



Appendix A

RF Test Data for BT (Conducted Measurement)

Product Name: POWERED SPEAKER

Trade Mark: ONKYO

Test Model: GX-10DB

Environmental Conditions

Temperature:	24.6℃
Relative Humidity:	52.1%
ATM Pressure:	101Kpa
Test Engineer:	Emiya lin
Supervised by:	Simba Haung
Test Date:	2024-12-16



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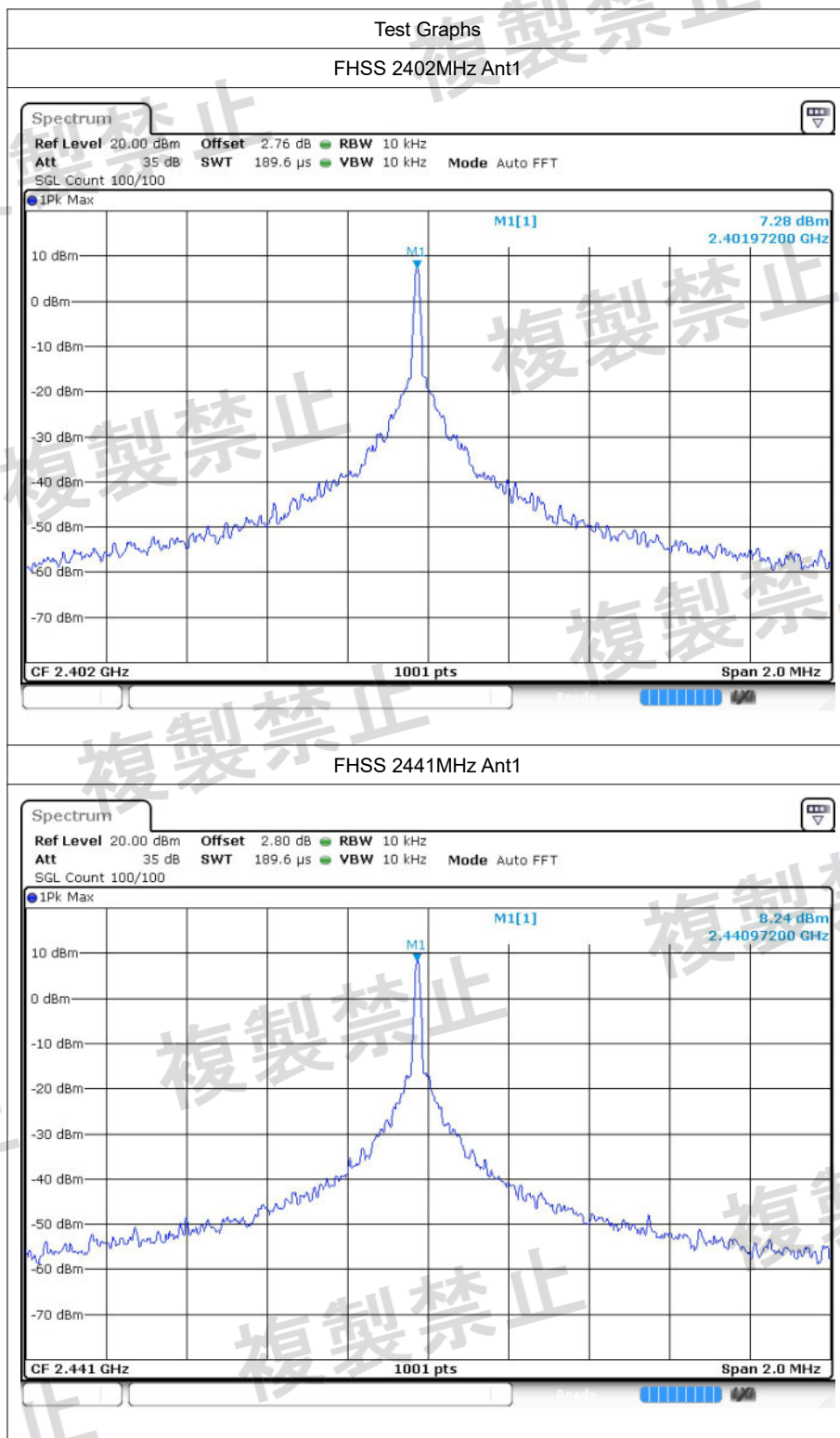


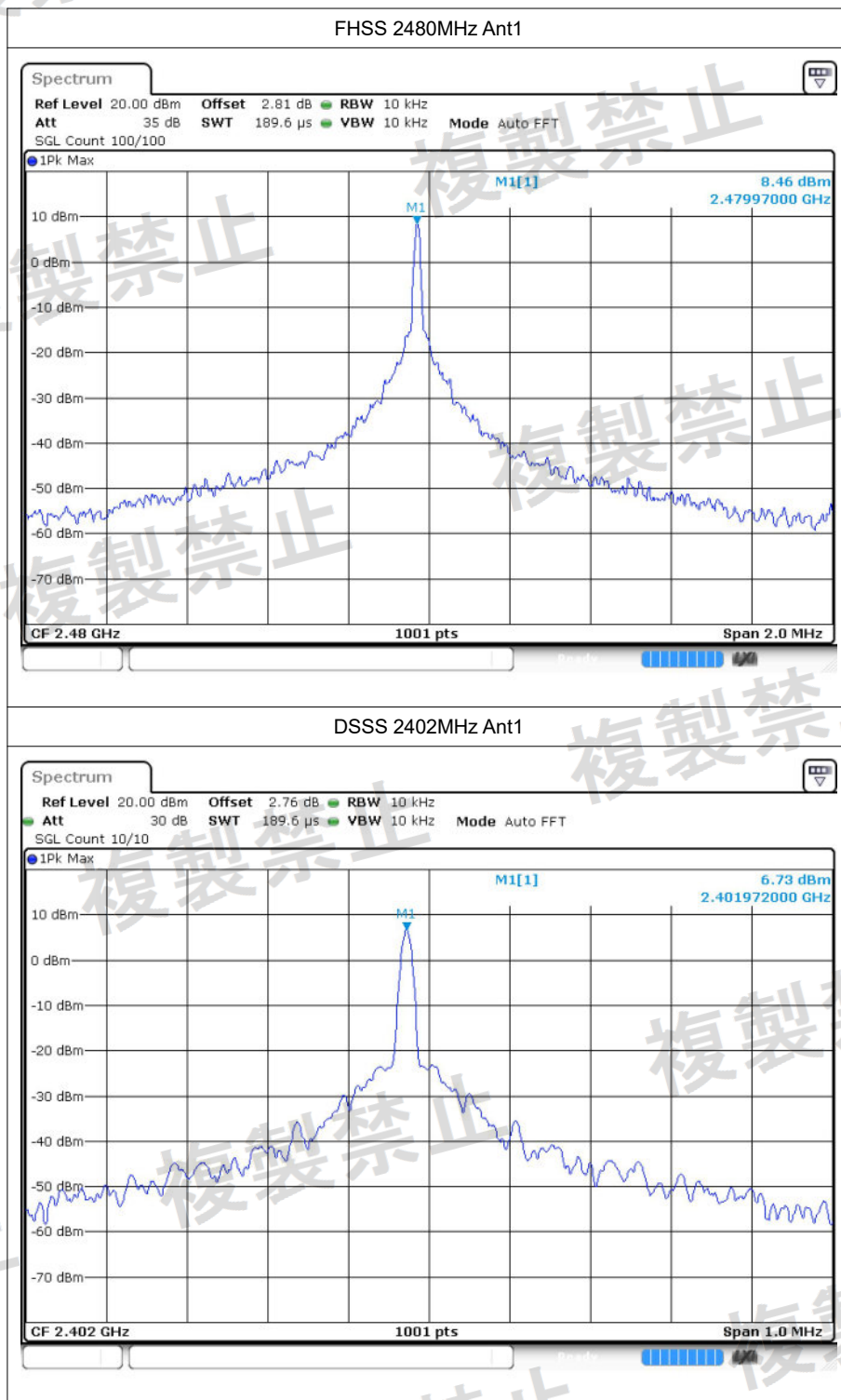
1 Frequency Error

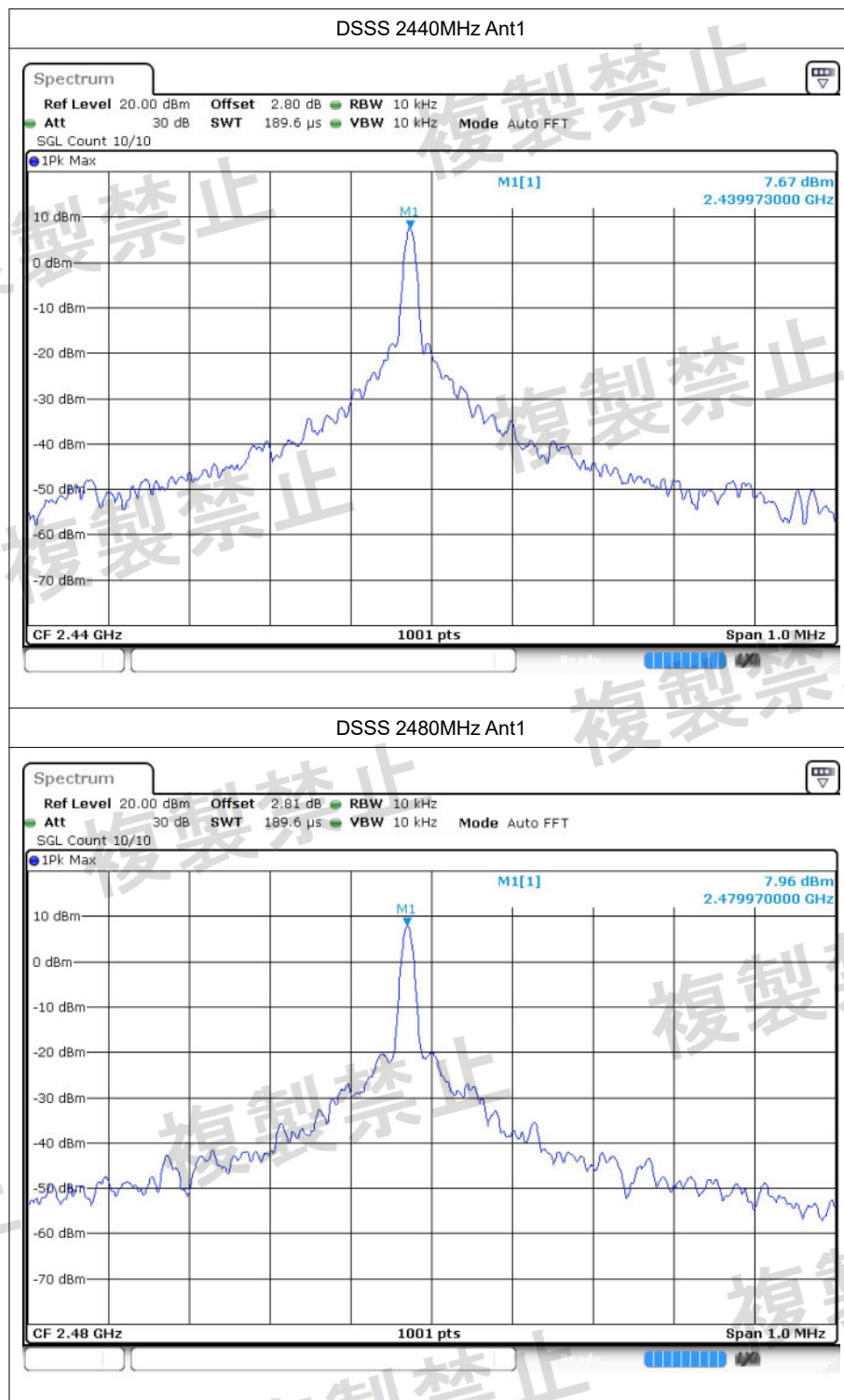
1.1 Test Result

Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Frequency Error (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
FHSS	2402	Ant1	2401.972	-28000	-11.66	50	Pass
FHSS	2441	Ant1	2440.972	-28000	-11.47	50	Pass
FHSS	2480	Ant1	2479.97	-30000	-12.1	50	Pass
DSSS	2402	Ant1	2401.972	-28000	-11.66	50	Pass
DSSS	2440	Ant1	2439.973	-27000	-11.07	50	Pass
DSSS	2480	Ant1	2479.97	-30000	-12.1	50	Pass

1.2 Test Graphs







2 Antenna and EIRP Power

2.1 Test Result

Mode	Frequency (MHz)	Antenna	Power (dBm)	Power (dBm/MHz)	Antenna Power (mW/MHz)	Declared Power (mW/MHz)	Tolerance (%)	Upper Limit (%)	Verdict
1-DH5	2402	Ant1	-1.57	-20.06	0.01	0.02	-50	20	Pass
1-DH5	2441	Ant1	-0.35	-18.84	0.01	0.02	-50	20	Pass
1-DH5	2480	Ant1	-0.85	-19.34	0.01	0.02	-50	20	Pass
2-DH5	2402	Ant1	-2.28	-20.77	0.01	0.02	-50	20	Pass
2-DH5	2441	Ant1	-1.15	-19.64	0.01	0.02	-50	20	Pass
2-DH5	2480	Ant1	-1.54	-20.03	0.01	0.02	-50	20	Pass
3-DH5	2402	Ant1	-2.29	-20.78	0.01	0.02	-50	20	Pass
3-DH5	2441	Ant1	-1.05	-19.54	0.01	0.02	-50	20	Pass
3-DH5	2480	Ant1	-1.67	-20.16	0.01	0.02	-50	20	Pass

Mode	Frequency (MHz)	Antenna	Power (dBm)	Power (dBm/MHz)	Antenna Power (mW)	Declared Power (mW)	Tolerance (%)	Upper Limit (%)	Verdict
BLE 1M	2402	Ant1	-1.1	-	0.78	1.5	-48	20	Pass
BLE 1M	2440	Ant1	-0.1	-	0.98	1.5	-34.67	20	Pass
BLE 1M	2480	Ant1	-0.73	-	0.85	1.5	-43.33	20	Pass



3 EIRP Power

3.1 Test Result

Mode	Frequency (MHz)	Antenna	Power (dBm/MHz)	Gain (dBi)	EIRP Power (dbm/MHz)	Limit (dbm/MHz)	Verdict
1-DH5	2402	Ant1	-20.06	3.3	-16.76	6.91	Pass
1-DH5	2441	Ant1	-18.84	3.3	-15.54	6.91	Pass
1-DH5	2480	Ant1	-19.34	3.3	-16.04	6.91	Pass
2-DH5	2402	Ant1	-20.77	3.3	-17.47	6.91	Pass
2-DH5	2441	Ant1	-19.64	3.3	-16.34	6.91	Pass
2-DH5	2480	Ant1	-20.03	3.3	-16.73	6.91	Pass
3-DH5	2402	Ant1	-20.78	3.3	-17.48	6.91	Pass
3-DH5	2441	Ant1	-19.54	3.3	-16.24	6.91	Pass
3-DH5	2480	Ant1	-20.16	3.3	-16.86	6.91	Pass

Mode	Frequency (MHz)	Antenna	Power (dbm)	Gain (dBi)	EIRP Power (dbm)	Limit (dbm)	Verdict
BLE 1M	2402	Ant1	-1.1	3.3	2.2	12.14	Pass
BLE 1M	2440	Ant1	-0.1	3.3	3.2	12.14	Pass
BLE 1M	2480	Ant1	-0.73	3.3	2.57	12.14	Pass

