

Appendix A for BT Test Data

Product Name: Portable Bluetooth Printer

Test Model: 581BTDM

Environmental Conditions

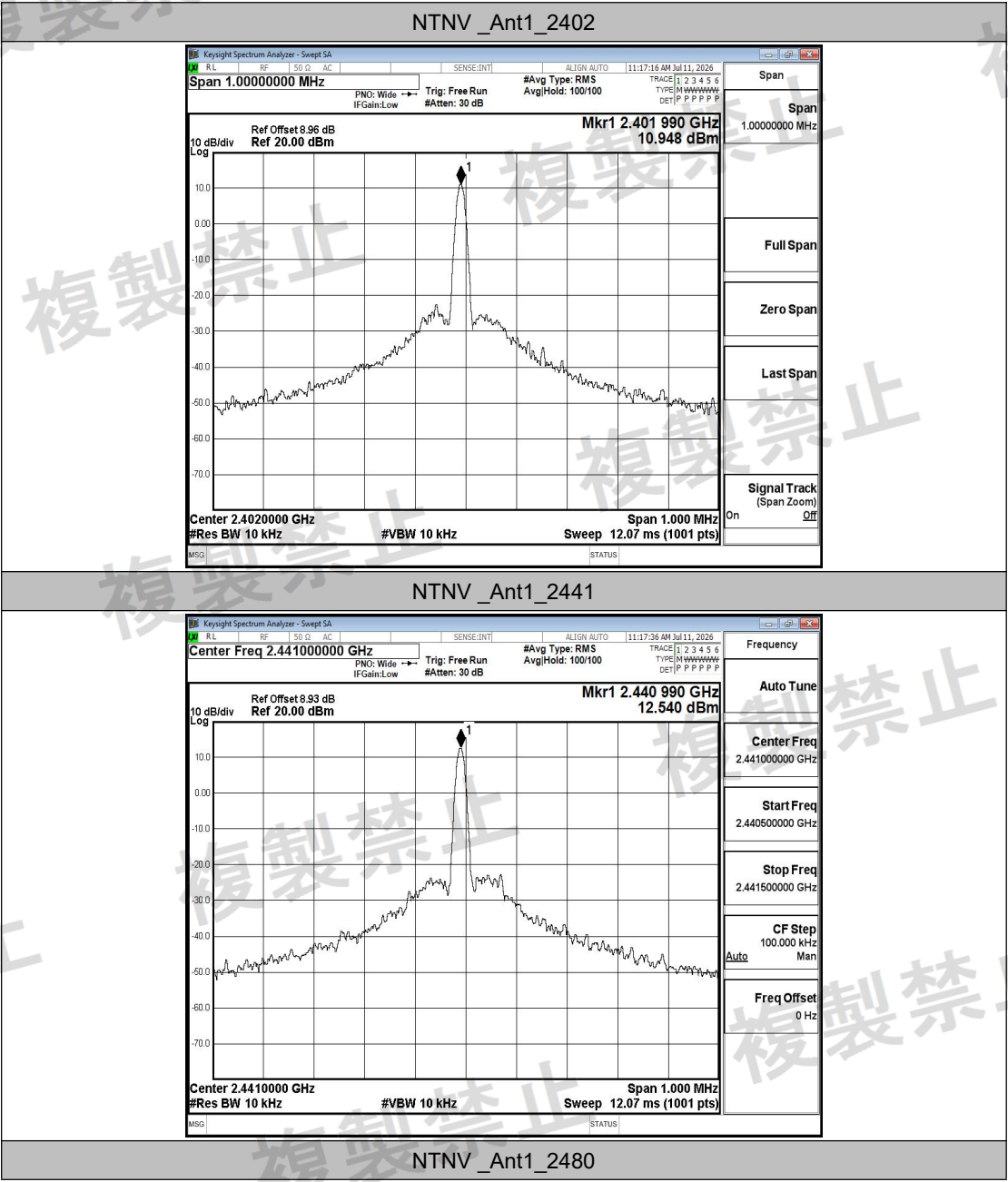
Temperature:	23.2°C
Relative Humidity:	53.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Zhang hai
Supervised by:	Fengliu Tang

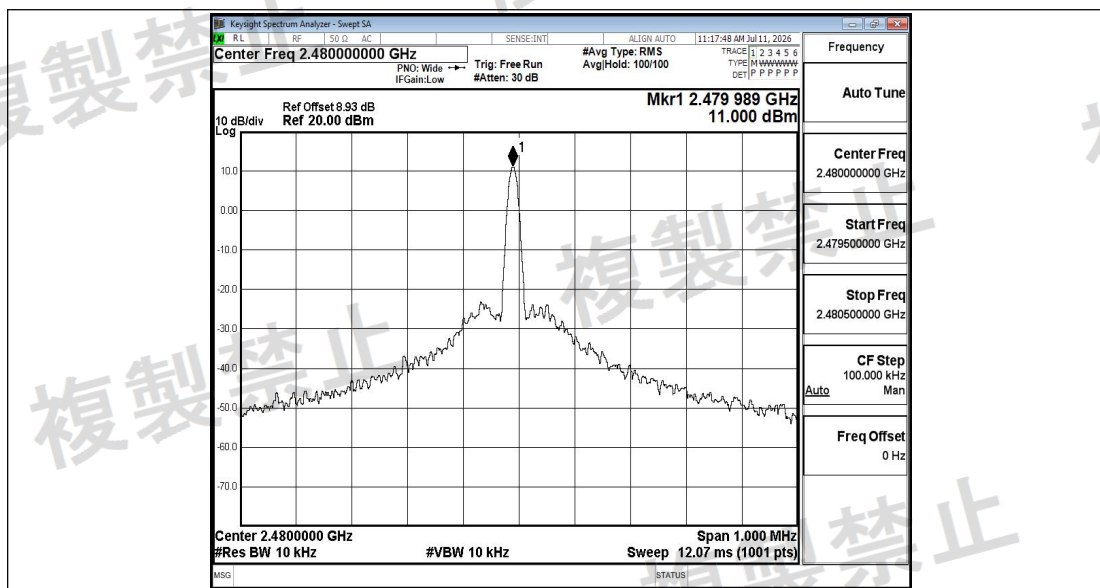
A.1 Frequency_Error

Test Result

Test Condition	Test Mode	Antenna	Frequency[MHz]	Result[ppm]	Limit[ppm]	Verdict
NTNV	Frequency_Error	Ant1	2402	-4.16320	±50	PASS
			2441	-4.09668	±50	PASS
			2480	-4.43548	±50	PASS

Test Graphs





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A.2 Antenna Power

Test Result

Test Voltage				Normal Voltage			
Mode	Declared power	Average Result	Average Result	Result	Limit	Tolerance	Limit
	(mW/MHz)	(dBm)	(mW)	(mW/MHz)	(mW/MHz)	/	/
Hopping-Tx (1Mbps)	0.05	3.37	2.17	0.040	3	-20.00%	+20%
Hopping-Tx (2Mbps)	0.05	2.44	1.75	0.032	3	-36.00%	+20%
Hopping-Tx (3Mbps)	0.05	2.66	1.85	0.034	3	-32.00%	+20%
Conclusion: PASS							

Result power= Average value / (Duty Cycle * Spreading bandwidth)

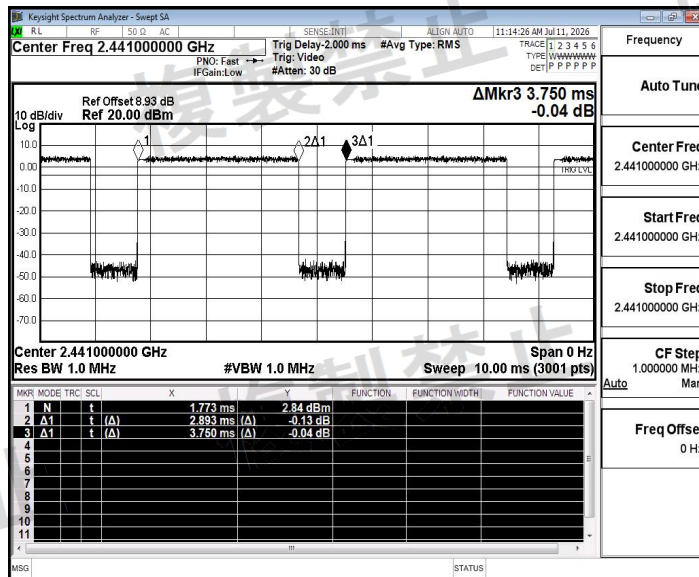
BT ANTenna power Result = Measured Power / Spreading bandwidth

Spread Bandwidth (DH5) = 69.729MHz, Spread Bandwidth (2DH5) = 69.858MHz,

Spread Bandwidth (3DH5) = 69.728MHz

Duty cycle=77.1%

Duty cycle= [Ton/ (Ton+Toff)]*100%=2.893/3.750*100%=77.1%



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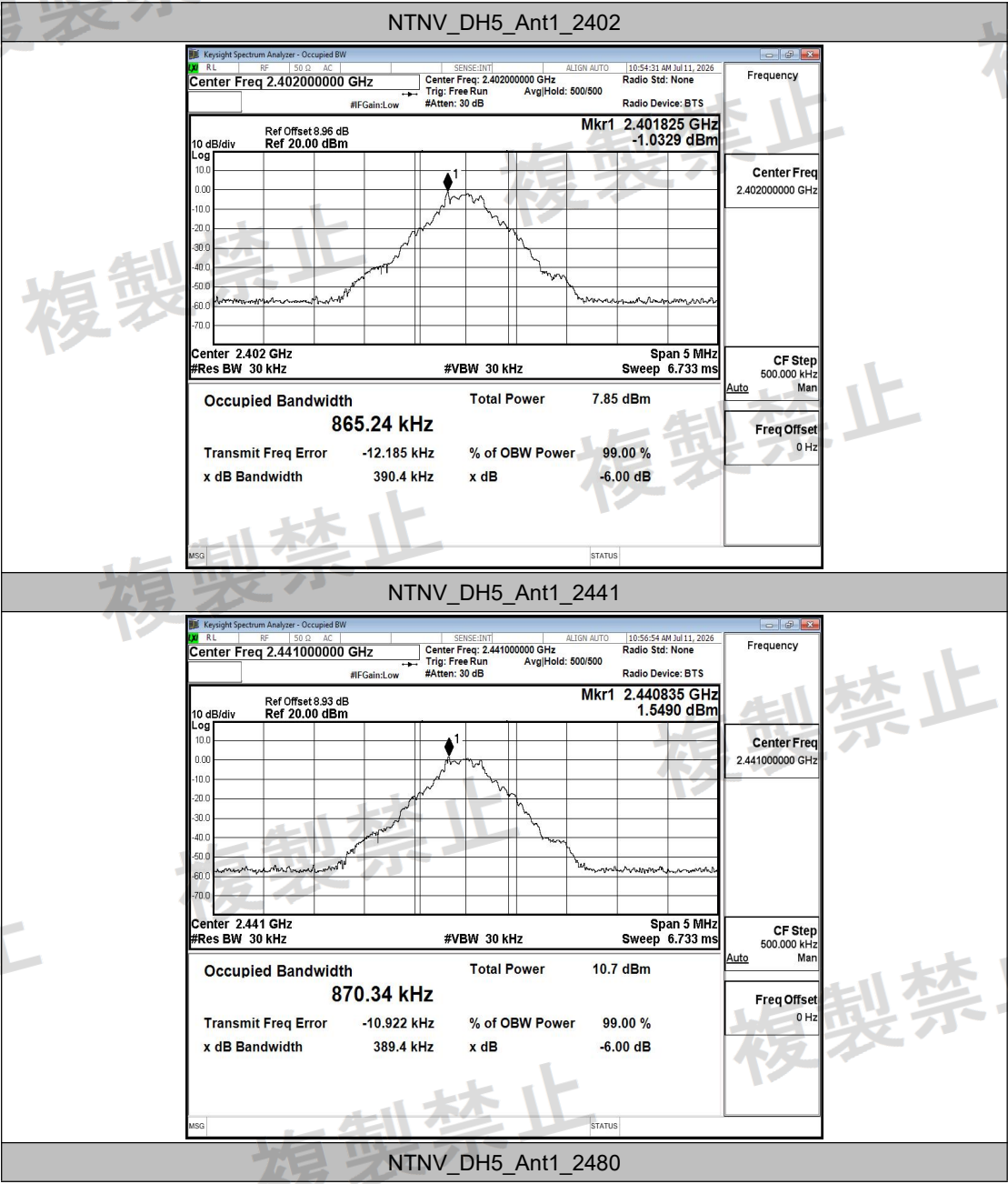
A.3 Occupied Bandwidth

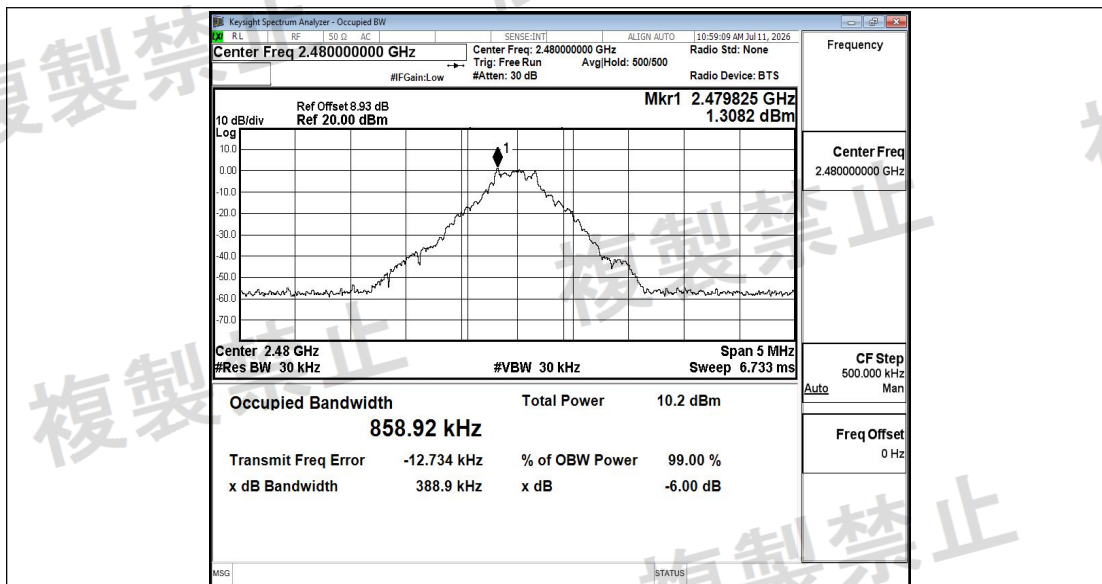
Test Result

Test Condition	Test Mode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	DH5	Ant1	2402	0.865	≤83.5	PASS
			2441	0.870	≤83.5	PASS
			2480	0.859	≤83.5	PASS
	2DH5	Ant1	2402	1.188	≤83.5	PASS
			2441	1.182	≤83.5	PASS
			2480	1.183	≤83.5	PASS
	3DH5	Ant1	2402	1.188	≤83.5	PASS
			2441	1.185	≤83.5	PASS
			2480	1.185	≤83.5	PASS

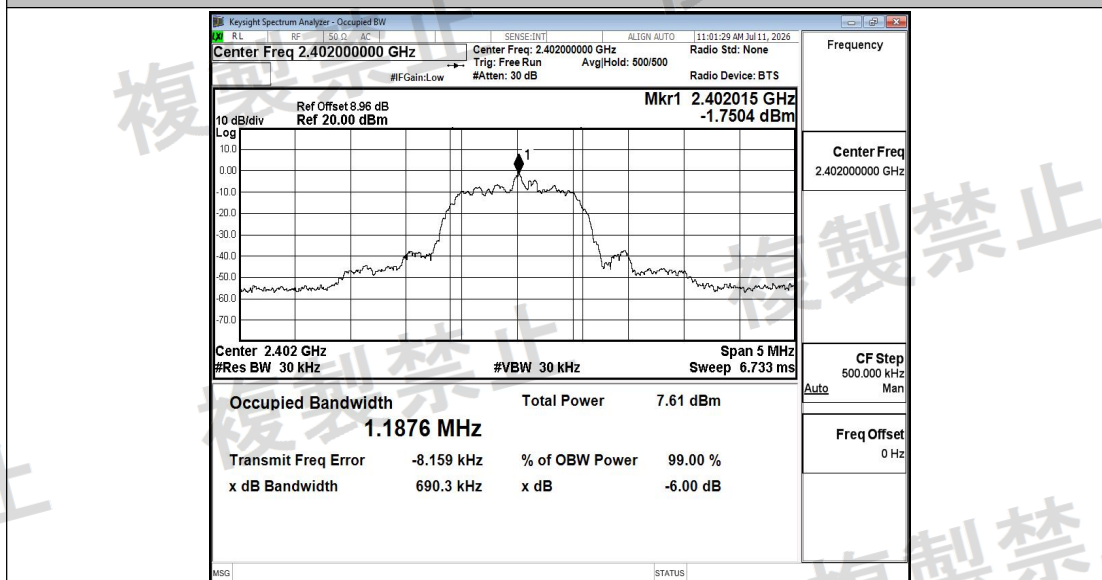
Test Condition	Test Mode	Antenna	Frequency[MHz]	Result [MHz]	Limit [MHz]	Verdict
NTNV	DH5	Ant1	Hop	78.462	≤83.5	PASS
	2DH5	Ant1	Hop	78.608	≤83.5	PASS
	3DH5	Ant1	Hop	78.587	≤83.5	PASS

