

**TEST REPORT**

Report Reference No..... : HTT202507768-1

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Date of issue..... : Aug. 05, 2025

Testing Laboratory Name..... : Shenzhen HTT Technology Co., Ltd.

Address..... : 1F, B Building, Huafeng International Robotics Industrial Park,
Gushu, Xixiang Street, Bao'an District, Shenzhen

Applicant..... : Wuchao (Shenzhen) Technology Development Co., Ltd.

Address..... : Room 1916, Tower A, Rongchuang Zhihui Building, Minzhi Street,
Longhua District, Shenzhen City, Guangdong, China

Test specification

Standard..... : Ordinance Article 2 paragraph 1 item (19)

Test item description : True Wireless Earphones

Trade Mark..... : HYUNDAI

Wuchao (Shenzhen) Technology Development Co., Ltd.

Manufactured by..... : Room 1916, Tower A, Rongchuang Zhihui Building, Minzhi Street,
Longhua District, Shenzhen City, Guangdong, China

Model/Type reference..... : LP5

Serial Model..... : N/A

Headphone battery capacity:3.7V/35mAh (polymer battery)

Rating(s) : Charging bin battery capacity:3.7V/250mAh (polymer battery)

Charging interface :USB Type-C

Result..... : PASS



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TEST REPORT

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Model Name : LP5

Serial Model : N/A

Trade Mark HYUNDAI

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Address : Room 1916, Tower A, Rongchuang Zhihui Building, Minzhi Street,
Longhua District, Shenzhen City, Guangdong, China

Test Result:

PASS

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.



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1. SUMMARY

1.1. Test Standards

The tests were performed according to following standards:

[ARIB STD-T66](#): Second-Generation Low-Power Data Communication System/Wireless LAN System

[MIC Notice No.88 Appendix No. 43](#): 2.4 GHz band wide-band low-power data communication system

1.2. Test Description

ARIB STD-T66		
ARIB STD-T66	Test Description	Test Results
3.2 (2)	Antenna Power	Complies
3.2 (3)	Tolerances for Antenna Power	Complies
3.2 (4)	Frequency Tolerance	Complies
3.2 (5)	Transmission Rate	Complies
3.2 (7)	Occupied Frequency Bandwidth	Complies
3.2 (8)	Spread Bandwidth	Complies
3.2 (11)	Dwell Time	Complies
3.2 (6)	Spurious Emissions	Complies
3.6	Transmission Antenna Gain (EIRP Antenna Power)	N/A
3.6	Transmission Radiated Angle Width (3dB Beam width)	N/A
/	Interference prevention function	Complies
/	Carrier Sensing function	N/A
Receiver Parameters		
3.3 (1)	Secondary Radiated Emissions	Complies
(1) N/A is an abbreviation for Not Applicable.		

Note: 1: "N/A" denotes test is not applicable in this Test Report

2: MIC Public Notice 88:2004, annex 1 and annex 43

3: MIC Ordinance Regulating Radio Equipment Section 4.17 of Article 49.20

4: Referenced in the standard ARIB STD-T66

1.3. Test Facility

1.3.1 Address of the test laboratory

Shenzhen HTT Technology Co.,Ltd.

1F, B Building, Huafeng International Robotics Industrial Park, Gushu, Xixiang Street, Bao'an District, Shenzhen, China



1.4. Measurement Uncertainty

For the test methods, according to the present document, the measurement uncertainty figures shall be calculated in accordance with TR100028-1 [2] and shall correspond to an expansion factor (coverage factor) $K=1.96$ or $K=2$ (which provide confidence levels of respectively 95% and 95.5% in the case where the distributions characterizing the actual measurement uncertainties are normal).

Parameter	Uncertainty
Frequency error / 99%&90% bandwidth	$\pm 1.62 \cdot 10^{-6}$
Total RF power, conducted	$\pm 0.8\text{dB}$
Spurious emissions, conducted	$\pm 0.8\text{dB}$
DC and low frequency voltages	$\pm 0.05\%$
Humidity	$\pm 5\%$
Temperature	$\pm 1^\circ\text{C}$



2. GENERAL INFORMATION

2.1. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Voltage	Normal Voltage	DC 3.70V
	High Voltage	DC 4.07V
	Low Voltage	DC 3.33V
Other	Normal Temperature	25°C
	Relative Humidity	55 %
	Air Pressure	989 hPa

2.2. General Description of EUT

Product Name:	True Wireless Earphones
Model/Type reference:	LP5
Date of sample receipt:	Jul. 17, 2025
Date of Test:	Jul. 17, 2025 ~ Aug. 05, 2025
Bluetooth	
Supported type:	Supported Bluetooth BR/EDR
Modulation:	GFSK, $\pi/4$ DQPSK
Operation frequency:	2402MHz~2480MHz
Channel number:	79
Channel separation:	1MHz
Rated power:	GFSK: 0.012mW/MHz $\pi/4$ DQPSK: 0.010mW/MHz
Antenna type:	Chip Antenna
Antenna Gain:	1.75 dBi
Firmware Version	/
Hardware Version	/

Note: For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.



2.3. Description of Test Modes

The EUT has been tested under typical operating condition. The Applicant provides communication tools software to control the EUT for staying in continuous transmitting and receiving mode for testing.

Operation Frequency List:

Channel	Frequency (MHz)
0	2402
1	2403
:	:
38	2440
39	2441
40	2442
:	:
77	2479
78	2480

Note: Test performed at the lowest/middle/highest frequencies selected in the list above for EUT supported while working on specified mode.

2.4. Measurement Instruments List

RF Conducted Test:

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Institution	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Oscilloscope	TEK	TDS3012B	HTT-004	LISAI	April 22, 2025	April 21, 2026
2	MXA signal analyzer	Agilent	N9020A	HTT-E024	LISAI	April 22, 2025	April 21, 2026
3	EMI Test Receiver	R&S	ESCI 7	HTT-E022	LISAI	April 22, 2025	April 21, 2026
4	DC Power	Agilent	E3632A	HTT-E023	LISAI	April 22, 2025	April 21, 2026
5	Analog signal generator	Agilent	N5181A	HTT-E025	LISAI	April 22, 2025	April 21, 2026
6	Vector signal generator	Agilent	N5182A	HTT-E026	LISAI	April 22, 2025	April 21, 2026
7	USB RF Power Sensor	Keysight	U2021XA	HTT-E027	LISAI	April 22, 2025	April 21, 2026
8	Spectrum Analyzer	KEYSIGHT	FSP	HTT-E037	LISAI	April 22, 2025	April 21, 2026
9	RF Switch Box	Shongyi	RFSW3003328	HTT-E047	LISAI	April 22, 2025	April 21, 2026
10	Programmable Constant Temp & Humi Test Chamber	SERTEP	STP-HWS225 B	HTT-092	LISAI	April 22, 2025	April 21, 2026
11	Temperature and humidity meter	Anbiao	TH10R	HTT-074	LISAI	April 22, 2025	April 21, 2026

Calibration by the calibration agencies listed in the table correspond to paragraph 4 (ii) (c) of Article 24-2 in the Radio Law".

LiSai-Guangzhou LiSai Calibration and Testing Co.,LTD.

2.5. Table for Parameters of Test Software Setting

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Power Parameters:



Test Software Version	Bluetooth MP Tool		
Frequency	2402MHz	2441MHz	2480MHz
Bluetooth	Default	Default	Default

2.6. Description of Test Modes

Tested channel, Frequency and Modulation Information		
CH0	2402MHz	GFSK(1Mbps), $\pi/4$ -DQPSK(2Mbps)
CH39	2441MHz	GFSK(1Mbps), $\pi/4$ -DQPSK(2Mbps)
CH78	2480MHz	GFSK(1Mbps), $\pi/4$ -DQPSK(2Mbps)
Hopping Mode		GFSK(1Mbps), $\pi/4$ -DQPSK(2Mbps)
Note: According exploratory test, EUT has maximum output power for GFSK modulation, All the test modes were tested, but only the worst case was recorded in this report.		

2.7. Test Voltage

POWER SUPPLY VOLTAGE FLUCTUATION TEST

Voltage Fluctuation Test	Normal Voltage	High Voltage +10% of Normal Voltage	Low Voltage -10% of Normal Voltage
Input To EUT	DC 3.70V	DC 4.07V	DC 3.33V
Output To RF Module	DC 3.30V	DC 3.3495V	DC 3.234V
Voltage Variation (%)	--	1.5%	-2%

Note:

Voltage Variation (%)

$= (\text{Output high or Low Voltage} - \text{Output Normal Voltage}) / \text{Output Normal Voltage} * 100$

During the input supply voltage to the EUT from the external power source is varied by +/- 10%, if output voltage had been confirmed that the fluctuation of power supply to the RF circuit of EUT (excluding power source) is equal to or less than +/-1%. Exempt extremely high and low supply voltage condition test, EUT only operated in normal voltage to test all regulations.

During the input supply voltage to the EUT from the external power source is varied by $\pm 10\%$, the fluctuation of input voltage to the circuit of RF unit of test equipment is exceed $\pm 1\%$. So, all measurement has been conducted by normal and limit voltage.



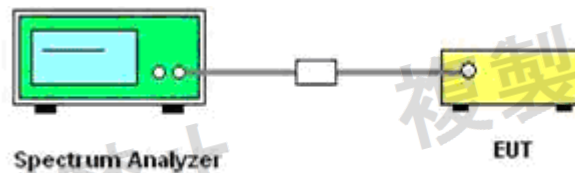
3. Test conditions and Results

3.1. Frequency Error

LIMIT

Tolerance of frequency shall be $\pm 50 \times 10^{-6}$.

TEST CONFIGURATION



TEST PROCEDURE

The EUT was directly connected to the spectrum analyser and antenna output port as show in the block diagram as TEST CONFIGURATION shows.

EUT Condition: non-modulation

Spectrum Condition:

- Frequency: test frequency
- Span: 300 KHz
- RBW: 10 KHz
- VBW: 30 KHz
- Sweep time: Auto
- Detector mode: Positive peak
- Indication mode: max hold

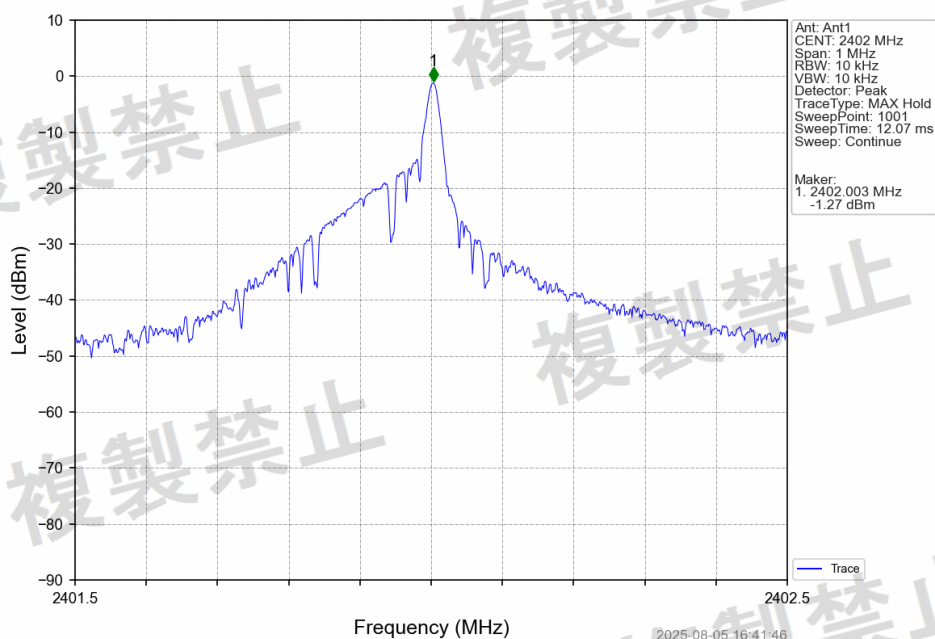
TEST RESULTS

Both left and right earphone were tested, and only the worst mode was recorded(left earphone).

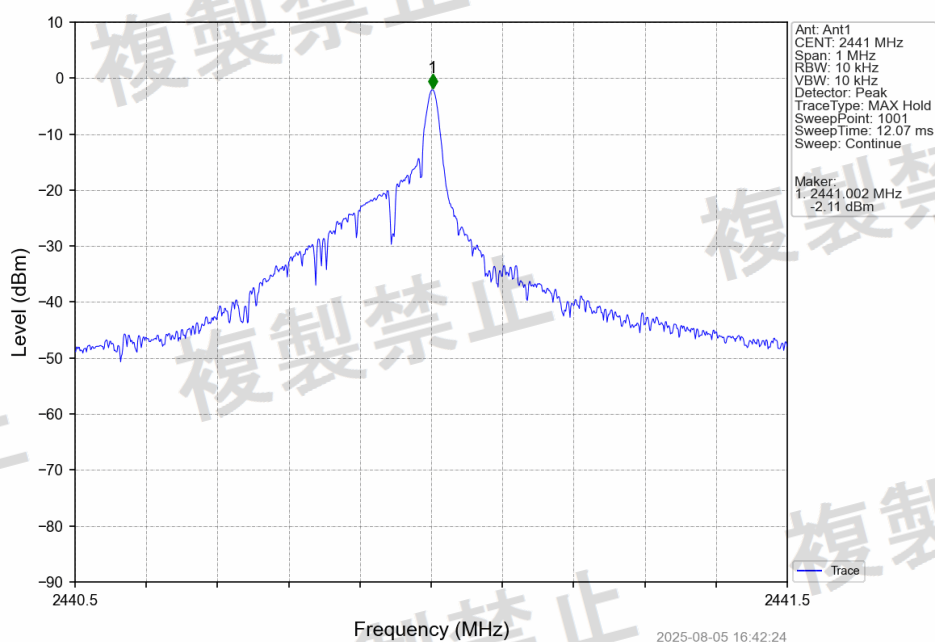
Ant1								
ENV	Mode	TX Type	Frequency (MHz)	Packet Type	Measured Frequency (MHz)	Tolerance (ppm)		Verdict
						Result	Limit	
NTNV	Carrier Wave	SISO	2402	DH5	2402.003	1.25	-50 to 50	Pass
			2441	DH5	2441.002	0.82	-50 to 50	Pass
			2480	DH5	2480.001	0.40	-50 to 50	Pass
NTLV	Carrier Wave	SISO	2402	DH5	2402.002	0.83	-50 to 50	Pass
			2441	DH5	2441.002	0.82	-50 to 50	Pass
			2480	DH5	2480.001	0.40	-50 to 50	Pass
NTHV	Carrier Wave	SISO	2402	DH5	2402.002	0.83	-50 to 50	Pass
			2441	DH5	2441.002	0.82	-50 to 50	Pass
			2480	DH5	2480.001	0.40	-50 to 50	Pass



Frequency Error_NTNV_Carrier Wave_2402MHz_Ant1_NTNV

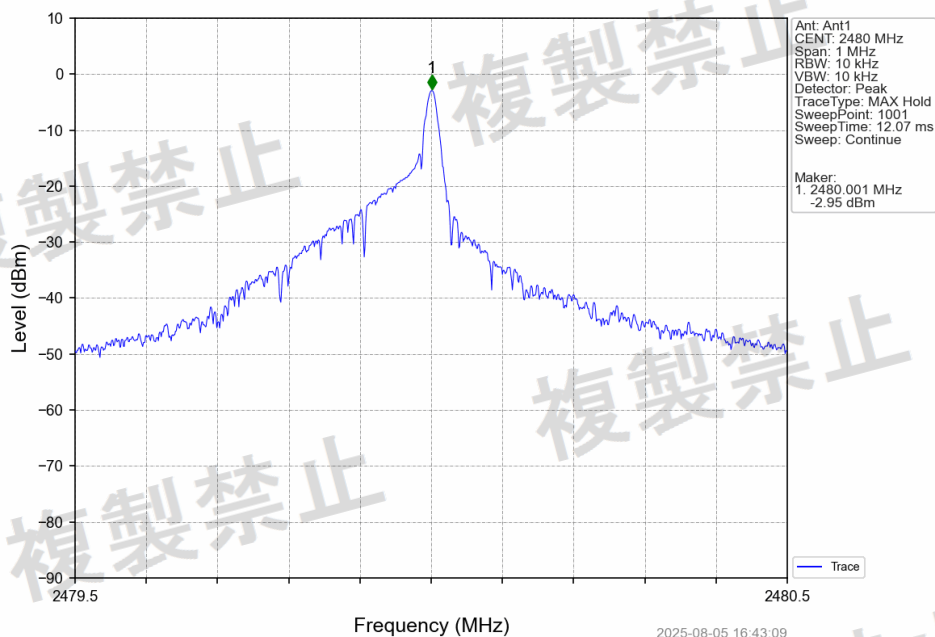


Frequency Error_NTNV_Carrier Wave_2441MHz_Ant1_NTNV

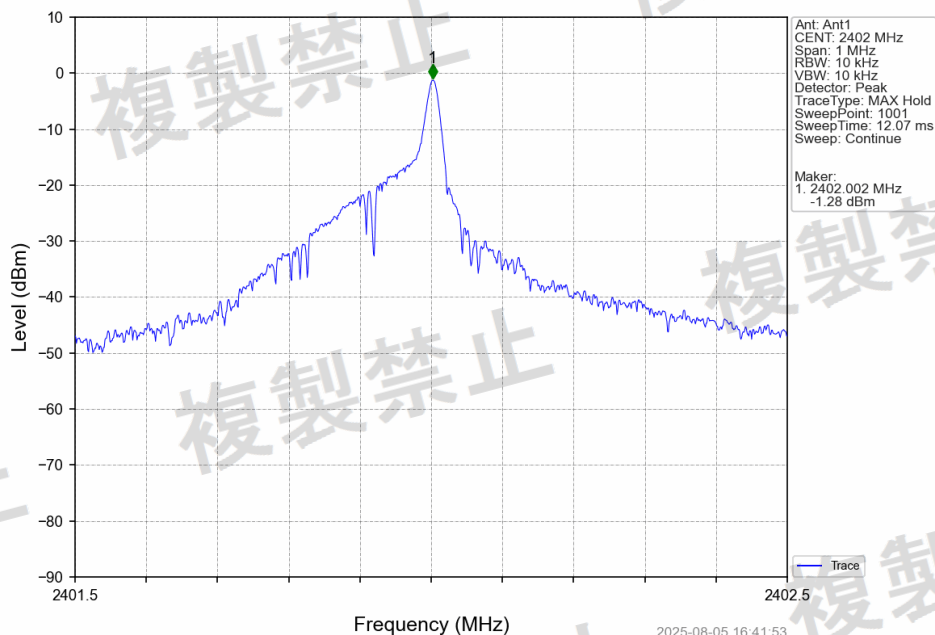




Frequency Error_NTNV_Carrier Wave_2480MHz_Ant1_NTNV

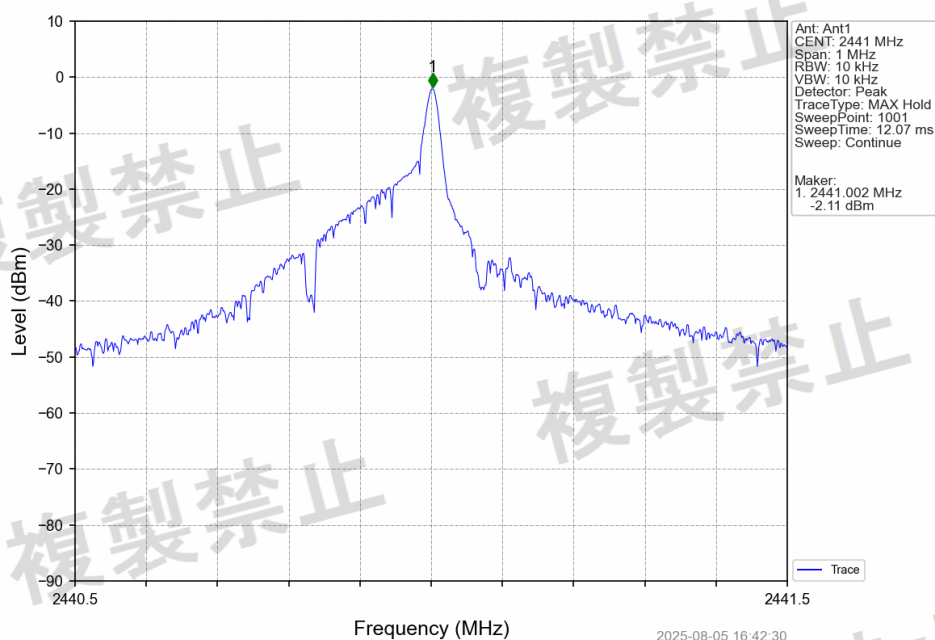


Frequency Error_NTLV_Carrier Wave_2402MHz_Ant1_NTLV

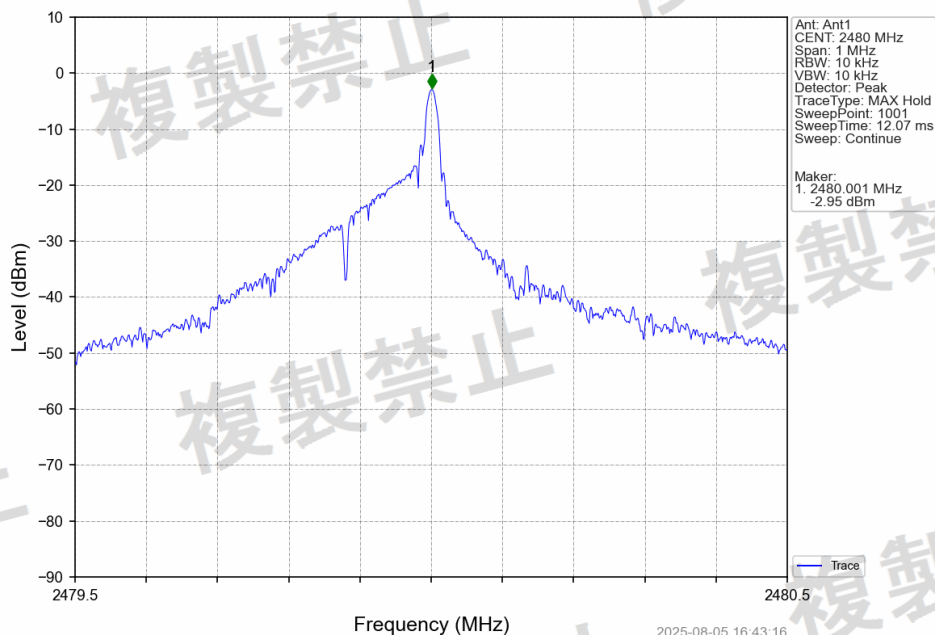


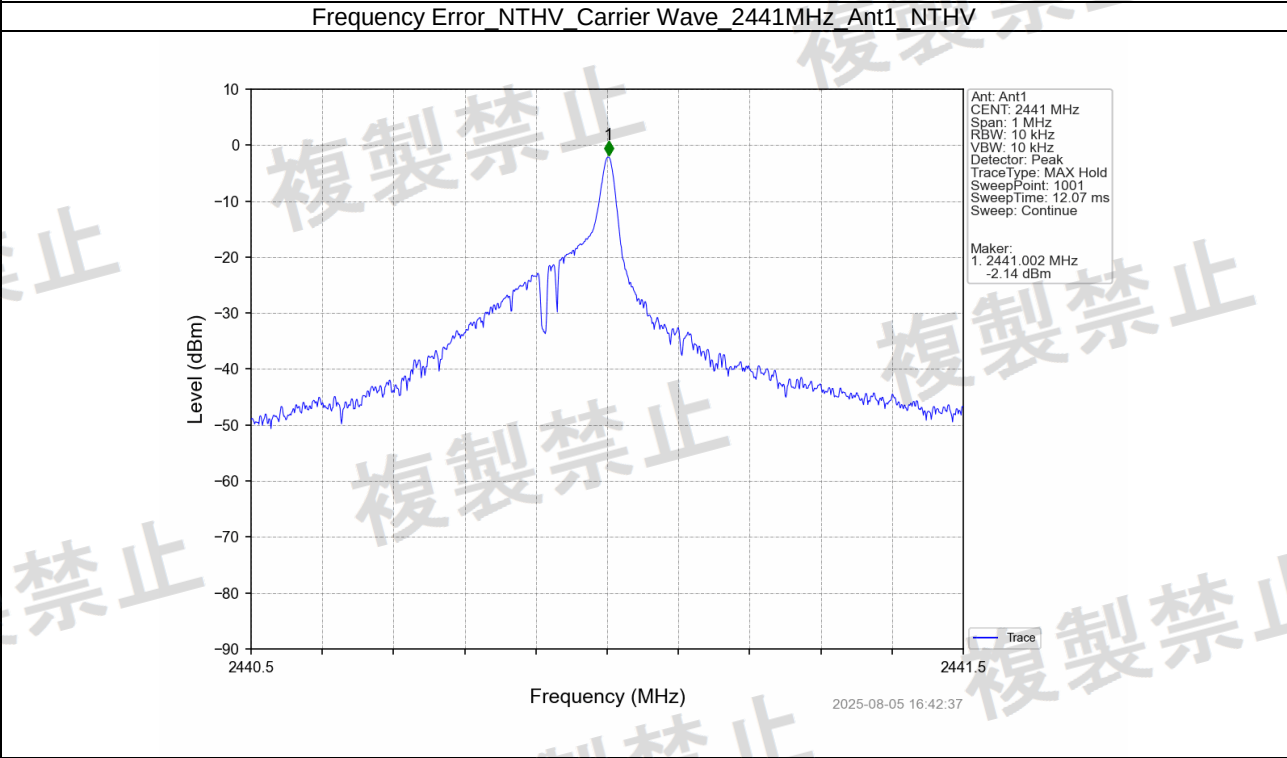
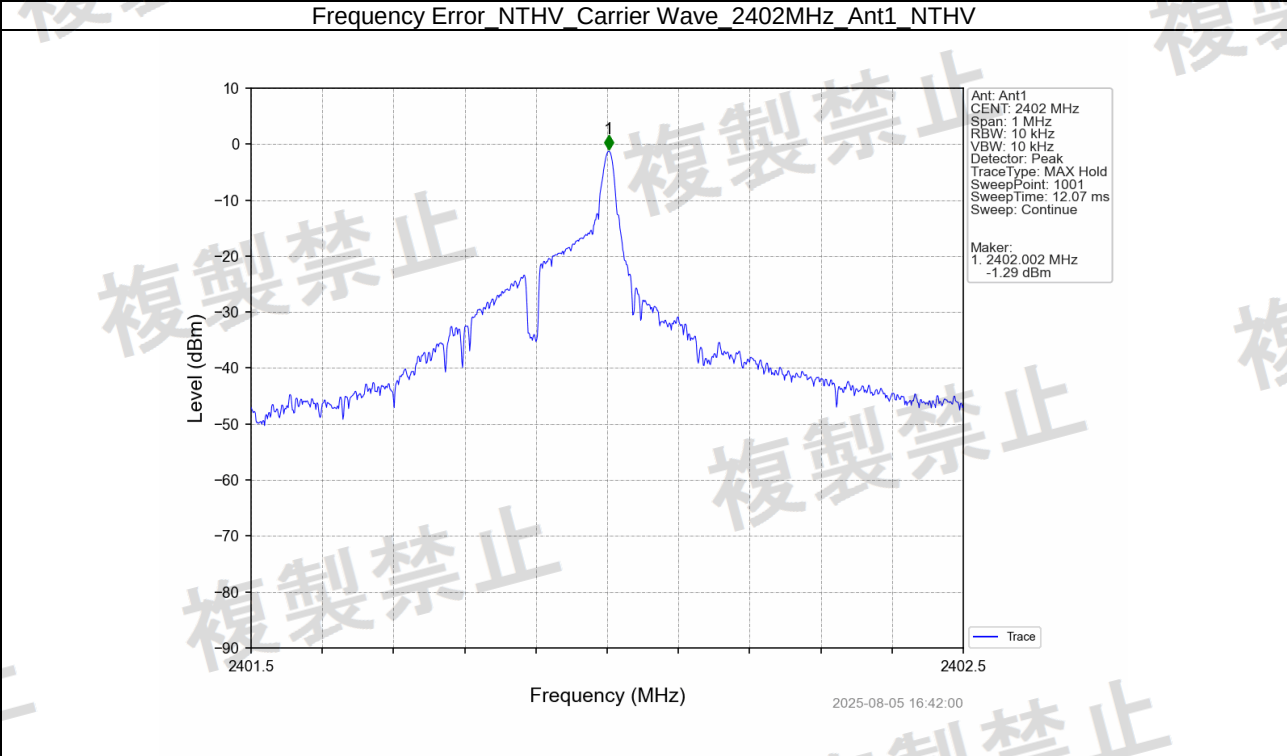


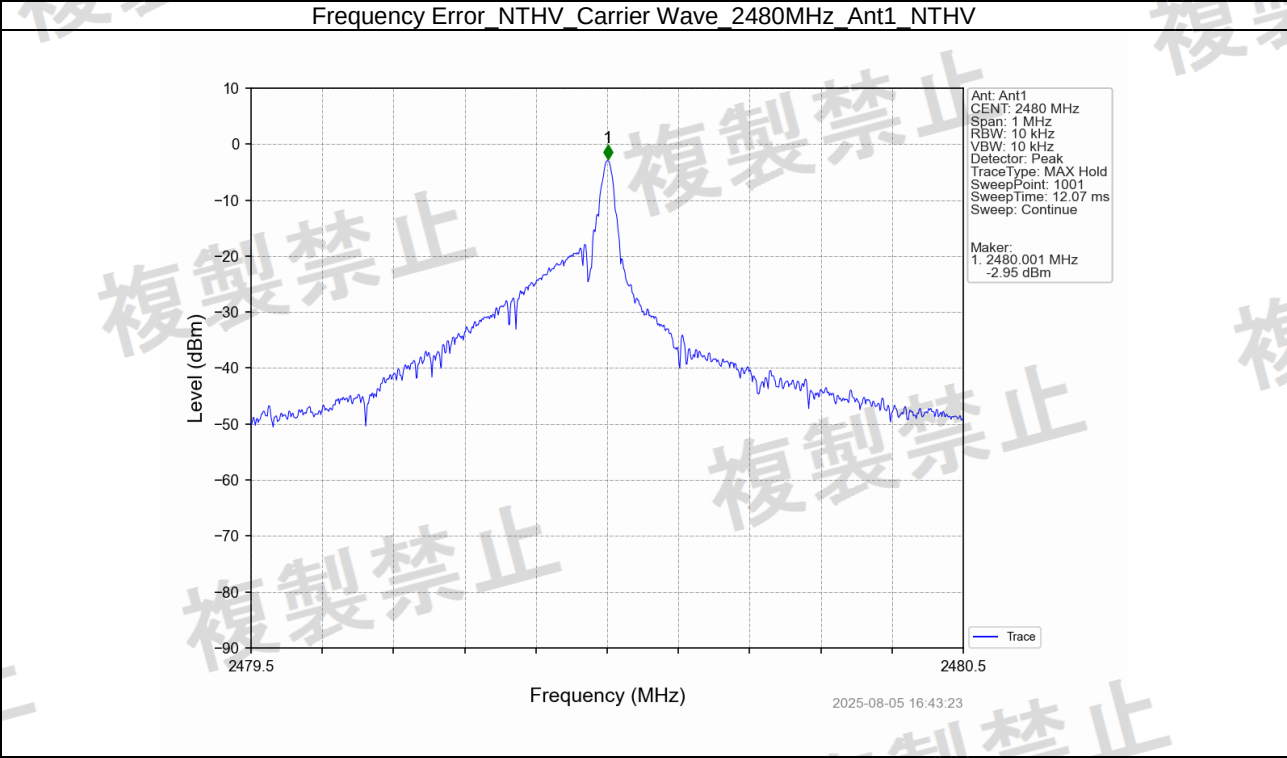
Frequency Error NTLV Carrier Wave 2441MHz Ant1 NTLV



Frequency Error NTLV Carrier Wave 2480MHz Ant1 NTLV







3.2. Antenna Output Power and Output Power Tolerance

LIMIT

- $\leq 3 \text{ mW /MHz}$ (FHSS from 2402-2480 MHz)
- $\leq 10 \text{ mW/MHz}$ (OFDM, DSSS from 2400-2483.5 MHz)
- $\leq 10 \text{ mW}$ (other from 2400-2483.5 MHz)

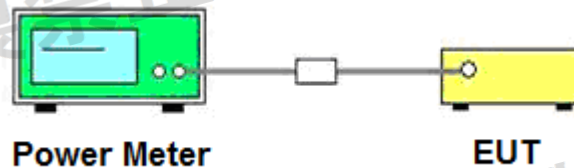
The Output Power Tolerance must be within +20%

E.i.r.p:

- $\leq 12.14 \text{ dBm/MHz}$ (OFDM, DS form 2400-2483.5 MHz)

Note: E.I.R.P will not be applied to the transmission antenna which has a gain of 2.14dBi or less.

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT was placed on a table which is 0.8m above ground plane.
2. The EUT was directly connected to the Power meter.
3. EUT have transmitted continuous maximum power of hopping mode (For FHSS Device);
4. The Antenna Power Density (PD) is equal to the:
 $PD = \text{Average value} / (\text{Duty Cycle} * \text{Spreading bandwidth})$;
5. Antenna Power Error is definition that actual measure antenna power tolerance between +20% power range that base on manufacturer declare the conducted power density.

