



# FCC TEST REPORT

According to

**CFR47 §15.247**

|              |   |                                                                      |
|--------------|---|----------------------------------------------------------------------|
| Applicant    | : | Hangzhou AiXiangJi Technology Co., Ltd                               |
| Address      | : | Room 701, Building 3, More Center, No.87 GuDun Road, Hangzhou, China |
| Manufacturer | : | Hangzhou AiXiangJi Technology Co., Ltd                               |
| Address      | : | Room 701, Building 3, More Center, No.87 GuDun Road, Hangzhou, China |
| Equipment    | : | WiFi Module                                                          |
| Model No.    | : | TYWE3S                                                               |
| Trade        | : | TUYA                                                                 |
| FCC ID       | : | 2AFNL-TYWE3S                                                         |
| Test Period  | : | Aug.07,2017~Aug.09, 2017                                             |

- The test result refers exclusively to the test presented test model / sample.
- Without written approval of **Cerpass Technology Corporation Test Laboratory** the test report shall not be reproduced except in full.
- The test report must not be used by the clients to claim product certification approval by **NVLAP** or any agency of the Government.

I HEREBY CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.10 – 2013& FCC Part15.247** and the energy emitted by this equipment was **passed**.

Approved by:

Laboratory Accreditation:

Mark Liao / Assistant Manager



Cerpass Technology Corporation Test Laboratory

|                 |          |
|-----------------|----------|
| NVLAP LAB Code: | 200954-0 |
| TAF LAB Code:   | 1439     |



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## History of this Test Report

| Report No.  | Version | Issue Date   | Description |
|-------------|---------|--------------|-------------|
| TEFI1708004 | Rev 01  | Aug.10, 2017 | Original.   |
|             |         |              |             |
|             |         |              |             |



## 1. Report of Measurements and Examinations

| Performed Test Item                         | Normative References                                          | Test Performed | Deviation | Result |
|---------------------------------------------|---------------------------------------------------------------|----------------|-----------|--------|
| Conducted Emission                          | FCC CFR Title 47 Part 15 Subpart C: 2016 Section 15.207       | Yes            | N/A       | Pass   |
| Radiated Emission                           | FCC CFR Title 47 Part 15 Subpart C: 2016 Section 15.209       | Yes            | No        | Pass   |
| RF Antenna Conducted Spurious               | FCC CFR Title 47 Part 15 Subpart C: 2016 Section 15.247(d)    | Yes            | No        | Pass   |
| Radiated Emission Band Edge                 | FCC CFR Title 47 Part 15 Subpart C: 2016 15.247(d)            | Yes            | No        | Pass   |
| Operation Frequency Range of 20dB Bandwidth | FCC CFR Title 47 Part 15 Subpart C: 2016 15.215(c)            | Yes            | No        | Pass   |
| Occupied Bandwidth                          | FCC CFR Title 47 Part 15 Subpart C: 2016 Section 15.247(a)(2) | Yes            | No        | Pass   |
| Output Power                                | FCC CFR Title 47 Part 15 Subpart C: 2016 Section 15.247(b)(3) | Yes            | No        | Pass   |
| Power Spectral Density                      | FCC CFR Title 47 Part 15 Subpart C: 2016 Section 15.247(e)    | Yes            | No        | Pass   |



## 2. General Info

### 2.1 Description of EUT

|              |             |
|--------------|-------------|
| Product name | WiFi Module |
| Model No.    | TYWE3S      |



## 2.2 Description of wireless module

|                    |                                                                                                          |
|--------------------|----------------------------------------------------------------------------------------------------------|
| WLAN               | TYWE3S                                                                                                   |
| Spreading          | 802.11b: CCK, DQPSK, DBPSK<br>802.11g: 64 QAM, 16 QAM, QPSK, BPSK<br>802.11n: BPSK, QPSK, 16-QAM, 64-QAM |
| Frequency Range    | 802.11b/g/n(20MHz): 2412-2462MHz                                                                         |
| Number of Channels | 802.11b/g/n (20MHz):11                                                                                   |
| Data Rate          | 802.11b: 1, 2, 5.5, 11Mbps<br>802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps<br>802.11n: MCS0~MCS7            |

Note: For more details, please refer to the EUT User manual.

## 2.3 Description of Antenna

| Antenna     | Peak Gain                  |
|-------------|----------------------------|
| PCB Antenna | 3dBi for 2.40~2.50GHz band |



## 2.4 Carrier Frequency of Channels

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

## 2.5 The Worst Case Configuration

### Data rate Configuration:

| Modulation Mode | Worst Data Rate |
|-----------------|-----------------|
| 802.11b         | 1Mbps           |
| 802.11g         | 6Mbps           |
| 802.11n(HT20)   | MCS0            |

Note: Power output test was verified over all data rates of each mode, and then choose the maximum power output for final test of each channel shown as the table.

## 2.6 EUT Exercise Software

|   |                                                                                                                                   |
|---|-----------------------------------------------------------------------------------------------------------------------------------|
| 1 | Turn on the power of equipment.                                                                                                   |
| 2 | Run 'SecureCRTPortable', input RF test command and set the test mode and channel, then press Transmit to start continue transmit. |

**2.7 Power Parameter Value of the test software**

| Mode           | Frequency (MHz) | Power Setting |
|----------------|-----------------|---------------|
| 802.11b        | 2412            | 0             |
|                | 2437            | 0             |
|                | 2462            | 0             |
| 802.11g        | 2412            | 0             |
|                | 2437            | 0             |
|                | 2462            | 0             |
| 802.11n(20MHz) | 2412            | 0             |
|                | 2437            | 0             |
|                | 2462            | 0             |

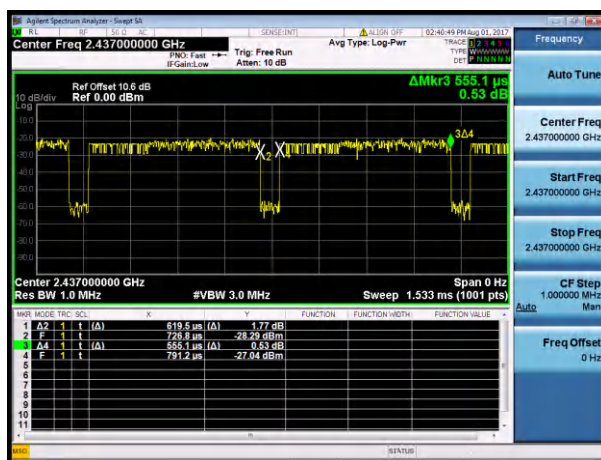


## 2.8 Duty cycle

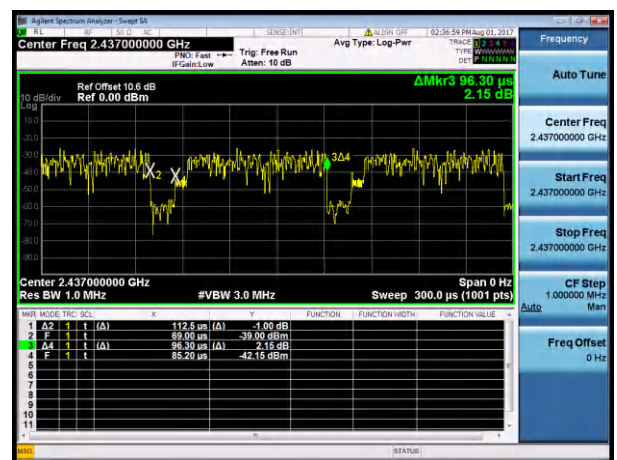
| Test Item | Duty cycle |
|-----------|------------|
|-----------|------------|

| Mode           | Frequency (MHz) | Measurement (%) |
|----------------|-----------------|-----------------|
| 802.11b        | 2437            | 89.6            |
| 802.11g        | 2437            | 85.6            |
| 802.11n(20MHz) | 2437            | 86.1            |

