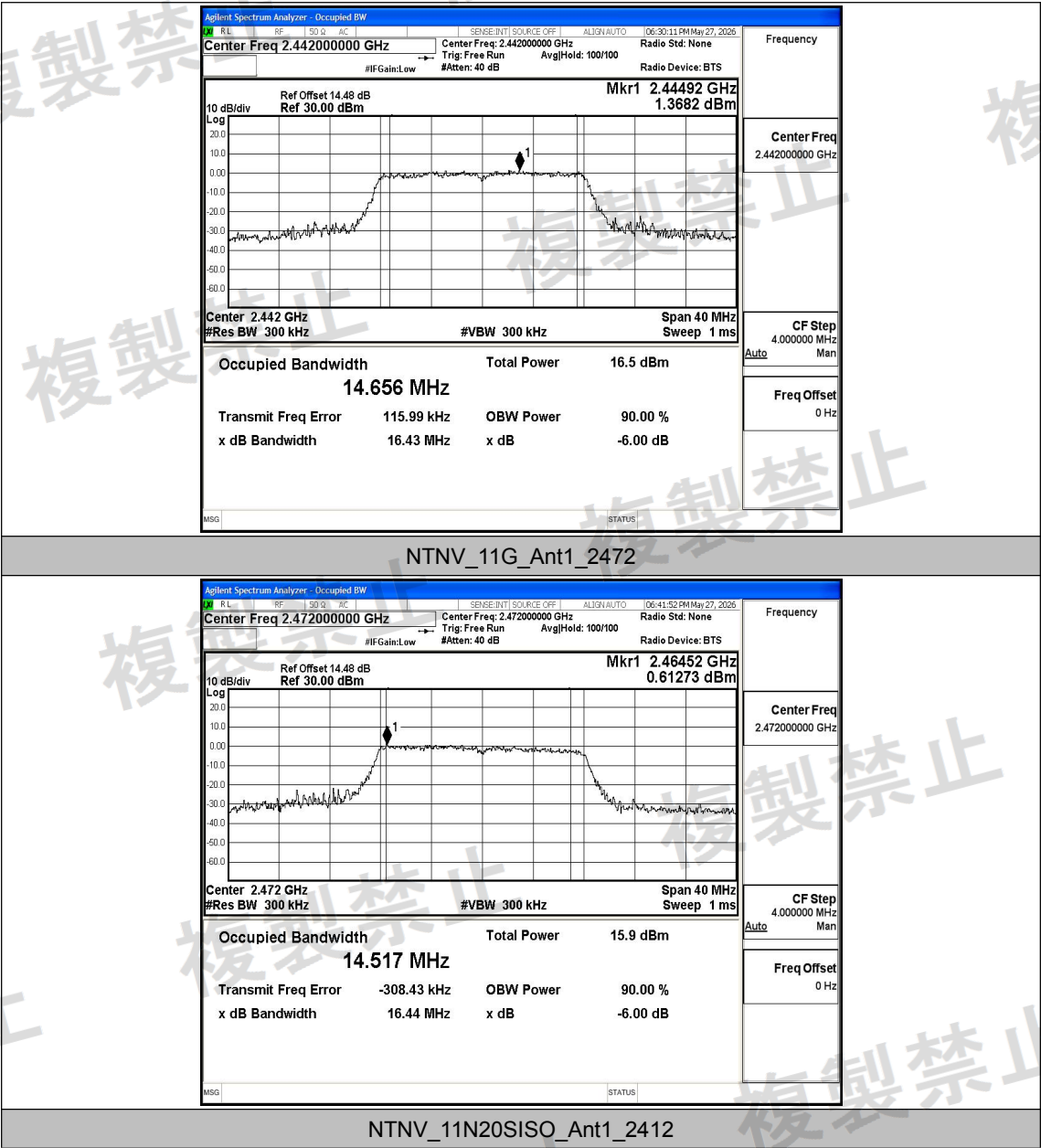


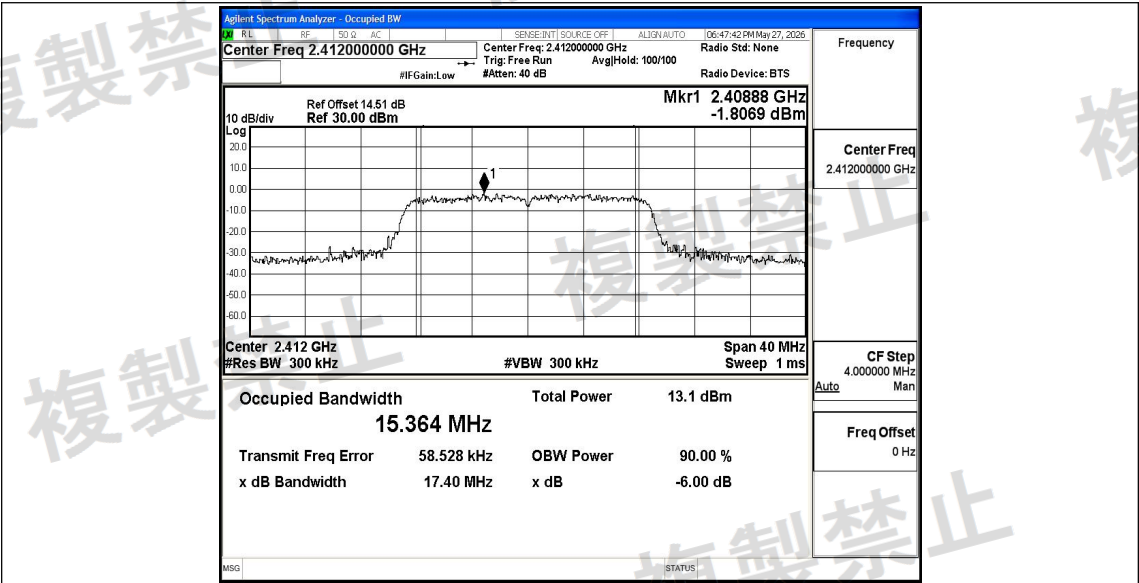


NTNV_11G_Ant1_2412

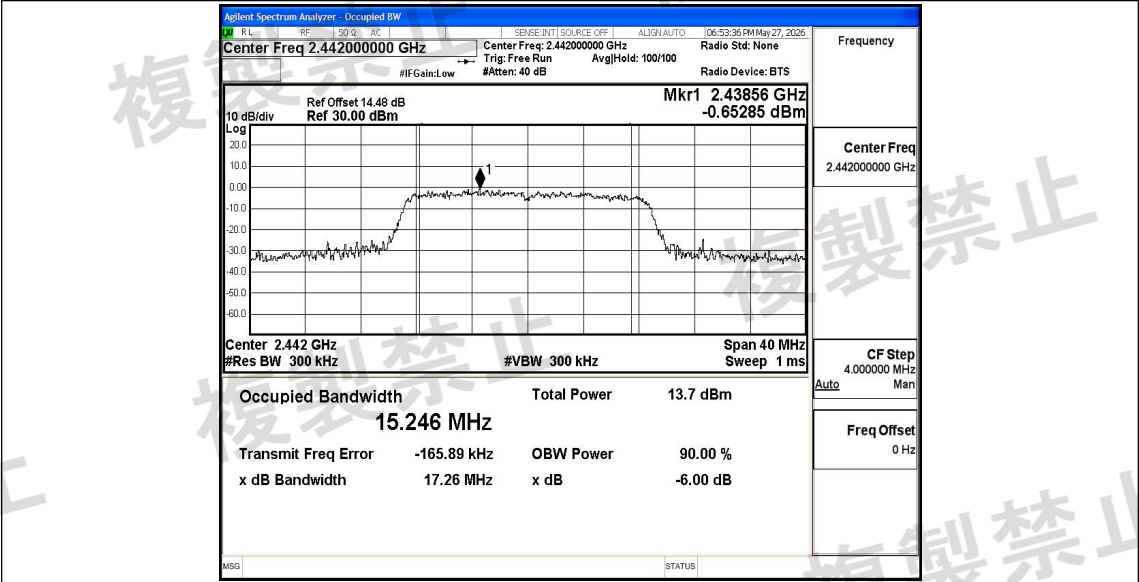


NTNV_11G_Ant1_2442

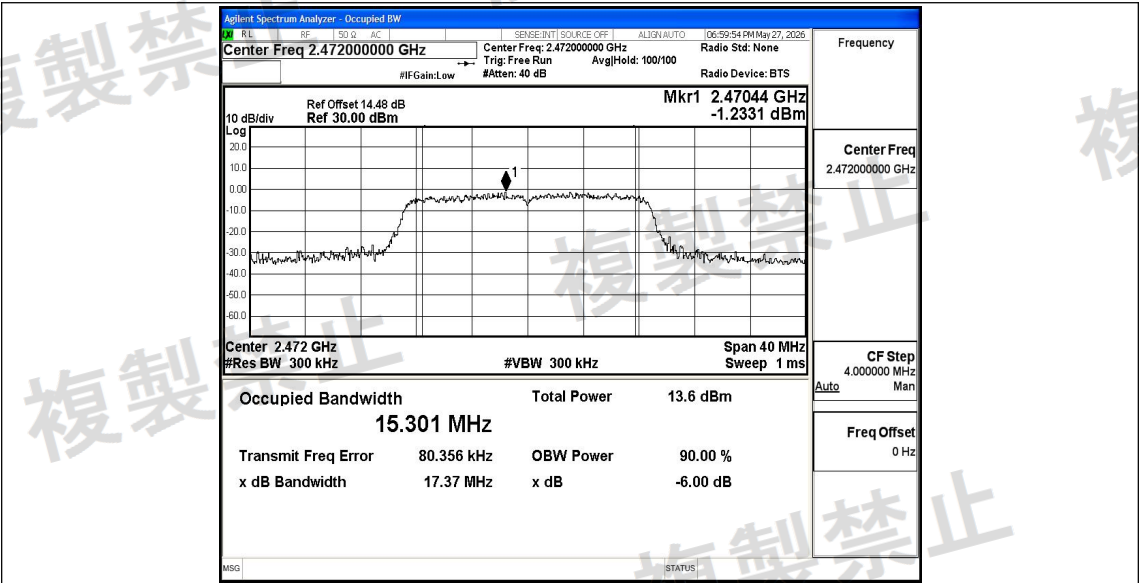




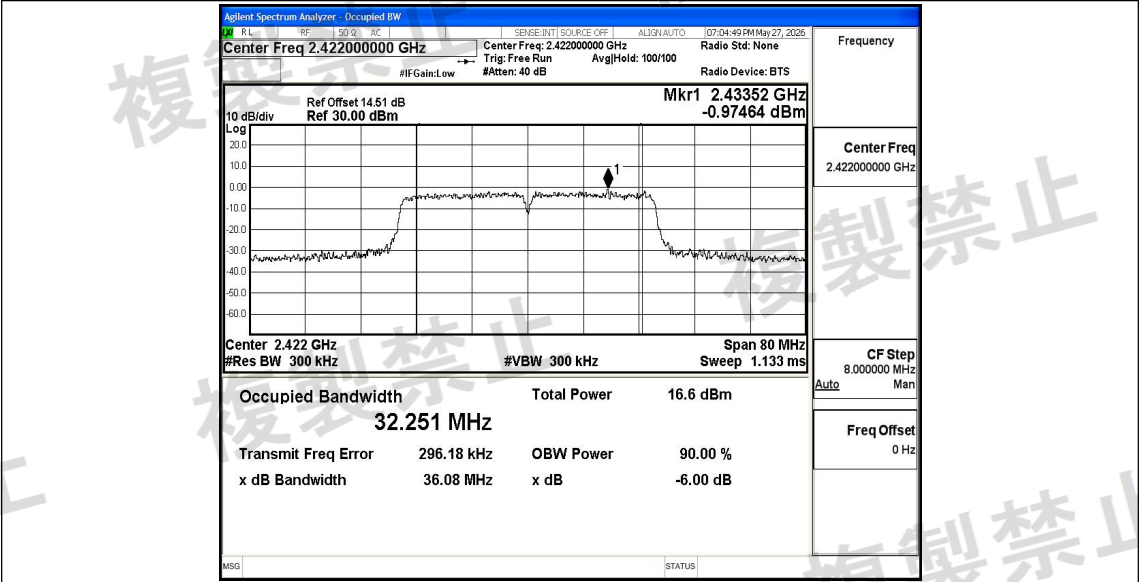
NTNV_11N20SISO_Ant1_2442



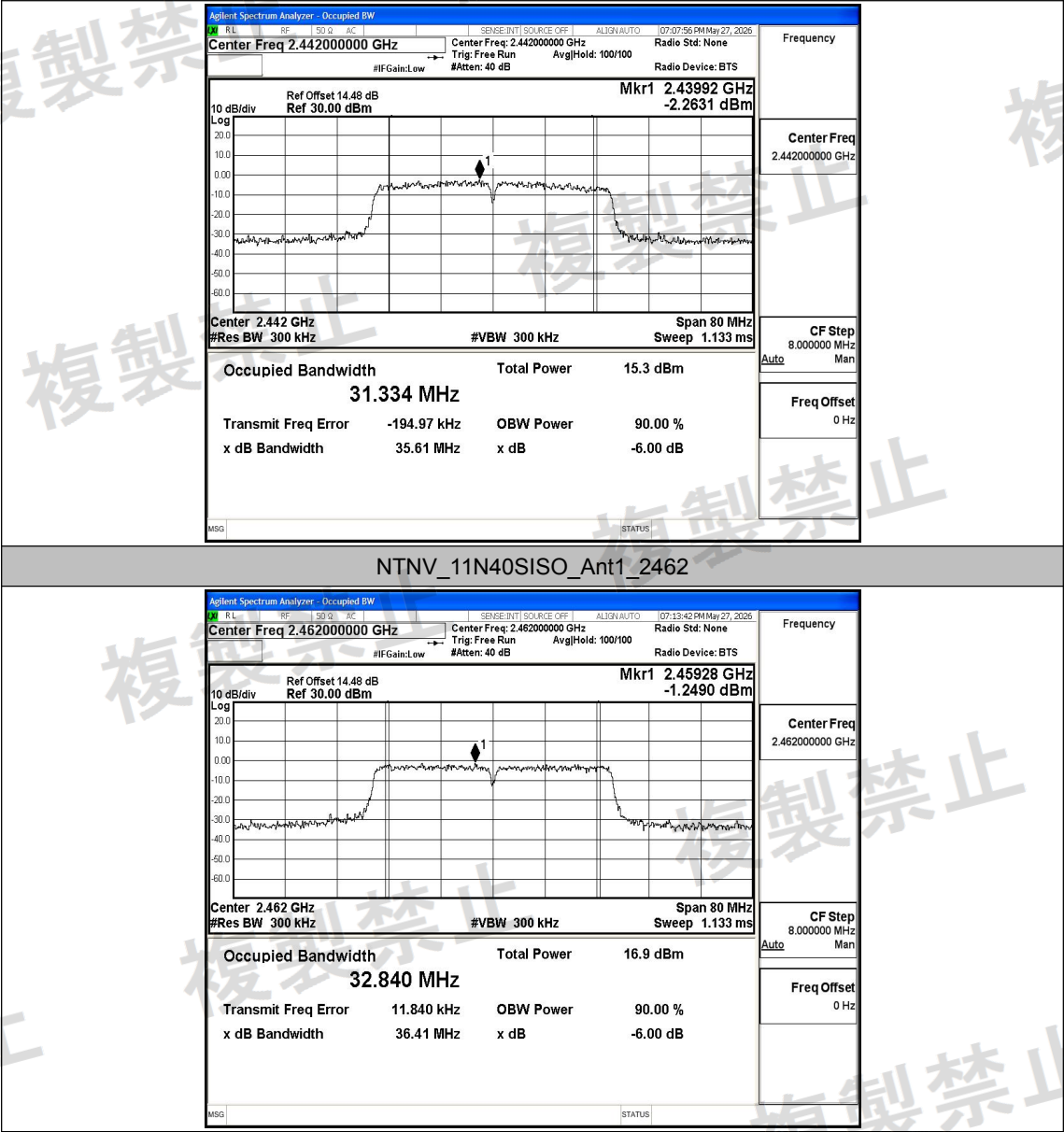
NTNV_11N20SISO_Ant1_2472



NTNV_11N40SISO_Ant1_2422



NTNV_11N40SISO_Ant1_2442



B.5 Spurious Emission of TX

Test Result

TestCondition	TestMode	Antenna	Freq(MHz)	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [μW]	Limit [μW]	Verdict
NTNV	11B	Ant1	2412	30~1000	-53.78	≤-26	0.00419	≤2.5	PASS
				1000~2387	-52.43	≤-26	0.00571	≤2.5	PASS
				2387~2400	-41.27	≤-16	0.07464	≤25	PASS
				2483.5~2496.5	-43.30	≤-16	0.04677	≤25	PASS
				2496.5~13000	-45.12	≤-26	0.03076	≤2.5	PASS
			2442	30~1000	-49.96	≤-26	0.01009	≤2.5	PASS
				1000~2387	-52.76	≤-26	0.00530	≤2.5	PASS
				2387~2400	-43.54	≤-16	0.04426	≤25	PASS
				2483.5~2496.5	-43.54	≤-16	0.04426	≤25	PASS
				2496.5~13000	-45.74	≤-26	0.02667	≤2.5	PASS
			2472	30~1000	-53.83	≤-26	0.00414	≤2.5	PASS
				1000~2387	-52.93	≤-26	0.00509	≤2.5	PASS
				2387~2400	-43.40	≤-16	0.04571	≤25	PASS
				2483.5~2496.5	-42.26	≤-16	0.05943	≤25	PASS
				2496.5~13000	-45.65	≤-26	0.02723	≤2.5	PASS
	11G	Ant1	2412	30~1000	-53.99	≤-26	0.00399	≤2.5	PASS
				1000~2387	-51.81	≤-26	0.00659	≤2.5	PASS
				2387~2400	-30.40	≤-16	0.91201	≤25	PASS
				2483.5~2496.5	-43.42	≤-16	0.04550	≤25	PASS
				2496.5~13000	-46.00	≤-26	0.02512	≤2.5	PASS
			2442	30~1000	-53.87	≤-26	0.00410	≤2.5	PASS
				1000~2387	-52.92	≤-26	0.00511	≤2.5	PASS
				2387~2400	-43.45	≤-16	0.04519	≤25	PASS
				2483.5~2496.5	-43.45	≤-16	0.04519	≤25	PASS
				2496.5~13000	-45.04	≤-26	0.03133	≤2.5	PASS
			2472	30~1000	-53.13	≤-26	0.00486	≤2.5	PASS
