



## MIC TEST REPORT

Applicant: Shenzhen E-Ran Technology Co., Ltd.  
Address of Applicant: Room 201, Plant No.34, Zhangyi Residential Quarter, Junzibu Community, Guanlan Street, Longhua District, Shenzhen  
Manufacturer: Shenzhen E-Ran Technology Co., Ltd.  
Address of Manufacturer: Room 201, Plant No.34, Zhangyi Residential Quarter, Junzibu Community, Guanlan Street, Longhua District, Shenzhen  
Factory: Shenzhen Yinuo Digital Technology Co., Ltd  
Address of Factory: Room 201, Plant No.34, Zhangyi Residential Quarter, Junzibu Community, Guanlan Street, Longhua District, Shenzhen  
Product Name: Smart Projector  
Model No.: HY300 PRO, HY300, HY300 PRO+, HY300 ULTRA, HY300 PLUS, HY260 PRO, F06  
Trade Mark: N/A  
Applicable standards: ARIB STD-T71 Version 5.1, Article 2 Paragraph 1 of Item 19-3 MIC notification No. 88 of 2004, annex 45  
Date of Test: Apr.23, 2025-Apr.29, 2025  
Date of report issued: Apr.30, 2025

Remark:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full without prior written permission of the company.

The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

### Prepared By

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### Report Revision History

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| ET-25041154E03 | Original    | Apri.30, 2025 |
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## Contents

Page

|     |                                                  |    |
|-----|--------------------------------------------------|----|
| 1   | TEST SUMMARY .....                               | 4  |
| 2   | GENERAL INFORMATION .....                        | 5  |
| 2.1 | GENERAL DESCRIPTION OF EUT .....                 | 5  |
| 2.2 | OPERATION CHANNEL LIST .....                     | 5  |
| 2.3 | TEST CHANNEL FREQUENCY .....                     | 5  |
| 2.4 | TEST MODE .....                                  | 6  |
| 2.5 | DESCRIPTION OF SUPPORT UNITS .....               | 6  |
| 2.6 | ENVIRONMENTAL CONDITIONS .....                   | 6  |
| 2.7 | TEST VOLTAGE .....                               | 6  |
| 2.8 | TEST FACILITY .....                              | 7  |
| 2.9 | ADDITIONAL INSTRUCTIONS .....                    | 7  |
| 3   | TEST INSTRUMENTS LIST .....                      | 8  |
| 4   | TEST RESULTS AND MEASUREMENT DATA .....          | 9  |
| 4.1 | FREQUENCY TOLERANCE .....                        | 9  |
| 4.2 | OCCUPIED FREQUENCY BANDWIDTH .....               | 11 |
| 4.3 | TRANSMITTER SPURIOUS EMISSIONS (CONDUCTED) ..... | 16 |
| 4.4 | ANTENNA POWER .....                              | 33 |
| 4.5 | ADJACENT CHANNEL LEAKAGE POWER .....             | 35 |
| 4.6 | TRANSMISSION BURST LENGTH .....                  | 40 |
| 4.7 | CARRIER SENSE FUNCTION .....                     | 44 |
| 4.8 | SECONDARY RADIATED EMISSIONS (CONDUCTED) .....   | 45 |
| 4.9 | INTERFERENCE PREVENTION FUNCTION .....           | 52 |
| 5   | TEST SETUP PHOTO .....                           | 53 |
| 6   | EUT CONSTRUCTIONAL DETAILS .....                 | 53 |

## 1 Test Summary

| Item                                       | Description of Test                              | Result |
|--------------------------------------------|--------------------------------------------------|--------|
| 1                                          | Frequency Tolerance                              | Pass   |
| 2                                          | Occupied Bandwidth and Spread-spectrum Bandwidth | Pass   |
| 3                                          | Antenna Power Tolerance                          | Pass   |
| 4                                          | Antenna Power &EIRP                              | Pass   |
| 5                                          | Unwanted emission strength                       | Pass   |
| 6                                          | Adjacent channel leakage power                   | Pass   |
| 7                                          | Transmission burst length                        | Pass   |
| 8                                          | Transmission data rate                           | Pass   |
| 8                                          | Secondary Radiated Emissions                     | Pass   |
| 9                                          | Interference Prevention Function                 | Pass   |
| 10                                         | Carrier sense function                           | Pass   |
| N/A is an abbreviation for Not Applicable. |                                                  |        |

Pass: The EUT complies with the essential requirements in the standard.

N/A: Is an abbreviation for Not Applicable.

Note: Compliance determination rules

1). The Compliance determination of test results does not take into account measurement uncertainty. Measurement results are determined based on regulatory limitations or requirements specified by the applicant/manufacturer. If measurement uncertainty is taken into account, the applicant/manufacturer will bear all possible risks of non-compliance.

2). The measurement uncertainty please refer to each test result in the "Measurement Uncertainty"

### Measurement Uncertainty

| Test Item                                    | Measurement Uncertainty | Notes |
|----------------------------------------------|-------------------------|-------|
| Bandwidth                                    | $\pm 0.55\%$            | (1)   |
| Antenna Power                                | $\pm 0.57\text{dB}$     | (1)   |
| Frequency Tolerance                          | $\pm 1 \times 10^{-7}$  | (1)   |
| Conducted spurious emission                  | $\pm 0.64\text{dB}$     | (1)   |
| Spurious emissions, radiated( $>1\text{G}$ ) | $\pm 4.26\text{dB}$     | (1)   |
| Spurious emissions, radiated( $<1\text{G}$ ) | $\pm 4.24\text{dB}$     | (1)   |

Note (1): The measurement uncertainty is for coverage factor of  $k=2$  and a level of confidence of 95%.

## 2 General Information

### 2.1 General Description of EUT

|                            |                                                                                                                                                            |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name:              | Smart Projector                                                                                                                                            |
| Model No.:                 | HY300 PRO, HY300, HY300 PRO+, HY300 ULTRA, HY300 PLUS, HY260 PRO, F06                                                                                      |
| Difference of Model:       | All the model are the same circuit and RF module, except the model names                                                                                   |
| Test model No.:            | HY300 PRO                                                                                                                                                  |
| Hardware version:          | V1.8.1                                                                                                                                                     |
| Software version:          | 1.0                                                                                                                                                        |
| Sample(s) Status           | Engineer sample                                                                                                                                            |
| Operating frequency range: | 5180-5240MHz                                                                                                                                               |
| Channel numbers:           | See 2.2 Operation Channel List                                                                                                                             |
| Channel separation:        | 5MHz                                                                                                                                                       |
| Modulation technology:     | 802.11n: OFDM (64QAM, 16QAM, QPSK, BPSK)<br>802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK)<br>802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)                  |
| Antenna Type:              | PCB Antenna                                                                                                                                                |
| Antenna gain:              | 2.02 dBi (Declare by applicant)<br>Note: Antenna information is provided by applicant, Testing lab is not responsible for the accuracy of the information. |
| Battery:                   | N/A                                                                                                                                                        |
| Power supply:              | AC 100-240V 50/60Hz                                                                                                                                        |

### 2.2 Operation Channel List

| Operation Frequency each of channel |           |         |           |         |           |         |           |
|-------------------------------------|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel                             | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 36                                  | 5180MHz   | 38      | 5190MHz   | 40      | 5200MHz   | 42      | 5210MHz   |
| 44                                  | 5220MHz   | 46      | 5230MHz   | 48      | 5240MHz   | /       | /         |

### 2.3 Test channel frequency

| Test channel    | Frequency (MHz)   |                |            |
|-----------------|-------------------|----------------|------------|
|                 | 802.11a/802.11n20 | 802.11n40/ac40 | 802.11ac80 |
| Lowest channel  | 5180MHz           | 5190MHz        | 5210MHz    |
| Middle channel  | 5200MHz           | /              | /          |
| Highest channel | 5240MHz           | 5230MHz        | /          |

## 2.4 Test mode

|                                                                                                                                                                                                                                                                     |                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Transmitting mode                                                                                                                                                                                                                                                   | Keep the EUT in continuously transmitting mode |
| <i>Remark: During the test, the dutycycle &gt;98%, the test voltage was tuned from 90% to 110% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.</i> |                                                |

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Pre-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

| Mode       | Data rate  |
|------------|------------|
| 802.11a    | 54 Mbps    |
| 802.11n20  | 144.4Mbps  |
| 802.11n40  | 300 Mbps   |
| 802.11ac20 | 173.3 Mbps |
| 802.11ac40 | 400Mbps    |
| 802.11ac80 | 866.7 Mbps |

## 2.5 Description of Support Units

| No. | Description | Manufacturer | Model | Serial Number | Certification or SDOC |
|-----|-------------|--------------|-------|---------------|-----------------------|
| /   | /           | /            | /     | /             | /                     |

## 2.6 Environmental conditions

|                    |          |
|--------------------|----------|
| Temperature range: | 23.7℃    |
| Humidity range:    | 45%      |
| Pressure range:    | 101.6kPa |

## 2.7 Test voltage

| Voltage Fluctuation test | Normal Voltage | +10% of Normal Voltage | -10% of Normal Voltage |
|--------------------------|----------------|------------------------|------------------------|
| AC Power                 | 100V           | 110V                   | 90V                    |
| RF Chip                  | 3.3V           | 3.3V                   | 3.3V                   |

Note:

Voltage Variation (%) = (Output high or Low Voltage - Output Normal Voltage)/ Output Normal Voltage\* 100

During the input supply voltage to the EUT from the power source is varied by +/- 10%, fluctuation of power supply to the RF circuit of EUT (excluding power source) is equal to or less than +/-1%, so only operated in normal voltage to test all regulations.



## 2.8 Test Facility

|                        |                                                                                                               |
|------------------------|---------------------------------------------------------------------------------------------------------------|
| Test laboratory:       | Shenzhen ETR Standard Technology Co., Ltd.                                                                    |
| CNAS Registration No.: | L11864                                                                                                        |
| Laboratory location:   | 103, Building A7 , Xinhe XinxingThird Industrial Area, Fuhai Road,<br>Fuyong Street Bao'an District, Shenzhen |
| Telephone:             | +86 755 85259392                                                                                              |

## 2.9 Additional Instructions

|                   |                               |
|-------------------|-------------------------------|
| Test Software     | Manufacturer COM port command |
| Power level setup | Default                       |



### 3 Test Instruments list

| Item | Equipment name    | Manufacturer  | Model               | Serial No.             | Calibration date | Due date  |
|------|-------------------|---------------|---------------------|------------------------|------------------|-----------|
| 1    | Spectrum analyzer | KEYSIGHT      | N9020A              | MY55370280             | 2025.3.06        | 2026.3.05 |
| 2    | Power detector    | MWRFTest      | MW100-PSB           | MW201020JYT            | 2025.3.06        | 2026.3.05 |
| 3    | Cable             | ZDECL         | JCT108-SMAJ-SMAJ-2M | /                      | /                | /         |
| 4    | Signal generator  | Agilent       | N5182A              | MY49060455             | 2025.3.06        | 2026.3.05 |
| 5    | Oscilloscope      | Tektronix     | TDS3032B            | B03245                 | 2025.4.22        | 2026.4.21 |
| 6    | DC Power Supply   | LongWei       | PS-305DF            | 170804961              | 2025.4.22        | 2026.4.21 |
| 7    | Power meter       | Rohde&Schwarz | NRP-Z11             | 1138.3004.02-117725-vh | 2025.3.06        | 2026.3.05 |

Note:

1. The calibration interval of the above test instruments is 12 or 24 months and the calibrations are traceable to international system unit (SI).

#### 2. Test Instruments Calibration Information

| Used                                                                 | Calibration Company: Abbreviation                                                                                                                                                                                      | Full Name of-calibration company                        |
|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| <input checked="" type="checkbox"/>                                  | CCIC                                                                                                                                                                                                                   | CCIC(Shenzhen)Metrology & Testing service Co. Ltds      |
| <input checked="" type="checkbox"/>                                  | SHITONG                                                                                                                                                                                                                | GUANGDONG SHITONG MEASURED INSTRUMENTS SERVICE CO.,LTD. |
| Calibration Information (Article 24-2, Paragraph 4 of the Radio Act) |                                                                                                                                                                                                                        |                                                         |
| <input type="checkbox"/>                                             | (a) Calibration, conducted by the National institute of information and communication Technology (NICT) or a designated calibration agency under Article 102-18-1 of the Radio-Act                                     |                                                         |
| <input type="checkbox"/>                                             | (b) Calibration conducted based on the regulations of Article 135 -or-144 of the Measurement Act                                                                                                                       |                                                         |
| <input checked="" type="checkbox"/>                                  | (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                                   |                                                         |
| <input type="checkbox"/>                                             | (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. |                                                         |

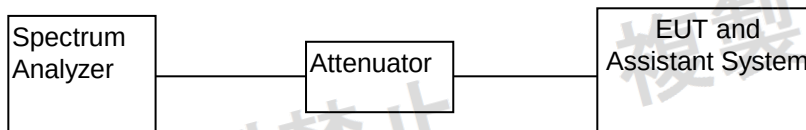
## 4 Test results and Measurement Data

### 4.1 Frequency Tolerance

#### 4.1.1 Limit

| Item                | Limits             |
|---------------------|--------------------|
| Frequency Tolerance | $\pm 20\text{ppm}$ |

#### 4.1.2 Block diagram of test setup



#### 4.1.3 Test Procedure

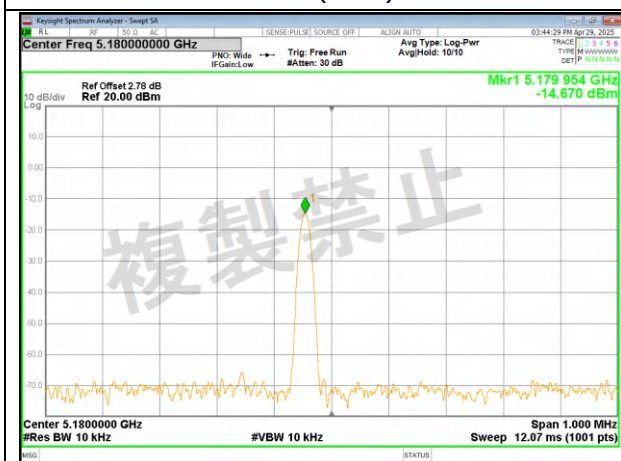
- Frequency accuracy of instrument shall be less than 10% of limits tolerance (5ppm).
- Setting of SA is following as: RBW: 10kHz / VBW: 10kHz.
- The frequency tolerance test case is directly measured using spectrum analyzer. Then the frequency error formula is  $(f-f_c)/f_c \times 10^6$  ppm and the limit is less than  $\pm 20\text{ppm}$ .

#### 4.1.4 Test Result

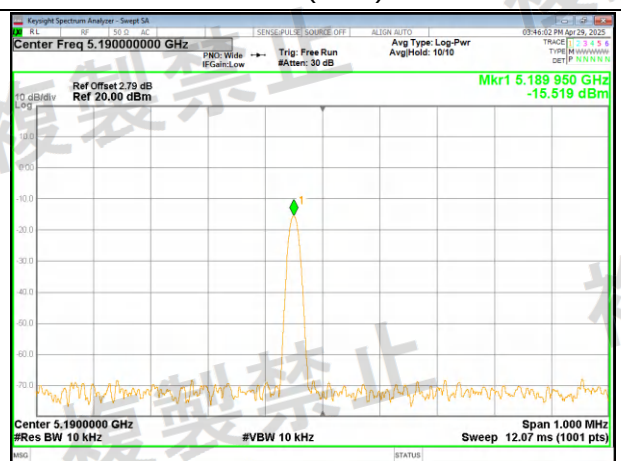
| Mode             | Condition | CH   | Frequency | Test Result | Result | Limit |
|------------------|-----------|------|-----------|-------------|--------|-------|
|                  |           |      | (MHz)     | (MHz)       | (ppm)  | (ppm) |
| Tx               | nominal   | CH36 | 5180      | 5179.954    | -8.88  | ±20   |
|                  |           | CH38 | 5190      | 5189.950    | -9.63  | ±20   |
|                  |           | CH40 | 5200      | 5199.951    | -9.42  | ±20   |
|                  |           | CH42 | 5210      | 5209.950    | -9.60  | ±20   |
|                  |           | CH46 | 5230      | 5229.950    | -9.56  | ±20   |
|                  |           | CH48 | 5240      | 5239.953    | -8.97  | ±20   |
| Conclusion: PASS |           |      |           |             |        |       |



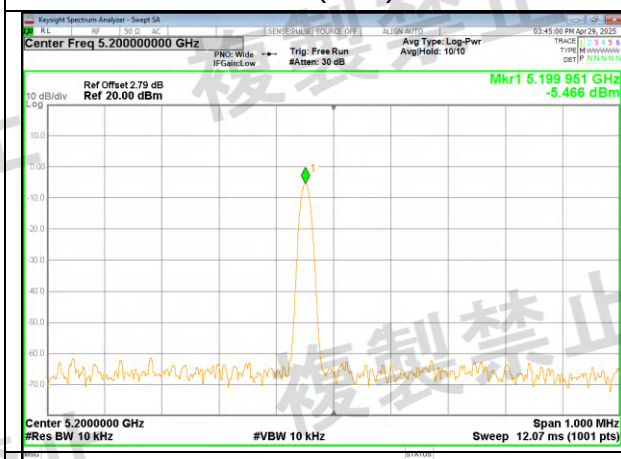
5180(MHz)



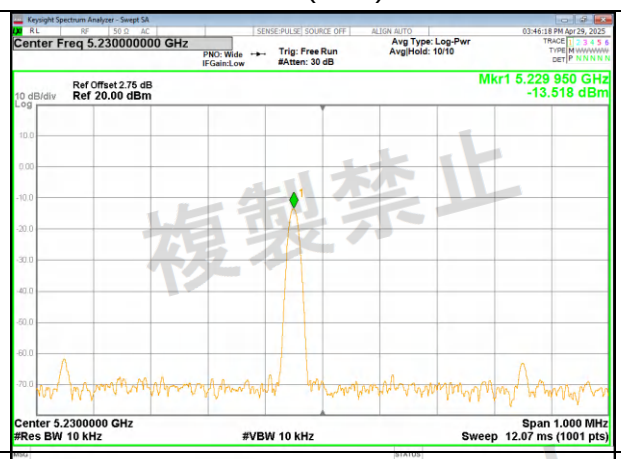
5190(MHz)



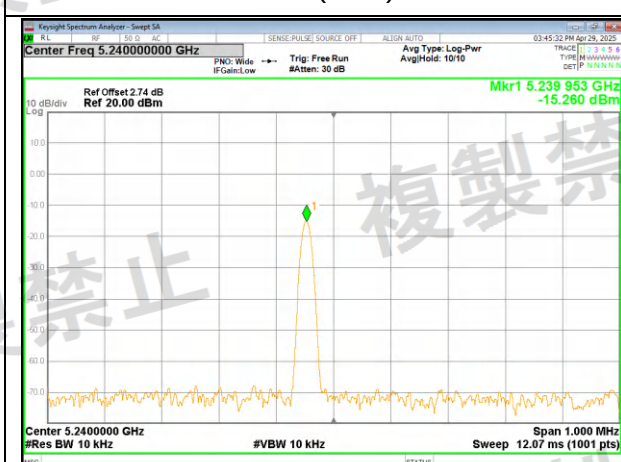
5200(MHz)



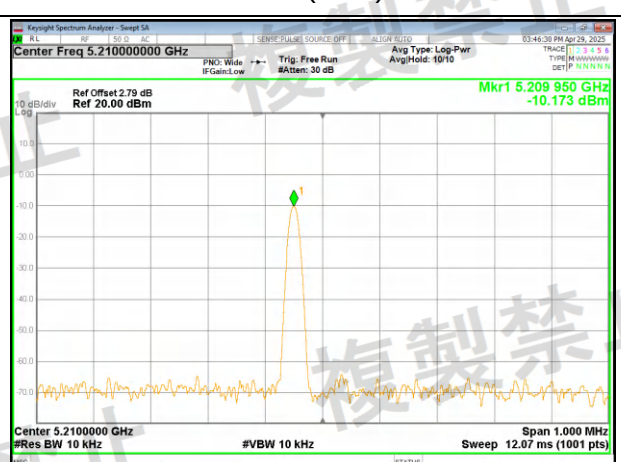
5230(MHz)



5240(MHz)



5210(MHz)

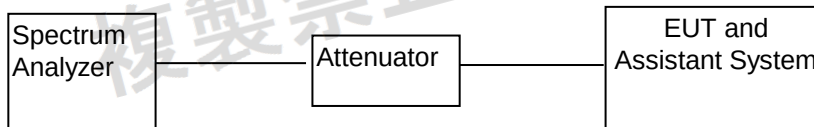


## 4.2 Occupied Frequency Bandwidth

### 4.2.1 Limit

| 5.2G band                                                                 | 5.3G band                                                                 | 5.6G band                                                                 |
|---------------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------|
| 20MHz system:<br>OFDM: $\leq 20\text{MHz}$<br>Others: $\leq 18\text{MHz}$ | 20MHz system:<br>OFDM: $\leq 20\text{MHz}$<br>Others: $\leq 18\text{MHz}$ | 20MHz system:<br>OFDM: $\leq 20\text{MHz}$<br>Others: $\leq 18\text{MHz}$ |
| 40MHz system:<br>OFDM: $\leq 40\text{MHz}$                                | 40MHz system:<br>OFDM: $\leq 40\text{MHz}$                                | 40MHz system:<br>OFDM: $\leq 40\text{MHz}$                                |
| 80MHz system:<br>OFDM: $\leq 80\text{MHz}$                                | 80MHz system:<br>OFDM: $\leq 80\text{MHz}$                                | 80MHz system:<br>OFDM: $\leq 80\text{MHz}$                                |
| 160MHz system:<br>OFDM: $\leq 160\text{MHz}$                              | 160MHz system:<br>OFDM: $\leq 160\text{MHz}$                              | 160MHz system:<br>OFDM: $\leq 160\text{MHz}$                              |

### 4.2.2 Block diagram of test setup



### 4.2.3 Test Procedures

- A) Setting of SA is following as:  
 RBW: 100kHz, VBW: 300kHz  
 Sweep Mode: Continuous sweep  
 Detect mode: Positive peak  
 Trace mode: Max hold.
- B) EUT have transmitted each modulation signal and fixed channelize (For DSSS or OFDM Device).SA set to 99% of occupied bandwidth to measure occupied bandwidth.

