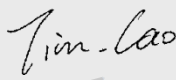
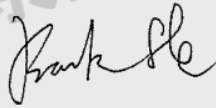


Test report No:

2650537R.702

MIC TEST REPORT

Product Name	Electronic shift controller
Trademark	L-TWOO
Model and /or type reference	eSW001
Applicant's name / address	Zhuhai L-TWOO Sport Technology Co., Ltd. No. 296, Dingwan 3rd Road, Sanzao Town, Jinwan District, Zhuhai City, Guangdong Province, P.R. China
Test method requested, standard	Notification No. 88 Annex 43 Article 2 Paragraph 1 item 19
Verdict Summary	IN COMPLIANCE
Documented by (name / position & signature)	Tim Cao / Project Manager 
Approved by (name / position & signature)	Frank He / Technical Manager 
Date of issue	2026-07-18
Report Version	V1.0
Report template No	Template_MIC-BT-RF-V1.0

INDEX

	page
Competences and Guarantees	3
General conditions	3
Document History	4
Test Summary	5
Used Equipment	6
Uncertainty	7
1 General Information	8
2 Description of Test Setup	9
2.1 Test Voltage	10
3 Verdict summary section	11
3.1 Standards	11
3.2 Deviation(s) from the Standard(s) / Test Specification(s)	11
4 TEST ITEMS OF LIMIT/SETUP/PROCEDURE	12
4.1 Antenna Power Antenna Power Tolerance and E.I.R.P.	12
4.2 Occupied Bandwidth	13
4.3 Frequency Tolerance	14
4.4 Transmitter Spurious Emission	16
4.5 Receiver Spurious Emission	18
4.6 Interference Prevention Function Measurement	20
5 Conforming the structure that is difficult to open	21
6 Setup photo and EUT photo	22
Antenna Power Tolerance and E.I.R.P.	24
Frequency Error	25
Occupied Bandwidth	27
Spread Bandwidth	29
Spurious Emission of TX	31
Interference Prevention Function	40

COMPETENCES AND GUARANTEES

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA.

GENERAL CONDITIONS

Test Location	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Test Facility	A2LA (Certificate No. 3235.01) CNAS (Certificate No. L5313) FCC - Designation Number: CN1199 Test Firm Registration Number: 566524 ISED - CAB identifier: CN0040 IC#: 4075B
Date (receive sample)	May. 21, 2026
Date (start test)	May. 25, 2026
Date (finish test)	May. 30, 2026

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.
5. The measurement result is considered in conformance with the requirement if it is within the prescribed limit, it is not necessary to account the uncertainty associated with the measurement result.

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
2650537R.702	V1.0	Initial issue of report.	2026-07-18

TEST SUMMARY

Test Item - MIC notification 88 Annex 43				
Performed Test Item	Normative References	Test Performed	Verdict	Remark
Antenna Power Antenna Power Tolerance and E.I.R.P	MIC notification 88 Annex 43 section 6	Yes	PASS	Test data please refer to Appendix
Occupied Bandwidth	MIC Notification 88 Annex 43 section 4	Yes	PASS	Test data please refer to Appendix
Frequency Tolerance	MIC Notification 88 Annex 43 section 3	Yes	PASS	Test data please refer to Appendix
Transmitter Spurious Emissions	MIC Notification 88 Annex 43 section 7	Yes	PASS	Test data please refer to Appendix
Receiver Spurious Emissions	MIC Notification 88 Annex 43 section 7	N/A	N/A	--
Interference Prevention Function	MIC Notification 88 Annex 43 section 12	Yes	PASS	Test data please refer to Appendix
Note: The product only supports TX.				

USED EQUIPMENT

Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Wireless Connectivity Tester	R&S	CMW 270	102593	2026.01.24	2027.01.23
High and low temperature and fast temperature change test box	ASTUOD	ASTD-FBT-225K	N/A	2026.01.11	2027.01.10
Temperature/Humidity Meter	RTS	RTS-8S	RF08	2025.06.17	2026.06.16
Spectrum Analyzer	Agilent	N9010A	MY48030494	2025.09.20	2026.09.19
MAX Signal Analyzer	R&S	FSV3044	101560	2026.01.18	2027.01.17
RF Control Unit	Tonscend	JS0806-2	22G8060594	2025.12.17	2026.12.16
Vector Signal Genertor	R&S	SMM 100A	101853	2026.01.18	2027.01.17
EXG-B MW Analog Signal Generator	Keysight	N5173B	MY61252566	2026.01.18	2027.01.17
Test Software	Tonscend	TS1120	JS1120-3	N/A	N/A

Instrument	Manufacturer	Model No.	Serial No.	Firmware Version	Software version	Calibration Body	Calibration Method
Wireless Connectivity Tester	R&S	CMW 270	102593	V 4.0.60	N/A	CEPREI	c
High and low temperature and fast temperature change test box	ASTUOD	ASTD-FBT-225K	N/A	N/A	N/A	CEPREI	c
Temperature/Humidity Meter	RTS	RTS-8S	RF08	N/A	N/A	CEPREI	c
Spectrum Analyzer	Agilent	N9010A	MY48030494	A.14.03	N/A	CEPREI	c
MAX Signal Analyzer	R&S	FSV3044	101560	2.30SP1	N/A	CEPREI	c
Vector Signal Genertor	R&S	SMM 100A	101853	5.00.166.23	N/A	CEPREI	c
EXG-B MW Analog Signal Generator	Keysight	N5173B	MY61252566	B.01.95	N/A	GRGTEST	c

Calibration Method:

(a) Calibration conducted by the National Institute of Information and Communications Technology (NICT) in Japan (hereinafter referred to as "NICT") or a designated calibration agency under Article 102-18 paragraph (1) in JRL.

(b) Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Act (Act No. 51 of 1992).

(c) Calibration conducted in countries except Japan, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1).

(d) Calibration, etc. conducted by using measuring instruments and other equipment listed in the right column of appended table No. 3, which shall have been given any type of calibration, etc. listed above from (a) to (c).

the calibration corresponds to C described above.

From TBL Article 87, paragraph 1, item 2

Notice: Calibration duration for above equipments is 1 year.

CEPREI : China ceprei laboratory calibration & testing centre.

DEKRA : DEKRA Testing and Certification (Suzhou) Co., Ltd.

GRGTEST: Grg Metrology&Test (WuXi) Co.,Ltd.

UNCERTAINTY

Uncertainties have been calculated according to the DEKRA internal document. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

Test item	Uncertainty
Antenna Power Antenna Power Tolerance and E.I.R.P	± 1.3 dB
Occupied Bandwidth	± 0.15 kHz
Frequency Tolerance	± 0.15 kHz
Transmitter Spurious Emissions	± 1.3 dB
Receiver Spurious Emissions	± 1.3 dB

1 GENERAL INFORMATION

Product Name:	Electronic shift controller
Model Name:	eSW001
Trademark:	L-TWOO
Hardware Version:	V1.01
Software Version:	V0.1.4
Manufacturer:	Zhuhai L-TWOO Sport Technology Co., Ltd.
Manufacturer Address:	No. 296, Dingwan 3rd Road, Sanzao Town, Jinwan District, Zhuhai City, Guangdong Province, P.R. China
Factory:	Zhuhai L-TWOO Sport Technology Co., Ltd.
Factory Address:	No. 296, Dingwan 3rd Road, Sanzao Town, Jinwan District, Zhuhai City, Guangdong Province, P.R. China
Power Supply:	3.2 Vdc
Wireless specification:	SRD 2.4G TX Only
Operating frequency range(s):	2401~2480MHz
Antenna Type:	Ceramic Antenna
Antenna Gain:	1.50 dBi
Declared Power:	2 mW
Remark:	As above information is provided and confirmed by the applicant. DEKRA is not liable to the accuracy, suitability, reliability or/and integrity of the information.

Power setting in test

SRD 2.4G	Mode	Frequency (MHz)	Power Setting
	GFSK	2402	Default
		2441	Default
		2480	Default

2 DESCRIPTION OF TEST SETUP

Auxiliary equipment	Type / Version	Manufacturer	Supplied by
(1) Notebook	ThinkPad T14	Lenovo	Adapter
(2) USB Control Cable	N/A	N/A	N/A
(3) USB Control Cable	N/A	N/A	N/A
software	Type / Version	Manufacturer	Supplied by
N/A	N/A	N/A	N/A

Accessories Information	Cable		
	Length used during test [m]	Attached during test	Shielded
(2)USB Control Cable	1	☒	☐

2.1 Test Voltage

Power supply voltage fluctuation test

Voltage Fluctuation Test	Normal Voltage	High Voltage Normal Voltage +10% of	Low Voltage Normal Voltage -10% of
Input To EUT	DC 3.0 V	DC 3.3 V	DC 2.7 V
Test Result	2.99 V	2.9 V	2.9 V
Voltage Variation	Reference	0%	0%
Note: Changing the supply voltage of the EUT will not change the voltage of the RF module. During the input supply voltage to the EUT from the external power source is varied by +/- 10%, if output voltage had been confirmed that the fluctuation of power supply to the RF circuit of EUT (excluding power source) is equal to or less than +/-1%. Exempt extremely high and low supply voltage condition test, EUT only operated in normal voltage to test all regulations.			

3 VERDICT SUMMARY SECTION

This chapter presents an overview of standards and results. Refer to the next chapters for details of measured test results and applied test levels.

