

Appendix A for 2.4GWIFI Test Data

Product Name: PCB module TX (Camera TX)
Test Model: KL01-D-V2V6

Environmental Conditions

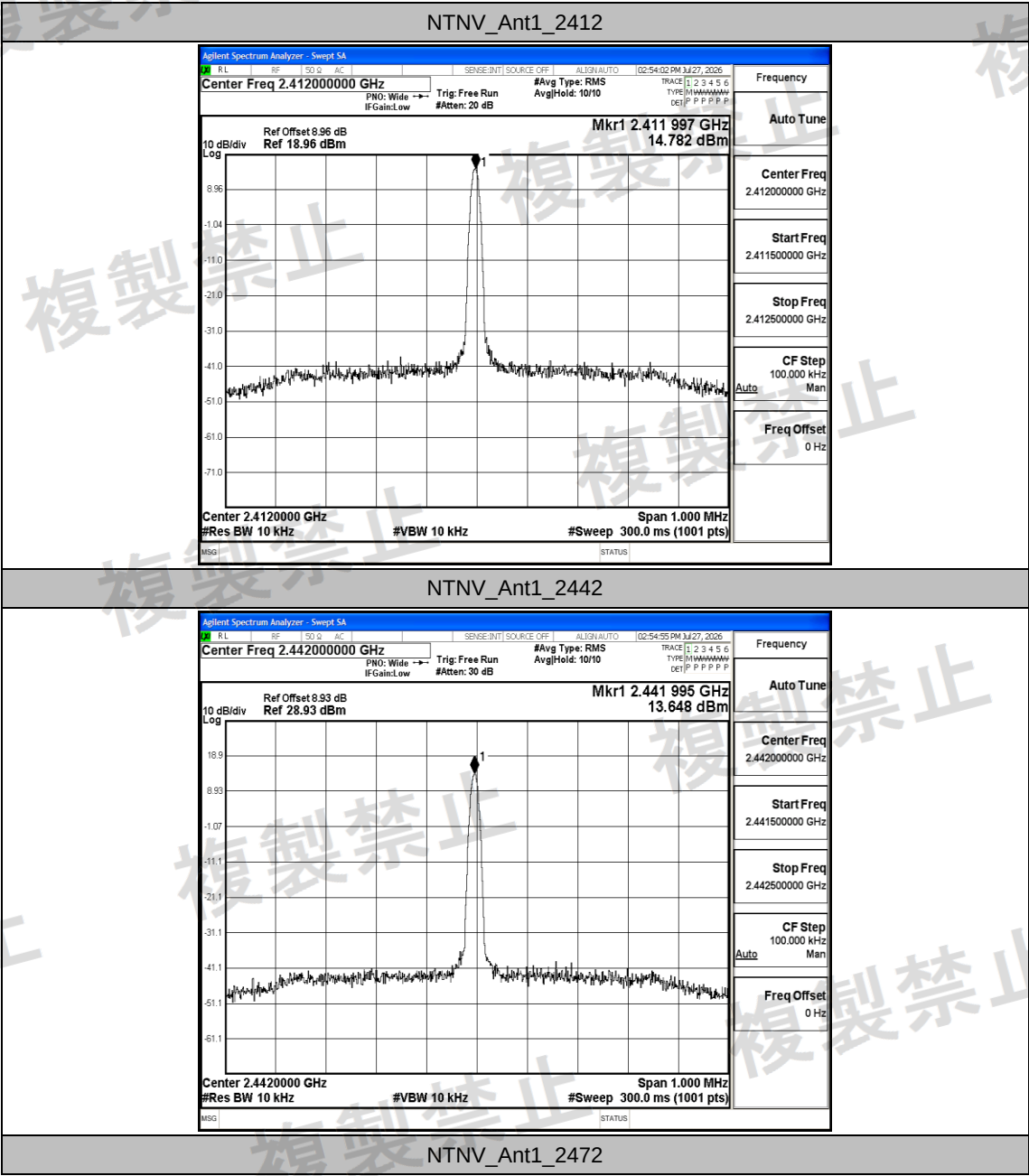
Temperature:	23.3°C
Relative Humidity:	54.0%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

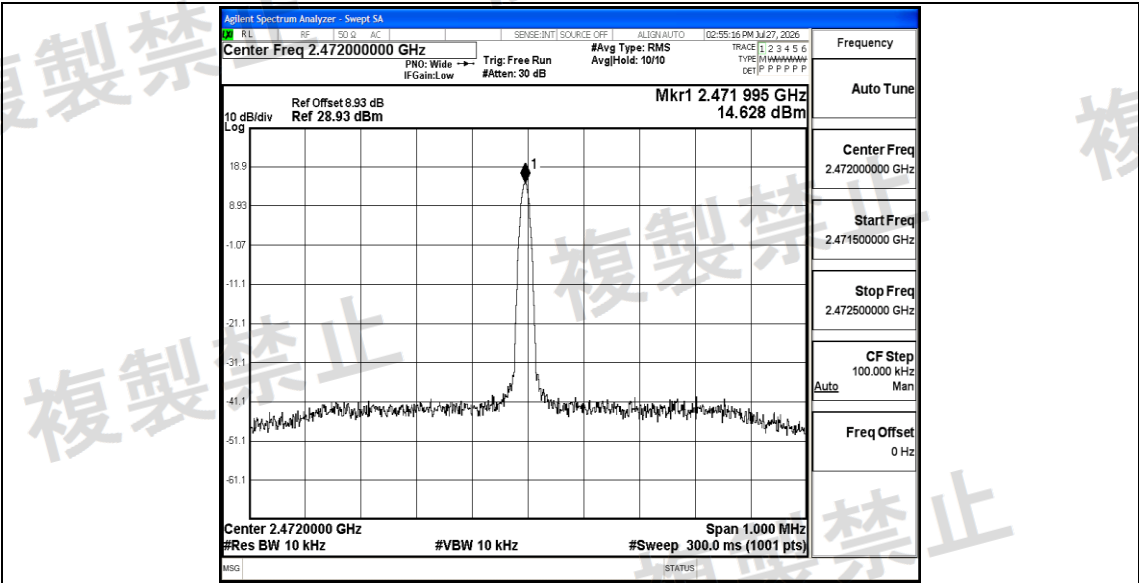
A.1 Frequency Error

Test Result

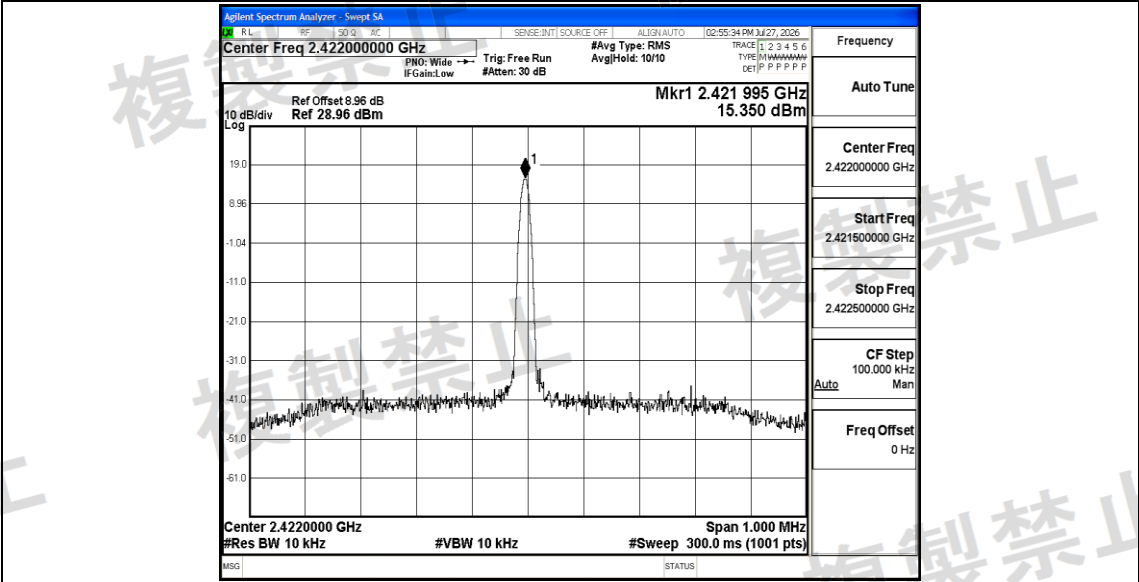
TestCondition	TestMode	Antenna	Frequency[MHz]	Result[ppm]	Limit[ppm]	Verdict
NTNV	Frequency Error	Ant1	2412	-1.24378	±50	PASS
			2442	-2.04750	±50	PASS
			2472	-2.02265	±50	PASS
		Ant1	2422	-2.06441	±50	PASS
			2462	-2.03087	±50	PASS

Test Graphs

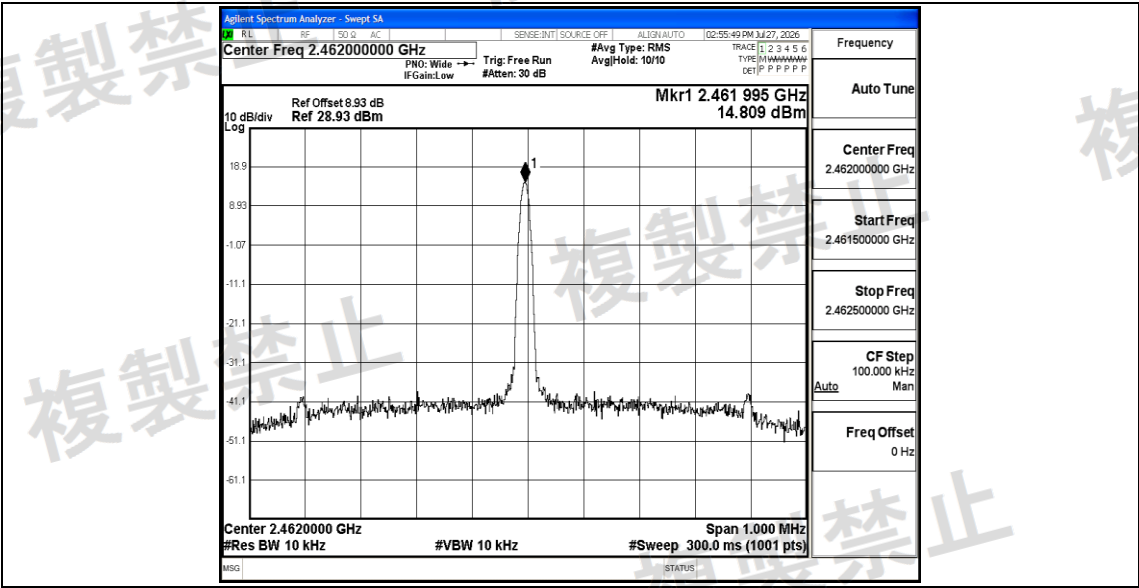




NTNV_Ant1_2422



NTNV_Ant1_2462



A.2 Antenna Power & E.I.R.P

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	4.23	2.65	≤10	PASS
			2442	3.05	2.02	≤10	PASS
			2472	4.06	2.55	≤10	PASS
	11G	Ant1	2412	4.96	3.13	≤10	PASS
			2442	2.69	1.86	≤10	PASS
			2472	4.67	2.93	≤10	PASS
	11N20SI SO	Ant1	2412	4.65	2.92	≤10	PASS
			2442	3.90	2.45	≤10	PASS
			2472	4.90	3.09	≤10	PASS
	11N40SI SO	Ant1	2422	-3.50	0.45	≤5	PASS
			2442	-3.99	0.40	≤5	PASS
			2462	-3.28	0.47	≤5	PASS

Tolerance								
Test Condition	Test Mode	Antenna	Freq(MHz)	Power [mW/MHz]	RatedPower [mW/MHz]	Result (%)	Limit (%)	Verdict
NTNV	11B	Ant1	2412	2.65	3.0	-11.67	+20	PASS
			2442	2.02	3.0	-32.67	+20	PASS
			2472	2.55	3.0	-15.00	+20	PASS
	11G	Ant1	2412	3.13	3.0	4.33	+20	PASS
			2442	1.86	3.0	-38.00	+20	PASS
			2472	2.93	3.0	-2.33	+20	PASS
	11N20SI SO	Ant1	2412	2.92	3.0	-2.67	+20	PASS
			2442	2.45	3.0	-18.33	+20	PASS
			2472	3.09	3.0	3.00	+20	PASS
	11N40SI SO	Ant1	2422	0.45	0.4	12.50	+20	PASS
			2442	0.40	0.4	0.00	+20	PASS
			2462	0.47	0.4	17.50	+20	PASS

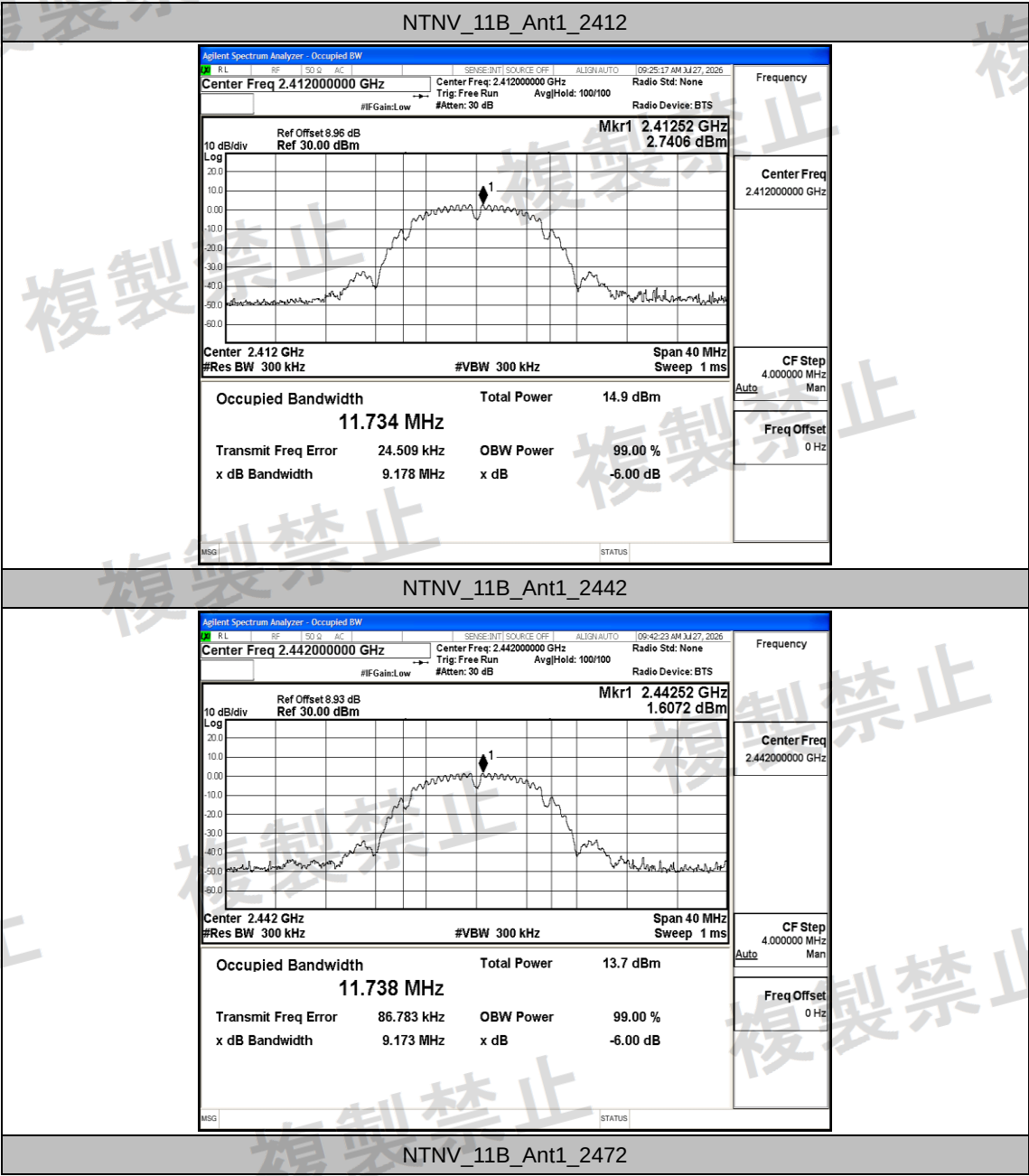
EIRP								
Test Condition	Test Mode	Antenna	Frequency [MHz]	Measured Power (dBm/MHz)	Antenna Gain (dBi)	EIRP (dBm/MHz)	Limit (dBm/MHz)	Verdict
NTNV	11B	Ant1	2412	4.23	4.6	8.83	≤12.14	PASS
			2442	3.05	4.6	7.65	≤12.14	PASS
			2472	4.06	4.6	8.66	≤12.14	PASS
	11G	Ant1	2412	4.96	4.6	9.56	≤12.14	PASS
			2442	2.69	4.6	7.29	≤12.14	PASS
			2472	4.67	4.6	9.27	≤12.14	PASS
	11N20SISO	Ant1	2412	4.65	4.6	9.25	≤12.14	PASS
			2442	3.90	4.6	8.50	≤12.14	PASS
			2472	5.90	4.6	10.50	≤12.14	PASS
	11N40SISO	Ant1	2422	-3.50	4.6	1.10	≤9.13	PASS
			2442	-3.99	4.6	0.61	≤9.13	PASS
			2462	-3.28	4.6	1.32	≤9.13	PASS

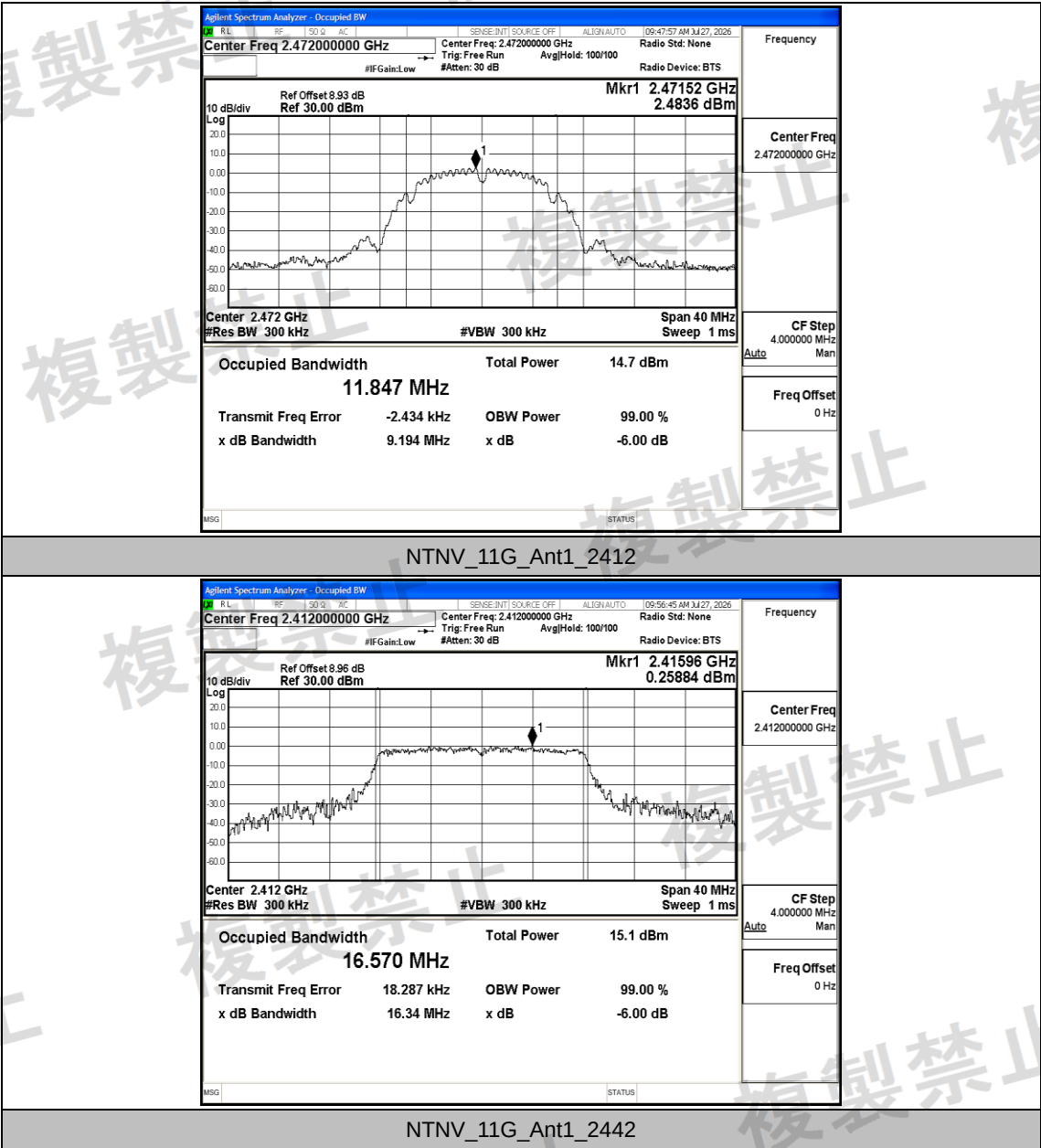
A.3 Occupied Bandwidth

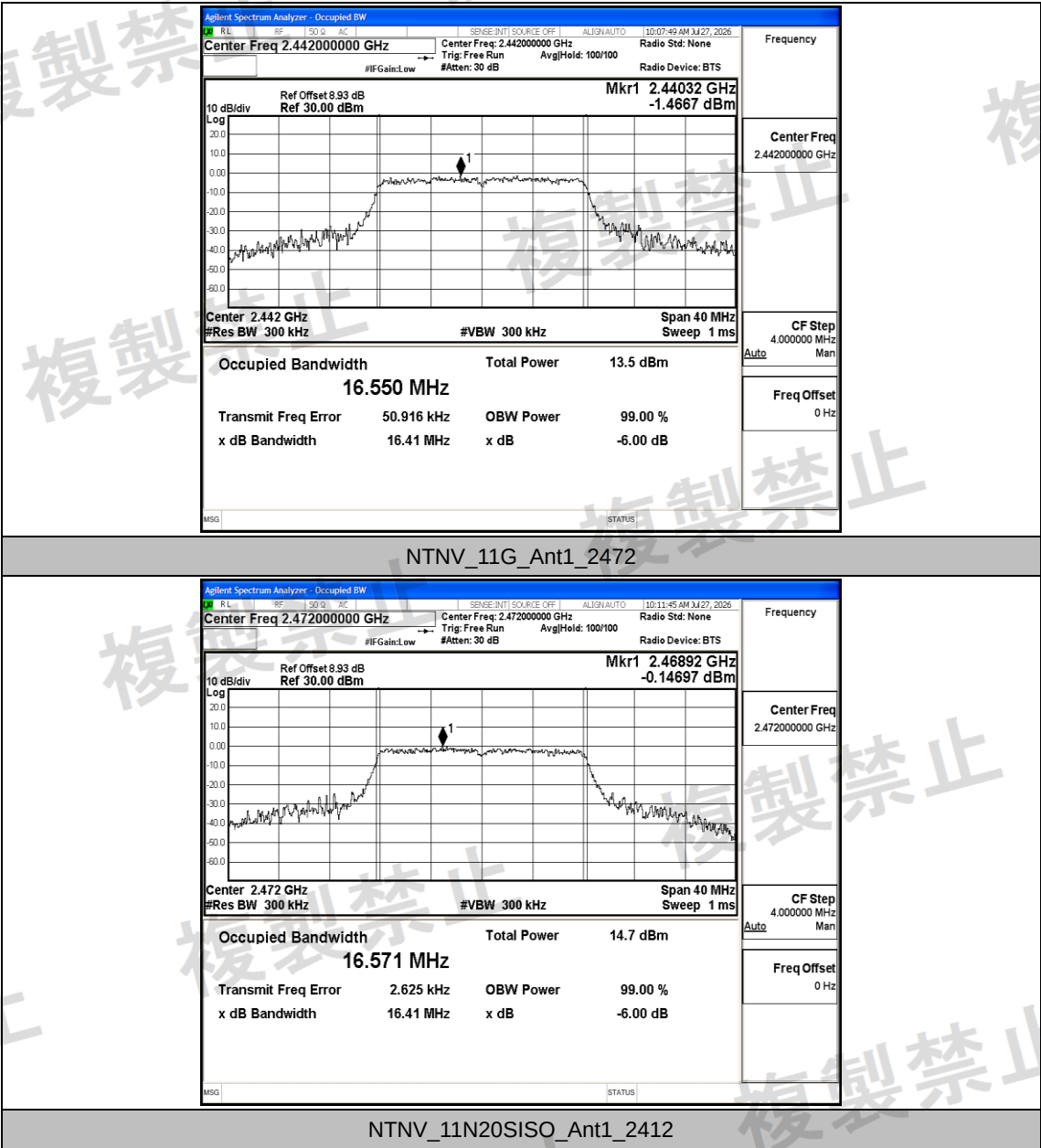
Test Result

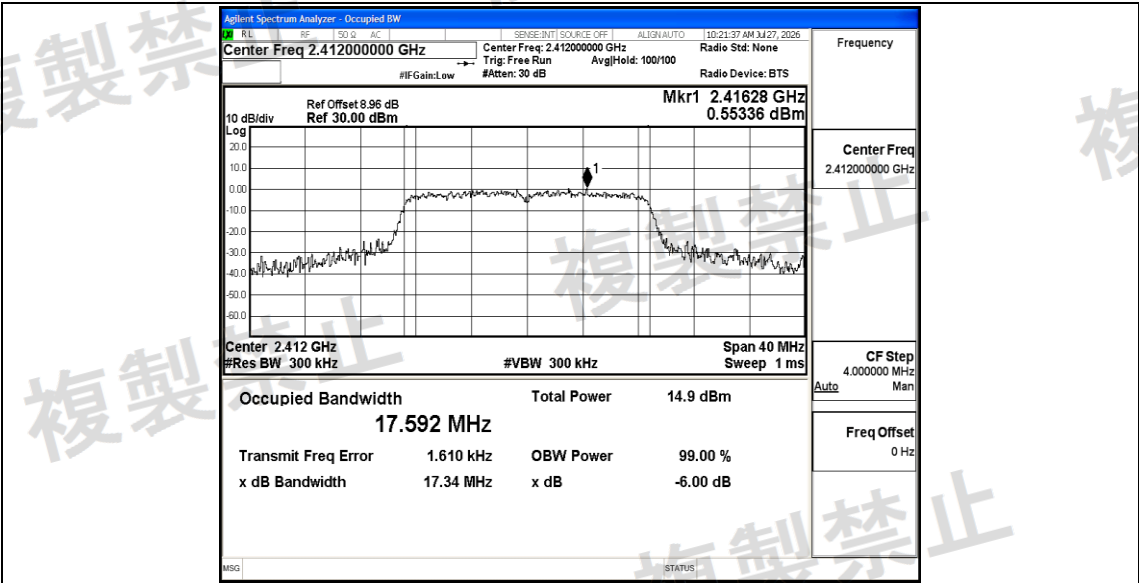
TestCondition	TestMode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	11B	Ant1	2412	11.734	≤26	PASS
			2442	11.738	≤26	PASS
			2472	11.847	≤26	PASS
	11G	Ant1	2412	16.570	≤26	PASS
			2442	16.550	≤26	PASS
			2472	16.571	≤26	PASS
	11N20SISO	Ant1	2412	17.592	≤26	PASS
			2442	17.612	≤26	PASS
			2472	17.628	≤26	PASS
	11N40SISO	Ant1	2422	35.928	26-40	PASS
			2442	35.927	26-40	PASS
			2462	35.956	26-40	PASS