Test Graphs

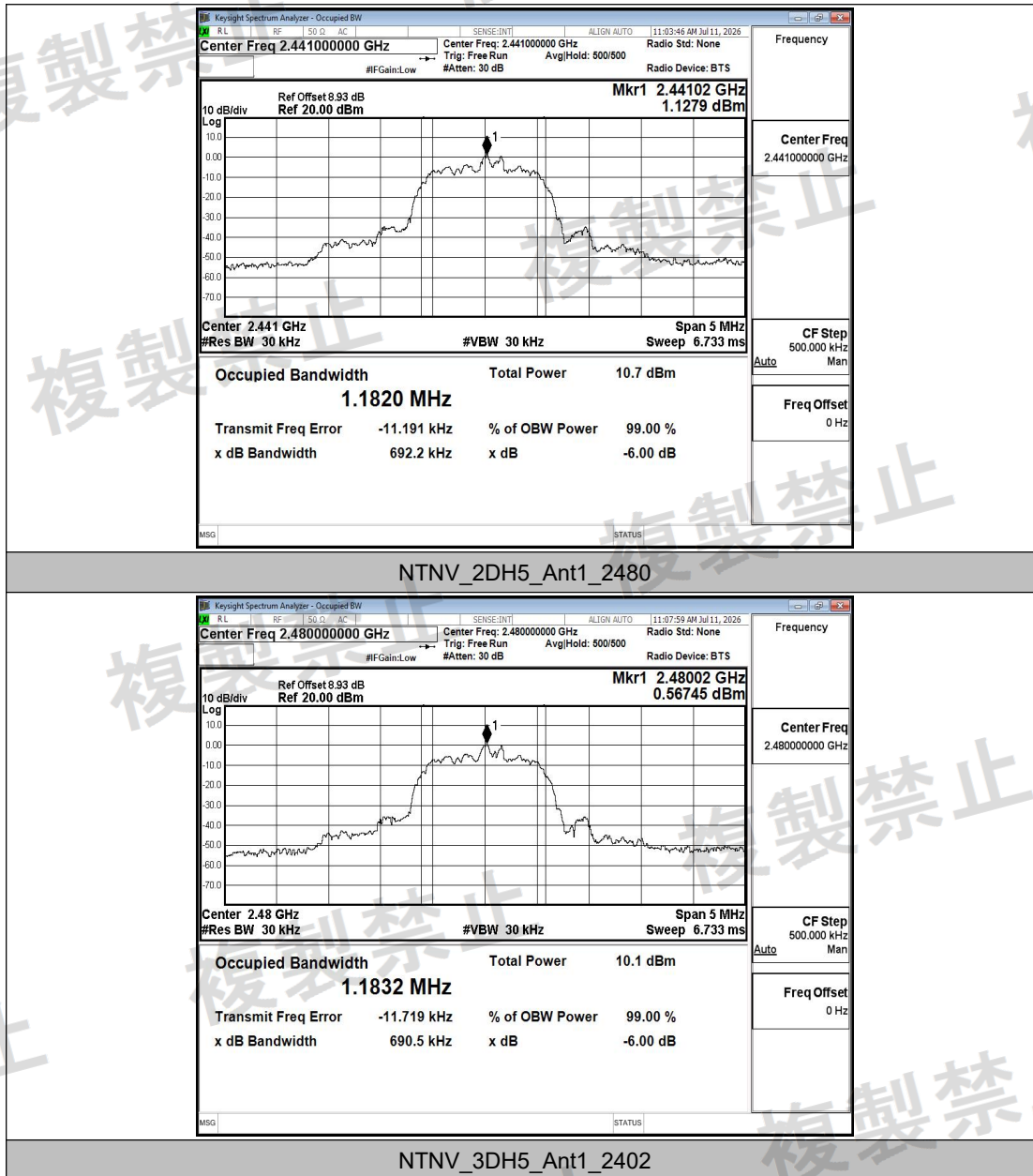


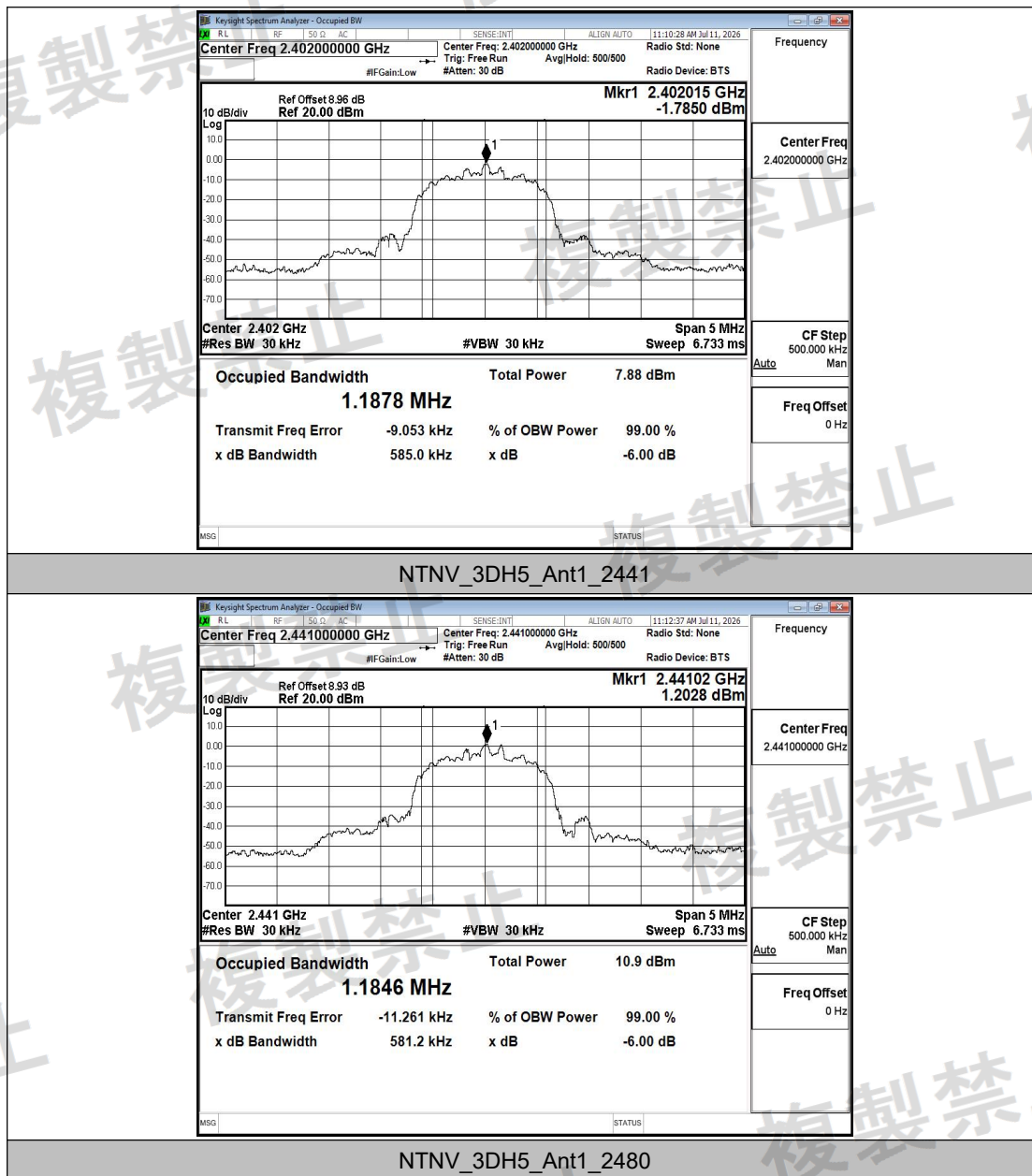


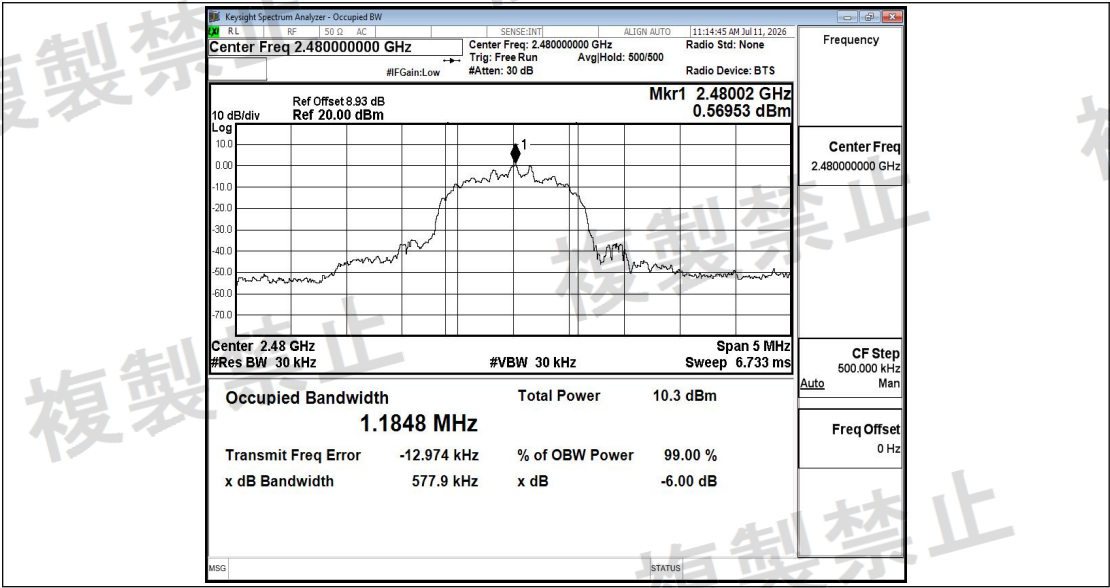
NTNV_2DH5_Ant1_2402

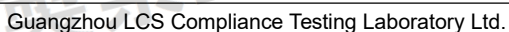


NTNV_2DH5_Ant1_2441

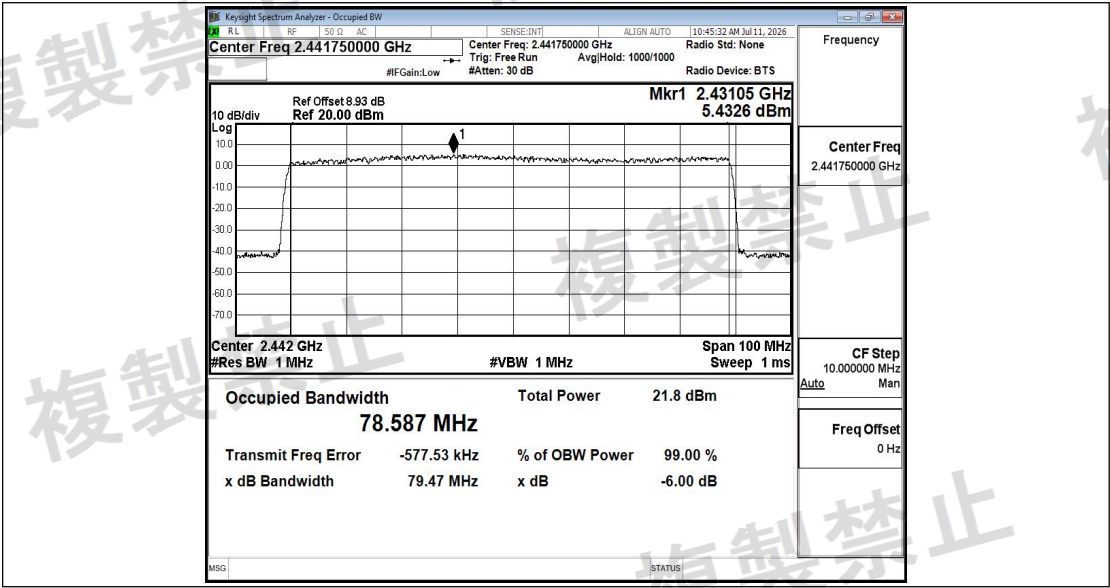








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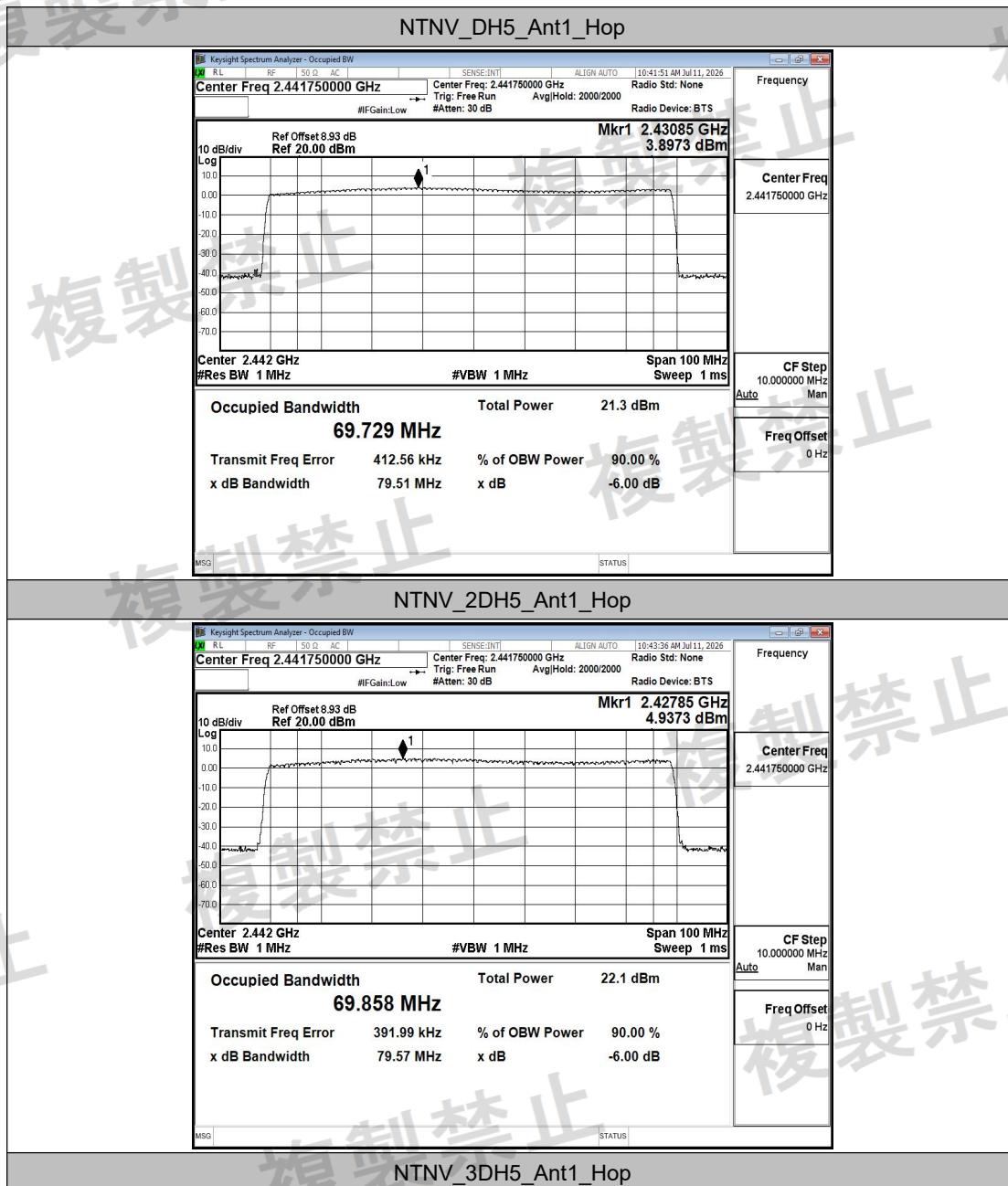


A.4 Spread Bandwidth

Test Result

Test Condition	Test Mode	Antenna	Frequency [MHz]	Result [MHz]	Limit [MHz]	Spread Factor	Limit	Verdict
NTNV	DH5	Ant1	Hop	69.729	≥ 0.5	69.729	>5	PASS
	2DH5	Ant1	Hop	69.858	≥ 0.5	34.929	>5	PASS
	3DH5	Ant1	Hop	69.728	≥ 0.5	23.243	>5	PASS

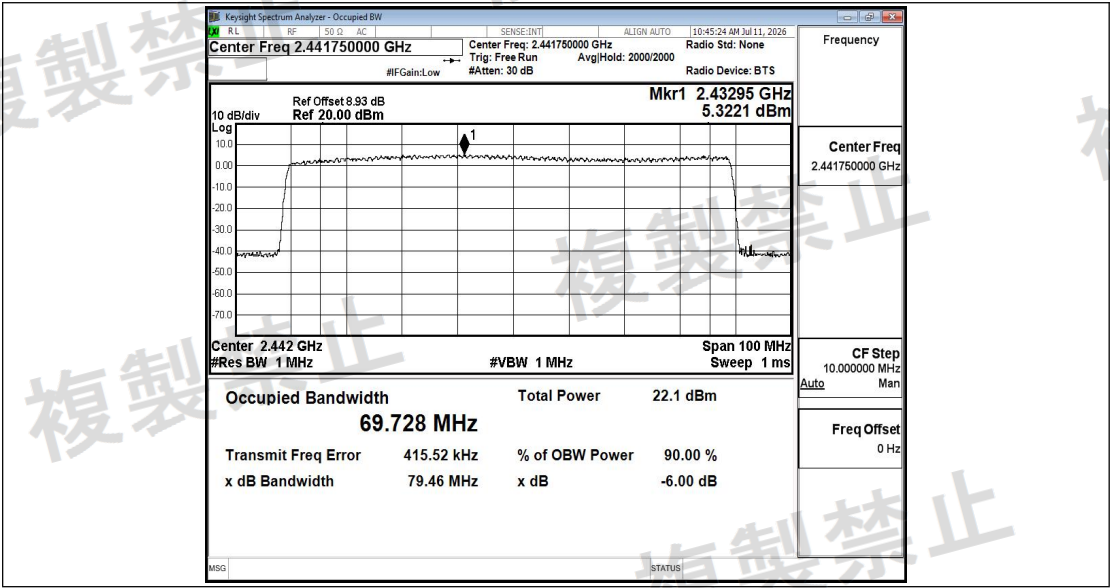
Test Graphs



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A.5 Spurious Emission of TX

Test Result

Test Condition	Test Mode	Antenna	Frequency [MHz]	Freq. Range [MHz]	Result [dBm]	Limit [dBm]	Result [μW]	Limit [μW]	Verdict
NTNV	DH5	Ant1	2402	30~1000	-58.98	≤-26	0.00126	≤2.5	PASS
				1000~2387	-57.66	≤-26	0.00171	≤2.5	PASS
				2387~2400	-45.25	≤-16	0.02985	≤25	PASS
				2483.5~2496.5	-48.94	≤-16	0.01276	≤25	PASS
				2496.5~13000	-51.49	≤-26	0.00710	≤2.5	PASS
			2441	30~1000	-59.01	≤-26	0.00126	≤2.5	PASS
				1000~2387	-57.95	≤-26	0.00160	≤2.5	PASS
				2387~2400	-48.93	≤-16	0.01279	≤25	PASS
				2483.5~2496.5	-48.72	≤-16	0.01343	≤25	PASS
				2496.5~13000	-50.88	≤-26	0.00817	≤2.5	PASS
			2480	30~1000	-59.01	≤-26	0.00126	≤2.5	PASS
				1000~2387	-57.79	≤-26	0.00166	≤2.5	PASS
				2387~2400	-48.95	≤-16	0.01274	≤25	PASS
				2483.5~2496.5	-48.53	≤-16	0.01403	≤25	PASS
				2496.5~13000	-52.31	≤-26	0.00587	≤2.5	PASS
	2DH5	Ant1	2402	30~1000	-58.65	≤-26	0.00136	≤2.5	PASS
				1000~2387	-57.79	≤-26	0.00166	≤2.5	PASS
				2387~2400	-36.61	≤-16	0.21827	≤25	PASS
				2483.5~2496.5	-48.41	≤-16	0.01442	≤25	PASS
				2496.5~13000	-51.49	≤-26	0.00710	≤2.5	PASS
			2441	30~1000	-58.81	≤-26	0.00132	≤2.5	PASS
				1000~2387	-57.62	≤-26	0.00173	≤2.5	PASS
				2387~2400	-48.86	≤-16	0.01300	≤25	PASS
				2483.5~2496.5	-48.90	≤-16	0.01288	≤25	PASS
				2496.5~13000	-51.41	≤-26	0.00723	≤2.5	PASS
			2480	30~1000	-50.60	≤-26	0.00871	≤2.5	PASS
				1000~2387	-57.80	≤-26	0.00166	≤2.5	PASS
				2387~2400	-48.93	≤-16	0.01279	≤25	PASS
				2483.5~2496.5	-48.53	≤-16	0.01403	≤25	PASS
				2496.5~13000	-52.51	≤-26	0.00561	≤2.5	PASS
	3DH5	Ant1	2402	30~1000	-49.89	≤-26	0.01026	≤2.5	PASS
				1000~2387	-57.75	≤-26	0.00168	≤2.5	PASS
				2387~2400	-36.63	≤-16	0.21727	≤25	PASS
				2483.5~2496.5	-48.75	≤-16	0.01334	≤25	PASS
				2496.5~13000	-52.37	≤-26	0.00579	≤2.5	PASS

