

APPLICATION CERTIFICATION FCC Part 15C  
On Behalf of  
Guangdong Mixwell Technology Co., Ltd.

SMART WI-FI AIR PURIFIER

Model No.: MW1081, TP12S

FCC ID: 2AT8F-MW1081

Prepared for : Guangdong Mixwell Technology Co., Ltd.  
Address : 1-4#F, A building, No.7, Yu Hua Street, 138 Industrial  
Area, TangXia, DongGuan, China.

Prepared by : Shenzhen Accurate Technology Co., Ltd.  
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Report No. : ATE20191304  
Date of Test : Aug. 20, 2019--Sep. 03, 2019  
Date of Report : Sep. 04, 2019

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## Test Report Certification

Applicant : Guangdong Mixwell Technology Co., Ltd.  
Address : 1-4#F, A building, No.7, Yu Hua Street, 138 Industrial Area,  
TangXia, DongGuan, China.  
Manufacturer : Guangdong Mixwell Technology Co., Ltd.  
Address : 1-4#F, A building, No.7, Yu Hua Street, 138 Industrial Area,  
TangXia, DongGuan, China.  
Product : SMART WI-FI AIR PURIFIER  
Model No. : MW1081, TP12S  
Trade name : **Tendomi**

Measurement Procedure Used:

**FCC Rules and Regulations Part 15 Subpart C Section 15.247**  
**ANSI C63.10: 2013**

The EUT was tested according to DTS test procedure of April 02, 2019 KDB558074 D01 DTS Meas Guidance v0502 for compliance to FCC 47CFR 15.247 requirements.

The device described above is tested by SHENZHEN ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and SHENZHEN ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of SHENZHEN ACCURATE TECHNOLOGY CO. LTD.

Date of Test : Aug. 20, 2019--Sep. 03, 2019  
Date of Report : Sep. 04, 2019

Prepared by :   
(Tim Zhang, Engineer)

Approved & Authorized Signer :   
( Sean Liu, Manager)

## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

|                         |   |                                                                                                     |
|-------------------------|---|-----------------------------------------------------------------------------------------------------|
| EUT                     | : | SMART WI-FI AIR PURIFIER                                                                            |
| Model Number            | : | MW1081, TP12S                                                                                       |
| Frequency Range         | : | 802.11b/g/n(20MHz): 2412-2462MHz                                                                    |
| Number of Channels      | : | 802.11b/g/n (20MHz):11                                                                              |
| G <sub>ANT</sub> MAX    | : | 2.51dBi                                                                                             |
| Type of Antenna         | : | PCB Antenna                                                                                         |
| Power Supply            | : | DC 12V(Powered by adapter)                                                                          |
| Adapter information     | : | Model: GQ12-120100-AU<br>INPUT: AC 100-240V~50/60Hz 0.4A Max<br>OUTPUT: DC 12V/1.0A                 |
| Data Rate               | : | 802.11b: 11, 5.5, 2, 1 Mbps<br>802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps<br>802.11n: up to 150Mbps |
| Modulation Type         | : | DSSS, OFDM                                                                                          |
| Applicant               | : | Guangdong Mixwell Technology Co., Ltd.                                                              |
| Address                 | : | 1-4#F, A building, No.7, Yu Hua Street,138 Industrial Area, TangXia, DongGuan, China                |
| Manufacturer            | : | Guangdong Mixwell Technology Co., Ltd.                                                              |
| Address                 | : | 1-4#F, A building, No.7, Yu Hua Street,138 Industrial Area, TangXia, DongGuan, China                |
| Date of sample received | : | Aug. 20, 2019                                                                                       |
| Date of Test            | : | Aug. 20, 2019--Sep. 03, 2019                                                                        |

### 1.2. Special Accessory and Auxiliary Equipment

|    |                                                              |
|----|--------------------------------------------------------------|
| PC | Manufacturer: LENOVO<br>M/N: 4290-RT8<br>S/N: R9-FW93G 11/08 |
|----|--------------------------------------------------------------|

### 1.3. Model difference declaration

MW1081, TP12S are identical in interior structure, electrical circuits and components, and just model number is different for the marketing requirement.

### 1.4. Laboratory Accreditation and Relationship to Customer

EMC Lab : Recognition of accreditation by Federal Communications Commission (FCC)  
The Designation Number is CN1189  
The Registration Number is 708358

Listed by Innovation, Science and Economic Development Canada (ISED)  
The Registration Number is 5077A-2

Accredited by China National Accreditation Service for Conformity Assessment (CNAS)  
The Registration Number is CNAS L3193

Accredited by American Association for Laboratory Accreditation (A2LA)  
The Certificate Number is 4297.01

Name of Firm : Shenzhen Accurate Technology Co., Ltd.  
Site Location : 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

### 1.5. Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.72dB, k=2  
(Mains ports, 9kHz-30MHz)

Radiated emission expanded uncertainty = 2.66dB, k=2  
(9kHz-30MHz)

Radiated emission expanded uncertainty = 4.28dB, k=2  
(30MHz-1000MHz)

Radiated emission expanded uncertainty = 4.98dB, k=2  
(1G-18GHz)

Radiated emission expanded uncertainty = 5.06dB, k=2  
(18G-26.5GHz)

## 2. MEASURING DEVICE AND TEST EQUIPMENT

### 2.1.For Radiated Emission Measurement

| Item                                                    | Equipment                        | Manufacturer         | Model No.                | Serial No. | Last Cal.    | Cal. Interval |
|---------------------------------------------------------|----------------------------------|----------------------|--------------------------|------------|--------------|---------------|
| 1.                                                      | Spectrum Analyzer                | Agilent              | E7405A                   | MY45115511 | Jan.05, 2019 | 1 Year        |
| 2.                                                      | Spectrum Analyzer                | Rohde&Schwarz        | FSV40                    | 101495     | Jan.05, 2019 | 1 Year        |
| 3.                                                      | Test Receiver                    | Rohde&Schwarz        | ESCS30                   | 100307     | Jan.05, 2019 | 1 Year        |
| 4.                                                      | Test Receiver                    | Rohde& Schwarz       | ESPI                     | 100396/003 | Jan.05, 2019 | 1 Year        |
| 5.                                                      | Test Receiver                    | Rohde& Schwarz       | ESPI                     | 101526/003 | Jan.05, 2019 | 1 Year        |
| 6.                                                      | Test Receiver                    | Rohde& Schwarz       | ESR                      | 101817     | Jan.05, 2019 | 1 Year        |
| 7.                                                      | Bilog Antenna                    | Schwarzbeck          | VULB9163                 | 9163-194   | Jan.05, 2019 | 1 Year        |
| 8.                                                      | Bilog Antenna                    | Schwarzbeck          | VULB9163                 | 9163-323   | Jan.05, 2019 | 1 Year        |
| 9.                                                      | Log.-Per.Antenna                 | Schwarzbeck          | VUSLP<br>9111B           | 9111B-074  | Jan.05, 2019 | 1 Year        |
| 10.                                                     | Biconical Broad Band Antenna     | Schwarzbeck          | VHBB<br>9124+BBA<br>9106 | 9124-617   | Jan.05, 2019 | 1 Year        |
| 11.                                                     | Loop Antenna                     | Schwarzbeck          | FMZB1516                 | 1516131    | Jan.05, 2019 | 1 Year        |
| 12.                                                     | Horn Antenna                     | Schwarzbeck          | BBHA9120D                | 9120D-655  | Jan.05, 2019 | 1 Year        |
| 13.                                                     | Horn Antenna                     | Schwarzbeck          | BBHA9120D                | 9120D-1067 | Jan.05, 2019 | 1 Year        |
| 14.                                                     | Vertical Active Monopole Antenna | Schwarzbeck          | VAMP 9243                | 9243-370   | Jan.05, 2019 | 1 Year        |
| 15.                                                     | RF Switching Unit+PreAMP         | Compliance Direction | RSU-M2                   | 38322      | Jan.05, 2019 | 1 Year        |
| 16.                                                     | Pre-Amplifier                    | Agilent              | 8447D                    | 294A10619  | Jan.05, 2019 | 1 Year        |
| 17.                                                     | Pre-Amplifier                    | Rohde&Schwarz        | CBLU11835<br>40-01       | 3791       | Jan.05, 2019 | 1 Year        |
| 18.                                                     | 50 Coaxial Switch                | Anritsu Corp         | MP59B                    | 6200237248 | Jan.05, 2019 | 1 Year        |
| 19.                                                     | 50 Coaxial Switch                | Anritsu Corp         | MP59B                    | 6200506474 | Jan.05, 2019 | 1 Year        |
| 20.                                                     | RF Coaxial Cable                 | Schwarzbeck          | N-5m                     | No.1       | Jan.05, 2019 | 1 Year        |
| 21.                                                     | RF Coaxial Cable                 | Schwarzbeck          | N-1m                     | No.6       | Jan.05, 2019 | 1 Year        |
| 22.                                                     | RF Coaxial Cable                 | Schwarzbeck          | N-1m                     | No.7       | Jan.05, 2019 | 1 Year        |
| 23.                                                     | RF Coaxial Cable                 | SUHNER               | N-3m                     | No.8       | Jan.05, 2019 | 1 Year        |
| 24.                                                     | RF Coaxial Cable                 | RESENBERGER          | N-3.5m                   | No.9       | Jan.05, 2019 | 1 Year        |
| 25.                                                     | RF Coaxial Cable                 | SUHNER               | N-6m                     | No.10      | Jan.05, 2019 | 1 Year        |
| 26.                                                     | RF Coaxial Cable                 | RESENBERGER          | N-12m                    | No.11      | Jan.05, 2019 | 1 Year        |
| 27.                                                     | RF Coaxial Cable                 | RESENBERGER          | N-0.5m                   | No.12      | Jan.05, 2019 | 1 Year        |
| 28.                                                     | RF Coaxial Cable                 | SUHNER               | N-2m                     | No.13      | Jan.05, 2019 | 1 Year        |
| 29.                                                     | RF Coaxial Cable                 | SUHNER               | N-0.5m                   | No.15      | Jan.05, 2019 | 1 Year        |
| 30.                                                     | RF Coaxial Cable                 | SUHNER               | N-2m                     | No.16      | Jan.05, 2019 | 1 Year        |
| 31.                                                     | RF Coaxial Cable                 | RESENBERGER          | N-6m                     | No.17      | Jan.05, 2019 | 1 Year        |
| Radiated Emission Measurement Software: EZ EMC V1.1.4.2 |                                  |                      |                          |            |              |               |

## 2.2.The Equipment Used to Measure Conducted Disturbance (L.I.S.N)

| Item                                                 | Equipment                              | Manufacturer    | Model No. | Serial No. | Last Cal.    | Cal. Interval |
|------------------------------------------------------|----------------------------------------|-----------------|-----------|------------|--------------|---------------|
| 1.                                                   | Test Receiver                          | Rohde & Schwarz | ESCS30    | 100307     | Jan.05, 2019 | 1 Year        |
| 2.                                                   | Test Receiver                          | Rohde & Schwarz | ESPI3     | 100396/003 | Jan.05, 2019 | 1 Year        |
| 3.                                                   | Test Receiver                          | Rohde & Schwarz | ESPI3     | 101526/003 | Jan.05, 2019 | 1 Year        |
| 4.                                                   | L.I.S.N.                               | Schwarzbeck     | NLSK8126  | 8126431    | Jan.05, 2019 | 1 Year        |
| 5.                                                   | L.I.S.N.                               | Rohde & Schwarz | ESH3-Z5   | 100305     | Jan.05, 2019 | 1 Year        |
| 6.                                                   | L.I.S.N.                               | Rohde & Schwarz | ESH3-Z5   | 100310     | Jan.05, 2019 | 1 Year        |
| 7.                                                   | L.I.S.N.                               | Rohde & Schwarz | ESH3-Z6   | 100132     | Jan.05, 2019 | 1 Year        |
| 8.                                                   | Pulse Limiter                          | Rohde & Schwarz | ESH3-Z2   | 100305     | Jan.05, 2019 | 1 Year        |
| 9.                                                   | Pulse Limiter                          | Rohde & Schwarz | ESH3-Z2   | 100312     | Jan.05, 2019 | 1 Year        |
| 10.                                                  | Pulse Limiter                          | Rohde & Schwarz | ESH3-Z2   | 100815     | Jan.05, 2019 | 1 Year        |
| 11.                                                  | 50Ω Coaxial Switch                     | Anritsu Corp    | MP59B     | 6200283936 | Jan.05, 2019 | 1 Year        |
| 12.                                                  | 50Ω Coaxial Switch                     | Anritsu Corp    | MP59B     | 6200283933 | Jan.05, 2019 | 1 Year        |
| 13.                                                  | 50Ω Coaxial Switch                     | Anritsu Corp    | MP59B     | 6200506474 | Jan.05, 2019 | 1 Year        |
| 14.                                                  | VOLTAGE PROBE                          | Schwarzbeck     | TK9416    | N/A        | Jan.05, 2019 | 1 Year        |
| 15.                                                  | RF CURRENT PROBE                       | Rohde & Schwarz | EZ-17     | 100048     | Jan.05, 2019 | 1 Year        |
| 16.                                                  | 8-Wire Impedance Stabilisation Network | Schwarzbeck     | CAT5 8158 | 8158-0035  | Jan.05, 2019 | 1 Year        |
| 17.                                                  | RF Coaxial Cable                       | SUHNER          | N-2m      | No.2       | Jan.05, 2019 | 1 Year        |
| 18.                                                  | RF Coaxial Cable                       | SUHNER          | N-2m      | No.3       | Jan.05, 2019 | 1 Year        |
| 19.                                                  | RF Coaxial Cable                       | SUHNER          | N-2m      | No.14      | Jan.05, 2019 | 1 Year        |
| Conducted Emission Measurement Software: ES-K1 V1.71 |                                        |                 |           |            |              |               |



### 3. OPERATION OF EUT DURING TESTING

#### 3.1.Operating Mode

The mode is used: **1.802.11b Transmitting mode**

Low Channel: 2412MHz

Middle Channel: 2437MHz

High Channel: 2462MHz

#### **2.802.11g Transmitting mode**

Low Channel: 2412MHz

Middle Channel: 2437MHz

High Channel: 2462MHz

#### **3.802.11n (20MHz) Transmitting mode**

Low Channel: 2412MHz

Middle Channel: 2437MHz

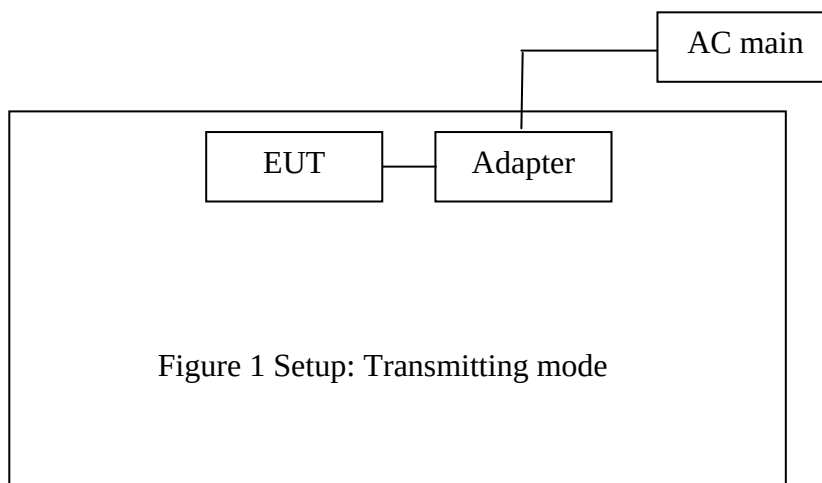
High Channel: 2462MHz

#### 3.2.Carrier Frequency of Channels

802.11b, 802.11g, 802.11n (20MHz)

| Channel | Frequency(MHz) | Channel | Frequency(MHz) |
|---------|----------------|---------|----------------|
| 01      | 2412           | 07      | 2442           |
| 02      | 2417           | 08      | 2447           |
| 03      | 2422           | 09      | 2452           |
| 04      | 2427           | 10      | 2457           |
| 05      | 2432           | 11      | 2462           |
| 06      | 2437           | ---     | ---            |

#### 3.3.Configuration and peripherals



### 3.4. Test mode

| Test Mode | Test Modes Description                                      |
|-----------|-------------------------------------------------------------|
| 11B       | IEEE 802.11b with data rate of 1 Mbps                       |
| 11G       | IEEE 802.11g with data rate of 6 Mbps                       |
| 11N20MHz  | IEEE 802.11n with data rate of MCS0 and bandwidth of 20 MHz |

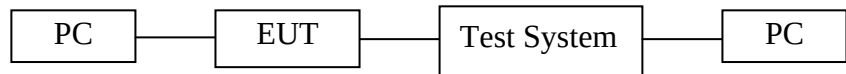
NOTE: Worst cases for each IEEE 802.11 mode are selected to perform tests.

## 4. TEST PROCEDURES AND RESULTS

| FCC Rules                             | Description of Test                      | Result    |
|---------------------------------------|------------------------------------------|-----------|
| Section 15.207                        | AC power Line Conducted Emission Test    | Compliant |
| Section 15.247(a)(2)                  | 6dB Occupied Bandwidth Test              | Compliant |
| KDB558074 D01 DTS Meas Guidance v0502 | Duty cycle                               | Compliant |
| KDB558074 D01 DTS Meas Guidance v0502 | OBW                                      | Compliant |
| Section 15.247(b)(3)                  | Maximum conducted (average) output power | Compliant |
| Section 15.247(e)                     | Power Spectral Density Test              | Compliant |
| Section 15.205<br>Section 15.209      | Radiated Spurious Emissions Test         | Compliant |
| Section 15.247(d)                     | Band Edge Compliance Test                | Compliant |
| Section 15.203                        | Antenna Requirement                      | Compliant |

## 5. 6DB OCCUPIED BANDWIDTH TEST

### 5.1. Block Diagram of Test Setup



### 5.2. The Requirement For Section 15.247(a)(1)

Section 15.247(a)(2): Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB band-width shall be at least 500 kHz

### 5.3. EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 5.4. Operating Condition of EUT

5.4.1. Setup the EUT and simulator as shown as Section 5.1.

5.4.2. Turn on the power of all equipment.

5.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2412MHz, 2437MHz and 2462MHz TX frequency to transmit.

### 5.5. Test Procedure

5.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

5.5.2. Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz.

5.5.3. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

## 5.6.Test Result

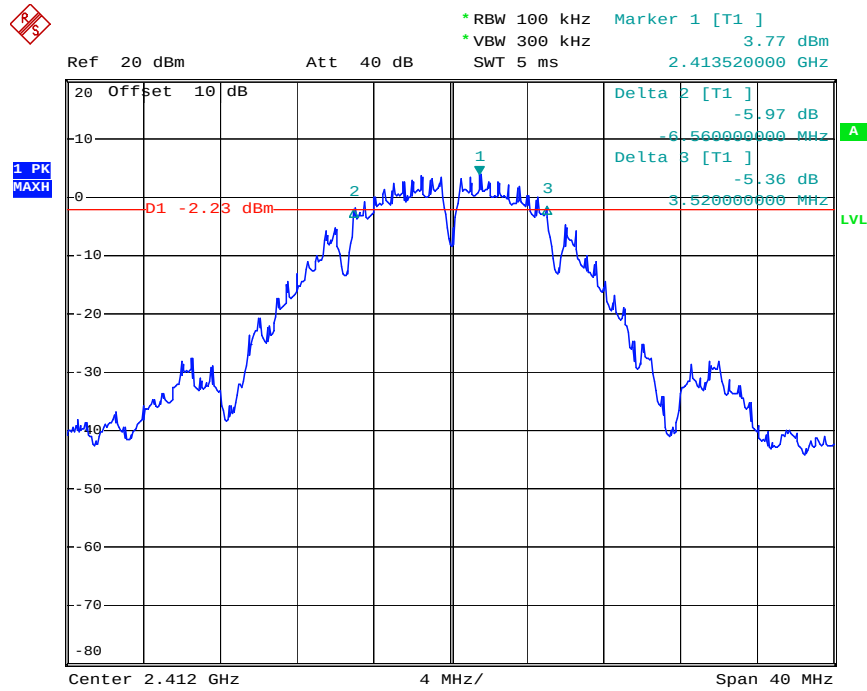
| The test was performed with 802.11b |                 |                     |             |
|-------------------------------------|-----------------|---------------------|-------------|
| Channel                             | Frequency (MHz) | 6dB Bandwidth (MHz) | Limit (MHz) |
| Low                                 | 2412            | 10.08               | > 0.5MHz    |
| Middle                              | 2437            | 9.56                | > 0.5MHz    |
| High                                | 2462            | 9.20                | > 0.5MHz    |

| The test was performed with 802.11g |                 |                     |             |
|-------------------------------------|-----------------|---------------------|-------------|
| Channel                             | Frequency (MHz) | 6dB Bandwidth (MHz) | Limit (MHz) |
| Low                                 | 2412            | 16.32               | > 0.5MHz    |
| Middle                              | 2437            | 16.04               | > 0.5MHz    |
| High                                | 2462            | 16.32               | > 0.5MHz    |

| The test was performed with 802.11n (Bandwidth: 20 MHz) |                 |                     |             |
|---------------------------------------------------------|-----------------|---------------------|-------------|
| Channel                                                 | Frequency (MHz) | 6dB Bandwidth (MHz) | Limit (MHz) |
| Low                                                     | 2412            | 15.24               | > 0.5MHz    |
| Middle                                                  | 2437            | 16.28               | > 0.5MHz    |
| High                                                    | 2462            | 16.40               | > 0.5MHz    |

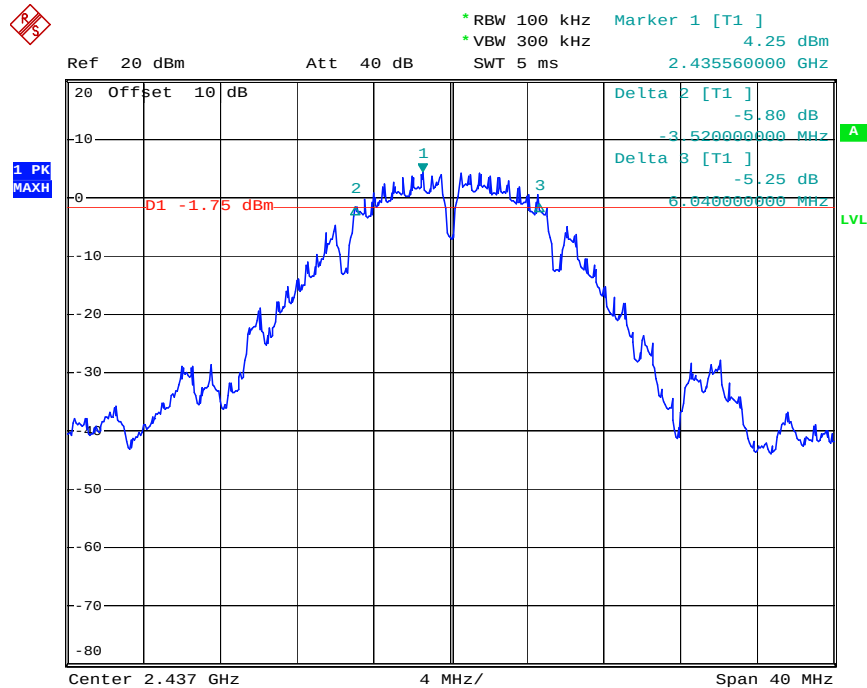
The spectrum analyzer plots are attached as below.

## 6dB Bandwidth 802.11b Channel Low 2412MHz



Date: 28.AUG.2019 18:29:40

## 802.11b Channel Middle 2437MHz



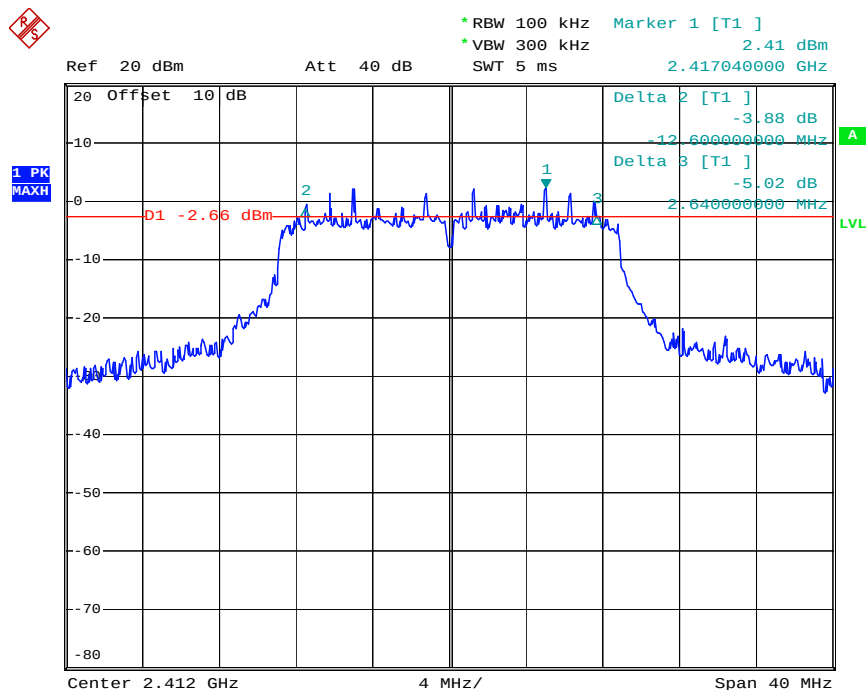
Date: 28.AUG.2019 18:31:04





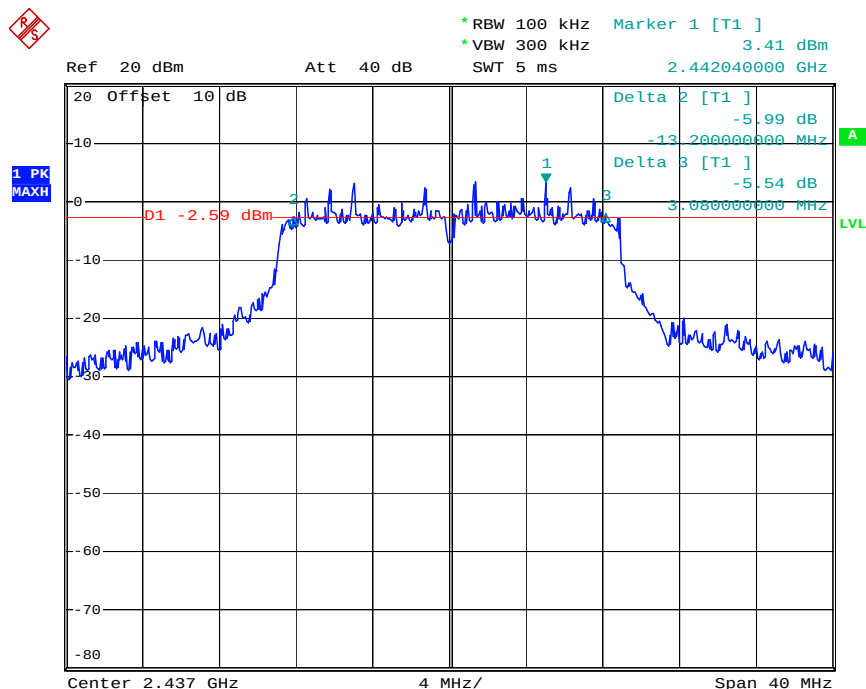


## 802.11n Channel Low 2412MHz (20MHz)



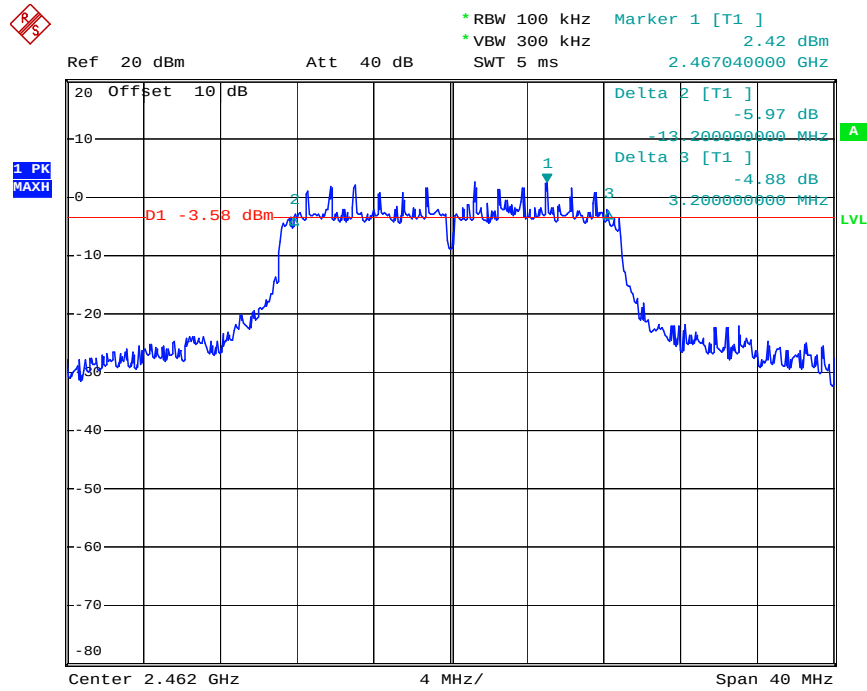
Date: 28.AUG.2019 18:38:30

## 802.11n Channel Middle 2437MHz(20MHz)



Date: 28.AUG.2019 18:37:16

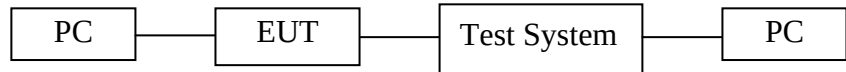
## 802.11n Channel High 2462MHz(20MHz)



Date: 28.AUG.2019 18:39:13

## 6. 99% OCCUPIED BANDWIDTH

### 6.1. Block Diagram of Test Setup



### 6.2. EUT Configuration on Measurement

The following equipment is installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 6.3. Operating Condition of EUT

6.3.1. Setup the EUT and simulator as shown as Section 6.1.

6.3.2. Turn on the power of all equipment.

6.3.3. Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2412MHz, 2437MHz and 2462MHz TX frequency to transmit.