TEST RESULTS

Left earphone:

ENV	Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Antenna Power (mW/MHz)		Nominal Power (mW/MHz)	Tolerance (%)		Verdict
						Measured	Limit		Measured	Limit	
NTNV	GFSK	SISO	HOPP	DH5	1	0.012	≤ 3.00	0.012	0.00	+20	Pass
	Pi/4DQPSK	SISO	HOPP	2DH5	1	0.005	≤ 3.00	0.010	-50.00	+20	Pass
NTLV	GFSK	SISO	HOPP	DH5	1	0.012	≤ 3.00	0.012	0.00	+20	Pass
	Pi/4DQPSK	SISO	HOPP	2DH5	1	0.008	≤ 3.00	0.010	-20.00	+20	Pass
NTHV	GFSK	SISO	HOPP	DH5	1	0.012	≤ 3.00	0.012	0.00	+20	Pass
	Pi/4DQPSK	SISO	HOPP	2DH5	1	0.006	≤ 3.00	0.010	-40.00	+20	Pass

Right earphone:

ENV	Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Antenna Power (mW/MHz)		Nominal Power (mW/MHz)	Tolerance (%)		Verdict
						Measured	Limit		Measured	Limit	
NTNV	GFSK	SISO	HOPP	DH5	1	0.011	≤ 3.00	0.012	-8.33	+20	Pass
	Pi/4DQPSK	SISO	HOPP	2DH5	1	0.003	≤ 3.00	0.010	-70.00	+20	Pass
NTLV	GFSK	SISO	HOPP	DH5	1	0.011	≤ 3.00	0.012	-8.33	+20	Pass
	Pi/4DQPSK	SISO	HOPP	2DH5	1	0.006	≤ 3.00	0.010	-40.00	+20	Pass
NTHV	GFSK	SISO	HOPP	DH5	1	0.011	≤ 3.00	0.012	-8.33	+20	Pass
	Pi/4DQPSK	SISO	HOPP	2DH5	1	0.005	≤ 3.00	0.010	-50.00	+20	Pass

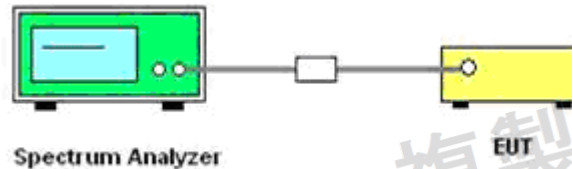


3.3. OCCUPIED BANDWIDTH AND SPREADING BANDWIDTH

LIMIT

- Occupied bandwidth: FH $\leq$ 83.5 MHz; OFDM $\leq$ 38 MHz; DS $\leq$ 26 MHz; Others $\leq$ 26 MHz
- Spread Bandwidth: $\geq$ 500 kHz (FH, DS)
- Spread factor $>$ 5.

TEST CONFIGURATION



TEST PROCEDURE

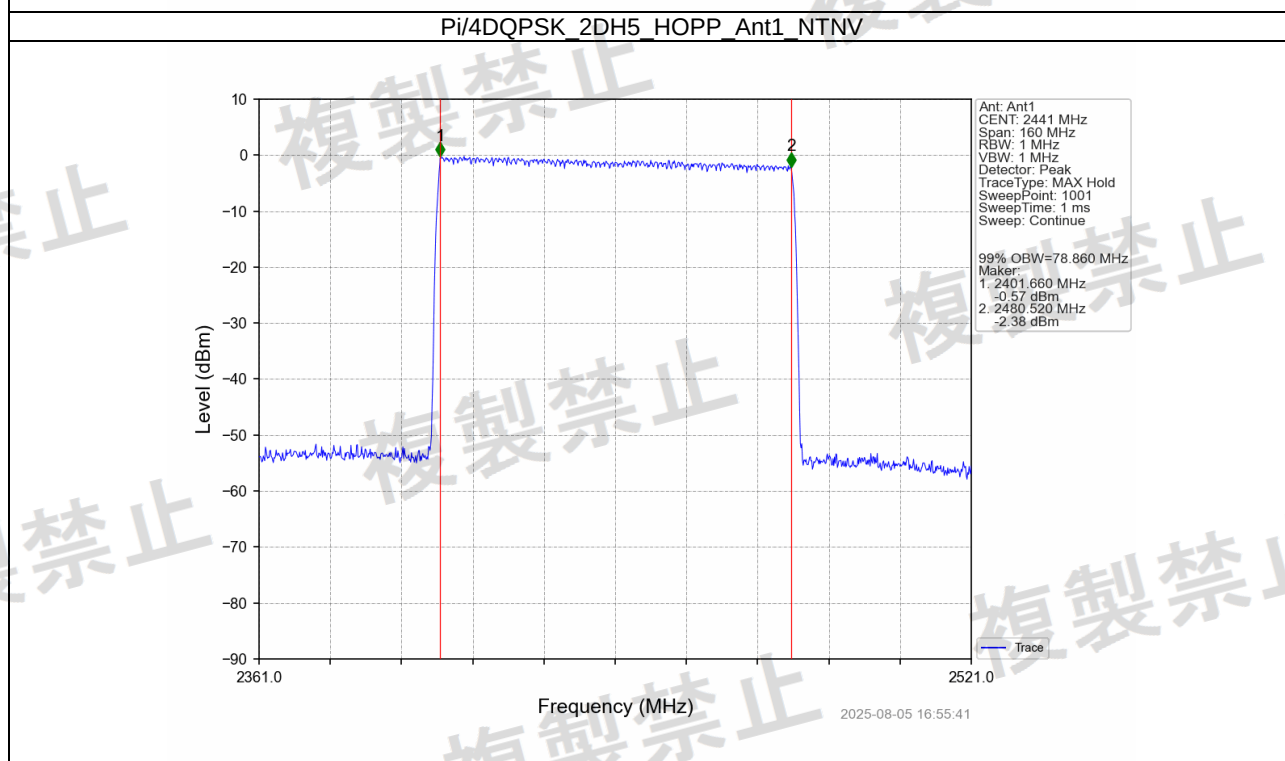
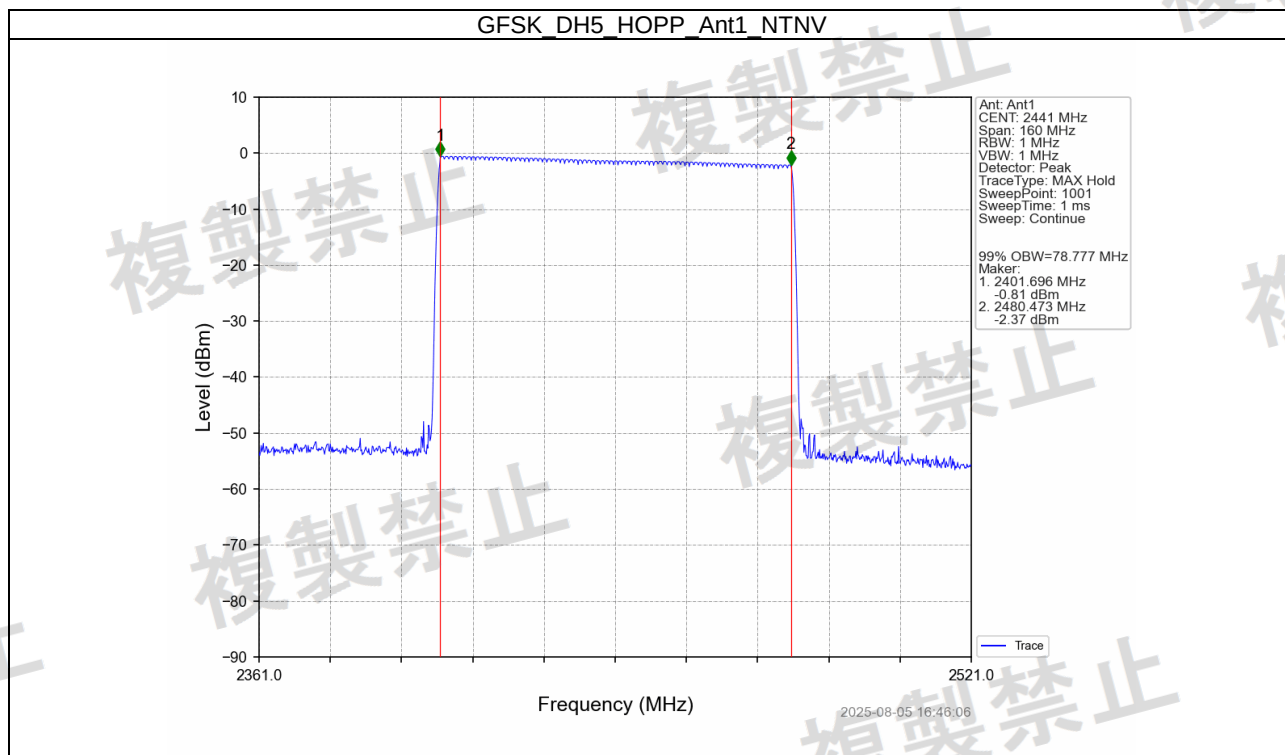
1. Setting of SA is following as follow:
 - RBW: under 3% of OBW
 - VBW: = RBW
 - Sweep time: Auto
 - Sweep Mode: Continuous sweep
 - Detect mode: Positive peak
 - Trace mode: Max hold
2. EUT have transmitted the maximum modulation signal and fixed channelize. SA set to 99% of occupied bandwidth to measure occupied bandwidth.
3. EUT have transmitted the maximum modulation signal and fixed channelize. SA set to 90% of occupied bandwidth to measure spread bandwidth.
4. Spread Factor=Spread Bandwidth/modulation rate. The modulation rate: MR=1Mbps (declare by client)

TEST RESULTS

Both left and right earphone were tested, and only the worst mode was recorded(left earphone).

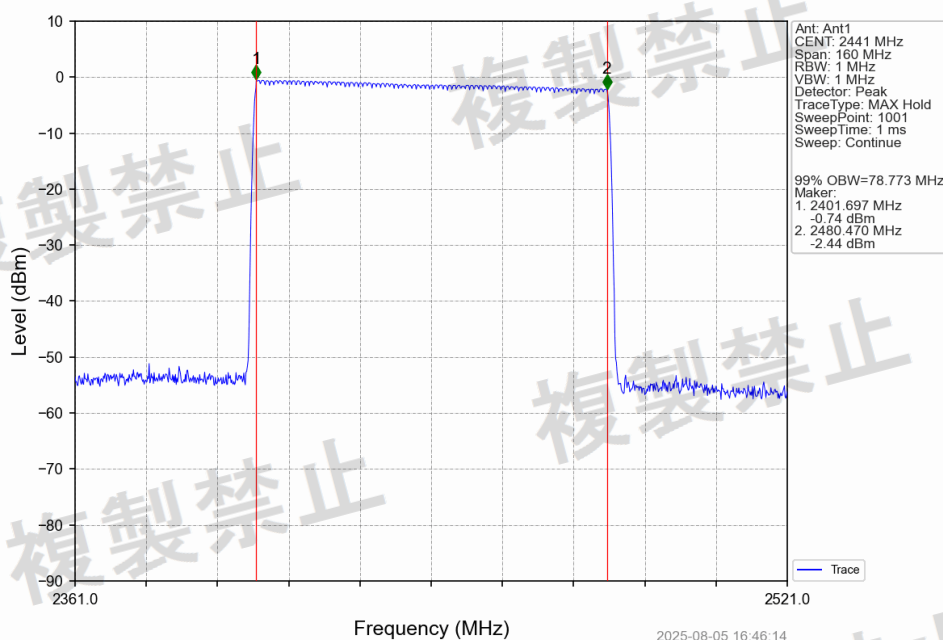
Test Result of Occupied Bandwidth

ENV	Mode	TX Type	Frequency (MHz)	Packet Type	99% Occupied Bandwidth (MHz)		Verdict
					ANT1	Limit	
NTNV	GFSK	SISO	HOPP	DH5	78.777	$\leq$ 83.5	Pass
	Pi/4DQPSK	SISO	HOPP	2DH5	78.860	$\leq$ 83.5	Pass
NTLV	GFSK	SISO	HOPP	DH5	78.773	$\leq$ 83.5	Pass
	Pi/4DQPSK	SISO	HOPP	2DH5	78.835	$\leq$ 83.5	Pass
NTHV	GFSK	SISO	HOPP	DH5	78.786	$\leq$ 83.5	Pass
	Pi/4DQPSK	SISO	HOPP	2DH5	78.882	$\leq$ 83.5	Pass

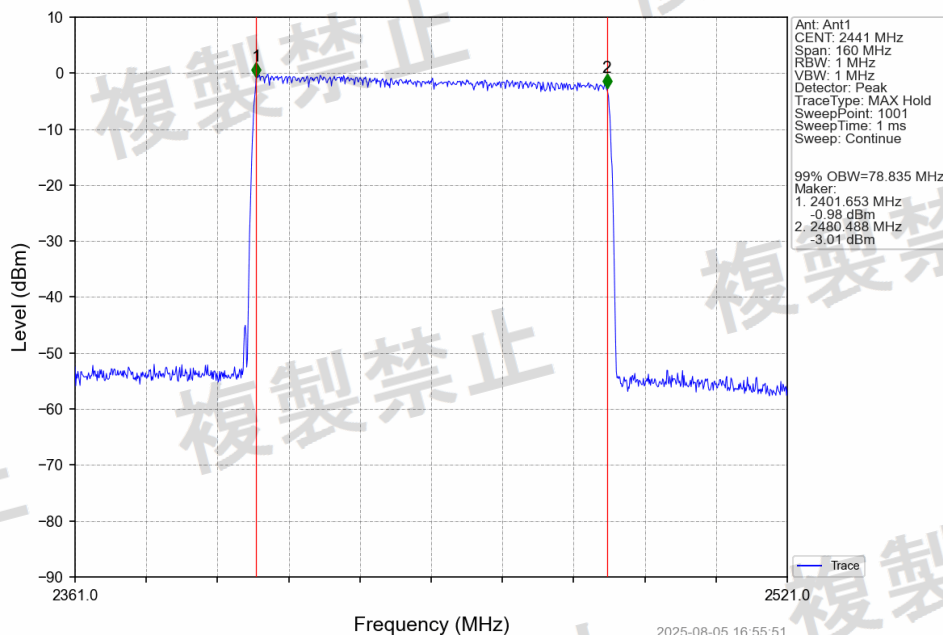




GFSK_DH5_HOPP_Ant1_NTLV

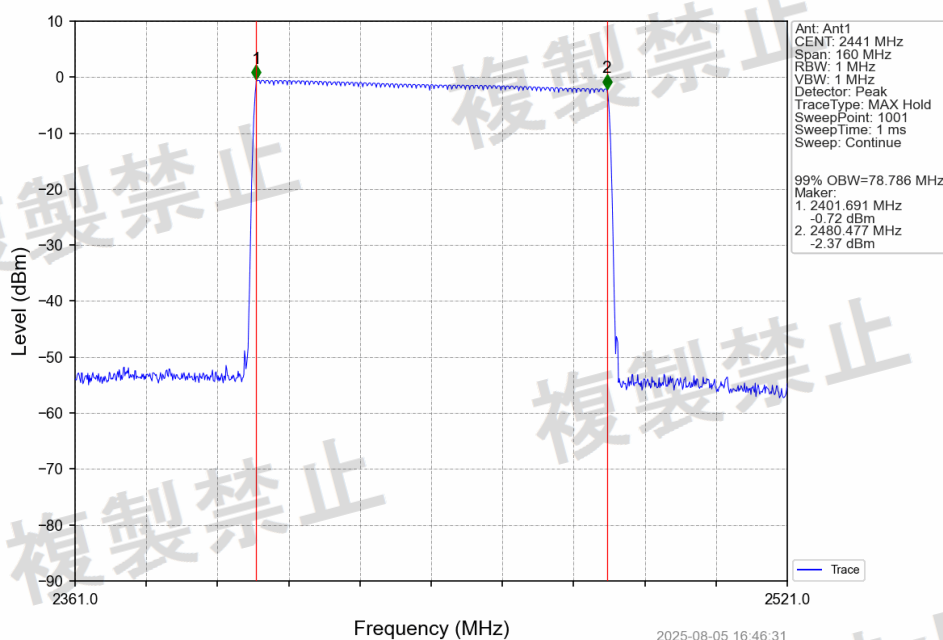


Pi/4DQPSK_2DH5_HOPP_Ant1_NTLV

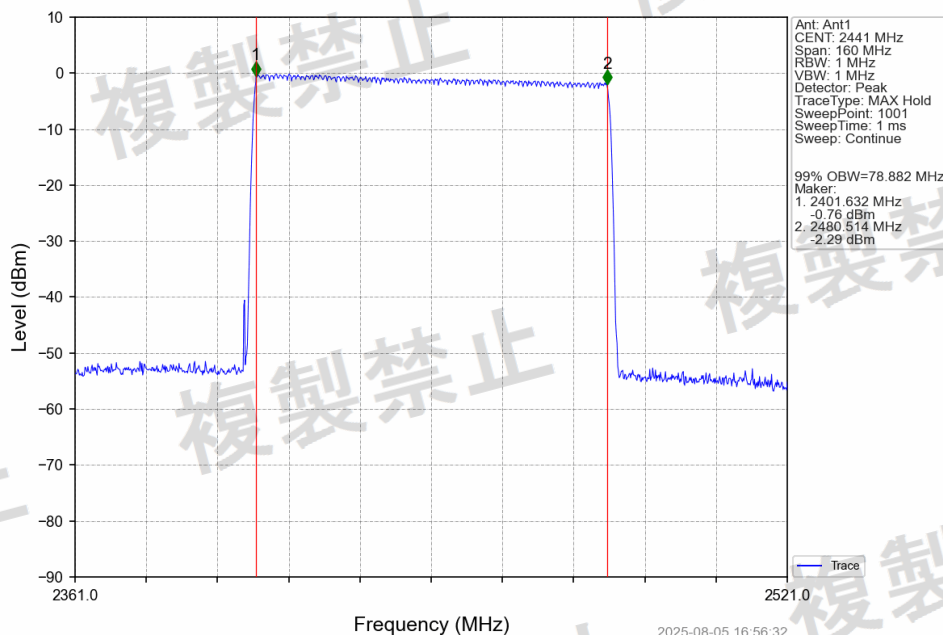




GFSK DH5_HOPP_Ant1_NTHV



Pi/4DQPSK_2DH5_HOPP_Ant1_NTHV





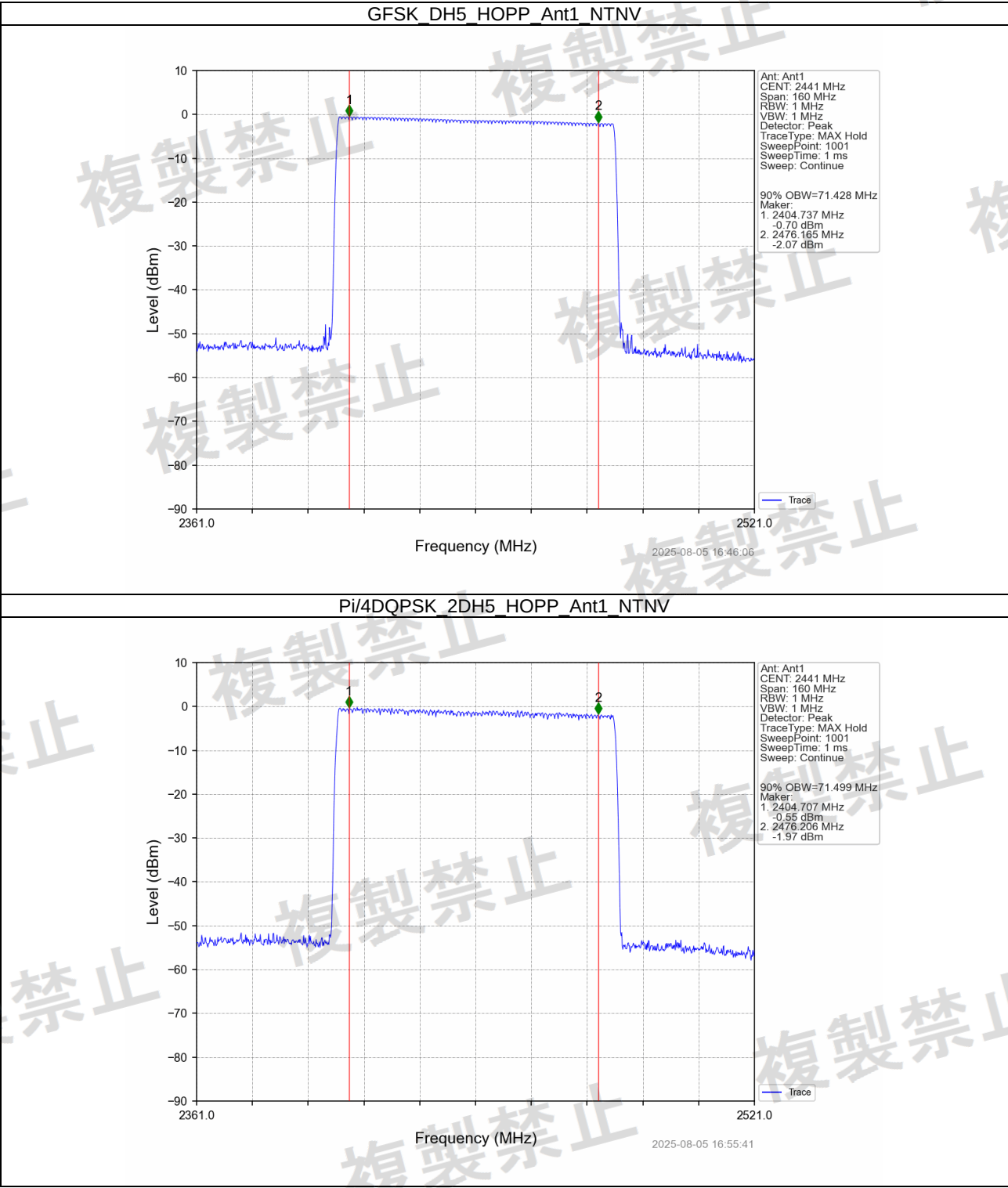
Test Result of Spectrum Bandwidth

ENV	Mode	TX Type	Frequency (MHz)	Packet Type	Spread Bandwidth (MHz)		Verdict
					ANT1	Limit	
NTNV	GFSK	SISO	HOPP	DH5	71.428	/	Only For Report
	Pi/4DQPSK	SISO	HOPP	2DH5	71.499	/	Only For Report
NTLV	GFSK	SISO	HOPP	DH5	71.442	/	Only For Report
	Pi/4DQPSK	SISO	HOPP	2DH5	71.637	/	Only For Report
NTHV	GFSK	SISO	HOPP	DH5	71.455	/	Only For Report
	Pi/4DQPSK	SISO	HOPP	2DH5	71.550	/	Only For Report

Test Result of Spread Spectrum Factor

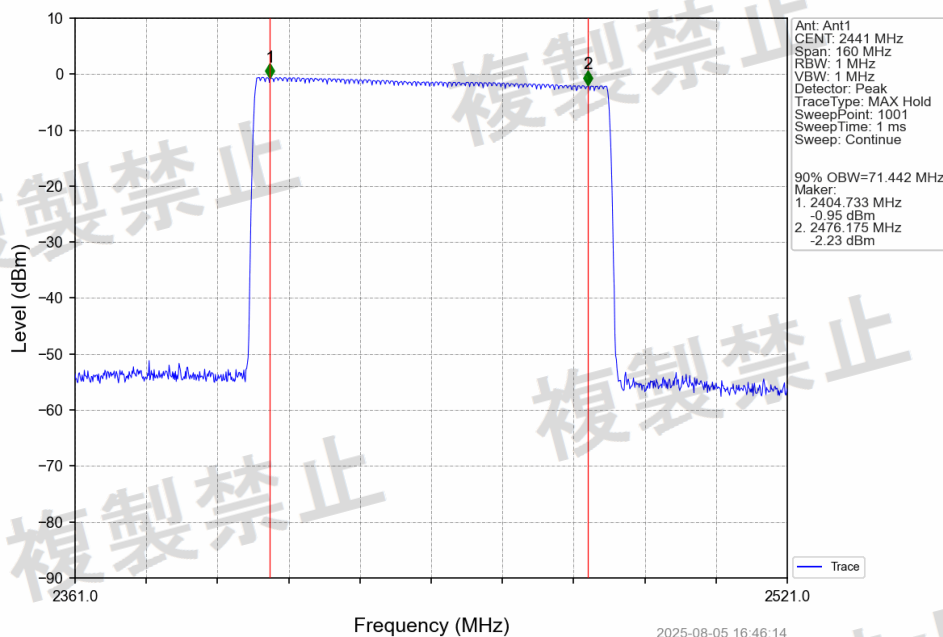
ENV	Mode	TX Type	Frequency (MHz)	Packet Type	Spread Factor		Verdict
					ANT1	Limit	
NTNV	GFSK	SISO	HOPP	DH5	71.430	≥ 5	Only For Report
	Pi/4DQPSK	SISO	HOPP	2DH5	71.500	≥ 5	Only For Report
NTLV	GFSK	SISO	HOPP	DH5	71.440	≥ 5	Only For Report
	Pi/4DQPSK	SISO	HOPP	2DH5	71.640	≥ 5	Only For Report
NTHV	GFSK	SISO	HOPP	DH5	71.460	≥ 5	Only For Report
	Pi/4DQPSK	SISO	HOPP	2DH5	71.550	≥ 5	Only For Report

Note1: Spread Factor = Spread Bandwidth / Symbol Rate, For Bluetooth, Symbol Rate = 1

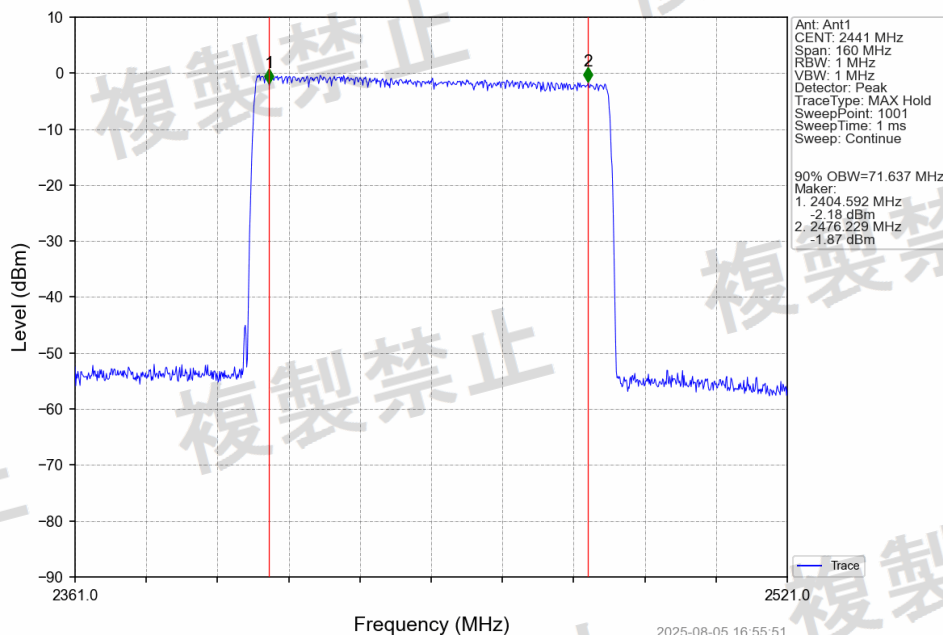




GFSK_DH5_HOPP_Ant1_NTLV

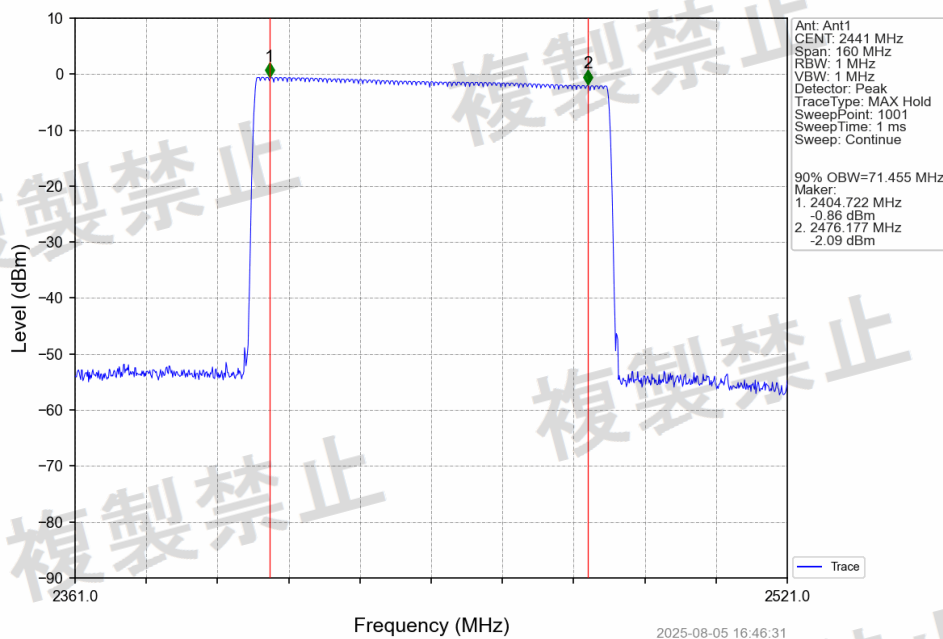


Pi/4DQPSK_2DH5_HOPP_Ant1_NTLV

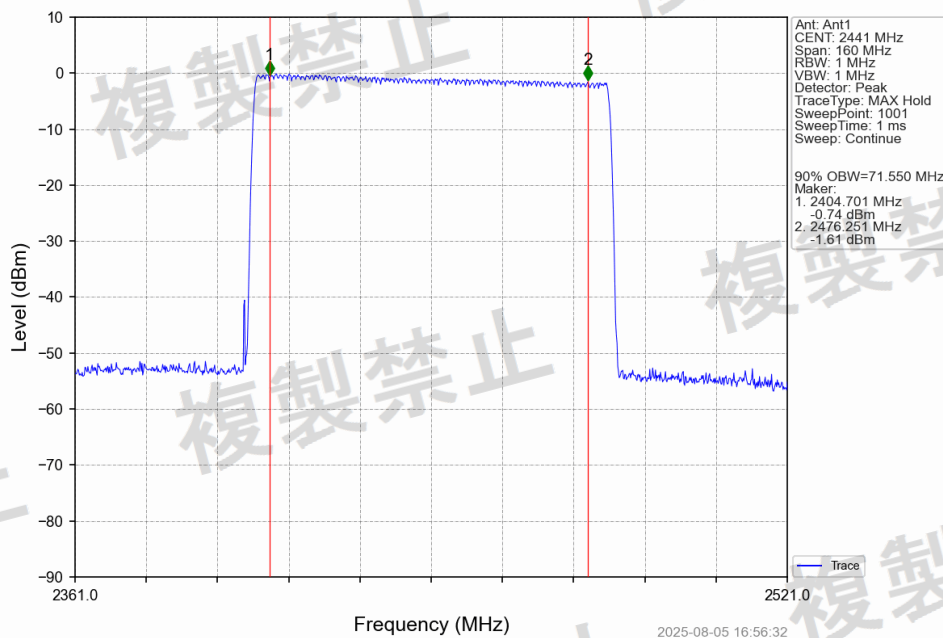




GFSK DH5 HOPP Ant1 NTHV



Pi/4DQPSK 2DH5 HOPP Ant1 NTHV



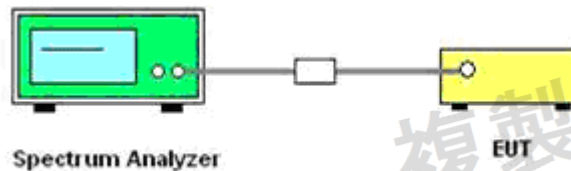


3.4. Dwell time

LIMIT

Frequency dwell time (time during which radio waves continue to be emitted at a specified frequency) of a transmitting equipment using the FH system shall be 0.4 seconds or less.

TEST CONFIGURATION



TEST PROCEDURE

The EUT was directly connected to the spectrum analyser and antenna output port as show in the block diagram as TEST CONFIGURATION shows.