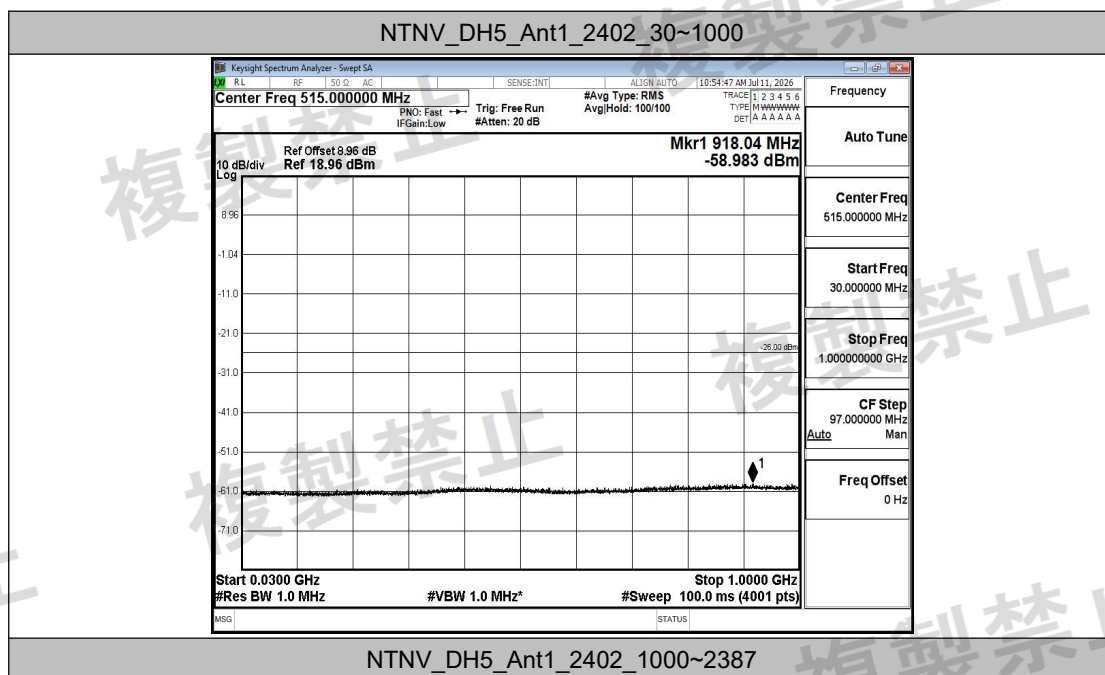
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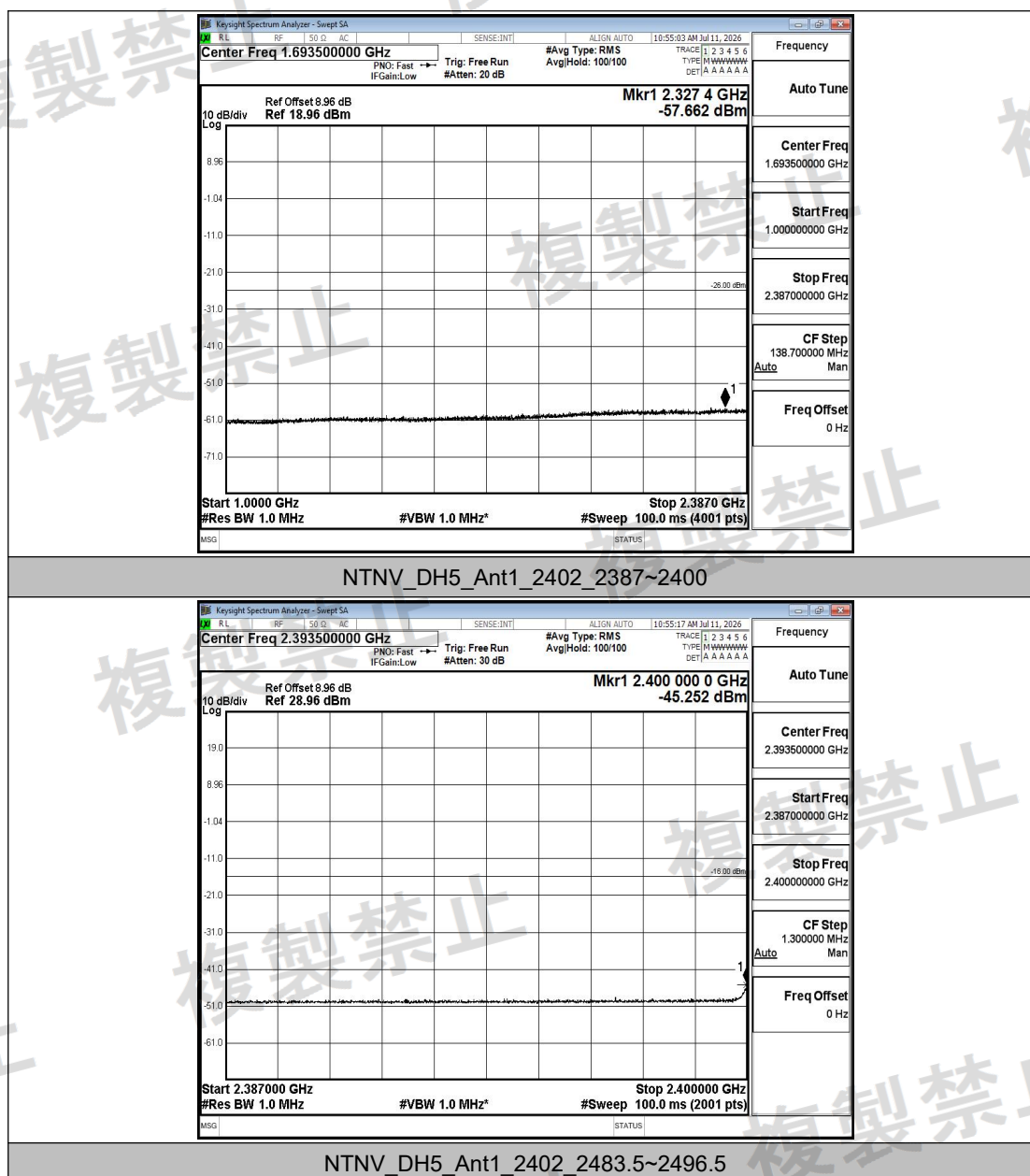
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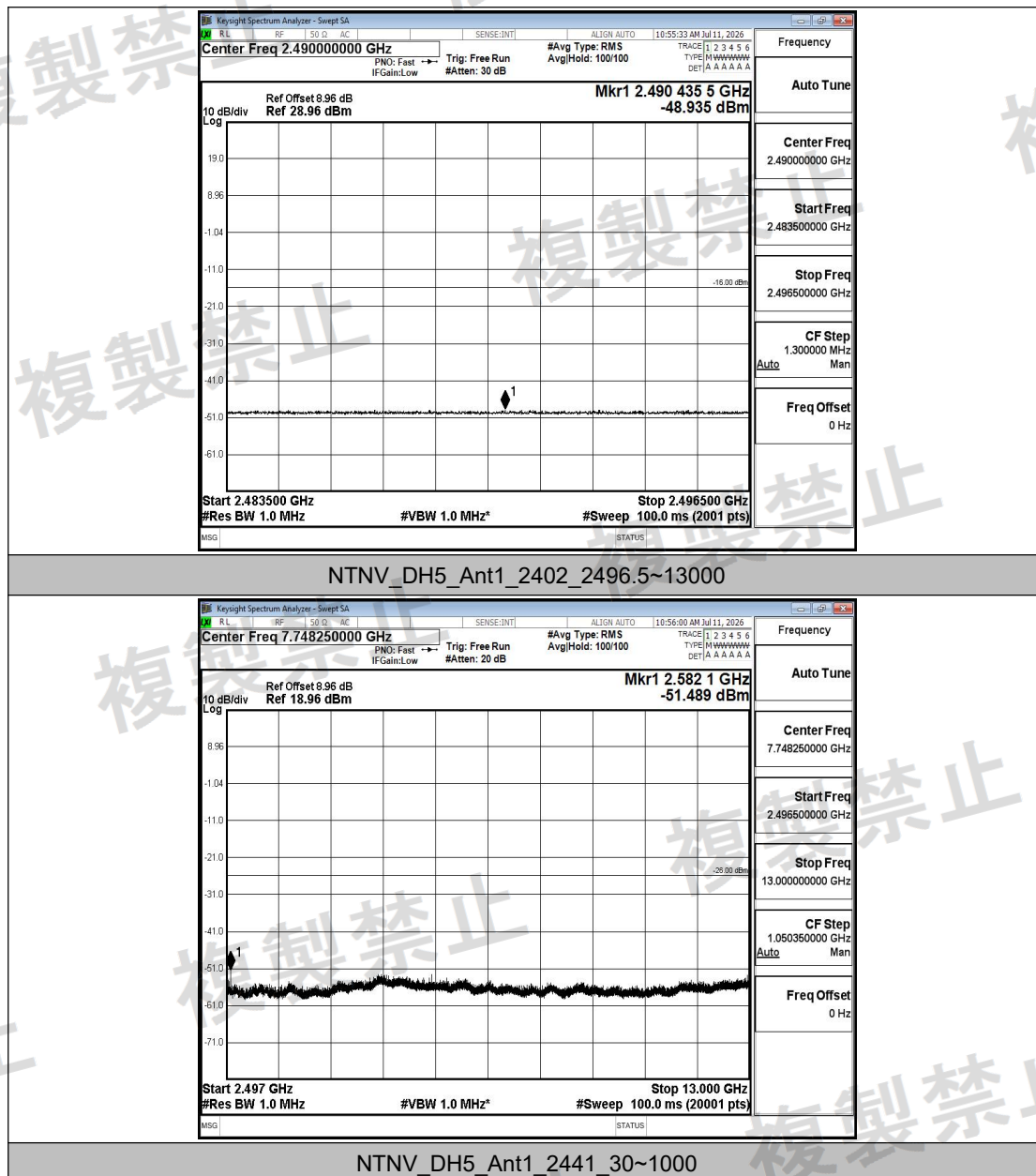
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		2441	30~1000	-50.30	≤-26	0.00933	≤2.5	PASS
			1000~2387	-57.69	≤-26	0.00170	≤2.5	PASS
			2387~2400	-48.86	≤-16	0.01300	≤25	PASS
			2483.5~2496.5	-48.90	≤-16	0.01288	≤25	PASS
			2496.5~13000	-52.42	≤-26	0.00573	≤2.5	PASS
		2480	30~1000	-53.76	≤-26	0.00421	≤2.5	PASS
			1000~2387	-57.82	≤-26	0.00165	≤2.5	PASS
			2387~2400	-49.00	≤-16	0.01259	≤25	PASS
			2483.5~2496.5	-48.39	≤-16	0.01449	≤25	PASS
			2496.5~13000	-52.19	≤-26	0.00604	≤2.5	PASS