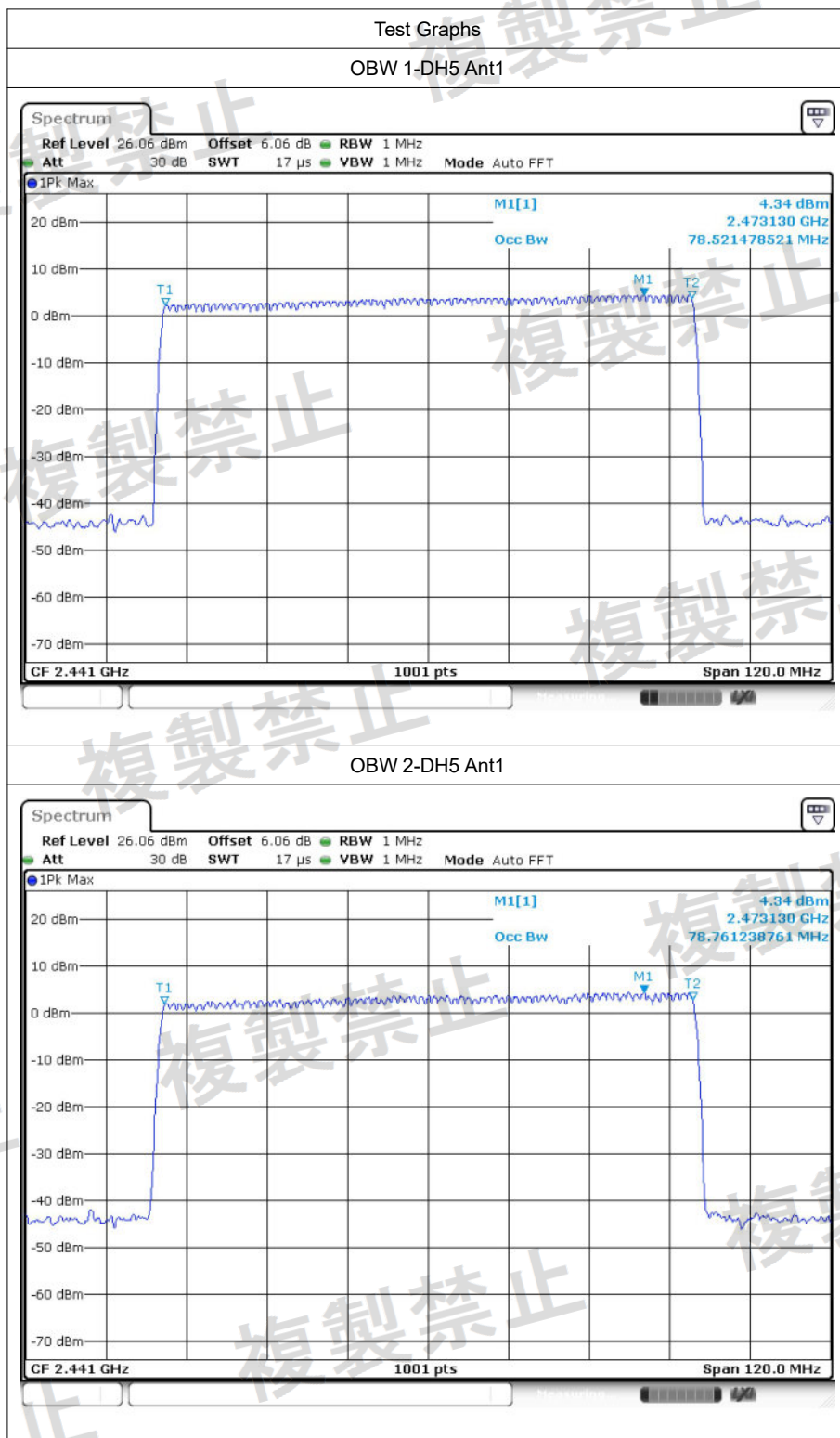


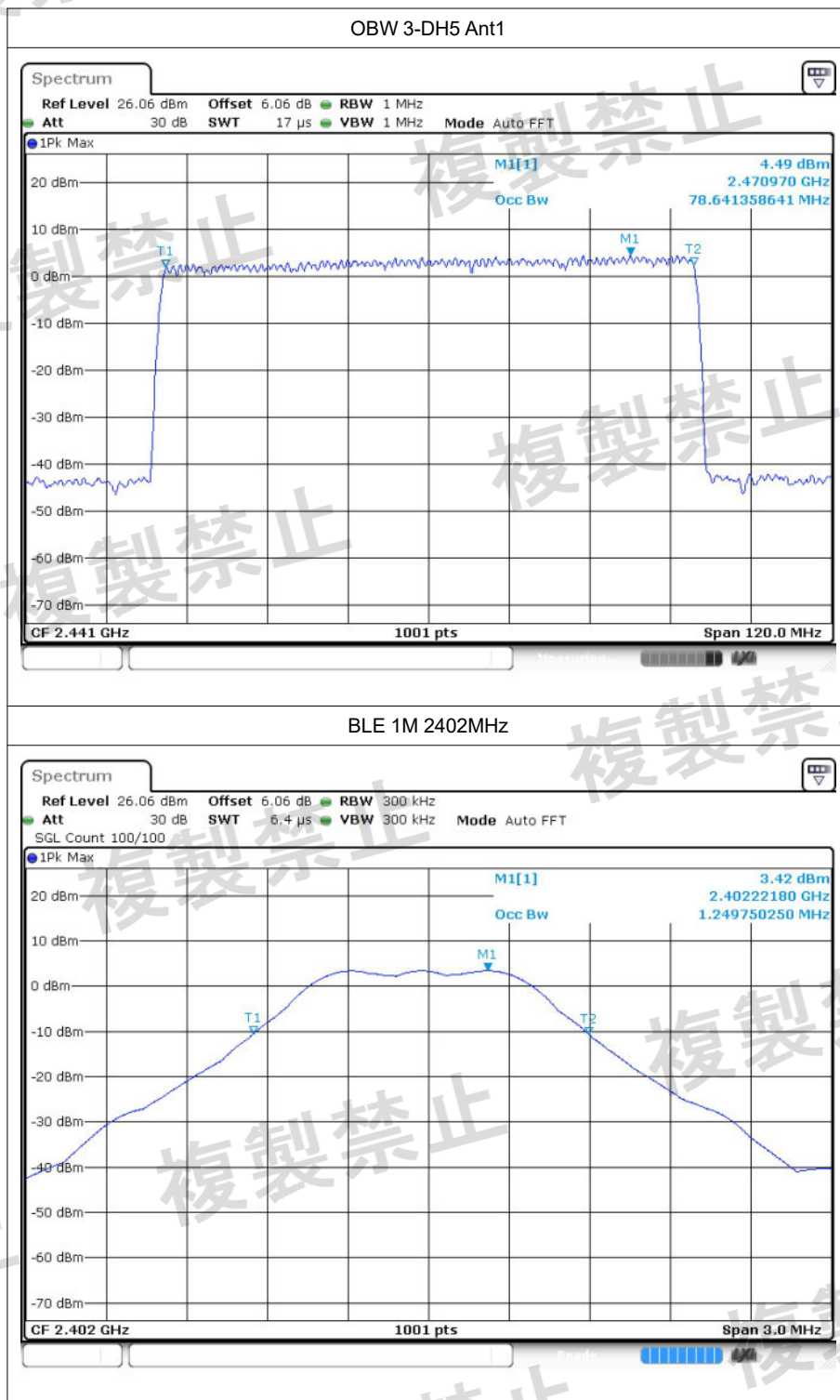
4 Occupied Channel Bandwidth

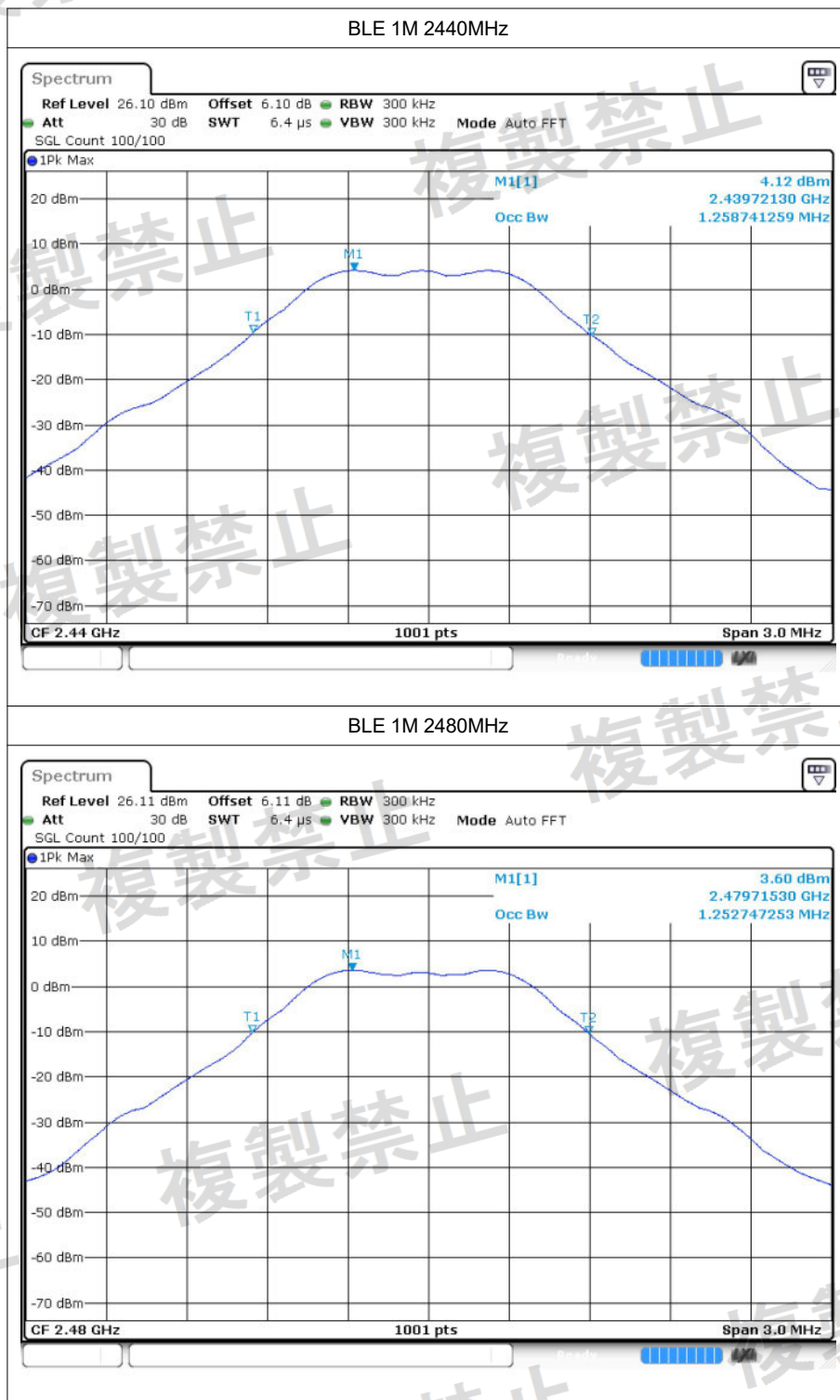
4.1 Test Result

Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
1-DH5	79 channels(2402~2480 MHz)	Ant1	78.521
2-DH5	79 channels(2402~2480 MHz)	Ant1	78.761
3-DH5	79 channels(2402~2480 MHz)	Ant1	78.641
BLE 1M	2402	Ant1	1.25
BLE 1M	2440	Ant1	1.259
BLE 1M	2480	Ant1	1.253

4.2 Test Graphs







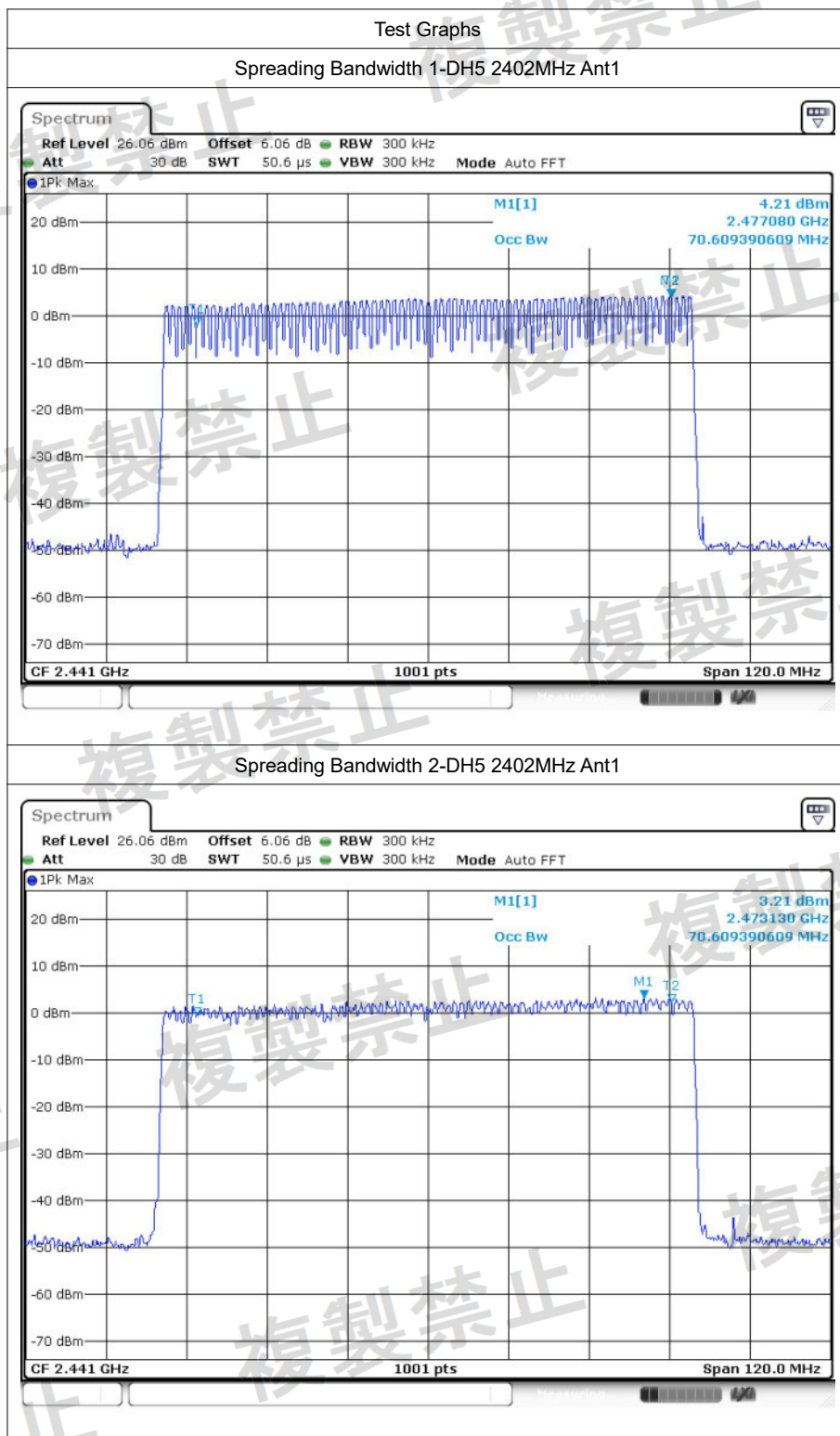


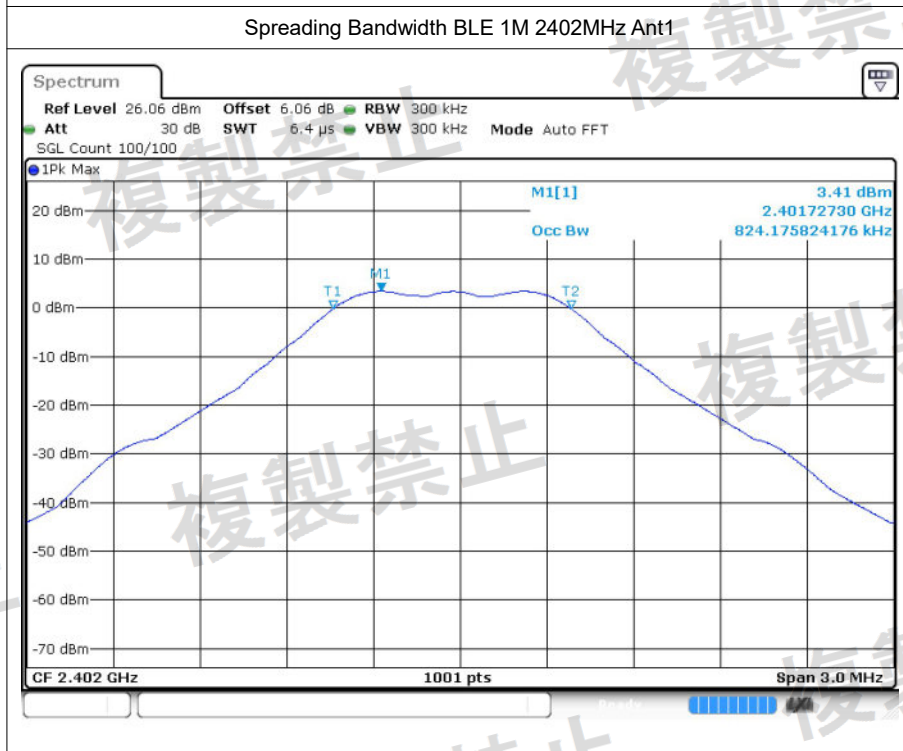
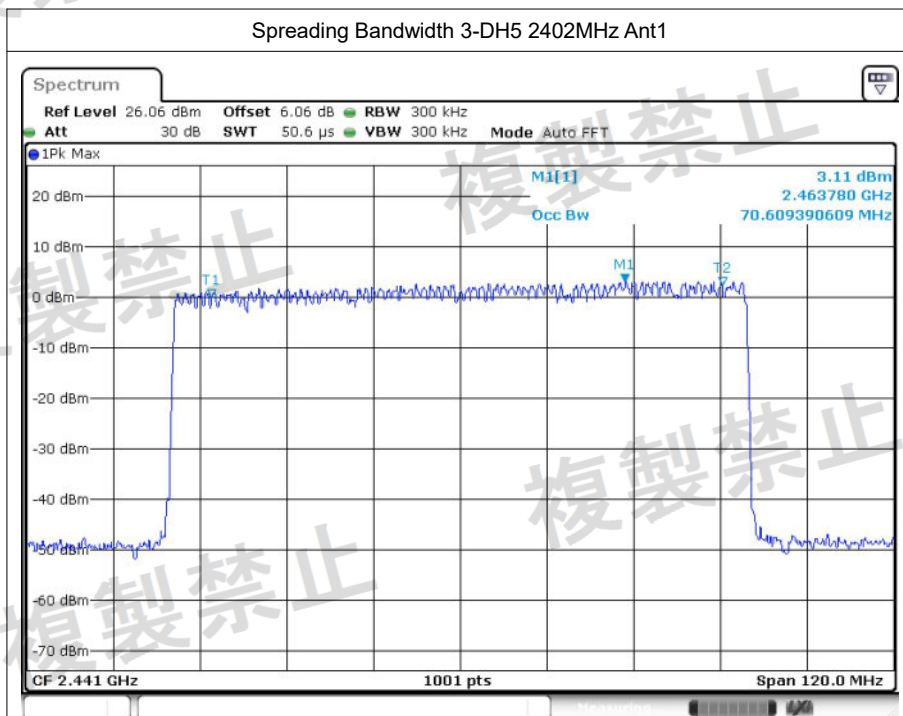
5 Spread Spectrum Bandwidth (90%)

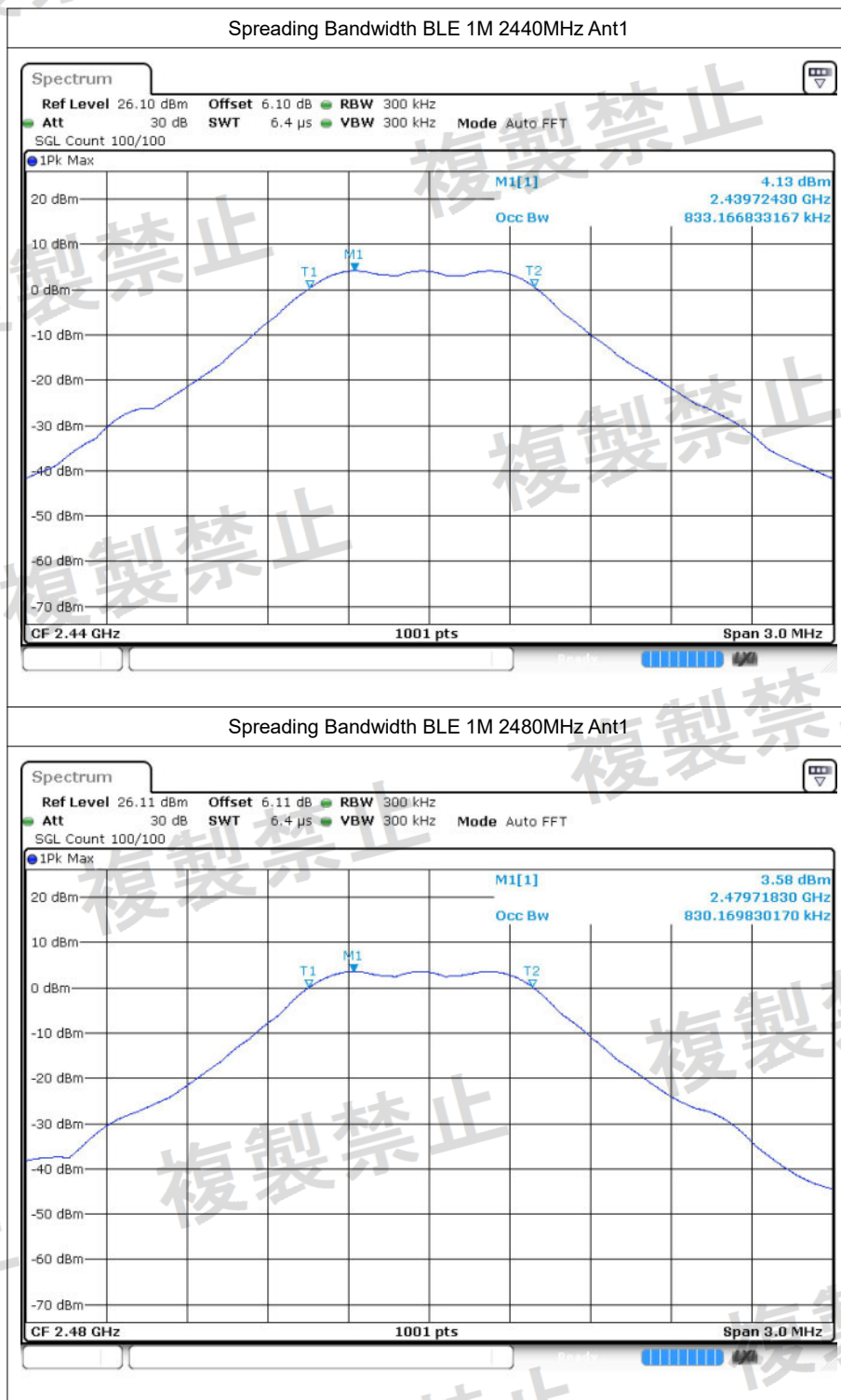
5.1 Test Result

Mode	Frequency (MHz)	Antenna	90% OBW (MHz)	Limit (MHz)	Verdict
1-DH5	79 channels(2402~2480 MHz)	Ant1	70.609	0.5	Pass
2-DH5	79 channels(2402~2480 MHz)	Ant1	70.609	0.5	Pass
3-DH5	79 channels(2402~2480 MHz)	Ant1	70.609	0.5	Pass
BLE 1M	2402	Ant1	0.824	0.5	Pass
BLE 1M	2440	Ant1	0.833	0.5	Pass
BLE 1M	2480	Ant1	0.83	0.5	Pass

5.2 Test Graphs









6 Tx Spurious Emission

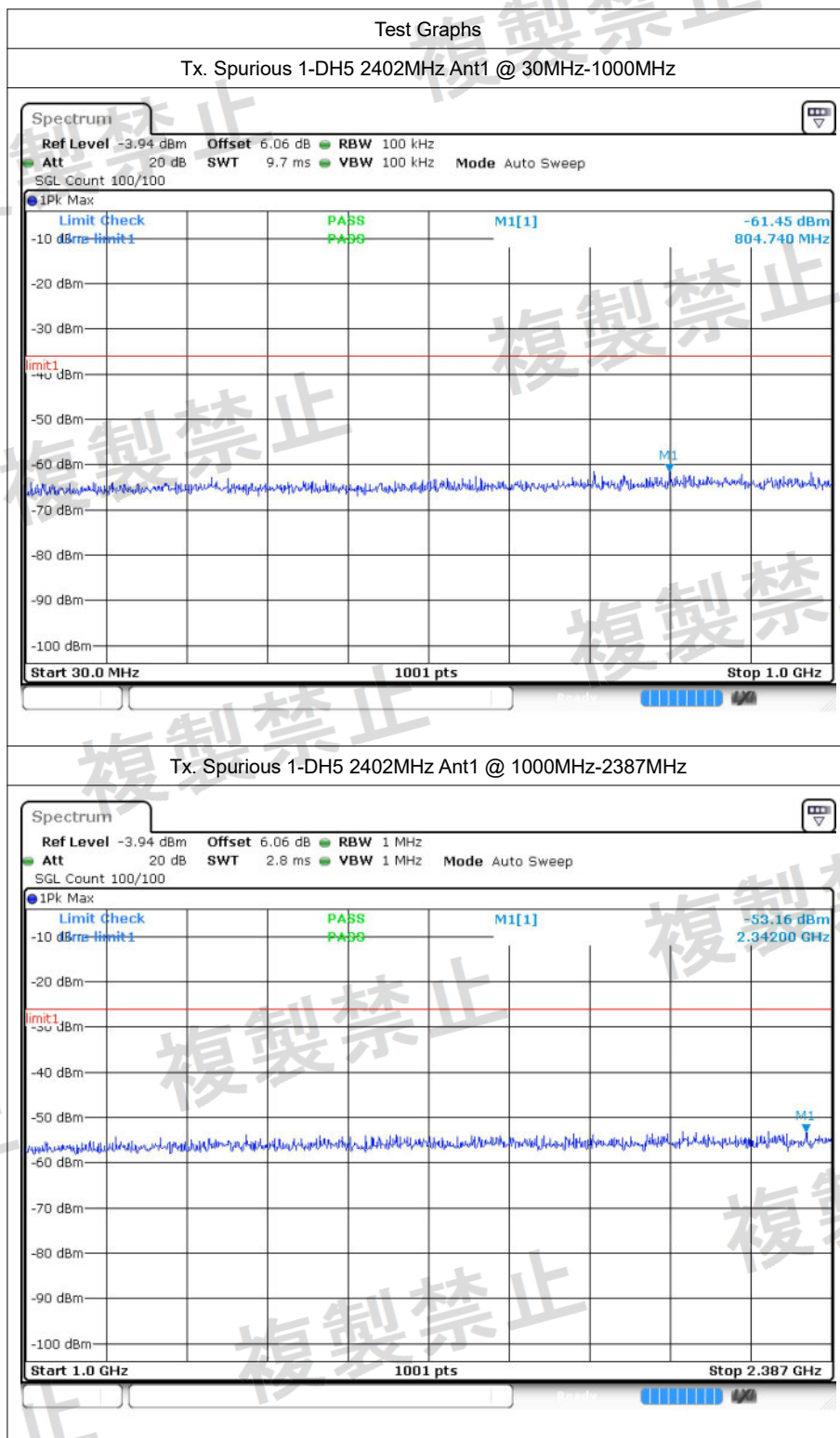
6.1 Test Result

Mode	Frequency (MHz)	Antenna	Range (MHz)	Emission Frequency (MHz)	Max Value (dBm)	Limit Start(dBm)	Limit Stop (dBm)	Verdict
1-DH5	2402	Ant1	30-1000	804.74	-51.45	-36	-36	Pass
1-DH5	2402	Ant1	1000-2387	2342	-53.16	-26	-26	Pass
1-DH5	2402	Ant1	2387-2400	2399.99	-38.63	-16	-16	Pass
1-DH5	2402	Ant1	2483.5-2496.5	2491.69	-54.83	-16	-16	Pass
1-DH5	2402	Ant1	2496.5-13000	10549.5	-44.27	-26	-26	Pass
1-DH5	2441	Ant1	30-1000	832.84	-51.35	-36	-36	Pass
1-DH5	2441	Ant1	1000-2387	2382.2	-52.45	-26	-26	Pass
1-DH5	2441	Ant1	2387-2400	2398.94	-54.1	-16	-16	Pass
1-DH5	2441	Ant1	2483.5-2496.5	2488.62	-53.98	-16	-16	Pass
1-DH5	2441	Ant1	2496.5-13000	12648.5	-43.51	-26	-26	Pass
1-DH5	2480	Ant1	30-1000	889.05	-52.04	-36	-36	Pass
1-DH5	2480	Ant1	1000-2387	2317	-52.74	-26	-26	Pass
1-DH5	2480	Ant1	2387-2400	2392.53	-52.19	-16	-16	Pass
1-DH5	2480	Ant1	2483.5-2496.5	2487.44	-44.2	-16	-16	Pass
1-DH5	2480	Ant1	2496.5-13000	11231.5	-44.05	-26	-26	Pass
2-DH5	2402	Ant1	30-1000	953	-52.05	-36	-36	Pass
2-DH5	2402	Ant1	1000-2387	2342	-50.91	-26	-26	Pass
2-DH5	2402	Ant1	2387-2400	2399.99	-29.28	-16	-16	Pass
2-DH5	2402	Ant1	2483.5-2496.5	2492.78	-54.03	-16	-16	Pass
2-DH5	2402	Ant1	2496.5-13000	7821.5	-43.72	-26	-26	Pass
2-DH5	2441	Ant1	30-1000	882.26	-50.8	-36	-36	Pass
2-DH5	2441	Ant1	1000-2387	2382.2	-51.63	-26	-26	Pass
2-DH5	2441	Ant1	2387-2400	2397.36	-54.21	-16	-16	Pass
2-DH5	2441	Ant1	2483.5-2496.5	2486.08	-53.93	-16	-16	Pass
2-DH5	2441	Ant1	2496.5-13000	7003.5	-44.09	-26	-26	Pass
2-DH5	2480	Ant1	30-1000	212.66	-51.8	-36	-36	Pass
2-DH5	2480	Ant1	1000-2387	2125.8	-53.56	-26	-26	Pass
2-DH5	2480	Ant1	2387-2400	2398.3	-54.19	-16	-16	Pass
2-DH5	2480	Ant1	2483.5-2496.5	2483.8	-46.46	-16	-16	Pass
2-DH5	2480	Ant1	2496.5-13000	12627.5	-43.06	-26	-26	Pass
3-DH5	2402	Ant1	30-1000	759.2	-52.12	-36	-36	Pass
3-DH5	2402	Ant1	1000-2387	2386.3	-49.11	-26	-26	Pass
3-DH5	2402	Ant1	2387-2400	2399.99	-29.14	-16	-16	Pass



