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Annex for 2.4G Wi-Fi

Test Report No.: CTL2606292031-MIC02

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MIC: 219-269481

1. Frequency Error

1.1 Test Result

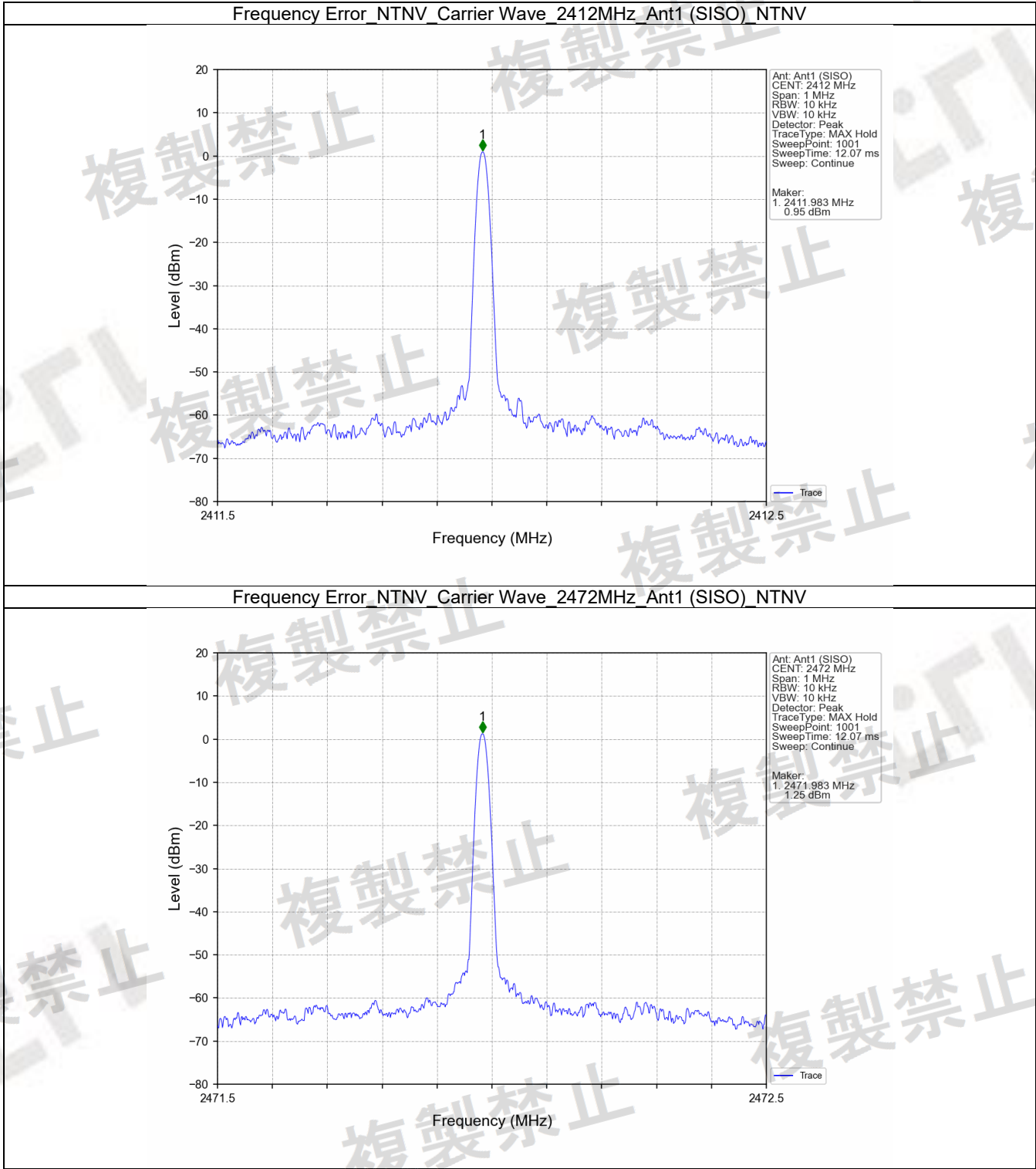
1.1.1 Ant1

Ant1							
ENV	Mode	TX Type	Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)		Verdict
					Result	Limit	
NTNV	Carrier Wave	SISO	2412	2411.983	-7.05	-50 to 50	Pass
			2472	2471.983	-6.88	-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

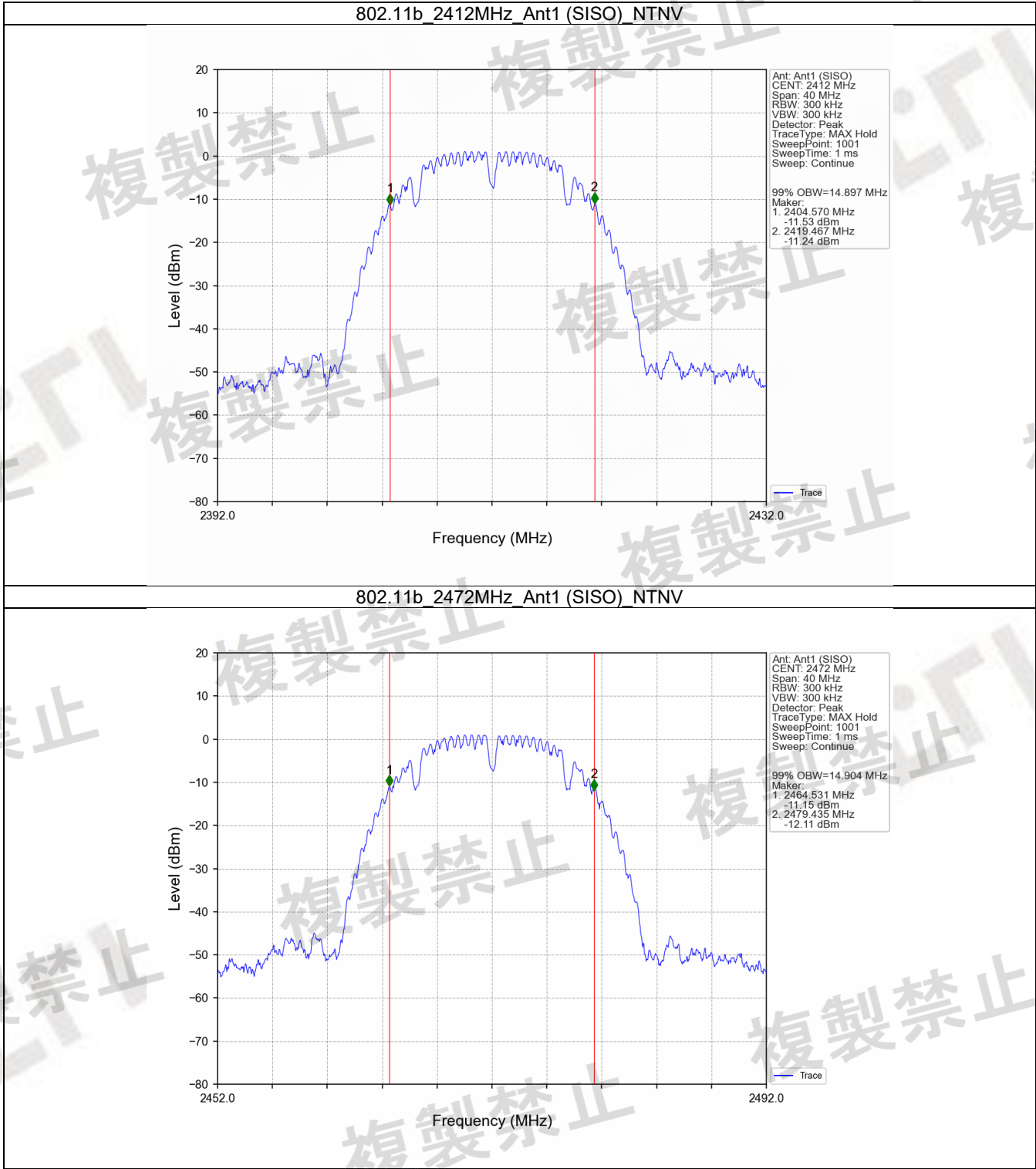
2.1.1 OBW

ENV	Mode	TX Type	Frequency (MHz)	99% Occupied Bandwidth (MHz)		Verdict
				ANT1	Limit	
NTNV	802.11b	SISO	2412	14.897	<=26	Pass
			2472	14.904	<=26	Pass
	802.11g	SISO	2412	16.415	<=26	Pass
			2472	16.406	<=26	Pass
	802.11n (HT20)	SISO	2412	17.529	<=26	Pass
			2472	16.392	<=26	Pass

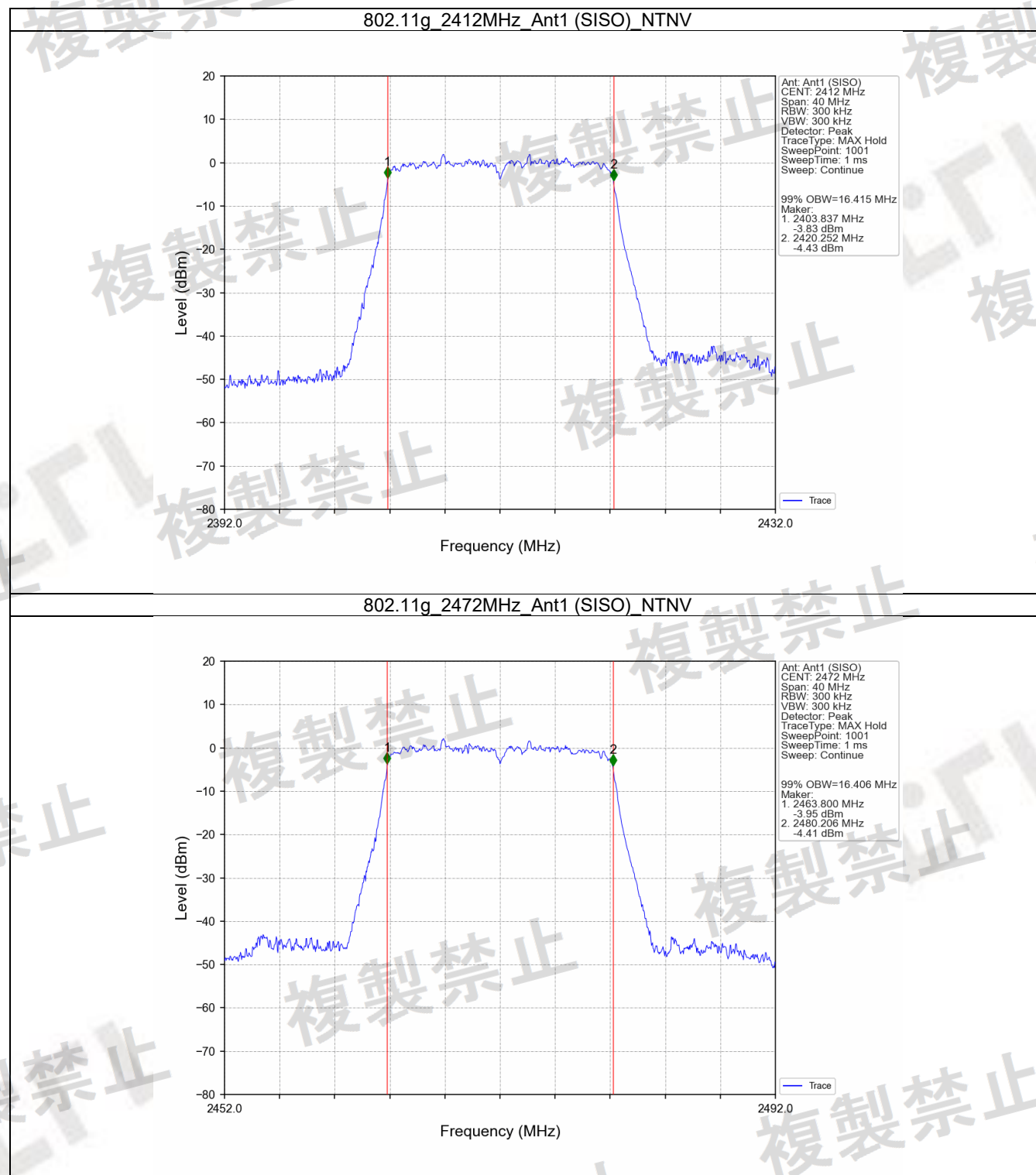
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2.2 Test Graph