Test Graphs



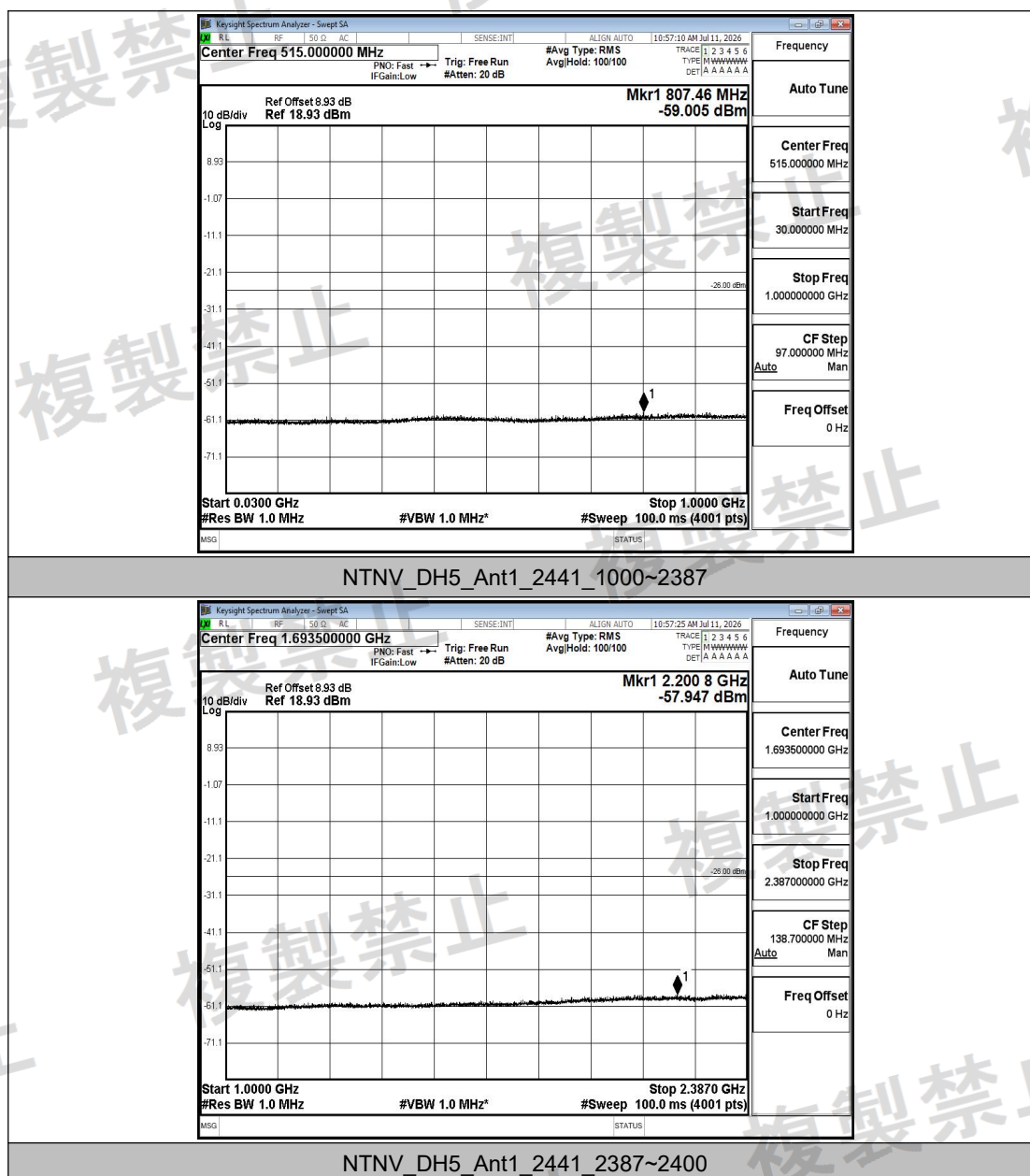


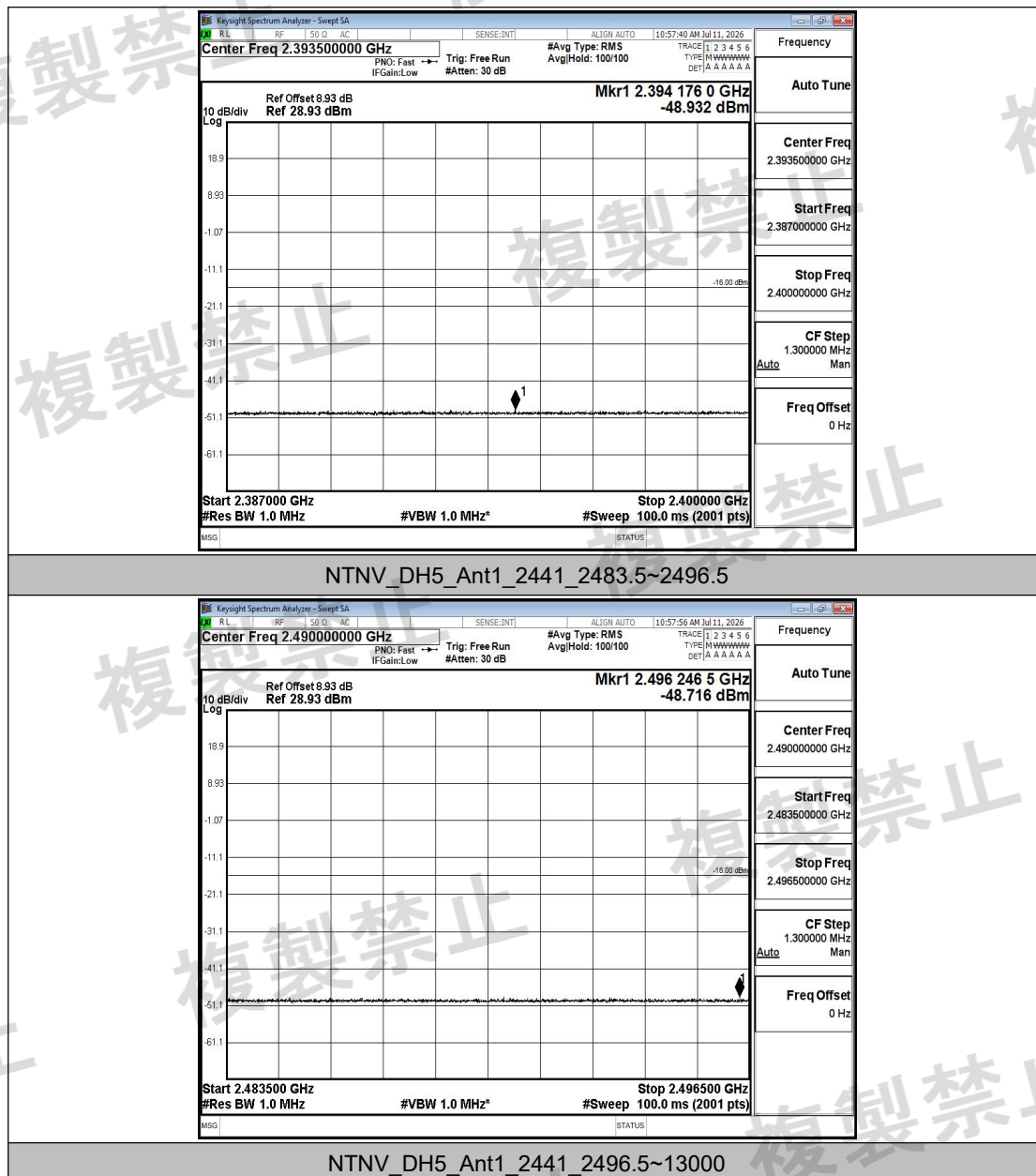


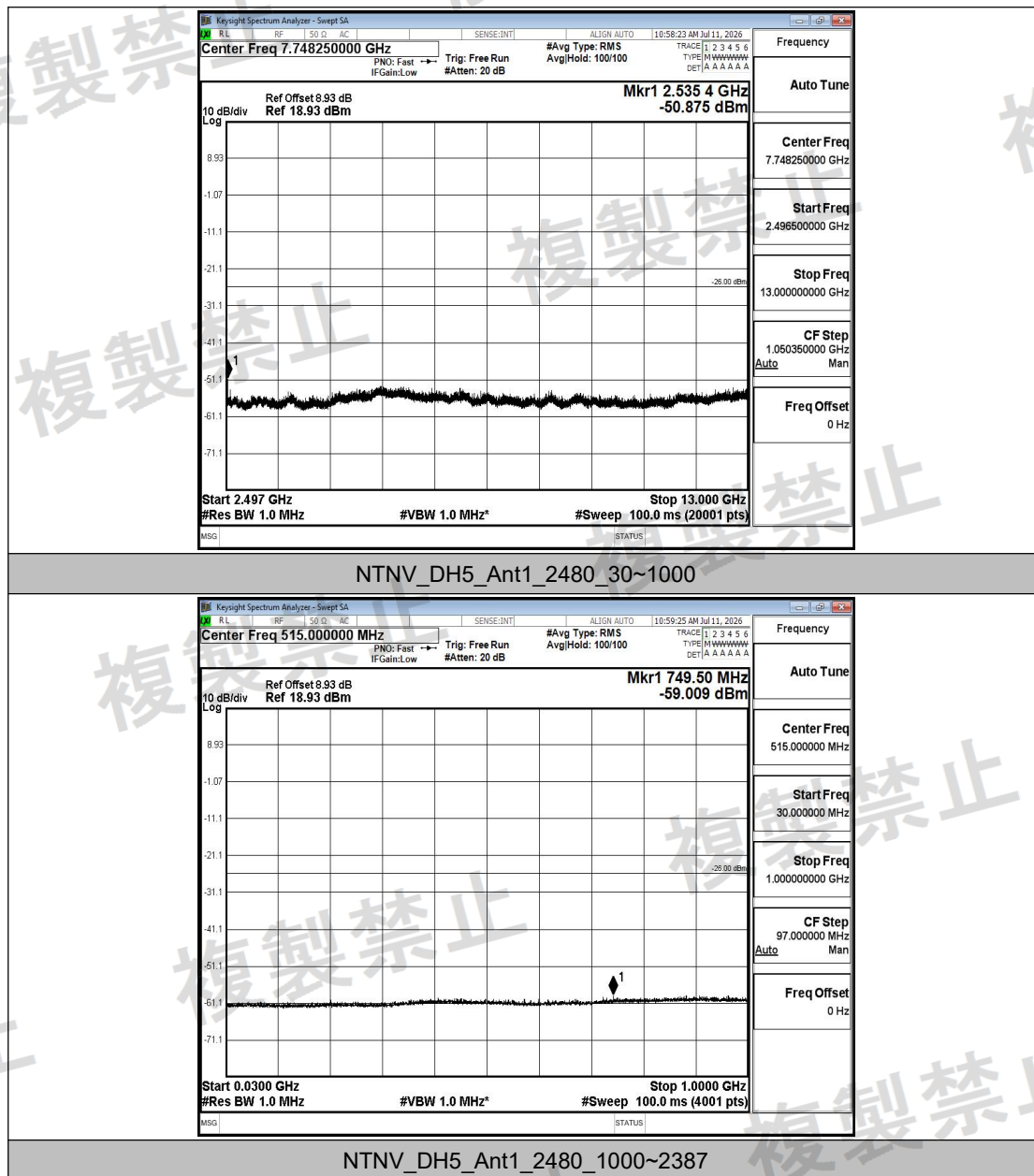
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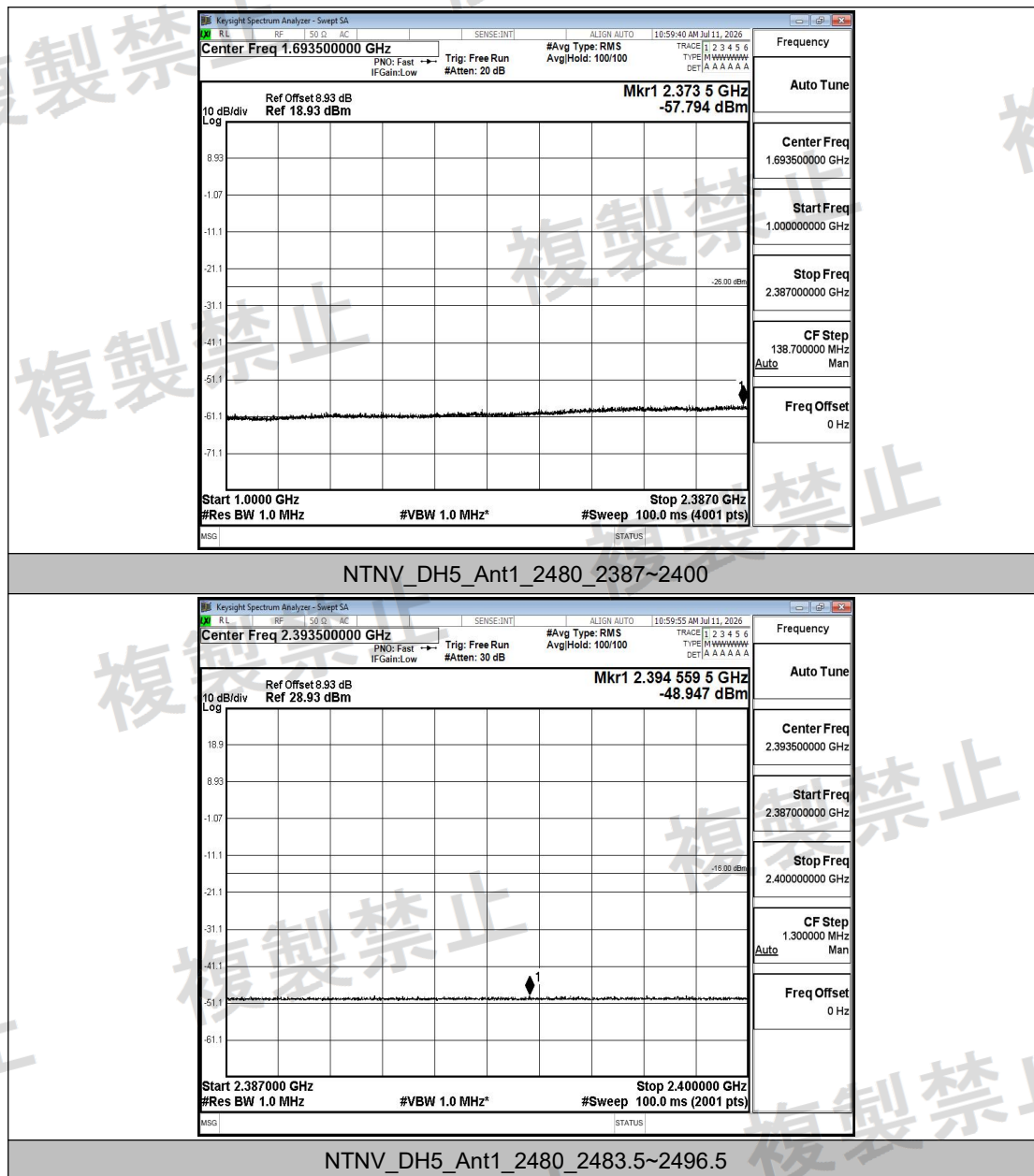


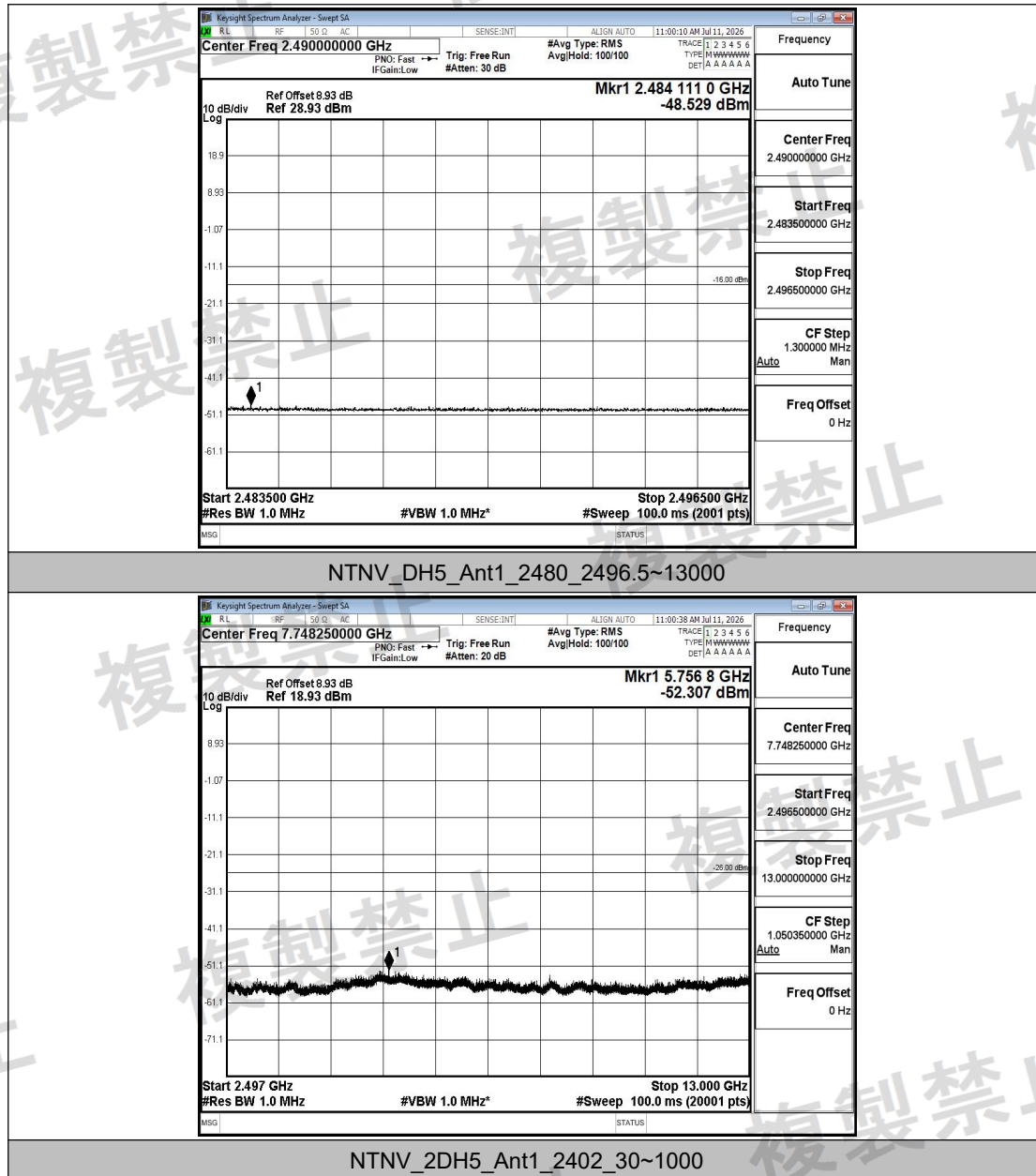


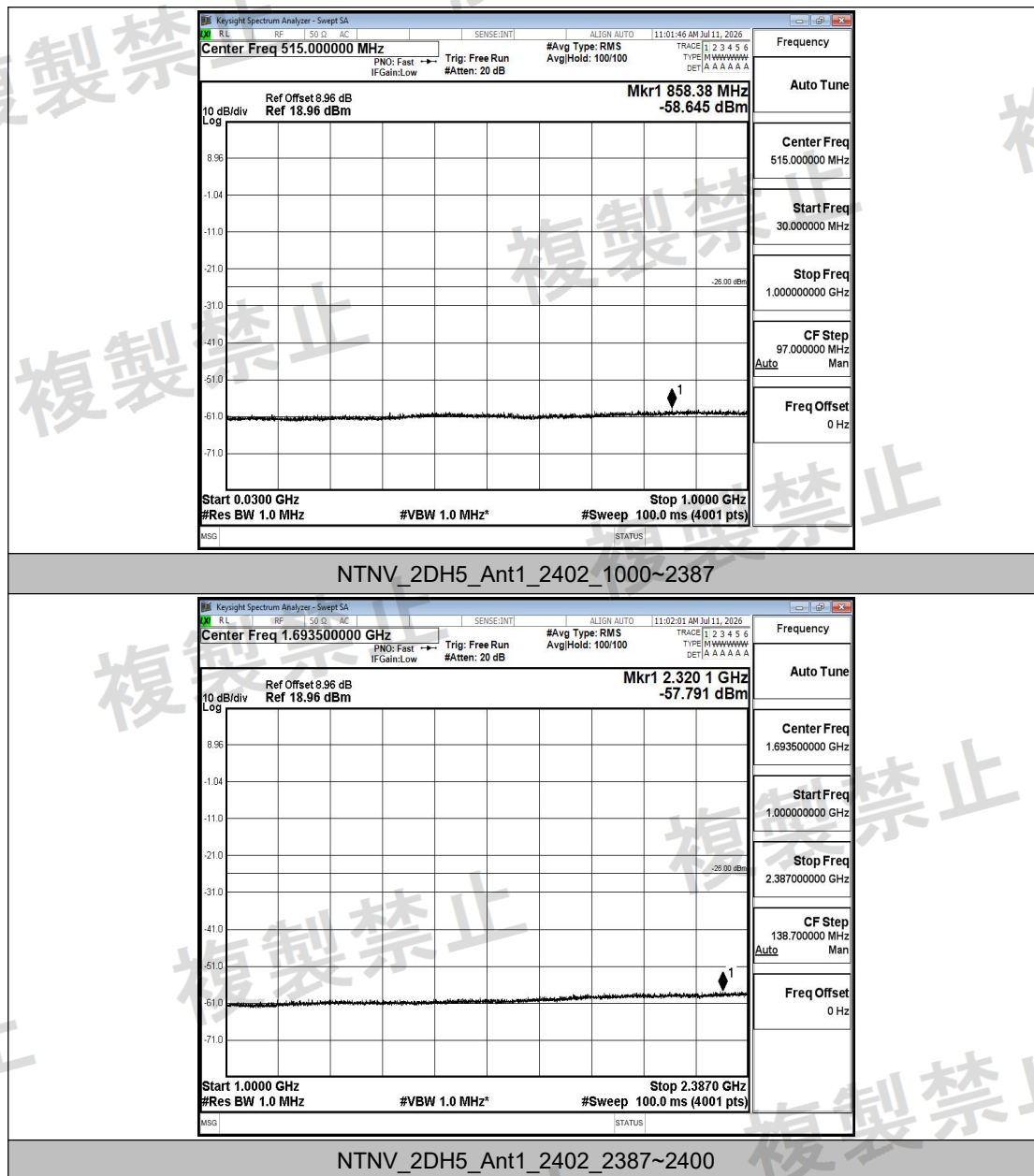
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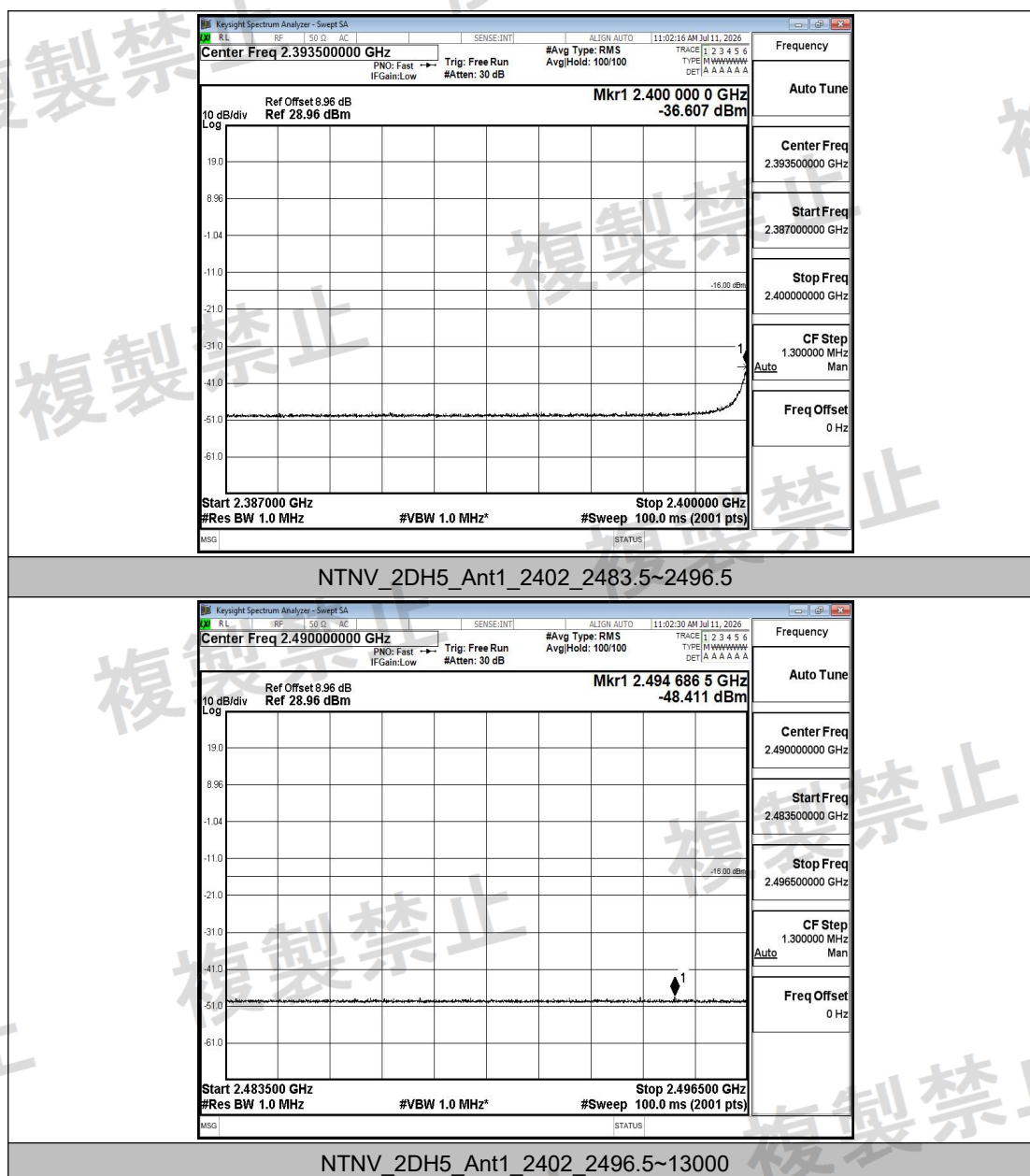
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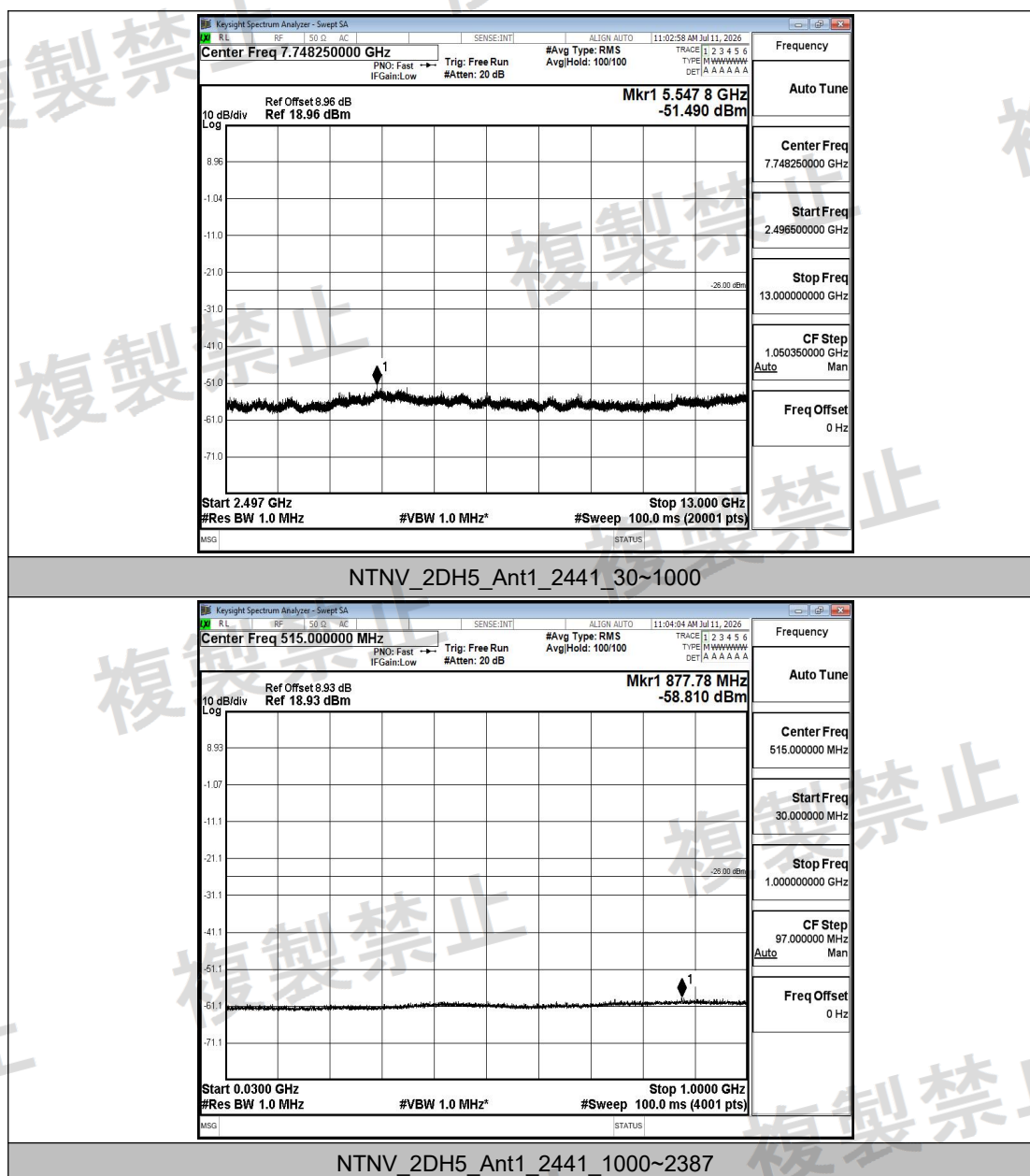
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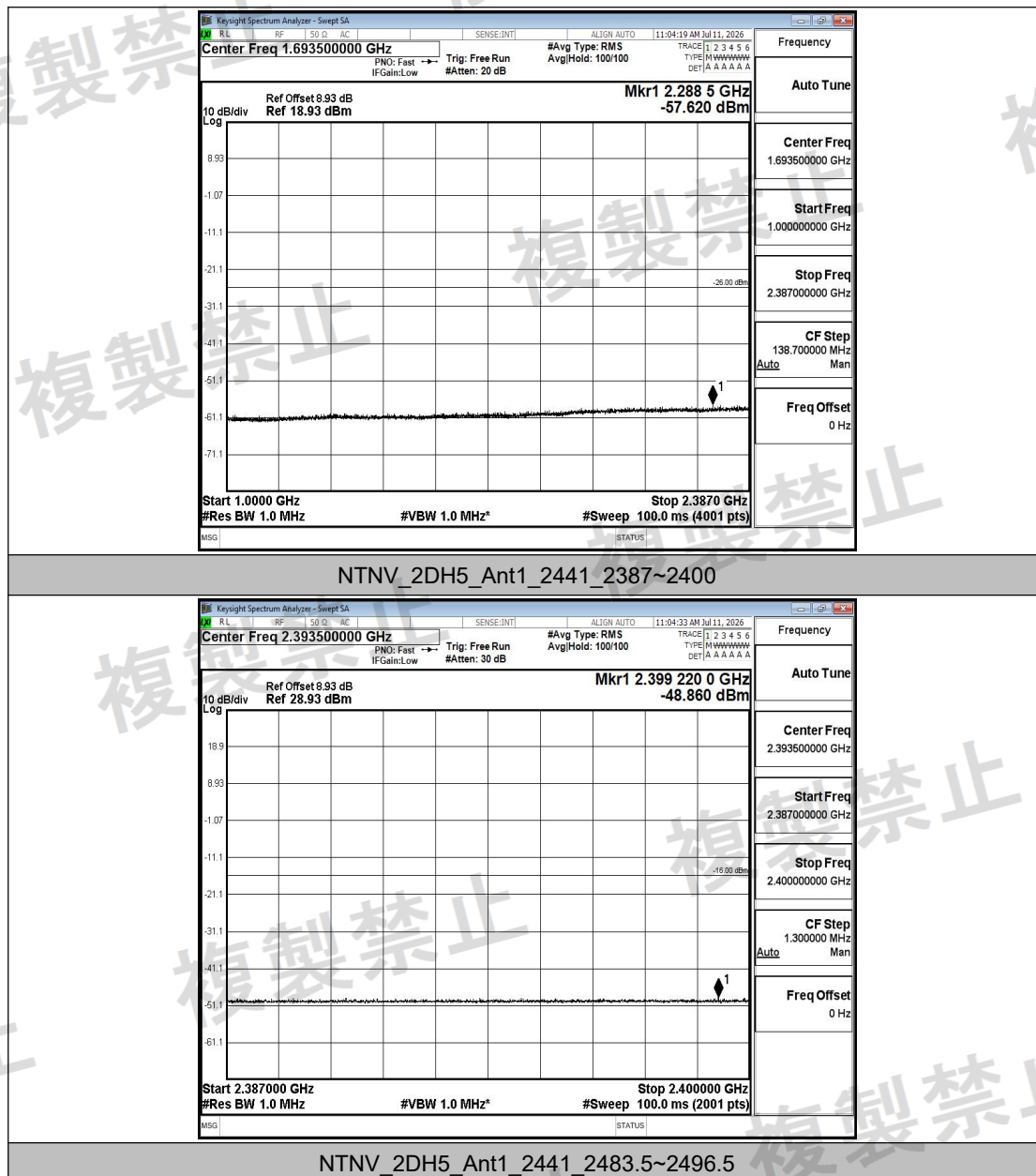


