

Appendix A for 2.4GWIFI Test Data

Product Name: Smart Camera
Test Model: CX1

Environmental Conditions

Temperature:	22.3° C
Relative Humidity:	52.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Suichao Lai
Supervised by:	Yan Chen

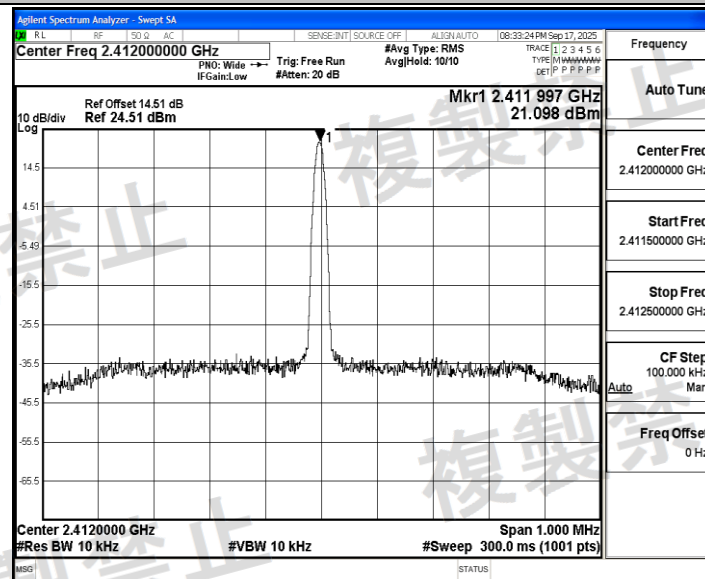
A.1 Frequency Error

Test Result

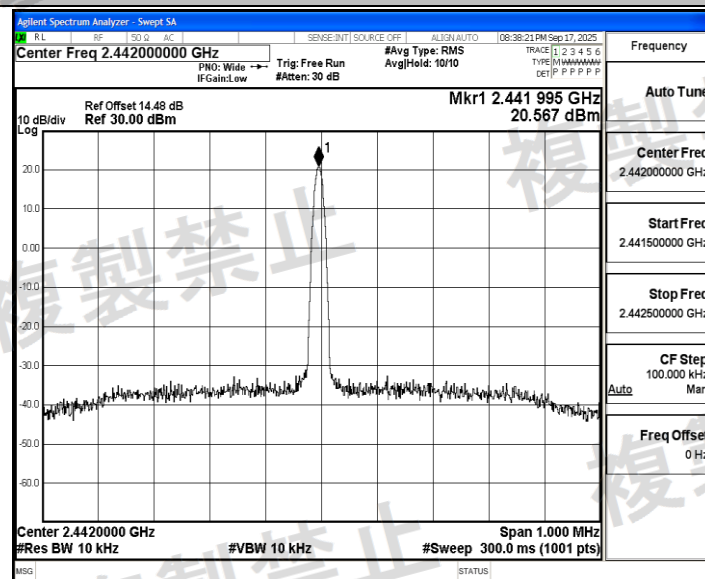
TestCondition	TestMode	Antenna	Frequency[MHz]	Result[ppm]	Limit[ppm]	Verdict
NTNV	Frequency Error	Ant1	2412	-1.24378	±50	PASS
			2442	-2.04750	±50	PASS
			2472	-1.61812	±50	PASS
		Ant1	2422	-1.65153	±50	PASS
			2462	-1.21852	±50	PASS

Test Graphs

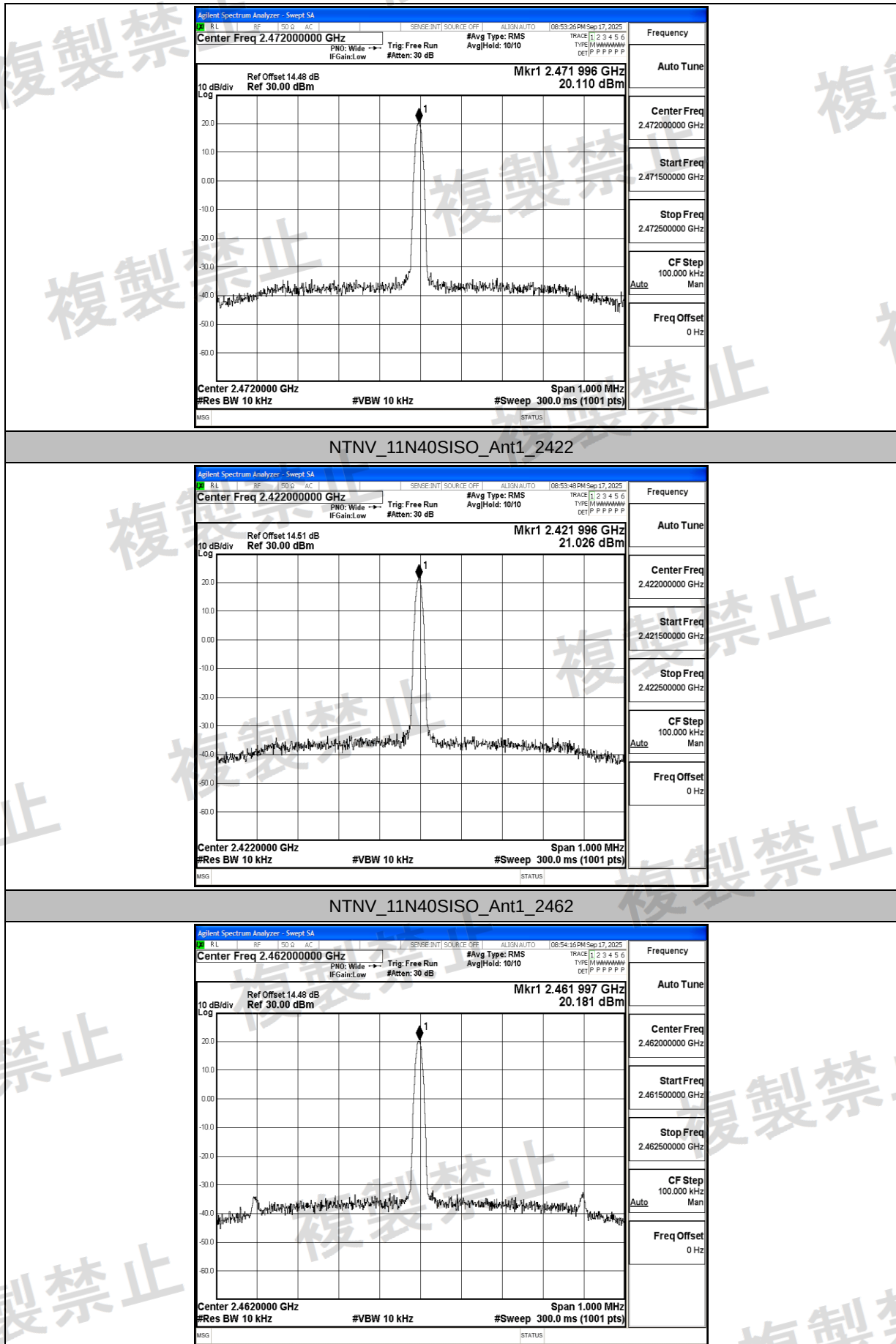
NTNV_11B_Ant1_2412



NTNV_11B_Ant1_2442



NTNV_11B_Ant1_2472



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A.2 Antenna Power

Test Result

Antenna Power							
Test Condition	Test Mode	Antenna	Frequency [MHz]	Measured Power (dBm/MHz)	Result (mW/MHz)	Limit (mW/MHz)	Verdict
NTNV	11B	Ant	2412	5.91	3.8994	≤10	PASS
			2442	5.54	3.5810	≤10	PASS
			2472	4.86	3.0620	≤10	PASS
	11G	Ant	2412	8.42	6.9502	≤10	PASS
			2442	8.10	6.4565	≤10	PASS
			2472	7.95	6.2373	≤10	PASS
	11N20SISO	Ant	2412	8.50	7.0795	≤10	PASS
			2442	8.26	6.6988	≤10	PASS
			2472	7.89	6.1518	≤10	PASS
	11N40SISO	Ant	2422	4.03	2.5293	≤5	PASS
			2442	4.34	2.7164	≤5	PASS
			2462	4.31	2.6977	≤5	PASS

Tolerance								
Test Condition	Test Mode	Antenna	Frequency [MHz]	Power (mW/MHz)	Rated Power (mW/MHz)	Result (%)	Limit (%)	Verdict
NTNV	11B	Ant	2412	3.8994	4	-2.52	+20	PASS
			2442	3.5810	4	-10.48	+20	PASS
			2472	3.0620	4	-23.45	+20	PASS
	11G	Ant	2412	6.9502	7	-0.71	+20	PASS
			2442	6.4565	7	-7.76	+20	PASS
			2472	6.2373	7	-10.90	+20	PASS
	11N20SISO	Ant	2412	7.0795	7	1.14	+20	PASS
			2442	6.6988	7	-4.30	+20	PASS
			2472	6.1518	7	-12.12	+20	PASS
	11N40SISO	Ant	2422	2.5293	3	-15.69	+20	PASS
			2442	2.7164	3	-9.45	+20	PASS
			2462	2.6977	3	-10.08	+20	PASS

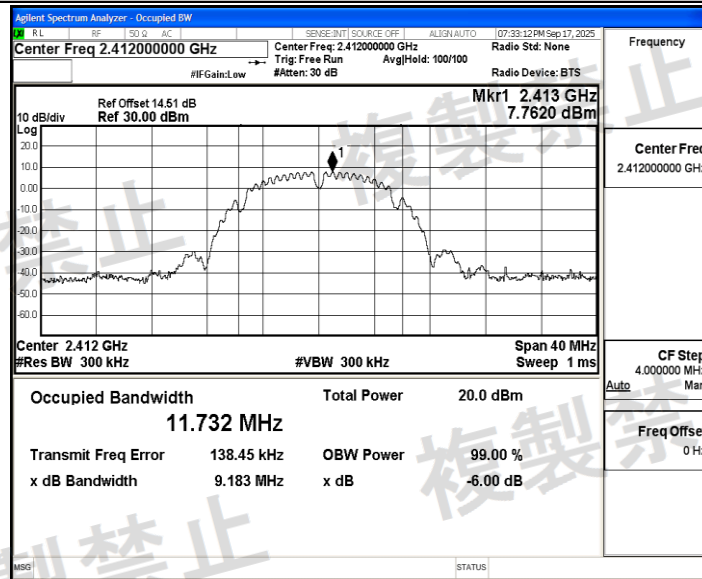
A.3 Occupied Bandwidth

Test Result

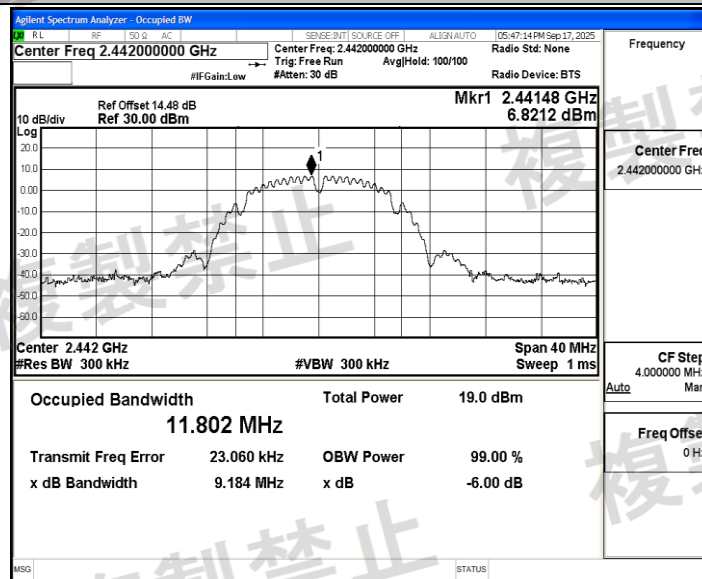
TestCondition	TestMode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	11B	Ant1	2412	11.732	≤26	PASS
			2442	11.802	≤26	PASS
			2472	11.755	≤26	PASS
	11G	Ant1	2412	16.580	≤26	PASS
			2442	16.609	≤26	PASS
			2472	16.647	≤26	PASS
	11N20SISO	Ant1	2412	17.600	≤26	PASS
			2442	17.659	≤26	PASS
			2472	17.653	≤26	PASS
	11N40SISO	Ant1	2422	35.995	26-40	PASS
			2442	35.993	26-40	PASS
			2462	36.160	26-40	PASS

Test Graphs

NTNV_11B_Ant1_2412



NTNV_11B_Ant1_2442



NTNV_11B_Ant1_2472

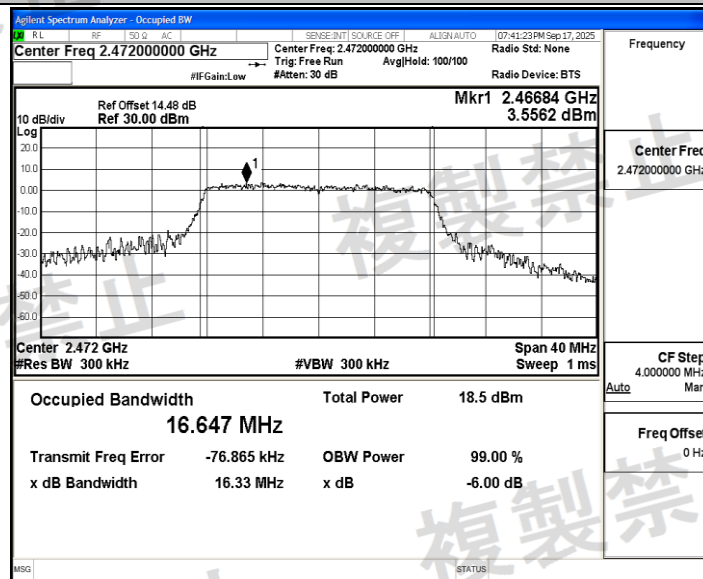


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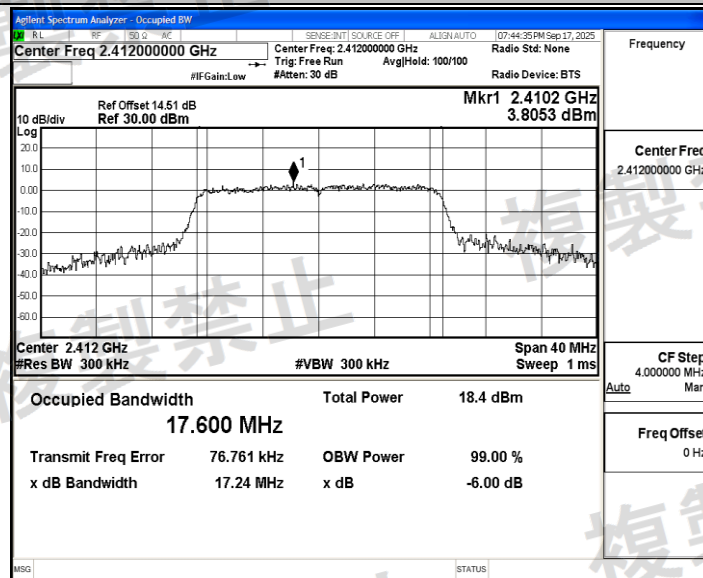
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NTNV_11G_Ant1_2472



NTNV_11N20SISO_Ant1_2412



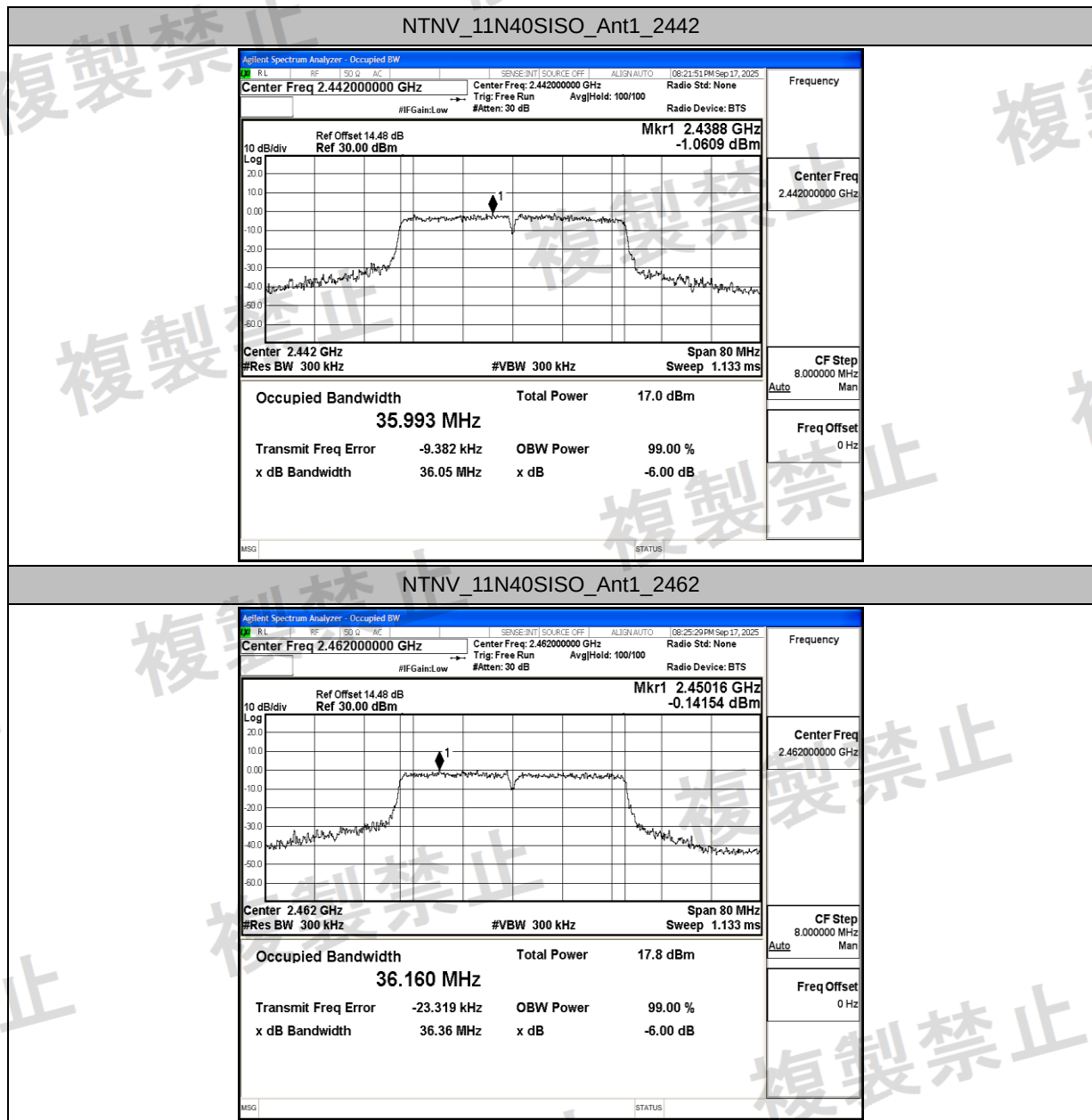
NTNV_11N20SISO_Ant1_2442



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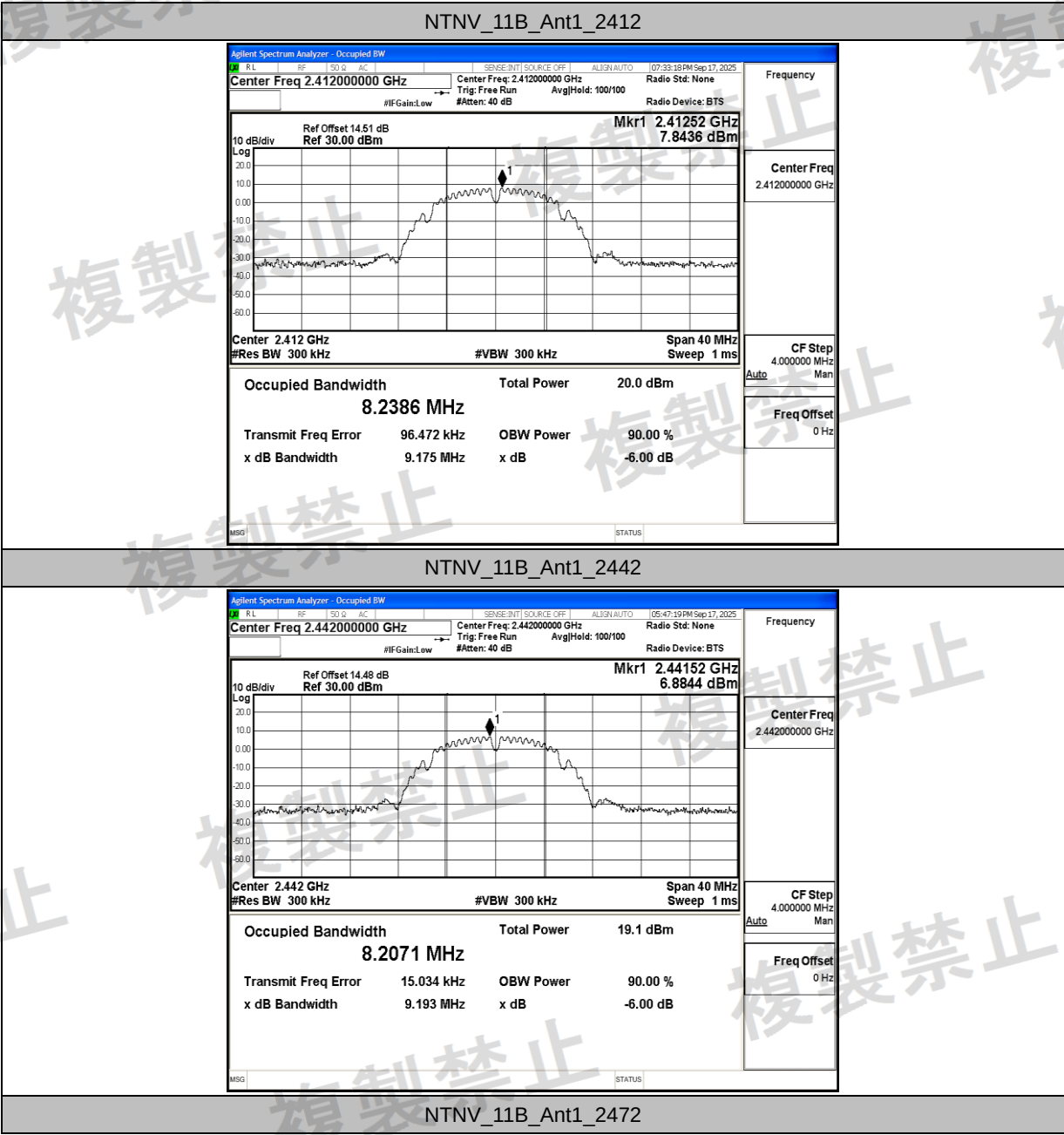


