

TEST REPORT

Applicant : MiraArc Co., Ltd.
Address : Fukuoka Itoshima-city Sone 539-11, Japan
Product Name : Ambient speaker
Brand Name : _amp
Model No : Ambient speaker, ambient-speaker
Standards : Item 19 of Article 2 Paragraph 1
MIC Notice No.88 Appendix No. 43
Report No : MTL26030600820S
Date of Receipt sample : March 06, 2026
Date of Test : March 06, 2026 to March 16, 2026
Date of Issue : April 14, 2026
Test Result : PASS

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.



Tested by:



Approved by

Prepared By:**Shenzhen MTL Testing Technology Co., Ltd.****305, Building A, Shenghengji Industrial Park, No.137, Fuyuan 1st Road, Zhancheng Community,
Fuhai Street, Bao'an District, Shenzhen, Guangdong, China****Tel: +86-0755-23143231 Fax: +86-0755-23143231**

Contents

Contents	2
1. TEST SUMMARY	4
2. MEASUREMENT UNCERTAINTY	4
3. TEST FACILITY	5
3.1. Deviation from Standard	5
3.2. Abnormalities from Standard Conditions	5
4. GENERAL INFORMATION	6
4.1. General Description of EUT	6
4.2. Description of Test Modes	6
4.3. Test Voltage	7
5. EQUIPMENTS LIST FOR ALL TEST ITEMS	8
6. TEST RESULTS	9
6.1. Interference Prevention Function	9
6.1.1. Conclusion:	9
6.2. RF Accessibility	10
6.2.1. Conclusion:	10
6.3. Tolerance of Frequency	11
6.3.1. EUT Operation	11
6.3.2. Test Setup Diagram:	11
6.3.3. Test Data	11
6.4. Occupied Bandwidth (99%)	12
6.4.1. EUT Operation	13
6.4.2. Test Setup Diagram:	13
6.4.3. Test Data	13
6.5. Spread Bandwidth (90%)	14
6.5.1. EUT Operation	14
6.5.2. Test Setup Diagram:	15
6.5.3. Test Data	15
6.6. Spread Factor	16
6.6.1. EUT Operation	16
6.6.2. Test Setup Diagram:	16
6.6.3. Test Data	16
6.7. Antenna Power and Tolerance	17
6.7.1. EUT Operation	18
6.7.2. Test Setup Diagram:	19
6.7.3. Test Data	19
6.8. Spurious Emission Intensity	20
6.8.1. EUT Operation	22
6.8.2. Test Setup Diagram:	22
6.8.3. Test Data	22
6.9. Secondary Radiated Emissions	23
6.9.1. EUT Operation	24
6.9.2. Test Setup Diagram:	24
6.9.3. Test Data	24
6.10. Dwell Time	25

6.10.1. EUT Operation	25
6.10.2. Test Setup Diagram:	26
6.10.3. Test Data	26
7. TEST SETUP PHOTOS	27
8. EXTERNAL AND INTERNAL PHOTOS OF THE EUT	28
9. Appendix Report	37

1. TEST SUMMARY

No.	Test Item	Test Method	Basic Standard	Result
1	Tolerance of Frequency	MIC Notice No.88 Appendix No. 43	Article 2-1, Item 19	PASS
2	Occupied Bandwidth (99%)	MIC Notice No.88 Appendix No. 43	Article 2-1, Item 19	PASS
3	Spread Bandwidth (90%)	MIC Notice No.88 Appendix No. 43	Article 2-1, Item 19	PASS
4	Spread Factor	MIC Notice No.88 Appendix No. 43	Article 2-1, Item 19	PASS
5	Antenna Power and Tolerance	MIC Notice No.88 Appendix No. 43	Article 2-1, Item 19	PASS
6	Spurious Emission Intensity	MIC Notice No.88 Appendix No. 43	Article 2-1, Item 19	PASS
7	Secondary Radiated Emissions	MIC Notice No.88 Appendix No. 43	Article 2-1, Item 19	PASS
8	Dwell Time	MIC Notice No.88 Appendix No. 43	Article 2-1, Item 19	PASS
9	Interference Prevention Function	MIC Notice No.88 Appendix No. 43	Article 2-1, Item 19	PASS
10	RF Accessibility	MIC Notice No.88 Appendix No. 43	Article 2-1, Item 19	PASS

2. MEASUREMENT UNCERTAINTY

The report uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

No.	Item	Uncertainty
1	Occupied Channel Bandwidth	$\pm 3.5\%$
2	RF output power, conducted	$\pm 1.197\text{dB}$

3. TEST FACILITY

Shenzhen MTL Testing Technology Co., Ltd.

Add:305, Building A, Shenghengji Industrial Park, No.137, Fuyuan 1st Road,
Zhancheng Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

3.1. Deviation from Standard

None

3.2. Abnormalities from Standard Conditions

None

4. GENERAL INFORMATION

4.1. General Description of EUT

Manufacturer:	Shenzhen Bopai Impression Industrial Design Co., Ltd.
Manufacturer Address:	3rd Floor, Building A, Baiwangda Intelligent Park, No. 11 Shibei Road, Longgang Distict, Shenzhen
EUT Name:	Ambient speaker
Model No:	Ambient speaker
Serial Model:	ambient-speaker
Brand Name:	_amp
Difference Description:	Only differences in enclosure color exist
Operation Frequency:	2402MHZ-2480MHZ
Modulation Type	GFSK, Pi/4DQPSK, 8DPSK
Bluetooth Version	N/A
Antenna Gain	-0.58dBi
Hardware Version	N/A
Software Version	N/A
Power Supply	DC 5V, 2A; DC 9V, 2A (DC 7.4V from battery 2000mAh*2)
Maximum Output Power	5W/7.5W/10W/15W (Pulse power:10W)

Note:

- 1.For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- 2.The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report. Due to the incorrect antenna information, a series of problems such as the accuracy of the test results will be borne by the customer.

4.2. 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.

Tested channel, Frequency and Modulation Information		
CH0	2402MHz	GFSK(1Mbps), $\pi/4$ -DQPSK(2Mbps), 8-DPSK(3Mbps)
CH39	2441MHz	GFSK(1Mbps), $\pi/4$ -DQPSK(2Mbps), 8-DPSK(3Mbps)
CH78	2480MHz	GFSK(1Mbps), $\pi/4$ -DQPSK(2Mbps), 8-DPSK(3Mbps)
Hopping Mode		GFSK(1Mbps), $\pi/4$ -DQPSK(2Mbps), 8-DPSK(3Mbps)

4.3. 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 7.40V	DC 8.14V	DC 6.66V
Output To RF Module	DC 3.30V	DC 3.30V	DC 3.30V
Voltage Variation(%)	--	--	--

Note: During the input supply voltage to the EUT from the external power source is varied by +/-10%, the fluctuation of input voltage to the circuit of RF unit of test equipment is less than $\pm 1\%$. so all test performed at normal voltage only.

5. EQUIPMENTS LIST FOR ALL TEST ITEMS

No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	EMI test receiver ESCI	R&S	ESPI-7	100754	2025-03-17	2027-03-16
2	Log periodic antenna	SCHWARZBECK	VULB9163	01790	2025-10-24	2026-10-23
3	preamplifier	QUANJUDA	LNA18	2503130032	2025-07-07	2026-07-06
4	spectrum analyzer	Agilent	N9020A	MY51287427	2025-07-07	2026-07-06
5	Terminal tester	R&S	CMW500	129734	2025-07-07	2026-07-06
6	Vector signal generator	Agilent	N5182A	MY50145556	2025-07-07	2026-07-06
7	RF automatic control unit	TST	CBOX-Full	2752539	2025-07-14	2026-07-13
8	High frequency antenna	Schwarzbeck	9120D-1141	03260	2025-10-19	2026-10-18
9	High-frequency horn antenna	Schwarzbeck	HA-018040L	25098408	2025-10-31	2026-10-30
10	preamplifier	HCT	HC180400-50 G25	25098401	2025-09-19	2026-09-18
11	spectrum analyzer	R&S	FSV40	101373	2025-12-24	2026-12-23
12	preamplifier	SCHWARZBECK	8447D	2944A08081	2025-03-17	2027-03-16
13	Oscillograph	Tektronix	TDS3052C	C011852	2025-08-08	2026-08-07
14	DC regulated power supply	LONGWVEI	PS-305DF	201104661	2025-07-07	2026-07-06
15	RF automatic control unit	TST	CBOX-Full	2752539	2025-07-14	2026-07-13
16	testing software	TST Pass	2.0.2 (2026.04.07_1 5.08.33)	/	2025-07-14	2026-07-13

Note:

Cal. Institution: Guangdong Zhongcheng Metrology Testing Co., Ltd.

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

- ☐ (a) Calibration conducted by the National Institute of Information and Communications Technology (NICT) or a designated calibration agency under Article 102-18-1 of the Radio Act.
- ☐ (b) Calibration conducted based on the regulations of Article 135 or 144 of the Measurement Act.
- ☒ (c) Calibration conducted in foreign countries, which is equivalent to calibration conducted by the NICT or a designated calibration agency under Article 102-18-1 of the Radio Act.
- ☐ (d) Calibration, etc. conducted by using measuring instruments and other facilities listed at the bottom of appended table 3 of the Radio Act, which is to have been calibrated as described in (a) through (c) above.

6. TEST RESULTS

6.1. Interference Prevention Function

Test Requirement:	The EUT shall support one of the following functions: - Automatic identification transmission - Automatic identification reception
Test Method:	Notification No.88 of MIC, 2004
Procedure:	(1) For EUTs capable of automatically transmitting identification data a. Transmit identification data from EUT to Demodulator b. Confirm identification data is correctly received by Demodulator (2) For EUTs capable of automatically receiving identification data a. Transmit identification data from Link Partner to EUT b. Confirm communication link is established c. Link Partner shall respond by transmitting different identification data back to the EUT d. Confirm EUT stops transmitting, or confirm EUT recognizes that the two identification data are different

6.1.1. Conclusion:

The detected ID of the device is below:

ef:ed:eb:38:d7:f9

Test result: The device meet the requirements

PASS

6.2. RF Accessibility

Test Requirement:

The EUT shall be constructed in such a way that sensitive RF parts, (like modulation and oscillator parts) cannot be reached easily by the user. These parts shall be covered by soldered metal caps or glue or by other mechanical covers. If the covers are fixed with screws, these shall be not the common type(s) like a Phillips, but special versions like Torx, so that the user cannot open the device with common tools.

6.2.1. Conclusion:

Tamper proof declaration:

- ☐ Sealed with special screws.
- ☐ Plastic chassis is being welded using ultrasonic waves.
- ☐ Chassis is glued using a special adhesive
- ☐ Metal covers are spot-fused.
- ☐ Cover is specially interlocked.
- ☐ RF and modulation components are covered with shielding case and this shielding case is soldered.
- ☐ Shielded case is welded at RF and modulation parts, and ID-ROM is welded using the BGA method.
- ☐ Shield case is welded at RF and modulation parts, and ID-ROM is glued at its lead with a special adhesive.
- ☐ Shield case is welded at RF and modulation parts, and ID-ROM is glued with a non-transparent laminating agent.
- ☒ RF and Modulation parts are mounted on PCB with surface mount technology, and there is no any adjustable parts on PCB or adjustable parts are not exposed.

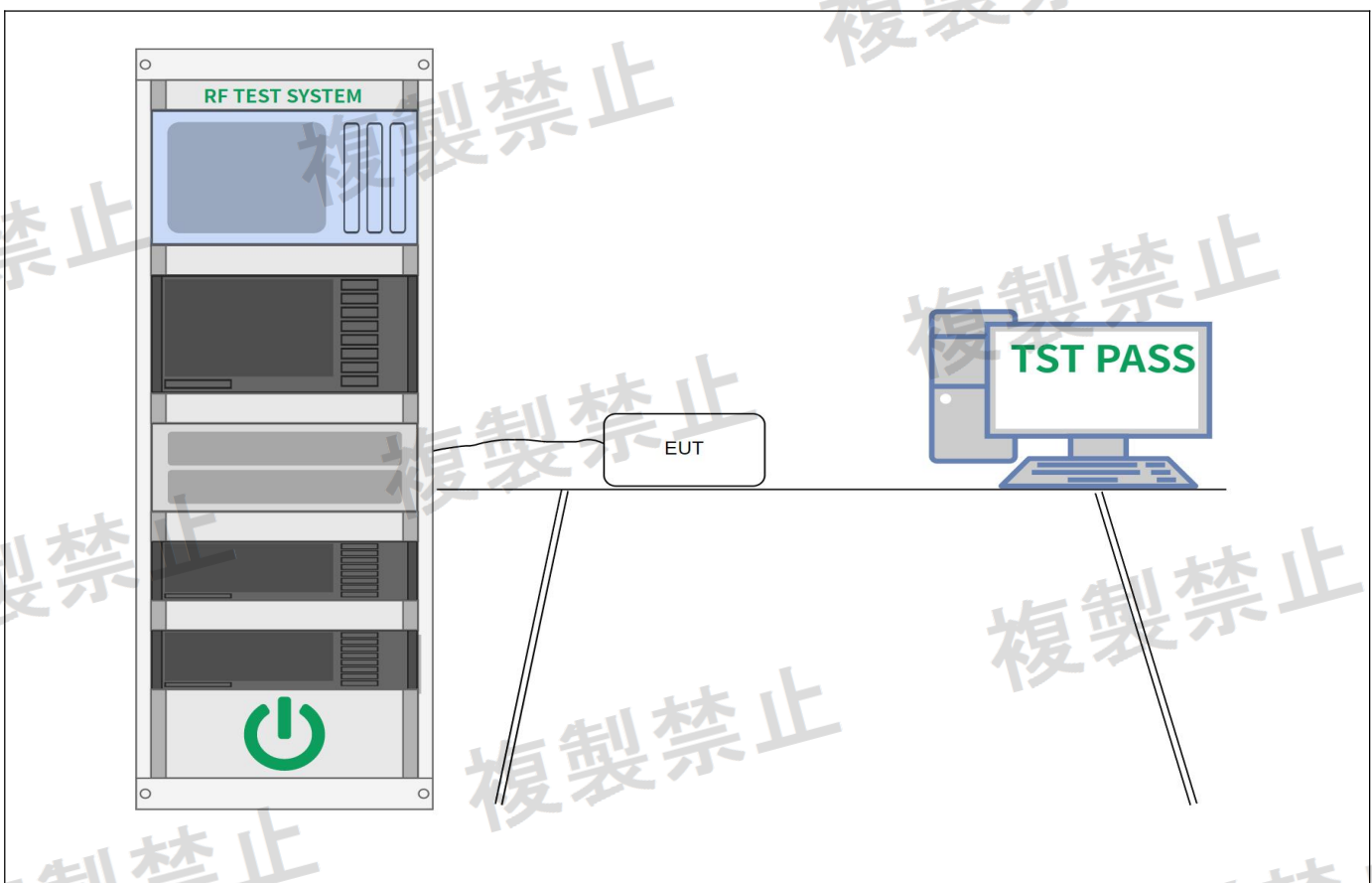
6.3. Tolerance of Frequency

Test Limit:	±50ppm or less.	
Test Method:	MIC Notice No.88 Appendix No. 43	
Procedure:	Center frequency:	Test frequency
	Span:	2 times channel bandwidth
	RBW:	100 kHz (Modulation ON)
	VBW:	100 kHz (Modulation ON)
	Sweep data points:	1001 or greater
	Sweep time:	Auto
	Detector mode:	Positive peak
	Indication mode:	Max hold
If the EUT cannot transmit in un-modulated mode then modulated mode measurements can be made, as follows: If the spectrum observed using the spectrum analyzer has a characteristic dip at the center, then the center frequency of the dip shall be regarded as the center frequency of the carrier.		

6.3.1. EUT Operation

Operating Environment:					
Temperature:	23.2 °C	Humidity:	51 %	Atmospheric Pressure:	101.1 kPa

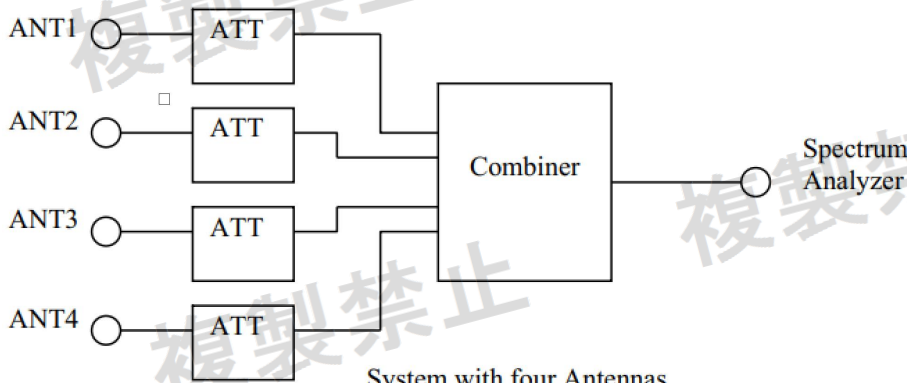
6.3.2. Test Setup Diagram:



6.3.3. Test Data

Please Refer to Appendix for Details.

6.4. Occupied Bandwidth (99%)

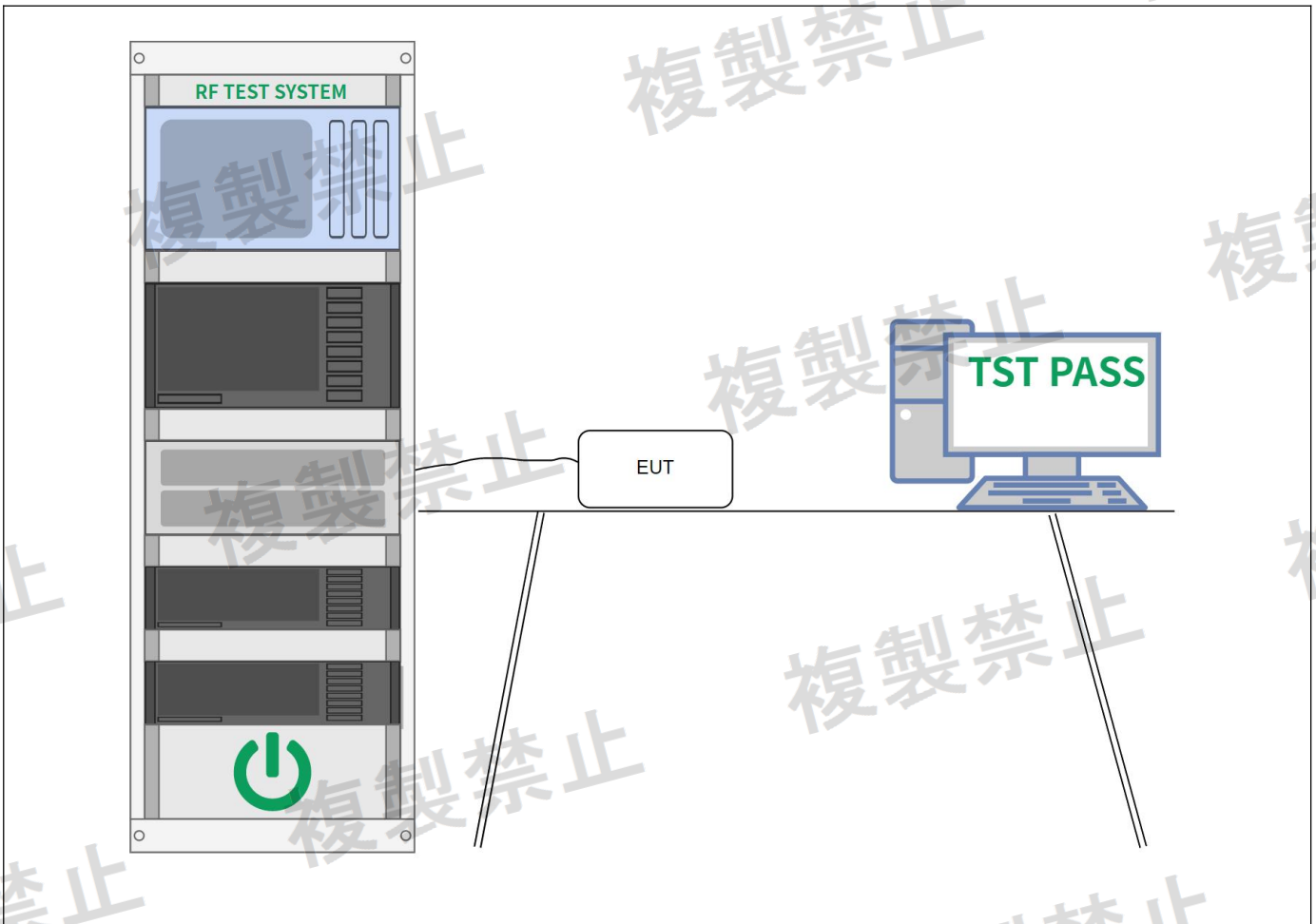
Test Limit:	For FHSS or FHSS and other modulation Hybrid: 83.5 MHz or less: The measured bandwidth at the low and high channels shall meet the following requirements: - The lowest frequency of the measured bandwidth shall not be less than 2400 MHz - The highest frequency of the measured bandwidth shall not be greater than 2483.5 MHz [Occupied Bandwidth] 83.5 MHz or less																		
Test Method:	MIC Notice No.88 Appendix No. 43																		
Procedure:	<table border="1"> <tr> <td>Center Frequency:</td><td>Test frequency</td></tr> <tr> <td>Span:</td><td>2 - 3.5 times the technical standard</td></tr> <tr> <td>RBW:</td><td>Within 3% of the technical standard</td></tr> <tr> <td>VBW:</td><td>Same as RBW</td></tr> <tr> <td>Sweep time:</td><td>Auto</td></tr> <tr> <td>Sweep data points:</td><td>1001 or greater</td></tr> <tr> <td>Detector mode:</td><td>Positive peak</td></tr> <tr> <td>Indication mode:</td><td>Max hold</td></tr> <tr> <td>BW setting:</td><td>99%</td></tr> </table> (1) Measure the signal bandwidth using a spectrum analyzer (2) For multiple antenna systems: a) Each antenna shall be individually measured b) If the measured occupied bandwidth for any antenna exceeds [(Occupied Bandwidth Limit) – 100kHz] then, in addition, the occupied bandwidth shall be measured with all antennas combined – see diagram below:  System with four Antennas	Center Frequency:	Test frequency	Span:	2 - 3.5 times the technical standard	RBW:	Within 3% of the technical standard	VBW:	Same as RBW	Sweep time:	Auto	Sweep data points:	1001 or greater	Detector mode:	Positive peak	Indication mode:	Max hold	BW setting:	99%
Center Frequency:	Test frequency																		
Span:	2 - 3.5 times the technical standard																		
RBW:	Within 3% of the technical standard																		
VBW:	Same as RBW																		
Sweep time:	Auto																		
Sweep data points:	1001 or greater																		
Detector mode:	Positive peak																		
Indication mode:	Max hold																		
BW setting:	99%																		

6.4.1. EUT Operation

Operating Environment:

Temperature:	22.3 °C	Humidity:	54 %	Atmospheric Pressure:	101.1 kPa
--------------	---------	-----------	------	-----------------------	-----------

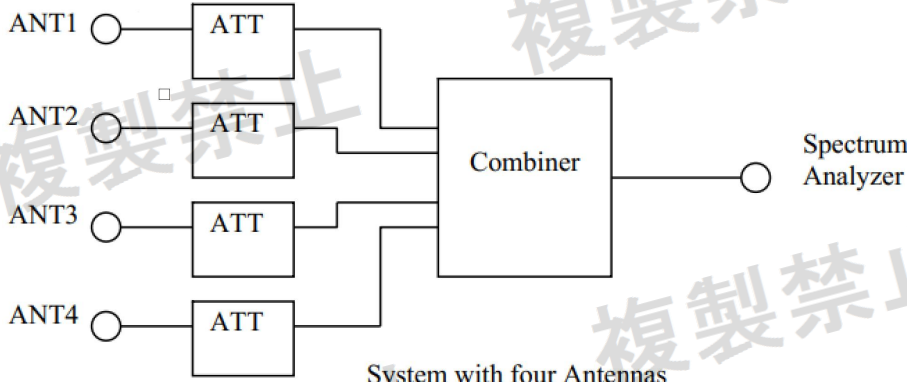
6.4.2. Test Setup Diagram:



6.4.3. Test Data

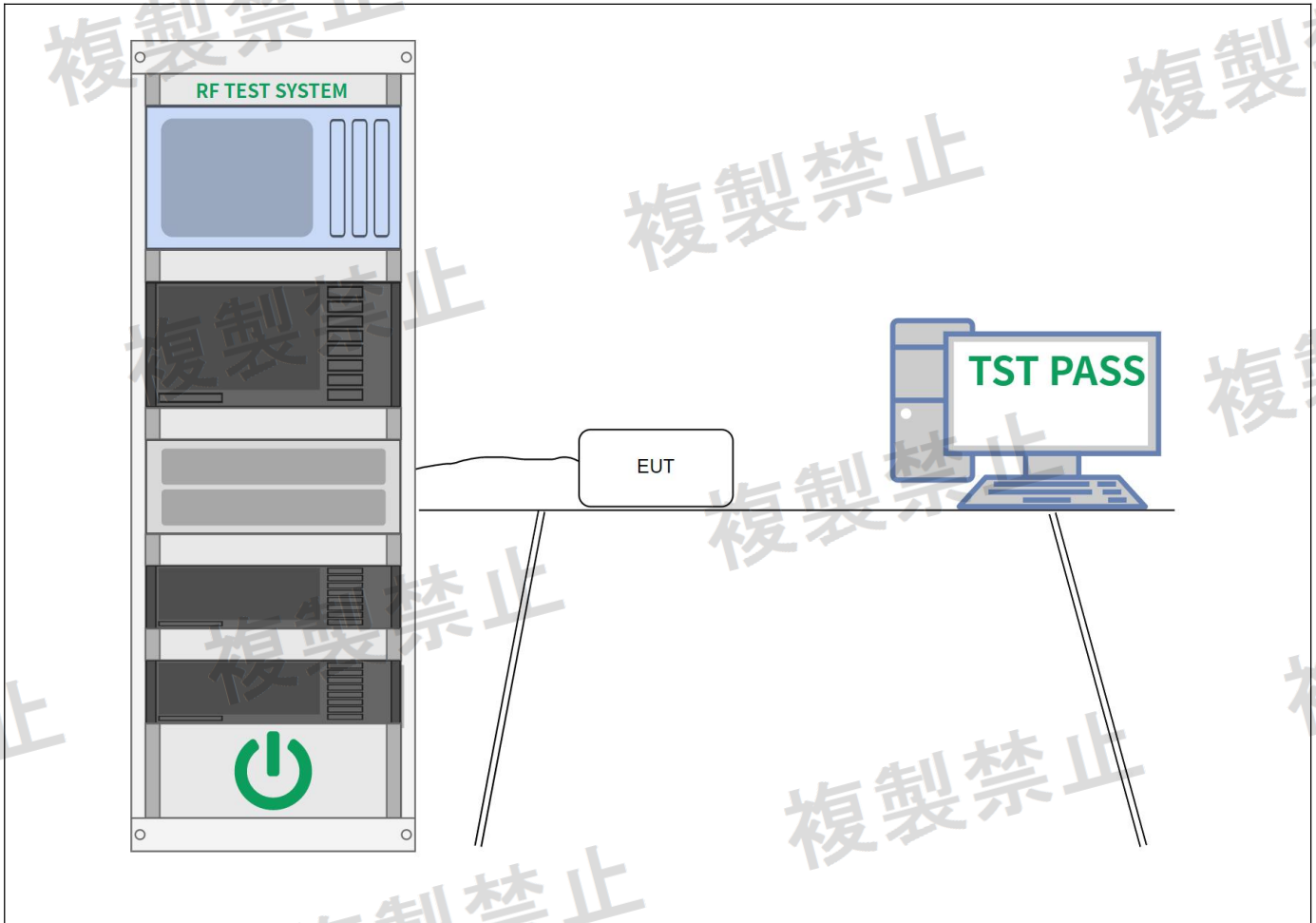
Please Refer to Appendix for Details.

6.5. Spread Bandwidth (90%)

Test Limit:	Only for report use.																		
Test Method:	MIC Notice No.88 Appendix No. 43																		
Procedure:	<table border="1"> <tr> <td>Center Frequency:</td><td>Test frequency</td></tr> <tr> <td>Span:</td><td>2 - 3.5 times the technical standard</td></tr> <tr> <td>RBW:</td><td>Within 3% of the technical standard</td></tr> <tr> <td>VBW:</td><td>Same as RBW</td></tr> <tr> <td>Sweep time:</td><td>Auto</td></tr> <tr> <td>Sweep data points:</td><td>1001 or greater</td></tr> <tr> <td>Detector mode:</td><td>Positive peak</td></tr> <tr> <td>Indication mode:</td><td>Max hold</td></tr> <tr> <td>BW setting:</td><td>90%</td></tr> </table> (1) Measure the signal bandwidth using a spectrum analyzer (2) For multiple antenna systems: a) Each antenna shall be individually measured b) If the measured occupied bandwidth for any antenna exceeds [(Occupied Bandwidth Limit) – 100kHz] then, in addition, the occupied bandwidth shall be measured with all antennas combined – see diagram below:  System with four Antennas	Center Frequency:	Test frequency	Span:	2 - 3.5 times the technical standard	RBW:	Within 3% of the technical standard	VBW:	Same as RBW	Sweep time:	Auto	Sweep data points:	1001 or greater	Detector mode:	Positive peak	Indication mode:	Max hold	BW setting:	90%
Center Frequency:	Test frequency																		
Span:	2 - 3.5 times the technical standard																		
RBW:	Within 3% of the technical standard																		
VBW:	Same as RBW																		
Sweep time:	Auto																		
Sweep data points:	1001 or greater																		
Detector mode:	Positive peak																		
Indication mode:	Max hold																		
BW setting:	90%																		

6.5.1. EUT Operation

Operating Environment:					
Temperature:	22.3 °C	Humidity:	54%	Atmospheric Pressure:	101.1 kPa

6.5.2. Test Setup Diagram:**6.5.3. Test Data**

Please Refer to Appendix for Details.