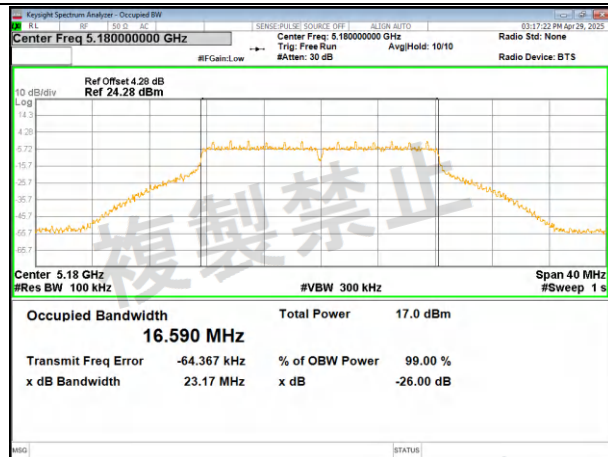


#### 4.2.4 Test Result

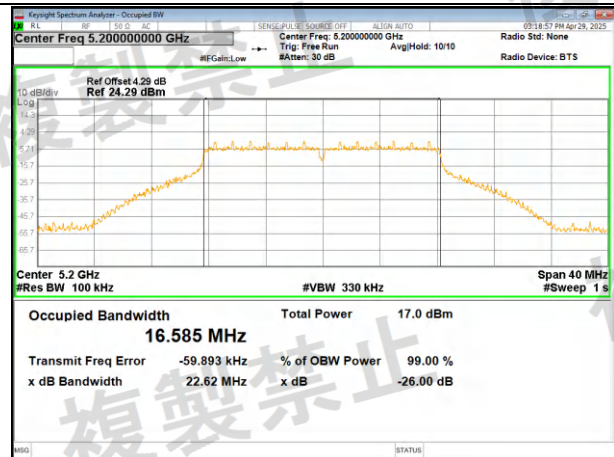
| Mode             | Condition | Frequency<br>MHz | 99% Bandwidth<br>(MHz) | Limit<br>(MHz) |
|------------------|-----------|------------------|------------------------|----------------|
| 802.11a          | nominal   | 5180             | 16.590                 | <=20MHz        |
|                  |           | 5200             | 16.585                 | <=20MHz        |
|                  |           | 5240             | 16.615                 | <=20MHz        |
| 802.11n20        | nominal   | 5180             | 17.666                 | <=20MHz        |
|                  |           | 5200             | 17.663                 | <=20MHz        |
|                  |           | 5240             | 17.670                 | <=20MHz        |
| 802.11n40        | nominal   | 5190             | 36.197                 | <=40MHz        |
|                  |           | 5230             | 36.206                 | <=40MHz        |
| 802.11ac20       | nominal   | 5180             | 17.678                 | <=20MHz        |
|                  |           | 5200             | 17.683                 | <=20MHz        |
|                  |           | 5240             | 17.683                 | <=20MHz        |
| 802.11ac40       | nominal   | 5190             | 36.203                 | <=40MHz        |
|                  |           | 5230             | 36.201                 | <=40MHz        |
| 802.11ac80       | nominal   | 5210             | 75.020                 | <=80MHz        |
| Conclusion: PASS |           |                  |                        |                |



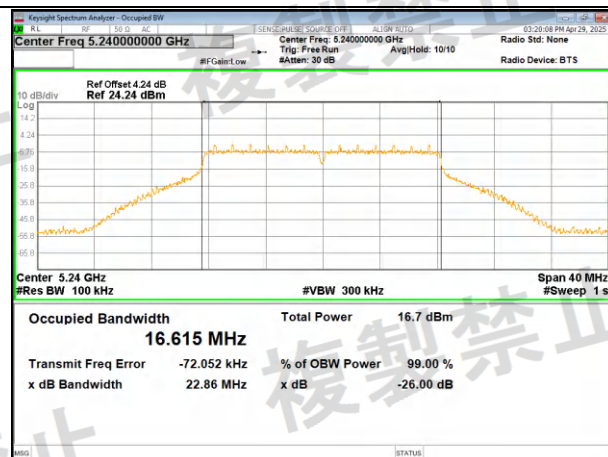
802.11a 5180(MHz)



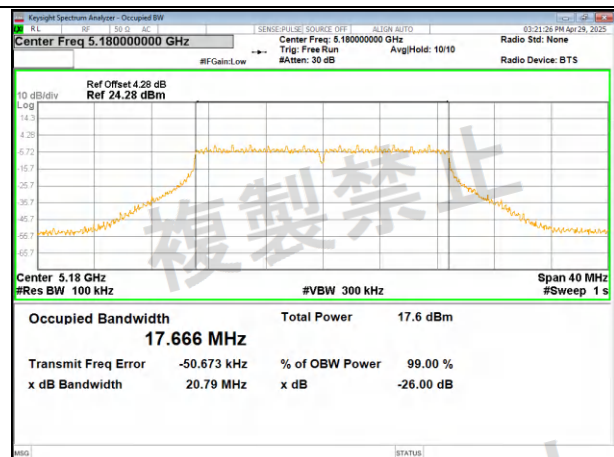
802.11a 5200(MHz)



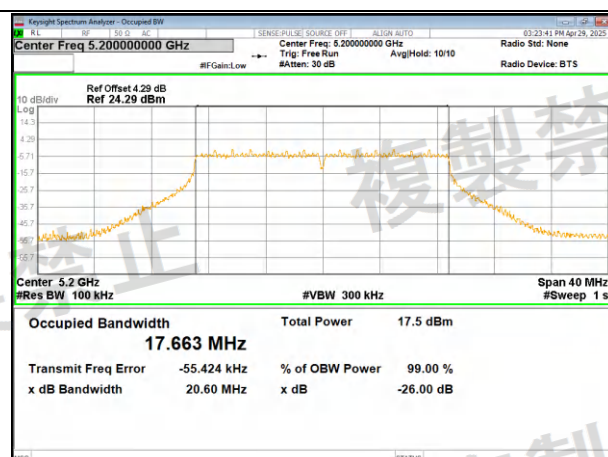
802.11a 5240(MHz)



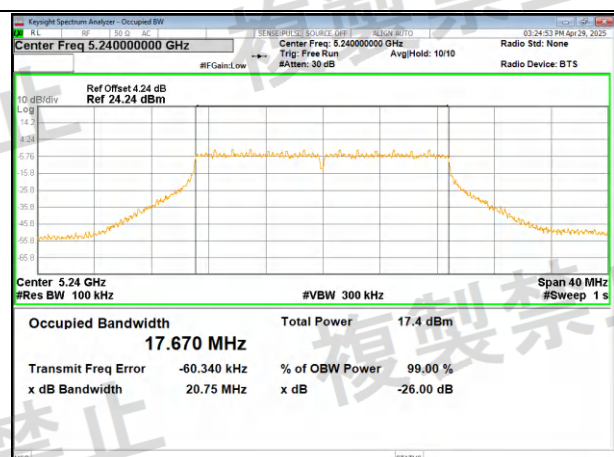
802.11n20 5180(MHz)

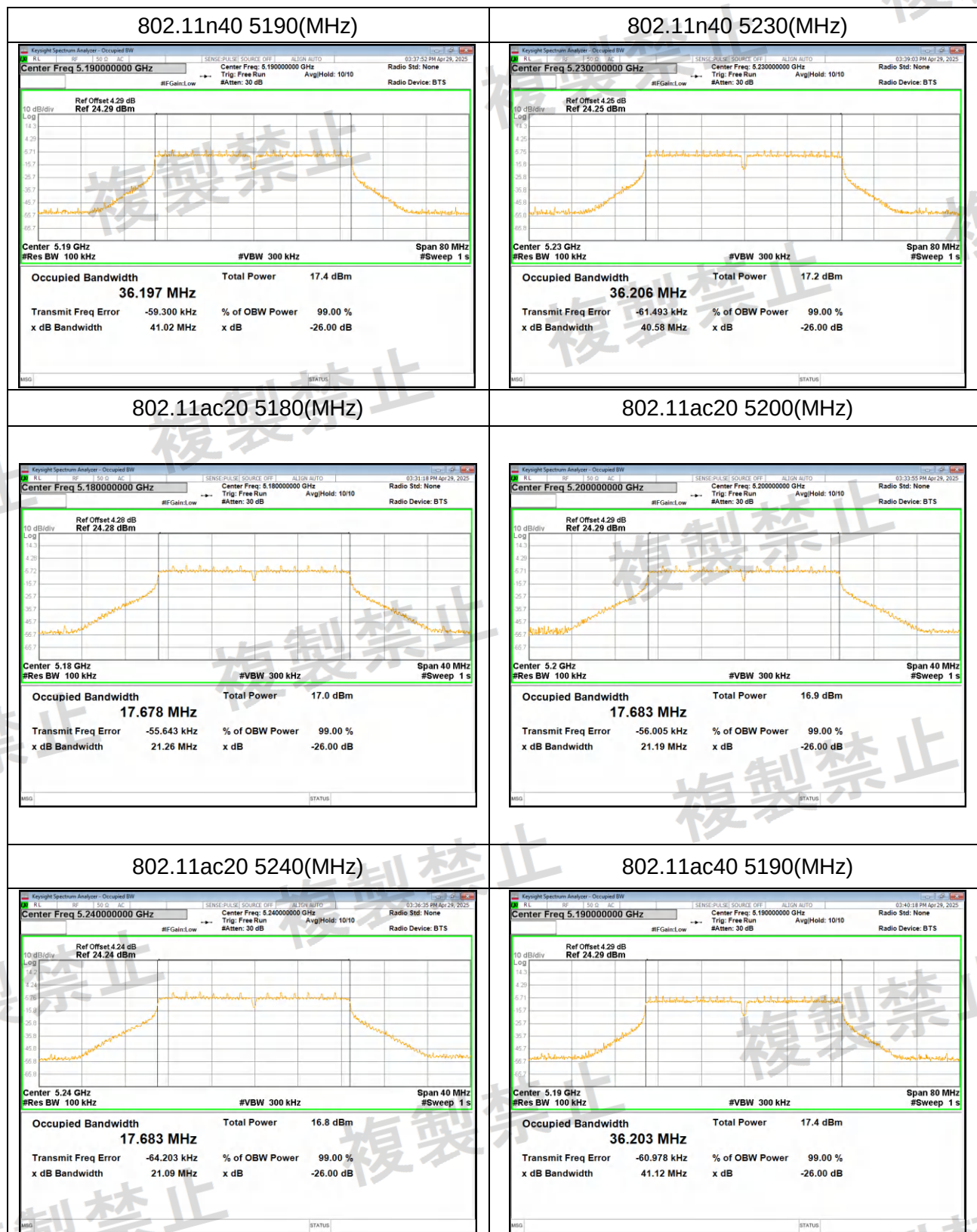


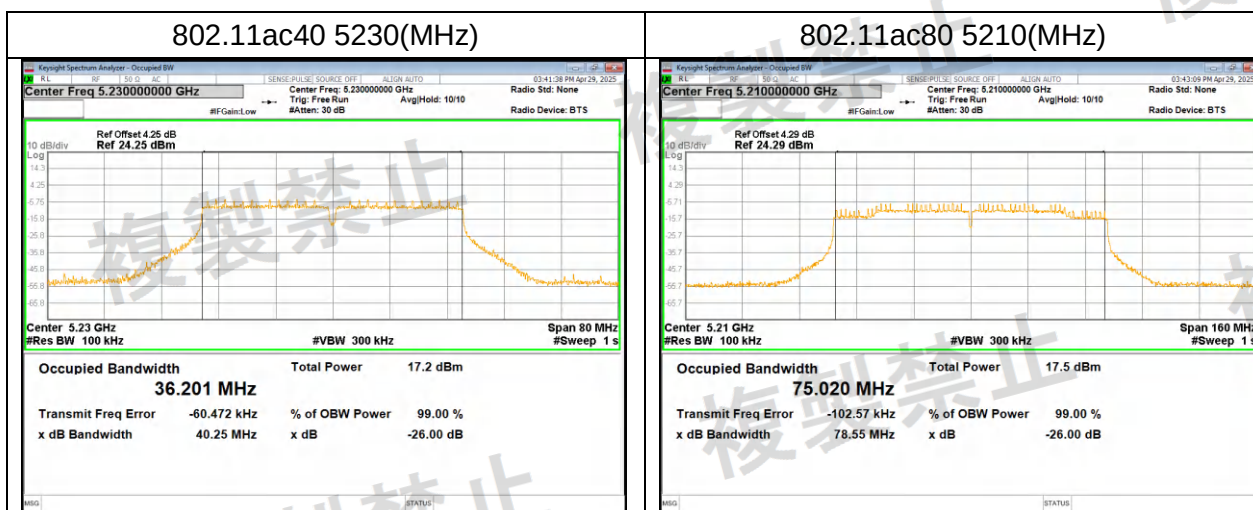
802.11n20 5200(MHz)



802.11n20 5240(MHz)







### 4.3 Transmitter Spurious Emissions (Conducted)

#### 4.3.1 Limits

| 20MHz system                                      |                                                   | W52                                               |                                                   |
|---------------------------------------------------|---------------------------------------------------|---------------------------------------------------|---------------------------------------------------|
| OBW : 16MHz or less                               | OBW : 18 ~ 20 MHz                                 | 40MHz system                                      | 80MHz system                                      |
| 5,142 MHz or less : 2.5 $\mu$ W/MHz               | 5,142 MHz or less : 2.5 $\mu$ W/MHz               | 5,141.6 MHz or less : 2.5 $\mu$ W/MHz             | 5,123.2 MHz or less : 2.5 $\mu$ W/MHz             |
| 5,142 ~ 5,150 MHz : 15 $\mu$ W/MHz                | 5,142 ~ 5,150 MHz : 15 $\mu$ W/MHz                | 5,141.6 ~ 5,150 MHz : 15 $\mu$ W/MHz              | 5,123.2 ~ 5,150 MHz : 15 $\mu$ W/MHz              |
| 5,250 ~ 5,251 MHz : $10^{1-(f-5240)/10}$ mW/MHz   | 5,250 ~ 5,251 MHz : $10^{1-(f-5240)/10}$ mW/MHz   | 5,250 ~ 5,251 MHz : $10^{1-(f-5240)/10}$ mW/MHz   | 5,250 ~ 5,251 MHz : $10^{1-(f-5240)/10}$ mW/MHz   |
| 5,251 ~ 5,260 MHz : $10^{1-(f-5240)/10}$ mW/MHz   | 5,251 ~ 5,260 MHz : $10^{1-(f-5240)/10}$ mW/MHz   | 5,251 ~ 5,260 MHz : $10^{1-(f-5240)/10}$ mW/MHz   | 5,251 ~ 5,260 MHz : $10^{1-(f-5240)/10}$ mW/MHz   |
| 5,260 ~ 5,266.7 MHz : $10^{1-(f-5240)/10}$ mW/MHz | 5,260 ~ 5,266.7 MHz : $10^{1-(f-5240)/10}$ mW/MHz | 5,270 ~ 5,278.4 MHz : $10^{1-(f-5240)/10}$ mW/MHz | 5,290 ~ 5,296.7 MHz : $10^{1-(f-5240)/10}$ mW/MHz |
| 5,266.7 MHz or more : 2.5 $\mu$ W/MHz             | 5,266.7 MHz or more : 2.5 $\mu$ W/MHz             | 5,278.4 MHz or more : 2.5 $\mu$ W/MHz             | 5,296.7 MHz or more : 2.5 $\mu$ W/MHz             |
| f = MHz, Difference from 5240 (MHz)               | f = MHz, Difference from 5240 (MHz)               | f = MHz, Difference from 5230 (MHz)               | f = MHz, Difference from 5210 (MHz)               |

#### 4.3.2 Block diagram of test setup



#### 4.3.3 Test Procedures

- 1) EUT have transmitted the maximum power and fixed channelize.
- 2) Setting of SA is following as:  
**RBW:** 1MHz / **VBW:** 1MHz  
**Sweep time:** Auto /  
**Sweep Mode:** Continuous sweep  
**Detect mode:** Positive peak  
**Trace mode:** Max hold.
- 3) Table No.45 related to Article 2 Paragraph 1 of Item 19-3 of Ordinance Concerning Technical Regulations Conformity Certification etc. of Specified Radio Equipment.

#### 4.3.4 Test Result.

| Condition | Mode | Frequency (MHz) | Range (MHz)  | Emission Frequency (MHz) | Max Value (dBm) | Max Value ( $\mu$ W/MHz) | Limit ( $\mu$ W/MHz) | Verdict |
|-----------|------|-----------------|--------------|--------------------------|-----------------|--------------------------|----------------------|---------|
| NVNT      | a    | 5180            | 30-5142      | 3322.128                 | -43.064         | 0.049                    | 2.5                  | Pass    |
| NVNT      | a    | 5180            | 5142-5150    | 5149.824                 | -46.589         | 0.022                    | 15                   | Pass    |
| NVNT      | a    | 5180            | 5250-5251    | 5250.246                 | -45.865         | 0.026                    | 1000                 | Pass    |
| NVNT      | a    | 5180            | 5251-5260    | 5254.888                 | -46.602         | 0.022                    | 100                  | Pass    |
| NVNT      | a    | 5180            | 5260-5266.7  | 5261.615                 | -46.014         | 0.025                    | 15                   | Pass    |
| NVNT      | a    | 5180            | 5266.7-26000 | 24486.469                | -32.311         | 0.587                    | 2.5                  | Pass    |
| NVNT      | a    | 5200            | 30-5142      | 3225                     | -43.529         | 0.044                    | 2.5                  | Pass    |
| NVNT      | a    | 5200            | 5142-5150    | 5149.776                 | -46.607         | 0.022                    | 15                   | Pass    |
| NVNT      | a    | 5200            | 5250-5251    | 5250.665                 | -46.254         | 0.024                    | 1000                 | Pass    |
| NVNT      | a    | 5200            | 5251-5260    | 5255.941                 | -46.383         | 0.023                    | 100                  | Pass    |
| NVNT      | a    | 5200            | 5260-5266.7  | 5262.921                 | -45.75          | 0.027                    | 15                   | Pass    |
| NVNT      | a    | 5200            | 5266.7-26000 | 24631.602                | -31.625         | 0.688                    | 2.5                  | Pass    |
| NVNT      | a    | 5240            | 30-5142      | 2632.008                 | -43.896         | 0.041                    | 2.5                  | Pass    |
| NVNT      | a    | 5240            | 5142-5150    | 5147.624                 | -45.749         | 0.027                    | 15                   | Pass    |
| NVNT      | a    | 5240            | 5250-5251    | 5250.644                 | -46.389         | 0.023                    | 1000                 | Pass    |
| NVNT      | a    | 5240            | 5251-5260    | 5252.449                 | -46.898         | 0.020                    | 100                  | Pass    |
| NVNT      | a    | 5240            | 5260-5266.7  | 5265.574                 | -45.994         | 0.025                    | 15                   | Pass    |
| NVNT      | a    | 5240            | 5266.7-26000 | 25025.535                | -31.348         | 0.733                    | 2.5                  | Pass    |
| NVNT      | n20  | 5180            | 30-5142      | 3132.984                 | -43.64          | 0.043                    | 2.5                  | Pass    |
| NVNT      | n20  | 5180            | 5142-5150    | 5144.296                 | -46.065         | 0.025                    | 15                   | Pass    |
| NVNT      | n20  | 5180            | 5250-5251    | 5250.971                 | -46.232         | 0.024                    | 1000                 | Pass    |
| NVNT      | n20  | 5180            | 5251-5260    | 5258.281                 | -46.733         | 0.021                    | 100                  | Pass    |
| NVNT      | n20  | 5180            | 5260-5266.7  | 5263.538                 | -45.847         | 0.026                    | 15                   | Pass    |
| NVNT      | n20  | 5180            | 5266.7-26000 | 25067.002                | -31.562         | 0.698                    | 2.5                  | Pass    |
| NVNT      | n20  | 5200            | 30-5142      | 2488.872                 | -42.91          | 0.051                    | 2.5                  | Pass    |
| NVNT      | n20  | 5200            | 5142-5150    | 5146.664                 | -46.731         | 0.021                    | 15                   | Pass    |
| NVNT      | n20  | 5200            | 5250-5251    | 5250.863                 | -45.701         | 0.027                    | 1000                 | Pass    |
| NVNT      | n20  | 5200            | 5251-5260    | 5256.103                 | -46.064         | 0.025                    | 100                  | Pass    |
| NVNT      | n20  | 5200            | 5260-5266.7  | 5261.36                  | -45.362         | 0.029                    | 15                   | Pass    |
| NVNT      | n20  | 5200            | 5266.7-26000 | 25087.735                | -31.782         | 0.663                    | 2.5                  | Pass    |
| NVNT      | n20  | 5240            | 30-5142      | 3168.768                 | -42.841         | 0.052                    | 2.5                  | Pass    |
| NVNT      | n20  | 5240            | 5142-5150    | 5143.032                 | -45.963         | 0.025                    | 15                   | Pass    |
| NVNT      | n20  | 5240            | 5250-5251    | 5250.736                 | -46.201         | 0.024                    | 1000                 | Pass    |
| NVNT      | n20  | 5240            | 5251-5260    | 5256.706                 | -46.048         | 0.025                    | 100                  | Pass    |
| NVNT      | n20  | 5240            | 5260-5266.7  | 5263.43                  | -45.375         | 0.029                    | 15                   | Pass    |
| NVNT      | n20  | 5240            | 5266.7-26000 | 24548.669                | -31.643         | 0.685                    | 2.5                  | Pass    |
| NVNT      | n40  | 5190            | 30-5141.6    | 3168.522                 | -43.703         | 0.043                    | 2.5                  | Pass    |
| NVNT      | n40  | 5190            | 5141.6-5150  | 5145.548                 | -46.31          | 0.023                    | 15                   | Pass    |
| NVNT      | n40  | 5190            | 5250-5251    | 5250.742                 | -46.287         | 0.024                    | 1000                 | Pass    |
| NVNT      | n40  | 5190            | 5251-5270    | 5251.133                 | -45.909         | 0.026                    | 100                  | Pass    |



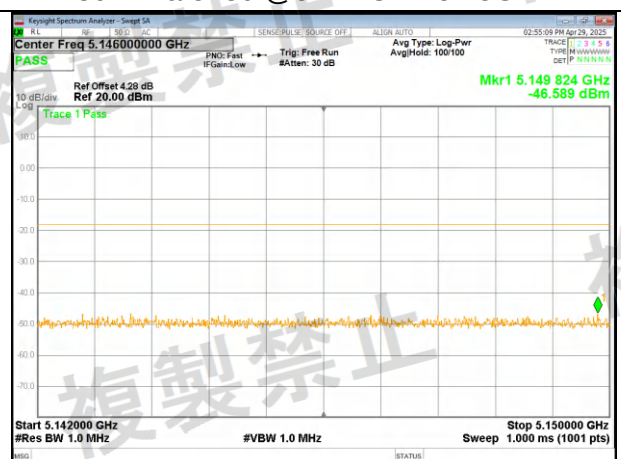
|      |      |      |              |           |         |       |      |      |
|------|------|------|--------------|-----------|---------|-------|------|------|
| NVNT | n40  | 5190 | 5270-5278.4  | 5275.628  | -46.527 | 0.022 | 15   | Pass |
| NVNT | n40  | 5190 | 5278.4-26000 | 24466.602 | -31.743 | 0.669 | 2.5  | Pass |
| NVNT | n40  | 5230 | 30-5141.6    | 3035.621  | -43.461 | 0.045 | 2.5  | Pass |
| NVNT | n40  | 5230 | 5141.6-5150  | 5143.851  | -46.355 | 0.023 | 15   | Pass |
| NVNT | n40  | 5230 | 5250-5251    | 5250.417  | -46.253 | 0.024 | 1000 | Pass |
| NVNT | n40  | 5230 | 5251-5270    | 5256.016  | -46.486 | 0.022 | 100  | Pass |
| NVNT | n40  | 5230 | 5270-5278.4  | 5272.747  | -46.119 | 0.024 | 15   | Pass |
| NVNT | n40  | 5230 | 5278.4-26000 | 24549.488 | -32.035 | 0.626 | 2.5  | Pass |
| NVNT | ac20 | 5180 | 30-5142      | 2417.304  | -42.145 | 0.061 | 2.5  | Pass |
| NVNT | ac20 | 5180 | 5142-5150    | 5144.832  | -45.438 | 0.029 | 15   | Pass |
| NVNT | ac20 | 5180 | 5250-5251    | 5250.77   | -45.533 | 0.028 | 1000 | Pass |
| NVNT | ac20 | 5180 | 5251-5260    | 5259.451  | -46.266 | 0.024 | 100  | Pass |
| NVNT | ac20 | 5180 | 5260-5266.7  | 5261.173  | -45.403 | 0.029 | 15   | Pass |
| NVNT | ac20 | 5180 | 5266.7-26000 | 24569.402 | -31.699 | 0.676 | 2.5  | Pass |
| NVNT | ac20 | 5200 | 30-5142      | 3015.408  | -43.619 | 0.043 | 2.5  | Pass |
| NVNT | ac20 | 5200 | 5142-5150    | 5145.368  | -45.813 | 0.026 | 15   | Pass |
| NVNT | ac20 | 5200 | 5250-5251    | 5250.089  | -45.995 | 0.025 | 1000 | Pass |
| NVNT | ac20 | 5200 | 5251-5260    | 5255.329  | -46.225 | 0.024 | 100  | Pass |
| NVNT | ac20 | 5200 | 5260-5266.7  | 5261.829  | -45.817 | 0.026 | 15   | Pass |
| NVNT | ac20 | 5200 | 5266.7-26000 | 25046.268 | -31.481 | 0.711 | 2.5  | Pass |
| NVNT | ac20 | 5240 | 30-5142      | 3173.88   | -43.22  | 0.048 | 2.5  | Pass |
| NVNT | ac20 | 5240 | 5142-5150    | 5146.44   | -46.356 | 0.023 | 15   | Pass |
| NVNT | ac20 | 5240 | 5250-5251    | 5250.676  | -46.274 | 0.024 | 1000 | Pass |
| NVNT | ac20 | 5240 | 5251-5260    | 5255.365  | -46.145 | 0.024 | 100  | Pass |
| NVNT | ac20 | 5240 | 5260-5266.7  | 5261.414  | -46.254 | 0.024 | 15   | Pass |
| NVNT | ac20 | 5240 | 5266.7-26000 | 24610.869 | -31.266 | 0.747 | 2.5  | Pass |
| NVNT | ac40 | 5190 | 30-5141.6    | 2360.89   | -43.611 | 0.044 | 2.5  | Pass |
| NVNT | ac40 | 5190 | 5141.6-5150  | 5149.546  | -46.009 | 0.025 | 15   | Pass |
| NVNT | ac40 | 5190 | 5250-5251    | 5250.014  | -45.62  | 0.027 | 1000 | Pass |
| NVNT | ac40 | 5190 | 5251-5270    | 5256.206  | -46.309 | 0.023 | 100  | Pass |
| NVNT | ac40 | 5190 | 5270-5278.4  | 5276.191  | -45.681 | 0.027 | 15   | Pass |
| NVNT | ac40 | 5190 | 5278.4-26000 | 24508.045 | -32     | 0.631 | 2.5  | Pass |
| NVNT | ac40 | 5230 | 30-5141.6    | 2974.282  | -43.551 | 0.044 | 2.5  | Pass |
| NVNT | ac40 | 5230 | 5141.6-5150  | 5146.094  | -46.907 | 0.020 | 15   | Pass |
| NVNT | ac40 | 5230 | 5250-5251    | 5250.547  | -46.52  | 0.022 | 1000 | Pass |
| NVNT | ac40 | 5230 | 5251-5270    | 5253.071  | -46.516 | 0.022 | 100  | Pass |
| NVNT | ac40 | 5230 | 5270-5278.4  | 5275.788  | -46.08  | 0.025 | 15   | Pass |
| NVNT | ac40 | 5230 | 5278.4-26000 | 25108.971 | -31.983 | 0.633 | 2.5  | Pass |
| NVNT | ac80 | 5210 | 30-5123.2    | 3147.038  | -43.411 | 0.046 | 2.5  | Pass |
| NVNT | ac80 | 5210 | 5123.2-5150  | 5131.669  | -46.183 | 0.024 | 15   | Pass |
| NVNT | ac80 | 5210 | 5250-5251    | 5250.057  | -46.608 | 0.022 | 1000 | Pass |
| NVNT | ac80 | 5210 | 5251-5290    | 5253.145  | -46.704 | 0.021 | 100  | Pass |
| NVNT | ac80 | 5210 | 5290-5296.7  | 5295.581  | -46.905 | 0.020 | 15   | Pass |
| NVNT | ac80 | 5210 | 5296.7-26000 | 24592.176 | -31.469 | 0.713 | 2.5  | Pass |