A.4 Spread Bandwidth

Test Result

TestCondition	TestMode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	11B	Ant1	2412	8.239	---	PASS
			2442	8.207	---	PASS
			2472	8.318	---	PASS
	11G	Ant1	2412	14.545	---	PASS
			2442	14.652	---	PASS
			2472	14.539	---	PASS
	11N20SISO	Ant1	2412	15.319	---	PASS
			2442	15.444	---	PASS
			2472	15.282	---	PASS
	11N40SISO	Ant1	2422	32.120	---	PASS
			2442	31.876	---	PASS
			2462	32.510	---	PASS

Test Graphs



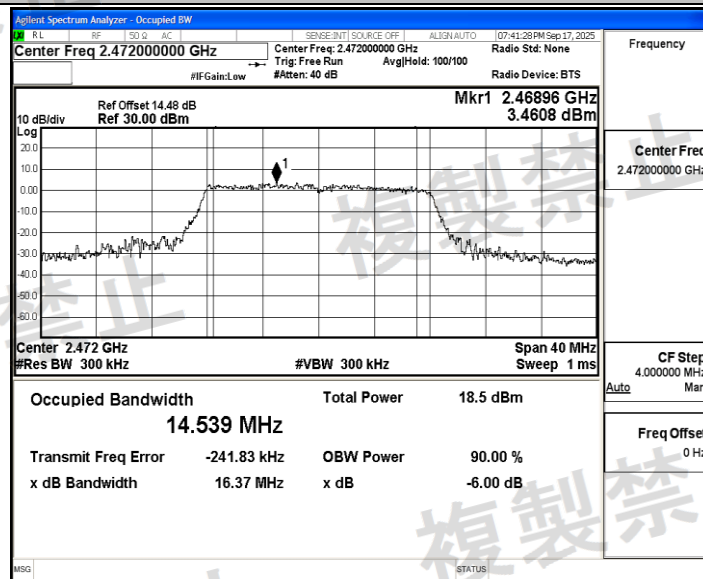


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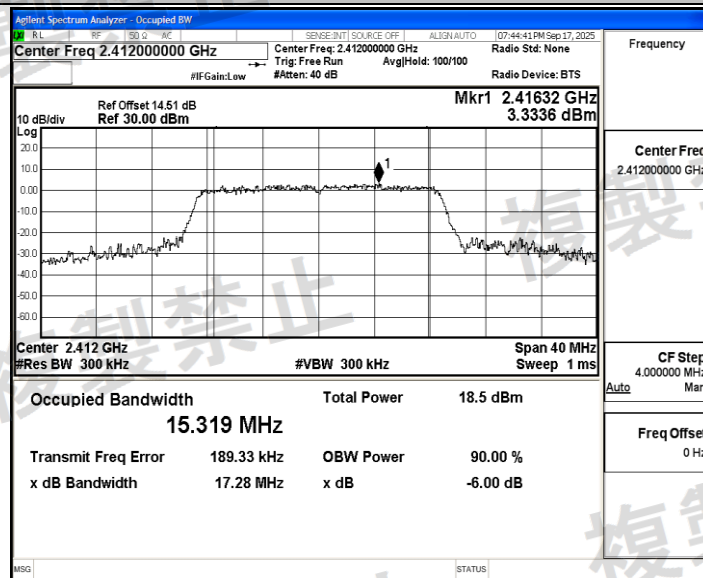
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NTNV_11G_Ant1_2472



NTNV_11N20SISO_Ant1_2412



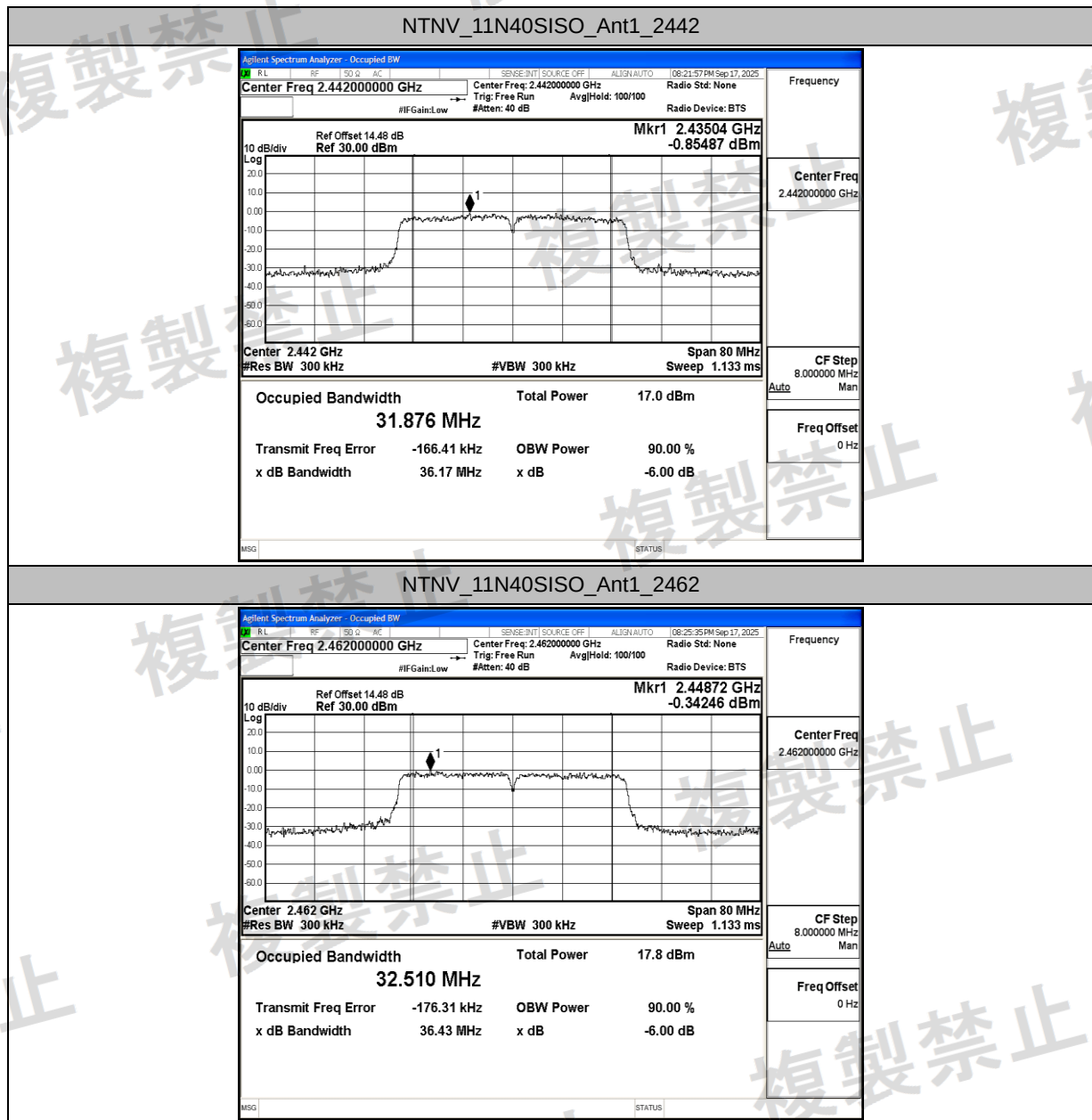
NTNV_11N20SISO_Ant1_2442



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A.5 Spurious Emission of TX

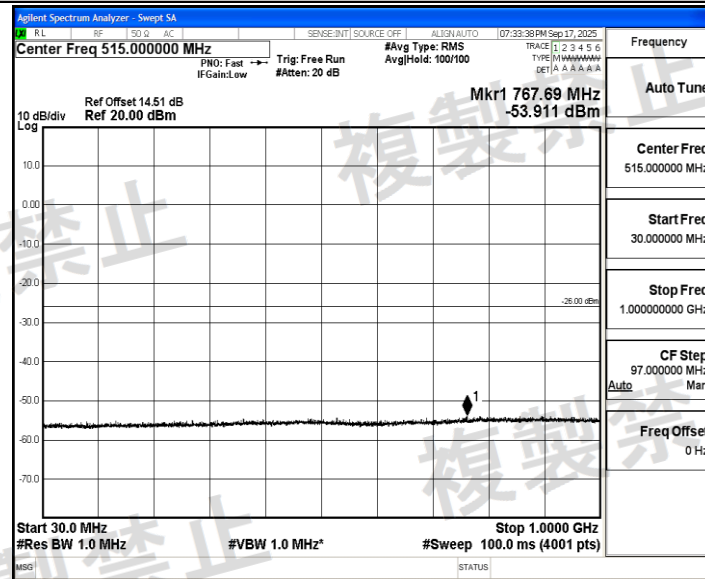
Test Result

TestCondition	TestMode	Antenna	Frequency[MHz]	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [μW]	Limit [μW]	Verdict
NTNV	11B	Ant1	2412	30~1000	-53.91	≤-26	0.00406	≤2.5	PASS
				1000~2387	-52.32	≤-26	0.00586	≤2.5	PASS
				2387~2400	-41.02	≤-16	0.07907	≤25	PASS
				2483.5~2496.5	-43.01	≤-16	0.05000	≤25	PASS
				2496.5~13000	-45.47	≤-26	0.02838	≤2.5	PASS
			2442	30~1000	-53.34	≤-26	0.00463	≤2.5	PASS
				1000~2387	-52.76	≤-26	0.00530	≤2.5	PASS
				2387~2400	-42.91	≤-16	0.05117	≤25	PASS
				2483.5~2496.5	-43.15	≤-16	0.04842	≤25	PASS
				2496.5~13000	-45.54	≤-26	0.02793	≤2.5	PASS
			2472	30~1000	-44.61	≤-26	0.03459	≤2.5	PASS
				1000~2387	-52.80	≤-26	0.00525	≤2.5	PASS
				2387~2400	-43.18	≤-16	0.04808	≤25	PASS
				2483.5~2496.5	-42.13	≤-16	0.06124	≤25	PASS
				2496.5~13000	-43.12	≤-26	0.04875	≤2.5	PASS
	11G	Ant1	2412	30~1000	-53.71	≤-26	0.00426	≤2.5	PASS
				1000~2387	-50.11	≤-26	0.00975	≤2.5	PASS
				2387~2400	-28.75	≤-16	1.33352	≤25	PASS
				2483.5~2496.5	-43.20	≤-16	0.04786	≤25	PASS
				2496.5~13000	-45.41	≤-26	0.02877	≤2.5	PASS
			2442	30~1000	-53.82	≤-26	0.00415	≤2.5	PASS
				1000~2387	-52.75	≤-26	0.00531	≤2.5	PASS
				2387~2400	-43.23	≤-16	0.04753	≤25	PASS
				2483.5~2496.5	-43.24	≤-16	0.04742	≤25	PASS
				2496.5~13000	-45.39	≤-26	0.02891	≤2.5	PASS
			2472	30~1000	-53.78	≤-26	0.00419	≤2.5	PASS
				1000~2387	-52.37	≤-26	0.00579	≤2.5	PASS
				2387~2400	-43.28	≤-16	0.04699	≤25	PASS
				2483.5~2496.5	-29.11	≤-16	1.22744	≤25	PASS
				2496.5~13000	-45.66	≤-26	0.02716	≤2.5	PASS
	11N20SISO	Ant1	2412	30~1000	-53.56	≤-26	0.00441	≤2.5	PASS
				1000~2387	-48.85	≤-26	0.01303	≤2.5	PASS
				2387~2400	-27.49	≤-16	1.78238	≤25	PASS
				2483.5~2496.5	-43.22	≤-16	0.04764	≤25	PASS
				2496.5~13000	-45.25	≤-26	0.02985	≤2.5	PASS
			2442	30~1000	-53.89	≤-26	0.00408	≤2.5	PASS

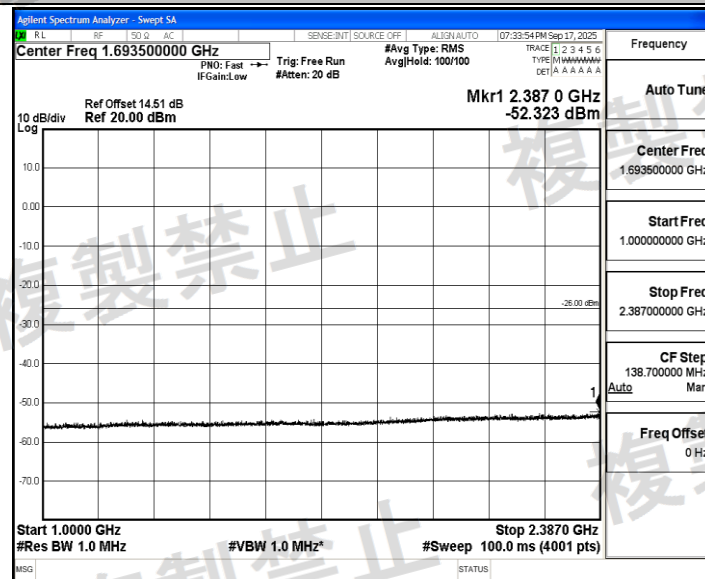
11N40SISO	Ant1		1000~2387	-45.84	≤-26	0.02606	≤2.5	PASS
			2387~2400	-43.31	≤-16	0.04667	≤25	PASS
			2483.5~2496.5	-43.24	≤-16	0.04742	≤25	PASS
			2496.5~13000	-45.72	≤-26	0.02679	≤2.5	PASS
		2472	30~1000	-53.86	≤-26	0.00411	≤2.5	PASS
			1000~2387	-52.42	≤-26	0.00573	≤2.5	PASS
			2387~2400	-43.31	≤-16	0.04667	≤25	PASS
			2483.5~2496.5	-28.95	≤-16	1.27350	≤25	PASS
			2496.5~13000	-45.71	≤-26	0.02685	≤2.5	PASS
		2422	30~1000	-52.98	≤-26	0.00504	≤2.5	PASS
			1000~2387	-44.14	≤-26	0.03855	≤2.5	PASS
			2387~2400	-32.51	≤-16	0.56105	≤25	PASS
			2483.5~2496.5	-43.22	≤-16	0.04764	≤25	PASS
			2496.5~13000	-45.26	≤-26	0.02979	≤2.5	PASS
		2442	30~1000	-53.13	≤-26	0.00486	≤2.5	PASS
			1000~2387	-52.82	≤-26	0.00522	≤2.5	PASS
			2387~2400	-42.81	≤-16	0.05236	≤25	PASS
			2483.5~2496.5	-42.97	≤-16	0.05047	≤25	PASS
			2496.5~13000	-44.87	≤-26	0.03258	≤2.5	PASS
		2462	30~1000	-47.15	≤-26	0.01928	≤2.5	PASS
			1000~2387	-52.54	≤-26	0.00557	≤2.5	PASS
			2387~2400	-43.17	≤-16	0.04819	≤25	PASS
			2483.5~2496.5	-32.16	≤-16	0.60814	≤25	PASS
			2496.5~13000	-45.38	≤-26	0.02897	≤2.5	PASS

Test Graphs

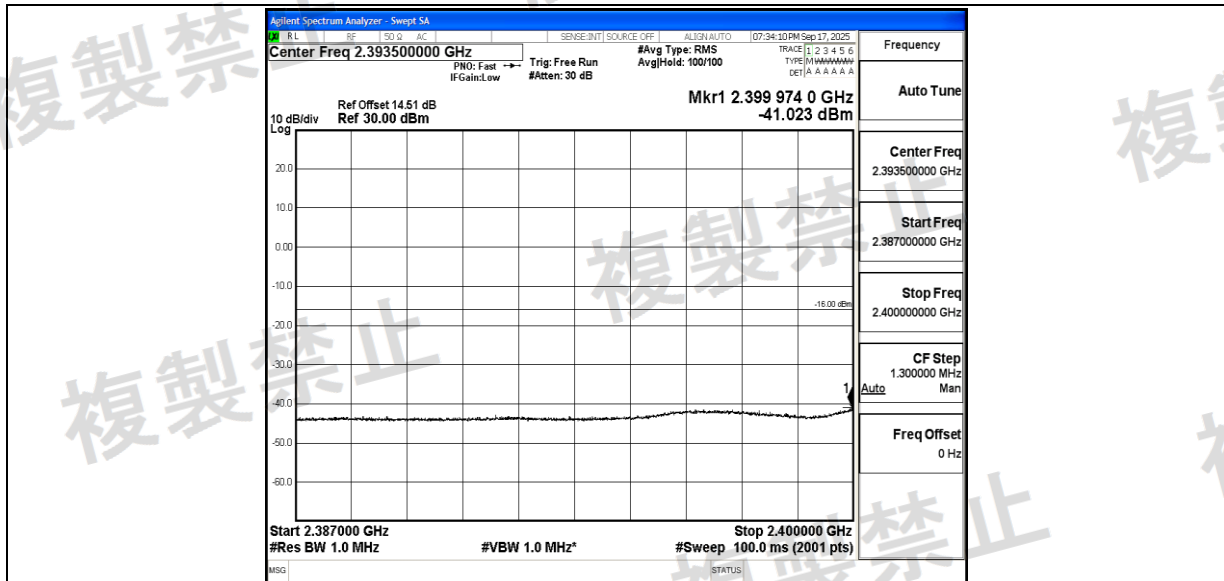
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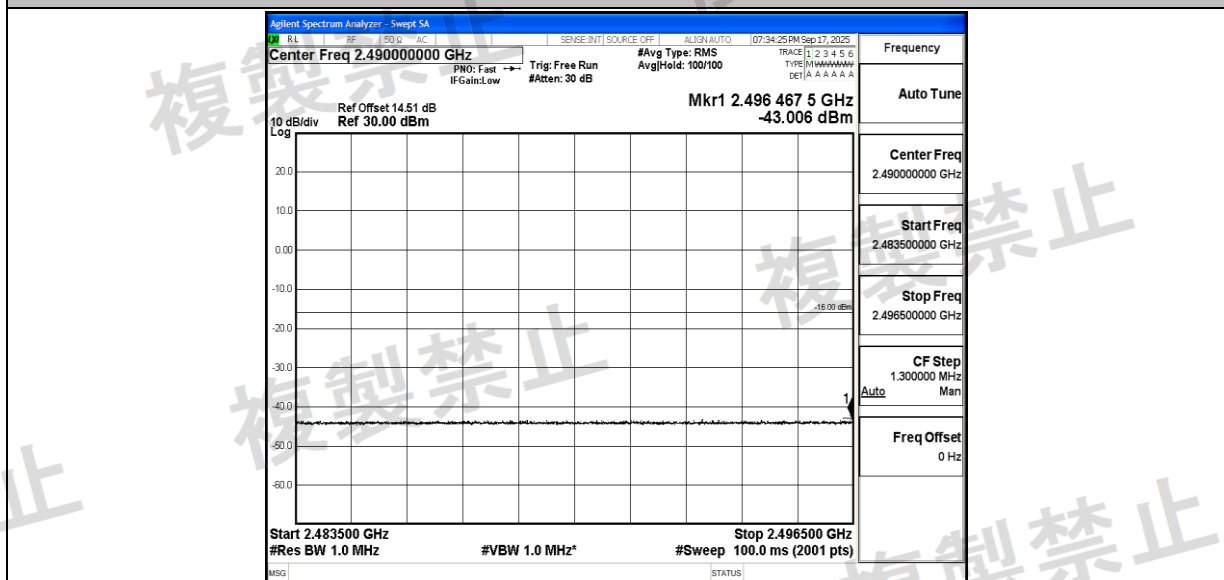
NTNV_11B_Ant1_2412_1000~2387



