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Annex for Bluetooth low Energy

Test Report No.: CTL2510312051-MIC02

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MIC: 219-259673

1. Frequency Error

1.1 Test Result

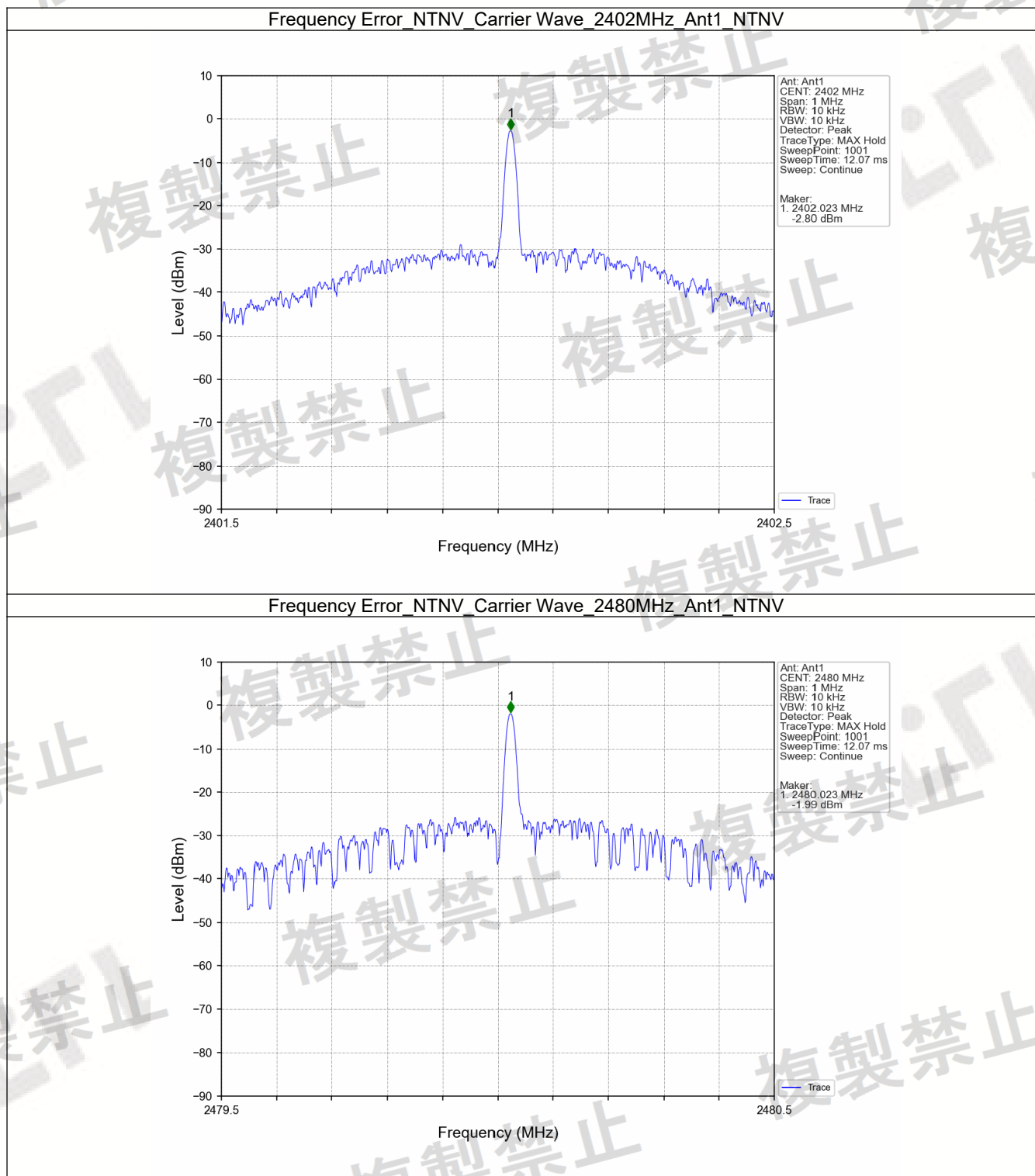
1.1.1 Ant1

Ant1							
ENV	Mode	TX Type	Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)		Verdict
					Result	Limit	
NTNV	Carrier Wave	SISO	2402	2402.023	9.58	-50 to 50	Pass
			2480	2480.023	9.27	-50 to 50	Pass

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1.2 Test Graph

1.2.1 Ant1



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2. Occupied Bandwidth

2.1 Test Result

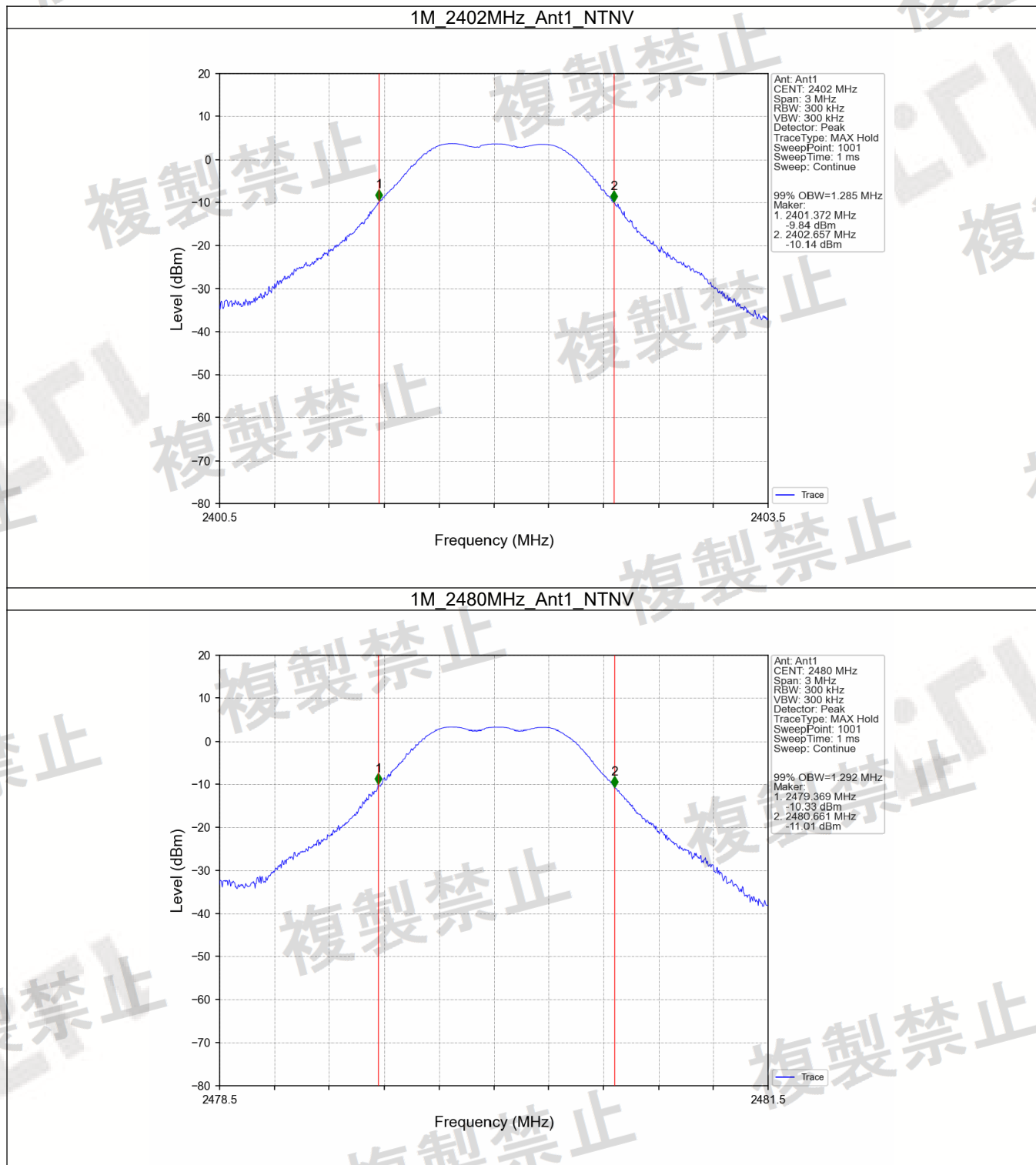
2.1.1 OBW

ENV	Mode	TX Type	Frequency (MHz)	99% Occupied Bandwidth (MHz)		Verdict
				ANT1	Limit	
NTNV	1M	SISO	2402	1.285	≤ 26	Pass
			2480	1.292	≤ 26	Pass
	2M	SISO	2402	2.161	≤ 26	Pass
			2480	2.167	≤ 26	Pass

