



## TEST REPORT

Test item description: AI Glasses  
Trademark(s): N/A  
Model/Type reference: WAI3 Pro  
Applicant's name: Covia Inc.  
Address: BENEX S-3, 3-20-8, Shinyokohama, Kohoku-ku Yokohama, Japan 2220033  
Manufacturer: Shenzhen Najingyun Innovation Technology Co., Ltd.  
Address: 5 Songpingshan Road, #201 JiaDa R&D Building Lobby B Shenzhen, 518057 China  
Prepared By: Shenzhen CTB Testing Technology Co., Ltd.  
Address: 1&2/F., Building A, No.26, Xinhe Road, Xinqiao, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, China  
Sample Received Date: Jun. 24, 2026  
Sample tested Date: Jun. 24, 2026 to Jul. 6, 2026  
Issue Date: Jul. 6, 2026  
Report No.: CTB26062406501RF03  
Test Standards: MIC Public Notice 88:2004, annex 1 and annex 43  
Ordinance Article 2 paragraph 1 item (19)  
ARIB STD-T66 V3.7  
Test Results: PASS  
Remark: This is WIFI-2.4GHz band radio test report.

Compiled by:

Reviewed by:

Approved by:

Kai ChenMartin FengBin Mei / Director

Note: If there is any objection to the inspection results in this report, please submit a written report to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. The tested sample(s) and the sample information are provided by the applicant. The authenticity, accuracy, and completeness of the provided information are the sole responsibility of the applicant. Without written approval of Shenzhen CTB Testing Technology Co., Ltd. this report can't be reproduced except in full. The result decision rules of our laboratory are based solely on the direct comparison between the actual measured values of test results and the standard limits, without considering the measurement uncertainty. "★" indicates the testing items were fulfilled by subcontracted lab. "✖" indicates the items are not in CNAS accreditation scope.

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1. TEST SUMMARY

1.1Version

| Report No.         | Issue Date   | Description | Approved |
|--------------------|--------------|-------------|----------|
| CTB26062406501RF03 | Jul. 6, 2026 | Original    | Valid    |

## 1.2 TEST PROCEDURES AND RESULTS

| Part | Rule Section | Description of Test                                             | Result   |
|------|--------------|-----------------------------------------------------------------|----------|
| 4.1  | 3            | Frequency Error                                                 | Complies |
| 4.3  | 4            | Occupied Bandwidth (99%),<br>Spread-spectrum<br>Bandwidth (90%) | Complies |
| 4.4  | 5            | Unwanted Emission Intensity                                     | Complies |
| 4.2  | 6            | Antenna Power Error                                             | Complies |
| 4.5  | 7            | Limitation of Collateral Emission of Receiver                   | Complies |
| 4.6  | 8            | Transmission Antenna Gain (EIRP Antenna<br>Power)               | N/A      |
| 4.7  | 9            | Transmission Radiation Angle Width (3dB<br>Beamwidth)           | N/A      |
| 4.8  | 10           | Radio Interference Prevention Capability                        | Complies |
| 4.9  | Note 2       | Carrier Sense Capability                                        | Complies |
| 4.10 | Note 3       | Number of carriers                                              | Complies |

## NOTE:

(1) "N/A" denotes test is not applicable in this Test Report

(2) Note2: MIC Public Notice 88:2004, annex 1 and annex 43

(3) Note3: MIC Ordinance Regulating Radio Equipment Section 4.17 of Article 49.20

### 1.3 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

| Item                                               | Uncertainty        |
|----------------------------------------------------|--------------------|
| Occupancy bandwidth                                | 54.3kHz            |
| Conducted output power Above 1G                    | 0.9dB              |
| Conducted output power below 1G                    | 0.9dB              |
| Power Spectral Density , Conduction                | 0.9dB              |
| Conduction spurious emissions                      | 2.0dB              |
| Out of band emission                               | 2.0dB              |
| 3m camber Radiated spurious emission(30MHz-1GHz)   | 4.6dB              |
| 3m chamber Radiated spurious emission(1GHz-18GHz)  | 5.1dB              |
| 3m chamber Radiated spurious emission(18GHz-40GHz) | 3.4dB              |
| Frequency Error                                    | 54.3Hz             |
| Adjacent channel power below 1G                    | 2.6dB              |
| Adjacent channel power Above 1G                    | 2.8dB              |
| humidity uncertainty                               | 5.5%               |
| Temperature uncertainty                            | 0.63℃              |
| frequency                                          | $1 \times 10^{-7}$ |

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

|                       |                                                                                                                            |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------|
| Model/Type reference: | WAI3 Pro                                                                                                                   |
| Model Description:    | N/A                                                                                                                        |
| Wi-Fi Specification:  | IEEE 802.11b/g/n                                                                                                           |
| Hardware Version:     | G03T-MB-V1.0                                                                                                               |
| Software Version:     | V1.0                                                                                                                       |
| Operation Frequency:  | IEEE 802.11b/g/n 20: 2412-2472MHz                                                                                          |
| Max. RF output power: | 802.11b: 4mW/MHz<br>802.11g: 3mW/MHz<br>802.11n20: 3mW/MHz                                                                 |
| Type of Modulation:   | 802.11b: DSSS(CCK/DQPSK/DBPSK)<br>802.11g: OFDM(BPSK/QPSK/16QAM/64QAM)<br>802.11n (HT20)): OFDM (64QAM, 16QAM, QPSK, BPSK) |
| Transmit Data Rate:   | 802.11b: 1M/2M/5.5M/11M bps<br>802.11g: 6M/9M/12M/18M/24M/36M/48M/54M bps<br>802.11n20: up to 75M bps                      |
| Antenna installation: | Internal antenna                                                                                                           |
| Antenna Gain:         | 2.48dBi                                                                                                                    |
| Ratings:              | DC 5V charging from adapter<br>DC 3.8V by battery                                                                          |

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. This report is for Wi-Fi test report.

## 2.2 Carrier Frequency of Channels

| Channel List for 802.11b/g/n(20MHz) |                 |         |                 |         |                 |         |                 |
|-------------------------------------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| Channel                             | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 01                                  | 2412            | 05      | 2432            | 09      | 2452            | 13      | 2472            |
| 02                                  | 2417            | 06      | 2437            | 10      | 2457            | /       | /               |
| 03                                  | 2422            | 07      | 2442            | 11      | 2462            | /       | /               |
| 04                                  | 2427            | 08      | 2447            | 12      | 2467            | /       | /               |

| Mode | Low channel (MHz) | Middle channel(MHz) | High channel(MHz) |
|------|-------------------|---------------------|-------------------|
| b    | 2412              | 2442                | 2472              |
| g    | 2412              | 2442                | 2472              |
| n20  | 2412              | 2442                | 2472              |

## 2.3 Table for Filed Antenna

| Ant. | Brand | Model Name   | Antenna Type     | Gain(dBi) | NOTE |
|------|-------|--------------|------------------|-----------|------|
| 1    | N/A   | 2.4G antenna | Internal antenna | 2.48dBi   | N/A  |

## 2.4DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

| Pretest Mode | Description |
|--------------|-------------|
| Mode 1       | TX          |
| Mode 2       | RX          |

## 2.5 TEST CONDITIONS

During the measurement the environmental conditions were within the listed ranges:

| Supply Voltage                                                                                                                                                                    |                      |                         |                         |               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------|-------------------------|---------------|
|                                                                                                                                                                                   | PC supply power<br>V | Module input power<br>V | Rated module power<br>V | Tolerance (%) |
| Normal                                                                                                                                                                            | 3.7                  | 3.3                     | 3.3                     |               |
| +10%                                                                                                                                                                              | 4.07                 | 3.3                     | 3.3                     | 0             |
| -10%                                                                                                                                                                              | 3.33                 | 3.3                     | 3.3                     | 0             |
| Others                                                                                                                                                                            |                      |                         |                         |               |
| Temperature (°C)                                                                                                                                                                  |                      | 20-25                   |                         |               |
| Relative humidity                                                                                                                                                                 |                      | 54 %.                   |                         |               |
| ATM Pressure:                                                                                                                                                                     |                      | 1010 mbar               |                         |               |
| Note 1: When the input voltage is reduced or increased by 10%, the regulator voltage changes of less than 1%.<br>So the following test items are conducted in the normal voltage. |                      |                         |                         |               |

## BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Mode 1:



## 2.6 DESCRIPTION OF SUPPORT UNITS (CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Item | Test item description | Trademark(s) | Model/Type reference | Note |
|------|-----------------------|--------------|----------------------|------|
| 1    | AI Glasses            | N/A          | WAI3 Pro             | EUT  |
|      |                       |              |                      |      |

| Item | Shielded Type | Ferrite Core | Length | Note |
|------|---------------|--------------|--------|------|
|      |               |              |        |      |
|      |               |              |        |      |

Note:

1. The support equipment was authorized by Declaration of Confirmation.
2. For detachable type I/O cable should be specified the length in cm in 『Length』 column.
3. "YES" is means "shielded" "with core"; "NO" is means "unshielded" "without core".

## 2.7 MEASUREMENT INSTRUMENTS LIST

| No. | Equipment                        | Manufacturer | Type No.                  | Serial No.   | Firmware Version           | Calibrated until |
|-----|----------------------------------|--------------|---------------------------|--------------|----------------------------|------------------|
| 1   | Spectrum Analyzer                | Agilent      | N9020A                    | MY52090073   | A.14.16                    | 2027/5/13        |
| 2   | Power Sensor                     | Agilent      | U2021XA                   | MY56120032   | /                          | 2027/5/13        |
| 3   | Power Sensor                     | Agilent      | U2021XA                   | MY56120034   | /                          | 2027/5/13        |
| 4   | Communication test set           | R&S          | CMW500                    | 108058       | V3.5.80                    | 2027/5/13        |
| 5   | Spectrum Analyzer                | KEYSIGHT     | N9020A                    | MY51289897   | A.14.16                    | 2027/5/13        |
| 6   | Signal Generator                 | Agilent      | N5181A                    | MY50140365   | A.01.60                    | 2027/5/13        |
| 7   | Vector signal generator          | Agilent      | N5182A                    | MY47420195   | A.01.87                    | 2027/5/13        |
| 8   | Communication test set           | Agilent      | E5515C                    | MY50102567   | B.19.07<br>(E1962B)        | 2027/5/13        |
| 9   | 2.4 GHz Filter                   | Shenxiang    | MSF2400-24<br>83.5MS-1154 | 20181015001  | /                          | 2027/5/15        |
| 10  | 5 GHz Filter                     | Shenxiang    | MSF5150-58<br>50MS-1155   | 20181015001  | /                          | 2027/5/15        |
| 11  | Filter                           | Xingbo       | XBLBQ-DZA<br>120          | 190821-1-1   | /                          | 2027/5/16        |
| 12  | BT&WI-FI Automatic test software | Microwave    | MTS8310                   | Ver. 2.0.0.0 | /                          | /                |
| 13  | Temperature humidity chamber     | Huihao       | HT-HW-1000<br>L           | /            | /                          | 2026/7/12        |
| 14  | 234G Automatic test software     | Microwave    | MTS8200                   | Ver. 2.0.0.0 | /                          | /                |
| 15  | 966 chamber                      | C.R.T.       | 966                       | /            | /                          | 2027/6/21        |
| 16  | Receiver                         | R&S          | ESPI                      | 100362       | RF_ATTEN_7<br>(104489/003) | 2027/5/14        |
| 17  | Amplifier                        | HP           | 8447E                     | 2945A02747   | /                          | 2027/5/14        |
| 18  | Amplifier                        | Agilent      | 8449B                     | 3008A01838   | /                          | 2027/5/13        |

|    |                                      |             |           |            |         |           |
|----|--------------------------------------|-------------|-----------|------------|---------|-----------|
| 19 | TRILOG Broadband Antenna             | Schwarzbeck | VULB 9168 | 00869      | /       | 2027/5/16 |
| 20 | Double Ridged Broadband Horn Antenna | Schwarzbeck | BBHA9120D | 01911      | /       | 2027/5/14 |
| 21 | EMI test software                    | Fala        | EZ-EMC    | FA-03A2 RE | /       | /         |
| 22 | Power Meter                          | KEYSIGHT    | N1912AP   | N/A        | A.05.00 | 2027/5/14 |
| 23 | DC power supply                      | Agilent     | E3640A    | MY53050046 | /       | 2027/5/14 |

Remark: Calibration institution "GRG METROLOGY & TEST GROUP Co., LTD."

Remark: Calibration based on Article 24-2, paragraph 4 of the Radio Act method c.

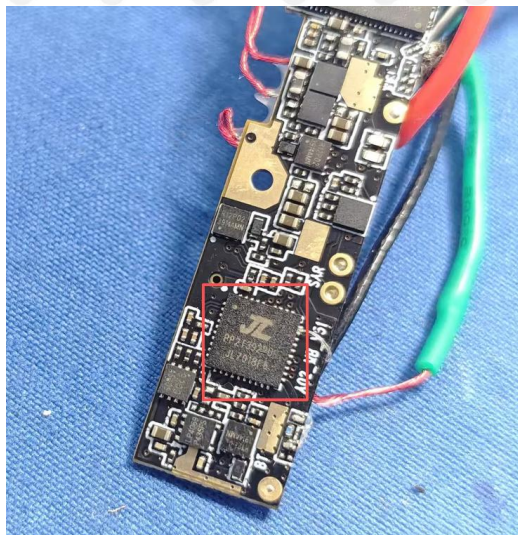
### 3. RF SHIELDINGMETHOD

We apply the product for Japan RF certification. The high-frequency section and modulation section of the radio equipment except for the antenna system shall not be capable of being opened easily.

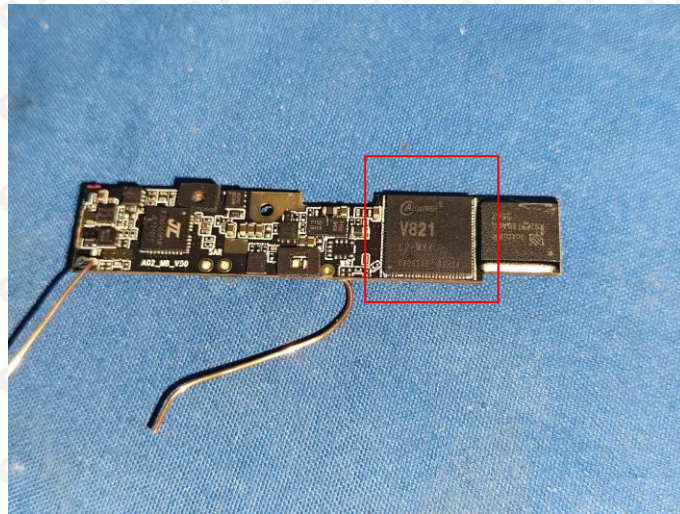
Confirmation method

|                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Sealed with special screws.                                                                                                                                                    |
| <input type="checkbox"/> Plastic chassis is being welded using ultrasonic wavs.                                                                                                                         |
| <input type="checkbox"/> Chassis is glued using a special adhesive.                                                                                                                                     |
| <input type="checkbox"/> Metal covers are spot-fused.                                                                                                                                                   |
| <input type="checkbox"/> Cover is specially interlocked.                                                                                                                                                |
| <input type="checkbox"/> RF and Modulation components are covered with shielding case and this shielding case is soldered.                                                                              |
| <input type="checkbox"/> Shield case is welded ant RF and modulations parts, and ID-ROM is welded using BGA Method.                                                                                     |
| <input type="checkbox"/> Shield case is welded ant RF and modulations parts, and ID-ROM is glued at its lead with a special adhesive.                                                                   |
| <input type="checkbox"/> Shield case is welded ant RF and modulations parts, and ID-ROM is glued with a non-transparent laminating agent.                                                               |
| <input checked="" type="checkbox"/> Other: All RF and modulation section packet in one IC, and IC is welded using QFN Method, and RF module is welded on the main board, end-User can't open it easily. |

Bt:



Wifi:



The RF chip has a terminal distance to less than 1mm and has 56 terminal.

#### 4 FREQUENCY ERROR

##### 4.1 LIMIT

| Item            | Limits   |
|-----------------|----------|
| Frequency Error | +/-50ppm |

##### 4.2 MEASURING INSTRUMENTS AND SETTING

The following table is the setting of Spectrum Analyzer.