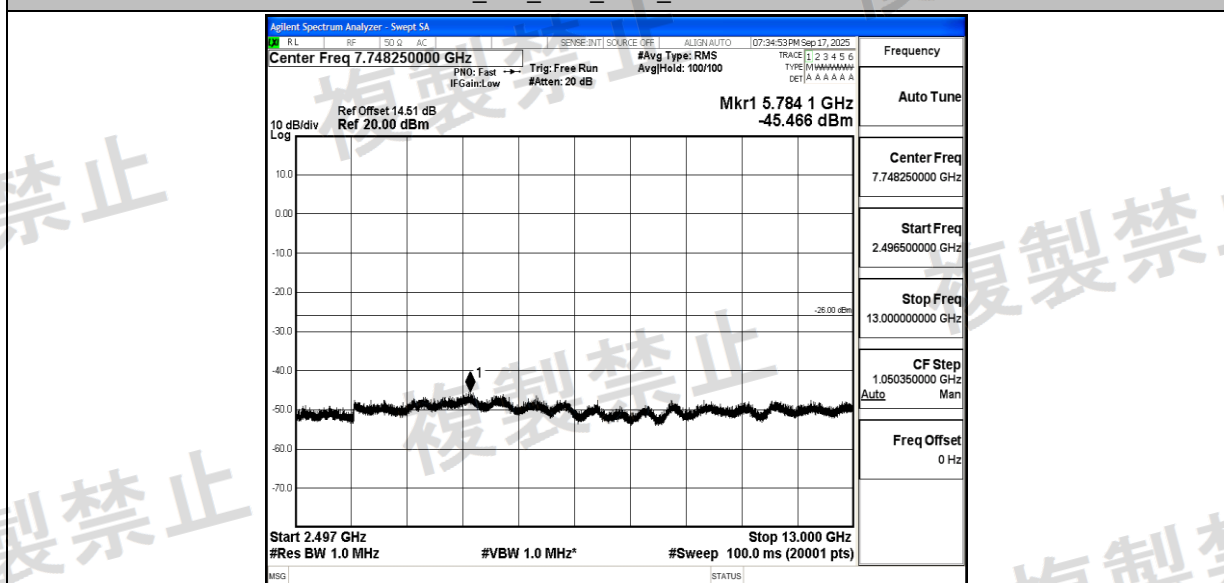
NTNV_11B_Ant1_2412_2387~2400



NTNV_11B_Ant1_2412_2483.5~2496.5



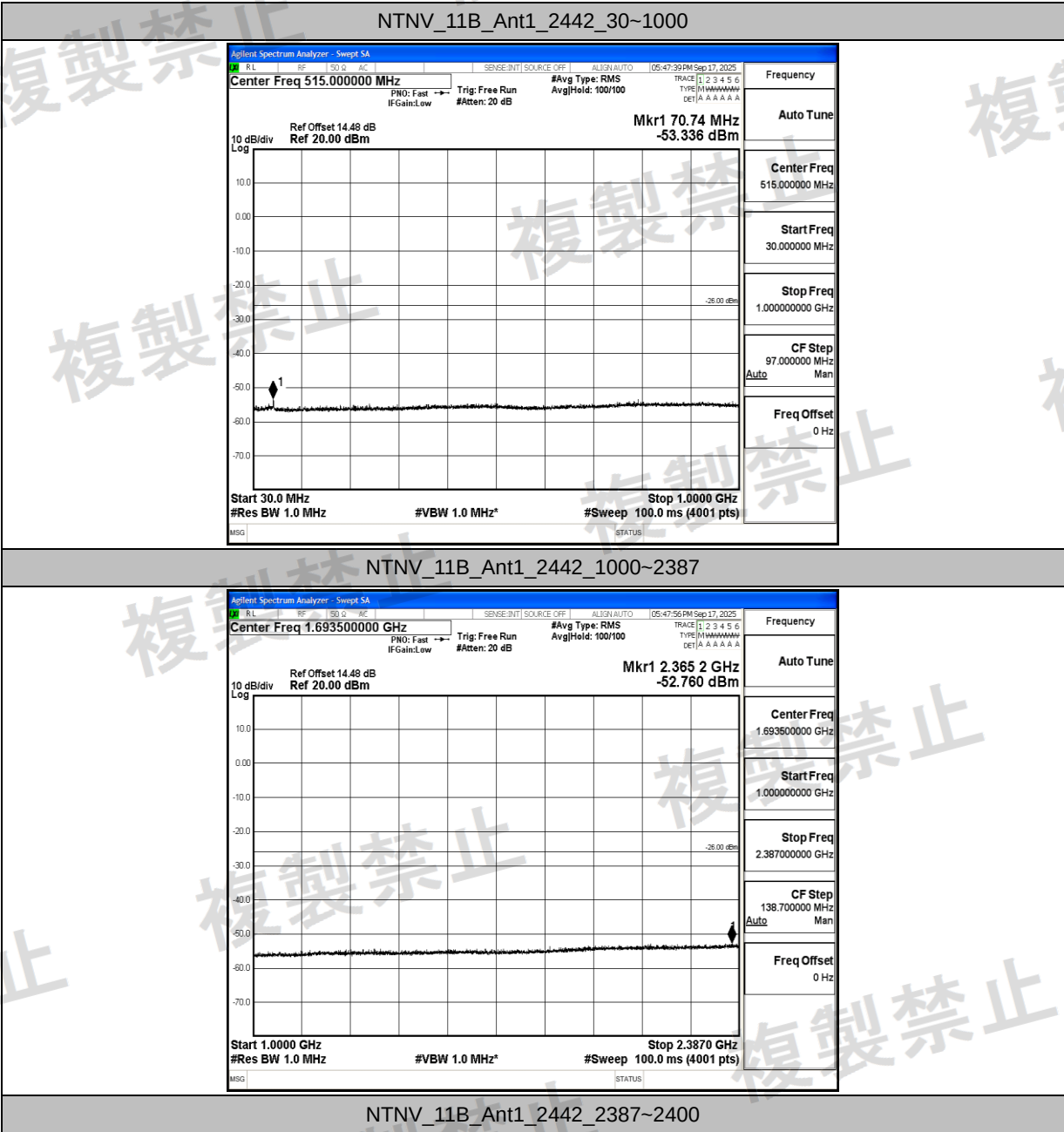
NTNV_11B_Ant1_2412_2496.5~13000

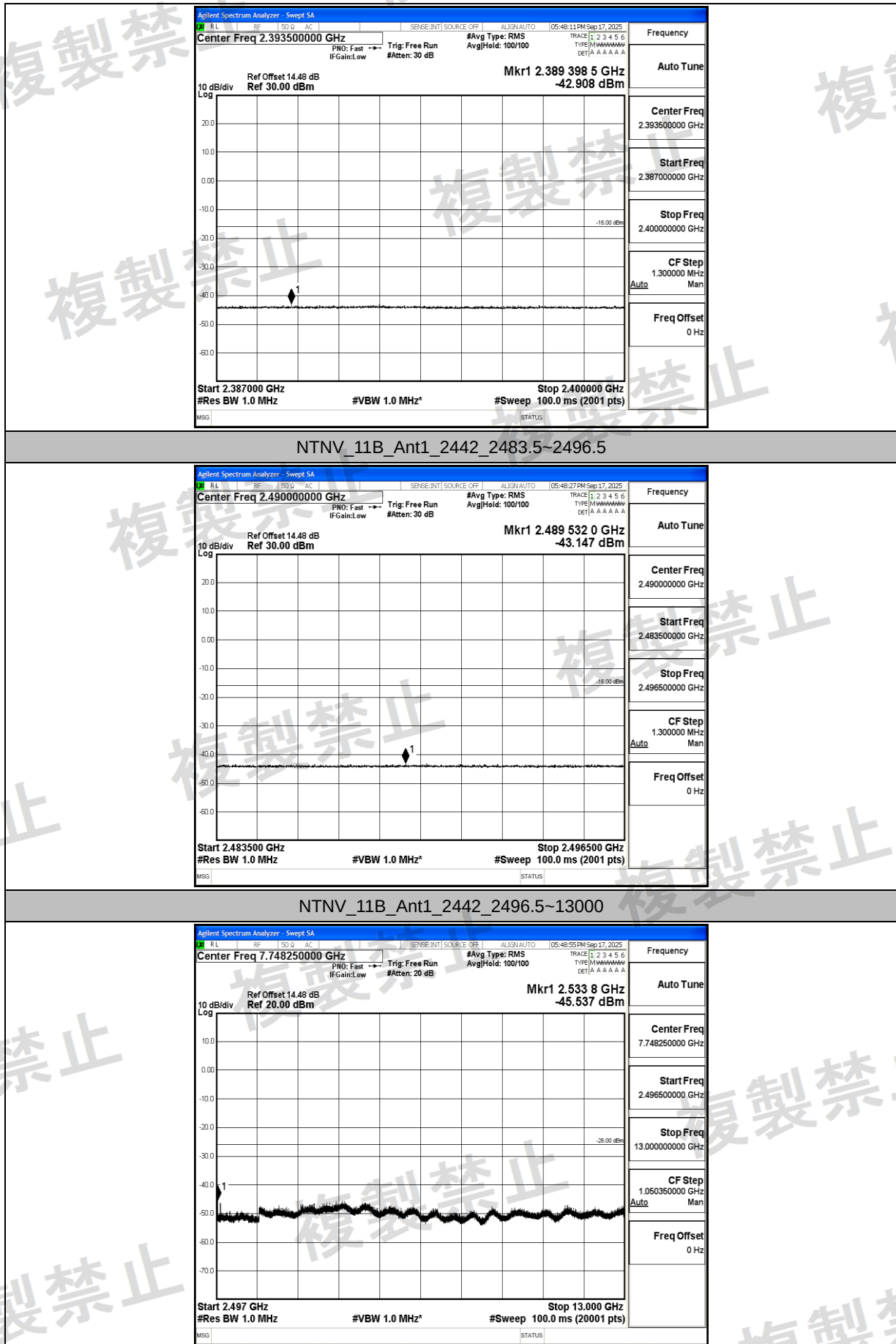


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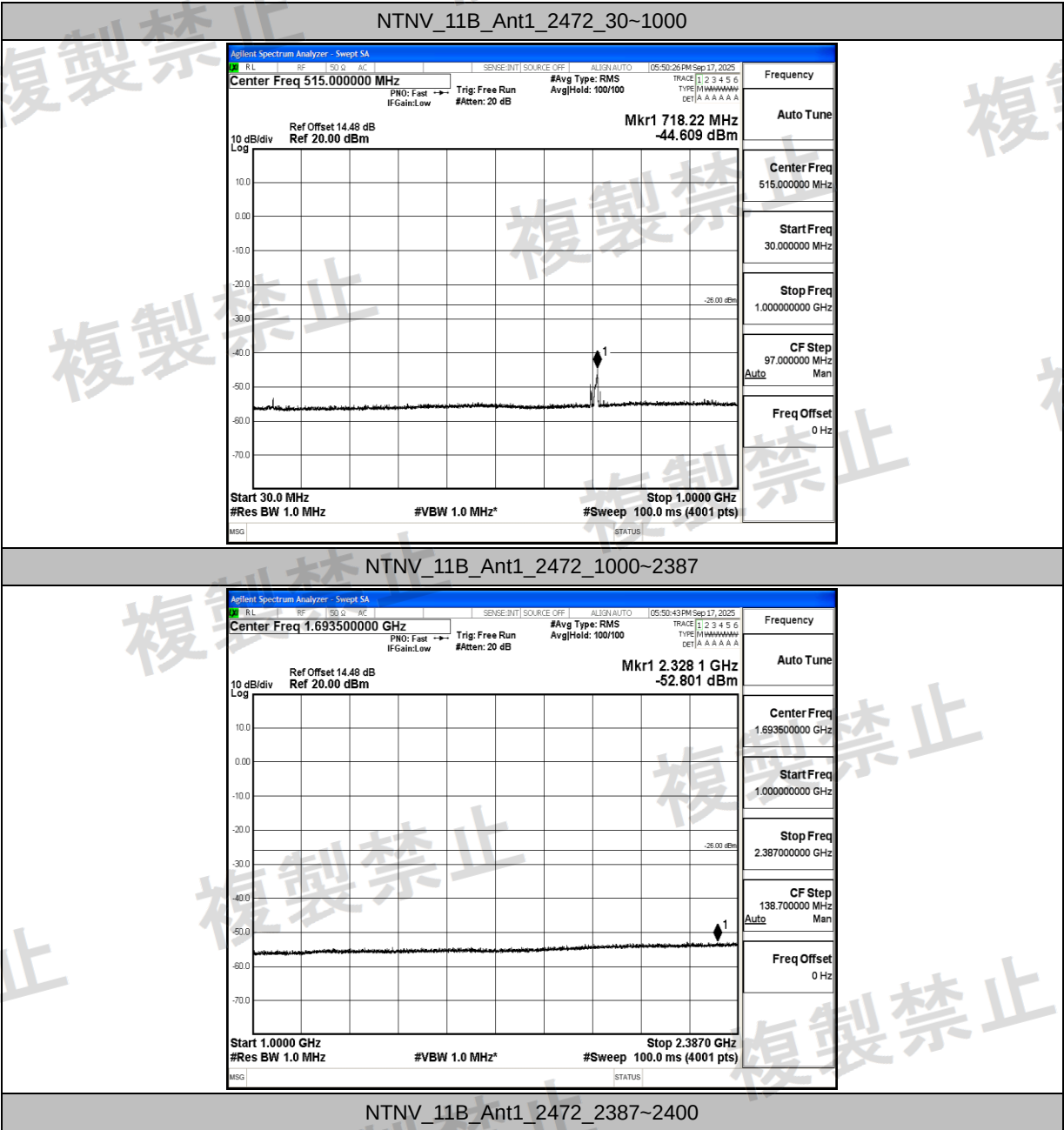


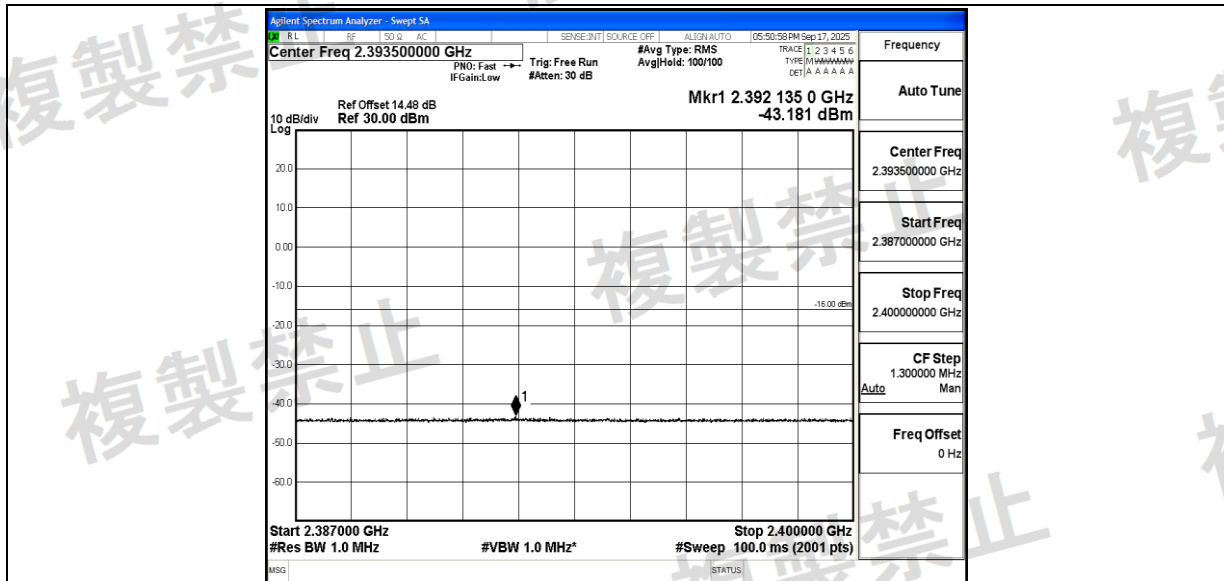


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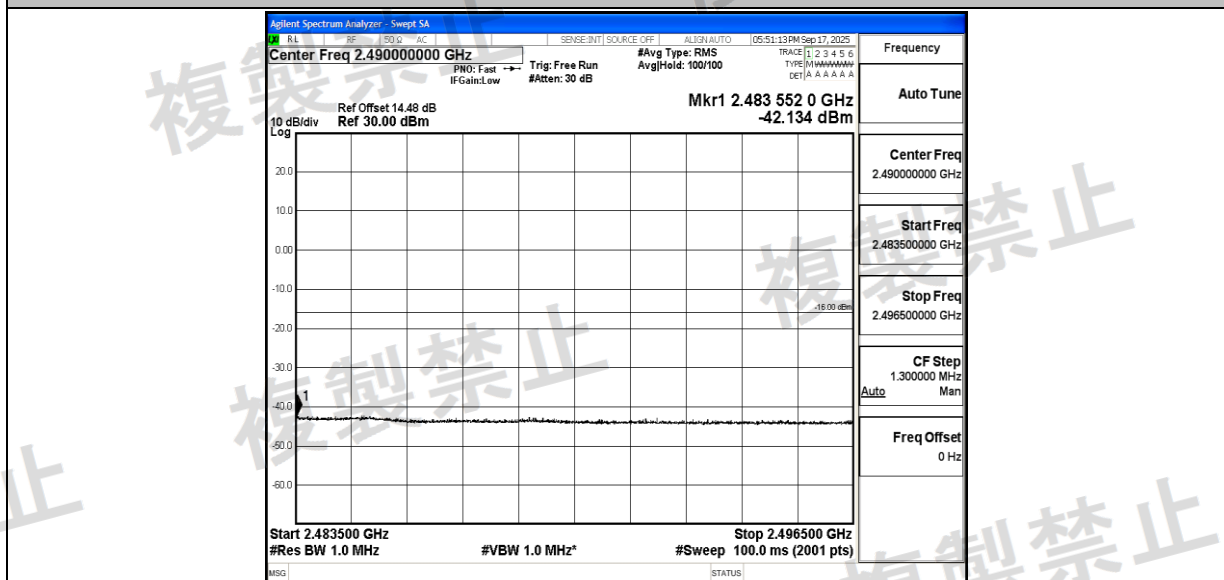
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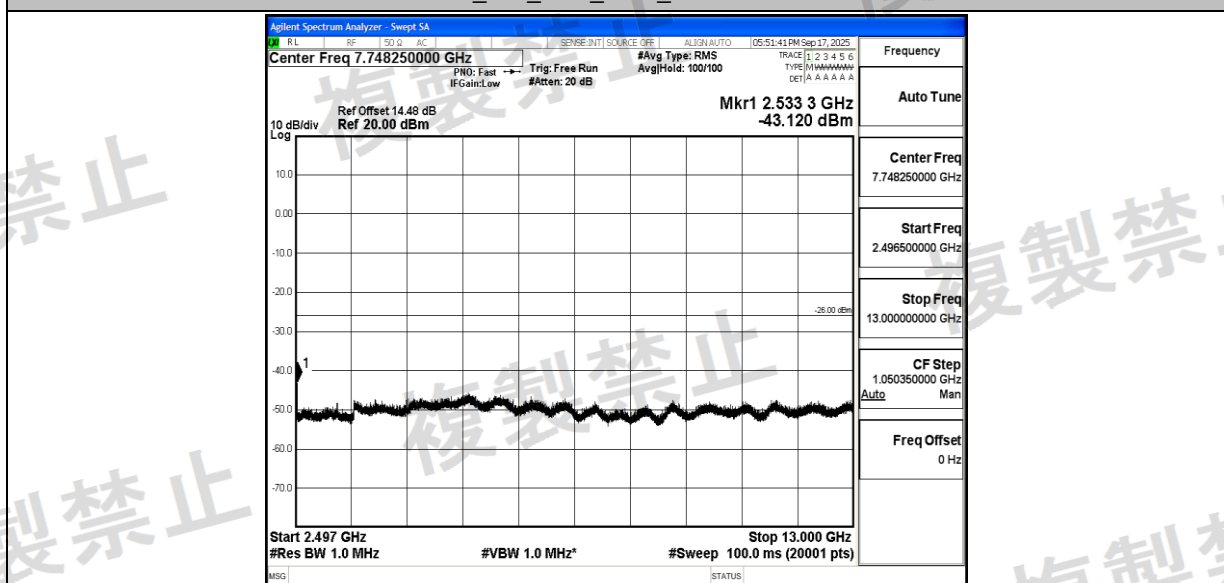