Remark: Antenna gain and cable loss data included in Offset

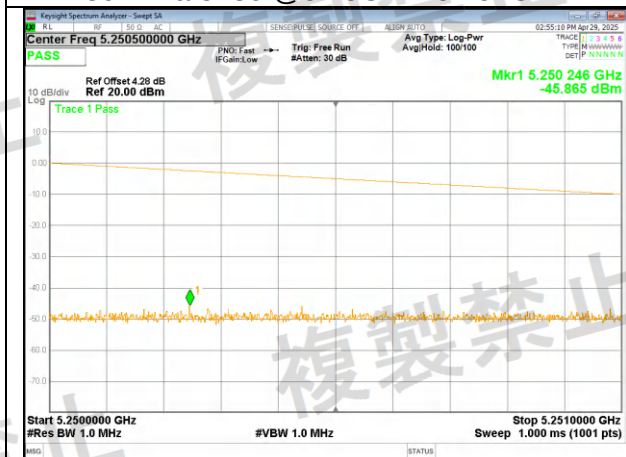
802.11a 5180 @30MHz-5.142GHz



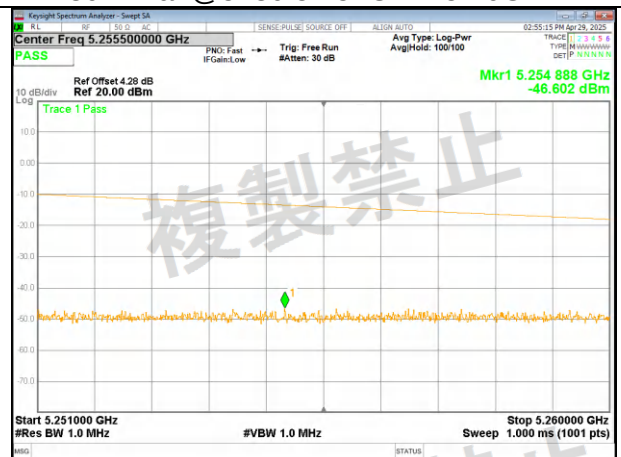
802.11a 5180 @5.142GHz-5.15GHz



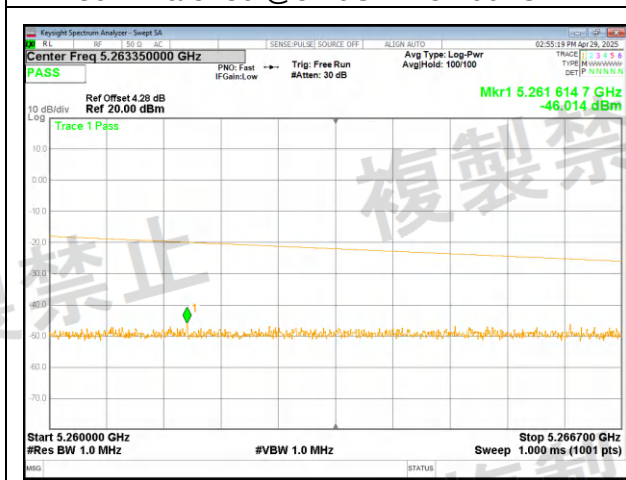
802.11a 5180 @5.25GHz~5.251GHz



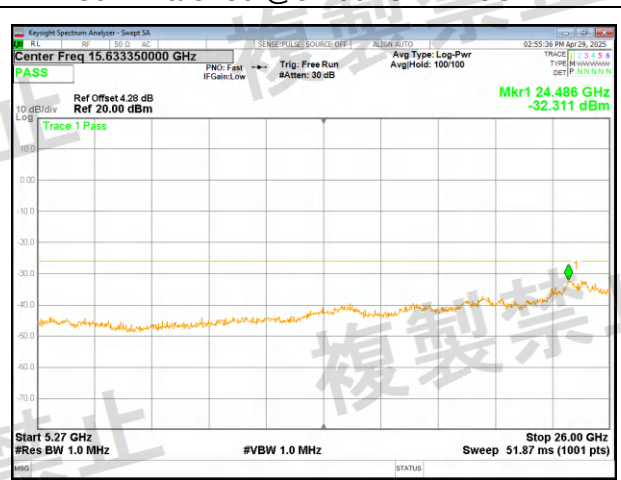
802.11a @5180 5.251GHz~5.26GHz



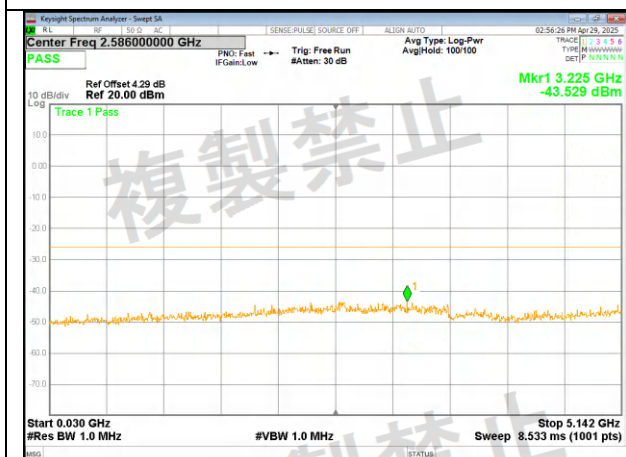
802.11a 5180 @5.26GHz~5.2667GHz



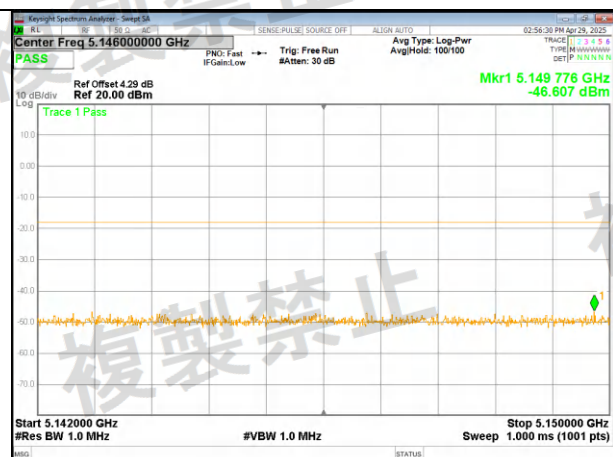
802.11a 5180 @5.2667GHz~26GHz



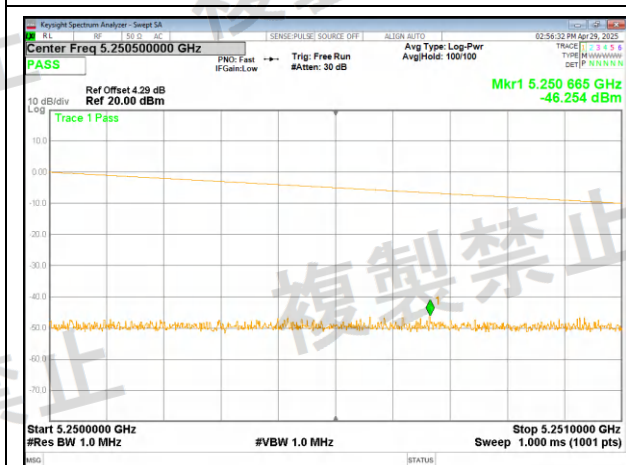
802.11a 5200 @30MHz-5.142GHz



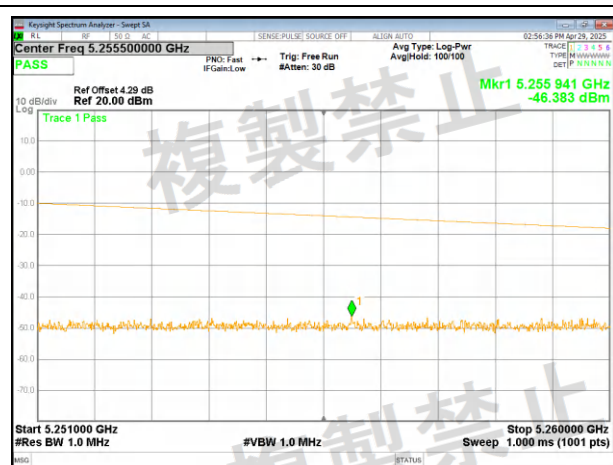
802.11a 5200 @5.142GHz-5.15GHz



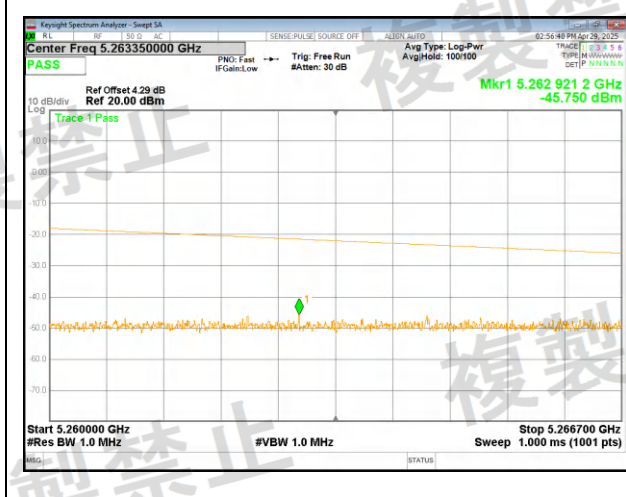
802.11a 5200 @5.25GHz~5.251GHz



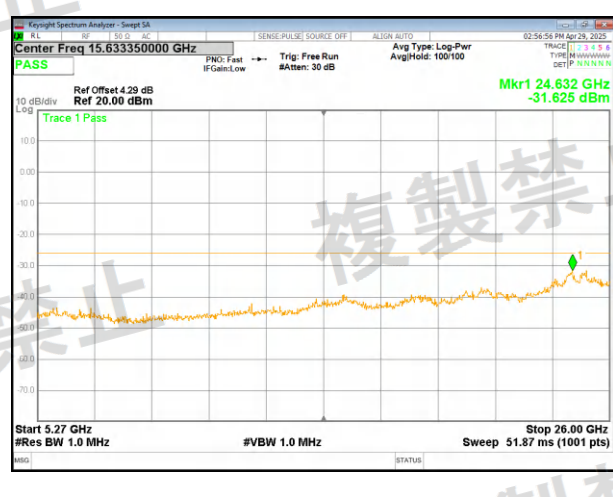
802.11a 5200 @5.251GHz~5.26GHz



802.11a 5200 @5.26GHz~5.2667GHz

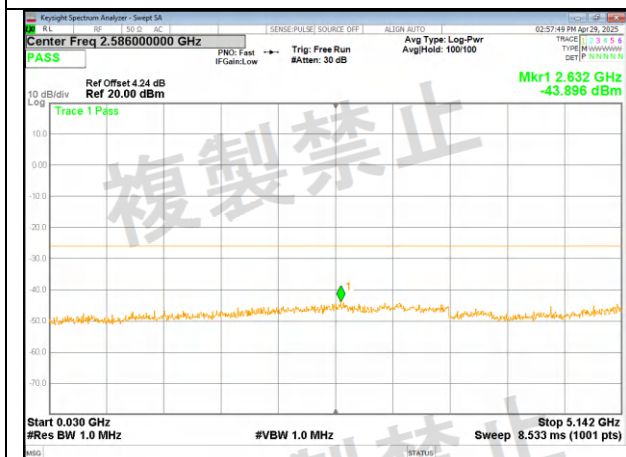


802.11a 5200 @5.2667GHz~26GHz

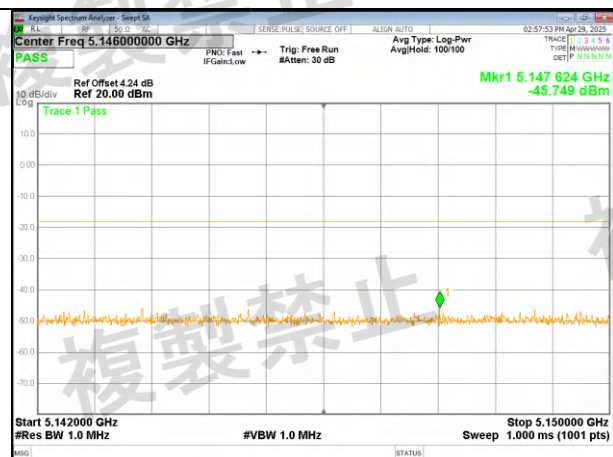




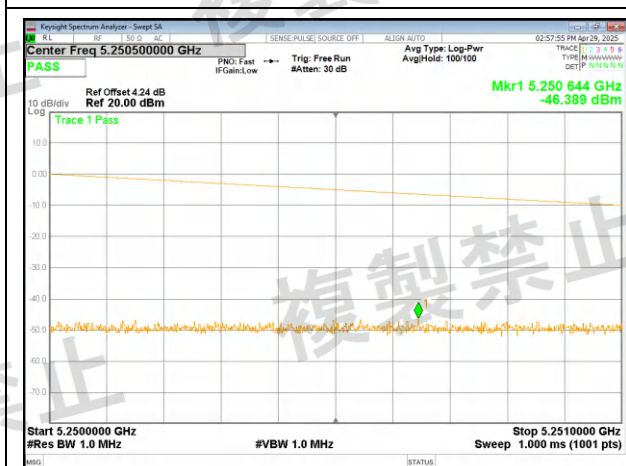
802.11a 5240 @30MHz-5.142GHz



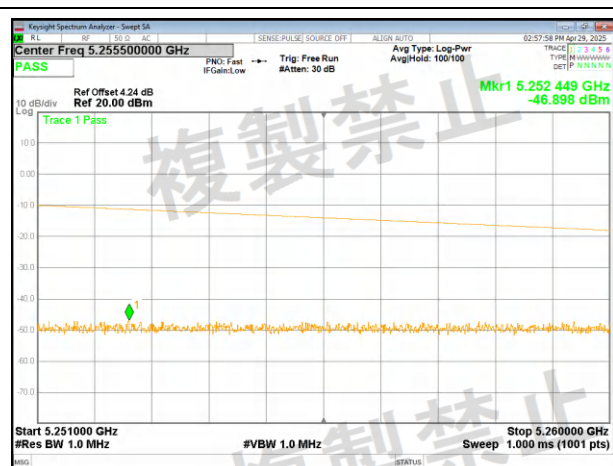
802.11a 5240 @5.142GHz-5.15GHz



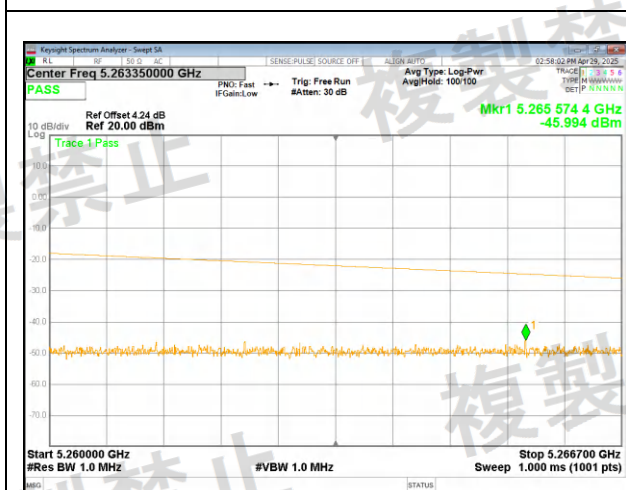
802.11a 5240 @5.25GHz~5.251GHz



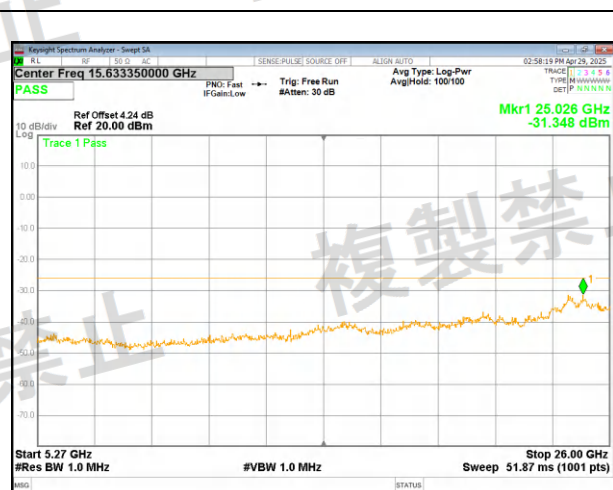
802.11a 5240 @5.251GHz~5.26GHz



802.11a 5240 @5.26GHz~5.2667GHz

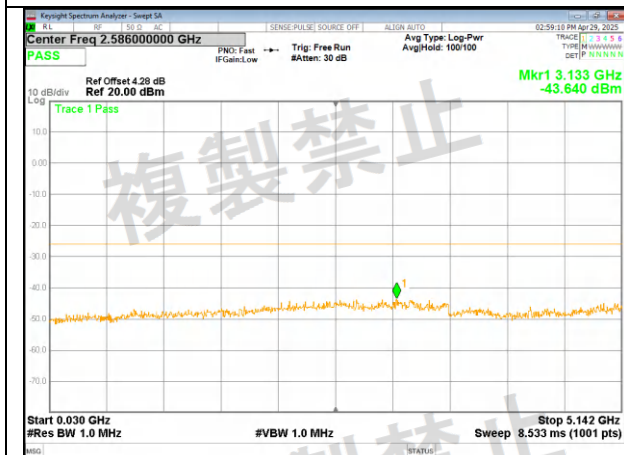


802.11a 5240 @5.2667GHz~26GHz

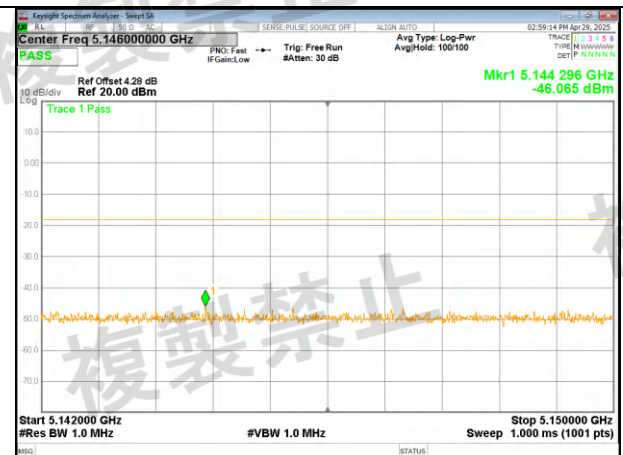




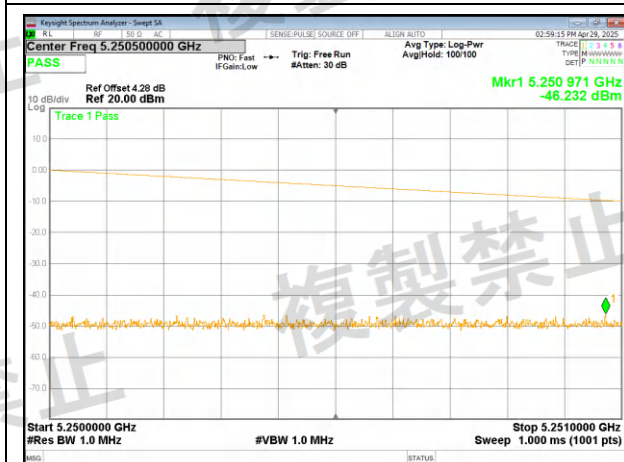
802.11n20 5180 @30MHz-5.142GHz



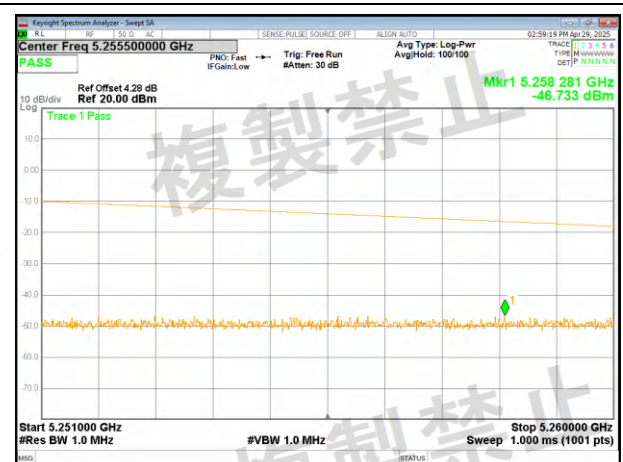
802.11n20 5180 @5.142GHz-5.15GHz



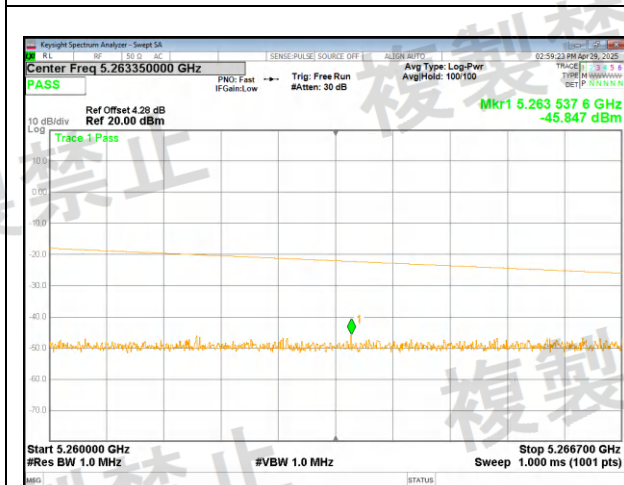
802.11n20 5180 @5.25GHz~5.251GHz



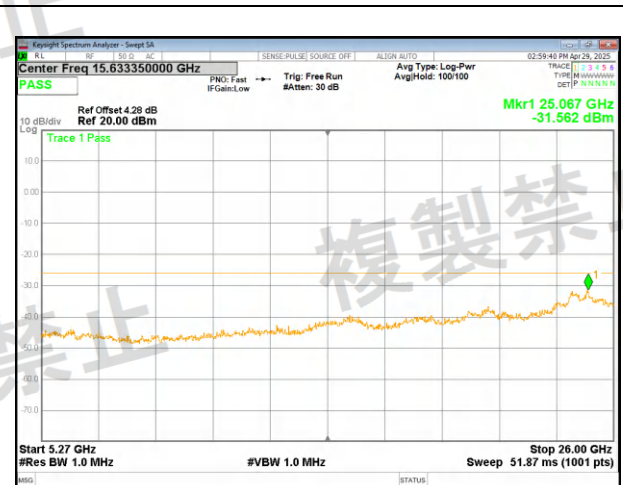
802.11n20 5180 @5.251GHz~5.26GHz



802.11n20 5180 @5.26GHz~5.2667GHz

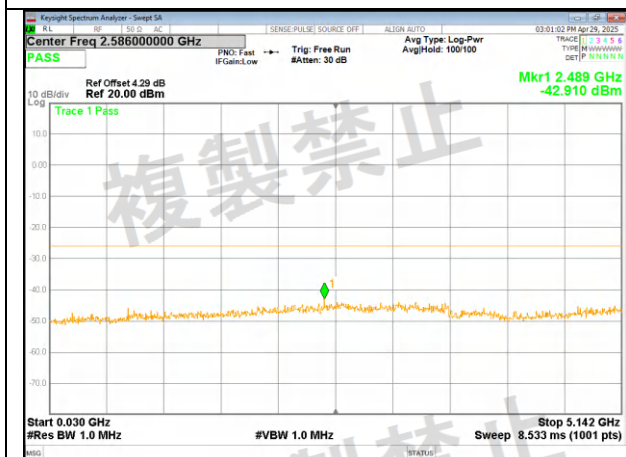


802.11n20 5180 @5.2667GHz~26GHz

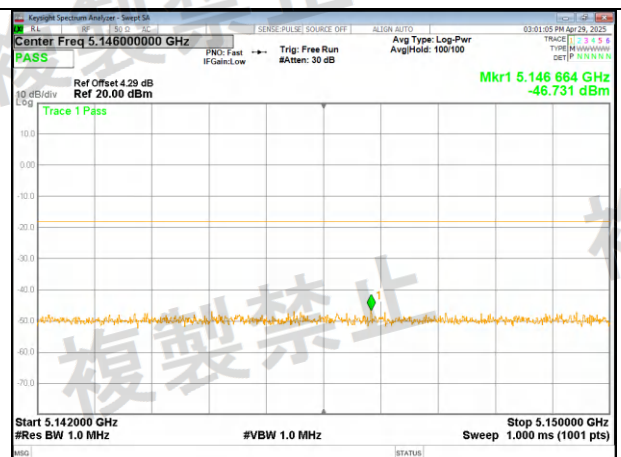




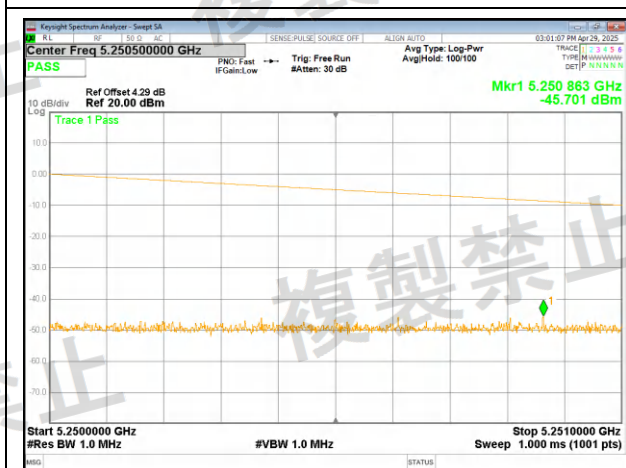
802.11n20 5200 @30MHz-5.142GHz



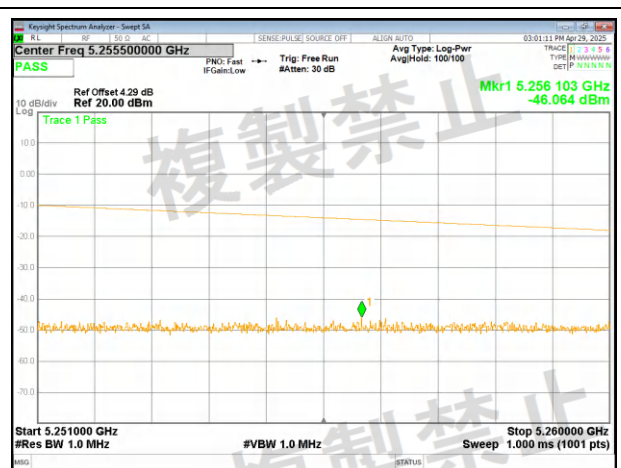
802.11n20 5200 @5.142GHz-5.15GHz



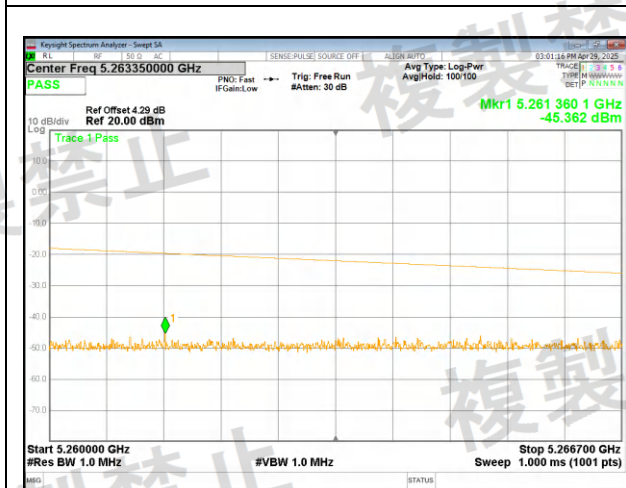
802.11n20 5200 @5.25GHz~5.251GHz



802.11n20 5200 @5.251GHz~5.26GHz



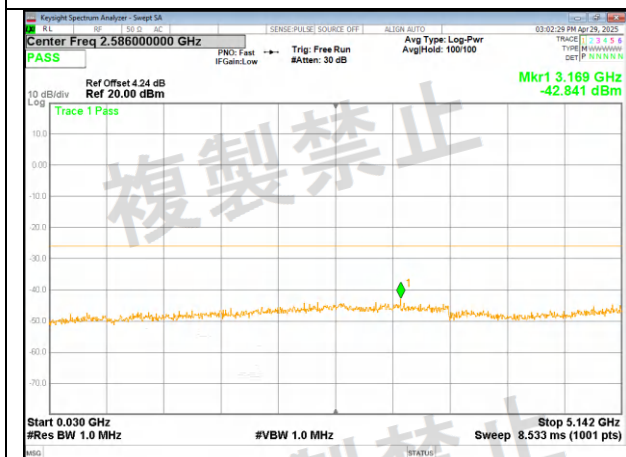
802.11n20 5200 @5.26GHz~5.2667GHz



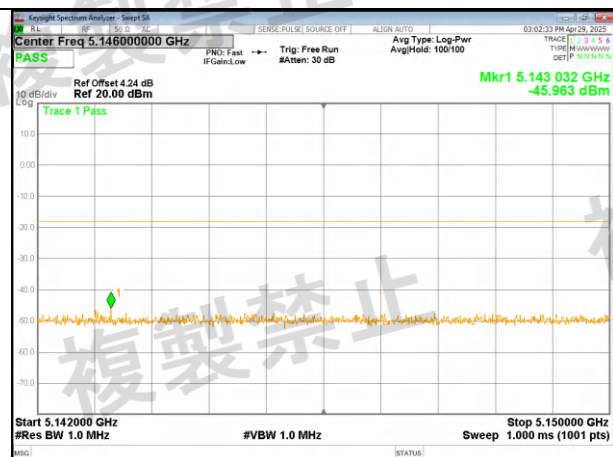
802.11n20 5200 @5.2667GHz~26GHz



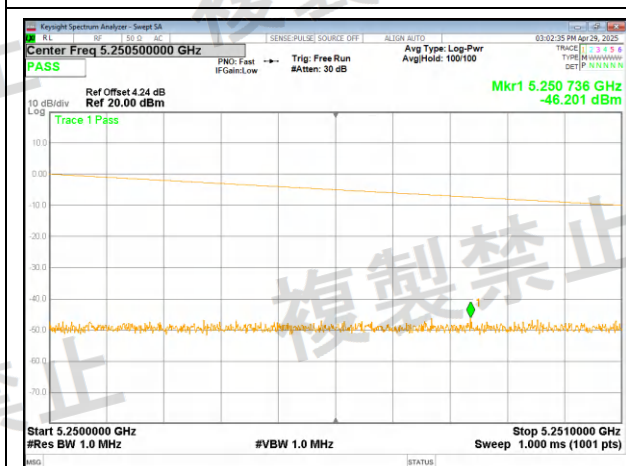
802.11n20 5240 @30MHz-5.142GHz



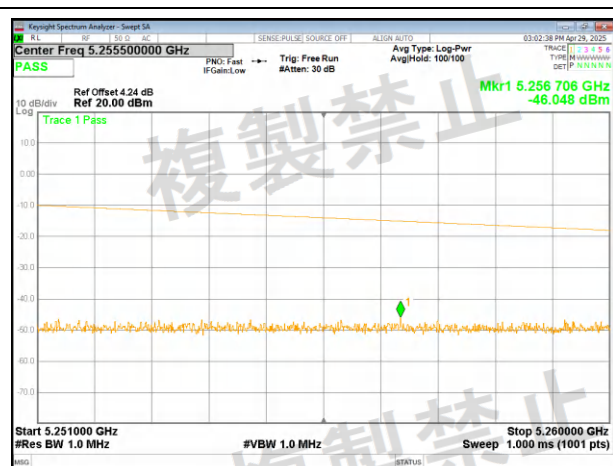
802.11n20 5240 @5.142GHz-5.15GHz



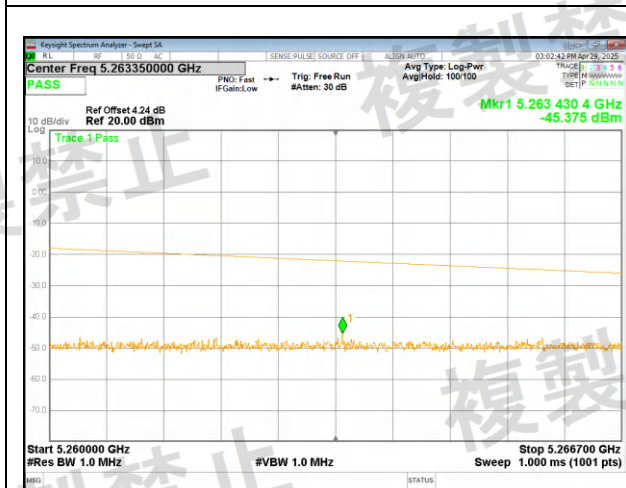
802.11n20 5240 @5.25GHz~5.251GHz



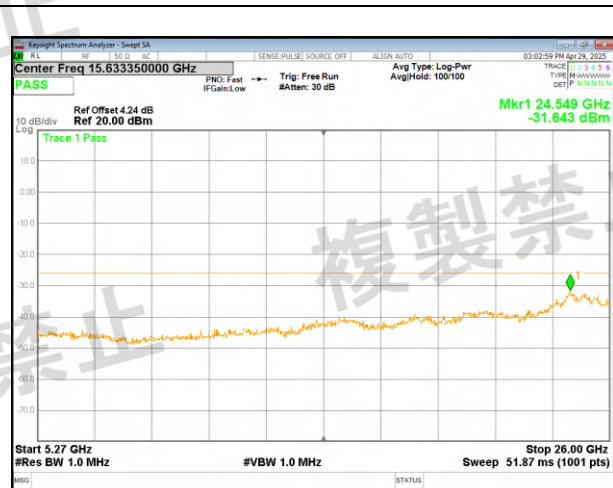
802.11n20 5240 @5.251GHz~5.26GHz



802.11n20 5240 @5.26GHz~5.2667GHz

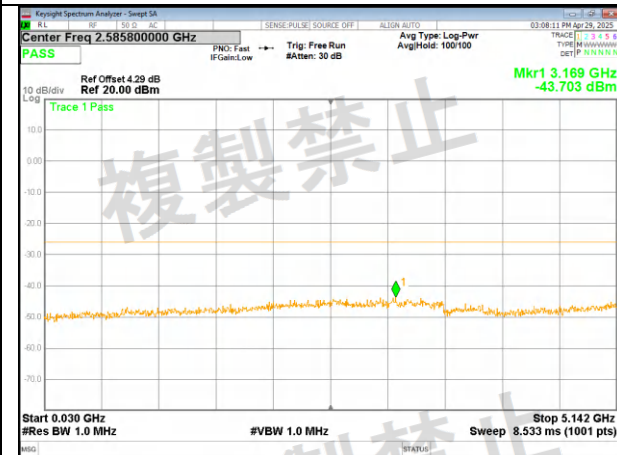


802.11n20 5240 @5.2667GHz~26GHz

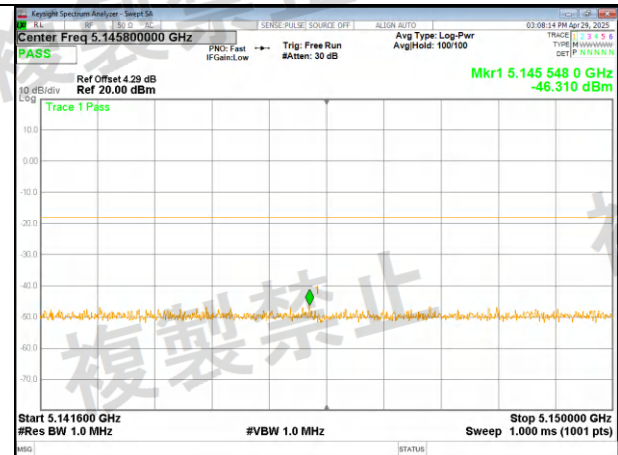




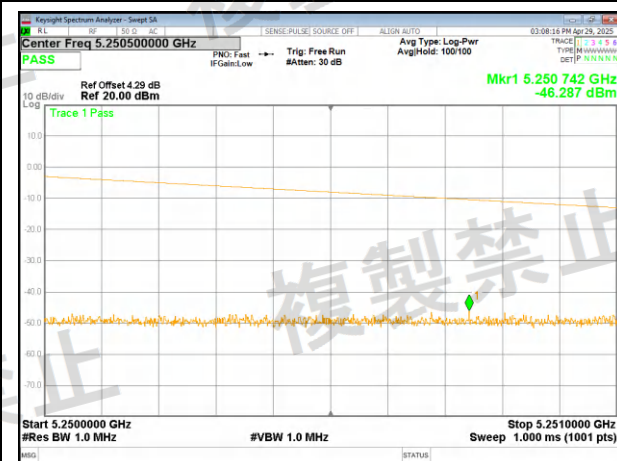
802.11n40 5190 @30MHz-5.1416GHz



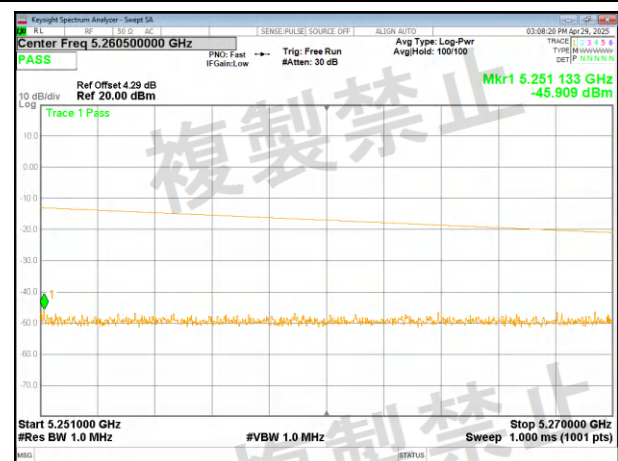
802.11n40 5190 @5.1416GHz-5.15GHz



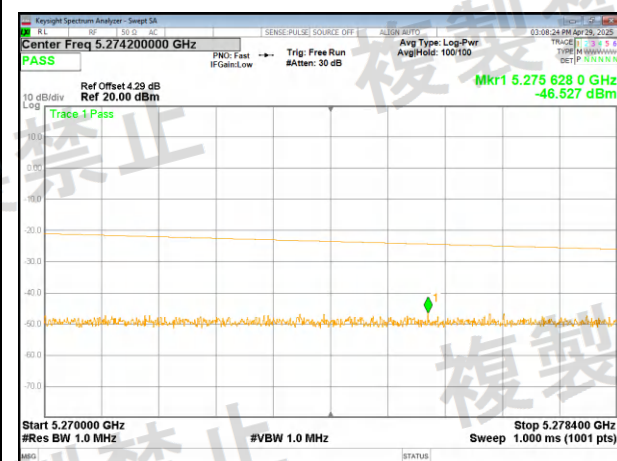
802.11n40 5190 @5.25GHz~5.251GHz



802.11n40 5190 @5.251GHz~5.27GHz



802.11n40 5190 @5.27GHz~5.2784GHz

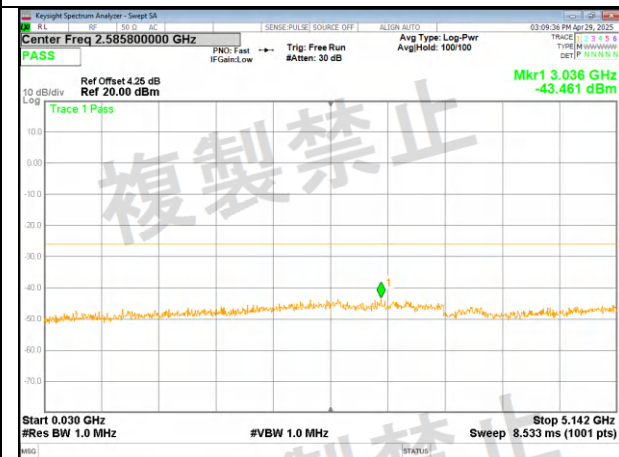


802.11n40 5190 @5.2784GHz~26GHz

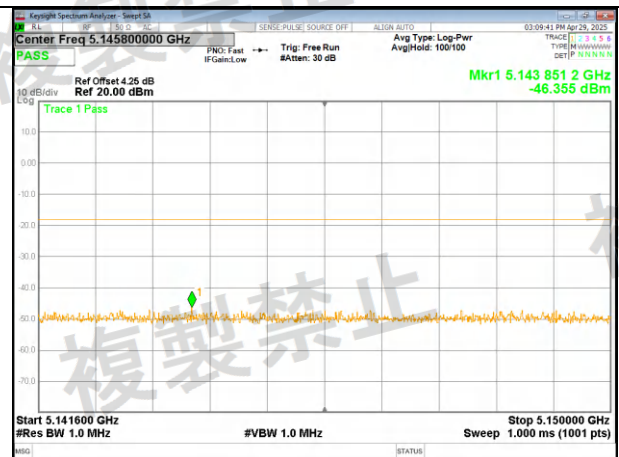




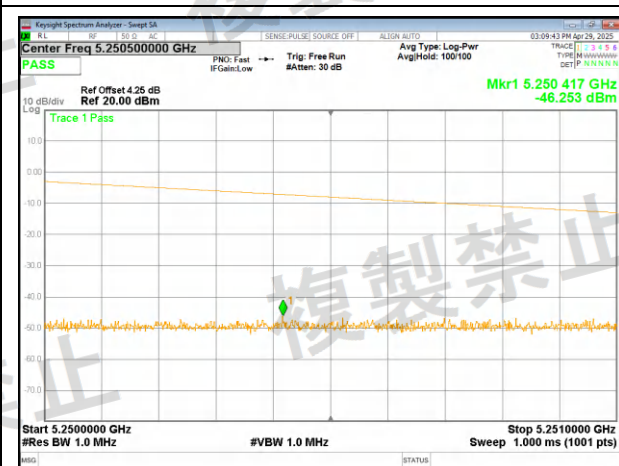
802.11n40 5230 @30MHz-5.1416GHz



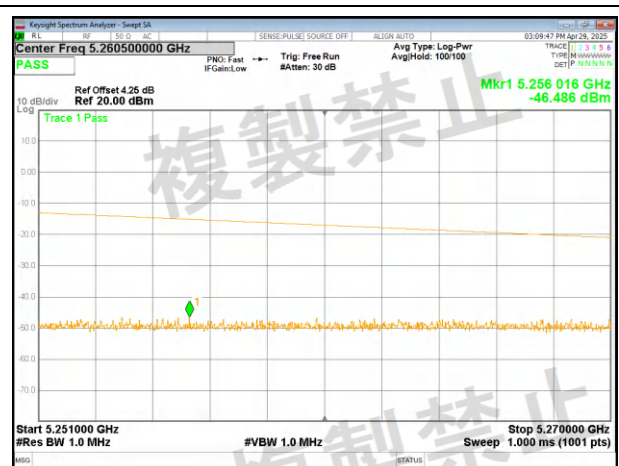
802.11n40 5230 @5.1416GHz-5.15GHz



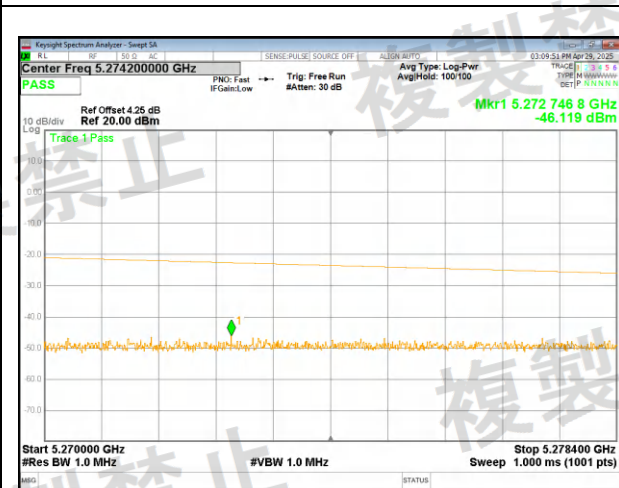
802.11n40 5230 @5.25GHz~5.251GHz



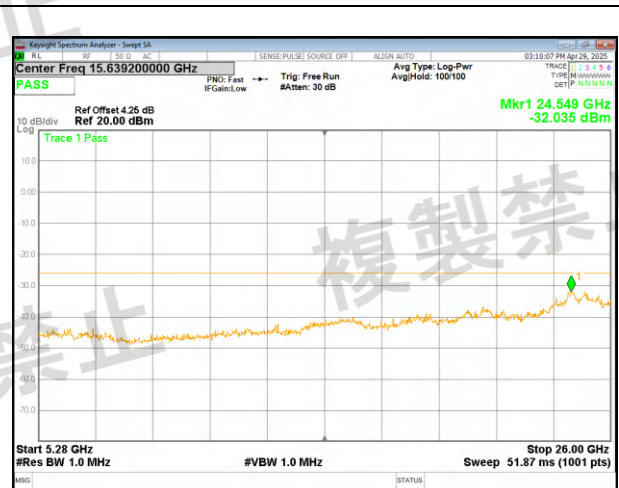
802.11n40 5230 @5.251GHz~5.27GHz



802.11n40 5230 @5.27GHz~5.2784GHz

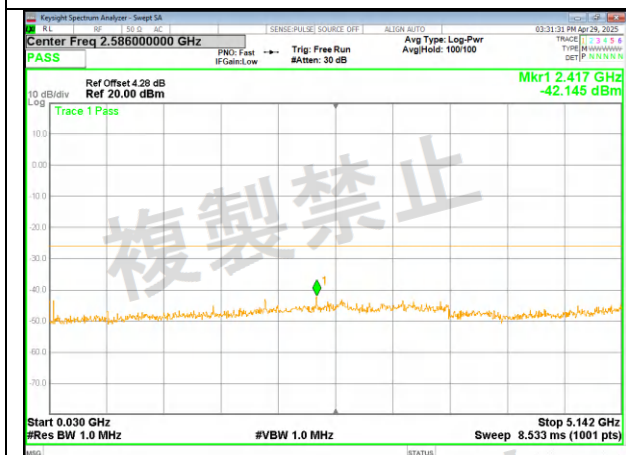


802.11n40 5230 @5.2784GHz~26GHz

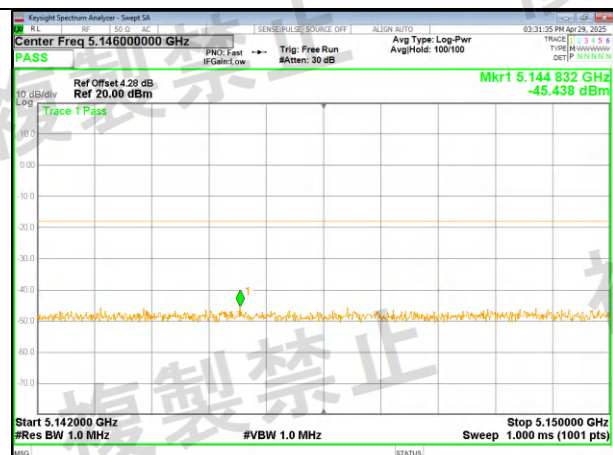




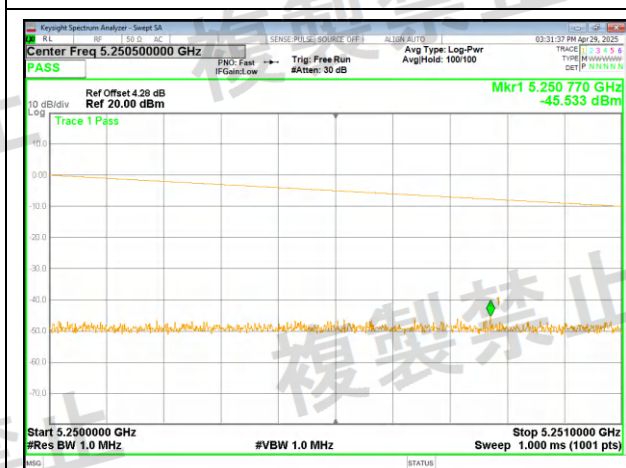
802.11ac20 5180 @30MHz-5.142GHz



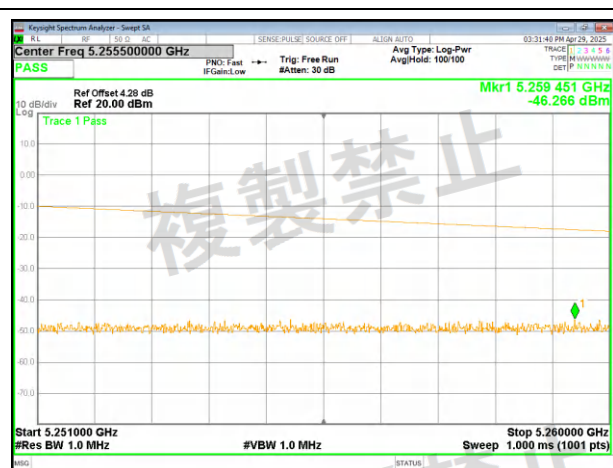
802.11ac20 5180 @5.142GHz-5.15GHz



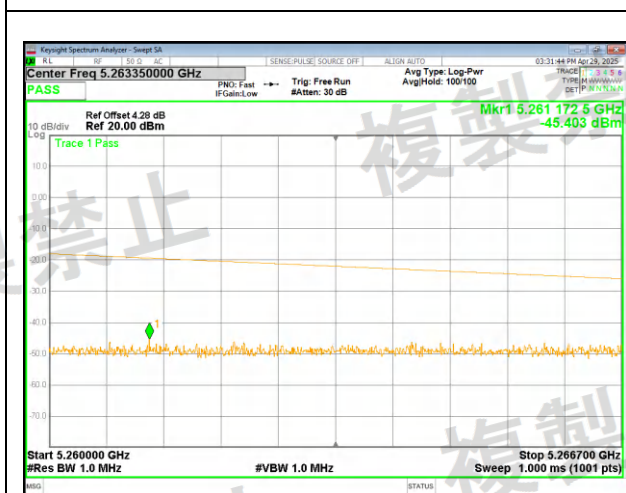
802.11ac20 5180 @5.25GHz~5.251GHz



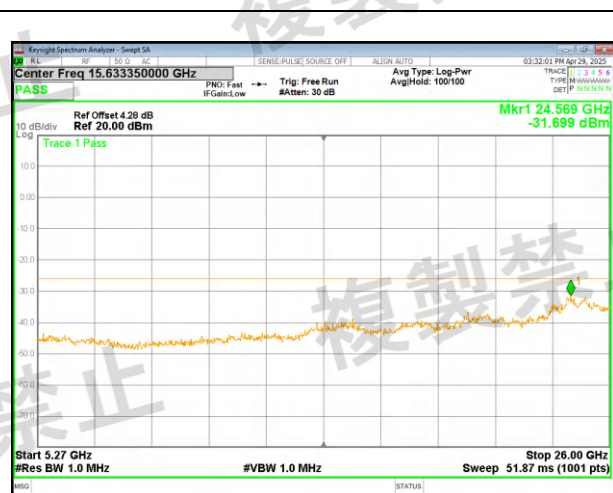
802.11ac20 5180 @5.251GHz~5.26GHz



802.11ac20 5180 @5.26GHz~5.2667GHz

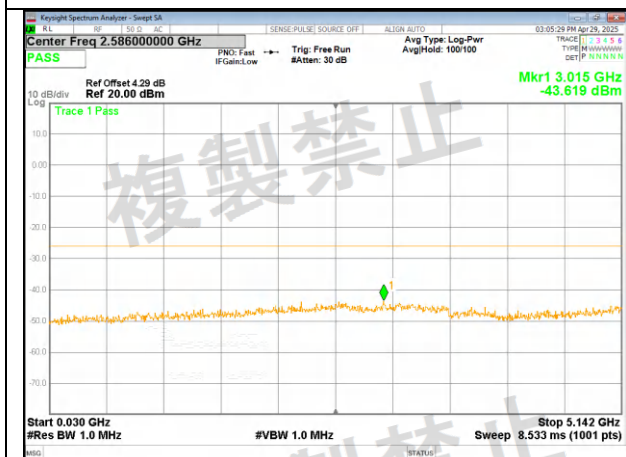


802.11ac20 5180 @5.2667GHz~26GHz

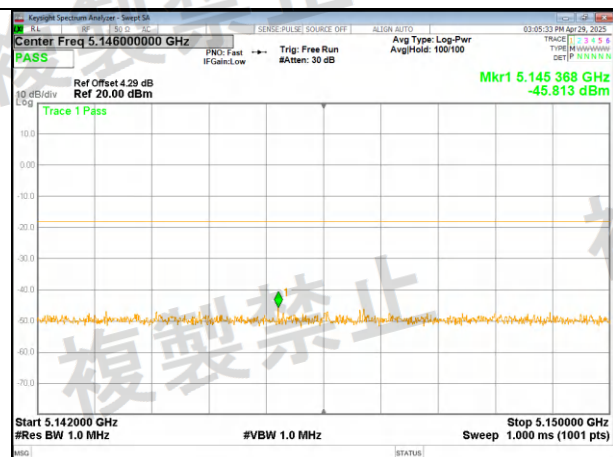




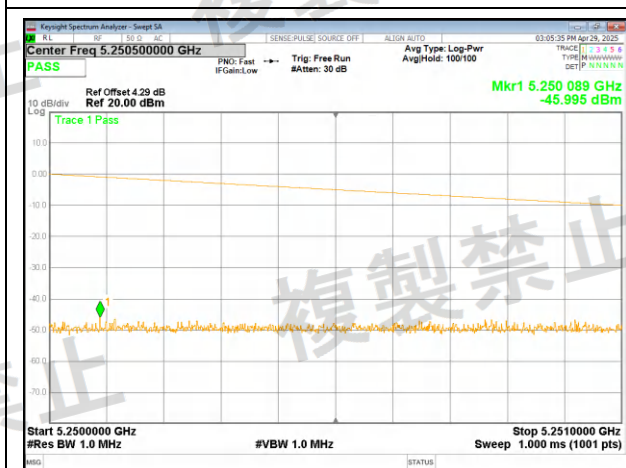
802.11ac20 5200 @30MHz-5.142GHz



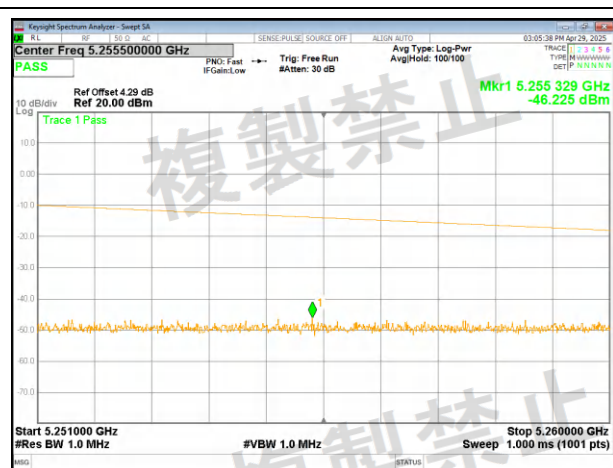
802.11ac20 5200 @5.142GHz-5.15GHz



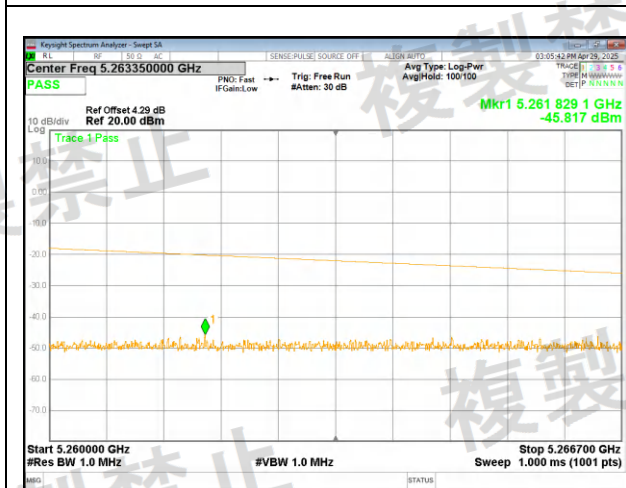
802.11ac20 5200 @5.25GHz~5.251GHz



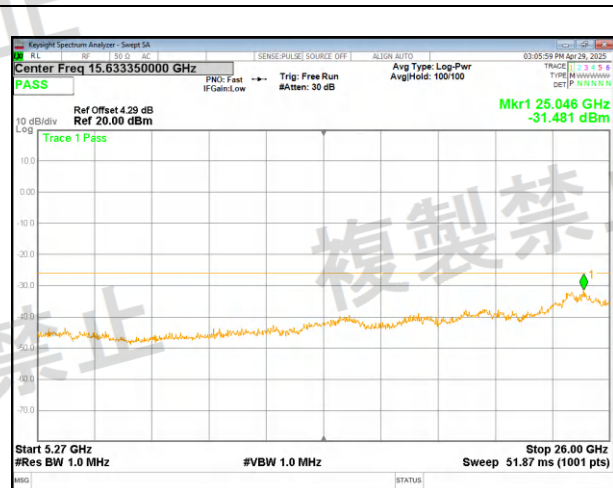
802.11ac20 5200 @5.251GHz~5.26GHz



802.11ac20 5200 @5.26GHz~5.2667GHz

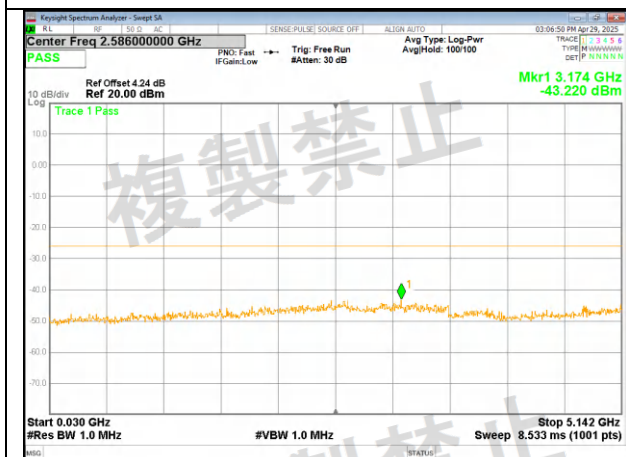


802.11ac20 5200 @5.2667GHz~26GHz

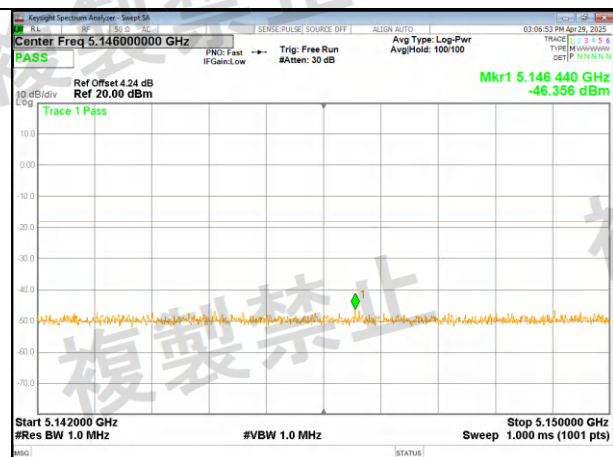




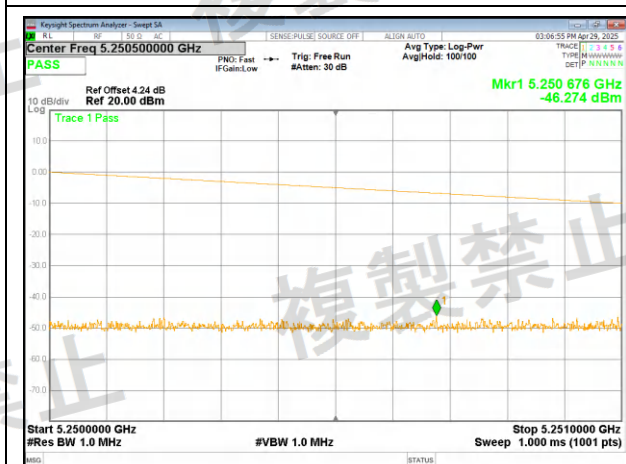
802.11ac20 5240 @30MHz-5.142GHz



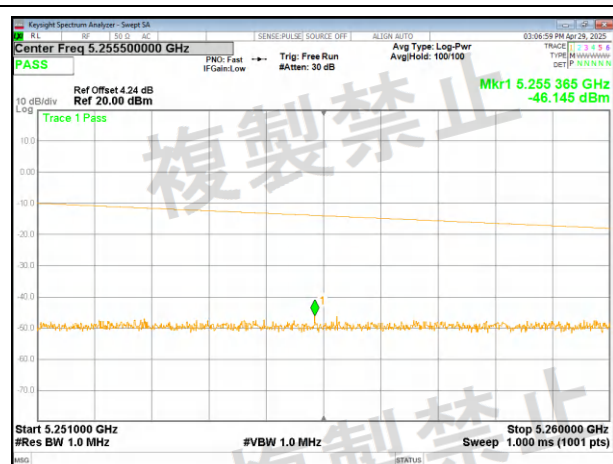
802.11ac20 5240 @5.142GHz-5.15GHz



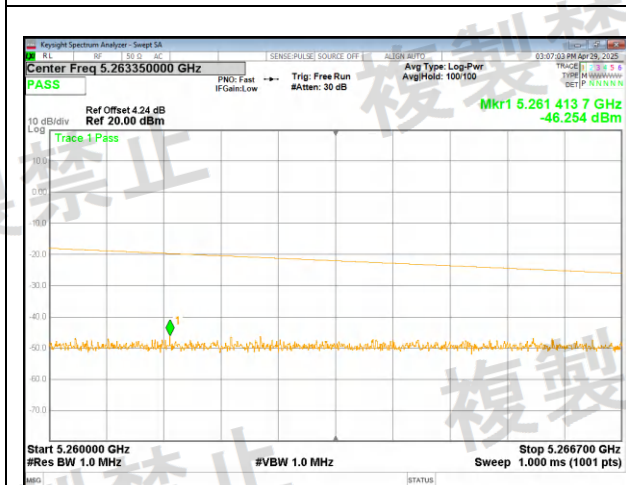
802.11ac20 5240 @5.25GHz~5.251GHz



802.11ac20 5240 @5.251GHz~5.26GHz