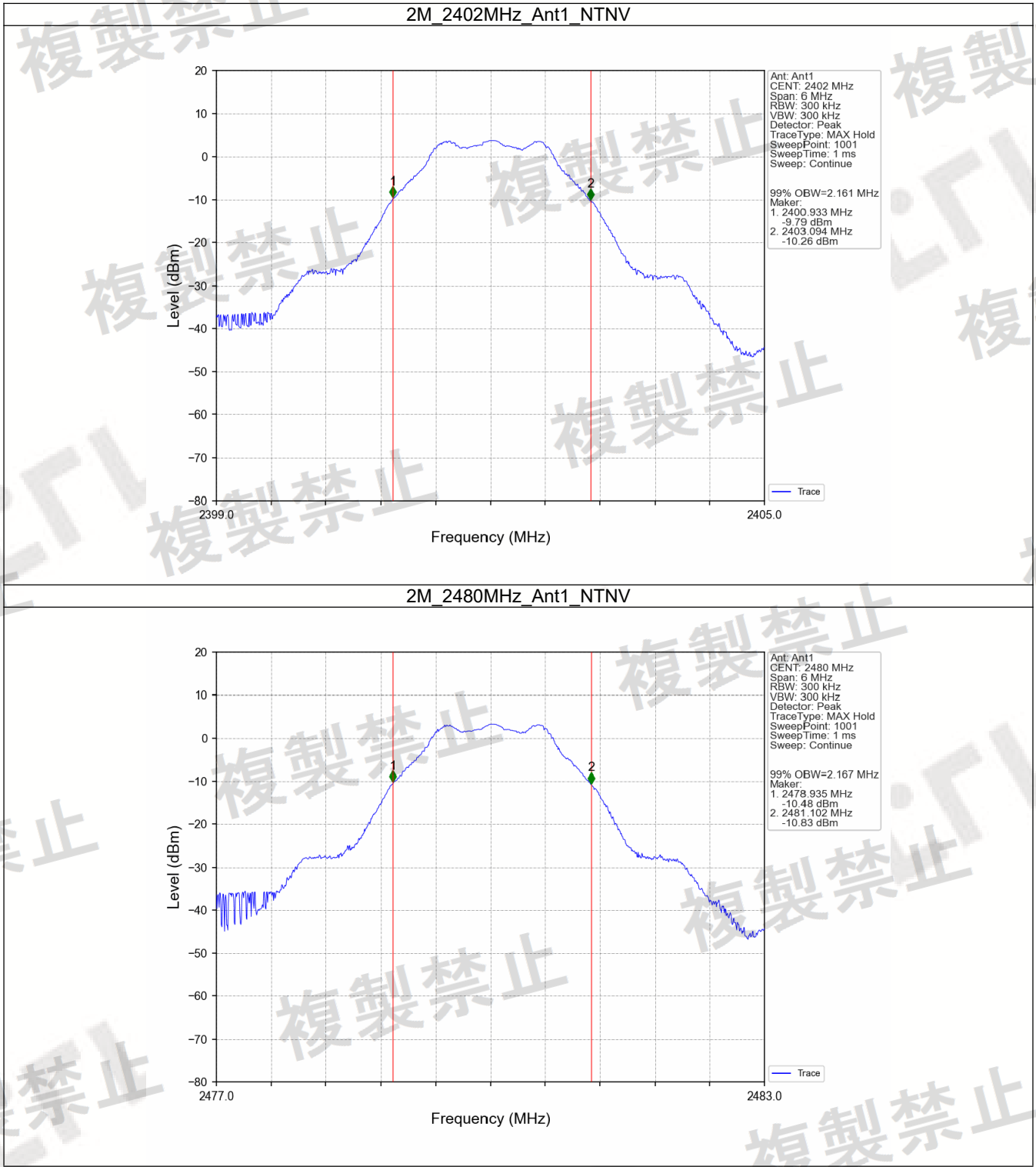
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2.2 Test Graph

2.2.1 OBW



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3. Antenna Power

3.1 Test Result

3.1.1 Power

ENV	Mode	TX Type	Frequency (MHz)	ANT	Antenna Power (mW)		Nominal Power (mW)	Tolerance (%)		Verdict
					Measured	Limit		Measured	Limit	
NTNV	1M	SISO	2402	1	1.966	≤ 10.00	2.000	-1.70	≤ 20	Pass
			2480	1	1.805	≤ 10.00	2.000	-9.75	≤ 20	Pass
	2M	SISO	2402	1	1.767	≤ 10.00	2.000	-11.65	≤ 20	Pass
			2480	1	1.708	≤ 10.00	2.000	-14.60	≤ 20	Pass

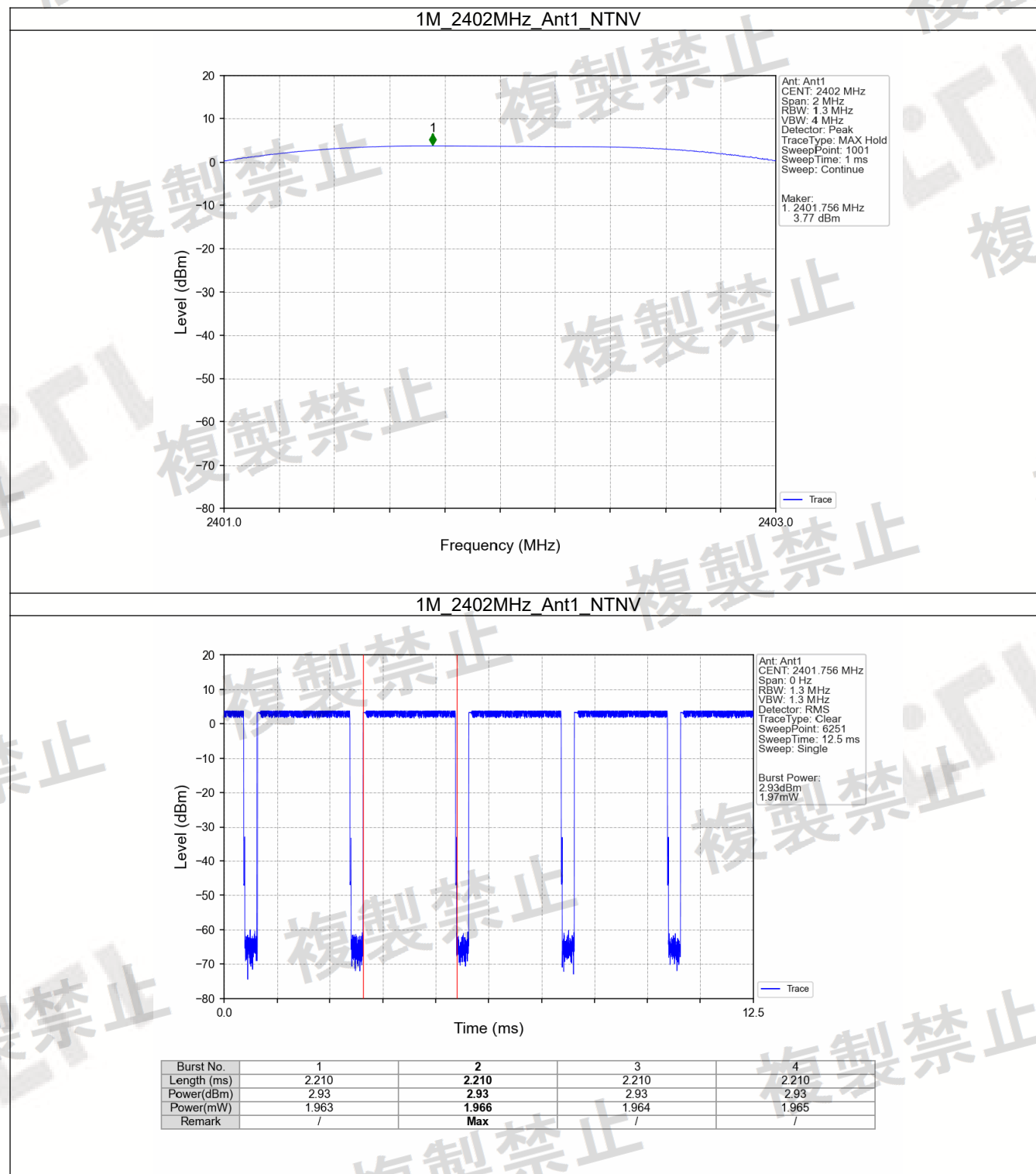
3.1.2 EIRP

ENV	Mode	TX Type	Frequency (MHz)	ANT	Gain (dBi)	EIRP (dBm)		Verdict
						Result	Limit	
NTNV	1M	SISO	2402	1	0.00	2.93	≤ 12.14	Pass
			2480	1	0.00	2.56	≤ 12.14	Pass
	2M	SISO	2402	1	0.00	2.47	≤ 12.14	Pass
			2480	1	0.00	2.32	≤ 12.14	Pass

