



Test Report

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Application No.: DNT2503210605R2606-04006-R1
Applicant: Guangzhou Junxingcheng Electronic Technology Co.,Ltd.
Address of Applicant: Rm.201,Factory C,NO.15,Wenyong Rd.Xindun Village,XintangTown,
Zengcheng Dist.Guangzhou
EUT Description: Wireless mouse
Model No.: R5Ultra,X1,X8Se,X8Plus,X8Pro,X8Ultra,M3,V5,M5Ultra,G3, X8ULTIMATE
Trade Mark: ATTACK SHARK
Standards: Item 19 of Article 2 Paragraph 1
MIC Notice No.88 Appendix No.43
Date of Receipt: 2025/3/23
Date of Test: 2025/3/24 to 2025/6/4
Date of Issue: 2025/6/23
Test Result: PASS *

Prepared By: Wayne Lin (Testing Engineer)

Reviewed By: Pencils Chen (Project Engineer)

Approved By: Heise Shen (Manager)



Note: If there is any objection to the results in this report, please submit a written inquiry to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp, and is issued by the company in accordance with the requirements of the "Conditions of Issuance of Test Reports" printed in the attached page. Unless otherwise stated, the results presented in this report only apply to the samples tested this time. Partial reproduction of this report is not allowed unless approved by the company in writing.

Dongguan DN Testing Co., Ltd.

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Date: June 23, 2025

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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V2.0	/	Jun 23, 2025	Valid	Original Report

Note: This report is an updated version based on the original report: DNT2503210605R2606-04006, only the series models were added. , without any changes to the hardware or software of the EUT. Therefore, no re-testing is required.



1 Test Summary

Test	Test Method	Limit/Severity	Result
Antenna Requirement	MIC Notice No.88 Appendix No.43	Notice 88 Appendix 43, B-1 (1) & (2)	PASS
Test frequency	MIC Notice No.88 Appendix No.43	Notice 88 Appendix 43, A-3	PASS
Frequency Error	MIC Notice No.88 Appendix No.43	DS,FH, FH+DS,FH+OFDM: $\geq 500\text{KHz}$	PASS
Occupied Bandwidth	MIC Notice No.88 Appendix No.43	Others: $\leq 26\text{MHz}$	PASS
Spread Bandwidth	MIC Notice No.88 Appendix No.43	$\geq 0.5\text{MHz}$	PASS
Antenna Power and Tolerance	MIC Notice No.88 Appendix No.43 MIC Notice No.88 Appendix No.43	Others: $\leq 10\text{mW}$ Tolerance: $+20\%$	PASS
Spurious Emission of Tx	MIC Notice No.88 Appendix No.43	$< 2387\text{MHz}$ $\leq 2.5\mu\text{W/MHz}$ $2387 \sim 2400\text{MHz}$ $\leq 25\mu\text{W/MHz}$ $2483.5 \sim 2496.5\text{MHz}$ $\leq 25\mu\text{W/MHz}$ $> 2496.5\text{MHz}$ $\leq 2.5\mu\text{W/MHz}$	PASS
Interference prevention capability	MIC Notice No.88 Appendix No.43	Notice 88 Appendix 43, 44, 45	PASS
Spurious Emission of Rx	MIC Notice No.88 Appendix No.43	(1) Below 1 GHz: $\leq 4\text{ nW}$ (2) Above 1 GHz: $\leq 20\text{ nW}$	PASS

Remark:

EUT: In this whole report EUT means Equipment Under Test.

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radio Frequency.

Item 19 of Article 2 Paragraph 1



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2 General Information

2.1 General Description of E.U.T.

Manufacturer:	Guangzhou Junxingcheng Electronic Technology Co.,Ltd.		
Address of Manufacture:	Rm.201,Factory C,NO.15,Wenyong Rd.Xindun Village,XintangTown, Zengcheng Dist.Guangzhou		
Product Name:	Wireless mouse		
Model No.:	R5Ultra		
Additional Model:	X1,X8Se,X8Plus,X8Pro,X8Ultra,M3,V5,M5Ultra,G3, X8ULTIMATE		
Trade Mark:	ATTACK SHARK		
Hardware Version:	V1.0		
Software Version:	V1.0		
Operating Frequency:	2402 MHz to 2478 MHz		
Declared Antenna Power:	1mW		
Type of Modulation:	GFSK		
Number of Channels:	39 Channels		
Antenna Type:	☐ External, ☒ Integrated		
Antenna Gain*:	☒ Provided by client		
	0dBi (ANT1)		
RF Cable*:	☒ Provided by client		
	0.5dB(0.6~1GHz)	0.8dB(1.4~2GHz)	1.0dB(2.1~2.7GHz)
	1.5dB(3~4GHz)	1.8dB(4.4~6GHz)	
power supply:	Input DC 5V & DC 3.7V From Battery		
Note: *Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information, DNT is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.			
*As above information is provided and confirmed by the applicant. DNT is not liable to the accuracy, suitability, reliability or/and integrity of the information.			
*All models are just color differences, motherboard, PCB circuit board, chip, electronic components, appearance all the same.			



2.2 Description of Support Units

The EUT has been tested independently.

2.3 Test Location

Company:	Dongguan DN Testing Co., Ltd
Address:	No. 1, West Fourth Street, South Xinfu Road, Wusha Liwu, Chang' an Town, Dongguan City, Guangdong P.R.China
Test engineer:	Wayne Lin

Remark: Our test report is under the quality assurance system according to ISO17025.

- **FCC, USA**

Designation Number: CN1348

- **A2LA (Certificate No. 7050.01)**

DONGGUAN DN TESTING CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 7050.01.

- **Innovation, Science and Economic Development Canada**

DONGGUAN DN TESTING CO., LTD. EMC Laboratory has been recognized by ISED as an accredited testing laboratory. CAB identifier is CN0149.

IC#: 30755.



2.4 Channel List

Operation Frequency of each channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2402MHz	10	2422MHz	20	2442MHz	30	2462MHz
1	2404MHz	11	2424MHz	21	2444MHz	31	2464MHz
2	2406MHz	12	2426MHz	22	2446MHz	32	2466MHz
3	2408MHz	13	2428MHz	23	2448MHz	33	2468MHz
4	2410MHz	14	2430MHz	24	2450MHz	34	2470MHz
5	2412MHz	15	2432MHz	25	2452MHz	35	2472MHz
6	2414MHz	16	2434MHz	26	2454MHz	36	2474MHz
7	2416MHz	17	2436MHz	27	2456MHz	37	2476MHz
8	2418MHz	18	2438MHz	28	2458MHz	38	2478MHz
9	2420MHz	19	2440MHz	29	2460MHz		

2.5 Test Environment and Mode

Operating Environment:	
Temperature:	20~25.0 °C
Humidity:	45~56 % RH
Atmospheric Pressure:	101.0~101.30 KPa
Test mode:	
Transmitting mode:	Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.

2.6 Power Setting of Test Software

Software Name	EMI_TEST_TOOL_V1.0.0.1_20250310		
Frequency(MHz)	2402	2440	2478
BLE 1M Setting	Default	Default	Default

2.7 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Frequency Error	±1.9%
2	Antenna Power	±0.743dB
3	Occupied Bandwidth	±0.0196%
4	Spread Bandwidth	±0.0196%
5	Transmitter Spurious Emission Strength and Unwanted Emission Intensity	30MHz-1GHz: ±0.746dB 1GHz-13GHz: ±1.328dB



2.8 Equipment List

For Connect EUT Antenna Terminal Test						
Description	Manufacturer	Model	Serial Number	Cal date	Due date	correcting mechanism
Signal Generator	Keysight	N5181A-6G	MY48180415	2024-10-23	2025-10-22	Dongguan DN Testing Co.,Ltd.
Signal Generator	Keysight	N5182B	MY57300617	2024-10-23	2025-10-22	Dongguan DN Testing Co.,Ltd.
Power supply	Keysight	E3640A	ZB2022656	2024-10-23	2025-10-22	Dongguan DN Testing Co.,Ltd.
Radio Communication Tester	R&S	CMW500	105082	2024-10-23	2025-10-22	Dongguan DN Testing Co.,Ltd.
Spectrum Analyzer	Aglient	N9010A	MY52221458	2024-10-23	2025-10-22	Dongguan DN Testing Co.,Ltd.
BT/WIFI Test Software	Tonscend	JS1120 V3.1.83	NA	NA	NA	NA
RF Control Unit	Tonscend	JS0806-2	22F8060581	NA	NA	NA
Power Sensor	Anritsu	ML2495A	2129005	2024-10-23	2025-10-22	Dongguan DN Testing Co.,Ltd.
Pulse Power Sensor	Anritsu	MA2411B	1911397	2024-10-23	2025-10-22	Dongguan DN Testing Co.,Ltd.
temperature and humidity box	SCOTEK	SCD-C40-80PRO	6866682020008	2024-10-23	2025-10-22	Dongguan DN Testing Co.,Ltd.
Voltmetre	FLUKE	F15B PRO	59755315WS	2024-10-23	2025-10-22	Dongguan DN Testing Co.,Ltd.

Note:

1. Calibration by the calibration agencies listed in the table correspond to paragraph 4 (ii) (c) of Article 24-2 in the Radio Law.
2. Calibration Method:
 - a) Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18.



3 Test Results

3.1 Radio Technical Requirements Specification

Table 1: Radio Technical Requirements Specification for 2.4 GHz band wide-band low-power data communication system (Item 19 of Article 2-1)

Items	Technical standard
Assigned frequency or designated frequency	2400-2483.5MHz
Communication method	One-way communication, simplex, semi-duplex, or duplex operation of digital signal transmission including spread spectrum
Tolerance of frequency ($\times 10^{-6}$)	$\leq \pm 50$ ppm
Tolerance of occupied bandwidth	Others: 26MHz or less
Antenna power	Others: ≤ 10 mW Tolerance: +20%
Antenna gain	1) 12.14 dBi or less in principle 2) In case of directional antenna (1) FH, FH+DS or FH+OFDM using 2427-2470.75 MHz EIRP ≤ 16.91 dBm/MHz (2) OFDM or DS other than (1) EIRP ≤ 22.14 dBm/MHz (3) Other than (1) and (2): 22.14 dBm or less (4) OFDM OBW 26 - 40MHz: 19.14dBm/MHz (5) Half-power angle of directional antenna (e) in case of the item 2): $e \leq 360/A$ (The A is 10 in maximum.)
Tolerance of spurious emission intensity	(< 2387 MHz: 2.5 μ W 2387 to 2400 MHz: 25 μ W 2483.5 through 2496.5 MHz: 25 μ W > 2496.5 MHz: 2.5 μ W
Spreading bandwidth	DS, FH, FH+DS, FH+OFDM: 500kHz or more
Spreading rate of spectrum	For DS system; (Spreading bandwidth) / (Frequency corresponding to transmission rate) ≥ 5
Limit of secondary radiated emissions	(1) Below 1 GHz: 4nW (2) 1 GHz or higher: 20nW
Interference prevention function	Shall have the function of automatic transmission and reception of identification sign.
Structure	Shall be of the structure that the RF and modulator sections excluding antenna cannot easily be opened.
Note	DS: Direct spread FH: Frequency hopping OFDM: Orthogonal frequency division multiplexing



3.2 E.U.T. test conditions

Power Supply:	DC 3.7V			
	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.			
	The measurement result of the voltage fluctuation at RF circuit when DC 3.3V +/- 1%.			
	DC Input		input voltage to the circuit	Deviation
	High Voltage	4.07V	3.4V	3%
	Normal Voltage	3.7V	3.3V	0.0%
Test Frequencies:	Low Voltage	3.33V	3.2V	3%
	If the EUT can be set to 3 of more different (carrier) frequencies in 1 allocated band, testing shall be performed using the Lowest, Middle and the Highest frequency (L, M and H). If there are 2 or fewer frequencies, testing shall be performed with the available frequencies.			



3.3 Antenna Requirement

Standard requirement

Applicable for equipment with an antenna terminal, including testing terminals) If an antenna connector is available, all relevant tests will be carried out conducted. If not, tests will be carried out in an anechoic room or with a suitable test-fixture.

The antenna is integrated antenna on the main PCB and no consideration of replacement. The best case gain of the antenna is 0dBi.

Result: An antenna connector is available, all relevant tests will be carried out conducted.

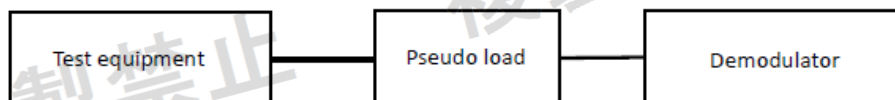


3.4 Interference prevention function

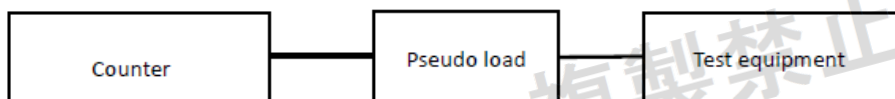
1) Measurement system diagram

(a) When transmitting identification code

If an identification code is transmitted



An identification code is received



2) Condition of measuring instrument

(b) Demodulator must be able to demodulate the transmitting signal emitted by test equipment and to indicate the identification code.

3) Condition of test equipment The mode of normal use.

4) Measuring operation procedure

(a) When test equipment has the function to transmit identification code automatically:

A) Transmit the predetermined identification code from test equipment.

B) Confirm the transmitted identification code by demodulator.

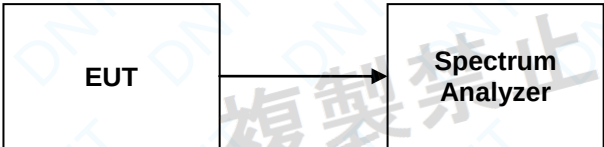
50-EB-F6-C2-51-09

5) Test result: The unit does meet the requirements (Good).

PASS



3.5 Frequency Error

Test Requirement:	Item 19 of Article 2-1
Limit:	Tolerance of frequency: $\pm 50 \times 10^{-6}$
Text Method:	MIC Notice No.88 Appendix No.43
Test Status:	Test the EUT in transmitting mode without modulation.
Temperature:	23.5 °C
Humidity:	47.1 % RH
Atmospheric Pressure:	101.0kPa -101.3 kPa
Test Configuration:	 <pre>graph LR; EUT[EUT] --> SA[Spectrum Analyzer]</pre>
Test Procedure:	1. Test Conditions: Spectrum Analyzer is used for measurement. 2. EUT conditions: Modulation/Spread/Hopping OFF, CW Tx 3. Spectrum Analyzer conditions: Frequency: Test Frequency Span 1MHz RBW 10 kHz (Modulation OFF), VBW 10 kHz (Modulation OFF), Sweep Time Auto Detector mode Positive peak Indication mode Max hold

Test Result See: Appendix A



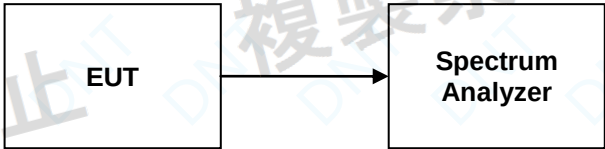
3.6 Occupied Bandwidth (99%)

Test Requirement:	Item 19 of Article 2-1
Limit:	OFDM: 40 MHz or less DSSS: 26 MHz or less
Text Method:	MIC Notice No.88 Appendix No.43
Test Status:	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.
Temperature:	23.5 °C
Humidity:	48.2 % RH
Atmospheric Pressure:	101.0kPa -101.3 kPa
Test Configuration:	 <pre>graph LR; EUT[EUT] --> SA[Spectrum Analyzer]</pre>
Test Procedure:	1. Test Conditions: Spectrum Analyzer is used for measurement. 2. EUT conditions: Modulation/Spread/Hopping ON For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal. 3. Spectrum Analyzer conditions: Frequency: Test Frequency Span 4 MHz RBW 300 KHz VBW 300 KHz Sweep Time Auto detector mode Sample Indication mode Max hold OBW 99%

Test Result See: Appendix B



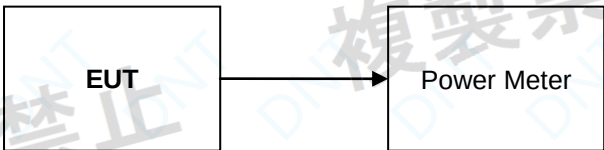
3.7 Spread Bandwidth(90%)

Test Requirement:	Item 19 of Article 2-1
Limit:	DS,FH, FH+DS,FH+OFDM: $\geq 500\text{KHz}$
Text Method:	MIC Notice No.88 Appendix No.43
Test Status:	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.
Temperature:	23.5 °C
Humidity:	48.2 % RH
Atmospheric Pressure:	101.0kPa -101.3 kPa
Test Configuration:	 <pre>graph LR; EUT[EUT] --> SA[Spectrum Analyzer]</pre>
Test Procedure:	- Test Conditions: Spectrum Analyzer is used for measurement. - EUT conditions: Modulation/Spread/Hopping ON For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal. - Spectrum Analyzer conditions: Frequency: Test Frequency Span 4 MHz RBW 300 KHz VBW 300 KHz Sweep Time Auto detector mode Sample Indication mode Max hold OBW 90%

Test Result See: Appendix C



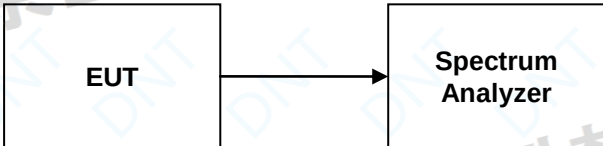
3.8 Antenna Power

Test Requirement:	Item 19 of Article 2-1
Limit:	10mW or less
Text Method:	MIC Notice No.88 Appendix No.43
Test Status:	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.
Temperature:	23.5 °C
Humidity:	50 % RH
Atmospheric Pressure:	101.0kPa -101.3 kPa
Test Configuration:	 <pre>graph LR; EUT[EUT] --> PM[Power Meter]</pre>
Test Procedure:	1. Test Conditions: Power meter is used for measurement. 2. EUT conditions: Modulation/Spread/Hopping ON, Modulation Tx For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.

Test Result See: Appendix D



3.9 Spurious Emissions of Tx

Test Requirement:	Item 19 of Article 2-1								
Limit:	<table><tr><td>< 2387MHz</td><td>$\leq 2.5\mu\text{W}/\text{MHz}$</td></tr><tr><td>2387 ~ 2400MHz</td><td>$\leq 25\mu\text{W}/\text{MHz}$</td></tr><tr><td>2483.5 ~ 2496.5MHz</td><td>$\leq 25\mu\text{W}/\text{MHz}$</td></tr><tr><td>>2496.5MHz</td><td>$\leq 2.5\mu\text{W}/\text{MHz}$</td></tr></table>	< 2387MHz	$\leq 2.5\mu\text{W}/\text{MHz}$	2387 ~ 2400MHz	$\leq 25\mu\text{W}/\text{MHz}$	2483.5 ~ 2496.5MHz	$\leq 25\mu\text{W}/\text{MHz}$	>2496.5MHz	$\leq 2.5\mu\text{W}/\text{MHz}$
< 2387MHz	$\leq 2.5\mu\text{W}/\text{MHz}$								
2387 ~ 2400MHz	$\leq 25\mu\text{W}/\text{MHz}$								
2483.5 ~ 2496.5MHz	$\leq 25\mu\text{W}/\text{MHz}$								
>2496.5MHz	$\leq 2.5\mu\text{W}/\text{MHz}$								
Text Method:	MIC Notice No.88 Appendix No.43								
Test Status:	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.								
Temperature:	23.5°C								
Humidity:	51 % RH								
Atmospheric Pressure:	101.0kPa -101.3 kPa								
Test Configuration:	 <pre>graph LR; EUT[EUT] --> SA[Spectrum Analyzer]</pre>								
Test Procedure:	- Test Conditions: Spectrum Analyzer is used for measurement. - EUT conditions: Modulation/Spread/Hopping ON For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal. - Spectrum Analyzer conditions: Step 1: All spurious are measured from 30 MHz to 13 GHz by peak mode. Step 2: IF the value measured by Step1 is 2 dB or less, measure in average mode. Test setup for Step 1: Frequency: 30MHz~2400MHz, 2483.5MHz~13GHz RBW 1 MHz VBW 1 MHz Sweep Time Auto detector mode Positive peak Indication mode Max hold Test setup for Step 2: Frequency: Spurious Frequency RBW 1 MHz VBW 1 MHz Sweep Time Auto detector mode Sample Indication mode Max hold								

Test Result See: Appendix E



3.10 RF accessibility

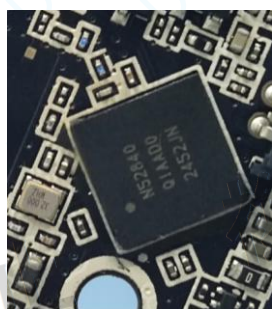
Standard requirement

Article 49-20, paragraph 1 (a)

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.