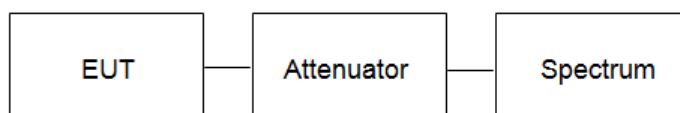
| Spectrum Parameter | Setting  |
|--------------------|----------|
| Attenuation        | Auto     |
| RB / VB            | 10KHz    |
| Detector           | Peak     |
| Trace              | Max Hold |
| Sweep Time         | Auto     |

##### 4.3 TEST PROCEDURE

1. In the case of unmodulated signal (continuous or continuous burst), measure the frequency directly by a frequency meter.
2. In the case of burst waves, the measurement shall be done for enough time in order to obtain the enough measuring accuracy, and the average of the measured values becomes the final value.
3. In the case of a test mode with a specific frequency spectrum, measure the frequency of the specific spectrum by a spectrum analyzer connected a frequency meter.
4. In the cases above, if the frequency equivalent to the test frequency is not directly measured in principle, it shall be obtained by necessary calculation.

In the case of modulated signal, if there is no specific spectrum measurable by a spectrum analyzer but a specific dip is observed, it is allowed to measure the frequency with the signal generator (synthesized). That is, observe a signal of the signal generator concurrently (or alternately) with the tested signal using the spectrum analyzer while setting the frequency of the signal generator to the position of the dip on the screen of the spectrum analyzer, and determine the frequency of the signal generator at the time as a measured value.

##### 4.4 TEST SETUP LAYOUT



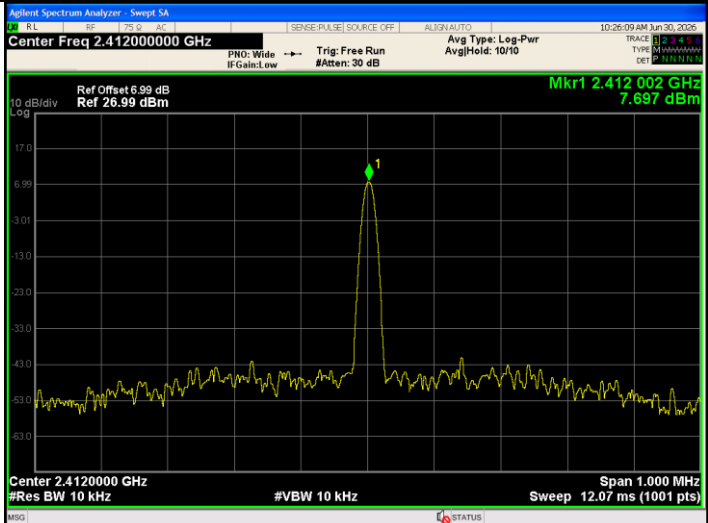
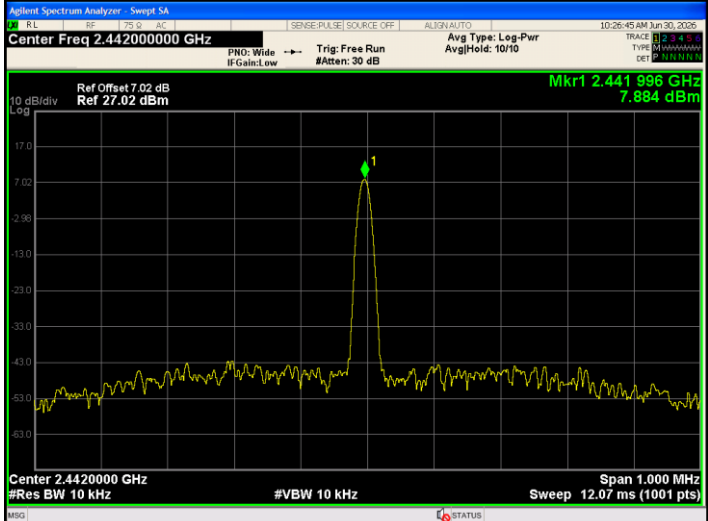
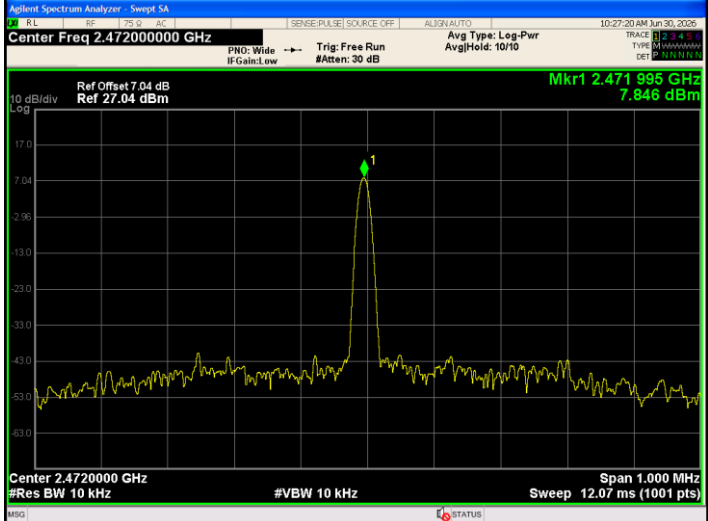
##### 4.5 EUT OPERATION DURING TEST

The EUT was placed on the test table and programmed in un-modulation function.

## 4.6 TEST RESULT

|              |         |                    |        |
|--------------|---------|--------------------|--------|
| Temperature: | 23℃     | Relative Humidity: | 54%    |
| Test Mode:   | TX Mode | Pressure:          | 101kPa |

| Test Voltage   | Test Frequency (MHz) | Measured Frequency (MHz) | Frequency Error(ppm) | Limit (ppm) | P/F  |
|----------------|----------------------|--------------------------|----------------------|-------------|------|
| Normal Voltage | 2412                 | 2412.002                 | 0.829                | ±50         | PASS |
|                | 2442                 | 2441.996                 | -1.638               | ±50         | PASS |
|                | 2472                 | 2471.995                 | -2.023               | ±50         | PASS |

| Mode           | Channel | Test graph                                                                           |
|----------------|---------|--------------------------------------------------------------------------------------|
| Normal Voltage | Low     |    |
|                | Middle  |   |
|                | High    |  |

## 5 ANTENNA POWER

### 5.1 LIMIT

| Item                  | Limits                                                   |
|-----------------------|----------------------------------------------------------|
| Antenna Power Density | 802.11b,g,n(HT20):10mW/MHz                               |
| Antenna Power Error   | +20%(Base on manufacturer declare antenna power density) |

### 5.2 MEASURING INSTRUMENTS AND SETTING

The following table is the setting of Spectrum Analyzer.

| Spectrum Parameter | Setting  |
|--------------------|----------|
| Attenuation        | Auto     |
| RB / VB            | 1MHz     |
| Detector           | Peak     |
| Trace              | Max Hold |
| Sweep Time         | Auto     |

### 5.3 TEST PROCEDURE

Attenuation of the attenuator shall be set to provide an optimum input level to the spectrum analyzer.

1. Set the spectrum analyzer as follows for searching the frequency that outputs the maximum antenna power:

Center frequency: Test frequency

Frequency sweep width: Approximately twice of the occupied bandwidth

Resolution bandwidth: 1MHz

Video bandwidth: Approximately three times of the resolution bandwidth

Y-axis scale: 10dB/Div

Sweep time: Minimum time to ensure the measuring accuracy

(In the case of burst wave, one burst shall be included per data point.)

Trigger condition: Free run

Data points: 400 points or more

Sweep mode: Continuous sweep

Detection mode: Positive peak

Display mode: Maximum hold

2. When the trace is complete, find the peak value of the power envelope and record.

In the case of bandwidth above RBW, connect to power meter directly.

3. Calculate antenna power density by the formula below

$PT(mW/MHz) = \text{Total Output Power (mW)} / \text{Burst Ratio} / \text{Spread Bandwidth (MHz)}$  Burst Ratio = ON Time / OFF Time

4. Antenna Power Error is definition that actual measure antenna power tolerance between + 20% to - 80% power range that base on manufacturer declare the conducted power density.

## 5.4 TEST SETUP LAYOUT



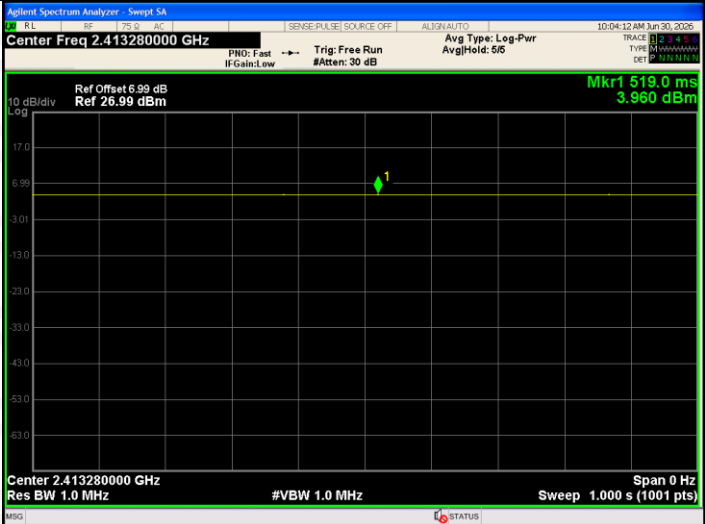
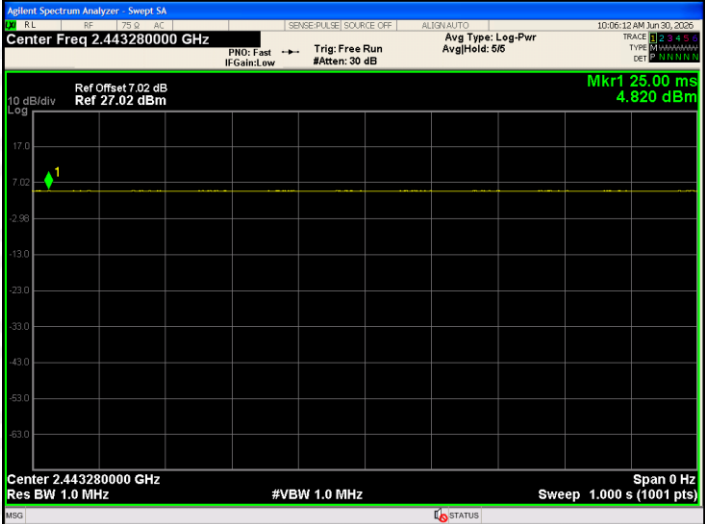
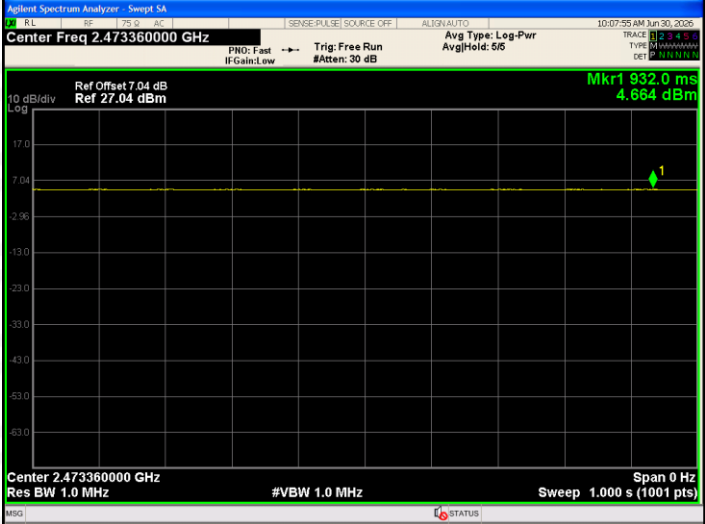
## EST DEVIATION

There is no deviation with the original standard.

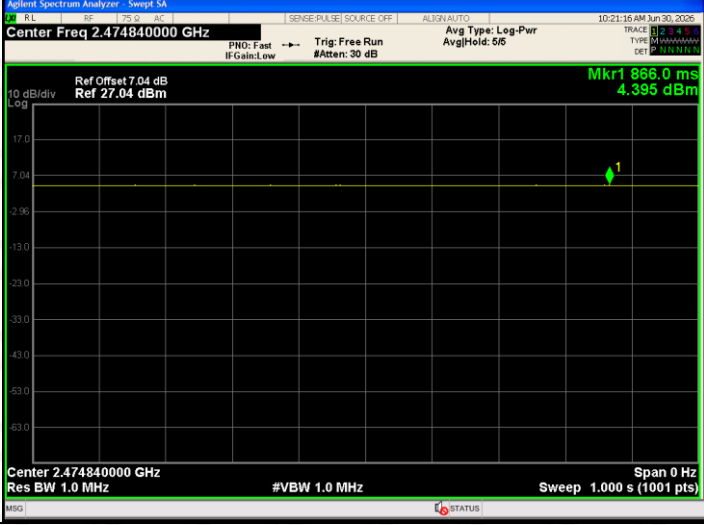
## 5.5 TEST RESULT

|              |         |                    |        |
|--------------|---------|--------------------|--------|
| Temperature: | 23℃     | Relative Humidity: | 54%    |
| Test Mode:   | TX Mode |                    | 101kPa |

| Test voltage (V) | Mode          | Channel (MHz) | Antenna Power (dBm/MHz) | output power (mW/MHz) | Rated output power (mW/MHz) | Tolerance (%) | Limit            |
|------------------|---------------|---------------|-------------------------|-----------------------|-----------------------------|---------------|------------------|
| Normal           | 802.11b       | 2412          | 3.96                    | 2.489                 | 4                           | -37.78        | 10mW/MHz<br>+20% |
|                  |               | 2442          | 4.82                    | 3.034                 | 4                           | -24.15        |                  |
|                  |               | 2472          | 4.664                   | 2.927                 | 4                           | -26.83        |                  |
|                  | 802.11g       | 2412          | 3.519                   | 2.249                 | 3                           | -25.05        |                  |
|                  |               | 2442          | 3.674                   | 2.330                 | 3                           | -22.33        |                  |
|                  |               | 2472          | 3.796                   | 2.397                 | 3                           | -20.11        |                  |
|                  | 802.11n(HT20) | 2412          | 4.657                   | 2.922                 | 3                           | -2.60         |                  |
|                  |               | 2442          | 4.48                    | 2.805                 | 3                           | -6.49         |                  |
|                  |               | 2472          | 4.395                   | 2.751                 | 3                           | -8.30         |                  |

| Normal Voltage |         |                                                                                                                                                                                                                                                                            |
|----------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mode           | Channel | Test graph                                                                                                                                                                                                                                                                 |
| 802.11b        | Low     |  <p>Agilent Spectrum Analyzer - Swept SA<br/>Center Freq 2.413280000 GHz<br/>Res BW 1.0 MHz<br/>Span 0 Hz<br/>Ref Offset 6.99 dB<br/>Ref 26.99 dBm<br/>Mkr1 519.0 ms<br/>3.960 dBm</p>   |
|                | Middle  |  <p>Agilent Spectrum Analyzer - Swept SA<br/>Center Freq 2.443280000 GHz<br/>Res BW 1.0 MHz<br/>Span 0 Hz<br/>Ref Offset 7.02 dB<br/>Ref 27.02 dBm<br/>Mkr1 25.00 ms<br/>4.820 dBm</p>  |
|                | High    |  <p>Agilent Spectrum Analyzer - Swept SA<br/>Center Freq 2.473360000 GHz<br/>Res BW 1.0 MHz<br/>Span 0 Hz<br/>Ref Offset 7.04 dB<br/>Ref 27.04 dBm<br/>Mkr1 932.0 ms<br/>4.664 dBm</p> |

| Normal Voltage |         |                                                                                                                                                                                                                                                                                                                                       |
|----------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mode           | Channel | Test graph                                                                                                                                                                                                                                                                                                                            |
| 802.11g        | Low     |  <p>Agilent Spectrum Analyzer - Swept SA<br/>Center Freq 2.415160000 GHz<br/>Ref Offset 6.99 dB<br/>Ref 26.99 dBm<br/>Mkr1 684.0 ms<br/>3.519 dBm<br/>Center 2.415160000 GHz<br/>Res BW 1.0 MHz<br/>#VBW 1.0 MHz<br/>Sweep 1.000 s (1001 pts)</p>   |
|                | Middle  |  <p>Agilent Spectrum Analyzer - Swept SA<br/>Center Freq 2.445120000 GHz<br/>Ref Offset 7.02 dB<br/>Ref 27.02 dBm<br/>Mkr1 125.0 ms<br/>3.674 dBm<br/>Center 2.445120000 GHz<br/>Res BW 1.0 MHz<br/>#VBW 1.0 MHz<br/>Sweep 1.000 s (1001 pts)</p>  |
|                | High    |  <p>Agilent Spectrum Analyzer - Swept SA<br/>Center Freq 2.475120000 GHz<br/>Ref Offset 7.04 dB<br/>Ref 27.04 dBm<br/>Mkr1 206.0 ms<br/>3.796 dBm<br/>Center 2.475120000 GHz<br/>Res BW 1.0 MHz<br/>#VBW 1.0 MHz<br/>Sweep 1.000 s (1001 pts)</p> |

| Normal Voltage |         |                                                                                                                                                                                                                                                                |
|----------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mode           | Channel | Test graph                                                                                                                                                                                                                                                     |
| 802.11n/HT20   | Low     |  <p>Agilent Spectrum Analyzer - Swept SA<br/>Center Freq 2.414840000 GHz<br/>Res BW 1.0 MHz<br/>Span 0 Hz<br/>Sweep 1.000 s (1001 pts)<br/>Mkr1 101.0 ms<br/>4.657 dBm</p>   |
|                | Middle  |  <p>Agilent Spectrum Analyzer - Swept SA<br/>Center Freq 2.444840000 GHz<br/>Res BW 1.0 MHz<br/>Span 0 Hz<br/>Sweep 1.000 s (1001 pts)<br/>Mkr1 100.0 ms<br/>4.480 dBm</p>  |
|                | High    |  <p>Agilent Spectrum Analyzer - Swept SA<br/>Center Freq 2.474840000 GHz<br/>Res BW 1.0 MHz<br/>Span 0 Hz<br/>Sweep 1.000 s (1001 pts)<br/>Mkr1 866.0 ms<br/>4.395 dBm</p> |

