

RF Test Data

For

Project No.:	DLE-251219013R
Client:	Welkin International CO., LTD.
Manufacturer:	Welkin International CO., LTD.
Product Description:	Dynamic Camping Light
Model No.:	LS020
Test Engineer:	Lijun
Test Date:	2025-12-30

Test Summary

Item	Result
Frequency Error	Pass
Occupied Bandwidth	Pass
Spread Bandwidth	Pass
Antenna Power	Pass
Spurious Emission Intensity	Pass
Secondary Radiated Emission	Pass

1. Frequency Error

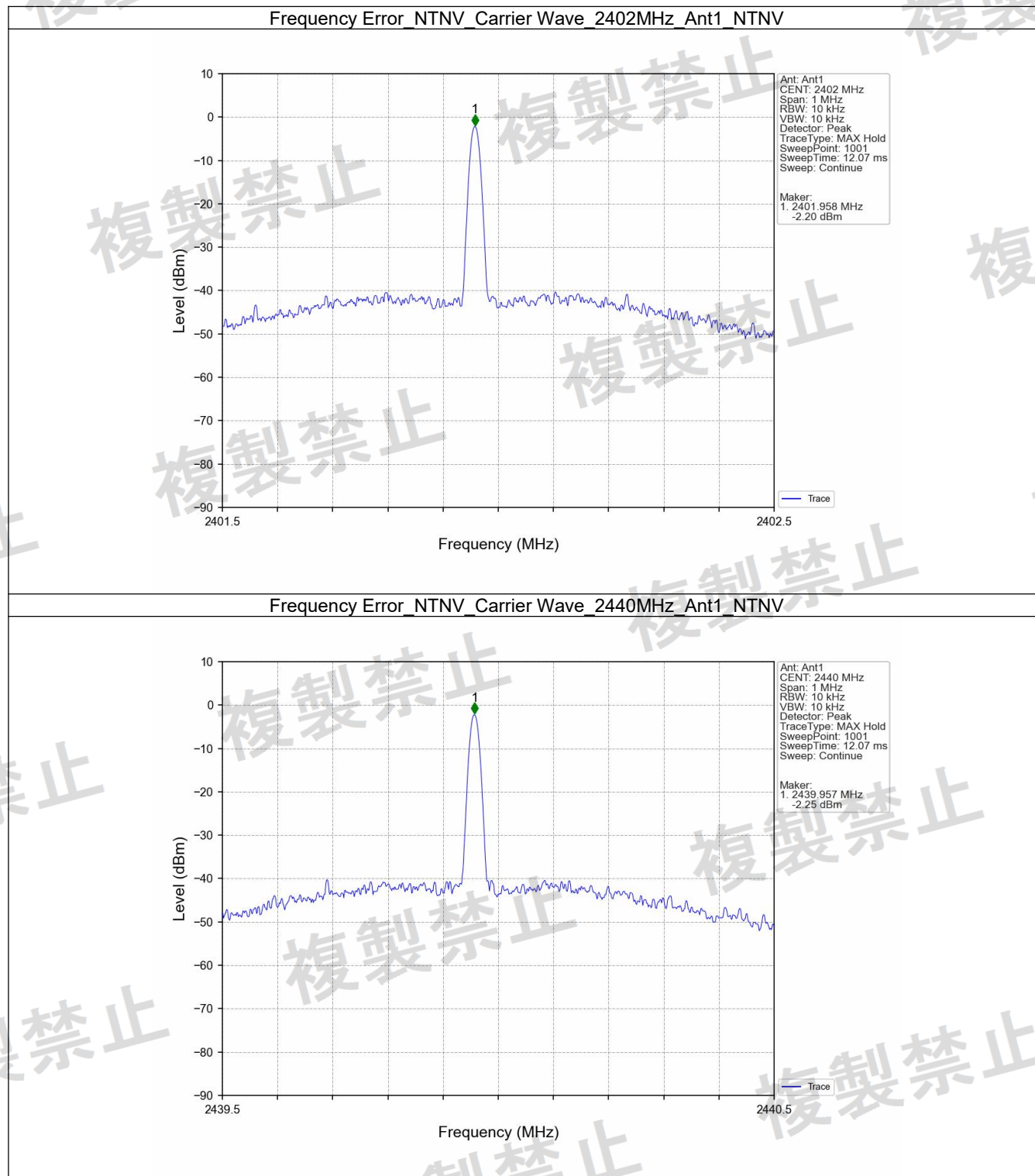
1.1 Test Result

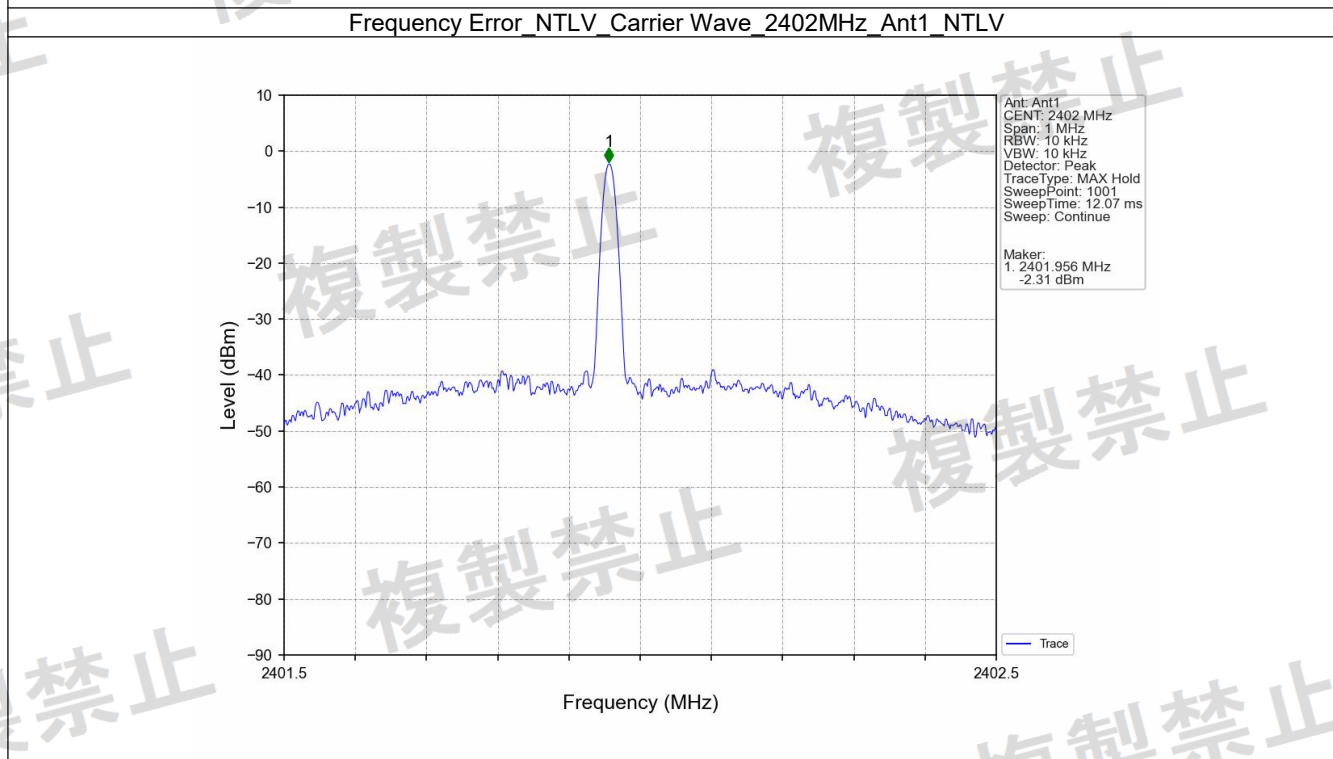
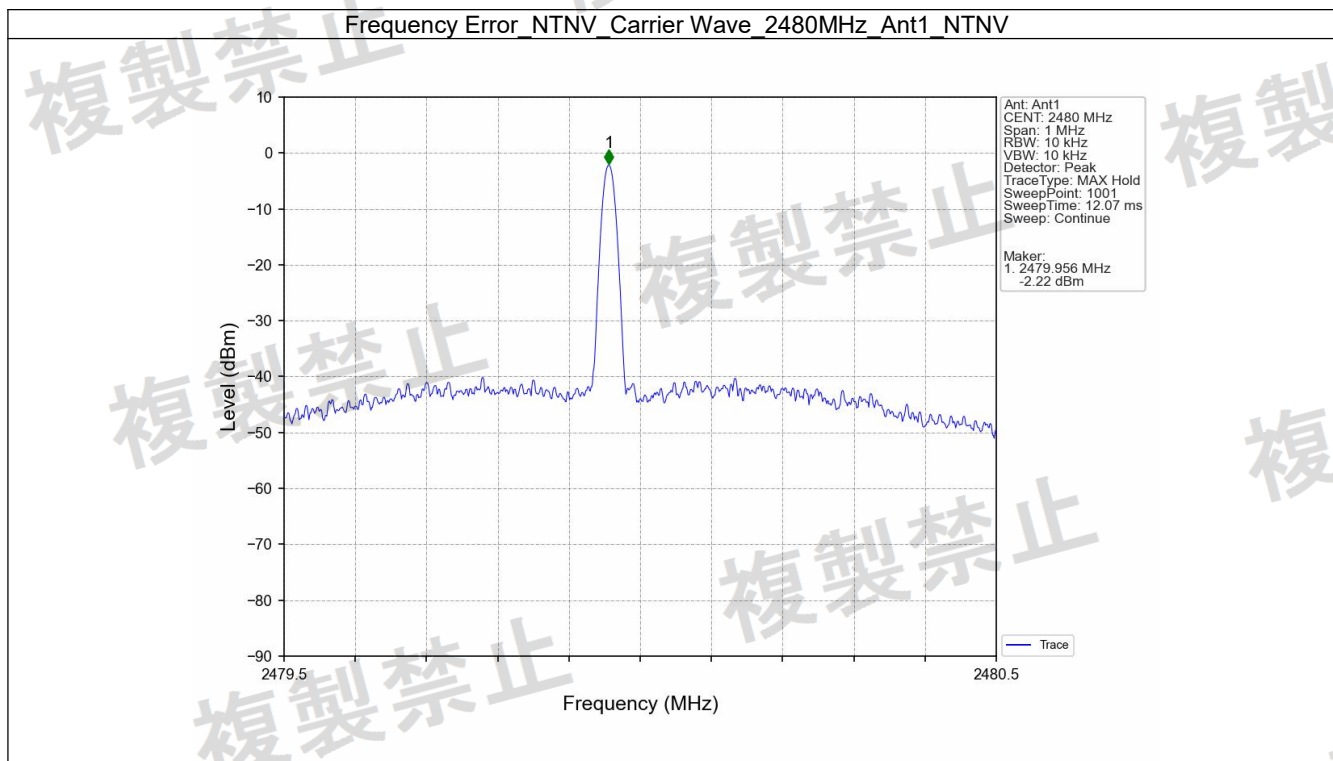
1.1.1 Ant1

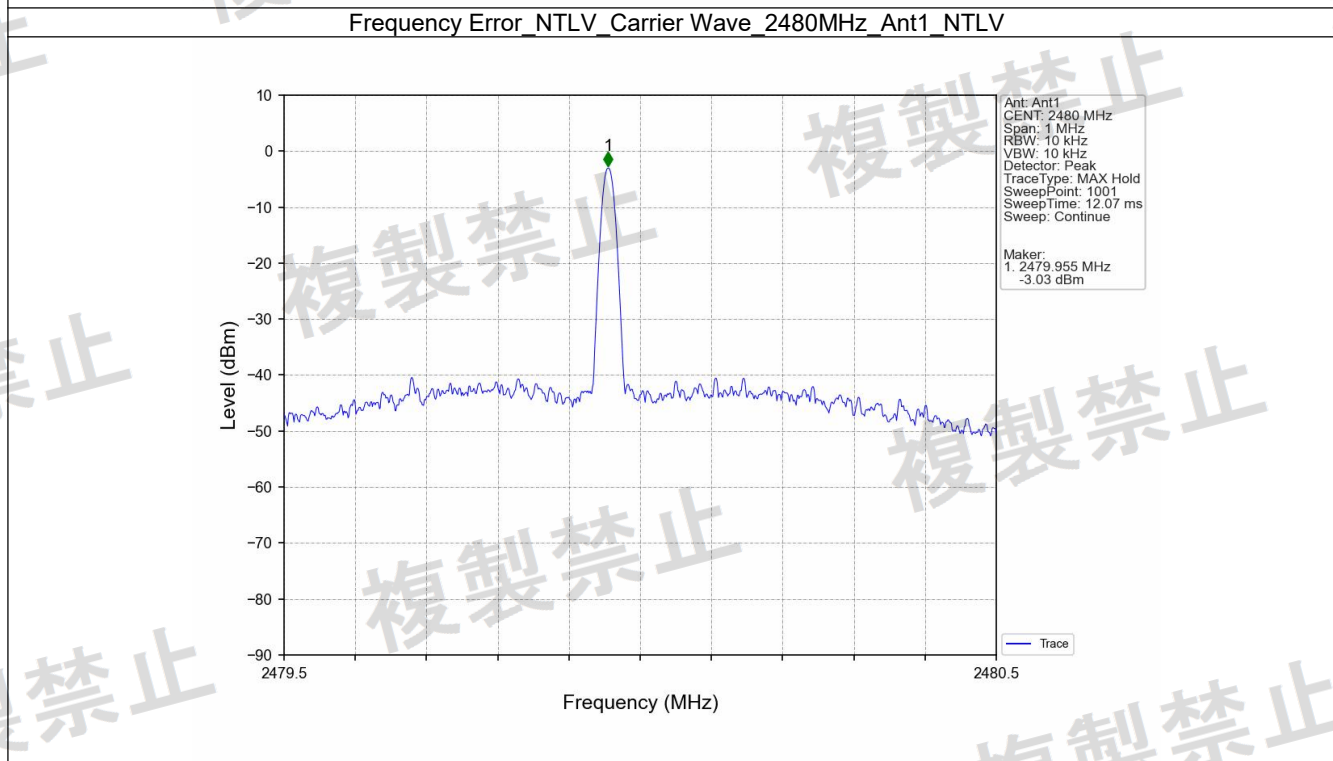
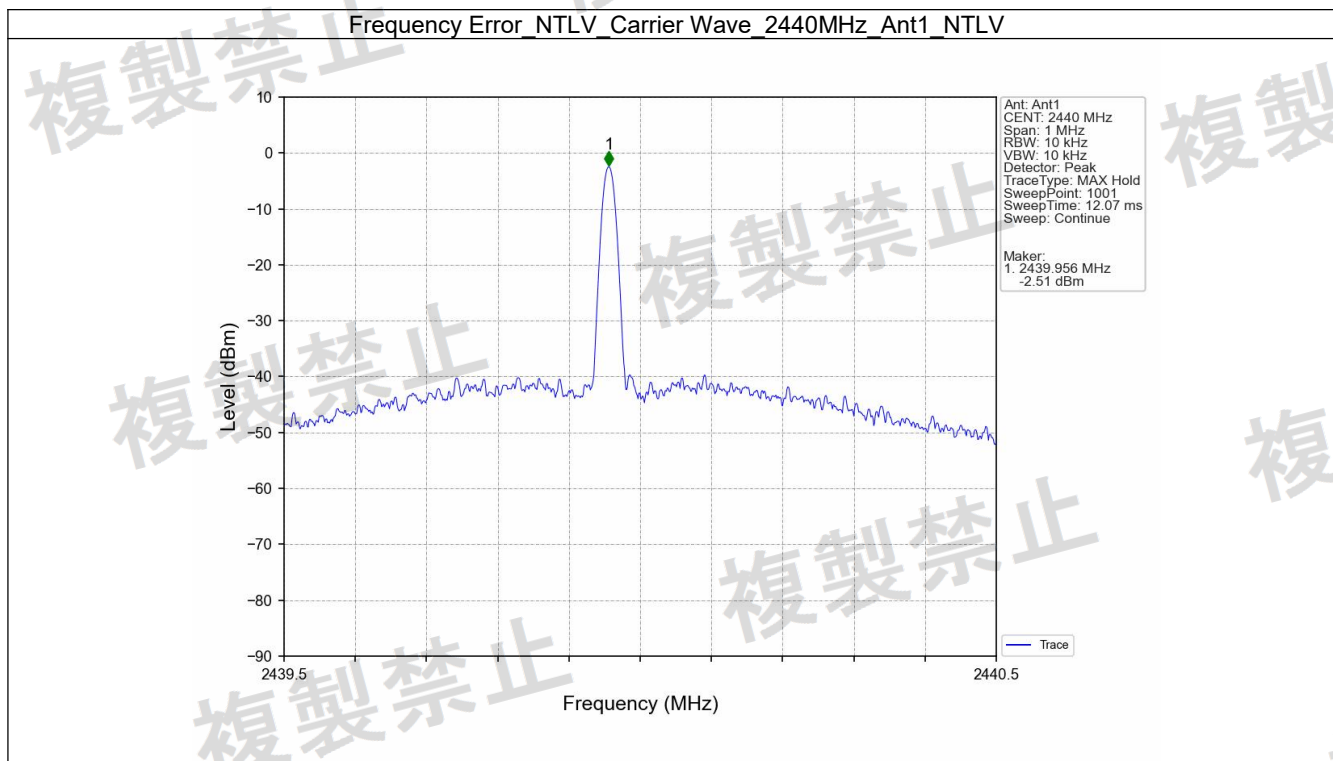
Ant1							
ENV	Mode	TX Type	Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)		Verdict
					Result	Limit	
NTNV	Carrier Wave	SISO	2402	2401.958	-17.49	-50 to 50	Pass
			2440	2439.957	-17.62	-50 to 50	Pass
			2480	2479.956	-17.74	-50 to 50	Pass
NTLV	Carrier Wave	SISO	2402	2401.956	-18.32	-50 to 50	Pass
			2440	2439.956	-18.03	-50 to 50	Pass
			2480	2479.955	-18.15	-50 to 50	Pass
NTHV	Carrier Wave	SISO	2402	2401.956	-18.32	-50 to 50	Pass
			2440	2439.956	-18.03	-50 to 50	Pass
			2480	2479.955	-18.15	-50 to 50	Pass

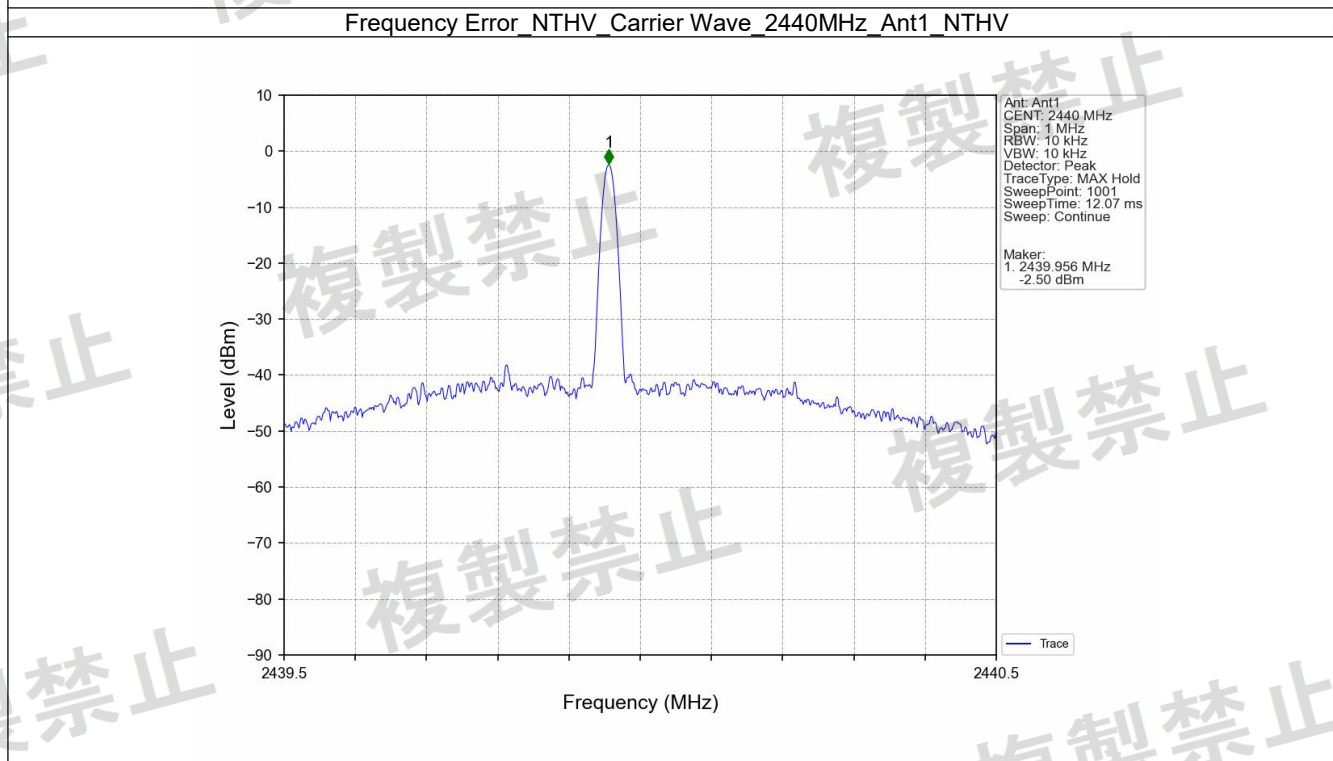
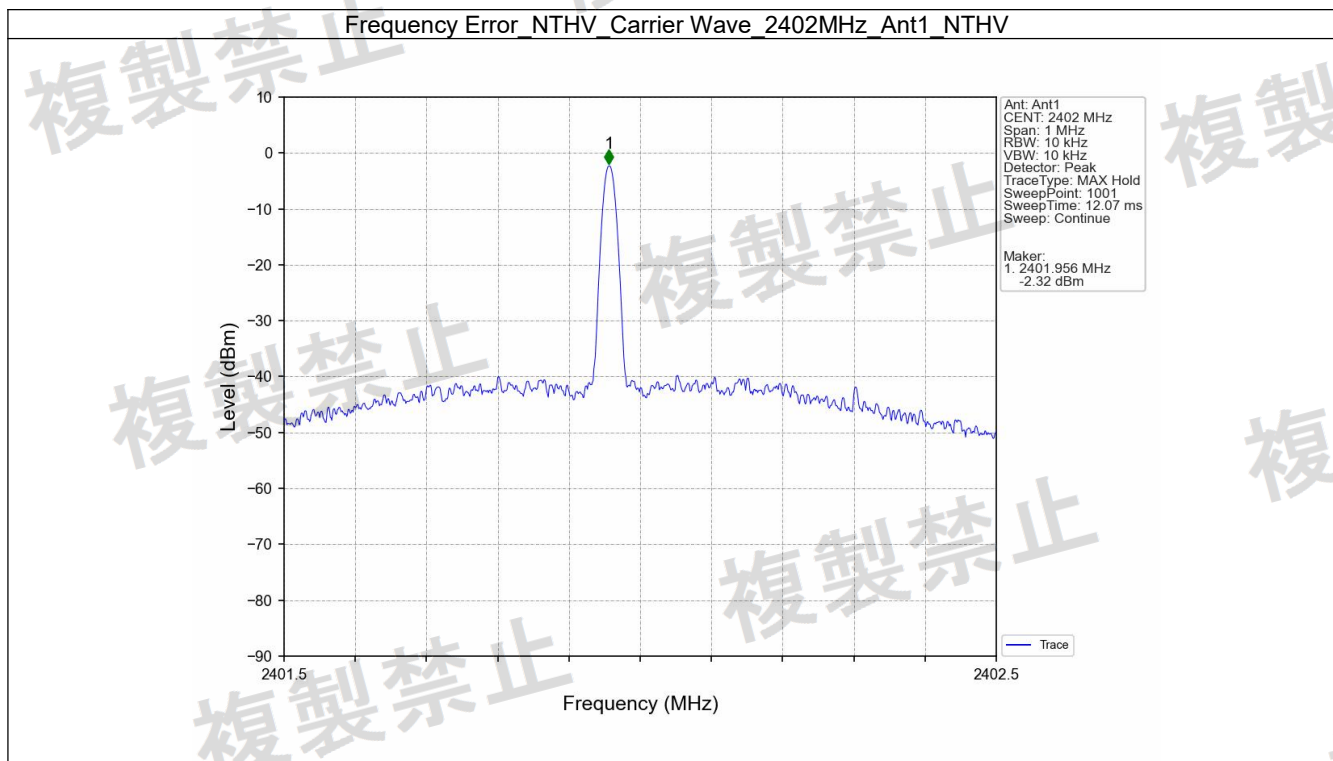
1.2 Test Graph

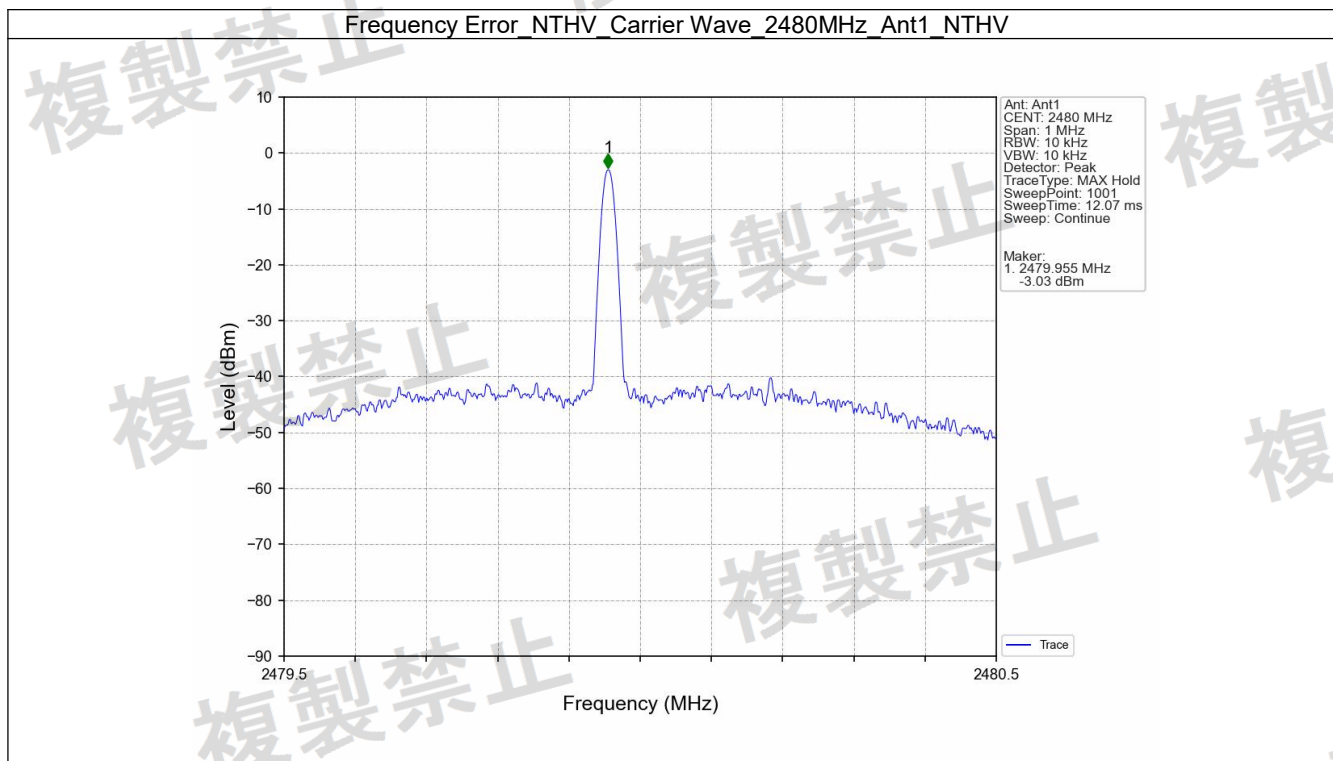
1.2.1 Ant1











2. Occupied Bandwidth

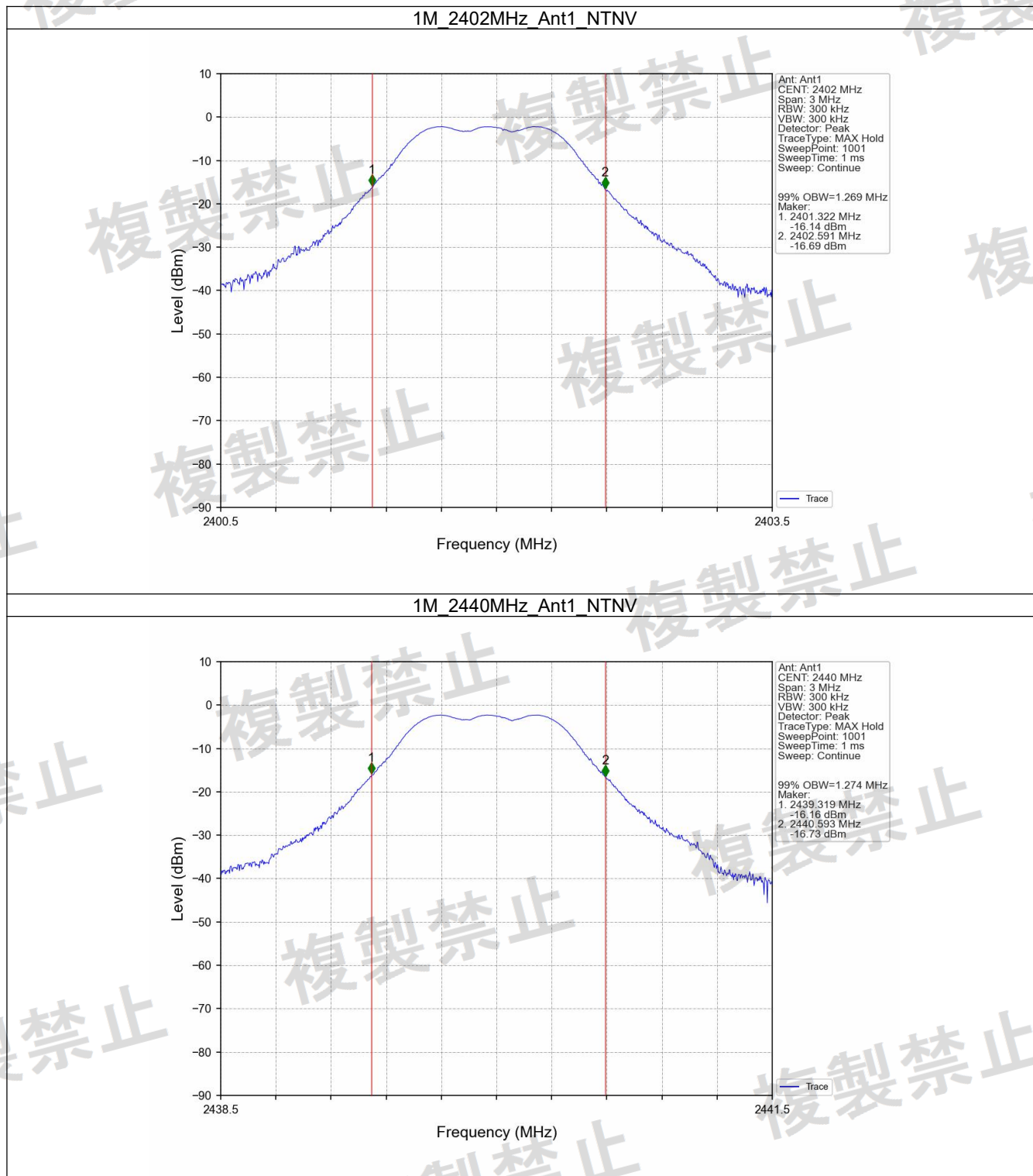
2.1 Test Result

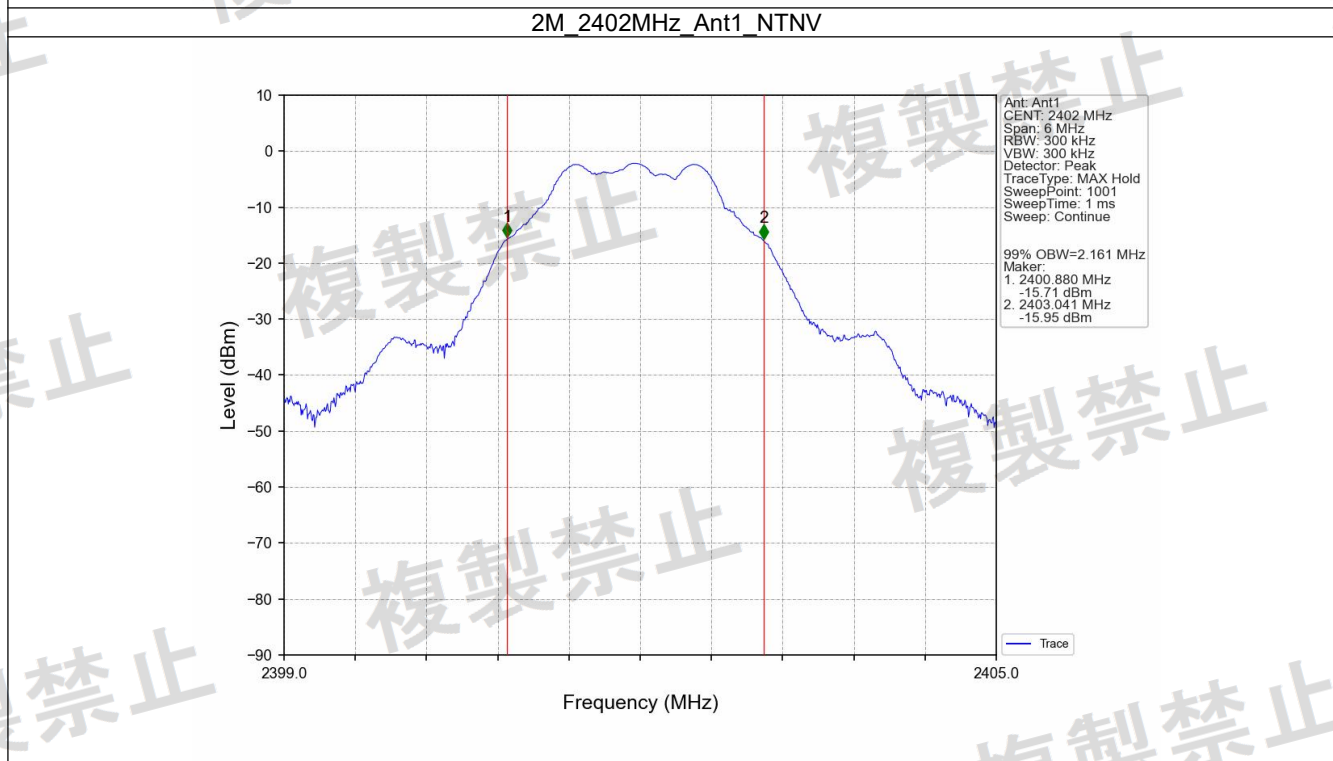
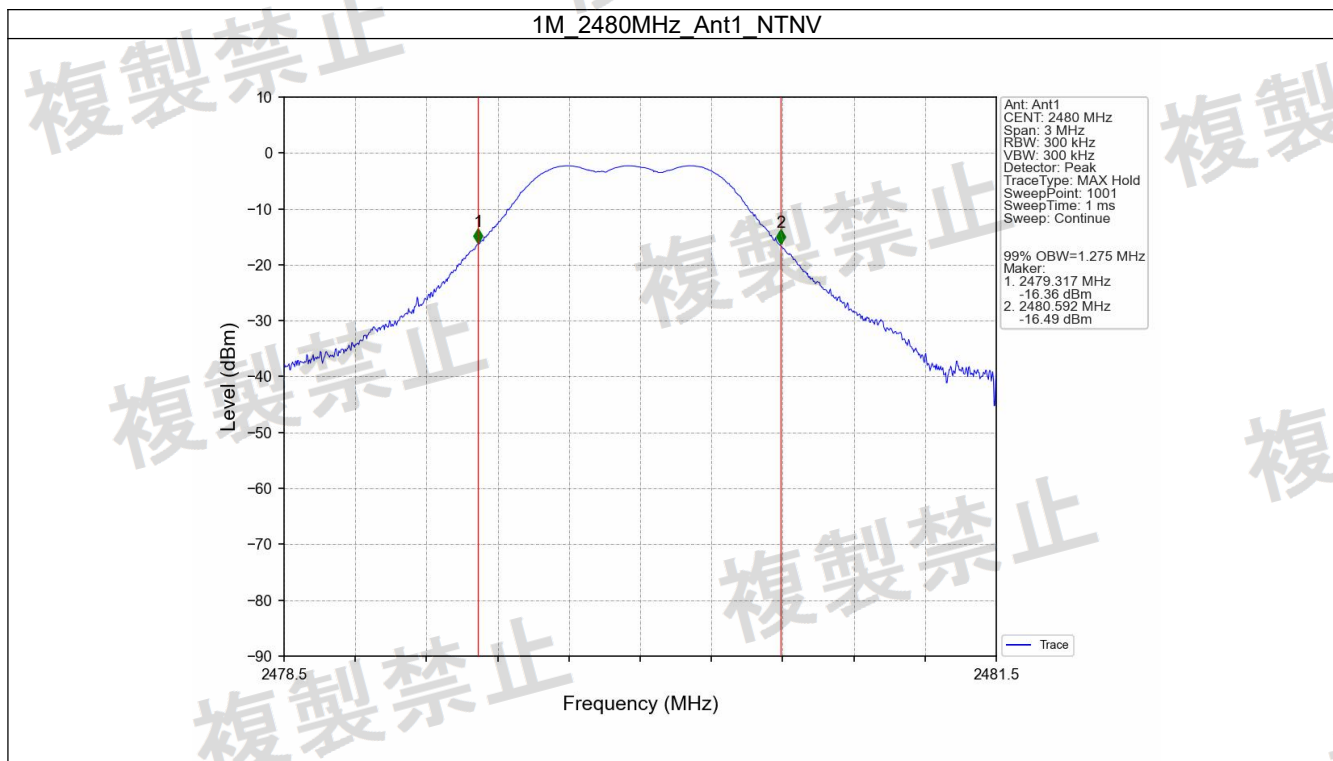
2.1.1 OBW

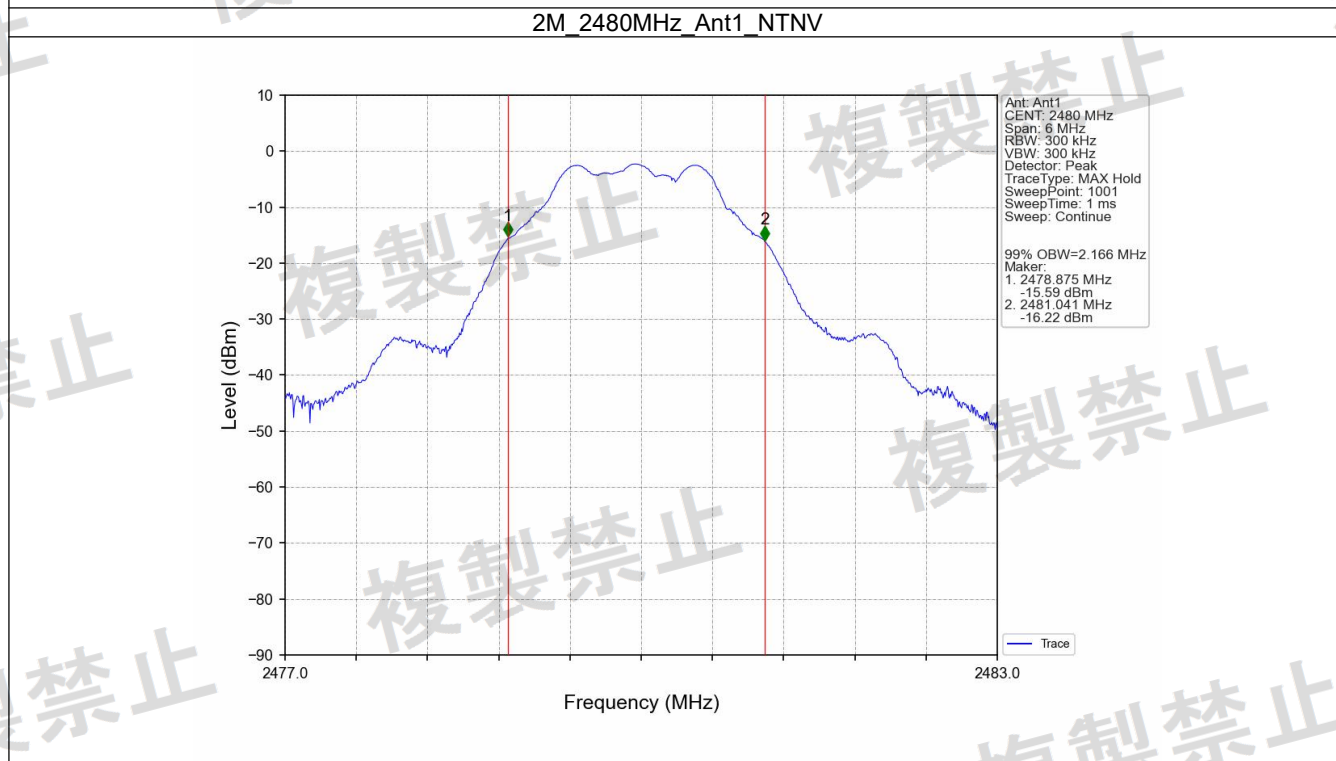
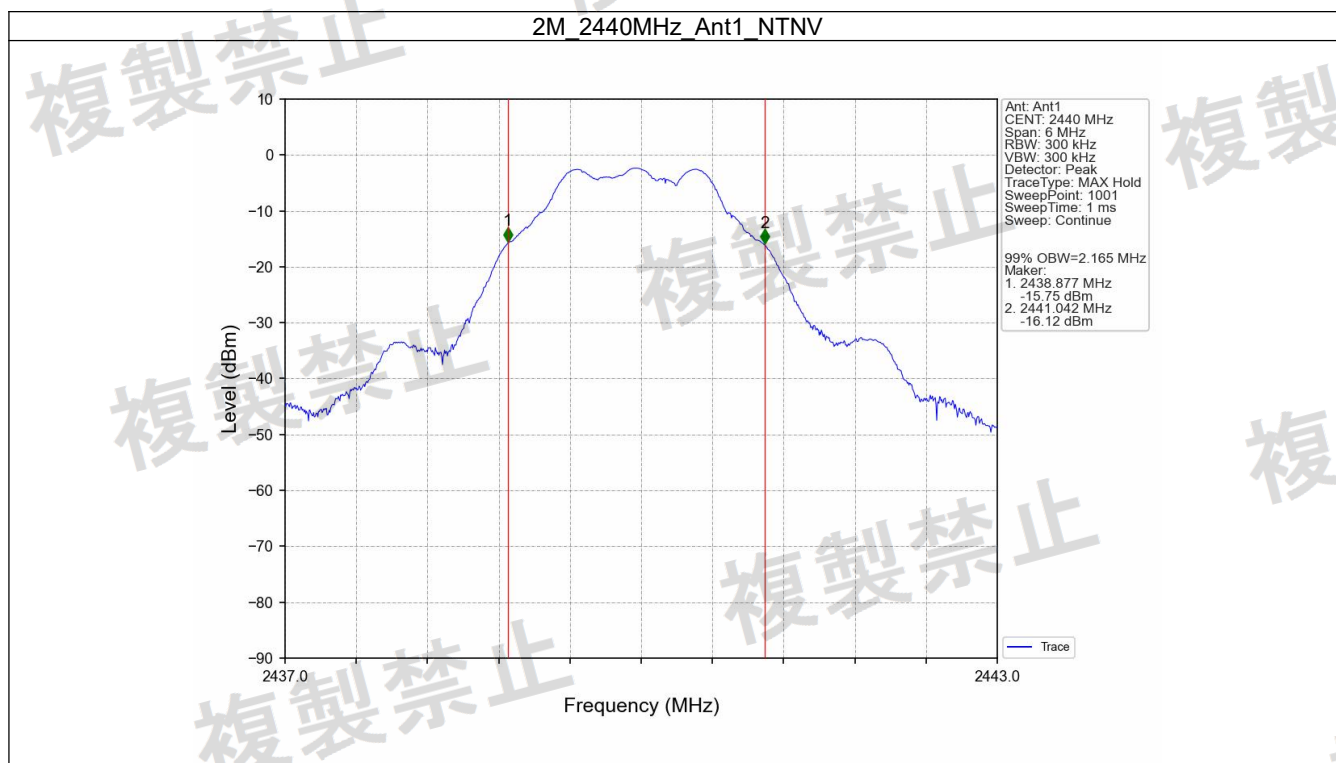
ENV	Mode	TX Type	Frequency (MHz)	99% Occupied Bandwidth (MHz)		Verdict
				ANT1	Limit	
NTNV	1M	SISO	2402	1.269	<=26	Pass
			2440	1.274	<=26	Pass
			2480	1.275	<=26	Pass
	2M	SISO	2402	2.161	<=26	Pass
			2440	2.165	<=26	Pass
			2480	2.166	<=26	Pass
NTLV	1M	SISO	2402	1.269	<=26	Pass
			2440	1.274	<=26	Pass
			2480	1.275	<=26	Pass
	2M	SISO	2402	2.162	<=26	Pass
			2440	2.164	<=26	Pass
			2480	2.164	<=26	Pass
NTHV	1M	SISO	2402	1.271	<=26	Pass
			2440	1.275	<=26	Pass
			2480	1.276	<=26	Pass
	2M	SISO	2402	2.162	<=26	Pass
			2440	2.163	<=26	Pass
			2480	2.165	<=26	Pass