802.11ac20 5240 @5.26GHz~5.2667GHz

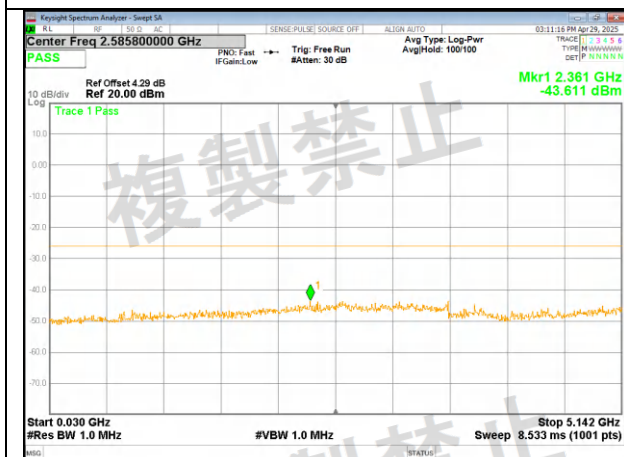


802.11ac20 5240 @5.2667GHz~26GHz

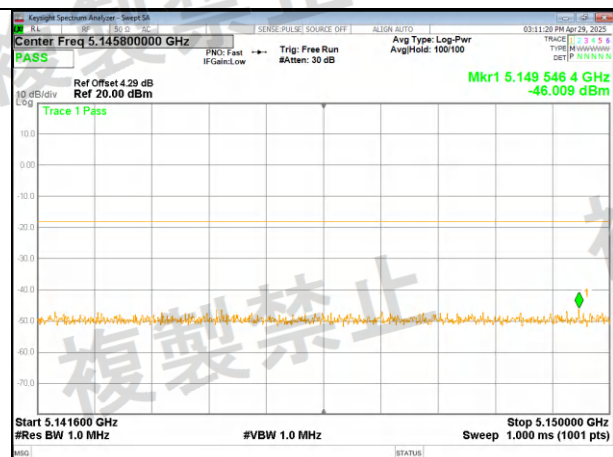




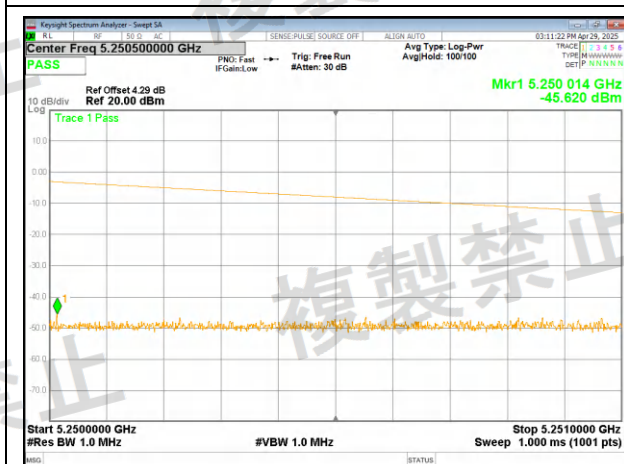
802.11ac40 5190 @30MHz-5.1416GHz



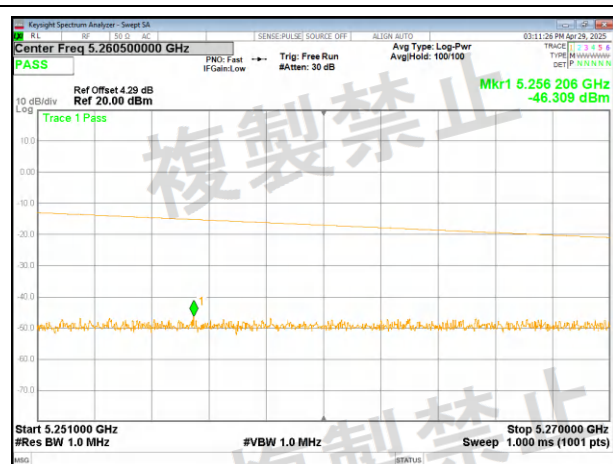
802.11ac40 5190 @5.1416GHz-5.15GHz



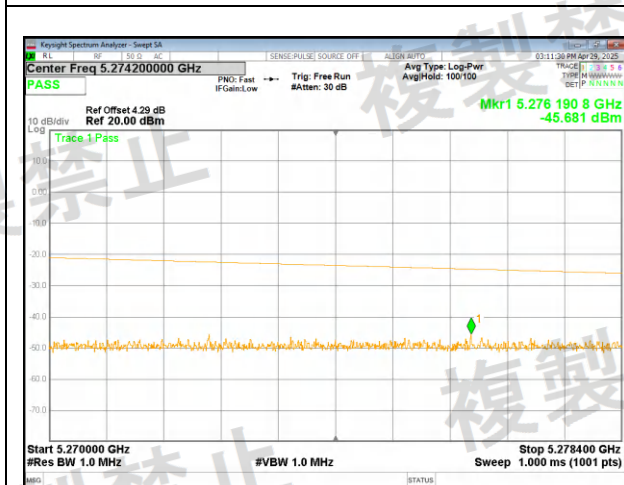
802.11ac40 5190 @5.25GHz~5.251GHz



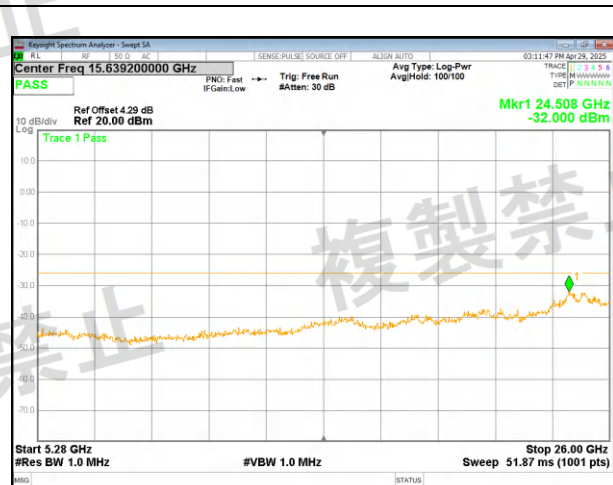
802.11ac40 5190 @5.251GHz~5.27GHz



802.11ac40 5190 @5.27GHz~5.2784GHz

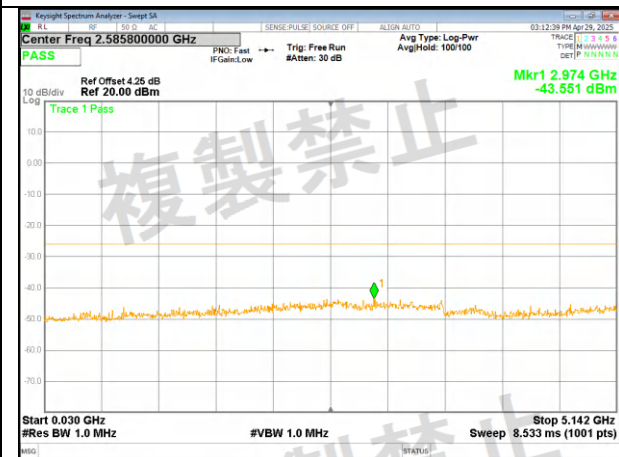


802.11ac40 5190 @5.2784GHz~26GHz

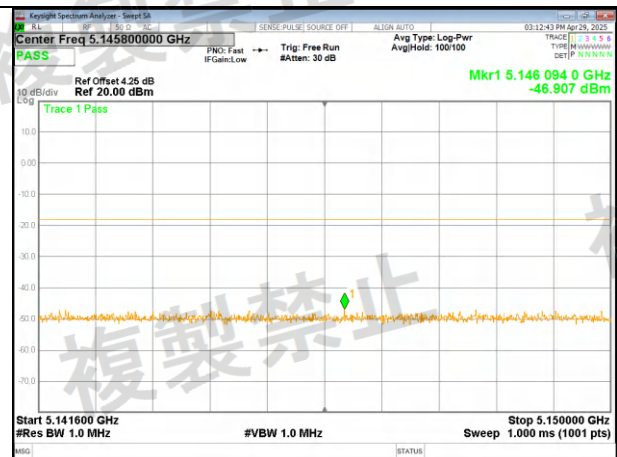




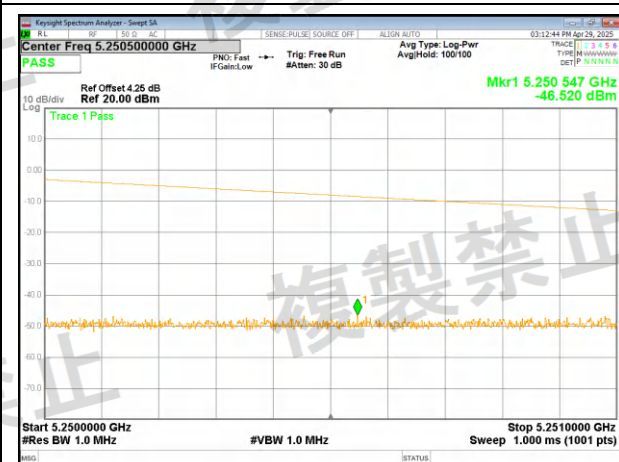
802.11ac40 5230 @30MHz-5.1416GHz



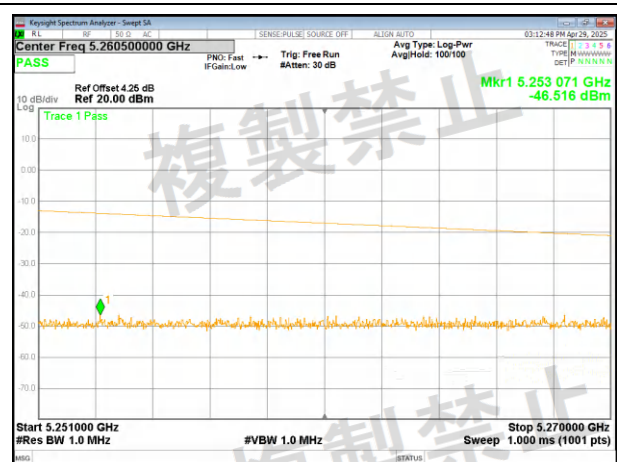
802.11ac40 5230 @5.1416GHz-5.15GHz



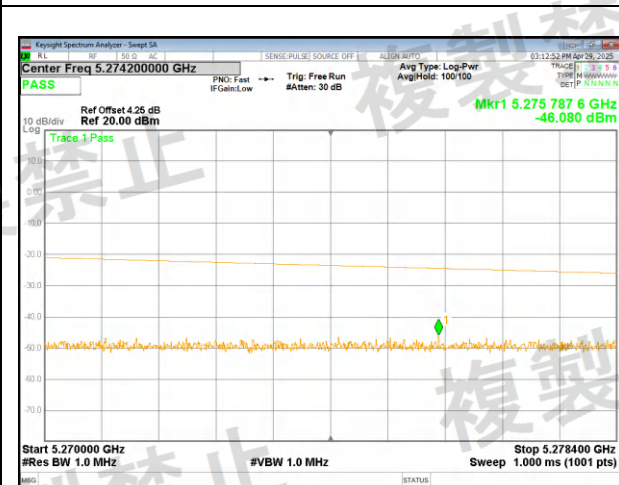
802.11ac40 5230 @5.25GHz~5.251GHz



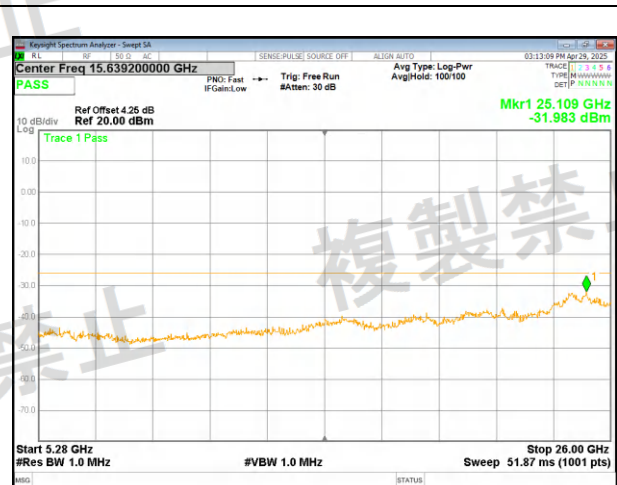
802.11ac40 5230 @5.251GHz~5.27GHz



802.11ac40 5230 @5.27GHz~5.2784GHz

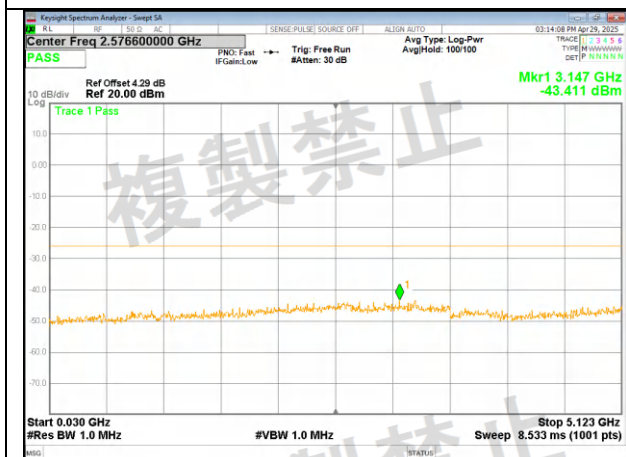


802.11ac40 5230 @5.2784GHz~26GHz

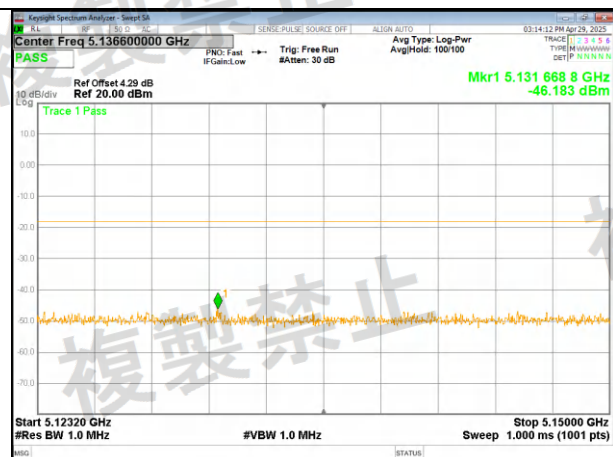




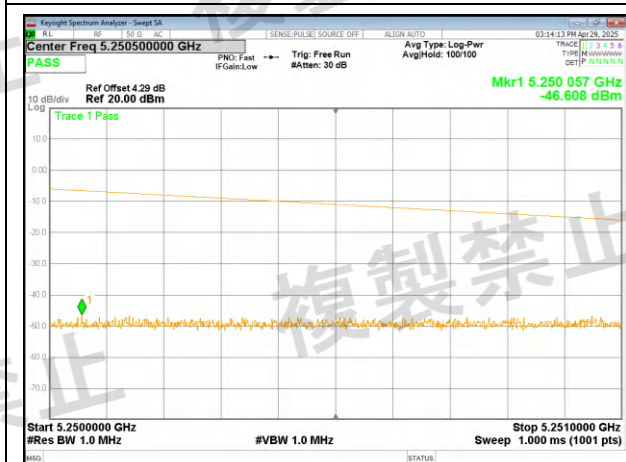
802.11ac80 5210 @30MHz-5.1232GHz



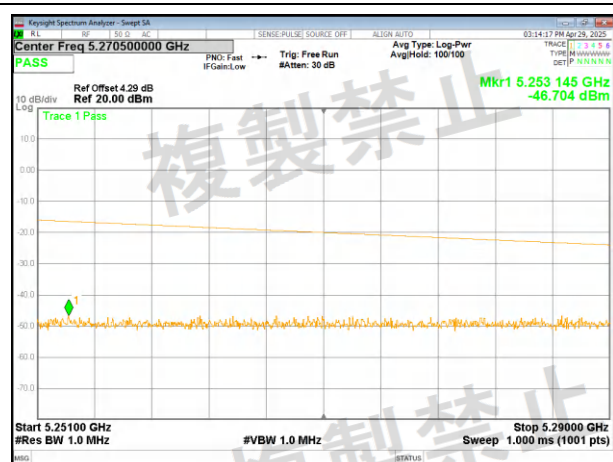
802.11ac80 5210 @5.1232GHz-5.15GHz



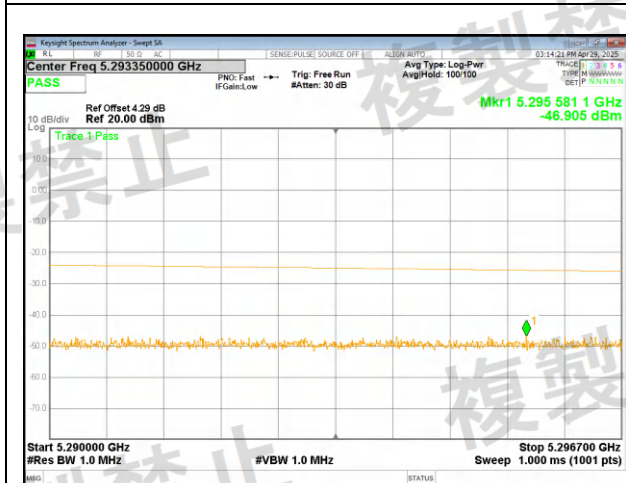
802.11ac80 5210 @5.25GHz~5.251GHz



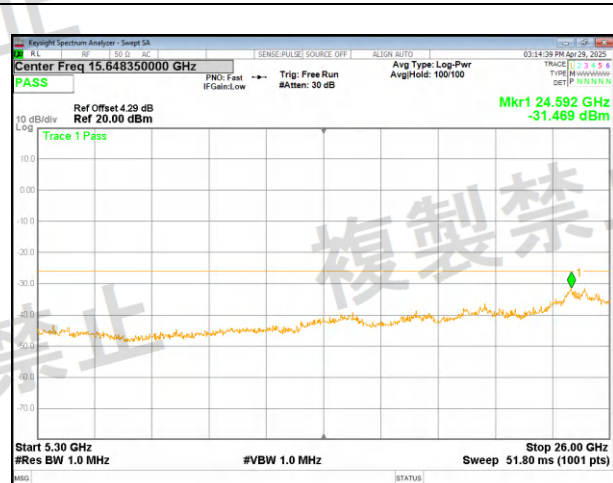
802.11ac80 5210 @5.251GHz~5.29GHz



802.11ac80 5210 @5.29GHz~5.2967GHz



802.11ac80 5210 @5.2967GHz~26GHz

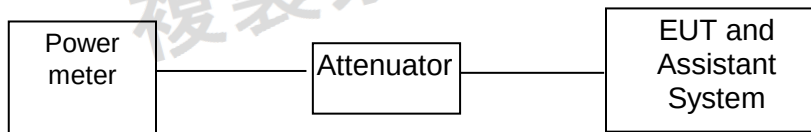


## 4.4 Antenna Power

### 4.4.1 Limits

| 5.2G /5.3G band                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 5.6G band                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| W52<br>20MHz system: $\leq 10\text{mW/MHz}$<br>40MHz system: $\leq 5\text{mW/MHz}$<br>80MHz system: $\leq 2.5\text{mW/MHz}$<br>160MHz system: $\leq 1.25\text{mW/MHz}$<br>W53<br>20MHz system: $\leq 10\text{mW/MHz}$ with TPC<br>$\leq 5\text{mW/MHz}$ without TPC<br>40MHz system: $\leq 5\text{mW/MHz}$ with TPC<br>$\leq 2.5\text{mW/MHz}$ without TPC<br>80MHz system: $\leq 2.5\text{mW/MHz}$ with TPC<br>$\leq 1.25\text{mW/MHz}$ without TPC<br>160MHz system: $\leq 1.25\text{mW/MHz}$ with TPC<br>$\leq 0.625\text{mW/MHz}$ without TPC | 20MHz system: $\leq 50\text{mW/MHz}$ with TPC<br>$\leq 25\text{mW/MHz}$ without TPC<br>40MHz system: $\leq 25\text{mW/MHz}$ with TPC<br>$\leq 12.5\text{mW/MHz}$ without TPC<br>80MHz system: $\leq 12.5\text{mW/MHz}$ with TPC<br>$\leq 6.25\text{mW/MHz}$ without TPC<br>160MHz system: $\leq 6.25\text{mW/MHz}$ with TPC<br>$\leq 3.125\text{mW/MHz}$ without TPC |
| Tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 5.2G/5.3G band: +20%,-80%<br>5.6G band: +50%,-50%                                                                                                                                                                                                                                                                                                                    |

### 4.4.2 Block Diagram of Test Setup



### 4.4.3 Test Procedures

- (1) Configure EUT and assistant system according clause 2.3 .
- (2) Set EUT work in carrier Tx mode as described in clause 2.4
- (3) Connected the EUT's antenna port to the power meter by suitable attenuator.
- (4) Reading power meter value and recorded.

#### 4.4.4 Test Result

| Mode                            | Condition | Frequency (MHz) | Test Result (dBm/MHz) | Test Result (mW/MHz) | Limit (mW/MHz) | Tolerance (%) | Limit (%) |
|---------------------------------|-----------|-----------------|-----------------------|----------------------|----------------|---------------|-----------|
| 11a                             | nominal   | 5180            | 5.81                  | 3.81                 | ≤10            | -4.73         | -80%~+20% |
|                                 |           | 5200            | 5.86                  | 3.85                 | ≤10            | -3.63         | -80%~+20% |
|                                 |           | 5240            | 5.56                  | 3.60                 | ≤10            | -10.06        | -80%~+20% |
| 11n 20                          | nominal   | 5180            | 5.81                  | 3.81                 | ≤10            | -4.73         | -80%~+20% |
|                                 |           | 5200            | 5.70                  | 3.72                 | ≤10            | -7.12         | -80%~+20% |
|                                 |           | 5240            | 5.65                  | 3.67                 | ≤10            | -8.18         | -80%~+20% |
| 11n 40                          | nominal   | 5190            | 2.96                  | 1.98                 | ≤5             | -1.15         | -80%~+20% |