3.1 Standards

Standard	Year	Description
Article 2 paragraph 1 item (19)	2023	2.4GHz Band Advanced Low Power Data Communication System
Notification No. 88 Annex 43.	2024	Test methods for radio equipment listed in Article 2, Paragraph 1, Item 19 and Item 19-2-2 of Certification Ordinance
--	--	--

3.2 Deviation(s) from the Standard(s) / Test Specification(s)

No deviation

4 TEST ITEMS OF LIMIT/SETUP/PROCEDURE

4.1 Antenna Power Antenna Power Tolerance and E.I.R.P

VERDICT: PASS

4.1.1 Limit

Standard Article 2 paragraph 1 item 19

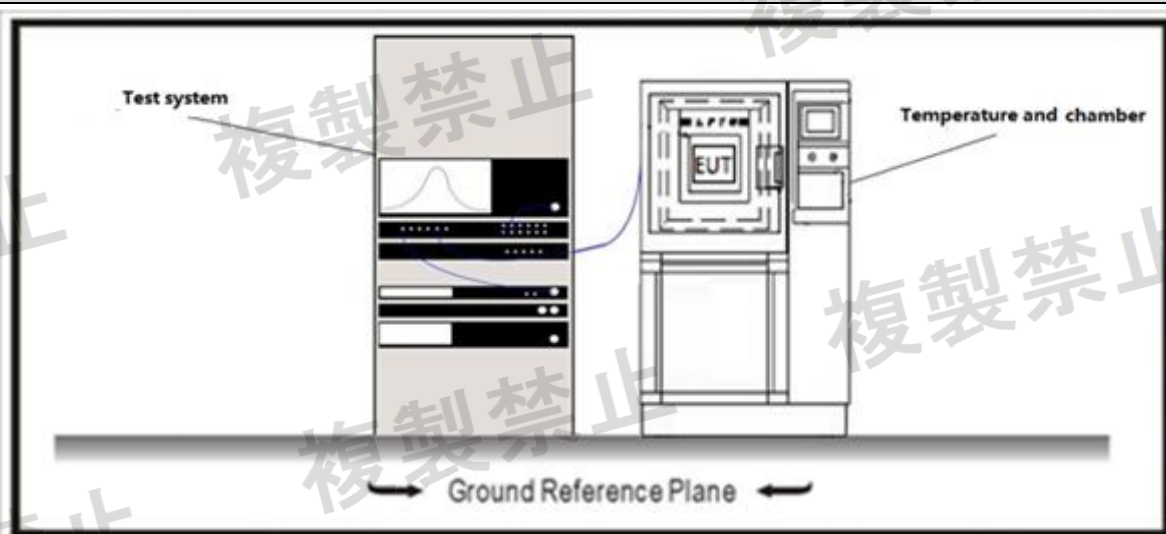
Output Power

- | | |
|-------------------------------------|--|
| ☒ | Max EIRP $\leq 12.14\text{dBm}$ |
| ☒ | Antenna power $\leq 10\text{mW}$ |
| ☐ | Max antenna gain = Max EIRP - declared power Max declared conductive power |
| ☐ | Antenna power = Max EIRP - Antenna gain |

Output Power Tolerance

- | | |
|-------------------------------------|------------------------------|
| ☒ | Output Power Tolerance: +20% |
|-------------------------------------|------------------------------|

4.1.2 Test Set up



4.1.3 Test Procedure

References Rule

- | | |
|-------------------------------------|-------------------------------------|
| ☒ | Method 1: MIC Notice 88 Appendix 43 |
|-------------------------------------|-------------------------------------|

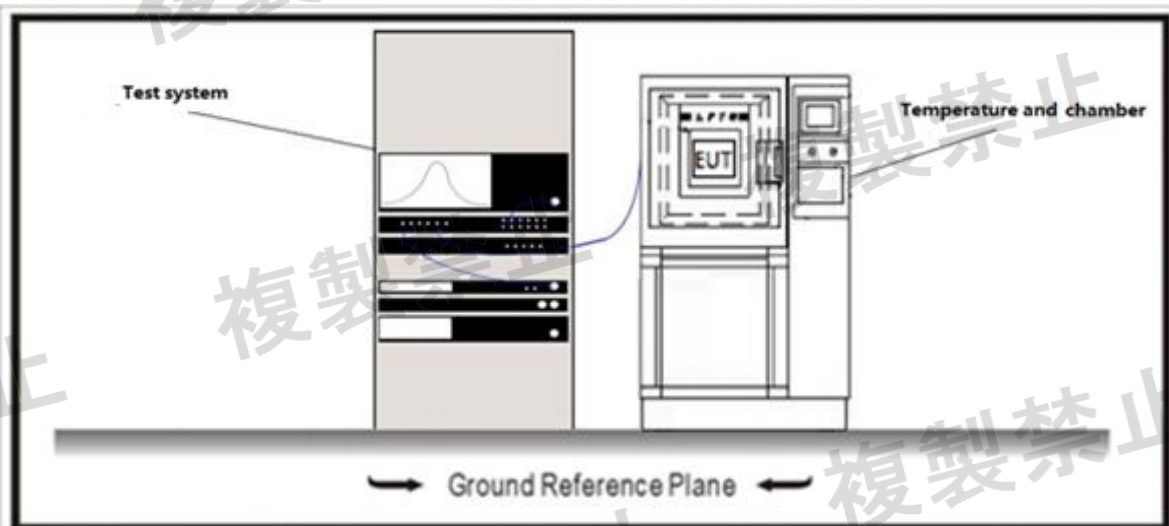
Step 1

- (a) Connect a high-frequency power meter to the output of the dummy load (attenuator) and measure the total power.
- (b) Antenna power shall be as follows.
- Value of a for continuous wave
 - Burst wave The average power in the burst is calculated from the value of (a) and the transmission time rate.

4.2 Occupied Bandwidth**VERDICT: PASS****4.2.1 Limit****Standard**

Article 2 paragraph 1 item 19

- | | |
|-------------------------------------|--|
| ☐ | Channel Power of DSSS, the limit should $\leq 26\text{MHz}$ |
| ☐ | Channel Power of FHSS, the limit should $\leq 83.5\text{MHz}$ |
| ☐ | Channel Power of OFDM |
| ☐ | Nominal Bandwidth=20MHz, the limit should $\leq 26\text{MHz}$ |
| ☐ | Nominal Bandwidth=40MHz, the limit should $\leq 38\text{MHz}$ |
| ☒ | Channel Power of other situation, the limit should $\leq 26\text{MHz}$ |

4.2.2 Test Setup**4.2.3 Test Procedure**

References Rule

- | | |
|-------------------------------------|-------------------------------|
| ☒ | Notification No. 88 Annex 43. |
|-------------------------------------|-------------------------------|

Step 1

1. Set spectrum analyzer to following setting:

- Center frequency: Equal to center frequency of test signal
- Span: Between 2 times and 3.5 times the limited bandwidth.
- RBW: Less than 3% of the limited bandwidth
- VBW: Equal to RBW
- Sweep mode: Continuous sweep
- Detect mode: Positive peak
- Trace mode: Max hold

2. The integrated 99% power bandwidth function may be used to measure the spread bandwidth.

4.3 Frequency Tolerance

VERDICT: PASS

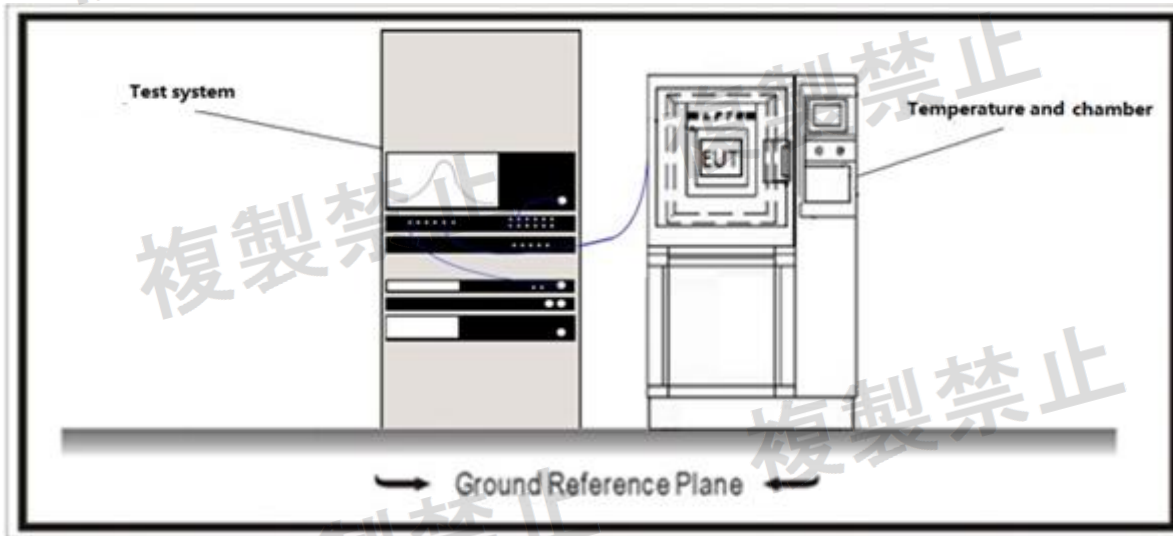
4.3.1 Limit

Standard

Article 2 paragraph 1 item 19

$\leq \pm 50$ ppm

4.3.2 Test Setup



4.3.3 Test Procedure

References Rule

☒ Notification No. 88 Annex 43.

