



RF Test Data

For

Project No.:	ZKT-251126L28095E-1
Client:	Autel Robotics Co., Ltd.
Manufacturer:	Autel Robotics Co., Ltd.
Product Description:	Dragonfish Repeater
Test Model:	DFRP
Test Engineer:	Jim Liu
Test Date:	2026-01-22

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	MIMO	2404.5	2404.516	6.65	-50 to 50	Pass
			2439.5	2439.516	6.56	-50 to 50	Pass
			2474.5	2474.516	6.47	-50 to 50	Pass

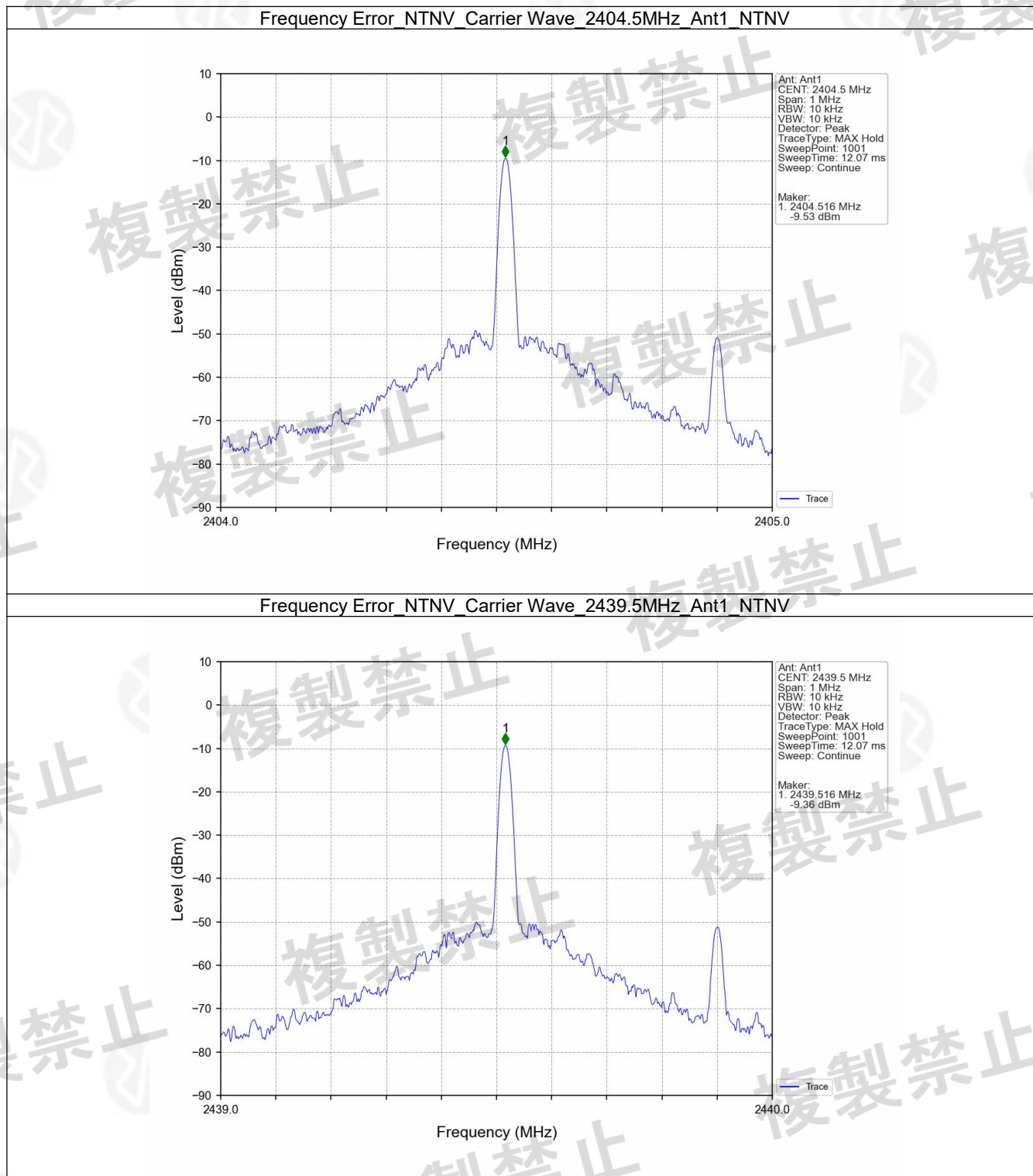
1.1.2 Ant2

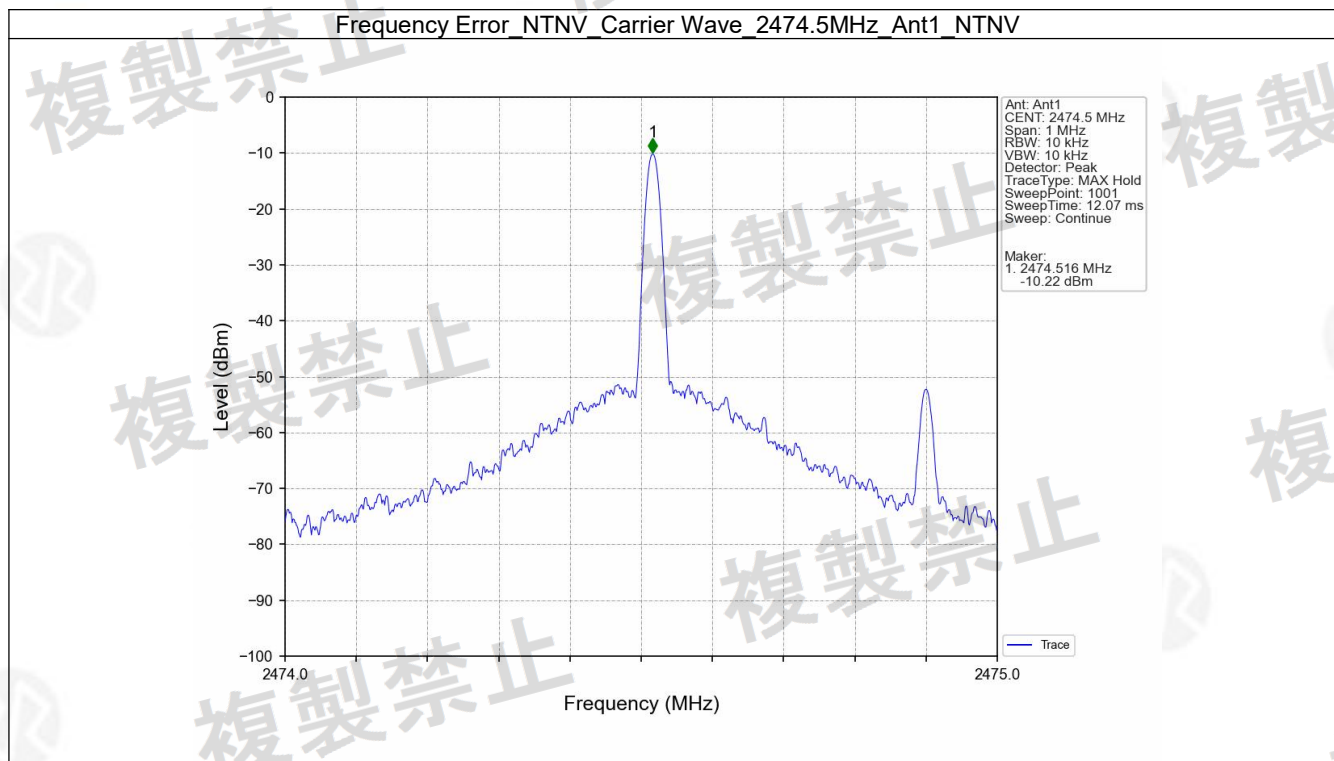
Ant2							
ENV	Mode	TX Type	Frequency (MHz)	Measured Frequency (MHz)	Tolerance (ppm)		Verdict
					Result	Limit	
NTNV	Carrier Wave	MIMO	2404.5	2404.516	6.65	-50 to 50	Pass
			2439.5	2439.516	6.56	-50 to 50	Pass
			2474.5	2474.516	6.47	-50 to 50	Pass



1.2 Test Graph

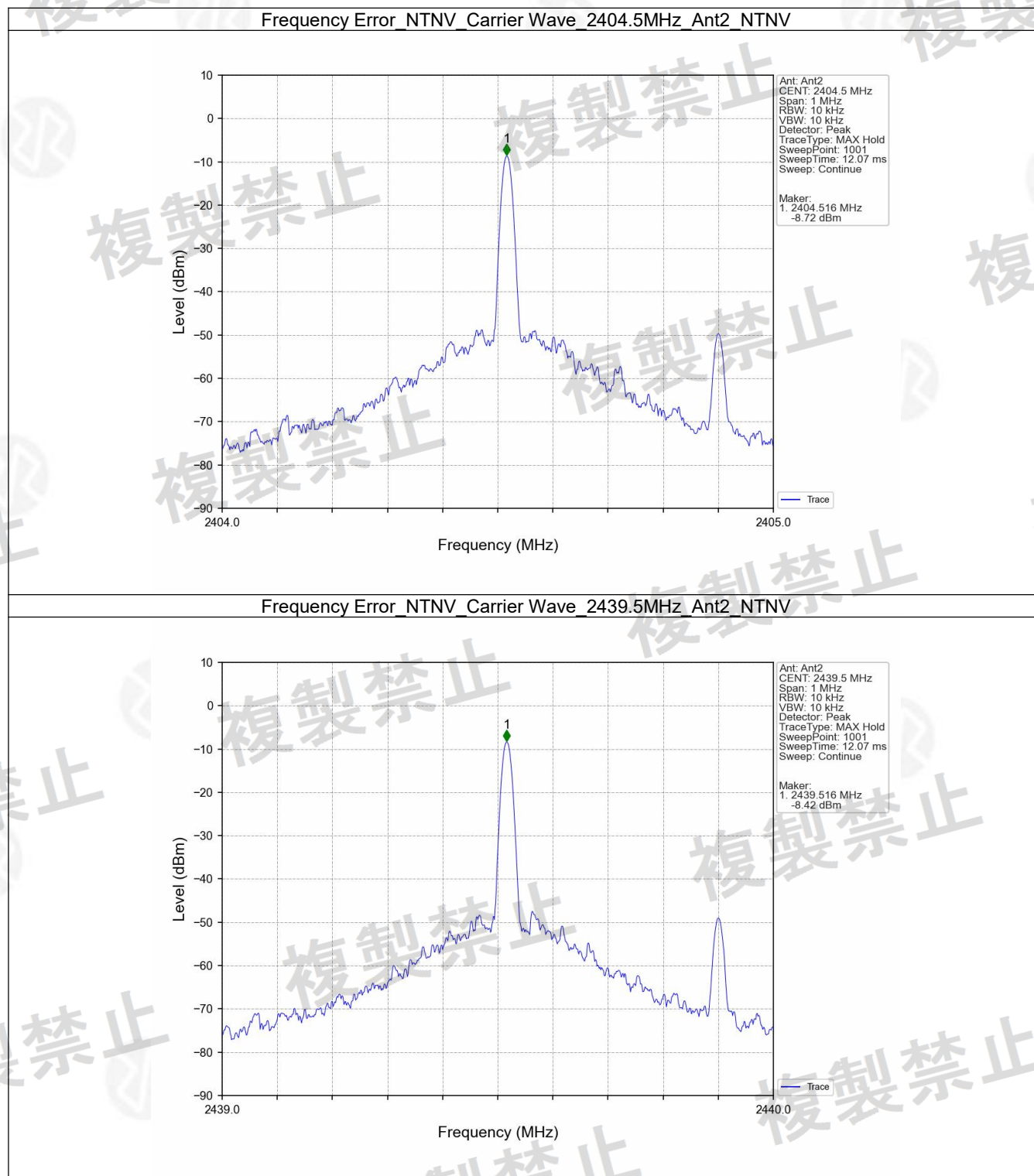
1.2.1 Ant1

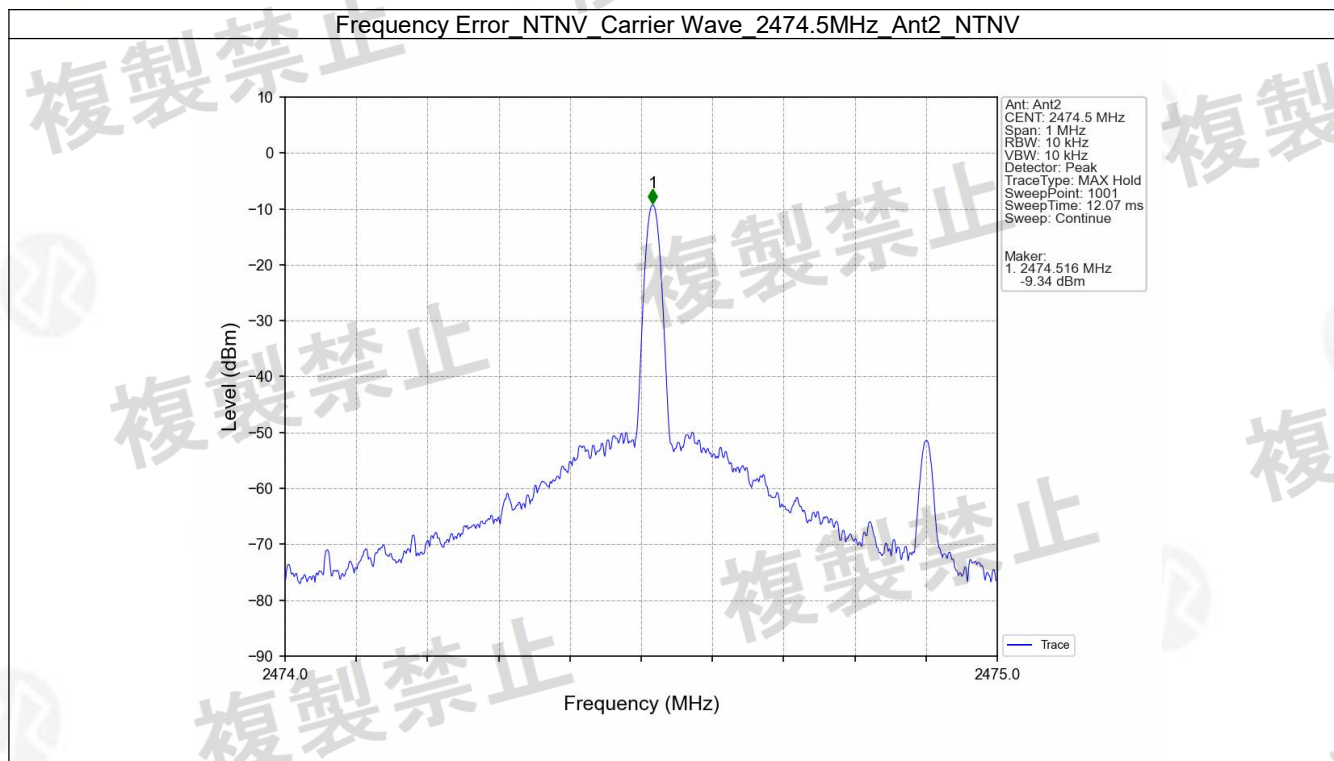






1.2.2 Ant2







2. Occupied Bandwidth

2.1 Test Result

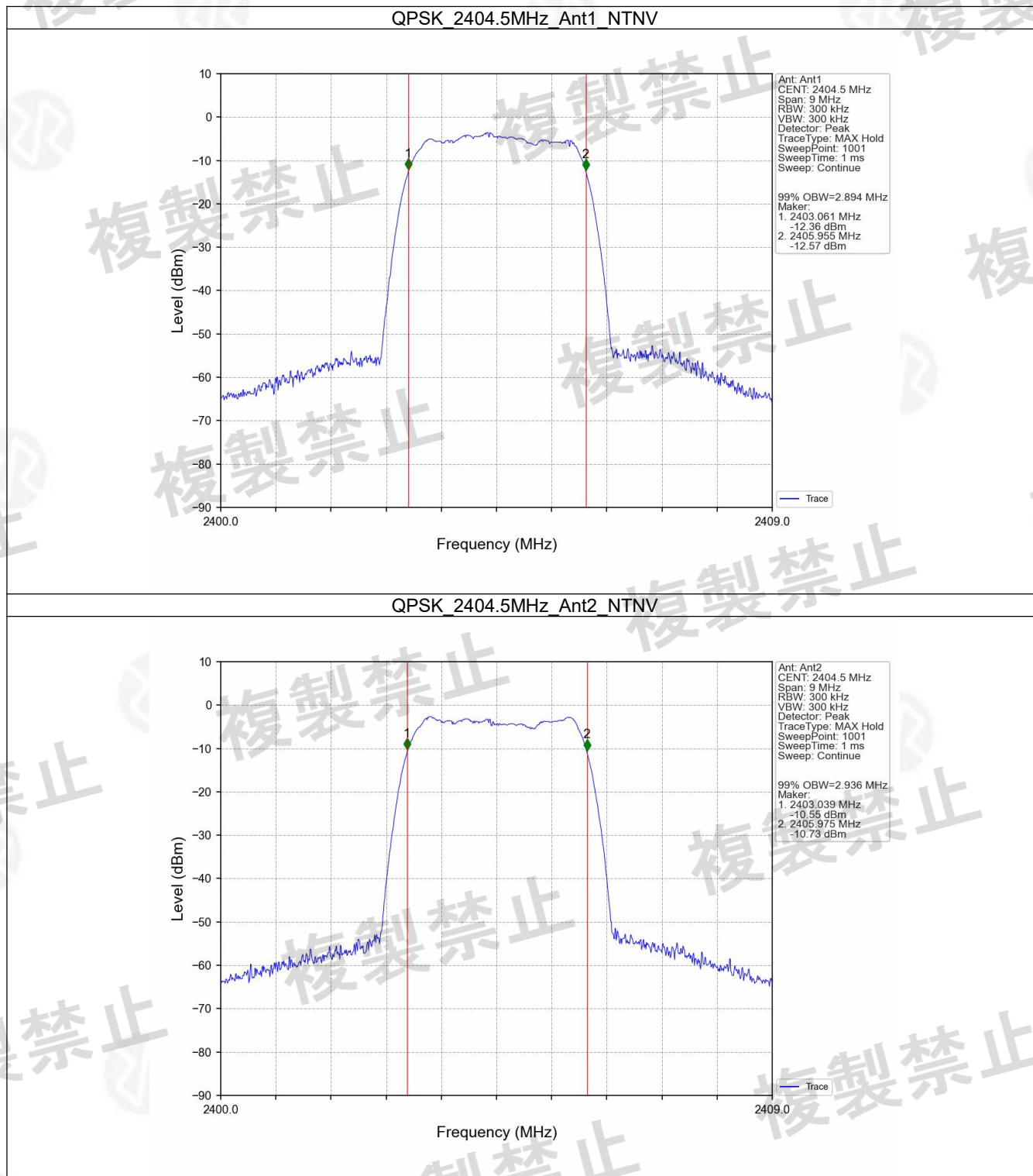
2.1.1 OBW

ENV	Mode	TX Type	Frequency (MHz)	99% Occupied Bandwidth (MHz)			Verdict
				ANT1	ANT2	Limit	
NTNV	QPSK	MIMO	2404.5	2.894	2.936	≤ 26	Pass
			2439.5	2.935	2.899	≤ 26	Pass
			2474.5	2.941	2.897	≤ 26	Pass
	16QAM	MIMO	2404.5	2.892	2.934	≤ 26	Pass
			2439.5	2.937	2.900	≤ 26	Pass
			2474.5	2.939	2.896	≤ 26	Pass



