



Test Report

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Application No.: DNT2508120255R8713-11929
Applicant: Beijing Wango International Trade Co., Ltd.
Address of Applicant: Room 0209, 2nd Floor, Block 7, No.1, Wuliqiao 2nd Street, Chaoyang District, Beijing, China
EUT Description: WAGA Champion
Model No.: WAHE01
Trade Mark: WAGAWAGA
Standards: Item 19 of Article 2 Paragraph 1
MIC Notice No.88 Appendix No.43
Date of Receipt: 2025/8/12
Date of Test: 2025/8/13 to 2025/10/12
Date of Issue: 2025/10/22
Test Result: PASS *

Prepared By: Wayne Lin (Testing Engineer)

Reviewed By: Pencils Chen (Project Engineer)

Approved By: Yense 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.

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

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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Oct 22, 2025	Valid	Original Report



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	$\leq \pm 50$ ppm	PASS
Occupied Bandwidth	MIC Notice No.88 Appendix No.43	Others: ≤ 26 MHz	PASS
Spread Bandwidth	MIC Notice No.88 Appendix No.43	≥ 0.5 MHz	PASS
Antenna Power and Tolerance	MIC Notice No.88 Appendix No.43 MIC Notice No.88 Appendix No.43	Others: ≤ 10 mW Tolerance: $+20\%$	PASS
Spurious Emission of Tx	MIC Notice No.88 Appendix No.43	< 2387 MHz $\leq 2.5\mu$ W/MHz 2387 ~ 2400MHz $\leq 25\mu$ W/MHz 2483.5 ~ 2496.5MHz $\leq 25\mu$ W/MHz >2496.5MHz $\leq 2.5\mu$ 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: ≤ 4 nW (2) Above 1 GHz: ≤ 20 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:	Beijing Wango International Trade Co., Ltd.		
Address of Manufacture:	Room 0209, 2nd Floor, Block 7, No.1, Wuliqiao 2nd Street, Chaoyang District, Beijing, China		
Product Name:	WAGA Champion		
Model No.:	WAHE01		
Additional Model:	/		
Trade Mark:	WAGAWAGA		
Hardware Version:	V1.0		
Software Version:	V1.0		
Operating Frequency:	2402MHz to 2480MHz		
Bluetooth version:	V5.3		
Declared Antenna Power:	1mW		
Type of Modulation:	GFSK		
Number of Channels:	40 Channels		
Antenna Type:	☐ External, ☒ Integrated		
Antenna Gain*:	☒ Provided by client		
	-0.37dBi (ANT1 Left earphone),-0.61dBi (ANT2 Right earphone)		
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 rechargeable lithium-ion 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.			



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	39	2480MHz

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	FCC_assist_1.0.2.2		
Frequency(MHz)	2402	2440	2480
BLE 1M Setting	10	10	10
BLE 2M Setting	10	10	10

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.

- ☐ (a) Calibration conducted by the National Institute of Information and Communications Technology (NICT) or 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.



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/MHz 2387 to 2400 MHz: 25 μ W/MHz 2483.5 through 2496.5 MHz: 25 μ W/MHz > 2496.5 MHz: 2.5 μ W/MHz
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 3.7V $\pm 10\%$.			
	DC Input		input voltage to the circuit	Deviation
	High Voltage	4.07V	3.04V	3%
	Normal Voltage	3.7V	3.3V	0.0%
Test Frequencies:	Low Voltage	3.3V	3.20V	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 FPC antenna .The best case gain of the antenna is-0.37dBi (ANT1 Left earphone),-0.61dBi (ANT2 Right earphone).

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

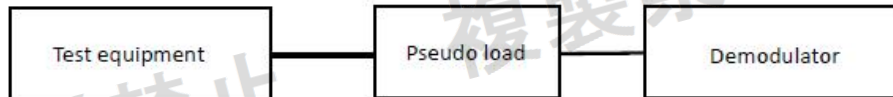


3.4 Interference prevention function

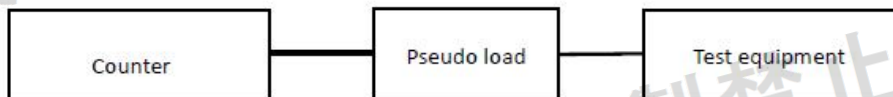
1) Measurement system diagram

(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.

A4C7F4AC33F8

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

PASS



3.5 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.

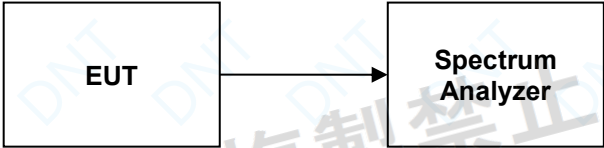
Test Result

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





3.6 Frequency Error

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



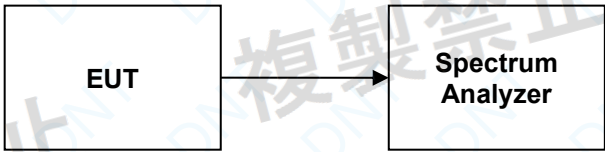
3.7 Occupied Bandwidth (99%)

Limit:	Others: 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



3.8 Spread Bandwidth(90%)

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



3.9 Antenna Power

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



3.10 Spurious Emissions of Tx

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



3.11 Spurious Emissions of Rx

Test Requirement:	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 – 1GHz ,1GHz –12.5 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

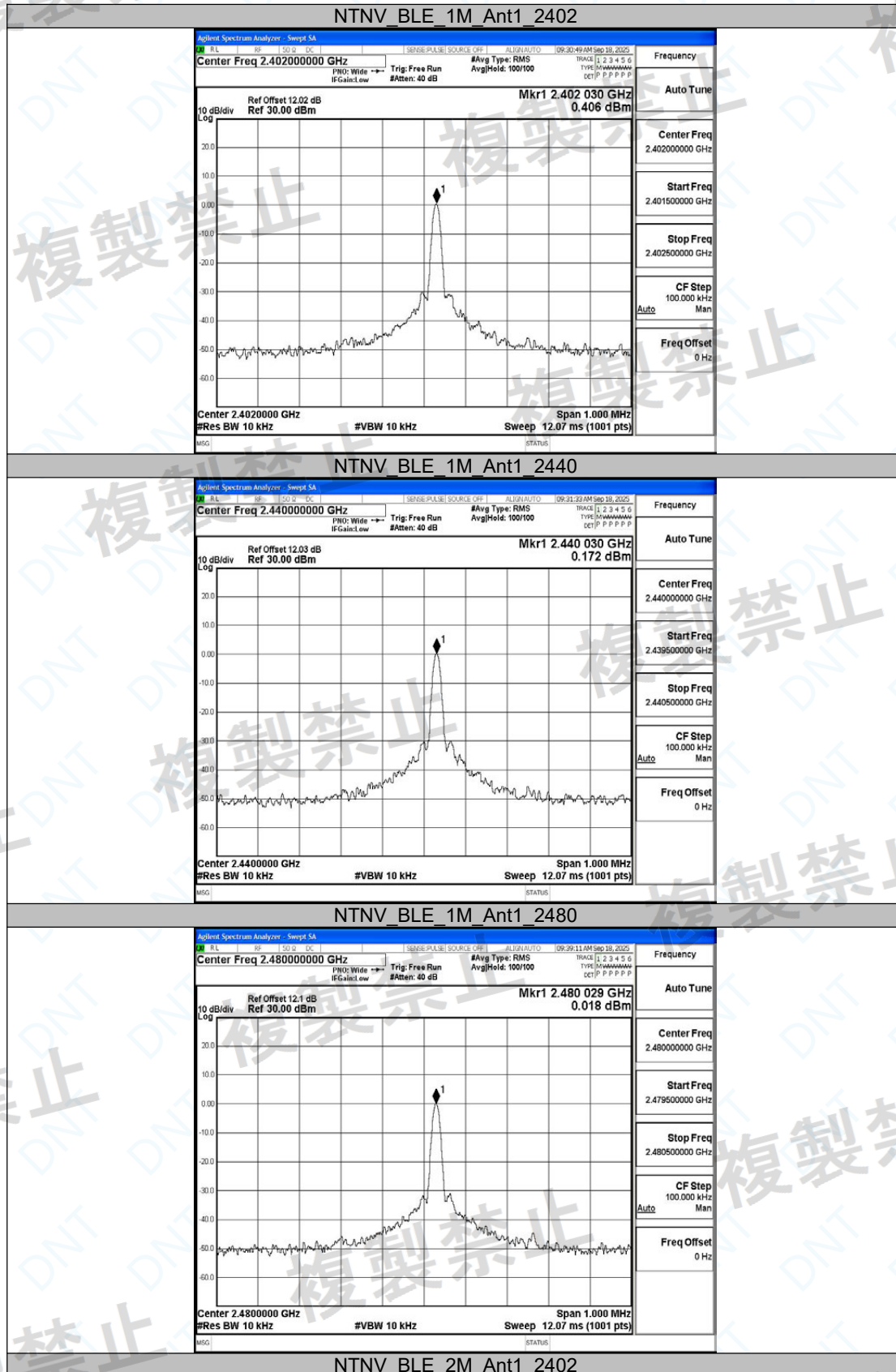
TestCondition	TestMode	Antenna	Freq(MHz)	Result[ppm]	Limit[ppm]	Verdict
NTNV	BLE_1M	Ant1	2402	12.48959	±50	PASS
			2440	12.29508	±50	PASS
			2480	11.69355	±50	PASS
	BLE_2M	Ant1	2402	11.65695	±50	PASS
			2440	9.83607	±50	PASS
			2480	10.48387	±50	PASS
NTLV	BLE_1M	Ant1	2402	12.48959	±50	PASS
			2440	12.70492	±50	PASS
			2480	12.09677	±50	PASS
	BLE_2M	Ant1	2402	11.65695	±50	PASS
			2440	9.83607	±50	PASS
			2480	10.48387	±50	PASS
NTHV	BLE_1M	Ant1	2402	12.48959	±50	PASS
			2440	12.29508	±50	PASS
			2480	11.69355	±50	PASS
	BLE_2M	Ant1	2402	11.65695	±50	PASS
			2440	9.83607	±50	PASS
			2480	10.08065	±50	PASS

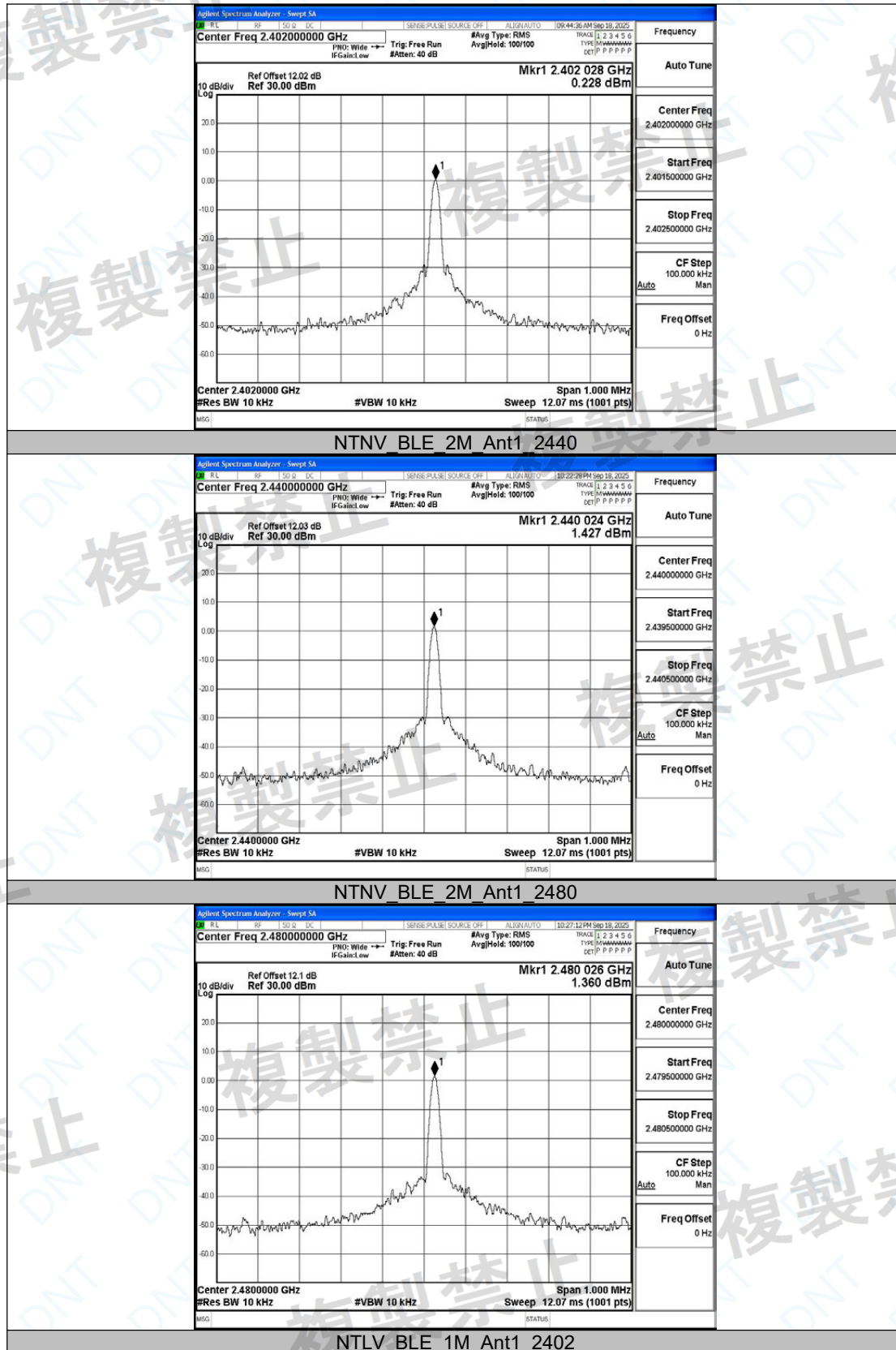
Note:

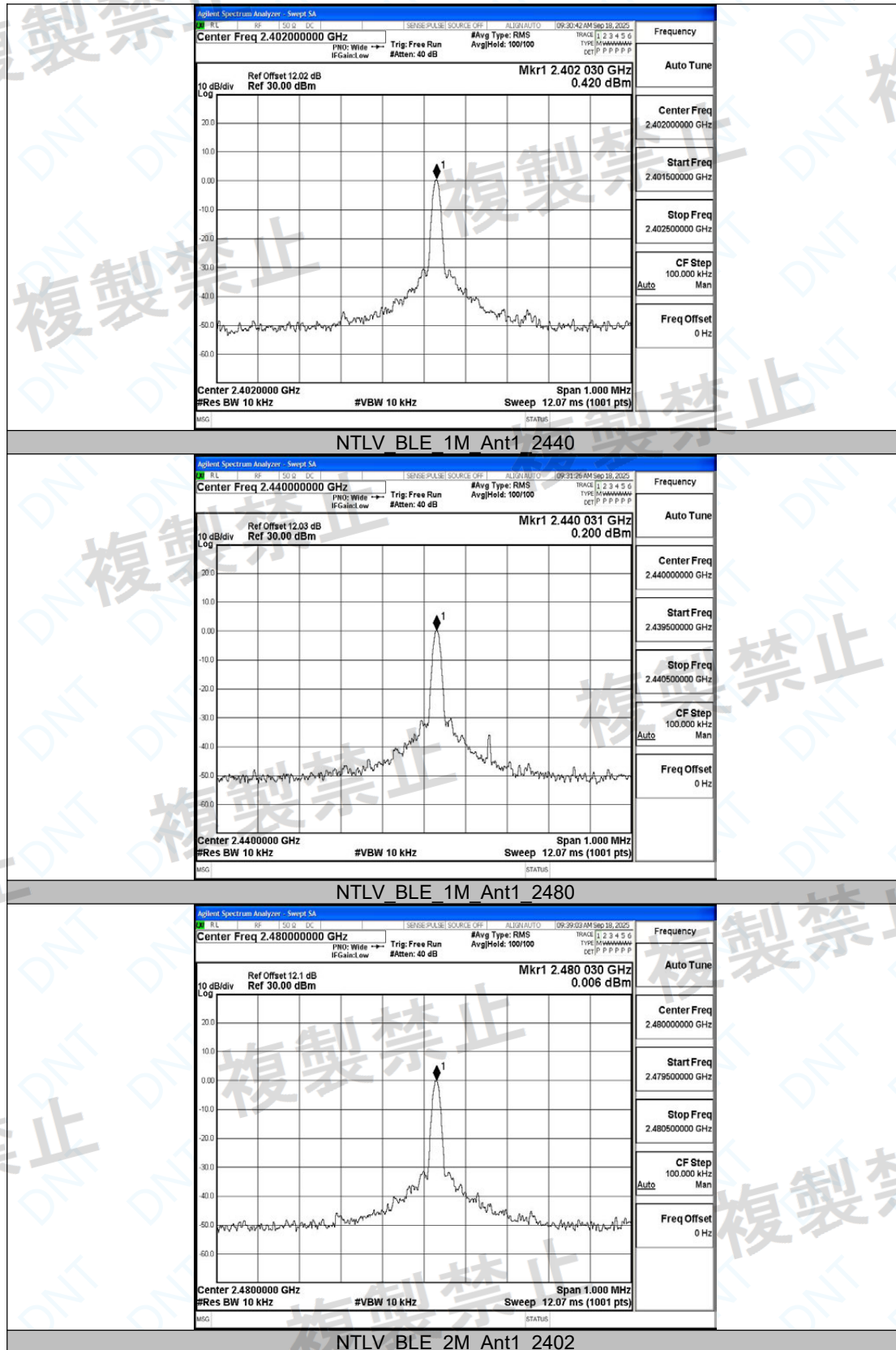
Both left and right earphone have tested, The right earphone is the worst, only the worse case was reported.

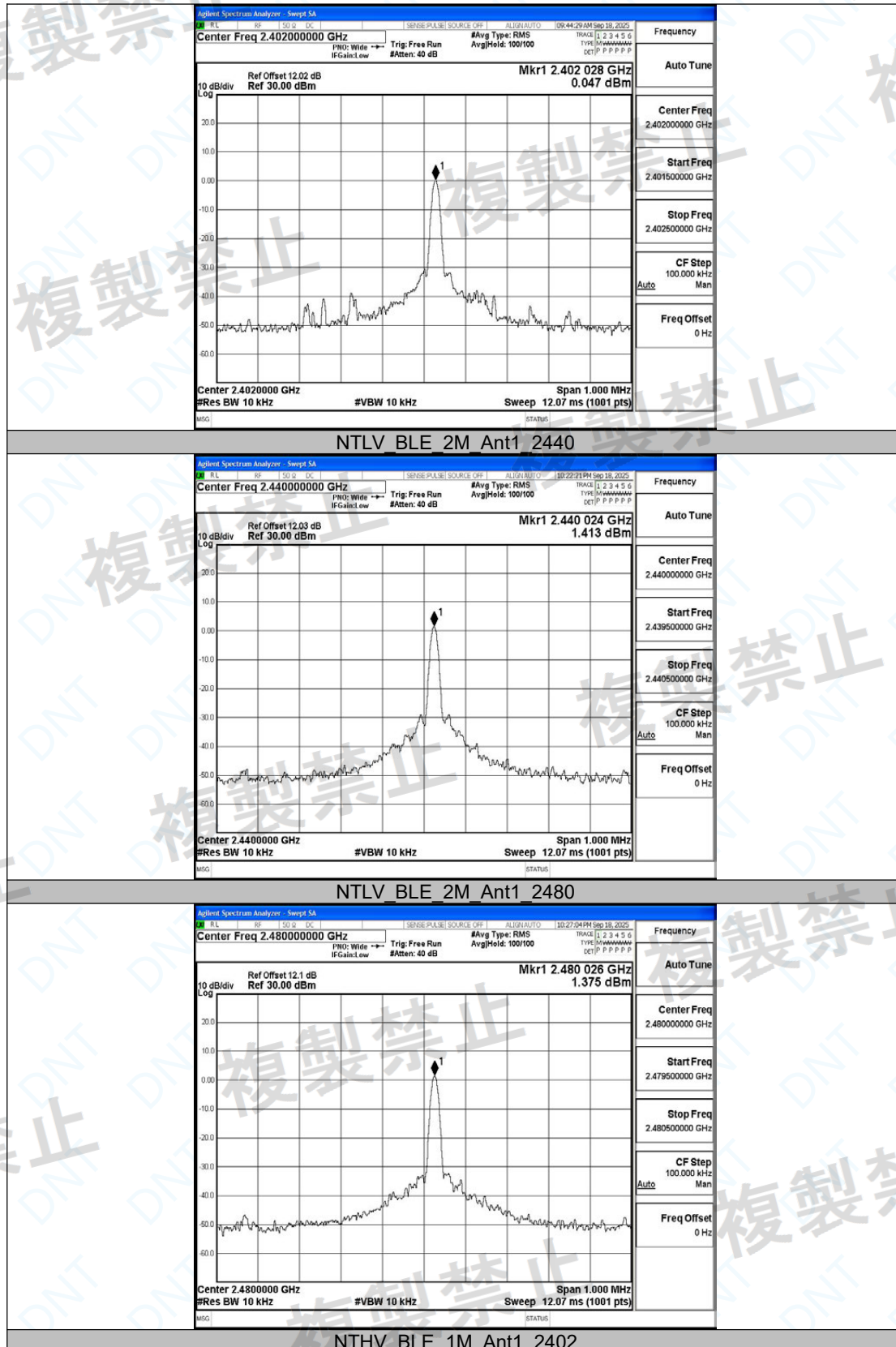


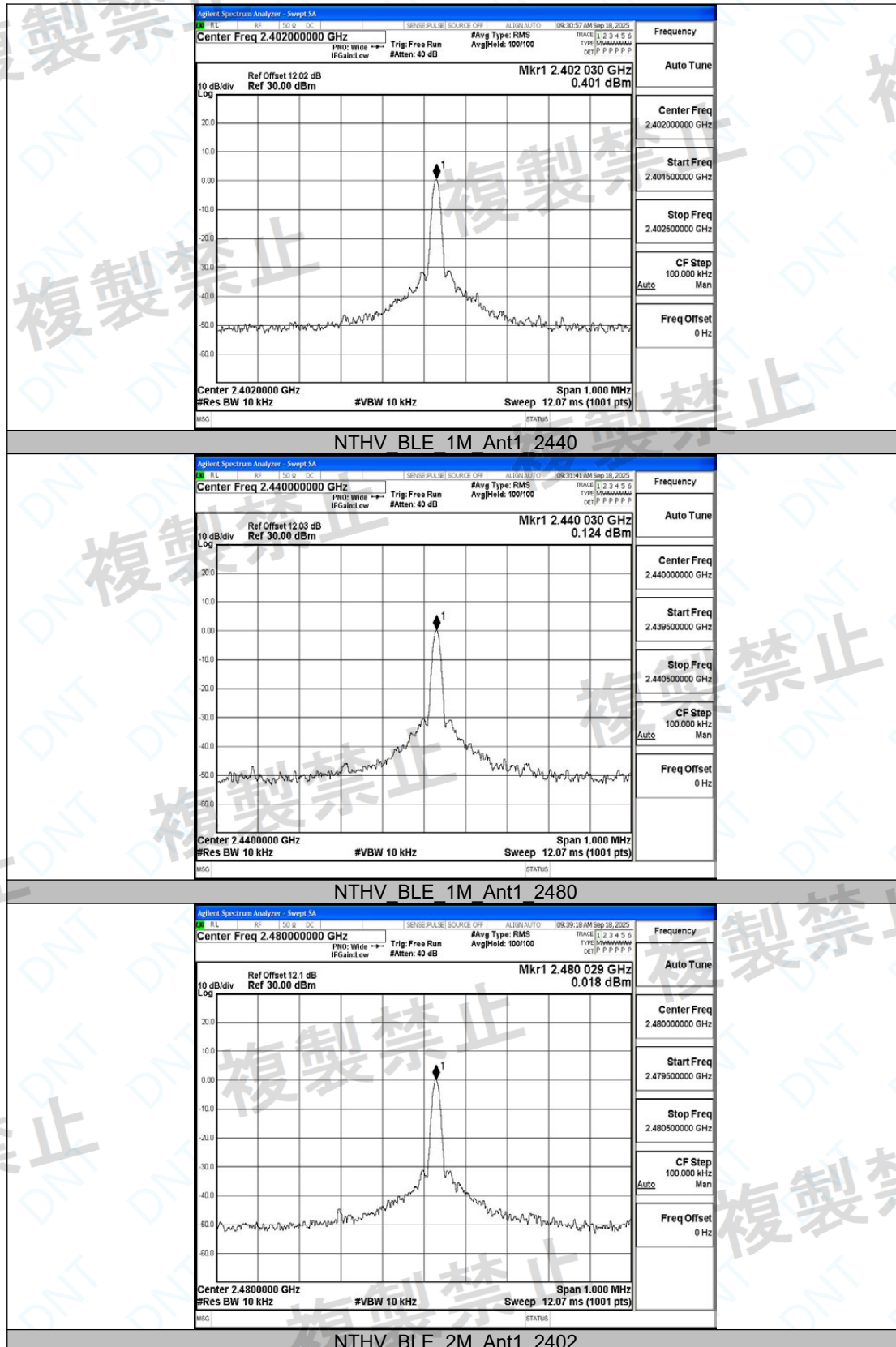
Test Graphs

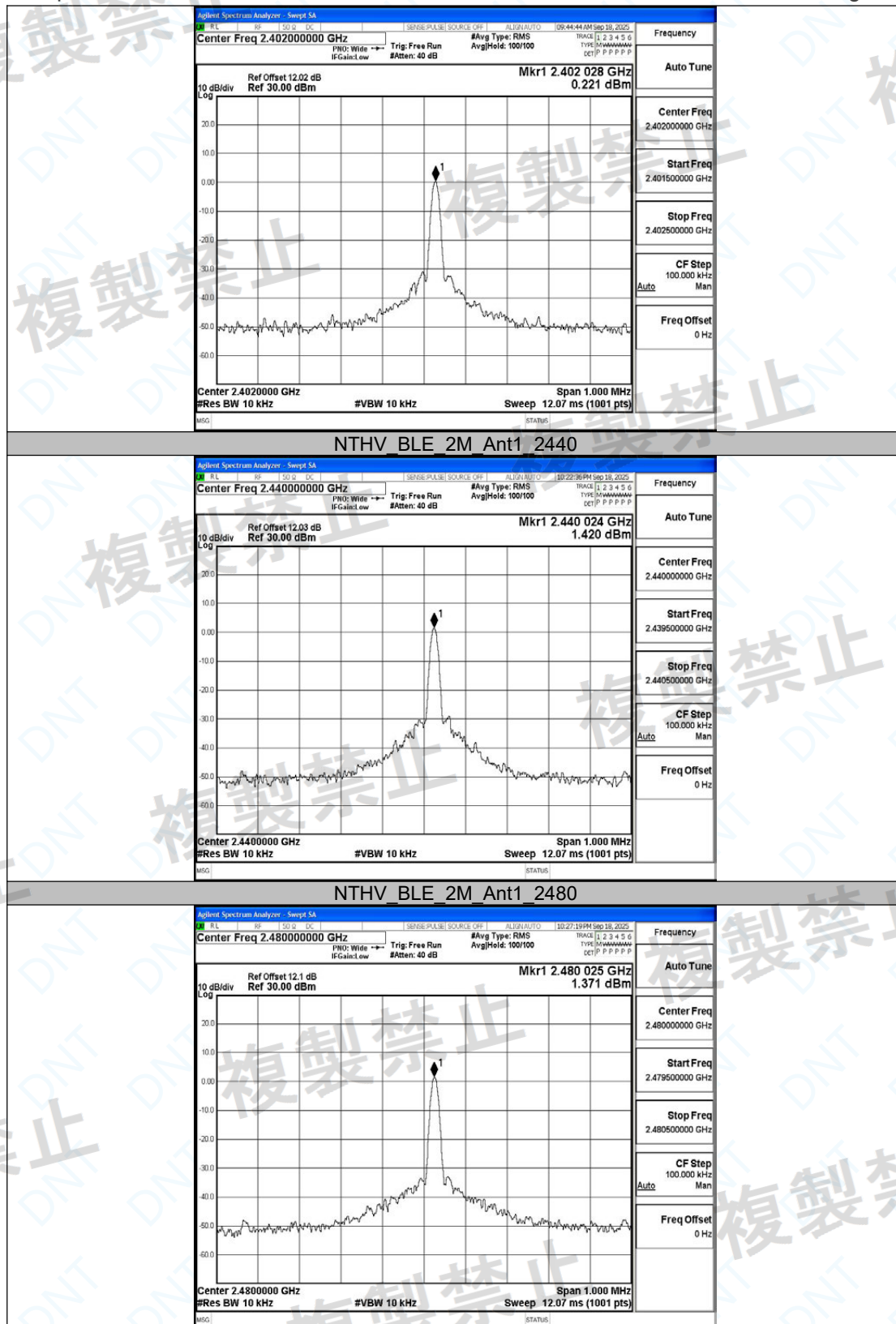












**Appendix B: Occupied Bandwidth****Test Result**

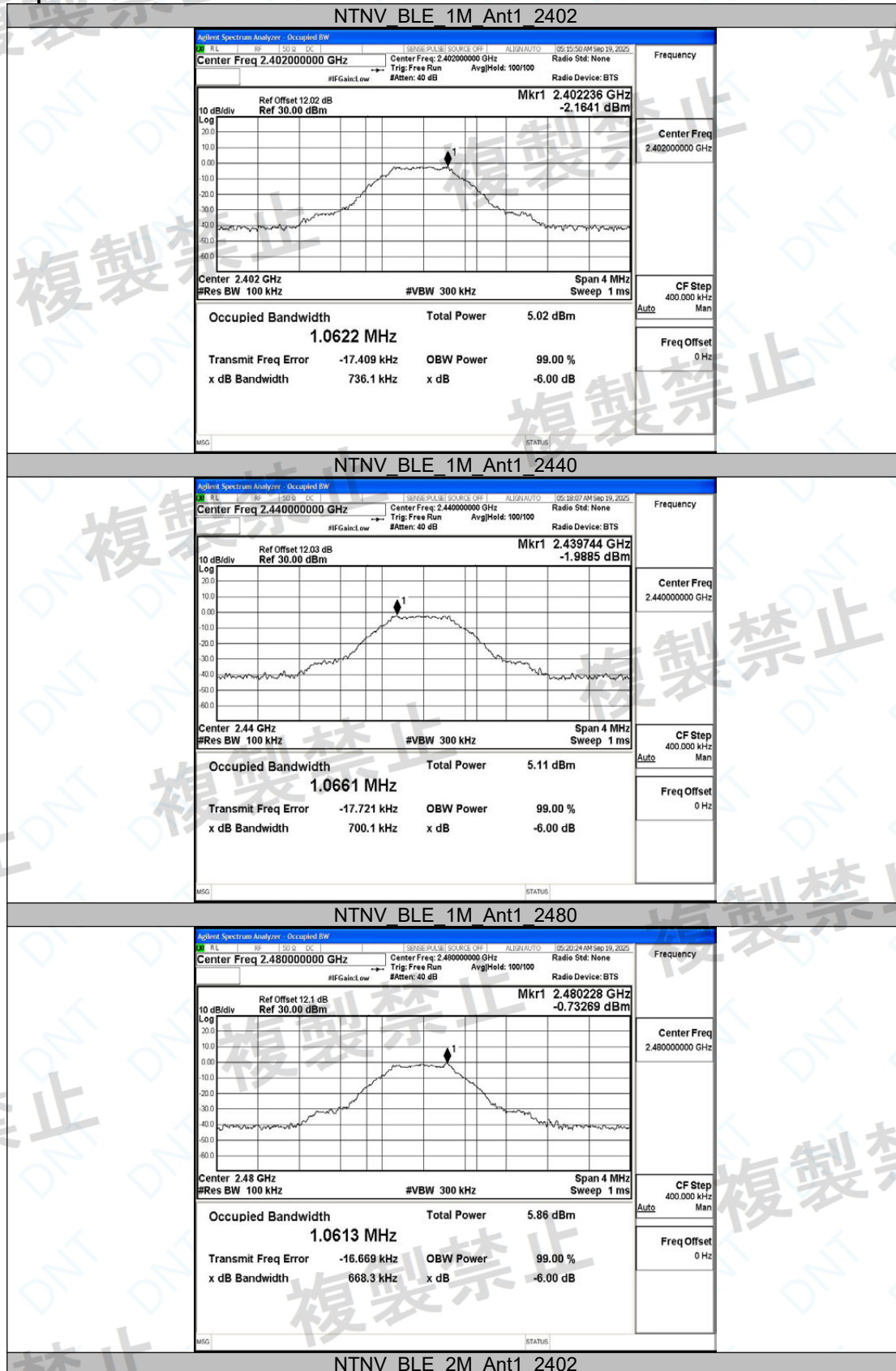
TestCondition	TestMode	Antenna	Freq(MHz)	Result [MHz]	Limit [MHz]	Verdict
NTNV	BLE_1M	Ant1	2402	1.062	≤26	PASS
			2440	1.066	≤26	PASS
			2480	1.061	≤26	PASS
	BLE_2M	Ant1	2402	2.079	≤26	PASS
			2440	2.070	≤26	PASS
			2480	2.058	≤26	PASS
NTLV	BLE_1M	Ant1	2402	1.066	≤26	PASS
			2440	1.070	≤26	PASS
			2480	1.068	≤26	PASS
	BLE_2M	Ant1	2402	2.063	≤26	PASS
			2440	2.060	≤26	PASS
			2480	2.053	≤26	PASS
NTHV	BLE_1M	Ant1	2402	1.068	≤26	PASS
			2440	1.066	≤26	PASS
			2480	1.059	≤26	PASS
	BLE_2M	Ant1	2402	2.059	≤26	PASS
			2440	2.099	≤26	PASS
			2480	2.076	≤26	PASS

