

TEST REPORT

Applicant : Shenzhen SonoCycle Technology Co., Ltd.
Address : 1400-1402, Building B, Gongcun Xincheng Commercial center, No.31, Sanlian Chuangye Road, Longhua District, Shenzhen City, Guangdong Province
Product Name : Wireless Headphones
Trade mark : SOUNDPEATS
Model No. : Air6 Pro
Series model : JewelClip, Air6 Deluxe HS, MoonSeelp Dot, Luno Dot, SnapClip, Free3 classic
Report Number : BLA-RF-202606-A16-01
Date of Issue : Jun. 30, 2026
Test standard : Item 19 of Article 2 Paragraph 1
Test result : PASS

Compiled by:

Mark Chen

Review by:

Xavier

Approved by:

Blue Zheng

Issued Date:

Jun. 30, 2026



BlueAsia Technical Services (Shenzhen) Co., Ltd

Address: No.41, South of Beihuan Road, Shangwu Community, Shiyan Subdistrict, Bao'an District, Shenzhen, Guangdong, China



The test report is effective only with both signature and specialized stamp and The result(s) shown in this report refer only to the sample(s) tested. Without written approval of BlueAsia, this report can't be reproduced except in full. The results described in this report do not represent the quality or characteristics of the sampled batch, nor do they represent any similar or identical products that are not explicitly stated.

1 Version

Version No.	Date	Description
00	Jun. 30, 2026	Original

2 Test Summary

Test	Test Requirement	Limit/Severity	Result
Antenna Requirement	Item 19 of Article 2 Paragraph 1	Notice 88 Appendix 43,B-1 (1)&(2)	PASS
Test frequency	Item 19 of Article 2 Paragraph 1	Notice 88 Appendix 43, A-3	PASS
Frequency Error	Item 19 of Article 2 Paragraph 1	±50 PPM or less	PASS
Occupied Bandwidth	Item 19 of Article 2 Paragraph 1	26MHz or less	PASS
Spread-spectrum Bandwidth	Item 19 of Article 2 Paragraph 1	N/A	N/A
Antenna Power	Item 19 of Article 2 Paragraph 1	Designated value: (1)FH, FH+DS , FH+OFDM 3mW/MHz (Used in the range of 2400~2483.5MHz) (2) OFDM , DS other than (1) : 10mW/MHz (3) Other than (1) & (2) 10mW Tolerance: +20%	PASS
Transmission Antenna Gain (EIRP Antenna Power)	Item 19 of Article 2 Paragraph 1		PASS
Transmission Radiation Angle Width (3dB beam-width)	Item 19 of Article 2 Paragraph 1		Note1
Spurious Emission of Tx	Item 19 of Article 2 Paragraph 1	(1) Below 2387 MHz : -26dBm/MHz (2) 2387 to 2400 MHz : -16dBm/MHz (3) 2483.5 through 2496.5 MHz : -16dBm/MHz (4) Over 2496.5 MHz : -26dBm/MHz	PASS
Dwell Time	Item 19 of Article 2 Paragraph 1	N/A	N/A
Pseudorandom Frequency Hopping Sequence	Item 19 of Article 2 Paragraph 1	Notice 88 Appendix 43	N/A
Interference prevention capability	Item 19 of Article 2 Paragraph 1	Notice 88 Appendix 43	PASS
RF accessibility	Item 19 of Article 2 Paragraph 1	Notice 88 Appendix 43	PASS
Spurious Emission of Rx	Item 19 of Article 2 Paragraph 1	(1) Below 1 GHz: -54dBm (2) 1GHz or higher: -47dBm	PASS

Remark:

Model No.: Air6 Pro, JewelClip, Air6 Deluxe HS, MoonSeelp Dot, Luno Dot, SnapClip, Free3 classic

Only the model Air6 Pro was tested, The above models have the same Circuit diagram, PCB layout and all electrical construction. The difference lies only model name and color.

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

Tx:In this whole report Tx (or tx) means the product in transmitting status.

Rx:In this whole report Rx (or rx) means the product in receiving status.

RF:In this whole report RF means Radiated Frequency.

Note1: The max EIRP power is less than 12.14dBm, this test is not applicable.

Note2: The left ear and the right ear the BOM and SCH are identical, but the PCB layout and part placement differ. In the report, full test data of left ear are reported and for right ear, verification test data of antenna power and spurious emission of Tx are reported to show compliance with the requirements.

3 Contents

1 Version	2
2 Test Summary	3
3 Contents	4
4 General Information	5
4.1 Client Information	5
4.2 General Description of EUT	5
4.3 Description of Support Units	5
4.4 Test Location	6
5 Equipment List	7
6 Radio Technical Requirements Specification	8
6.1 Transmitter Requirements	9
6.1.1 EUT test voltage and Frequency	9
6.1.2 Antenna Requirement	11
6.1.3 Frequency Error	12
6.1.4 Occupied Bandwidth (99%)	15
6.1.5 Spread-spectrum Bandwidth (90%)	19
6.1.6 Antenna Power	22
6.1.7 Spurious Emissions of Tx	29
6.1.8 Interference prevention function	48
6.1.9 RF accessibility	49
6.2 Receiver Requirements	50
6.2.1 Spurious Emissions of Rx	50
7 Test setup photo	56
8 Photographs	57
8.1 EUT Constructional Details	57

4 General Information

4.1 Client Information

Applicant:	Shenzhen SonoCycle Technology Co., Ltd.
Address of Applicant:	1400-1402, Building B, Gongcun Xincheng Commercial center, No.31, Sanlian Chuangye Road, Longhua District, Shenzhen City, Guangdong Province
Manufacturer:	Shenzhen SonoCycle Technology Co., Ltd.
Address of Manufacturer:	1400-1402, Building B, Gongcun Xincheng Commercial center, No.31, Sanlian Chuangye Road, Longhua District, Shenzhen City, Guangdong Province
Factory:	Dongguan SiliSound Technology Co., Ltd.
Address of Factory:	Rm.601, No.26 Xinyang Road, Tangxia Town, Dongguan City, Guangdong Prov.

4.2 General Description of EUT

Product Name:	Wireless Headphones
Model No.:	Air6 Pro
Series model No.:	JewelClip, Air6 Deluxe HS, MoonSeelp Dot, Luno Dot, SnapClip, Free3 classic
Operating Frequency:	2402 MHz to 2480 MHz
Conducted rated power:	F1D: 2.00mW
Number of Channels:	40 Channels
Transfer Rate:	1Mbps, 2Mbps
Type of Modulation:	GFSK
Channel Separation:	2 MHz
Antenna Type:	FPC antenna
Antenna gain:	L ear: 0.34dBi, R ear: 0.81dBi (Provided by customer)
Voltage Supply:	Battery DC 3.85V
Test Voltage:	DC 3.85V
Hardware Version:	V1.2
Software Version:	Air6Pro_S27_20260516_v0.1.2
Sample Received Date:	Jun. 03, 2026
Sample tested Date:	Jun. 03, 2026 to Jun. 13, 2026

4.3 Description of Support Units

The EUT has been tested stand-alone.

Device Type	Manufacturer	Model Name	Serial No.	Remark
Test board	DevEBox	CH340G	/	/
PC	Lenovo	E460C	/	/

4.4 Test Location

All tests were performed at:

BlueAsia Technical Services (Shenzhen) Co., Ltd.

No.41, South of Beihuan Road, Shangwu Community, Shiyan Subdistrict, Bao'an District, Shenzhen, Guangdong, China

Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673

No tests were sub-contracted.

CNAS — Designation No.: L9788

BlueAsia Technical Services(Shenzhen) Co., Ltd is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L9788.

5 Equipment List

Equipment	Manufacturer	Model	Serial No.	Cal Date	Due Date	Calibration body	Classification
Communication test set test set	Anritsu	MT8852B	06262047872	2025/8/6	2026/8/5	GRGT	(c)
Spectrum Analyzer	Keysight	N9030A	MY52350152	2025/8/6	2026/8/5	GRGT	(c)
Signal Generator	Agilent	E4438C	MY45092582	2025/8/6	2026/8/5	GRGT	(c)
DC regulated power supply	ZHAOXIN	KXN-305D	BLA-EMC-027	2025/8/6	2026/8/5	GRGT	(c)

Remark:

- (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)

From JRL Article 24-2, paragraph 4, Item 2

Notice: Calibration duration for above equipments is 1 year.

6 Radio Technical Requirements Specification

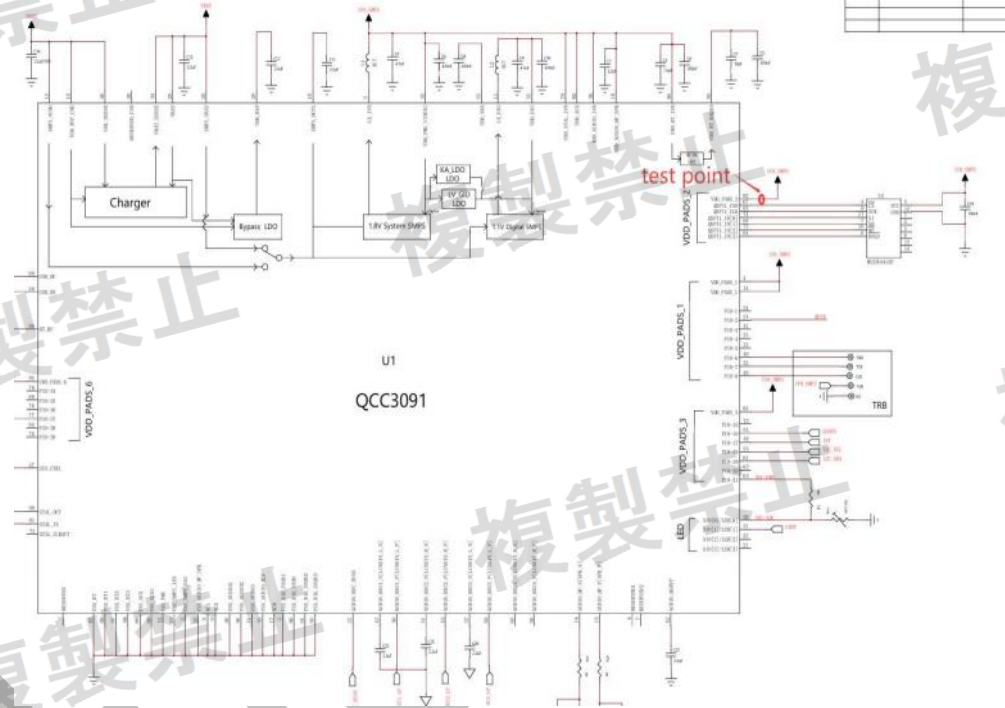
Table 1: Radio Technical Requirements Specification for 2.4 GHz band wide-band low-power data communication system (Item 19 of Article 2 Paragraph 1)

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 ($\times 10^{-6}$)	± 50 PPM
Tolerance of occupied bandwidth	FH: 83.5MHz or less FH + OFDM: 83.5MHz or less Others: 26MHz or less FH + DS: 83.5MHz or less OFDM: 38MHz or less
Antenna power	Designated value (1) FH, FH+DS, FH+OFDM: 3mW/MHz (used in the range of 2400 - 2483.5 MHz) (2) OFDM, DS other than (1): 10mW/MHz (3) Other than (1) & (2): 10mW 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 2400 - 2483.5 MHz EIRP $\leq$ 16.91 dBm/MHz (2) OFDM or DS other than (1) EIRP $\leq$ 22.14 dBm/MHz (3) Other than (1) and (2): 22.14 dBm or less (4) OFDM OBW 26 - 38MHz: 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	(1) Below 2387 MHz: 2.5 μ W/MHz (2) 2387 to 2400 MHz: 25 μ W/MHz (3) 2483.5 through 2496.5 MHz: 25 μ W/MHz (4) Over 2496.5 MHz: 2.5 μ W/MHz
Spreading bandwidth	N/A
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

Note: The Technical Standards described here do not cover all of the regulated items.

6.1 Transmitter Requirements

6.1.1 EUT test voltage and Frequency

EUT test voltage																
Power Supply:	DC 3.85V															
Test voltage require:	The power supply is by DC 3.85V by battery power. The supply voltage of RF part is varied within +/-1%. When DC 3.85V +/- 10%, so DC 3.85V is shown in the test report.															
Power Supply view:																
Power Supply result:	The measurement result of the voltage fluctuation at RF circuit when DC 3.85V +/- 10%.															
	DC INPUT	RF circuit														
	4.235V	1.80V														
	3.850V	1.80V														
	3.465V	1.80V														
<table border="1"> <thead> <tr> <th rowspan="2">Test condition</th><th colspan="2">Ambient</th></tr> <tr> <th>Temperature(°C)</th><th>Voltage(V)</th></tr> </thead> <tbody> <tr> <td>NTNV</td><td>24</td><td>DC 3.85</td></tr> <tr> <td>NTLV</td><td>N/A</td><td>N/A</td></tr> <tr> <td>NTHV</td><td>N/A</td><td>N/A</td></tr> </tbody> </table>			Test condition	Ambient		Temperature(°C)	Voltage(V)	NTNV	24	DC 3.85	NTLV	N/A	N/A	NTHV	N/A	N/A
Test condition	Ambient															
	Temperature(°C)	Voltage(V)														
NTNV	24	DC 3.85														
NTLV	N/A	N/A														
NTHV	N/A	N/A														

6.1.1.1 Test frequency

Test frequencies:	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.	
Frequency range over which device operates	Number of frequencies	Location in the range of operation
1 MHz or less	1	Middle
1 to 10 MHz	2	1 near top and 1 near bottom
More than 10 MHz	3	1 near top, 1 near middle and 1 near bottom

EUT channels and frequencies list:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

Test frequencies are the lowest channel: 0 channel (2402 MHz), Middle channel, 19 channel (2440 MHz) and highest channel: 39channel (2480 MHz).

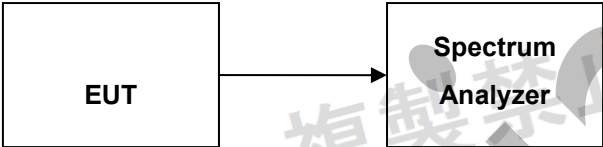
6.1.2 Antenna Requirement

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.
EUT Antenna
The antenna is FPC antenna. The best case gain of the antenna is L ear: 0.34dBi, R ear: 0.81dBi from 2402~2480MHz.



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

6.1.3 Frequency Error

Test Requirement:	Item 19 of Article 2 Paragraph 1		
Test Method:	MIC Notice No.88 Appendix No.43		
EUT Operation:			
Ambient:	Temp.: 24°C	Humid.: 48%	Press.: 1010 mbar
Test Status:	Test the EUT in transmitting mode without modulation. Test in Channel lowest (2402MHz), middle (2440MHz) and highest (2480MHz), keep in continuously transmitting status.		
Test Configuration:	 <pre> graph LR EUT[EUT] --> SA[Spectrum Analyzer] </pre>		
Test Conditions:	Frequency Counter or Spectrum Analyzer is used for measurement.		
EUT conditions:	Modulation/Spread/Hopping off, CW Tx If EUT does not accept "Modulation OFF" mode in the measurement, you may use "Modulation ON" mode. In that case you can use the Max power Frequency as the measuring results.		
Spectrum Analyzer conditions:	Frequency: Test Frequency Span 1MHz RBW 10KHz VBW 10KHz Sweep Time Auto Detector mode Positive peak Indication mode Max hold		
Technical standard:	Tolerance of frequency: $\pm 50 \times 10^{-6}$		
Test result:	PASS		

Measurement Record:

Uncertainty: $\pm 10\text{Hz}$

Test Result

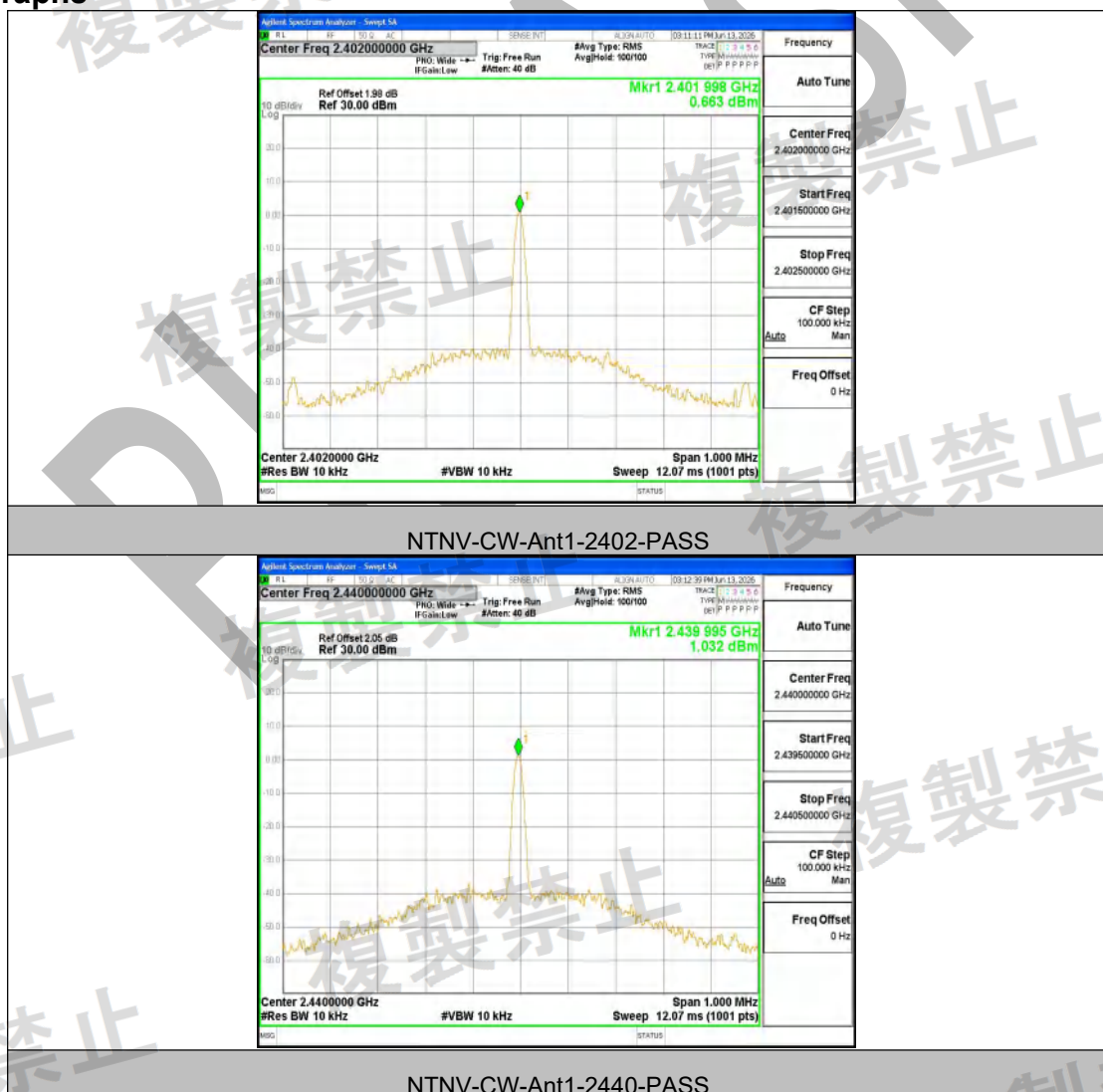
L ear:

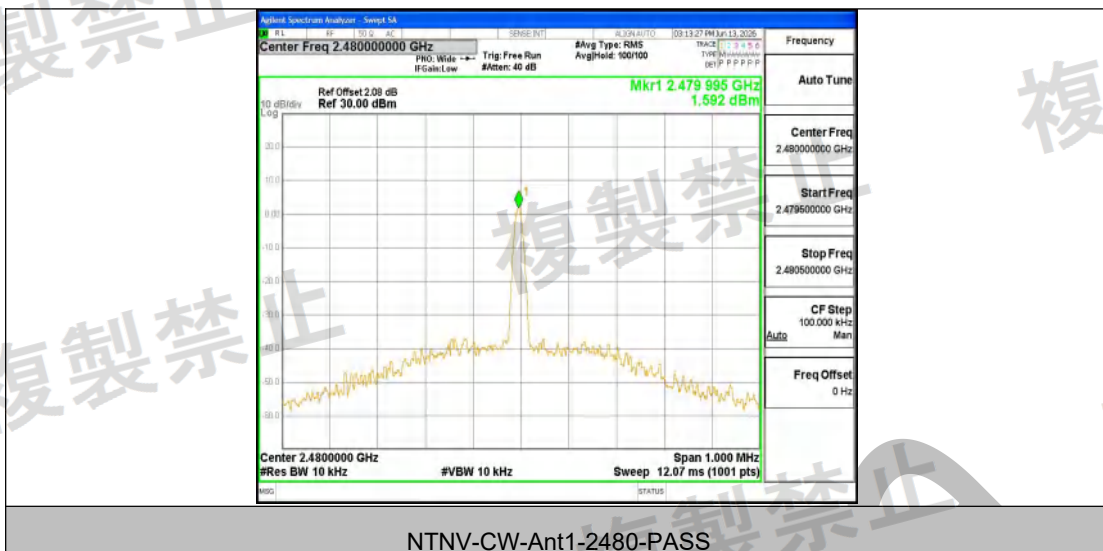
TestCondition	TestMode	Antenna	Freq(MHz)	CenterFreq [MHz]	Result[ppm]	Limit[ppm]	Verdict
NTNV	CW	Ant1	2402	2401.998	-0.83264	± 50	PASS
			2440	2439.995	-2.04918	± 50	PASS
			2480	2479.995	-2.01613	± 50	PASS

Note: The nominal frequency shall be confirmed by the applicant and test lab.

