

# TEST REPORT

**Reference No.** ..... : WTD26D05137940W003  
**FCC ID**..... : 2BWV-V-G11  
**Applicant**..... : Shenzhen Zanbin Technology Co., Ltd  
**Address** ..... : C-3-701, Building C, Guanhaitai Garden, No. 4 Chuangye Road,  
Haizhu Community, Yuehai Street, Nanshan District, Shenzhen  
**Manufacturer** ..... : Shenzhen Zanbin Technology Co., Ltd  
**Address** ..... : C-3-701, Building C, Guanhaitai Garden, No. 4 Chuangye Road,  
Haizhu Community, Yuehai Street, Nanshan District, Shenzhen  
**Product**..... : digital Calendar  
**Model(s)**..... : G11  
**Standards**..... : FCC 47CFR Part 15 Section 15.407  
**Date of Receipt Sample** .... : 2026-05-25  
**Date of Test**..... : 2026-05-26 to 2026-06-23  
**Date of Issue** ..... : 2026-06-23  
**Test Result**..... : **Pass**

**Remarks:**

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.

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### 3 Revision History

| Test Report No.    | Date of Receipt Sample | Date of Test                   | Date of Issue | Purpose  | Comment | Approved |
|--------------------|------------------------|--------------------------------|---------------|----------|---------|----------|
| WTD26D05137940W003 | 2026-05-25             | 2026-05-26<br>to<br>2026-06-23 | 2026-06-23    | original | -       | Valid    |

## 4 General Information

### 4.1 General Description of E.U.T.

|                      |                       |
|----------------------|-----------------------|
| Product:             | digital Calendar      |
| Model(s):            | G11                   |
| Model Description:   | N/A                   |
| Test Sample No.:     | 1-1/1                 |
| Wi-Fi Specification: | 5G-802.11a/n(HT20/40) |
| Hardware Version:    | G-11_MAIN_P1          |
| Software Version:    | G11_CN_U_20260509_R05 |

### 4.2 Details of E.U.T.

|                      |                                                                                    |
|----------------------|------------------------------------------------------------------------------------|
| Operation Frequency: | 802.11a/n(HT20)<br>U-NII-1: 5180-5240MHz<br>802.11n(HT40)<br>U-NII-1: 5190-5230MHz |
|----------------------|------------------------------------------------------------------------------------|

Max. RF output power: U-NII-1: 17.87dBm

Type of Modulation: OFDM

Antenna installation: FPC antenna

Antenna Gain: 3.64dBi

Note:

#: The antenna gain is provided by the applicant, and the applicant should be responsible for its authenticity, WALTEK lab has not verified the authenticity of its information.

Ratings: DC 12V, 2A

Adapter: Model: SG-120200024BU  
Input: 100-240V~, 50/60Hz, 0.6A Max.  
Output: DC 12V, 2A

### 4.3 Channel List

| U-NII-1 (5.15-5.25GHz) |                |         |                |
|------------------------|----------------|---------|----------------|
| channel                | Frequency(MHz) | channel | Frequency(MHz) |
| 36                     | 5180           | 38      | 5190           |
| 40                     | 5200           | 42      | 5210           |
| 44                     | 5220           | 46      | 5230           |
| 48                     | 5240           |         |                |

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

For 802.11a/n(HT20)

| channel | Frequency(MHz) | channel | Frequency(MHz) |
|---------|----------------|---------|----------------|
| 36      | 5180           | 40      | 5200           |
| 48      | 5240           |         |                |

For 802.11n(HT40)

| channel | Frequency(MHz) | channel | Frequency(MHz) |
|---------|----------------|---------|----------------|
| 38      | 5190           | 46      | 5230           |

#### 4.4 Test Mode Description

During testing, Channel and Power Controlling Software provided by the applicant was used to control the operating channel as well as the maximum output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Transmitting duty cycle is no less 98%.

The software is TermAssist and SecureCRT tool Use together.

| Test Items                                | Mode             | Data Rate | TX/RX |
|-------------------------------------------|------------------|-----------|-------|
| Radiated Emissions                        | 802.11a(HT20)    | 6 Mbps    | TX    |
|                                           | 802.11n(HT20/40) | MCS0      | TX    |
| Duty Cycle                                | 802.11a(HT20)    | 6 Mbps    | TX    |
|                                           | 802.11n(HT20/40) | MCS0      | TX    |
| Band Edge                                 | 802.11a(HT20)    | 6 Mbps    | TX    |
|                                           | 802.11n(HT20/40) | MCS0      | TX    |
| 26dB Bandwidth and 99% Occupied Bandwidth | 802.11a(HT20)    | 6 Mbps    | TX    |
|                                           | 802.11n(HT20/40) | MCS0      | TX    |
| Maximum Conducted Output Power            | 802.11a(HT20)    | 6 Mbps    | TX    |
|                                           | 802.11n(HT20/40) | MCS0      | TX    |
| Power Spectral Density                    | 802.11a(HT20)    | 6 Mbps    | TX    |
|                                           | 802.11n(HT20/40) | MCS0      | TX    |
| Frequency Stability                       | Un-modulation    | /         | TX    |

#### 4.5 Test Facility

The test facility has a test site registered with the following organizations:

**ISED CAB identifier: CN0013. Test Firm Registration No.: 7760A.**

Waltek Testing Group Co., Ltd. Has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files.

Registration number 7760A, October 15, 2016.

**FCC Designation No.: CN1201. Test Firm Registration No.: 523476.**

Waltek Testing Group Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration number 523476, September 10, 2019.

## 5 Equipment Used during Test

### 5.1 Equipments List

| Item                                                        | Equipment                 | Manufacturer | Model No.             | Serial No.      | Last Cal. Date           | Calibration Due Date     |
|-------------------------------------------------------------|---------------------------|--------------|-----------------------|-----------------|--------------------------|--------------------------|
| <b>Conducted emissions from the AC mains power ports 2#</b> |                           |              |                       |                 |                          |                          |
| 1                                                           | EMI Test Receiver         | R&S          | ESCI                  | 101155          | 2025-07-04               | 2026-07-03               |
| 2                                                           | LISN                      | SCHWARZBECK  | NSLK 8128             | 8128-259        | 2025-06-03<br>2026-06-02 | 2026-06-02<br>2027-06-01 |
| 3                                                           | Limiter                   | CYBERTEK     | EM5010                | 261115-001-0024 | 2025-07-04               | 2026-07-03               |
| 4                                                           | Cable                     | Laplace      | RF300                 | -               | 2025-07-04               | 2026-07-03               |
| <b>3m Semi-anechoic Chamber for Radiation Emissions 1#</b>  |                           |              |                       |                 |                          |                          |
| 1                                                           | Spectrum Analyzer         | R&S          | FSP30                 | 100091          | 2026-04-07               | 2027-04-06               |
| 2                                                           | Amplifier                 | Agilent      | 8447D                 | 2944A10178      | 2025-07-04               | 2026-07-03               |
| 3                                                           | Tri-log Broadband Antenna | SCHWARZBECK  | VULB9163              | 336             | 2025-07-20               | 2026-07-19               |
| 4                                                           | Coaxial Cable             | Top          | TYPE16(13M)           | -               | 2026-04-07               | 2027-04-06               |
| 5                                                           | Broad-band Horn Antenna   | SCHWARZBECK  | BBHA 9120 D           | 9120D-1314      | 2025-08-09               | 2026-08-08               |
| 6                                                           | Broad-band Horn Antenna   | SCHWARZBECK  | BBHA 9170             | 335             | 2025-07-04               | 2026-07-03               |
| 7                                                           | Broadband Preamplifier    | COMPLIANCE   | PAP-1G18              | 2004            | 2025-07-04               | 2026-07-03               |
| 8                                                           | Coaxial Cable             | Top          | ZT26-NJ-NJ-8M/FA      | -               | 2026-04-07               | 2027-04-06               |
| 9                                                           | Microwave Amplifier       | SCHWARZBECK  | BBV 9721              | 100472          | 2025-07-04               | 2026-07-03               |
| 10                                                          | Coaxial Cable             | Top          | ZT40-2.92J-2.92J-2.0M | 17100919        | 2025-07-08               | 2026-07-07               |
| <b>3m Semi-anechoic Chamber for Radiation Emissions 2#</b>  |                           |              |                       |                 |                          |                          |
| 1                                                           | Test Receiver             | R&S          | ESCI                  | 101296          | 2026-04-07               | 2027-04-06               |
| 2                                                           | Trilog Broadband Antenna  | SCHWARZBECK  | VULB9160              | 9160-3325       | 2025-07-05               | 2026-07-04               |
| 3                                                           | Active Loop Antenna       | Com-Power    | AL-130R               | 10160007        | 2026-04-19               | 2027-04-18               |
| 4                                                           | Amplifier                 | ANRITSU      | MH648A                | M43381          | 2026-04-07               | 2027-04-06               |
| 5                                                           | Cable                     | HUBER+SUHNER | CBL2                  | 525178          | 2026-04-07               | 2027-04-06               |
| <b>RF Conducting</b>                                        |                           |              |                       |                 |                          |                          |
| 1                                                           | Spectrum Analyzer         | R&S          | FSP40                 | 100501          | 2025-07-04               | 2026-07-03               |
| 2                                                           | Spectrum Analyzer         | Agilent      | N9020A                | MY49100060      | 2025-07-04               | 2026-07-03               |
| 3                                                           | Power Sensor              | TST          | TSCB562R2             | -               | 2025-12-05               | 2026-12-04               |

#### Test Software:

| Test Item                                       | Software name | Software version  |
|-------------------------------------------------|---------------|-------------------|
| Conduction disturbance<br>Radiated Emission(3m) | EZ-EMC        | EZ-EMC(RA-03A1-1) |
| RF Conducted Testing                            | TST-301       | V2.0              |



## 5.2 Description of Support Units

| Equipment | Manufacturer | Model No. | Series No. |
|-----------|--------------|-----------|------------|
| /         | /            | /         | /          |

## 5.3 Measurement Uncertainty

| Parameter                         | Uncertainty                           |
|-----------------------------------|---------------------------------------|
| Radio Frequency                   | $\pm 1 \times 10^{-6}$                |
| RF Power                          | $\pm 1.0$ dB                          |
| RF Power Density                  | $\pm 2.2$ dB                          |
| Radiated Spurious Emissions test  | $\pm 5.03$ dB (30M~1000MHz)           |
|                                   | $\pm 5.47$ dB (1000M~25000MHz)        |
| Conducted Spurious Emissions test | $\pm 3.64$ dB (AC mains 150KHz~30MHz) |

## 6 Test Summary

| Test Items                                                        | Test Requirement                    | Result |
|-------------------------------------------------------------------|-------------------------------------|--------|
| Conducted Emissions                                               | 15.207(a)                           | PASS   |
| Radiated Emissions                                                | 15.407(b)<br>15.205(a)<br>15.209(a) | PASS   |
| Duty Cycle                                                        | KDB 789033                          | PASS   |
| 6dB Bandwidth                                                     | 15.407(e)                           | N/A    |
| 26 dB Emission Bandwidth<br>& 99% Occupied Bandwidth              | 15.407(a)                           | PASS   |
| Maximum Conducted Output Power                                    | 15.407(a)                           | PASS   |
| Power Spectral Density                                            | 15.407(a)                           | PASS   |
| Restricted bands around<br>fundamental frequency                  | 15.407(b)                           | PASS   |
| Frequency stability                                               | 15.407(g)                           | PASS   |
| Antenna Requirement                                               | 15.203                              | PASS   |
| Maximum Permissible Exposure<br>(Exposure of Humans to RF Fields) | 1.1307(b)(1)                        | PASS   |

## 7 Duty cycle

Test Requirement: FCC 47CFR Part 15 Section 15.407  
KDB789033 D02 General U-NII Test Procedures New Rules v02r01, Section (B)

Test Method: ANSI C63.10-2020

Test Limit: N/A

Test Result: PASS

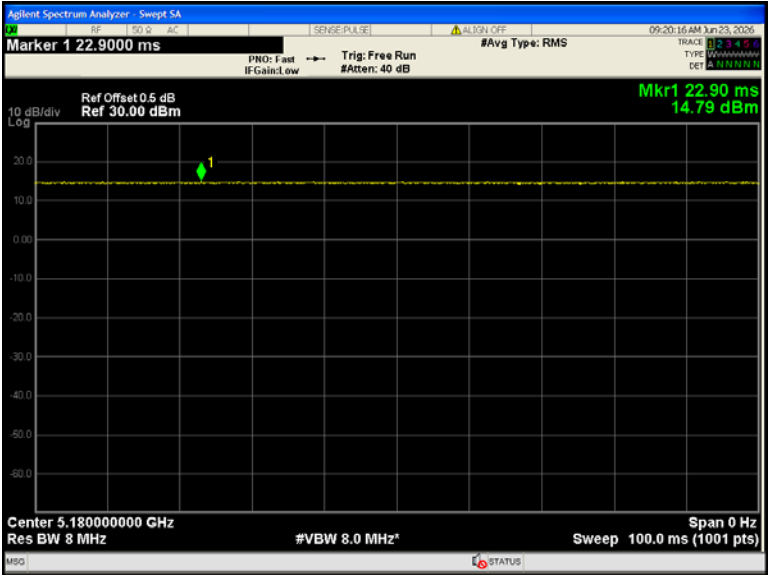
Remark: Through Pre-scan, and found 802.11a at lowest channel is the worst case. Only the worst case is recorded in the report.