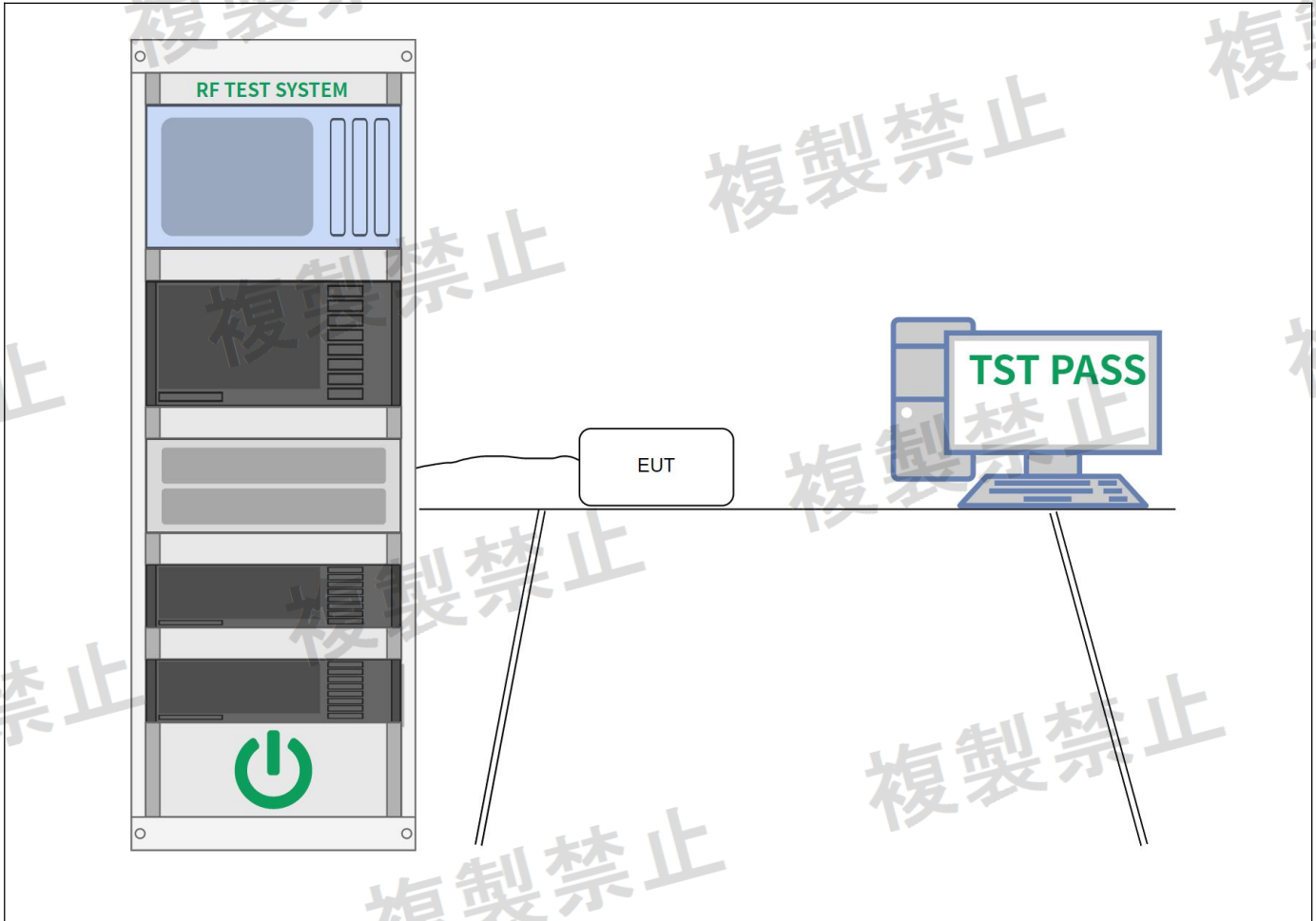
6.6. Spread Factor

Test Limit:	The spread factor should be more than 5.
Test Method:	The test method is the same as spread bandwidth.
Procedure:	The test procedure is the same as spread bandwidth.

6.6.1. EUT Operation

Operating Environment:					
Temperature:	22.3 °C	Humidity:	54 %	Atmospheric Pressure:	101.1 kPa

6.6.2. Test Setup Diagram:



6.6.3. Test Data

Please Refer to Appendix for Details.

6.7. Antenna Power and Tolerance

Test Limit:	Antenna Power: 3 mW/MHz or less Tolerance: +20% or less EIRP: 6.91dBm/MHz	
Test Method:	MIC Notice No.88 Appendix No. 43	
Procedure:	[Setting 1] – Search for peak power frequency	
	Center Frequency:	Test frequency
	Span:	Approximately twice the occupied bandwidth
	RBW:	1MHz
	VBW:	Approximately three times the RBW
	Sweep time:	Auto
	Sweep data points:	1001 or greater
	Detector mode:	Positive peak
	Indication mode:	Max hold
	[Setting 2] – Measurement of average antenna power for FHSS, DSSS, OFDM	
	Frequency:	Frequency of peak power found using [Setting 1]
	Span:	0 Hz
	RBW:	3 MHz (FHSS-Channel Spacing $\leq$ 1MHz) 1MHz (DSSS, OFDM, FHSS-Channel Spacing $>$ 1MHz)
	Detector mode:	Sample
	Sweep:	Minimum time required to make an accurate measurement.
		For burst type (intermittent) transmission sweep time shall be greater than one burst interval
	Sweep data points:	1001 or greater
	[Setting 3] – Measurement of average antenna power other than for FHSS, DSSS, OFDM	
	Frequency:	Frequency of peak power found using [Setting 1]
	Span:	0 Hz
	RBW:	Bandwidth sufficient to cover that occupied by the carrier
	VBW:	Bandwidth sufficient to cover that occupied by the carrier
	Detector mode:	Sample
	Sweep:	Minimum time required to make an accurate measurement.
		For burst type (intermittent) transmission sweep time shall be greater than one burst interval
	Sweep data	1001 or greater

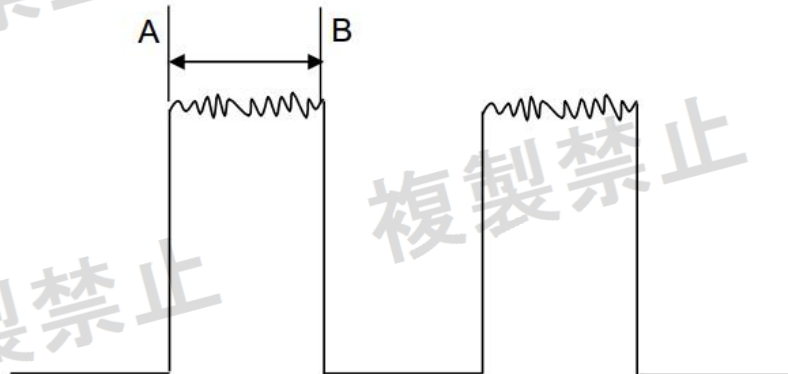
points:

- A hopping transmission separation of 1MHz or less with a constant transmission interval
- The transmission probability is equal for all hopping frequencies

Procedure:
(1) After configuring the spectrum analyzer to [Setting 1], find the frequency of maximum transmitted power

(2) After configuring the spectrum analyzer to [Setting 2], measure the Average Burst Power of the frequency found in (1)

Note: Measure the period A-B in the figure below:



Measurement of Average Burst Power (A to B)

(3) Calculate Antenna Power using the following formula:

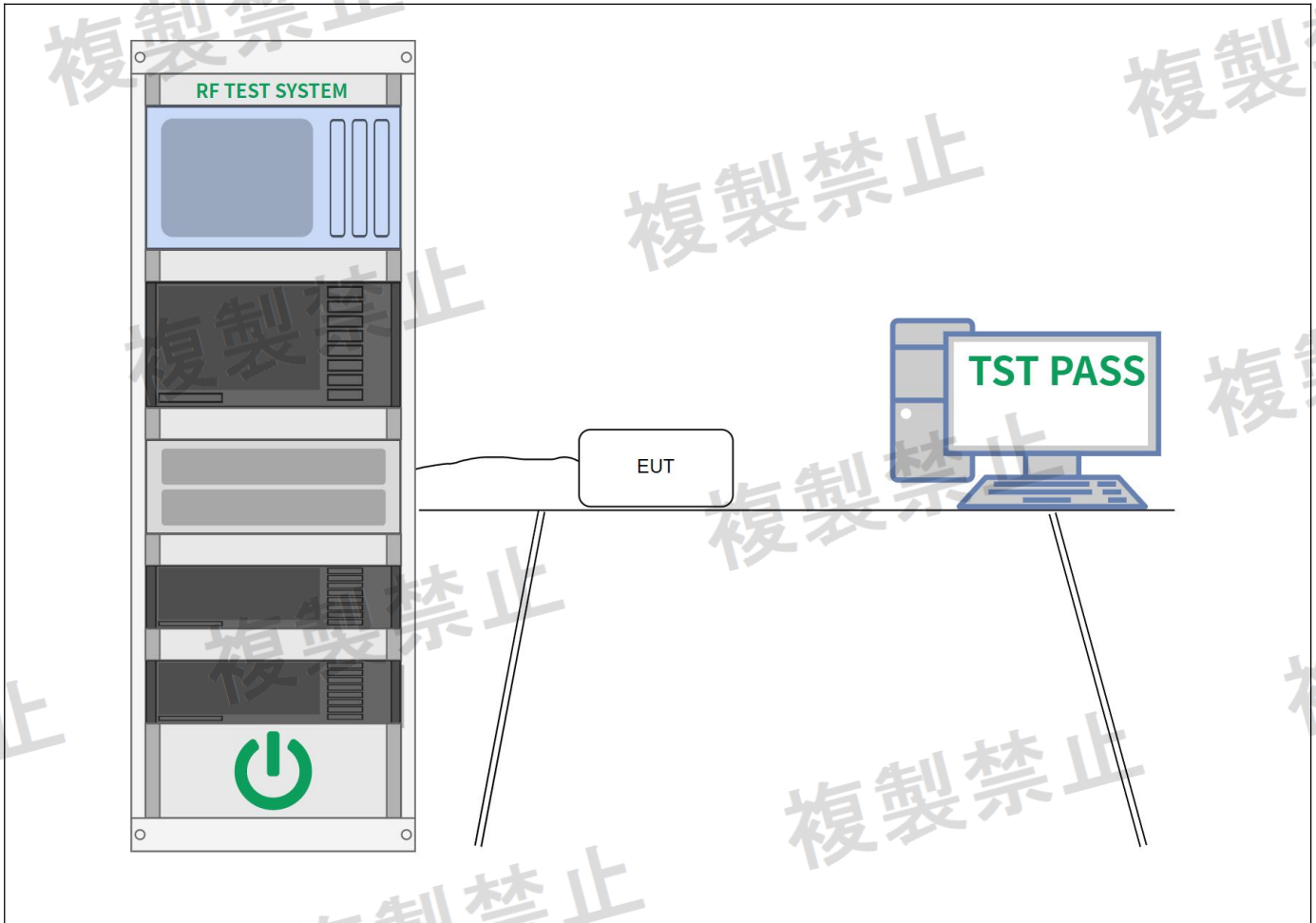
Antenna Power (W/MHz) = Average Burst Power (W) / Spread Bandwidth (MHz) [Note]
Spread Bandwidth in the formula above is derived from the data collected in section 5
(Occupied Bandwidth (99%) and Spread Bandwidth (90%))

(4) If the EUT has multiple antennas then each antenna power output shall be measured individually – the sum of these individual measurements shall represent the power output value

6.7.1. EUT Operation

Operating Environment:

Temperature:	21.2 °C	Humidity:	46.8 %	Atmospheric Pressure:	101.1 kPa
--------------	---------	-----------	--------	-----------------------	-----------

6.7.2. Test Setup Diagram:**6.7.3. Test Data**

Please Refer to Appendix for Details.

6.8. Spurious Emission Intensity

Test Limit:	(1) Below 2387 MHz: 2.5 μ W (-26 dBm)/MHz or less (2) 2387 to 2400 MHz: 25.0 μ W (-16 dBm)/MHz or less (3) 2483.5 to 2496.5 MHz: 25.0 μ W (-16 dBm)/MHz or less (4) Over 2496.5 MHz: 2.5 μ W (-26 dBm)/MHz or less	
Test Method:	MIC Notice No.88 Appendix No. 43	
Procedure:	[Setting 1]	
	Frequency range:	(see Note 1)
	RBW:	1 MHz
	VBW:	1 MHz
	Sweep time:	Minimum time required to make an accurate measurement
	Sweep Data Points:	1001 or greater
	Detector mode:	Positive peak
	Indication mode:	Max hold (see Note 2)
	Note 1:	Measurement range shall be 30 MHz to 12.5 GHz, except for the following cases: -FHSS, FHSS+DSSS, FHSS+OFDM:2374 MHz to 2509.5 MHz -Other than FHSS, FHSS+DSSS, FHSS+OFDM: 2400 MHz to 2483.5 MHz
	Note 2:	Sweep shall be repeated until the max hold waveform is stable.
	[Setting 2]	
	Center frequency:	Frequency of spurious emission found using [Setting 1]
	Span:	0 Hz
	RBW:	1 MHz
	VBW:	1 MHz
	Sweep time:	Minimum time required to make an accurate measurement. For burst type (intermittent) spurious emissions, sweep time shall be greater than one burst interval
	Sweep Data Points:	1001 or greater
	Detector mode:	Sample
	[Setting 3]	
	Frequency range:	2374 MHz to 2400 MHz 2483.5 MHz to 2509.5 MHz
	RBW:	30 kHz
	VBW:	30 kHz

Sweep time:	Minimum time required to make an accurate measurement.
Sweep data points:	1001 or greater
Detector mode:	Positive peak
Indication mode:	Max hold

(1) After configuring the spectrum analyzer to [Setting 1], search for spurious emissions from 30 MHz to 12.5 GHz. If the sweep range does not cover the required measurement frequency range then the measurement range will need to be divided into sufficient sections of size [RBW x Sweep Data Points]. If spurious emissions greater than [Limit - 3dB] are found, then more detailed measurements are required, go to step (2)

(2) Configure the spectrum analyzer using [Setting 2] and measure the average signal amplitude.

If the spurious emission is burst type (intermittent), then the average value shall not include signal OFF time.

If spurious emissions ranging from 30 MHz to 2374 MHz and from 2509.5MHz to 12.5GHz are over the limit, then the test result is Fail.

If spurious emissions ranging from 2374 MHz to 2400 MHz and from 2483.5 MHz to 2509.5 MHz are over the limit, then further detailed measurements are required, go to step (3)

(3) In the following cases, measure the spurious emissions using [Setting 3]

- Case1: FHSS, FHSS+DSSS, FHSS+OFDM

- Case2: Other than FHSS, FHSS+DSSS, FHSS+OFDM, and the spurious emissions in step (2) are over the limit

(4) Calculate the spurious emission value (Calculated Value) using following the formula below:

Calculated Value = (Measured Value using (3) + 15.2dB)

Note: 15.2dB adjustment is derived from the Conversion Factor of RBW

Conversion Factor of RBW = $10 \times \log(\text{Reference Bandwidth} / \text{RBW of measurement}) = 15.2 \text{ [dB]}$ Where: Reference Bandwidth = 1 MHz

RBW of measurement = 30 kHz

(5) If the calculated value using (4) is over the Limit (section 6.7), go to (6)

(6) Configure the spectrum analyzer to [Setting 3] then make the following changes:

Frequency: Frequency of spurious emission

Span: 1 MHz

(7) After sweep, send the span data set to the PC

(8) Convert measured data from dBm to Watts

(9) Sum all the data using the formula below. If the sum is within the limit, the test result is Pass, otherwise, Fail

$$P_s = \left(\sum_{i=1}^n E_i \right) \times \frac{S_w}{RBW \times k \times n}$$

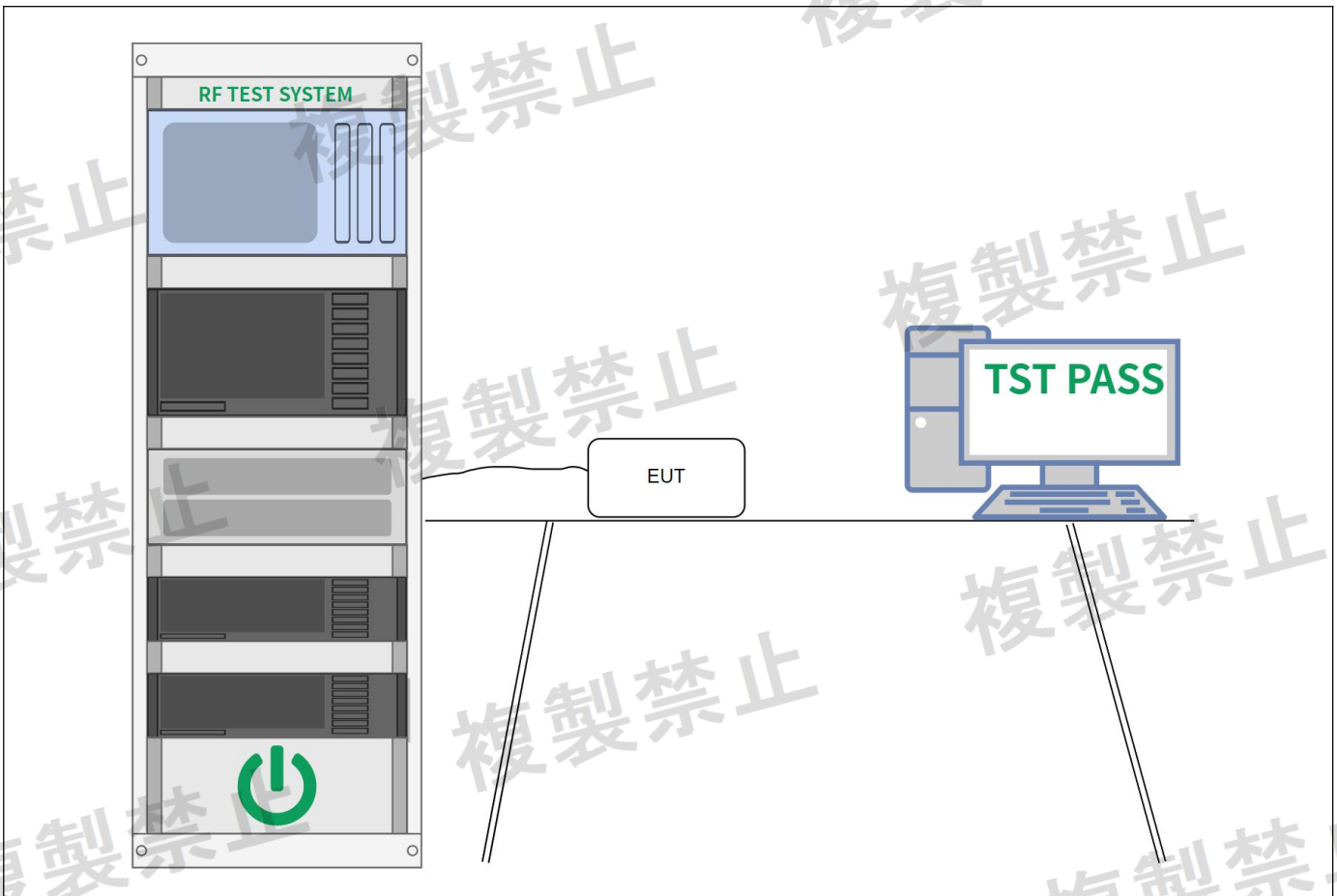
Ps: Sum (Watts) Ei: Measured value at each point in the Span (Watts) Sw: Span (1MHz) n: Number of measurement points in the Span k: Correction factor for Equivalent Noise Bandwidth, specific to each spectrum analyzer, check the instrument user guide RBW: Resolution Bandwidth (MHz). (10) If the EUT has multiple antennas, measure the spurious emission form each individual antenna using steps (1) through (9) (11) Convert the individual antenna spurious level measurements (step (10)) from dB to absolute values (12) Combine (sum) the absolute values of the spurious measurements at each frequency for each antenna (to create a single composite spectrum of spurious emissions) (13) Ensure that the composite spectrum does not exceed the Limit defined in 6.7 (Technical Standard) (14) Configuring the spectrum analyzer using [Setting 3] and measure the spurious emissions with all the antennas electrically combined
--

6.8.1. EUT Operation

Operating Environment:

Temperature:	23 °C	Humidity:	55.4 %	Atmospheric Pressure:	101.1 kPa
--------------	-------	-----------	--------	-----------------------	-----------

6.8.2. Test Setup Diagram:



6.8.3. Test Data

Please Refer to Appendix for Details.

6.9. Secondary Radiated Emissions

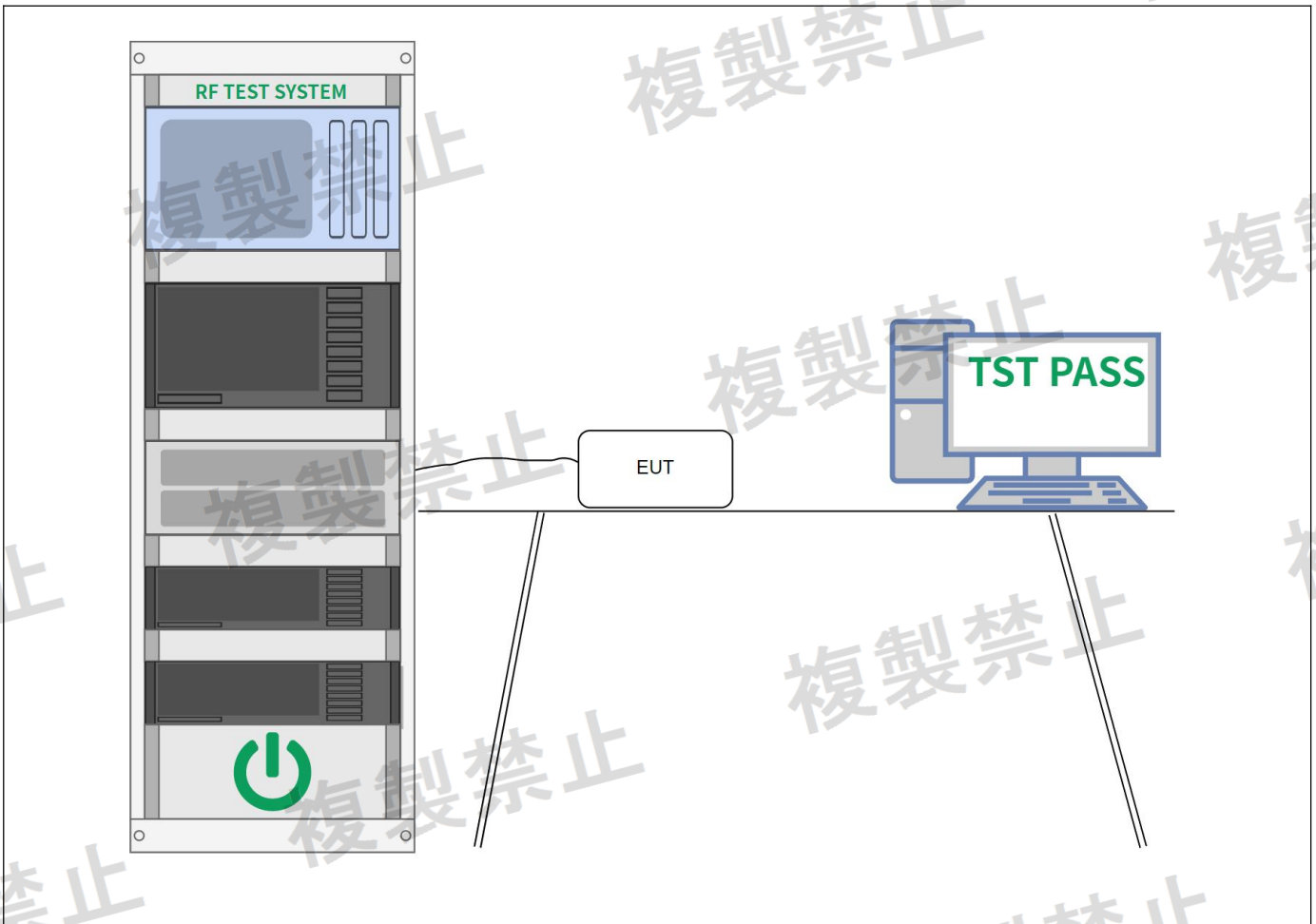
Test Limit:	(1) Below 1 GHz: 4 nW (-54dBm) or less (2) Above 1 GHz: 20 nW (-47dBm) or less	
Test Method:	MIC Notice No.88 Appendix No. 43	
Procedure:	[Setting 1]	
	Frequency range:	30 MHz ~ 12.5 GHz
	RBW:	Below 1 GHz:100 kHz Above 1 GHz:1 MHz
	VBW:	Below 1 GHz:100 kHz Above 1 GHz:1 MHz
	Sweep time:	Auto
	Sweep data points:	1001 or greater
	Detector mode:	Positive peak
	Indication mode:	Max hold
	[Setting 2]	
	Center Frequency:	Frequency of spurious emission found using [Setting 1]
	Span:	0 Hz
	RBW:	Below 1 GHz:100 kHz Above 1 GHz:1 MHz
	VBW:	Below 1 GHz:100 kHz Above 1 GHz:1 MHz
	Sweep time:	Auto
	Sweep data points:	1001 or greater
	Detector mode:	Sample
	(1) Configure the spectrum analyzer to [Setting 1] and then search for spurious emissions in the range 30 MHz to 12.5GHz. If the sweep range does not cover the required measurement frequency range then the measurement range will need to be divided into sufficient sections of size [RBW x Sweep Data Points].	
	(2) If spurious emissions are found with an amplitude greater than [Limit - 10dB] then perform further detailed measurements as described in (3)	
	(3) Configure the spectrum analyzer using [Setting 2] and measure the average signal amplitude.	
	If the spurious emission is burst type (intermittent), then the average value shall not include signal OFF time Multiple Antenna Systems	
	If the EUT has multiple antennas then emissions from each antenna shall be measured individually, as described below	
	(4) For each antenna repeat steps (1) through (3). Convert all spurious level measurements from dB to absolute value	
	(5) Combine (sum) the absolute values of the spurious measurements at each frequency for each antenna (to create a single composite spectrum of spurious emissions)	
	(6) Ensure that the composite spectrum does not exceed the Limit	

6.9.1. EUT Operation

Operating Environment:

Temperature:	21.9 °C	Humidity:	48.5 %	Atmospheric Pressure:	101.1 kPa
--------------	---------	-----------	--------	-----------------------	-----------

6.9.2. Test Setup Diagram:



6.9.3. Test Data

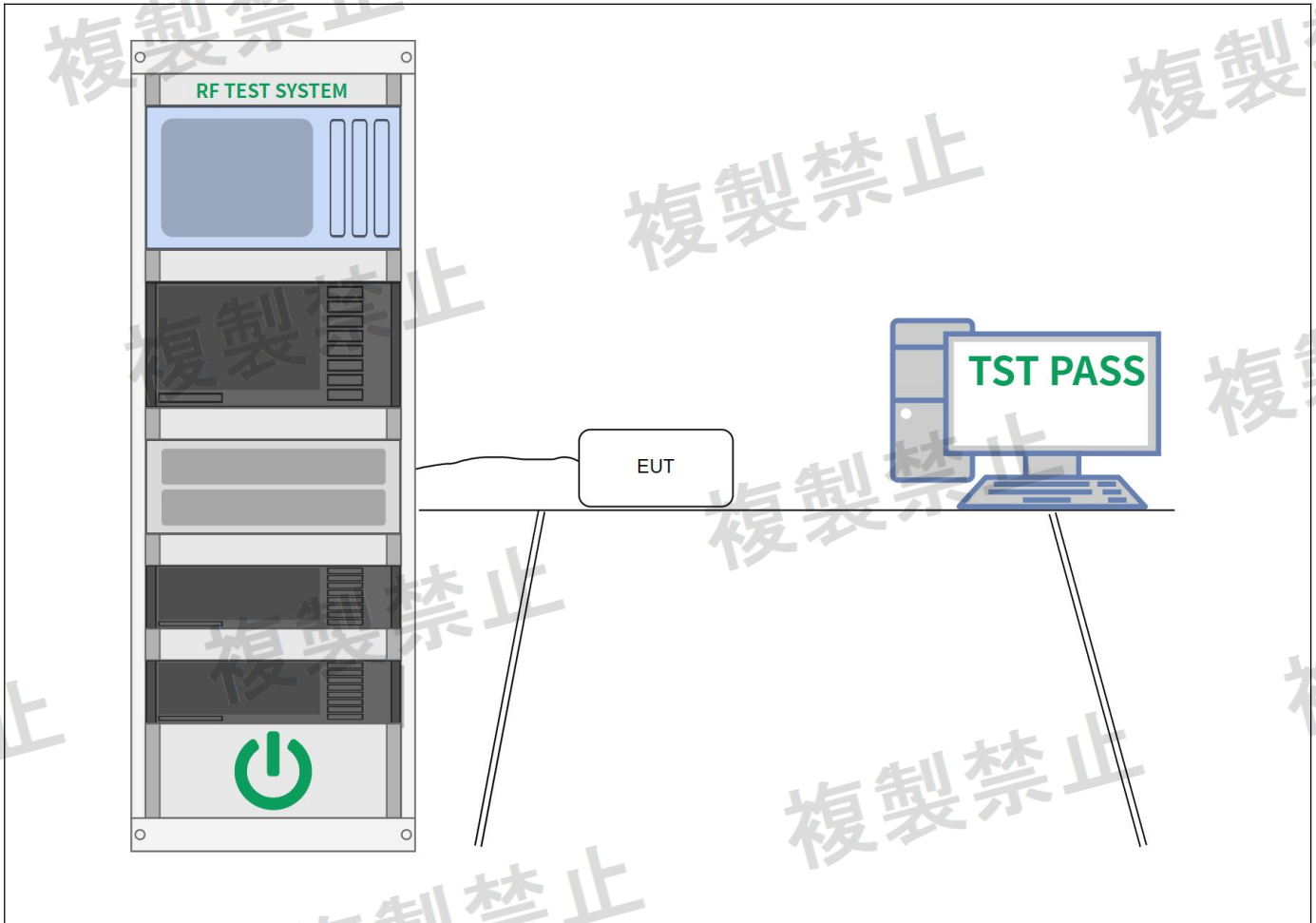
Please Refer to Appendix for Details.

6.10. Dwell Time

Test Limit:	shall be less than 0.4 seconds	
Test Method:	MIC Notice No.88 Appendix No. 43	
Procedure:	[Setting 1]	
	Frequency:	Test frequency
	Span:	0 Hz
	RBW:	1 MHz
	VBW:	1 MHz
	Sweep data points:	1001 or greater
	Trigger:	Video trigger
	Detection mode:	Positive peak
	(1) Configure the spectrum analyzer to [Setting 1]	
	(2) Measure the Burst Cycle and Transmit ON Time	
(3) Total Dwell Time shall be calculated by the following formula:		
Total Dwell Time = (0.4 x Spreading Rate x Transmit ON Time) / (Burst Cycle x Number of Hopping Channels) [Notes]		
a. Spreading Rate = Spread Bandwidth (measured value) / Transmission Rate		
b. Transmit ON Time and Burst Cycle are both measured in Seconds		
c. Numerical Coefficient (0.4) is a dimensionless number defined in the technical standard		

6.10.1. EUT Operation

Operating Environment:					
Temperature:	21.9 °C	Humidity:	48.5 %	Atmospheric Pressure:	101.1 kPa

6.10.2. Test Setup Diagram:**6.10.3. Test Data**

Please Refer to Appendix for Details.