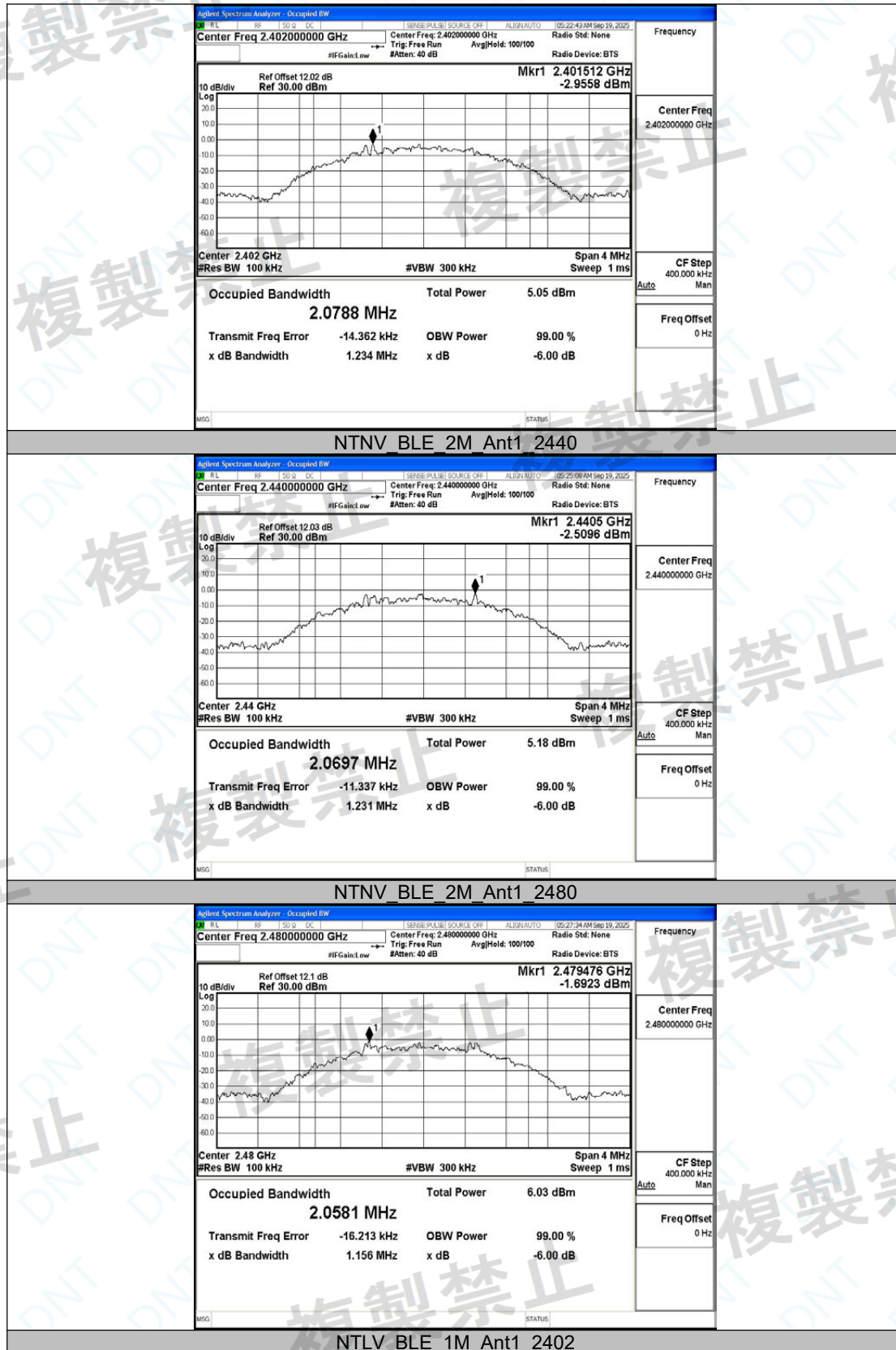
Note:

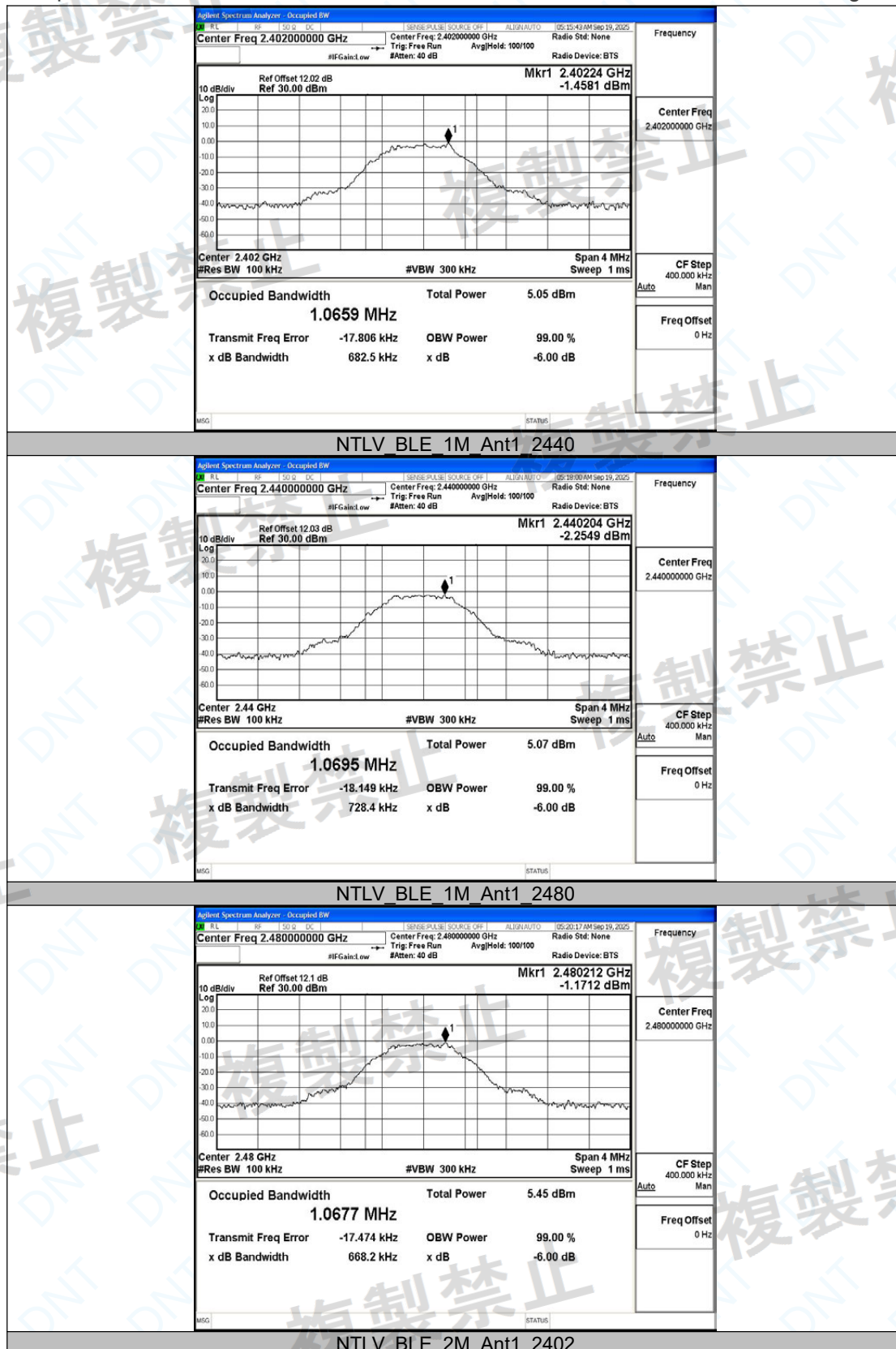
Both left and right earphone have tested, The right earphone is the worst, only the worse case was reported.

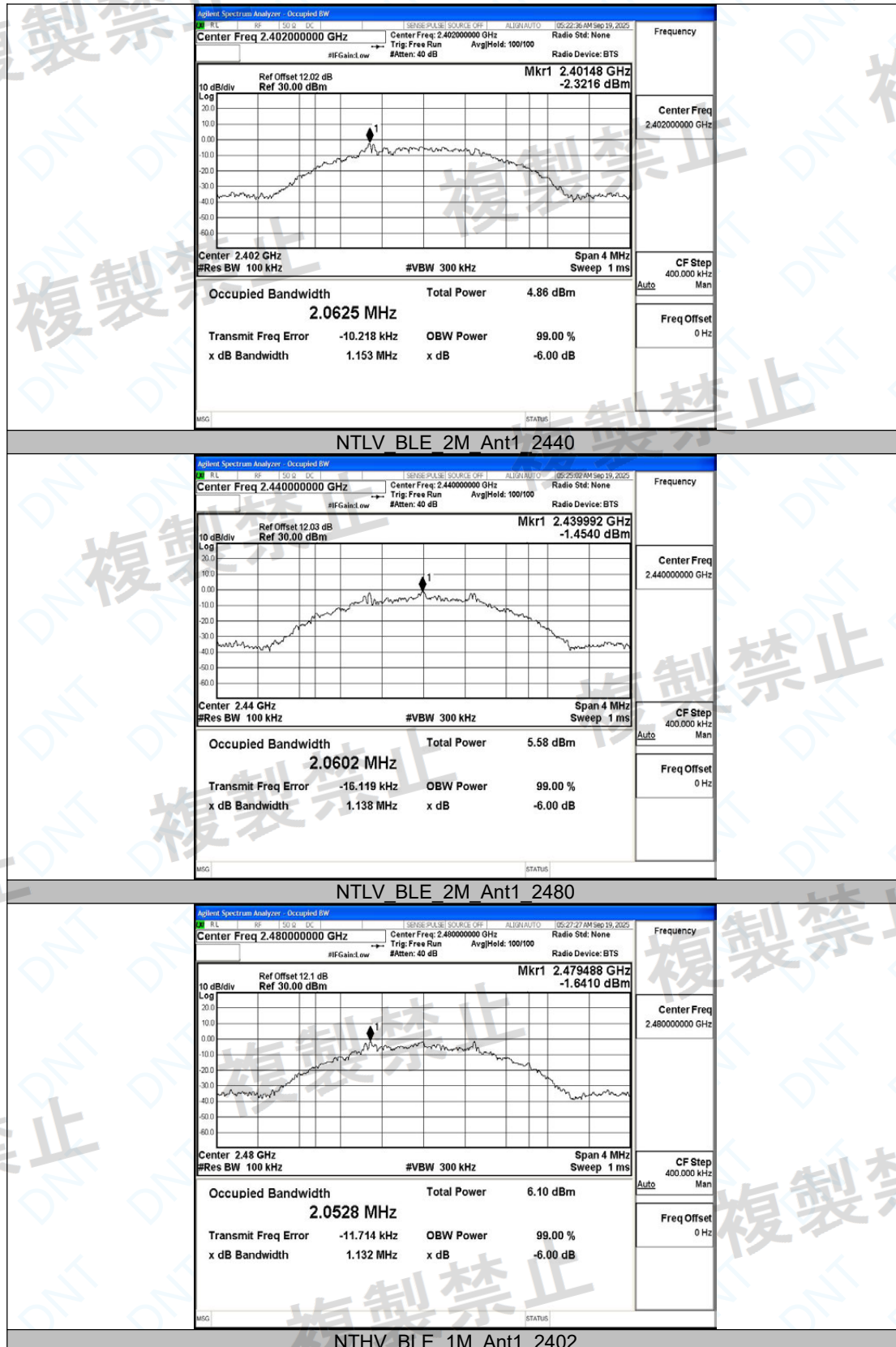


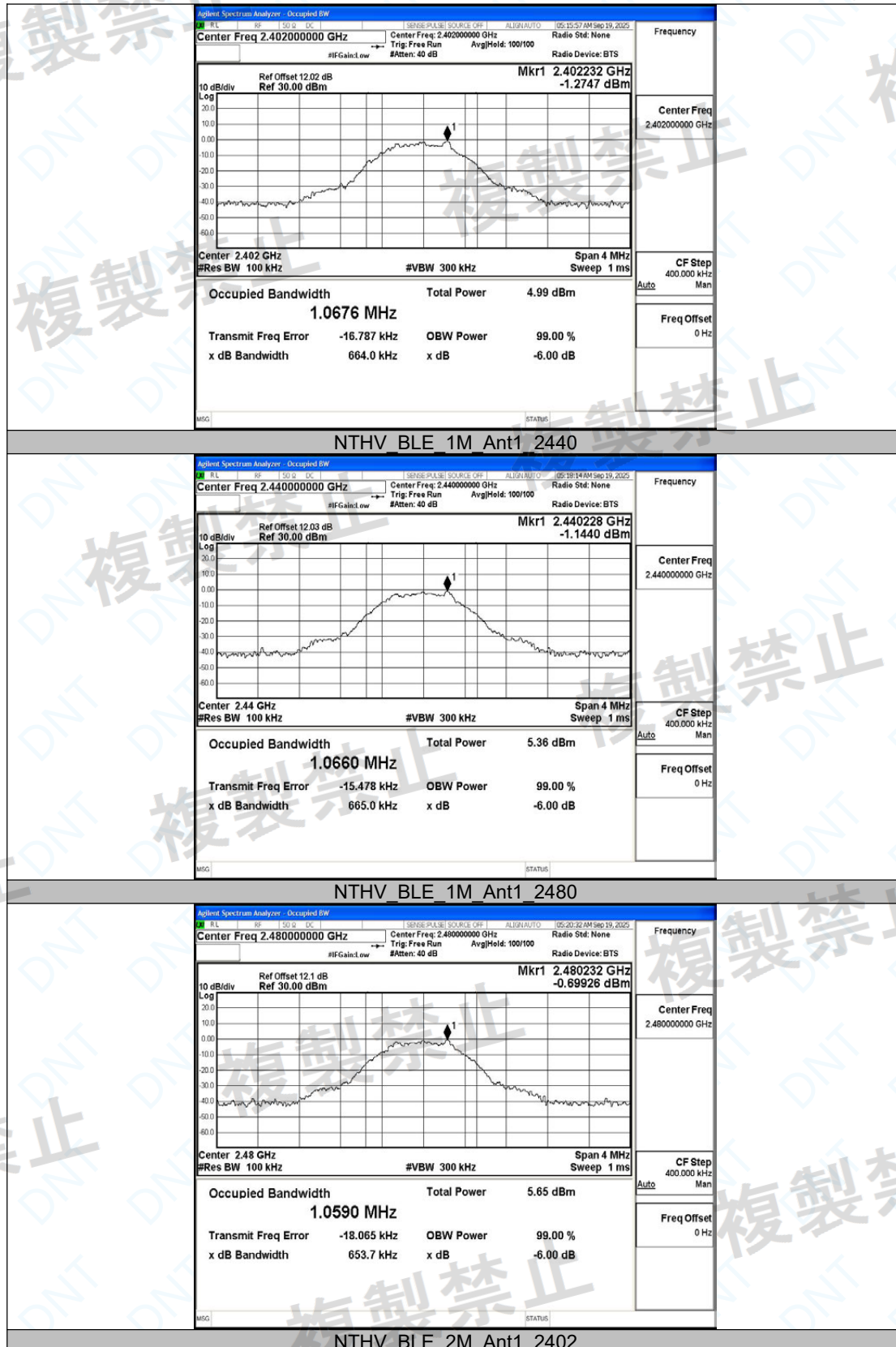
Test Graphs

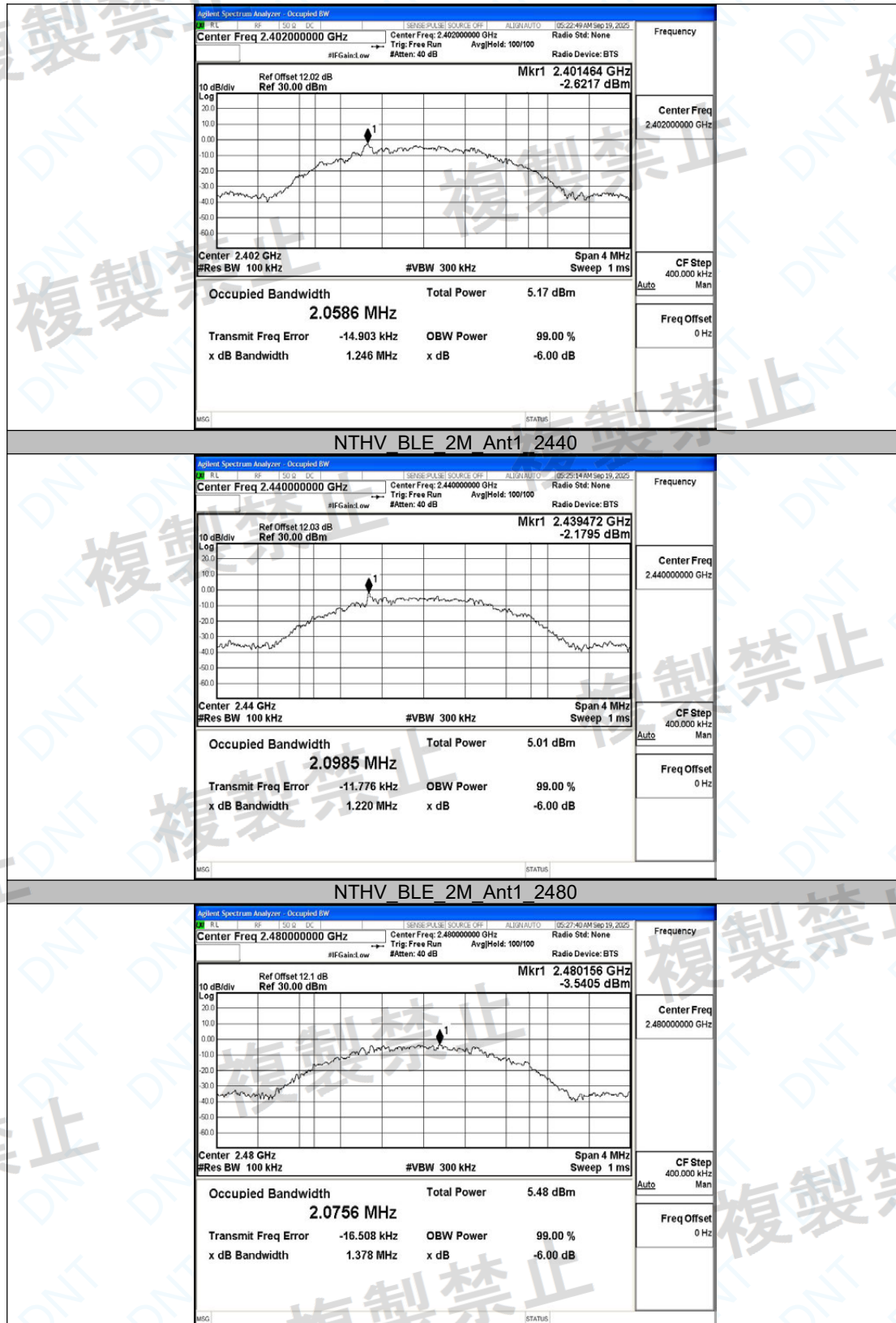












**Appendix C: Spread Bandwidth****Test Result**

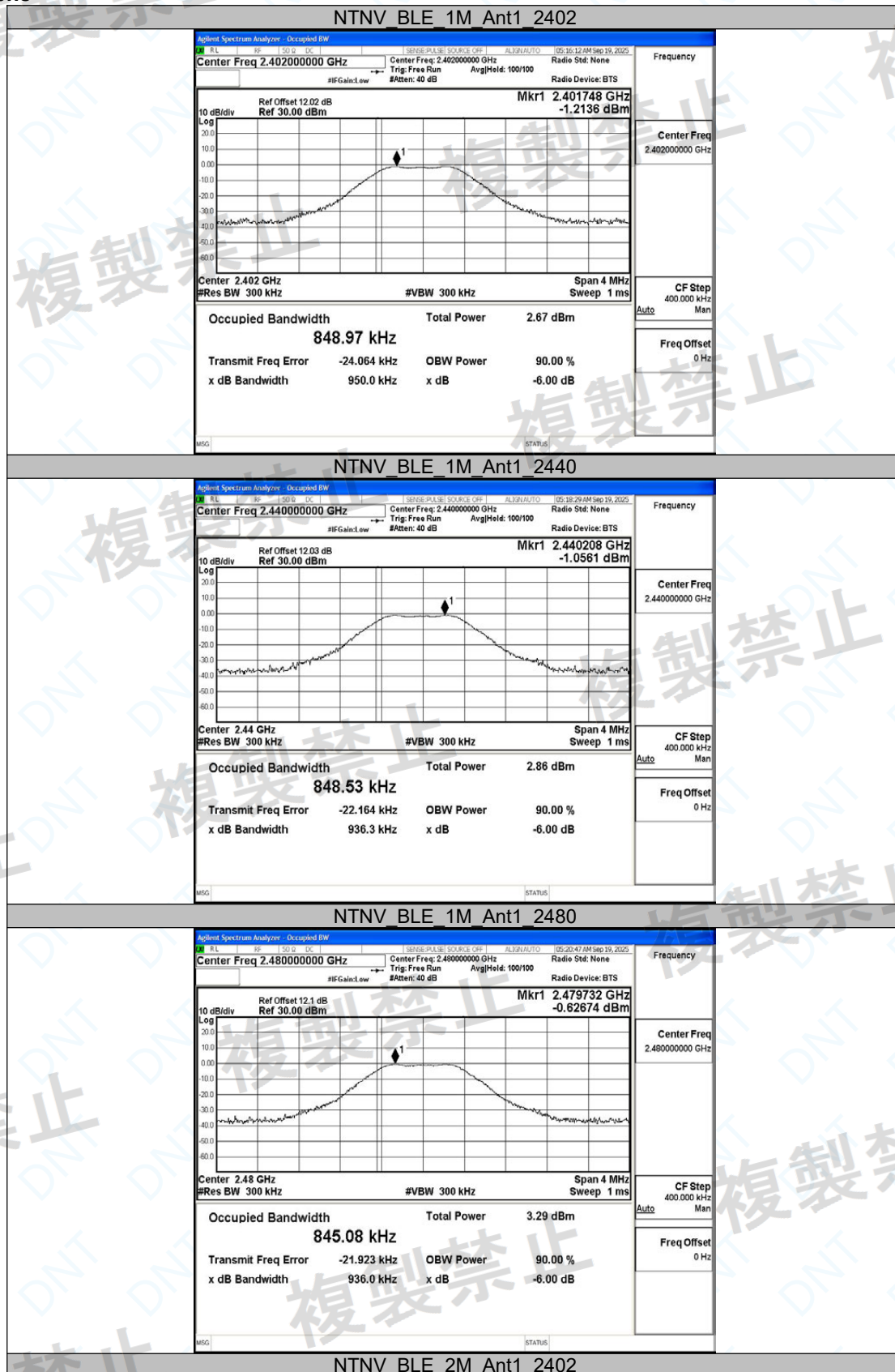
TestCondition	TestMode	Antenna	Freq(MHz)	Result [MHz]	Limit [MHz]	Verdict
NTNV	BLE_1M	Ant1	2402	0.849	≥0.5	PASS
			2440	0.849	≥0.5	PASS
			2480	0.845	≥0.5	PASS
	BLE_2M	Ant1	2402	1.374	≥0.5	PASS
			2440	1.377	≥0.5	PASS
			2480	1.374	≥0.5	PASS
NTLV	BLE_1M	Ant1	2402	0.849	≥0.5	PASS
			2440	0.848	≥0.5	PASS
			2480	0.845	≥0.5	PASS
	BLE_2M	Ant1	2402	1.375	≥0.5	PASS
			2440	1.374	≥0.5	PASS
			2480	1.371	≥0.5	PASS
NTHV	BLE_1M	Ant1	2402	0.847	≥0.5	PASS
			2440	0.847	≥0.5	PASS
			2480	0.843	≥0.5	PASS
	BLE_2M	Ant1	2402	1.375	≥0.5	PASS
			2440	1.378	≥0.5	PASS
			2480	1.375	≥0.5	PASS

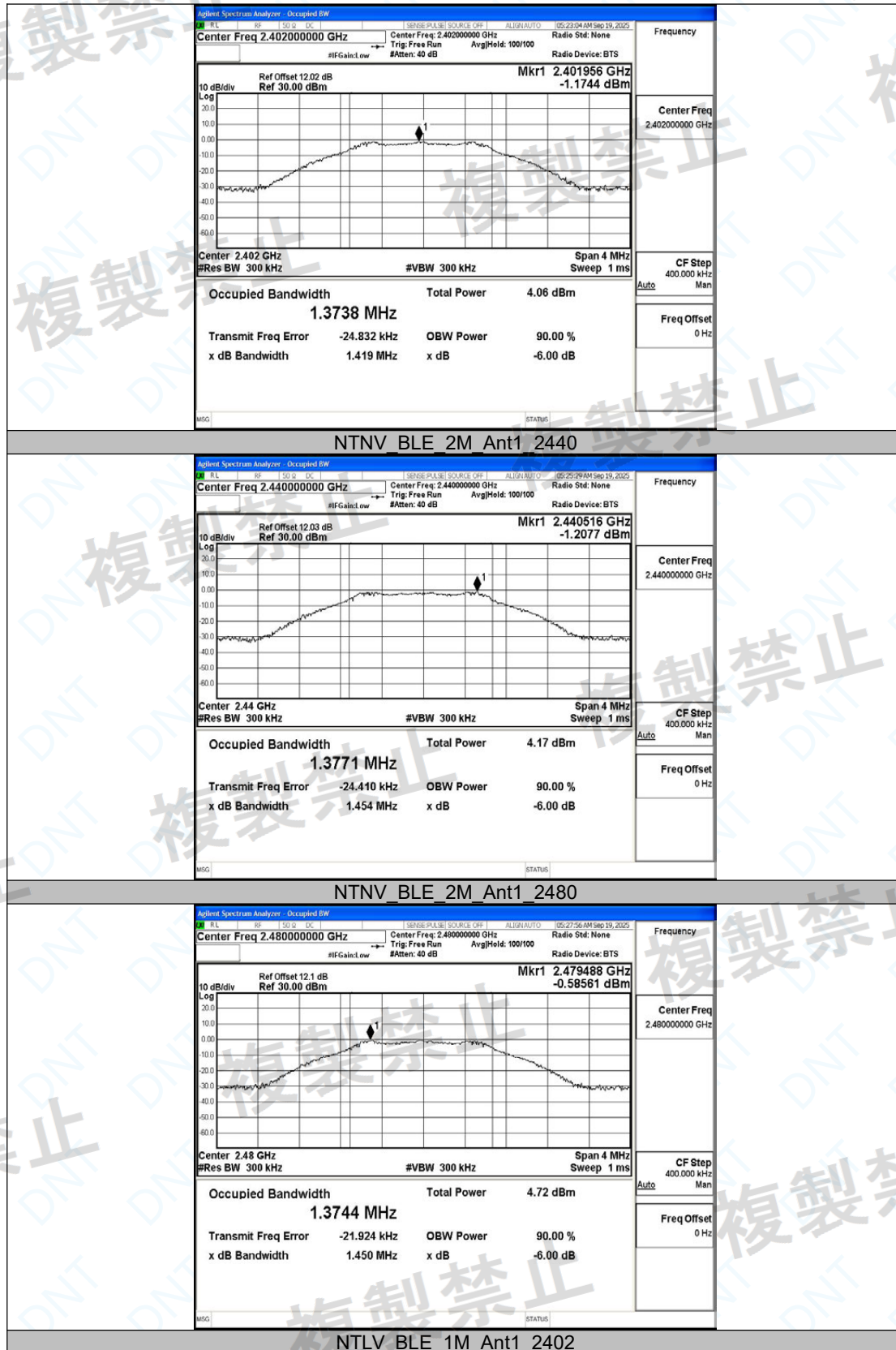
Note:

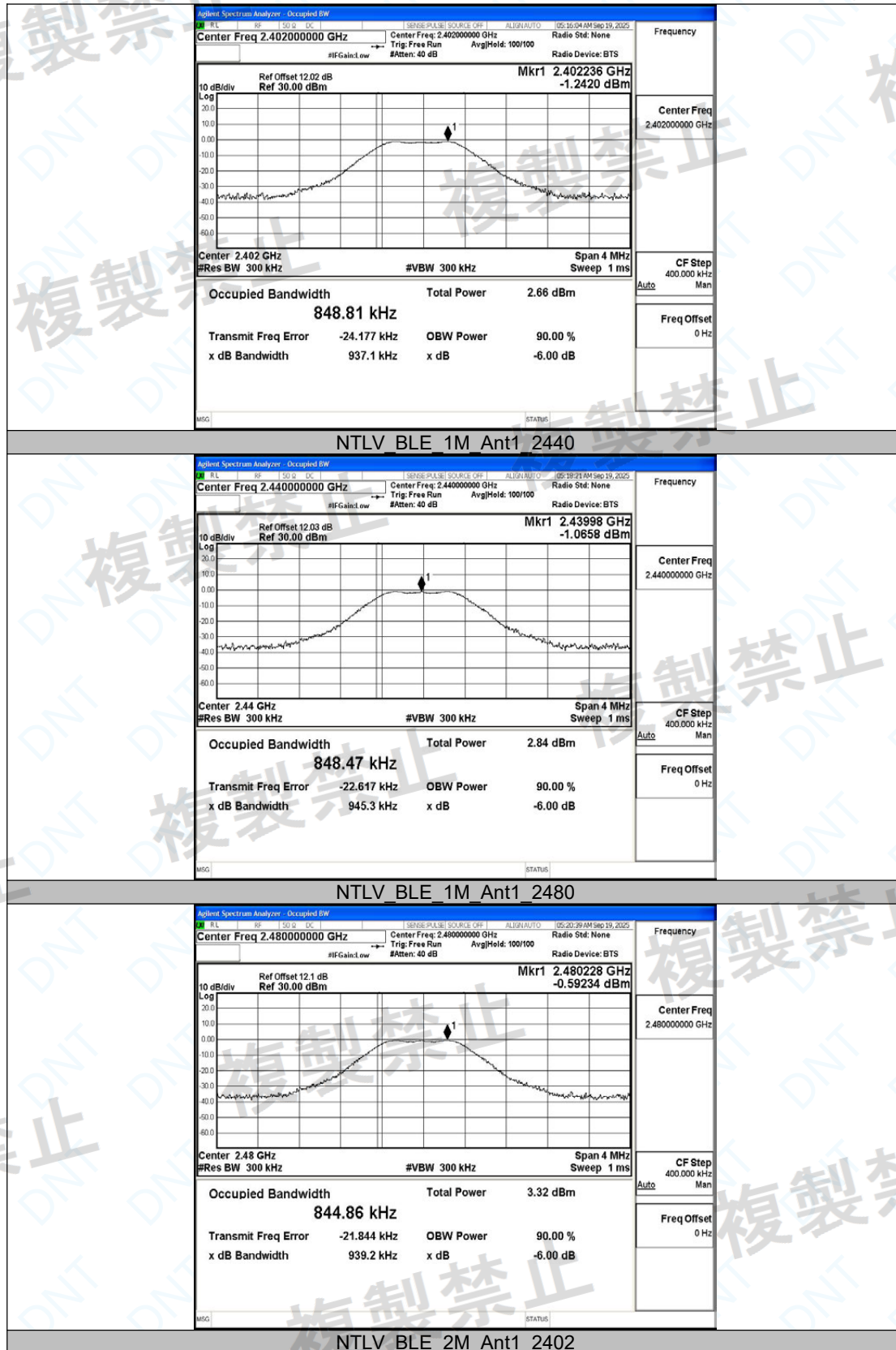
Both left and right earphone have tested, The right earphone is the worst, only the worse case was reported.