Test Graphs

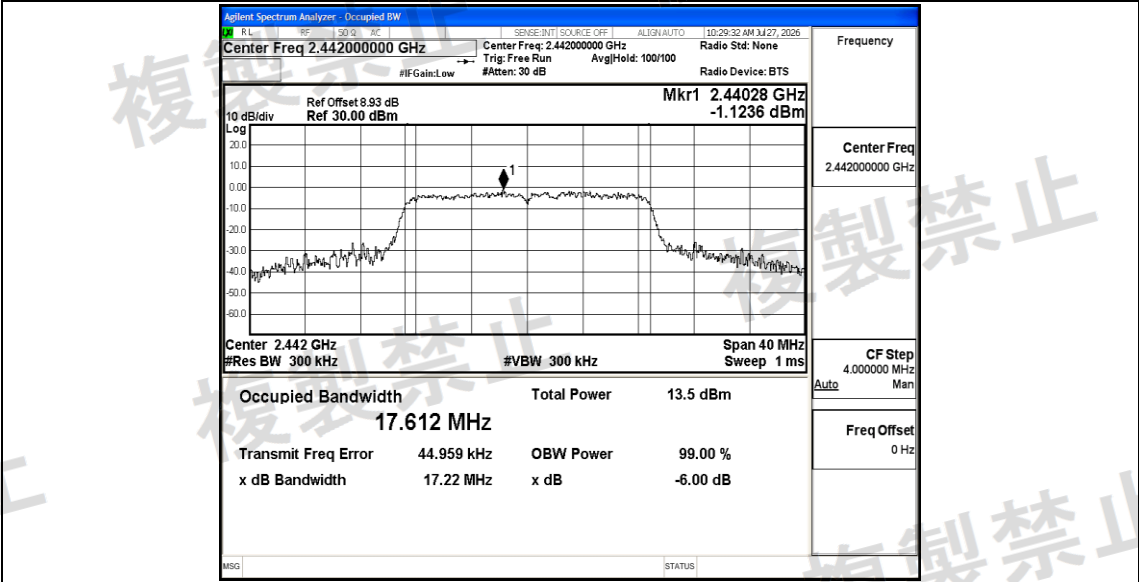




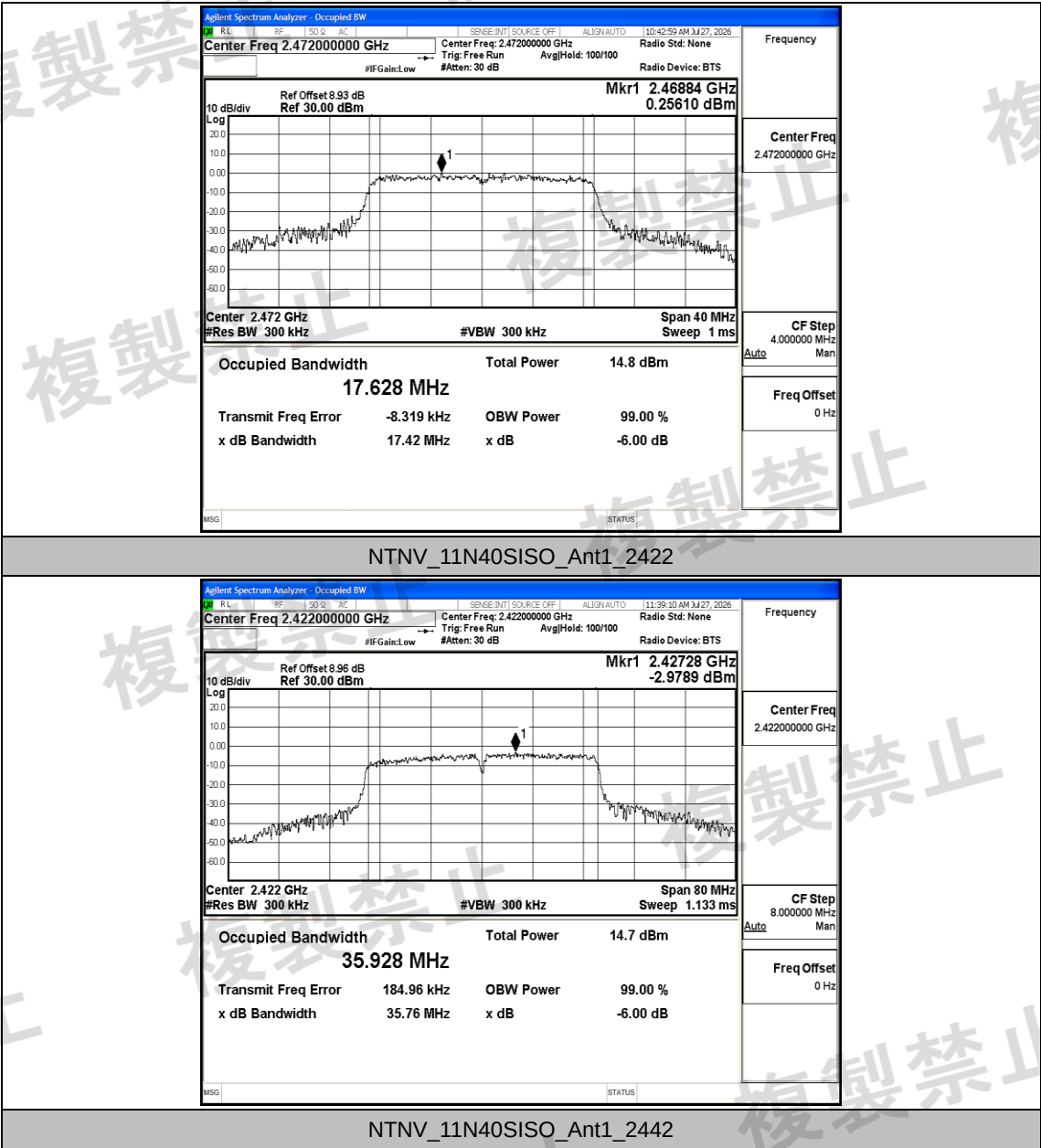


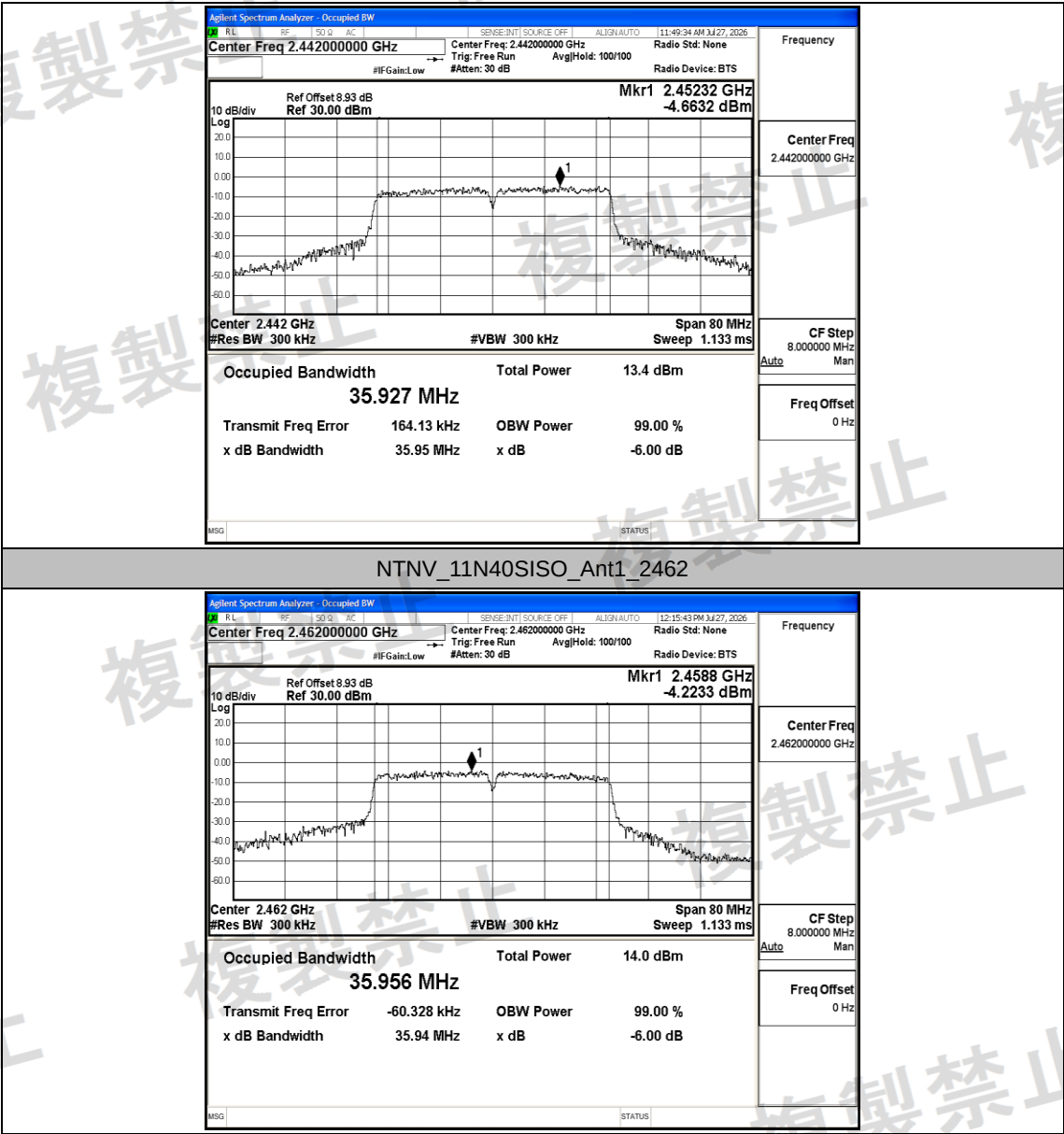


NTNV_11N20SISO_Ant1_2442



NTNV_11N20SISO_Ant1_2472



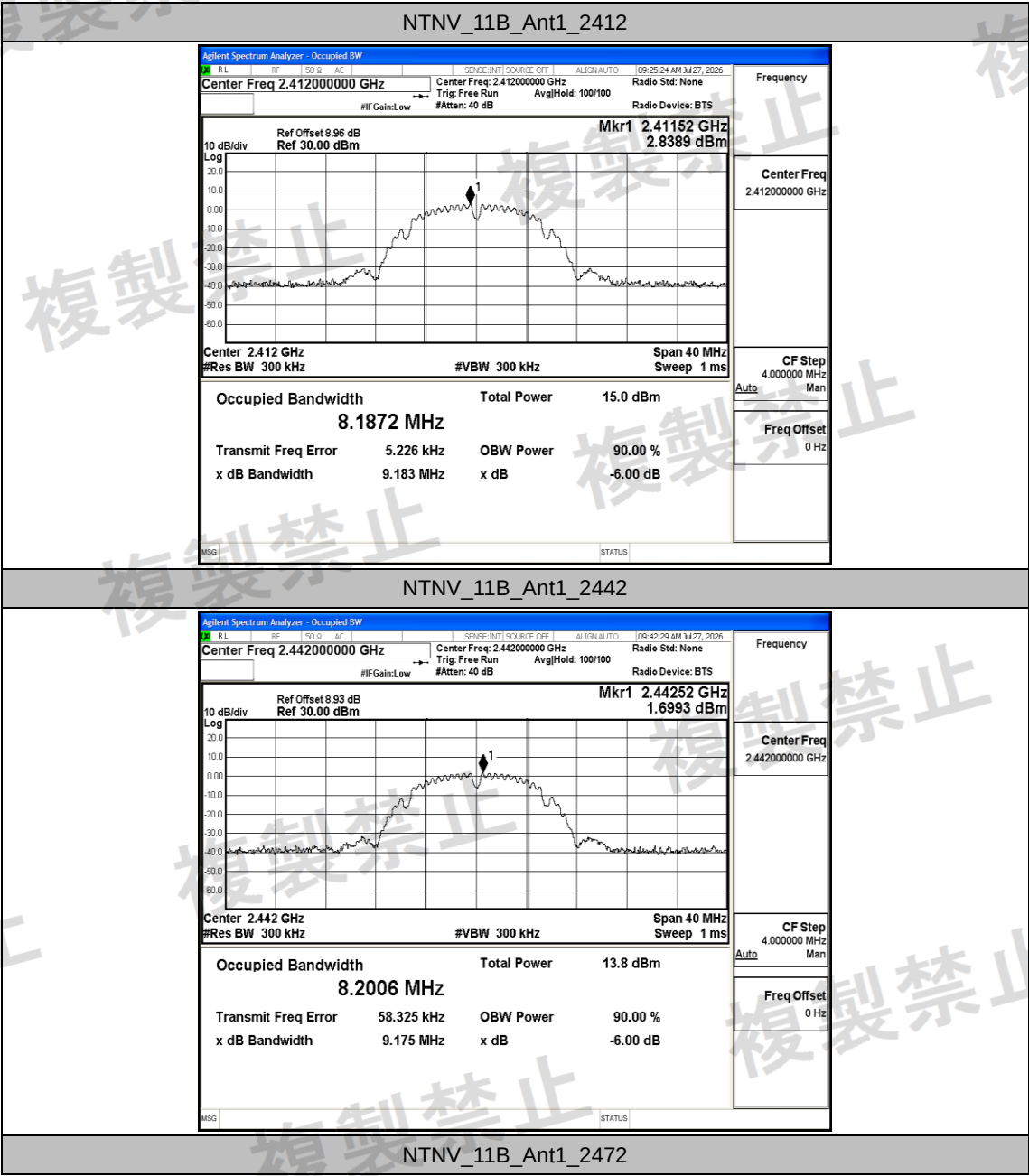


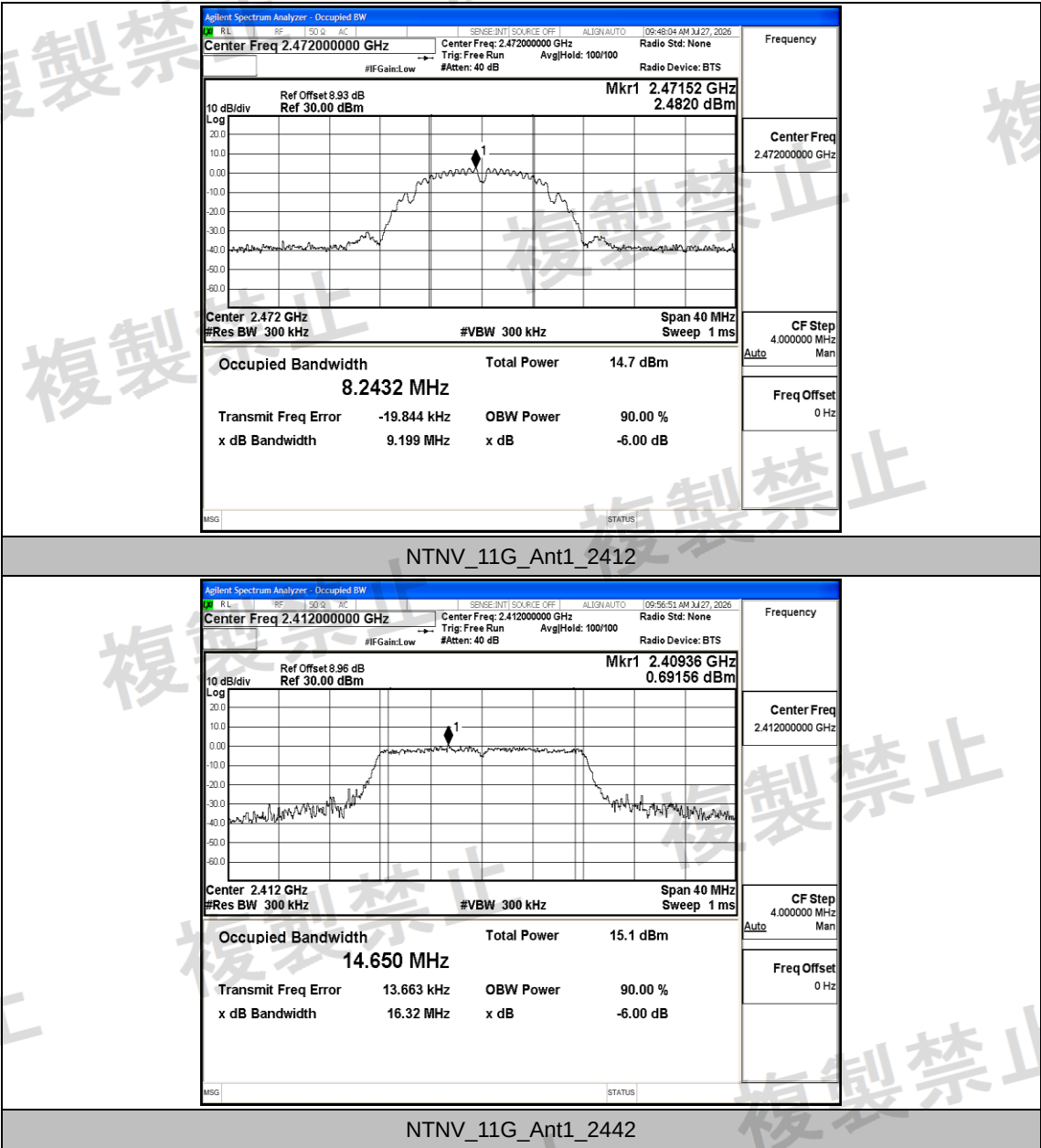
A.4 Spread Bandwidth

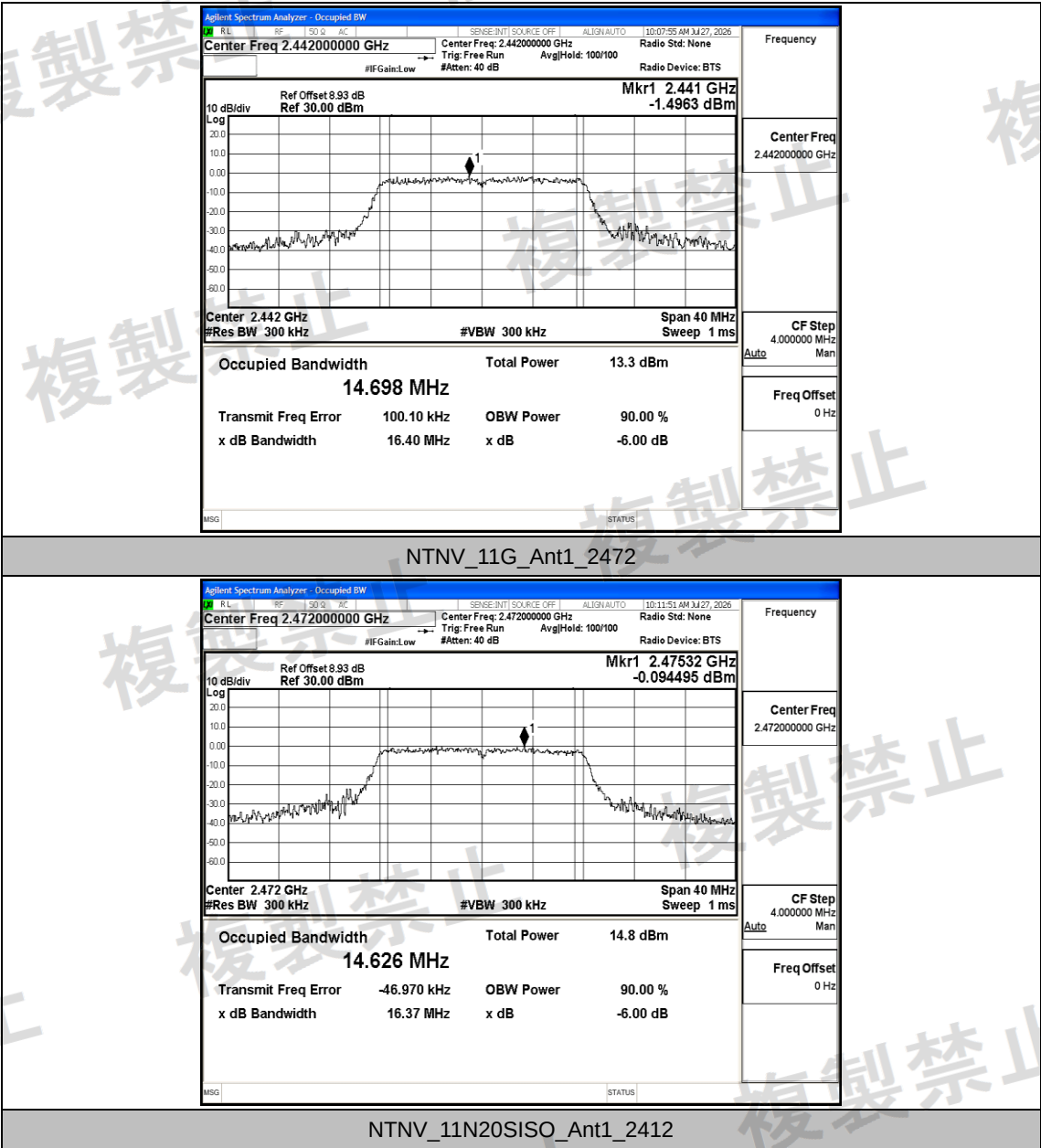
Test Result

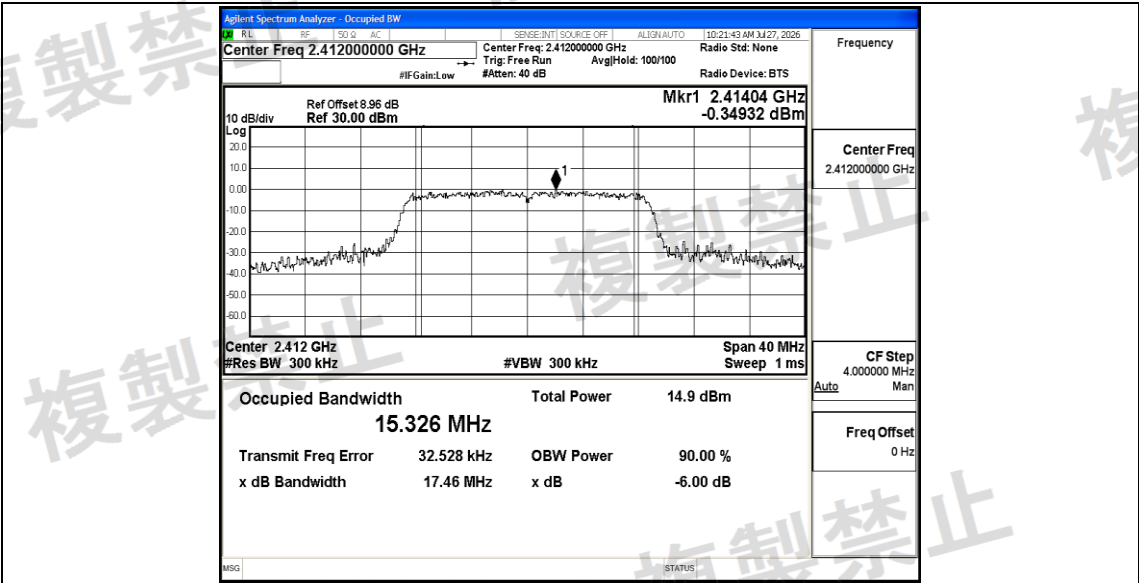
TestCondition	TestMode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	11B	Ant1	2412	8.187	---	PASS
			2442	8.201	---	PASS
			2472	8.243	---	PASS
	11G	Ant1	2412	14.650	---	PASS
			2442	14.698	---	PASS
			2472	14.626	---	PASS
	11N20SISO	Ant1	2412	15.326	---	PASS
			2442	15.441	---	PASS
			2472	15.459	---	PASS
	11N40SISO	Ant1	2422	31.110	---	PASS
			2442	31.994	---	PASS
			2462	31.642	---	PASS