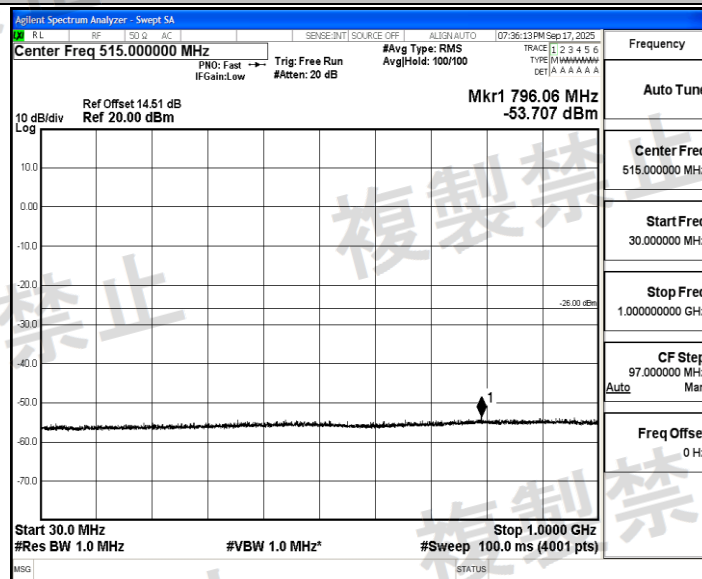
NTNV_11B_Ant1_2472_2483.5~2496.5



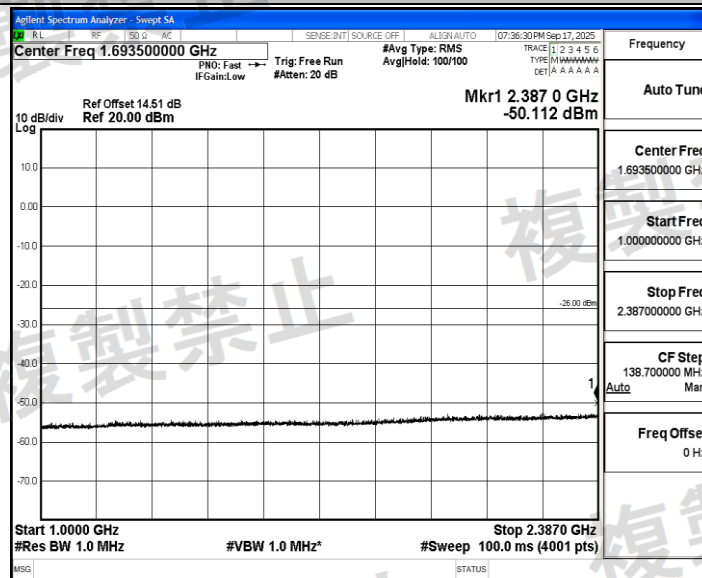
NTNV_11B_Ant1_2472_2496.5~13000



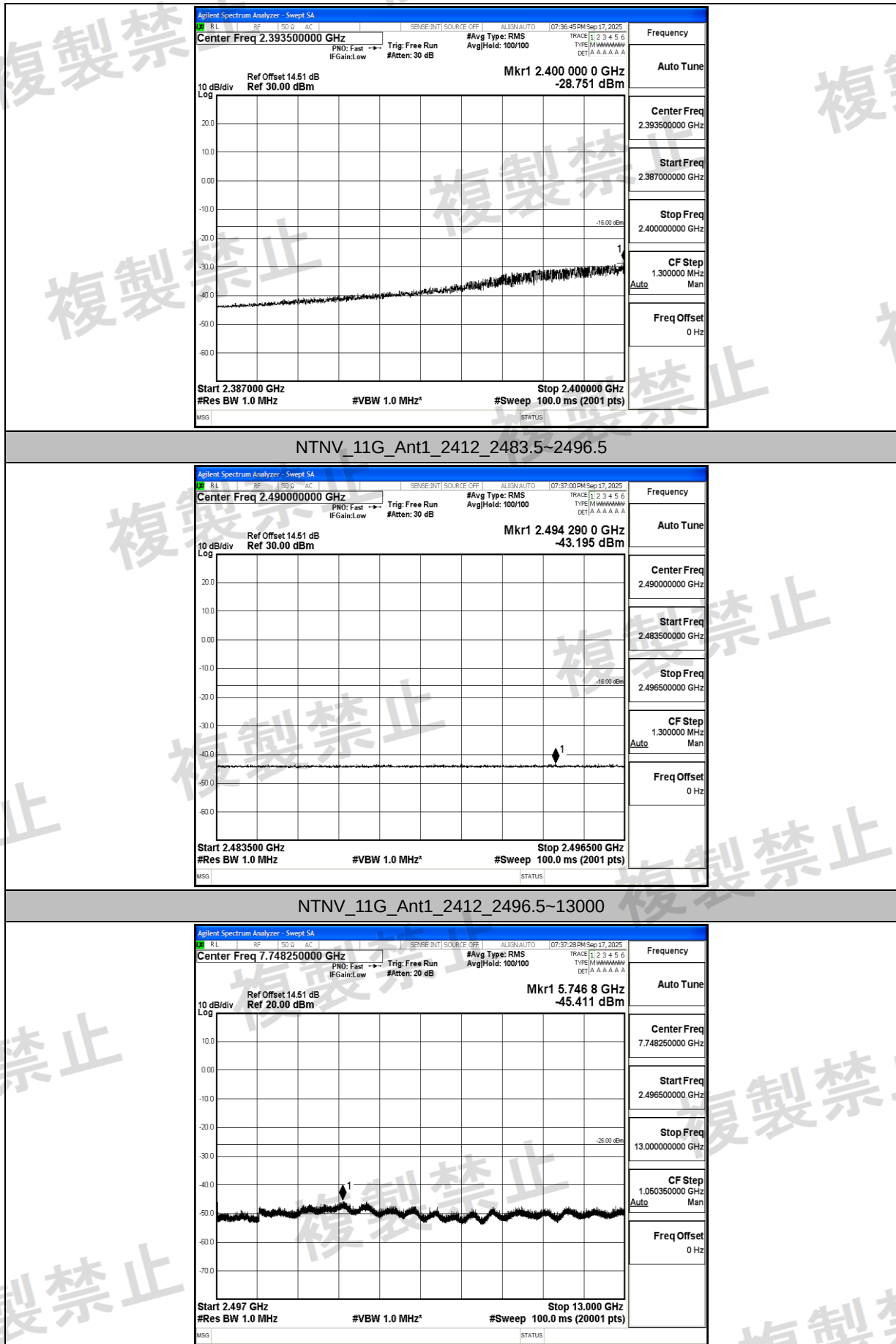
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NTNV_11G_Ant1_2412_1000~2387



NTNV_11G_Ant1_2412_2387~2400

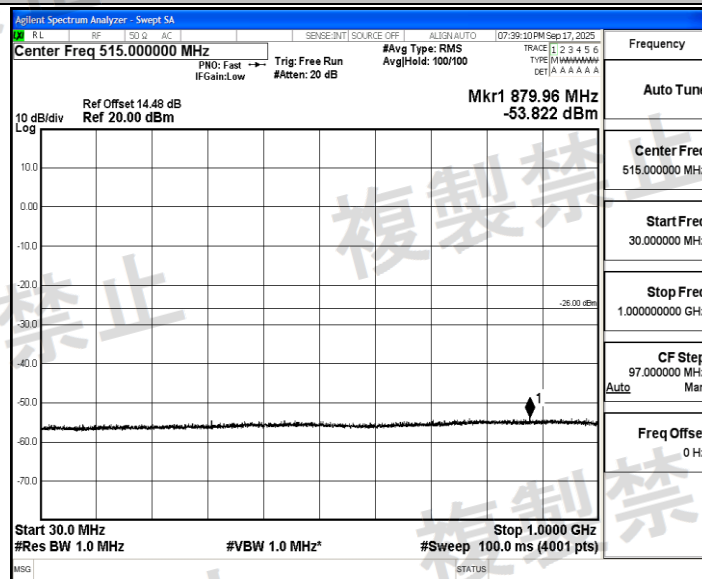


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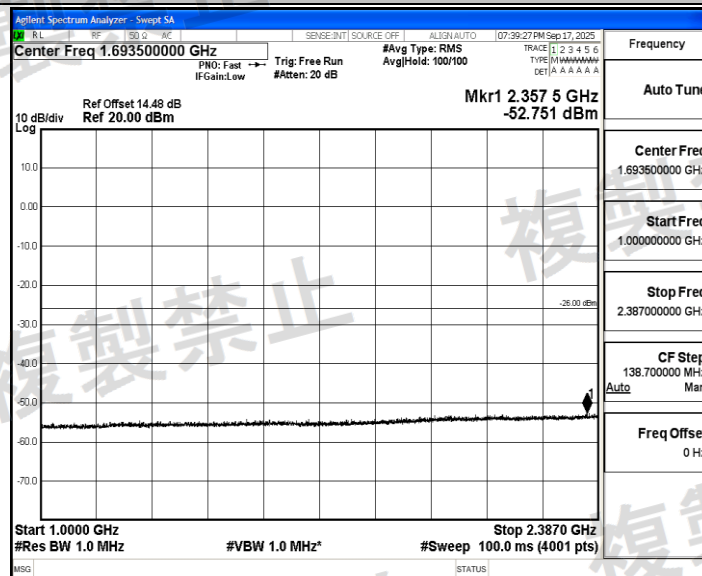
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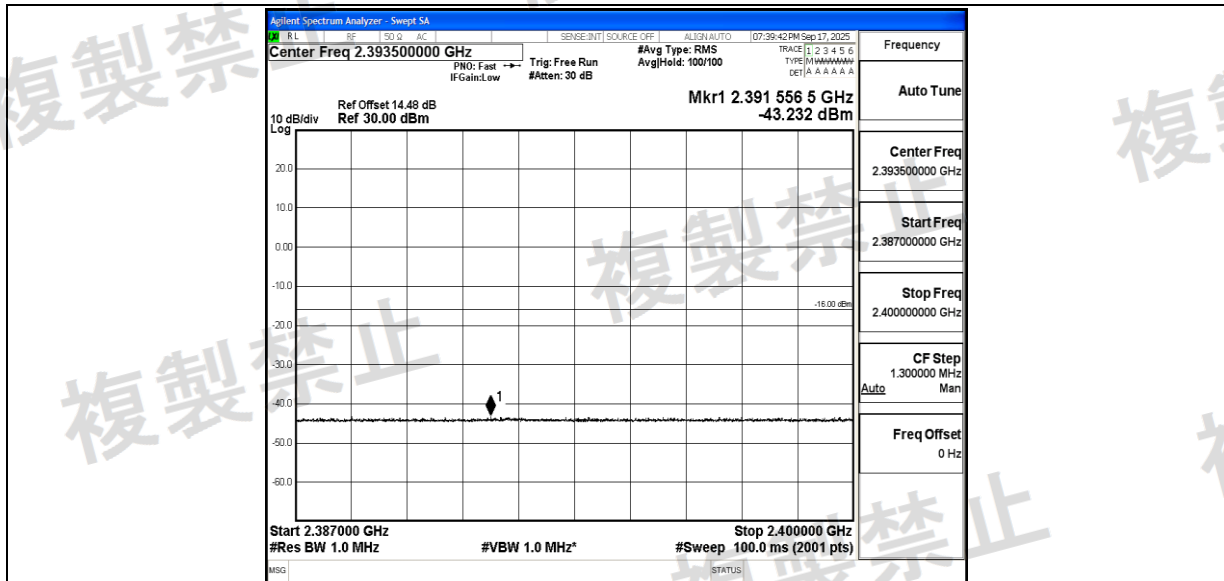
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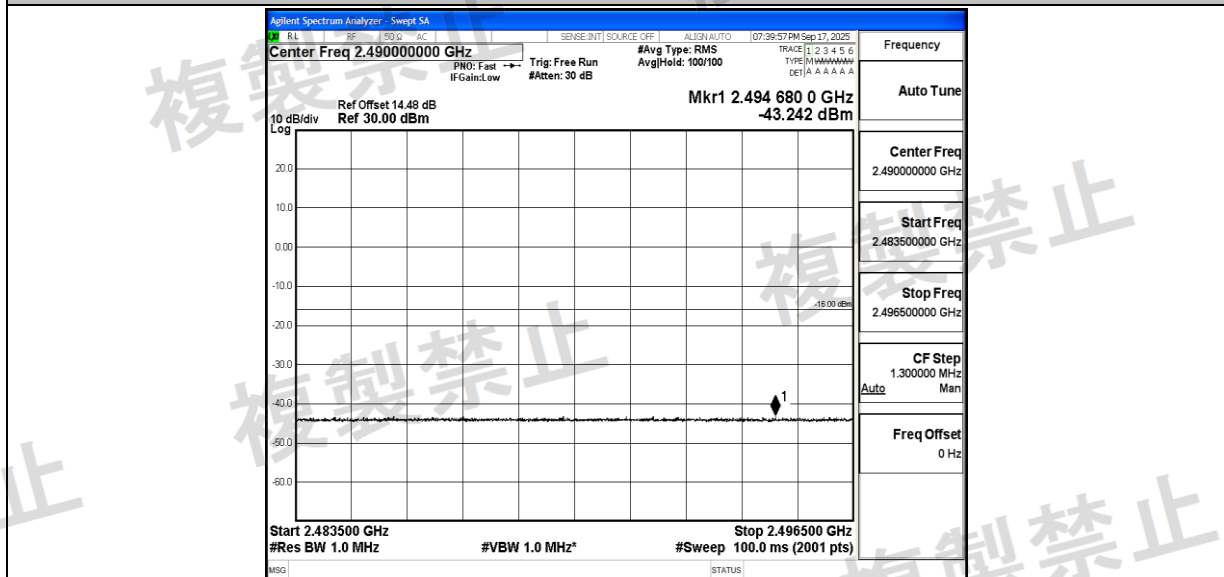
NTNV_11G_Ant1_2442_1000~2387