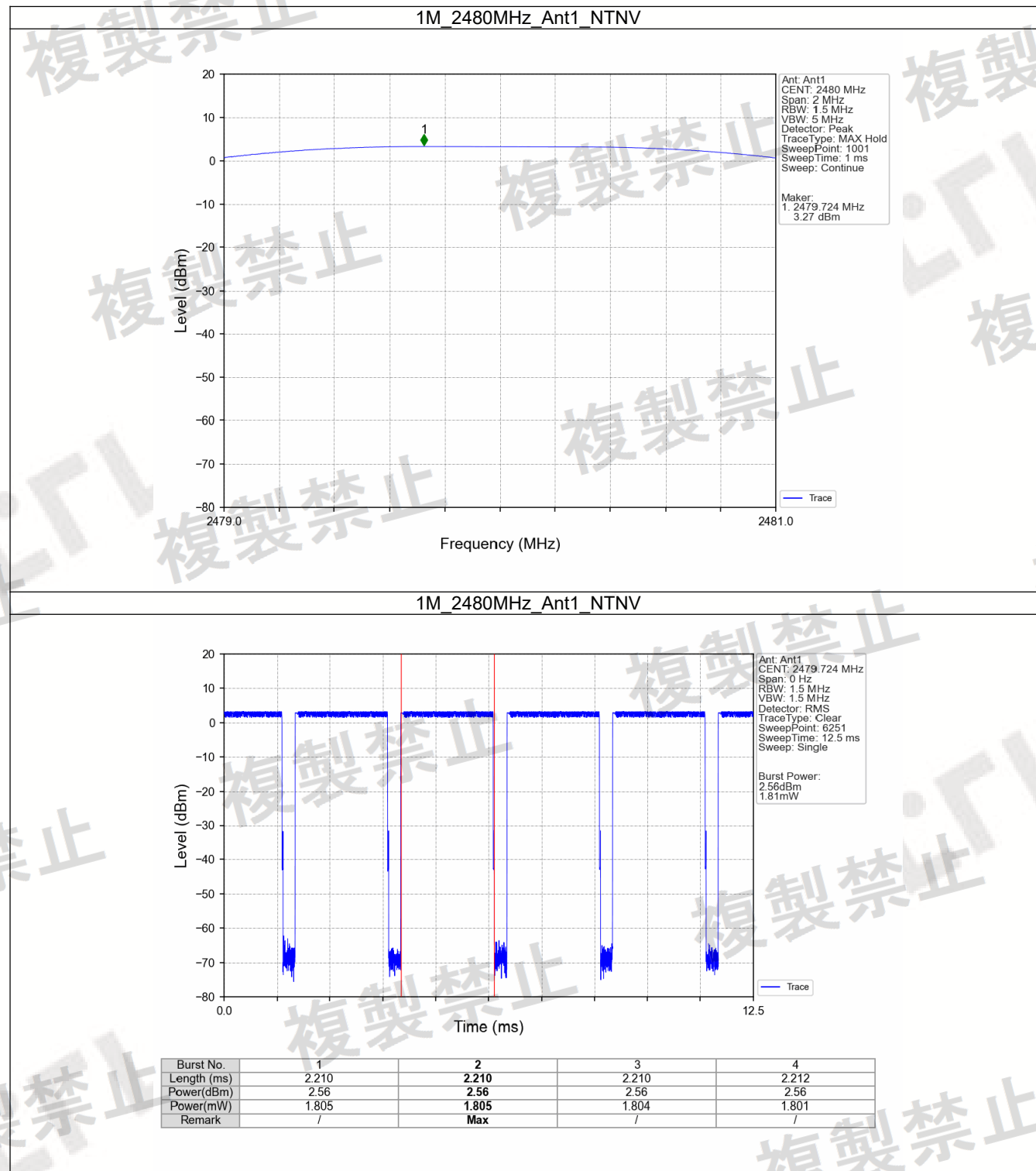
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3.2 Test Graph