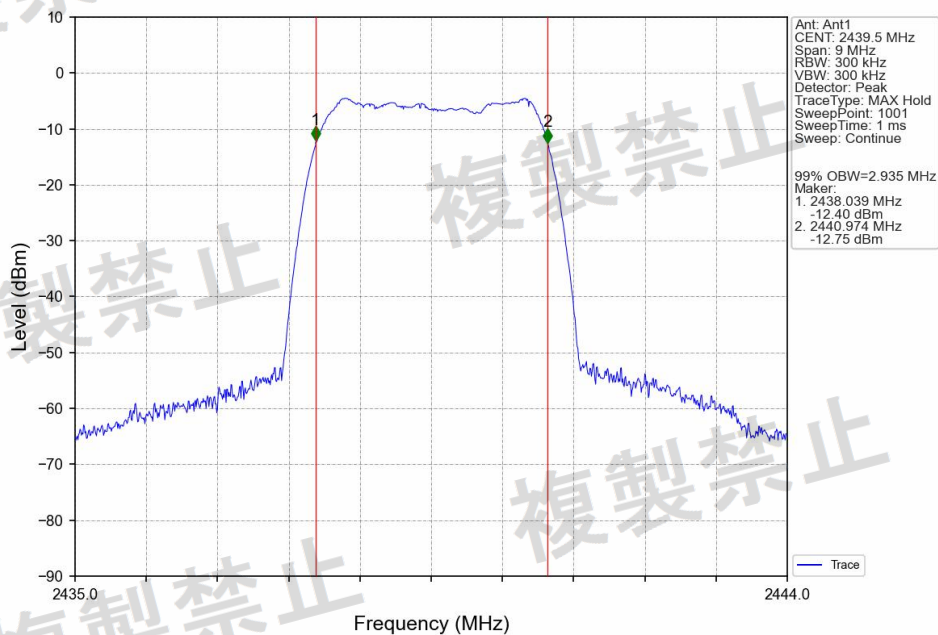
2.2 Test Graph

2.2.1 OBW

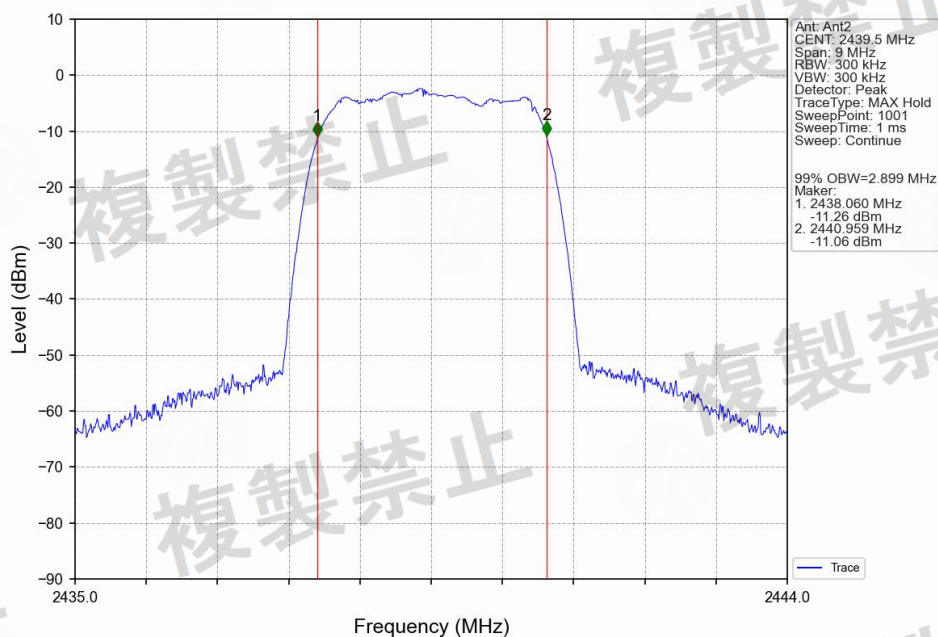




QPSK_2439.5MHz_Ant1_NTNV

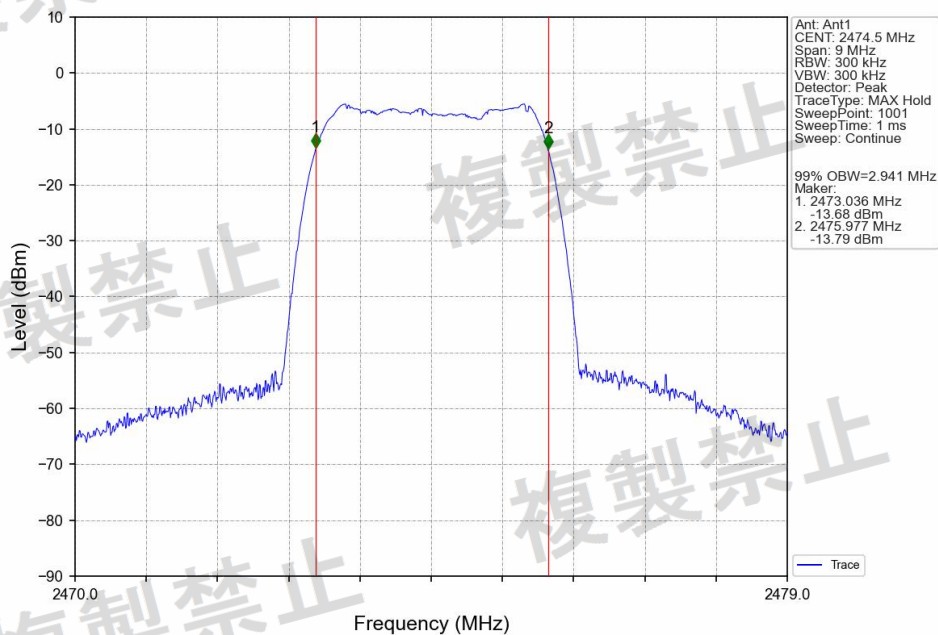


QPSK_2439.5MHz_Ant2_NTNV

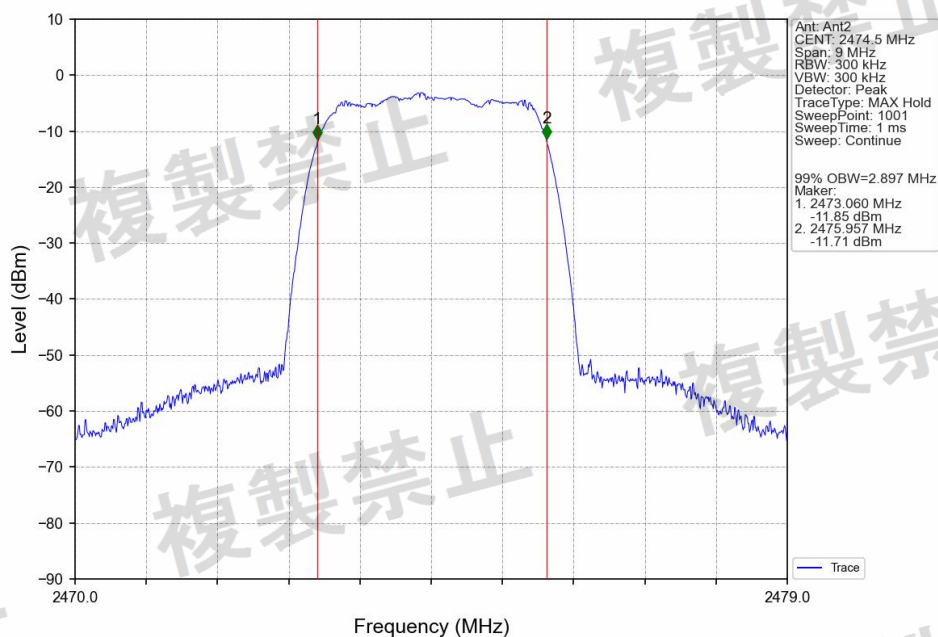




QPSK_2474.5MHz_Ant1_NTNV

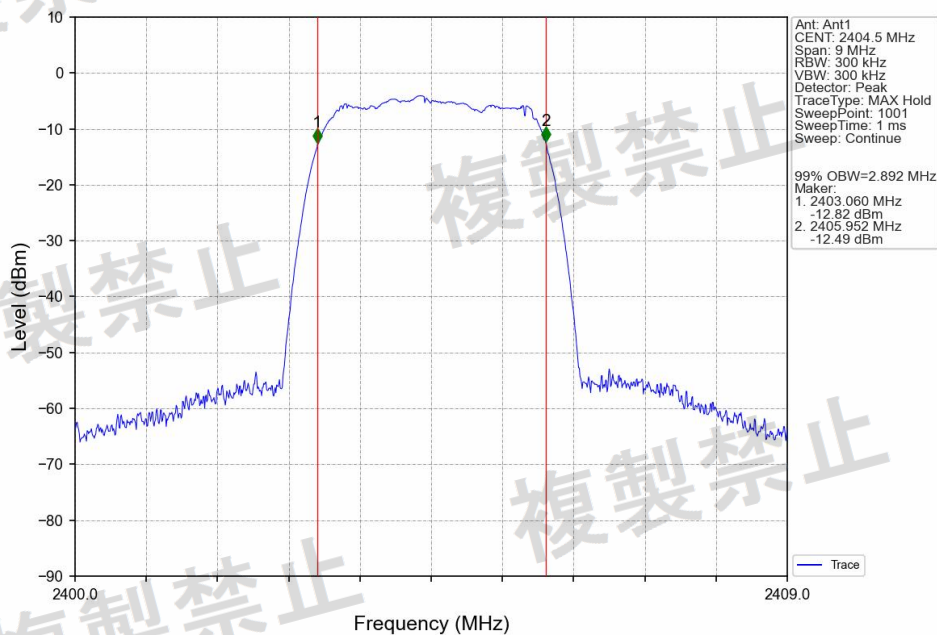


QPSK_2474.5MHz_Ant2_NTNV

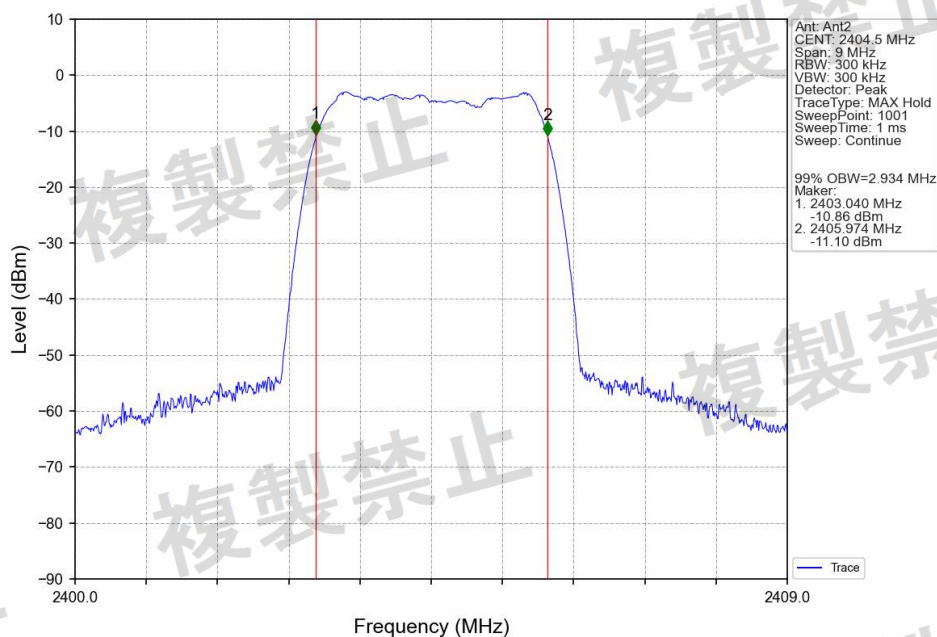




16QAM_2404.5MHz_Ant1_NTNV

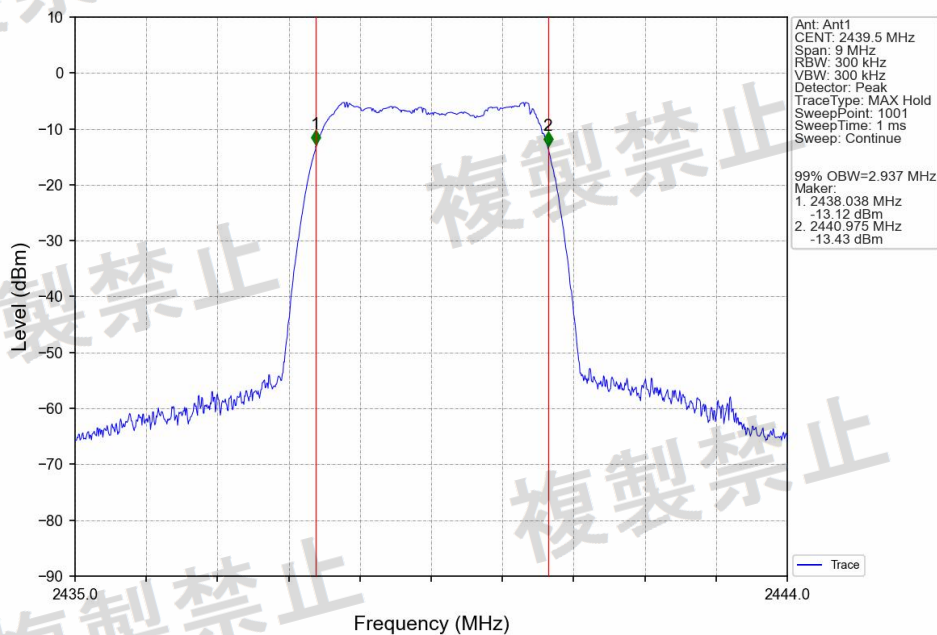


16QAM_2404.5MHz_Ant2_NTNV

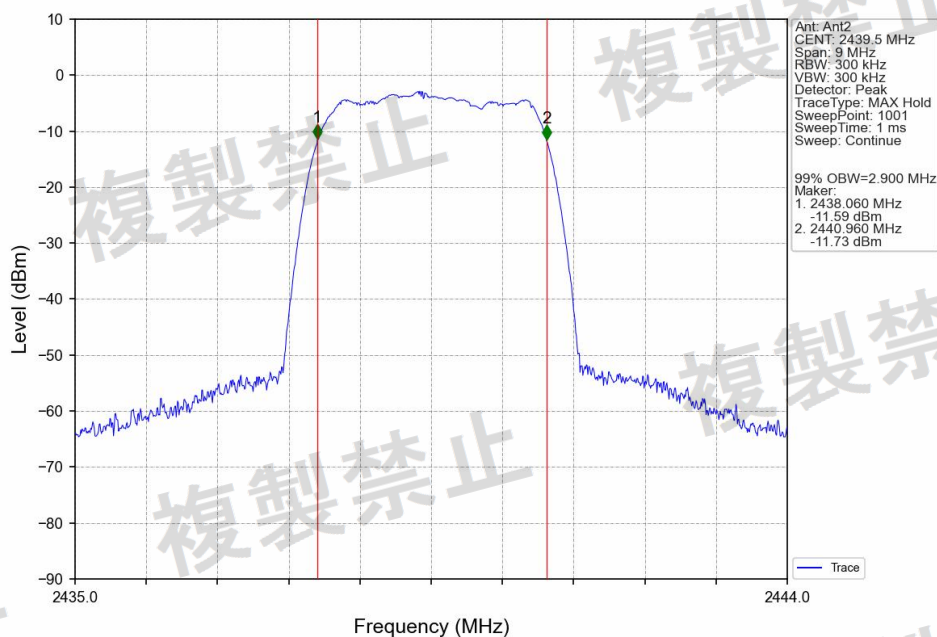




16QAM_2439.5MHz_Ant1_NTNV

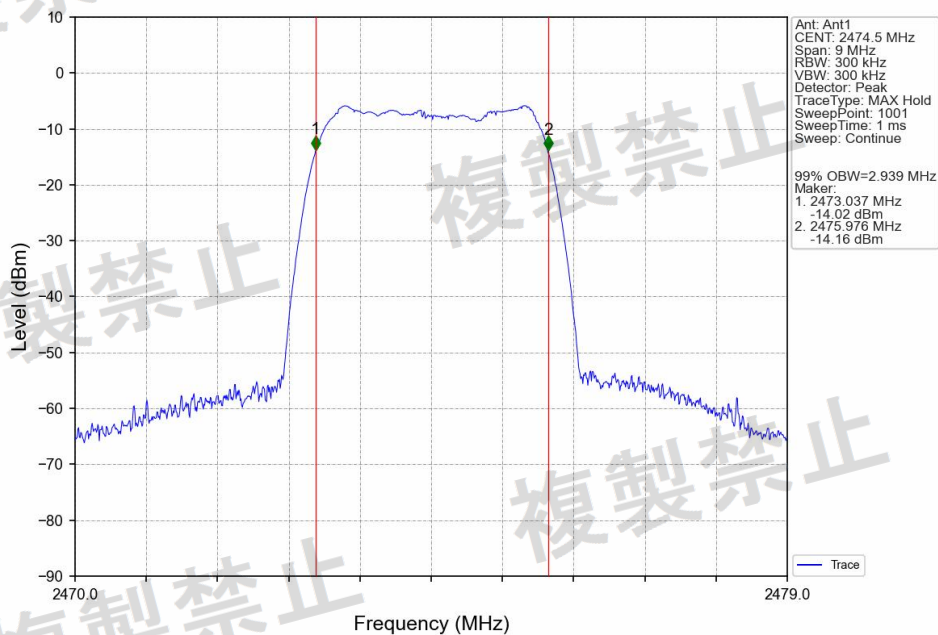


16QAM_2439.5MHz_Ant2_NTNV

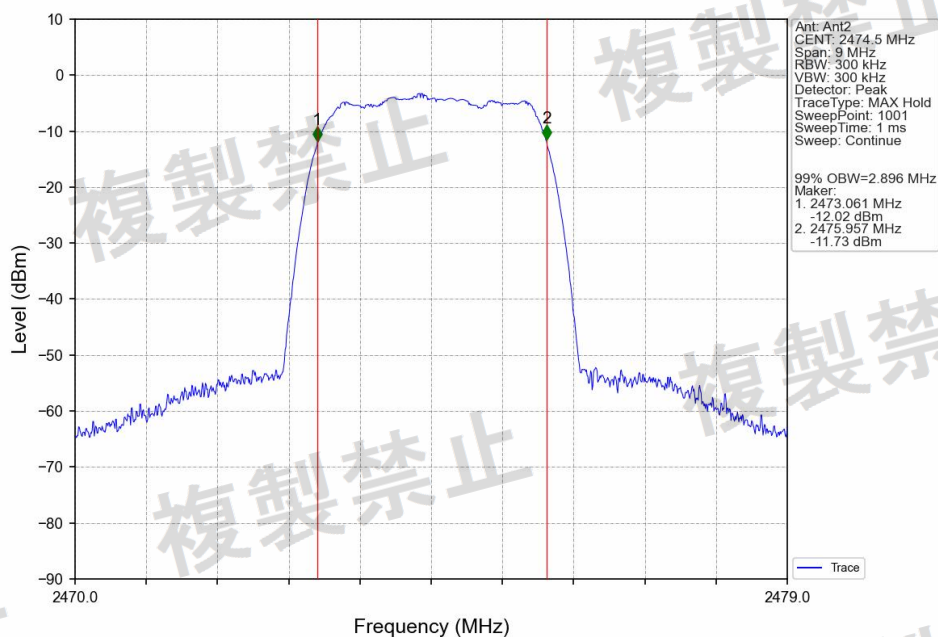




16QAM_2474.5MHz_Ant1_NTNV



16QAM_2474.5MHz_Ant2_NTNV





3. Spread Bandwidth

3.1 Test Result

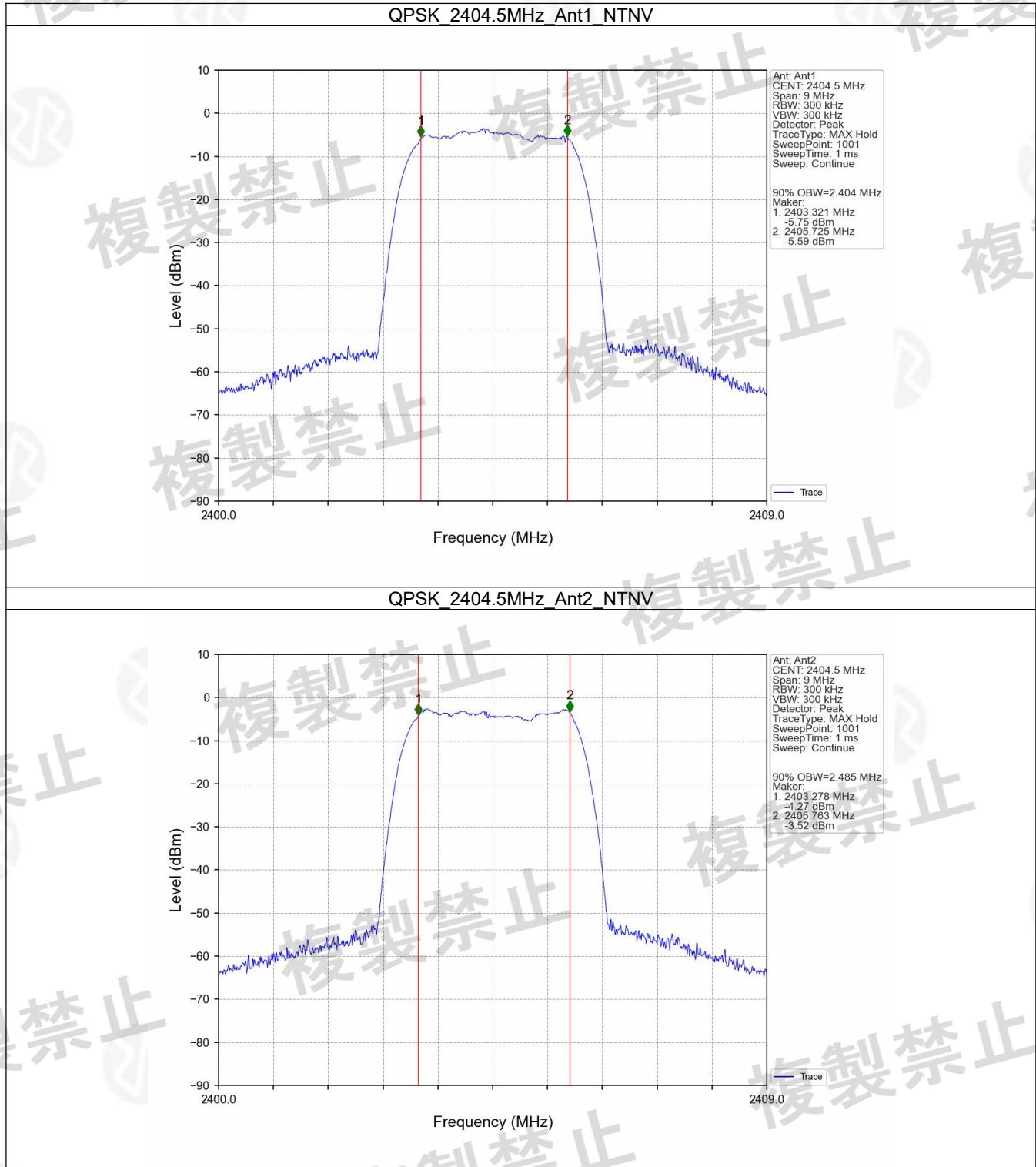
3.1.1 SPBW

ENV	Mode	TX Type	Frequency (MHz)	Spread Bandwidth (MHz)			Verdict
				ANT1	ANT2	Limit	
NTNV	QPSK	MIMO	2404.5	2.404	2.485	≥ 0.5	Pass
			2439.5	2.490	2.412	≥ 0.5	Pass
			2474.5	2.497	2.412	≥ 0.5	Pass
	16QAM	MIMO	2404.5	2.402	2.483	≥ 0.5	Pass
			2439.5	2.492	2.415	≥ 0.5	Pass
			2474.5	2.496	2.410	≥ 0.5	Pass