### 6.4. Test Procedure

6.4.1. The transmitter output was connected to the spectrum analyzer through a low loss cable. The transmitter shall be operated at its maximum carrier power measured under normal test conditions. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.

6.4.2. The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately 3x RBW.

6.4.3. A peak, or peak hold, may be used in place of the sampling detector as this may produce a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold may be necessary to determine the occupied bandwidth if the device is not transmitting continuously.

6.4.4. Set SPA "Meas" function, Select "Occupied Bandwidth" function, Select "99% Power Bandwidth". The frequency of the upper and lower markers indicating the edges of the transmitters "99% Power" emission bandwidth shall be recorded to automate by SPA.

## 6.5.Measurement Result

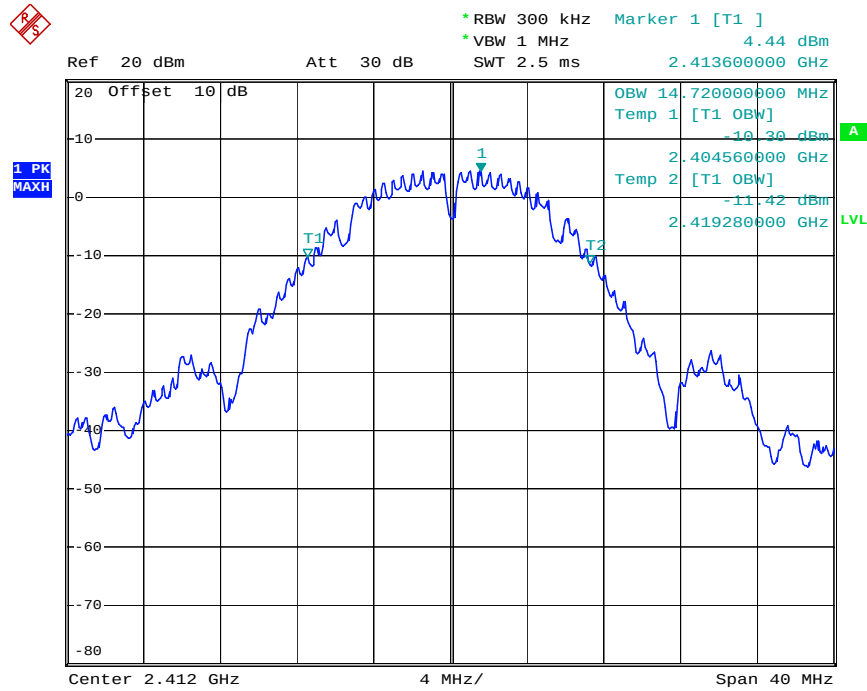
| The test was performed with 802.11b |                 |                              |
|-------------------------------------|-----------------|------------------------------|
| Channel                             | Frequency (MHz) | 99% Occupied Bandwidth (MHz) |
| Low                                 | 2412            | 14.72                        |
| Middle                              | 2437            | 14.48                        |
| High                                | 2462            | 14.08                        |

| The test was performed with 802.11g |                 |                              |
|-------------------------------------|-----------------|------------------------------|
| Channel                             | Frequency (MHz) | 99% Occupied Bandwidth (MHz) |
| Low                                 | 2412            | 18.80                        |
| Middle                              | 2437            | 19.76                        |
| High                                | 2462            | 18.48                        |

| The test was performed with 802.11n (Bandwidth: 20 MHz) |                 |                              |
|---------------------------------------------------------|-----------------|------------------------------|
| Channel                                                 | Frequency (MHz) | 99% Occupied Bandwidth (MHz) |
| Low                                                     | 2412            | 19.04                        |
| Middle                                                  | 2437            | 19.60                        |
| High                                                    | 2462            | 18.88                        |

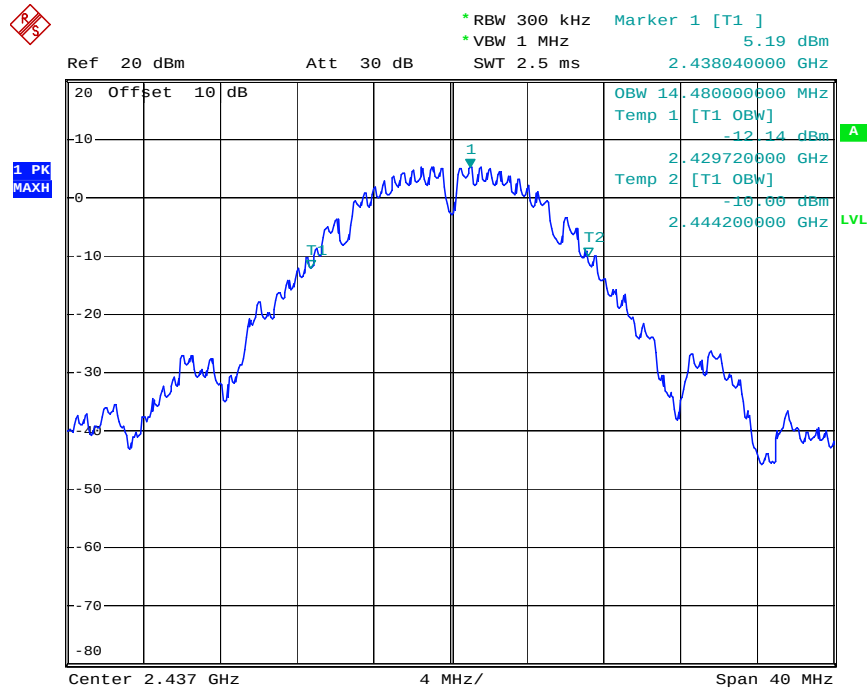
The spectrum analyzer plots are attached as below.

## 802.11b Low Channel 2412MHz



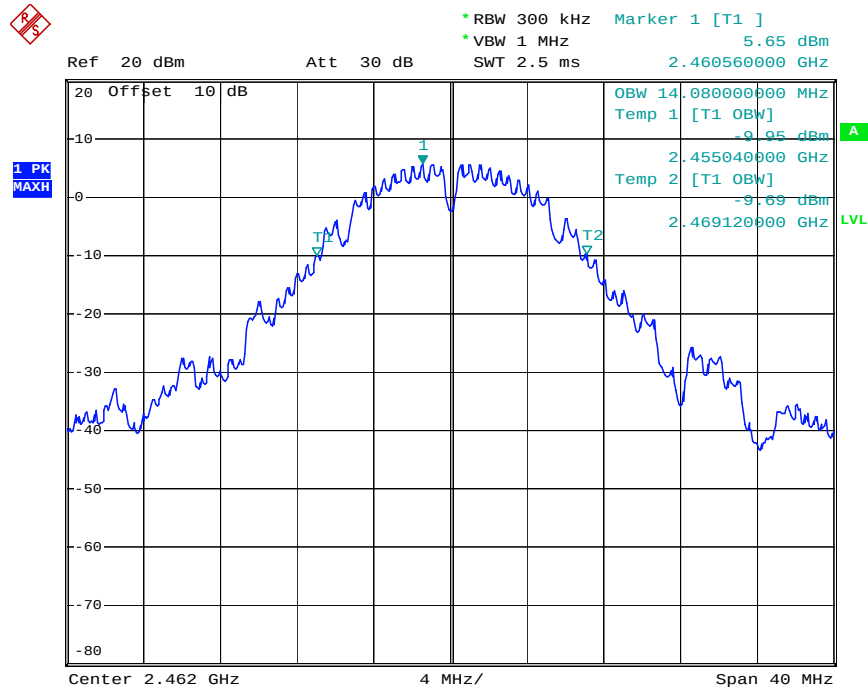
Date: 28.AUG.2019 18:43:36

## 802.11b Middle Channel 2437MHz



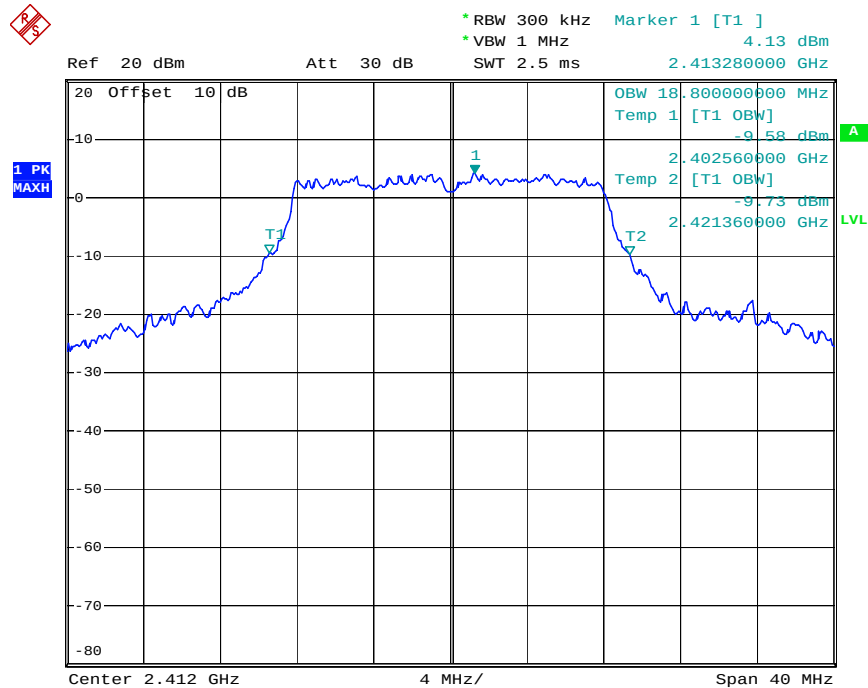
Date: 28.AUG.2019 18:43:13

## 802.11b High Channel 2462MHz



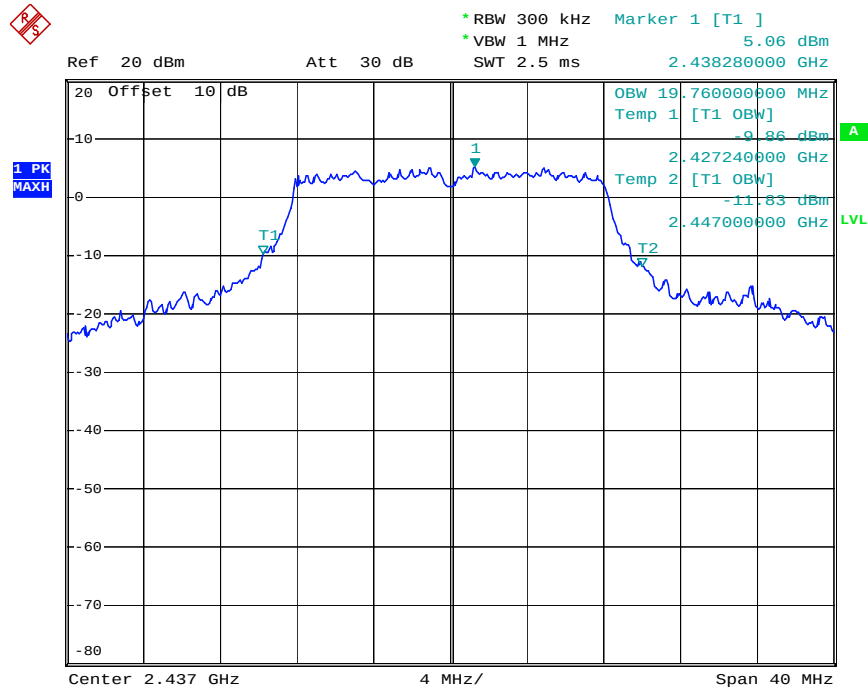
Date: 28.AUG.2019 18:42:51

## 802.11g Channel Low 2412MHz



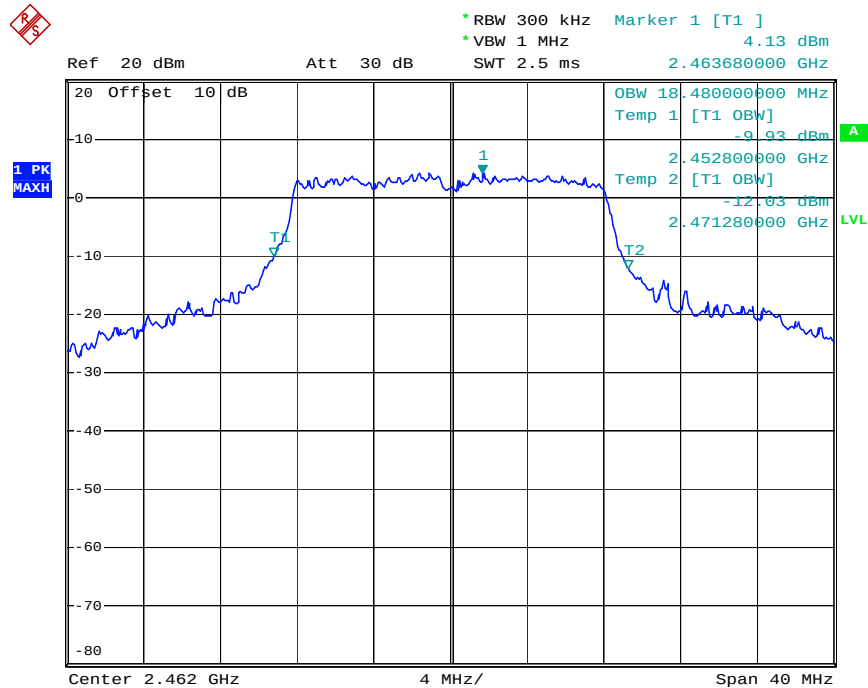
Date: 28.AUG.2019 18:41:39

## 802.11g Middle Channel 2437MHz



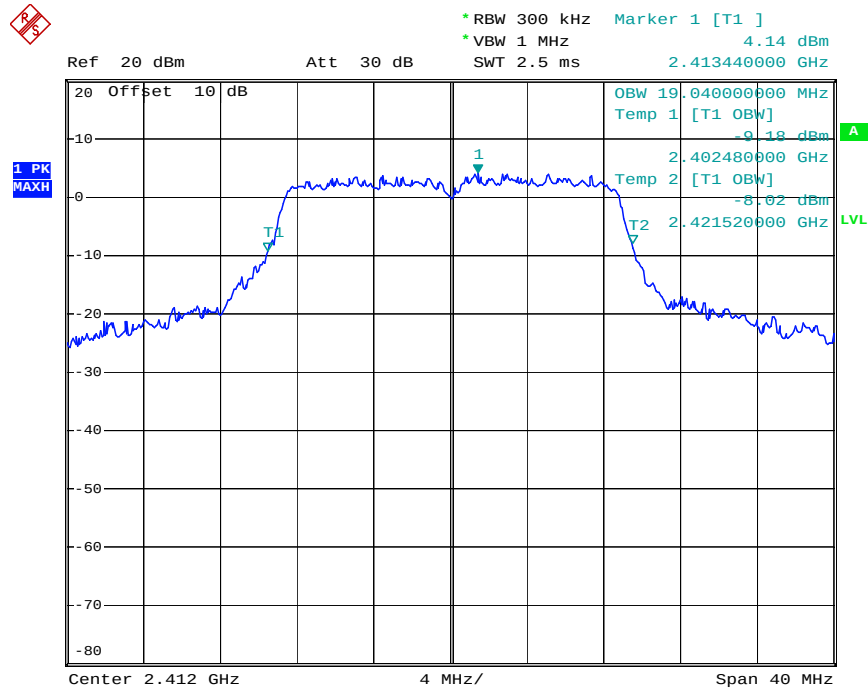
Date: 28.AUG.2019 18:42:08

## 802.11g High Channel 2462MHz



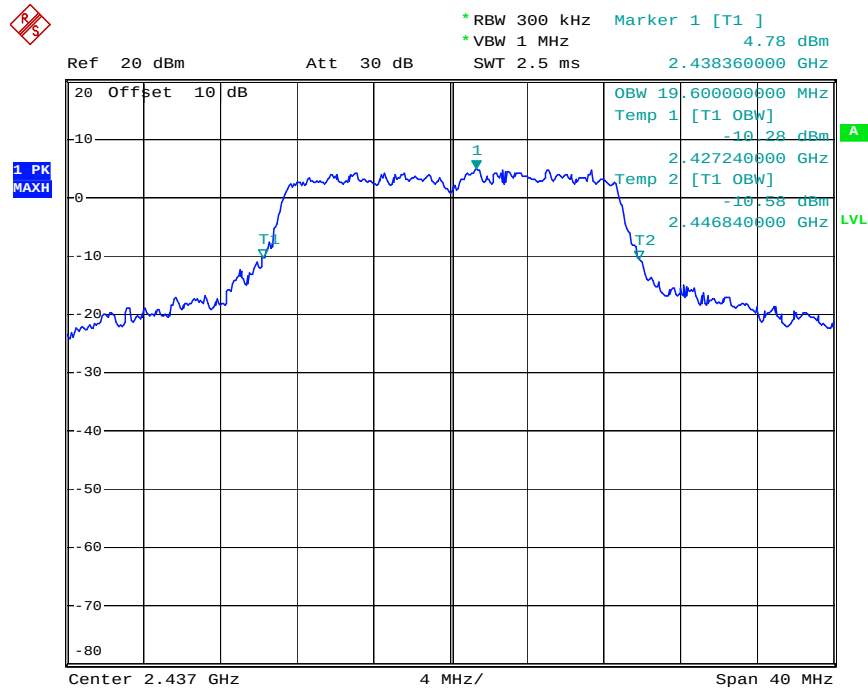
Date: 28.AUG.2019 18:42:30

## 802.11n(20MHz) Low Channel 2412MHz



Date: 28.AUG.2019 18:40:52

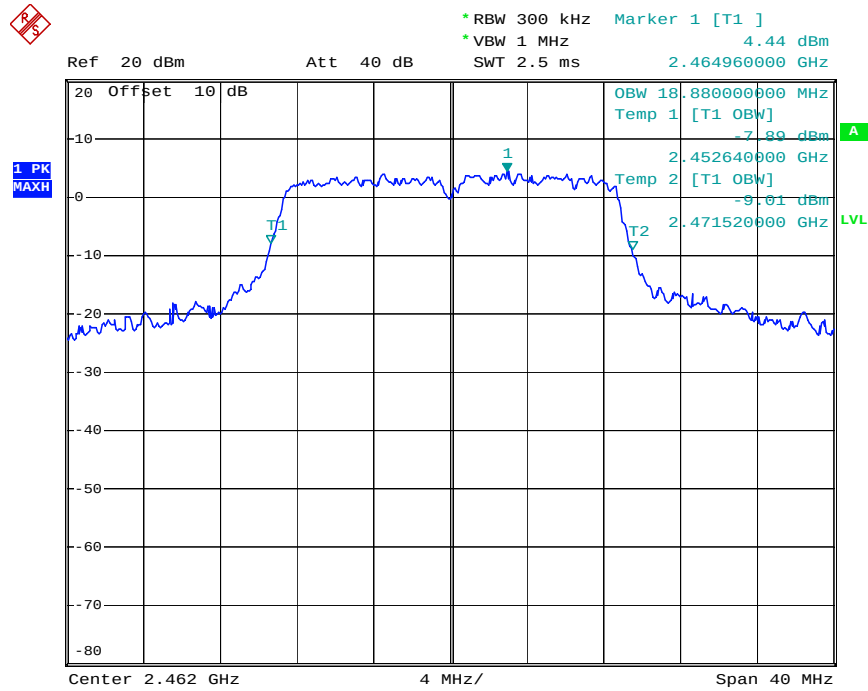
## 802.11n(20MHz) Middle Channel 2437MHz



Date: 28.AUG.2019 18:40:30



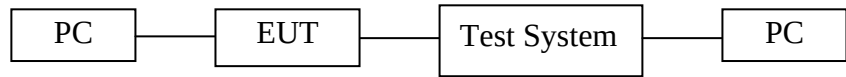
# 802.11n(20MHz) High Channel 2462MHz



Date: 28.AUG.2019 18:40:03

## 7. DUTY CYCLE MEASUREMENT

### 7.1. Block Diagram of Test Setup



### 7.2. EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 7.3. Operating Condition of EUT

7.3.1. Setup the EUT and simulator as shown as Section 7.1.

7.3.2. Turn on the power of all equipment.

7.3.3. Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2437MHz TX frequency to transmit.

### 7.4. Test Procedure

Measurements of duty cycle and transmission duration shall be performed using one of the following techniques:

1. A diode detector and an oscilloscope that together have sufficiently short response time to permit accurate measurements of the on- and off-times of the transmitted signal.
2. The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on- and off-times of the transmitted signal
  - a. Set the center frequency of the instrument to the centre frequency of the transmission
  - b. Set  $RBW \geq OBW$  if possible; otherwise, set RBW to the largest available value(10MHz).
  - c. Set detector = Peak or average.
  - d. The zero-span measurement method shall not be used unless both RBW and VBW are  $> 50/T$  and the number of sweep points across duration T exceeds 100.  
(For example, if VBW and/or RBW are limited to 3MHz, then the zero-span method of measuring duty cycle shall not be used if  $T \leq 16.7$  microseconds.)

## 7.5. Test Result

| The test was performed with 802.11b |                 |               |            |
|-------------------------------------|-----------------|---------------|------------|
| Channel                             | Frequency (MHz) | duty cycle(x) | 10log(1/x) |
| Middle                              | 2437            | 88.14%        | 0.55       |

| The test was performed with 802.11g |                 |               |            |
|-------------------------------------|-----------------|---------------|------------|
| Channel                             | Frequency (MHz) | duty cycle(x) | 10log(1/x) |
| Middle                              | 2437            | 80.00%        | 0.97       |

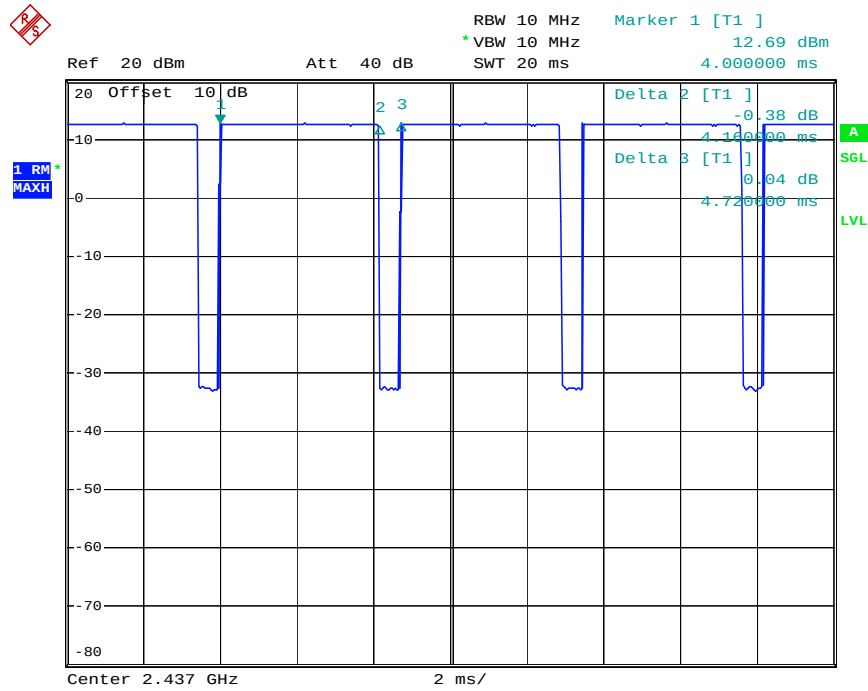
| The test was performed with 802.11n20 |                 |               |            |
|---------------------------------------|-----------------|---------------|------------|
| Channel                               | Frequency (MHz) | duty cycle(x) | 10log(1/x) |
| Middle                                | 2437            | 78.95%        | 1.03       |

Note: The duty cycle's parameter settings for each mode(802.11b,g,n) are the same, Therefore, other channels can refer to the test data of the middle channel.

The spectrum analyzer plots are attached as below.

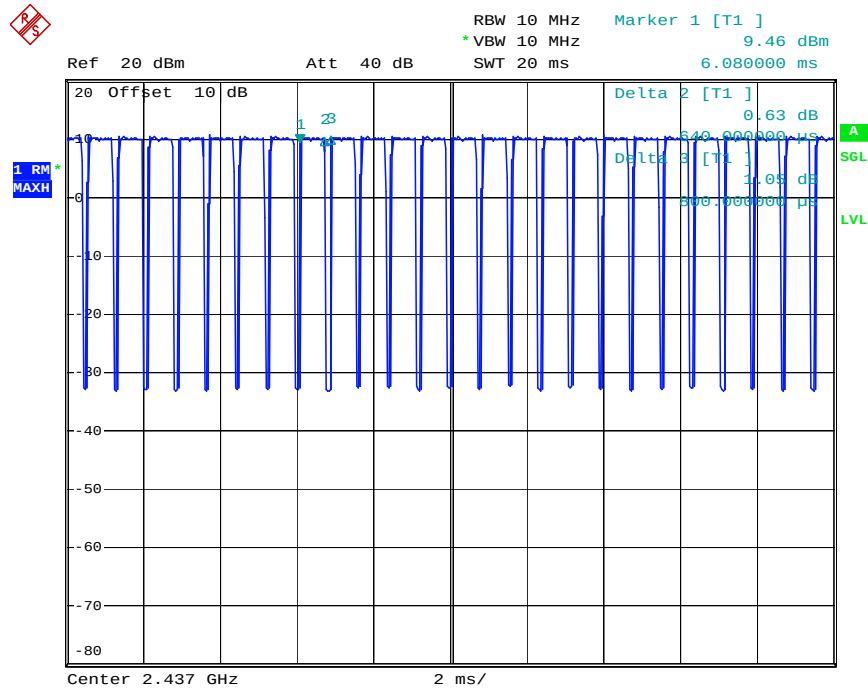
# Duty cycle

## 802.11b Channel Middle 2437MHz



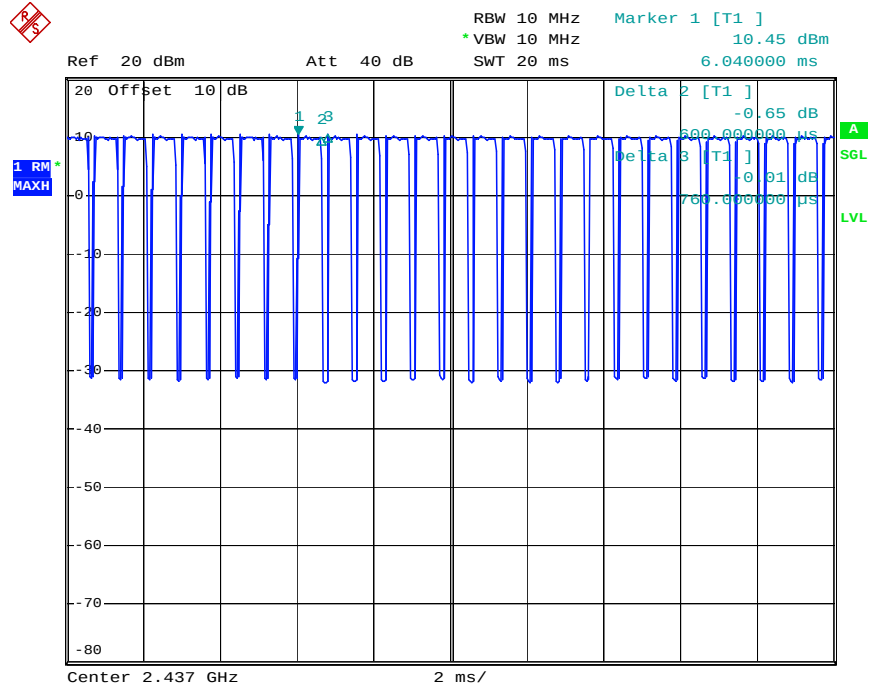
Date: 28.AUG.2019 18:51:40

## 802.11g Channel Middle 2437MHz



Date: 28.AUG.2019 18:51:03

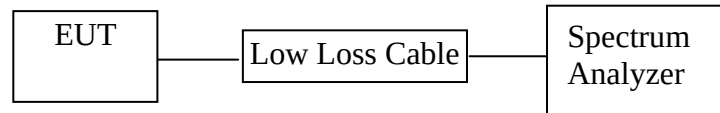
802.11n20 Channel Middle 2437MHz



Date: 28.AUG.2019 18:50:22

## 8. POWER SPECTRAL DENSITY TEST

### 8.1. Block Diagram of Test Setup



### 8.2. The Requirement For Section 15.247(e)

Section 15.247(e): For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

### 8.3. EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 8.4. Operating Condition of EUT

8.4.1. Setup the EUT and simulator as shown as Section 8.1.

8.4.2. Turn on the power of all equipment.

8.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2412MHz, 2437MHz and 2462MHz TX frequency to transmit.