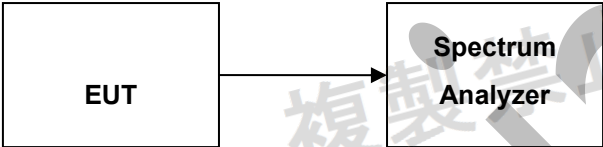
Result plot as follows:

Test Graphs





6.1.4 Occupied Bandwidth (99%)

Test Requirement:	Item 19 of Article 2 Paragraph 1
Test Method:	MIC Notice No.88 Appendix No.43
EUT Operation:	
Ambient:	Temp.: 24.0°C Humid.: 48% Press.: 1010 mbar
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.
Test Configuration:	 <pre> graph LR EUT[EUT] --> SA[Spectrum Analyzer] </pre>
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.
Spectrum Analyzer conditions:	Frequency: Test Frequency Span 3MHz or 6MHz RBW 100KHz VBW 300KHz Sweep Time Auto detector mode Positive peak Indication mode Max hold OBW 99%
Technical standard:	26MHz or less
Test result:	PASS

Measurement Record:

Uncertainty: $\pm 10\text{KHz}$

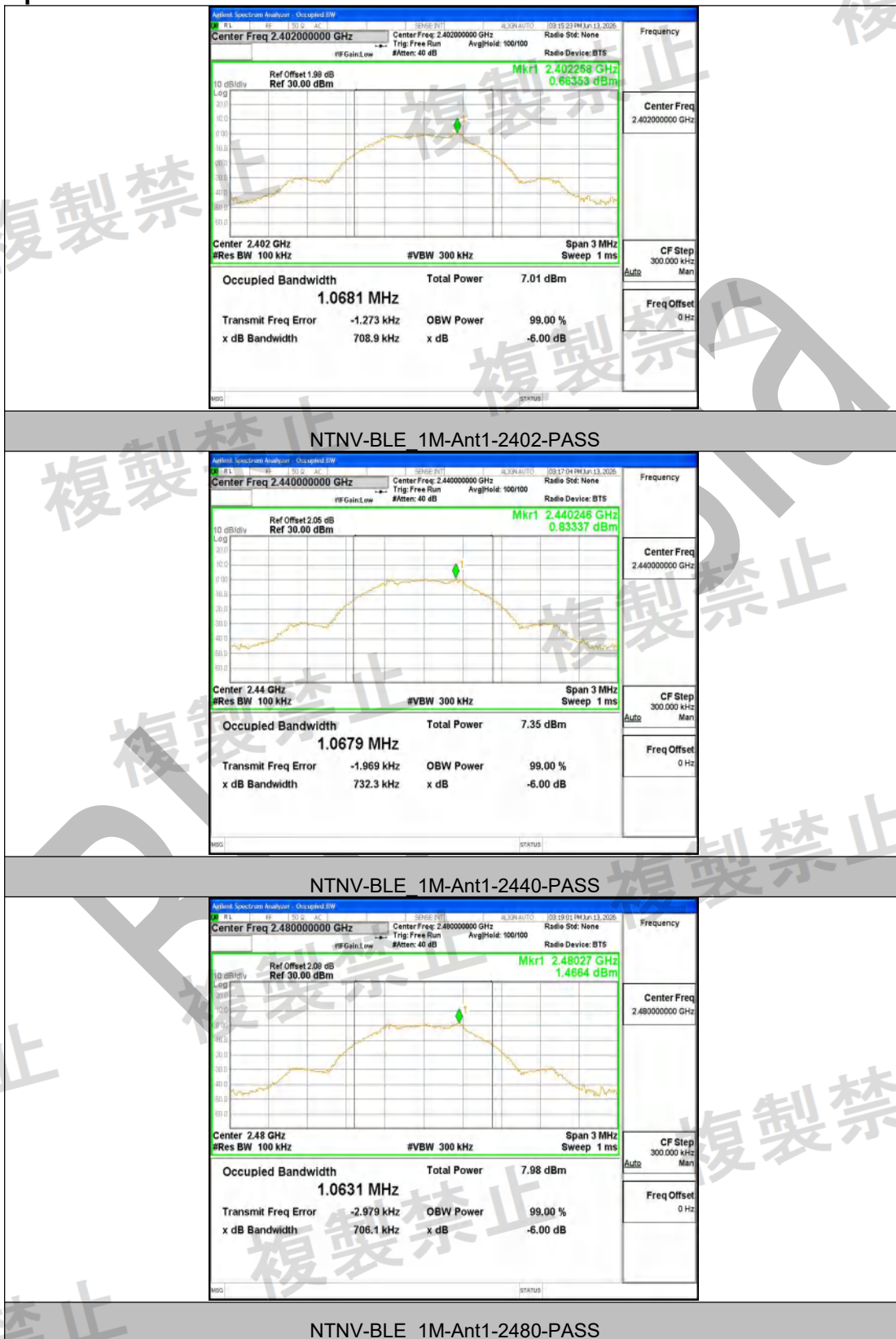
Test Result

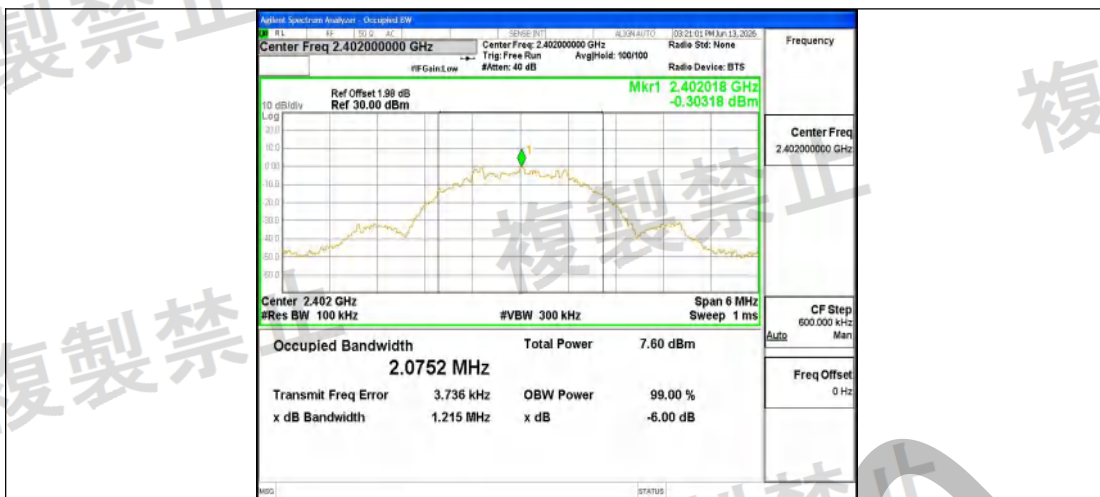
L ear:

TestCondition	TestMode	Antenna	Freq(MHz)	Result [MHz]	Limit [MHz]	Verdict
NTNV	BLE_1M	Ant1	2402	1.068	≤ 26	PASS
			2440	1.068	≤ 26	PASS
			2480	1.063	≤ 26	PASS
NTNV	BLE_2M	Ant1	2402	2.075	≤ 26	PASS
			2440	2.097	≤ 26	PASS
			2480	2.097	≤ 26	PASS

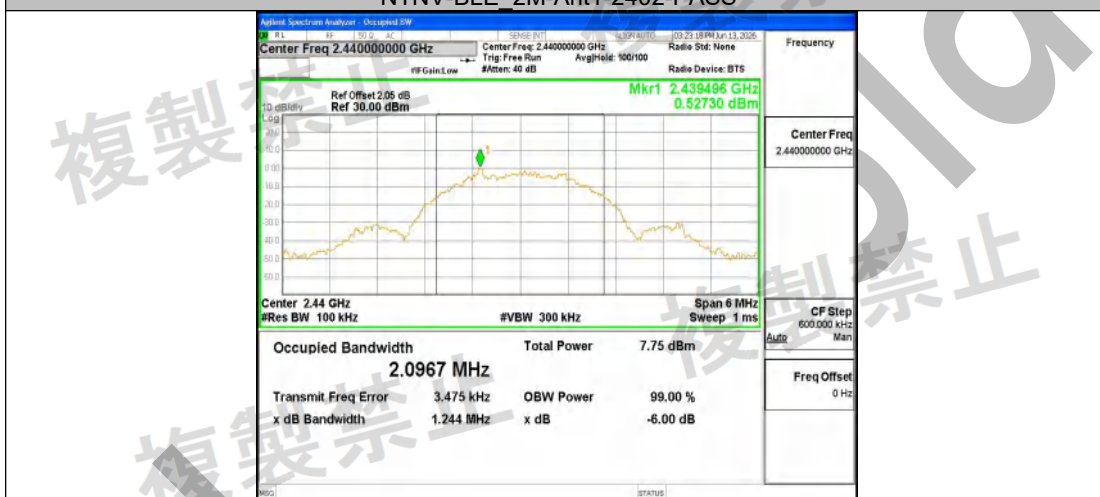
Result plot as follows:

Test Graphs

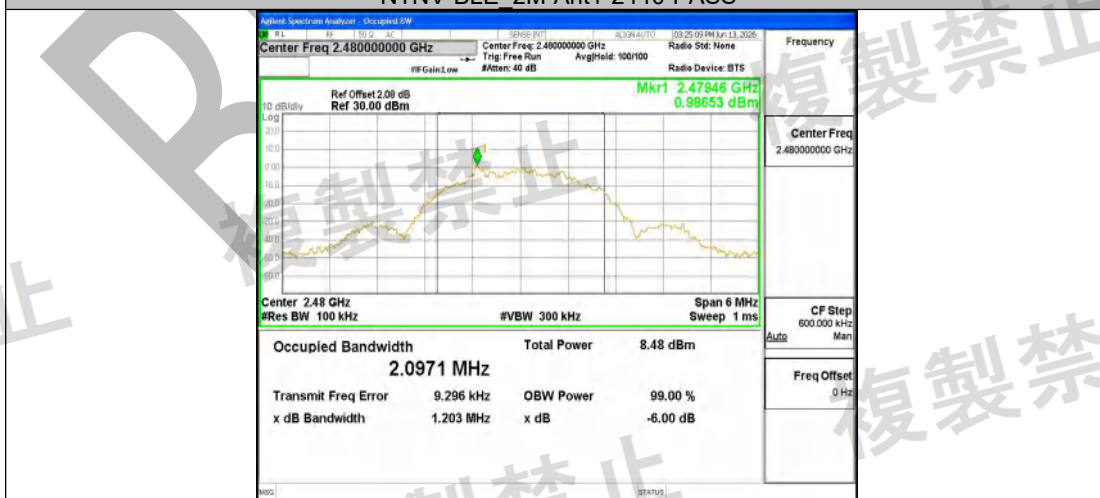




NTVN-BLE 2M-Ant1-2402-PASS

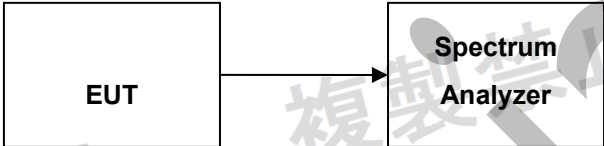


NTVN-BLE 2M-Ant1-2440-PASS



NTVN-BLE 2M-Ant1-2480-PASS

6.1.5 Spread-spectrum Bandwidth (90%)

Test Requirement:	Item 19 of Article 2 Paragraph 1
Test Method:	MIC Notice No.88 Appendix No.43
EUT Operation:	
Ambient:	Temp.: 24.0°C Humid.: 48% Press.: 1010 mbar
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.
Test Configuration:	 <pre> graph LR EUT[EUT] --> SA[Spectrum Analyzer] </pre>
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.
Spectrum Analyzer conditions:	Frequency: Test Frequency Span 3MHz or 6MHz RBW 100KHz VBW 300KHz Sweep Time Auto detector mode Positive peak Indication mode Max hold OBW 90%
Technical standard:	N/A
Test result:	N/A

Measurement Record: **Uncertainty: ± 10KHz**

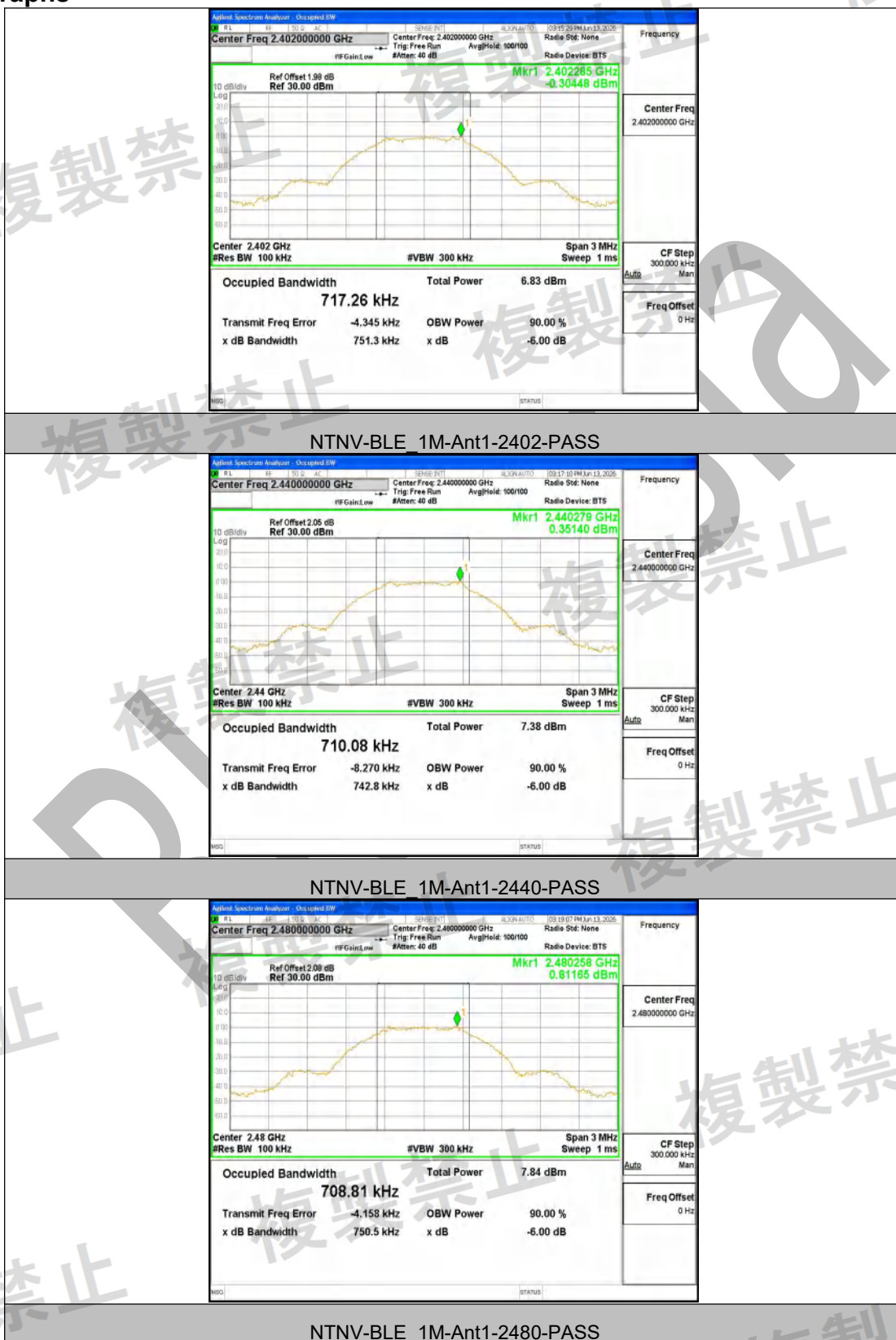
Test Result

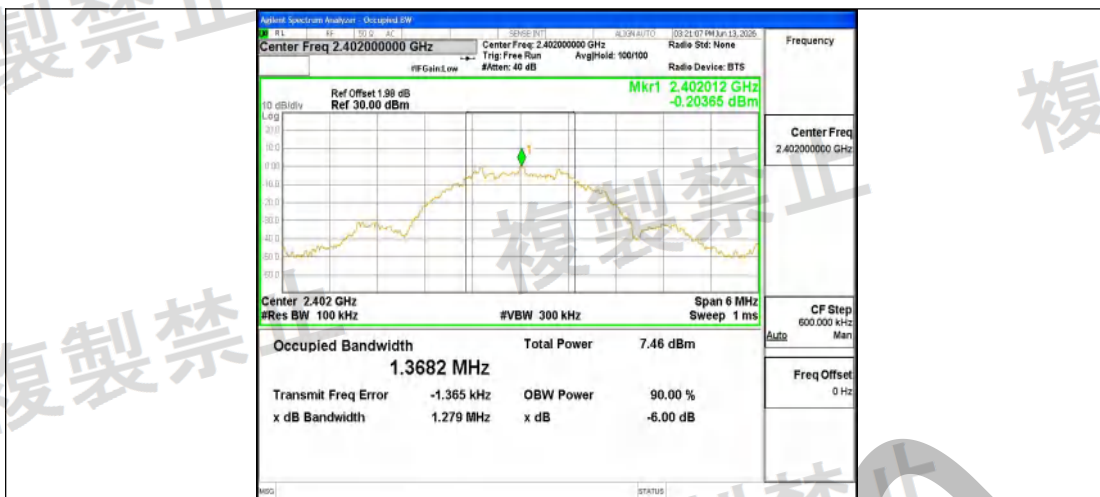
Learn:

TestCondition	TestMode	Antenna	Freq(MHz)	Result [MHz]	Limit [MHz]	Verdict
NTNV	BLE_1M	Ant1	2402	0.717	N/A	N/A
			2440	0.710	N/A	N/A
			2480	0.709	N/A	N/A
NTNV	BLE_2M	Ant1	2402	1.368	N/A	N/A
			2440	1.397	N/A	N/A
			2480	1.394	N/A	N/A

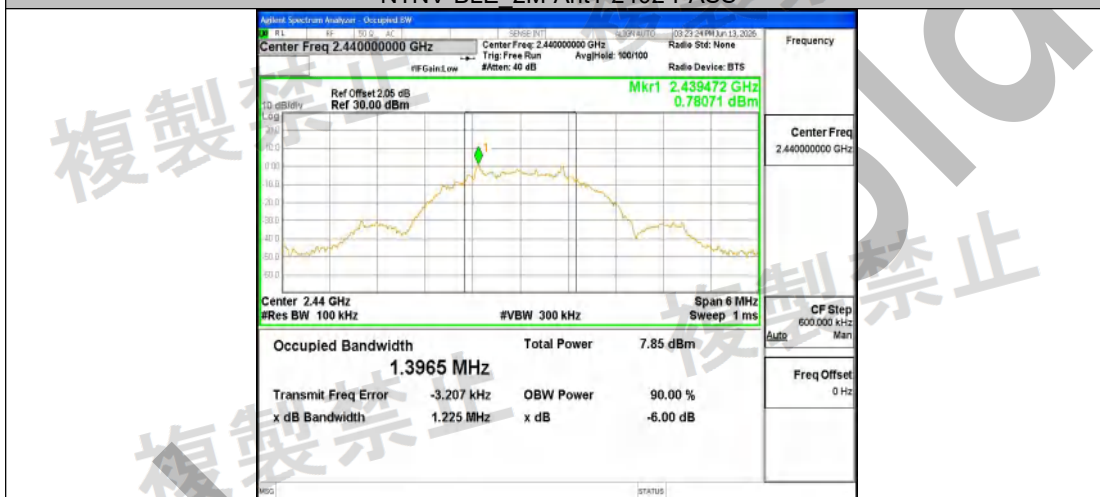
Result plot as follows:

Test Graphs

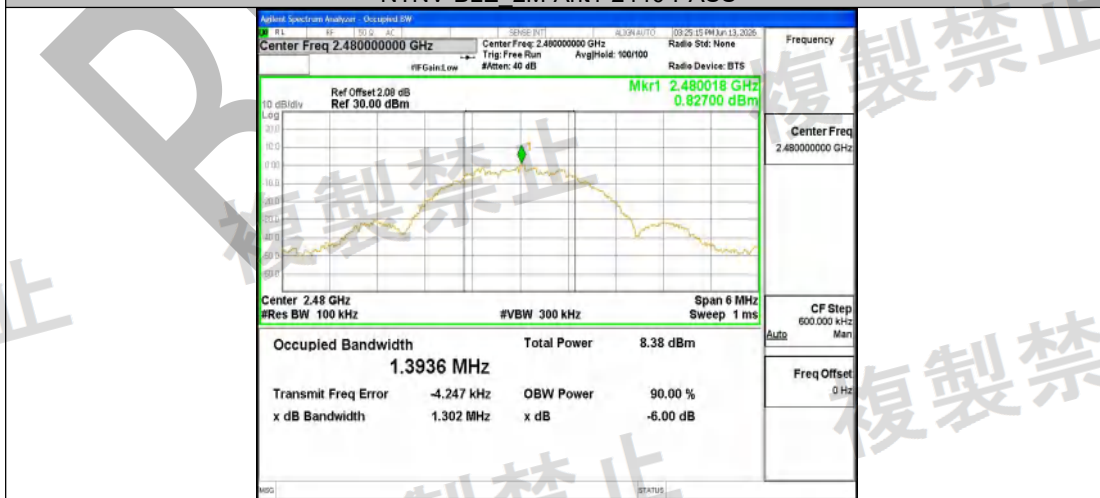




NTVN-BLE 2M-Ant1-2402-PASS

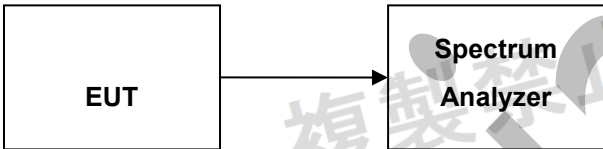


NTVN-BLE 2M-Ant1-2440-PASS



NTVN-BLE 2M-Ant1-2480-PASS

6.1.6 Antenna Power

Test Requirement:	Item 19 of Article 2 Paragraph 1		
Test Method:	MIC Notice No.88 Appendix No.43		
EUT Operation:			
Ambient:	Temp.: 24°C	Humid.: 48%	Press.: 1010mbar
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.		
Test Configuration:	 <pre> graph LR EUT[EUT] --> SA[Spectrum Analyzer] </pre>		
EUT conditions:	Modulation/Spread/Hopping on, PN9 Modulation Tx For equipment using diffusion code, set to the test diffusion code and modulate with standard coding testsignal.		
Spectrum Analyzer conditions:	Frequency: Test Frequency Span 10MHz RBW 2/3MHz VBW 2/3MHz Sweep Time Auto Detector mode Positive peak Indication mode Max hold		
Technical standard:	Antenna Power (1) FH, FH+DS , FH+OFDM 3mW/MHz or less (used in the range of 2427-2470.75 MHz) (2) OFDM , DS other than (1) 10mW/MHz or less (3) Other than (1) & (2) 10mW or less Tolerance: +20%		
Test result:	PASS		

Measurement Record:
Uncertainty: ± 10 kHz / ± 1 dB
Test Result

L ear:

AntennaPower							
TestCondition	TestMode	Antenna	Freq(MHz)	Result(dBm)	Result(mW)	Limit(mW)	Verdict
NTNV	BLE_1M	Ant1	2402	0.763	1.192	≤ 10	PASS
			2440	1.655	1.464	≤ 10	PASS
			2480	2.596	1.818	≤ 10	PASS
NTNV	BLE_2M	Ant1	2402	1.047	1.273	≤ 10	PASS
			2440	1.970	1.574	≤ 10	PASS
			2480	2.701	1.863	≤ 10	PASS

Tolerance								
Test Condition	Test Mode	Antenna	Freq(MHz)	Power (mW)	Rated Power (mW)	Result(%)	Limit(%)	Verdict
NTNV	BLE_1M	Ant1	2402	1.192	2.00	-40.40	+20	PASS
			2440	1.464	2.00	-26.80	+20	PASS
			2480	1.818	2.00	-9.10	+20	PASS
NTNV	BLE_2M	Ant1	2402	1.273	2.00	-36.35	+20	PASS
			2440	1.574	2.00	-21.30	+20	PASS
			2480	1.863	2.00	-6.85	+20	PASS

EIRP							
TestCondition	TestMode	Antenna	Freq(MHz)	Result(dBm)	EIRP(dBm)	Limit(dBm)	Verdict
NTNV	BLE_1M	Ant1	2402	0.763	1.103	≤ 12.14	PASS
			2440	1.655	1.995	≤ 12.14	PASS
			2480	2.596	2.936	≤ 12.14	PASS
NTNV	BLE_2M	Ant1	2402	1.047	1.387	≤ 12.14	PASS
			2440	1.970	2.310	≤ 12.14	PASS
			2480	2.701	3.041	≤ 12.14	PASS

Remark:

Conducted rated power:F1D: 2.00mW

Tolerance (%) :[(test value- rate power)/rater power]*100

EIRP= antenna power in dBm+ gain in dBi

BlueAsia Technical Services (Shenzhen) Co., Ltd

Tel: +86-755-23059481

Email: marketing@cblueasia.com www.cblueasia.com

Version:v1.0

Rear:

AntennaPower							
TestCondition	TestMode	Antenna	Freq(MHz)	Result(dBm)	Result(mW)	Limit(mW)	Verdict
NTNV	BLE_1M	Ant1	2402	0.651	1.162	<=10	PASS
			2440	1.118	1.294	<=10	PASS
			2480	1.698	1.478	<=10	PASS
NTNV	BLE_2M	Ant1	2402	0.663	1.165	<=10	PASS
			2440	1.189	1.315	<=10	PASS
			2480	1.768	1.502	<=10	PASS

Tolerance								
Test Condition	Test Mode	Antenna	Freq(MHz)	Power (mW)	Rated Power (mW)	Result(%)	Limit(%)	Verdict
NTNV	BLE_1M	Ant1	2402	1.162	2.00	-41.90	+20	PASS
			2440	1.294	2.00	-35.30	+20	PASS
			2480	1.478	2.00	-26.10	+20	PASS
NTNV	BLE_2M	Ant1	2402	1.165	2.00	-41.75	+20	PASS
			2440	1.315	2.00	-34.25	+20	PASS
			2480	1.502	2.00	-24.90	+20	PASS

EIRP							
TestCondition	TestMode	Antenna	Freq(MHz)	Result(dBm)	EIRP(dBm)	Limit(dBm)	Verdict
NTNV	BLE_1M	Ant1	2402	0.651	1.461	<=12.14	PASS
			2440	1.118	1.928	<=12.14	PASS
			2480	1.698	2.508	<=12.14	PASS
NTNV	BLE_2M	Ant1	2402	0.663	1.473	<=12.14	PASS
			2440	1.189	1.999	<=12.14	PASS
			2480	1.768	2.578	<=12.14	PASS

Remark:

Conducted rated power:F1D: 2.00mW

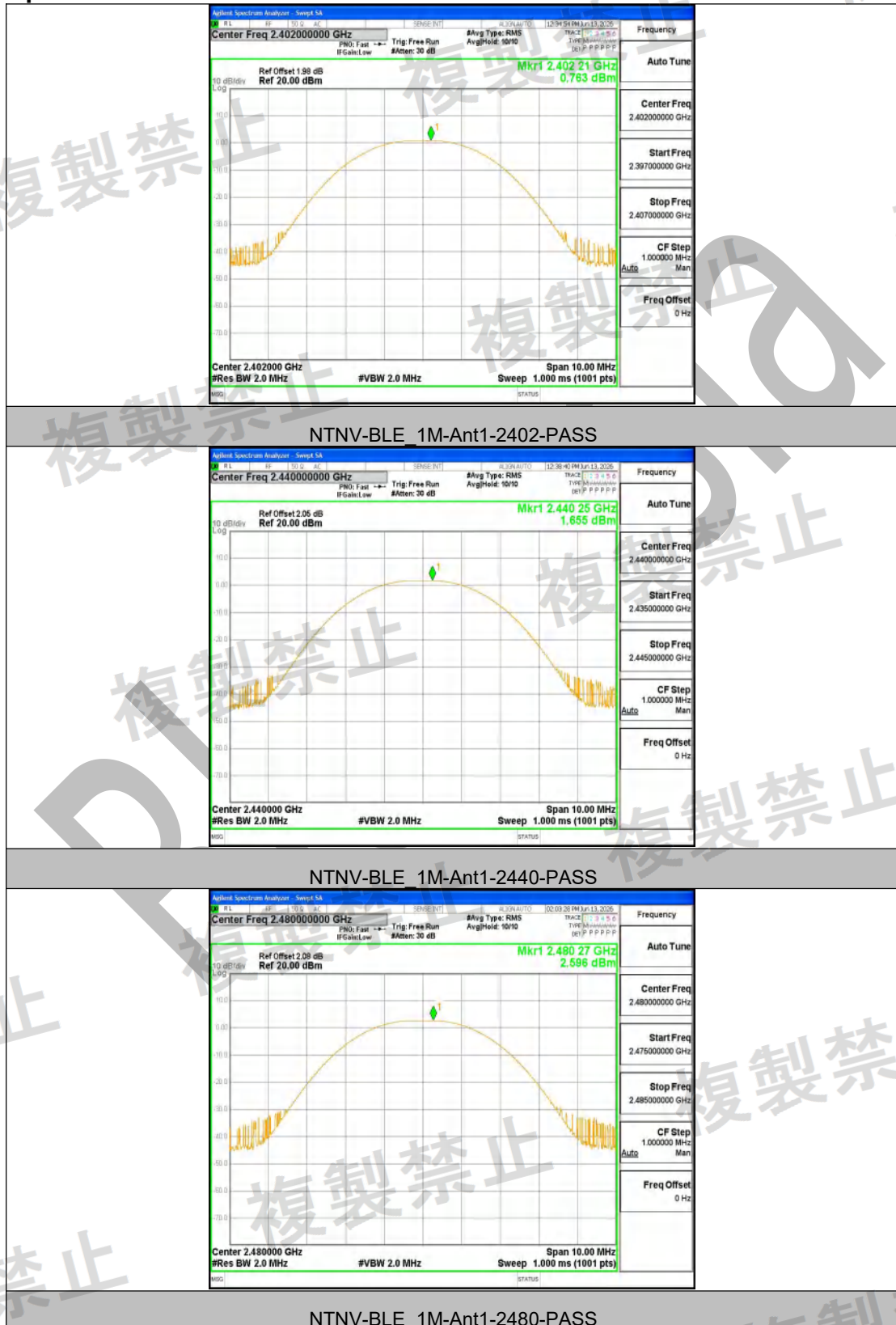
Tolerance (%) :[(test value- rate power)/rater power]*100

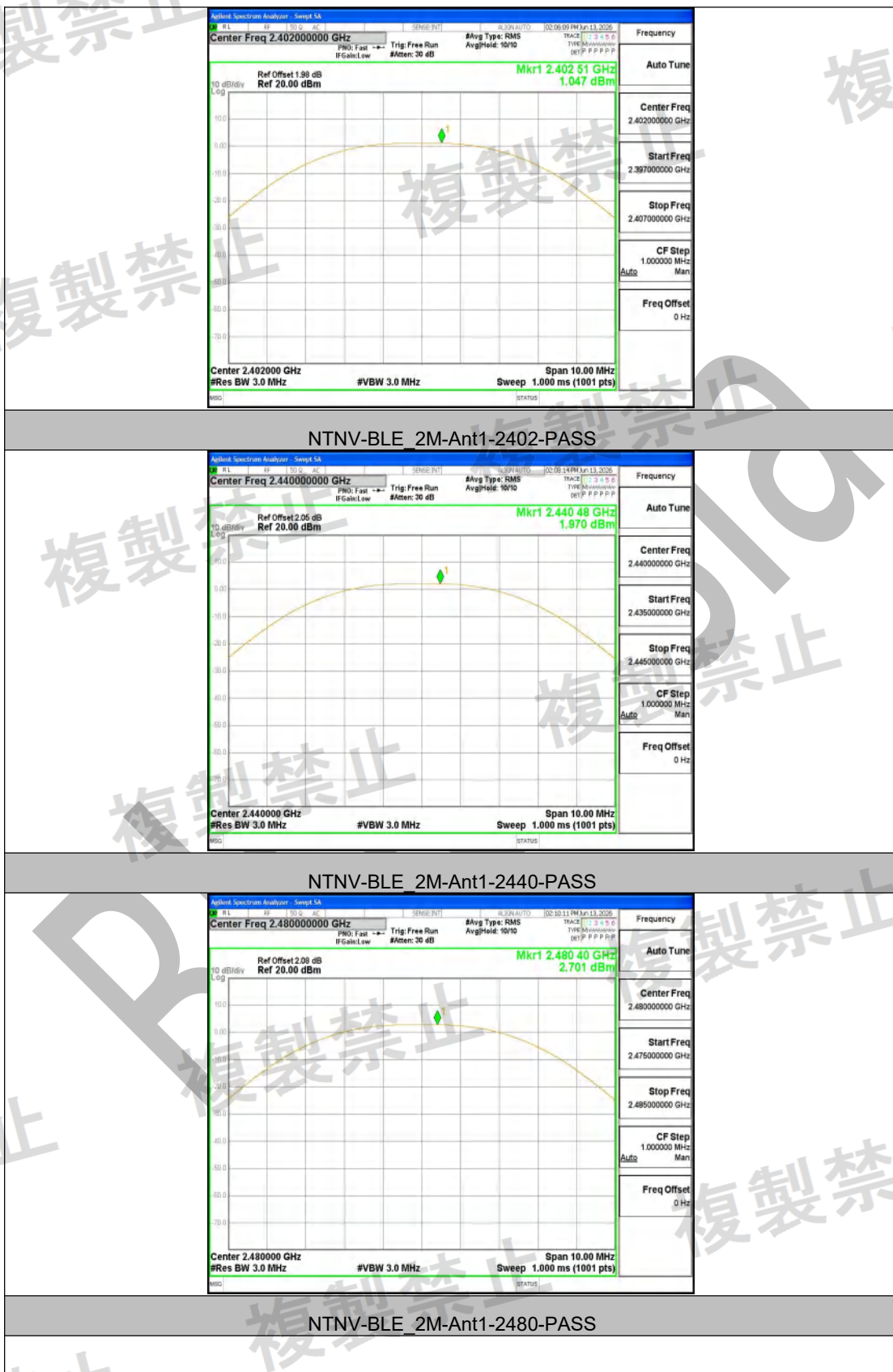
EIRP= antenna power in dBm+ gain in dBi

Lear:

Result plot as follows:

Test Graphs

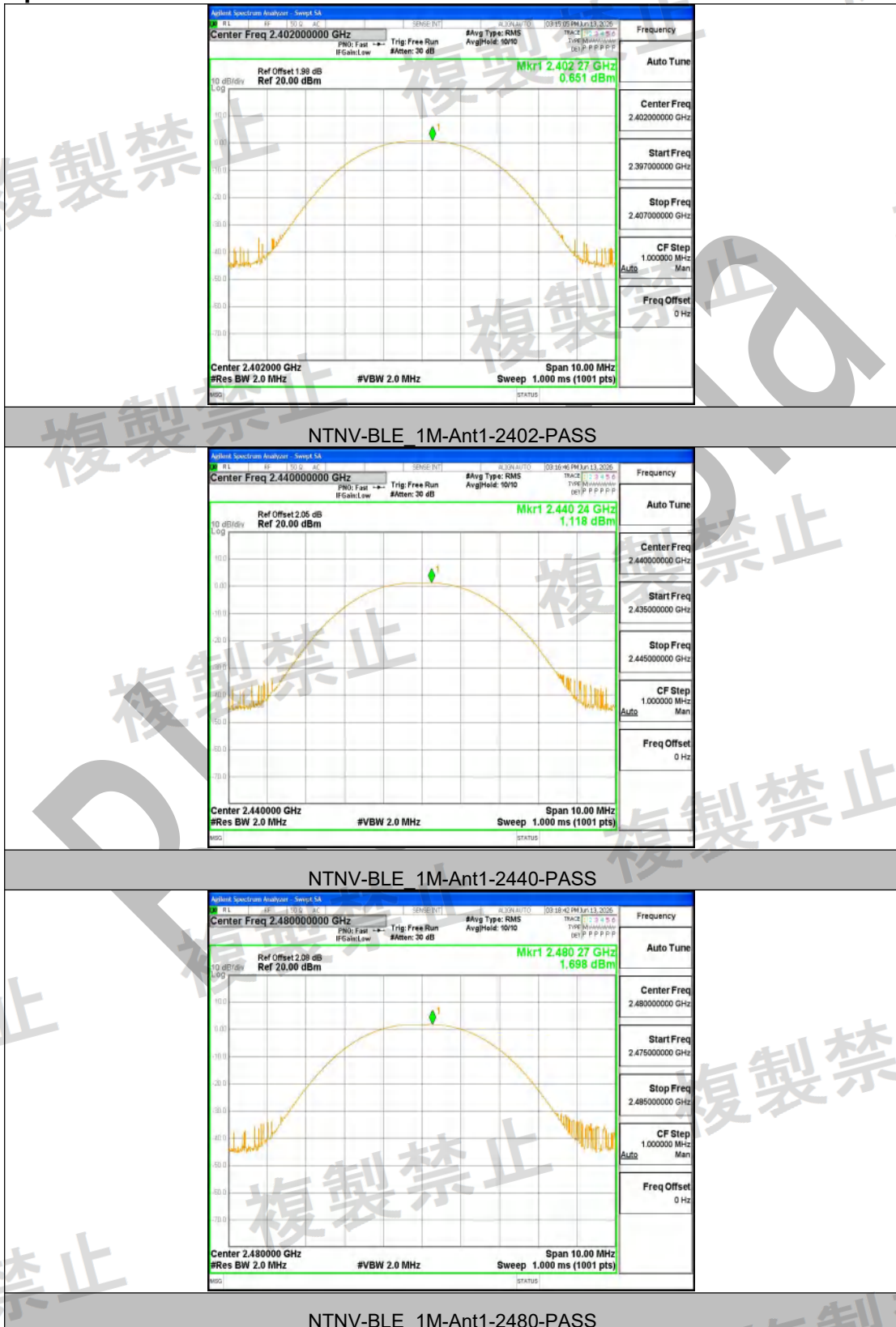


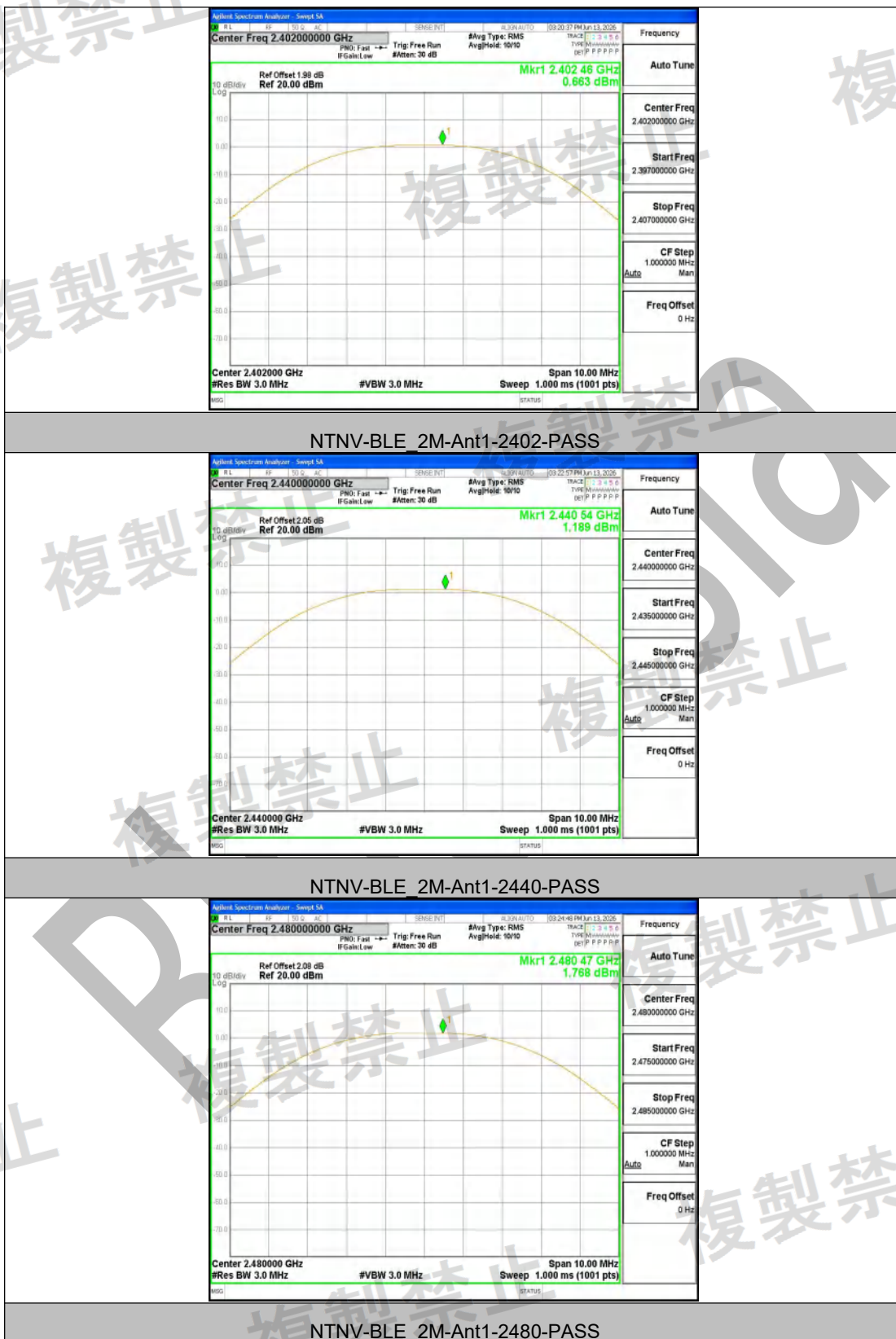


Result:

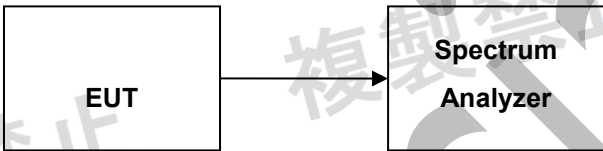
Result plot as follows:

Test Graphs





6.1.7 Spurious Emissions of Tx

Test Requirement:	Item 19 of Article 2 Paragraph 1		
Test Method:	MIC Notice No.88 Appendix No.43		
EUT Operation:			
Ambient:	Temp.: 24°C	Humid.: 48%	Press.: 1010 mbar
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.		
Test Configuration:	 <pre> graph LR EUT[EUT] --> SA[Spectrum Analyzer] </pre>		
EUT conditions:	Modulation/Spread/Hopping on, PN9 Modulation Tx For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.		
Measurement Procedure:	Step1 All spurious are measured from 30MHz to 13GHz by peak mode.		
Spectrum Analyzer conditions(Step 1):	Frequency: 30MHz – 2400MHz , 2483.5MHz –13GHz RBW 1000kHz (30 – 1GHz) , 1000KHz (over 1GHz) VBW 1000kHz (30 – 1GHz) , 1000KHz (over 1GHz) Sweep Time Auto detector mode Positive peak Indication mode Max hold		
Spectrum Analyzer conditions(Step 2):	Frequency: Spurious Frequency Span 0Hz RBW 1MHz VBW 1MHz Sweep Time Auto Detector mode Sample Indication mode Max hold		
Technical standard:	(1) Below 2387 MHz : 2.5μW/MHz;-26dbm/Mhz (2) 2387 to 2400 MHz : 25μW/MHz;-16dbm/Mhz (3) 2483.5 through 2496.5 MHz : 25μW/MHz;-16dbm/Mhz (4) Over 2496.5 MHz : 2.5μW/MHz;-26dbm/Mhz		
Test result:	PASS		

Measurement Record:
Uncertainty: $\pm 1\text{dB}$
Test Result
L ear:

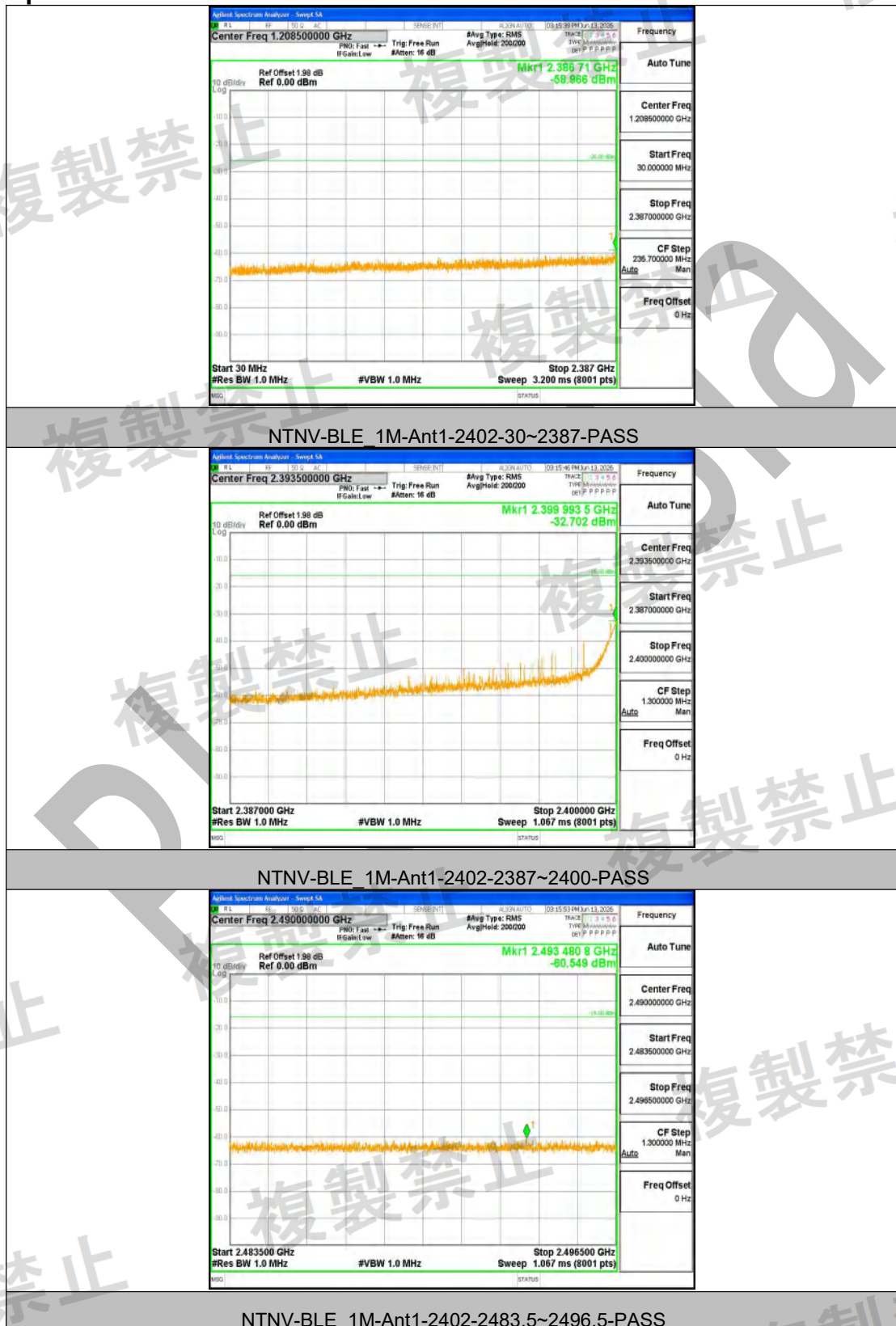
Test Condition	Test Mode	Antenna	Channel (MHz)	Freq.Range [MHz]	Freq [MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Verdict
NTNV	BLE_1M	Ant1	2402	30~2387	2386.71	-58.97	≤ -26	PASS
NTNV	BLE_1M	Ant1	2402	2387~2400	2399.99	-32.70	≤ -16	PASS
NTNV	BLE_1M	Ant1	2402	2483.5~2496.5	2493.48	-60.55	≤ -16	PASS
NTNV	BLE_1M	Ant1	2402	2496.5~13000	7205.45	-54.41	≤ -26	PASS
NTNV	BLE_1M	Ant1	2440	30~2387	2375.51	-60.15	≤ -26	PASS
NTNV	BLE_1M	Ant1	2440	2387~2400	2399.79	-60.20	≤ -16	PASS
NTNV	BLE_1M	Ant1	2440	2483.5~2496.5	2488.35	-60.40	≤ -16	PASS
NTNV	BLE_1M	Ant1	2440	2496.5~13000	7319.42	-56.40	≤ -26	PASS
NTNV	BLE_1M	Ant1	2480	30~2387	2378.46	-60.00	≤ -26	PASS
NTNV	BLE_1M	Ant1	2480	2387~2400	2397.74	-60.45	≤ -16	PASS
NTNV	BLE_1M	Ant1	2480	2483.5~2496.5	2483.82	-41.63	≤ -16	PASS
NTNV	BLE_1M	Ant1	2480	2496.5~13000	7441.27	-54.44	≤ -26	PASS
NTNV	BLE_2M	Ant1	2402	30~2387	2310.69	-60.21	≤ -26	PASS
NTNV	BLE_2M	Ant1	2402	2387~2400	2400.00	-20.67	≤ -16	PASS
NTNV	BLE_2M	Ant1	2402	2483.5~2496.5	2492.03	-60.07	≤ -16	PASS
NTNV	BLE_2M	Ant1	2402	2496.5~13000	7208.08	-55.03	≤ -26	PASS
NTNV	BLE_2M	Ant1	2440	30~2387	2355.18	-59.32	≤ -26	PASS
NTNV	BLE_2M	Ant1	2440	2387~2400	2387.26	-60.12	≤ -16	PASS
NTNV	BLE_2M	Ant1	2440	2483.5~2496.5	2490.39	-60.36	≤ -16	PASS
NTNV	BLE_2M	Ant1	2440	2496.5~13000	3497.53	-51.20	≤ -26	PASS
NTNV	BLE_2M	Ant1	2480	30~2387	1979.53	-59.73	≤ -26	PASS
NTNV	BLE_2M	Ant1	2480	2387~2400	2396.82	-60.23	≤ -16	PASS
NTNV	BLE_2M	Ant1	2480	2483.5~2496.5	2483.52	-39.79	≤ -16	PASS
NTNV	BLE_2M	Ant1	2480	2496.5~13000	3418.23	-42.51	≤ -26	PASS