### 7.1 Summary of Test Results

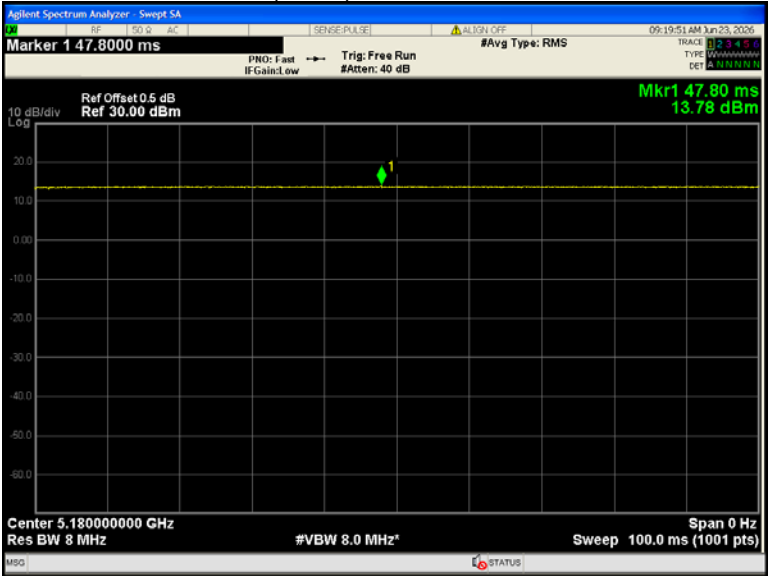
| Type of Modulation       | On time<br>ms | Period<br>ms | Duty<br>Cycle<br>linear | Duty<br>Cycle<br>% | Duty<br>Cycle<br>Factor(dB) | Average<br>Factor(dB) |
|--------------------------|---------------|--------------|-------------------------|--------------------|-----------------------------|-----------------------|
| U-NII-1<br>802.11a       | 100           | 100          | 1.00                    | 100.00             | 0.00                        | 0.00                  |
| U-NII-1<br>802.11n(HT20) | 100           | 100          | 1.00                    | 100.00             | 0.00                        | 0.00                  |
| U-NII-1<br>802.11n(HT40) | 100           | 100          | 1.00                    | 100.00             | 0.00                        | 0.00                  |

Test result plots shown as follows:

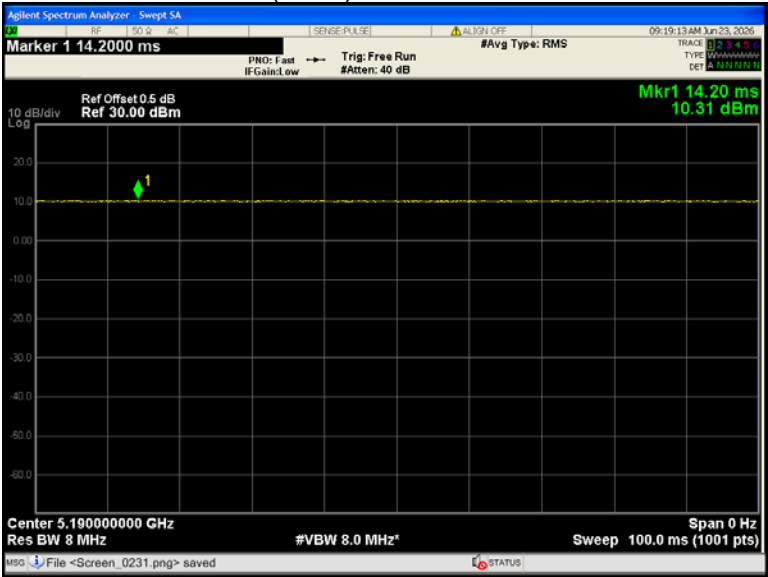
802.11a U-NII-1 Low channel



802.11n(HT20) U-NII-1 Low channel



802.11n(HT40) U-NII-1 Low channel



8 Conducted Emission

Test Requirement: FCC 47CFR Part 15 Section 15.207  
Test Method: ANSI C63.10-2020  
Test Result: PASS  
Frequency Range: 150kHz to 30MHz  
Limit:

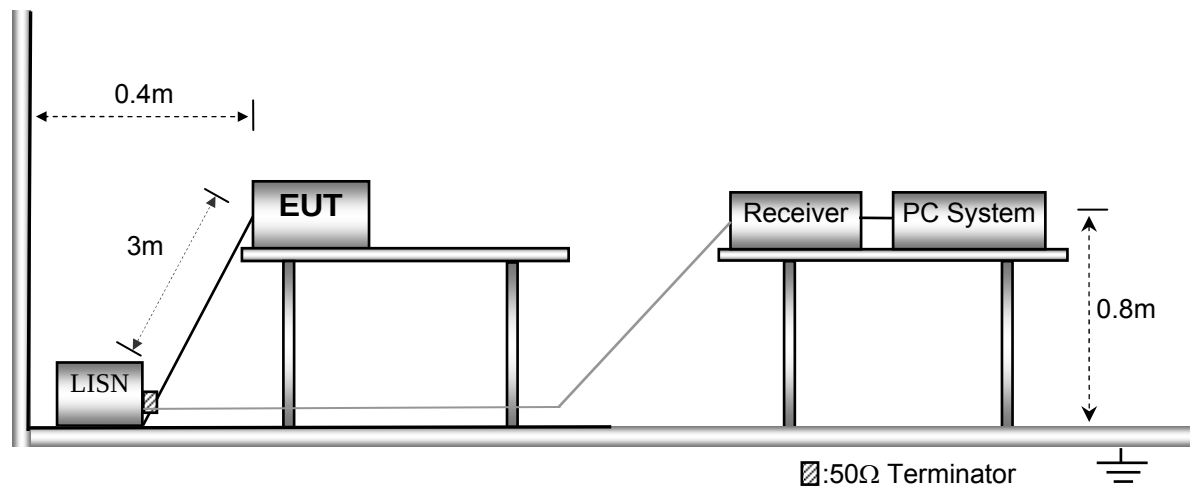
| Frequency (MHz)                                 | Conducted Limit (dBμV) |        |           |
|-------------------------------------------------|------------------------|--------|-----------|
|                                                 | Qu                     | i-peak | Average   |
| 0.15 to 0.5                                     | 6                      | to 56* | 56 to 46* |
| 0.5 to 5                                        |                        | 56     | 46        |
| 5 to 30                                         |                        | 60     | 50        |
| *Decreases with the logarithm of the frequency. |                        |        |           |

8.1 E.U.T. Operation

Operating Environment :  
Temperature: 24.4 °C  
Humidity: 60.2 % RH  
Atmospheric Pressure: 101.2kPa  
EUT Operation :  
The test was performed in transmitting mode, the test data were shown in the report.

8.2 EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.10-2020.



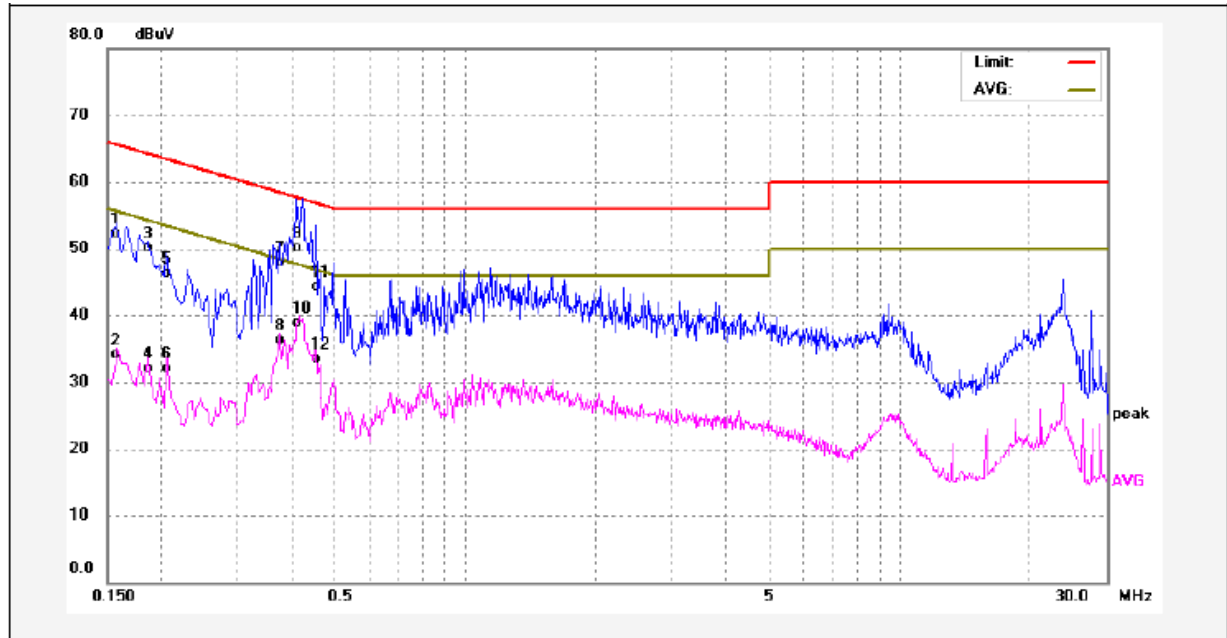
8.3 Measurement Description

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

## 8.4 Conducted Emission Test Result

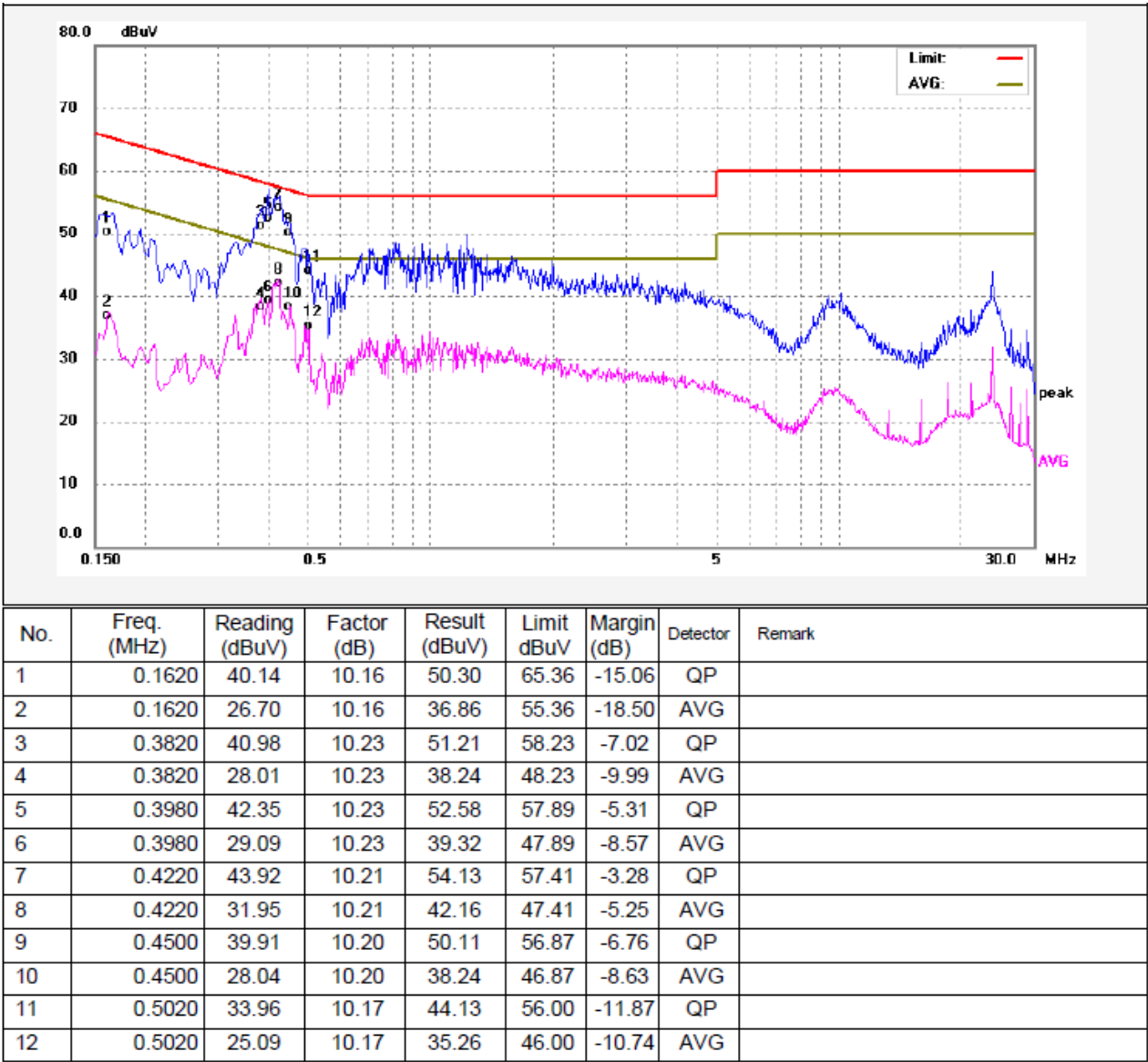
Remark: only the worst data (U-NII-1 802.11a High channel mode) were reported