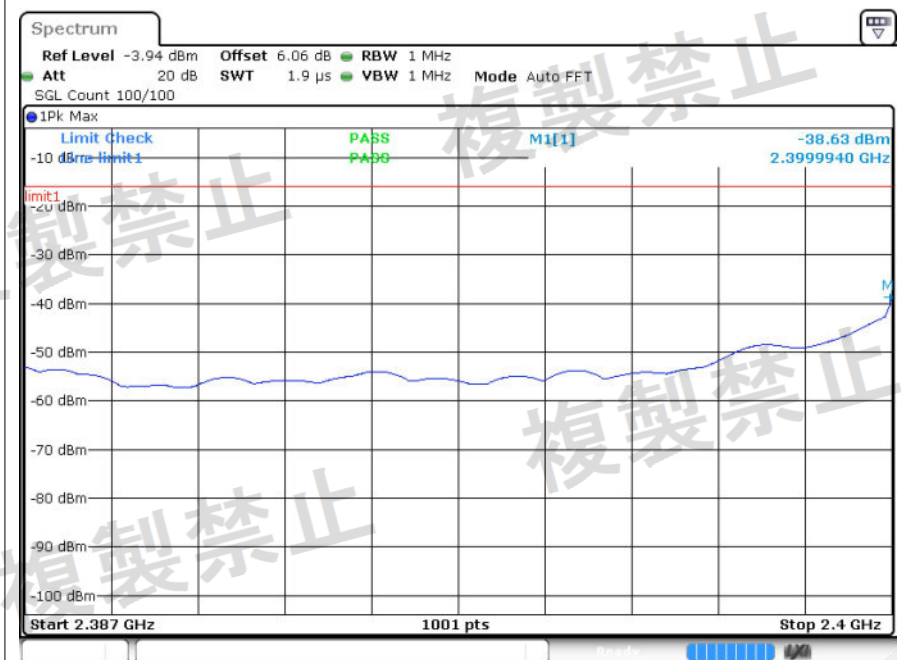
3-DH5	2402	Ant1	2483.5-2496.5	2486.53	-53.48	-16	-16	Pass
3-DH5	2402	Ant1	2496.5-13000	12648.5	-44.39	-26	-26	Pass
3-DH5	2441	Ant1	30-1000	870.63	-51.38	-36	-36	Pass
3-DH5	2441	Ant1	1000-2387	1974.8	-52.35	-26	-26	Pass
3-DH5	2441	Ant1	2387-2400	2395.28	-53.49	-16	-16	Pass
3-DH5	2441	Ant1	2483.5-2496.5	2486.36	-52.8	-16	-16	Pass
3-DH5	2441	Ant1	2496.5-13000	11252.5	-43.89	-26	-26	Pass
3-DH5	2480	Ant1	30-1000	765.01	-51.13	-36	-36	Pass
3-DH5	2480	Ant1	1000-2387	2125.8	-52.69	-26	-26	Pass
3-DH5	2480	Ant1	2387-2400	2396.68	-54.03	-16	-16	Pass
3-DH5	2480	Ant1	2483.5-2496.5	2487.51	-43.79	-16	-16	Pass
3-DH5	2480	Ant1	2496.5-13000	6992.5	-44.1	-26	-26	Pass
BLE 1M	2402	Ant1	30-1000	741.75	-51.63	-36	-36	Pass
BLE 1M	2402	Ant1	1000-2387	2342	-50.77	-26	-26	Pass
BLE 1M	2402	Ant1	2387-2400	2399.99	-29.9	-16	-16	Pass
BLE 1M	2402	Ant1	2483.5-2496.5	2490.49	-53.13	-16	-16	Pass
BLE 1M	2402	Ant1	2496.5-13000	6992.5	-44	-26	-26	Pass
BLE 1M	2440	Ant1	30-1000	866.76	-51.52	-36	-36	Pass
BLE 1M	2440	Ant1	1000-2387	2380.8	-51.11	-26	-26	Pass
BLE 1M	2440	Ant1	2387-2400	2399.19	-54.19	-16	-16	Pass
BLE 1M	2440	Ant1	2483.5-2496.5	2495.92	-54.27	-16	-16	Pass
BLE 1M	2440	Ant1	2496.5-13000	10287.5	-44.51	-26	-26	Pass
BLE 1M	2480	Ant1	30-1000	357.05	-51.39	-36	-36	Pass
BLE 1M	2480	Ant1	1000-2387	1645	-52.96	-26	-26	Pass
BLE 1M	2480	Ant1	2387-2400	2399.64	-53.87	-16	-16	Pass
BLE 1M	2480	Ant1	2483.5-2496.5	2483.74	-50.27	-16	-16	Pass
BLE 1M	2480	Ant1	2496.5-13000	12648.5	-44.08	-26	-26	Pass

6.2 Test Graphs

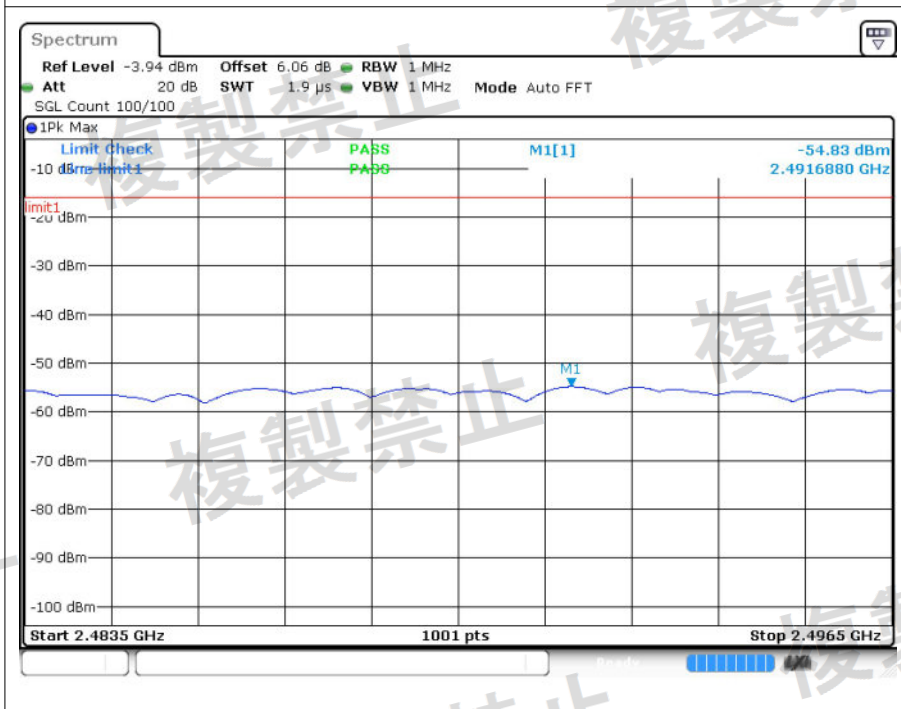


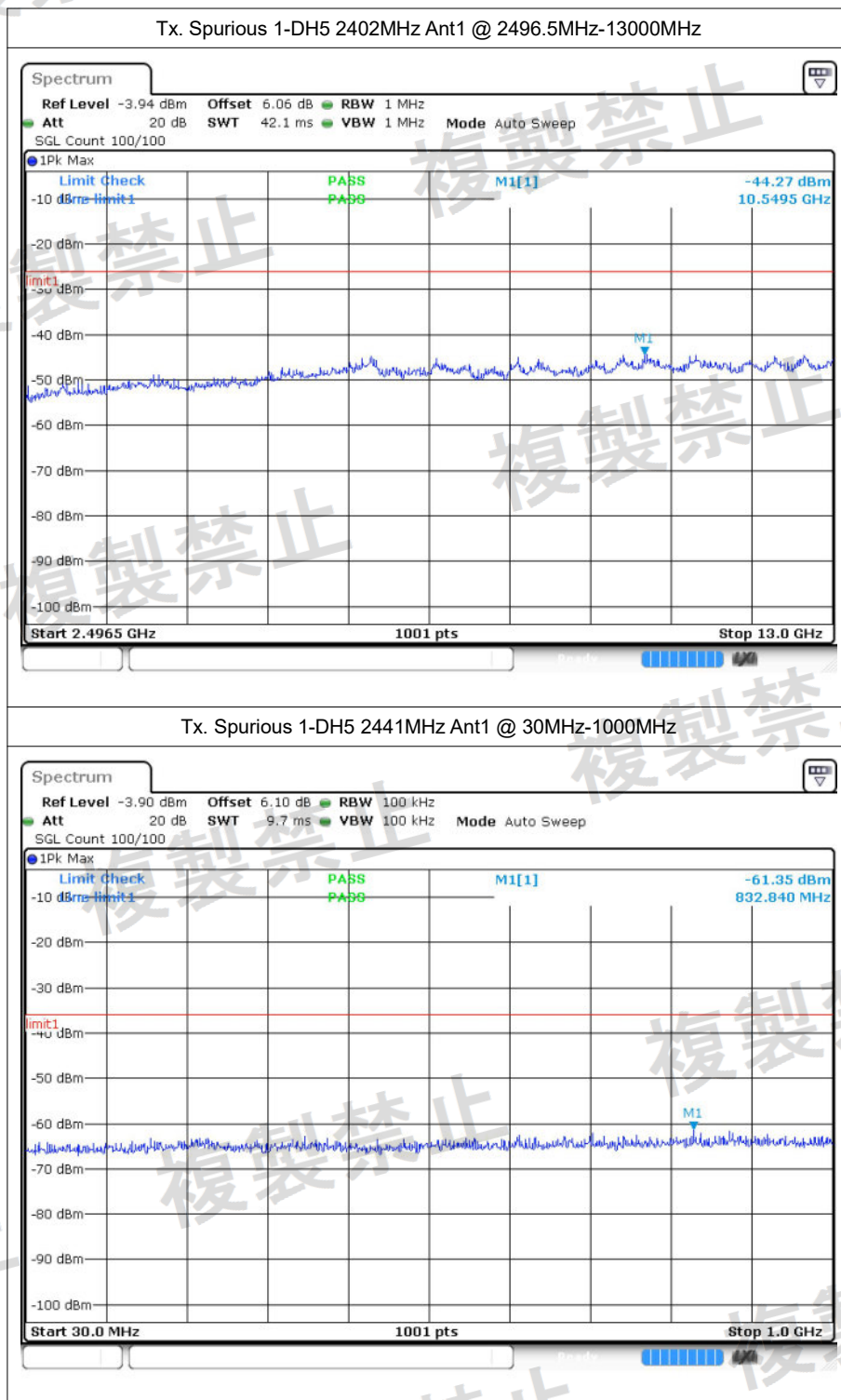


Tx. Spurious 1-DH5 2402MHz Ant1 @ 2387MHz-2400MHz

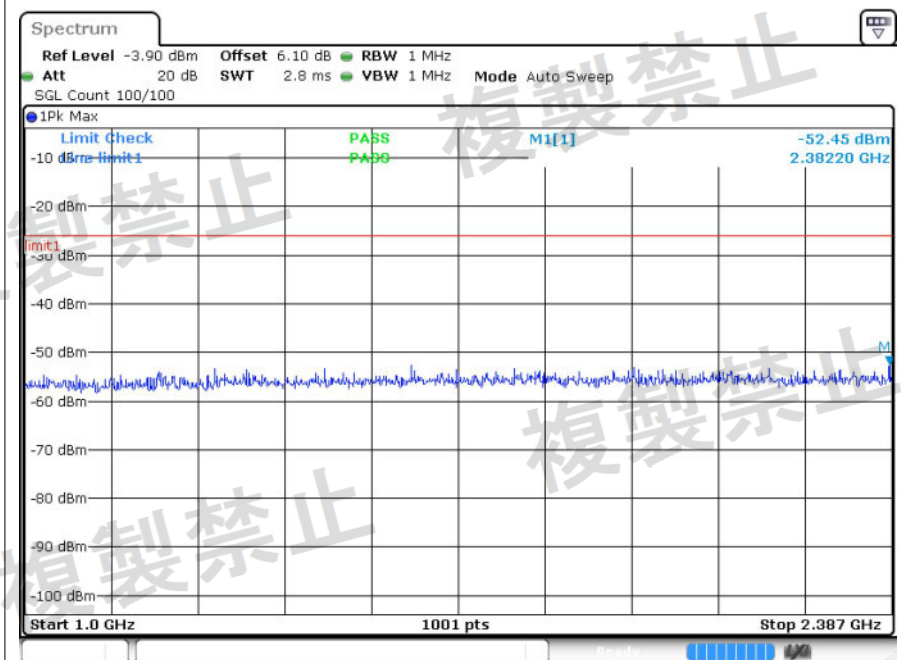


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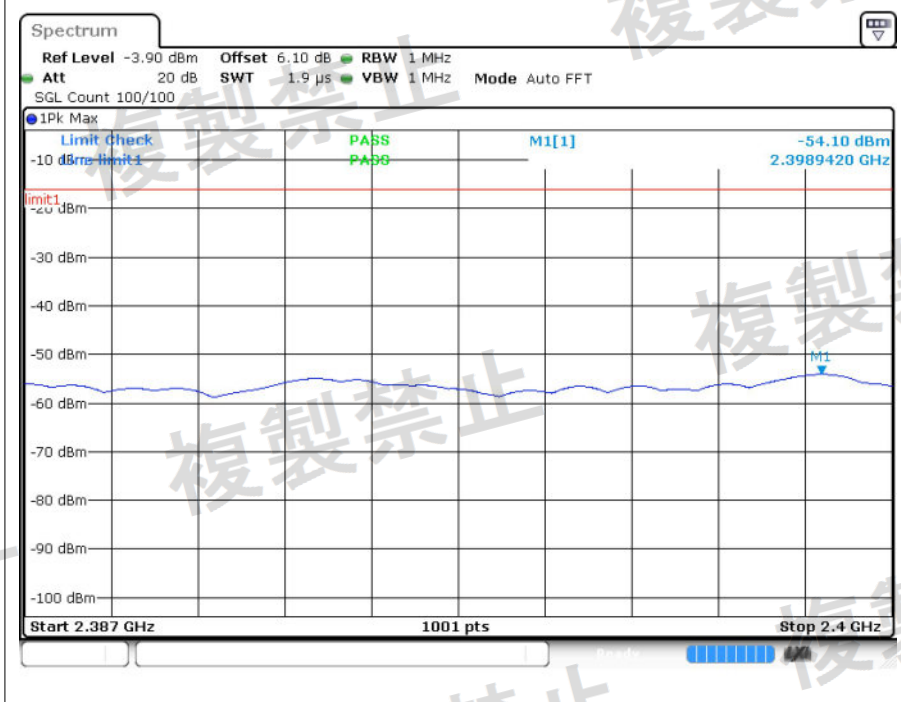