|                                 |           | 5230            | 2.91                  | 1.95                 | ≤5             | -2.28         | -80%~+20% |
| 11ac 20                         | nominal   | 5180            | 5.86                  | 3.85                 | ≤10            | -3.63         | -80%~+20% |
|                                 |           | 5200            | 5.75                  | 3.76                 | ≤10            | -6.04         | -80%~+20% |
|                                 |           | 5240            | 5.71                  | 3.72                 | ≤10            | -6.90         | -80%~+20% |
| 11ac 40                         | nominal   | 5190            | 2.91                  | 1.95                 | ≤5             | -2.28         | -80%~+20% |
|                                 |           | 5230            | 2.89                  | 1.95                 | ≤5             | -2.73         | -80%~+20% |
| 11ac 80                         | nominal   | 5210            | 0.42                  | 1.10                 | ≤2.5           | 10.00         | -80%~+20% |
| Rated Power:20MHz OB: 4.0mW/MHz |           |                 |                       |                      |                |               |           |
| Rated Power:40MHz OB: 2.0mW/MHz |           |                 |                       |                      |                |               |           |
| Rated Power:80MHz OB: 1.0mW/MHz |           |                 |                       |                      |                |               |           |
| Conclusion: PASS                |           |                 |                       |                      |                |               |           |

#### EIPR POWER

| Mode       | Condition | Frequency (MHz) | Power (dBm/MHz) | Antenna Gain (dBi) | EIRP (dBm/MHz) | EIRP (mW/MHz) | Limit (mW/MHz) |
|------------|-----------|-----------------|-----------------|--------------------|----------------|---------------|----------------|
| 11a        | nominal   | 5180            | 5.81            | 2.02               | 7.83           | 6.07          | ≤10            |
|            |           | 5200            | 5.86            | 2.02               | 7.88           | 6.14          | ≤10            |
|            |           | 5240            | 5.56            | 2.02               | 7.58           | 5.73          | ≤10            |
| 11n HT20   | nominal   | 5180            | 5.81            | 2.02               | 7.83           | 6.07          | ≤10            |
|            |           | 5200            | 5.70            | 2.02               | 7.72           | 5.92          | ≤10            |
|            |           | 5240            | 5.65            | 2.02               | 7.67           | 5.85          | ≤10            |
| 11n HT40   | nominal   | 5190            | 2.96            | 2.02               | 4.98           | 3.15          | ≤5             |
|            |           | 5230            | 2.91            | 2.02               | 4.93           | 3.11          | ≤5             |
| 11ac VHT20 | nominal   | 5180            | 5.86            | 2.02               | 7.88           | 6.14          | ≤10            |
|            |           | 5200            | 5.75            | 2.02               | 7.77           | 5.98          | ≤10            |
|            |           | 5240            | 5.71            | 2.02               | 7.73           | 5.93          | ≤10            |
| 11ac VHT40 | nominal   | 5190            | 2.91            | 2.02               | 4.93           | 3.11          | ≤5             |
|            |           | 5230            | 2.89            | 2.02               | 4.91           | 3.10          | ≤5             |
| 11ac VHT80 | nominal   | 5210            | 0.42            | 2.02               | 2.44           | 1.75          | ≤2.5           |

## 4.5 Adjacent channel leakage power

### 4.5.1 Limits

|                                |                                                                |                                                                 |                                                                 |                                                                 |                                                                 |
|--------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|
| Adjacent Channel Emitted Power | $F_c \pm 20\text{MHz}$<br>$\pm 9\text{MHz BW} : -25\text{dBc}$ | $F_c \pm 20\text{MHz}$<br>$\pm 10\text{MHz BW} : -25\text{dBc}$ | $F_c \pm 40\text{MHz}$<br>$\pm 20\text{MHz BW} : -25\text{dBc}$ | $F_c \pm 80\text{MHz}$<br>$\pm 40\text{MHz BW} : -25\text{dBc}$ | $F_c \pm 80\text{MHz}$<br>$\pm 40\text{MHz BW} : -25\text{dBc}$ |