## 6 OCCUPIED BANDWIDTH and Spread Factor

### 6.1 LIMIT

| Item                | Limits        |
|---------------------|---------------|
| Occupied Band Width | 26MHz or less |

### 6.2 MEASURING INSTRUMENTS AND SETTING

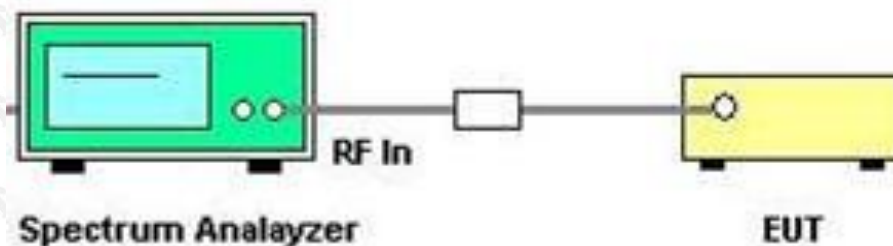
The following table is the setting of Spectrum Analyzer.

| Spectrum Parameter | Setting  |
|--------------------|----------|
| Attenuation        | Auto     |
| RB / VB            | 300KHz   |
| Detector           | Peak     |
| Trace              | Max Hold |
| Sweep Time         | Auto     |

### 6.3 TEST PROCEDURE

- Setting of SA is following as: RB: 300kHz / VB: 300kHz / SPAN: 40MHz / AT: 30dB Ref: 20dBm / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold
- EUT have transmitted the maximum modulation signal and fixed channelize ( For DSSS or OFDM Device) or continuous maximum power of hopping mode(For FHSS Device). SA set to 99% of occupied bandwidth to measure occupied bandwidth. The limit is less than 26MHz(For DSSS or OFDM Device) or 83.5MHz(For FHSS Device).
- SA set to 90% of occupied bandwidth to measure Spread Spectrum Bandwidth and must greater than 500kHz.
- Spread Spectrum Factor = Spread Spectrum Bandwidth / modulation rate of EUT.  
The modulation rate: MR=1.375 for 802.11b, MR=1.5 for 802.11g/n20, MR=3 for 802.11n40.

### 6.4 TEST SETUP LAYOUT



### EST DEVIATION

There is no deviation with the original standard.

### 6.5 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

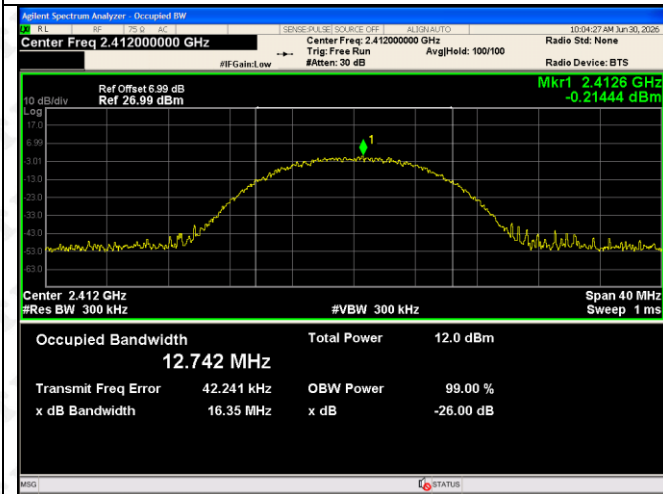
### 6.6 TEST RESULT

|              |         |                    |        |
|--------------|---------|--------------------|--------|
| Temperature: | 23℃     | Relative Humidity: | 54%    |
| Test Mode:   | TX Mode | Pressure:          | 101kPa |

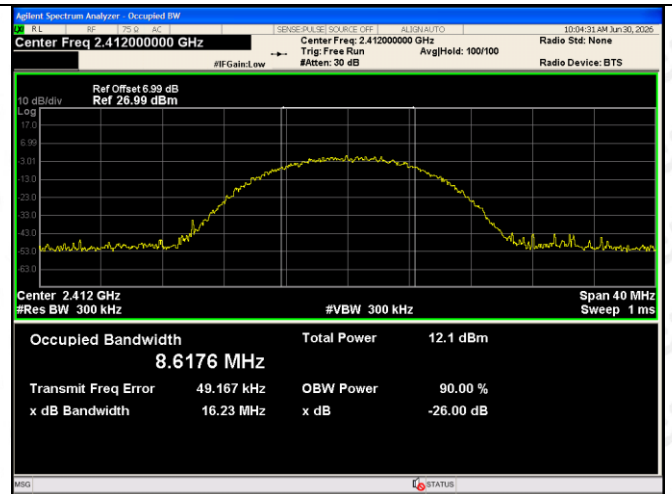
| Mode          | Test Voltage | Frequency (MHz) | Occupied Bandwidth 99%(MHz) | Spread Bandwidth 90%(MHz) |
|---------------|--------------|-----------------|-----------------------------|---------------------------|
| 802.11b       | Normal       | 2412            | 12.7422                     | 8.6176                    |
|               |              | 2442            | 12.8001                     | 8.7633                    |
|               |              | 2472            | 12.7875                     | 8.5776                    |
| 802.11g       | Normal       | 2412            | 15.3802                     | 11.9287                   |
|               |              | 2442            | 15.4582                     | 12.1104                   |
|               |              | 2472            | 15.4232                     | 11.9484                   |
| 802.11n/HT 20 | Normal       | 2412            | 16.4098                     | 12.2524                   |
|               |              | 2442            | 16.6431                     | 12.0910                   |
|               |              | 2472            | 16.7218                     | 12.2276                   |