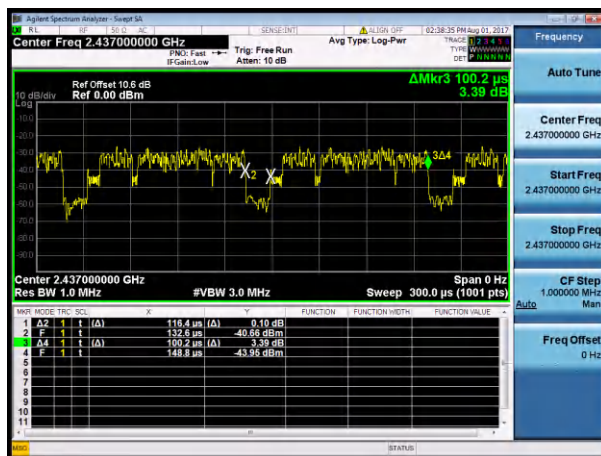
802.11b (2437MHz)



802.11g (2437MHz)



802.11n(20MHz)(2437MHz)





## 2.9 Support equipment

| Product     | Manufacturer | Model No.     | Serial No. | Power Cord |
|-------------|--------------|---------------|------------|------------|
| Notebook PC | DELL         | Inspiron 3543 | N/A        | N/A        |

| Connection Diagram                                                                                                                                                                                                                                                                                                                     |                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <p>The diagram shows a large rectangular frame. Inside, at the top center, is a horizontal line labeled 'A' above it. Below this line, there are two rectangular boxes side-by-side. The left box is labeled 'EUT' and the right box is labeled 'Notebook PC'. Lines connect the bottom of the 'A' label to the top of both boxes.</p> |                          |
| Signal Cable Type                                                                                                                                                                                                                                                                                                                      | Signal cable Description |
| A USB Cable                                                                                                                                                                                                                                                                                                                            | Shielded                 |



### 3. General Information of Test Site

#### 3.1 Information of Test Site

|                                |                                                                                                                                                                                                                                                                                                                |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Site :                    | <b>Cerpass Technology Corporation Test Laboratory</b><br>Address: No.10, Ln. 2, Lianfu St., Luzhu Dist., Taoyuan City 33848, Taiwan (R.O.C.)<br>Tel:+886-3-3226-888<br>Fax:+886-3-3226-881<br>Address: No.68-1, Shihbachongsi, Shihding Township, New Taipei City 223, Taiwan, R.O.C.<br>Tel: +886-2-2663-8582 |
| FCC Registration Number :      | TW1439                                                                                                                                                                                                                                                                                                         |
| IC Registration Number :       | 4934B-1, 4934E-1, 4934E-2                                                                                                                                                                                                                                                                                      |
| VCCI                           | T-2205 for Telecommunication Test<br>C-4663 for Conducted emission test<br>R-3428, R-4218 for Radiated emission test<br>G-812, G-813 for radiated disturbance above 1GHz                                                                                                                                       |
| Frequency Range Investigated : | Conducted Emission Test: from 150 kHz to 30 MHz<br>Radiated Emission Test: from 30 MHz to 18,000 MHz                                                                                                                                                                                                           |
| Test Distance :                | The test distance of radiated emission below 1GHz from antenna to EUT is 3 M.<br>The test distance of radiated emission above 1GHz from antenna to EUT is 3 M.                                                                                                                                                 |



### 3.2 Measuring Equipment

| Instrument/Ancillary        | Manufacturer | Model No. | Serial No. | Calibration Date | Valid Date. |
|-----------------------------|--------------|-----------|------------|------------------|-------------|
| Test Receiver               | R&S          | ESCI      | 100565     | 2017.03.26       | 2018.03.25  |
| AMN                         | R&S          | ESH2-Z5   | 100182     | 2016.09.06       | 2017.09.05  |
| Two-Line V-Network          | R&S          | ENV216    | 100325     | /                | /           |
| Pulse Limiter               | R&S          | ESH3-Z2   | 100529     | 2017.03.26       | 2018.03.25  |
| Temperature/ Humidity Meter | Zhicheng     | ZC1-11    | CEP-TH-004 | 2017.03.29       | 2018.03.28  |
| EZ-EMC                      | Fala         | Ver CT3A1 | N/A        | N/A              | N/A         |

| Instrument/Ancillary        | Manufacturer  | Model No. | Serial No. | Calibration Date | Valid Date. |
|-----------------------------|---------------|-----------|------------|------------------|-------------|
| EMI Test Receiver           | R&S           | ESCI      | 101183     | 2017.03.26       | 2018.03.25  |
| Preamplifier                | songyi        | EM330     | 60618      | 2017.03.26       | 2018.03.25  |
| Preamplifier                | Agilent       | 8449B     | 3008A02342 | 2017.03.26       | 2018.03.25  |
| Bilog Antenna               | Sunol Science | JB1       | A072414-1  | 2017.04.16       | 2018.04.15  |
| Broad-Band Horn Antenna     | Schwarzbeck   | BBHA9120D | 9120D-618  | 2017.04.16       | 2018.04.15  |
| Broad-Band Horn Antenna     | Schwarzbeck   | BBHA9170  | 9170-347   | 2017.04.16       | 2018.04.15  |
| Preamplifier                | COM-POWER     | PA-840    | 711885     | 2017.03.26       | 2018.03.25  |
| Spectrum Analyzer           | R&S           | FSP40     | 100324     | 2017.03.26       | 2018.03.25  |
| Spectrum Analyzer           | KEYSIGHT      | N9010A    | MY54200207 | 2017.03.17       | 2018.03.16  |
| Temperature/ Humidity Meter | Zhicheng      | ZC1-11    | CEP-TH-002 | 2017.03.29       | 2018.03.28  |
| EZ-EMC                      | Fala          | Ver CT3A1 | N/A        | N/A              | N/A         |



### 3.3 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor ( $k=2$ )).

| Measurement Item                      | Measurement Frequency | Polarization          | Uncertainty     |
|---------------------------------------|-----------------------|-----------------------|-----------------|
| Conducted Emission                    | 9 kHz ~ 30 MHz        | Line / Neutral        | $\pm 2.9076$ dB |
| Radiated Emission                     | 9 kHz ~ 40,000 MHz    | Vertical / Horizontal | $\pm 0.948$ dB  |
| Spurious Emission (Conducted)         | -                     | -                     | $\pm 4.011$ dB  |
| Maximum Peak and Average Output Power | -                     | -                     | $\pm 0.322$ dB  |
| Power Spectral Density                | -                     | -                     | $\pm 0.322$ dB  |
| Bandwidth                             | -                     | -                     | 74.224Hz        |



## 4. AC Conducted Emission Measurement

### 4.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.10-2013 Section 6.2. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 6.2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

| FCC Part 15 Subpart C Paragraph 15.207 Limits |                         |                      |
|-----------------------------------------------|-------------------------|----------------------|
| Frequency (MHz)                               | Quasi Peak (dB $\mu$ V) | Average (dB $\mu$ V) |
| 0.15 – 0.5                                    | 66-56*                  | 56-46*               |
| 0.5 – 5.0                                     | 56                      | 46                   |
| 5.0 – 30.0                                    | 60                      | 50                   |

\*Decreases with the logarithm of the frequency.