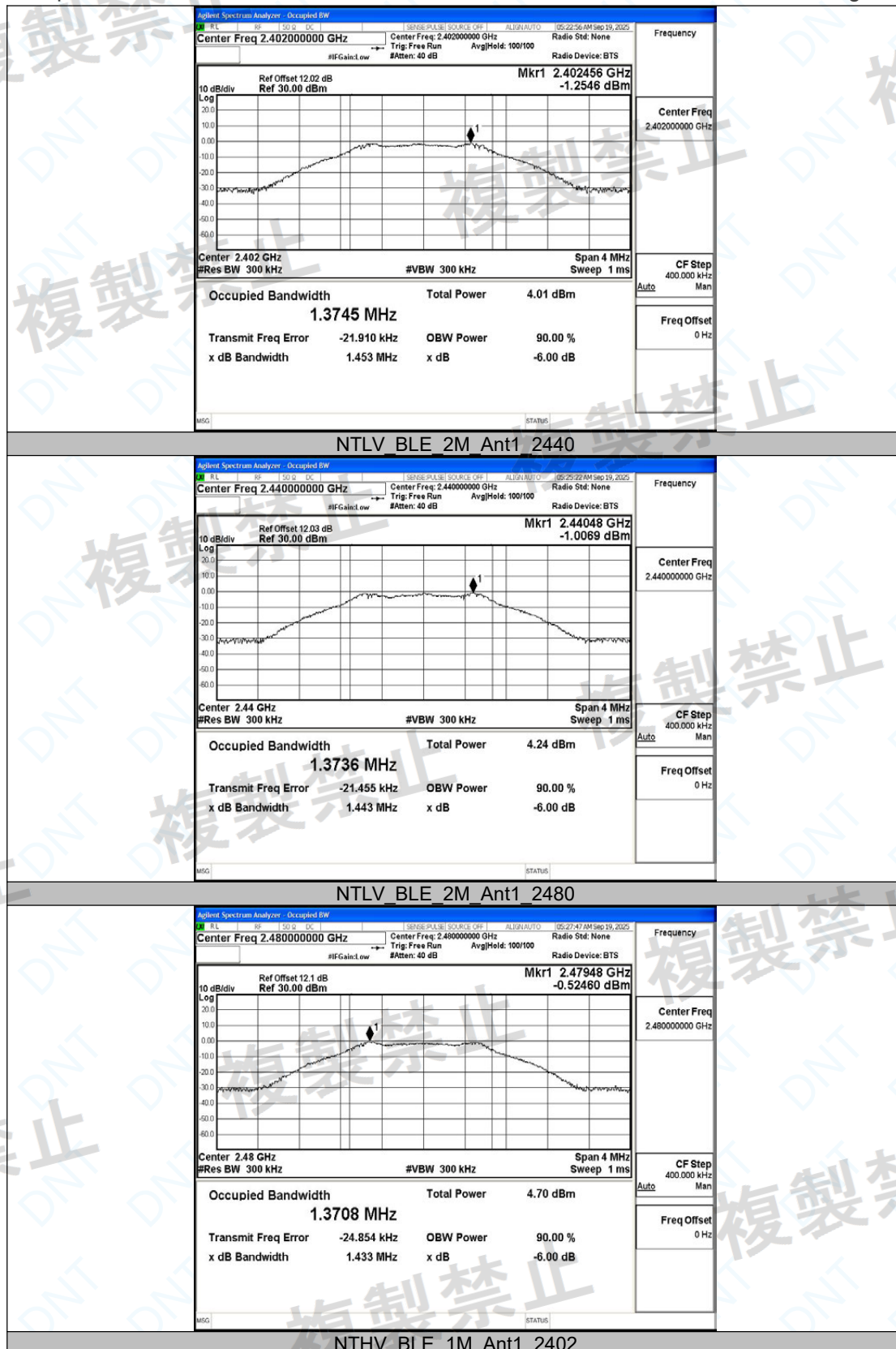


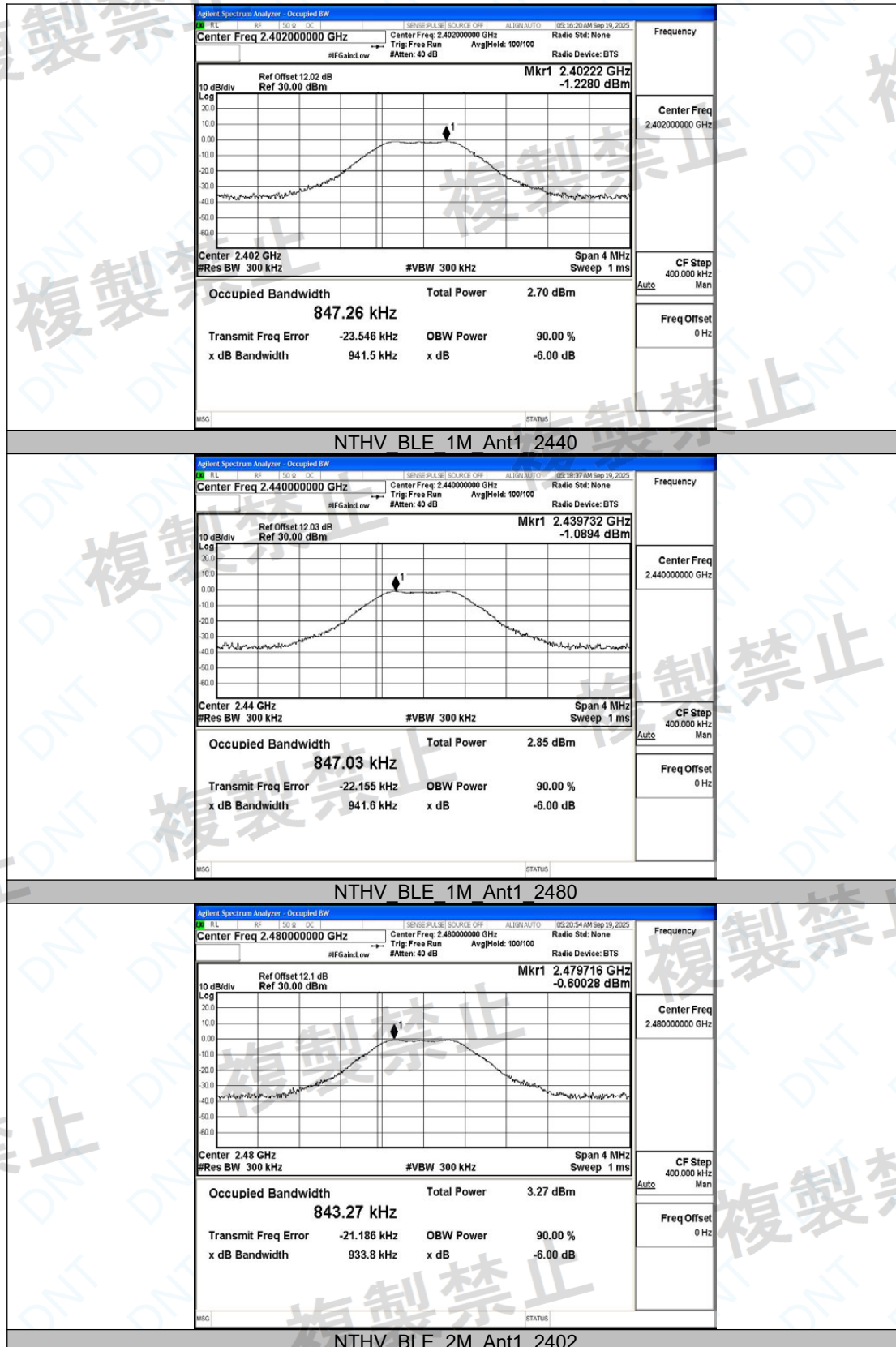
Test Graphs

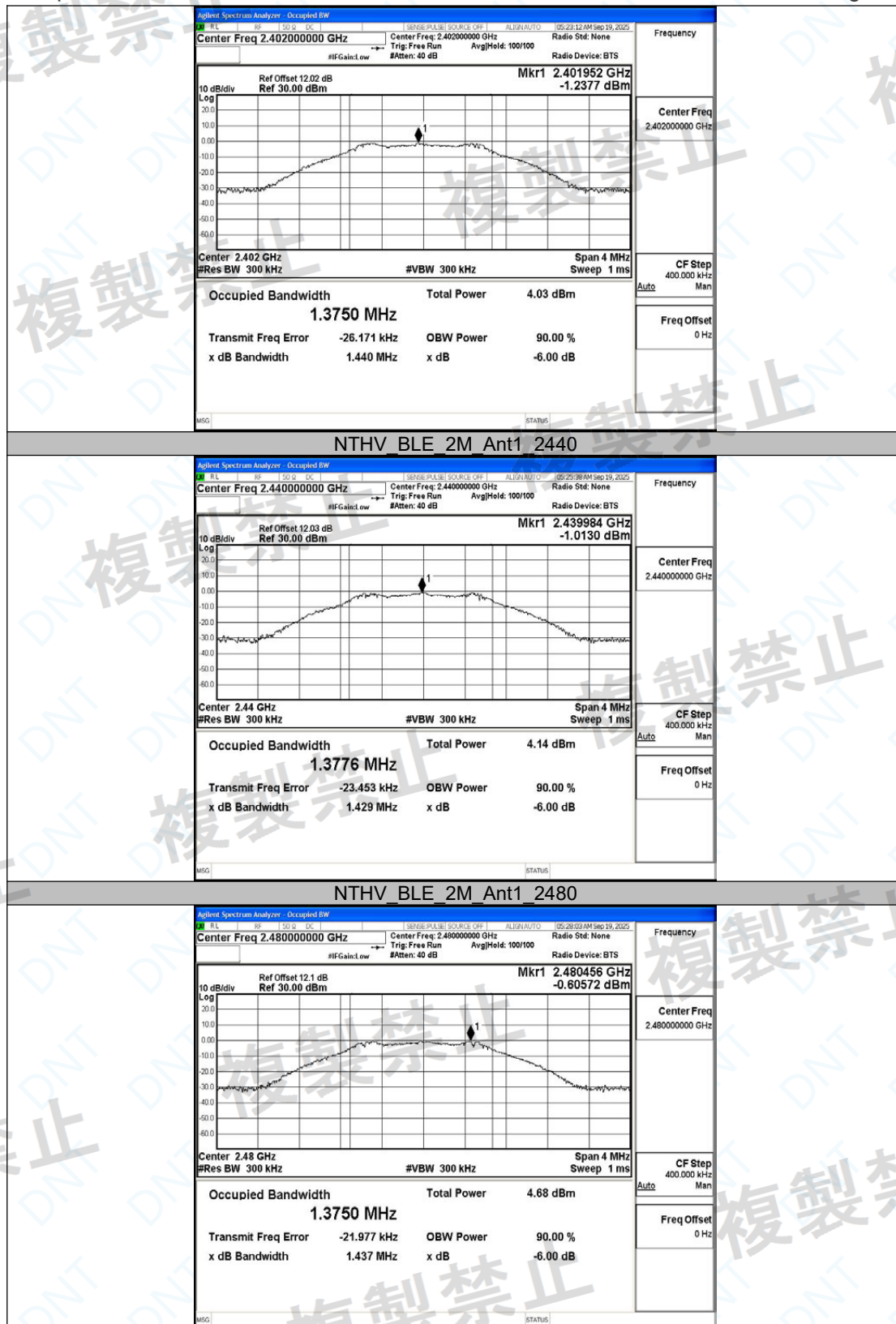












**Appendix D: Antenna Power**
Test Result(Left earphone)

Antenna Power							
Test Condition	Test Mode	Antenna	Freq (MHz)	Result (dBm)	Result(mW)	Limit(mW)	Verdict
NTNV	BLE_1M	Ant1	2402	-2.58	0.5521	≤10	PASS
			2440	-2.18	0.6053	≤10	PASS
			2480	-1.82	0.6577	≤10	PASS
	BLE_2M	Ant1	2402	-3.39	0.4581	≤10	PASS
			2440	-3.04	0.4966	≤10	PASS
			2480	-2.48	0.5649	≤10	PASS
NTLV	BLE_1M	Ant1	2402	-2.38	0.5781	≤10	PASS
			2440	-2.38	0.5781	≤10	PASS
			2480	-1.81	0.6592	≤10	PASS
	BLE_2M	Ant1	2402	-3.24	0.4742	≤10	PASS
			2440	-3.08	0.4920	≤10	PASS
			2480	-2.51	0.5610	≤10	PASS
NTHV	BLE_1M	Ant1	2402	-1.81	0.6592	≤10	PASS
			2440	-2.08	0.6194	≤10	PASS
			2480	-1.78	0.6637	≤10	PASS
	BLE_2M	Ant1	2402	-3.21	0.4775	≤10	PASS
			2440	-2.93	0.5093	≤10	PASS
			2480	-3.14	0.4853	≤10	PASS

Tolerance								
Test Condition	Test Mode	Antenna	Freq(MHz)	Power (mW)	RatedPower (mW)	Result (%)	Limit (%)	Verdict
NTNV	BLE_1M	Ant1	2402	0.5521	1	-44.79	+20	PASS
			2440	0.6053	1	-39.47	+20	PASS
			2480	0.6577	1	-34.23	+20	PASS
	BLE_2M	Ant1	2402	0.4581	1	-54.19	+20	PASS
			2440	0.4966	1	-50.34	+20	PASS
			2480	0.5649	1	-43.51	+20	PASS
NTLV	BLE_1M	Ant1	2402	0.5781	1	-42.19	+20	PASS
			2440	0.5781	1	-42.19	+20	PASS
			2480	0.6592	1	-34.08	+20	PASS
	BLE_2M	Ant1	2402	0.4742	1	-52.58	+20	PASS
			2440	0.4920	1	-50.80	+20	PASS
			2480	0.5610	1	-43.90	+20	PASS
NTHV	BLE_1M	Ant1	2402	0.6592	1	-34.08	+20	PASS
			2440	0.6194	1	-38.06	+20	PASS
			2480	0.6637	1	-33.63	+20	PASS
	BLE_2M	Ant1	2402	0.4775	1	-52.25	+20	PASS
			2440	0.5093	1	-49.07	+20	PASS
			2480	0.4853	1	-51.47	+20	PASS



Test Result(Right earphone)

Antenna Power							
Test Condition	Test Mode	Antenna	Freq(M Hz)	Result (dBm)	Result(mW)	Limit (mW)	Verdict
NTNV	BLE_1M	Ant1	2402	-1.81	0.6592	≤10	PASS
			2440	-1.99	0.6324	≤10	PASS
			2480	-1.64	0.6855	≤10	PASS
	BLE_2M	Ant1	2402	-3.34	0.4634	≤10	PASS
			2440	-3.00	0.5012	≤10	PASS
			2480	-2.61	0.5483	≤10	PASS
NTLV	BLE_1M	Ant1	2402	-2.53	0.5585	≤10	PASS
			2440	-2.05	0.6237	≤10	PASS
			2480	-1.68	0.6792	≤10	PASS
	BLE_2M	Ant1	2402	-3.36	0.4613	≤10	PASS
			2440	-3.55	0.4416	≤10	PASS
			2480	-2.47	0.5662	≤10	PASS
NTHV	BLE_1M	Ant1	2402	-2.22	0.5998	≤10	PASS
			2440	-2.00	0.6310	≤10	PASS
			2480	-1.63	0.6871	≤10	PASS
	BLE_2M	Ant1	2402	-4.05	0.3936	≤10	PASS
			2440	-3.74	0.4227	≤10	PASS
			2480	-2.44	0.5702	≤10	PASS

Tolerance								
Test Condition	Test Mode	Antenna	Freq (MHz)	Power (mW)	Rated Power (mW)	Result (%)	Limit (%)	Verdict
NTNV	BLE_1M	Ant1	2402	0.6592	1	-34.08	+20	PASS
			2440	0.6324	1	-36.76	+20	PASS
			2480	0.6855	1	-31.45	+20	PASS
	BLE_2M	Ant1	2402	0.4634	1	-53.66	+20	PASS
			2440	0.5012	1	-49.88	+20	PASS
			2480	0.5483	1	-45.17	+20	PASS
NTLV	BLE_1M	Ant1	2402	0.5585	1	-44.15	+20	PASS
			2440	0.6237	1	-37.63	+20	PASS
			2480	0.6792	1	-32.08	+20	PASS
	BLE_2M	Ant1	2402	0.4613	1	-53.87	+20	PASS
			2440	0.4416	1	-55.84	+20	PASS
			2480	0.5662	1	-43.38	+20	PASS
NTHV	BLE_1M	Ant1	2402	0.5998	1	-40.02	+20	PASS
			2440	0.6310	1	-36.90	+20	PASS
			2480	0.6871	1	-31.29	+20	PASS
	BLE_2M	Ant1	2402	0.3936	1	-60.64	+20	PASS
			2440	0.4227	1	-57.73	+20	PASS
			2480	0.5702	1	-42.98	+20	PASS

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

Test Condition	Test Mode	Antenna	Freq (MHz)	Freq.Range [MHz]	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [μW]	Limit [μW]	Verdict
NTNV	BLE_1M	Ant1	2402	30~1000	862.75	-49.11	≤-26	0.01227	≤2.5	PASS
				1000~2387	2242.41	-46.33	≤-26	0.02328	≤2.5	PASS
				2387~2400	2388.79	-37.59	≤-16	0.17418	≤25	PASS
				2483.5~2496.5	2496.24	-36.97	≤-16	0.20091	≤25	PASS
				2496.5~13000	3609.35	-42.53	≤-26	0.05585	≤2.5	PASS
			2440	30~1000	910.76	-49.14	≤-26	0.01219	≤2.5	PASS
				1000~2387	2248.30	-46.70	≤-26	0.02138	≤2.5	PASS
				2387~2400	2388.56	-37.22	≤-16	0.18967	≤25	PASS
				2483.5~2496.5	2493.02	-37.19	≤-16	0.19099	≤25	PASS
				2496.5~13000	4845.08	-42.51	≤-26	0.05610	≤2.5	PASS
			2480	30~1000	779.33	-49.72	≤-26	0.01067	≤2.5	PASS
				1000~2387	2371.74	-46.68	≤-26	0.02148	≤2.5	PASS
				2387~2400	2387.83	-37.16	≤-16	0.19231	≤25	PASS
				2483.5~2496.5	2492.18	-37.47	≤-16	0.17906	≤25	PASS
				2496.5~13000	3646.11	-42.77	≤-26	0.05284	≤2.5	PASS
	BLE_2M	Ant1	2402	30~1000	866.63	-49.62	≤-26	0.01091	≤2.5	PASS
				1000~2387	2267.72	-47.12	≤-26	0.01941	≤2.5	PASS
				2387~2400	2398.18	-37.05	≤-16	0.19724	≤25	PASS
				2483.5~2496.5	2491.14	-37.27	≤-16	0.18750	≤25	PASS
				2496.5~13000	3606.72	-42.15	≤-26	0.06095	≤2.5	PASS
			2440	30~1000	891.60	-49.26	≤-26	0.01186	≤2.5	PASS
				1000~2387	2282.63	-47.05	≤-26	0.01972	≤2.5	PASS
				2387~2400	2398.06	-37.43	≤-16	0.18072	≤25	PASS
				2483.5~2496.5	2484.10	-36.77	≤-16	0.21038	≤25	PASS
				2496.5~13000	4782.59	-42.07	≤-26	0.06209	≤2.5	PASS
			2480	30~1000	806.73	-48.78	≤-26	0.01324	≤2.5	PASS
				1000~2387	2231.66	-46.86	≤-26	0.02061	≤2.5	PASS
				2387~2400	2399.25	-36.63	≤-16	0.21727	≤25	PASS
				2483.5~2496.5	2491.16	-36.66	≤-16	0.21577	≤25	PASS
				2496.5~13000	4861.89	-43.03	≤-26	0.04977	≤2.5	PASS
NTLV	BLE_1M	Ant1	2402	30~1000	822.73	-49.66	≤-26	0.01081	≤2.5	PASS
				1000~2387	2357.87	-47.06	≤-26	0.01968	≤2.5	PASS
				2387~2400	2395.62	-36.51	≤-16	0.22336	≤25	PASS
				2483.5~2496.5	2489.64	-36.78	≤-16	0.20989	≤25	PASS
				2496.5~13000	3608.30	-42.99	≤-26	0.05023	≤2.5	PASS
			2440	30~1000	942.77	-48.93	≤-26	0.01279	≤2.5	PASS
				1000~2387	2357.18	-46.80	≤-26	0.02089	≤2.5	PASS
				2387~2400	2398.47	-37.44	≤-16	0.18030	≤25	PASS
				2483.5~2496.5	2488.20	-36.62	≤-16	0.21777	≤25	PASS
				2496.5~13000	3988.52	-42.50	≤-26	0.05623	≤2.5	PASS
			2480	30~1000	846.74	-48.85	≤-26	0.01303	≤2.5	PASS
				1000~2387	1938.31	-46.64	≤-26	0.02168	≤2.5	PASS
				2387~2400	2391.45	-36.54	≤-16	0.22182	≤25	PASS
				2483.5~2496.5	2490.92	-37.26	≤-16	0.18793	≤25	PASS
				2496.5~13000	3604.09	-42.68	≤-26	0.05395	≤2.5	PASS
	BLE_2M	Ant1	2402	30~1000	852.32	-49.15	≤-26	0.01216	≤2.5	PASS
				1000~2387	2324.24	-46.86	≤-26	0.02061	≤2.5	PASS
				2387~2400	2389.57	-36.76	≤-16	0.21086	≤25	PASS
				2483.5~2496.5	2487.94	-36.46	≤-16	0.22594	≤25	PASS
				2496.5~13000	4043.67	-43.11	≤-26	0.04887	≤2.5	PASS
			2440	30~1000	815.70	-48.99	≤-26	0.01262	≤2.5	PASS
				1000~2387	2361.34	-46.34	≤-26	0.02323	≤2.5	PASS
				2387~2400	2390.98	-36.76	≤-16	0.21086	≤25	PASS
				2483.5~2496.5	2486.45	-36.84	≤-16	0.20701	≤25	PASS
				2496.5~13000	3630.35	-42.37	≤-26	0.05794	≤2.5	PASS
			2480	30~1000	188.11	-49.07	≤-26	0.01239	≤2.5	PASS
				1000~2387	2360.30	-46.97	≤-26	0.02009	≤2.5	PASS
				2387~2400	2396.41	-37.28	≤-16	0.18707	≤25	PASS
				2483.5~2496.5	2488.15	-36.89	≤-16	0.20464	≤25	PASS



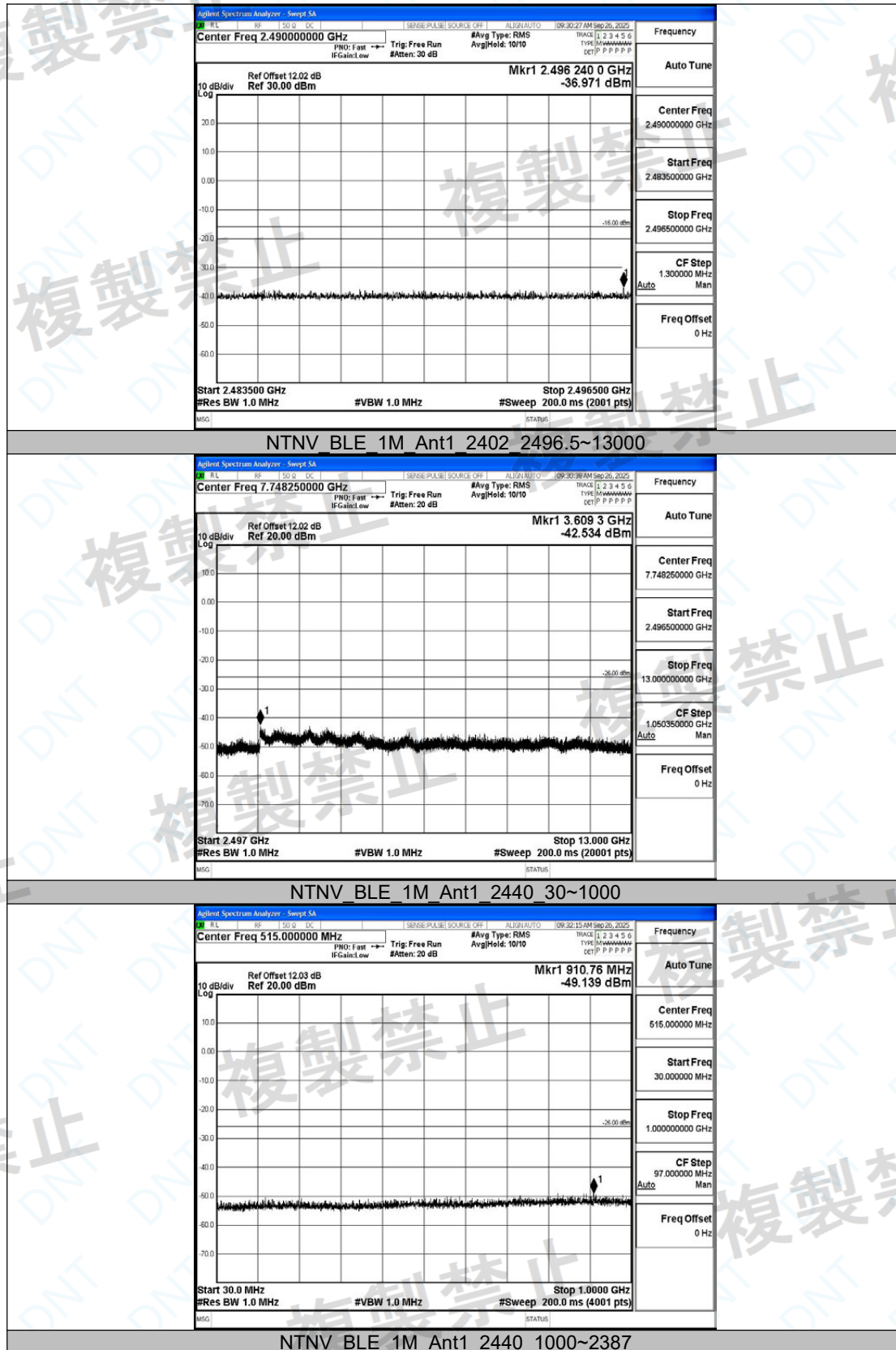
NTHV	BLE_1M	Ant1	2402	2496.5~13000	3614.60	-42.62	≤-26	0.05470	≤2.5	PASS
				30~1000	831.71	-48.96	≤-26	0.01271	≤2.5	PASS
				1000~2387	2270.49	-47.19	≤-26	0.01910	≤2.5	PASS
				2387~2400	2397.69	-36.70	≤-16	0.21380	≤25	PASS
				2483.5~2496.5	2488.00	-37.37	≤-16	0.18323	≤25	PASS
			2440	2496.5~13000	3608.82	-42.62	≤-26	0.05470	≤2.5	PASS
				30~1000	766.96	-48.63	≤-26	0.01371	≤2.5	PASS
				1000~2387	2108.21	-46.77	≤-26	0.02104	≤2.5	PASS
				2387~2400	2396.88	-36.97	≤-16	0.20091	≤25	PASS
				2483.5~2496.5	2485.59	-36.86	≤-16	0.20606	≤25	PASS
			2480	2496.5~13000	4885.00	-43.06	≤-26	0.04943	≤2.5	PASS
				30~1000	227.88	-49.14	≤-26	0.01219	≤2.5	PASS
				1000~2387	2320.77	-47.01	≤-26	0.01991	≤2.5	PASS
				2387~2400	2399.86	-37.05	≤-16	0.19724	≤25	PASS
				2483.5~2496.5	2489.92	-37.36	≤-16	0.18365	≤25	PASS
	BLE_2M	Ant1	2402	2496.5~13000	4003.75	-42.58	≤-26	0.05521	≤2.5	PASS
				30~1000	891.36	-49.40	≤-26	0.01148	≤2.5	PASS
				1000~2387	2333.95	-46.89	≤-26	0.02046	≤2.5	PASS
				2387~2400	2394.12	-37.38	≤-16	0.18281	≤25	PASS
				2483.5~2496.5	2490.46	-36.93	≤-16	0.20277	≤25	PASS
			2440	2496.5~13000	3703.88	-42.67	≤-26	0.05408	≤2.5	PASS
				30~1000	924.10	-49.10	≤-26	0.01230	≤2.5	PASS
				1000~2387	2167.51	-46.88	≤-26	0.02051	≤2.5	PASS
				2387~2400	2387.10	-37.54	≤-16	0.17620	≤25	PASS
				2483.5~2496.5	2488.23	-37.07	≤-16	0.19634	≤25	PASS
			2480	2496.5~13000	3609.35	-43.27	≤-26	0.04710	≤2.5	PASS
				30~1000	993.45	-48.97	≤-26	0.01268	≤2.5	PASS
				1000~2387	2217.79	-47.10	≤-26	0.01950	≤2.5	PASS
				2387~2400	2390.35	-36.88	≤-16	0.20512	≤25	PASS
				2483.5~2496.5	2488.30	-36.60	≤-16	0.21878	≤25	PASS
				2496.5~13000	3606.19	-42.69	≤-26	0.05383	≤2.5	PASS