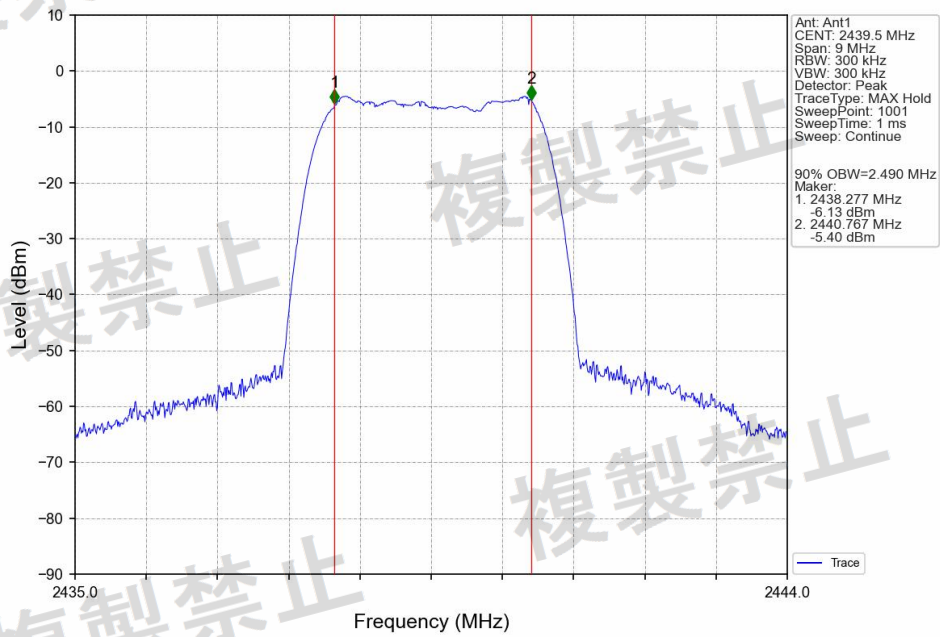
3.2 Test Graph

3.2.1 SPBW

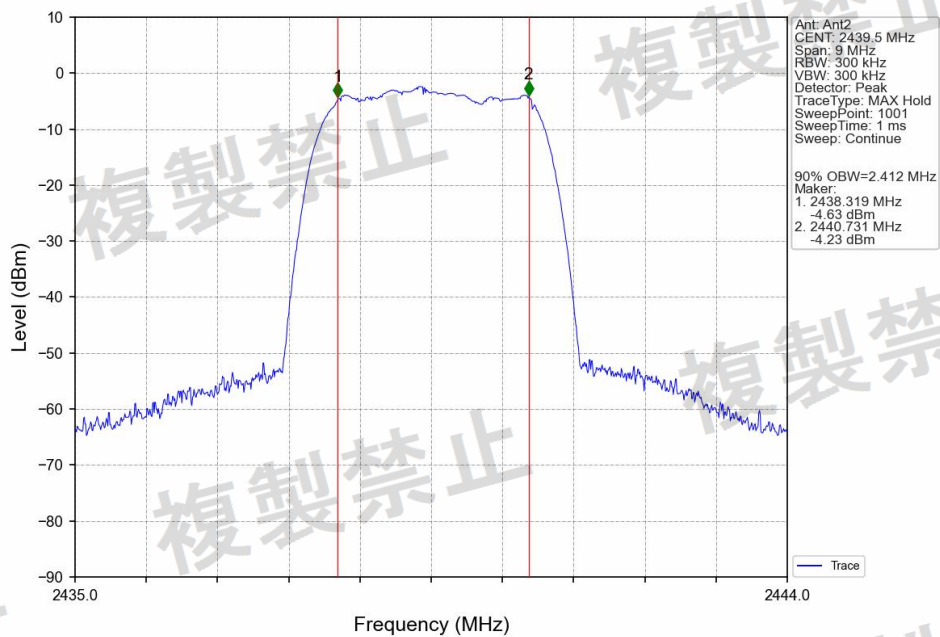




QPSK_2439.5MHz_Ant1_NTNV

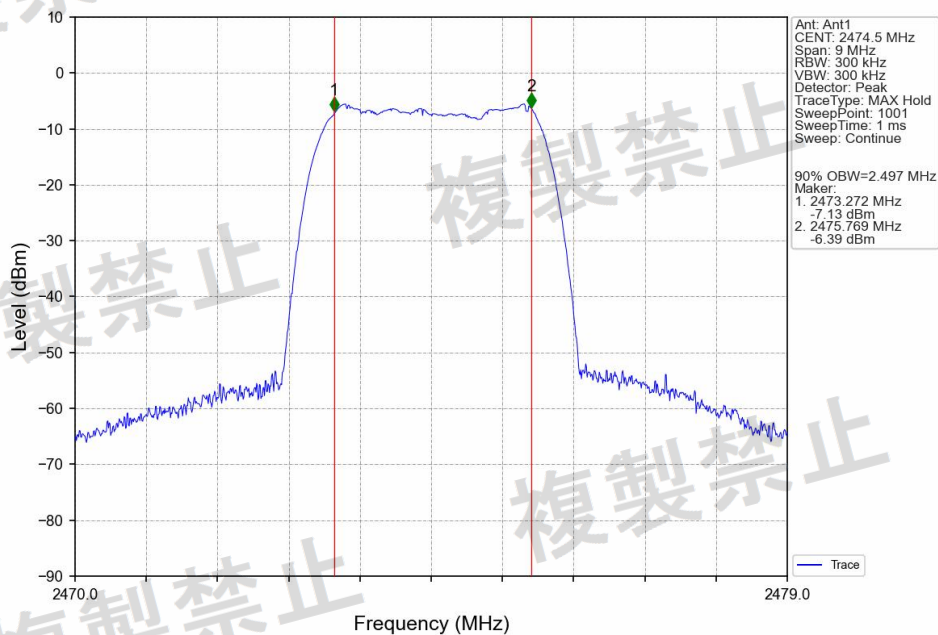


QPSK_2439.5MHz_Ant2_NTNV

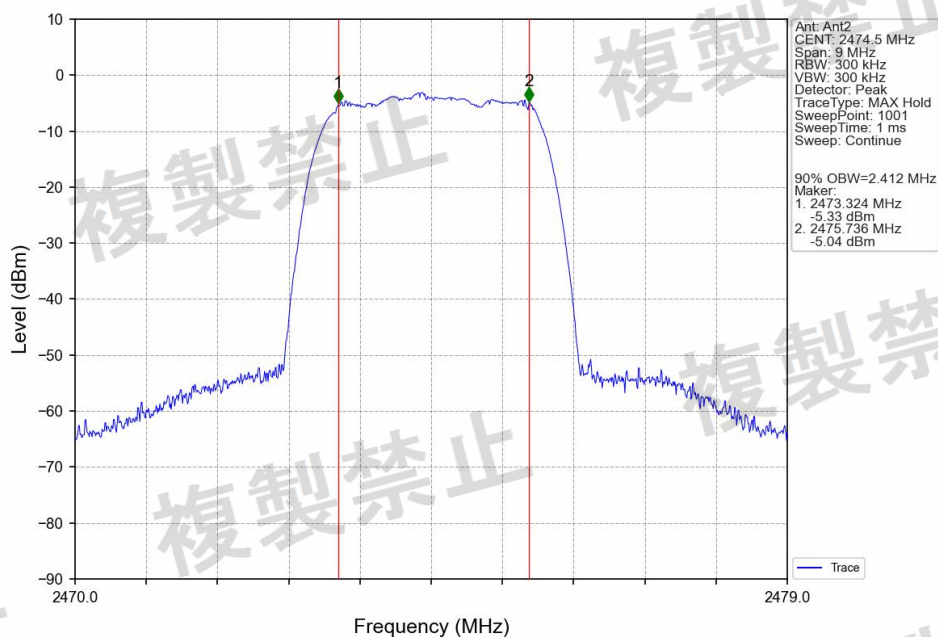




QPSK_2474.5MHz_Ant1_NTNV

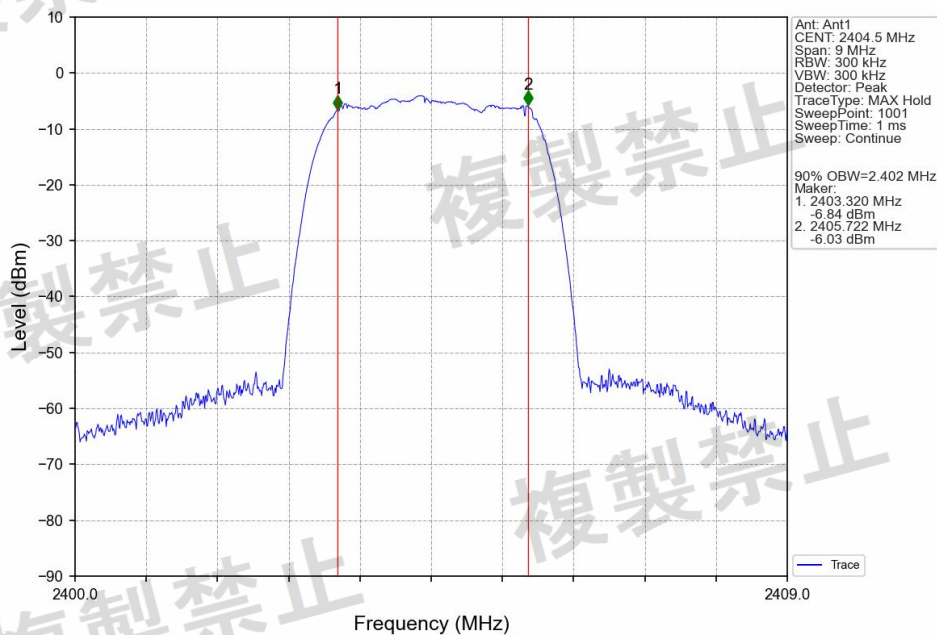


QPSK_2474.5MHz_Ant2_NTNV

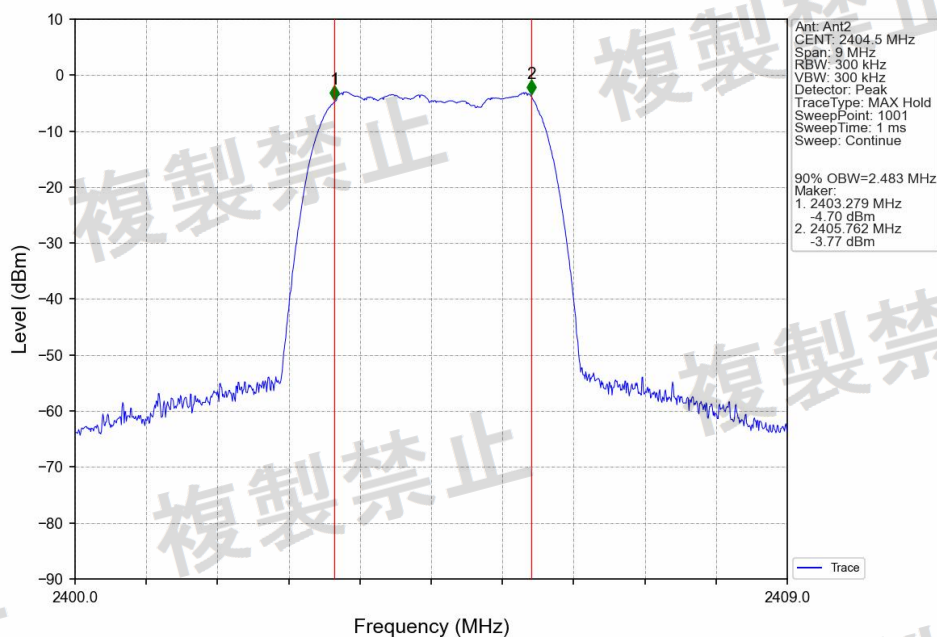




16QAM_2404.5MHz_Ant1_NTNV

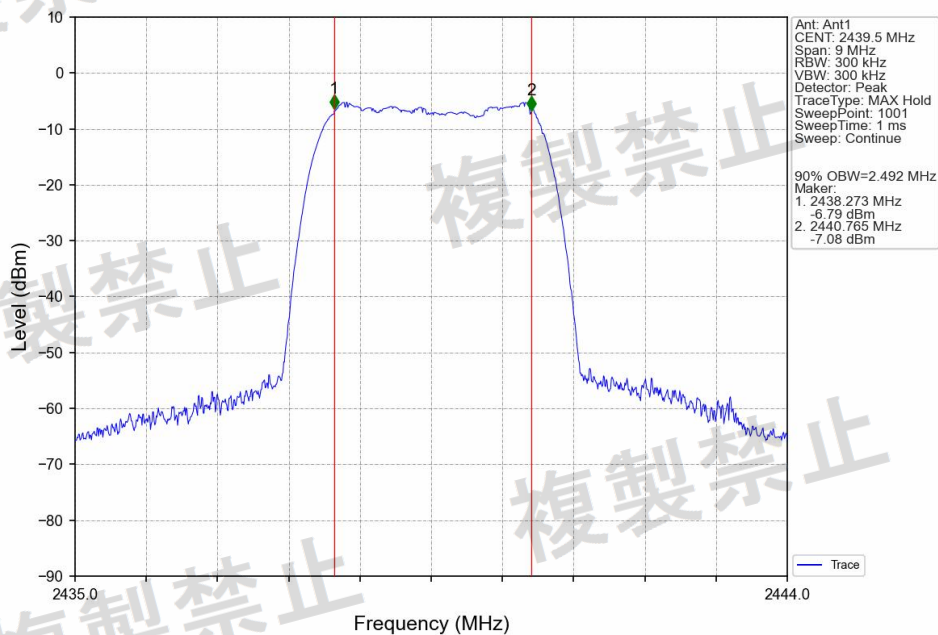


16QAM_2404.5MHz_Ant2_NTNV

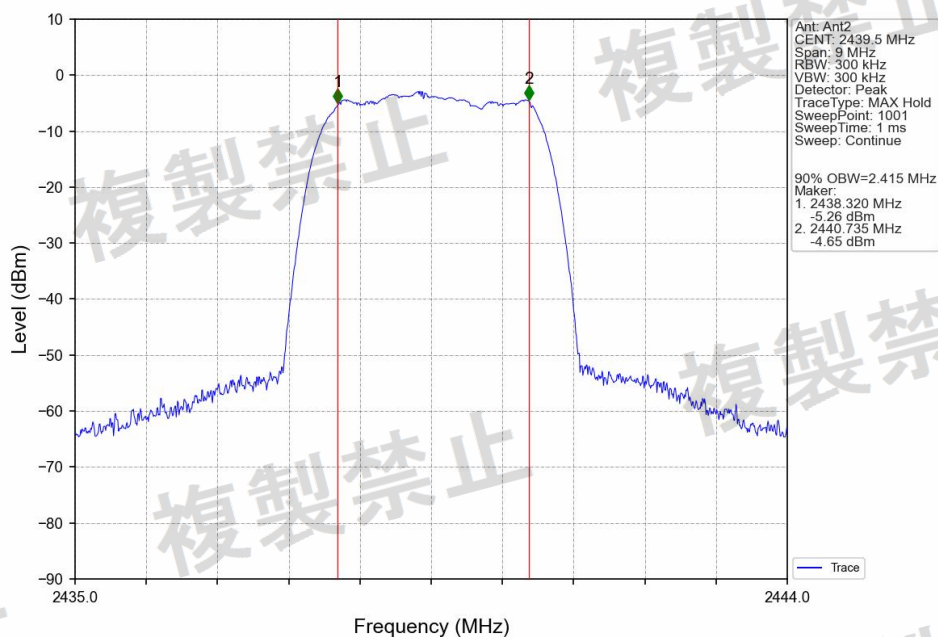




16QAM_2439.5MHz_Ant1_NTNV

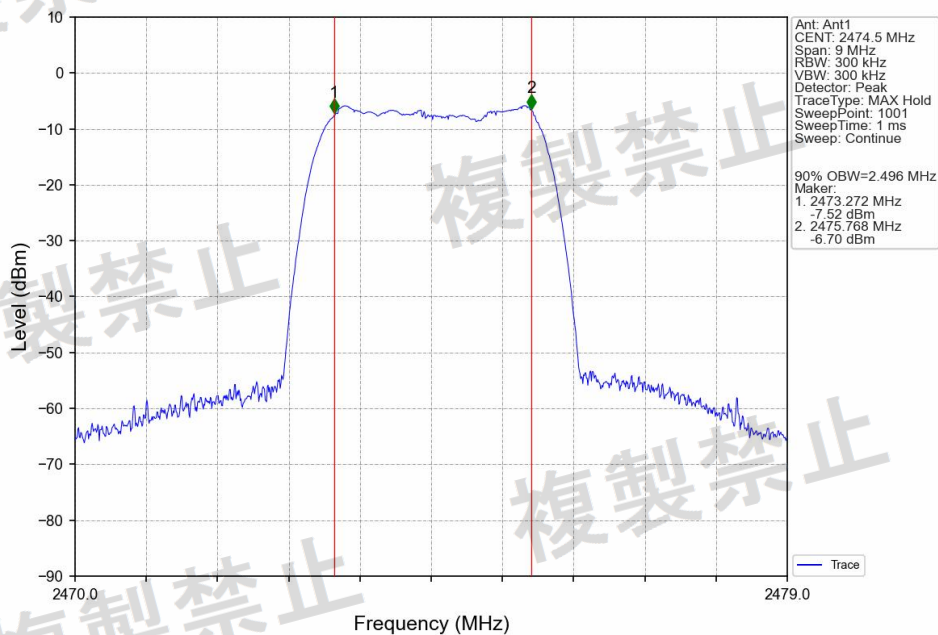


16QAM_2439.5MHz_Ant2_NTNV

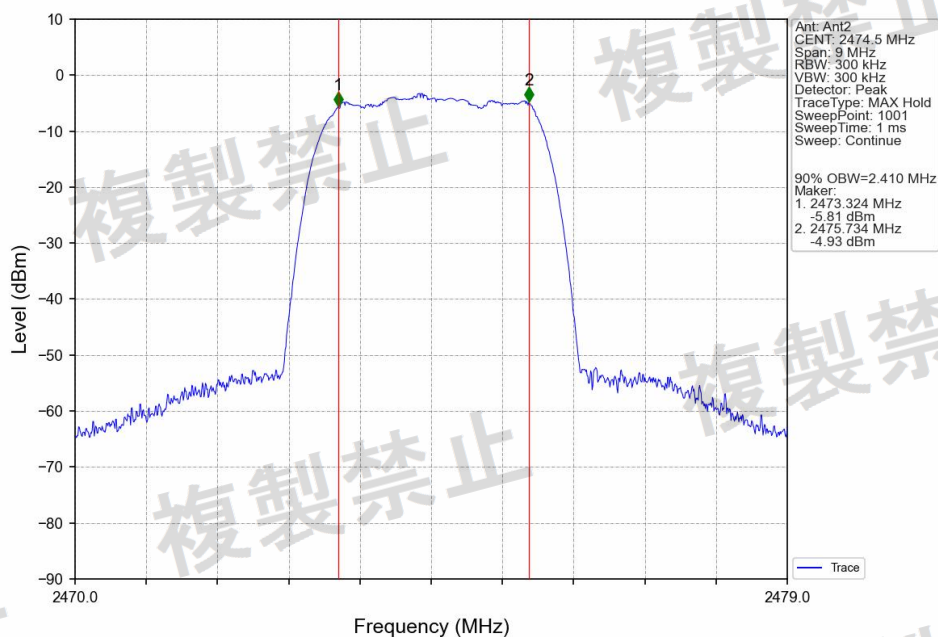




16QAM_2474.5MHz_Ant1_NTNV



16QAM_2474.5MHz_Ant2_NTNV





4. Antenna Power

4.1 Test Result

4.1.1 Power

ENV	Mode	TX Type	Frequency (MHz)	ANT	Antenna Power (mW/MHz)		Nominal Power (mW/MHz)	Tolerance (%)		Verdict
					Measured	Limit		Measured	Limit	
NTNV	QPSK	MIMO	2404.5	1	2.324	<=10.00	4.000	-41.90	20	Pass
				2	2.481	<=10.00	4.000	-37.98	20	Pass
				MIMO	4.805	<=10.00	4.000	20.13	20	Pass
			2439.5	1	2.241	<=10.00	4.000	-43.98	20	Pass
				2	2.449	<=10.00	4.000	-38.78	20	Pass
				MIMO	4.69	<=10.00	4.000	17.25	20	Pass
			2474.5	1	2.161	<=10.00	4.000	-45.98	20	Pass
				2	2.383	<=10.00	4.000	-40.43	20	Pass
				MIMO	4.544	<=10.00	4.000	13.60	20	Pass
	16QAM	MIMO	2404.5	1	2.273	<=10.00	4.000	-43.18	20	Pass
				2	2.436	<=10.00	4.000	-39.10	20	Pass
				MIMO	4.709	<=10.00	4.000	17.73	20	Pass
			2439.5	1	2.195	<=10.00	4.000	-45.13	20	Pass
				2	2.394	<=10.00	4.000	-40.15	20	Pass
				MIMO	4.589	<=10.00	4.000	14.73	20	Pass
			2474.5	1	2.144	<=10.00	4.000	-46.40	20	Pass
				2	2.364	<=10.00	4.000	-40.90	20	Pass
				MIMO	4.508	<=10.00	4.000	12.70	20	Pass

4.1.2 EIRP

ENV	Mode	TX Type	Frequency (MHz)	ANT	Antenna Power (dBm/MHz)	EIRP (dBm/MHz)		Verdict
						Result	Limit	
NTNV	QPSK	MIMO	2404.5	1	3.66	8.32	<=12.14	Pass
				2	3.94	8.60	<=12.14	Pass
				MIMO	6.81	11.47	<=12.14	Pass
			2439.5	1	3.50	8.16	<=12.14	Pass
				2	3.88	8.54	<=12.14	Pass
				MIMO	6.71	11.36	<=12.14	Pass
			2474.5	1	3.34	8.00	<=12.14	Pass
				2	3.77	8.43	<=12.14	Pass
				MIMO	6.57	11.22	<=12.14	Pass
	16QAM	MIMO	2404.5	1	3.56	8.22	<=12.14	Pass
				2	3.86	8.52	<=12.14	Pass
				MIMO	6.72	11.37	<=12.14	Pass
			2439.5	1	3.41	8.07	<=12.14	Pass
				2	3.79	8.45	<=12.14	Pass
				MIMO	6.61	11.27	<=12.14	Pass