### 4.2 Test Standard

Tested according to ANSI C63.10: 2013 Section 6.2 for compliance to FCC 47CFR 15.247 Part15.207 (a) requirements.

### 4.3 Test Procedures

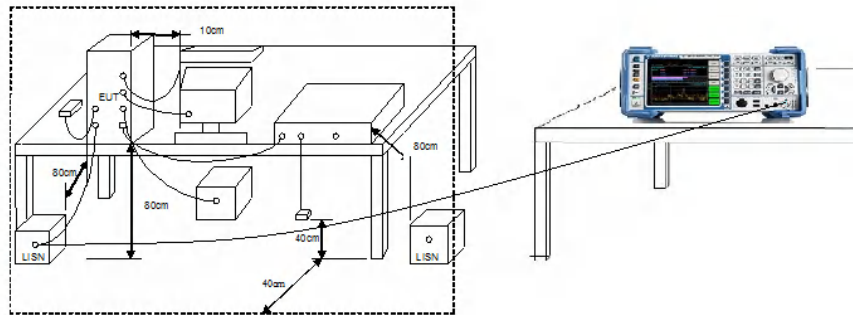
The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs) Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.



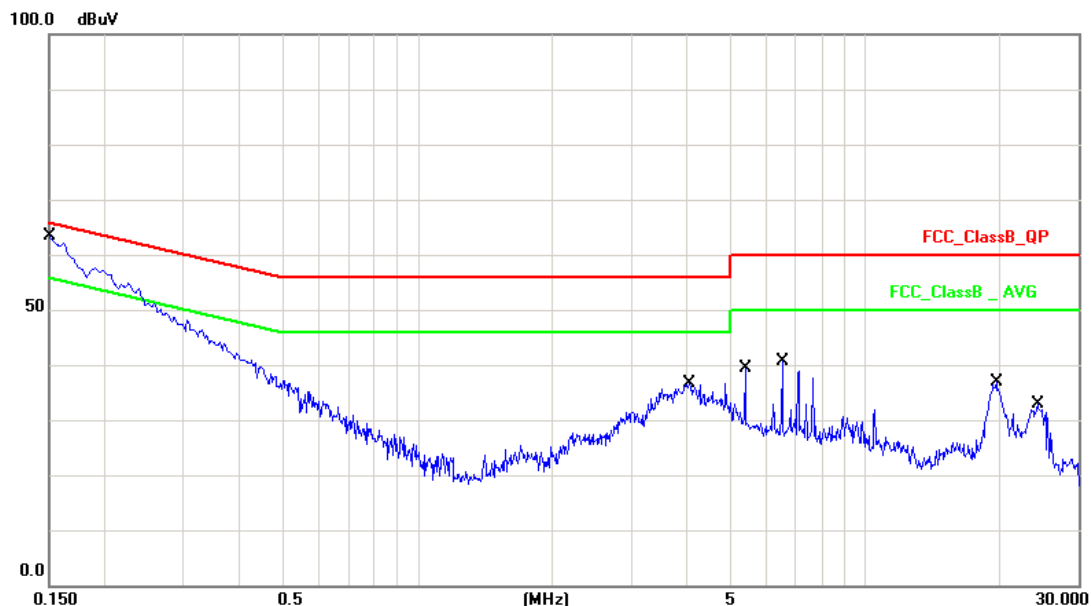
#### 4.4 Test Setup Layout





#### 4.5 Test Result

|                  |                                       |           |            |
|------------------|---------------------------------------|-----------|------------|
| Test Mode :      | Mode 1: Normal Operation with WIFI on |           |            |
| AC Power :       | AC 120V/60Hz                          | Phase:    | LINE       |
| Temperature :    | 26°C                                  | Humidity: | 60%        |
| Pressure(mbar) : | 1002                                  | Date:     | 2017/08/08 |

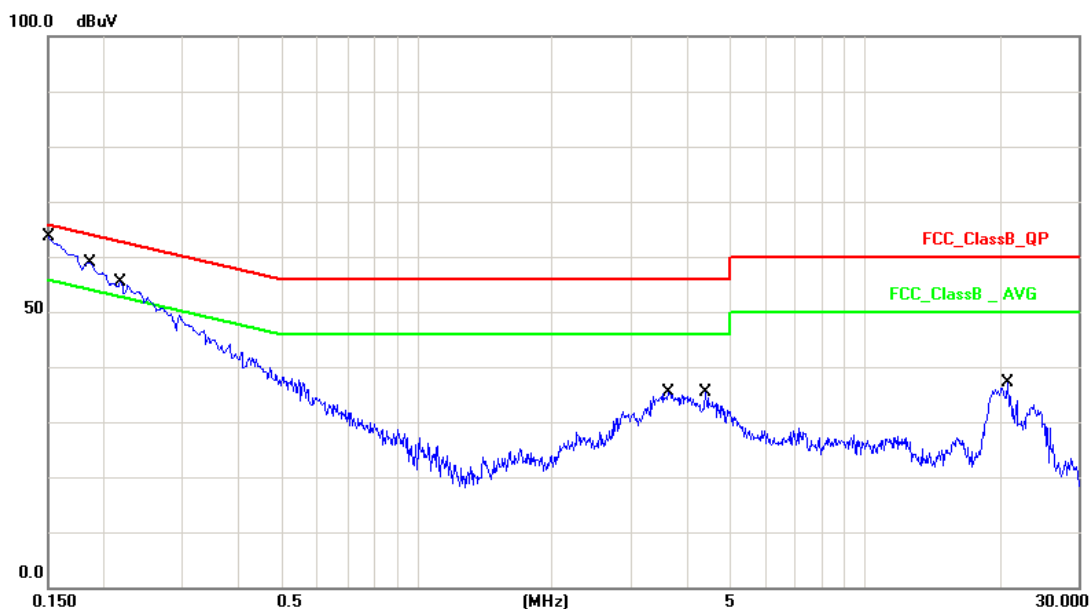


| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|-------------|----------------|--------------|--------------|-------------|----------|
| 1   | 0.1500          | 10.13       | 45.89          | 56.02        | 65.99        | -9.97       | QP       |
| 2   | 0.1500          | 10.13       | 23.20          | 33.33        | 55.99        | -22.66      | AVG      |
| 3   | 4.0660          | 10.20       | 20.44          | 30.64        | 56.00        | -25.36      | QP       |
| 4   | 4.0660          | 10.20       | 15.83          | 26.03        | 46.00        | -19.97      | AVG      |
| 5   | 5.3940          | 10.24       | 13.38          | 23.62        | 60.00        | -36.38      | QP       |
| 6   | 5.3940          | 10.24       | 8.83           | 19.07        | 50.00        | -30.93      | AVG      |
| 7   | 6.5300          | 10.26       | 11.59          | 21.85        | 60.00        | -38.15      | QP       |
| 8   | 6.5300          | 10.26       | 6.89           | 17.15        | 50.00        | -32.85      | AVG      |
| 9   | 19.6500         | 10.35       | 19.40          | 29.75        | 60.00        | -30.25      | QP       |
| 10  | 19.6500         | 10.35       | 10.95          | 21.30        | 50.00        | -28.70      | AVG      |
| 11  | 24.3620         | 10.41       | 15.24          | 25.65        | 60.00        | -34.35      | QP       |
| 12  | 24.3620         | 10.41       | 9.48           | 19.89        | 50.00        | -30.11      | AVG      |