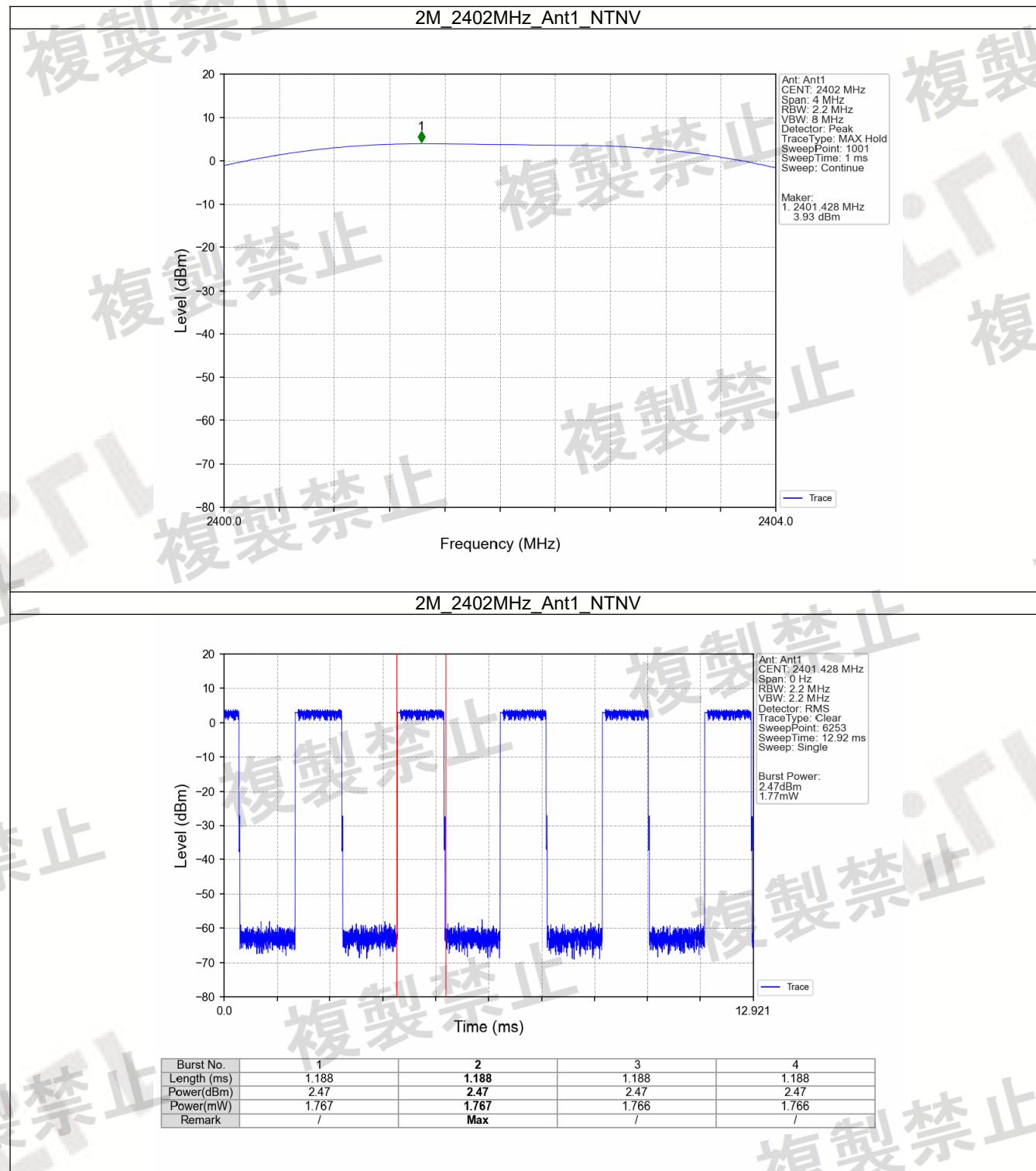
3.2.1 Power



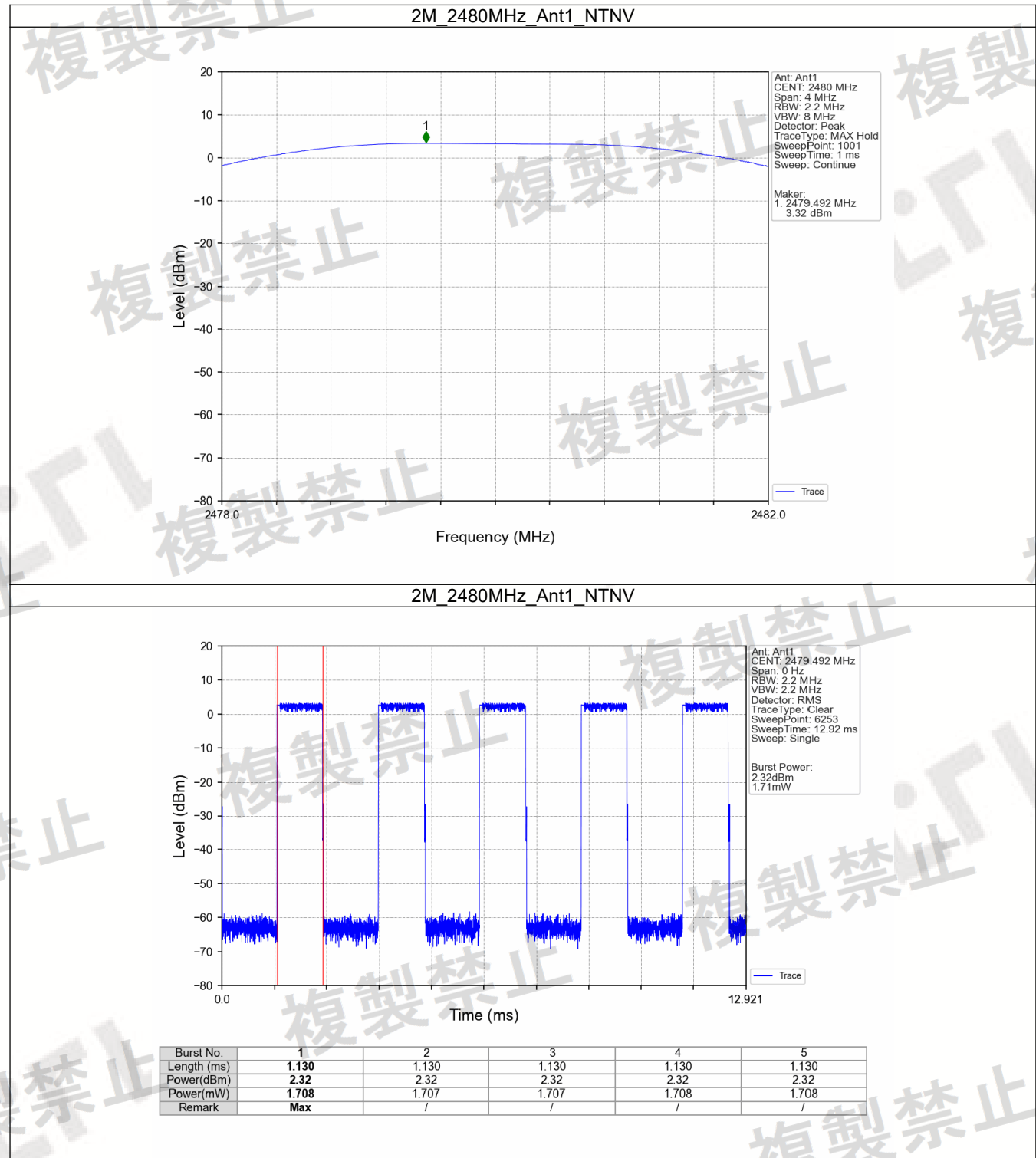
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4. Spurious Emission Intensity

4.1 Test Result

4.1.1 TxSe_NTNV

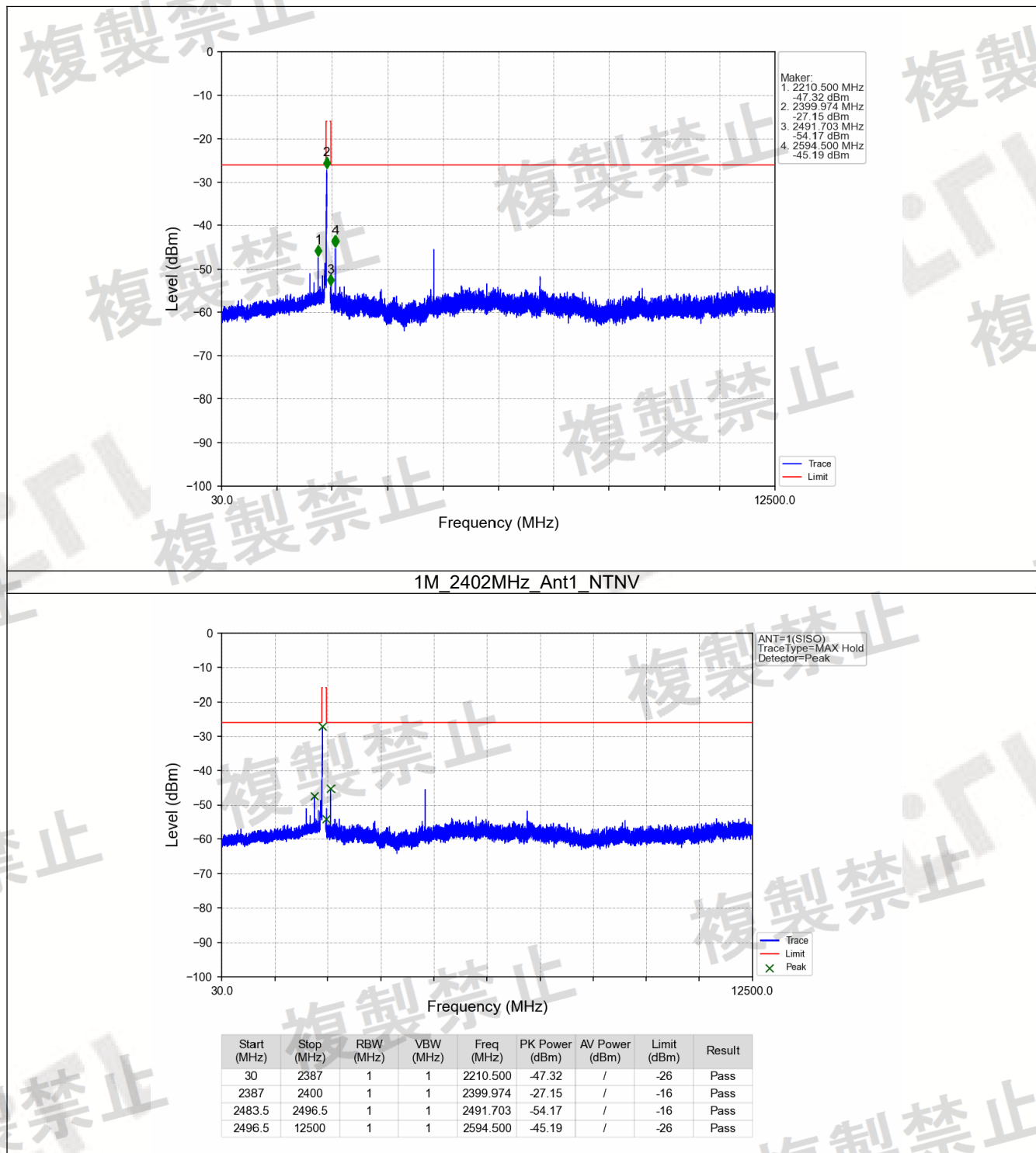
NTNV												
Mode	TX Type	Freq. (MHz)	ANT	Freq. Range		Marker					Limit (uW /MHz)	Verdict
				Start (MHz)	Stop (MHz)	Freq. (MHz)	PK Power (dBm /MHz)	PK Power (uW /MHz)	AV Power (dBm /MHz)	AV Power (uW /MHz)		
1M	SISO	2402	1	30	2387	2210.5	-47.32	0.019	/	/	2.5	Pass
				2387	2400	2399.974	-27.15	1.928	/	/	25	Pass
				2483.5	2496.5	2491.703	-54.17	0.004	/	/	25	Pass
				2496.5	12500	2594.5	-45.19	0.030	/	/	2.5	Pass
		2480	1	30	2387	2289	-45.72	0.027	/	/	2.5	Pass
				2387	2400	2398.869	-57.76	0.002	/	/	25	Pass
				2483.5	2496.5	2484.969	-41.22	0.076	/	/	25	Pass
				2496.5	12500	4960	-47.03	0.020	/	/	2.5	Pass
2M	SISO	2402	1	30	2387	2386.5	-47.53	0.018	/	/	2.5	Pass
				2387	2400	2399.987	-17.67	17.100	-23.87	4.102	25	Pass
				2483.5	2496.5	2495.499	-54.26	0.004	/	/	25	Pass
				2496.5	12500	2595	-45.27	0.030	/	/	2.5	Pass
		2480	1	30	2387	2288.5	-45.30	0.030	/	/	2.5	Pass
				2387	2400	2399.038	-54.40	0.004	/	/	25	Pass
				2483.5	2496.5	2484.93	-39.19	0.121	/	/	25	Pass
				2496.5	12500	2672	-45.43	0.029	/	/	2.5	Pass