Test Graphs

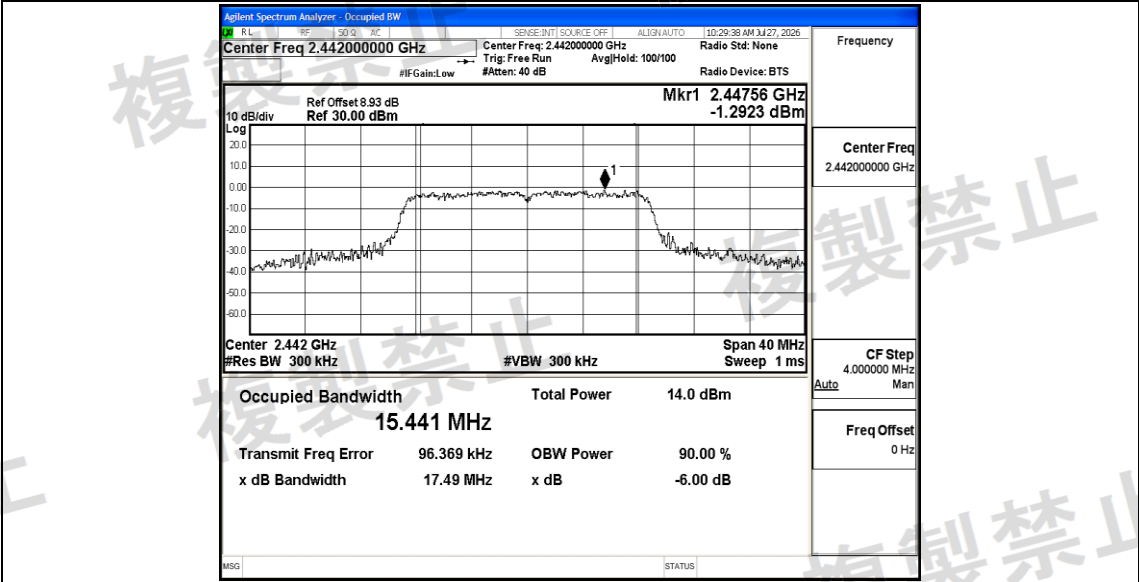




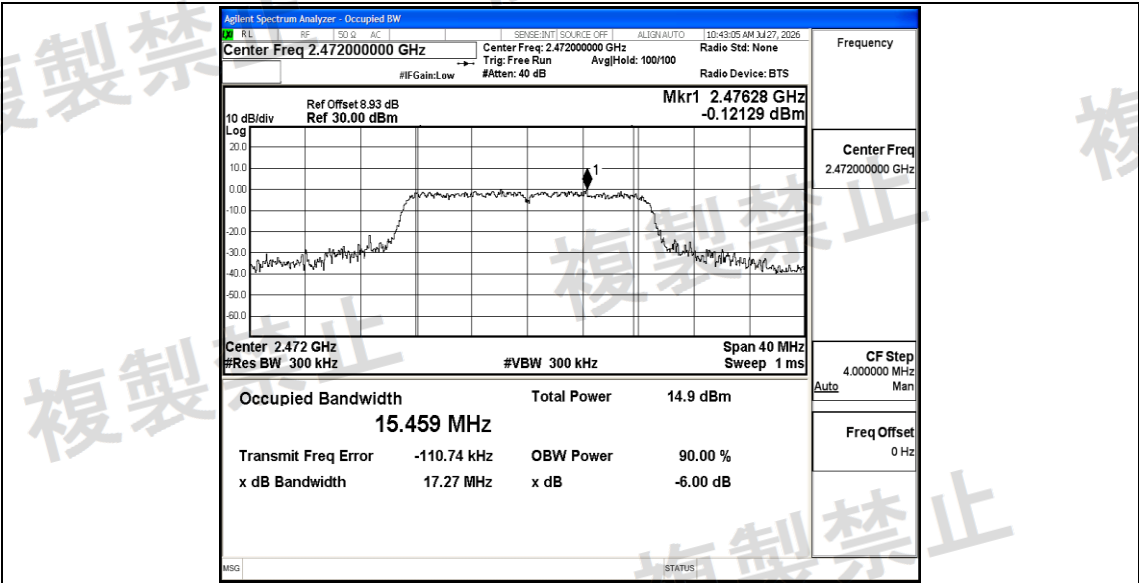




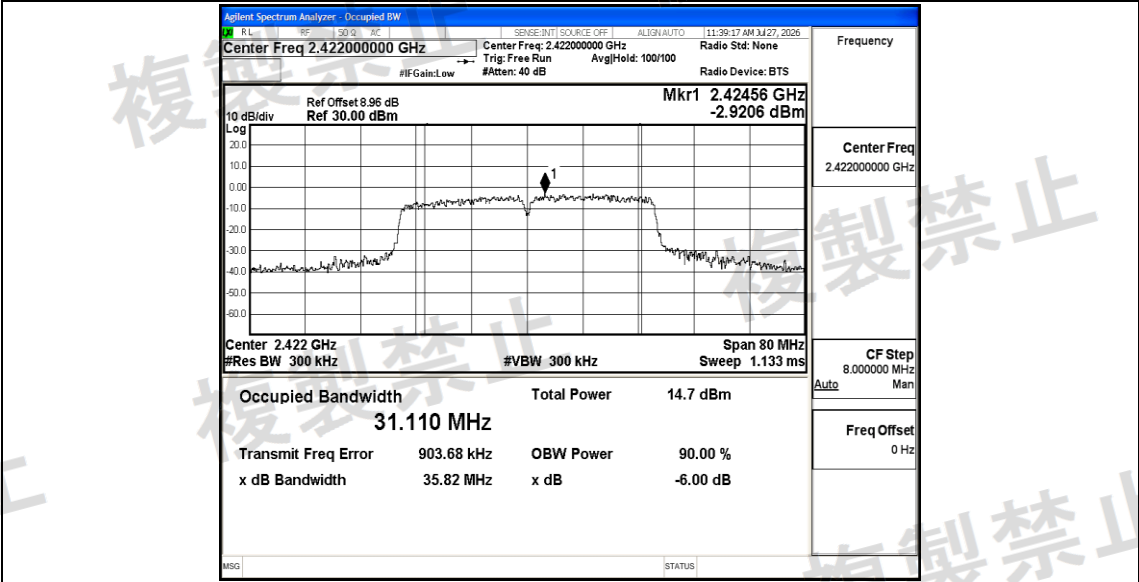
NTNV_11N20SISO_Ant1_2442



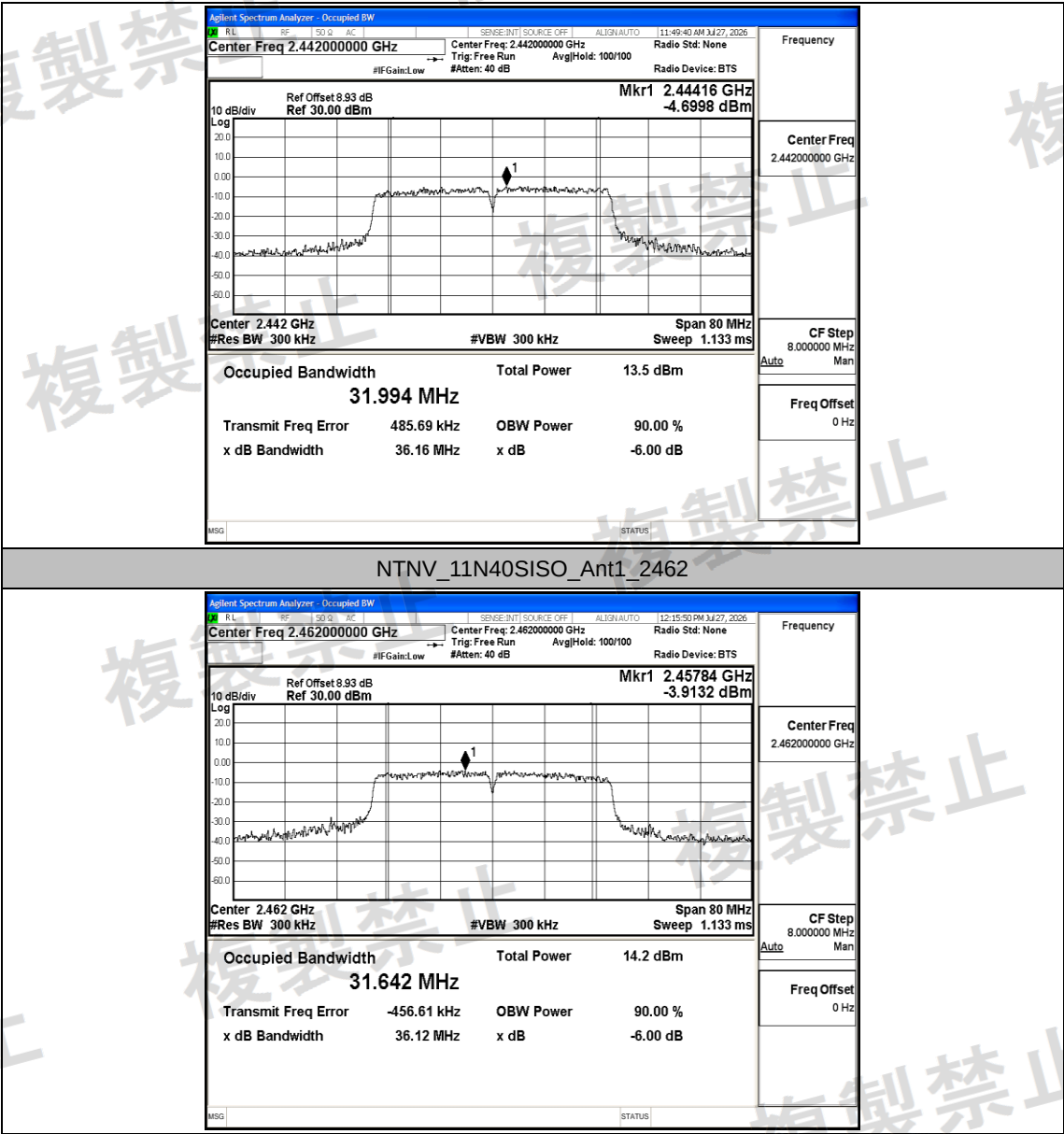
NTNV_11N20SISO_Ant1_2472



NTNV_11N40SISO_Ant1_2422



NTNV_11N40SISO_Ant1_2442



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	-59.49	≤-26	0.00112	≤2.5	PASS
				1000~2387	-57.75	≤-26	0.00168	≤2.5	PASS
				2387~2400	-45.65	≤-16	0.02723	≤25	PASS
				2483.5~2496.5	-48.85	≤-16	0.01303	≤25	PASS
				2496.5~13000	-47.93	≤-26	0.01611	≤2.5	PASS
			2442	30~1000	-33.60	≤-26	0.43652	≤2.5	PASS
				1000~2387	-58.14	≤-26	0.00153	≤2.5	PASS
				2387~2400	-48.69	≤-16	0.01352	≤25	PASS
				2483.5~2496.5	-48.44	≤-16	0.01432	≤25	PASS
				2496.5~13000	-48.58	≤-26	0.01387	≤2.5	PASS
			2472	30~1000	-59.34	≤-26	0.00116	≤2.5	PASS
				1000~2387	-58.16	≤-26	0.00153	≤2.5	PASS
				2387~2400	-48.77	≤-16	0.01327	≤25	PASS
				2483.5~2496.5	-44.27	≤-16	0.03741	≤25	PASS
				2496.5~13000	-26.84	≤-26	2.07014	≤2.5	PASS
	11G	Ant1	2412	30~1000	-32.47	≤-26	0.56624	≤2.5	PASS
				1000~2387	-51.18	≤-26	0.00762	≤2.5	PASS
				2387~2400	-31.59	≤-16	0.69343	≤25	PASS
				2483.5~2496.5	-48.85	≤-16	0.01303	≤25	PASS
				2496.5~13000	-51.16	≤-26	0.00766	≤2.5	PASS
			2442	30~1000	-37.35	≤-26	0.18408	≤2.5	PASS
				1000~2387	-57.79	≤-26	0.00166	≤2.5	PASS
				2387~2400	-48.48	≤-16	0.01419	≤25	PASS
				2483.5~2496.5	-48.62	≤-16	0.01374	≤25	PASS
				2496.5~13000	-35.41	≤-26	0.28774	≤2.5	PASS
			2472	30~1000	-36.69	≤-26	0.21429	≤2.5	PASS
				1000~2387	-58.20	≤-26	0.00151	≤2.5	PASS
				2387~2400	-48.93	≤-16	0.01279	≤25	PASS
				2483.5~2496.5	-31.37	≤-16	0.72946	≤25	PASS
				2496.5~13000	-39.94	≤-26	0.10139	≤2.5	PASS
	11N20SISO	Ant1	2412	30~1000	-42.37	≤-26	0.05794	≤2.5	PASS
				1000~2387	-50.29	≤-26	0.00935	≤2.5	PASS
				2387~2400	-31.19	≤-16	0.76033	≤25	PASS
				2483.5~2496.5	-48.88	≤-16	0.01294	≤25	PASS
				2496.5~13000	-29.87	≤-26	1.03039	≤2.5	PASS
			2442	30~1000	-36.56	≤-26	0.22080	≤2.5	PASS

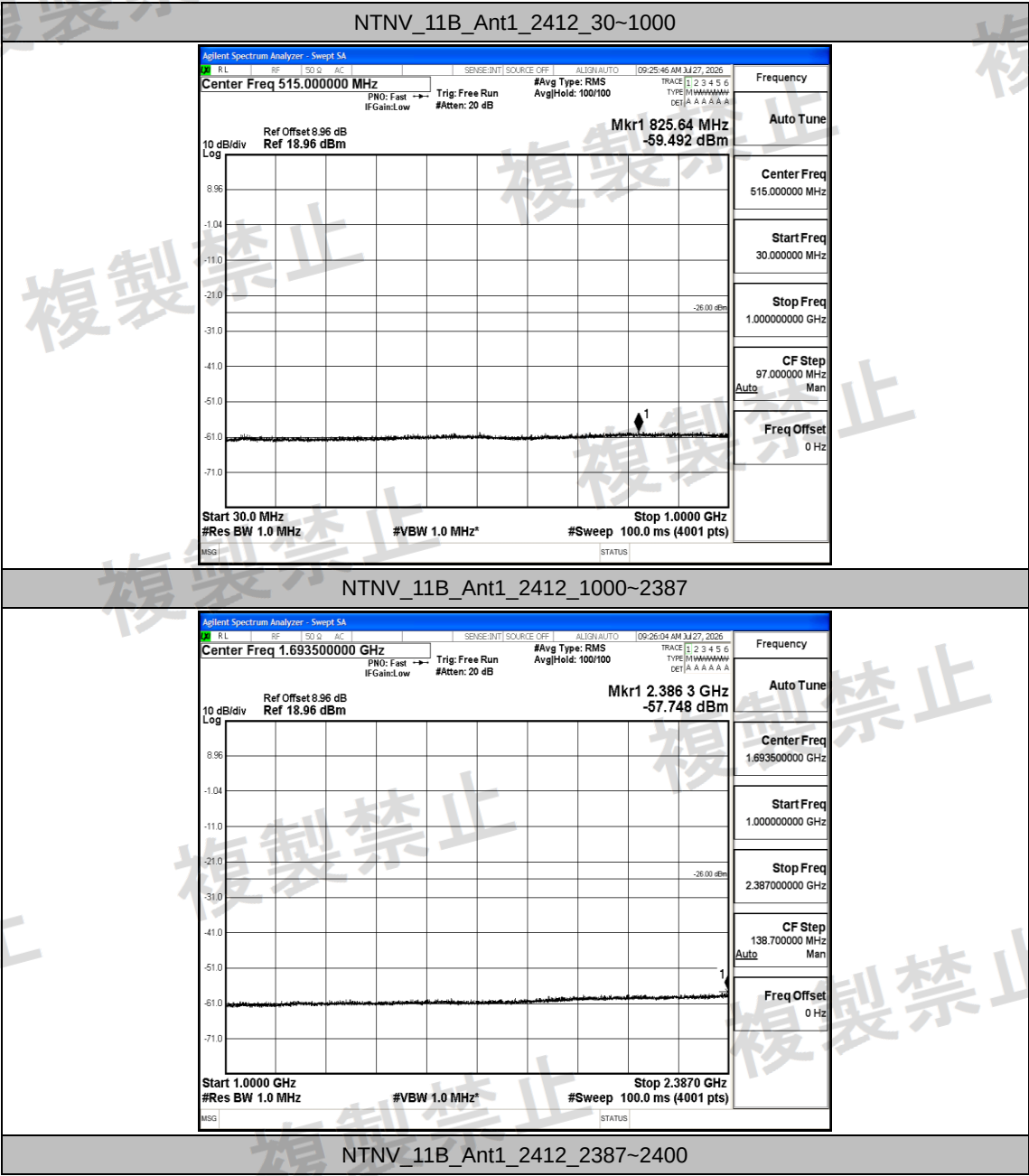
Guangzhou LCS Compliance Testing Laboratory Ltd.

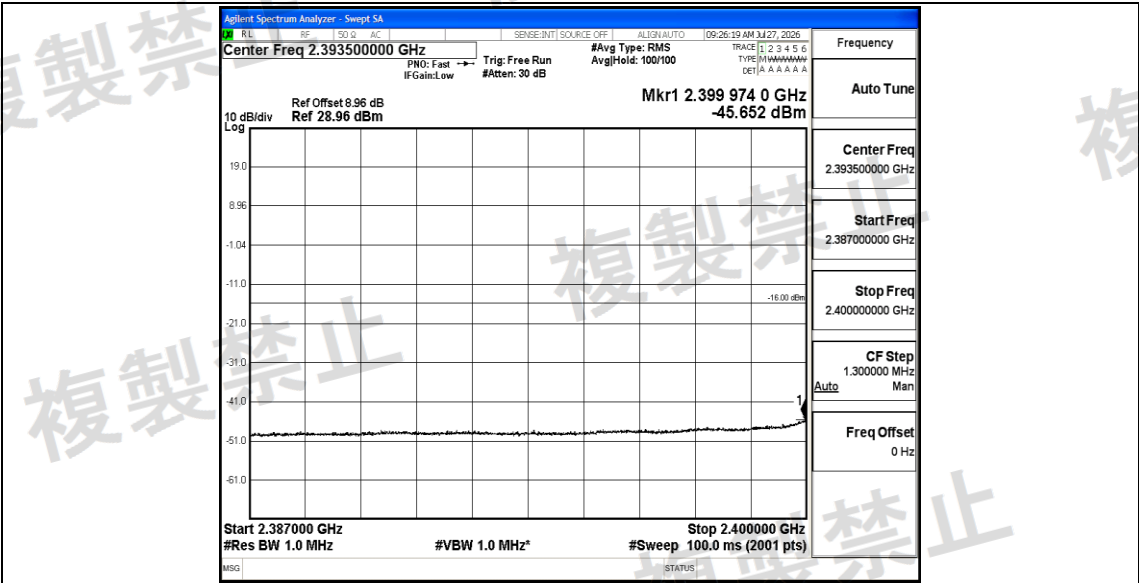
Add: No.44-1, Qianfeng North Road, Shiqi, Panyu District, Guangzhou, Guangdong, China

Tel: +(86) 020-39166689 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

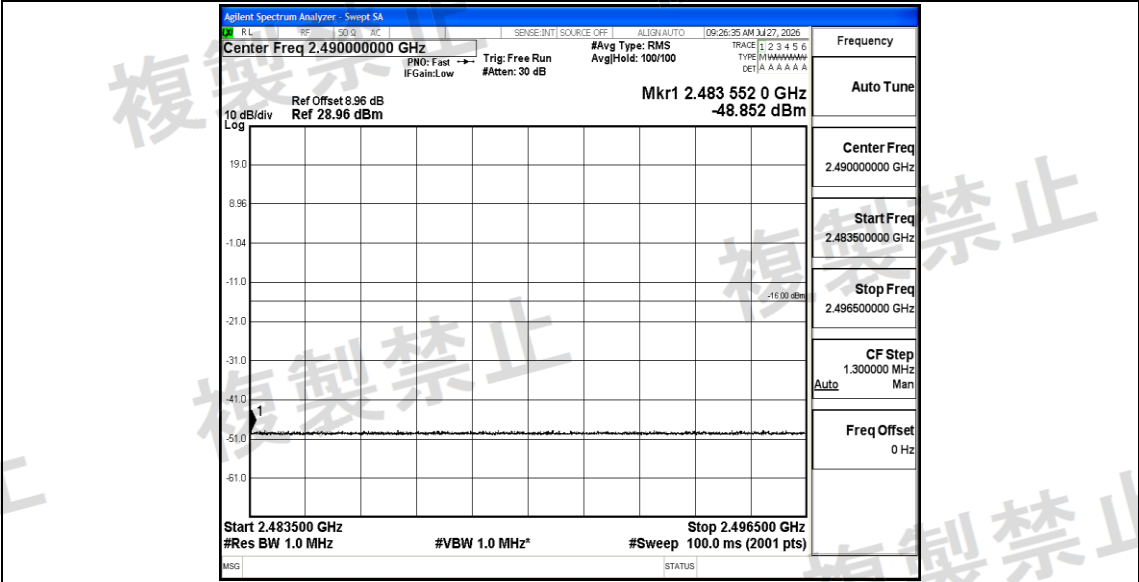
11N40SISO	Ant1		1000~2387	-58.27	≤-26	0.00149	≤2.5	PASS
			2387~2400	-48.99	≤-16	0.01262	≤25	PASS
			2483.5~2496.5	-48.72	≤-16	0.01343	≤25	PASS
			2496.5~13000	-27.71	≤-26	1.69434	≤2.5	PASS
		2472	30~1000	-41.22	≤-26	0.07551	≤2.5	PASS
			1000~2387	-58.26	≤-26	0.00149	≤2.5	PASS
			2387~2400	-48.83	≤-16	0.01309	≤25	PASS
			2483.5~2496.5	-29.98	≤-16	1.00462	≤25	PASS
			2496.5~13000	-50.95	≤-26	0.00804	≤2.5	PASS
		2422	30~1000	-31.17	≤-26	0.76384	≤2.5	PASS
			1000~2387	-50.26	≤-26	0.00942	≤2.5	PASS
			2387~2400	-38.16	≤-16	0.15276	≤25	PASS
			2483.5~2496.5	-48.69	≤-16	0.01352	≤25	PASS
			2496.5~13000	-32.62	≤-26	0.54702	≤2.5	PASS
		2442	30~1000	-35.86	≤-26	0.25942	≤2.5	PASS
			1000~2387	-58.40	≤-26	0.00145	≤2.5	PASS
			2387~2400	-48.61	≤-16	0.01377	≤25	PASS
			2483.5~2496.5	-47.11	≤-16	0.01945	≤25	PASS
			2496.5~13000	-38.78	≤-26	0.13243	≤2.5	PASS
		2462	30~1000	-34.19	≤-26	0.38107	≤2.5	PASS
			1000~2387	-58.06	≤-26	0.00156	≤2.5	PASS
			2387~2400	-48.97	≤-16	0.01268	≤25	PASS
			2483.5~2496.5	-36.22	≤-16	0.23878	≤25	PASS
			2496.5~13000	-51.13	≤-26	0.00771	≤2.5	PASS