Note: Measurement Level = Reading Level + Correct Factor



|                  |                                       |            |            |
|------------------|---------------------------------------|------------|------------|
| Test Mode :      | Mode 1: Normal Operation with WIFI on |            |            |
| AC Power :       | AC 120V/60Hz                          | Phase :    | NEUTRAL    |
| Temperature :    | 26°C                                  | Humidity : | 60%        |
| Pressure(mbar) : | 1002                                  | Date:      | 2017/08/08 |



| No. | Frequency (MHz) | Factor (dB) | Reading (dBuV) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|-------------|----------------|--------------|--------------|-------------|----------|
| 1   | 0.1500          | 10.13       | 45.90          | 56.03        | 65.99        | -9.96       | QP       |
| 2   | 0.1500          | 10.13       | 24.17          | 34.30        | 55.99        | -21.69      | AVG      |
| 3   | 0.1860          | 10.13       | 40.35          | 50.48        | 64.21        | -13.73      | QP       |
| 4   | 0.1860          | 10.13       | 14.68          | 24.81        | 54.21        | -29.40      | AVG      |
| 5   | 0.2180          | 10.13       | 37.08          | 47.21        | 62.89        | -15.68      | QP       |
| 6   | 0.2180          | 10.13       | 13.28          | 23.41        | 52.89        | -29.48      | AVG      |
| 7   | 3.6540          | 10.21       | 20.54          | 30.75        | 56.00        | -25.25      | QP       |
| 8   | 3.6540          | 10.21       | 15.55          | 25.76        | 46.00        | -20.24      | AVG      |
| 9   | 4.4100          | 10.24       | 18.42          | 28.66        | 56.00        | -27.34      | QP       |
| 10  | 4.4100          | 10.24       | 13.81          | 24.05        | 46.00        | -21.95      | AVG      |
| 11  | 20.8140         | 10.43       | 16.78          | 27.21        | 60.00        | -32.79      | QP       |
| 12  | 20.8140         | 10.43       | 10.13          | 20.56        | 50.00        | -29.44      | AVG      |

Note: Measurement Level = Reading Level + Correct Factor



## 5. Radiated Emission Measurement

### 5.1 Test Limit

In any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter measurement is based on the maximum conducted output power, the attenuation required under this paragraph shall be 30dB instead of 20dB. In addition, radiated emissions which fall in section 15.205(a) the restricted bands must also comply with the radiated emission limit specified in section 15.209(a).

| FCC Part 15 Subpart C Paragraph 15.209 |                                       |                                  |
|----------------------------------------|---------------------------------------|----------------------------------|
| FREQUENCIES<br>(MHz)                   | FIELD STRENGTH<br>(micro volts/meter) | MEASUREMENT DISTANCE<br>(meters) |
| 0.009~0.490                            | 2400/F(kHz)                           | 300                              |
| 0.490~1.705                            | 24000/F(kHz)                          | 30                               |
| 1.705~30.0                             | 30                                    | 30                               |
| 30~88                                  | 100                                   | 3                                |
| 88~216                                 | 150                                   | 3                                |
| 216~960                                | 200                                   | 3                                |
| Above 960                              | 500                                   | 3                                |

Note 1: The lower limit shall apply at the transition frequency.

Note 2: Distance refers to the distance in meters between the measuring instrument Antenna and the closed point of any part of the device or system.

Note 3: E field strength (dBuV/m) = 20 log E field strength (uV/m)

Note 4: \*\*Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§15.231 and 15.241.

### 5.2 Test Standard

KDB 558074 D01v04 - Section 12.2.3 (quasi-peak measurements)

KDB 558074 D01v04 - Section 12.2.4 (peak power measurements)

KDB 558074 D01v04- Section 12.2.5 (average power measurements)



### 5.3 Test Procedures

#### Quasi-Peak Field Strength Measurements:

The specifications for measurements using the CISPR quasi-peak detector can be found in Publication 16 of the International Special Committee on Radio Frequency Interference (CISPR) of the International Electrotechnical Commission.

As an alternative to CISPR quasi-peak measurement, compliance can be demonstrated to the applicable emission limits using a peak detector.

#### Peak Field Strength Measurements:

Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

1. RBW=As specified in Table 1
2. VBW=3×RBW
3. Detector=Peak
4. Trace mode=Max hold
5. Sweep time=Auto couple
6. Allow the trace to stabilize

Table 1-RBW as a function of frequency

| Frequency    | RBW          |
|--------------|--------------|
| 9 ~ 150kHz   | 200 ~ 300Hz  |
| 0.15 ~ 30MHz | 9 ~ 10kHz    |
| 30 ~ 1000MHz | 100 ~ 120kHz |
| > 1000MHz    | 1MHz         |

#### AVE Field Strength Measurements:

Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

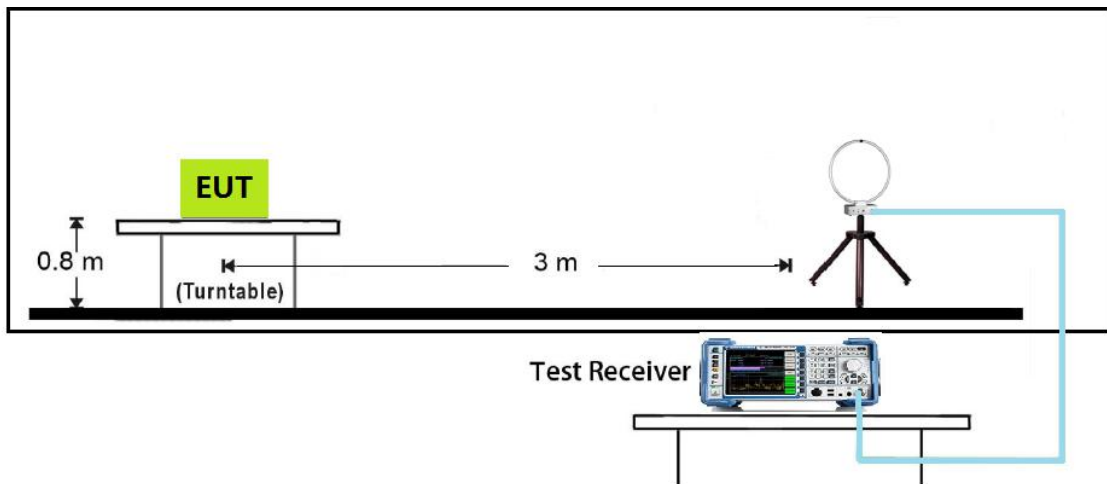
1. RBW= 1MHz
2. VBW≥1/T
3. Detector=Peak
4. Trace mode=Max hold
5. Sweep time=Auto couple
6. Allow max hold to run for at least 50 times(1/duty cycle) trace