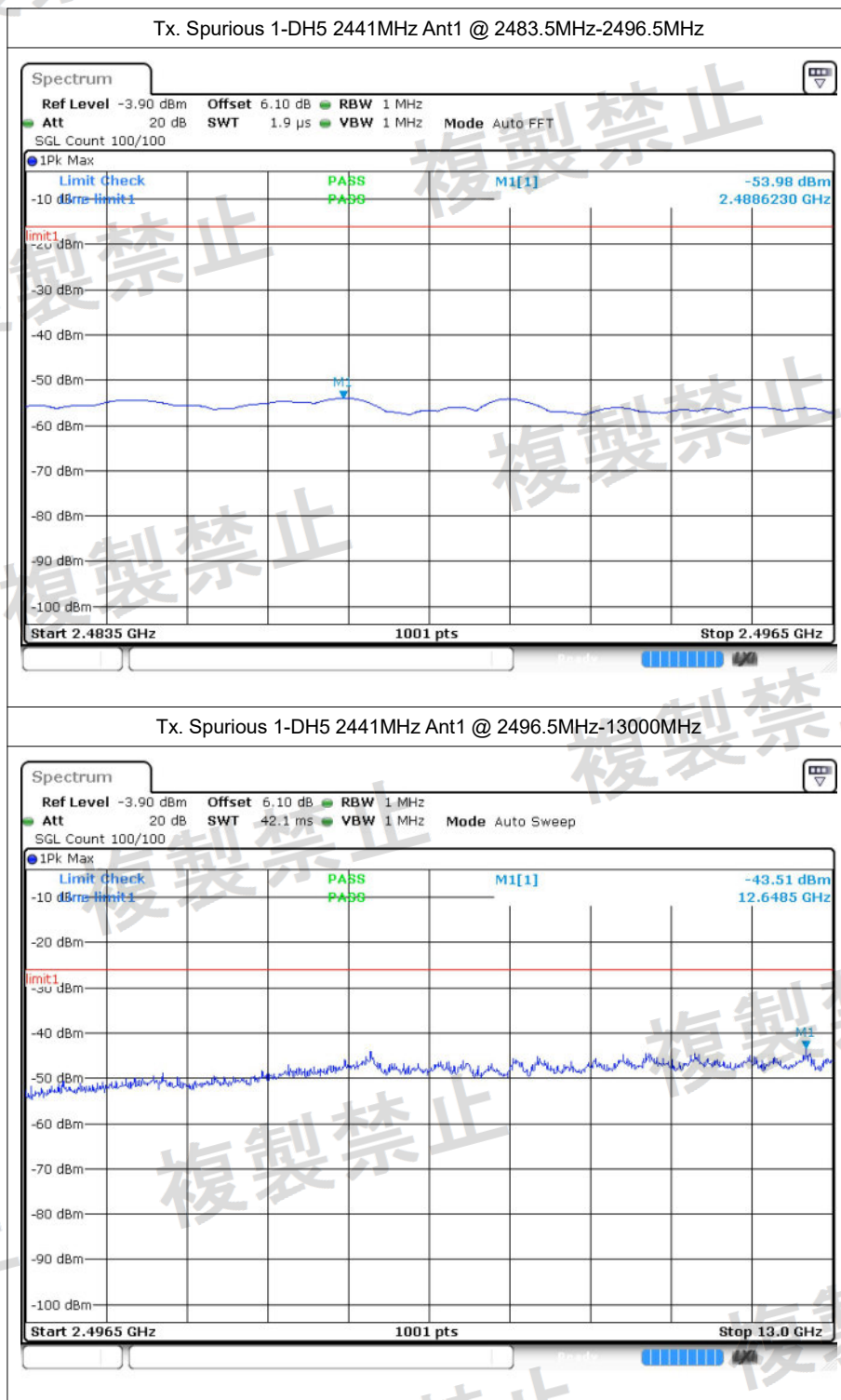


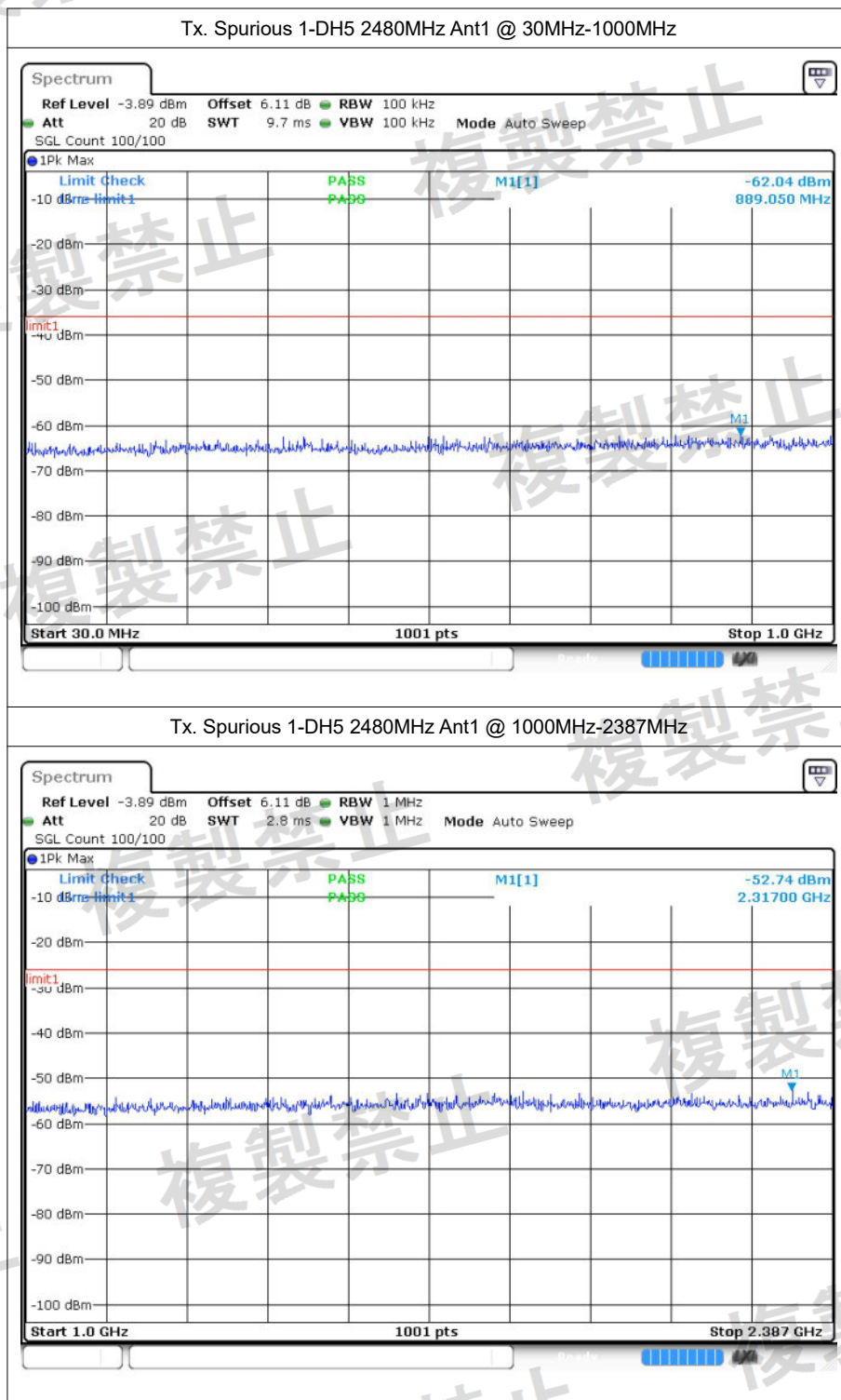
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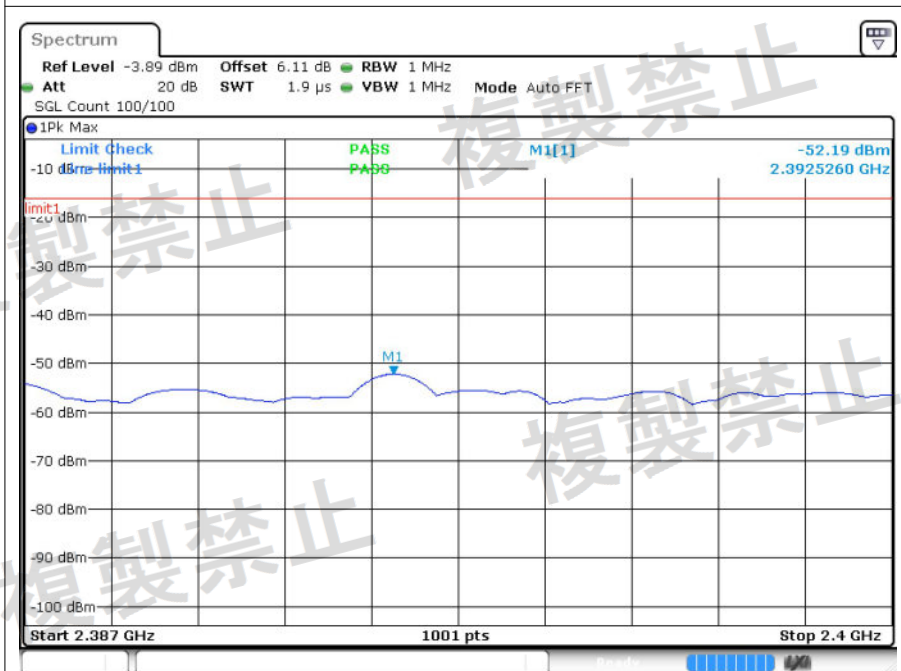
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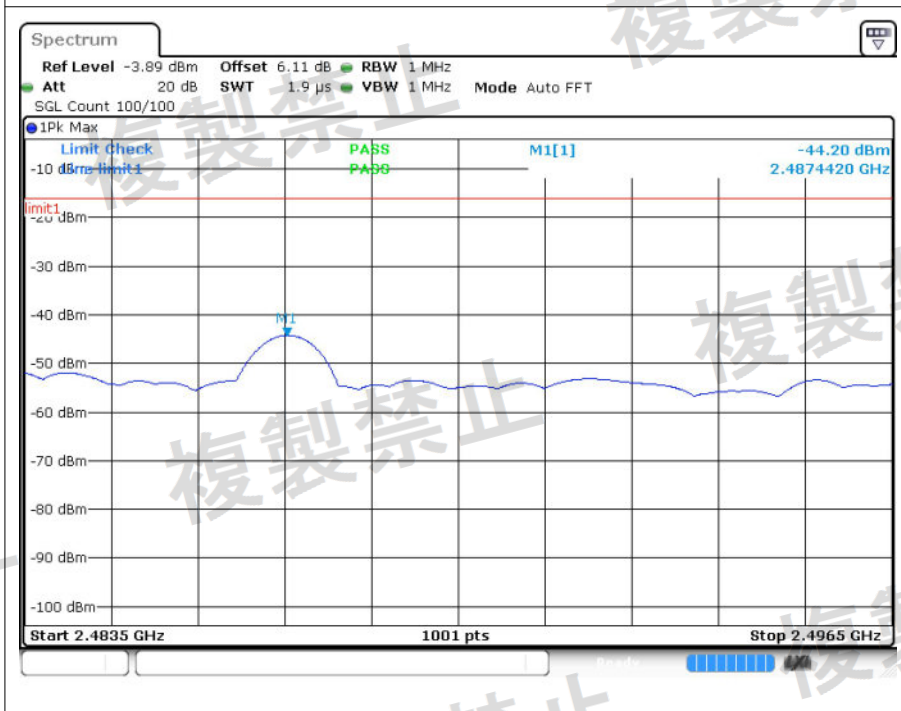


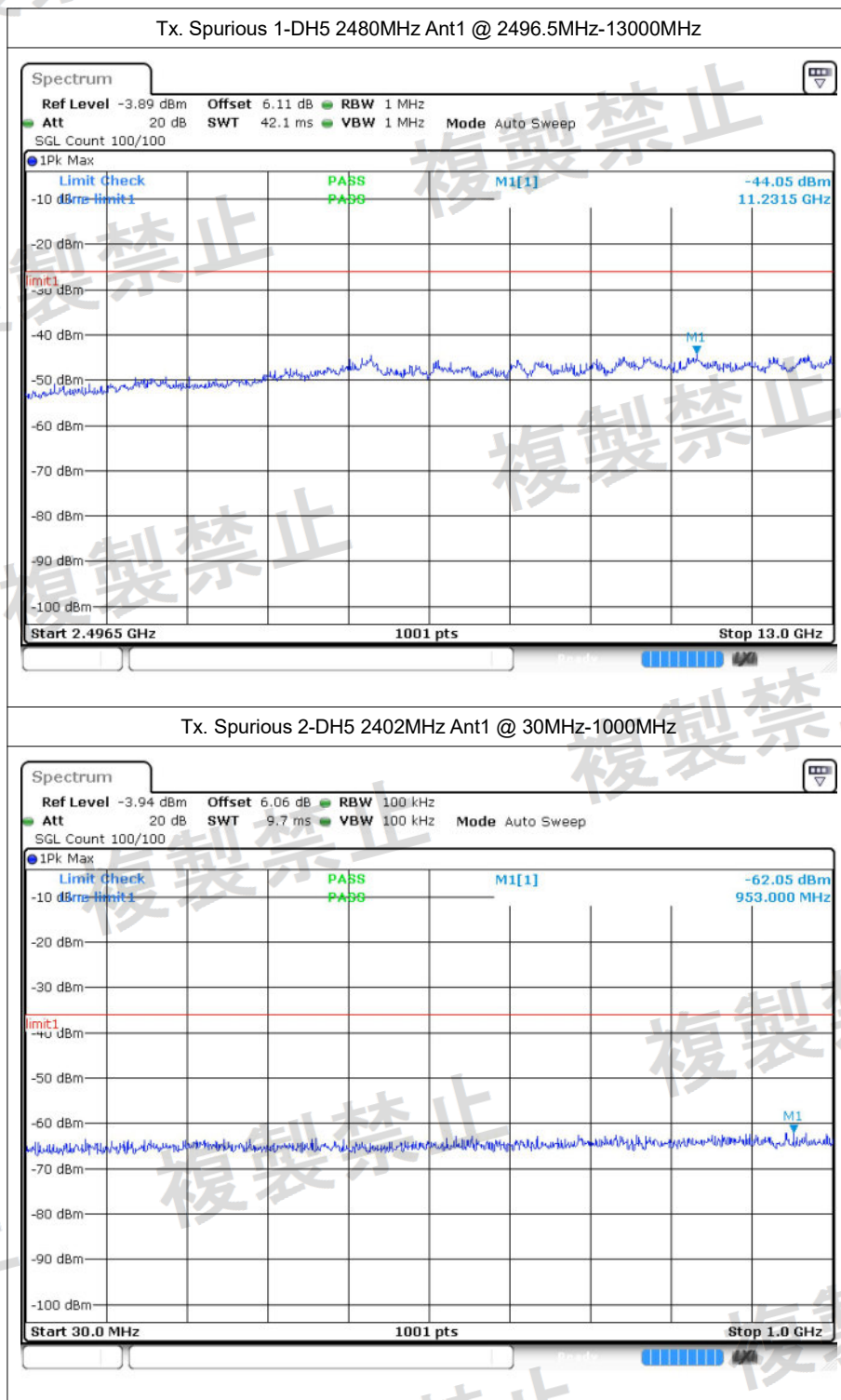


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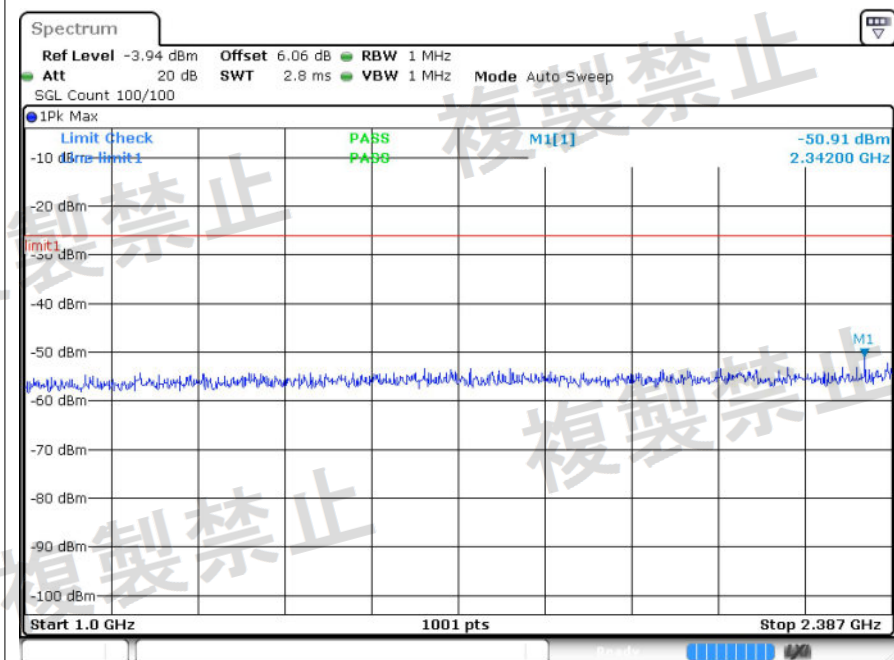
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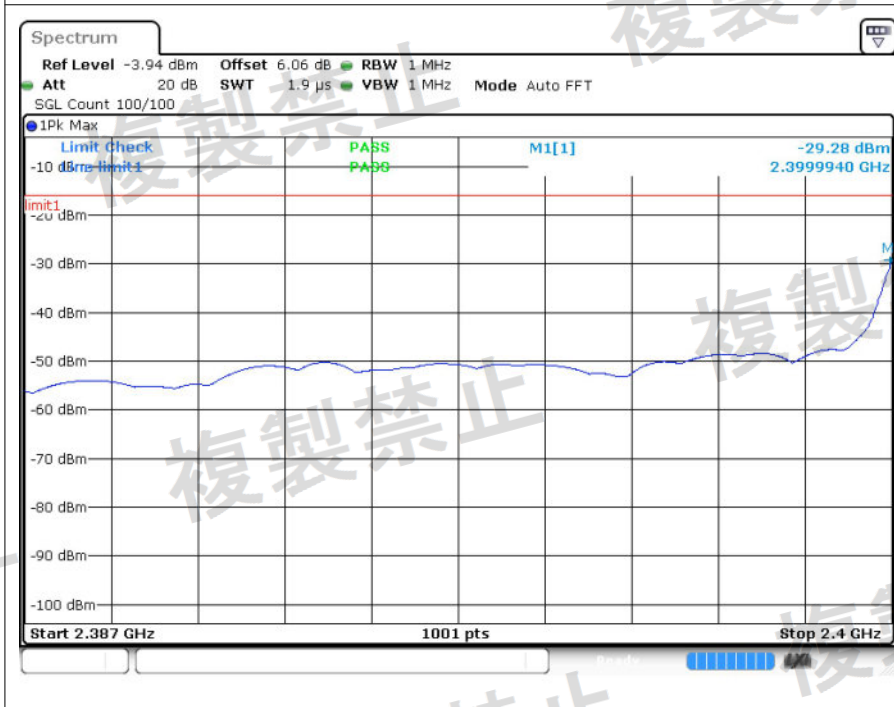


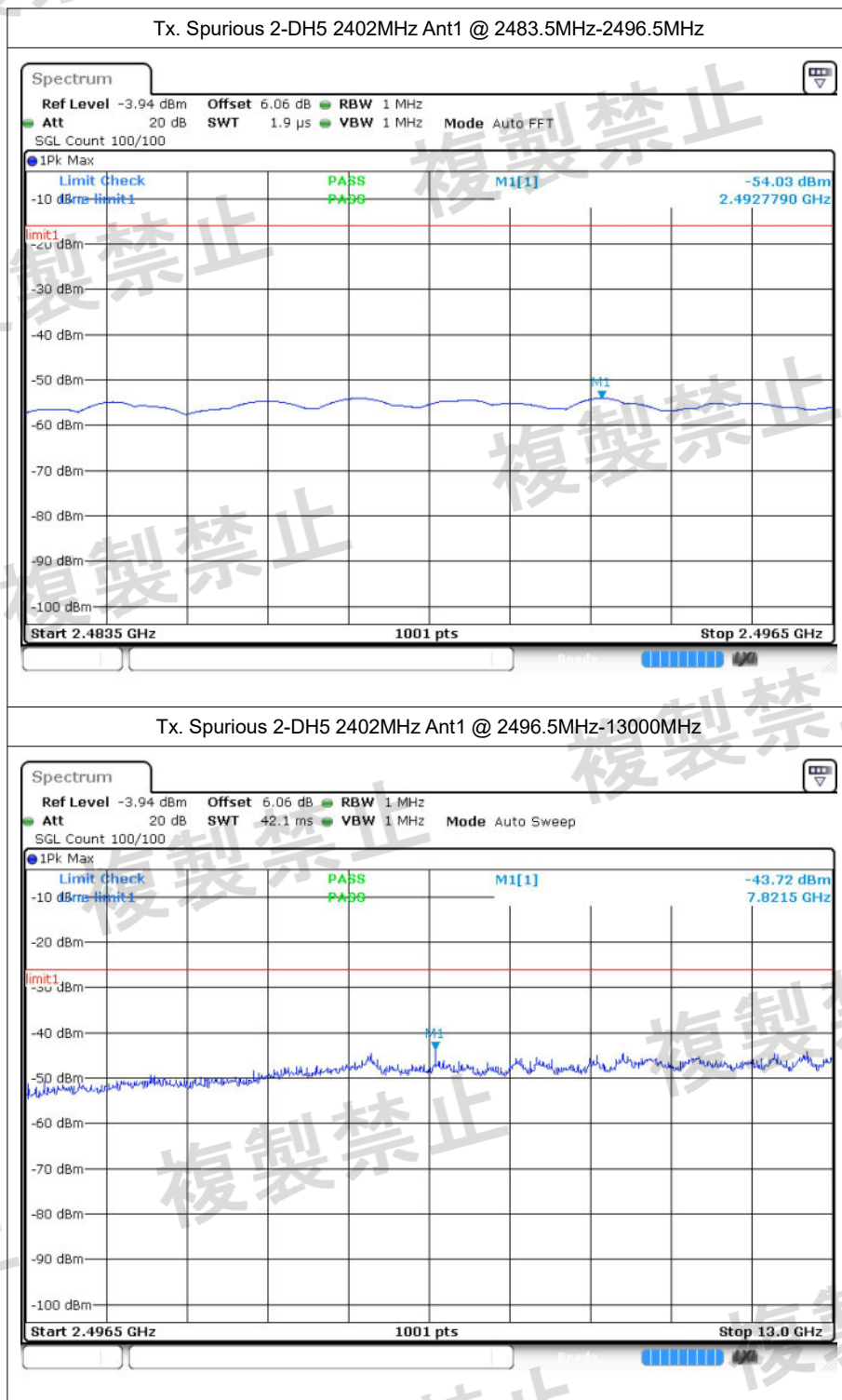


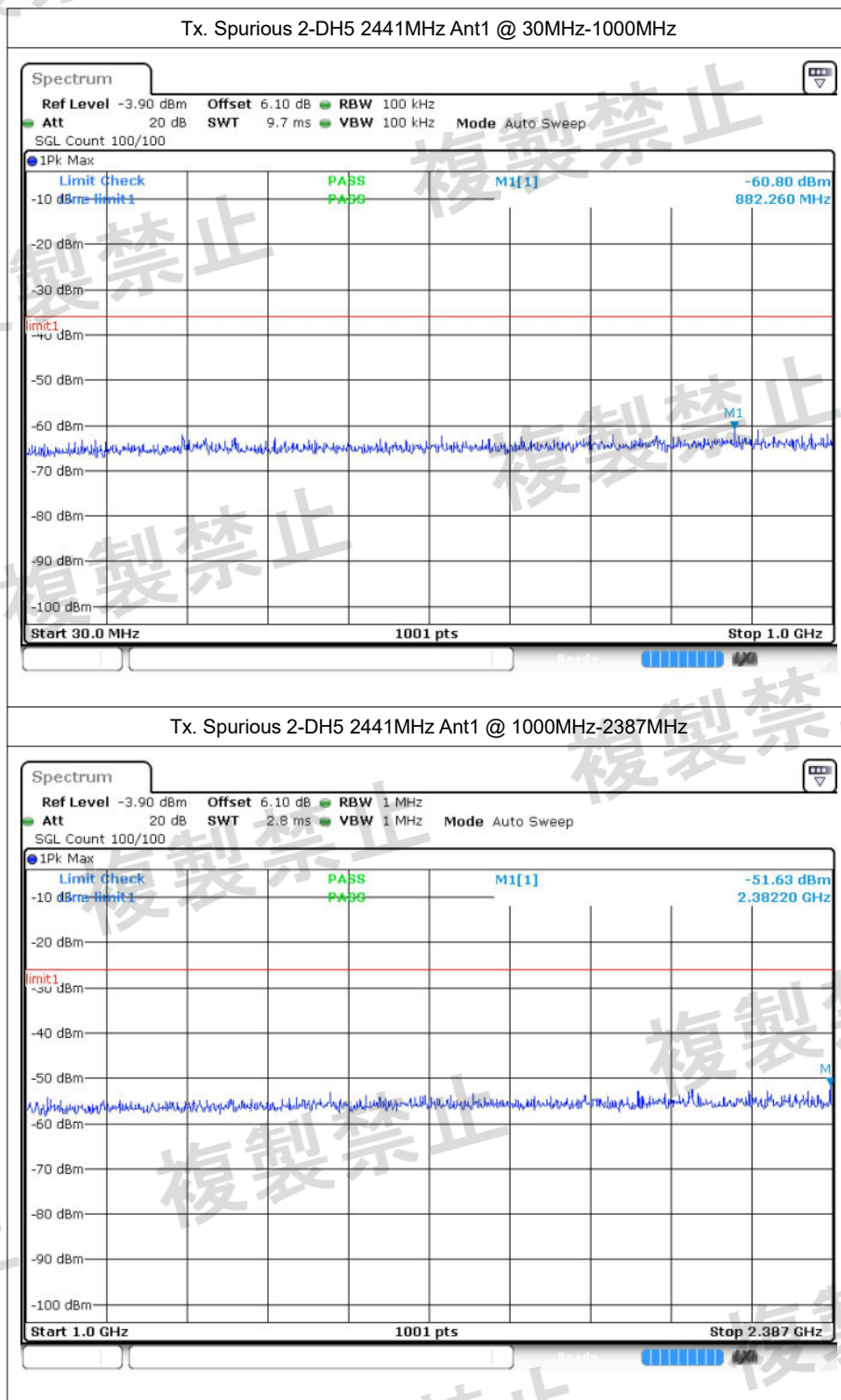
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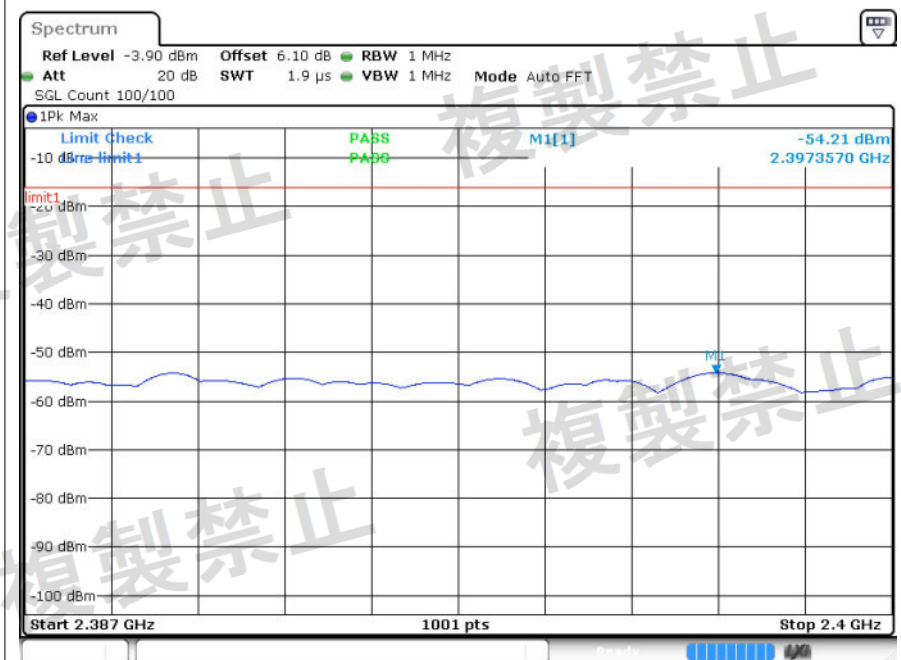
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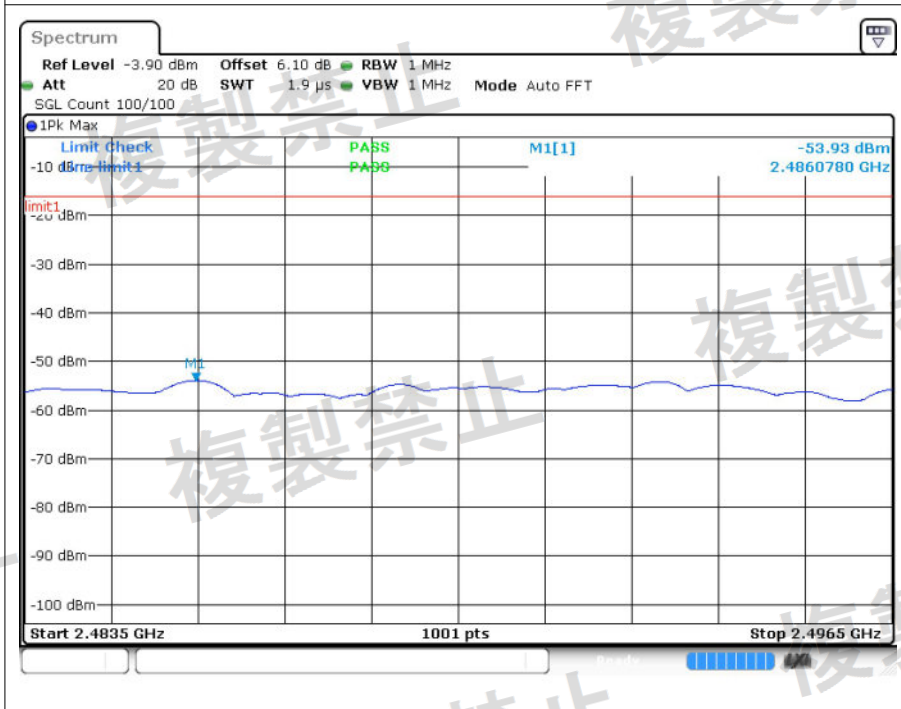