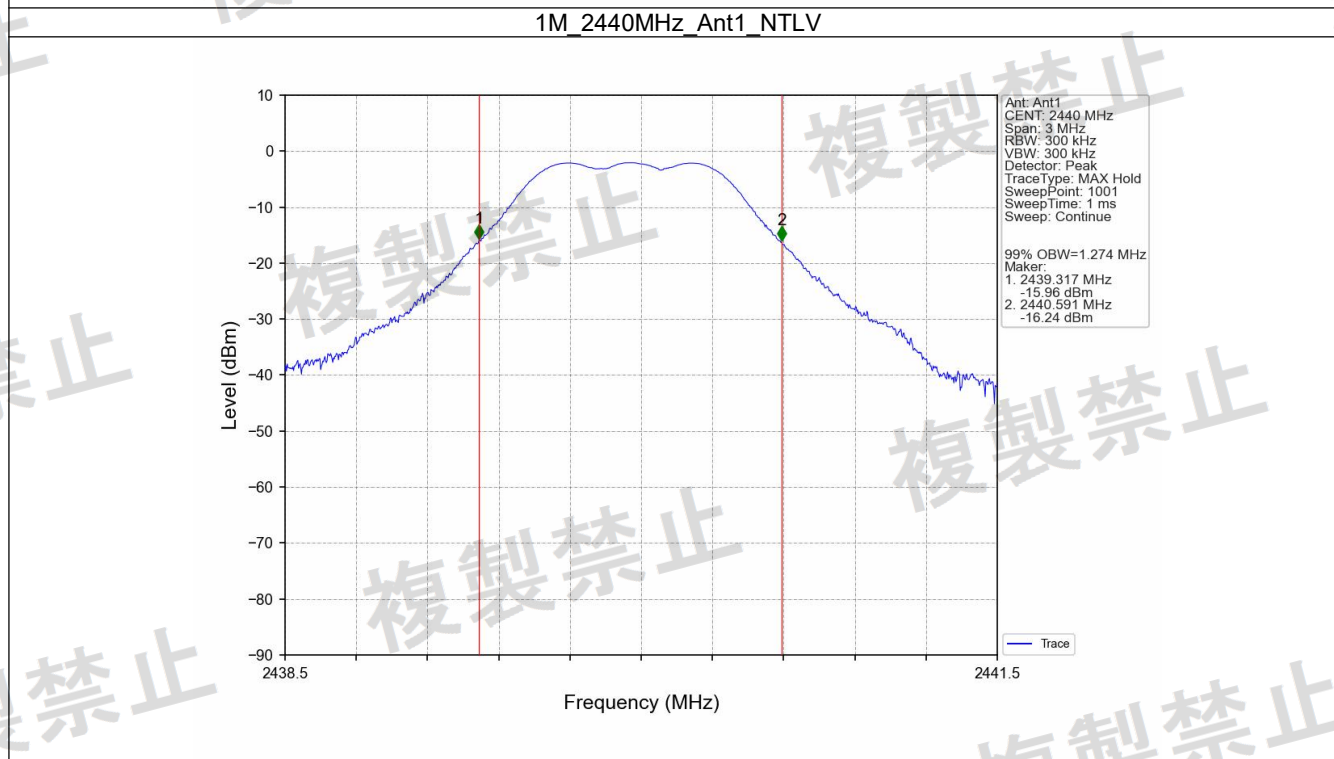
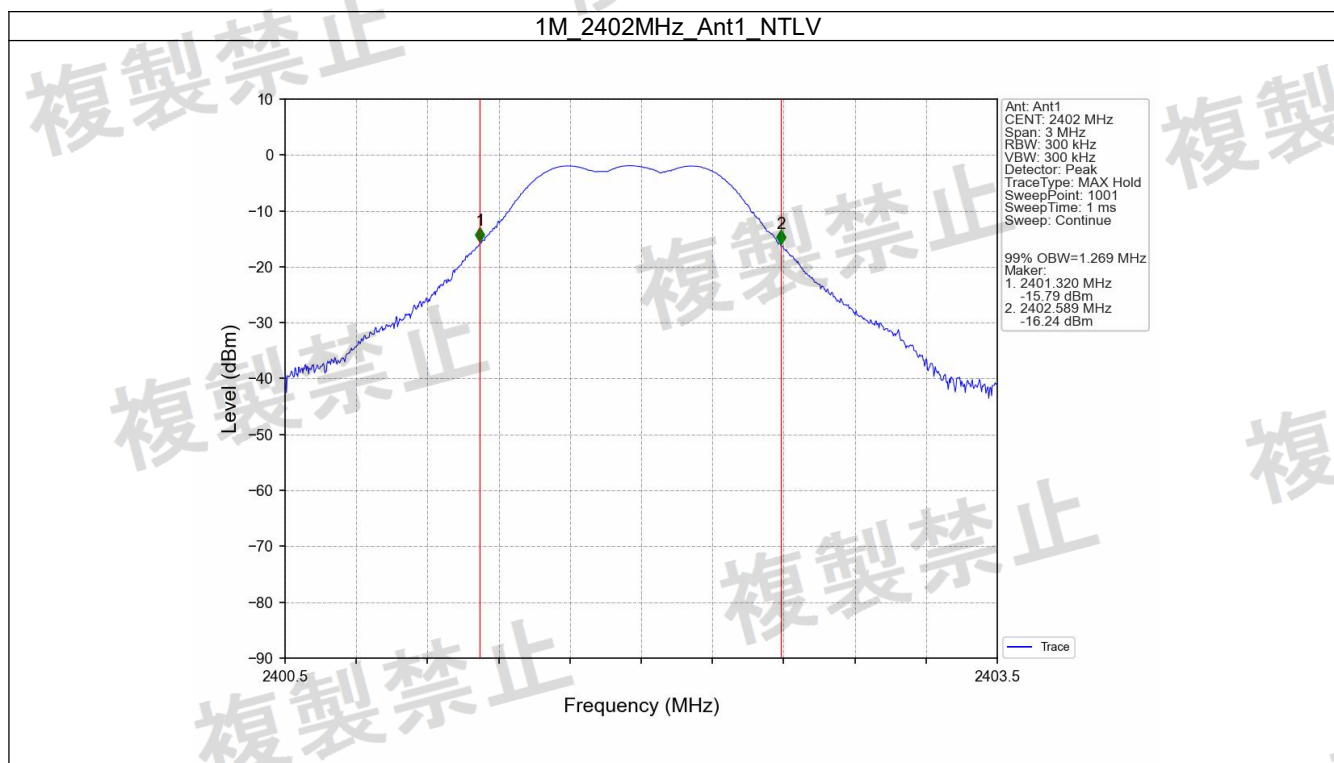
2.2 Test Graph

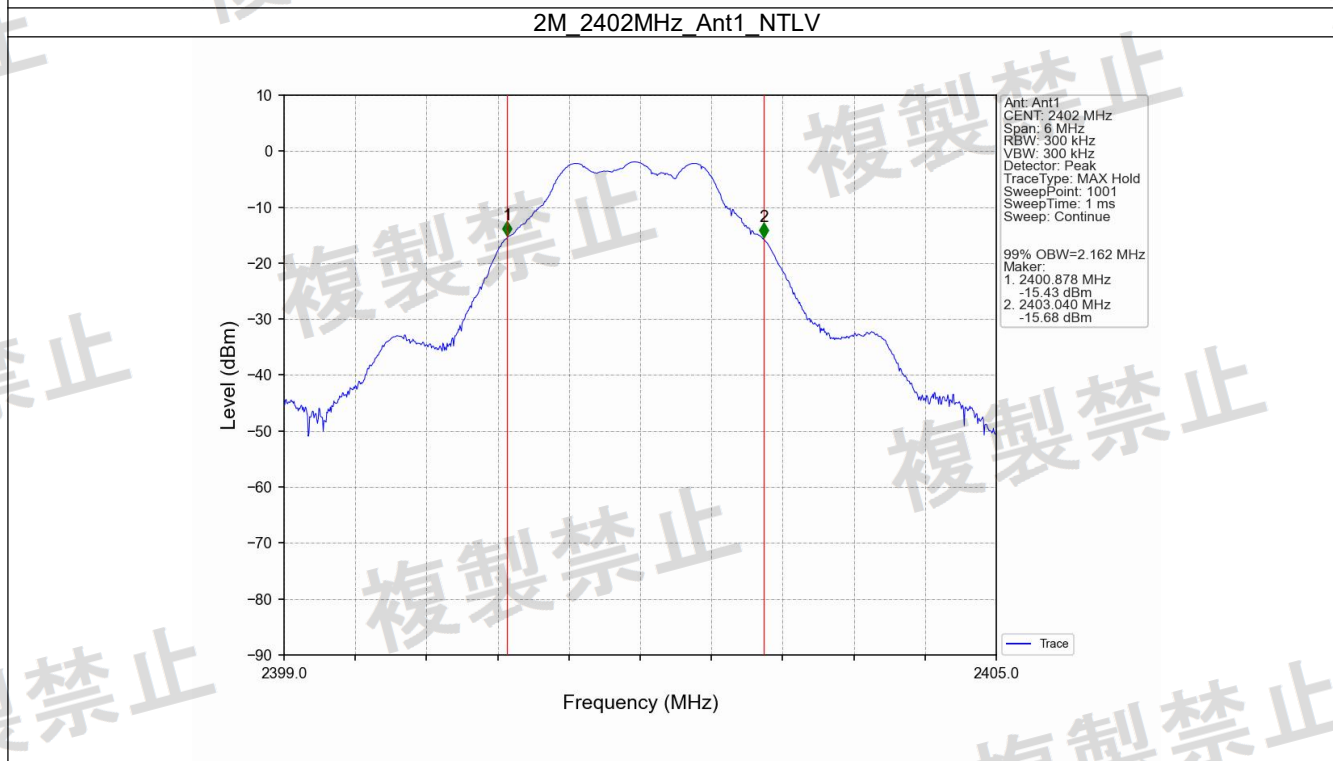
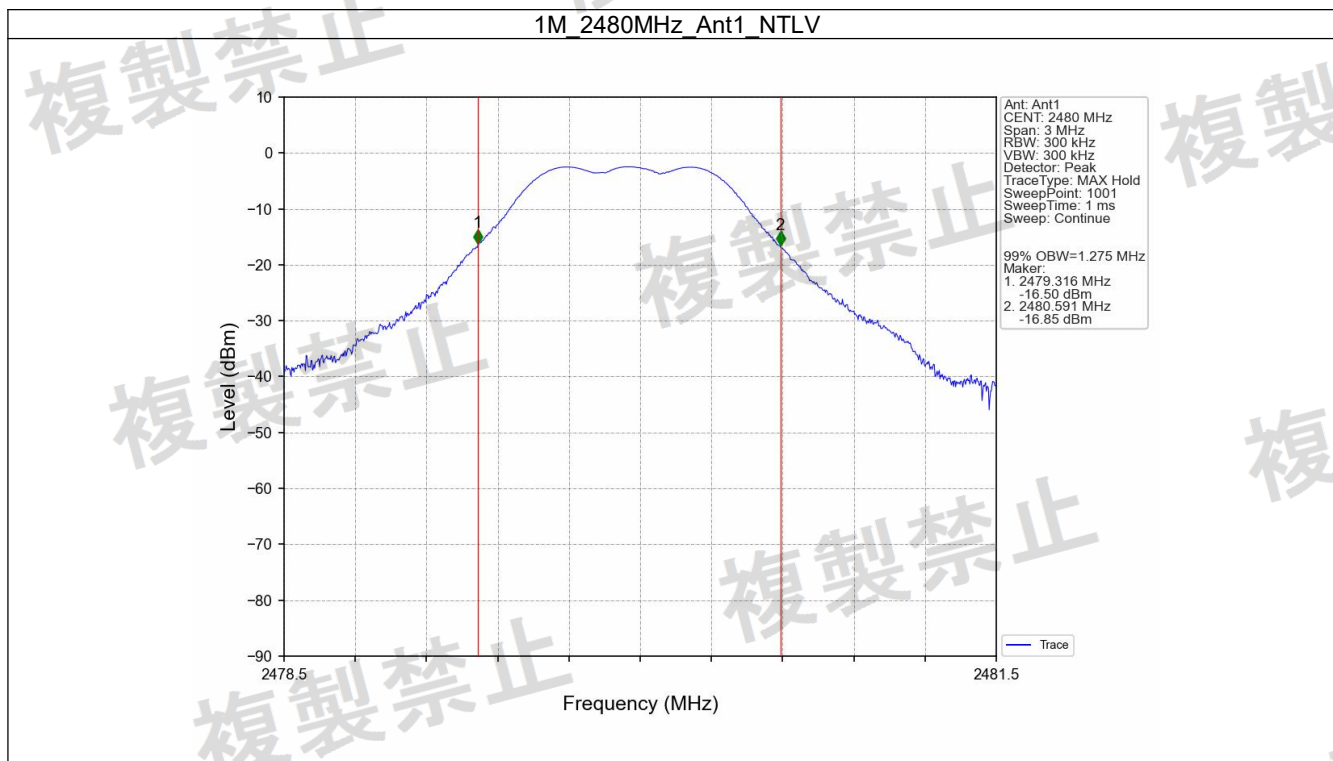
2.2.1 OBW

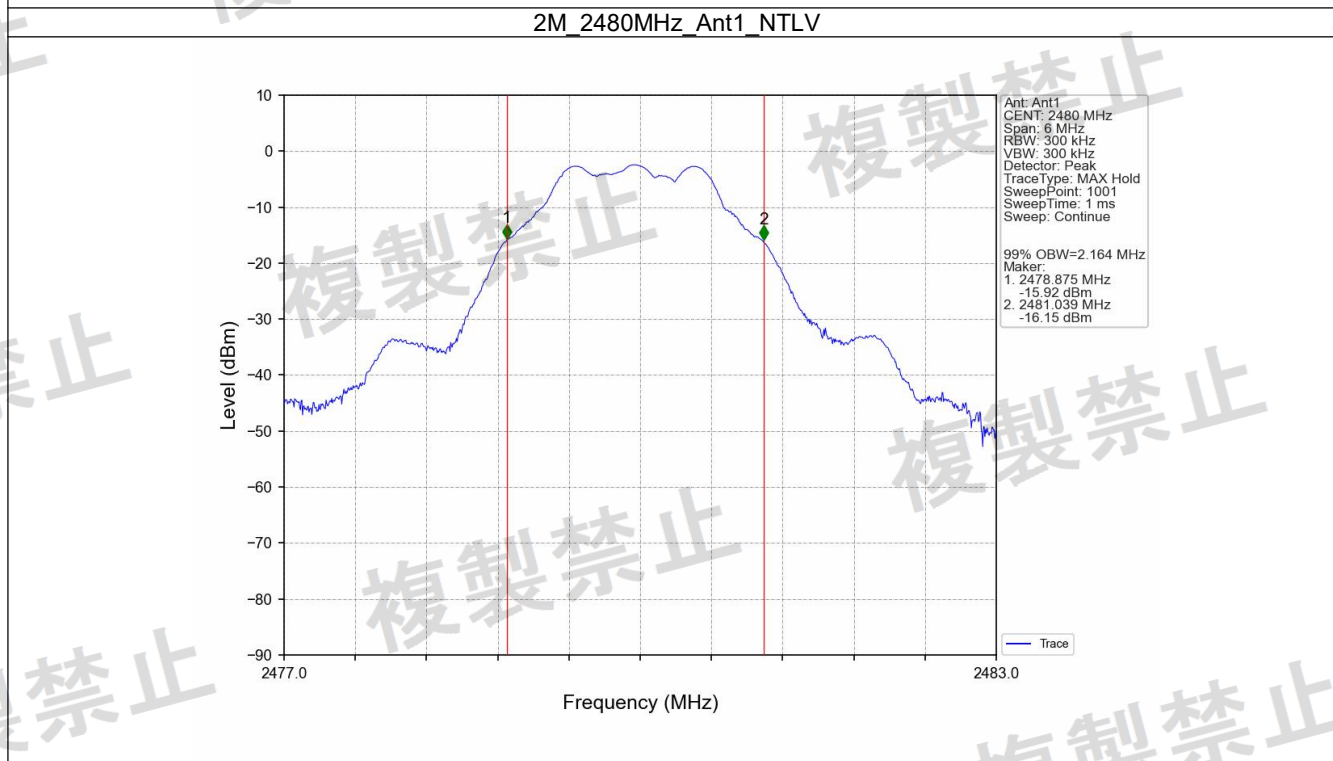
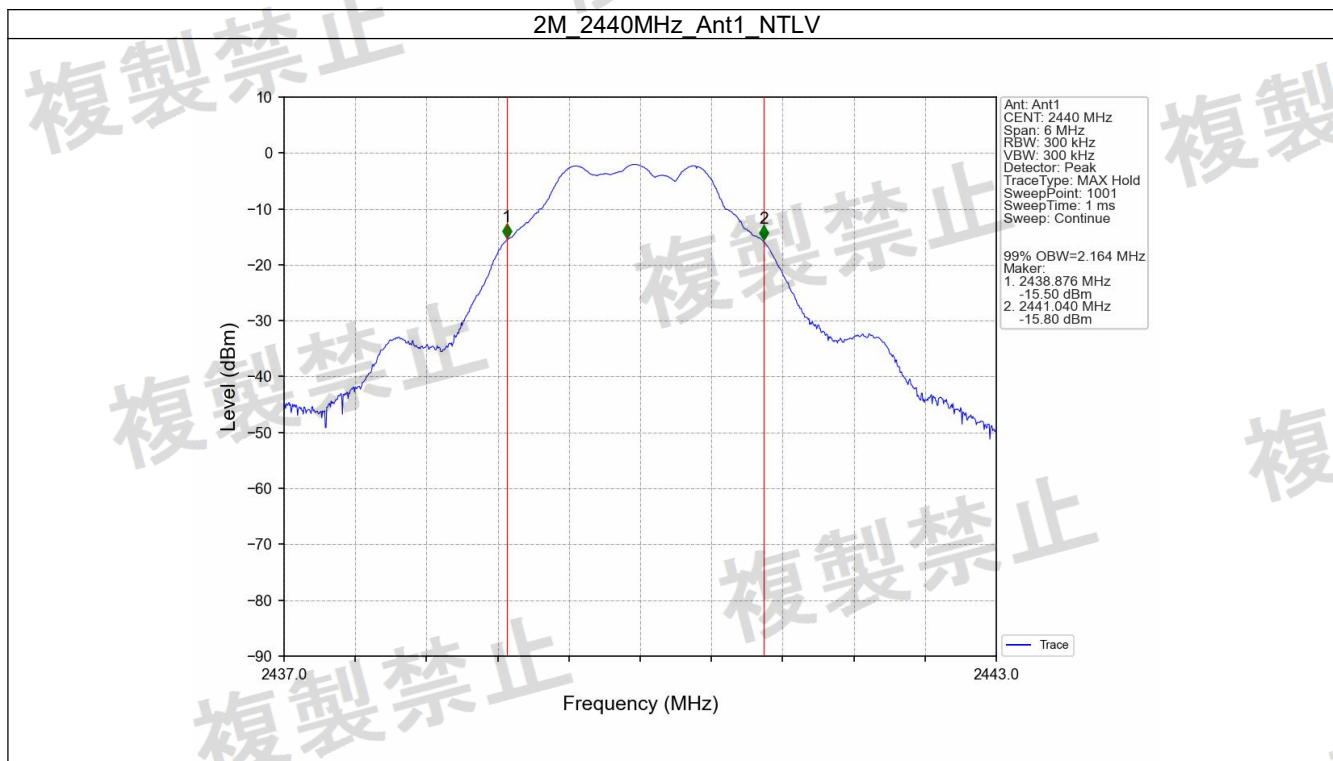


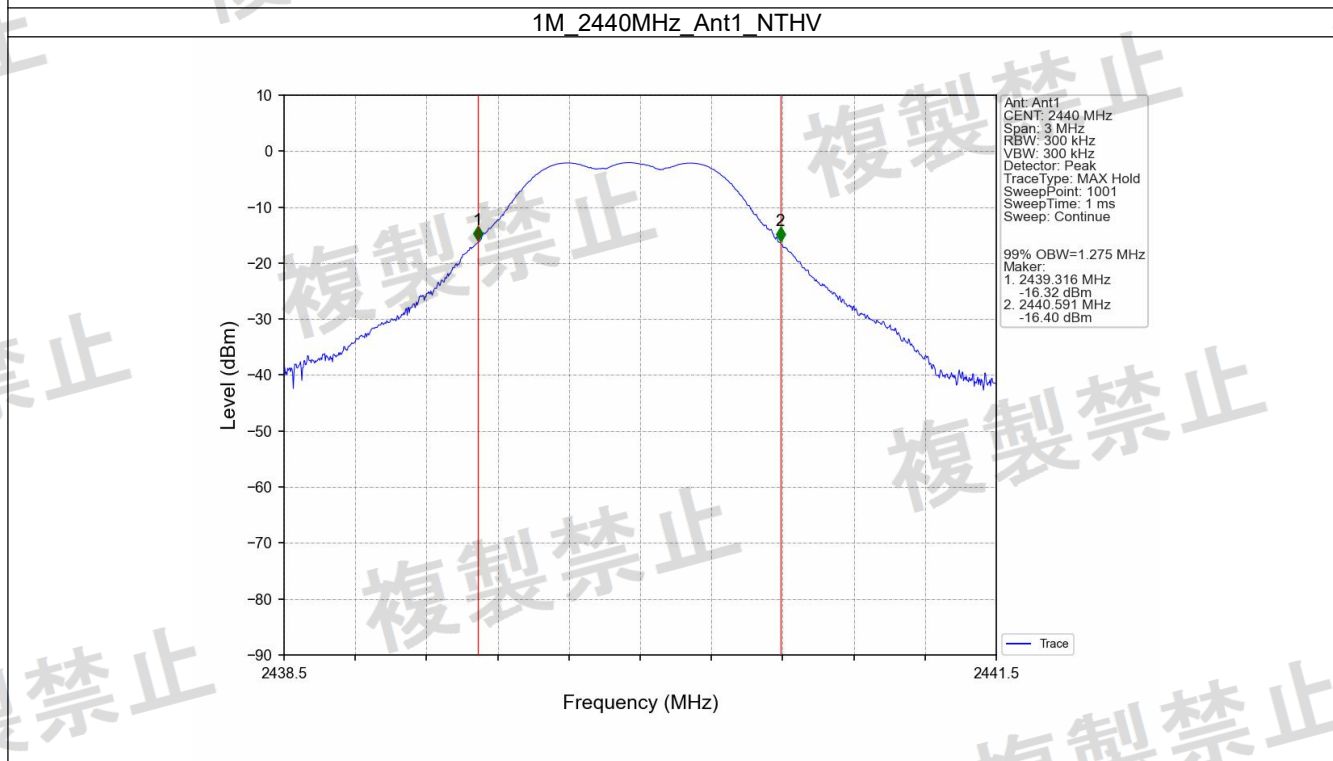
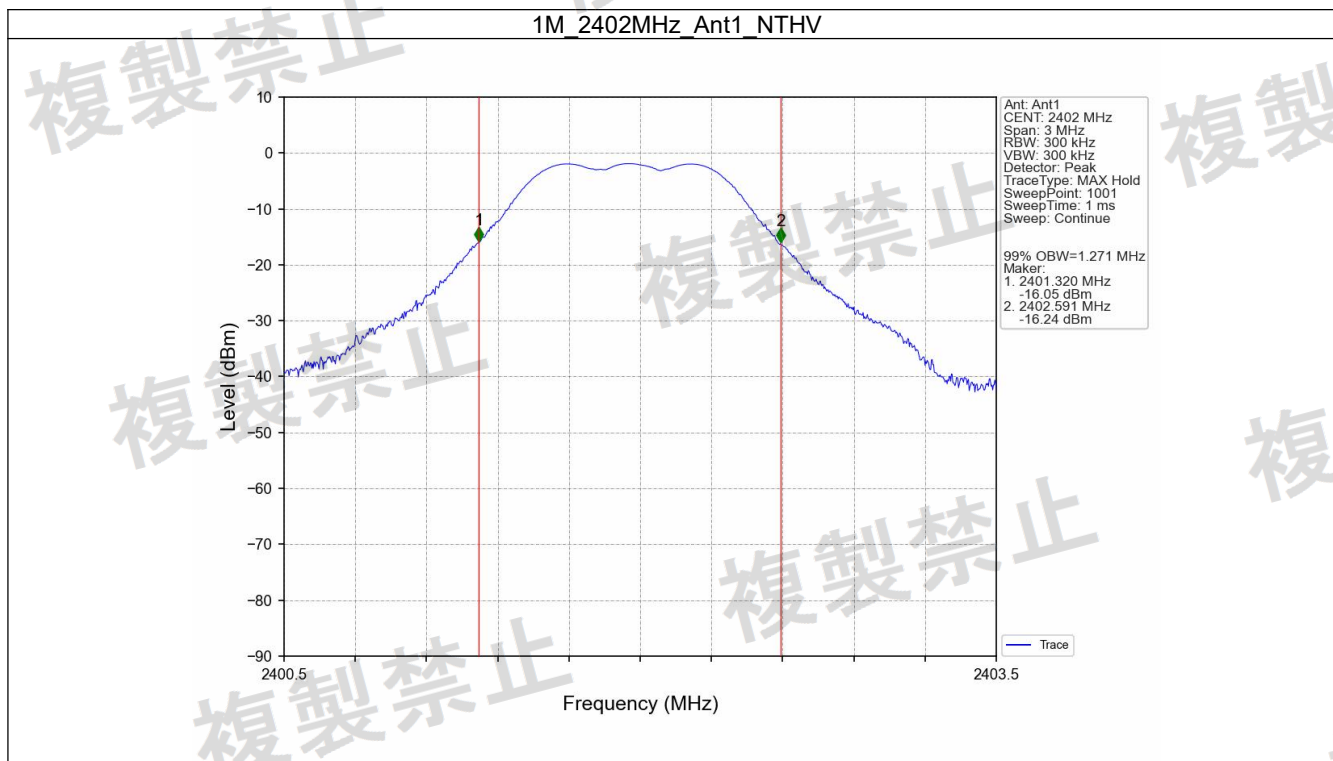


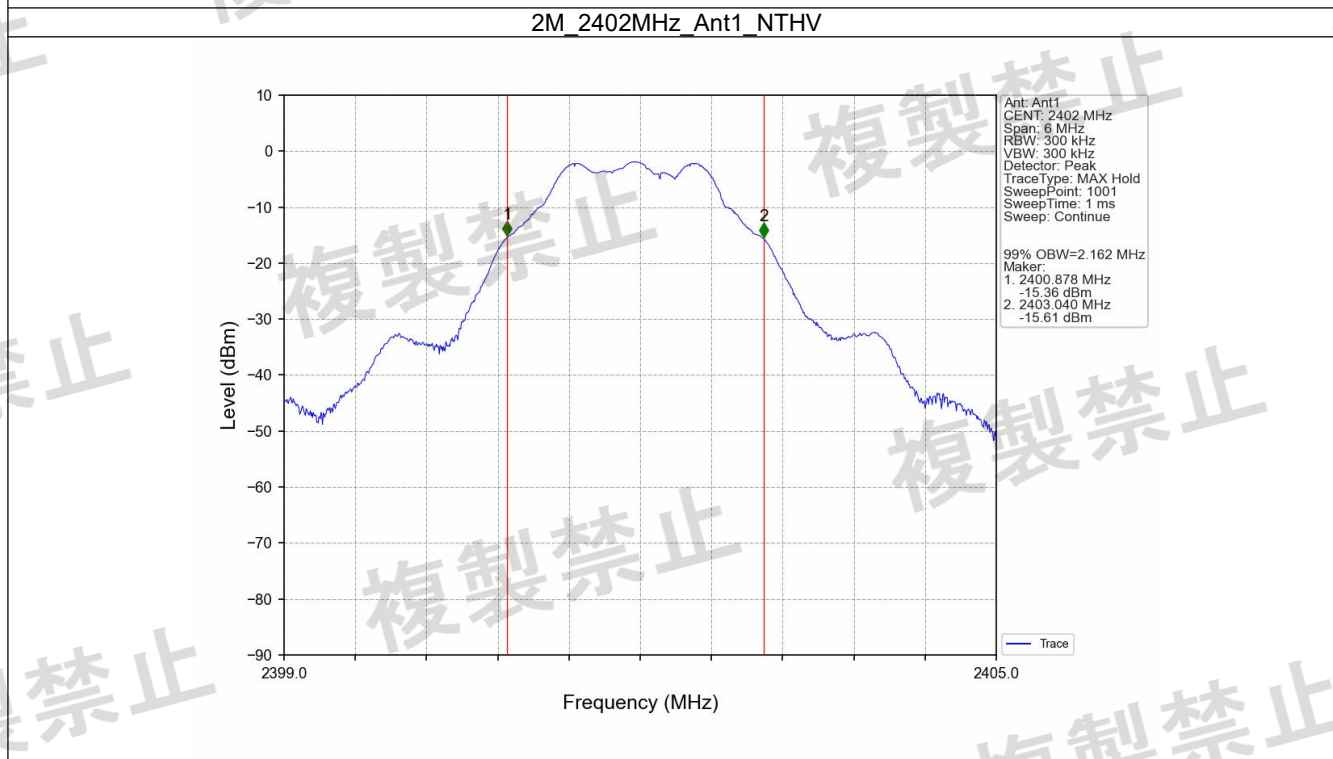
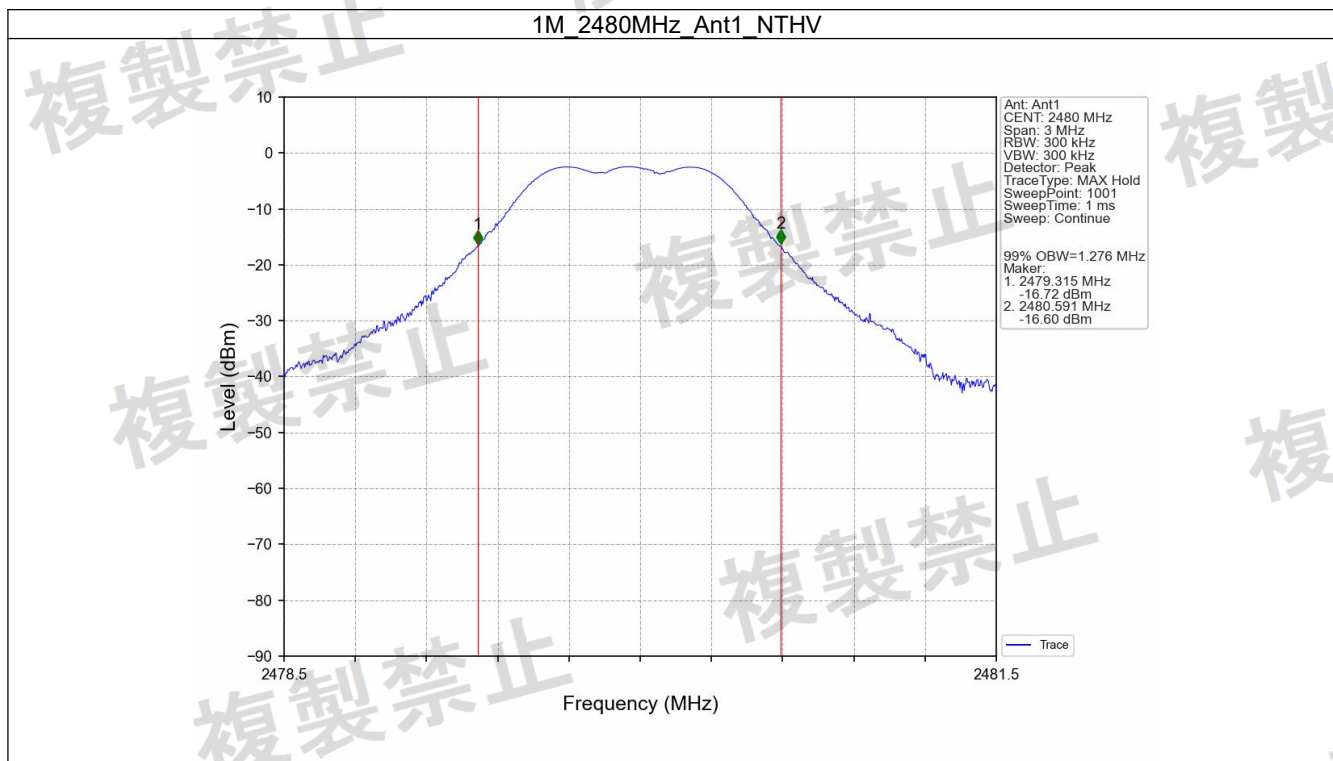


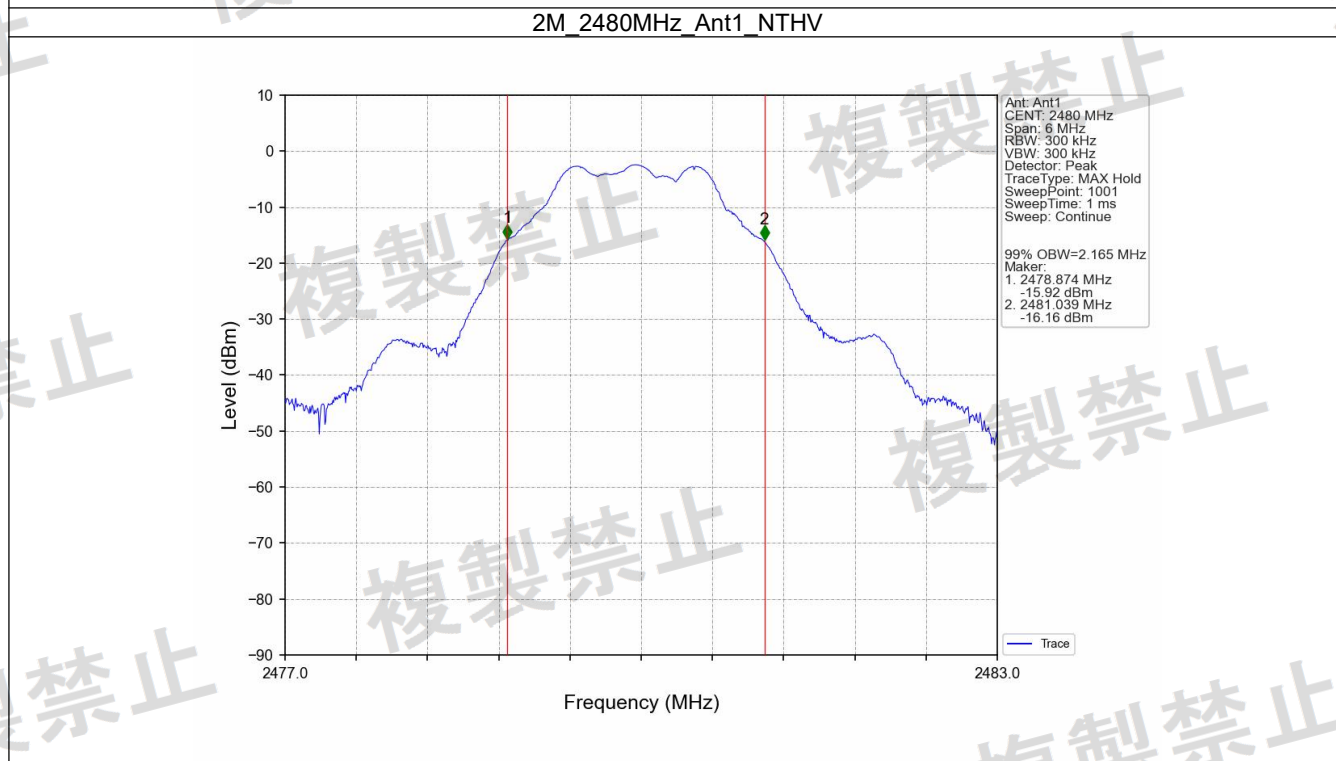
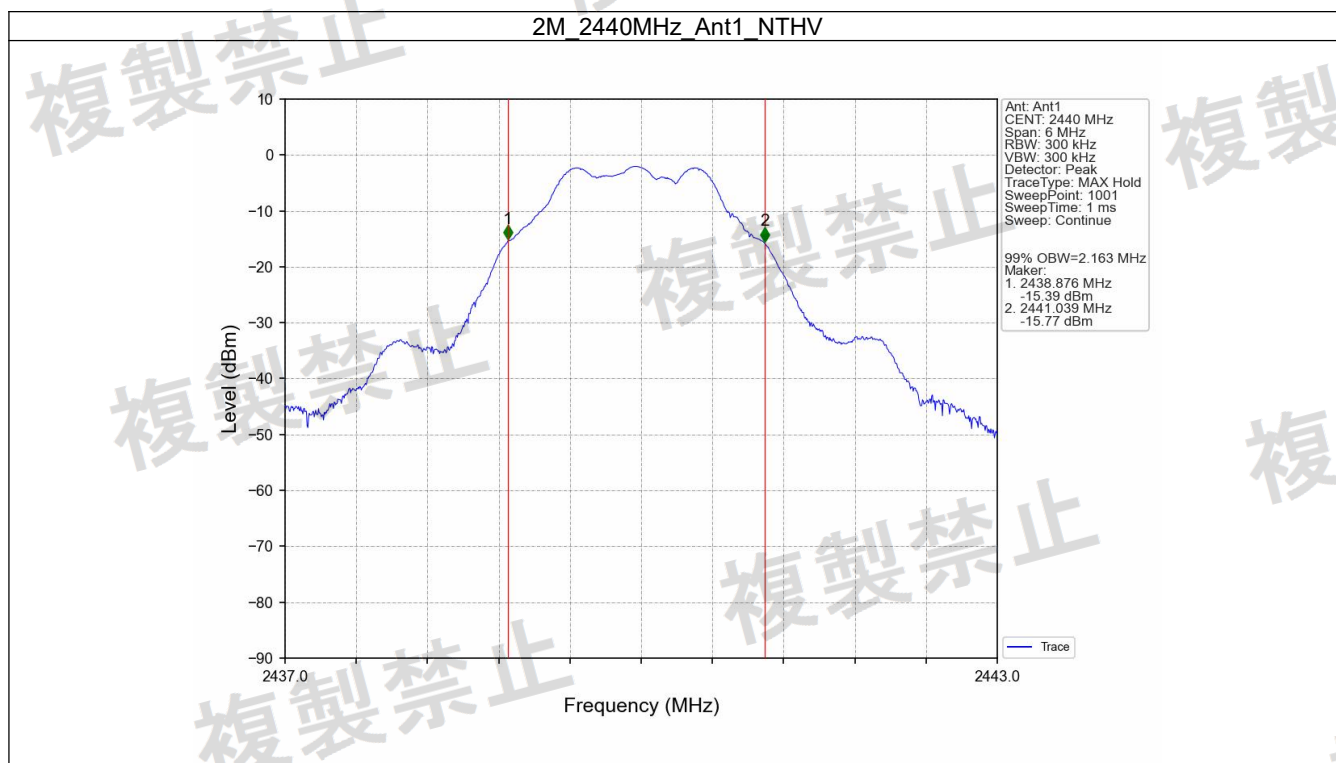