Live line:



| No. | Freq. (MHz) | Reading (dBuV) | Factor (dB) | Result (dBuV) | Limit dBuV | Margin (dB) | Detector | Remark |
|-----|-------------|----------------|-------------|---------------|------------|-------------|----------|--------|
| 1   | 0.1580      | 42.10          | 10.16       | 52.26         | 65.56      | -13.30      | QP       |        |
| 2   | 0.1580      | 24.00          | 10.16       | 34.16         | 55.56      | -21.40      | AVG      |        |
| 3   | 0.1860      | 40.02          | 10.14       | 50.16         | 64.21      | -14.05      | QP       |        |
| 4   | 0.1860      | 22.02          | 10.14       | 32.16         | 54.21      | -22.05      | AVG      |        |
| 5   | 0.2060      | 36.06          | 10.15       | 46.21         | 63.36      | -17.15      | QP       |        |
| 6   | 0.2060      | 22.01          | 10.15       | 32.16         | 53.36      | -21.20      | AVG      |        |
| 7   | 0.3740      | 37.74          | 10.24       | 47.98         | 58.41      | -10.43      | QP       |        |
| 8   | 0.3740      | 25.97          | 10.24       | 36.21         | 48.41      | -12.20      | AVG      |        |
| 9   | 0.4140      | 39.79          | 10.22       | 50.01         | 57.57      | -7.56       | QP       |        |
| 10  | 0.4140      | 28.59          | 10.22       | 38.81         | 47.57      | -8.76       | AVG      |        |
| 11  | 0.4540      | 34.11          | 10.20       | 44.31         | 56.80      | -12.49      | QP       |        |
| 12  | 0.4540      | 23.28          | 10.20       | 33.48         | 46.80      | -13.32      | AVG      |        |

Neutral line:





## 9 Radiated Emissions

Test Requirement: FCC 47CFR Part 15 Section 15.209 & 15.407

Test Method: ANSI C63.10-2020

Test Result: PASS

Measurement Distance: 3m

Limit:

| Frequency<br>(MHz) | Field Strength        |                 | Field Strength Limit at 3m Measurement<br>Distance |                                       |
|--------------------|-----------------------|-----------------|----------------------------------------------------|---------------------------------------|
|                    | uV/m                  | Distance<br>(m) | uV/m                                               | dBuV/m                                |
| 0.009 ~ 0.490      | $2400/F(\text{kHz})$  | 300             | $10000 * 2400/F(\text{kHz})$                       | $20\log^{(2400/F(\text{kHz}))} + 80$  |
| 0.490 ~ 1.705      | $24000/F(\text{kHz})$ | 30              | $100 * 24000/F(\text{kHz})$                        | $20\log^{(24000/F(\text{kHz}))} + 40$ |
| 1.705 ~ 30         | 30                    | 30              | $100 * 30$                                         | $20\log^{(30)} + 40$                  |
| 30 ~ 88            | 100                   | 3               | 100                                                | $20\log^{(100)}$                      |
| 88 ~ 216           | 150                   | 3               | 150                                                | $20\log^{(150)}$                      |
| 216 ~ 960          | 200                   | 3               | 200                                                | $20\log^{(200)}$                      |
| Above 960          | 500                   | 3               | 500                                                | $20\log^{(500)}$                      |

### 9.1 EUT Operation

Operating Environment :

Temperature: 23.5 °C

Humidity: 52.1 % RH

Atmospheric Pressure: 101.2kPa

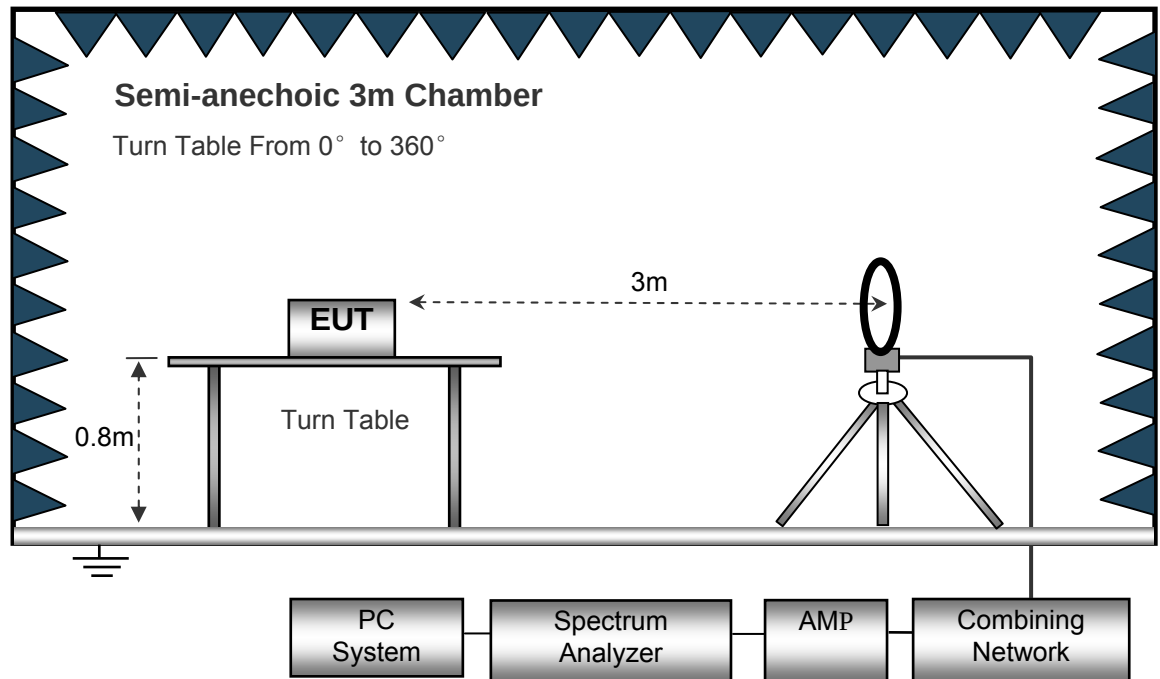
EUT Operation :

The test was performed in transmitting mode, the test data were shown in the report.

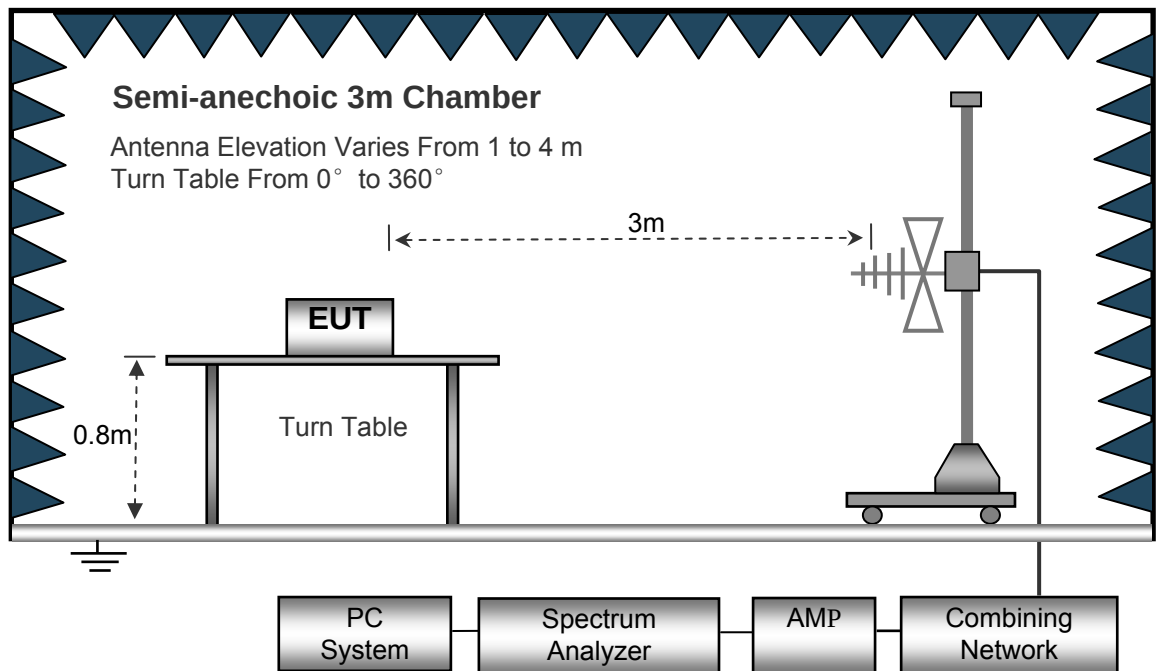
## 9.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10-2020.

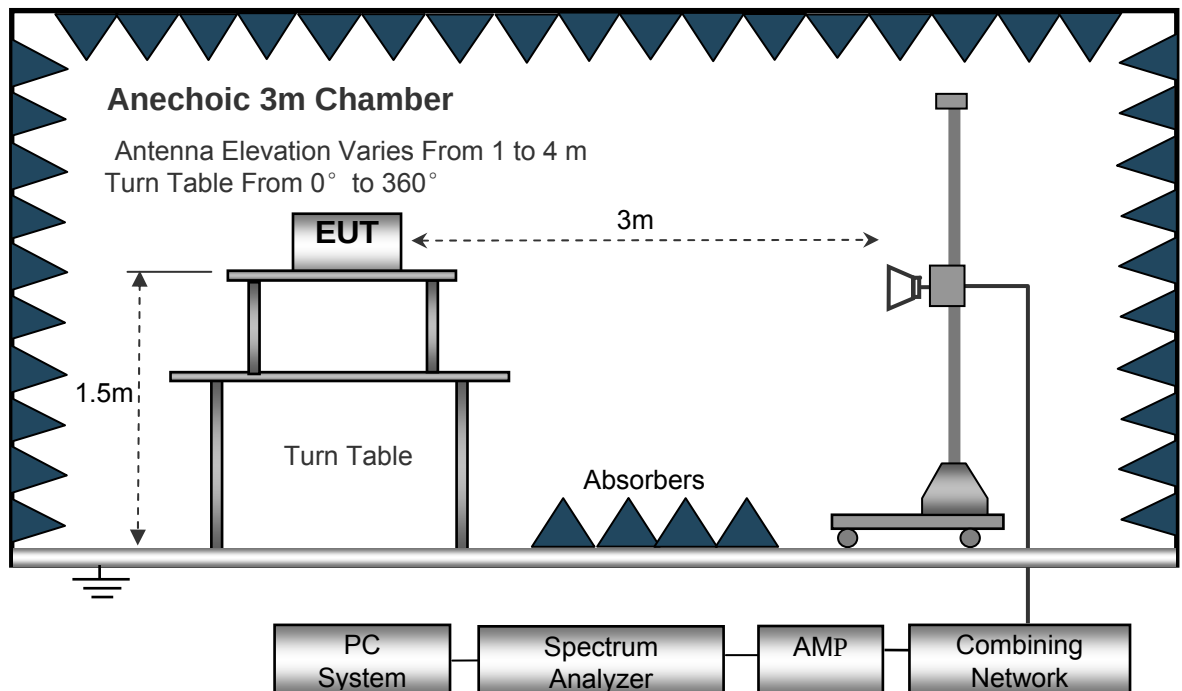
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz.



### 9.3 Spectrum Analyzer Setup

Below 30MHz

Sweep Speed ..... Auto  
 IF Bandwidth.....10kHz  
 Video Bandwidth.....10kHz  
 Resolution Bandwidth.....10kHz

30MHz ~ 1GHz

Sweep Speed ..... Auto  
 Detector .....PK  
 Resolution Bandwidth.....100kHz  
 Video Bandwidth.....300kHz

Above 1GHz

Sweep Speed ..... Auto  
 Detector .....PK  
 Resolution Bandwidth.....1MHz  
 Video Bandwidth.....3MHz  
 Detector .....Ave.  
 Resolution Bandwidth.....1MHz  
 Video Bandwidth.....10Hz

## 9.4 Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above ground plane for below 1GHz and 1.5m for above 1GHz.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are performed in X,Y and Z axis positioning(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand),the worst condition was tested putting the eut in X axis,so the worst data were shown as follow.
8. A 2.4GHz high –pass filter is used during radiated emissions above 1GHz measurement.

## 9.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain}$$

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit for Class B. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{Limit}$$

## 9.6 Summary of Test Results

### Test Frequency: 9KHz~30MHz

The measurements were more than 20 dB below the limit and not reported.