4.2 Test Graph

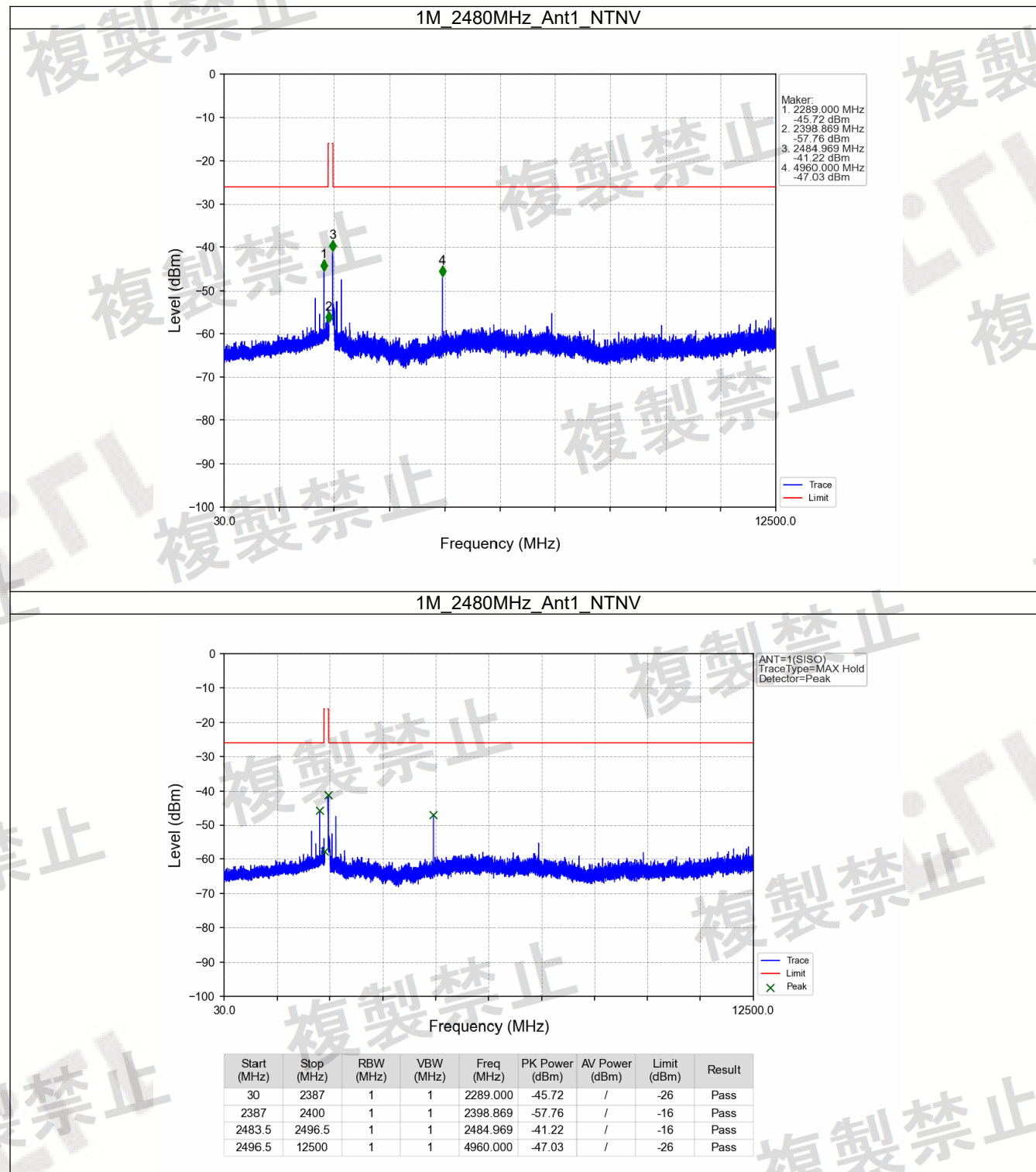
4.2.1 TxSe_NTNV

1M_2402MHz_Ant1_NTNV

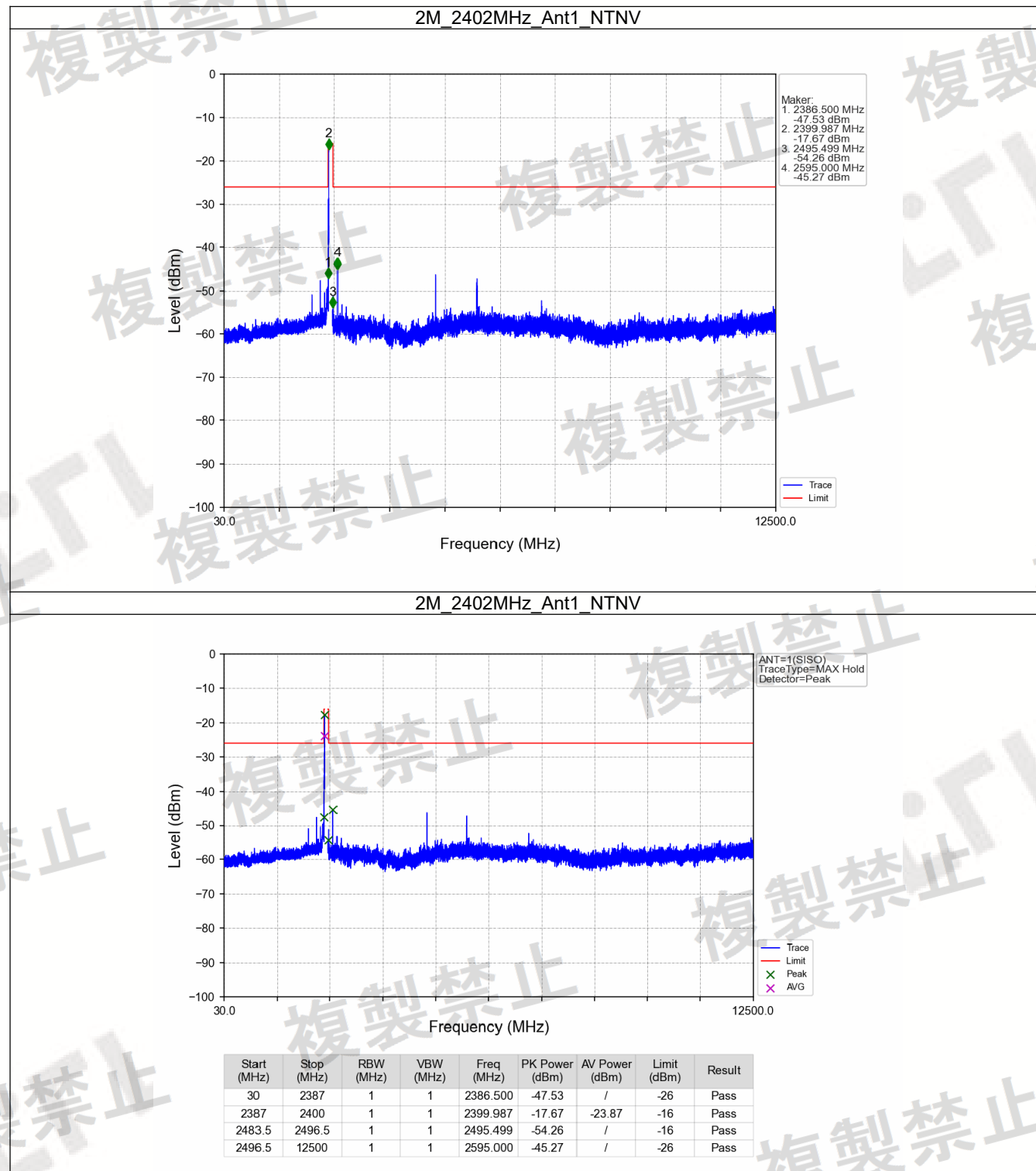
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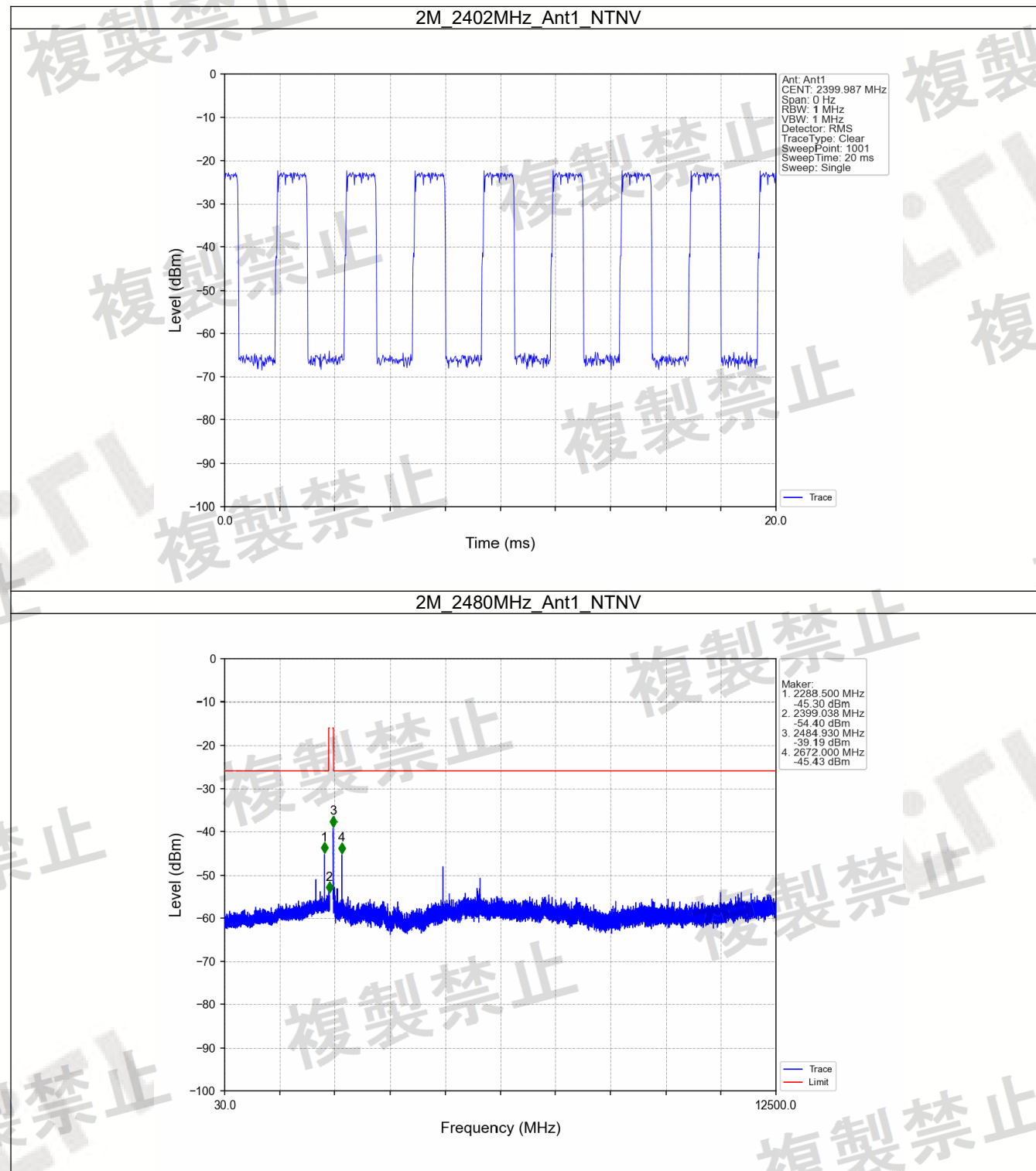