3. Spread Bandwidth

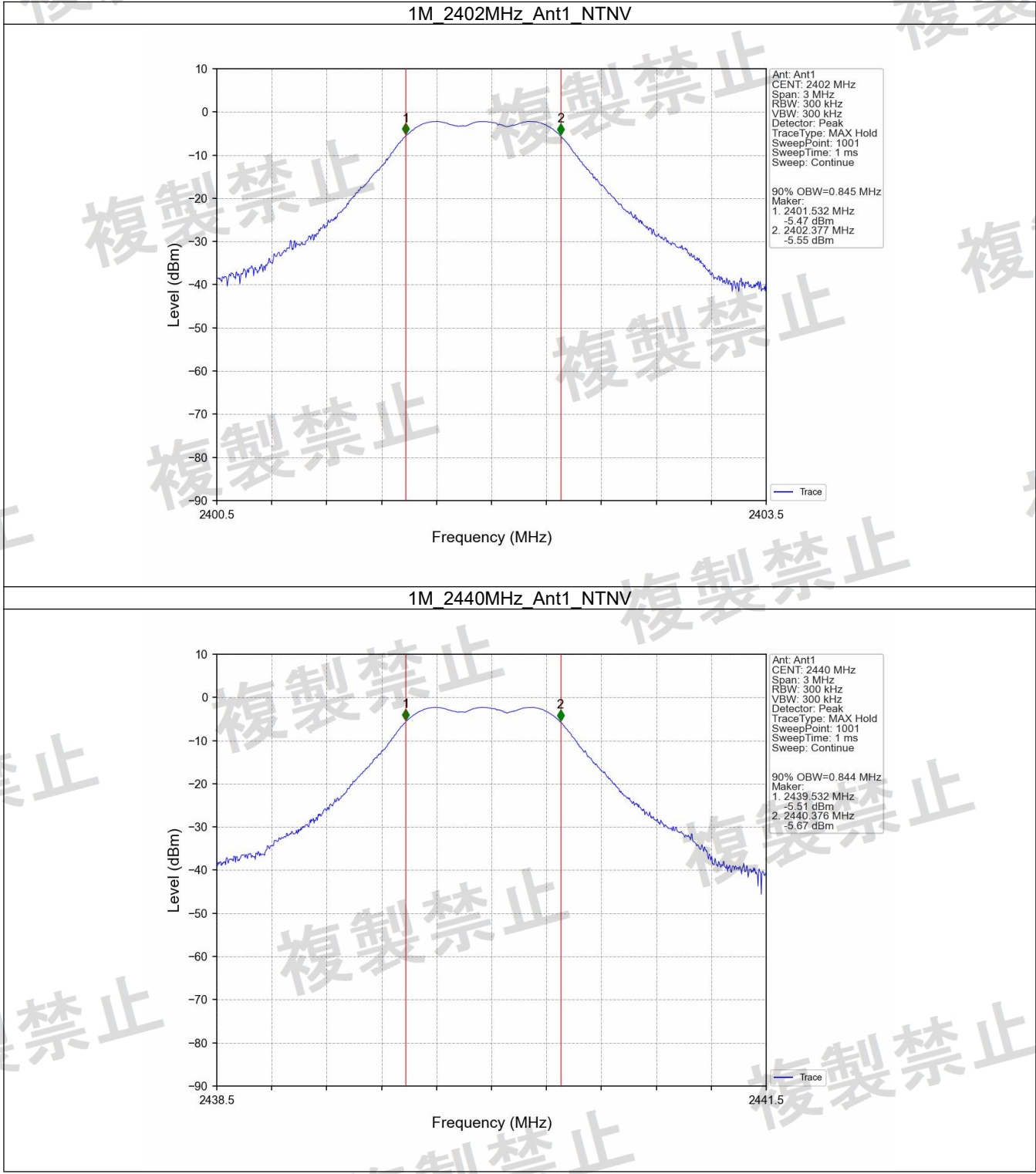
3.1 Test Result

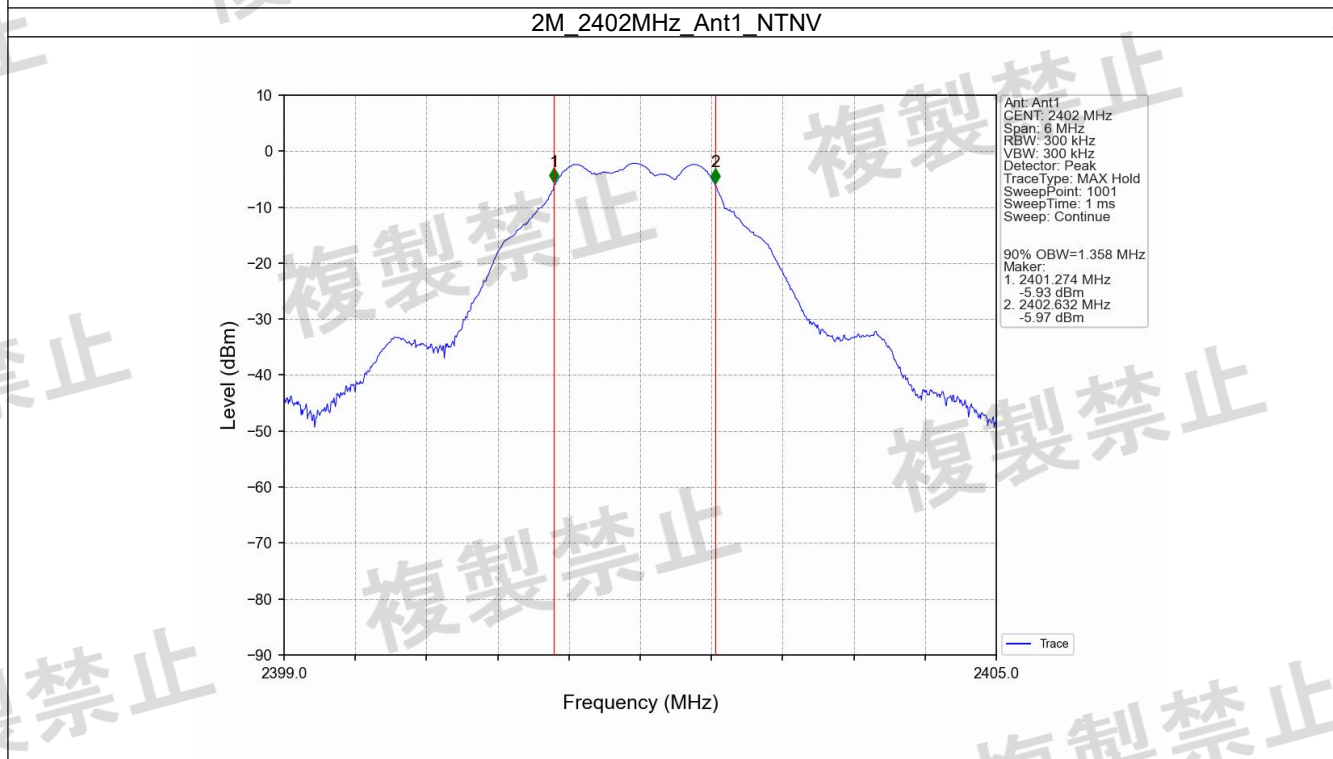
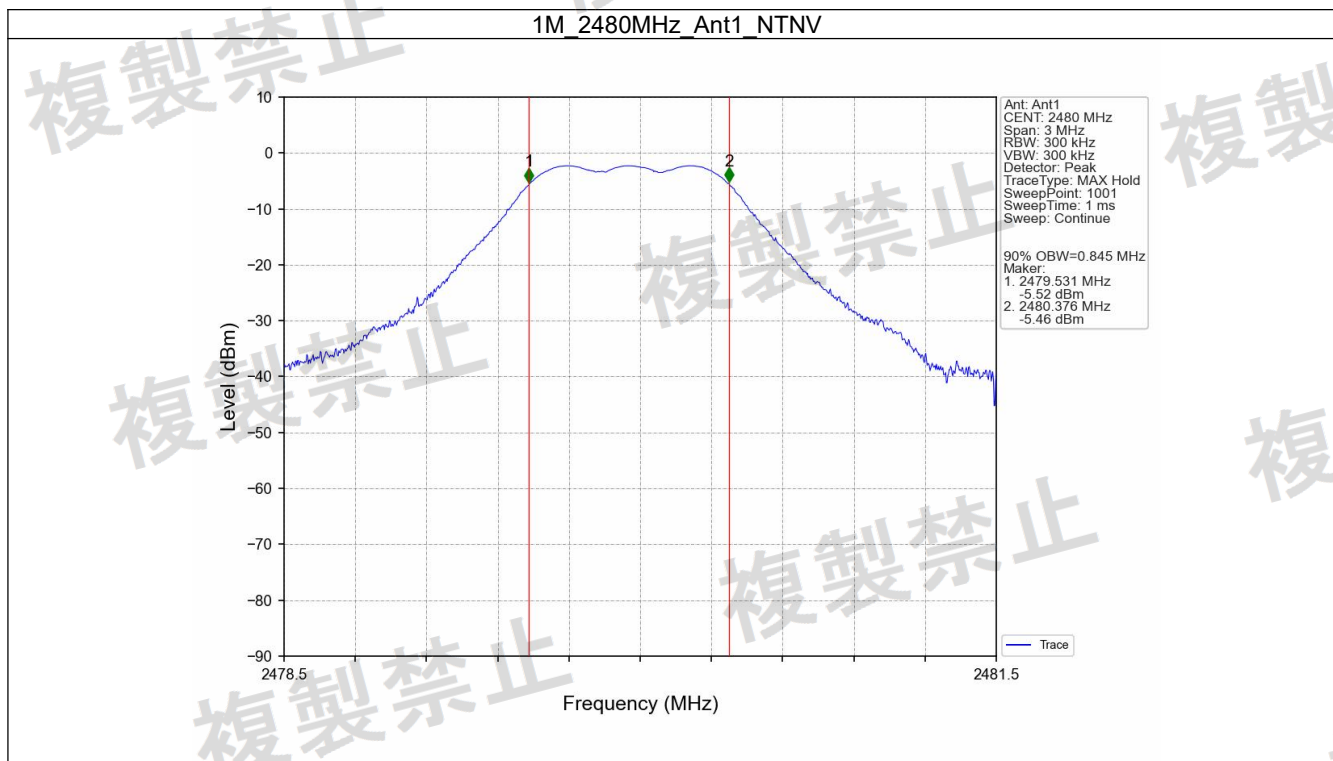
3.1.1 SPBW

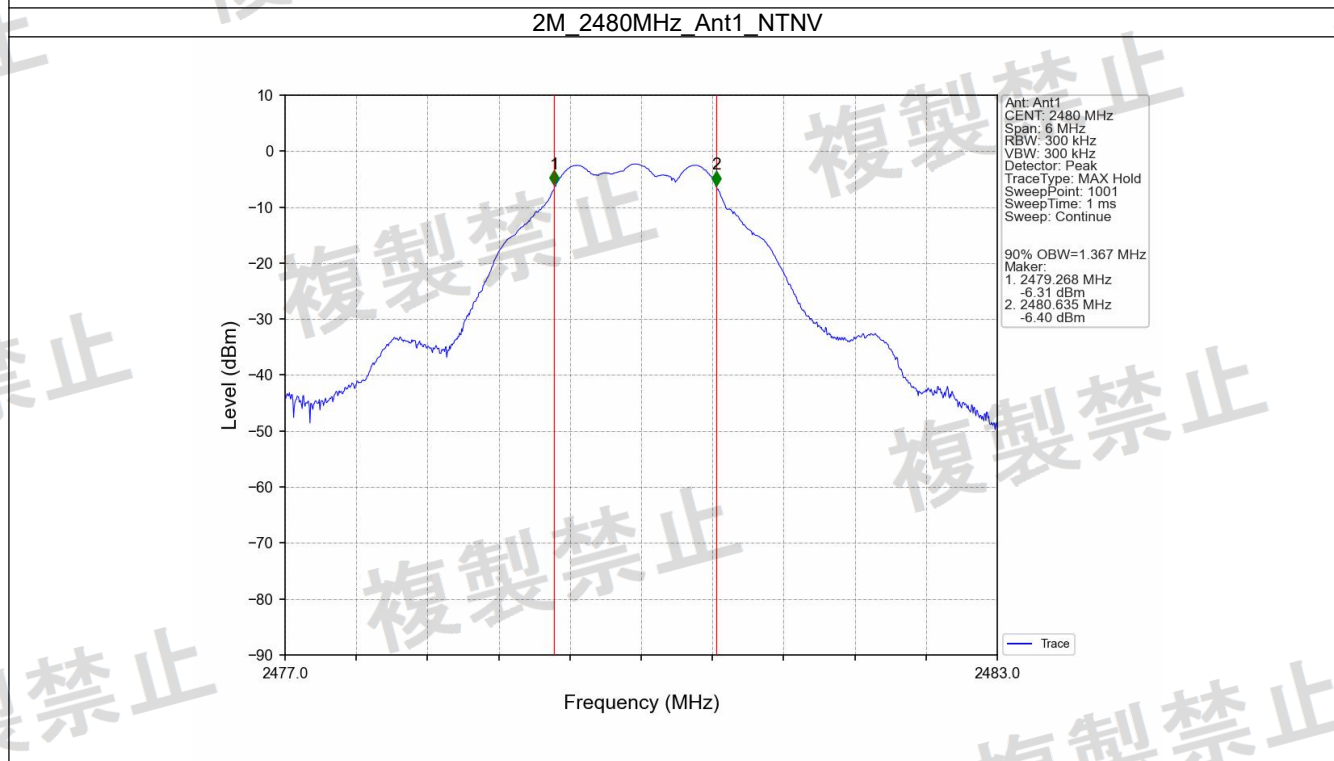
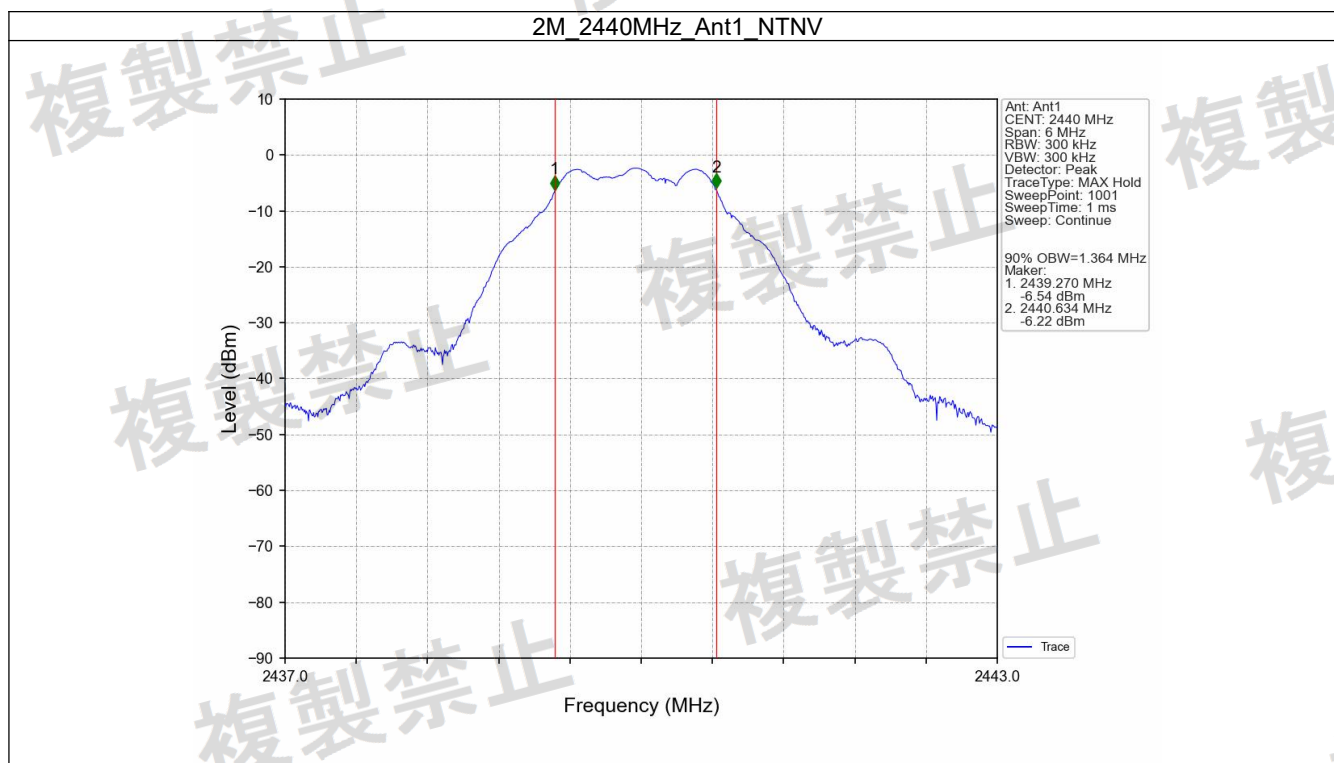
ENV	Mode	TX Type	Frequency (MHz)	Spread Bandwidth (MHz)		Verdict
				ANT1	Limit	
NTNV	1M	SISO	2402	0.845	≥ 0.5	Pass
			2440	0.844	≥ 0.5	Pass
			2480	0.845	≥ 0.5	Pass
	2M	SISO	2402	1.358	≥ 0.5	Pass
			2440	1.364	≥ 0.5	Pass
			2480	1.367	≥ 0.5	Pass
NTLV	1M	SISO	2402	0.844	≥ 0.5	Pass
			2440	0.843	≥ 0.5	Pass
			2480	0.844	≥ 0.5	Pass
	2M	SISO	2402	1.360	≥ 0.5	Pass
			2440	1.363	≥ 0.5	Pass
			2480	1.363	≥ 0.5	Pass
NTHV	1M	SISO	2402	0.845	≥ 0.5	Pass
			2440	0.843	≥ 0.5	Pass
			2480	0.844	≥ 0.5	Pass
	2M	SISO	2402	1.363	≥ 0.5	Pass
			2440	1.363	≥ 0.5	Pass
			2480	1.363	≥ 0.5	Pass

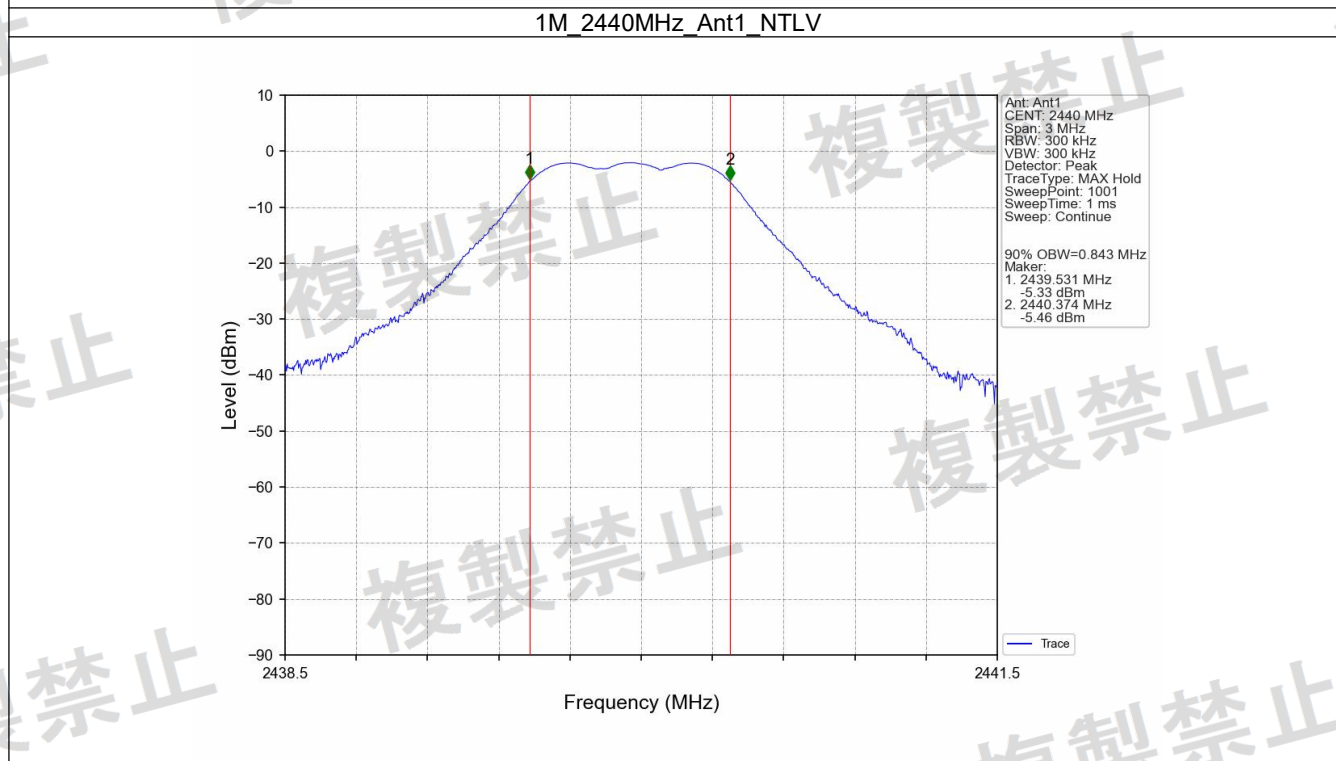
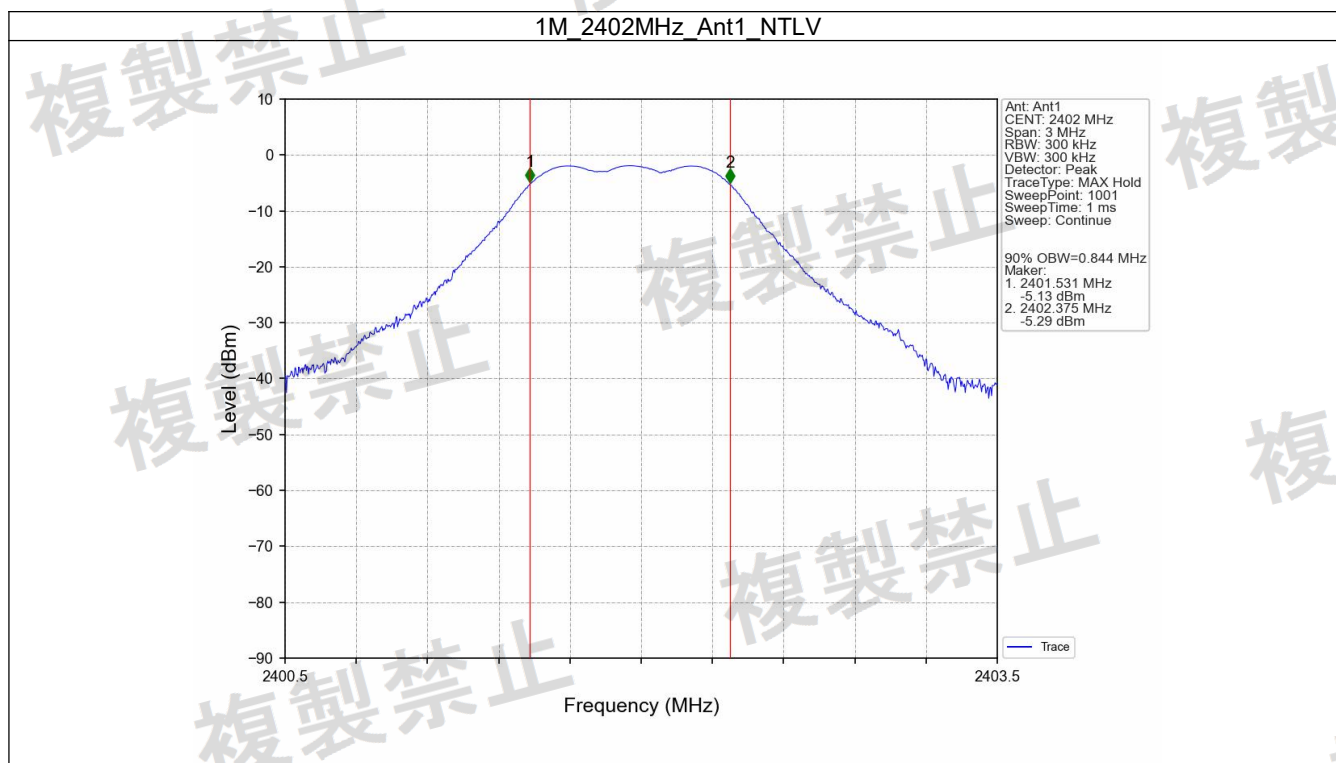
3.2 Test Graph

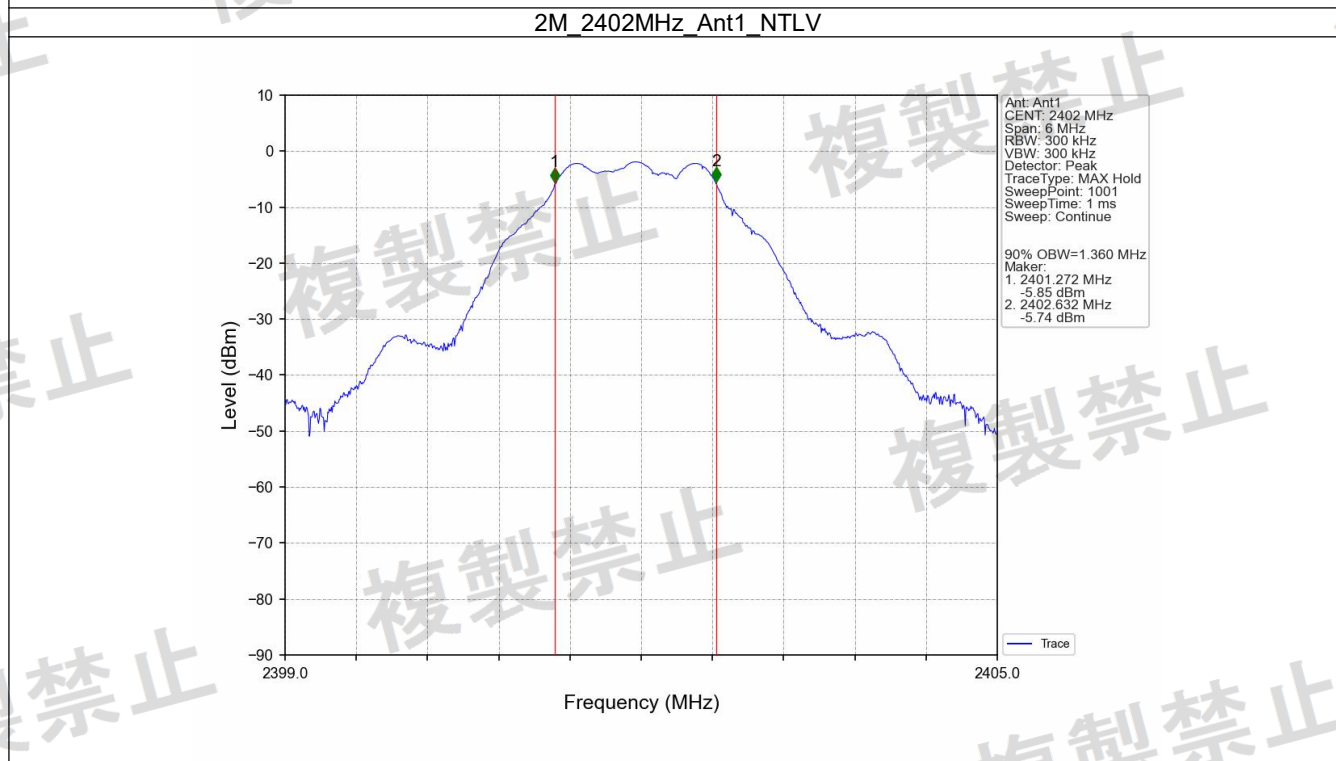
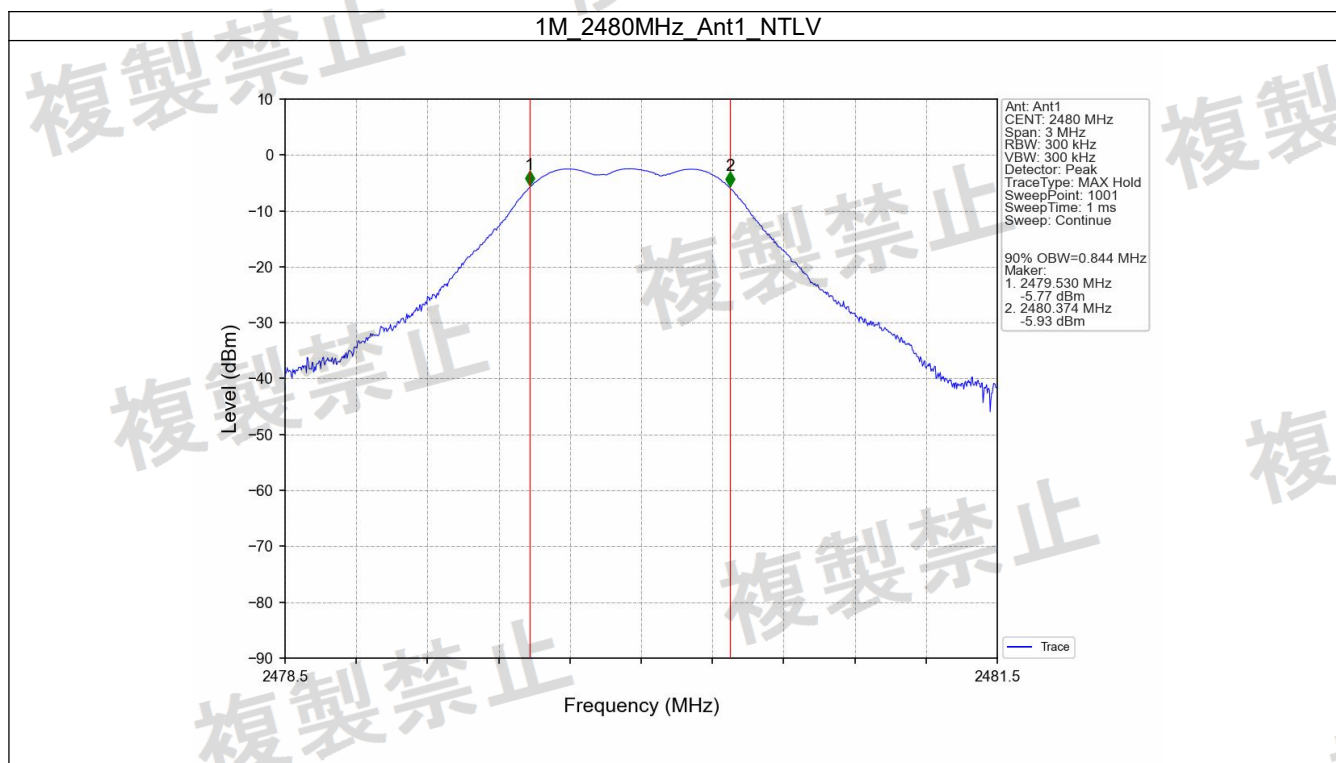
3.2.1 SPBW

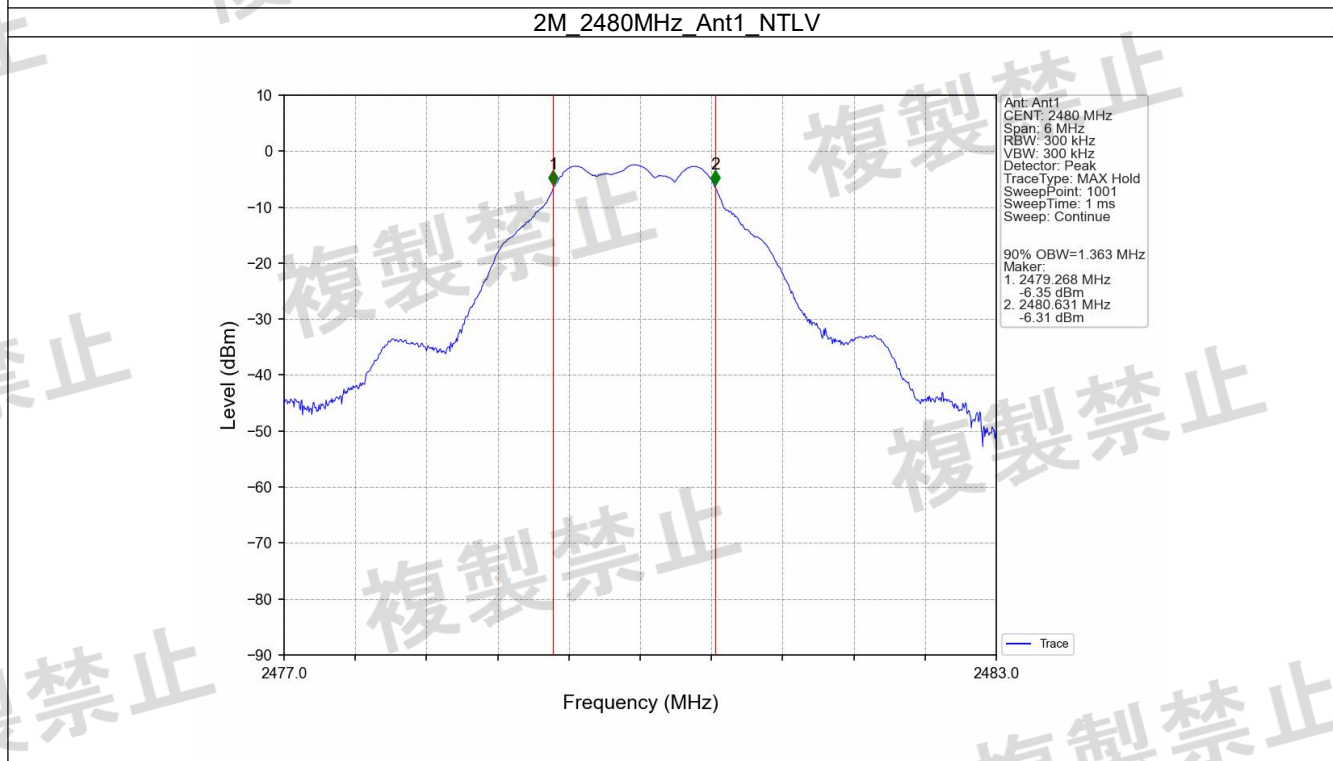
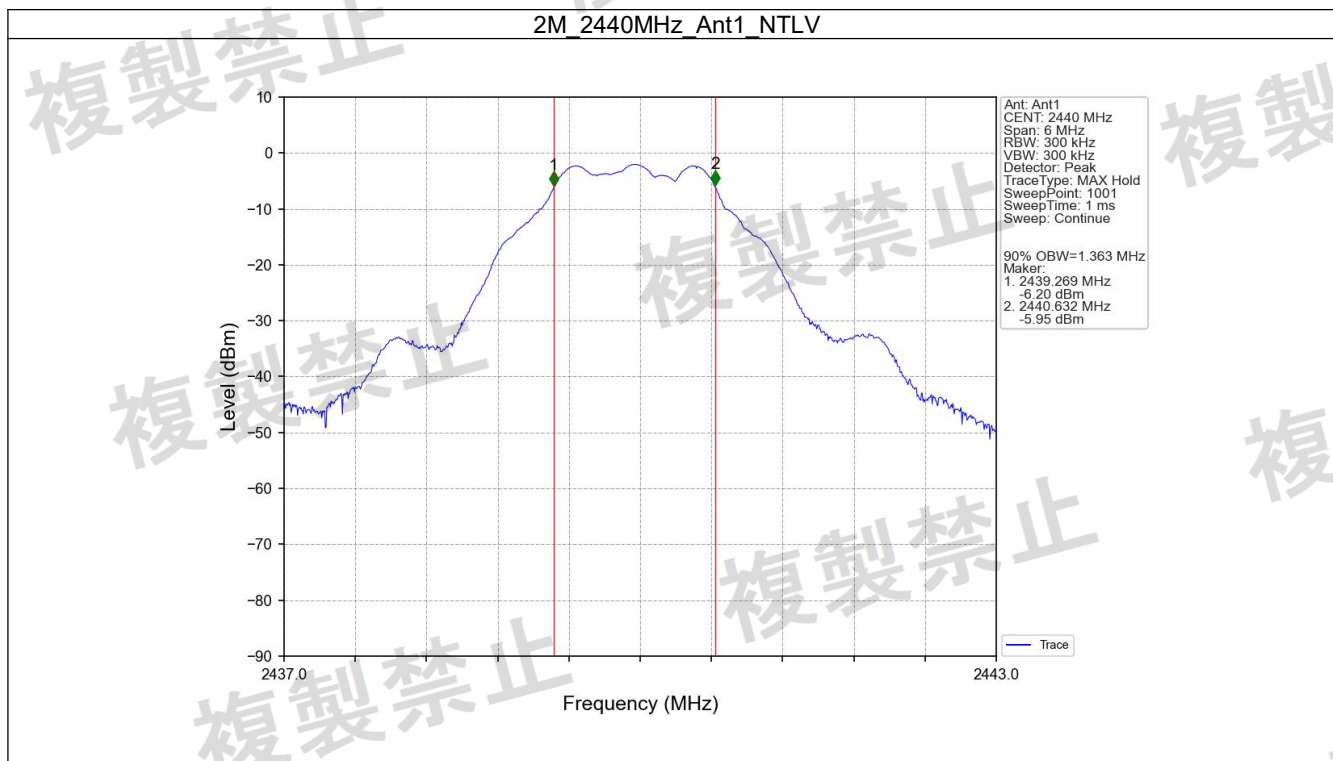


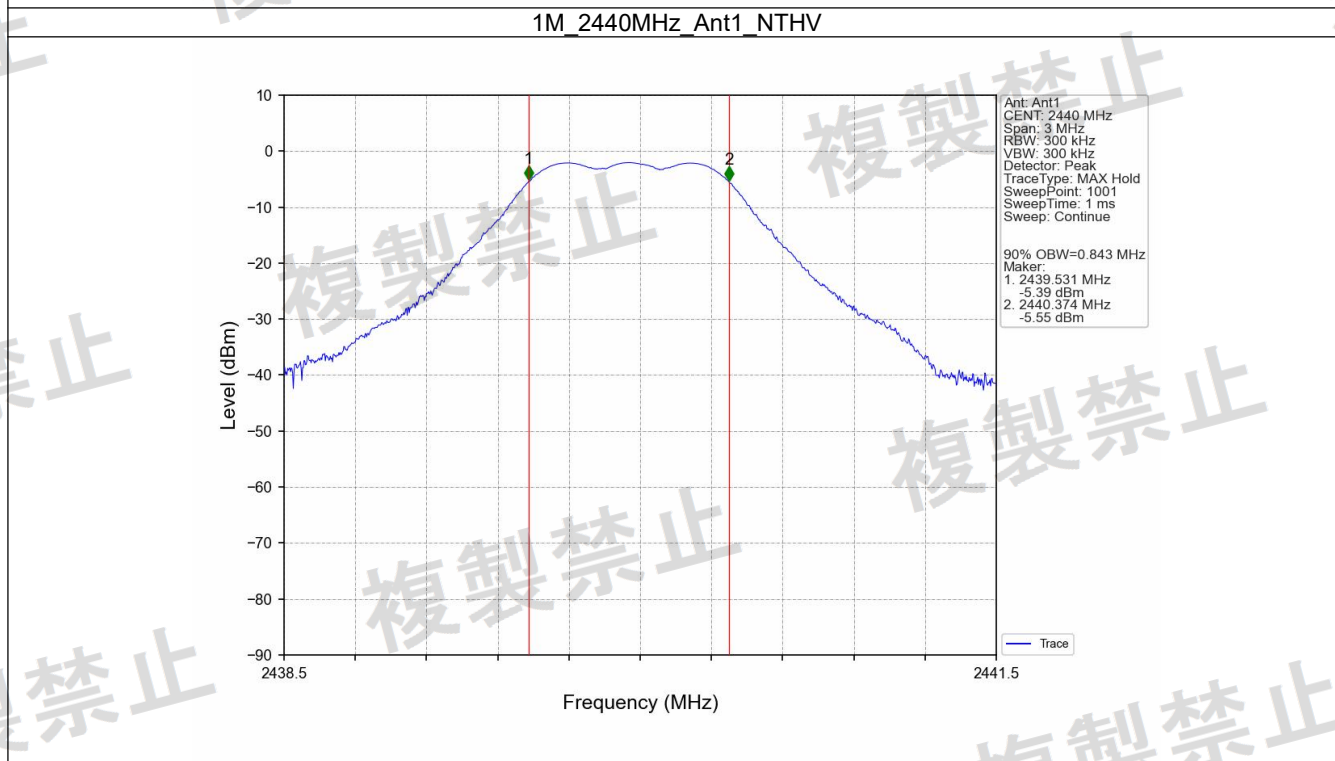
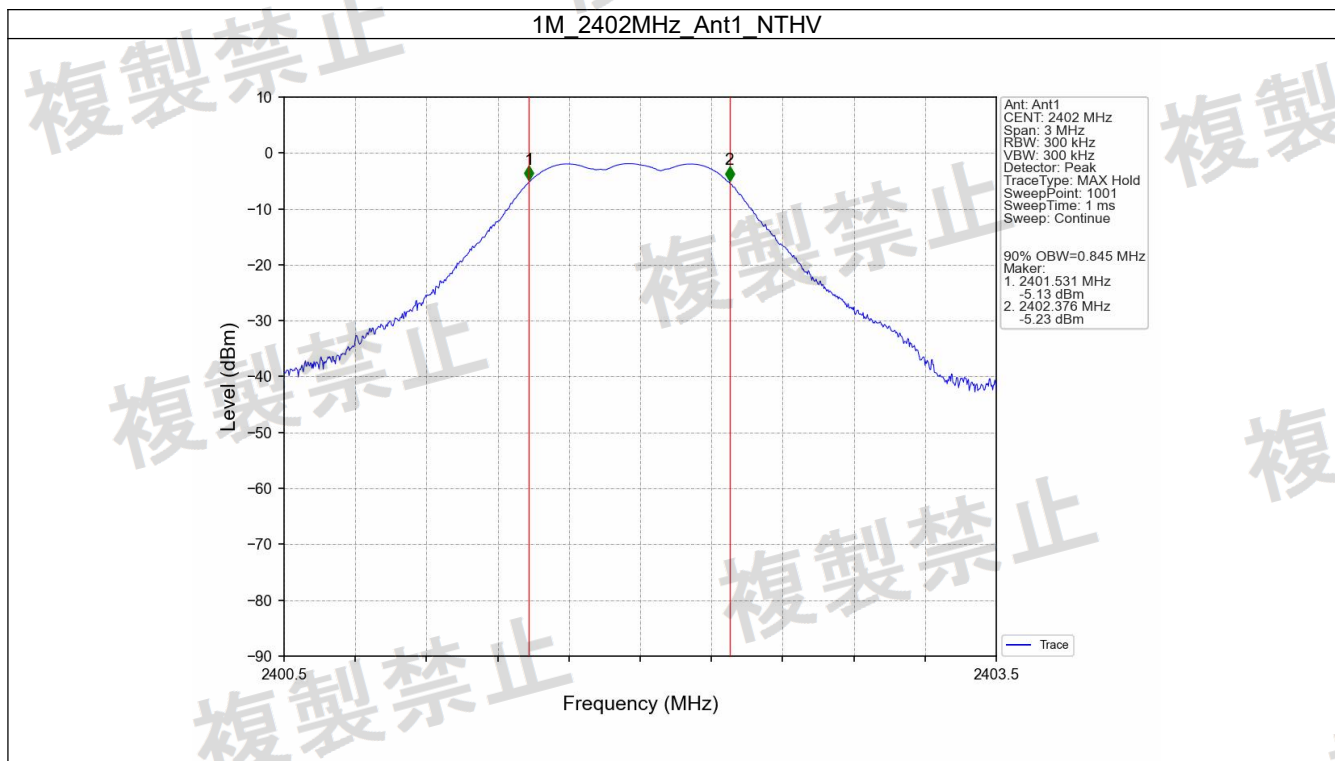