### Test Frequency : 30MHz ~ 18GHz

| Frequency                              | Receiver Reading | Detector    | Turn table Angle | RX Antenna |       | Corrected Factor | Corrected Amplitude | FCC Part 15.407/209/205 |        |
|----------------------------------------|------------------|-------------|------------------|------------|-------|------------------|---------------------|-------------------------|--------|
|                                        |                  |             |                  | Height     | Polar |                  |                     | Limit                   | Margin |
| (MHz)                                  | (dBμV)           | (PK/QP/Ave) | Degree           | (m)        | (H/V) | (dB)             | (dBμV/m)            | (dBμV/m)                | (dB)   |
| 802.11a U-NII-1 Low Channel 5180MHz    |                  |             |                  |            |       |                  |                     |                         |        |
| 223.45                                 | 40.39            | QP          | 248              | 1.3        | H     | -11.62           | 28.77               | 46.00                   | -17.23 |
| 223.45                                 | 36.93            | QP          | 52               | 1.5        | V     | -11.62           | 25.31               | 46.00                   | -20.69 |
| 4539.63                                | 50.09            | PK          | 242              | 1.1        | H     | -2.03            | 48.06               | 74.00                   | -25.94 |
| 4539.63                                | 45.73            | Ave         | 242              | 1.1        | H     | -2.03            | 43.70               | 54.00                   | -10.30 |
| 5149.96                                | 51.60            | PK          | 35               | 1.5        | H     | -1.02            | 50.58               | 74.00                   | -23.42 |
| 5149.96                                | 47.41            | Ave         | 35               | 1.5        | H     | -1.02            | 46.39               | 54.00                   | -7.61  |
| 10360.00                               | 41.64            | PK          | 205              | 1.8        | H     | 5.33             | 46.97               | 74.00                   | -27.03 |
| 10360.00                               | 36.29            | Ave         | 205              | 1.8        | H     | 5.33             | 41.62               | 54.00                   | -12.38 |
| 802.11a U-NII-1 Middle channel 5200MHz |                  |             |                  |            |       |                  |                     |                         |        |
| 223.45                                 | 41.31            | QP          | 228              | 1.7        | H     | -11.62           | 29.69               | 46.00                   | -16.31 |
| 223.45                                 | 37.34            | QP          | 85               | 1.1        | V     | -11.62           | 25.72               | 46.00                   | -20.28 |
| 4518.18                                | 49.99            | PK          | 222              | 1.6        | H     | -1.94            | 48.05               | 74.00                   | -25.95 |
| 4518.18                                | 45.78            | Ave         | 222              | 1.6        | H     | -1.94            | 43.84               | 54.00                   | -10.16 |
| 5110.32                                | 51.04            | PK          | 311              | 1.3        | H     | -1.06            | 49.98               | 74.00                   | -24.02 |
| 5110.32                                | 47.19            | Ave         | 311              | 1.3        | H     | -1.06            | 46.13               | 54.00                   | -7.87  |
| 10400.00                               | 41.52            | PK          | 246              | 1.7        | H     | 5.21             | 46.73               | 74.00                   | -27.27 |
| 10400.00                               | 36.67            | Ave         | 246              | 1.7        | H     | 5.21             | 41.88               | 54.00                   | -12.12 |

| Frequency                            | Receiver Reading | Detector    | Turn table Angle | RX Antenna |       | Corrected Factor | Corrected Amplitude | FCC Part 15.407/209/205 |        |
|--------------------------------------|------------------|-------------|------------------|------------|-------|------------------|---------------------|-------------------------|--------|
|                                      |                  |             |                  | Height     | Polar |                  |                     | Limit                   | Margin |
| (MHz)                                | (dBμV)           | (PK/QP/Ave) | Degree           | (m)        | (H/V) | (dB)             | (dBμV/m)            | (dBμV/m)                | (dB)   |
| 802.11a U-NII-1 High channel 5240MHz |                  |             |                  |            |       |                  |                     |                         |        |
| 223.45                               | 39.89            | QP          | 171              | 1.1        | H     | -11.62           | 28.27               | 46.00                   | -17.73 |
| 223.45                               | 37.26            | QP          | 266              | 1.7        | V     | -11.62           | 25.64               | 46.00                   | -20.36 |
| 4504.84                              | 51.40            | PK          | 317              | 1.1        | H     | -2.24            | 49.16               | 74.00                   | -24.84 |
| 4504.84                              | 45.03            | Ave         | 317              | 1.1        | H     | -2.24            | 42.79               | 54.00                   | -11.21 |
| 5123.02                              | 52.76            | PK          | 291              | 1.0        | H     | -1.09            | 51.67               | 74.00                   | -22.33 |
| 5123.02                              | 46.29            | Ave         | 291              | 1.0        | H     | -1.09            | 45.20               | 54.00                   | -8.80  |
| 10480.00                             | 41.41            | PK          | 160              | 1.9        | H     | 5.14             | 46.55               | 74.00                   | -27.45 |
| 10480.00                             | 37.61            | Ave         | 160              | 1.9        | H     | 5.14             | 42.75               | 54.00                   | -11.25 |

| Frequency                                    | Receiver Reading | Detector    | Turn table Angle | RX Antenna |       | Corrected Factor | Corrected Amplitude | FCC Part 15.407/209/205 |        |
|----------------------------------------------|------------------|-------------|------------------|------------|-------|------------------|---------------------|-------------------------|--------|
|                                              |                  |             |                  | Height     | Polar |                  |                     | Limit                   | Margin |
| (MHz)                                        | (dBμV)           | (PK/QP/Ave) | Degree           | (m)        | (H/V) | (dB)             | (dBμV/m)            | (dBμV/m)                | (dB)   |
| 802.11n(HT20) U-NII-1 Low Channel 5180MHz    |                  |             |                  |            |       |                  |                     |                         |        |
| 223.45                                       | 40.90            | QP          | 276              | 1.5        | H     | -11.62           | 29.28               | 46.00                   | -16.72 |
| 223.45                                       | 35.46            | QP          | 332              | 2.0        | V     | -11.62           | 23.84               | 46.00                   | -22.16 |
| 4530.35                                      | 55.27            | PK          | 10               | 1.0        | H     | -2.14            | 53.13               | 74.00                   | -20.87 |
| 4530.35                                      | 47.86            | Ave         | 10               | 1.0        | H     | -2.14            | 45.72               | 54.00                   | -8.28  |
| 5144.14                                      | 47.81            | PK          | 192              | 1.8        | H     | -1.06            | 46.75               | 74.00                   | -27.25 |
| 5144.14                                      | 37.79            | Ave         | 192              | 1.8        | H     | -1.06            | 36.73               | 54.00                   | -17.27 |
| 10360.00                                     | 40.37            | PK          | 315              | 1.1        | H     | 5.33             | 45.70               | 74.00                   | -28.30 |
| 10360.00                                     | 36.36            | Ave         | 315              | 1.1        | H     | 5.33             | 41.69               | 54.00                   | -12.31 |
| 802.11n(HT20) U-NII-1 Middle channel 5200MHz |                  |             |                  |            |       |                  |                     |                         |        |
| 223.45                                       | 41.16            | QP          | 19               | 1.1        | H     | -11.62           | 29.54               | 46.00                   | -16.46 |
| 223.45                                       | 34.59            | QP          | 149              | 1.0        | V     | -11.62           | 22.97               | 46.00                   | -23.03 |
| 4538.59                                      | 54.14            | PK          | 226              | 2.0        | H     | -2.12            | 52.02               | 74.00                   | -21.98 |
| 4538.59                                      | 47.86            | Ave         | 226              | 2.0        | H     | -2.12            | 45.74               | 54.00                   | -8.26  |
| 5135.43                                      | 47.63            | PK          | 299              | 1.2        | H     | -1.06            | 46.57               | 74.00                   | -27.43 |
| 5135.43                                      | 37.06            | Ave         | 299              | 1.2        | H     | -1.06            | 36.00               | 54.00                   | -18.00 |
| 10400.00                                     | 42.69            | PK          | 312              | 1.5        | H     | 5.21             | 47.90               | 74.00                   | -26.10 |
| 10400.00                                     | 37.62            | Ave         | 312              | 1.5        | H     | 5.21             | 42.83               | 54.00                   | -11.17 |

| Frequency                                  | Receiver Reading | Detector    | Turn table Angle | RX Antenna |       | Corrected Factor | Corrected Amplitude | FCC Part 15.407/209/205 |        |
|--------------------------------------------|------------------|-------------|------------------|------------|-------|------------------|---------------------|-------------------------|--------|
|                                            |                  |             |                  | Height     | Polar |                  |                     | Limit                   | Margin |
| (MHz)                                      | (dBμV)           | (PK/QP/Ave) | Degree           | (m)        | (H/V) | (dB)             | (dBμV/m)            | (dBμV/m)                | (dB)   |
| 802.11n(HT20) U-NII-1 High channel 5240MHz |                  |             |                  |            |       |                  |                     |                         |        |
| 223.45                                     | 40.99            | QP          | 150              | 1.7        | H     | -11.62           | 29.37               | 46.00                   | -16.63 |
| 223.45                                     | 34.97            | QP          | 105              | 1.3        | V     | -11.62           | 23.35               | 46.00                   | -22.65 |
| 4508.47                                    | 53.64            | PK          | 107              | 1.5        | H     | -1.96            | 51.68               | 74.00                   | -22.32 |
| 4508.47                                    | 47.99            | Ave         | 107              | 1.5        | H     | -1.96            | 46.03               | 54.00                   | -7.97  |
| 5125.14                                    | 46.83            | PK          | 105              | 2.0        | H     | -1.06            | 45.77               | 74.00                   | -28.23 |
| 5125.14                                    | 36.16            | Ave         | 105              | 2.0        | H     | -1.06            | 35.10               | 54.00                   | -18.90 |
| 10480.00                                   | 41.76            | PK          | 112              | 1.8        | H     | 5.14             | 46.90               | 74.00                   | -27.10 |
| 10480.00                                   | 37.14            | Ave         | 112              | 1.8        | H     | 5.14             | 42.28               | 54.00                   | -11.72 |



| Frequency                                  | Receiver Reading | Detector    | Turn table Angle | RX Antenna |       | Corrected Factor | Corrected Amplitude | FCC Part 15.407/209/205 |        |
|--------------------------------------------|------------------|-------------|------------------|------------|-------|------------------|---------------------|-------------------------|--------|
|                                            |                  |             |                  | Height     | Polar |                  |                     | Limit                   | Margin |
| (MHz)                                      | (dBμV)           | (PK/QP/Ave) | Degree           | (m)        | (H/V) | (dB)             | (dBμV/m)            | (dBμV/m)                | (dB)   |
| 802.11n(HT40) U-NII-1 Low Channel 5190MHz  |                  |             |                  |            |       |                  |                     |                         |        |
| 223.45                                     | 35.49            | QP          | 239              | 1.8        | H     | -11.62           | 23.87               | 46.00                   | -22.13 |
| 223.45                                     | 46.46            | QP          | 313              | 1.7        | V     | -11.62           | 34.84               | 46.00                   | -11.16 |
| 4504.28                                    | 42.72            | PK          | 320              | 1.3        | H     | -1.89            | 40.83               | 74.00                   | -33.17 |
| 4504.28                                    | 30.16            | Ave         | 320              | 1.3        | H     | -1.89            | 28.27               | 54.00                   | -25.73 |
| 5128.79                                    | 46.34            | PK          | 254              | 1.1        | H     | -1.06            | 45.28               | 74.00                   | -28.72 |
| 5128.79                                    | 37.25            | Ave         | 254              | 1.1        | H     | -1.06            | 36.19               | 54.00                   | -17.81 |
| 10380.00                                   | 40.32            | PK          | 248              | 1.9        | H     | 5.26             | 45.58               | 74.00                   | -28.42 |
| 10380.00                                   | 33.98            | Ave         | 248              | 1.9        | H     | 5.26             | 39.24               | 54.00                   | -14.76 |
| 802.11n(HT40) U-NII-1 High channel 5230MHz |                  |             |                  |            |       |                  |                     |                         |        |
| 223.45                                     | 34.99            | QP          | 128              | 1.9        | H     | -11.62           | 23.37               | 46.00                   | -22.63 |
| 223.45                                     | 45.46            | QP          | 247              | 1.9        | V     | -11.62           | 33.84               | 46.00                   | -12.16 |
| 4527.13                                    | 42.01            | PK          | 26               | 1.2        | H     | -1.94            | 40.07               | 74.00                   | -33.93 |
| 4527.13                                    | 30.40            | Ave         | 26               | 1.2        | H     | -1.94            | 28.46               | 54.00                   | -25.54 |
| 5126.00                                    | 45.78            | PK          | 24               | 1.7        | H     | -1.06            | 44.72               | 74.00                   | -29.28 |
| 5126.00                                    | 37.70            | Ave         | 24               | 1.7        | H     | -1.06            | 36.64               | 54.00                   | -17.36 |
| 10460.00                                   | 41.58            | PK          | 168              | 1.2        | H     | 5.28             | 46.86               | 74.00                   | -27.14 |
| 10480.00                                   | 36.66            | Ave         | 168              | 1.2        | H     | 5.28             | 41.94               | 54.00                   | -12.06 |

**Test Frequency: 12GHz~40GHz**

The measurements were more than 20 dB below the limit and not reported.