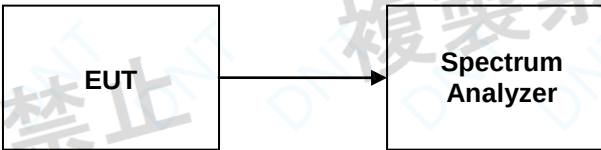
Test Result

RF and Modulation parts are mounted on PCB with surface mount technology





3.11 Spurious Emissions of Rx

Test Requirement:	Item 19 of Article 2-1
Text Method:	MIC Notice No.88 Appendix No.43
Limit:	(1) Below 1 GHz: ≤ 4 nW (2) Above 1 GHz: ≤ 20 nW
Test Status:	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.
Temperature:	23.5 °C
Humidity:	56 % RH
Atmospheric Pressure:	101.0kPa -101.3 kPa
Test Configuration:	 <pre>graph LR; EUT[EUT] --> SA[Spectrum Analyzer]</pre>
Test Procedure:	1. Test Conditions: Spectrum Analyzer is used for measurement. 2. EUT conditions: Modulation/Spread/Hopping ON For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal 3. Spectrum Analyzer conditions: Step 1: All spurious are measured from 30 MHz to 13 GHz by peak mode. Step 2: IF the value measured by Step1 is 2 dB or less, measure in average mode. Test setup for Step 1: Frequency: 30 MHz – 2400 MHz , 2483.5 MHz –13 GHz RBW 100 kHz (30 – 1GHz) , 1 MHz (over 1GHz) VBW 100 kHz (30 – 1GHz) , 1 MHz (over 1GHz) Sweep Time Auto detector mode Positive peak Indication mode Max hold Test setup for Step 2: Frequency: Spurious Frequency Span 0 Hz RBW 100 kHz (30 – 1GHz) , 1 MHz (over 1GHz) VBW 100 kHz (30 – 1GHz) , 1 MHz (over 1GHz) Sweep Time Auto detector mode Sample Indication mode Max hold

Test Result See: Appendix F



4 Appendix

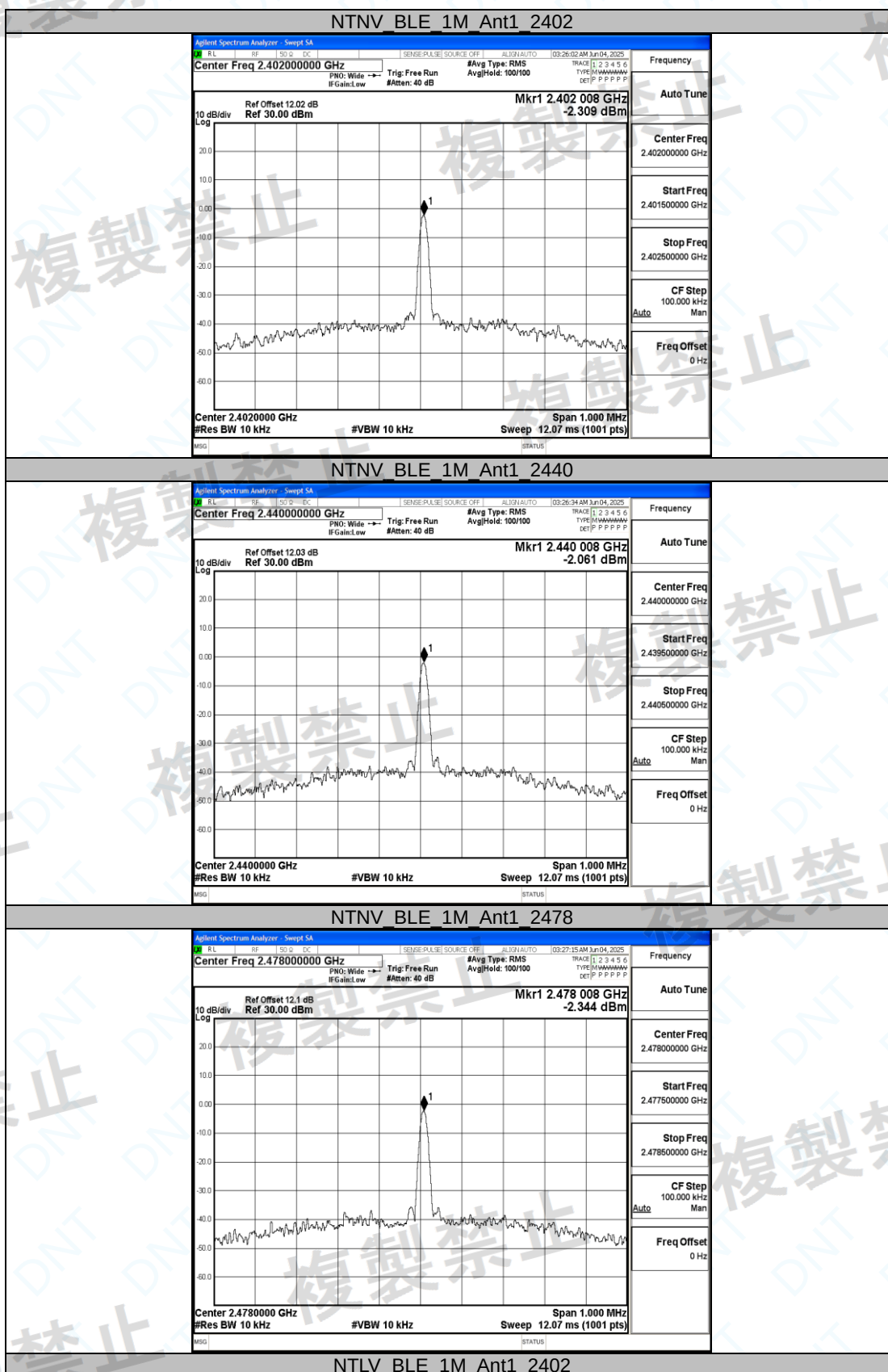
Appendix A: Frequency Error

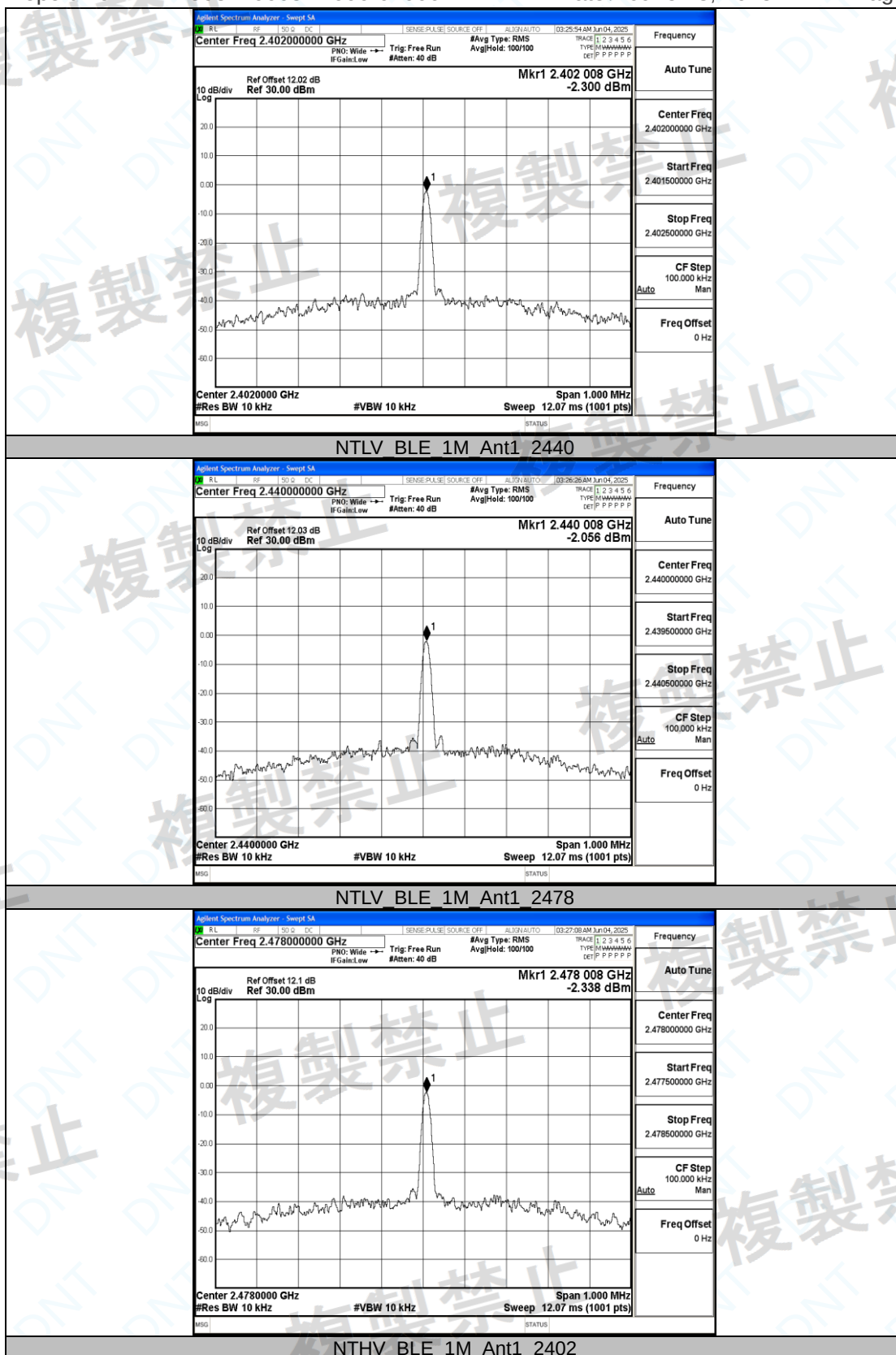
Test Result

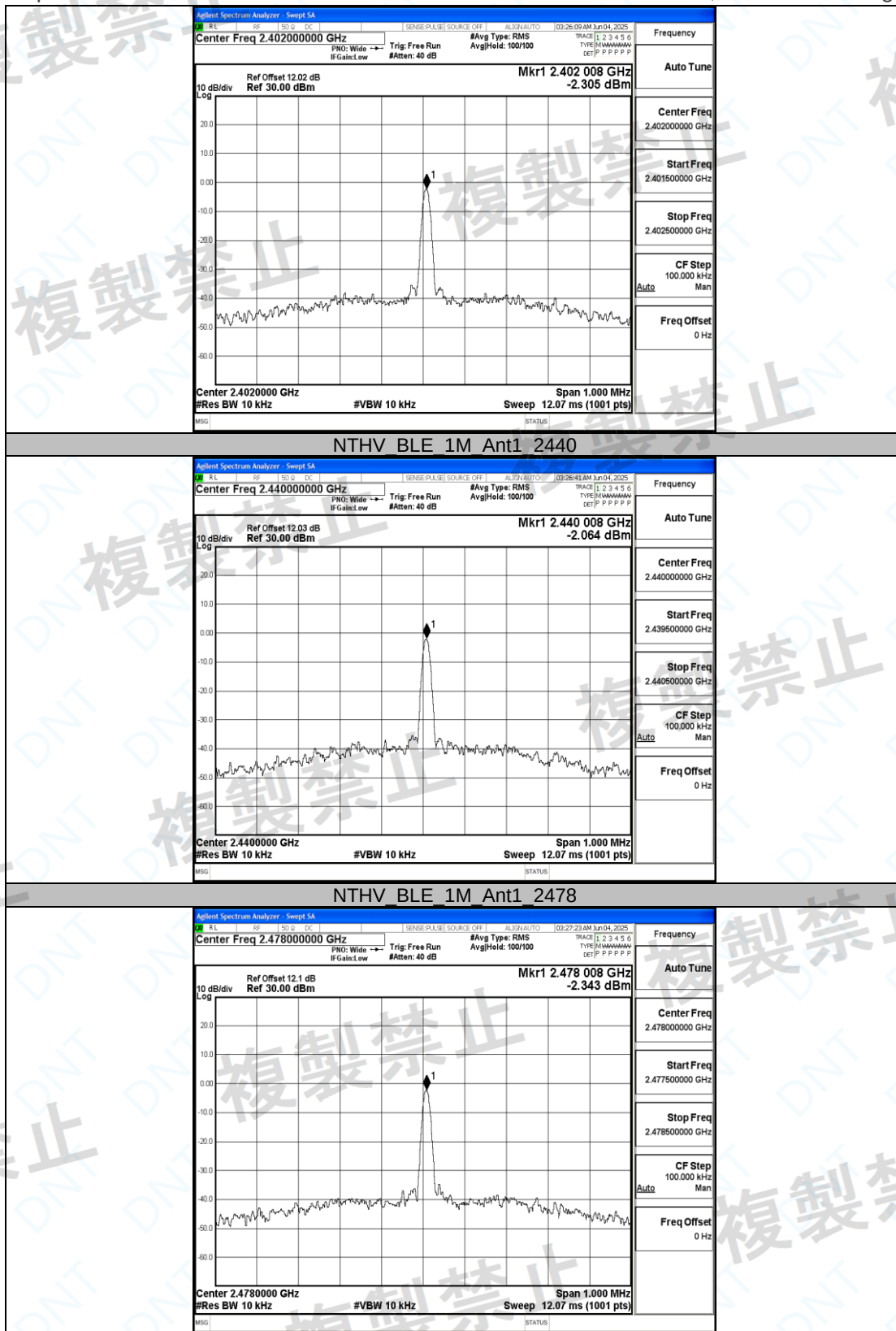
TestCondition	TestMode	Antenna	Freq(MHz)	Result[ppm]	Limit[ppm]	Verdict
NTNV	Tx	Ant1	2402	3.33056	±50	PASS
			2440	3.27869	±50	PASS
			2478	3.22841	±50	PASS
NTLV	Tx	Ant1	2402	3.33056	±50	PASS
			2440	3.27869	±50	PASS
			2478	3.22841	±50	PASS
NTHV	Tx	Ant1	2402	3.33056	±50	PASS
			2440	3.27869	±50	PASS
			2478	3.22841	±50	PASS



Test Graphs







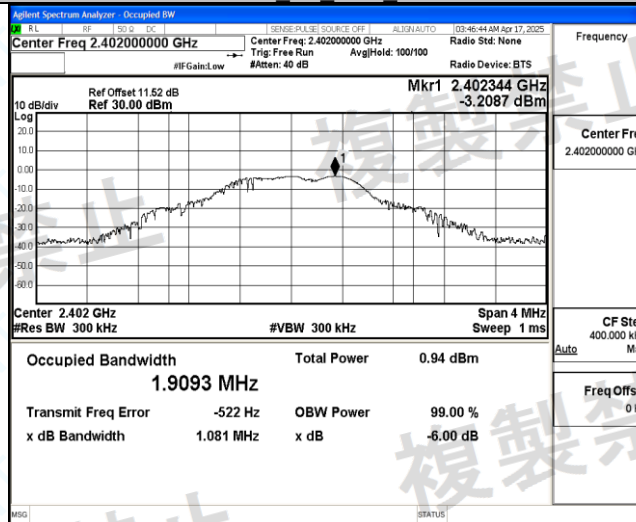
**Appendix B: Occupied Bandwidth****Test Result**

TestCondition	TestMode	Antenna	Freq(MHz)	Result [MHz]	Limit [MHz]	Verdict
NTNV	TX	Ant1	2402	1.909	≤26	PASS
			2440	1.888	≤26	PASS
			2478	1.923	≤26	PASS
NTLV	TX	Ant1	2402	1.933	≤26	PASS
			2440	1.907	≤26	PASS
			2478	1.895	≤26	PASS
NTHV	TX	Ant1	2402	1.895	≤26	PASS
			2440	1.910	≤26	PASS
			2478	1.880	≤26	PASS

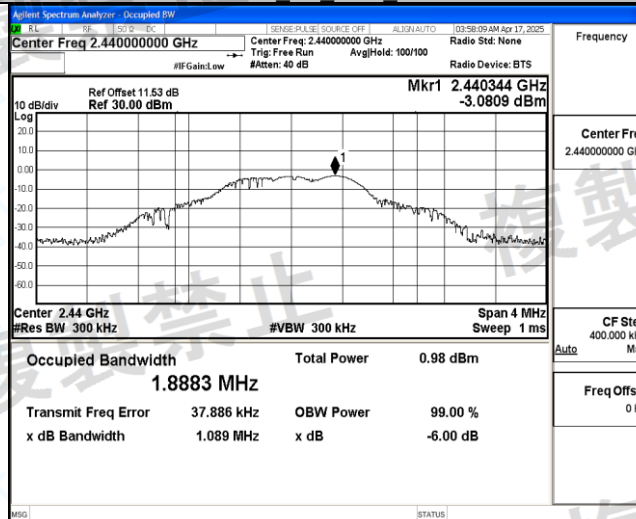


Test Graphs

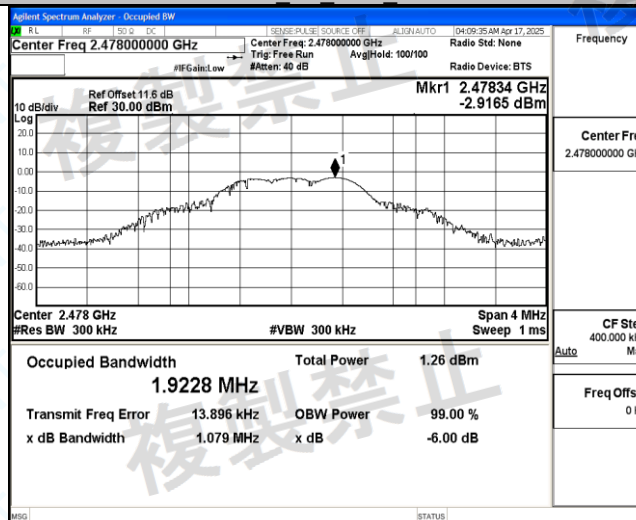
NTNV TX Ant1 2402



NTNV TX Ant1 2440

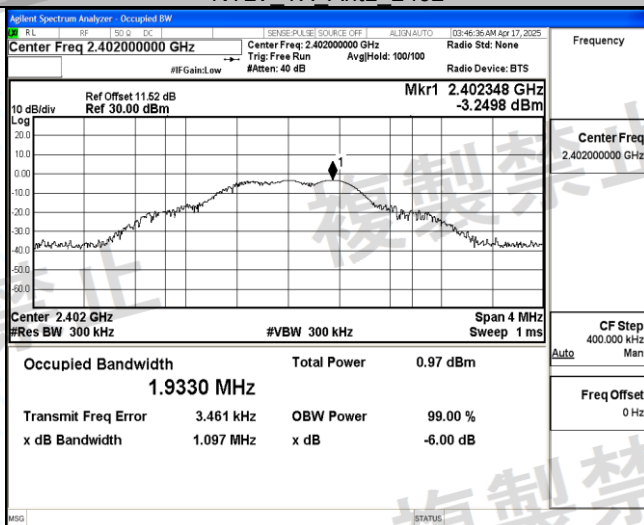


NTNV TX Ant1 2478

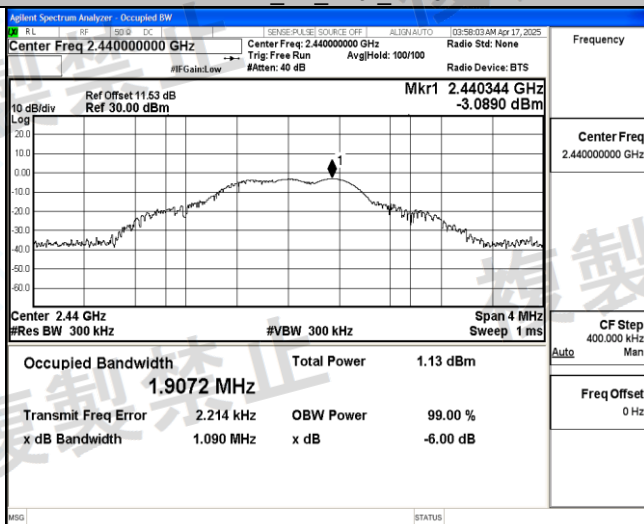




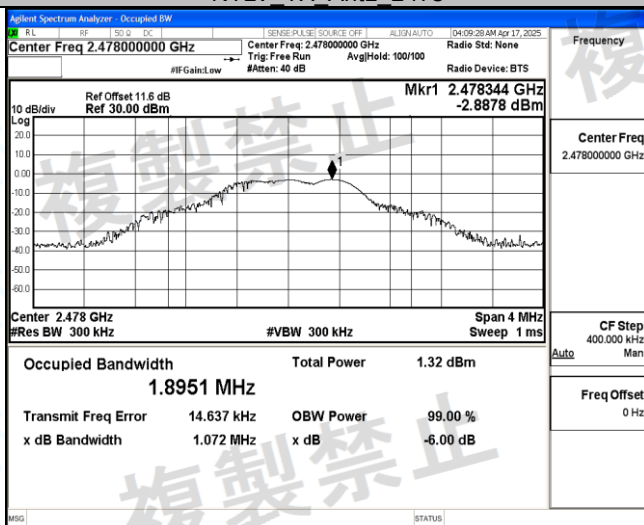
NTLV TX Ant1 2402



NTLV TX Ant1 2440

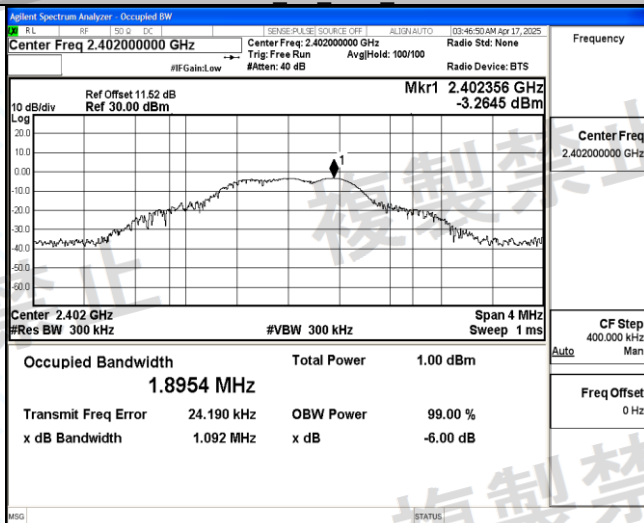


NTLV TX Ant1 2478

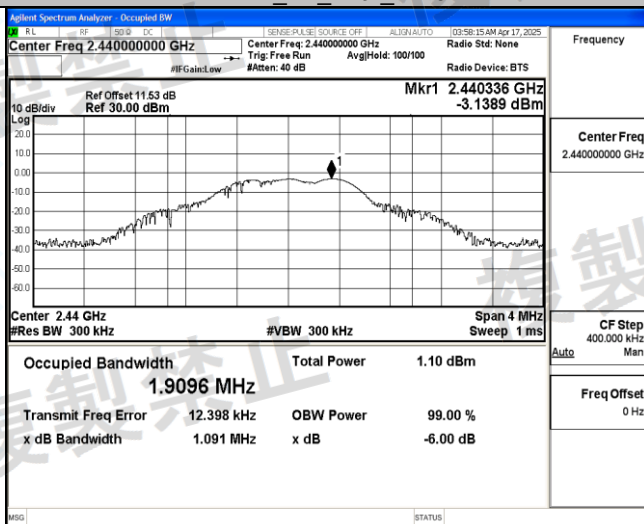




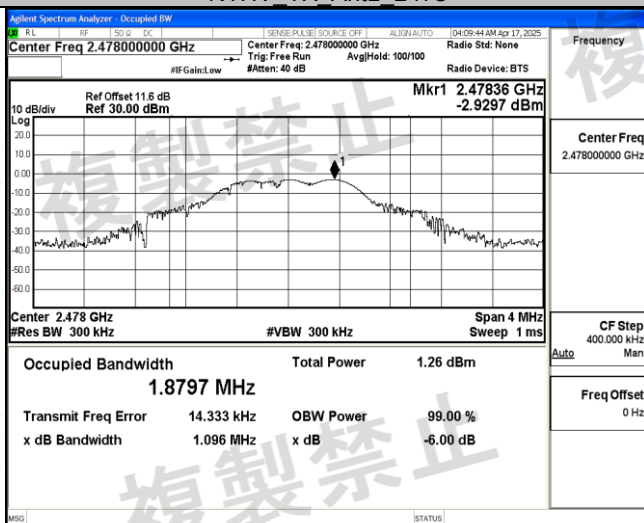
NTHV_TX_Ant1_2402



NTHV_TX_Ant1_2440



NTHV_TX_Ant1_2478



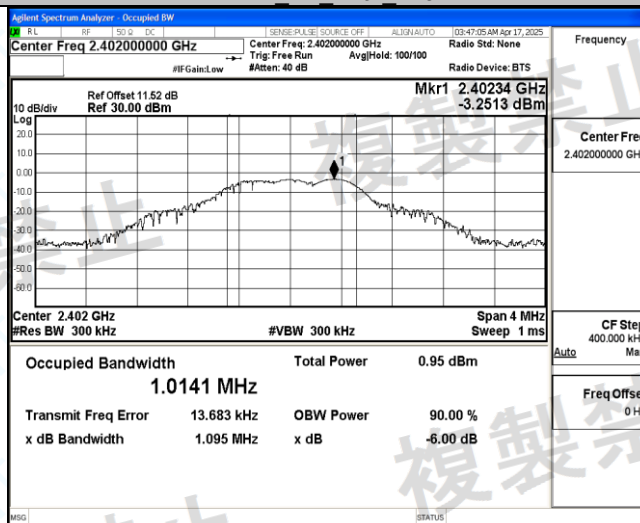
**Appendix C: Spread Bandwidth****Test Result**