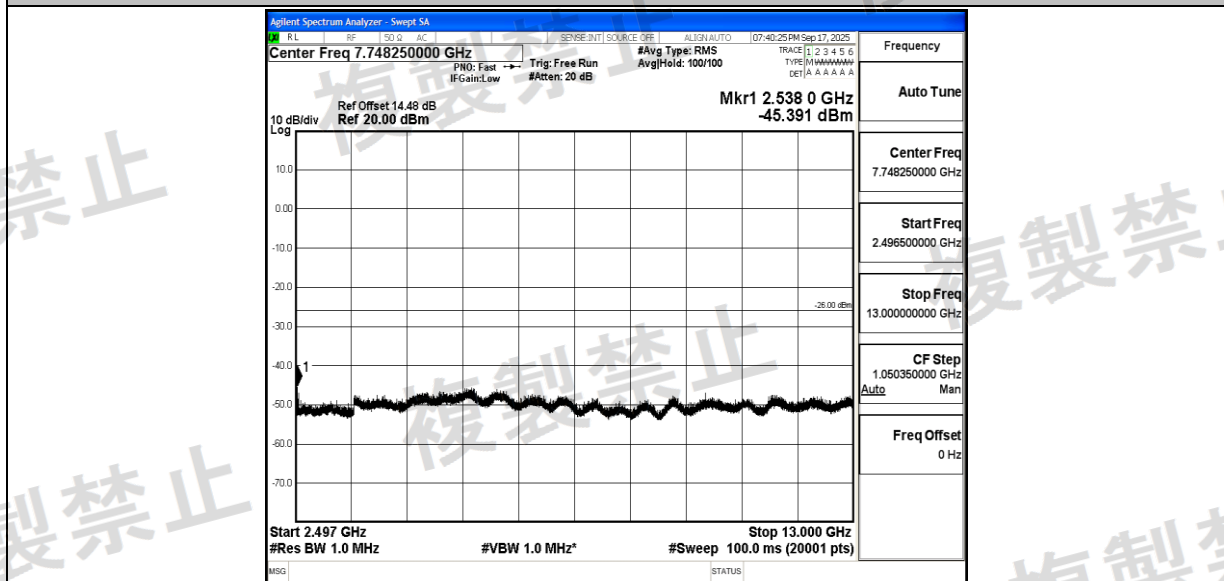
NTNV_11G_Ant1_2442_2387~2400



NTNV_11G_Ant1_2442_2483.5~2496.5



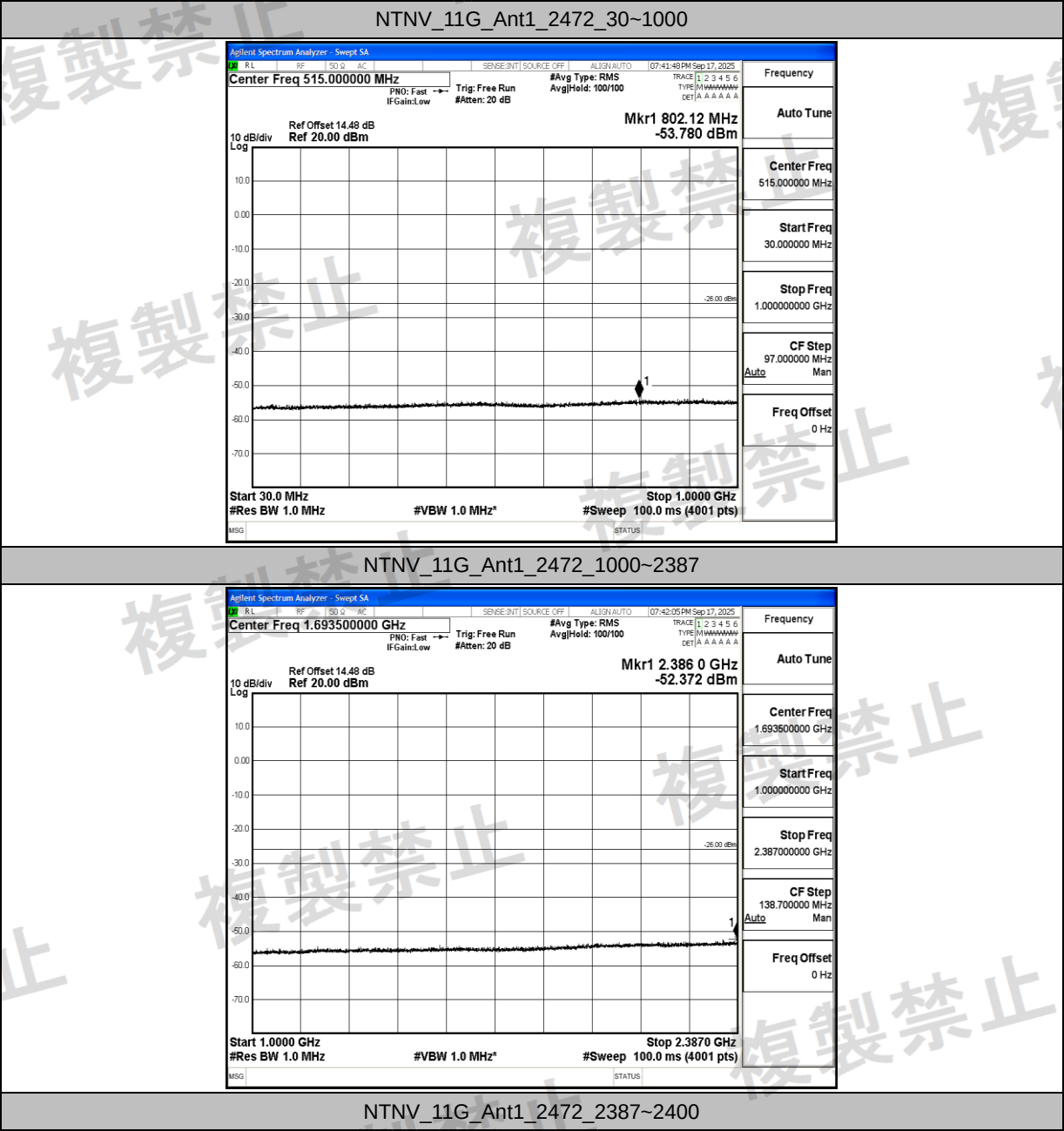
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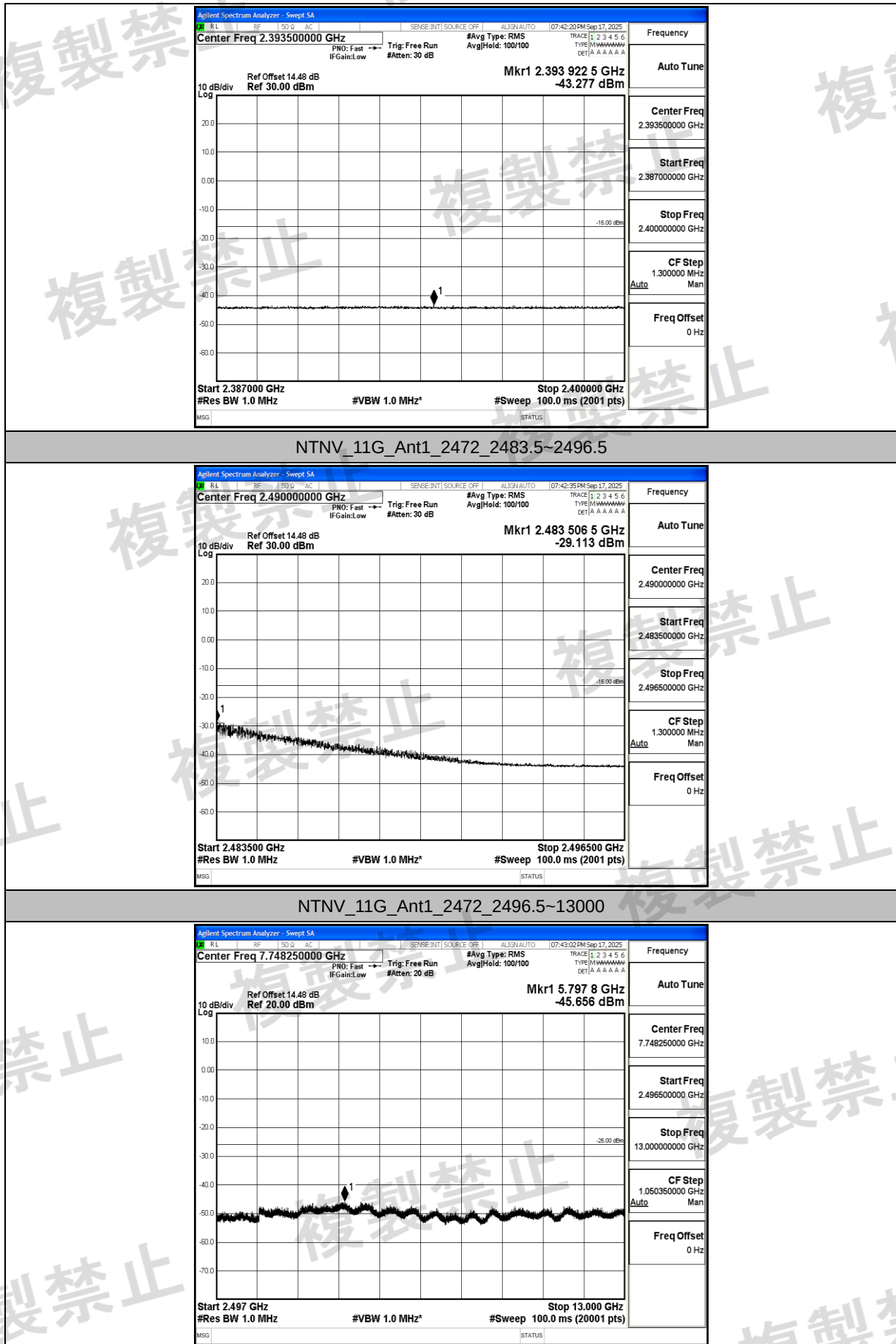


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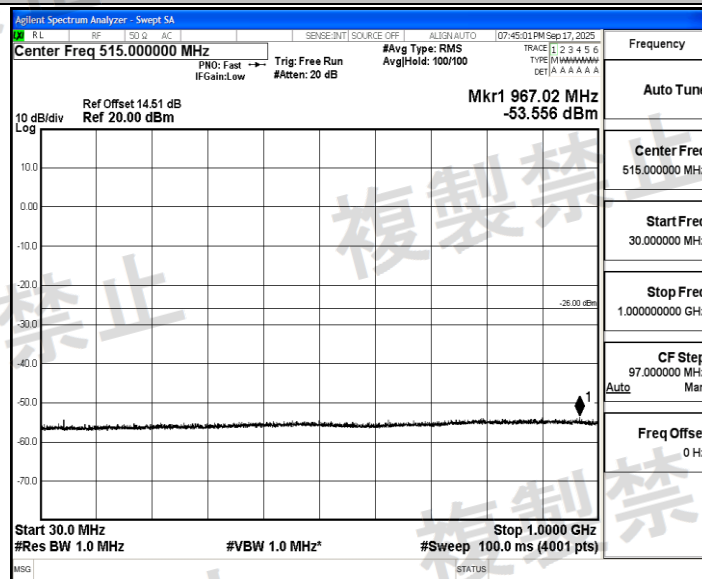


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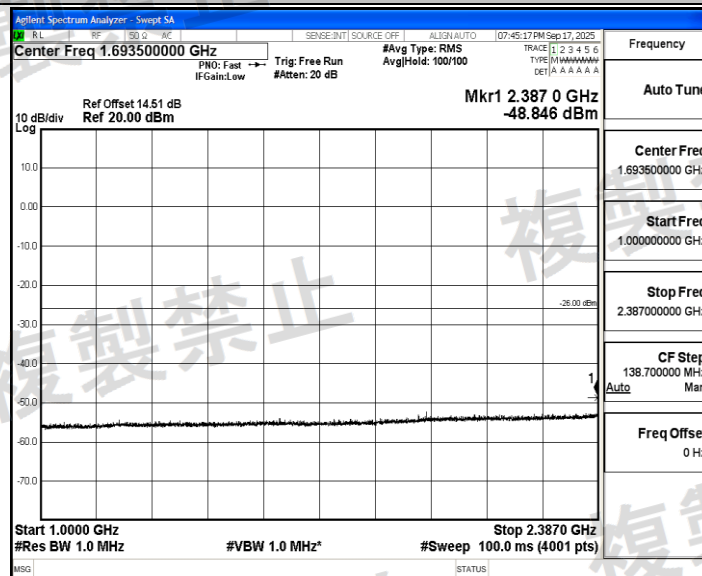
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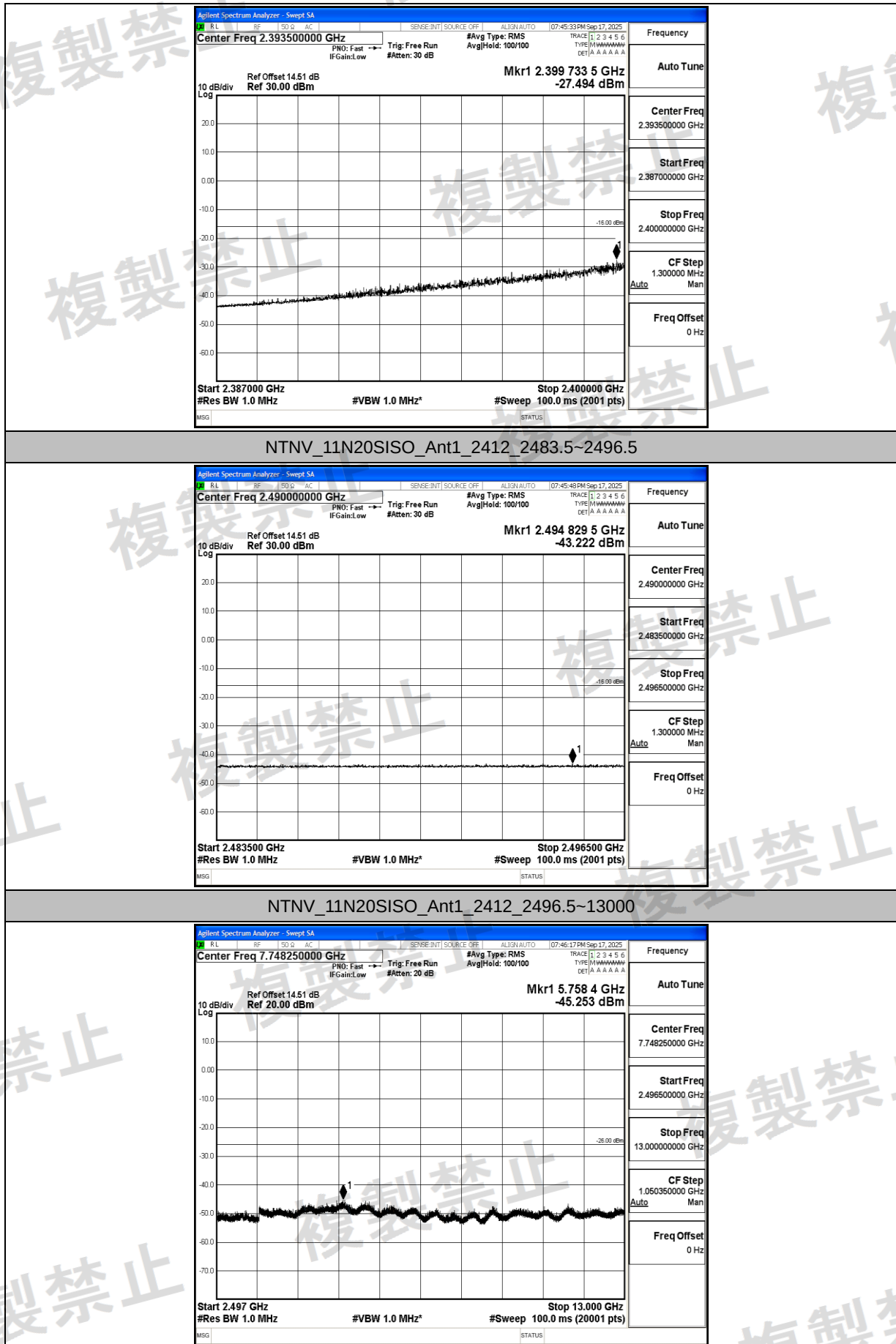
NTNV_11N20SISO_Ant1_2412_30~1000



NTNV_11N20SISO_Ant1_2412_1000~2387



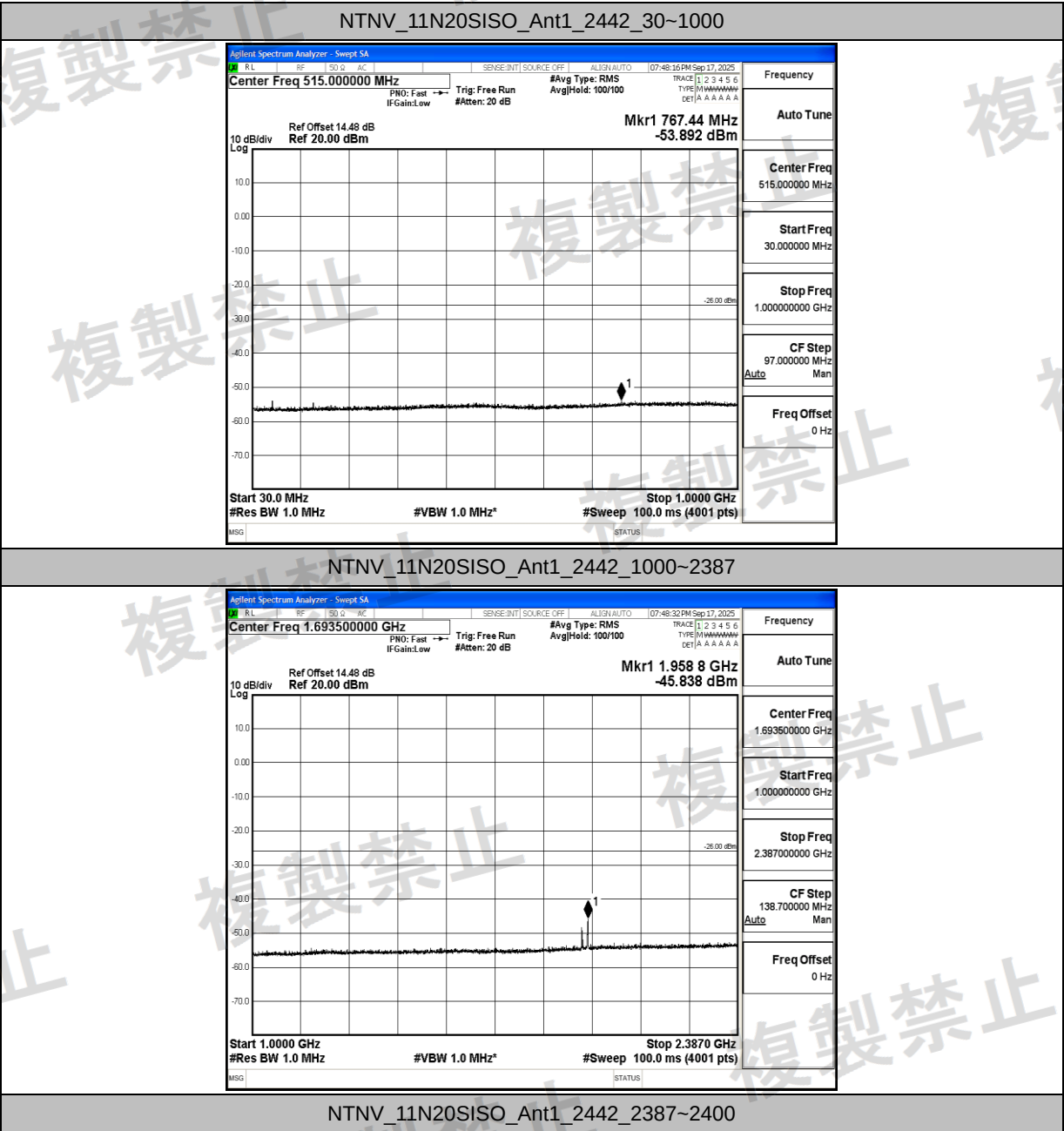
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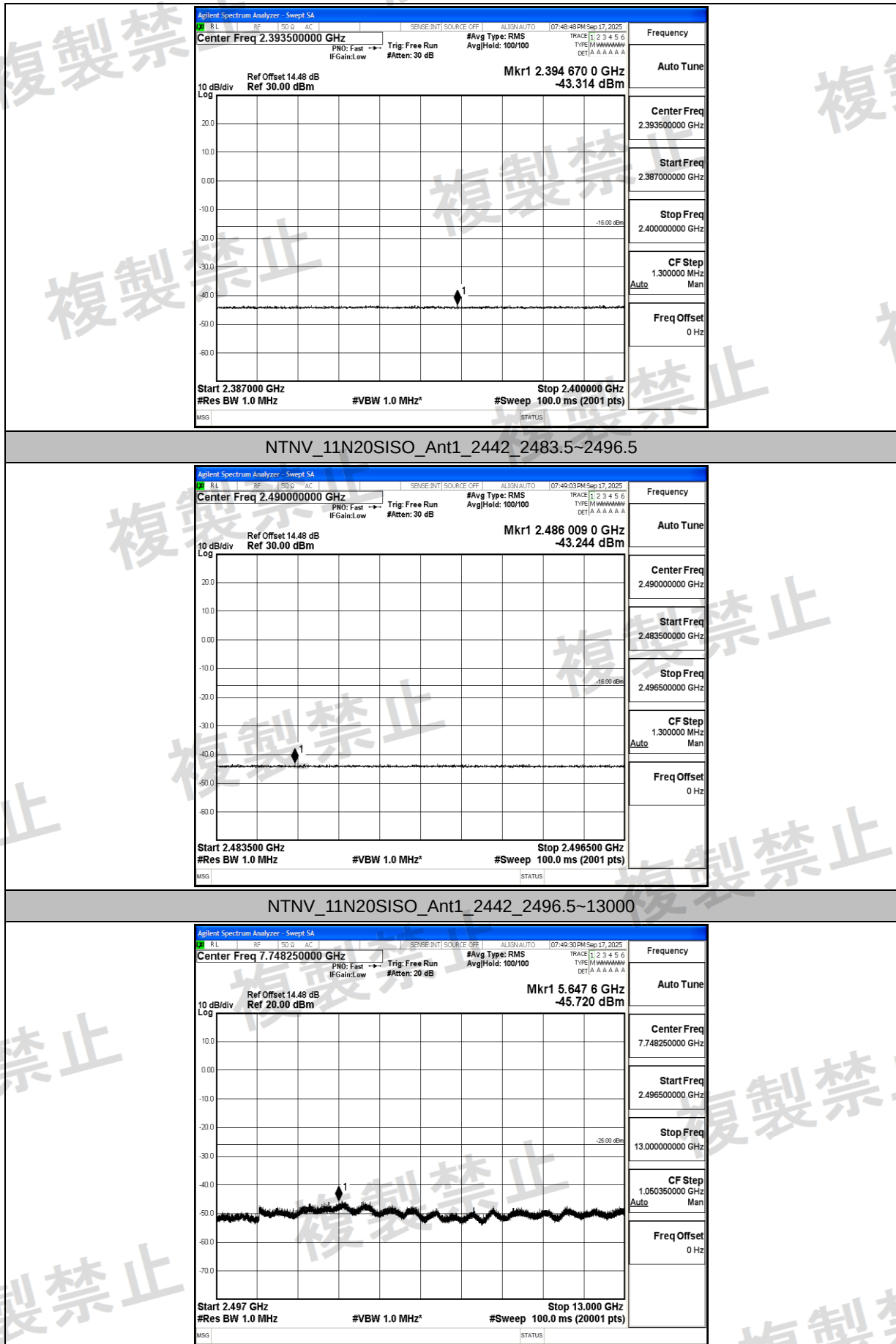


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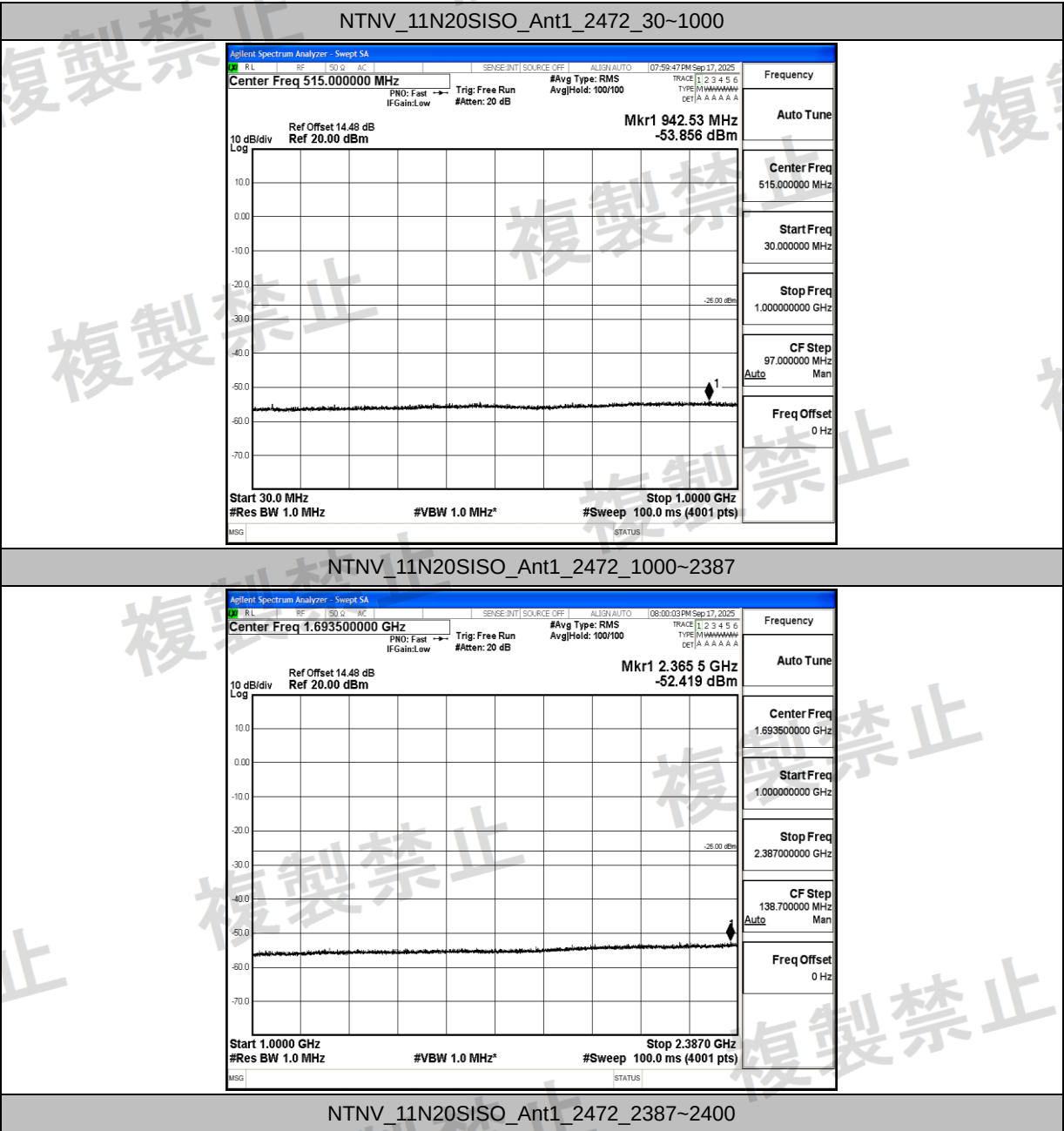