## 10 Band Edge

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | FCC 47CFR Part 15 Section 15.407                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Test Method:      | ANSI C63.10-2020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Test Limit:       | <p>For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27dBm/MHz.</p> <p>For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.</p> <p>For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.</p> <p>For transmitters operating in the 5.725-5.85 GHz band:</p> <p>(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.</p> <p>(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.</p> |
| Test Result:      | PASS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

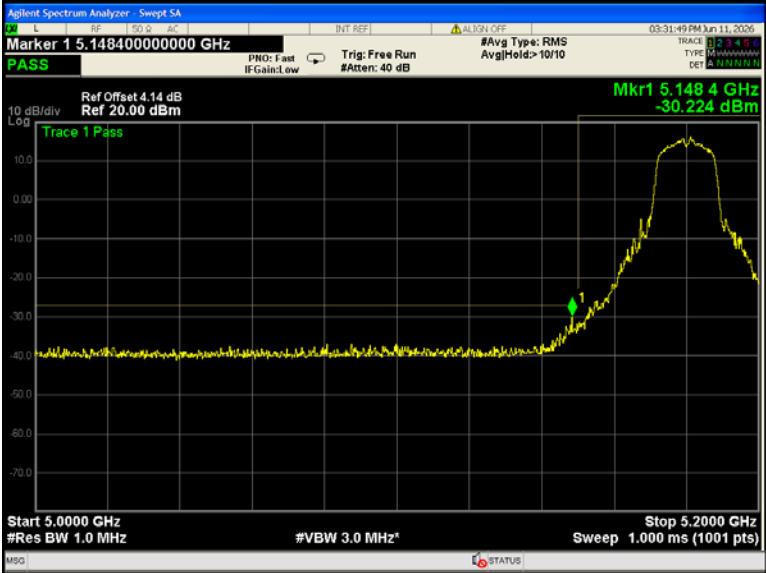
### 10.1 Test Produce

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. To convert the conducted power to EIRP as required by FCC 15.407, calculate and apply a Reference Level Offset or Correction factor table in the spectrum analyzer:  
Path Loss: Measure the loss of the cable and any external attenuators set into Reference Level Offset.  
Antenna Gain (G): Determine the maximum directional gain of the antenna in dBi.  
MIMO/Beamforming: If the EUT supports multiple outputs, calculate the Directional Gain according to KDB 662911, set Directional Antenna Gain (dBi) into Correction factor table.  
Follow the procedures specified in KDB Publication 662911 adjusting emission levels measured on individual outputs by  $10\log(N_{ANT})$ , where  $N_{ANT}$  is the number of outputs, set  $10\log(N_{ANT})$ , into Correction factor table.
4. Set RBW to 1000 kHz and VBW of spectrum analyzer to 3000 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
5. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
6. Repeat above procedures until all measured frequencies were complete.

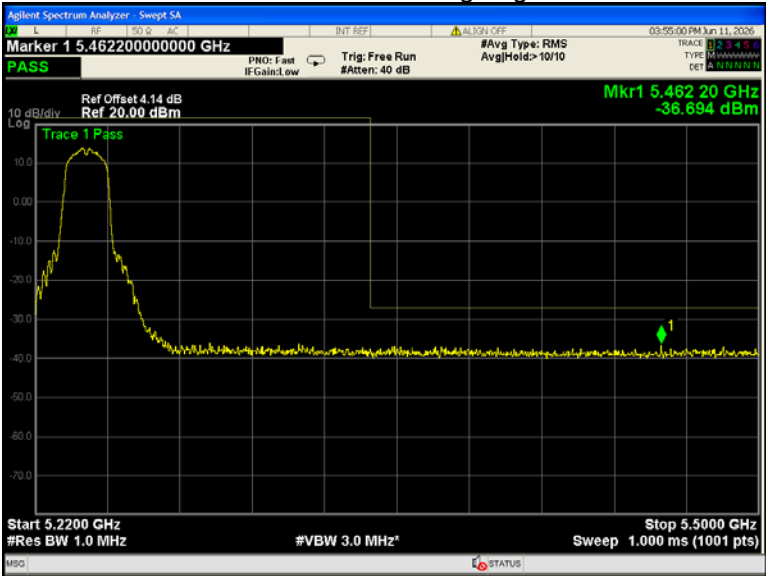
10.2 Test Result

Test result plots shown as follows:

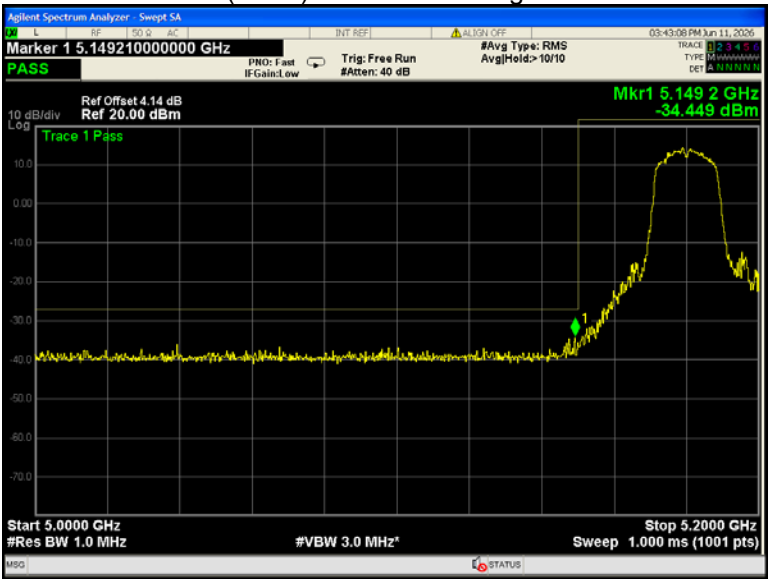
802.11a U-NII-1 Band edge-left side



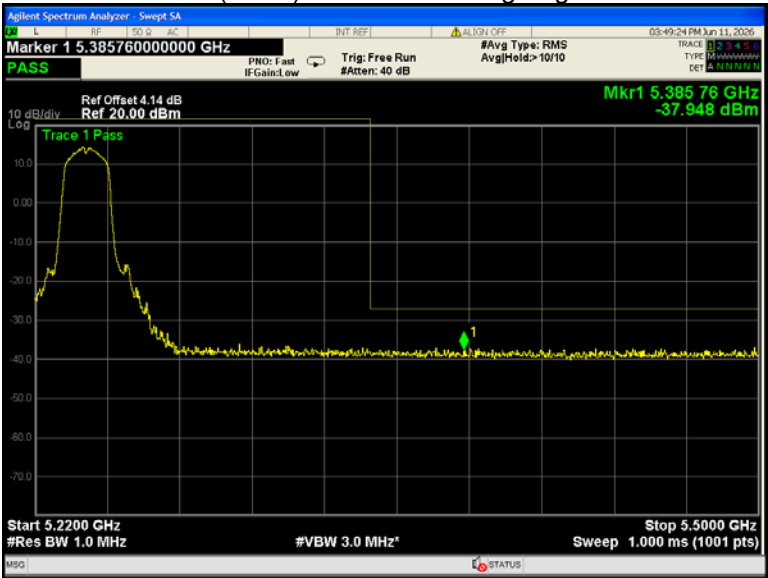
802.11a U-NII-1 Band edge-right side



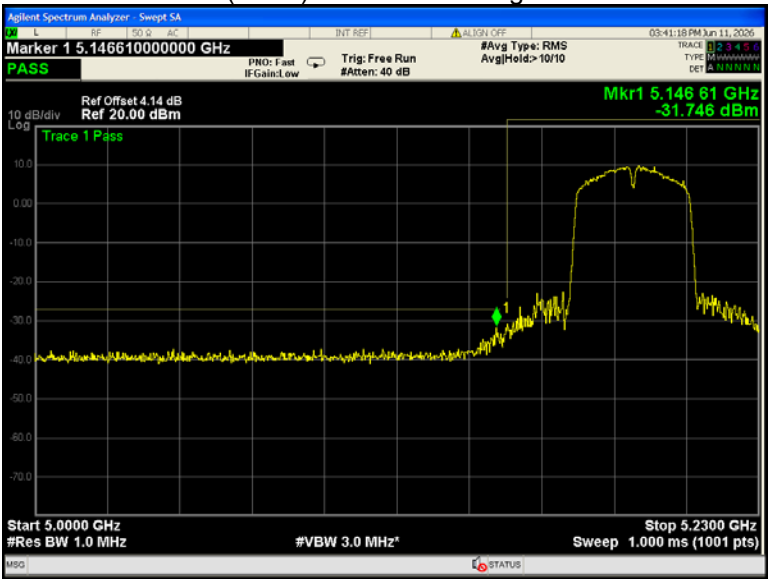
802.11n(HT20) U-NII-1 Band edge-left side



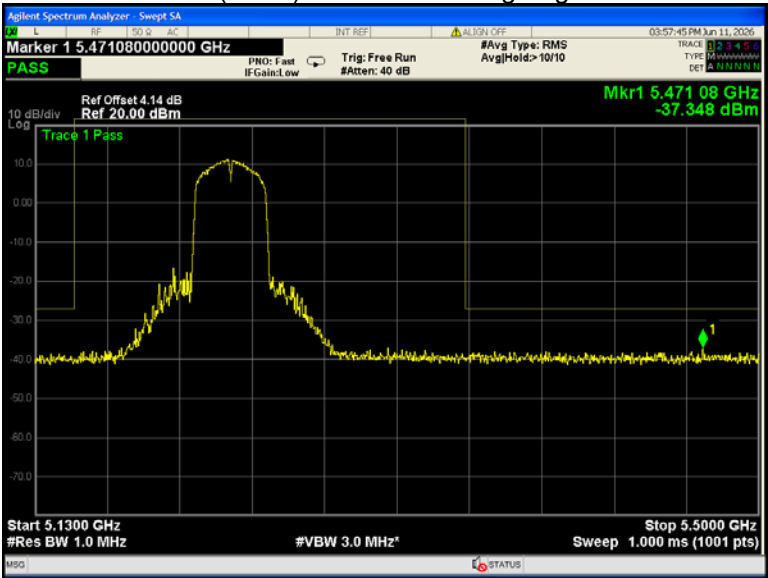
802.11n(HT20) U-NII-1 Band edge-right side



802.11n(HT40) U-NII-1 Band edge-left side



802.11n(HT40) U-NII-1 Band edge-right side



## 11 26 dB Bandwidth and 99% Occupied Bandwidth

Test Requirement: FCC 47CFR Part 15 Section 15.407 (a)  
 KDB662911 D01 Multiple Transmitter Output v02r01

Test Method: KDB789033 D02 General U-NII Test Procedures New Rules v02r01  
 Section D

Test Limit: No restriction limits

Test Result: PASS

### 11.1 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 1% to 5% of the OBW, VBW = 3x RBW

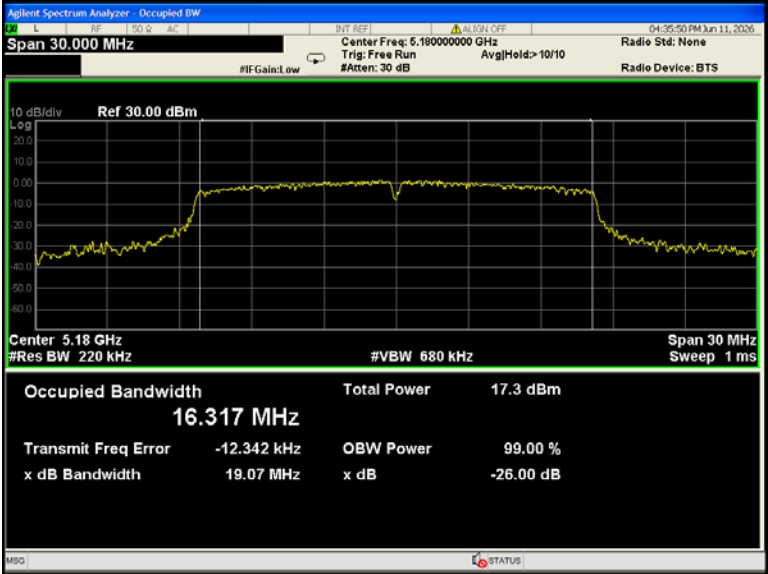
### 11.2 Test Result

| Band    | Operation mode | 26 dB Bandwidth (MHz) |        |       | 99% Bandwidth (MHz) |        |        |
|---------|----------------|-----------------------|--------|-------|---------------------|--------|--------|
|         |                | Low                   | Middle | High  | Low                 | Middle | High   |
| U-NII-1 | 802.11a        | 19.07                 | 16.281 | 18.04 | 16.317              | 18.89  | 16.294 |
|         | 802.11n(HT20)  | 20.31                 | 20.48  | 23.02 | 17.437              | 17.437 | 17.500 |
|         | 802.11n(HT40)  | 37.96                 | /      | 37.94 | 35.321              | /      | 35.378 |

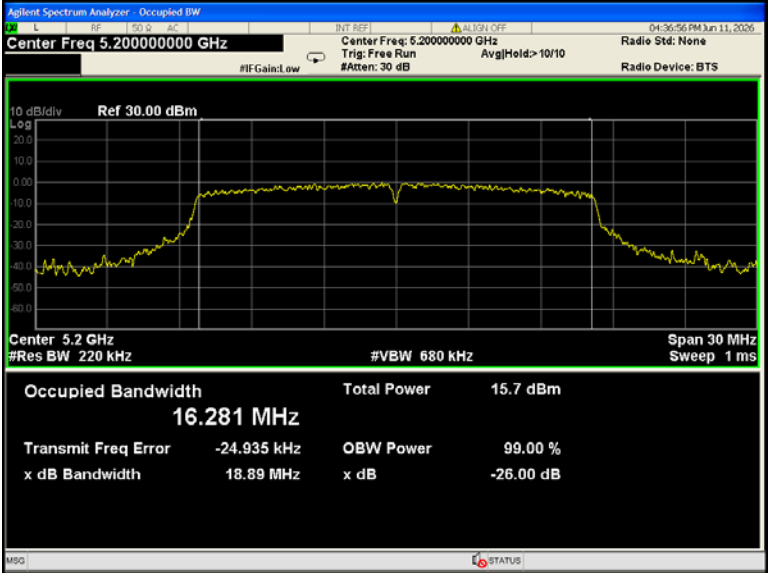
Test result plots shown as follows:

26 dB Bandwidth

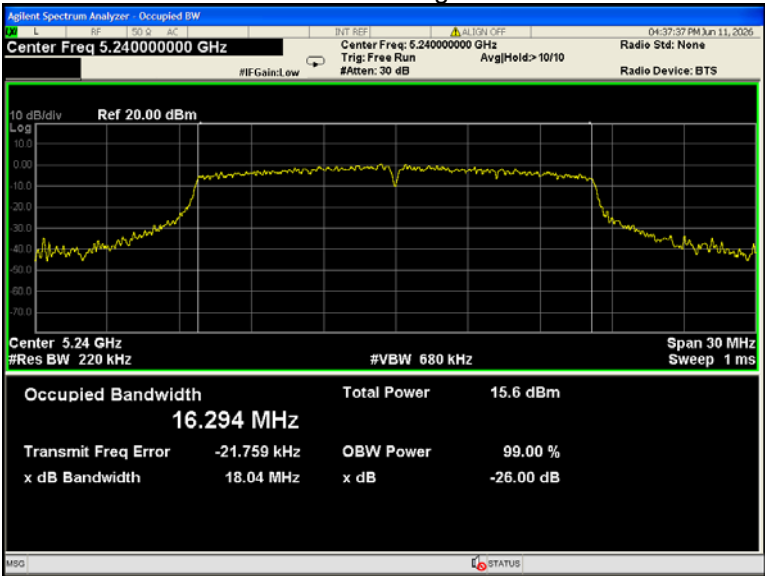
802.11a U-NII-1 Low channel



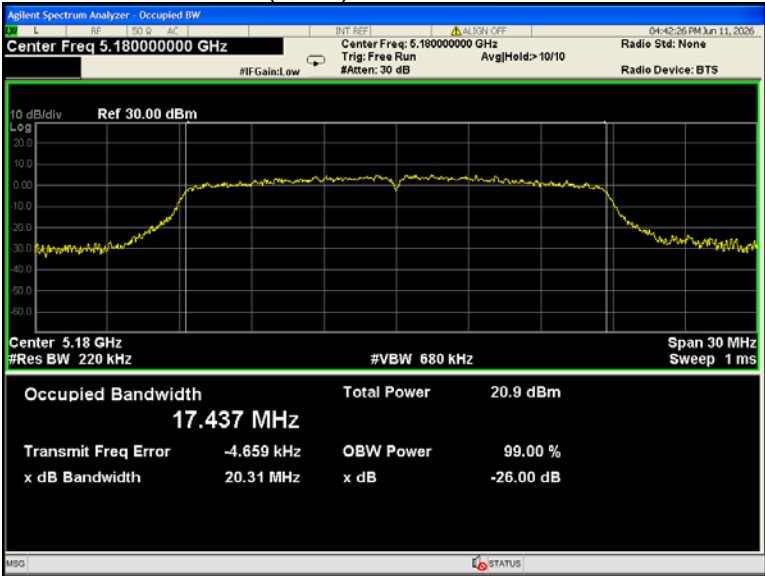
802.11a U-NII-1 Middle channel



802.11a U-NII-1 High channel

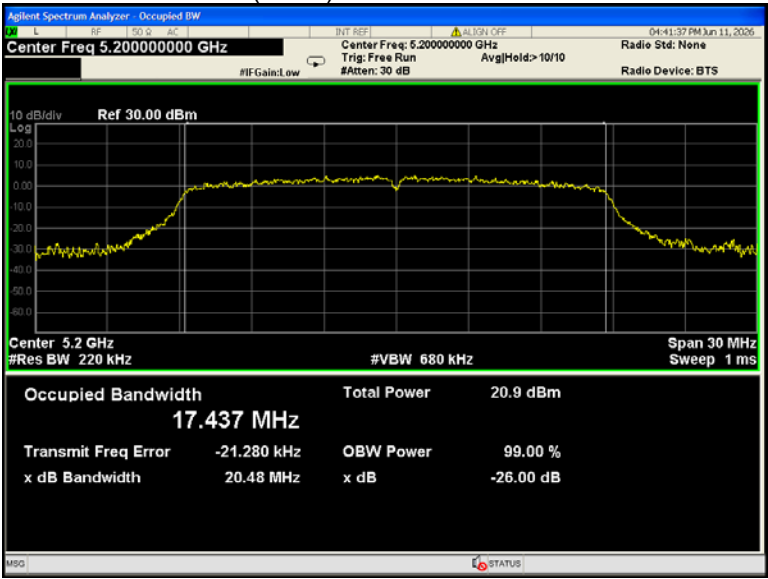


802.11n(HT20) U-NII-1 Low channel

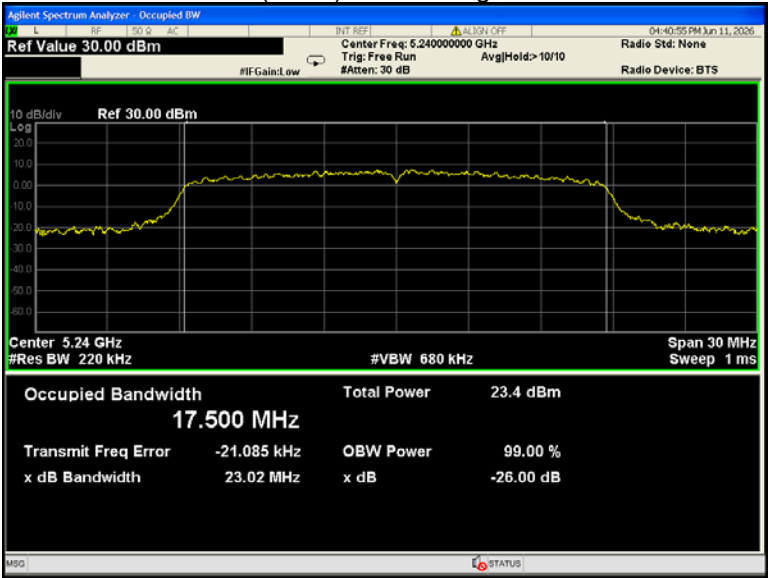




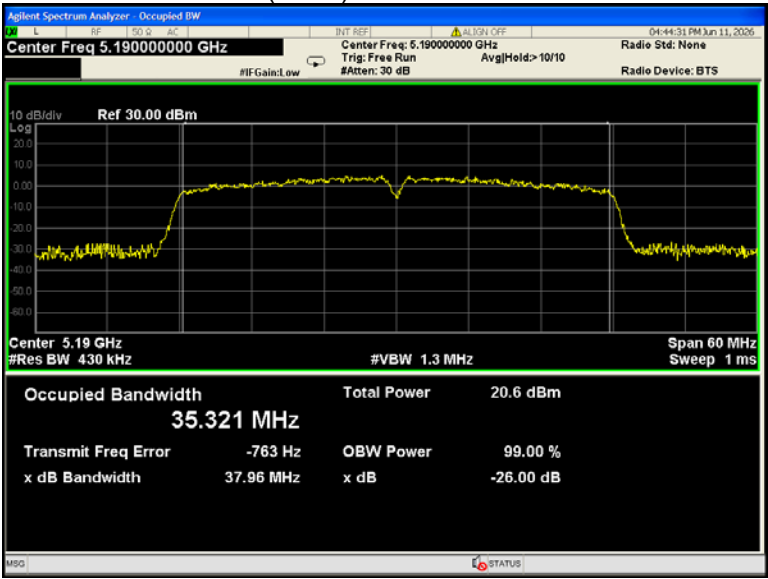
802.11n(HT20) U-NII-1 Middle channel



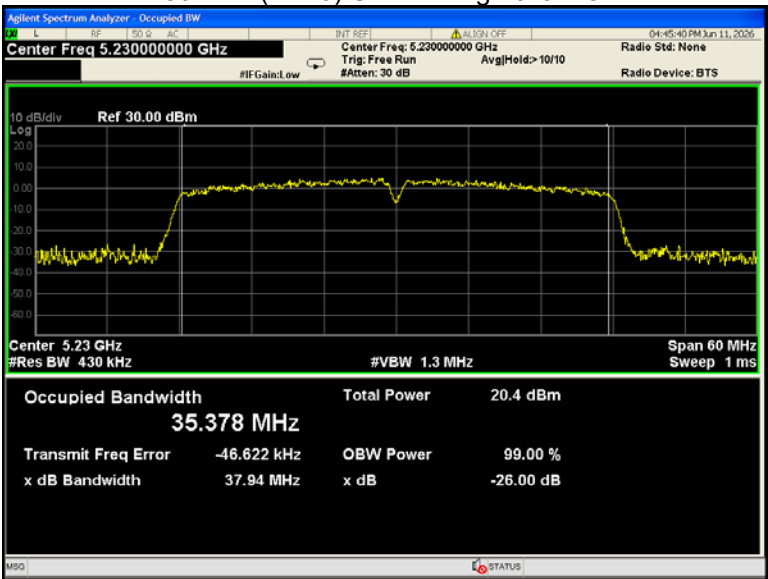
802.11n(HT20) U-NII-1 High channel



802.11n(HT40) U-NII-1 Low channel



802.11n(HT40) U-NII-1 High channel



## 12 Maximum Conducted Output Power

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | FCC 47CFR Part 15 Section 15.407(a)<br>KDB662911 D01 Multiple Transmitter Output v02r01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Test Method:      | KDB789033 D02 General U-NII Test Procedures New Rules v02r01<br>Section E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Test Limit:       | <p><b>For the band 5.15-5.25 GHz</b></p> <p>For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi.</p> <p>For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi.</p> <p>For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.</p> <p>For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi.</p> <p><b>For the 5.25-5.35 GHz and 5.47-5.725 GHz bands</b></p> <p>For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or <math>11 \text{ dBm} + 10 \log B</math>, where B is the 26 dB emission bandwidth in megahertz.</p> <p><b>For the band 5.725-5.850 GHz</b></p> <p>For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.</p> |
| Test Result:      | PASS<br>Conducted output power= measurement power+10log(1/x)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Remark:           | X is duty cycle=1, so 10log(1/1)=0<br>Conducted output power= measurement power                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

### 12.1 Test Procedure

- (i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- (ii) Set RBW = 1 MHz.
- (iii) Set VBW  $\geq$  3 MHz.
- (iv) Number of points in sweep  $\geq 2 \times \text{span} / \text{RBW}$ . (This ensures that bin-to-bin spacing is  $\leq \text{RBW}/2$ , so that narrowband signals are not lost between frequency bins.)
- (v) Sweep time = auto.
- (vi) Detector = power averaging (rms), if available. Otherwise, use sample detector mode.
- (vii) If transmit duty cycle < 98%, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control

level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle  $\geq 98\%$ , and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run.”

(viii) Trace average at least 100 traces in power averaging (rms) mode.