7. TEST SETUP PHOTOS

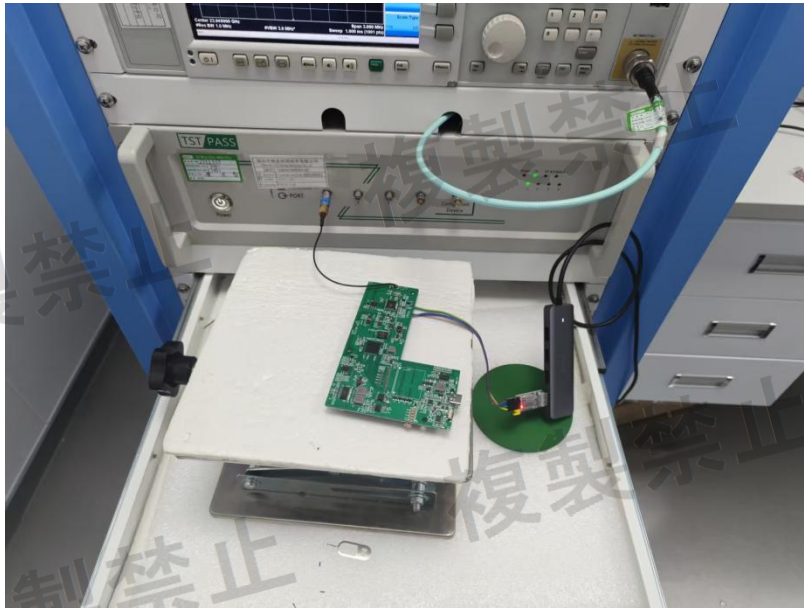


FIGURE 1

8. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

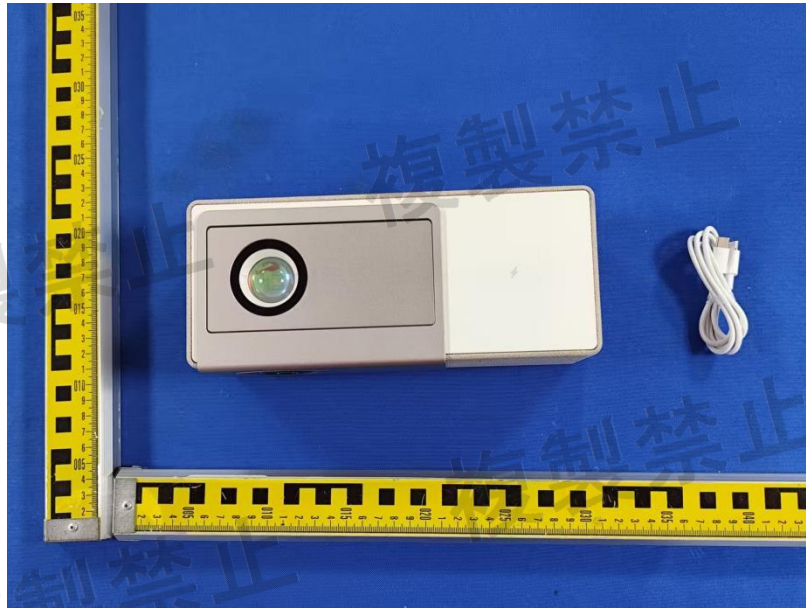


FIGURE 1

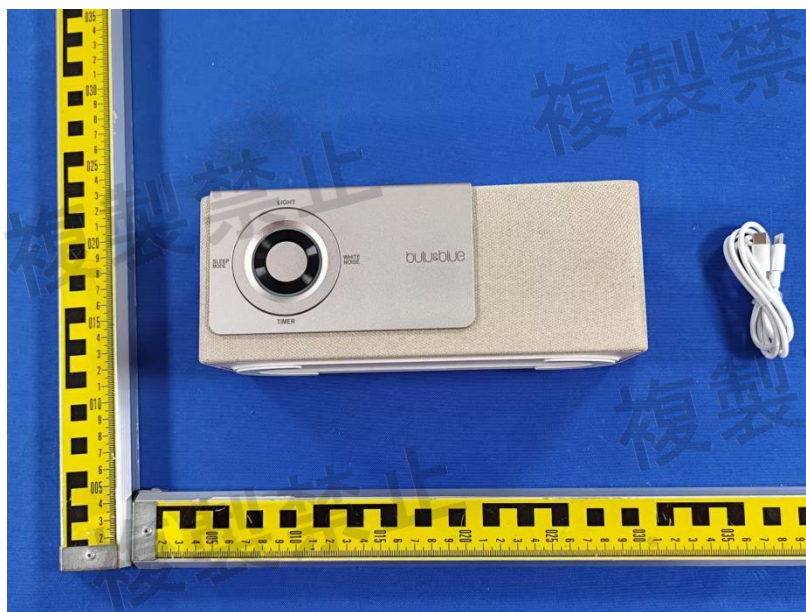


FIGURE 2

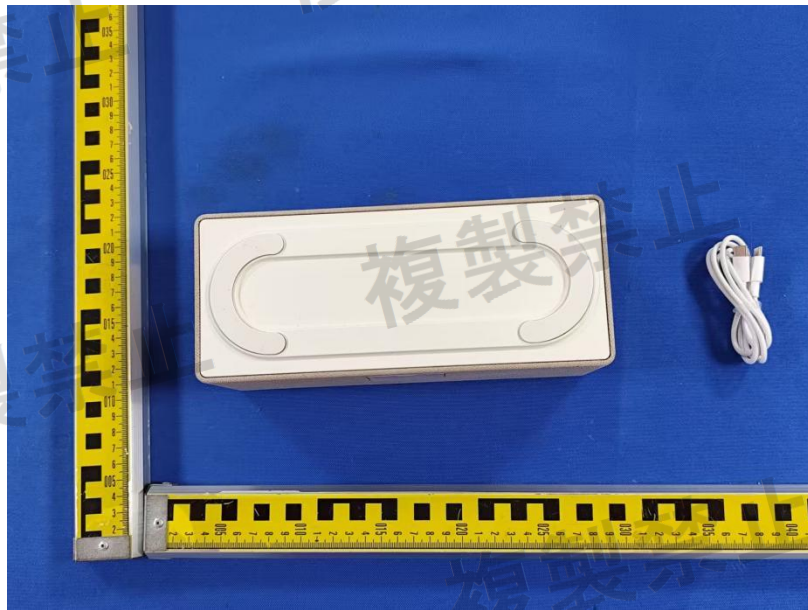


FIGURE 3

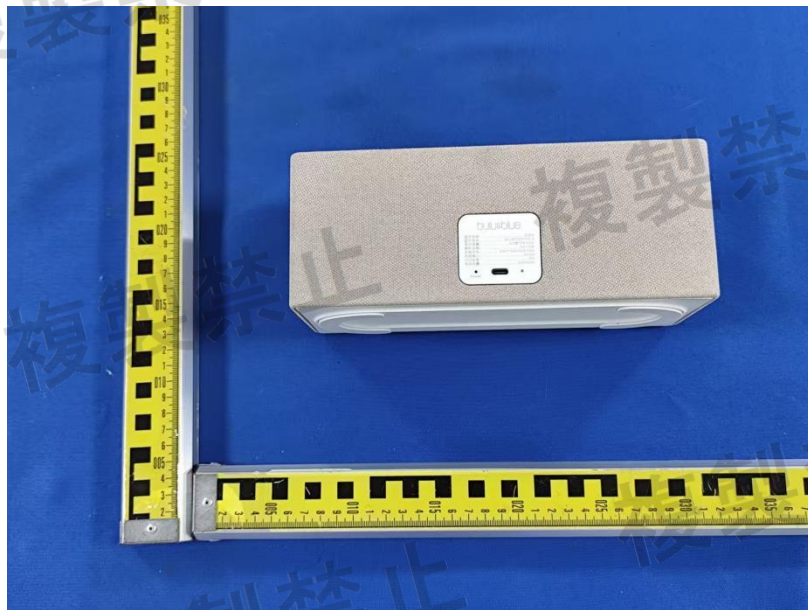


FIGURE 4

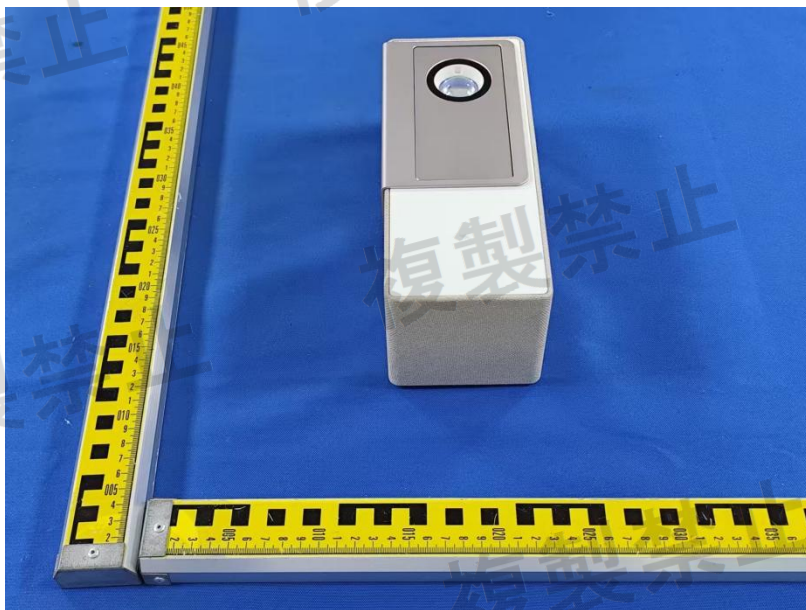


FIGURE 5

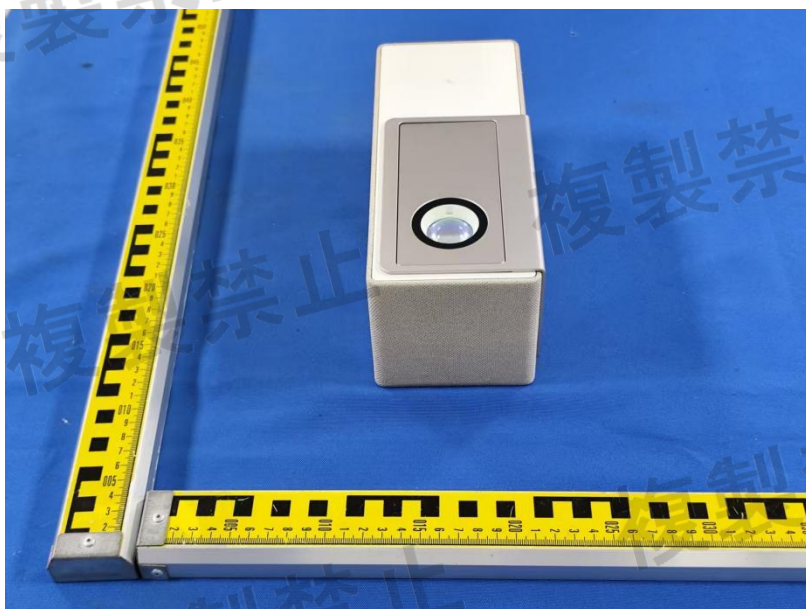


FIGURE 6



FIGURE 7

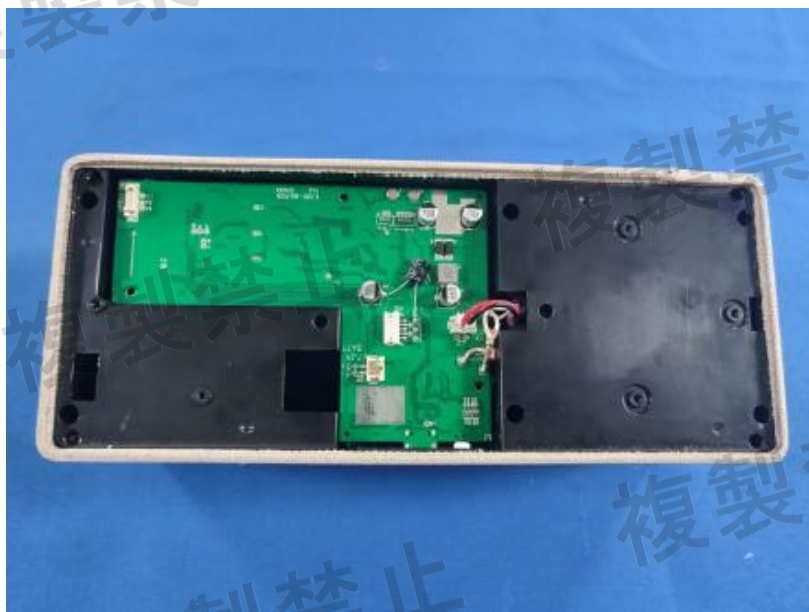


FIGURE 8

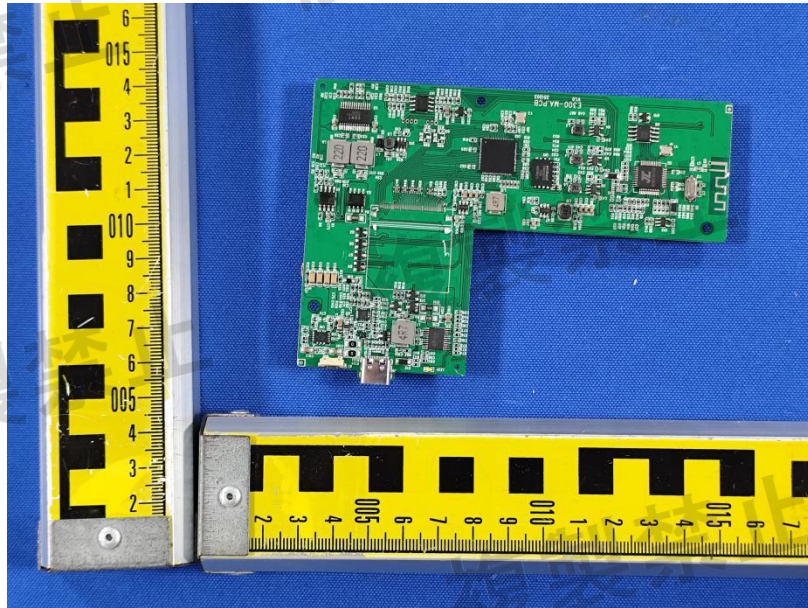


FIGURE 9

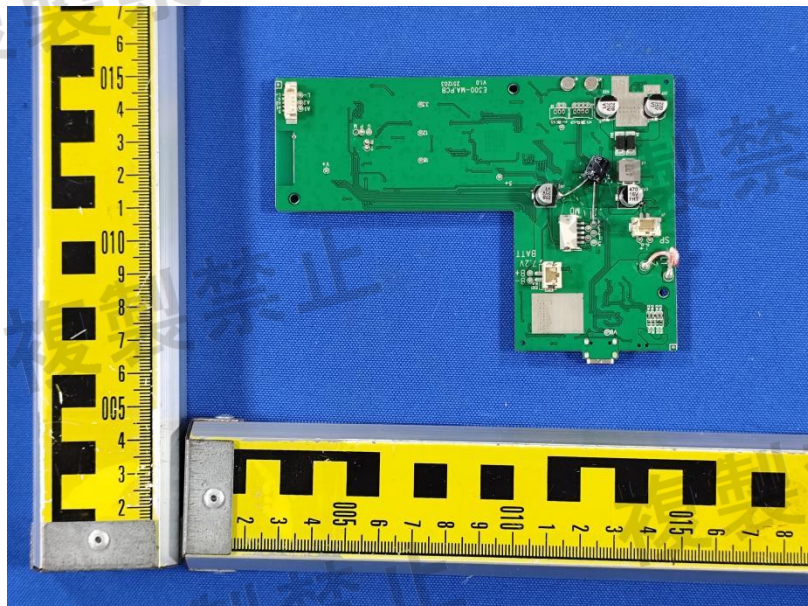


FIGURE 10



複製禁止



FIGURE 1

禁止製

複製禁止

複製禁止

複製禁止

複製禁止

複製禁止

複製禁止

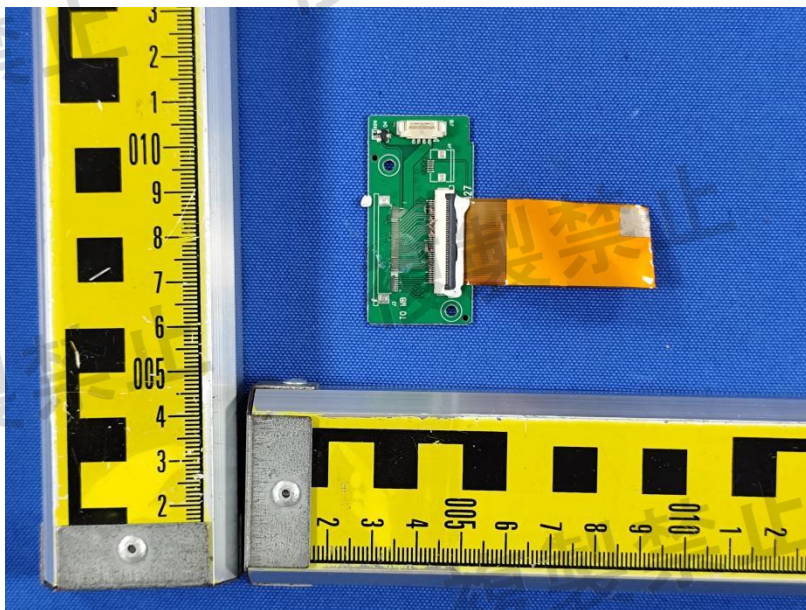


FIGURE 13



FIGURE 14

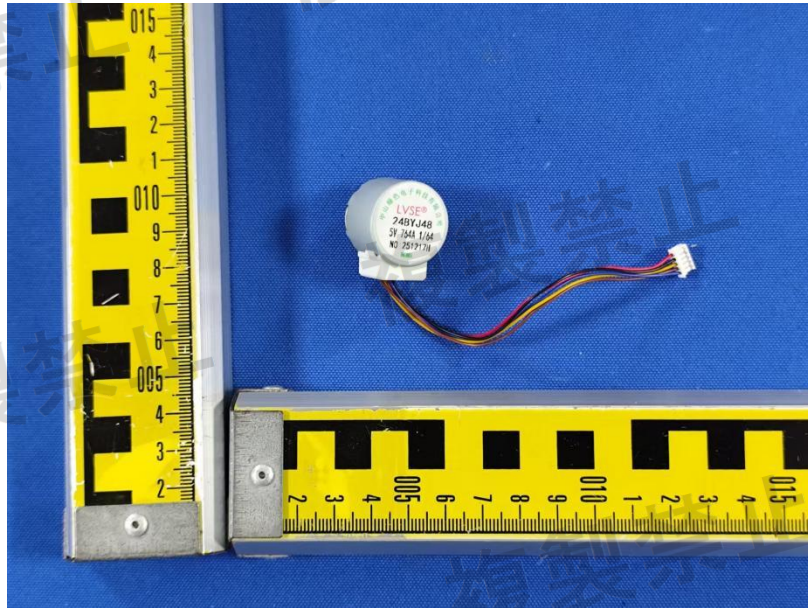


FIGURE 15

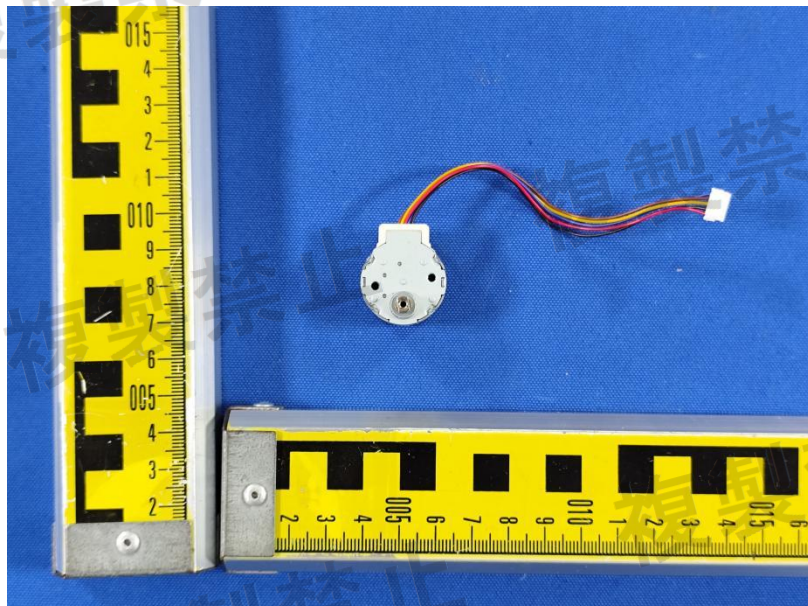


FIGURE 16



FIGURE 17

9. Appendix Report

1. Frequency Error

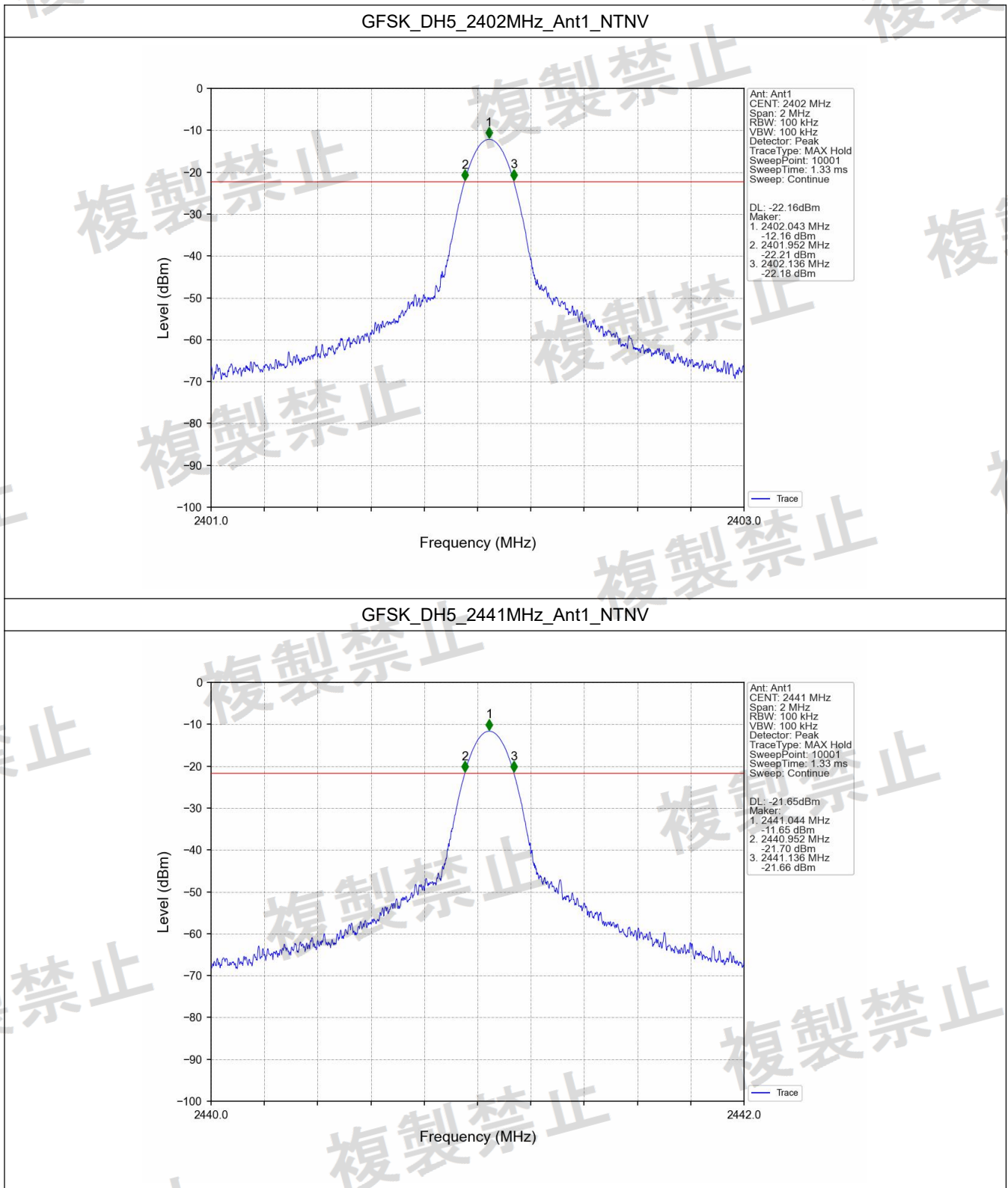
1.1 Test Result

1.1.1 Ant1

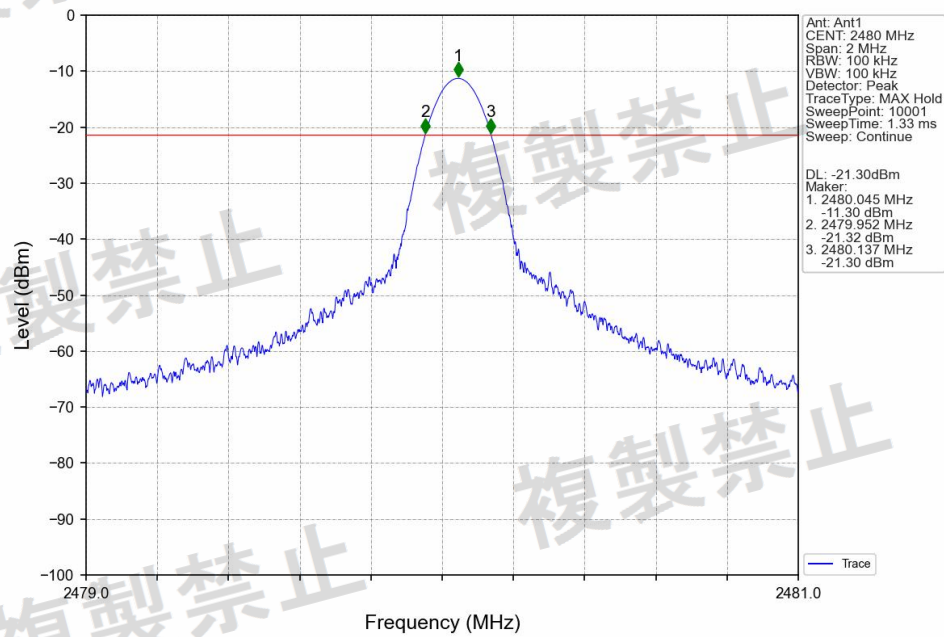
Ant1								
ENV	Mode	TX Type	Frequency (MHz)	Packet Type	Measured Frequency (MHz)	Tolerance (ppm)		Verdict
						Result	Limit	
NTNV	GFSK	SISO	2402	DH5	2402.044	18.28	-50 to 50	Pass
			2441	DH5	2441.044	18.15	-50 to 50	Pass
			2480	DH5	2480.045	18.02	-50 to 50	Pass
	Pi/4DQPSK	SISO	2402	2DH5	2402.044	18.33	-50 to 50	Pass
			2441	2DH5	2441.045	18.24	-50 to 50	Pass
			2480	2DH5	2480.045	18.19	-50 to 50	Pass
	8DPSK	SISO	2402	3DH5	2402.044	18.38	-50 to 50	Pass
			2441	3DH5	2441.045	18.29	-50 to 50	Pass
			2480	3DH5	2480.045	18.29	-50 to 50	Pass