EUT Condition: modulation

Spectrum Condition:

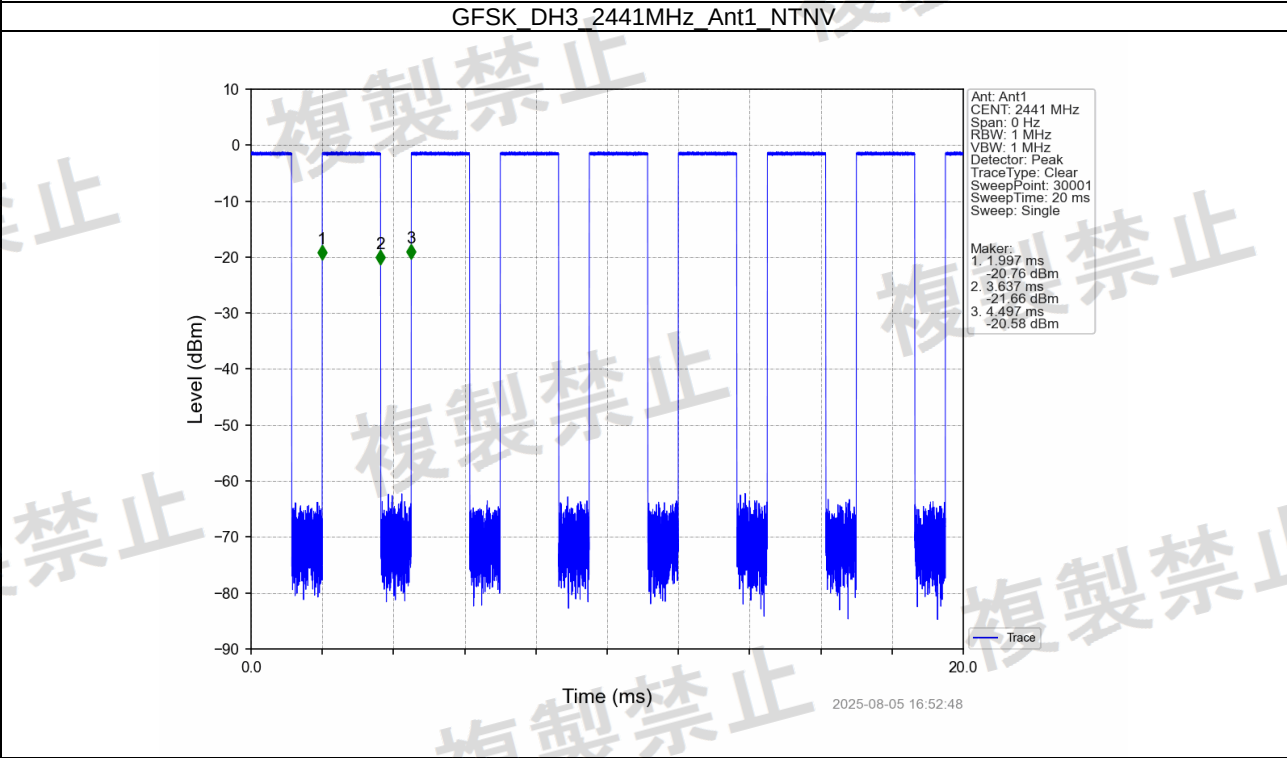
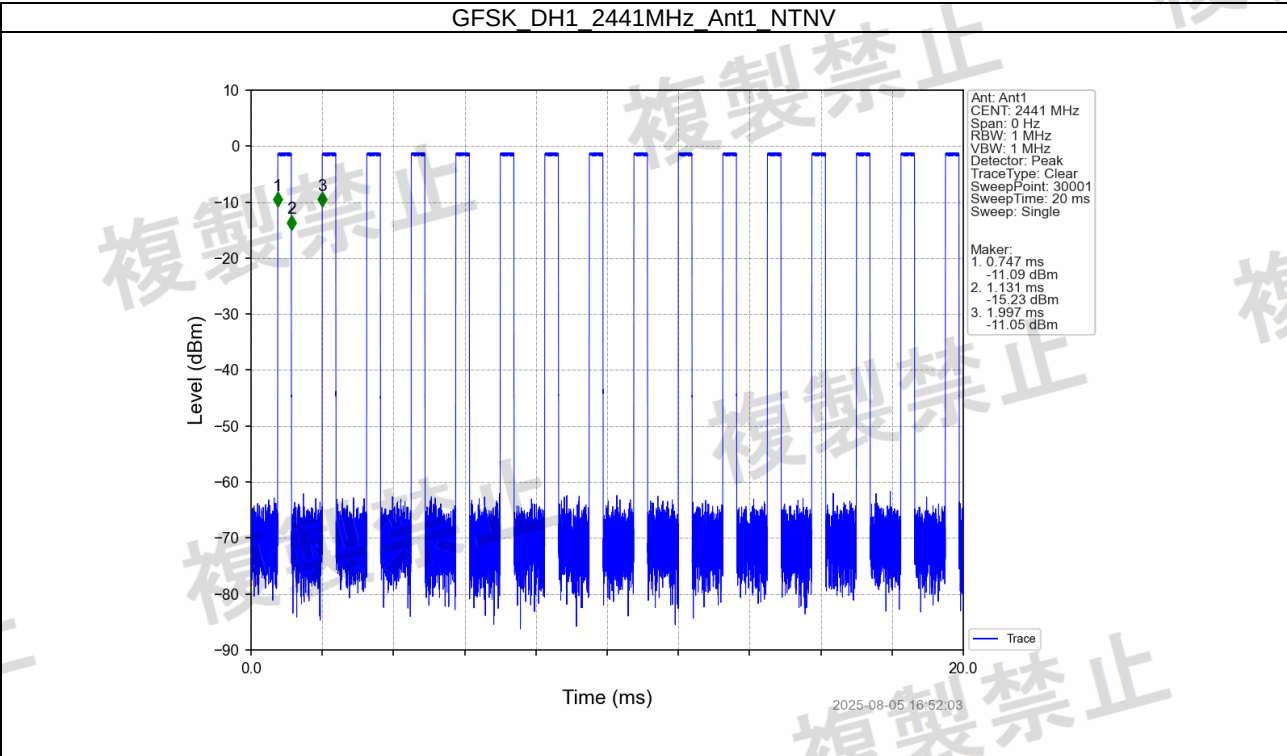
- Frequency: test channel
- Span=0MHz
- RBW: 1MHz
- VBW: 1MHz
- Sweep time: Auto
- Detector mode: Positive peak

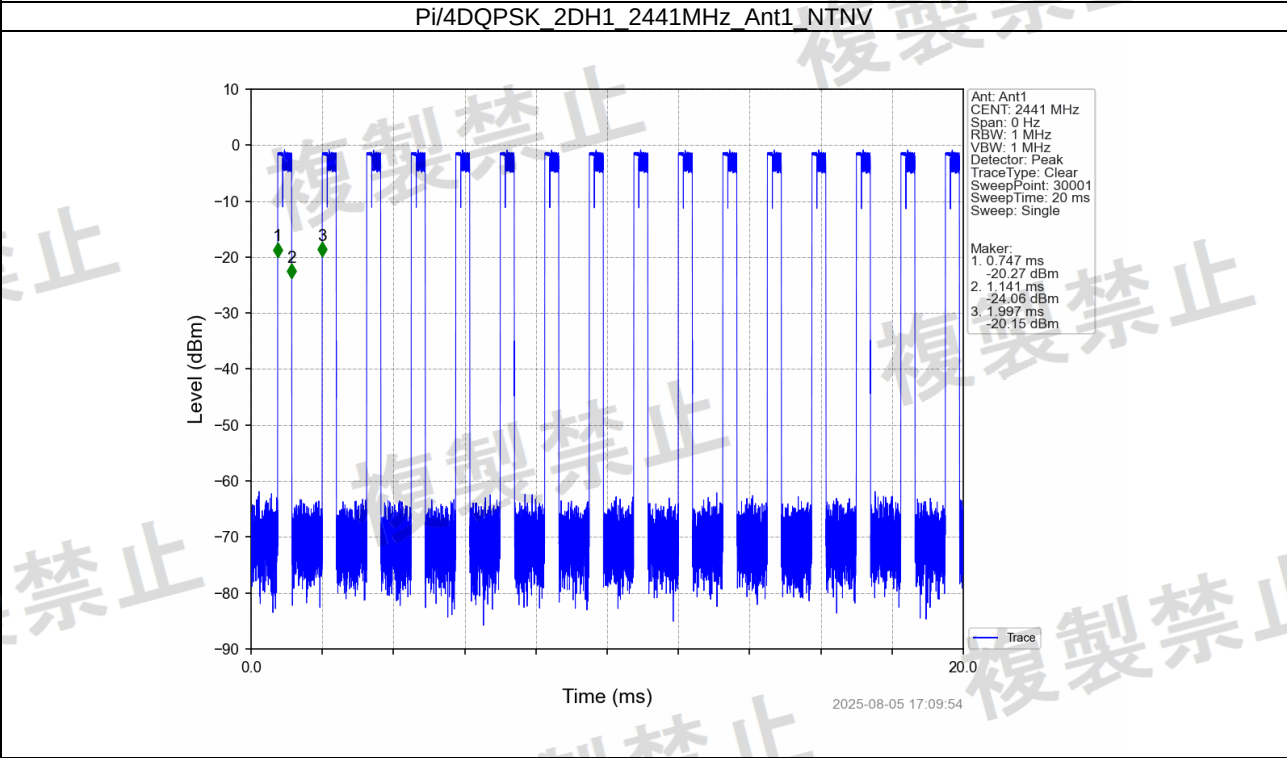
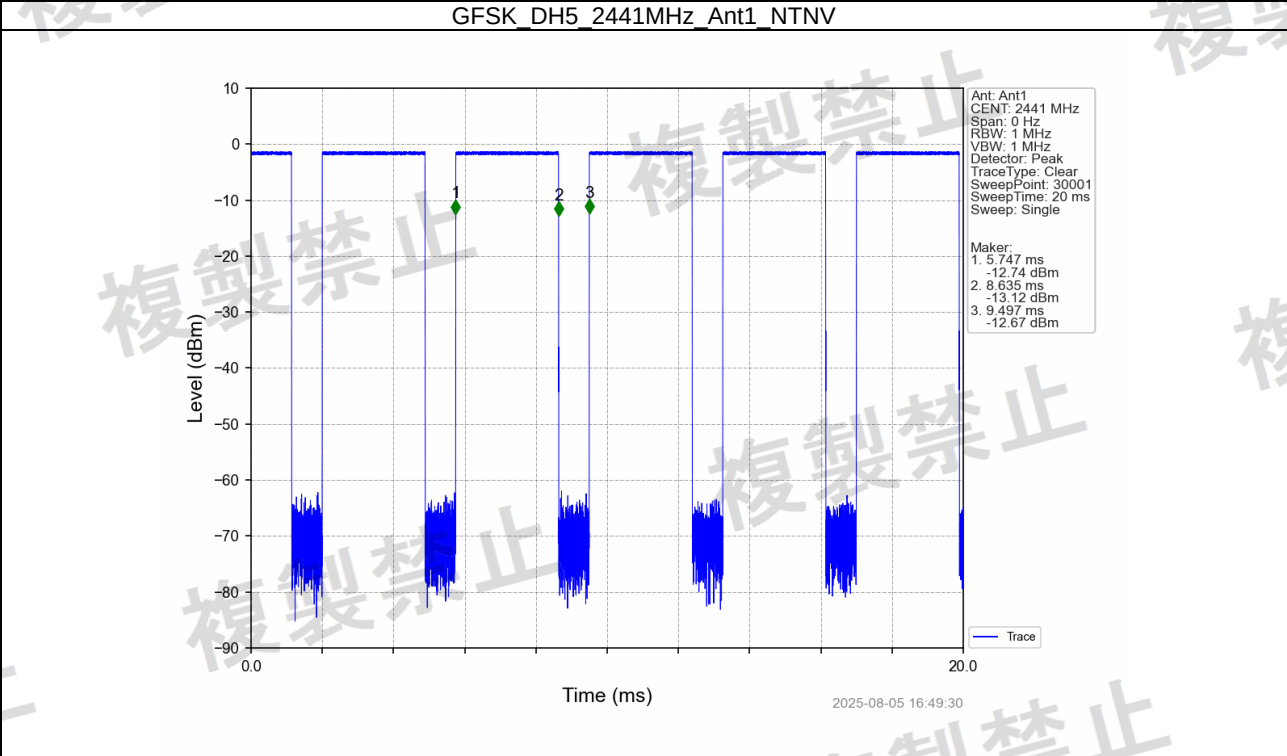
TEST RESULTS

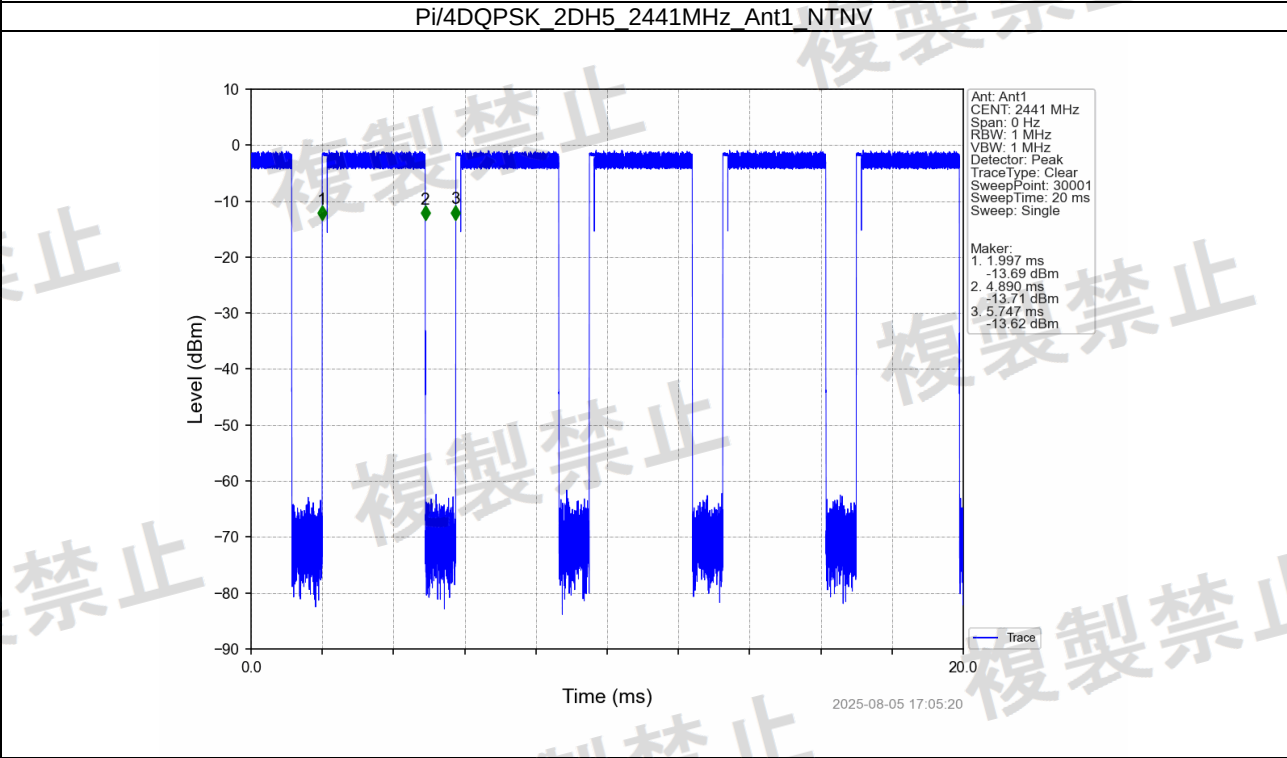
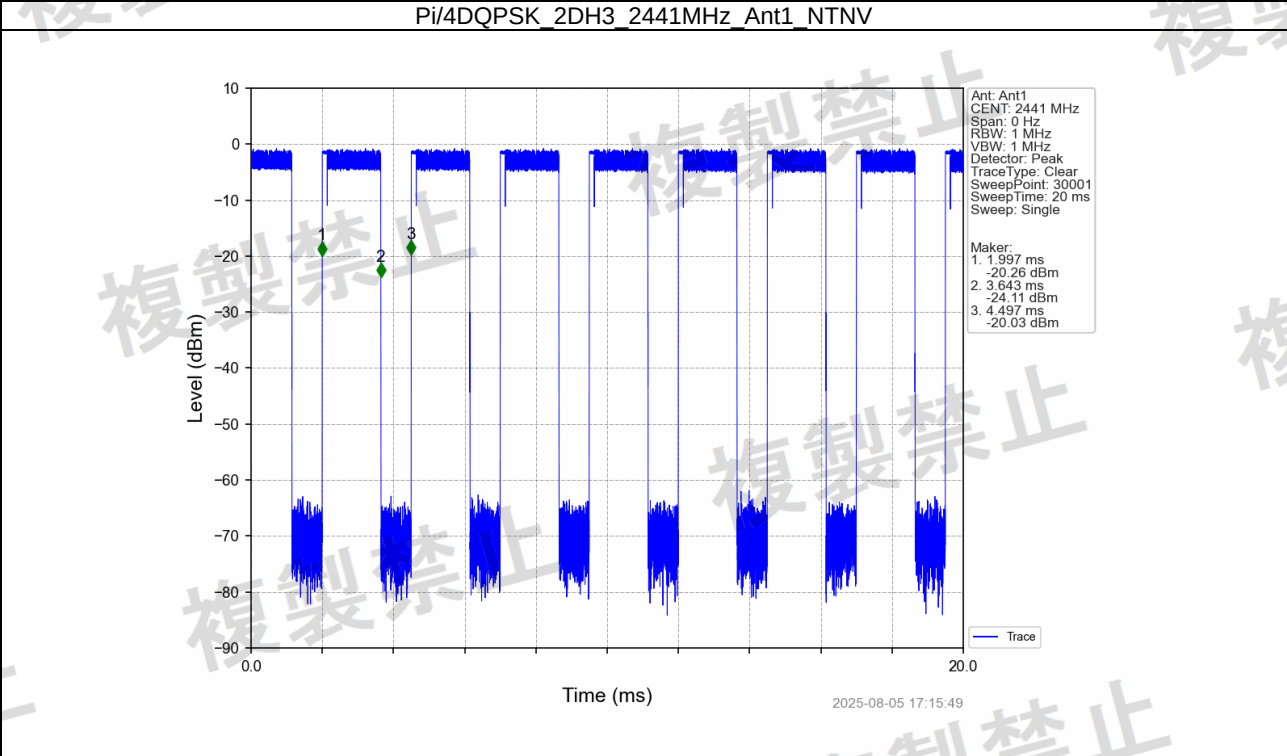
Both left and right earphone were tested, and only the worst mode was recorded(left earphone).

Ant1											
ENV	Mode	TX Type	Frequency (MHz)	Packet Type	Spreading Rate	T_on (ms)	Period (ms)	Hopp Number	Dwell Time (ms)		Verdict
									Result	Limit	
NTNV	GFSK	SISO	2441	DH1	71.428	0.384	1.250	79	111.102	<=400	Pass
				DH3	71.428	1.640	2.500	79	237.249	<=400	Pass
				DH5	71.428	2.888	3.750	79	278.527	<=400	Pass
	Pi/4DQPSK	SISO	2441	2DH1	71.499	0.394	1.250	79	114.109	<=400	Pass
				2DH3	71.499	1.646	2.500	79	238.354	<=400	Pass
				2DH5	71.499	2.893	3.750	79	279.287	<=400	Pass
NTLV	GFSK	SISO	2441	DH1	71.442	0.384	1.250	79	111.124	<=400	Pass
				DH3	71.442	1.640	2.500	79	237.296	<=400	Pass
				DH5	71.442	2.888	3.750	79	278.582	<=400	Pass
	Pi/4DQPSK	SISO	2441	2DH1	71.637	0.394	1.250	79	114.329	<=400	Pass
				2DH3	71.637	1.645	2.500	79	238.669	<=400	Pass
				2DH5	71.637	2.893	3.750	79	279.826	<=400	Pass
NTHV	GFSK	SISO	2441	DH1	71.455	0.384	1.250	79	111.144	<=400	Pass
				DH3	71.455	1.640	2.500	79	237.339	<=400	Pass
				DH5	71.455	2.888	3.750	79	278.632	<=400	Pass
	Pi/4DQPSK	SISO	2441	2DH1	71.550	0.394	1.250	79	114.190	<=400	Pass
				2DH3	71.550	1.646	2.500	79	238.524	<=400	Pass
				2DH5	71.550	2.894	3.750	79	279.582	<=400	Pass

*Note: Dwell time= (400 x spreading rate x Ton) / (Period x 79)

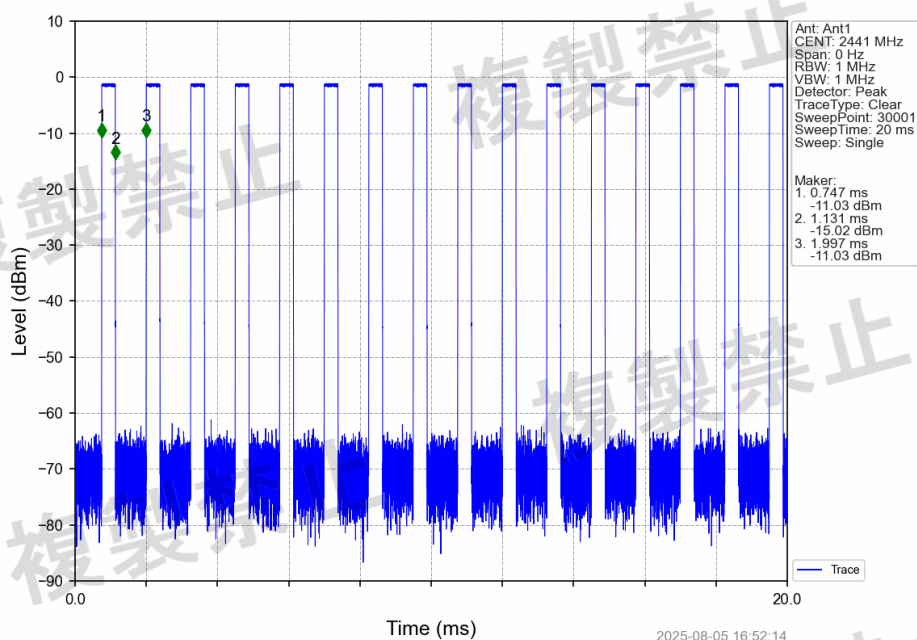




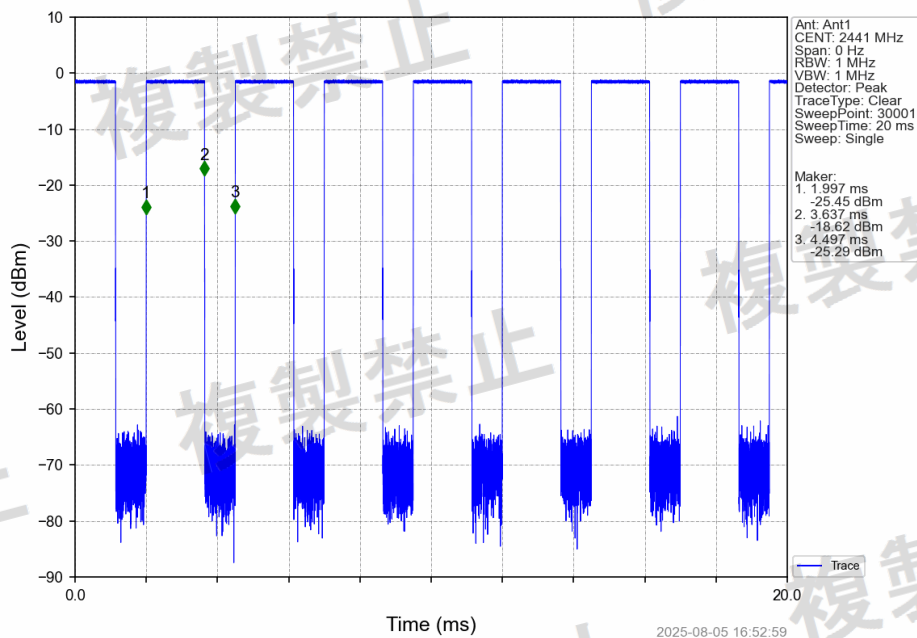


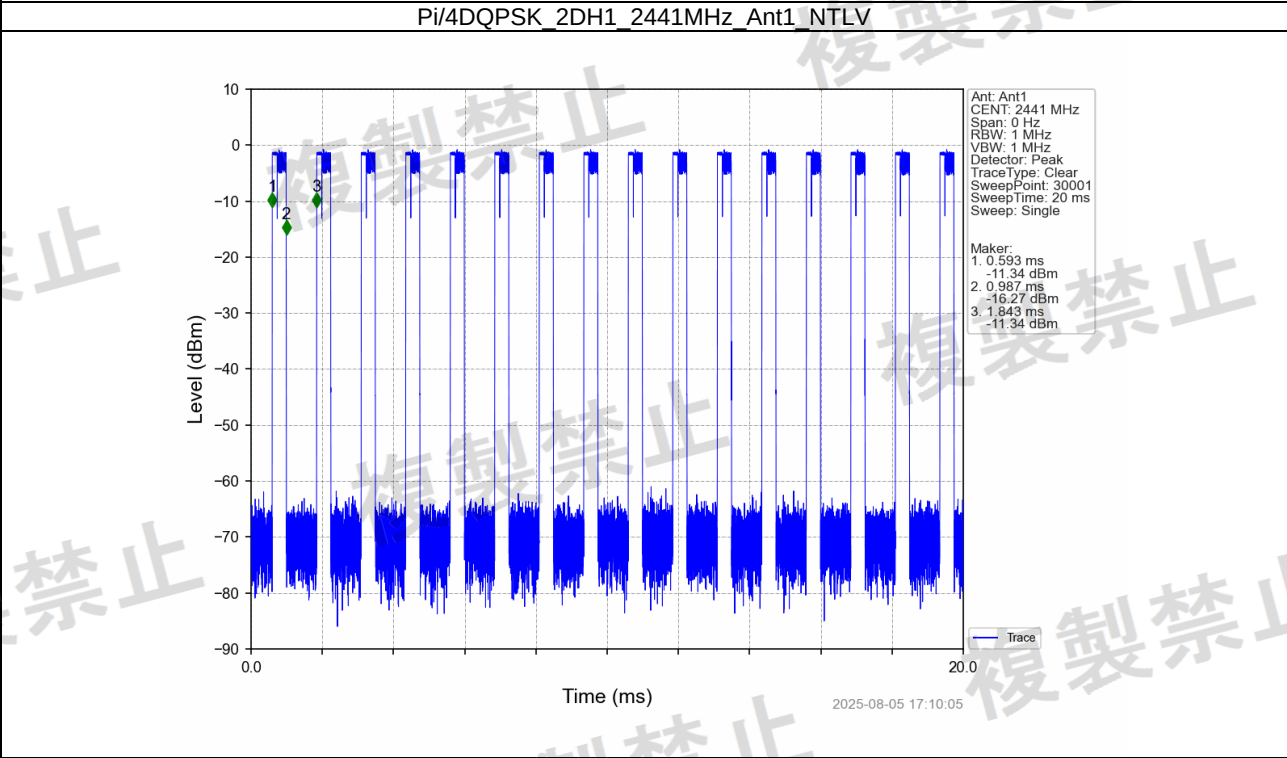
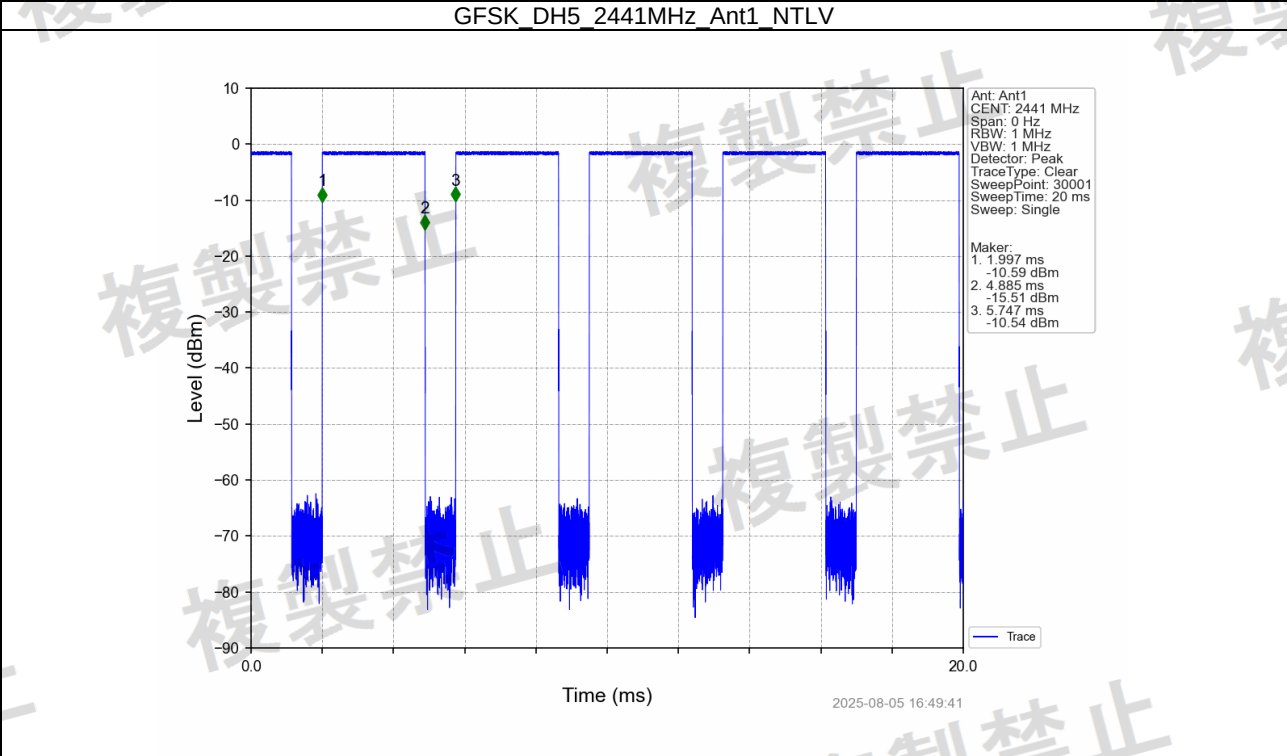


GFSK DH1 2441MHz Ant1 NTLV



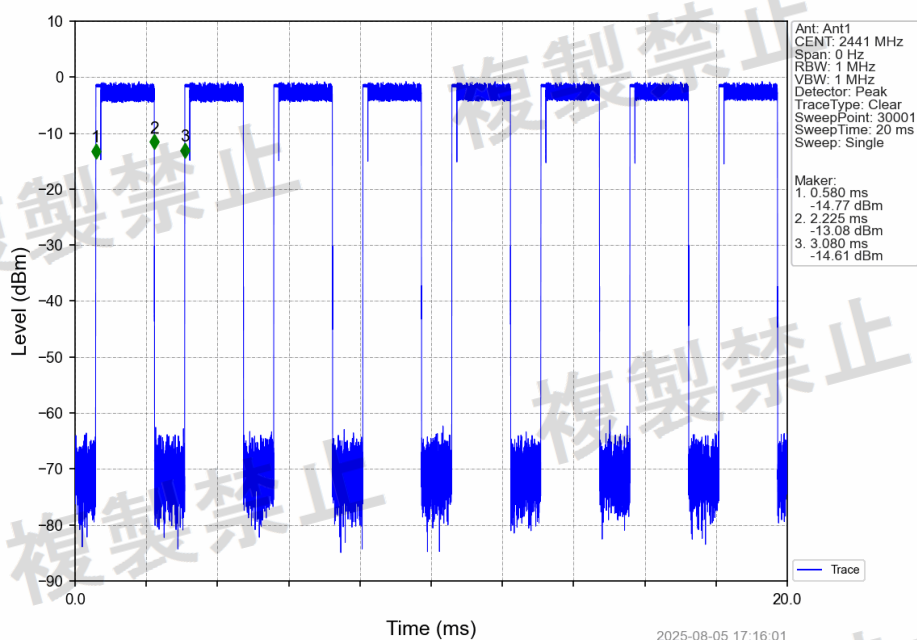
GFSK DH3 2441MHz Ant1 NTLV



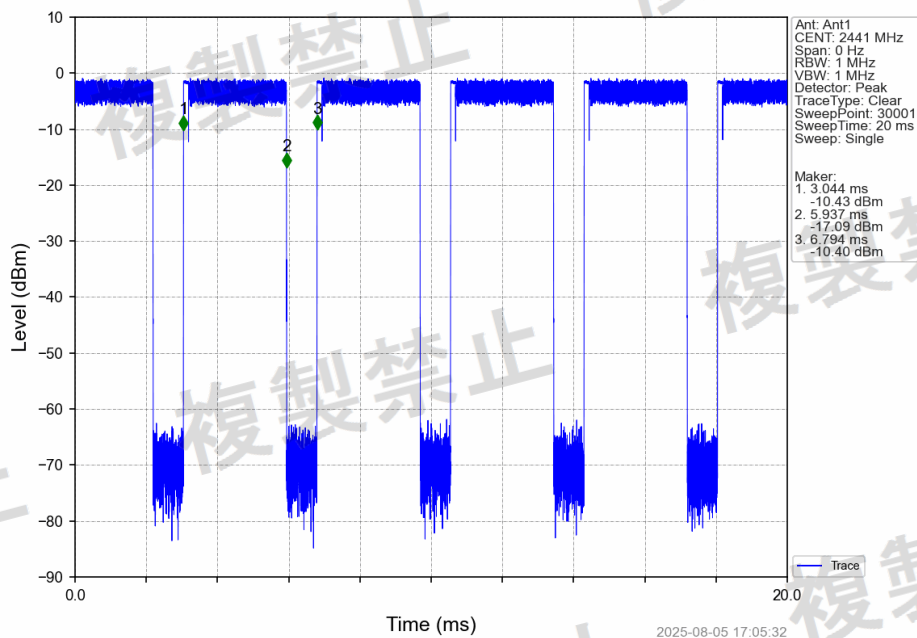


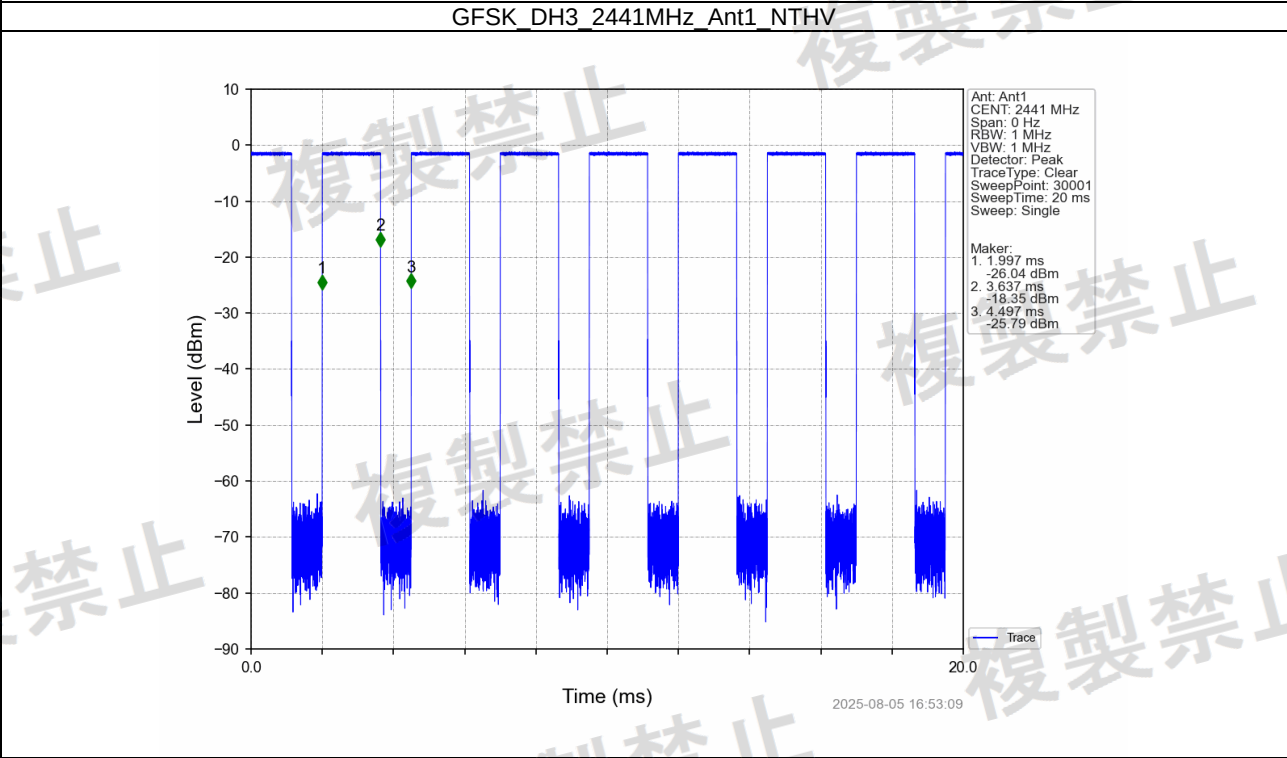
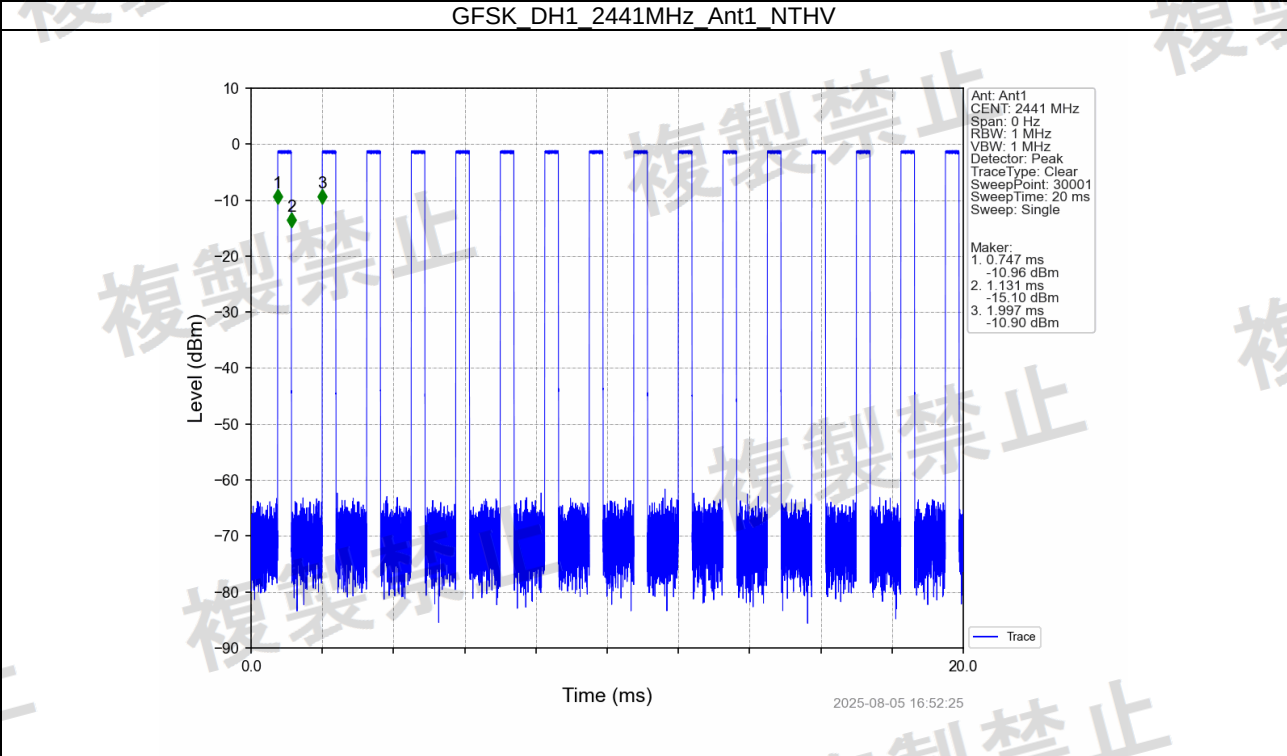