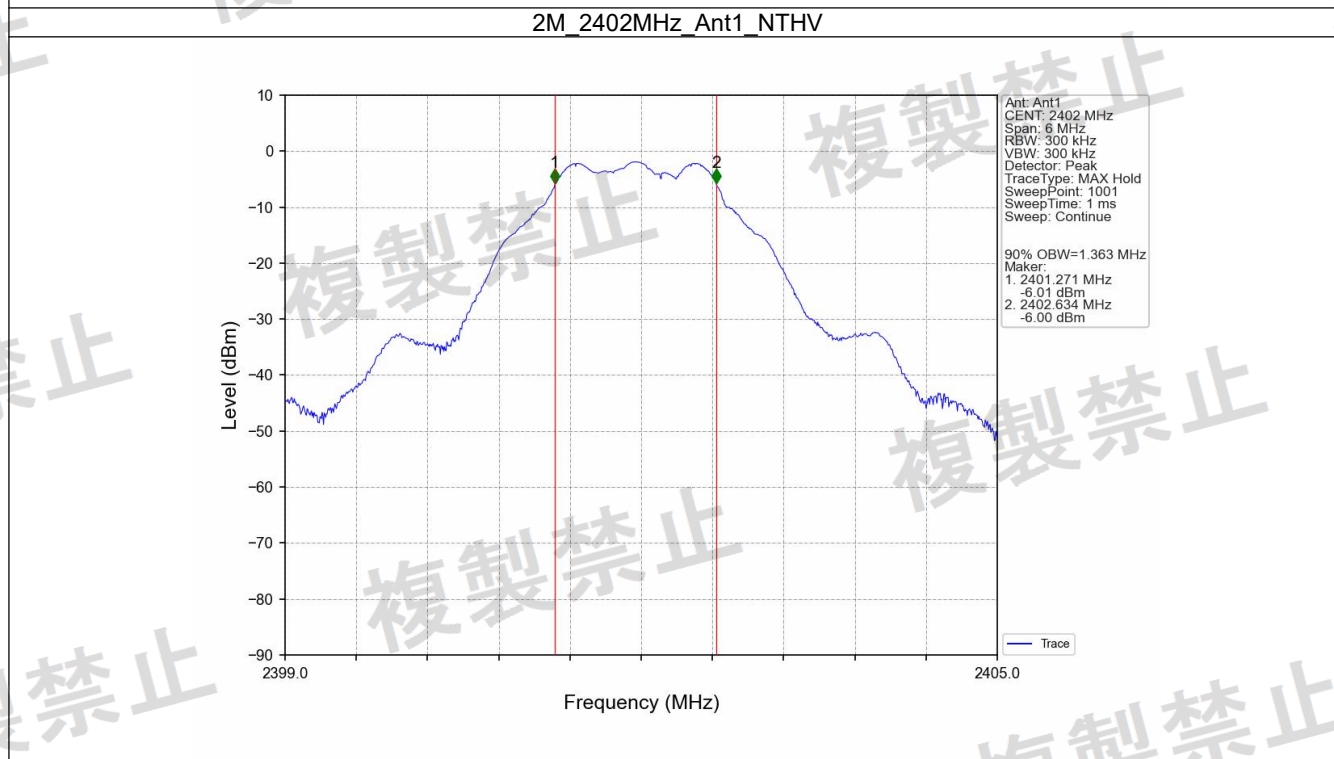
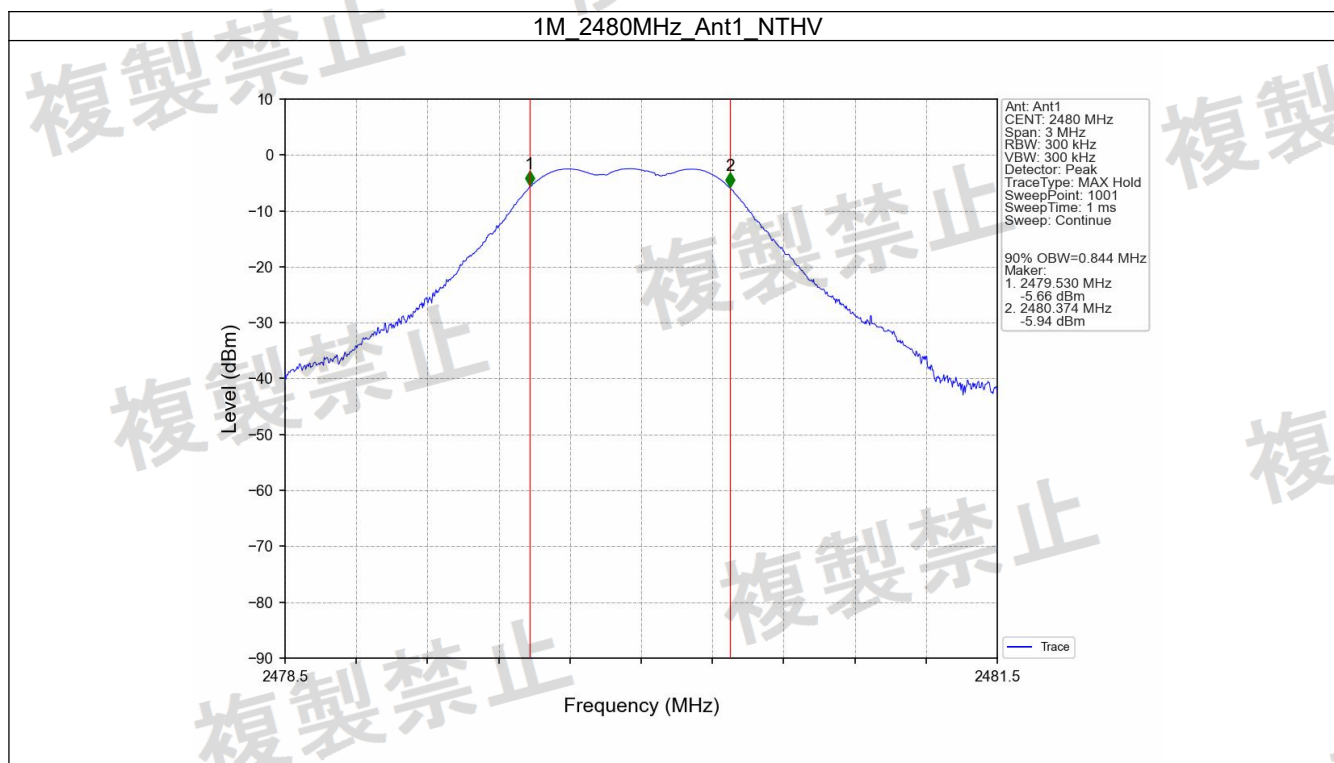


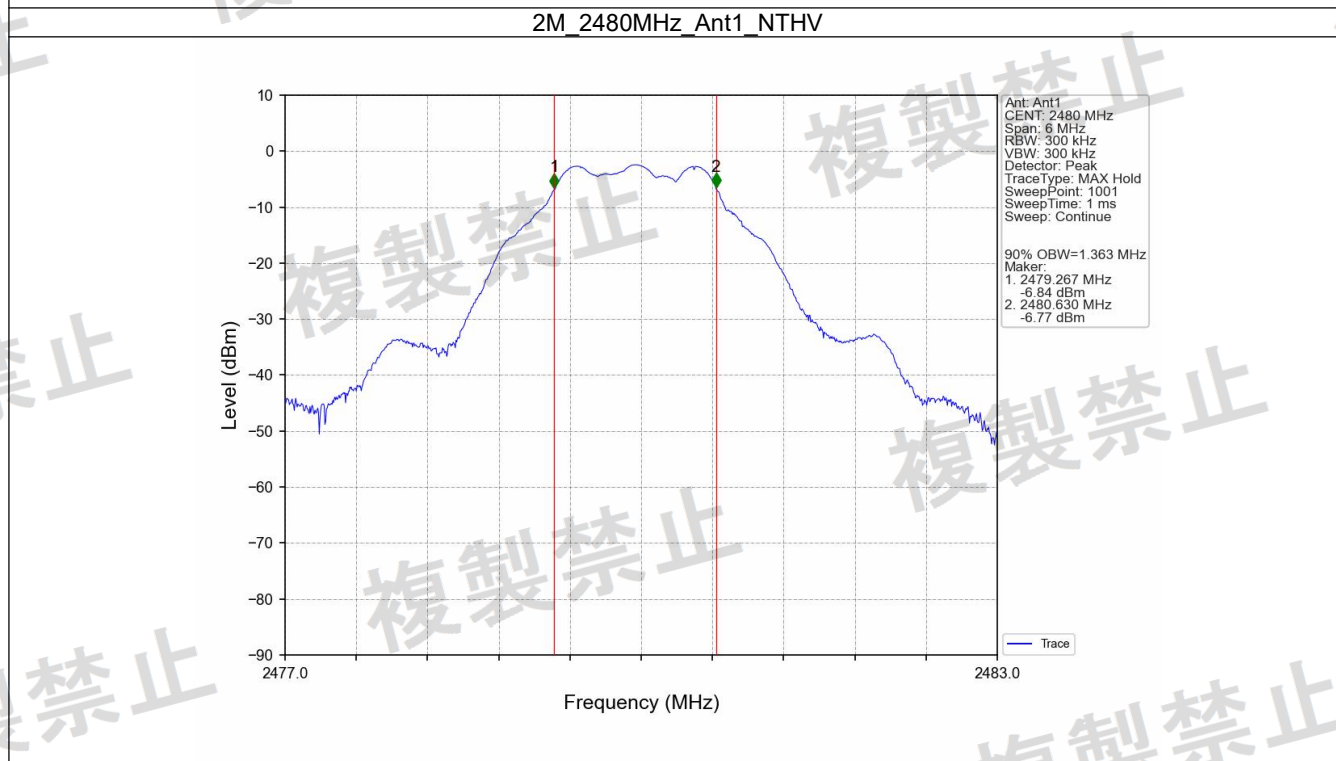
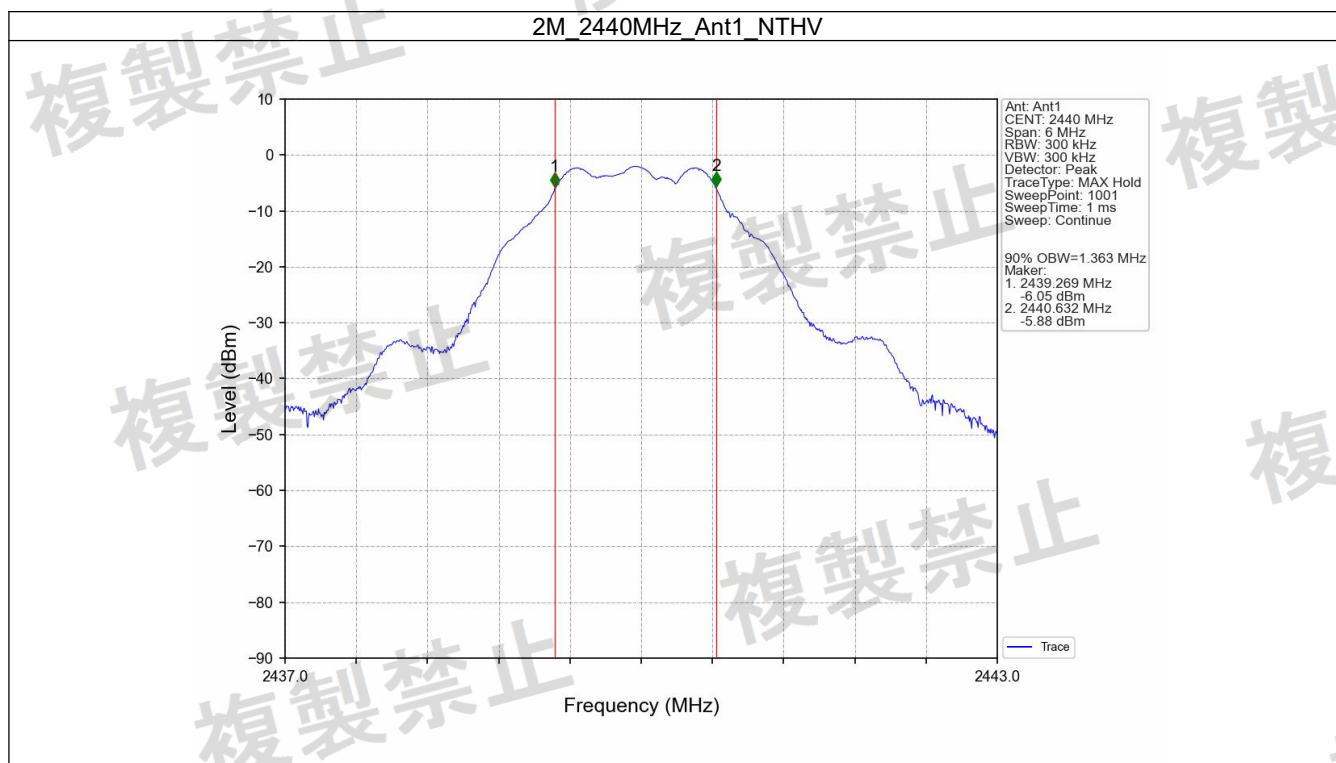












4. Antenna Power

4.1 Test Result

4.1.1 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	0.533	<=10.00	0.530	0.57	20	Pass
			2440	1	0.447	<=10.00	0.530	-15.66	20	Pass
			2480	1	0.508	<=10.00	0.530	-4.15	20	Pass
	2M	SISO	2402	1	0.408	<=10.00	0.770	-47.01	20	Pass
			2440	1	0.381	<=10.00	0.770	-50.52	20	Pass
			2480	1	0.402	<=10.00	0.770	-47.79	20	Pass
NTLV	1M	SISO	2402	1	0.574	<=10.00	0.530	8.30	20	Pass
			2440	1	0.497	<=10.00	0.530	-6.23	20	Pass
			2480	1	0.379	<=10.00	0.530	-28.49	20	Pass
	2M	SISO	2402	1	0.547	<=10.00	0.770	-28.96	20	Pass
			2440	1	0.547	<=10.00	0.770	-28.96	20	Pass
			2480	1	0.506	<=10.00	0.770	-34.29	20	Pass
NTHV	1M	SISO	2402	1	0.576	<=10.00	0.530	8.68	20	Pass
			2440	1	0.554	<=10.00	0.530	4.53	20	Pass
			2480	1	0.497	<=10.00	0.530	-6.23	20	Pass
	2M	SISO	2402	1	0.547	<=10.00	0.770	-28.96	20	Pass
			2440	1	0.549	<=10.00	0.770	-28.70	20	Pass
			2480	1	0.473	<=10.00	0.770	-38.57	20	Pass

4.1.2 EIRP

ENV	Mode	TX Type	Frequency (MHz)	ANT	Antenna Power (dBm)	EIRP (dBm)		Verdict
						Result	Limit	
NTNV	1M	SISO	2402	1	-2.73	1.27	<=12.14	Pass
			2440	1	-3.48	0.52	<=12.14	Pass
			2480	1	-2.94	1.06	<=12.14	Pass
	2M	SISO	2402	1	-3.89	0.11	<=12.14	Pass
			2440	1	-4.19	-0.19	<=12.14	Pass
			2480	1	-3.94	0.06	<=12.14	Pass
NTLV	1M	SISO	2402	1	-2.41	1.59	<=12.14	Pass
			2440	1	-3.02	0.98	<=12.14	Pass
			2480	1	-4.21	-0.21	<=12.14	Pass
	2M	SISO	2402	1	-2.62	1.38	<=12.14	Pass
			2440	1	-2.62	1.38	<=12.14	Pass
			2480	1	-2.94	1.06	<=12.14	Pass
NTHV	1M	SISO	2402	1	-2.38	1.62	<=12.14	Pass
			2440	1	-2.56	1.44	<=12.14	Pass
			2480	1	-3.02	0.98	<=12.14	Pass
	2M	SISO	2402	1	-2.62	1.38	<=12.14	Pass
			2440	1	-2.60	1.4	<=12.14	Pass
			2480	1	-3.25	0.75	<=12.14	Pass

Note: ANT Gain=4.0dBi

EIRP(dBm)=Conduction Power(dBm)+ANT Gain

5. Spurious Emission Intensity

5.1 Test Result

5.1.1 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	168.5	-39.19	0.121	/	/	2.5	Pass
				2387	2400	2399.974	-30.03	0.993	/	/	25	Pass
				2483.5	2496.5	2495.733	-58.84	0.001	/	/	25	Pass
				2496.5	12500	7205.5	-40.29	0.094	/	/	2.5	Pass
		2440	1	30	2387	66	-39.42	0.114	/	/	2.5	Pass
				2387	2400	2392.187	-61.68	0.001	/	/	25	Pass
				2483.5	2496.5	2486.672	-62.62	0.001	/	/	25	Pass
				2496.5	12500	7321	-40.21	0.095	/	/	2.5	Pass
		2480	1	30	2387	144.5	-39.84	0.104	/	/	2.5	Pass
				2387	2400	2395.736	-64.16	0.000	/	/	25	Pass
				2483.5	2496.5	2483.526	-38.28	0.149	/	/	25	Pass
				2496.5	12500	7439.5	-39.60	0.110	/	/	2.5	Pass
2M	SISO	2402	1	30	2387	41.5	-40.16	0.096	/	/	2.5	Pass
				2387	2400	2399.987	-23.44	4.529	/	/	25	Pass
				2483.5	2496.5	2491.911	-64.40	0.000	/	/	25	Pass
				2496.5	12500	7206	-40.97	0.080	/	/	2.5	Pass
		2440	1	30	2387	168.5	-40.35	0.092	/	/	2.5	Pass
				2387	2400	2398.765	-61.75	0.001	/	/	25	Pass
				2483.5	2496.5	2495.603	-63.37	0.000	/	/	25	Pass
				2496.5	12500	7320	-40.19	0.096	/	/	2.5	Pass
		2480	1	30	2387	42	-39.48	0.113	/	/	2.5	Pass
				2387	2400	2393.695	-64.59	0.000	/	/	25	Pass
				2483.5	2496.5	2483.604	-38.55	0.140	/	/	25	Pass
				2496.5	12500	7440	-39.46	0.113	/	/	2.5	Pass

5.1.2 TxSe_NTLV

NTLV												
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	2385	-52.66	0.005	/	/	2.5	Pass
				2387	2400	2399.922	-30.53	0.885	/	/	25	Pass
				2483.5	2496.5	2489.519	-58.87	0.001	/	/	25	Pass
				2496.5	12500	7205.5	-40.62	0.087	/	/	2.5	Pass
		2440	1	30	2387	2318.5	-58.15	0.002	/	/	2.5	Pass
				2387	2400	2399.35	-58.32	0.001	/	/	25	Pass
				2483.5	2496.5	2495.395	-58.45	0.001	/	/	25	Pass
				2496.5	12500	7319	-45.22	0.030	/	/	2.5	Pass
		2480	1	30	2387	2352.5	-61.49	0.001	/	/	2.5	Pass
				2387	2400	2395.125	-64.00	0.000	/	/	25	Pass
				2483.5	2496.5	2483.565	-39.93	0.102	/	/	25	Pass

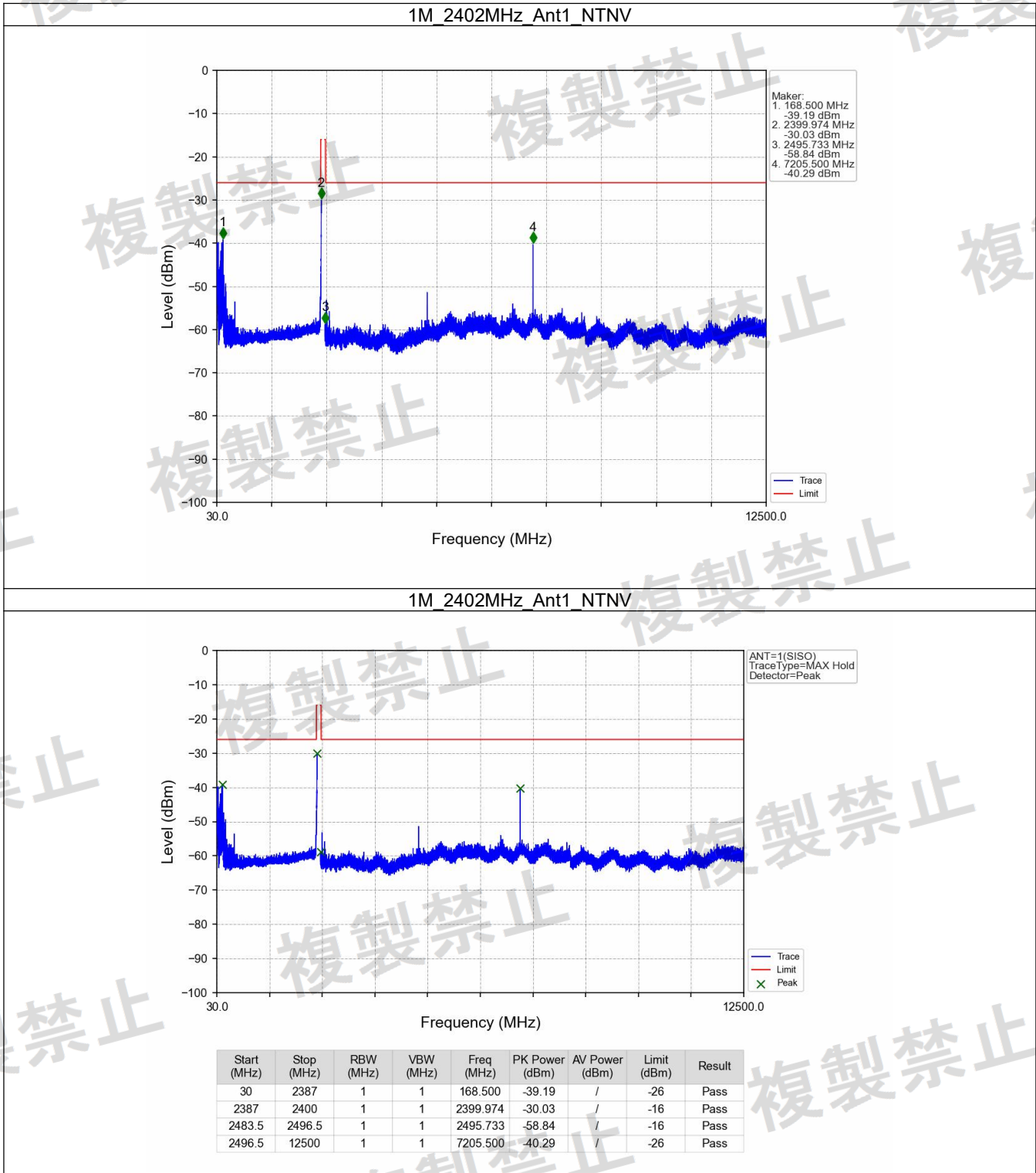
2M	SISO	2402	1	2496.5	12500	7439.5	-48.27	0.015	/	/	2.5	Pass
				30	2387	2386.5	-51.94	0.006	/	/	2.5	Pass
				2387	2400	2399.987	-23.19	4.797	/	/	25	Pass
				2483.5	2496.5	2483.929	-58.61	0.001	/	/	25	Pass
		2440	1	2496.5	12500	7204.5	-41.01	0.079	/	/	2.5	Pass
				30	2387	2150.5	-57.72	0.002	/	/	2.5	Pass
				2387	2400	2396.165	-58.52	0.001	/	/	25	Pass
				2483.5	2496.5	2491.157	-59.07	0.001	/	/	25	Pass
		2480	1	2496.5	12500	7318.5	-45.58	0.028	/	/	2.5	Pass
				30	2387	2329	-63.05	0.000	/	/	2.5	Pass
				2387	2400	2389.249	-63.78	0.000	/	/	25	Pass
				2483.5	2496.5	2483.539	-40.36	0.092	/	/	25	Pass
				2496.5	12500	7438.5	-48.43	0.014	/	/	2.5	Pass

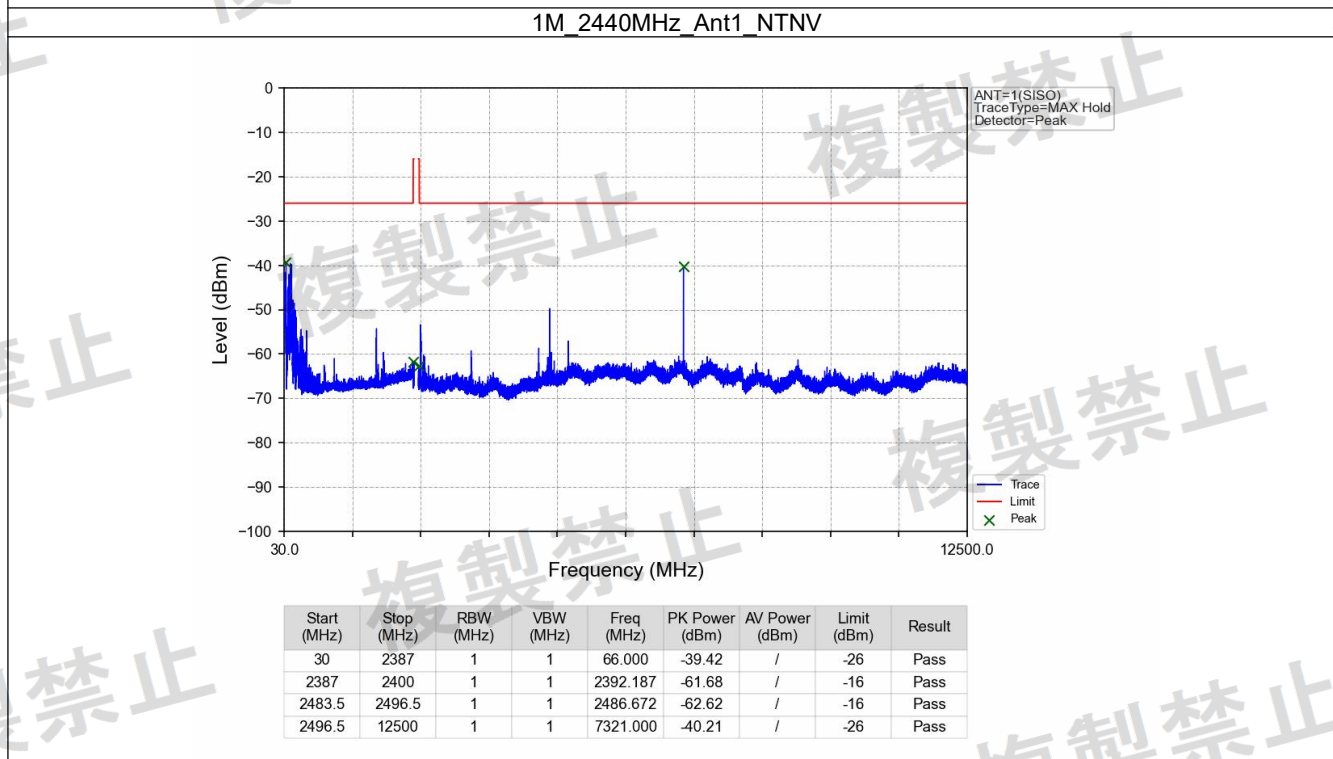
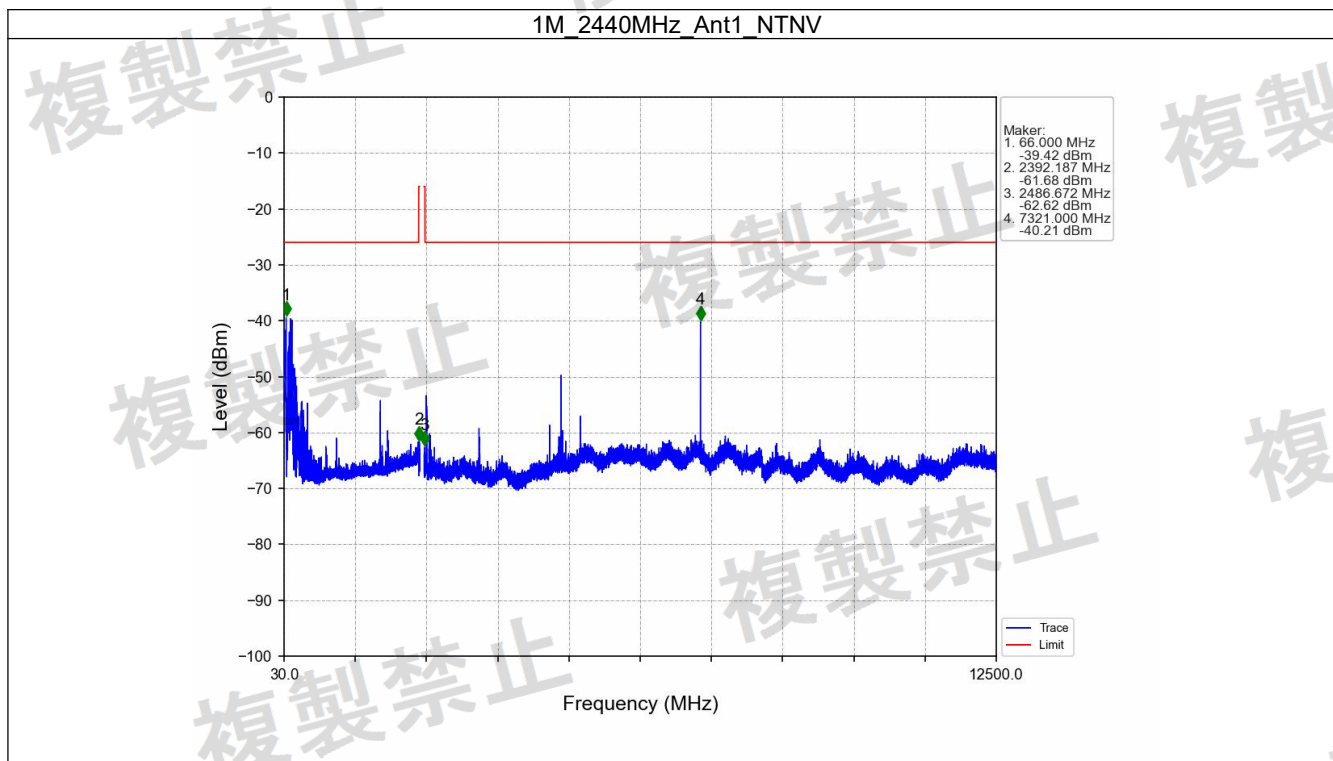
5.1.3 TxSe_NTHV

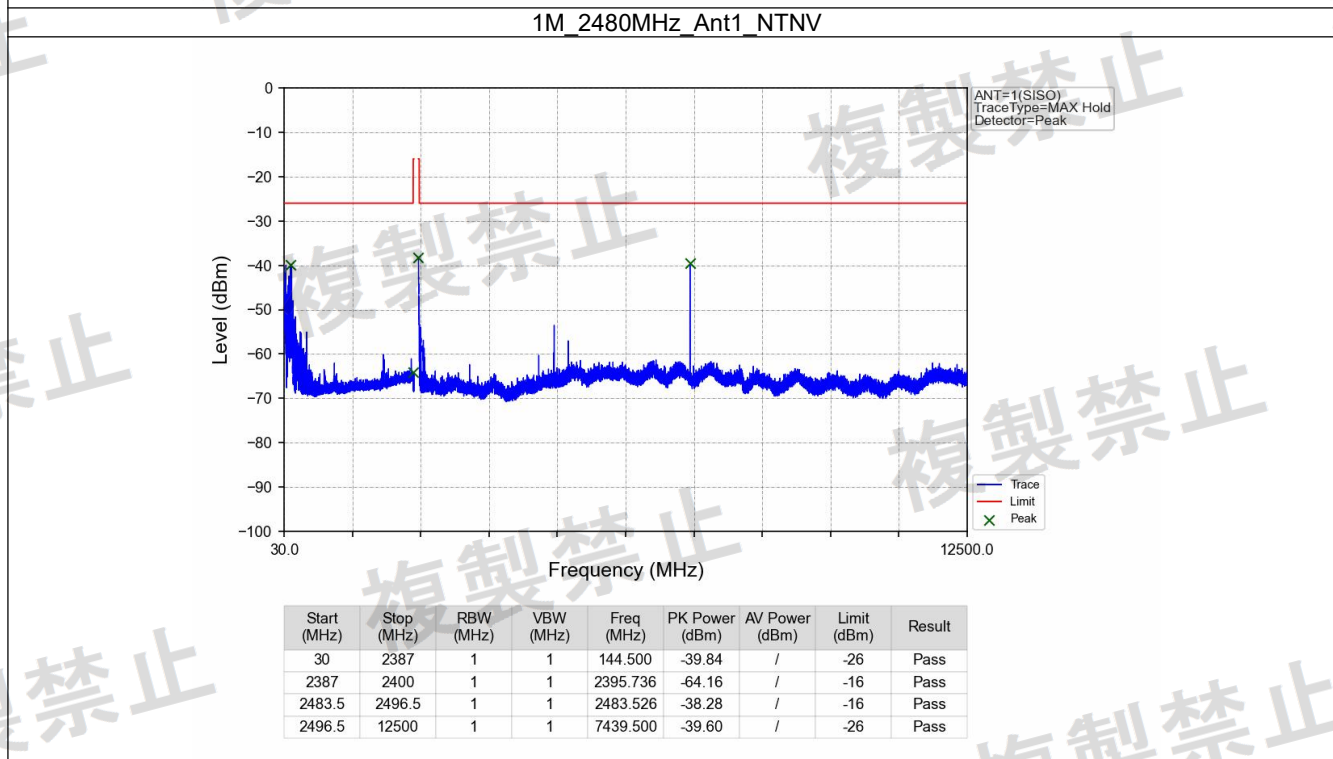
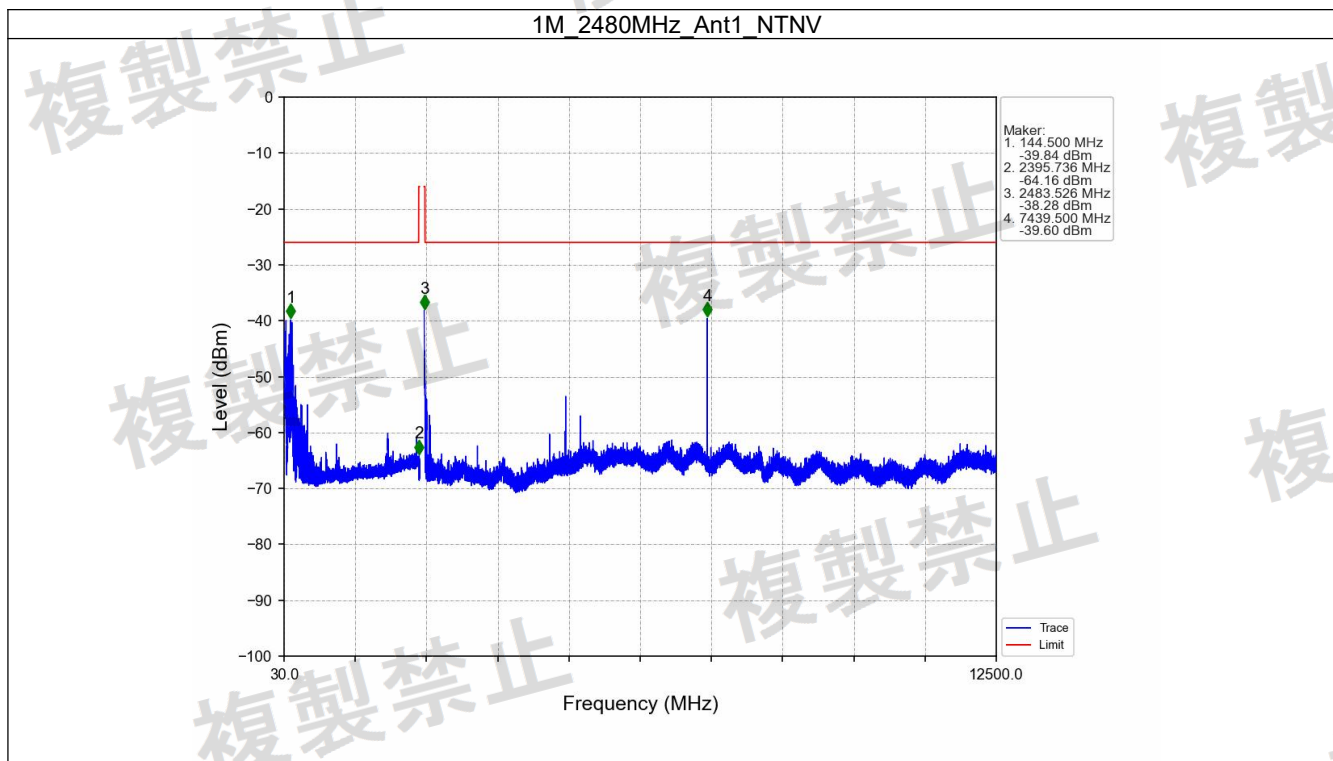
NTHV												
Mode	TX Type	Freq. (MHz)	ANT	Freq. Range		Marker					Limit (uW /MHz)	Verdict
				Start (MHz)	Stop (MHz)	Freq. (MHz)	PK Power (dBm /MHz)	PK Power (uW /MHz)	AV Power (dBm /MHz)	AV Power (uW /MHz)		
1M	SISO	2402	1	30	2387	2383.5	-54.44	0.004	/	/	2.5	Pass
				2387	2400	2399.974	-30.42	0.908	/	/	25	Pass
				2483.5	2496.5	2489.922	-58.47	0.001	/	/	25	Pass
				2496.5	12500	7205.5	-40.67	0.086	/	/	2.5	Pass
		2440	1	30	2387	2289	-57.87	0.002	/	/	2.5	Pass
				2387	2400	2392.135	-58.22	0.002	/	/	25	Pass
				2483.5	2496.5	2496.136	-57.96	0.002	/	/	25	Pass
				2496.5	12500	7321	-45.48	0.028	/	/	2.5	Pass
		2480	1	30	2387	2352.5	-61.93	0.001	/	/	2.5	Pass
				2387	2400	2394.839	-64.17	0.000	/	/	25	Pass
				2483.5	2496.5	2483.526	-39.90	0.102	/	/	25	Pass
				2496.5	12500	7440	-48.20	0.015	/	/	2.5	Pass
2M	SISO	2402	1	30	2387	2383	-51.50	0.007	/	/	2.5	Pass
				2387	2400	2399.987	-23.07	4.932	/	/	25	Pass
				2483.5	2496.5	2491.768	-58.43	0.001	/	/	25	Pass
				2496.5	12500	7206	-40.60	0.087	/	/	2.5	Pass
		2440	1	30	2387	2376	-57.66	0.002	/	/	2.5	Pass
				2387	2400	2397.595	-57.41	0.002	/	/	25	Pass
				2483.5	2496.5	2491.729	-59.04	0.001	/	/	25	Pass
				2496.5	12500	7320	-44.80	0.033	/	/	2.5	Pass
		2480	1	30	2387	2352.5	-63.02	0.000	/	/	2.5	Pass
				2387	2400	2394.748	-64.01	0.000	/	/	25	Pass
				2483.5	2496.5	2483.552	-40.26	0.094	/	/	25	Pass
				2496.5	12500	7438.5	-48.63	0.014	/	/	2.5	Pass