|                                | $F_c \pm 40\text{MHz}$<br>$\pm 9\text{MHz BW} : -40\text{dBc}$ | $F_c \pm 40\text{MHz}$<br>$\pm 10\text{MHz BW} : -40\text{dBc}$ | $F_c \pm 80\text{MHz}$<br>$\pm 20\text{MHz BW} : -40\text{dBc}$ |                                                                 |                                                                 |

### 4.5.2 Block Diagram of Test Setup



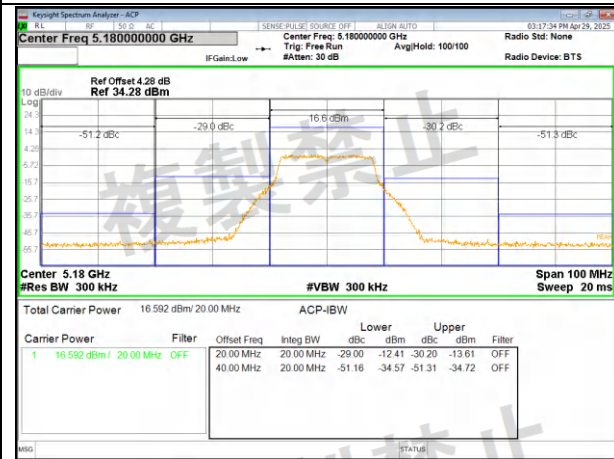
### 4.5.3 Test Procedures

Table No.45 related to Article 2 Paragraph 1 of Item 19-3 of Ordinance Concerning Technical Regulations Conformity Certification etc. of Specified Radio Equipment.

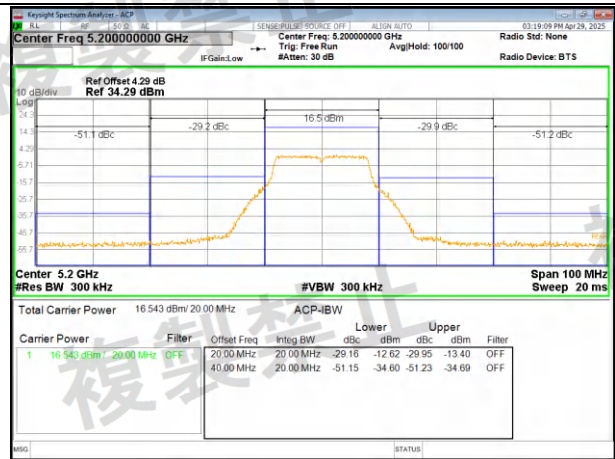
### 4.5.4 Test Result

| Mode             | CH   | Frequency (MHz) | Bandwidth (MHz) | Lower (dBc) | Upper (dBc) | Limit (dBc) |
|------------------|------|-----------------|-----------------|-------------|-------------|-------------|
| 11a              | CH36 | 5180            | 20              | -29.00      | -30.20      | ≤-25        |
|                  |      |                 | 40              | -51.16      | -51.31      | ≤-40        |
|                  | CH40 | 5200            | 20              | -29.16      | -29.95      | ≤-25        |
|                  |      |                 | 40              | -51.15      | -51.23      | ≤-40        |
|                  | CH48 | 5240            | 20              | -28.89      | -30.44      | ≤-25        |
|                  |      |                 | 40              | -50.9       | -51.04      | ≤-40        |
| 11n20            | CH36 | 5180            | 20              | -31.84      | -32.73      | ≤-25        |
|                  |      |                 | 40              | -51.40      | -51.67      | ≤-40        |
|                  | CH40 | 5200            | 20              | -32.34      | -32.83      | ≤-25        |
|                  |      |                 | 40              | -51.59      | -51.57      | ≤-40        |
|                  | CH48 | 5240            | 20              | -31.73      | -32.81      | ≤-25        |
|                  |      |                 | 40              | -51.40      | -51.32      | ≤-40        |
| 11n40            | CH38 | 5190            | 40              | -34.10      | -34.52      | ≤-25        |
|                  |      |                 | 80              | -48.14      | -48.84      | ≤-40        |
|                  | CH46 | 5230            | 40              | -33.94      | -35.00      | ≤-25        |
|                  |      |                 | 80              | -47.95      | -48.58      | ≤-40        |
| 11ac20           | CH36 | 5180            | 20              | -30.41      | -30.84      | ≤-25        |
|                  |      |                 | 40              | -51.30      | -51.46      | ≤-40        |
|                  | CH40 | 5200            | 20              | -30.34      | -31.22      | ≤-25        |
|                  |      |                 | 40              | -51.21      | -51.22      | ≤-40        |
|                  | CH48 | 5240            | 20              | -30.33      | -31.25      | ≤-25        |
|                  |      |                 | 40              | -50.89      | -50.97      | ≤-40        |
| 11ac40           | CH38 | 5190            | 40              | -33.80      | -35.00      | ≤-25        |
|                  |      |                 | 80              | -47.99      | -48.64      | ≤-40        |
|                  | CH46 | 5230            | 40              | -33.95      | -35.03      | ≤-25        |
|                  |      |                 | 80              | -47.87      | -48.48      | ≤-40        |
| 11ac80           | CH42 | 5210            | 80              | -37.77      | -38.72      | ≤-25        |
| Conclusion: PASS |      |                 |                 |             |             |             |

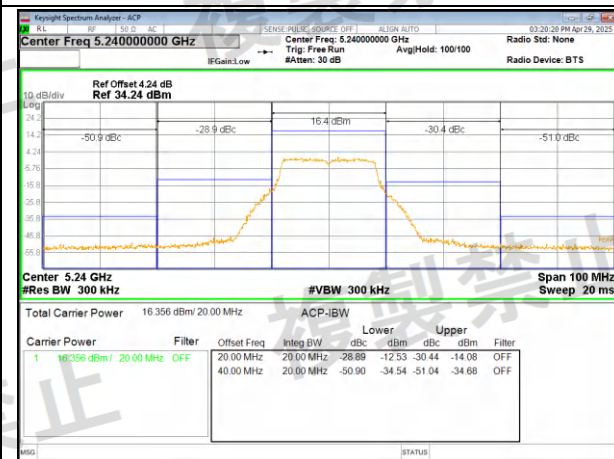
802.11a 5180(MHz)



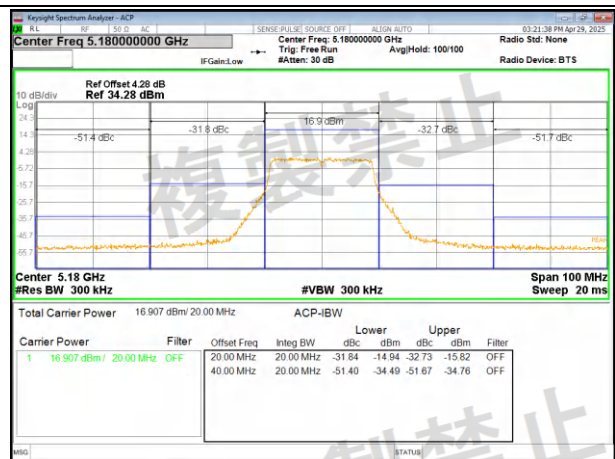
802.11a 5200(MHz)



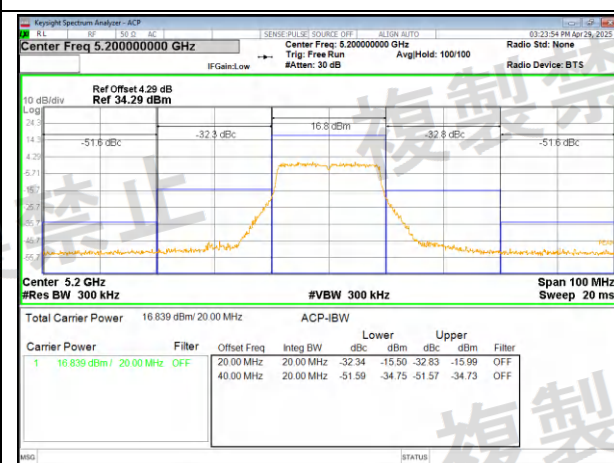
802.11a 5240(MHz)



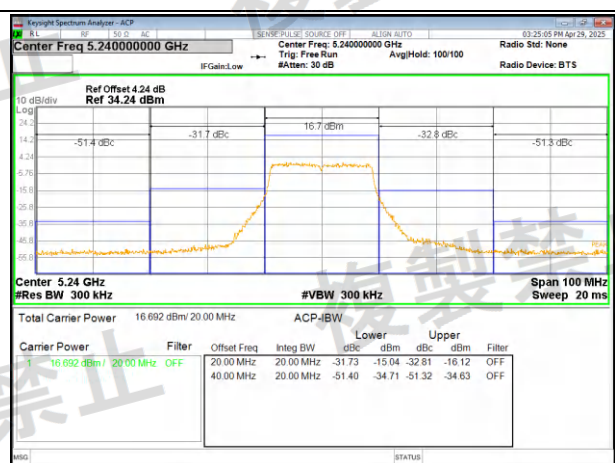
802.11n20 5180(MHz)



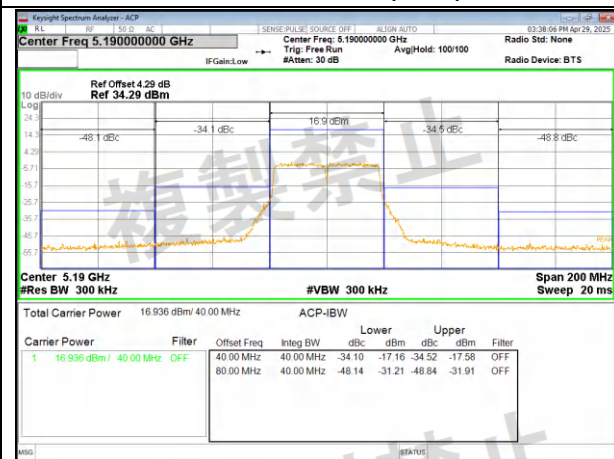
802.11n20 5200(MHz)



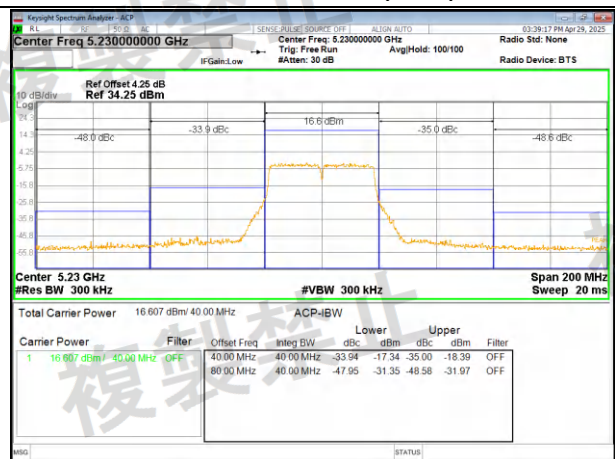
802.11n20 5240(MHz)



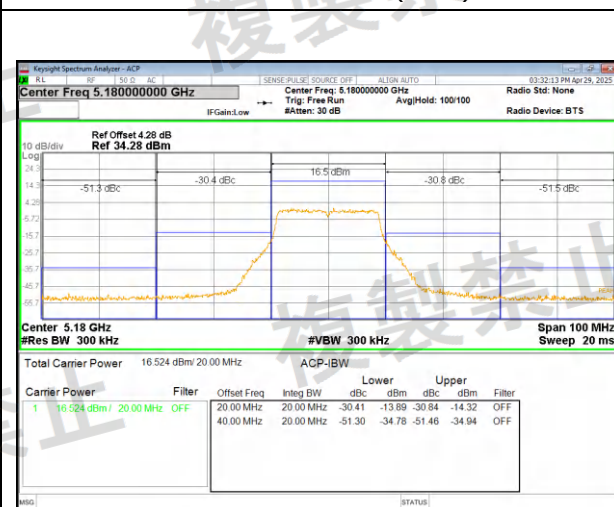
802.11n40 5190(MHz)



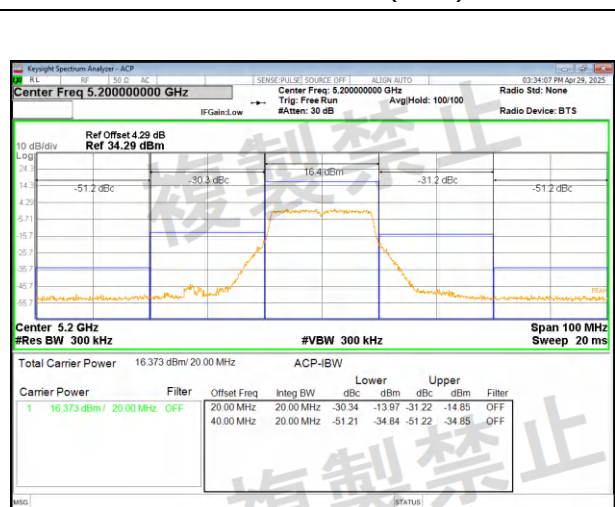
802.11n40 5230(MHz)



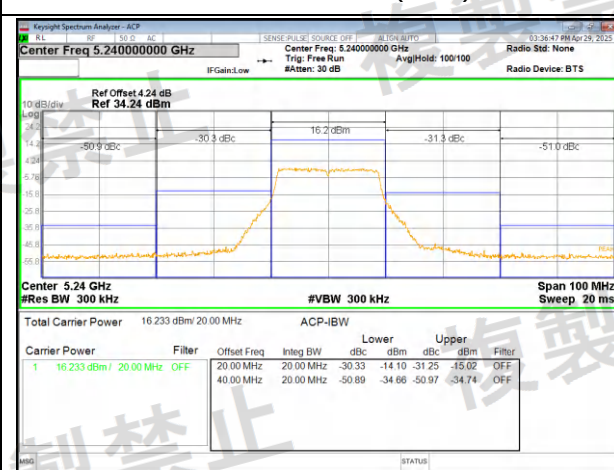
802.11ac20 5180(MHz)



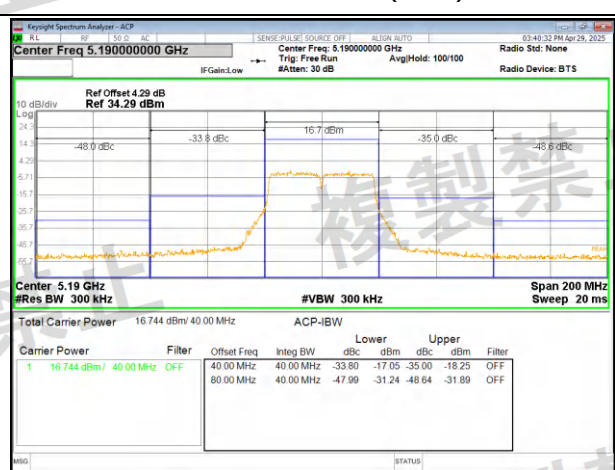
802.11ac20 5200(MHz)

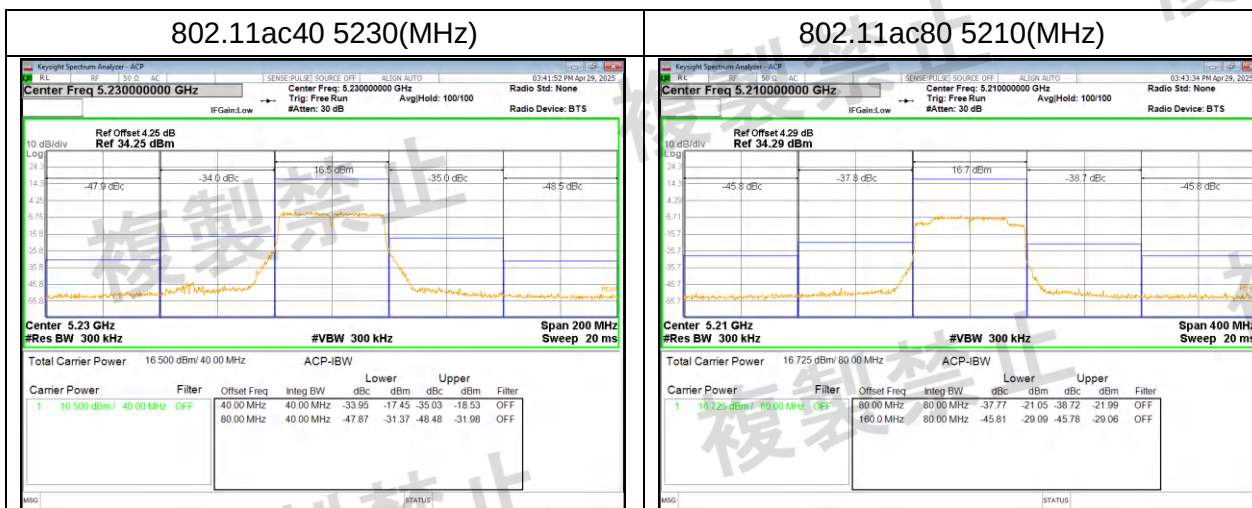


802.11ac20 5240(MHz)



802.11ac40 5190(MHz)





## 4.6 Transmission burst length

### 4.6.1 Limit

8ms or less

### 4.6.2 Block Diagram of Test Setup



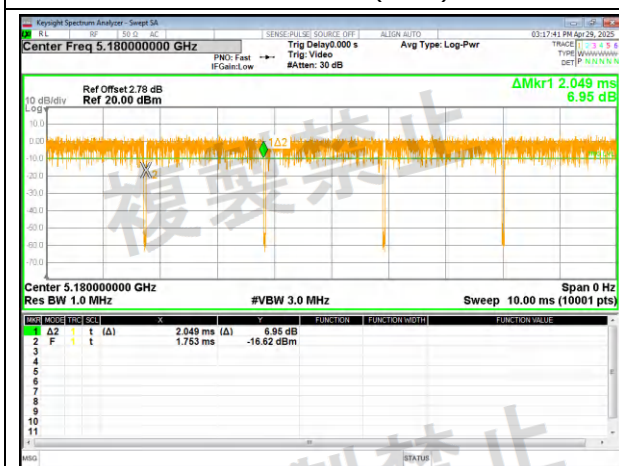
### 4.6.3 Test Procedures

Table No.45 related to Article 2 Paragraph 1 of Item 19-3 of Ordinance Concerning Technical Regulations Conformity Certification etc. of Specified Radio Equipment.