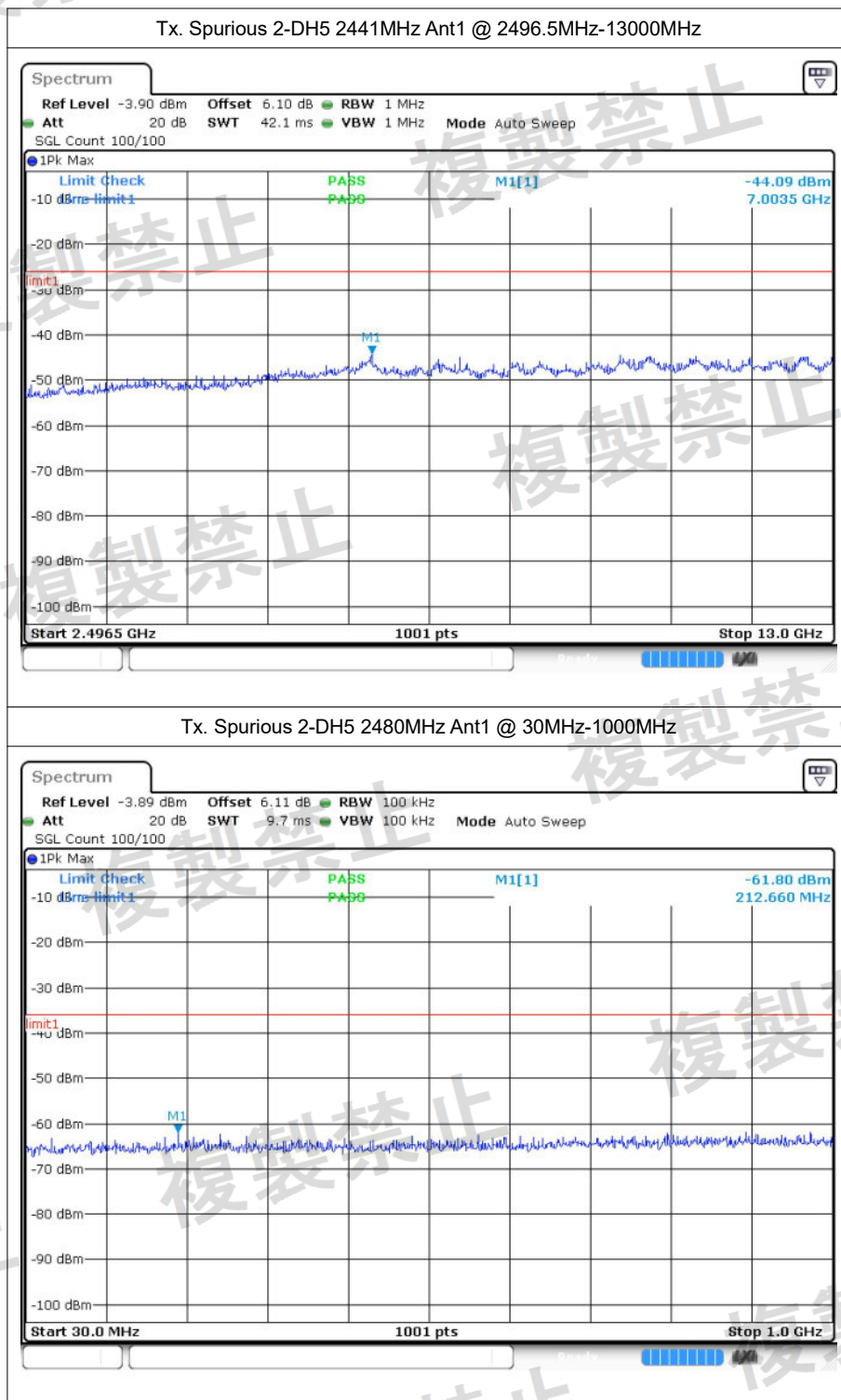


Tx. Spurious 2-DH5 2441MHz Ant1 @ 2387MHz-2400MHz

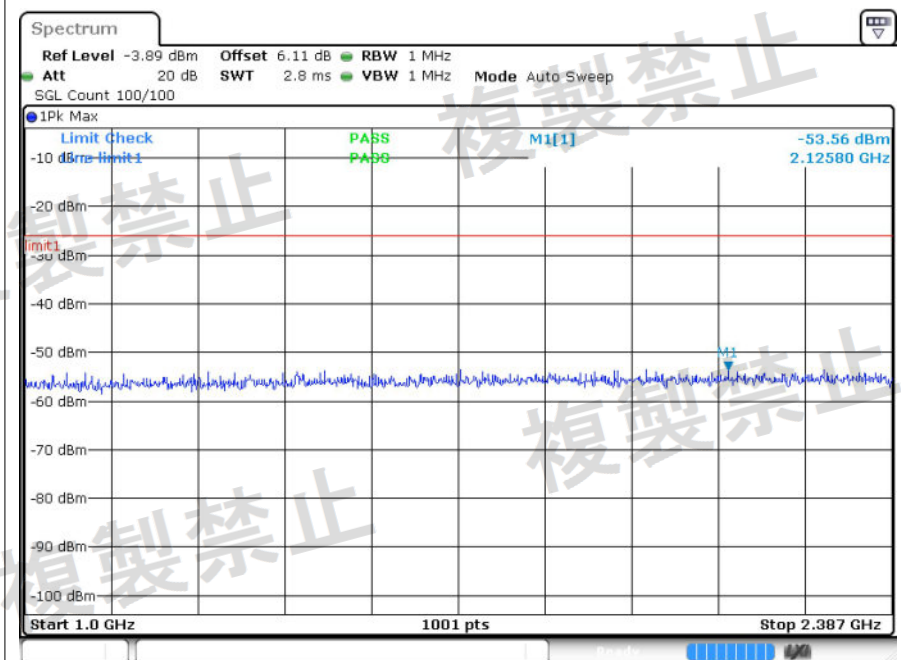


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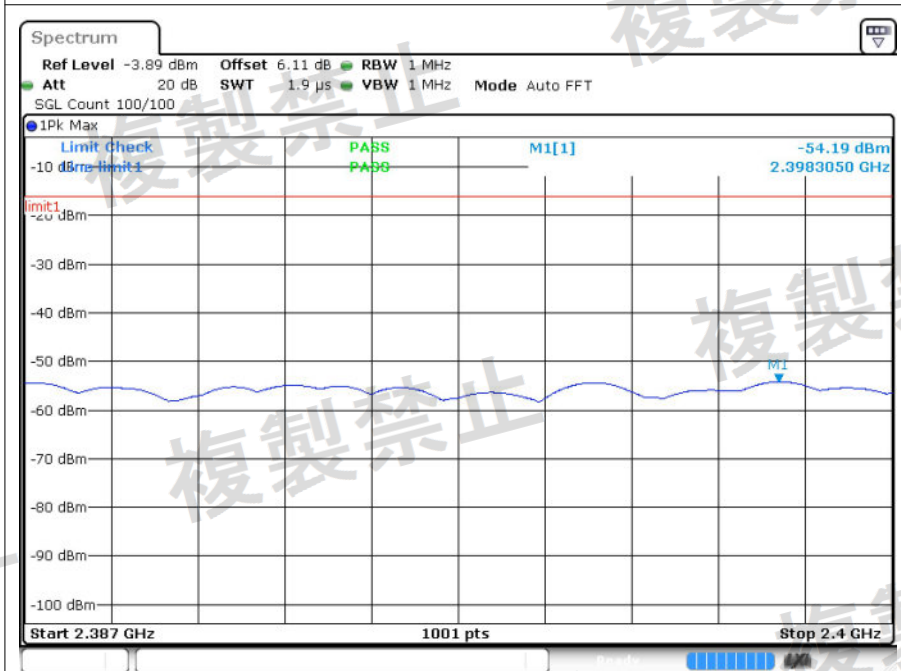


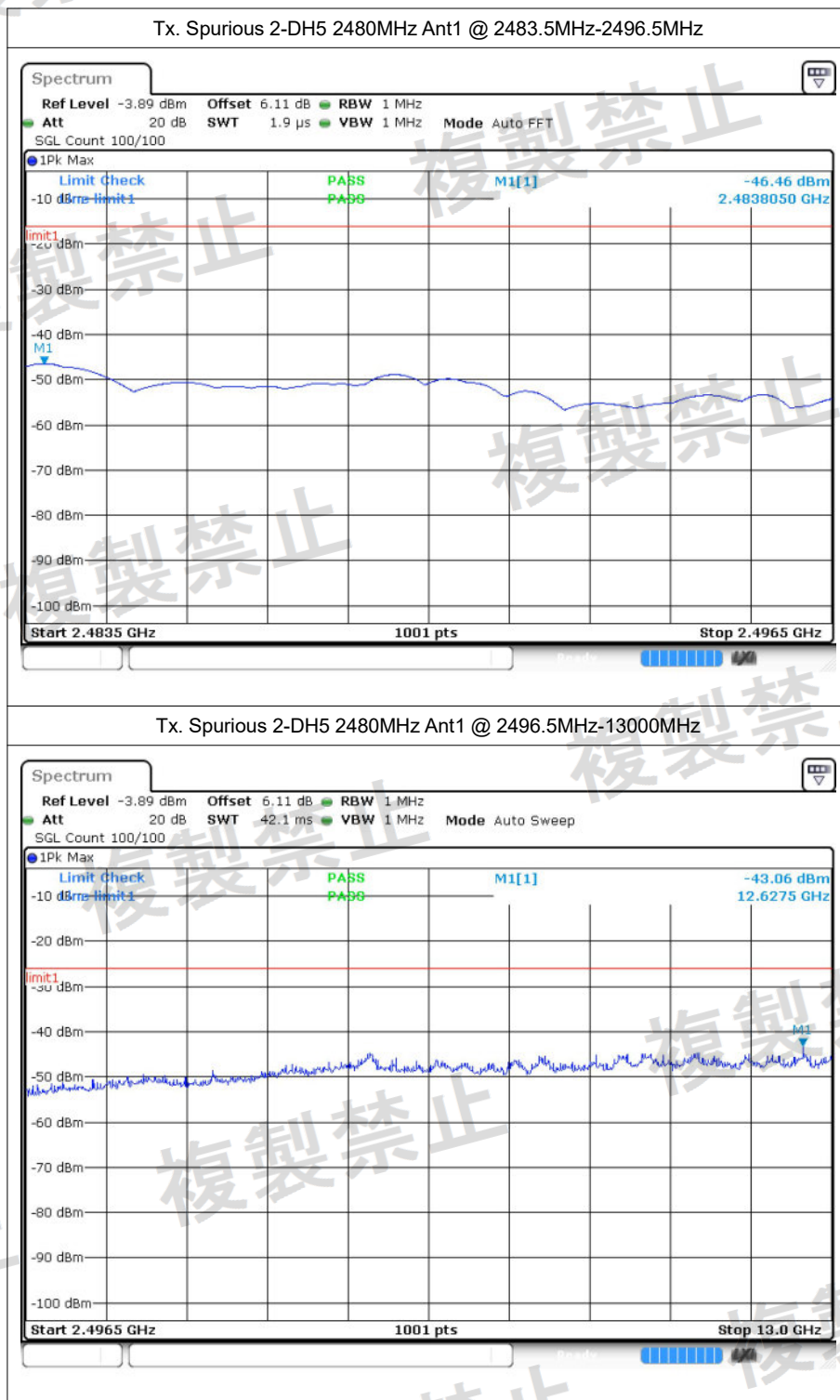


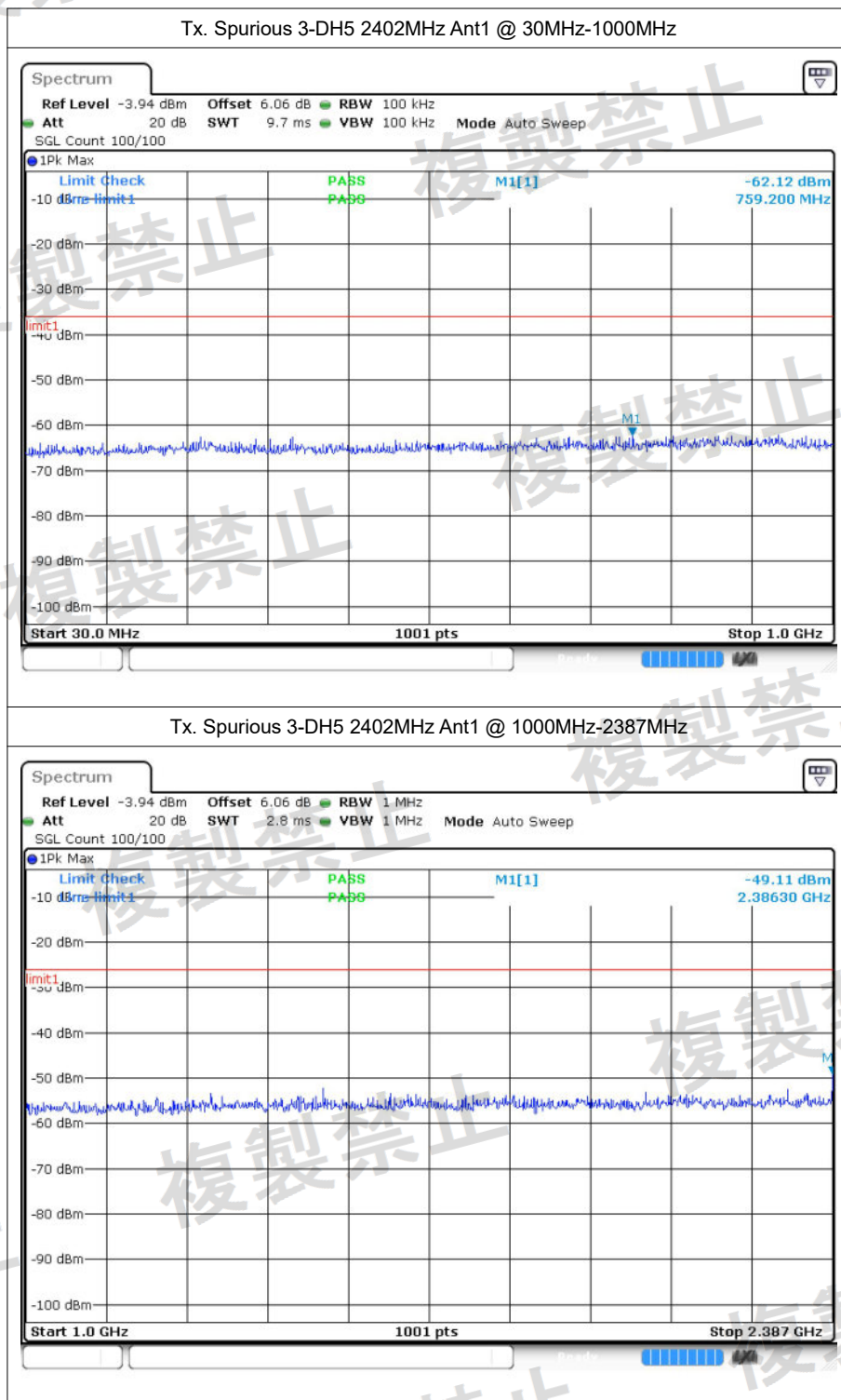
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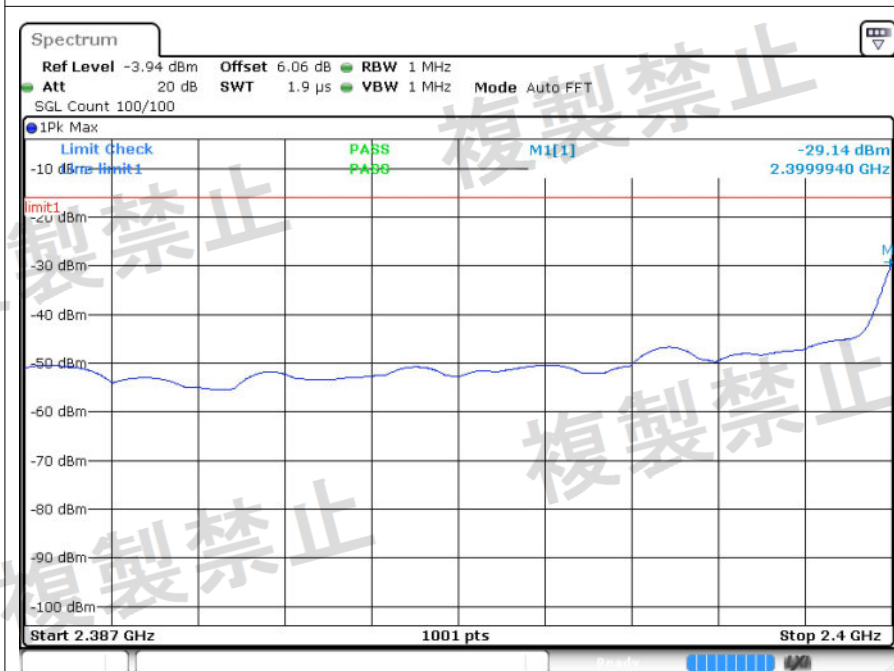
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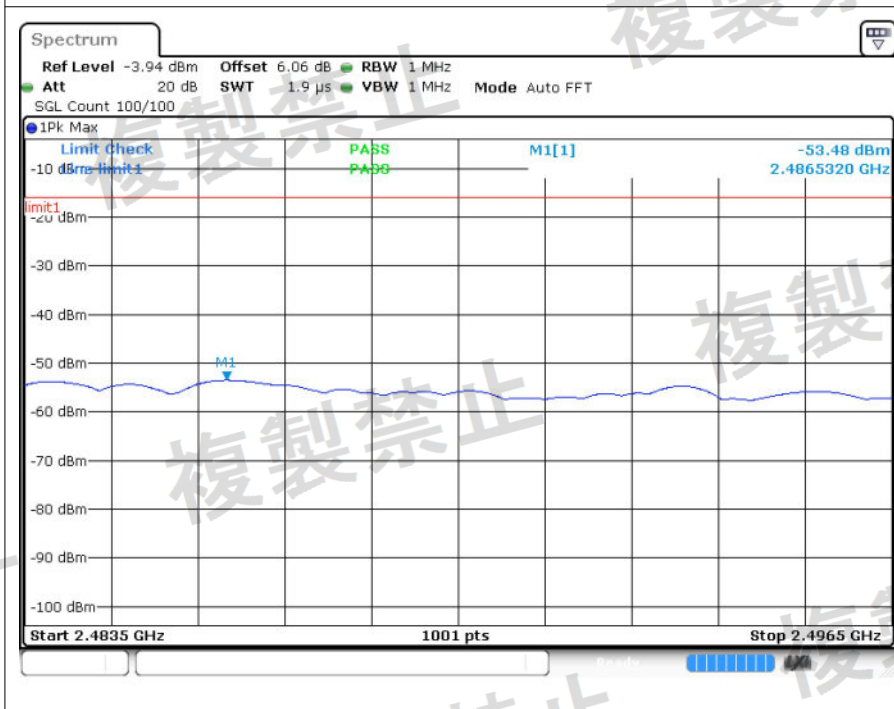