Test Graphs

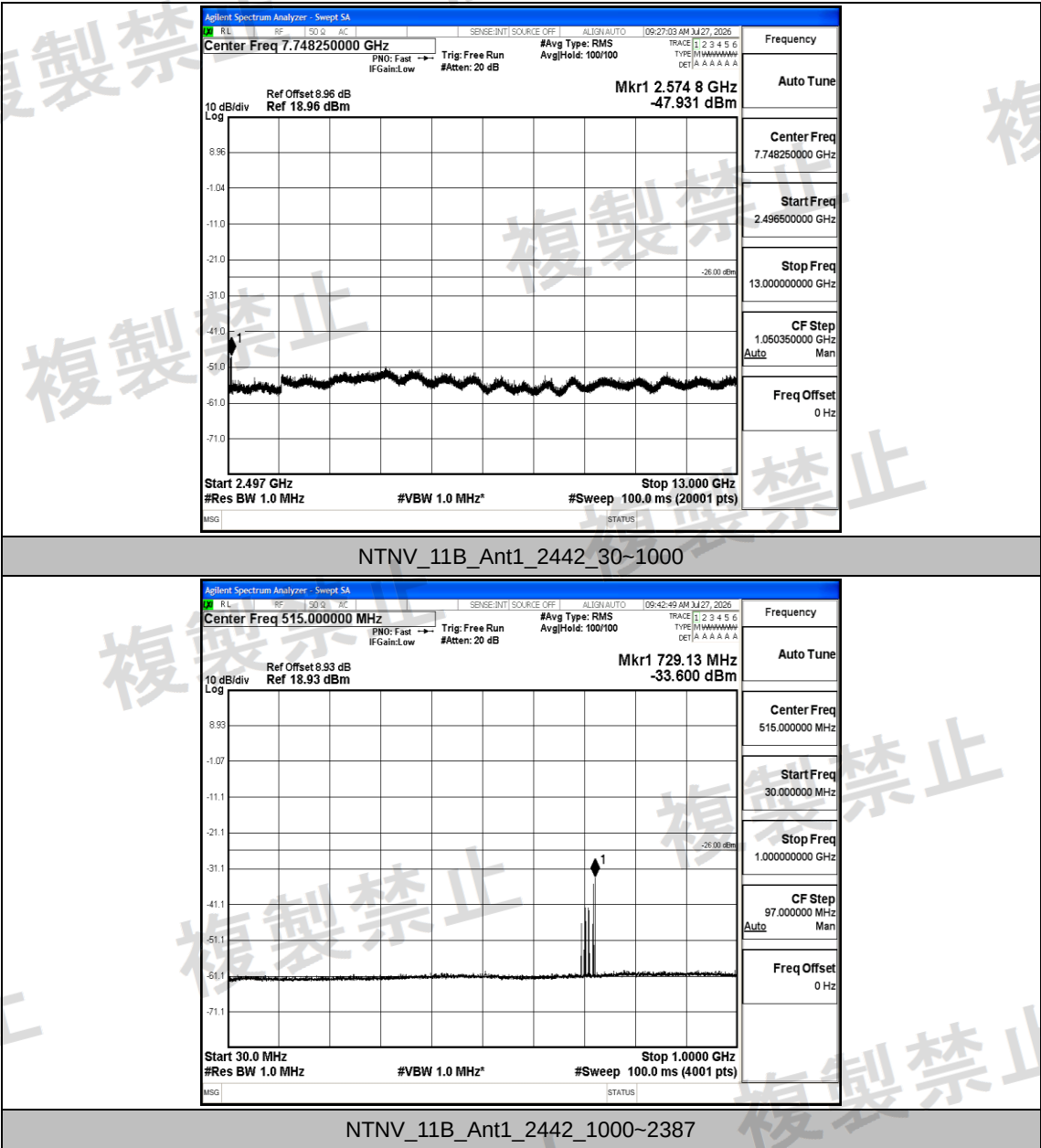


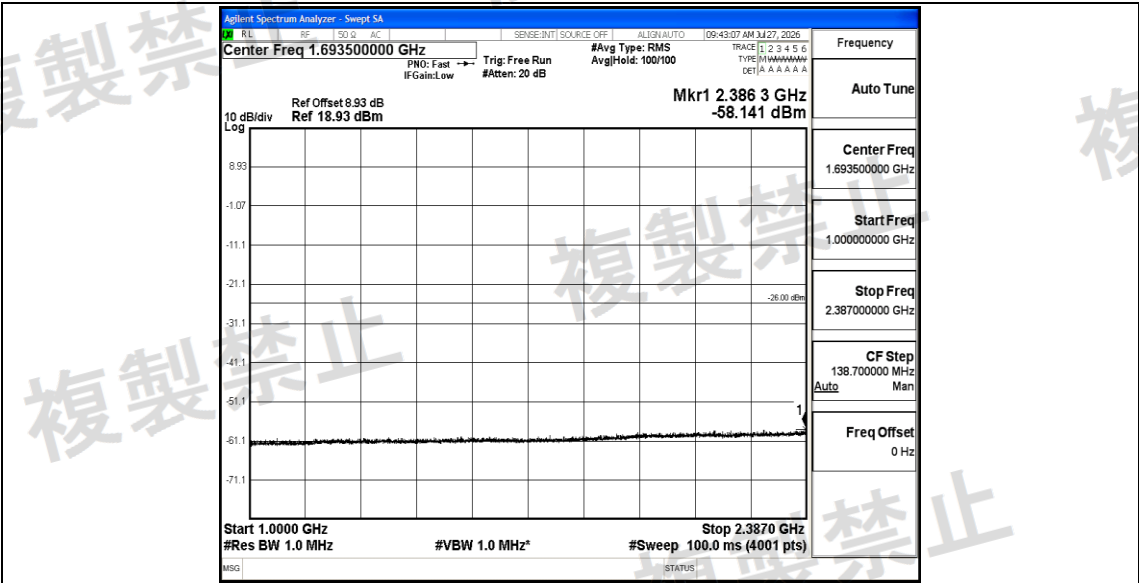


NTNV_11B_Ant1_2412_2483.5~2496.5

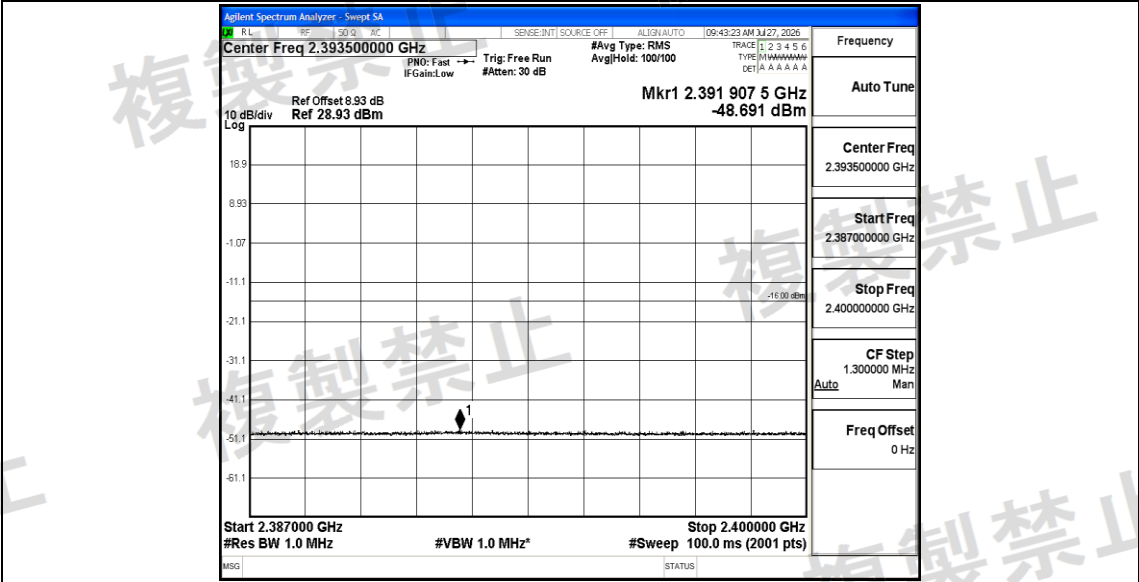


NTNV_11B_Ant1_2412_2496.5~13000

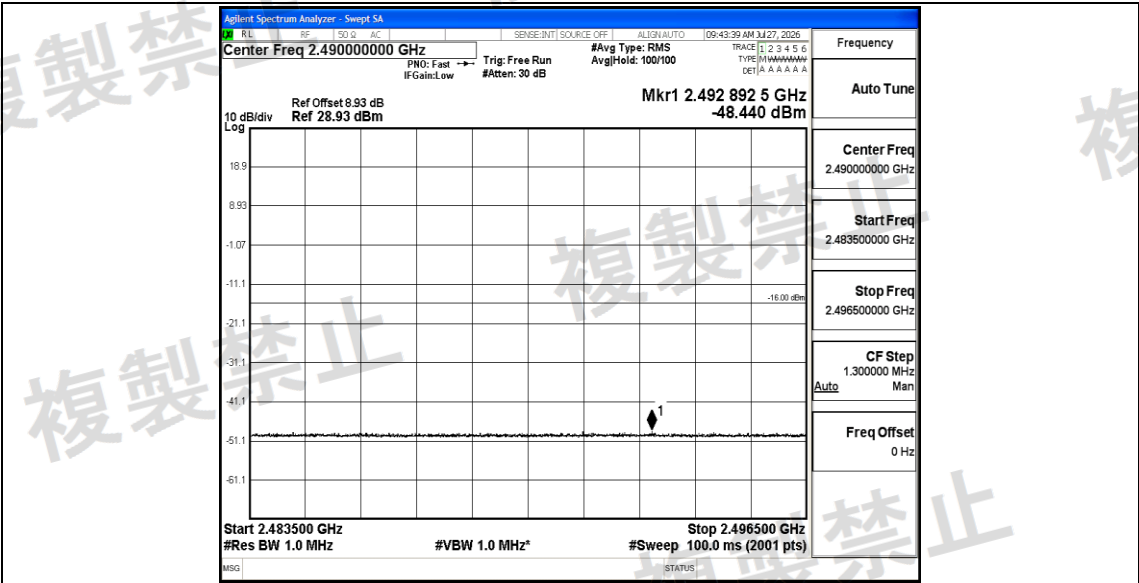




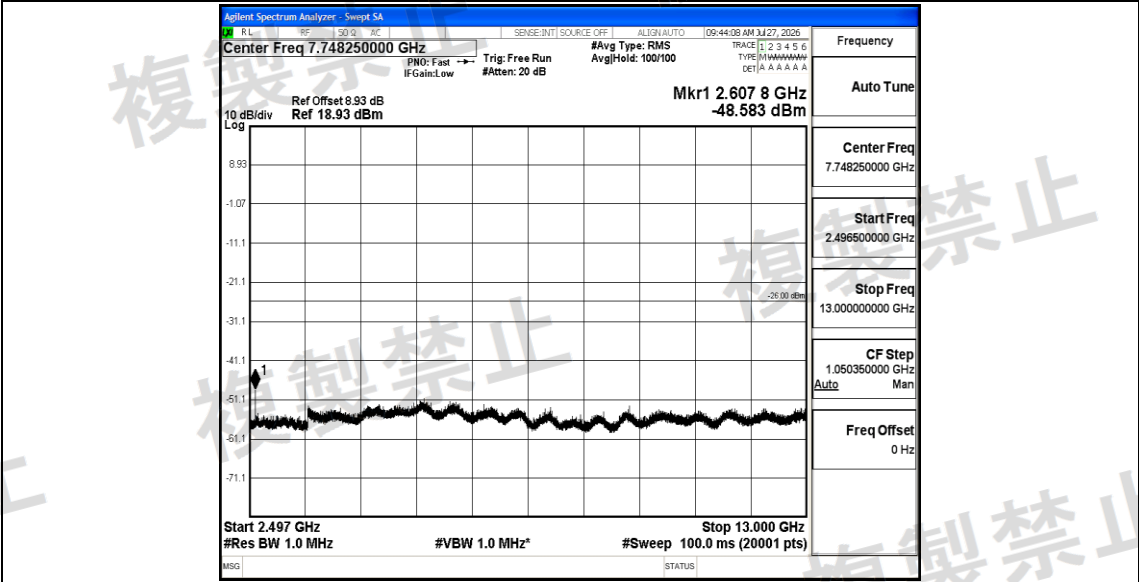
NTNV_11B_Ant1_2442_2387~2400



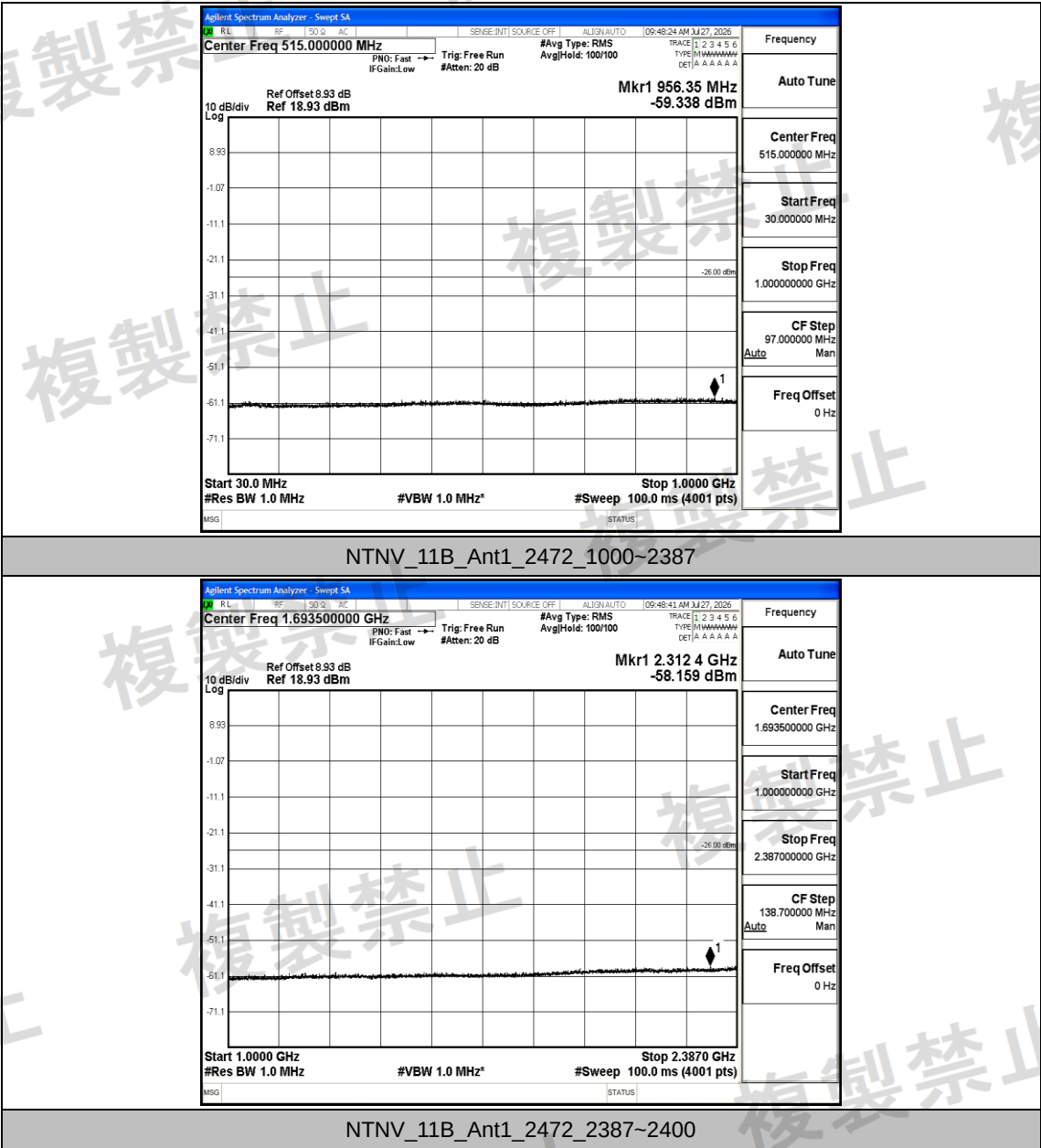
NTNV_11B_Ant1_2442_2483.5~2496.5

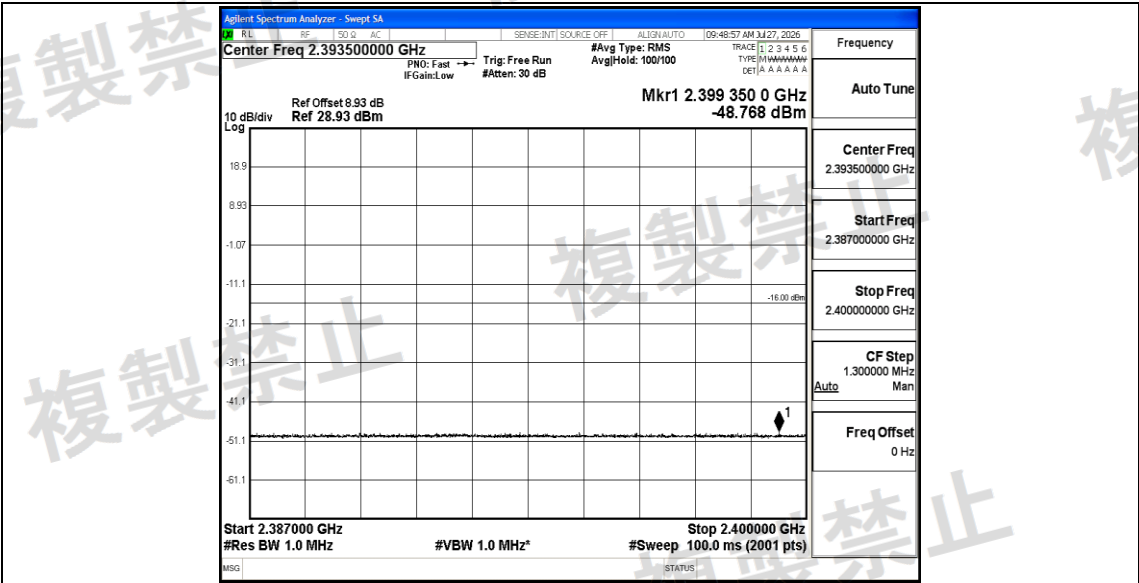


NTNV_11B_Ant1_2442_2496.5~13000

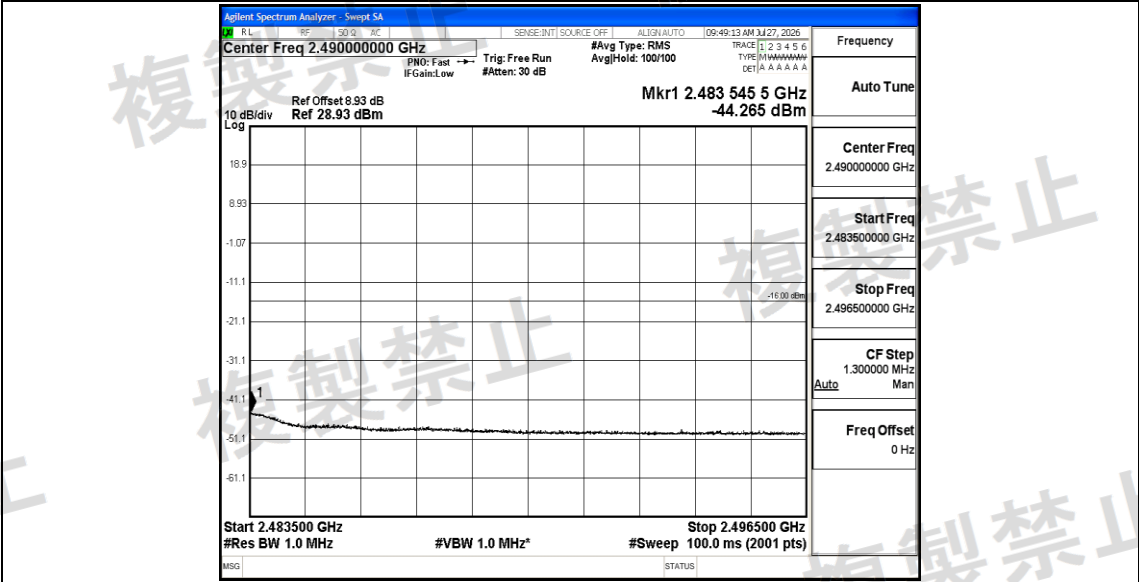


NTNV_11B_Ant1_2472_30~1000

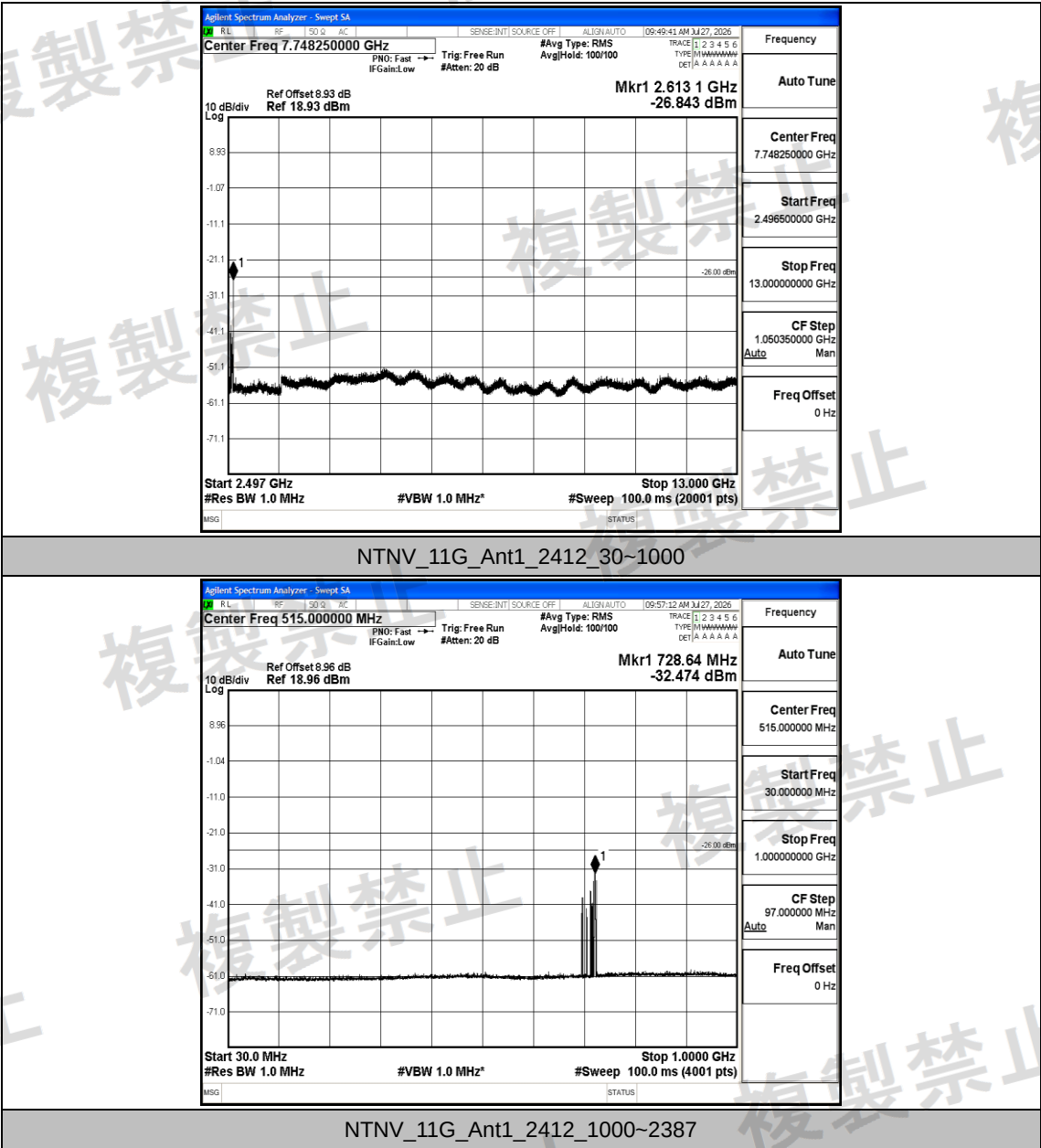


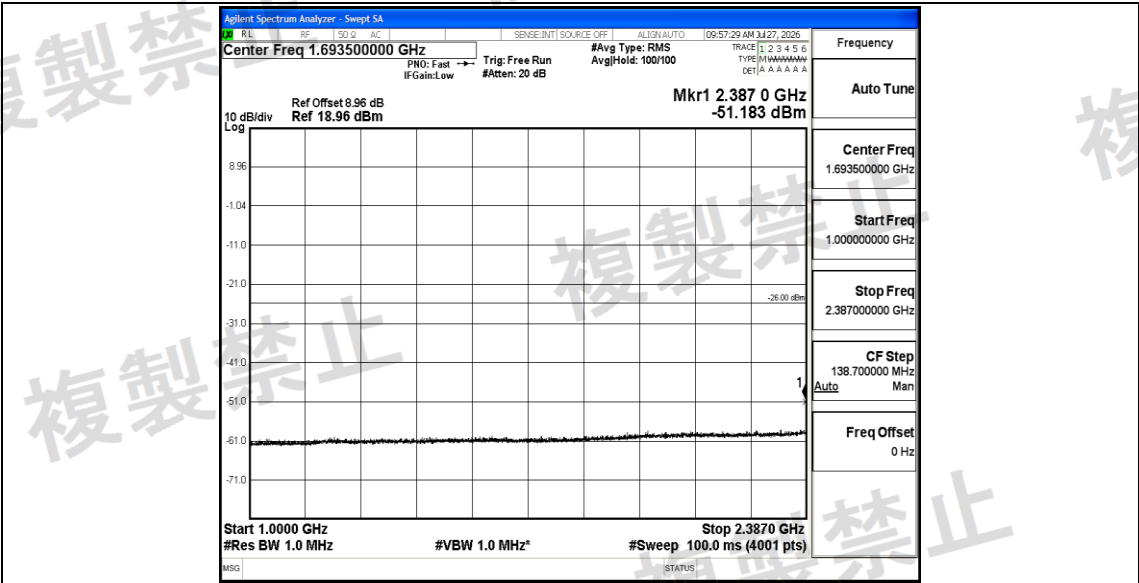


NTNV_11B_Ant1_2472_2483.5~2496.5

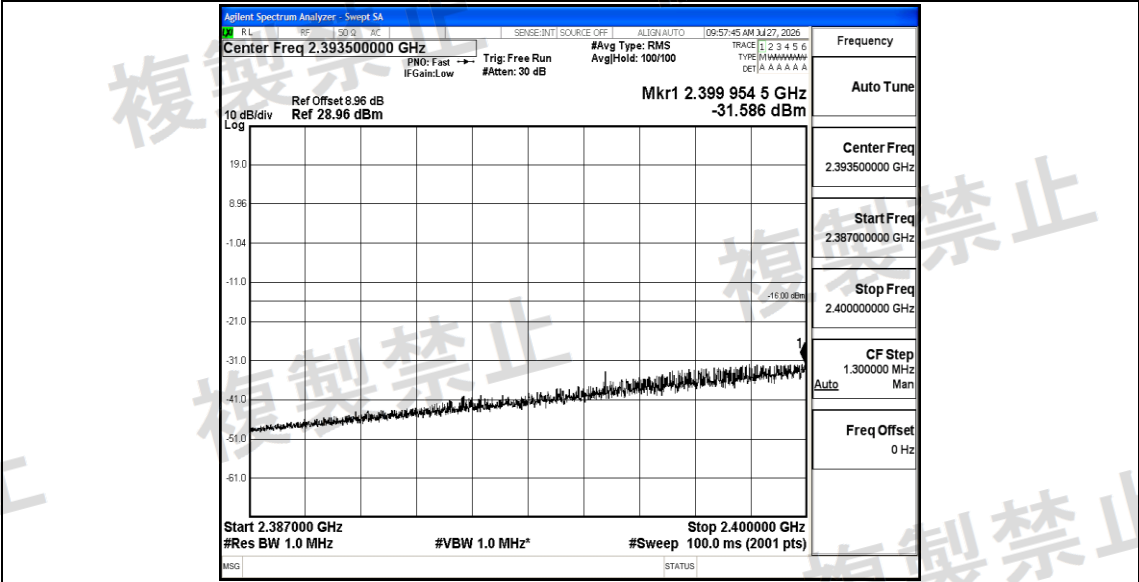


NTNV_11B_Ant1_2472_2496.5~13000

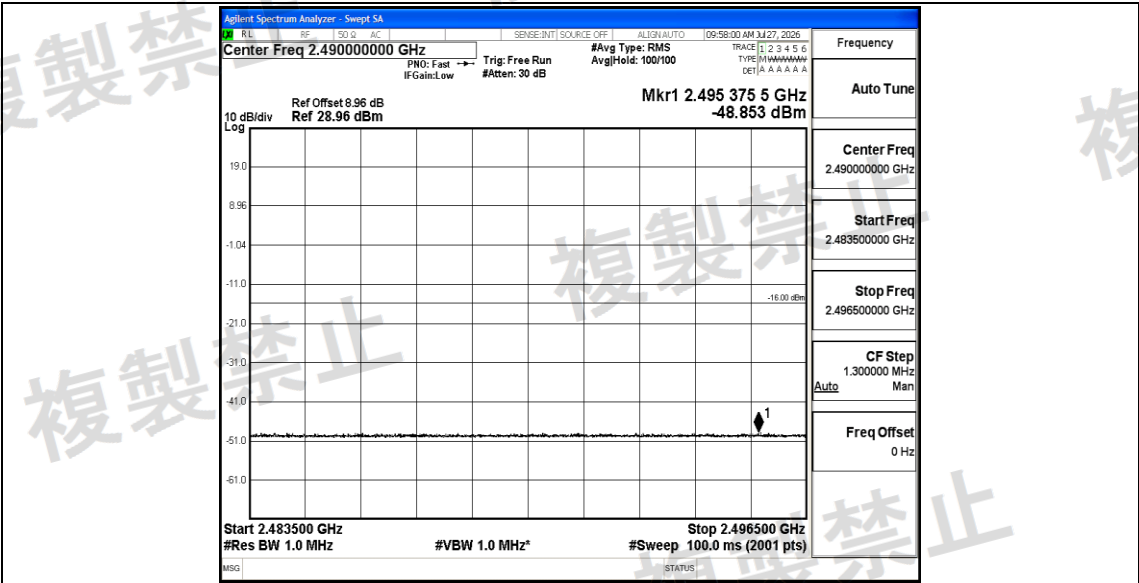




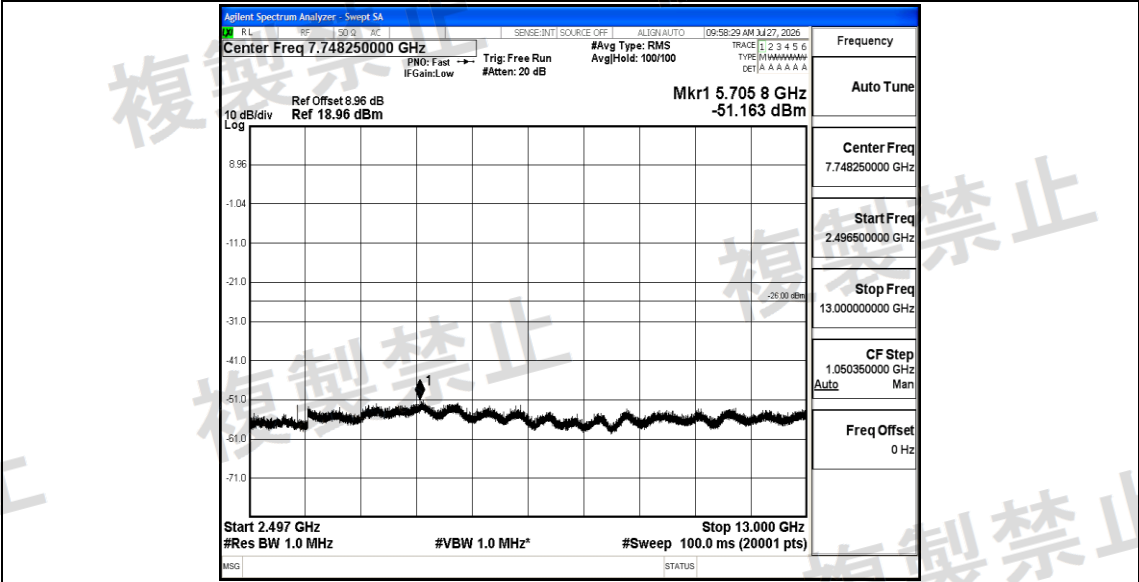
NTNV_11G_Ant1_2412_2387~2400