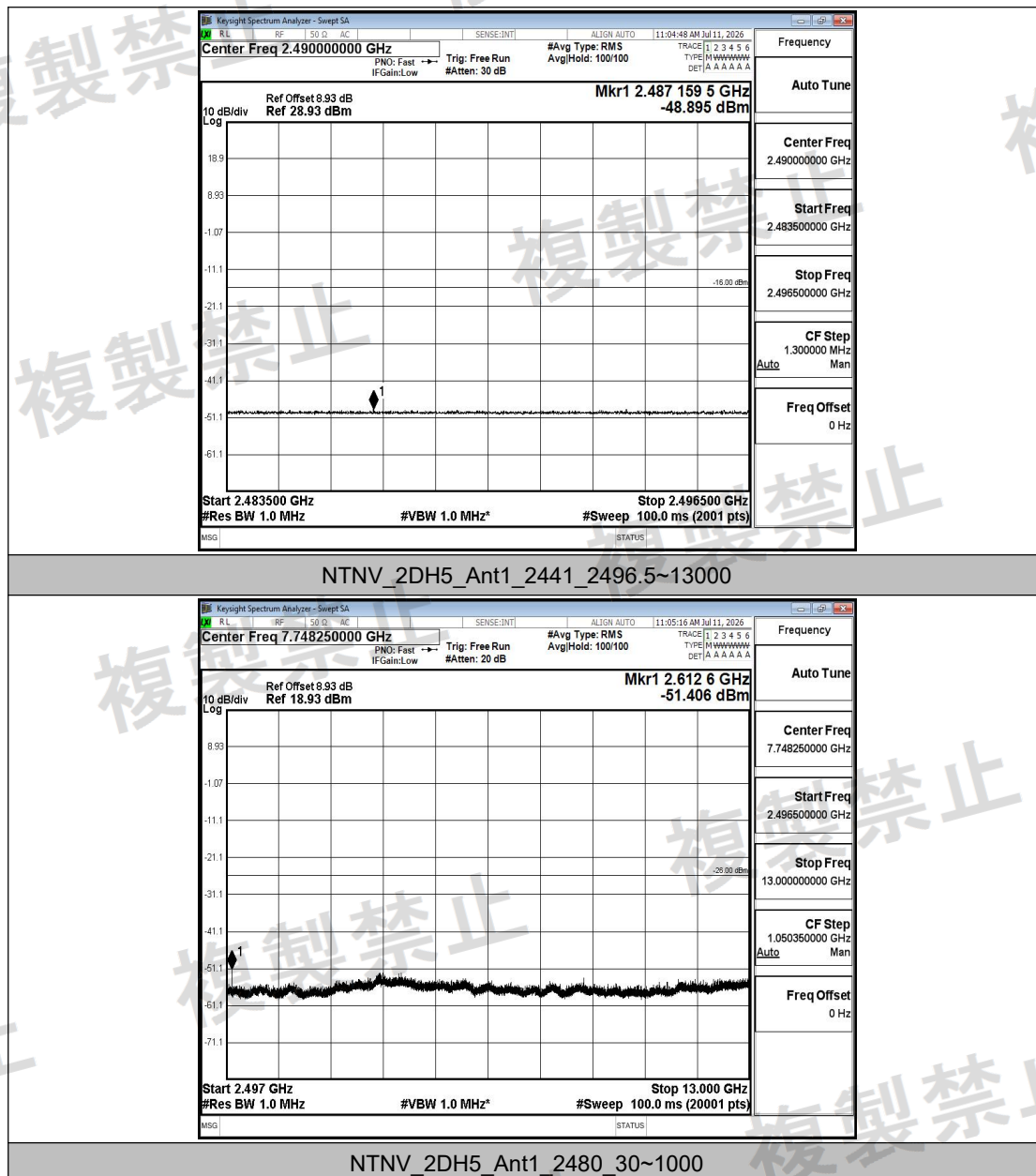








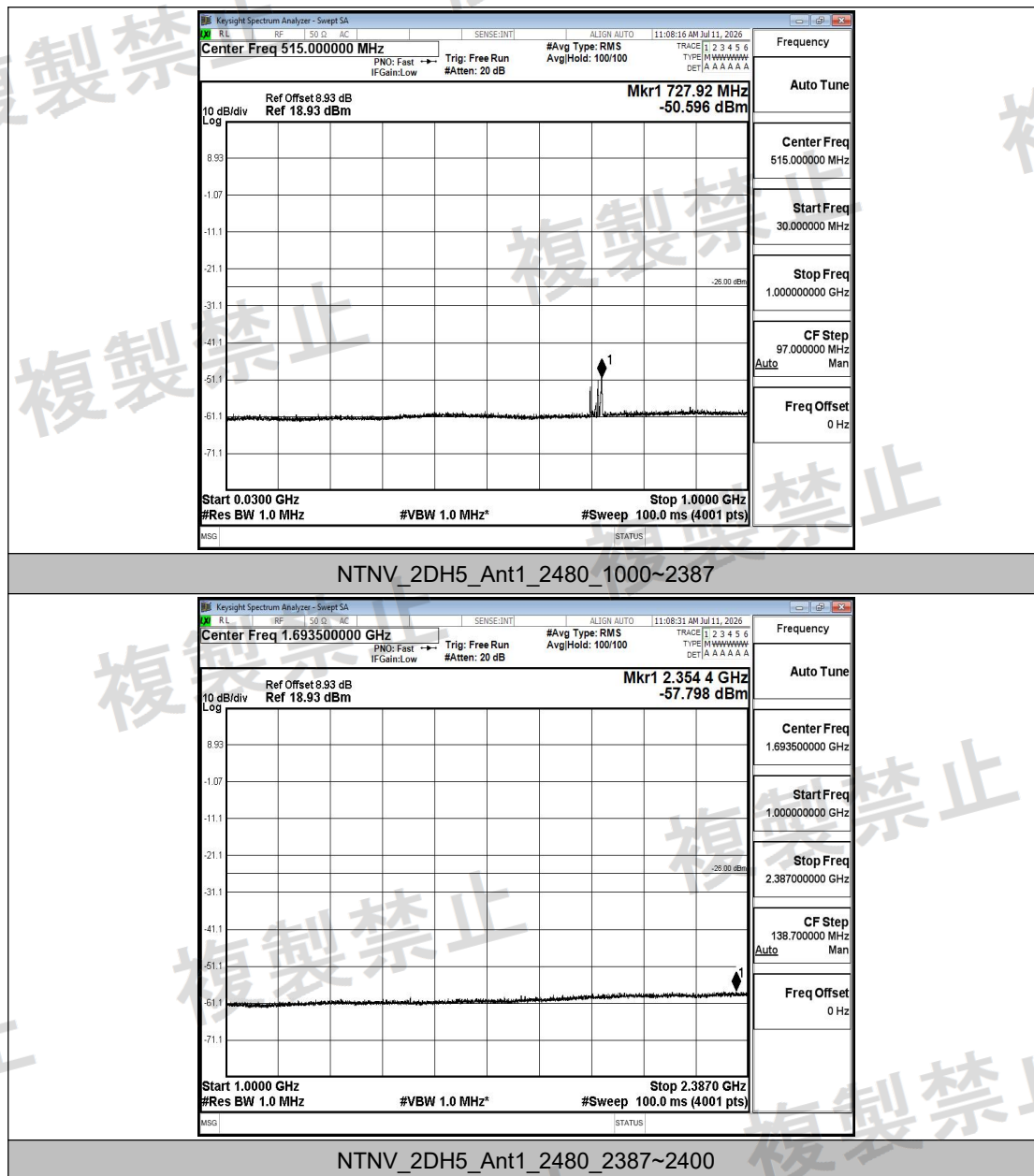


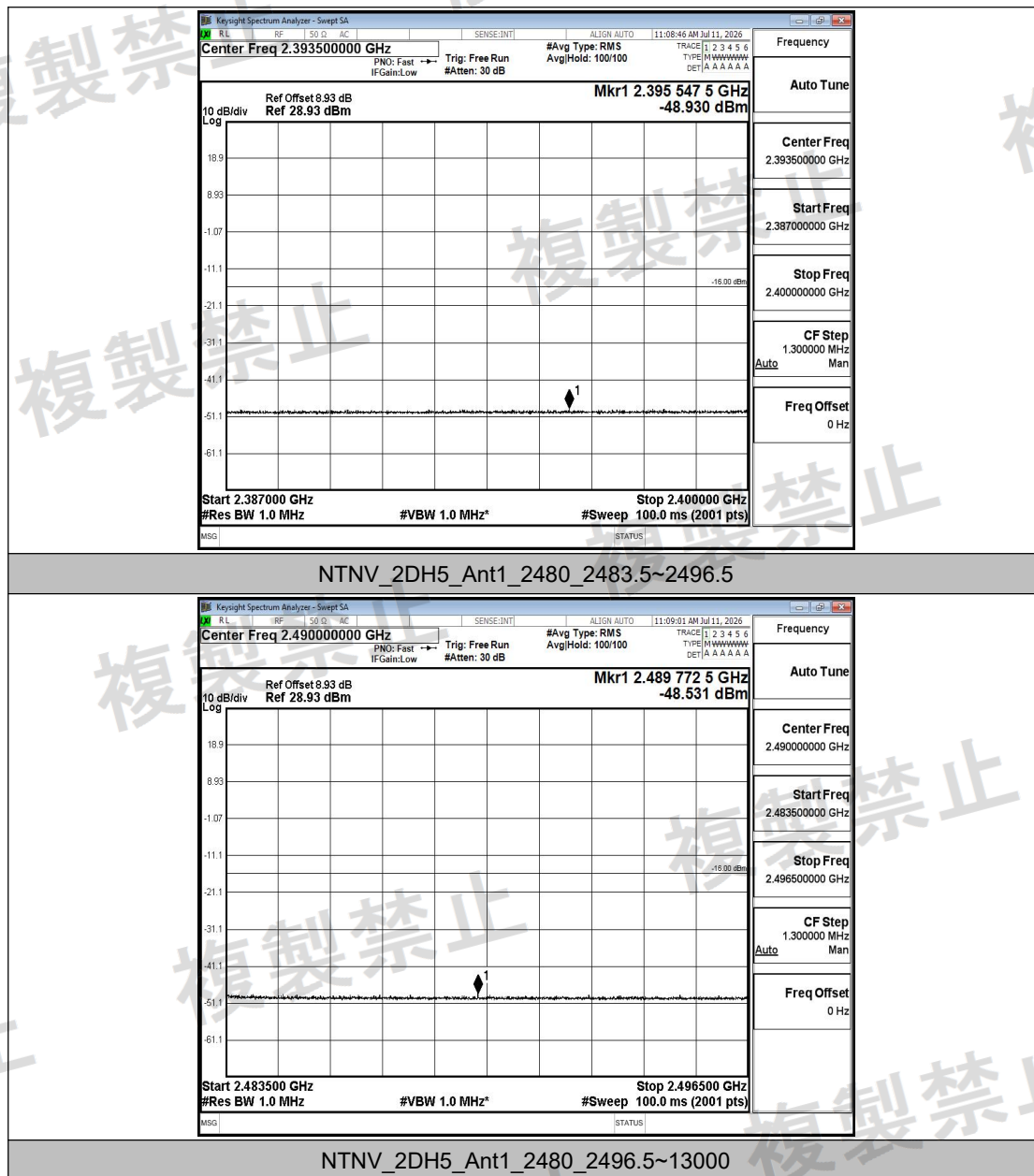


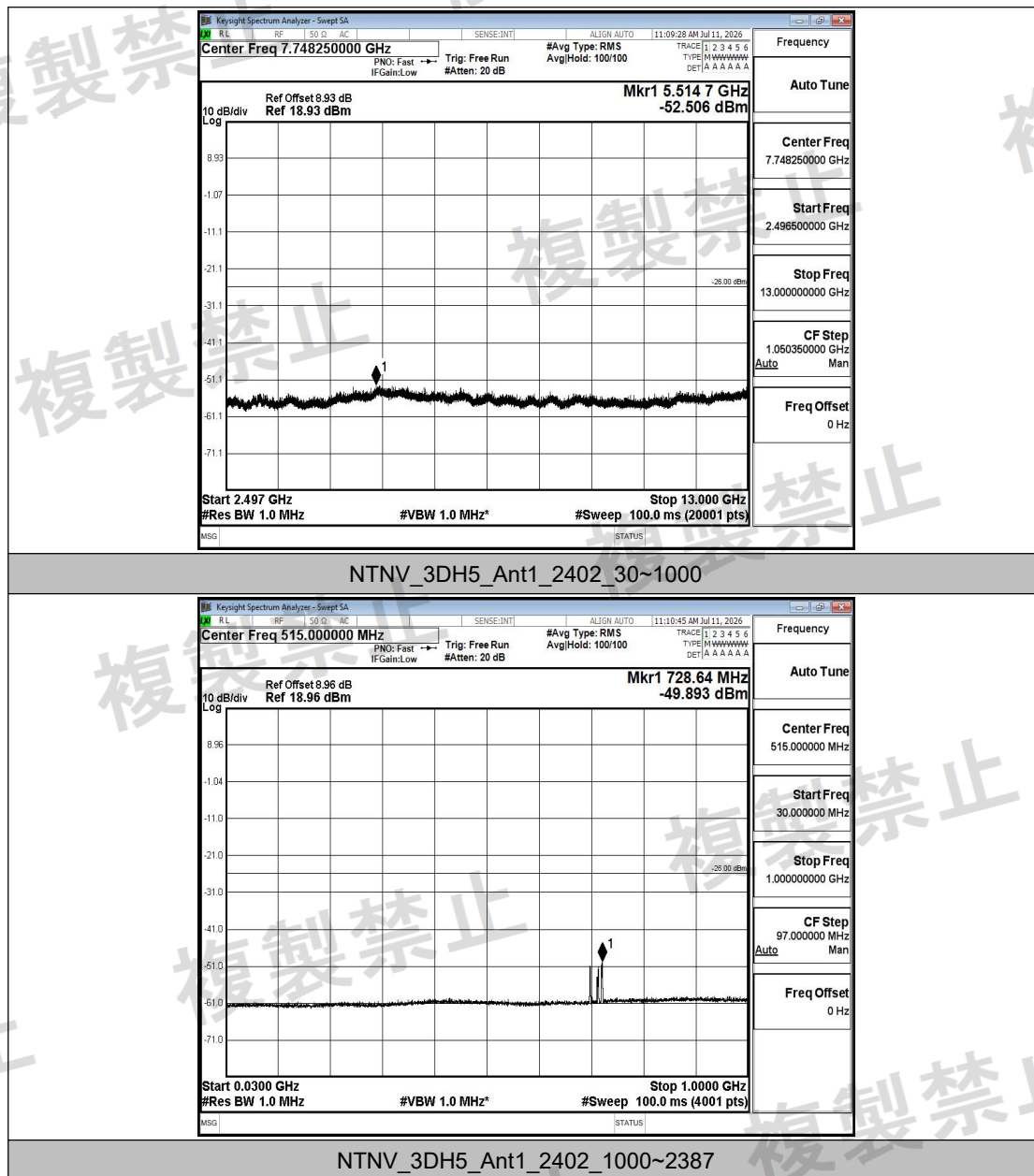
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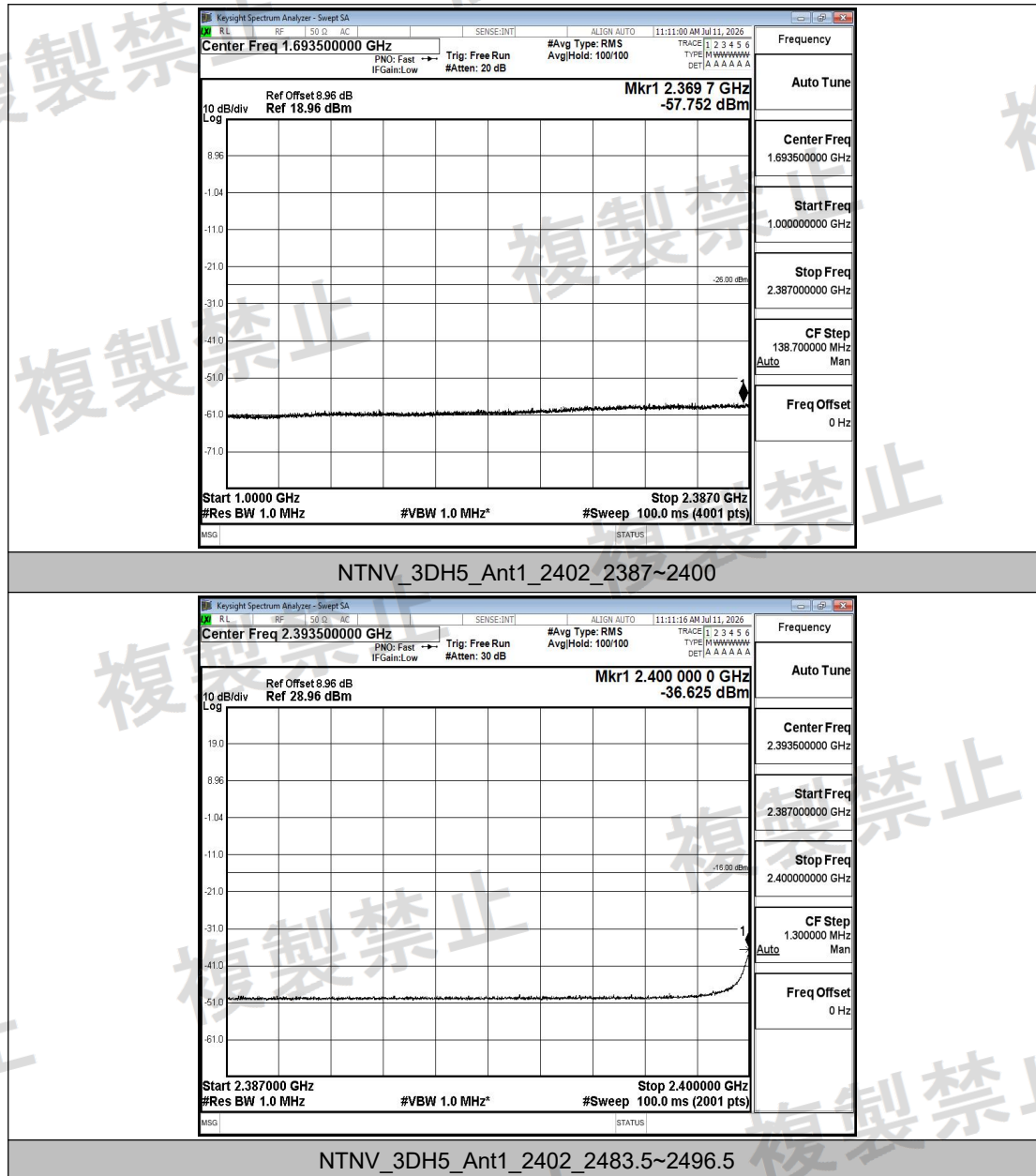