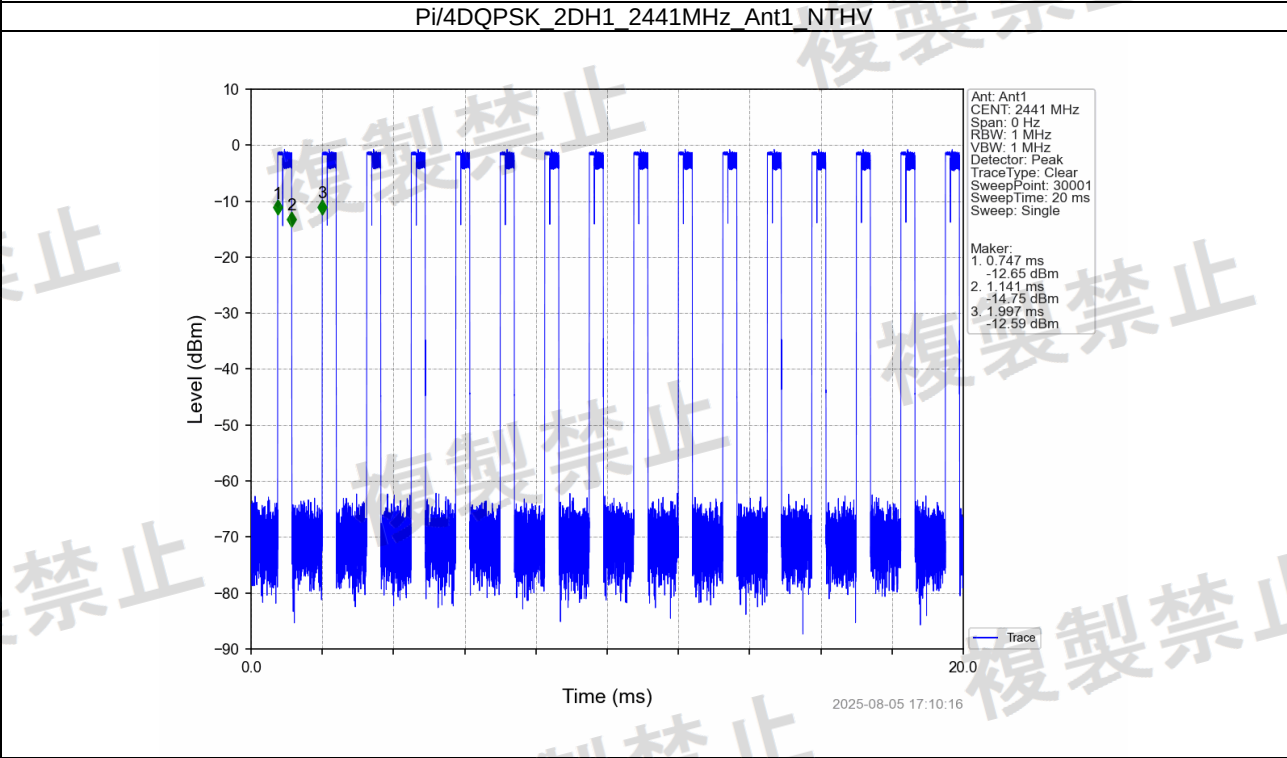
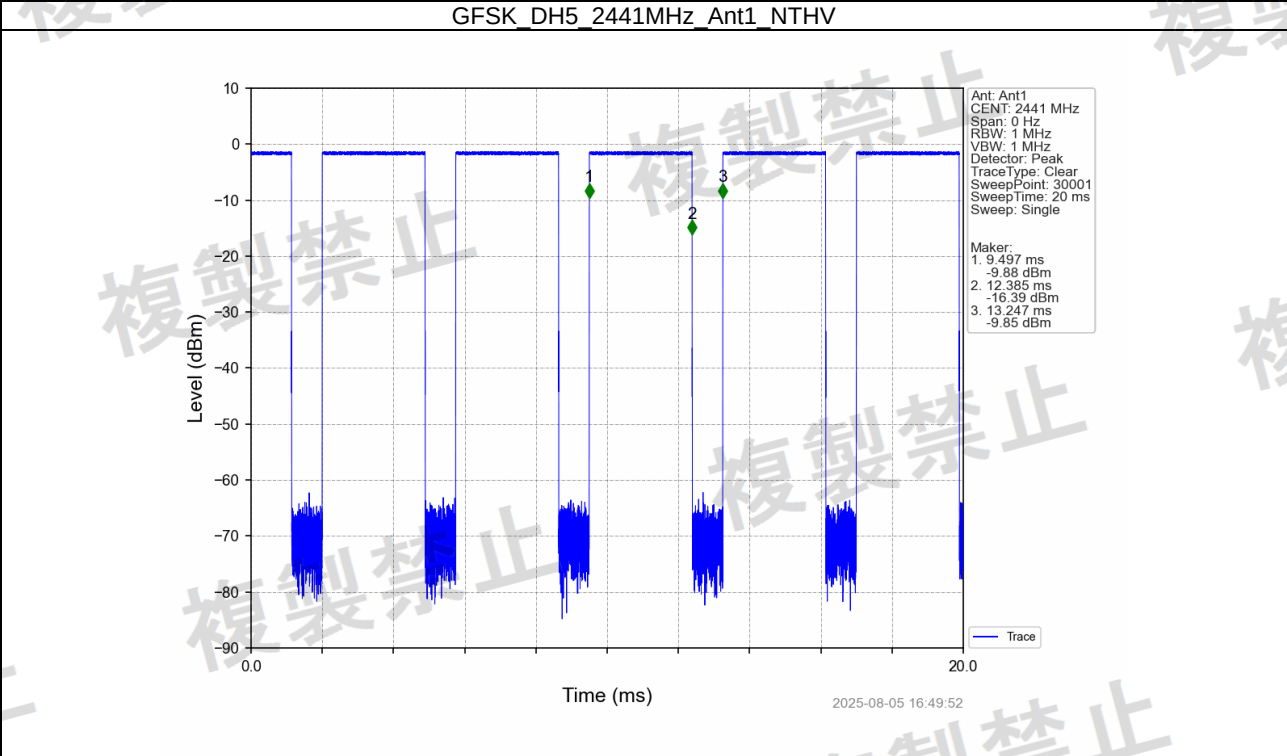
Pi/4DQPSK 2DH3 2441MHz Ant1 NTLV



Pi/4DQPSK 2DH5 2441MHz Ant1 NTLV

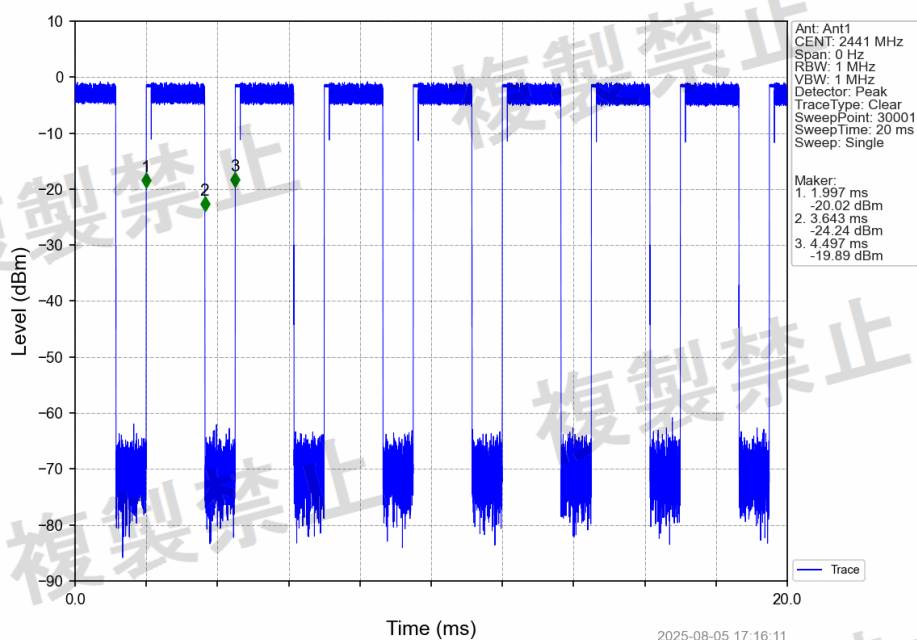




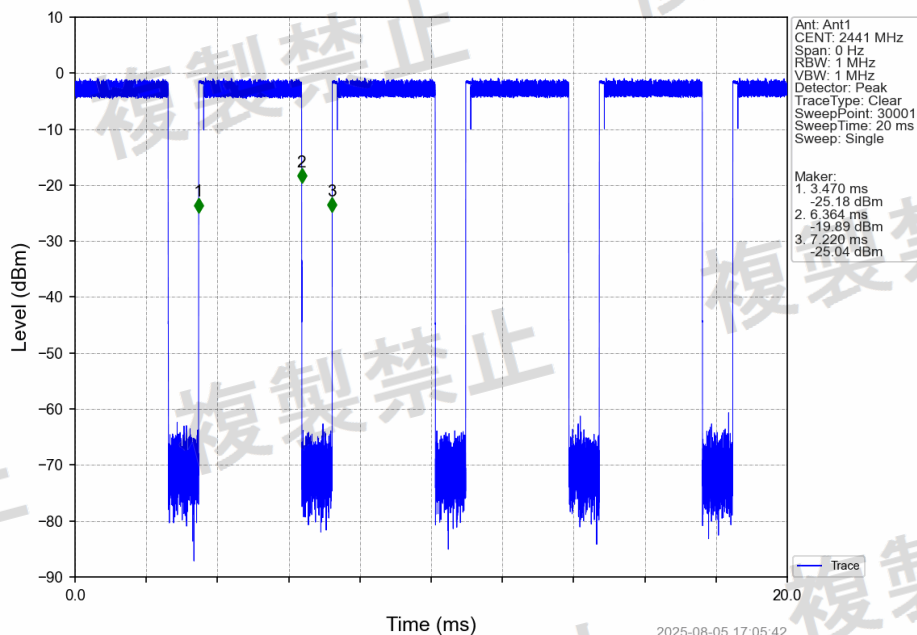




Pi/4DQPSK 2DH3 2441MHz Ant1 NTHV



Pi/4DQPSK 2DH5 2441MHz Ant1 NTHV





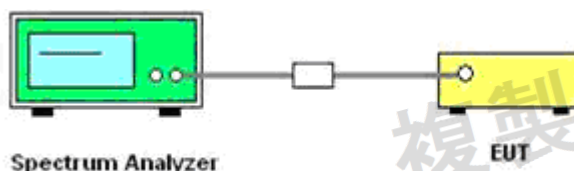
3.5. Unwanted Emission Strength

LIMIT

Permissible mean power of spurious emission of each frequency supplied to a feeder, that is, mean power of spurious emission in the 1 MHz bandwidth at frequency f other than frequency band used shall be as follows:

- a. $2,387\text{MHz} \leq f \leq 2,400\text{MHz}$ and $2,483.5\text{MHz} < f \leq 2,496.5\text{MHz}$ 25 μW or less
- b. $2,387\text{MHz} > f$ and $2,496.5\text{MHz} < f$ 2.5 μW or less

TEST CONFIGURATION



TEST PROCEDURE

The EUT was directly connected to the spectrum analyser and antenna output port as show in the block diagram as TEST CONFIGURATION shows.

EUT Condition: modulation

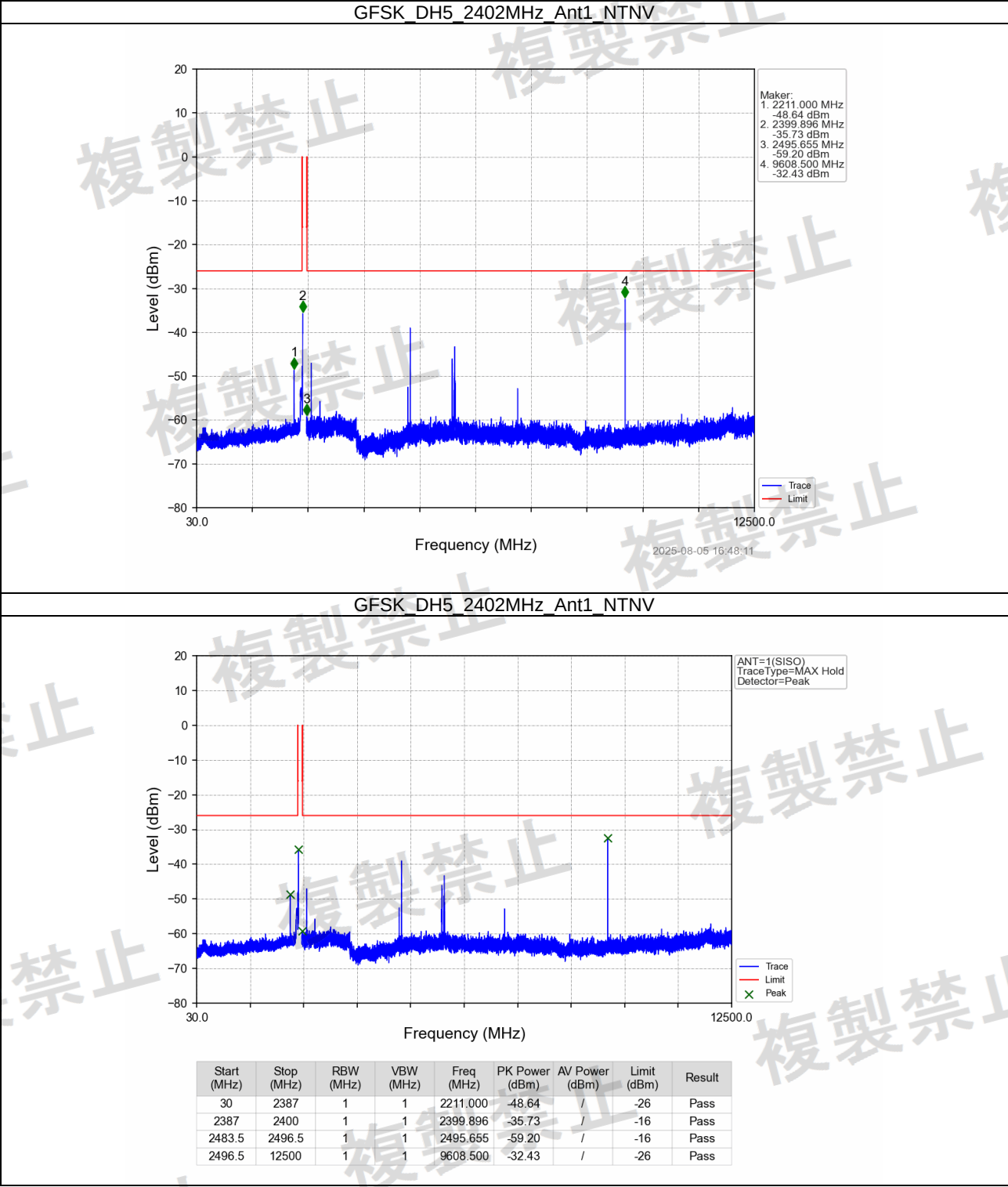
Spectrum Condition:

- Frequency: 30MHz-13GHz
- RBW: 100 KHz (30MHz-1GHz), 1MHz (1GHz-12.5GHz)
- VBW: 100 KHz (30MHz-1GHz), 1MHz (1GHz-12.5GHz)
- Sweep time: Auto
- Detector mode: Positive peak
- Indication mode: max hold

TEST RESULTS

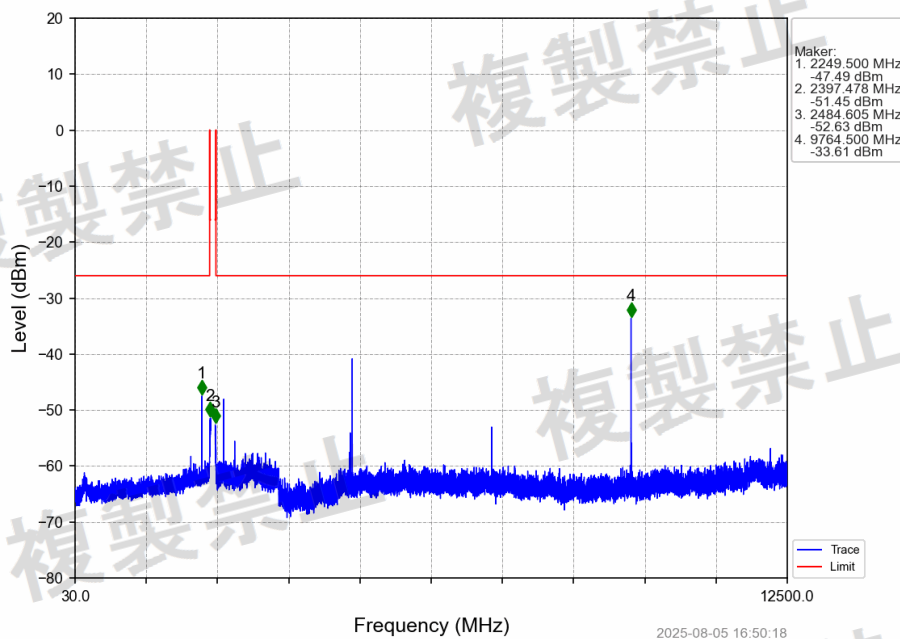


Both left and right earphone were tested, and only the worst mode was recorded(left earphone).