			2474.5	1	3.31	7.97	<=12.14	Pass
				2	3.73	8.39	<=12.14	Pass
				MIMO	6.53	11.19	<=12.14	Pass

Note : ANT 1: 4.66dBi; ANT 2: 4.66dBi

EIRP(dBm/MHz)=Antenna Power (dBm/MHz)+Gain (dBi)



5. Spurious Emission Intensity

5.1 Test Result

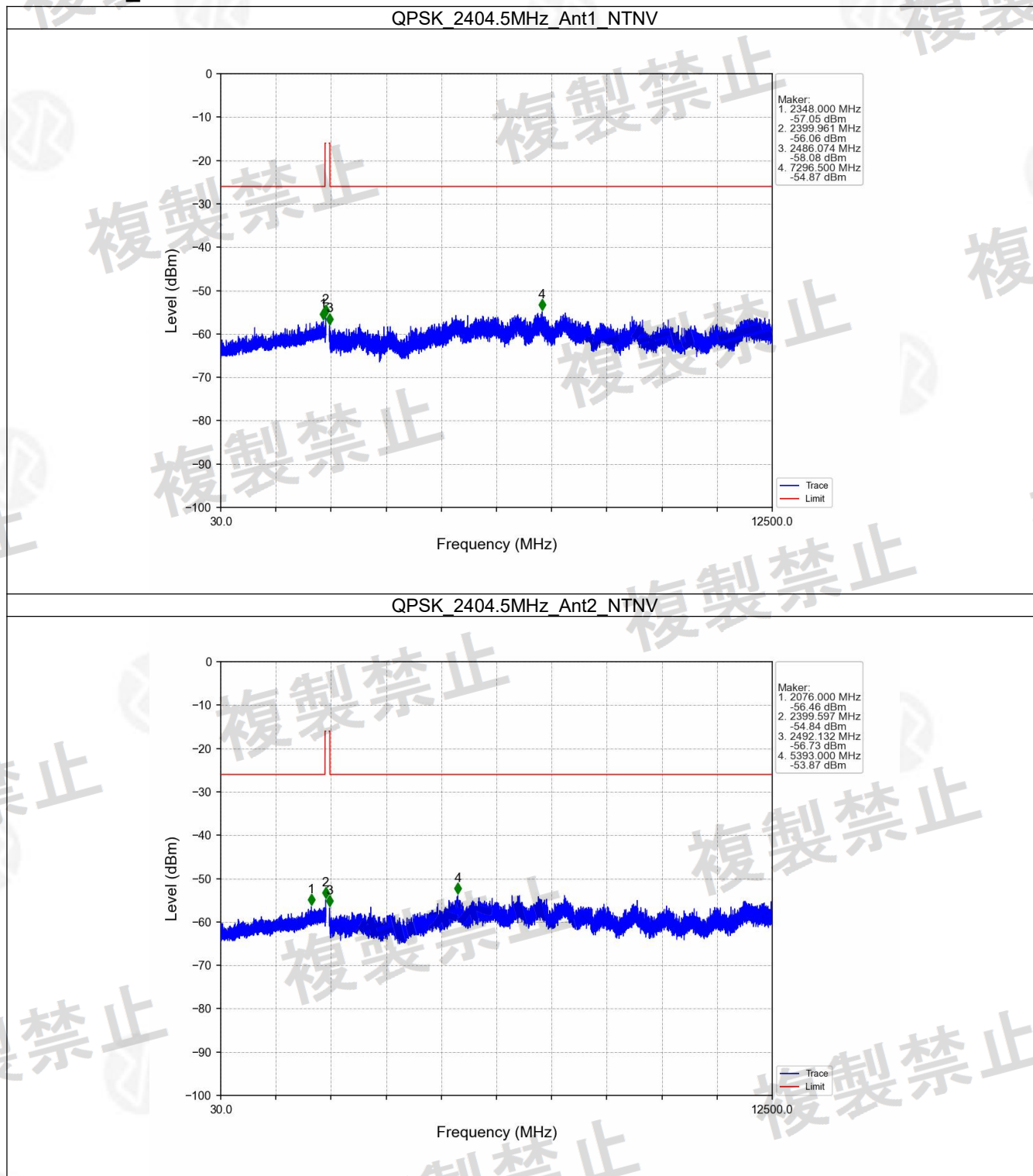
5.1.1 TxSe_NTNV

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)		
QPSK	MIMO	2404.5	1	/	/	/	/	/	/	/	/	Pass
			2	/	/	/	/	/	/	/	/	Pass
			MIMO	30	2387	2348	-54.64	0.003	/	/	2.5	Pass
				2387	2400	2399.597	-53.49	0.004	/	/	25	Pass
				2483.5	2496.5	2492.132	-54.88	0.003	/	/	25	Pass
				2496.5	12500	6740.5	-52.06	0.006	/	/	2.5	Pass
		2439.5	1	/	/	/	/	/	/	/	/	Pass
			2	/	/	/	/	/	/	/	/	Pass
			MIMO	30	2387	2288.5	-54.68	0.003	/	/	2.5	Pass
				2387	2400	2390.432	-55.63	0.003	/	/	25	Pass
				2483.5	2496.5	2483.591	-54.87	0.003	/	/	25	Pass
				2496.5	12500	6729.5	-52.02	0.006	/	/	2.5	Pass
		2474.5	1	/	/	/	/	/	/	/	/	Pass
			2	/	/	/	/	/	/	/	/	Pass
			MIMO	30	2387	2282	-54.57	0.003	/	/	2.5	Pass
				2387	2400	2391.966	-55.29	0.003	/	/	25	Pass
				2483.5	2496.5	2483.513	-55.56	0.003	/	/	25	Pass
				2496.5	12500	7229.5	-52.06	0.006	/	/	2.5	Pass
16QAM	MIMO	2404.5	1	/	/	/	/	/	/	/	/	Pass
			2	/	/	/	/	/	/	/	/	Pass
			MIMO	30	2387	2347.5	-54.69	0.003	/	/	2.5	Pass
				2387	2400	2399.961	-53.13	0.005	/	/	25	Pass
				2483.5	2496.5	2494.316	-55.43	0.003	/	/	25	Pass
				2496.5	12500	7244	-52.18	0.006	/	/	2.5	Pass
		2439.5	1	/	/	/	/	/	/	/	/	Pass
			2	/	/	/	/	/	/	/	/	Pass
			MIMO	30	2387	2226	-53.91	0.004	/	/	2.5	Pass
				2387	2400	2394.566	-54.88	0.003	/	/	25	Pass
				2483.5	2496.5	2494.719	-55.16	0.003	/	/	25	Pass
				2496.5	12500	5797	-52.72	0.005	/	/	2.5	Pass
		2474.5	1	/	/	/	/	/	/	/	/	Pass
			2	/	/	/	/	/	/	/	/	Pass
			MIMO	30	2387	2119	-54.60	0.003	/	/	2.5	Pass
				2387	2400	2398.57	-55.55	0.003	/	/	25	Pass
				2483.5	2496.5	2493.757	-55.10	0.003	/	/	25	Pass
				2496.5	12500	7787	-52.27	0.006	/	/	2.5	Pass



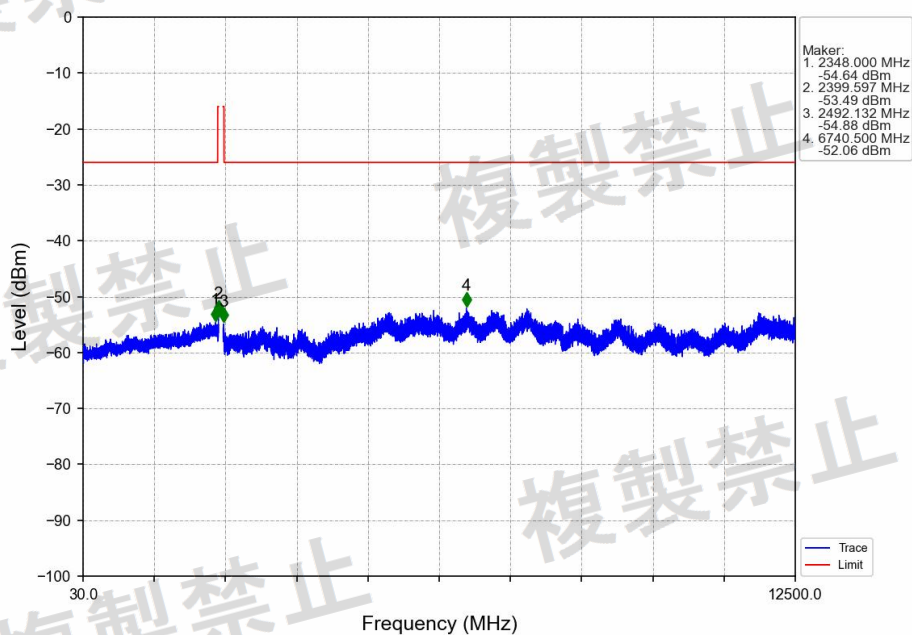
5.2 Test Graph

5.2.1 TxSe_NTNV

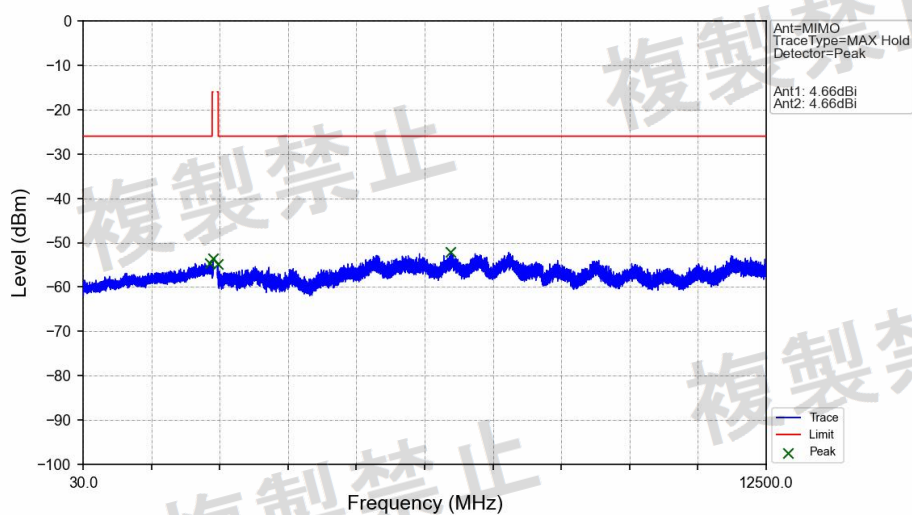




QPSK_2404.5MHz_MIMO_NTNV



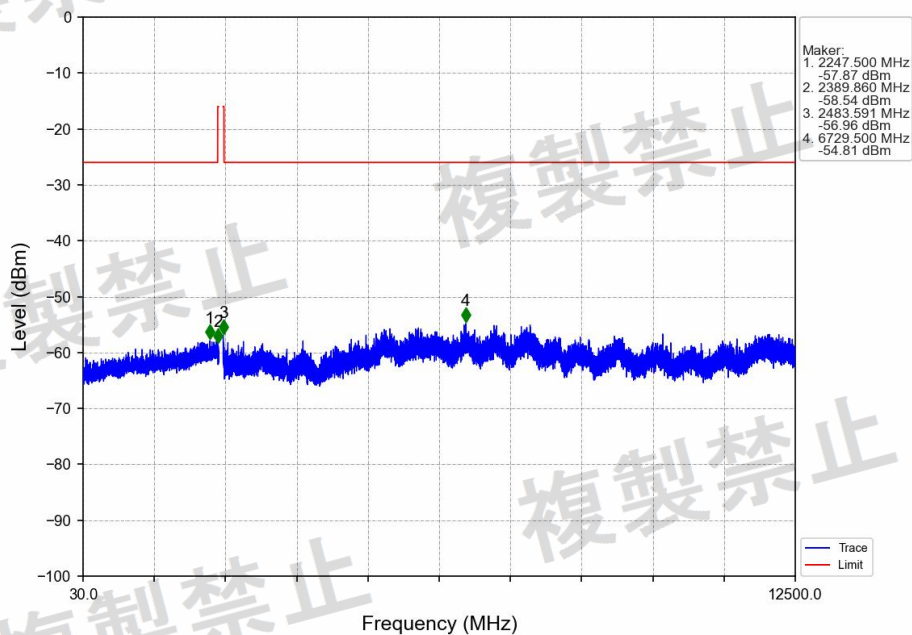
QPSK_2404.5MHz_MIMO_NTNV



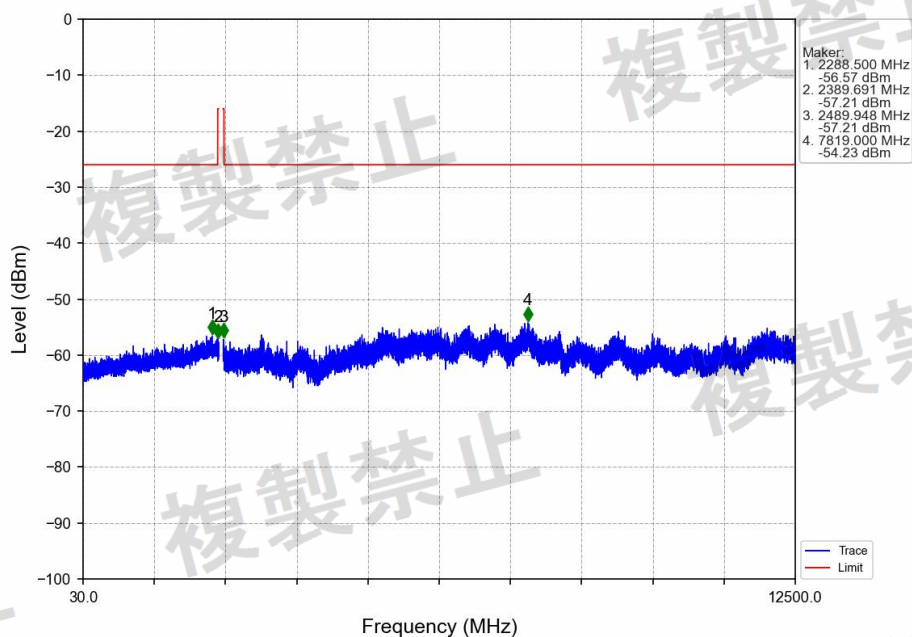
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2348.000	-54.64	/	-26	Pass
2387	2400	1	1	2399.597	-53.49	/	-16	Pass
2483.5	2496.5	1	1	2492.132	-54.88	/	-16	Pass
2496.5	12500	1	1	6740.500	-52.06	/	-26	Pass