### 8.5. Test Procedure

8.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

8.5.2. Measurement Procedure PKPSD:

This procedure must be used if maximum peak conducted output power was used to demonstrate compliance to the fundamental output power limit, and is optional if the maximum (average) conducted output power was used to demonstrate compliance.

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW  $3\text{ kHz} \leq \text{RBW} \leq 100\text{ kHz}$ .

4. Set the VBW  $\geq 3 \times$  RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

#### 8.5.3.Measurement the maximum power spectral density.

### 8.6.Test Result

PASS

Note: Single antenna transmit in 802.11b and 802.11g mode

Both antennas are transmitted at the same time in 802.11n mode.

We have recorded the worst case value in the report.

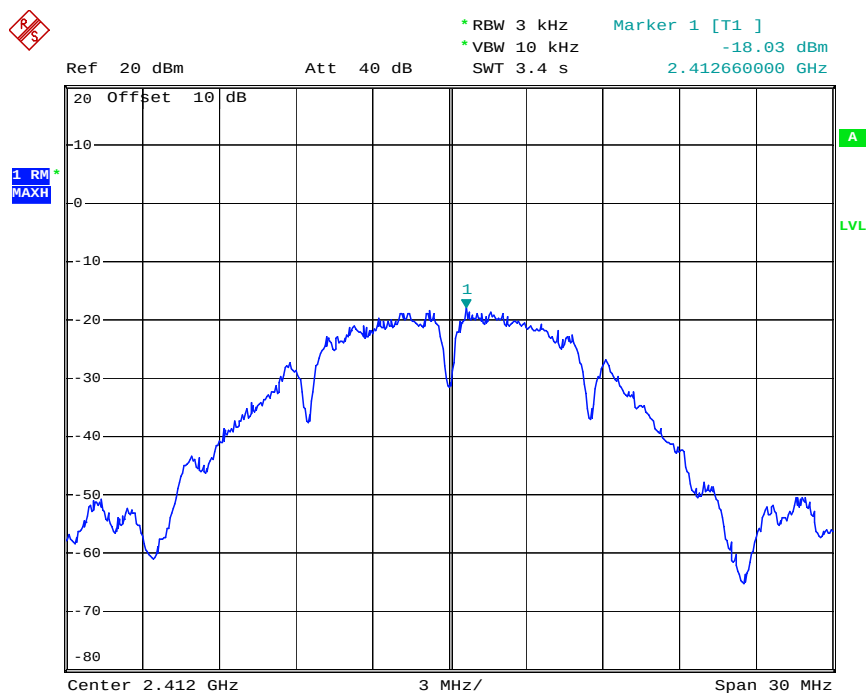
| The test was performed with 802.11b |                 |                             |                      |                                   |              |
|-------------------------------------|-----------------|-----------------------------|----------------------|-----------------------------------|--------------|
| Channel                             | Frequency (MHz) | Power Spectral Density(dBm) | 10log(1/ duty cycle) | Final Power Spectral Density(dBm) | Limits (dBm) |
| Low                                 | 2412            | -18.03                      | 0.55                 | -17.48                            | 8 dBm        |
| Middle                              | 2437            | -17.49                      | 0.55                 | -16.94                            | 8 dBm        |
| High                                | 2462            | -17.62                      | 0.55                 | -17.07                            | 8 dBm        |

| The test was performed with 802.11g |                 |                             |                      |                                   |              |
|-------------------------------------|-----------------|-----------------------------|----------------------|-----------------------------------|--------------|
| Channel                             | Frequency (MHz) | Power Spectral Density(dBm) | 10log(1/ duty cycle) | Final Power Spectral Density(dBm) | Limits (dBm) |
| Low                                 | 2412            | -20.75                      | 0.97                 | -19.78                            | 8 dBm        |
| Middle                              | 2437            | -21.52                      | 0.97                 | -20.55                            | 8 dBm        |
| High                                | 2462            | -21.30                      | 0.97                 | -20.33                            | 8 dBm        |

| The test was performed with 802.11n(20MHz) |                 |                             |                      |                                   |              |
|--------------------------------------------|-----------------|-----------------------------|----------------------|-----------------------------------|--------------|
| Channel                                    | Frequency (MHz) | Power Spectral Density(dBm) | 10log(1/ duty cycle) | Final Power Spectral Density(dBm) | Limits (dBm) |
| Low                                        | 2412            | -21.51                      | 1.03                 | -20.48                            | 8 dBm        |
| Middle                                     | 2437            | -21.27                      | 1.03                 | -20.24                            | 8 dBm        |
| High                                       | 2462            | -22.81                      | 1.03                 | -21.78                            | 8 dBm        |

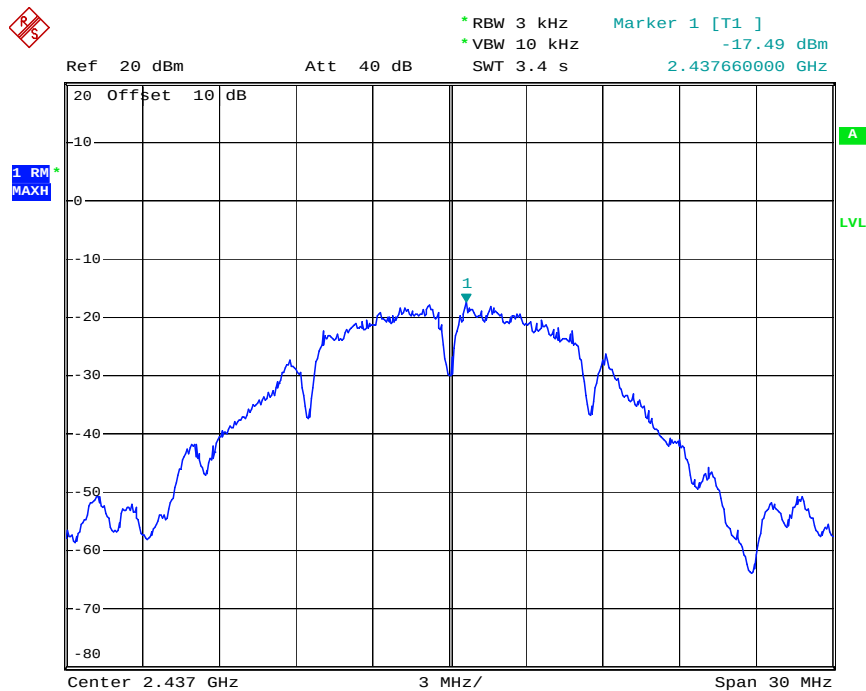
The spectrum analyzer plots are attached as below.

## 802.11b Low Channel 2412MHz



Date: 28.AUG.2019 18:53:04

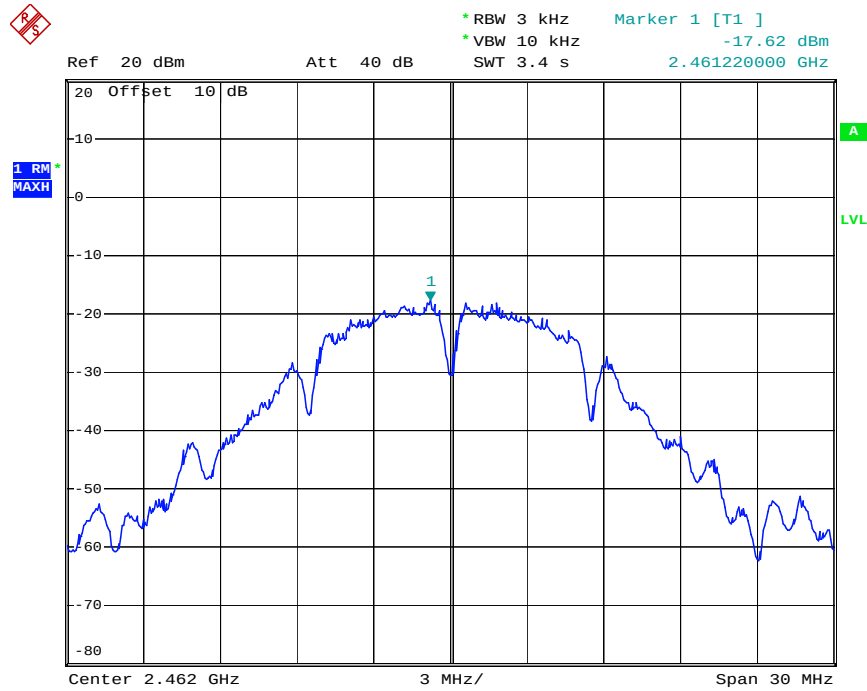
## 802.11b Middle Channel 2437MHz



Date: 28.AUG.2019 18:52:40

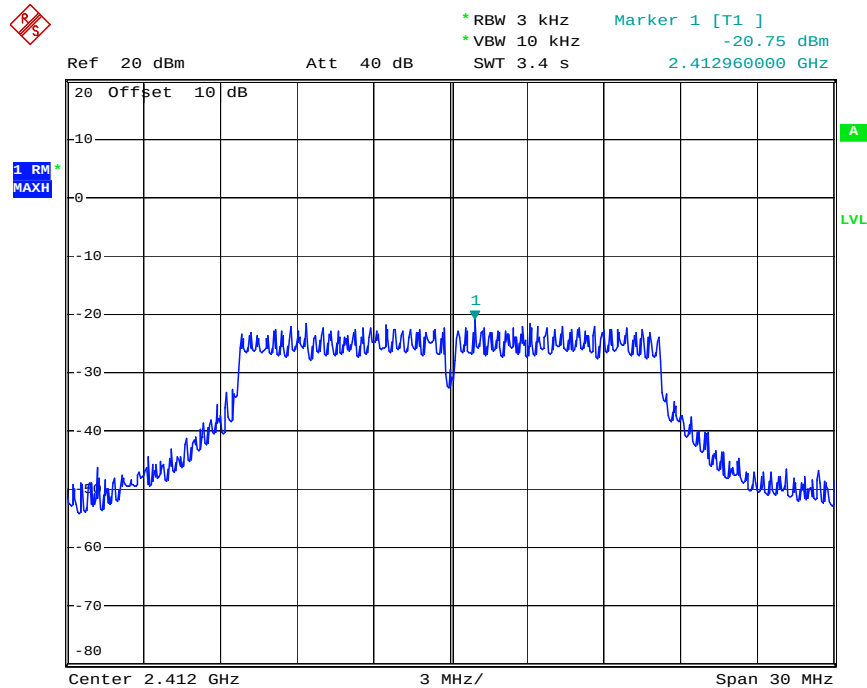


## 802.11b High Channel 2462MHz



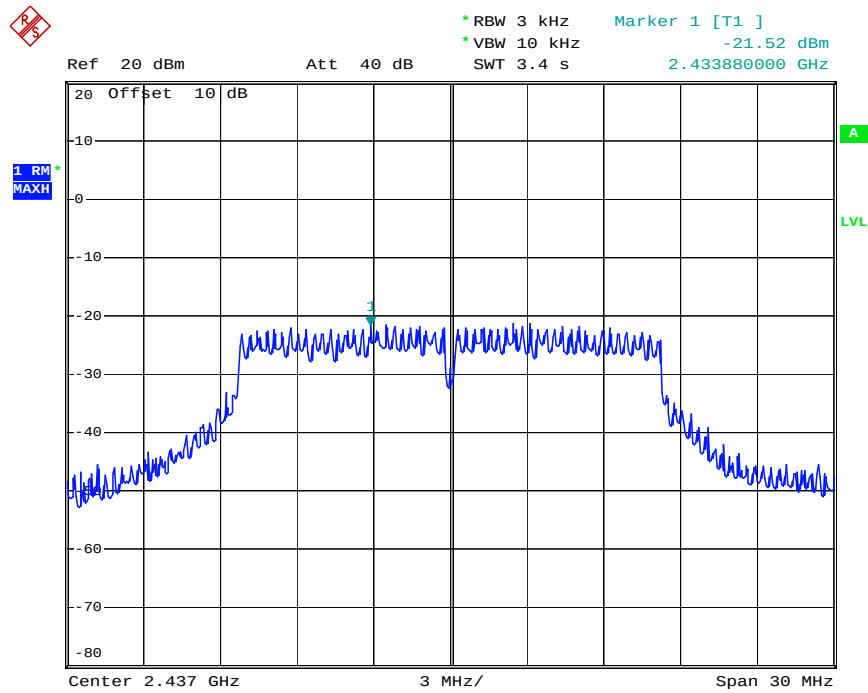
Date: 28.AUG.2019 18:53:36

## 802.11g Low Channel 2412MHz



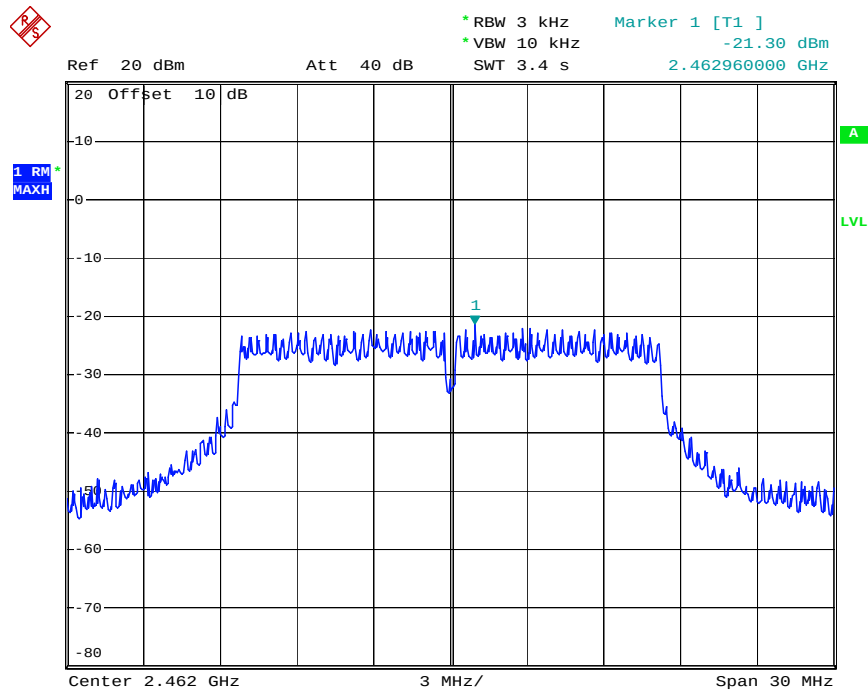
Date: 28.AUG.2019 18:55:10

## 802.11g Middle Channel 2437MHz



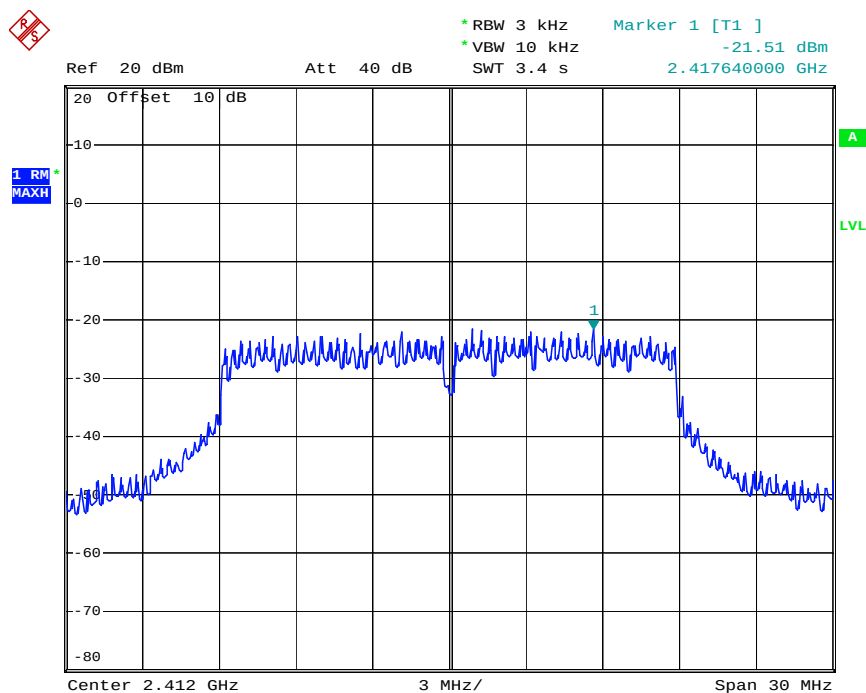
Date: 28.AUG.2019 18:54:45

## 802.11g High Channel 2462MHz



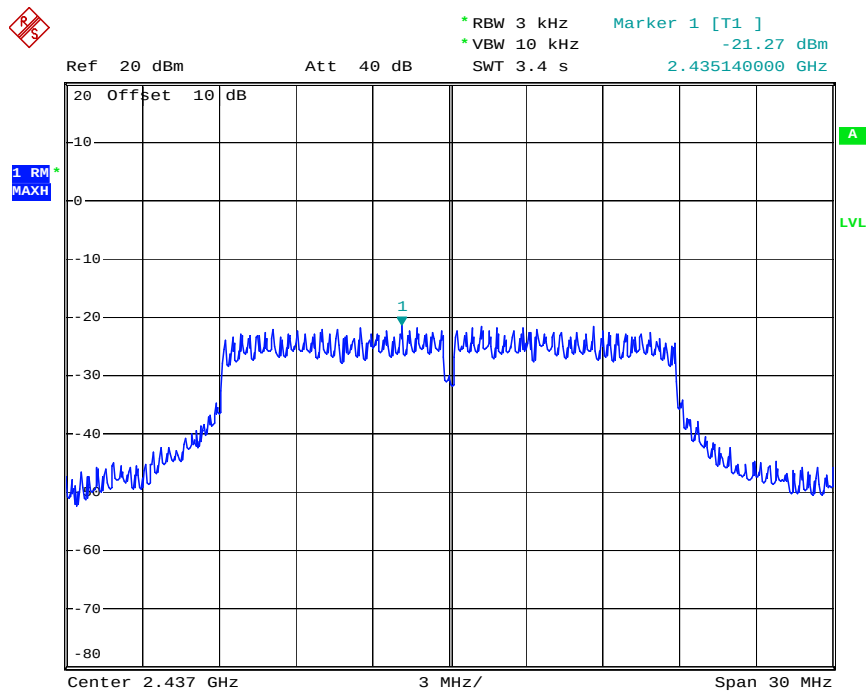
Date: 28.AUG.2019 18:54:17

## 802.11n(20MHz) Low Channel 2412MHz



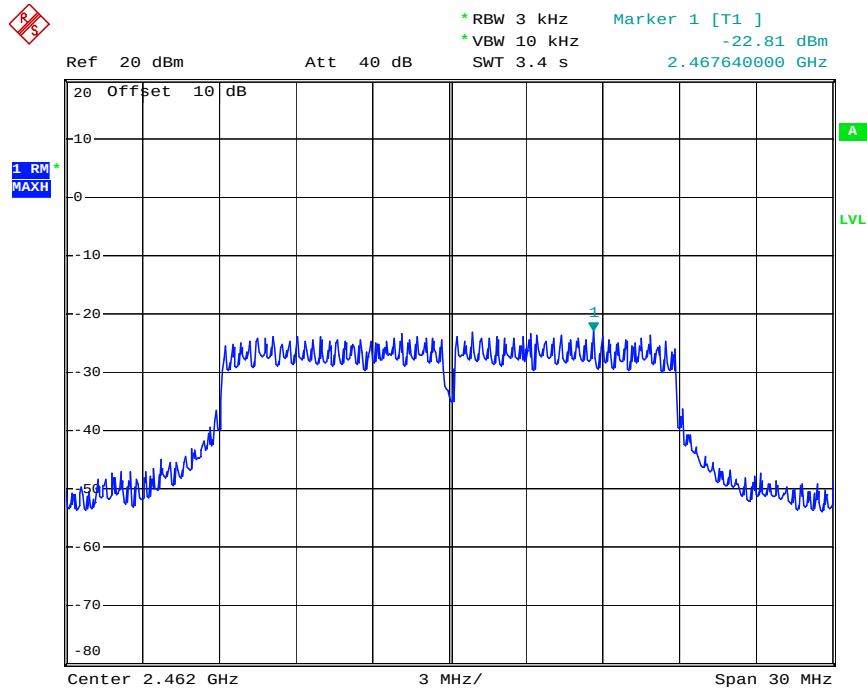
Date: 28.AUG.2019 18:55:46

## 802.11n(20MHz) Middle Channel 2437MHz



Date: 28.AUG.2019 18:56:17

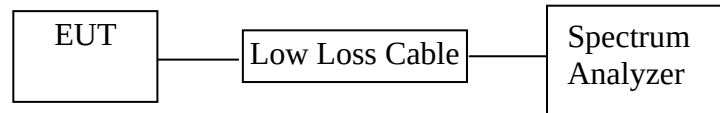
# 802.11n(20MHz) High Channel 2462MHz



Date: 28.AUG.2019 18:56:50

## 9. MAXIMUM CONDUCTED (AVERAGE) OUTPUT POWER

### 9.1. Block Diagram of Test Setup



### 9.2. The Requirement For Section 15.247(b)(3)

Section 15.247(b)(3): For systems using digital modulation in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands: 1 Watt.

### 9.3. EUT Configuration on Measurement

The equipment is installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 9.4. Operating Condition of EUT

9.4.1. Setup the EUT and simulator as shown as Section 9.1.

9.4.2. Turn on the power of all equipment.

9.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2412MHz, 2437MHz and 2462MHz TX frequency to transmit.

### 9.5. Test Procedure

9.5.1. The EUT was tested according to DTS test procedure of April 02, 2019 KDB558074 D01 DTS Meas Guidance v0502 for compliance to FCC 47CFR 15.247 requirements.

9.5.2. The transmitter output was connected to the spectrum analyzer through a low loss cable.

9.5.3. Set RBW = 1-5% of the OBW, not to exceed 1 MHz, VBW  $\geq$  3 x RBW, Sweep time = auto, Set span to at least 1.5 times the OBW, Detector = RMS.

9.5.4. Measurement the Maximum conducted (average) output power.

## 9.6.Test Result

Final power= Ave output power+10log(1/ duty cycle)

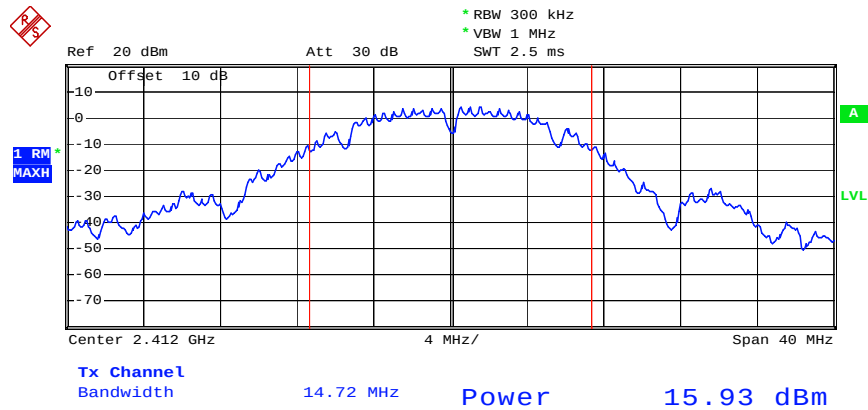
| The test was performed with 802.11b |                        |                      |                   |                 |                    |
|-------------------------------------|------------------------|----------------------|-------------------|-----------------|--------------------|
| Frequency (MHz)                     | Ave output power (dBm) | 10log(1/ duty cycle) | Final power (dBm) | Final power (W) | FCC Limits dBm / W |
| 2412                                | 15.93                  | 0.55                 | 16.48             | 0.0445          | 30 dBm / 1 W       |
| 2437                                | 14.35                  | 0.55                 | 14.90             | 0.0309          | 30 dBm / 1 W       |
| 2462                                | 14.89                  | 0.55                 | 15.44             | 0.0350          | 30 dBm / 1 W       |

| The test was performed with 802.11g |                        |                      |                   |                 |                    |
|-------------------------------------|------------------------|----------------------|-------------------|-----------------|--------------------|
| Frequency (MHz)                     | Ave output power (dBm) | 10log(1/ duty cycle) | Final power (dBm) | Final power (W) | FCC Limits dBm / W |
| 2412                                | 16.23                  | 0.97                 | 17.20             | 0.0525          | 30 dBm / 1 W       |
| 2437                                | 15.28                  | 0.97                 | 16.25             | 0.0422          | 30 dBm / 1 W       |
| 2462                                | 14.95                  | 0.97                 | 15.92             | 0.0391          | 30 dBm / 1 W       |

| The test was performed with 802.11n(20MHz) |                        |                      |                   |                 |                    |
|--------------------------------------------|------------------------|----------------------|-------------------|-----------------|--------------------|
| Frequency (MHz)                            | Ave output power (dBm) | 10log(1/ duty cycle) | Final power (dBm) | Final power (W) | FCC Limits dBm / W |
| 2412                                       | 15.28                  | 1.03                 | 16.31             | 0.0428          | 30 dBm / 1 W       |
| 2437                                       | 15.86                  | 1.03                 | 16.89             | 0.0489          | 30 dBm / 1 W       |
| 2462                                       | 15.48                  | 1.03                 | 16.51             | 0.0448          | 30 dBm / 1 W       |

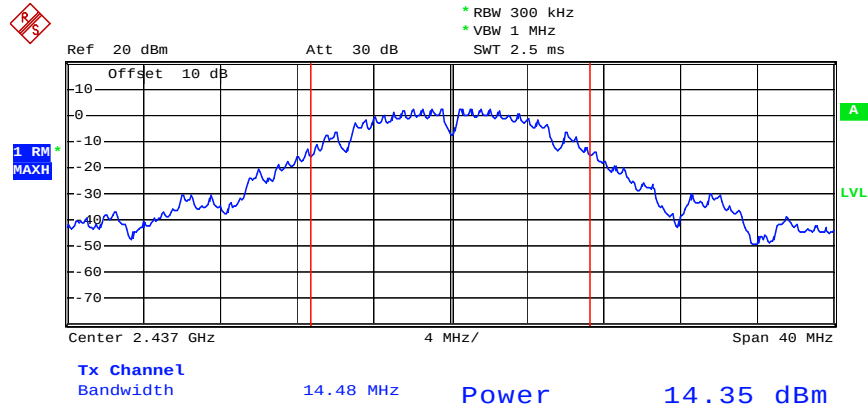
The spectrum analyzer plots are attached as below.