				1000~2387	-52.52	≤-26	0.00560	≤2.5	PASS
				2387~2400	-43.75	≤-16	0.04217	≤25	PASS
				2483.5~2496.5	-31.44	≤-16	0.71779	≤25	PASS
				2496.5~13000	-33.98	≤-26	0.39994	≤2.5	PASS
	11N20SISO	Ant1	2412	30~1000	-53.97	≤-26	0.00401	≤2.5	PASS
				1000~2387	-52.47	≤-26	0.00566	≤2.5	PASS
				2387~2400	-32.67	≤-16	0.54075	≤25	PASS

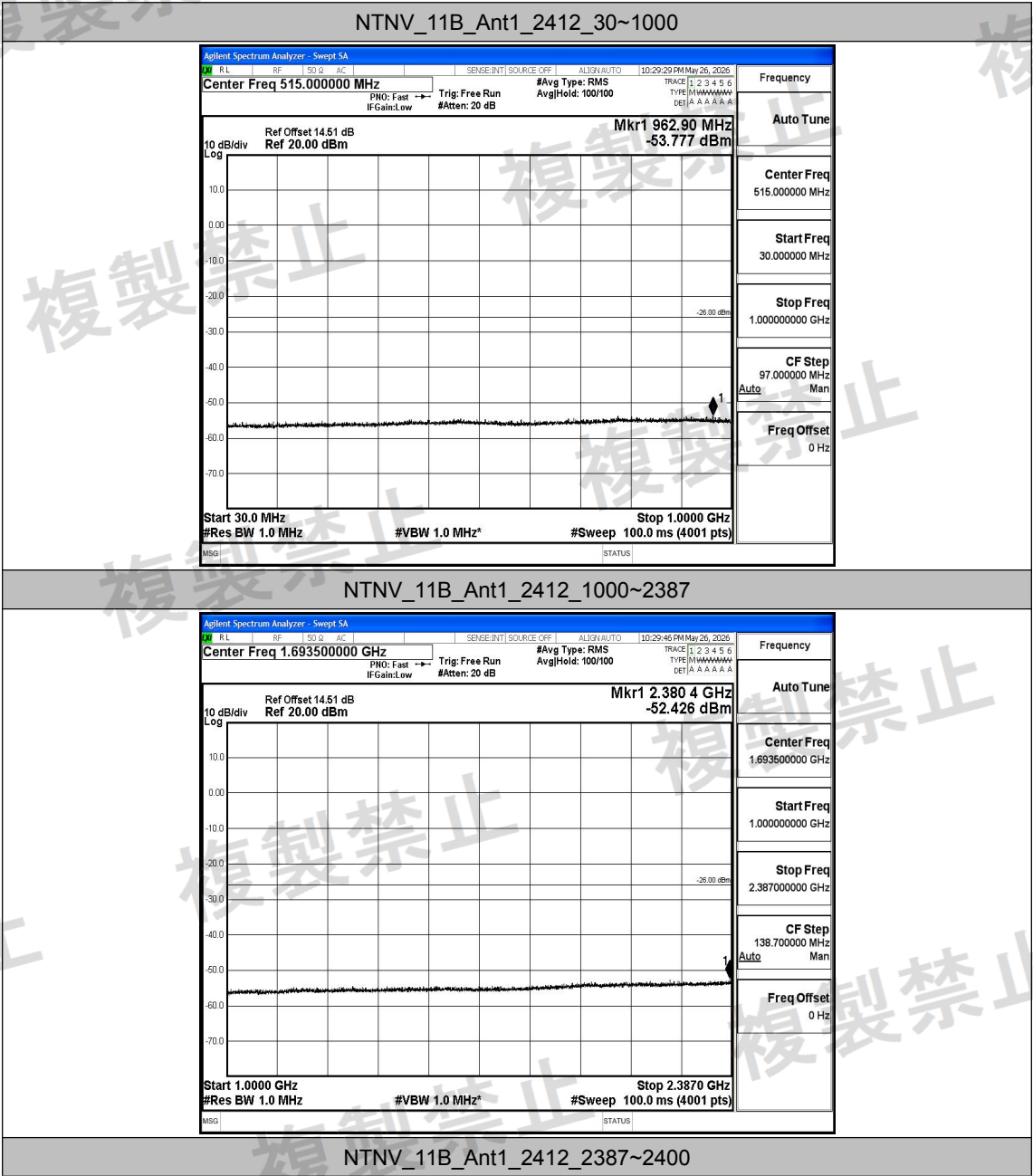
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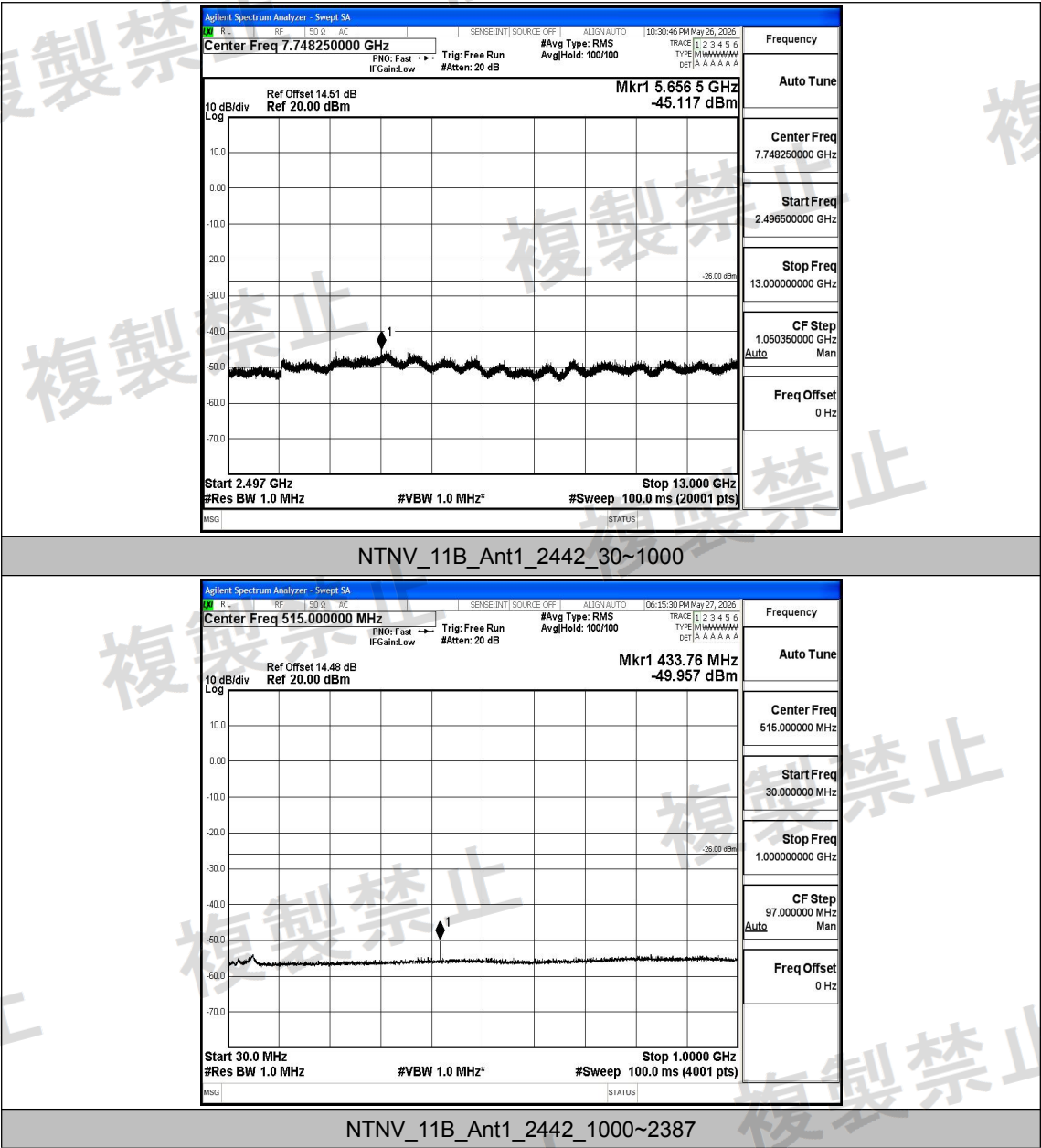
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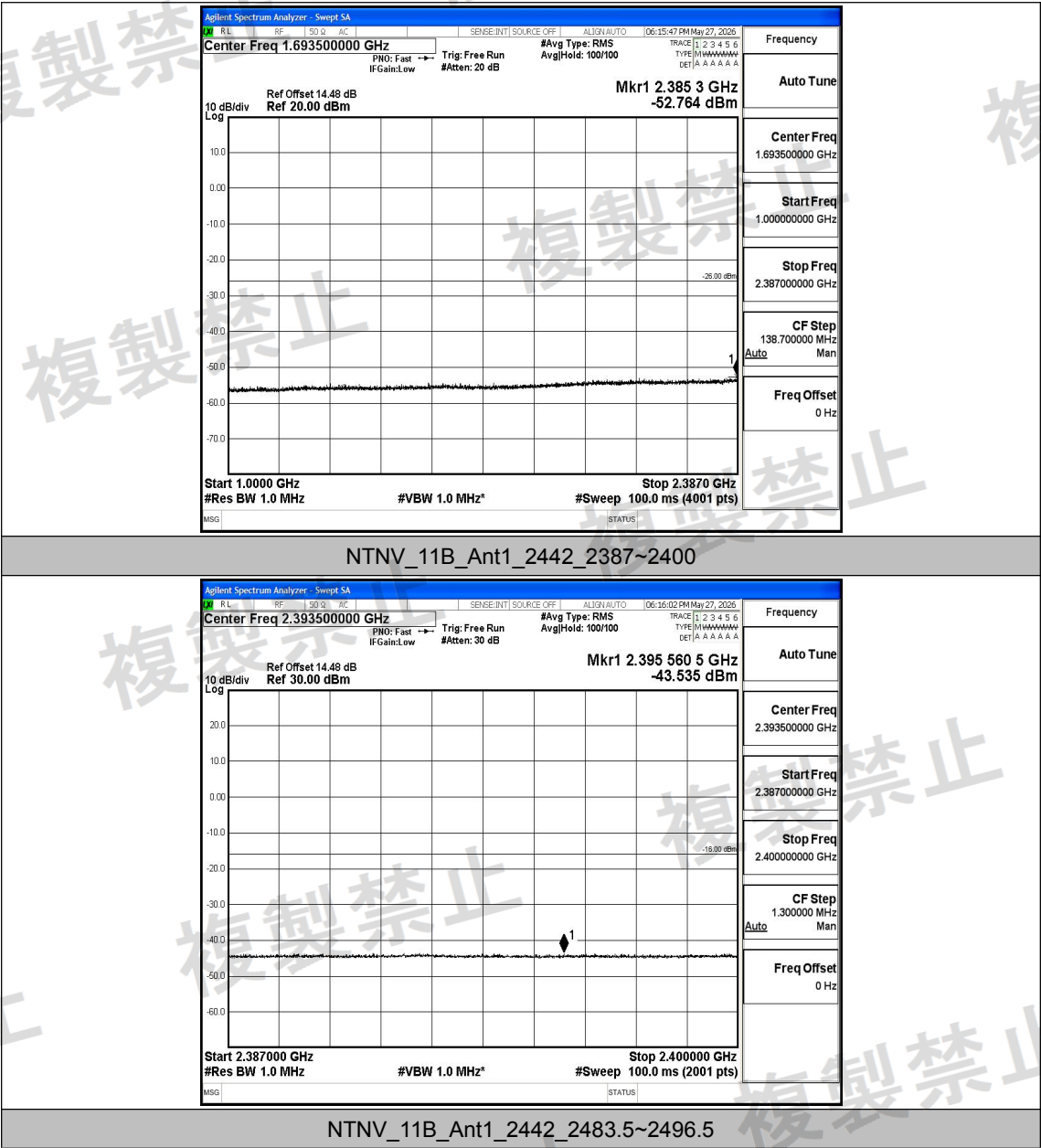
複製禁止				2483.5~2496.5	-43.48	≤-16	0.04487	≤25	PASS
				2496.5~13000	-40.71	≤-26	0.08492	≤2.5	PASS
			2442	30~1000	-53.91	≤-26	0.00406	≤2.5	PASS
				1000~2387	-53.05	≤-26	0.00495	≤2.5	PASS
				2387~2400	-43.61	≤-16	0.04355	≤25	PASS
				2483.5~2496.5	-43.35	≤-16	0.04624	≤25	PASS
				2496.5~13000	-39.22	≤-26	0.11967	≤2.5	PASS
			2472	30~1000	-53.83	≤-26	0.00414	≤2.5	PASS
				1000~2387	-52.61	≤-26	0.00548	≤2.5	PASS
				2387~2400	-43.21	≤-16	0.04775	≤25	PASS
	2483.5~2496.5	-32.43		≤-16	0.57148	≤25	PASS		
	2496.5~13000	-45.96		≤-26	0.02535	≤2.5	PASS		
	11N40SISO	Ant1	2422	30~1000	-53.46	≤-26	0.00451	≤2.5	PASS
				1000~2387	-46.76	≤-26	0.02109	≤2.5	PASS
				2387~2400	-33.58	≤-16	0.43853	≤25	PASS
				2483.5~2496.5	-43.60	≤-16	0.04365	≤25	PASS
				2496.5~13000	-44.17	≤-26	0.03828	≤2.5	PASS
			2442	30~1000	-53.90	≤-26	0.00407	≤2.5	PASS
				1000~2387	-52.85	≤-26	0.00519	≤2.5	PASS
				2387~2400	-43.38	≤-16	0.04592	≤25	PASS
				2483.5~2496.5	-43.32	≤-16	0.04656	≤25	PASS
				2496.5~13000	-37.33	≤-26	0.18493	≤2.5	PASS
		2462	30~1000	-54.23	≤-26	0.00378	≤2.5	PASS	
			1000~2387	-53.09	≤-26	0.00491	≤2.5	PASS	
			2387~2400	-43.64	≤-16	0.04325	≤25	PASS	
			2483.5~2496.5	-32.18	≤-16	0.60534	≤25	PASS	
			2496.5~13000	-45.47	≤-26	0.02838	≤2.5	PASS	