QPSK_2439.5MHz_Ant1_NTNV

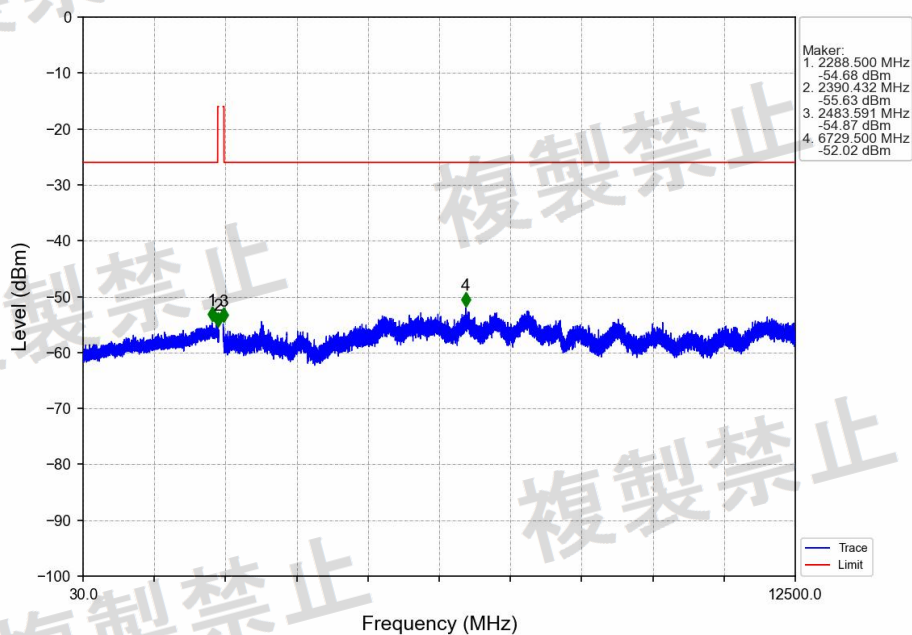


QPSK_2439.5MHz_Ant2_NTNV

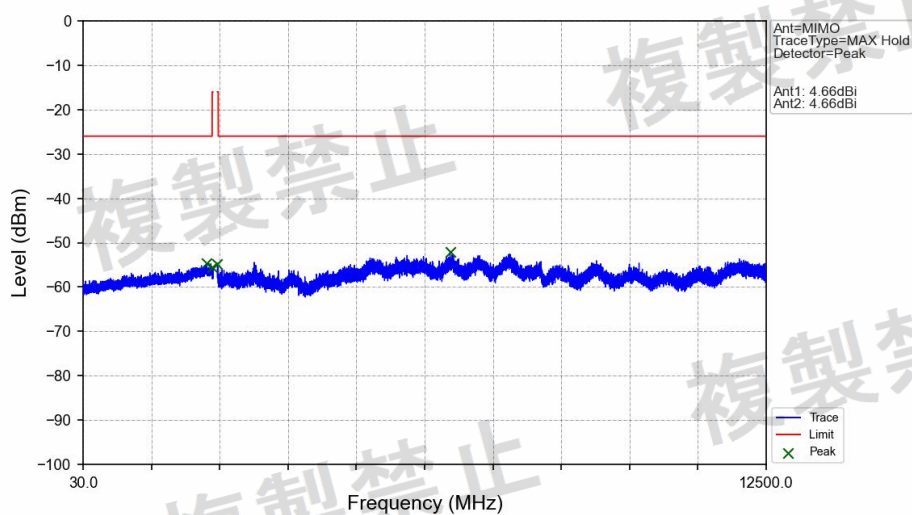




QPSK_2439.5MHz_MIMO_NTNV



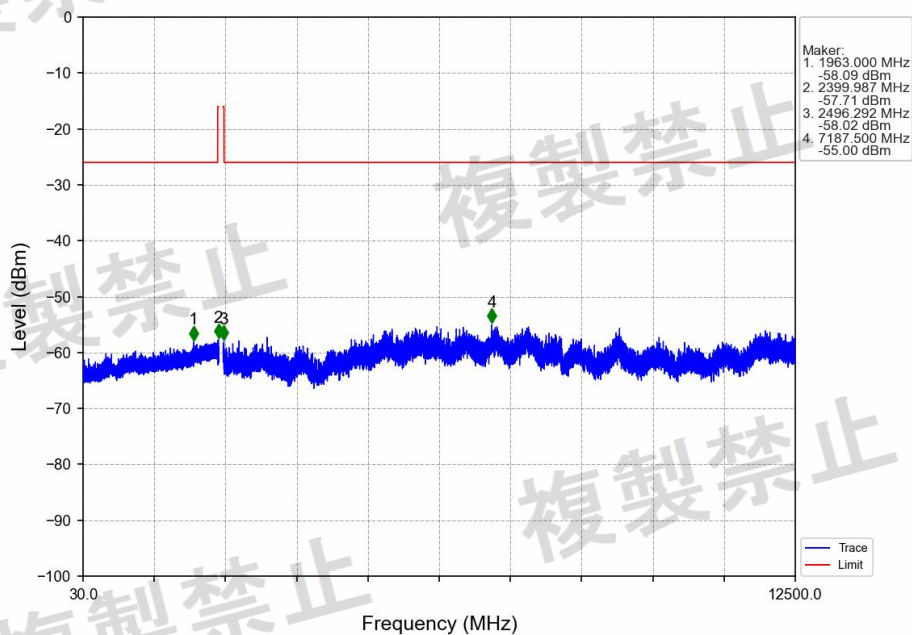
QPSK_2439.5MHz_MIMO_NTNV



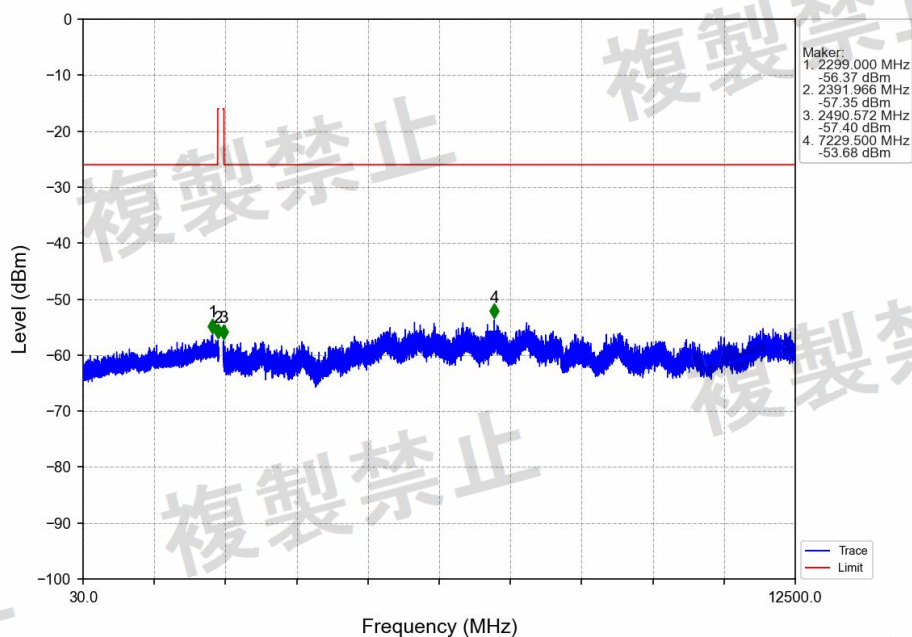
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2288.500	-54.68	/	-26	Pass
2387	2400	1	1	2390.432	-55.63	/	-16	Pass
2483.5	2496.5	1	1	2483.591	-54.87	/	-16	Pass
2496.5	12500	1	1	6729.500	-52.02	/	-26	Pass



QPSK_2474.5MHz_Ant1_NTNV

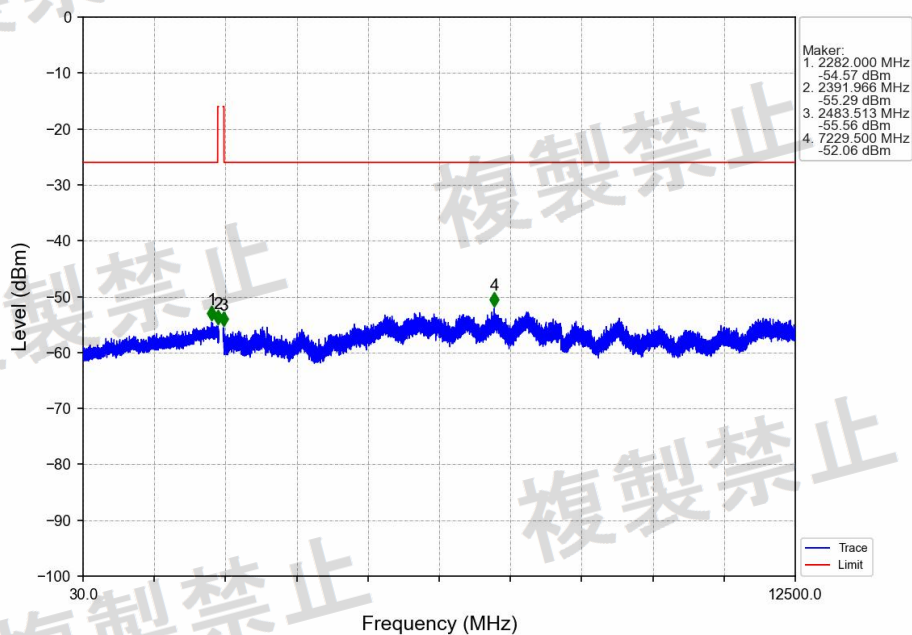


QPSK_2474.5MHz_Ant2_NTNV

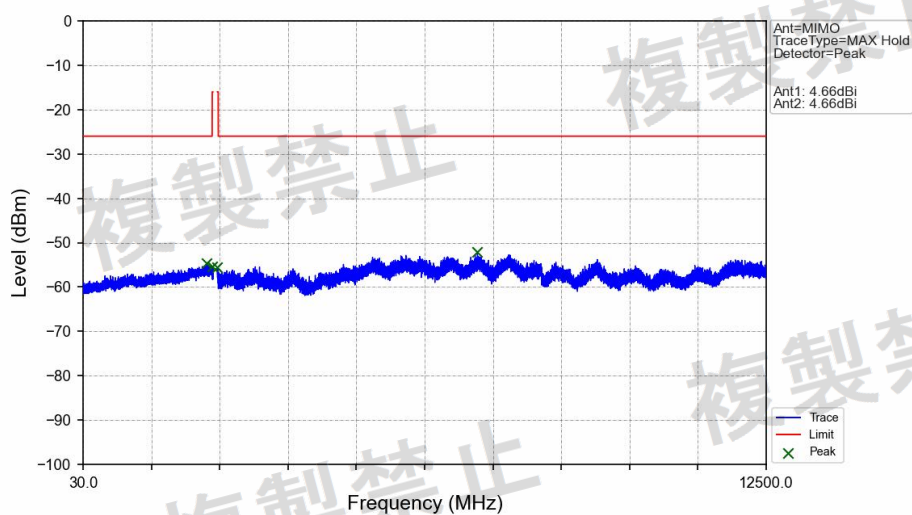




QPSK_2474.5MHz_MIMO_NTNV



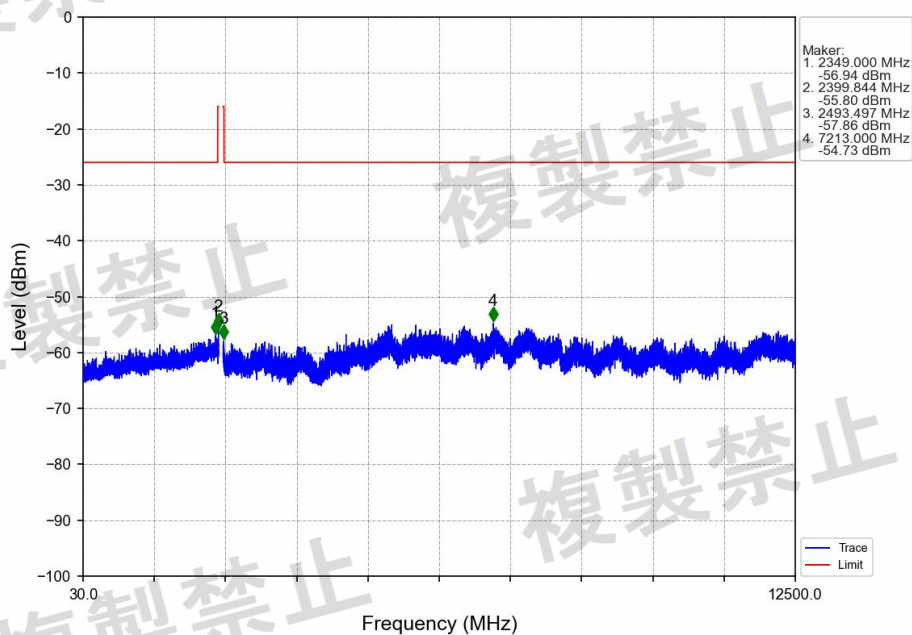
QPSK_2474.5MHz_MIMO_NTNV



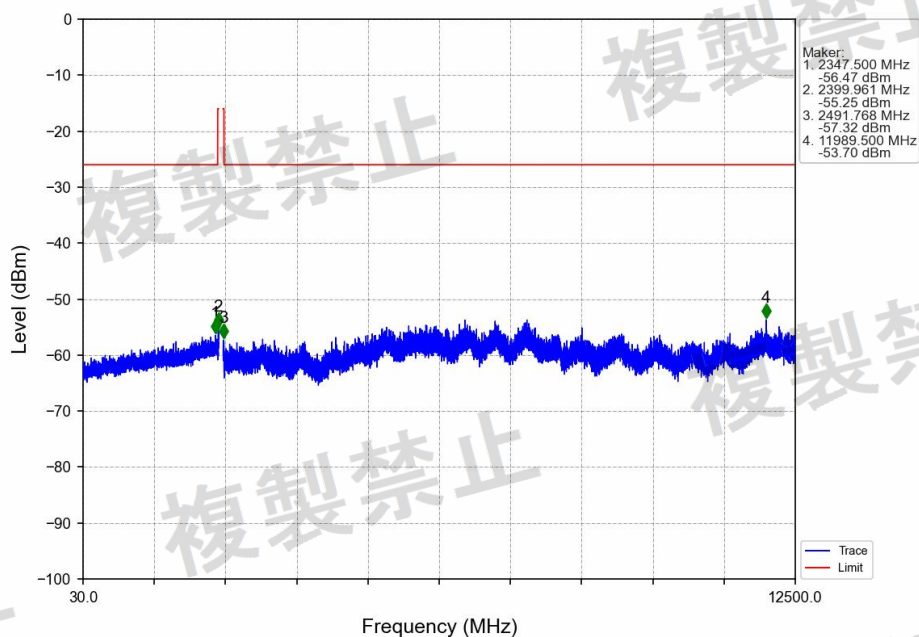
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2282.000	-54.57	/	-26	Pass
2387	2400	1	1	2391.966	-55.29	/	-16	Pass
2483.5	2496.5	1	1	2483.513	-55.56	/	-16	Pass
2496.5	12500	1	1	7229.500	-52.06	/	-26	Pass



16QAM_2404.5MHz_Ant1_NTNV

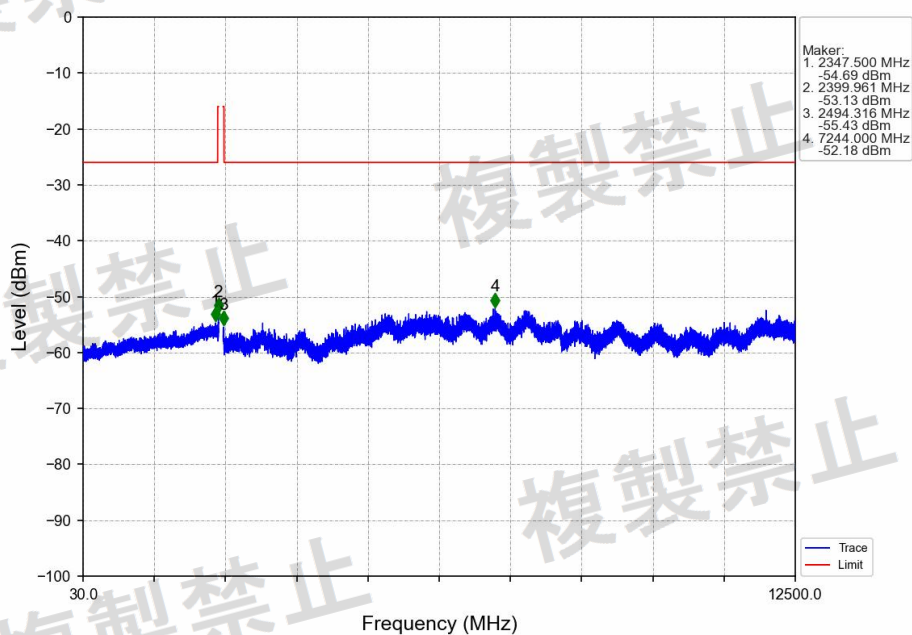


16QAM_2404.5MHz_Ant2_NTNV

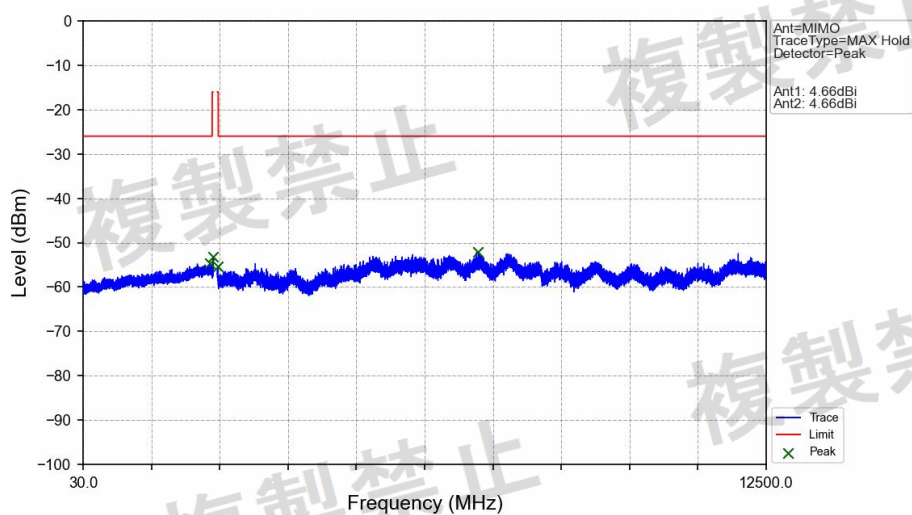




16QAM_2404.5MHz_MIMO_NTNV



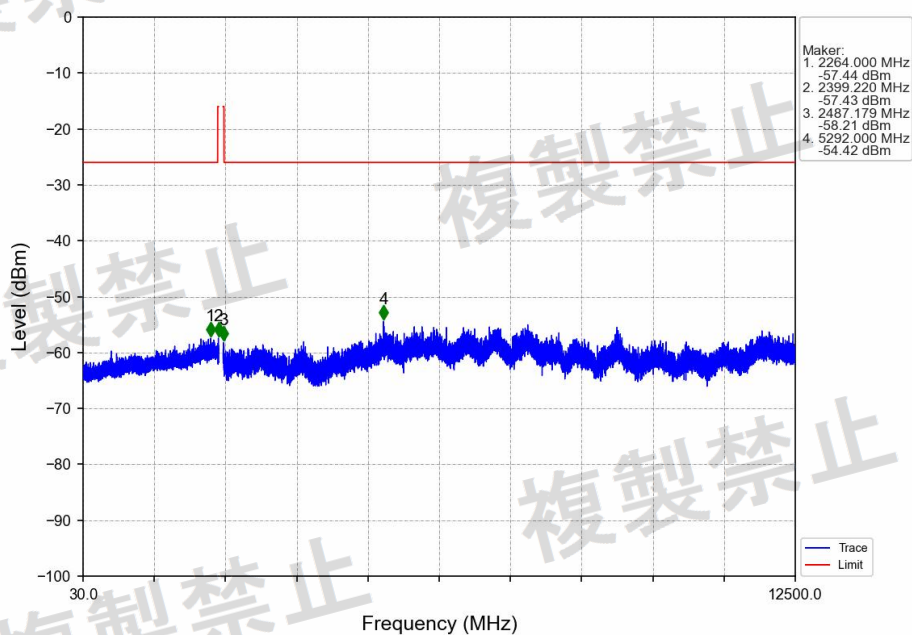
16QAM_2404.5MHz_MIMO_NTNV



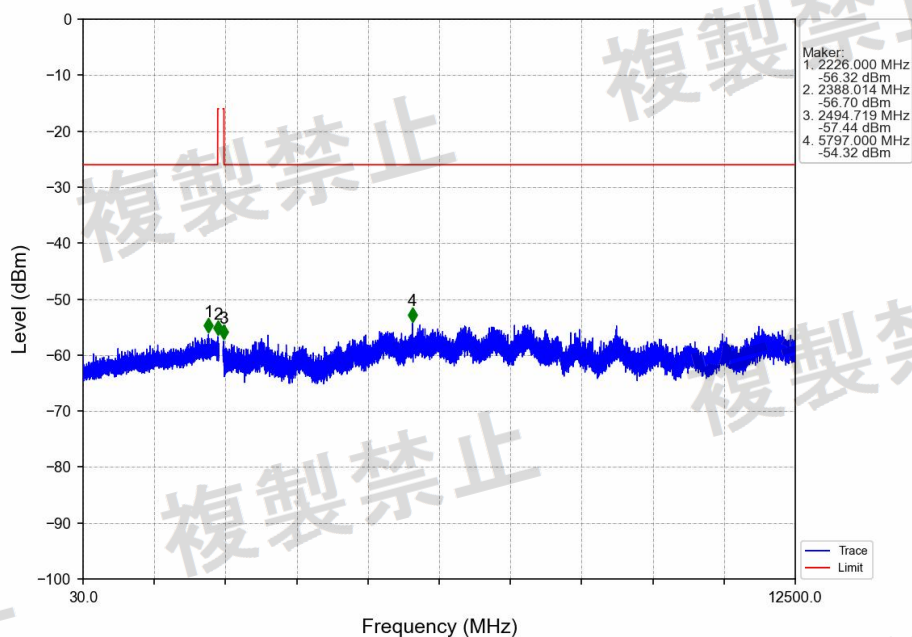
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2347.500	-54.69	/	-26	Pass
2387	2400	1	1	2399.961	-53.13	/	-16	Pass
2483.5	2496.5	1	1	2494.316	-55.43	/	-16	Pass
2496.5	12500	1	1	7244.000	-52.18	/	-26	Pass