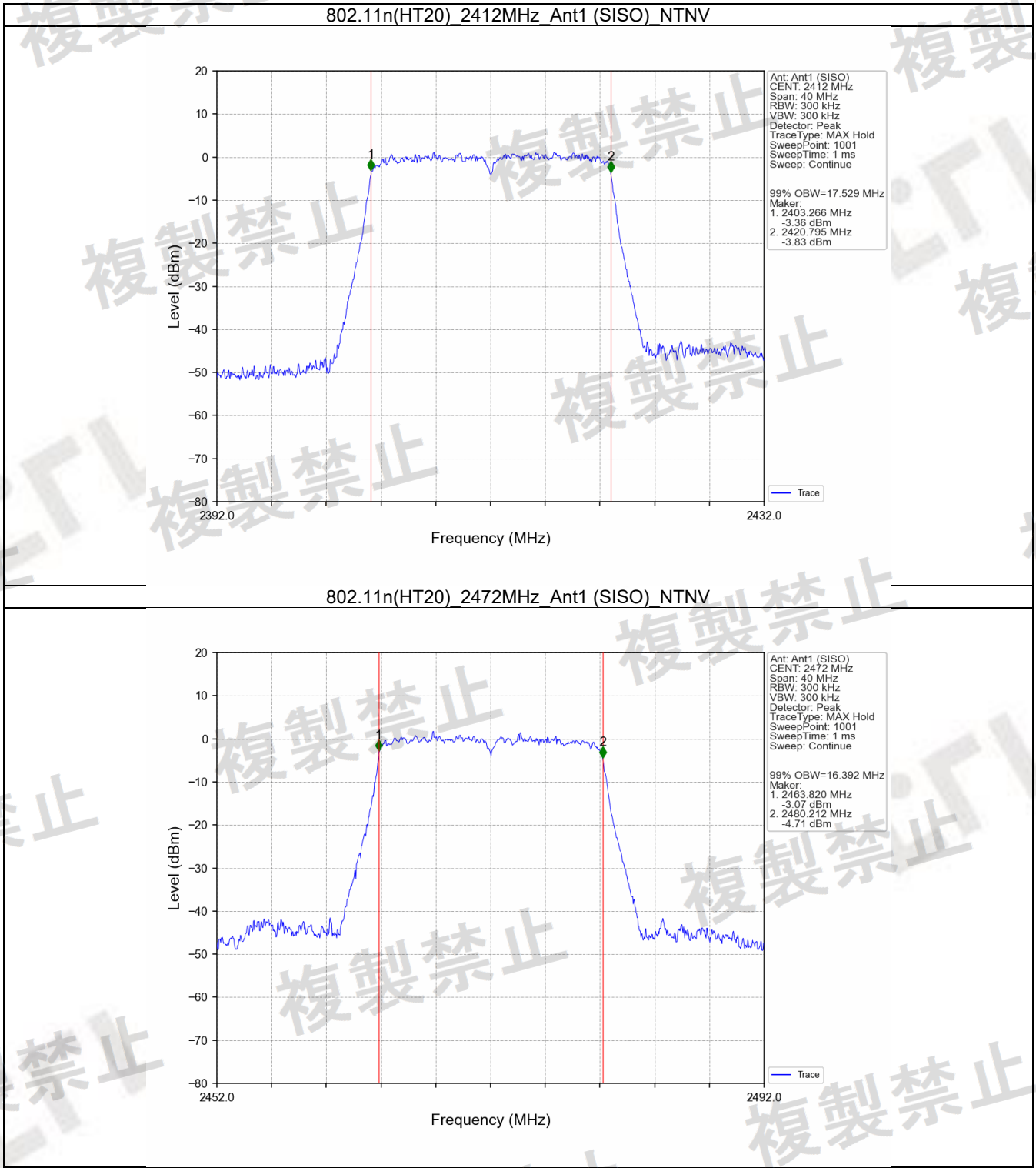
2.2.1 OBW



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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/MHz)		Nominal Power (mW/MHz)	Tolerance (%)		Verdict
					Measured	Limit		Measured	Limit	
NTNV	802.11b	SISO	2412	1	1.288	<=10.00	1.300	-0.92	<=20	Pass
			2472	1	1.262	<=10.00	1.300	-2.92	<=20	Pass
	802.11g	SISO	2412	1	0.852	<=10.00	0.850	0.24	<=20	Pass
			2472	1	0.813	<=10.00	0.850	-4.35	<=20	Pass
	802.11n (HT20)	SISO	2412	1	0.769	<=10.00	0.770	-0.13	<=20	Pass
			2472	1	0.813	<=10.00	0.770	5.58	<=20	Pass

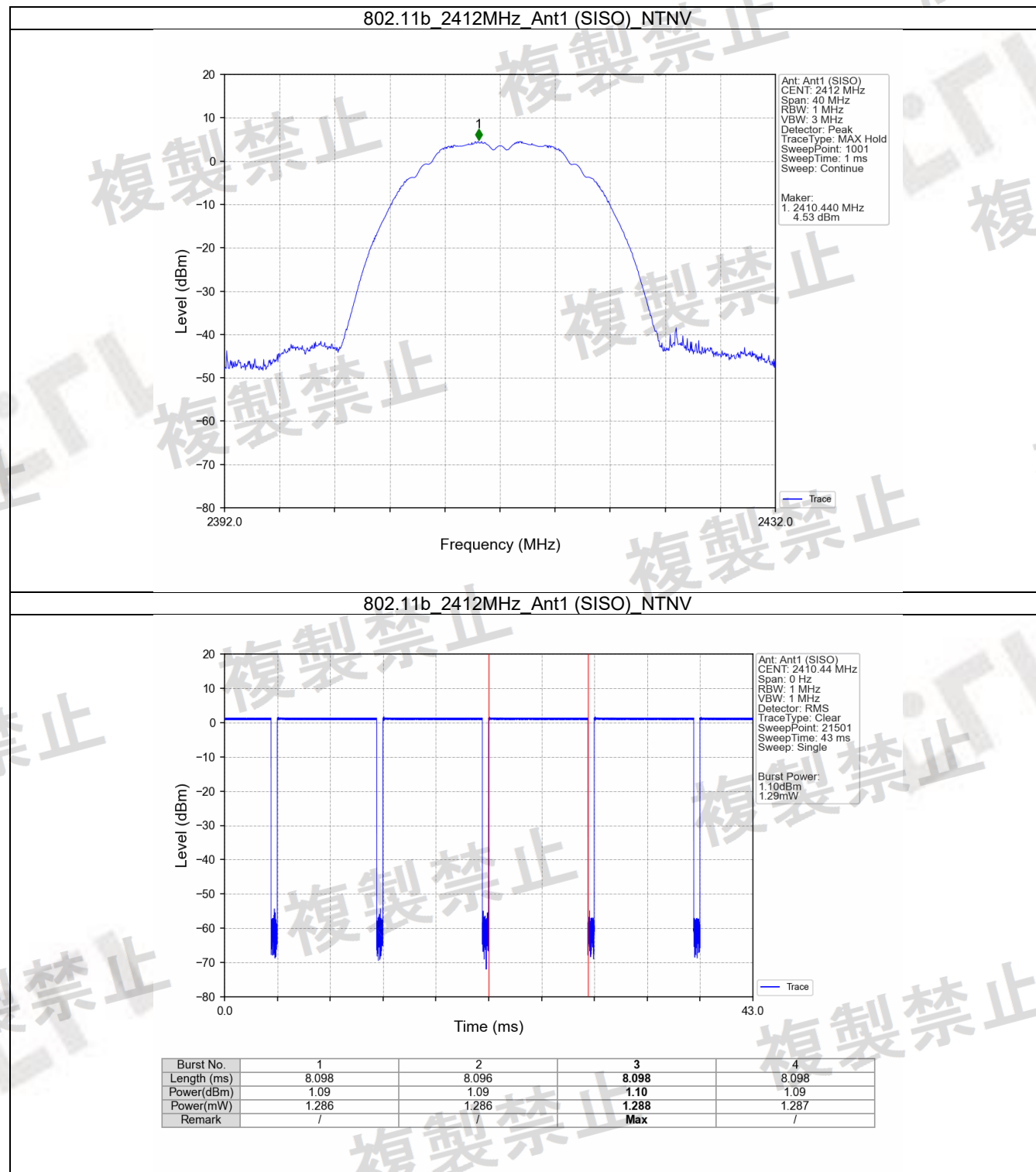
3.1.2 EIRP

ENV	Mode	TX Type	Frequency (MHz)	ANT	Gain (dBi)	EIRP (dBm/MHz)		Verdict
						Result	Limit	
NTNV	802.11b	SISO	2412	1	-24.85	-23.75	<=12.14	Pass
			2472	1	-24.85	-23.84	<=12.14	Pass
	802.11g	SISO	2412	1	-24.85	-25.54	<=12.14	Pass
			2472	1	-24.85	-25.75	<=12.14	Pass
	802.11n (HT20)	SISO	2412	1	-24.85	-25.99	<=12.14	Pass
			2472	1	-24.85	-25.75	<=12.14	Pass

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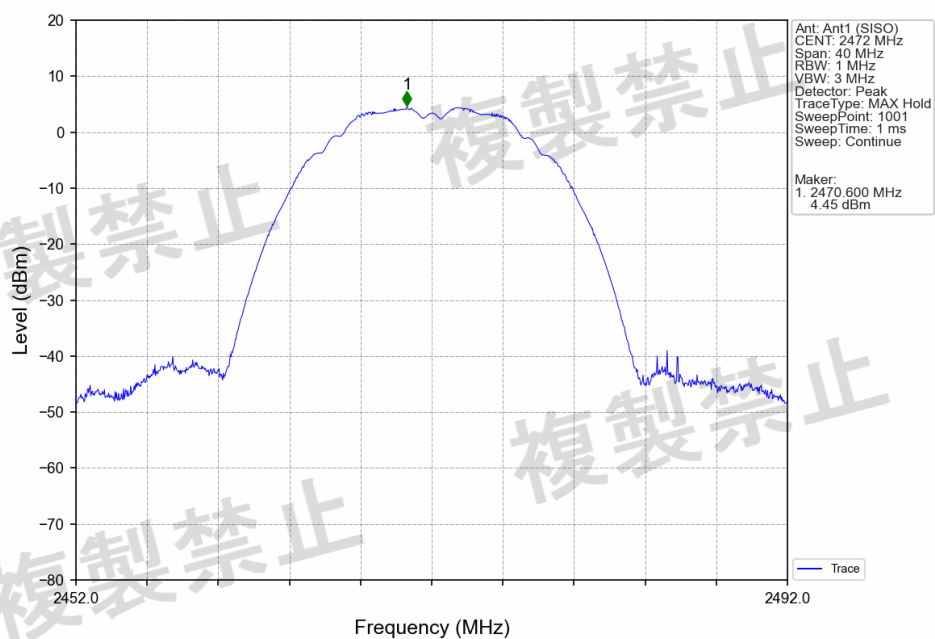
3.2 Test Graph

3.2.1 Power

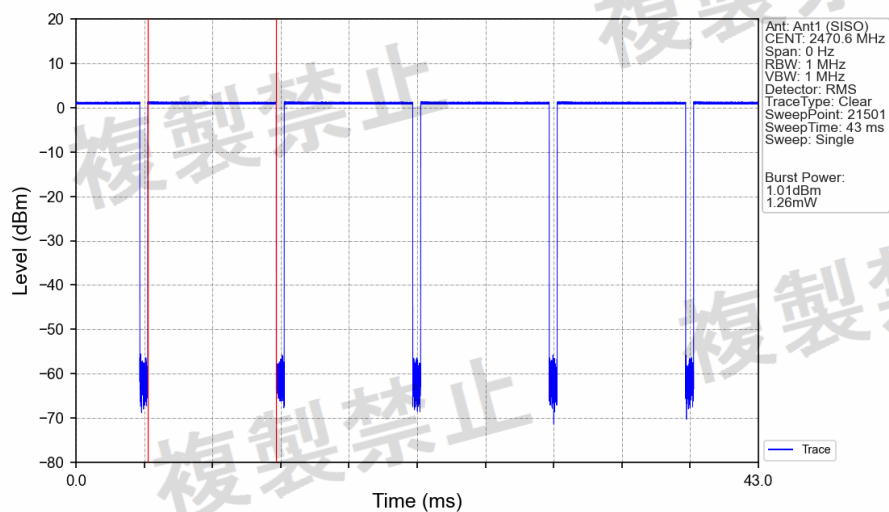


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802.11b_2472MHz_Ant1 (SISO)_NTNV