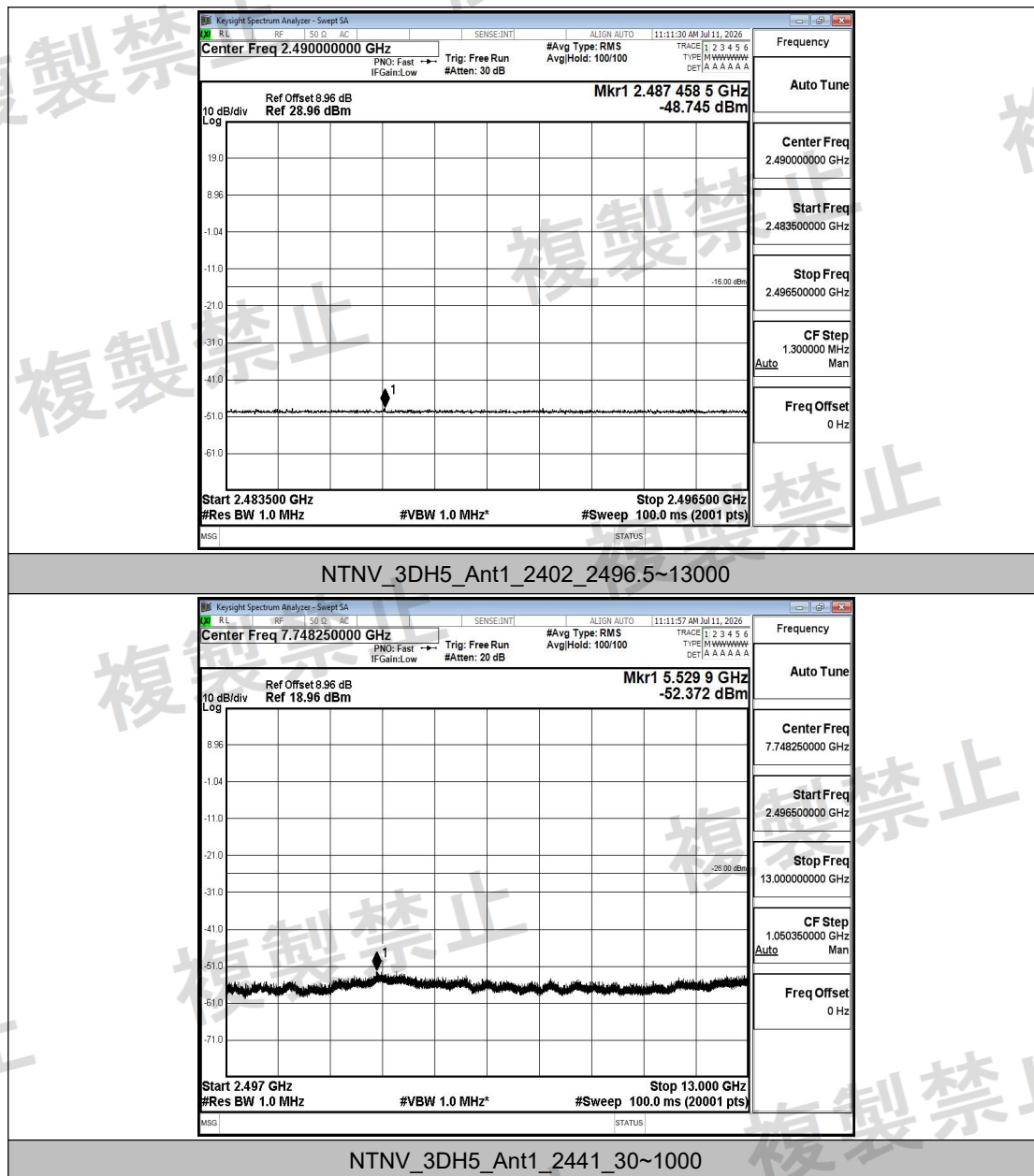


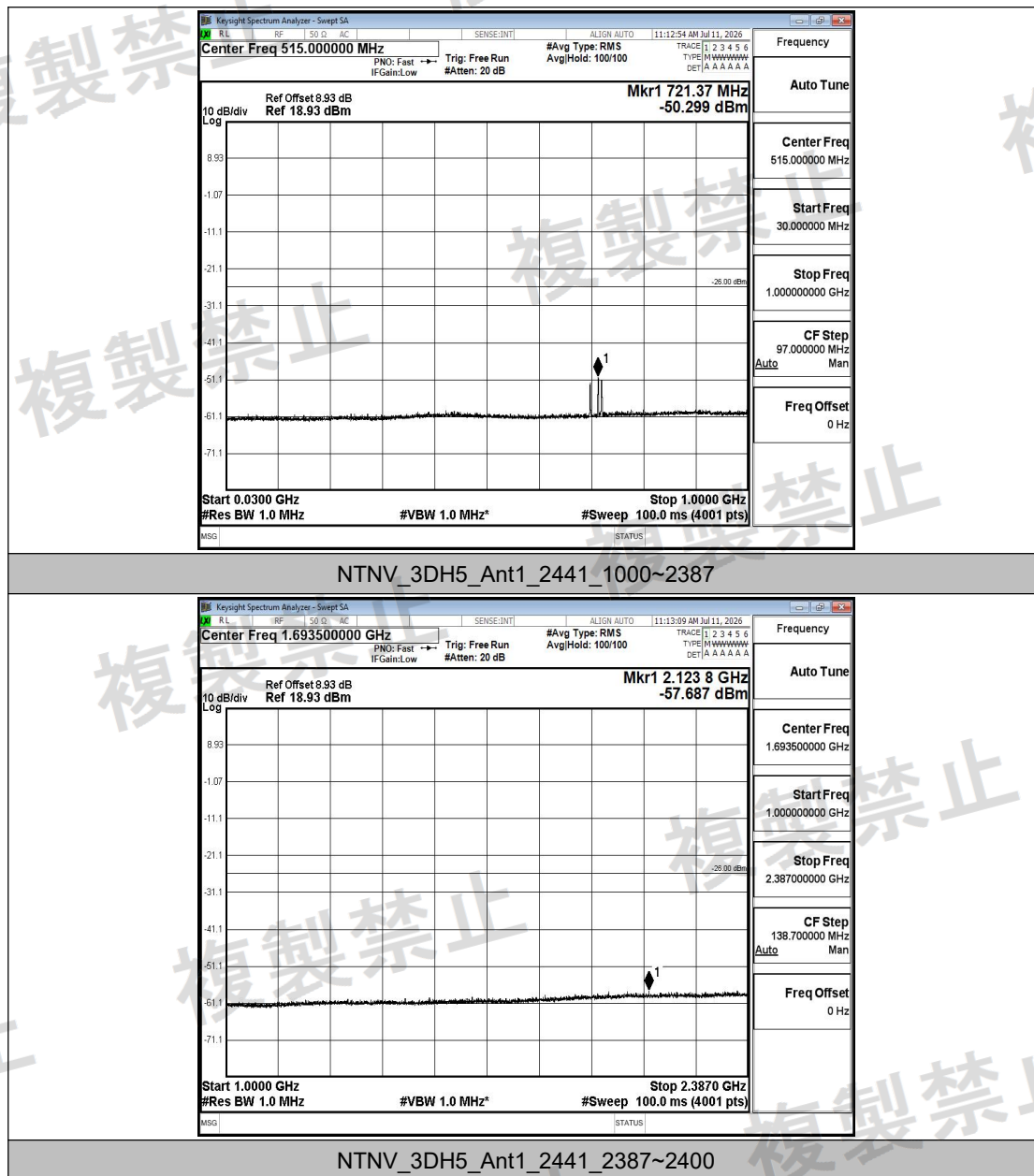
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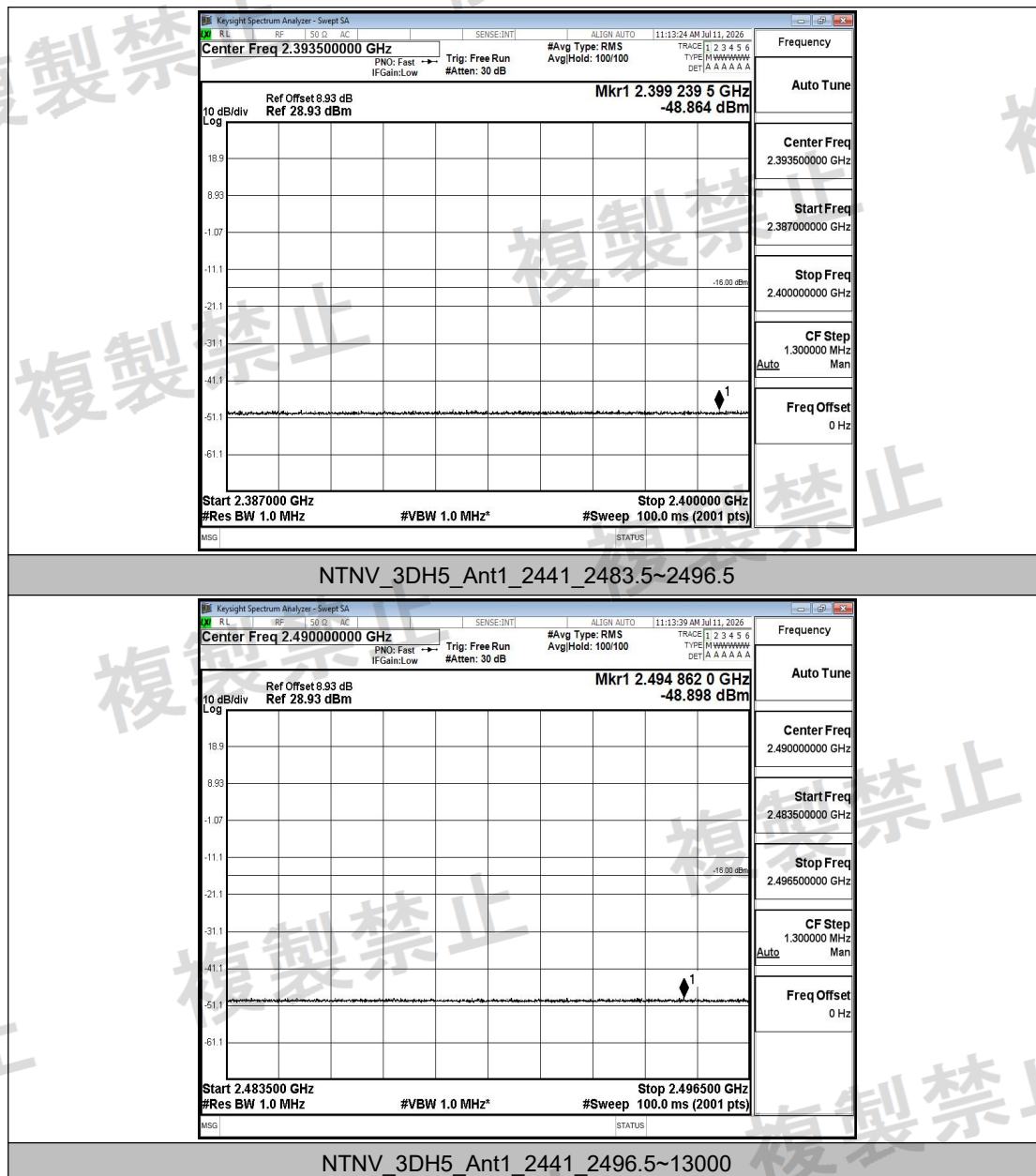
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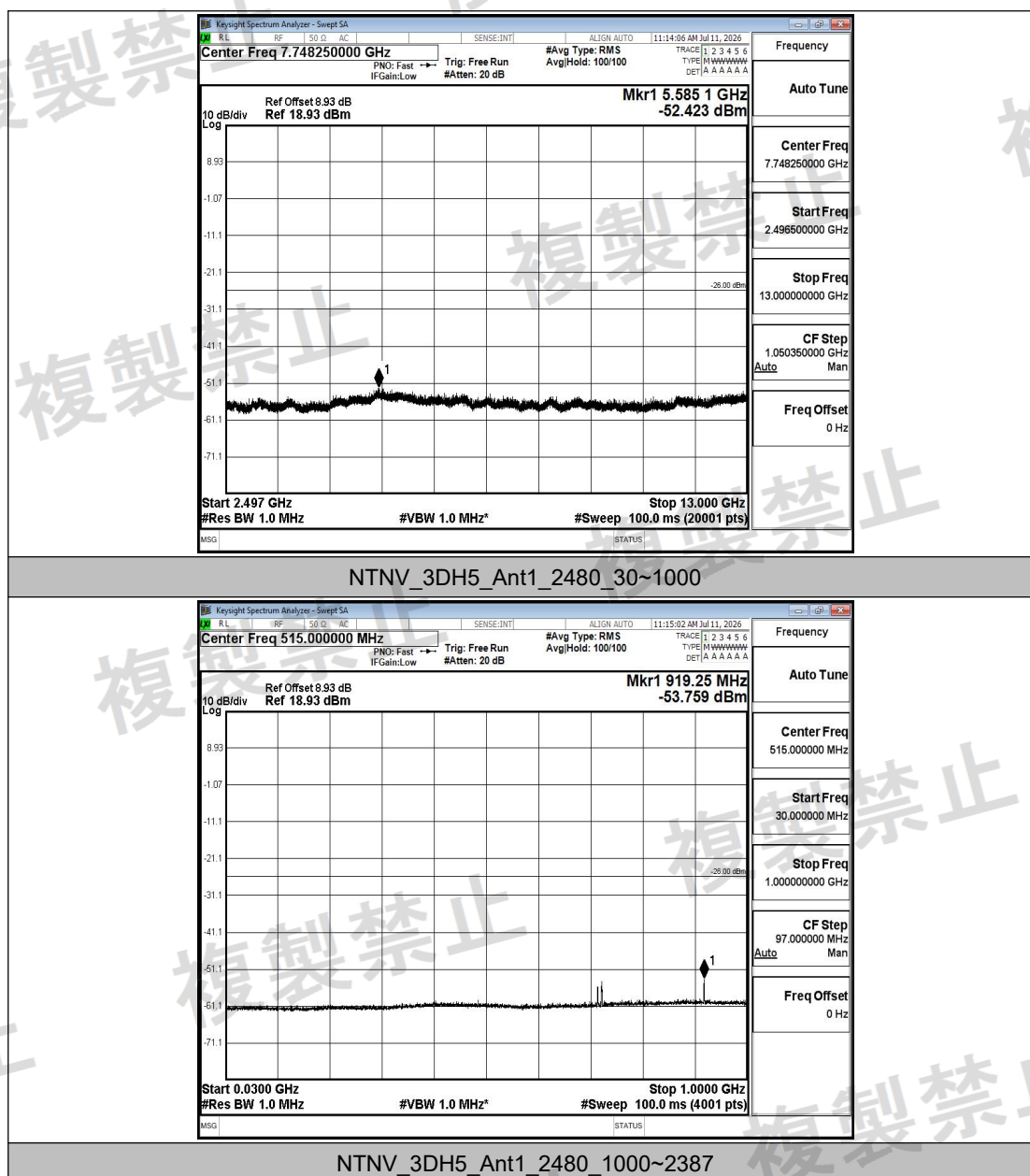
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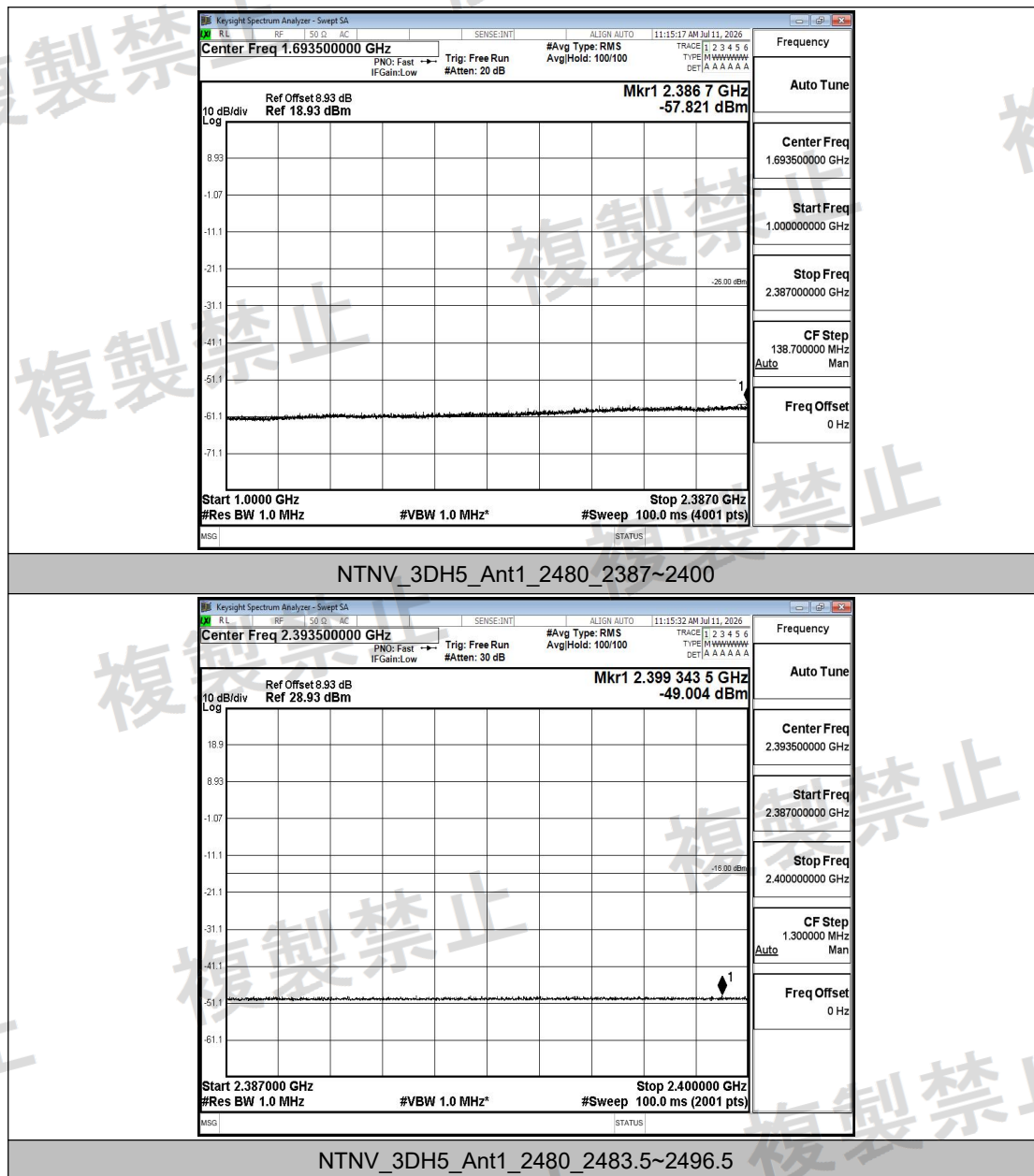