16QAM_2439.5MHz_Ant1_NTNV

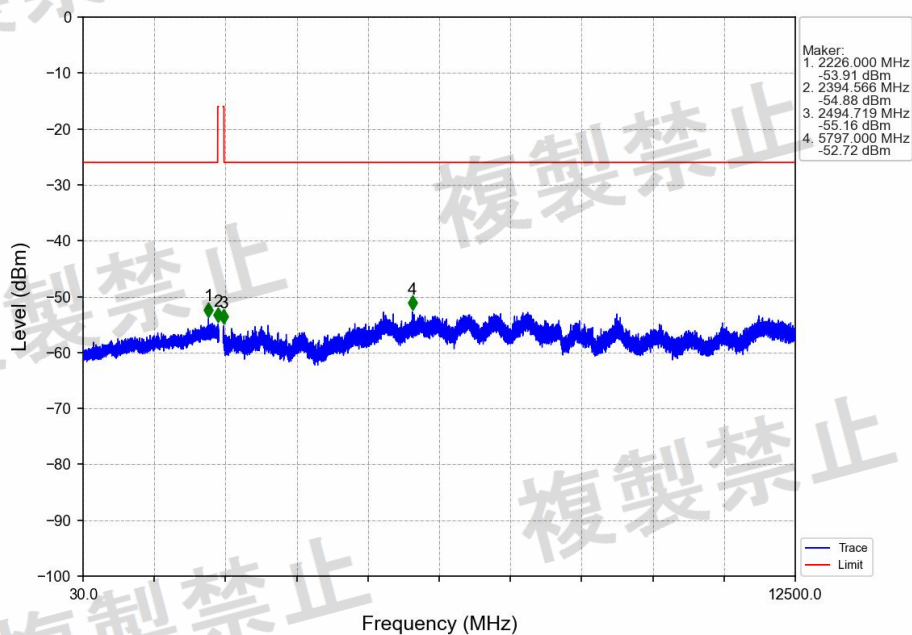


16QAM_2439.5MHz_Ant2_NTNV

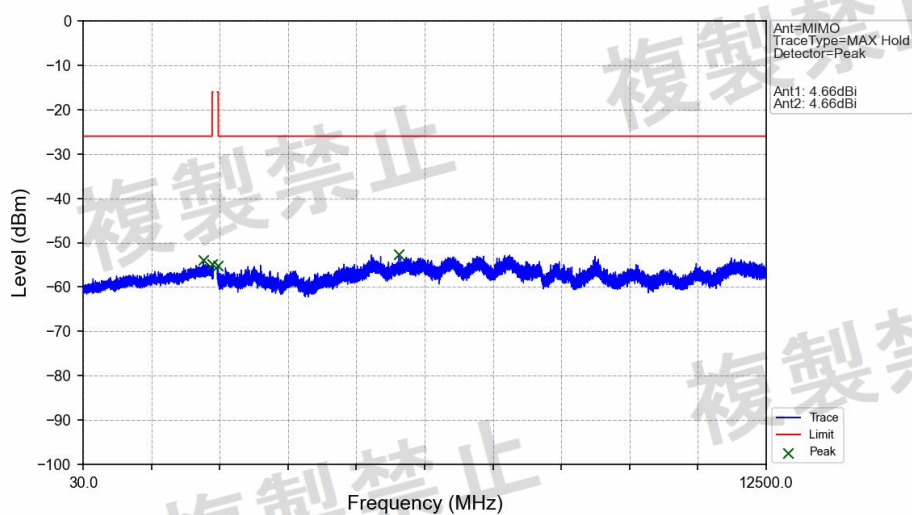




16QAM_2439.5MHz_MIMO_NTNV



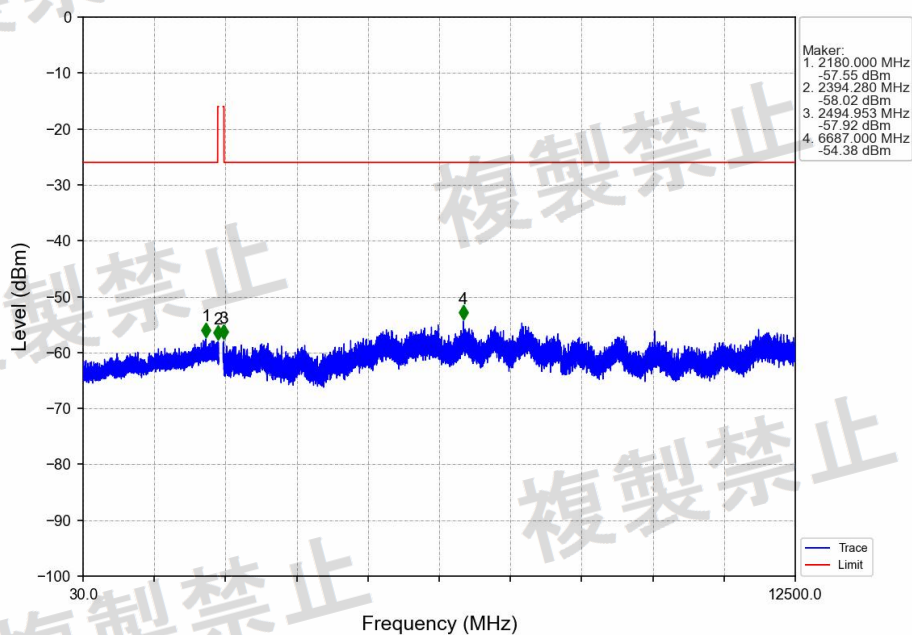
16QAM_2439.5MHz_MIMO_NTNV



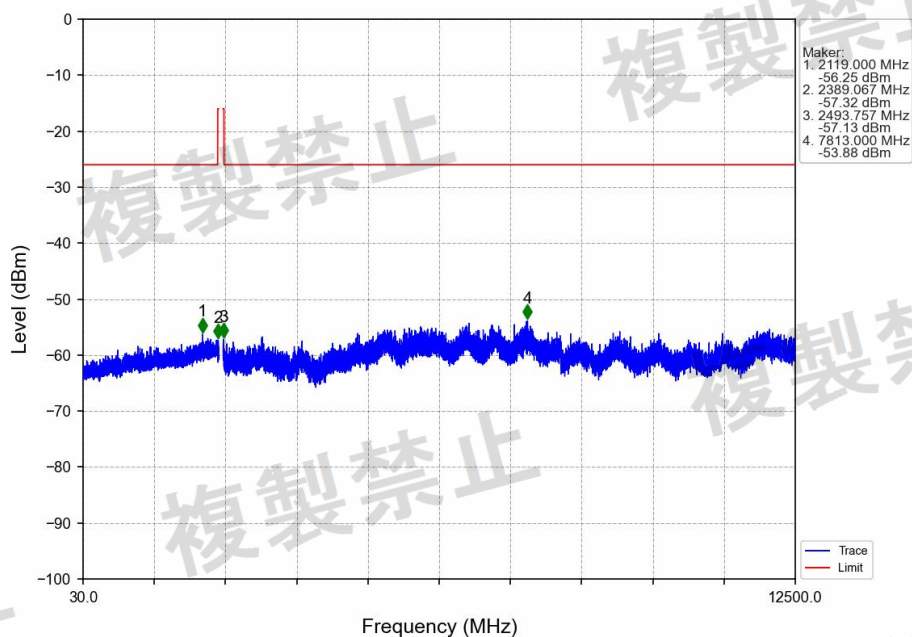
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2226.000	-53.91	/	-26	Pass
2387	2400	1	1	2394.566	-54.88	/	-16	Pass
2483.5	2496.5	1	1	2494.719	-55.16	/	-16	Pass
2496.5	12500	1	1	5797.000	-52.72	/	-26	Pass



16QAM_2474.5MHz_Ant1_NTNV

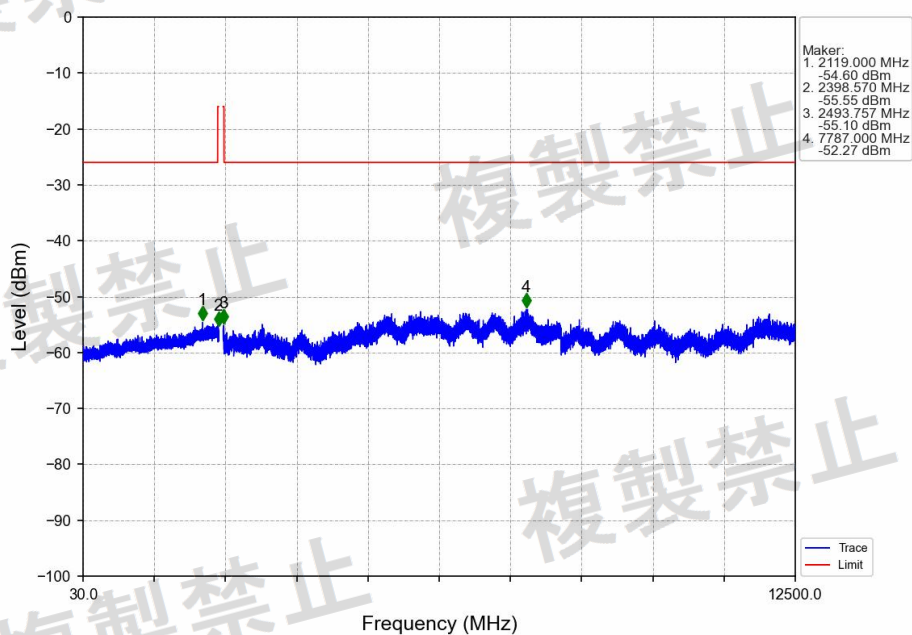


16QAM_2474.5MHz_Ant2_NTNV

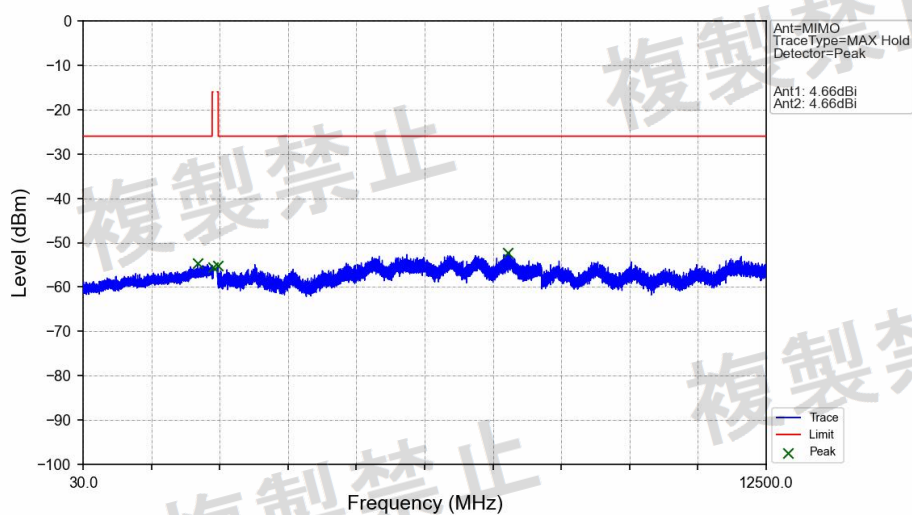




16QAM_2474.5MHz_MIMO_NTNV



16QAM_2474.5MHz_MIMO_NTNV



Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2119.000	-54.60	/	-26	Pass
2387	2400	1	1	2398.570	-55.55	/	-16	Pass
2483.5	2496.5	1	1	2493.757	-55.10	/	-16	Pass
2496.5	12500	1	1	7787.000	-52.27	/	-26	Pass



6. Secondary Radiated Emission

6.1 Test Result

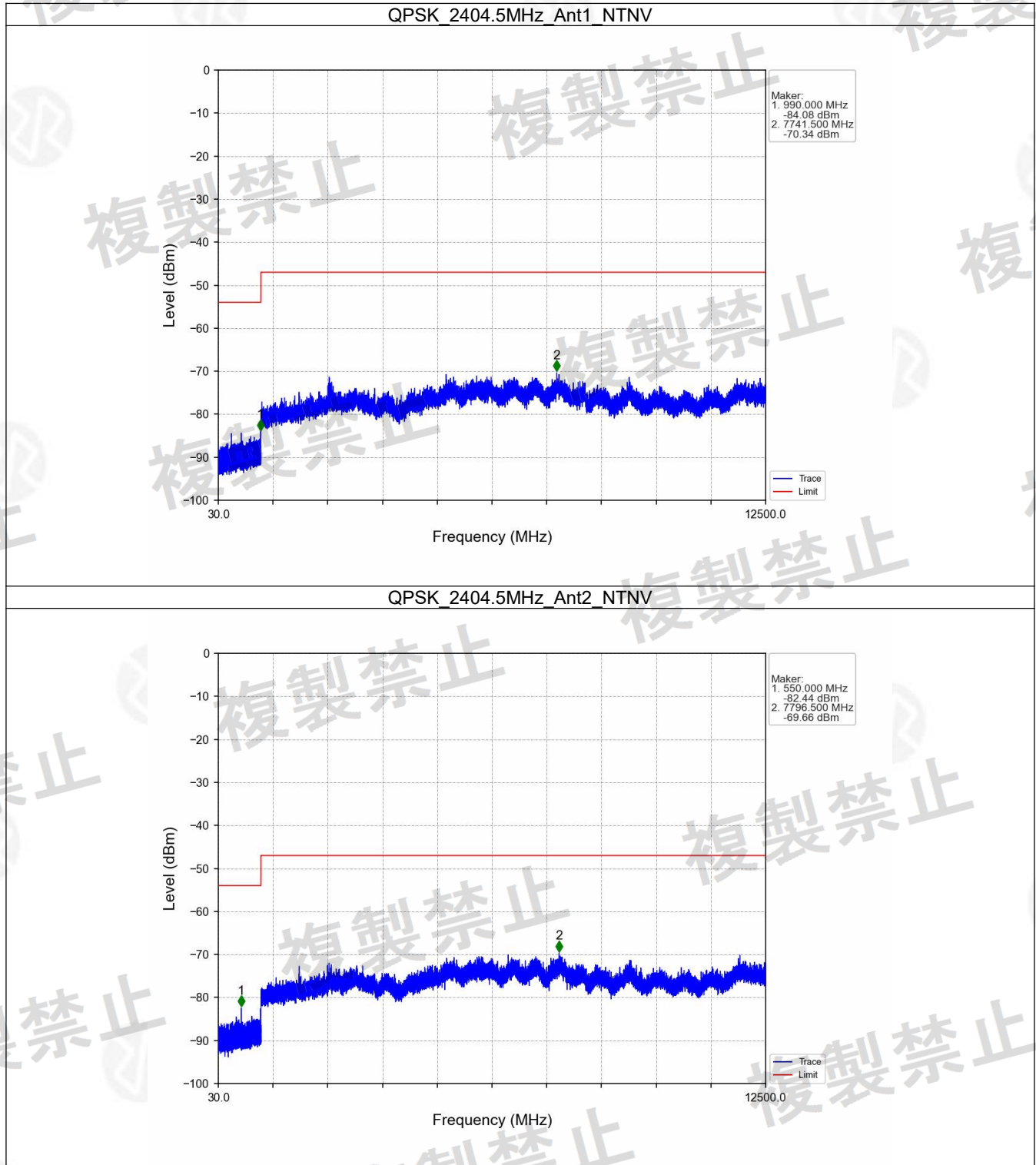
6.1.1 RxSe_NTNV

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)		
QPSK	MIMO	2404.5	1	/	/	/	/	/	/	/	/	Pass
			2	/	/	/	/	/	/	/	/	Pass
			MIMO	30	1000	550	-80.28	0.009	/	/	4	Pass
				1000	12500	7796	-67.56	0.175	/	/	20	Pass
		2439.5	1	/	/	/	/	/	/	/	/	Pass
			2	/	/	/	/	/	/	/	/	Pass
			MIMO	30	1000	989.95	-80.29	0.009	/	/	4	Pass
				1000	12500	6252	-67.79	0.166	/	/	20	Pass
		2474.5	1	/	/	/	/	/	/	/	/	Pass
			2	/	/	/	/	/	/	/	/	Pass
			MIMO	30	1000	990	-80.16	0.010	/	/	4	Pass
				1000	12500	5924	-67.73	0.169	/	/	20	Pass
16QAM	MIMO	2404.5	1	/	/	/	/	/	/	/	/	Pass
			2	/	/	/	/	/	/	/	/	Pass
			MIMO	30	1000	990	-79.96	0.010	/	/	4	Pass
				1000	12500	7803.5	-67.85	0.164	/	/	20	Pass
		2439.5	1	/	/	/	/	/	/	/	/	Pass
			2	/	/	/	/	/	/	/	/	Pass
			MIMO	30	1000	990	-79.74	0.011	/	/	4	Pass
				1000	12500	7819.5	-67.65	0.172	/	/	20	Pass
		2474.5	1	/	/	/	/	/	/	/	/	Pass
			2	/	/	/	/	/	/	/	/	Pass
			MIMO	30	1000	990	-80.35	0.009	/	/	4	Pass
				1000	12500	7757.5	-67.90	0.162	/	/	20	Pass