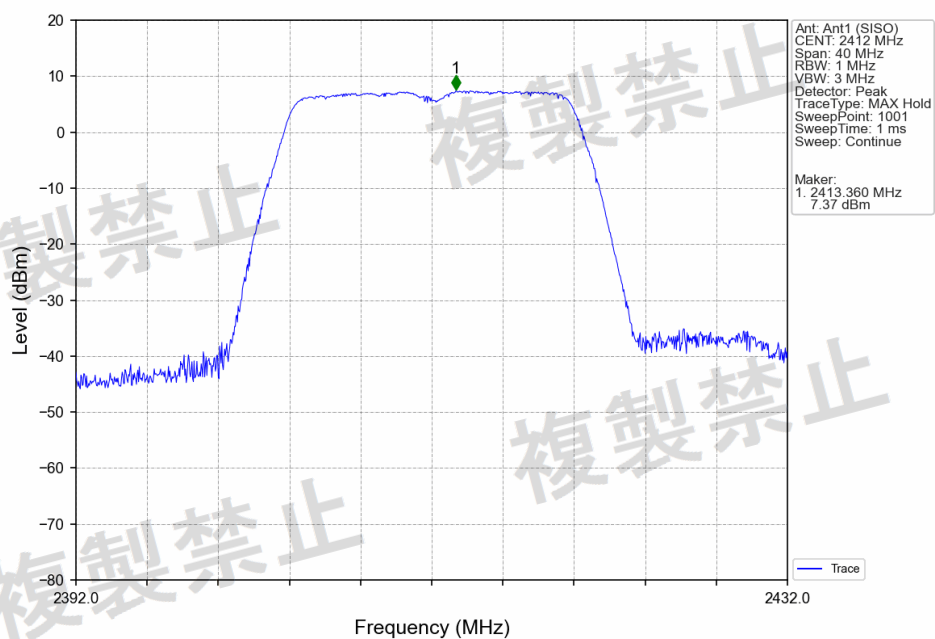
802.11b_2472MHz_Ant1 (SISO)_NTNV



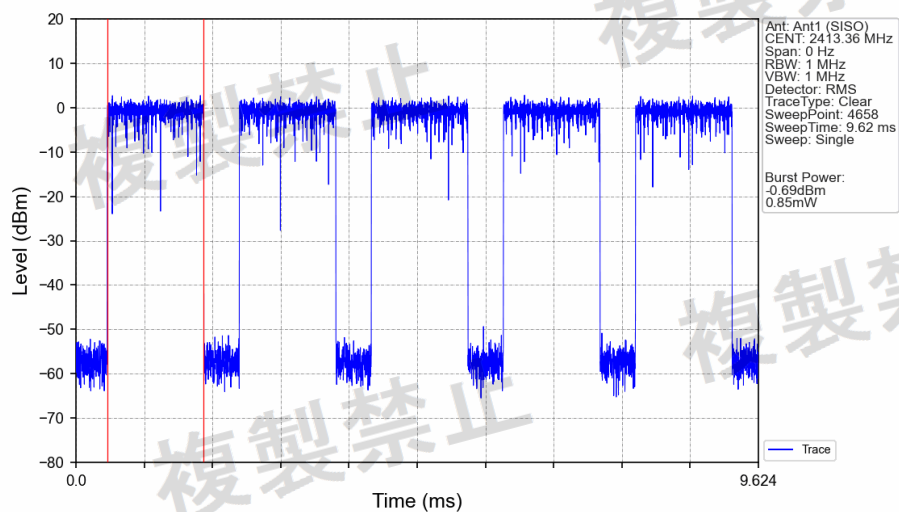
Burst No.	1	2	3	4
Length (ms)	8.098	8.098	8.098	8.098
Power(dBm)	1.01	1.01	1.01	1.01
Power(mW)	1.262	1.262	1.261	1.261
Remark	Max	/	/	/

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802.11g_2412MHz_Ant1 (SISO)_NTNV



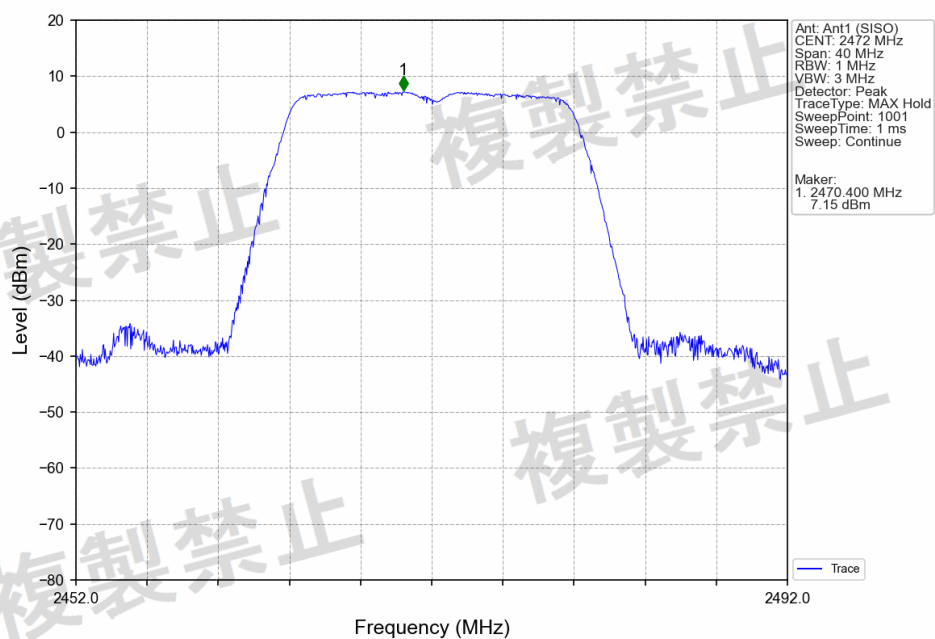
802.11g_2412MHz_Ant1 (SISO)_NTNV



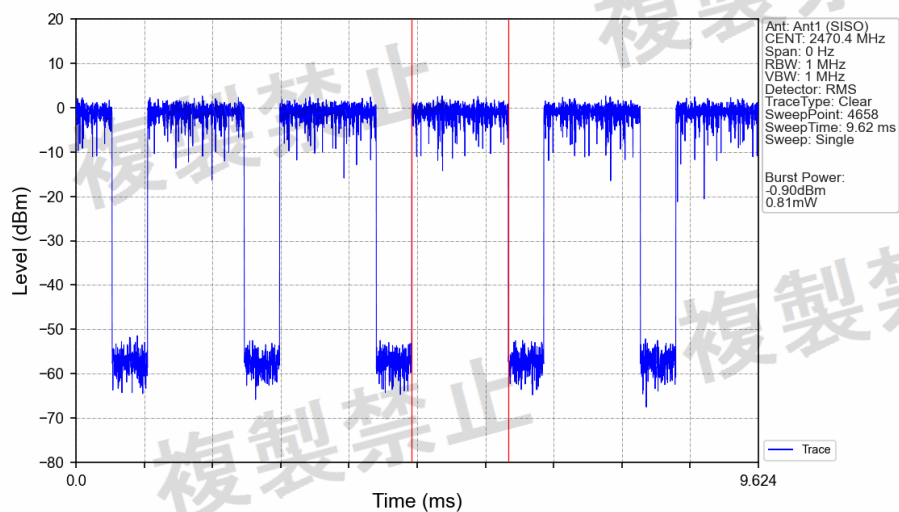
Burst No.	1	2	3	4	5
Length (ms)	1.360	1.360	1.362	1.362	1.360
Power(dBm)	-0.69	-0.70	-0.70	-0.71	-0.70
Power(mW)	0.852	0.851	0.850	0.850	0.851
Remark	Max	/	/	/	/

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802.11g_2472MHz_Ant1 (SISO)_NTNV