TestCondition	TestMode	Antenna	Freq(MHz)	Result [MHz]	Limit [MHz]	Verdict
NTNV	TX	Ant1	2402	1.014	≥ 0.5	PASS
			2440	1.018	≥ 0.5	PASS
			2478	1.008	≥ 0.5	PASS
NTLV	TX	Ant1	2402	1.021	≥ 0.5	PASS
			2440	1.010	≥ 0.5	PASS
			2478	1.015	≥ 0.5	PASS
NTHV	TX	Ant1	2402	1.029	≥ 0.5	PASS
			2440	0.997	≥ 0.5	PASS
			2478	1.012	≥ 0.5	PASS

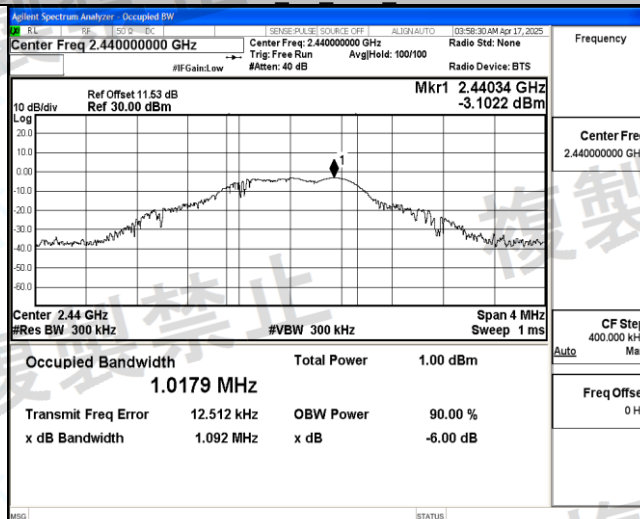


Test Graphs

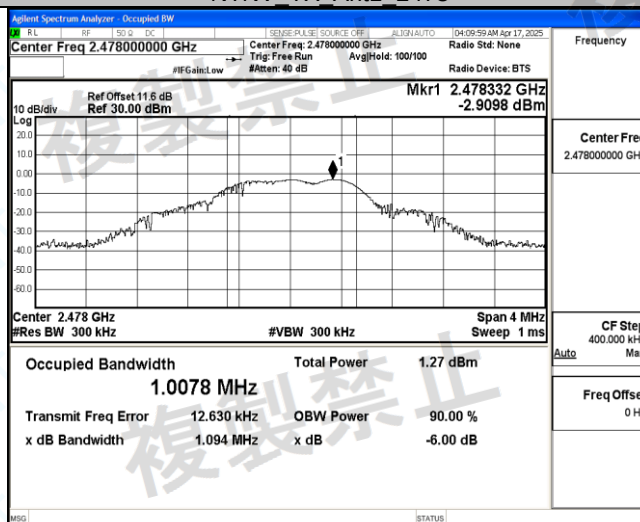
NTNV TX Ant1 2402



NTNV TX Ant1 2440

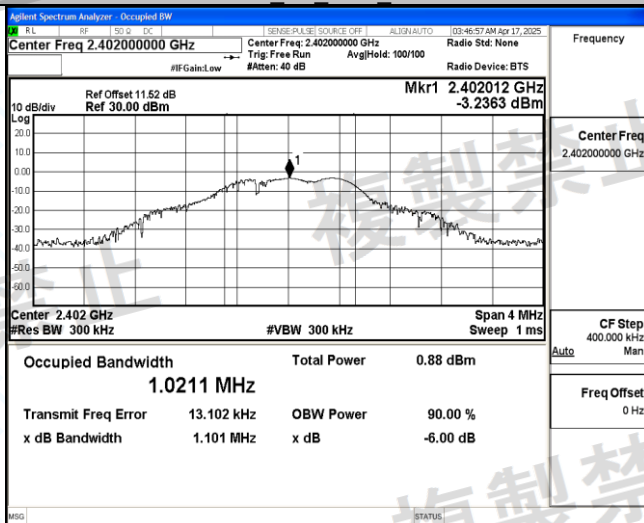


NTNV TX Ant1 2478

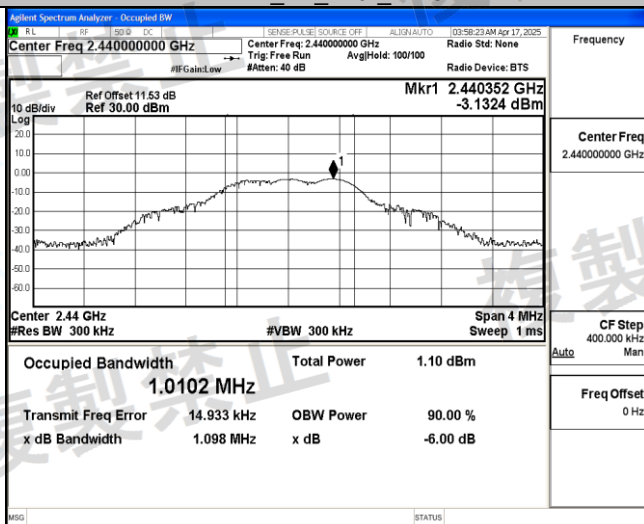




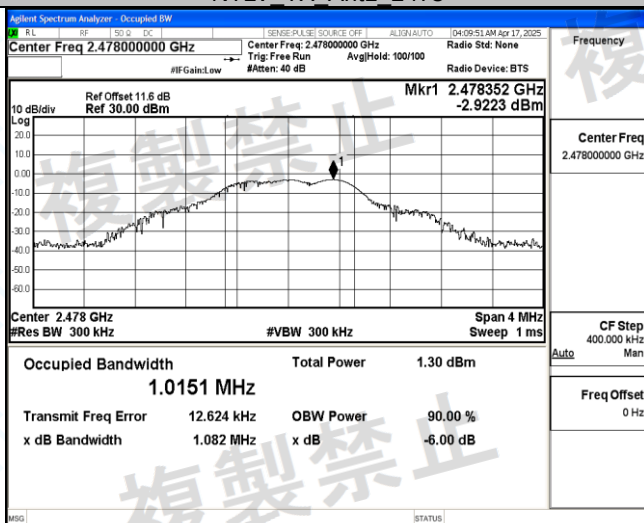
NTLV TX Ant1 2402



NTLV TX Ant1 2440

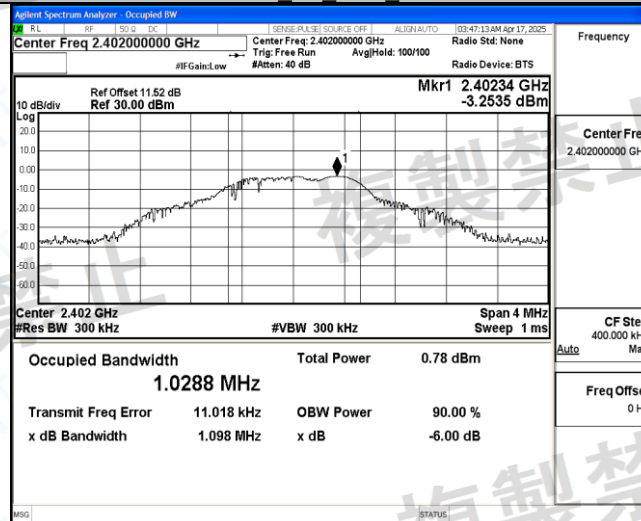


NTLV TX Ant1 2478

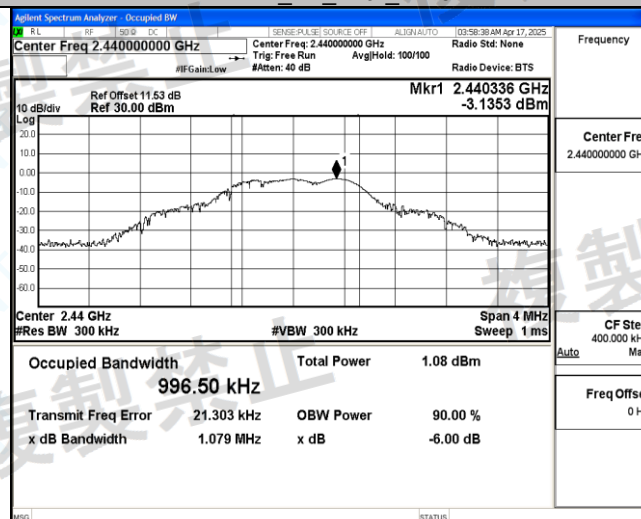




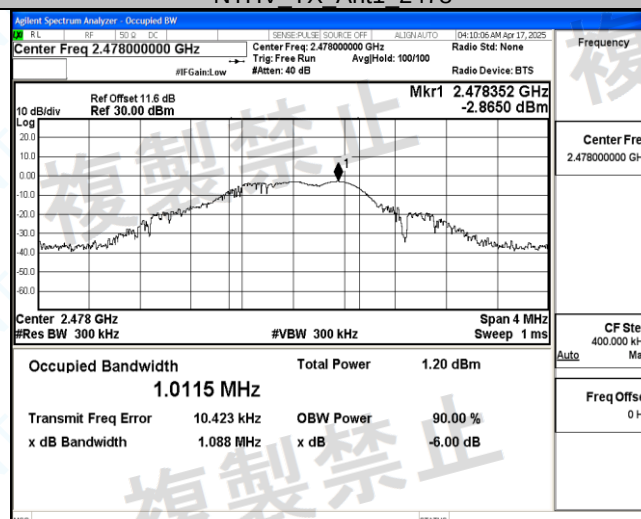
NTHV_TX_Ant1_2402



NTHV_TX_Ant1_2440



NTHV_TX_Ant1_2478



**Appendix C: Antenna Power****Test Result**

Antenna Power							
TestCondition	TestMode	Antenna	Freq (MHz)	Result (dBm)	Result(mW)	Limit(mW)	Verdict
NTNV	TX	Ant1	2402	-2.99	0.5023	≤10	PASS
			2440	-2.68	0.5395	≤10	PASS
			2478	-2.39	0.5768	≤10	PASS
LTVN	TX	Ant1	2402	-3.00	0.5012	≤10	PASS
			2440	-2.71	0.5358	≤10	PASS
			2478	-2.42	0.5728	≤10	PASS
HTNV	TX	Ant1	2402	-3.00	0.5012	≤10	PASS
			2440	-2.71	0.5358	≤10	PASS
			2478	-2.38	0.5781	≤10	PASS

Tolerance								
Test Condition	Test Mode	Antenna	Freq(MHz)	Power (mW)	Rated Power (mW)	Result (%)	Limit (%)	Verdict
NTNV	TX	Ant1	2402	0.5023	1	-49.77	+20	PASS
			2440	0.5395	1	-46.05	+20	PASS
			2478	0.5768	1	-42.32	+20	PASS
LTVN	TX	Ant1	2402	0.5012	1	-49.88	+20	PASS
			2440	0.5358	1	-46.42	+20	PASS
			2478	0.5728	1	-42.72	+20	PASS
HTNV	TX	Ant1	2402	0.5012	1	-49.88	+20	PASS
			2440	0.5358	1	-46.42	+20	PASS
			2478	0.5781	1	-42.19	+20	PASS

**Appendix E: Spurious Emission of TX****Test Result**

Test Condition	TestMode	Antenna	Freq(M Hz)	Freq.Range [MHz]	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [μW]	Limit [μW]	Verdict
NTNV	TX	Ant1	2402	30~2387	2291.25	-45.88	≤-26	0.02582	≤2.5	PASS
				30~1000	915.61	-48.76	≤-26	0.01330	≤2.5	PASS
				1000~2387	2371.05	-44.95	≤-26	0.03199	≤2.5	PASS
				2387~2400	2399.99	-27.94	≤-16	1.60694	≤25	PASS
				2483.5~2496.5	2495.56	-36.31	≤-16	0.23388	≤25	PASS
				2496.5~13000	3613.55	-41.25	≤-26	0.07499	≤2.5	PASS
			2440	30~1000	977.69	-48.58	≤-26	0.01387	≤2.5	PASS
				30~2387	2327.49	-46.70	≤-26	0.02138	≤2.5	PASS
				1000~2387	2267.02	-45.47	≤-26	0.02838	≤2.5	PASS
				2387~2400	2388.70	-36.49	≤-16	0.22439	≤25	PASS
				2483.5~2496.5	2494.46	-36.68	≤-16	0.21478	≤25	PASS
				2496.5~13000	7321.28	-42.03	≤-26	0.06266	≤2.5	PASS
			2478	30~1000	961.44	-48.02	≤-26	0.01578	≤2.5	PASS
				30~2387	2382.88	-46.50	≤-26	0.02239	≤2.5	PASS
				1000~2387	2275.69	-46.34	≤-26	0.02323	≤2.5	PASS
				2387~2400	2398.90	-36.82	≤-16	0.20797	≤25	PASS
				2483.5~2496.5	2492.26	-36.64	≤-16	0.21677	≤25	PASS
				2496.5~13000	7435.25	-40.67	≤-26	0.08570	≤2.5	PASS
NTLV	TX	Ant1	2402	30~2387	2337.21	-45.91	≤-26	0.02564	≤2.5	PASS
				30~1000	924.83	-48.36	≤-26	0.01459	≤2.5	PASS
				1000~2387	2300.31	-45.35	≤-26	0.02917	≤2.5	PASS
				2387~2400	2399.99	-27.46	≤-16	1.79473	≤25	PASS
				2483.5~2496.5	2484.56	-36.60	≤-16	0.21878	≤25	PASS
				2496.5~13000	3616.17	-41.87	≤-26	0.06501	≤2.5	PASS
			2440	30~2387	2280.05	-46.66	≤-26	0.02158	≤2.5	PASS
				30~1000	886.51	-48.21	≤-26	0.01510	≤2.5	PASS
				1000~2387	2362.73	-45.12	≤-26	0.03076	≤2.5	PASS
				2387~2400	2392.17	-36.43	≤-16	0.22751	≤25	PASS
				2483.5~2496.5	2492.65	-36.75	≤-16	0.21135	≤25	PASS
				2496.5~13000	7321.28	-41.33	≤-26	0.07362	≤2.5	PASS
			2478	30~1000	936.22	-48.25	≤-26	0.01496	≤2.5	PASS
				30~2387	2313.34	-46.03	≤-26	0.02495	≤2.5	PASS
				1000~2387	2333.25	-45.75	≤-26	0.02661	≤2.5	PASS
				2387~2400	2389.16	-36.39	≤-16	0.22961	≤25	PASS
				2483.5~2496.5	2496.18	-36.66	≤-16	0.21577	≤25	PASS
				2496.5~13000	7435.25	-41.54	≤-26	0.07015	≤2.5	PASS
NTHV	TX	Ant1	2402	30~2387	2336.03	-47.02	≤-26	0.01986	≤2.5	PASS
				30~1000	798.97	-48.46	≤-26	0.01426	≤2.5	PASS
				1000~2387	2359.95	-44.95	≤-26	0.03199	≤2.5	PASS
				2387~2400	2400.00	-27.80	≤-16	1.65959	≤25	PASS
				2483.5~2496.5	2496.36	-35.71	≤-16	0.26853	≤25	PASS
				2496.5~13000	5499.98	-41.08	≤-26	0.07798	≤2.5	PASS
			2440	30~2387	2358.13	-46.34	≤-26	0.02323	≤2.5	PASS
				30~1000	855.71	-48.25	≤-26	0.01496	≤2.5	PASS
				1000~2387	2293.38	-45.62	≤-26	0.02742	≤2.5	PASS
				2387~2400	2389.70	-36.50	≤-16	0.22387	≤25	PASS
				2483.5~2496.5	2485.37	-36.28	≤-16	0.23550	≤25	PASS
				2496.5~13000	3629.83	-41.49	≤-26	0.07096	≤2.5	PASS
			2478	30~2387	2042.29	-46.63	≤-26	0.02173	≤2.5	PASS
				30~1000	941.80	-48.10	≤-26	0.01549	≤2.5	PASS
				1000~2387	2203.22	-45.76	≤-26	0.02655	≤2.5	PASS
				2387~2400	2390.19	-36.26	≤-16	0.23659	≤25	PASS
				2483.5~2496.5	2495.99	-36.40	≤-16	0.22909	≤25	PASS

Dongguan DN Testing Co., Ltd.

Add: No. 1, West Fourth Street, Xingfa South Road, Wusha Community, Chang'an Town, Dongguan City, Guangdong P.R.China