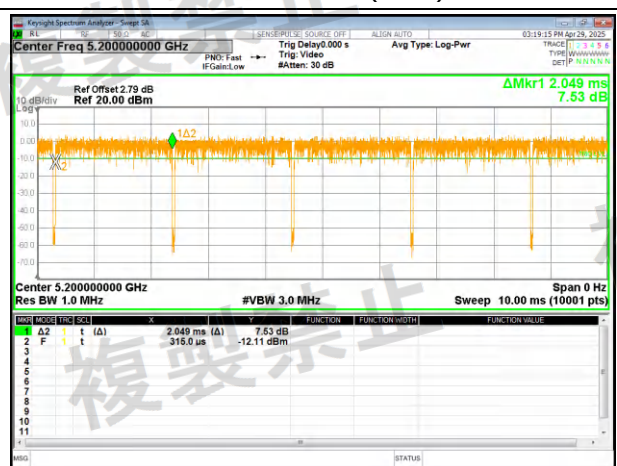
### 4.6.4 Test Result

| Mode             | Condition | CH   | Frequency<br>(MHz) | Test Result<br>(ms) | Limit<br>(ms) |
|------------------|-----------|------|--------------------|---------------------|---------------|
| 11a              | nominal   | CH36 | 5180               | 2.049               | ≤8.0          |
|                  |           | CH40 | 5200               | 2.049               | ≤8.0          |
|                  |           | CH48 | 5240               | 2.048               | ≤8.0          |
| 11n20            | nominal   | CH36 | 5180               | 0.505               | ≤8.0          |
|                  |           | CH40 | 5200               | 0.505               | ≤8.0          |
|                  |           | CH48 | 5240               | 0.504               | ≤8.0          |
| 11n40            | nominal   | CH38 | 5190               | 0.488               | ≤8.0          |
|                  |           | CH46 | 5230               | 0.488               | ≤8.0          |
| 11ac20           | nominal   | CH36 | 5180               | 0.980               | ≤8.0          |
|                  |           | CH40 | 5200               | 0.981               | ≤8.0          |
|                  |           | CH48 | 5240               | 0.981               | ≤8.0          |
| 11ac40           | nominal   | CH38 | 5190               | 0.493               | ≤8.0          |
|                  |           | CH46 | 5230               | 0.493               | ≤8.0          |
| 11ac80           | nominal   | CH42 | 5210               | 0.253               | ≤8.0          |
| Conclusion: PASS |           |      |                    |                     |               |

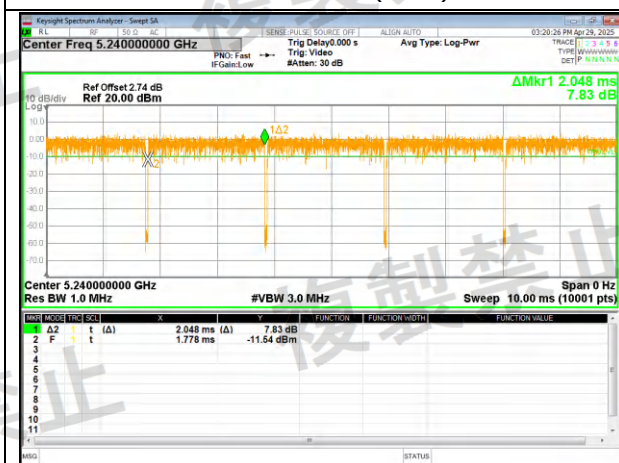
802.11a 5180(MHz)



802.11a 5200(MHz)



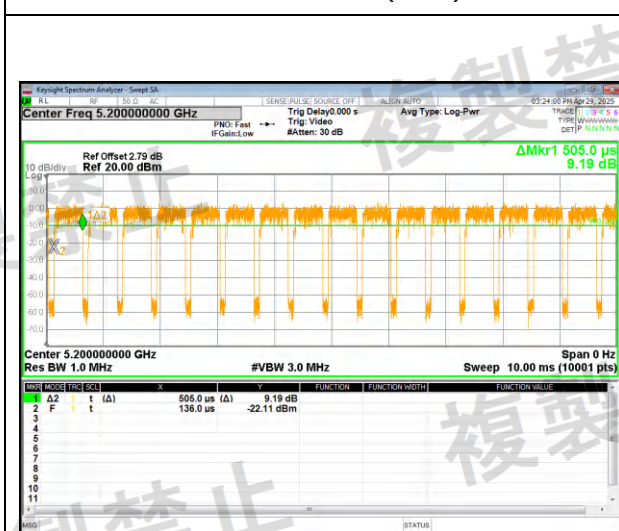
802.11a 5240(MHz)



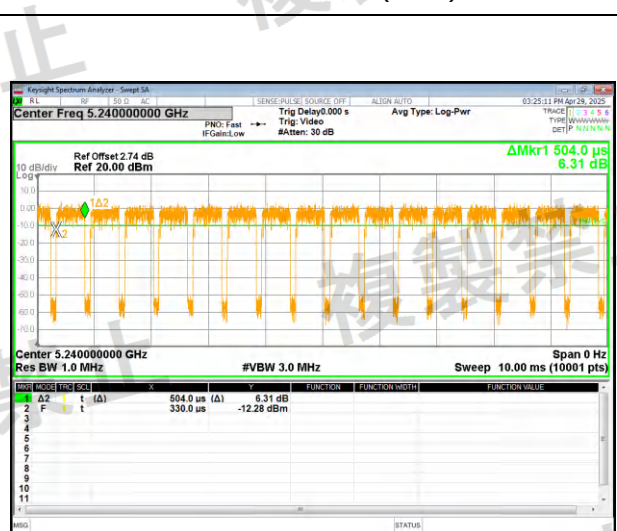
802.11n20 5180(MHz)



802.11n20 5200(MHz)

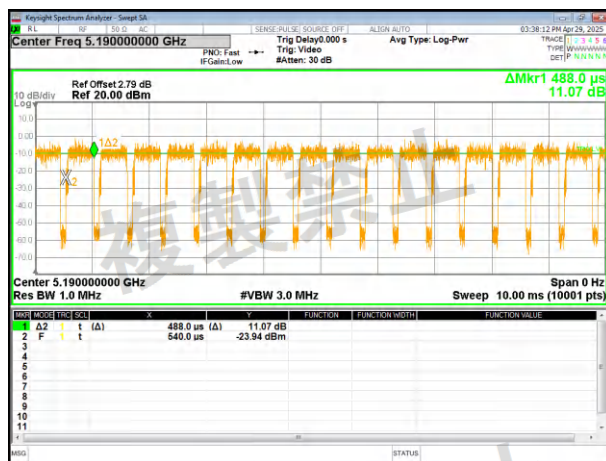


802.11n20 5240(MHz)

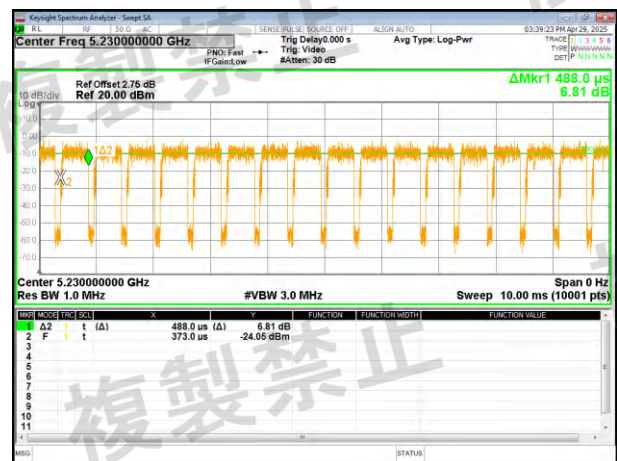




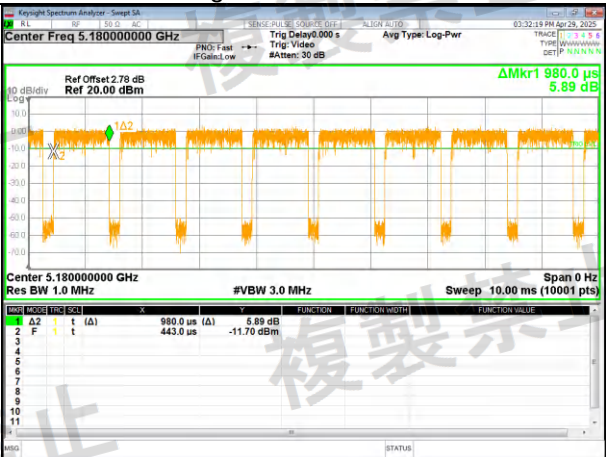
802.11n40 5190(MHz)



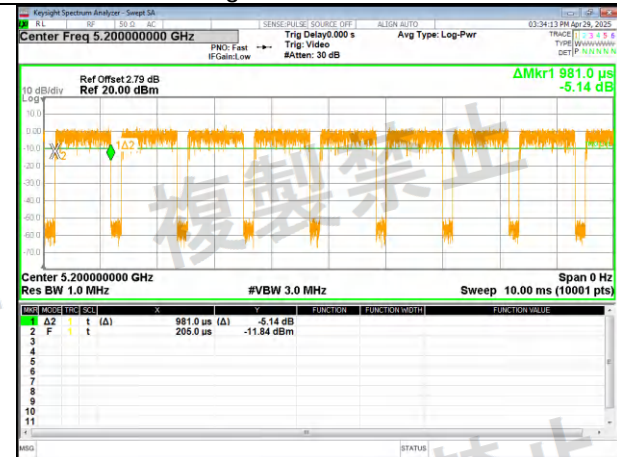
802.11n40 5230(MHz)



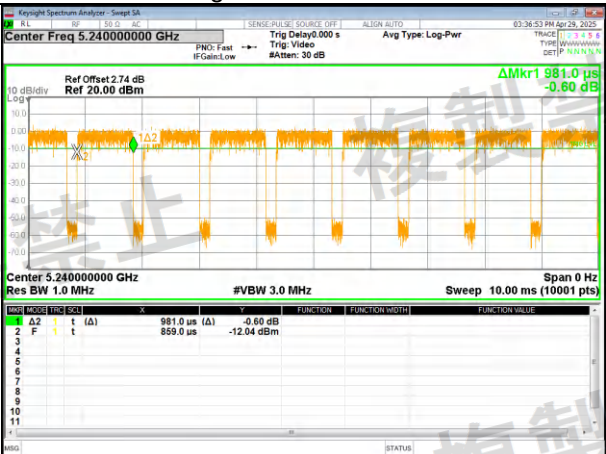
Burst Length NVNT ac20 5180MHz



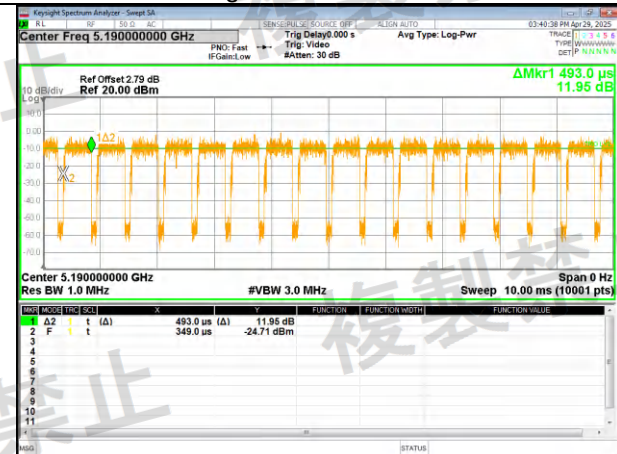
Burst Length NVNT ac20 5200MHz

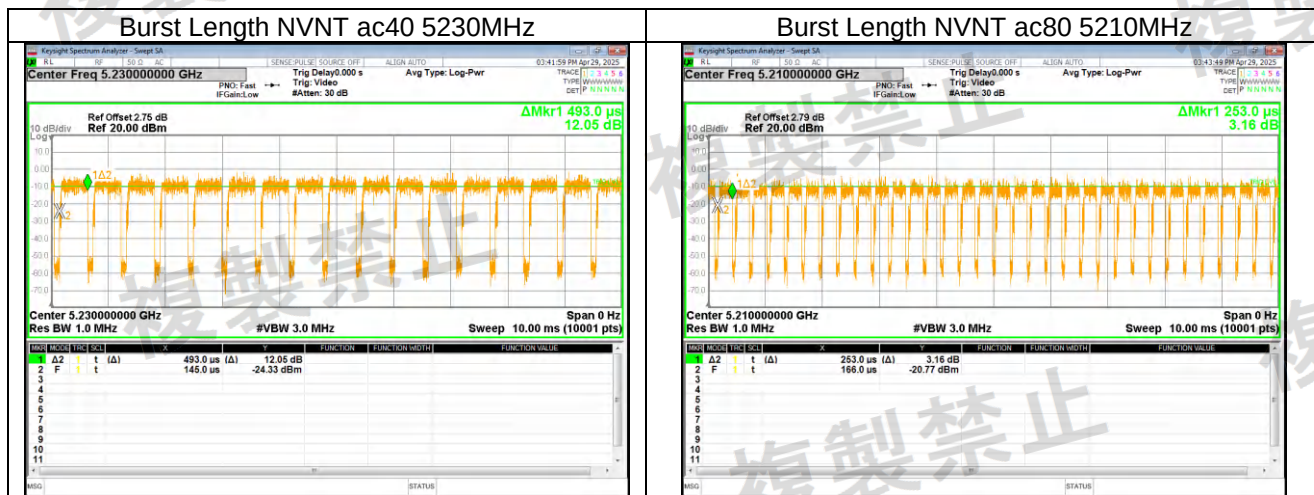


Burst Length NVNT ac20 5240MHz



Burst Length NVNT ac40 5190MHz



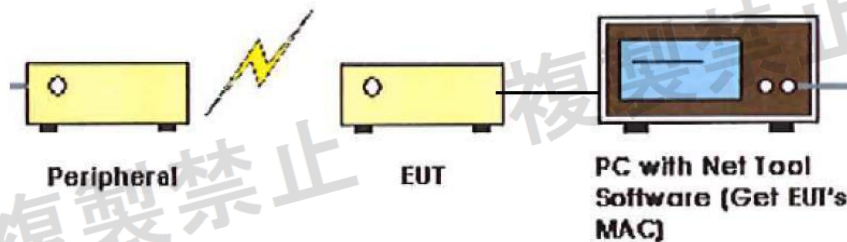


## 4.7 Carrier sense function

### 4.7.1 Limit

The radio equipment connected to telecommunication circuit equipment shall be equipped with a device which detects emissions radiated from another radio station and prevents interference, or a device which prevents interference by operation on a receive signal and a signal for diffusion for signal level detection.

### 4.7.2 Block diagram of test setup



### 4.7.3 Test Procedure

1. Set the EUT link with a peripheral.
2. Set a signal generator (simulate a radio device which co-exists with EUT) at same frequency channel, with a proper signal level (exceeding 100mV/m) output to act as interference signal.
3. Monitor the signal transmission between the EUT and peripheral, while the interference signal presents. The EUT would stop transmitting once it detects interference signal over the air, then record it pass, otherwise, the result is fail.

### 4.7.4 Test result

| Mode       | Frequency (MHz) | Interference power | Result  |
|------------|-----------------|--------------------|---------|
| 802.11a    | 5180            | -7dBm              | CONFORM |
|            | 5200            | -7dBm              | CONFORM |
|            | 5240            | -7dBm              | CONFORM |
| 802.11n20  | 5180            | -7dBm              | CONFORM |
|            | 5200            | -7dBm              | CONFORM |
|            | 5240            | -7dBm              | CONFORM |
| 802.11n40  | 5190            | -7dBm              | CONFORM |
|            | 5230            | -7dBm              | CONFORM |
| 802.11ac20 | 5180            | -7dBm              | CONFORM |
|            | 5200            | -7dBm              | CONFORM |
|            | 5240            | -7dBm              | CONFORM |
| 802.11ac40 | 5190            | -7dBm              | CONFORM |
|            | 5230            | -7dBm              | CONFORM |
| 802.11ac80 | 5210            | -7dBm              | CONFORM |

## 4.8 Secondary Radiated Emissions (Conducted)

### 4.8.1 Limits

| Item                 | Limit                                                 |
|----------------------|-------------------------------------------------------|
| Rx Spurious Emission | $\leq 4\text{nW}(-54\text{dBm}) (f < 1\text{GHz})$    |
|                      | $\leq 20\text{nW}(-47\text{dBm})(1\text{GHz} \leq f)$ |

### 4.8.2 Block Diagram of Test Setup



### 4.8.3 Test Procedures

1. EUT has the continuous reception mode and fixed only one channelize.
2. SA set **RBW**: 100kHz and **VBW**: 100kHz. Then adjust to start frequency 30MHz and stop frequency 1000MHz. Search to mark peak reading value + cable loss shall be less than 4nW.
3. SA set **RBW**: 1MHz and **VBW**: 1MHz. Then adjust to start frequency 1000MHz and stop frequency 13000MHz. Search to mark peak reading value + cable loss shall be less than 20nW.
4. If power level of lower emissions are more than 1/10 of limit(0.4nW for  $f < 1\text{GHz}$ , 2nW for  $f \geq 1\text{GHz}$ ), all those are to be indicated in the 2nd and 3rd lines. If other values exceed 1 / 10 of the limit or less, no indication is required.

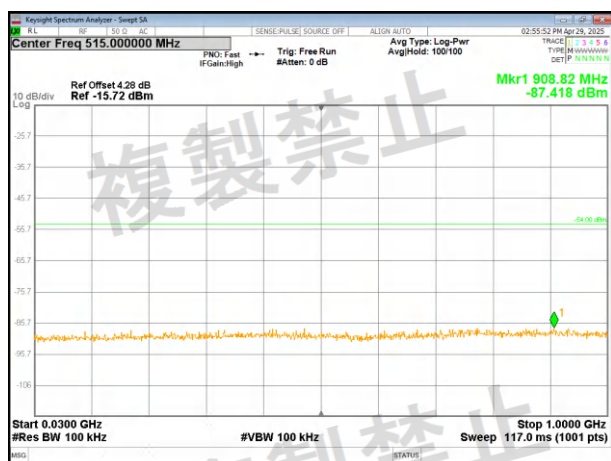


#### 4.8.4 Test Result

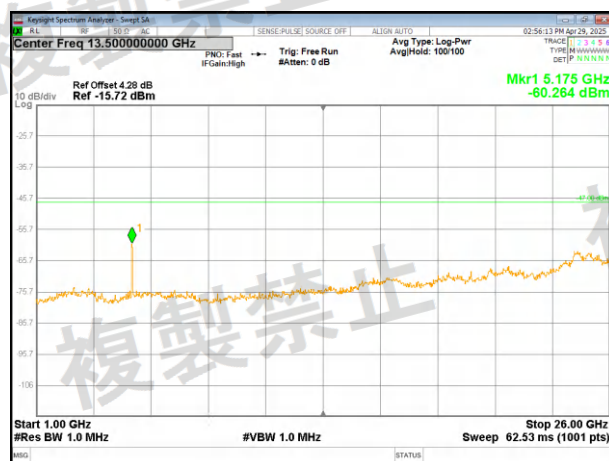
| Mode | Frequency (MHz) | Range (MHz) | Emission Frequency (MHz) | Max Value (dBm) | Max Value (nW) | Limit (nW) | Verdict |
|------|-----------------|-------------|--------------------------|-----------------|----------------|------------|---------|
| a    | 5180            | 30-1000     | 908.82                   | -87.418         | 0.002          | 4          | Pass    |
| a    | 5180            | 1000-26000  | 5175                     | -60.264         | 0.941          | 20         | Pass    |
| a    | 5200            | 30-1000     | 788.54                   | -86.939         | 0.002          | 4          | Pass    |
| a    | 5200            | 1000-26000  | 24475                    | -62.556         | 0.555          | 20         | Pass    |
| a    | 5240            | 30-1000     | 451.95                   | -86.699         | 0.002          | 4          | Pass    |
| a    | 5240            | 1000-26000  | 5175                     | -61.961         | 0.637          | 20         | Pass    |
| n20  | 5180            | 30-1000     | 900.09                   | -86.667         | 0.002          | 4          | Pass    |
| n20  | 5180            | 1000-26000  | 5175                     | -61.253         | 0.749          | 20         | Pass    |
| n20  | 5200            | 30-1000     | 837.04                   | -86.854         | 0.002          | 4          | Pass    |
| n20  | 5200            | 1000-26000  | 24500                    | -61.837         | 0.655          | 20         | Pass    |
| n20  | 5240            | 30-1000     | 901.06                   | -86.998         | 0.002          | 4          | Pass    |
| n20  | 5240            | 1000-26000  | 5175                     | -60.179         | 0.960          | 20         | Pass    |
| n40  | 5190            | 30-1000     | 901.06                   | -86.496         | 0.002          | 4          | Pass    |
| n40  | 5190            | 1000-26000  | 5175                     | -59.387         | 1.152          | 20         | Pass    |
| n40  | 5230            | 30-1000     | 871.96                   | -86.338         | 0.002          | 4          | Pass    |
| n40  | 5230            | 1000-26000  | 5200                     | -60.1           | 0.977          | 20         | Pass    |
| ac20 | 5180            | 30-1000     | 939.86                   | -87.224         | 0.002          | 4          | Pass    |
| ac20 | 5180            | 1000-26000  | 5175                     | -57.708         | 1.695          | 20         | Pass    |
| ac20 | 5200            | 30-1000     | 858.38                   | -87.027         | 0.002          | 4          | Pass    |
| ac20 | 5200            | 1000-26000  | 5175                     | -58.123         | 1.541          | 20         | Pass    |
| ac20 | 5240            | 30-1000     | 895.24                   | -86.063         | 0.002          | 4          | Pass    |
| ac20 | 5240            | 1000-26000  | 5175                     | -58.739         | 1.337          | 20         | Pass    |
| ac40 | 5190            | 30-1000     | 422.85                   | -86.98          | 0.002          | 4          | Pass    |
| ac40 | 5190            | 1000-26000  | 5200                     | -60.564         | 0.878          | 20         | Pass    |
| ac40 | 5230            | 30-1000     | 793.39                   | -87.102         | 0.002          | 4          | Pass    |
| ac40 | 5230            | 1000-26000  | 5175                     | -61.161         | 0.765          | 20         | Pass    |
| ac80 | 5210            | 30-1000     | 809.88                   | -87.155         | 0.002          | 4          | Pass    |
| ac80 | 5210            | 1000-26000  | 5175                     | -60.544         | 0.882          | 20         | Pass    |