## 802.11b Normal Voltage

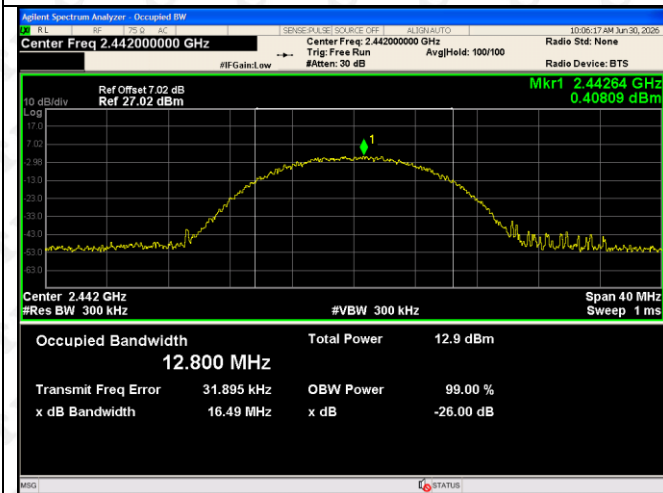
## 99% Bandwidth



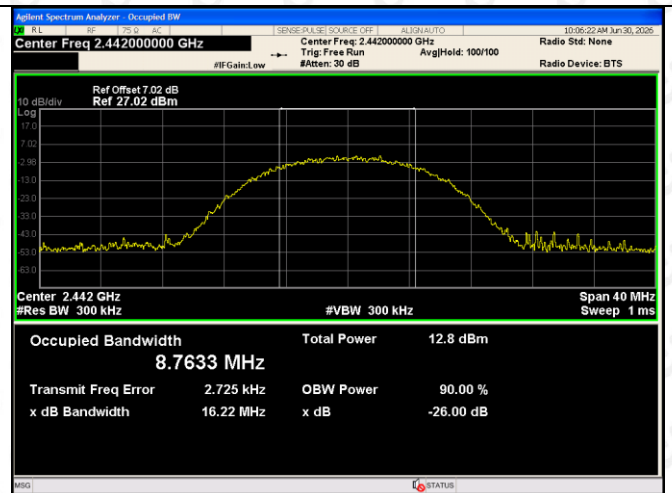
## 90% Bandwidth



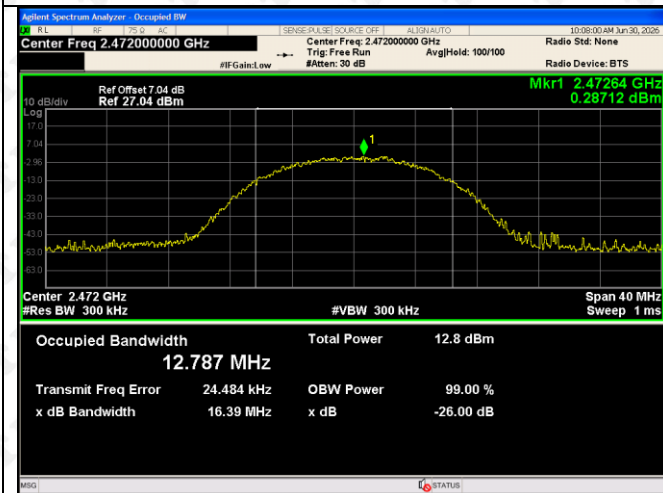
## 2412MHz



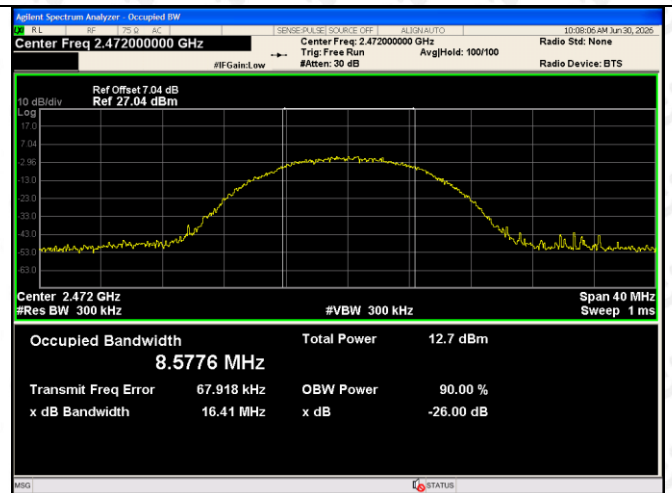
## 2412 MHz



## 2442 MHz



## 2442 MHz



## 2472 MHz

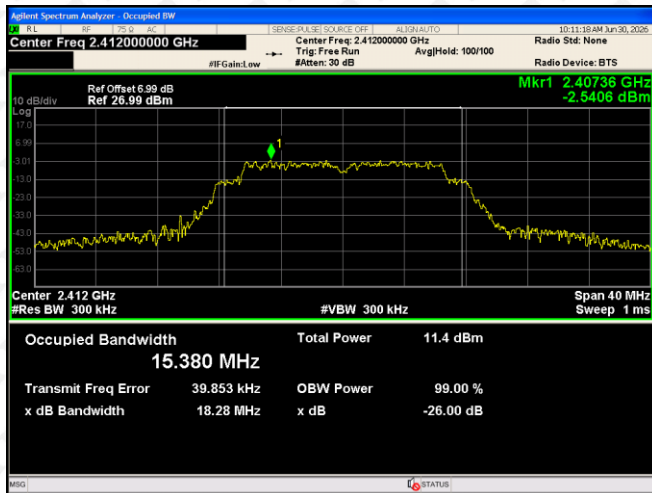


## 2472 MHz

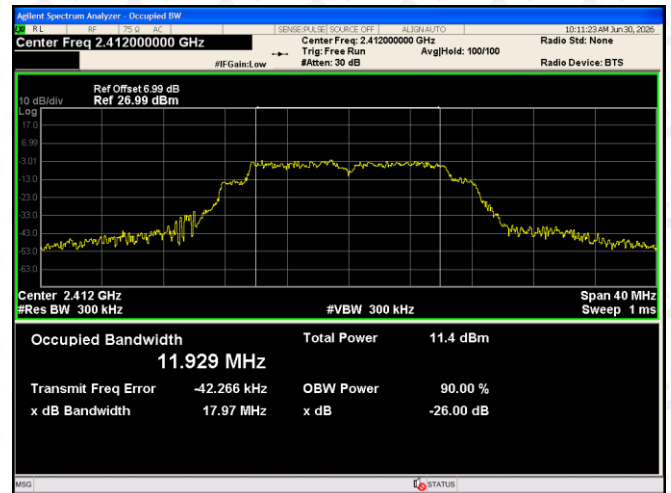


## 802.11g Normal Voltage

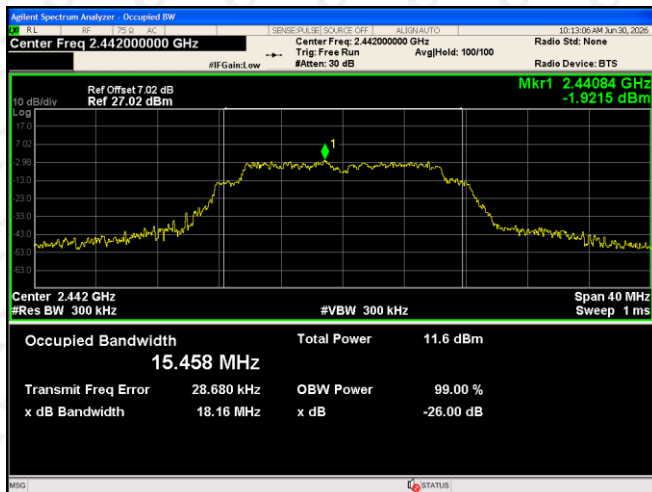
## 99% Bandwidth



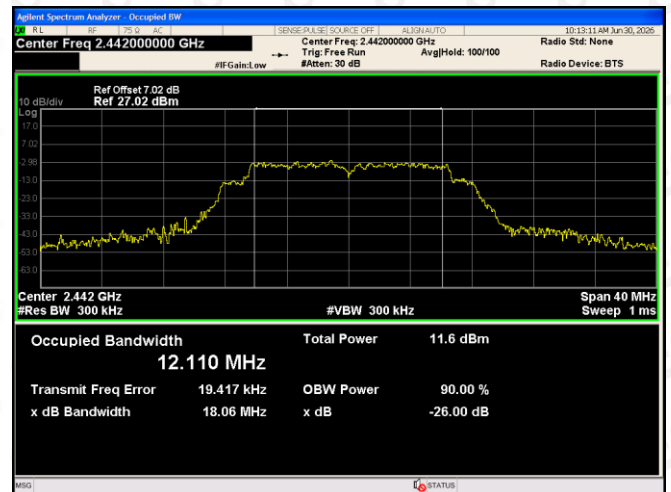
## 90% Bandwidth



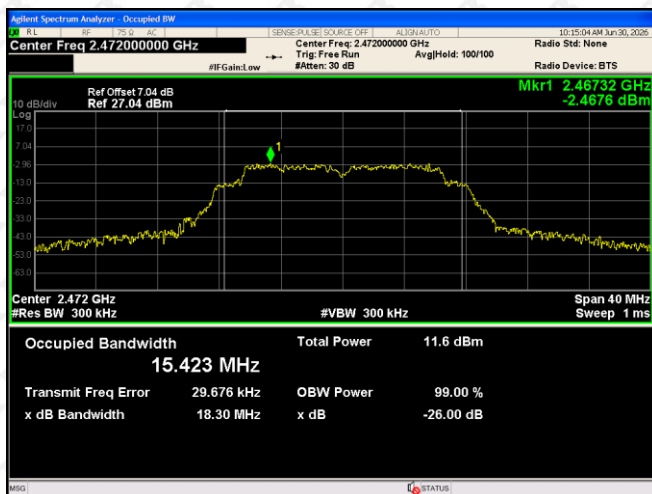
## 2412MHz



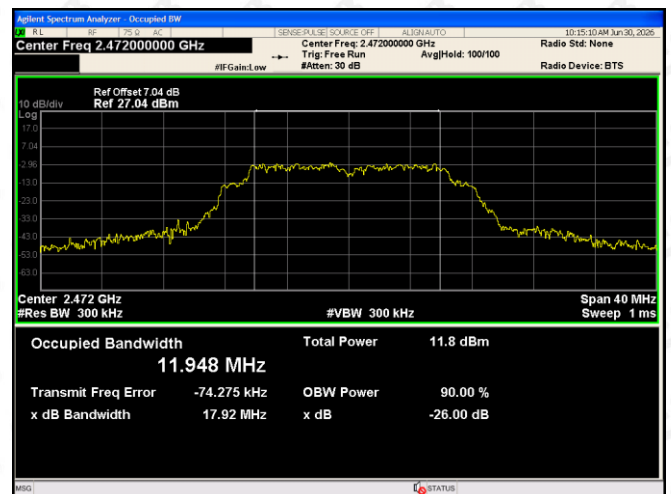
## 2412 MHz



## 2442 MHz



## 2442 MHz



## 2472 MHz

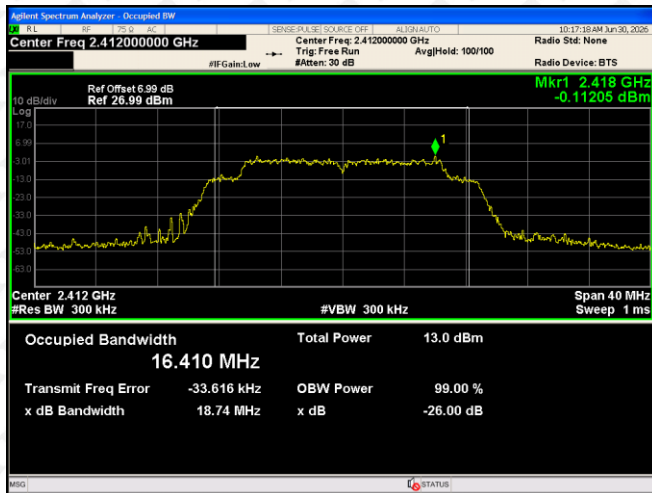


## 2472 MHz

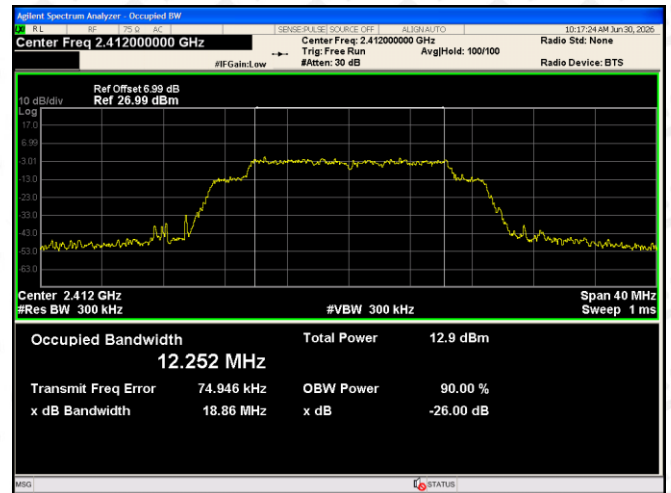


## 802.11n/HT20 Normal Voltage

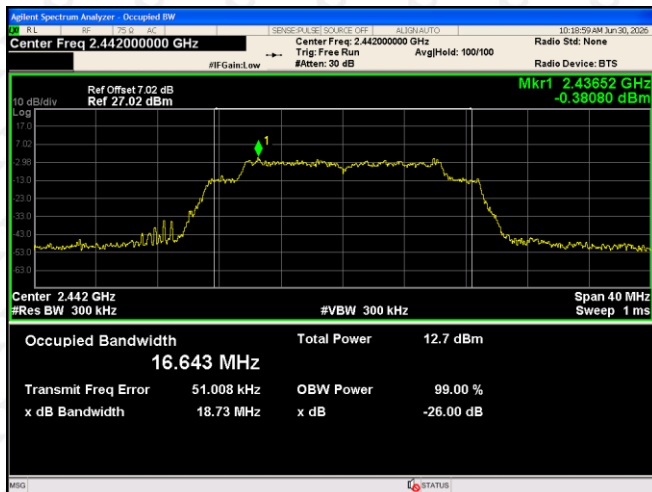
## 99% Bandwidth



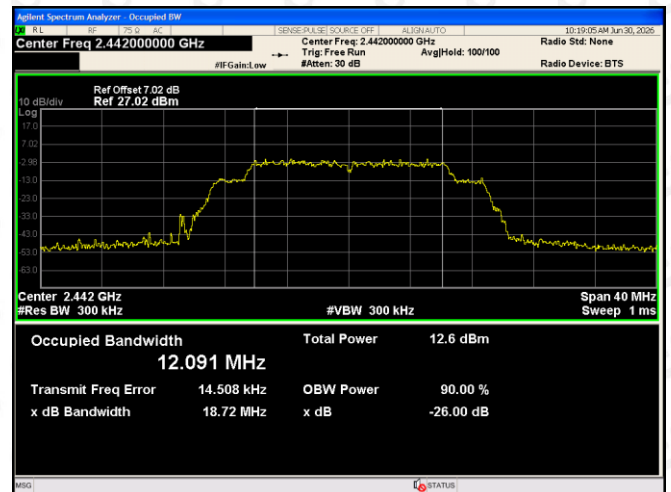
## 90% Bandwidth



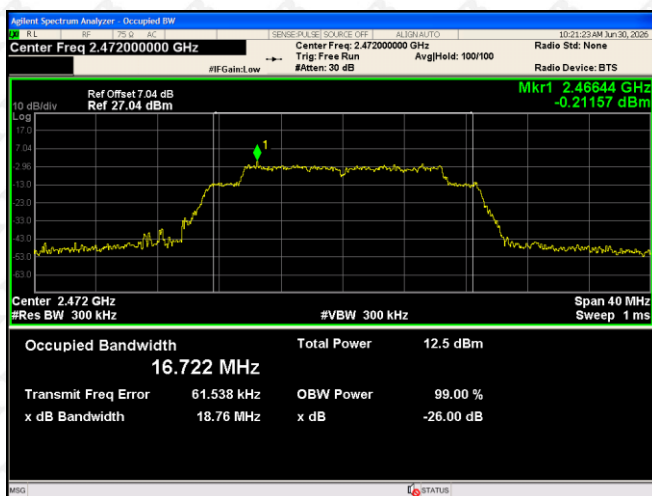
## 2412MHz



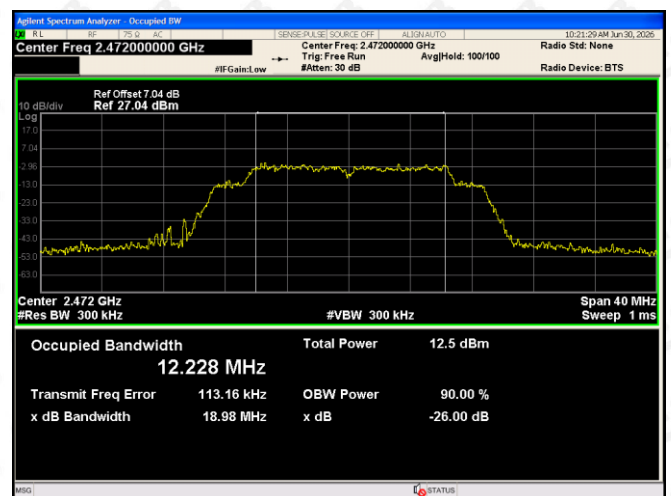
## 2412 MHz



## 2442 MHz



## 2442 MHz



## 2472 MHz



## 2472 MHz



## 7 UNWANTED EMISSION INTENSITY MEASUREMENT

### 7.1 LIMIT

| Item                 | Limits                                                                 |
|----------------------|------------------------------------------------------------------------|
| TX Spurious Emission | $\leq 2.5 \mu\text{W/MHz} (30\text{MHz} \leq f \leq 1000\text{MHz})$   |
|                      | $\leq 2.5 \mu\text{W/MHz} (1000\text{MHz} < f \leq 2387\text{MHz})$    |
|                      | $\leq 25 \mu\text{W/MHz} (2387\text{MHz} < f \leq 2400\text{MHz})$     |
|                      | $\leq 25 \mu\text{W/MHz} (2483.5\text{MHz} \leq f < 2496.5\text{MHz})$ |
|                      | $\leq 2.5 \mu\text{W/MHz} (2496.5\text{MHz} \leq f < 12500\text{MHz})$ |

### 7.2 MEASURING INSTRUMENTS AND SETTING

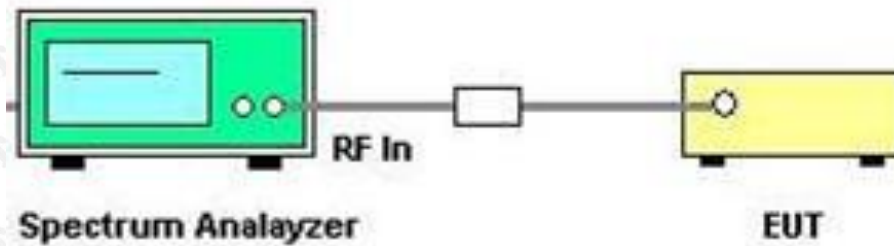
The following table is the setting of Spectrum Analyzer.

| Spectrum Parameter | Setting  |
|--------------------|----------|
| Attenuation        | Auto     |
| RB / VB            | 1MHz     |
| Detector           | Peak     |
| Trace              | Max Hold |
| Sweep Time         | Auto     |

### 7.3 TEST PROCEDURE

1. EUT have transmitted the maximum modulation signal and fixed channelize.
2. Setting of SA is following as: Below 1GHz RB:100kHz / VB:100kHz  
Above 1GHz RB:1MHz / VB:1MHz / AT: 10dB Ref: 0dBm / Sweep time: Auto  
Sweep Mode: Continuous sweep / Detect mode: Positive peak  
Trace mode: Max hold
3. Setting of SA is following as 30MHz and stop frequency 1000MHz Then to mark peak reading value + cable loss shall be less than 2.5μW.
4. Setting of SA is following as 1000MHz and stop frequency 2387MHz Then to mark peak reading value + cable loss shall be less than 2.5μW.
5. SA adjusted to start frequency 2387MHz and stop frequency 2400MHz. Then to mark peak reading value + cable loss shall be less than 25μW.
6. SA adjusted to start frequency 2483.5MHz and stop frequency 2496.5MHz Then to mark peak reading value + cable loss shall be less than 25μW
7. SA adjusted to start frequency 2496.5MHz and stop frequency 12500MHz Then to mark peak reading value + cable loss shall be less than 2.5μW
8. Measure side band spurious as follows: For 2.4GHz band: 2374MHz~2400MHz and 2483.5MHz~2509.5MHz RBW = VBW = 30kHz, Result\_Value = Measured\_Value + 15.2 [dBm]
9. If the Result\_Value is over the requirement, take total sum of 1MHz band centered at the spur frequency like ACLP measurement as Result\_Value.

## 7.4 TEST SETUP LAYOUT



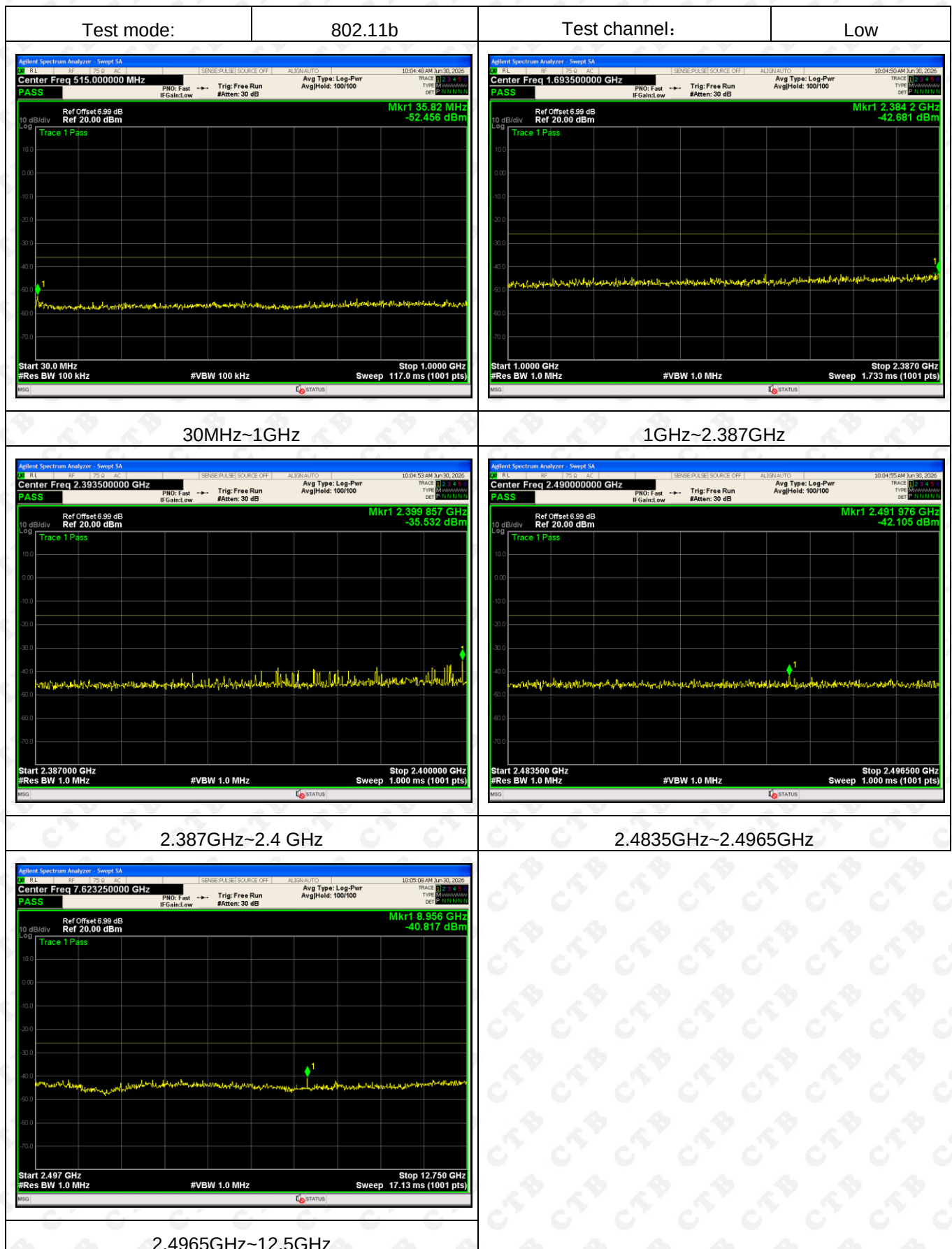
## EST DEVIATION

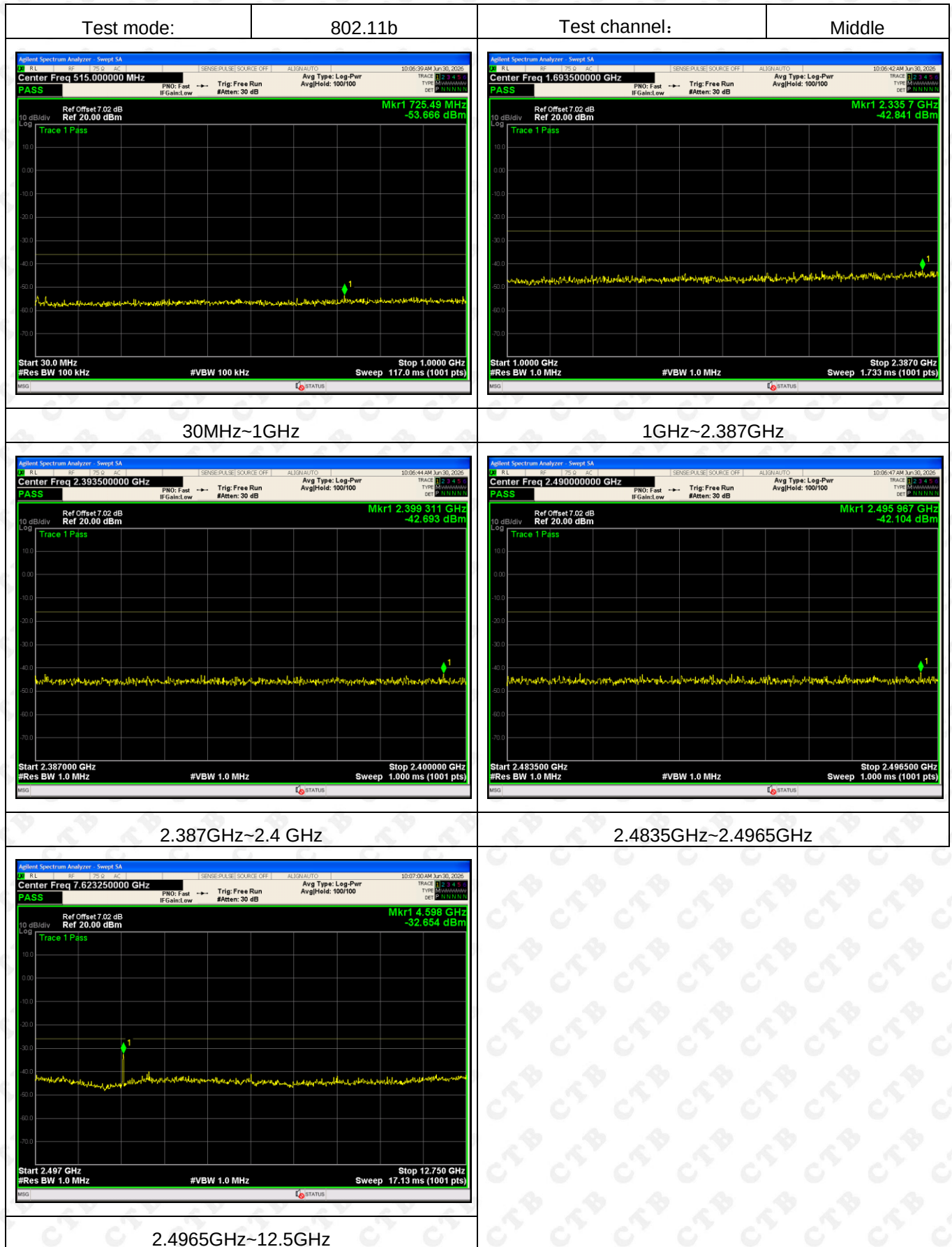
There is no deviation with the original standard.