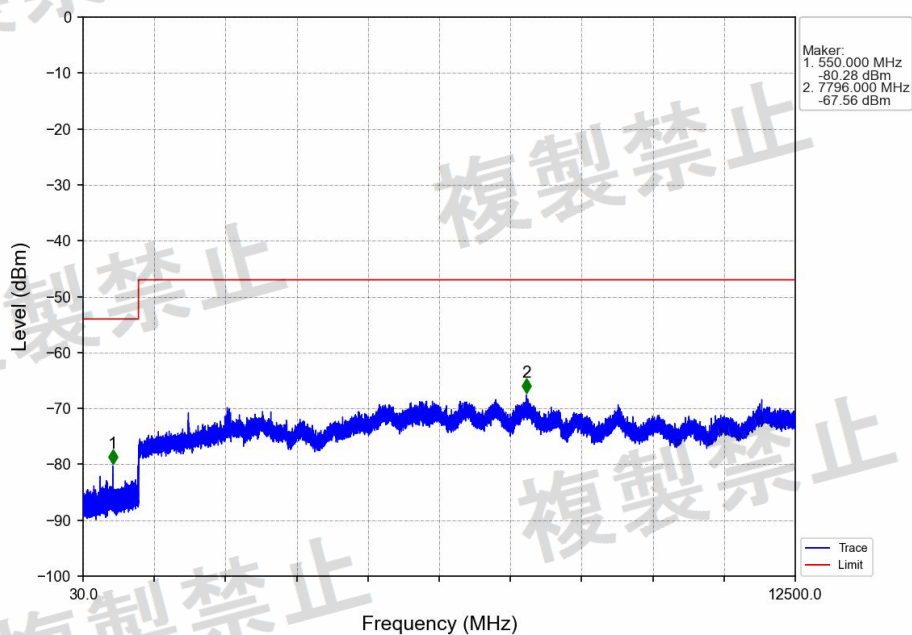
6.2 Test Graph

6.2.1 RxSe_NTNV

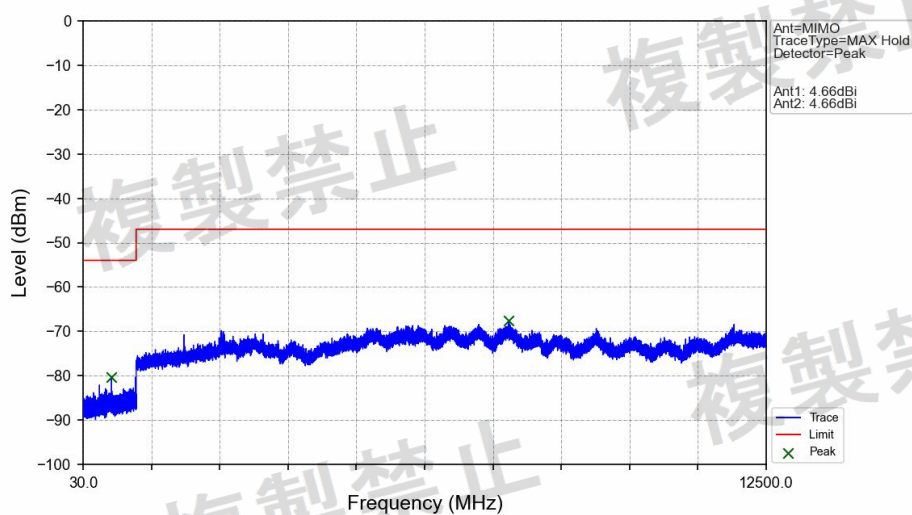




QPSK_2404.5MHz_MIMO_NTNV



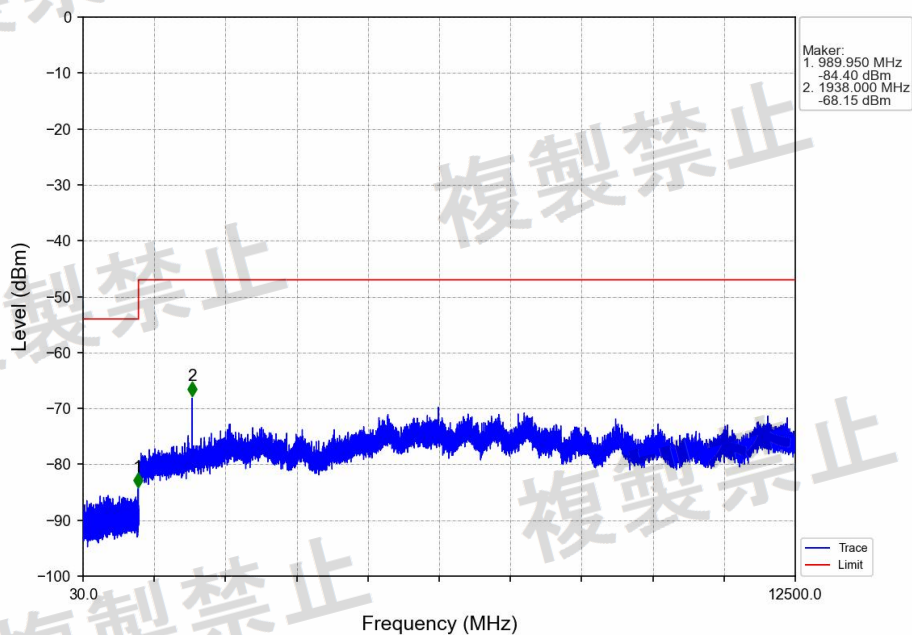
QPSK_2404.5MHz_MIMO_NTNV



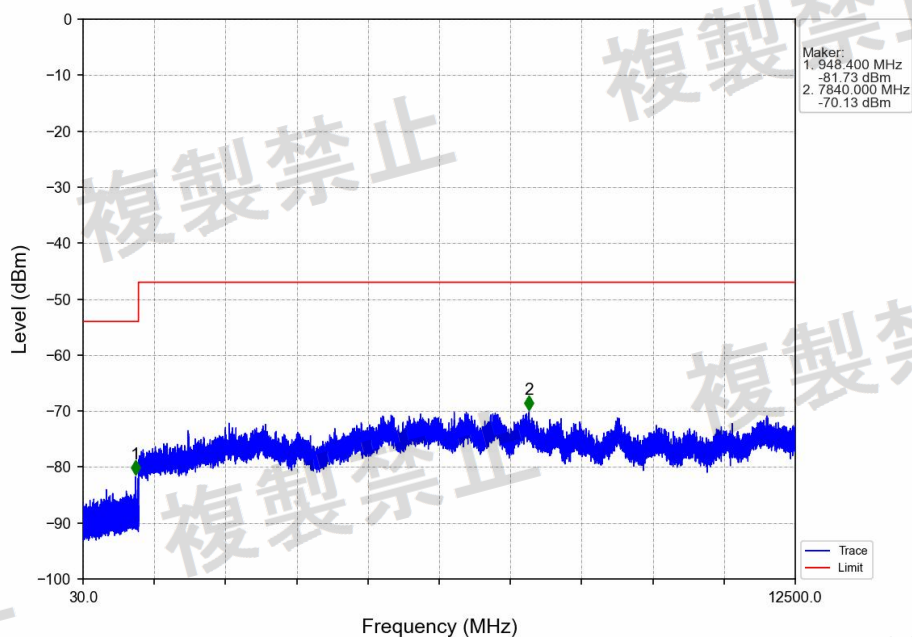
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	1000	0.1	0.1	550.000	-80.28	/	-54	Pass
1000	12500	1	1	7796.000	-67.56	/	-47	Pass



QPSK_2439.5MHz_Ant1_NTNV

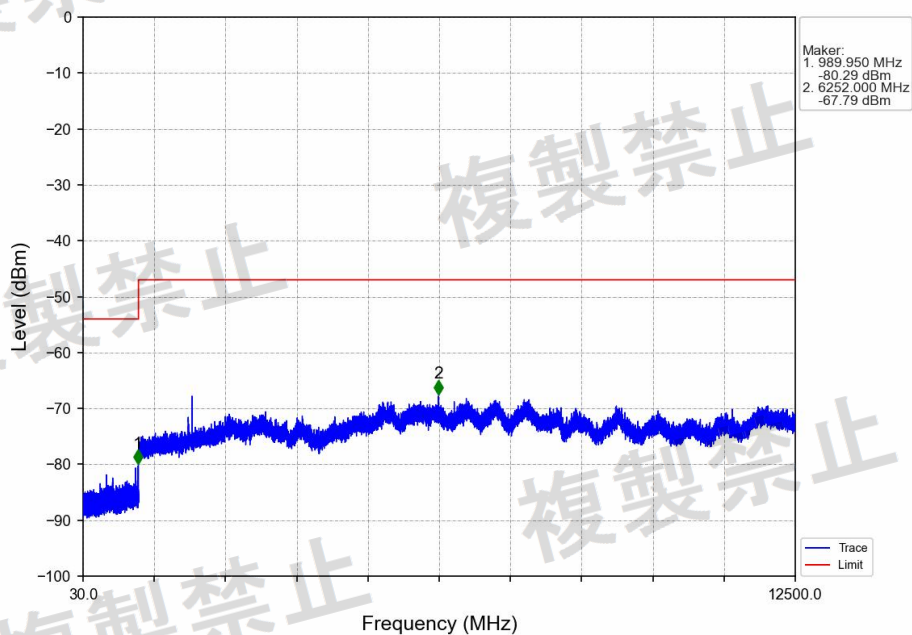


QPSK_2439.5MHz_Ant2_NTNV

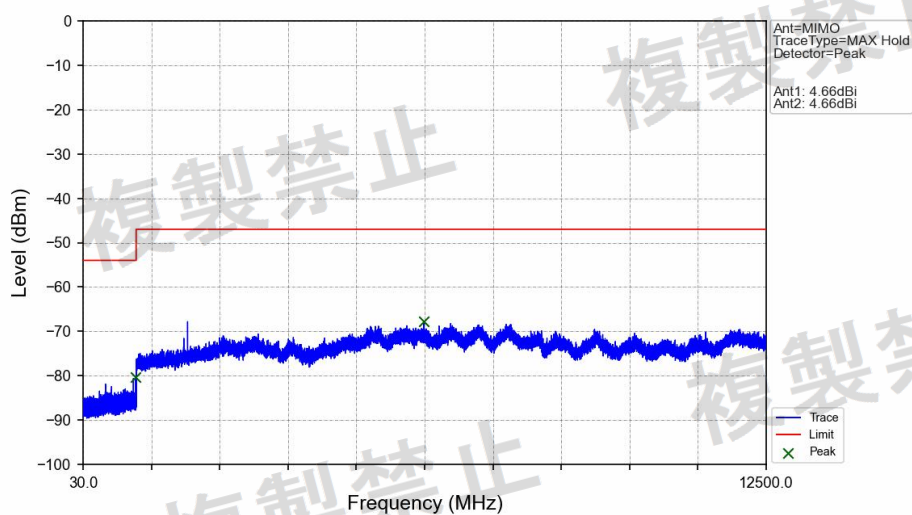




QPSK_2439.5MHz_MIMO_NTNV



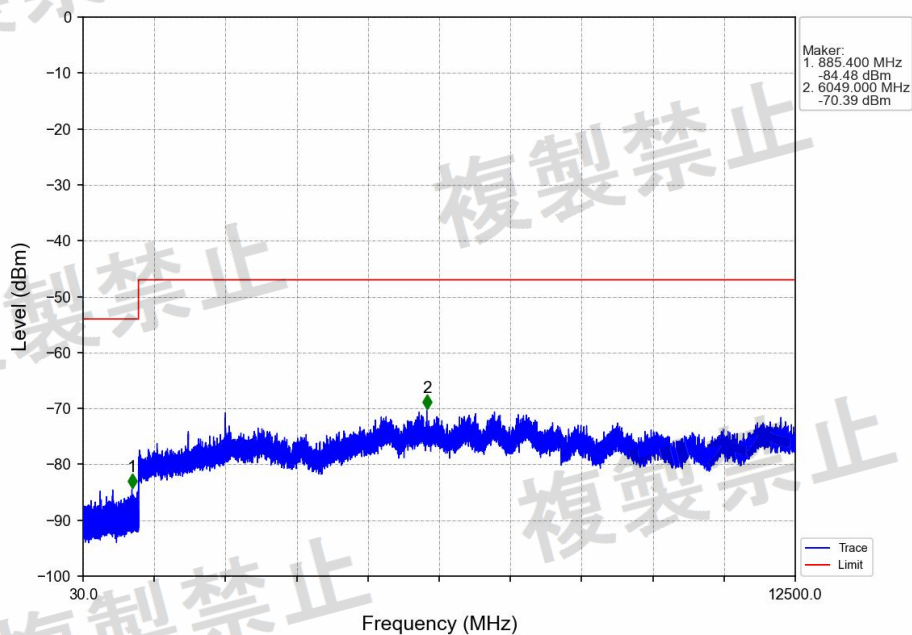
QPSK_2439.5MHz_MIMO_NTNV



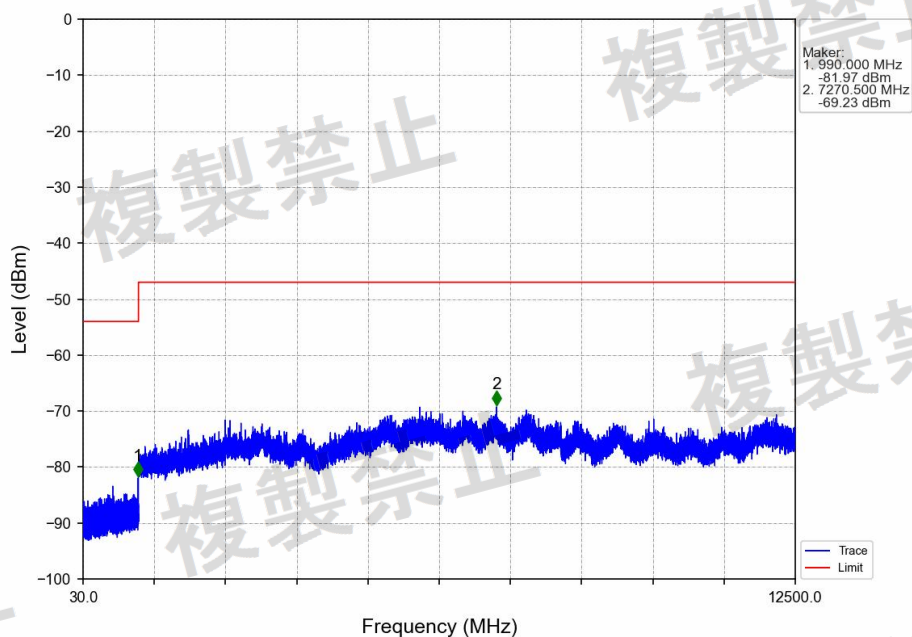
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	1000	0.1	0.1	989.950	-80.29	/	-54	Pass
1000	12500	1	1	6252.000	-67.79	/	-47	Pass



QPSK_2474.5MHz_Ant1_NTNV

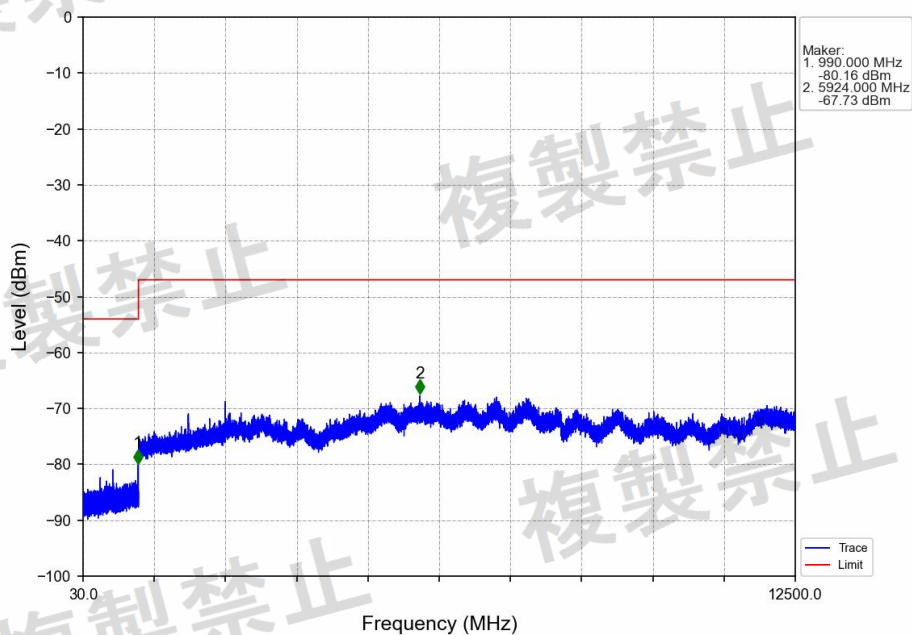


QPSK_2474.5MHz_Ant2_NTNV

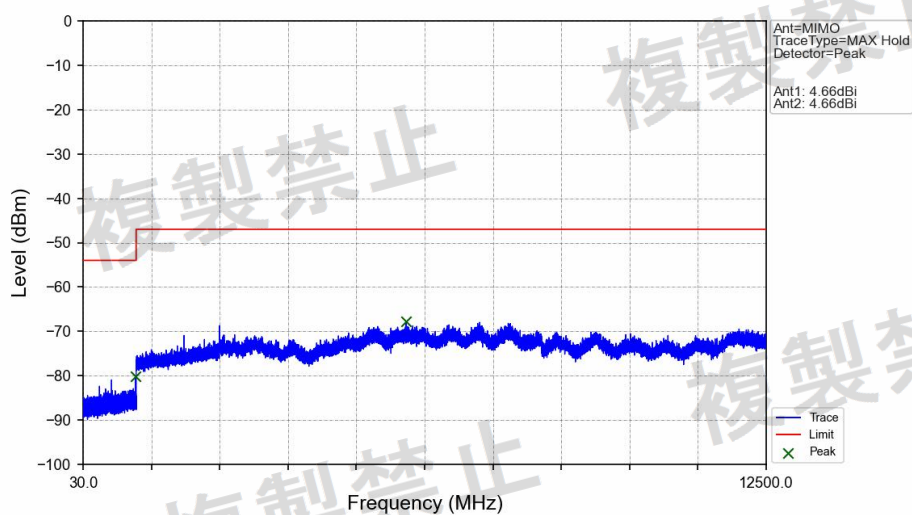




QPSK_2474.5MHz_MIMO_NTNV



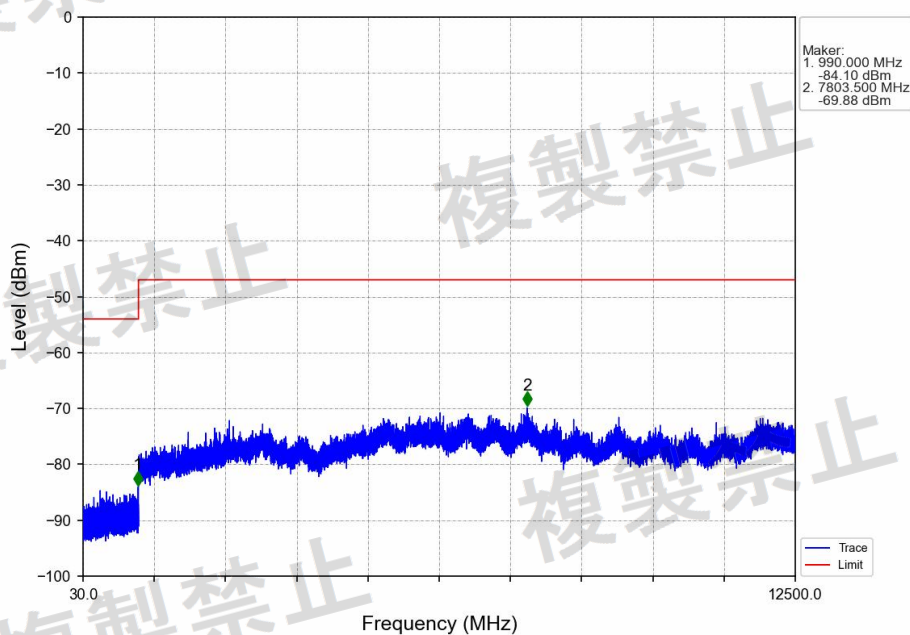
QPSK_2474.5MHz_MIMO_NTNV



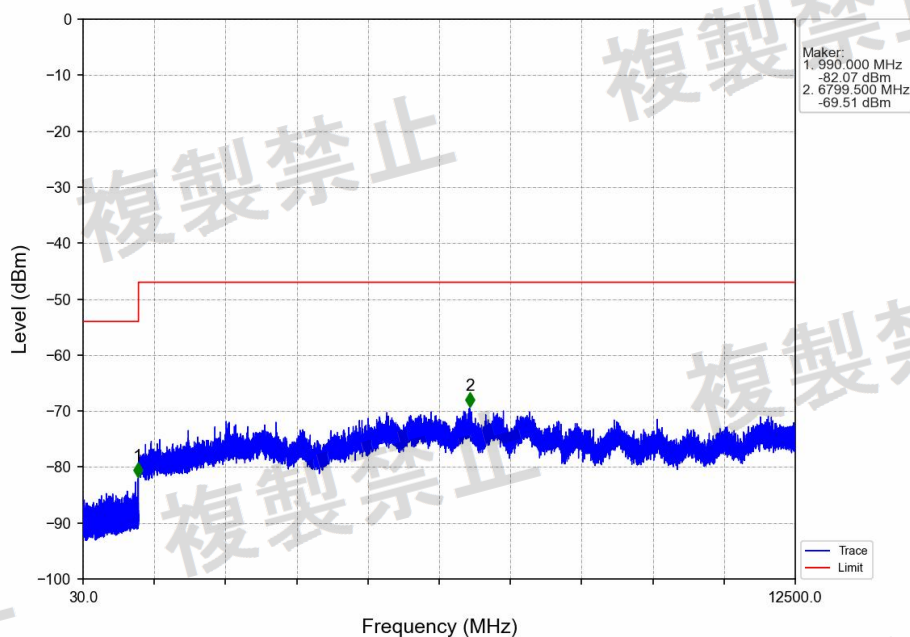
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	1000	0.1	0.1	990.000	-80.16	/	-54	Pass
1000	12500	1	1	5924.000	-67.73	/	-47	Pass