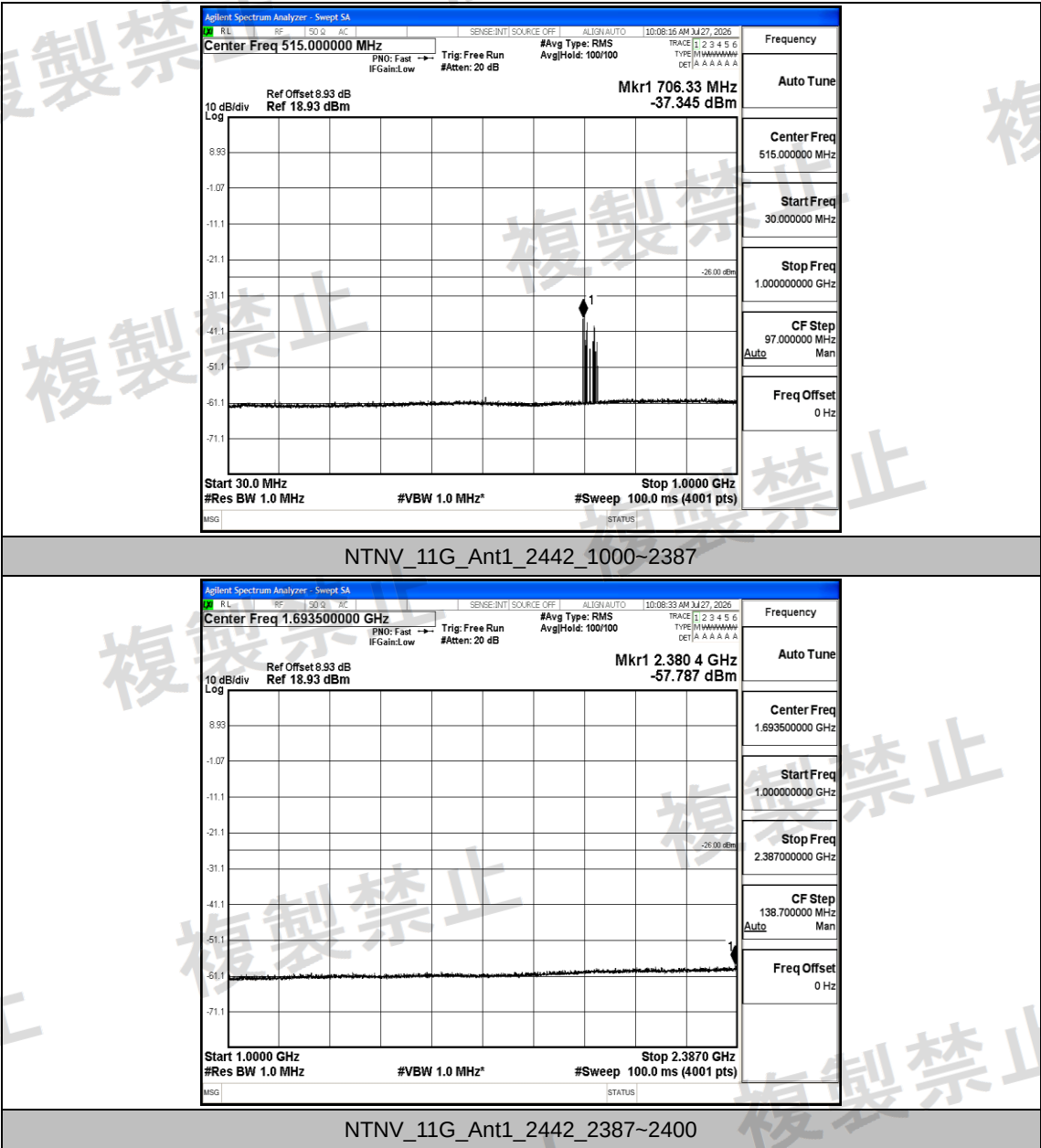
NTNV_11G_Ant1_2412_2483.5~2496.5

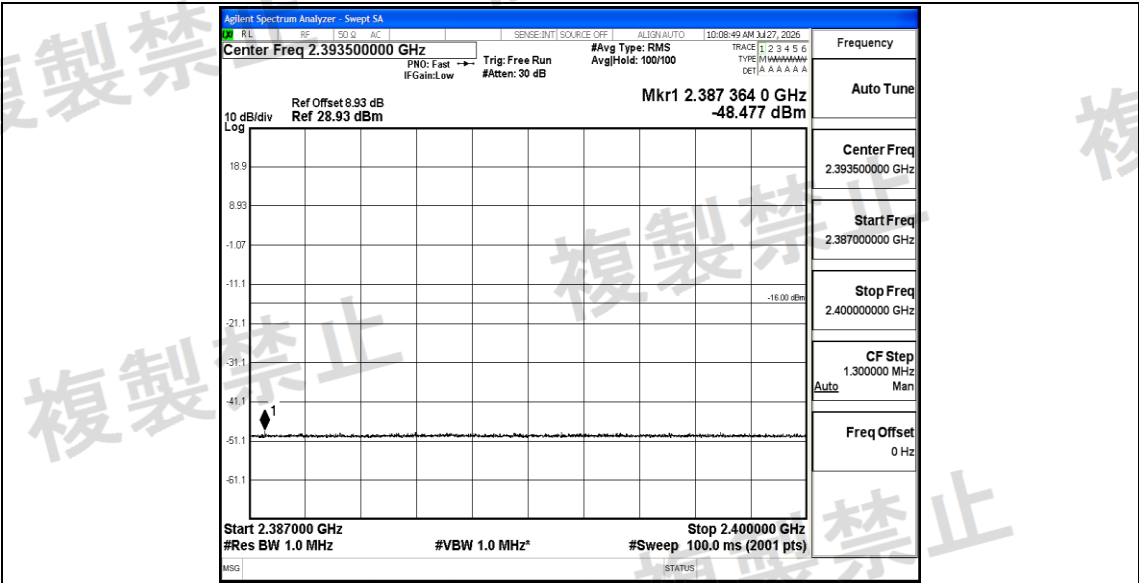


NTNV_11G_Ant1_2412_2496.5~13000

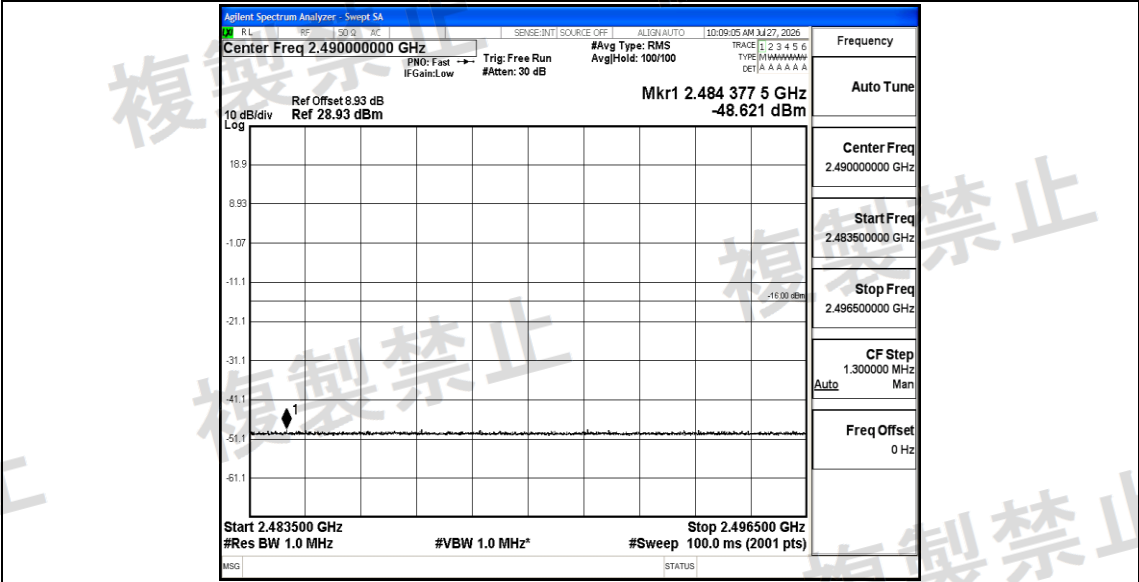


NTNV_11G_Ant1_2442_30~1000

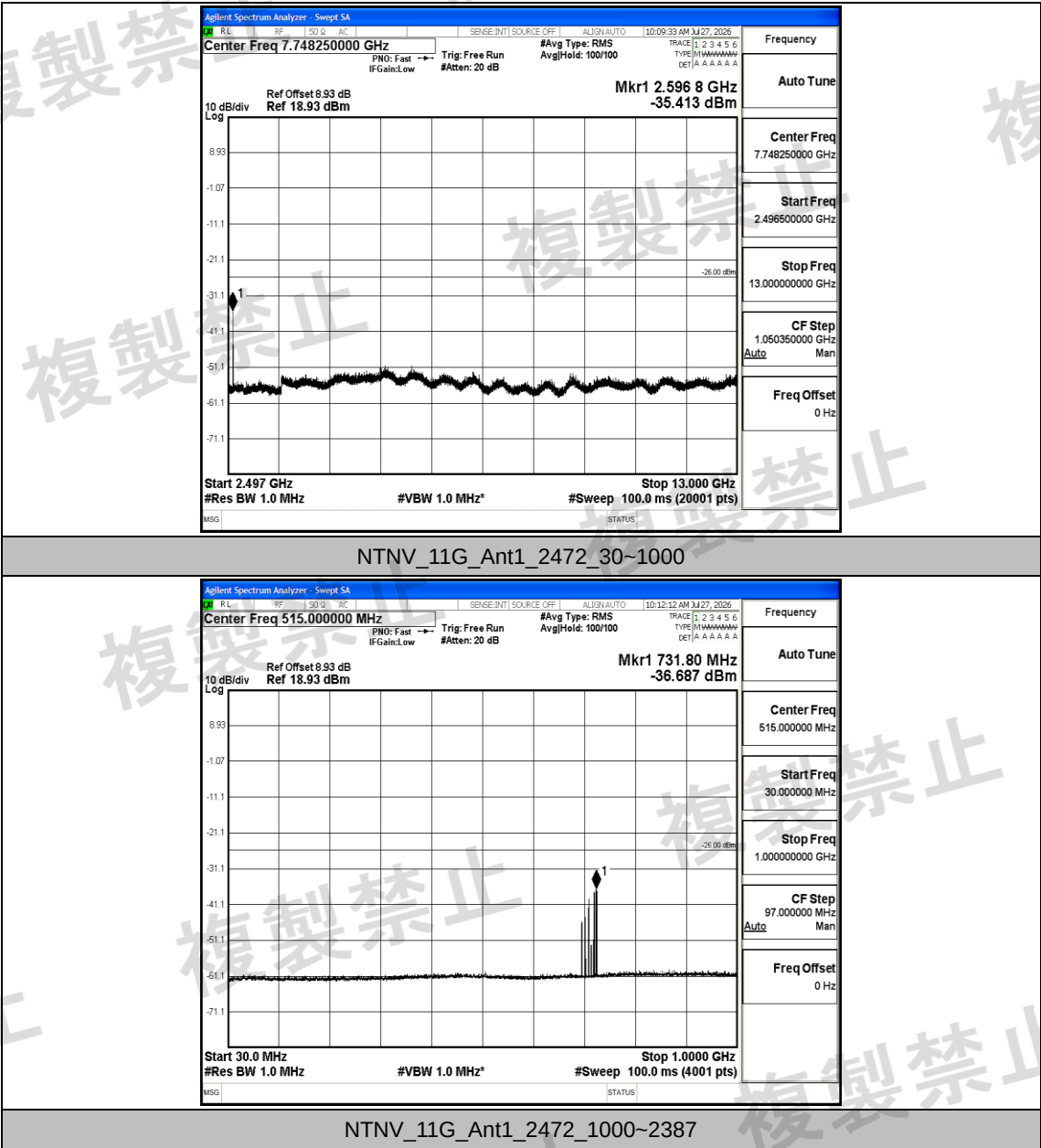


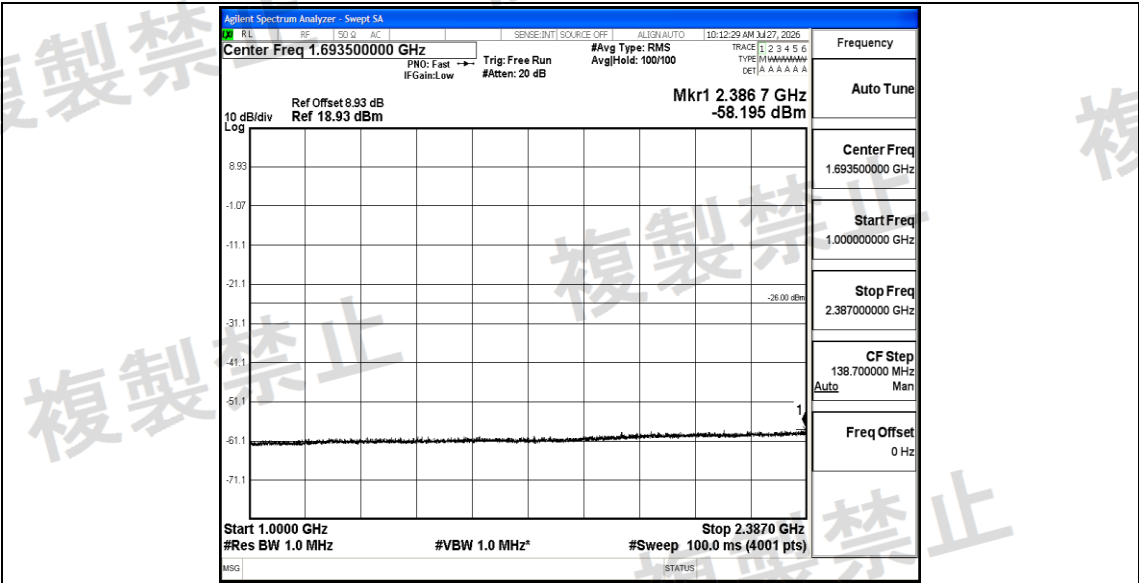


NTNV_11G_Ant1_2442_2483.5~2496.5

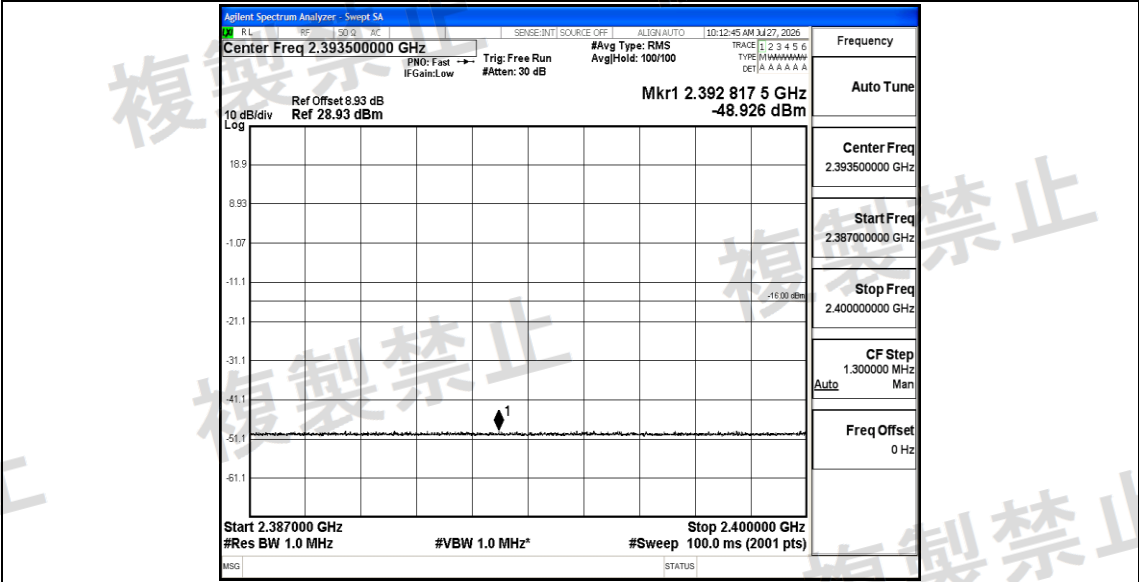


NTNV_11G_Ant1_2442_2496.5~13000

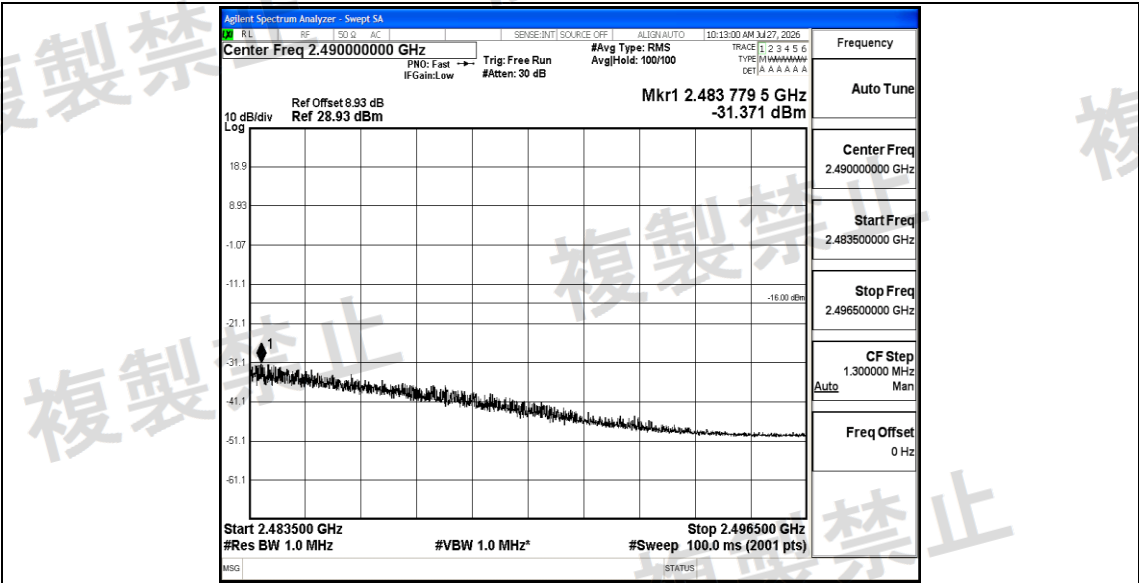




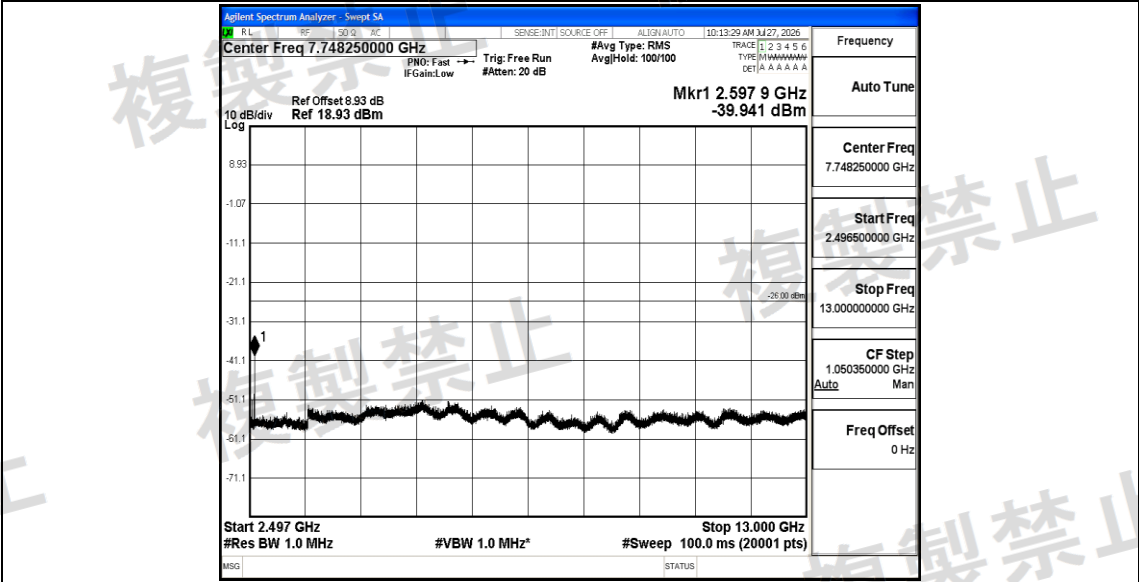
NTNV_11G_Ant1_2472_2387~2400



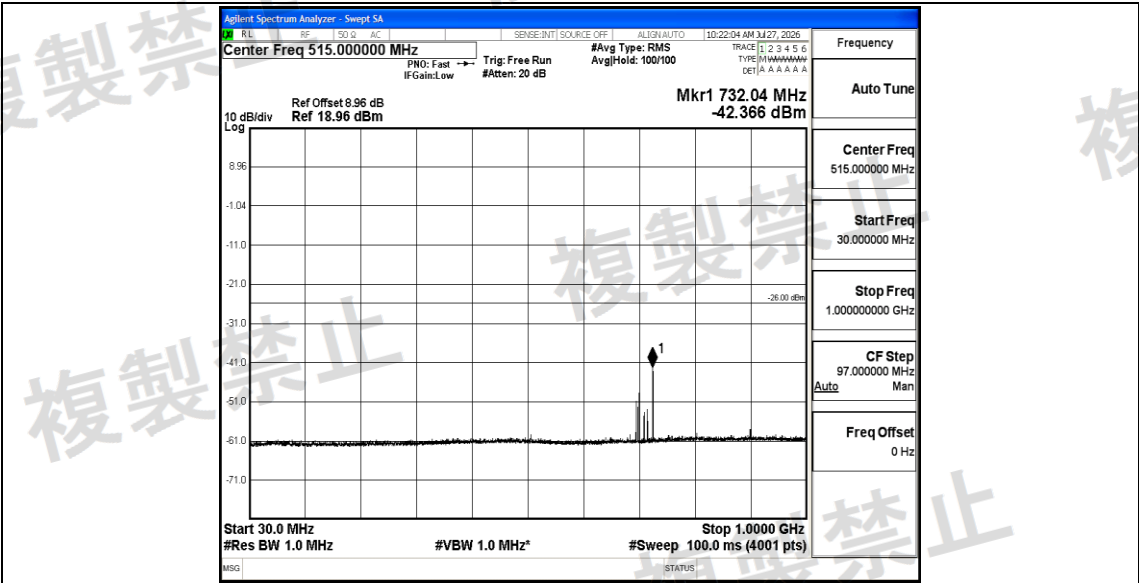
NTNV_11G_Ant1_2472_2483.5~2496.5



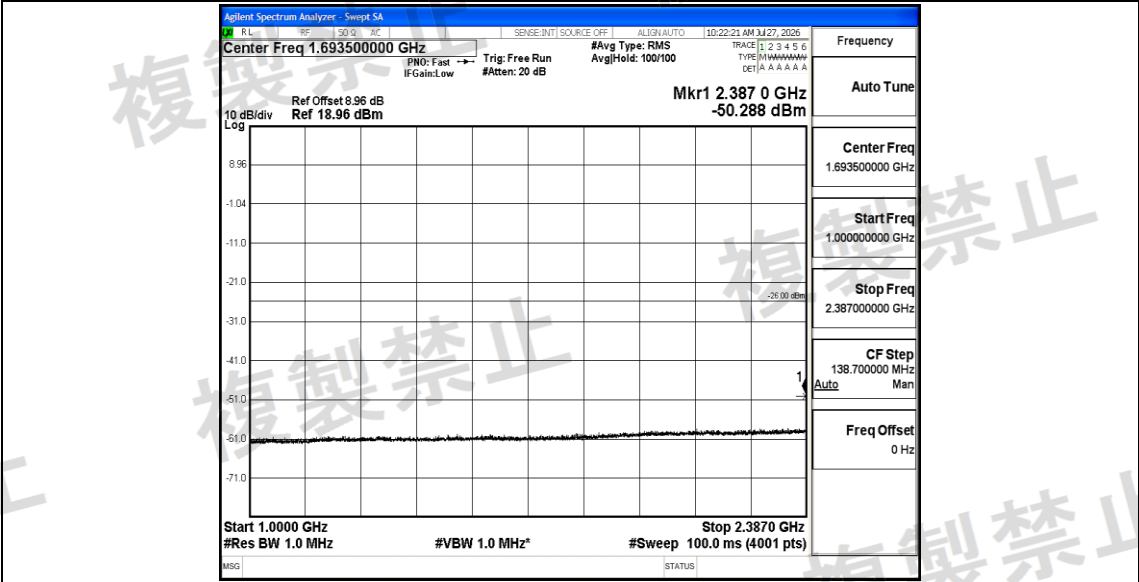
NTNV_11G_Ant1_2472_2496.5~13000



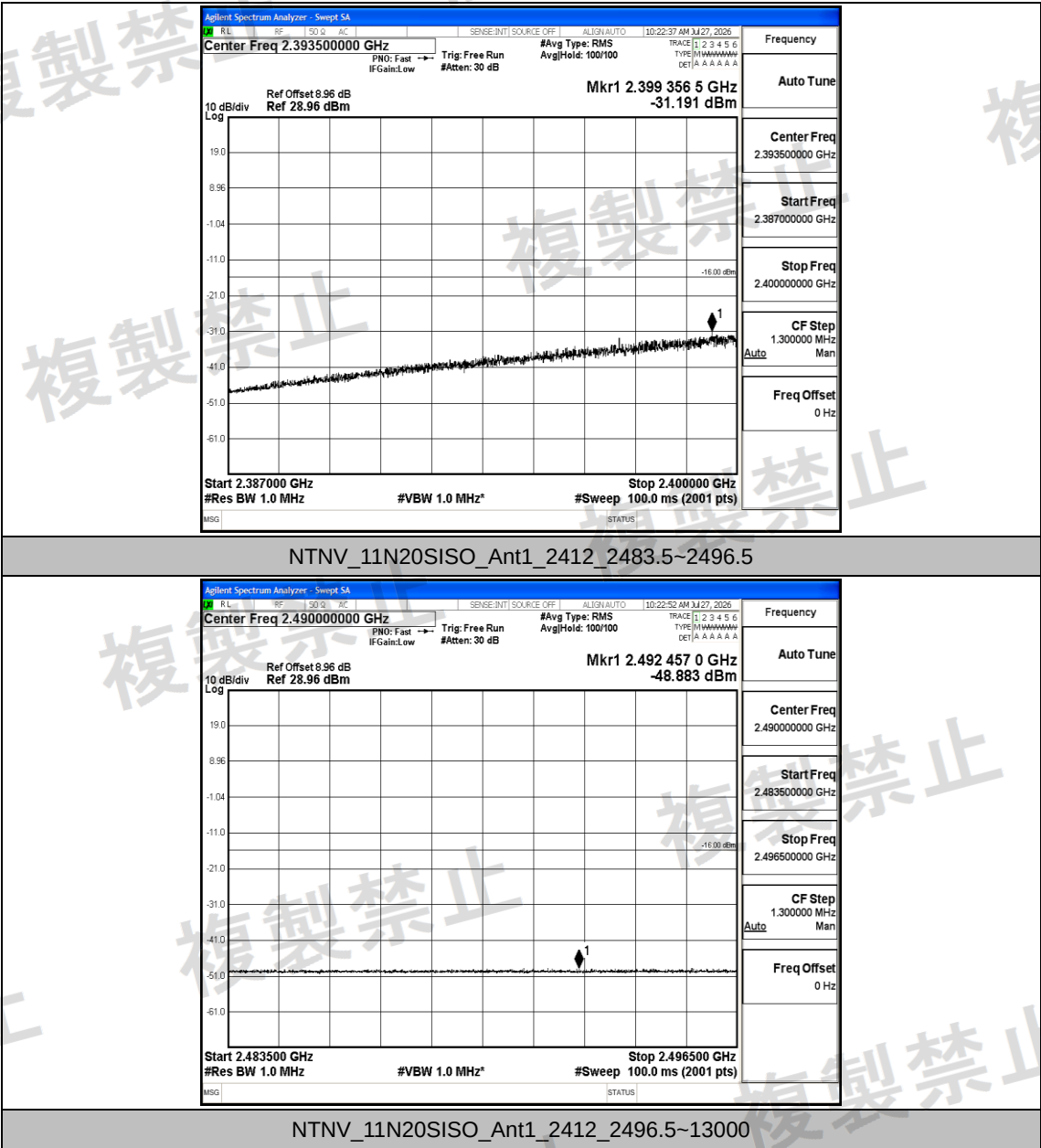
NTNV_11N20SISO_Ant1_2412_30~1000

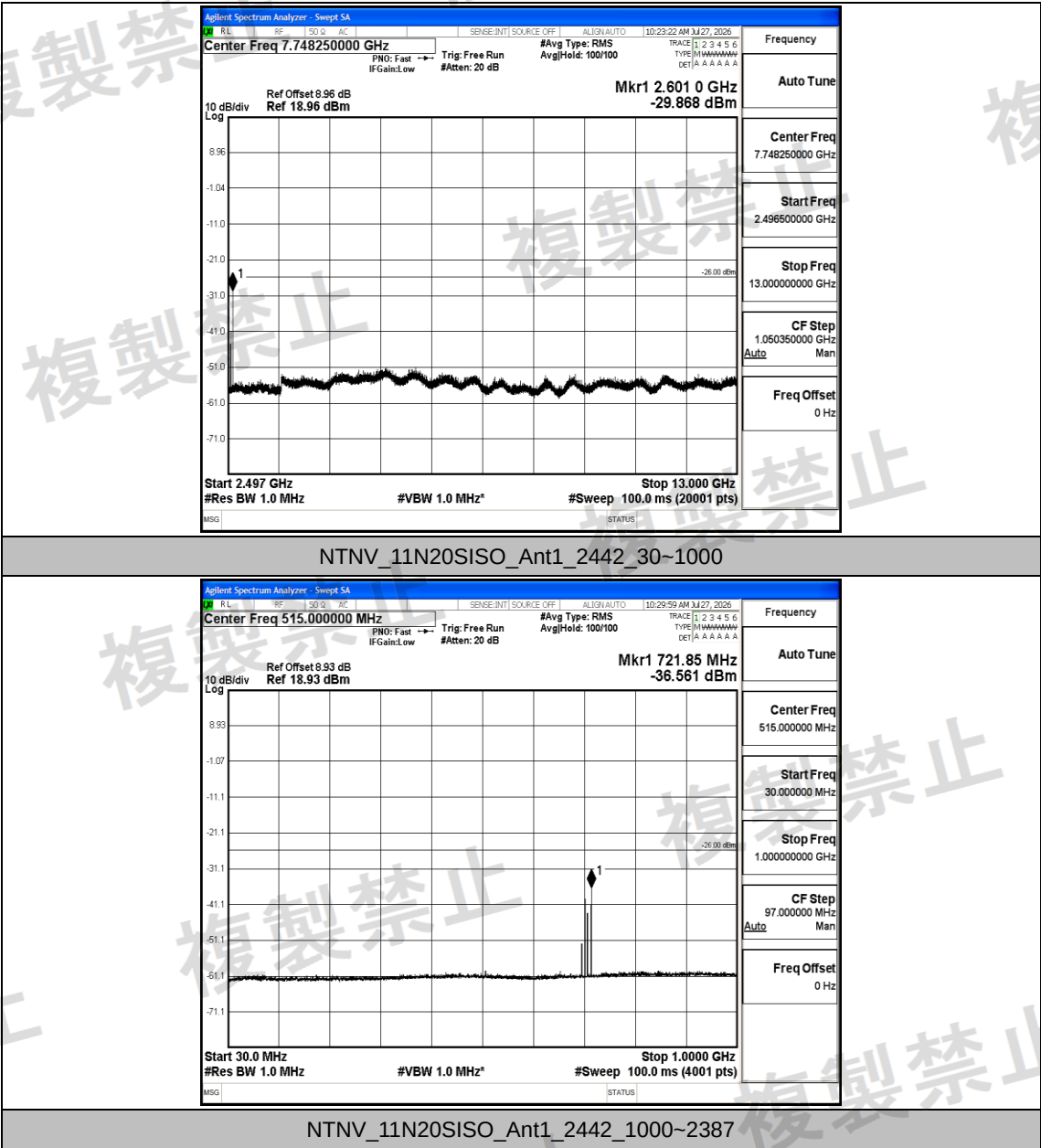


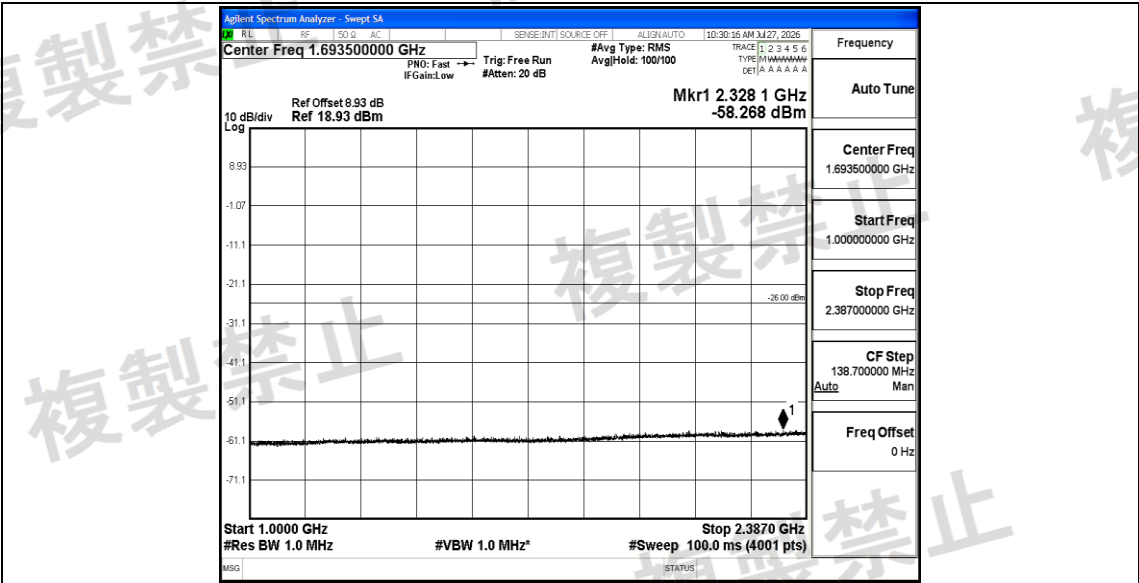