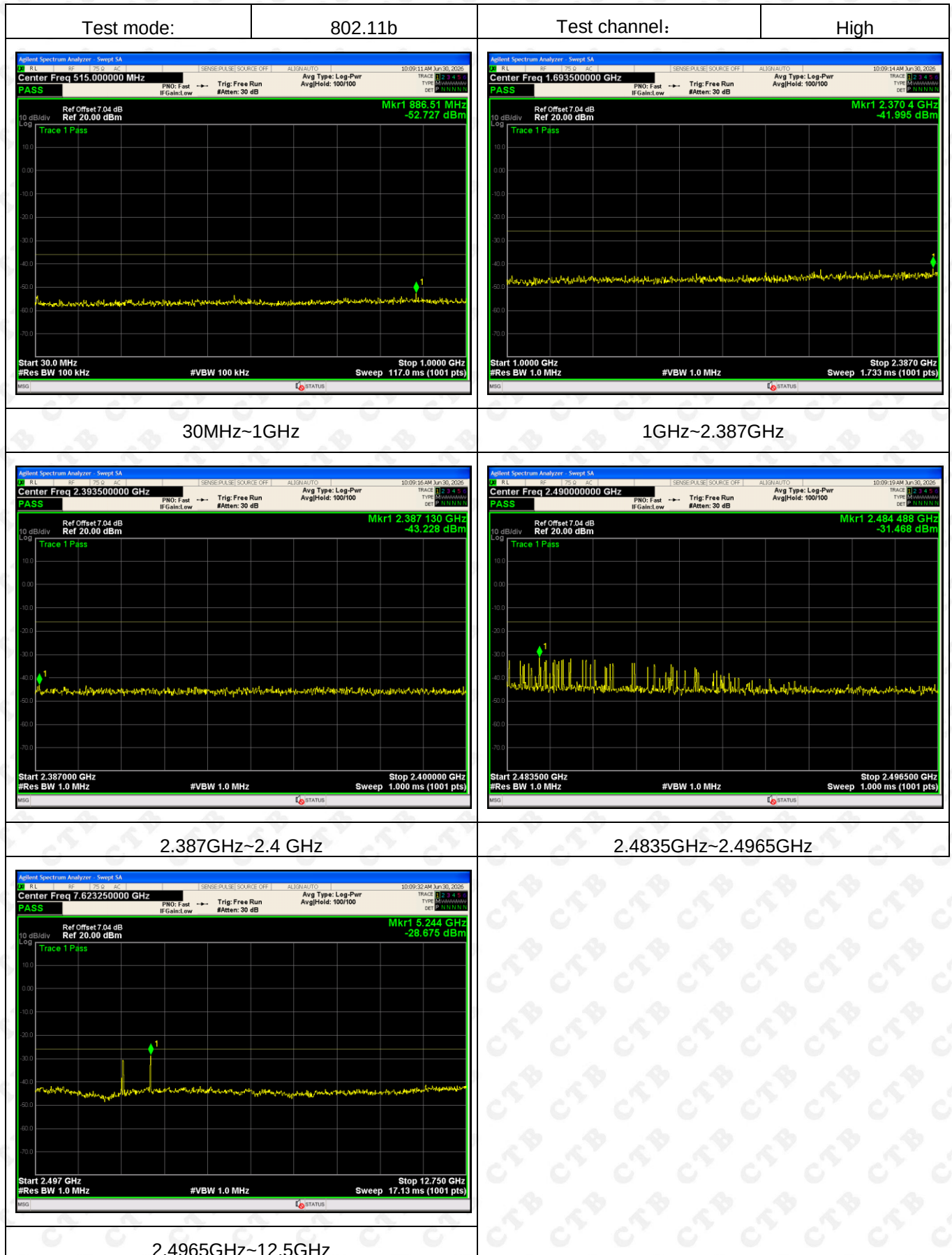
## 7.5 TEST RESULT

|               |                |                    |        |
|---------------|----------------|--------------------|--------|
| Temperature:  | 23℃            | Relative Humidity: | 54%    |
| Test Voltage: | Normal Voltage | Pressure:          | 101kPa |

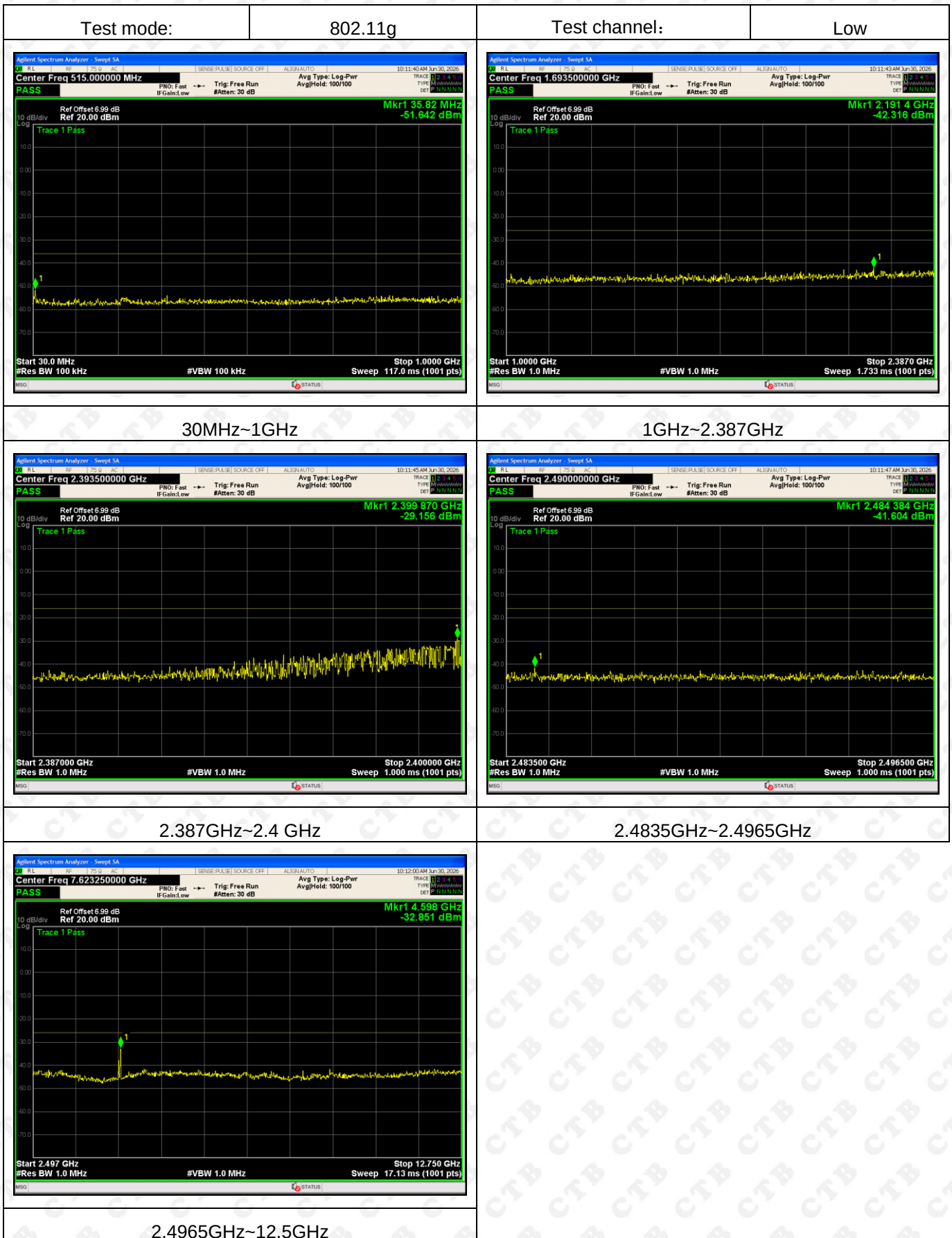
| Test mode | Test Channel | Test freq. range        | Emission Frequency (MHz) | Test result (dBm/MHz) | Test result (uW/MHz) | limits (uW/MHz) | Result |
|-----------|--------------|-------------------------|--------------------------|-----------------------|----------------------|-----------------|--------|
| 802.11b   | Low          | 30MHz≤f≤1000MHz         | 35.82                    | -52.46                | 0.057                | 2.5             | PASS   |
|           |              | 1000MHz < f≤2387MHz     | 2384.23                  | -42.68                | 0.054                | 2.5             | PASS   |
|           |              | 2387MHz < f≤2400MHz     | 2399.86                  | -35.53                | 0.280                | 25              | PASS   |
|           |              | 2483.5MHz≤f < 2496.5MHz | 2491.98                  | -42.11                | 0.062                | 25              | PASS   |
|           |              | 2496.5MHz≤f < 12750MHz  | 8956.21                  | -40.82                | 0.083                | 2.5             | PASS   |
|           | Middle       | 30MHz≤f≤1000MHz         | 725.49                   | -53.67                | 0.004                | 2.5             | PASS   |
|           |              | 1000MHz < f≤2387MHz     | 2335.68                  | -42.84                | 0.052                | 2.5             | PASS   |
|           |              | 2387MHz < f≤2400MHz     | 2399.31                  | -42.69                | 0.054                | 25              | PASS   |
|           |              | 2483.5MHz≤f < 2496.5MHz | 2495.97                  | -42.1                 | 0.062                | 25              | PASS   |
|           |              | 2496.5MHz≤f < 12750MHz  | 4598.47                  | -32.65                | 0.543                | 2.5             | PASS   |
|           | High         | 30MHz≤f≤1000MHz         | 886.51                   | -52.73                | 0.005                | 2.5             | PASS   |
|           |              | 1000MHz < f≤2387MHz     | 2370.36                  | -42                   | 0.063                | 2.5             | PASS   |
|           |              | 2387MHz < f≤2400MHz     | 2387.13                  | -43.23                | 0.048                | 25              | PASS   |
|           |              | 2483.5MHz≤f < 2496.5MHz | 2484.49                  | -31.47                | 0.713                | 25              | PASS   |
|           |              | 2496.5MHz≤f < 12750MHz  | 5244.44                  | -28.68                | 1.355                | 2.5             | PASS   |