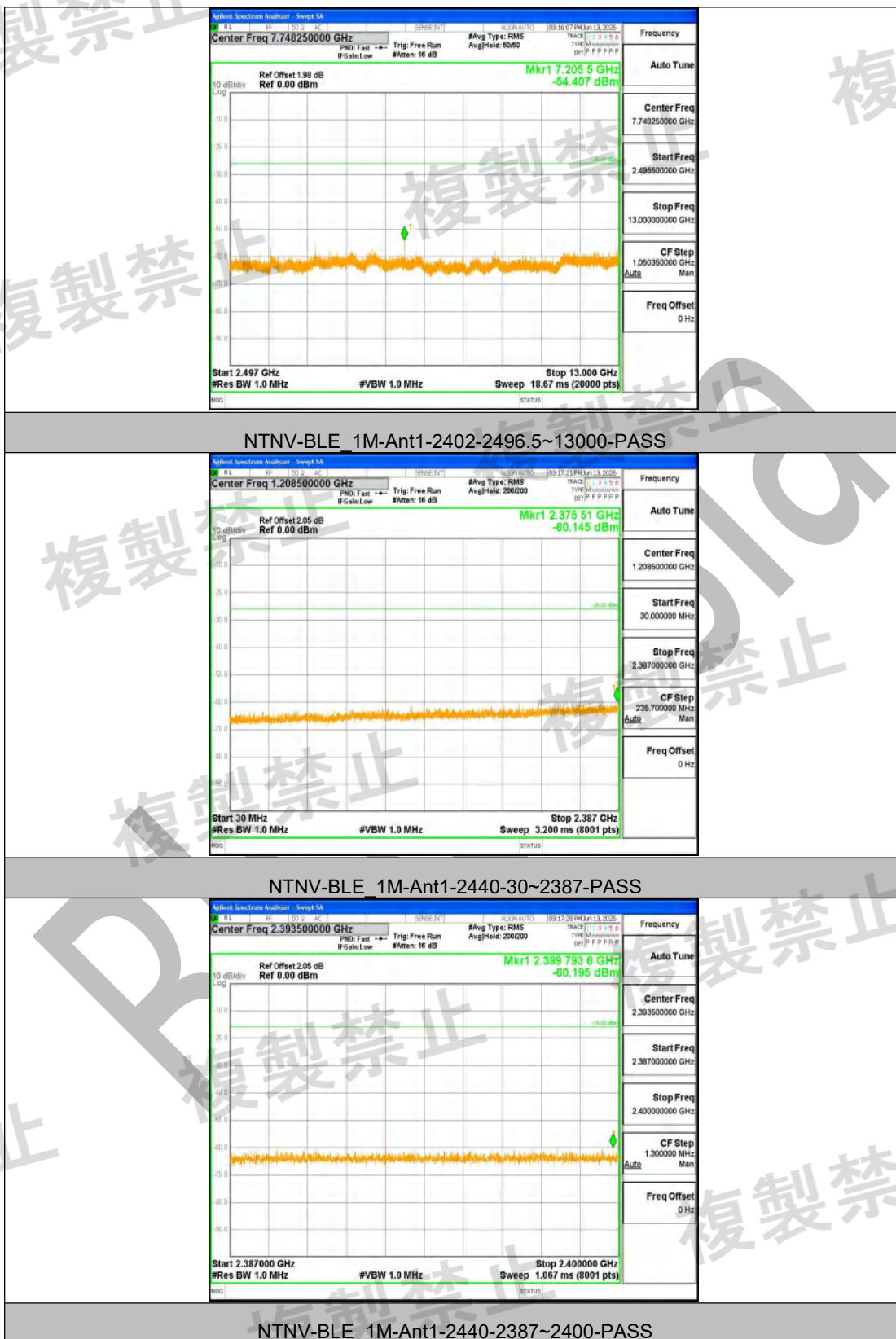
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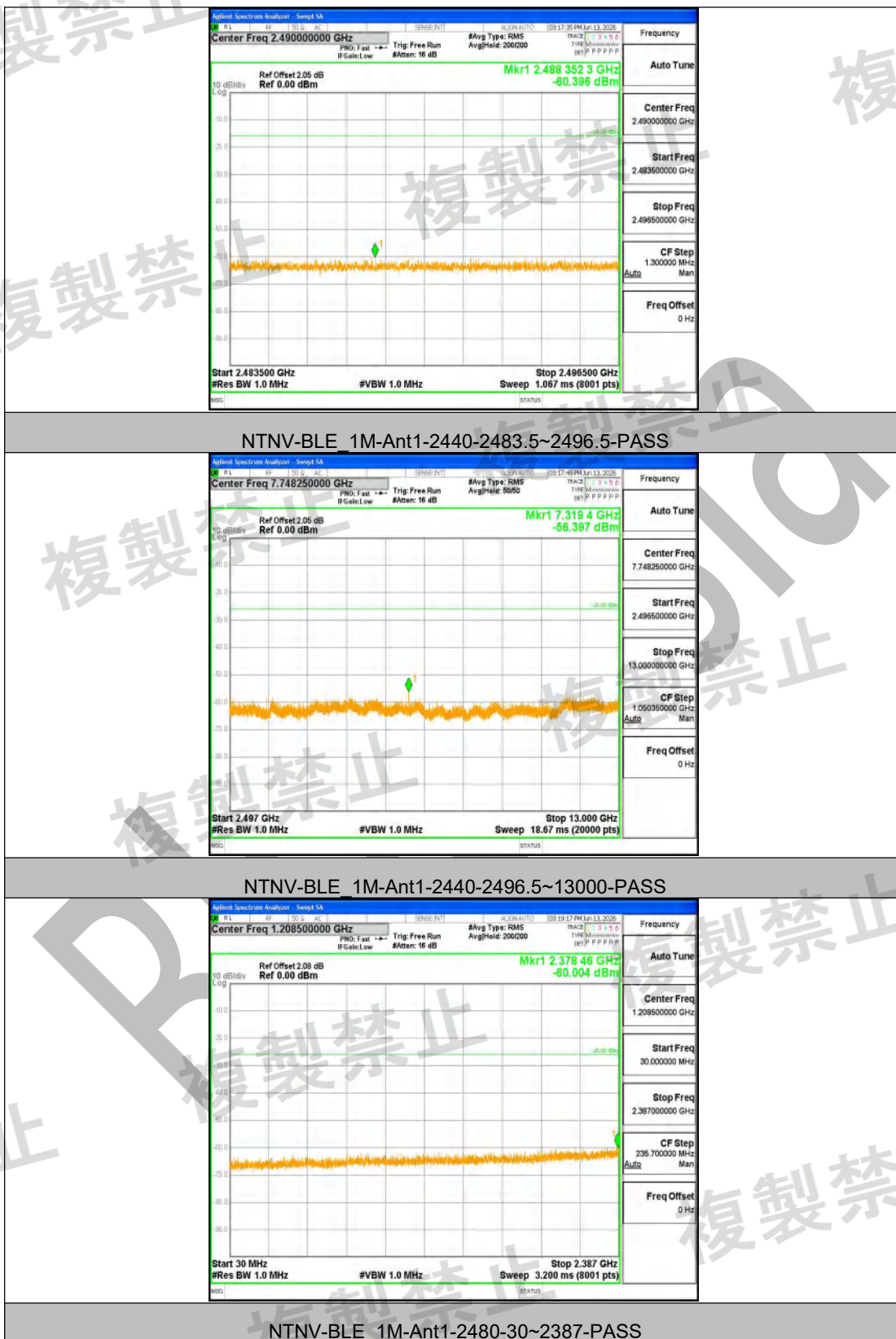
TestCondition	TestMode	Antenna	Channel (MHz)	Freq.Range [MHz]	Freq [MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Verdict
NTNV	BLE_1M	Ant1	2402	30~2387	2387.00	-58.95	≤-26	PASS
NTNV	BLE_1M	Ant1	2402	2387~2400	2400.00	-33.16	≤-16	PASS
NTNV	BLE_1M	Ant1	2402	2483.5~2496.5	2491.20	-60.04	≤-16	PASS
NTNV	BLE_1M	Ant1	2402	2496.5~13000	4803.71	-51.70	≤-26	PASS
NTNV	BLE_1M	Ant1	2440	30~2387	2368.73	-60.06	≤-26	PASS
NTNV	BLE_1M	Ant1	2440	2387~2400	2388.19	-60.37	≤-16	PASS
NTNV	BLE_1M	Ant1	2440	2483.5~2496.5	2486.29	-59.73	≤-16	PASS
NTNV	BLE_1M	Ant1	2440	2496.5~13000	4879.86	-53.85	≤-26	PASS
NTNV	BLE_1M	Ant1	2480	30~2387	2244.99	-59.63	≤-26	PASS
NTNV	BLE_1M	Ant1	2480	2387~2400	2395.92	-60.13	≤-16	PASS
NTNV	BLE_1M	Ant1	2480	2483.5~2496.5	2483.61	-39.04	≤-16	PASS
NTNV	BLE_1M	Ant1	2480	2496.5~13000	4961.27	-52.86	≤-26	PASS
NTNV	BLE_2M	Ant1	2402	30~2387	2291.84	-59.01	≤-26	PASS
NTNV	BLE_2M	Ant1	2402	2387~2400	2400.00	-20.43	≤-16	PASS
NTNV	BLE_2M	Ant1	2402	2483.5~2496.5	2491.66	-58.83	≤-16	PASS
NTNV	BLE_2M	Ant1	2402	2496.5~13000	3497.53	-48.43	≤-26	PASS
NTNV	BLE_2M	Ant1	2440	30~2387	2276.52	-60.10	≤-26	PASS
NTNV	BLE_2M	Ant1	2440	2387~2400	2392.43	-60.48	≤-16	PASS
NTNV	BLE_2M	Ant1	2440	2483.5~2496.5	2486.85	-59.83	≤-16	PASS
NTNV	BLE_2M	Ant1	2440	2496.5~13000	7322.05	-53.75	≤-26	PASS
NTNV	BLE_2M	Ant1	2480	30~2387	2373.15	-60.20	≤-26	PASS
NTNV	BLE_2M	Ant1	2480	2387~2400	2393.26	-59.71	≤-16	PASS
NTNV	BLE_2M	Ant1	2480	2483.5~2496.5	2483.71	-38.80	≤-16	PASS
NTNV	BLE_2M	Ant1	2480	2496.5~13000	4960.74	-54.32	≤-26	PASS

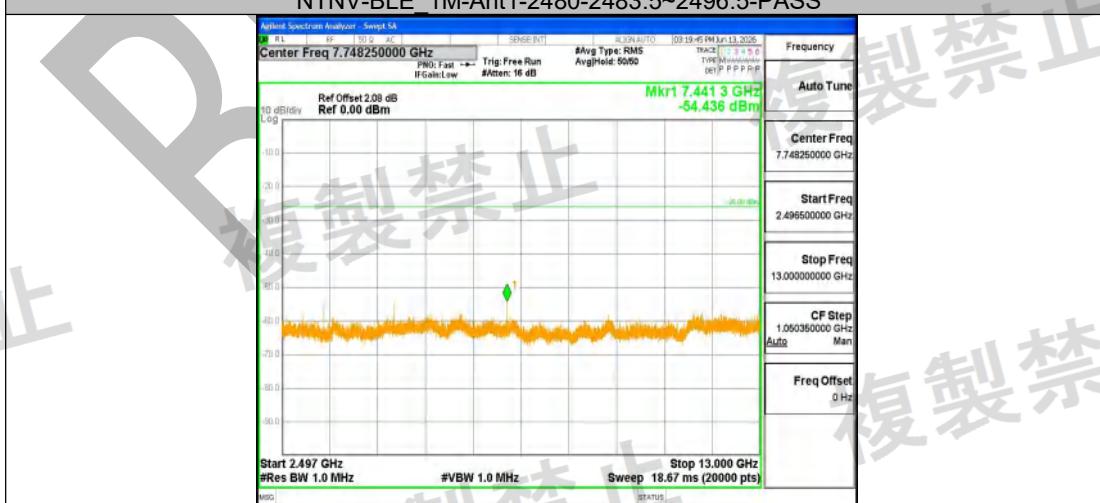
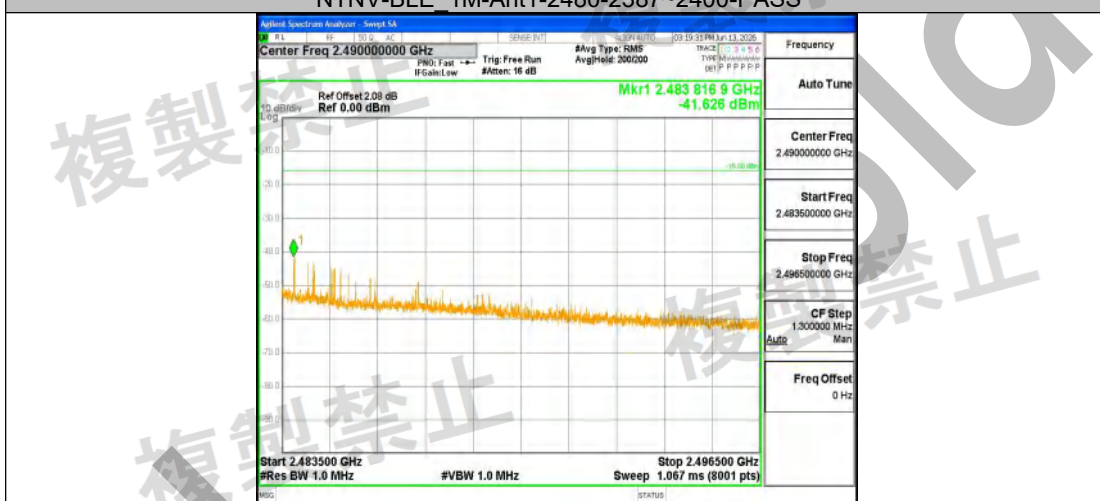
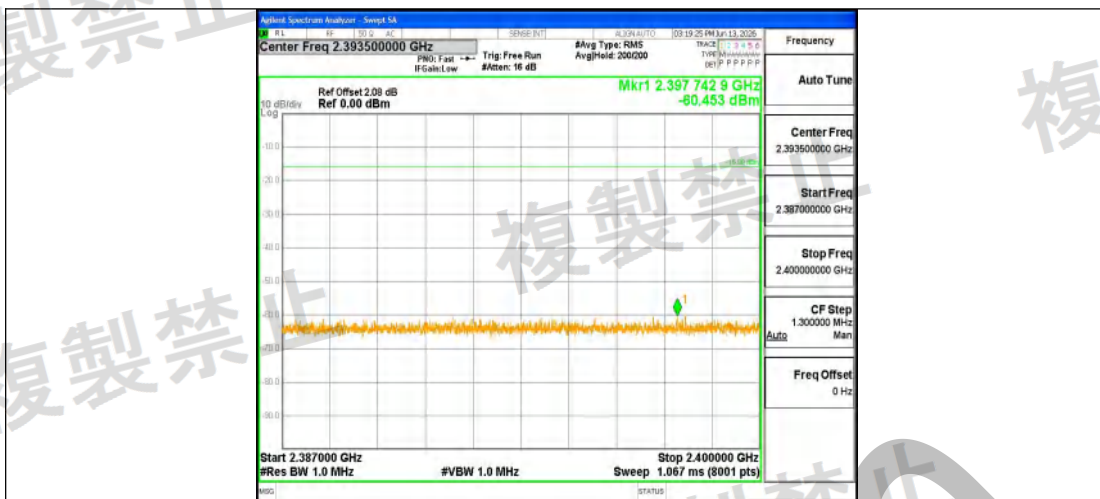
Learn:
Result plot as follows:

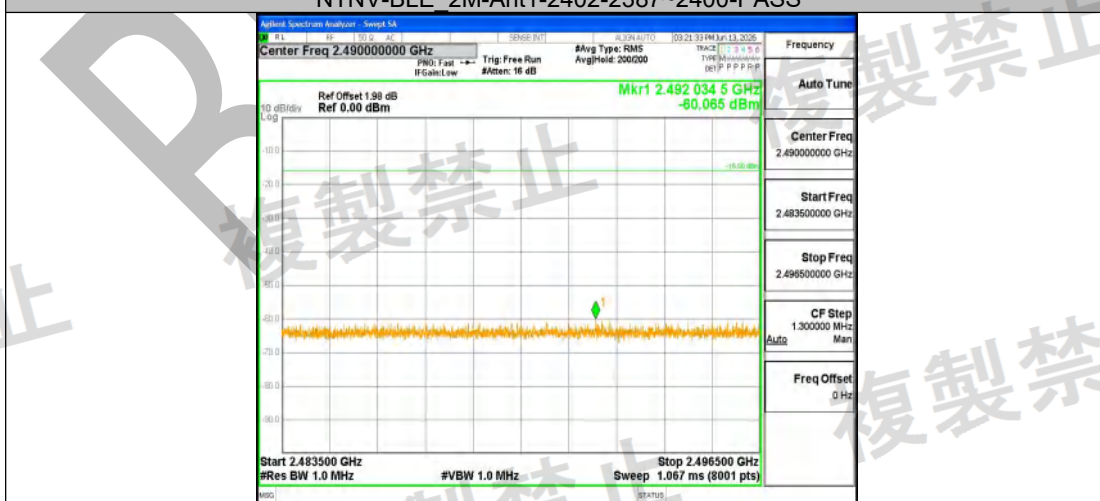
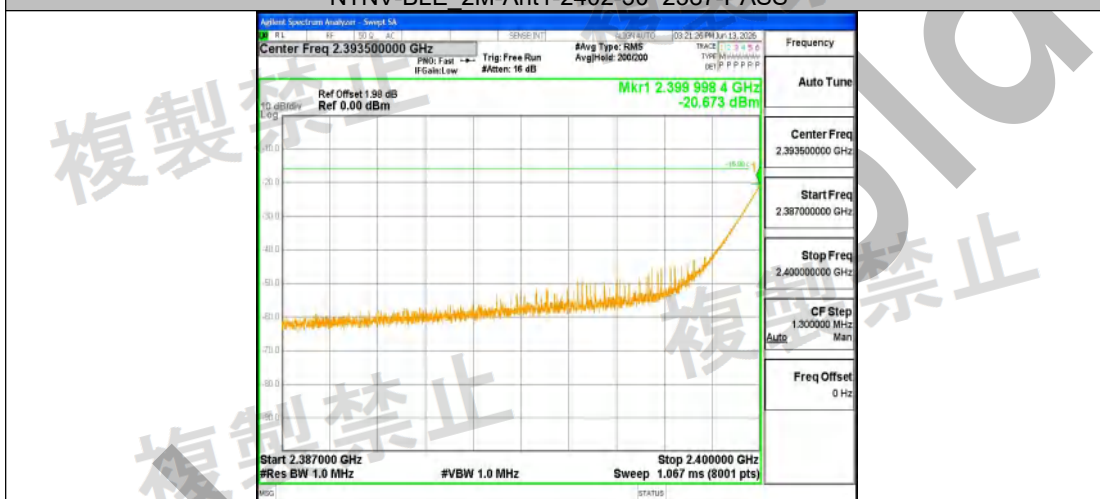
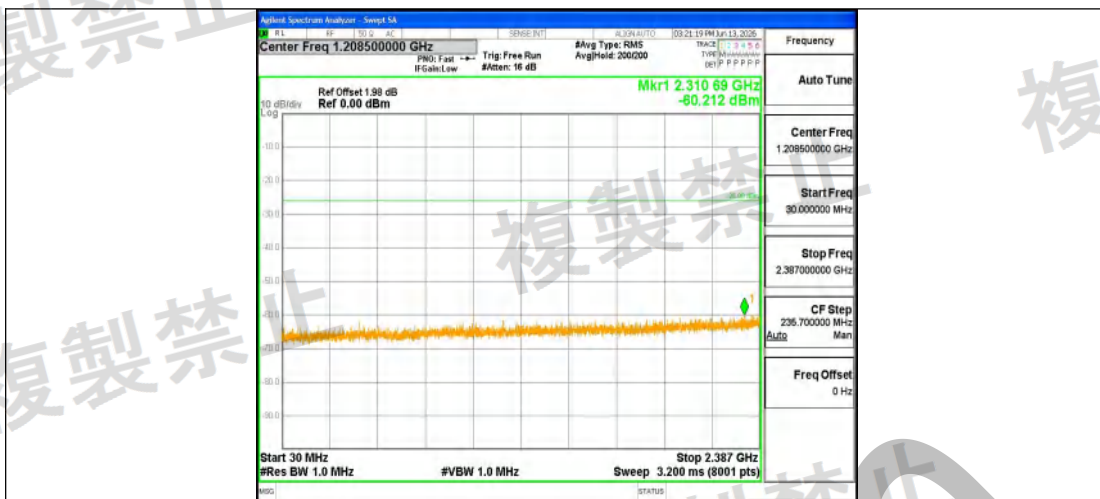
Test Graphs