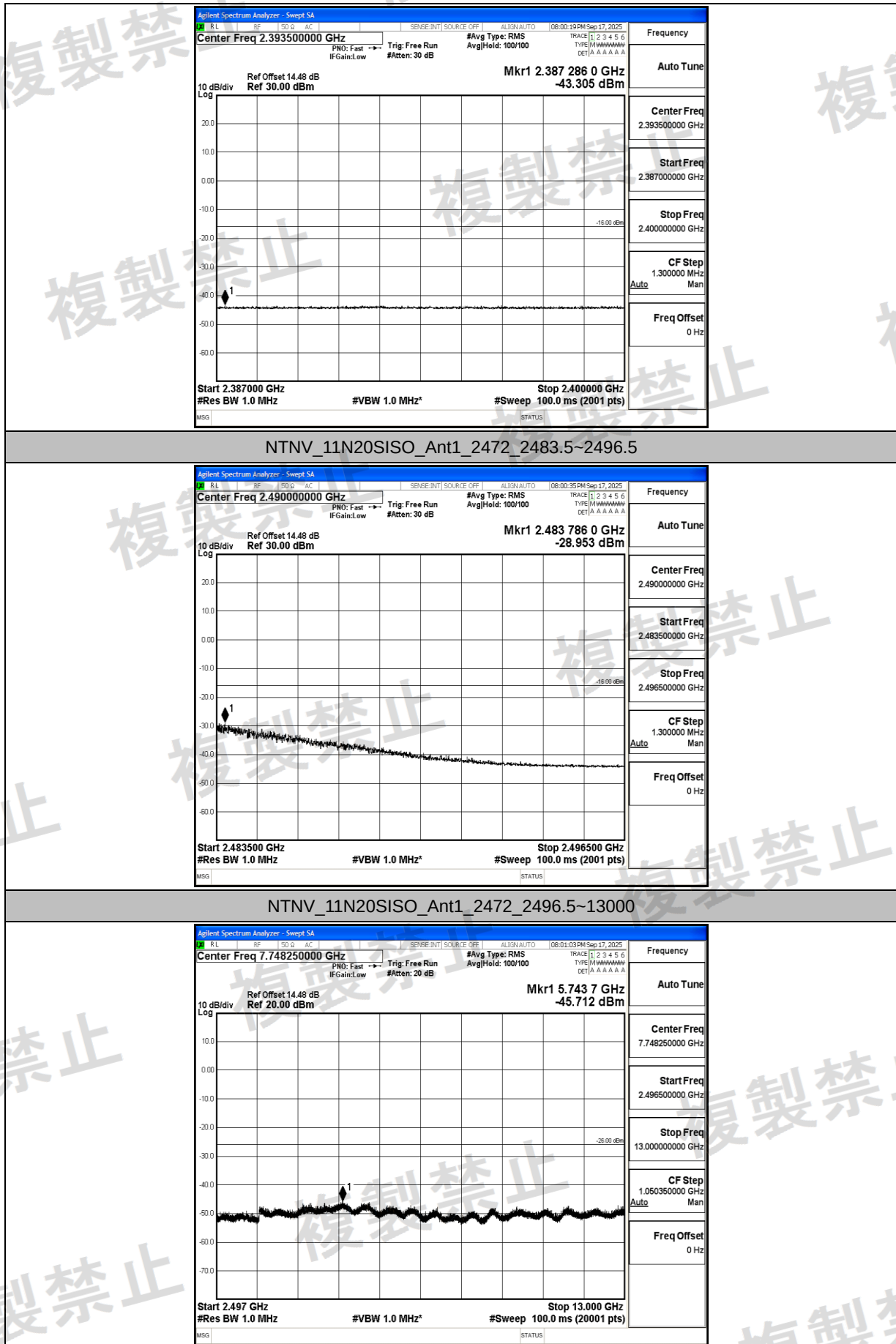


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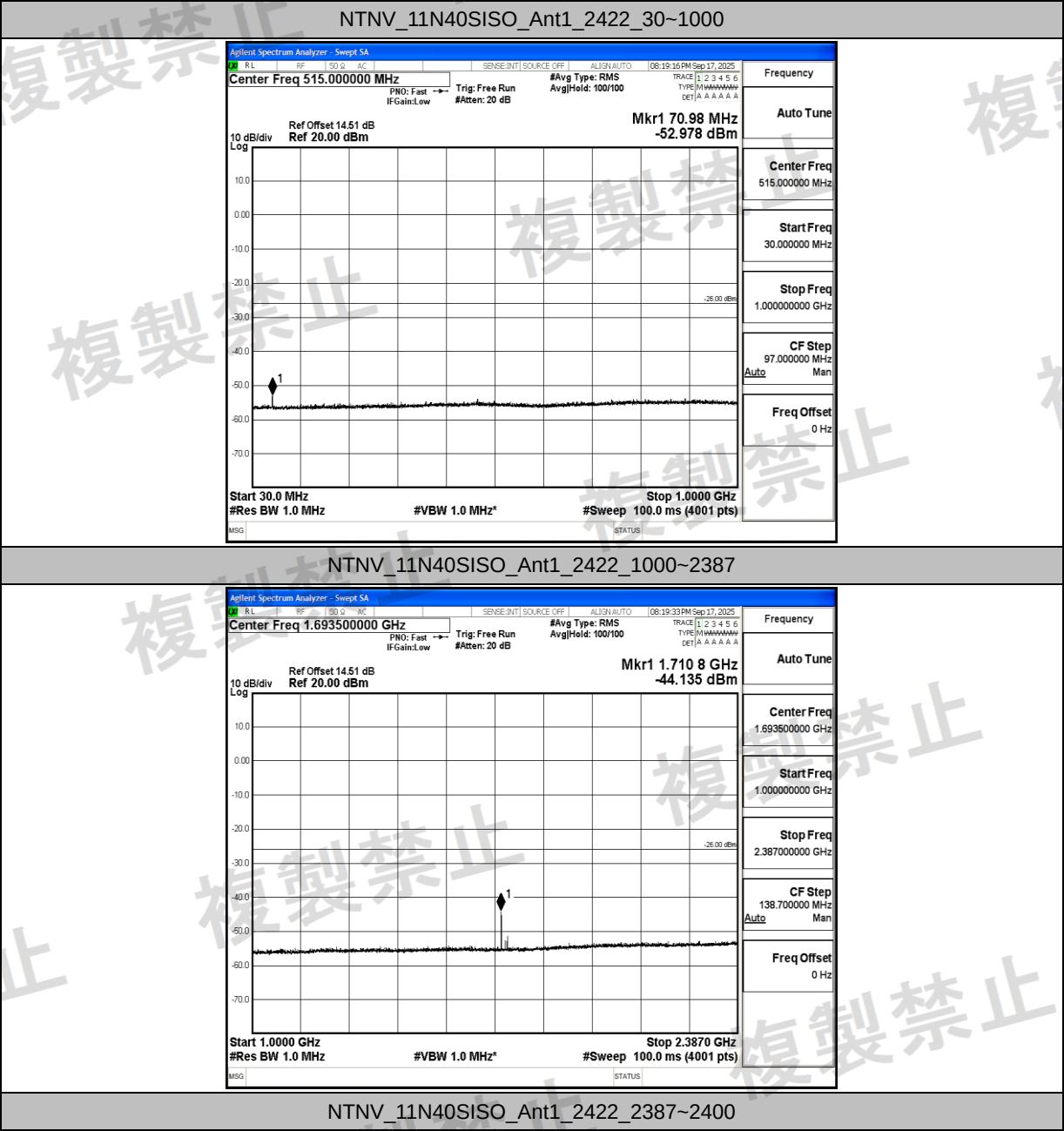


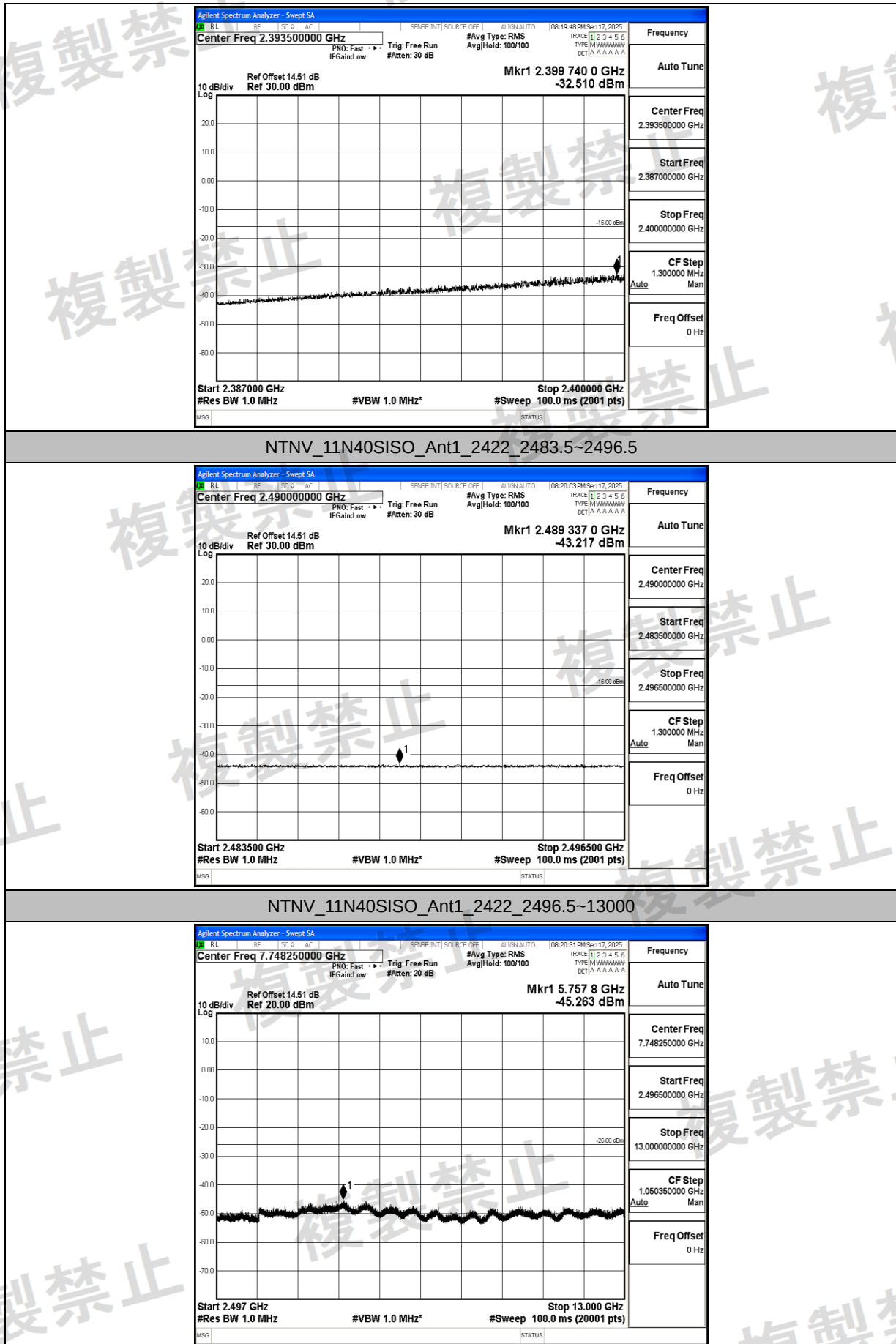


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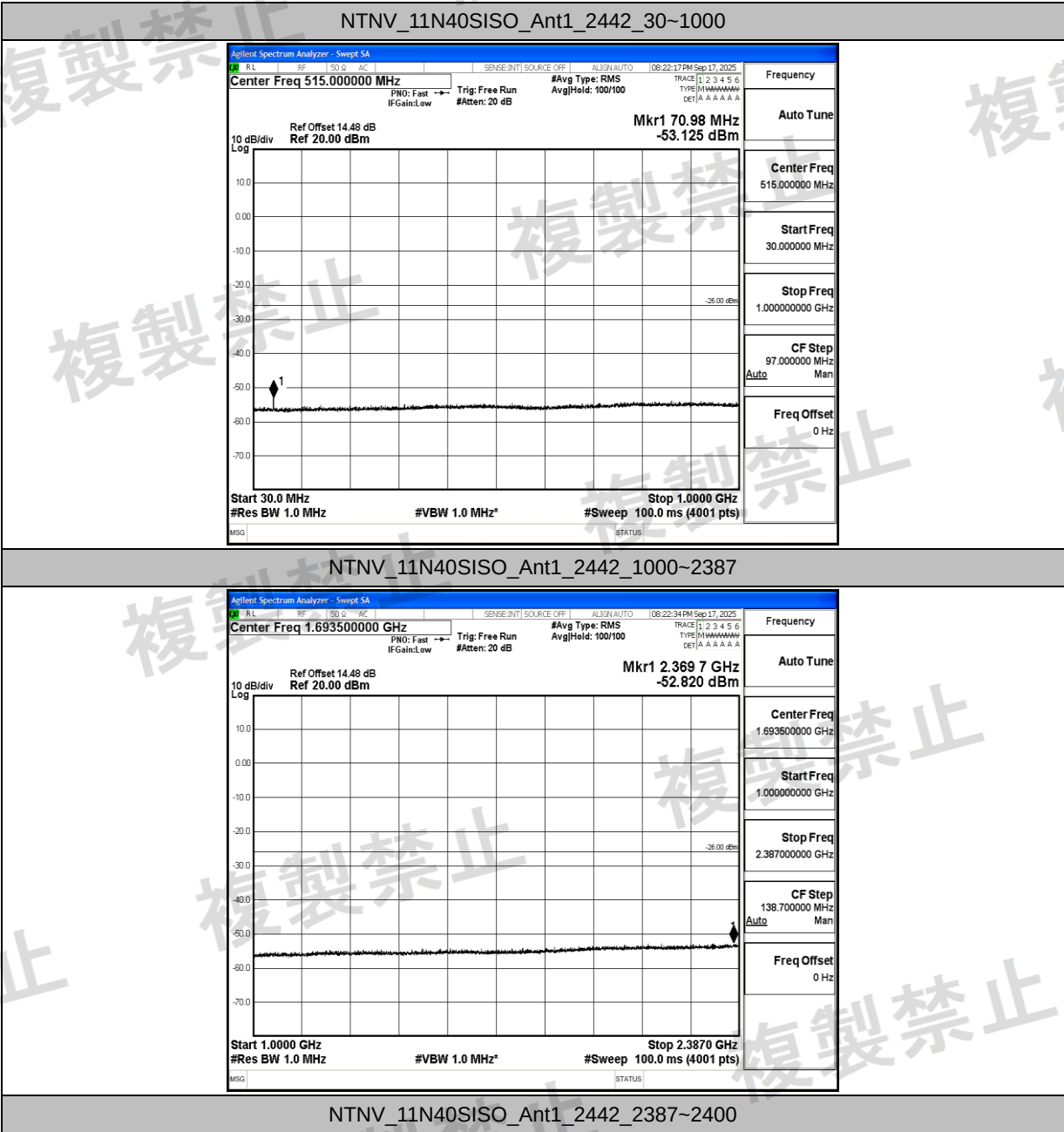


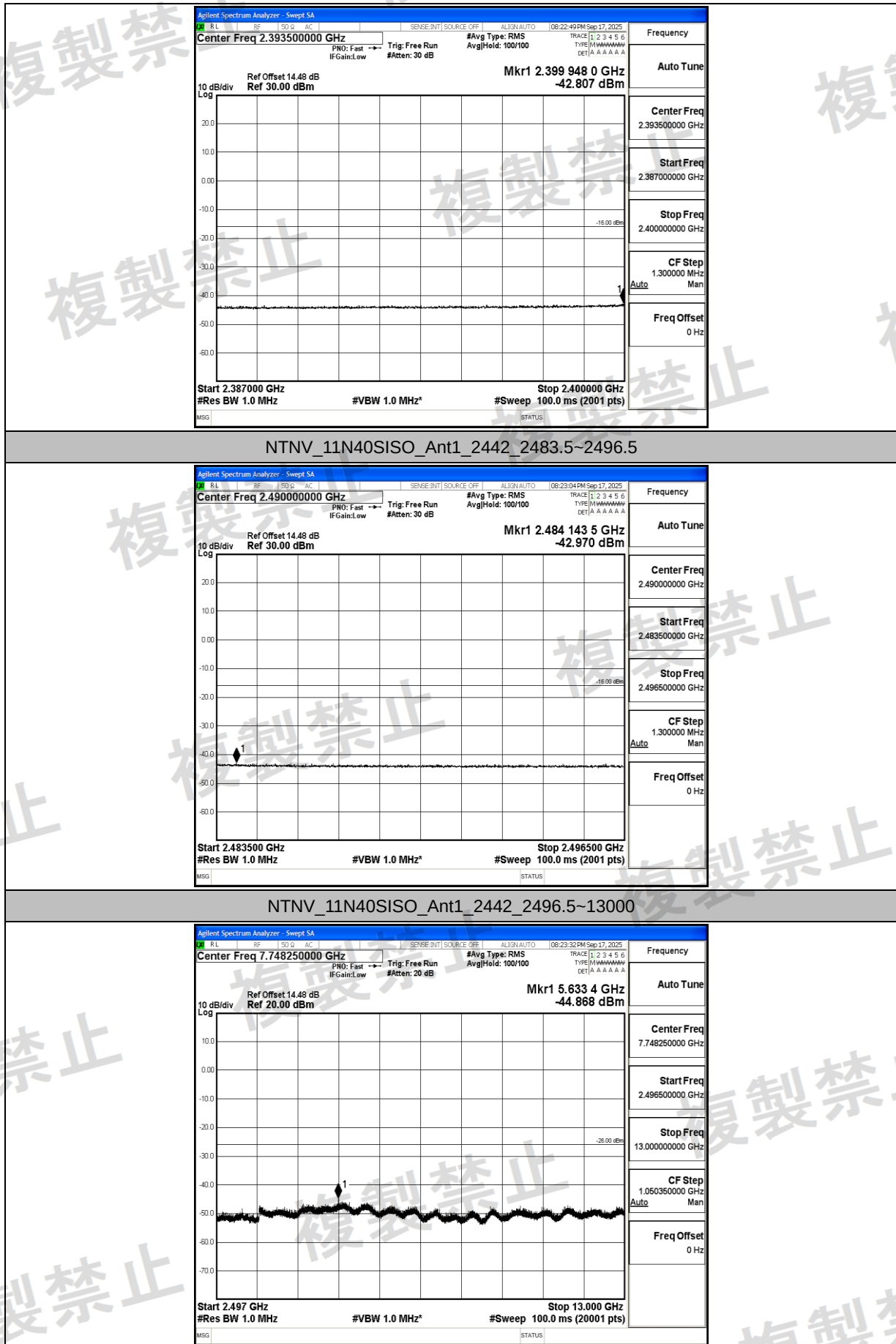


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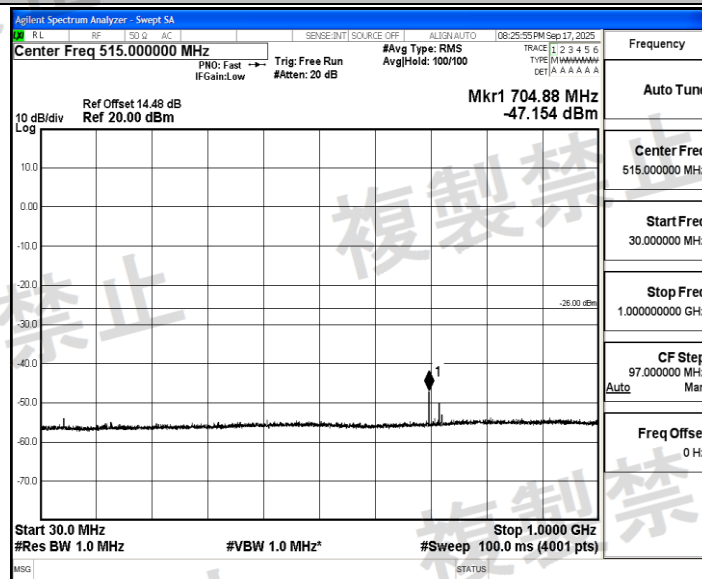