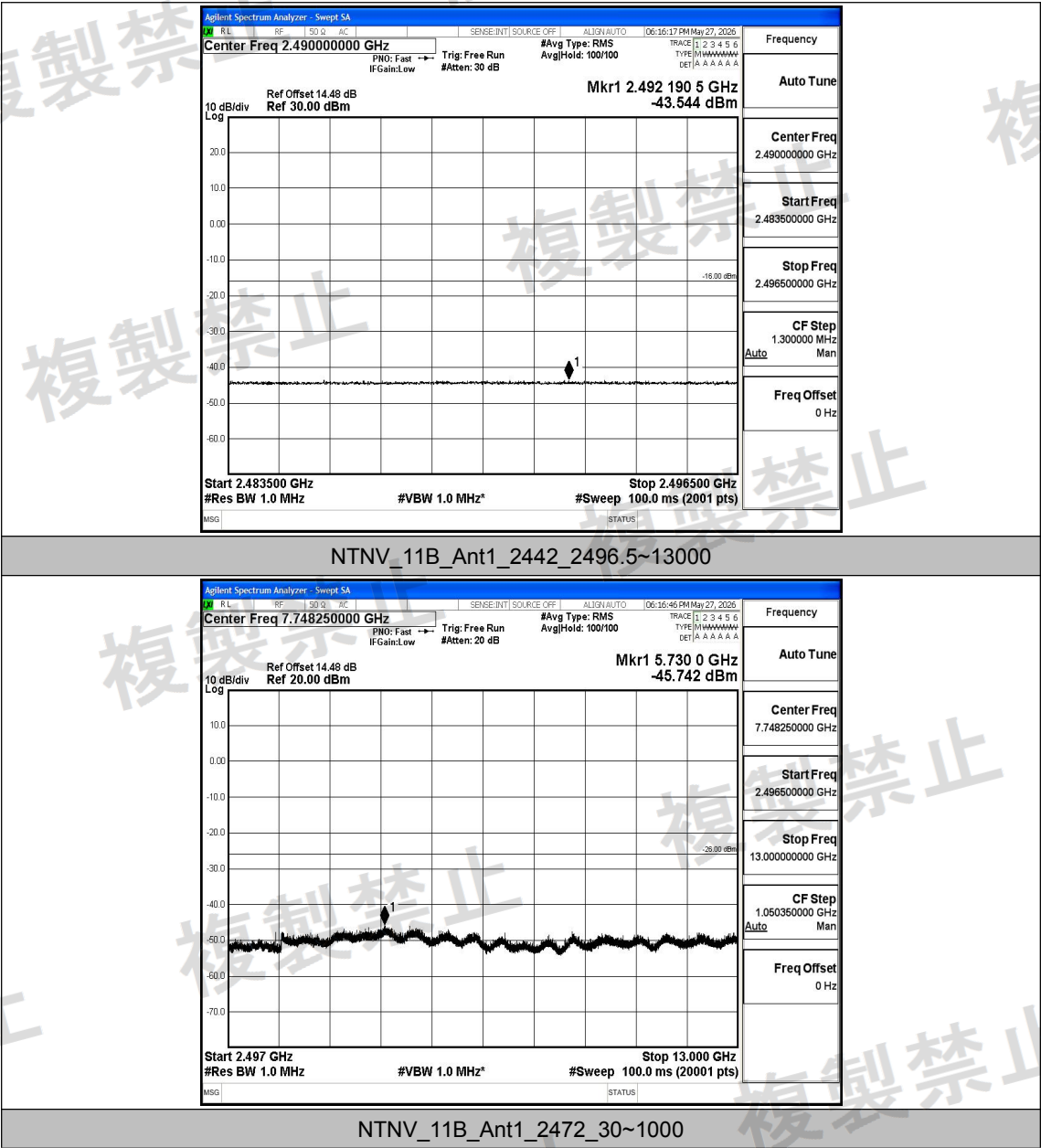
Test Graphs

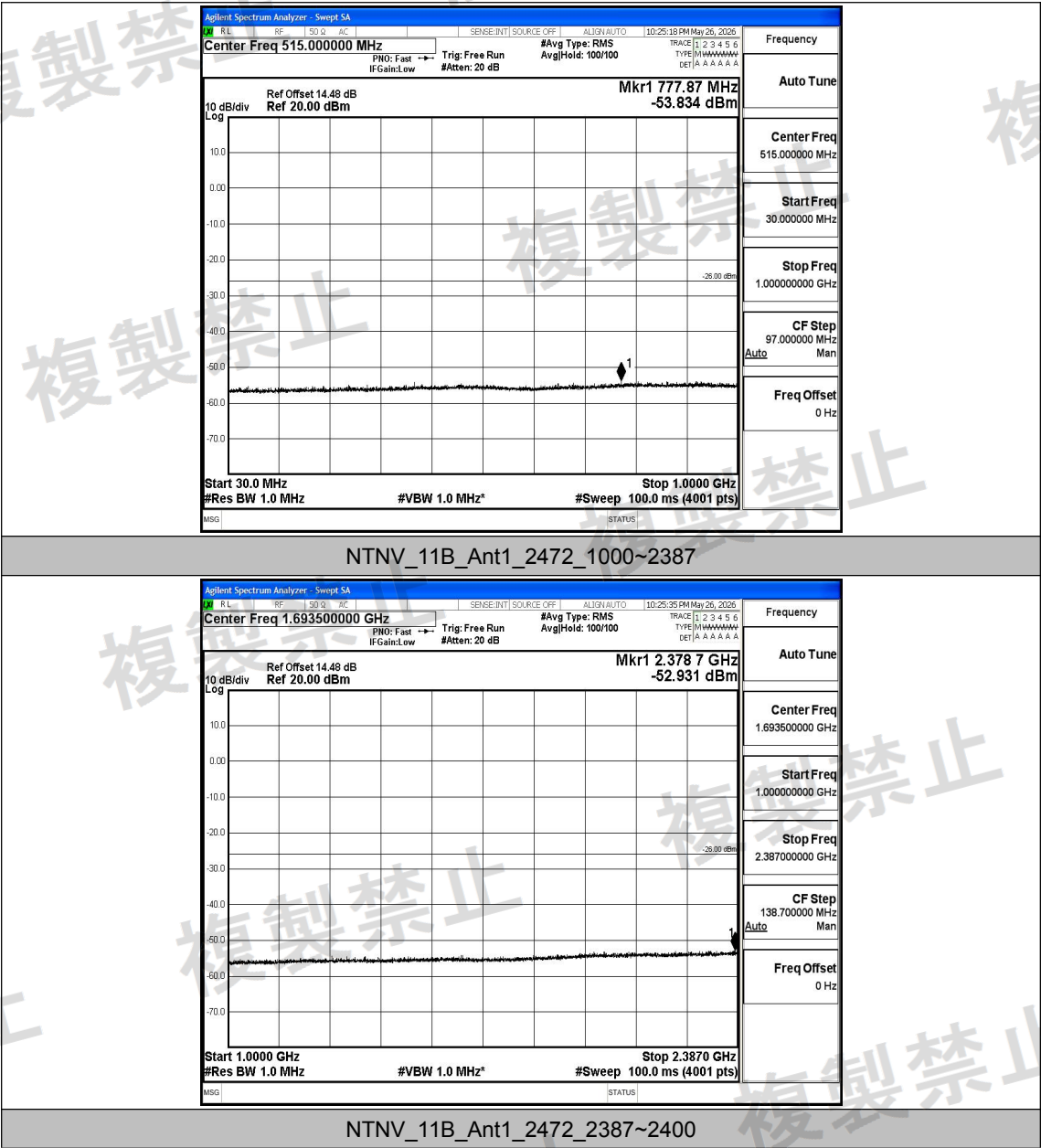


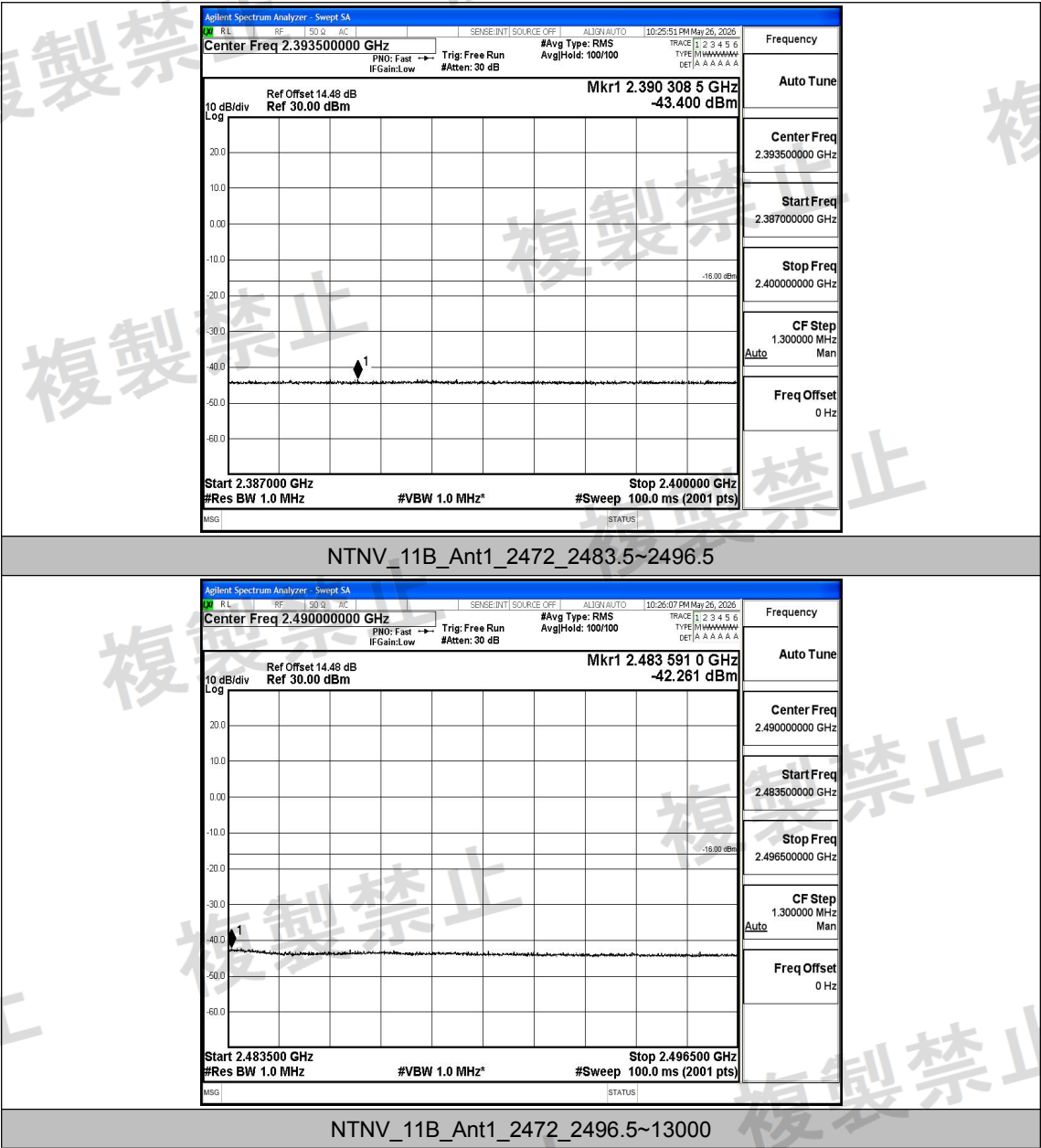


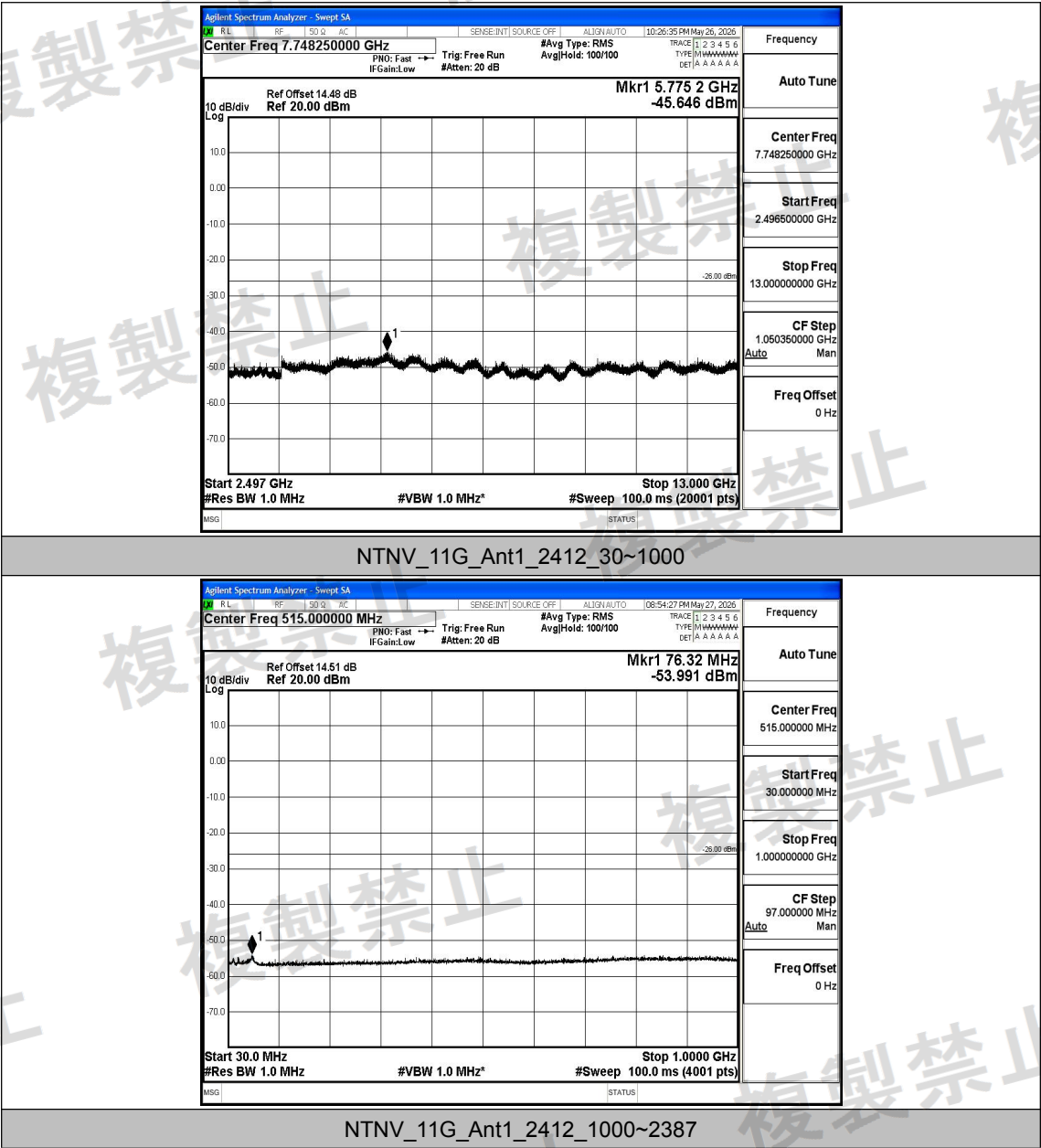


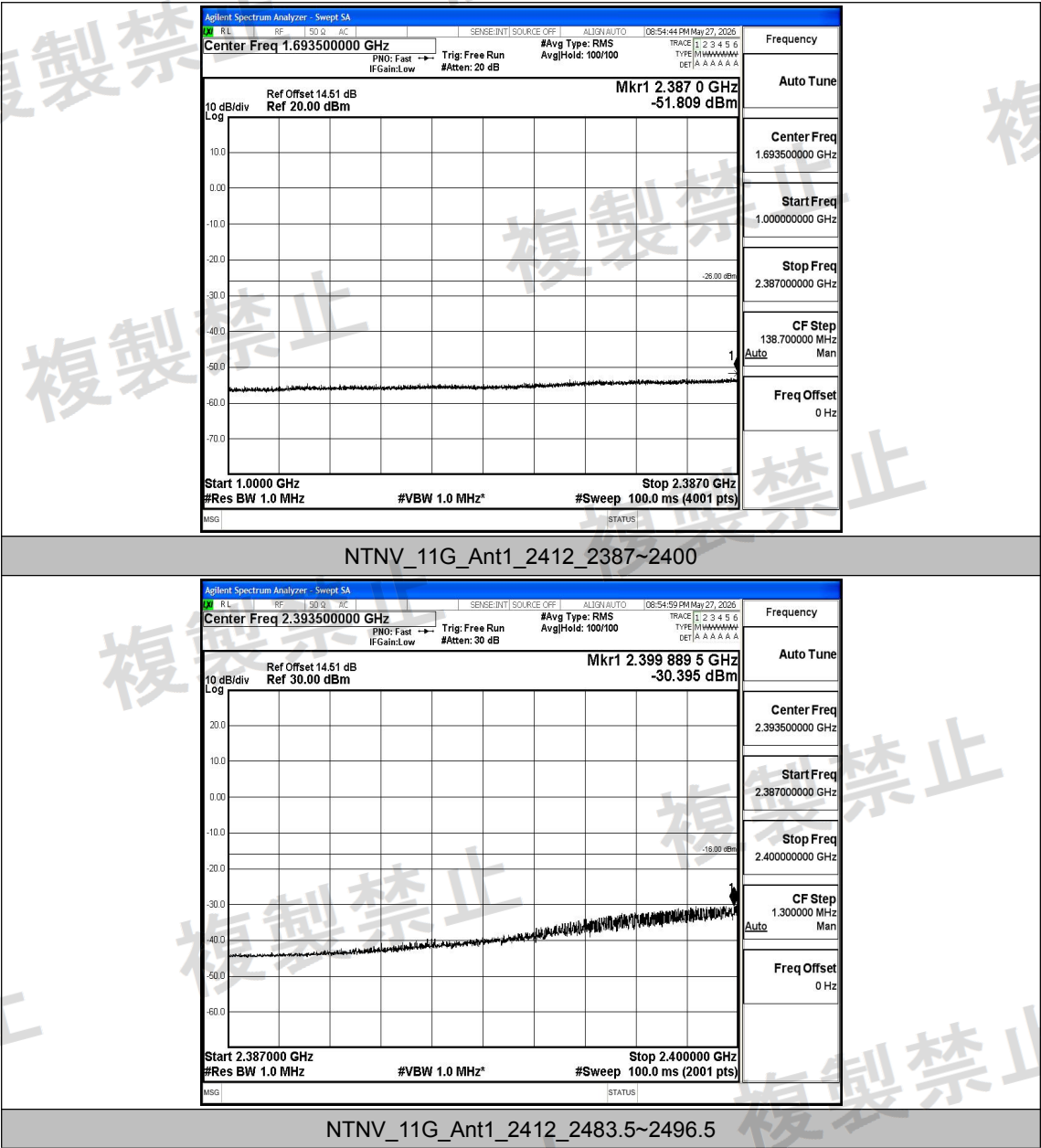


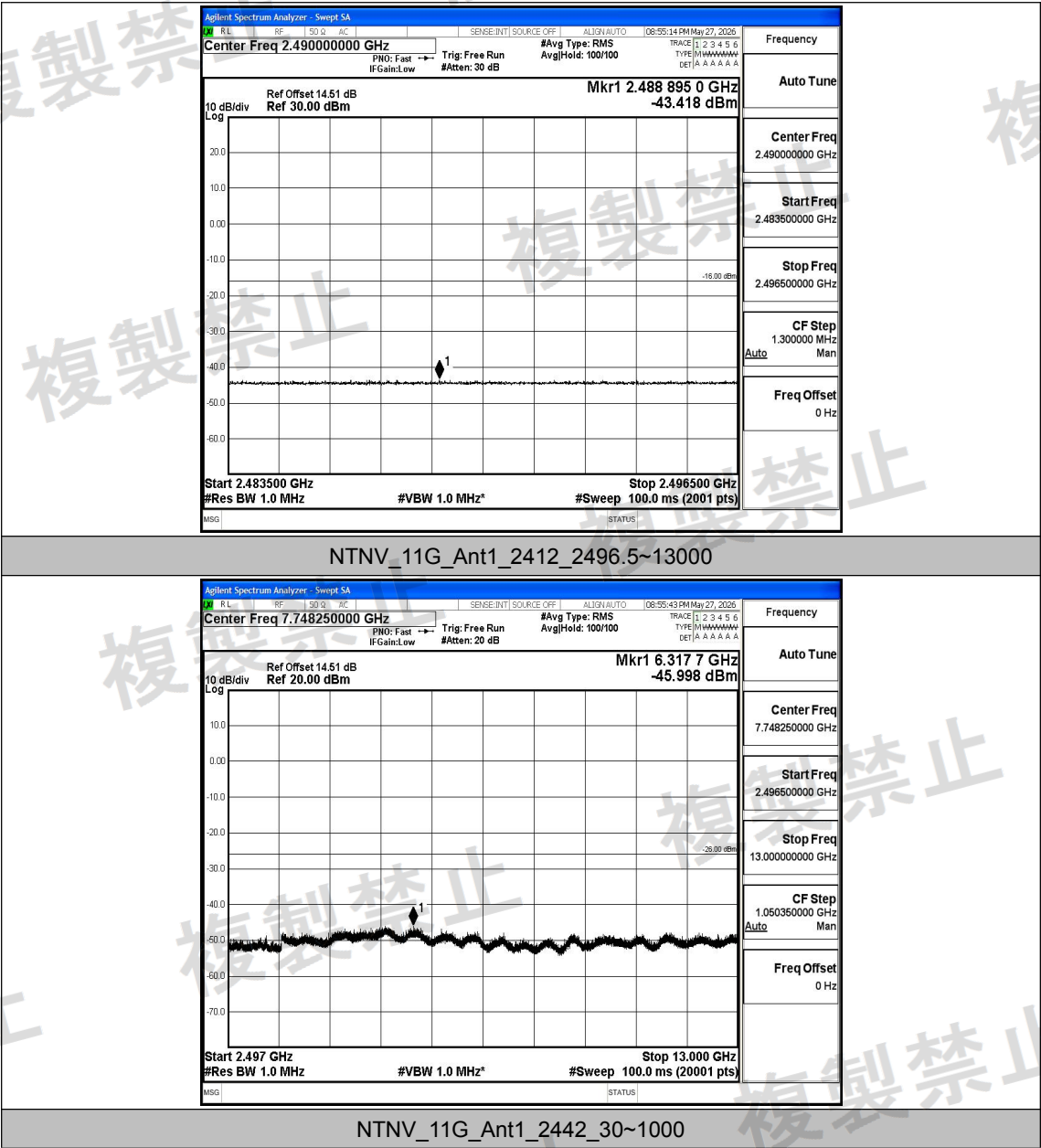


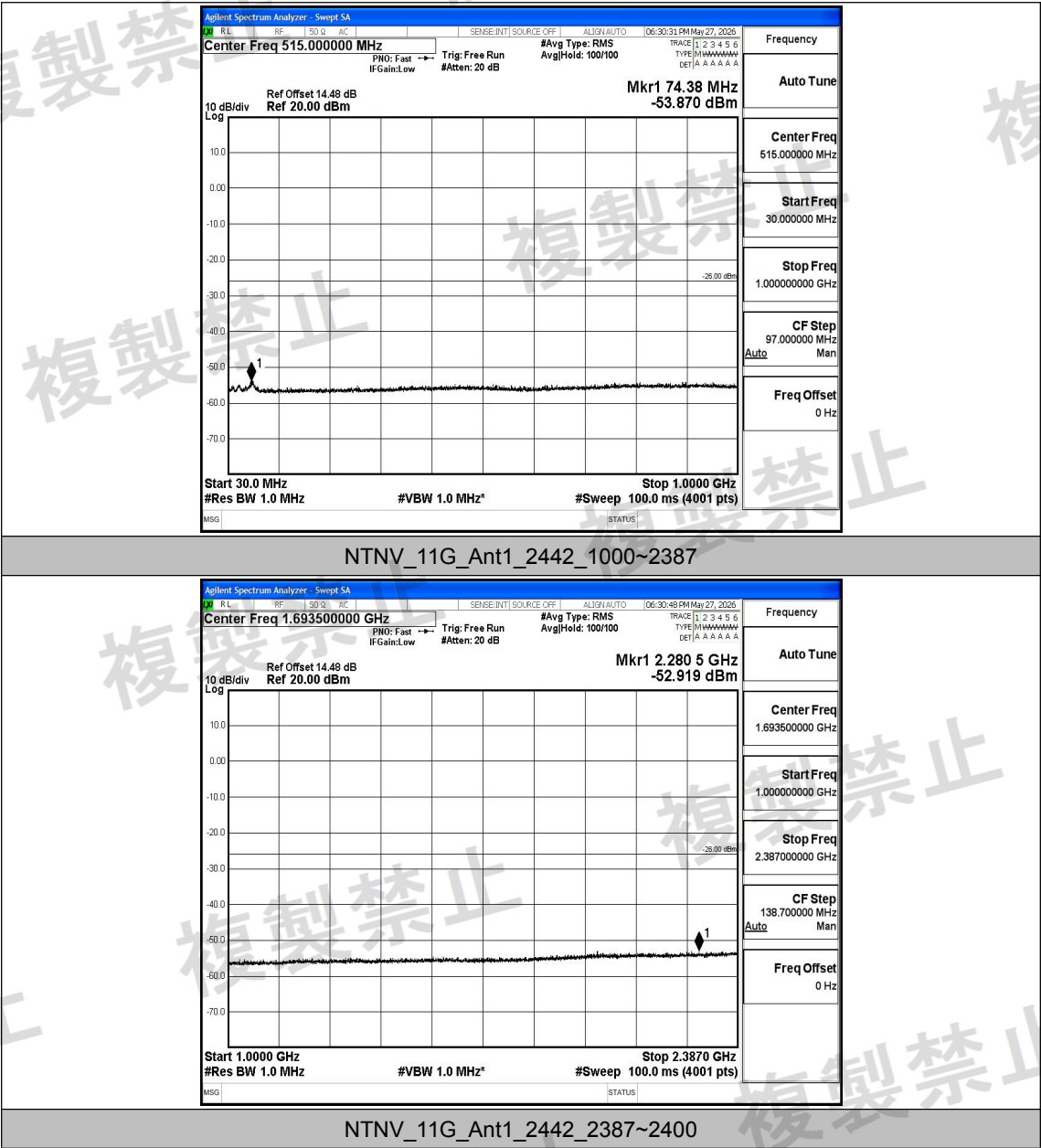


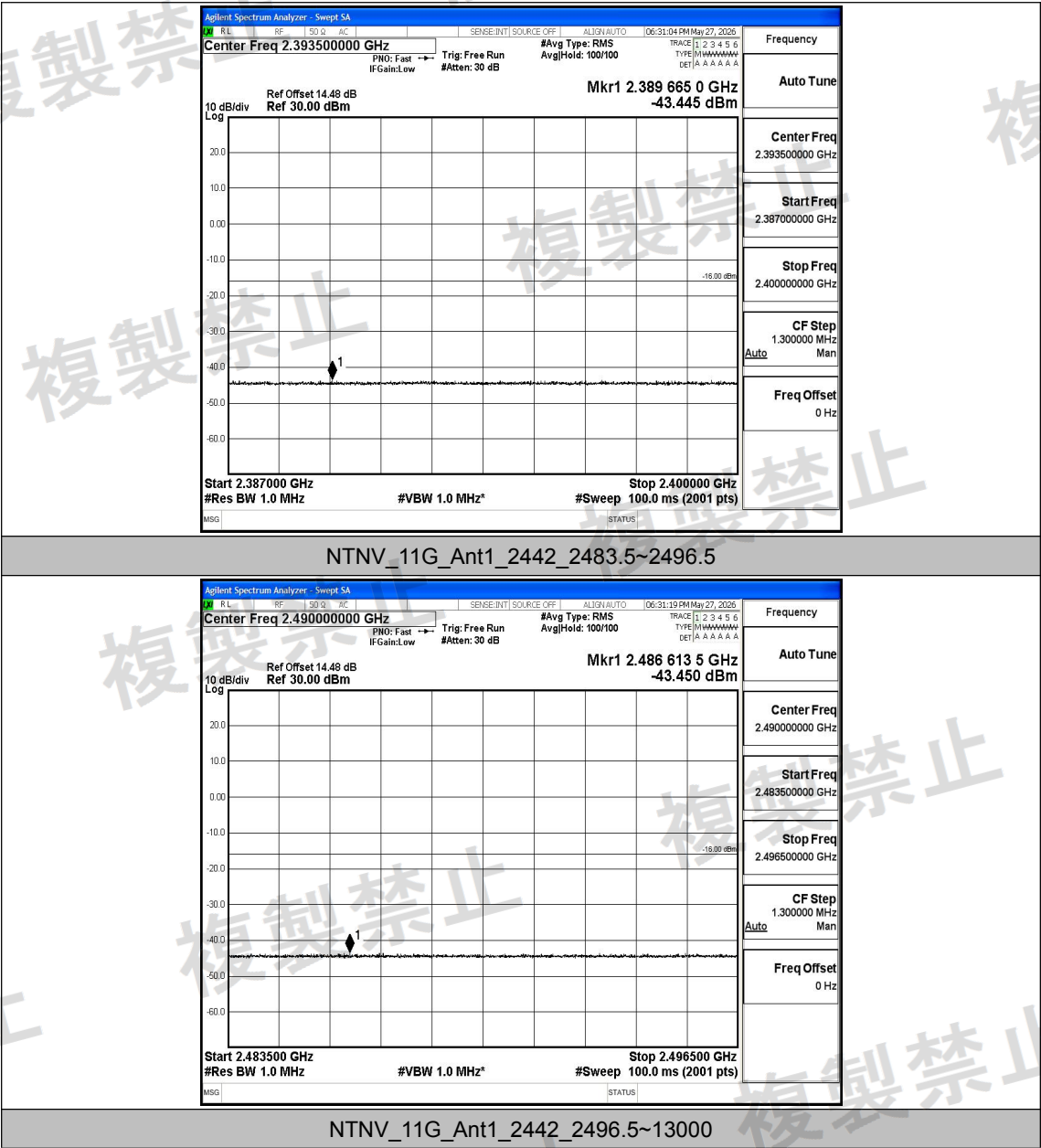


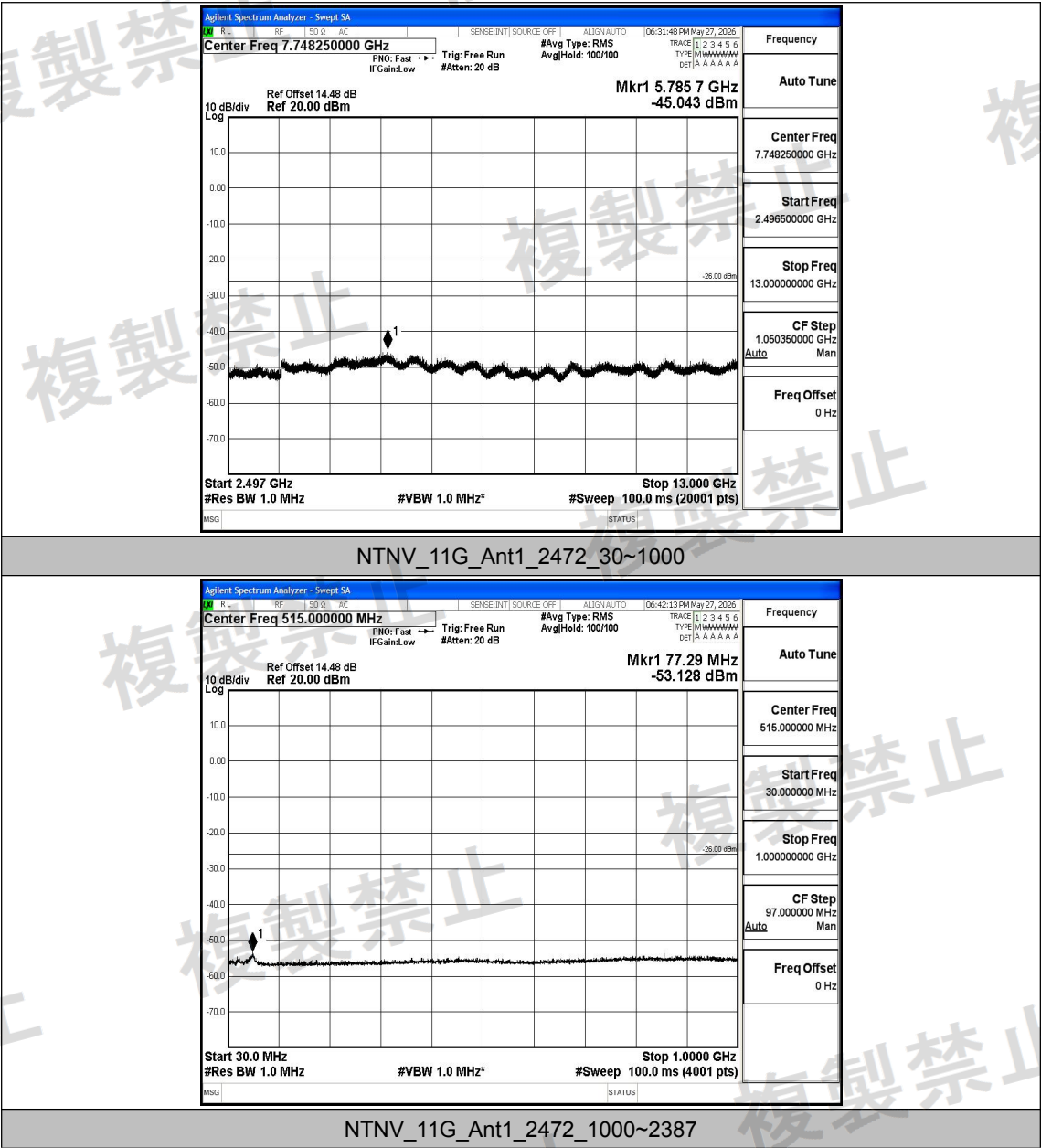