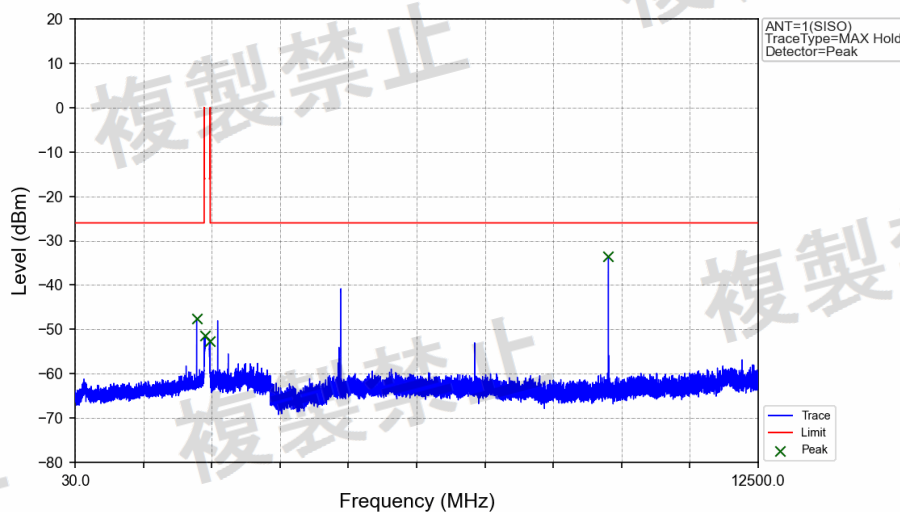




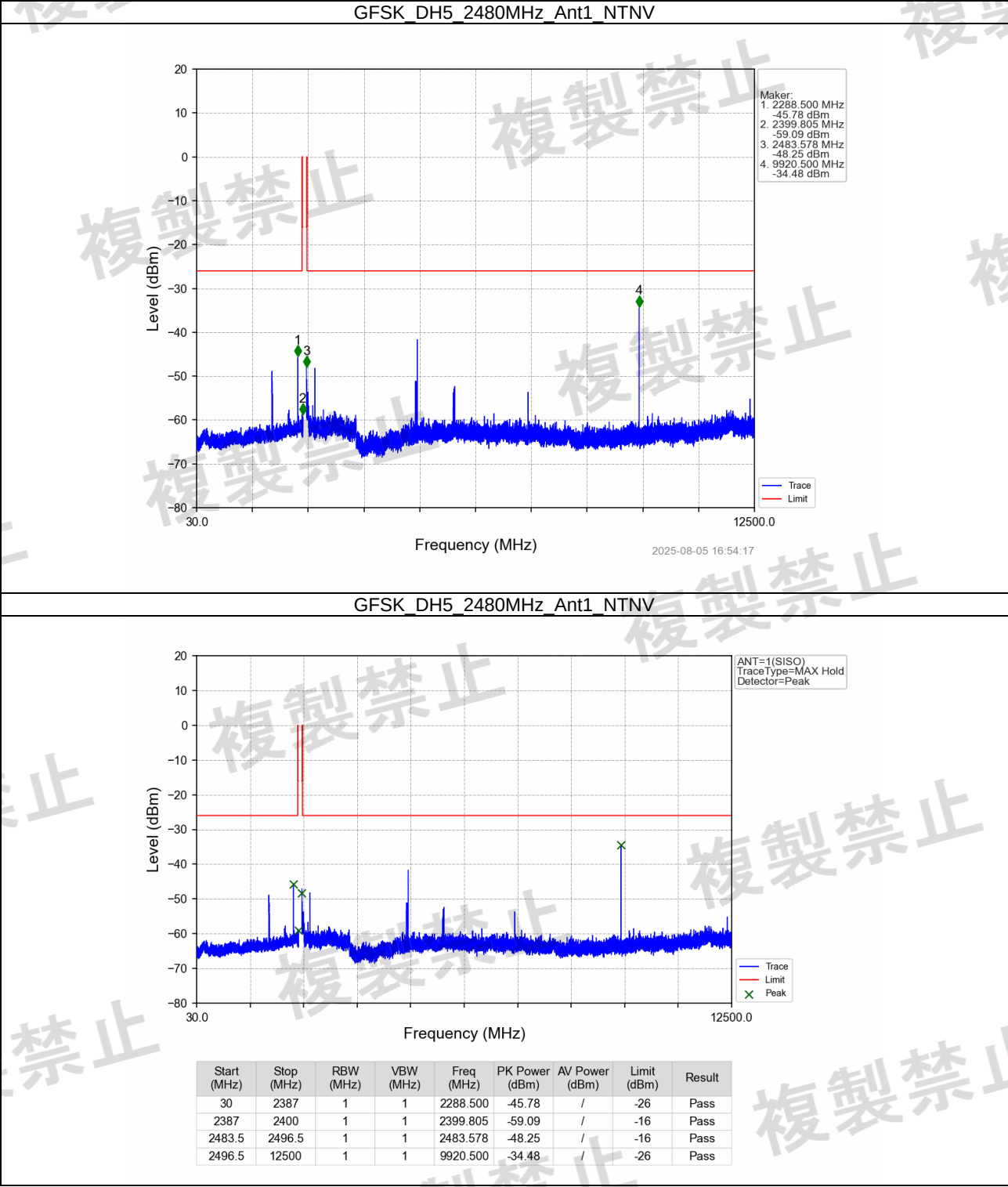
GFSK_DH5_2441MHz_Ant1_NTNV

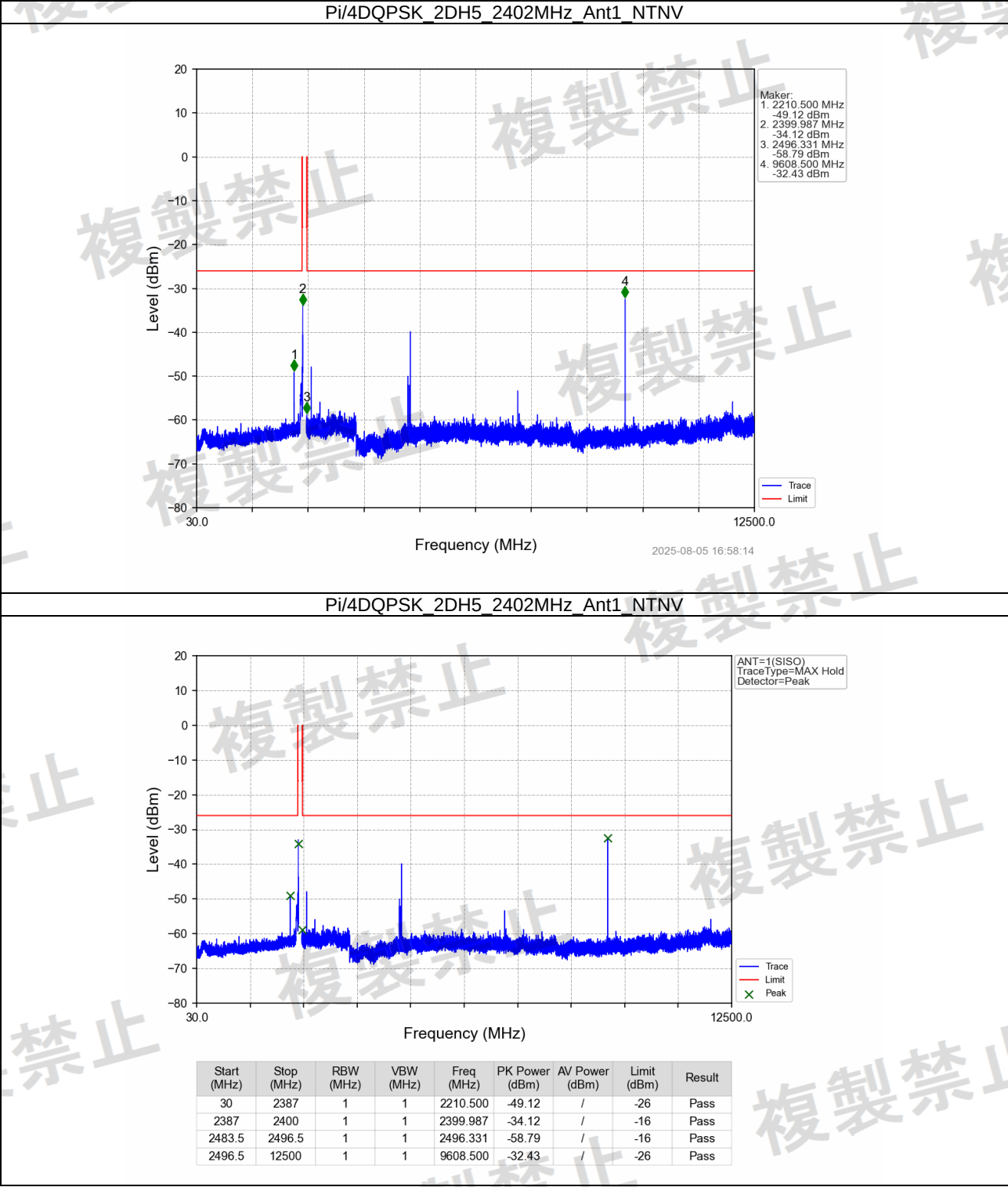


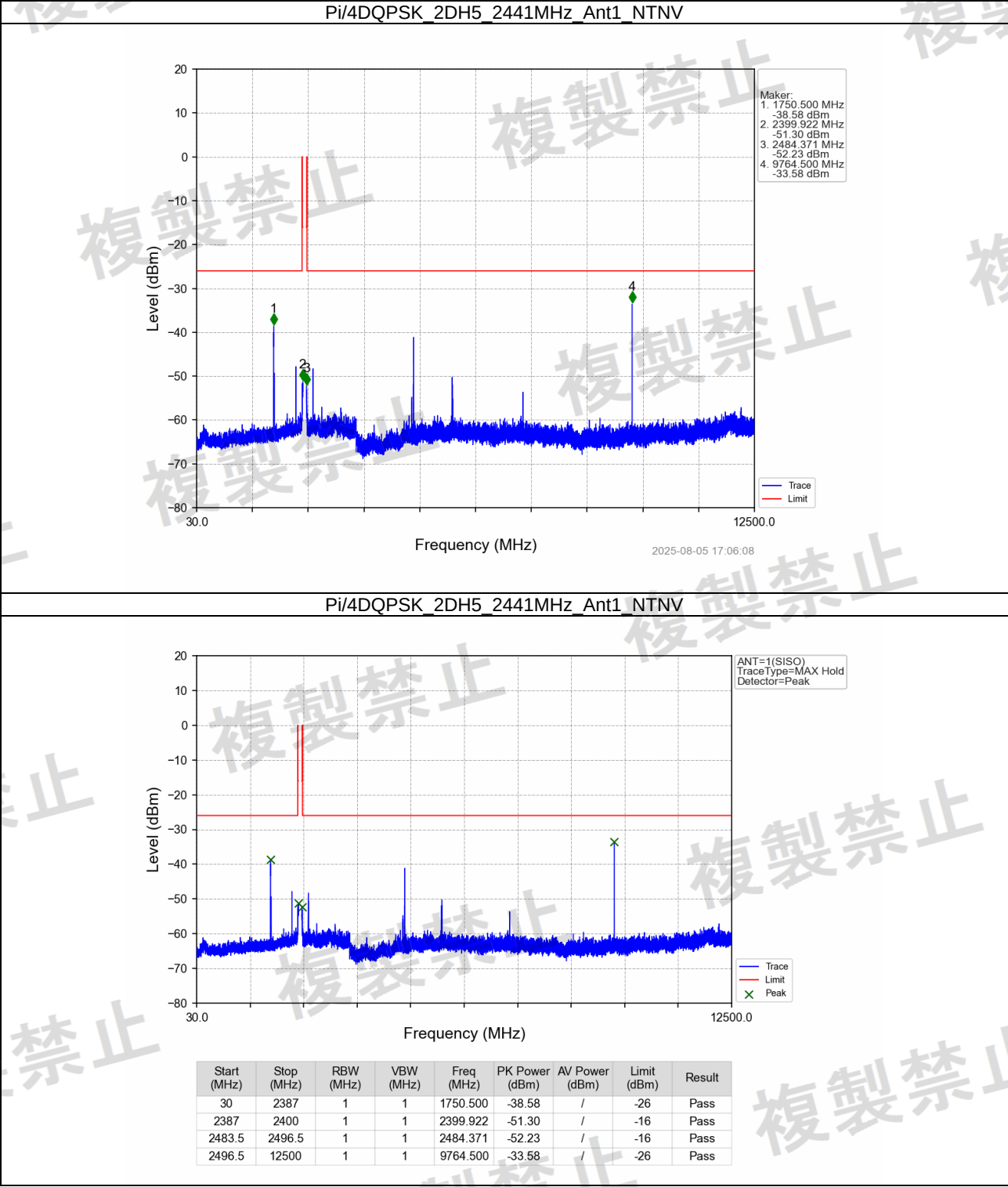
GFSK_DH5_2441MHz_Ant1_NTNV

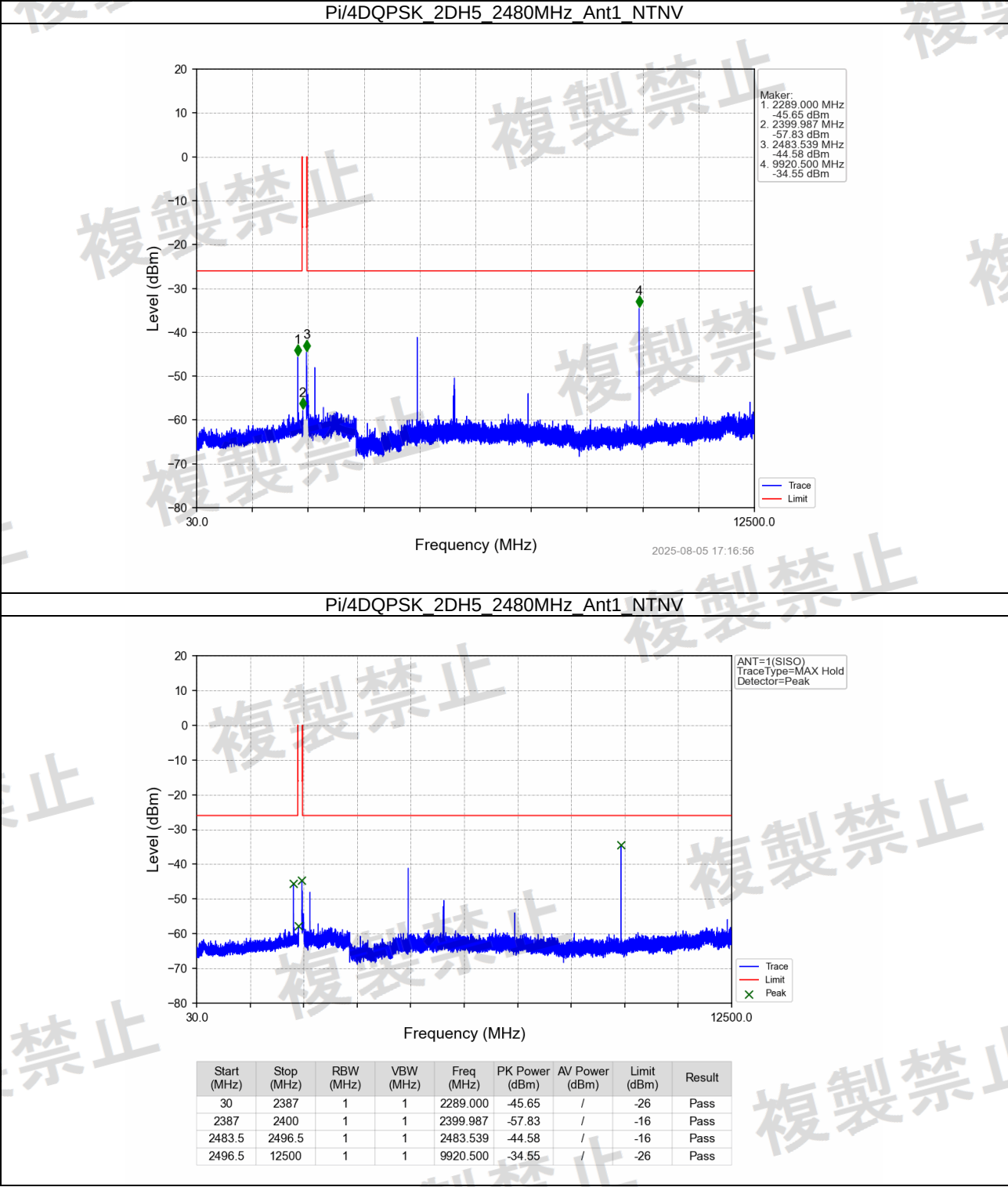


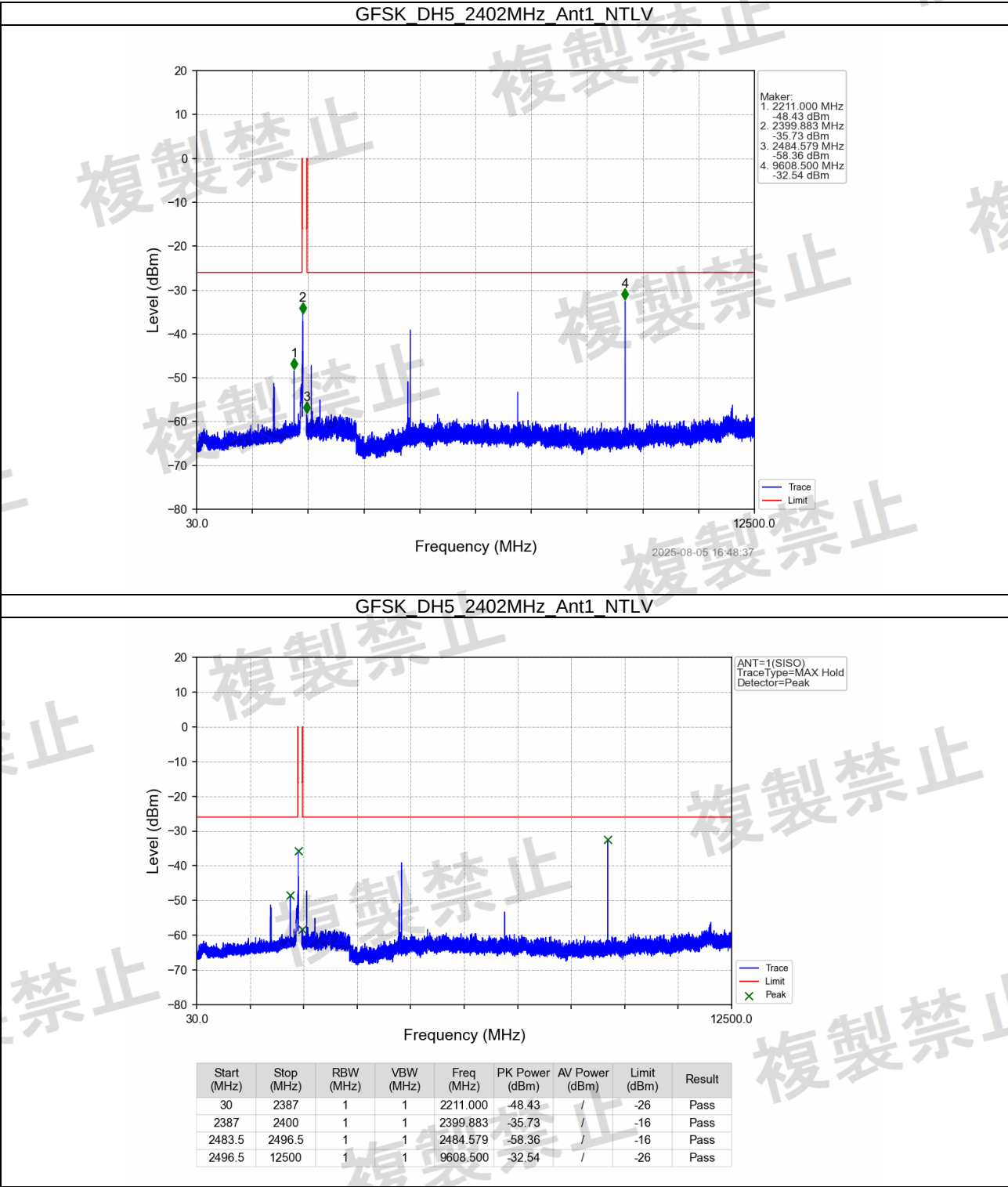
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2249.500	-47.49	/	-26	Pass
2387	2400	1	1	2397.478	-51.45	/	-16	Pass
2483.5	2496.5	1	1	2484.605	-52.63	/	-16	Pass
2496.5	12500	1	1	9764.500	-33.61	/	-26	Pass





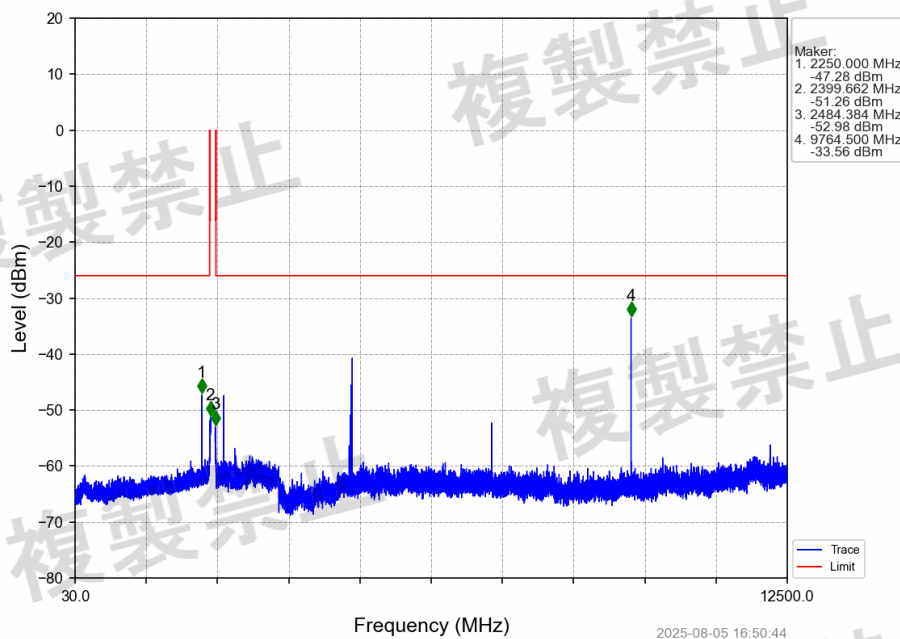




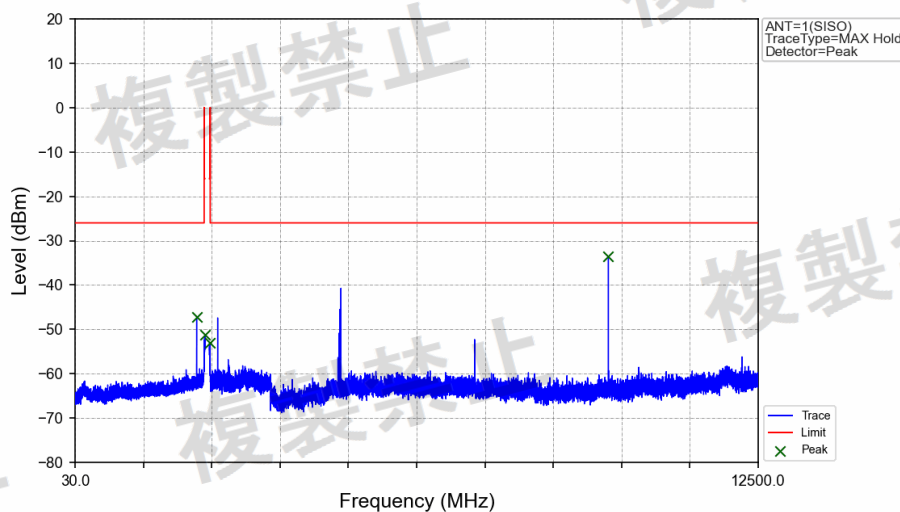




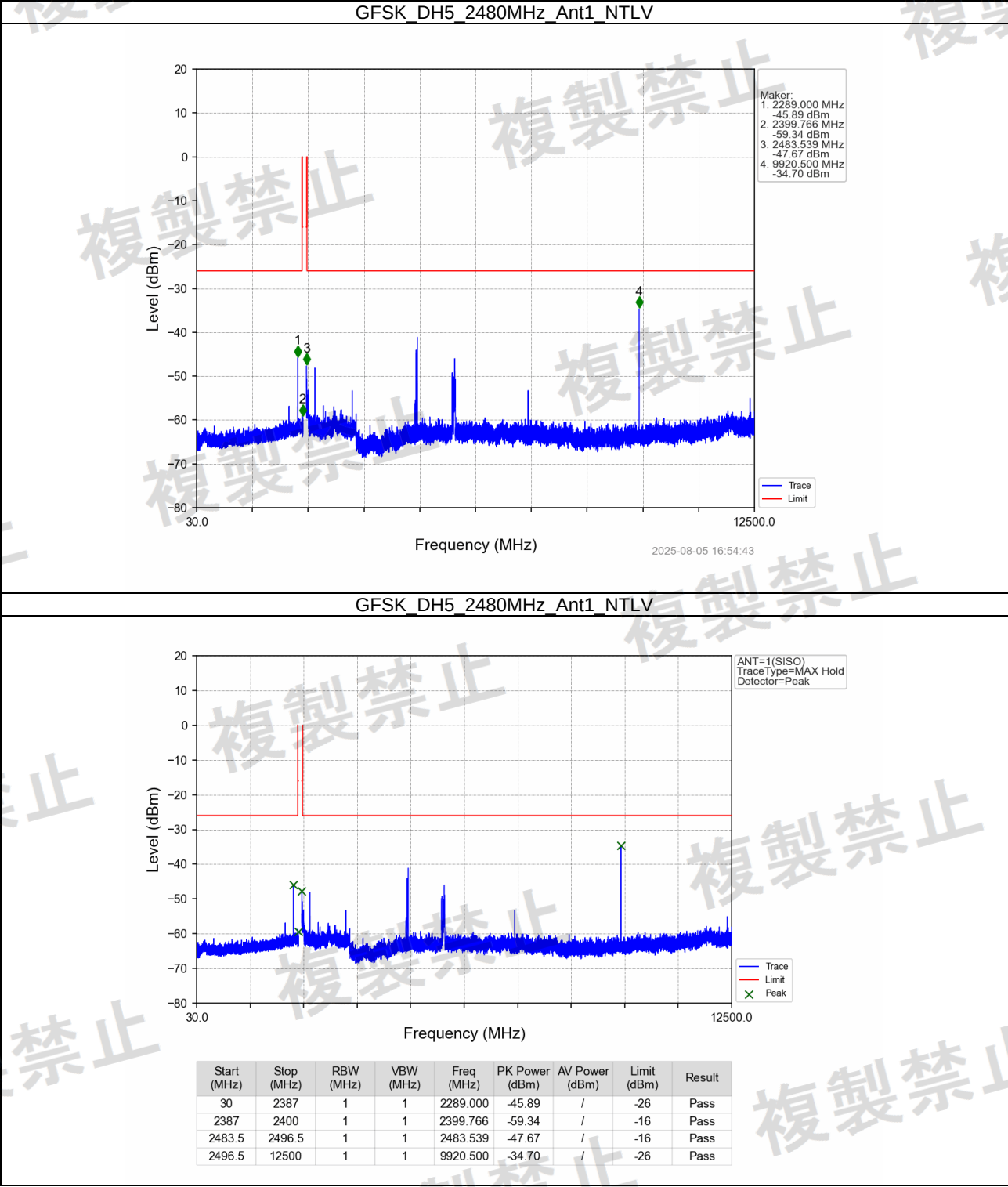
GFSK DH5 2441MHz Ant1 NTLV

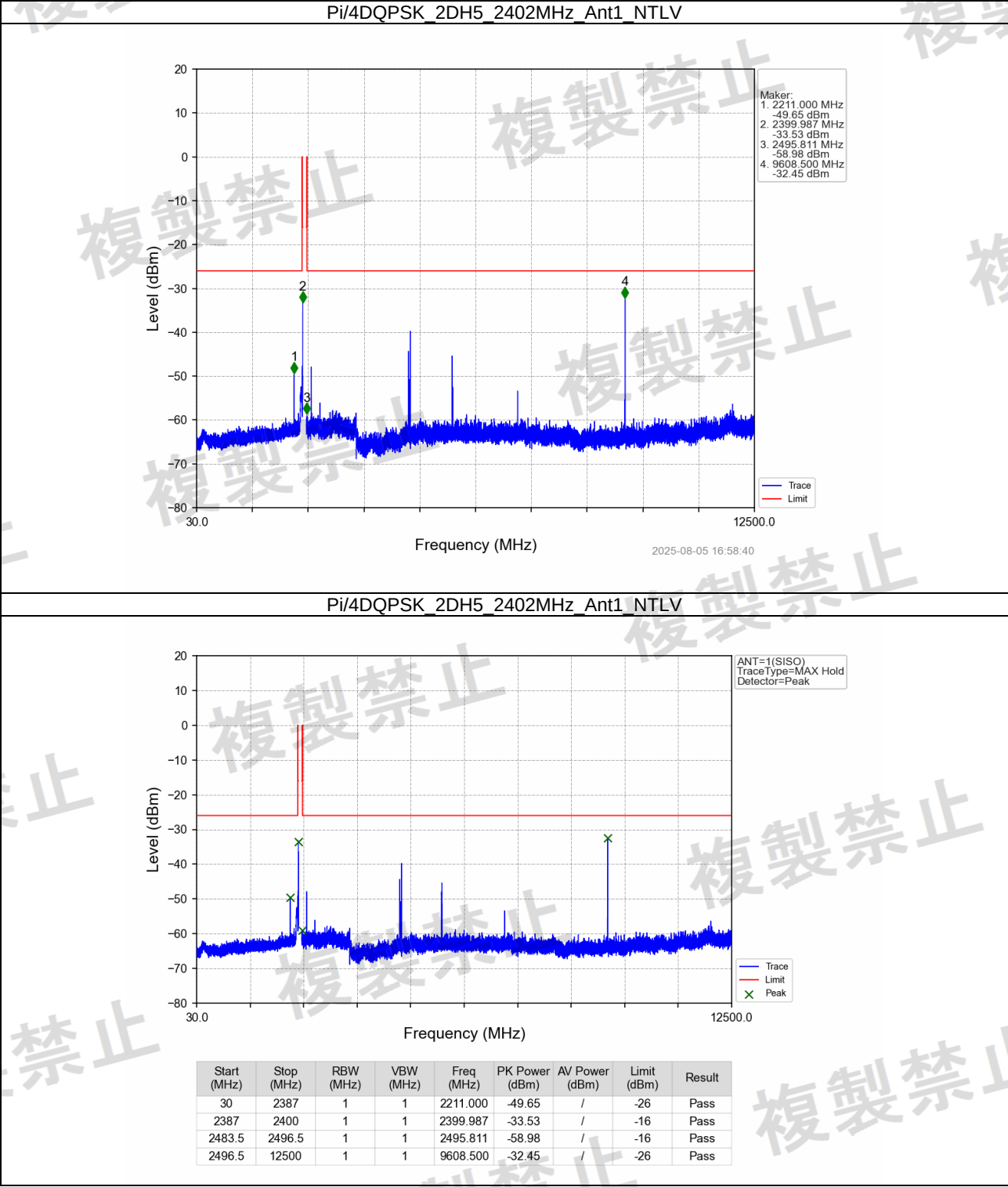


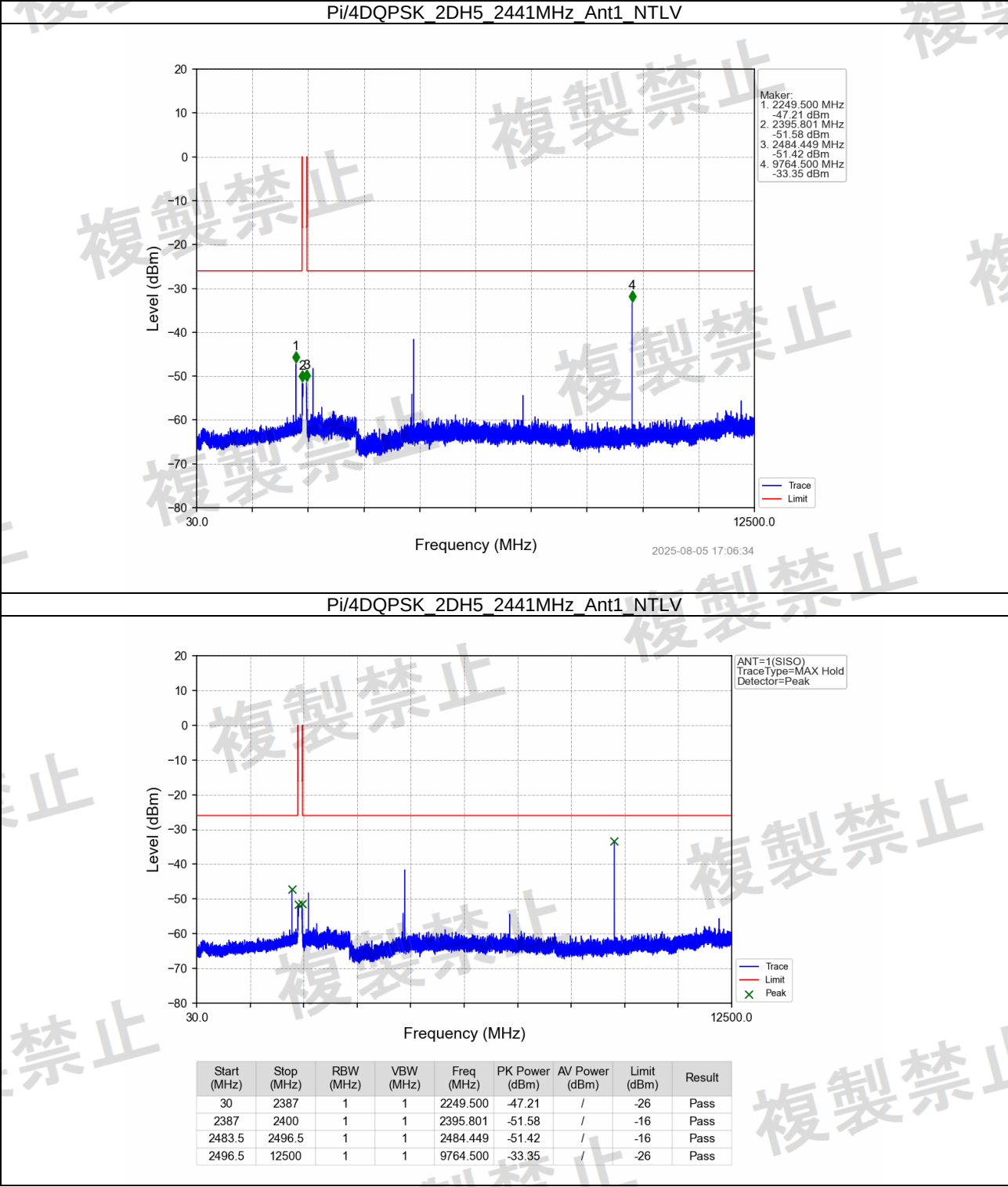
GFSK DH5 2441MHz Ant1 NTLV

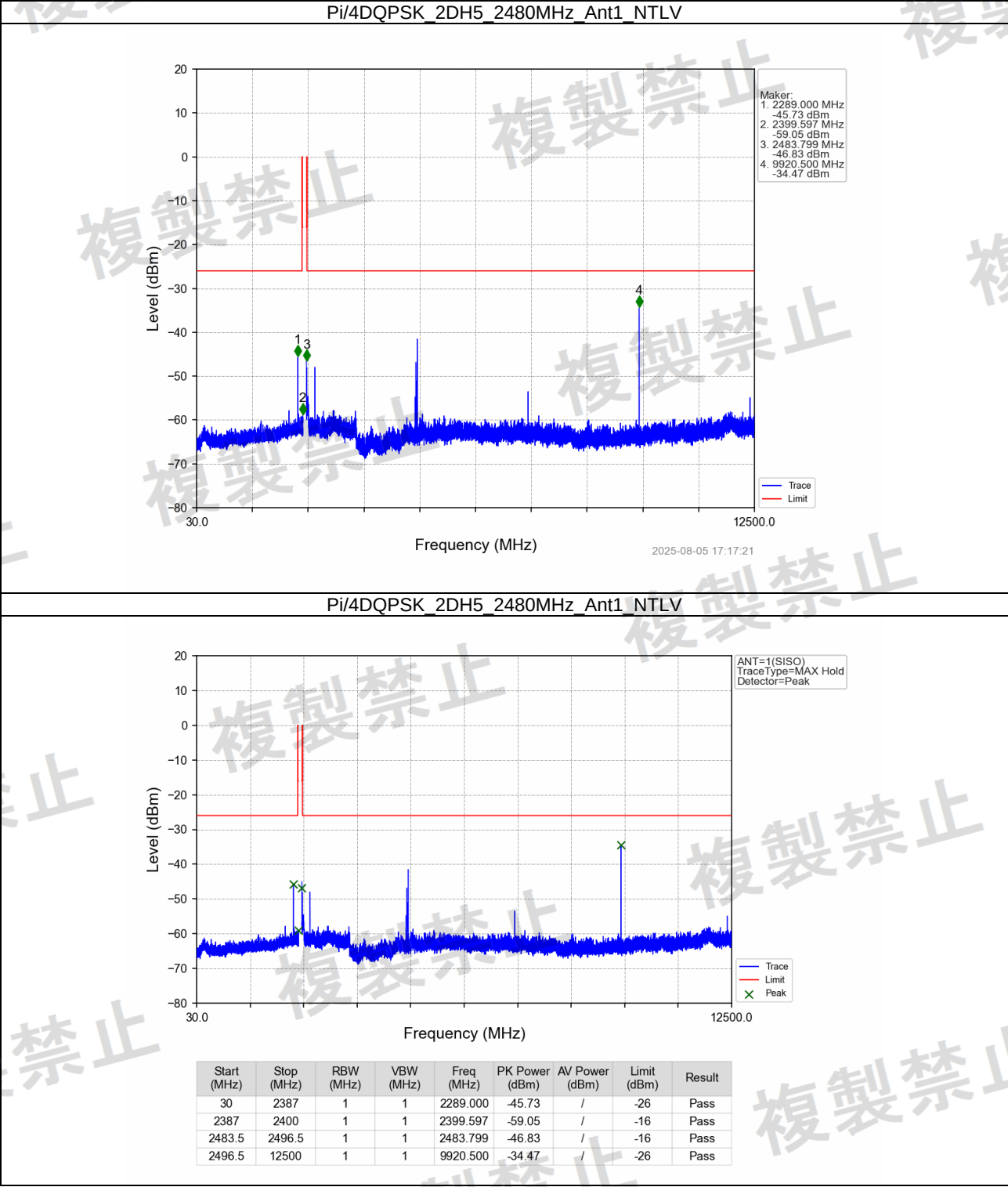


Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2250.000	-47.28	/	-26	Pass
2387	2400	1	1	2399.662	-51.26	/	-16	Pass
2483.5	2496.5	1	1	2484.384	-52.98	/	-16	Pass
2496.5	12500	1	1	9764.500	-33.56	/	-26	Pass