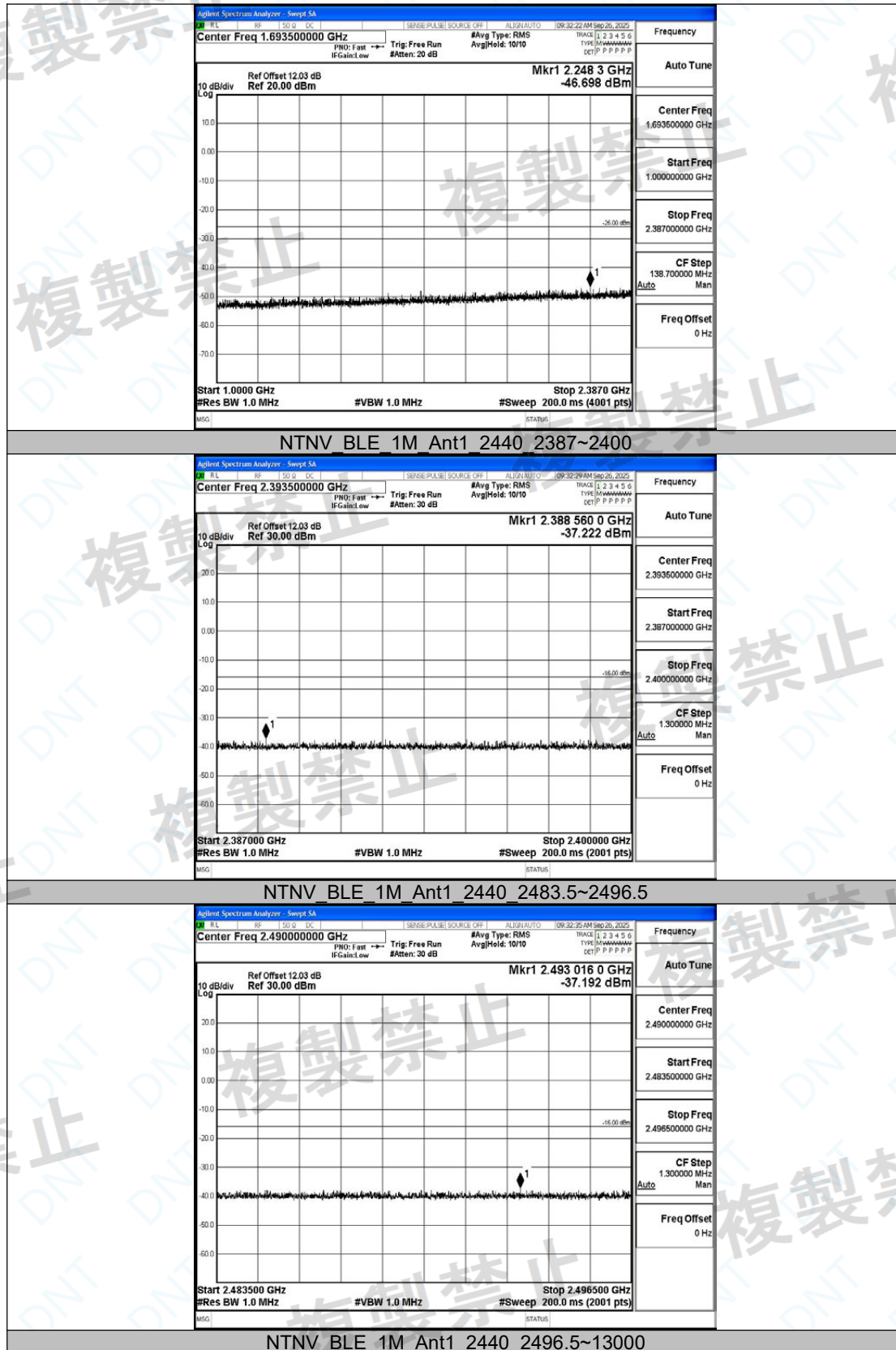
Note: Both left and right earphone have tested, The right earphone is the worst, only the worse case was reported.