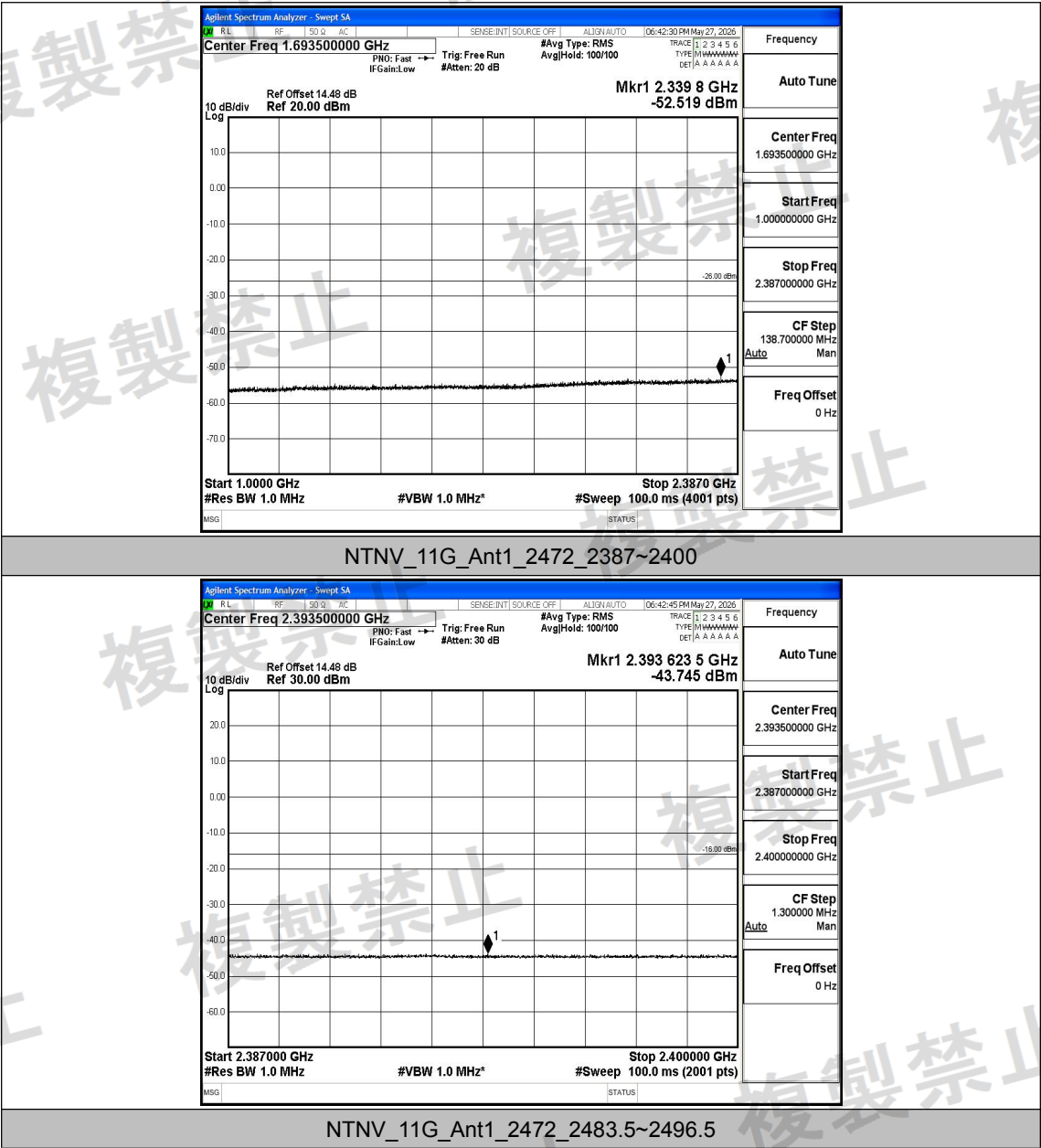


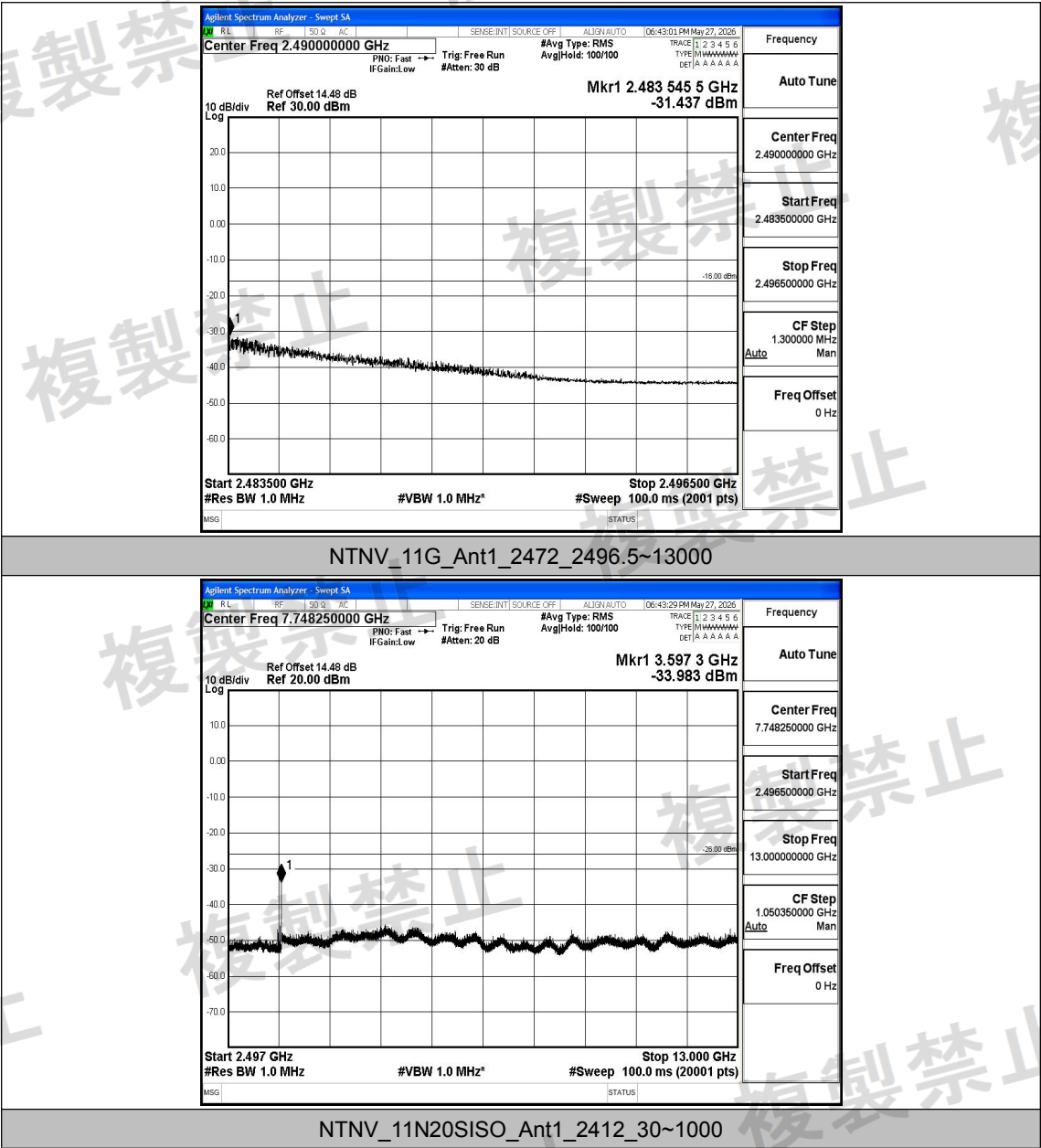




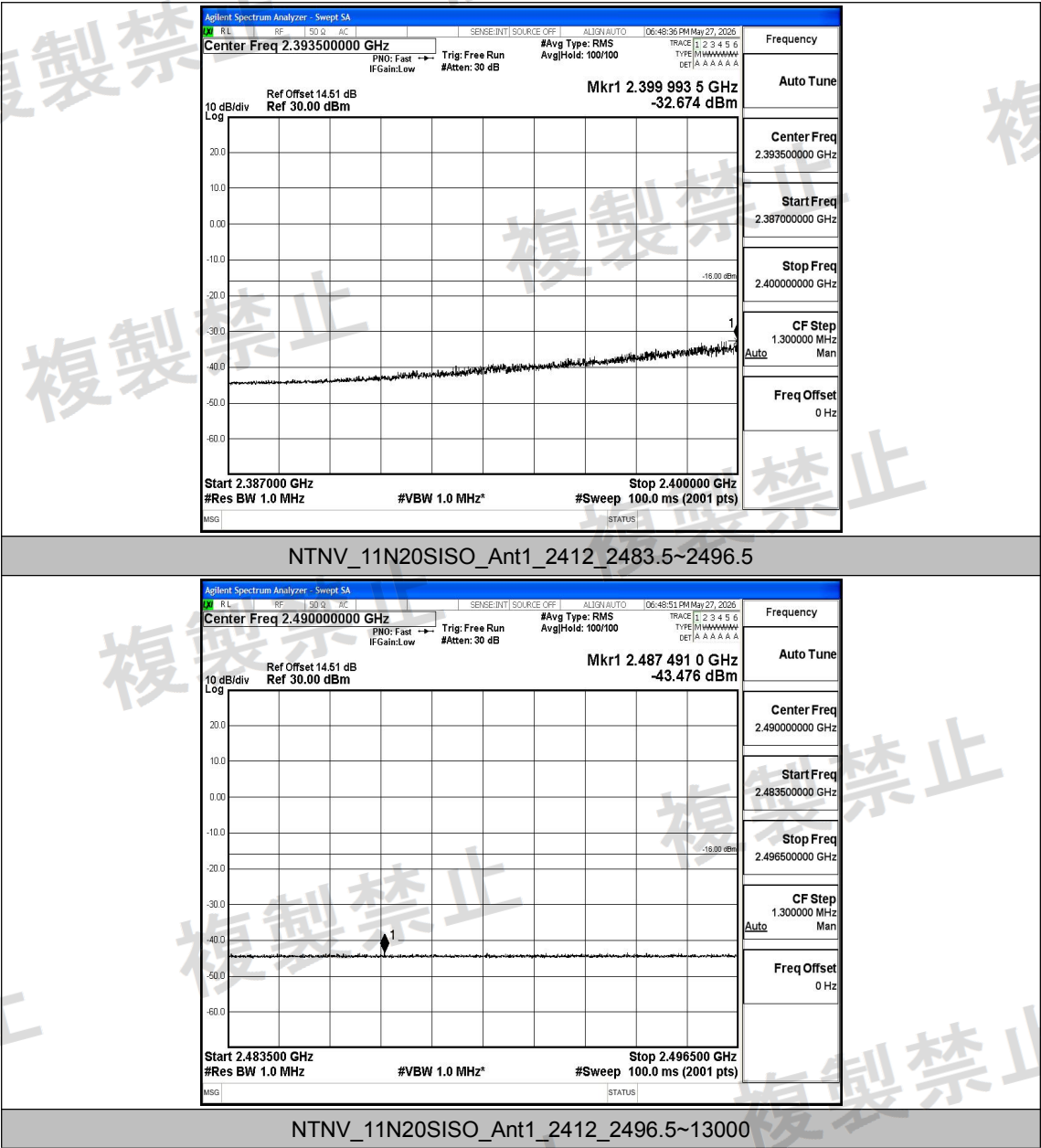


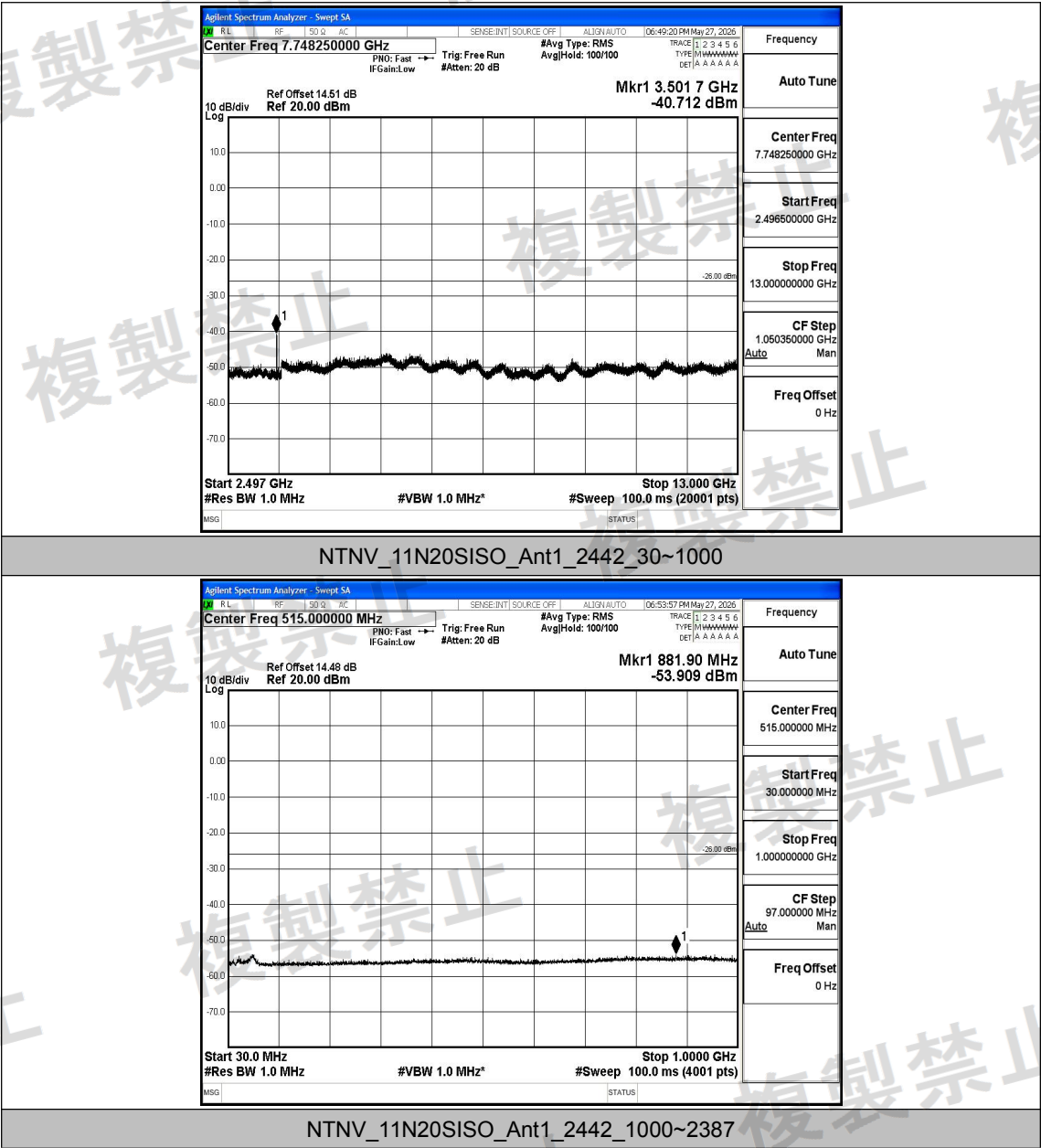


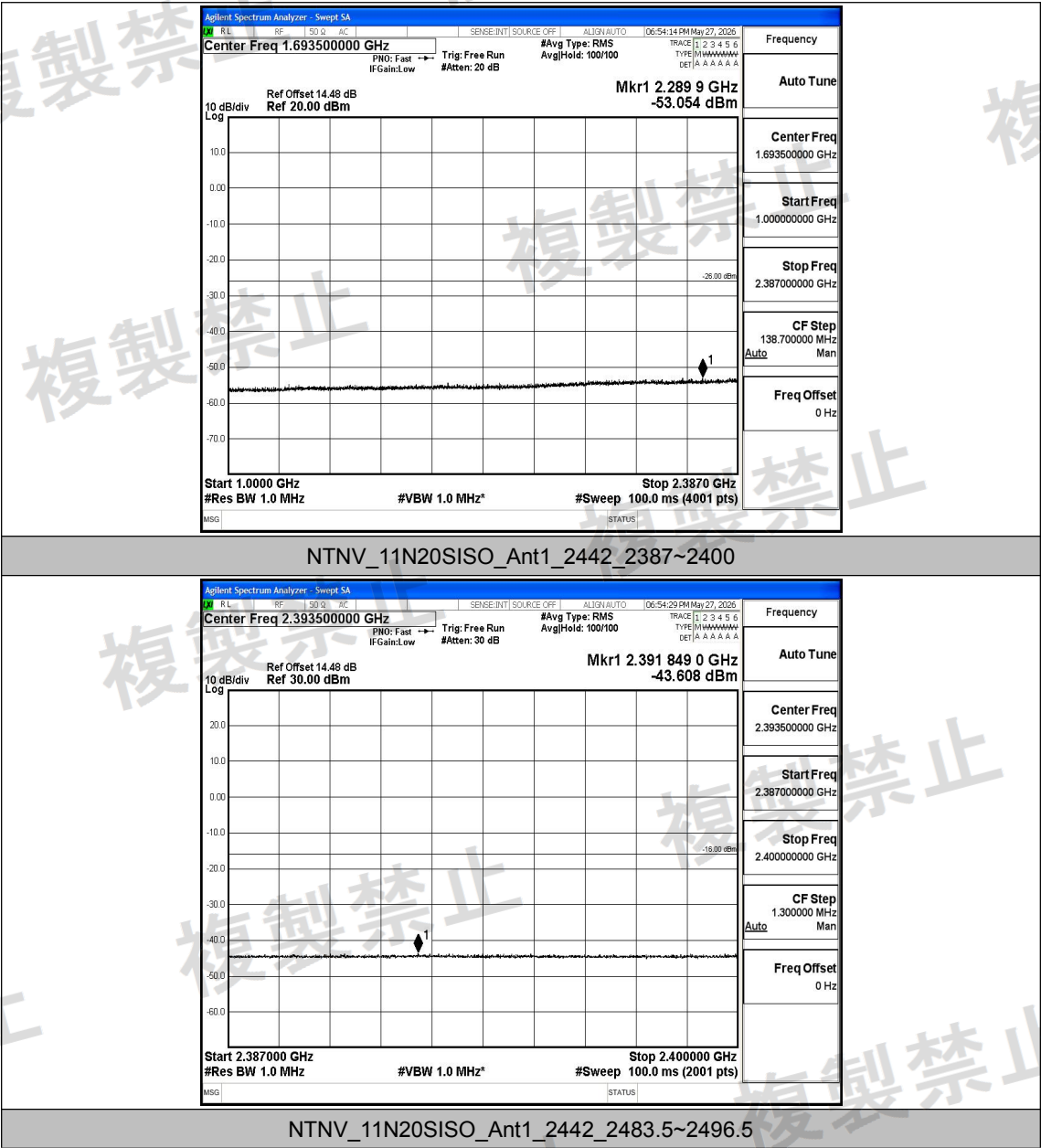


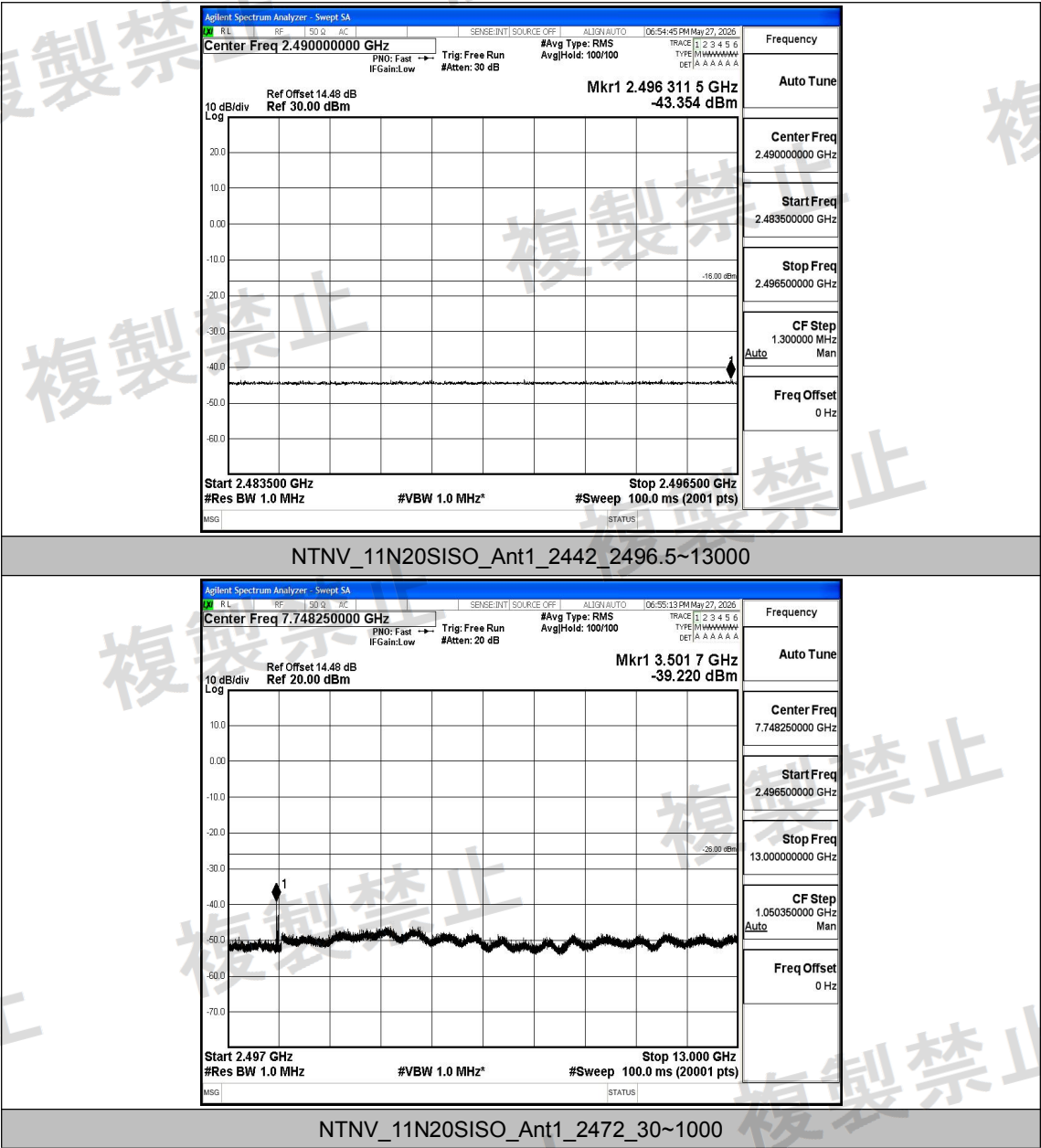


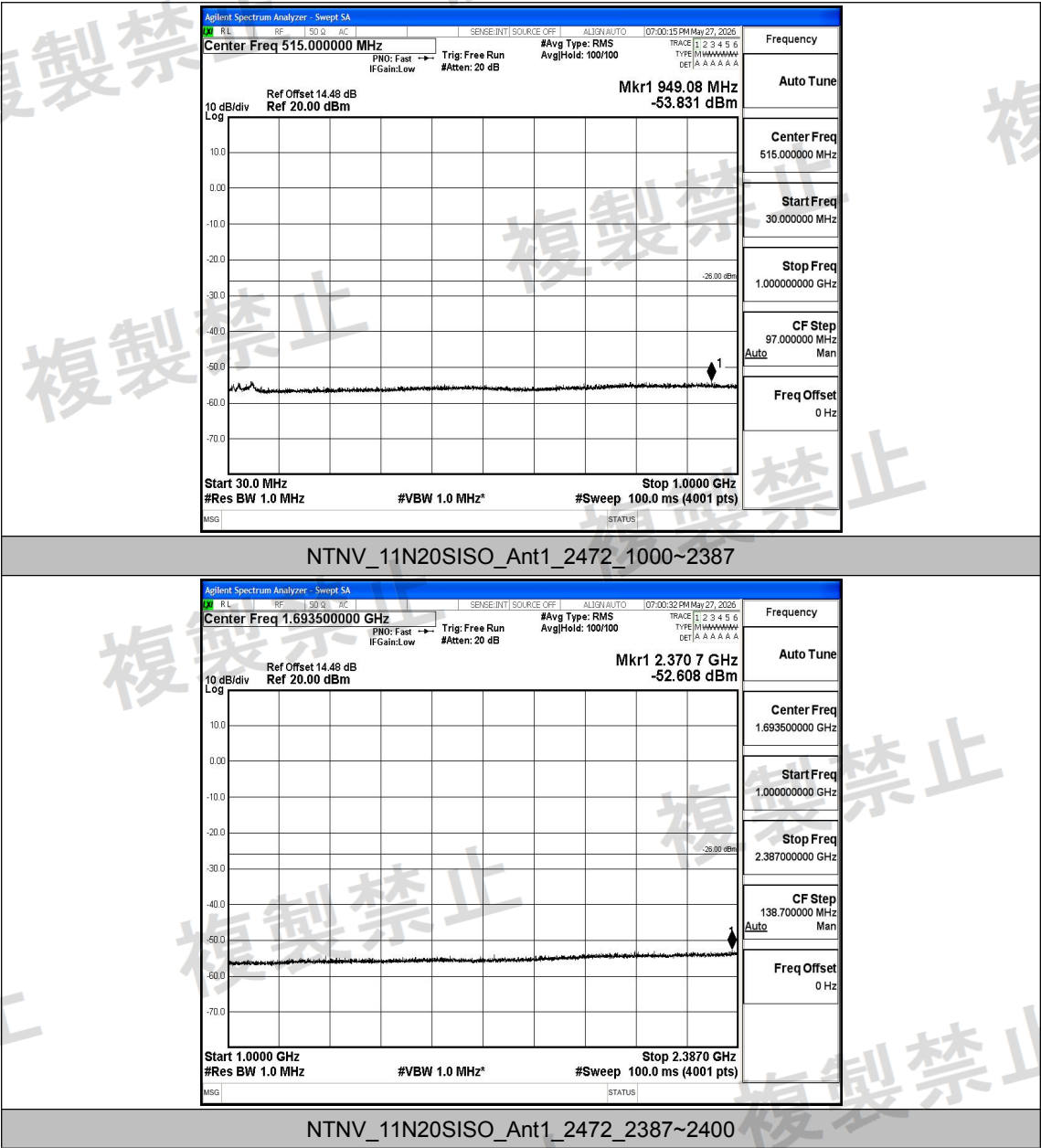


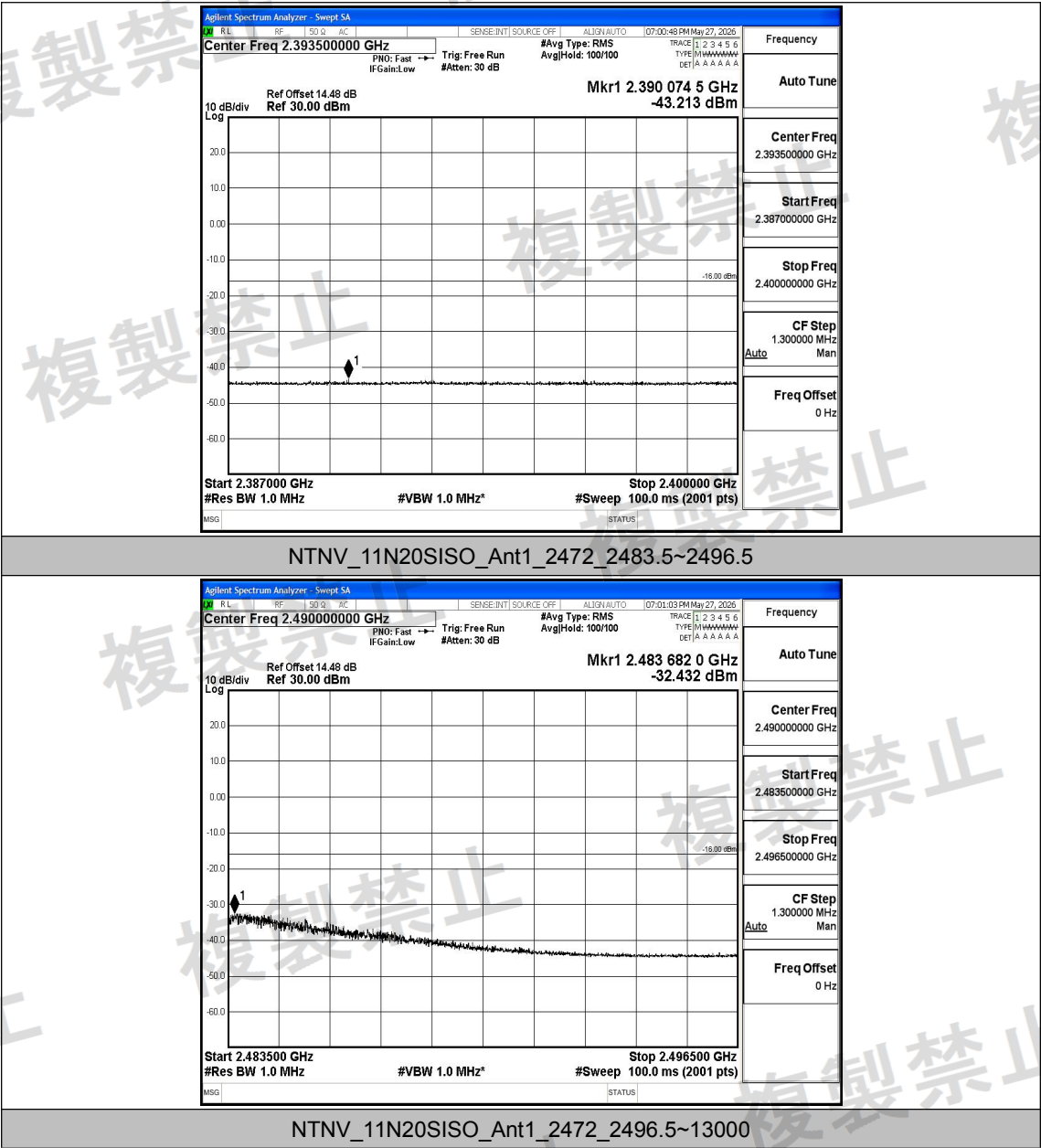


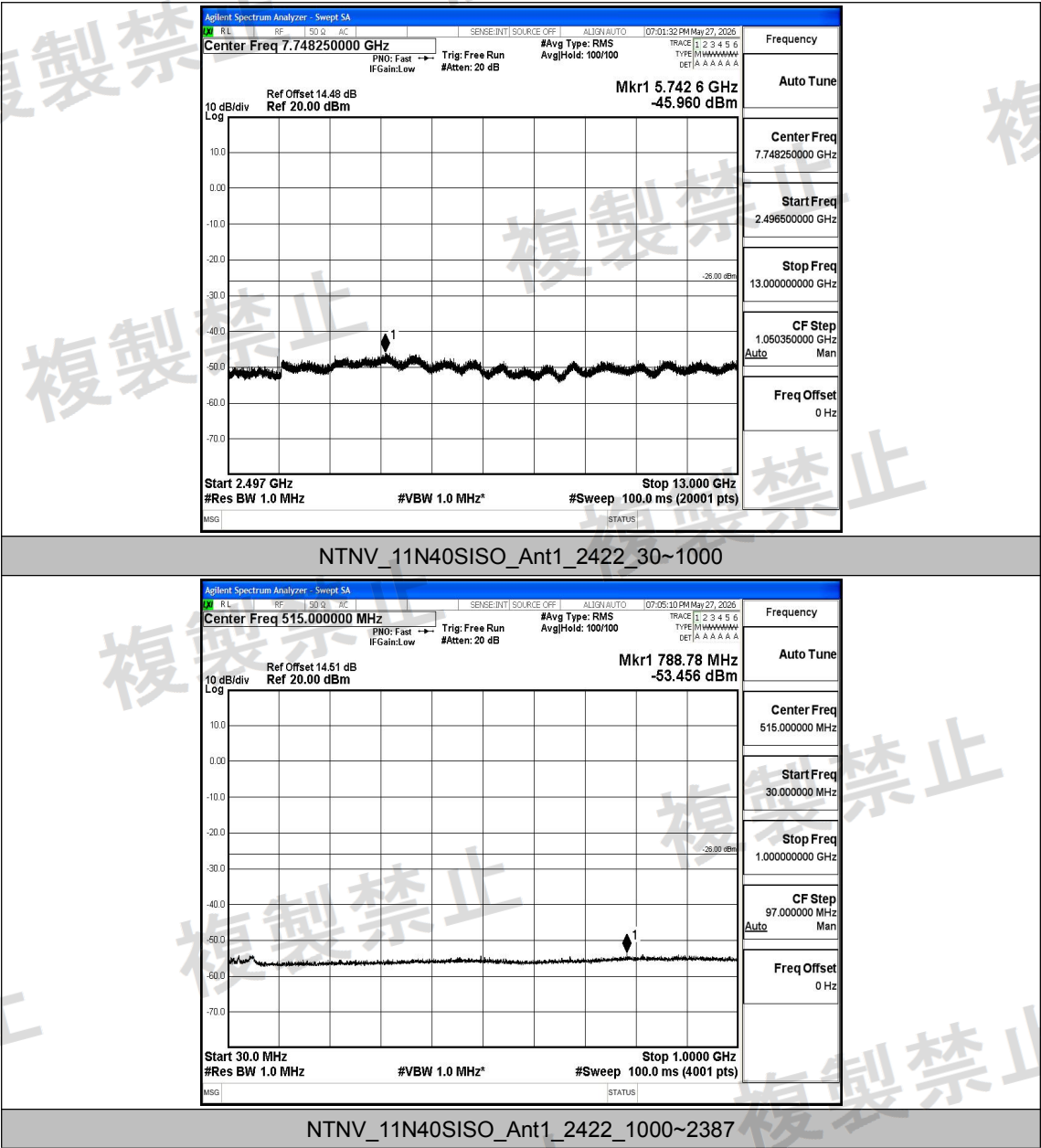