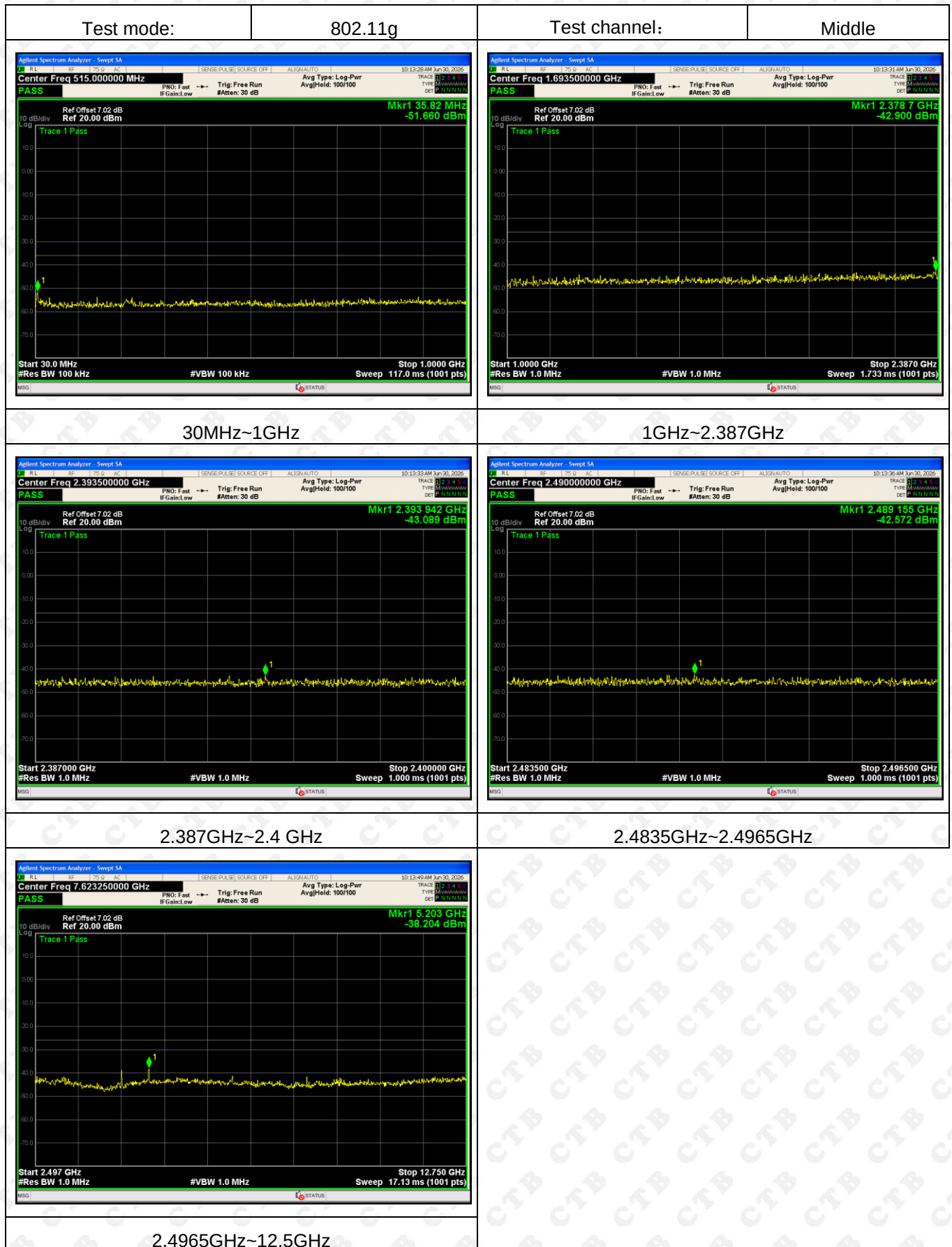


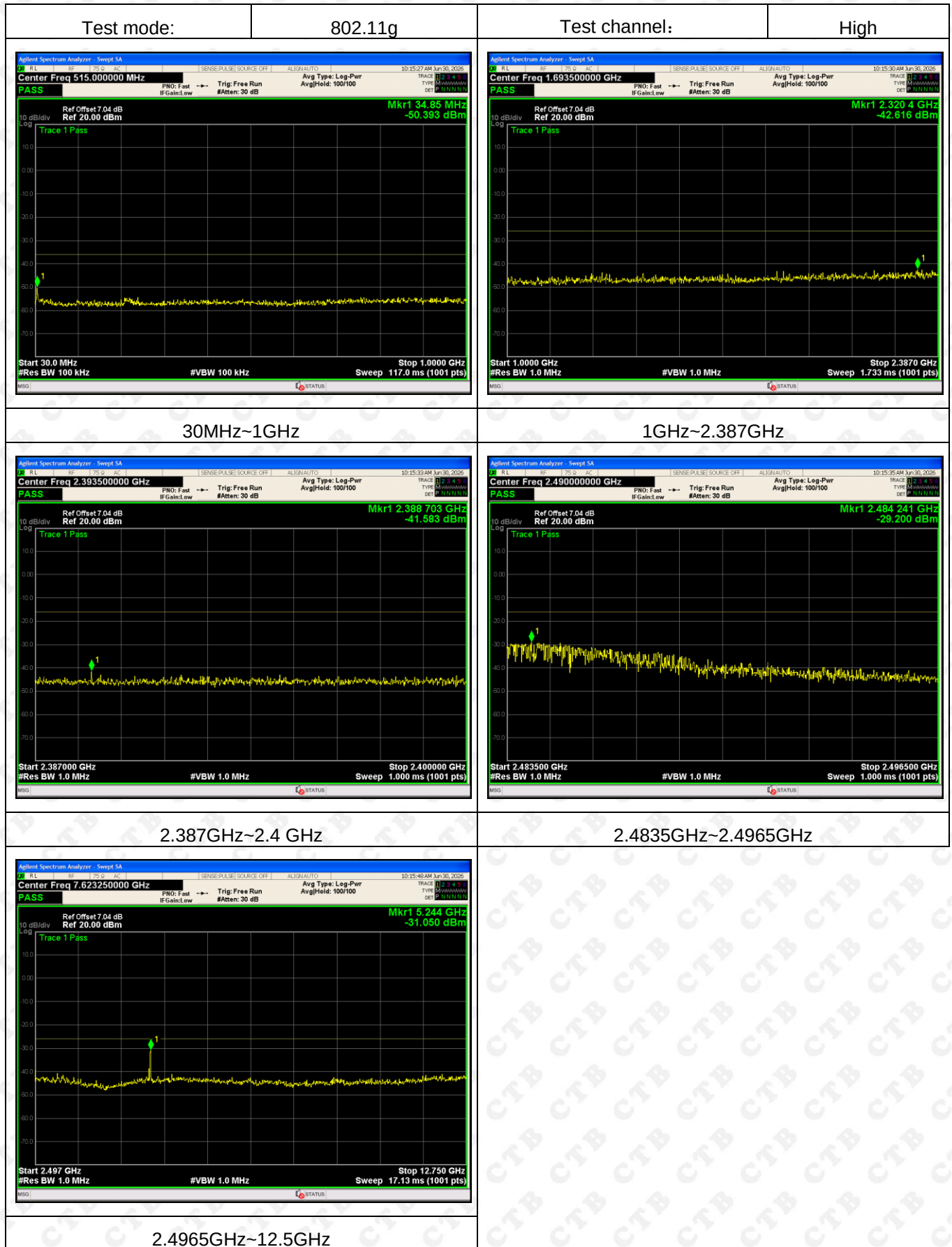




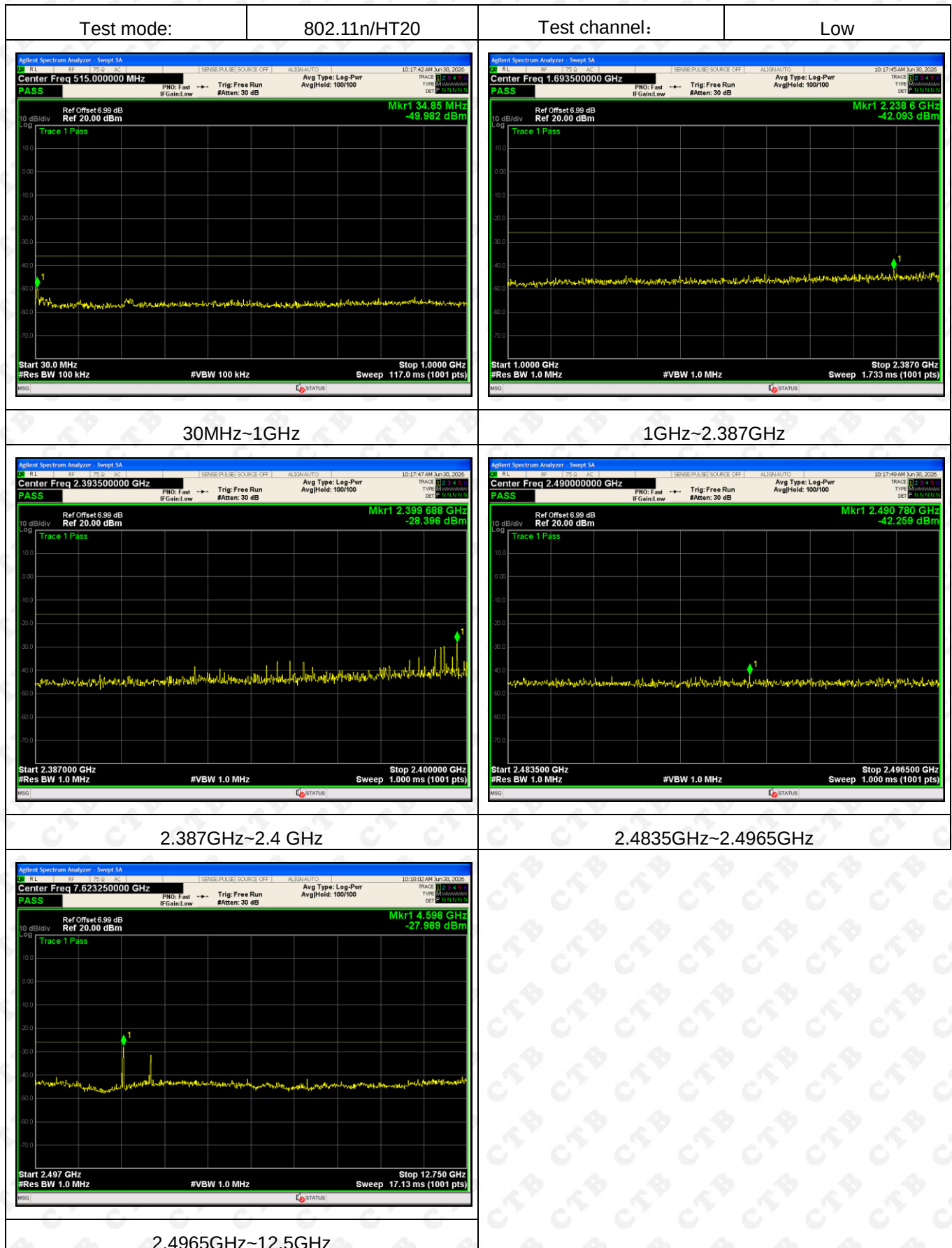
| Test mode | Test Channel | Test freq. range        | Emission Frequency (MHz) | Test result (dBm/MHz) | Test result (uW/MHz) | limits (uW/MHz) | Result |
|-----------|--------------|-------------------------|--------------------------|-----------------------|----------------------|-----------------|--------|
| 802.11g   | Low          | 30MHz≤f≤1000MHz         | 35.82                    | -51.64                | 0.069                | 2.5             | PASS   |
|           |              | 1000MHz < f≤2387MHz     | 2191.43                  | -42.32                | 0.059                | 2.5             | PASS   |
|           |              | 2387MHz < f≤2400MHz     | 2399.87                  | -29.16                | 1.213                | 25              | PASS   |
|           |              | 2483.5MHz≤f < 2496.5MHz | 2484.38                  | -41.6                 | 0.069                | 25              | PASS   |
|           |              | 2496.5MHz≤f < 12750MHz  | 4598.47                  | -32.85                | 0.519                | 2.5             | PASS   |
|           | Middle       | 30MHz≤f≤1000MHz         | 35.82                    | -51.66                | 0.007                | 2.5             | PASS   |
|           |              | 1000MHz < f≤2387MHz     | 2378.68                  | -42.9                 | 0.051                | 2.5             | PASS   |
|           |              | 2387MHz < f≤2400MHz     | 2393.94                  | -43.09                | 0.049                | 25              | PASS   |
|           |              | 2483.5MHz≤f < 2496.5MHz | 2489.15                  | -42.57                | 0.055                | 25              | PASS   |
|           |              | 2496.5MHz≤f < 12750MHz  | 5203.42                  | -38.2                 | 0.151                | 2.5             | PASS   |
|           | High         | 30MHz≤f≤1000MHz         | 34.85                    | -50.39                | 0.009                | 2.5             | PASS   |
|           |              | 1000MHz < f≤2387MHz     | 2320.42                  | -42.62                | 0.055                | 2.5             | PASS   |
|           |              | 2387MHz < f≤2400MHz     | 2388.7                   | -41.58                | 0.070                | 25              | PASS   |
|           |              | 2483.5MHz≤f < 2496.5MHz | 2484.24                  | -29.2                 | 1.202                | 25              | PASS   |
|           |              | 2496.5MHz≤f < 12750MHz  | 5244.44                  | -31.05                | 0.785                | 2.5             | PASS   |

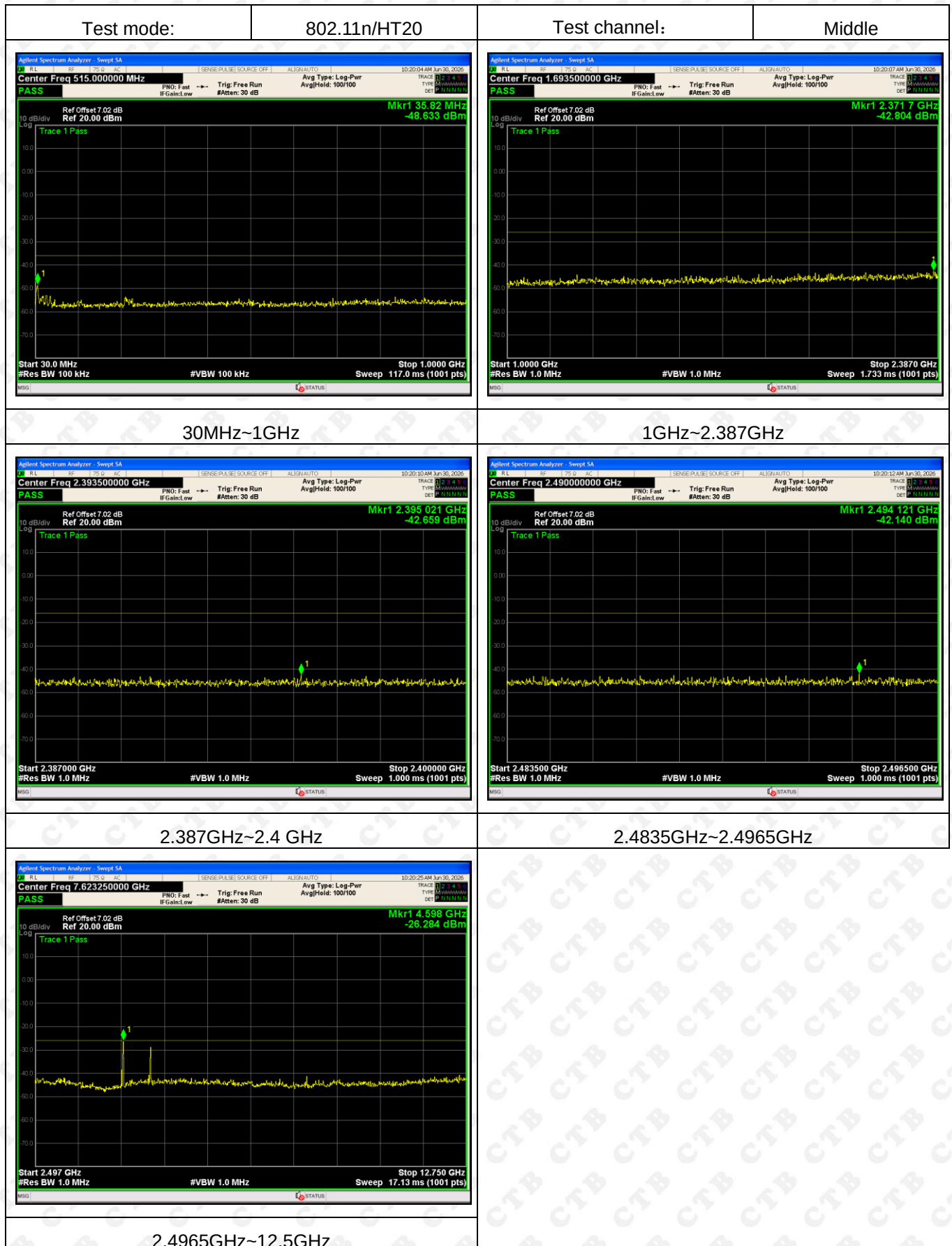


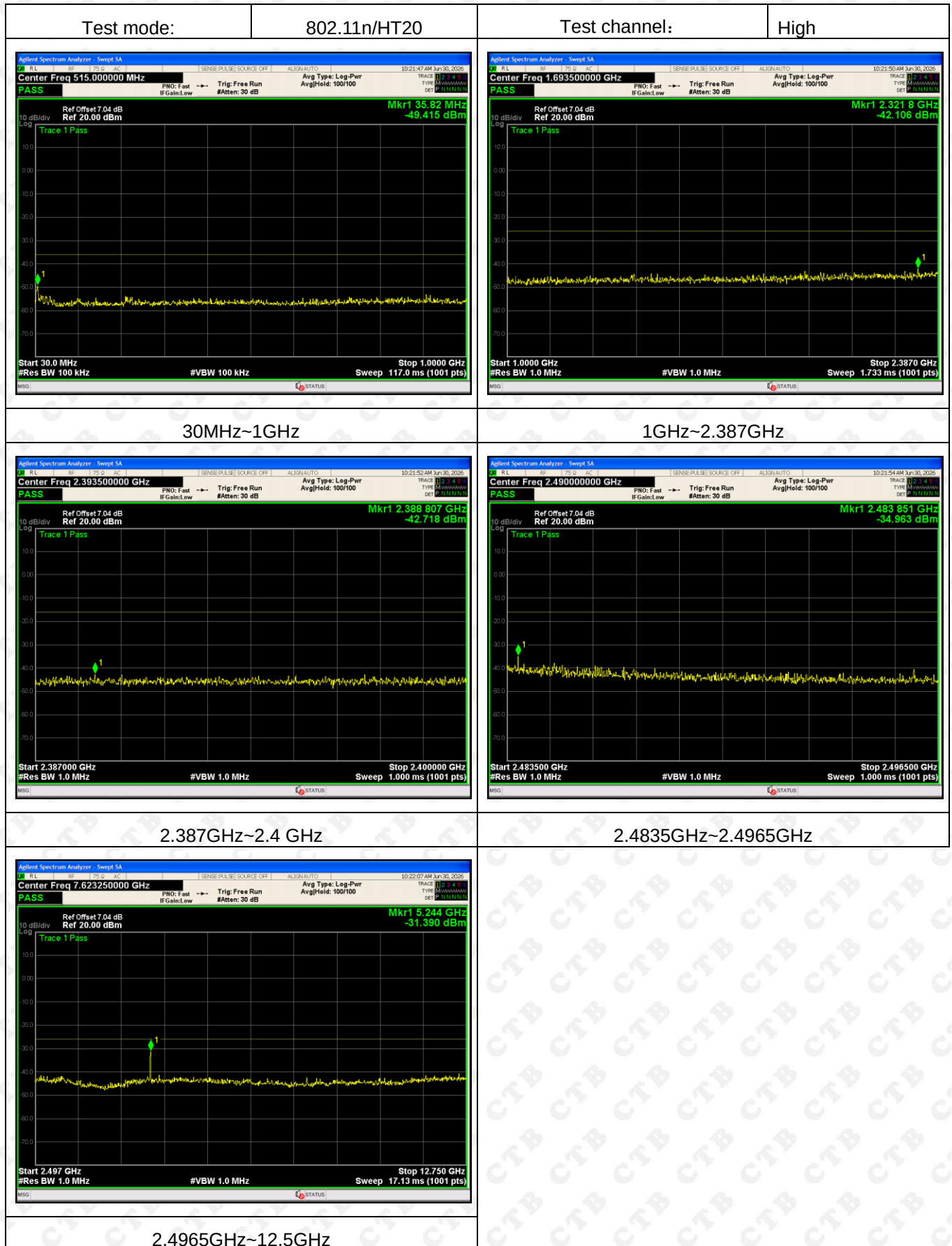




| Test mode     | Test Channel | Test freq. range        | Emission Frequency (MHz) | Test result (dBm/MHz) | Test result (uW/MHz) | limits (uW/MHz) | Result |
|---------------|--------------|-------------------------|--------------------------|-----------------------|----------------------|-----------------|--------|
| 802.11n<br>20 | Low          | 30MHz≤f≤1000MHz         | 34.85                    | -49.98                | 0.100                | 2.5             | PASS   |
|               |              | 1000MHz < f≤2387MHz     | 2238.59                  | -42.09                | 0.062                | 2.5             | PASS   |
|               |              | 2387MHz < f≤2400MHz     | 2399.69                  | -28.4                 | 1.445                | 25              | PASS   |
|               |              | 2483.5MHz≤f < 2496.5MHz | 2490.78                  | -42.26                | 0.059                | 25              | PASS   |
|               |              | 2496.5MHz≤f < 12750MHz  | 4598.47                  | -27.99                | 1.589                | 2.5             | PASS   |
|               | Middle       | 30MHz≤f≤1000MHz         | 35.82                    | -48.63                | 0.014                | 2.5             | PASS   |
|               |              | 1000MHz < f≤2387MHz     | 2371.74                  | -42.8                 | 0.052                | 2.5             | PASS   |
|               |              | 2387MHz < f≤2400MHz     | 2395.02                  | -42.66                | 0.054                | 25              | PASS   |
|               |              | 2483.5MHz≤f < 2496.5MHz | 2494.12                  | -42.14                | 0.061                | 25              | PASS   |
|               |              | 2496.5MHz≤f < 12750MHz  | 4598.47                  | -26.28                | 2.355                | 2.5             | PASS   |
|               | High         | 30MHz≤f≤1000MHz         | 35.82                    | -49.42                | 0.011                | 2.5             | PASS   |
|               |              | 1000MHz < f≤2387MHz     | 2321.81                  | -42.11                | 0.062                | 2.5             | PASS   |
|               |              | 2387MHz < f≤2400MHz     | 2388.81                  | -42.72                | 0.053                | 25              | PASS   |
|               |              | 2483.5MHz≤f < 2496.5MHz | 2483.85                  | -34.96                | 0.319                | 25              | PASS   |
|               |              | 2496.5MHz≤f < 12750MHz  | 5244.44                  | -31.39                | 0.726                | 2.5             | PASS   |