Web: www.dn-testing.com

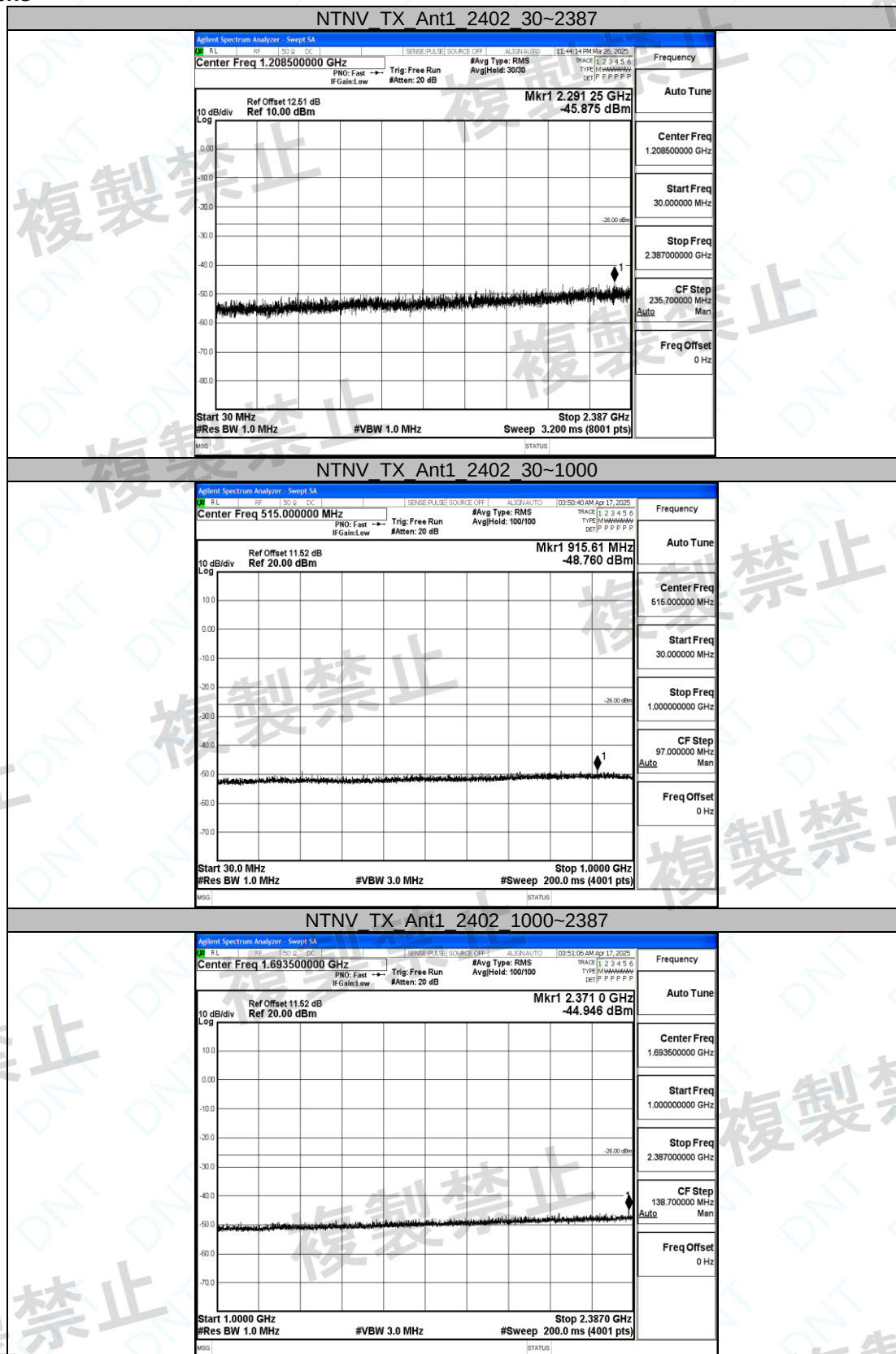
Tel: +86-769-88087383

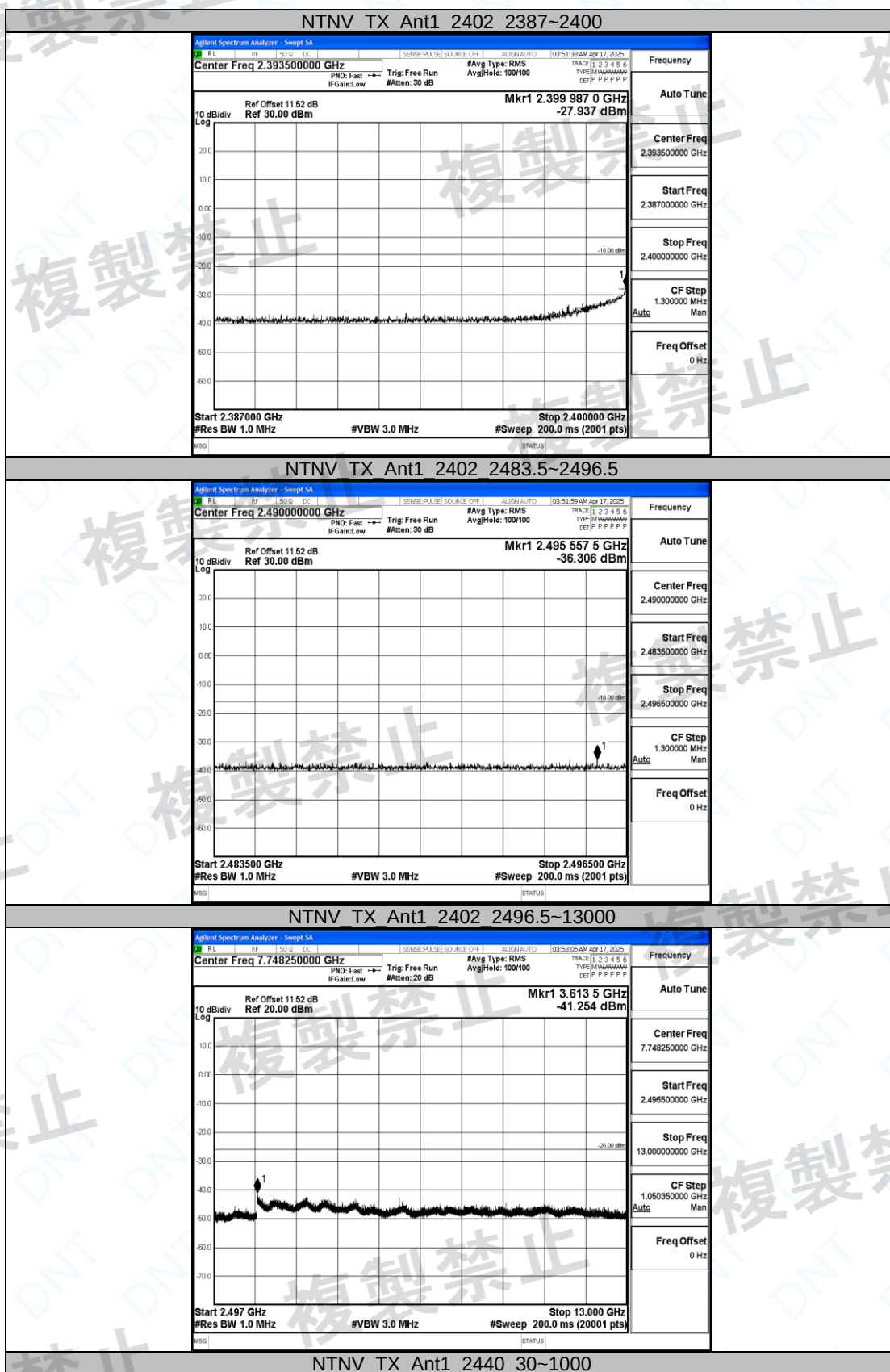
E-mail: service@dn-testing.com

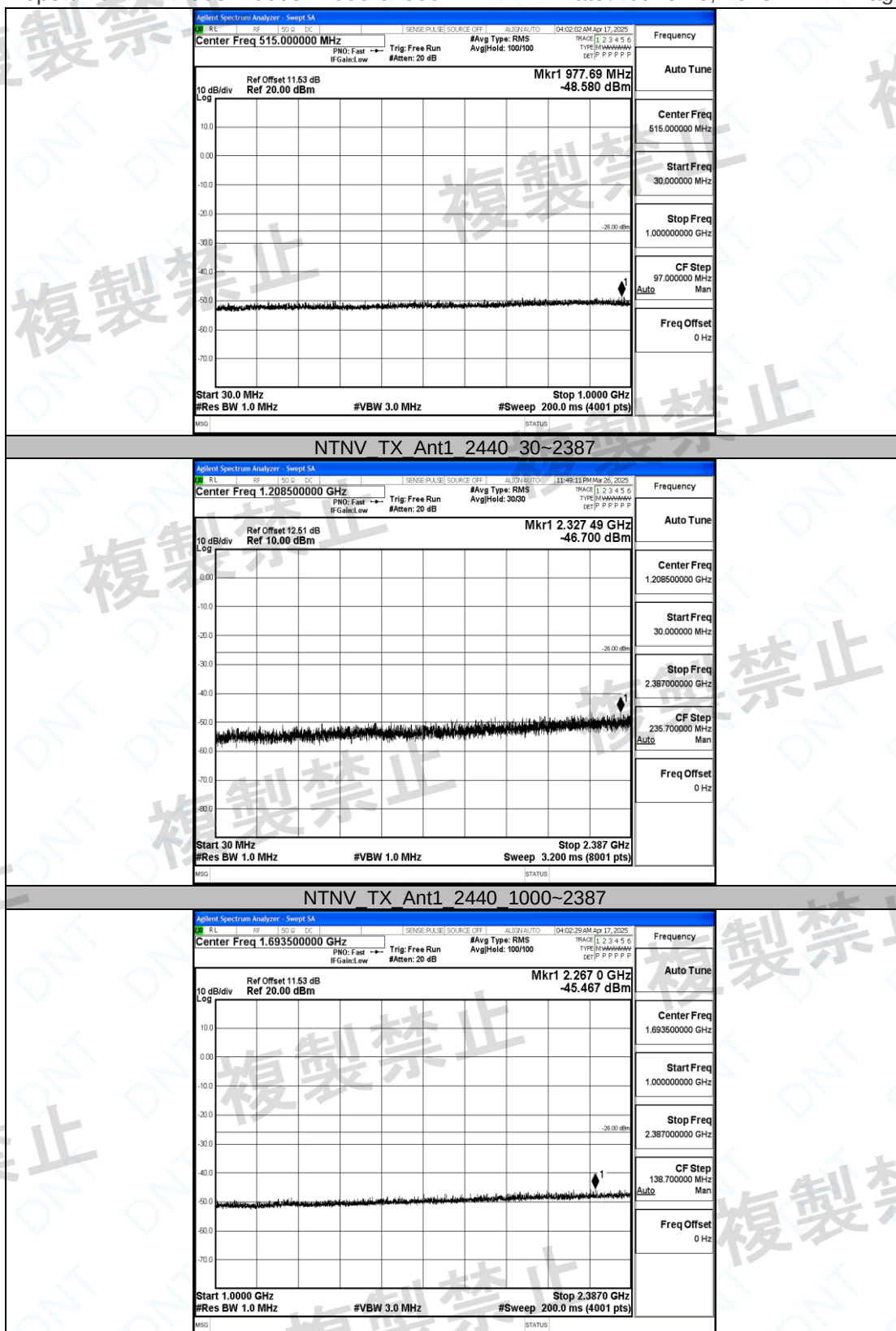


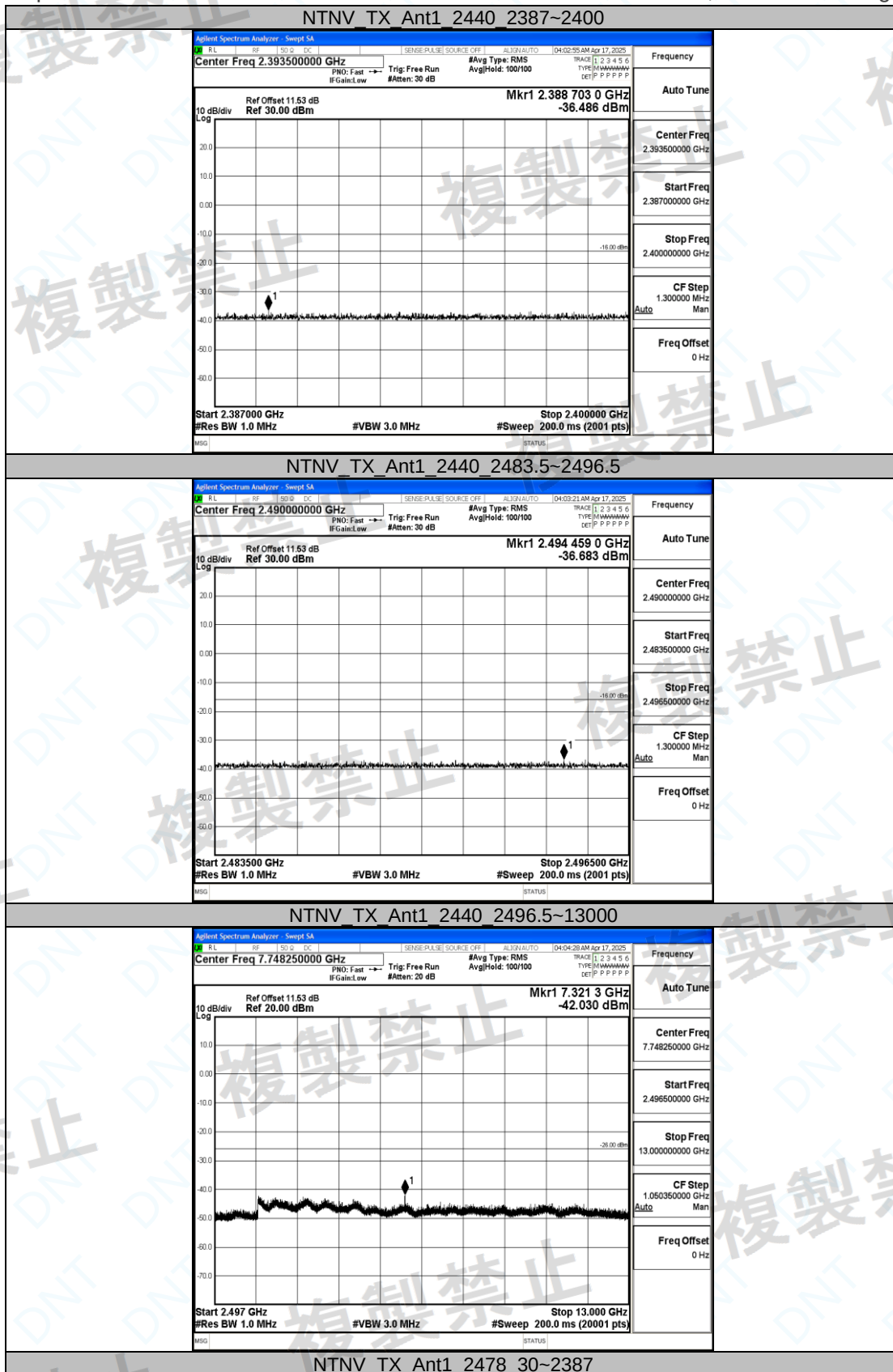
			2496.5~13000	7434.20	-41.11	≤-26	0.07745	≤2.5	PASS
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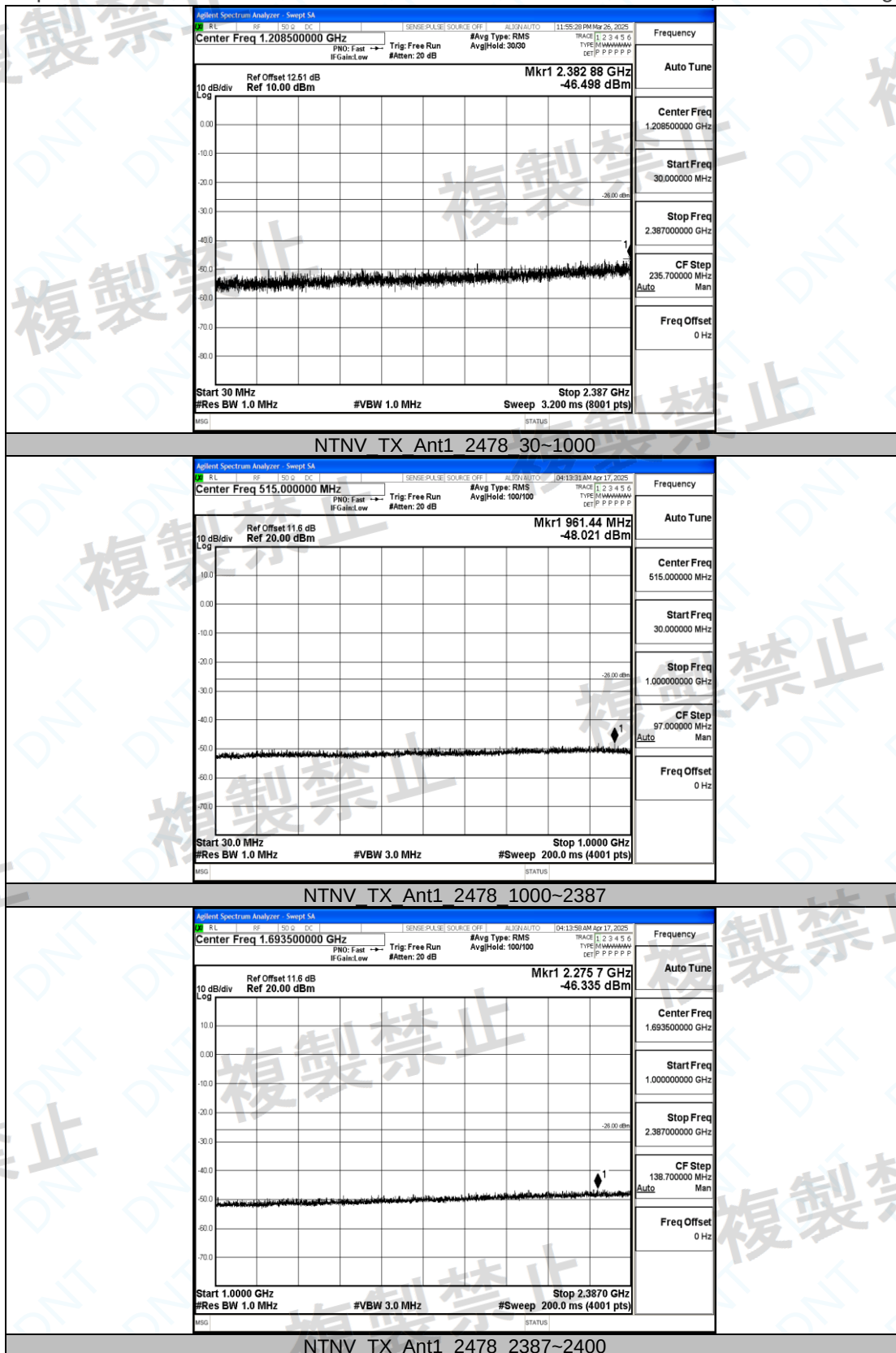
Test Graphs

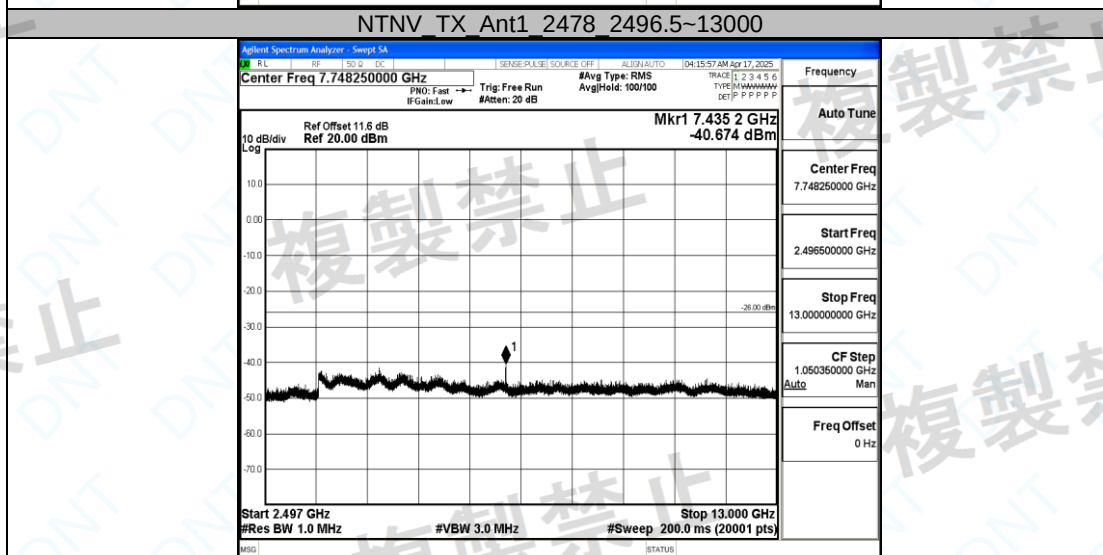
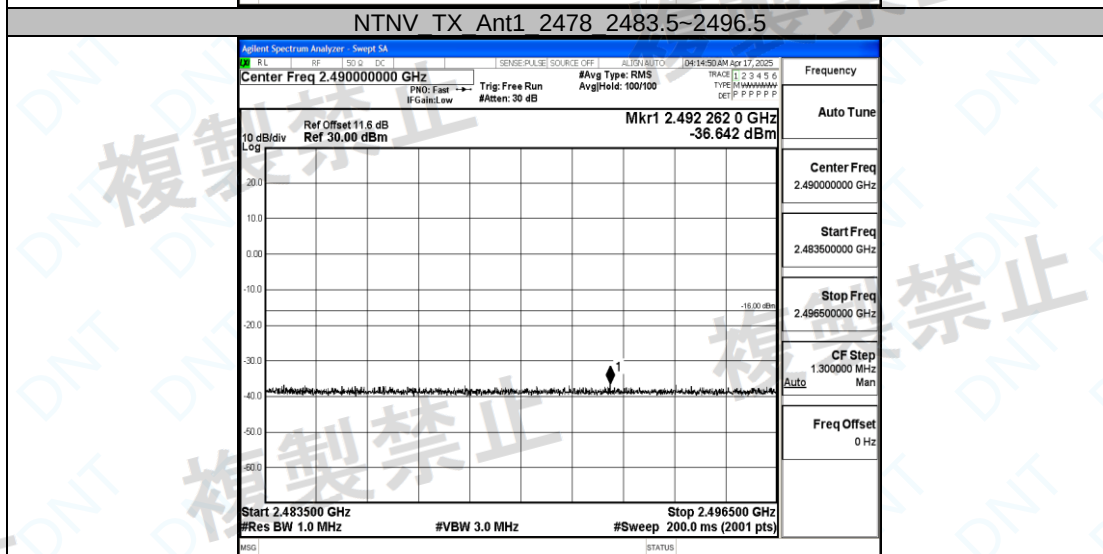
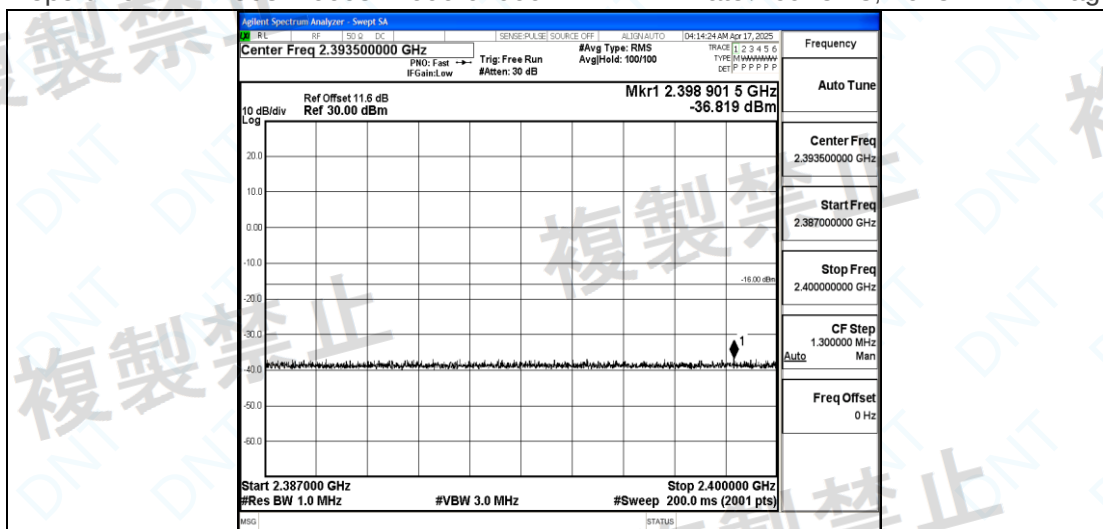