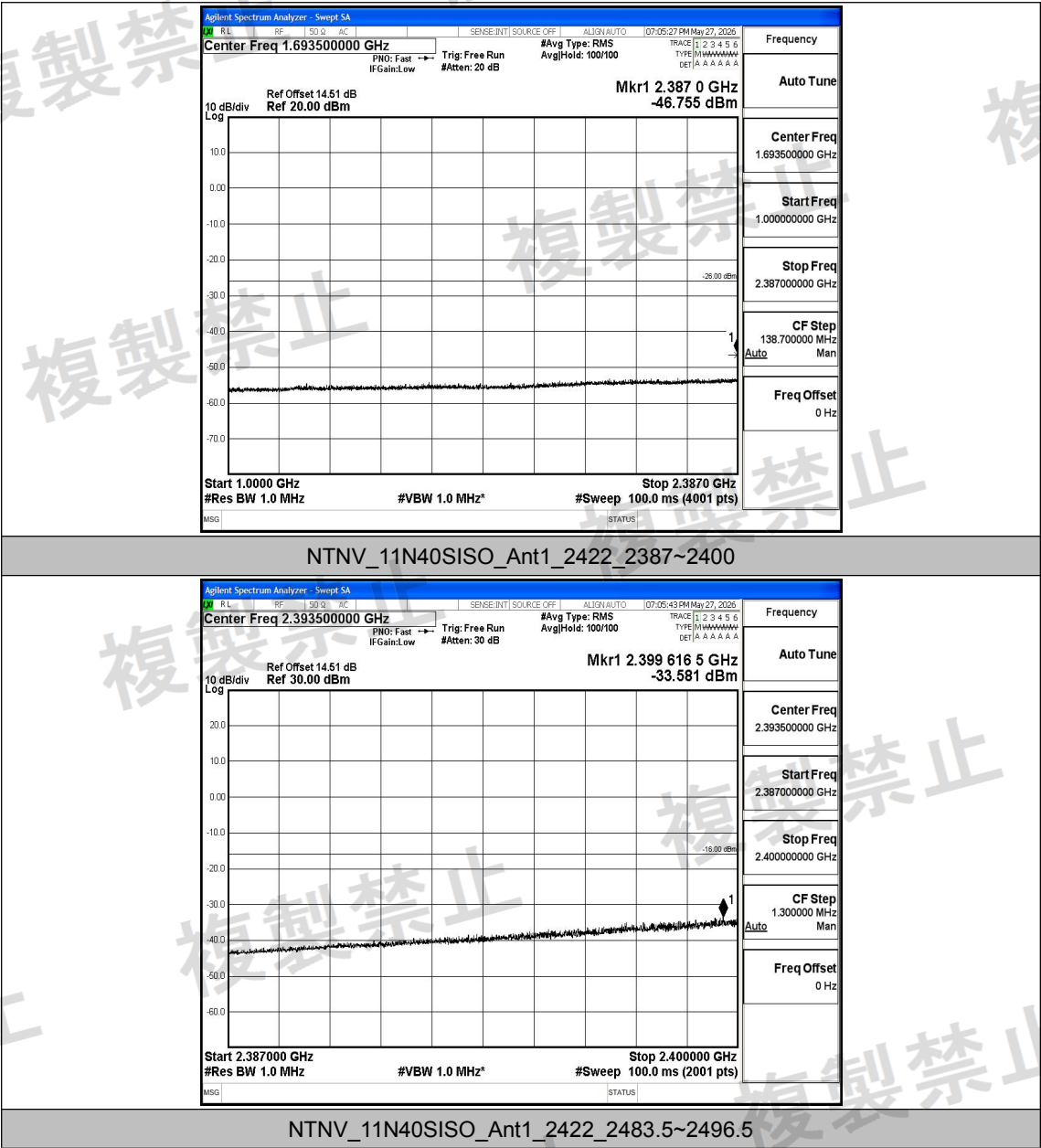


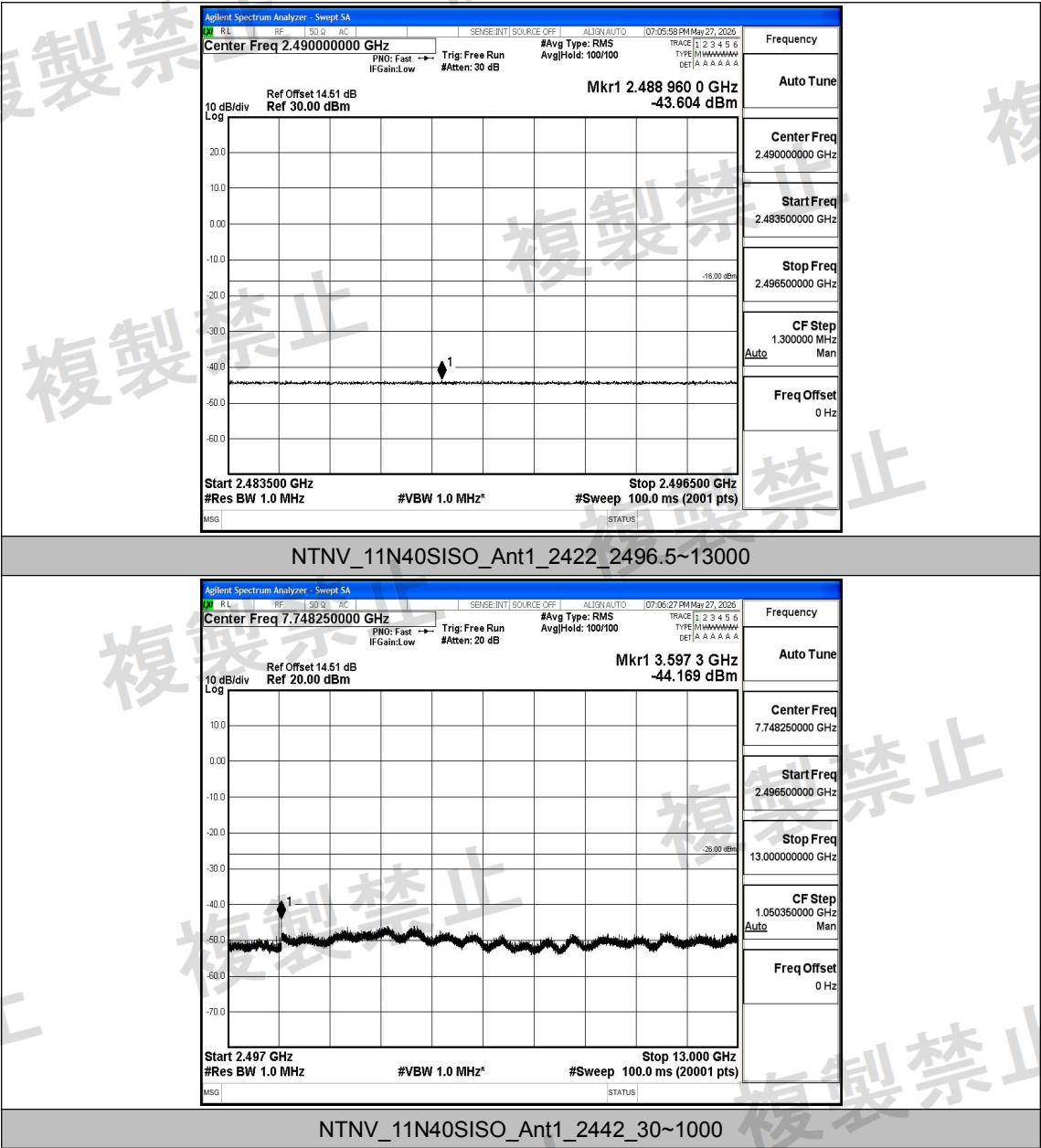




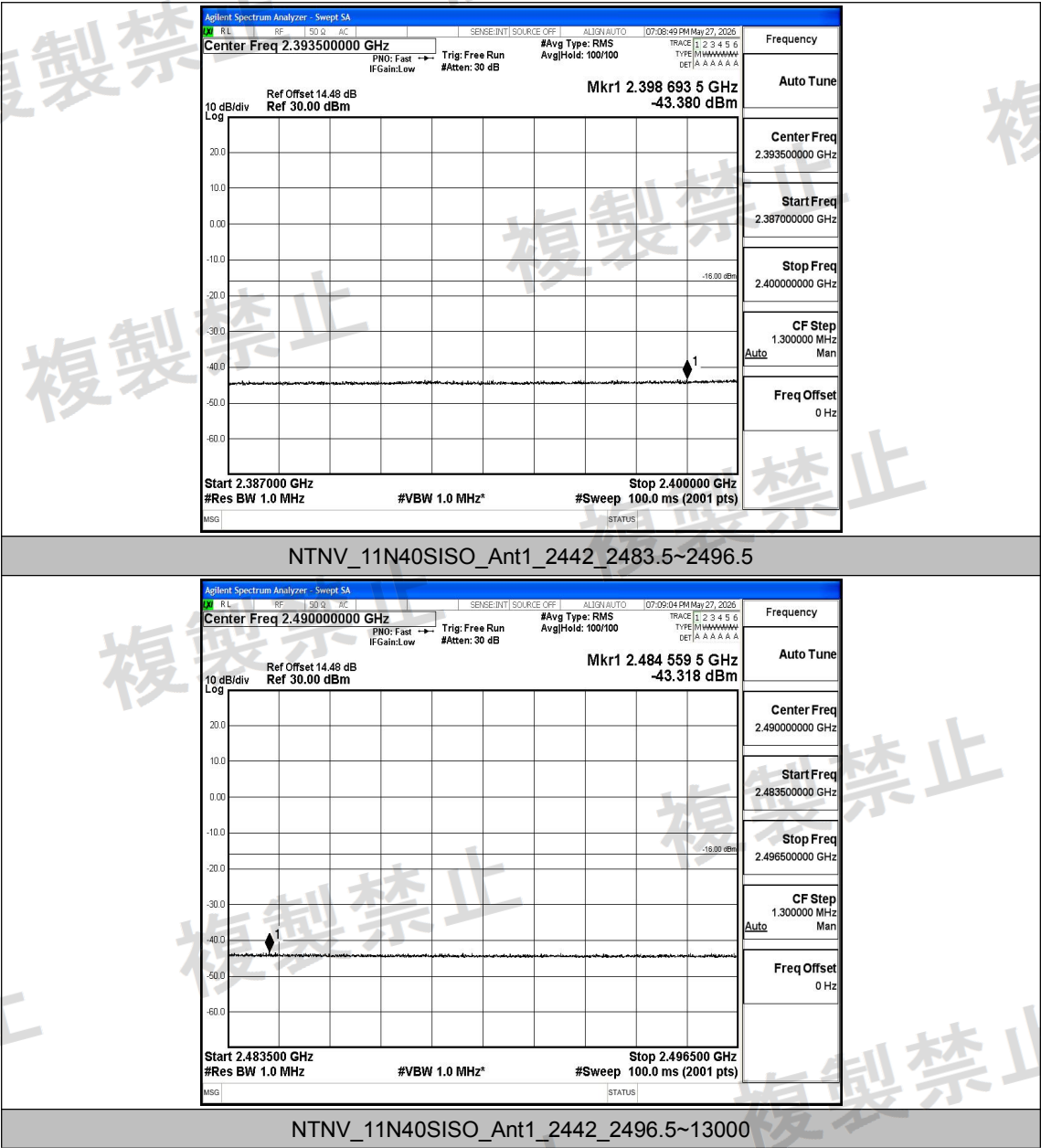


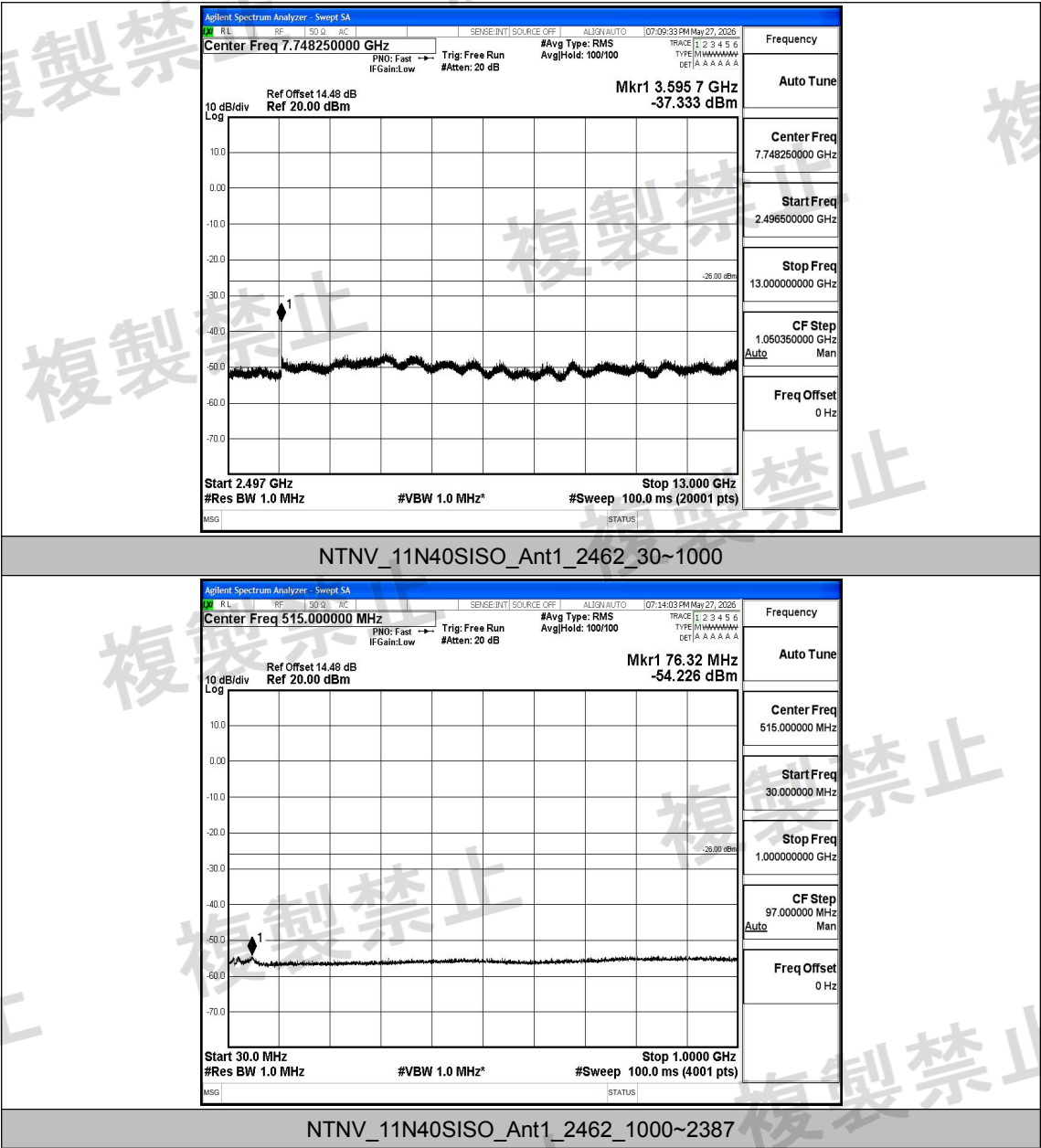


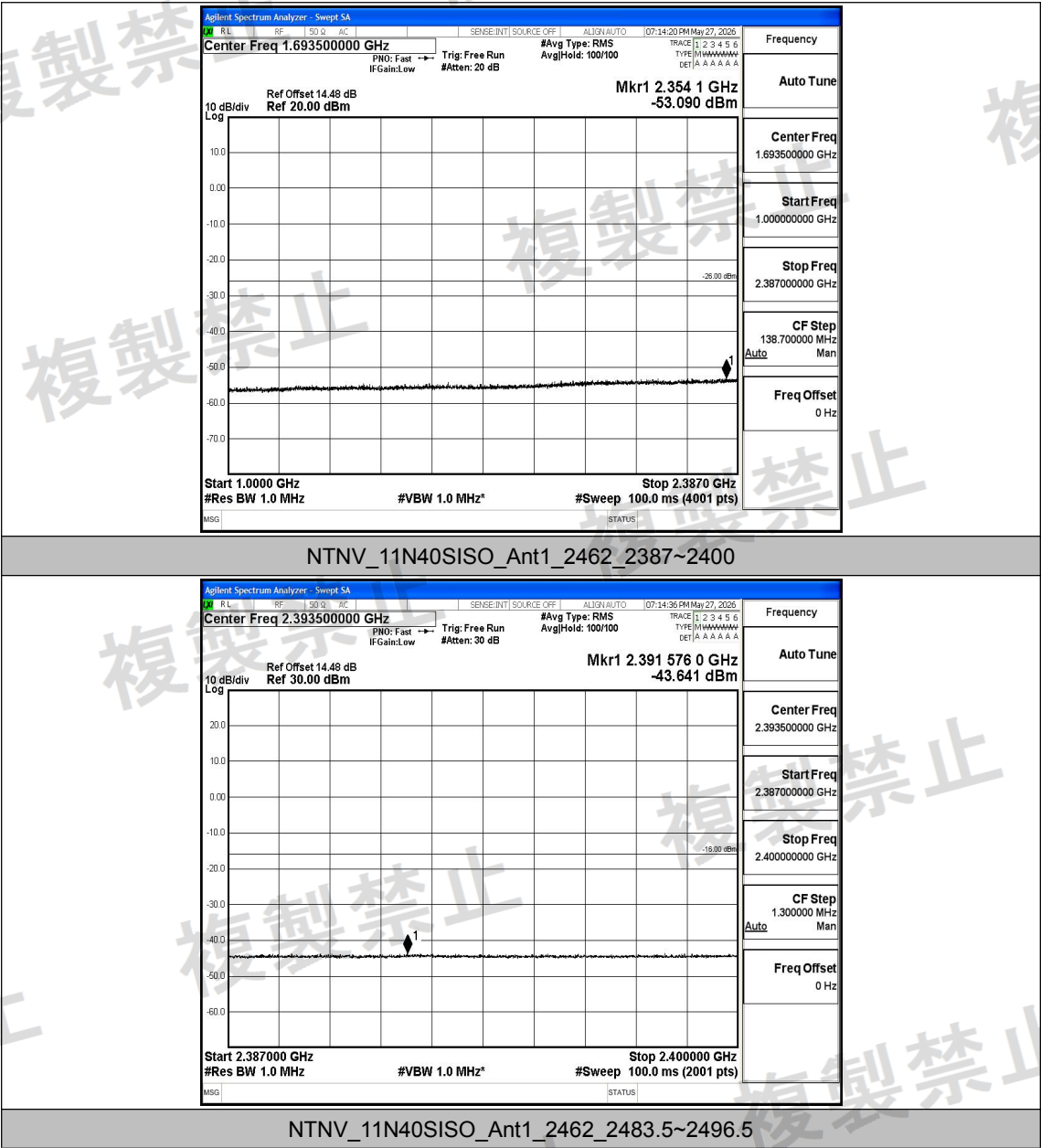


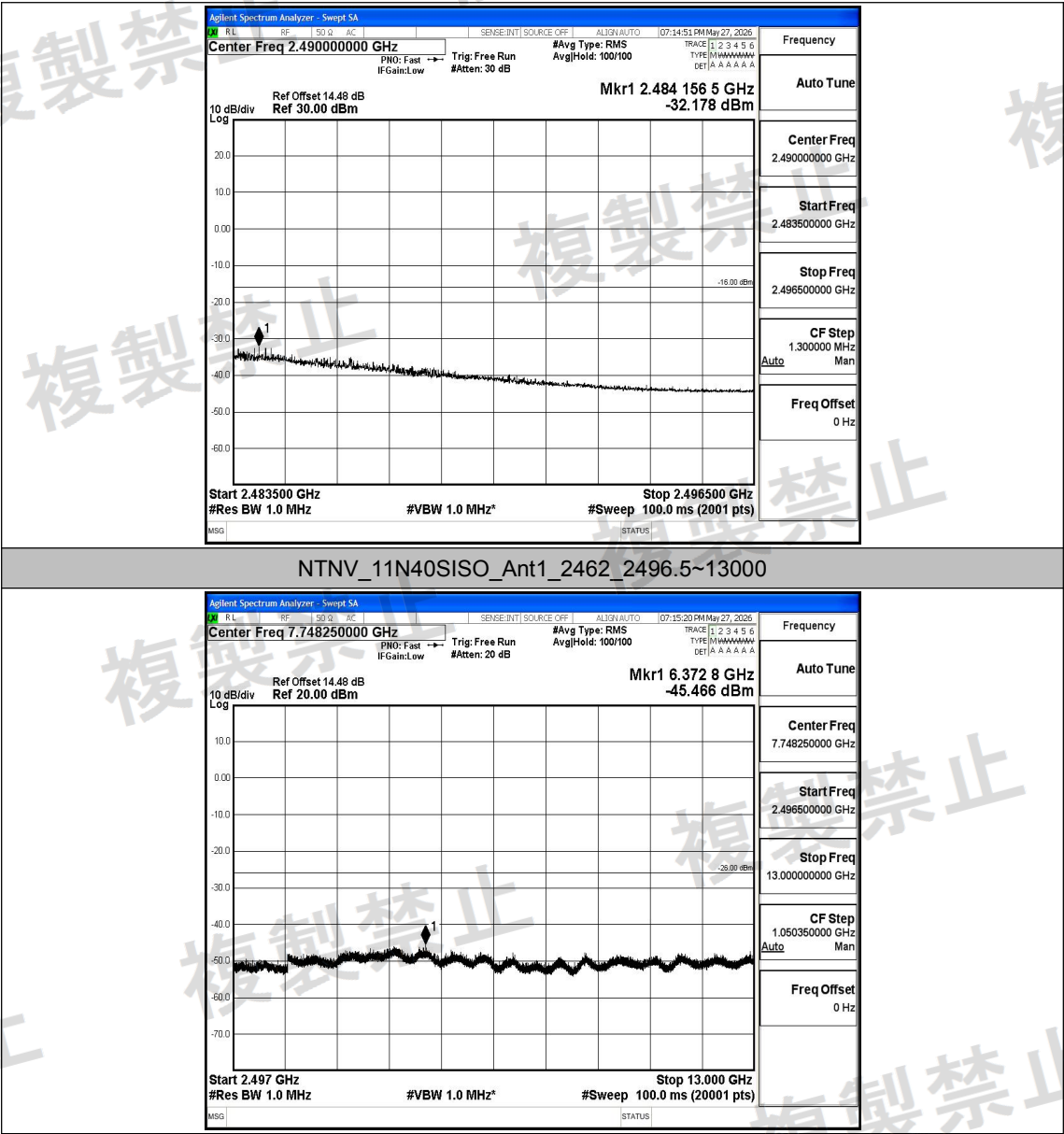












B.6 Spurious Emission of RX

Test Result