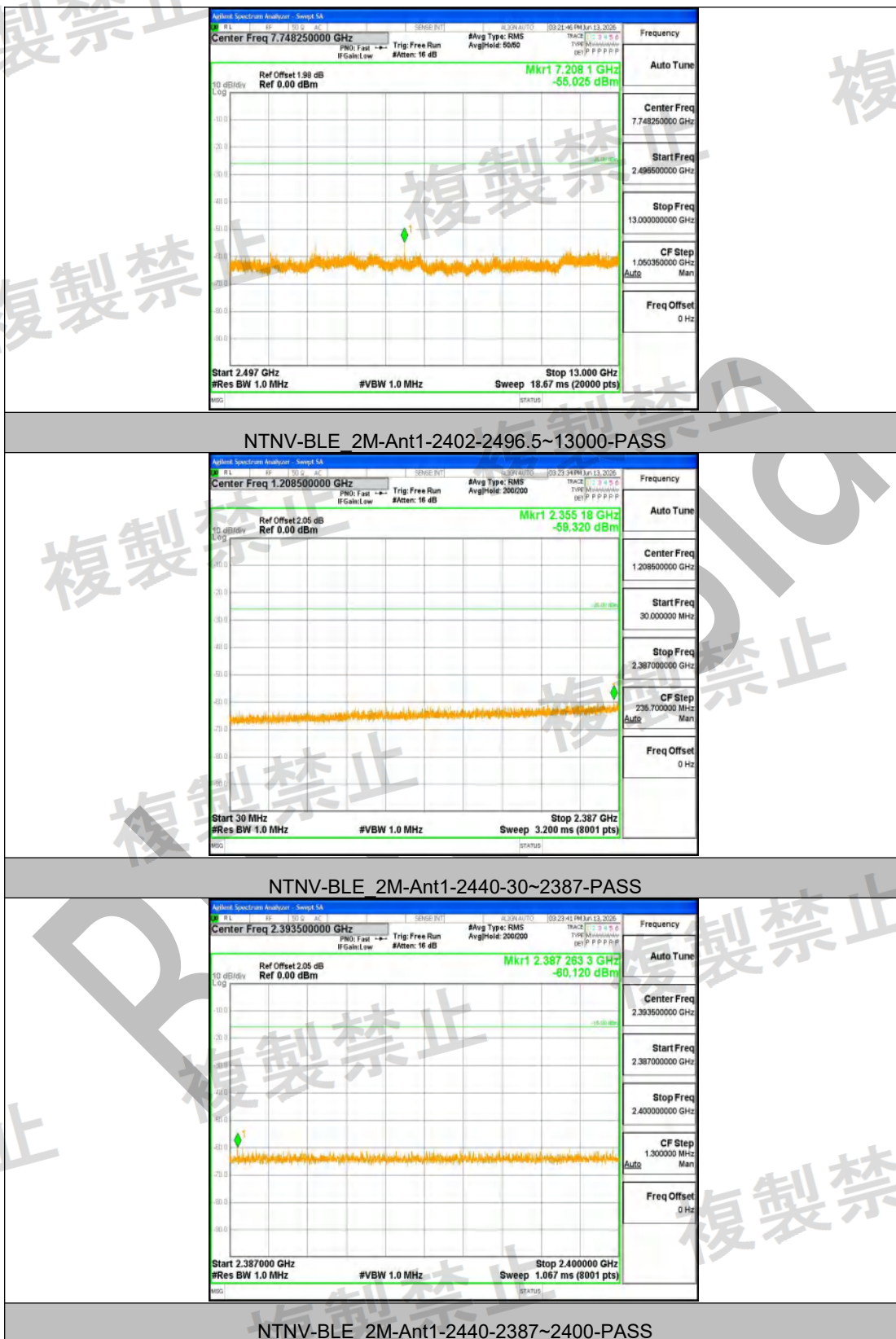


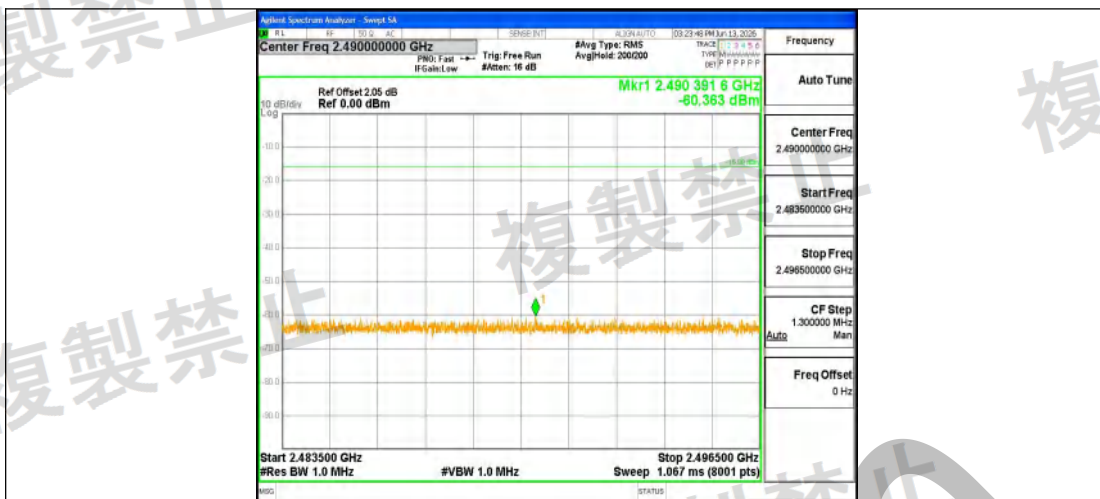




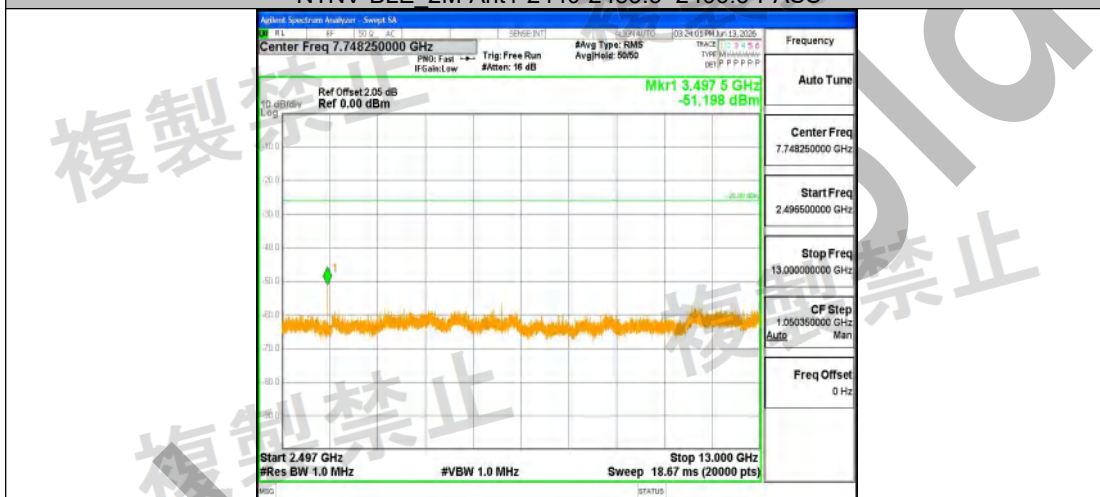




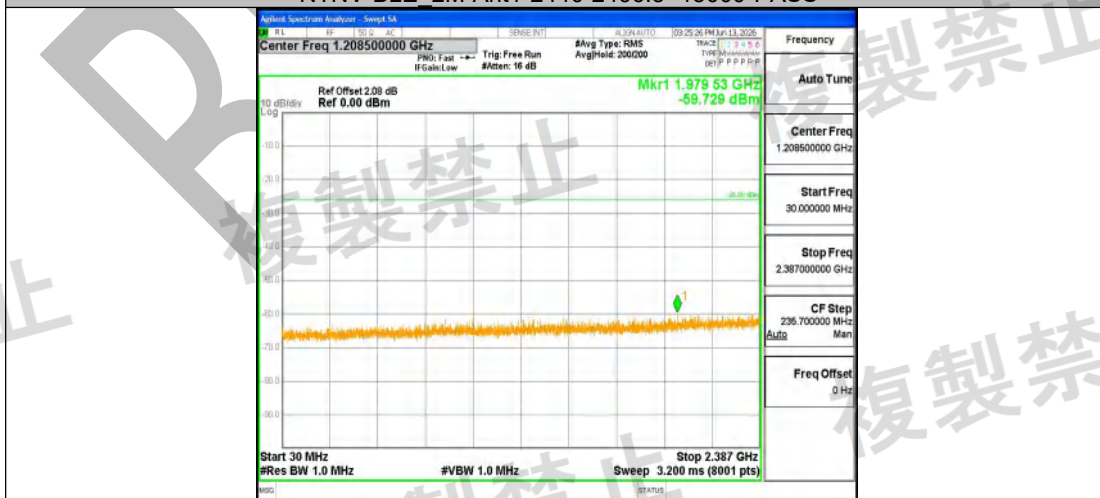




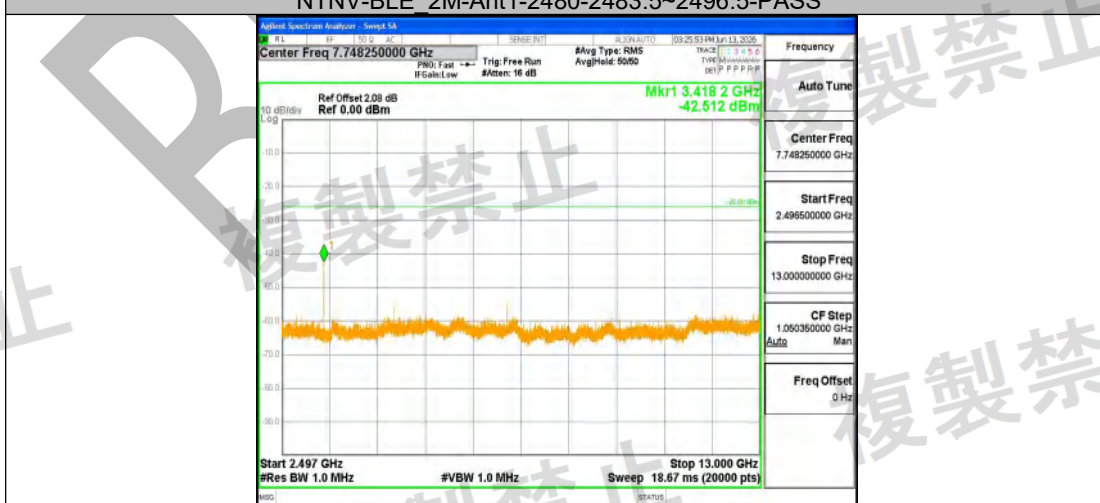
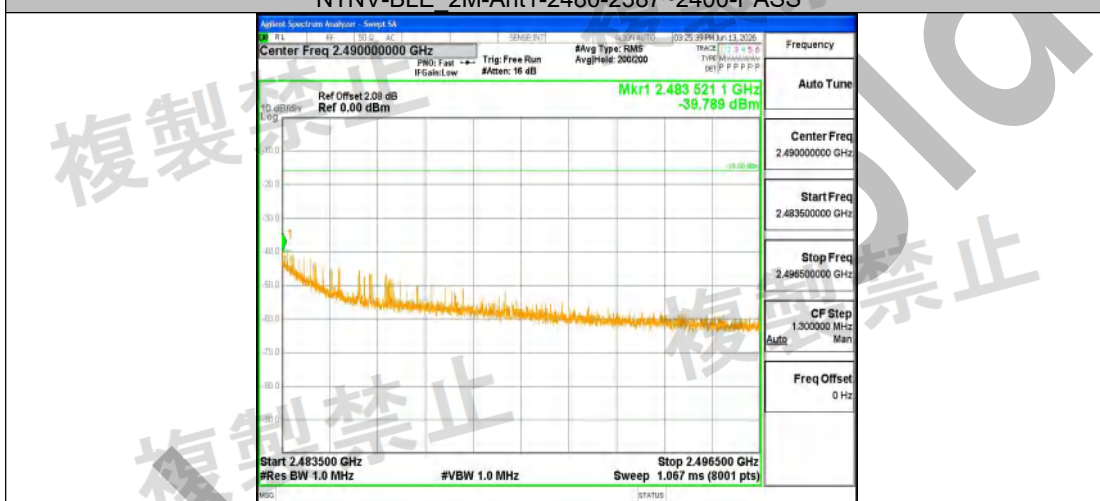
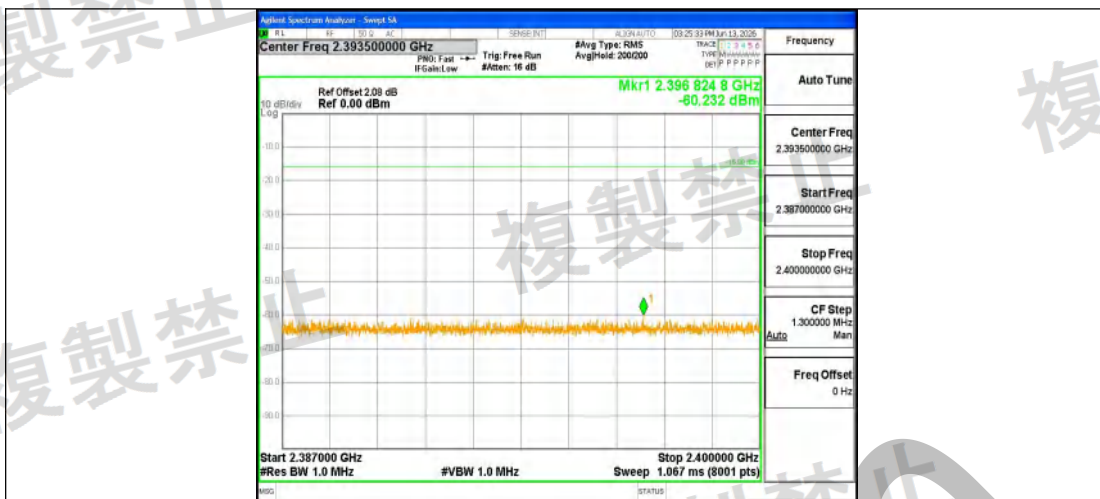
NTNV-BLE 2M-Ant1-2440-2483.5~2496.5-PASS