Do as an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode

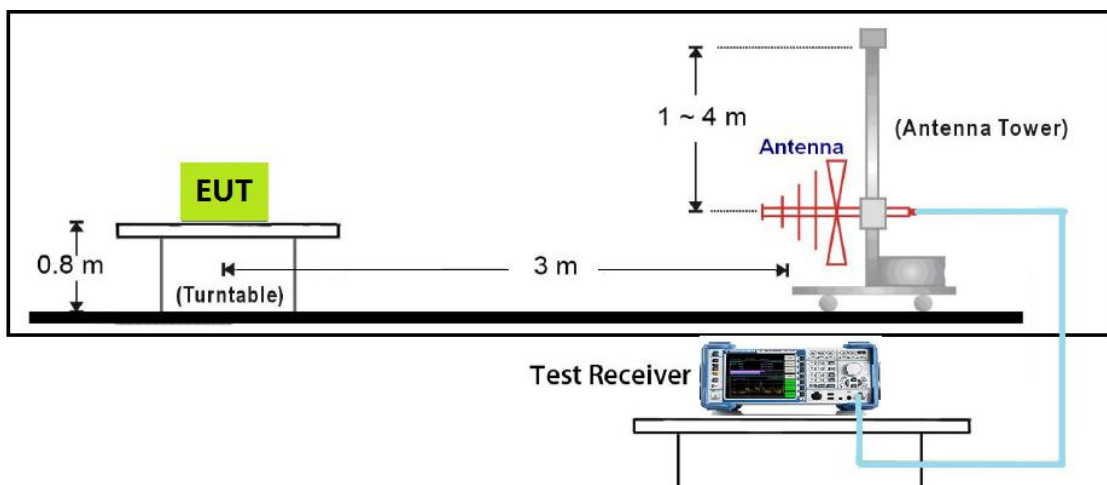


## 5.4 Test Setup Layout

9kHz~30MHz Test Setup

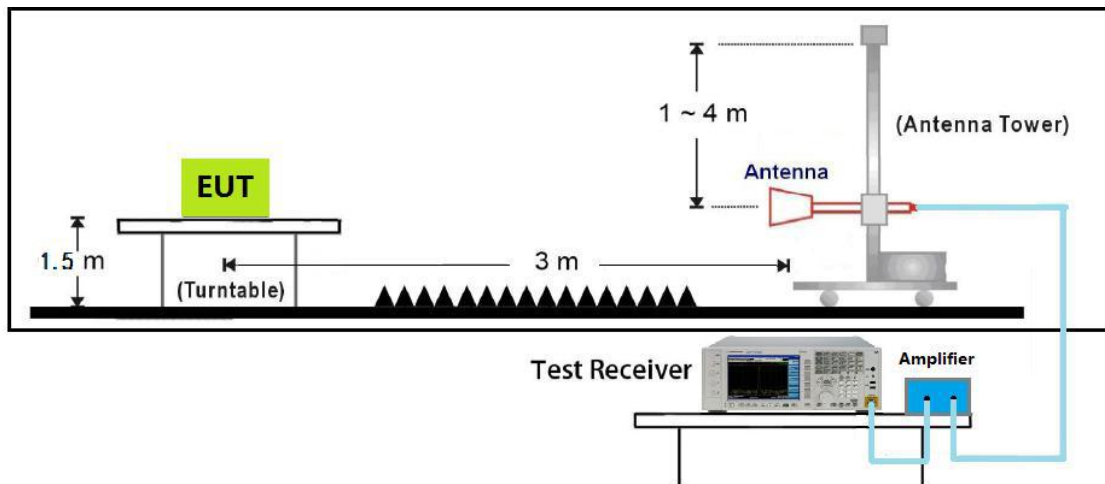


30MHz~1GHz Test Setup

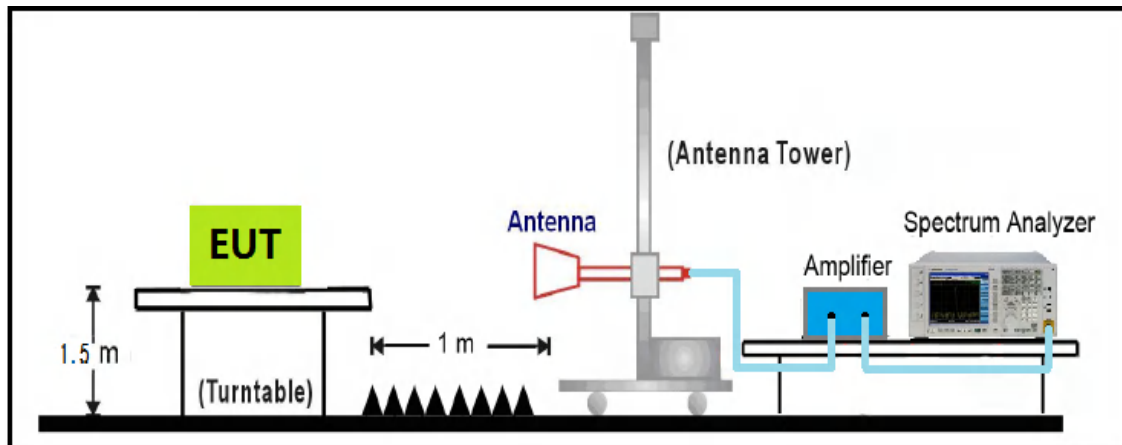




## 1GHz~18GHz Test Setup



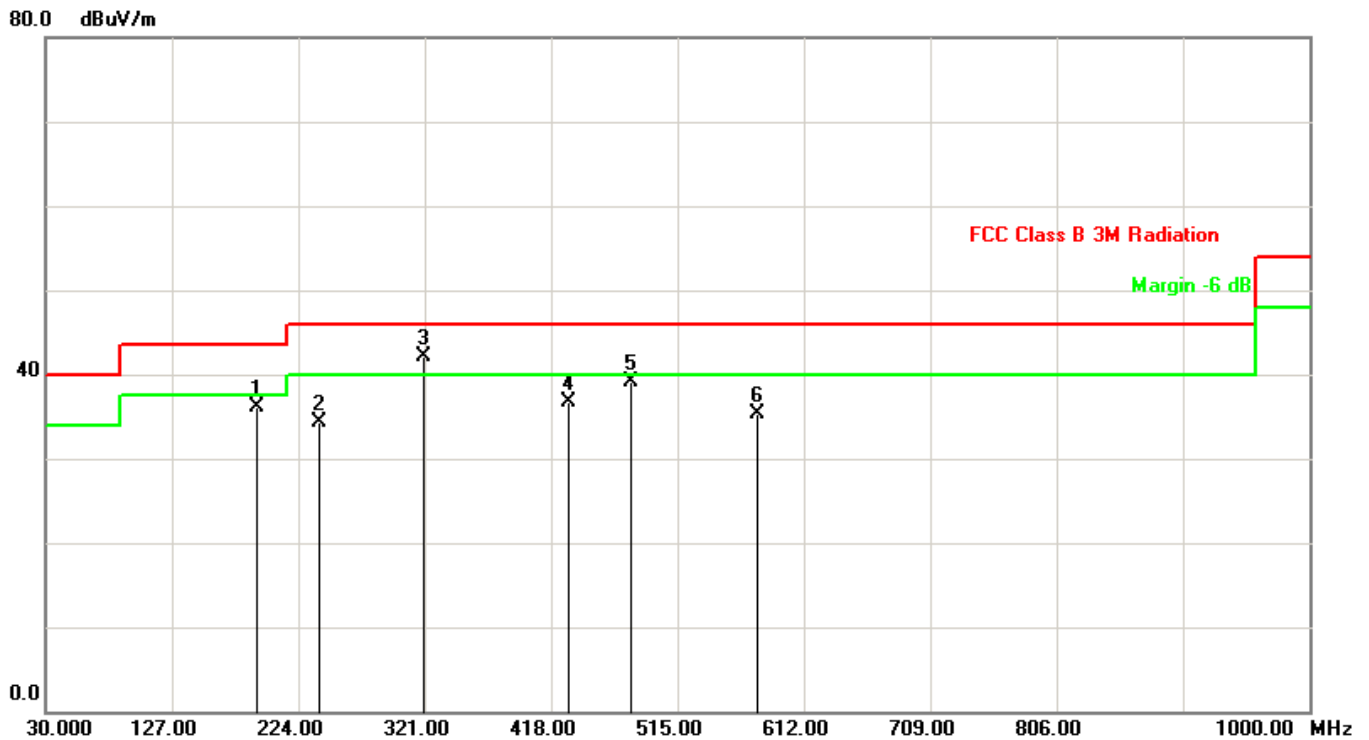
## 18GHz~40GHz Test Setup





## 5.5 Test Result

|                                                     |                      |
|-----------------------------------------------------|----------------------|
| Limit: FCC_Part15.209_RE(3m)                        | Margin: 0            |
| Probe: CBL6112D (30-1000MHz)                        | Polarity: Horizontal |
| EUT: WiFi Module                                    | Power: AC 120V/60Hz  |
| Note: Mode1: Transmit at channel 2437MHz by 802.11b |                      |



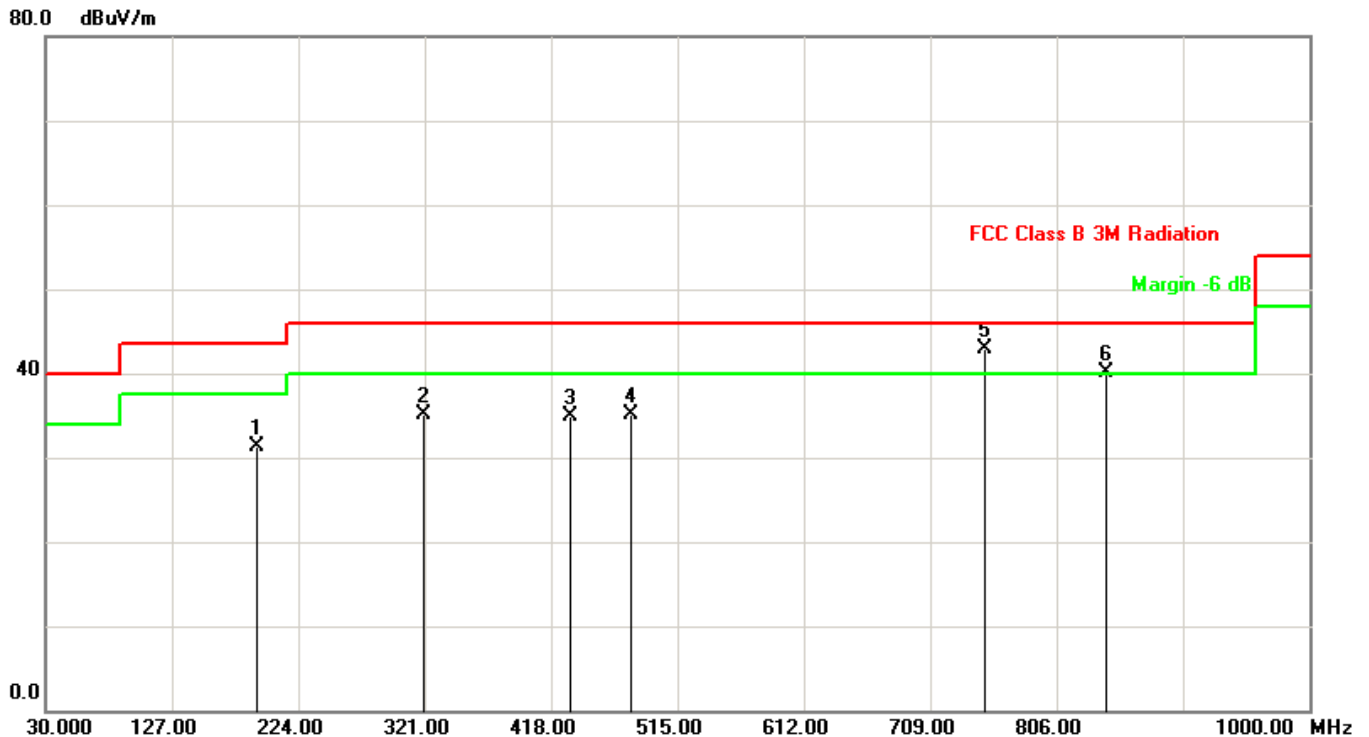
| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|
| 1   | 191.9900        | -12.52        | 48.64          | 36.12          | 43.50          | -7.38       | QP   |
| 2   | 240.4900        | -11.88        | 46.20          | 34.32          | 46.00          | -11.68      | QP   |
| 3   | 320.0299        | -6.24         | 48.32          | 42.08          | 46.00          | -3.92       | QP   |
| 4   | 431.5799        | -4.51         | 41.14          | 36.63          | 46.00          | -9.37       | QP   |
| 5   | 480.0799        | -6.19         | 45.34          | 39.15          | 46.00          | -6.85       | QP   |
| 6   | 576.1100        | -2.73         | 38.08          | 35.35          | 46.00          | -10.65      | QP   |