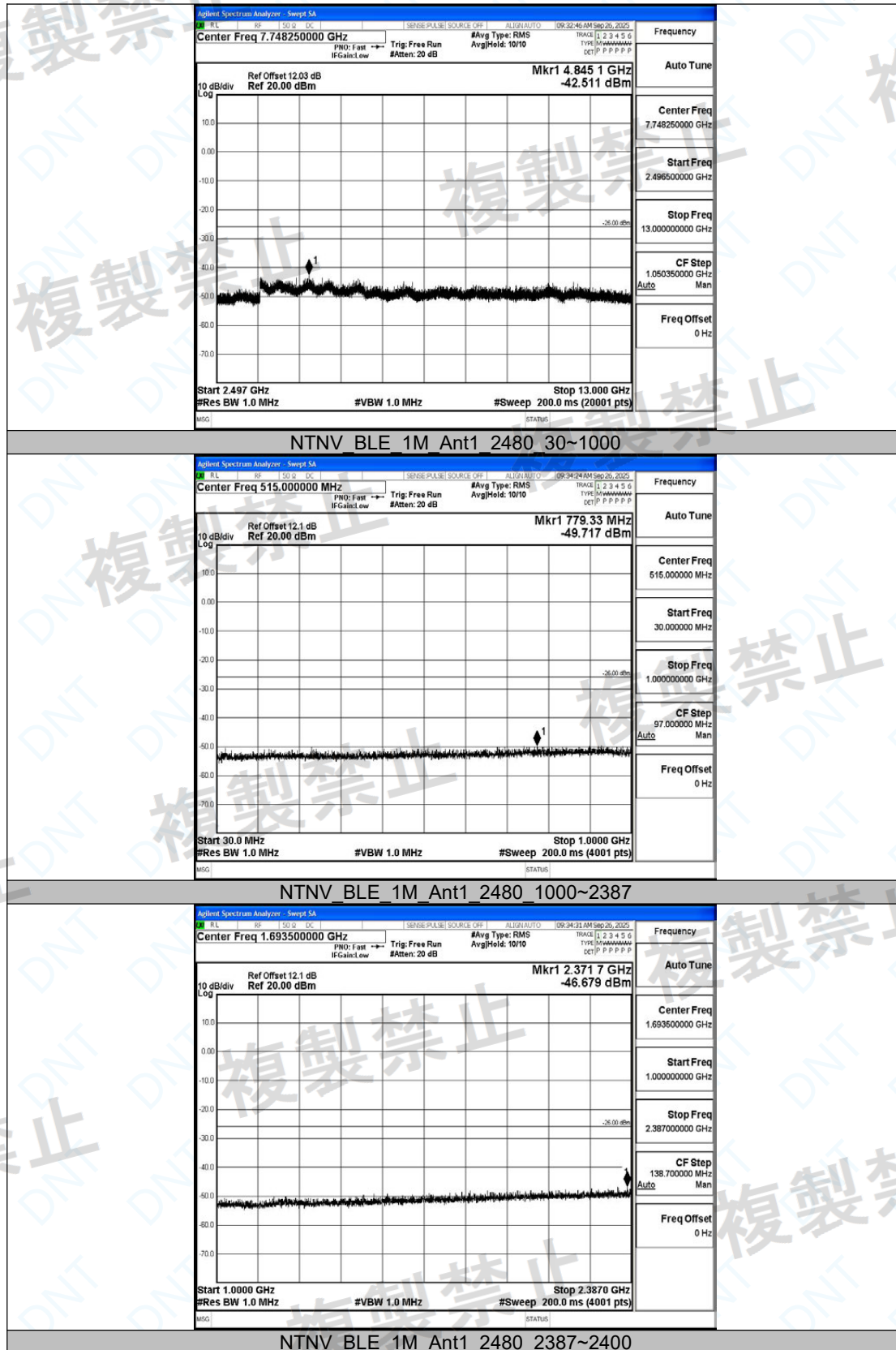


Test Graphs

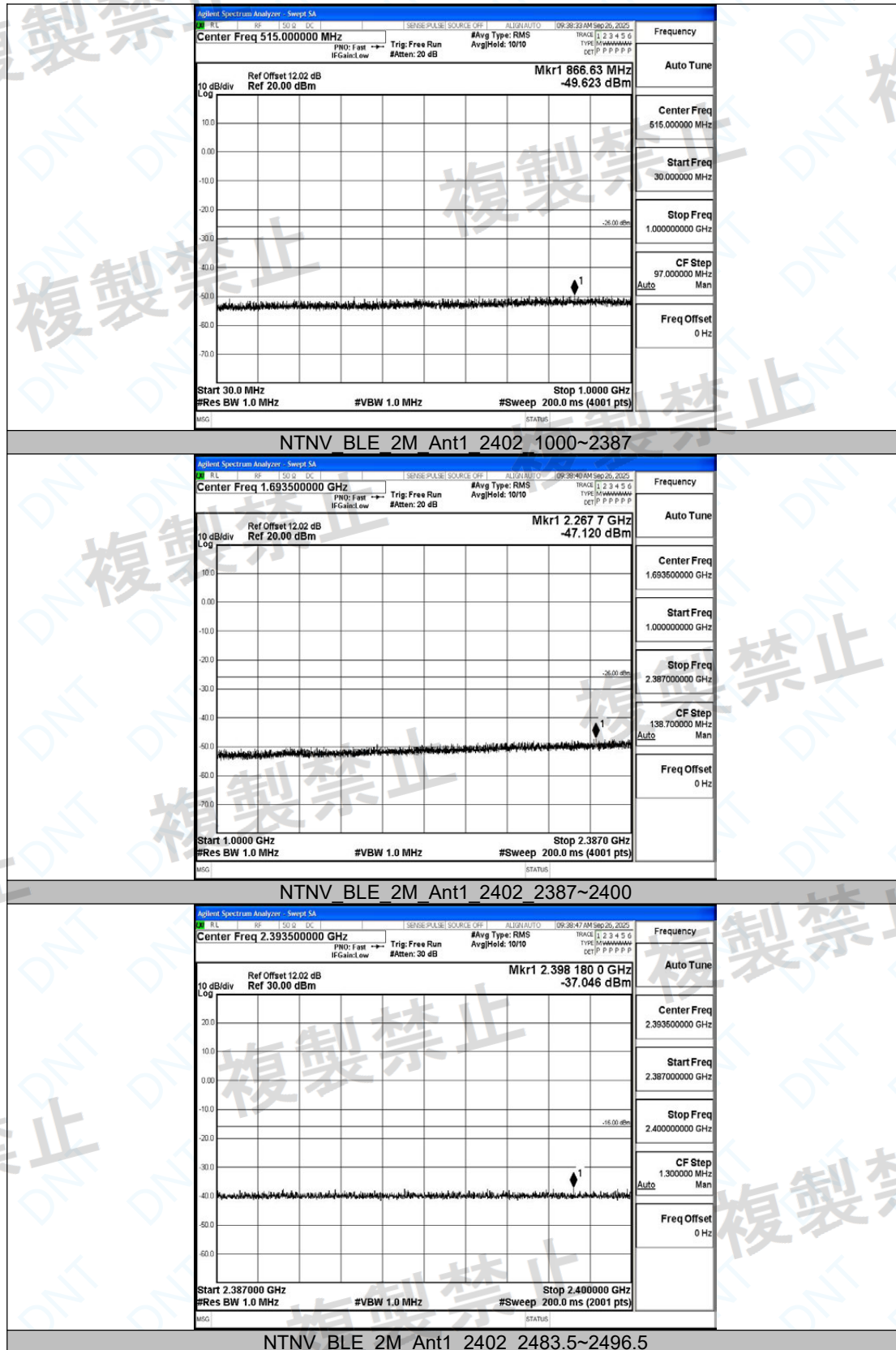


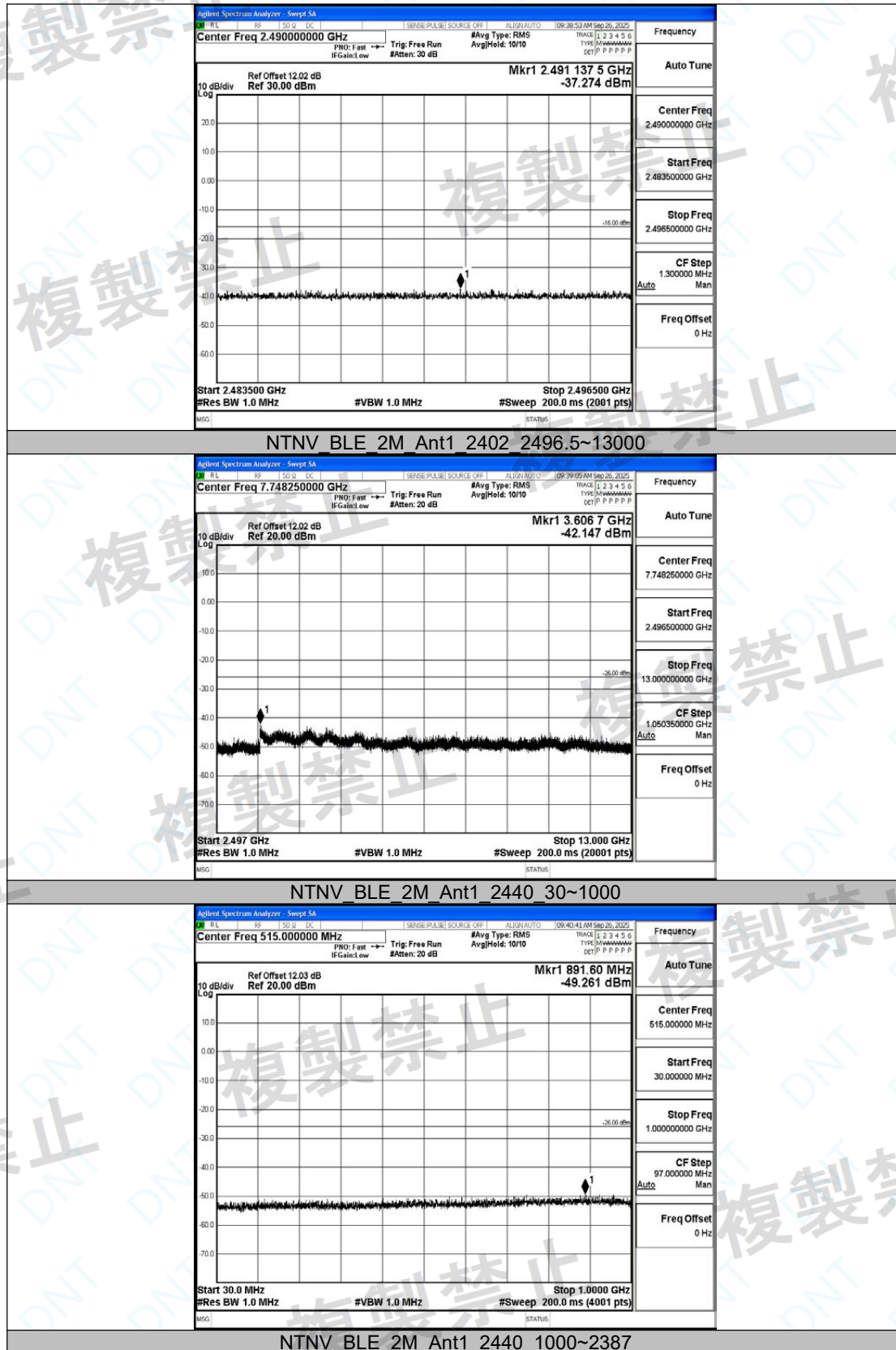


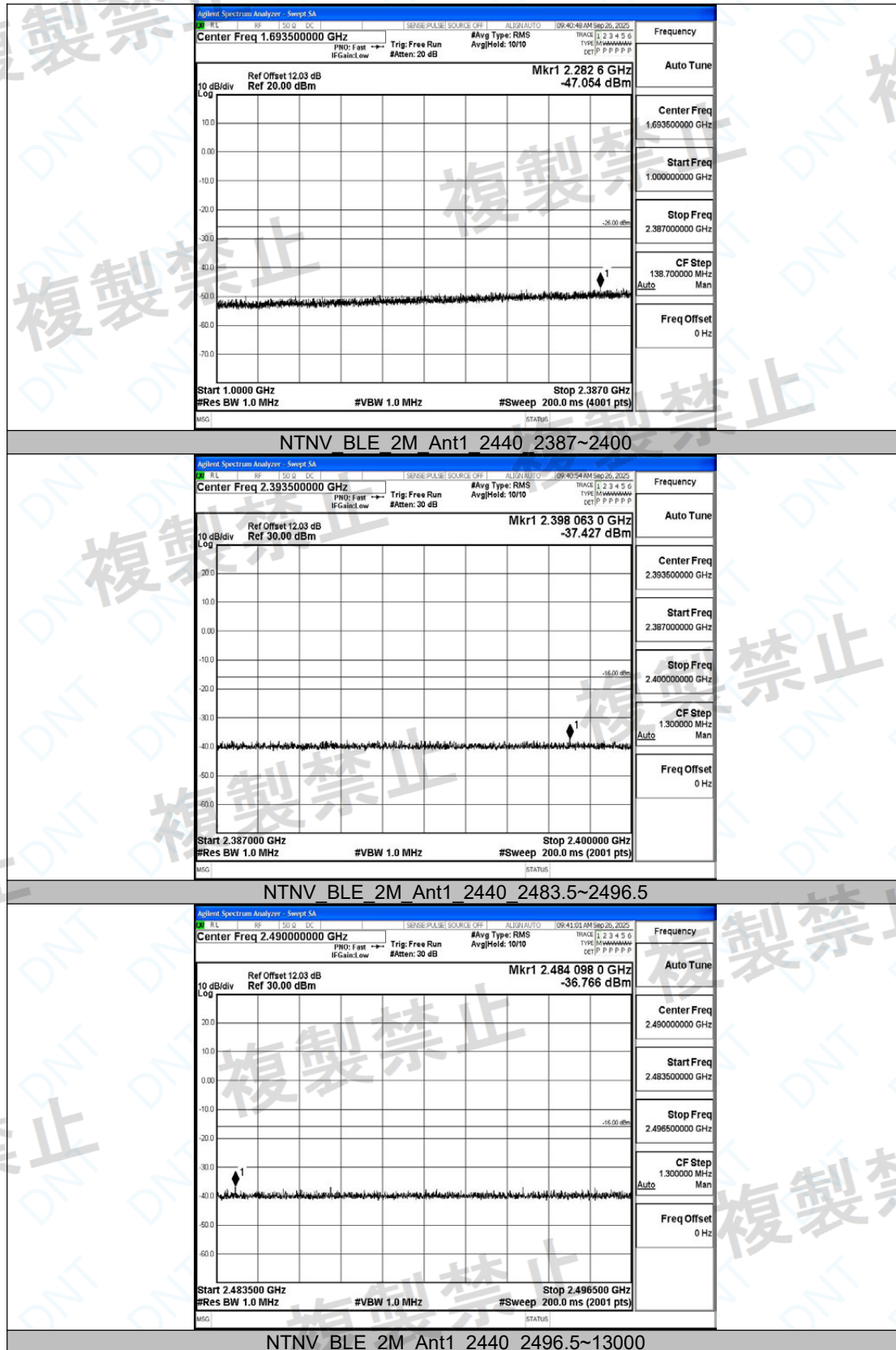


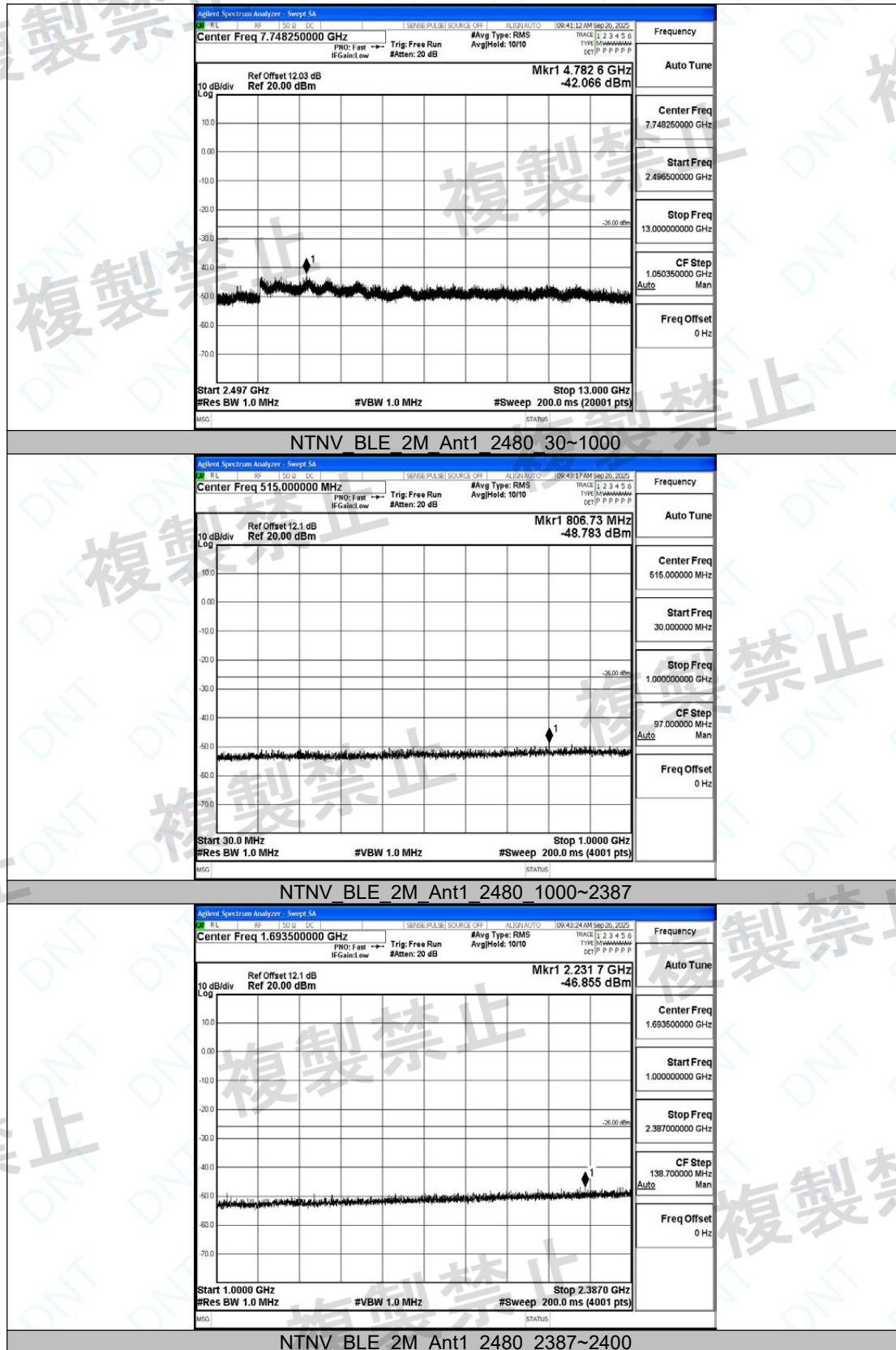


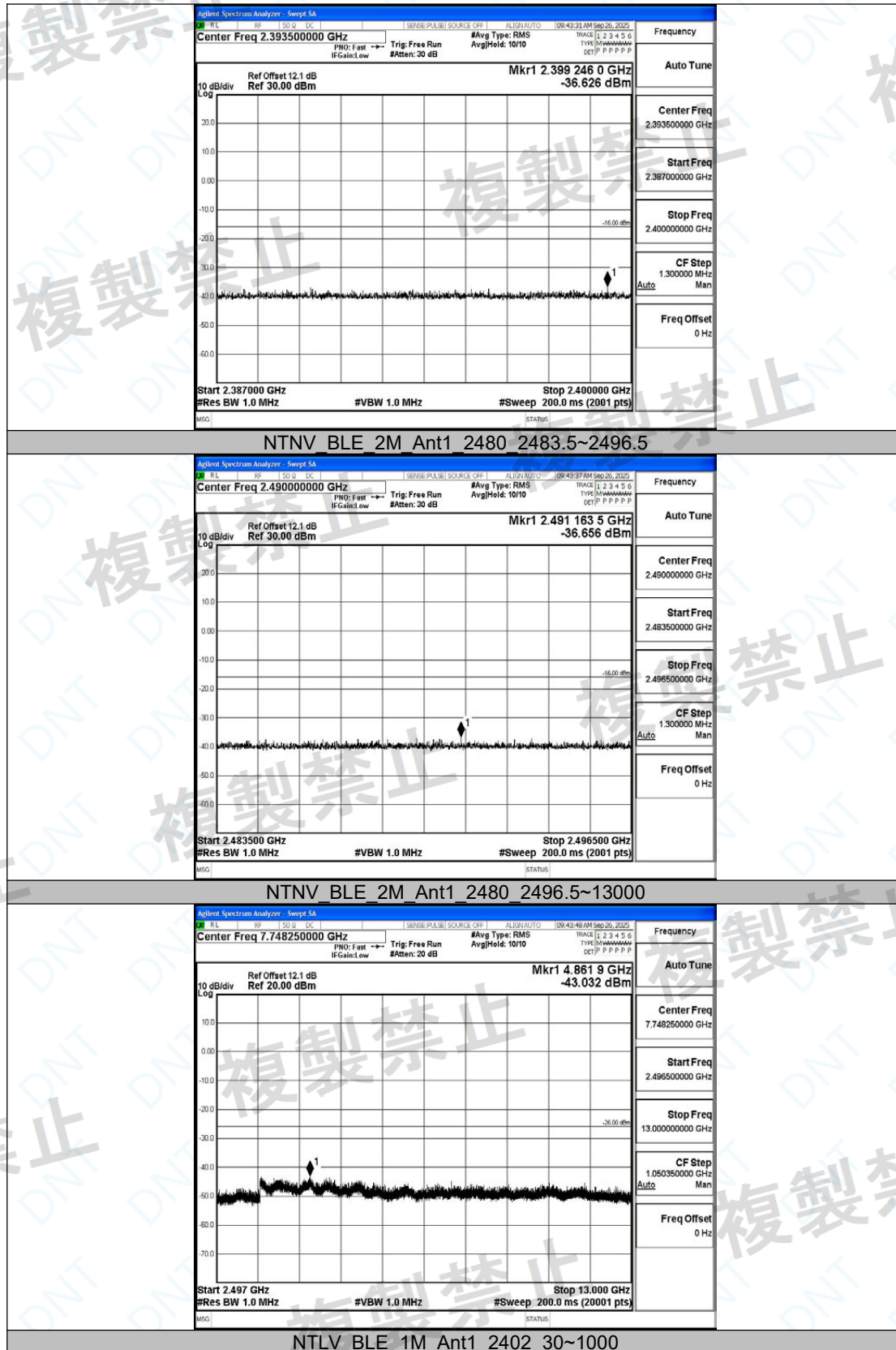


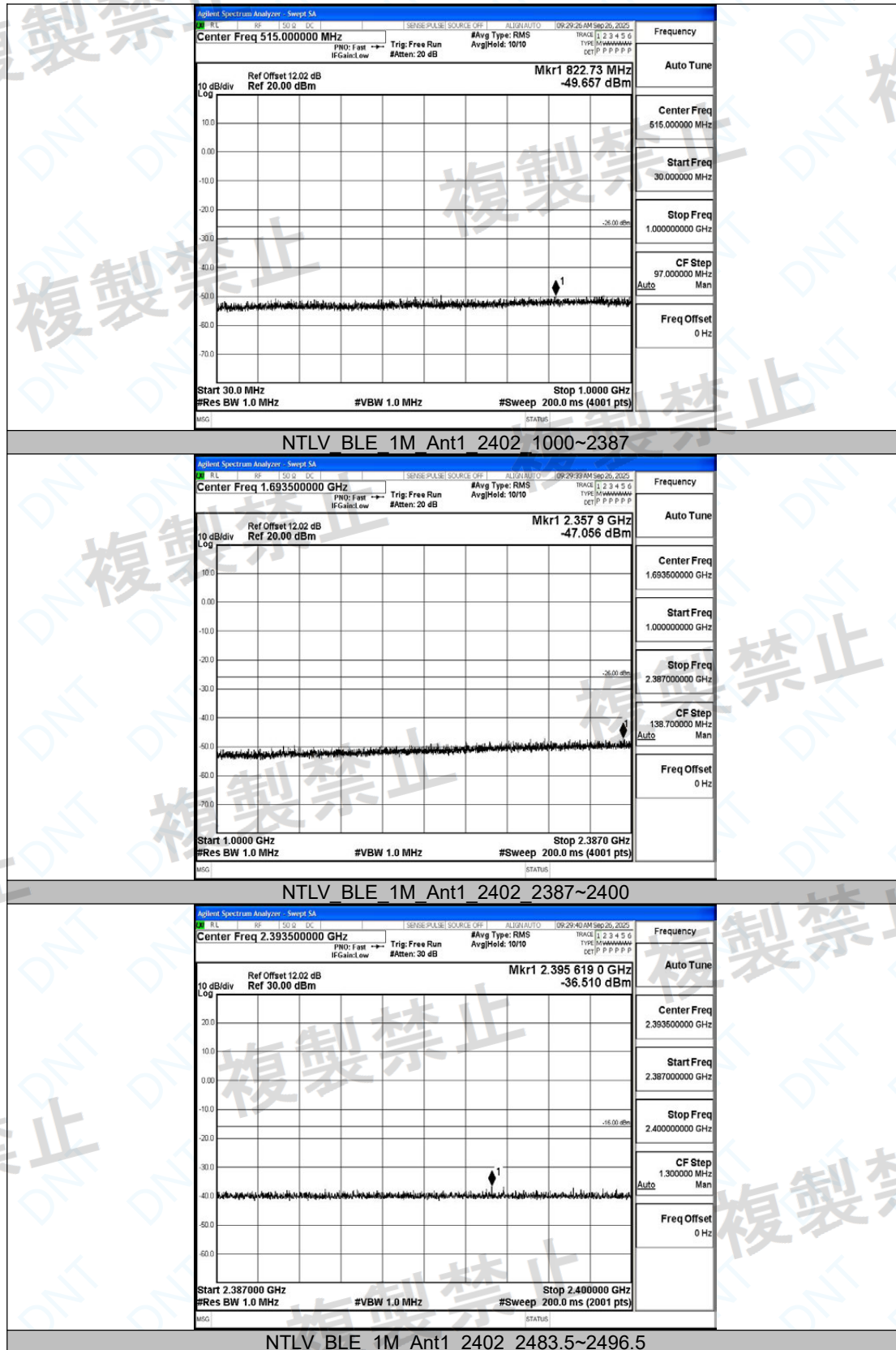


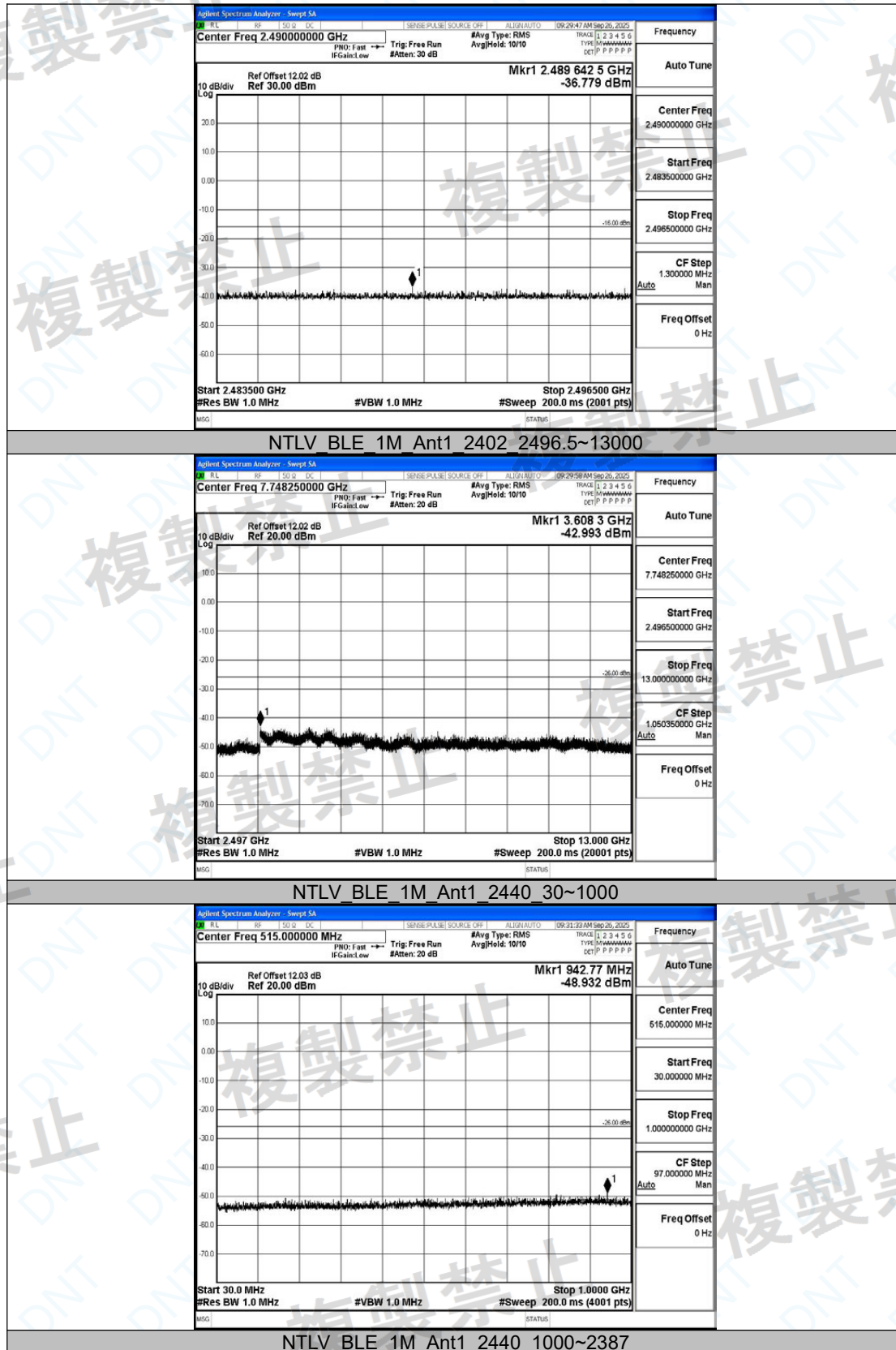


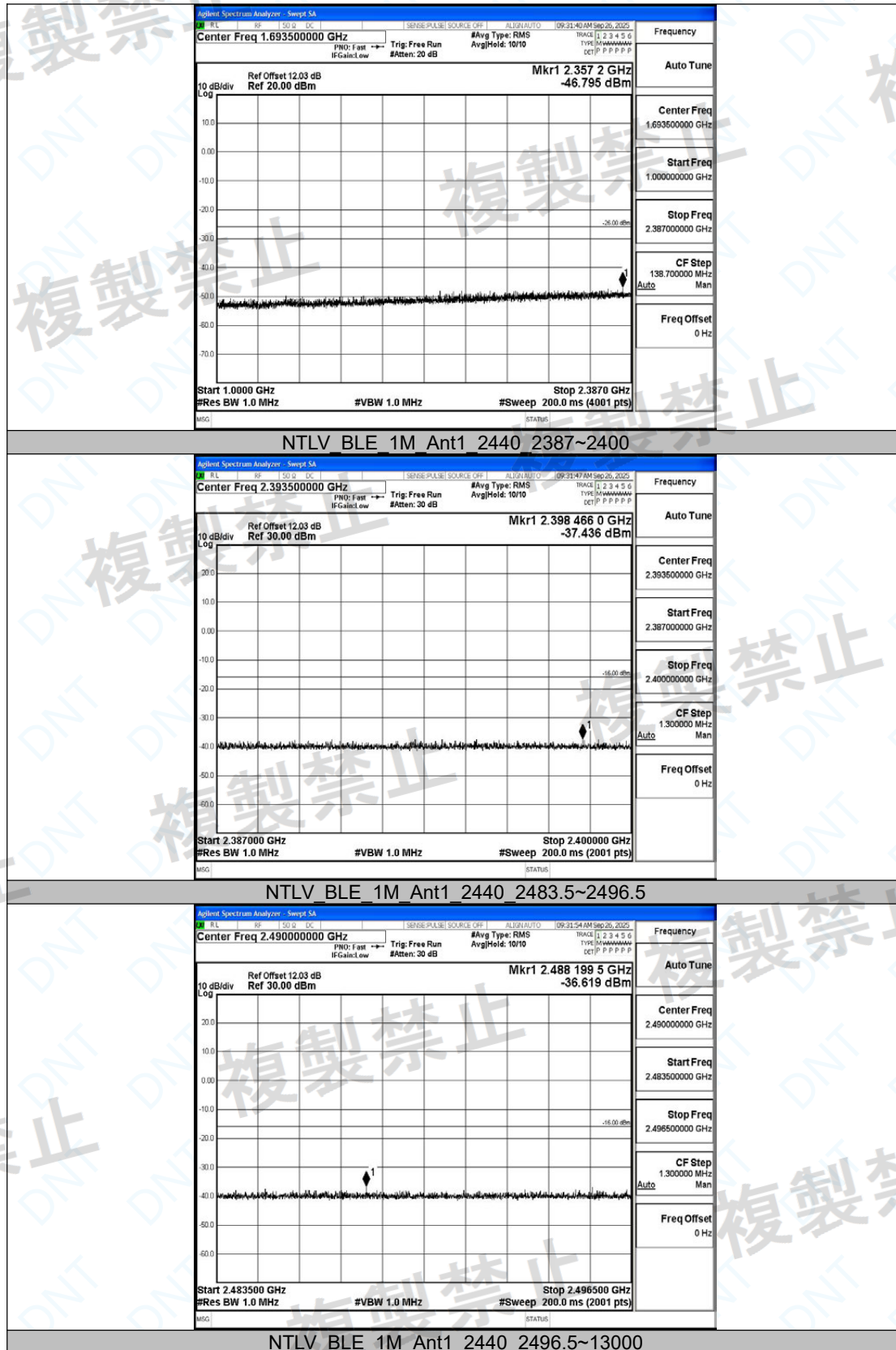


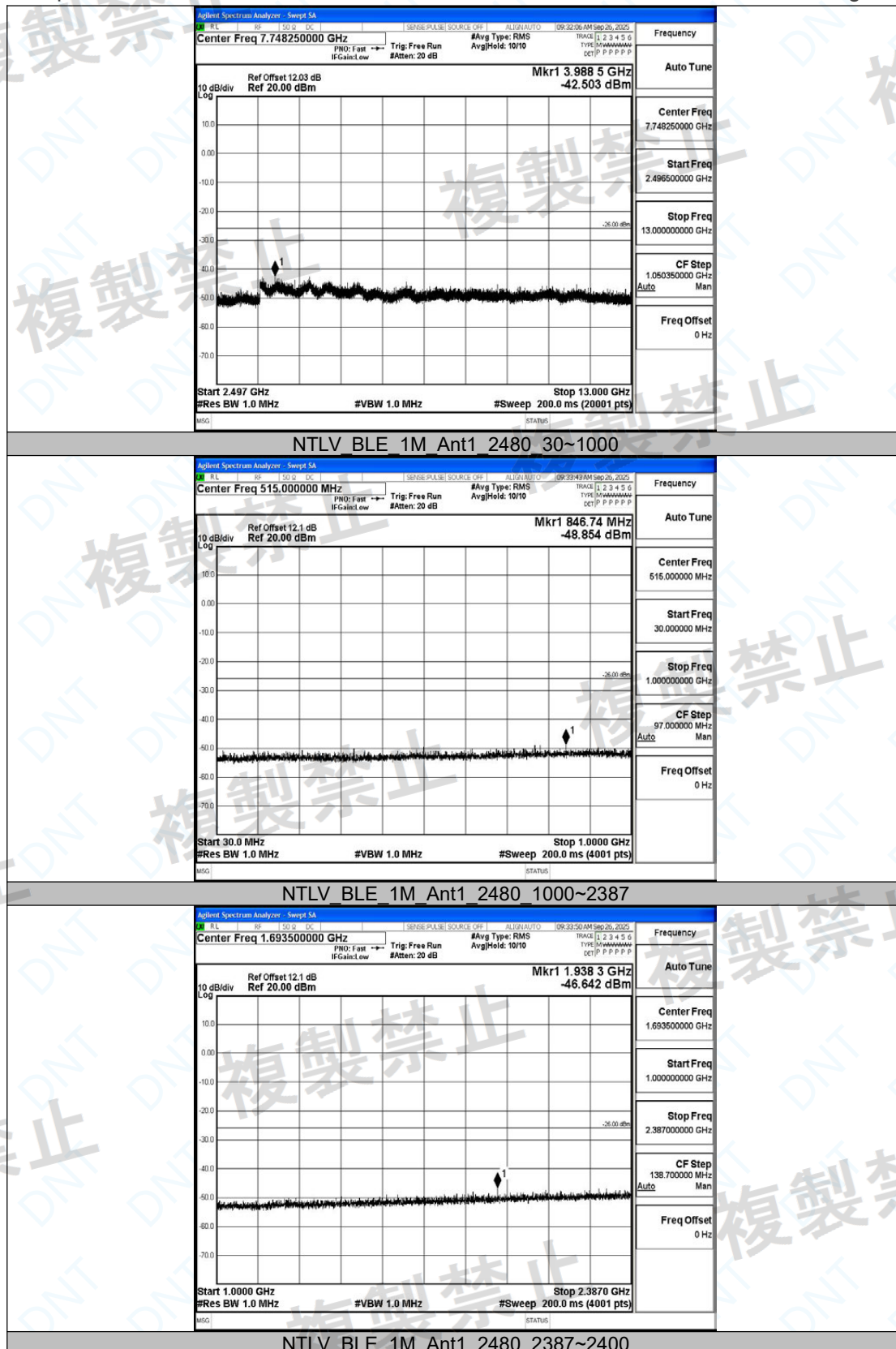


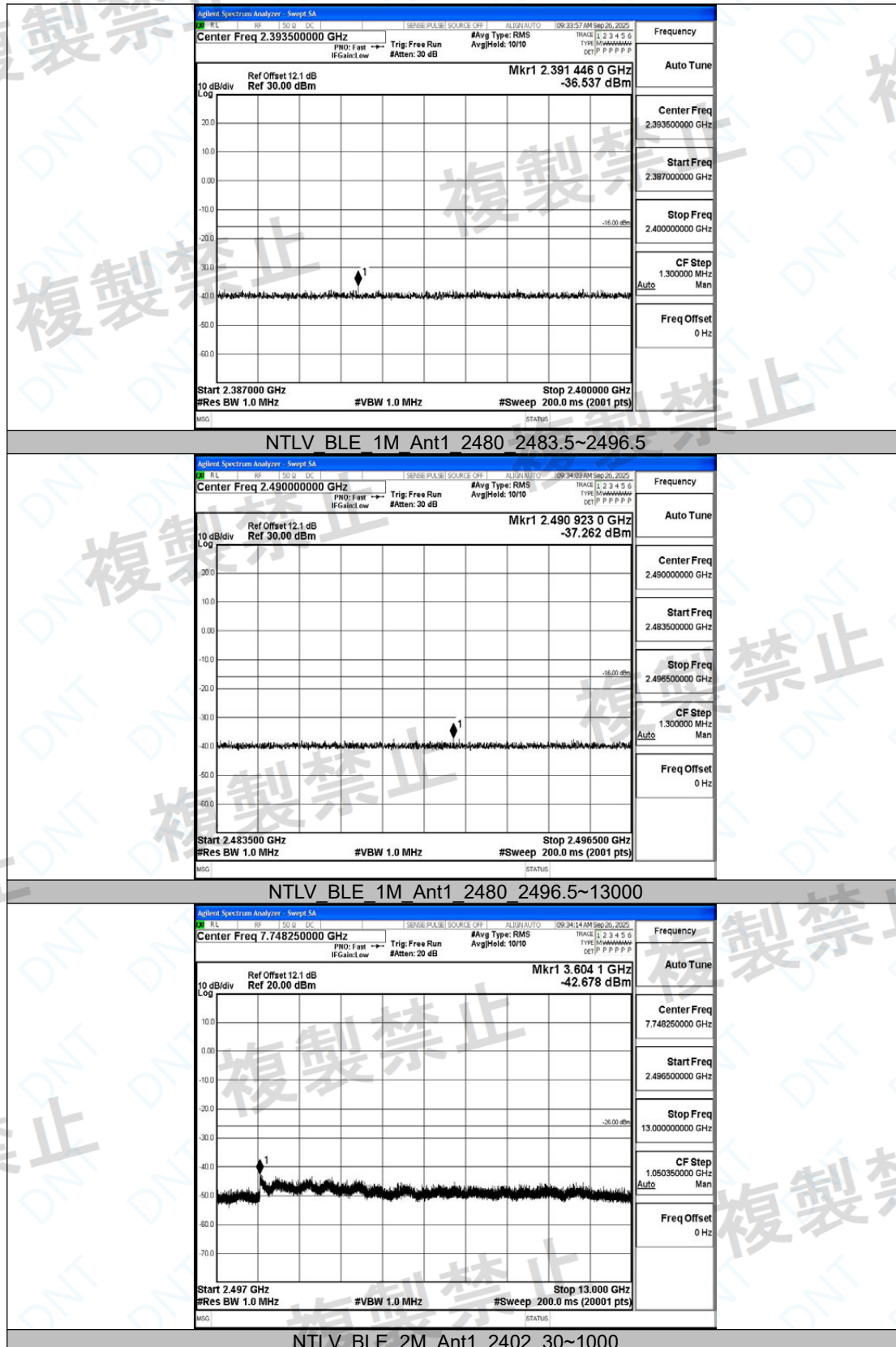


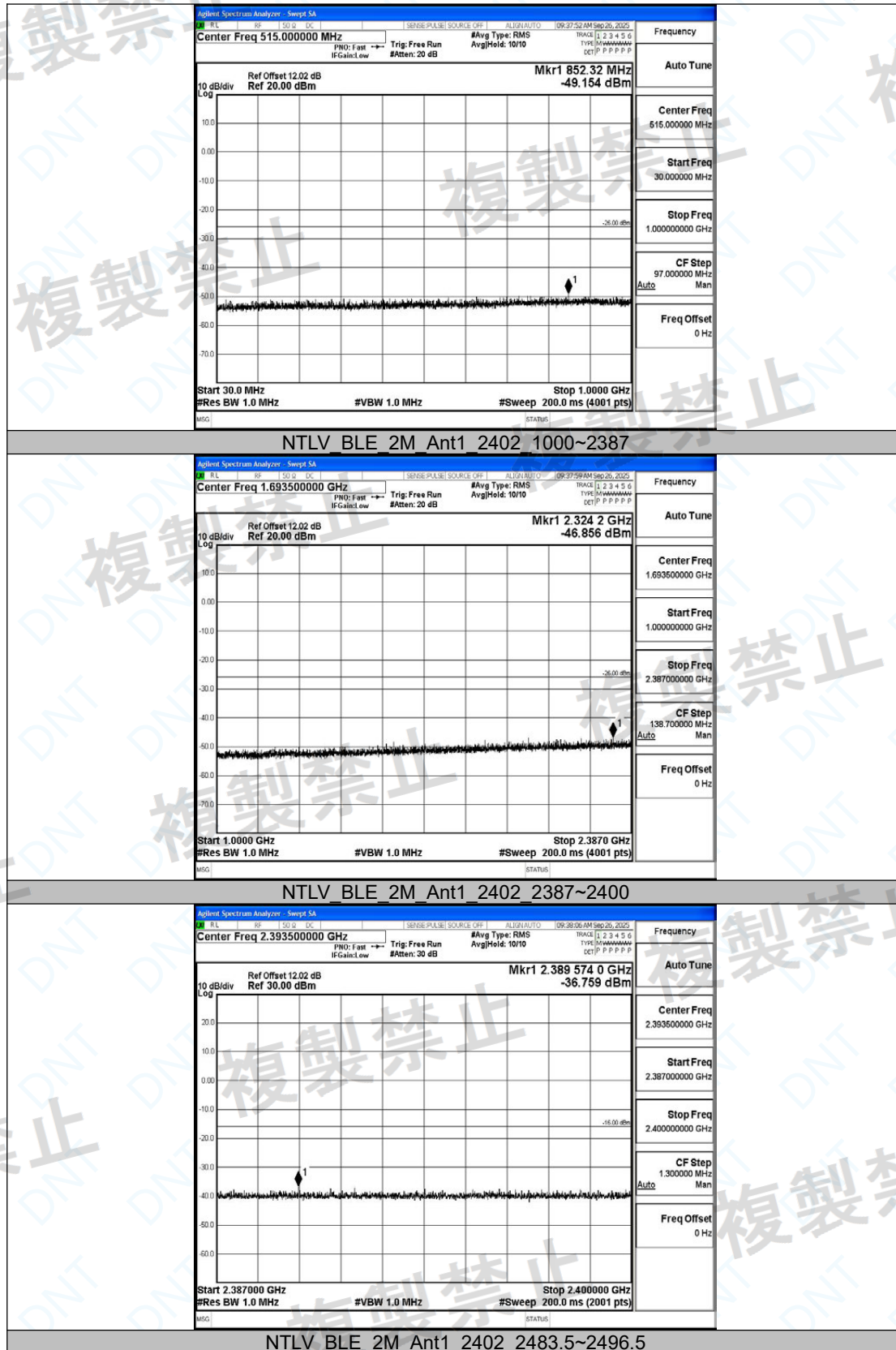


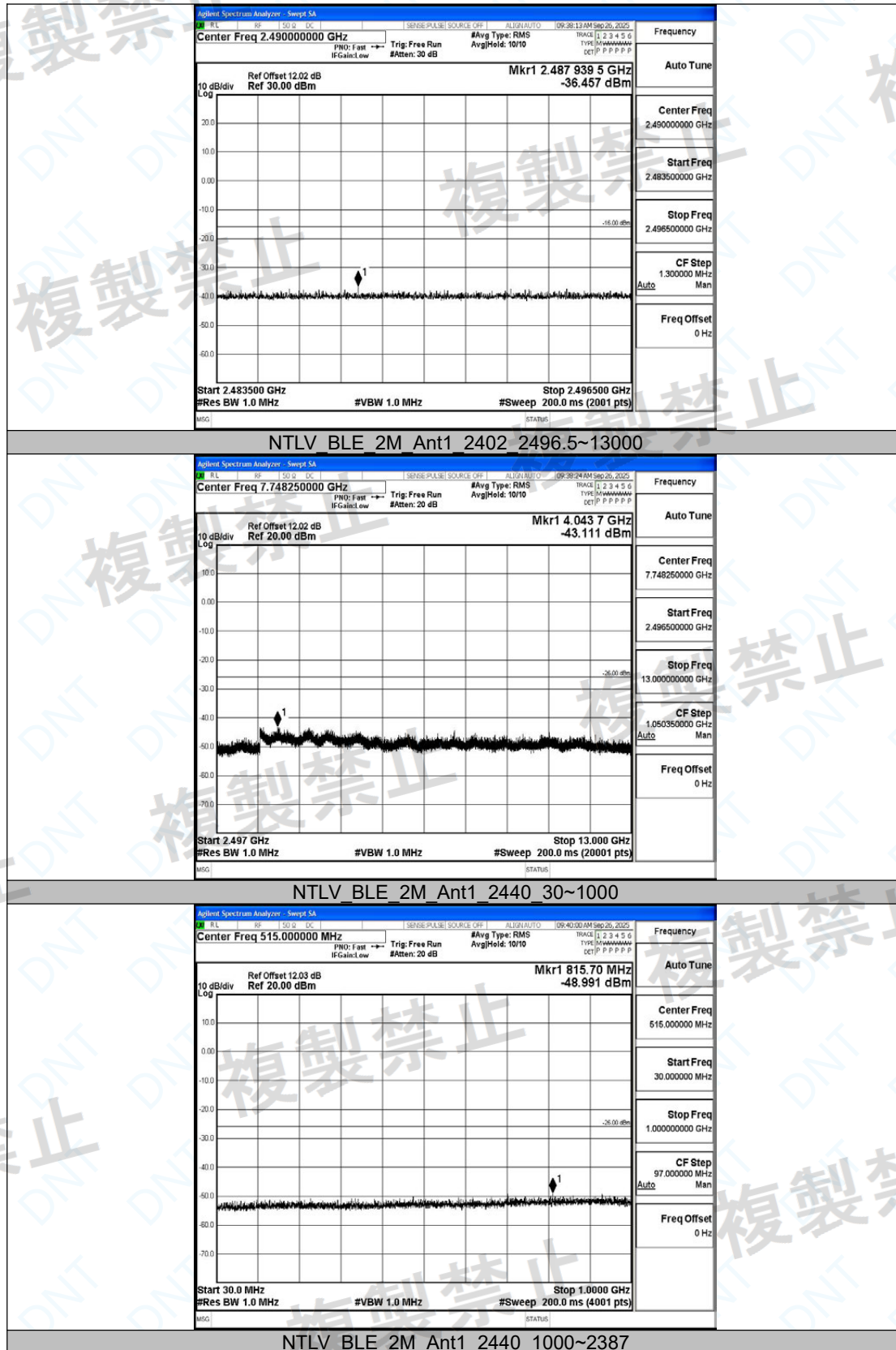


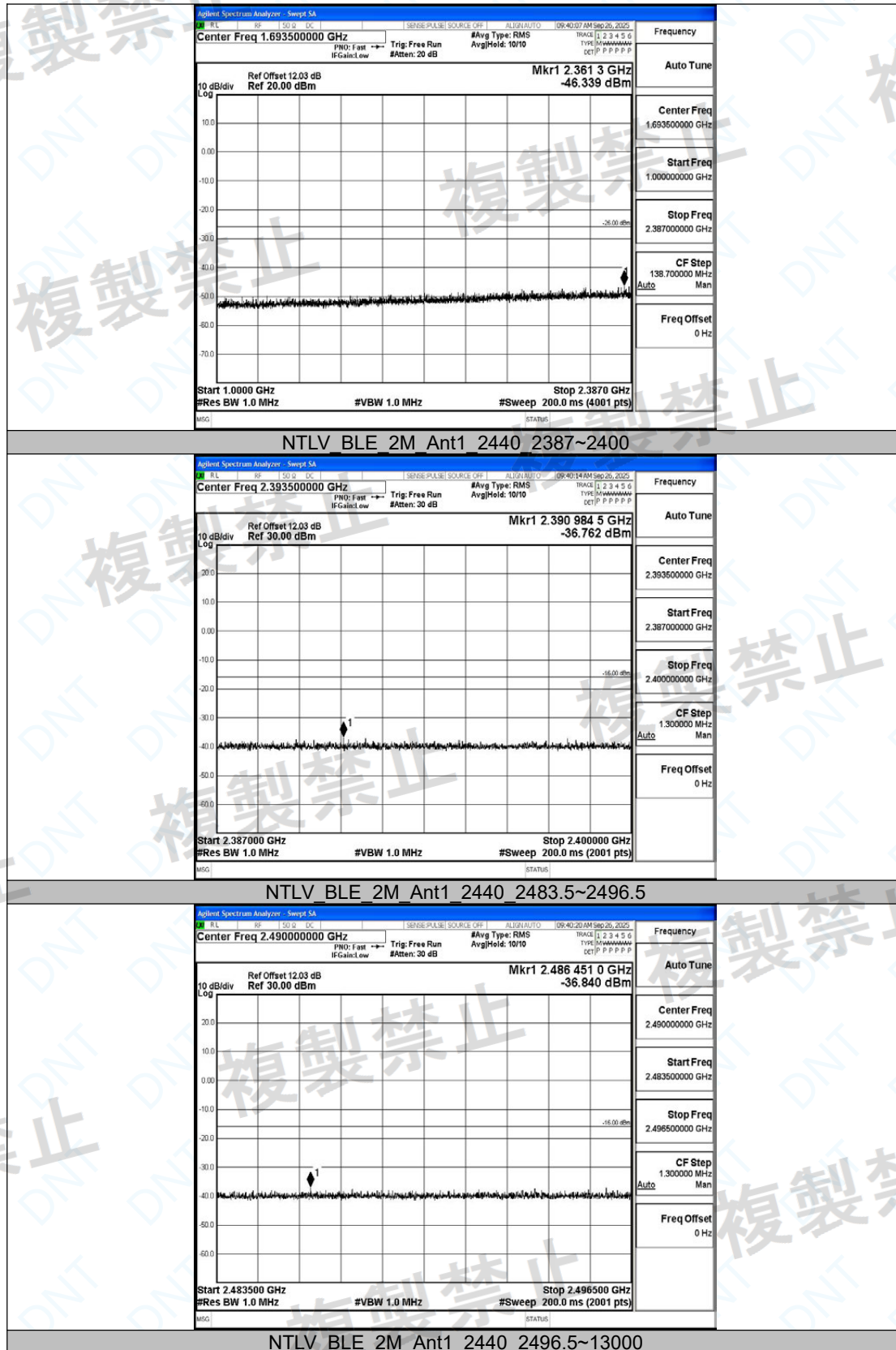


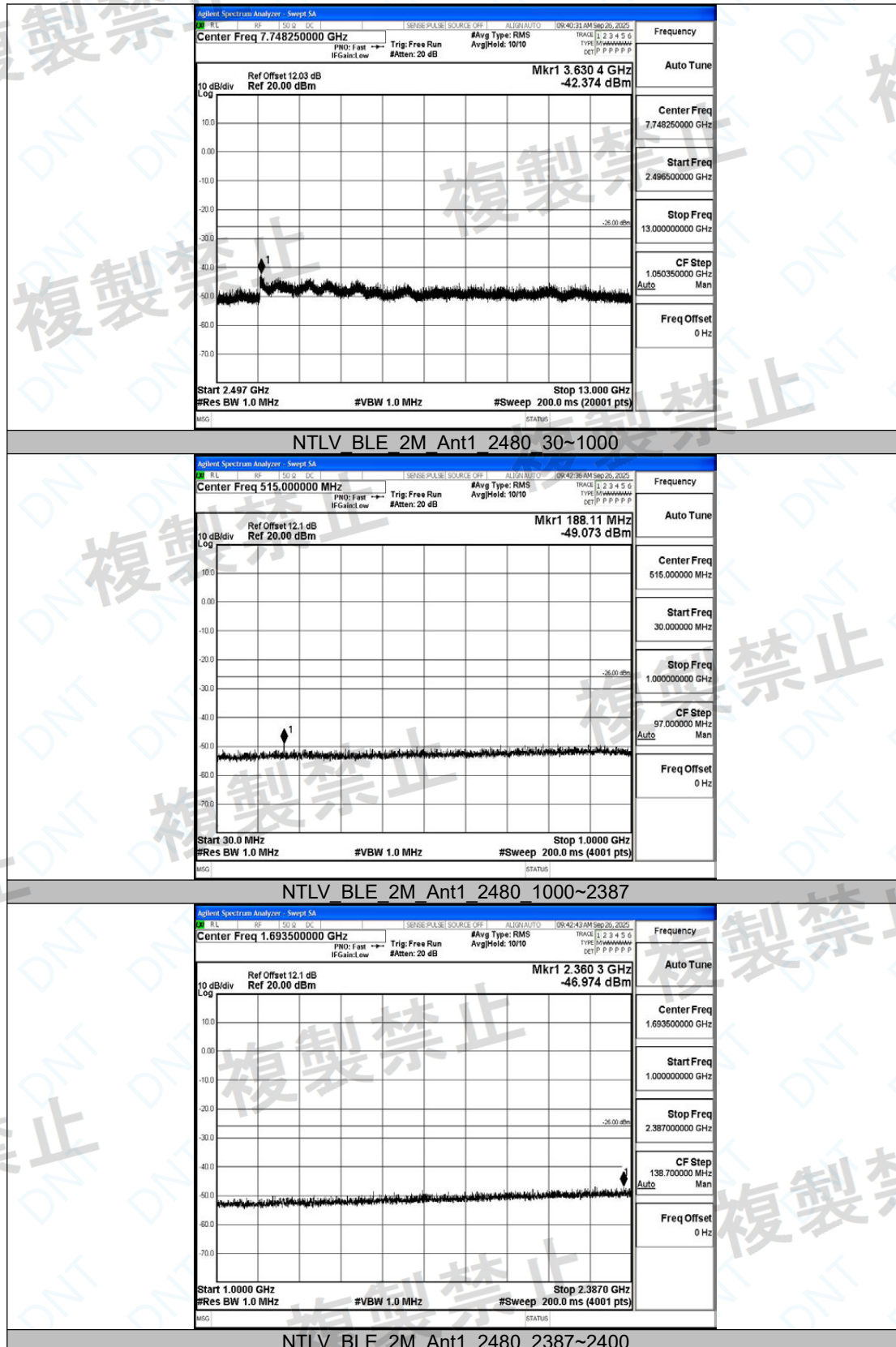


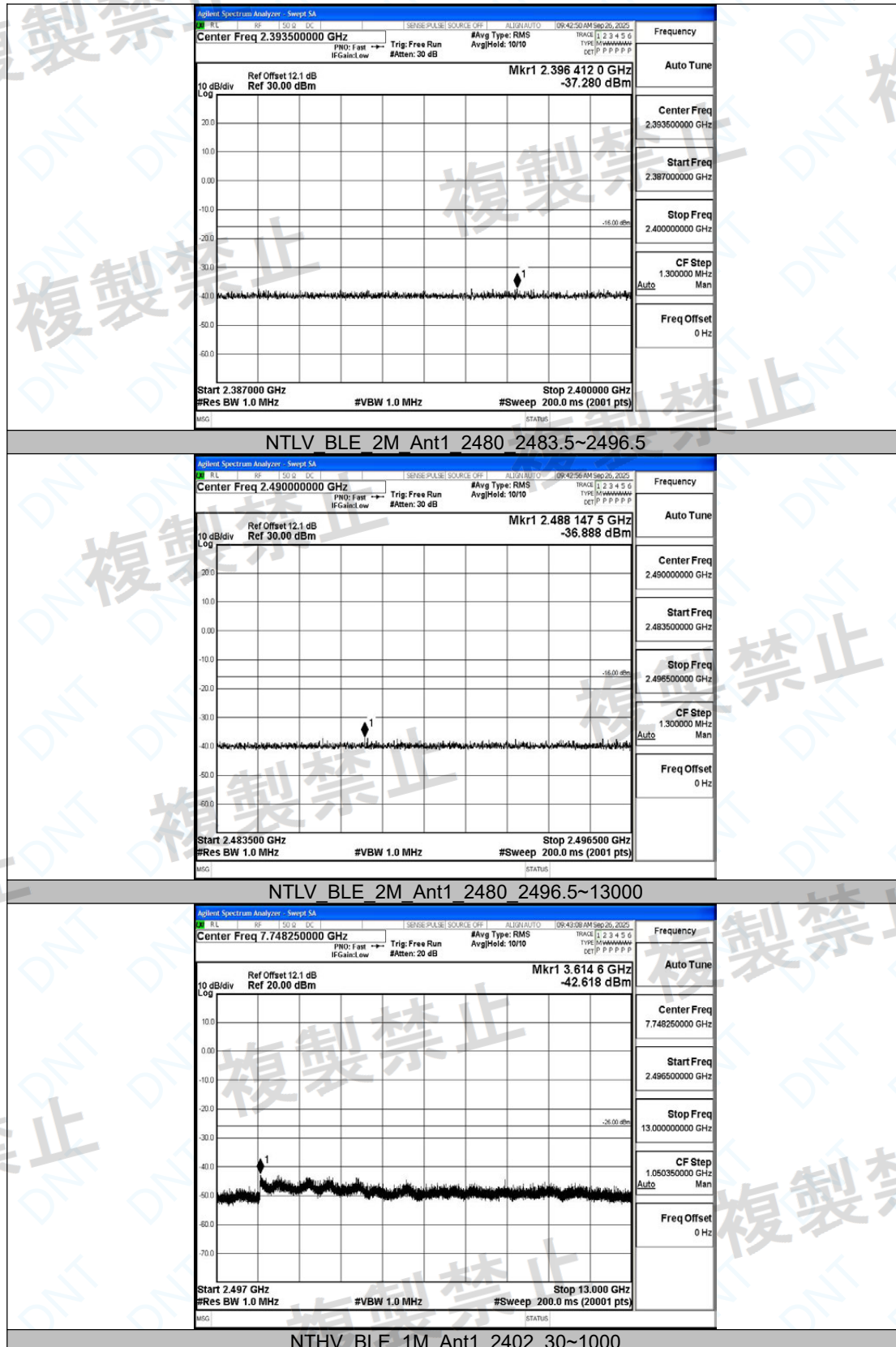


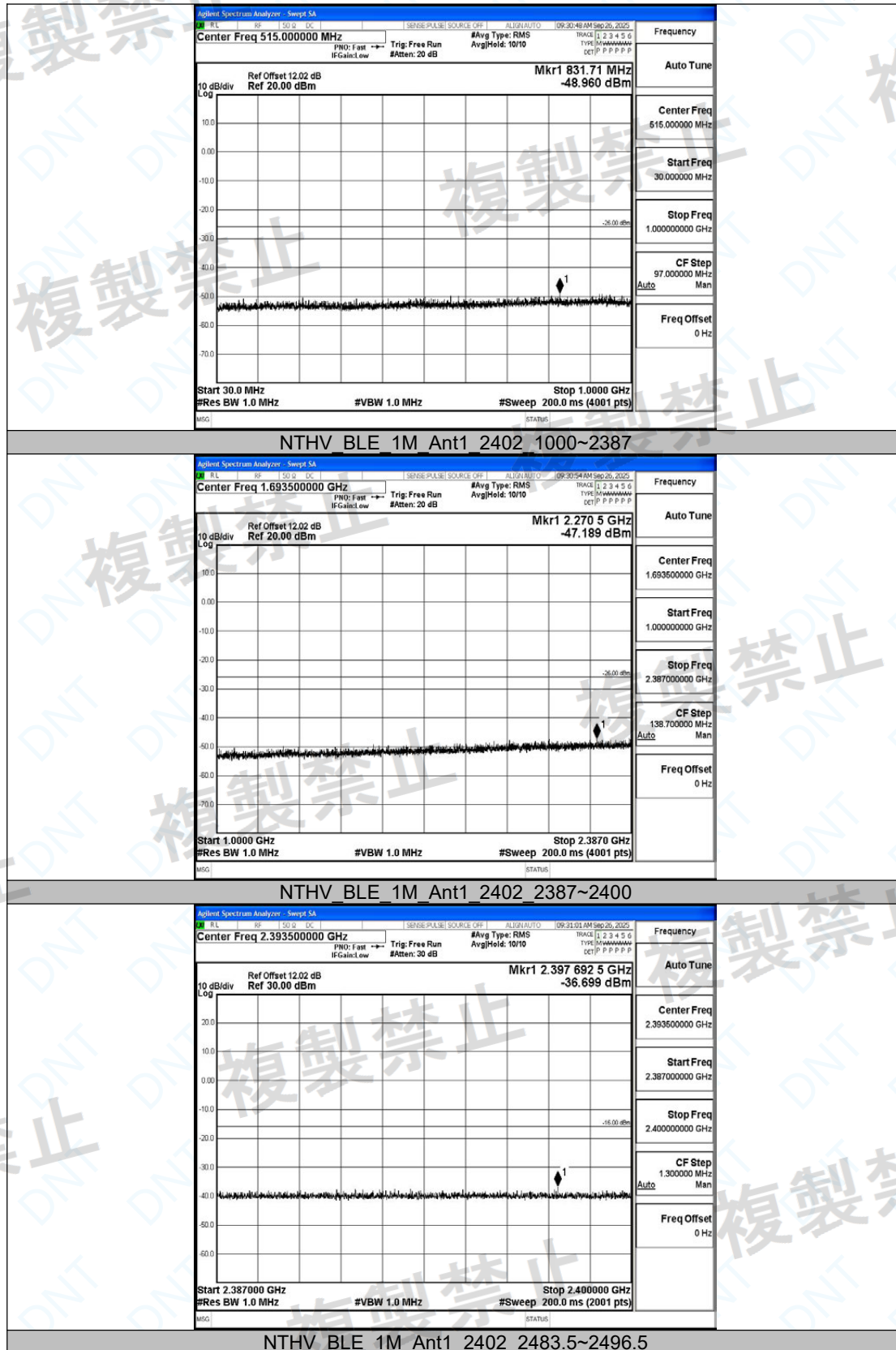


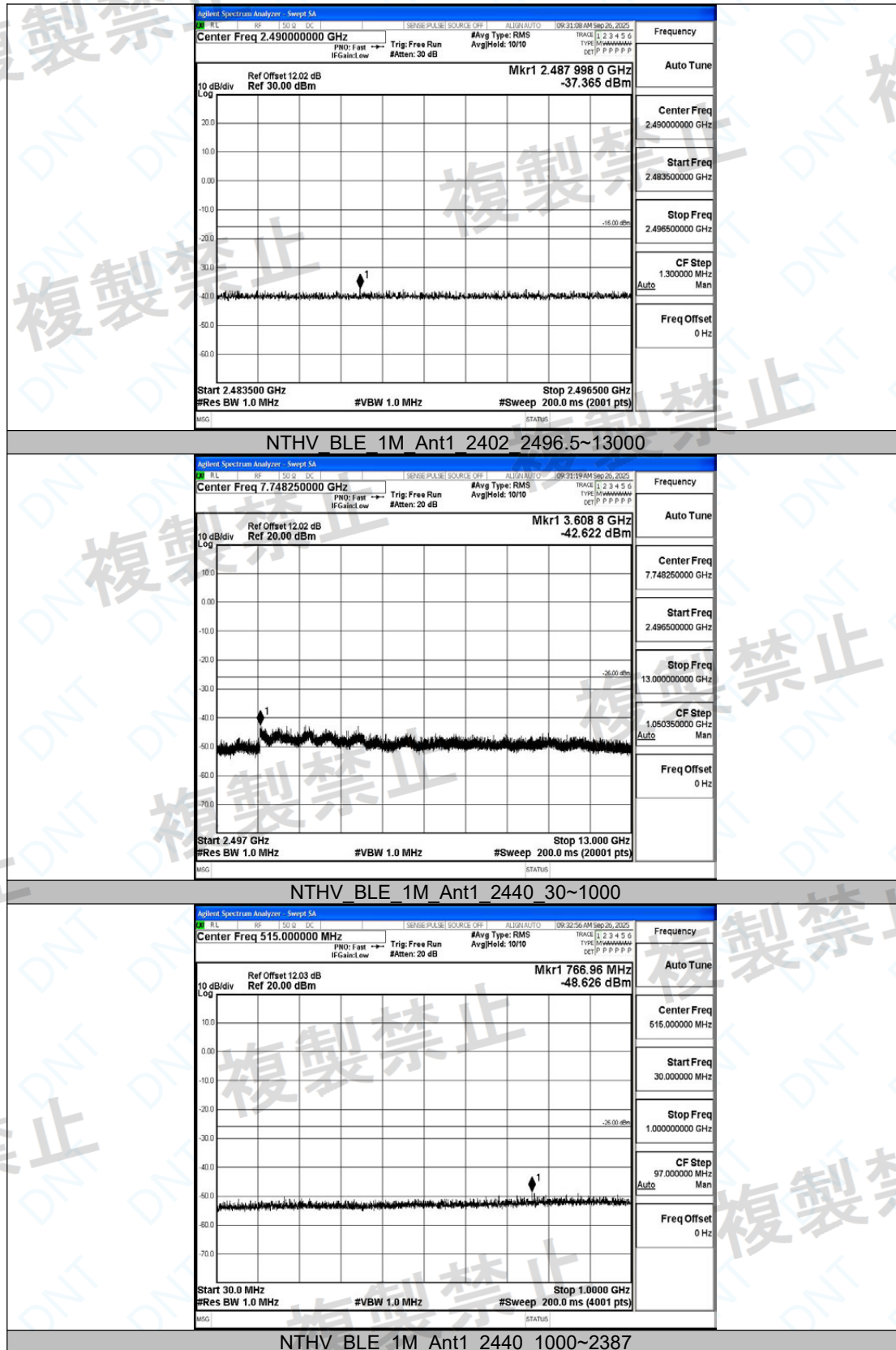


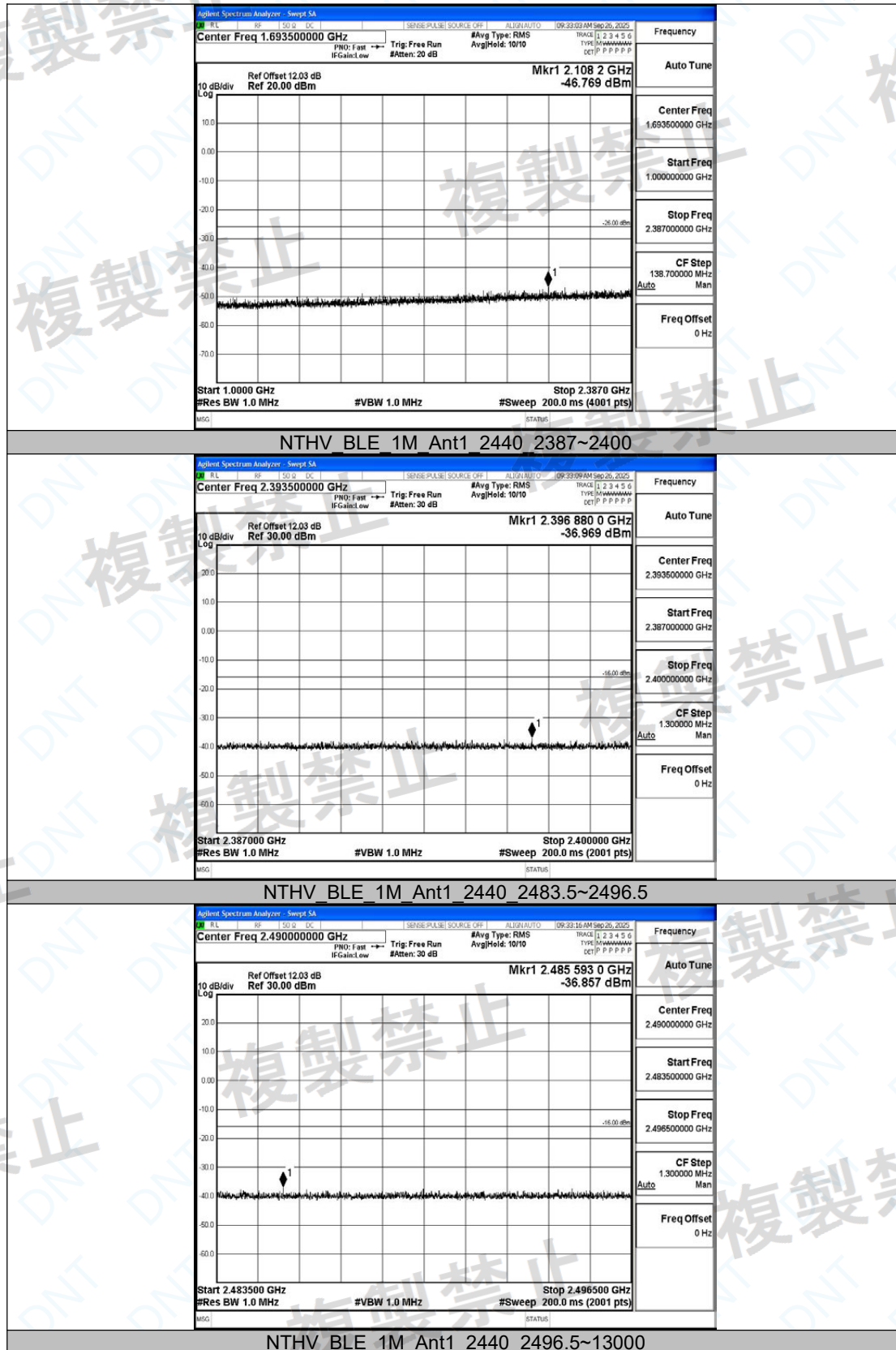


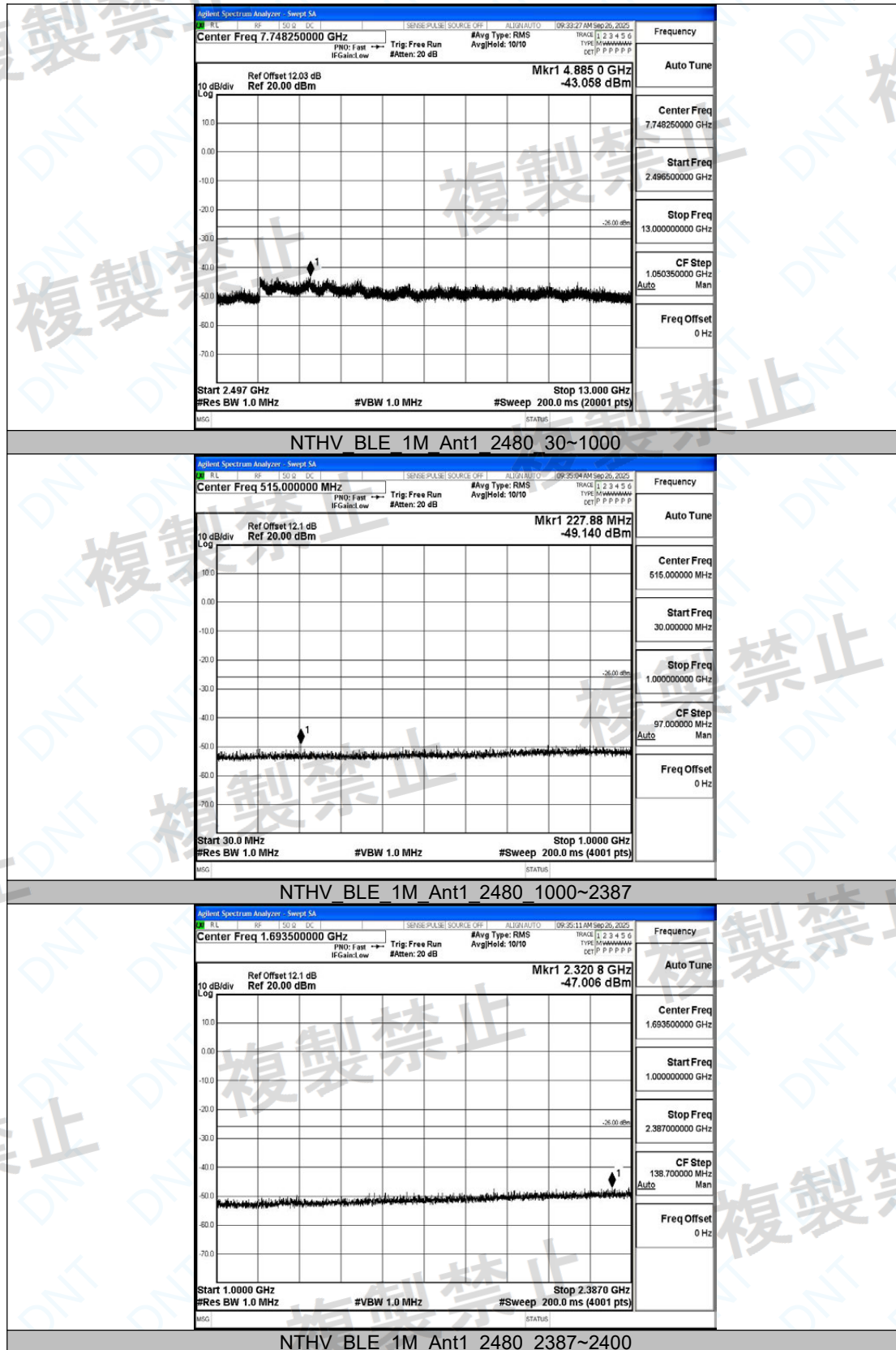


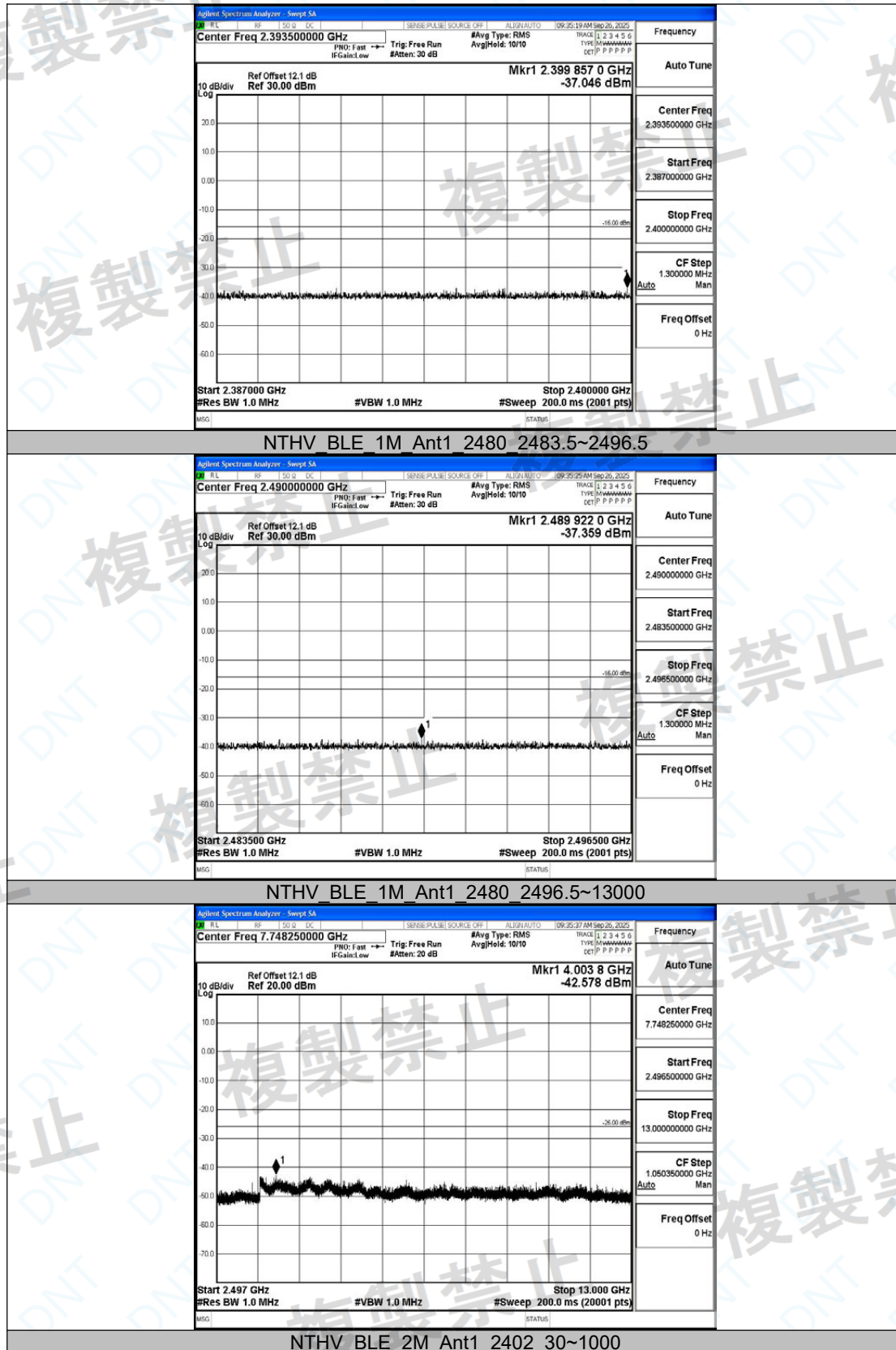


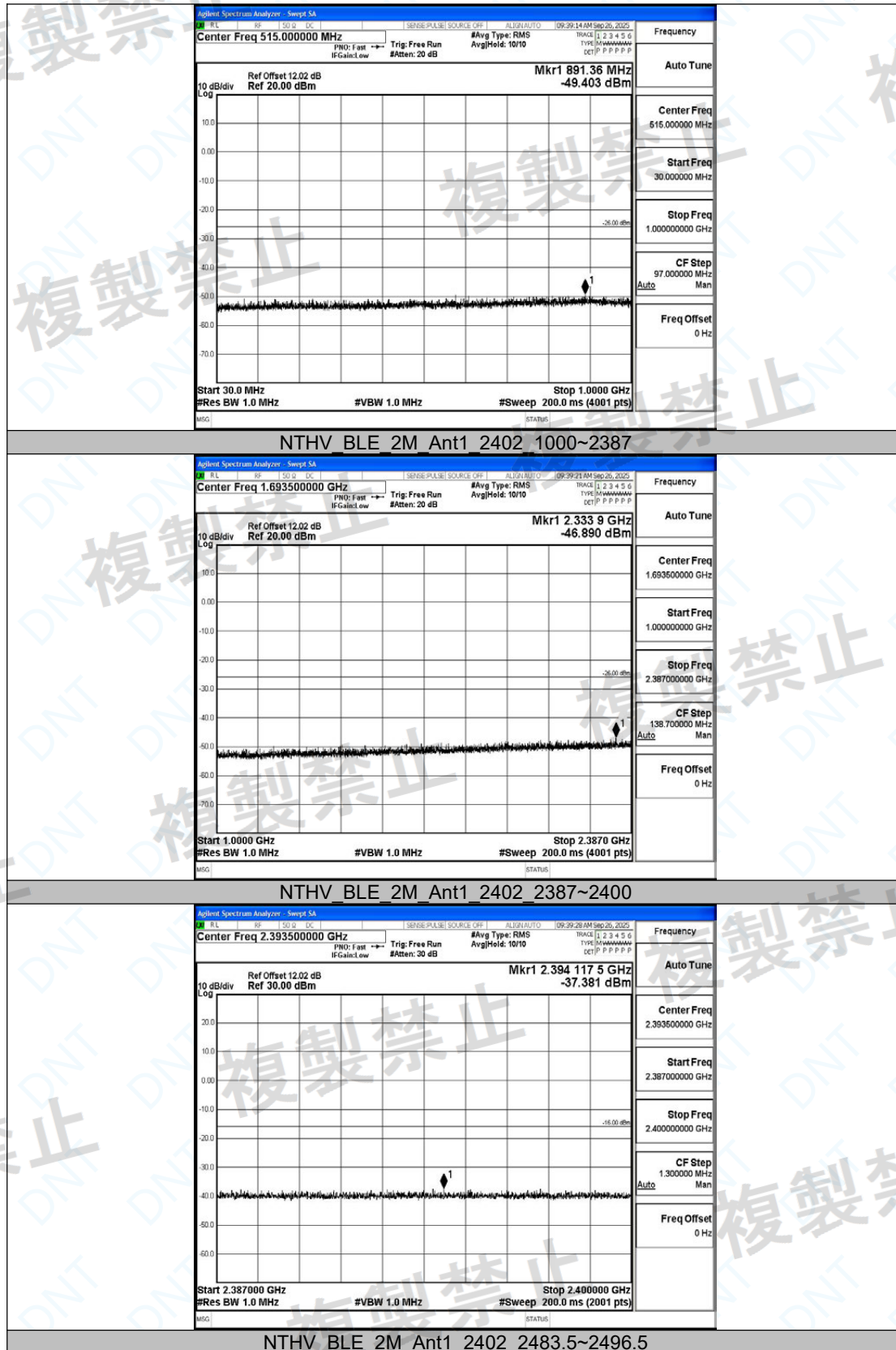


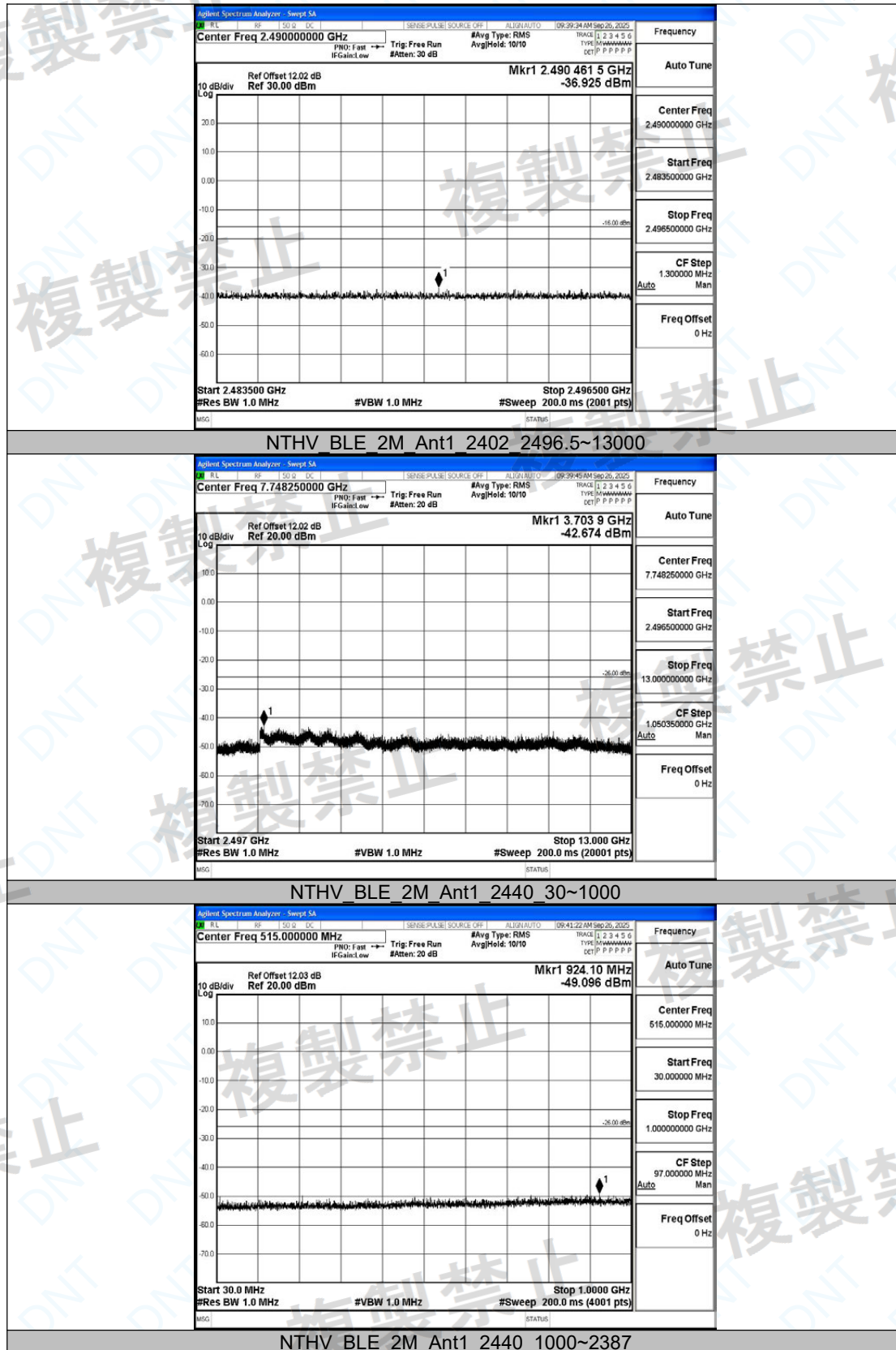


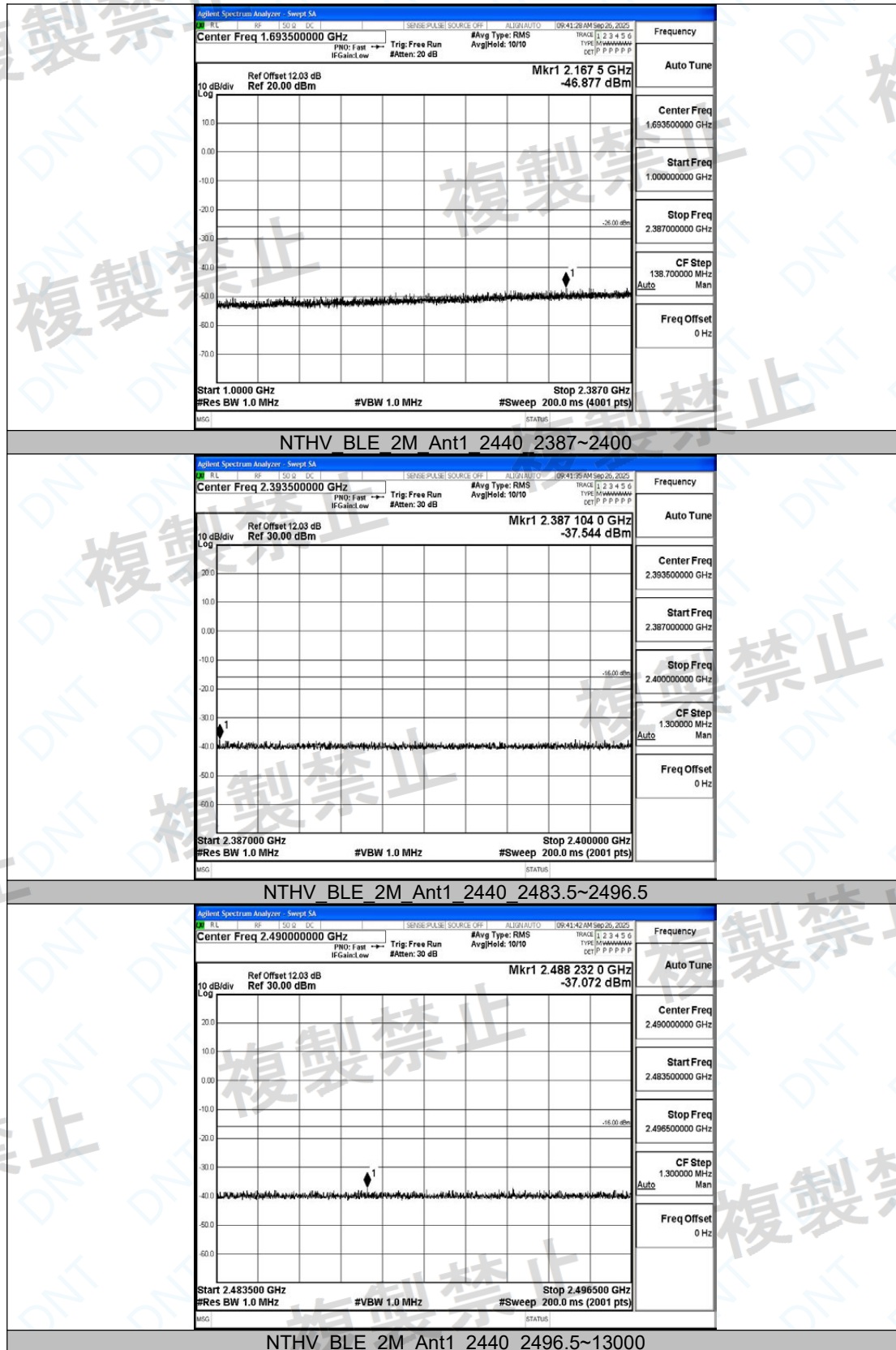


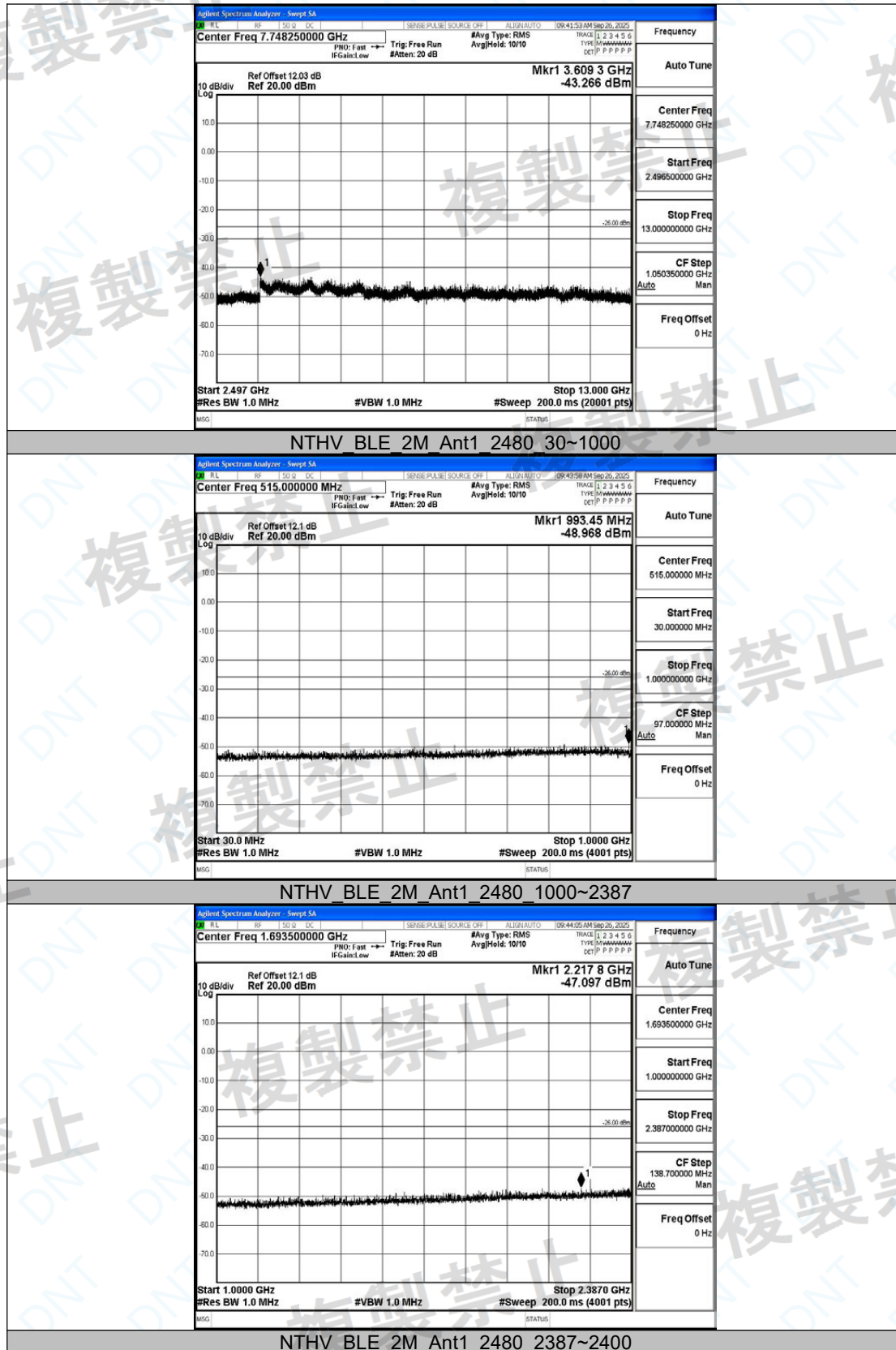


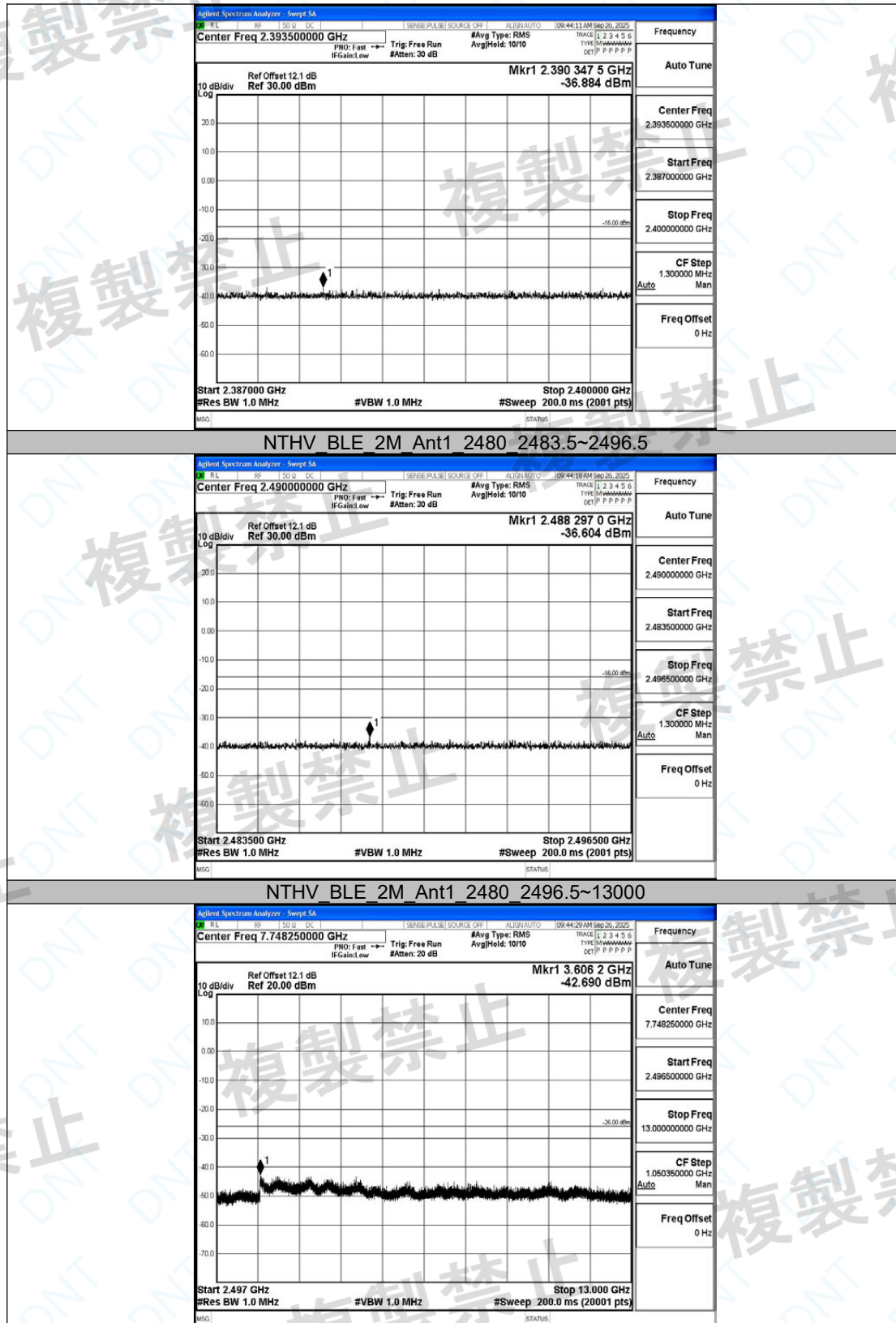