## 802.11b Low Channel 2412MHz



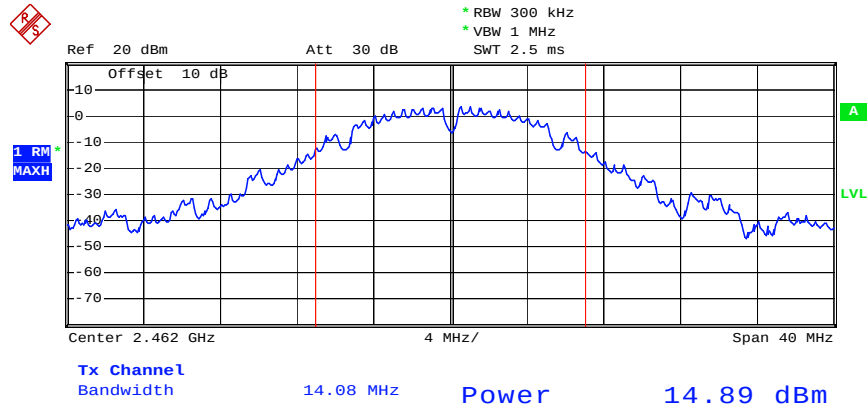
Date: 28.AUG.2019 19:21:18

## 802.11b Middle Channel 2437MHz



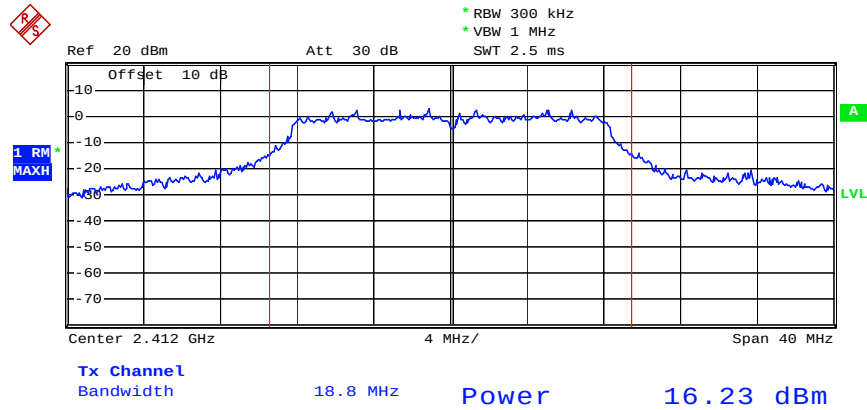
Date: 28.AUG.2019 19:22:44

## 802.11b High Channel 2462MHz



Date: 28.AUG.2019 19:24:19

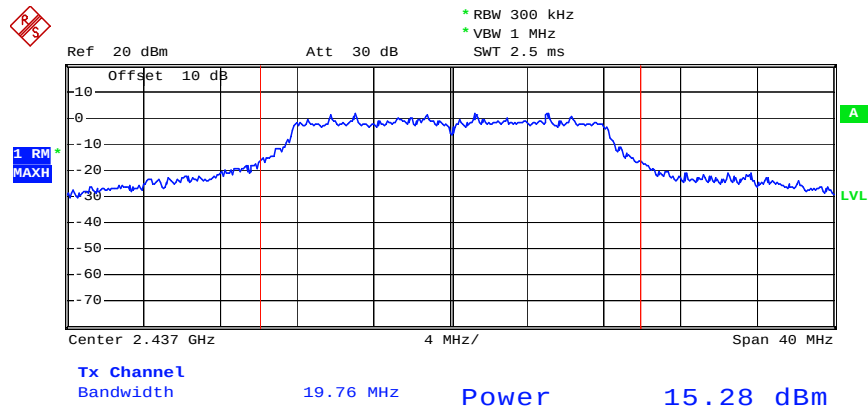
## 802.11g Low Channel 2412MHz



Date: 28.AUG.2019 19:29:26

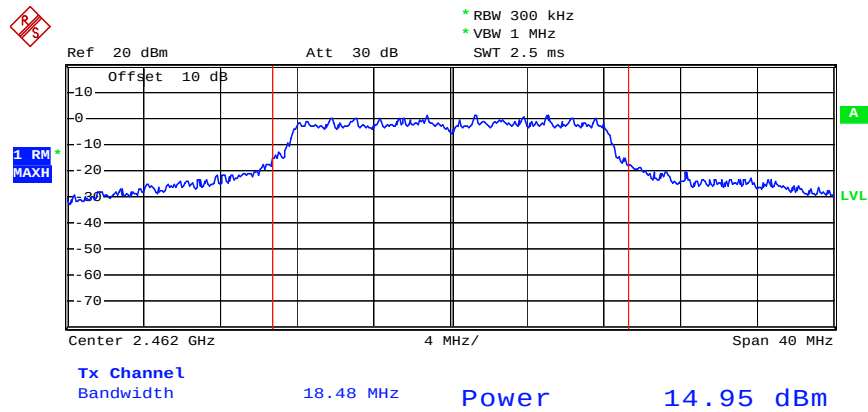


## 802.11g Middle Channel 2437MHz



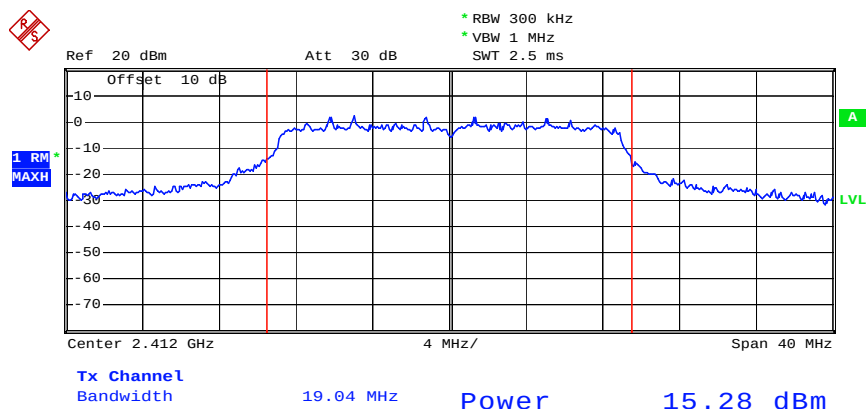
Date: 28.AUG.2019 19:28:04

## 802.11g High Channel 2462MHz



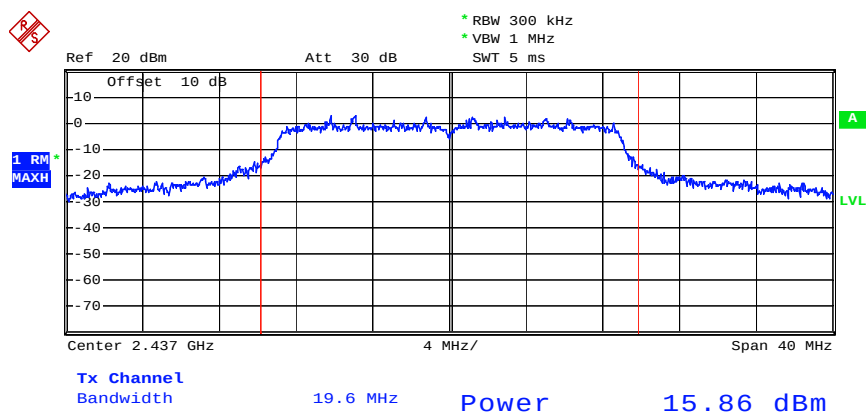
Date: 28.AUG.2019 19:26:18

## 802.11n(20MHz) Low Channel 2412MHz



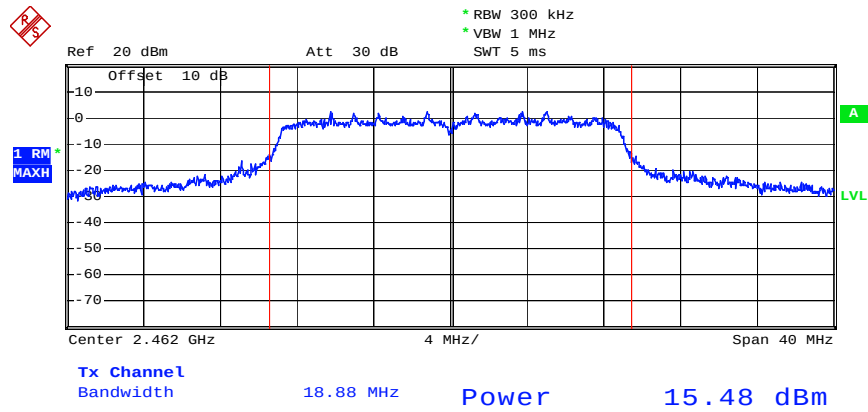
Date: 28.AUG.2019 19:30:19

## 802.11n(20MHz) Middle Channel 2437MHz



Date: 28.AUG.2019 19:31:06

# 802.11n(20MHz) High Channel 2462MHz

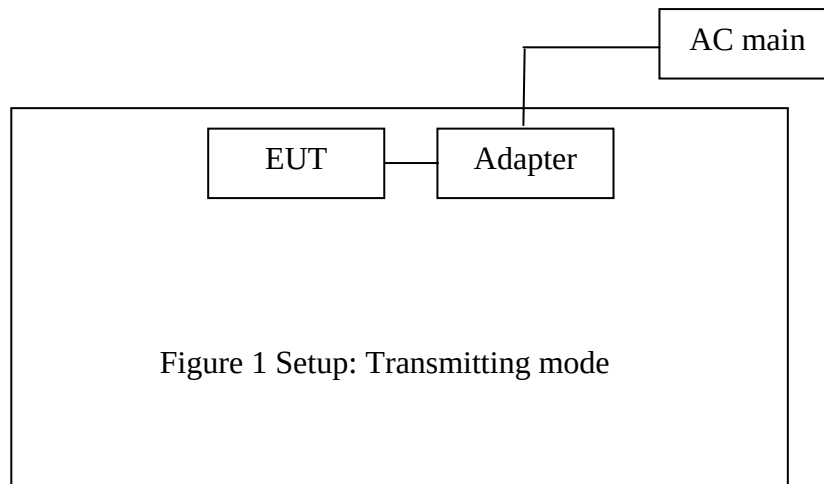


Date: 28.AUG.2019 19:31:39

## 10.RADIATED SPURIOUS EMISSION TEST

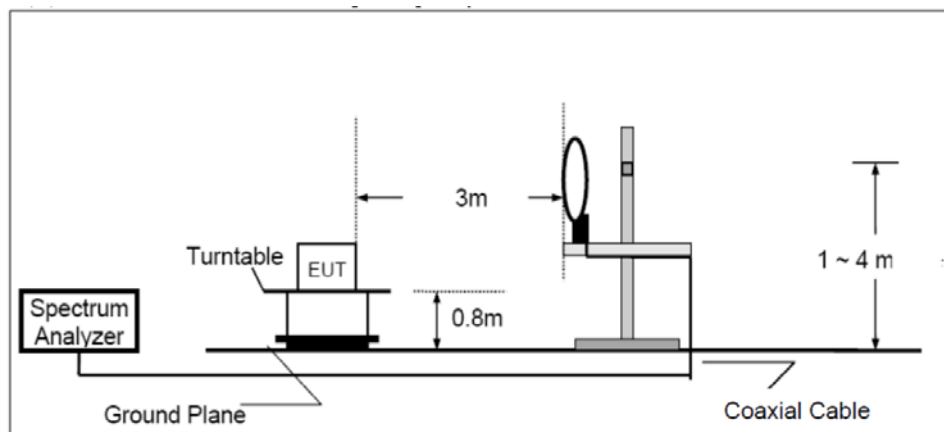
### 10.1.Block Diagram of Test Setup

#### 10.1.1.Block diagram of connection between the EUT and peripherals

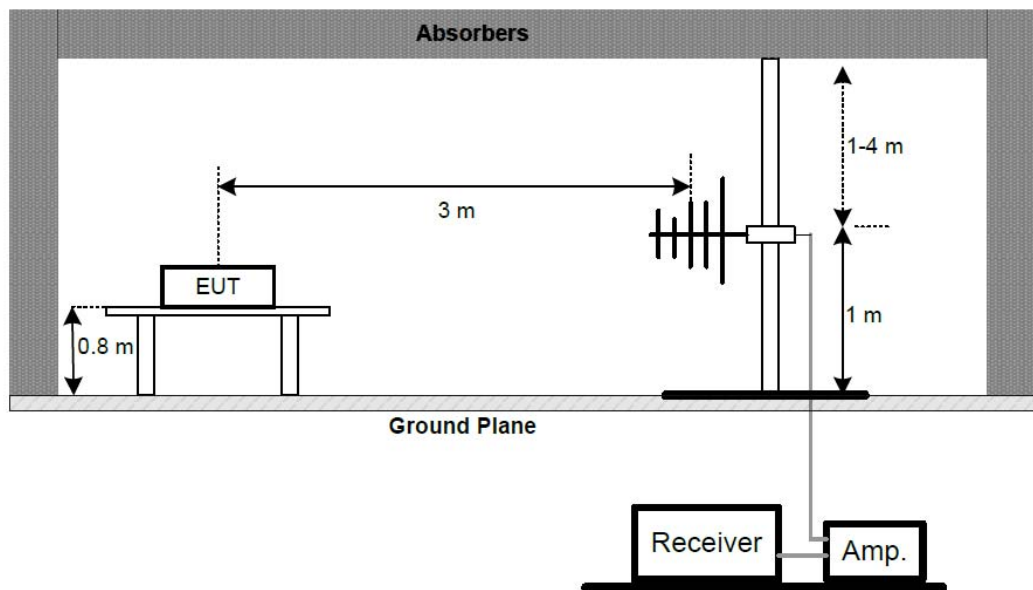


#### 10.1.2.Semi-Anechoic Chamber Test Setup Diagram

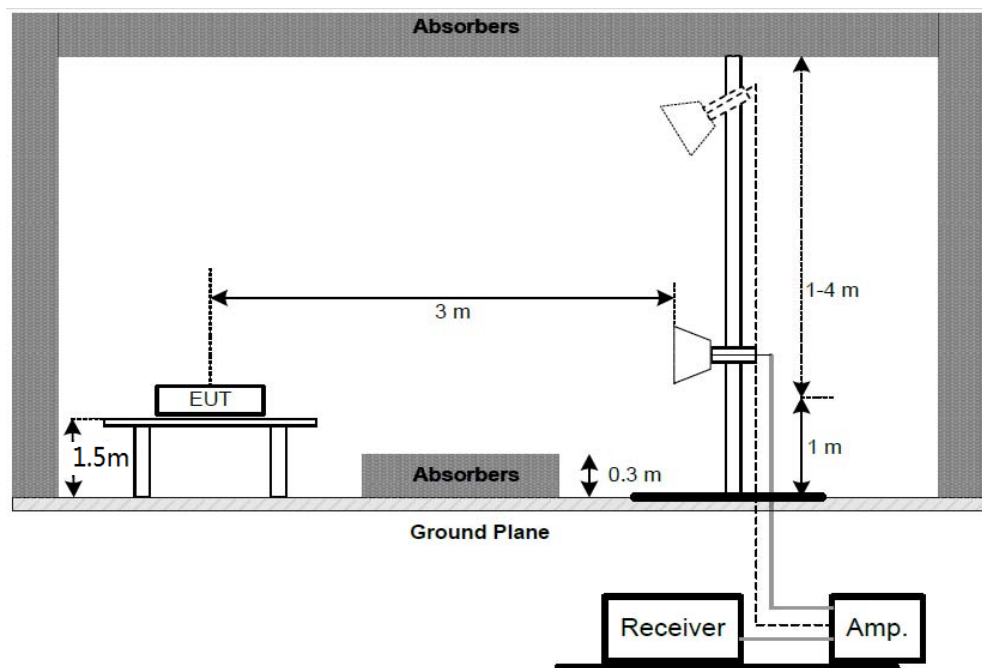
##### (A) Radiated Emission Test Set-Up, Frequency below 30MHz



(B) Radiated Emission Test Set-Up, Frequency below 1GHz



Above 1GHz:



## 10.2.The Limit For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

## 10.3.Restricted bands of operation

### 10.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

| MHz                      | MHz                 | MHz           | GHz              |
|--------------------------|---------------------|---------------|------------------|
| 0.090-0.110              | 16.42-16.423        | 399.9-410     | 4.5-5.15         |
| <sup>1</sup> 0.495-0.505 | 16.69475-16.69525   | 608-614       | 5.35-5.46        |
| 2.1735-2.1905            | 16.80425-16.80475   | 960-1240      | 7.25-7.75        |
| 4.125-4.128              | 25.5-25.67          | 1300-1427     | 8.025-8.5        |
| 4.17725-4.17775          | 37.5-38.25          | 1435-1626.5   | 9.0-9.2          |
| 4.20725-4.20775          | 73-74.6             | 1645.5-1646.5 | 9.3-9.5          |
| 6.215-6.218              | 74.8-75.2           | 1660-1710     | 10.6-12.7        |
| 6.26775-6.26825          | 108-121.94          | 1718.8-1722.2 | 13.25-13.4       |
| 6.31175-6.31225          | 123-138             | 2200-2300     | 14.47-14.5       |
| 8.291-8.294              | 149.9-150.05        | 2310-2390     | 15.35-16.2       |
| 8.362-8.366              | 156.52475-156.52525 | 2483.5-2500   | 17.7-21.4        |
| 8.37625-8.38675          | 156.7-156.9         | 2690-2900     | 22.01-23.12      |
| 8.41425-8.41475          | 162.0125-167.17     | 3260-3267     | 23.6-24.0        |
| 12.29-12.293             | 167.72-173.2        | 3332-3339     | 31.2-31.8        |
| 12.51975-12.52025        | 240-285             | 3345.8-3358   | 36.43-36.5       |
| 12.57675-12.57725        | 322-335.4           | 3600-4400     | ( <sup>2</sup> ) |
| 13.36-13.41              |                     |               |                  |

<sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510

<sup>2</sup>Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

## 10.4. Configuration of EUT on Measurement

The equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

## 10.5. Operating Condition of EUT

10.5.1. Setup the EUT and simulator as shown as Section 10.1.

10.5.2. Turn on the power of all equipment.

10.5.3. Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2412MHz, 2437MHz and 2462MHz TX frequency to transmit.

## 10.6. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground(Below 1GHz). The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The worst-case data rate for this channel to be 1Mbps for 802.11b mode and 6Mbps for 802.11g mode and 150Mbps for 802.11n mode, based on previous with 802.11 WLAN product design architectures.

The frequency range from 30MHz to 25000MHz is checked.

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

During the radiated emission test, the spectrum analyzer was set with the following configurations:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions

are reported.

## 10.7. The Field Strength of Radiation Emission Measurement Results

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. \*: Denotes restricted band of operation.

3. The EUT is tested radiation emission at each test mode (802.11b/g/n) in three axes. The worst emissions are reflected in the following plots.

4. The radiation emissions from 18-25GHz are not reported, because the test values lower than the limits of 20dB

5. The average measurement was not performed when peak measured data under the limit of average detection.

**Below 1G**





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Tel:+86-0755-26503290

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Job No.: FRANK2019-W #158

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 1

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal

Power Source: AC 120V/60Hz

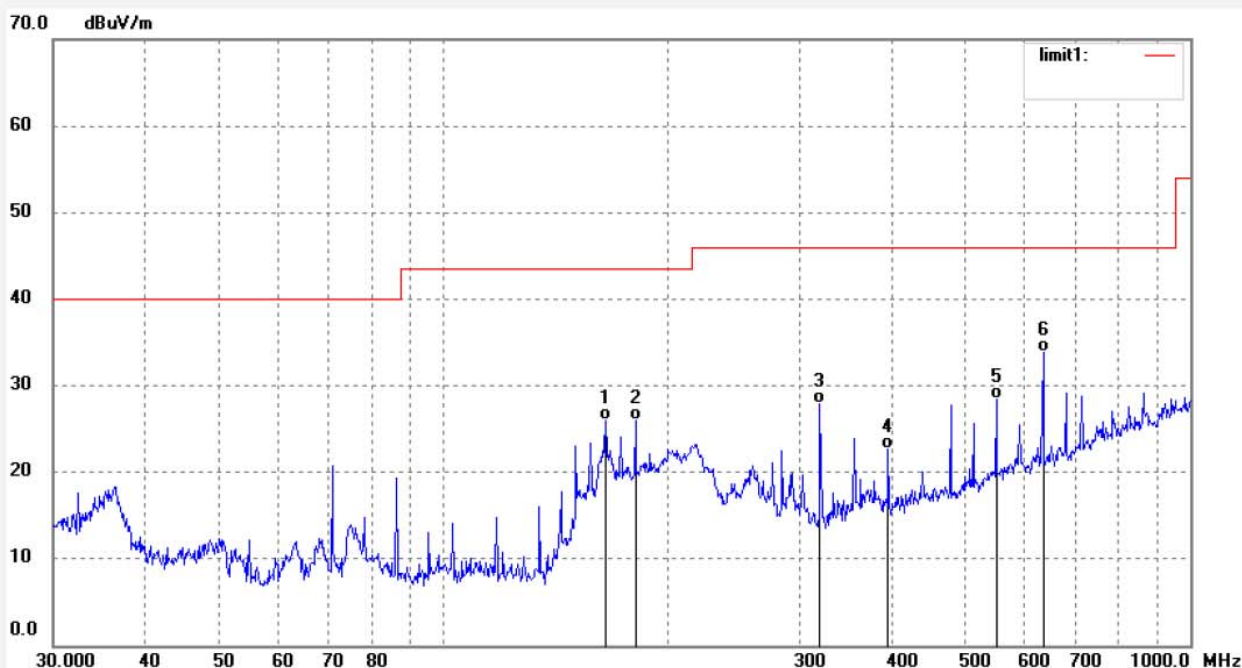
Date: 2019/08/30

Time: 17:24:16

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 164.8911    | 52.56            | -26.55      | 26.01           | 43.50          | -17.49      | QP       | 200         | 320           |        |
| 2   | 180.6640    | 52.01            | -25.97      | 26.04           | 43.50          | -17.46      | QP       | 200         | 142           |        |
| 3   | 319.2071    | 48.48            | -20.65      | 27.83           | 46.00          | -18.17      | QP       | 200         | 93            |        |
| 4   | 394.1198    | 41.15            | -18.41      | 22.74           | 46.00          | -23.26      | QP       | 200         | 110           |        |
| 5   | 550.2902    | 43.30            | -14.79      | 28.51           | 46.00          | -17.49      | QP       | 200         | 22            |        |
| 6   | 635.5576    | 46.86            | -12.96      | 33.90           | 46.00          | -12.10      | QP       | 200         | 193           |        |

Job No.: FRANK2019-W #159

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 1

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Vertical

Power Source: AC 120V/60Hz

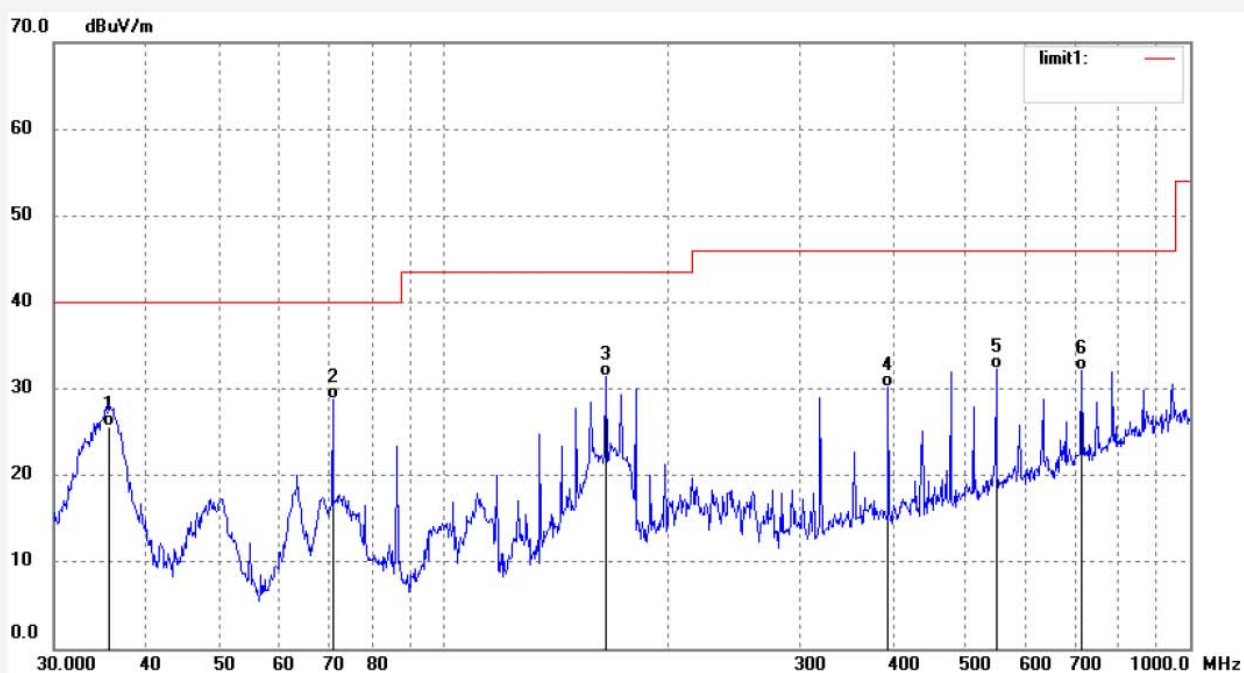
Date: 2019/08/30

Time: 17:25:25

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq.<br>(MHz) | Reading<br>(dBuV/m) | Factor<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Detector | Height<br>(cm) | Degree<br>(deg.) | Remark |
|-----|----------------|---------------------|----------------|--------------------|-------------------|----------------|----------|----------------|------------------|--------|
| 1   | 35.7616        | 47.35               | -21.77         | 25.58              | 40.00             | -14.42         | QP       | 100            | 211              |        |
| 2   | 70.9535        | 56.26               | -27.52         | 28.74              | 40.00             | -11.26         | QP       | 100            | 33               |        |
| 3   | 164.8910       | 58.00               | -26.55         | 31.45              | 43.50             | -12.05         | QP       | 100            | 112              |        |
| 4   | 394.1197       | 48.56               | -18.41         | 30.15              | 46.00             | -15.85         | QP       | 100            | 32               |        |
| 5   | 550.2902       | 47.04               | -14.79         | 32.25              | 46.00             | -13.75         | QP       | 100            | 66               |        |
| 6   | 716.2038       | 43.25               | -11.09         | 32.16              | 46.00             | -13.84         | QP       | 100            | 149              |        |



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Job No.: FRANK2019-W #161

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 6

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal

Power Source: AC 120V/60Hz

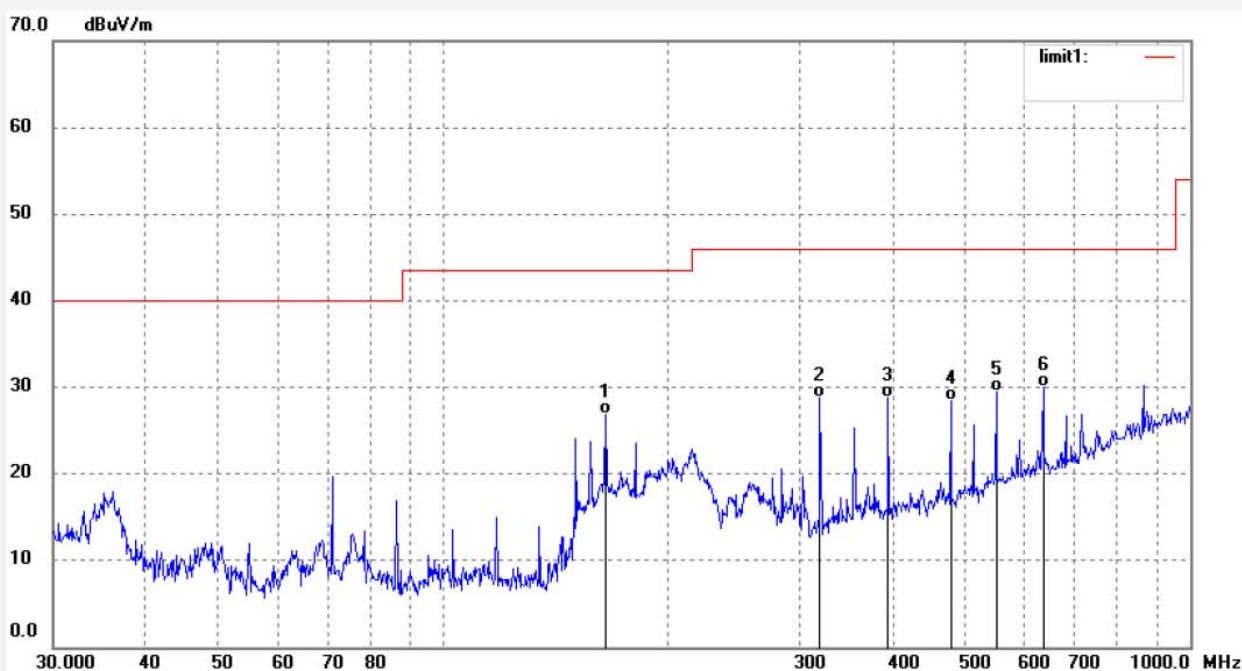
Date: 2019/08/30

Time: 17:27:06

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 164.8911    | 53.48            | -26.55      | 26.93           | 43.50          | -16.57      | QP       | 200         | 302           |        |
| 2   | 319.2071    | 49.37            | -20.65      | 28.72           | 46.00          | -17.28      | QP       | 200         | 56            |        |
| 3   | 394.1198    | 47.24            | -18.41      | 28.83           | 46.00          | -17.17      | QP       | 200         | 63            |        |
| 4   | 478.1394    | 45.10            | -16.65      | 28.45           | 46.00          | -17.55      | QP       | 200         | 159           |        |
| 5   | 550.2902    | 44.36            | -14.79      | 29.57           | 46.00          | -16.43      | QP       | 200         | 22            |        |
| 6   | 635.5576    | 43.06            | -12.96      | 30.10           | 46.00          | -15.90      | QP       | 200         | 193           |        |