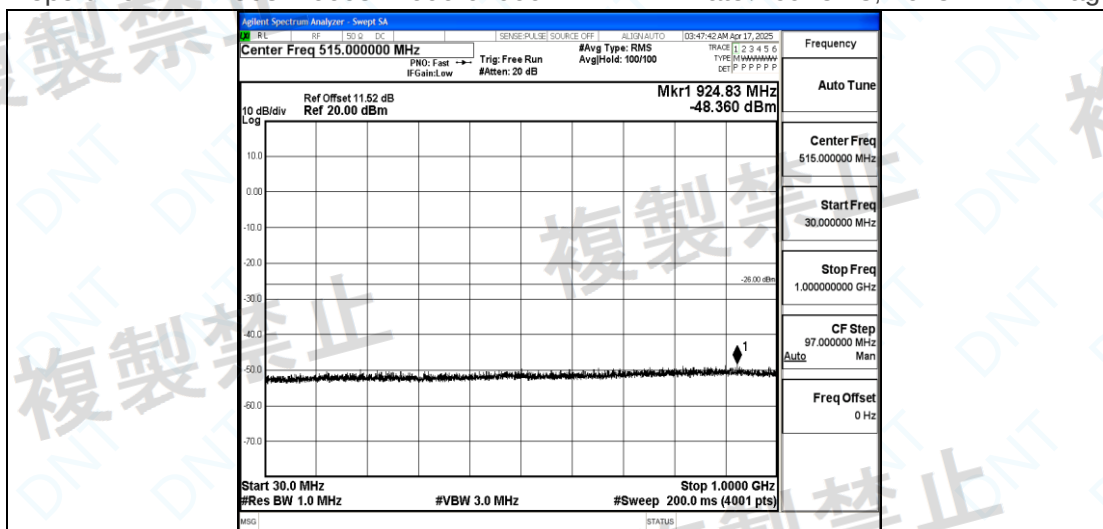




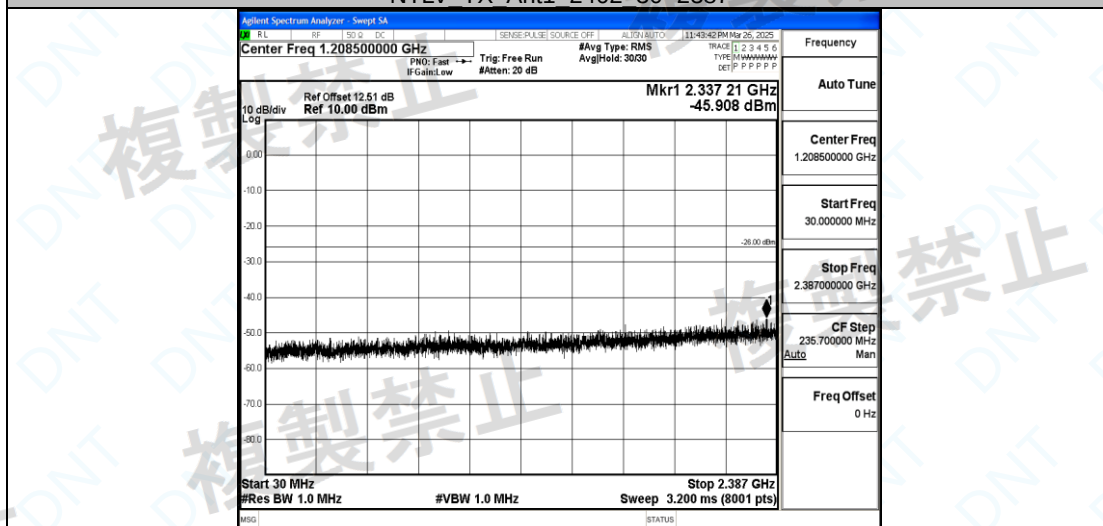




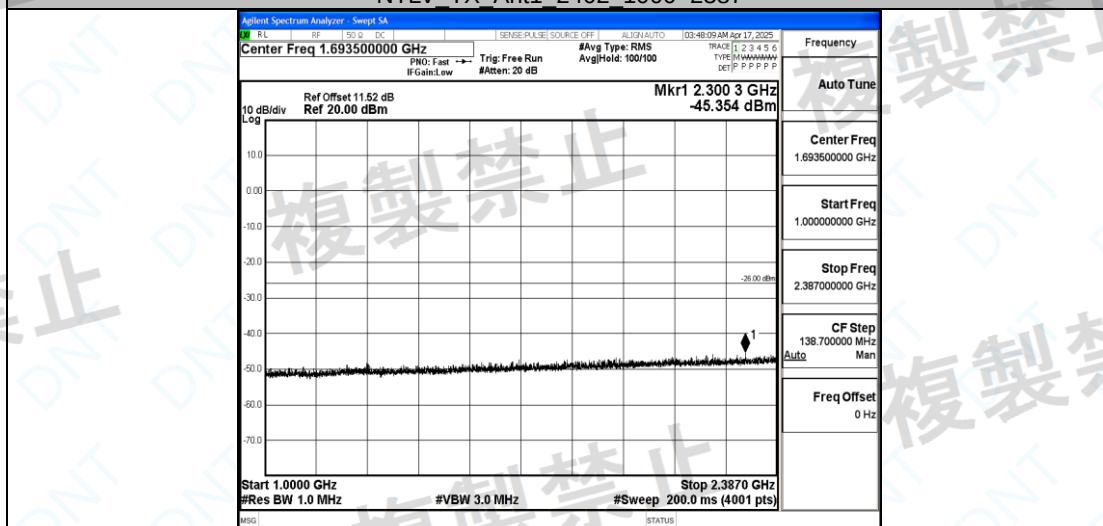




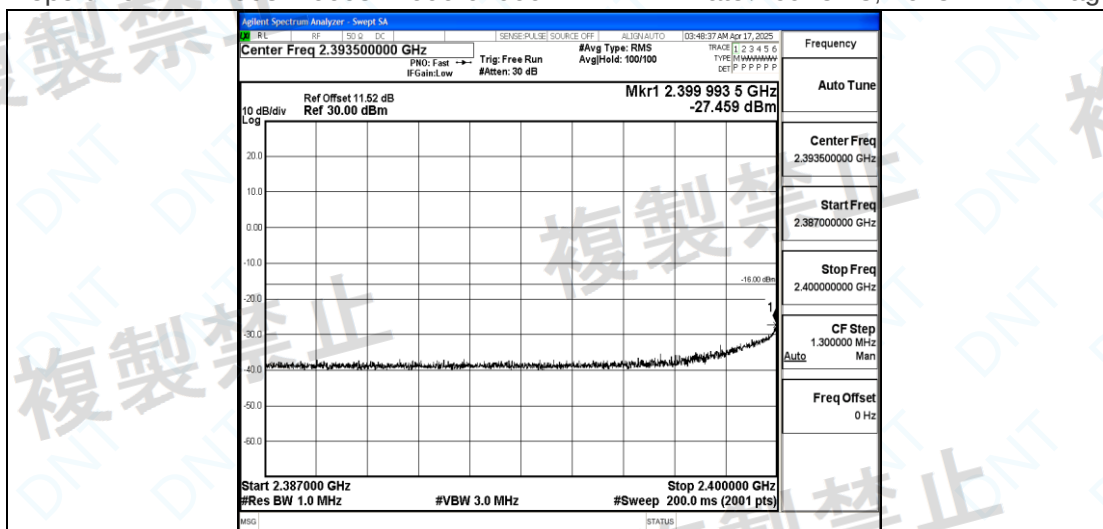
NTLV TX Ant1 2402 30-2387



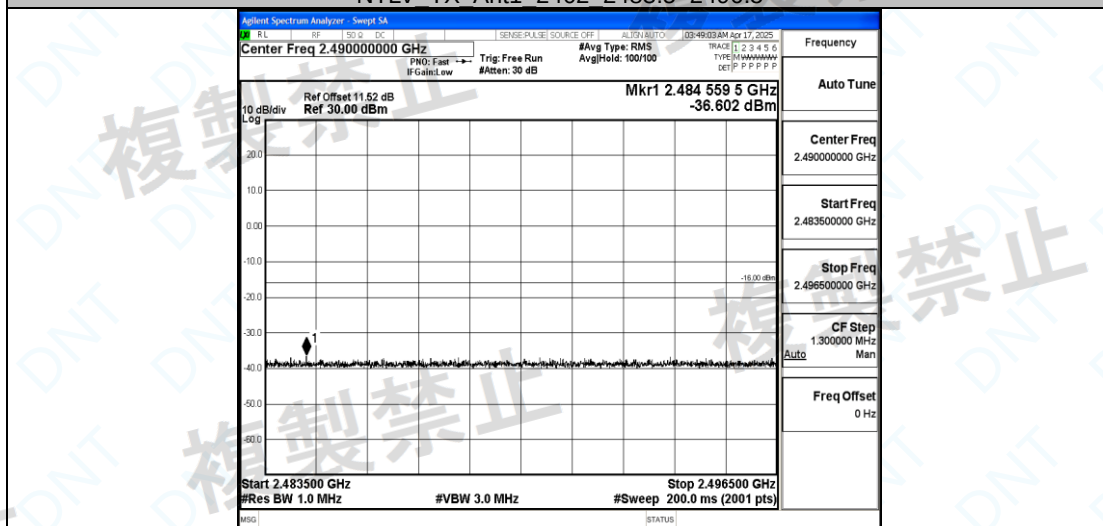
NTLV TX Ant1 2402 1000-2387



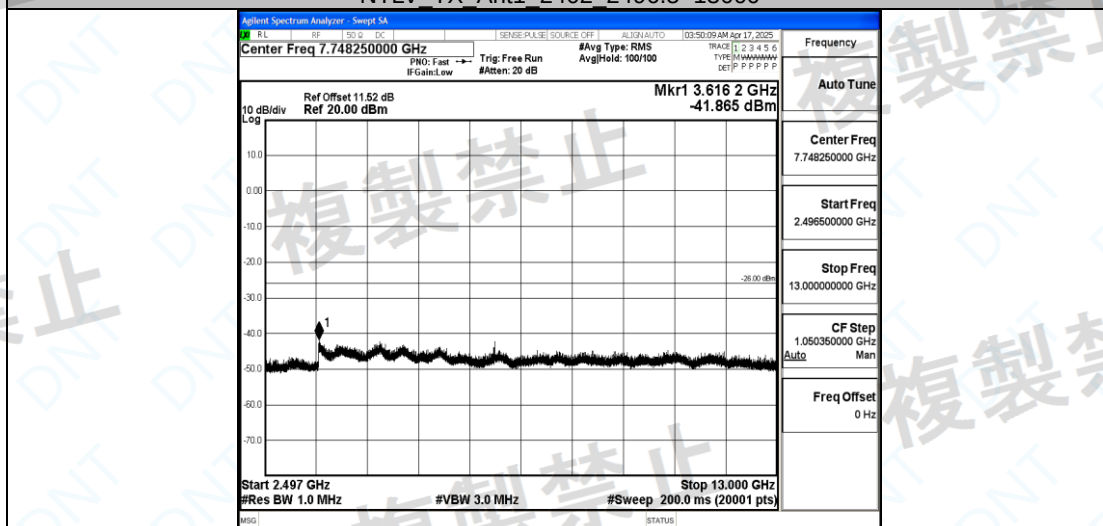
NTLV TX Ant1 2402 2387-2400



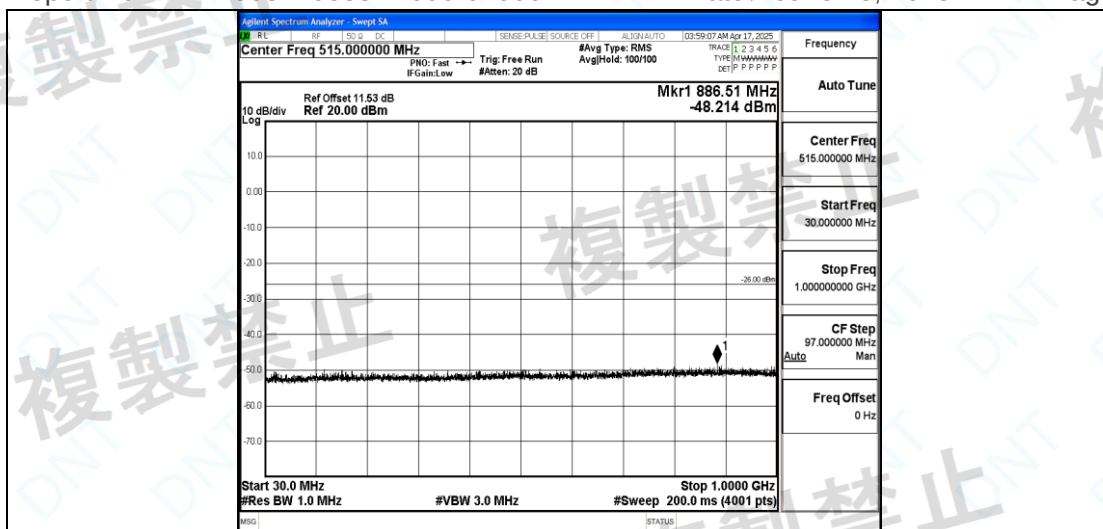
NTLV TX Ant1 2402 2483.5~2496.5



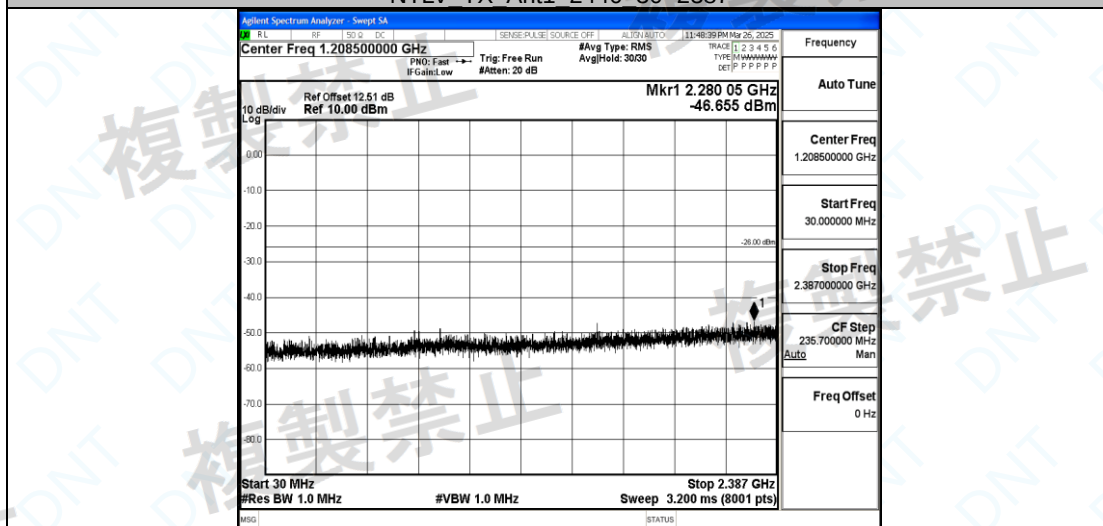
NTLV TX Ant1 2402 2496.5~13000



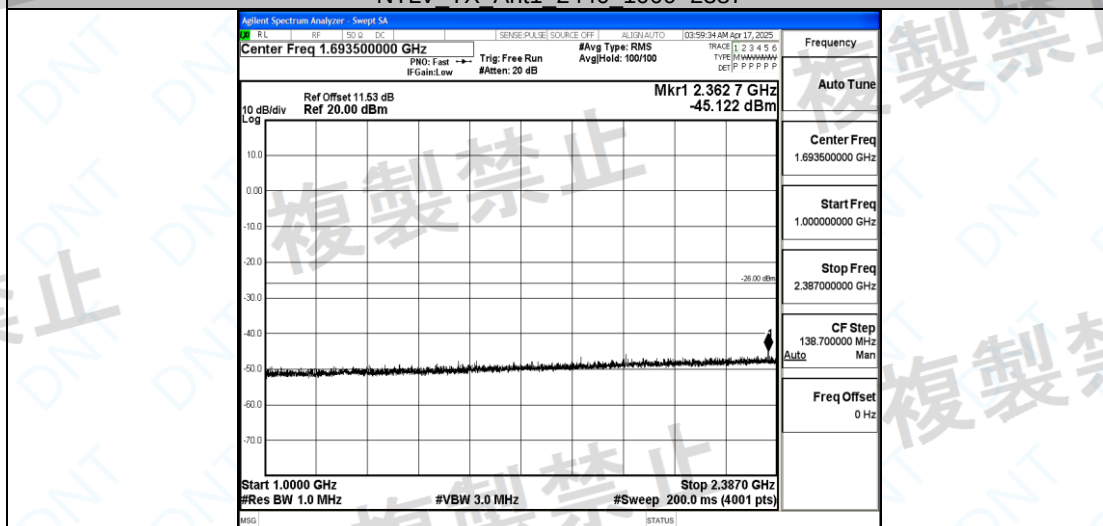
NTLV TX Ant1 2440 30~1000



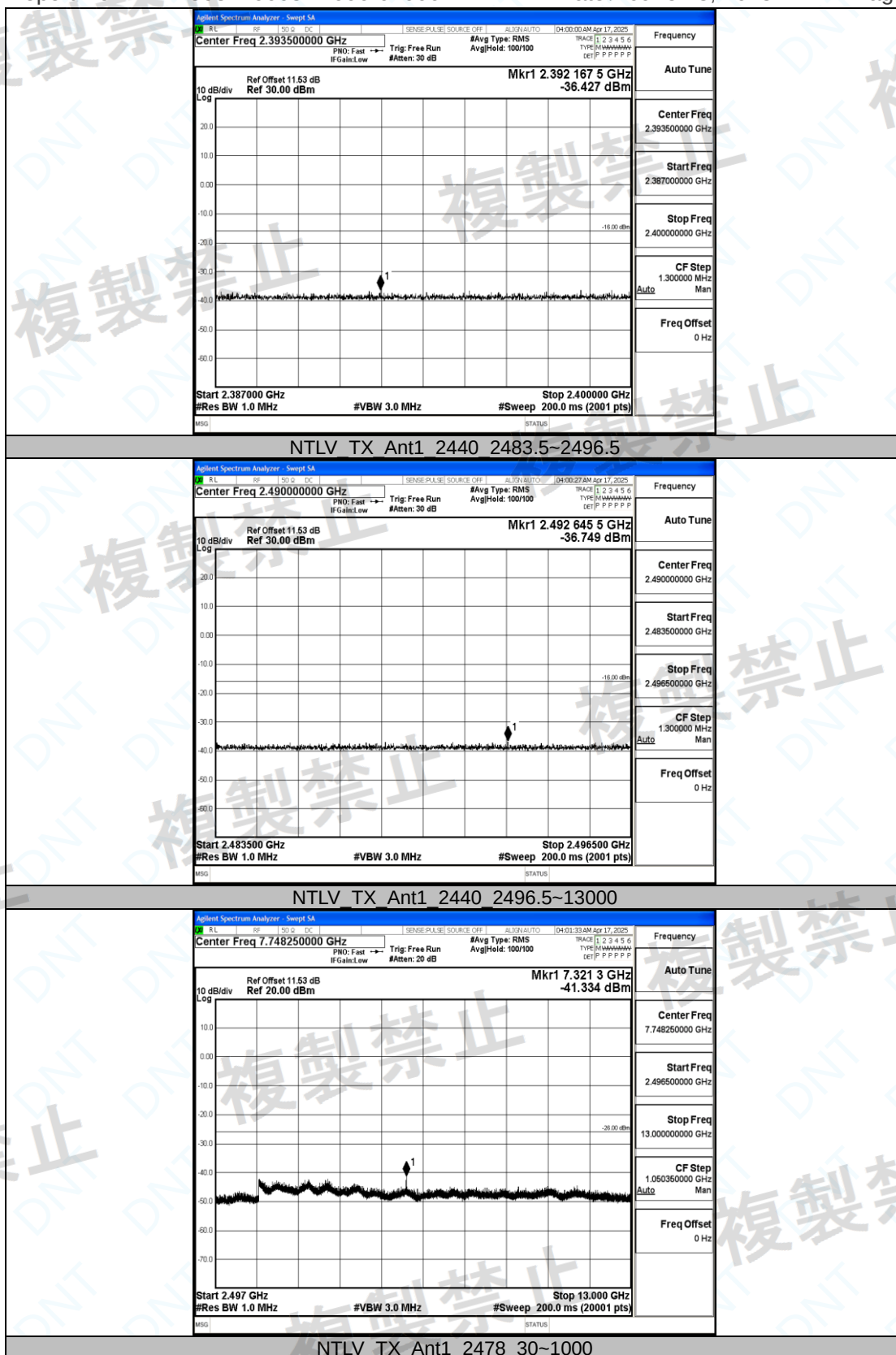
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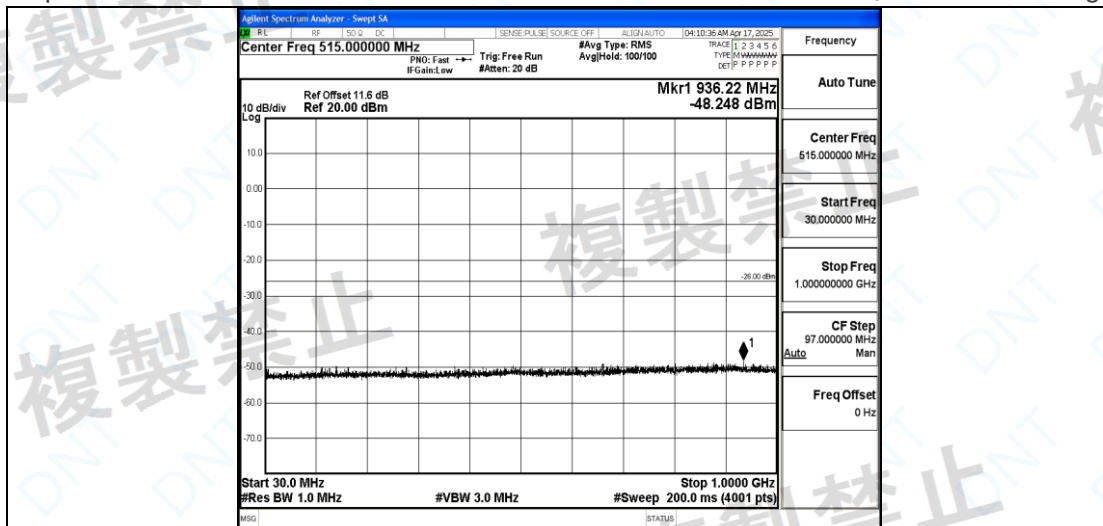


NTLV TX Ant1 2440 1000-2387

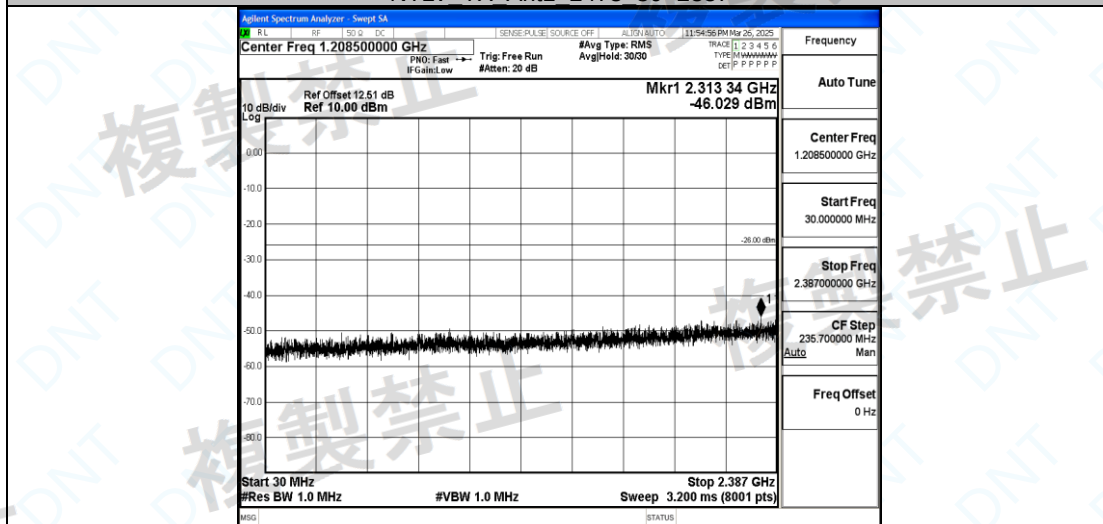


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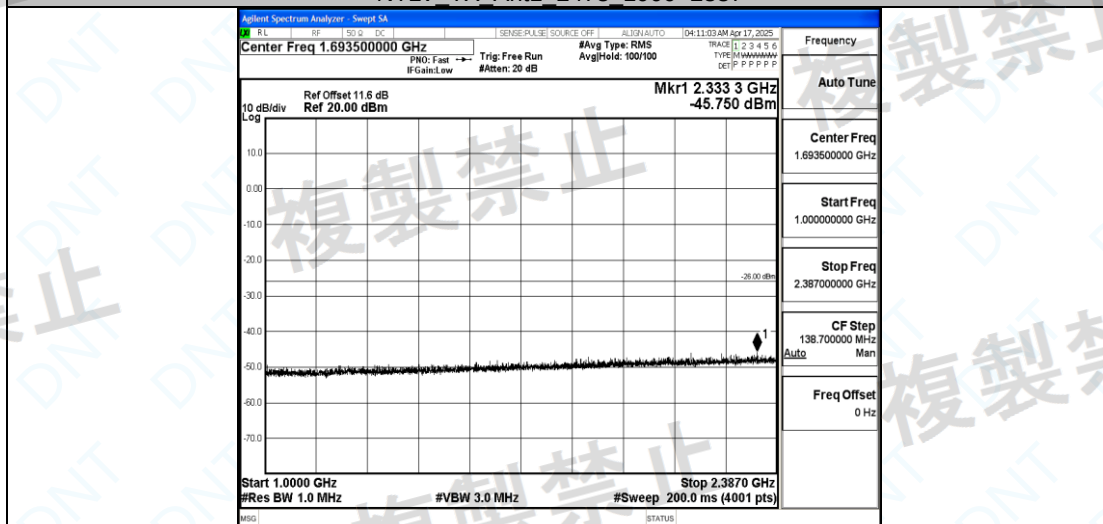