Step 1

☒ Unmodulation Wave (CW signal)

1. Set spectrum analyzer as following setting:

Center frequency: Equal to center frequency of signal under test

Span: Widest enough to see the entire waveform

RBW: 10kHz

VBW: 10kHz

Detect mode: Positive Peak

Trace mode: Max hold

Sweep time: Auto

2. Use the peak search function to find the highest level frequency and record data.

☐ Modulation Wave

1. Set spectrum analyzer to following setting:

Center frequency: Equal to center frequency of signal under test

Span: Widest enough to see the entire waveform

RBW: 100kHz

VBW: 100kHz

Detect mode: Positive Peak

Trace mode: Max hold

Sweep time: Auto

2. Use the peak search function to find the highest level frequency, record maximum level.

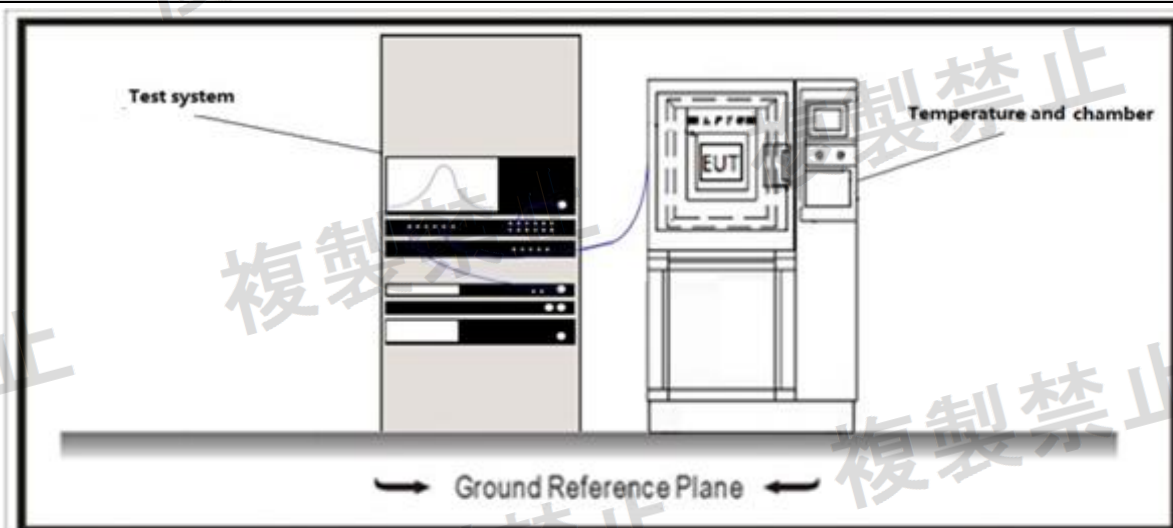
3. Setting display line to 10dB lower than the maximum level.

4. Mark the lowest and highest frequency where the test signal intersect the display line, record the frequency F_L , F_H .5. The Center frequency of test $F_C = (F_L + F_H)/2$

4.4 Transmitter Spurious Emission**VERDICT: PASS****4.4.1 Limit****Standard**

Article 2 paragraph 1 item 19

- | | |
|-------------------------------------|--|
| ☒ | Frequency between 30 - 2387 MHz, $\leq 2.5\mu\text{W}/\text{MHz}$ |
| ☒ | Frequency between 2387 - 2400 MHz, $\leq 25\mu\text{W}/\text{MHz}$ |
| ☒ | Frequency between 2483.5 - 2496.5 MHz, $\leq 25\mu\text{W}/\text{MHz}$ |
| ☒ | Frequency between 2496.5 - 12500, $\leq 2.5\mu\text{W}/\text{MHz}$ |

4.4.2 Test Setup

4.4.3 Test Procedure

References Rule

☒ Notification No. 88 Annex 43.

Step 1

1. Set the spectrum analyzer as follows when searching.

Sweep frequency width 30MHz to 5 times the carrier frequency

Resolution bandwidth 100 kHz for frequencies below 1 GHz, 1 MHz for frequencies above 1 GHz

Video bandwidth Same as resolution bandwidth

Sweep time Minimum time for guaranteed measurement accuracy

Sweep mode Single sweep

Detection mode positive peak

2. Set the spectrum analyzer for secondary emission measurement as follows.

Center frequency Secondary emission frequency

Sweep frequency width 0Hz

Resolution bandwidth 100 kHz for frequencies below 1 GHz, 1 MHz for frequencies above 1 GHz

Video bandwidth Same as resolution bandwidth

Sweep time Minimum time for guaranteed measurement accuracy

Sweep mode Single sweep

Detection mode sample

4.5 Receiver Spurious Emission

VERDICT: PASS

4.5.1 Limit

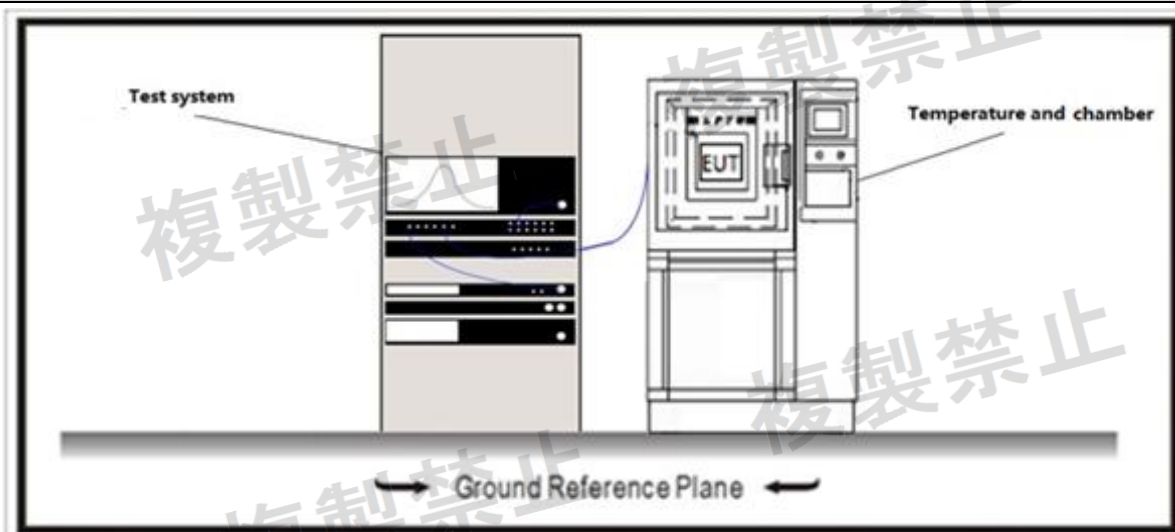
Standard

Article 2 paragraph 1 item 19

<= 4nW for 30 - 1000 MHz

<= 20nW for 1000 - 12500 MHz

4.5.2 Test Setup



4.5.3 Test Procedure

References Rule
☒ Notification No. 88 Annex 43.

Step 1

1. Set the spectrum analyzer as follows when searching.

Sweep frequency width 30MHz to 5 times the carrier frequency

Resolution bandwidth 100 kHz for frequencies below 1 GHz, 1 MHz for frequencies above 1 GHz

Video bandwidth Same as resolution bandwidth

Sweep time Minimum time for guaranteed measurement accuracy

Sweep mode Single sweep

Detection mode positive peak

2. Set the spectrum analyzer for secondary emission measurement as follows.

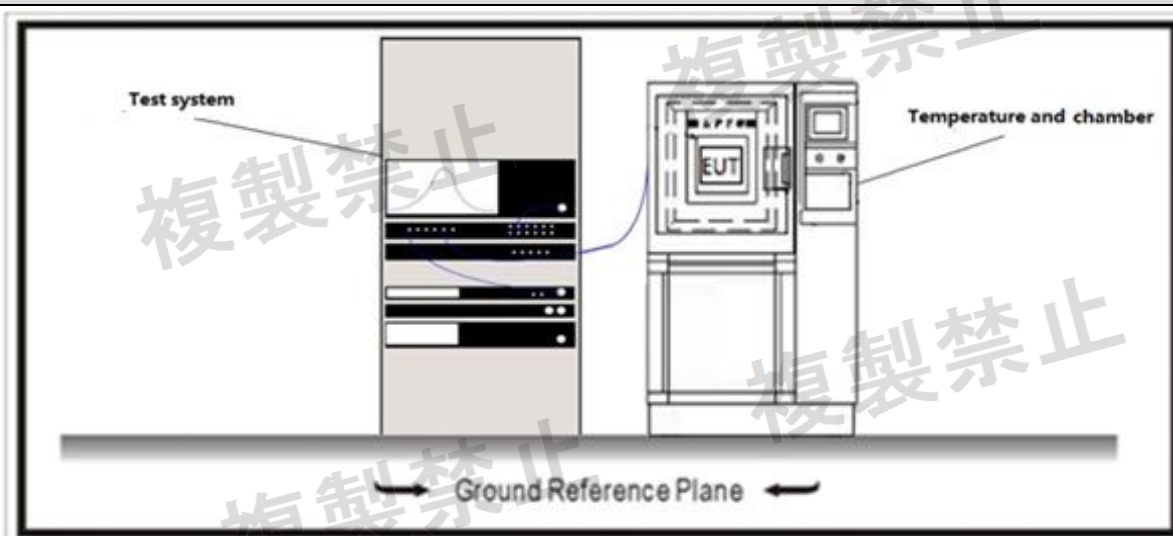
Center frequency Secondary emission frequency

Sweep frequency width	0Hz
Resolution bandwidth	100 kHz for frequencies below 1 GHz, 1 MHz for frequencies above 1 GHz
Video bandwidth	Same as resolution bandwidth
Sweep time	Minimum time for guaranteed measurement accuracy
Sweep mode	Single sweep
Detection mode	sample

4.6 Interference Prevention Function Measurement**VERDICT: PASS****4.6.1 Limit****Standard**

Article 2 Paragraph 1 of item 19

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

4.6.2 Test Setup**4.6.3 Test Procedure****References Rule**☒ Notification No. 88 Annex 43.**Step 1**

1. Establish communication between EUT and auxiliary equipment, auxiliary must have an ability to parse and display the identifier code.
2. When the test equipment has the function of automatically transmitting the identification code.
 - A. The test equipment sends the identification code specified in the equipment rules.
 - B. Check the identification code sent by the demodulator.
3. When the test equipment has the function of automatically receiving the identification code.
 - A. The opposite device transmits the identification code specified in the device rules.
 - B. Verify that a dedicated fixture is used to communicate with the test equipment.
 - C. Send a code from the counter that differs from the identification code specified in the equipment rules.
 - D. Verify that the test equipment stops transmitting or displays a different ID.
4. If the encoding specified in the device rules is the same as the demodulated encoding, recoded as "Good", otherwise record as "No".