16QAM_2404.5MHz_Ant1_NTNV

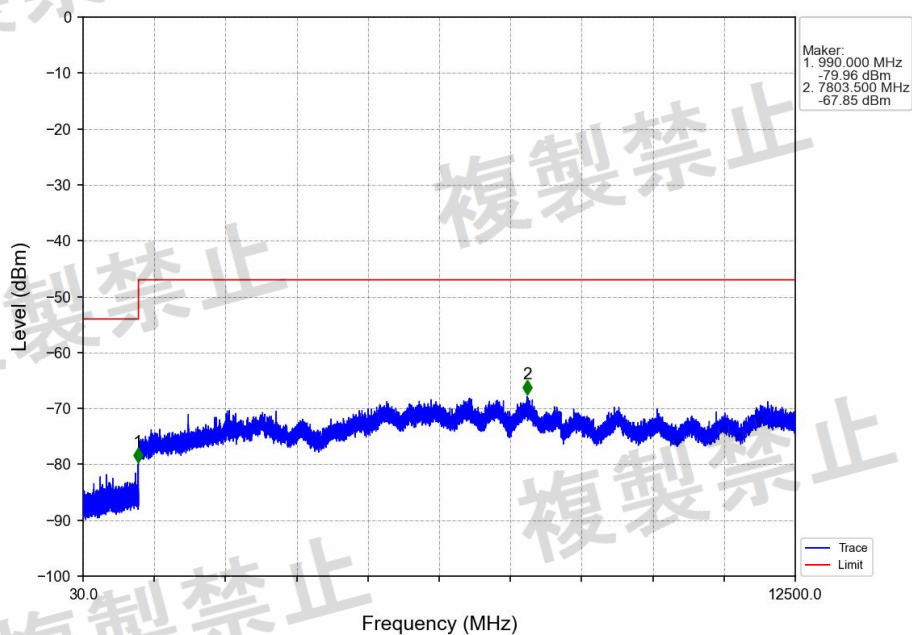


16QAM_2404.5MHz_Ant2_NTNV

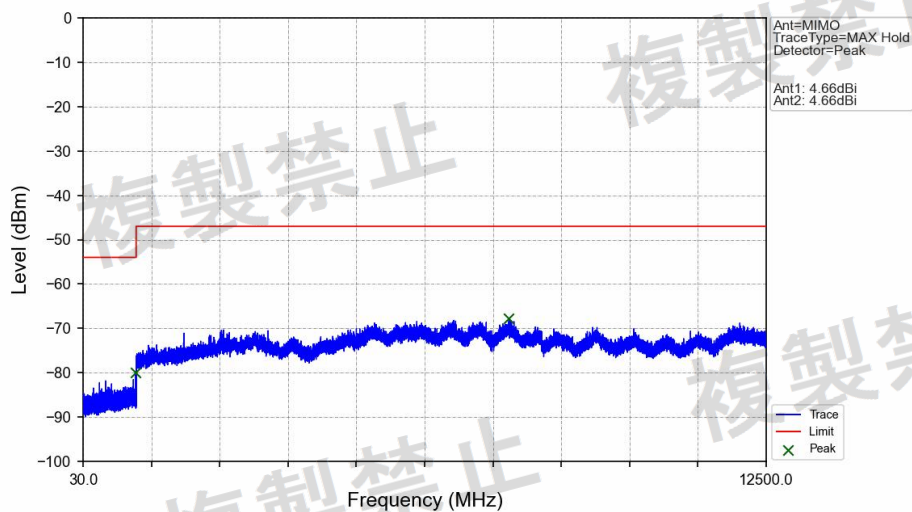




16QAM_2404.5MHz_MIMO_NTNV



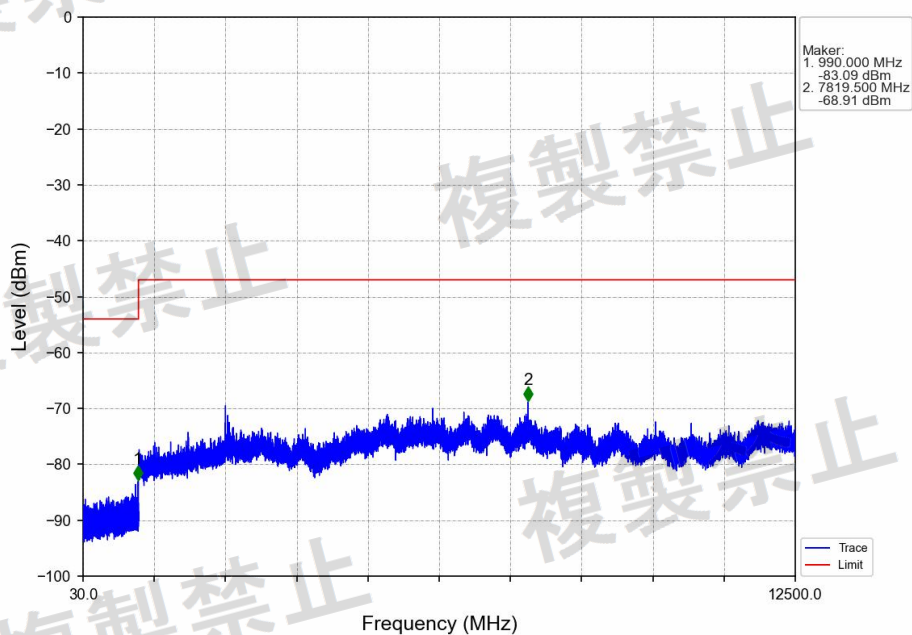
16QAM_2404.5MHz_MIMO_NTNV



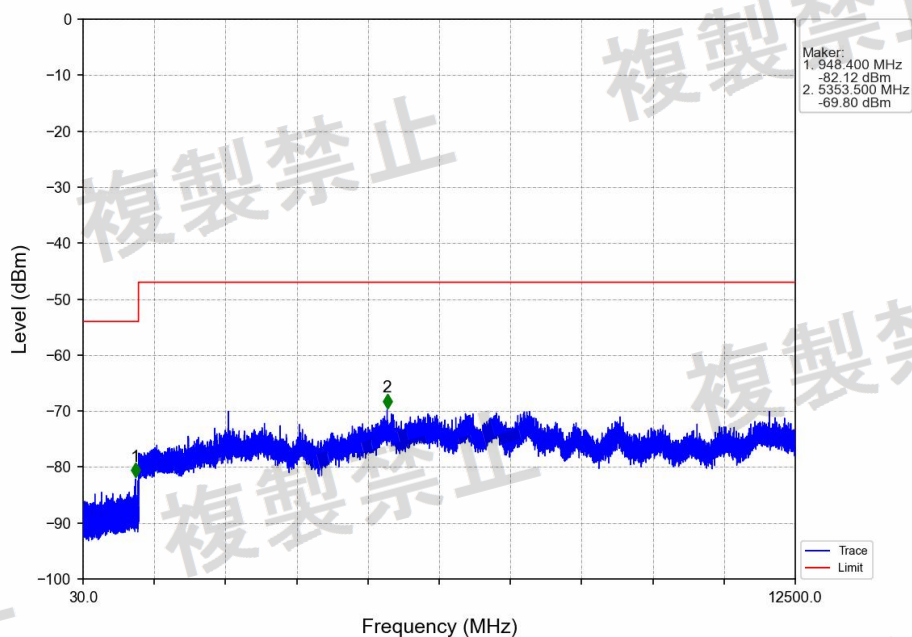
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	1000	0.1	0.1	990.000	-79.96	/	-54	Pass
1000	12500	1	1	7803.500	-67.85	/	-47	Pass



16QAM_2439.5MHz_Ant1_NTNV

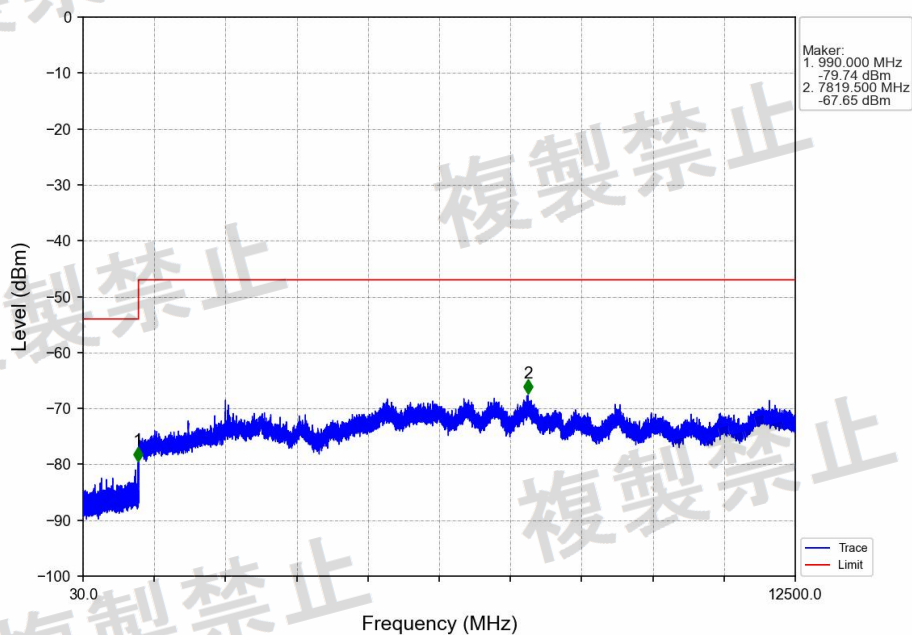


16QAM_2439.5MHz_Ant2_NTNV

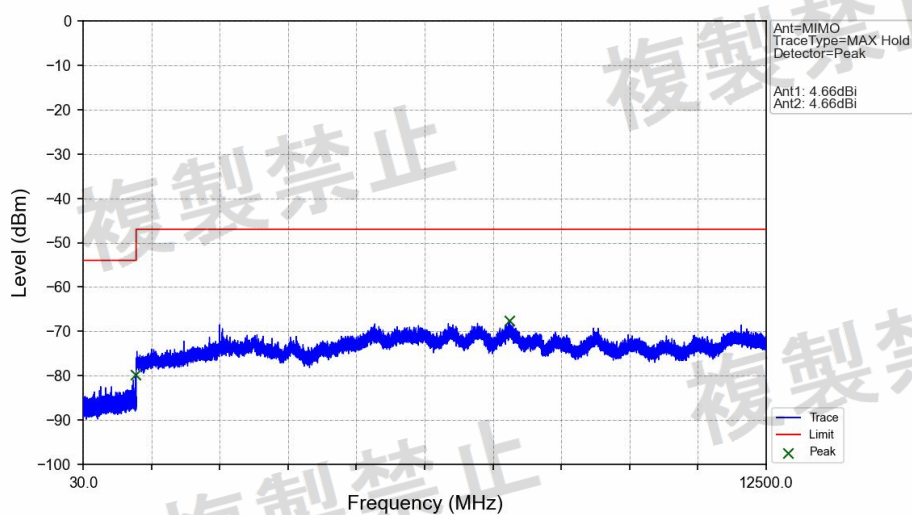




16QAM_2439.5MHz_MIMO_NTNV



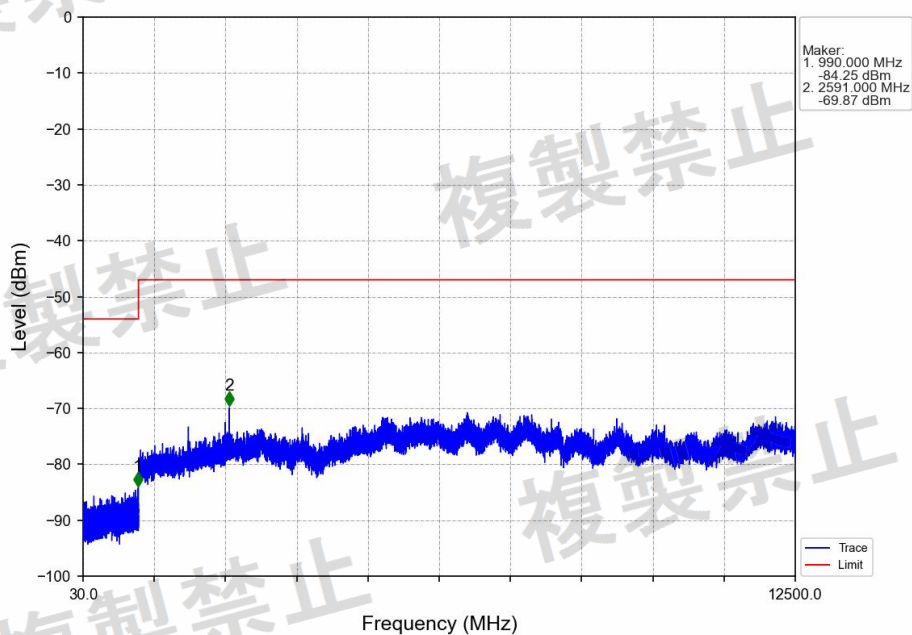
16QAM_2439.5MHz_MIMO_NTNV



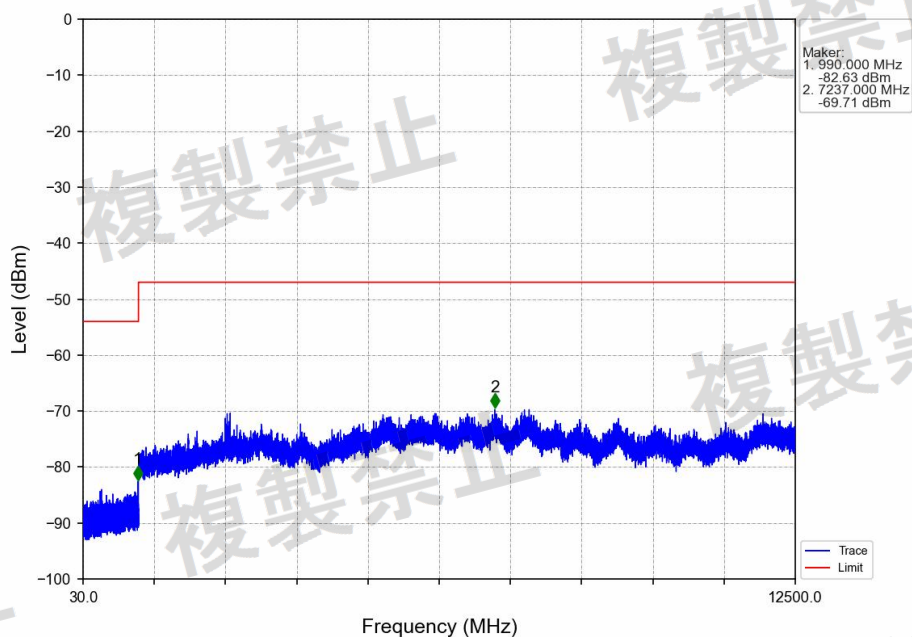
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	1000	0.1	0.1	990.000	-79.74	/	-54	Pass
1000	12500	1	1	7819.500	-67.65	/	-47	Pass



16QAM_2474.5MHz_Ant1_NTNV

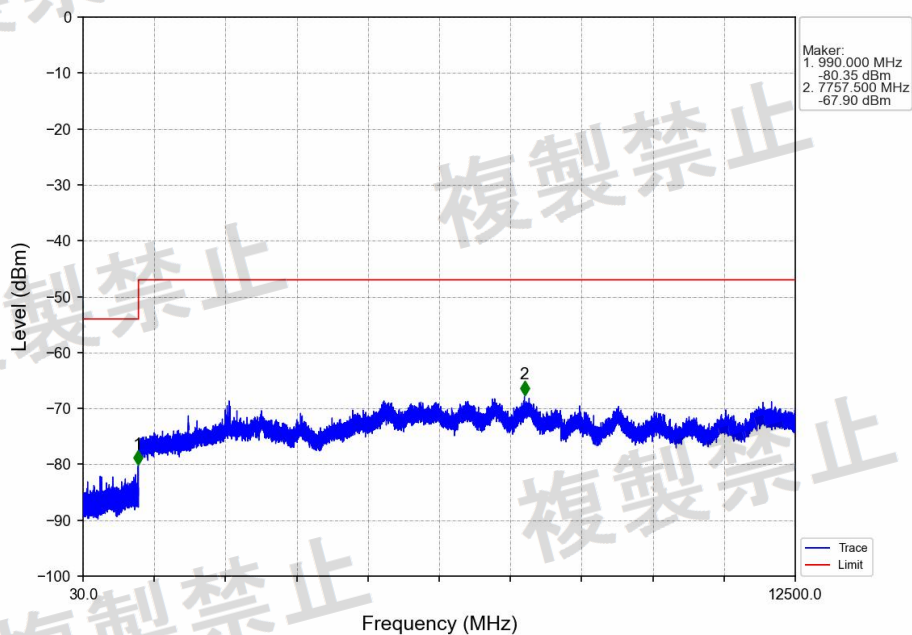


16QAM_2474.5MHz_Ant2_NTNV

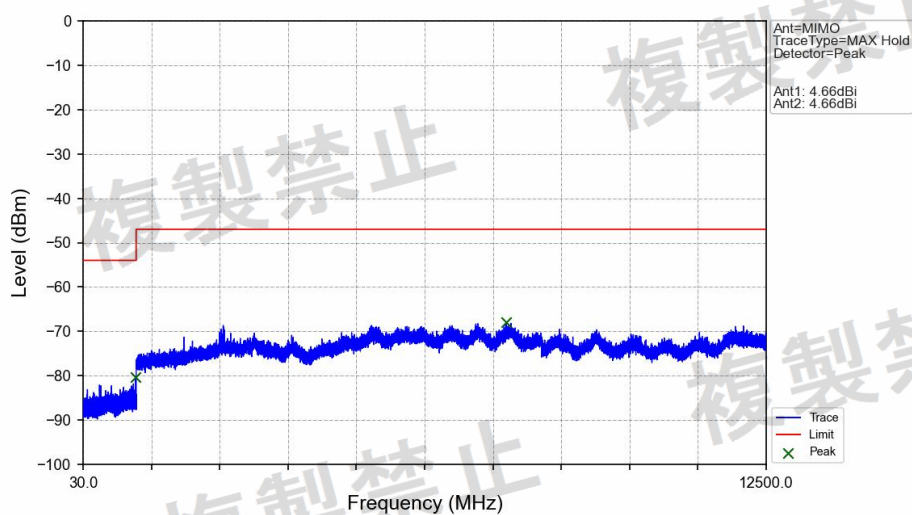




16QAM_2474.5MHz_MIMO_NTNV



16QAM_2474.5MHz_MIMO_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	990.000	-80.35	/	-54	Pass
1000	12500	1	1	7757.500	-67.90	/	-47	Pass