1.2 Test Graph

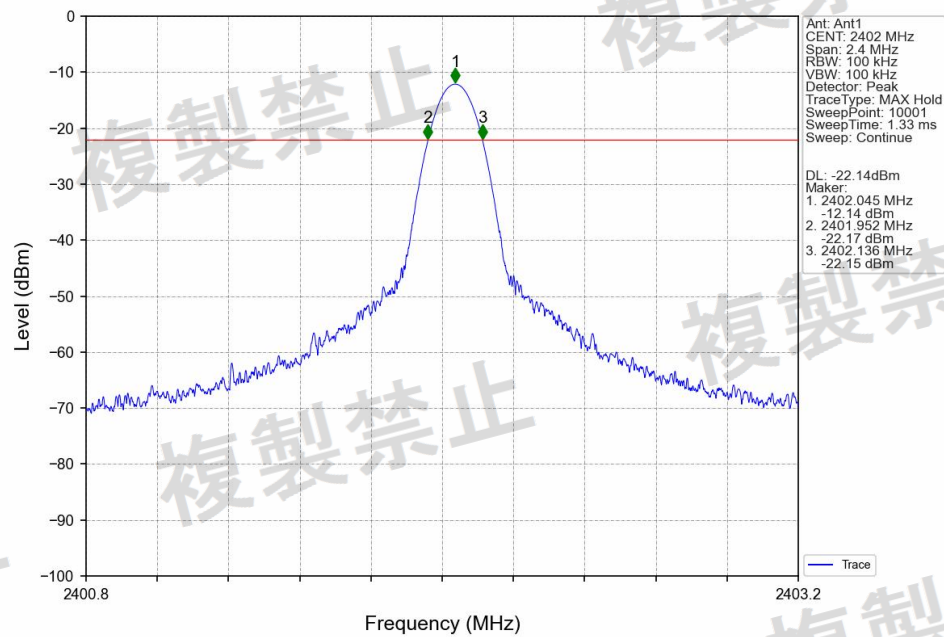
1.2.1 Ant1



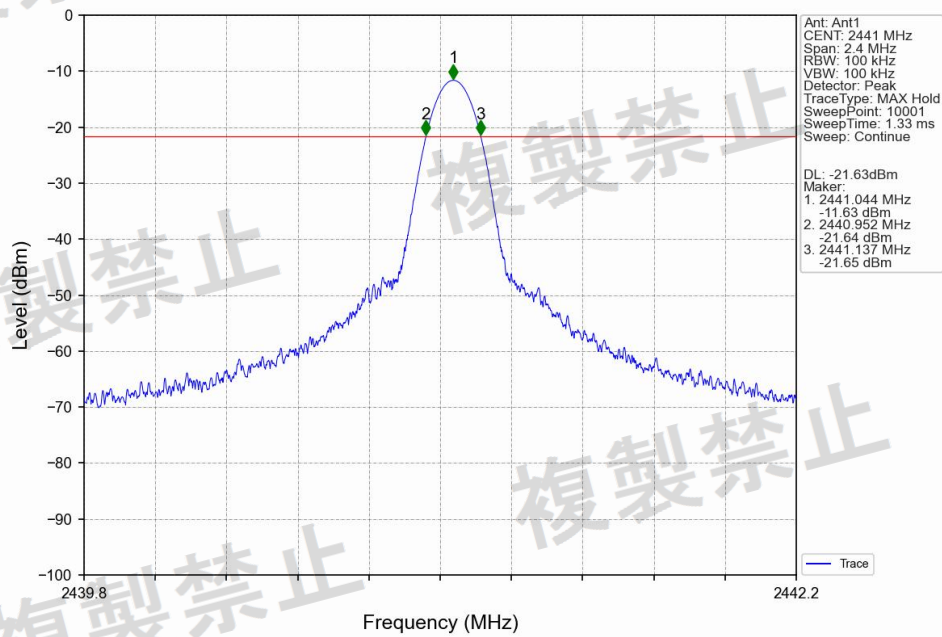
GFSK_DH5_2480MHz_Ant1_NTNV



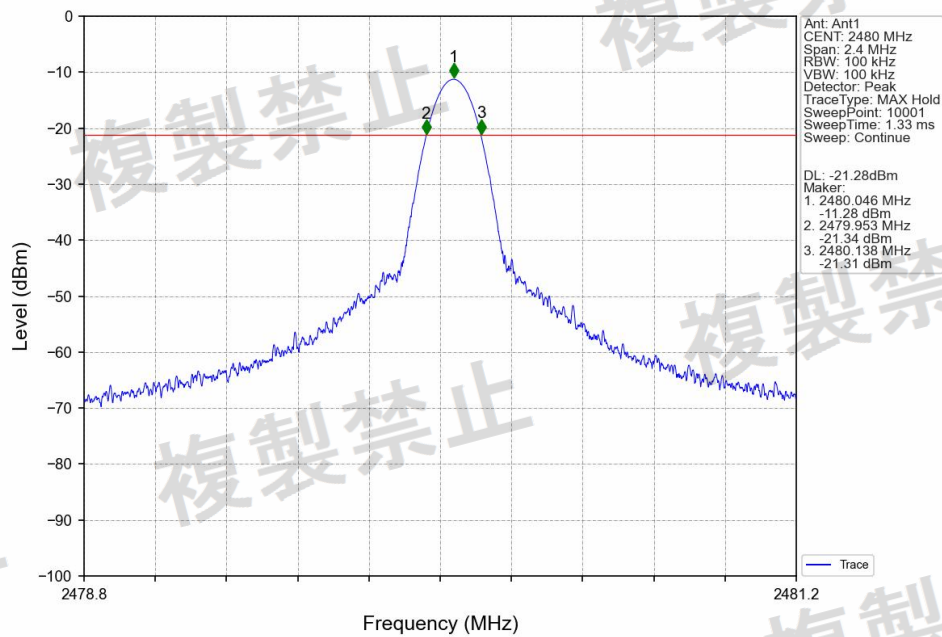
Pi/4DQPSK_2DH5_2402MHz_Ant1_NTNV



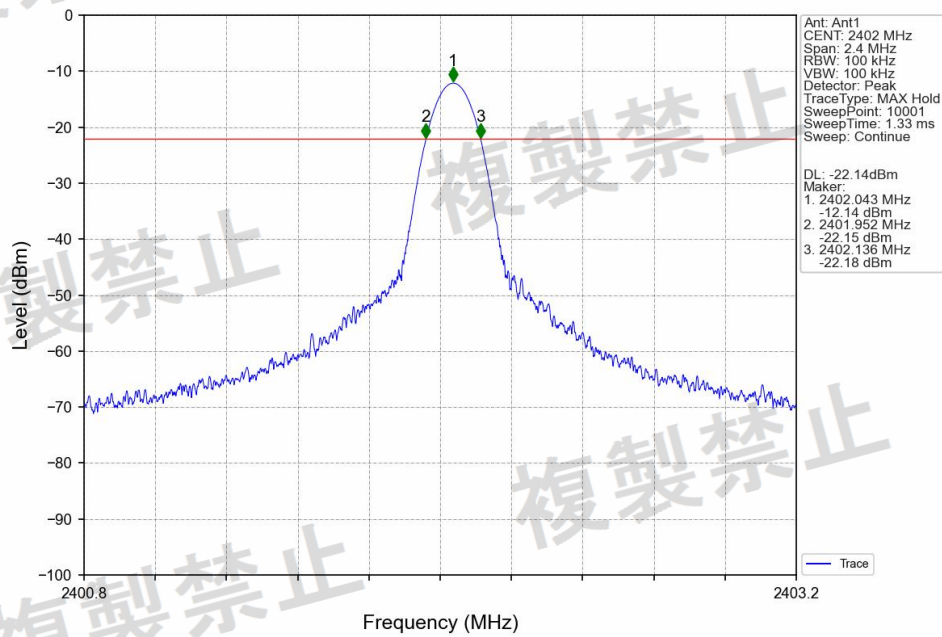
Pi/4DQPSK_2DH5_2441MHz_Ant1_NTNV



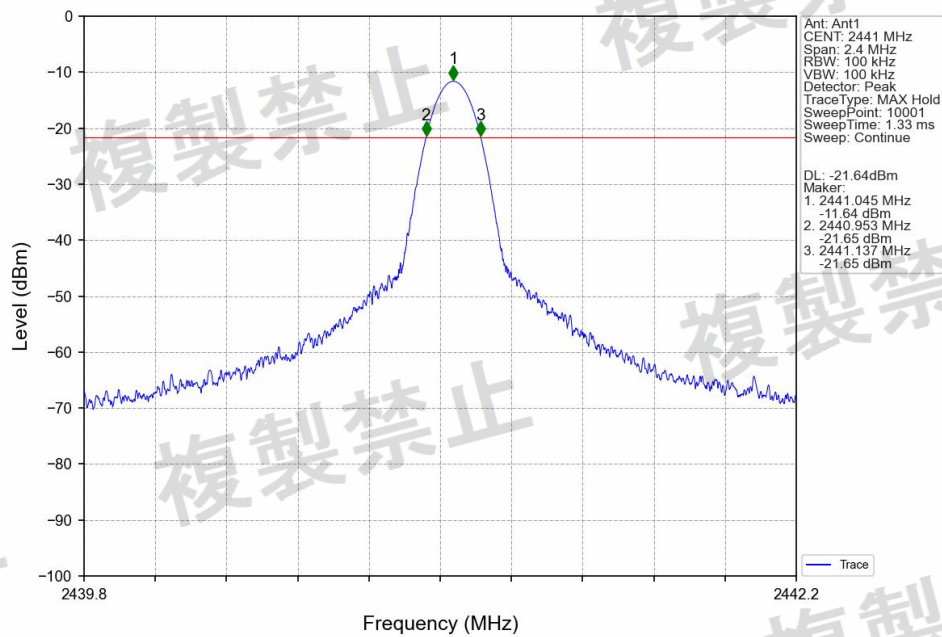
Pi/4DQPSK_2DH5_2480MHz_Ant1_NTNV

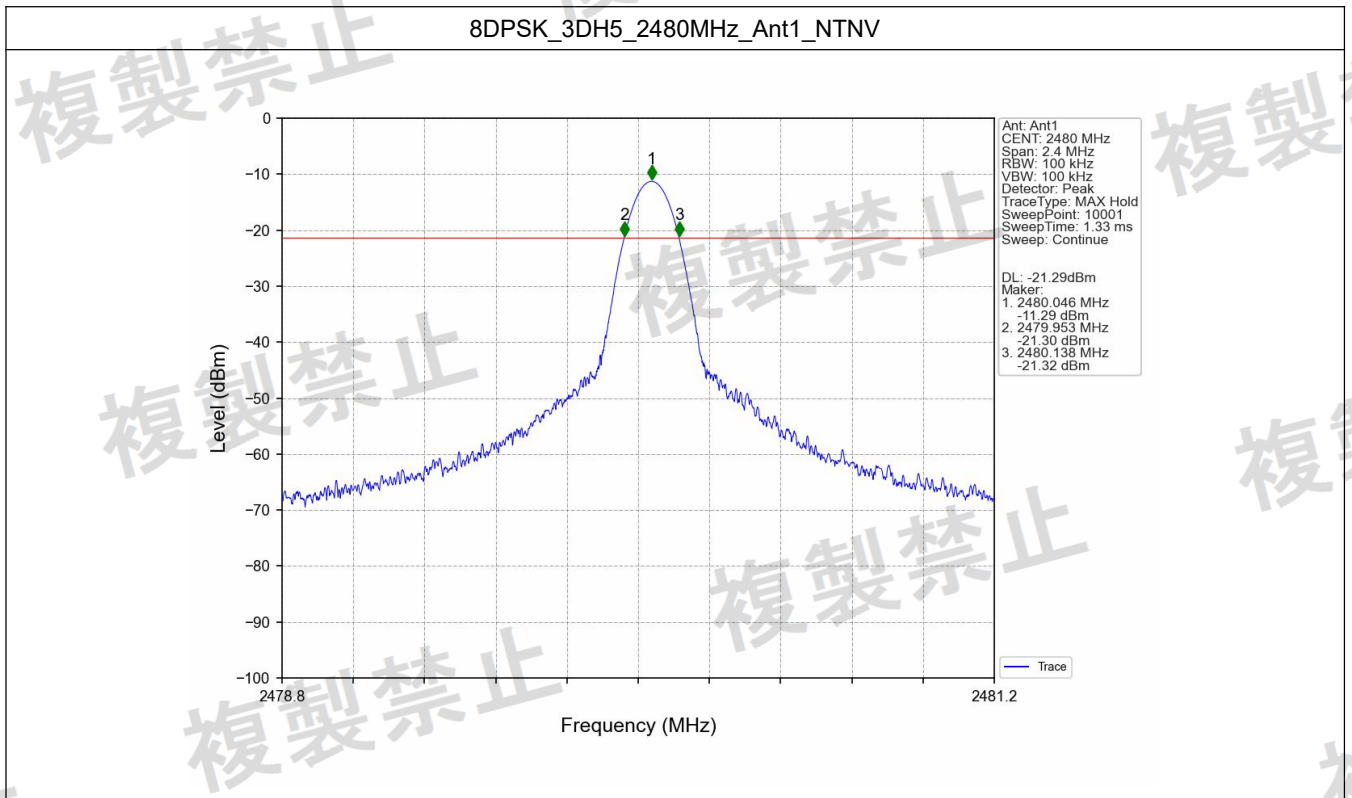


8DPSK_3DH5_2402MHz_Ant1_NTNV



8DPSK_3DH5_2441MHz_Ant1_NTNV





2. Occupied Bandwidth

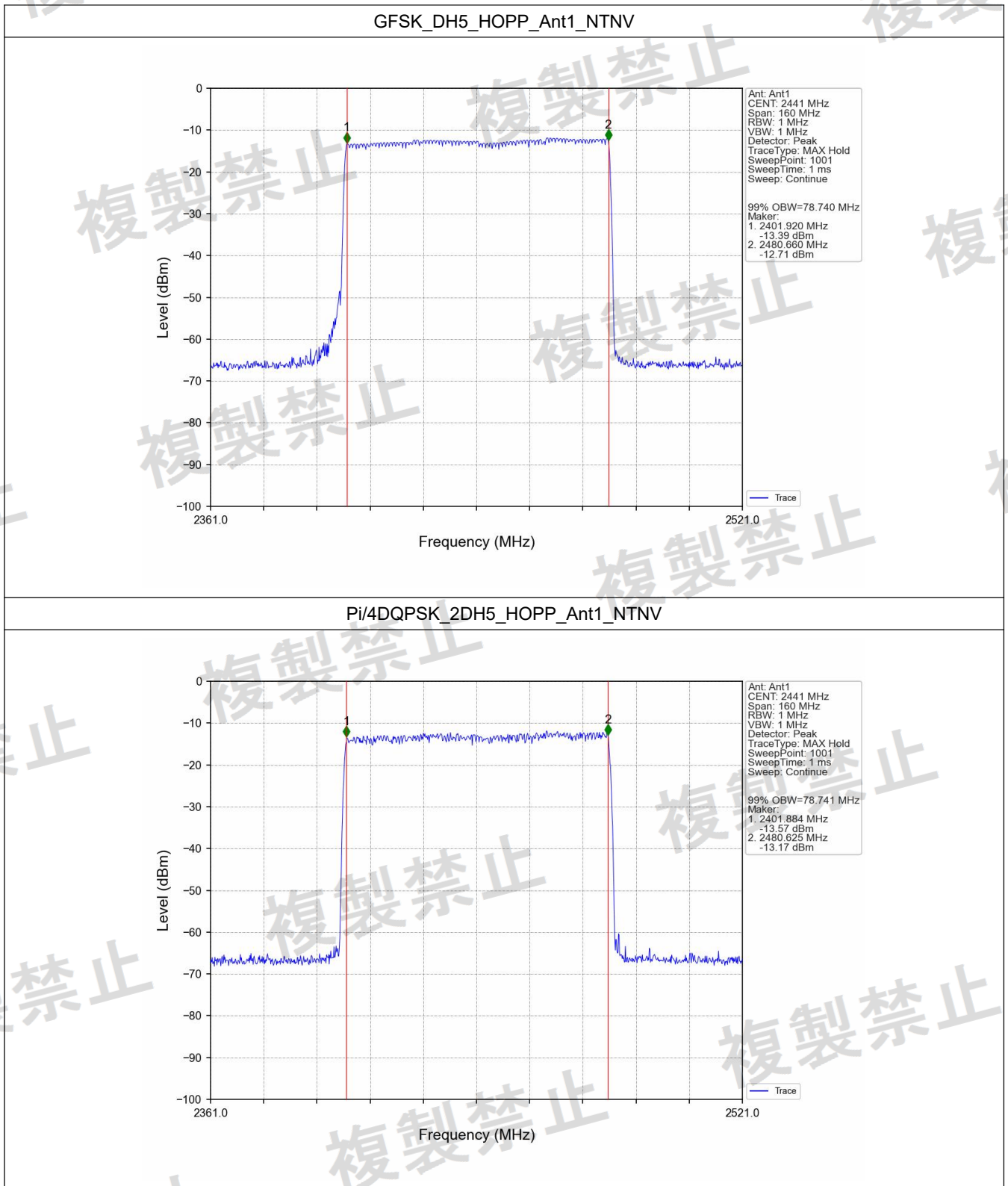
2.1 Test Result

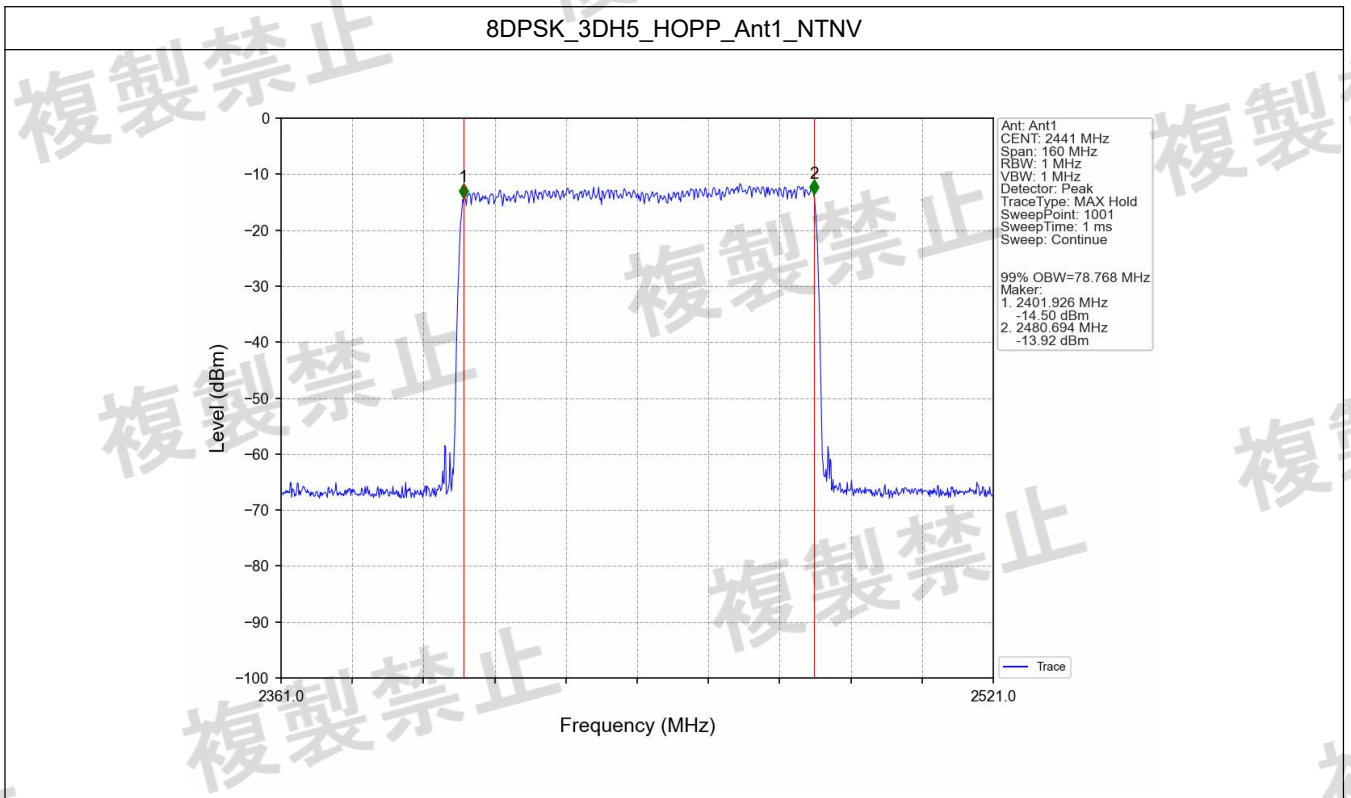
2.1.1 OBW

ENV	Mode	TX Type	Frequency (MHz)	Packet Type	99% Occupied Bandwidth (MHz)		Verdict
					ANT1	Limit	
NTNV	GFSK	SISO	HOPP	DH5	78.740	<=83.5	Pass
	Pi/4DQPSK	SISO	HOPP	2DH5	78.741	<=83.5	Pass
	8DPSK	SISO	HOPP	3DH5	78.768	<=83.5	Pass

2.2 Test Graph

2.2.1 OBW





3. Spread Bandwidth

3.1 Test Result

3.1.1 SPBW

ENV	Mode	TX Type	Frequency (MHz)	Packet Type	Spread Bandwidth (MHz)		Verdict
					ANT1	Limit	
NTNV	GFSK	SISO	HOPP	DH5	71.328	/	Only For Report
	PI/4DQPSK	SISO	HOPP	2DH5	71.408	/	Only For Report
	8DPSK	SISO	HOPP	3DH5	71.512	/	Only For Report

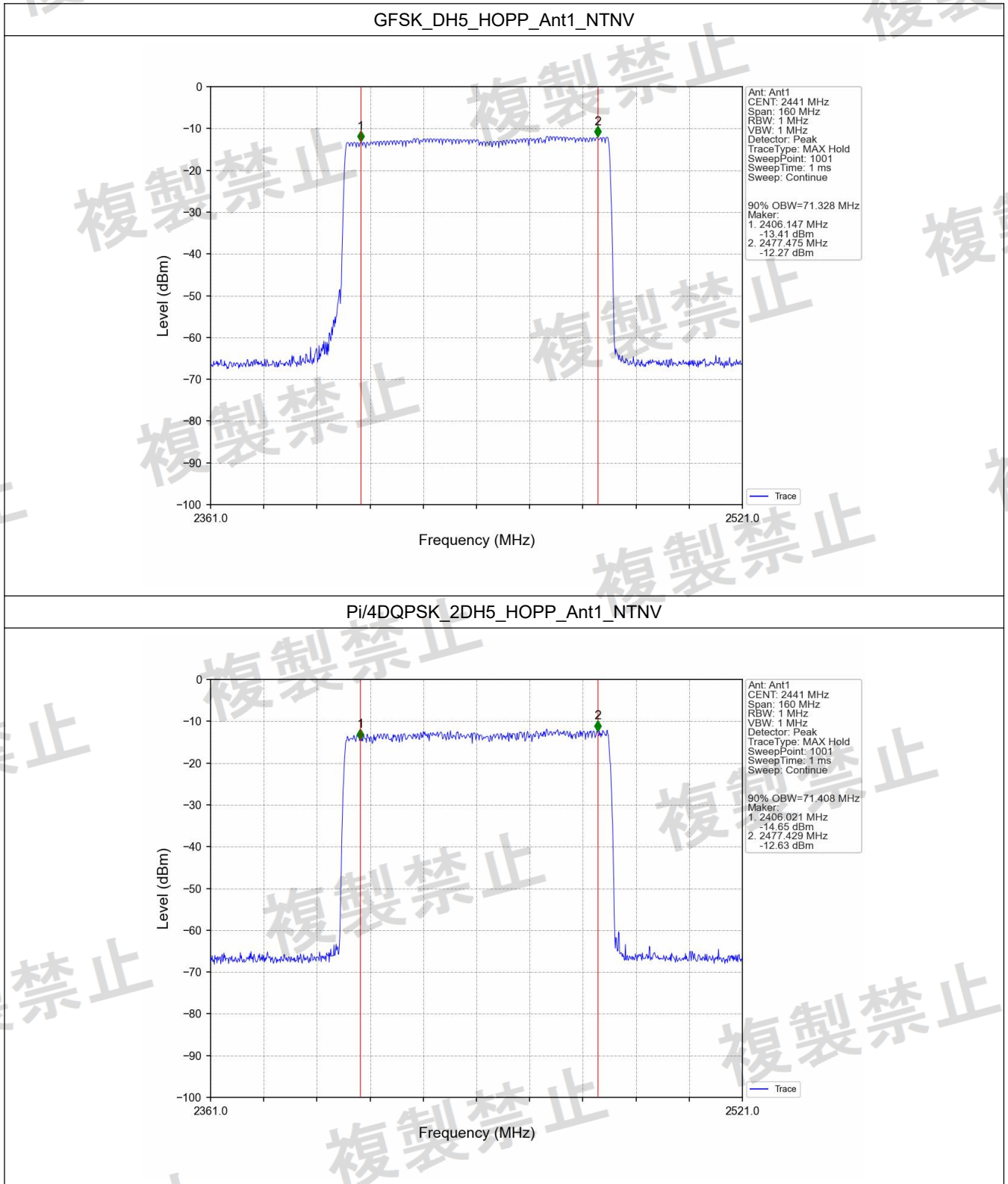
3.1.2 SpreadFactor

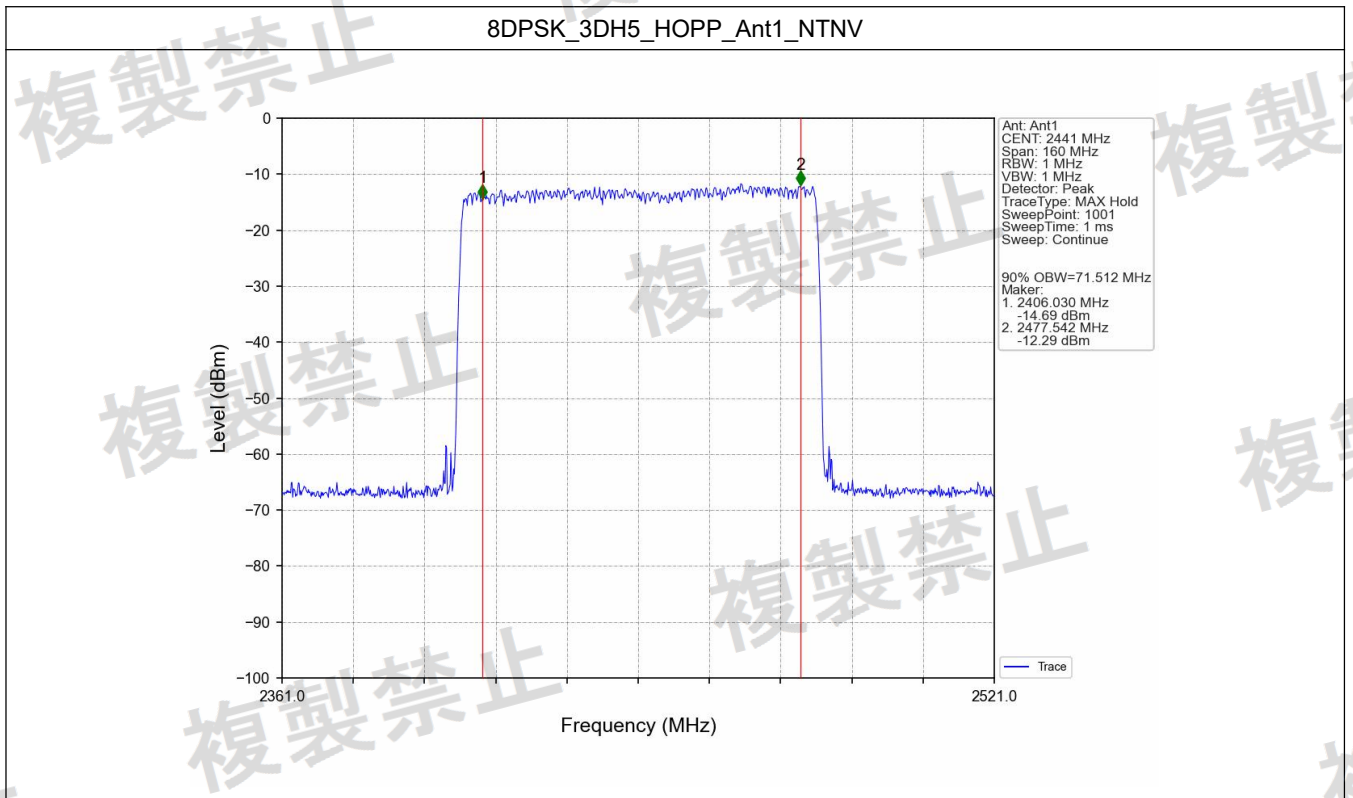
ENV	Mode	TX Type	Frequency (MHz)	Packet Type	Spread Factor		Verdict
					ANT1	Limit	
NTNV	GFSK	SISO	HOPP	DH5	71.328	>=5	Only For Report
	PI/4DQPSK	SISO	HOPP	2DH5	71.408	>=5	Only For Report
	8DPSK	SISO	HOPP	3DH5	71.512	>=5	Only For Report

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

3.2 Test Graph

3.2.1 SPBW





4. Antenna Power

4.1 Test Result

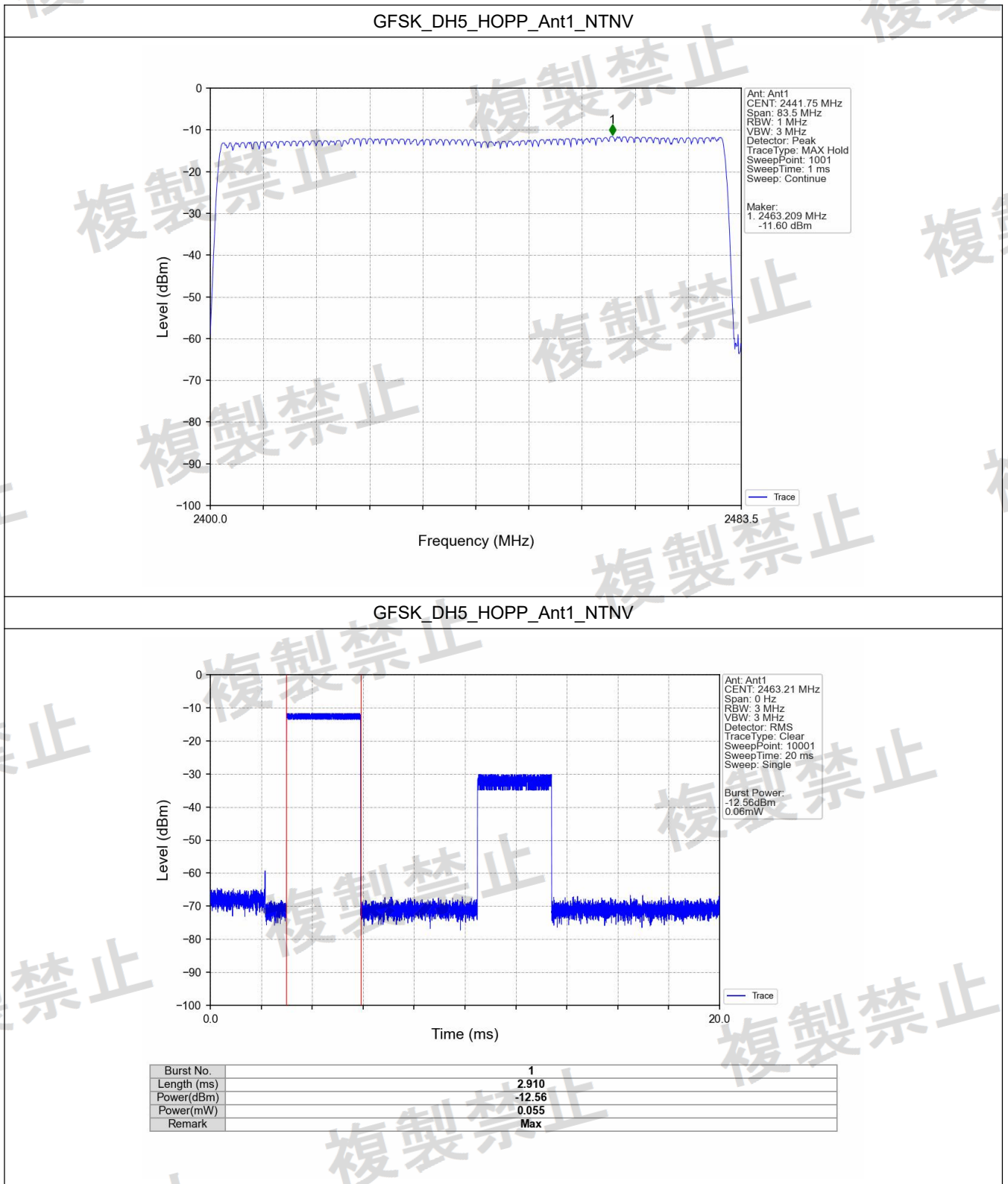
4.1.1 Power

ENV	Mode	TX Type	Frequency (MHz)	Packet Type	ANT	Antenna Power (dBm)	Antenna Power (mW/MHz)		Nominal Power (mW/MHz)	Tolerance (%)		Verdict
							Measured	Limit		Measured	Limit	
NTNV	GFSK	SISO	HOPP	DH5	1	-12.56	0.0008	<=3.00	0.001	-20.00	<=20	Pass
	Pi/4DQPSK	SISO	HOPP	2DH5	1	-14.16	0.0005	<=3.00	0.001	-50.00	<=20	Pass
	8DPSK	SISO	HOPP	3DH5	1	-15.99	0.0003	<=3.00	0.001	-70.00	<=20	Pass

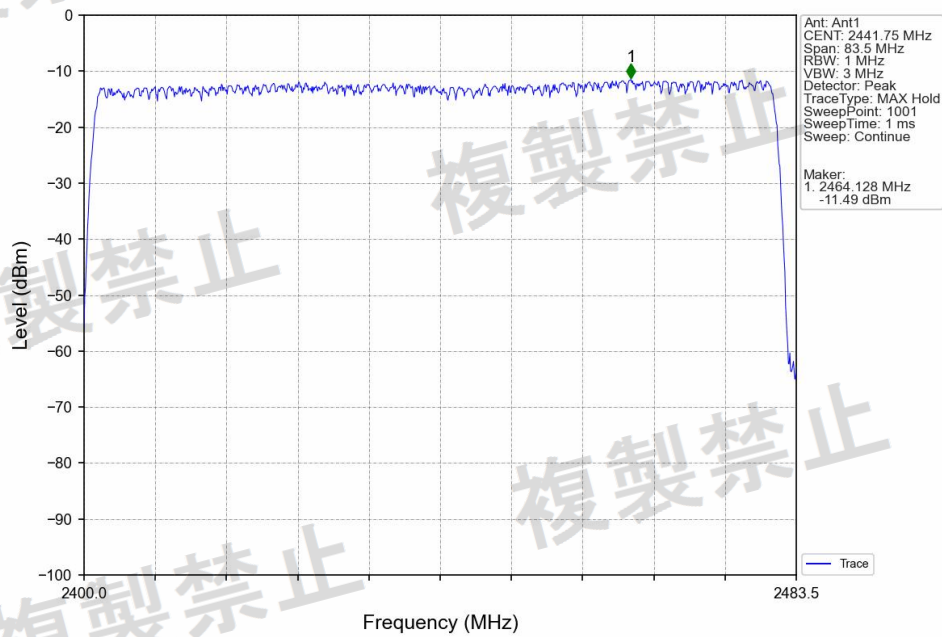
Note: Antenna Power(mW /MHz)=Result (mW) / 90%BW