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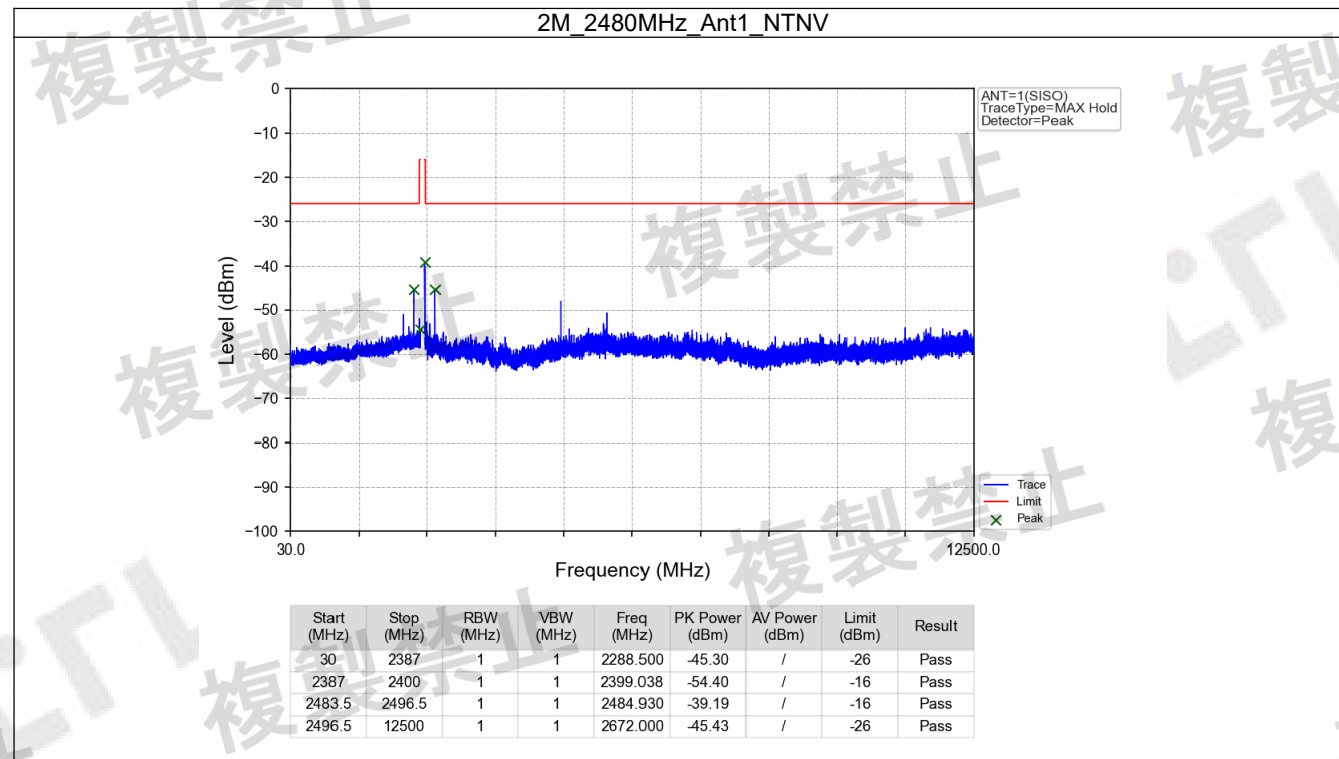
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5. Secondary Radiated Emission