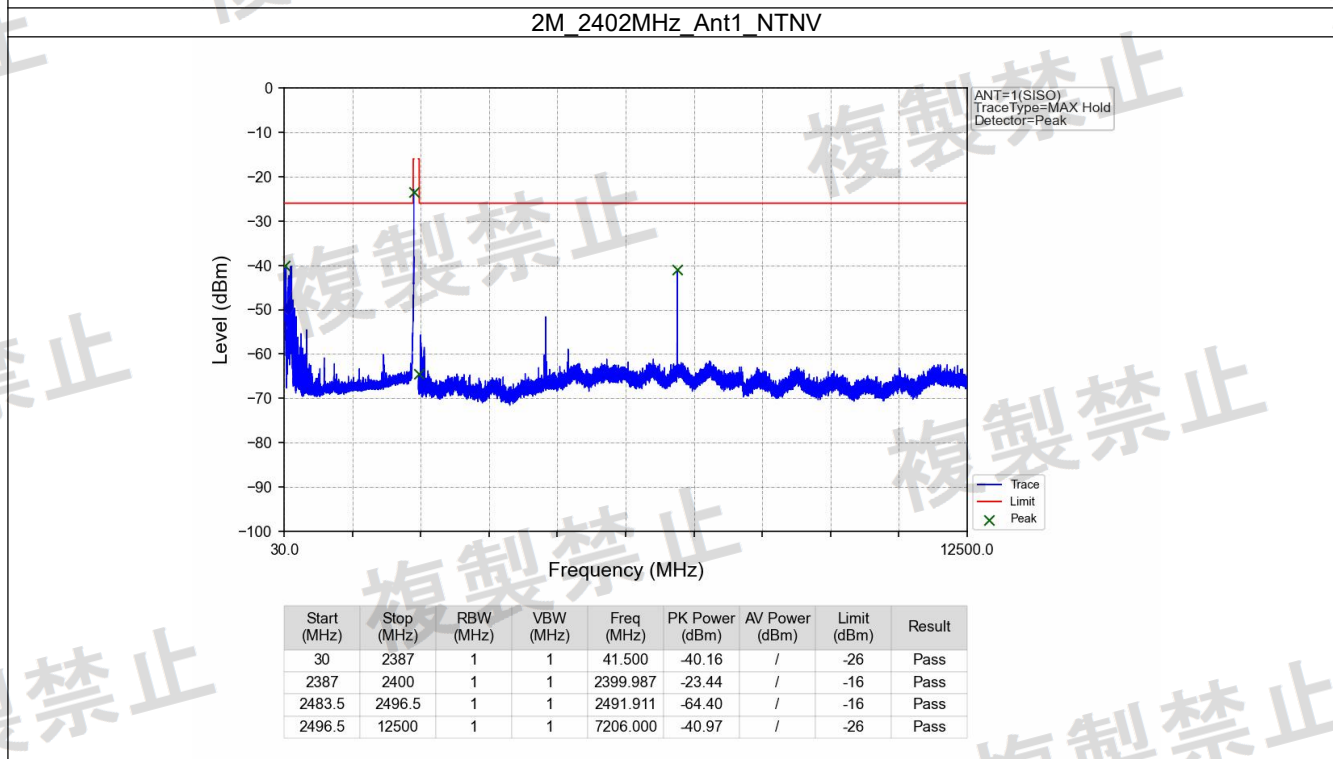
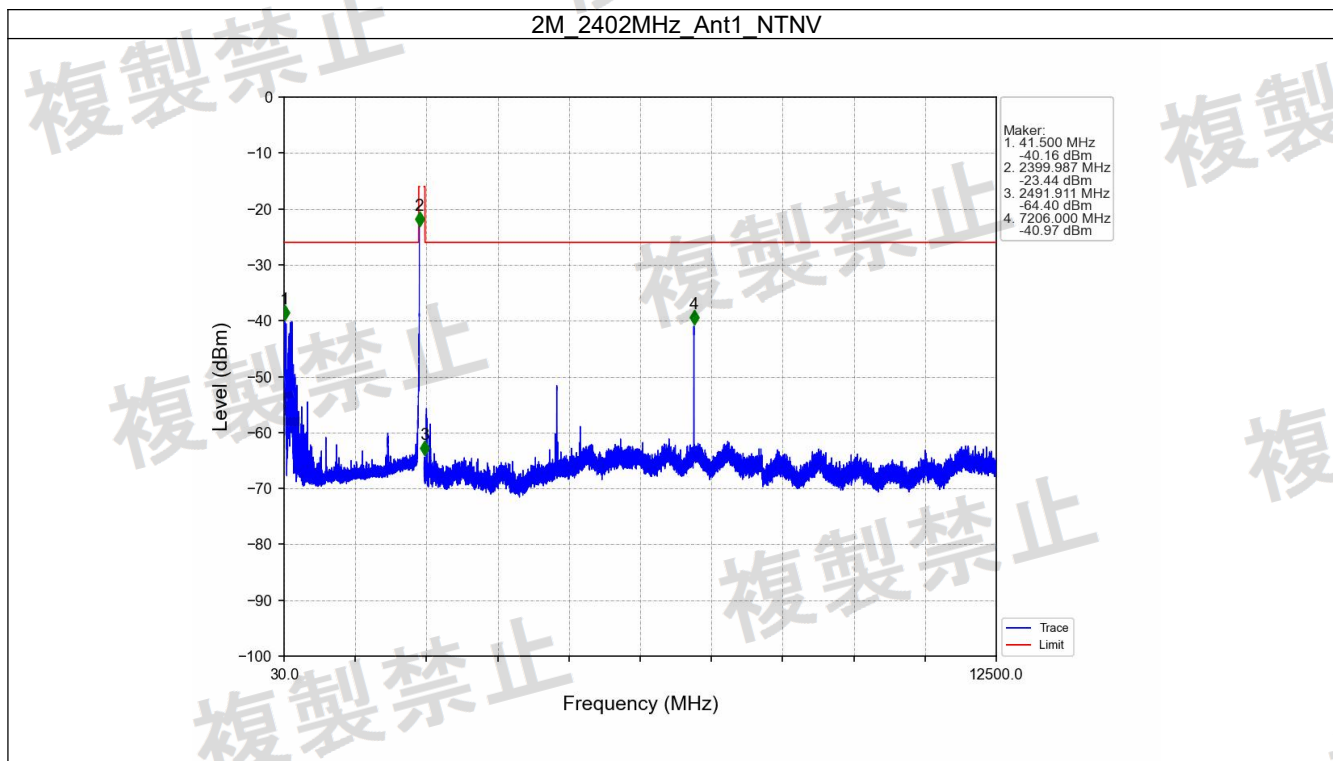
5.2 Test Graph

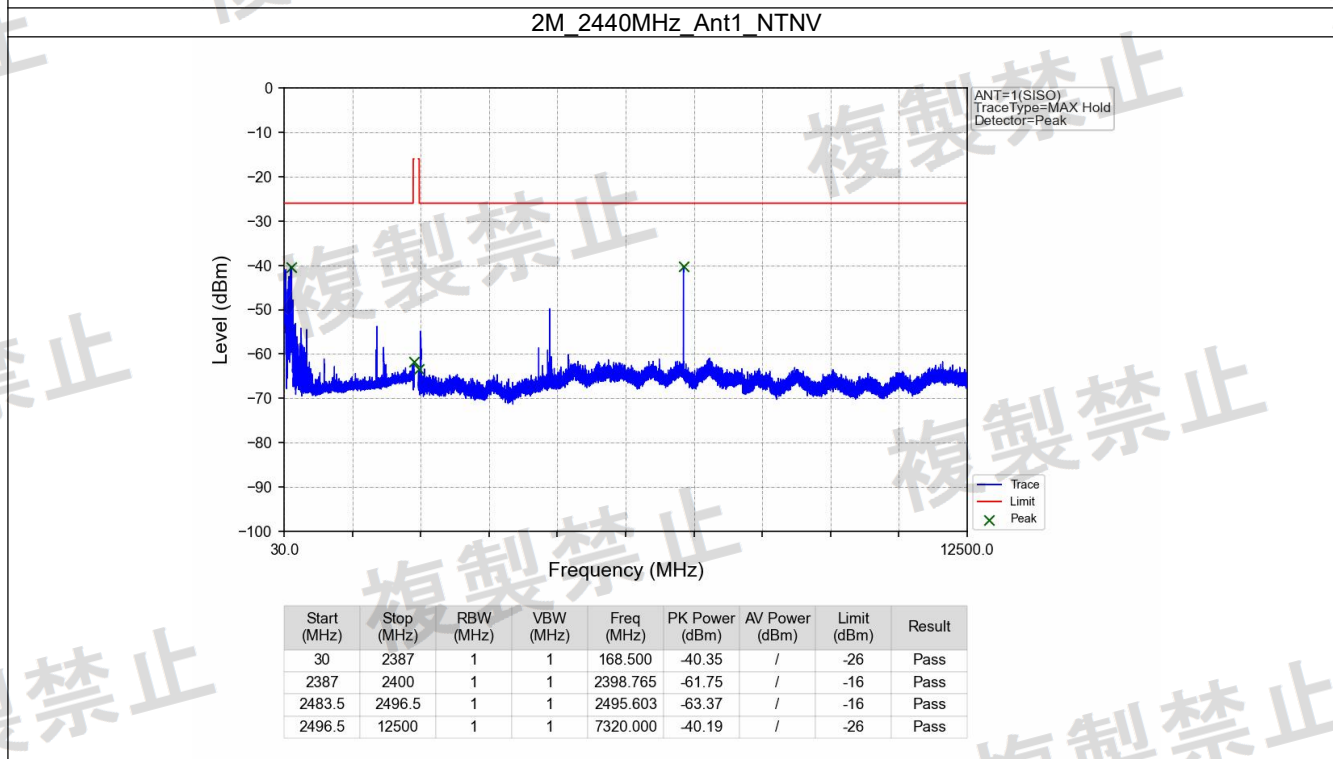
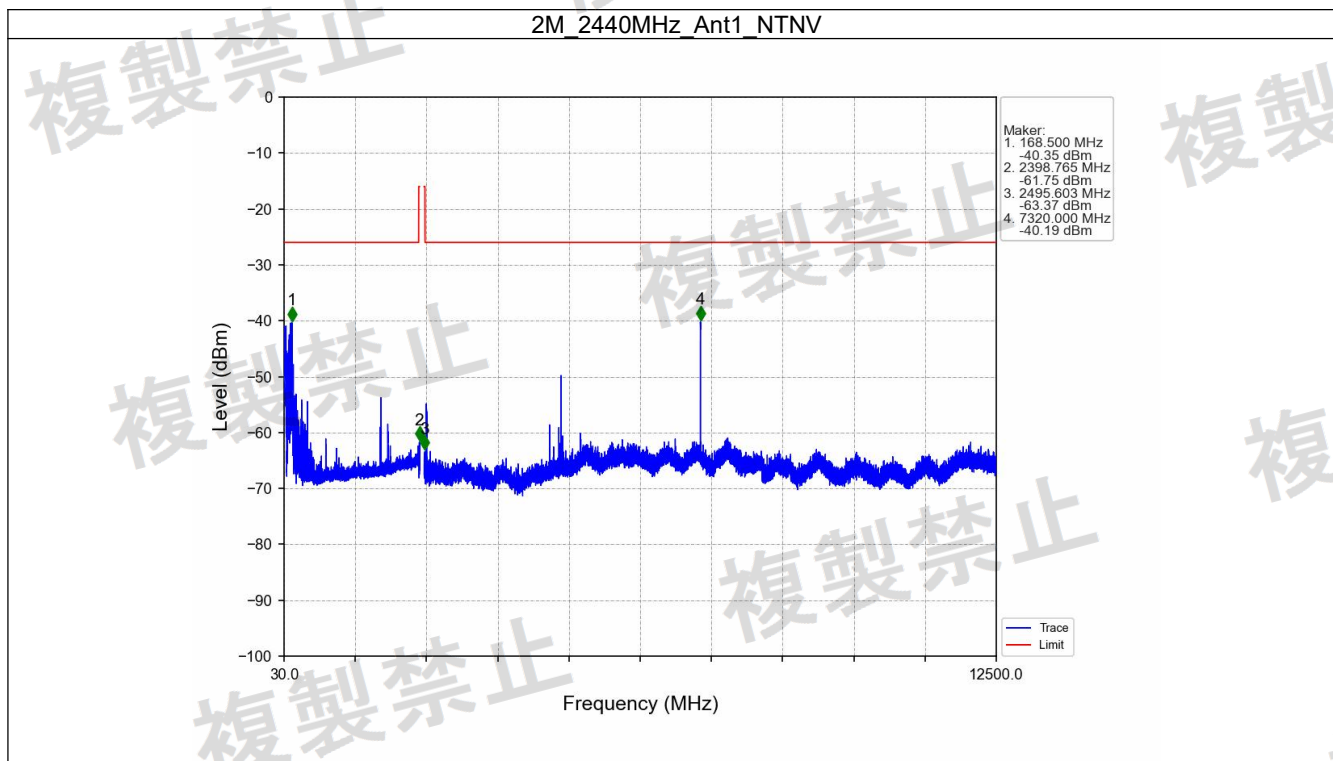
5.2.1 TxSe_NTNV

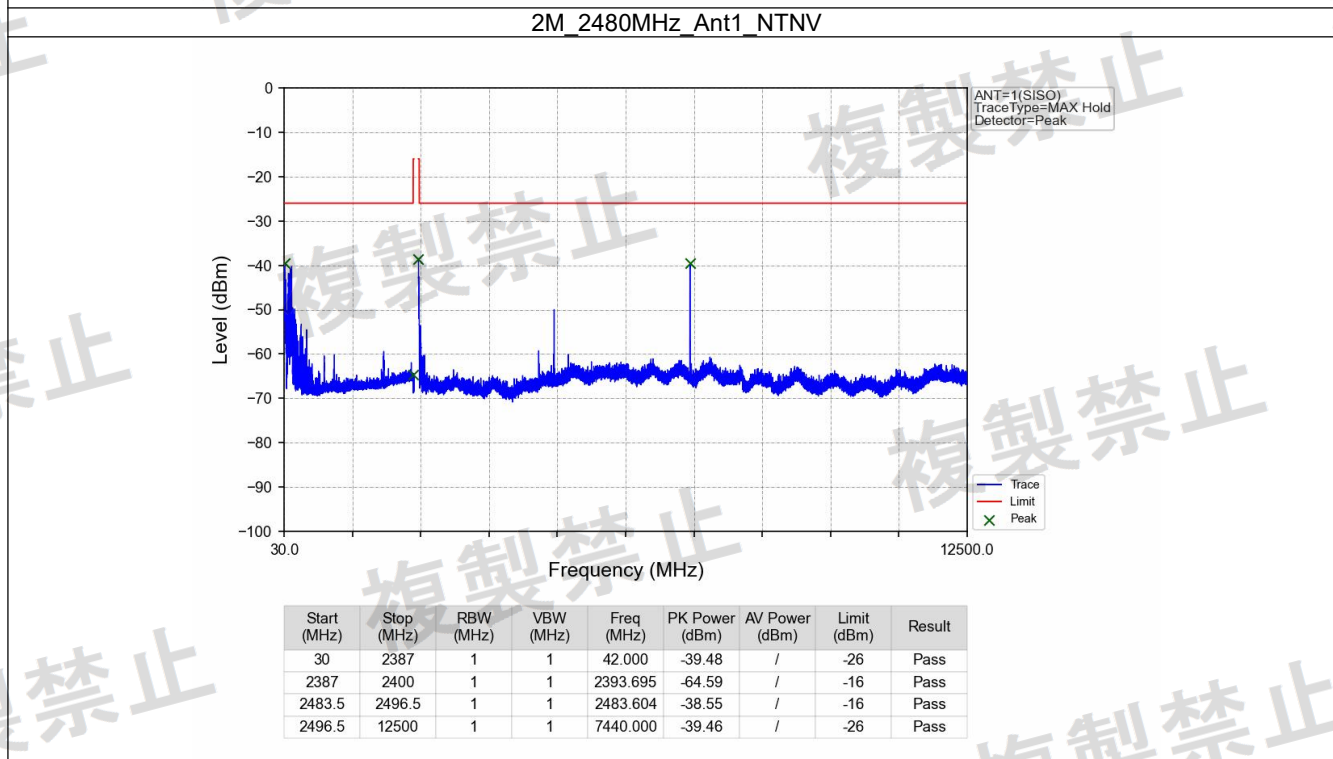
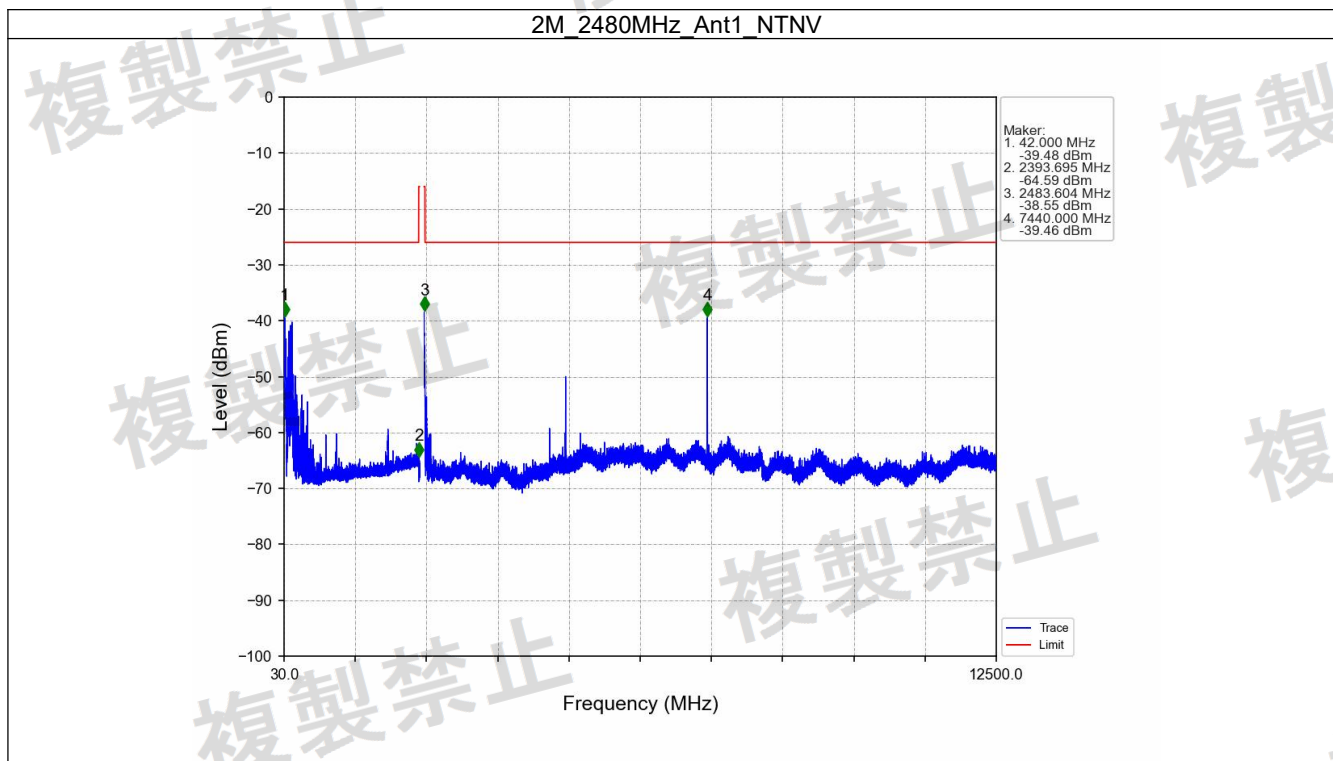




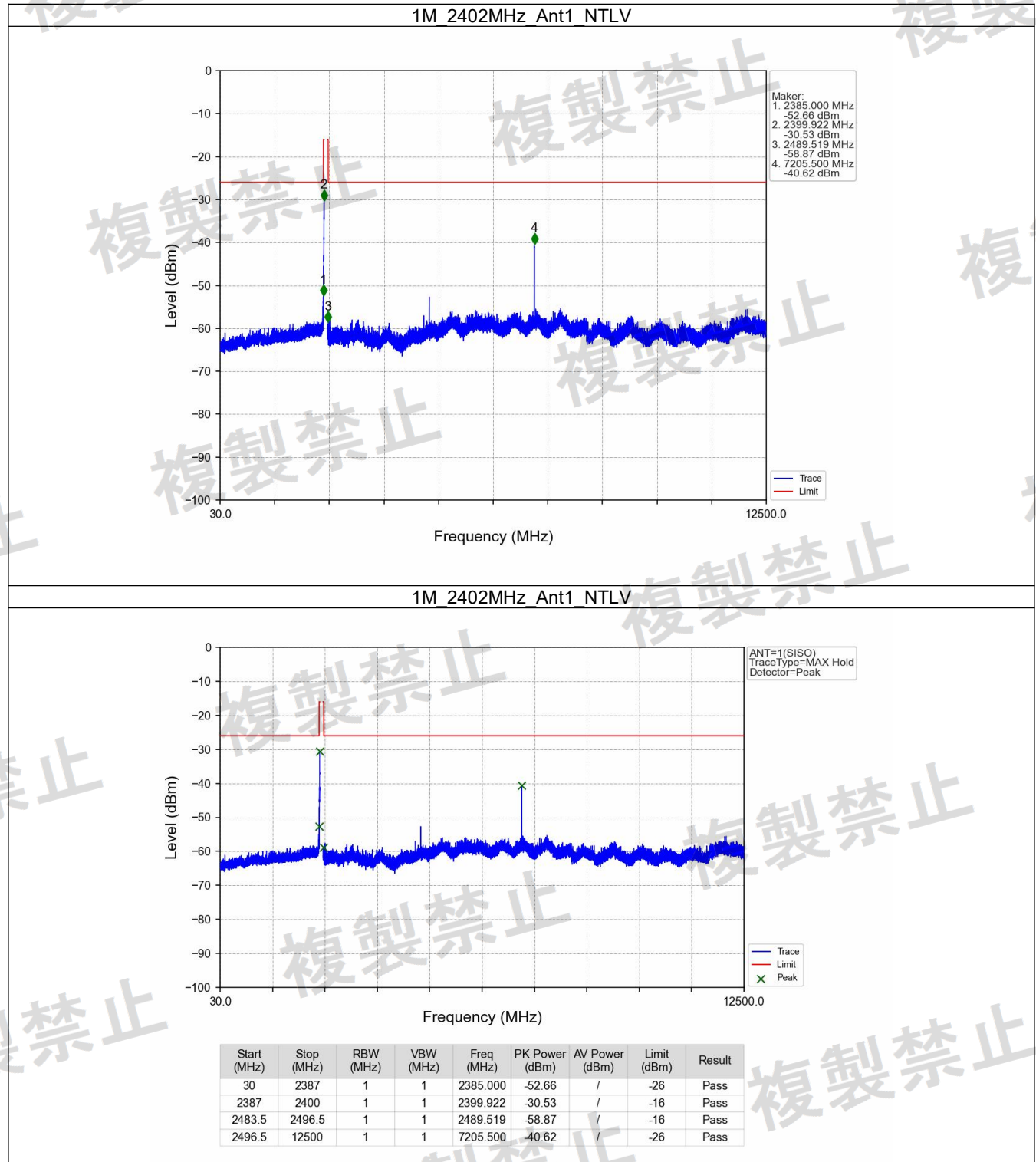


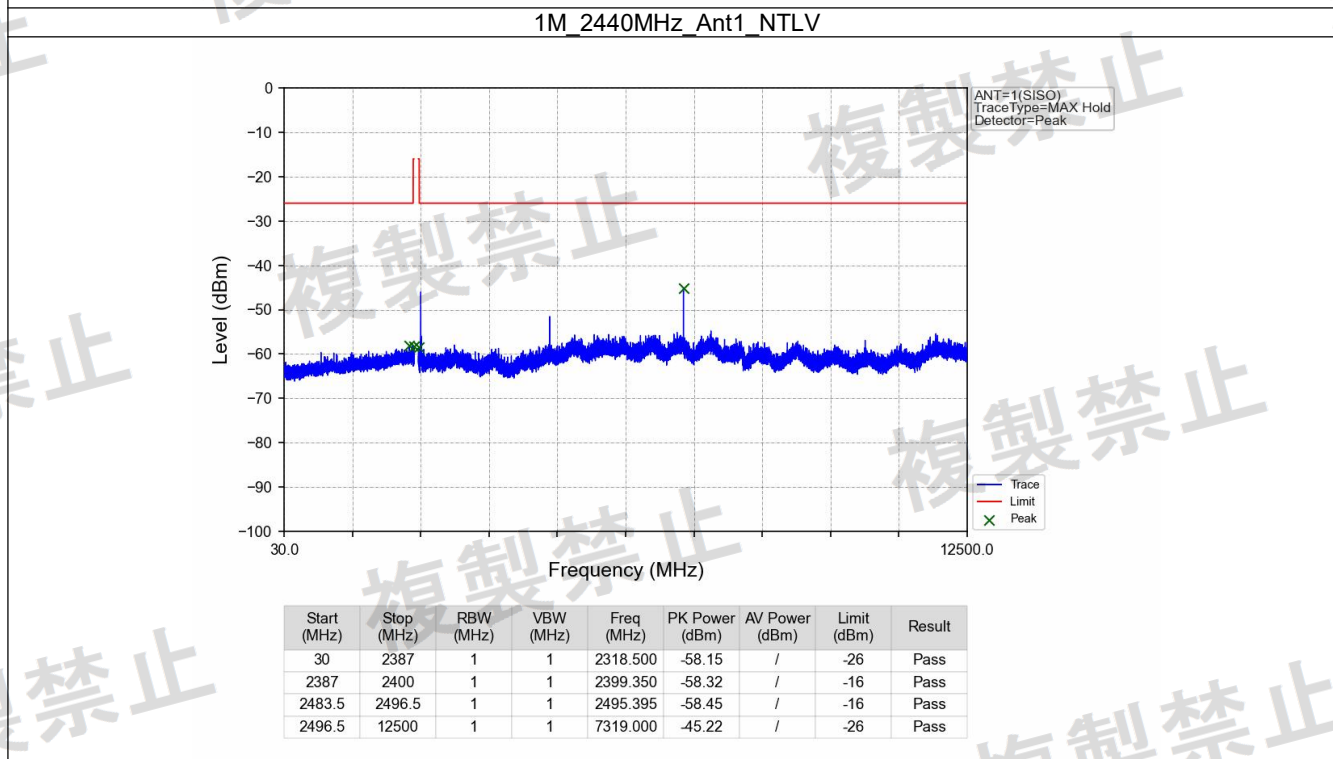
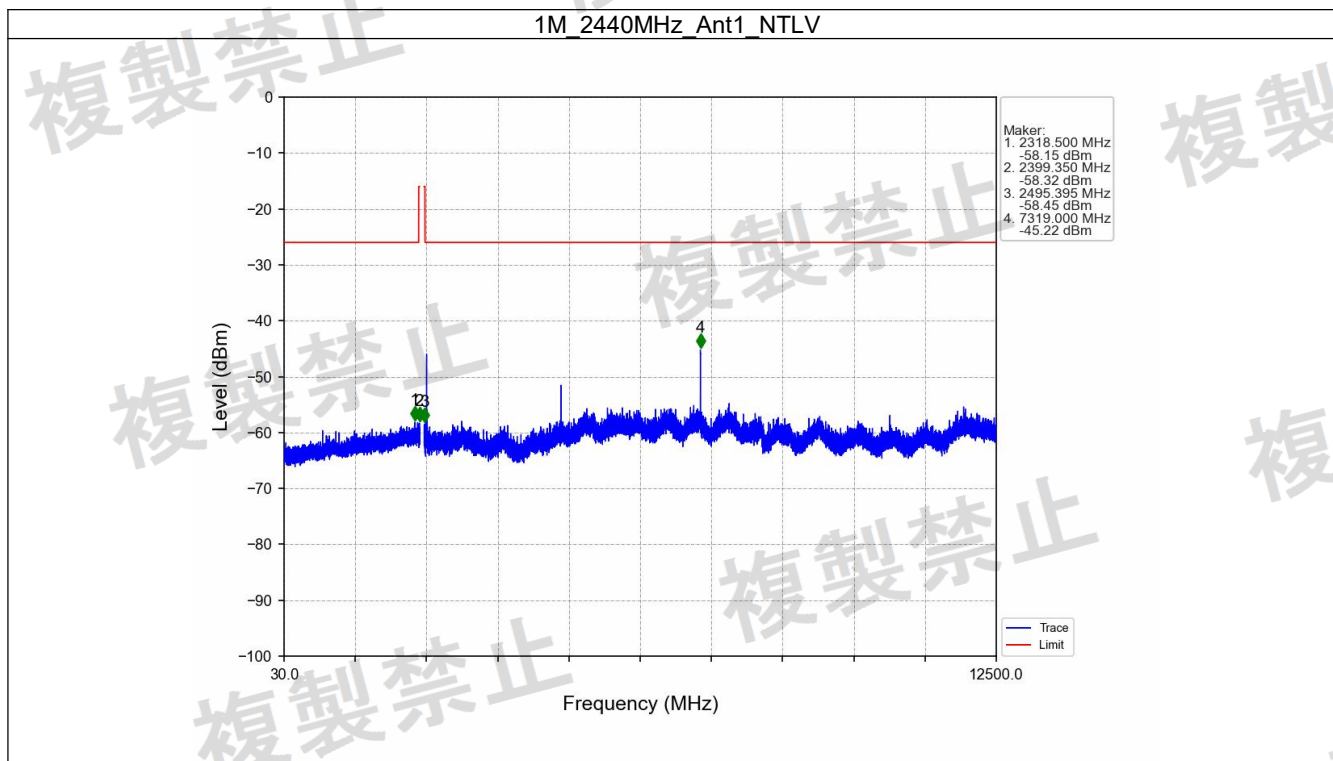


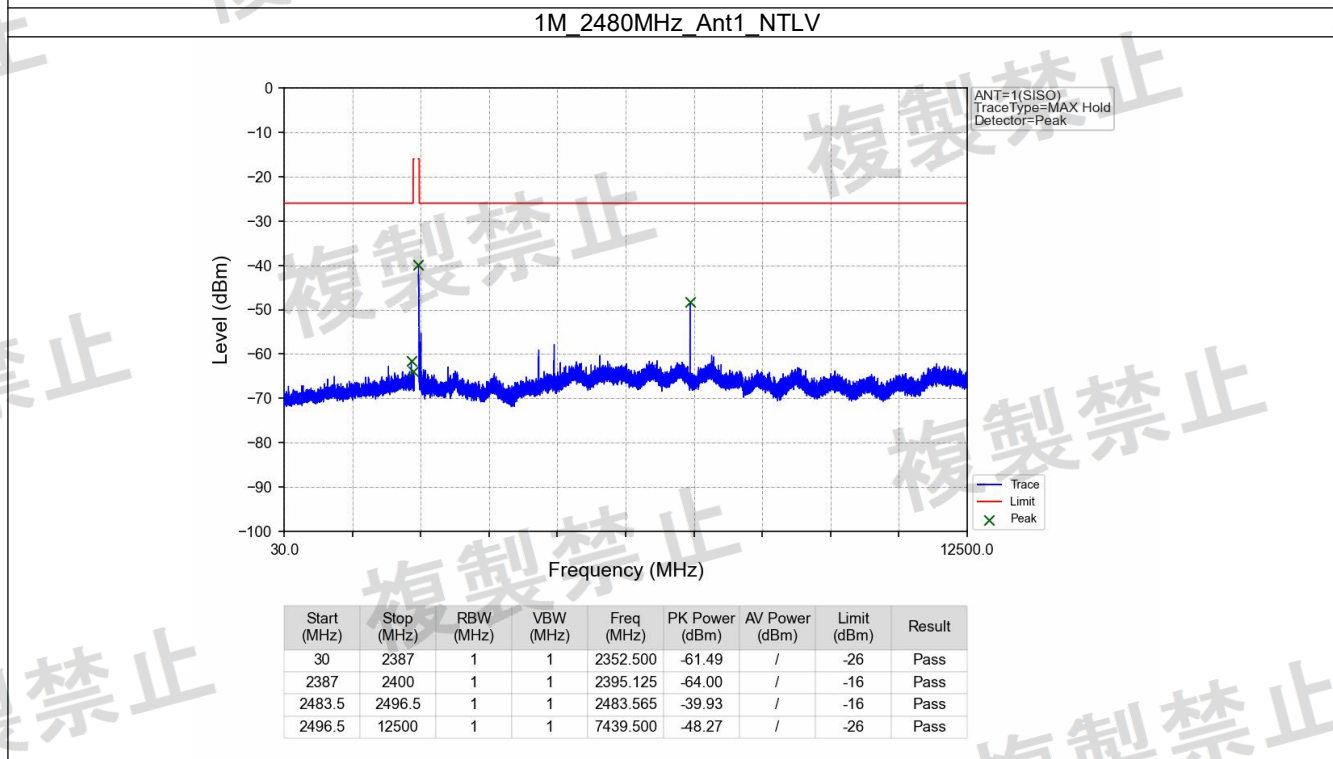
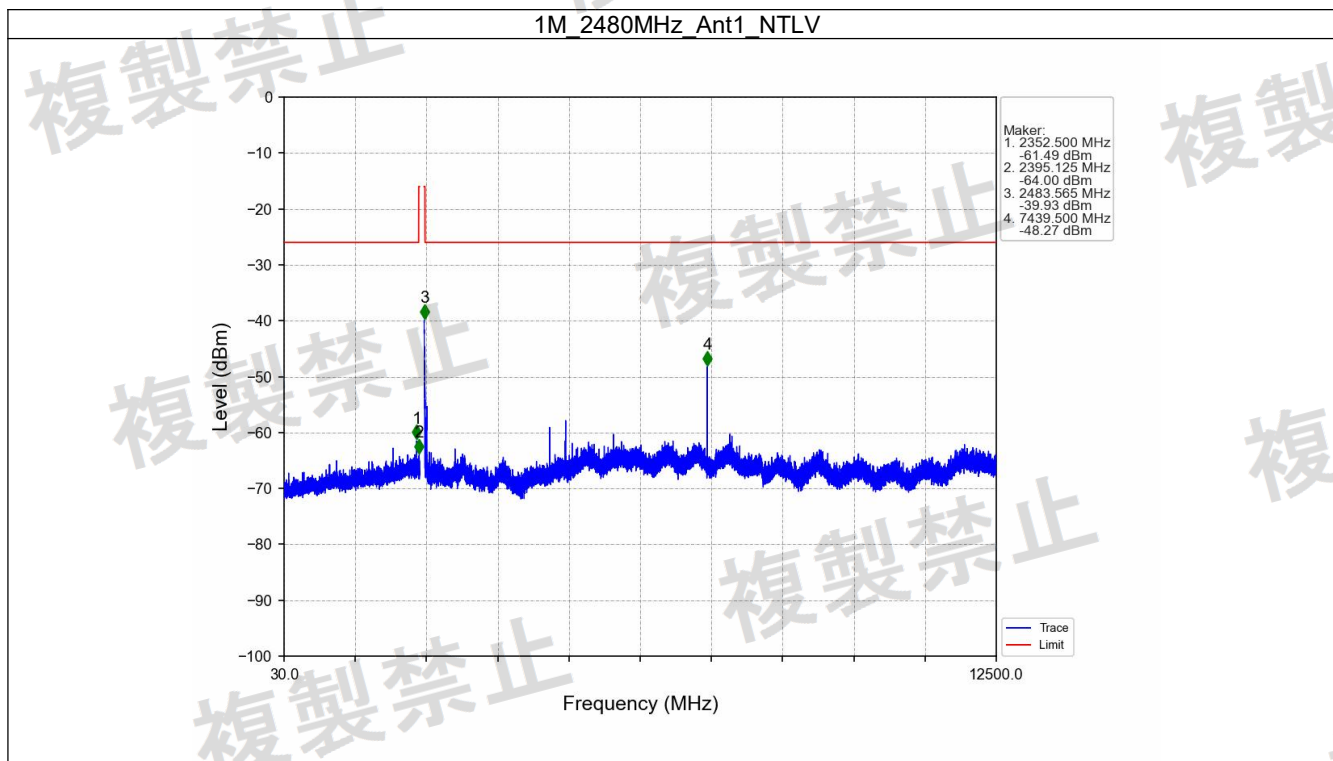


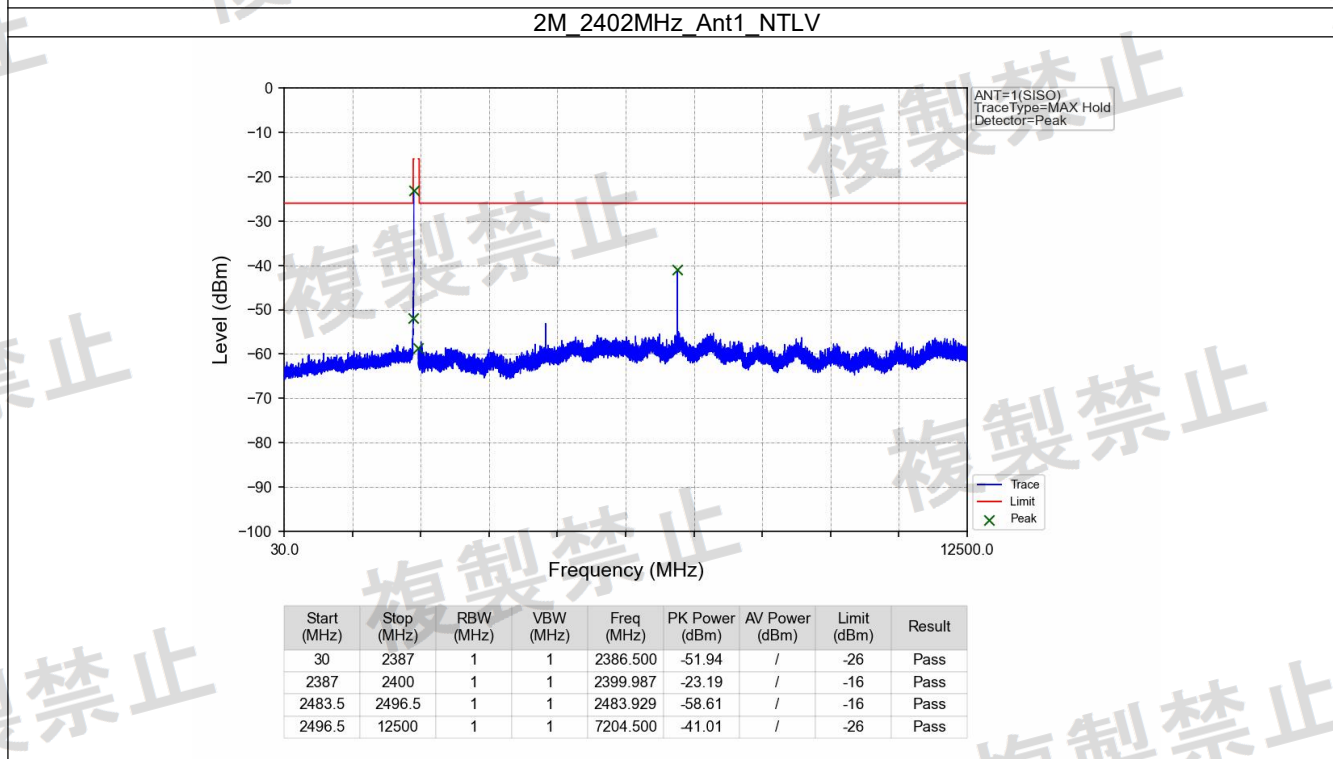
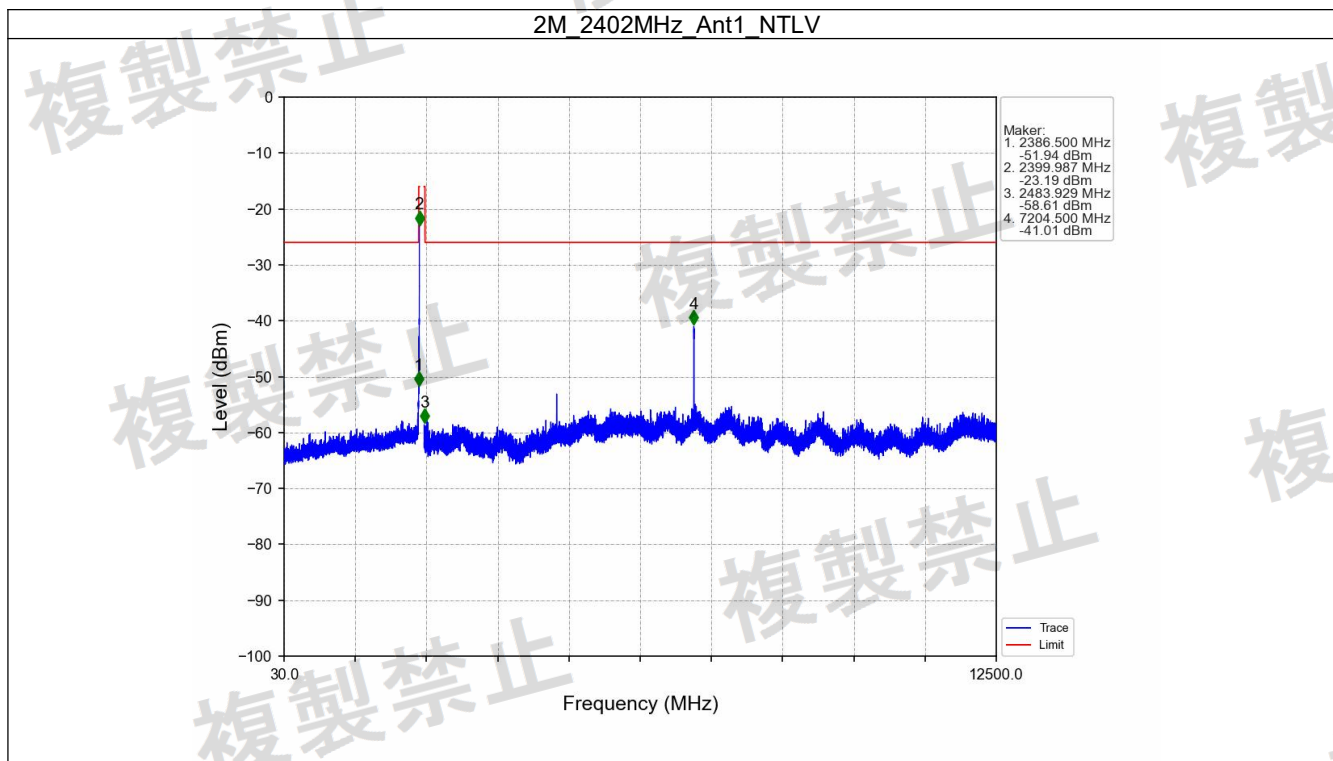