4.2 Test Graph

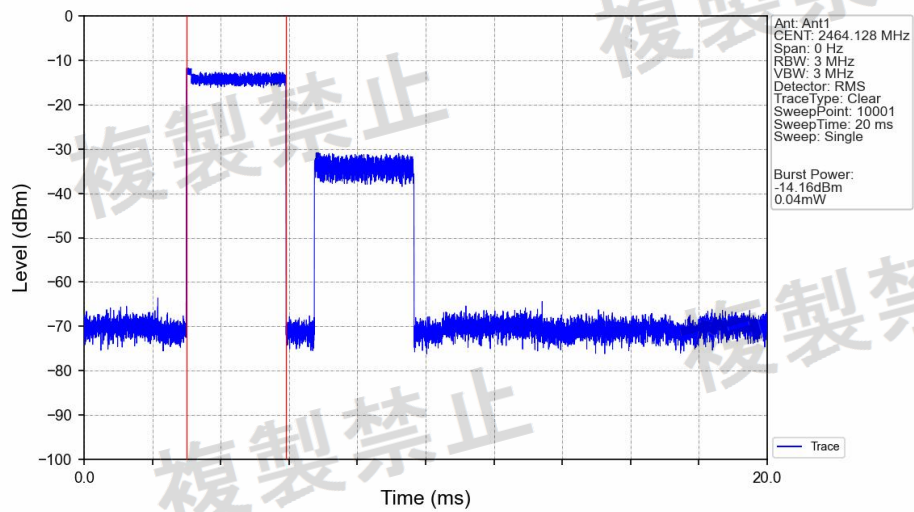
4.2.1 Power



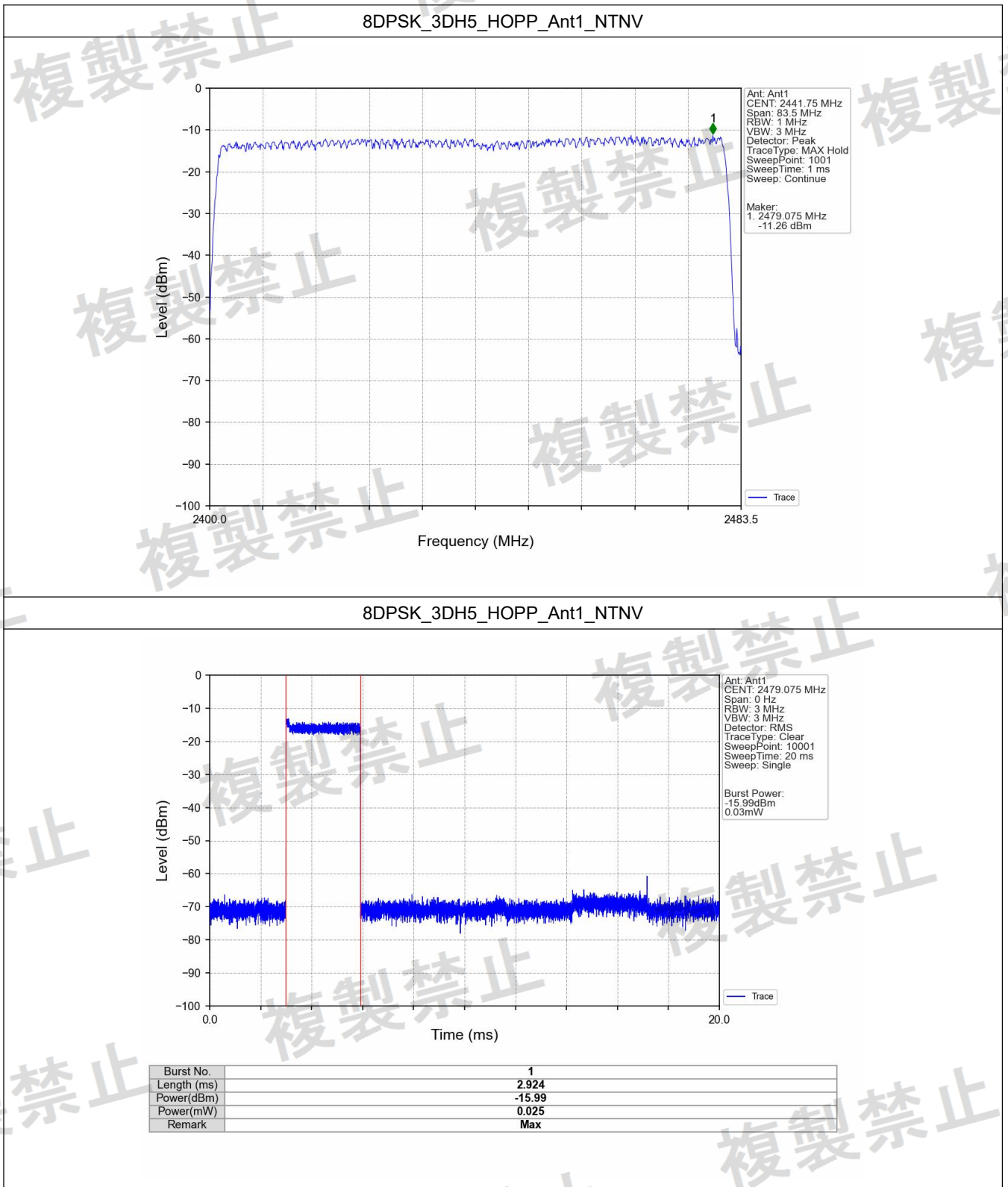
Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV



Pi/4DQPSK_2DH5_HOPP_Ant1_NTNV



Burst No.	1
Length (ms)	2.916
Power(dBm)	-14.16
Power(mW)	0.038
Remark	Max



5. Dwell Time

5.1 Test Result

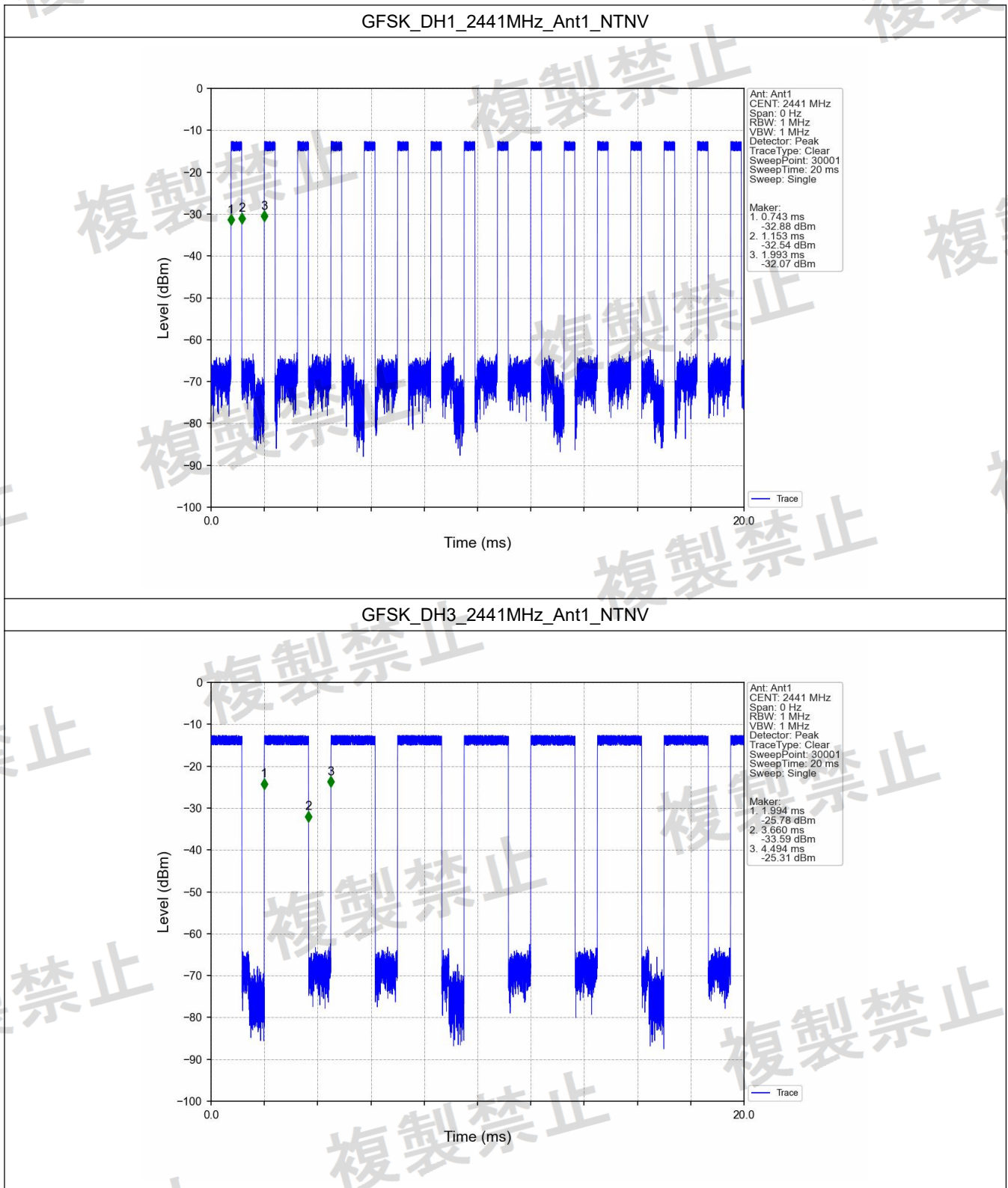
5.1.1 Ant1

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	71.328	0.410	1.250	79	118.459	<=400	Pass
				DH3	71.328	1.666	2.500	79	240.673	<=400	Pass
				DH5	71.328	2.914	3.750	79	280.641	<=400	Pass
	Pi/4DQPSK	SISO	2441	2DH1	71.408	0.420	1.250	79	121.484	<=400	Pass
				2DH3	71.408	1.672	2.500	79	241.811	<=400	Pass
				2DH5	71.408	2.919	3.749	79	281.513	<=400	Pass
	8DPSK	SISO	2441	3DH1	71.512	0.422	1.250	79	122.240	<=400	Pass
				3DH3	71.512	1.672	2.500	79	242.163	<=400	Pass
				3DH5	71.512	2.922	3.750	79	282.137	<=400	Pass

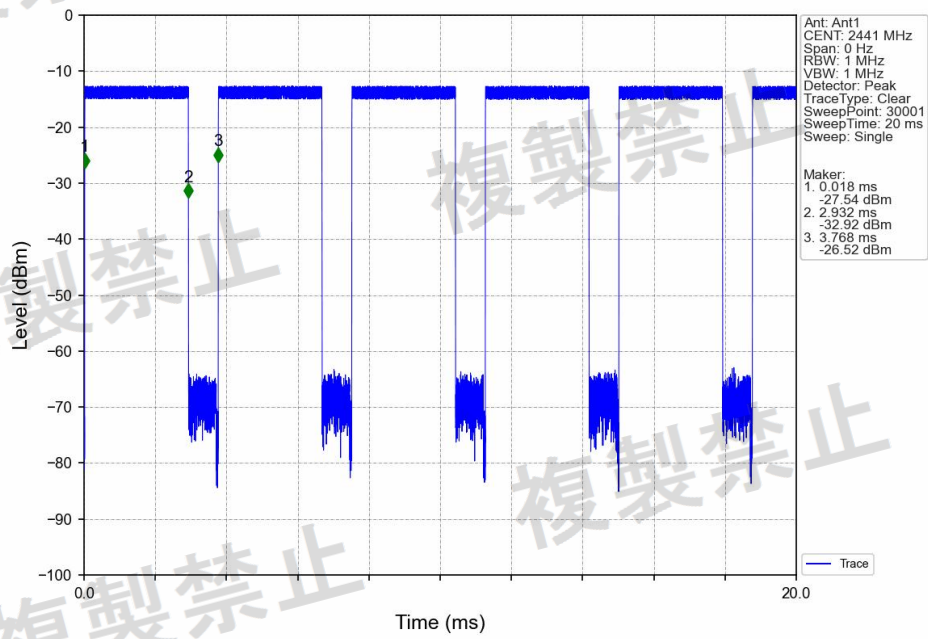
Note: Dwell Time = 90% spreading factor / total number of channels * duty cycle * 400ms

5.2 Test Graph

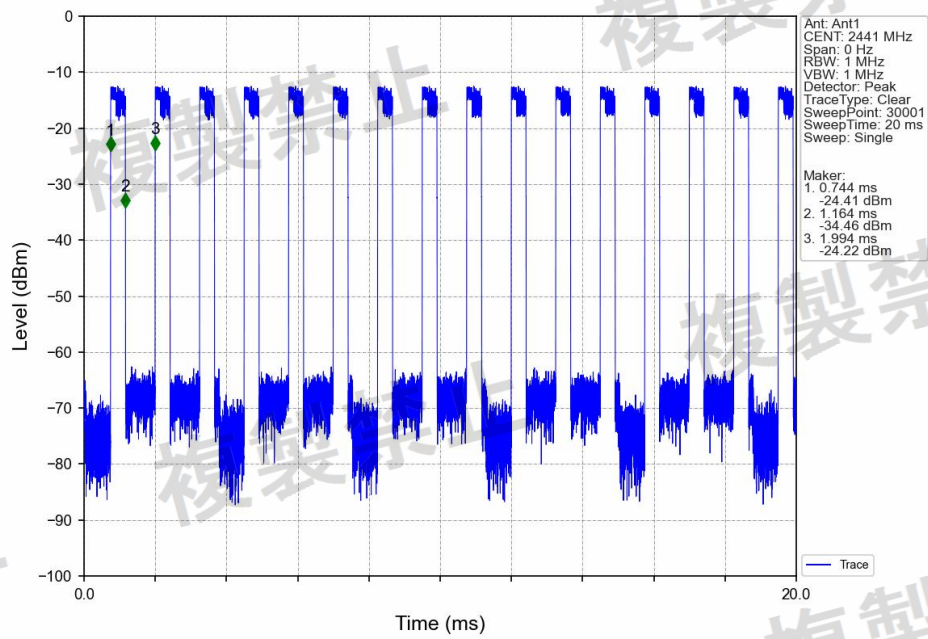
5.2.1 Ant1



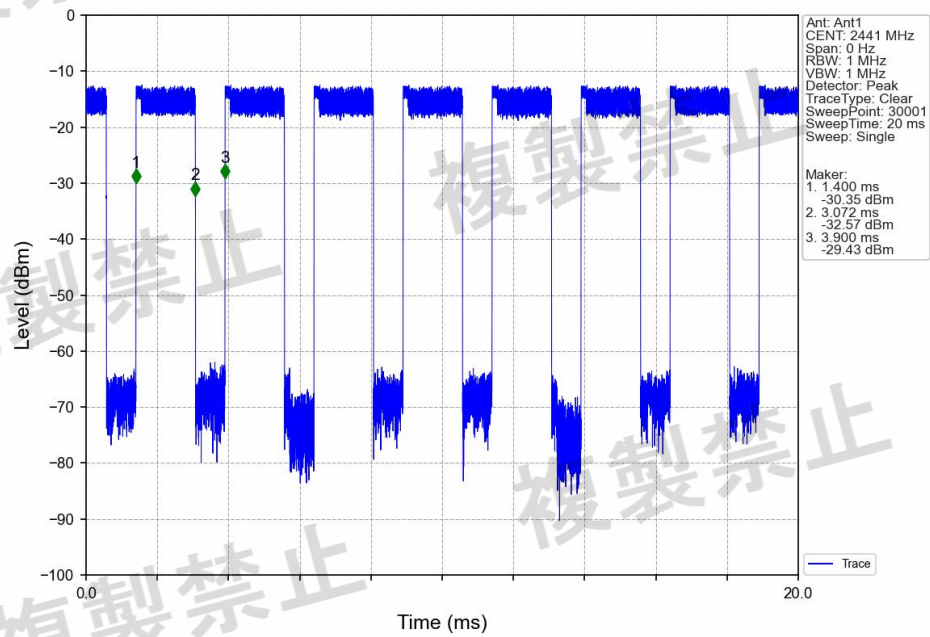
GFSK_DH5_2441MHz_Ant1_NTNV



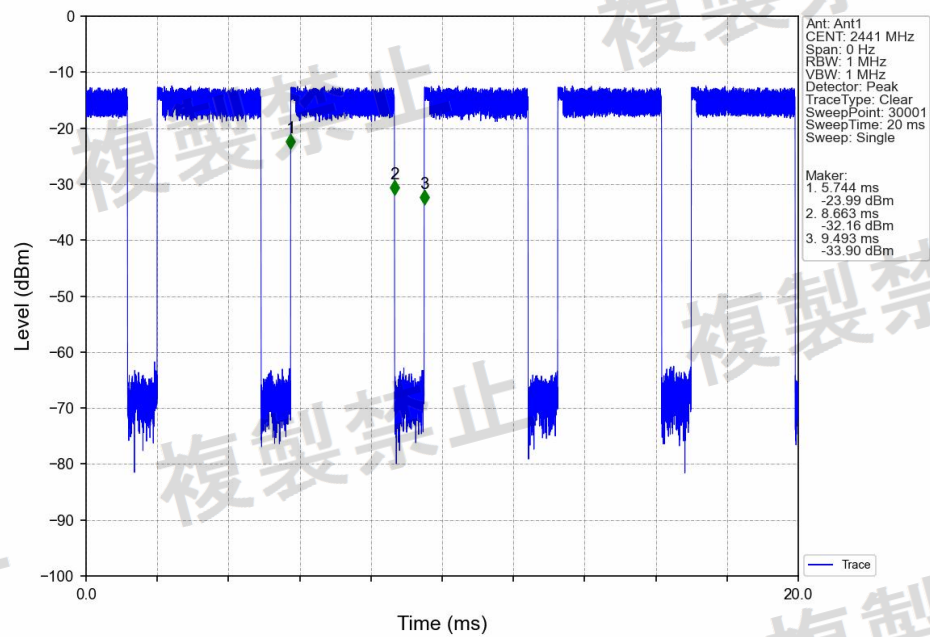
Pi/4DQPSK_2DH1_2441MHz_Ant1_NTNV



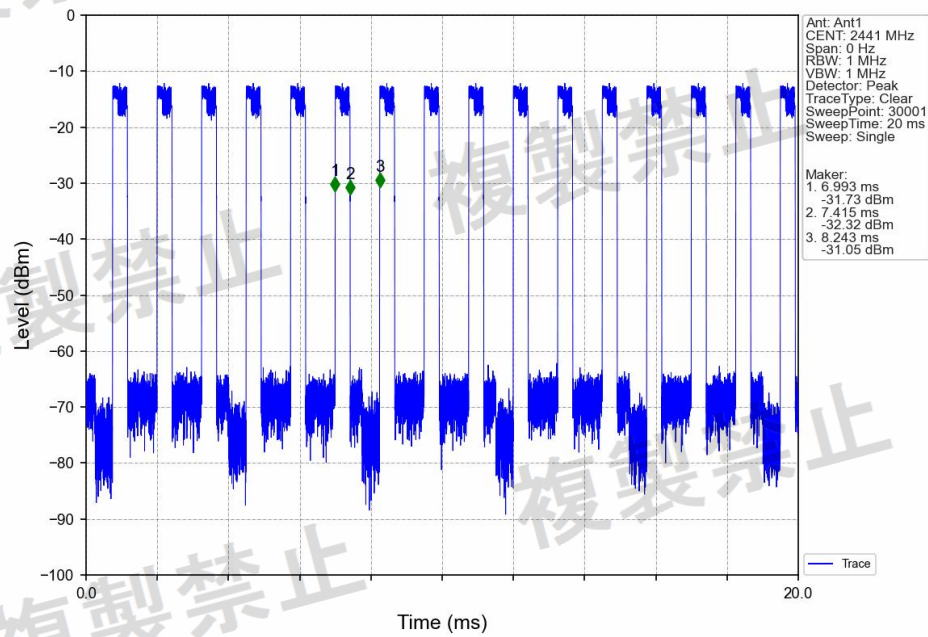
Pi/4DQPSK_2DH3_2441MHz_Ant1_NTNV



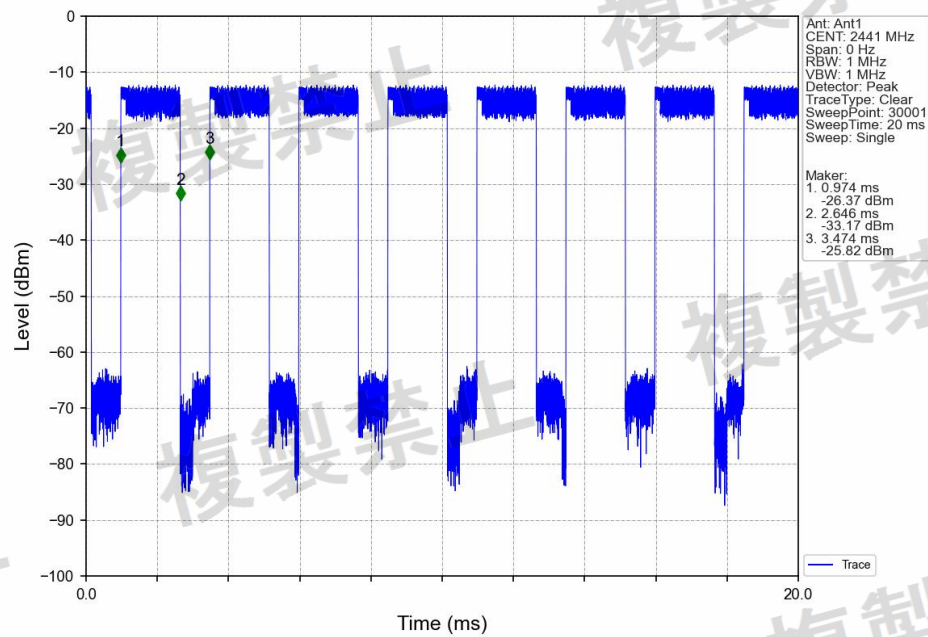
Pi/4DQPSK_2DH5_2441MHz_Ant1_NTNV

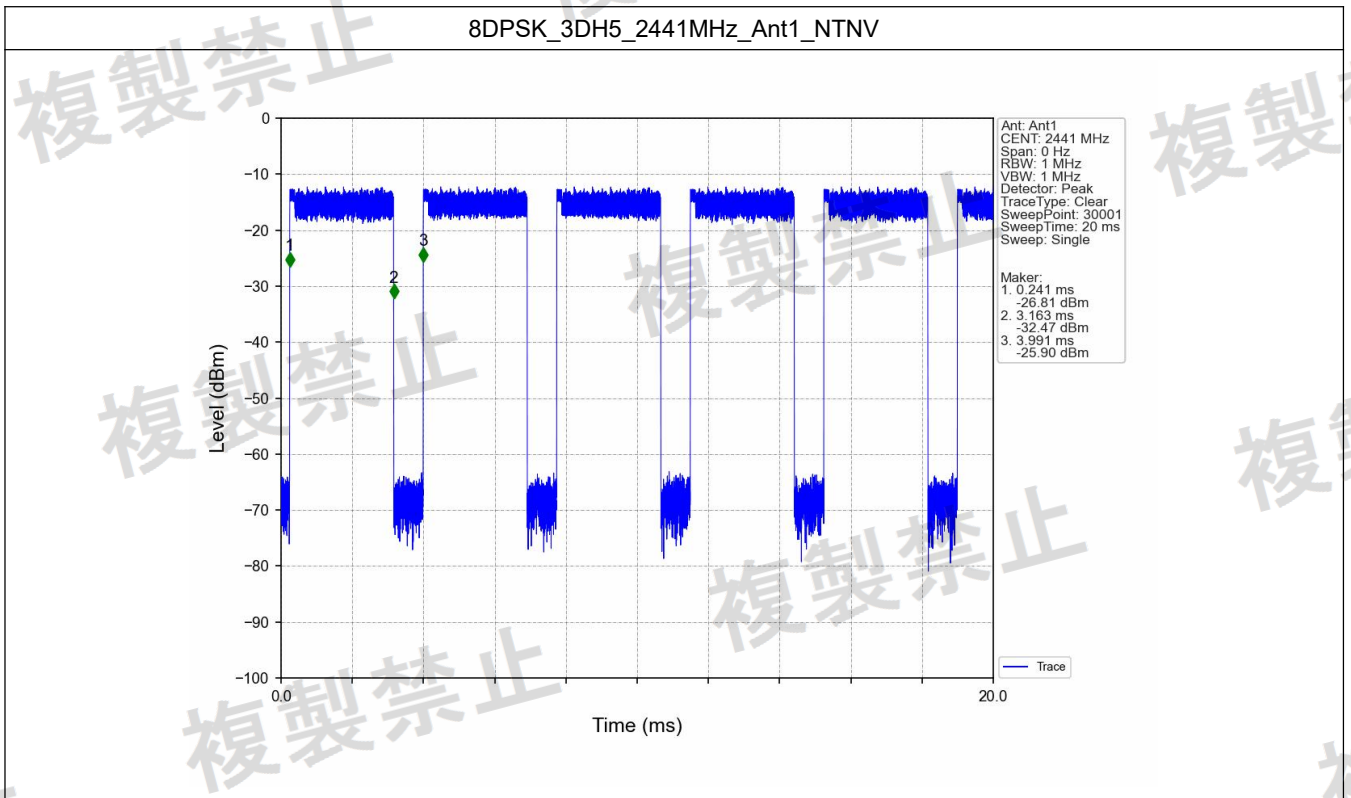


8DPSK_3DH1_2441MHz_Ant1_NTNV



8DPSK_3DH3_2441MHz_Ant1_NTNV





6. Spurious Emission Intensity

6.1 Test Result

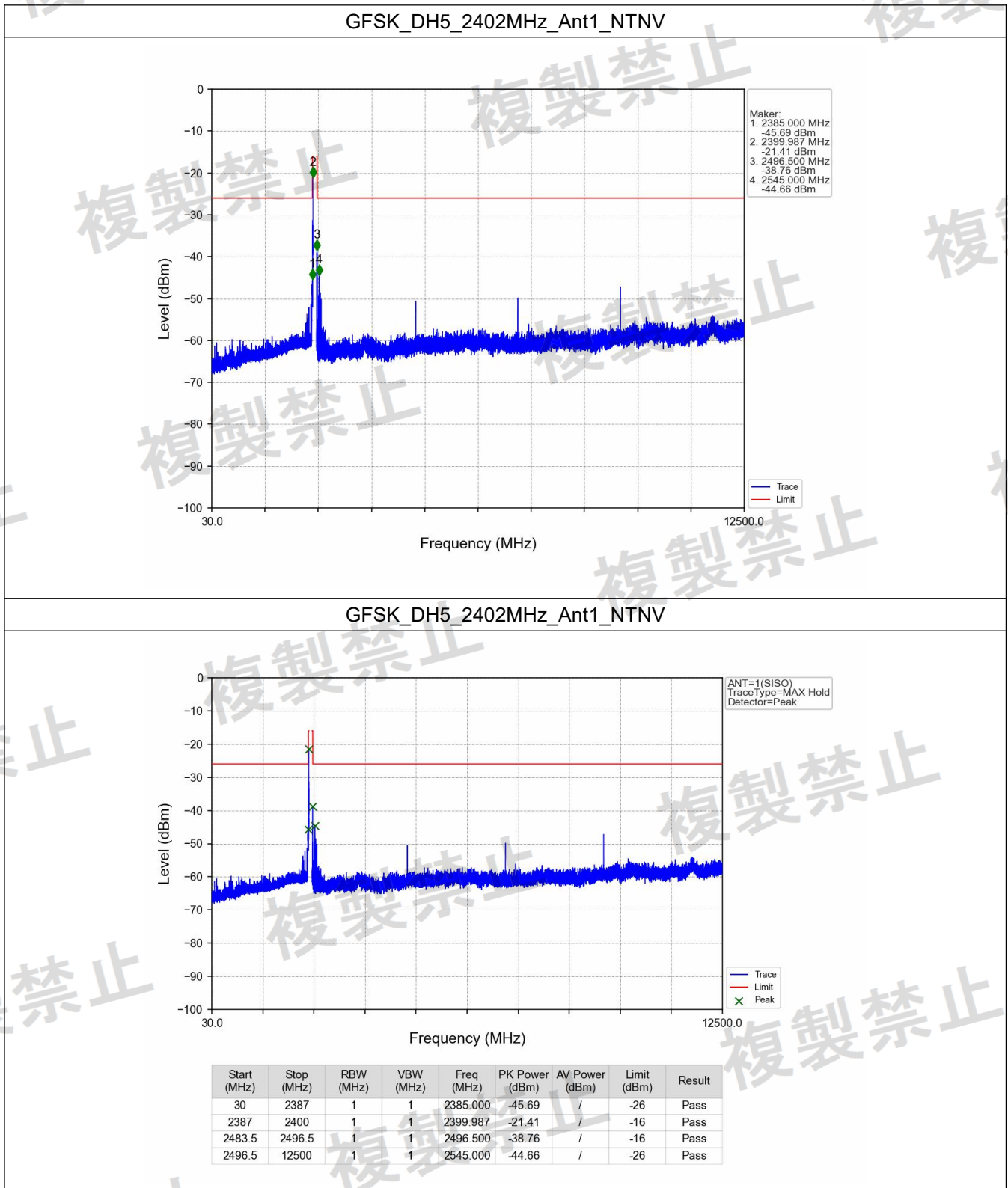
6.1.1 TxSe_NTNV

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)		
GFSK	SISO	2402	1	30	2387	2385	-45.69	0.027	/	/	2.5	Pass
				2387	2400	2399.987	-21.41	7.228	/	/	25	Pass
				2483.5	2496.5	2496.5	-38.76	0.133	/	/	25	Pass
				2496.5	12500	2545	-44.66	0.034	/	/	2.5	Pass
		2441	1	30	2387	2386	-44.59	0.035	/	/	2.5	Pass
				2387	2400	2399.987	-21.50	7.079	/	/	25	Pass
				2483.5	2496.5	2496.487	-38.76	0.133	/	/	25	Pass
				2496.5	12500	2546.5	-45.90	0.026	/	/	2.5	Pass
		2480	1	30	2387	2382.5	-45.86	0.026	/	/	2.5	Pass
				2387	2400	2399.987	-21.48	7.112	/	/	25	Pass
				2483.5	2496.5	2496.5	-39.11	0.123	/	/	25	Pass
				2496.5	12500	2546	-46.12	0.024	/	/	2.5	Pass
Pi/4DQPSK	SISO	2402	1	30	2387	1940	-41.81	0.066	/	/	2.5	Pass
				2387	2400	2399.987	-21.66	6.823	/	/	25	Pass
				2483.5	2496.5	2496.5	-38.72	0.134	/	/	25	Pass
				2496.5	12500	2497	-45.18	0.030	/	/	2.5	Pass
		2441	1	30	2387	2384	-45.08	0.031	/	/	2.5	Pass
				2387	2400	2399.987	-21.56	6.982	/	/	25	Pass
				2483.5	2496.5	2496.188	-40.37	0.092	/	/	25	Pass
				2496.5	12500	2546.5	-45.22	0.030	/	/	2.5	Pass
		2480	1	30	2387	2386	-45.40	0.029	/	/	2.5	Pass
				2387	2400	2399.987	-21.48	7.112	/	/	25	Pass
				2483.5	2496.5	2496.474	-39.08	0.124	/	/	25	Pass
				2496.5	12500	2546.5	-46.32	0.023	/	/	2.5	Pass
8DPSK	SISO	2402	1	30	2387	2379.5	-44.61	0.035	/	/	2.5	Pass
				2387	2400	2399.987	-21.37	7.295	/	/	25	Pass
				2483.5	2496.5	2496.318	-39.40	0.115	/	/	25	Pass
				2496.5	12500	2498	-37.91	0.162	/	/	2.5	Pass
		2441	1	30	2387	2384	-45.05	0.031	/	/	2.5	Pass
				2387	2400	2399.987	-21.42	7.211	/	/	25	Pass
				2483.5	2496.5	2496.5	-39.11	0.123	/	/	25	Pass
				2496.5	12500	2546.5	-47.06	0.020	/	/	2.5	Pass
		2480	1	30	2387	2379.5	-44.26	0.037	/	/	2.5	Pass

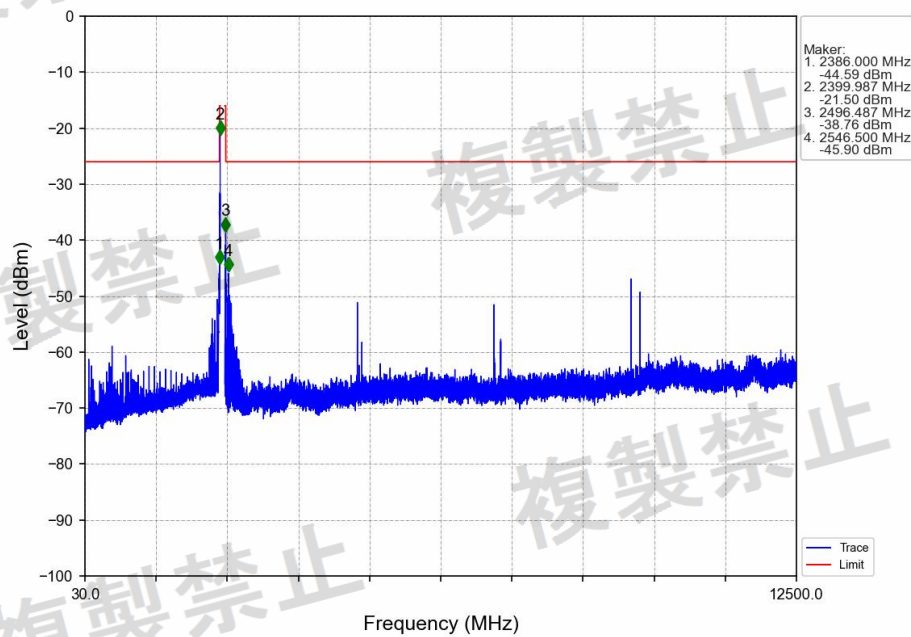
			2387	2400	2399.987	-21.43	7.194	/	/	25	Pass
			2483.5	2496.5	2496.435	-39.20	0.120	/	/	25	Pass
			2496.5	12500	9603	-46.14	0.024	/	/	2.5	Pass