## 8 UNWANTED EMISSION INTENSITY MEASUREMENT

## 8.1 LIMIT

| Item                 | Limits                                      |
|----------------------|---------------------------------------------|
| RX Spurious Emission | $\leq 4\text{nW}$ ( $f < 1\text{GHz}$ )     |
|                      | $\leq 20\text{nW}$ ( $1\text{GHz} \leq f$ ) |

## 8.2 MEASURING INSTRUMENTS AND SETTING

The following table is the setting of Spectrum Analyzer.

| Spectrum Parameter | Setting                                                     |
|--------------------|-------------------------------------------------------------|
| Attenuation        | Auto                                                        |
| RB                 | 100 kHz (below 1GHz emissions) 1 MHz (above 1GHz emissions) |
| VB                 | 100 kHz (below 1GHz emissions) 1 MHz (above 1GHz emissions) |
| Detector           | Peak                                                        |
| Trace              | Max Hold                                                    |
| Sweep Time         | Auto                                                        |

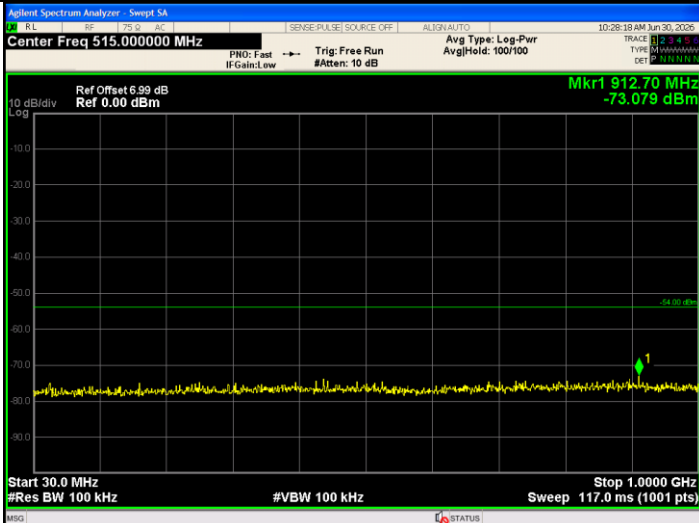
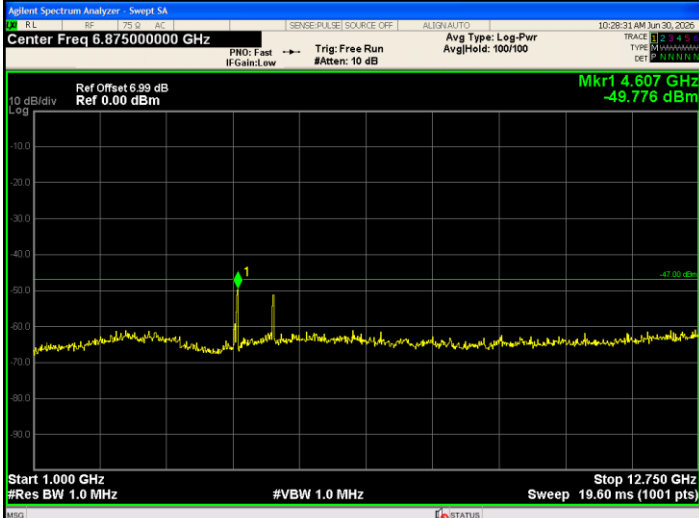
## 8.3 TEST PROCEDURE

1. EUT have the continuous reception mode and fixed only one channelize.
2. Setting of SA is following as  
RB / VB: 100 kHz (below 1GHz emissions) / 1 MHz (above 1GHz emissions) /  
AT: 10dB / Ref: 0dBm / Sweep time: Auto / Sweep Mode: Continuous sweep /  
Detect mode: Positive peak / Trace mode: Max hold
3. SA set RB: 100kHz and VB: 100kHz. Then adjust to start frequency 30MHz and stop frequency 1000MHz. Search to mark peak reading value + cable loss shall be less than 4nW
4. SA set RB: 1MHz and VB: 1MHz. Then adjust to start frequency 1000MHz and stop frequency 12500MHz. Search to mark peak reading value + cable loss shall be less than 20nW
5. 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 others are 1/10 or less more of the limit, no necessary to be indicated.

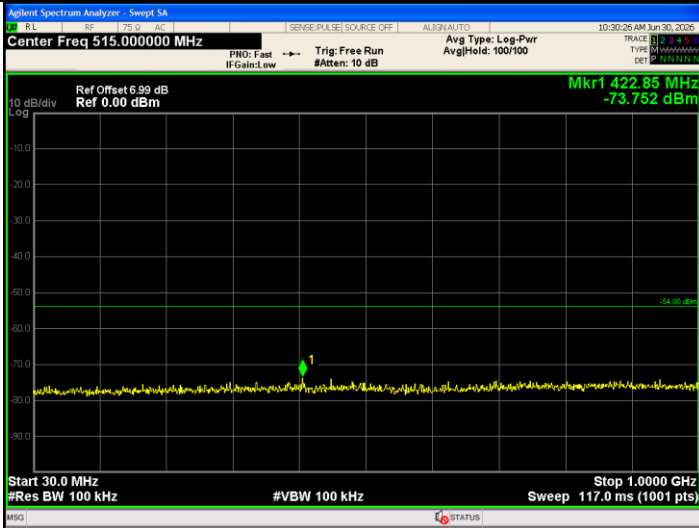
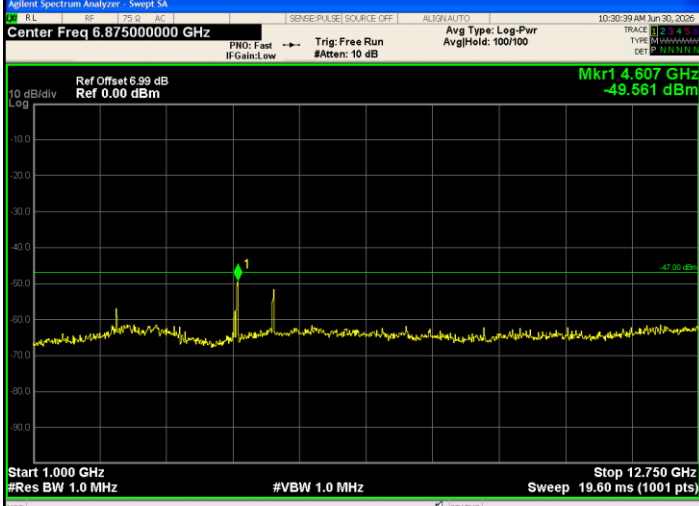
# 8.4 TEST RESULT

|               |                |                    |        |
|---------------|----------------|--------------------|--------|
| Temperature:  | 23℃            | Relative Humidity: | 54%    |
| Test Voltage: | Normal Voltage | Pressure:          | 101kPa |

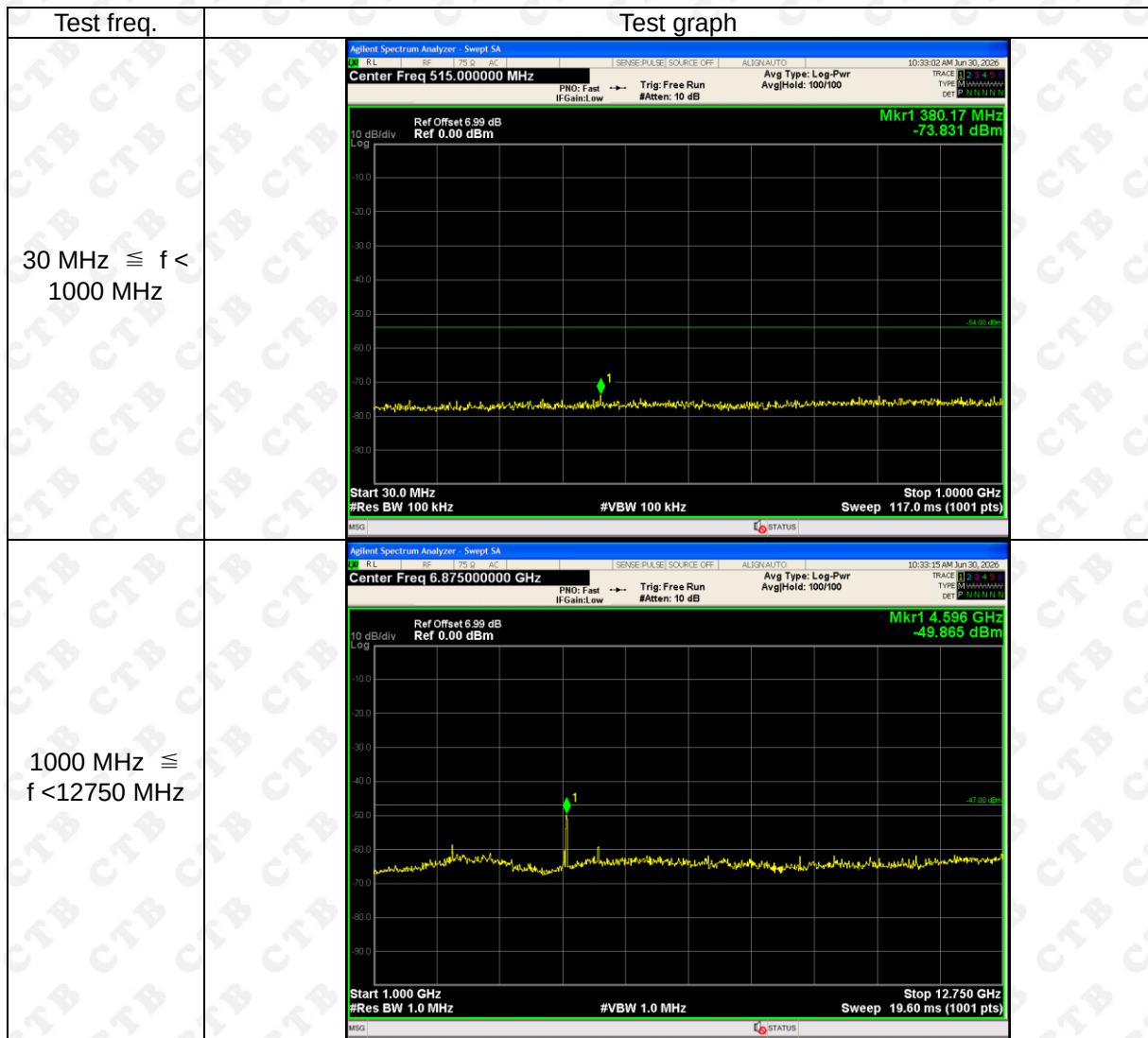
| Test mode | Test freq. range   | Emission Frequency (MHz) | Test result dBm | Test result nW | Limit nW | Result |
|-----------|--------------------|--------------------------|-----------------|----------------|----------|--------|
| b mode    | 30MHz≤f≤1000MHz    | 912.7                    | -73.08          | 0.049          | 4        | PASS   |
|           | 1000MHz<f≤12750MHz | 4607.25                  | -49.78          | 10.520         | 20       | PASS   |

| Test freq.               | Test graph                                                                           |
|--------------------------|--------------------------------------------------------------------------------------|
| 30 MHz ≤ f < 1000 MHz    |   |
| 1000 MHz ≤ f < 12750 MHz |  |

| Test mode | Test freq. range       | Emission Frequency (MHz) | Test result dBm | Test result nW | Limit nW | Result |
|-----------|------------------------|--------------------------|-----------------|----------------|----------|--------|
| g mode    | 30MHz≤f≤1000MHz        | 422.85                   | -73.75          | 0.042          | 4        | PASS   |
|           | 1000MHz < f ≤ 12750MHz | 4607.25                  | -49.56          | 11.066         | 20       | PASS   |

| Test freq.               | Test graph                                                                                                                                                                                                                                                                                                                                             |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 30 MHz ≤ f < 1000 MHz    |  <p>Agilent Spectrum Analyzer - Sweep SA<br/>Center Freq 515.000000 MHz<br/>Ref Offset 5.99 dB<br/>Ref 0.00 dBm<br/>Mkr1 422.85 MHz<br/>-73.752 dBm<br/>Start 30.0 MHz<br/>#Res BW 100 kHz<br/>#VBW 100 kHz<br/>Stop 1.0000 GHz<br/>Sweep 117.0 ms (1001 pts)</p>   |
| 1000 MHz ≤ f < 12750 MHz |  <p>Agilent Spectrum Analyzer - Sweep SA<br/>Center Freq 6.875000000 GHz<br/>Ref Offset 5.99 dB<br/>Ref 0.00 dBm<br/>Mkr1 4.607 GHz<br/>-49.561 dBm<br/>Start 1.000 GHz<br/>#Res BW 1.0 MHz<br/>#VBW 1.0 MHz<br/>Stop 12.750 GHz<br/>Sweep 19.60 ms (1001 pts)</p> |

| Test mode | Test freq. range   | Emission Frequency (MHz) | Test result dBm | Test result nW | Limit nW | Result |
|-----------|--------------------|--------------------------|-----------------|----------------|----------|--------|
| N20 mode  | 30MHz≤f≤1000MHz    | 380.17                   | -73.83          | 0.041          | 4        | PASS   |
|           | 1000MHz<f≤12750MHz | 4595.5                   | -49.87          | 10.304         | 20       | PASS   |



## 9 TRANSMISSION ANTENNA GAIN (EIRP ANTENNA POWER) MEASUREMENT

### 9.1 LIMIT

| Item                                                                                                                                                                                                                                                                                          | Limits                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EIRP Power Density                                                                                                                                                                                                                                                                            | $\leq 6.91\text{dBm/MHz}$ (FH form 2427 - 2470.75 MHz)<br>$\leq 12.14\text{dBm/MHz}$ (OFDM,DS from 2400~2483.5MHz)<br>$\leq 12.14\text{dBm}$ (Other from 2400~2483.5MHz) |
| Note: This test item is not applied for radio equipment with equivalent isotropic radiation power lower than 12.14dBm/MHz, but Antenna Power(Conducted) limit is 10 mW/MHz (10 dBm/MHz), So the test item will be not applied to the transmission antenna which has a gain of 2.14dBi or less |                                                                                                                                                                          |

### 9.2 MEASURING INSTRUMENTS AND SETTING

The following table is the setting of Spectrum Analyzer.