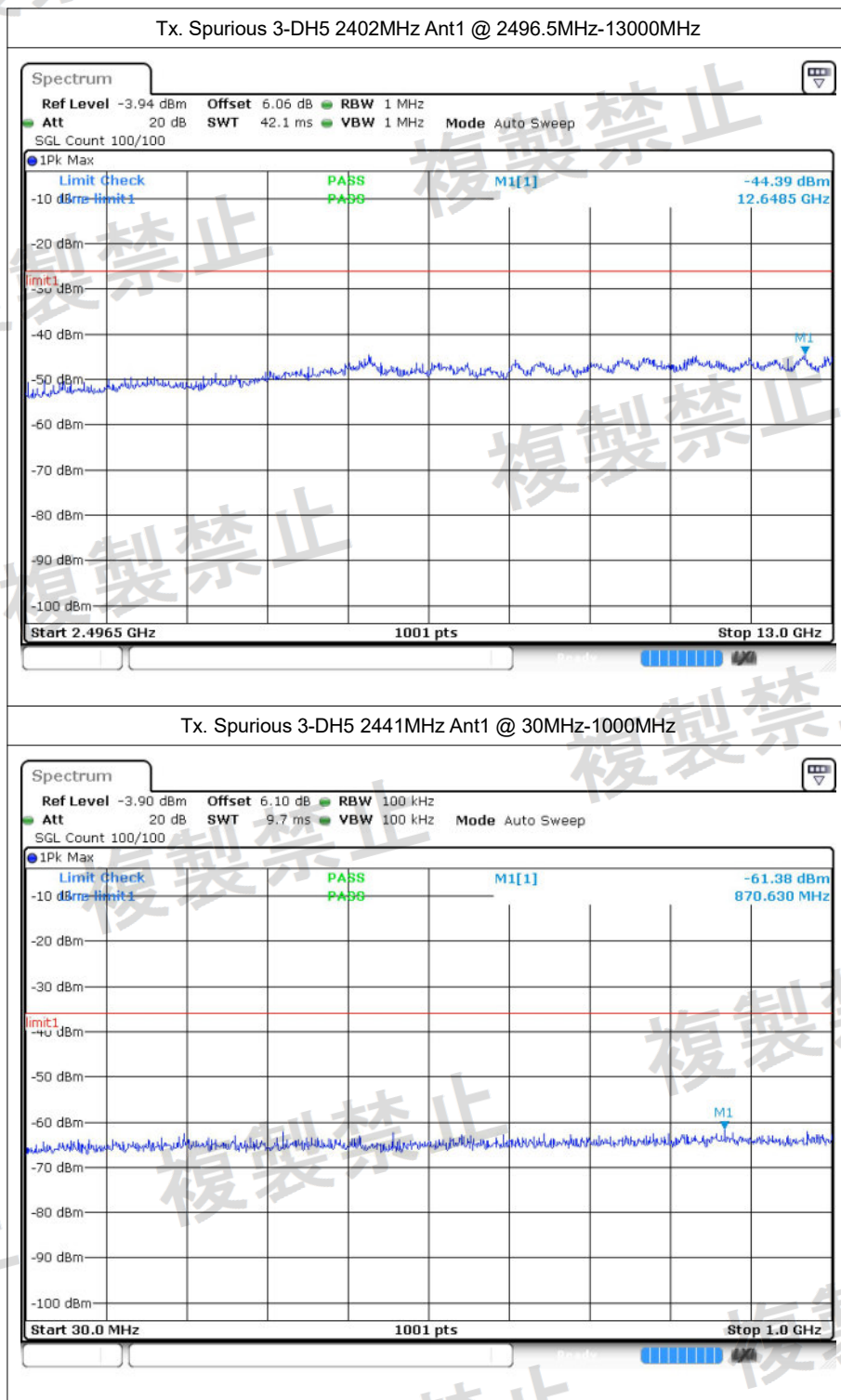


Tx. Spurious 3-DH5 2402MHz Ant1 @ 2387MHz-2400MHz

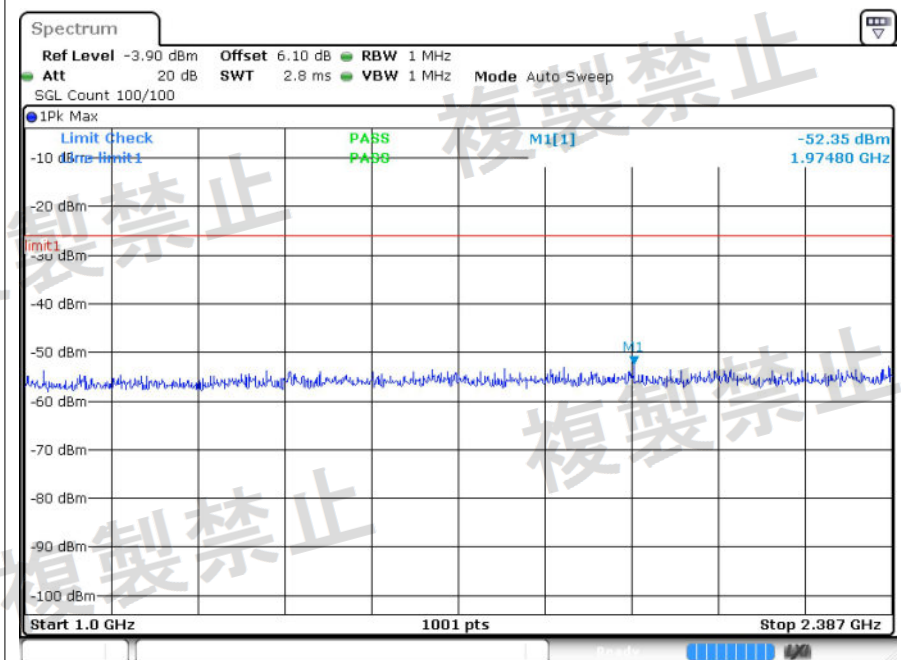


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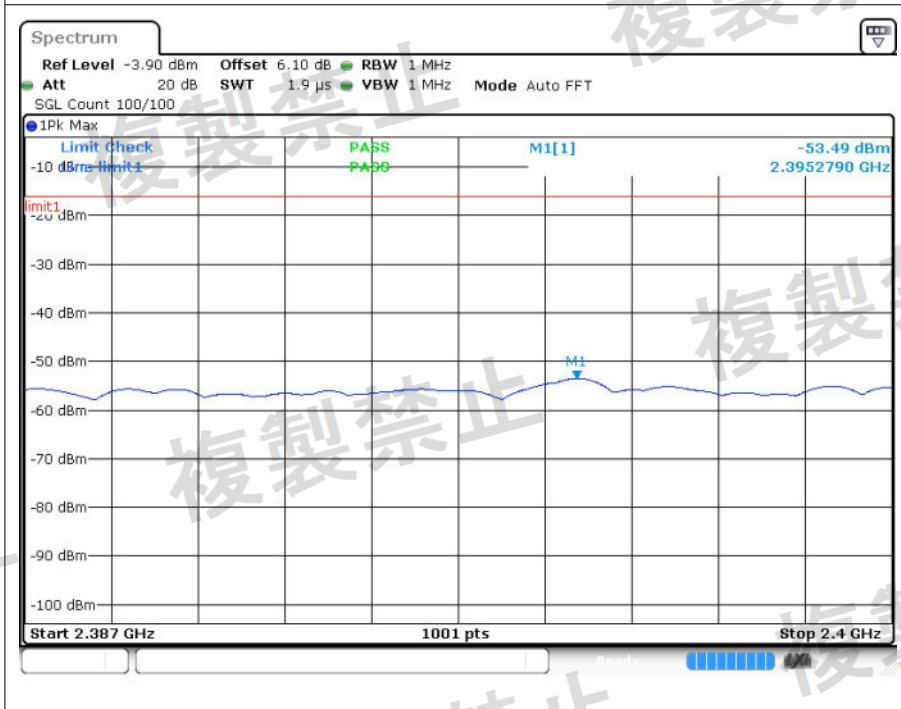


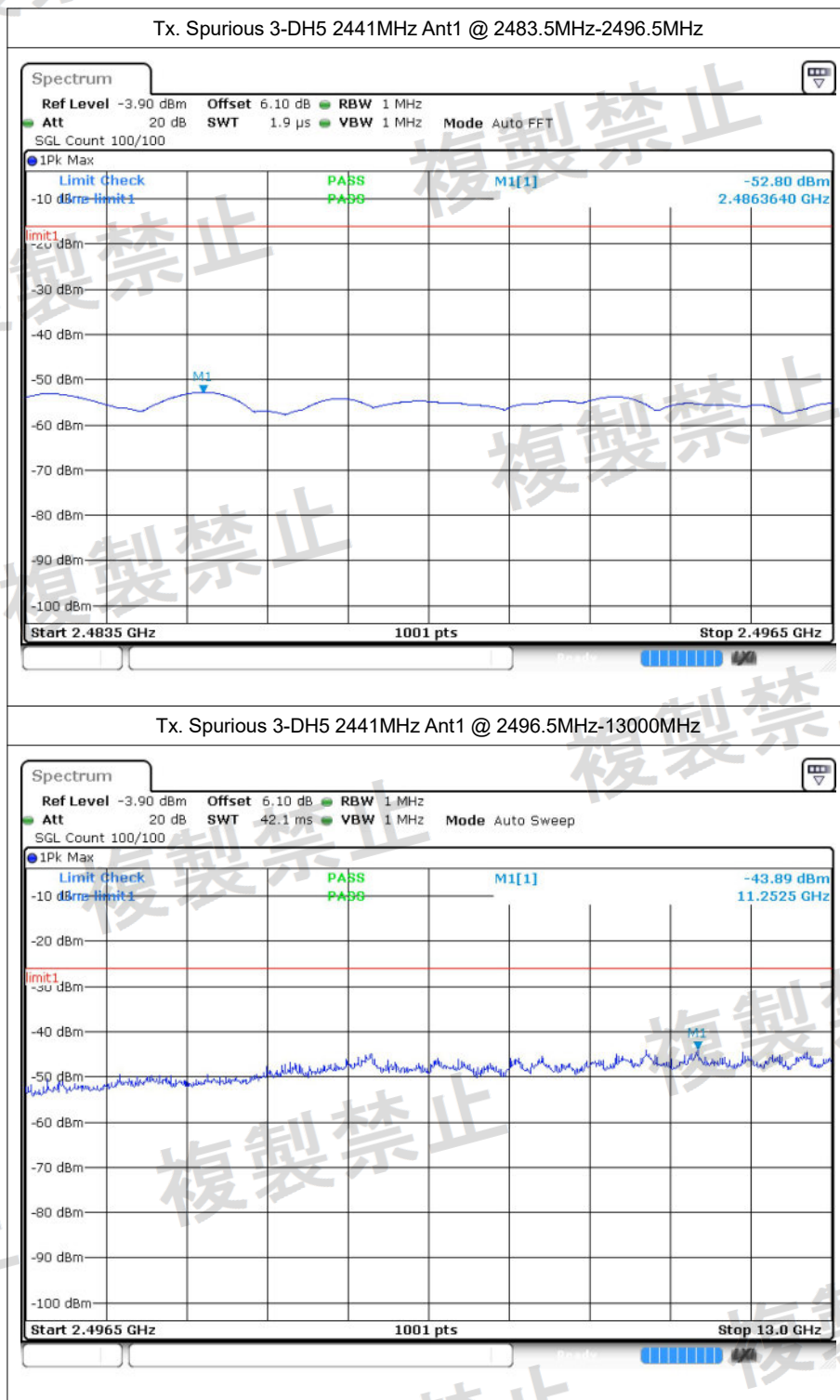


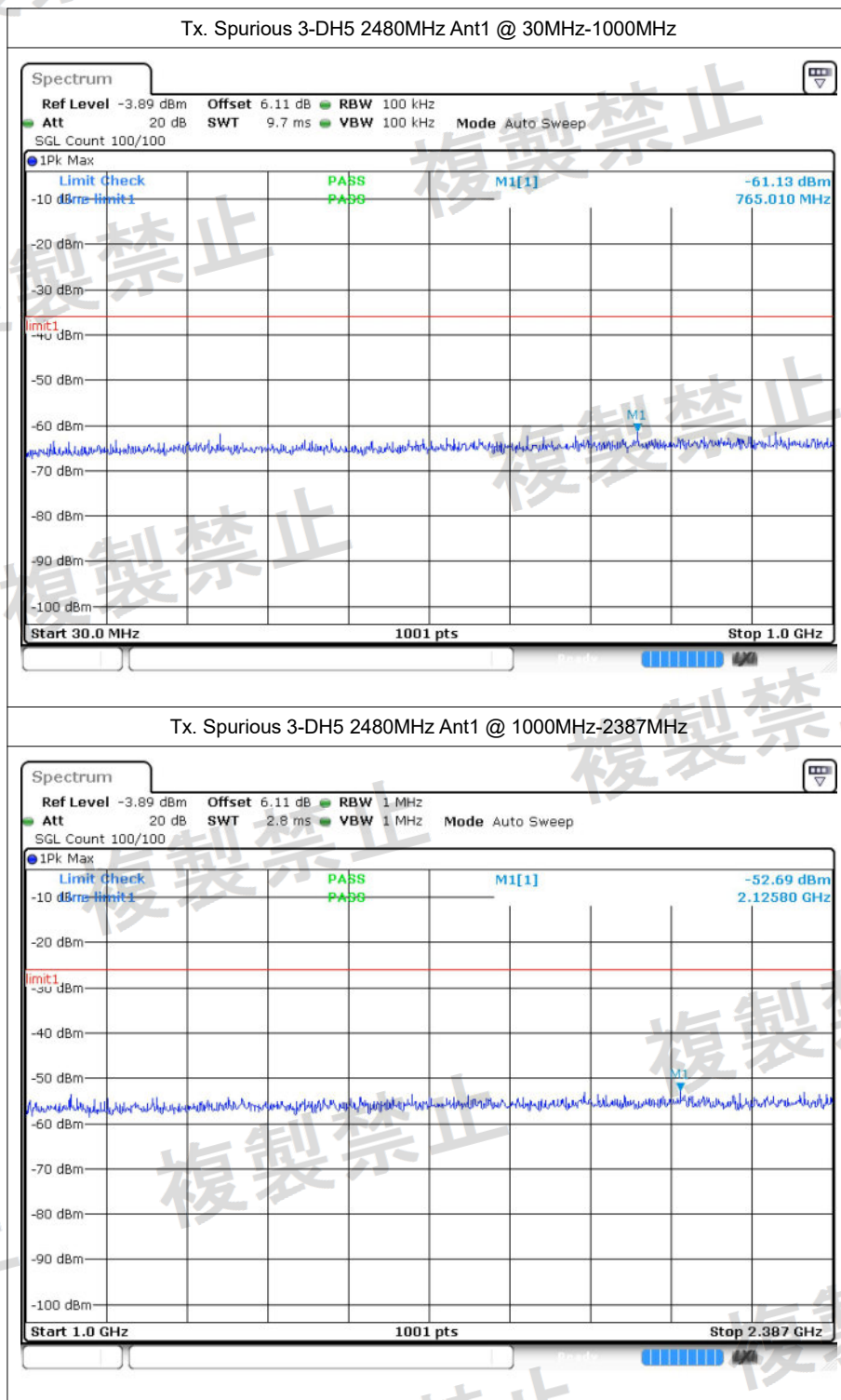
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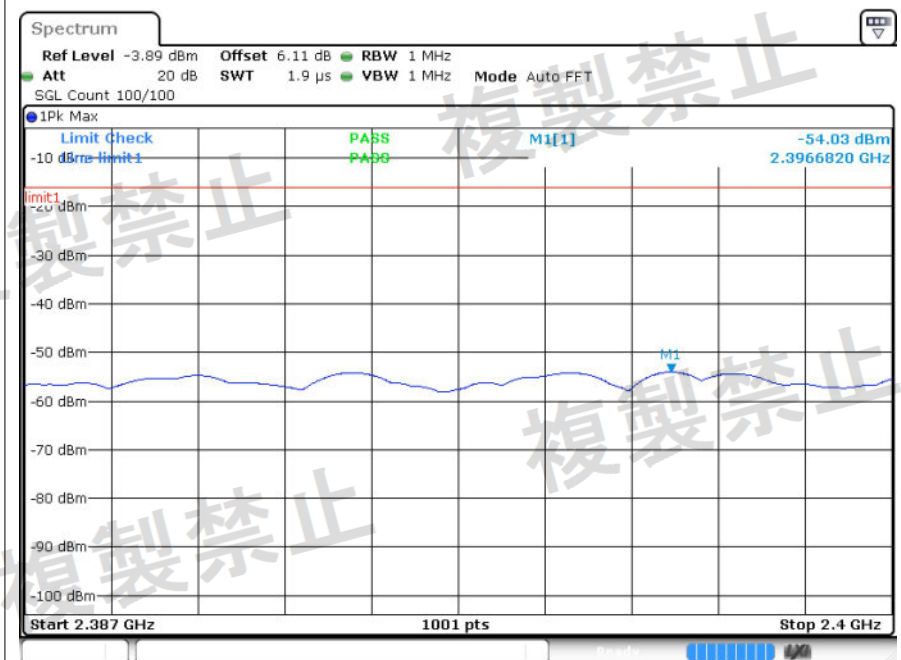
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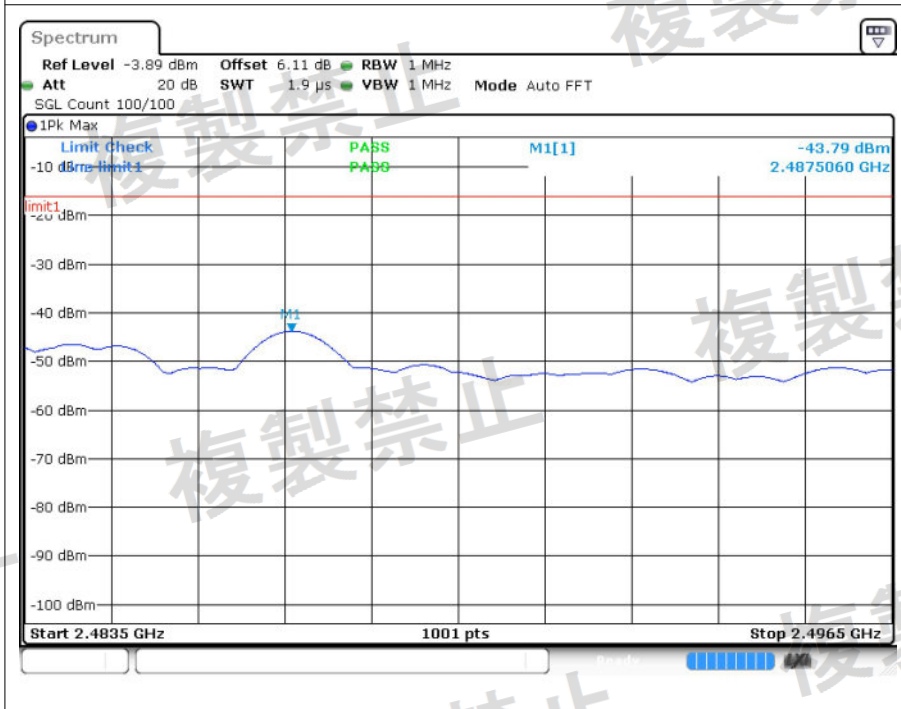