5 CONFORMING THE STRUCTURE THAT IS DIFFICULT TO OPEN

The Radio Equipment:	
☐	Use Special Screw
☐	Metal Shielding is Soldered
☐	Use Ball Grid Array (BGA)
☒	RF module/Chip Pins > 20
☒	RF module/Chip Pins distance < 1.5 mm

The high-frequency section and modulation section (except for the antenna system) are not capable of being opened easily.

6 SETUP PHOTO AND EUT PHOTO

Remark: The test setup photo and EUT Photo please see appendix.

Appendix

Antenna Power Tolerance and E.I.R.P

Output Power And E.I.R.P

Mode	Frequency (MHz)	Antenna Power		EIRP (dBm)	Limit		Pass/Fail
		(dBm)	(mW)		Antenna Power (mW)	EIRP (dBm)	
SRD 2.4G	2402	1.91	1.55	3.41	10.00	12.14	Pass
	2441	1.81	1.52	3.31	10.00	12.14	Pass
	2480	1.34	1.36	2.84	10.00	12.14	Pass

Note: EIRP = Antenna Power + Antenna Gain (dBi)

Output Power Tolerance

Mode	Frequency (MHz)	Declared Power	Antenna Power	Tolerance (%)	Limit(%)	Pass/Fail
		(mW)	(mW)			
SRD 2.4G	2402	2	1.55	-22.50	+20	Pass
	2441	2	1.52	-24.00	+20	Pass
	2480	2	1.36	-32.00	+20	Pass

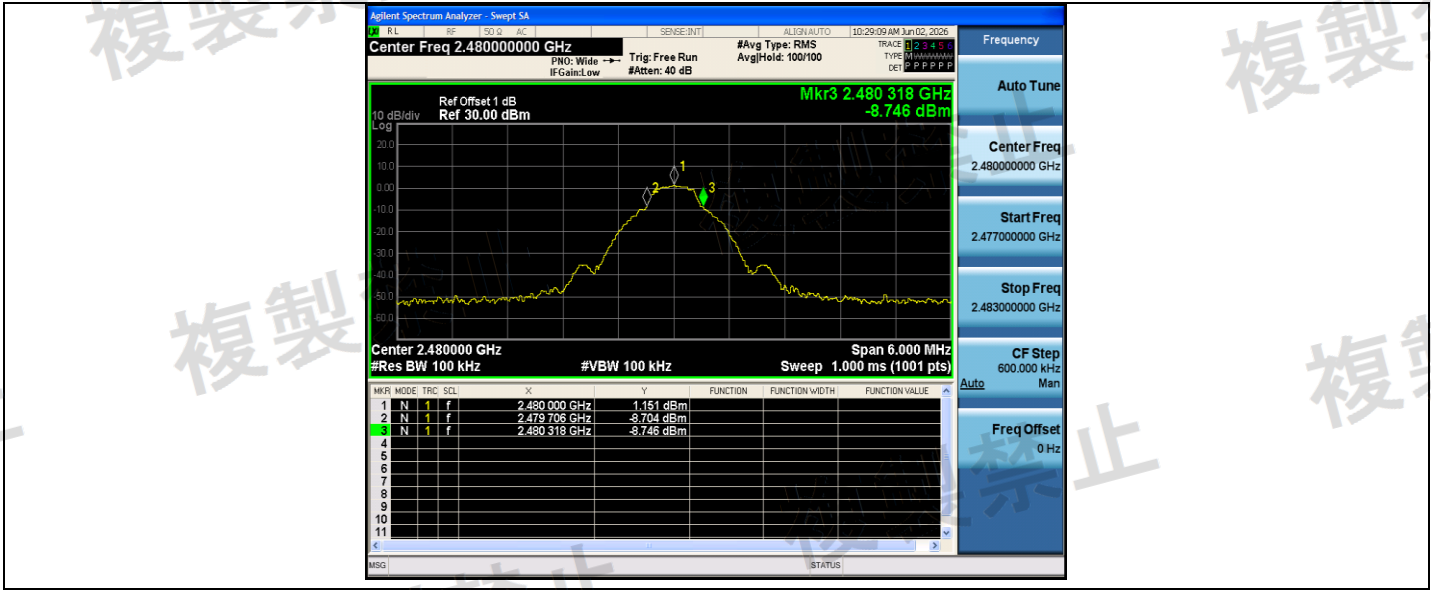
Note: Tolerance = (Antenna Power – Declared Power) / Declared Power * 100%

Frequency Error Test Result

TestCondition	TestMode	Freq(MHz)	Result[ppm]	Limit[ppm]	Verdict
NTNV	SRD 2.4G	2402	-4.99584	±50	PASS
		2441	2.45801	±50	PASS
		2480	4.83871	±50	PASS