TestCondition	TestMode	Antenna	Freq(MHz)	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	11B	Ant1	2412	30~1000	-84.07	≤-54	0.00392	≤4	PASS
				1000~12500	-61.99	≤-47	0.63241	≤20	PASS
			2442	30~1000	-84.27	≤-54	0.00374	≤4	PASS
				1000~12500	-62.24	≤-47	0.59704	≤20	PASS
			2472	30~1000	-84.31	≤-54	0.00371	≤4	PASS
				1000~12500	-61.89	≤-47	0.64714	≤20	PASS
	11G	Ant1	2412	30~1000	-84.11	≤-54	0.00388	≤4	PASS
				1000~12500	-62.44	≤-47	0.57016	≤20	PASS
			2442	30~1000	-84.38	≤-54	0.00365	≤4	PASS
				1000~12500	-66.79	≤-47	0.20941	≤20	PASS
			2472	30~1000	-84.16	≤-54	0.00384	≤4	PASS
				1000~12500	-67.13	≤-47	0.19364	≤20	PASS
	11N20SISO	Ant1	2412	30~1000	-84.09	≤-54	0.00390	≤4	PASS
				1000~12500	-67.17	≤-47	0.19187	≤20	PASS
			2442	30~1000	-84.17	≤-54	0.00383	≤4	PASS
				1000~12500	-66.71	≤-47	0.21330	≤20	PASS
			2472	30~1000	-84.14	≤-54	0.00385	≤4	PASS
				1000~12500	-67.3	≤-47	0.18621	≤20	PASS
	11N40SISO	Ant1	2422	30~1000	-84.13	≤-54	0.00386	≤4	PASS
				1000~12500	-66.85	≤-47	0.20654	≤20	PASS
			2442	30~1000	-84.05	≤-54	0.00394	≤4	PASS
				1000~12500	-67.07	≤-47	0.19634	≤20	PASS
			2462	30~1000	-84.17	≤-54	0.00383	≤4	PASS
				1000~12500	-66.56	≤-47	0.22080	≤20	PASS

Test Graphs