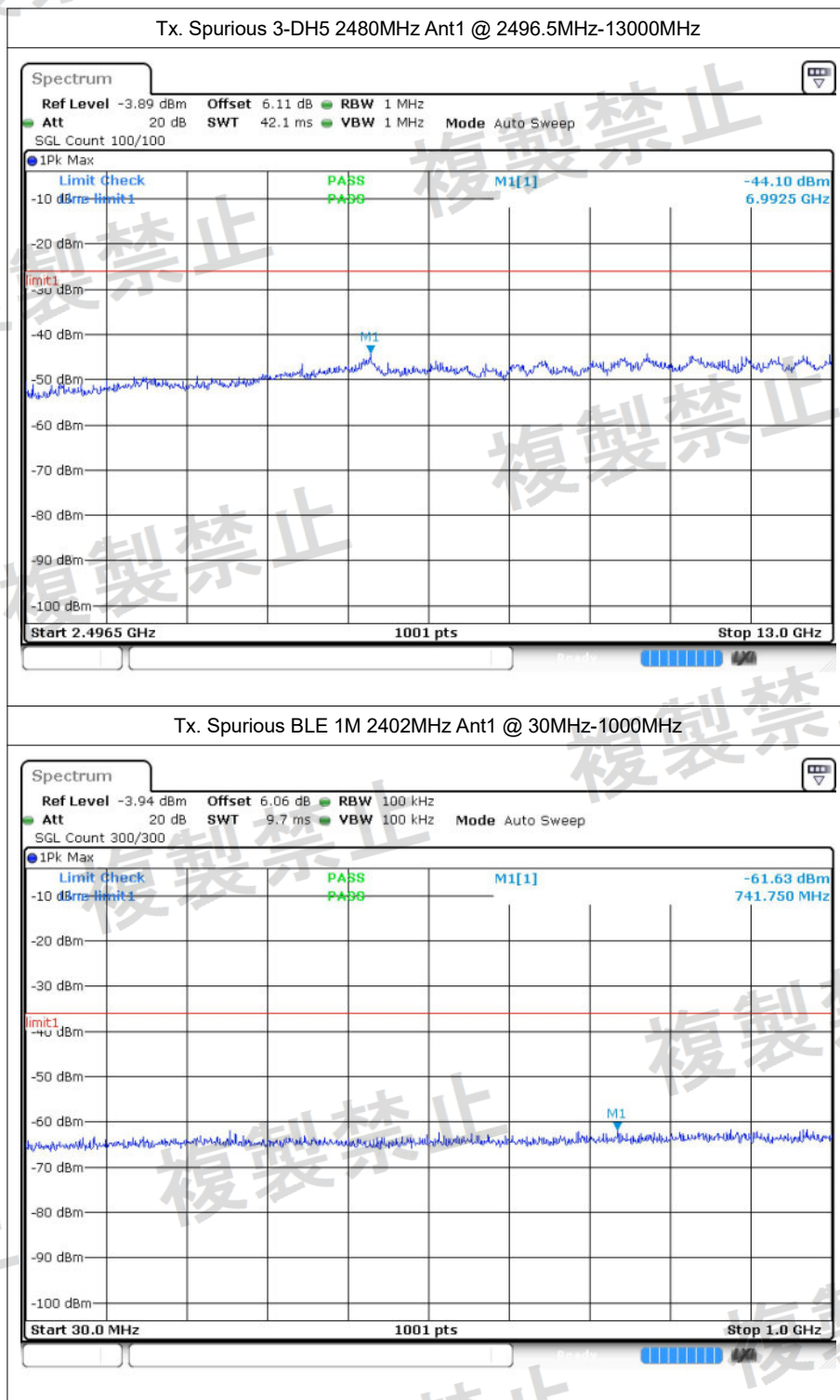


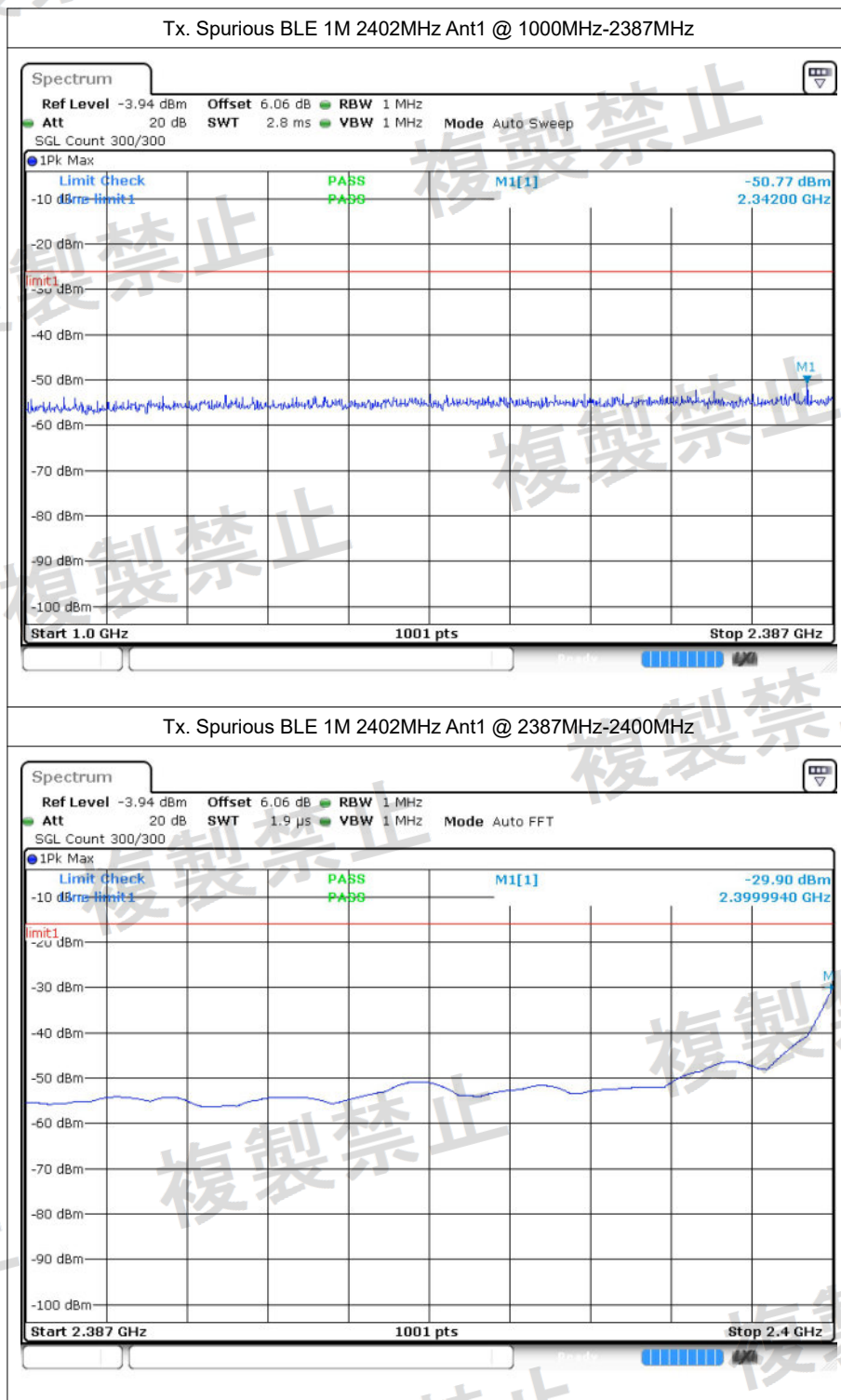
Tx. Spurious 3-DH5 2480MHz Ant1 @ 2387MHz-2400MHz

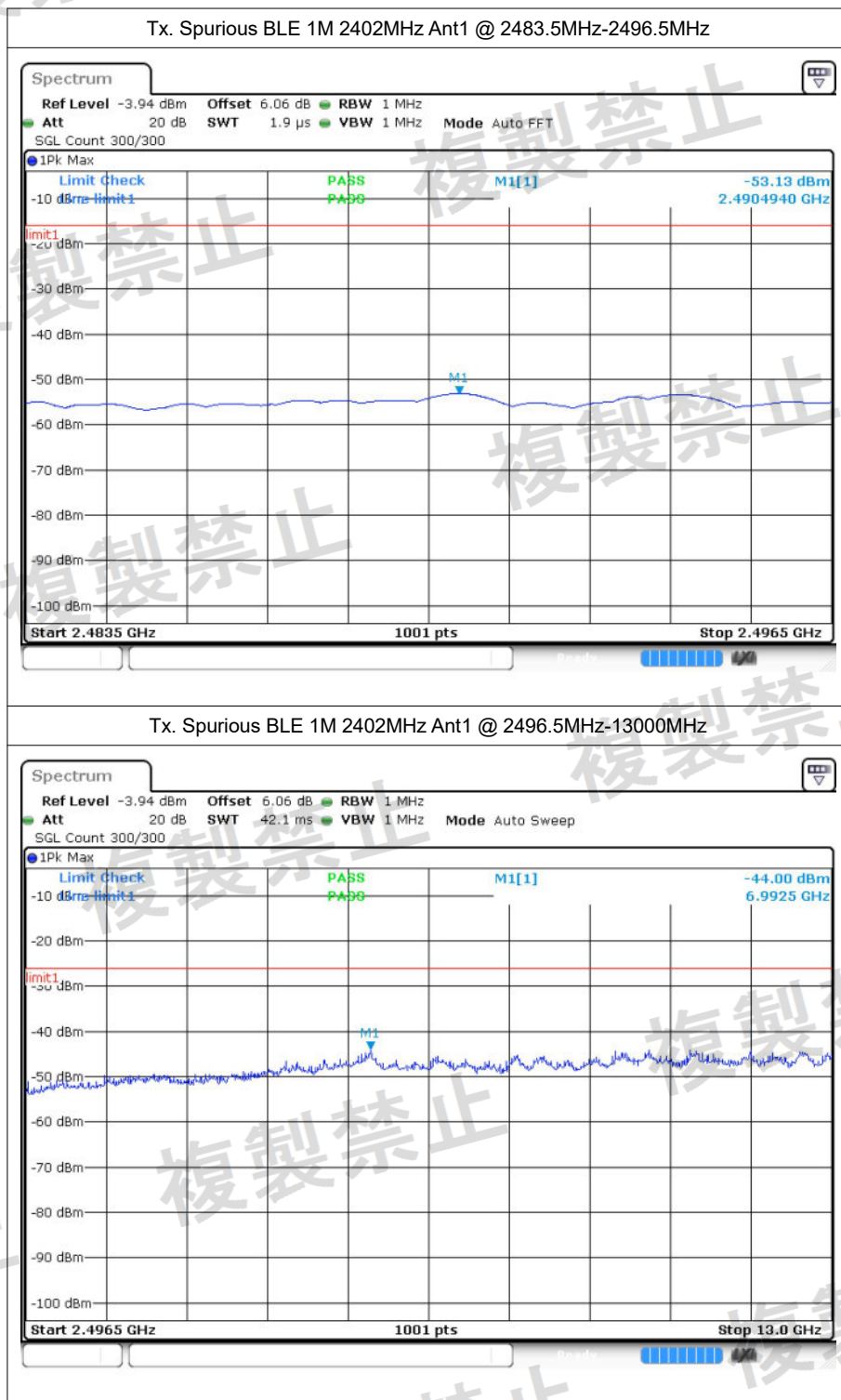


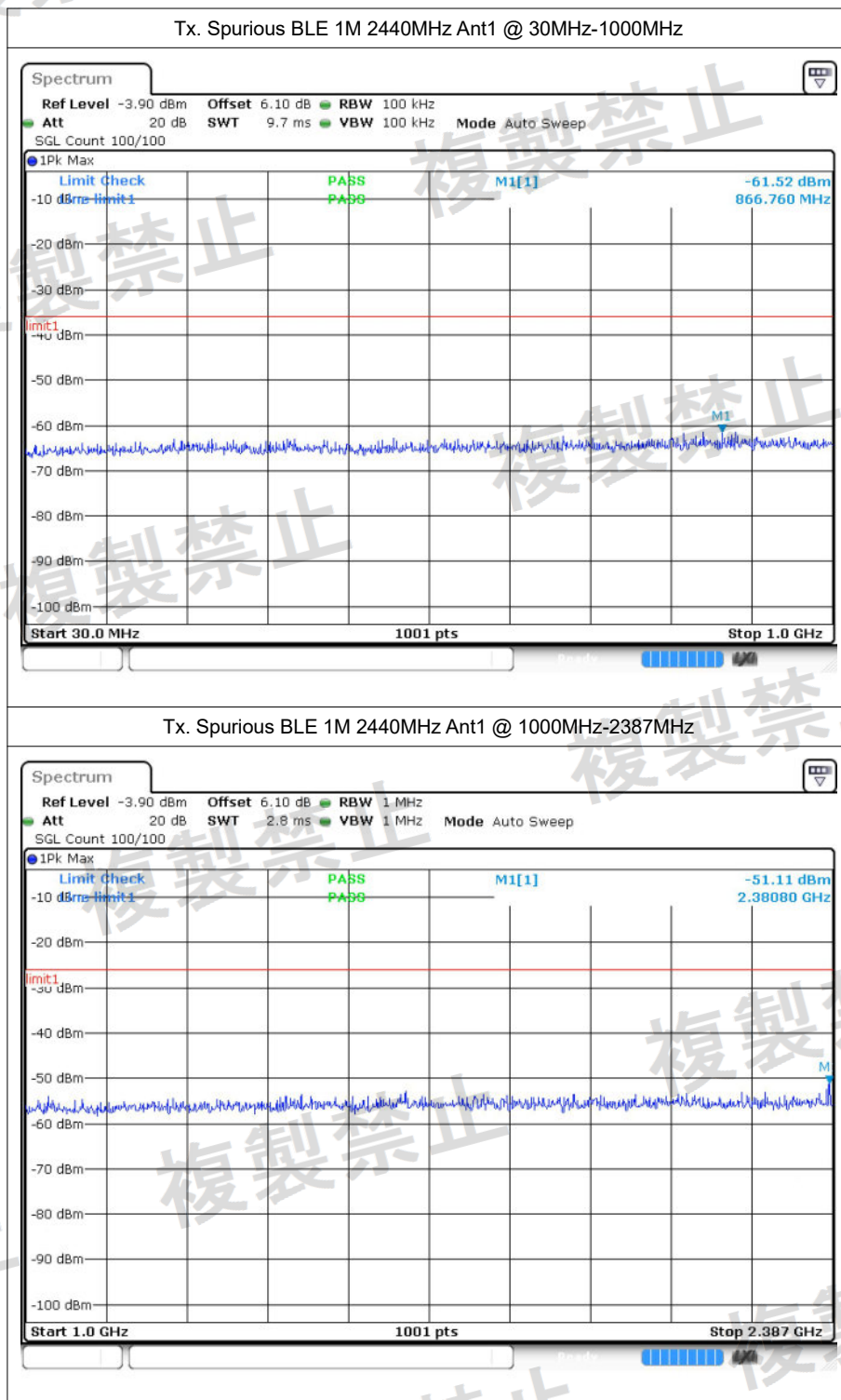
Tx. Spurious 3-DH5 2480MHz Ant1 @ 2483.5MHz-2496.5MHz