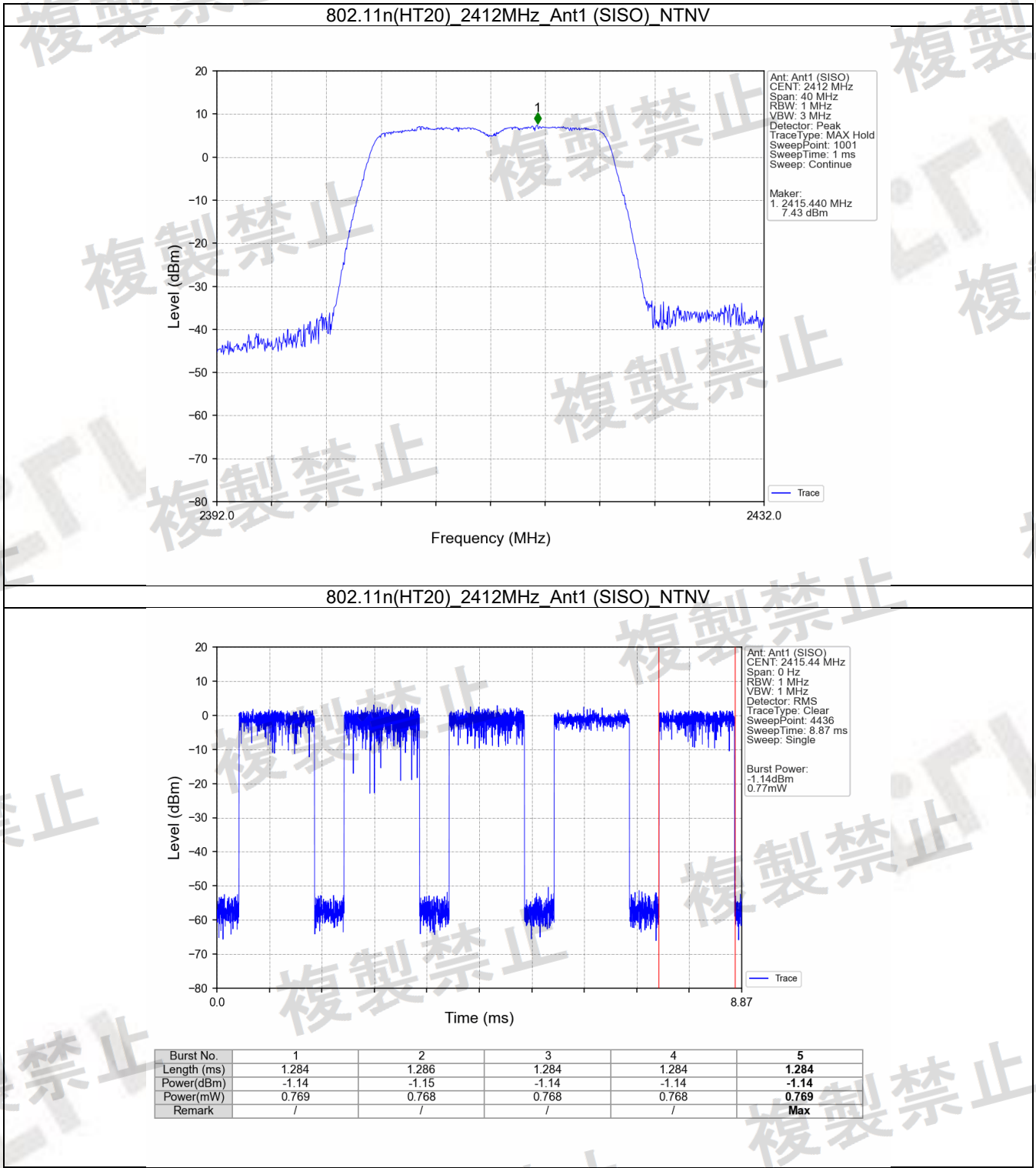


802.11g_2472MHz_Ant1 (SISO)_NTNV

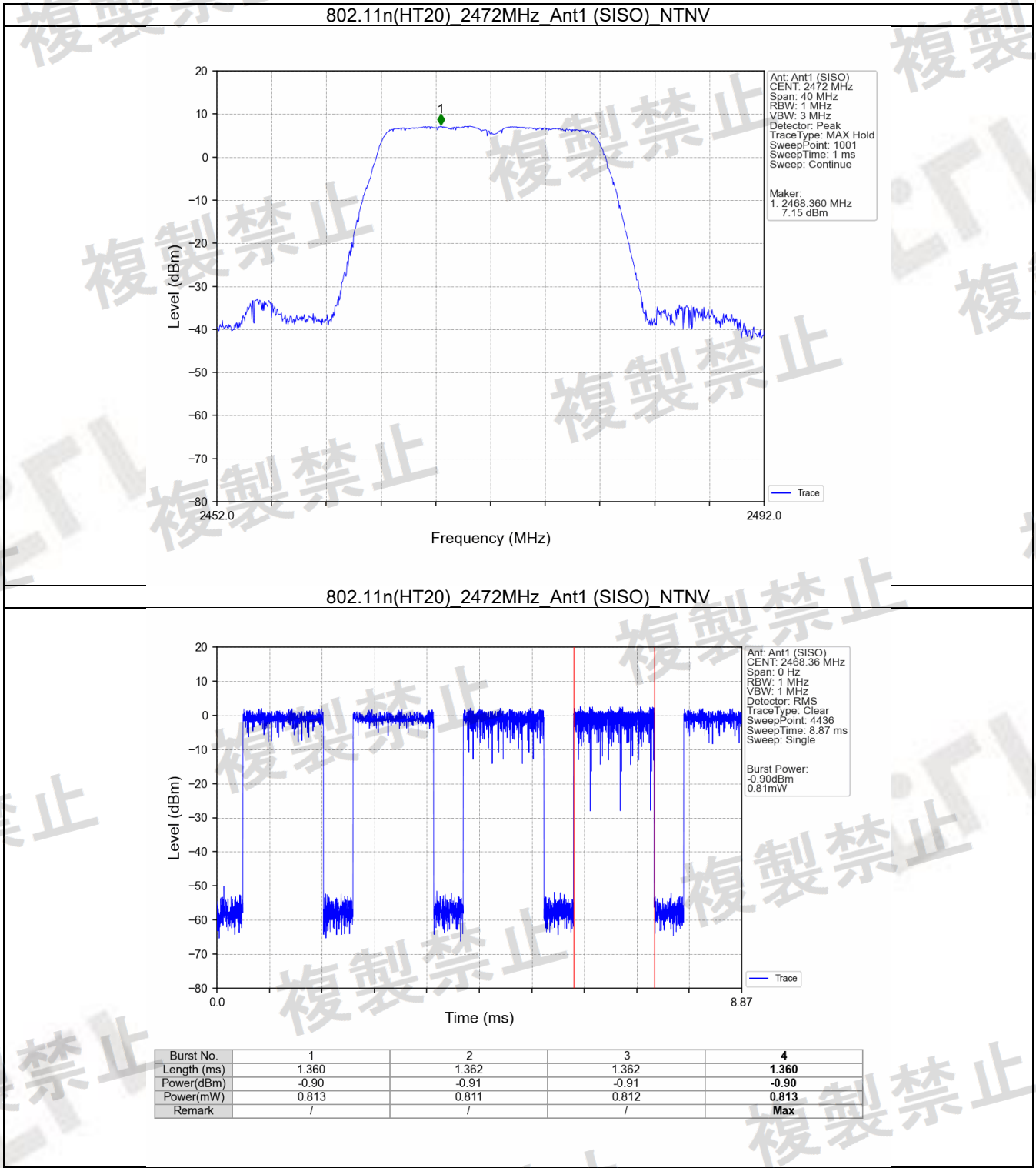


Burst No.	1	2	3	4
Length (ms)	1.362	1.362	1.360	1.360
Power(dBm)	-0.90	-0.91	-0.90	-0.90
Power(mW)	0.813	0.811	0.813	0.812
Remark	/	/	Max	/

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MIC: 219-269481



MIC: 219-269481

4. Spurious Emission Intensity

4.1 Test Result

4.1.1 TxSe_NTNV

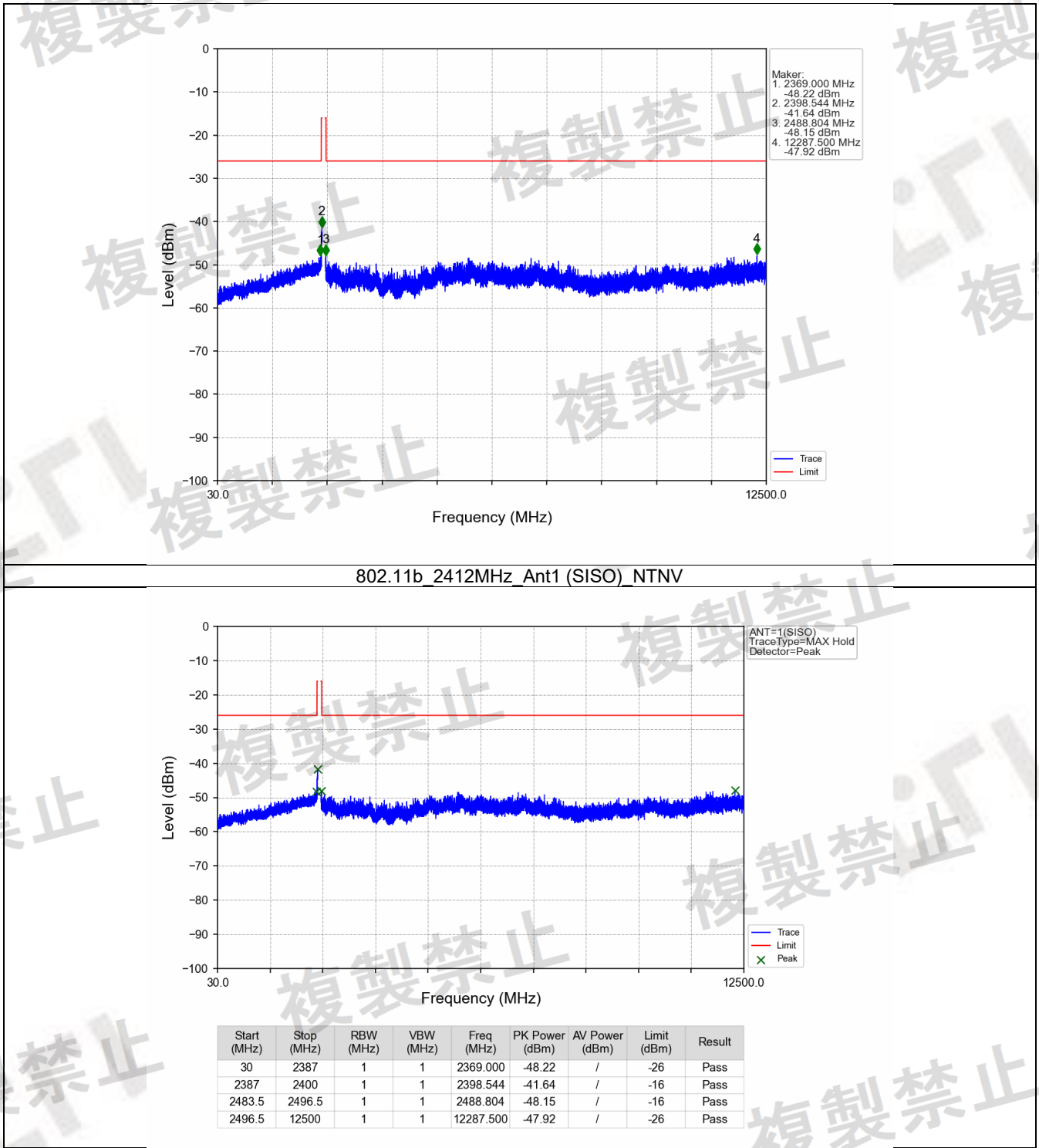
NTNV												
Mode	TX Type	Freq. (MHz)	ANT	Freq. Range		Marker					Limit (uW /MHz)	Verdict
				Start (MHz)	Stop (MHz)	Freq. (MHz)	PK Power (dBm /MHz)	PK Power (uW /MHz)	AV Power (dBm /MHz)	AV Power (uW /MHz)		
802.11b	SISO	2412	1	30	2387	2369	-48.22	0.015	/	/	2.5	Pass
				2387	2400	2398.544	-41.64	0.069	/	/	25	Pass
				2483.5	2496.5	2488.804	-48.15	0.015	/	/	25	Pass
				2496.5	12500	12287.5	-47.92	0.016	/	/	2.5	Pass
		2472	1	30	2387	2343	-48.45	0.014	/	/	2.5	Pass
				2387	2400	2389.652	-48.14	0.015	/	/	25	Pass
				2483.5	2496.5	2484.826	-40.31	0.093	/	/	25	Pass
				2496.5	12500	2498.5	-47.75	0.017	/	/	2.5	Pass
802.11g	SISO	2412	1	30	2387	2373	-45.05	0.031	/	/	2.5	Pass
				2387	2400	2398.258	-39.11	0.123	/	/	25	Pass
				2483.5	2496.5	2487.491	-44.06	0.039	/	/	25	Pass
				2496.5	12500	12078.5	-43.22	0.048	/	/	2.5	Pass
		2472	1	30	2387	2271	-44.84	0.033	/	/	2.5	Pass
				2387	2400	2398.609	-45.26	0.030	/	/	25	Pass
				2483.5	2496.5	2485.827	-35.99	0.252	/	/	25	Pass
				2496.5	12500	12388.5	-44.07	0.039	/	/	2.5	Pass
802.11n (HT20)	SISO	2412	1	30	2387	2356.5	-44.72	0.034	/	/	2.5	Pass
				2387	2400	2399.688	-37.50	0.178	/	/	25	Pass
				2483.5	2496.5	2485.307	-44.88	0.033	/	/	25	Pass
				2496.5	12500	11612	-44.28	0.037	/	/	2.5	Pass
		2472	1	30	2387	2226	-45.30	0.030	/	/	2.5	Pass
				2387	2400	2389.639	-45.19	0.030	/	/	25	Pass
				2483.5	2496.5	2486.009	-34.12	0.387	/	/	25	Pass
				2496.5	12500	2498.5	-44.15	0.038	/	/	2.5	Pass

4.2 Test Graph

4.2.1 TxSe_NTNV

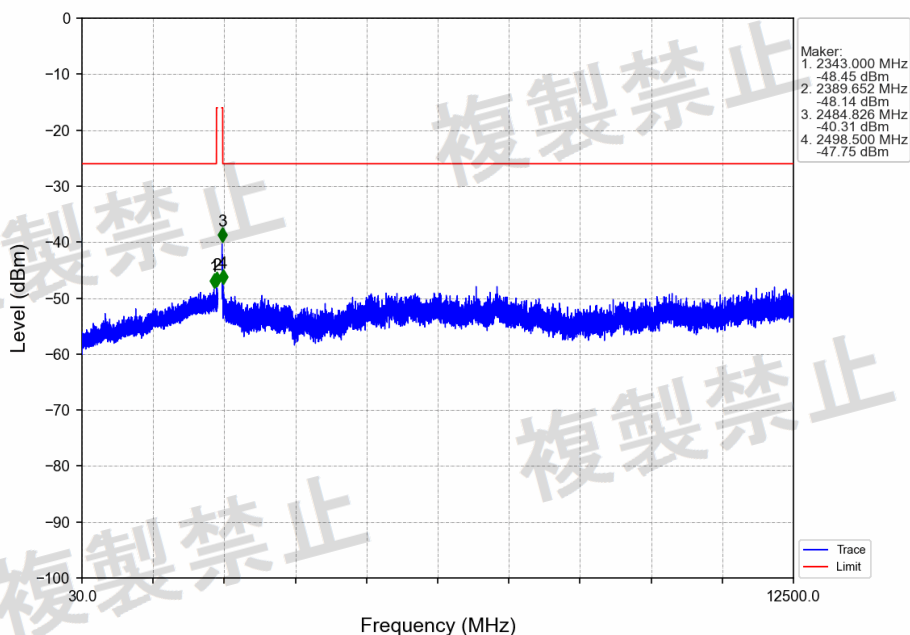
802.11b_2412MHz_Ant1 (SISO)_NTNV

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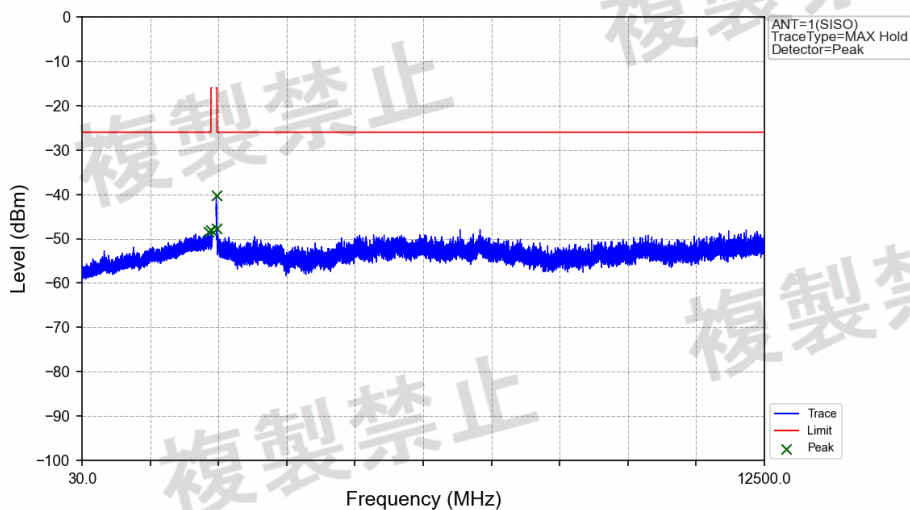