6.2 Test Graph

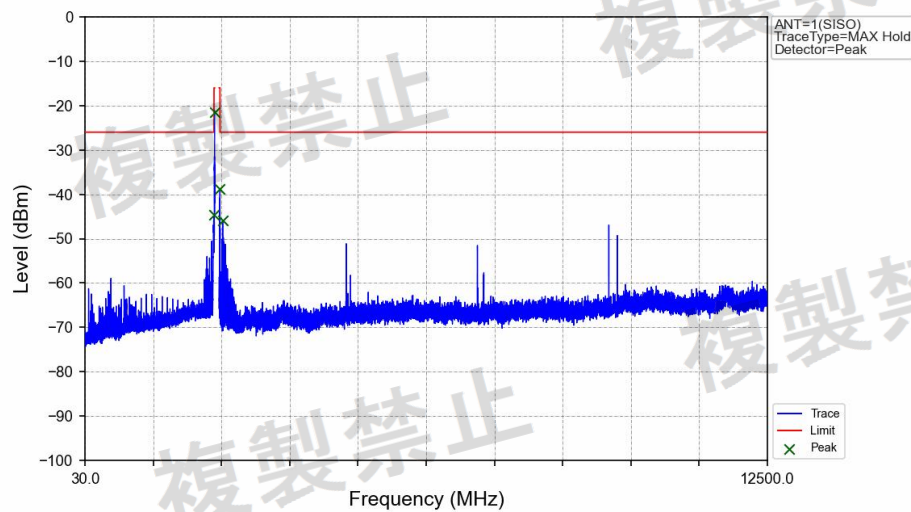
6.2.1 TxSe_NTNV



GFSK_DH5_2441MHz_Ant1_NTNV

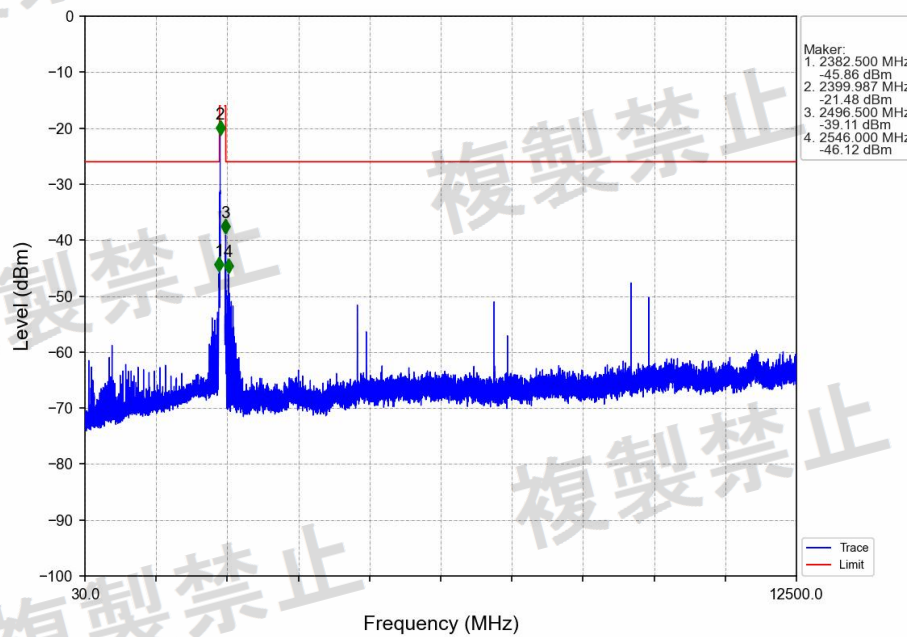


GFSK_DH5_2441MHz_Ant1_NTNV

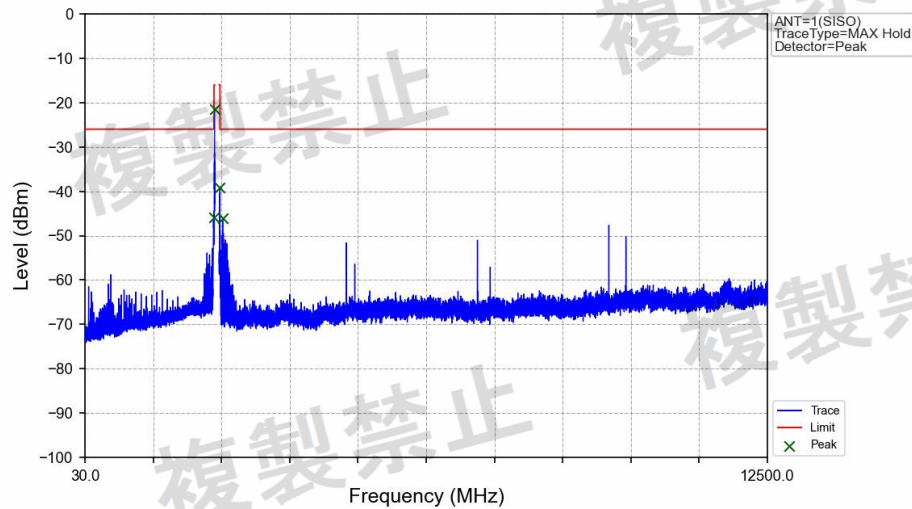


Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2386.000	-44.59	/	-26	Pass
2387	2400	1	1	2399.987	-21.50	/	-16	Pass
2483.5	2496.5	1	1	2496.487	-38.76	/	-16	Pass
2496.5	12500	1	1	2546.500	-45.90	/	-26	Pass

GFSK_DH5_2480MHz_Ant1_NTNV

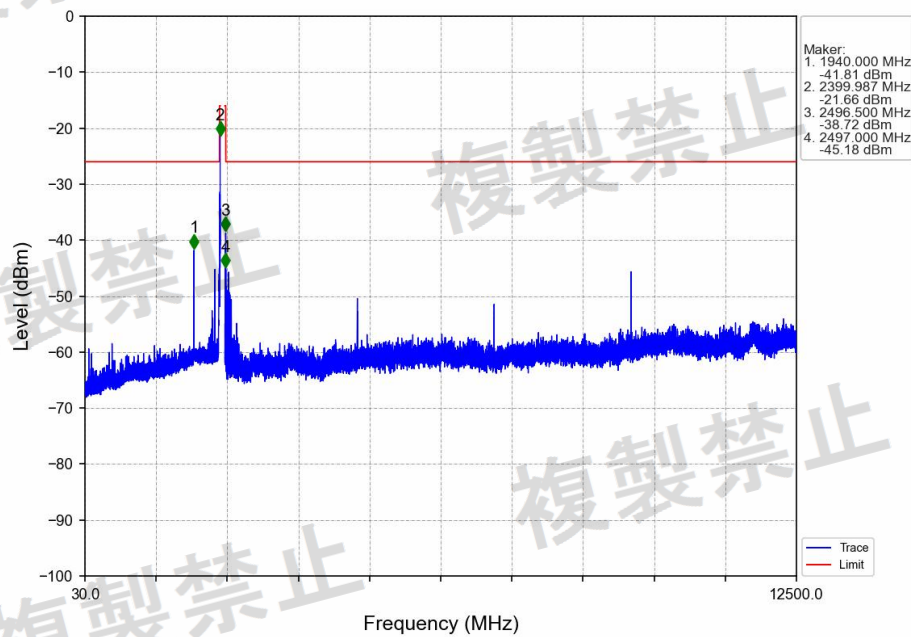


GFSK_DH5_2480MHz_Ant1_NTNV

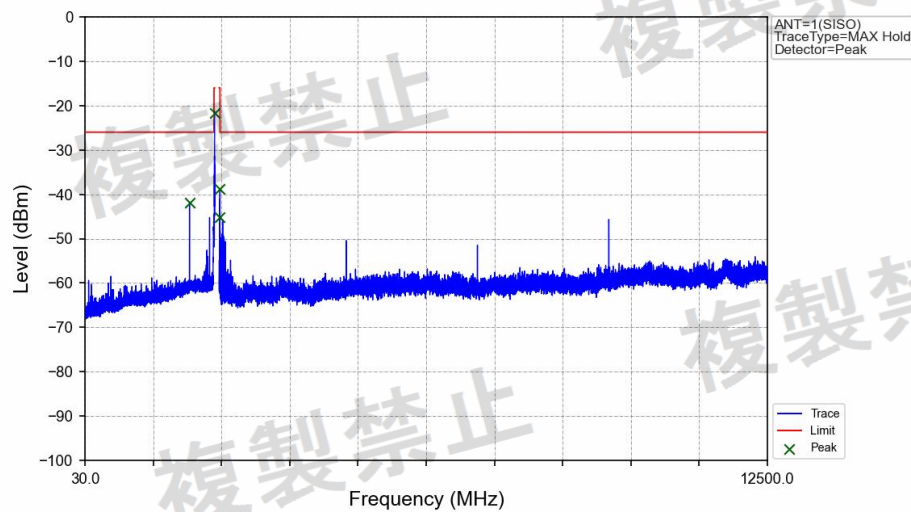


Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2382.500	-45.86	/	-26	Pass
2387	2400	1	1	2399.987	-21.48	/	-16	Pass
2483.5	2496.5	1	1	2496.500	-39.11	/	-16	Pass
2496.5	12500	1	1	2546.000	-46.12	/	-26	Pass

Pi/4DQPSK_2DH5_2402MHz_Ant1_NTNV

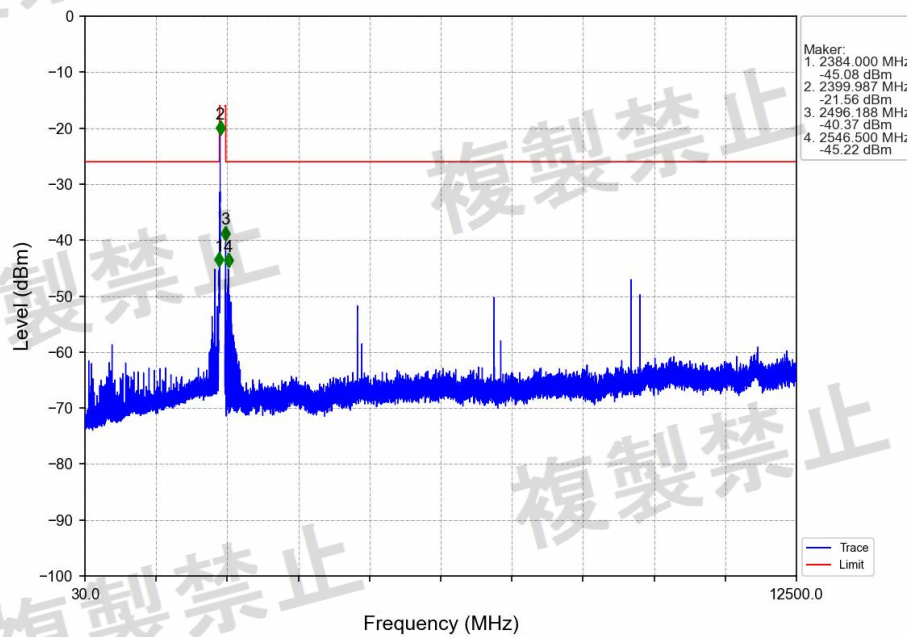


Pi/4DQPSK_2DH5_2402MHz_Ant1_NTNV

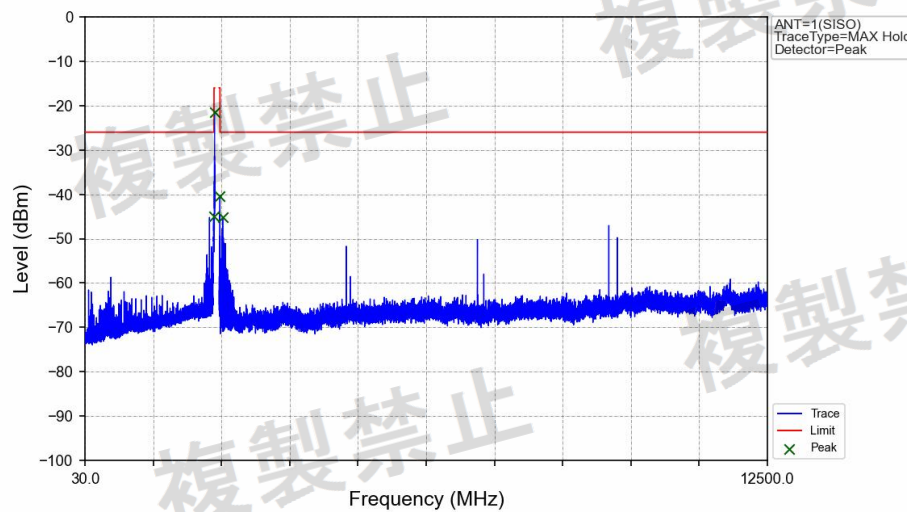


Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	1940.000	-41.81	/	-26	Pass
2387	2400	1	1	2399.987	-21.66	/	-16	Pass
2483.5	2496.5	1	1	2496.500	-38.72	/	-16	Pass
2496.5	12500	1	1	2497.000	-45.18	/	-26	Pass

Pi/4DQPSK_2DH5_2441MHz_Ant1_NTNV

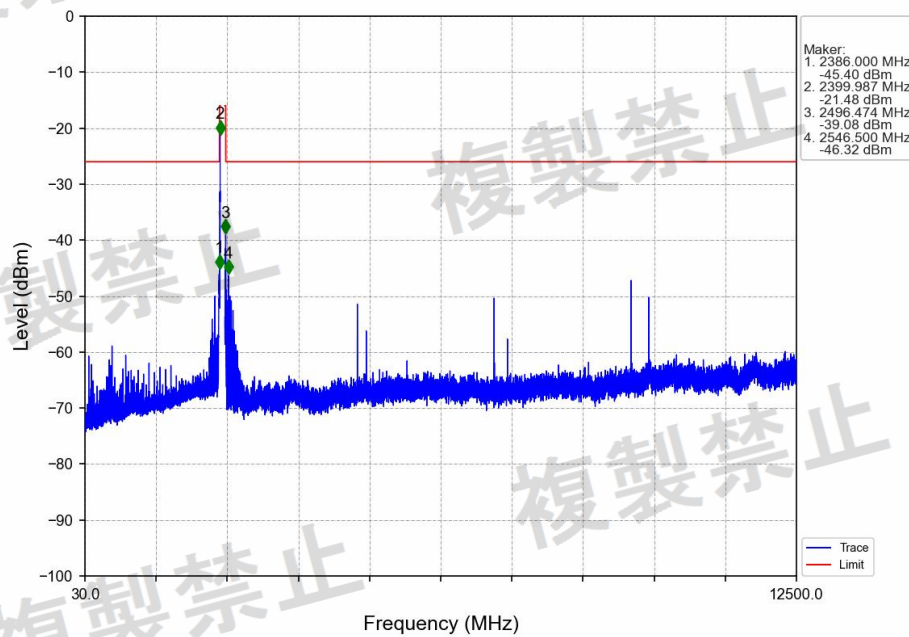


Pi/4DQPSK_2DH5_2441MHz_Ant1_NTNV

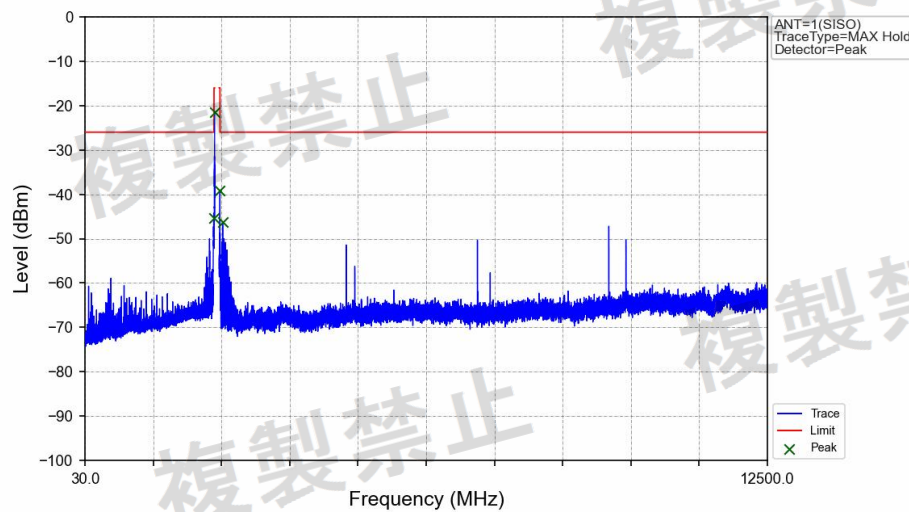


Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2384.000	-45.08	/	-26	Pass
2387	2400	1	1	2399.987	-21.56	/	-16	Pass
2483.5	2496.5	1	1	2496.188	-40.37	/	-16	Pass
2496.5	12500	1	1	2546.500	-45.22	/	-26	Pass

Pi/4DQPSK_2DH5_2480MHz_Ant1_NTNV

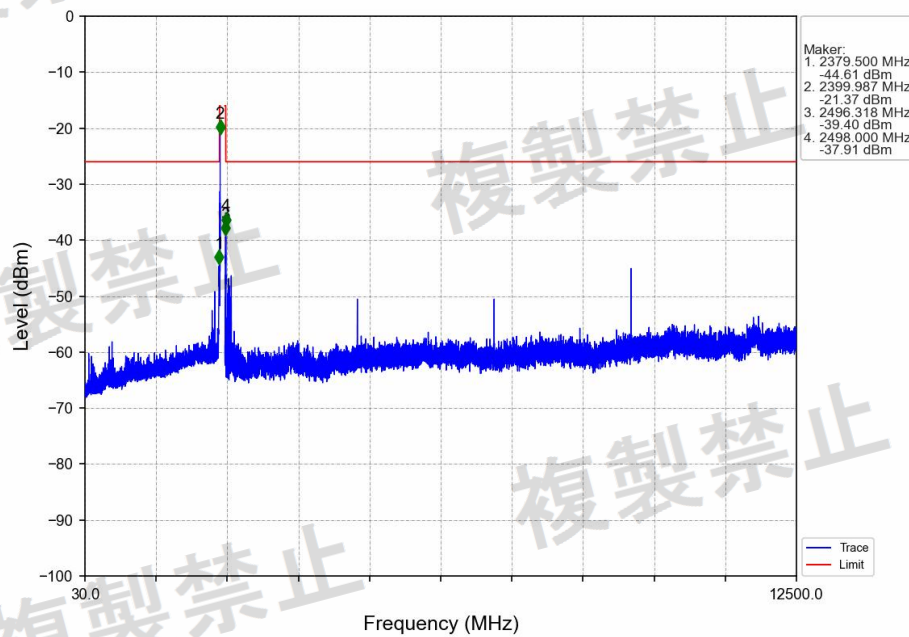


Pi/4DQPSK_2DH5_2480MHz_Ant1_NTNV

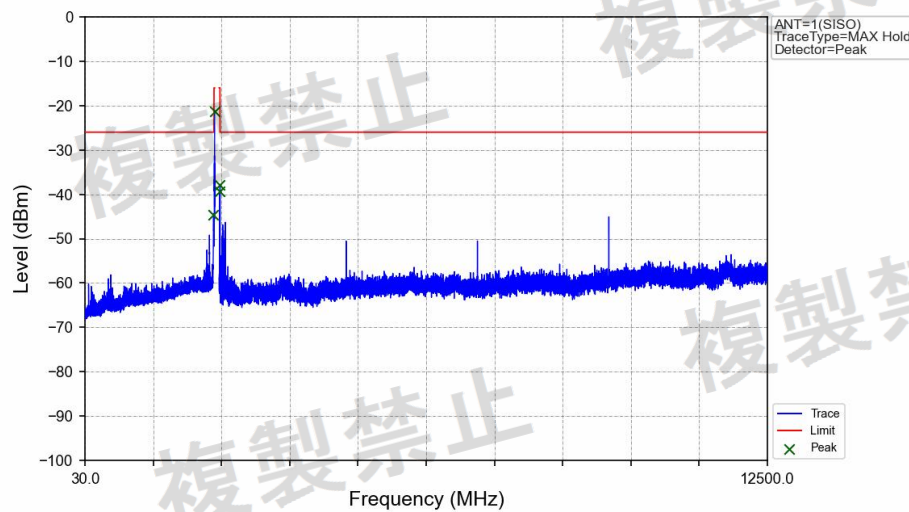


Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2386.000	-45.40	/	-26	Pass
2387	2400	1	1	2399.987	-21.48	/	-16	Pass
2483.5	2496.5	1	1	2496.474	-39.08	/	-16	Pass
2496.5	12500	1	1	2546.500	-46.32	/	-26	Pass

8DPSK_3DH5_2402MHz_Ant1_NTNV

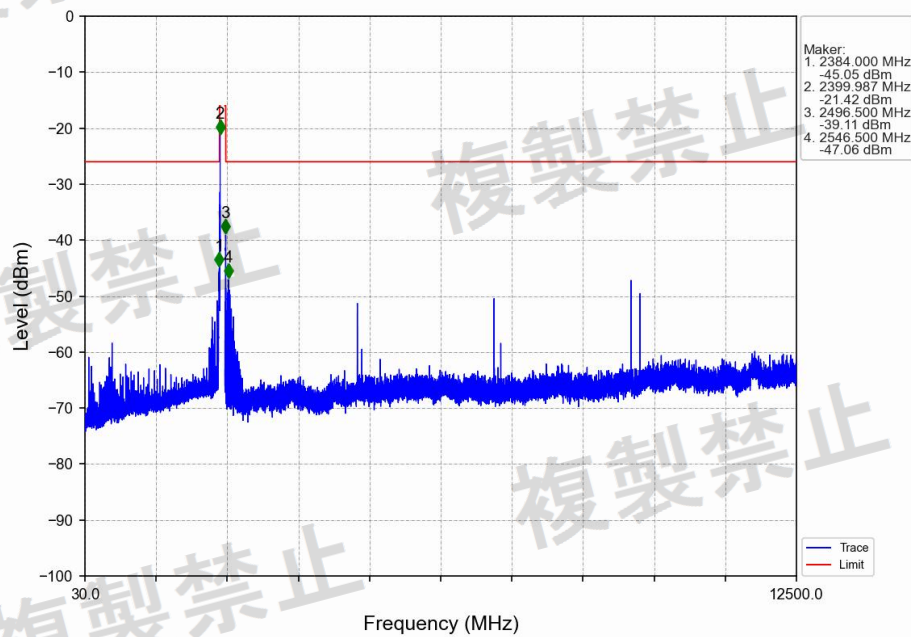


8DPSK_3DH5_2402MHz_Ant1_NTNV

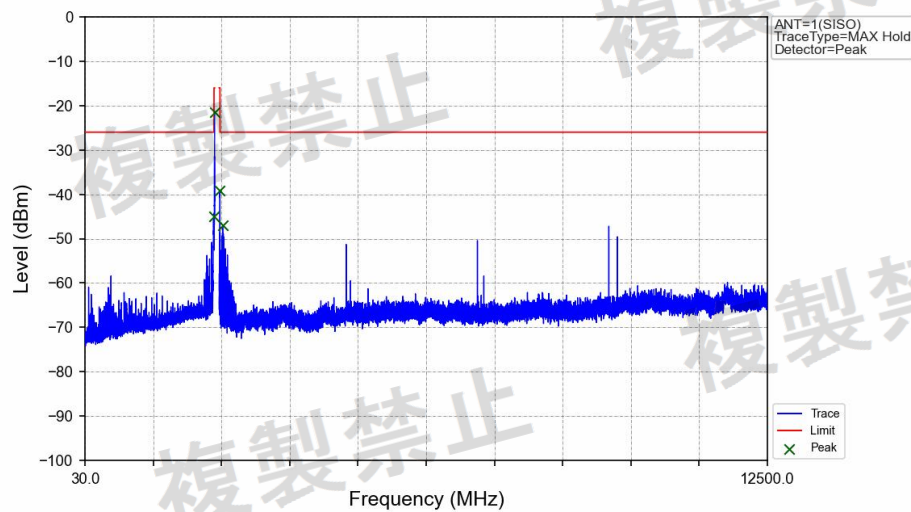


Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2379.500	-44.61	/	-26	Pass
2387	2400	1	1	2399.987	-21.37	/	-16	Pass
2483.5	2496.5	1	1	2496.318	-39.40	/	-16	Pass
2496.5	12500	1	1	2498.000	-37.91	/	-26	Pass

8DPSK_3DH5_2441MHz_Ant1_NTNV

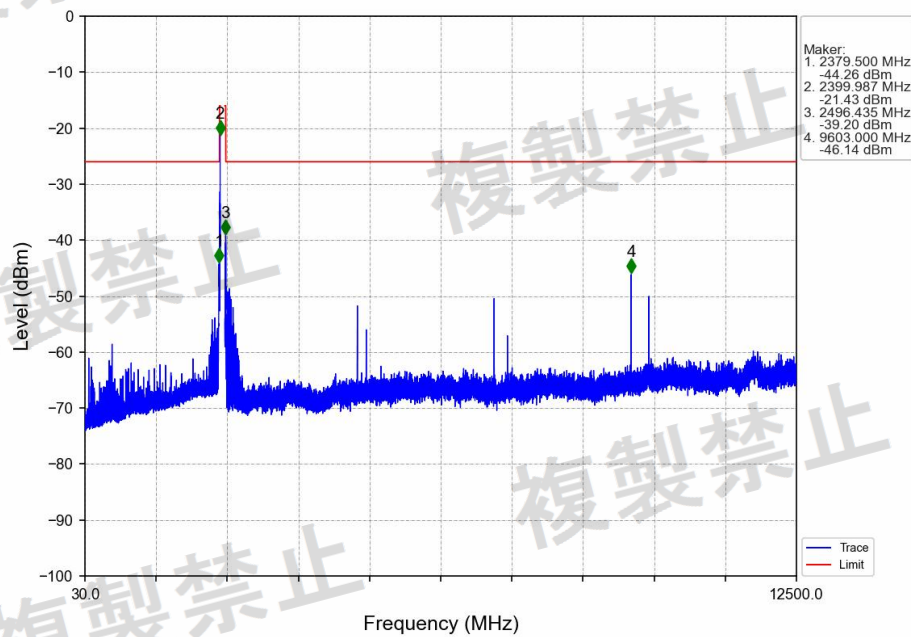


8DPSK_3DH5_2441MHz_Ant1_NTNV

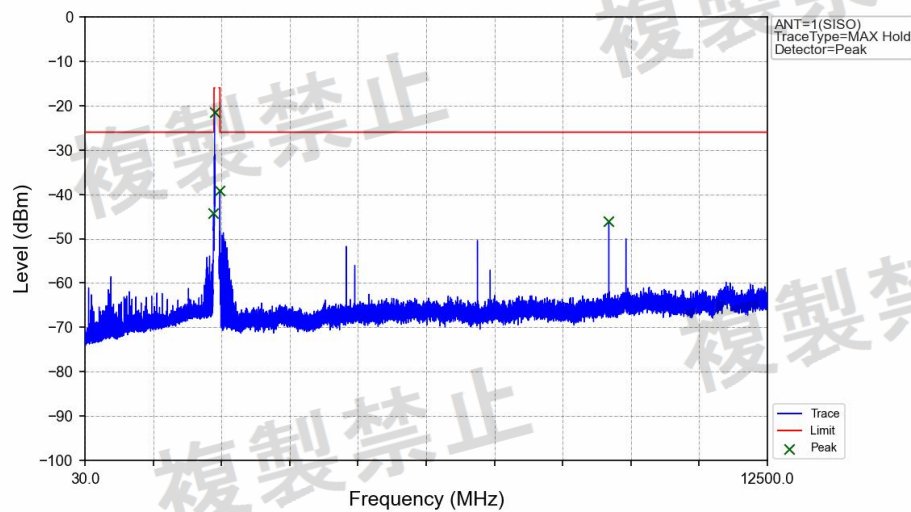


Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	2387	1	1	2384.000	-45.05	/	-26	Pass
2387	2400	1	1	2399.987	-21.42	/	-16	Pass
2483.5	2496.5	1	1	2496.500	-39.11	/	-16	Pass
2496.5	12500	1	1	2546.500	-47.06	/	-26	Pass

8DPSK_3DH5_2480MHz_Ant1_NTNV



8DPSK_3DH5_2480MHz_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	2379.500	-44.26	/	-26	Pass
2387	2400	1	1	2399.987	-21.43	/	-16	Pass
2483.5	2496.5	1	1	2496.435	-39.20	/	-16	Pass
2496.5	12500	1	1	9603.000	-46.14	/	-26	Pass