Note: SA set to from 2.4965GHz to 13GHz, plot shows from 2.497GHz to 13GHz as of SA' s default format.

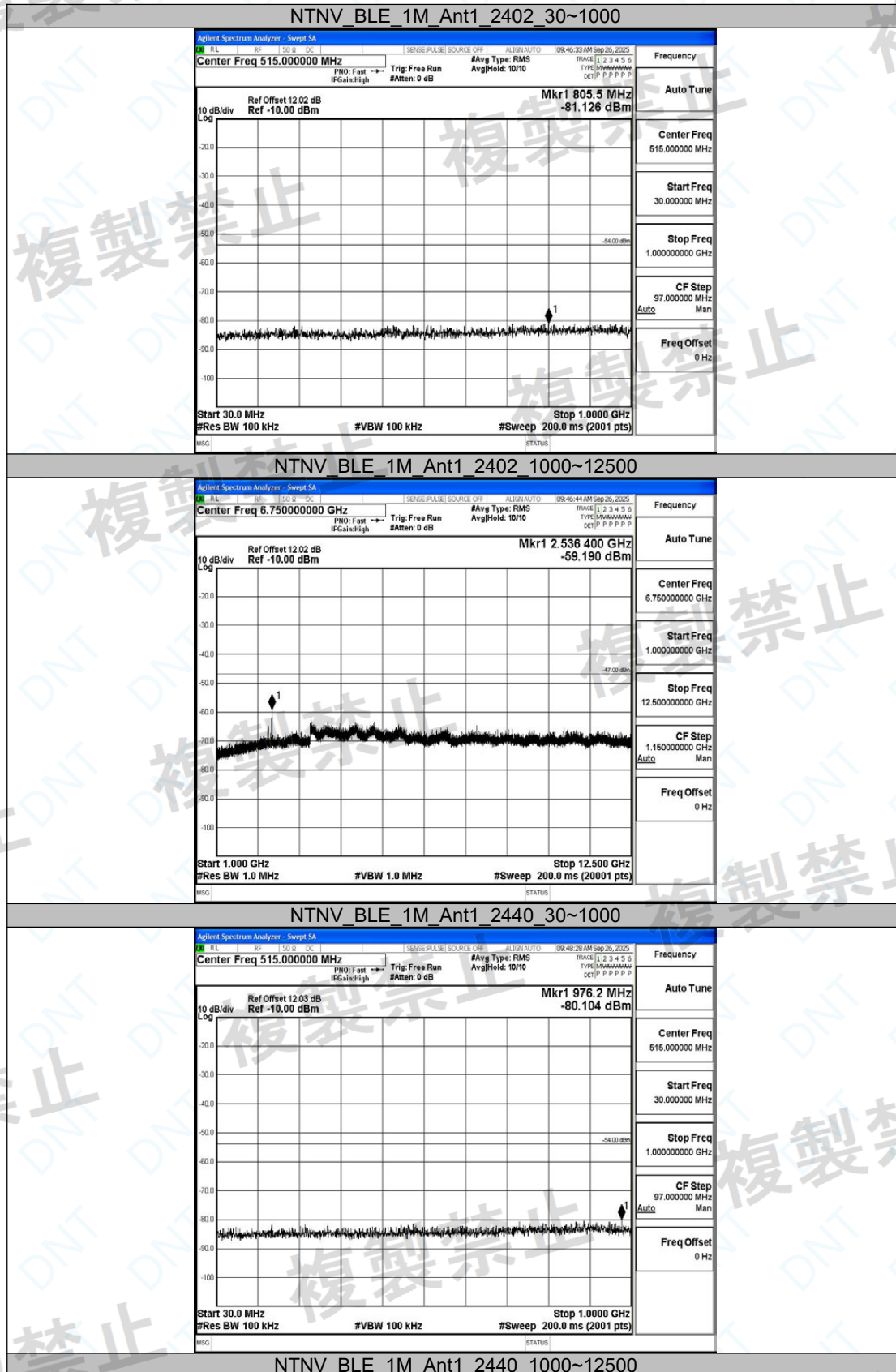
**Appendix F: Spurious Emission of RX****Test Result**

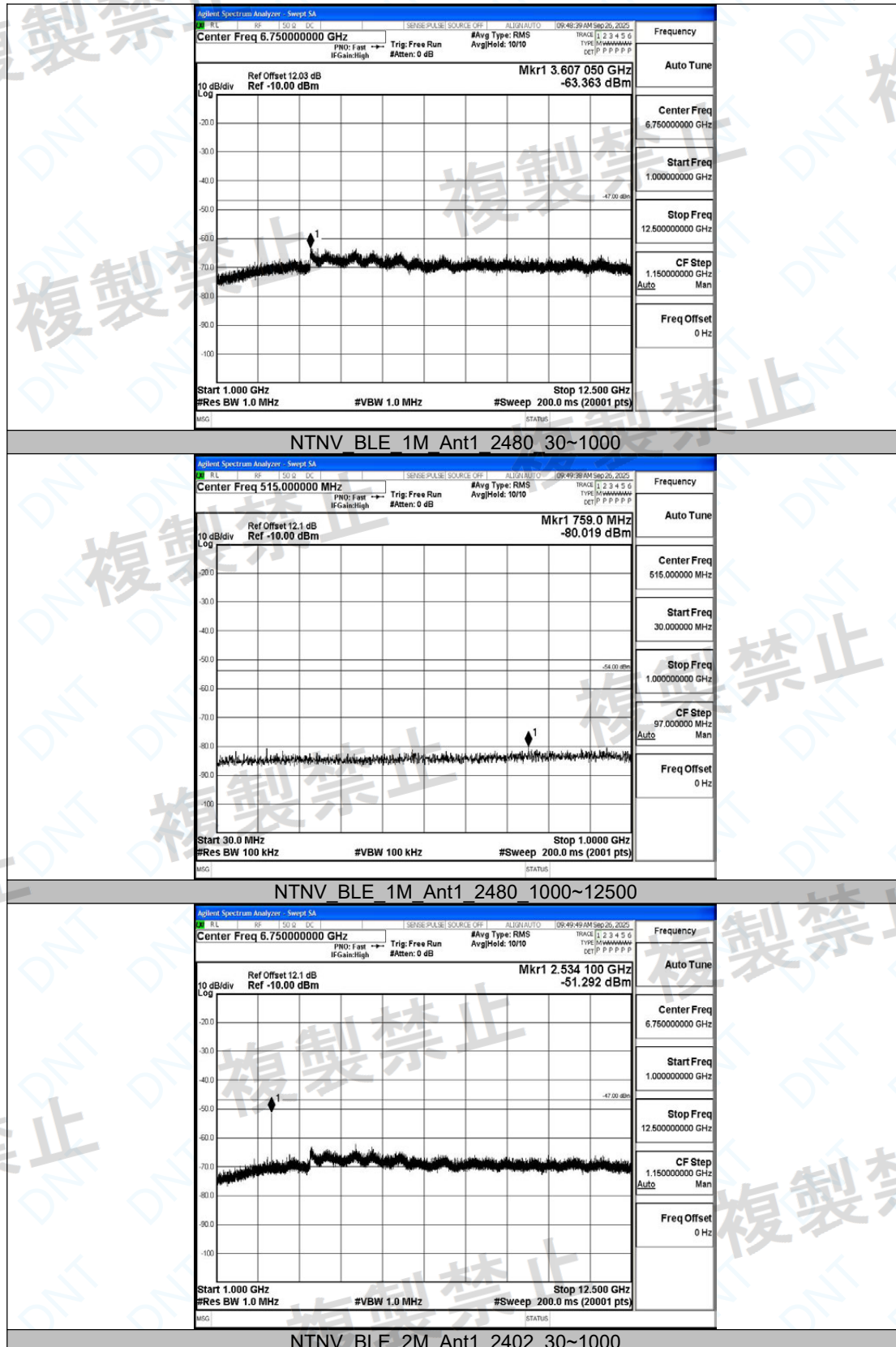
TestCondition	TestMode	Antenna	Freq(M Hz)	Freq.Range [MHz]	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [nW]	Limit [nW]	Verdict
NTNV	BLE_1M	Ant1	2402	30~1000	805.52	-81.13	≤-54	0.00771	≤4	PASS
				1000~12500	2536.40	-59.19	≤-47	1.20504	≤20	PASS
			2440	30~1000	976.24	-80.10	≤-54	0.00977	≤4	PASS
				1000~12500	3607.05	-63.36	≤-47	0.46132	≤20	PASS
			2480	30~1000	758.96	-80.02	≤-54	0.00995	≤4	PASS
				1000~12500	2534.1	-51.29	≤-47	7.43019	≤20	PAS
	BLE_2M	Ant1	2402	30~1000	786.60	-80.15	≤-54	0.00966	≤4	PAS
				1000~12500	4848.48	-62.80	≤-47	0.52481	≤20	PAS
			2440	30~1000	873.42	-80.55	≤-54	0.00881	≤4	PAS
				1000~12500	3650.18	-62.75	≤-47	0.53088	≤20	PAS
			2480	30~1000	849.65	-80.06	≤-54	0.00986	≤4	PAS
				1000~12500	2472.58	-55.50	≤-47	2.81838	≤20	PAS
NTLV	BLE_1M	Ant1	2402	30~1000	869.54	-79.81	≤-54	0.01045	≤4	PAS
				1000~12500	2531.23	-48.68	≤-47	13.5518	≤20	PAS
			2440	30~1000	878.75	-80.22	≤-54	0.00951	≤4	PAS
				1000~12500	3498.95	-51.68	≤-47	6.79204	≤20	PAS