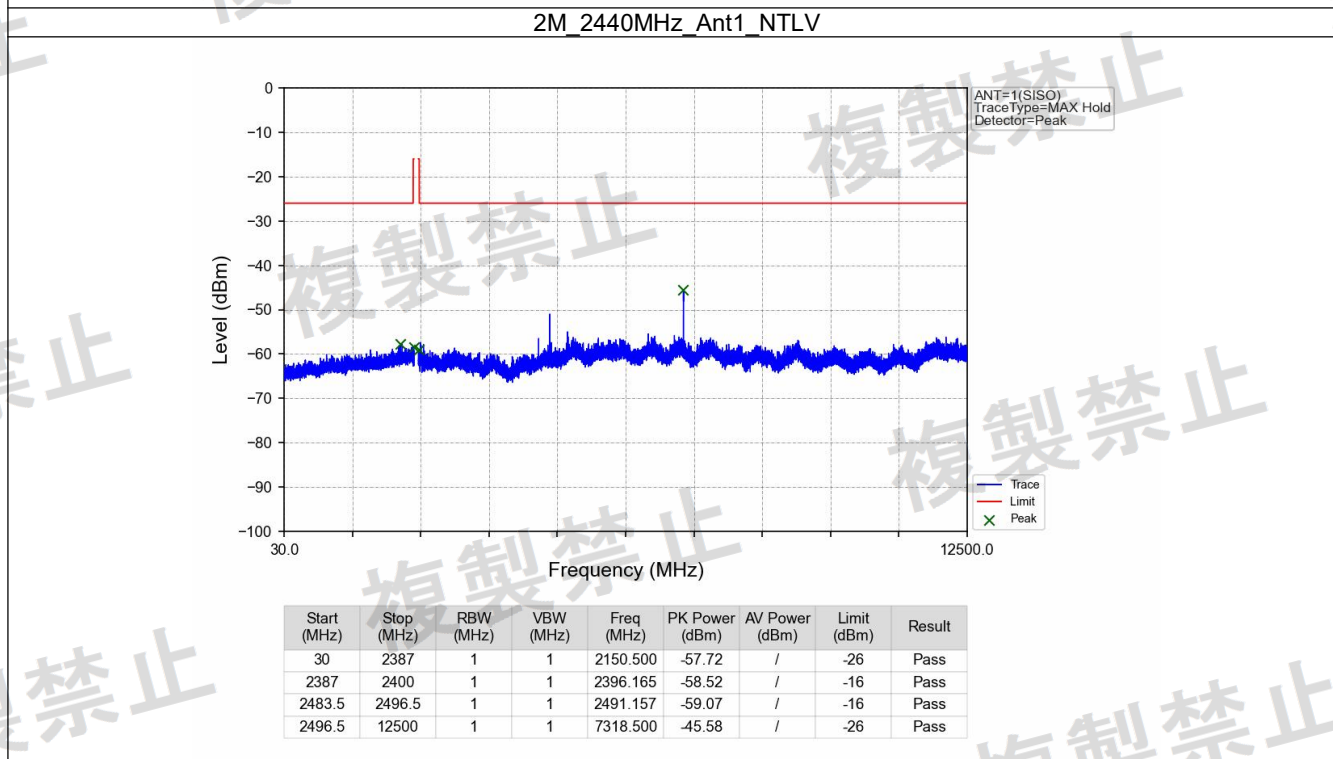
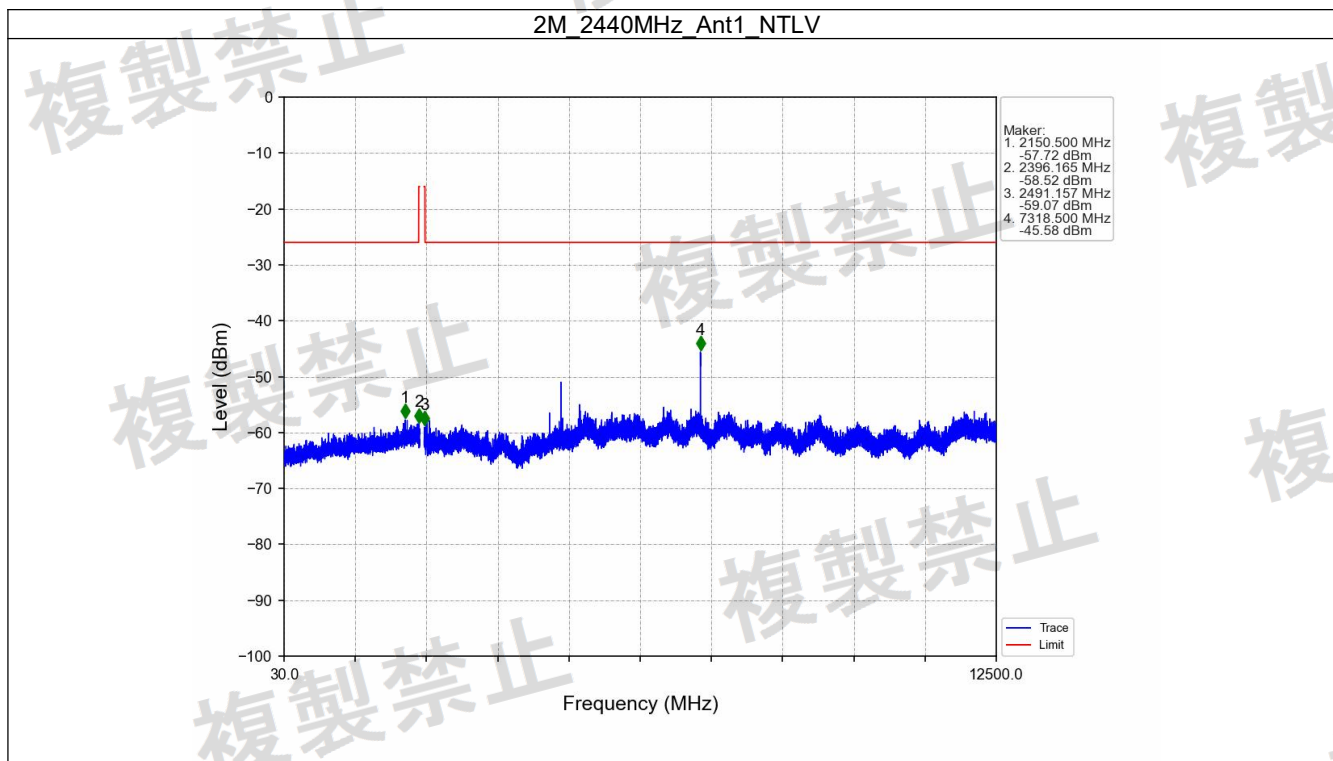
5.2.2 TxSe_NTLV

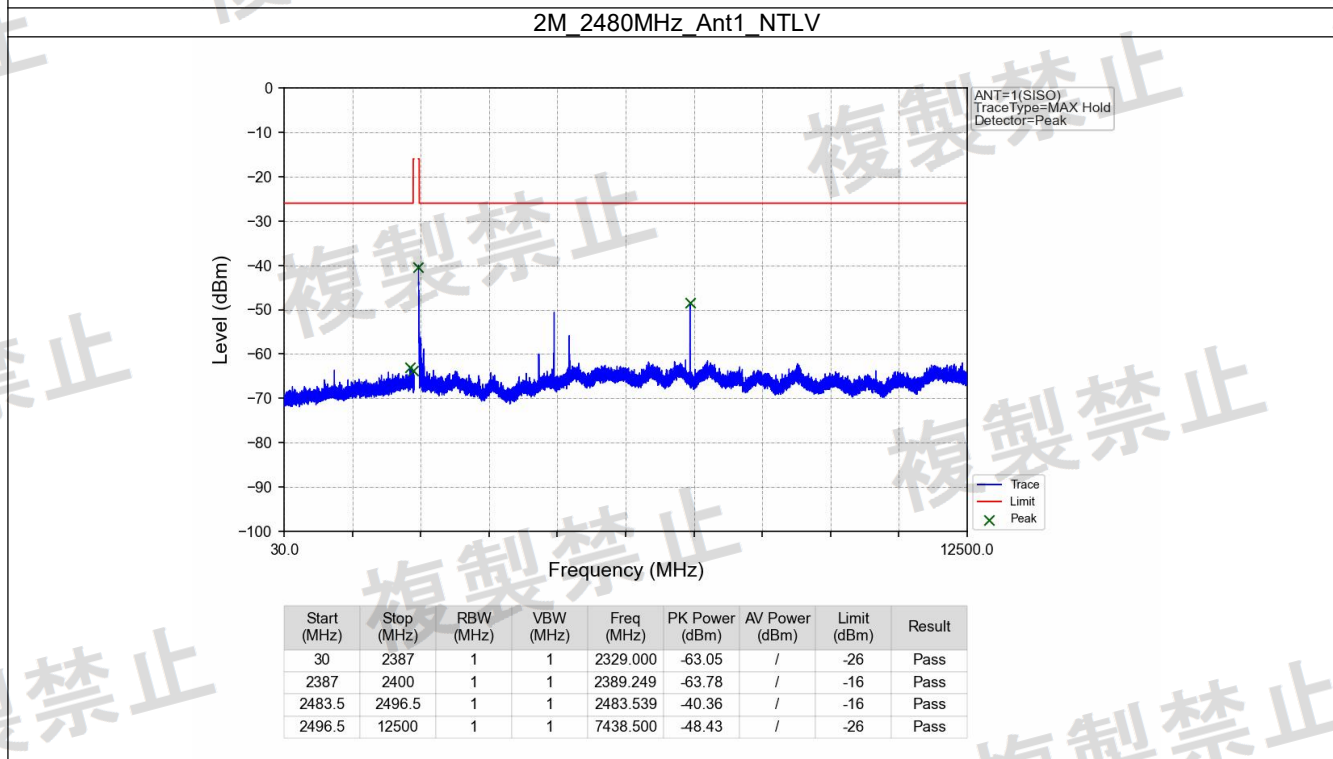
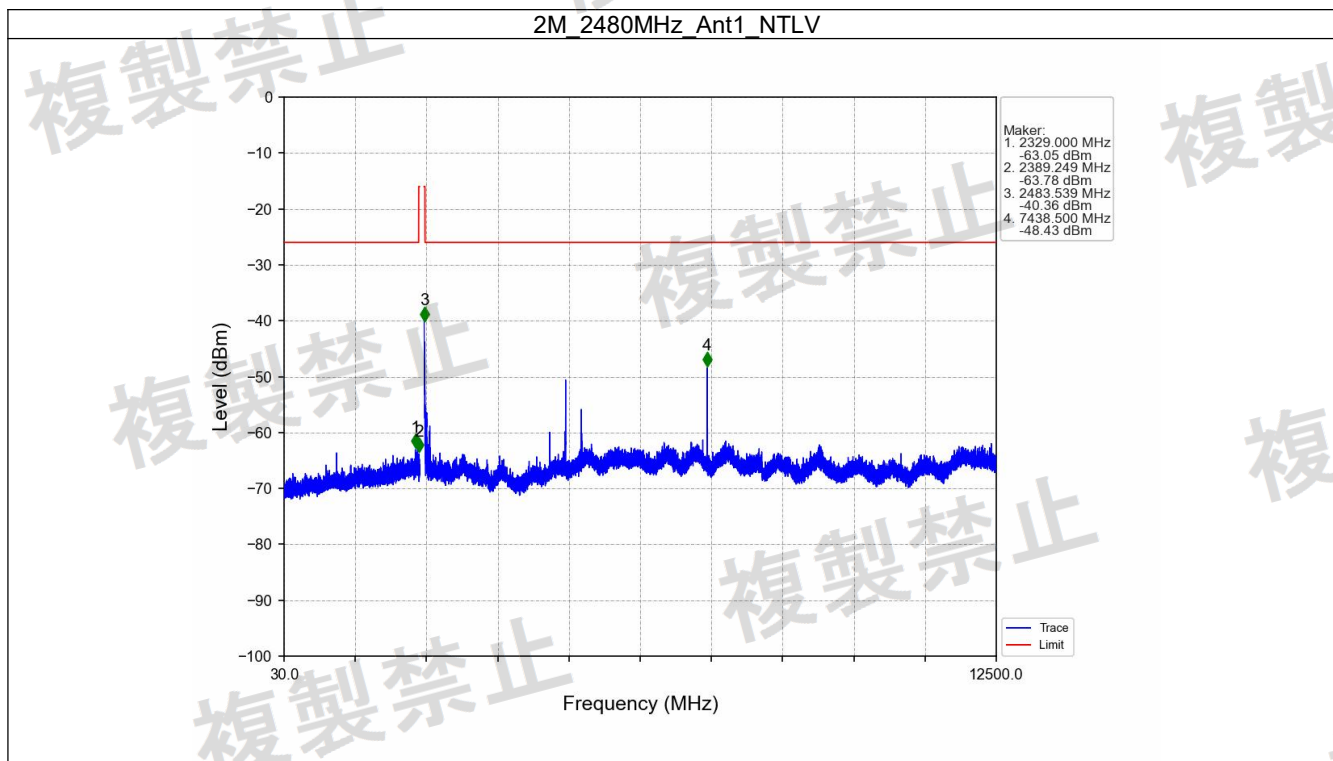




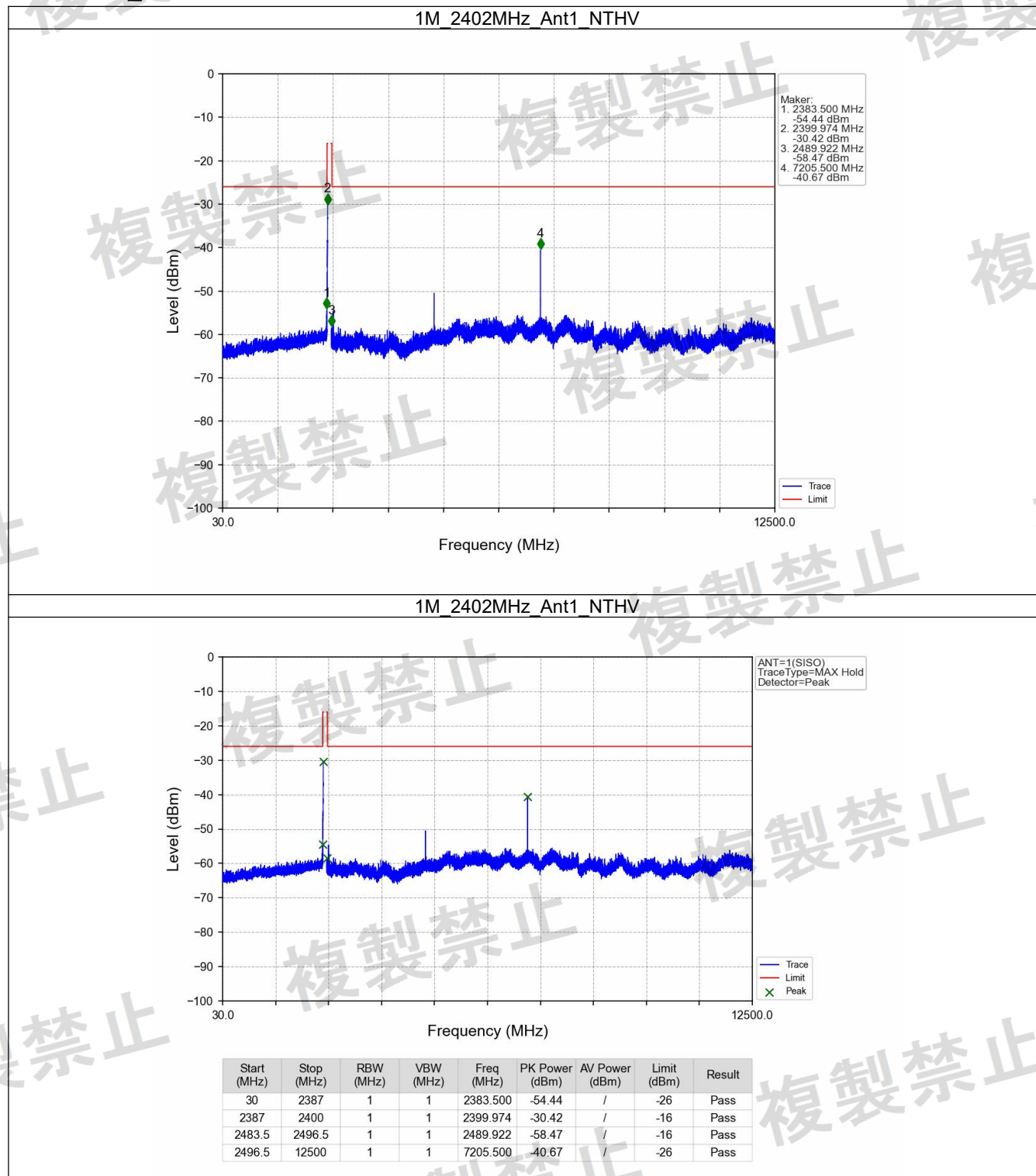


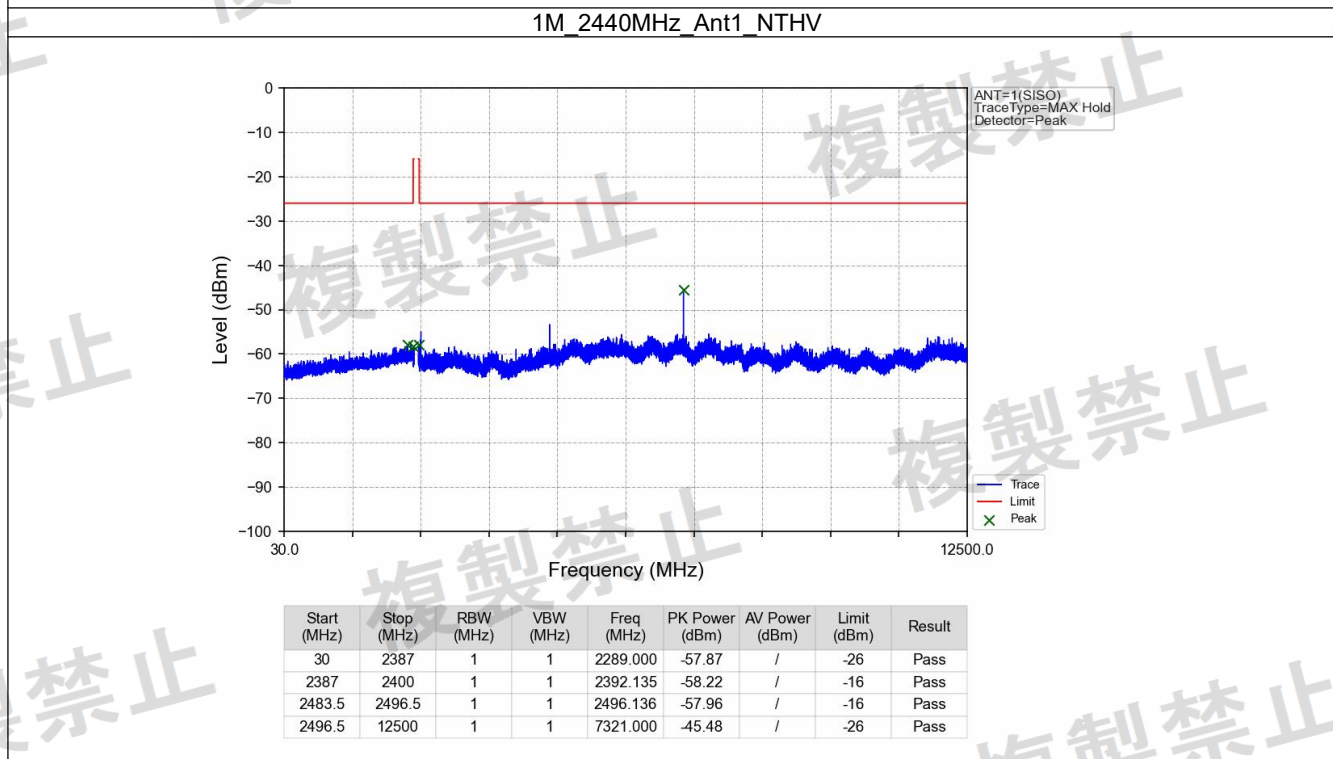
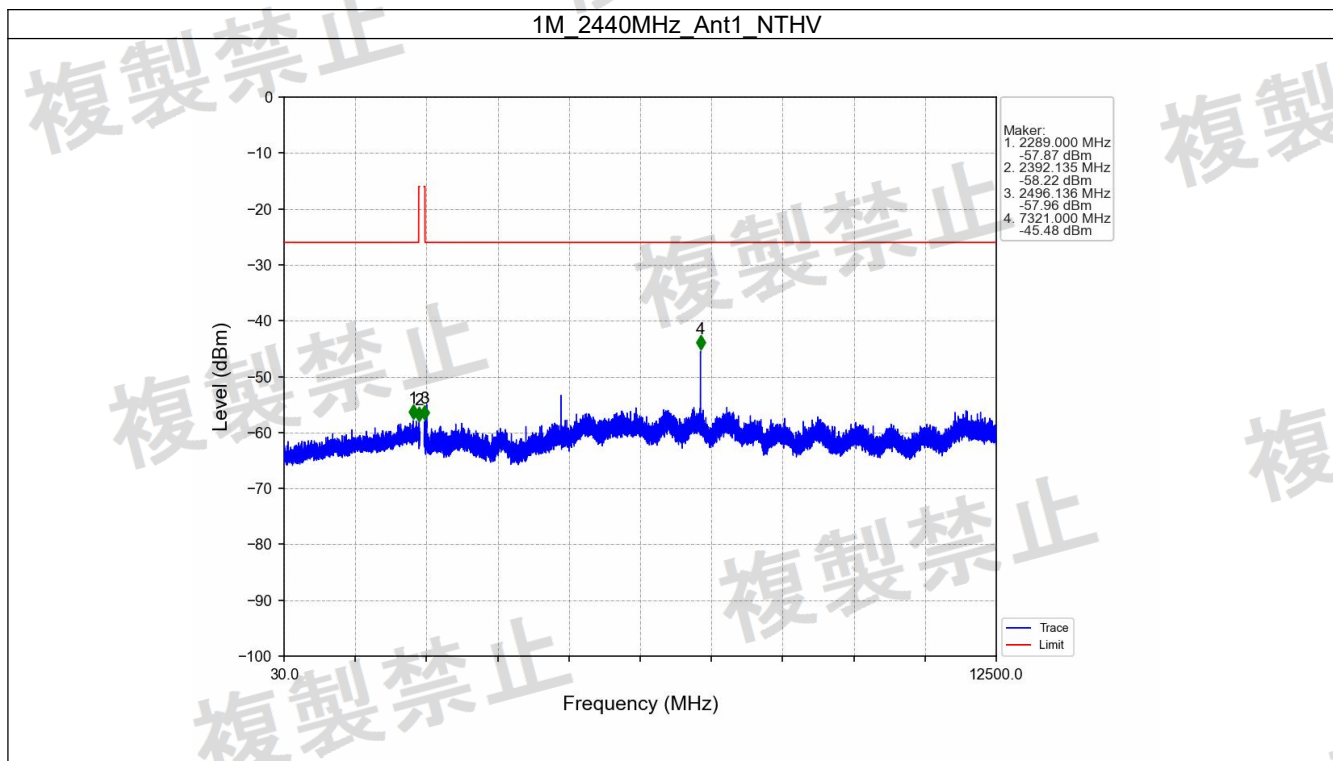


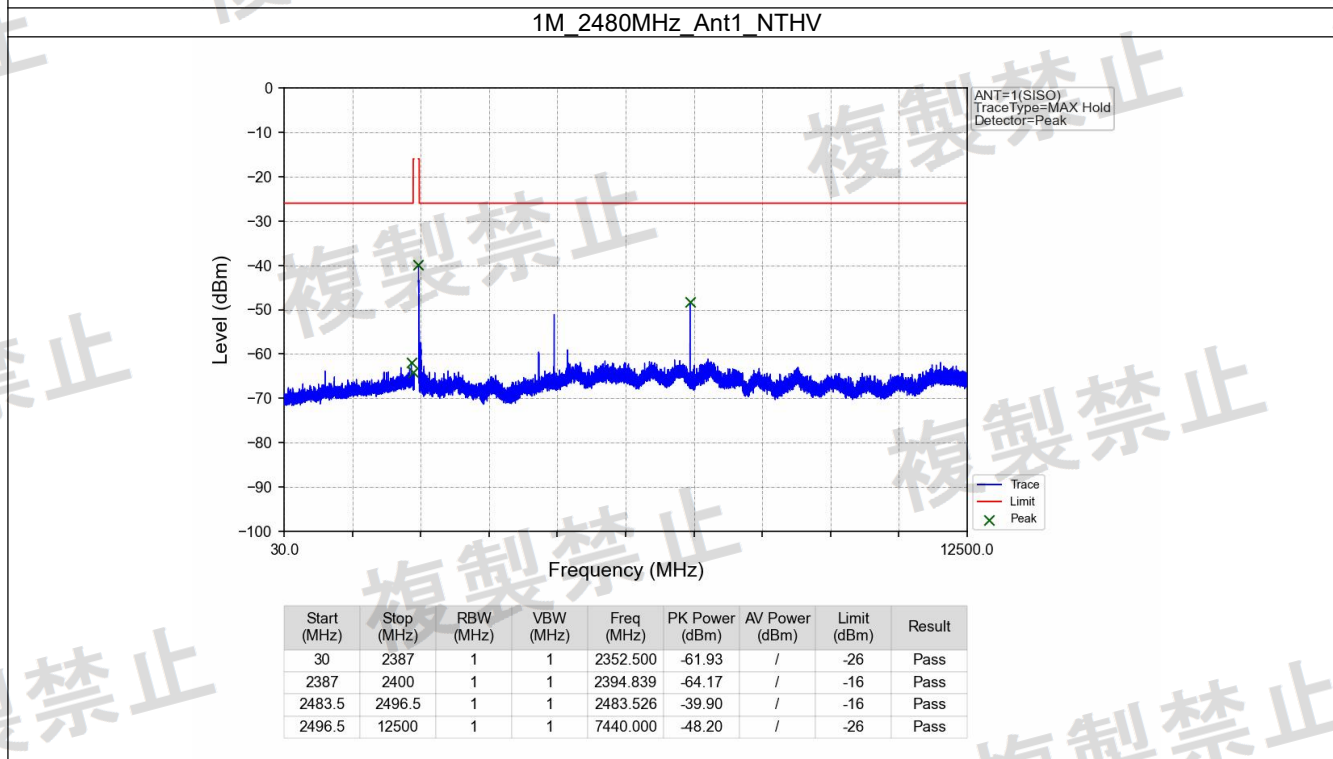
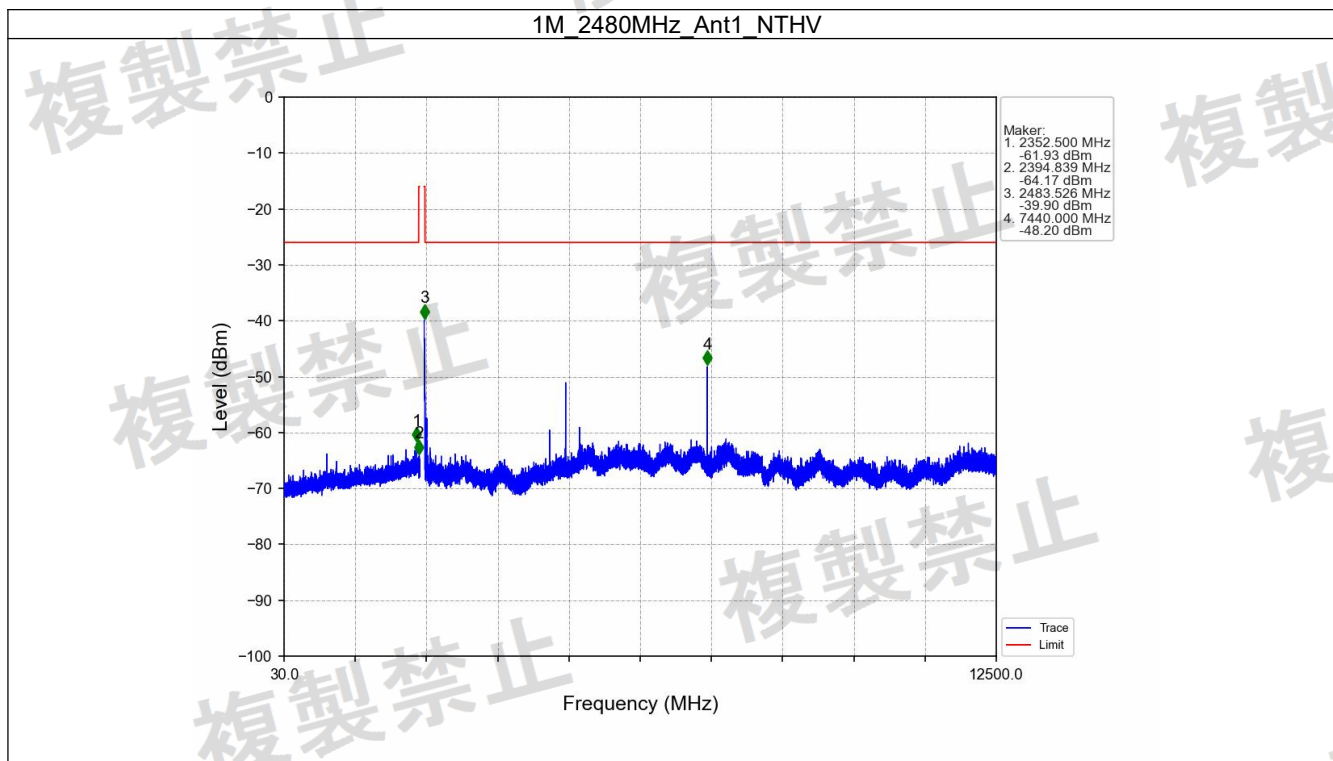


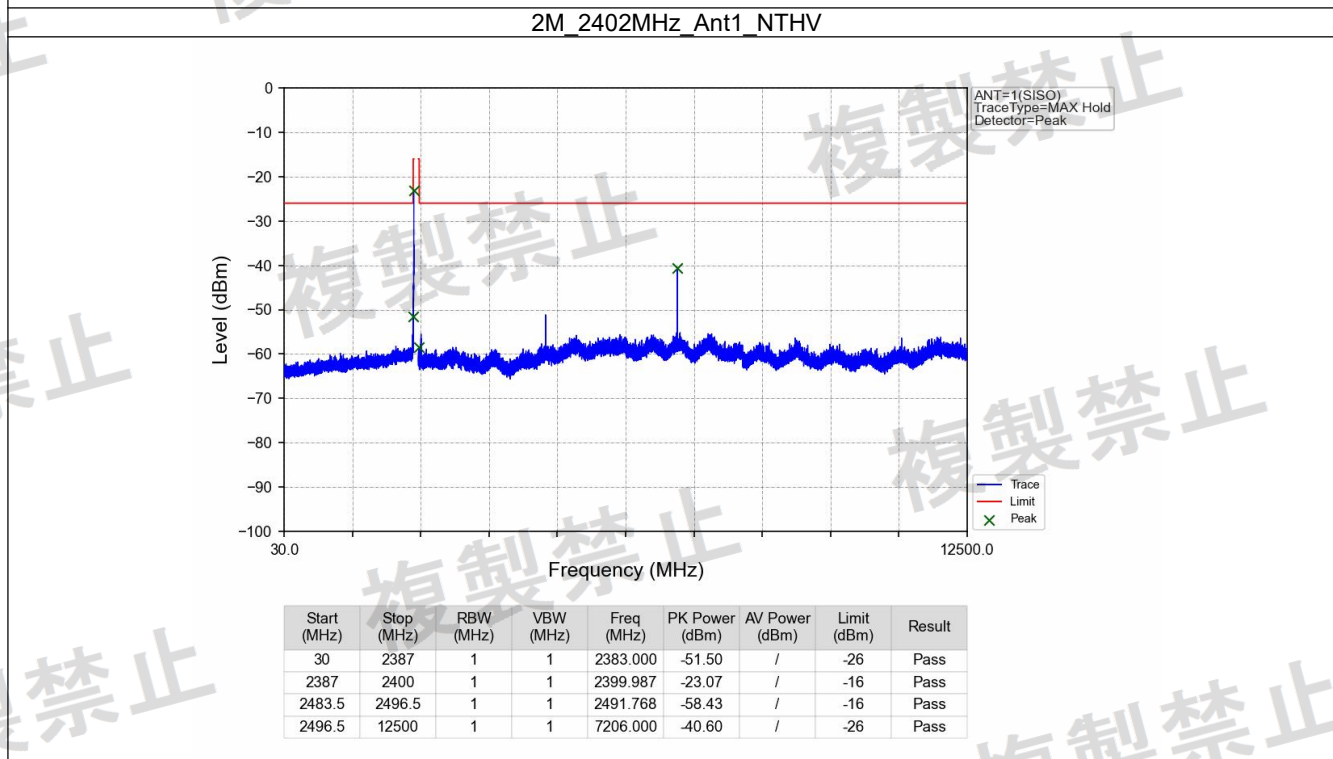
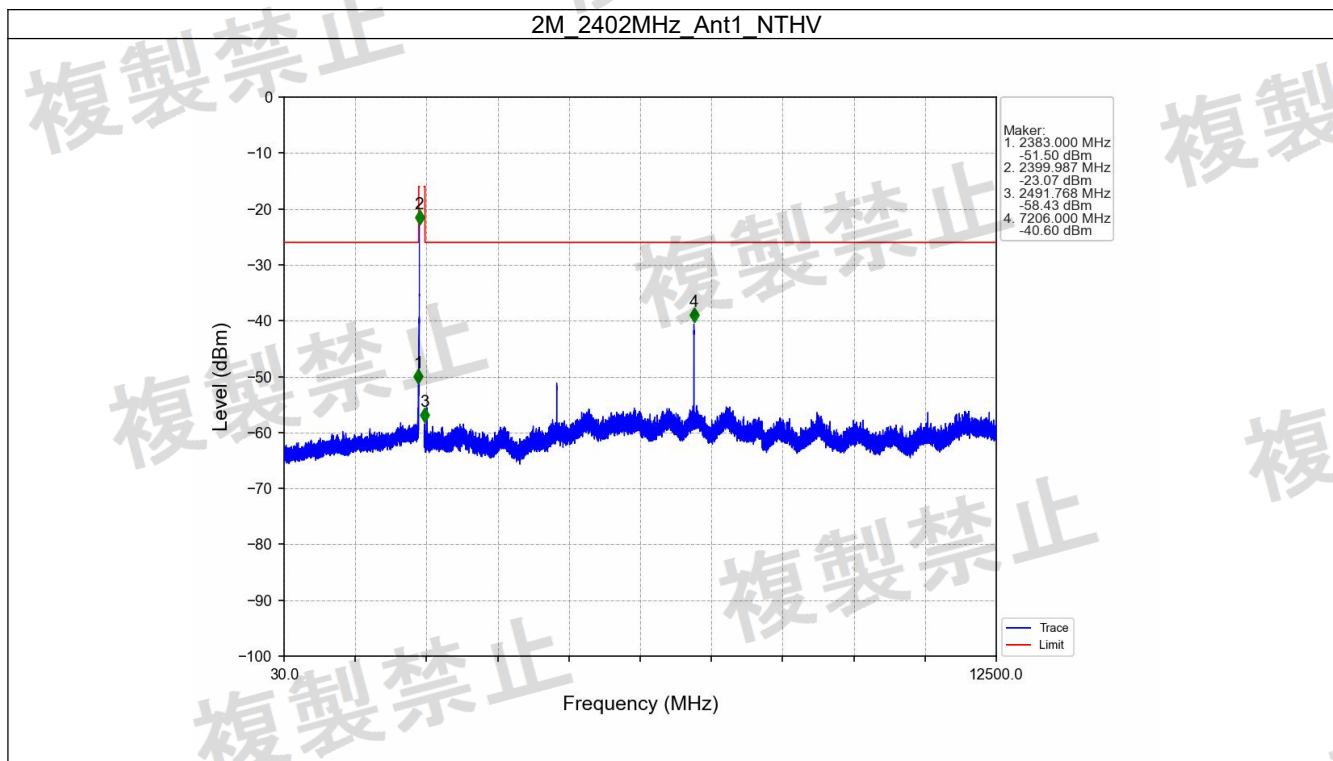


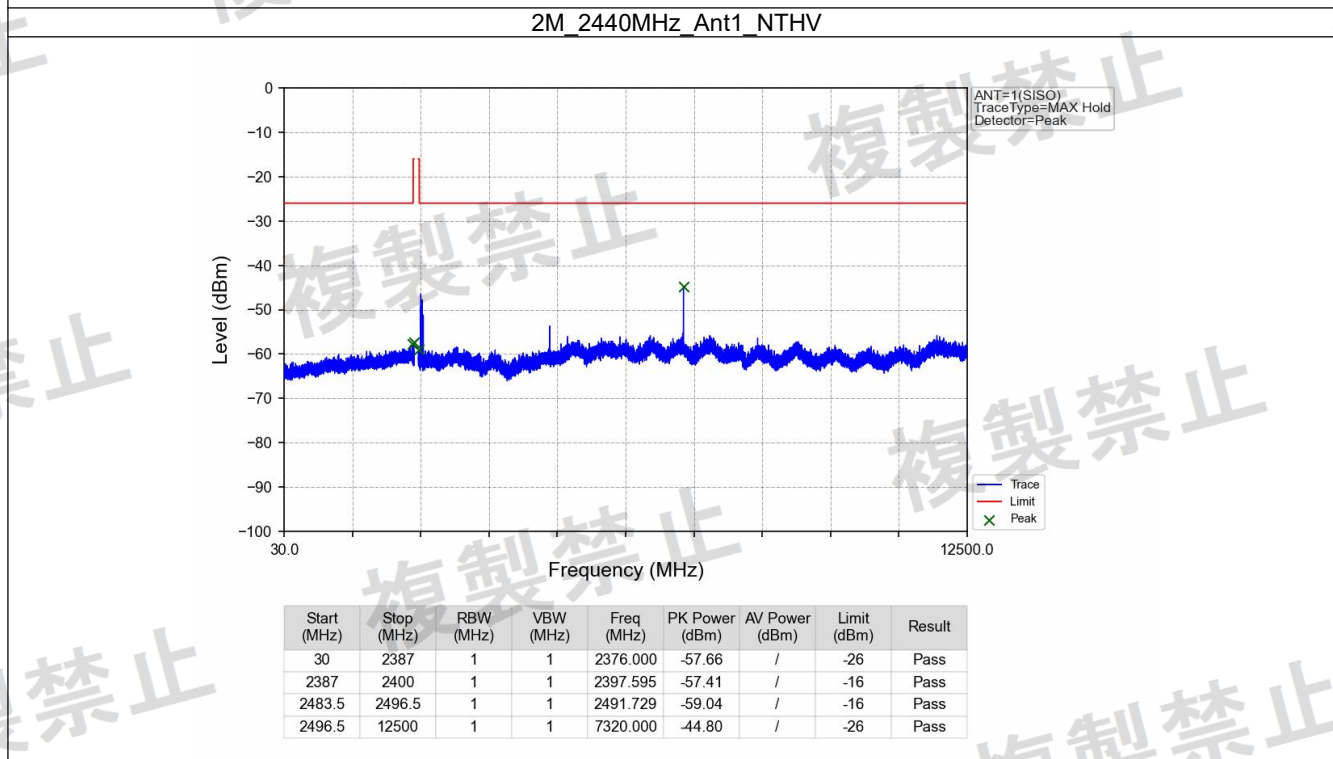
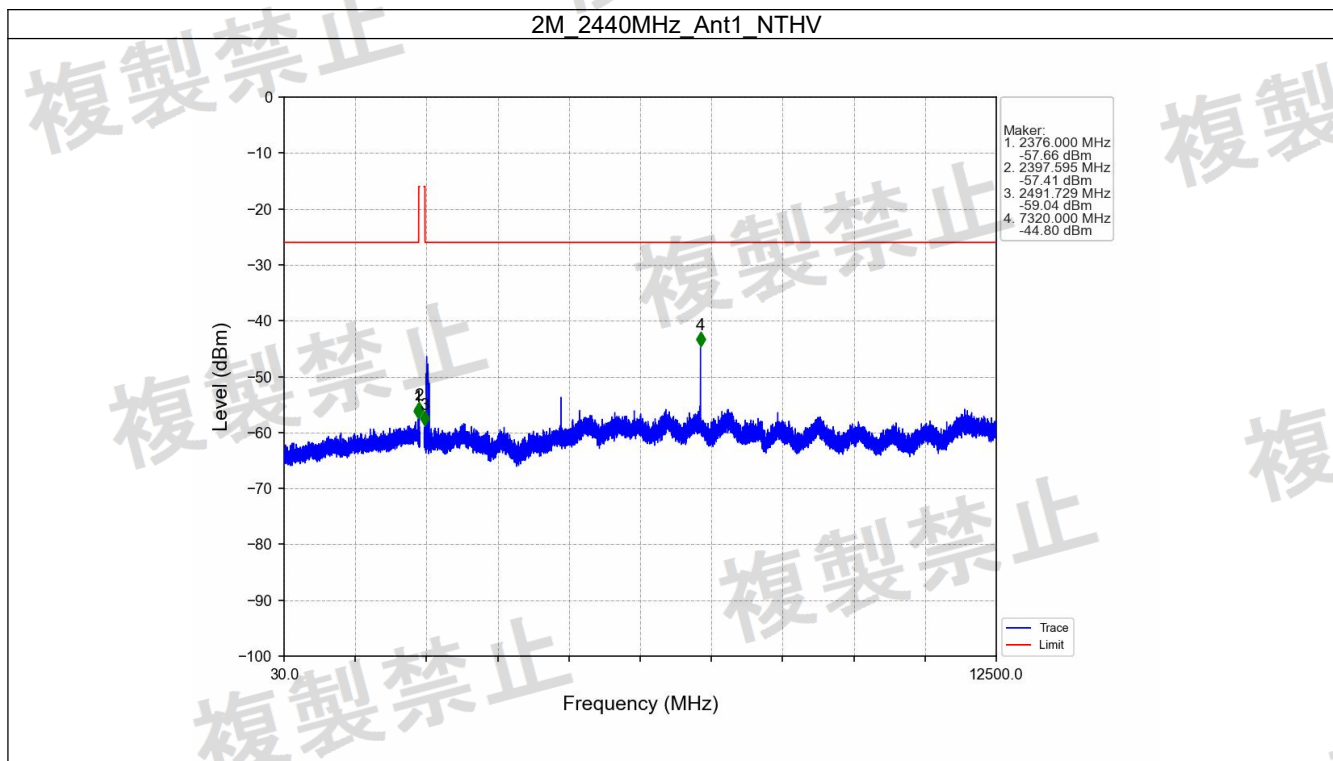
5.2.3 TxSe_NTHV