Test Graphs

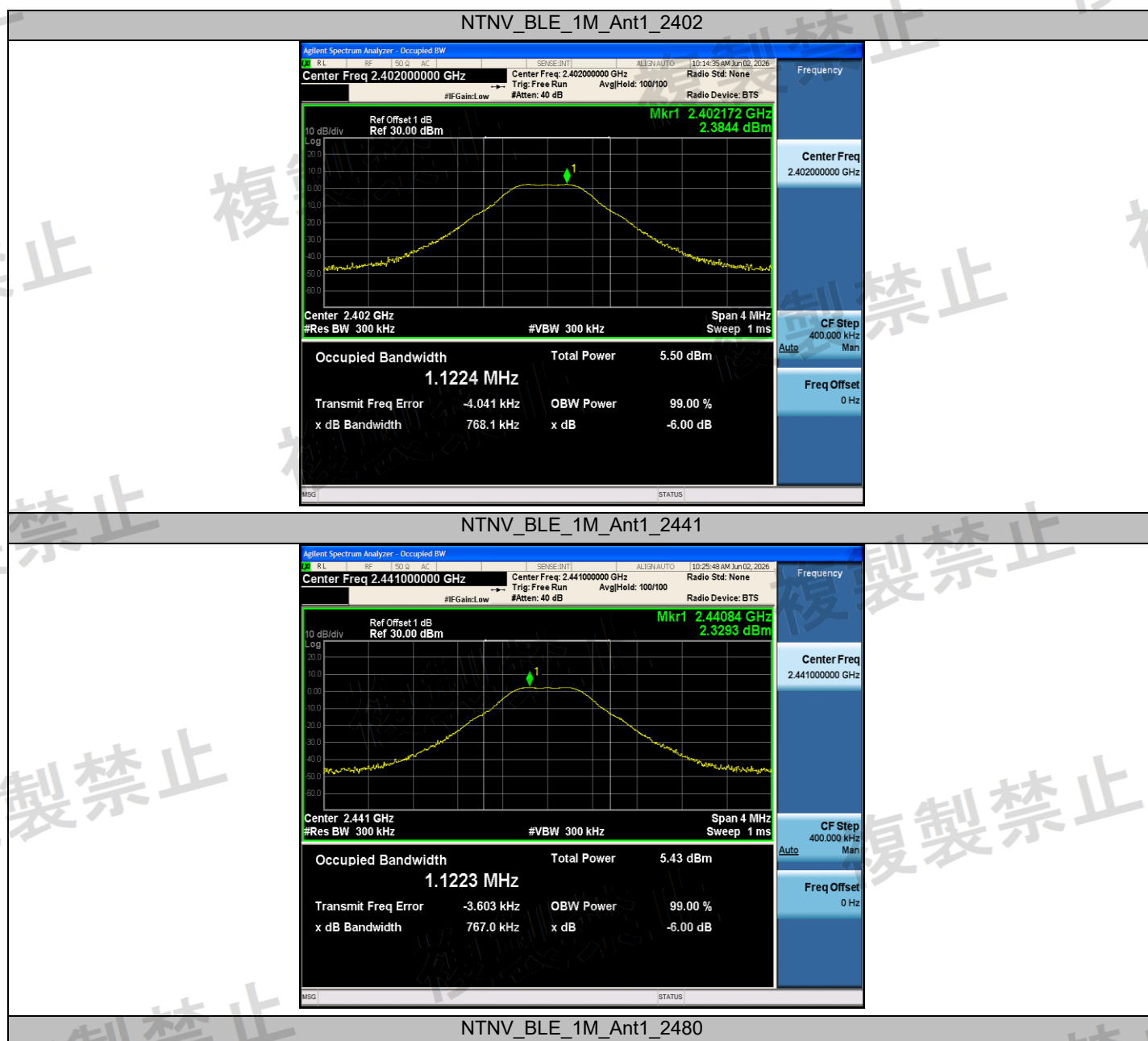


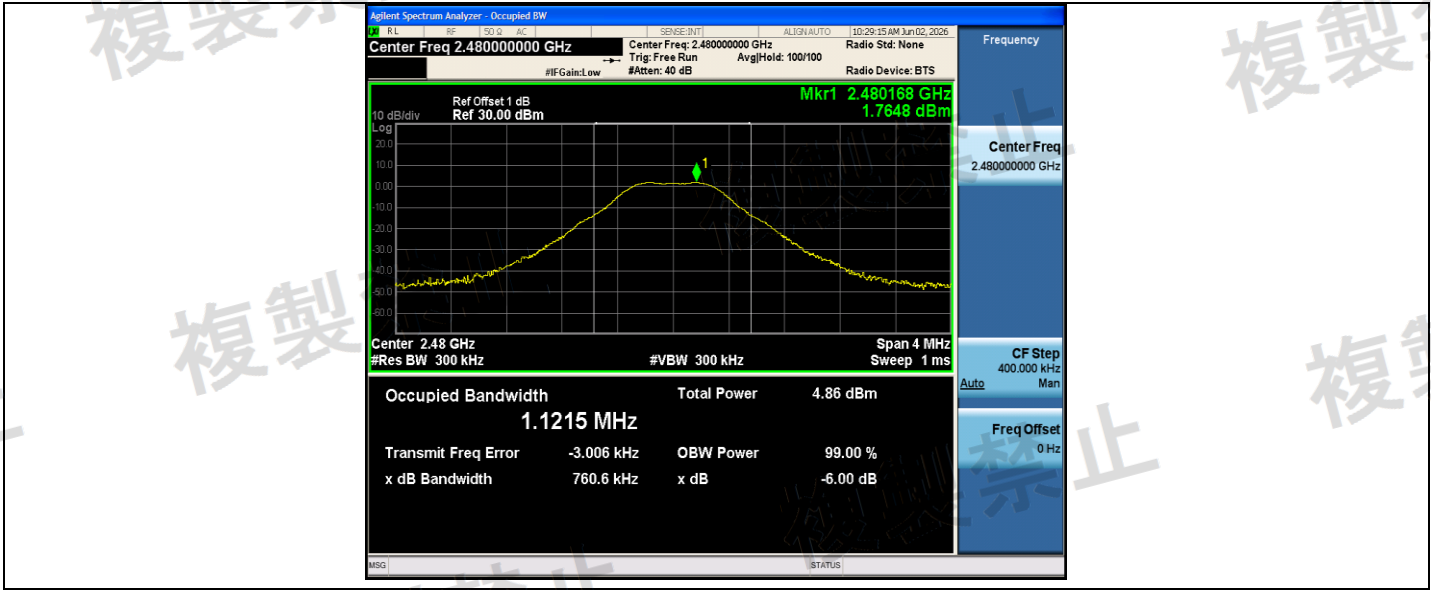


Occupied Bandwidth Test Result

TestCondition	TestMode	Freq(MHz)	Result [MHz]	Limit [MHz]	Verdict
NTNV	SRD 2.4G	2402	1.122	≤26	PASS
NTNV		2441	1.122	≤26	PASS
NTNV		2480	1.122	≤26	PASS

Test Graphs

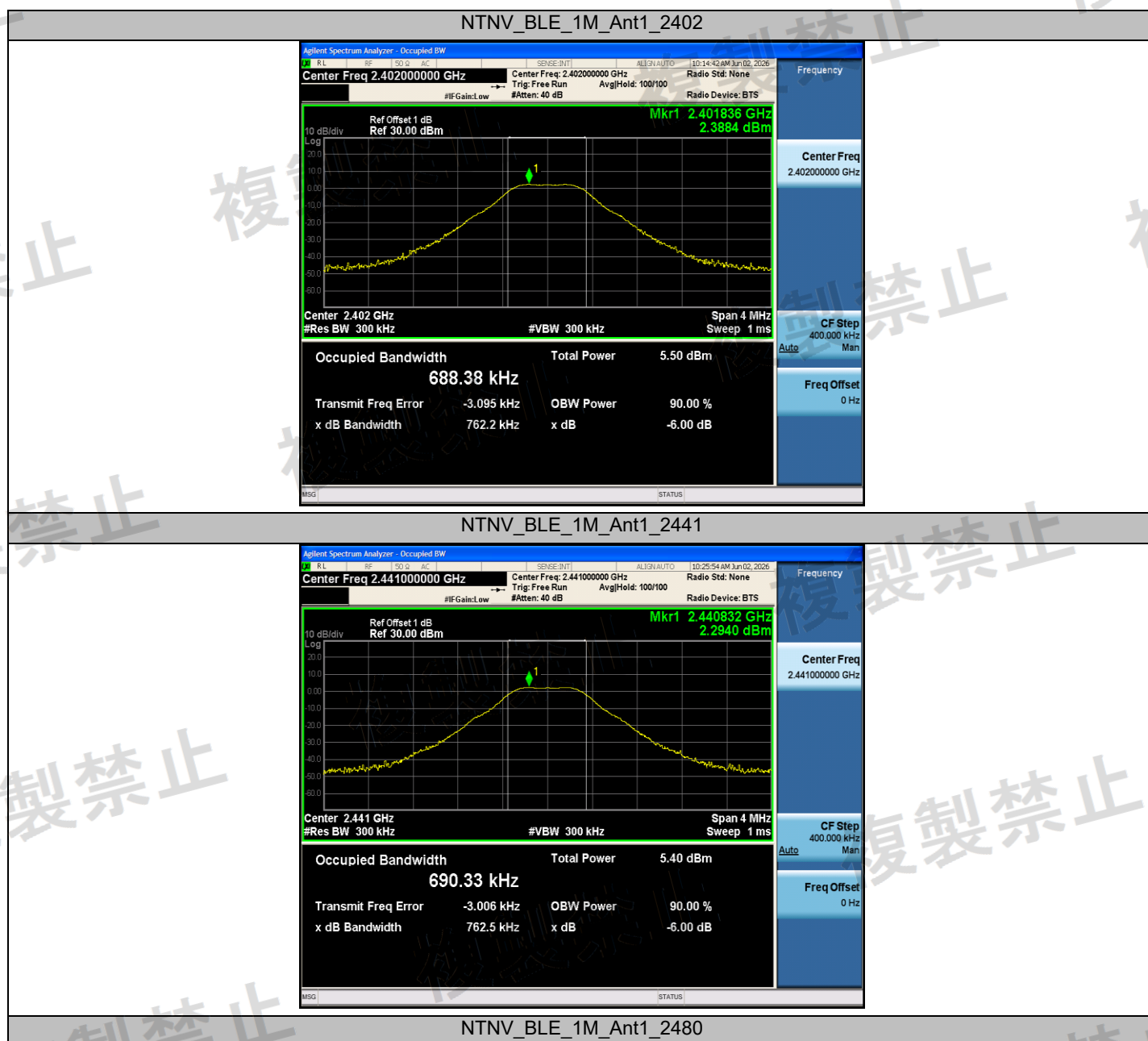


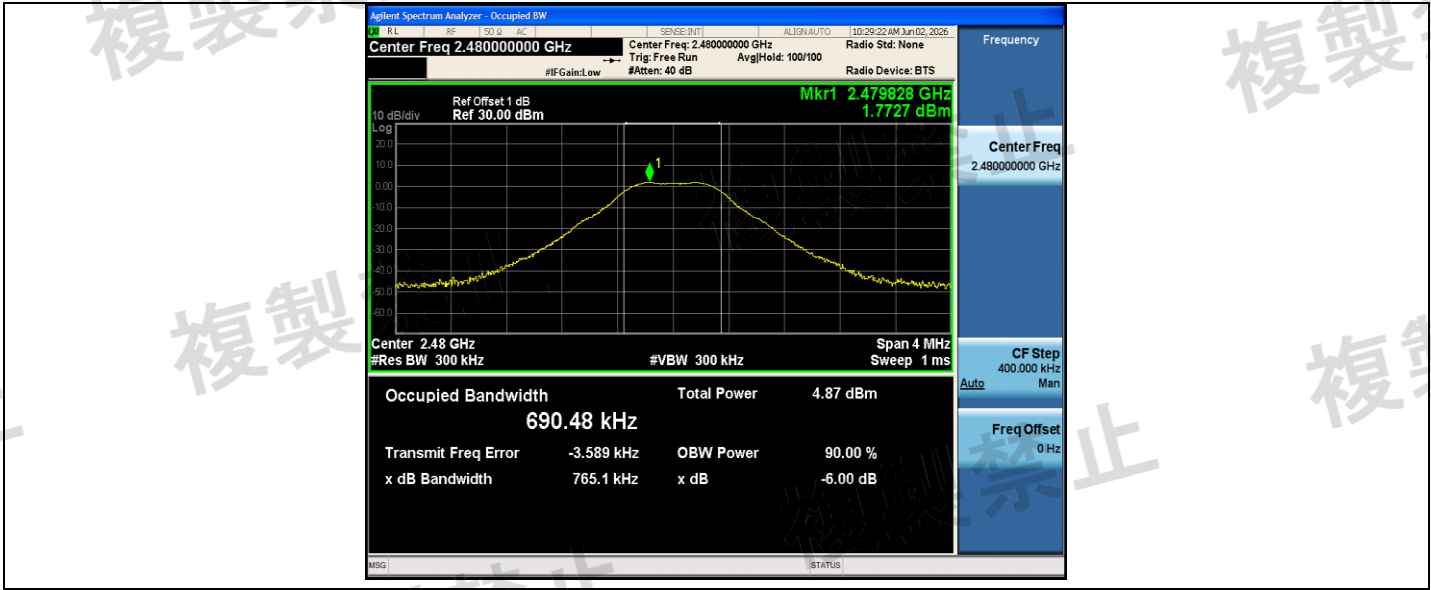


Spread Bandwidth Test Result

TestCondition	TestMode	Freq(MHz)	Result [MHz]	Limit [MHz]	Verdict
NTNV	SRD 2.4G	2402	0.688	≥0.5	PASS
NTNV		2441	0.690	≥0.5	PASS
NTNV		2480	0.690	≥0.5	PASS