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor(dB).

Factor (dB)=Cable Loss(dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain(dB)



|                                                     |                     |
|-----------------------------------------------------|---------------------|
| Limit: FCC_Part15.209_RE(3m)                        | Margin: 0           |
| Probe: CBL6112D (30-1000MHz)                        | Polarity: Vertical  |
| EUT: WiFi Module                                    | Power: AC 120V/60Hz |
| Note: Mode1: Transmit at channel 2437MHz by 802.11b |                     |



| No. | Frequency (MHz) | Factor (dB/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|---------------|----------------|----------------|----------------|-------------|------|
| 1   | 191.9900        | -12.52        | 43.74          | 31.22          | 43.50          | -12.28      | QP   |
| 2   | 320.0299        | -6.24         | 41.31          | 35.07          | 46.00          | -10.93      | QP   |
| 3   | 432.5500        | -4.61         | 39.47          | 34.86          | 46.00          | -11.14      | QP   |
| 4   | 480.0799        | -6.19         | 41.33          | 35.14          | 46.00          | -10.86      | QP   |
| 5   | 750.7100        | 1.37          | 41.48          | 42.85          | 46.00          | -3.15       | QP   |
| 6   | 844.7999        | 1.56          | 38.58          | 40.14          | 46.00          | -5.86       | QP   |

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor(dB).