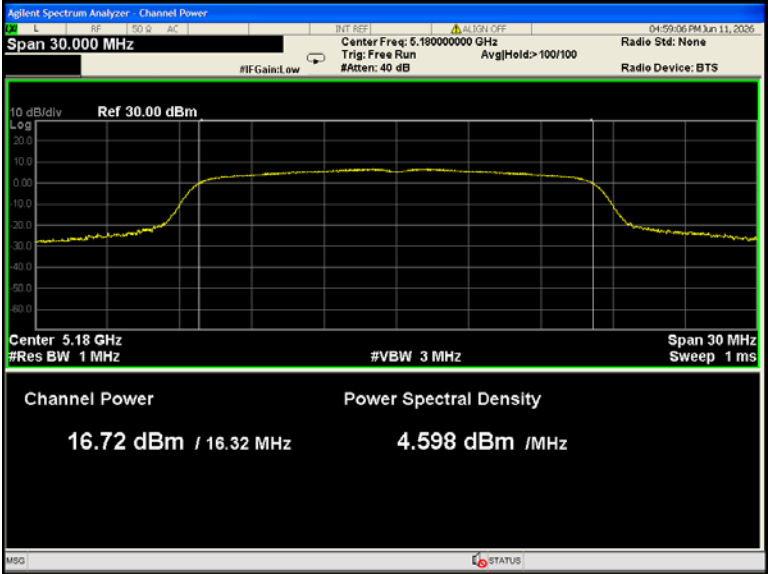
(ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

## 12.2 Test Result

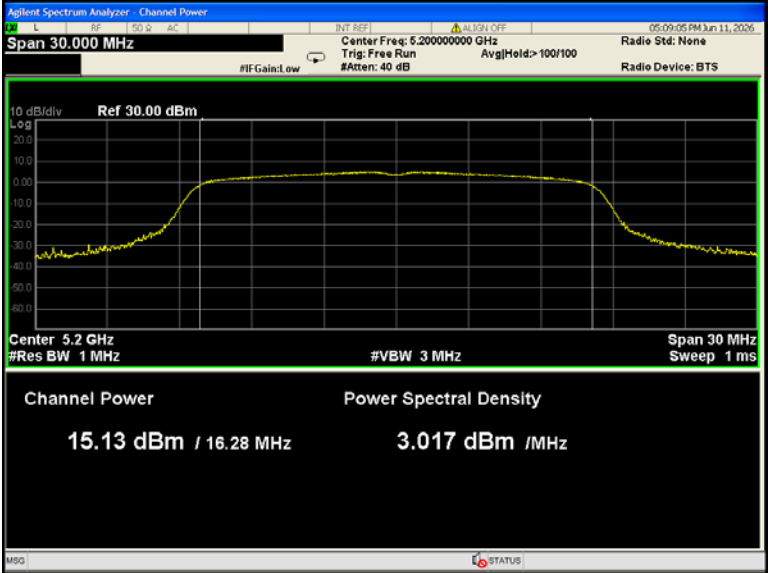
| Band    | Operation mode | Maximum Conducted Output Power (dBm) |        |       | Limit(dBm) |
|---------|----------------|--------------------------------------|--------|-------|------------|
|         |                | Low                                  | Middle | High  |            |
| U-NII-1 | 802.11a        | 16.72                                | 15.13  | 14.54 | 23.98      |
|         | 802.11n(HT20)  | <b>17.87</b>                         | 15.04  | 14.72 | 23.98      |
|         | 802.11n(HT40)  | 14.64                                | /      | 14.48 | 23.98      |

Test result plots shown as follows:

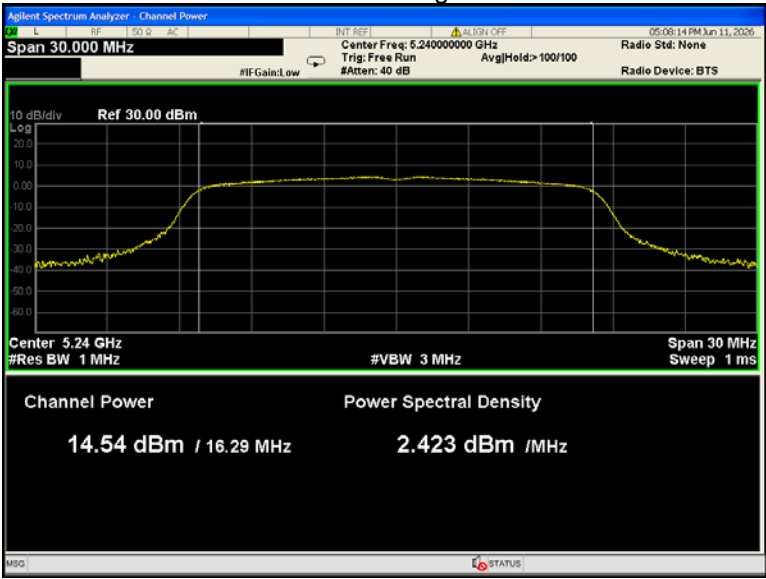
802.11a U-NII-1 Low channel



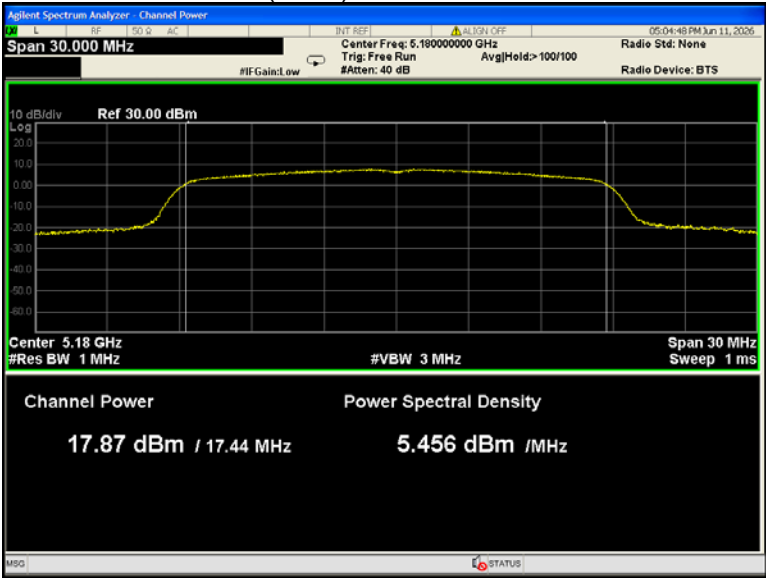
802.11a U-NII-1 Middle channel



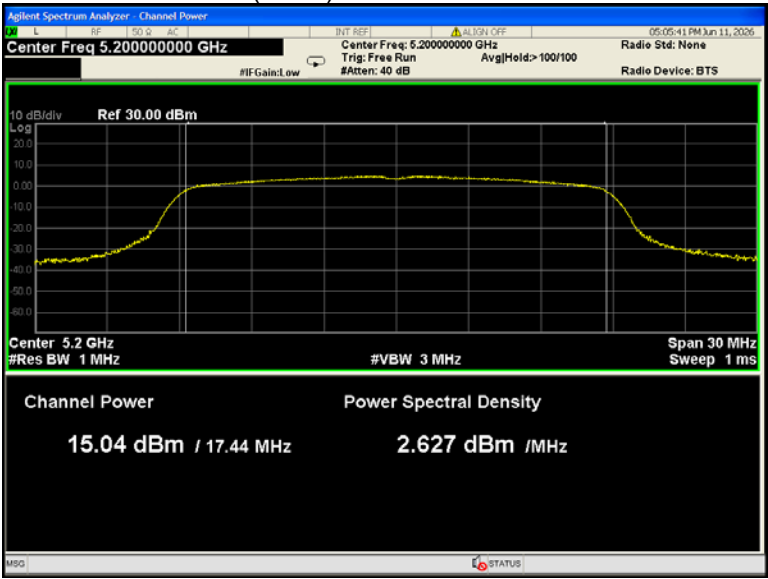
802.11a U-NII-1 High channel



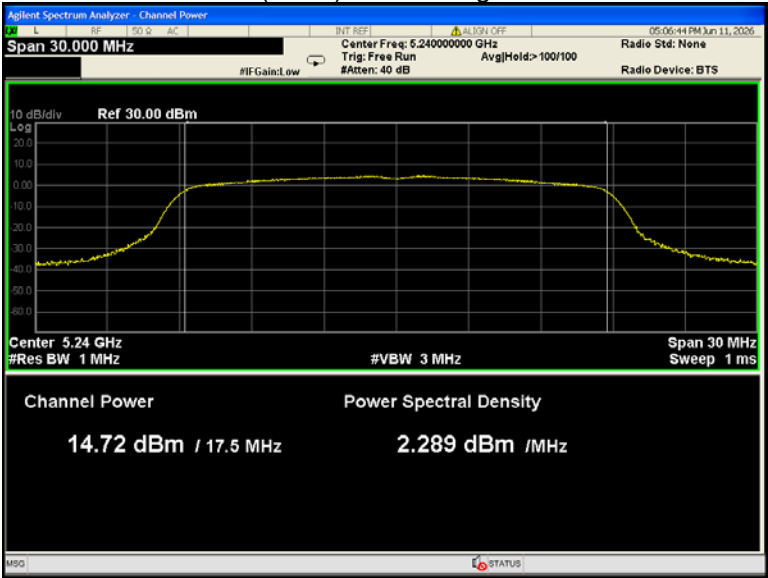
802.11n(HT20) U-NII-1 Low channel



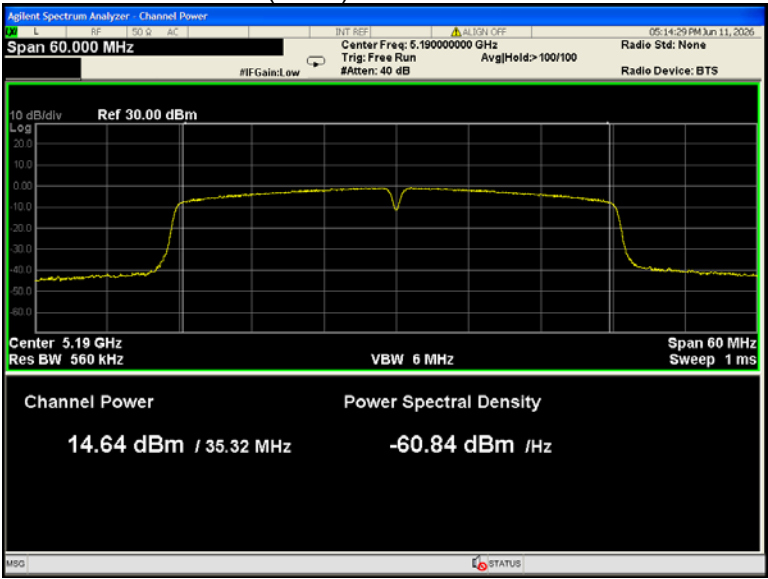
802.11n(HT20) U-NII-1 Middle channel



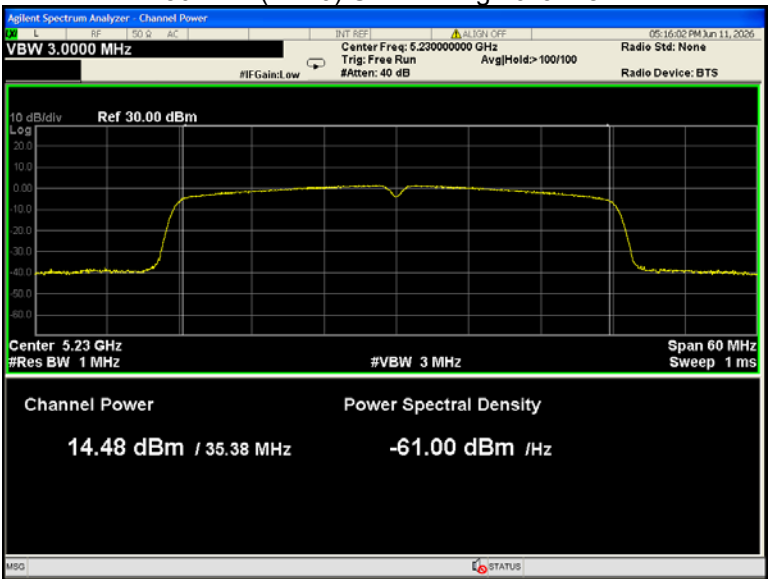
802.11n(HT20) U-NII-1 High channel



802.11n(HT40) U-NII-1 Low channel



802.11n(HT40) U-NII-1 High channel





## 13 Power Spectral Density

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | FCC 47CFR Part 15 Section 15.407(a)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Test Method:      | KDB 789033 D02 General U-NII Test Procedures New Rules v02r01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Test Limit:       | <p><b>For the band 5.15-5.25 GHz</b><br/>For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band.<br/>For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band.<br/>For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band.<br/>For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.</p> <p><b>For the 5.25-5.35 GHz and 5.47-5.725 GHz bands</b><br/>The maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.</p> <p><b>For the band 5.725-5.850 GHz</b><br/>The maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.</p> |
| Test Result:      | PASS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

### 13.1 Test Procedure

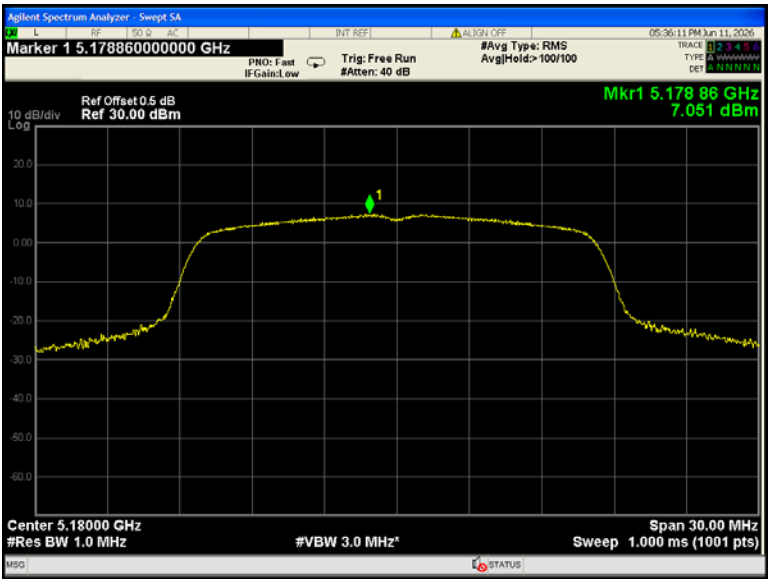
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum analyzer.
2. Refer to section 4 of this report, according to KDB 789033 and ANSI C63.10, select the appropriate test method: SA-1.
3. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
4. The result is the Maximum PSD over 1 MHz reference bandwidth.
5. For devices operating in the band 5.725–5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz).