7. Secondary Radiated Emission

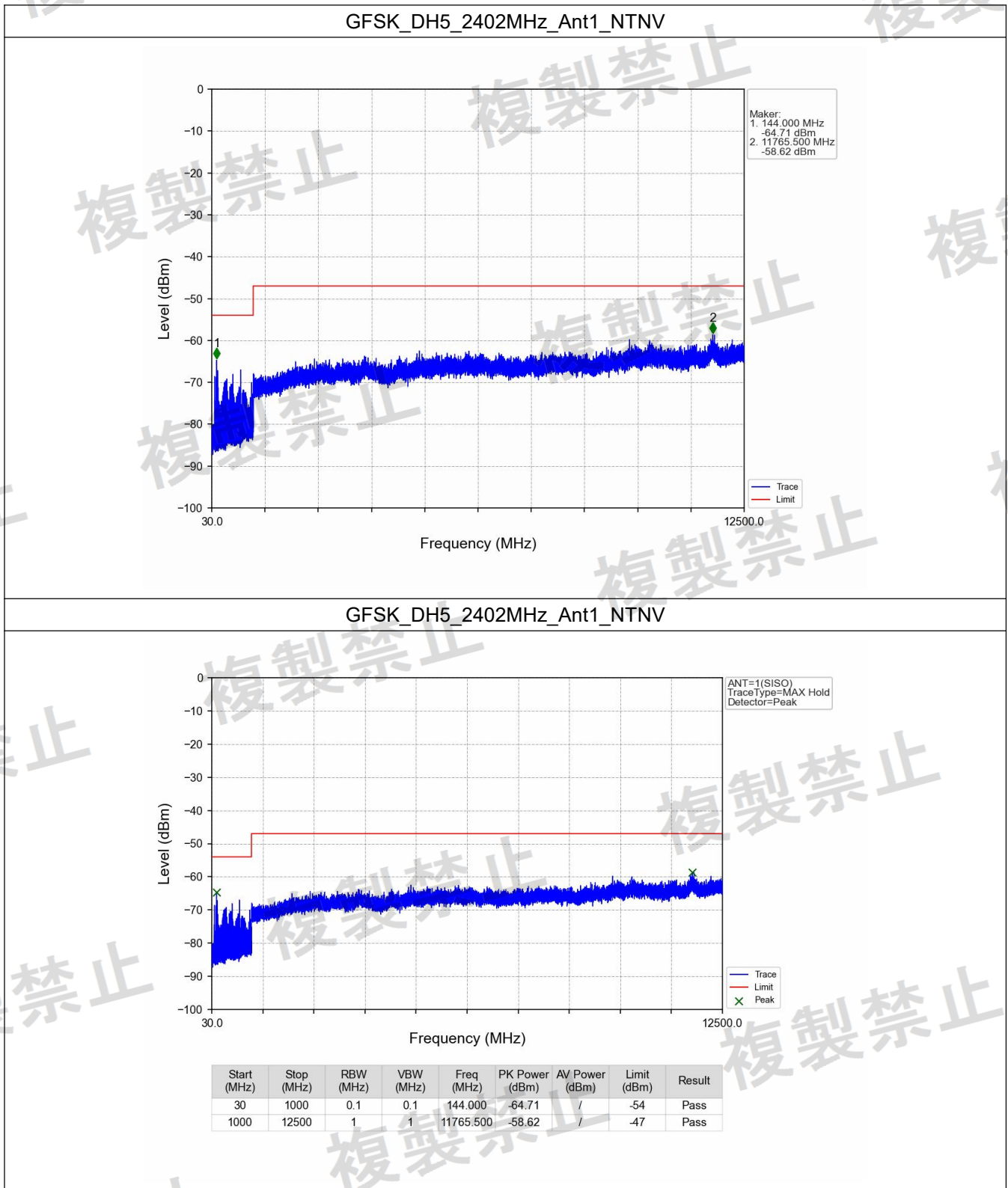
7.1 Test Result

7.1.1 RxSe_NTNV

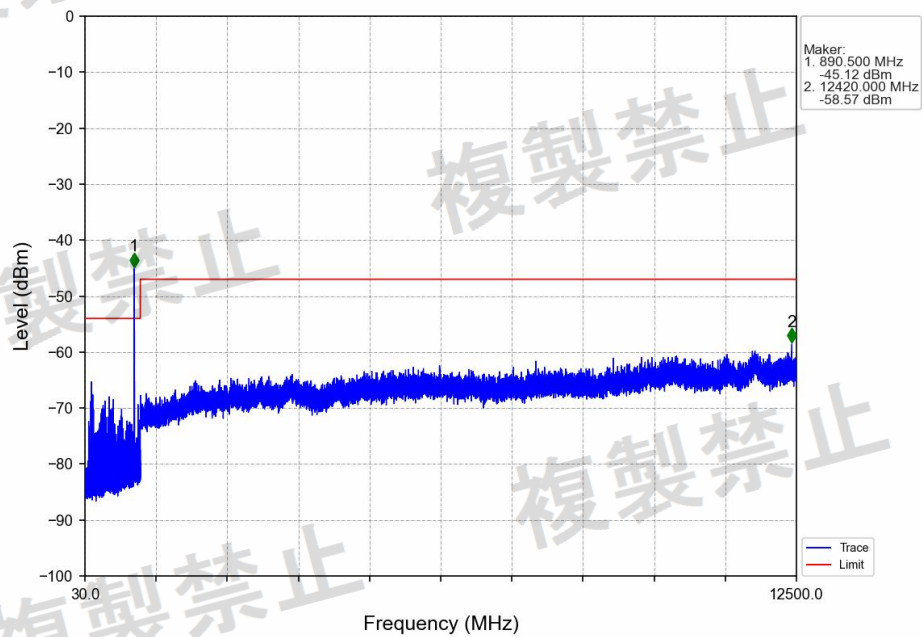
NTNV												
Mode	TX Type	Freq. (MHz)	ANT	Freq. Range		Marker					Limit (nW)	Verdict
				Start (MHz)	Stop (MHz)	Freq. (MHz)	PK Power (dBm)	PK Power (nW)	AV Power (dBm)	AV Power (nW)		
GFSK	SISO	2402	1	30	1000	144	-64.71	0.338	/	/	4	Pass
				1000	12500	11765.5	-58.62	1.374	/	/	20	Pass
		2441	1	30	1000	890.5	-45.12	30.761	-90.51	0.001	4	Pass
				1000	12500	12420	-58.57	1.390	/	/	20	Pass
		2480	1	30	1000	144	-63.88	0.409	-68.14	0.153	4	Pass
				1000	12500	892.85	-45.67	27.102	-75.82	0.026	4	Pass
Pi/4DQPSK	SISO	2402	1	30	1000	898.35	-45.35	29.174	-90.37	0.001	4	Pass
				1000	12500	1960.5	-53.67	4.295	-48.19	15.171	20	Pass
						1964.5	-35.83	261.216	-56.31	2.339	20	Pass
						2406.5	-45.57	27.733	-74.41	0.036	20	Pass
						2412.5	-49.79	10.495	-78.24	0.015	20	Pass
						2419	-46.66	21.577	-78.28	0.015	20	Pass
		2441	1	30	1000	892.55	-48.16	15.276	-90.33	0.001	4	Pass
				1000	12500	11806.5	-58.92	1.282	/	/	20	Pass
		2480	1	30	1000	893.35	-45.99	25.177	-90.21	0.001	4	Pass
				1000	12500	12464.5	-59.81	1.045	/	/	20	Pass
8DPSK	SISO	2402	1	30	1000	892.95	-50.36	9.204	-59.74	1.062	4	Pass
				1000	12500	11793	-59.31	1.172	/	/	20	Pass
		2441	1	30	1000	889.6	-42.07	62.087	-90.26	0.001	4	Pass
				1000	12500	2407.5	-52.56	5.546	-78.27	0.015	20	Pass
						2418	-55.72	2.679	-78.27	0.015	20	Pass
		2480	1	30	1000	889.9	-47.03	19.815	-59.54	1.112	4	Pass
				1000	12500	11739	-58.96	1.271	/	/	20	Pass

7.2 Test Graph

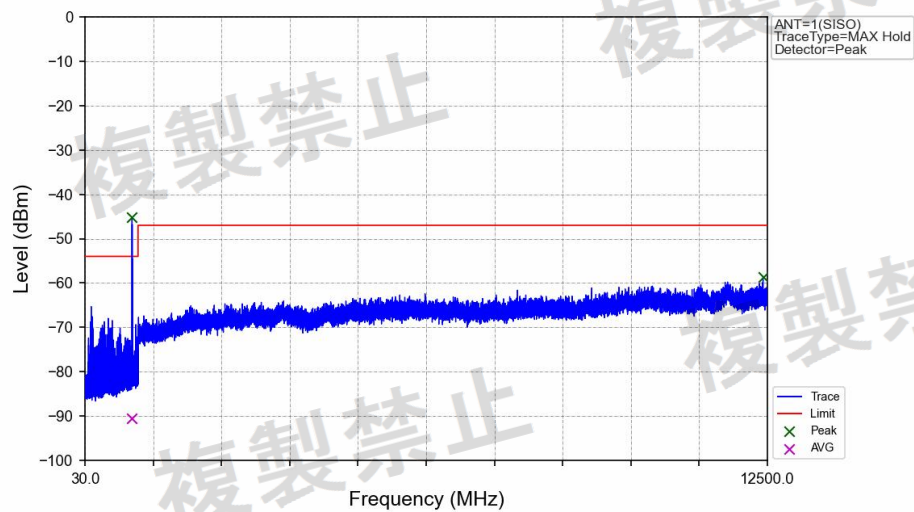
7.2.1 RxSe_NTNV



GFSK_DH5_2441MHz_Ant1_NTNV

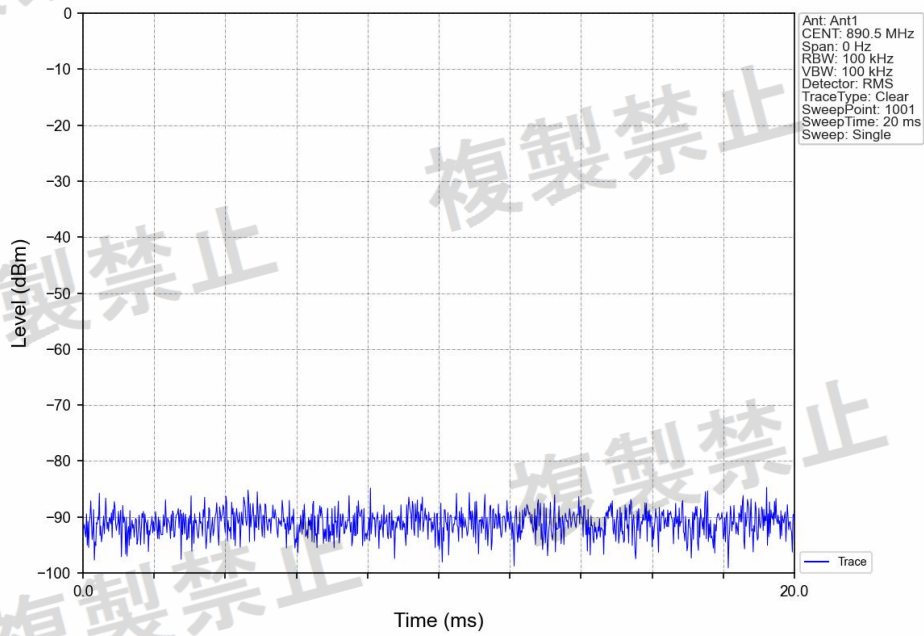


GFSK_DH5_2441MHz_Ant1_NTNV

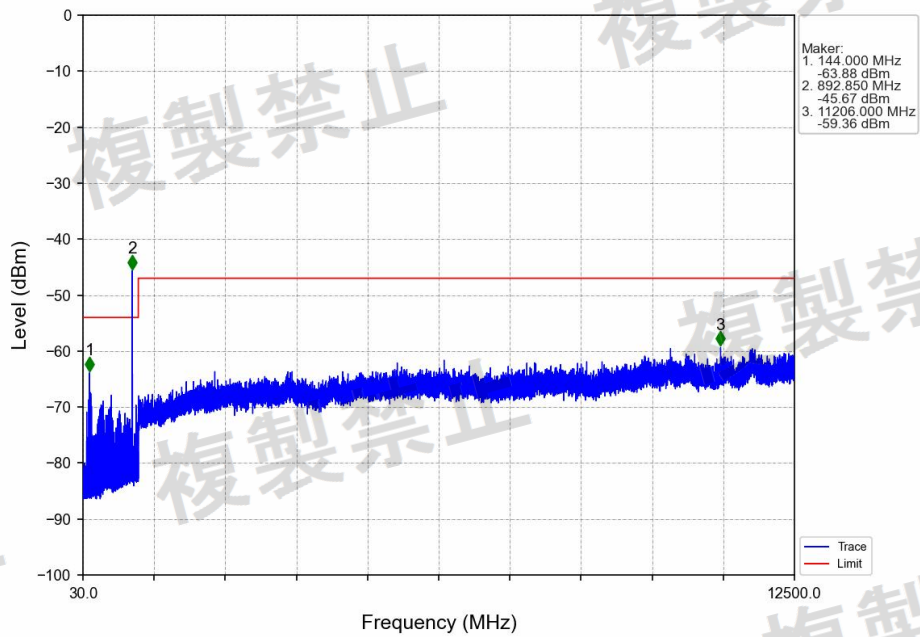


Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	1000	0.1	0.1	890.500	-45.12	-90.51	-54	Pass
1000	12500	1	1	12420.000	-58.57	/	-47	Pass

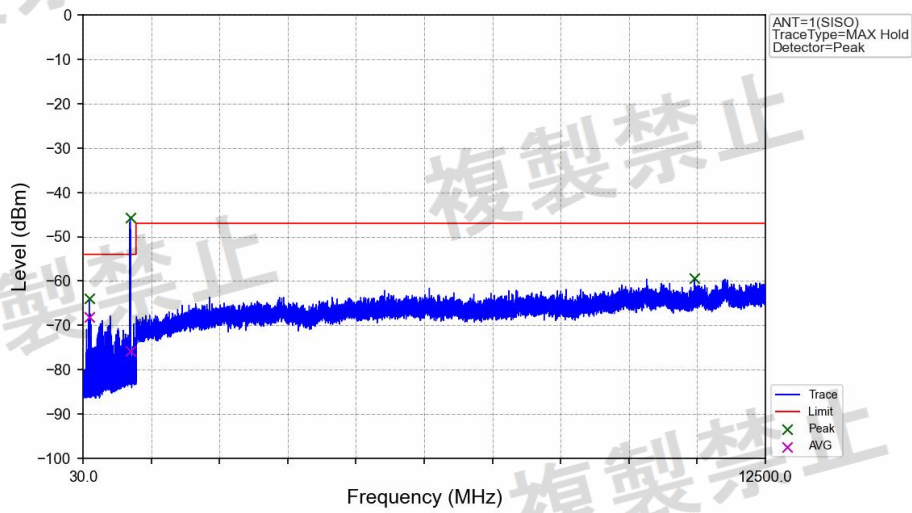
GFSK_DH5_2441MHz_Ant1_NTNV



GFSK_DH5_2480MHz_Ant1_NTNV

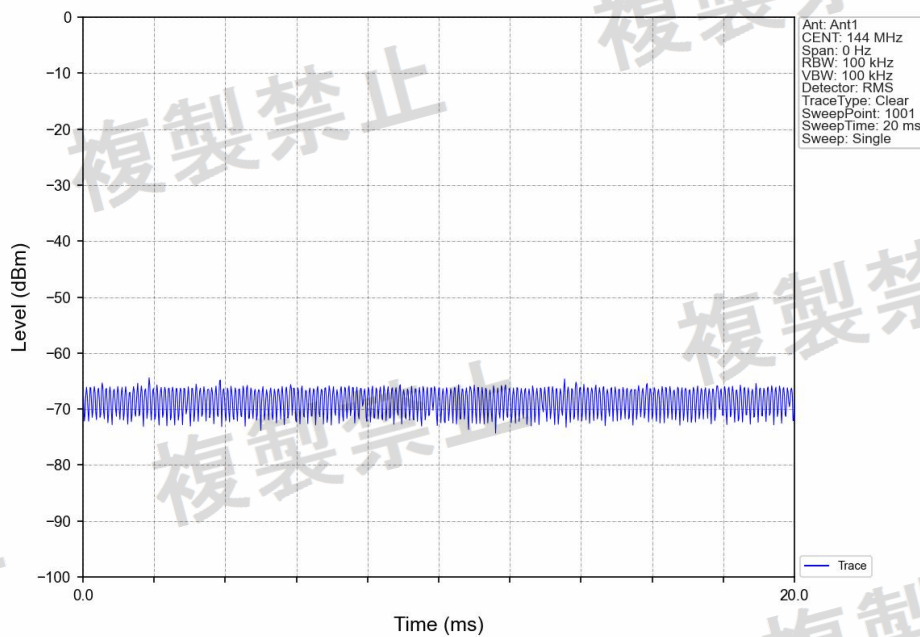


GFSK_DH5_2480MHz_Ant1_NTNV

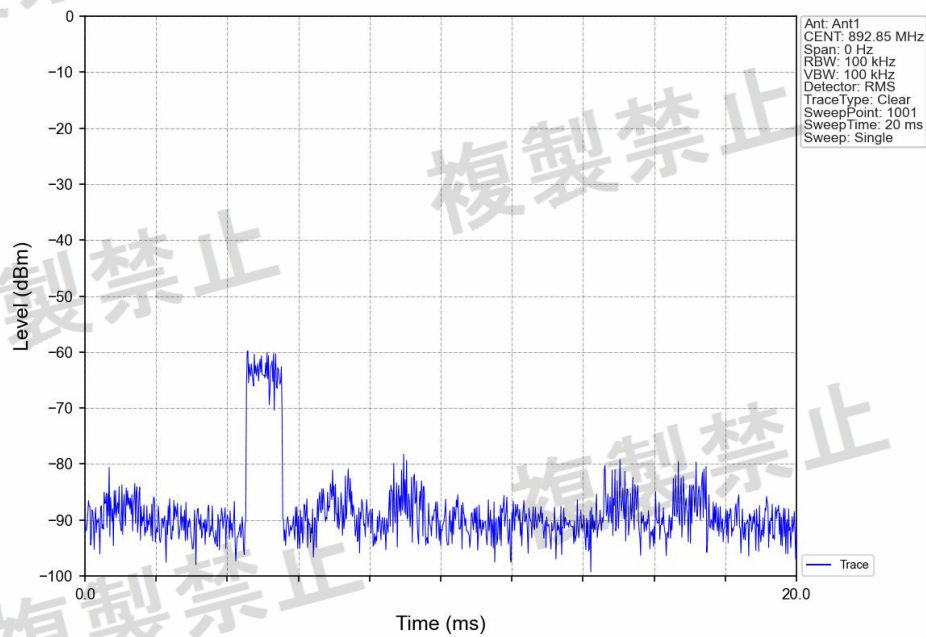


Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	1000	0.1	0.1	144.000	-63.88	-68.14	-54	Pass
30	1000	0.1	0.1	892.850	-45.67	-75.82	-54	Pass
1000	12500	1	1	11206.000	-59.36	/	-47	Pass

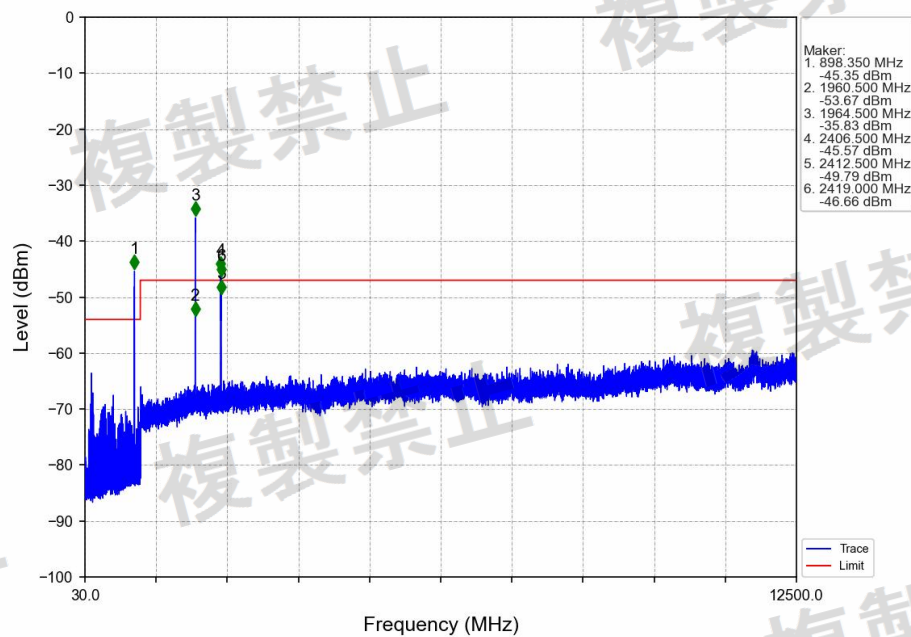
GFSK_DH5_2480MHz_Ant1_NTNV



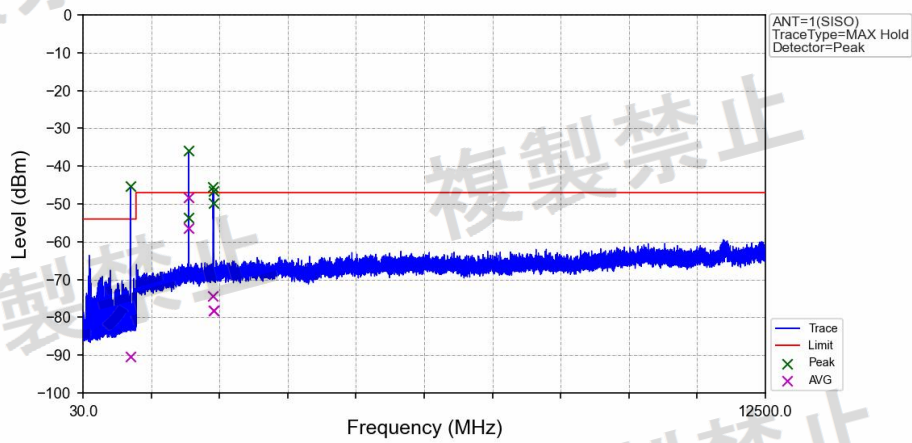
GFSK_DH5_2480MHz_Ant1_NTNV



Pi/4DQPSK_2DH5_2402MHz_Ant1_NTNV

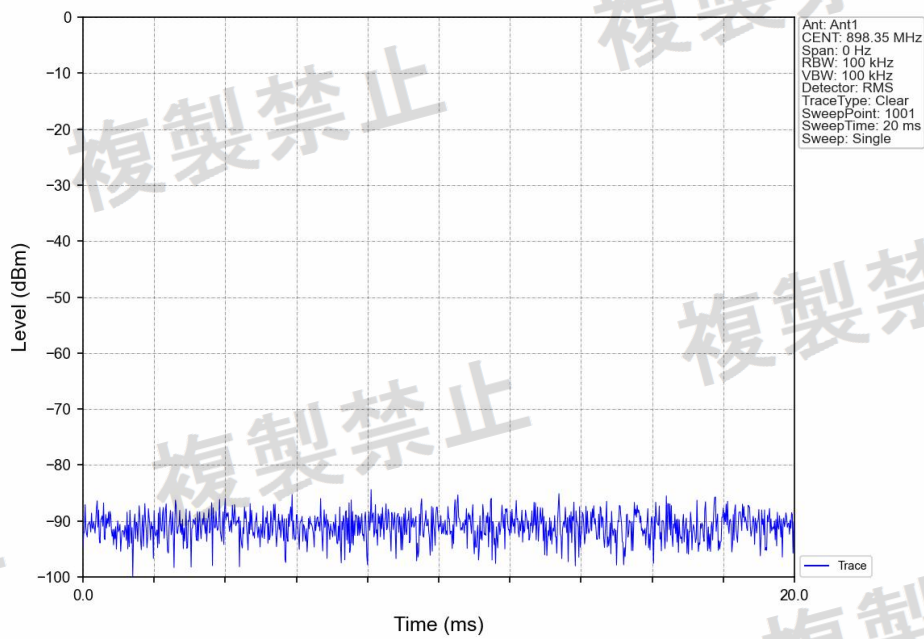


Pi/4DQPSK_2DH5_2402MHz_Ant1_NTNV

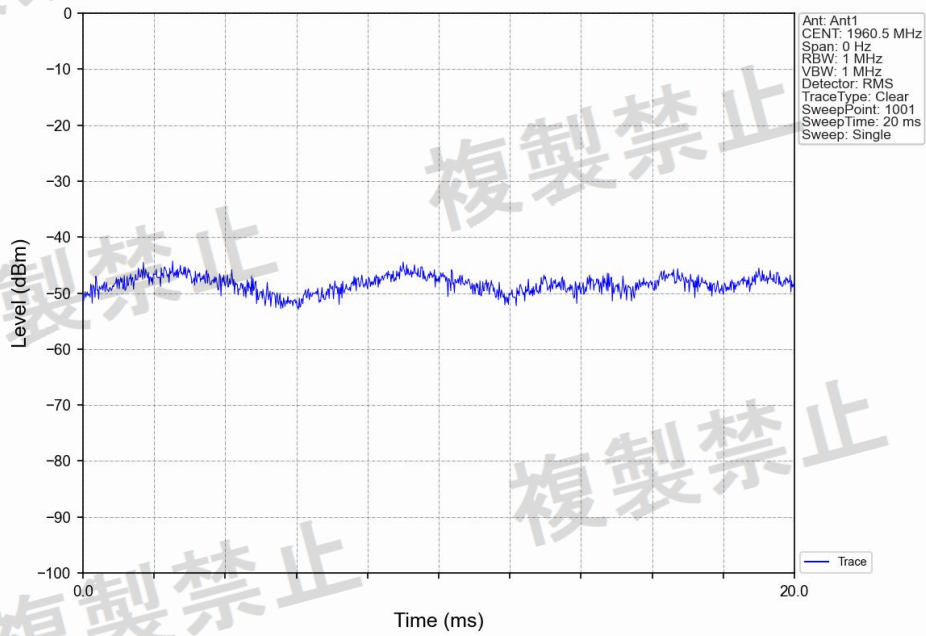


Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	1000	0.1	0.1	898.350	-45.35	-90.37	-54	Pass
1000	12500	1	1	1960.500	-53.67	-48.19	-47	Pass
1000	12500	1	1	1964.500	-35.83	-56.31	-47	Pass
1000	12500	1	1	2406.500	-45.57	-74.41	-47	Pass
1000	12500	1	1	2412.500	-49.79	-78.24	-47	Pass
1000	12500	1	1	2419.000	-46.66	-78.28	-47	Pass