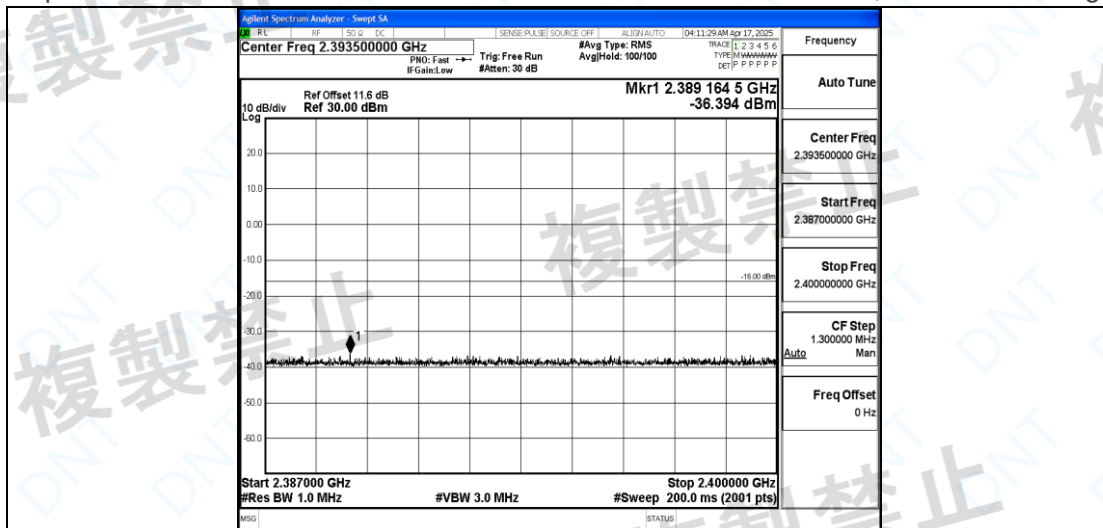
NTLV TX Ant1 2478 30-2387



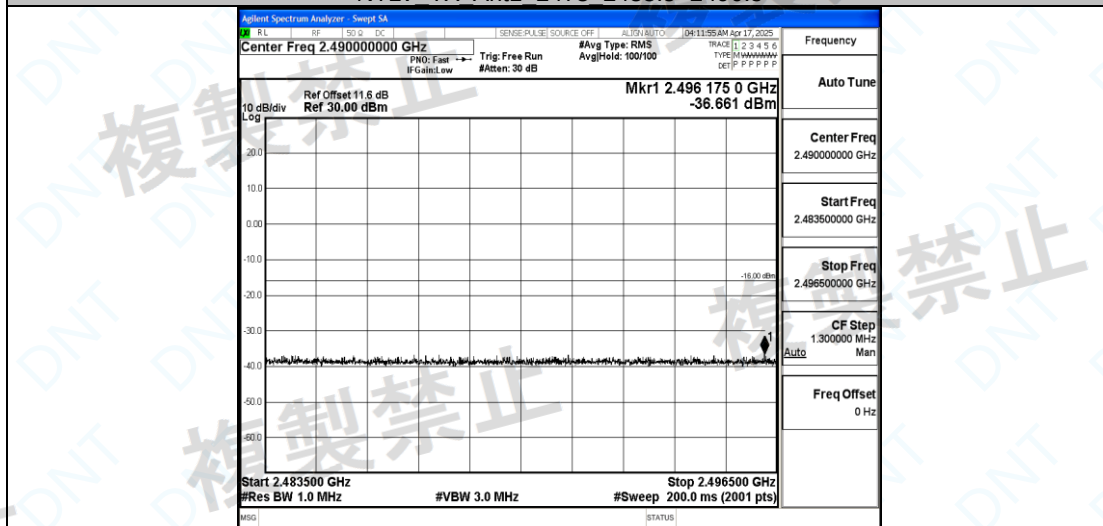
NTLV TX Ant1 2478 1000-2387



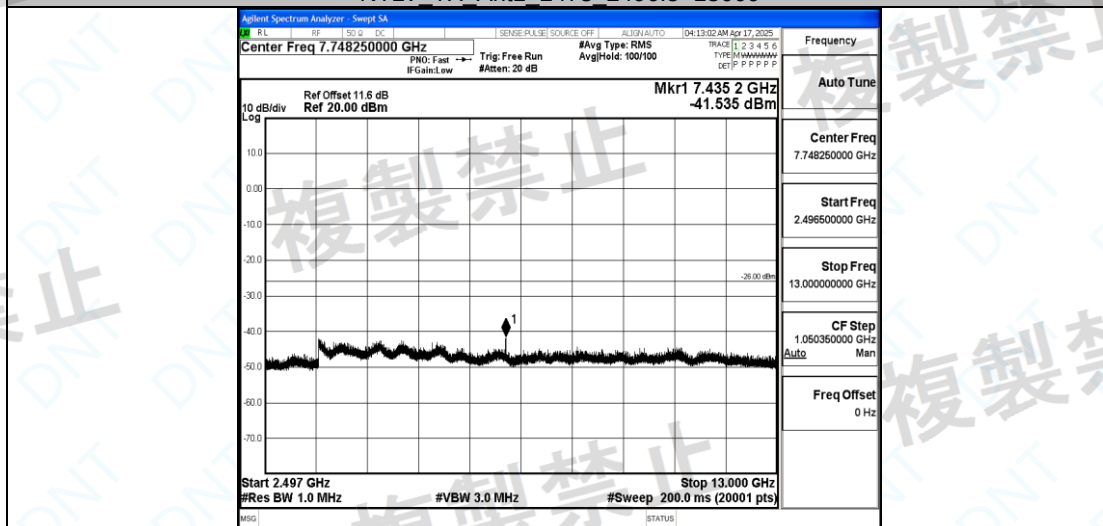
NTLV TX Ant1 2478 2387-2400



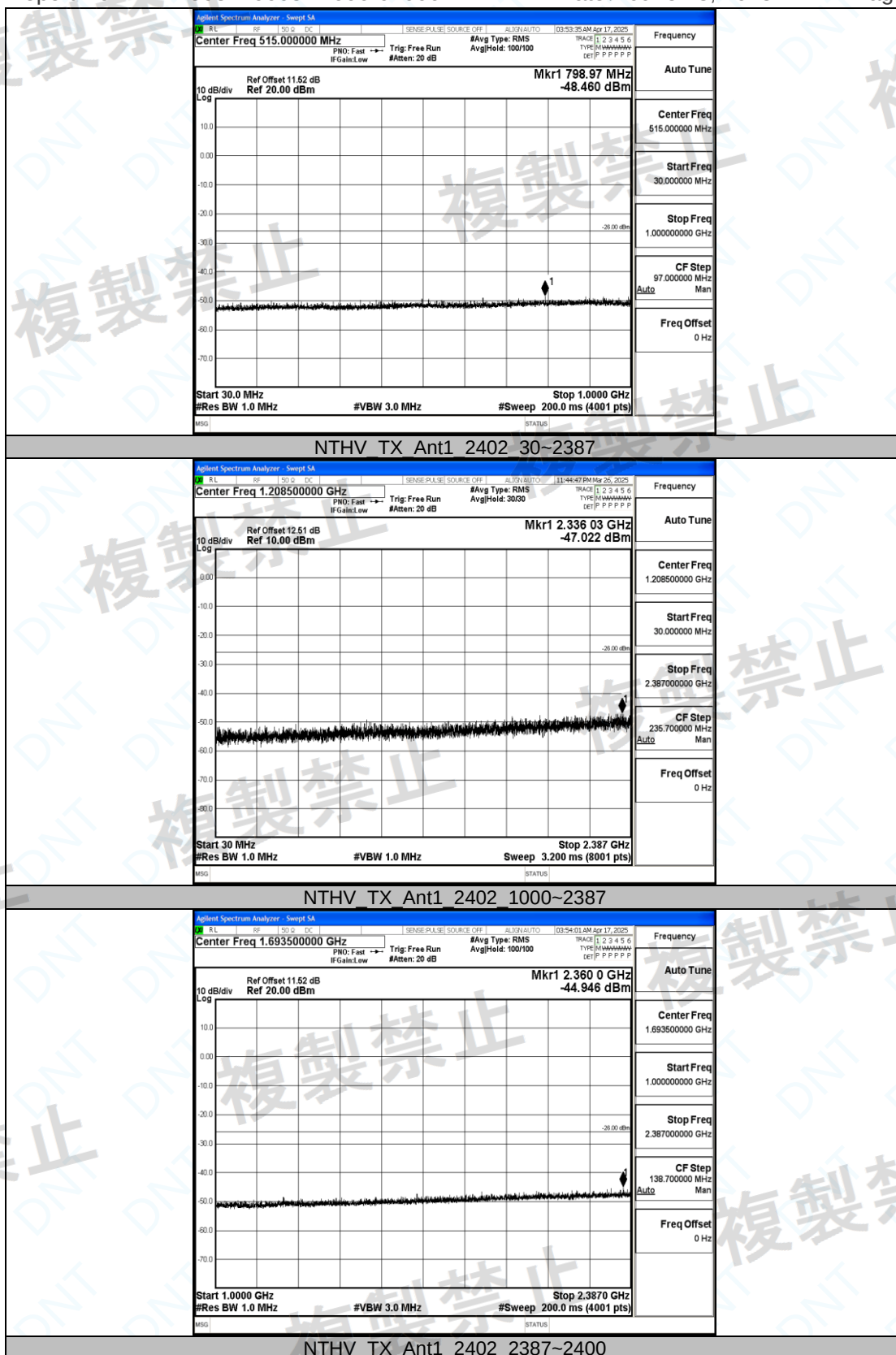
NTLV TX Ant1 2478 2483.5~2496.5

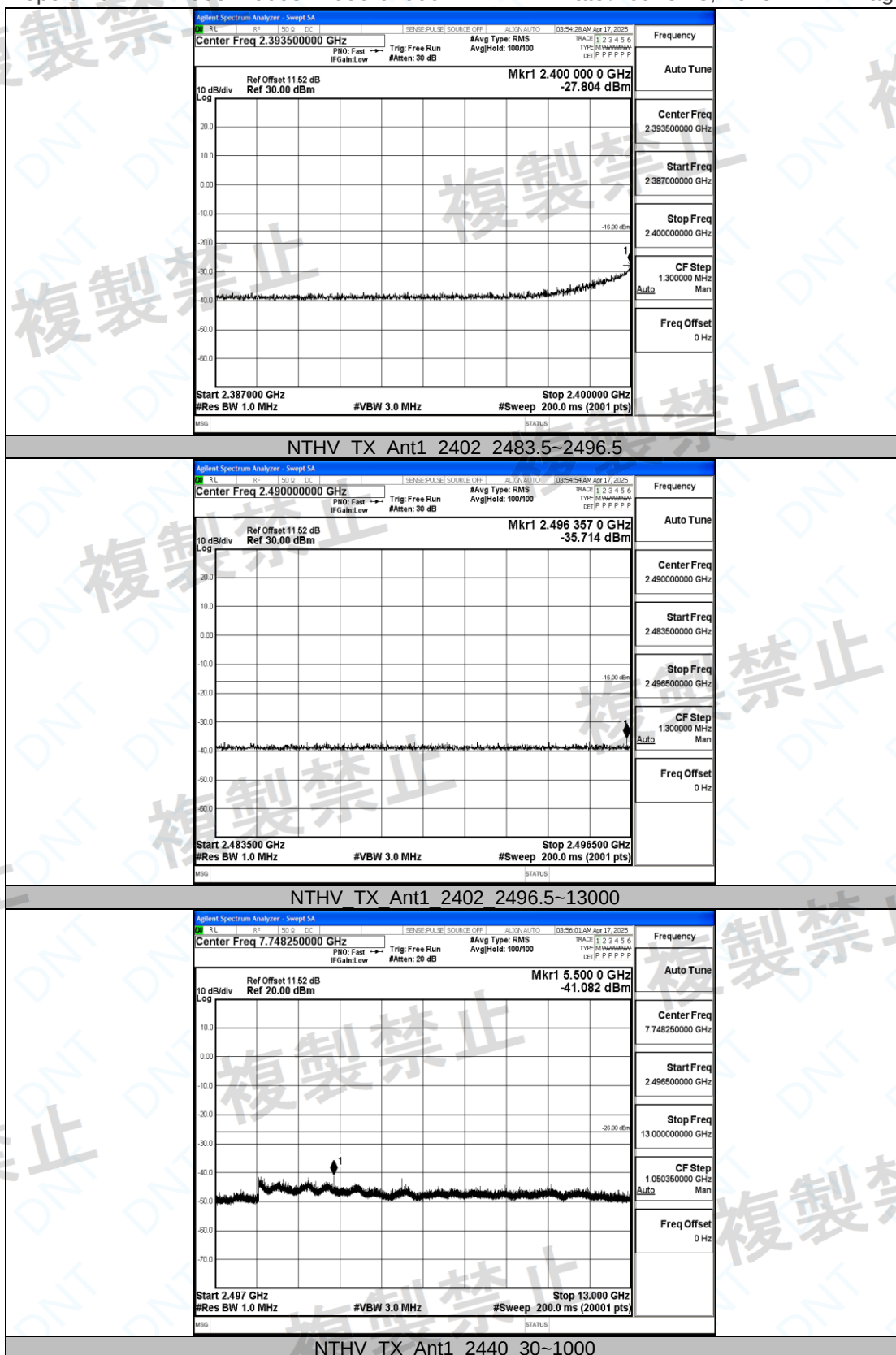


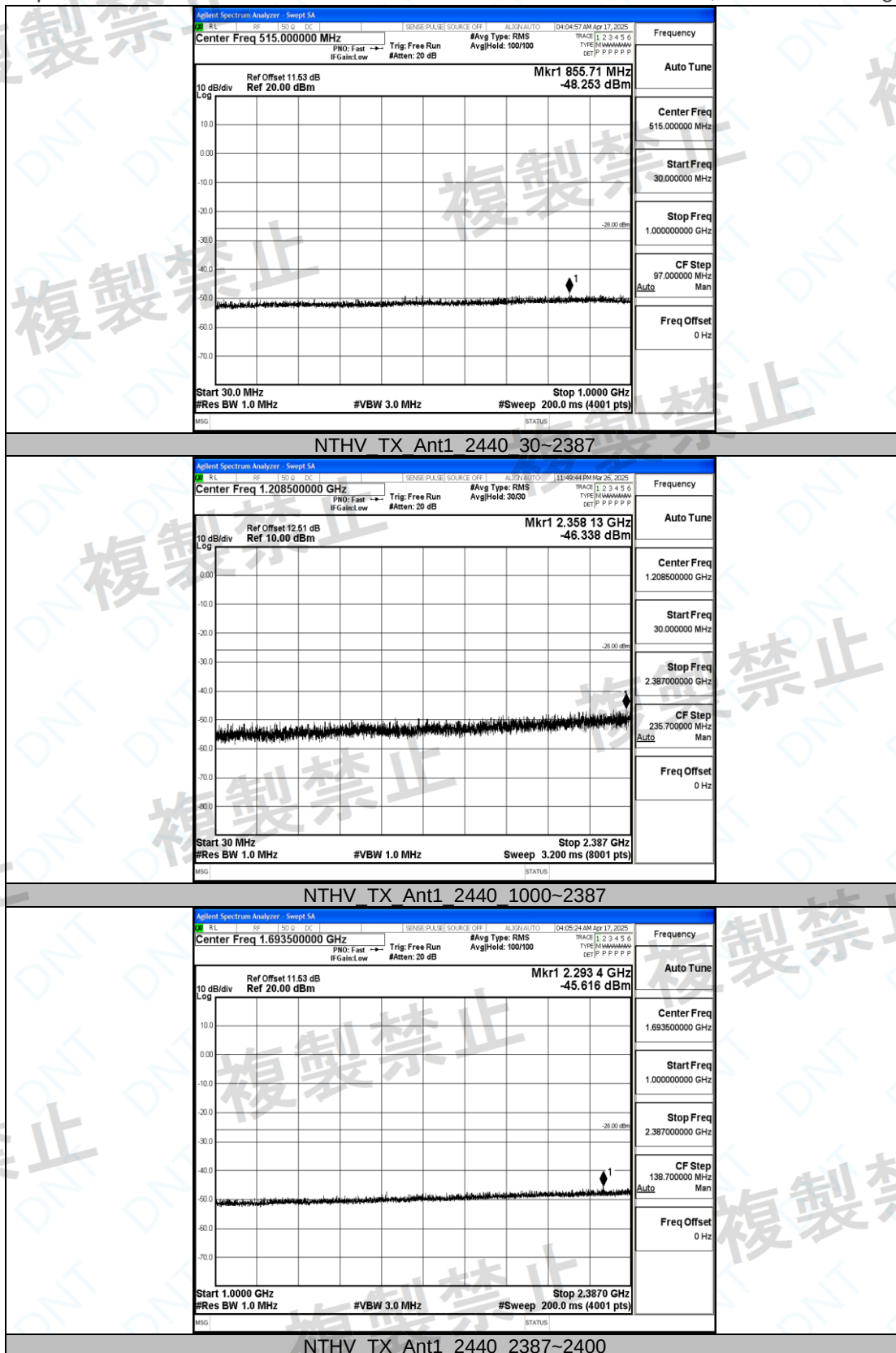
NTLV TX Ant1 2478 2496.5~13000

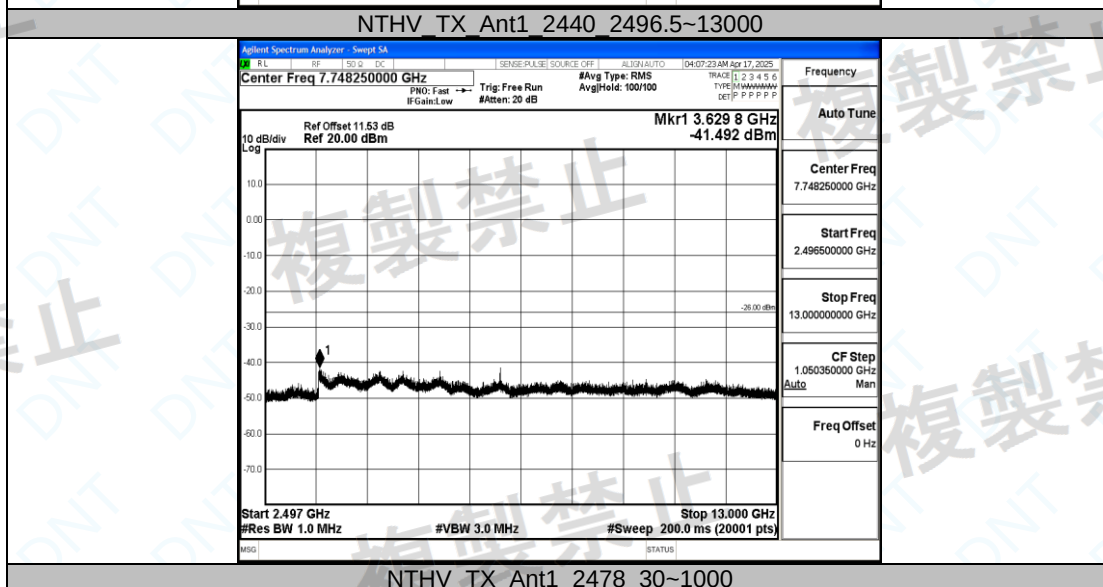
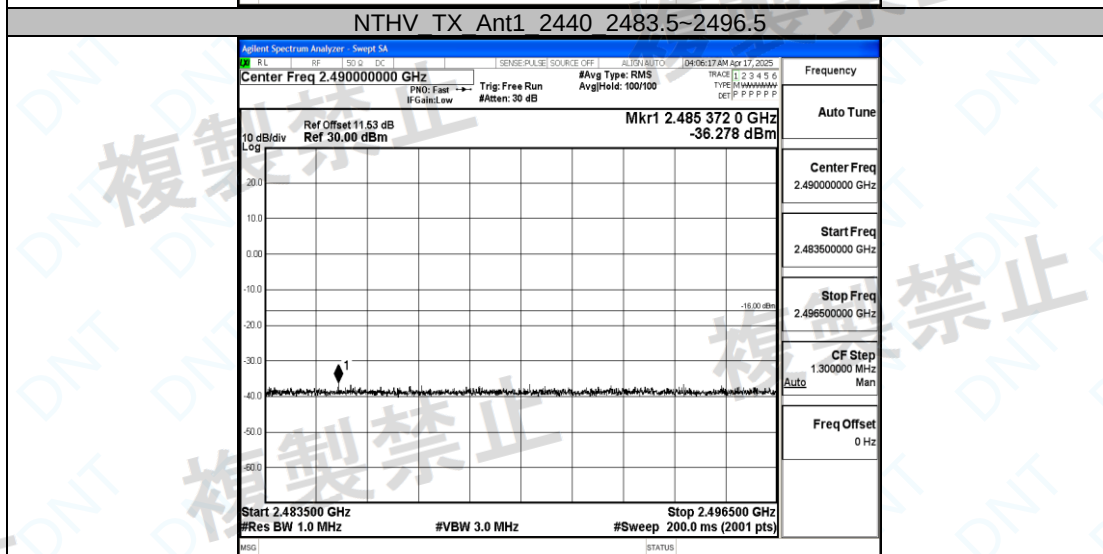
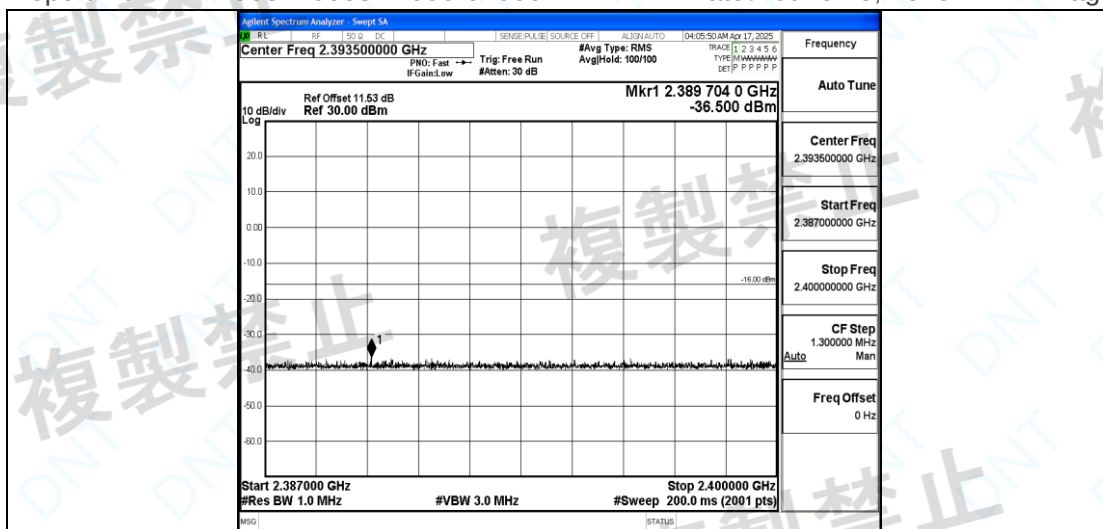


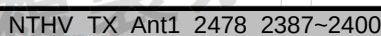
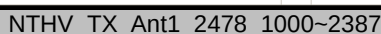
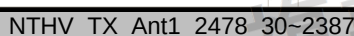
NTHV TX Ant1 2402 30~1000