NTNV-BLE 2M-Ant1-2440-2496.5~13000-PASS

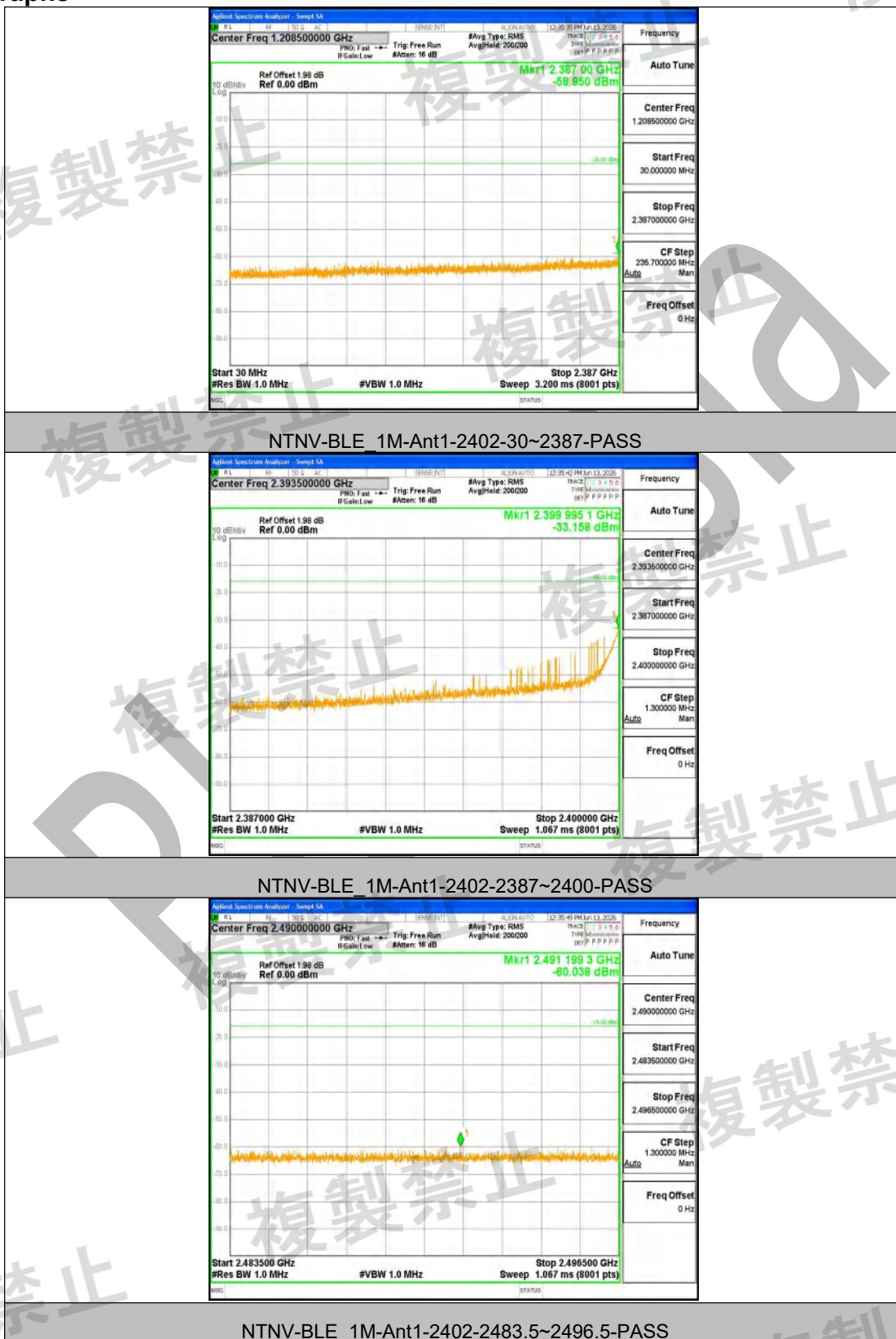


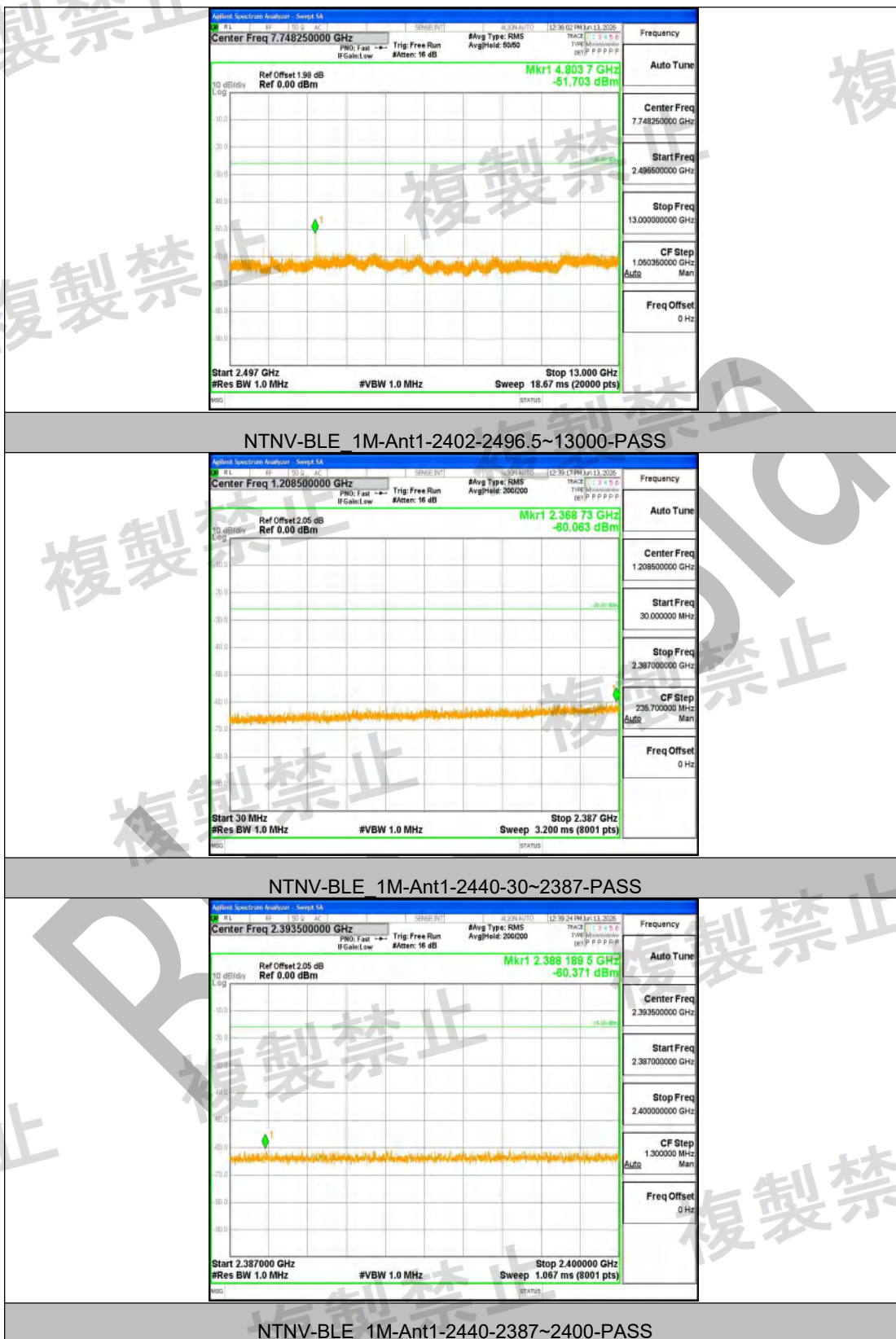
NTNV-BLE 2M-Ant1-2480-30~2387-PASS

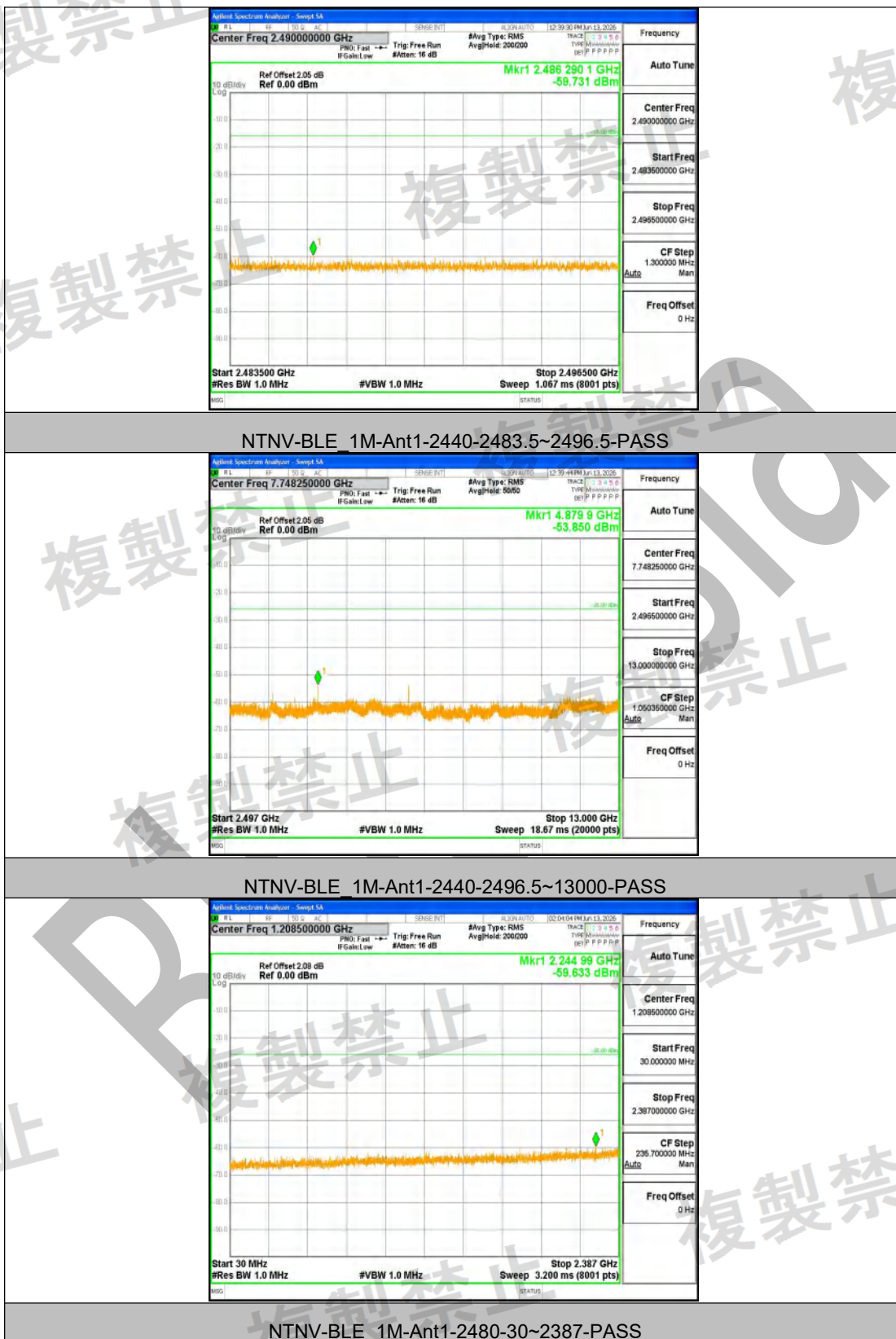


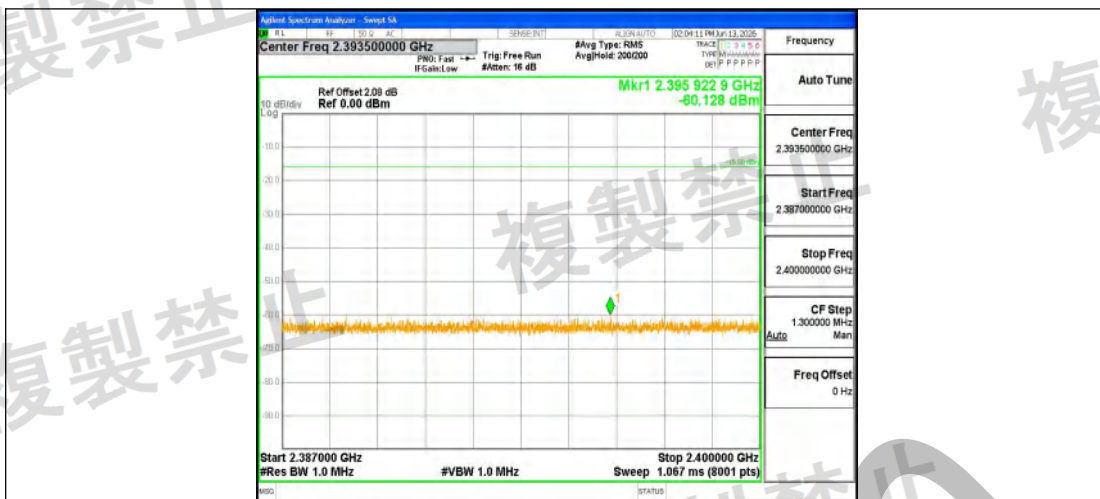
Rear:
Result plot as follows:

Test Graphs

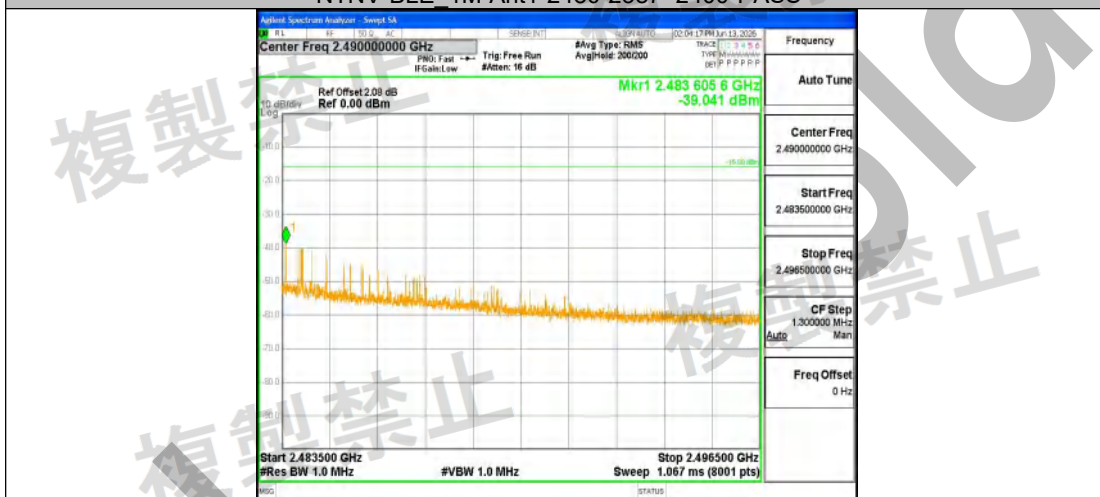




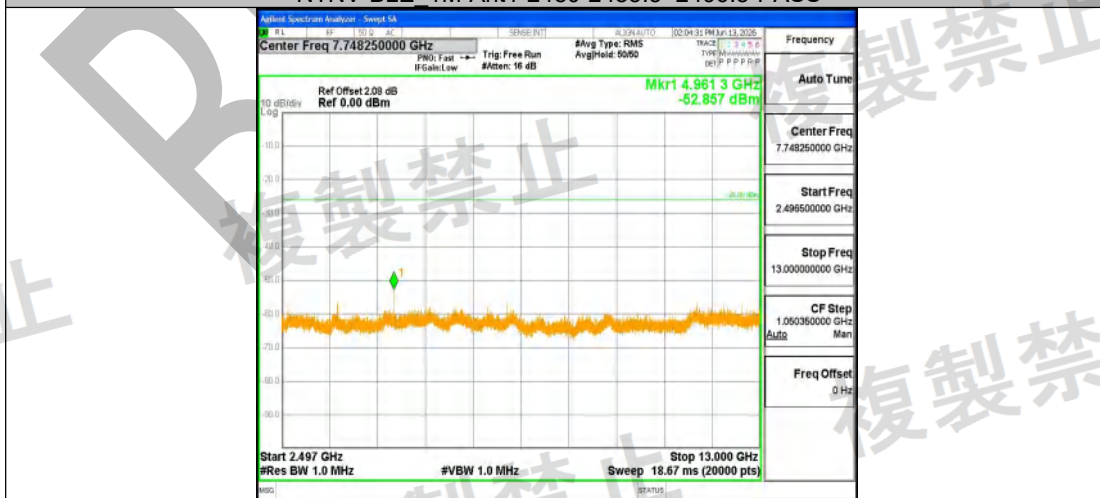




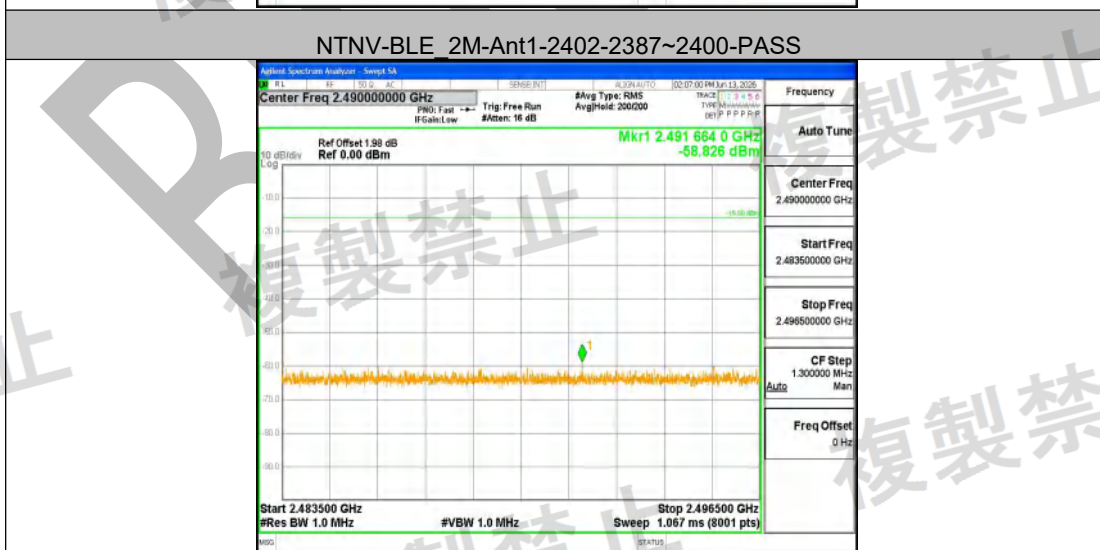
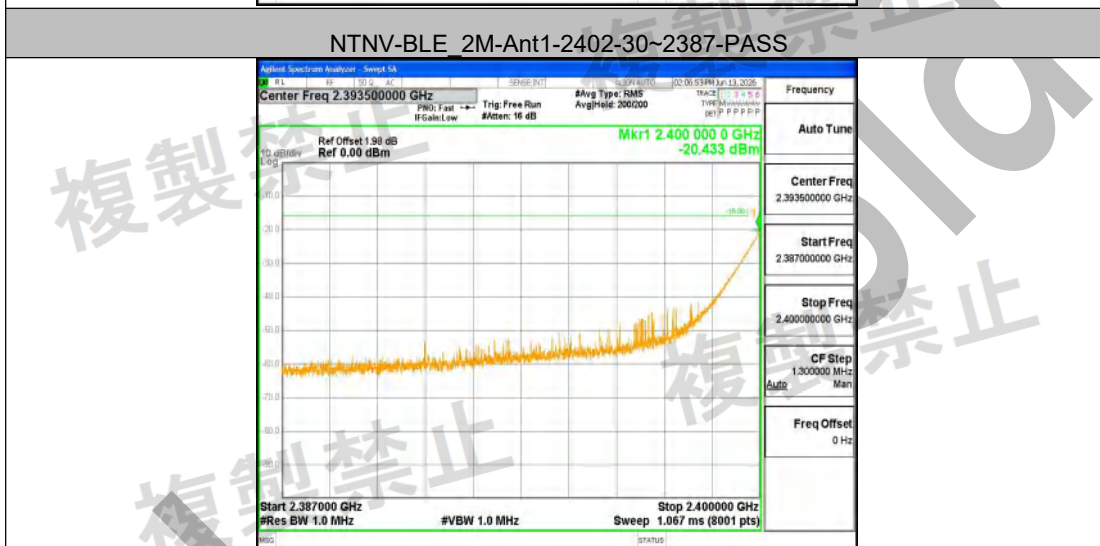
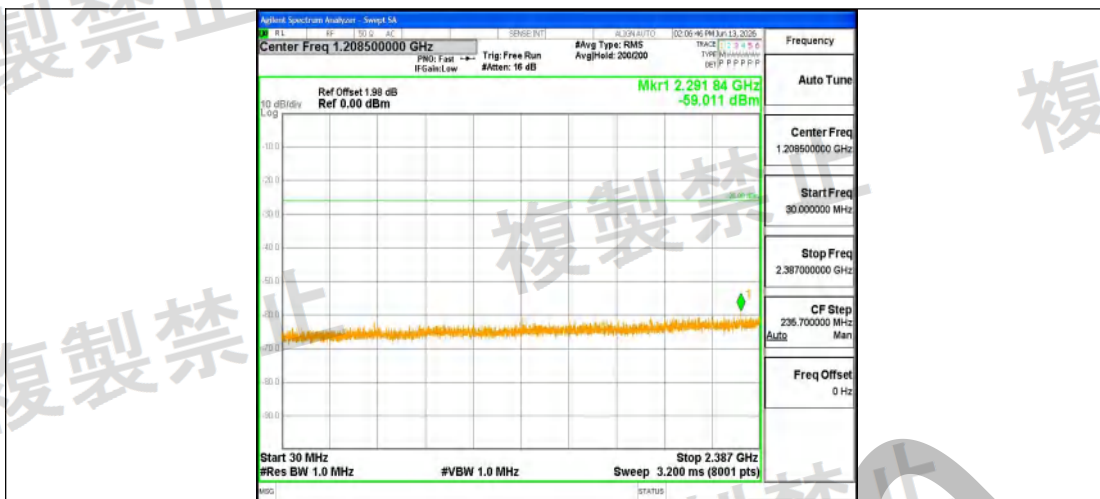
NTNV-BLE 1M-Ant1-2480-2387~2400-PASS

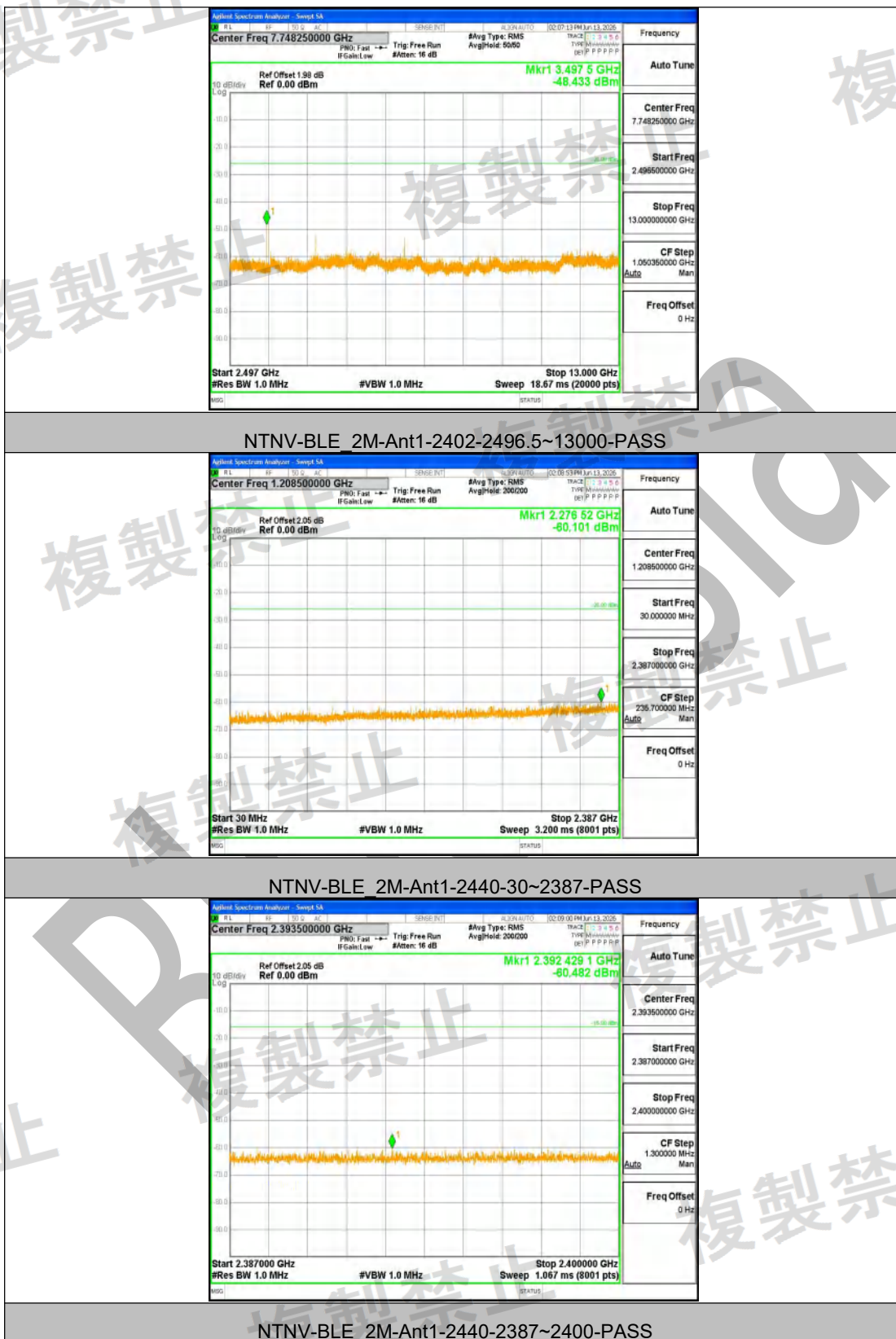


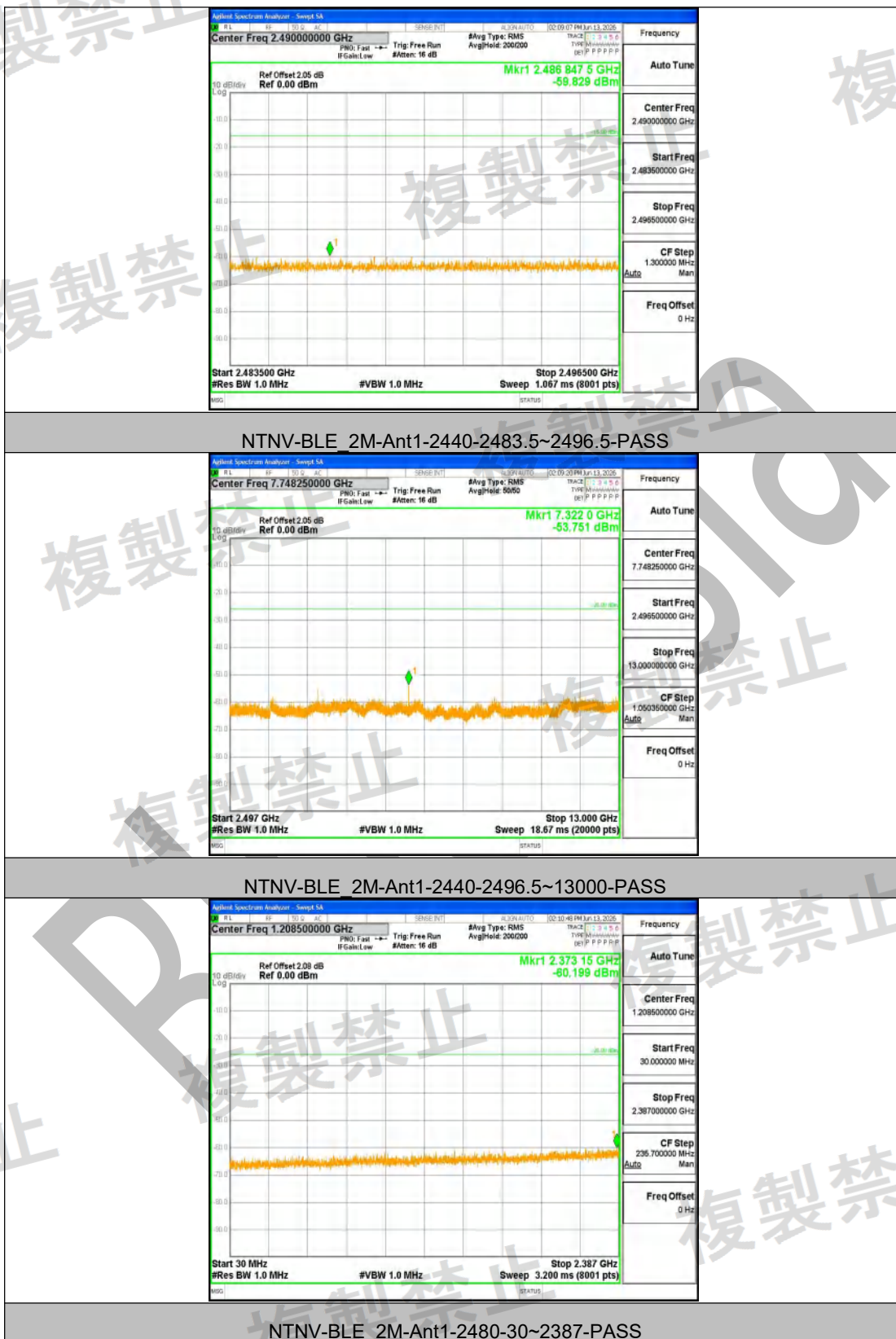
NTNV-BLE 1M-Ant1-2480-2483.5~2496.5-PASS