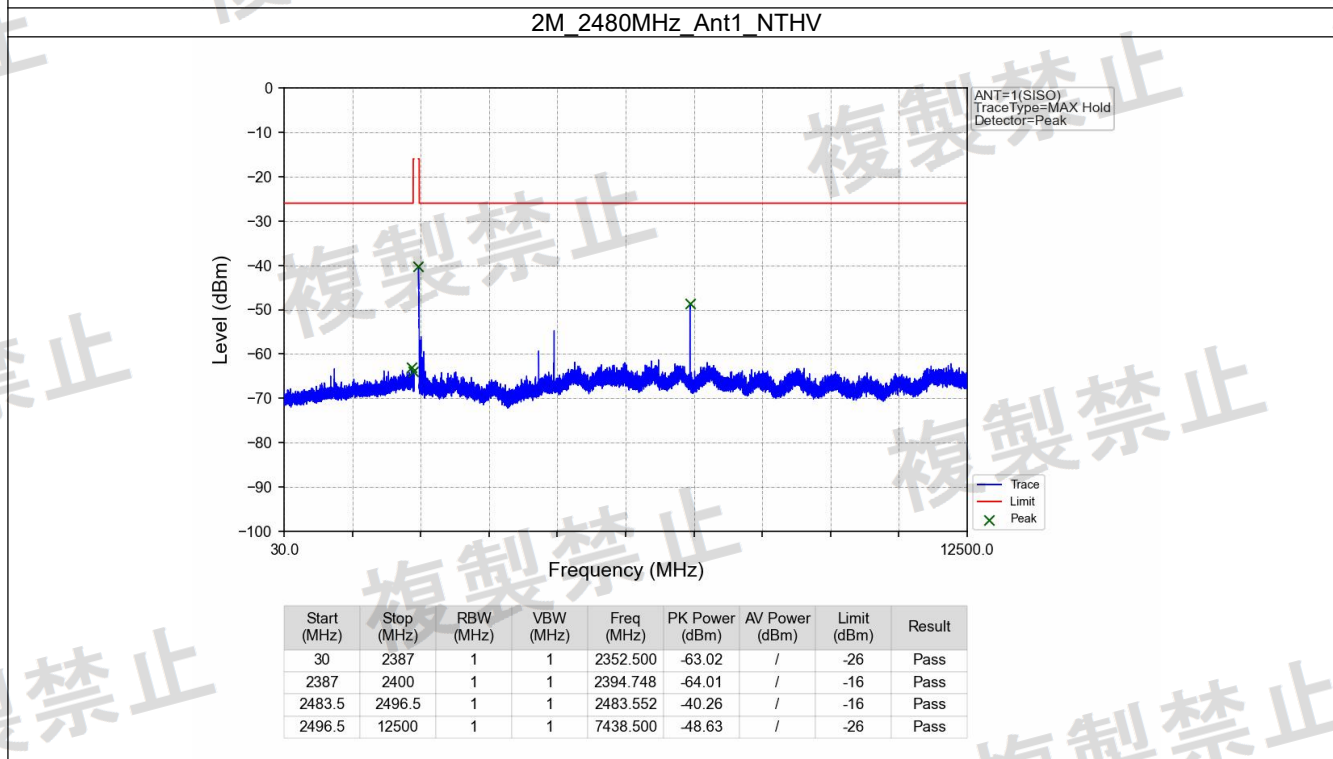
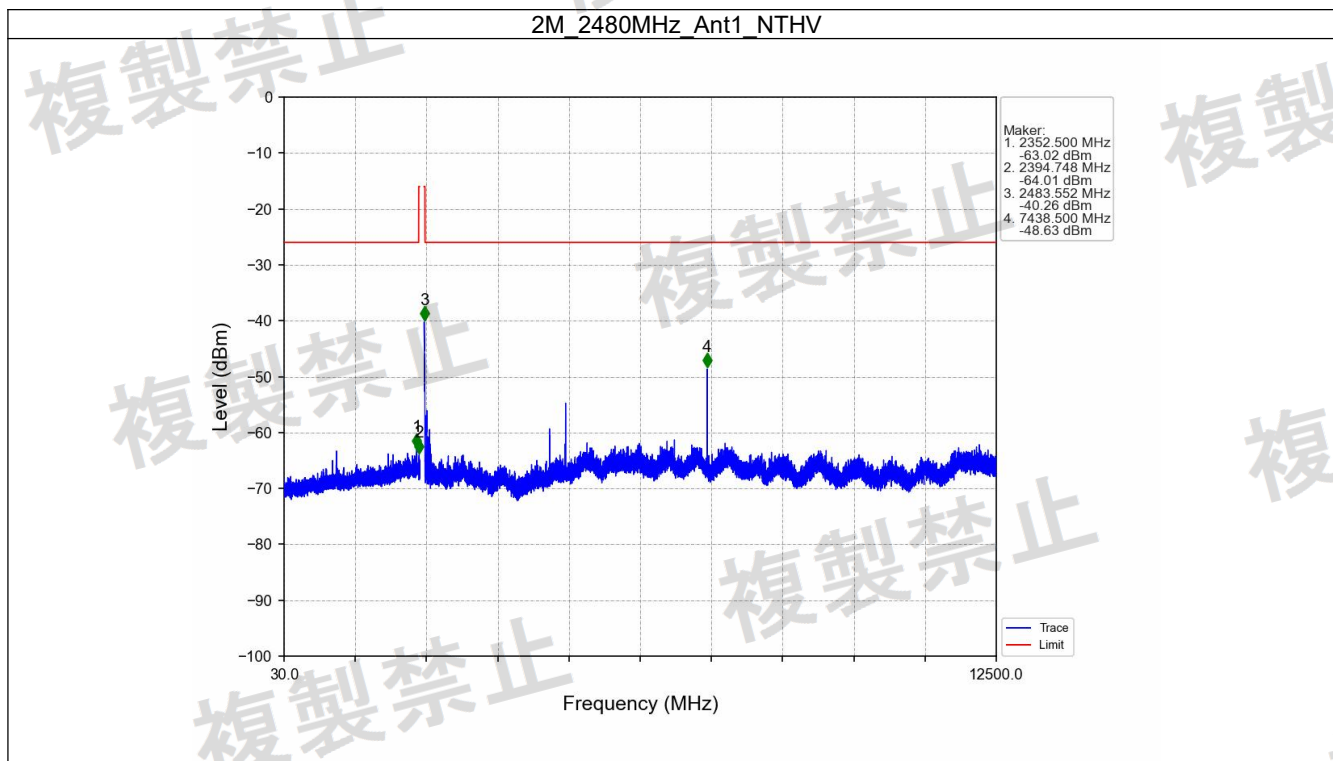












6. Secondary Radiated Emission

6.1 Test Result

6.1.1 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	840.8	-75.59	0.028	/	/	4	Pass
				1000	12500	6774.5	-60.10	0.977	/	/	20	Pass
		2440	1	30	1000	858	-75.63	0.027	/	/	4	Pass
				1000	12500	5936	-60.45	0.902	/	/	20	Pass
		2480	1	30	1000	918.25	-75.04	0.031	/	/	4	Pass
				1000	12500	5909.5	-59.91	1.021	/	/	20	Pass
2M	SISO	2402	1	30	1000	956.45	-75.74	0.027	/	/	4	Pass
				1000	12500	5266.5	-60.80	0.832	/	/	20	Pass
		2440	1	30	1000	895.55	-75.35	0.029	/	/	4	Pass
				1000	12500	2518	-58.00	1.585	/	/	20	Pass
		2480	1	30	1000	702.65	-75.80	0.026	/	/	4	Pass
				1000	12500	7832.5	-59.96	1.009	/	/	20	Pass

6.1.2 RxSe_NTLV

NTLV												
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	948.25	-69.12	0.122	/	/	4	Pass
				1000	12500	7845	-61.75	0.668	/	/	20	Pass
		2440	1	30	1000	948.25	-69.06	0.124	/	/	4	Pass
				1000	12500	7809	-60.88	0.817	/	/	20	Pass
		2480	1	30	1000	948.25	-69.22	0.120	/	/	4	Pass
				1000	12500	7251	-61.09	0.778	/	/	20	Pass
2M	SISO	2402	1	30	1000	948.2	-72.34	0.058	/	/	4	Pass
				1000	12500	7265.5	-60.34	0.925	/	/	20	Pass
		2440	1	30	1000	948.2	-71.60	0.069	/	/	4	Pass
				1000	12500	7860.5	-60.64	0.863	/	/	20	Pass
		2480	1	30	1000	948.2	-73.80	0.042	/	/	4	Pass
				1000	12500	7840.5	-60.17	0.962	/	/	20	Pass

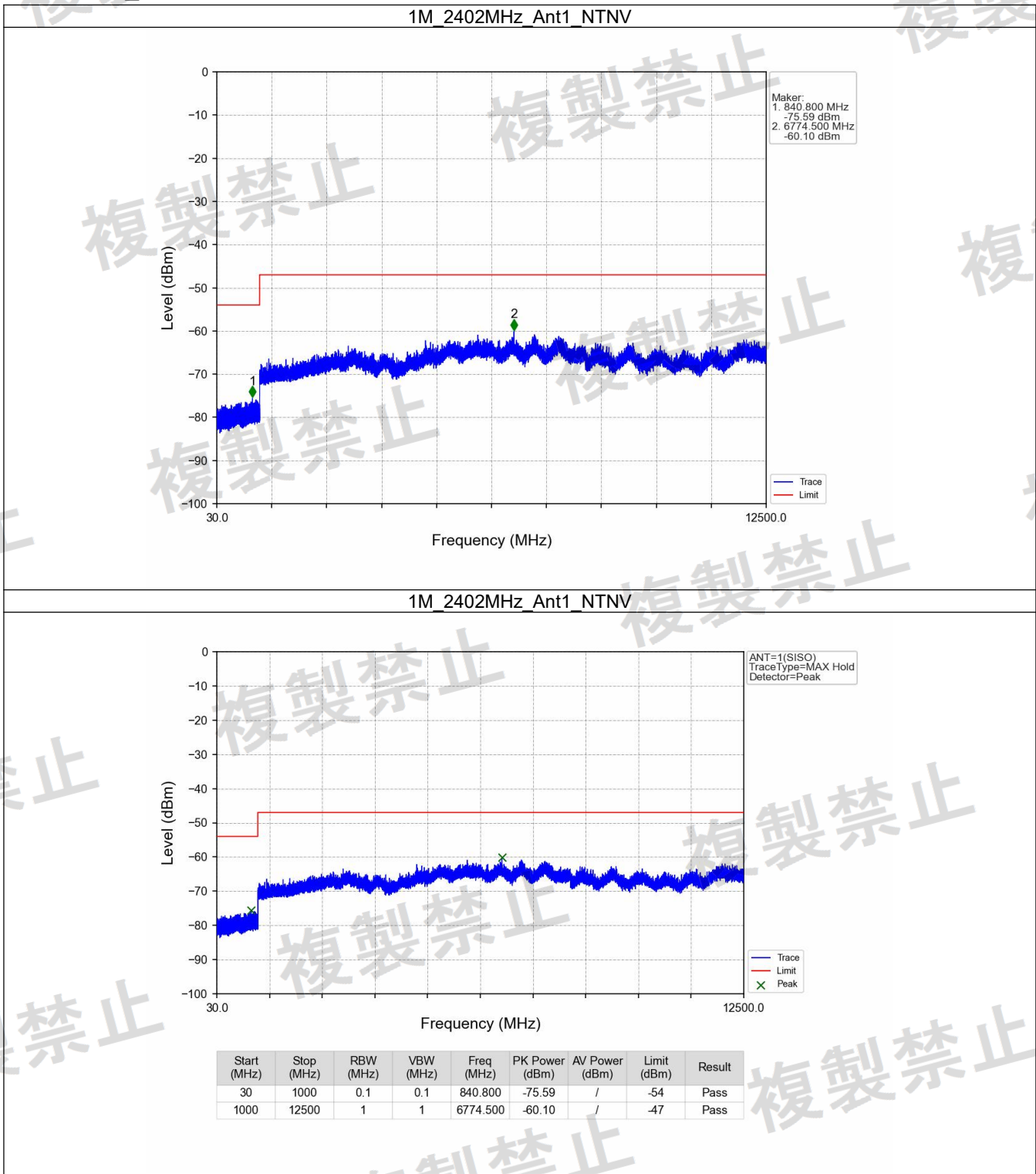
6.1.3 RxSe_NTHV

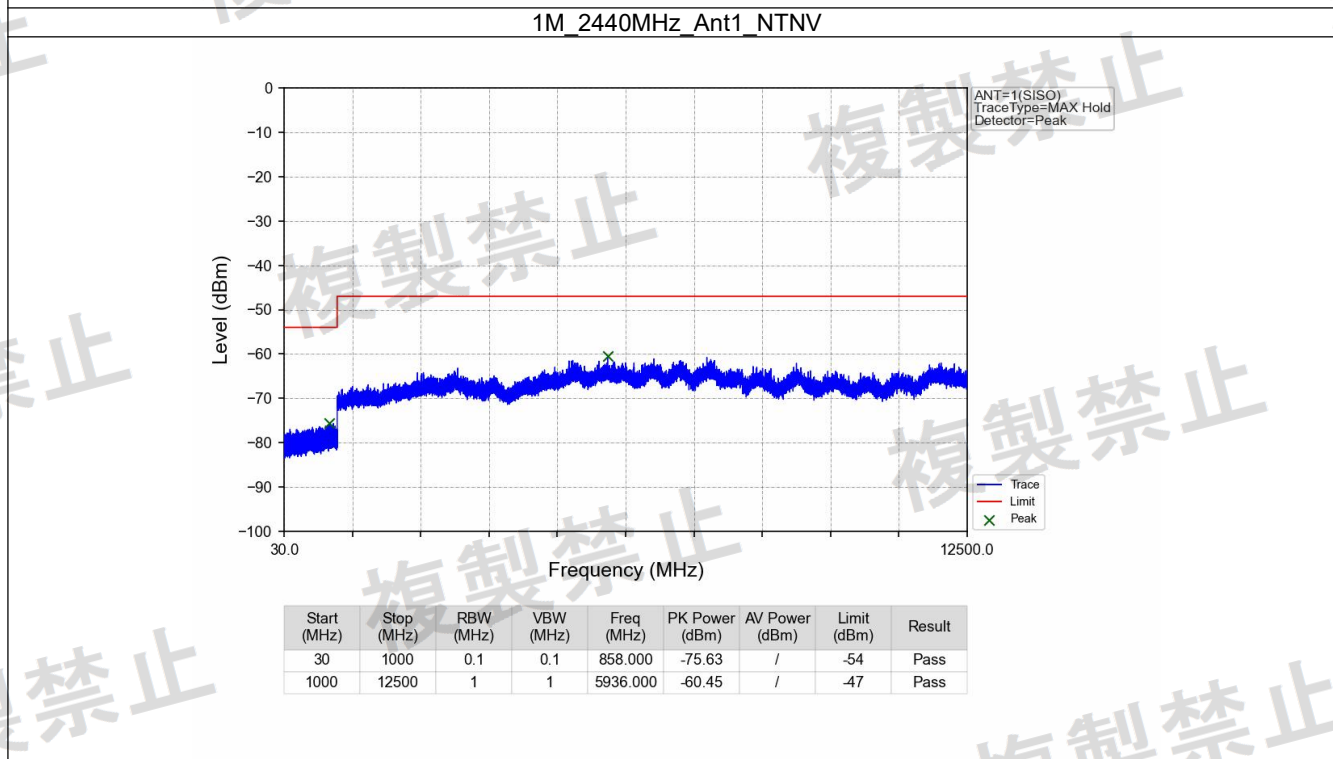
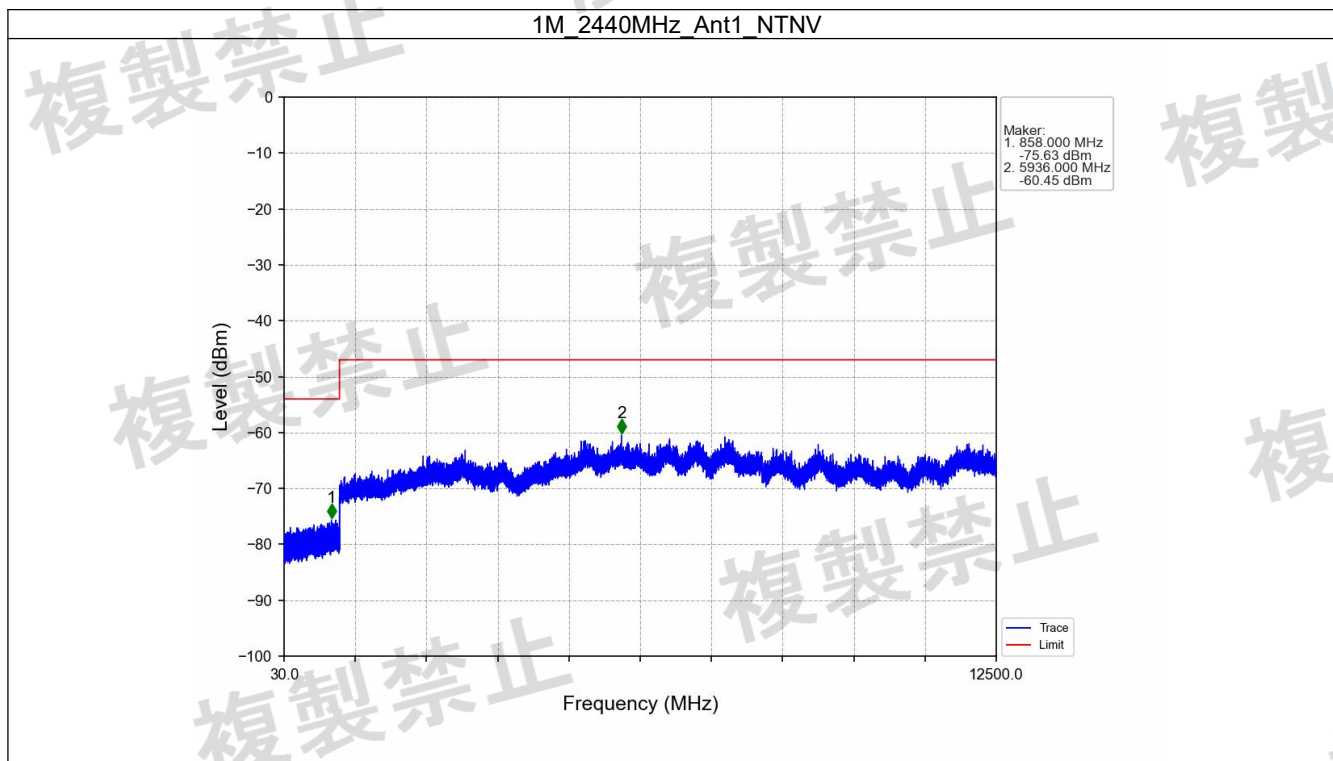
NTHV												
Mode	TX Type	Freq. (MHz)	ANT	Freq. Range		Marker					Limit (nW)	Verdict
				Start (MHz)	Stop (MHz)	Freq. (MHz)	PK Power (dBm)	PK Power (nW)	AV Power (dBm)	AV Power (nW)		
1M	SISO	2402	1	30	1000	948.25	-70.81	0.083	/	/	4	Pass
				1000	12500	7874.5	-60.63	0.865	/	/	20	Pass
		2440	1	30	1000	948.2	-68.17	0.152	/	/	4	Pass
				1000	12500	12025	-61.01	0.793	/	/	20	Pass
		2480	1	30	1000	900.05	-70.51	0.089	/	/	4	Pass
				1000	12500	6715	-60.13	0.971	/	/	20	Pass

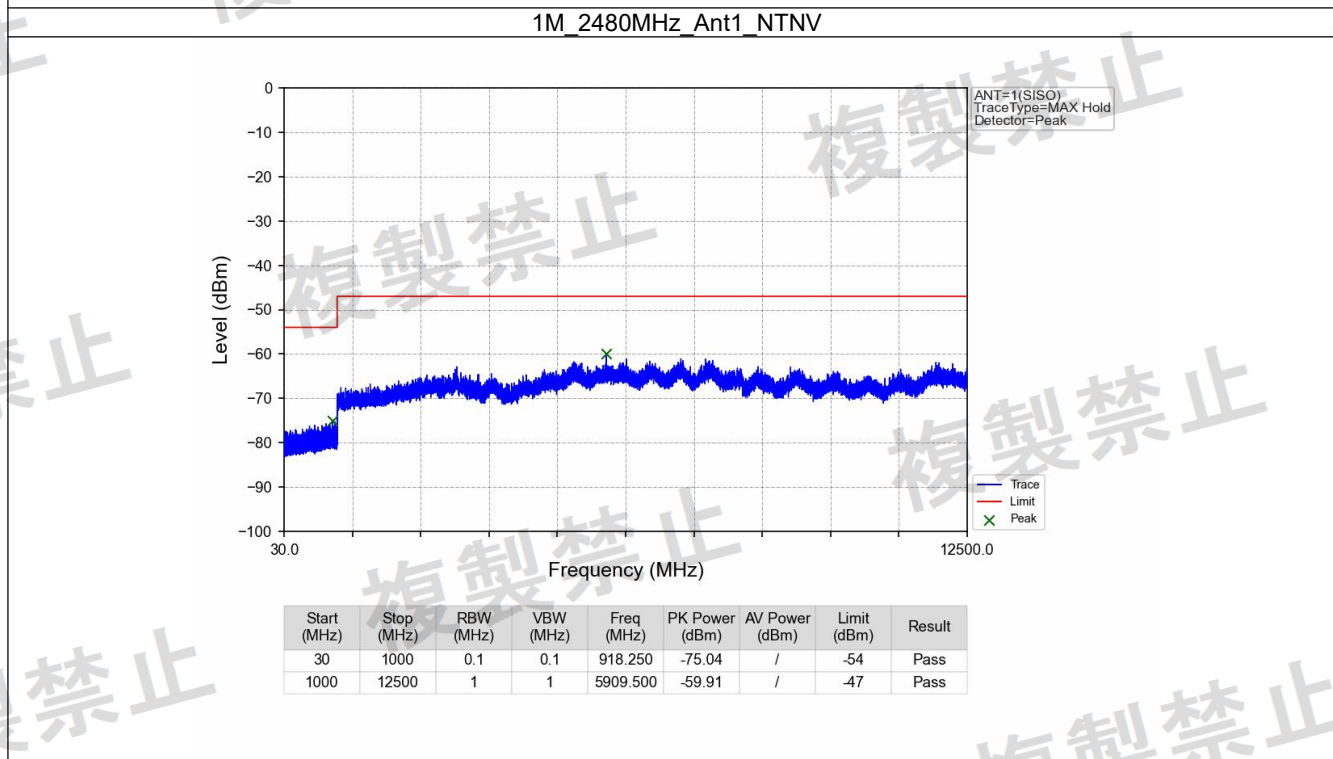
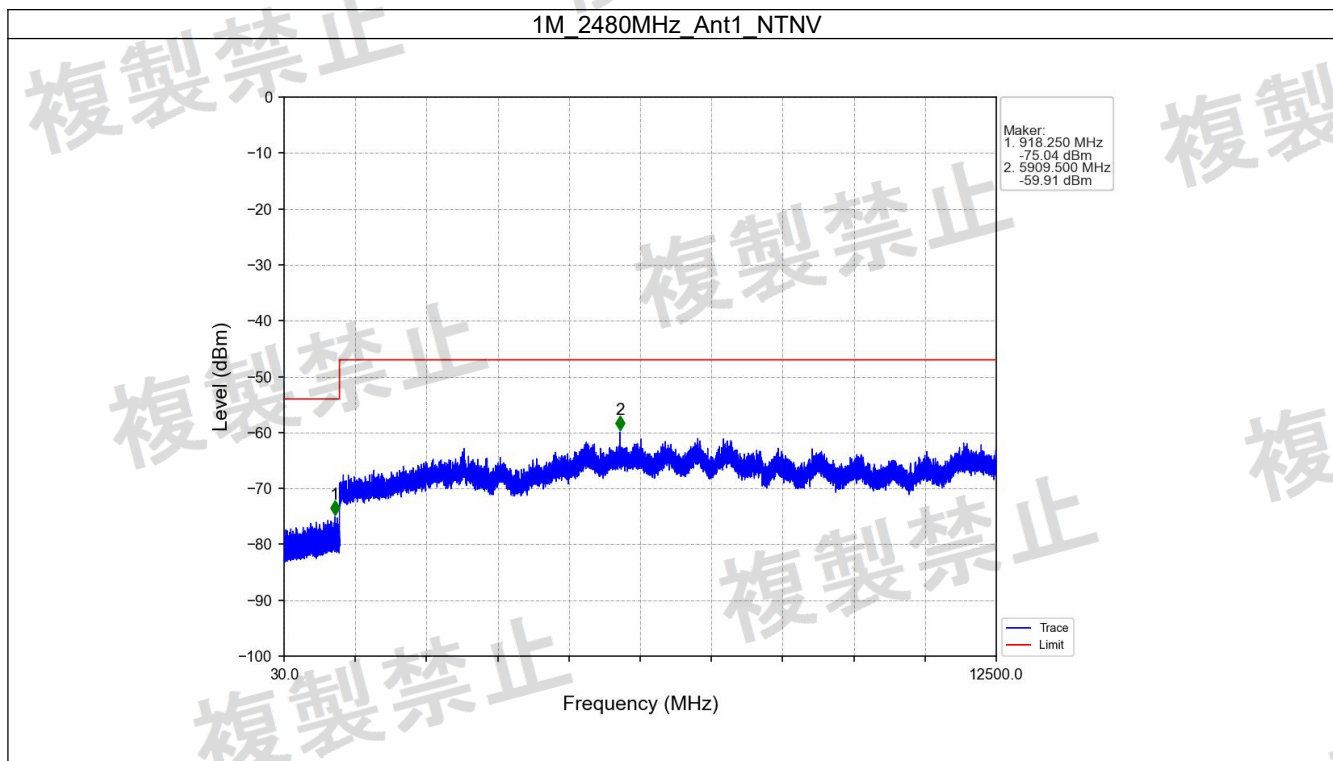
2M	SISO	2402	1	30	1000	948.25	-72.18	0.061	/	/	4	Pass
				1000	12500	2527.5	-60.70	0.851	/	/	20	Pass
		2440	1	30	1000	948.3	-71.67	0.068	/	/	4	Pass
				1000	12500	7238.5	-61.13	0.771	/	/	20	Pass
		2480	1	30	1000	948.15	-74.25	0.038	/	/	4	Pass
				1000	12500	2528.5	-59.91	1.021	/	/	20	Pass

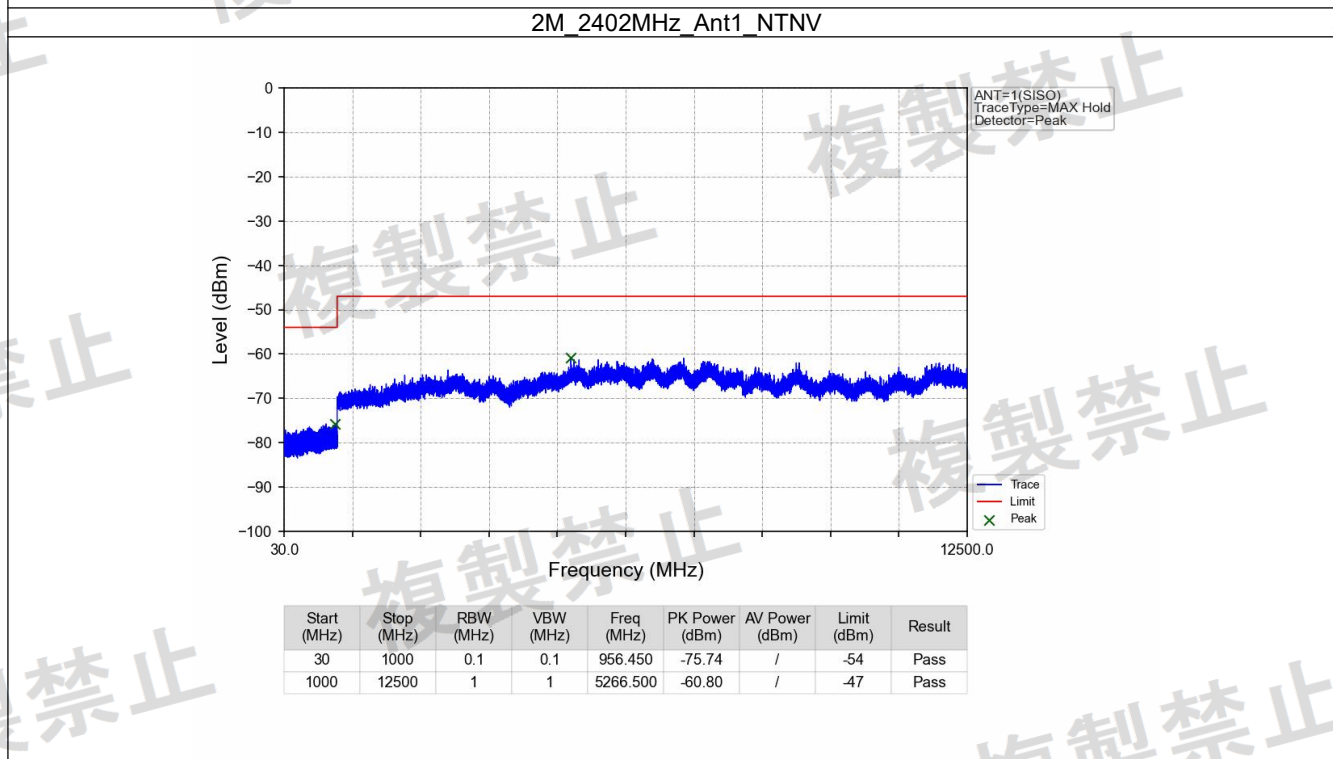
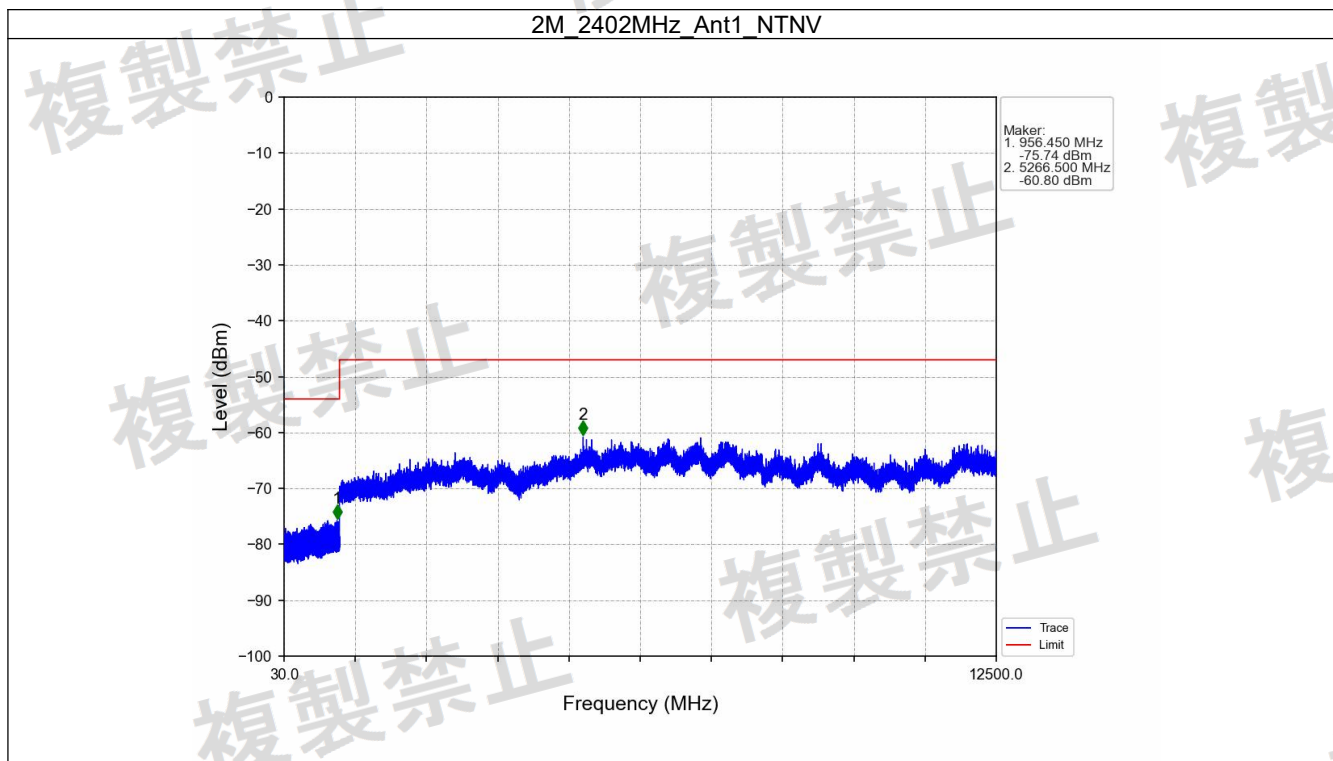
6.2 Test Graph

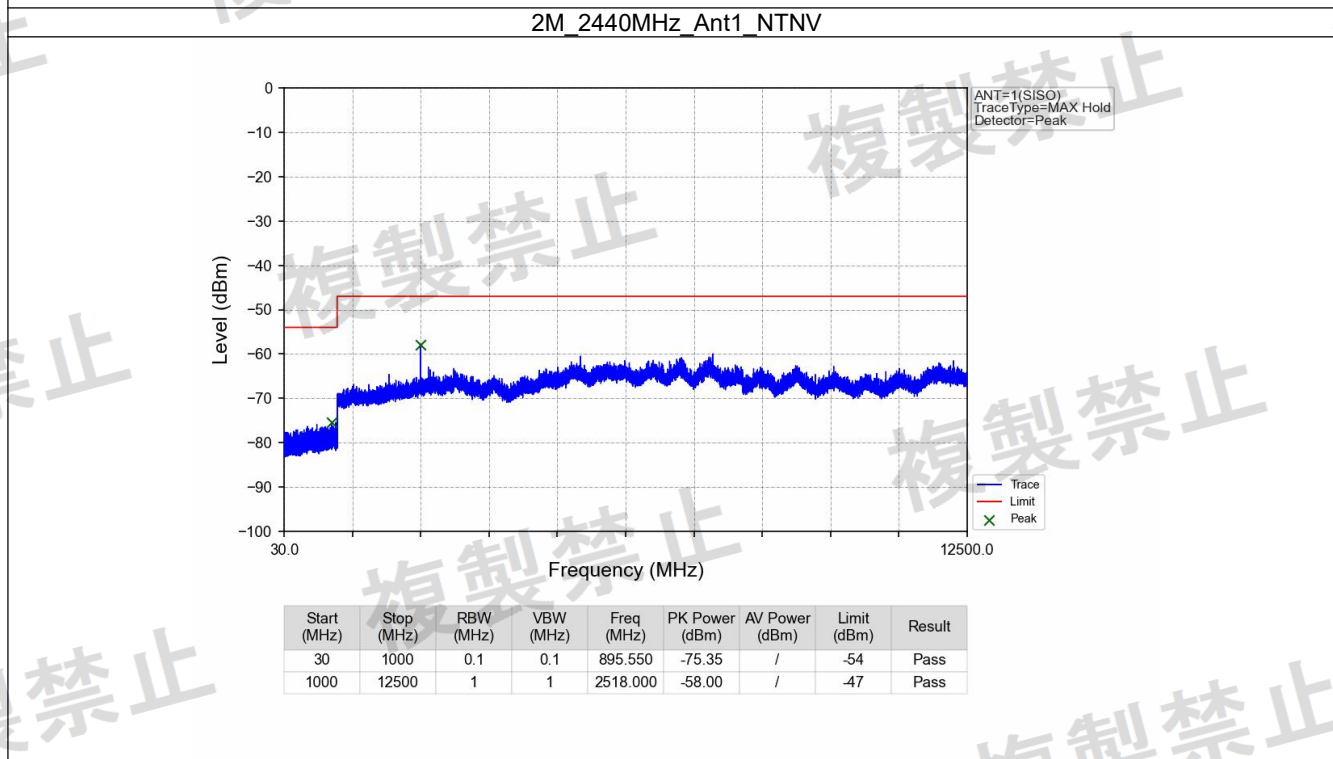
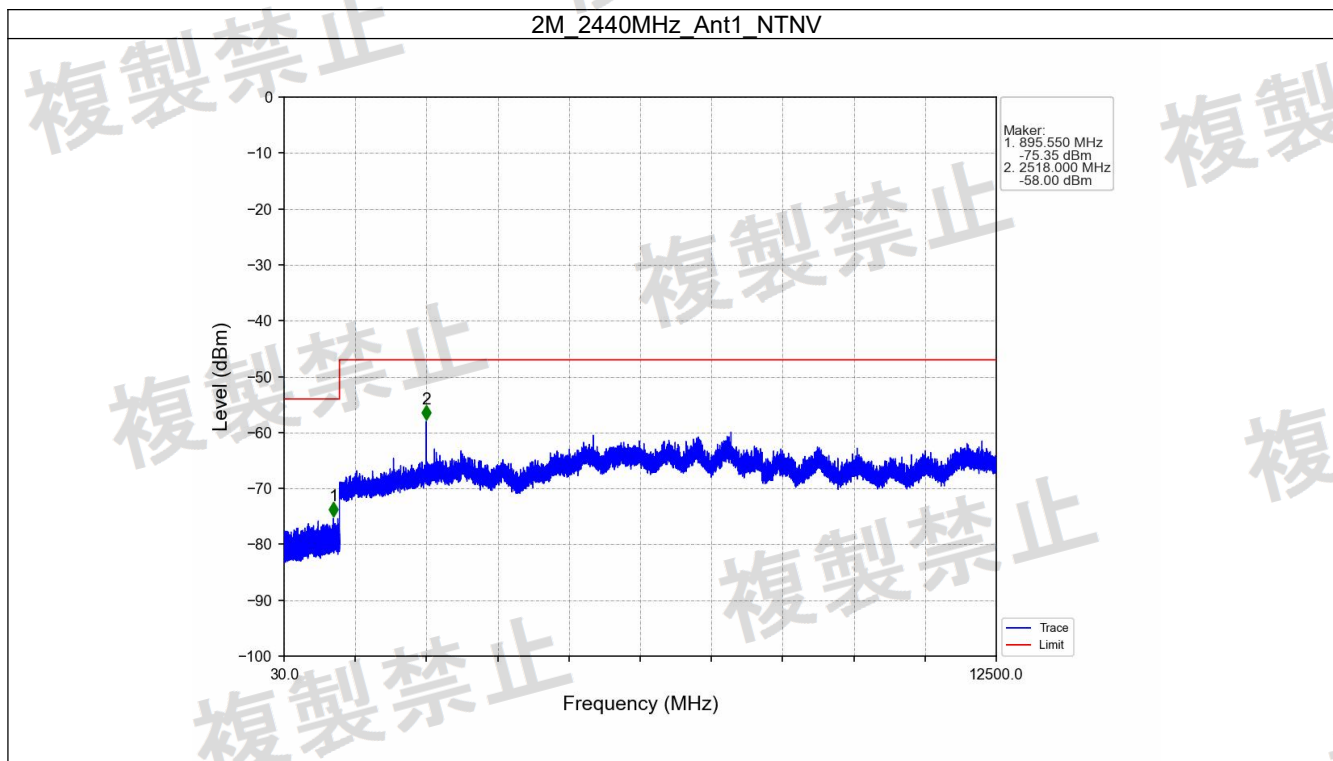
6.2.1 RxSe_NTNV