Job No.: FRANK2019-W #160

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 6

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Vertical

Power Source: AC 120V/60Hz

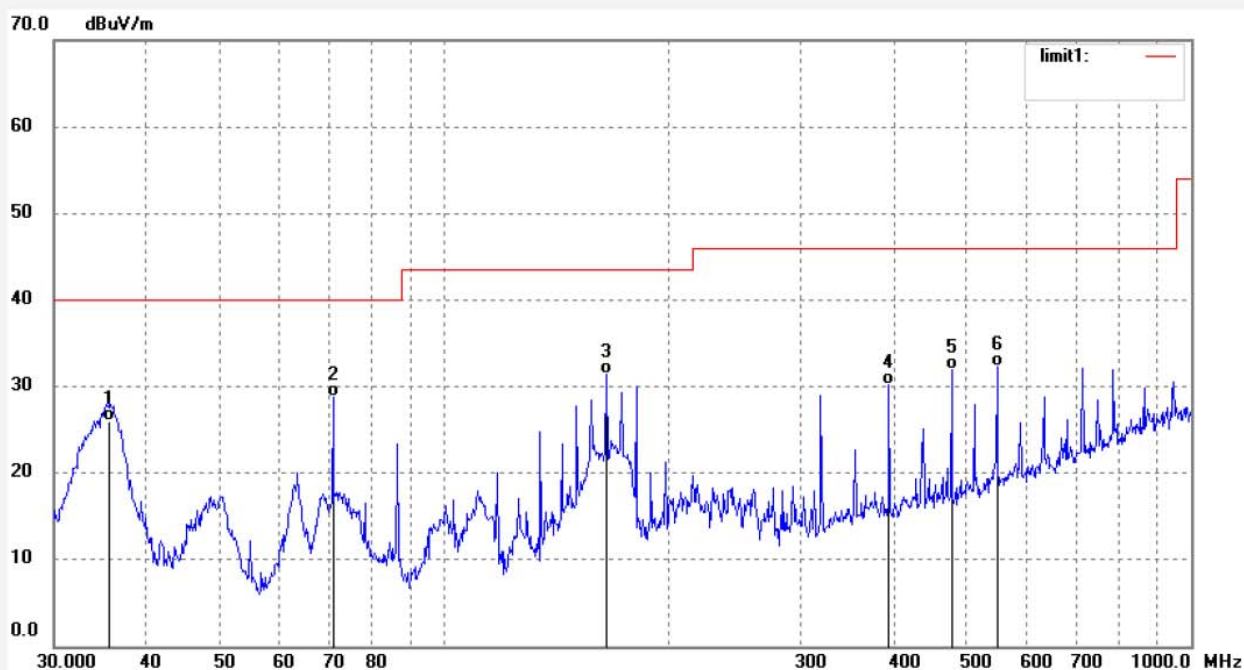
Date: 2019/08/30

Time: 17:25:37

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 35.6362     | 47.64            | -21.72      | 25.92           | 40.00          | -14.08      | QP       | 100         | 221           |        |
| 2   | 70.9535     | 56.33            | -27.52      | 28.81           | 40.00          | -11.19      | QP       | 100         | 210           |        |
| 3   | 164.8910    | 58.00            | -26.55      | 31.45           | 43.50          | -12.05      | QP       | 100         | 33            |        |
| 4   | 394.1197    | 48.56            | -18.41      | 30.15           | 46.00          | -15.85      | QP       | 100         | 93            |        |
| 5   | 478.1394    | 48.54            | -16.65      | 31.89           | 46.00          | -14.11      | QP       | 100         | 321           |        |
| 6   | 550.2902    | 47.04            | -14.79      | 32.25           | 46.00          | -13.75      | QP       | 100         | 193           |        |



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Job No.: FRANK2019-W #162

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 11

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal

Power Source: AC 120V/60Hz

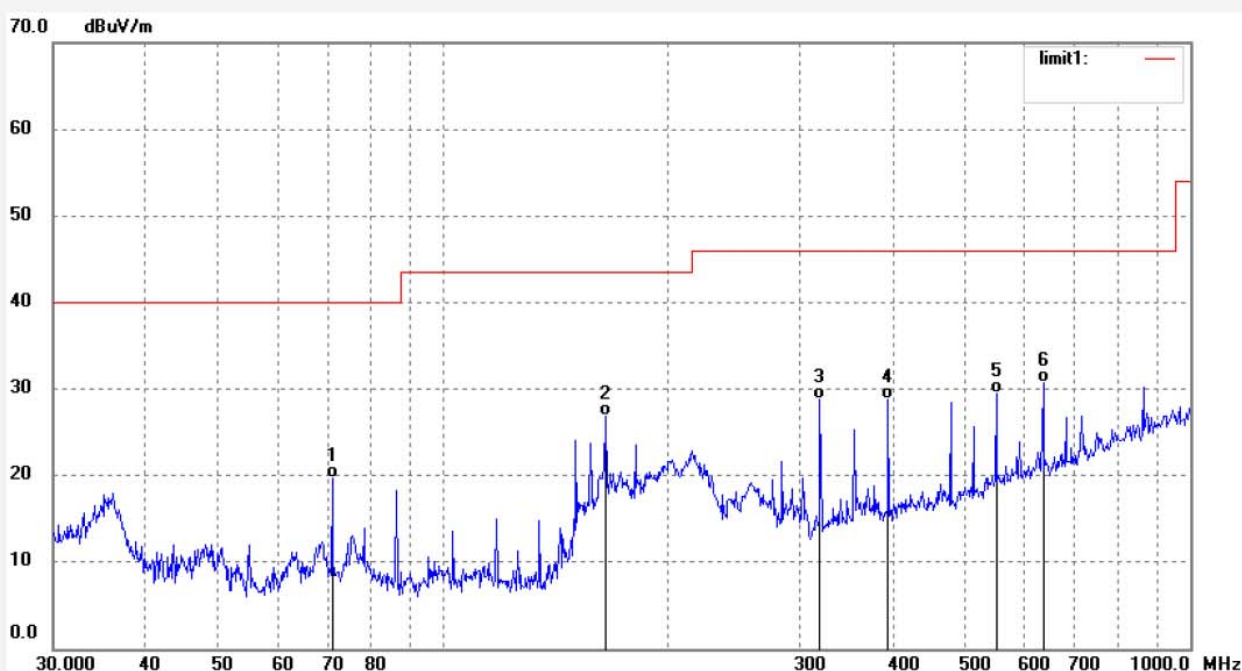
Date: 2019/08/30

Time: 17:27:15

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 70.9535     | 47.26            | -27.52      | 19.74           | 40.00          | -20.26      | QP       | 200         | 201           |        |
| 2   | 164.8911    | 53.48            | -26.55      | 26.93           | 43.50          | -16.57      | QP       | 200         | 63            |        |
| 3   | 319.2071    | 49.37            | -20.65      | 28.72           | 46.00          | -17.28      | QP       | 200         | 118           |        |
| 4   | 394.1198    | 47.24            | -18.41      | 28.83           | 46.00          | -17.17      | QP       | 200         | 41            |        |
| 5   | 550.2902    | 44.36            | -14.79      | 29.57           | 46.00          | -16.43      | QP       | 200         | 22            |        |
| 6   | 635.5576    | 43.76            | -12.96      | 30.80           | 46.00          | -15.20      | QP       | 200         | 193           |        |



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Job No.: FRANK2019-W #163

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 11

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Vertical

Power Source: AC 120V/60Hz

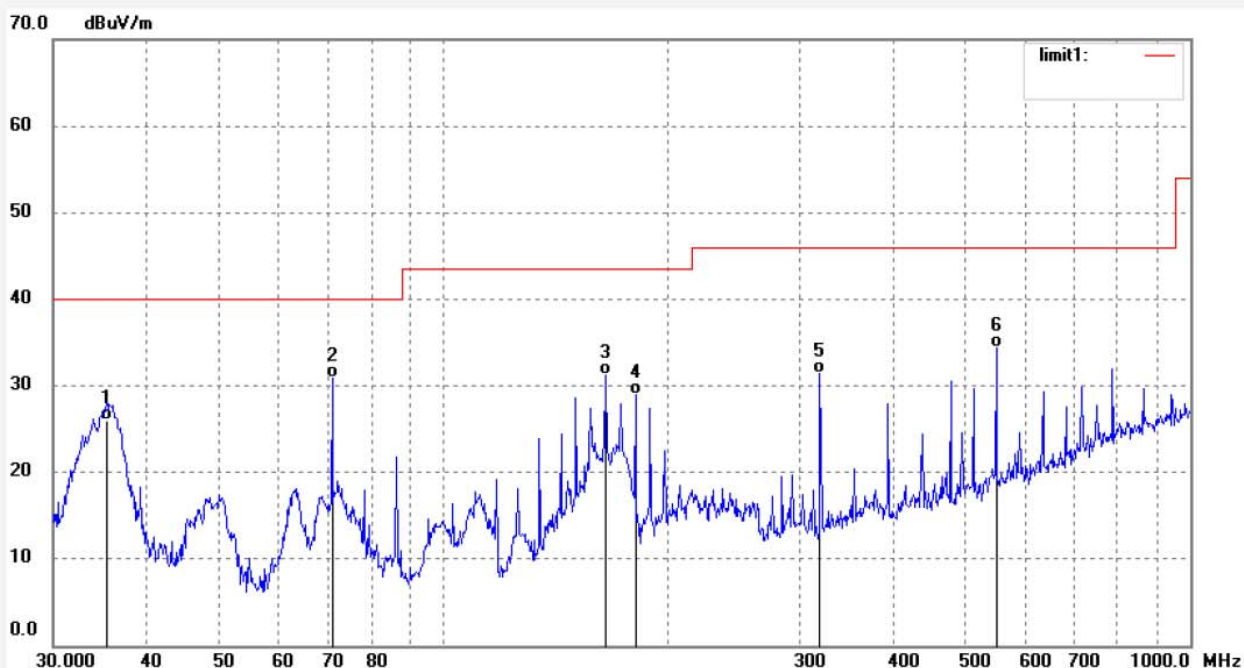
Date: 2019/08/30

Time: 17:28:21

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 35.3866     | 47.68            | -21.62      | 26.06           | 40.00          | -13.94      | QP       | 100         | 92            |        |
| 2   | 70.9535     | 58.46            | -27.52      | 30.94           | 40.00          | -9.06       | QP       | 100         | 100           |        |
| 3   | 164.8911    | 57.75            | -26.55      | 31.20           | 43.50          | -12.30      | QP       | 100         | 321           |        |
| 4   | 180.6640    | 54.85            | -25.97      | 28.88           | 43.50          | -14.62      | QP       | 100         | 59            |        |
| 5   | 319.2071    | 52.02            | -20.65      | 31.37           | 46.00          | -14.63      | QP       | 100         | 332           |        |
| 6   | 550.2902    | 49.13            | -14.79      | 34.34           | 46.00          | -11.66      | QP       | 100         | 106           |        |



## Above 1G



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Job No.: FRANK2019-W #125

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 1

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal

Power Source: AC 120V/60Hz

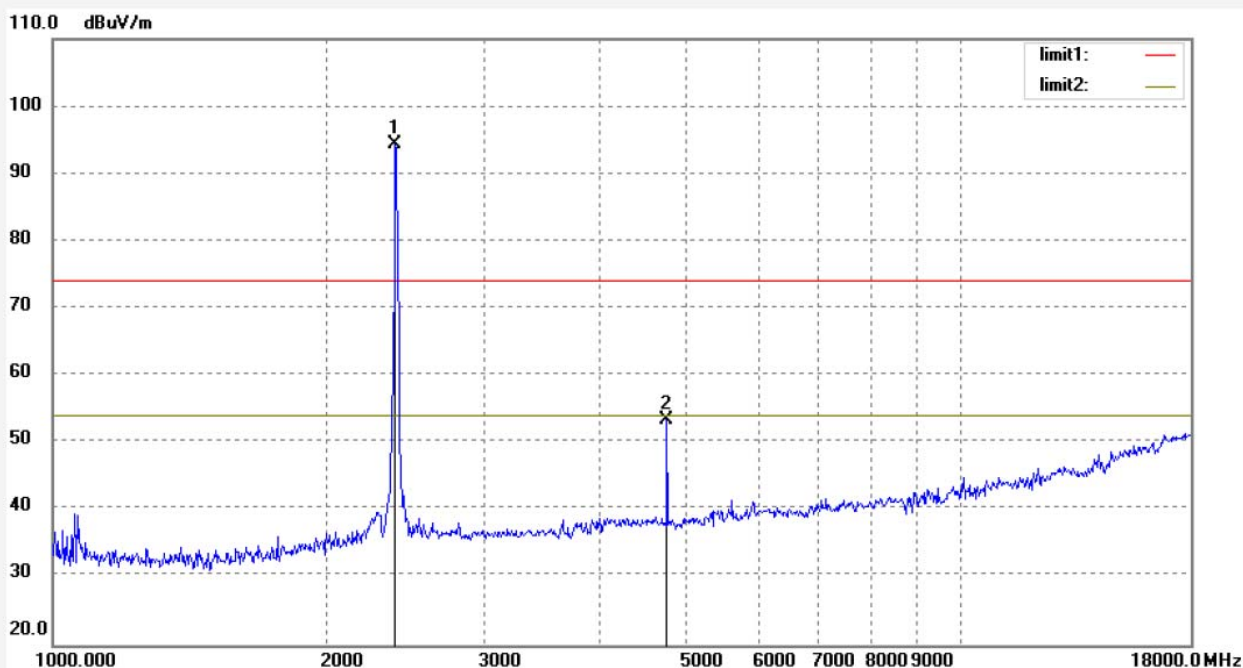
Date: 2019/08/29

Time: 16:34:31

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2412.259    | 100.73           | -6.33       | 94.40           |                |             | peak     | 200         | 21            |        |
| 2   | 4824.584    | 52.53            | 0.82        | 53.35           | 74.00          | -20.65      | peak     | 200         | 196           |        |

Note: The fundamental radiated emissions were reduced by Band Reject Filter in the plot.

Job No.: FRANK2019-W #126

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 1

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Vertical

Power Source: AC 120V/60Hz

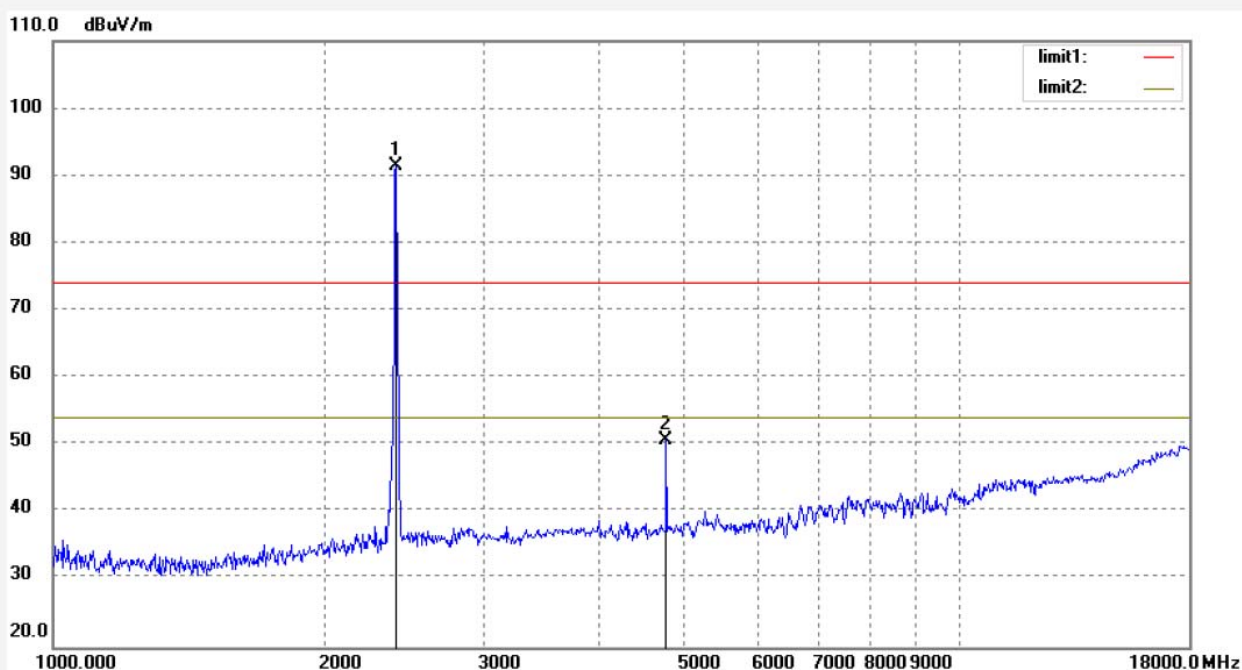
Date: 2019/08/29

Time: 16:35:45

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2412.219    | 97.73            | -6.29       | 91.44           |                |             | peak     | 150         | 221           |        |
| 2   | 4824.584    | 49.92            | 0.82        | 50.74           | 74.00          | -23.26      | peak     | 150         | 185           |        |

Note: The fundamental radiated emissions were reduced by Band Reject Filter in the plot.



Job No.: FRANK2019-W #128

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 6

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal

Power Source: AC 120V/60Hz

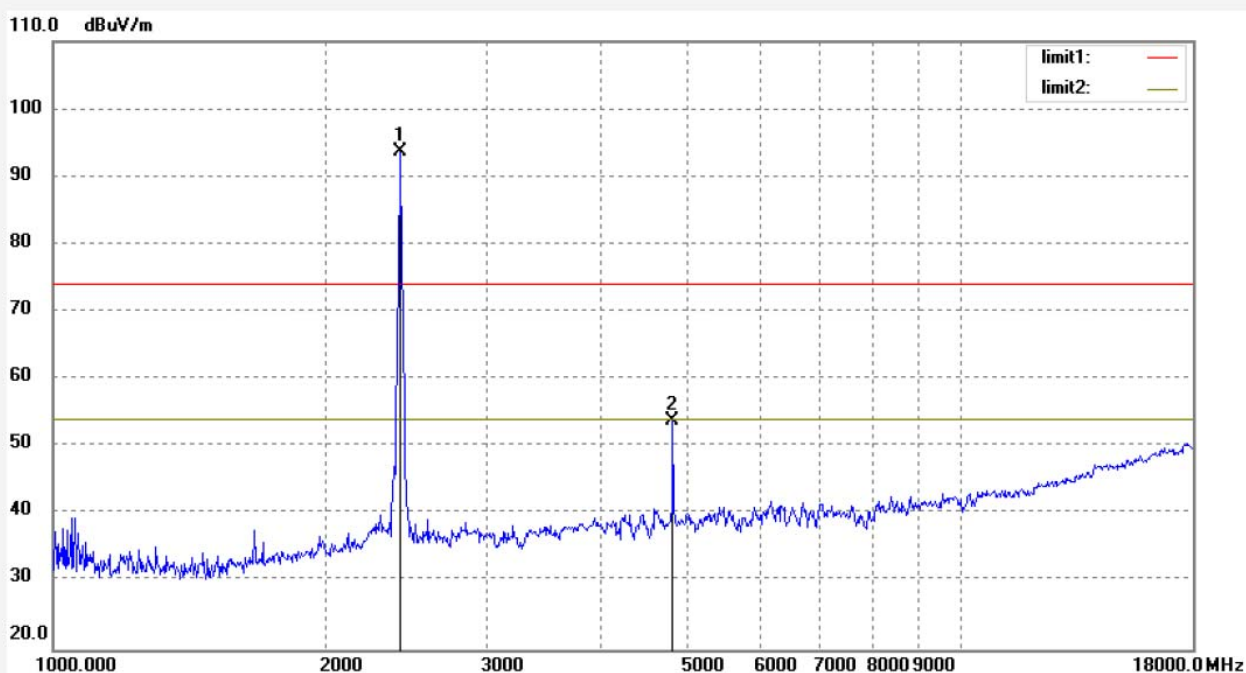
Date: 2019/08/29

Time: 16:41:36

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2437.121    | 99.81            | -6.20       | 93.61           |                |             | peak     | 250         | 63            |        |
| 2   | 4874.324    | 52.74            | 1.07        | 53.81           | 74.00          | -20.19      | peak     | 200         | 211           |        |

Note: The fundamental radiated emissions were reduced by Band Reject Filter in the plot.

Job No.: FRANK2019-W #127

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 6

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Vertical

Power Source: AC 120V/60Hz

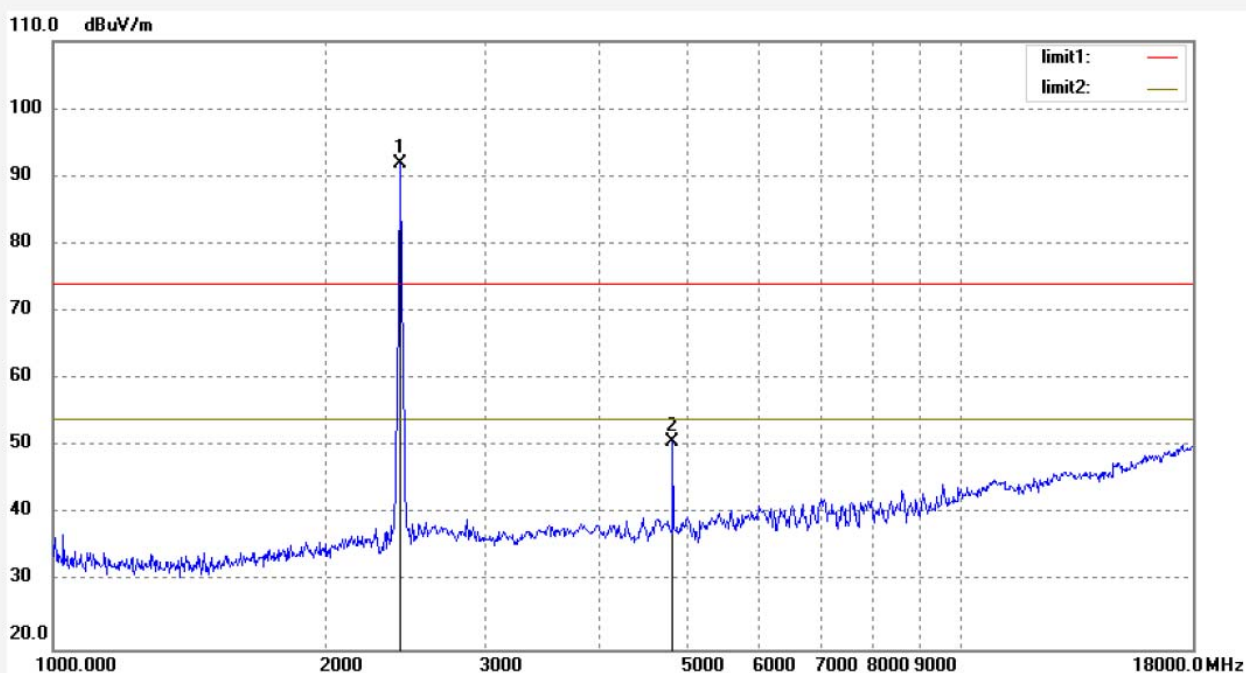
Date: 2019/08/29

Time: 16:40:20

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2437.121    | 98.00            | -6.20       | 91.80           |                |             | peak     | 150         | 332           |        |
| 2   | 4874.324    | 49.67            | 1.07        | 50.74           | 74.00          | -23.26      | peak     | 150         | 196           |        |

Note: The fundamental radiated emissions were reduced by Band Reject Filter in the plot.



## ACCURATE TECHNOLOGY CO., LTD.

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Job No.: FRANK2019-W #129

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 11

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal

Power Source: AC 120V/60Hz

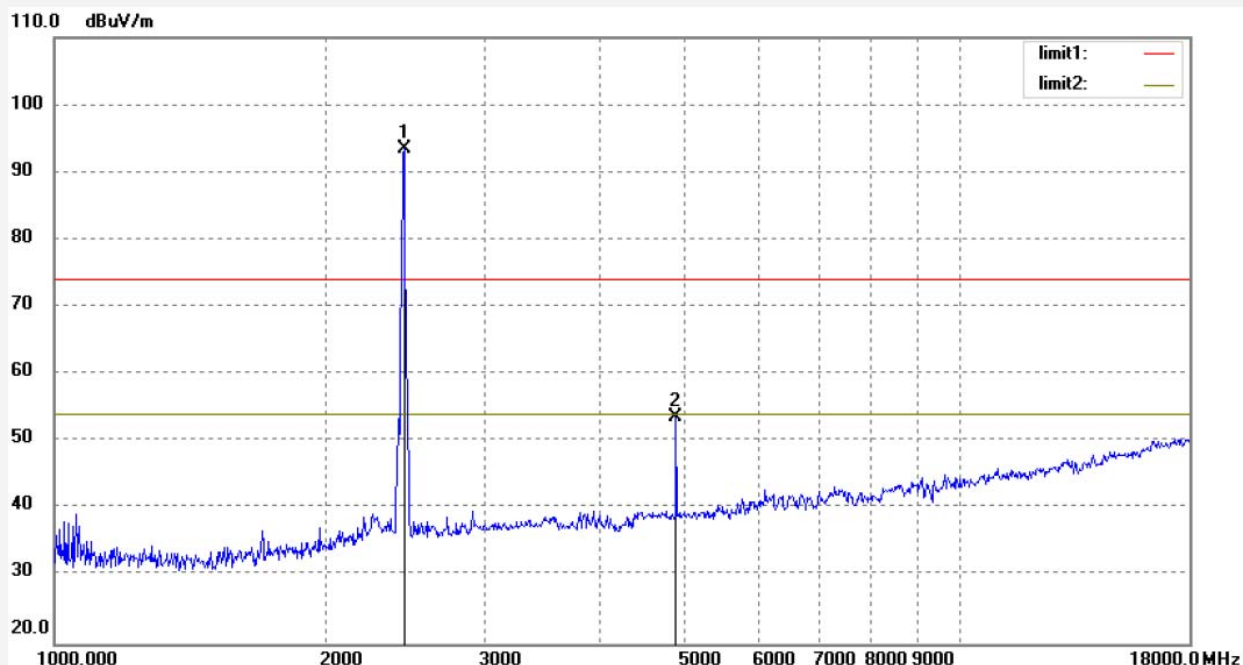
Date: 2019/08/29

Time: 16:43:04

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2462.307    | 99.63            | -6.10       | 93.53           |                |             | peak     | 200         | 145           |        |
| 2   | 4924.717    | 52.21            | 1.32        | 53.53           | 74.00          | -20.47      | peak     | 200         | 158           |        |

Note: The fundamental radiated emissions were reduced by Band Reject Filter in the plot.