MIC: 219-269481

802.11b_2472MHz_Ant1 (SISO)_NTNV



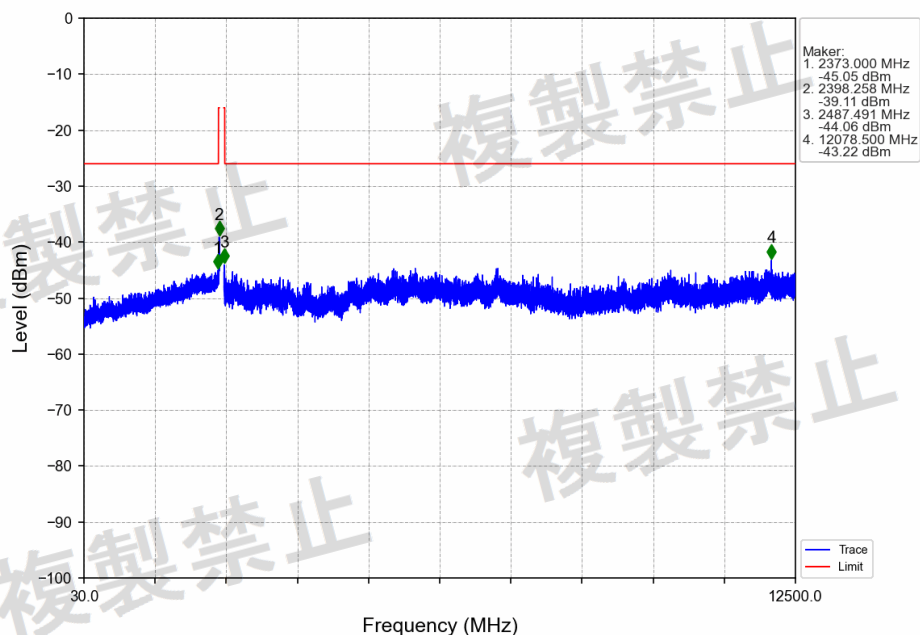
802.11b_2472MHz_Ant1 (SISO)_NTNV



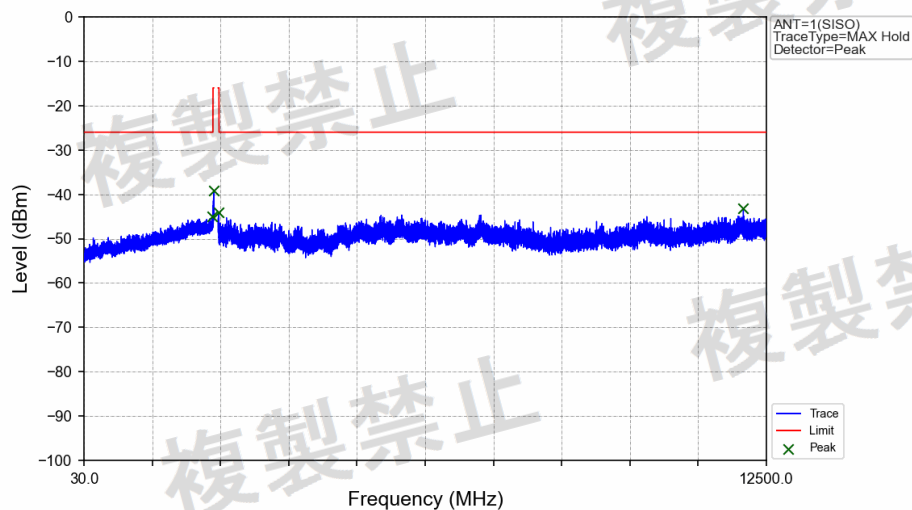
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2343.000	-48.45	/	-26	Pass
2387	2400	1	1	2389.652	-48.14	/	-16	Pass
2483.5	2496.5	1	1	2484.826	-40.31	/	-16	Pass
2496.5	12500	1	1	2498.500	-47.75	/	-26	Pass

MIC: 219-269481

802.11g_2412MHz_Ant1 (SISO)_NTNV



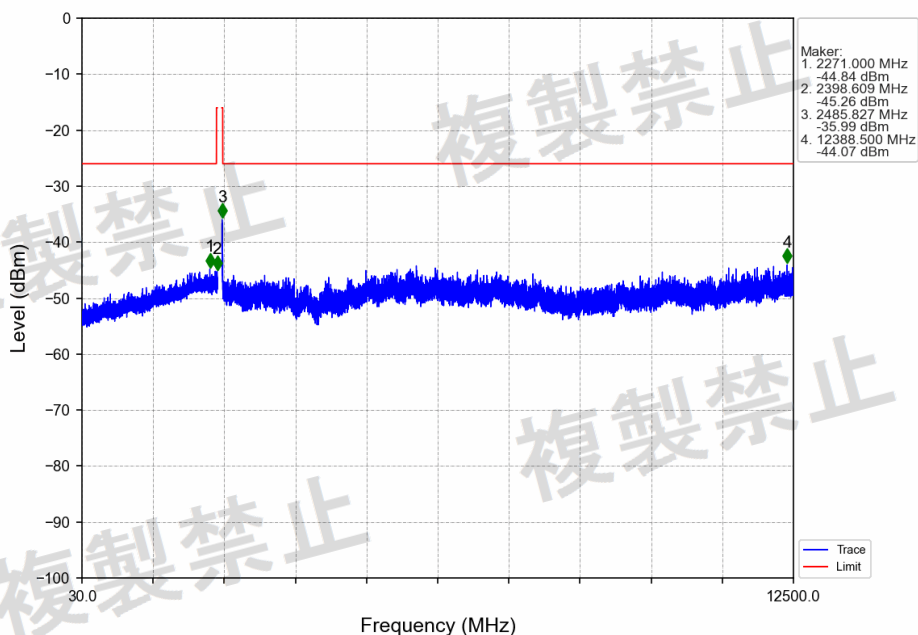
802.11g_2412MHz_Ant1 (SISO)_NTNV



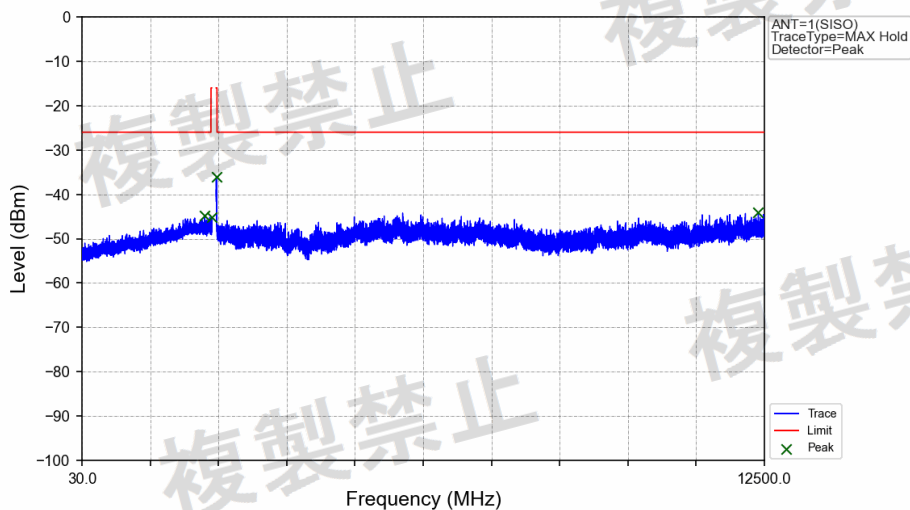
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2373.000	-45.05	/	-26	Pass
2387	2400	1	1	2398.258	-39.11	/	-16	Pass
2483.5	2496.5	1	1	2487.491	-44.06	/	-16	Pass
2496.5	12500	1	1	12078.500	-43.22	/	-26	Pass

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802.11g_2472MHz_Ant1 (SISO)_NTNV



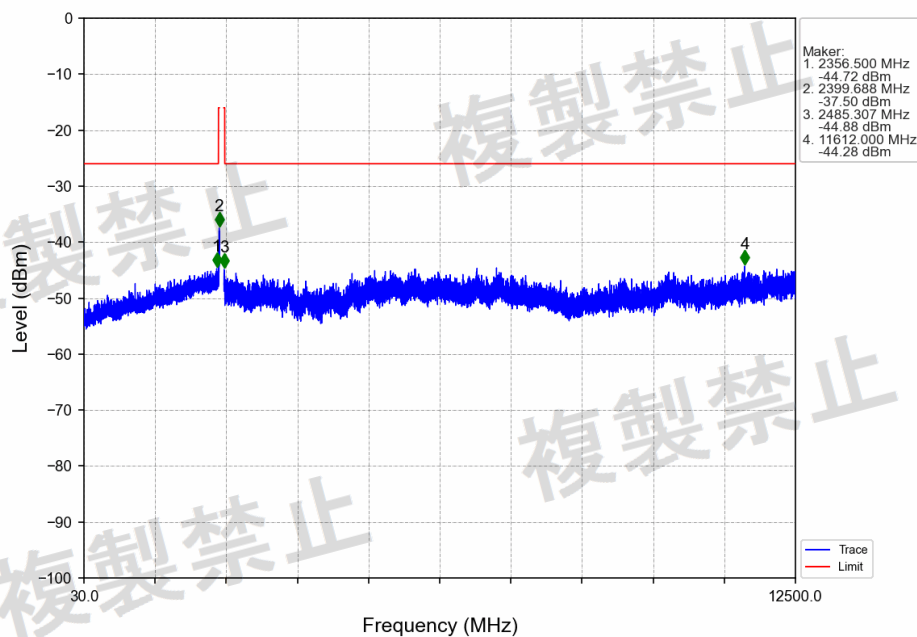
802.11g_2472MHz_Ant1 (SISO)_NTNV



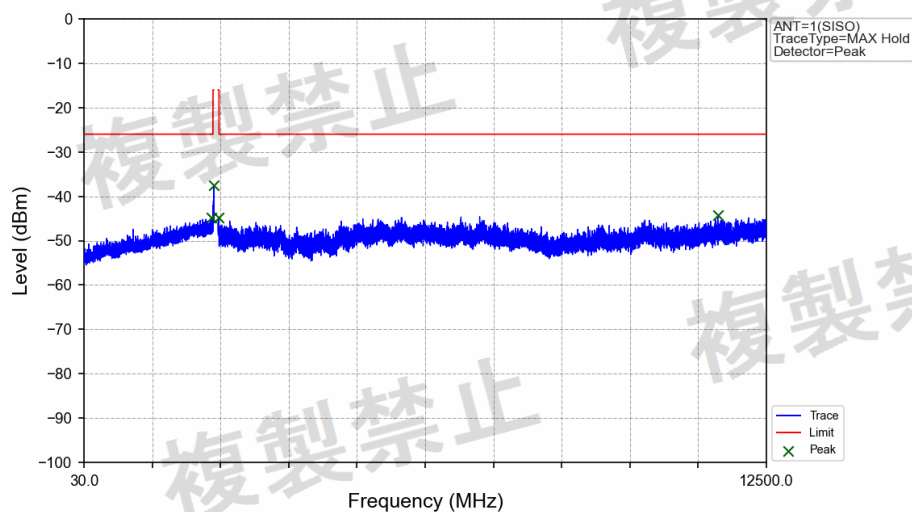
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2271.000	-44.84	/	-26	Pass
2387	2400	1	1	2398.609	-45.26	/	-16	Pass
2483.5	2496.5	1	1	2485.827	-35.99	/	-16	Pass
2496.5	12500	1	1	12388.500	-44.07	/	-26	Pass