			2480	30~1000	865.66	-80.69	≤-54	0.00853	≤4	PAS
				1000~12500	2424.85	-59.30	≤-47	1.17490	≤20	PAS
	BLE_2M	Ant1	2402	30~1000	883.60	-80.20	≤-54	0.00955	≤4	PAS
				1000~12500	2479.48	-53.13	≤-47	4.86407	≤20	PAS
			2440	30~1000	890.39	-79.43	≤-54	0.01140	≤4	PAS
				1000~12500	2459.93	-58.91	≤-47	1.28529	≤20	PAS
			2480	30~1000	967.02	-80.14	≤-54	0.00968	≤4	PAS
				1000~12500	2459.93	-55.66	≤-47	2.71644	≤20	PAS
NTHV	BLE_1M	Ant1	2402	30~1000	897.18	-80.17	≤-54	0.00962	≤4	PAS
				1000~12500	4864.58	-62.69	≤-47	0.53827	≤20	PAS
			2440	30~1000	949.56	-80.68	≤-54	0.00855	≤4	PAS
				1000~12500	2444.98	-59.80	≤-47	1.04713	≤20	PASS
			2480	30~1000	900.09	-80.56	≤-54	0.00879	≤4	PASS
				1000~12500	4088.90	-62.53	≤-47	0.55847	≤20	PASS
	BLE_2M	Ant1	2402	30~1000	646.92	-80.76	≤-54	0.00839	≤4	PASS
				1000~12500	2472	-50.03	≤-47	9.93116	≤20	PAS
			2440	30~1000	823.46	-79.97	≤-54	0.01007	≤4	PAS
				1000~12500	5313.65	-62.32	≤-47	0.58614	≤20	PAS
			2480	30~1000	438.86	-80.80	≤-54	0.00832	≤4	PAS
				1000~12500	2444.98	-55.87	≤-47	2.58821	≤20	PAS

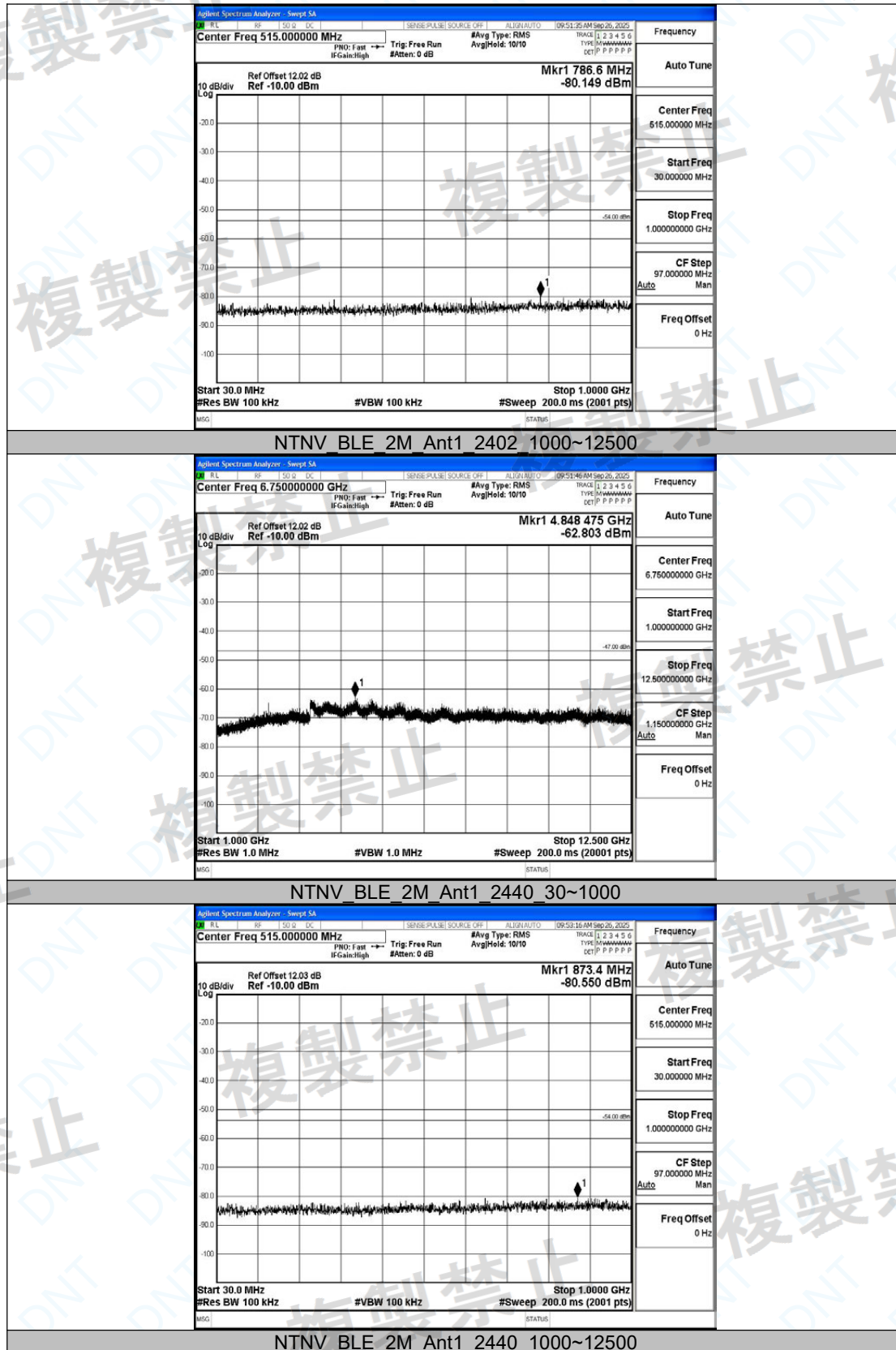
Note: Both left and right earphone have tested, The right earphone is the worst, only the worse case was reported.