**13.2 Test Result**

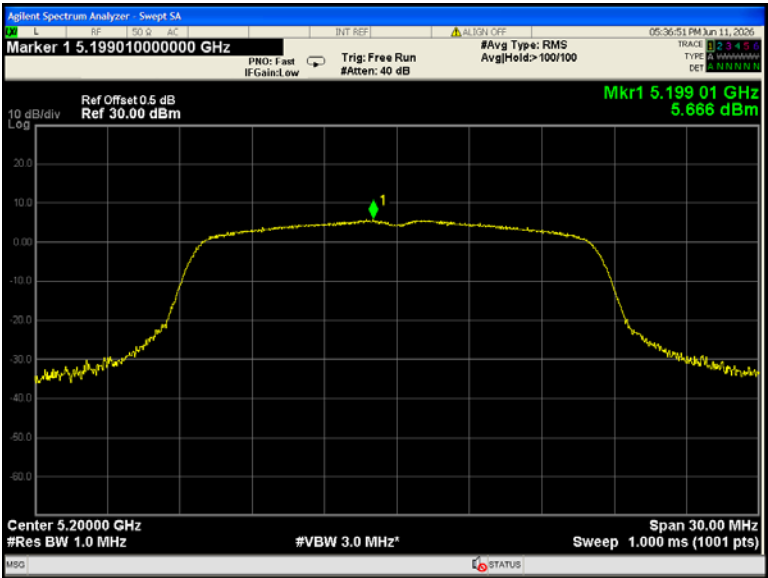
| Band    | Operation mode | Power Spectral Density (dBm/MHz) |        |       |
|---------|----------------|----------------------------------|--------|-------|
|         |                | Low                              | Middle | High  |
| U-NII-1 | 802.11a        | 7.051                            | 5.666  | 5.601 |
|         | 802.11n(HT20)  | 5.332                            | 5.772  | 5.188 |
|         | 802.11n(HT40)  | 1.848                            | /      | 2.529 |
|         | Limit          | ≤11.00dBm/MHz                    |        |       |

Test result plots shown as follows:

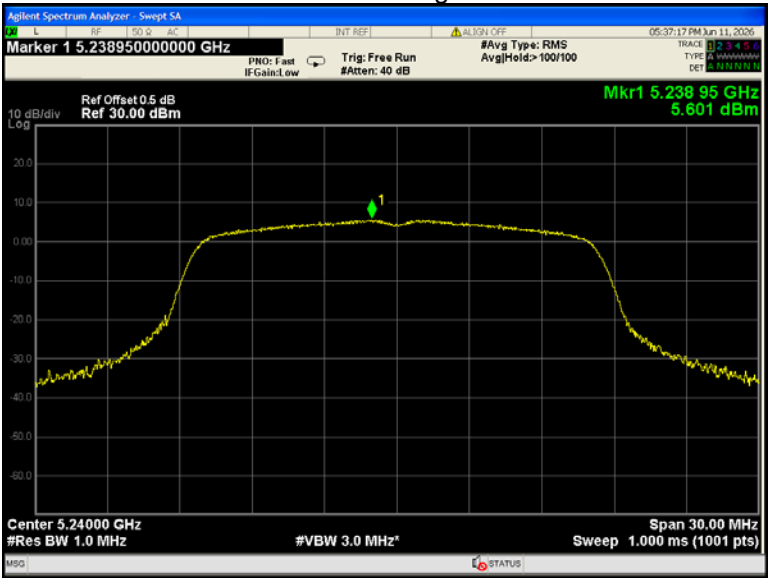
802.11a U-NII-1 Low channel



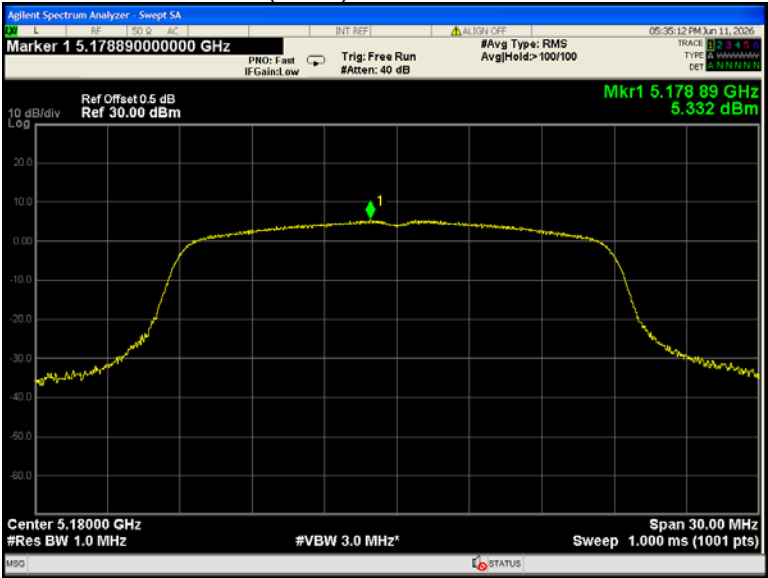
802.11a U-NII-1 Middle channel



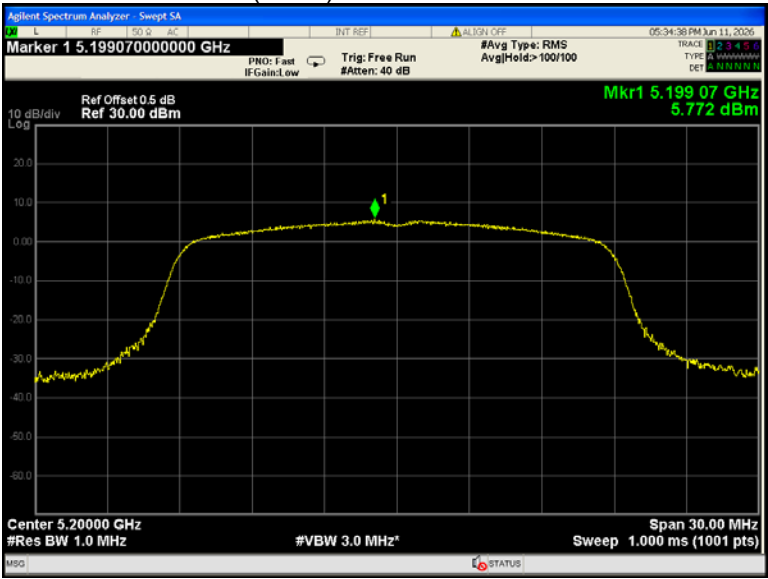
802.11a U-NII-1 High channel



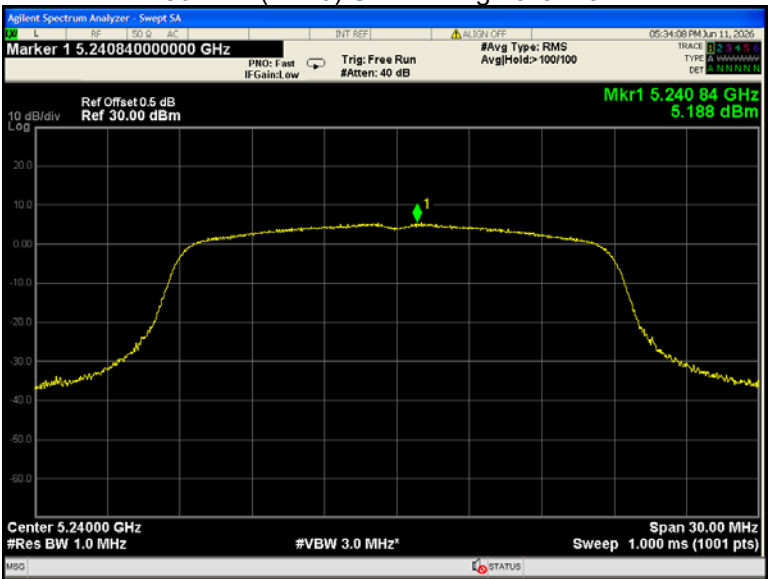
802.11n(HT20) U-NII-1 Low channel



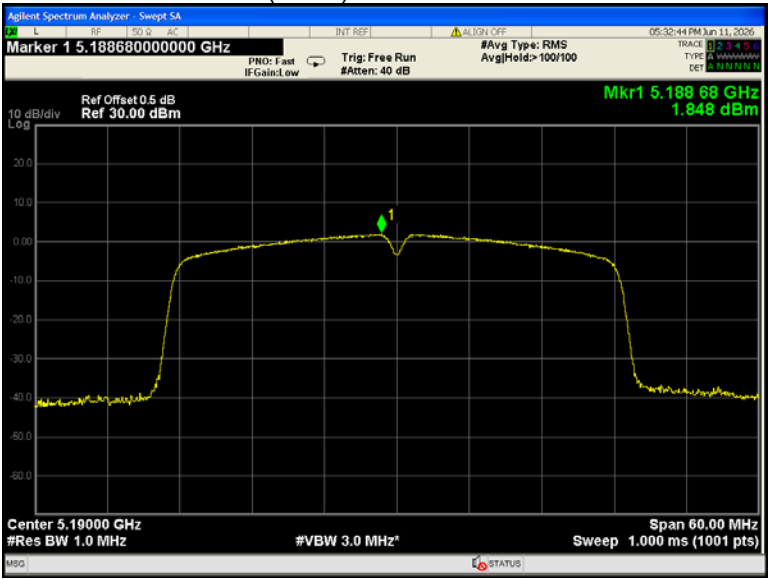
802.11n(HT20) U-NII-1 Middle channel



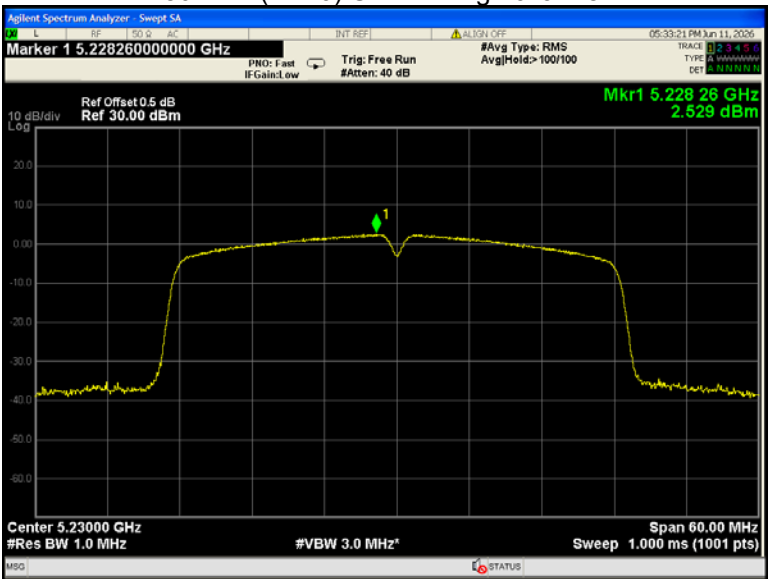
802.11n(HT20) U-NII-1 High channel



802.11n(HT40) U-NII-1 Low channel



802.11n(HT40) U-NII-1 High channel



## 14 Frequency Stability

|                   |                                                                                                                                                                                                                                      |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | FCC 47CFR Part 15 Section 15.407(g)                                                                                                                                                                                                  |
| Test Method:      | ANSI C63.10-2020                                                                                                                                                                                                                     |
| Test Limit:       | Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual or 20ppm. |
| Test Result:      | PASS                                                                                                                                                                                                                                 |

### 14.1 Test Procedure

1. The transmitter output (antenna port) was connected to the spectrum analyzer.  
EUT have transmitted absence of unmodulation signal and fixed channelise. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.  $f_c$  is declaring of channel frequency. Then the frequency error formula is  $(f_c - f)/f_c \times 10^6$  ppm and the limit is less than  $\pm 20$  ppm. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.
2. Extreme temperature rule is 0°C~ 40°C.

**14.2 Test Result**

| U-NII-1 Test Frequency:5180MHz |                    |                       |                       |             |
|--------------------------------|--------------------|-----------------------|-----------------------|-------------|
| Temperature (°C)               | Power Supply (VAC) | Frequency Error (MHz) | Frequency Error (ppm) | Limit (ppm) |
| 50                             | 12V                | 0.0082                | 1.58                  | 20          |
| 40                             |                    | 0.0081                | 1.56                  | 20          |
| 30                             |                    | 0.0109                | 2.10                  | 20          |
| 20                             |                    | 0.0080                | 1.54                  | 20          |
| 10                             |                    | 0.0080                | 1.54                  | 20          |
| 0                              |                    | 0.0099                | 1.91                  | 20          |
| -10                            |                    | 0.0080                | 1.54                  | 20          |
| -20                            |                    | 0.0124                | 2.39                  | 20          |
| 20                             | 10.8               | 0.008                 | 1.54                  | 20          |
| 20                             | 13.2               | 0.0098                | 1.89                  | 20          |



## **15 Antenna Requirement**

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

This product has an FPC antenna fulfil the requirement of this section.

Note: Please refer to EUT photos for more details.

## **16 RF Exposure**

Remark: refer to MPE test report: WTD26D05137940W004.

## **17 Photographs of test setup and EUT.**

Note: Please refer to appendix: Appendix-G11-Photos.

=====End of Report=====