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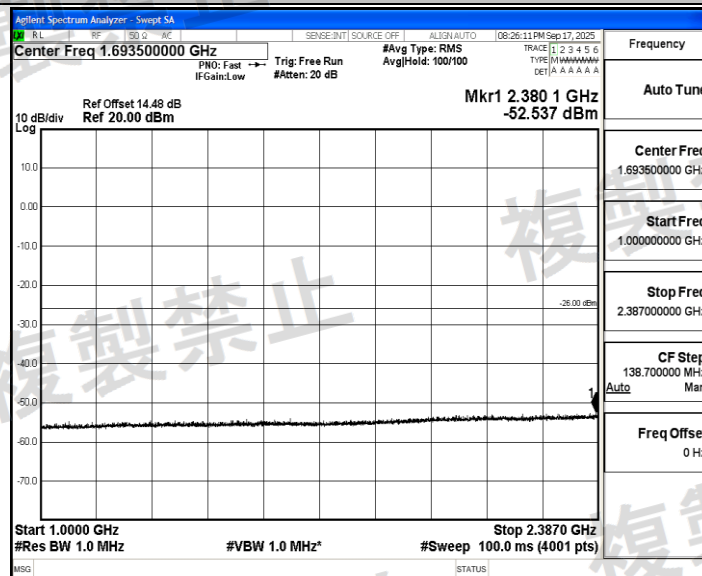
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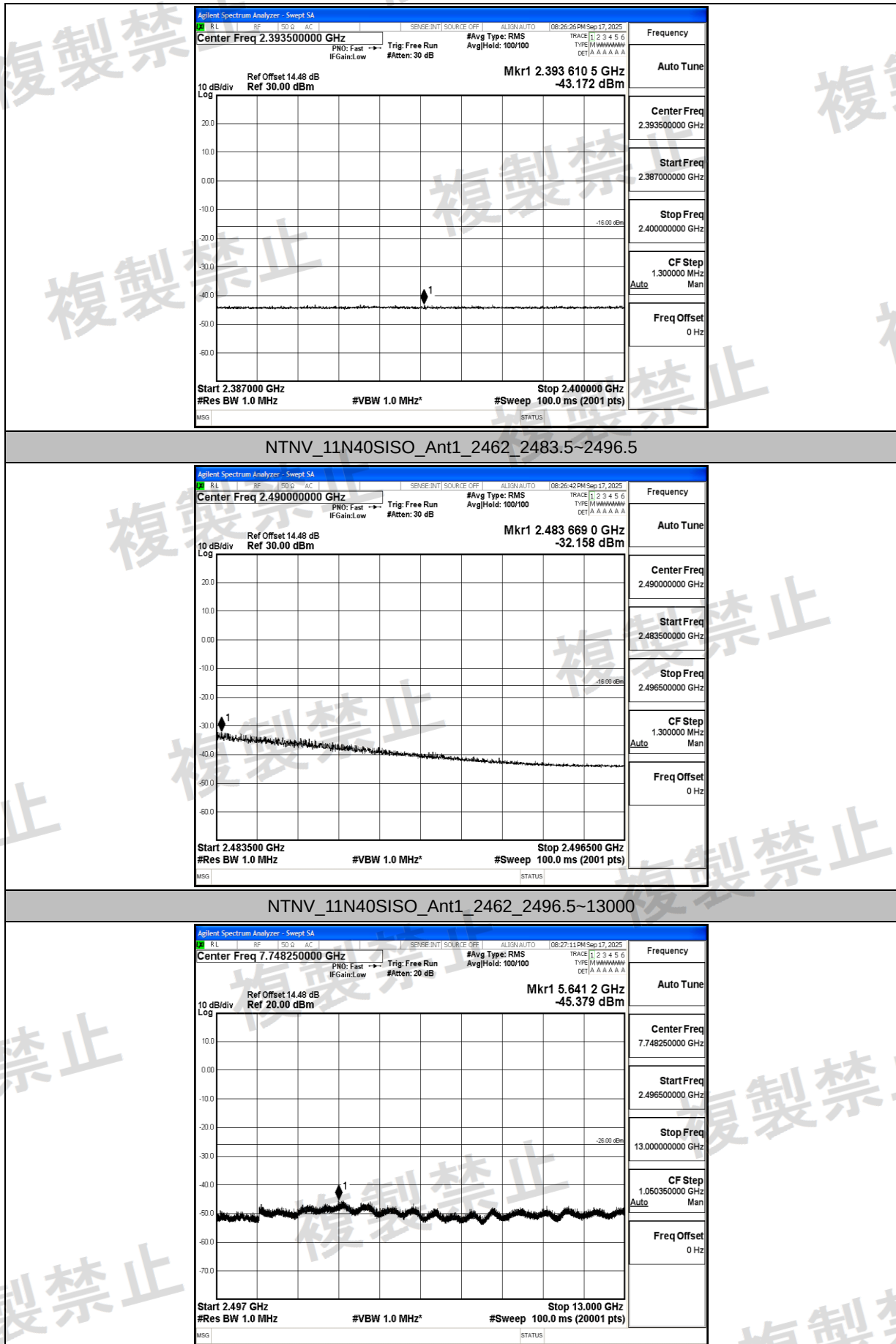
NTNV_11N40SISO_Ant1_2462_30~1000



NTNV_11N40SISO_Ant1_2462_1000~2387



NTNV_11N40SISO_Ant1_2462_2387~2400



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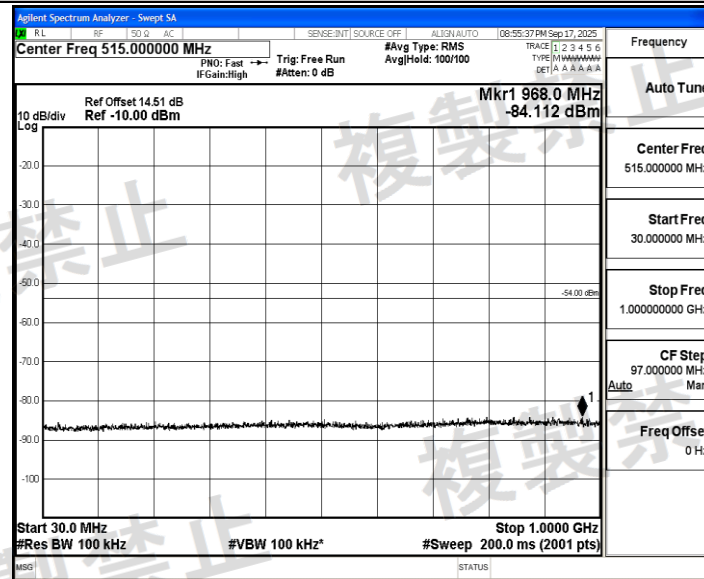
A.6 Spurious Emission of RX

Test Result

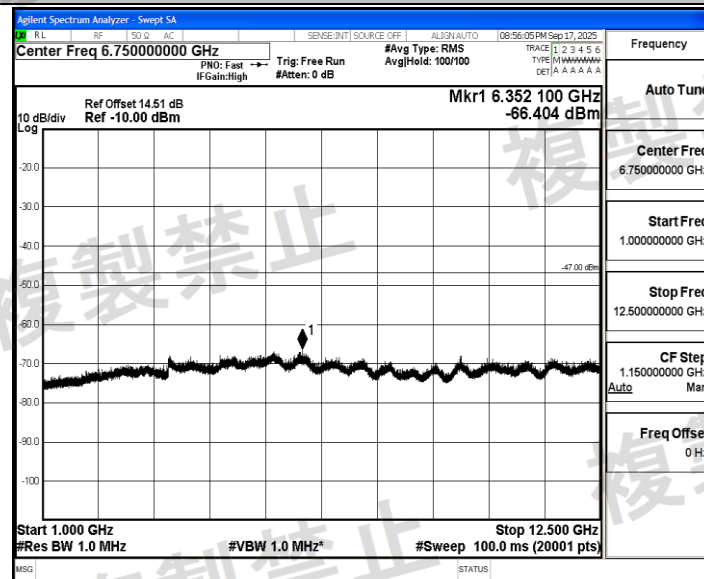
TestCondition	TestMode	Antenna	Frequency[MHz]	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	11B	Ant1	2412	30~1000	-84.11	≤-54	0.00388	≤4	PASS
				1000~12500	-66.4	≤-47	0.22909	≤20	PASS
			2442	30~1000	-84.18	≤-54	0.00382	≤4	PASS
				1000~12500	-66.9	≤-47	0.20417	≤20	PASS
			2472	30~1000	-84.03	≤-54	0.00395	≤4	PASS
				1000~12500	-66.9	≤-47	0.20417	≤20	PASS
	11G	Ant1	2412	30~1000	-84.05	≤-54	0.00394	≤4	PASS
				1000~12500	-66.9	≤-47	0.20417	≤20	PASS
			2442	30~1000	-83.6	≤-54	0.00437	≤4	PASS
				1000~12500	-67	≤-47	0.19953	≤20	PASS
			2472	30~1000	-84.1	≤-54	0.00389	≤4	PASS
				1000~12500	-67.03	≤-47	0.19815	≤20	PASS
	11N20SISO	Ant1	2412	30~1000	-83.85	≤-54	0.00412	≤4	PASS
				1000~12500	-66.8	≤-47	0.20893	≤20	PASS
			2442	30~1000	-84.05	≤-54	0.00394	≤4	PASS
				1000~12500	-66.45	≤-47	0.22646	≤20	PASS
			2472	30~1000	-84.24	≤-54	0.00377	≤4	PASS
				1000~12500	-66.81	≤-47	0.20845	≤20	PASS
	11N40SISO	Ant1	2422	30~1000	-83.65	≤-54	0.00432	≤4	PASS
				1000~12500	-67.17	≤-47	0.19187	≤20	PASS
			2442	30~1000	-84.11	≤-54	0.00388	≤4	PASS
				1000~12500	-66.99	≤-47	0.19999	≤20	PASS
			2462	30~1000	-84.36	≤-54	0.00366	≤4	PASS
				1000~12500	-66.68	≤-47	0.21478	≤20	PASS