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802.11n(HT20)_2412MHz_Ant1 (SISO)_NTNV



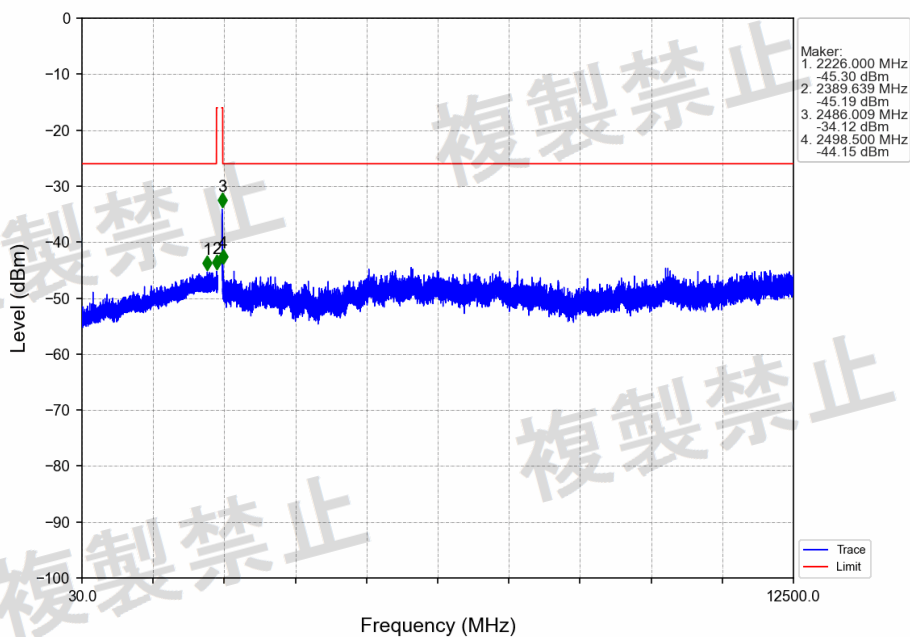
802.11n(HT20)_2412MHz_Ant1 (SISO)_NTNV



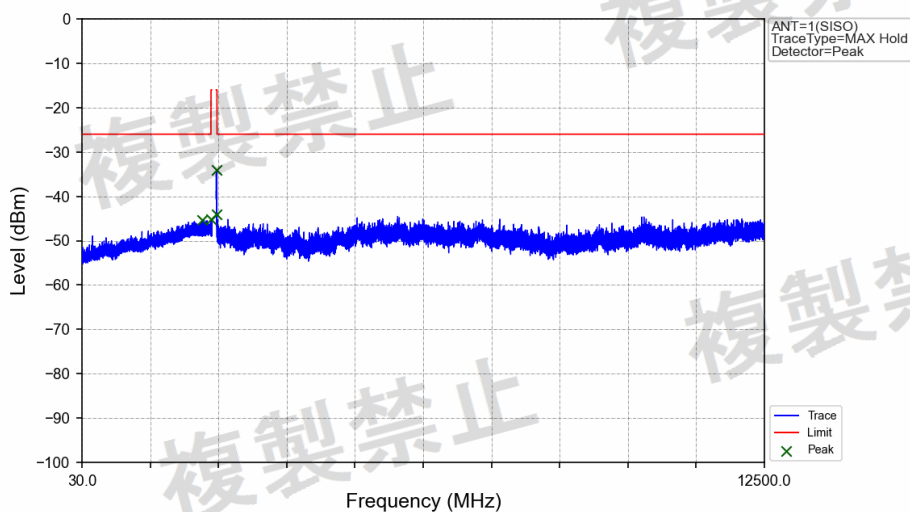
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2356.500	-44.72	/	-26	Pass
2387	2400	1	1	2399.688	-37.50	/	-16	Pass
2483.5	2496.5	1	1	2485.307	-44.88	/	-16	Pass
2496.5	12500	1	1	11612.000	-44.28	/	-26	Pass

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802.11n(HT20)_2472MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_2472MHz_Ant1 (SISO)_NTNV



Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2226.000	-45.30	/	-26	Pass
2387	2400	1	1	2389.639	-45.19	/	-16	Pass
2483.5	2496.5	1	1	2486.009	-34.12	/	-16	Pass
2496.5	12500	1	1	2498.500	-44.15	/	-26	Pass

MIC: 219-269481

5. Secondary Radiated Emission

5.1 Test Result

5.1.1 RxSe_NTNV

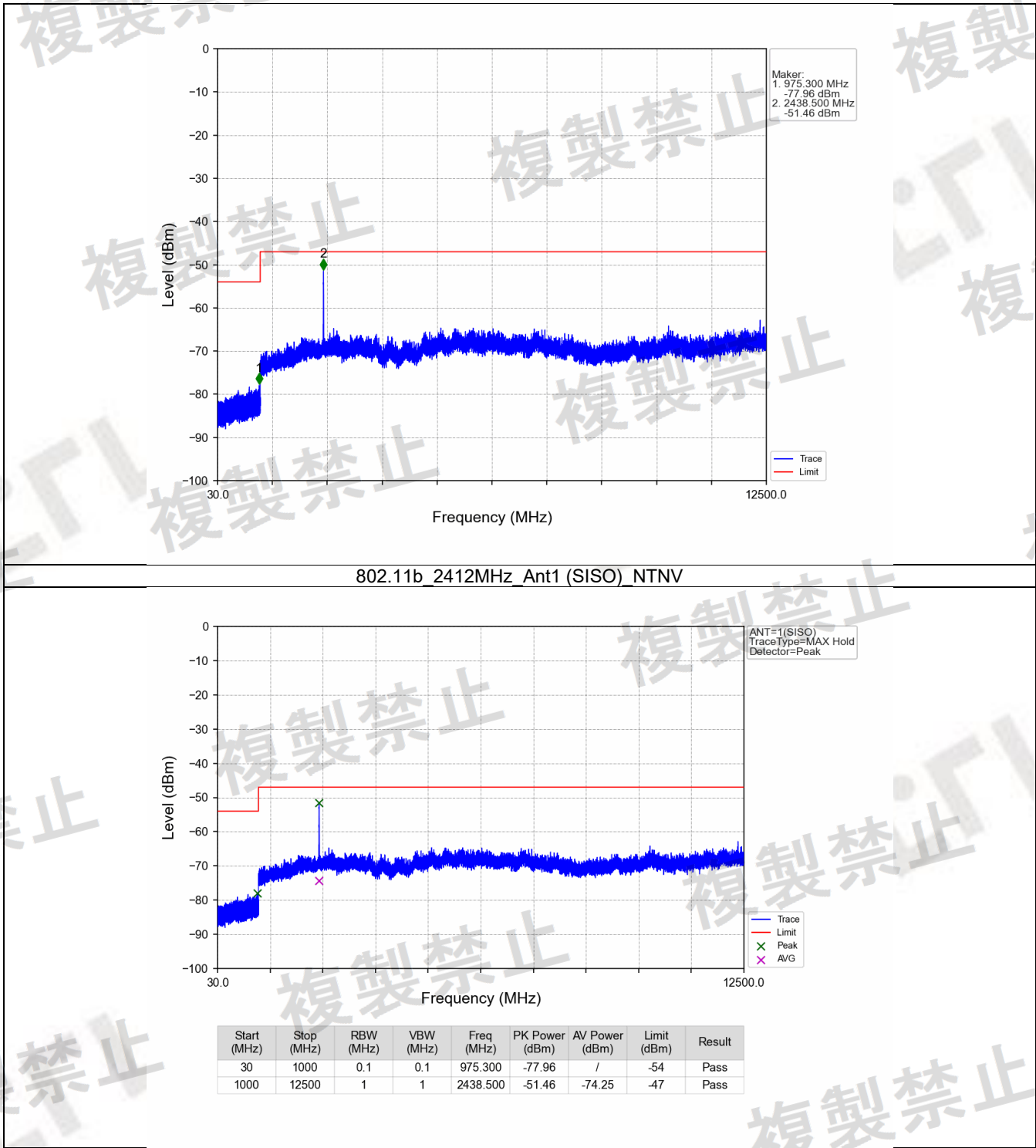
NTNV												
Mode	TX Type	Freq. (MHz)	ANT	Freq. Range		Marker					Limit (nW)	Verdict
				Start (MHz)	Stop (MHz)	Freq. (MHz)	PK Power (dBm)	PK Power (nW)	AV Power (dBm)	AV Power (nW)		
802.11b	SISO	2412	1	30	1000	975.3	-77.96	0.016	/	/	4	Pass
				1000	12500	2438.5	-51.46	7.145	-74.25	0.038	20	Pass
		2472	1	30	1000	920.4	-77.73	0.017	/	/	4	Pass
				1000	12500	12361.5	-63.89	0.408	/	/	20	Pass
802.11g	SISO	2412	1	30	1000	941.2	-78.10	0.015	/	/	4	Pass
				1000	12500	2439	-50.31	9.311	-65.36	0.291	20	Pass
		2472	1	30	1000	920.75	-78.33	0.015	/	/	4	Pass
				1000	12500	2440	-50.23	9.484	-55.23	2.999	20	Pass
802.11n (HT20)	SISO	2412	1	30	1000	876.1	-78.41	0.014	/	/	4	Pass
				1000	12500	2439	-50.78	8.356	-54.98	3.177	20	Pass
		2472	1	30	1000	988.85	-78.77	0.013	/	/	4	Pass
				1000	12500	2439	-50.88	8.166	-70.32	0.093	20	Pass