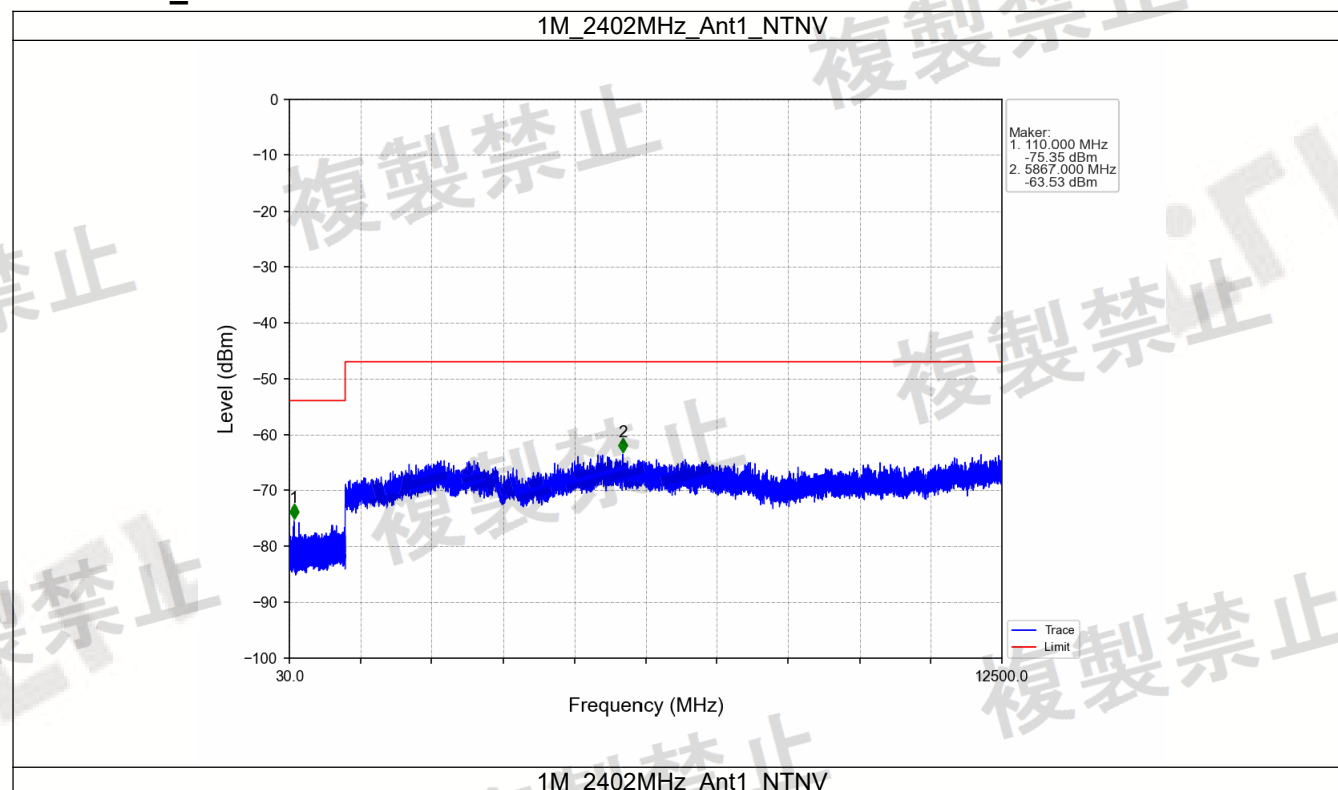
5.1 Test Result

5.1.1 RxSe_NTNV

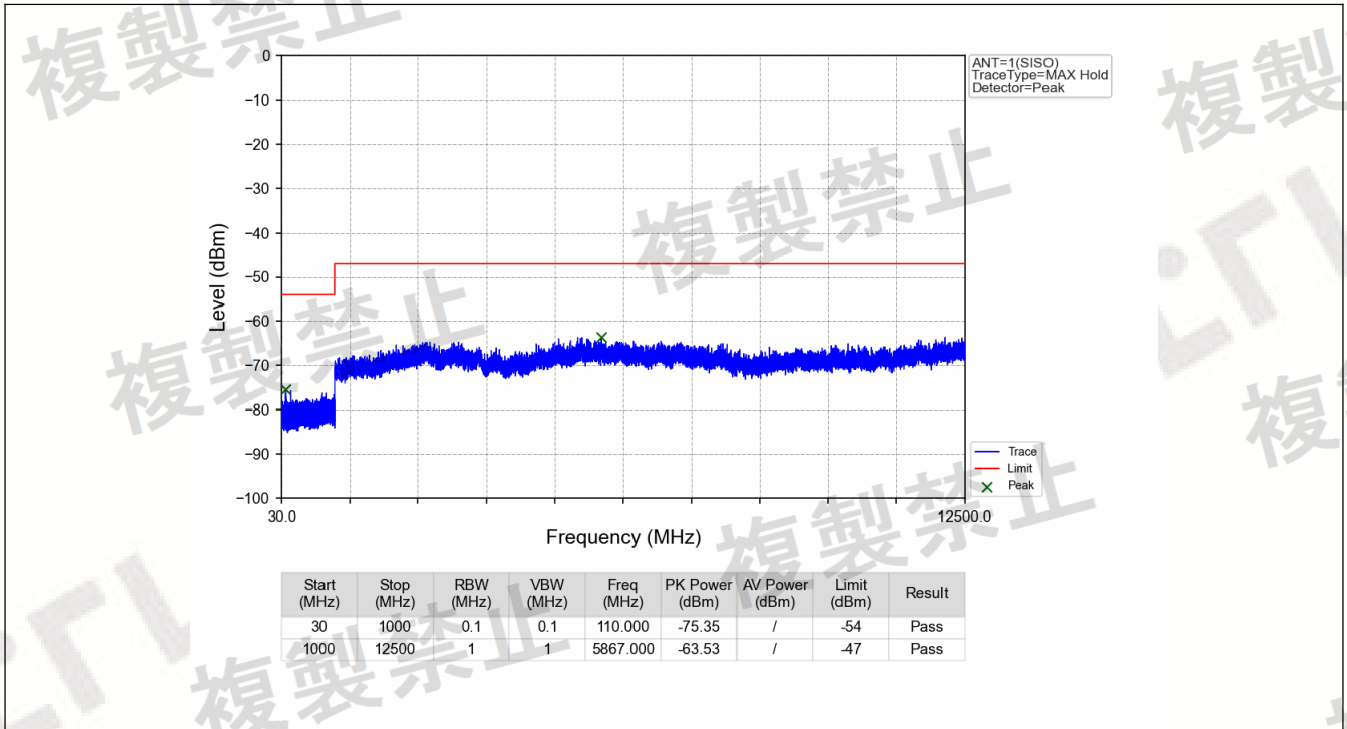
NTNV												
Mode	TX Type	Freq. (MHz)	ANT	Freq. Range		Marker					Limit (nW)	Verdict
				Start (MHz)	Stop (MHz)	Freq. (MHz)	PK Power (dBm)	PK Power (nW)	AV Power (dBm)	AV Power (nW)		
1M	SISO	2402	1	30	1000	110	-75.35	0.029	/	/	4	Pass
				1000	12500	5867	-63.53	0.444	/	/	20	Pass
		2480	1	30	1000	108.75	-74.97	0.032	/	/	4	Pass
				1000	12500	2445	-52.03	6.266	-76.09	0.025	20	Pass
2M	SISO	2402	1	30	1000	109.35	-75.43	0.029	/	/	4	Pass
				1000	12500	2442	-59.43	1.140	/	/	20	Pass
		2480	1	30	1000	200	-75.67	0.027	/	/	4	Pass
				1000	12500	2441.5	-59.29	1.178	/	/	20	Pass