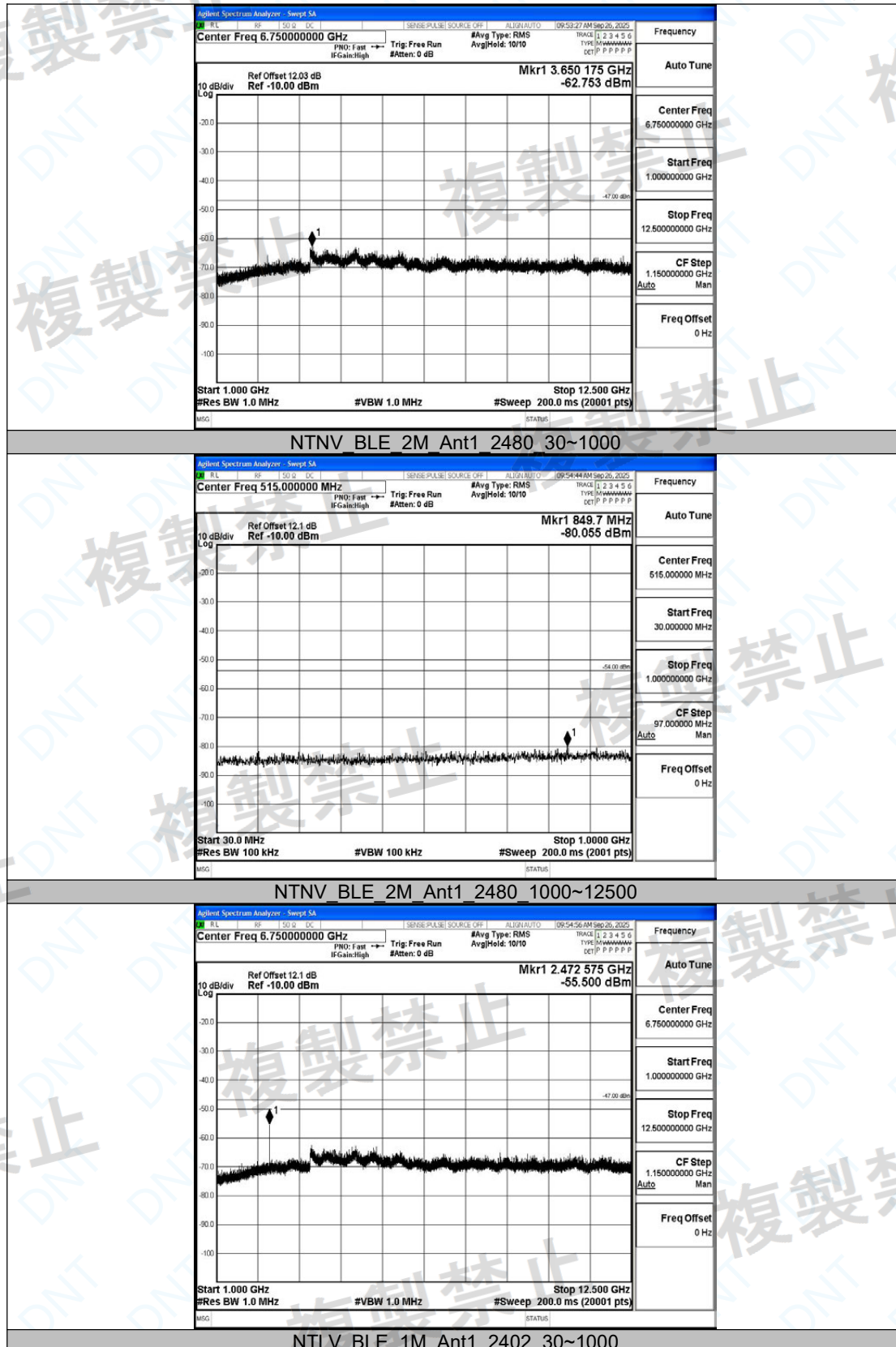


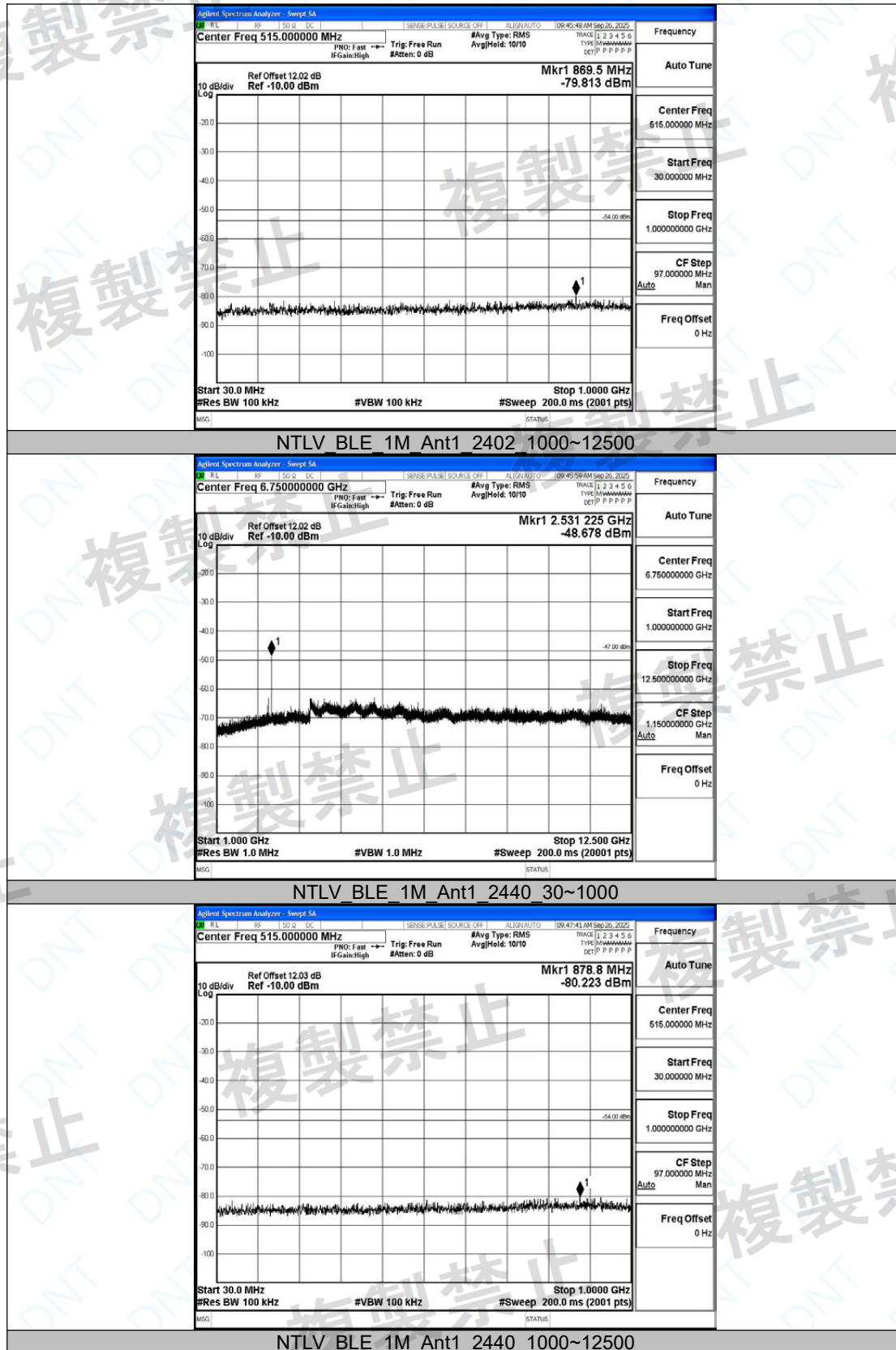
Test Graphs

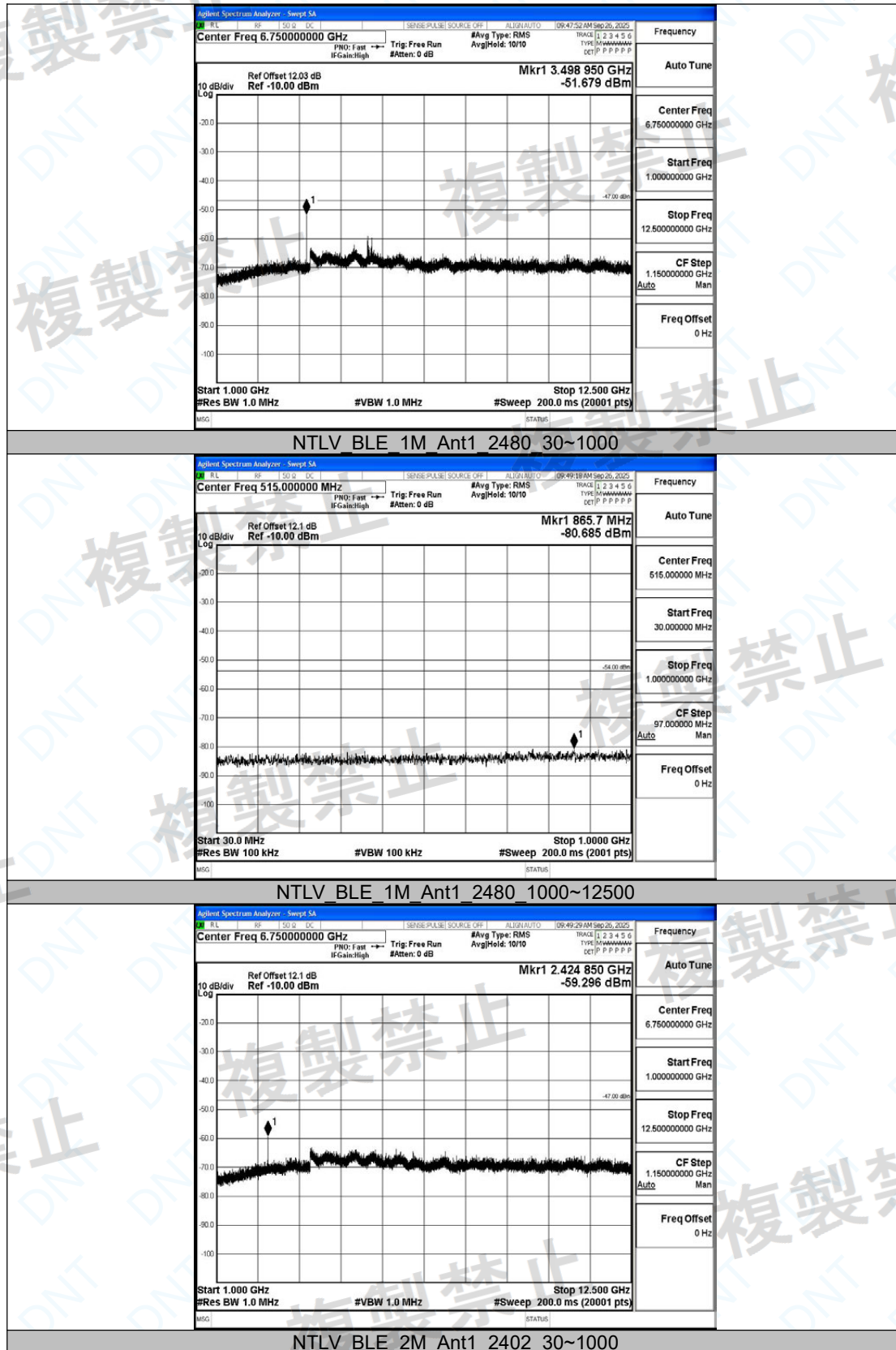


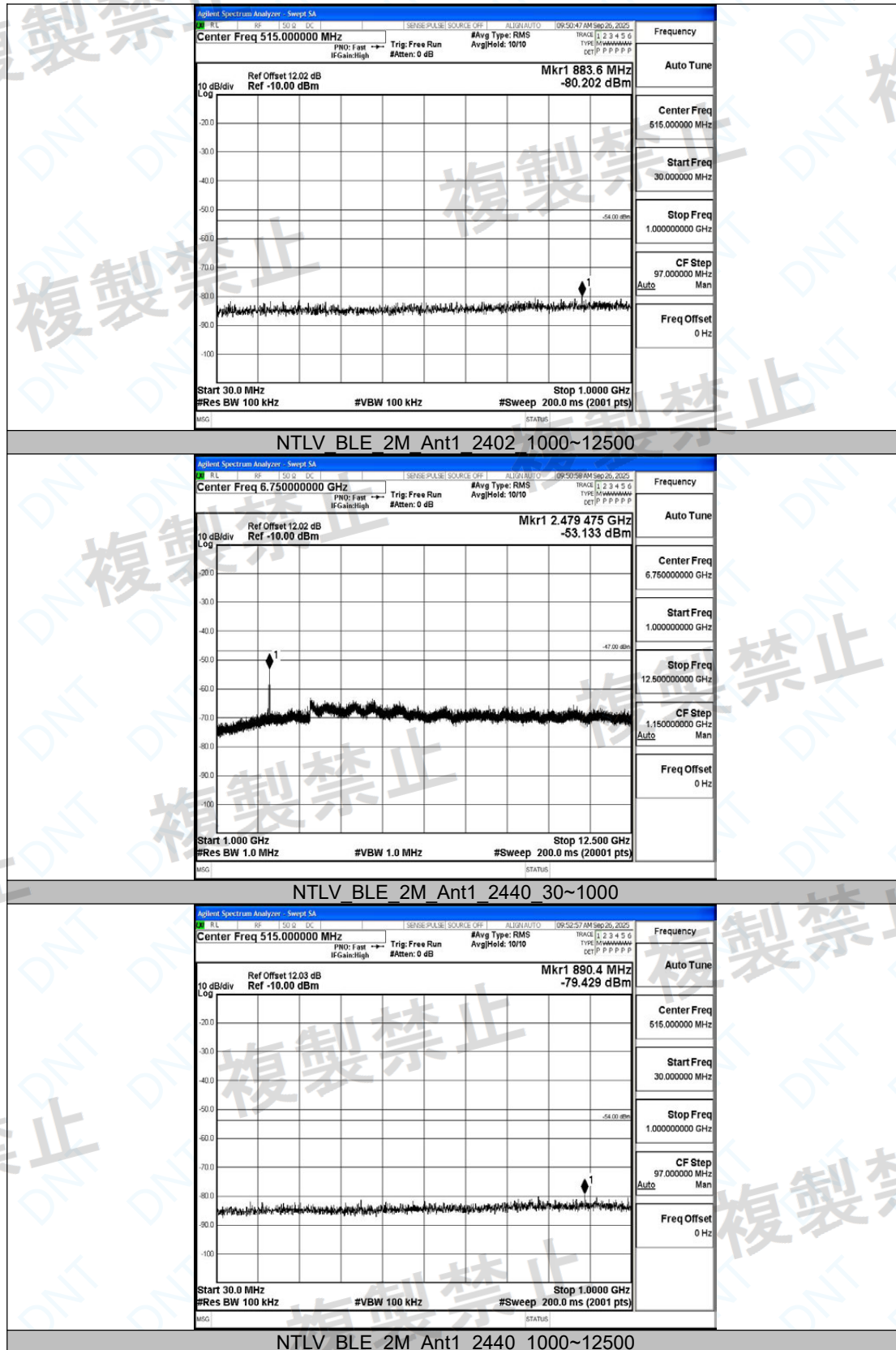


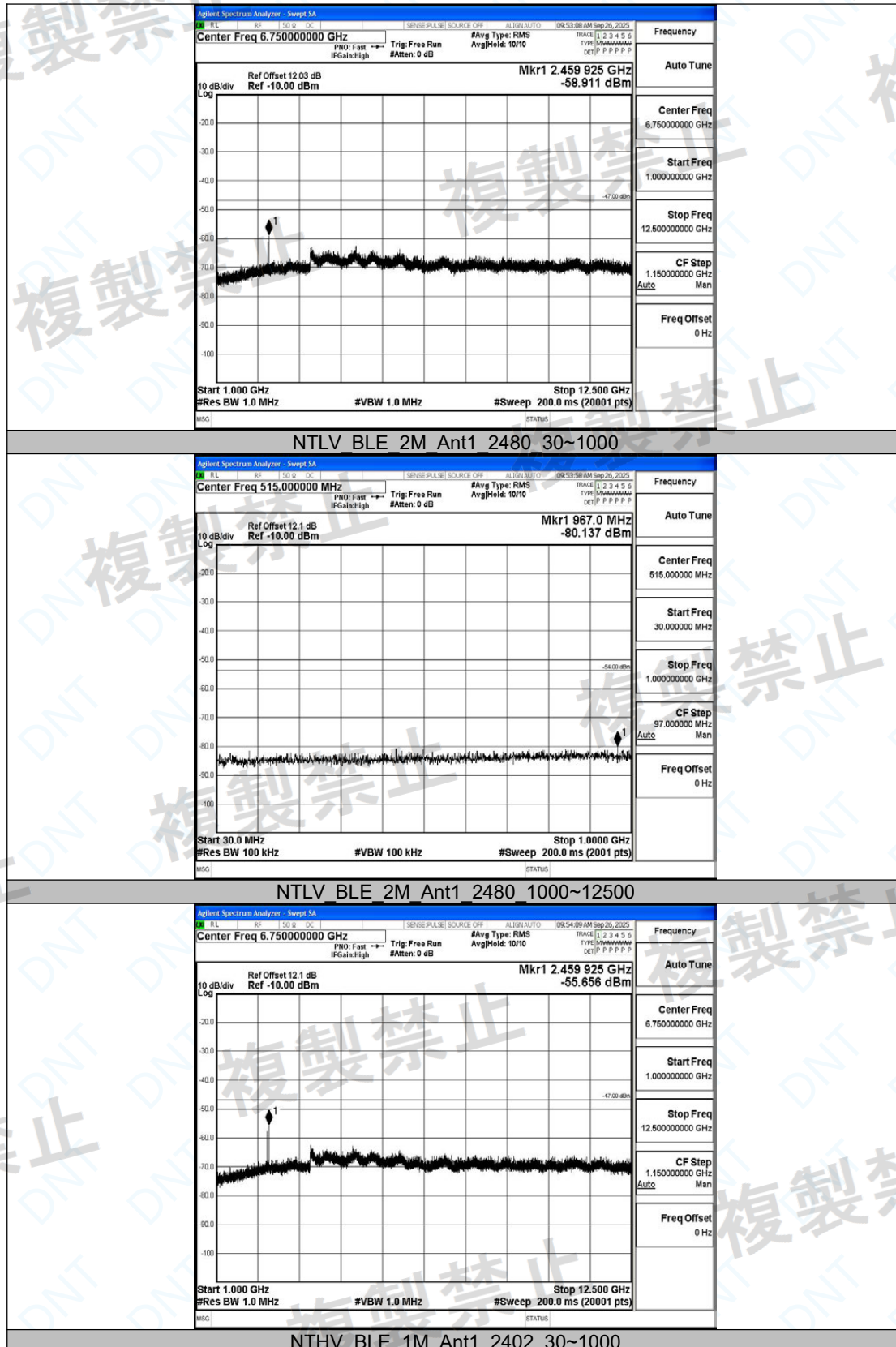


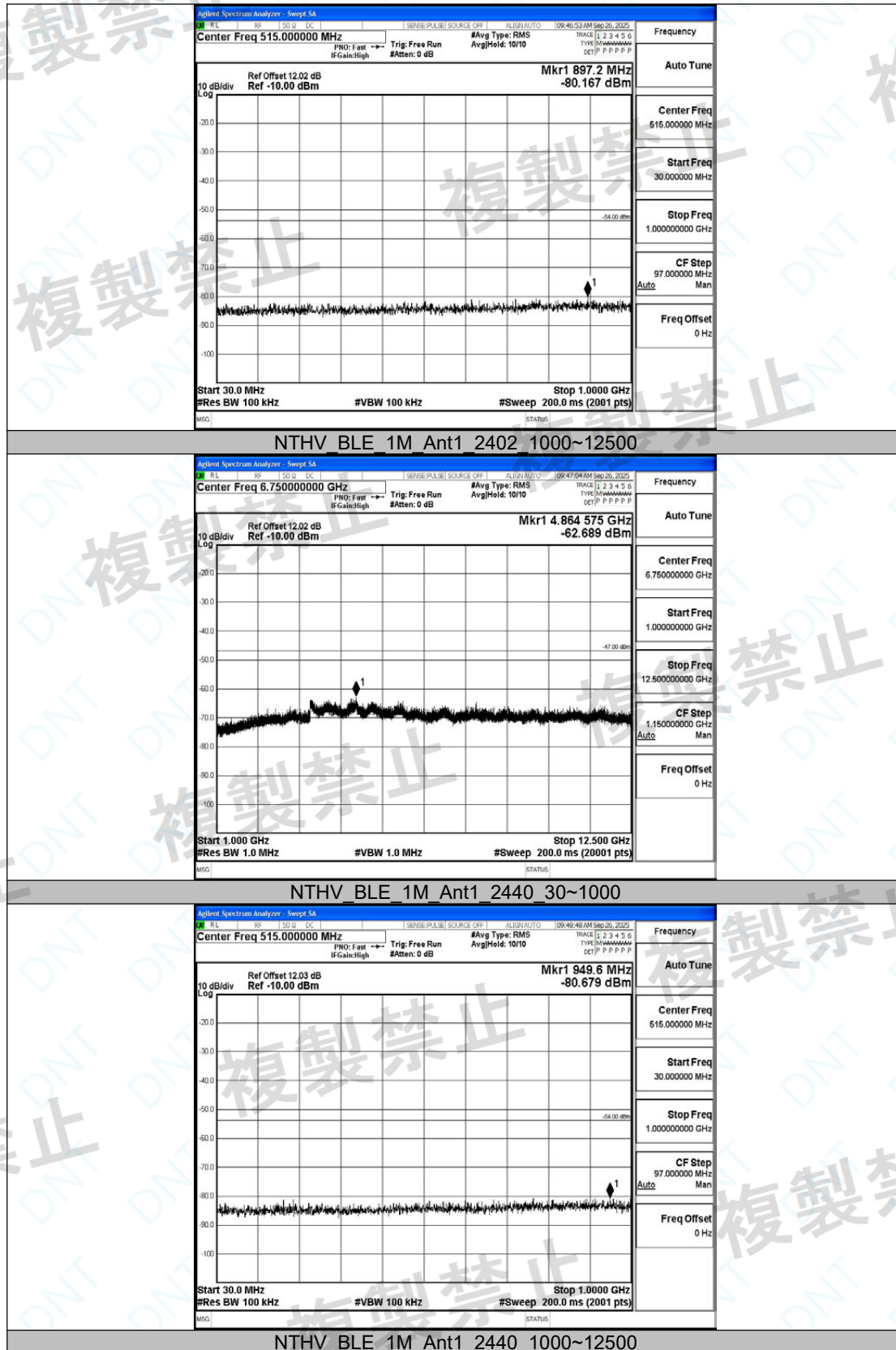


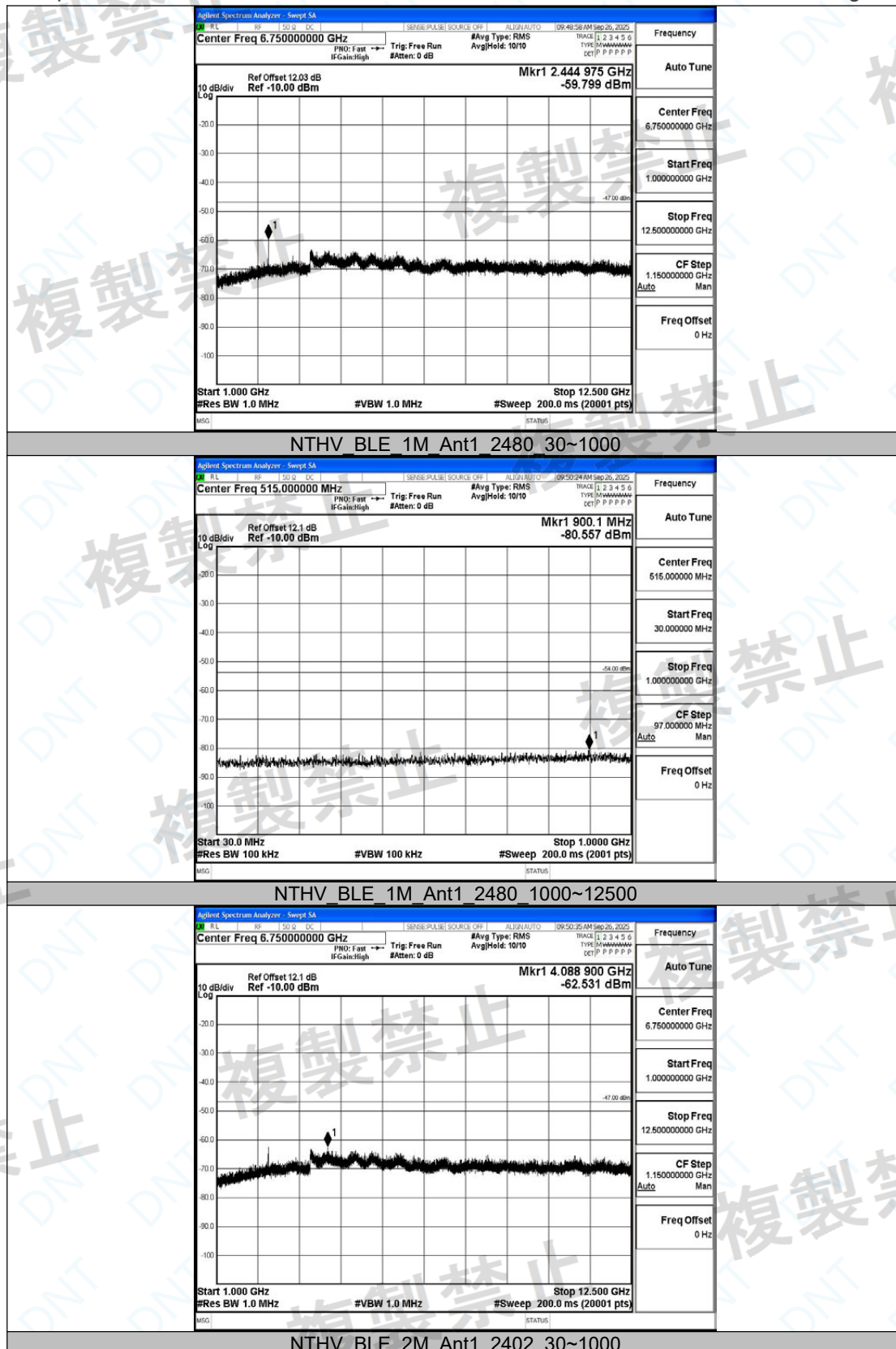


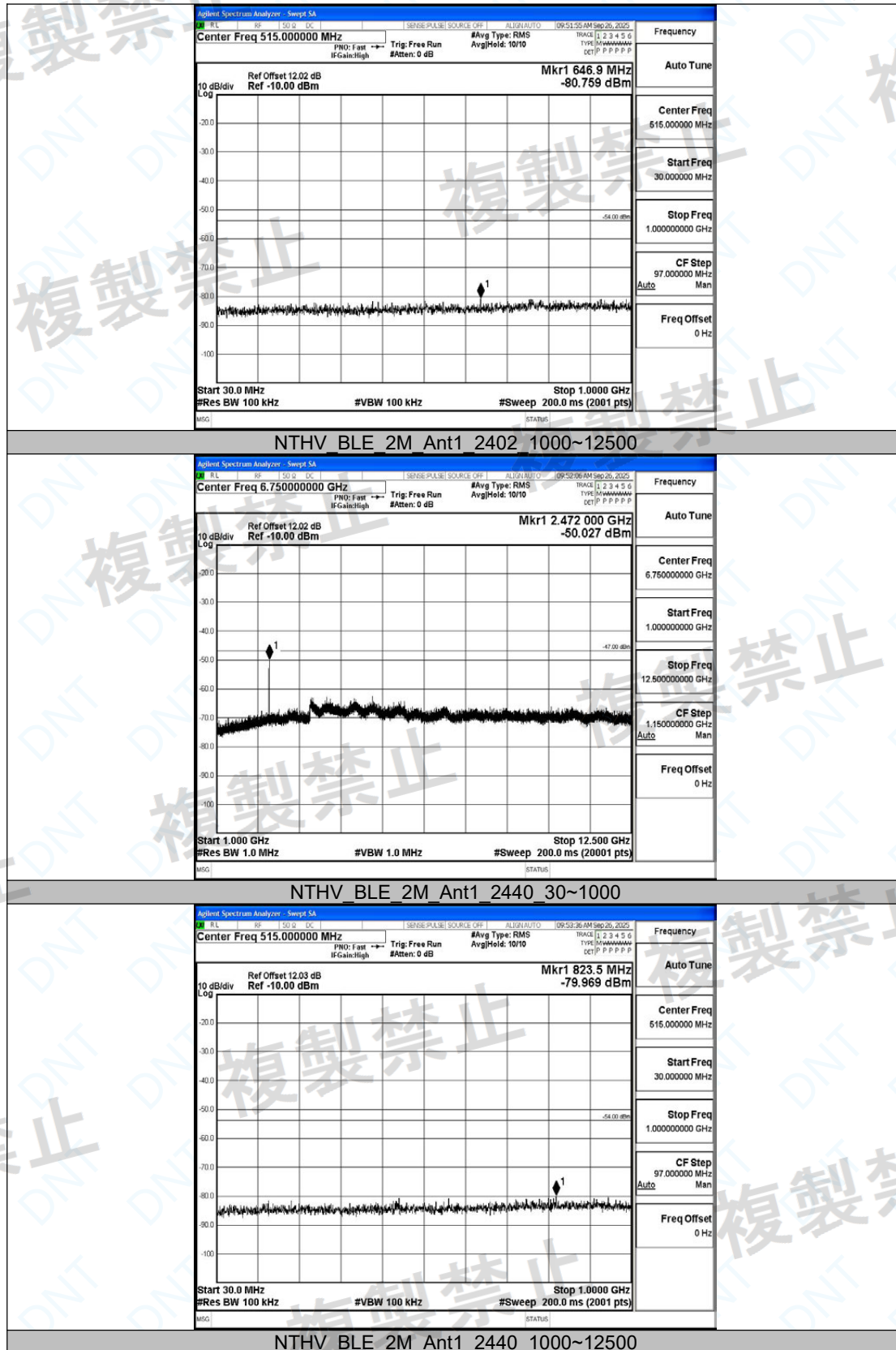


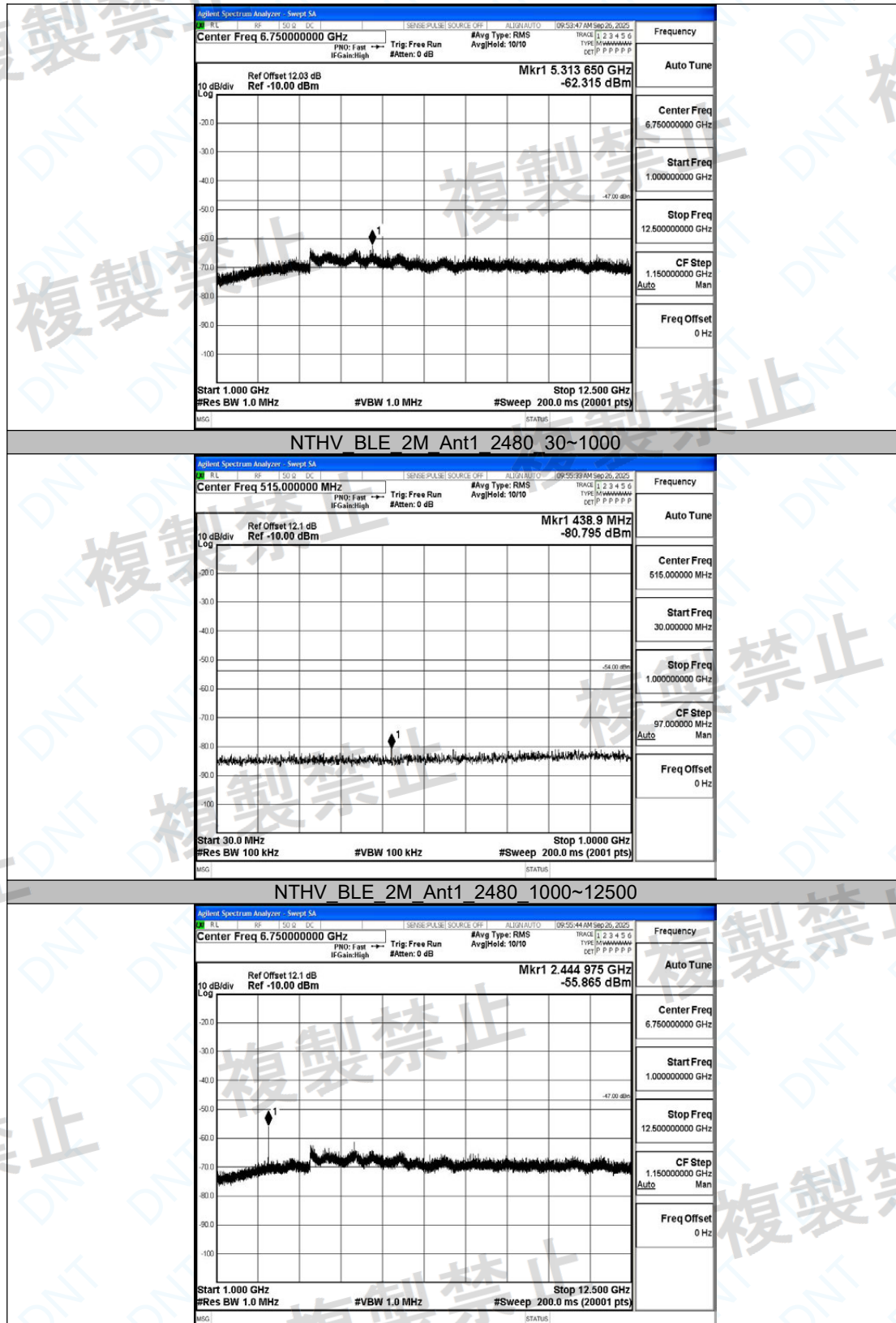












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