Job No.: FRANK2019-W #130

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 11(802.11B)

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Vertical

Power Source: AC 120V/60Hz

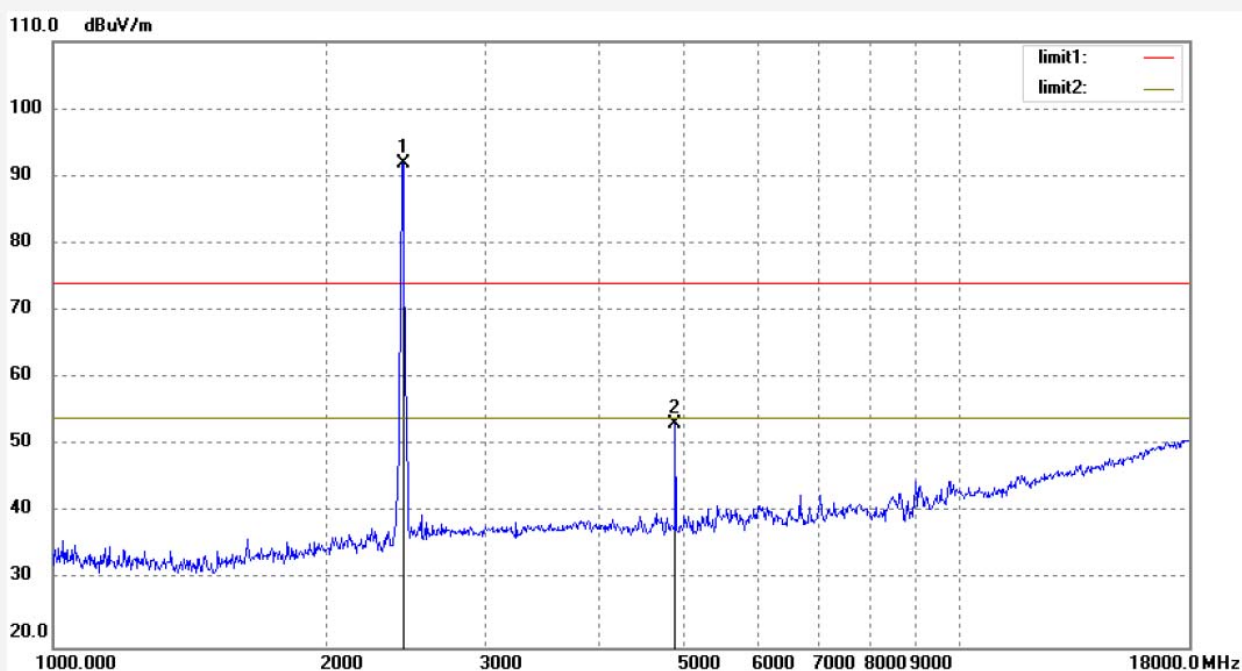
Date: 2019/08/29

Time: 16:44:38

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2462.307    | 98.08            | -6.10       | 91.98           |                |             | peak     | 150         | 219           |        |
| 2   | 4924.717    | 51.92            | 1.32        | 53.24           | 74.00          | -20.76      | peak     | 150         | 130           |        |

Note: The fundamental radiated emissions were reduced by Band Reject Filter in the plot.

## 11.BAND EDGE COMPLIANCE TEST

### 11.1.Block Diagram of Test Setup



### 11.2.The Requirement For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

### 11.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 11.4.Operating Condition of EUT

11.4.1.Setup the EUT and simulator as shown as Section 11.1.

11.4.2.Turn on the power of all equipment.

11.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2412MHz and 2462MHz TX frequency to transmit.

## 11.5. Test Procedure

### Conducted Band Edge:

11.5.1. The transmitter output was connected to the spectrum analyzer via a low loss cable.

11.5.2. Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz.

### Radiate Band Edge:

11.5.3. The EUT is placed on a turntable, which is 1.5m above the ground plane and worked at highest radiated power.

11.5.4. The turntable was rotated for 360 degrees to determine the position of maximum emission level.

11.5.5. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

11.5.6. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

11.5.7. RBW=1MHz, VBW=1MHz

11.5.8. The band edges was measured and recorded.

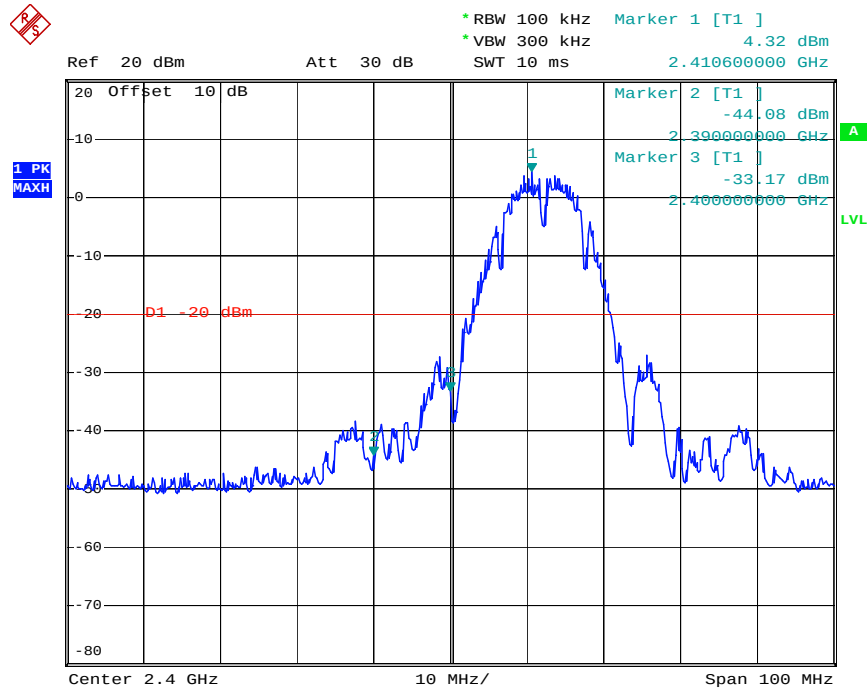
## 11.6. Test Result

| The test was performed with 802.11b |                           |                          |
|-------------------------------------|---------------------------|--------------------------|
| Frequency (MHz)                     | Result of Band Edge (dBc) | Limit of Band Edge (dBc) |
| 2400.0                              | 37.49                     | > 20dBc                  |
| 2483.5                              | 45.24                     | > 20dBc                  |

| The test was performed with 802.11g |                           |                          |
|-------------------------------------|---------------------------|--------------------------|
| Frequency (MHz)                     | Result of Band Edge (dBc) | Limit of Band Edge (dBc) |
| 2400.0                              | 25.47                     | > 20dBc                  |
| 2483.5                              | 36.05                     | > 20dBc                  |

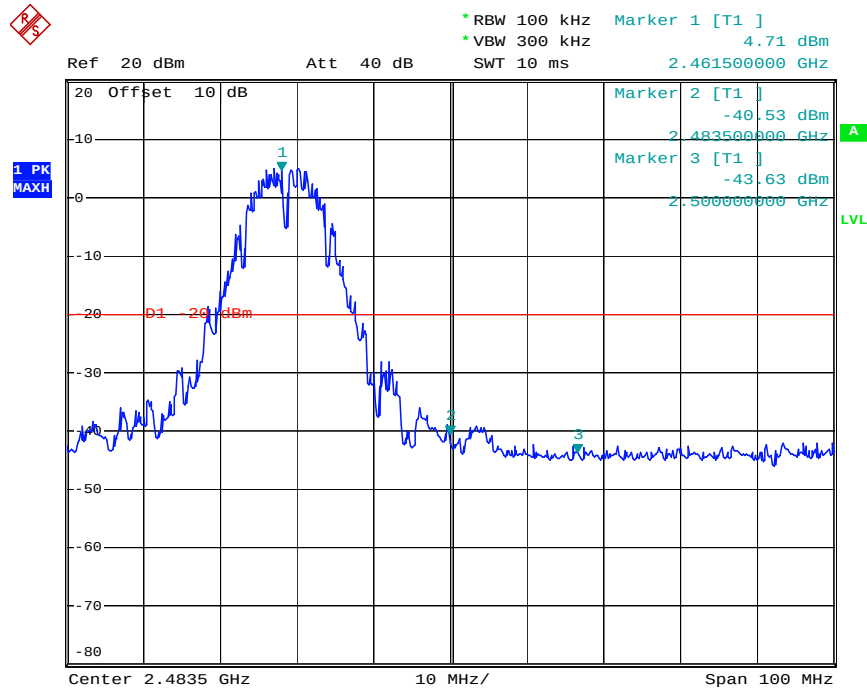
| The test was performed with 802.11n (20MHz) |                           |                          |
|---------------------------------------------|---------------------------|--------------------------|
| Frequency (MHz)                             | Result of Band Edge (dBc) | Limit of Band Edge (dBc) |
| 2400.0                                      | 27.34                     | > 20dBc                  |
| 2483.5                                      | 34.09                     | > 20dBc                  |

## 802.11b Low Channel 2412MHz



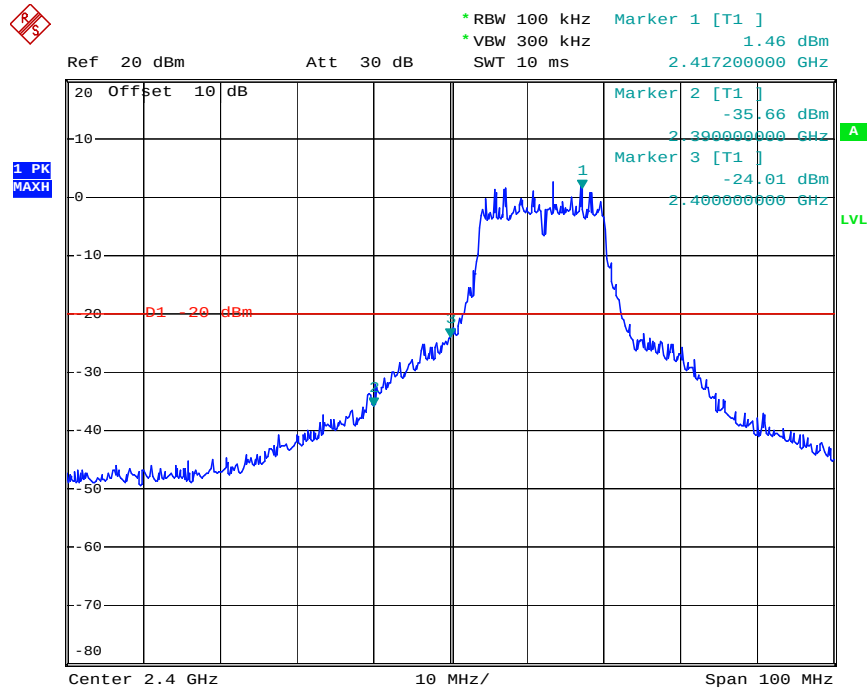
Date: 28.AUG.2019 18:47:16

## 802.11b High Channel 2462MHz



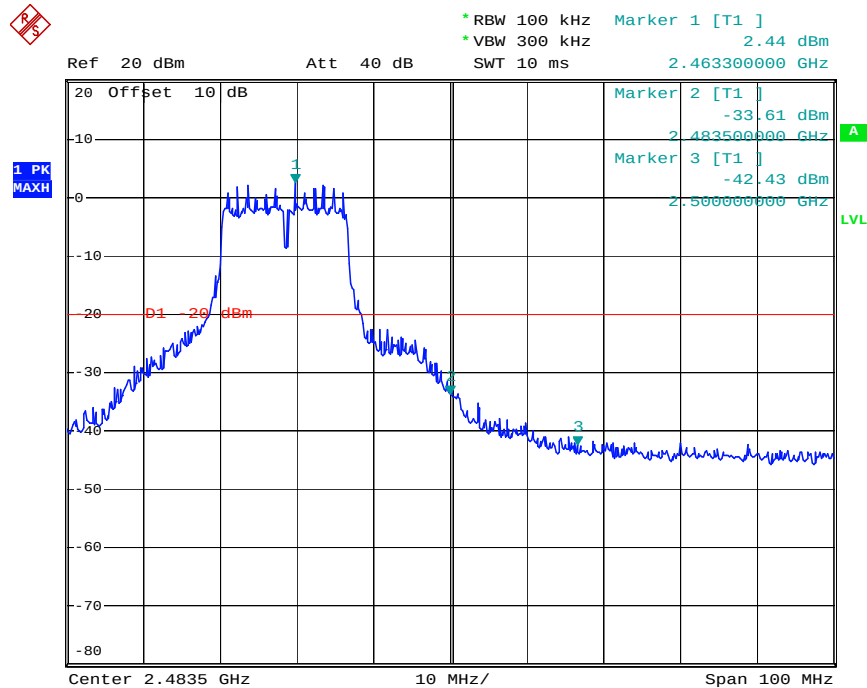
Date: 28.AUG.2019 18:47:55

## 802.11g Low Channel 2412MHz



Date: 28.AUG.2019 18:46:50

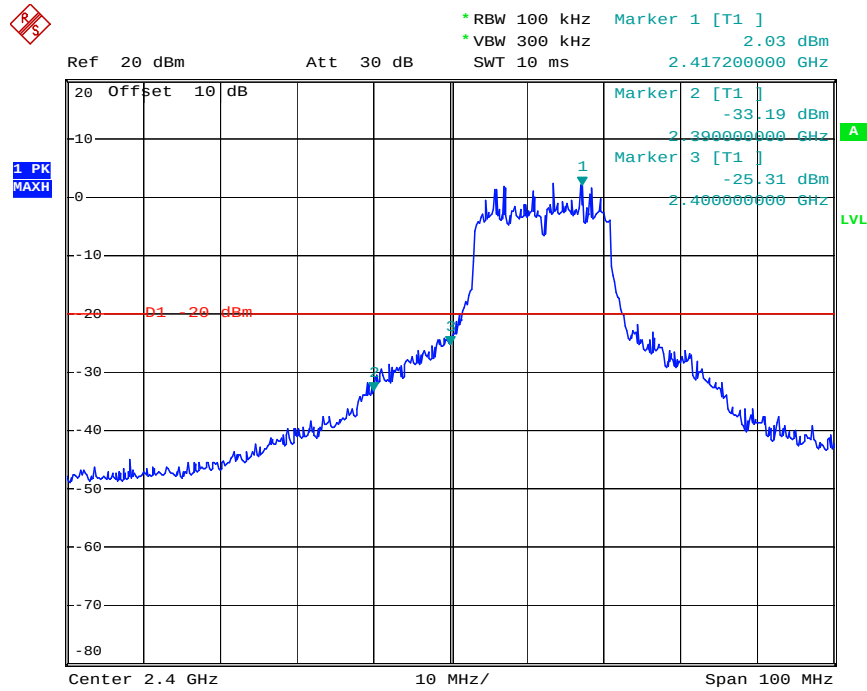
## 802.11g High Channel 2462MHz



Date: 28.AUG.2019 18:48:16

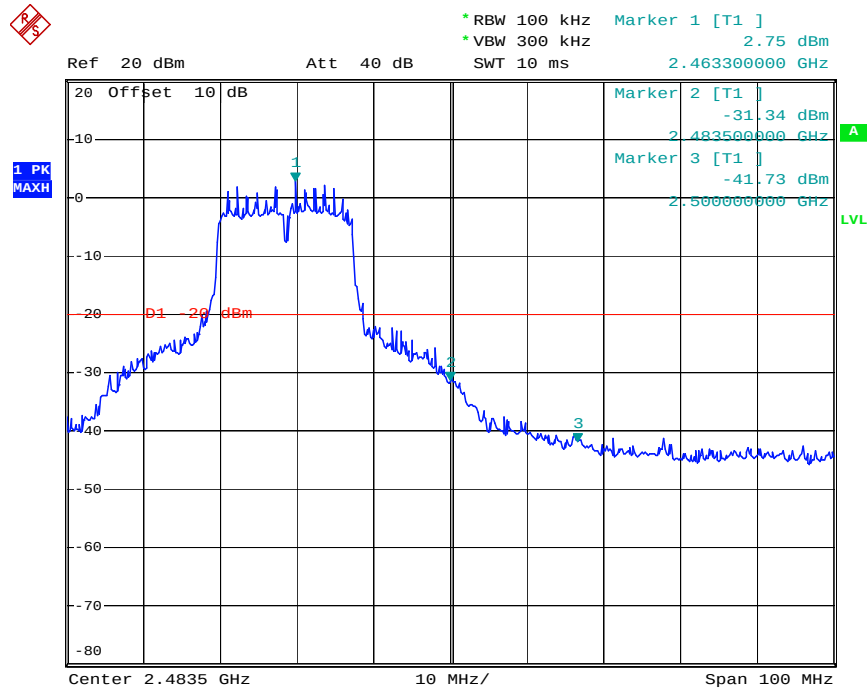


## 802.11n(20MHz) Low Channel 2412MHz



Date: 28.AUG.2019 18:46:01

## 802.11n(20MHz) High Channel 2462MHz



Date: 28.AUG.2019 18:48:39

## Radiated Band Edge Result

Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:  
$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$
3. Display the measurement of peak values.
4. The EUT is tested radiation emission at each test mode (802.11b/g/n) in three axes. The worst emissions are reflected in the following plots.
5. The average measurement was not performed when peak measured data under the limit of average detection.

Job No.: FRANK2019-W #132

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 1(802.11B)

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal

Power Source: AC 120V/60Hz

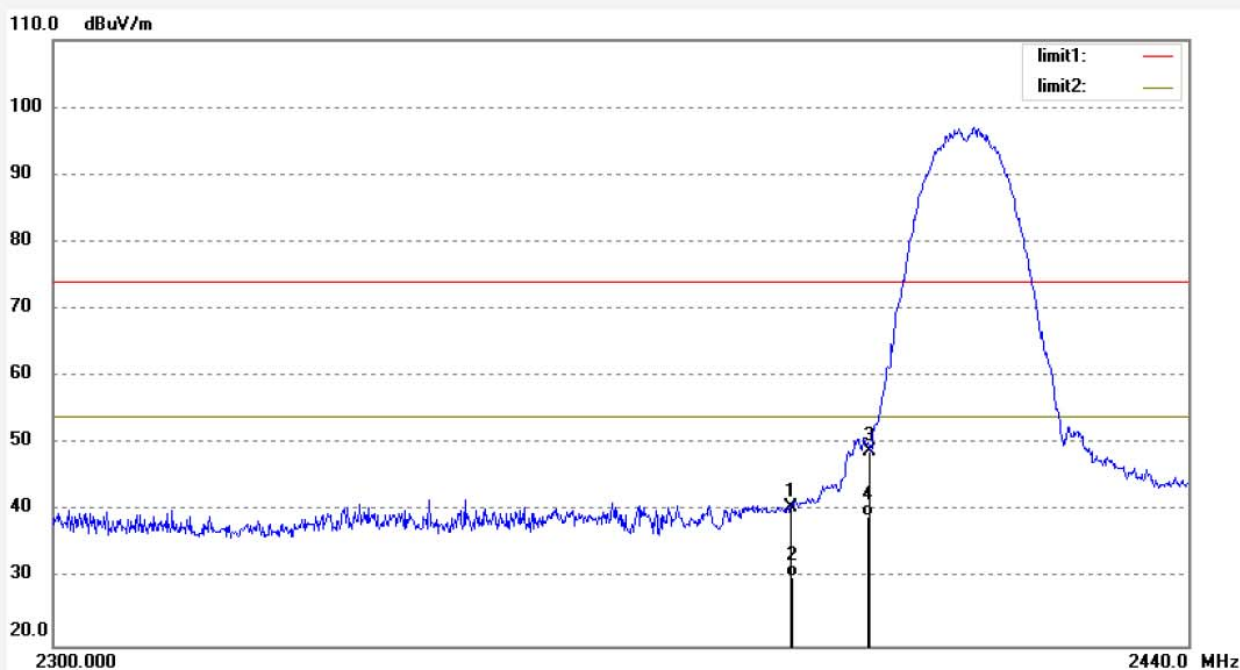
Date: 2019/08/29

Time: 16:54:13

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2390.000    | 46.83            | -6.32       | 40.51           | 74.00          | -33.49      | peak     | 200         | 224           |        |
| 2   | 2390.000    | 36.49            | -6.32       | 30.17           | 54.00          | -23.83      | AVG      | 200         | 93            |        |
| 3   | 2400.000    | 55.26            | -6.27       | 48.99           | 74.00          | -25.01      | peak     | 200         | 221           |        |
| 4   | 2400.000    | 45.46            | -6.27       | 39.19           | 54.00          | -14.81      | AVG      | 200         | 193           |        |

Job No.: FRANK2019-W #131

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 1(802.11B)

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Vertical

Power Source: AC 120V/60Hz

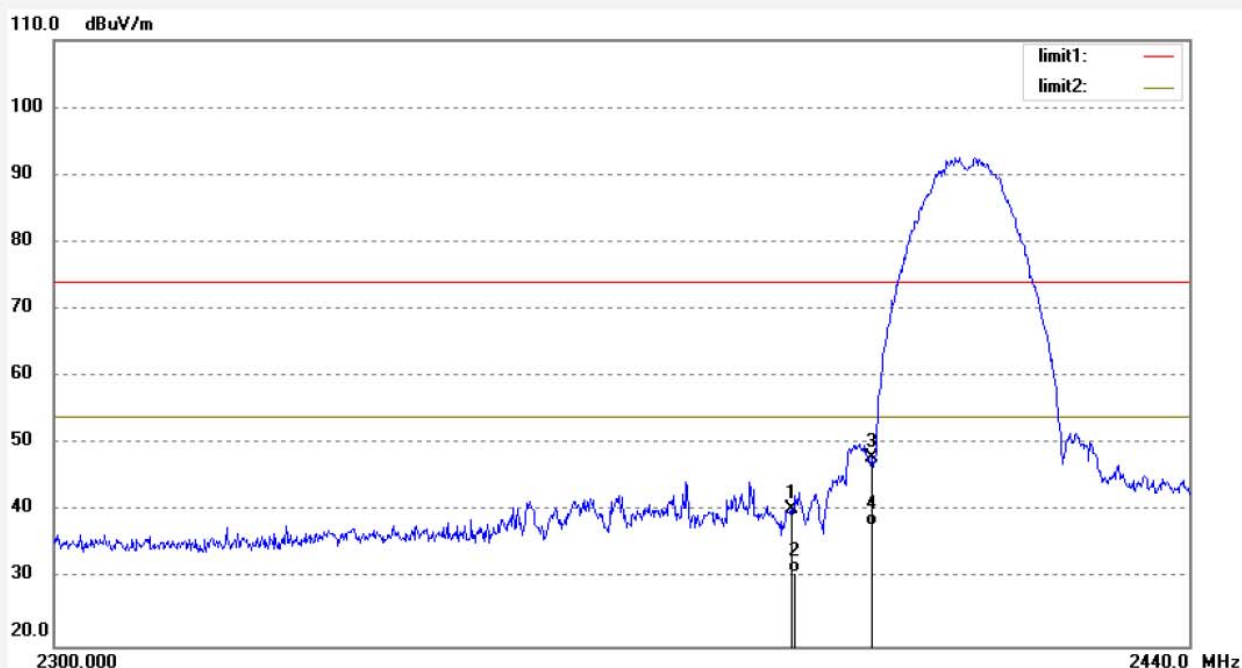
Date: 2019/08/29

Time: 16:52:12

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2390.000    | 46.79            | -6.32       | 40.47           | 74.00          | -33.53      | peak     | 150         | 82            |        |
| 2   | 2390.000    | 37.16            | -6.32       | 30.84           | 54.00          | -23.16      | AVG      | 150         | 118           |        |
| 3   | 2400.000    | 54.20            | -6.27       | 47.93           | 74.00          | -26.07      | peak     | 150         | 332           |        |
| 4   | 2400.000    | 44.19            | -6.27       | 37.92           | 54.00          | -16.08      | AVG      | 150         | 196           |        |

Job No.: FRANK2019-W #141

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 11(802.11B)

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal

Power Source: AC 120V/60Hz

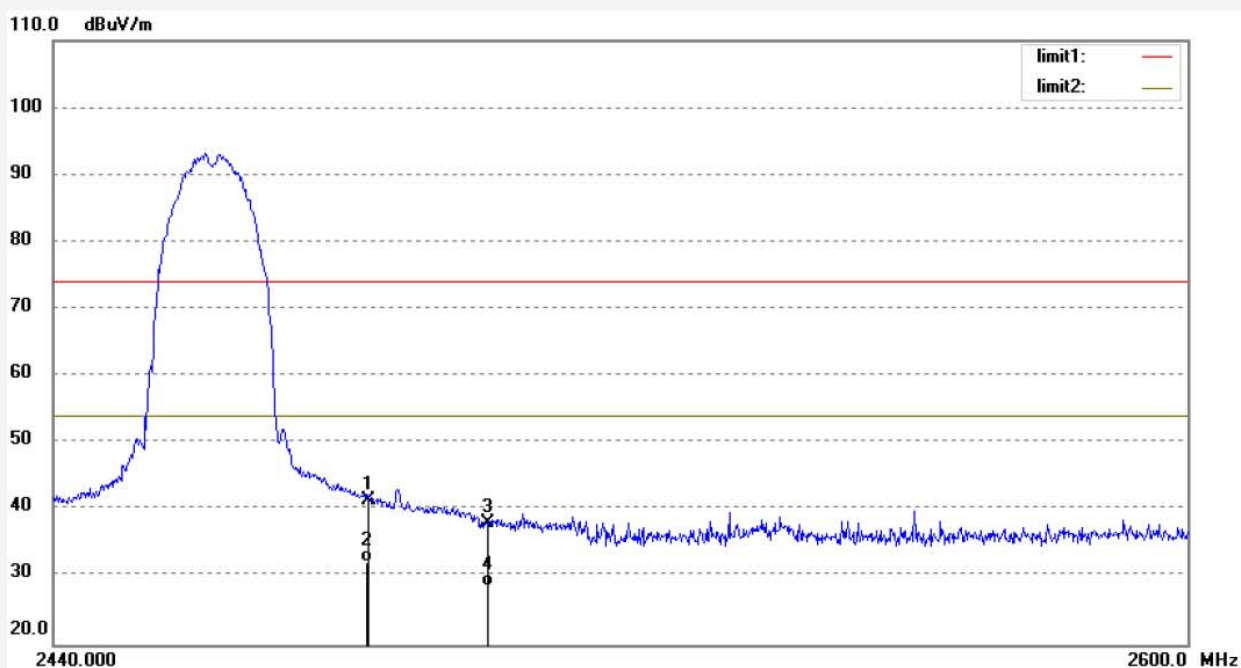
Date: 2019/08/29

Time: 17:11:21

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2483.500    | 47.47            | -5.89       | 41.58           | 74.00          | -32.42      | peak     | 200         | 110           |        |
| 2   | 2483.500    | 38.16            | -5.89       | 32.27           | 54.00          | -21.73      | AVG      | 250         | 332           |        |
| 3   | 2500.000    | 43.97            | -5.81       | 38.16           | 74.00          | -35.84      | peak     | 200         | 55            |        |
| 4   | 2500.000    | 34.49            | -5.81       | 28.68           | 54.00          | -25.32      | AVG      | 250         | 174           |        |



Job No.: FRANK2019-W #142

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 11(802.11B)