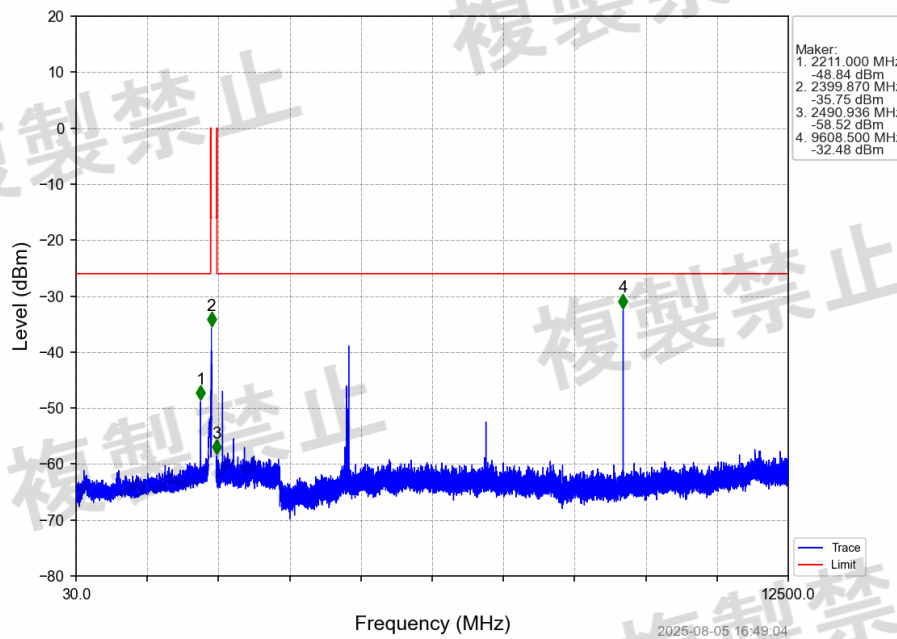




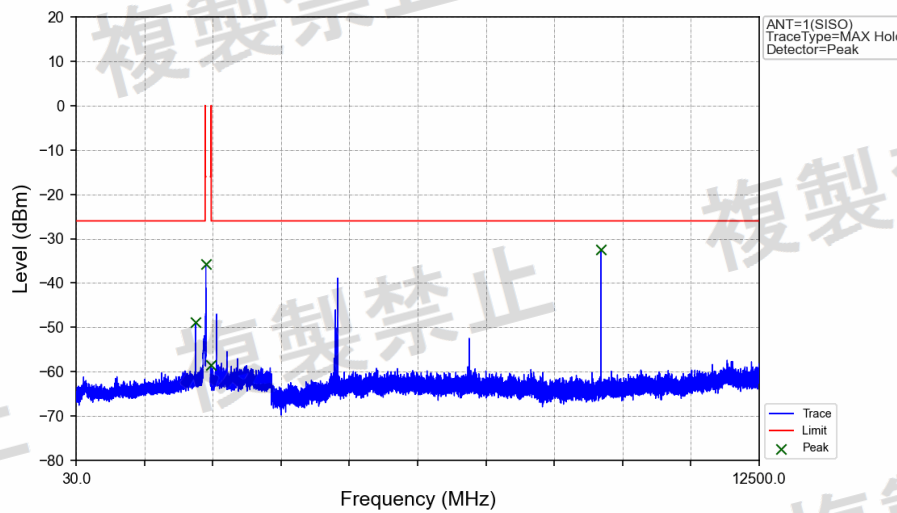




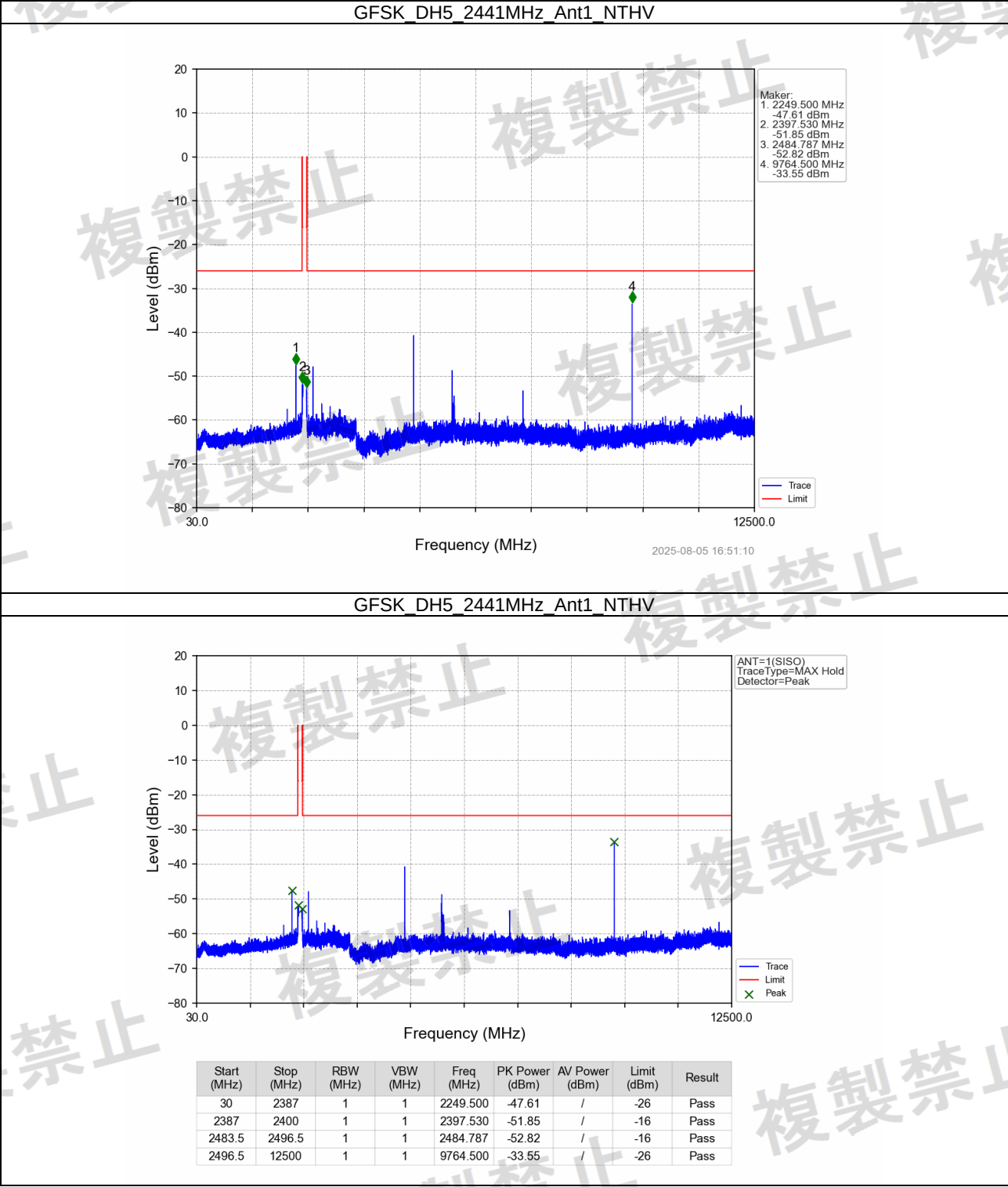
GFSK_DH5_2402MHz_Ant1_NTHV

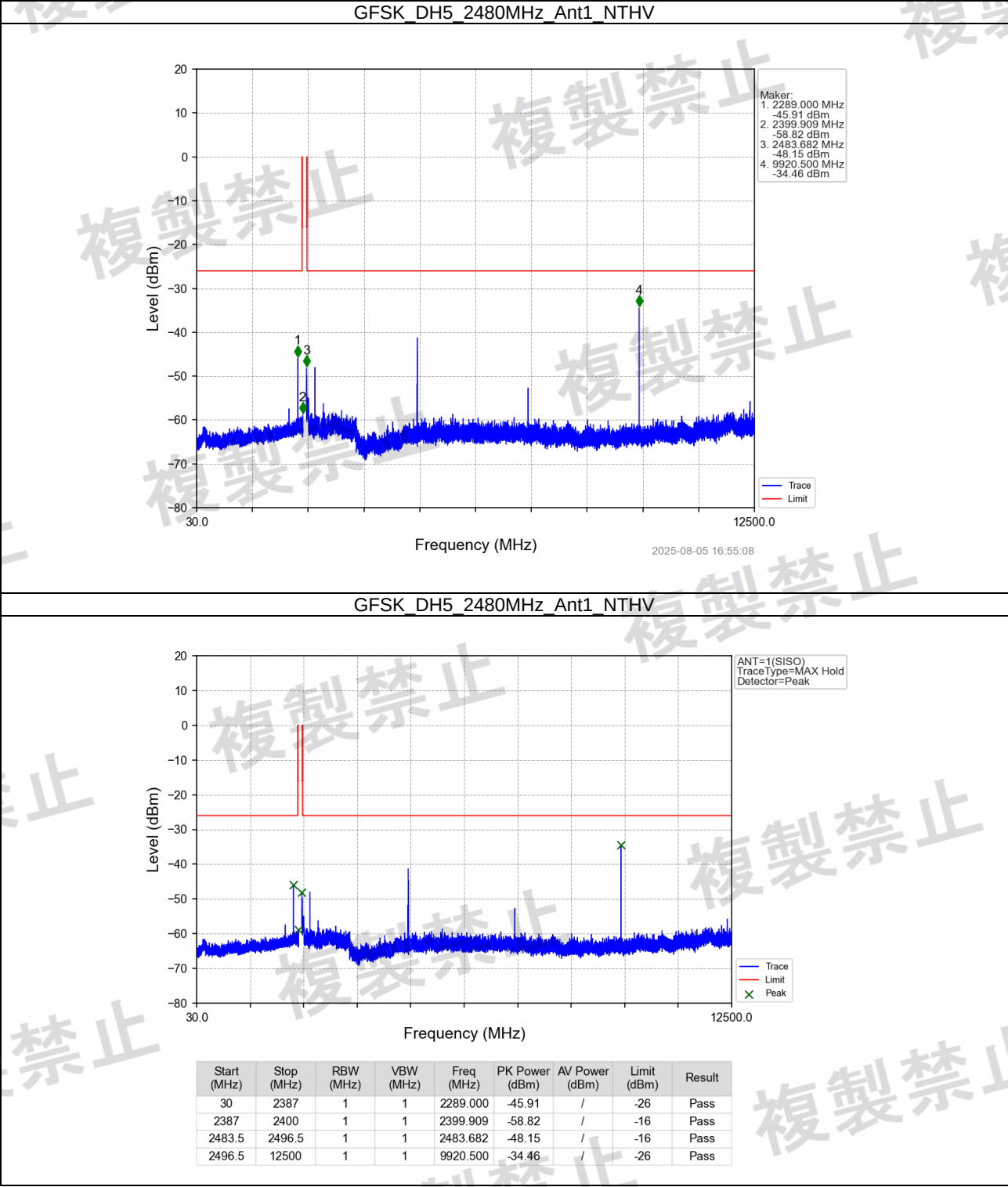


GFSK_DH5_2402MHz_Ant1_NTHV



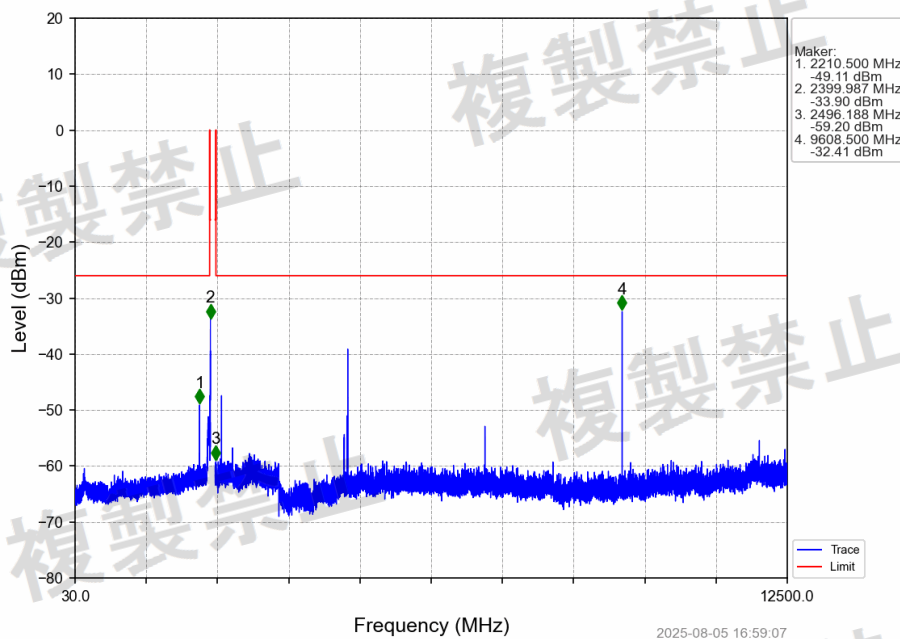
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2211.000	-48.84	/	-26	Pass
2387	2400	1	1	2399.870	-35.75	/	-16	Pass
2483.5	2496.5	1	1	2490.936	-58.52	/	-16	Pass
2496.5	12500	1	1	9608.500	-32.48	/	-26	Pass



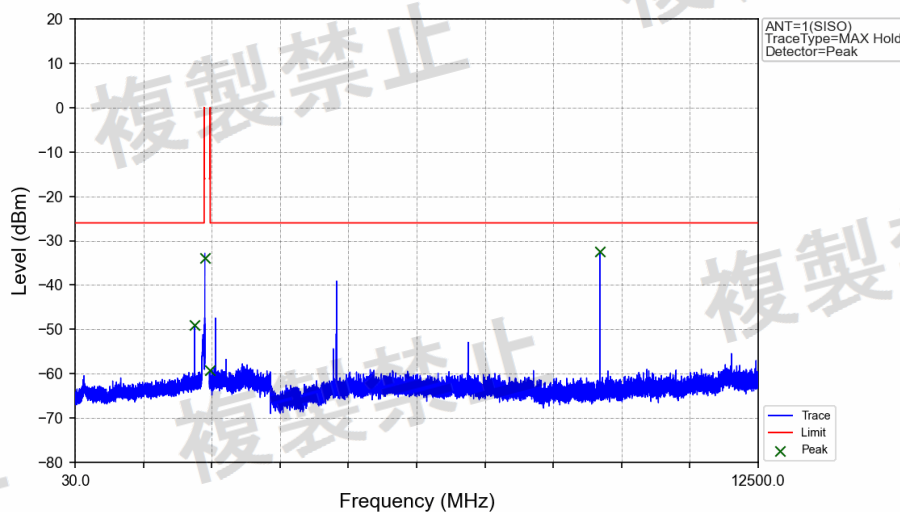




Pi/4DQPSK_2DH5_2402MHz_Ant1_NTHV



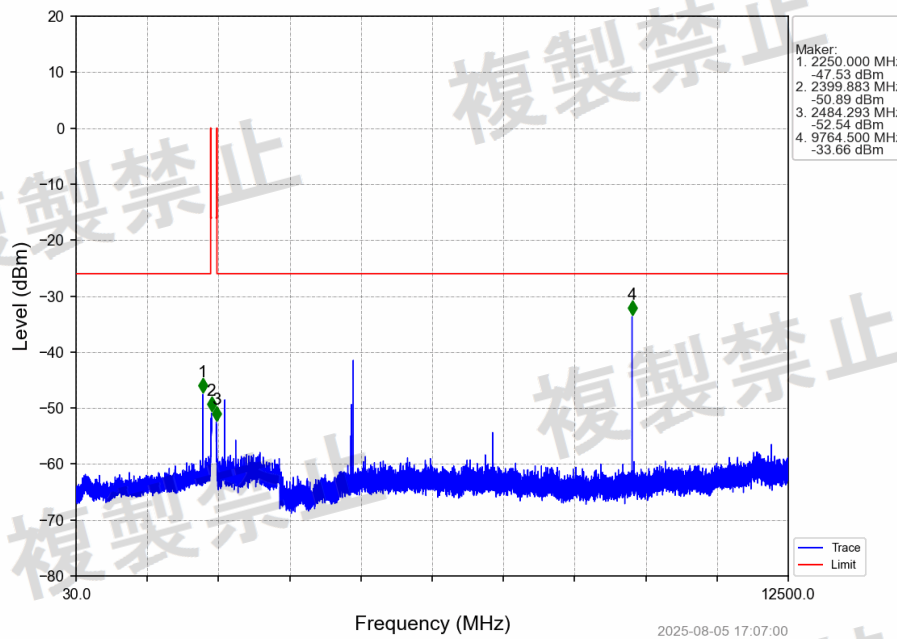
Pi/4DQPSK_2DH5_2402MHz_Ant1_NTHV



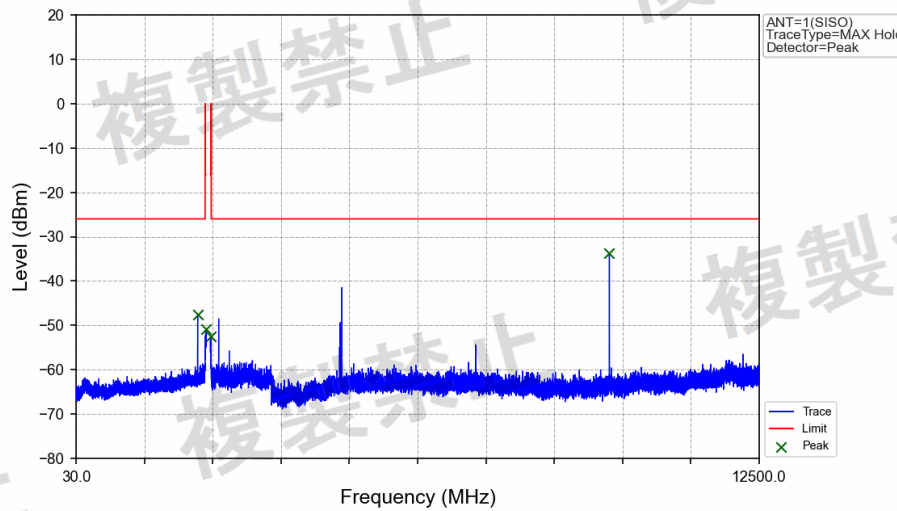
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2210.500	-49.11	/	-26	Pass
2387	2400	1	1	2399.987	-33.90	/	-16	Pass
2483.5	2496.5	1	1	2496.188	-59.20	/	-16	Pass
2496.5	12500	1	1	9608.500	-32.41	/	-26	Pass



Pi/4DQPSK 2DH5 2441MHz Ant1 NTHV



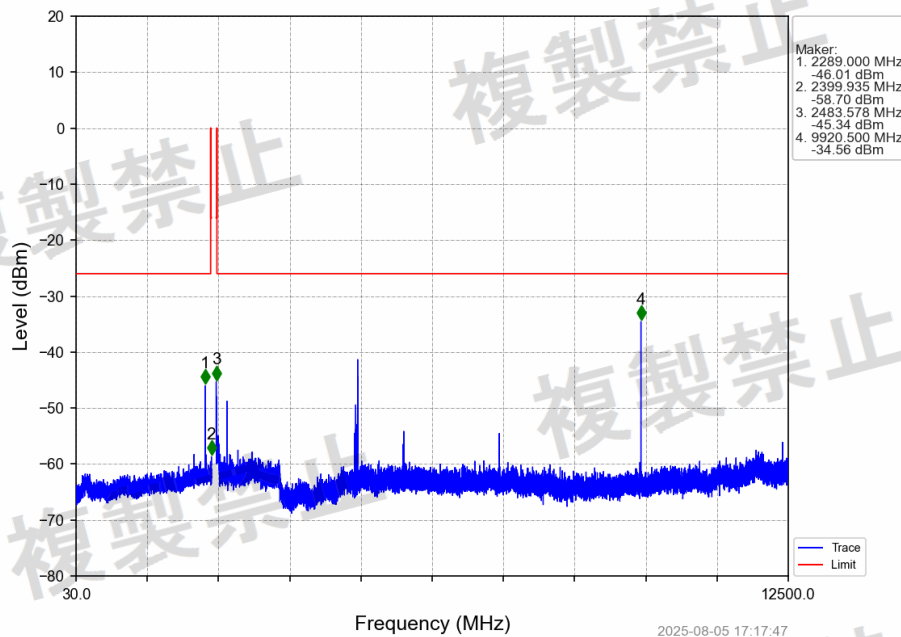
Pi/4DQPSK 2DH5 2441MHz Ant1 NTHV



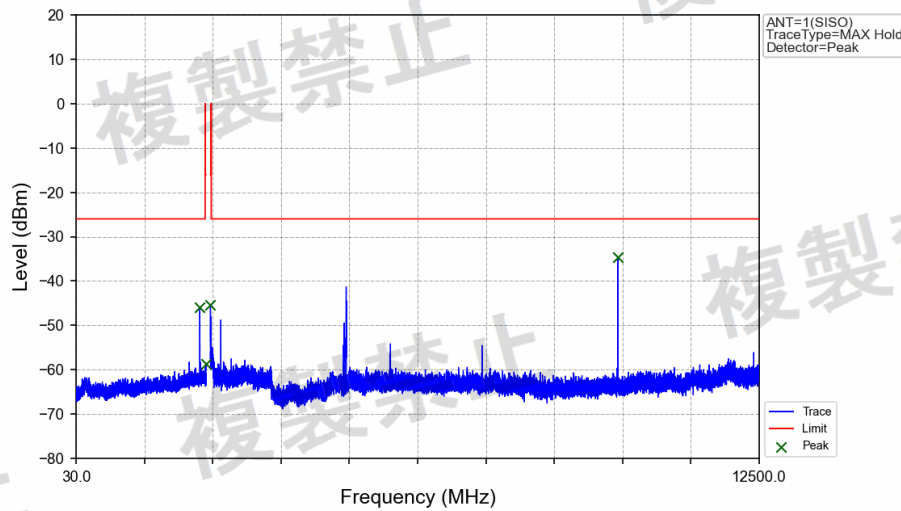
Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2250.000	-47.53	/	-26	Pass
2387	2400	1	1	2399.883	-50.89	/	-16	Pass
2483.5	2496.5	1	1	2484.293	-52.54	/	-16	Pass
2496.5	12500	1	1	9764.500	-33.66	/	-26	Pass



Pi/4DQPSK 2DH5 2480MHz Ant1 NTHV



Pi/4DQPSK 2DH5 2480MHz Ant1 NTHV



Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2289.000	-46.01	/	-26	Pass
2387	2400	1	1	2399.935	-58.70	/	-16	Pass
2483.5	2496.5	1	1	2483.578	-45.34	/	-16	Pass
2496.5	12500	1	1	9920.500	-34.56	/	-26	Pass

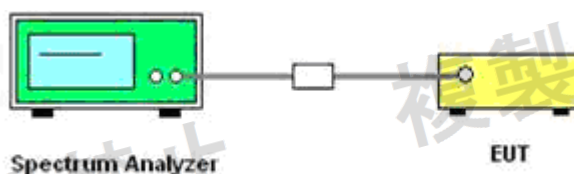


3.6. Secondary Radiated Emission Strength

LIMIT

The limit on secondary emissions radiated from the receiving equipment within which the function of other radio equipment will not be impaired shall be, in terms of the power of a dummy antenna circuit that has the same electrical constant as the receiving antenna, 4nW or less at a frequency below 1 GHz and 20nW or less at a frequency of 1 GHz or higher as measured using the circuit.

TEST CONFIGURATION



TEST PROCEDURE

The EUT was directly connected to the spectrum analyser and antenna output port as show in the block diagram as TEST CONFIGURATION shows.

EUT Condition: modulation

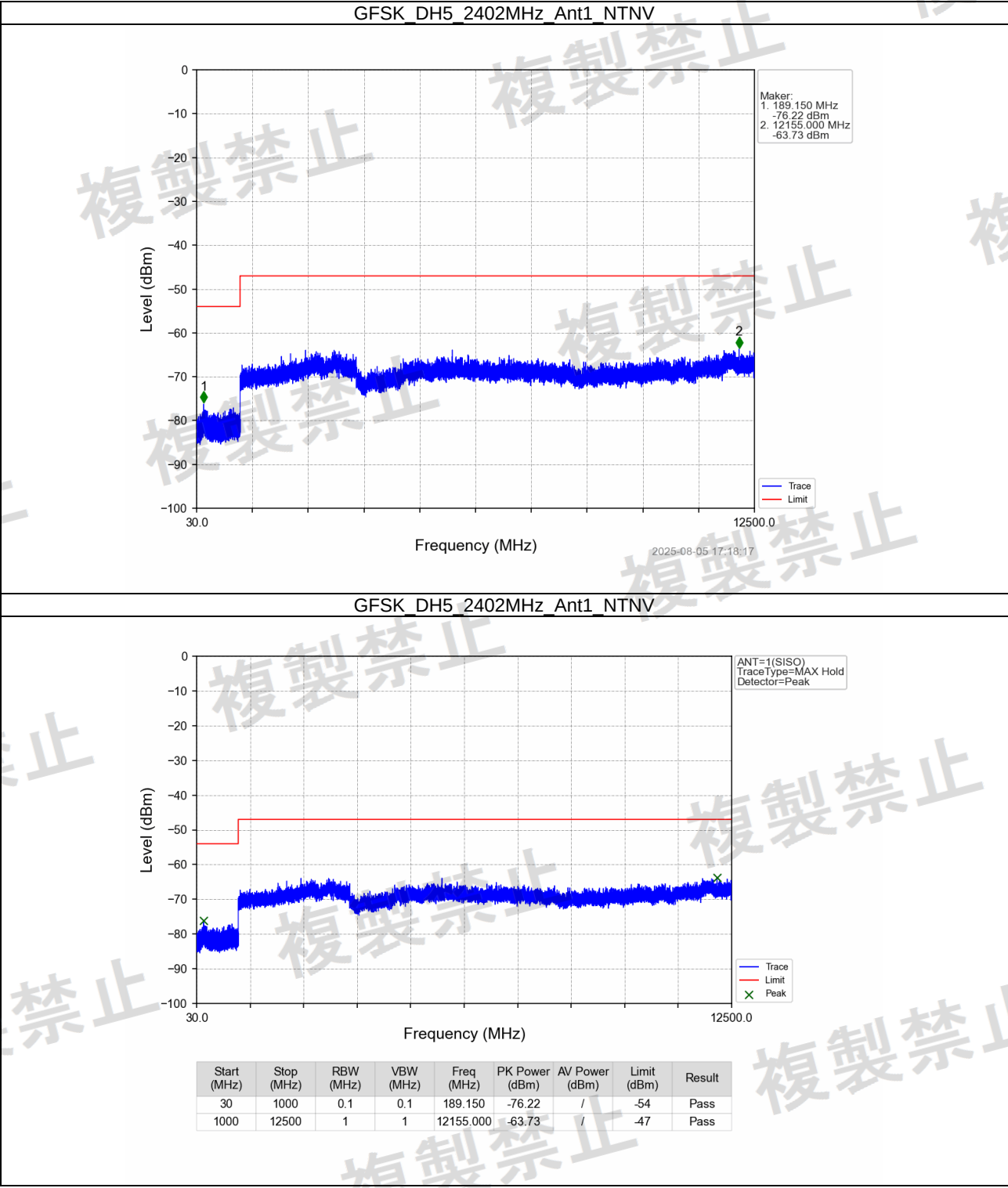
Spectrum Condition:

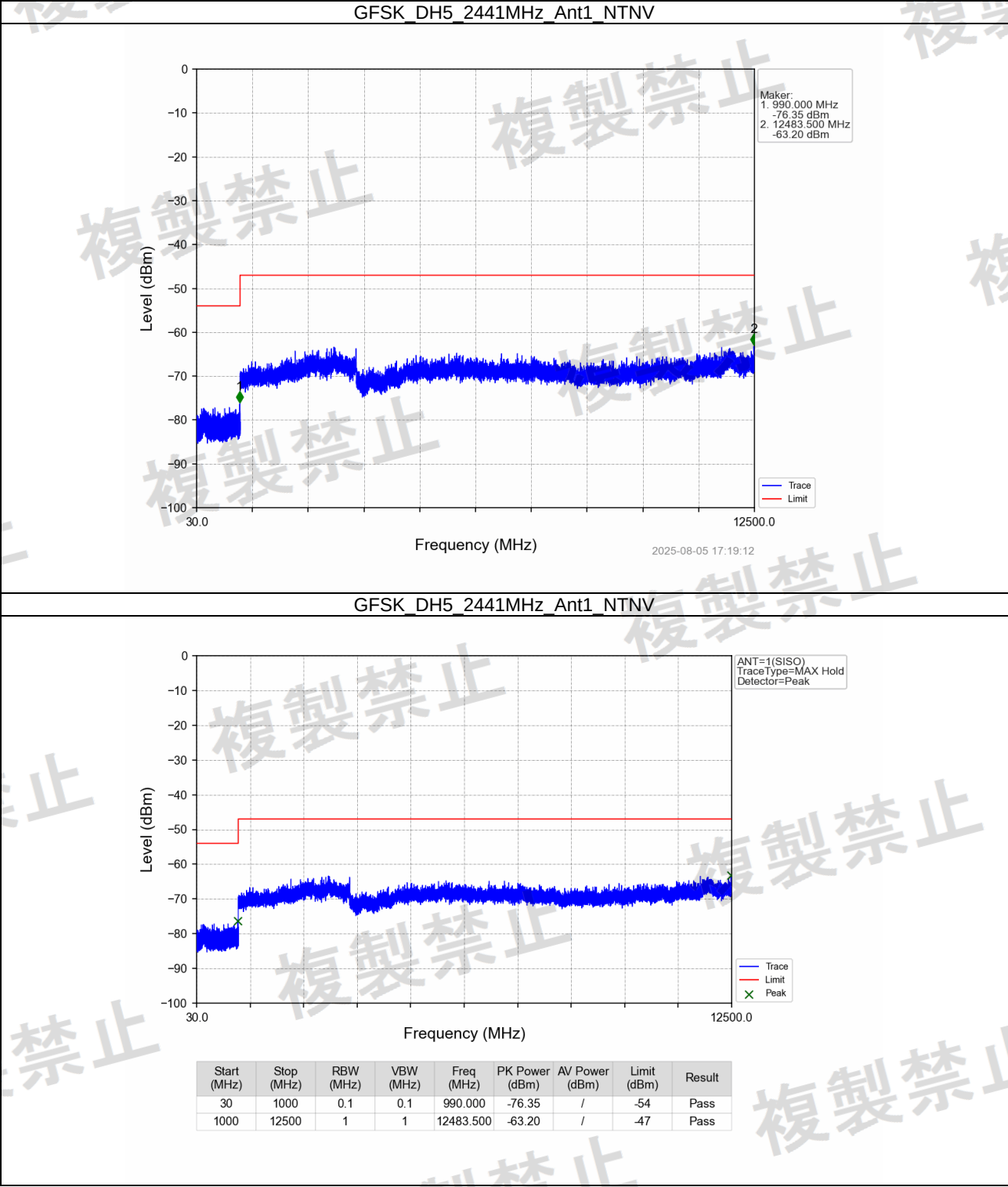
- Frequency: 30MHz-13GHz
- RBW: 100 KHz (30MHz-1GHz), 1MHz (1GHz-12.5GHz)
- VBW: 100 KHz (30MHz-1GHz), 1MHz (1GHz-12.5GHz)
- Sweep time: Auto
- Detector mode: Positive peak
- Indication mode: max hold

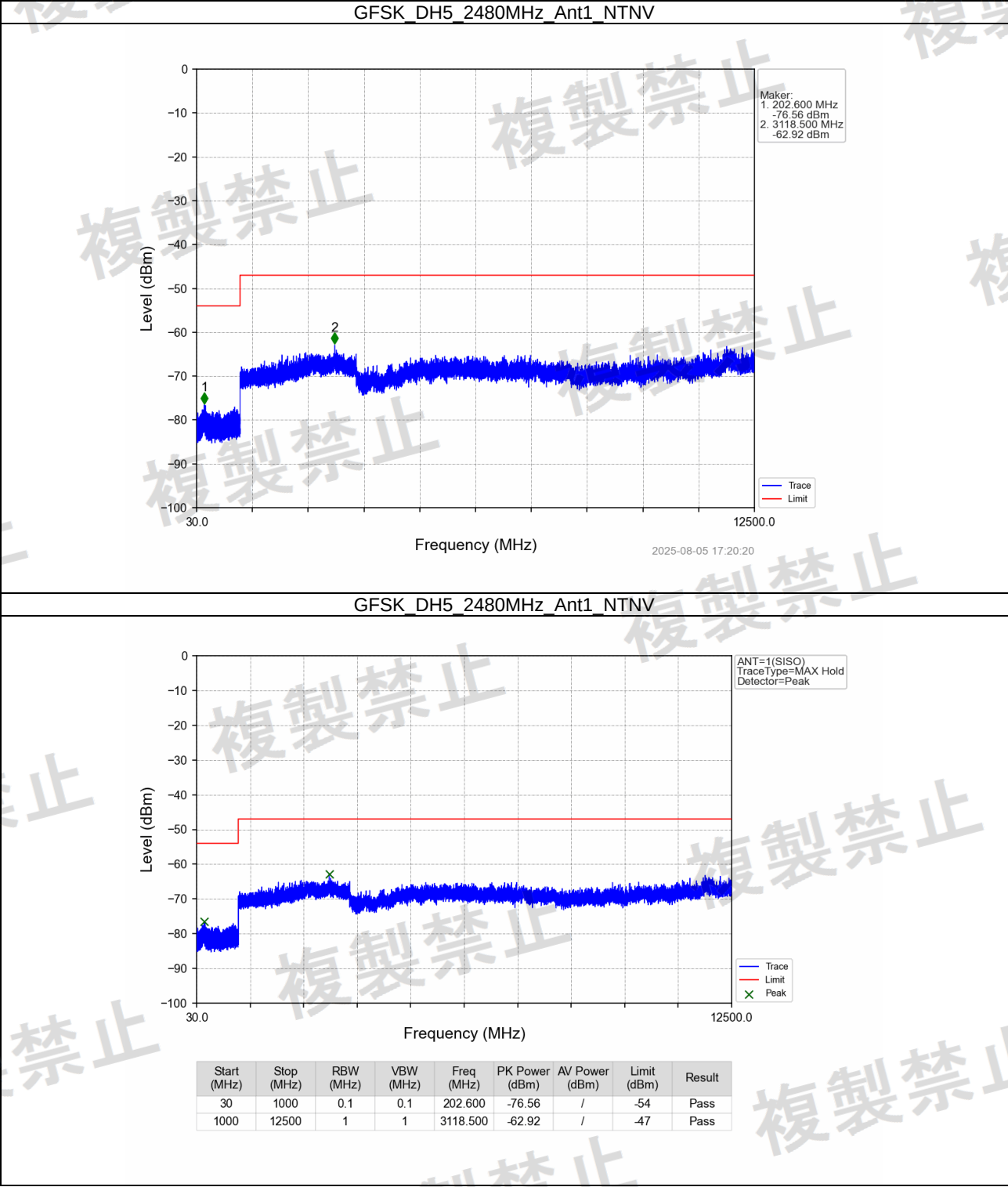
TEST RESULTS

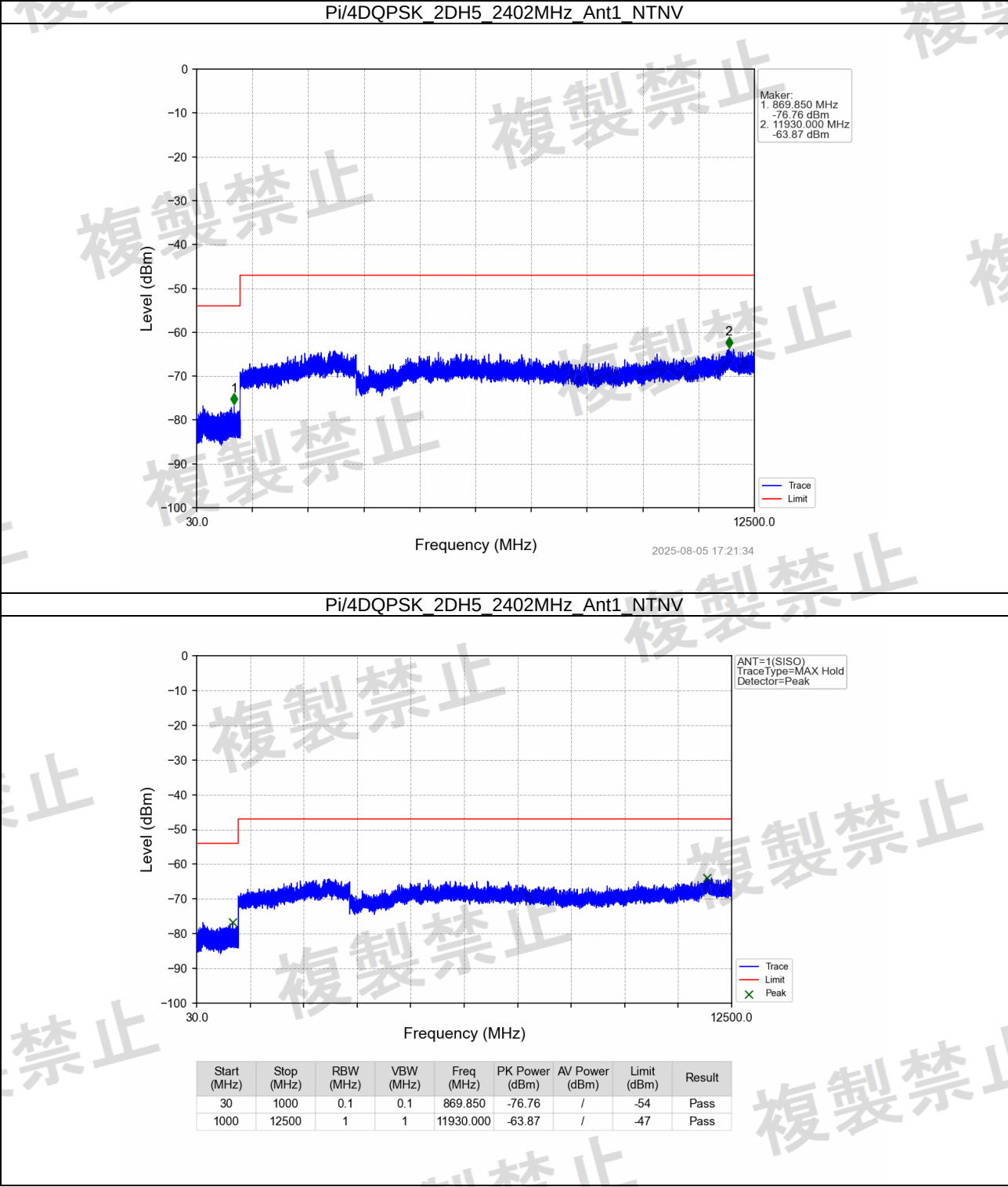


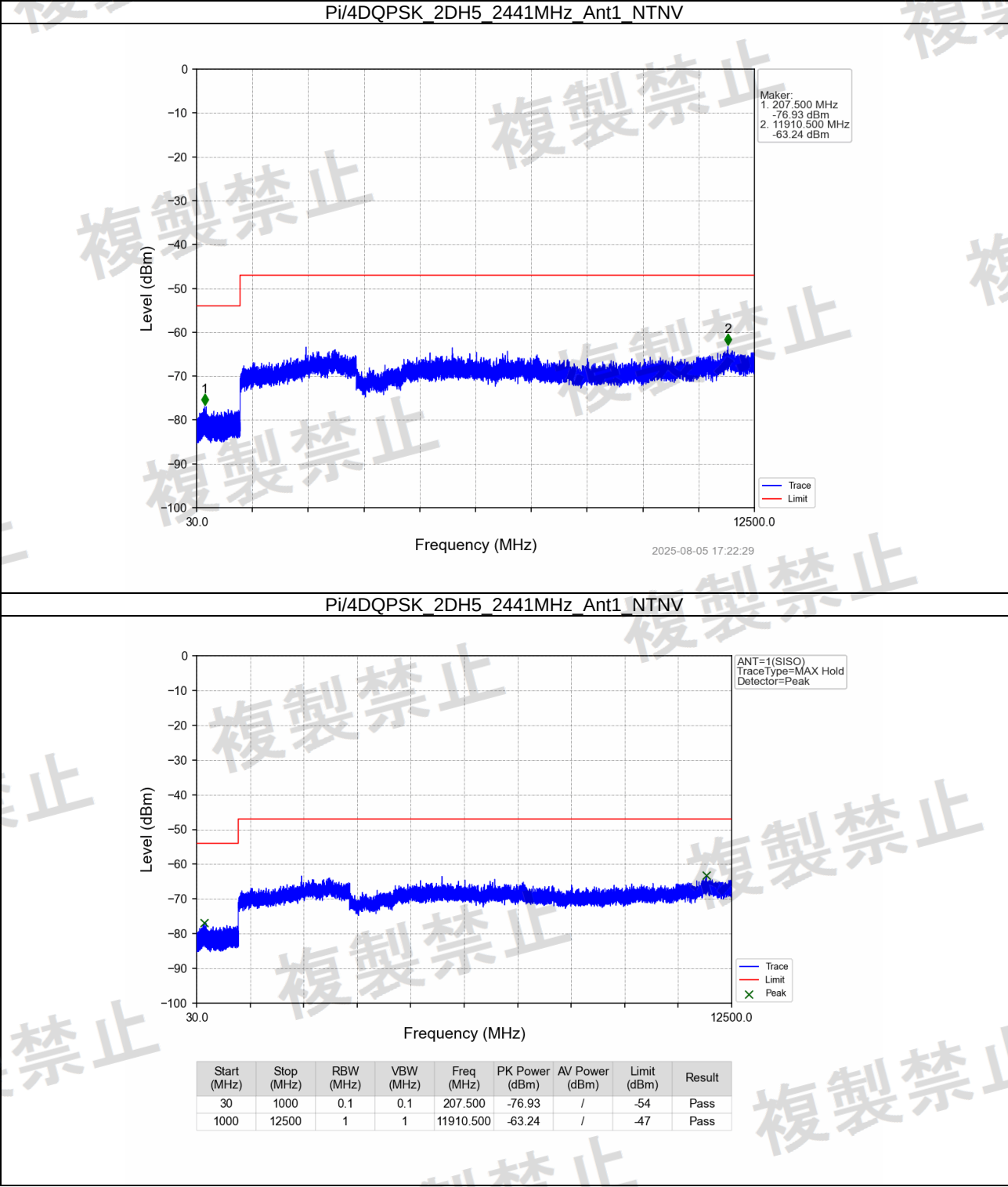
Both left and right earphone were tested, and only the worst mode was recorded(left earphone).