5.2 Test Graph

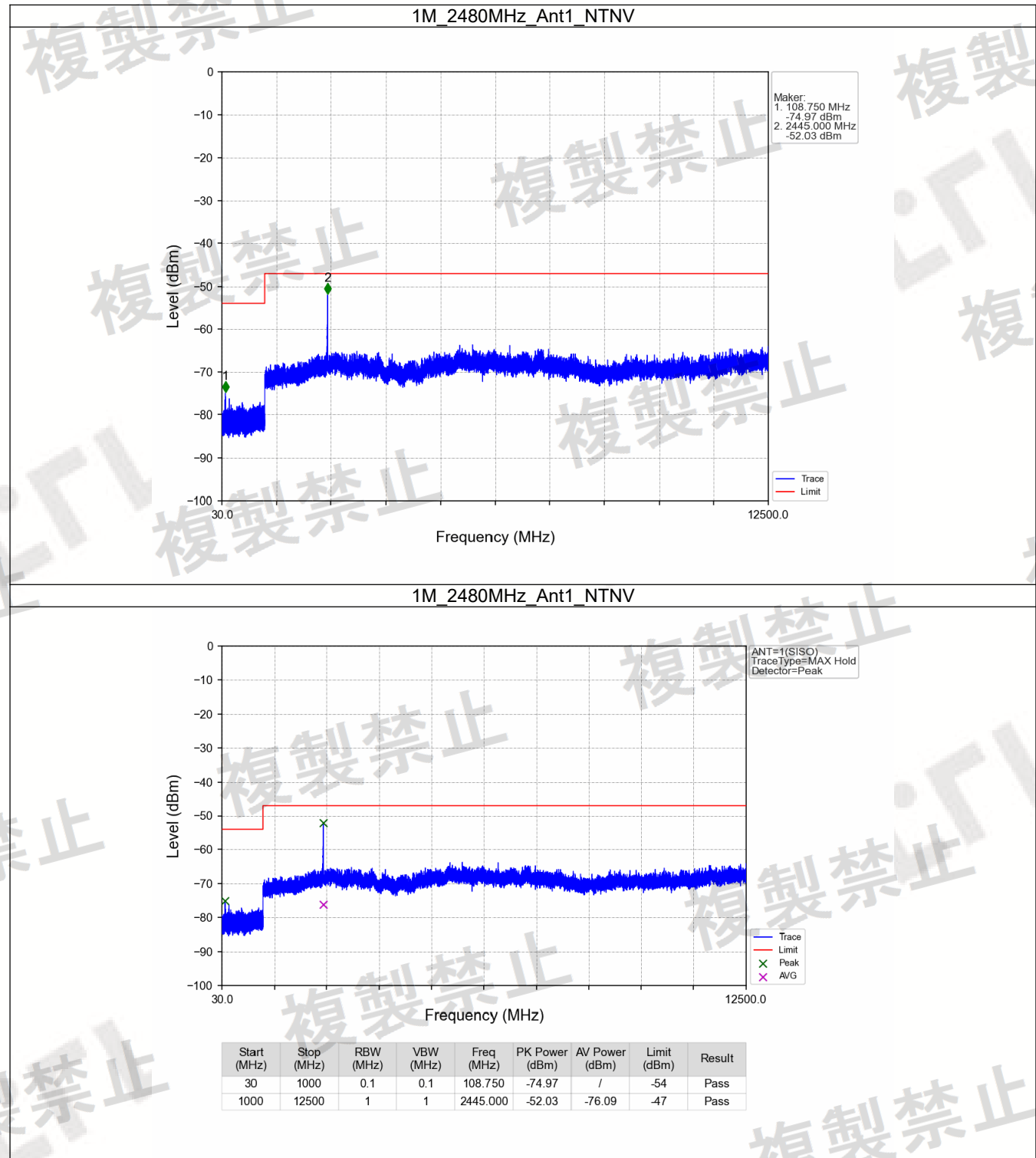
5.2.1 RxSe_NTNV



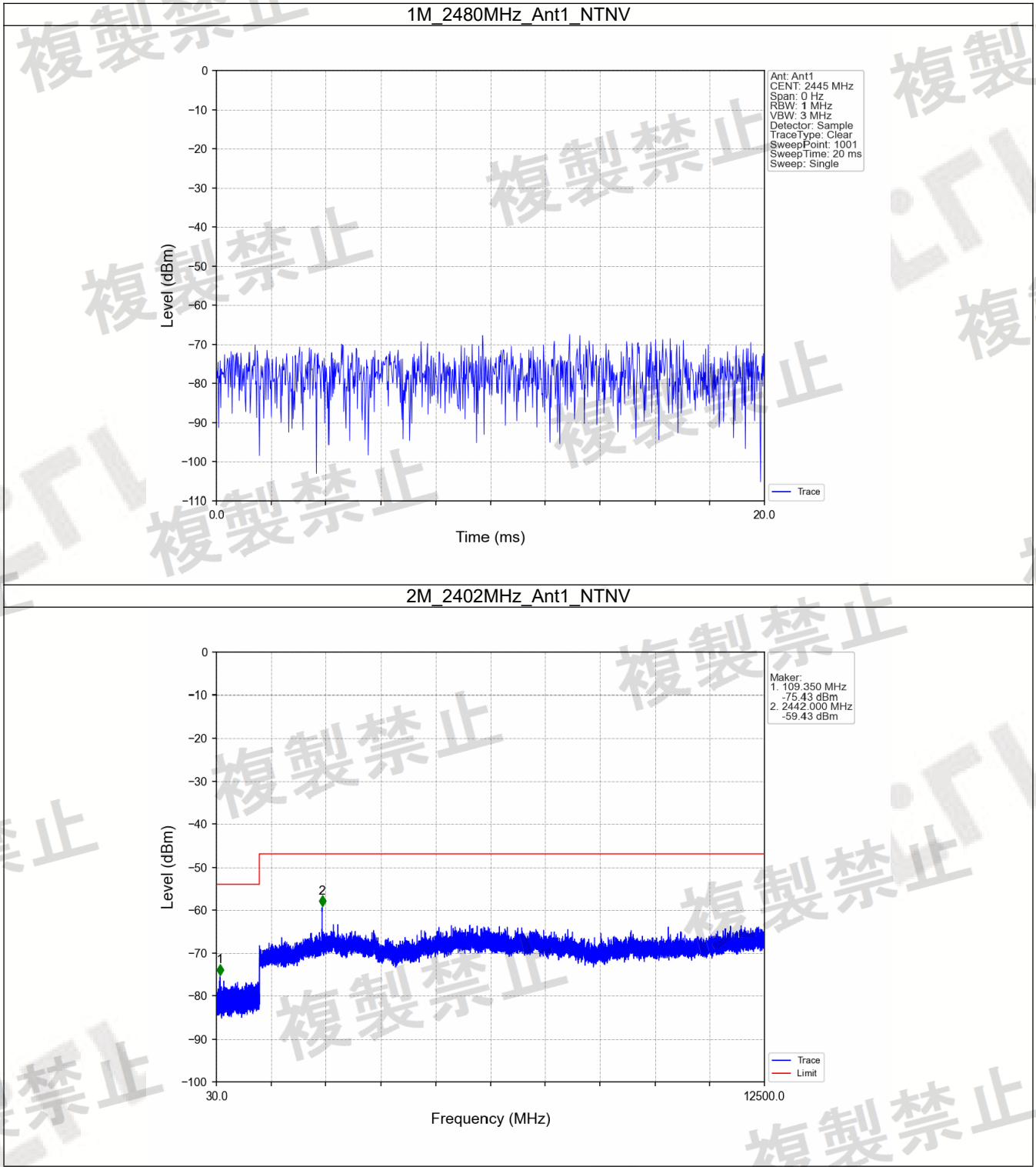
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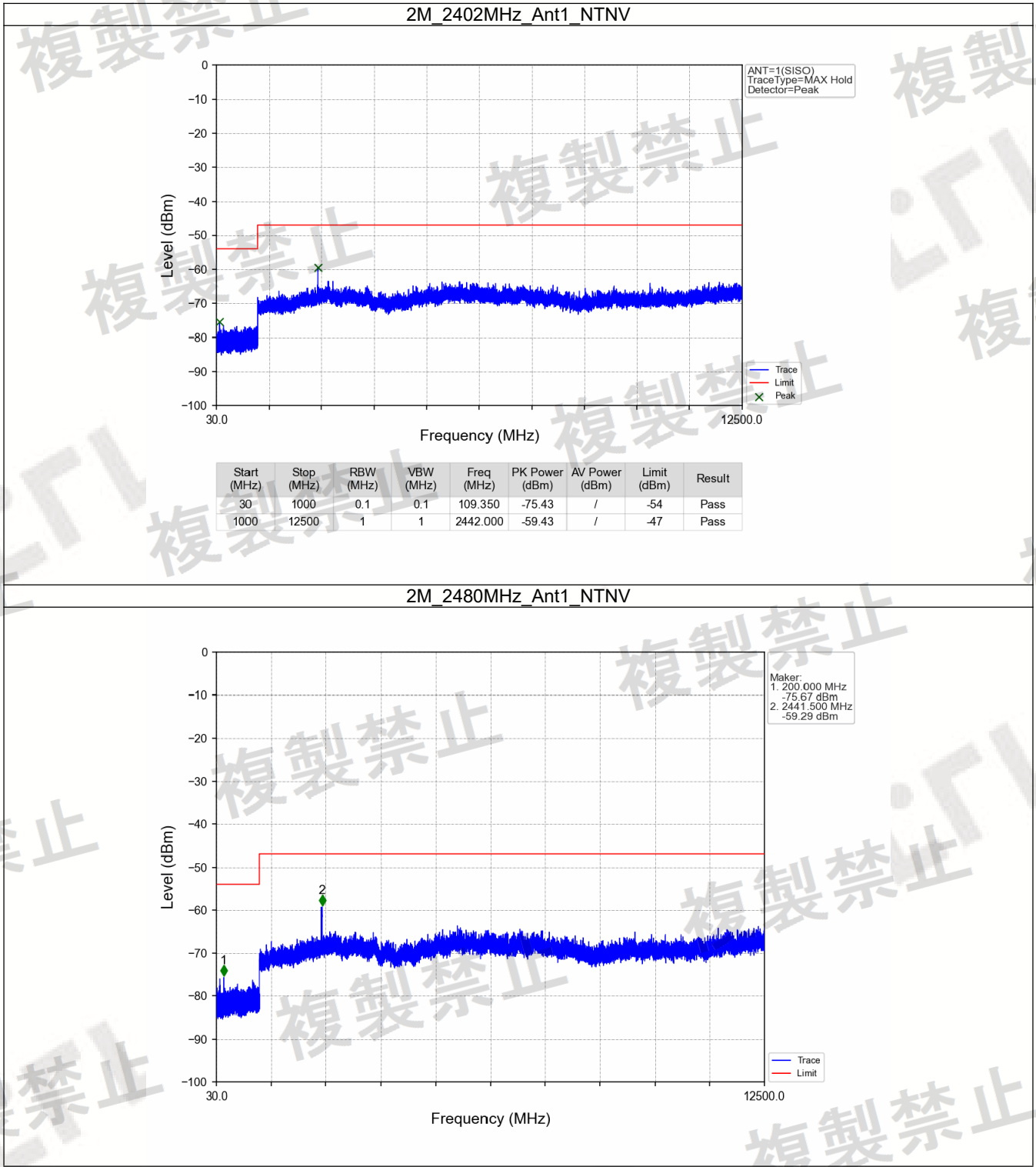
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