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Vertical

Power Source: AC 120V/60Hz

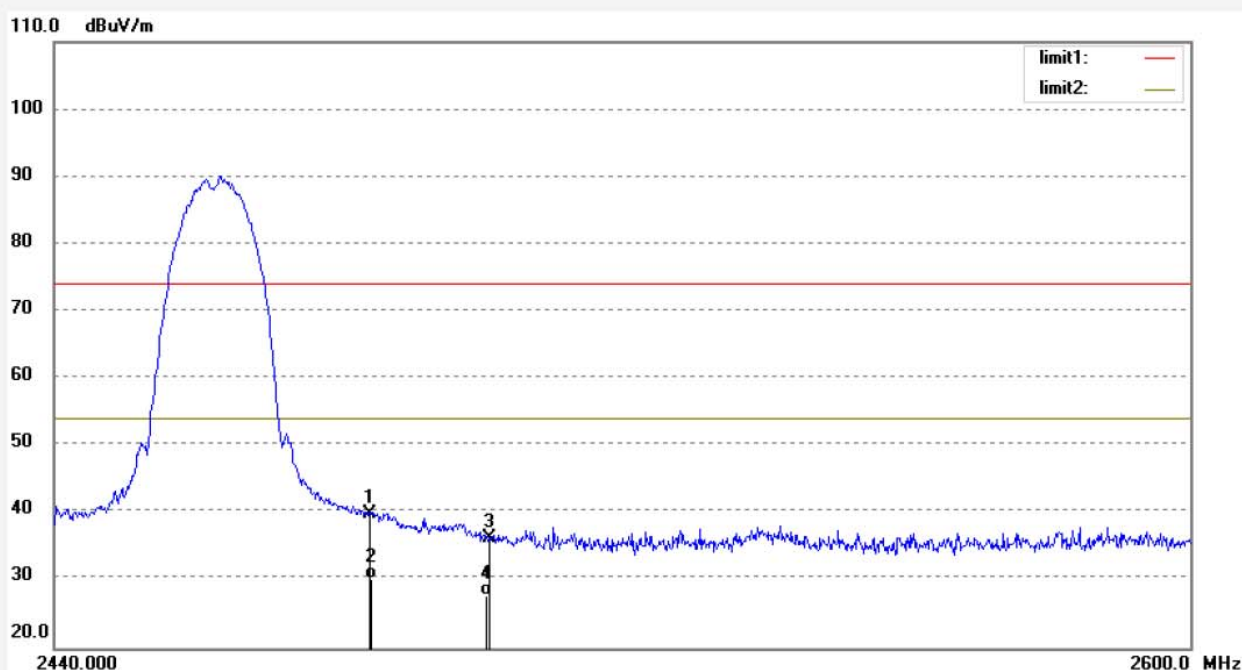
Date: 2019/08/29

Time: 17:12:16

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2483.500    | 45.78            | -5.89       | 39.89           | 74.00          | -34.11      | peak     | 150         | 93            |        |
| 2   | 2483.500    | 36.15            | -5.89       | 30.26           | 54.00          | -23.74      | AVG      | 150         | 221           |        |
| 3   | 2500.000    | 42.11            | -5.81       | 36.30           | 74.00          | -37.70      | peak     | 150         | 55            |        |
| 4   | 2500.000    | 33.48            | -5.81       | 27.67           | 54.00          | -26.33      | AVG      | 150         | 175           |        |



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Fax:+86-0755-26503396

Job No.: FRANK2019-W #133

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 1(802.11G)

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal

Power Source: AC 120V/60Hz

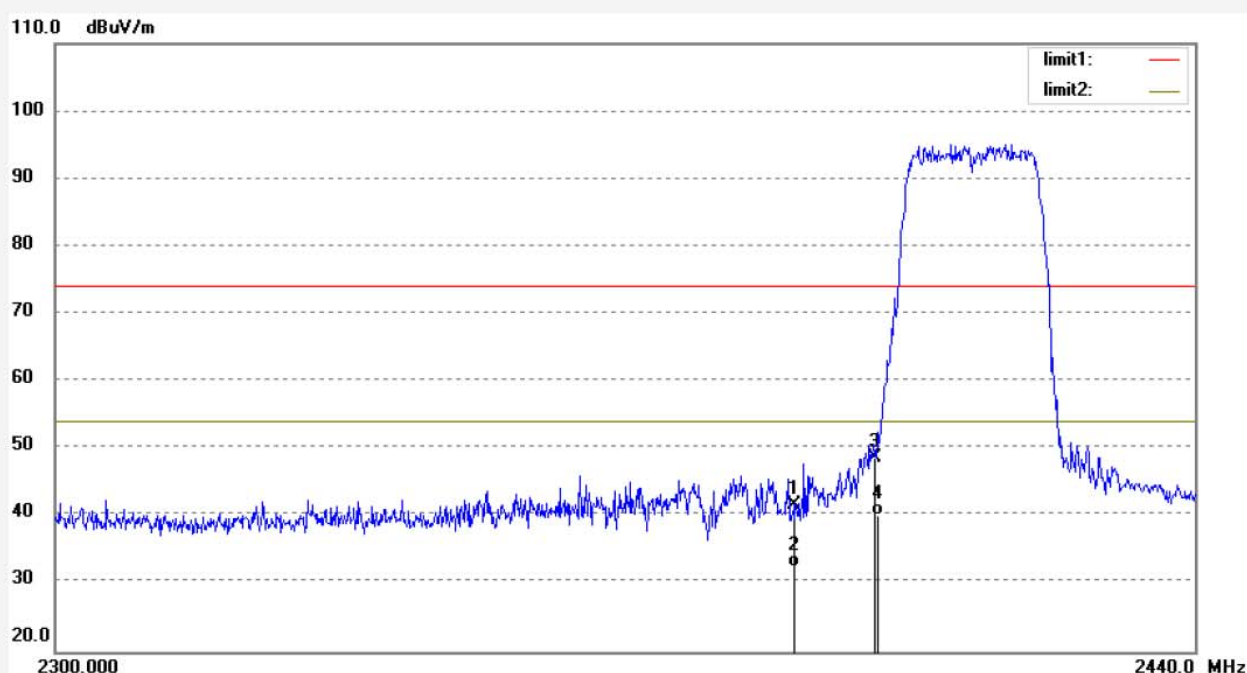
Date: 2019/08/29

Time: 16:56:17

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2390.000    | 48.02            | -6.32       | 41.70           | 74.00          | -32.30      | peak     | 200         | 214           |        |
| 2   | 2390.000    | 38.90            | -6.32       | 32.58           | 54.00          | -21.42      | AVG      | 200         | 221           |        |
| 3   | 2400.000    | 55.07            | -6.27       | 48.80           | 74.00          | -25.20      | peak     | 200         | 93            |        |
| 4   | 2400.000    | 46.48            | -6.27       | 40.21           | 54.00          | -13.79      | AVG      | 200         | 136           |        |

Job No.: FRANK2019-W #134

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 1(802.11G)

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Vertical

Power Source: AC 120V/60Hz

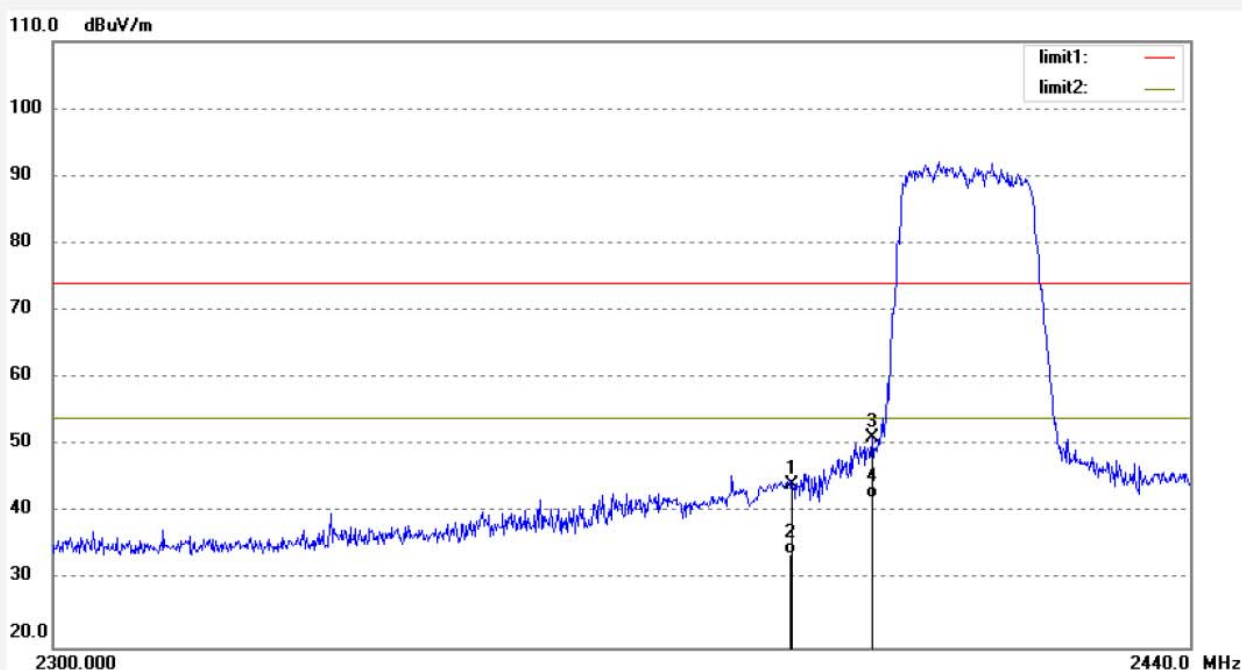
Date: 2019/08/29

Time: 16:58:15

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2390.000    | 50.41            | -6.32       | 44.09           | 74.00          | -29.91      | peak     | 150         | 154           |        |
| 2   | 2390.000    | 40.13            | -6.32       | 33.81           | 54.00          | -20.19      | AVG      | 150         | 66            |        |
| 3   | 2400.000    | 57.43            | -6.27       | 51.16           | 74.00          | -22.84      | peak     | 150         | 93            |        |
| 4   | 2400.000    | 48.42            | -6.27       | 42.15           | 54.00          | -11.85      | AVG      | 150         | 219           |        |





## ACCURATE TECHNOLOGY CO., LTD.

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Job No.: FRANK2019-W #140

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 11(802.11G)

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal

Power Source: AC 120V/60Hz

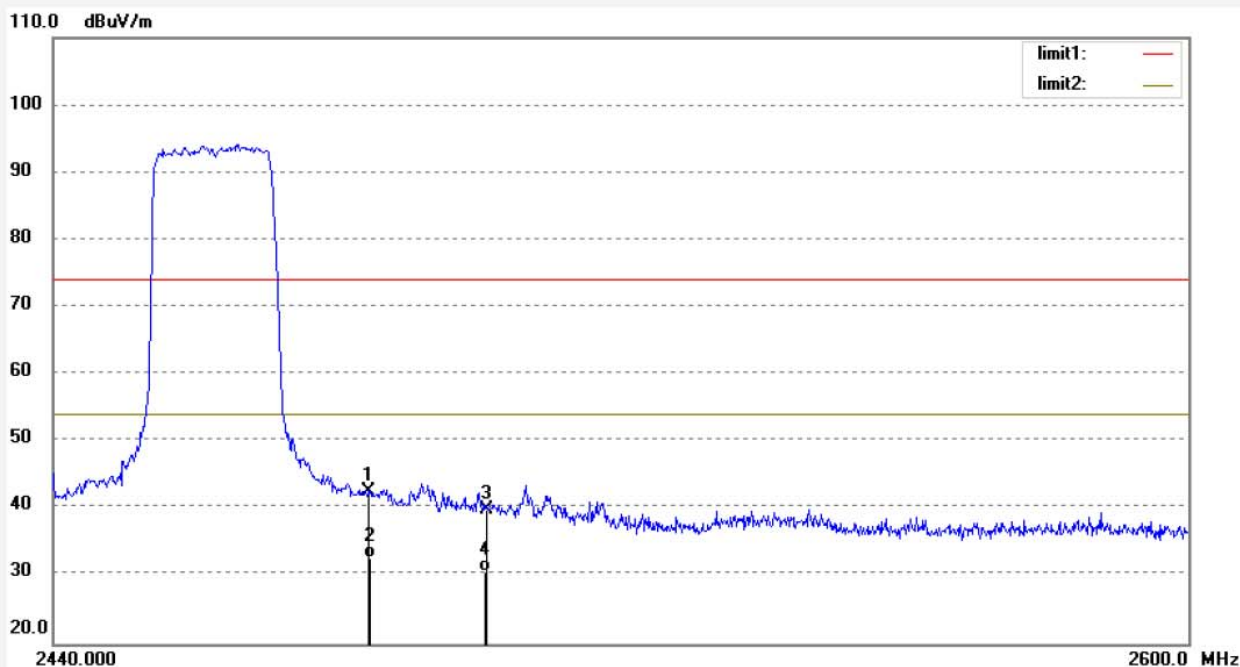
Date: 2019/08/29

Time: 17:09:52

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2483.500    | 48.46            | -5.89       | 42.57           | 74.00          | -31.43      | peak     | 200         | 112           |        |
| 2   | 2483.500    | 38.49            | -5.89       | 32.60           | 54.00          | -21.40      | AVG      | 250         | 26            |        |
| 3   | 2500.000    | 45.74            | -5.81       | 39.93           | 74.00          | -34.07      | peak     | 200         | 221           |        |
| 4   | 2500.000    | 36.42            | -5.81       | 30.61           | 54.00          | -23.39      | AVG      | 250         | 163           |        |

Job No.: FRANK2019-W #139

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 11(802.11G)

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Vertical

Power Source: AC 120V/60Hz

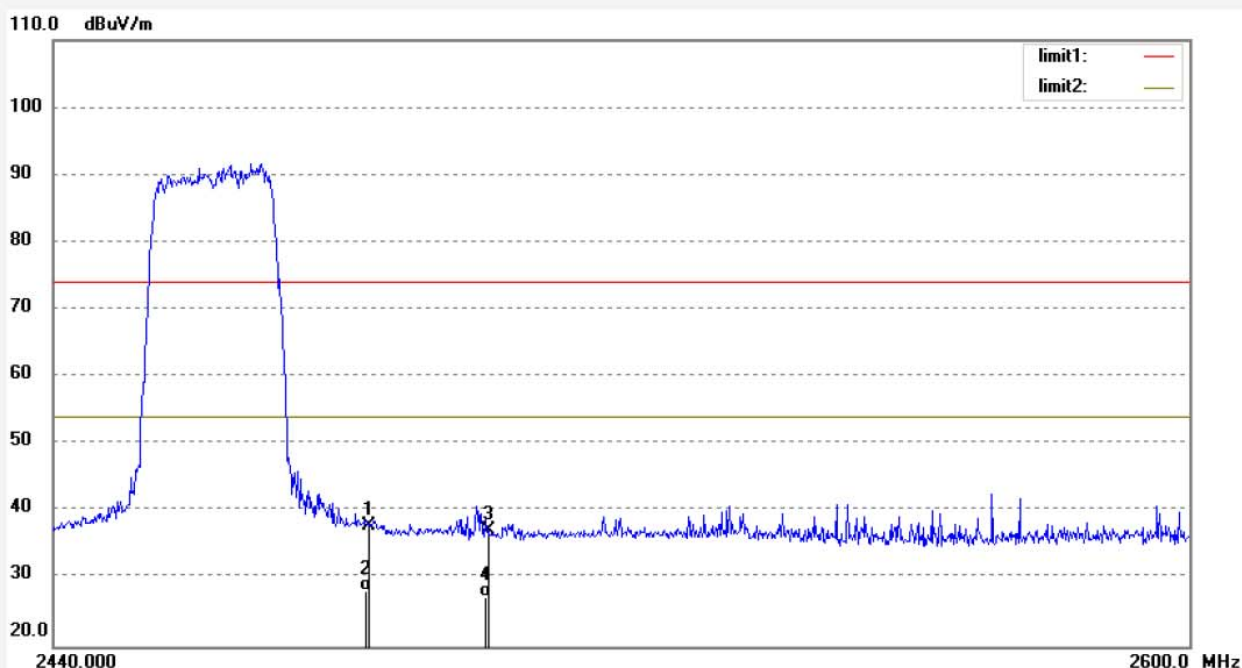
Date: 2019/08/29

Time: 17:08:06

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2483.500    | 43.75            | -5.89       | 37.86           | 74.00          | -36.14      | peak     | 150         | 93            |        |
| 2   | 2483.500    | 34.16            | -5.89       | 28.27           | 54.00          | -25.73      | AVG      | 150         | 52            |        |
| 3   | 2500.000    | 42.97            | -5.81       | 37.16           | 74.00          | -36.84      | peak     | 150         | 222           |        |
| 4   | 2500.000    | 33.18            | -5.81       | 27.37           | 54.00          | -26.63      | AVG      | 150         | 110           |        |

Job No.: FRANK2019-W #136

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 1(802.11N20)

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal

Power Source: AC 120V/60Hz

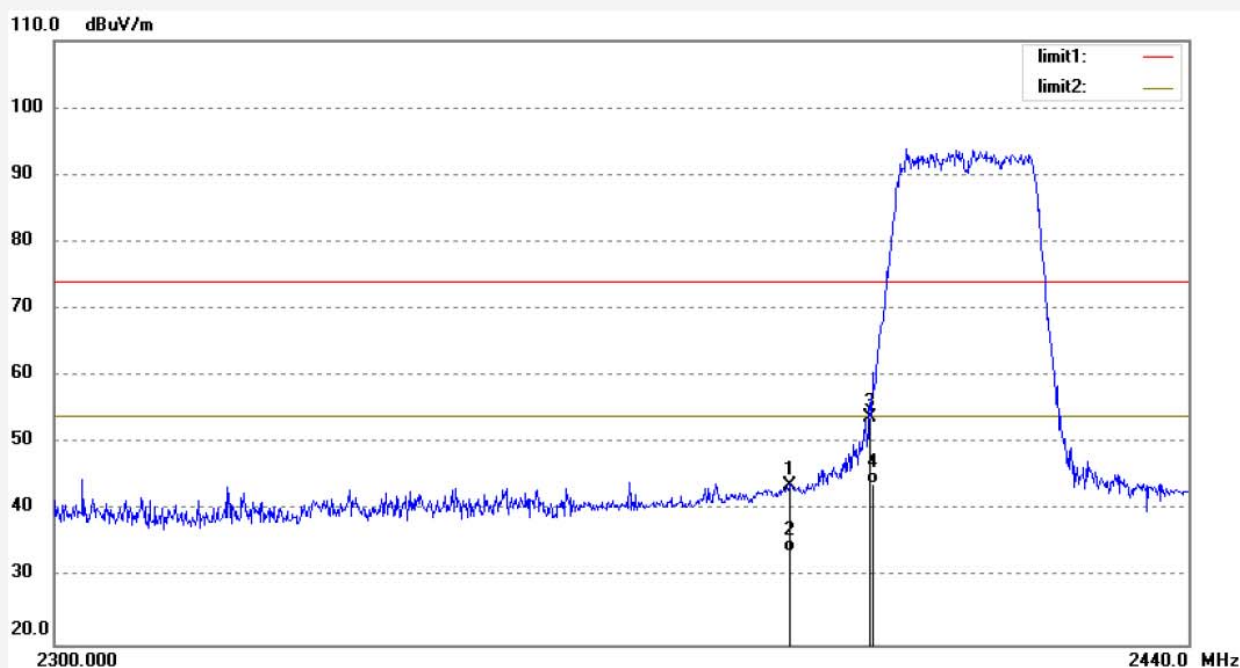
Date: 2019/08/29

Time: 17:01:57

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2390.000    | 50.09            | -6.32       | 43.77           | 74.00          | -30.23      | peak     | 200         | 126           |        |
| 2   | 2390.000    | 40.14            | -6.32       | 33.82           | 54.00          | -20.18      | AVG      | 250         | 55            |        |
| 3   | 2400.000    | 60.13            | -6.27       | 53.86           | 74.00          | -20.14      | peak     | 200         | 14            |        |
| 4   | 2400.000    | 50.15            | -6.27       | 43.88           | 54.00          | -10.12      | AVG      | 250         | 178           |        |



Job No.: FRANK2019-W #135

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 1(802.11N20)

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Vertical

Power Source: AC 120V/60Hz

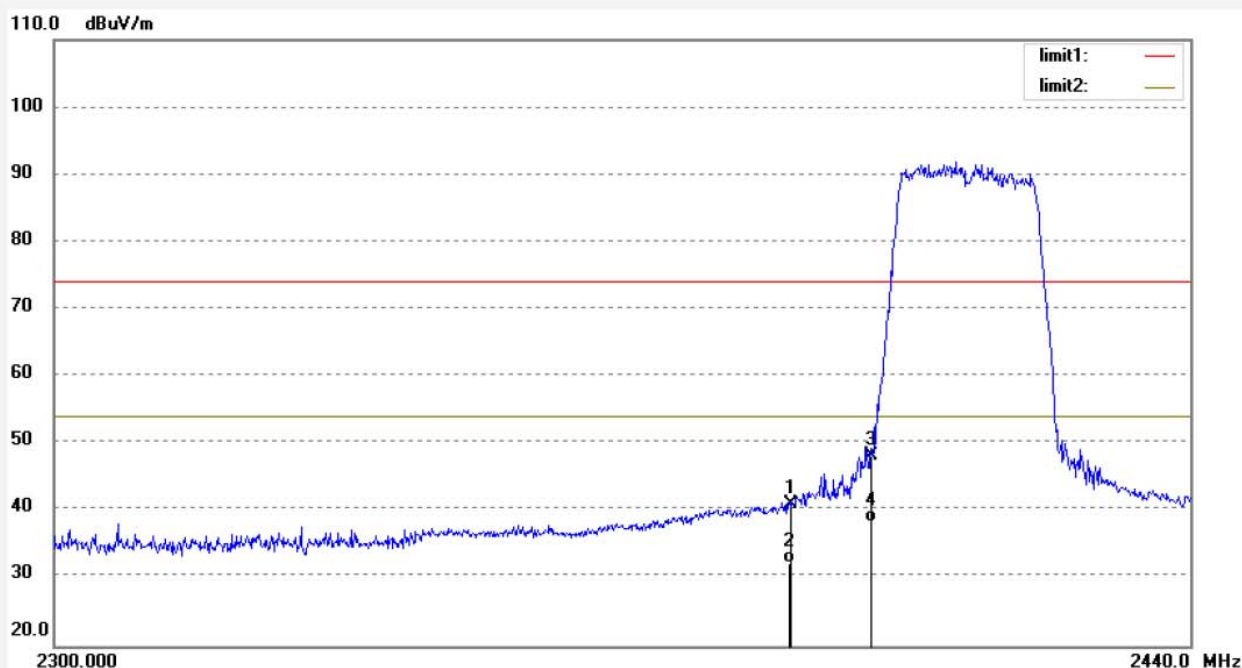
Date: 2019/08/29

Time: 17:00:36

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2390.000    | 47.29            | -6.32       | 40.97           | 74.00          | -33.03      | peak     | 150         | 221           |        |
| 2   | 2390.000    | 38.49            | -6.32       | 32.17           | 54.00          | -21.83      | AVG      | 150         | 210           |        |
| 3   | 2400.000    | 54.50            | -6.27       | 48.23           | 74.00          | -25.77      | peak     | 150         | 33            |        |
| 4   | 2400.000    | 44.68            | -6.27       | 38.41           | 54.00          | -15.59      | AVG      | 150         | 196           |        |

Job No.: FRANK2019-W #137

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 11(802.11N20)

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal

Power Source: AC 120V/60Hz

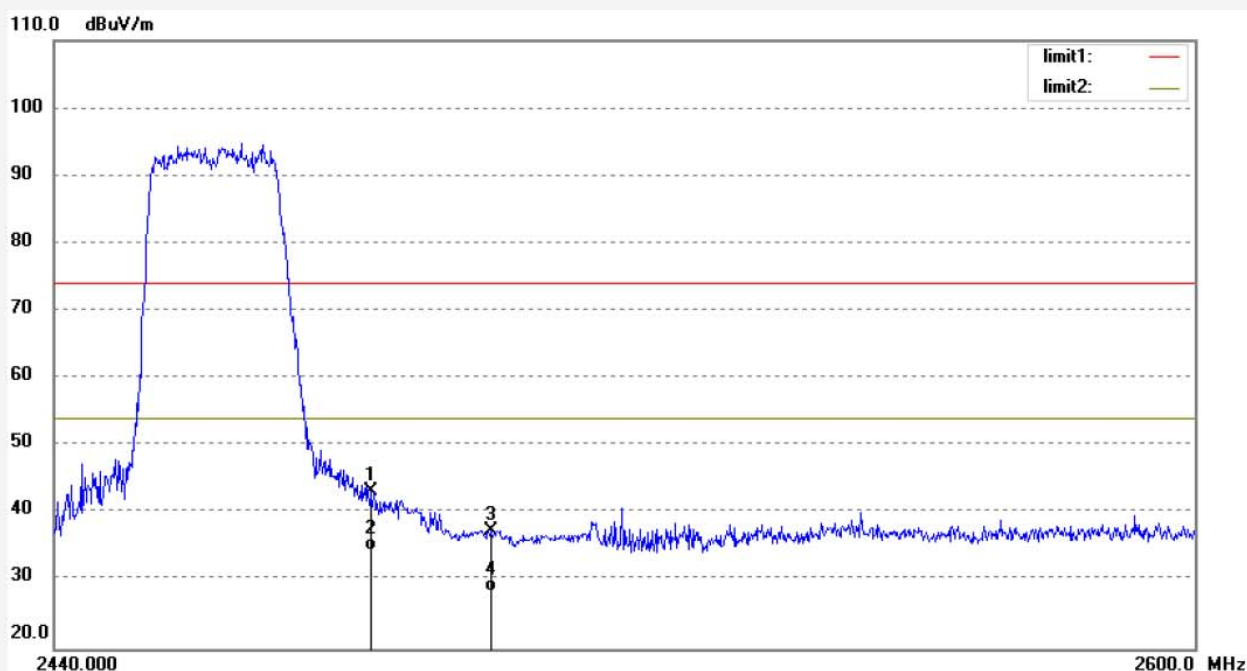
Date: 2019/08/29

Time: 17:04:10

Engineer Signature: CHARLEY

Distance: 3m

Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2483.500    | 49.24            | -5.89       | 43.35           | 74.00          | -30.65      | peak     | 200         | 58            |        |
| 2   | 2483.500    | 40.32            | -5.89       | 34.43           | 54.00          | -19.57      | AVG      | 200         | 201           |        |
| 3   | 2500.000    | 43.18            | -5.81       | 37.37           | 74.00          | -36.63      | peak     | 200         | 322           |        |
| 4   | 2500.000    | 34.16            | -5.81       | 28.35           | 54.00          | -25.65      | AVG      | 250         | 166           |        |

Job No.: FRANK2019-W #138

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: SMART WI-FI AIR PURIFIER

Mode: TX Channel 11(802.11N20)

Model: MW1081

Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Vertical

Power Source: AC 120V/60Hz

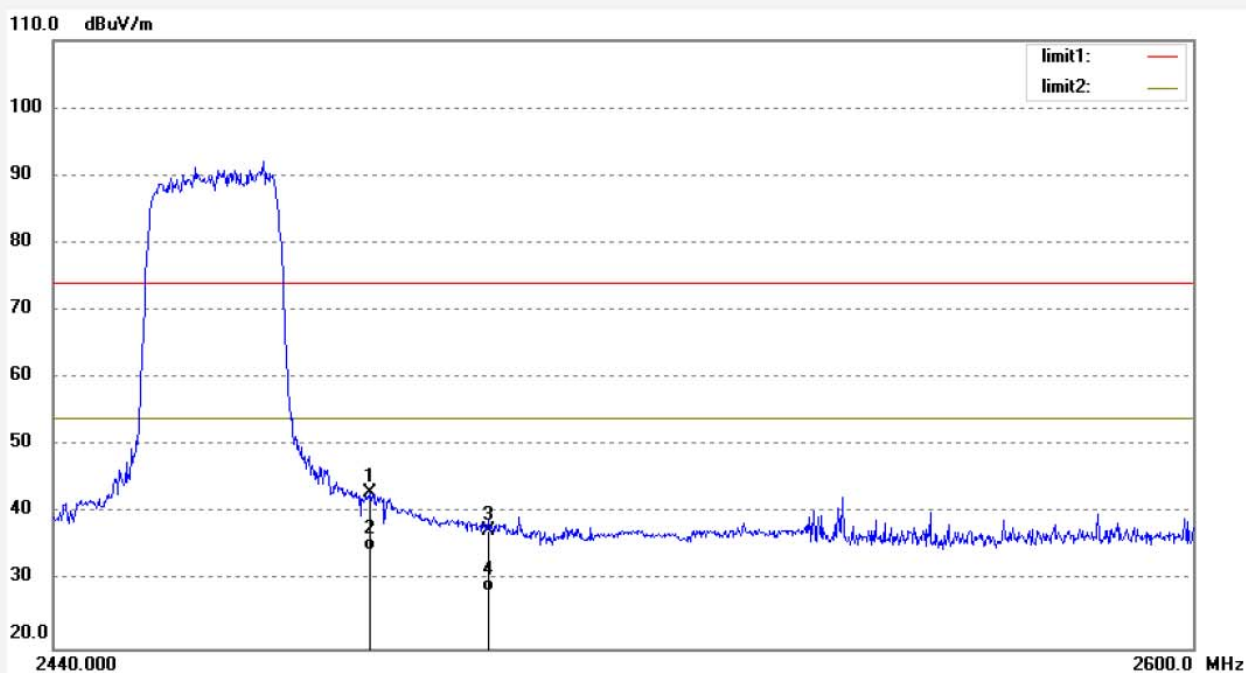
Date: 2019/08/29

Time: 17:06:25

Engineer Signature: CHARLEY

Distance: 3m

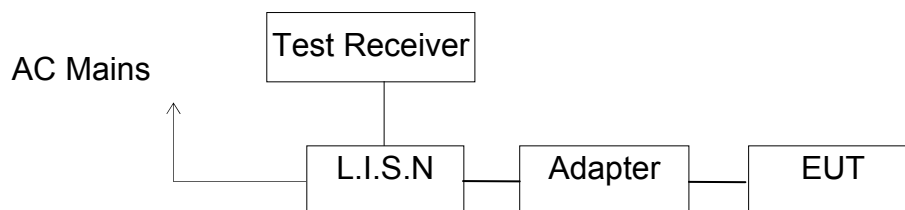
Note: Report NO.:ATE20191304



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2483.500    | 49.00            | -5.89       | 43.11           | 74.00          | -30.89      | peak     | 150         | 331           |        |
| 2   | 2483.500    | 40.31            | -5.89       | 34.42           | 54.00          | -19.58      | AVG      | 150         | 11            |        |
| 3   | 2500.000    | 43.31            | -5.81       | 37.50           | 74.00          | -36.50      | peak     | 150         | 52            |        |
| 4   | 2500.000    | 34.15            | -5.81       | 28.34           | 54.00          | -25.66      | AVG      | 150         | 185           |        |