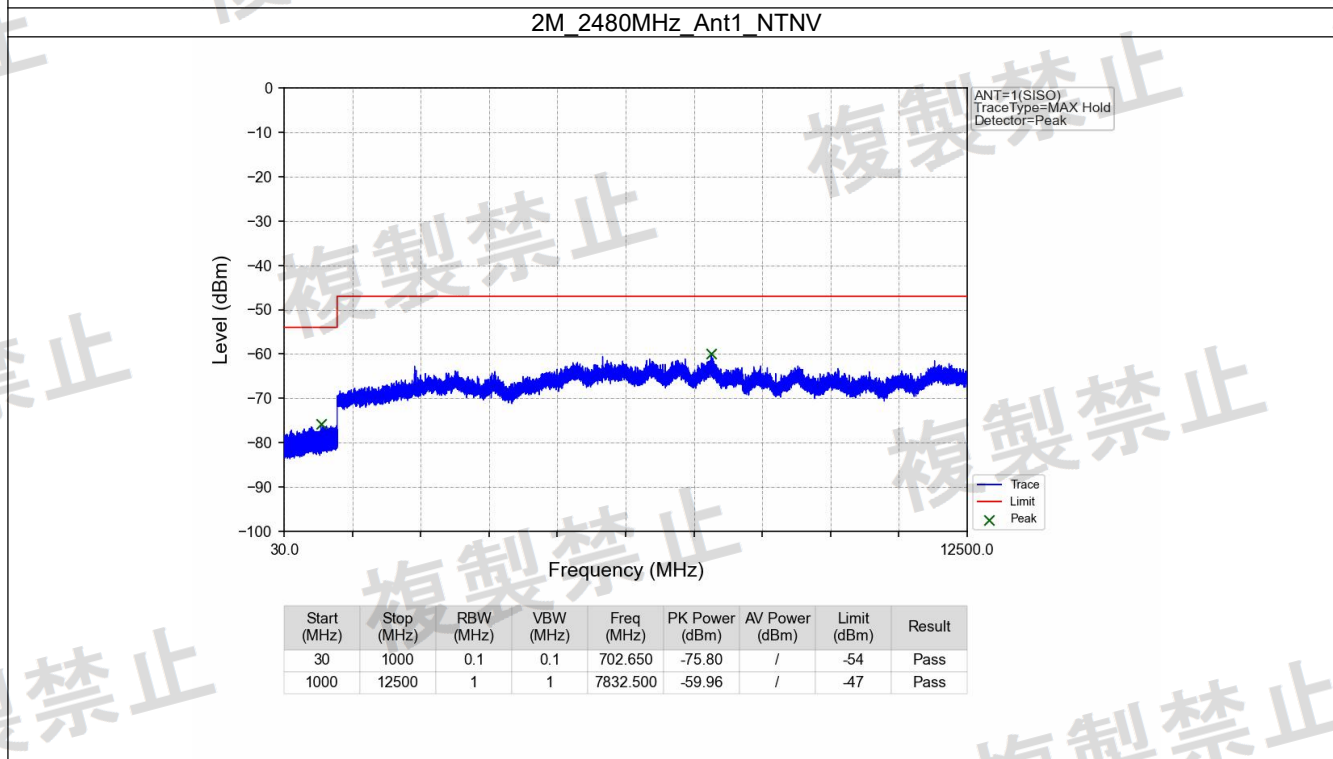
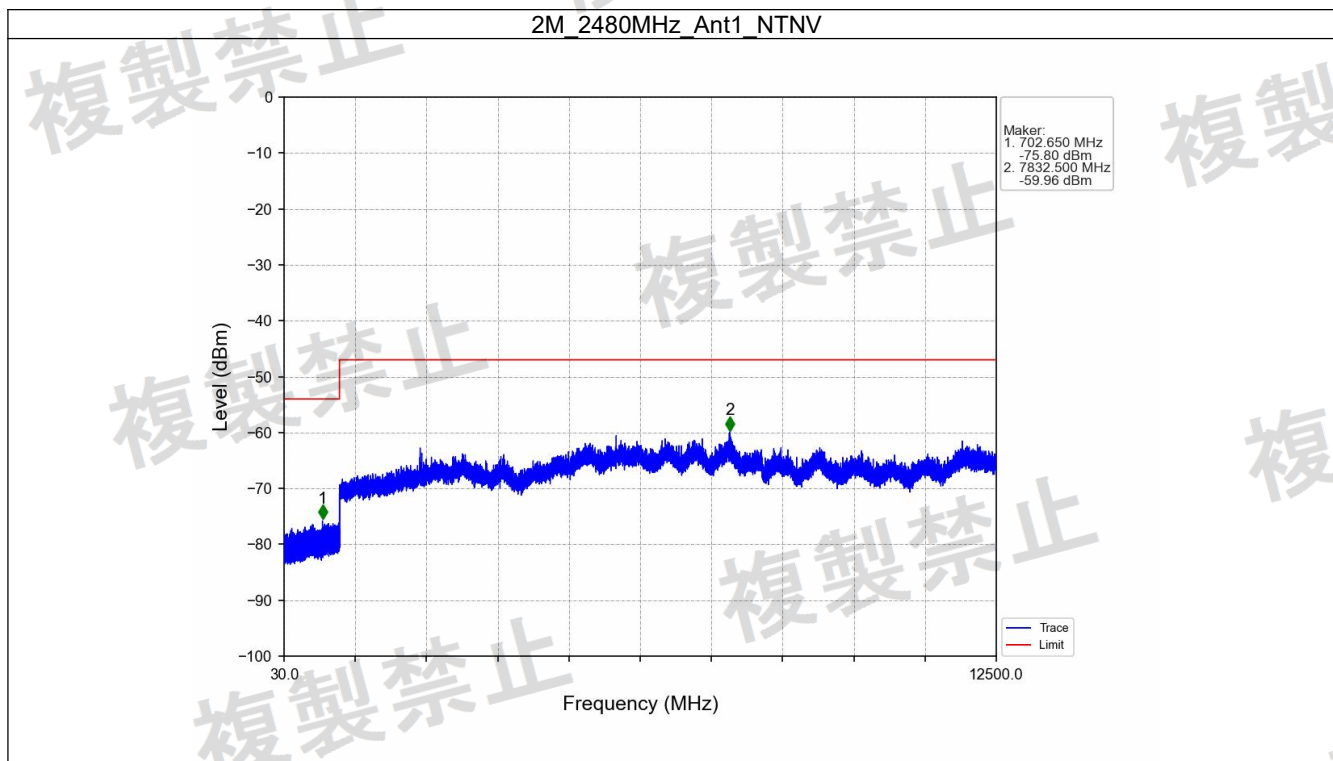




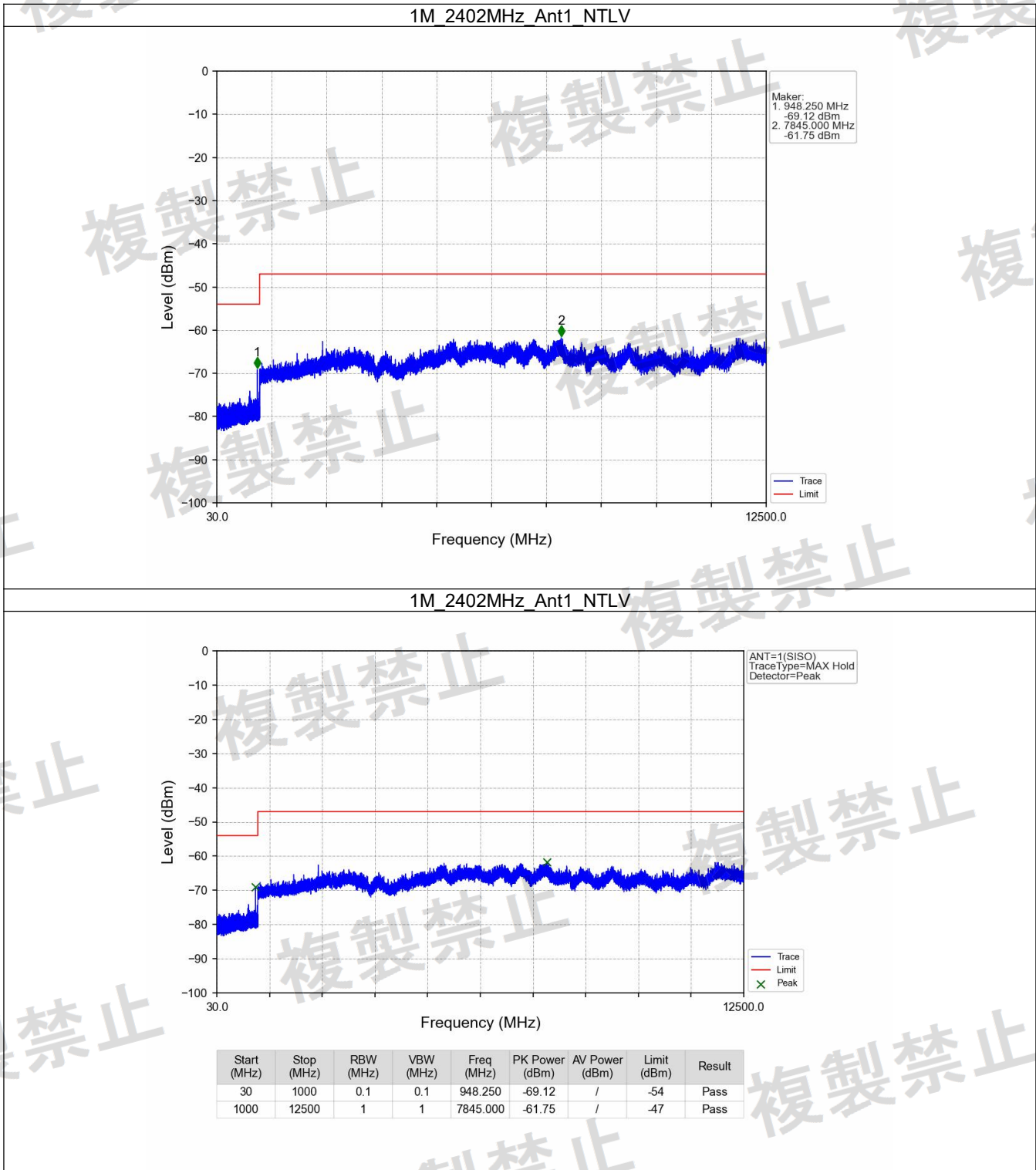


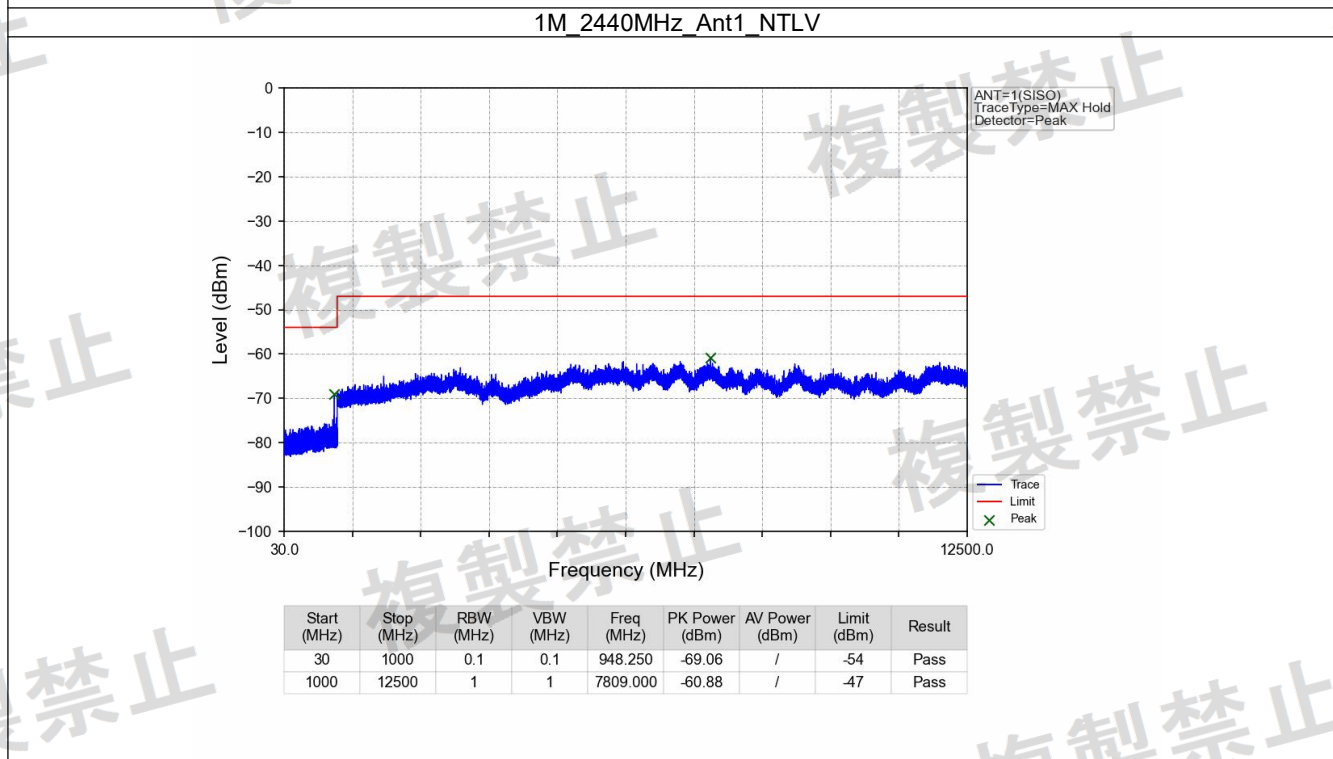
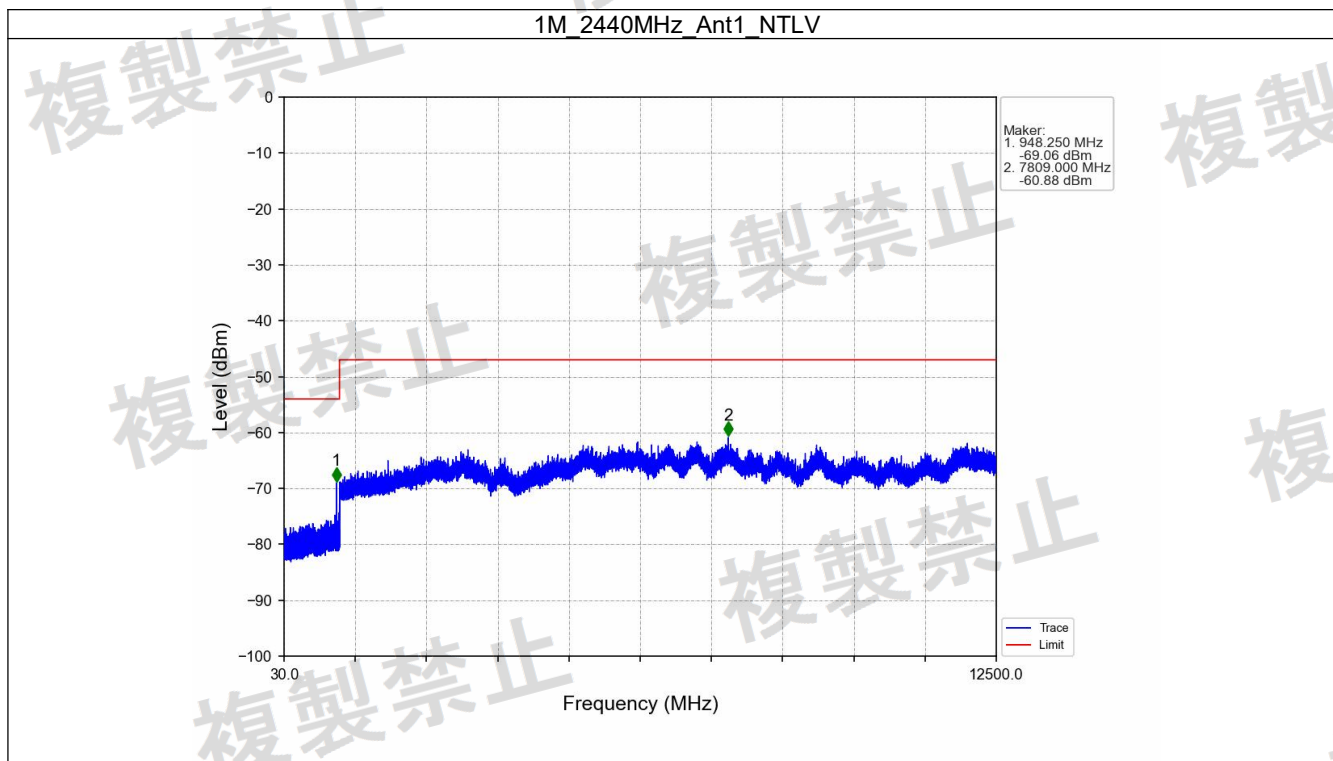


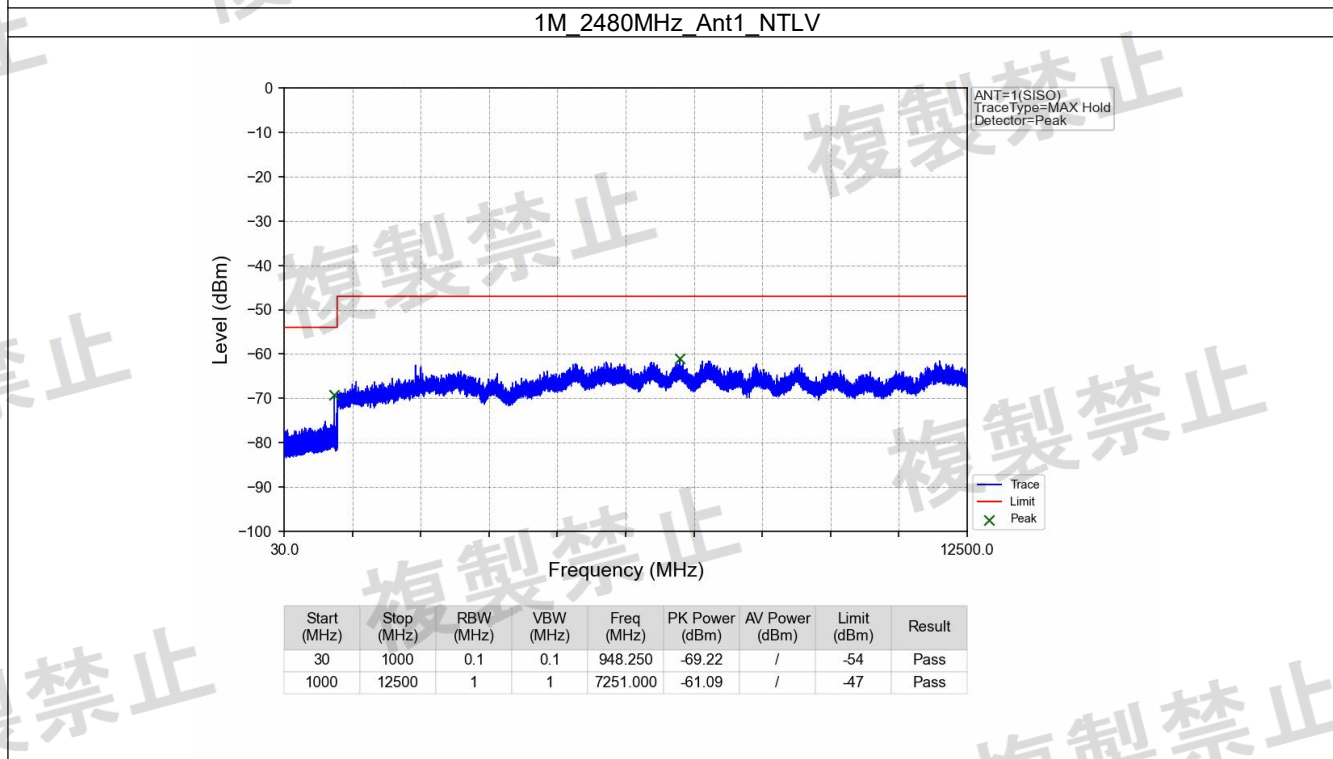
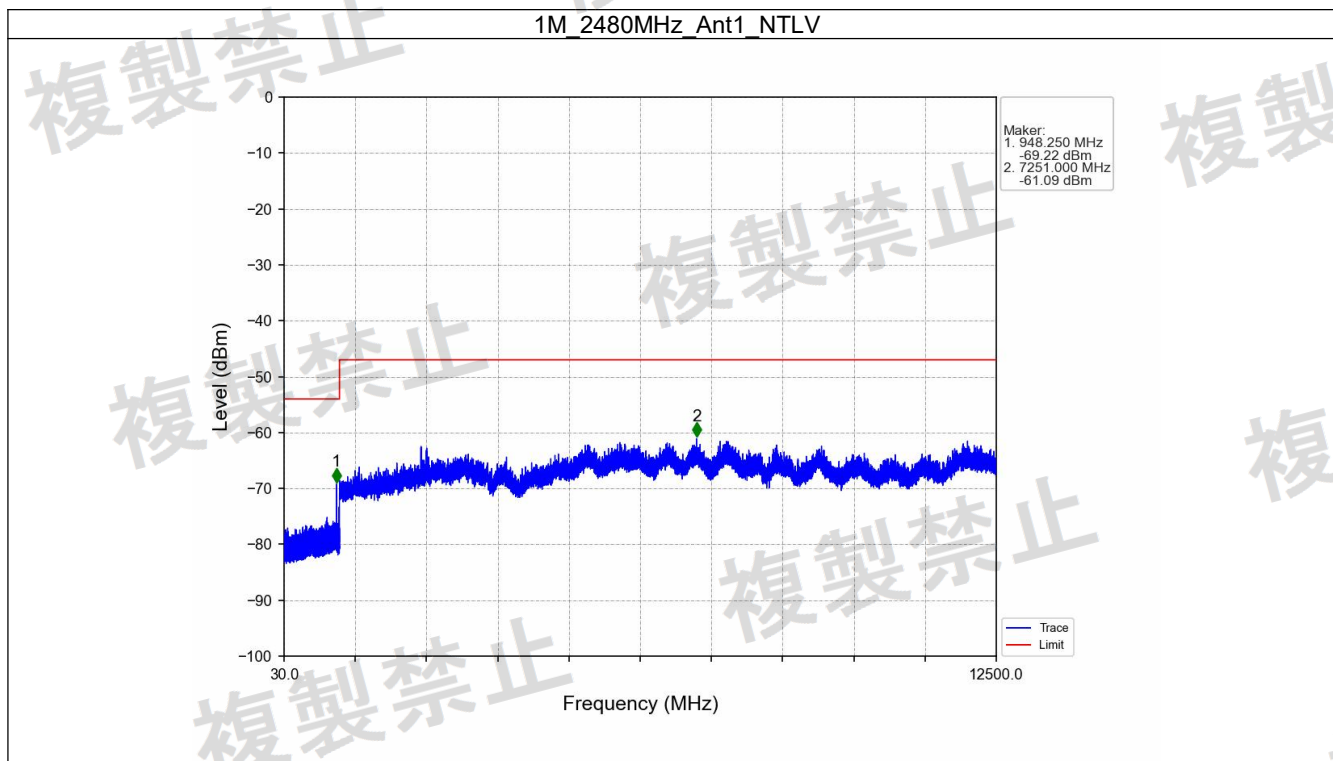


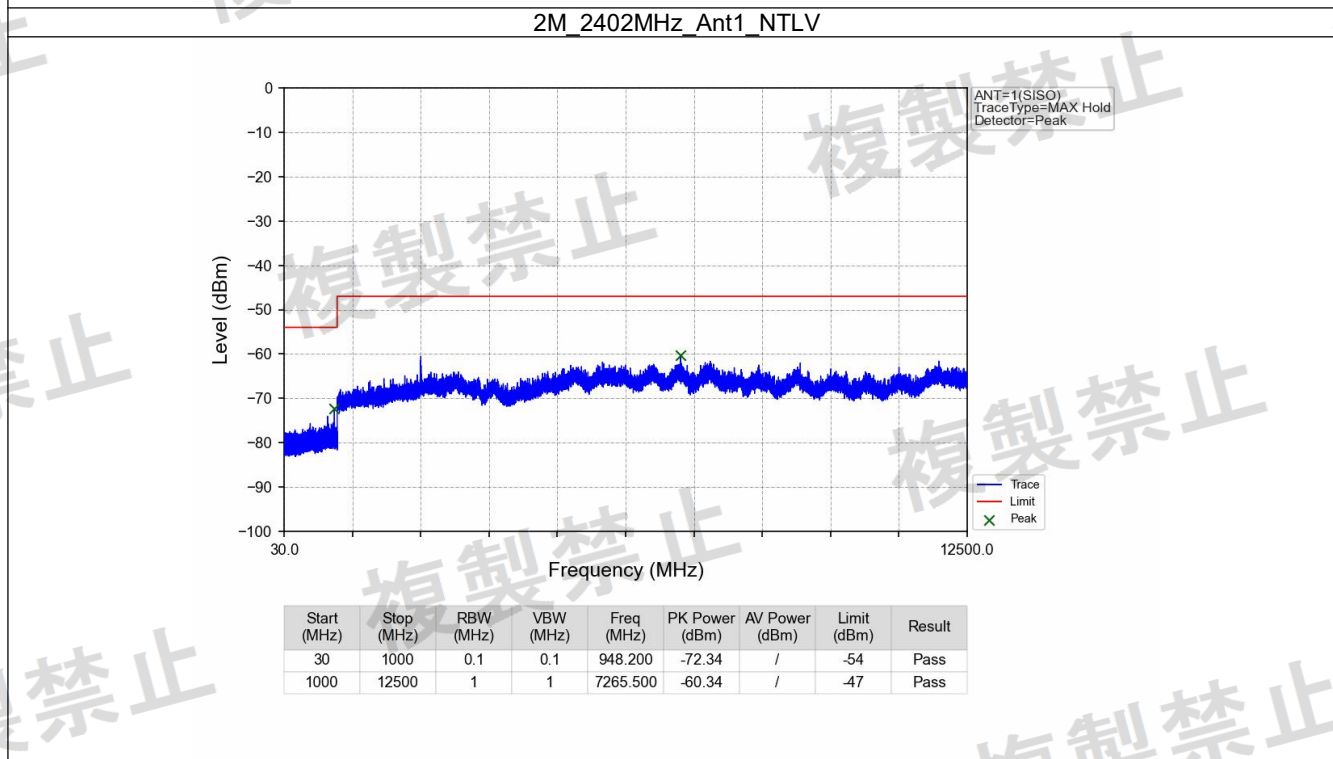
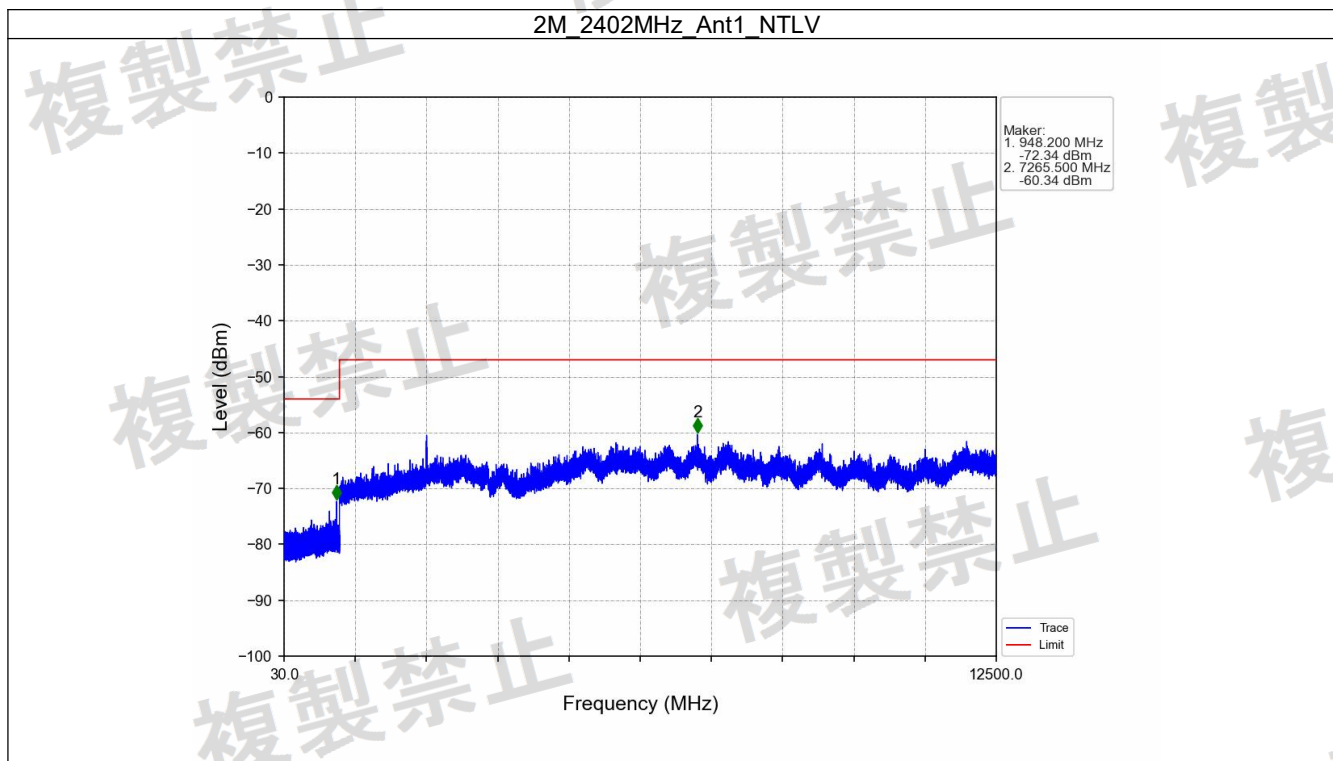


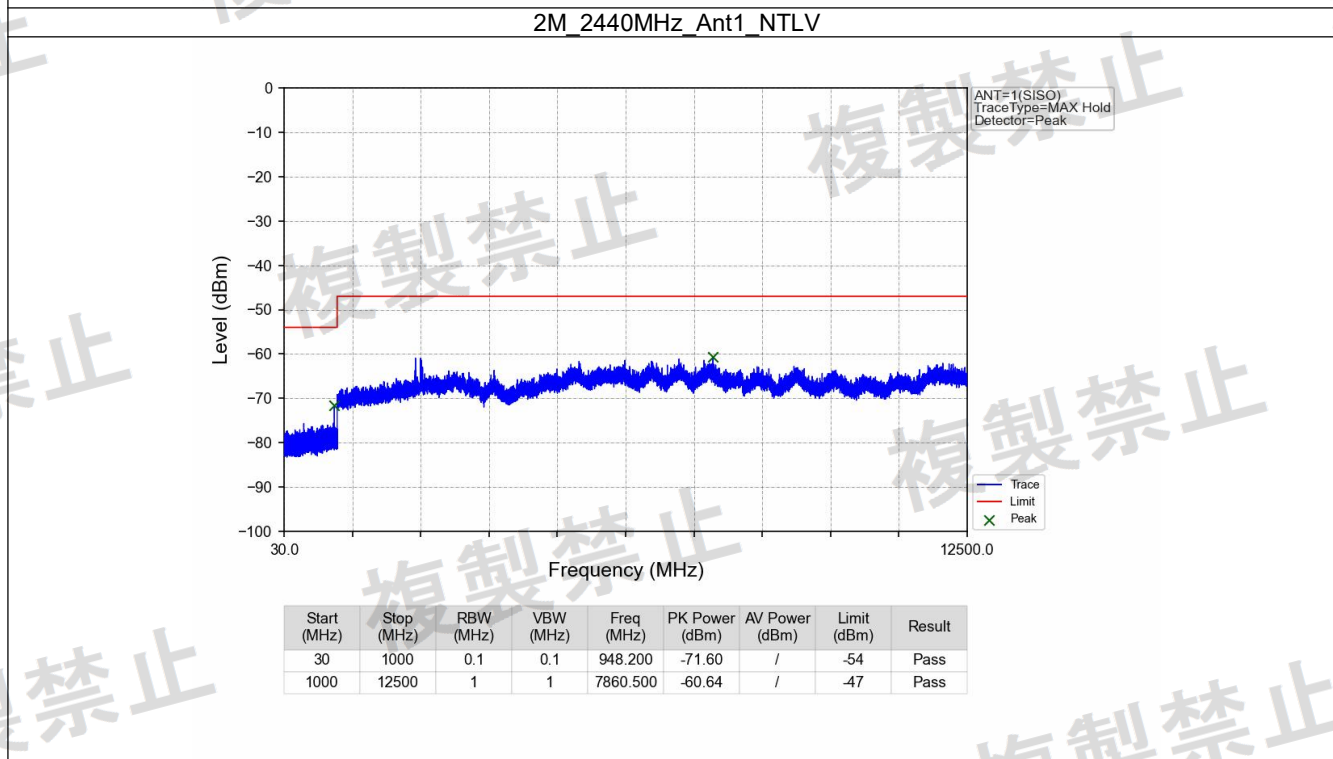
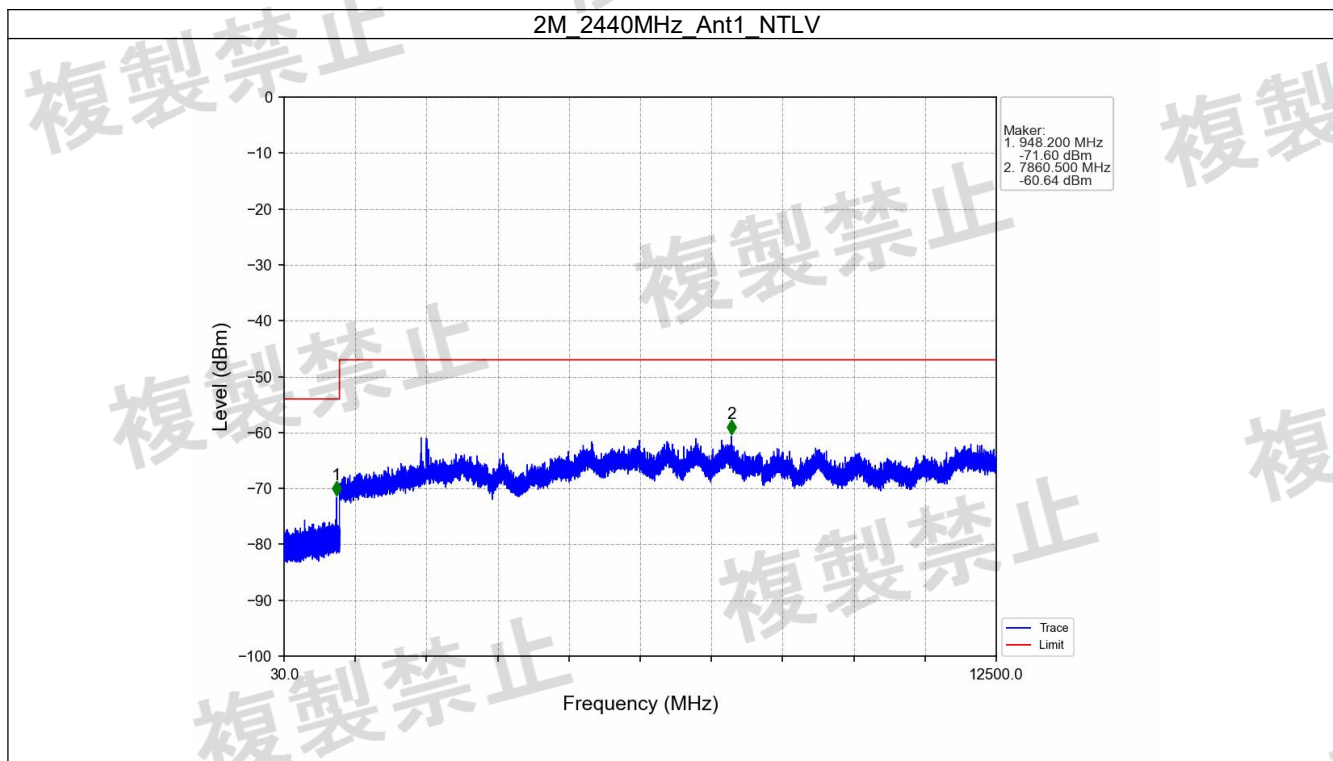
6.2.2 RxSe_NTLV

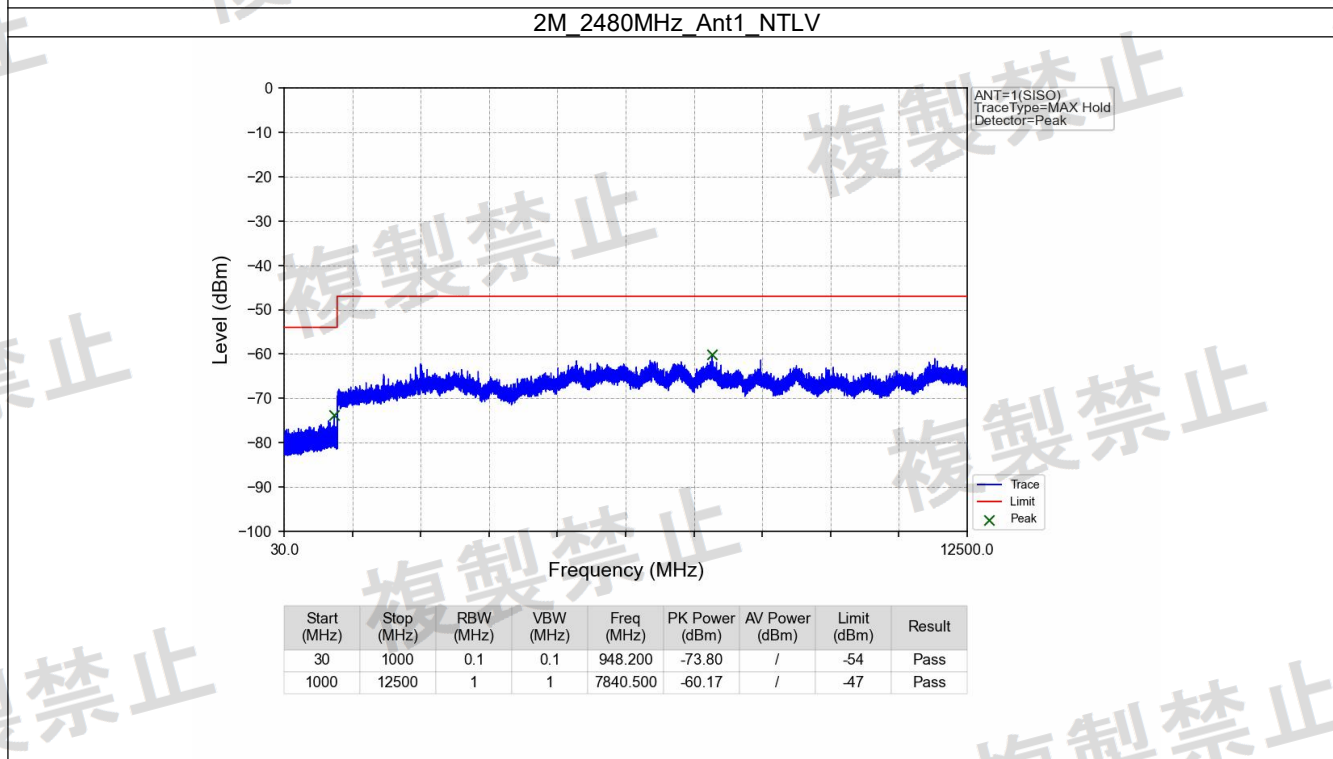
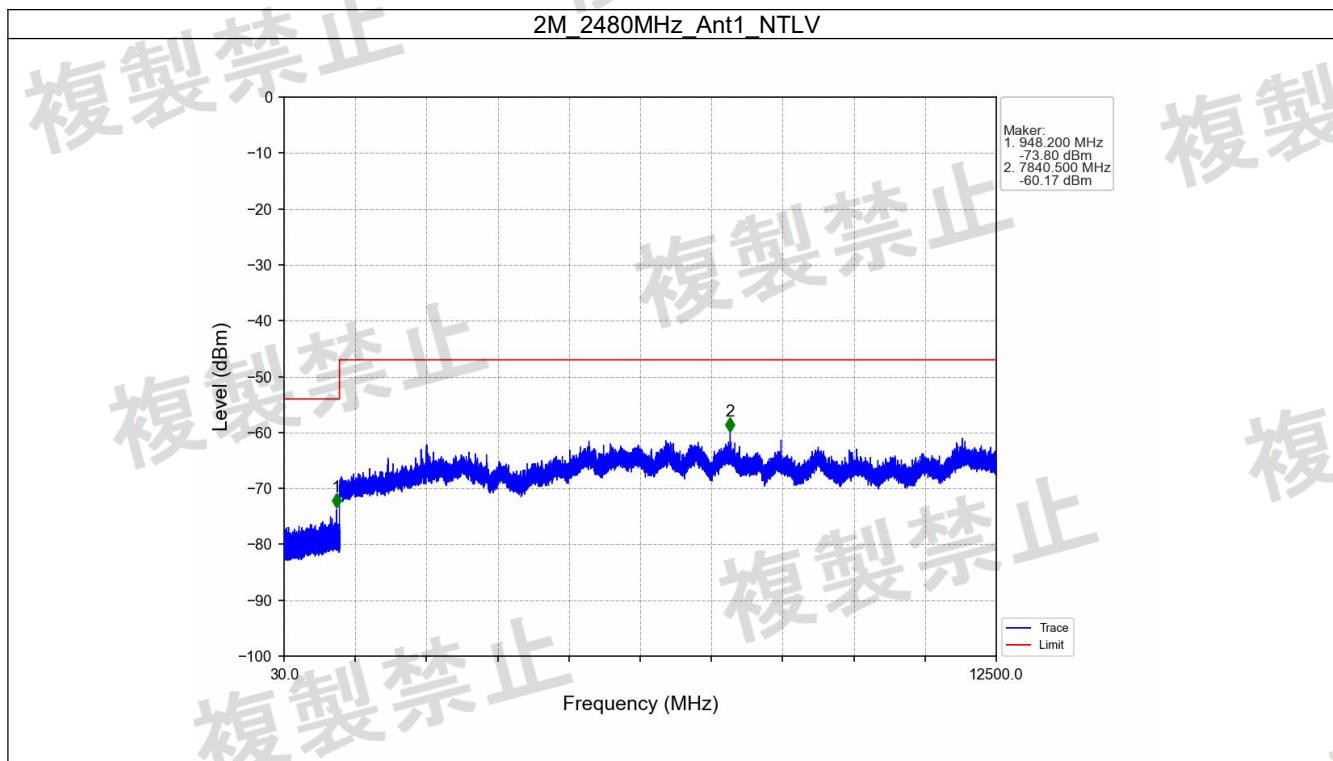












6.2.3 RxSe_NTHV