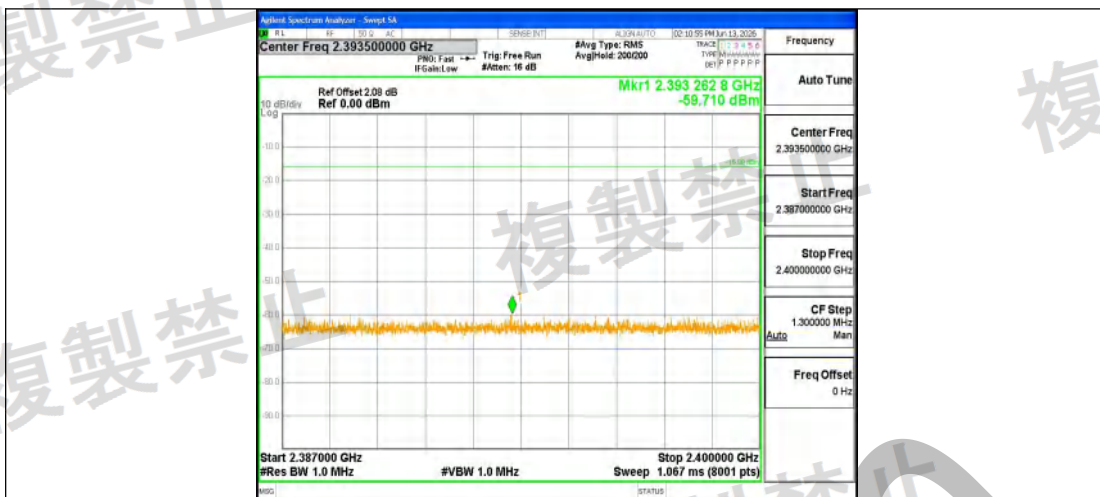


NTNV-BLE 1M-Ant1-2480-2496.5~13000-PASS

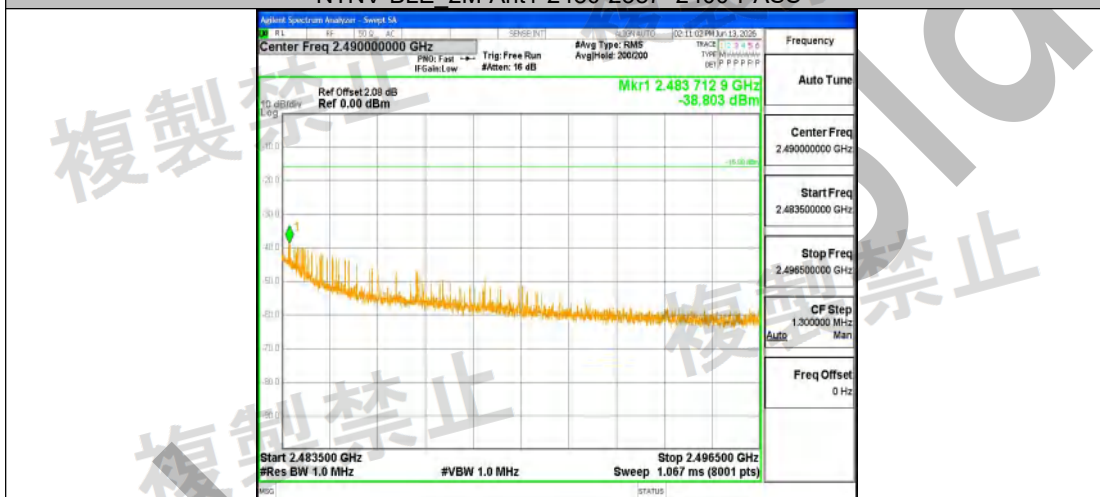




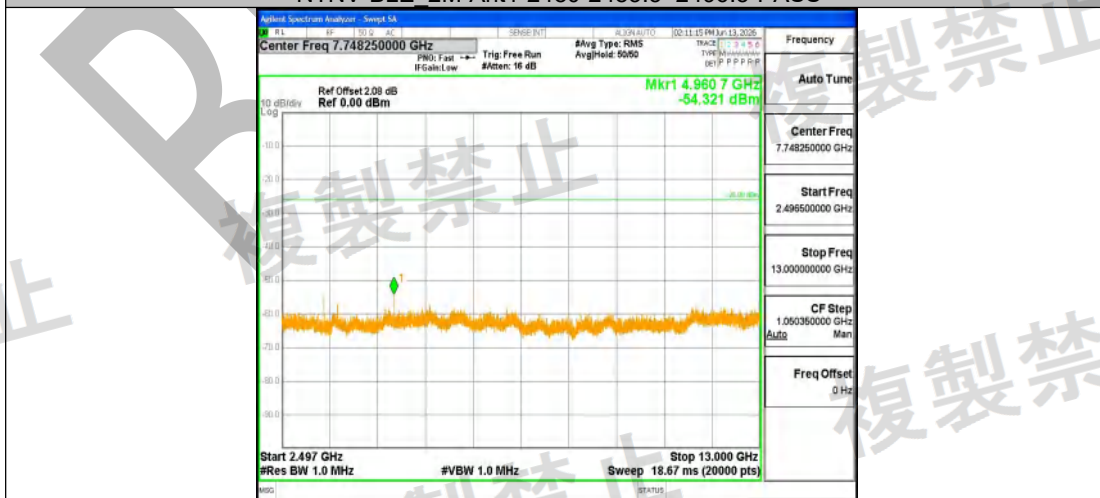




NTNV-BLE 2M-Ant1-2480-2387~2400-PASS



NTNV-BLE 2M-Ant1-2480-2483.5~2496.5-PASS

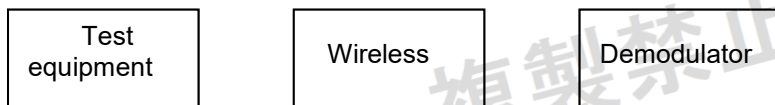


NTNV-BLE 2M-Ant1-2480-2496.5~13000-PASS

6.1.8 Interference prevention function

1) Measurement system diagram

(1) When transmitting identification code



2) Condition of measuring instrument

(1) 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

(1) 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.

MAC Address:

L ear:

98:80:BB:41:AF:51

R ear:

6D:DA:B8:FD:1D:DC

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

Test result: PASS

6.1.9 RF accessibility

Standard requirement

Article 49-20, paragraph 1 (a)

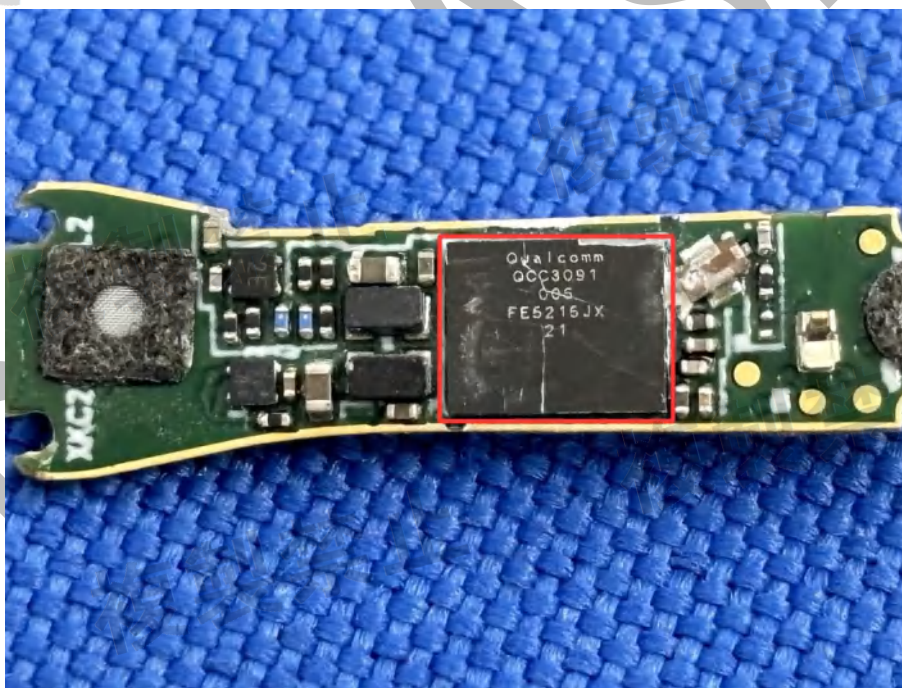
The EUT shall be constructed in such a way that sensitive RF parts, (like modulation and oscillator parts) cannot be reached easily by the user. These parts shall be covered by soldered metal caps or glue or by other mechanical covers. If the covers are fixed with screws, these shall be not the common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

☐ RF and Modulation parts are mounted on PCB with surface mount technology, the chip is welded on PCB, and there is no any adjustable parts on PCB or adjustable parts are not exposed.

The interval of terminals: 0.5mm

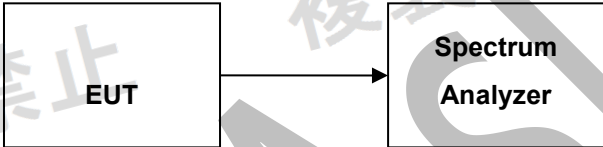
Number of terminals: 30

☒ RF and Modulation parts are mounted on PCB with surface mount technology, chip is welded on PCB, and there is no any adjustable parts on PCB or adjustable parts are not exposed, all the pins are inside the package. and ID-ROM is welded using the BGA Method.



6.2 Receiver Requirements

6.2.1 Spurious Emissions of Rx

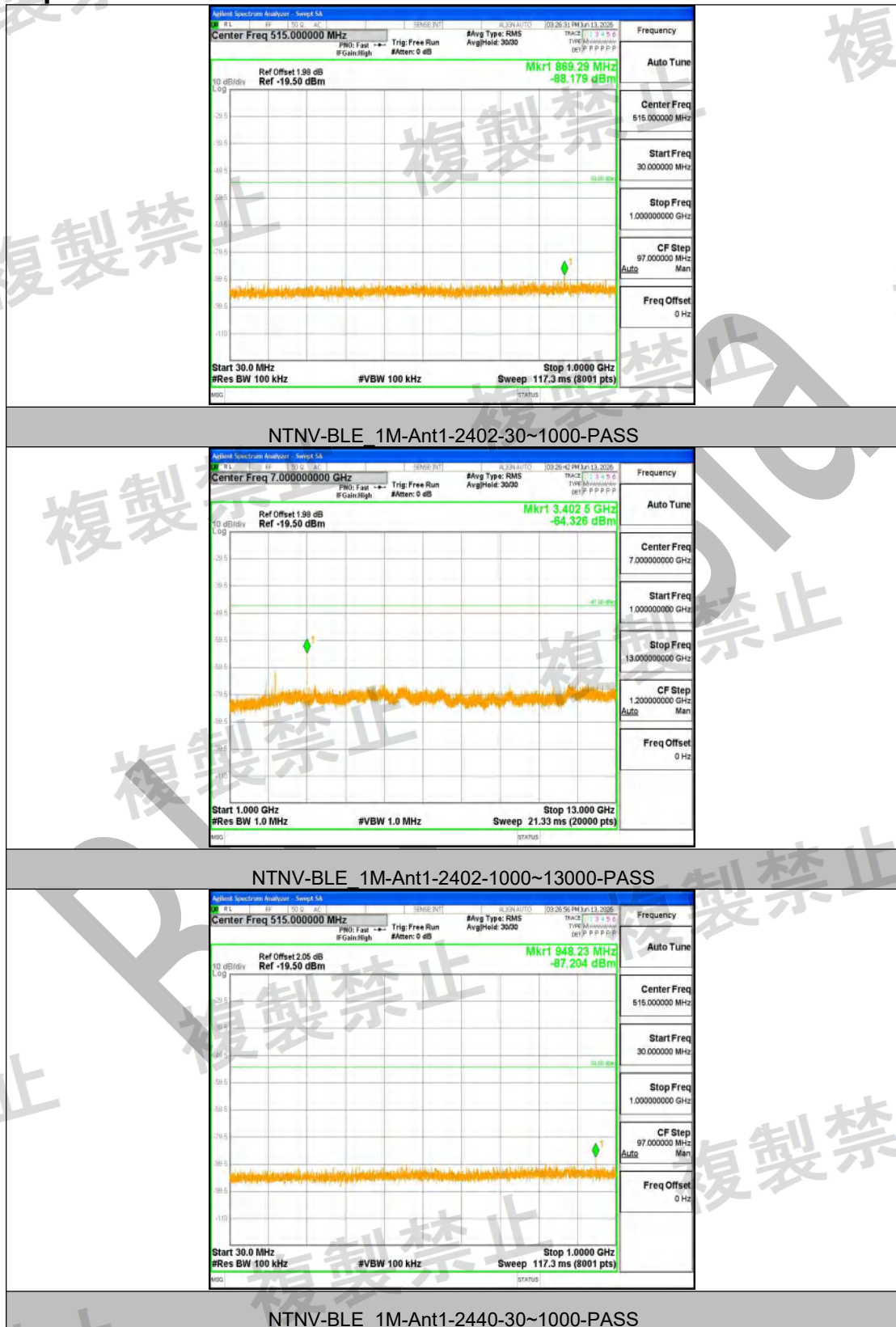
Test Requirement:	Item 19 of Article 2 Paragraph 1		
Test Method:	MIC Notice No.88 Appendix No.43		
EUT Operation:			
Ambient:	Temp.: 24°C	Humid.: 48%	Press.: 1010 mbar
Test Status:	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.		
Test Configuration:	 <pre> graph LR EUT[EUT] --> SA[Spectrum Analyzer] </pre>		
EUT conditions:	Rx		
Measurement Procedure:	Step1 All spurious are measured from 30MHz to 13 GHz by peak mode.		
Spectrum Analyzer conditions(Step 1):	Frequency: 30MHz – 2400MHz , 2483.5MHz –13GHz 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		
Spectrum Analyzer Conditions(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		
Technical standard:	(1) Below 1 GHz : 4 nW or less;-54dbm (2) 1 GHz and over : 20 nW or less;-47dbm		
Test result:	PASS		

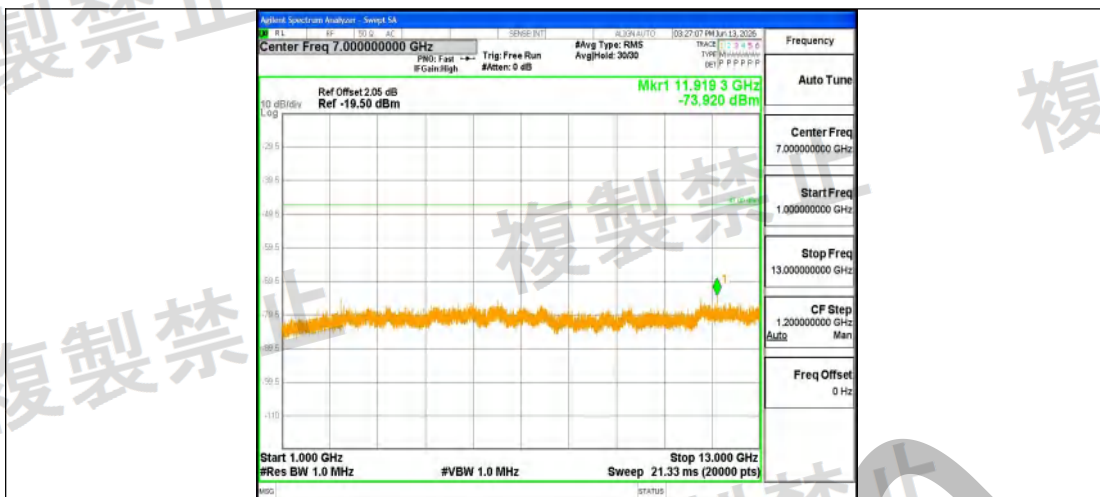
Test Result

Learn:

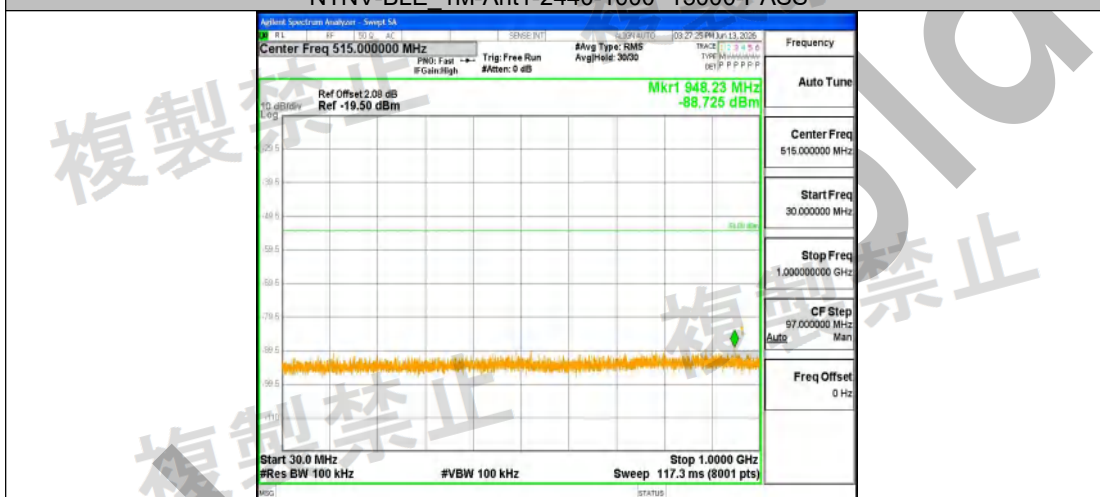
Test Condition	Test Mode	Antenna	Channel (MHz)	Freq.Range [MHz]	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
NTNV	BLE_1M	Ant1	2402	30~1000	869.29	-88.18	≤-54	PASS
NTNV	BLE_1M	Ant1	2402	1000~13000	3402.52	-64.33	≤-47	PASS
NTNV	BLE_1M	Ant1	2440	30~1000	948.23	-87.20	≤-54	PASS
NTNV	BLE_1M	Ant1	2440	1000~13000	11919.35	-73.92	≤-47	PASS
NTNV	BLE_1M	Ant1	2480	30~1000	948.23	-88.73	≤-54	PASS
NTNV	BLE_1M	Ant1	2480	1000~13000	11618.73	-75.32	≤-47	PASS
NTNV	BLE_2M	Ant1	2402	30~1000	500.81	-89.28	≤-54	PASS
NTNV	BLE_2M	Ant1	2402	1000~13000	5179.21	-61.40	≤-47	PASS
NTNV	BLE_2M	Ant1	2440	30~1000	936.71	-88.86	≤-54	PASS
NTNV	BLE_2M	Ant1	2440	1000~13000	2411.87	-65.19	≤-47	PASS
NTNV	BLE_2M	Ant1	2480	30~1000	817.52	-88.80	≤-54	PASS
NTNV	BLE_2M	Ant1	2480	1000~13000	2409.47	-69.84	≤-47	PASS