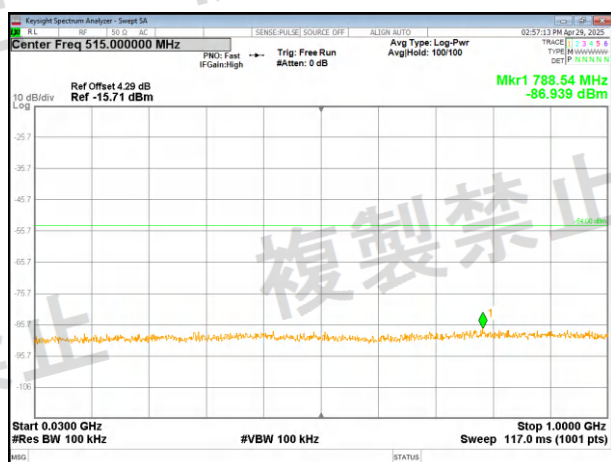
802.11a 5180MHz, 30MHz~1GHz



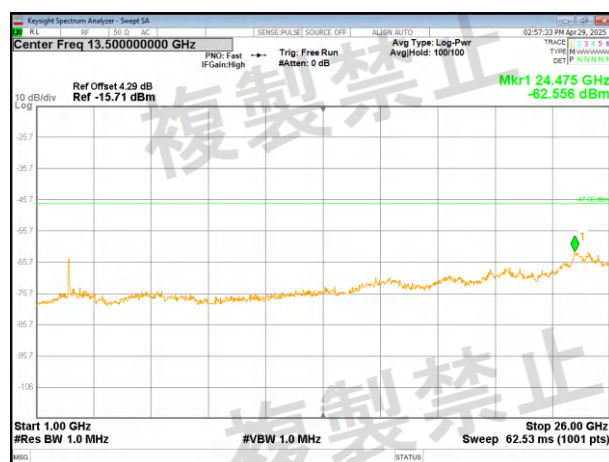
802.11a 5180MHz, 1GHz~26GHz



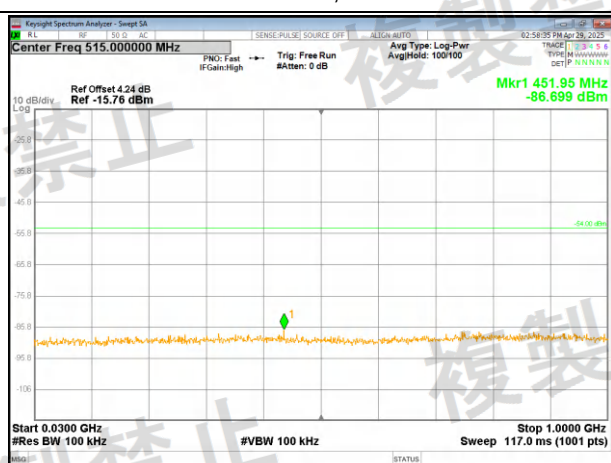
802.11a 5200MHz, 30MHz~1GHz



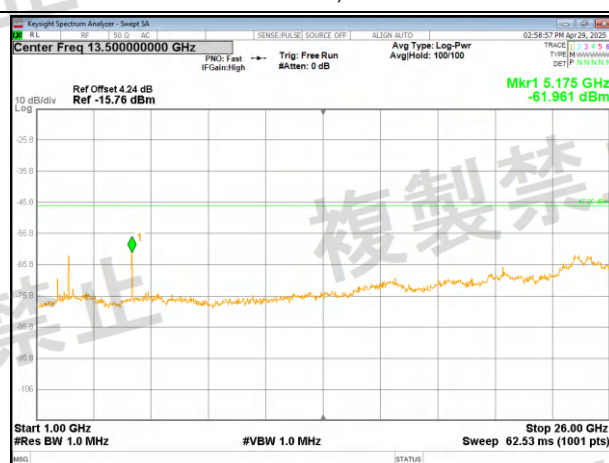
802.11a 5200MHz, 1GHz~26GHz



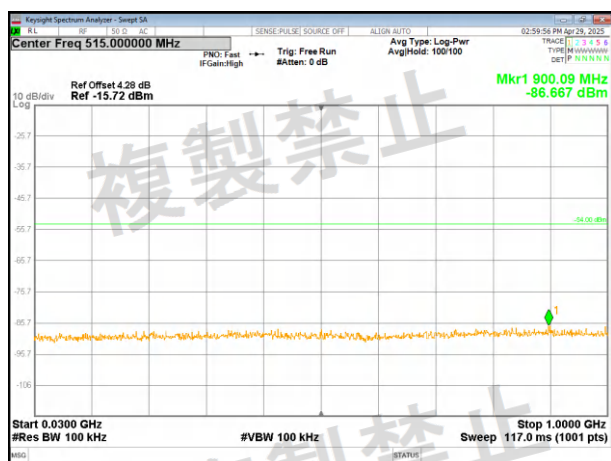
802.11a 5240MHz, 30MHz~1GHz



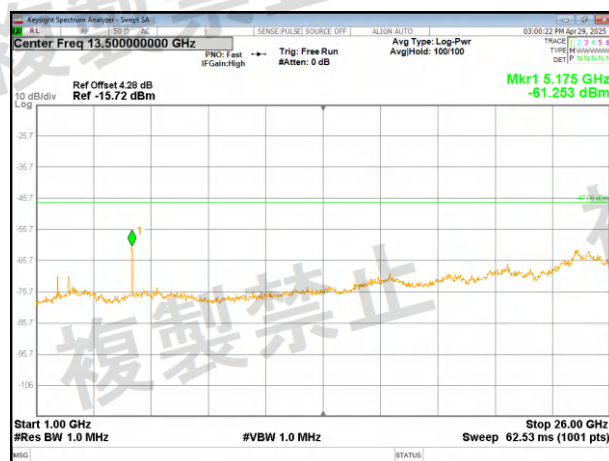
802.11a 5240MHz, 1GHz~26GHz



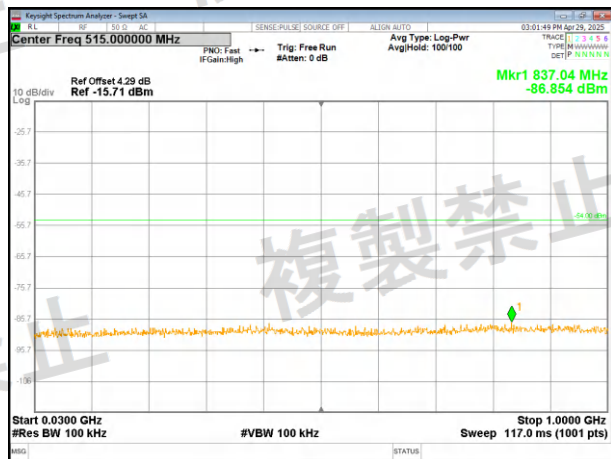
802.11n20 5180MHz, 30MHz~1GHz



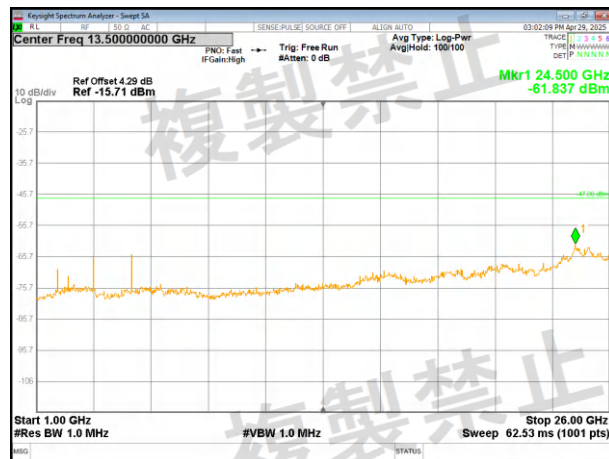
802.11n20 5180MHz, 1GHz~26GHz



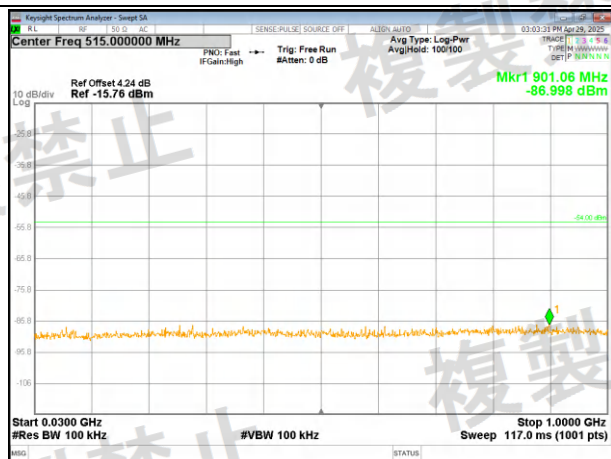
802.11n20 5200MHz, 30MHz~1GHz



802.11n20 5200MHz, 1GHz~26GHz



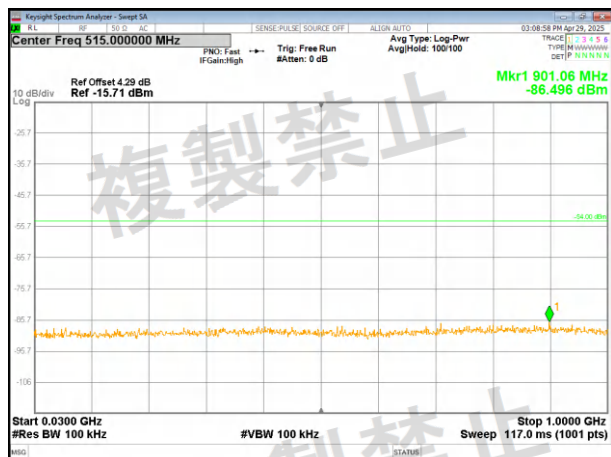
802.11n20 5240MHz, 30MHz~1GHz



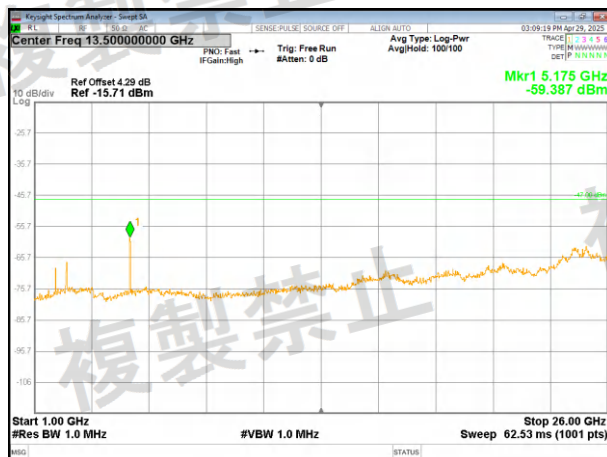
802.11n20 5240MHz, 1GHz~26GHz



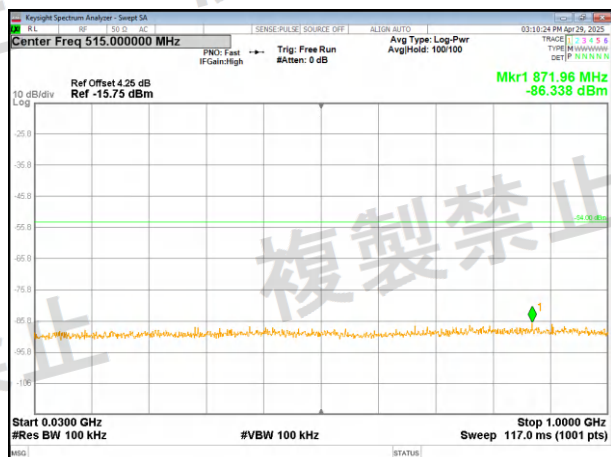
802.11n40 5190MHz, 30MHz~1GHz



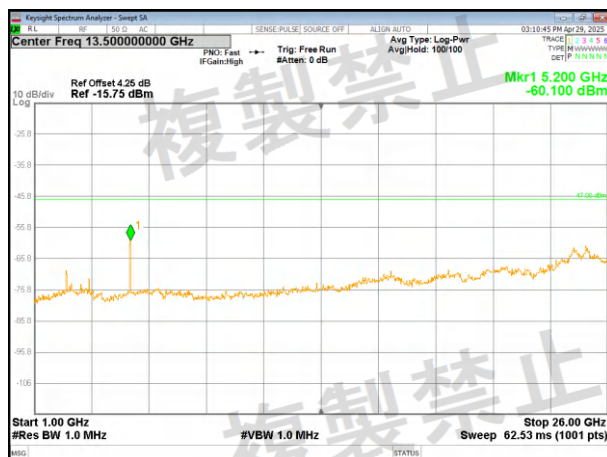
802.11n40 5190MHz, 1GHz~26GHz



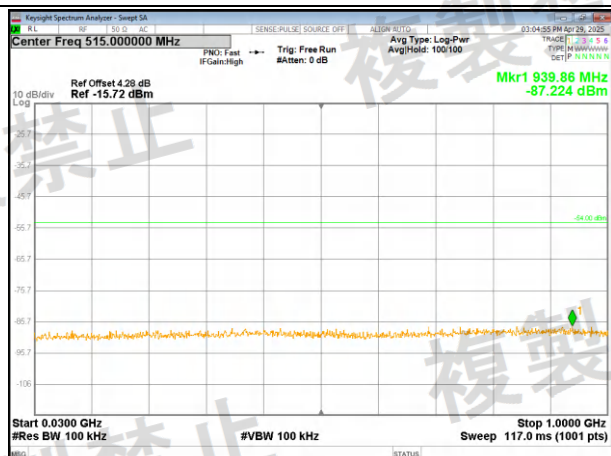
802.11n40 5230MHz, 30MHz~1GHz



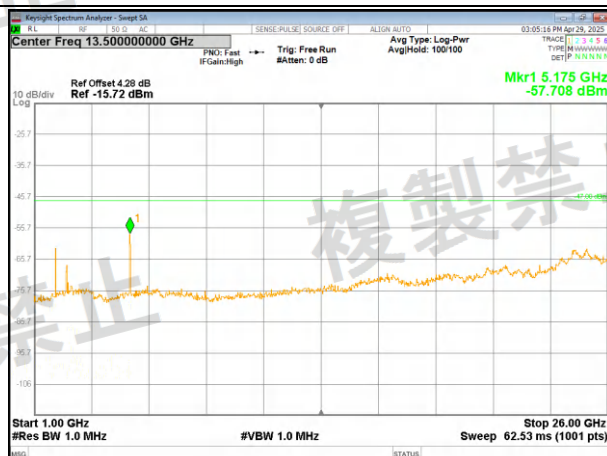
802.11n40 5230MHz, 1GHz~26GHz



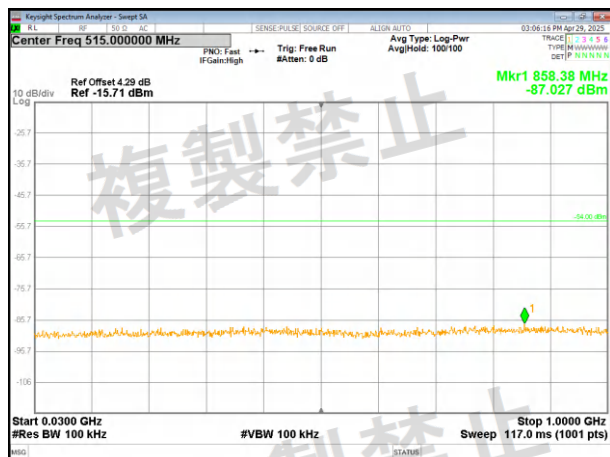
802.11ac20 5180MHz, 30MHz~1GHz



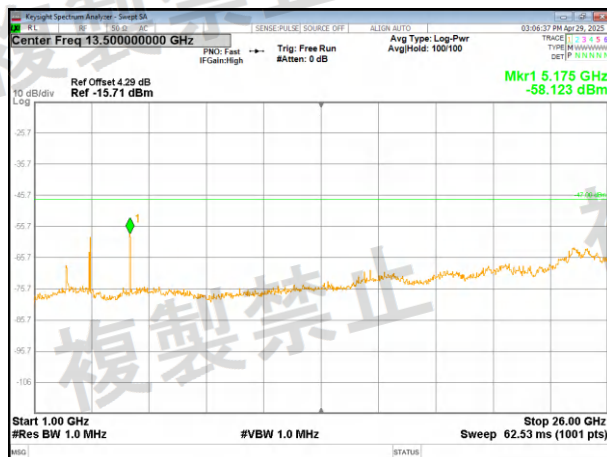
802.11ac20 5180MHz, 1GHz~26GHz



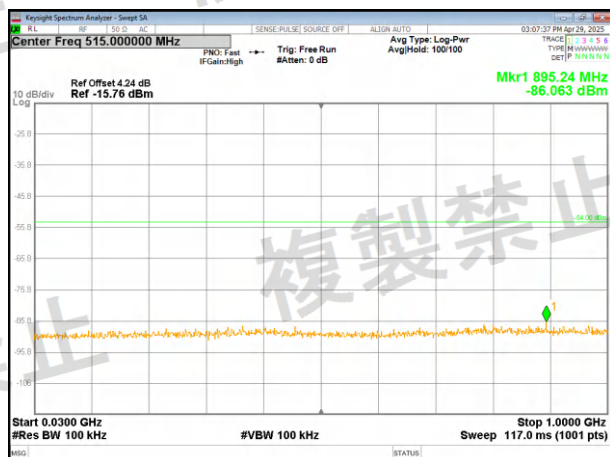
802.11ac20 5200MHz, 30MHz~1GHz



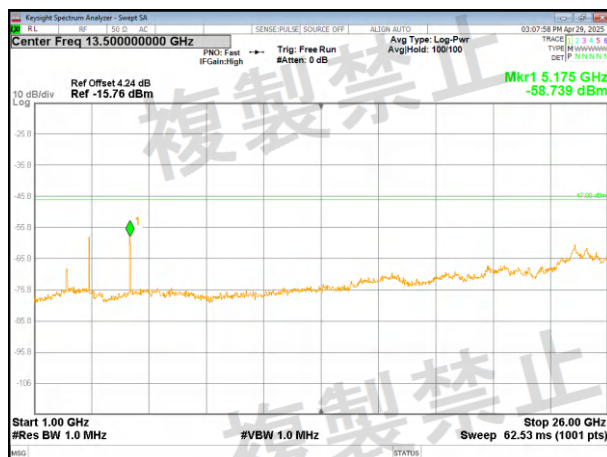
802.11ac20 5200MHz, 1GHz~26GHz



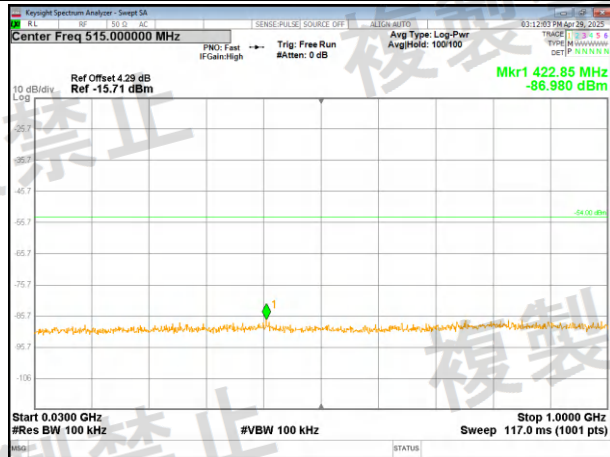
802.11ac20 5240MHz, 30MHz~1GHz



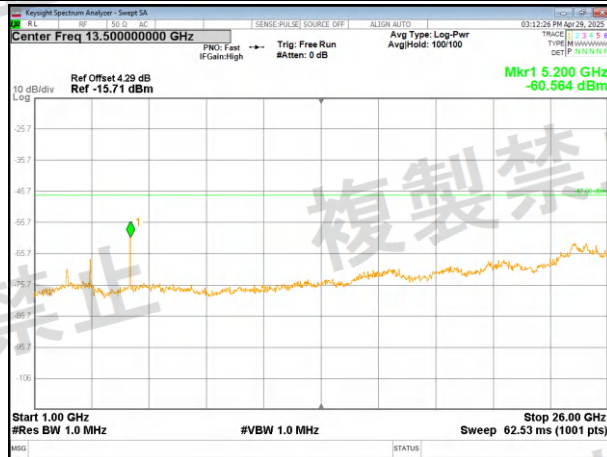
802.11ac20 5240MHz, 1GHz~26GHz



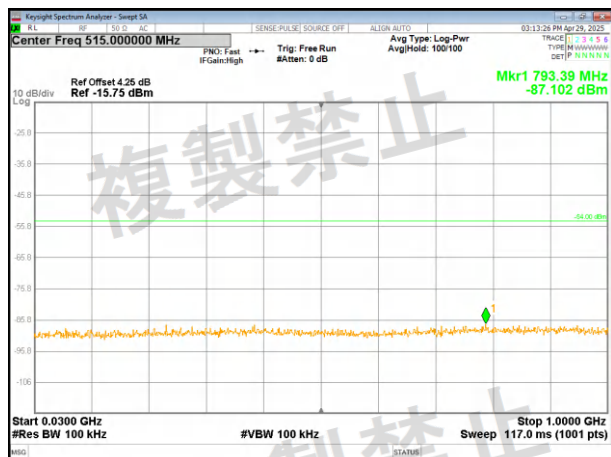
802.11ac40 5190MHz, 30MHz~1GHz



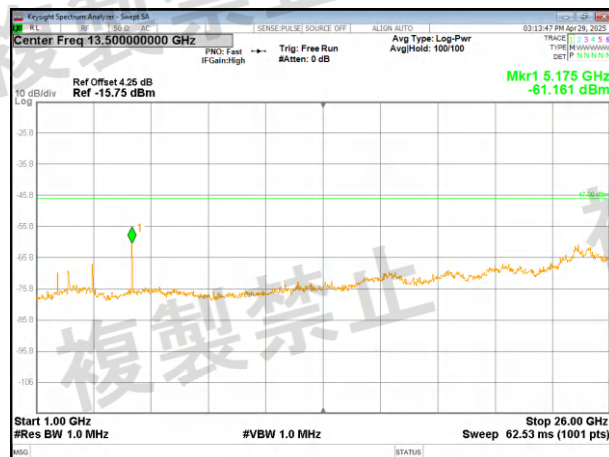
802.11ac40 5190MHz, 1GHz~26GHz



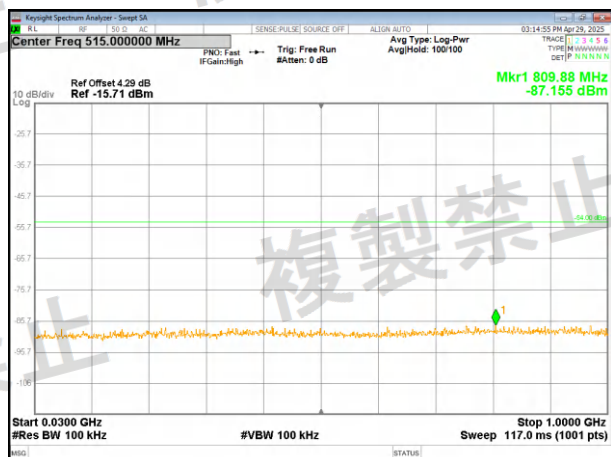
802.11ac40 5230MHz, 30MHz~1GHz



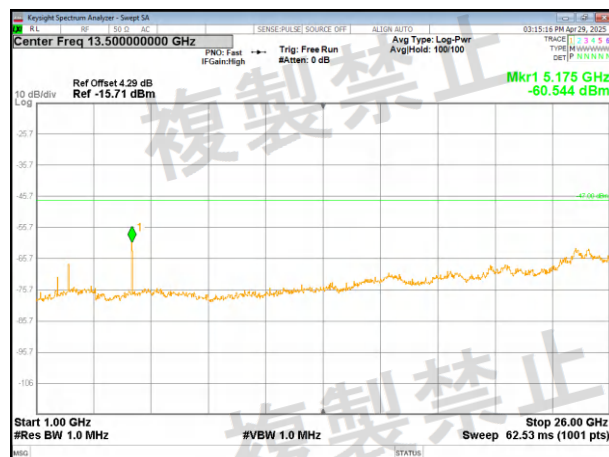
802.11ac40 5230MHz, 1GHz~26GHz



802.11ac80 5210MHz, 30MHz~1GHz



802.11ac80 5210MHz, 1GHz~26GHz

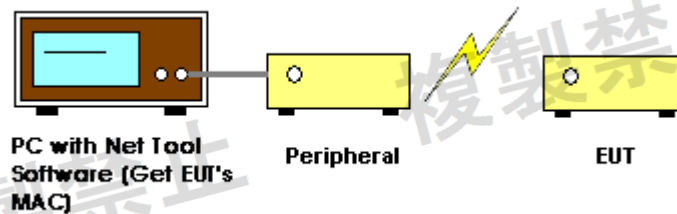


## 4.9 Interference prevention function

### 4.9.1 Limit

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

### 4.9.2 Diagram of test setup



### 4.9.3 Test Procedure

- In the case that the EUT has the function of automatically transmitting the identification code: a. Transmit the predetermined identification codes from EUT. b. Check the transmitted identification codes with the demodulator.
- In the case of receiving the identification code: a. Transmit the predetermined identification codes from the counterpart. b. Check if communication is normal. c. Transmit the signals other than predetermined ID codes from the counterpart. d. Check if the EUT stops the transmission, or if it displays that identification codes are different from the predetermined ones.

### 4.9.4 Test result

|              |                   |           |       |
|--------------|-------------------|-----------|-------|
| EUT:         | Smart Projector   |           |       |
| Temperature: | 22.5°C            | Humidity: | 37%RH |
| MAC          | F4:4D:34:C8:48:ED |           |       |
| Test result: | PASS              |           |       |

## 5 Test Setup Photo

Reference to the **appendix I** for details.

## 6 EUT Constructional Details

Reference to the **appendix II** for details.

-----End-----