Test Graphs

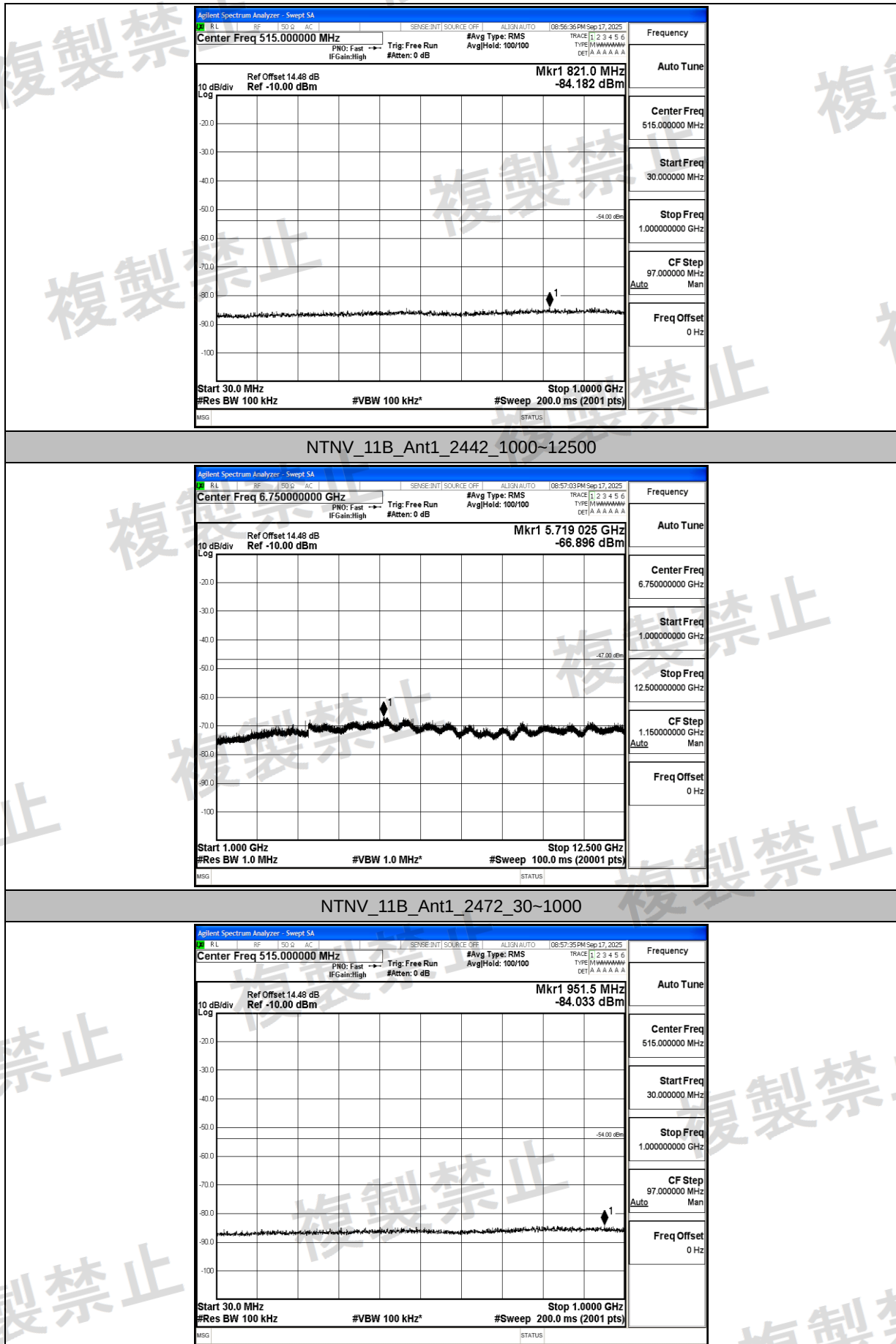
NTNV_11B_Ant1_2412_30~1000



NTNV_11B_Ant1_2412_1000~12500



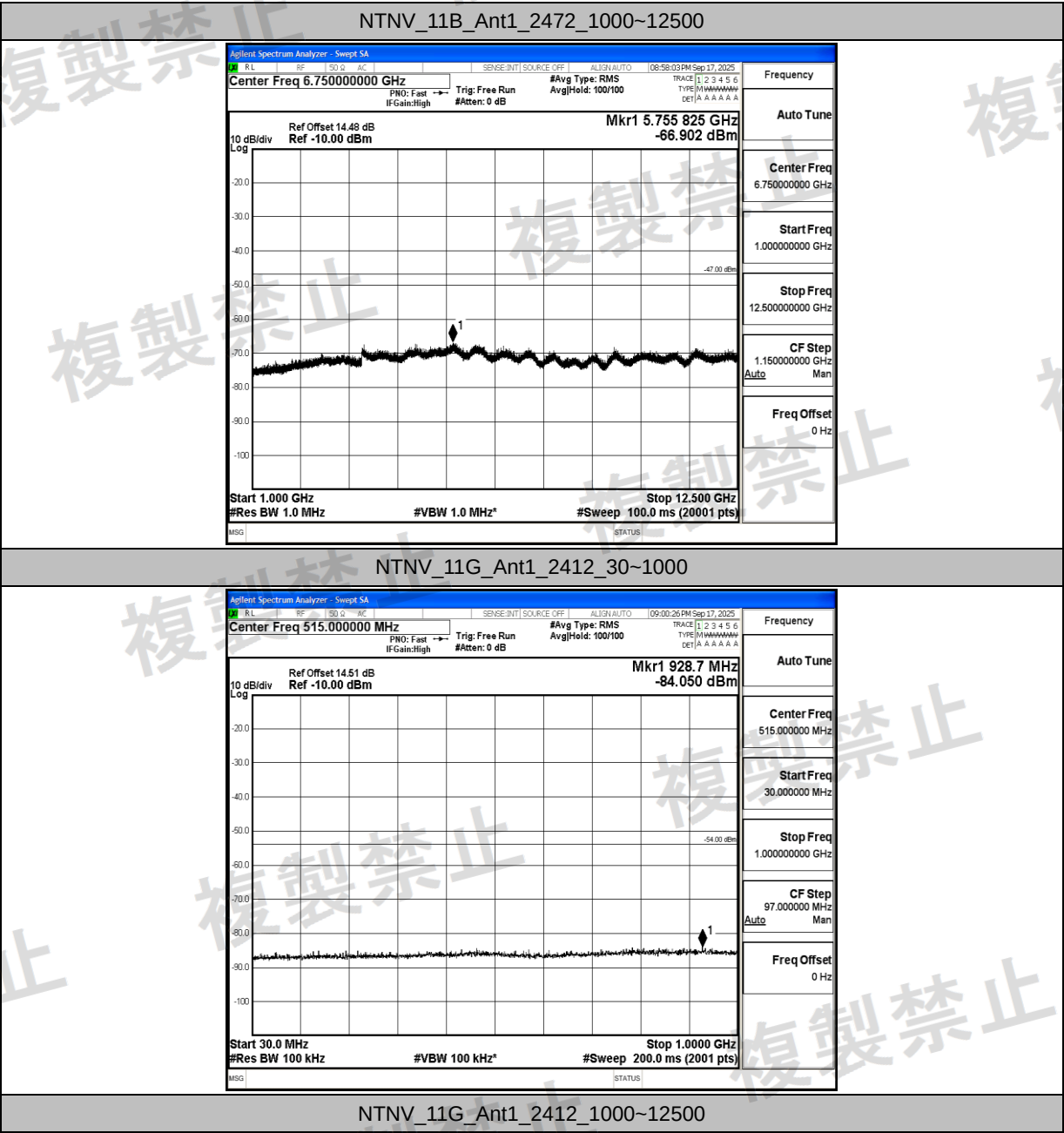
NTNV_11B_Ant1_2442_30~1000

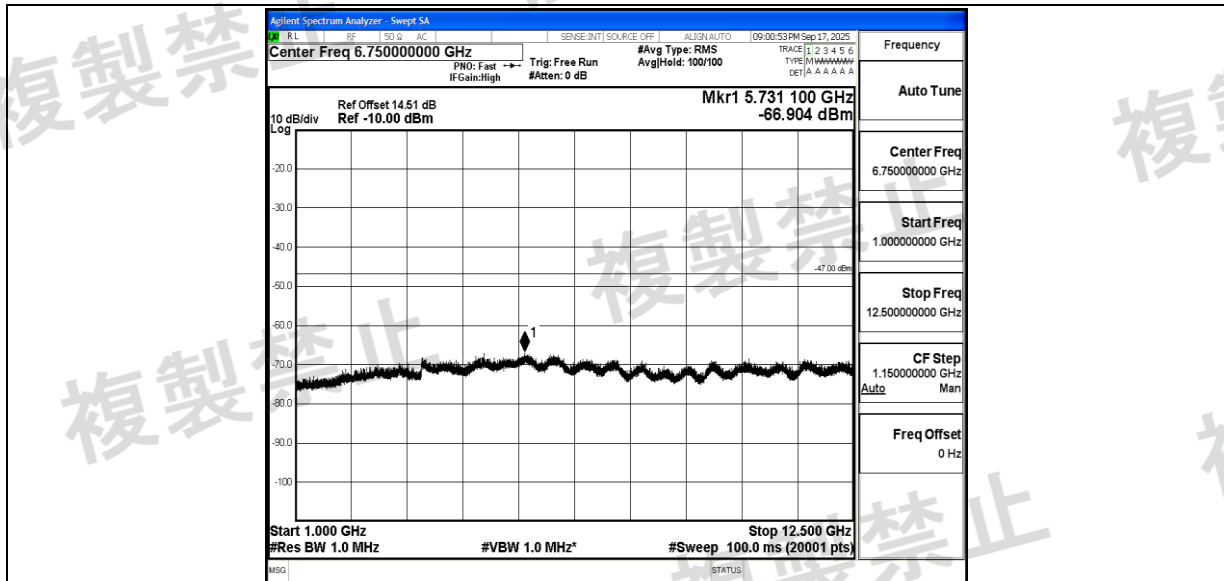


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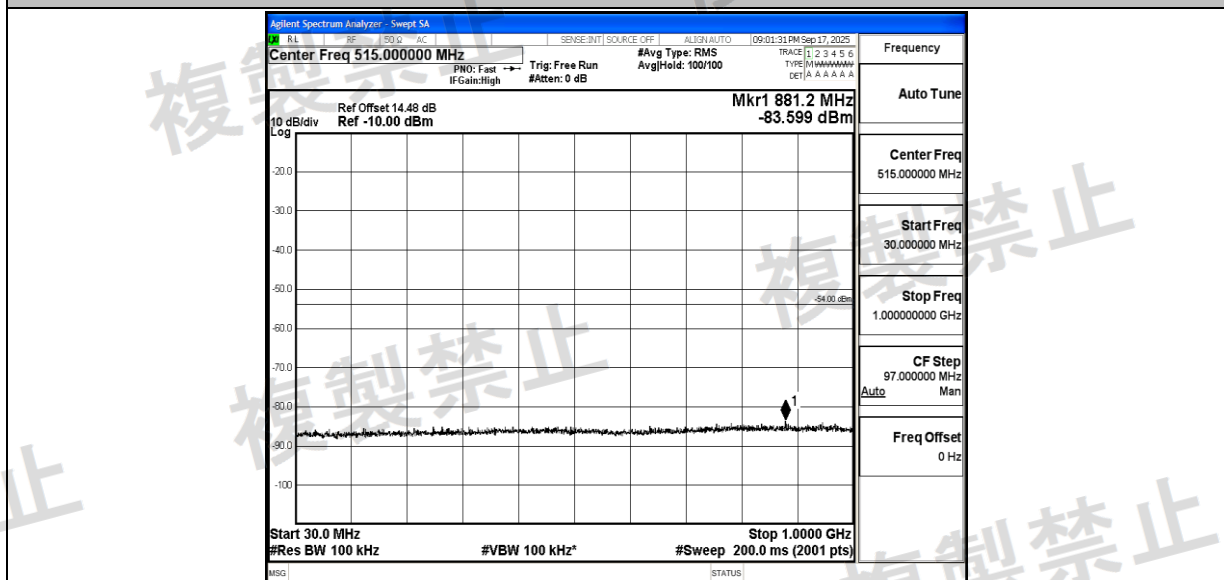
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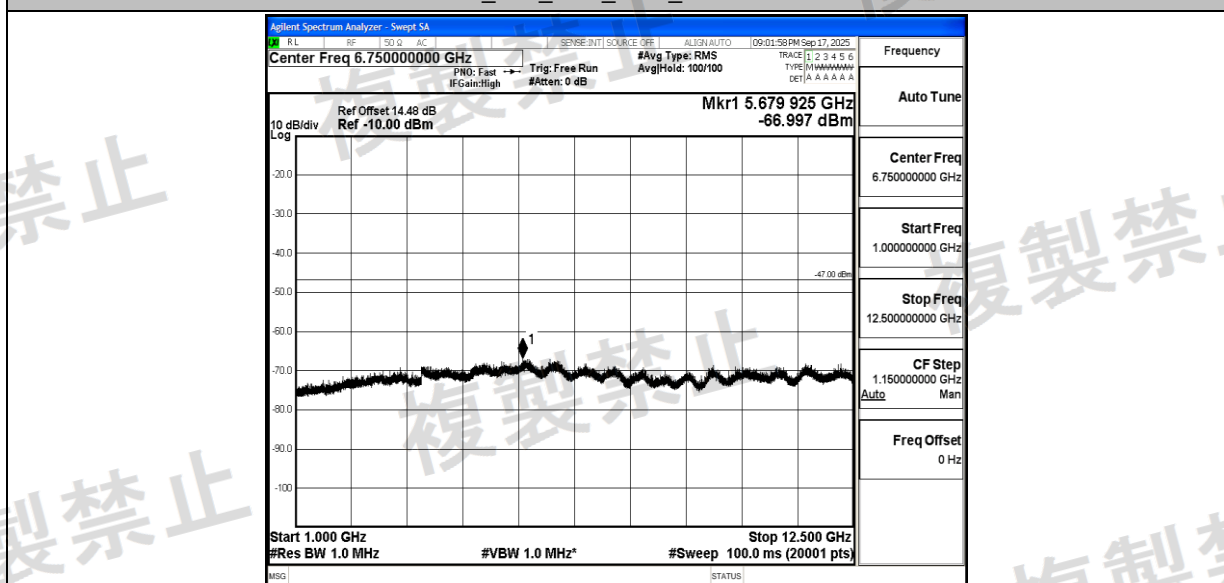


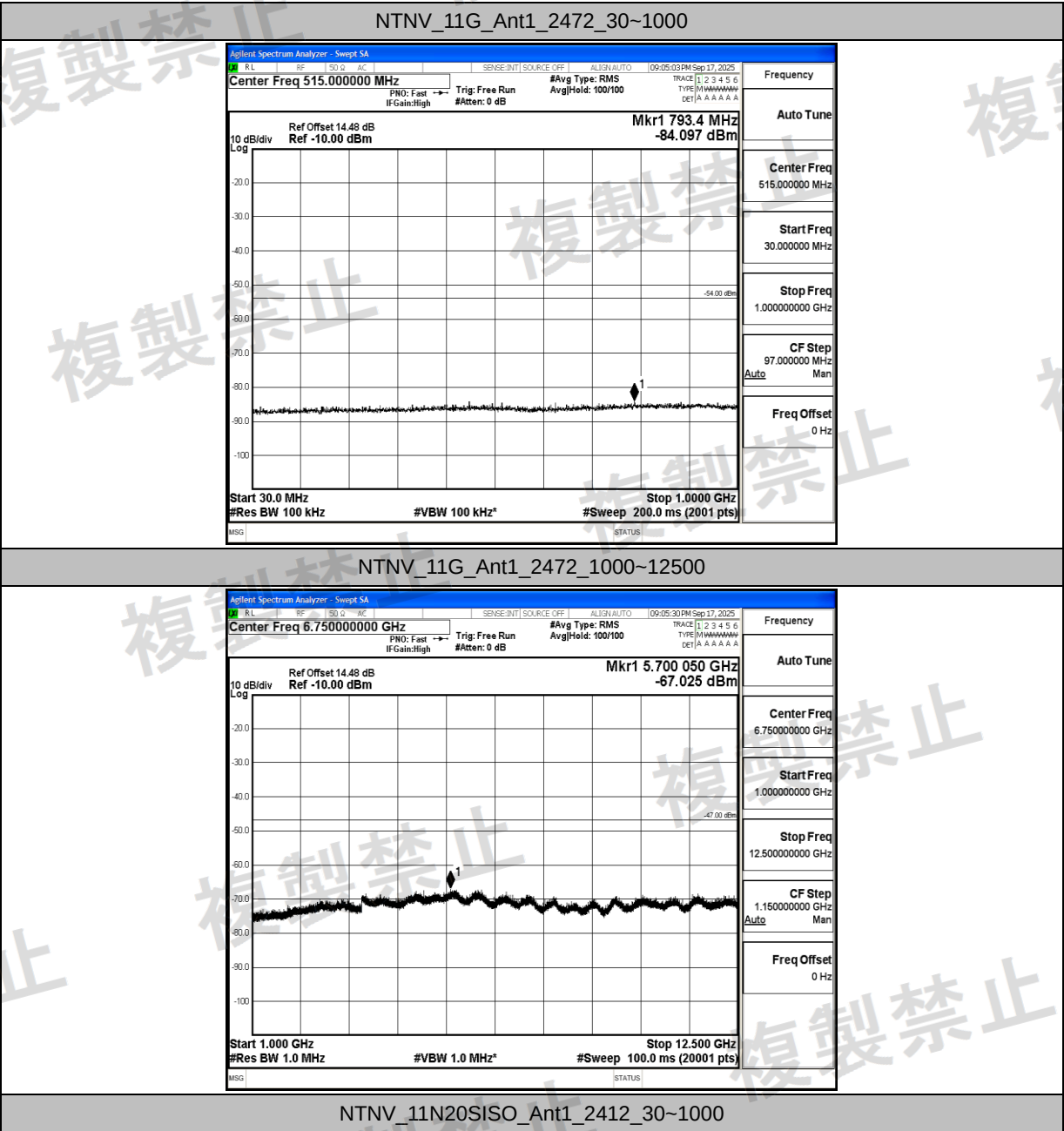


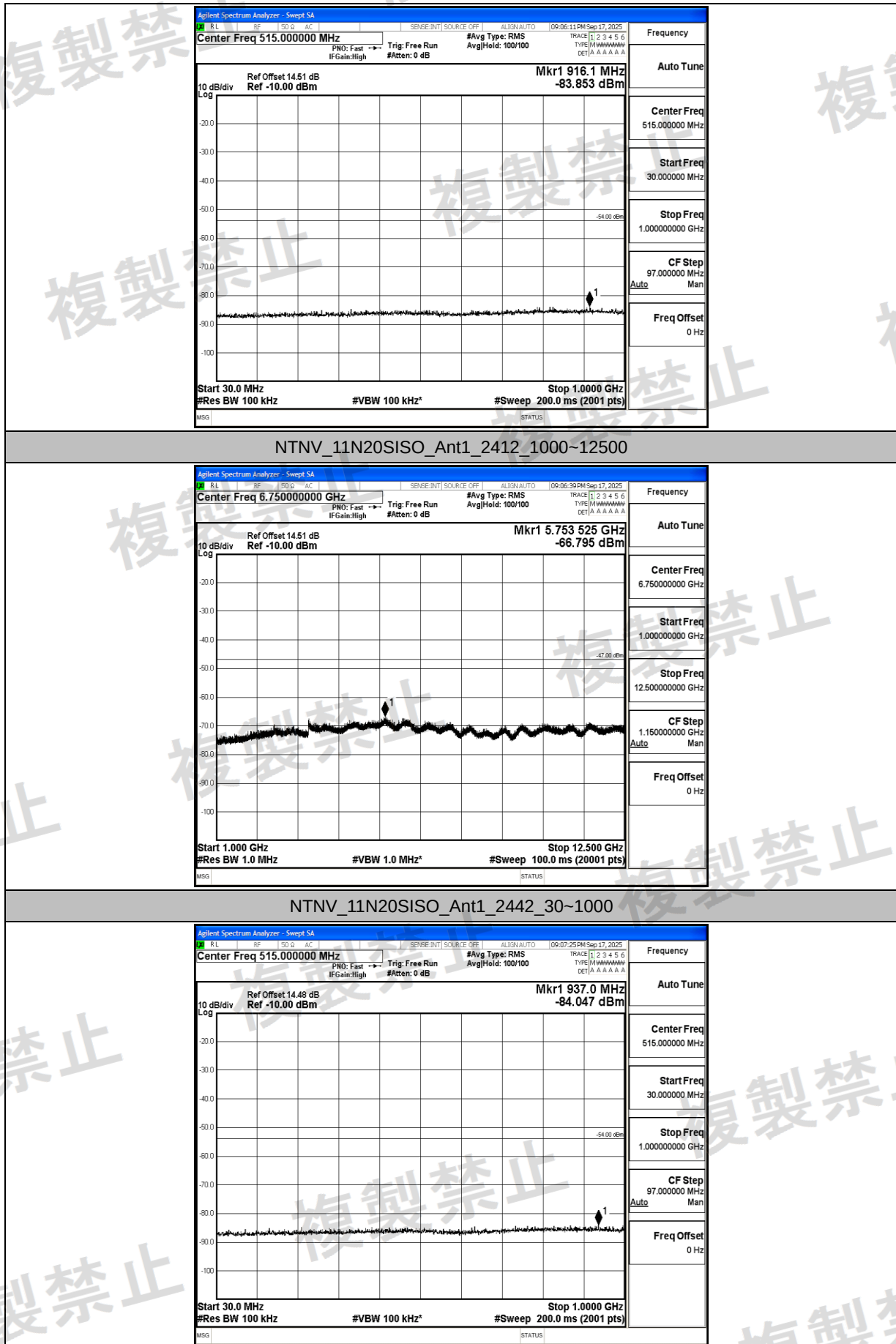
NTNV_11G_Ant1_2442_30~1000



NTNV_11G_Ant1_2442_1000~12500



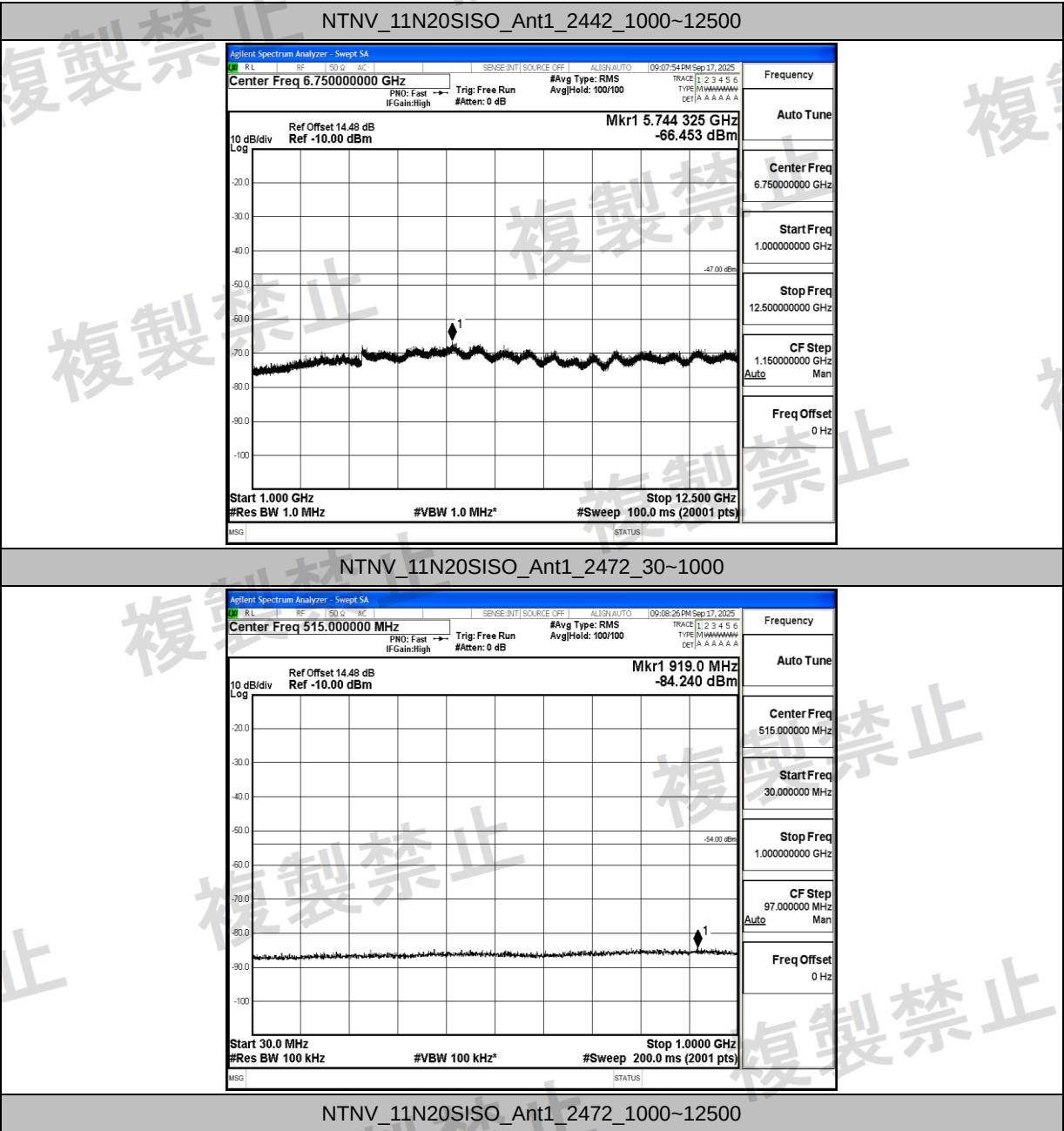


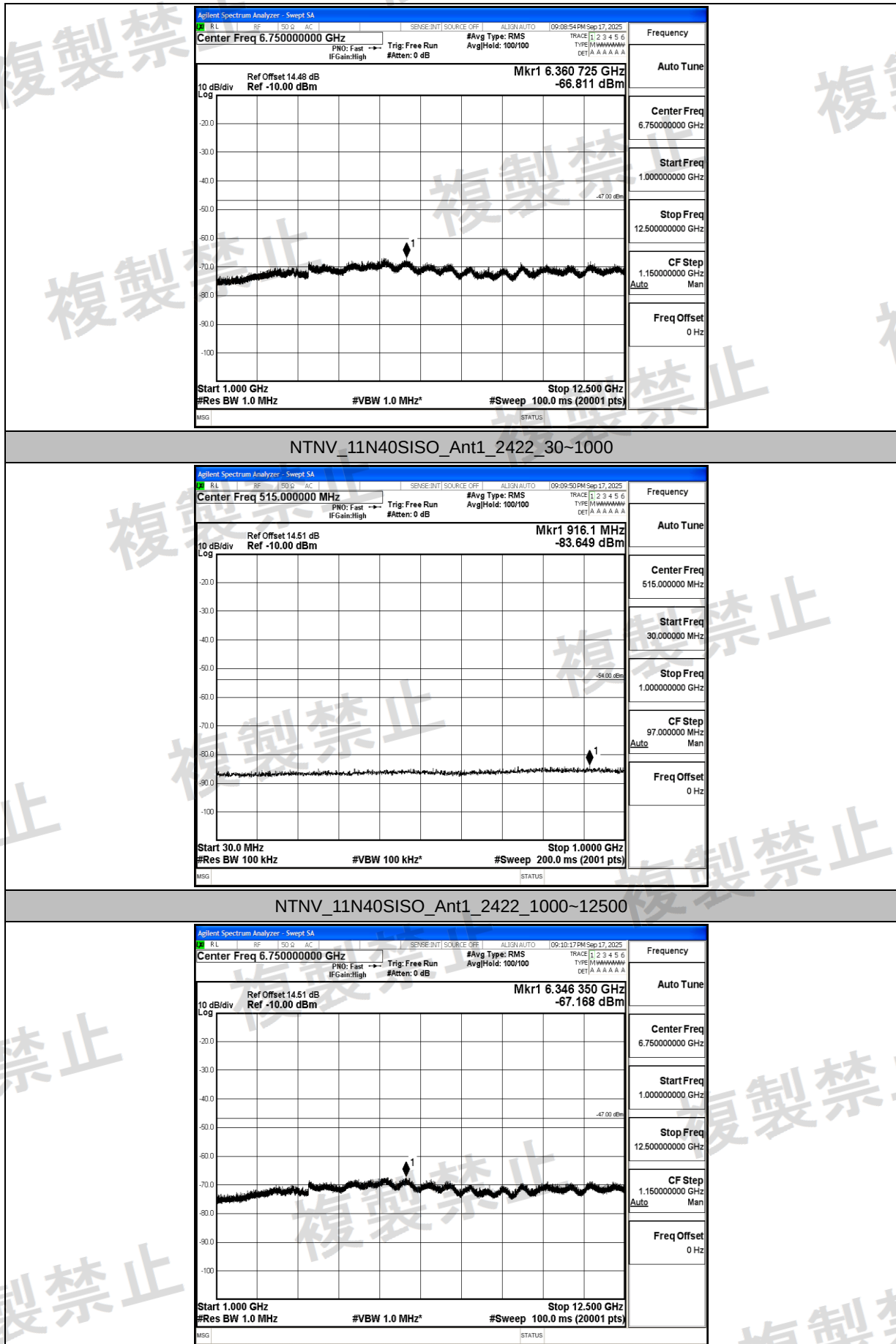


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