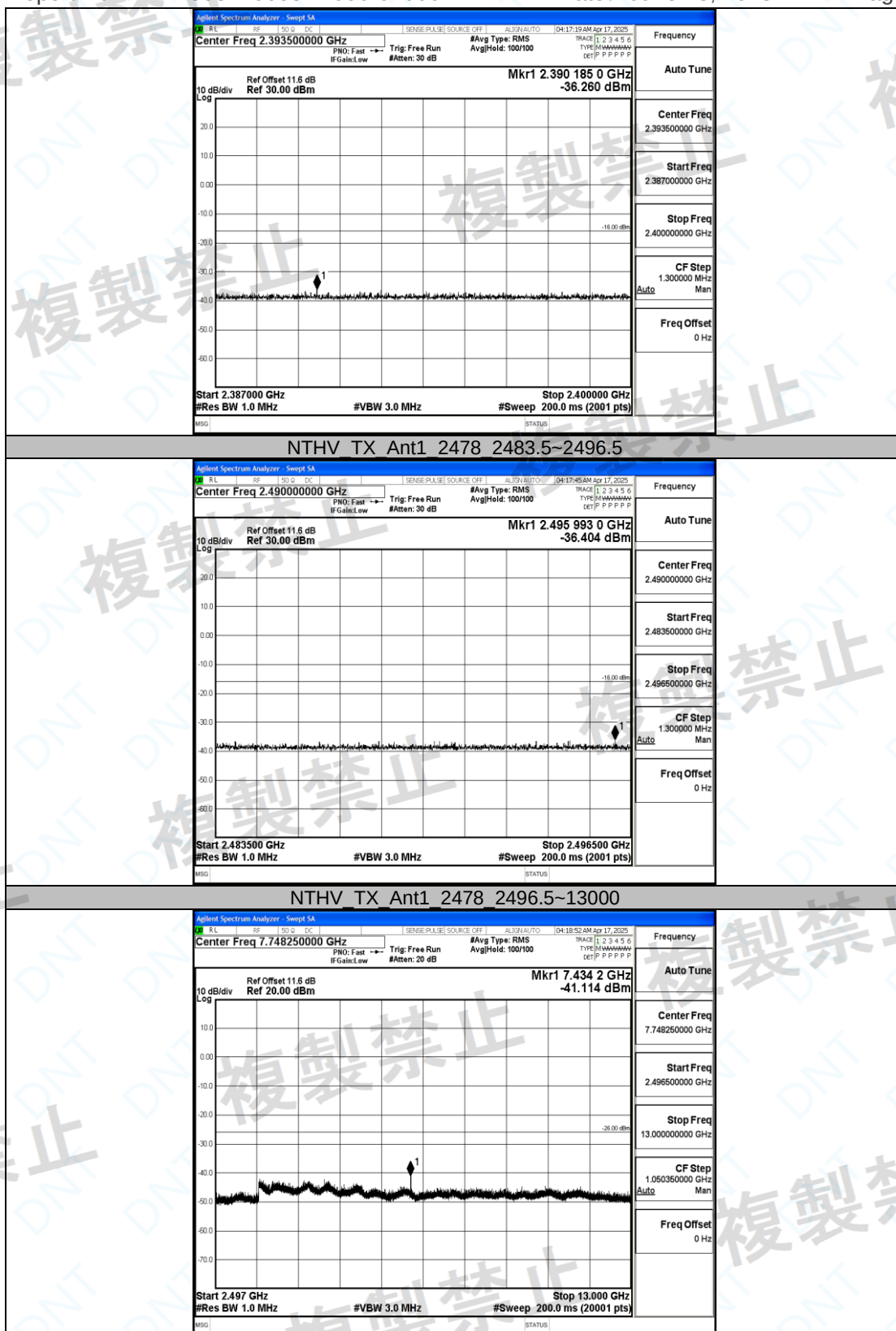












Note: SA set to from 2.4965GHz to 13GHz, plot shows from 2.497GHz to 13GHz as of SA's default format.

**Appendix F: Spurious Emission of RX****Test Result 1**

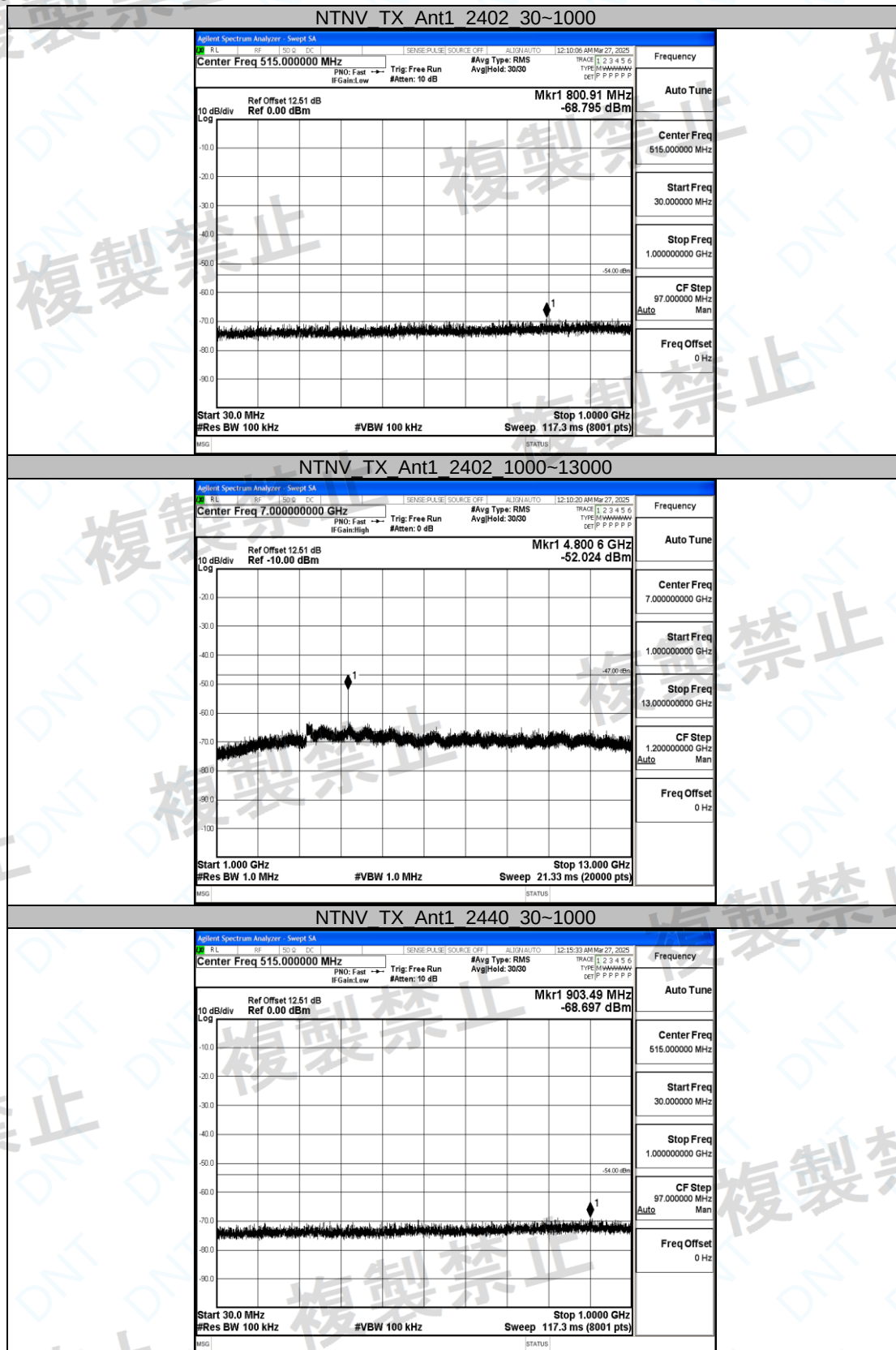
TestCondition	TestMode	Antenna	Freq(M Hz)	Freq.Range [MHz]	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	TX	Ant1	2402	30~1000	800.91	-68.80	≤-54	0.13183	≤4	PASS
				1000~13000	4800.59	-52.02	≤-47	6.28058	≤20	See table below
			2440	30~1000	903.49	-68.70	≤-54	0.13490	≤4	PASS
				1000~13000	4876.79	-51.81	≤-47	6.59174	≤20	See table below
			2478	30~1000	888.94	-68.38	≤-54	0.14521	≤4	PASS
				1000~13000	4952.4	-53.60	≤-47	4.36516	≤20	See table below
NTLV	TX	Ant1	2402	30~1000	925.31	-69.03	≤-54	0.12503	≤4	PASS
				1000~13000	4800.59	-51.72	≤-47	6.72977	≤20	See table below
			2440	30~1000	839.22	-68.10	≤-54	0.15488	≤4	PASS
				1000~13000	4876.19	-51.94	≤-47	6.39735	≤20	See table below
			2478	30~1000	939.25	-68.56	≤-54	0.13932	≤4	PASS
				1000~13000	4952.4	-54.10	≤-47	3.89045	≤20	See table below
NTHV	TX	Ant1	2402	30~1000	856.68	-68.59	≤-54	0.13836	≤4	PASS
				1000~13000	4800.59	-51.84	≤-47	6.54636	≤20	See table below
			2440	30~1000	907.61	-68.49	≤-54	0.14158	≤4	PASS
				1000~13000	4876.79	-50.81	≤-47	8.29851	≤20	See table below
			2478	30~1000	127.97	-68.97	≤-54	0.12677	≤4	PASS
				1000~13000	4952.4	-53.72	≤-47	4.24620	≤20	See table below

Test Result 2

TestCondition	TestMode	Antenna	Freq(M Hz)	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	TX	Ant1	2402	4800.05	-53.44	≤-47	4.52898	≤20	PASS
			2440	4876.20	-54.21	≤-47	3.79315	≤20	PASS
			2478	4952.09	-54.63	≤-47	3.44350	≤20	PASS
NTLV	TX	Ant1	2402	4800.00	-53.41	≤-47	4.56037	≤20	PASS
			2440	4876.11	-53.70	≤-47	4.26580	≤20	PASS
			2478	4952.11	-54.68	≤-47	3.40408	≤20	PASS
NTHV	TX	Ant1	2402	4800.11	-53.53	≤-47	4.43609	≤20	PASS
			2440	4876.05	-53.82	≤-47	4.14954	≤20	PASS
			2478	4952.05	-54.57	≤-47	3.49140	≤20	PASS

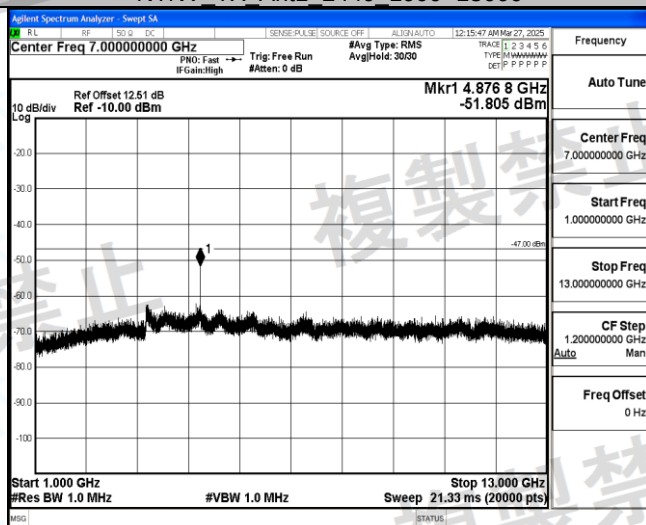


Test Graphs 1

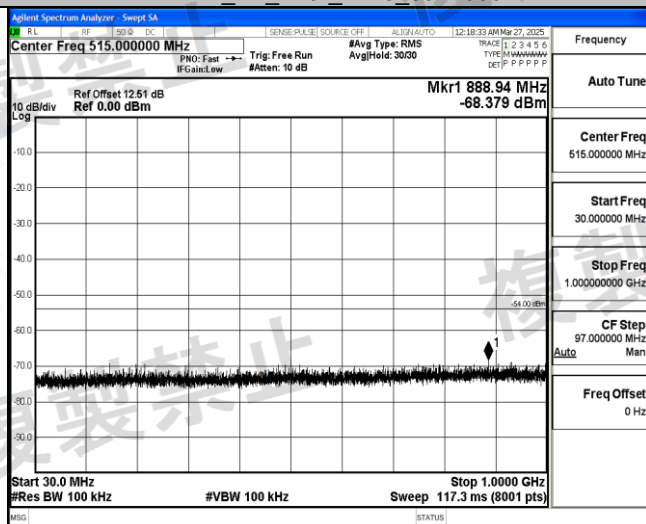




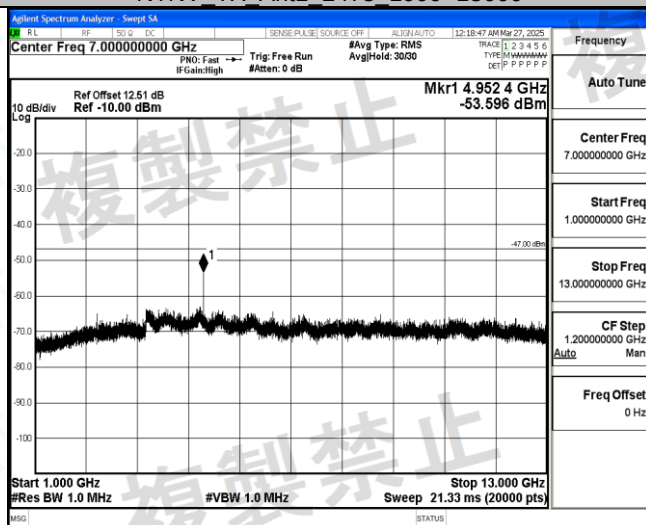
NTNV_TX_Ant1_2440_1000~13000



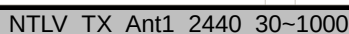
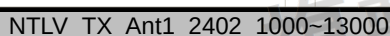
NTNV_TX_Ant1_2478_30~1000