Factor (dB)=Cable Loss(dB) + Antenna Factor (dB/m) - Pre\_Amplifier Gain(dB)

**Radiated Emission above 1GHz:**

Mode1: Transmit by 802.11b

| CH | Antenna | Frequency<br>(MHz) | Reading<br>Level<br>(dBuV/m) | Factor<br>(dB) | Measure<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Detector |
|----|---------|--------------------|------------------------------|----------------|------------------------------|-------------------|----------------|----------|
| 1  | H       | 4824.00            | 48.47                        | 3.32           | 51.79                        | 54(note3)         | -2.21          | PK       |
|    | H       | 7236.00            | 37.62                        | 8.22           | 45.84                        | 54(note3)         | -8.16          | PK       |
|    | V       | 4824.00            | 47.06                        | 3.32           | 50.38                        | 54(note3)         | -3.62          | PK       |
|    | V       | 7236.00            | 37.87                        | 8.22           | 46.09                        | 54(note3)         | -7.91          | PK       |
| 6  | H       | 4874.00            | 50.05                        | 3.42           | 53.47                        | 54(note3)         | -0.53          | PK       |
|    | H       | 7311.00            | 37.98                        | 8.27           | 46.25                        | 54(note3)         | -7.75          | PK       |
|    | V       | 4874.00            | 48.59                        | 3.42           | 52.01                        | 54(note3)         | -1.99          | PK       |
|    | V       | 7311.00            | 38.15                        | 8.27           | 46.42                        | 54(note3)         | -7.58          | PK       |
| 11 | H       | 4924.00            | 48.76                        | 3.52           | 52.28                        | 54(note3)         | -1.72          | PK       |
|    | H       | 7386.00            | 37.58                        | 8.32           | 45.90                        | 54(note3)         | -8.10          | PK       |
|    | V       | 4924.00            | 46.84                        | 3.52           | 50.36                        | 54(note3)         | -3.64          | PK       |
|    | V       | 7386.00            | 37.83                        | 8.32           | 46.15                        | 54(note3)         | -7.85          | PK       |

Note: 1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.



Mode2: Transmit by 802.11g

| CH | Antenna | Frequency (MHz) | Reading Level (dBuV/m) | Factor (dB) | Measure Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|----|---------|-----------------|------------------------|-------------|------------------------|----------------|-------------|----------|
| 1  | H       | 4824.00         | 48.95                  | 3.32        | 52.27                  | 54(note3)      | -1.73       | PK       |
|    | H       | 7236.00         | 37.78                  | 8.22        | 46.00                  | 54(note3)      | -8.00       | PK       |
|    | V       | 4824.00         | 47.38                  | 3.32        | 50.70                  | 54(note3)      | -3.30       | PK       |
|    | V       | 7236.00         | 37.88                  | 8.22        | 46.10                  | 54(note3)      | -7.90       | PK       |
| 6  | H       | 4874.00         | 48.15                  | 3.42        | 51.57                  | 54(note3)      | -2.43       | PK       |
|    | H       | 7311.00         | 37.84                  | 8.27        | 46.11                  | 54(note3)      | -7.89       | PK       |
|    | V       | 4874.00         | 47.00                  | 3.42        | 50.42                  | 54(note3)      | -3.58       | PK       |
|    | V       | 7311.00         | 37.55                  | 8.27        | 45.82                  | 54(note3)      | -8.18       | PK       |
| 11 | H       | 4924.00         | 48.93                  | 3.52        | 52.45                  | 54(note3)      | -1.55       | PK       |
|    | H       | 7386.00         | 37.74                  | 8.32        | 46.06                  | 54(note3)      | -7.94       | PK       |
|    | V       | 4924.00         | 46.76                  | 3.52        | 50.28                  | 54(note3)      | -3.72       | PK       |
|    | V       | 7386.00         | 37.75                  | 8.32        | 46.07                  | 54(note3)      | -7.93       | PK       |

Note: 1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.



Mode3: Transmit by 802.11n(20MHz)

| CH | Antenna | Frequency<br>(MHz) | Reading<br>Level<br>(dBuV/m) | Factor<br>(dB) | Measure<br>Level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Detector |
|----|---------|--------------------|------------------------------|----------------|------------------------------|-------------------|----------------|----------|
| 1  | H       | 4824.00            | 49.04                        | 3.32           | 52.36                        | 54(note3)         | -1.64          | PK       |
|    | H       | 7236.00            | 37.48                        | 8.22           | 45.70                        | 54(note3)         | -8.30          | PK       |
|    | V       | 4824.00            | 47.12                        | 3.32           | 50.44                        | 54(note3)         | -3.56          | PK       |
|    | V       | 7236.00            | 38.00                        | 8.22           | 46.22                        | 54(note3)         | -7.78          | PK       |
| 6  | H       | 4874.00            | 48.50                        | 3.42           | 51.92                        | 54(note3)         | -2.08          | PK       |
|    | H       | 7311.00            | 37.60                        | 8.27           | 45.87                        | 54(note3)         | -8.13          | PK       |
|    | V       | 4874.00            | 46.68                        | 3.42           | 50.10                        | 54(note3)         | -3.90          | PK       |
|    | V       | 7311.00            | 37.88                        | 8.27           | 46.15                        | 54(note3)         | -7.85          | PK       |
| 11 | H       | 4924.00            | 48.63                        | 3.52           | 52.15                        | 54(note3)         | -1.85          | PK       |
|    | H       | 7386.00            | 37.40                        | 8.32           | 45.72                        | 54(note3)         | -8.28          | PK       |
|    | V       | 4924.00            | 46.66                        | 3.52           | 50.18                        | 54(note3)         | -3.82          | PK       |
|    | V       | 7386.00            | 37.58                        | 8.32           | 45.90                        | 54(note3)         | -8.10          | PK       |