NTNV_11N20SISO_Ant1_2412_1000~2387



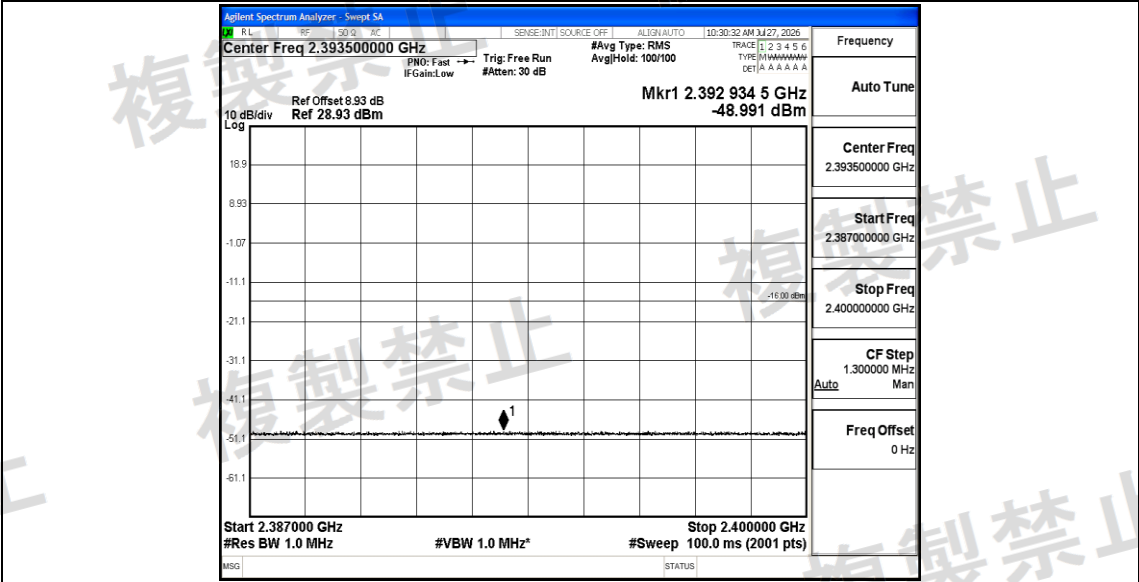
NTNV_11N20SISO_Ant1_2412_2387~2400



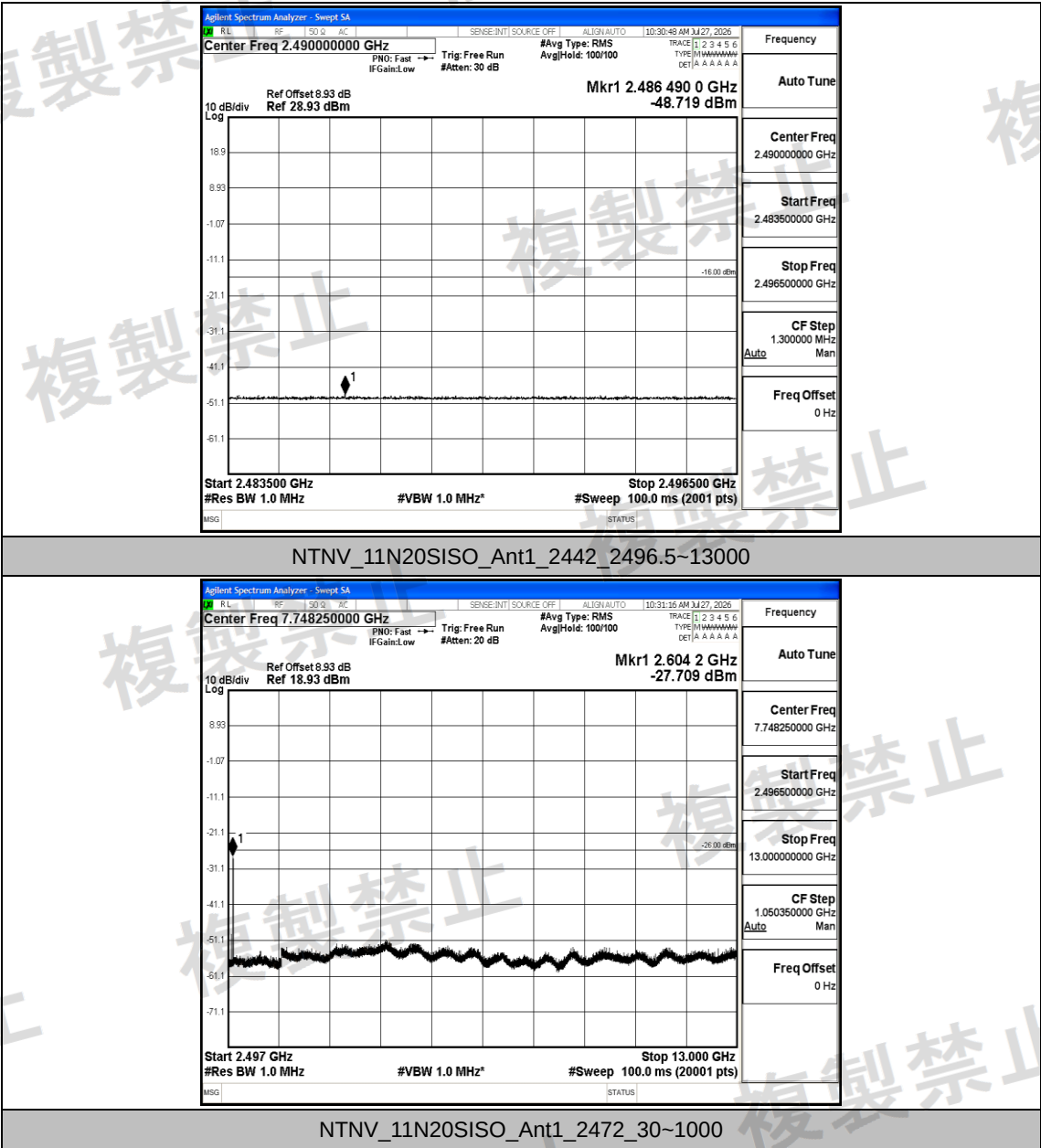


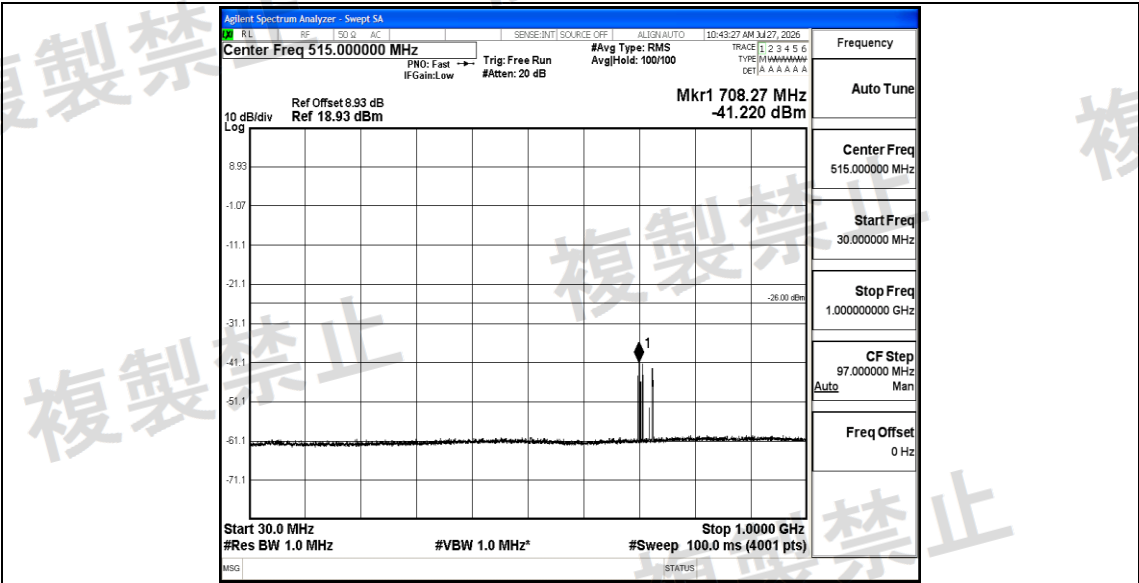


NTNV_11N20SISO_Ant1_2442_2387~2400

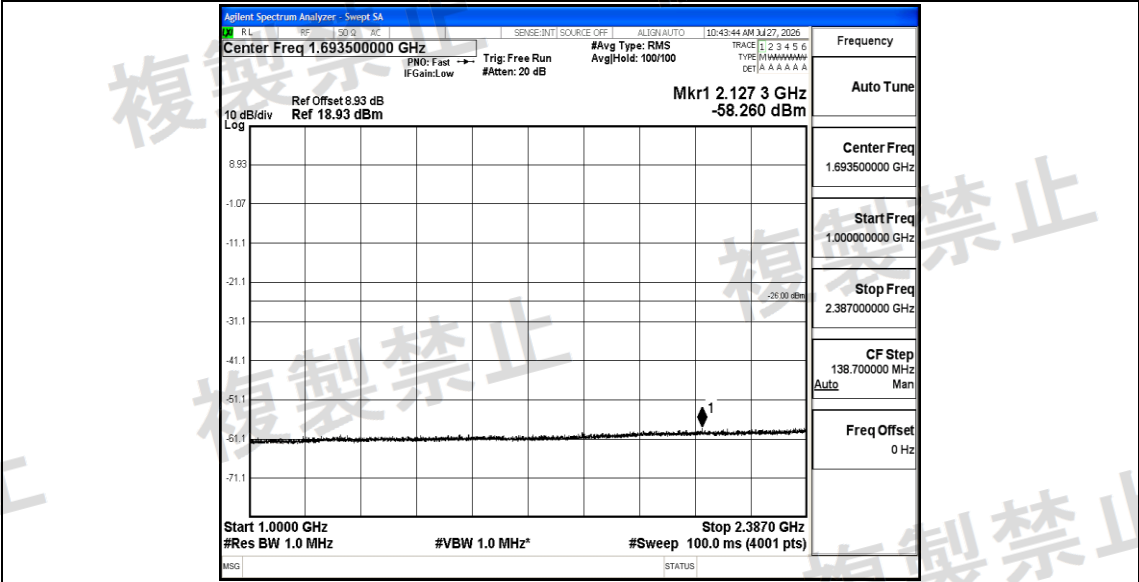


NTNV_11N20SISO_Ant1_2442_2483.5~2496.5

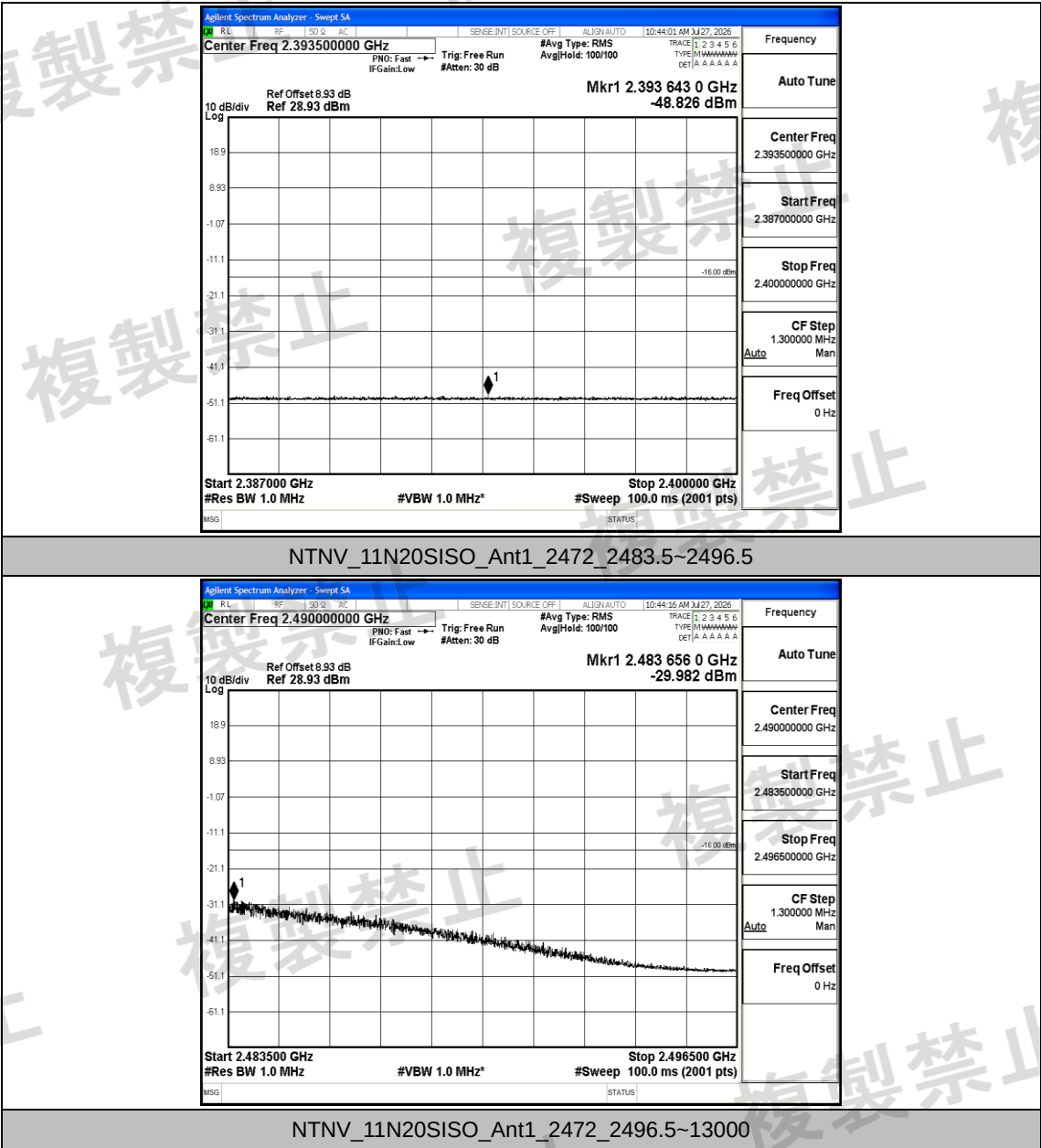


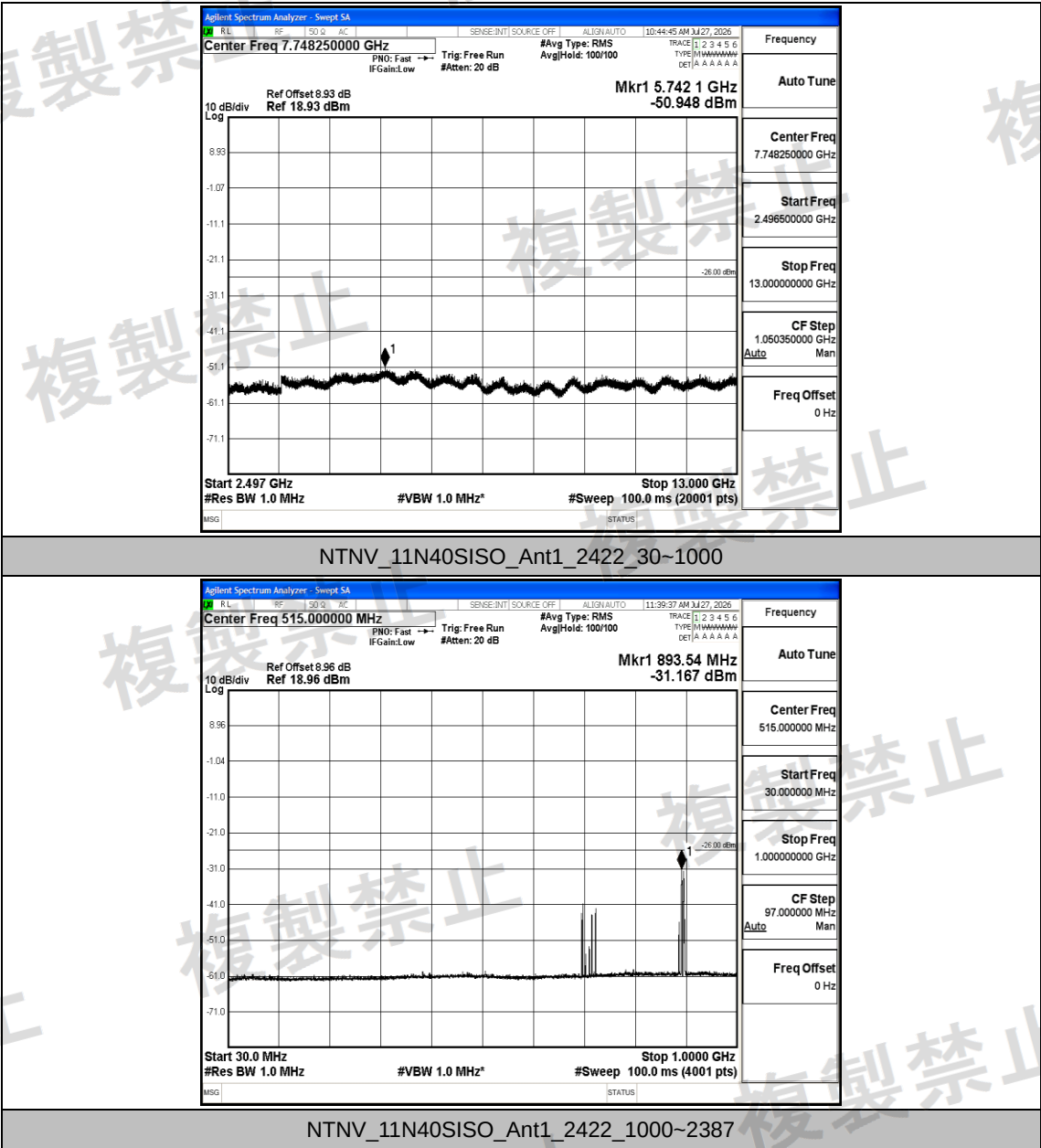


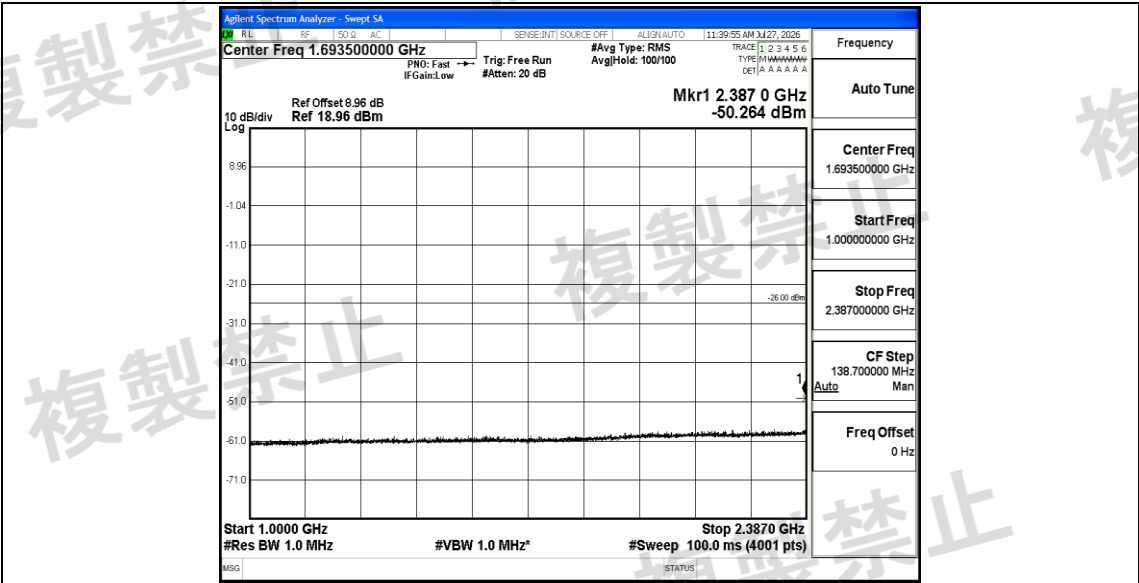
NTNV_11N20SISO_Ant1_2472_1000~2387



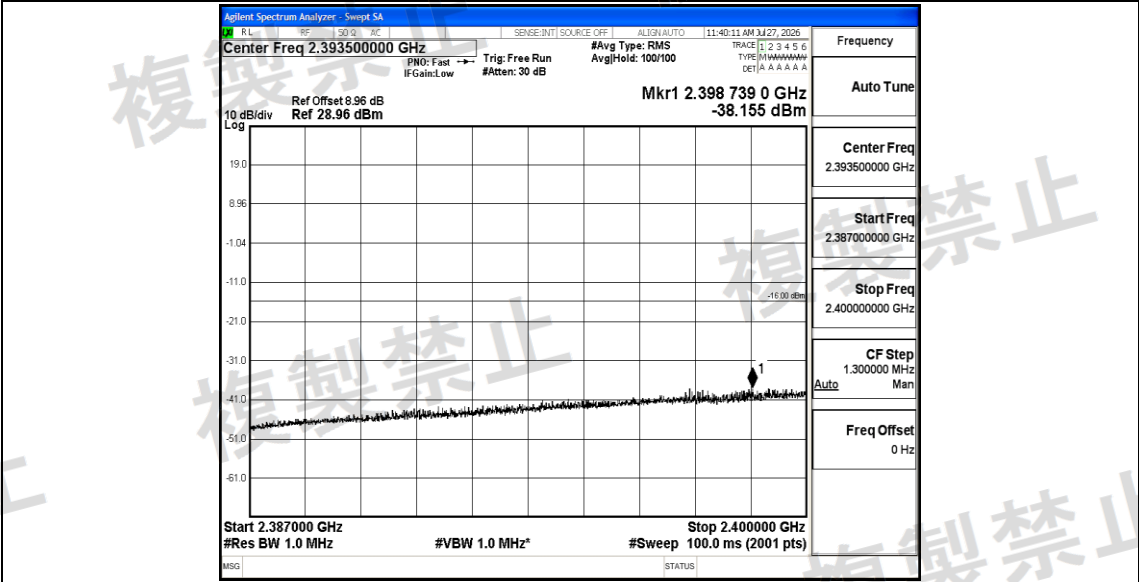
NTNV_11N20SISO_Ant1_2472_2387~2400



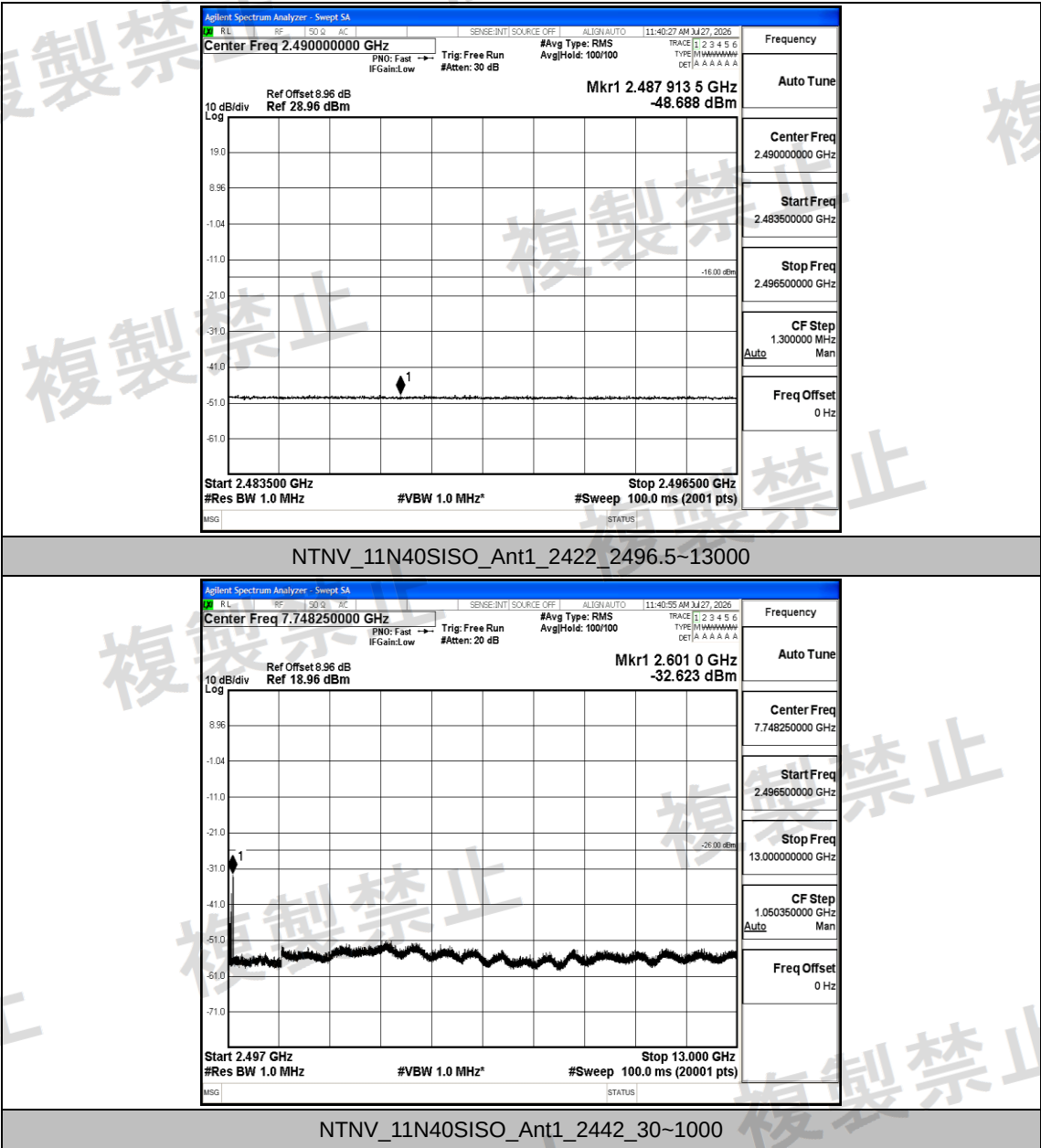


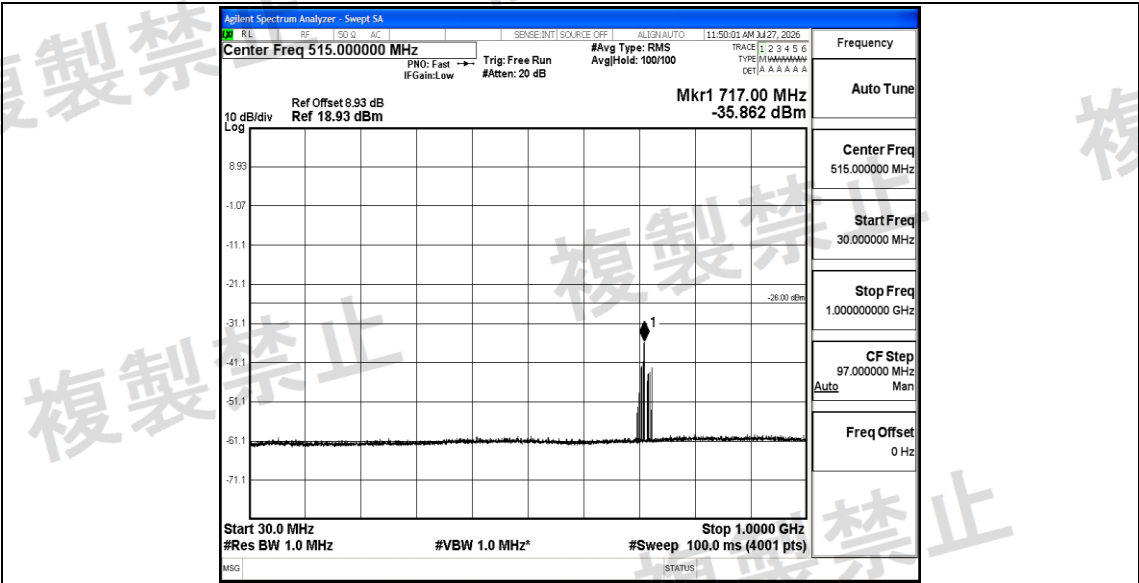


NTNV_11N40SISO_Ant1_2422_2387~2400

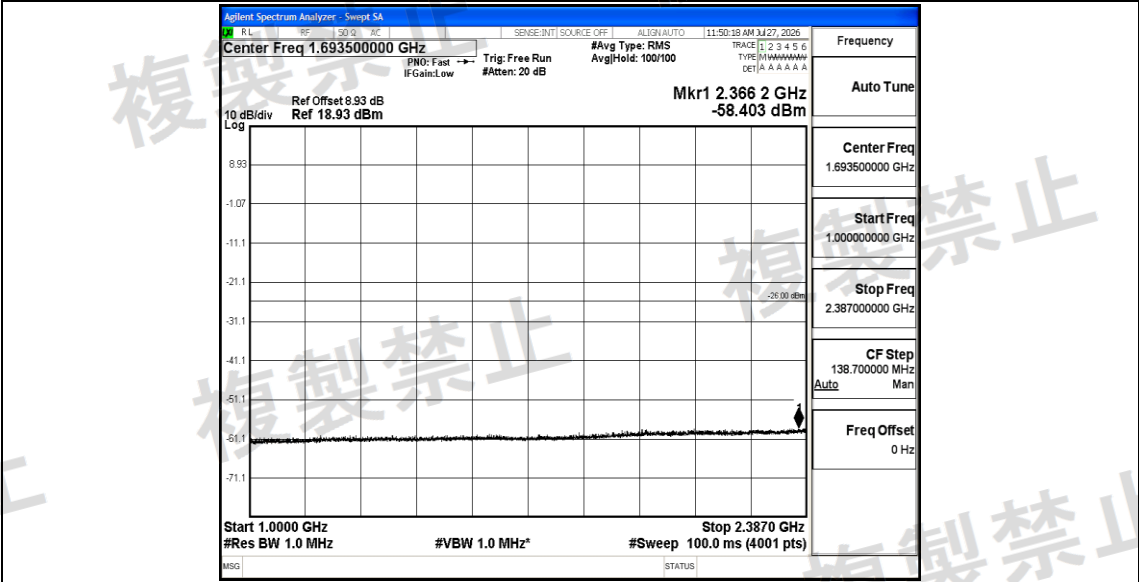


NTNV_11N40SISO_Ant1_2422_2483.5~2496.5

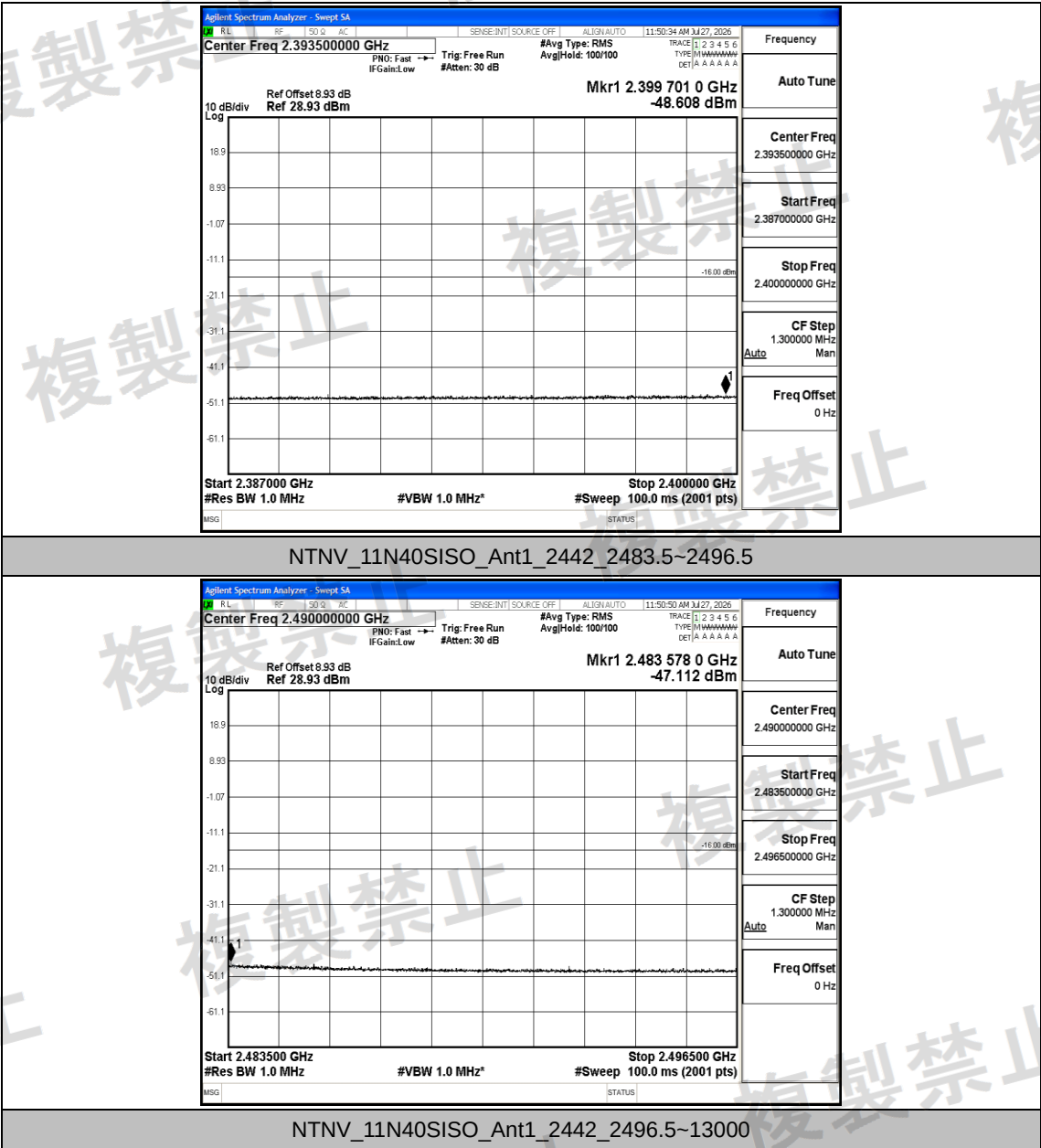


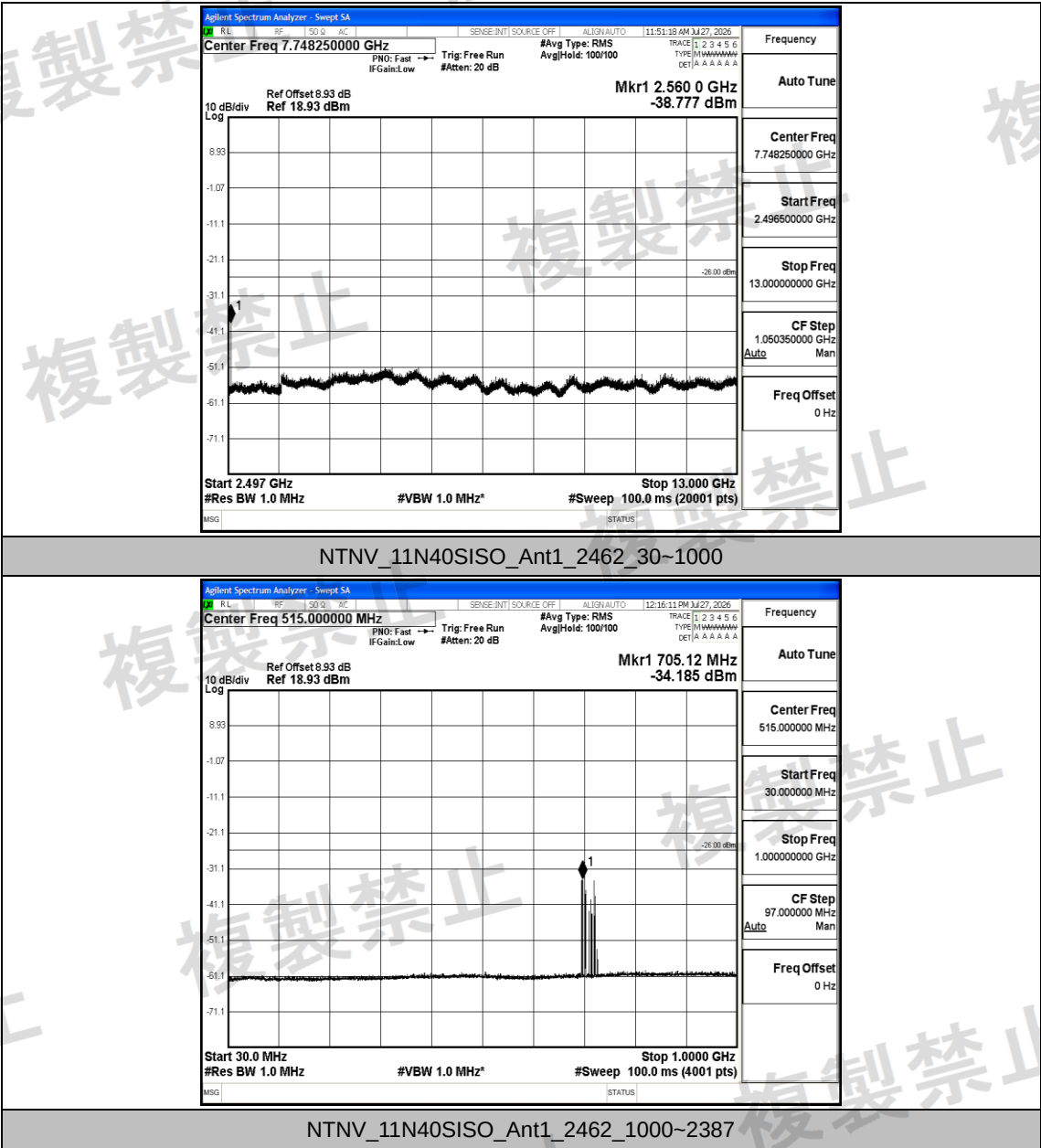