Test Graphs





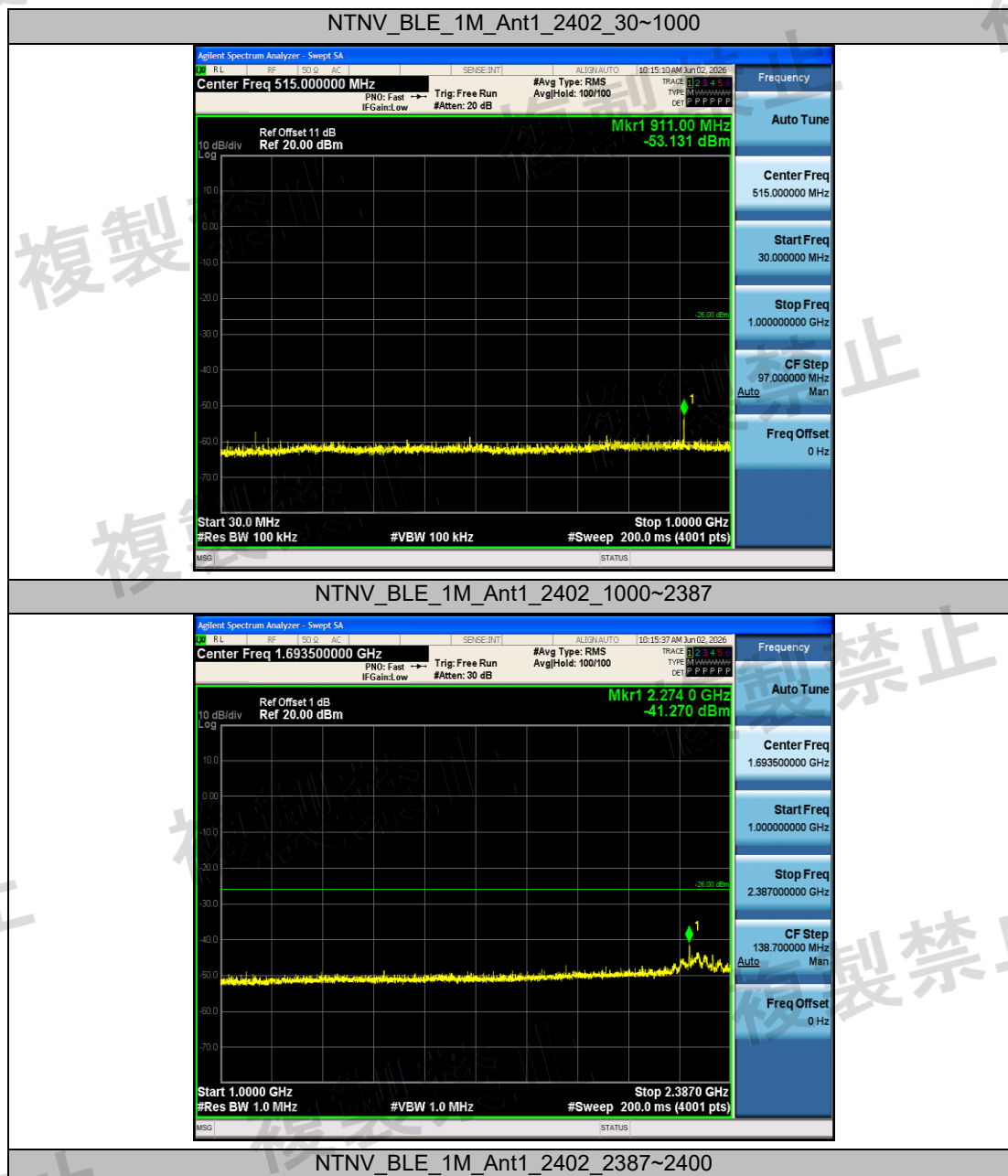
Spurious Emission of TX Test Result

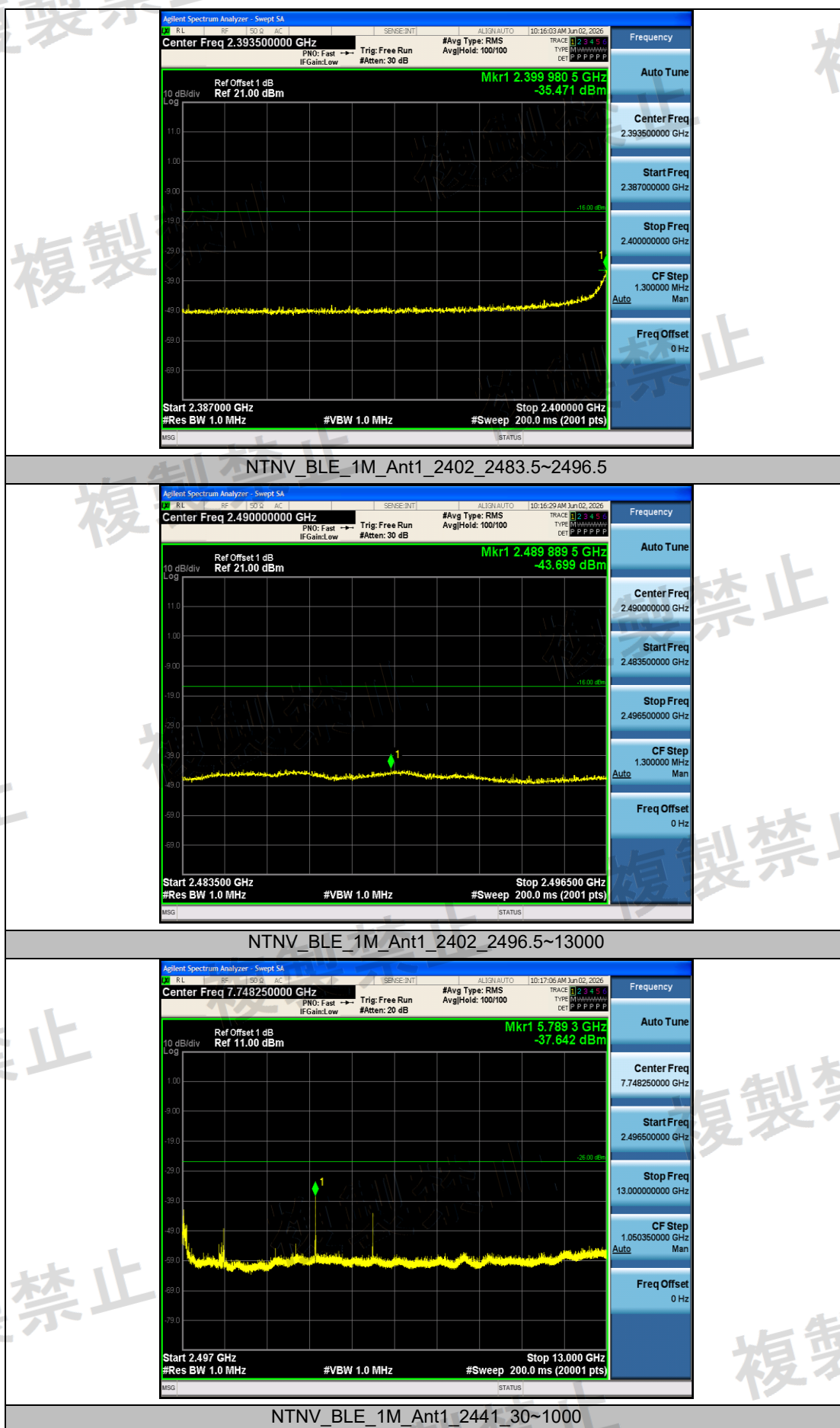
TestCondition n	TestMod e	Freq(M Hz)	Freq.Range [MHz]	Freq. [MHz]	Result [dBm/MH z]	Limit [dBm/ MHz]	Result [μW/MH z]	Limit [μW/M Hz]	Verdict
NTNV	SRD 2.4G	2402	30~1000	911.00	-53.13	≤-26	0.00486	≤2.5	PASS
			1000~2387	2273.96	-41.27	≤-26	0.07464	≤2.5	PASS
			2387~2400	2399.98	-35.47	≤-16	0.28379	≤25	PASS
			2483.5~2496.5	2489.89	-43.70	≤-16	0.04266	≤25	PASS
			2496.5~13000	5789.35	-37.64	≤-26	0.17219	≤2.5	PASS
		2441	30~1000	96.20	-56.57	≤-26	0.00220	≤2.5	PASS
			1000~2387	2313.49	-40.64	≤-26	0.08630	≤2.5	PASS
			2387~2400	2395.70	-45.05	≤-16	0.03126	≤25	PASS
			2483.5~2496.5	2484.14	-45.36	≤-16	0.02911	≤25	PASS
			2496.5~13000	3519.02	-21.33	≤-26	7.36207	≤2.5	See table below
		2480	30~1000	119.97	-58.00	≤-26	0.00158	≤2.5	PASS
			1000~2387	2351.98	-40.08	≤-26	0.09817	≤2.5	PASS
			2387~2400	2391.98	-43.48	≤-16	0.04487	≤25	PASS
			2483.5~2496.5	2483.68	-45.85	≤-16	0.02600	≤25	PASS
			2496.5~13000	3515.86	-34.09	≤-26	0.38994	≤2.5	PASS