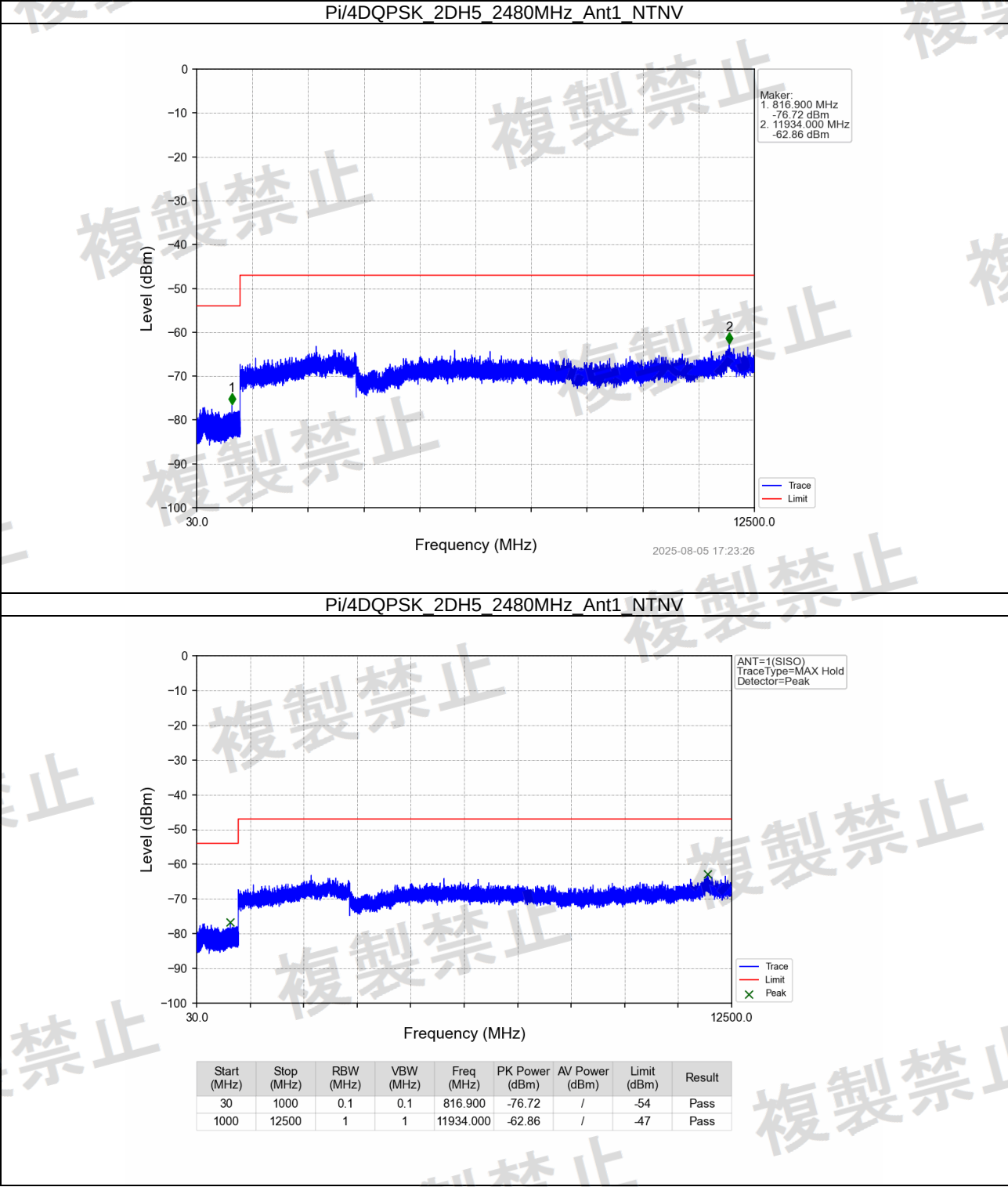


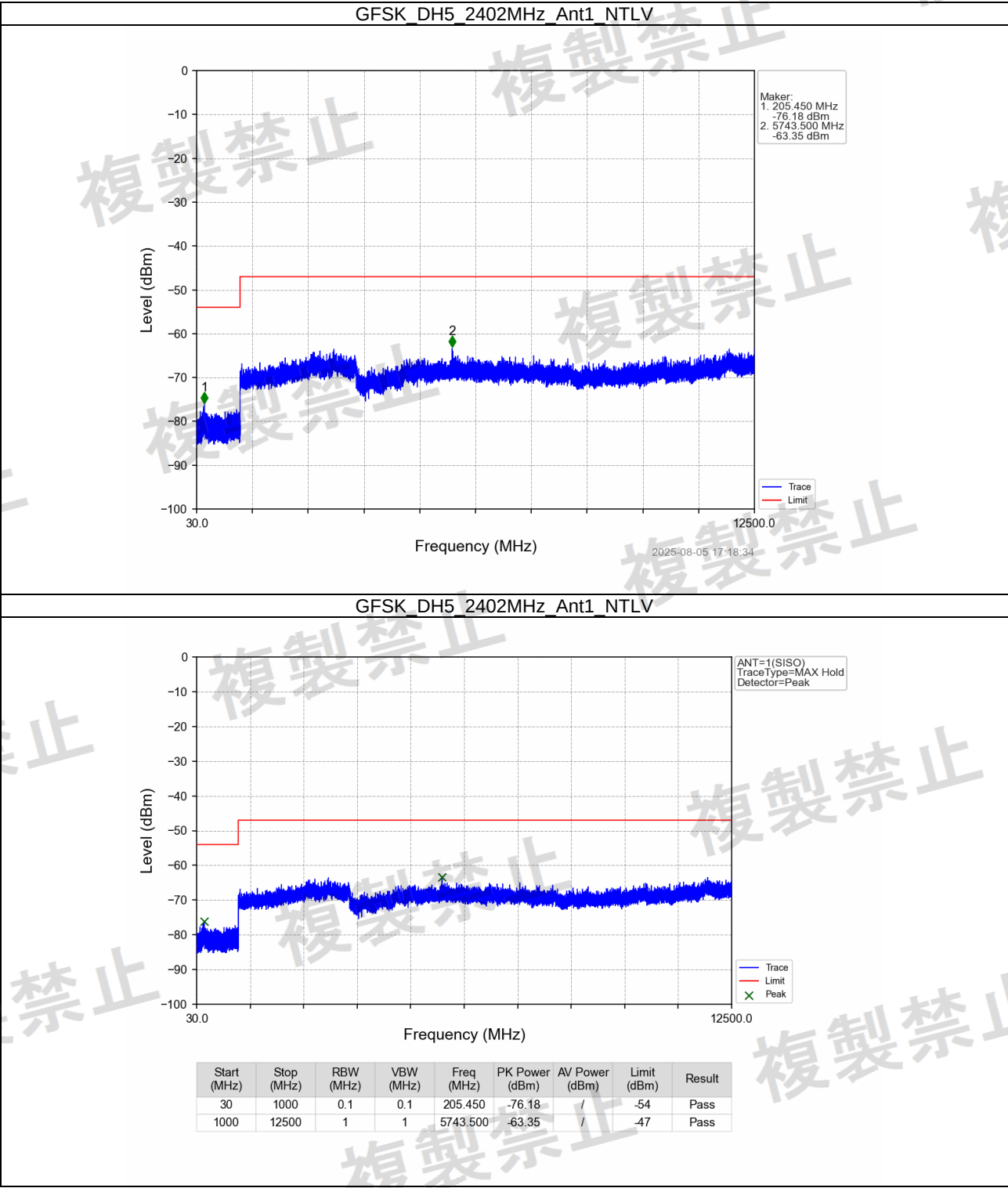


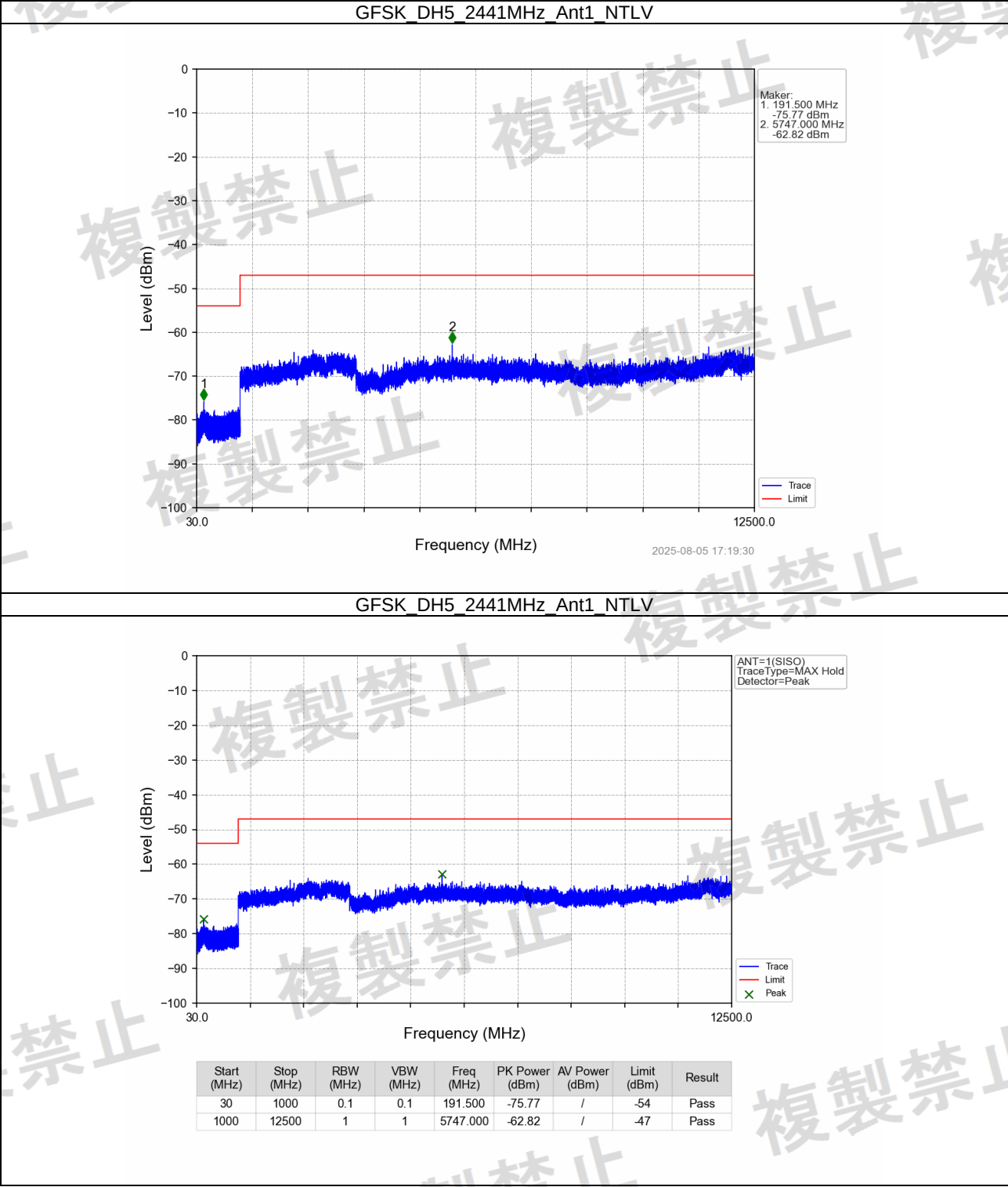


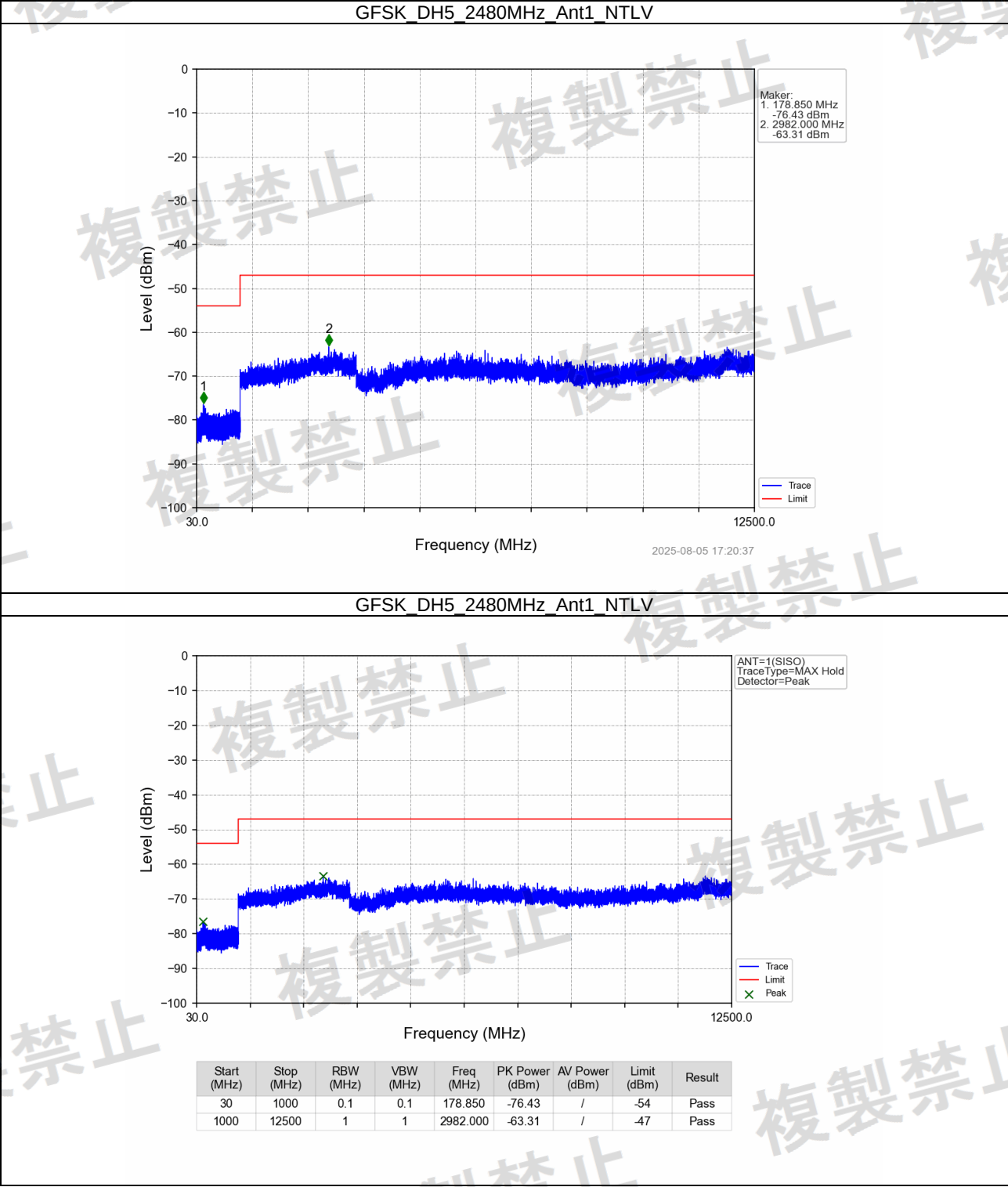


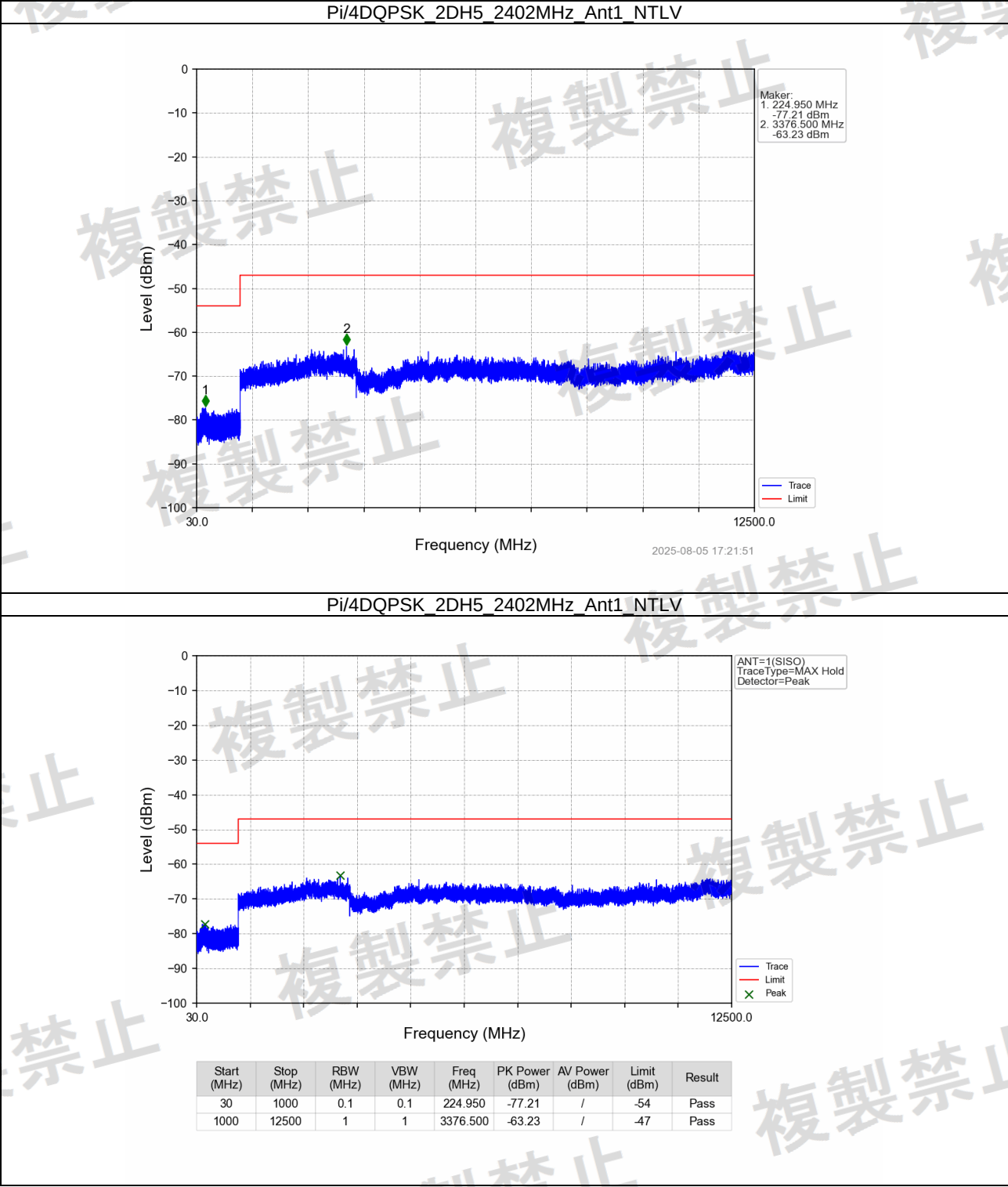


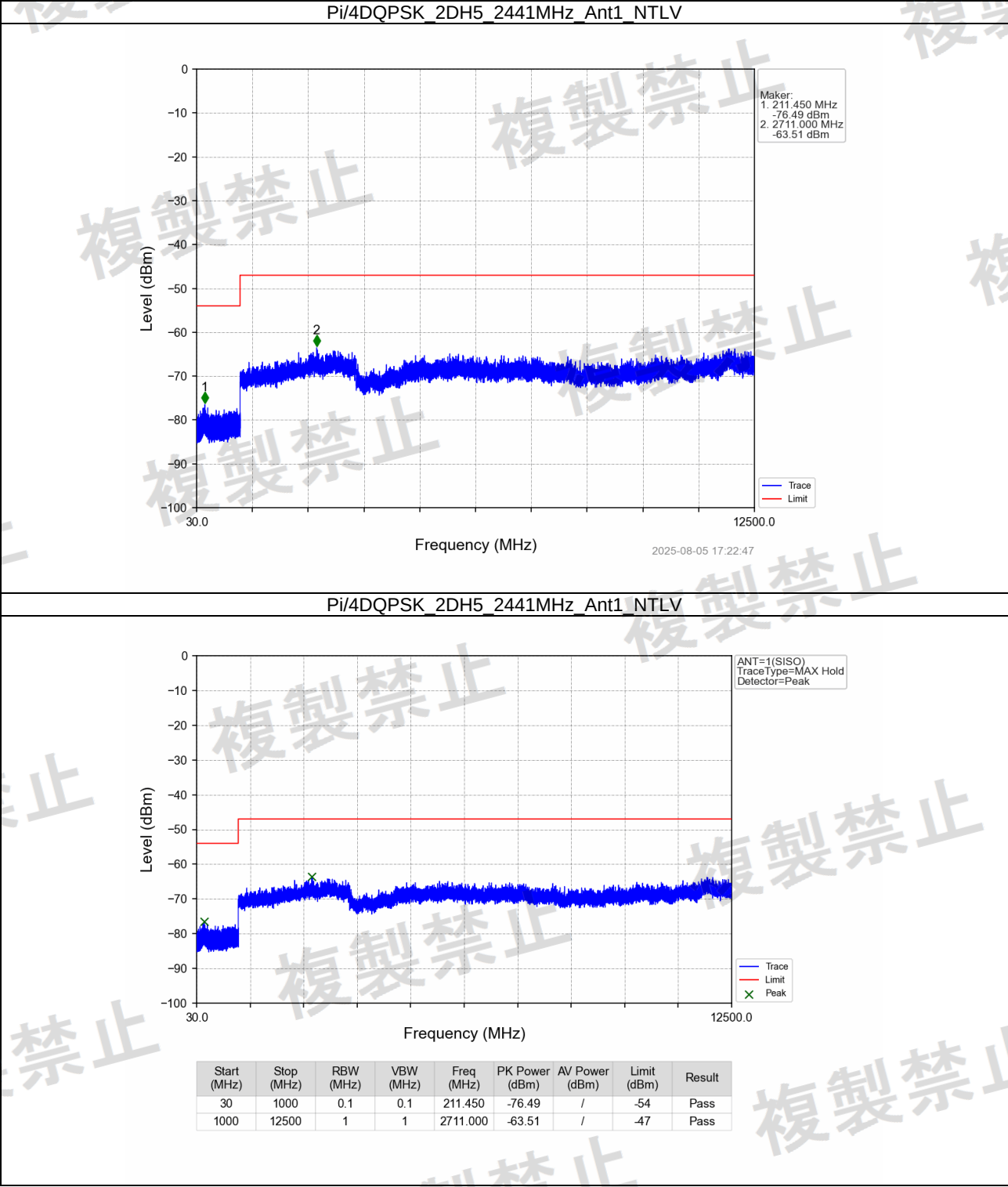


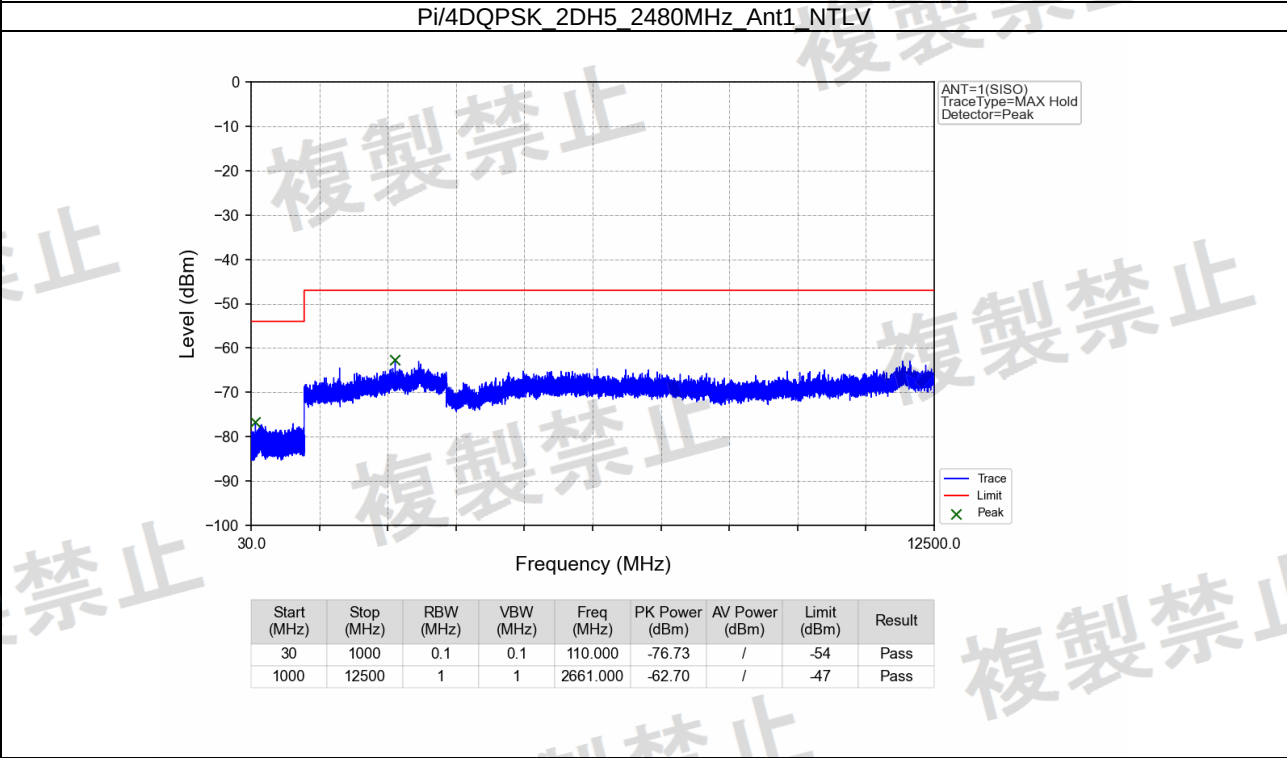
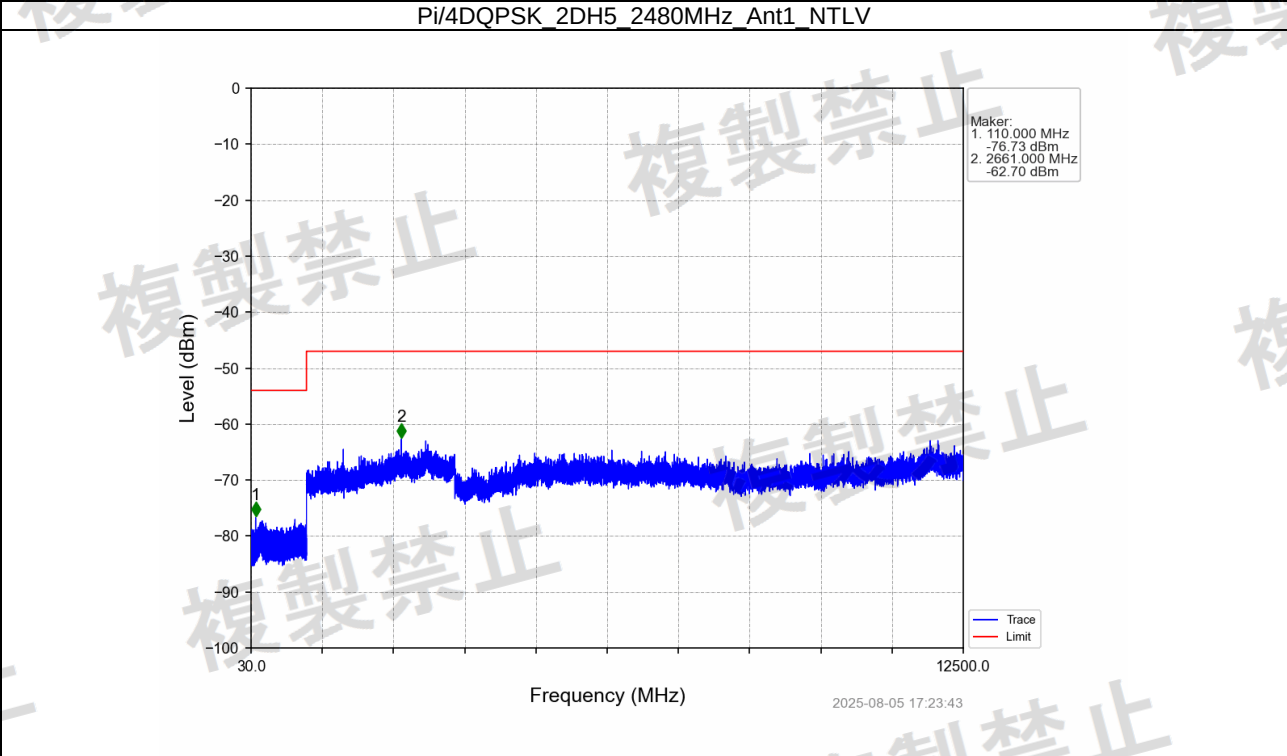