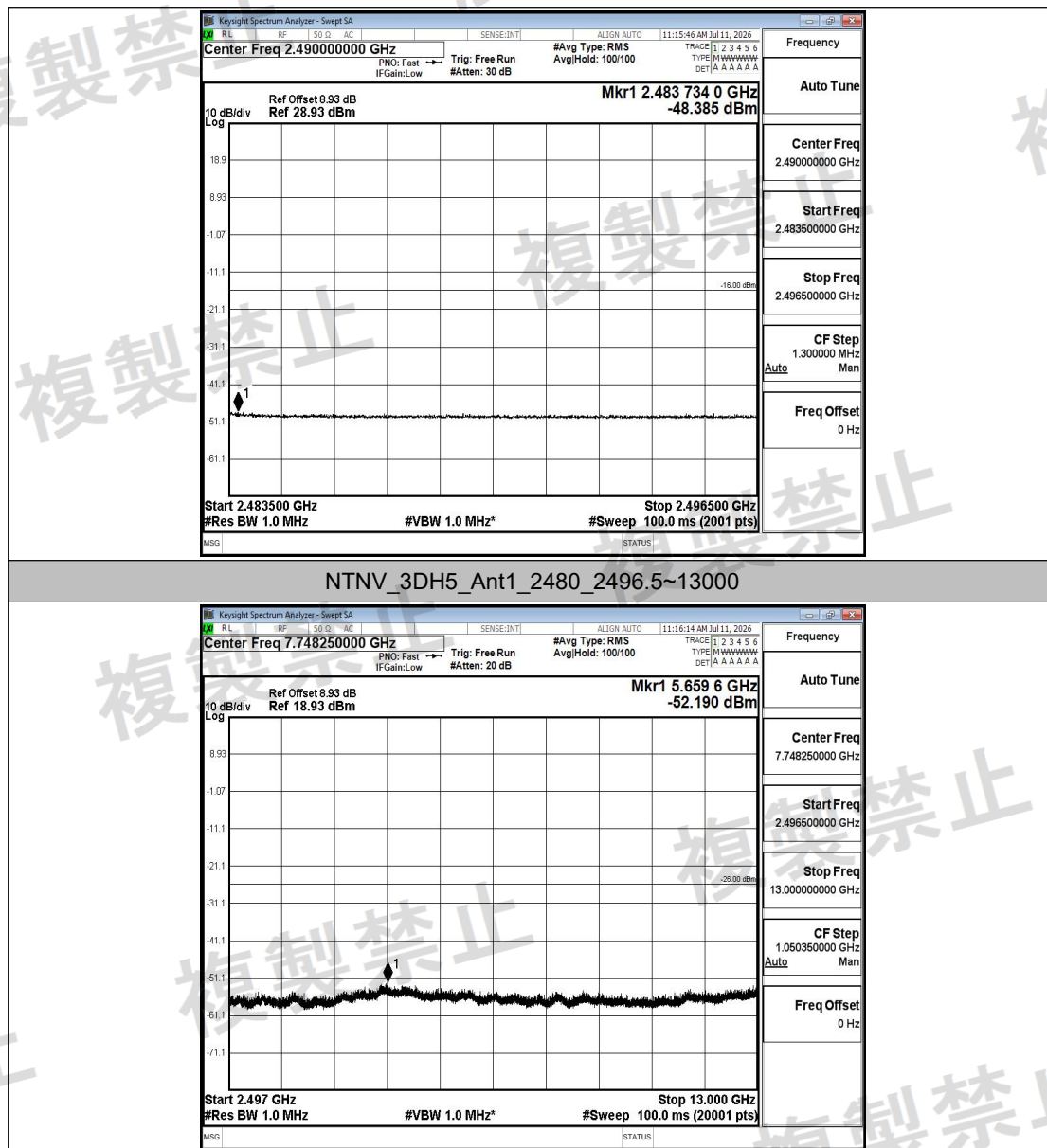












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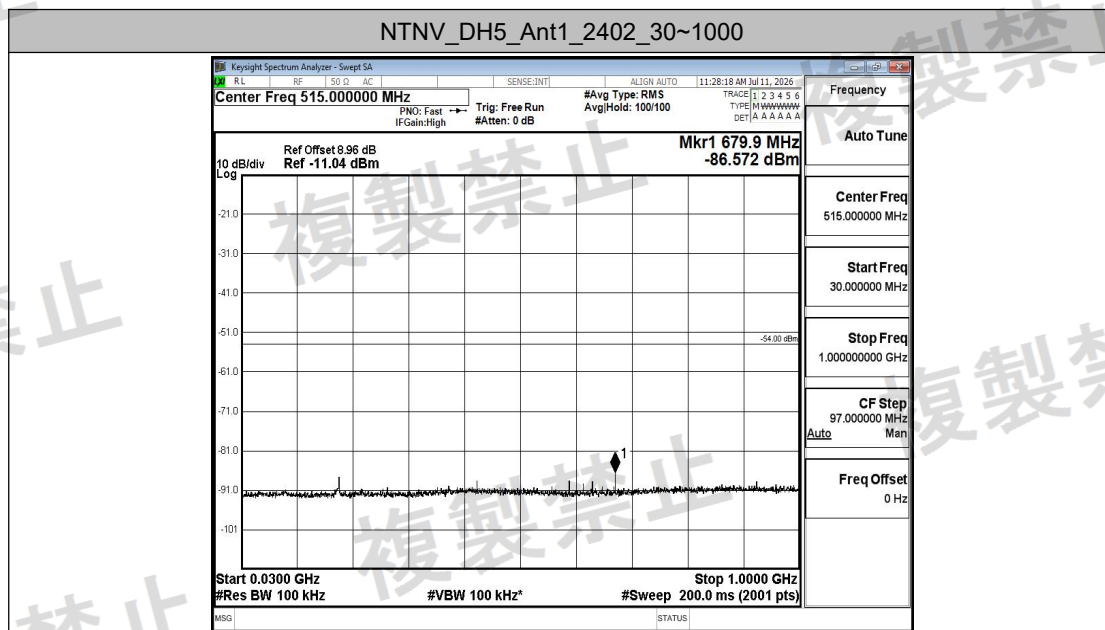
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A.6 Spurious Emission of RX

Test Result

Test Condition	Test Mode	Antenna	Frequency [MHz]	Freq. Range [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	DH5	Ant1	2402	30~1000	-86.57	≤-54	0.00220	≤4	PASS
				1000~12500	-65.91	≤-47	0.25645	≤20	PASS
			2441	30~1000	-87.21	≤-54	0.00190	≤4	PASS
				1000~12500	-64.93	≤-47	0.32137	≤20	PASS
			2480	30~1000	-87.16	≤-54	0.00192	≤4	PASS
				1000~12500	-66.93	≤-47	0.20277	≤20	PASS
	2DH5	Ant1	2402	30~1000	-87.31	≤-54	0.00186	≤4	PASS
				1000~12500	-63.38	≤-47	0.45920	≤20	PASS
			2441	30~1000	-86.67	≤-54	0.00215	≤4	PASS
				1000~12500	-66.04	≤-47	0.24889	≤20	PASS
			2480	30~1000	-87.1	≤-54	0.00195	≤4	PASS
				1000~12500	-69.25	≤-47	0.11885	≤20	PASS
	3DH5	Ant1	2402	30~1000	-87.11	≤-54	0.00195	≤4	PASS
				1000~12500	-66.52	≤-47	0.22284	≤20	PASS
			2441	30~1000	-87.29	≤-54	0.00187	≤4	PASS
				1000~12500	-67.47	≤-47	0.17906	≤20	PASS
			2480	30~1000	-86.91	≤-54	0.00204	≤4	PASS
				1000~12500	-64.84	≤-47	0.32810	≤20	PASS