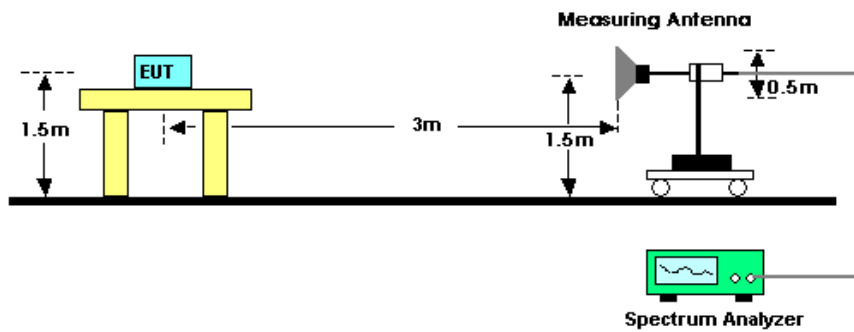
| Spectrum Parameter | Setting  |
|--------------------|----------|
| Attenuation        | Auto     |
| RB/VB              | 1MHz     |
| Detector           | Peak     |
| Trace              | Max Hold |
| Sweep Time         | Auto     |

### 9.3 TEST PROCEDURE

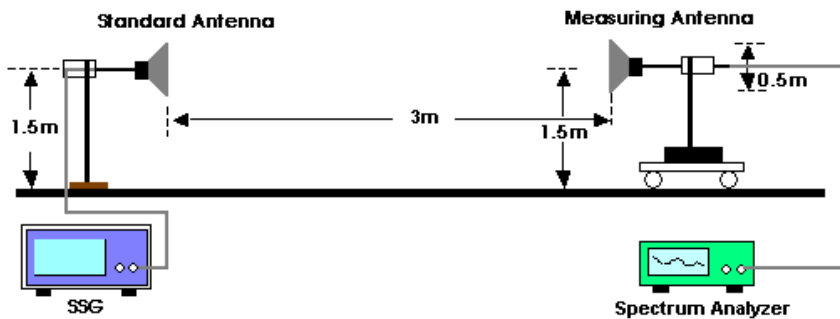
1. Set EUT and measuring antenna at the same height and roughly facing each other.
2. Move the measuring antenna height up and down within  $\pm 50\text{cm}$  of EUT height and swing it to find the maximum output of the measuring antenna. The output level at the spectrum analyzer is read as "E".
3. Remove the EUT from the turn table and put the replacing antenna facing to measuring antenna at same height. Set the standard signal generator (SSG) at same frequency and transmit on then receive the signal
4. Swing the replacing antenna give a maximum receiving level.
5. Move the measuring antenna height up and down within  $\pm 50\text{cm}$  of replacing antenna height and swing it to find the maximum receiving level.
6. Set SSG output power at  $P_t$  to give the equivalent output level of "E" or calculate  $P_t$  with SSG output which gives the nearest of "E" and difference ( $\pm 1\text{dB}$ ). Record the  $P_t$ .
7. Calculate EIRP by the formula below  $\text{EIRP} = G_t - L + P_t$ .  $G_t$ : gain of replacing antenna (dBi)  
 $L$ : feeder loss between SSG and replacing antenna  $P_t$ : Output power of the SSG
8. If the antenna for the EUT has circular polarization, sum of V-field and H-field will be result if measuring antenna is linear polarization.

## 9.4 TEST SETUP LAYOUT

For EUT radiation measurement



For standard antenna measurement



### TEST DEVIATION

There is no deviation with the original standard.

## 9.5 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

## 9.6 TEST RESULT

| Test voltage   | Test modulation | Output power (dBm/MHz) | Gain (dBi) | EIRP (dBm/MHz) | Result |
|----------------|-----------------|------------------------|------------|----------------|--------|
| Normal Voltage | 802.11b         | 4.82                   | 2.48       | 7.3            | Pass   |
| Normal Voltage | 802.11g         | 3.796                  | 2.48       | 6.276          | Pass   |
| Normal Voltage | 802.11n(HT20)   | 4.657                  | 2.48       | 7.137          | Pass   |

## 10TRANSMISSION RADIATION ANGLE WIDTH (3DB BEAMWIDTH) MEASUREMENT

## 10.1 LIMIT

| Item                                                                                                                                                                                                                                                                                          | Limits                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3dB antenna beam width                                                                                                                                                                                                                                                                        | $360/A$ (If $A < 1$ ; then $A = 1$ )<br>$A = \{\text{EIRP Power [mW]} / 16.36 \text{ for DS, OFDM}\}$ or<br>$A = \{\text{EIRP Power [mW]} / 4.9 \text{ for FH}\}$ |
| Note: This test item is not applied for radio equipment with equivalent isotropic radiation power lower than 12.14dBm/MHz, but Antenna Power(Conducted) limit is 10 mW/MHz (10 dBm/MHz), So the test item will not be applied to the transmission antenna which has a gain of 2.14dBi or less |                                                                                                                                                                   |

## 10.2 MEASURING INSTRUMENTS AND SETTING

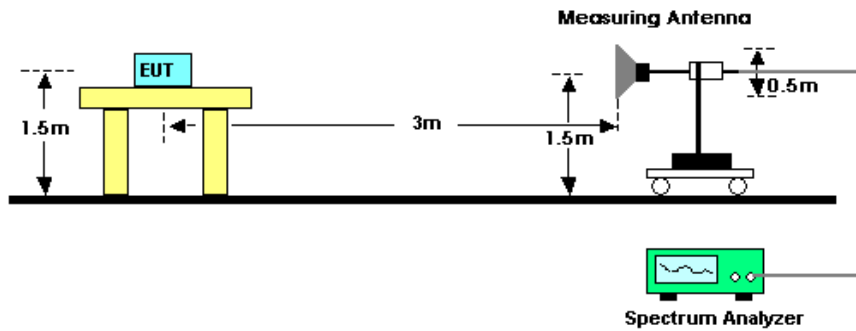
The following table is the setting of Spectrum Analyzer.

| Spectrum Parameter | Setting  |
|--------------------|----------|
| Attenuation        | Auto     |
| Span Frequency     | 0MHz     |
| RB                 | 1MHz     |
| VB                 | 1KHz     |
| Detector           | Peak     |
| Trace              | Max Hold |
| Sweep Time         | Auto     |

## 10.3 TEST PROCEDURE

1. Set EUT and measuring antenna at the same height and roughly facing each other.
2. Set spectrum analyzer with condition in section 4.7.2 and tune reference level to observe receiving signal position.
3. Rotate directions of the EUT horizontally and vertically to find the maximum receiving power.
4. Move the measuring antenna height up and down within  $\pm 50\text{cm}$  of EUT height and swing it to find the maximum output of measuring antenna. The output level at the spectrum analyzer is read as "E"
5. Calculate permitted radiation angle in horizontal and vertical using EIRP measured in another test method.
6. Calculate 3dB antenna beam width by the formula below  $360/A$  (If  $A < 1$ ; then  $A = 1$ ).  $A = \{\text{EIRP Power [mW]} / 16.36 \text{ for DS, OFDM}\}$  or  $A = \{\text{EIRP Power [mW]} / 4.9 \text{ for FH}\}$

#### 10.4 TEST SETUP LAYOUT



#### TEST DEVIATION

There is no deviation with the original standard.

#### 10.5 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

#### 10.6 TEST RESULT

N/A

Note: This test item is not applied for radio equipment with equivalent isotropic radiation power lower than 12.14dBm/MHz

## 11 RADIO INTERFERENCE PREVENTION CAPABILITY MEASUREMENT

### 11.1 LIMIT

| Item                | Limits         |
|---------------------|----------------|
| Identification code | $\geq 48$ bits |

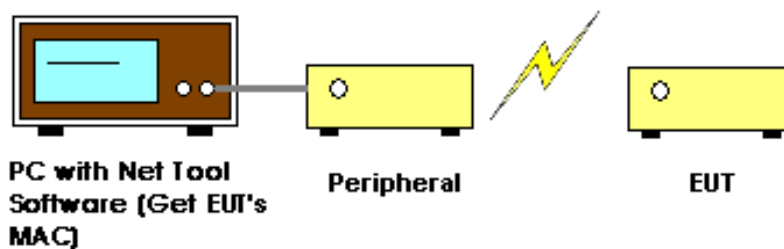
### 11.2 MEASURING ID CODE SOFTWARE

| Item        | Limits   |
|-------------|----------|
| MAC IP List | MAC Scan |

### 11.3 TEST PROCEDURE

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

### 11.4 TEST SETUP LAYOUT



### EST DEVIATION

There is no deviation with the original standard.

### 11.5 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

### 11.6 TEST RESULT

|              |         |                    |     |
|--------------|---------|--------------------|-----|
| Temperature: | 23°C    | Relative Humidity: | 54% |
| Pressure:    | 101kPa  |                    |     |
| Test Result: | CONFORM |                    |     |

MAC: 9CA525BA87F7

## 12 CARRIER SENSING FUNCTION

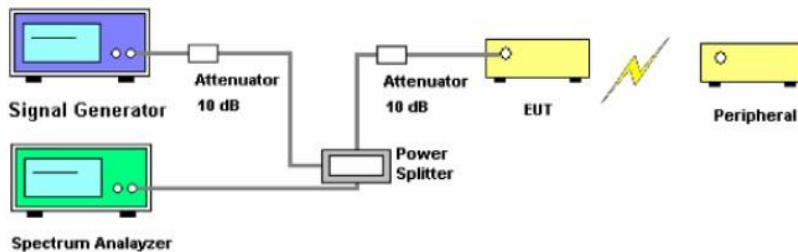
### 12.1 TEST REQUIREMENT

MIC Notice No.88 Appendix No.43

Article 2, Paragraph 1, Item 19 Rules Section 10

### 12.2 BLOCK DIAGRAM OF TEST SETUP

#### ❖ Measurement System Diagram



#### ❖ Conditions of Application Equipment (EUT)

- The EUT state shall be "normal mode link with wireless router".

### 12.3 TEST PROCEDURE

1. SG adjusted the frequency as same as the EUT transmitted signal and emitted the absence of modulation from SG and power level is  $(on\ 22.79 + G - 20 \cdot \log(f) \text{ dBm})$  (G is the antenna gain, f is the test frequency).
2. Turn off the RF signal of the SG.
3. EUT have transmitted the maximum modulation signal and fixed channelize.
4. Setting of SA: RBW/VBW=1MHz/1MHz, span=50MHz, Sweep time=auto, Sweep mode=continuous, Detect mode=positive peak
5. SG RF signal on.
6. EUT shall be stop the transmitted any signal and SG RF signal off, the EUT will be continuous

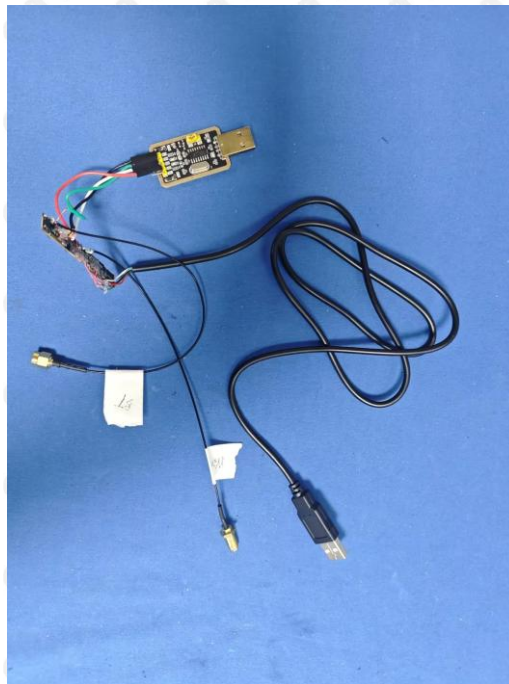
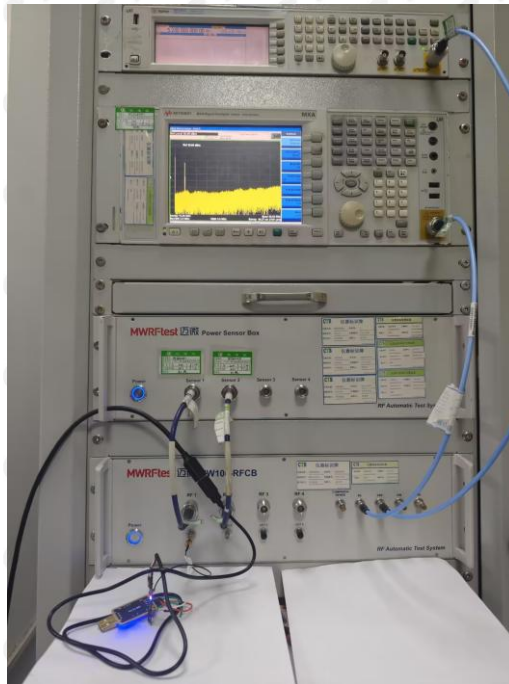
### 12.4 TEST RESULT

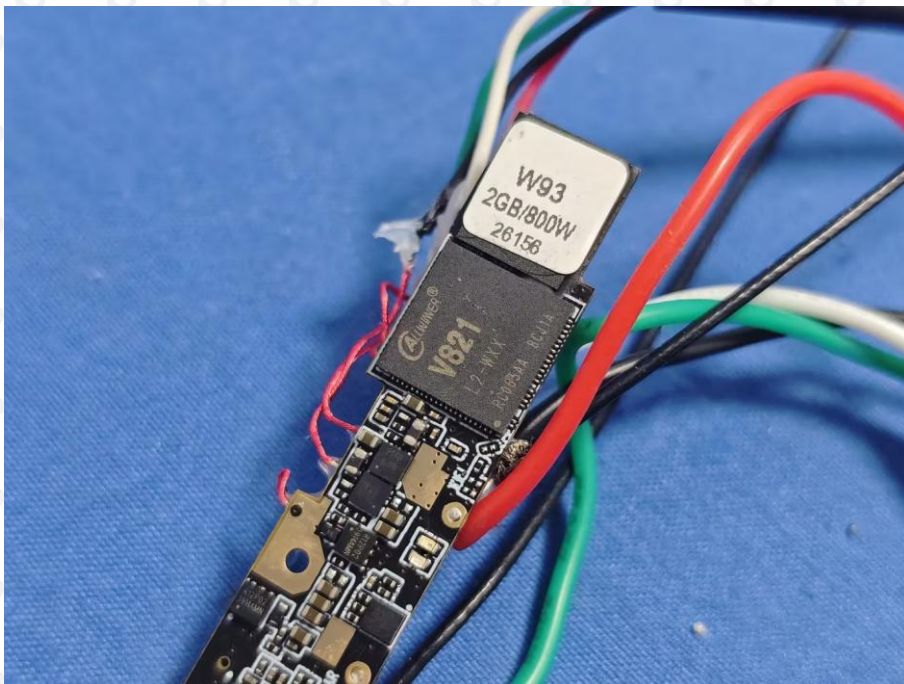
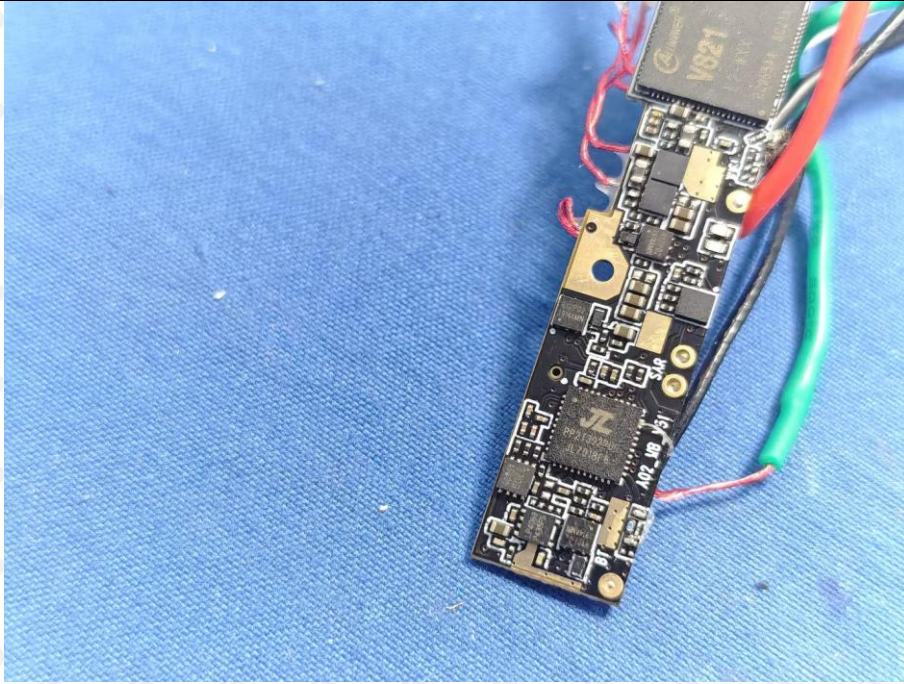
|                                                                                                                                                                                               |                           |                    |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--------------------|-----|
| Temperature:                                                                                                                                                                                  | 23℃                       | Relative Humidity: | 54% |
| Pressure:                                                                                                                                                                                     | 101kPa                    |                    |     |
| Test Result:                                                                                                                                                                                  | CONFORM for 802.11n(HT40) |                    |     |
| Note: The EUT cannot transmit radio when the field strength at maximal gain direction of receiving antenna power is over 100mV/m; and The Camera can start to transmit after carrier sensing. |                           |                    |     |

### 13 NUMBER OF CARRIERS

This device has more than 1 subcarrier in 1MHz, compliance with the requirement.

# 15 EUT TEST PHOTO





\*\*\*\*\* END OF REPORT \*\*\*\*\*