## 12. POWER LINE CONDUCTED MEASUREMENT

### 12.1. Block Diagram of Test Setup



(EUT: SMART WI-FI AIR PURIFIER)

### 12.2. Power Line Conducted Emission Measurement Limits

| Frequency<br>(MHz) | Limit dB(μV)     |               |
|--------------------|------------------|---------------|
|                    | Quasi-peak Level | Average Level |
| 0.15 - 0.50        | 66.0 – 56.0 *    | 56.0 – 46.0 * |
| 0.50 - 5.00        | 56.0             | 46.0          |
| 5.00 - 30.00       | 60.0             | 50.0          |

NOTE1: The lower limit shall apply at the transition frequencies.  
 NOTE2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

### 12.3. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

### 12.4. Operating Condition of EUT

12.4.1. Setup the EUT and simulator as shown as Section 12.1.

12.4.2. Turn on the power of all equipment.

12.4.3. Let the EUT work in test mode and measure it.

## 12.5.Test Procedure

The EUT is put on the plane 0.8 m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10: 2013 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

## 12.6.DATA SAMPLE

| Frequency (MHz) | Quasi Peak Level (dB $\mu$ V) | Average Level (dB $\mu$ V) | Transducer value (dB) | QuasiPeak Result (dB $\mu$ V) | Average Result (dB $\mu$ V) | Quasi Peak Limit (dB $\mu$ V) | Average Limit (dB $\mu$ V) | QuasiPeak Margin (dB) | Average Margin (dB) | Remark (Pass/Fail) |
|-----------------|-------------------------------|----------------------------|-----------------------|-------------------------------|-----------------------------|-------------------------------|----------------------------|-----------------------|---------------------|--------------------|
| X.XX            | 29.4                          | 18.3                       | 11.1                  | 40.5                          | 29.4                        | 56.0                          | 56.0                       | 15.5                  | 16.6                | Pass               |

Transducer value = Insertion loss of LISN + Cable Loss

Result = Quasi-peak Level/Average Level + Transducer value

Limit = Limit stated in standard

Calculation Formula:

Margin = Limit – Reading level value – Transducer value



## 12.7.Power Line Conducted Emission Measurement Results

**PASS.**

The frequency range from 150kHz to 30MHz is checked.

|                                            |               |              |               |              |          |      |     |  |
|--------------------------------------------|---------------|--------------|---------------|--------------|----------|------|-----|--|
| Test mode : WIFI operation (worse case)    |               |              |               |              |          |      |     |  |
| Test Voltage: 120V/60Hz                    |               |              |               |              |          |      |     |  |
| <b>MEASUREMENT RESULT: "F-1302-4_fin"</b>  |               |              |               |              |          |      |     |  |
| 2019-8-27 11:36                            |               |              |               |              |          |      |     |  |
| Frequency<br>MHz                           | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line | PE  |  |
| 0.154000                                   | 42.50         | 10.8         | 66            | 23.3         | QP       | L1   | GND |  |
| 0.400000                                   | 34.50         | 11.0         | 58            | 23.4         | QP       | L1   | GND |  |
| 0.890000                                   | 26.90         | 11.1         | 56            | 29.1         | QP       | L1   | GND |  |
| 2.215000                                   | 22.50         | 11.3         | 56            | 33.5         | QP       | L1   | GND |  |
| 8.000000                                   | 29.10         | 11.5         | 60            | 30.9         | QP       | L1   | GND |  |
| 24.005000                                  | 31.50         | 11.7         | 60            | 28.5         | QP       | L1   | GND |  |
| <b>MEASUREMENT RESULT: "F-1302-4_fin2"</b> |               |              |               |              |          |      |     |  |
| 2019-8-27 11:36                            |               |              |               |              |          |      |     |  |
| Frequency<br>MHz                           | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line | PE  |  |
| 0.192000                                   | 29.60         | 10.8         | 54            | 24.3         | AV       | L1   | GND |  |
| 0.400000                                   | 26.90         | 11.0         | 48            | 21.0         | AV       | L1   | GND |  |
| 1.800000                                   | 21.20         | 11.2         | 46            | 24.8         | AV       | L1   | GND |  |
| 2.145000                                   | 16.40         | 11.3         | 46            | 29.6         | AV       | L1   | GND |  |
| 8.000000                                   | 23.10         | 11.5         | 50            | 26.9         | AV       | L1   | GND |  |
| 24.005000                                  | 24.30         | 11.7         | 50            | 25.7         | AV       | L1   | GND |  |
| <b>MEASUREMENT RESULT: "F-1302-3_fin"</b>  |               |              |               |              |          |      |     |  |
| 2019-8-27 11:33                            |               |              |               |              |          |      |     |  |
| Frequency<br>MHz                           | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line | PE  |  |
| 0.156000                                   | 42.40         | 10.8         | 66            | 23.3         | QP       | N    | GND |  |
| 0.424000                                   | 36.50         | 11.0         | 57            | 20.9         | QP       | N    | GND |  |
| 1.850000                                   | 24.50         | 11.2         | 56            | 31.5         | QP       | N    | GND |  |
| 2.310000                                   | 21.60         | 11.3         | 56            | 34.4         | QP       | N    | GND |  |
| 8.005000                                   | 22.90         | 11.5         | 60            | 37.1         | QP       | N    | GND |  |
| 24.005000                                  | 26.70         | 11.7         | 60            | 33.3         | QP       | N    | GND |  |
| <b>MEASUREMENT RESULT: "F-1302-3_fin2"</b> |               |              |               |              |          |      |     |  |
| 2019-8-27 11:33                            |               |              |               |              |          |      |     |  |
| Frequency<br>MHz                           | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line | PE  |  |
| 0.150000                                   | 30.80         | 10.8         | 56            | 25.2         | AV       | N    | GND |  |
| 0.420000                                   | 27.30         | 11.0         | 47            | 20.1         | AV       | N    | GND |  |
| 1.800000                                   | 20.70         | 11.2         | 46            | 25.3         | AV       | N    | GND |  |
| 2.235000                                   | 15.20         | 11.3         | 46            | 30.8         | AV       | N    | GND |  |
| 8.005000                                   | 18.60         | 11.5         | 50            | 31.4         | AV       | N    | GND |  |
| 24.005000                                  | 22.00         | 11.7         | 50            | 28.0         | AV       | N    | GND |  |

Test mode : WIFI operation (worse case)

Test Voltage: 240V/60Hz

**MEASUREMENT RESULT: "F-1302-2\_fin"**

2019-8-27 11:31

| Frequency<br>MHz | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.174000         | 48.30         | 10.8         | 65            | 16.5         | QP       | N    | GND |
| 0.420000         | 39.10         | 11.0         | 57            | 18.3         | QP       | N    | GND |
| 1.672000         | 26.20         | 11.2         | 56            | 29.8         | QP       | N    | GND |
| 2.475000         | 22.40         | 11.3         | 56            | 33.6         | QP       | N    | GND |
| 5.680000         | 21.30         | 11.5         | 60            | 38.7         | QP       | N    | GND |
| 24.010000        | 26.80         | 11.7         | 60            | 33.2         | QP       | N    | GND |

**MEASUREMENT RESULT: "F-1302-2\_fin2"**

2019-8-27 11:31

| Frequency<br>MHz | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.174000         | 31.70         | 10.8         | 55            | 23.1         | AV       | N    | GND |
| 0.418000         | 29.40         | 11.0         | 48            | 18.1         | AV       | N    | GND |
| 1.554000         | 19.50         | 11.2         | 46            | 26.5         | AV       | N    | GND |
| 2.305000         | 16.30         | 11.3         | 46            | 29.7         | AV       | N    | GND |
| 8.005000         | 20.10         | 11.5         | 50            | 29.9         | AV       | N    | GND |
| 24.010000        | 21.80         | 11.7         | 50            | 28.2         | AV       | N    | GND |

**MEASUREMENT RESULT: "F-1302-1\_fin"**

2019-8-27 11:28

| Frequency<br>MHz | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.188000         | 46.50         | 10.8         | 64            | 17.6         | QP       | L1   | GND |
| 0.522000         | 34.80         | 11.0         | 56            | 21.2         | QP       | L1   | GND |
| 1.194000         | 32.10         | 11.2         | 56            | 23.9         | QP       | L1   | GND |
| 2.635000         | 30.10         | 11.3         | 56            | 25.9         | QP       | L1   | GND |
| 8.005000         | 31.00         | 11.5         | 60            | 29.0         | QP       | L1   | GND |
| 24.010000        | 30.70         | 11.7         | 60            | 29.3         | QP       | L1   | GND |

**MEASUREMENT RESULT: "F-1302-1\_fin2"**

2019-8-27 11:28

| Frequency<br>MHz | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.150000         | 46.70         | 10.8         | 56            | 9.3          | AV       | L1   | GND |
| 0.418000         | 30.00         | 11.0         | 48            | 17.5         | AV       | L1   | GND |
| 2.025000         | 20.00         | 11.3         | 46            | 26.0         | AV       | L1   | GND |
| 2.635000         | 19.50         | 11.3         | 46            | 26.5         | AV       | L1   | GND |
| 8.005000         | 24.90         | 11.5         | 50            | 25.1         | AV       | L1   | GND |
| 24.015000        | 23.60         | 11.7         | 50            | 26.4         | AV       | L1   | GND |

Emissions attenuated more than 20 dB below the permissible value are not reported.

The spectral diagrams are attached as below.

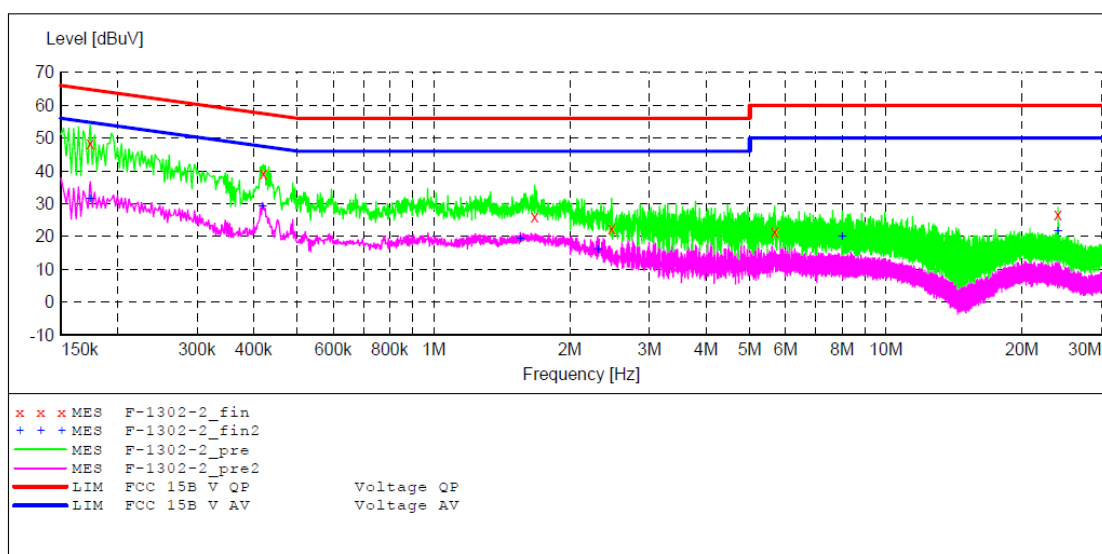
## ACCURATE TECHNOLOGY CO.,LTD

### CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: SMART WI-FI AIR PURIFIER M/N:MW1081  
 Manufacturer: Guangdong Mixwell Technology Co.,Ltd  
 Operating Condition: WIFI OPERATION  
 Test Site: 2#Shielding Room  
 Operator: Frank  
 Test Specification: N 240V/60Hz  
 Comment: Report NO.:ATE20191304  
 Start of Test: 2019-8-27 / 11:29:31

### SCAN TABLE: "V 150K-30MHz fin"

Short Description: SUB STD VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average



### MEASUREMENT RESULT: "F-1302-2\_fin"

2019-8-27 11:31

| Frequency<br>MHz | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.174000         | 48.30         | 10.8         | 65            | 16.5         | QP       | N    | GND |
| 0.420000         | 39.10         | 11.0         | 57            | 18.3         | QP       | N    | GND |
| 1.672000         | 26.20         | 11.2         | 56            | 29.8         | QP       | N    | GND |
| 2.475000         | 22.40         | 11.3         | 56            | 33.6         | QP       | N    | GND |
| 5.680000         | 21.30         | 11.5         | 60            | 38.7         | QP       | N    | GND |
| 24.010000        | 26.80         | 11.7         | 60            | 33.2         | QP       | N    | GND |

### MEASUREMENT RESULT: "F-1302-2\_fin2"

2019-8-27 11:31

| Frequency<br>MHz | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.174000         | 31.70         | 10.8         | 55            | 23.1         | AV       | N    | GND |
| 0.418000         | 29.40         | 11.0         | 48            | 18.1         | AV       | N    | GND |
| 1.554000         | 19.50         | 11.2         | 46            | 26.5         | AV       | N    | GND |
| 2.305000         | 16.30         | 11.3         | 46            | 29.7         | AV       | N    | GND |
| 8.005000         | 20.10         | 11.5         | 50            | 29.9         | AV       | N    | GND |
| 24.010000        | 21.80         | 11.7         | 50            | 28.2         | AV       | N    | GND |

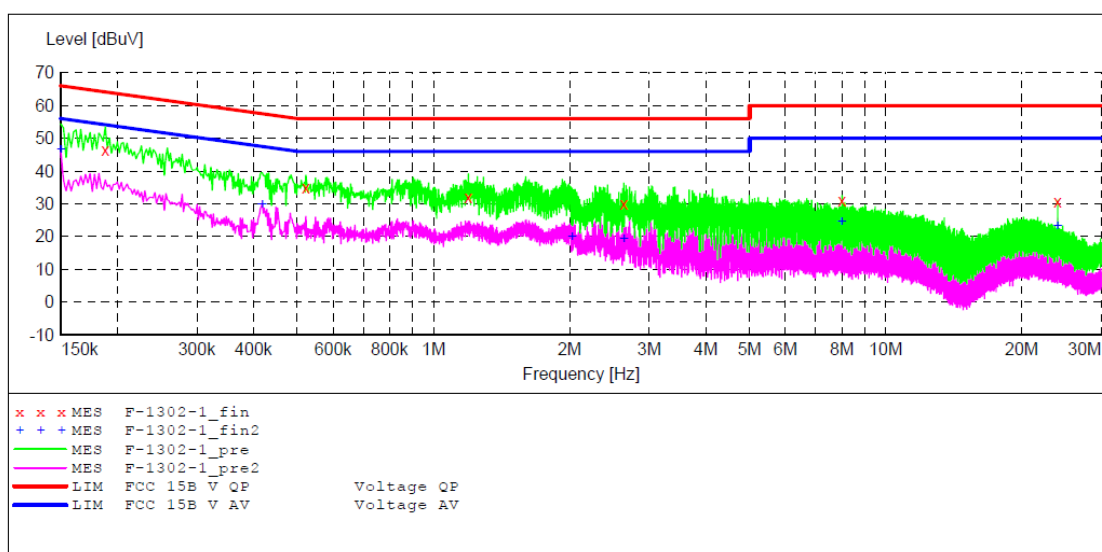
## ACCURATE TECHNOLOGY CO.,LTD

### CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: SMART WI-FI AIR PURIFIER M/N:MW1081  
 Manufacturer: Guangdong Mixwell Technology Co.,Ltd  
 Operating Condition: WIFI OPERATION  
 Test Site: 2#Shielding Room  
 Operator: Frank  
 Test Specification: L 240V/60Hz  
 Comment: Report NO.:ATE20191304  
 Start of Test: 2019-8-27 / 11:27:13

### SCAN TABLE: "V 150K-30MHz fin"

Short Description: SUB STD VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average



### MEASUREMENT RESULT: "F-1302-1\_fin"

2019-8-27 11:28

| Frequency<br>MHz | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.188000         | 46.50         | 10.8         | 64            | 17.6         | QP       | L1   | GND |
| 0.522000         | 34.80         | 11.0         | 56            | 21.2         | QP       | L1   | GND |
| 1.194000         | 32.10         | 11.2         | 56            | 23.9         | QP       | L1   | GND |
| 2.635000         | 30.10         | 11.3         | 56            | 25.9         | QP       | L1   | GND |
| 8.005000         | 31.00         | 11.5         | 60            | 29.0         | QP       | L1   | GND |
| 24.010000        | 30.70         | 11.7         | 60            | 29.3         | QP       | L1   | GND |

### MEASUREMENT RESULT: "F-1302-1\_fin2"

2019-8-27 11:28

| Frequency<br>MHz | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.150000         | 46.70         | 10.8         | 56            | 9.3          | AV       | L1   | GND |
| 0.418000         | 30.00         | 11.0         | 48            | 17.5         | AV       | L1   | GND |
| 2.025000         | 20.00         | 11.3         | 46            | 26.0         | AV       | L1   | GND |
| 2.635000         | 19.50         | 11.3         | 46            | 26.5         | AV       | L1   | GND |
| 8.005000         | 24.90         | 11.5         | 50            | 25.1         | AV       | L1   | GND |
| 24.015000        | 23.60         | 11.7         | 50            | 26.4         | AV       | L1   | GND |

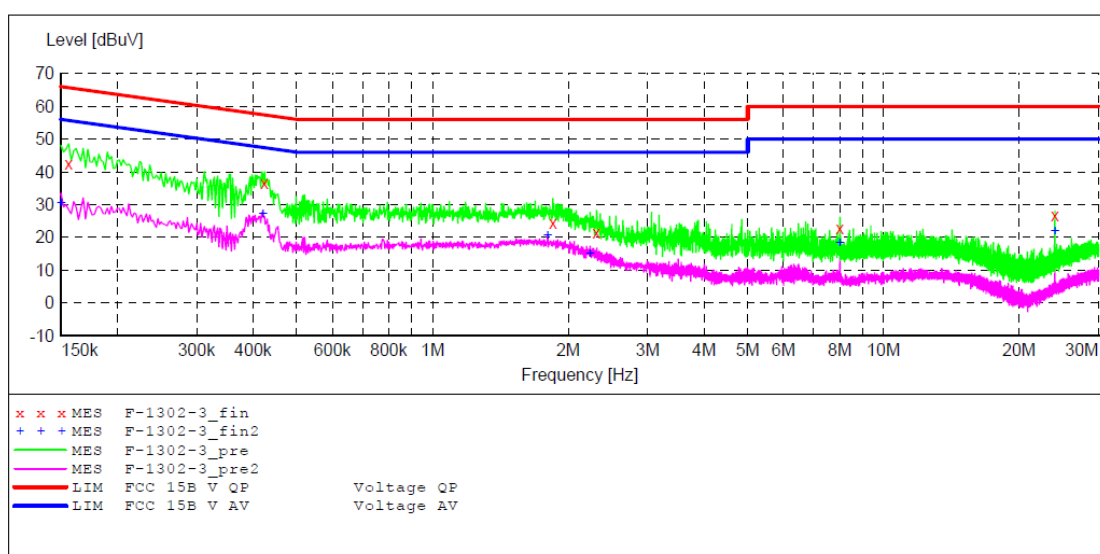
## ACCURATE TECHNOLOGY CO.,LTD

### CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: SMART WI-FI AIR PURIFIER M/N:MW1081  
 Manufacturer: Guangdong Mixwell Technology Co.,Ltd  
 Operating Condition: WIFI OPERATION  
 Test Site: 2#Shielding Room  
 Operator: Frank  
 Test Specification: N 120V/60Hz  
 Comment: Report NO.:ATE20191304  
 Start of Test: 2019-8-27 / 11:32:05

### SCAN TABLE: "V 150K-30MHz fin"

Short Description: SUB STD VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average



### MEASUREMENT RESULT: "F-1302-3\_fin"

2019-8-27 11:33

| Frequency<br>MHz | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.156000         | 42.40         | 10.8         | 66            | 23.3         | QP       | N    | GND |
| 0.424000         | 36.50         | 11.0         | 57            | 20.9         | QP       | N    | GND |
| 1.850000         | 24.50         | 11.2         | 56            | 31.5         | QP       | N    | GND |
| 2.310000         | 21.60         | 11.3         | 56            | 34.4         | QP       | N    | GND |
| 8.005000         | 22.90         | 11.5         | 60            | 37.1         | QP       | N    | GND |
| 24.005000        | 26.70         | 11.7         | 60            | 33.3         | QP       | N    | GND |

### MEASUREMENT RESULT: "F-1302-3\_fin2"

2019-8-27 11:33

| Frequency<br>MHz | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.150000         | 30.80         | 10.8         | 56            | 25.2         | AV       | N    | GND |
| 0.420000         | 27.30         | 11.0         | 47            | 20.1         | AV       | N    | GND |
| 1.800000         | 20.70         | 11.2         | 46            | 25.3         | AV       | N    | GND |
| 2.235000         | 15.20         | 11.3         | 46            | 30.8         | AV       | N    | GND |
| 8.005000         | 18.60         | 11.5         | 50            | 31.4         | AV       | N    | GND |
| 24.005000        | 22.00         | 11.7         | 50            | 28.0         | AV       | N    | GND |

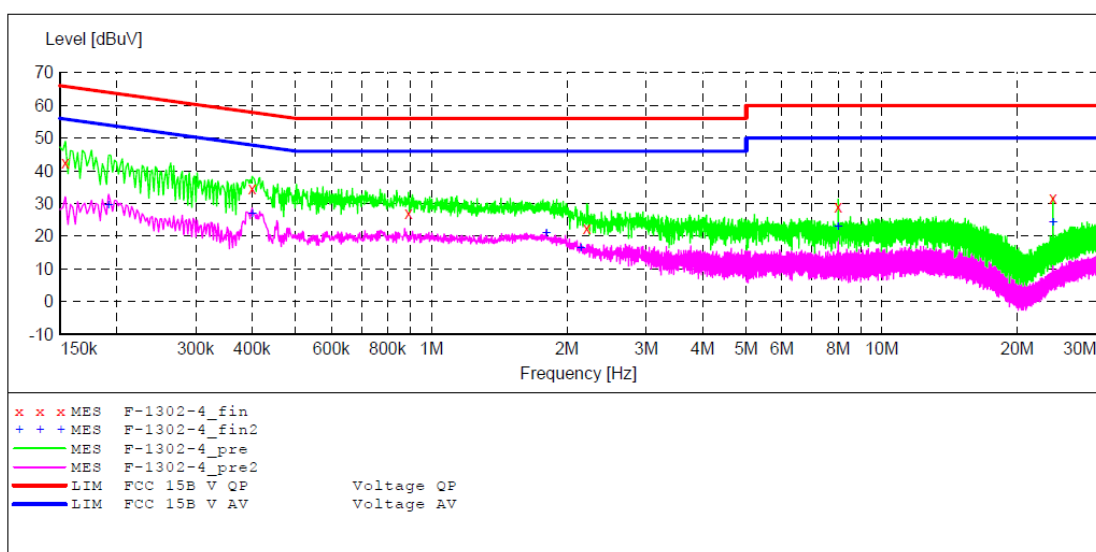
## ACCURATE TECHNOLOGY CO.,LTD

### CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: SMART WI-FI AIR PURIFIER M/N:MW1081  
 Manufacturer: Guangdong Mixwell Technology Co.,Ltd  
 Operating Condition: WIFI OPERATION  
 Test Site: 2#Shielding Room  
 Operator: Frank  
 Test Specification: L 120V/60Hz  
 Comment: Report NO.:ATE20191304  
 Start of Test: 2019-8-27 / 11:34:22

### SCAN TABLE: "V 150K-30MHz fin"

Short Description: SUB STD VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average



### MEASUREMENT RESULT: "F-1302-4\_fin"

2019-8-27 11:36

| Frequency<br>MHz | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.154000         | 42.50         | 10.8         | 66            | 23.3         | QP       | L1   | GND |
| 0.400000         | 34.50         | 11.0         | 58            | 23.4         | QP       | L1   | GND |
| 0.890000         | 26.90         | 11.1         | 56            | 29.1         | QP       | L1   | GND |
| 2.215000         | 22.50         | 11.3         | 56            | 33.5         | QP       | L1   | GND |
| 8.000000         | 29.10         | 11.5         | 60            | 30.9         | QP       | L1   | GND |
| 24.005000        | 31.50         | 11.7         | 60            | 28.5         | QP       | L1   | GND |

### MEASUREMENT RESULT: "F-1302-4\_fin2"

2019-8-27 11:36

| Frequency<br>MHz | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.192000         | 29.60         | 10.8         | 54            | 24.3         | AV       | L1   | GND |
| 0.400000         | 26.90         | 11.0         | 48            | 21.0         | AV       | L1   | GND |
| 1.800000         | 21.20         | 11.2         | 46            | 24.8         | AV       | L1   | GND |
| 2.145000         | 16.40         | 11.3         | 46            | 29.6         | AV       | L1   | GND |
| 8.000000         | 23.10         | 11.5         | 50            | 26.9         | AV       | L1   | GND |
| 24.005000        | 24.30         | 11.7         | 50            | 25.7         | AV       | L1   | GND |

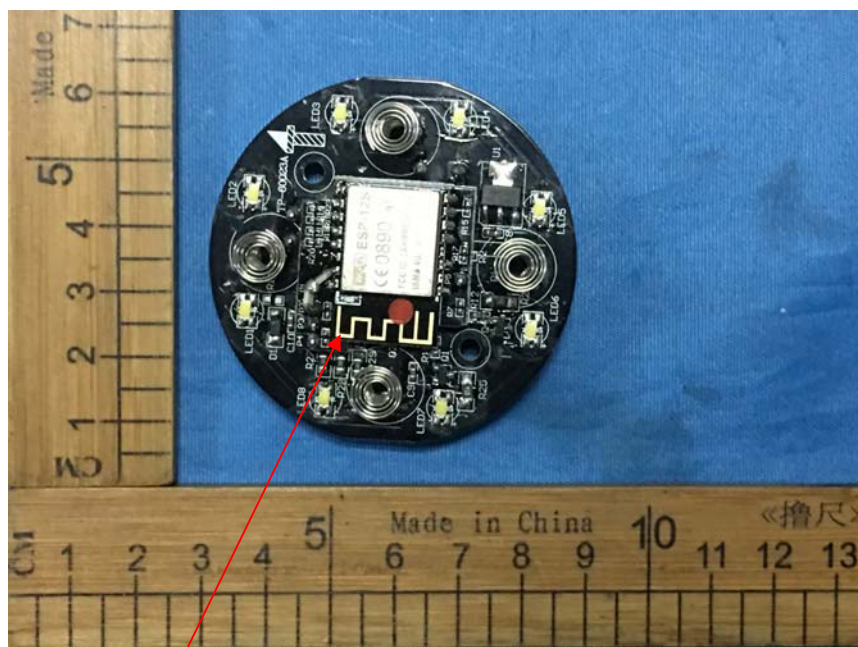
## 13.ANTENNA REQUIREMENT

### 13.1.The Requirement

According to Section 15.203, 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.

### 13.2.Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Antenna gain of EUT is 2.51dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



Antenna