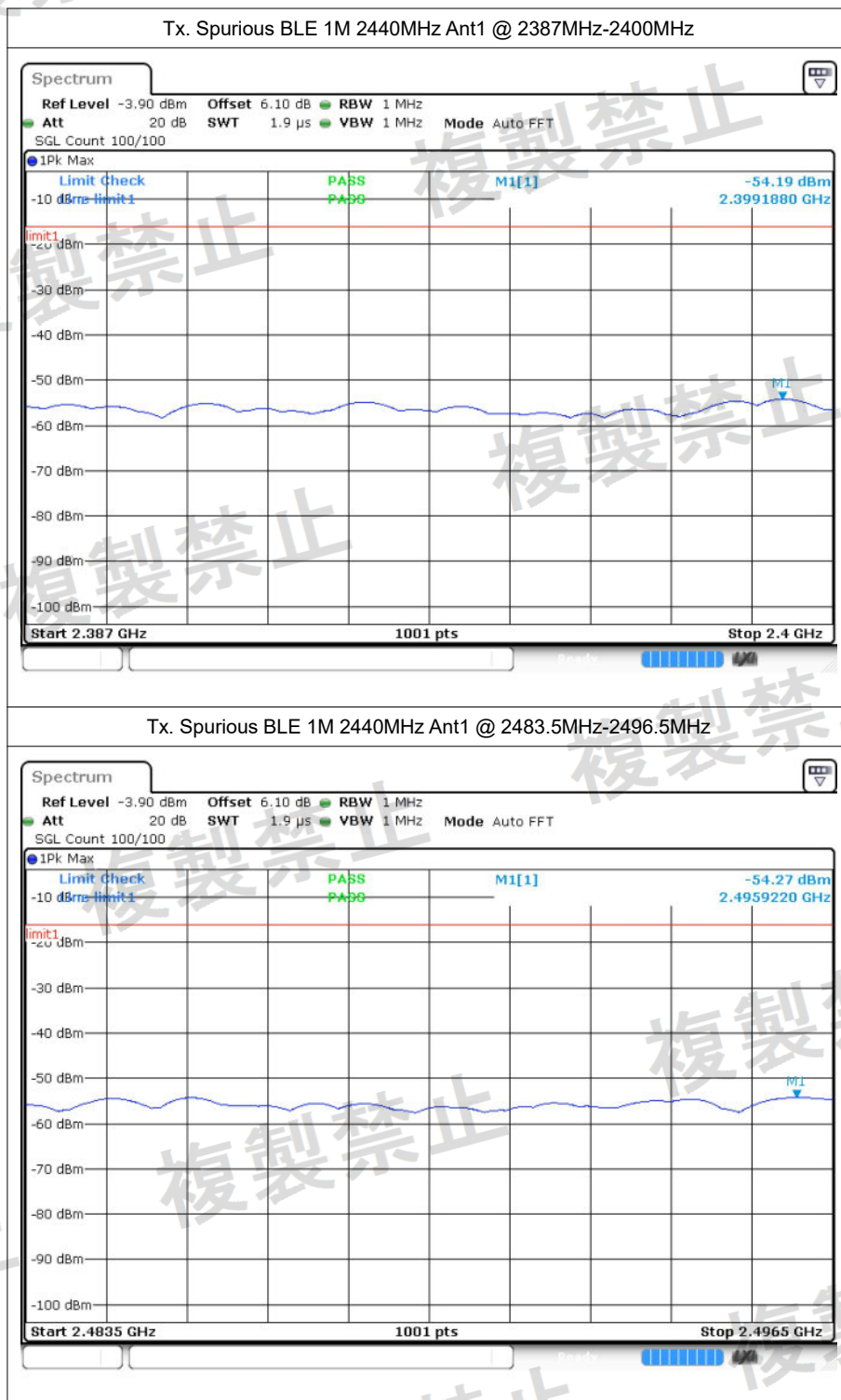


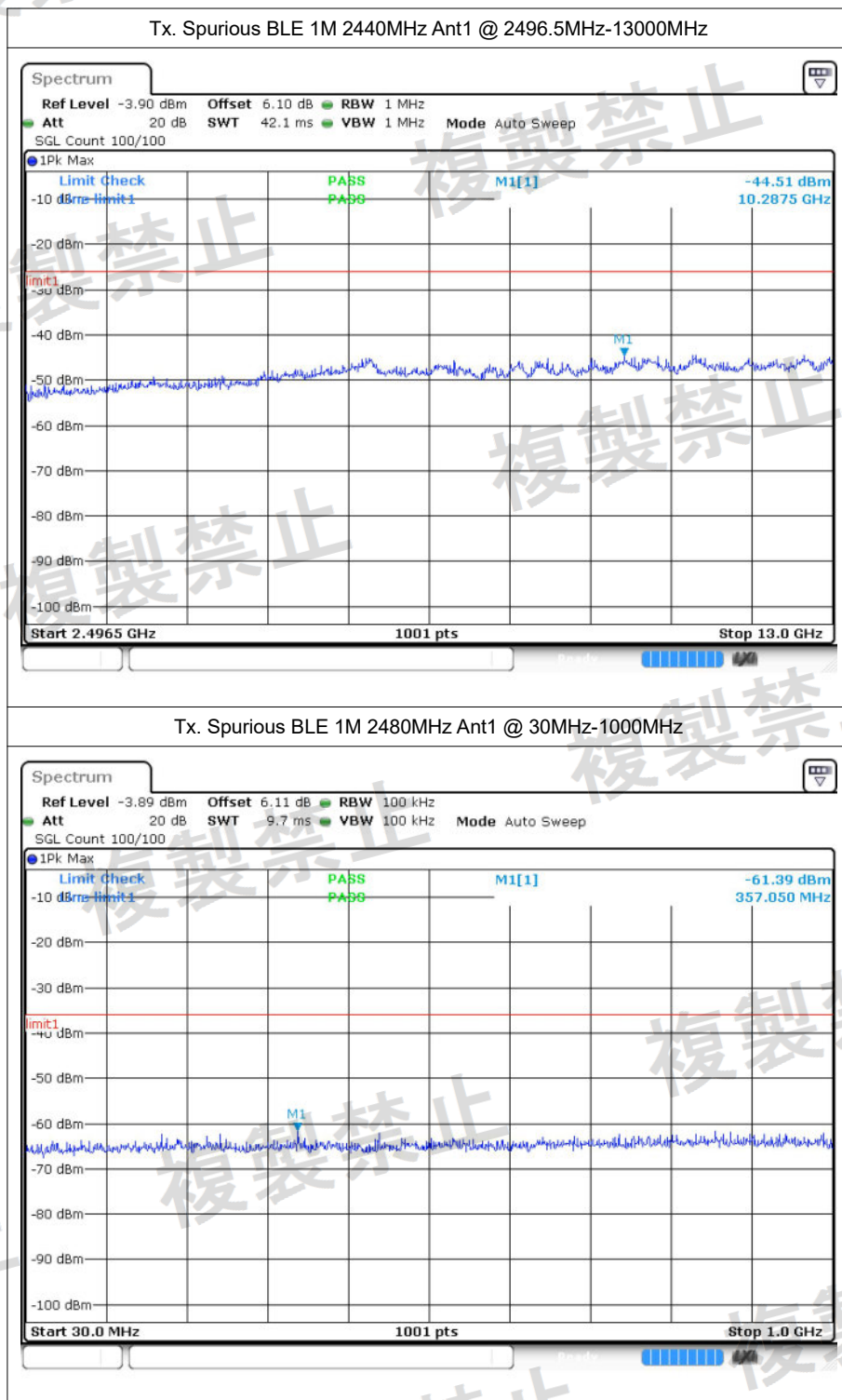


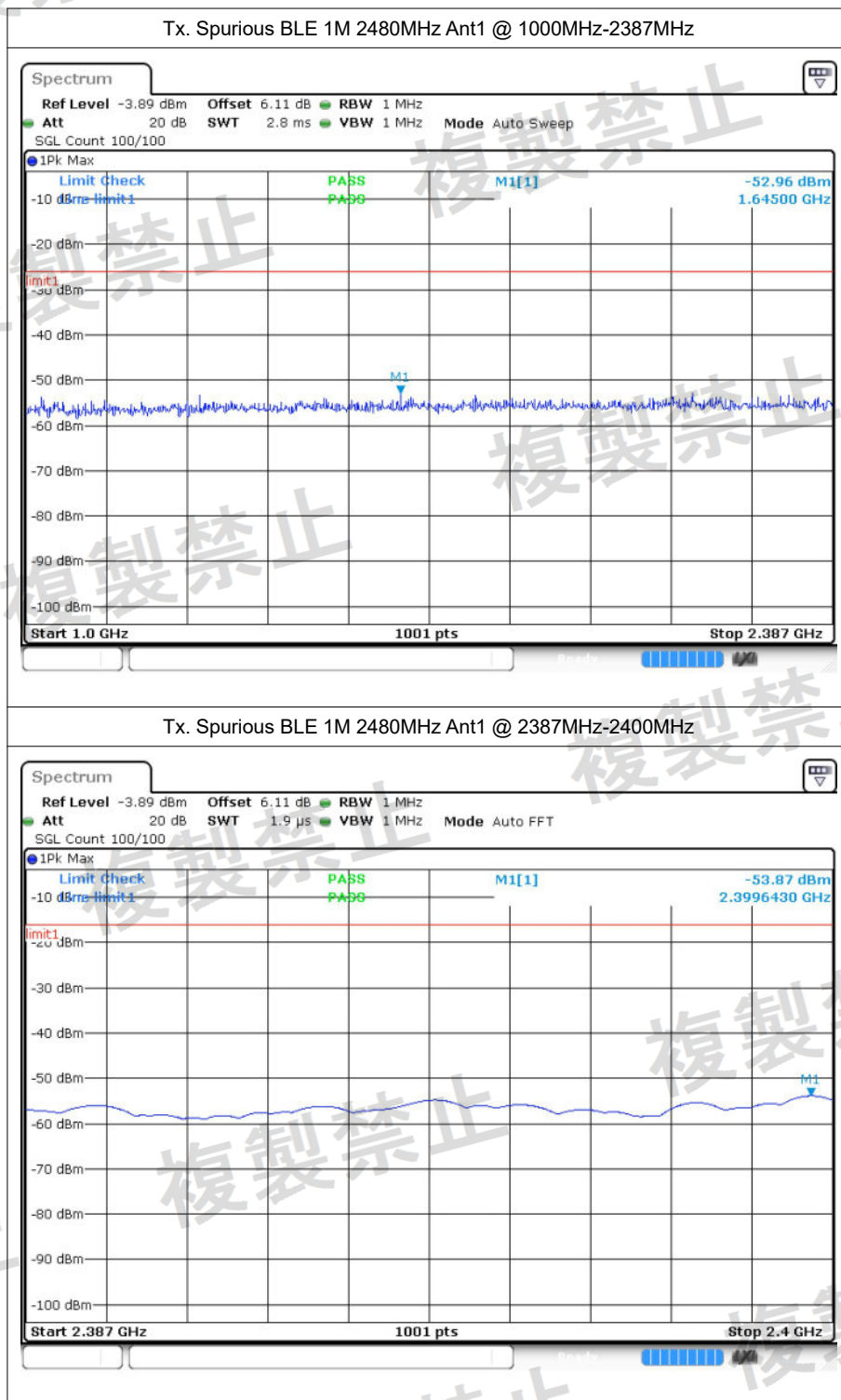


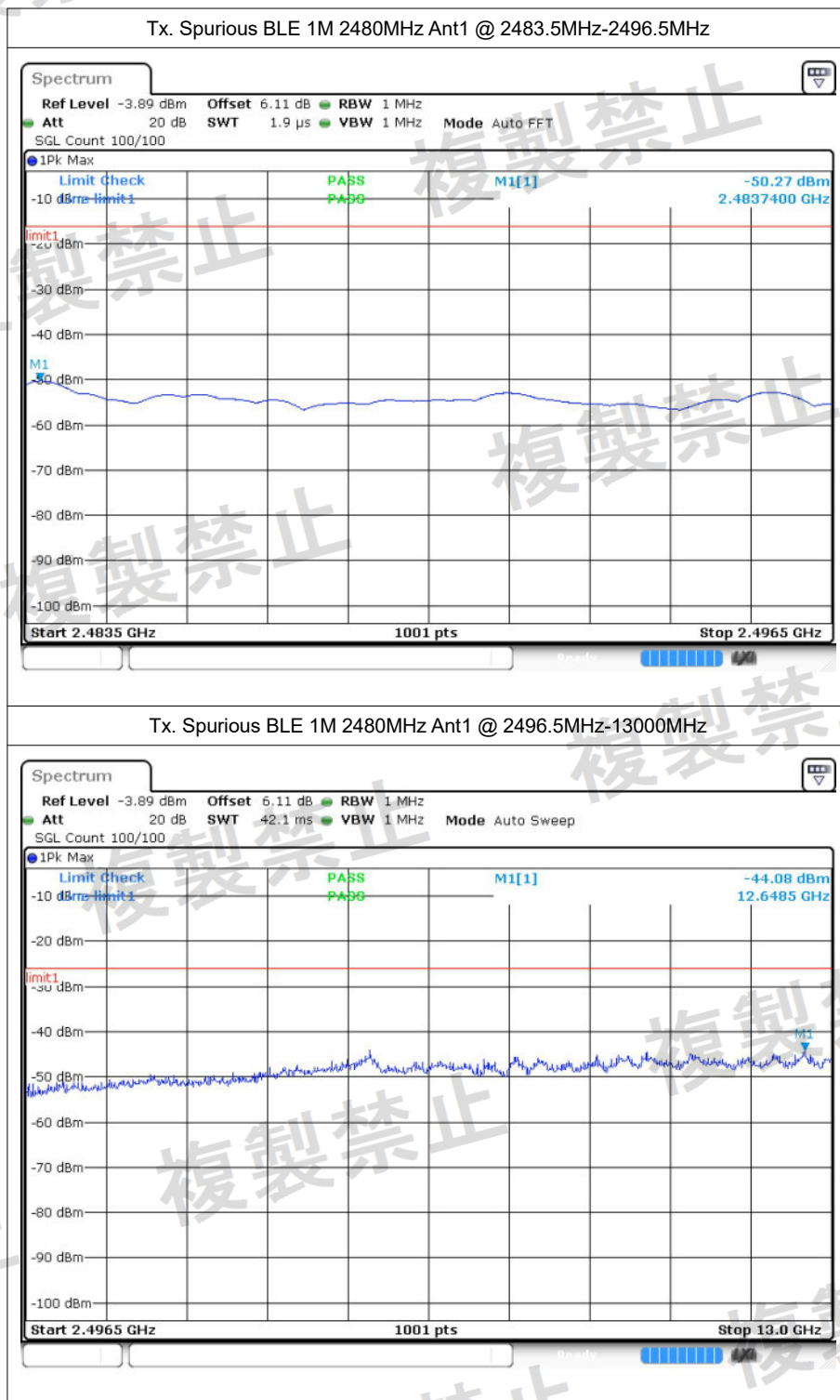










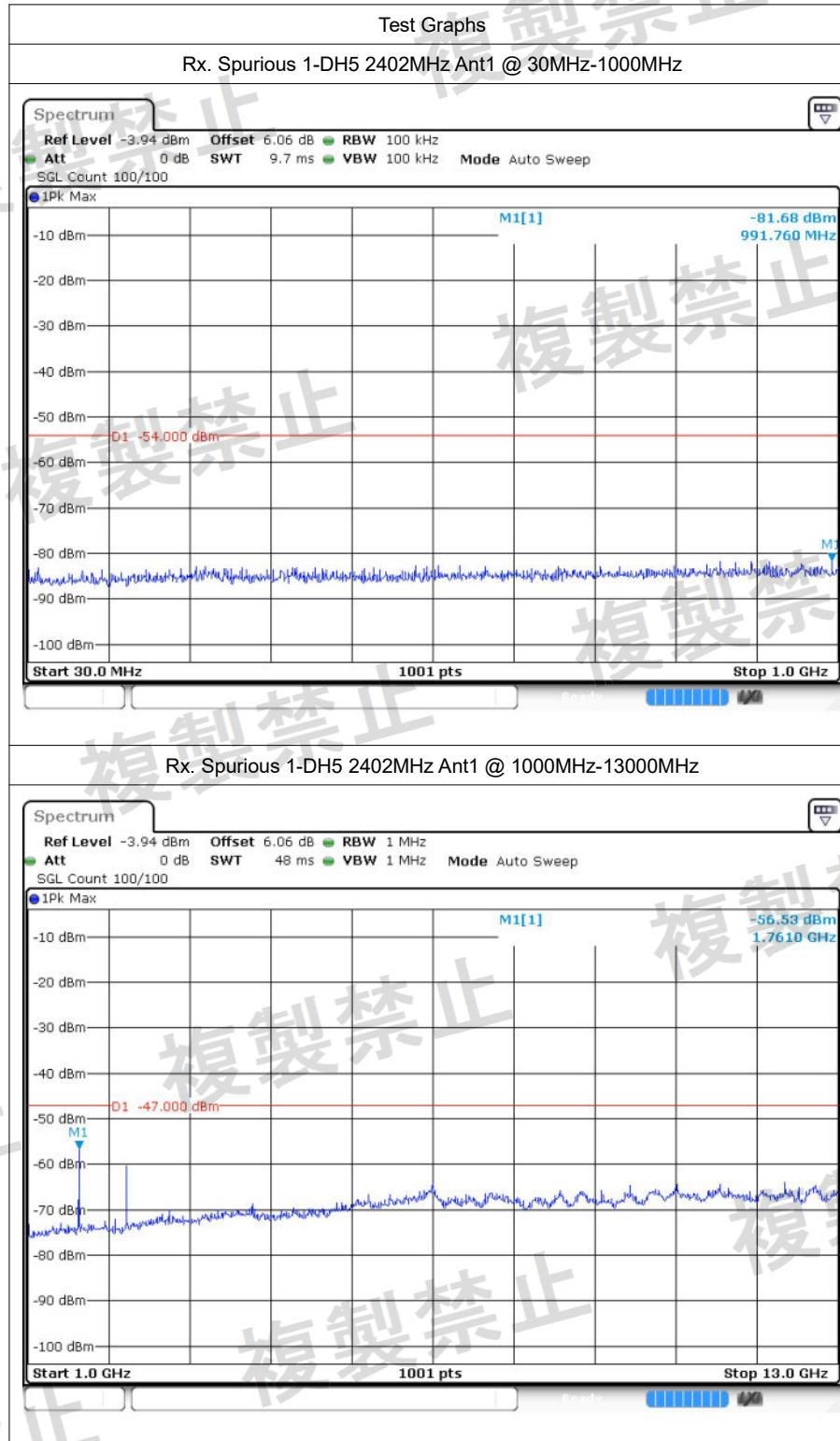


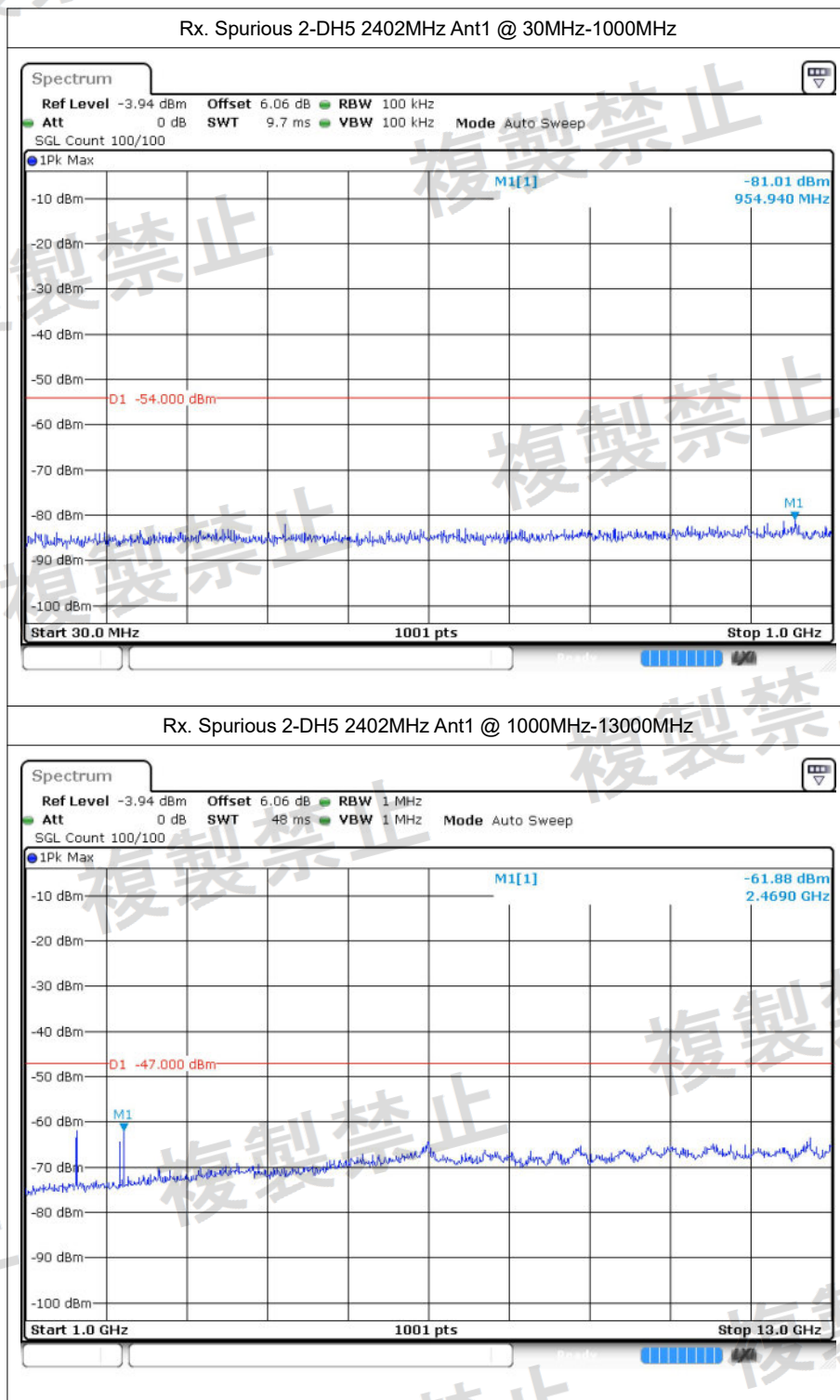
7 Rx Spurious Emission

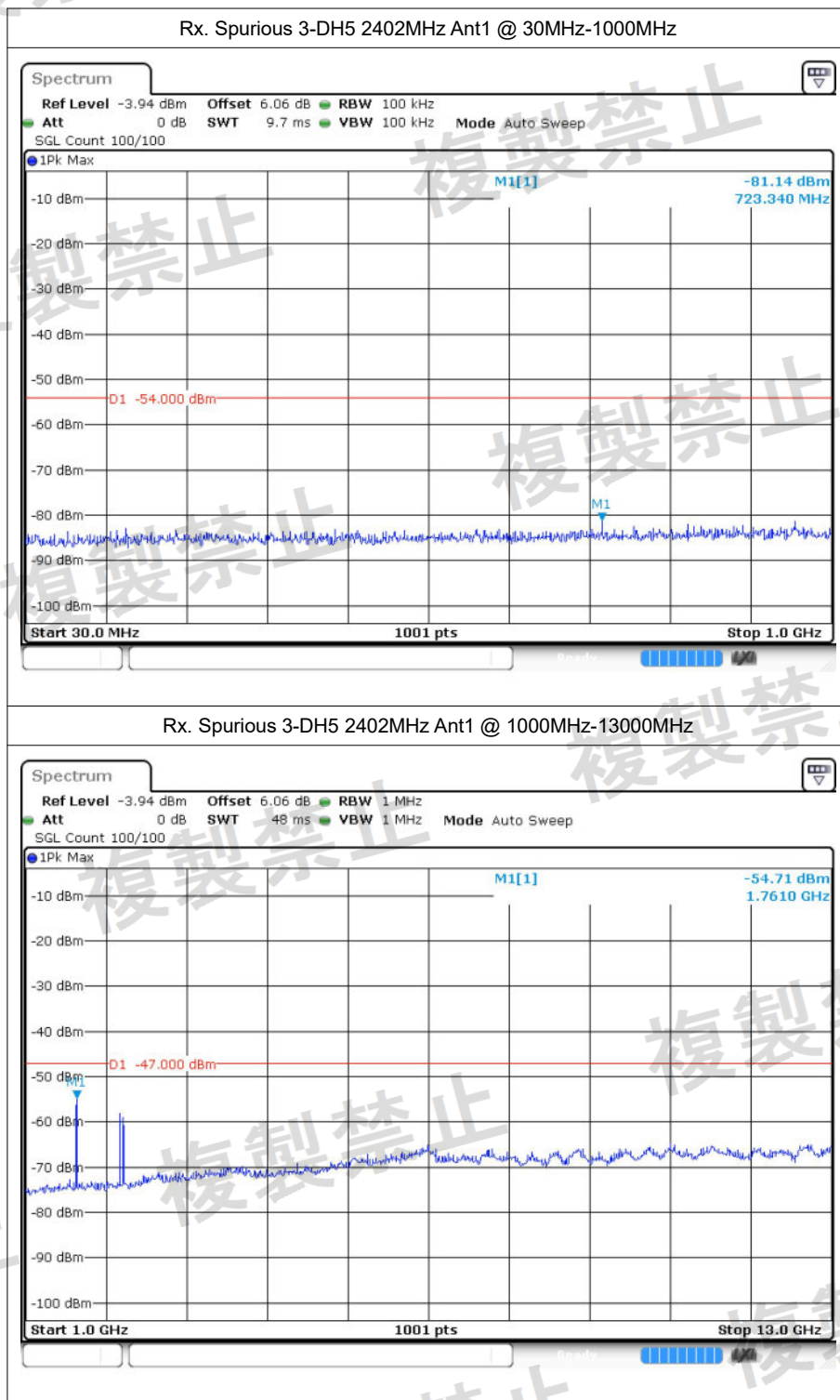
7.1 Test Result

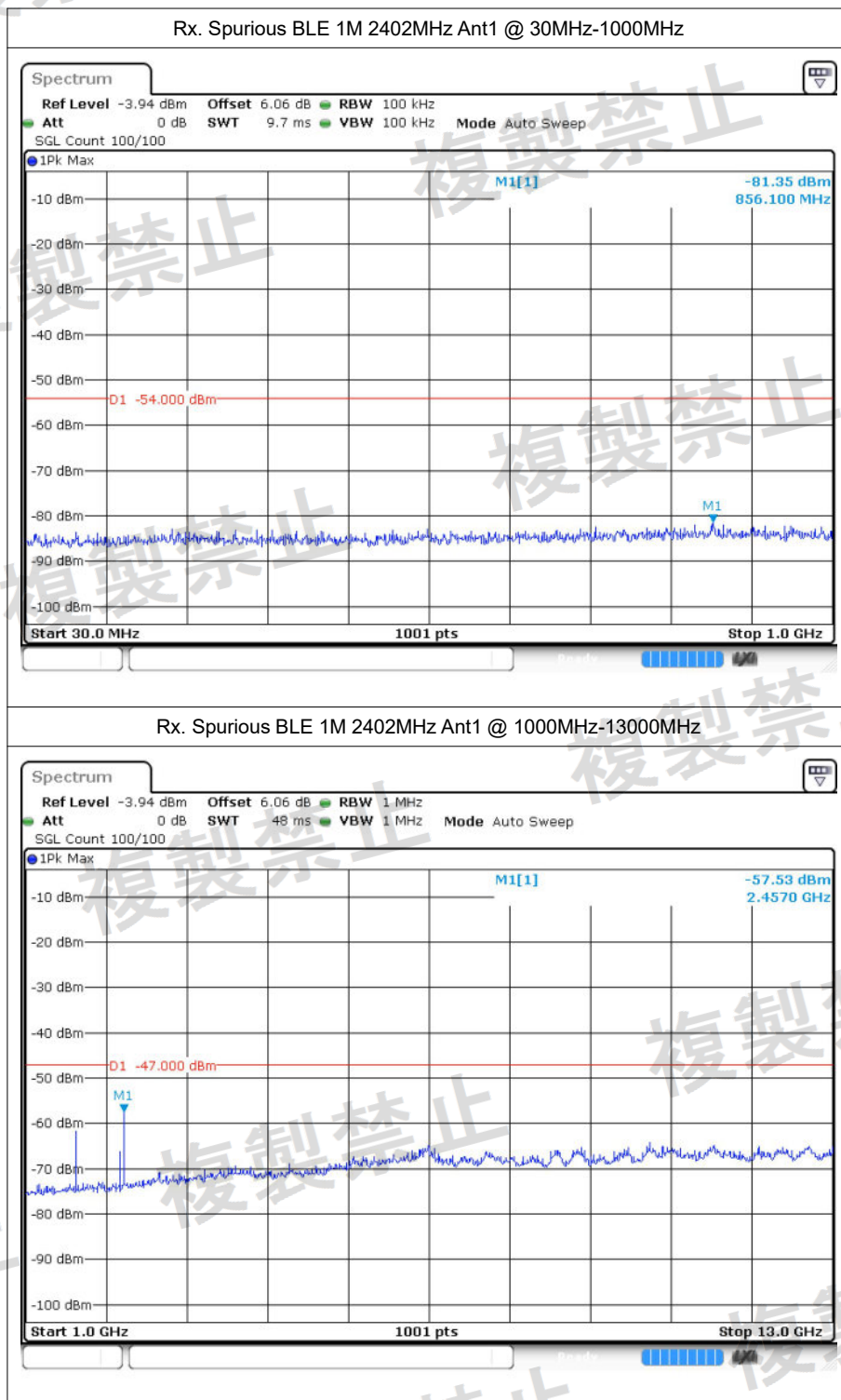
Mode	Antenna	Range (MHz)	Emission Frequency (MHz)	Max Value (dBm)	Limit (dBm)	Verdict
1-DH5	Ant1	30-1000	991.76	-81.68	-54	Pass
1-DH5	Ant1	1000-13000	1761	-56.53	-47	Pass
2-DH5	Ant1	30-1000	954.94	-81.01	-54	Pass
2-DH5	Ant1	1000-13000	2469	-61.88	-47	Pass
3-DH5	Ant1	30-1000	723.34	-81.14	-54	Pass
3-DH5	Ant1	1000-13000	1761	-54.71	-47	Pass
BLE 1M	Ant1	30-1000	856.1	-81.35	-54	Pass
BLE 1M	Ant1	1000-13000	2457	-57.53	-47	Pass

7.2 Test Graphs











8 Dwell Time

8.1 Test Result

Mode	Frequency (MHz)	Antenna	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
1-DH5	2402	Ant1	2.885	0.285615	99	31600	0.4	Pass
1-DH5	2441	Ant1	2.885	0.326005	113	31600	0.4	Pass
1-DH5	2480	Ant1	2.885	0.274075	95	31600	0.4	Pass
2-DH5	2402	Ant1	2.889	0.271566	94	31600	0.4	Pass
2-DH5	2441	Ant1	2.89	0.32368	112	31600	0.4	Pass
2-DH5	2480	Ant1	2.889	0.286011	99	31600	0.4	Pass
3-DH5	2402	Ant1	2.891	0.263081	91	31600	0.4	Pass
3-DH5	2441	Ant1	2.891	0.335356	116	31600	0.4	Pass
3-DH5	2480	Ant1	2.891	0.297773	103	31600	0.4	Pass

8.2 Test Graphs