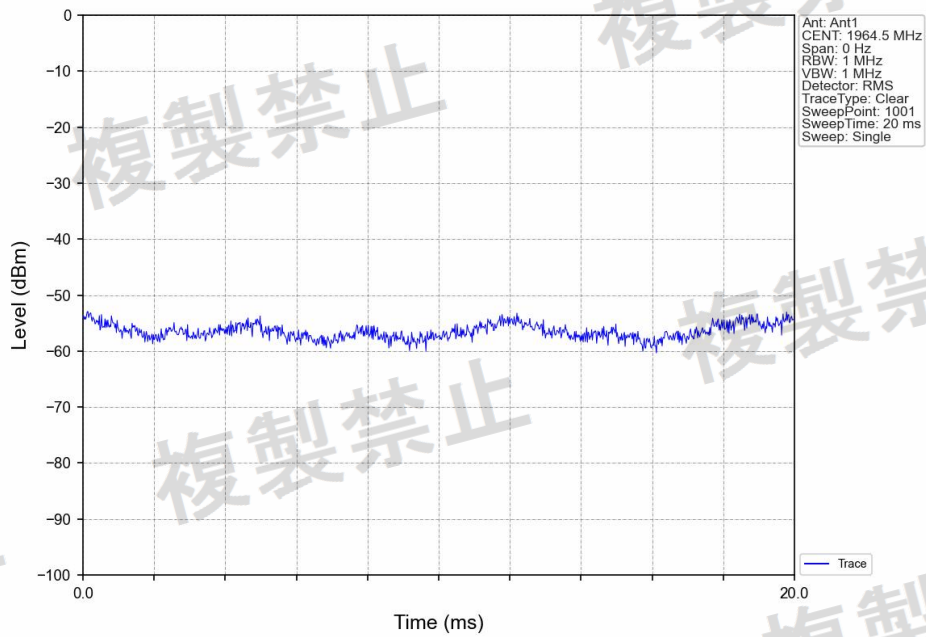
Pi/4DQPSK_2DH5_2402MHz_Ant1_NTNV



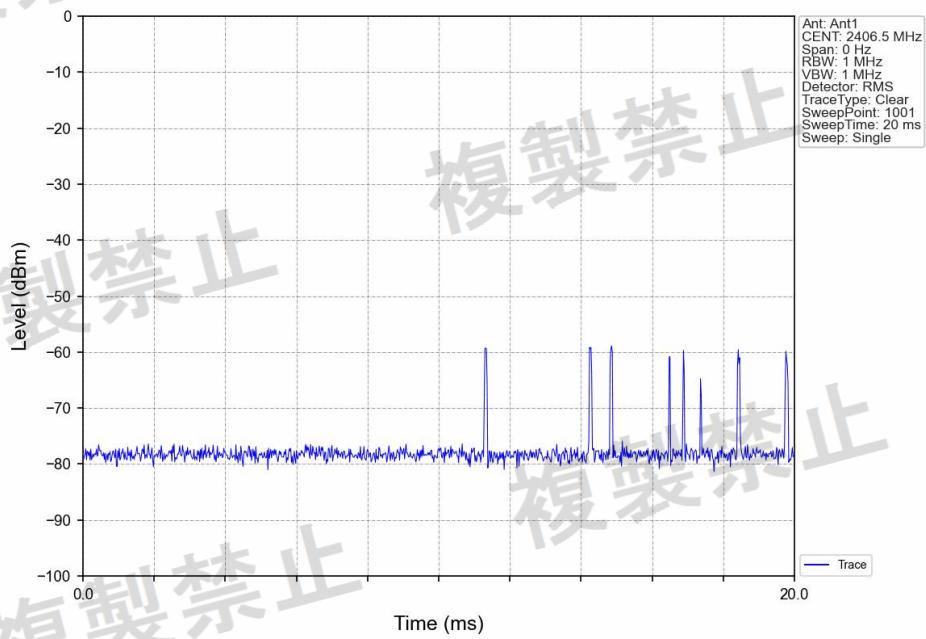
Pi/4DQPSK_2DH5_2402MHz_Ant1_NTNV



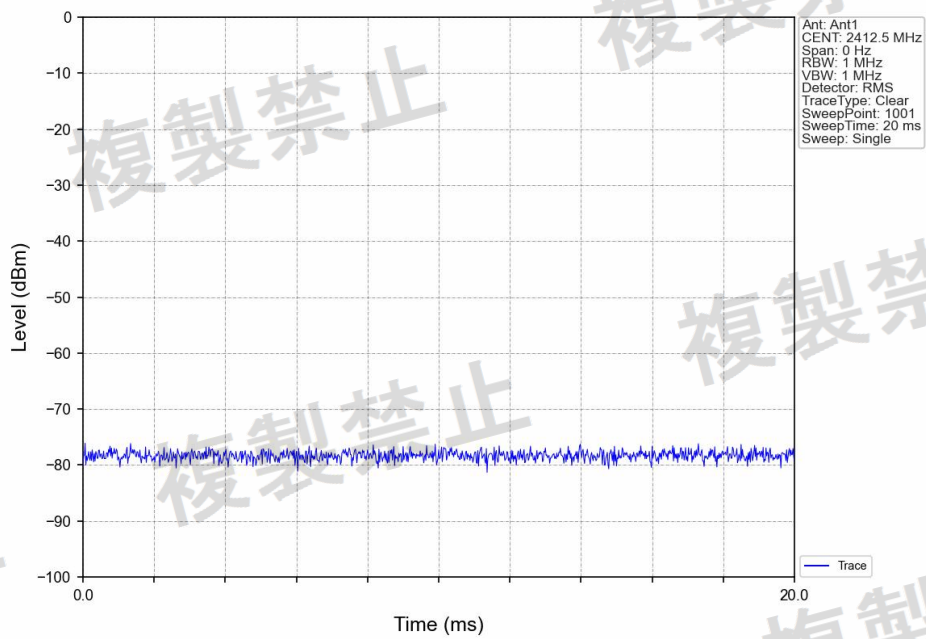
Pi/4DQPSK_2DH5_2402MHz_Ant1_NTNV



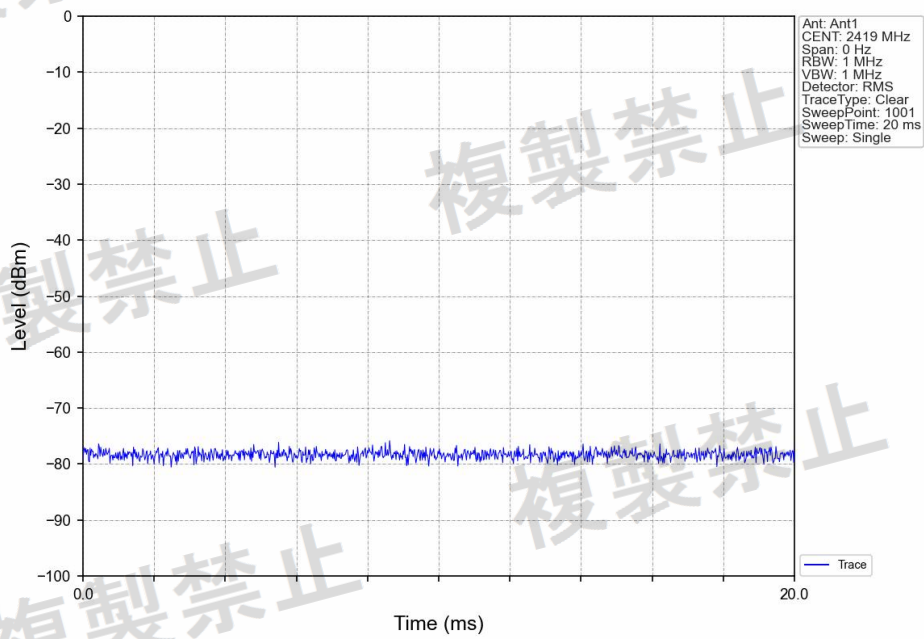
Pi/4DQPSK_2DH5_2402MHz_Ant1_NTNV



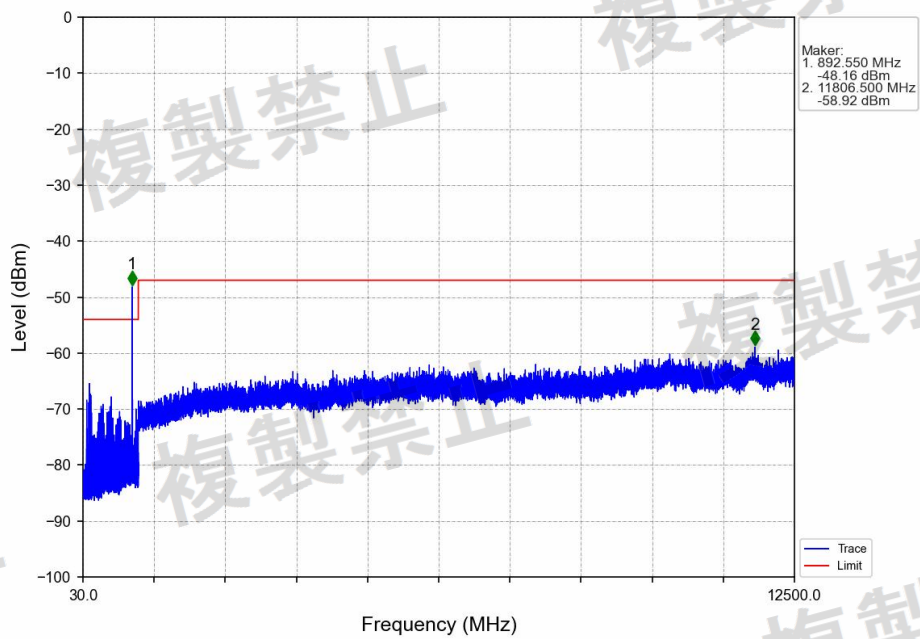
Pi/4DQPSK_2DH5_2402MHz_Ant1_NTNV



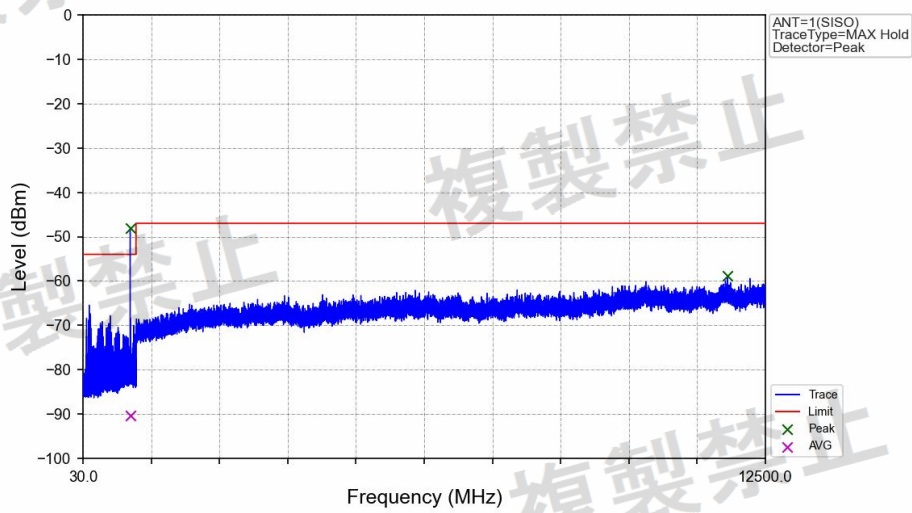
Pi/4DQPSK_2DH5_2402MHz_Ant1_NTNV



Pi/4DQPSK_2DH5_2441MHz_Ant1_NTNV

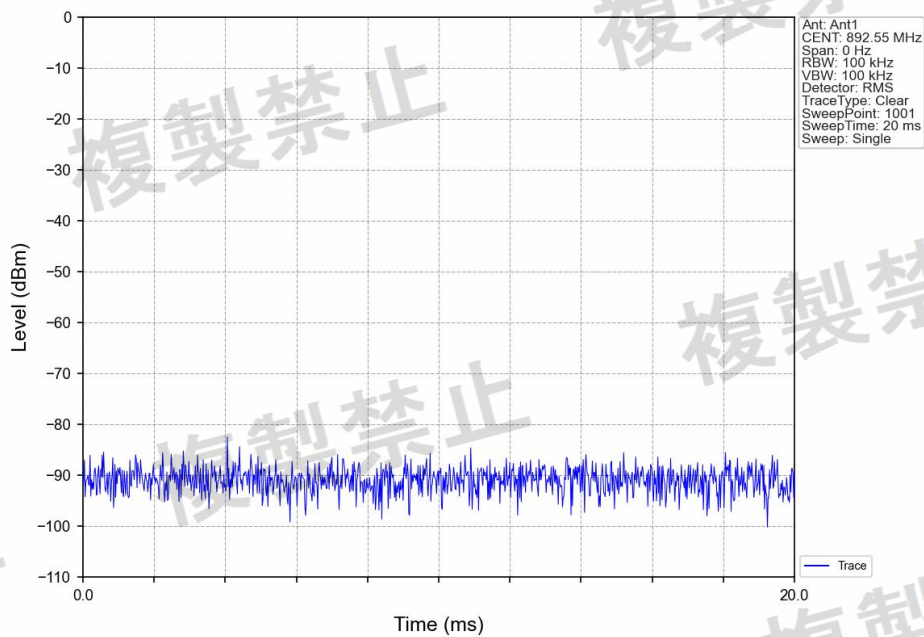


Pi/4DQPSK_2DH5_2441MHz_Ant1_NTNV

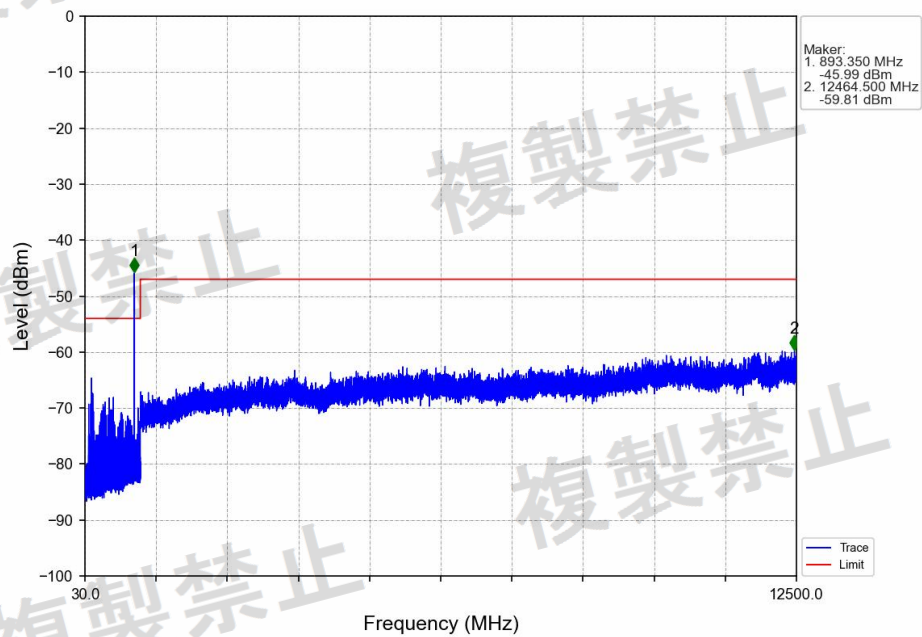


Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	1000	0.1	0.1	892.550	-48.16	-90.33	-54	Pass
1000	12500	1	1	11806.500	-58.92	/	-47	Pass

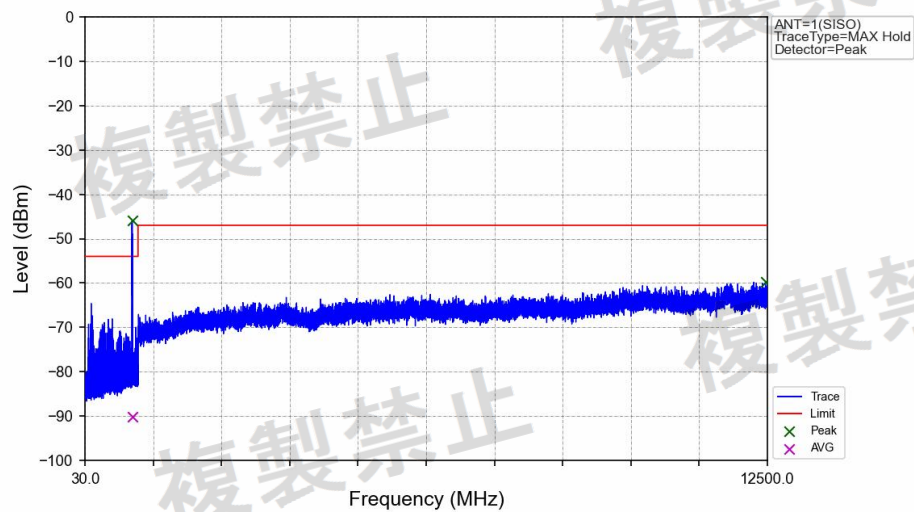
Pi/4DQPSK_2DH5_2441MHz_Ant1_NTNV



Pi/4DQPSK_2DH5_2480MHz_Ant1_NTNV

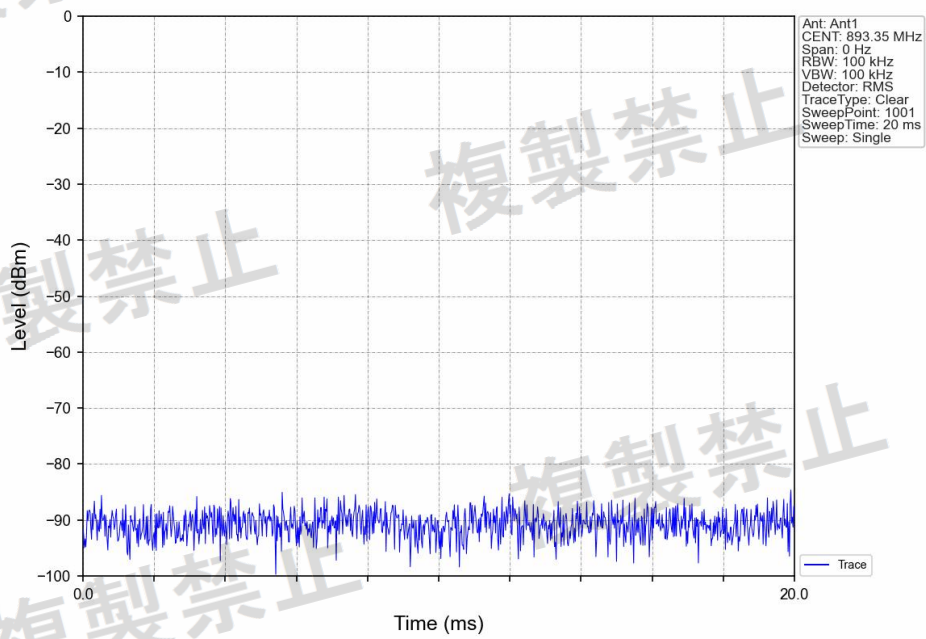


Pi/4DQPSK_2DH5_2480MHz_Ant1_NTNV

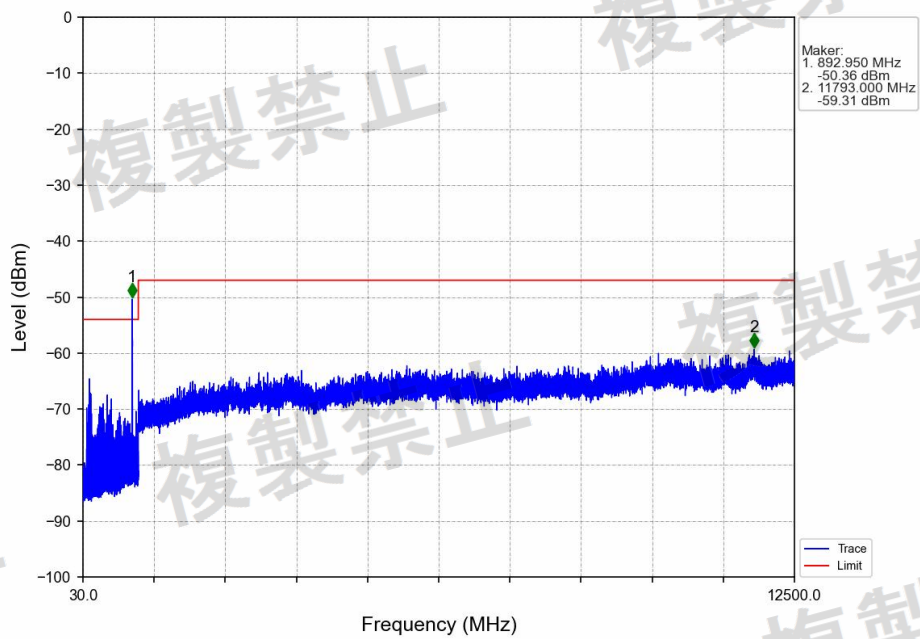


Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	1000	0.1	0.1	893.350	-45.99	-90.21	-54	Pass
1000	12500	1	1	12464.500	-59.81	/	-47	Pass

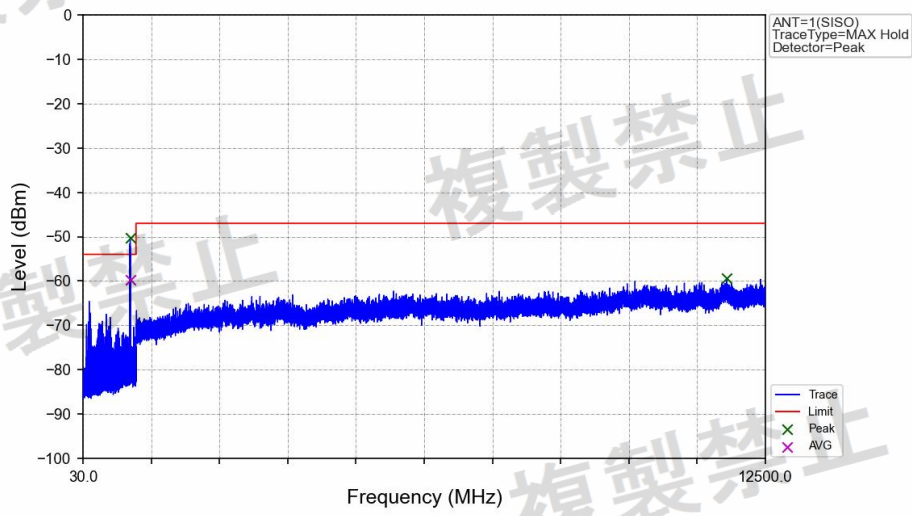
Pi/4DQPSK_2DH5_2480MHz_Ant1_NTNV



8DPSK_3DH5_2402MHz_Ant1_NTNV

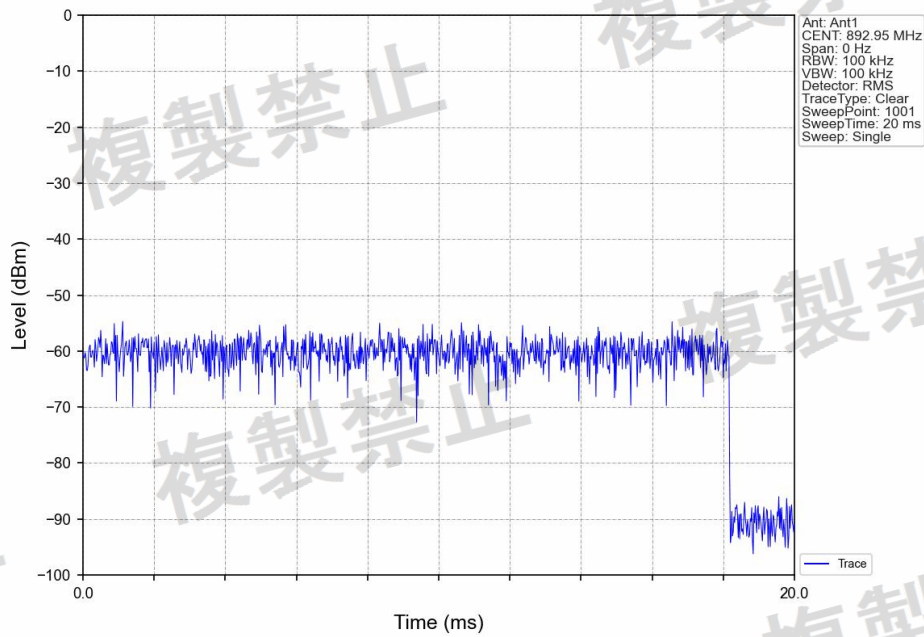


8DPSK_3DH5_2402MHz_Ant1_NTNV

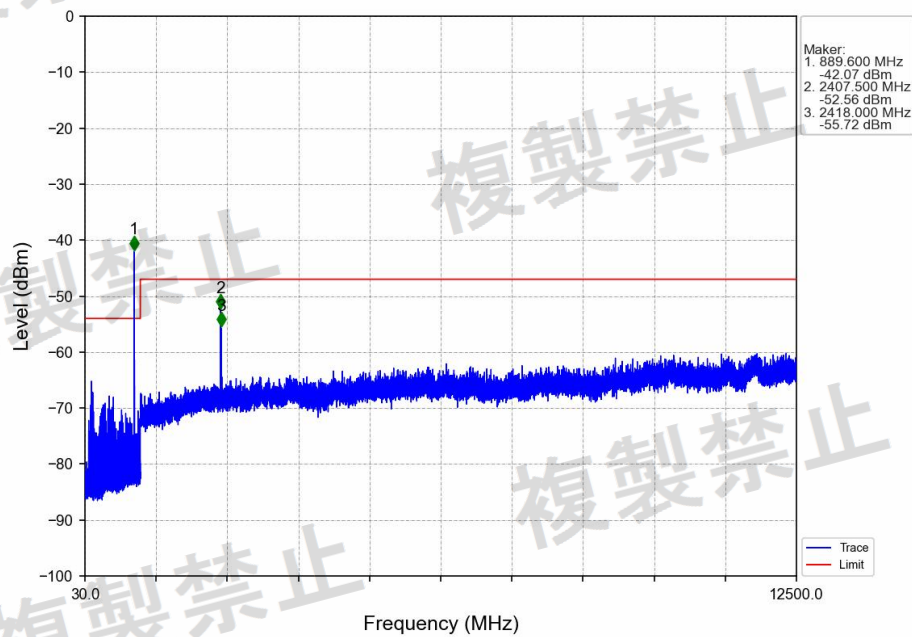


Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	1000	0.1	0.1	892.950	-50.36	-59.74	-54	Pass
1000	12500	1	1	11793.000	-59.31	/	-47	Pass

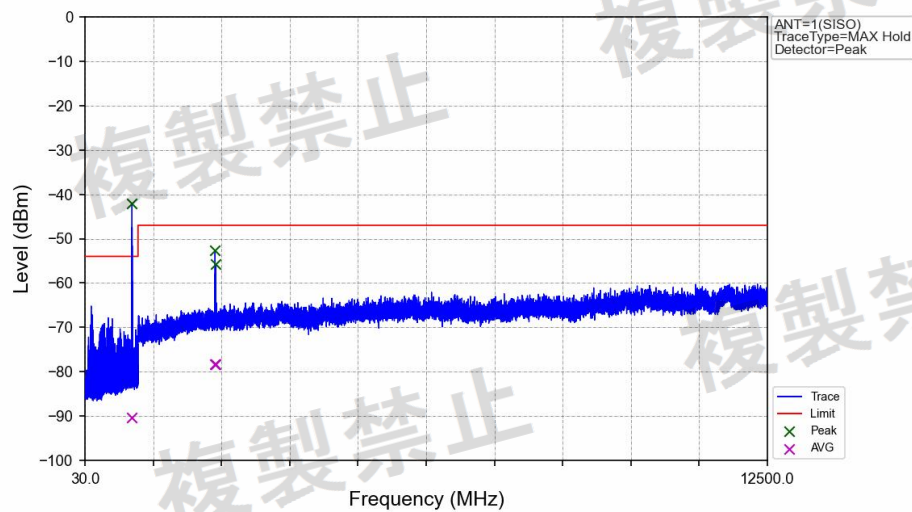
8DPSK_3DH5_2402MHz_Ant1_NTNV



8DPSK_3DH5_2441MHz_Ant1_NTNV

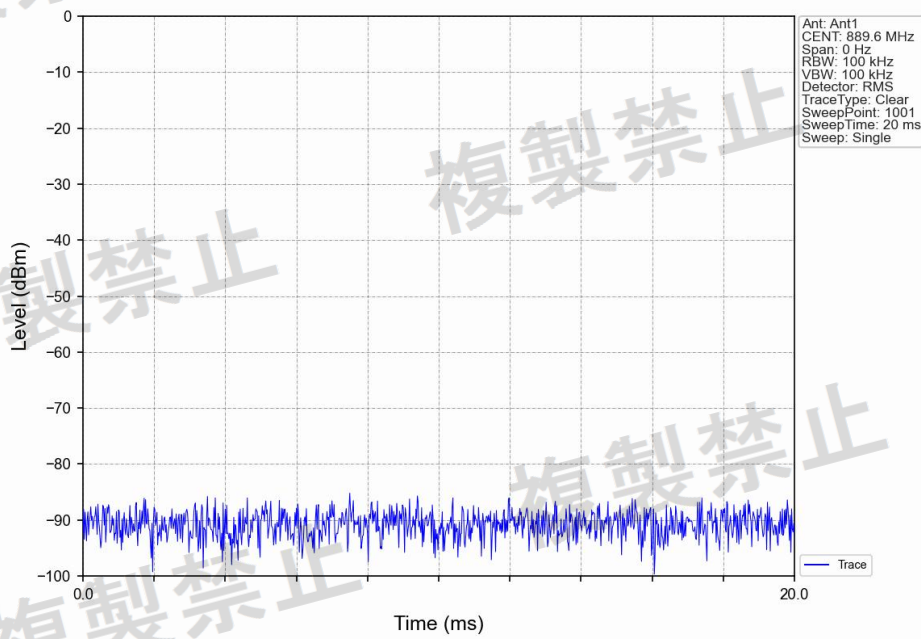


8DPSK_3DH5_2441MHz_Ant1_NTNV

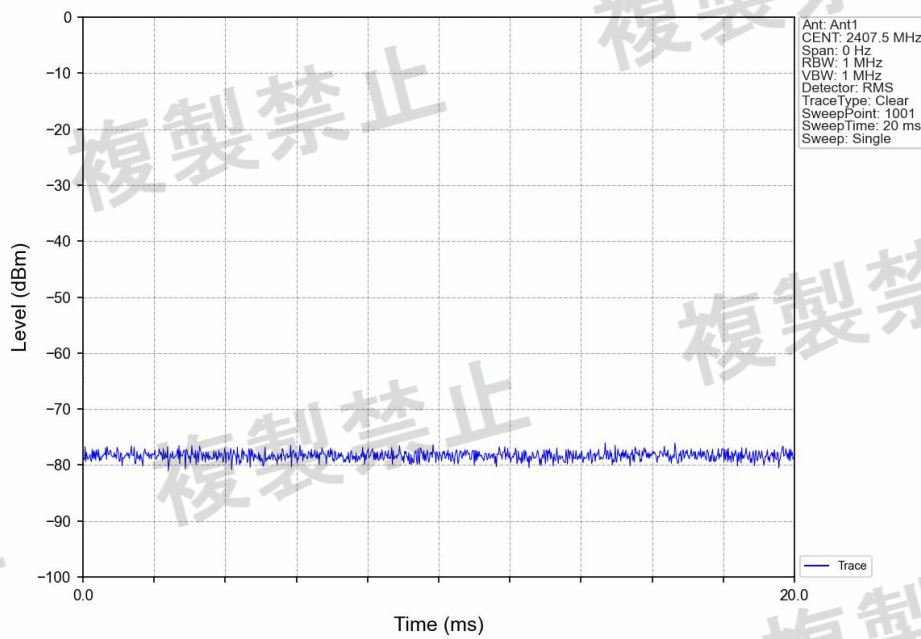


Start (MHz)	Stop (MHz)	RBW (MHz)	VBW (MHz)	Freq (MHz)	PK Power (dBm)	AV Power (dBm)	Limit (dBm)	Result
30	1000	0.1	0.1	889.600	-42.07	-90.26	-54	Pass
1000	12500	1	1	2407.500	-52.56	-78.27	-47	Pass
1000	12500	1	1	2418.000	-55.72	-78.27	-47	Pass

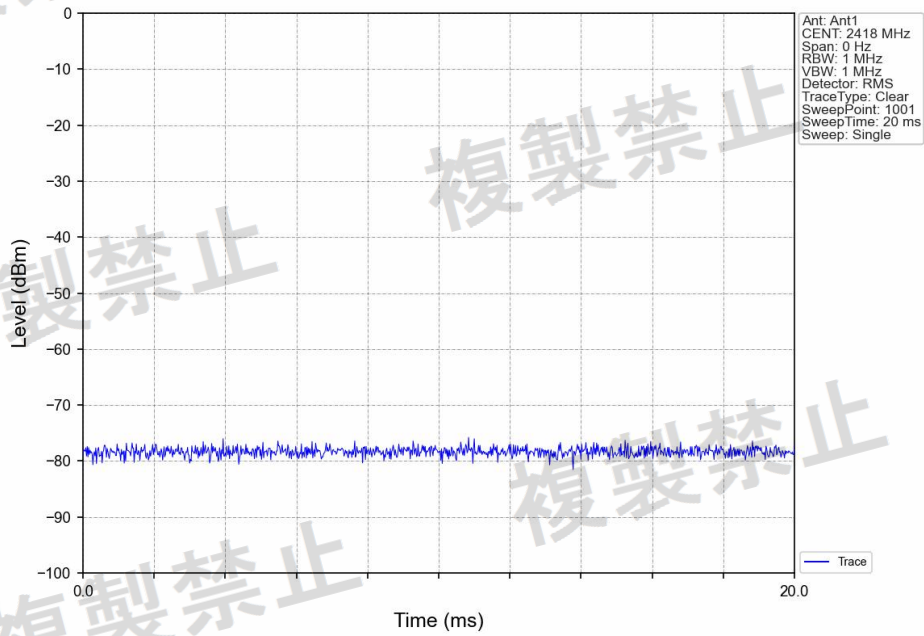
8DPSK_3DH5_2441MHz_Ant1_NTNV



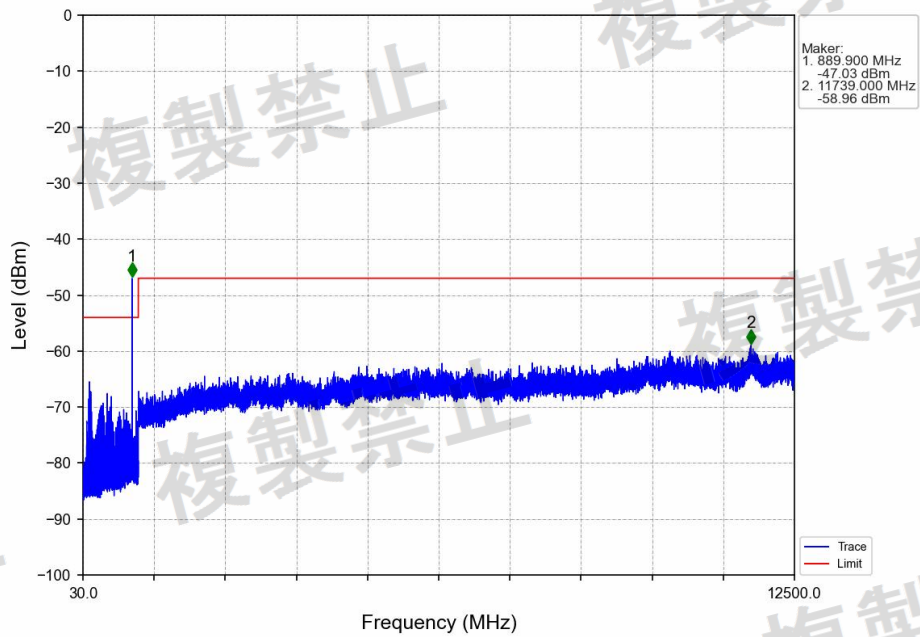
8DPSK_3DH5_2441MHz_Ant1_NTNV



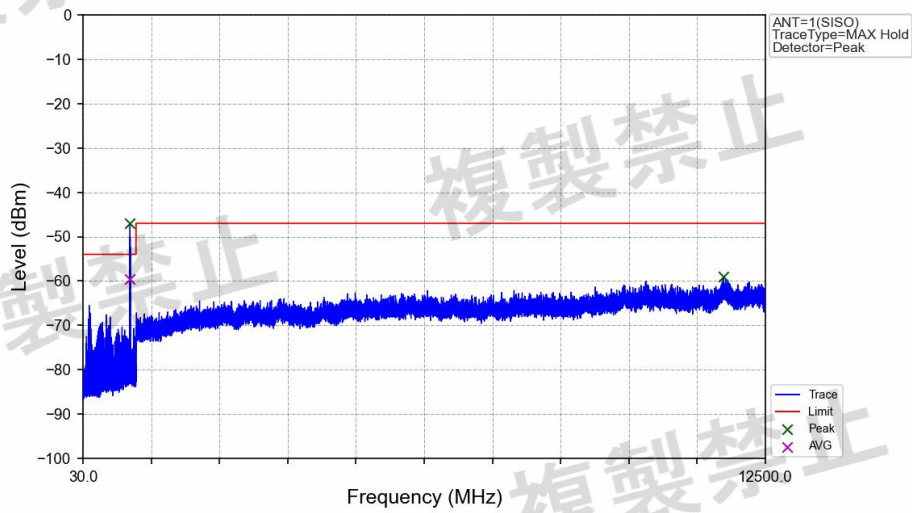
8DPSK_3DH5_2441MHz_Ant1_NTNV



8DPSK_3DH5_2480MHz_Ant1_NTNV

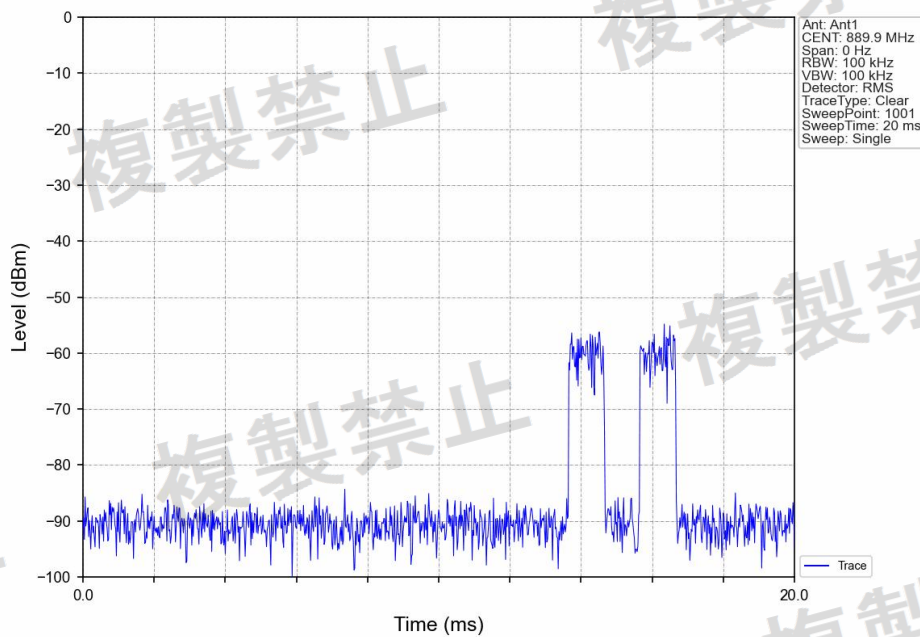


8DPSK_3DH5_2480MHz_Ant1_NTNV



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	889.900	-47.03	-59.54	-54	Pass
1000	12500	1	1	11739.000	-58.96	/	-47	Pass

8DPSK_3DH5_2480MHz_Ant1_NTNV



End of the report