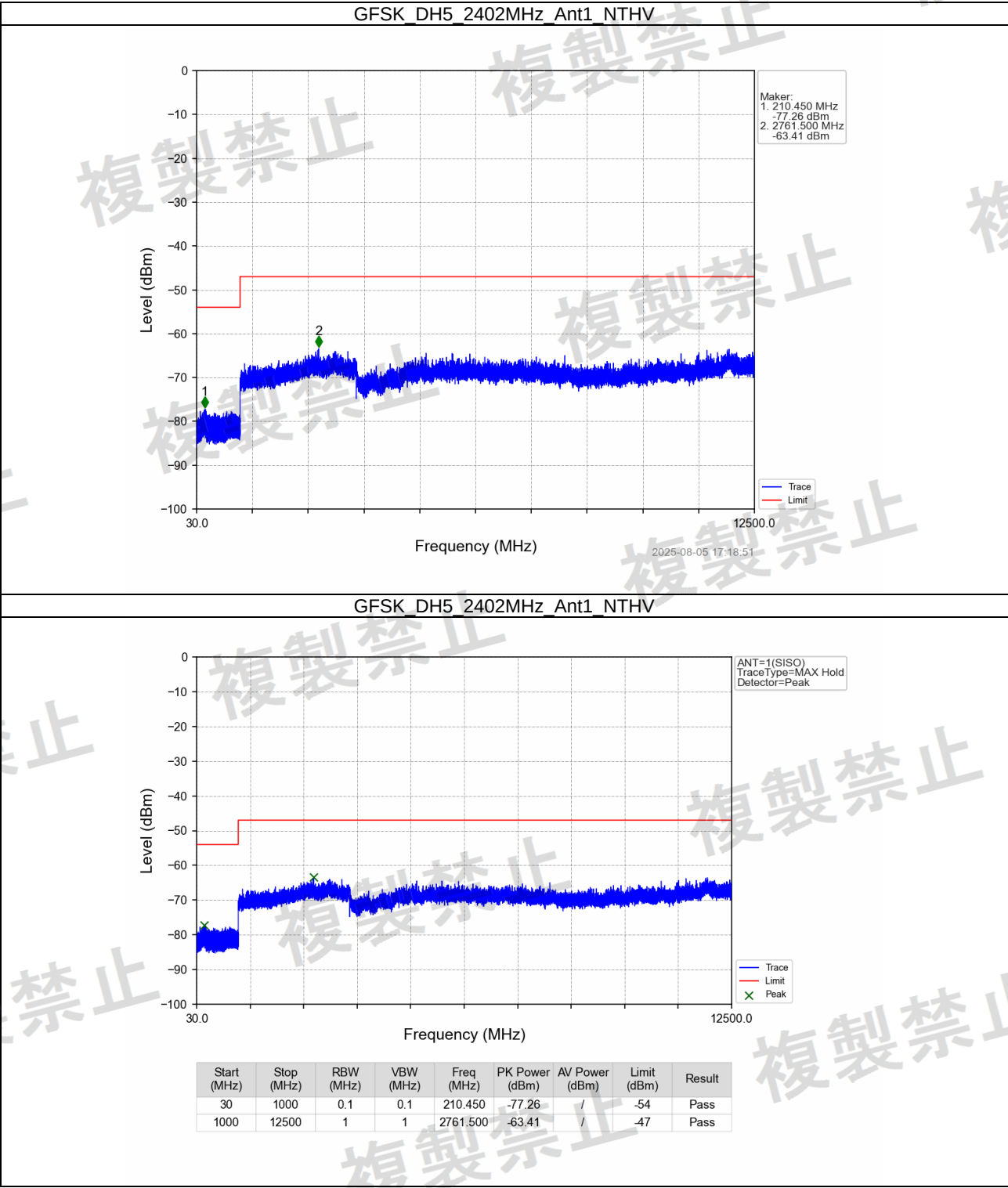


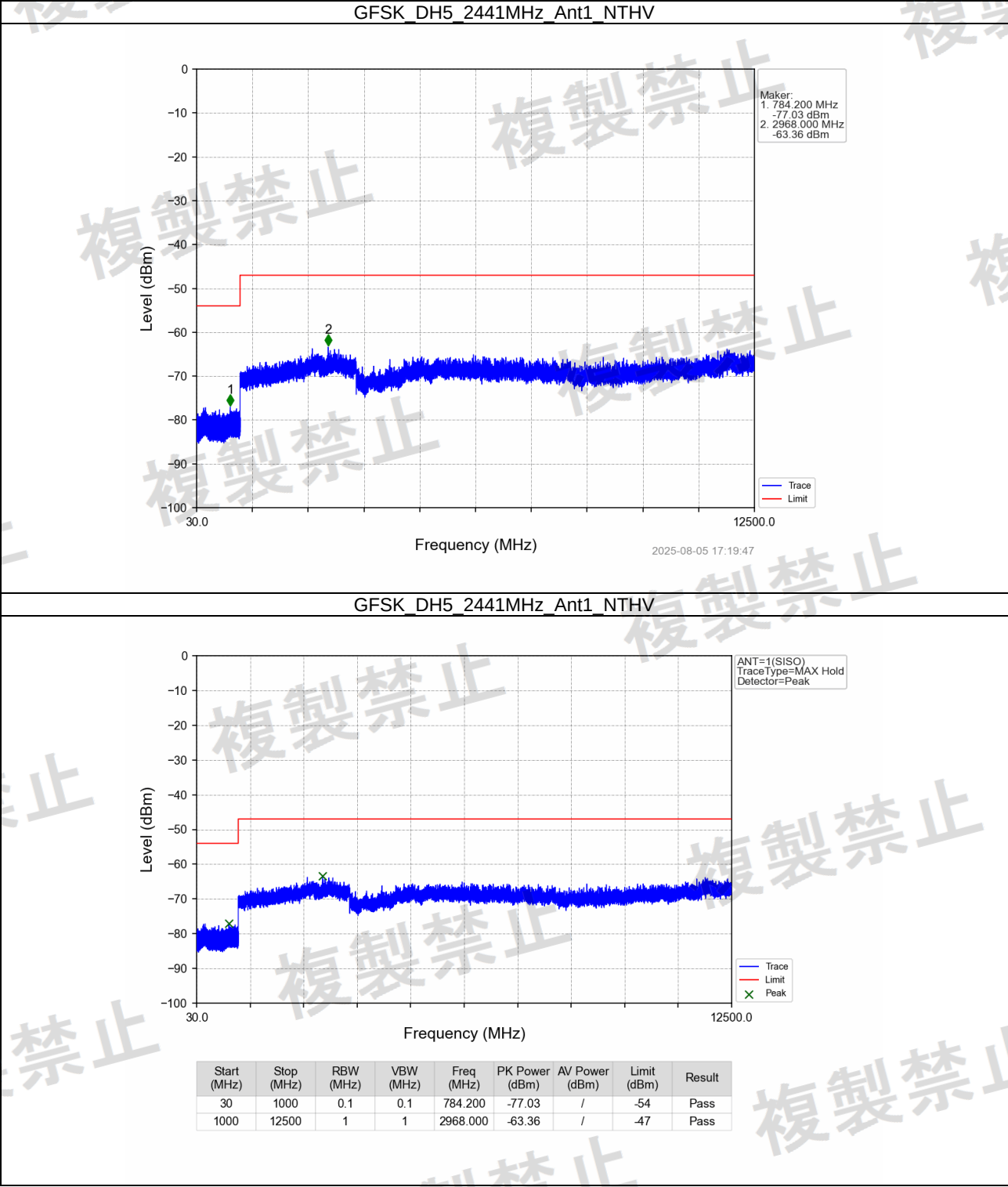


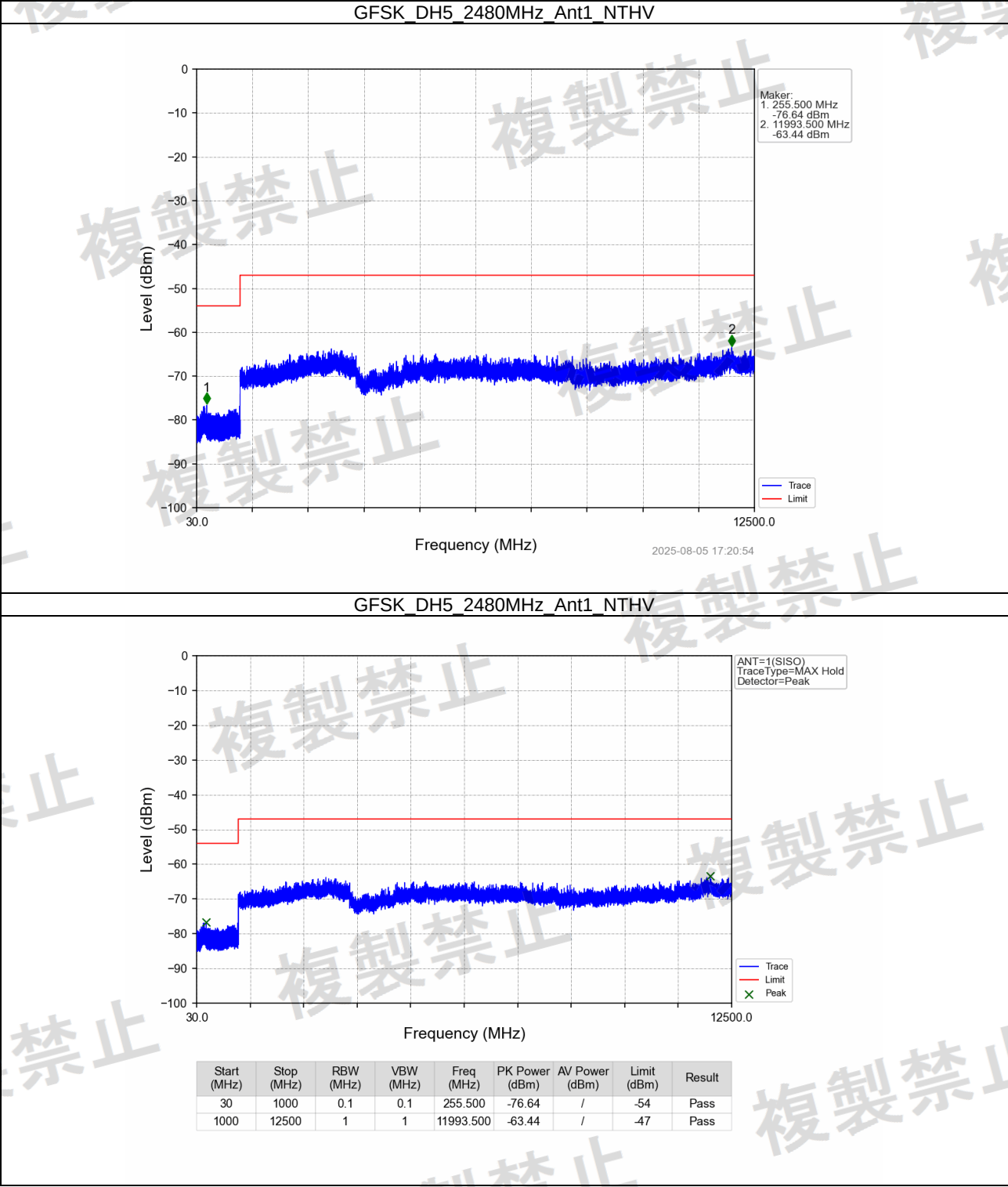


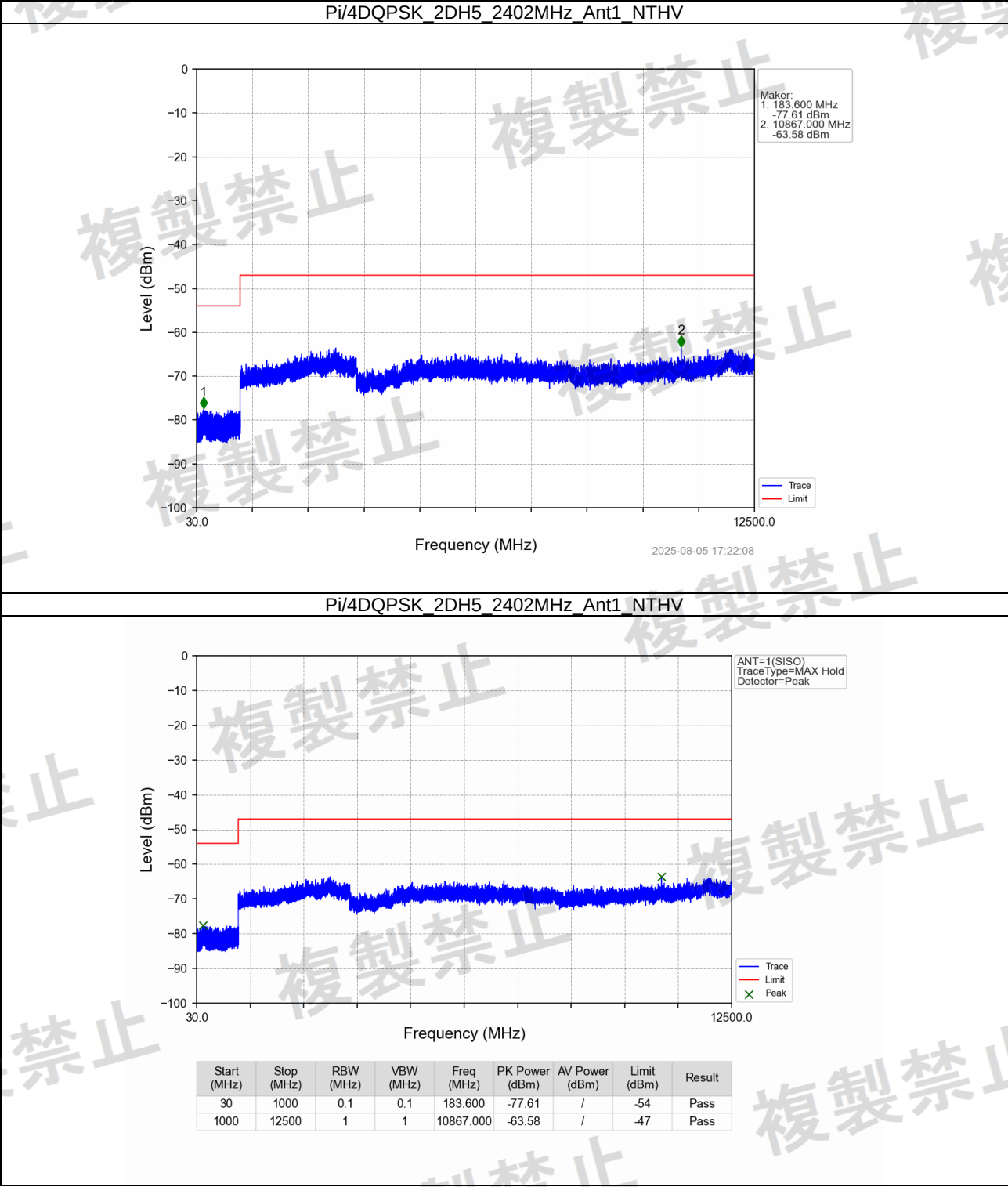


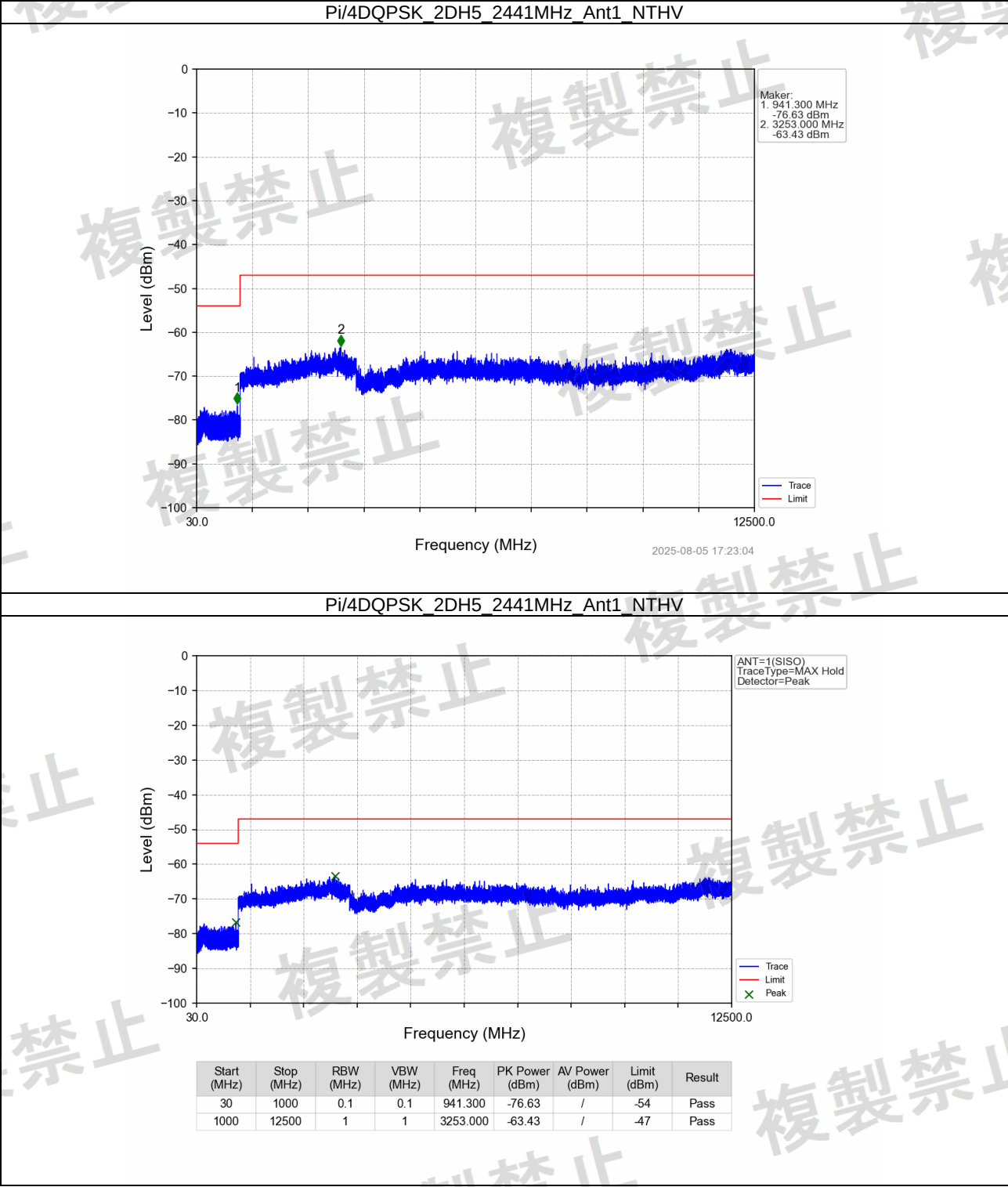


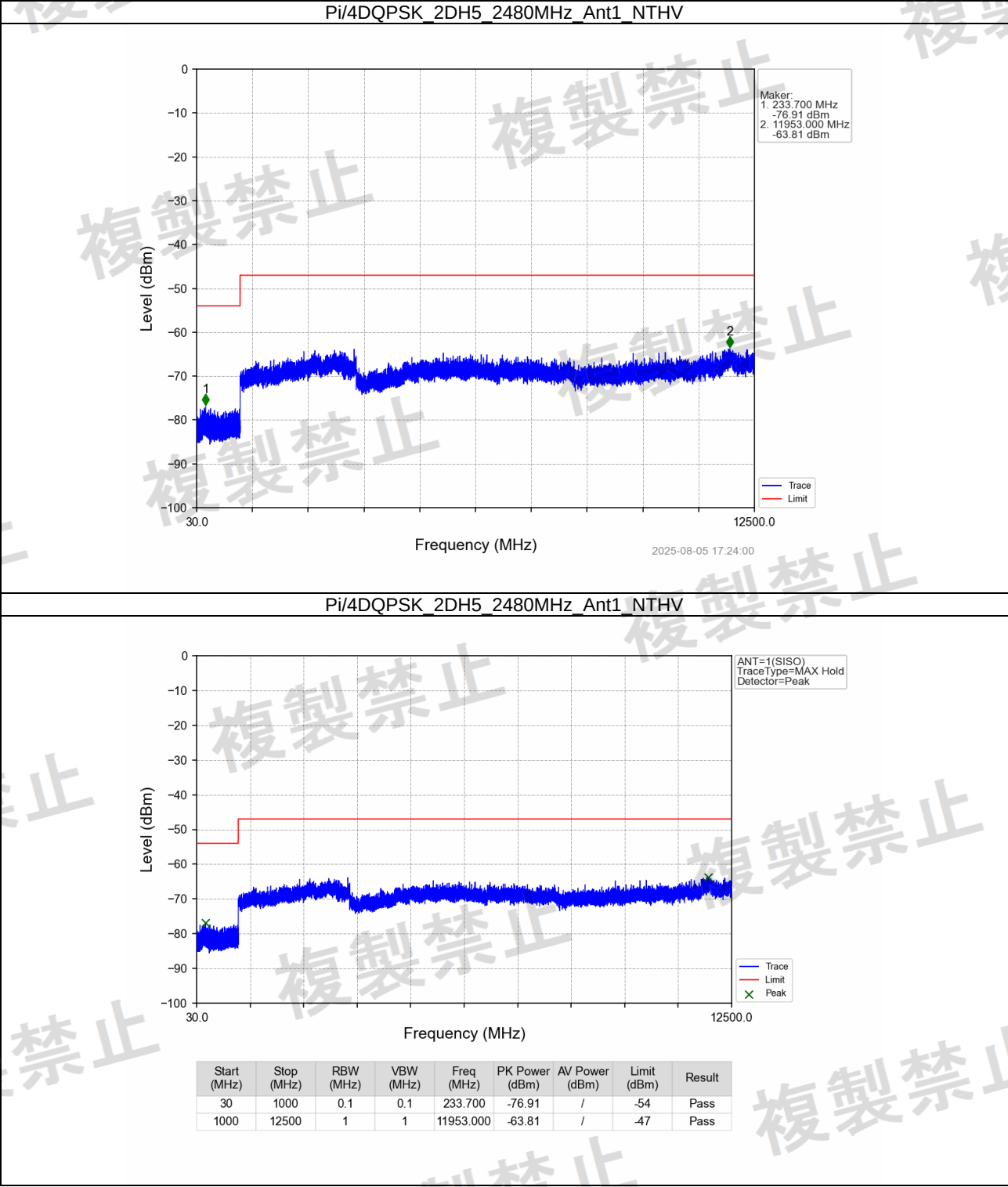














3.7. Construction protection method

REQUIREMENT

The high-frequency section and modulation section of the radio equipment except for the antenna system shall not be capable of being opened easily.

CONFIRMATION METHOD

All high-frequency section and modulation section was packaged in one IC, it can not be easily open.



3.8. Interference Prevention Function

REQUIREMENT

Clarify the one automatically to transmit and to receive identification code with the wireless equipment of the wireless station used in the same premises.

Item	Limits
Identification code	≥ 48 bits

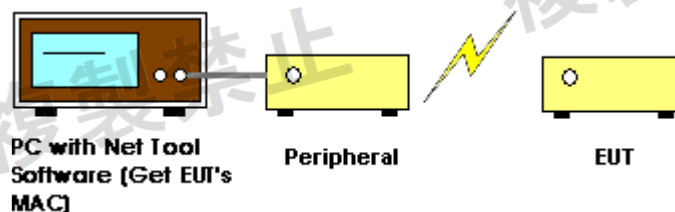
CONFIRMATION METHOD

A communication link was made where the ID code is correct (Identical).

TEST PROCEDURE

1. In the case that the EUT has the function of automatically transmitting the identification code: a. Transmit the predetermined identification codes from EUT. b. Check the transmitted identification codes with the demodulator.
2. In the case of receiving the identification code: a. Transmit the predetermined identification codes from the counterpart. b. Check if communication is normal. c. Transmit the other signals than predetermined ID codes from the counterpart. d. check if the EUT stops the transmission, or if it displays that identification codes are different from the predetermined ones.

TEST CONFIGURATION



TEST RESULTS

PASS

MAC Address: C5: A3: E6: B8: 3D: 2A

3.9. Carrier Sensing Function

LIMIT

Item	Limits
Carrier Sense	Good – EUT stop RF transmission signal after carrier inject to EUT. (On $22.79 + Gr - 20 \cdot \log(f)$ [dBm] (Gr: dBi; f: MHz) or 100mV/m)

INSTRUMENTS SETTING

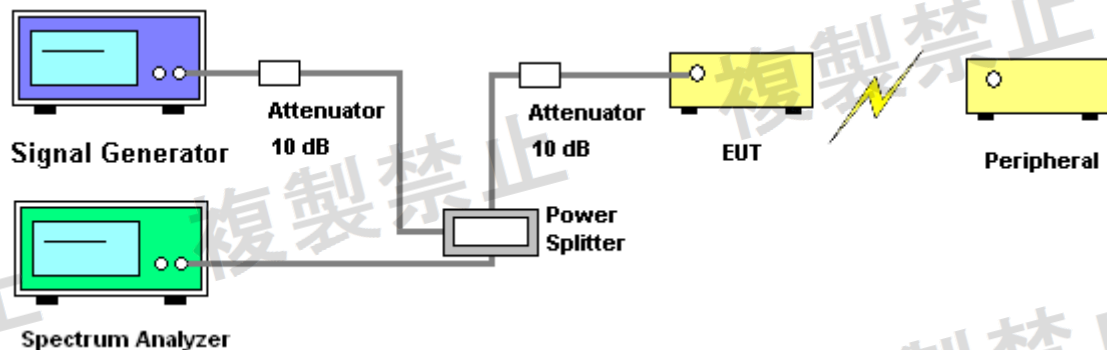
The following table is the setting of spectrum analyser and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
RB / VB	1 MHz
Span	0 MHz
Sweep	Continuous
Detector	Peak
Trigger mode	Video

TEST PROCEDURE

1. SSG adjusted the frequency as same as the EUT transmitted signal and emitted the absence of modulation from SSG and power level is (On $22.79 + Gr - 20 \cdot \log(f)$ [dBm] (Gr: dBi; f: MHz). Then turn off the RF signal of SSG.
2. EUT have transmitted the maximum modulation signal and fixed channelize.
3. Setting of SA is following as: RB: 1MHz / VB: 1MHz / SPAN: 50MHz / AT: 10dB / Ref: 0dBm / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak.
4. SSG RF Signal On.
5. EUT shall be stop the transmitted any signal and SSG RF Signal Off. Then EUT will be continuous transmitted signal.

TEST CONFIGURATION



TEST RESULTS

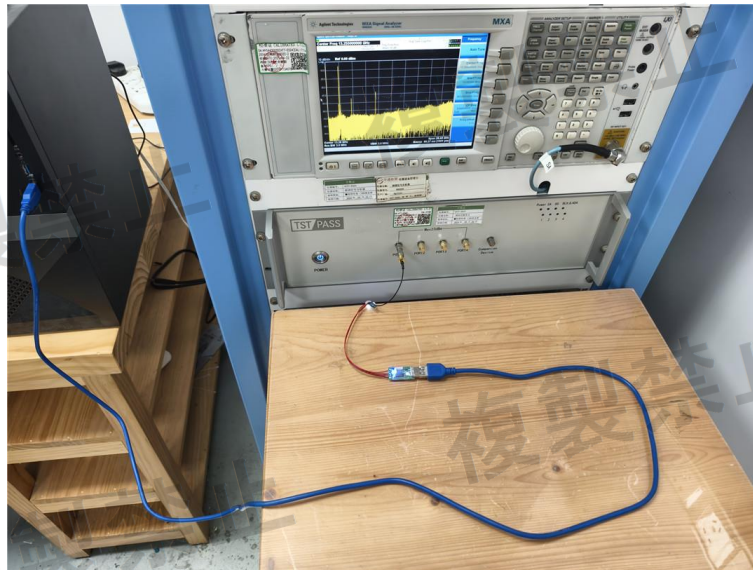
Not Applicable.



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3.10. Test Setup Photos of the EUT





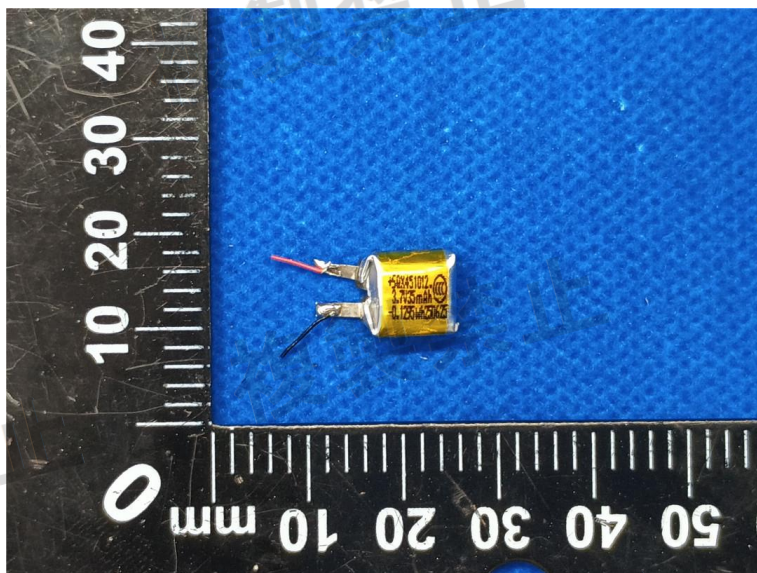
4. External and Internal Photos of the EUT





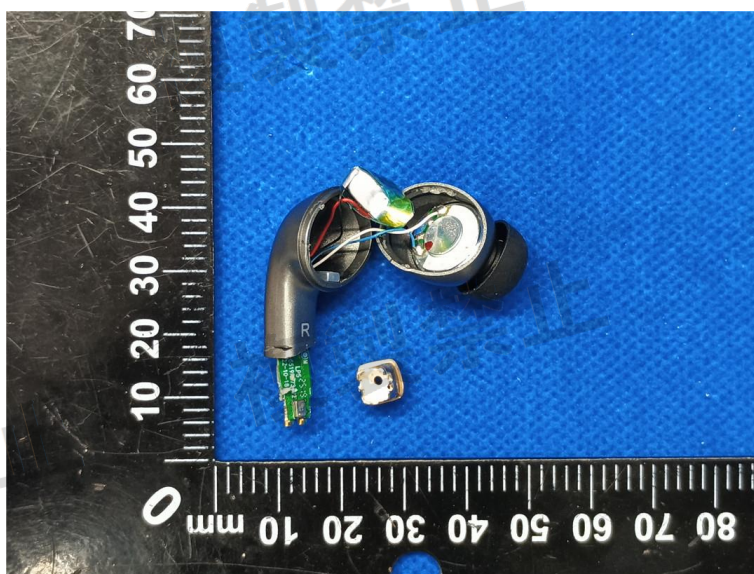
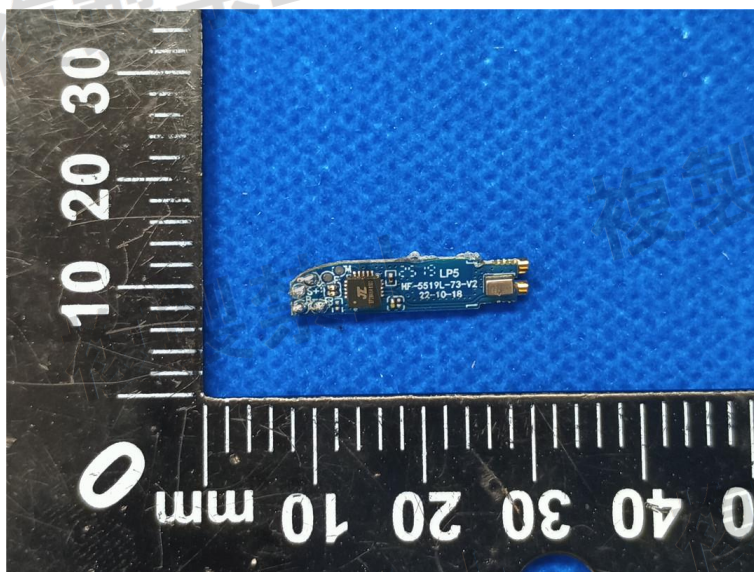
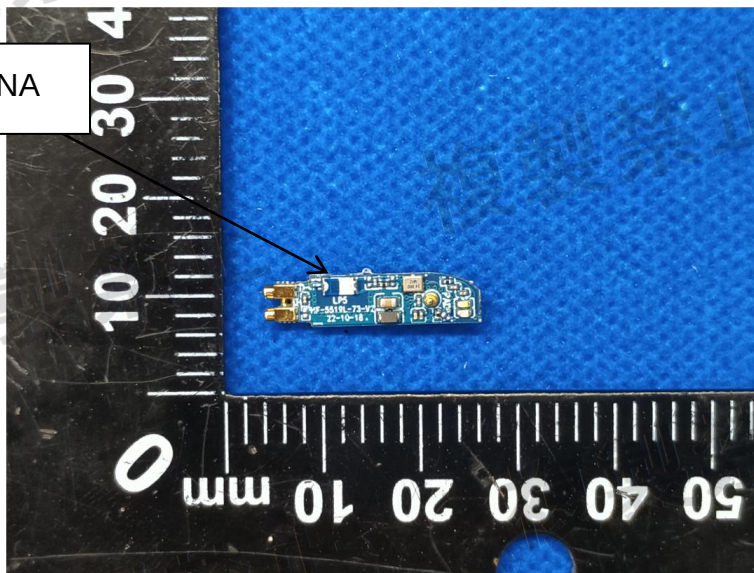


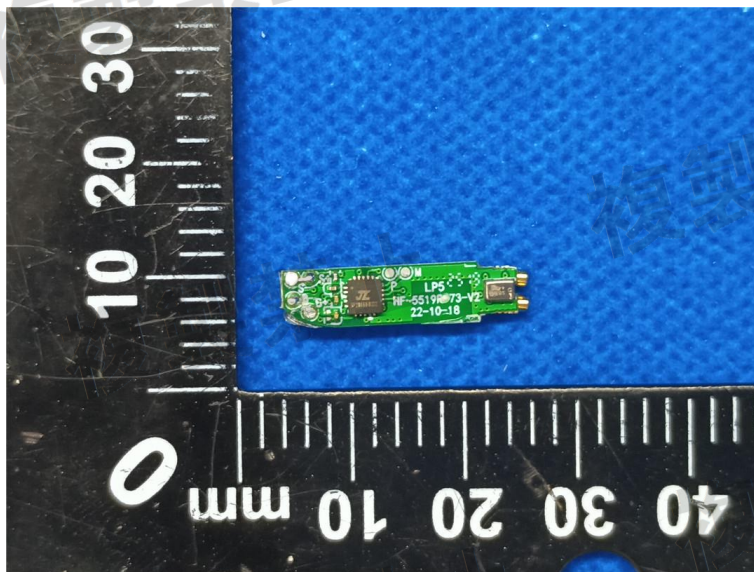
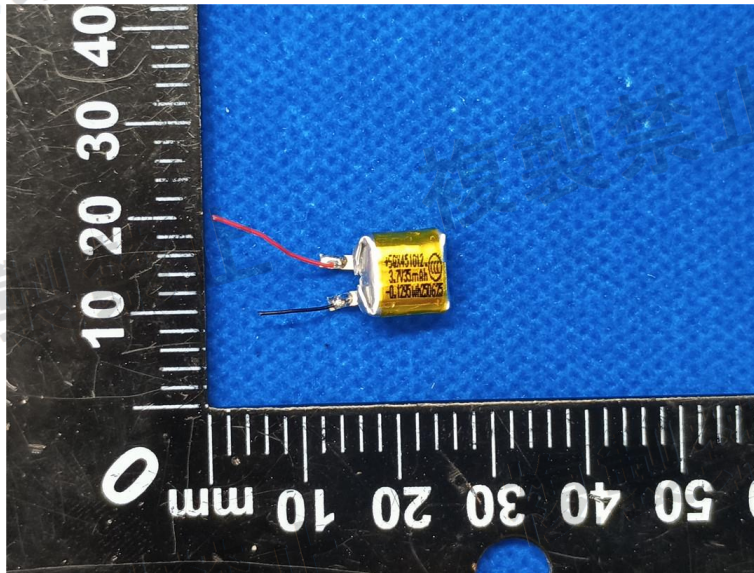






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