5.2 Test Graph

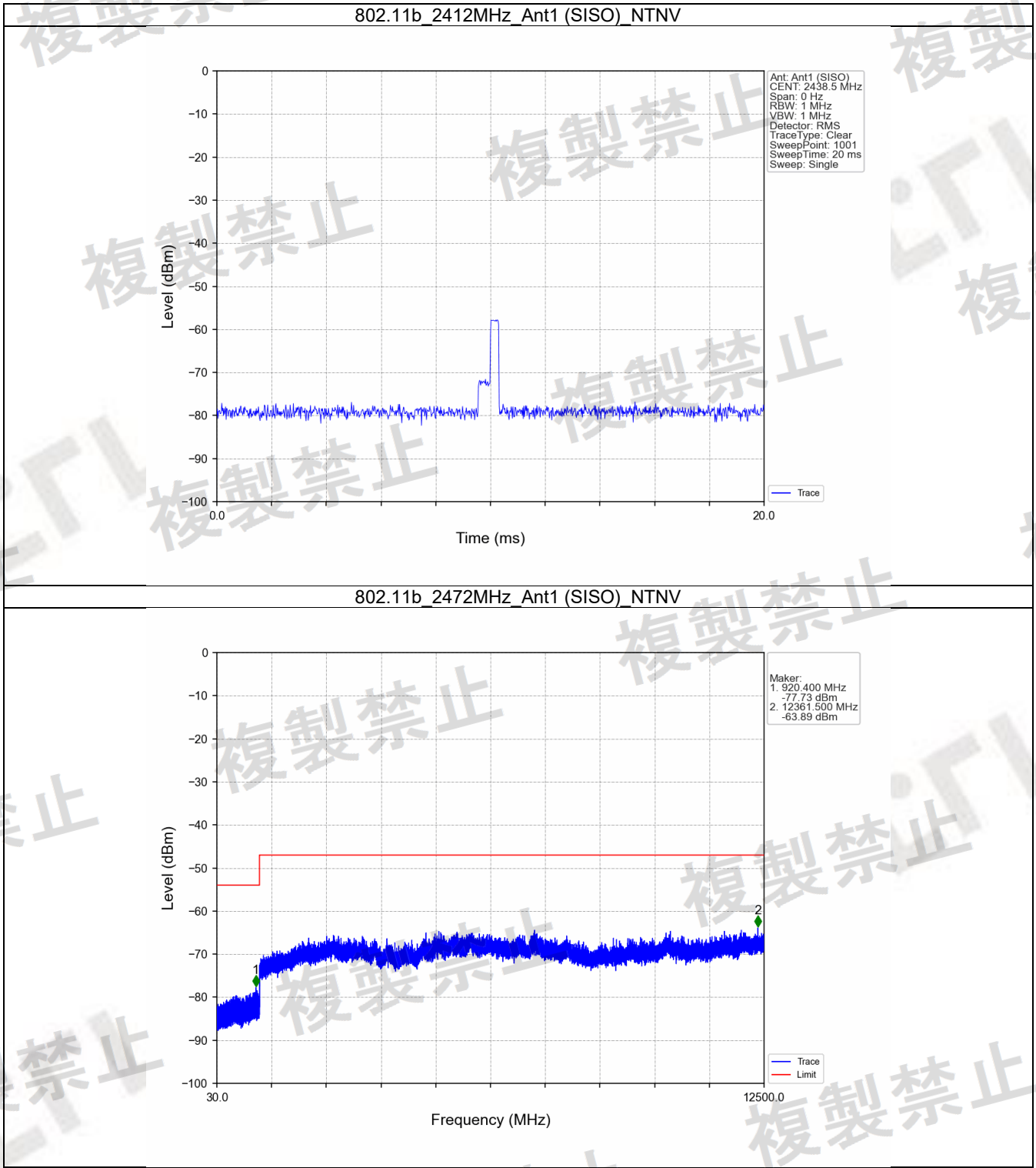
5.2.1 RxSe_NTNV

802.11b_2412MHz_Ant1 (SISO)_NTNV

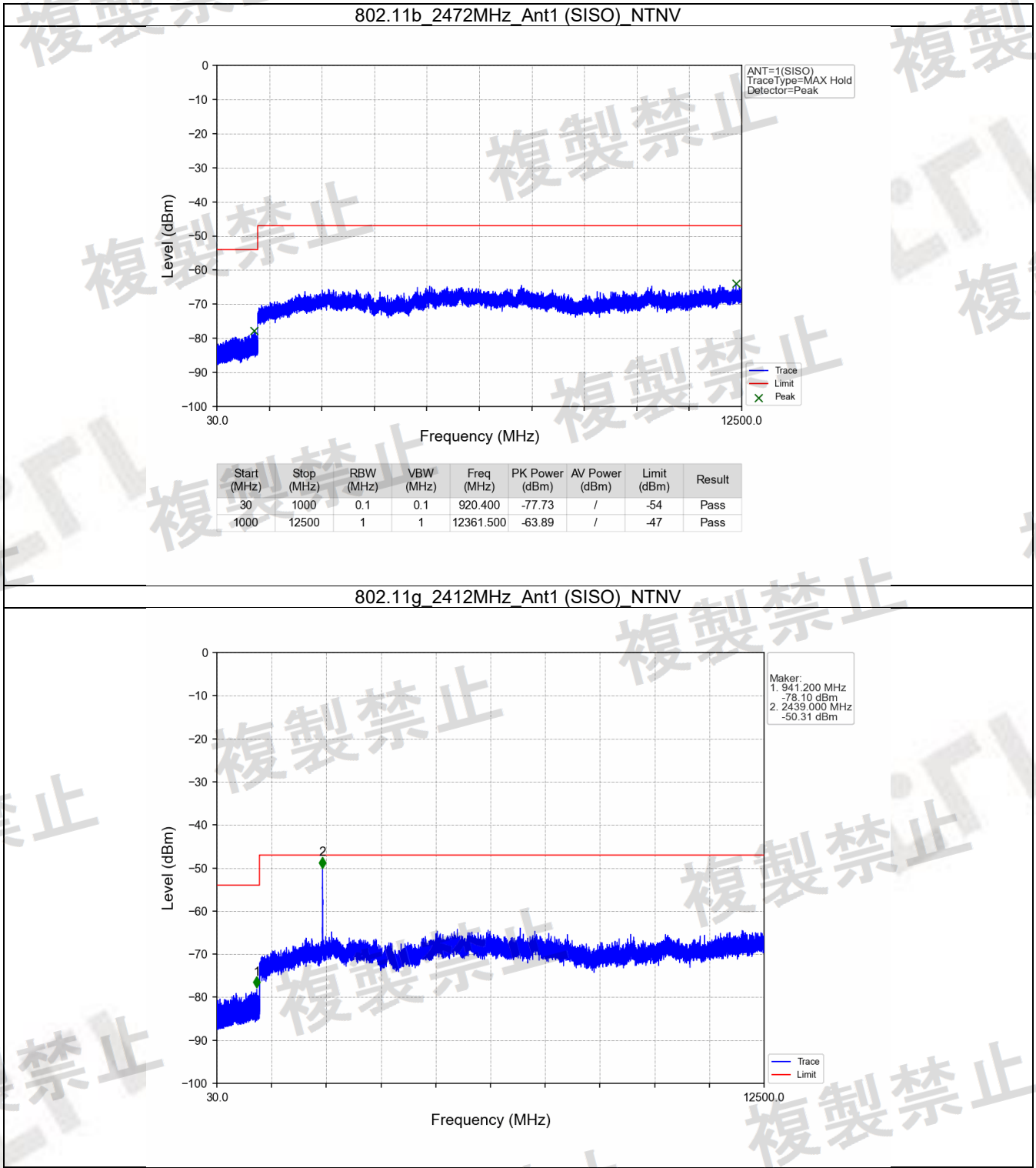
MIC: 219-269481



MIC: 219-269481

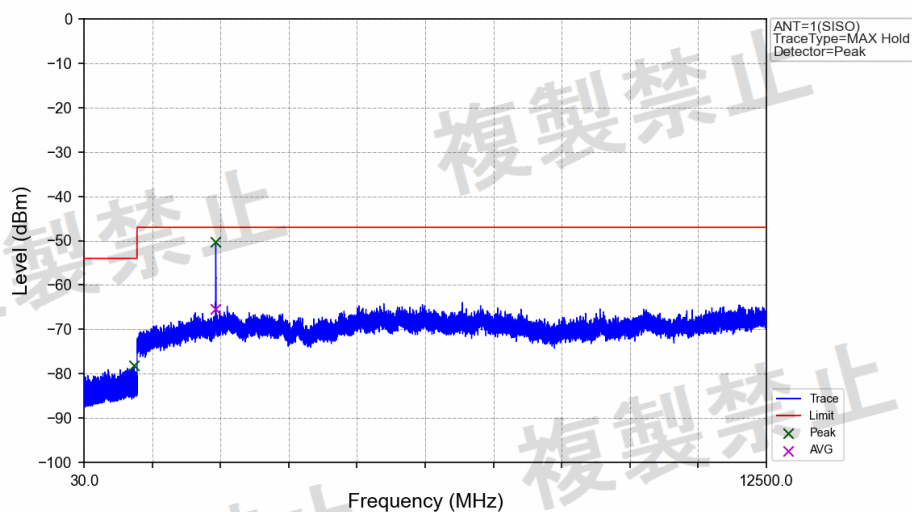


MIC: 219-269481



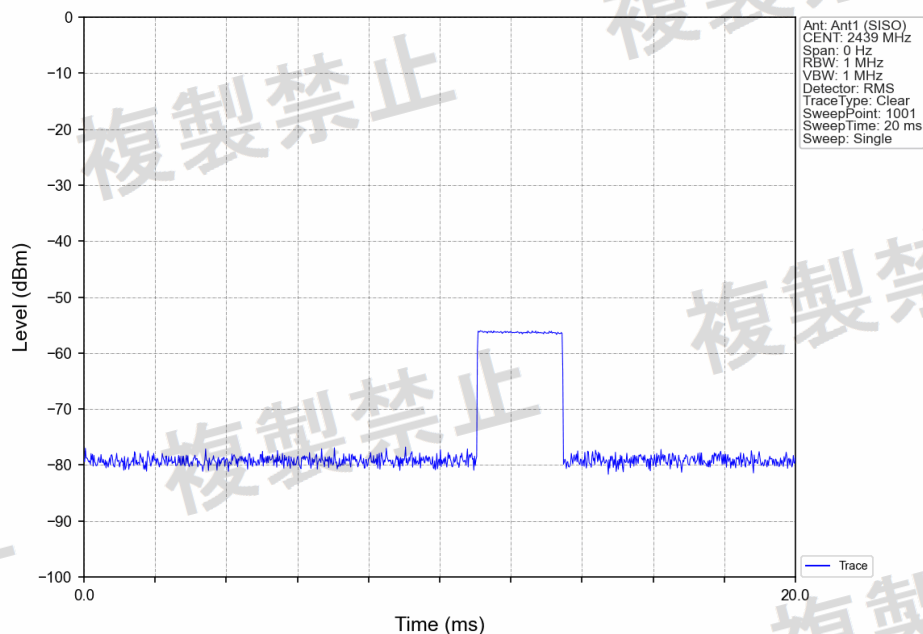
MIC: 219-269481

802.11g_2412MHz_Ant1 (SISO)_NTNV



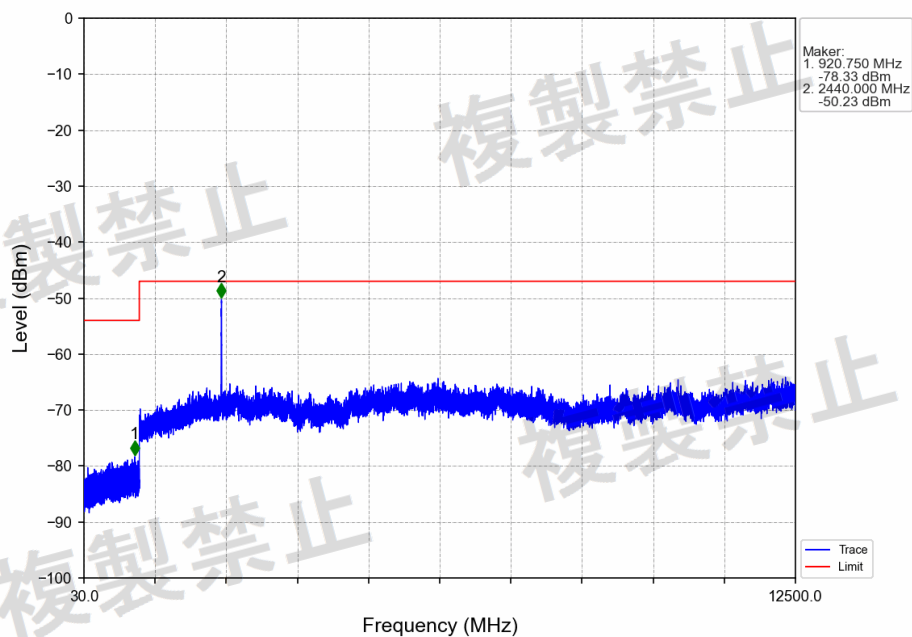
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	1000	0.1	0.1	941.200	-78.10	/	-54	Pass
1000	12500	1	1	2439.000	-50.31	-65.36	-47	Pass

802.11g_2412MHz_Ant1 (SISO)_NTNV

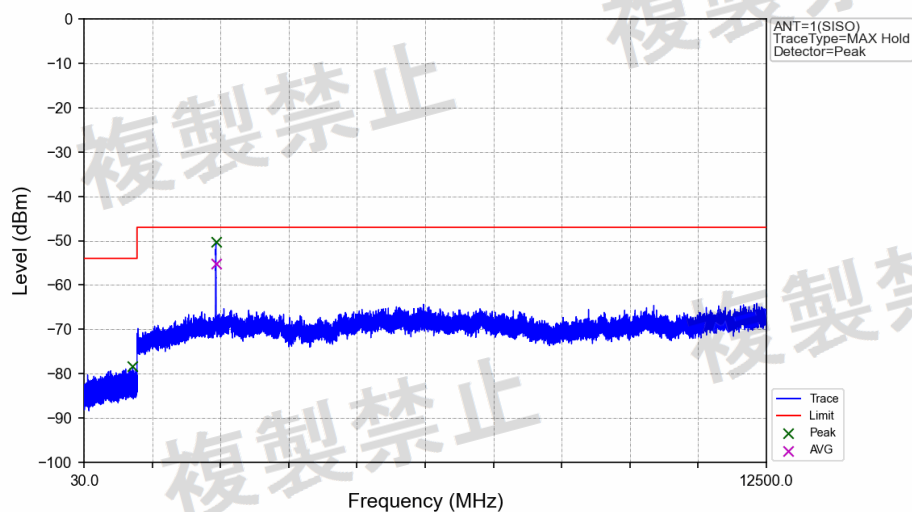


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802.11g_2472MHz_Ant1 (SISO)_NTNV