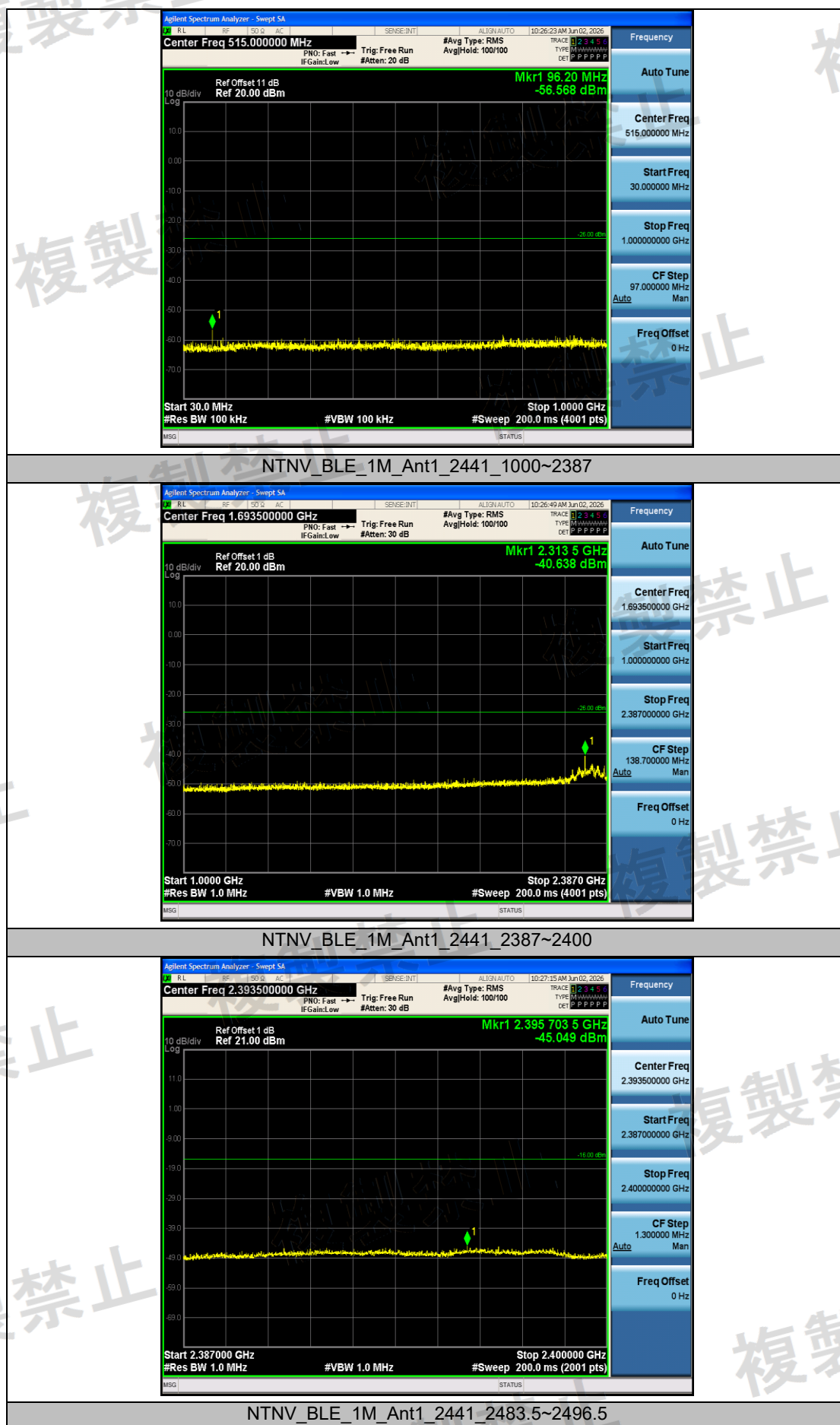
Test Result_Step2

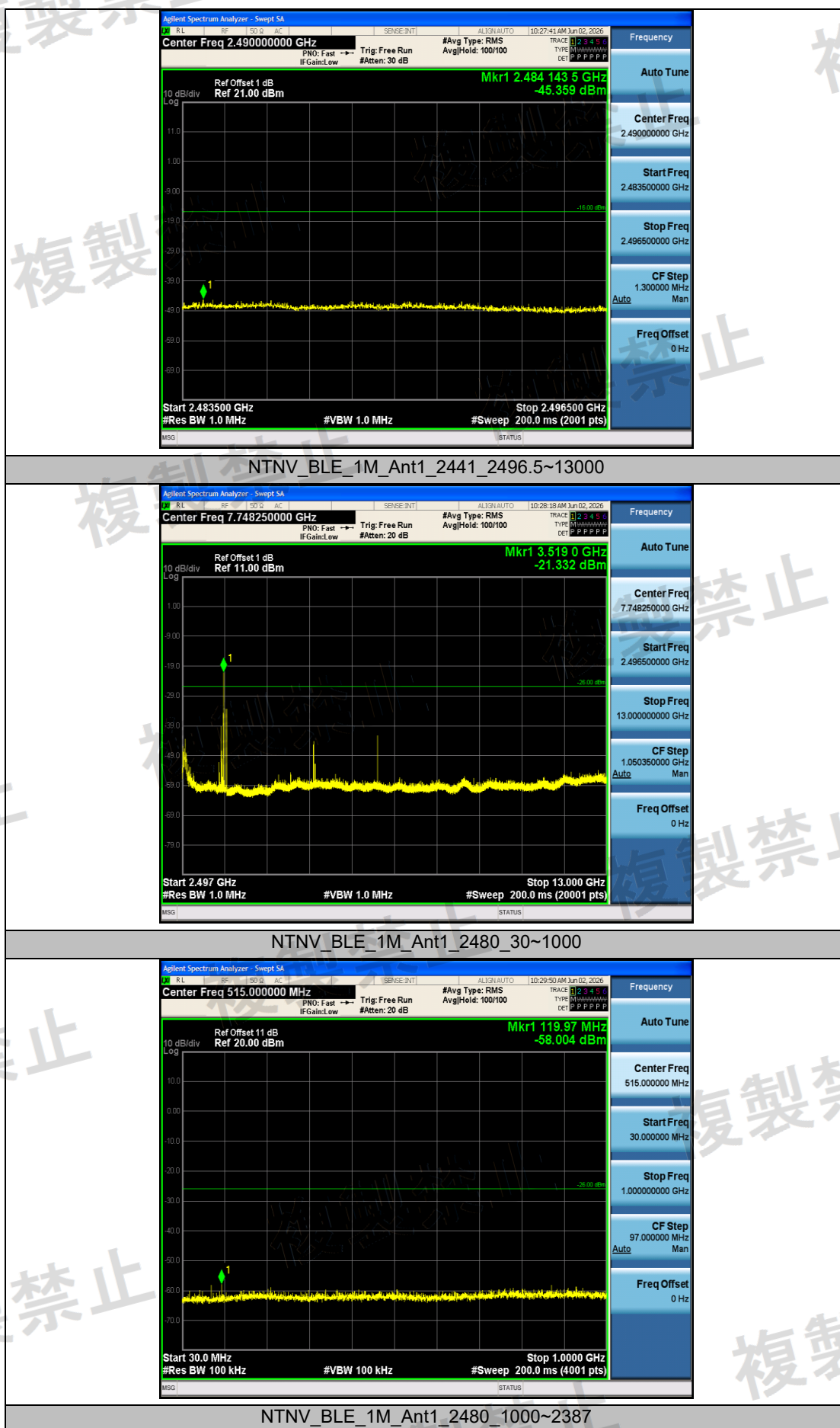
TestCondition	TestMode	Freq(MHz)	Freq. [MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Result [μW/MHz]	Limit [μW/MHz]	Verdict
NTNV	SRD 2.4G	2441	1746.90	-42.89	≤-26	0.05140	≤2.5	PASS