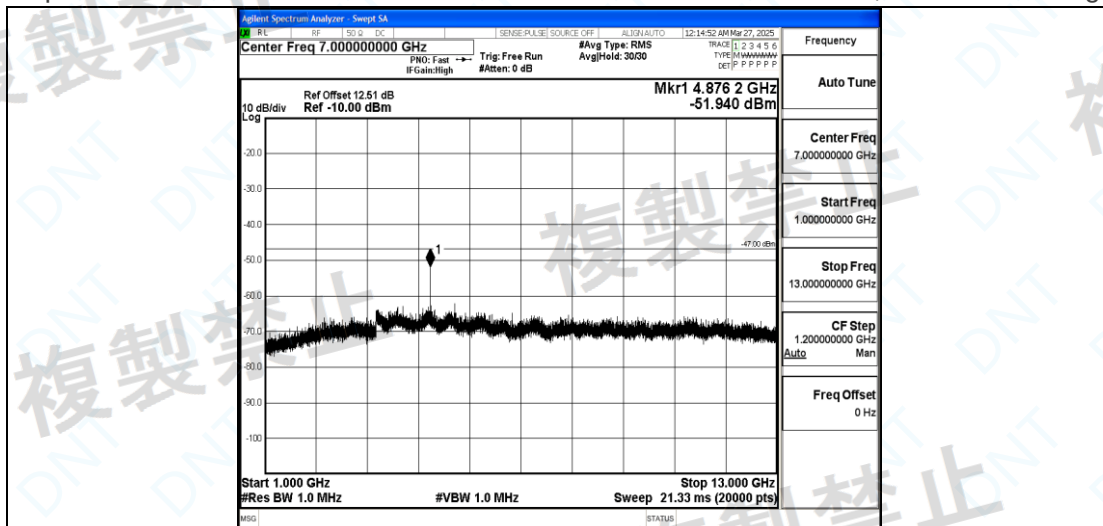


NTNV_TX_Ant1_2478_1000~13000

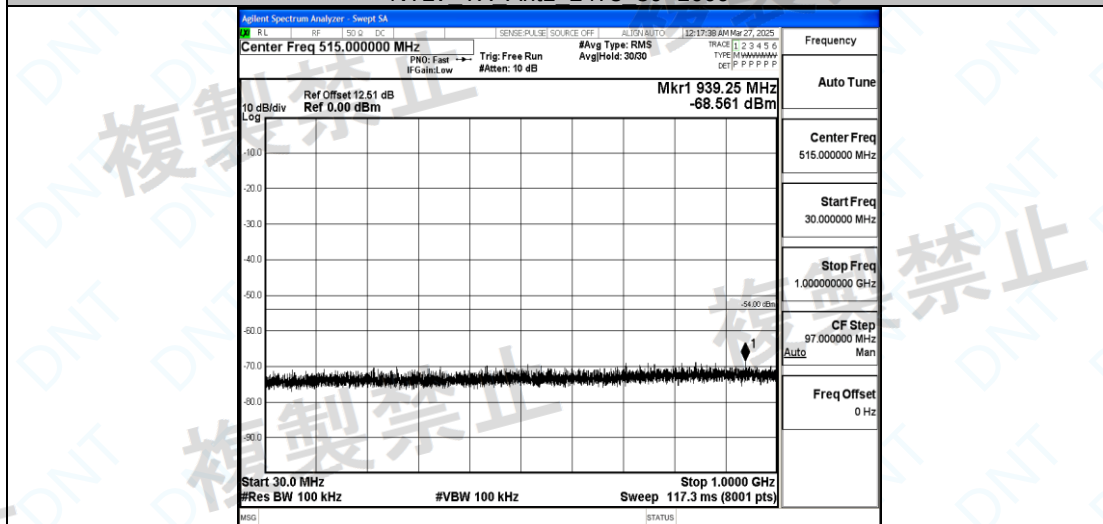


NTLV_TX_Ant1_2402_30~1000

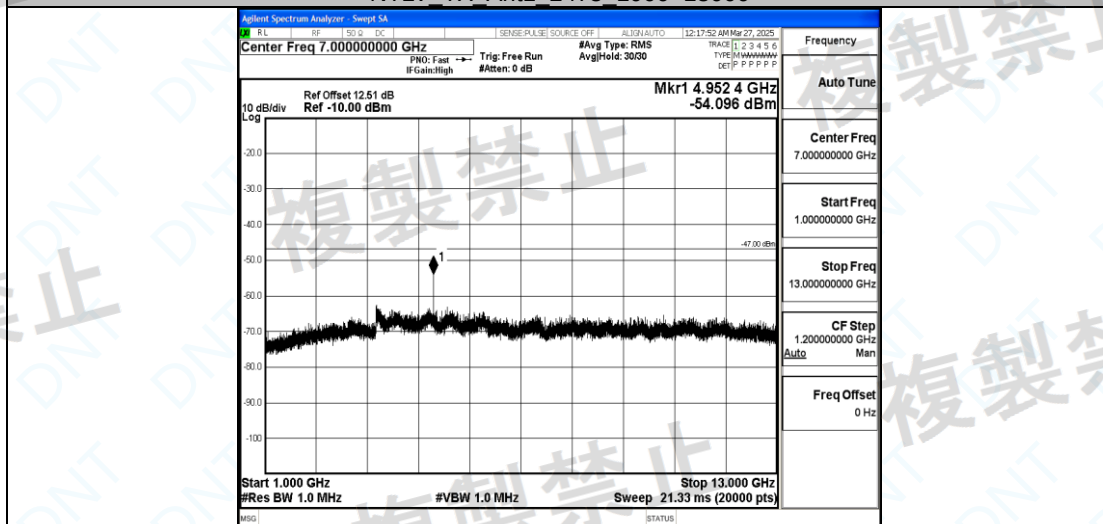




NTLV TX Ant1 2478 30-1000

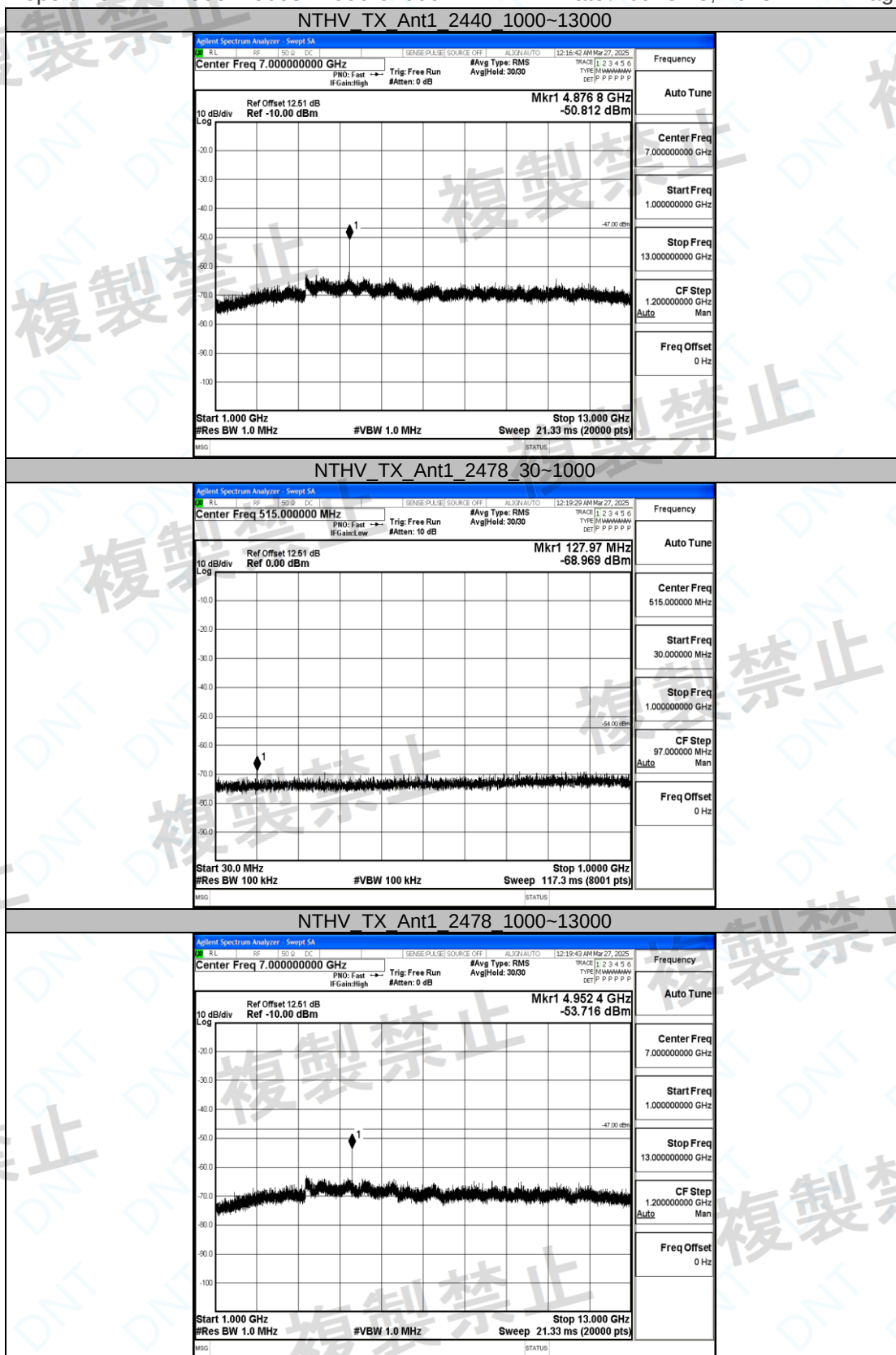


NTLV TX Ant1 2478 1000-13000



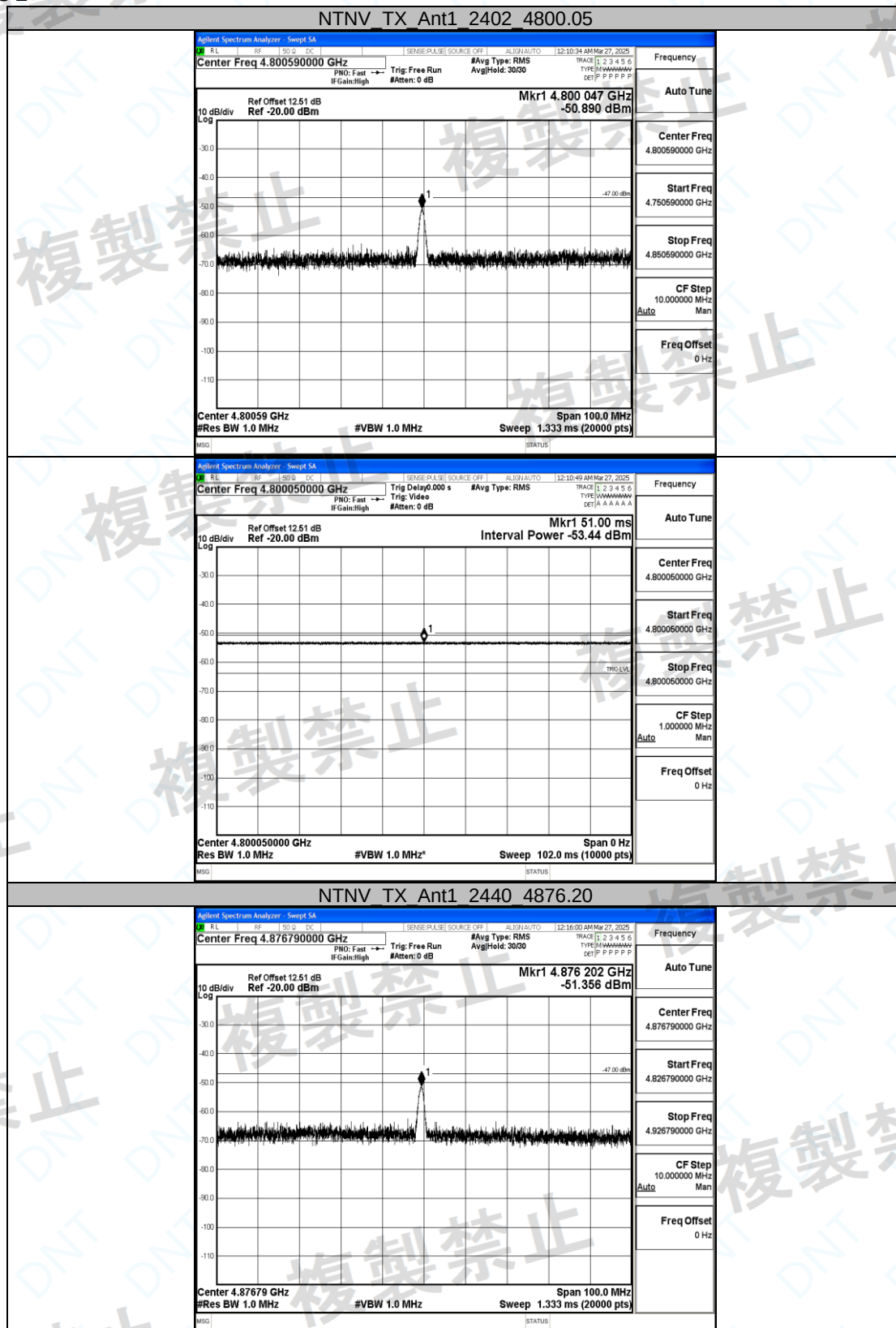
NTHV TX Ant1 2402 30-1000

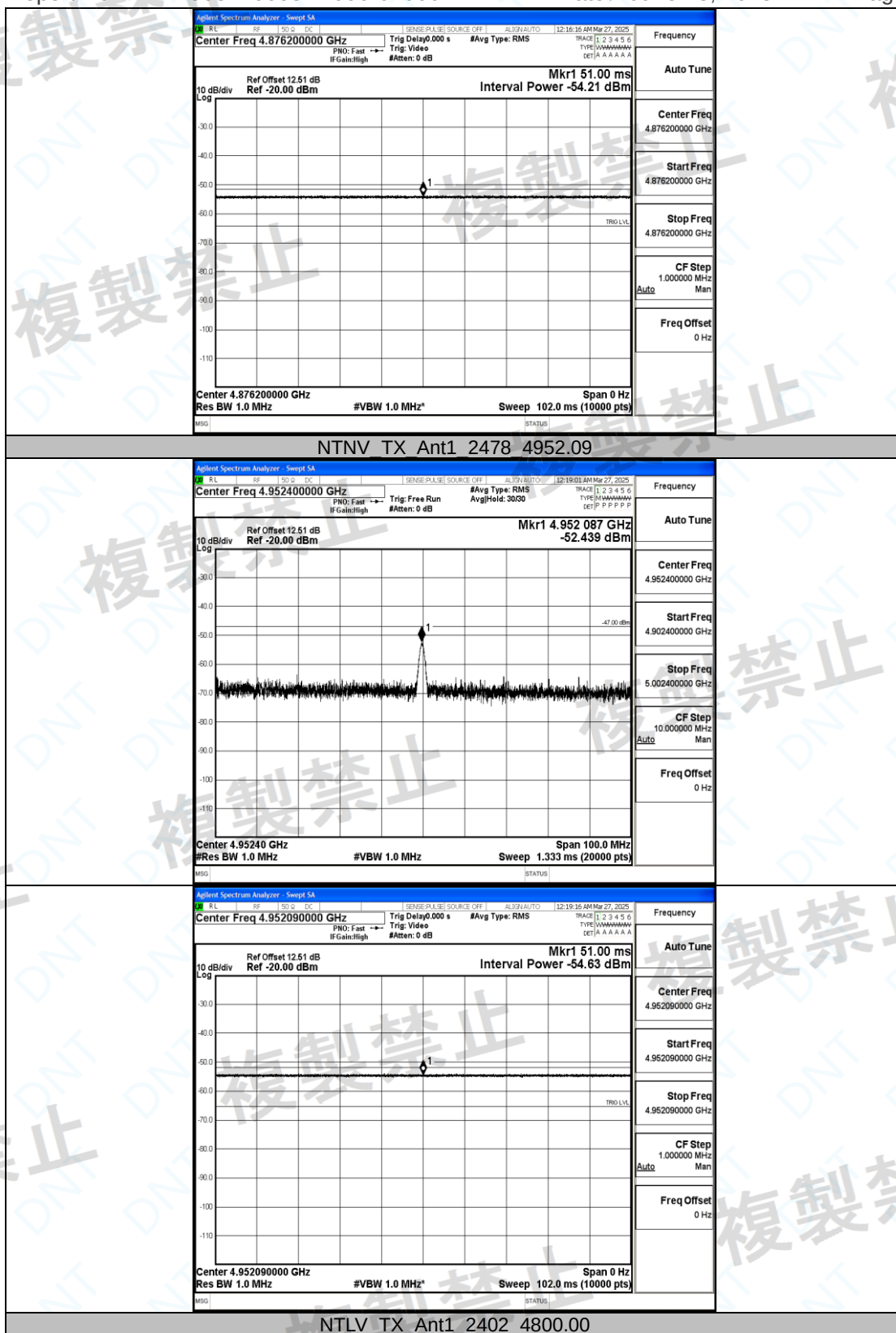


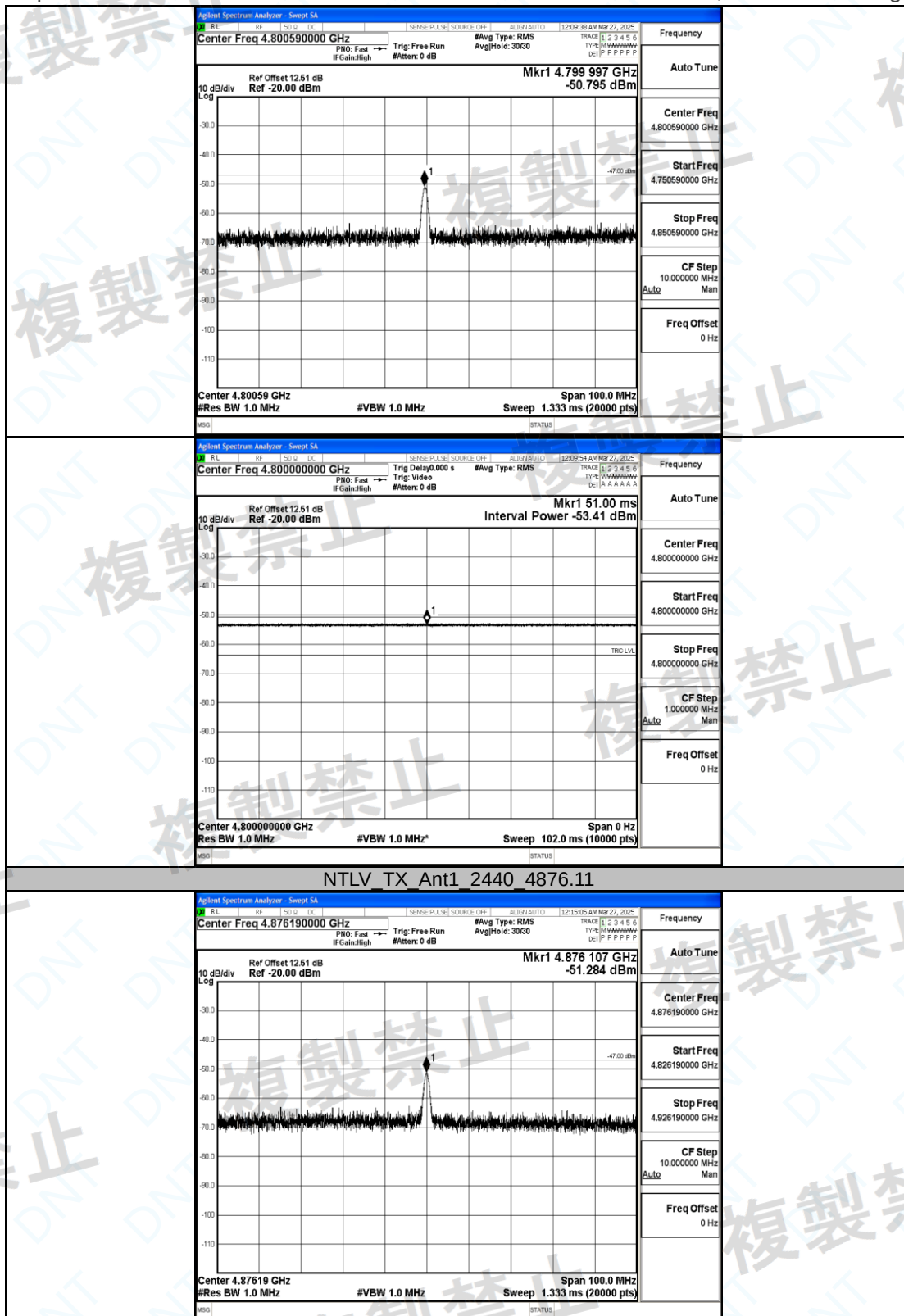


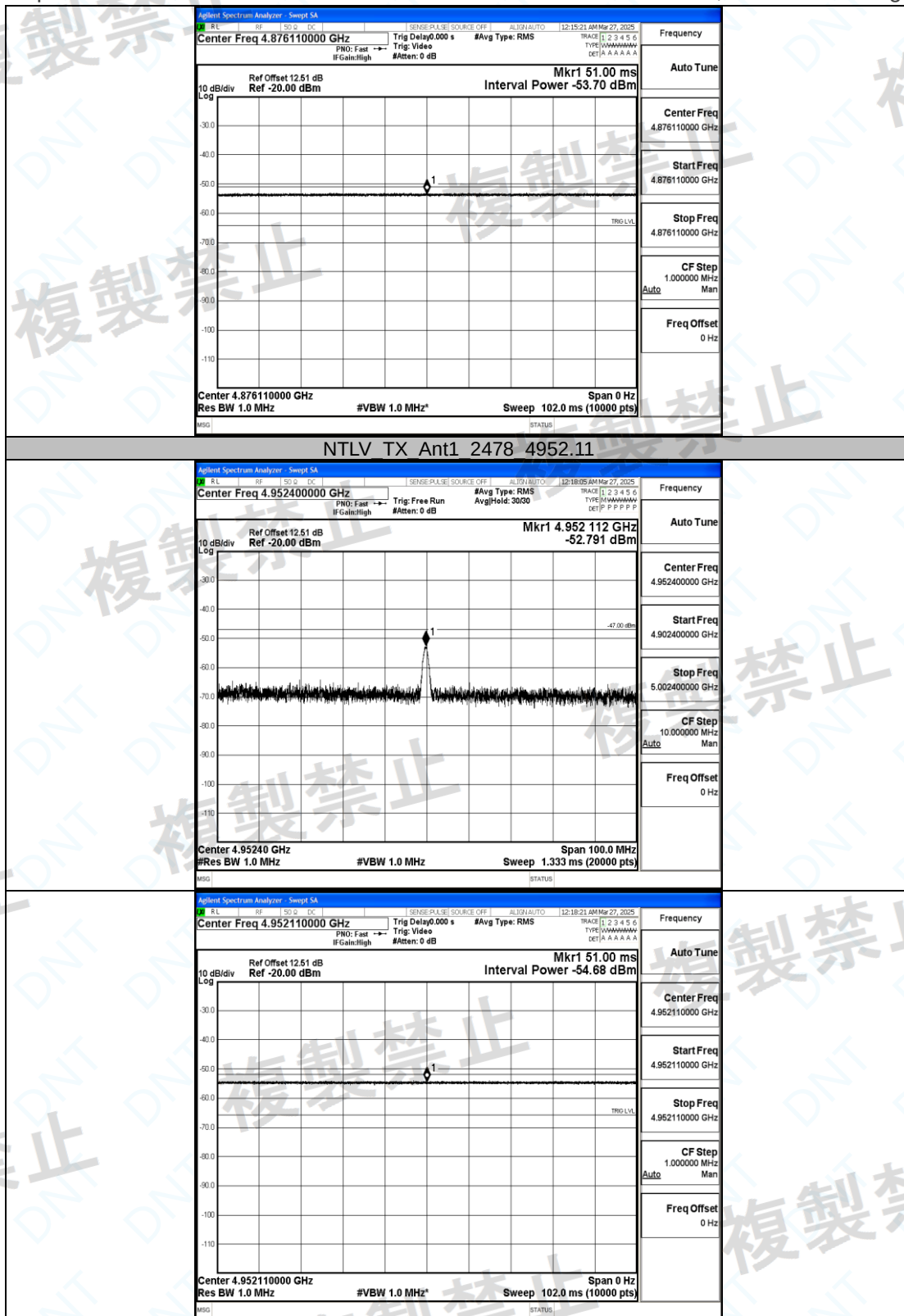


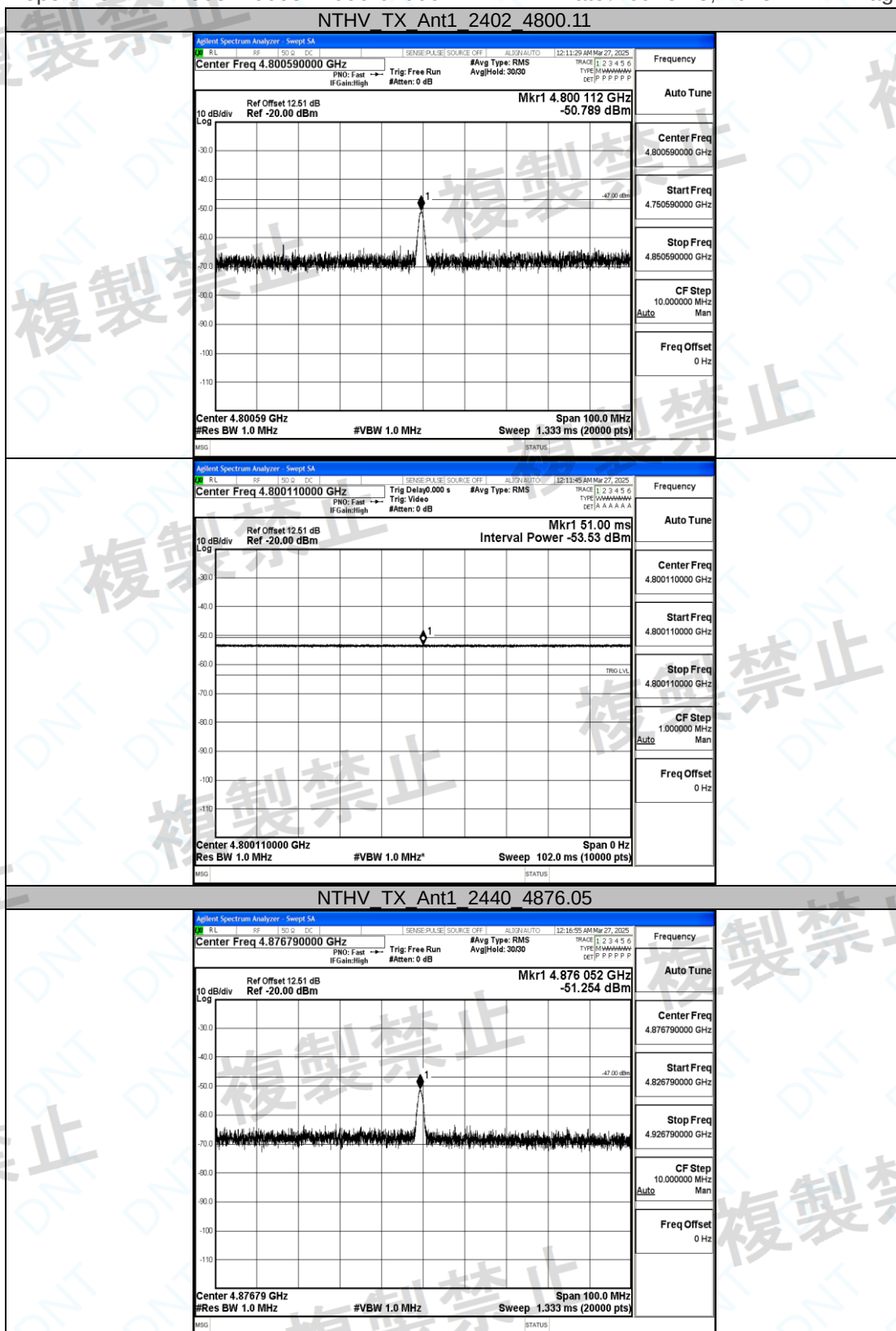
Test Graphs 2

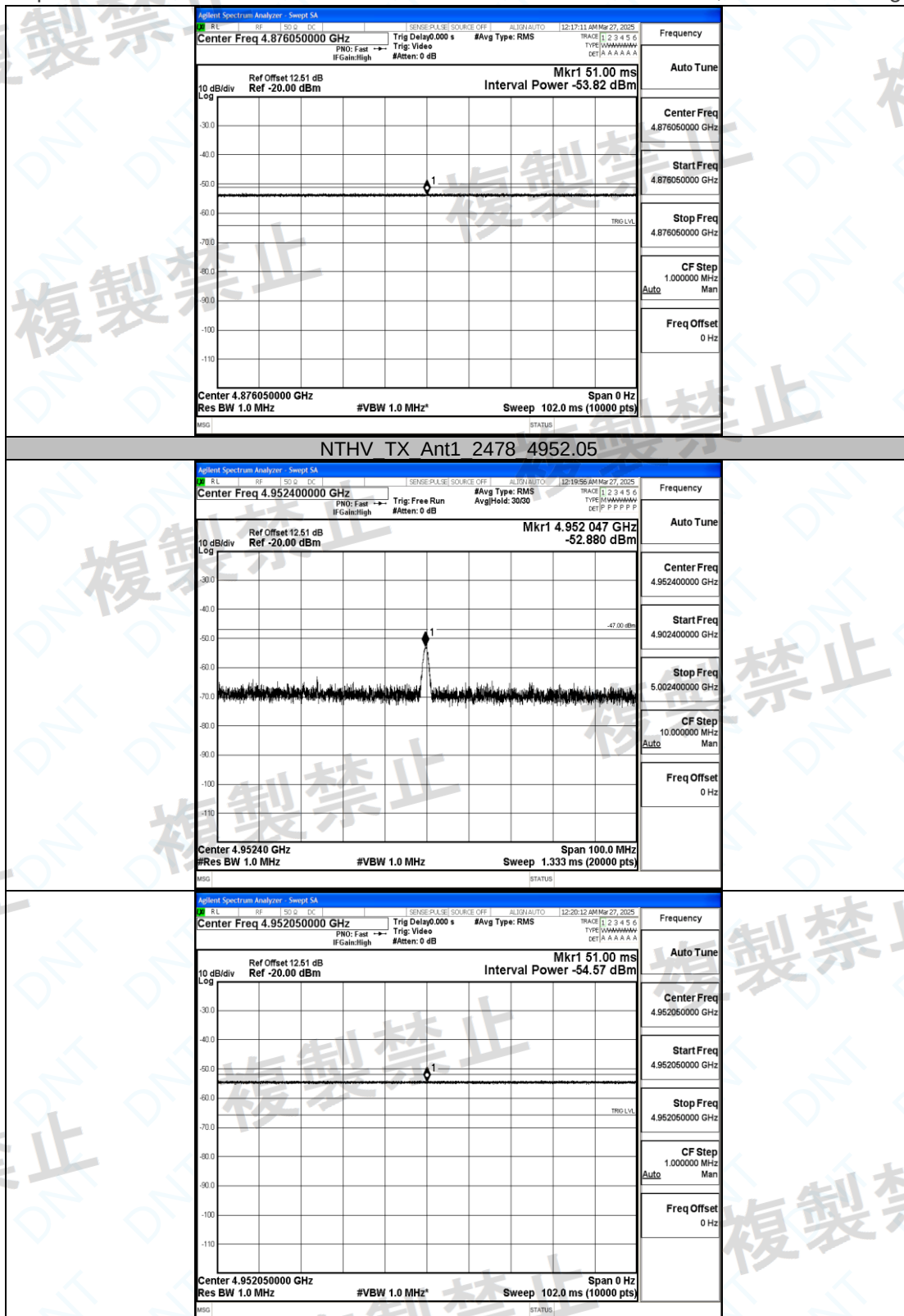












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