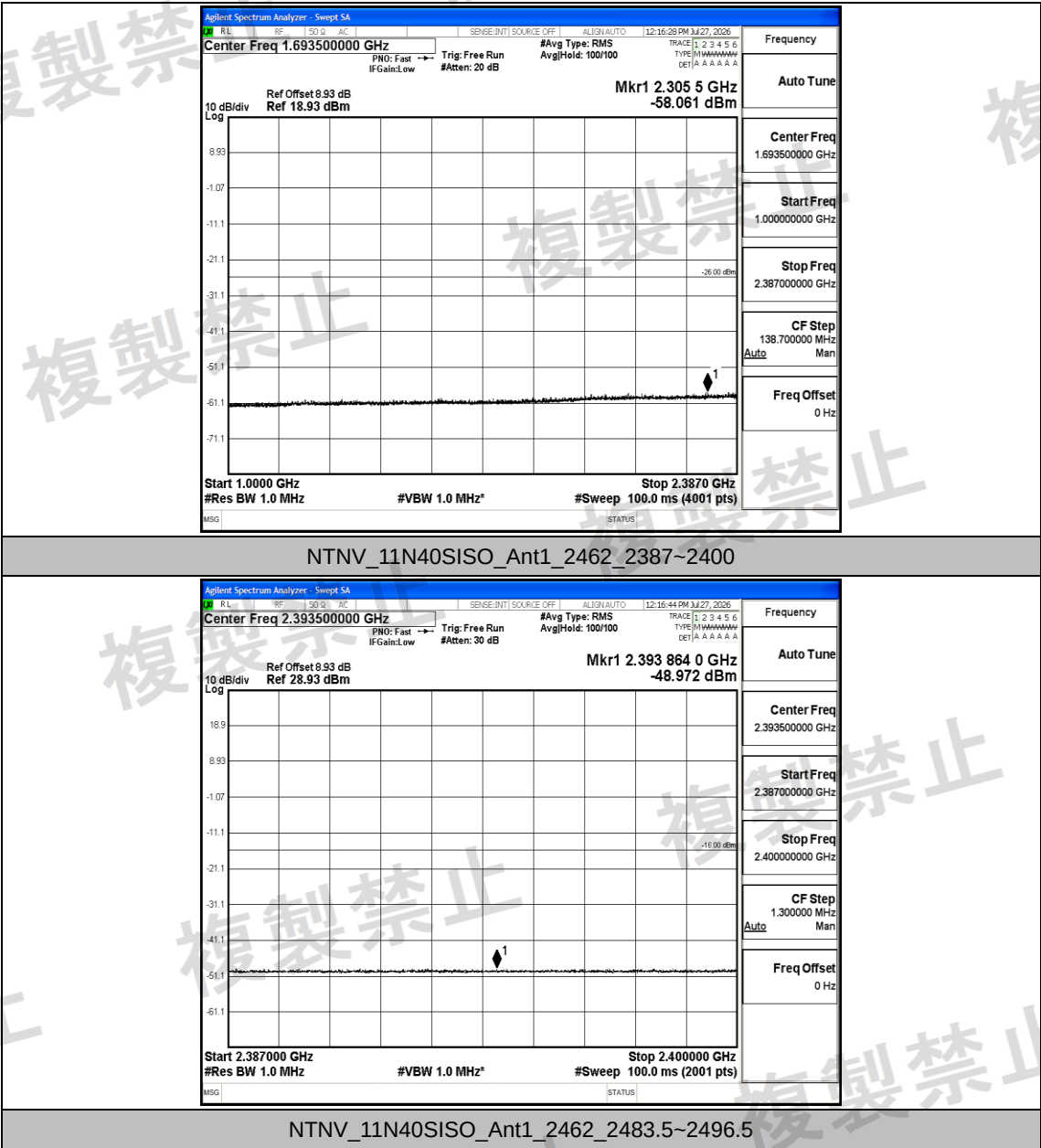
NTNV_11N40SISO_Ant1_2442_1000~2387

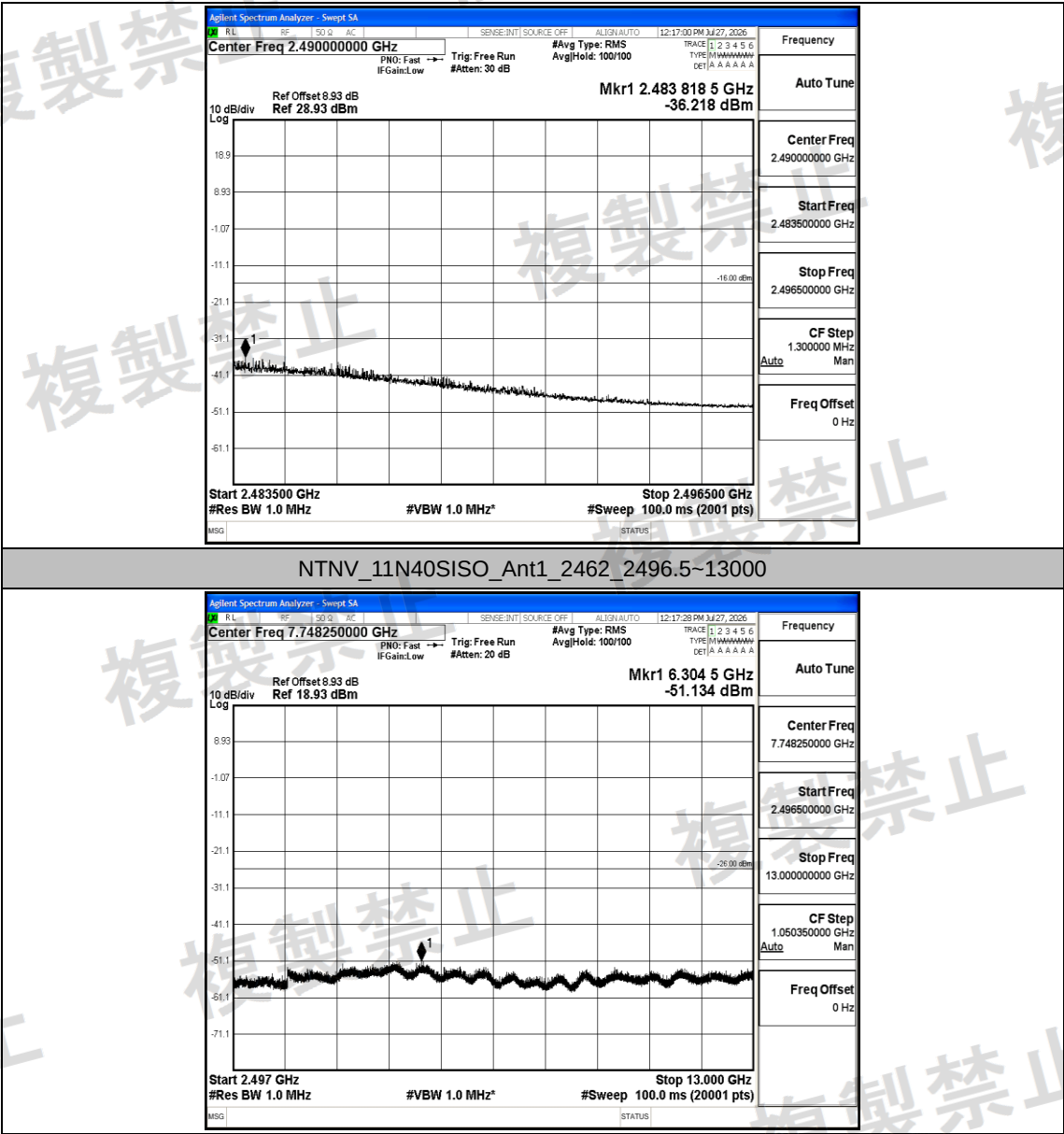


NTNV_11N40SISO_Ant1_2442_2387~2400







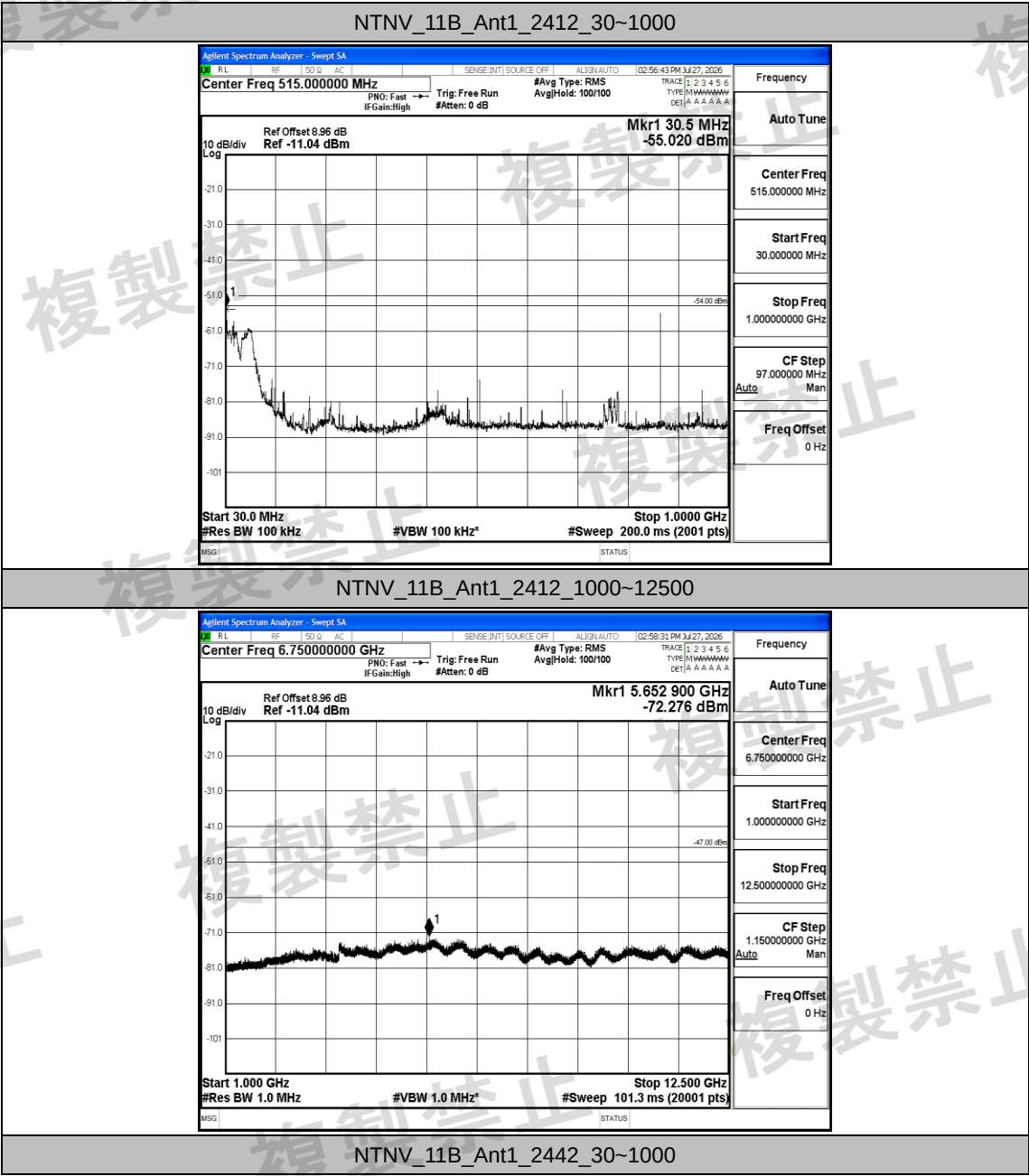


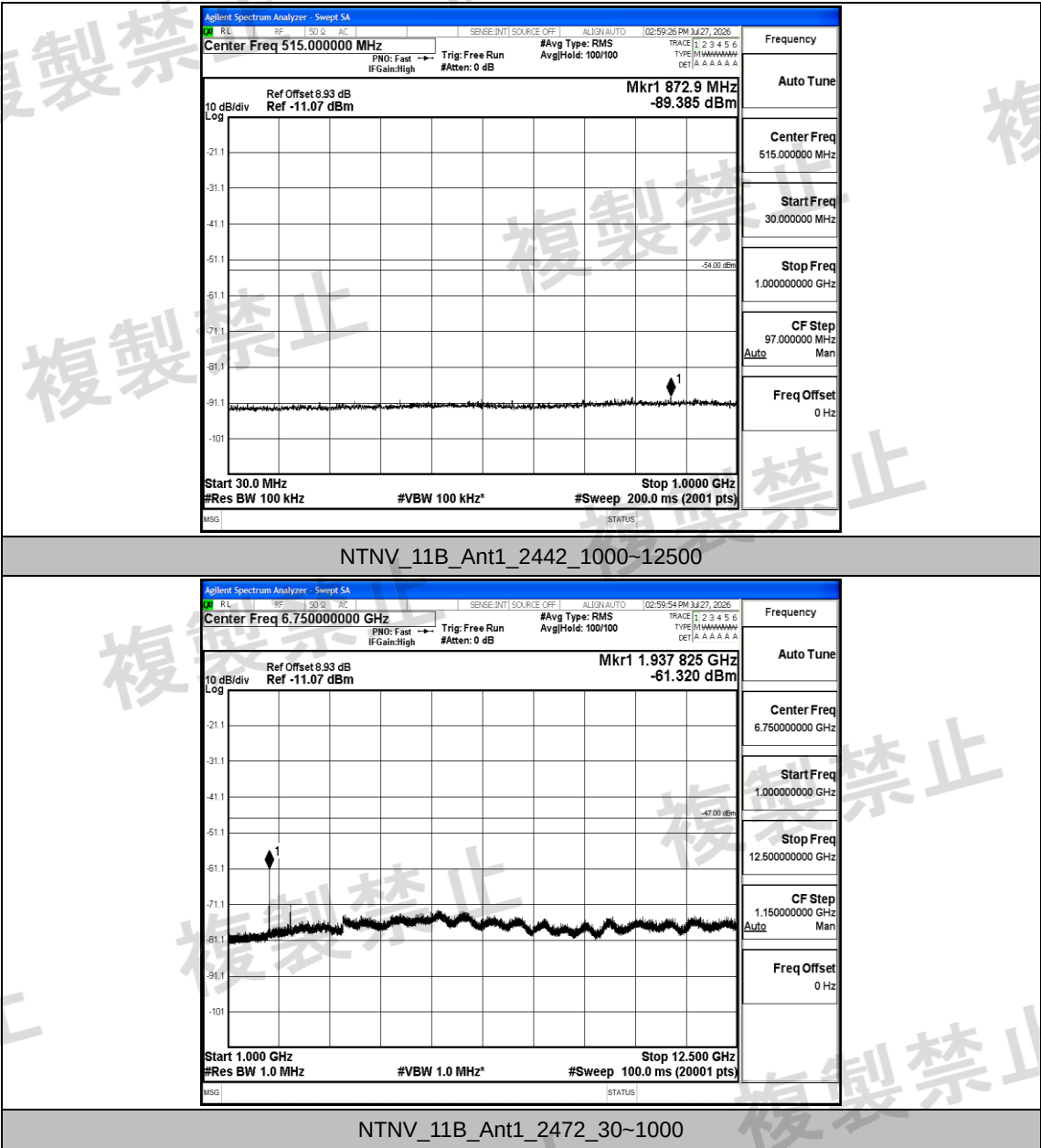
A.6 Spurious Emission of RX

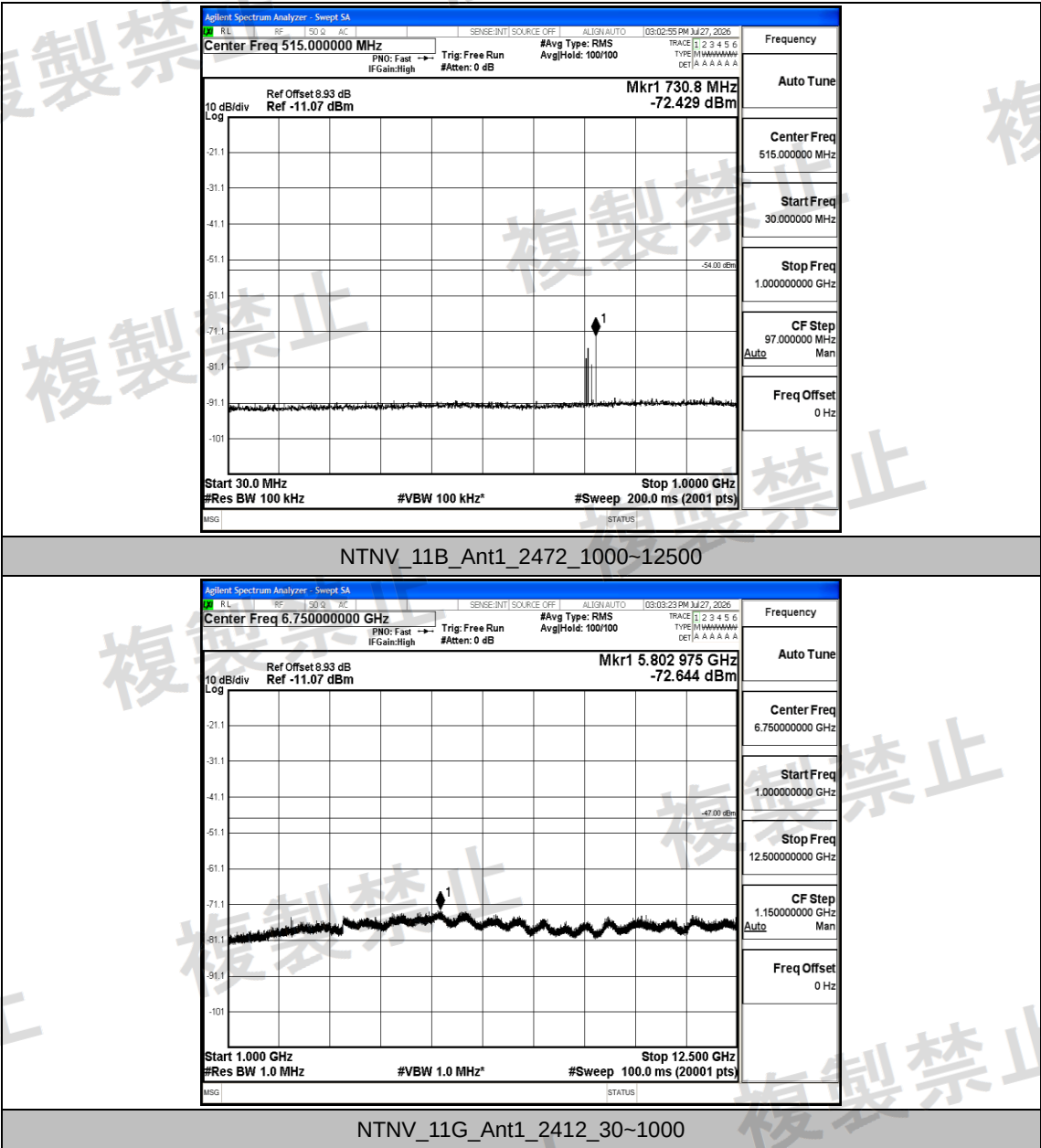
Test Result

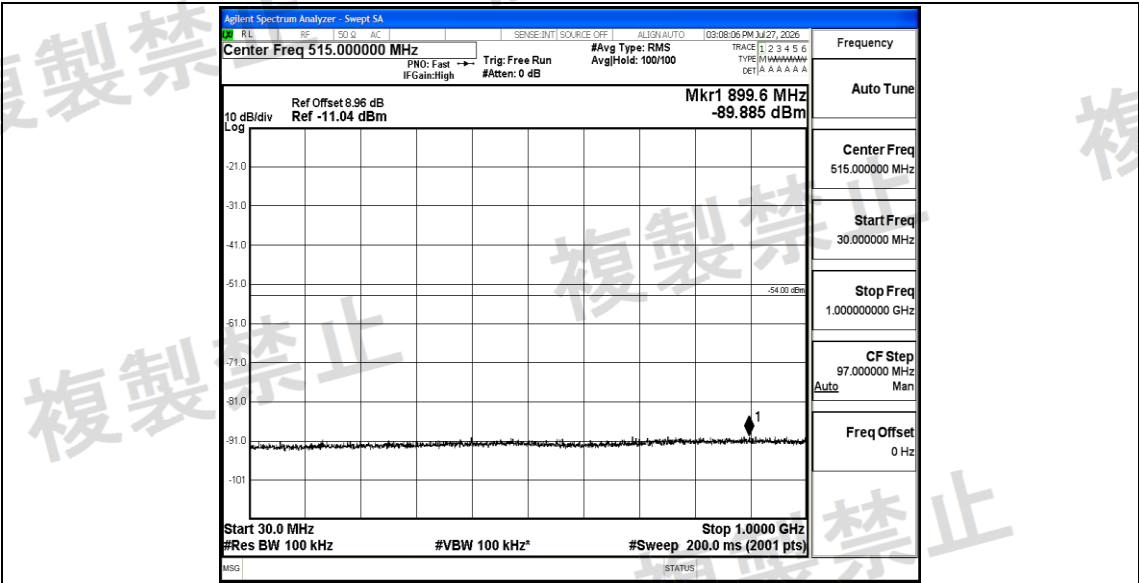
TestCondition	TestMode	Antenna	Frequency[MHz]	Freq.Range [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	11B	Ant1	2412	30~1000	-55.02	≤-54	3.14775	≤4	PASS
				1000~12500	-72.28	≤-47	0.05916	≤20	PASS
			2442	30~1000	-89.39	≤-54	0.00115	≤4	PASS
				1000~12500	-61.32	≤-47	0.73790	≤20	PASS
			2472	30~1000	-72.43	≤-54	0.05715	≤4	PASS
				1000~12500	-72.64	≤-47	0.05445	≤20	PASS
	11G	Ant1	2412	30~1000	-89.89	≤-54	0.00103	≤4	PASS
				1000~12500	-65.3	≤-47	0.29512	≤20	PASS