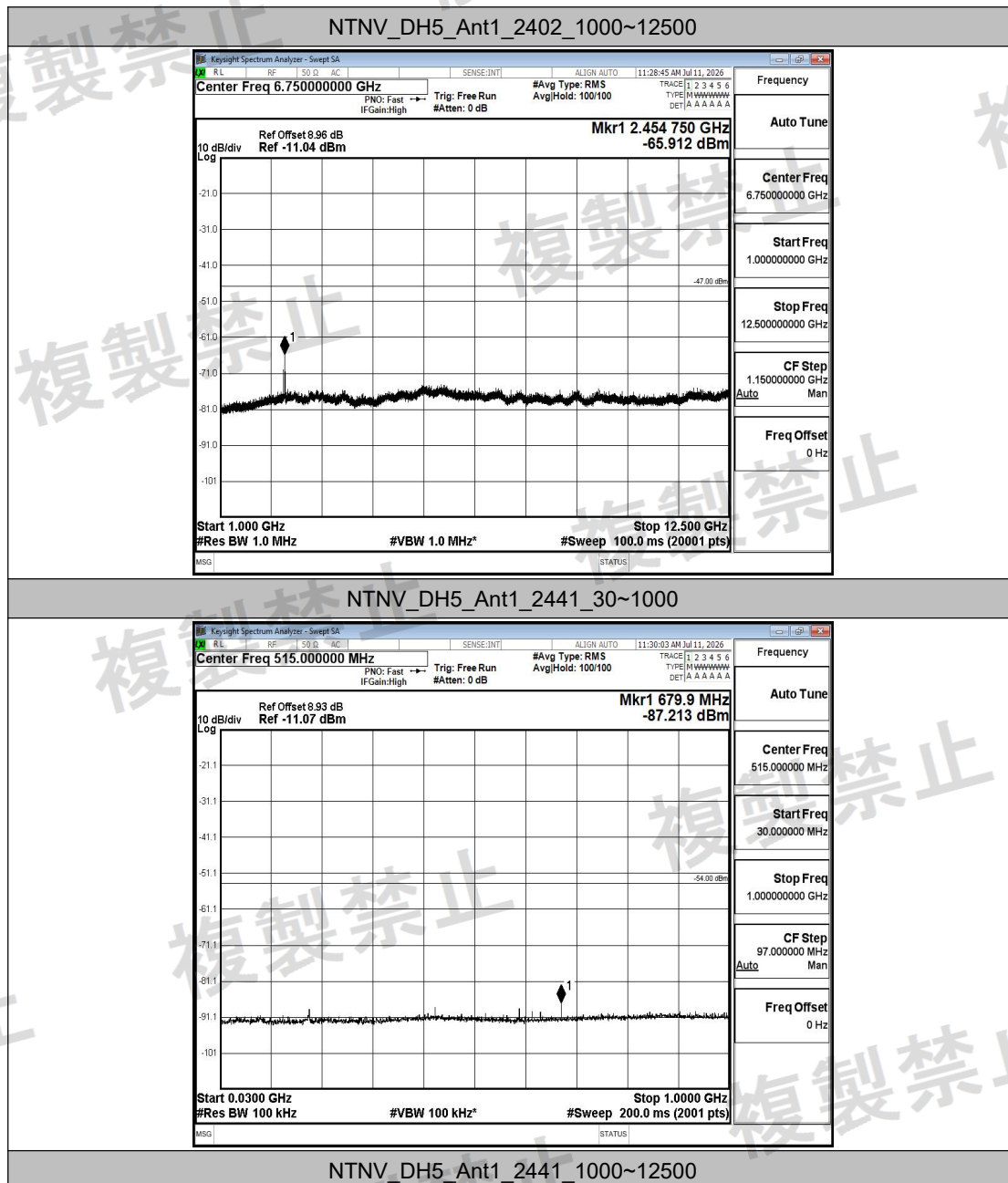
Test Graphs

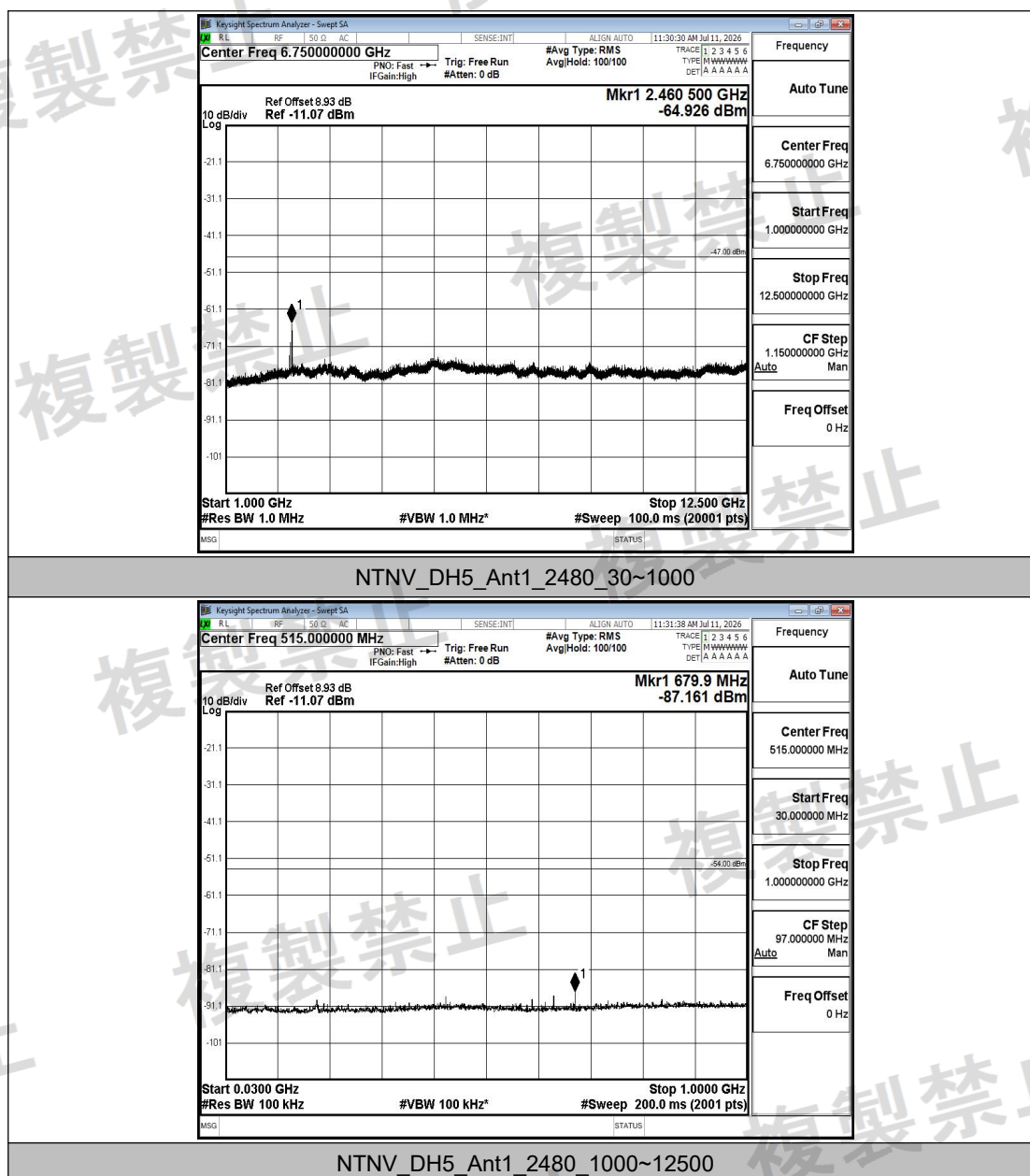


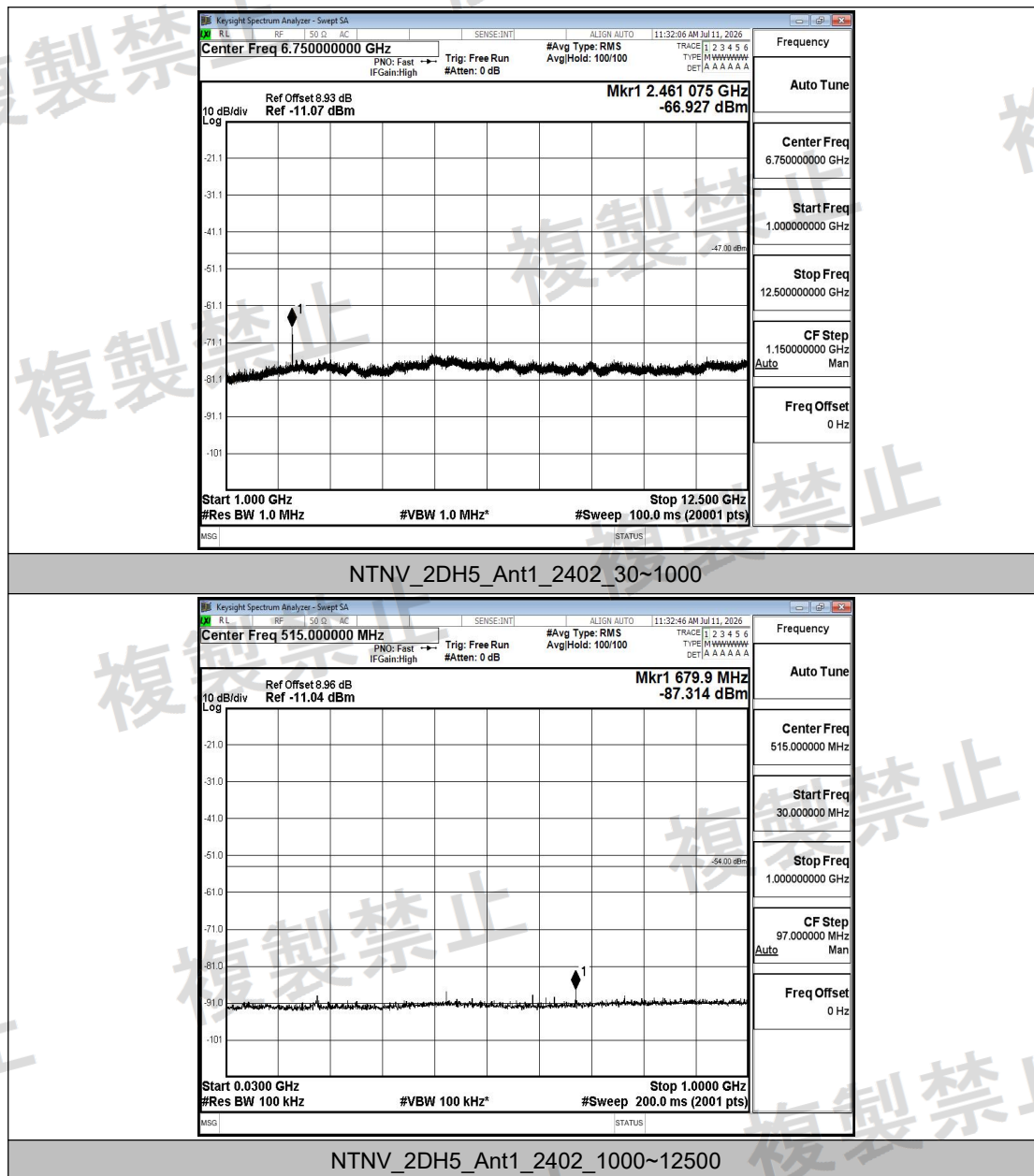
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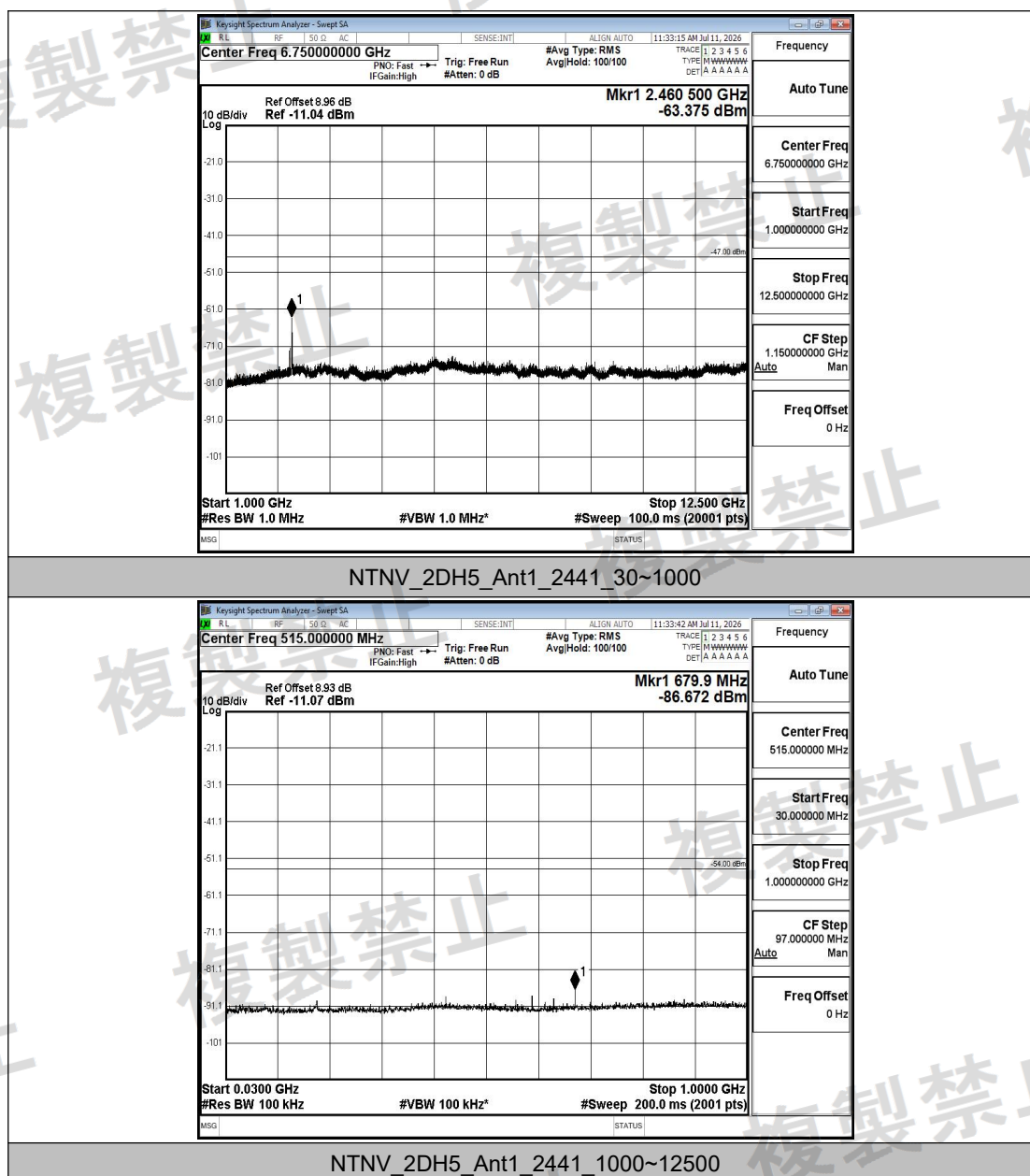
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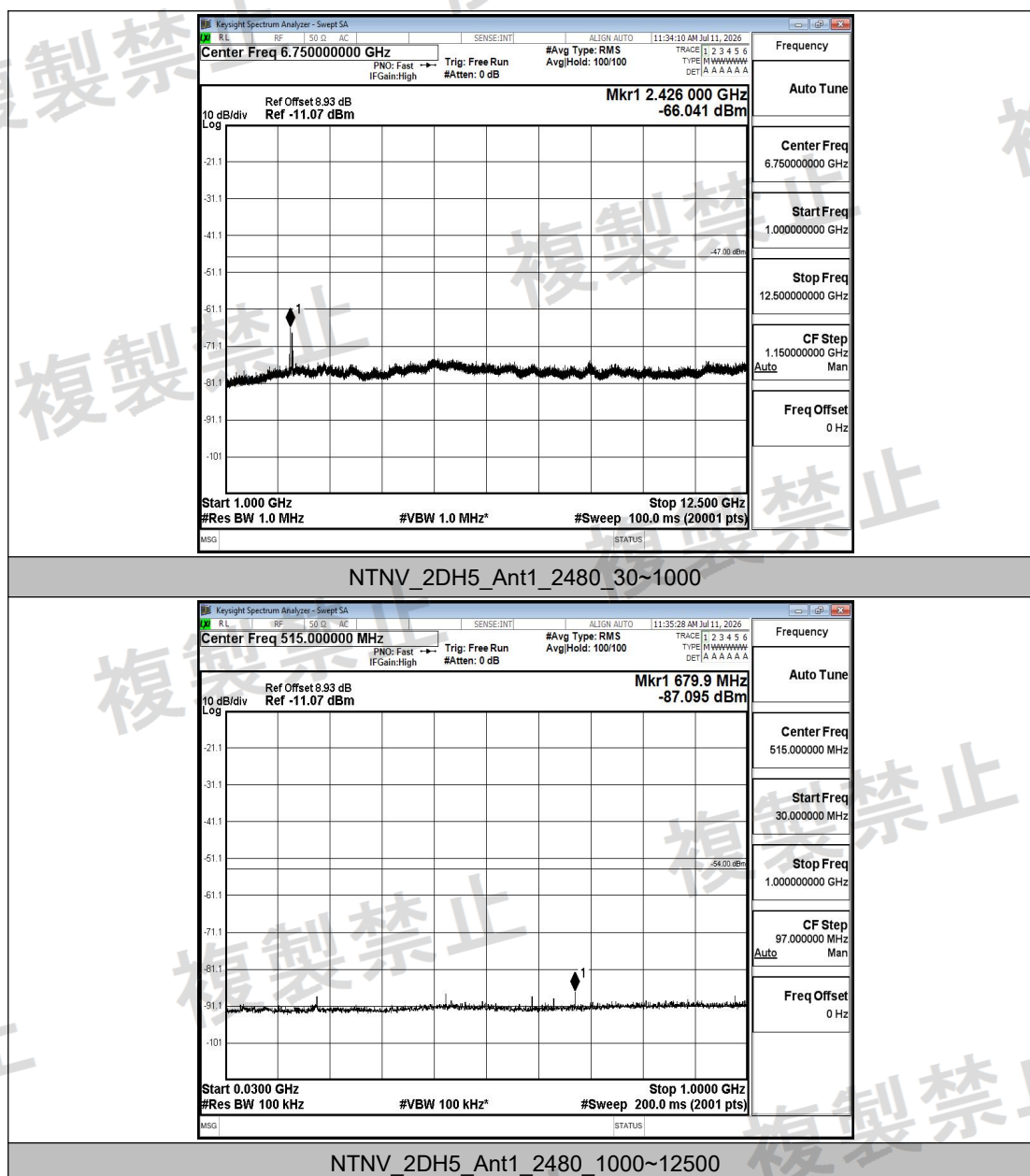
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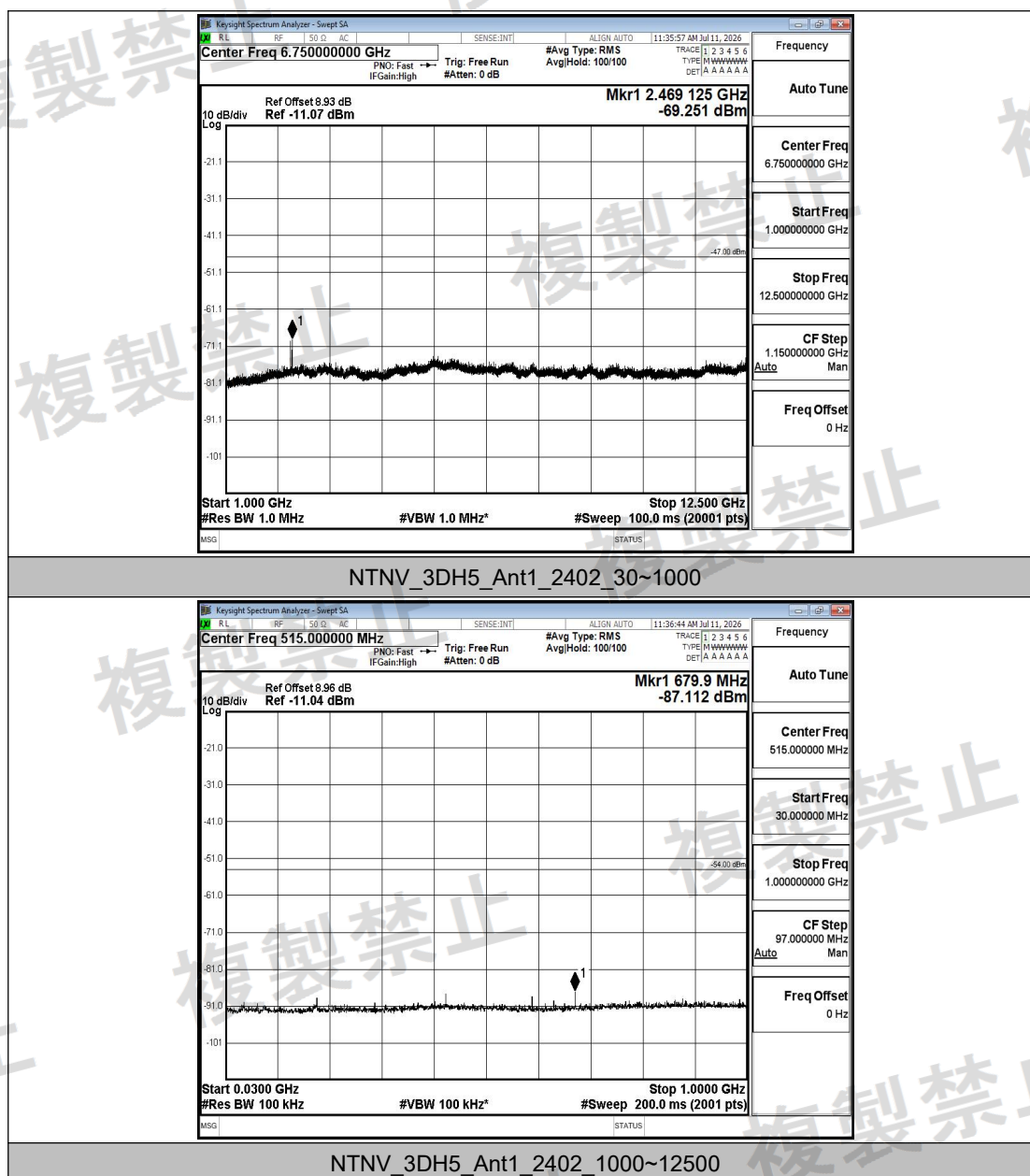


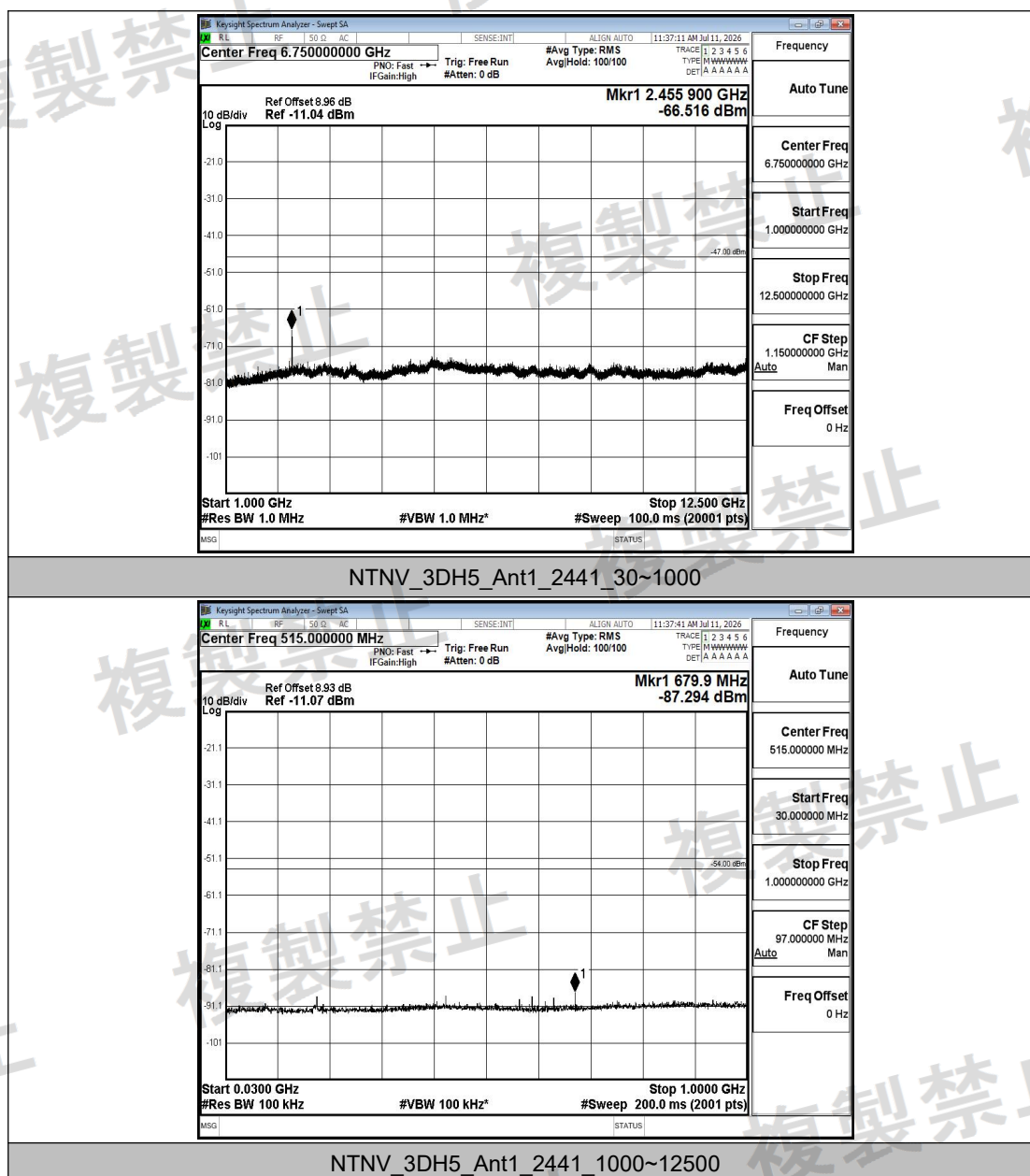


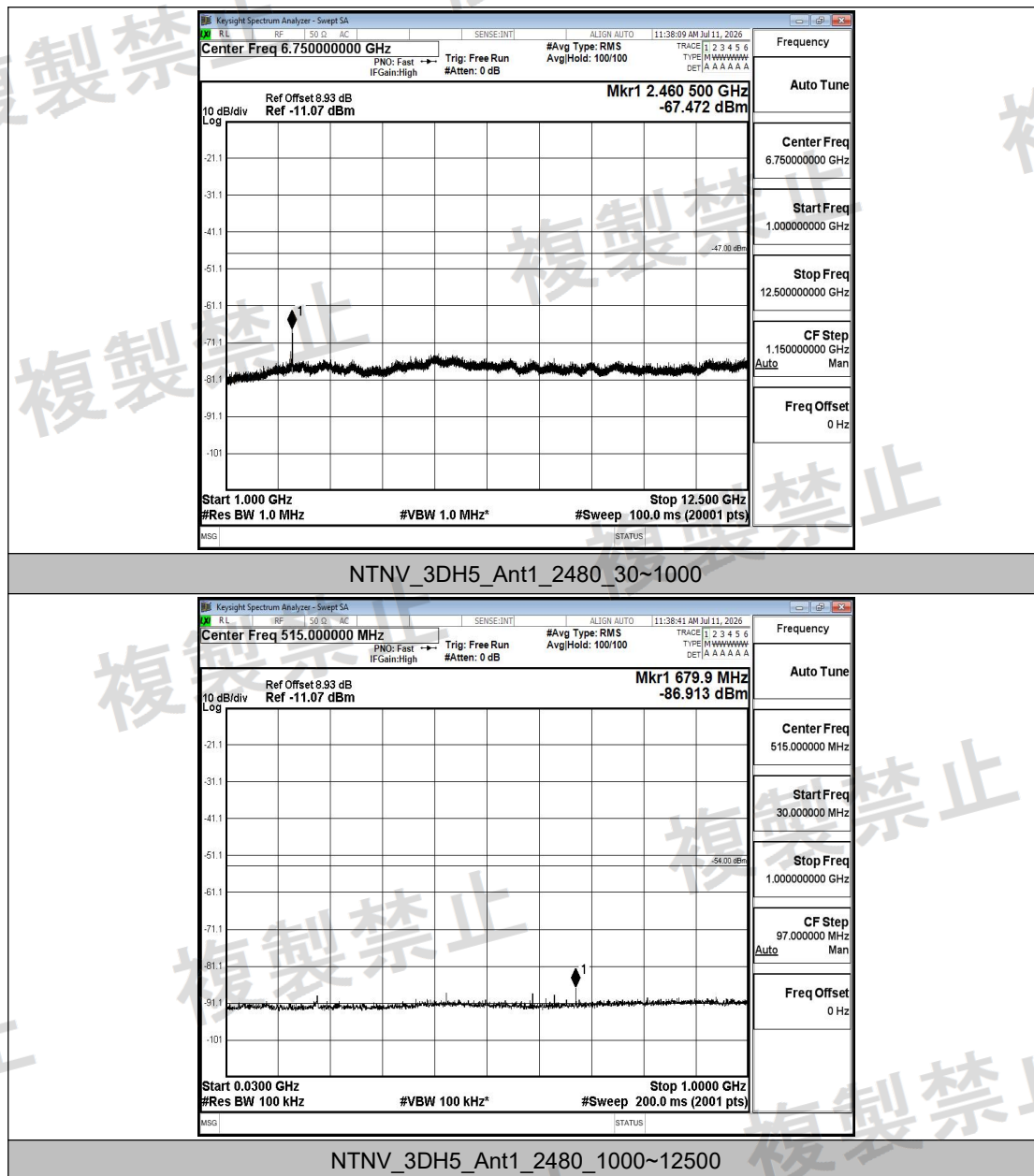


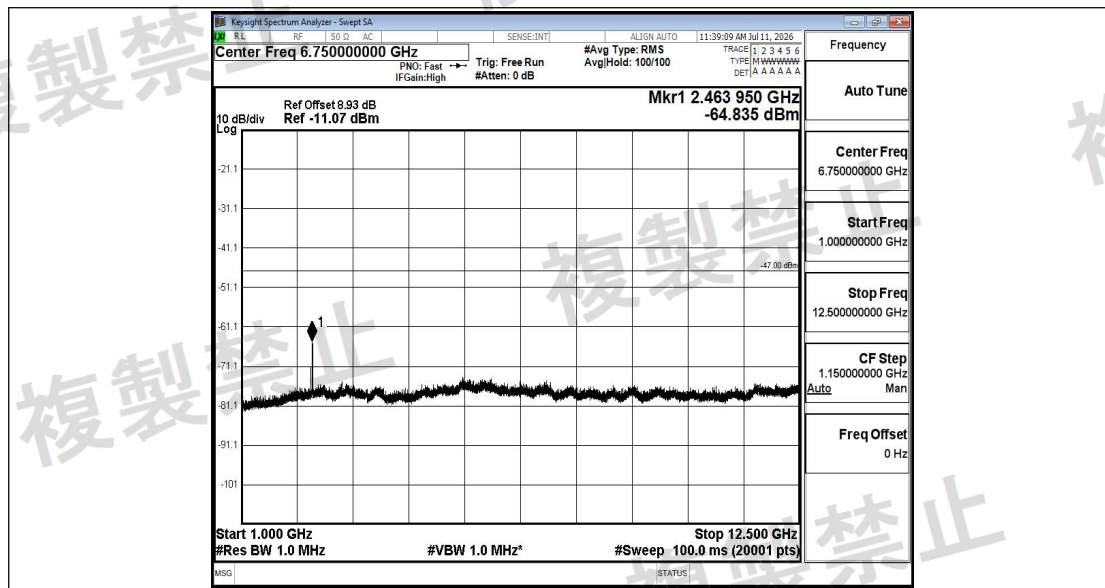












A.7 Dwell Time

Test Result

Test Condition	Test Mode	Antenna	Frequency[MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit [s]	Verdict
NTNV	DH5	Ant1	Hop	2.91	110	0.32	≤0.4	PASS
	2DH5	Ant1	Hop	2.90	60	0.174	≤0.4	PASS
	3DH5	Ant1	Hop	2.90	110	0.319	≤0.4	PASS

Test Graphs