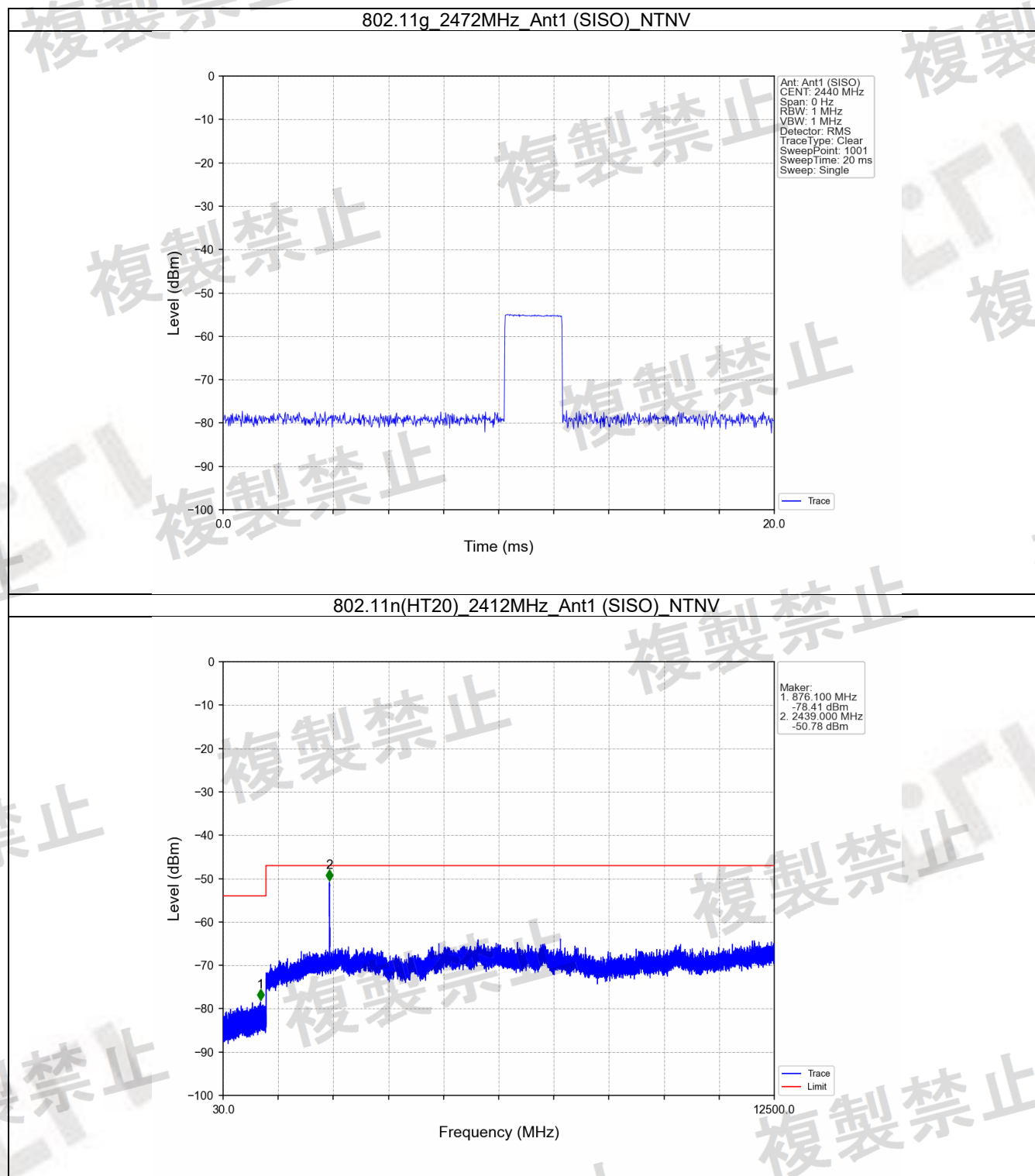


802.11g_2472MHz_Ant1 (SISO)_NTNV

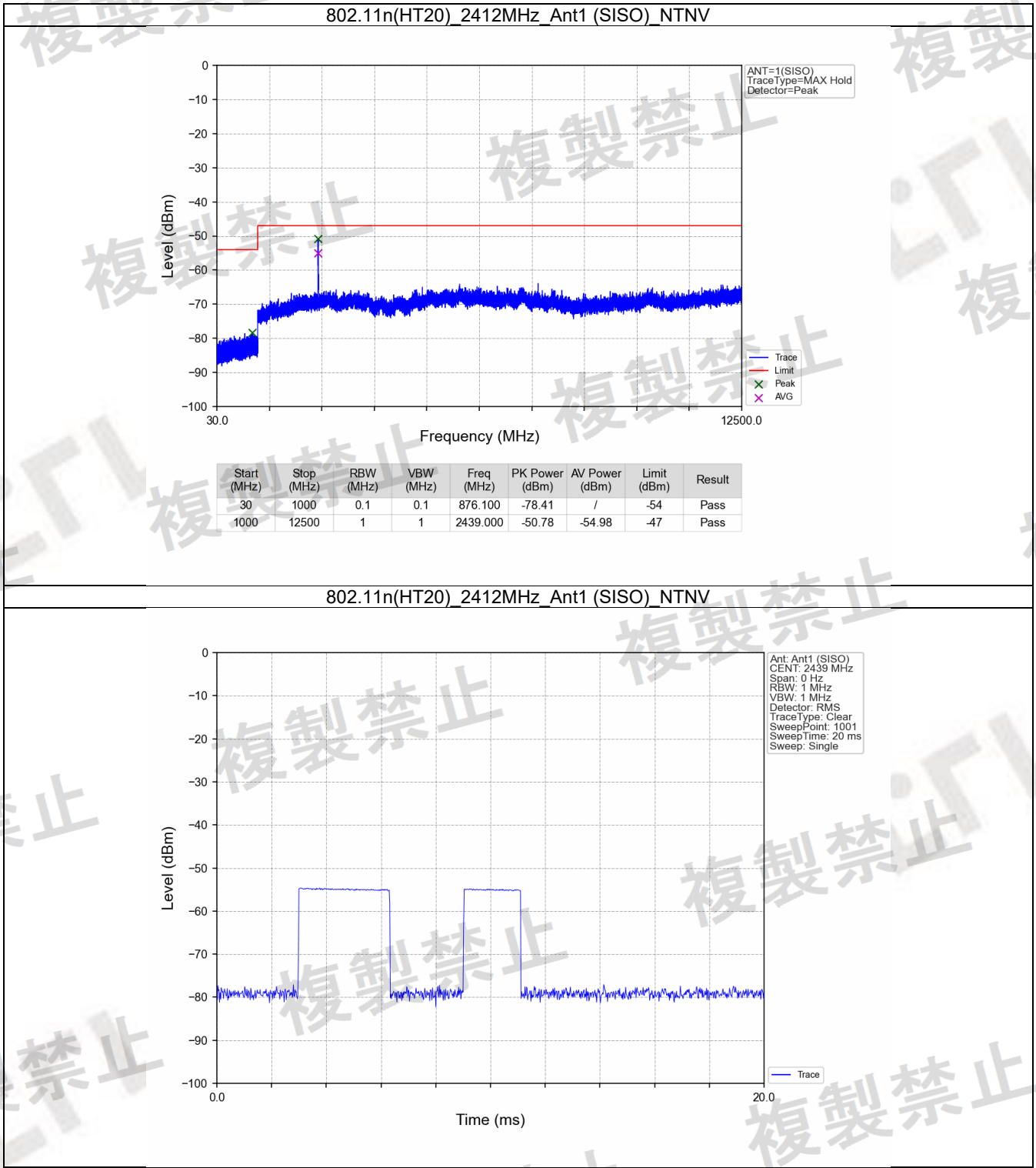


Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	1000	0.1	0.1	920.750	-78.33	/	-54	Pass
1000	12500	1	1	2440.000	-50.23	-55.23	-47	Pass

MIC: 219-269481

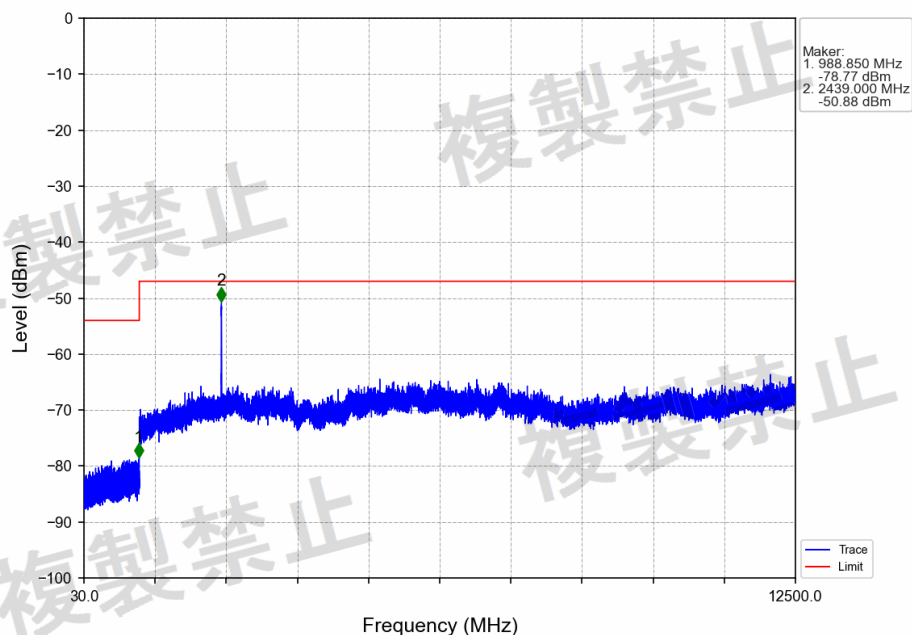


MIC: 219-269481

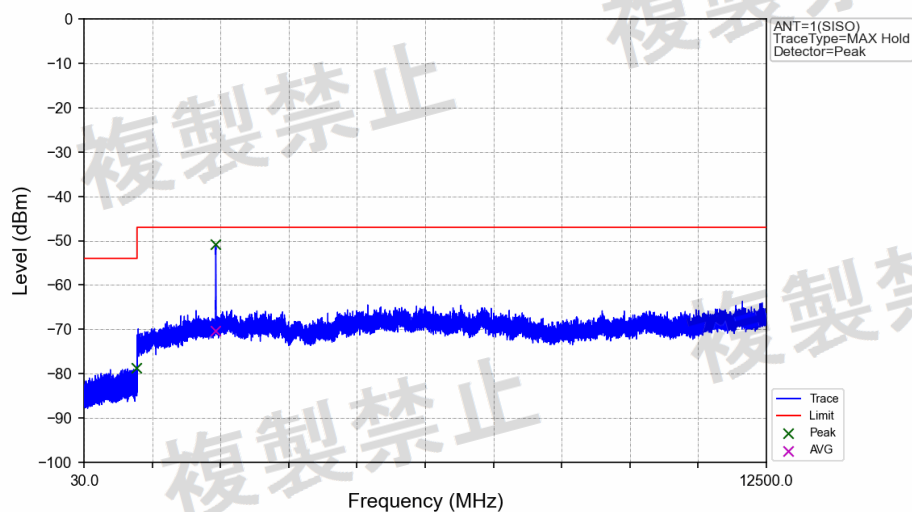


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802.11n(HT20)_2472MHz_Ant1 (SISO)_NTNV



802.11n(HT20)_2472MHz_Ant1 (SISO)_NTNV



Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	1000	0.1	0.1	988.850	-78.77	/	-54	Pass
1000	12500	1	1	2439.000	-50.88	-70.32	-47	Pass

MIC: 219-269481