			2442	30~1000	-89.32	≤-54	0.00117	≤4	PASS
				1000~12500	-72.67	≤-47	0.05408	≤20	PASS
			2472	30~1000	-62.26	≤-54	0.59429	≤4	PASS
				1000~12500	-66.5	≤-47	0.22387	≤20	PASS
	11N20SISO	Ant1	2412	30~1000	-89.65	≤-54	0.00108	≤4	PASS
				1000~12500	-71.22	≤-47	0.07551	≤20	PASS
			2442	30~1000	-89.77	≤-54	0.00105	≤4	PASS
				1000~12500	-64.59	≤-47	0.34754	≤20	PASS
			2472	30~1000	-75.64	≤-54	0.02729	≤4	PASS
				1000~12500	-56.42	≤-47	2.28034	≤20	PASS
	11N40SISO	Ant1	2422	30~1000	-80.42	≤-54	0.00908	≤4	PASS
				1000~12500	-71.71	≤-47	0.06745	≤20	PASS
			2442	30~1000	-89.71	≤-54	0.00107	≤4	PASS
				1000~12500	-58.9	≤-47	1.28825	≤20	PASS
			2462	30~1000	-89.6	≤-54	0.00110	≤4	PASS
				1000~12500	-69.52	≤-47	0.11169	≤20	PASS

Test Graphs

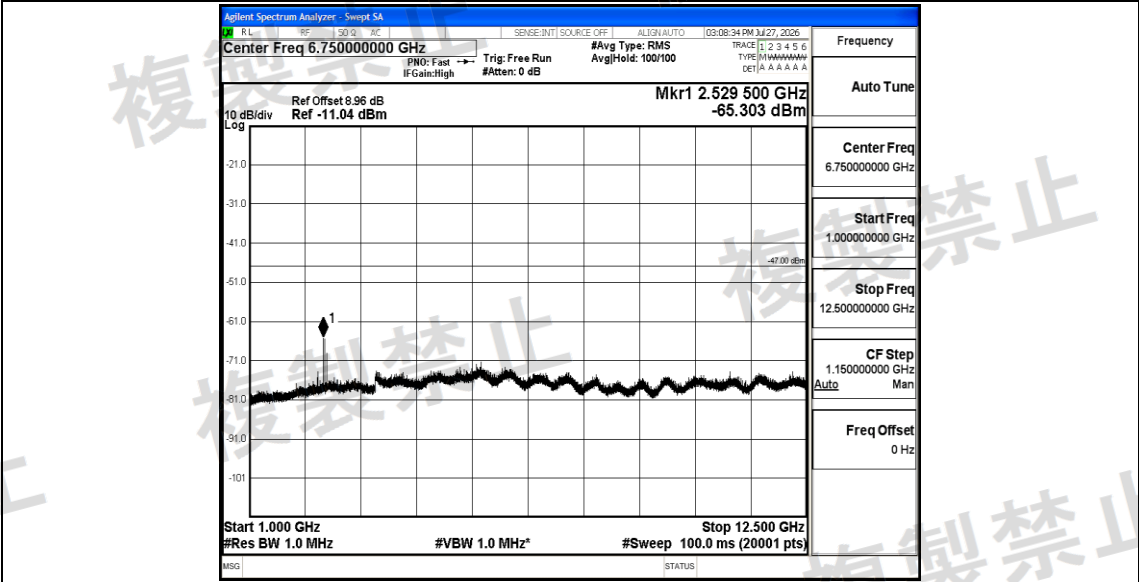








NTNV_11G_Ant1_2412_1000~12500



NTNV_11G_Ant1_2442_30~1000