Test Graphs

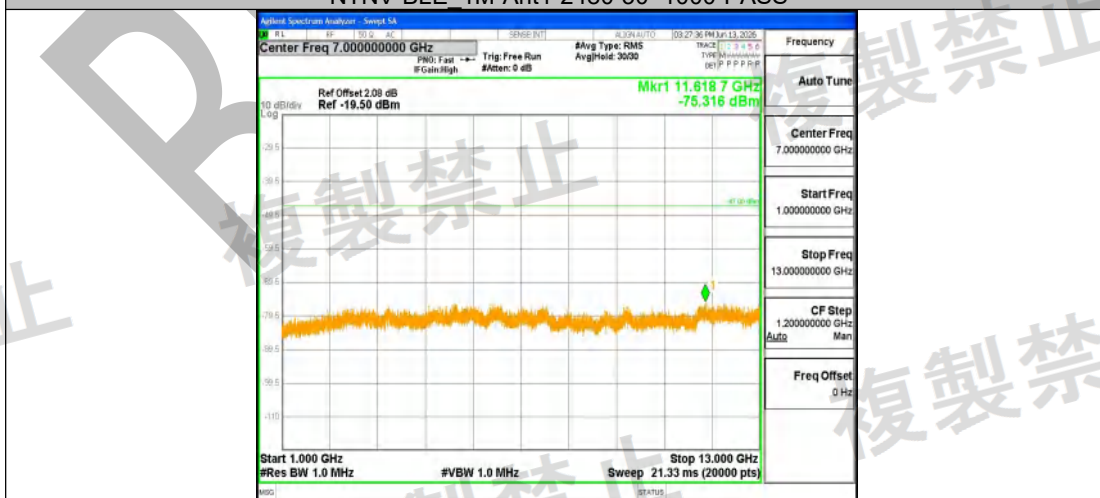




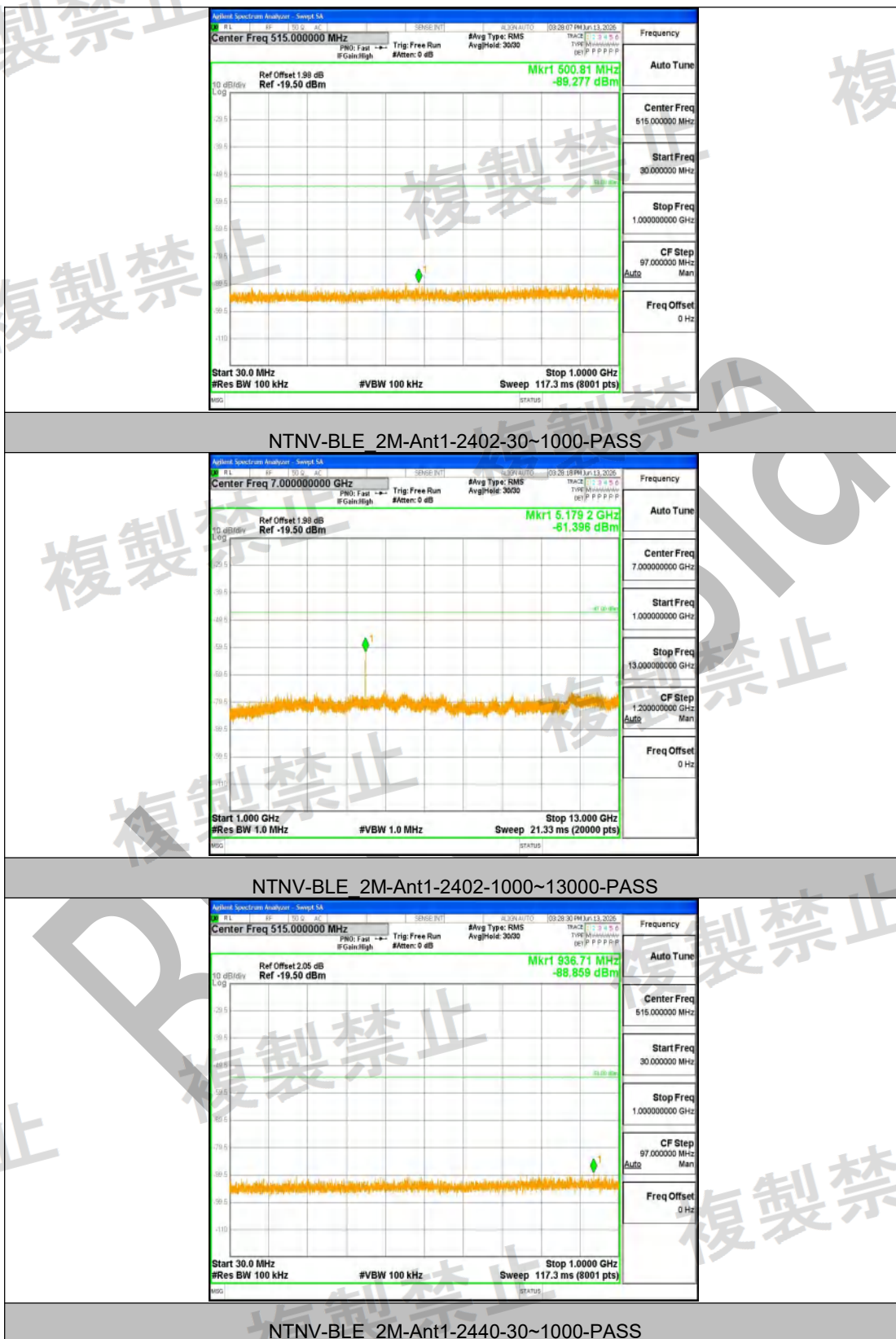
NTNV-BLE 1M-Ant1-2440-1000~13000-PASS

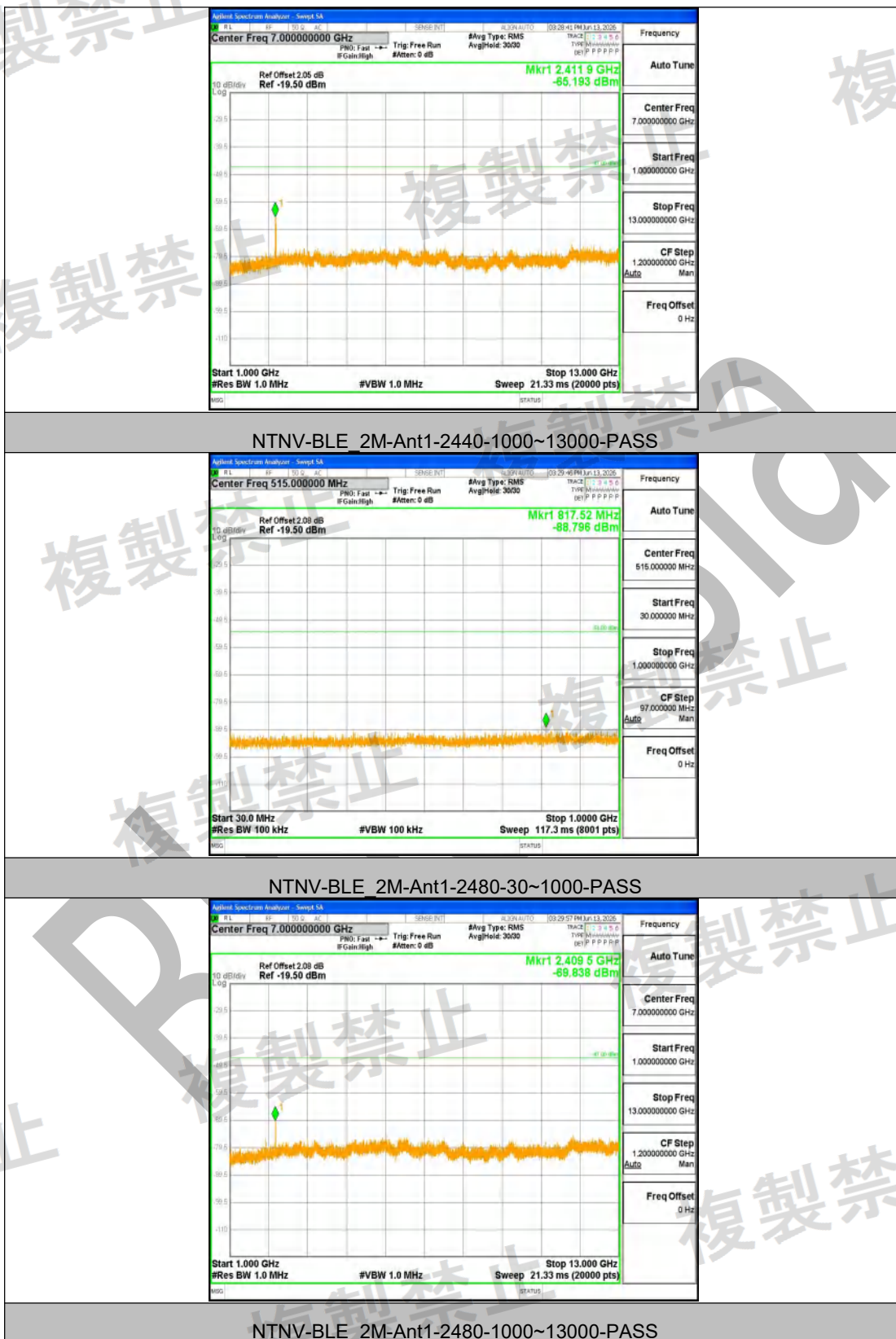


NTNV-BLE 1M-Ant1-2480-30~1000-PASS

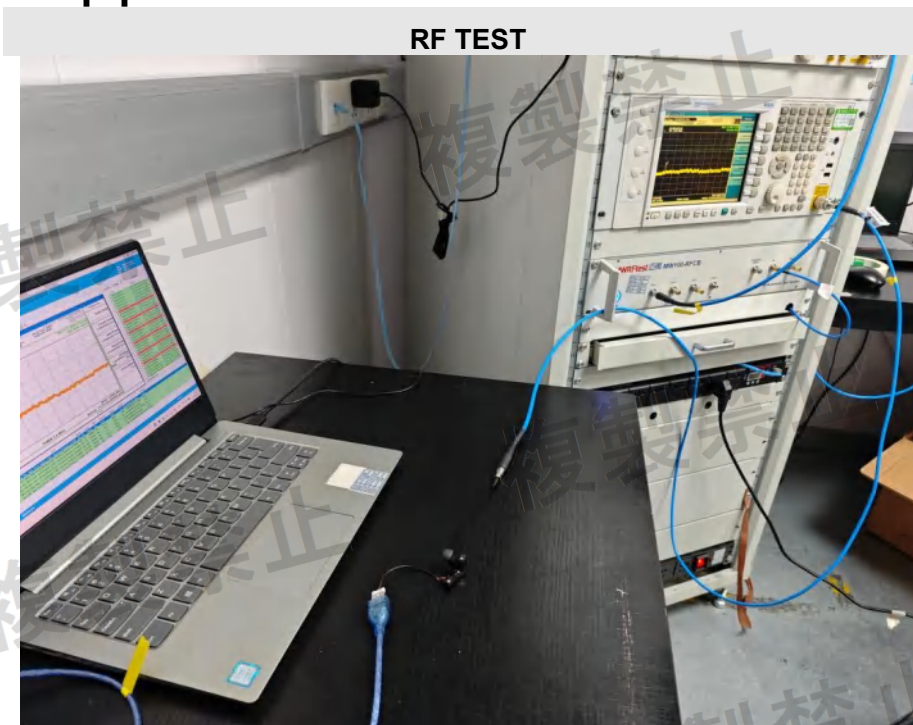


NTNV-BLE 1M-Ant1-2480-1000~13000-PASS





7 Test setup photo



8 Photographs

8.1 EUT Constructional Details



View of Product-1



View of Product-2



View of Product-3



View of Product-4



View of Product-5



View of Product-6



View of Product-7



View of Product-8



View of Product-9



View of Product-10



View of Product-11



View of Product-12



View of Product-13



View of Product-14



View of Product-15 L ear



View of Product-16 L ear



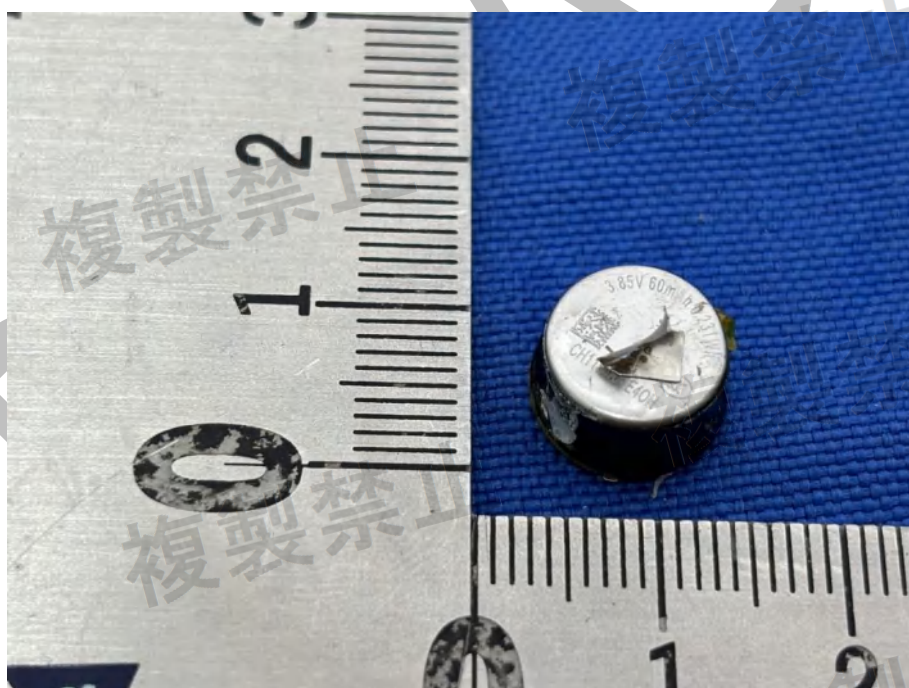
View of Product-17 L ear



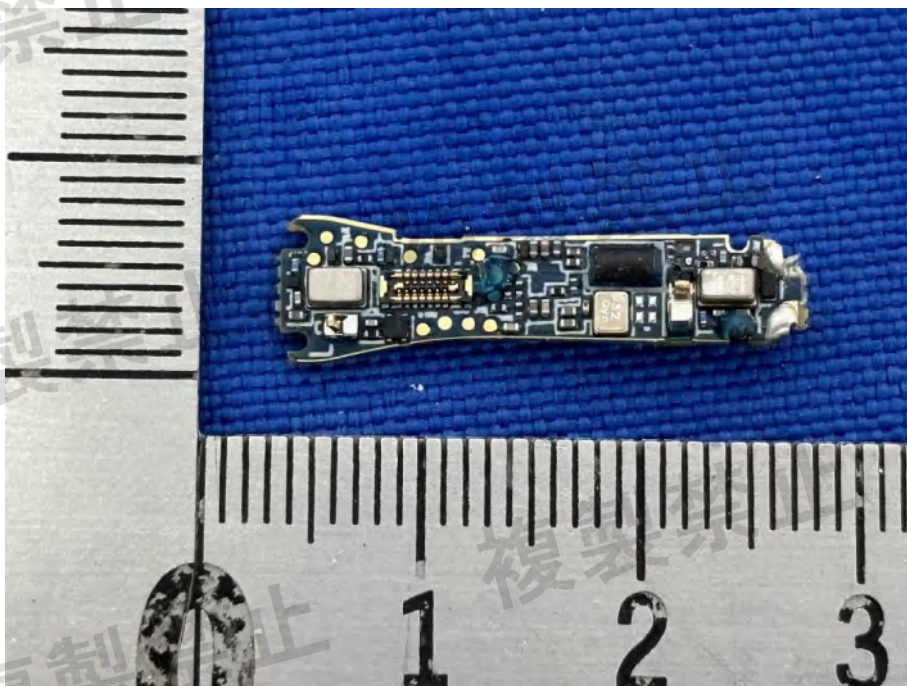
View of Product-18 L ear



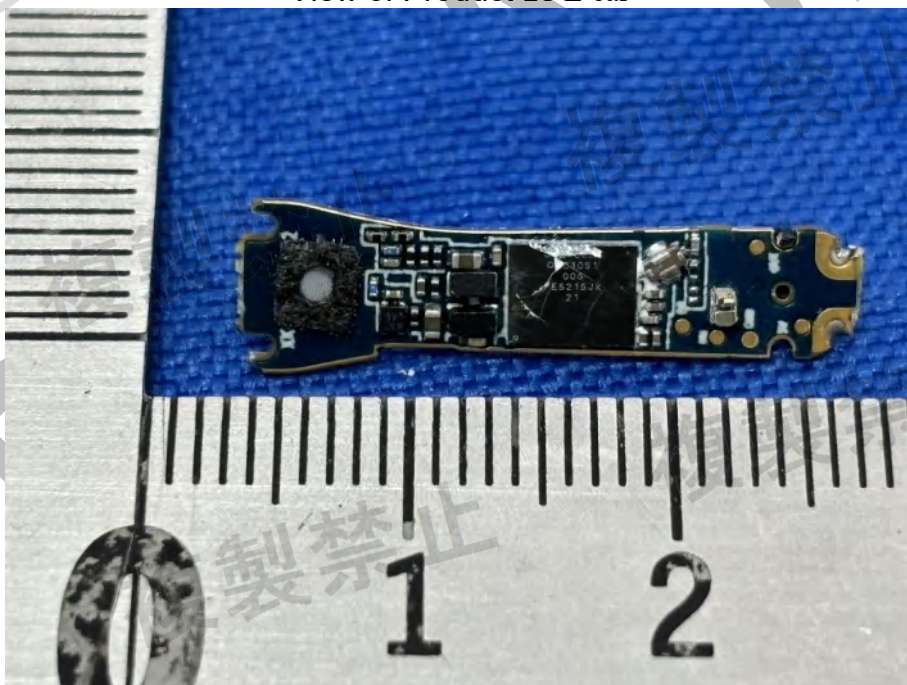
View of Product-19 L ear



View of Product-20 L ear



View of Product-21 L ear



View of Product-22 L ear



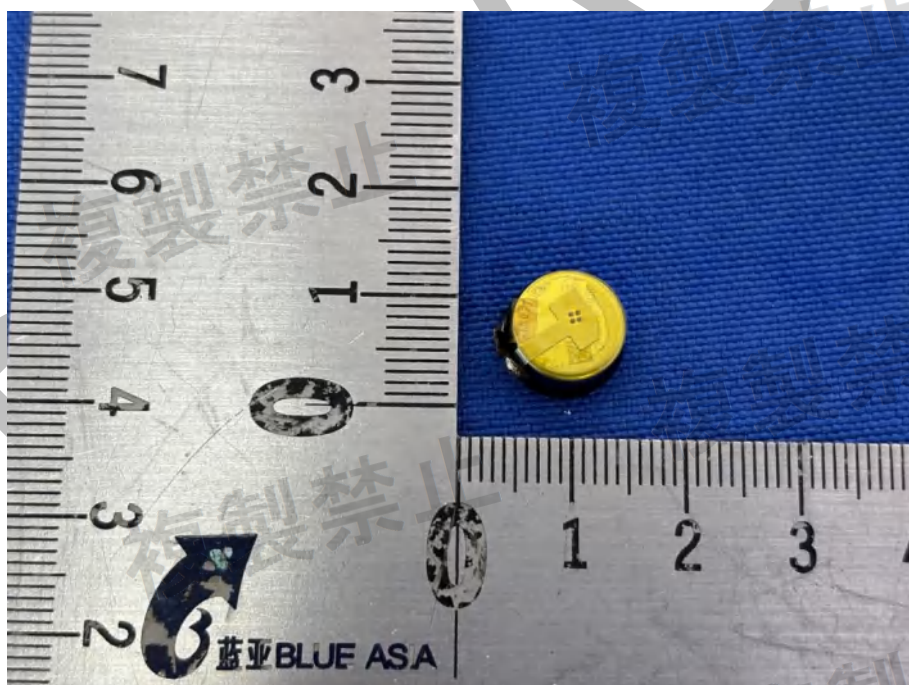
View of Product-23 R ear



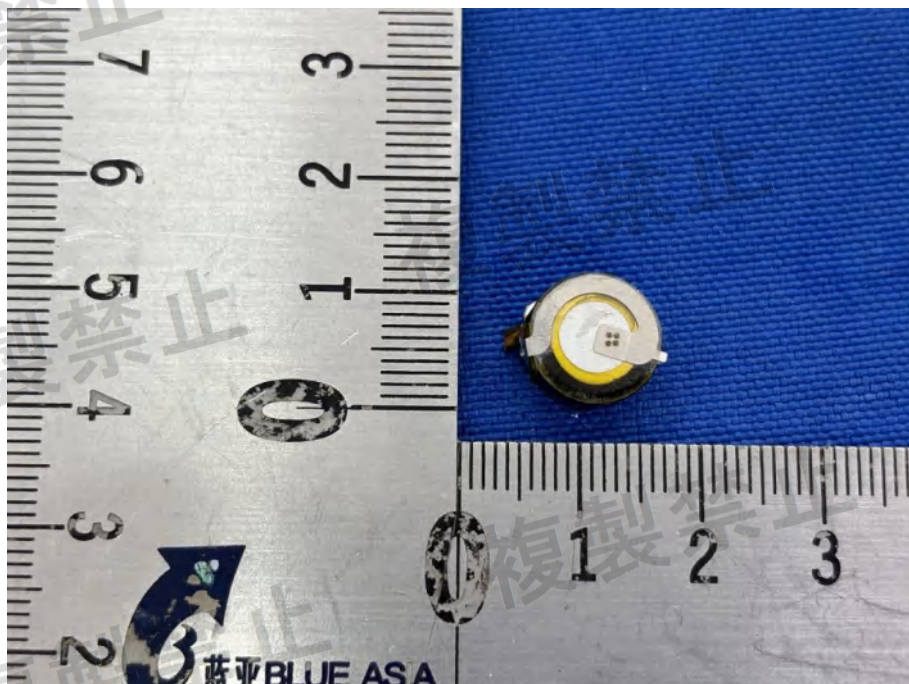
View of Product-24 R ear



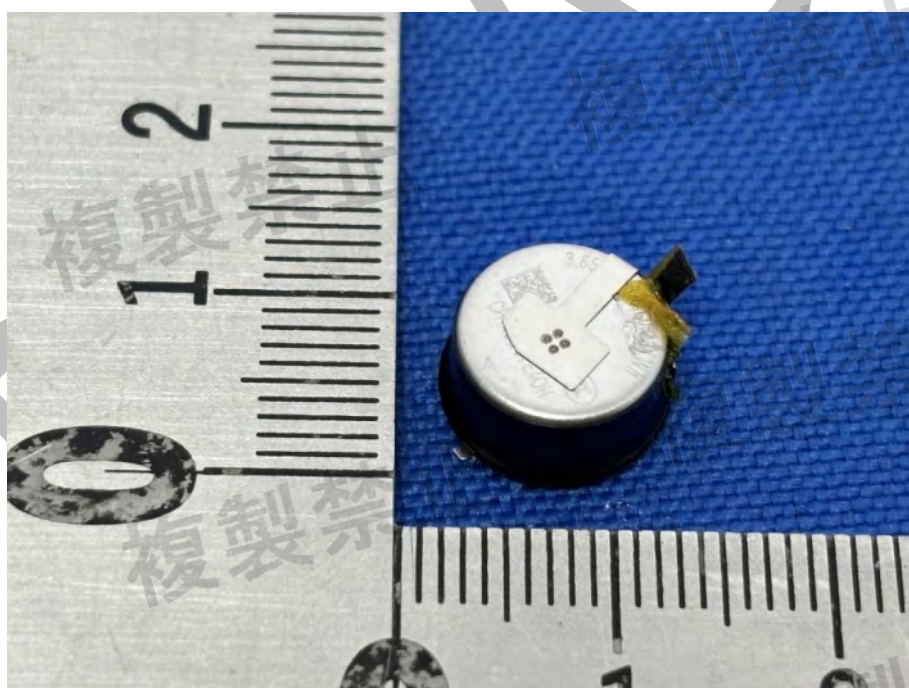
View of Product-25 R ear



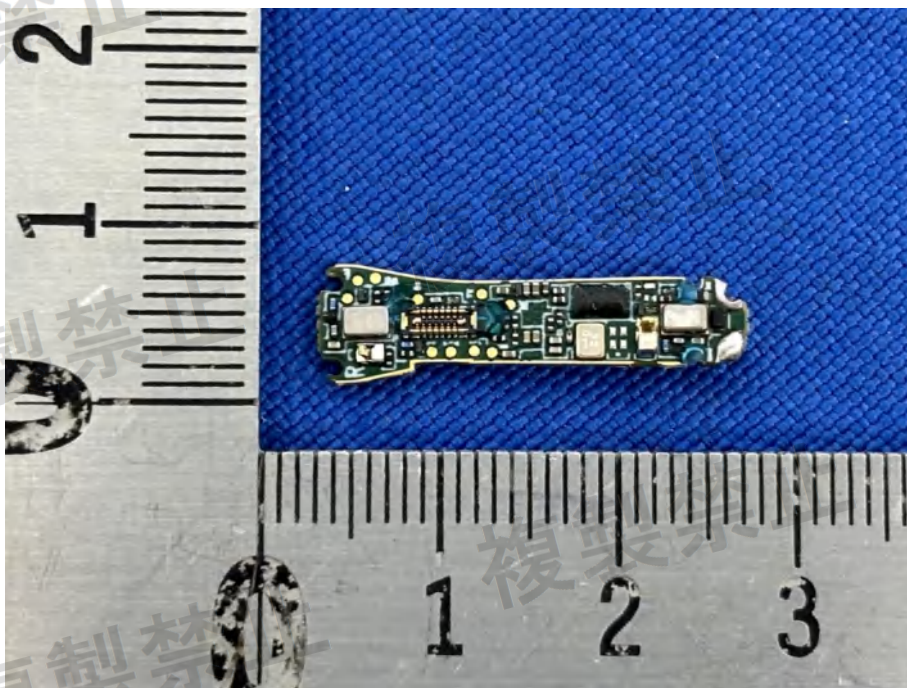
View of Product-26 R ear



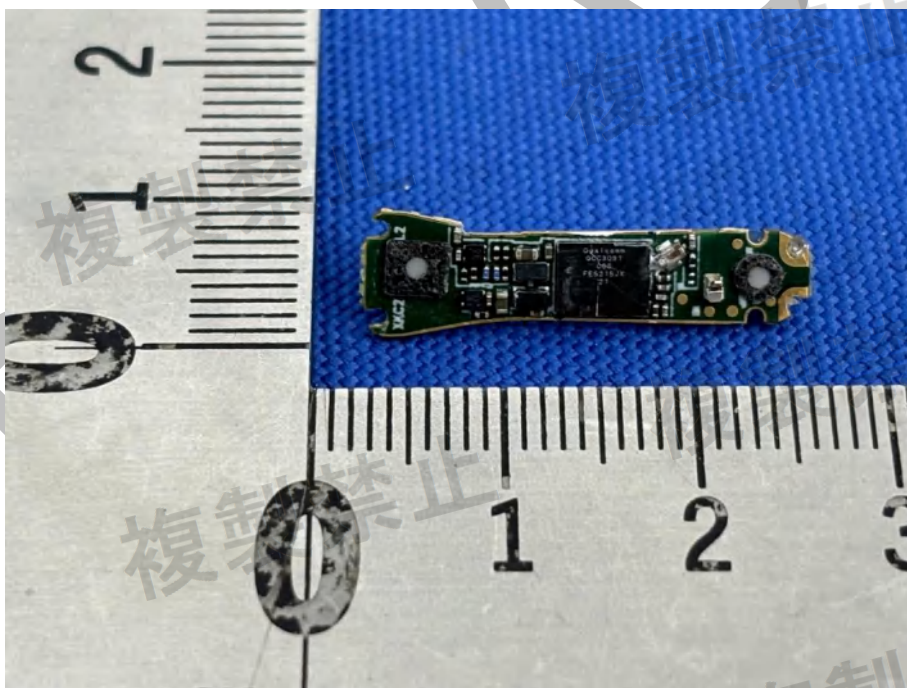
View of Product-27 R ear



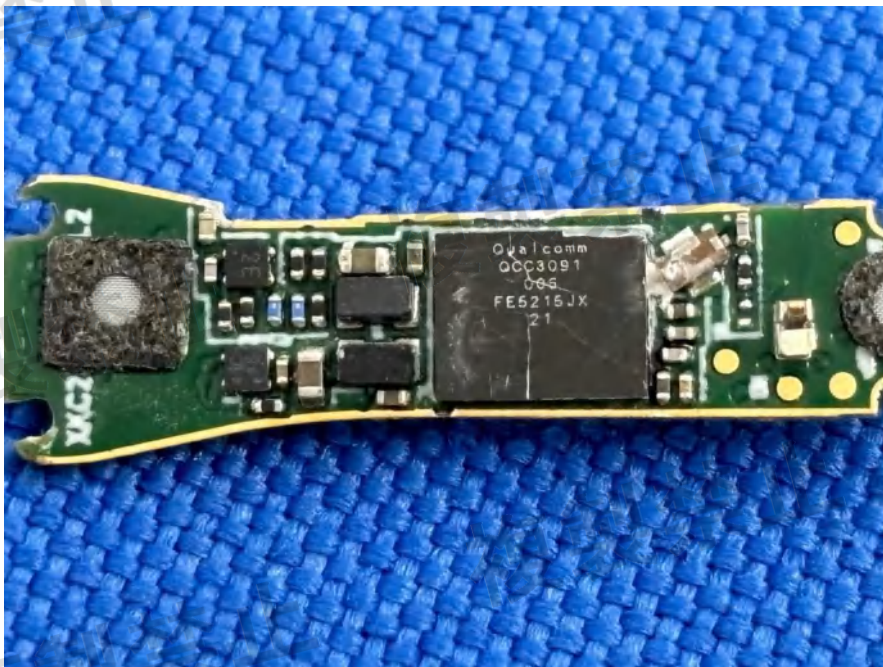
View of Product-28 R ear



View of Product-29 R ear



View of Product-30 R ear



View of Product-31 R ear



View of Product-32

*** End of Report ***

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