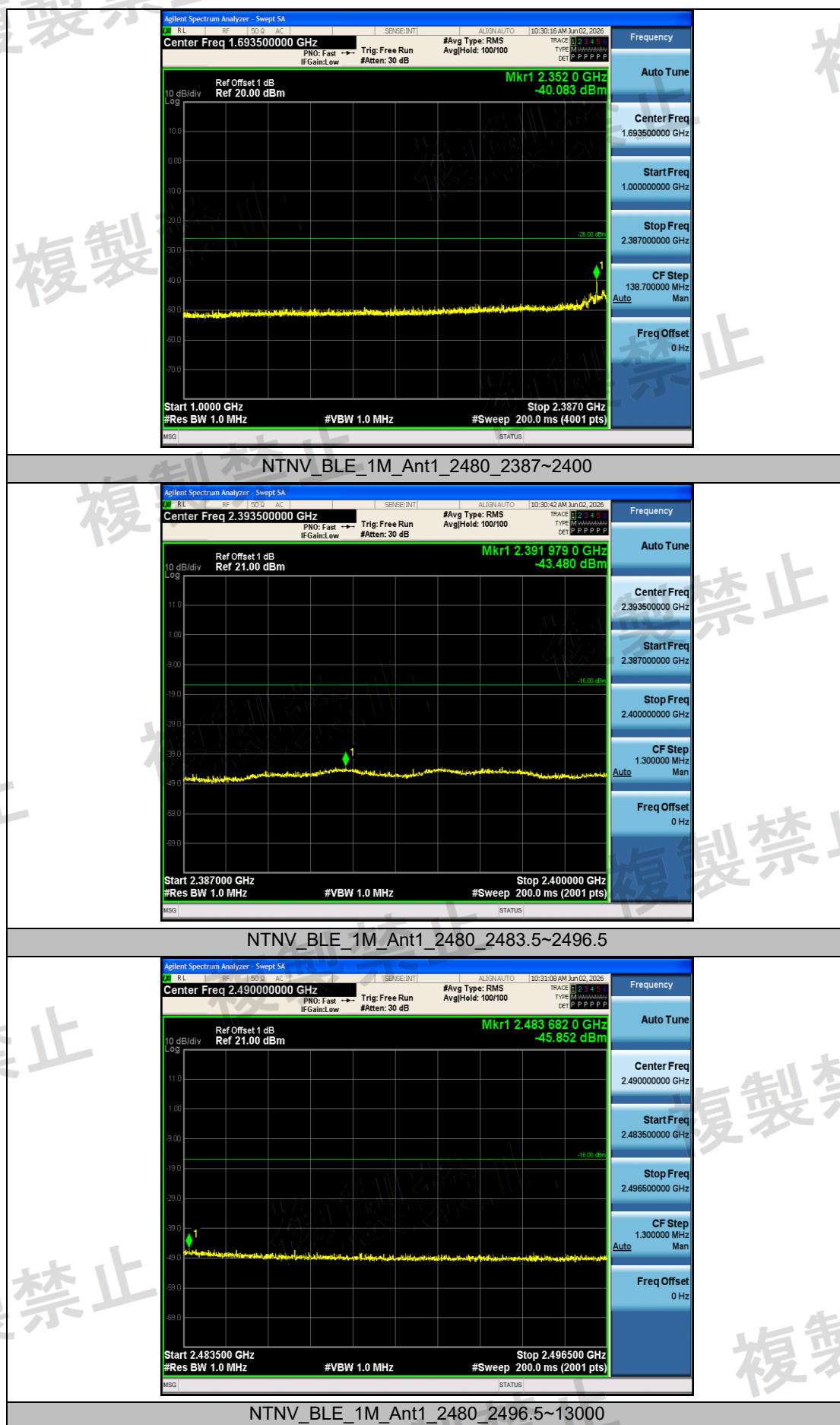
Test Graphs

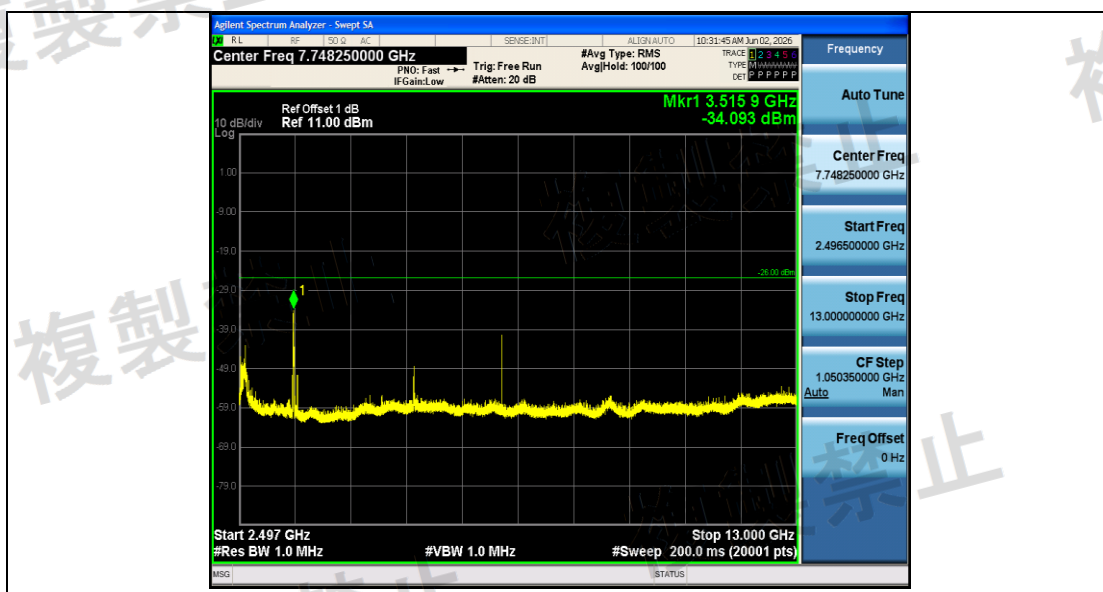




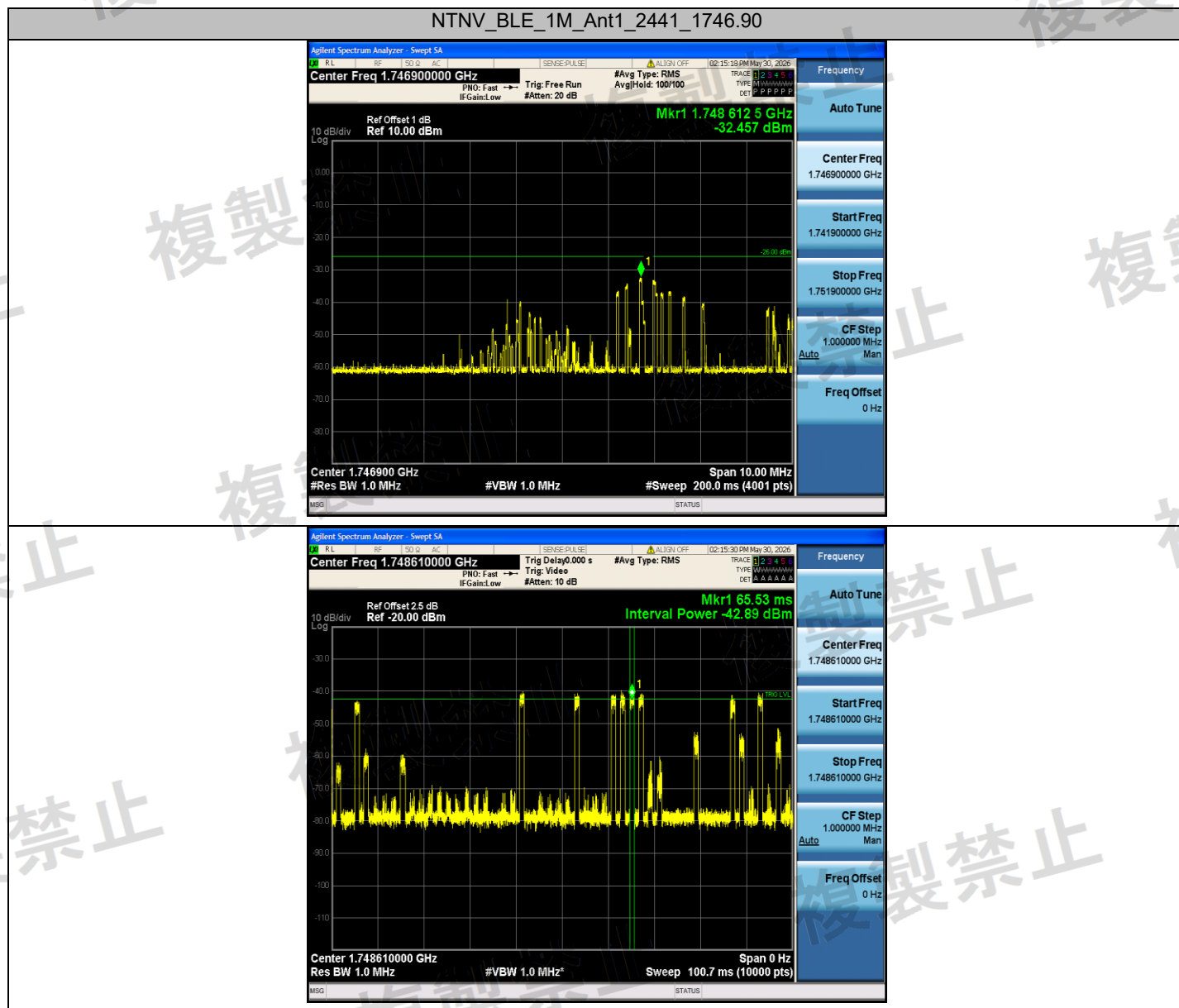








Test Graphs_Step2



Note 1: For 30-1000MHz, 100kHz RBW is used for testing Ref offset= Cable loss + 100kHz RBW Factor.

Note 2: For Test Graphs_Step2, the largest points in the entire segment are extracted. This data is sufficient to prove the compliance of other points.

Interference Prevention Function

Test Item	:	Interference Prevention Function Measurement
Test Site	:	TR8
Test Mode	:	Mode: Normal Mode
EUT MAC Address	:	FF:AC:FE:9A:58:E2



LTOST21036RE2589A

FF:AC:FE:9A:58:E2

NOT BONDED

CONNECT

:

▲ -73 dBm

↔ 229 ms