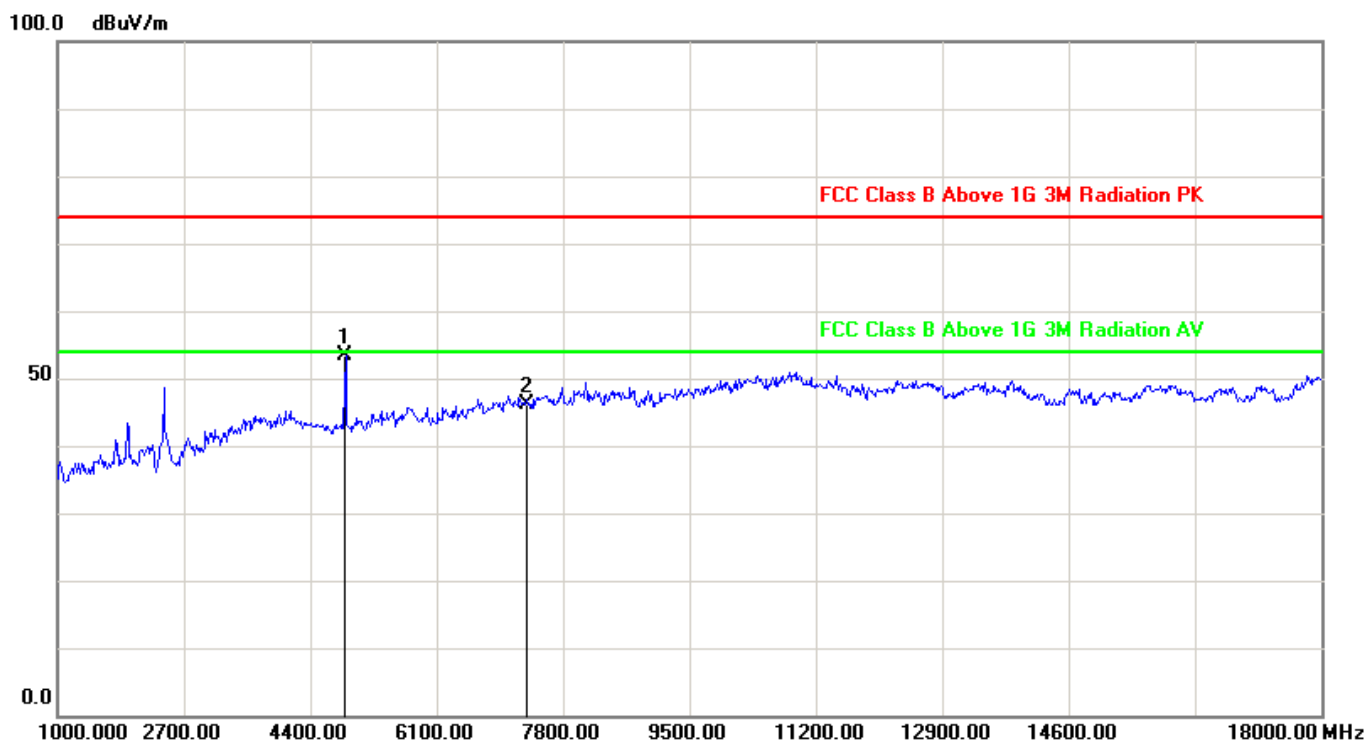
Note: 1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

**The worst case of Radiated Emission 1~18GHz:**

|                                         |                      |
|-----------------------------------------|----------------------|
| Site: AC102                             | Time: 2017/08/07     |
| Limit: FCC_Part15.209_RE(3m)            | Margin: 0            |
| Probe: N/A                              | Polarity: Horizontal |
| EUT: WiFi Module                        | Power: AC 120V/60Hz  |
| Note: Mode: Transmit 802.11b at 2437MHz |                      |



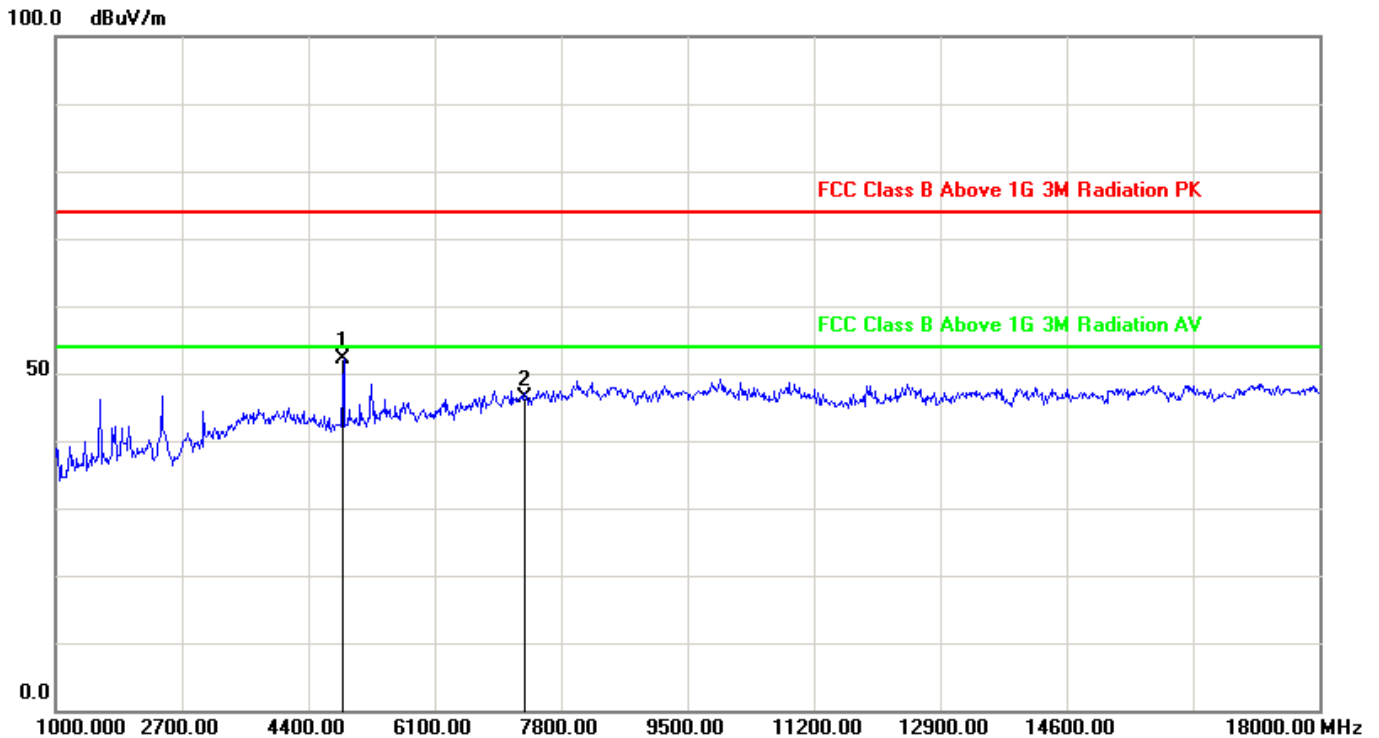
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|------|
| 1   | 4874.00         | 50.05          | 3.42          | 53.47          | 54(note3)      | -0.53       | peak |
| 2   | 7311.00         | 37.98          | 8.27          | 46.25          | 54(note3)      | -7.75       | peak |

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor
3. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~40GHz), therefore no data appear in the report.



|                                         |                     |
|-----------------------------------------|---------------------|
| Site: AC102                             | Time: 2017/08/07    |
| Limit: FCC_Part15.209_RE(3m)            | Margin: 0           |
| Probe: N/A                              | Polarity: Vertical  |
| EUT: WiFi Module                        | Power: AC 120V/60Hz |
| Note: Mode: Transmit 802.11b at 2437MHz |                     |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Det. |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|------|
| 1   | 4874.00         | 48.59          | 3.42          | 52.01          | 54(note3)      | -1.99       | peak |
| 2   | 7311.00         | 38.15          | 8.27          | 46.42          | 54(note3)      | -7.58       | peak |

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or AVG measurements as necessary.
2. Measurement Level = Reading Level + Correct Factor
3. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~40GHz), therefore no data appear in the report.



## 6. 6dB Bandwidth Measurement

### 6.1 Test Limit

According to FCC part15.247 - Section (a)(2), the minimum 6dB bandwidth shall be at least 500 kHz.

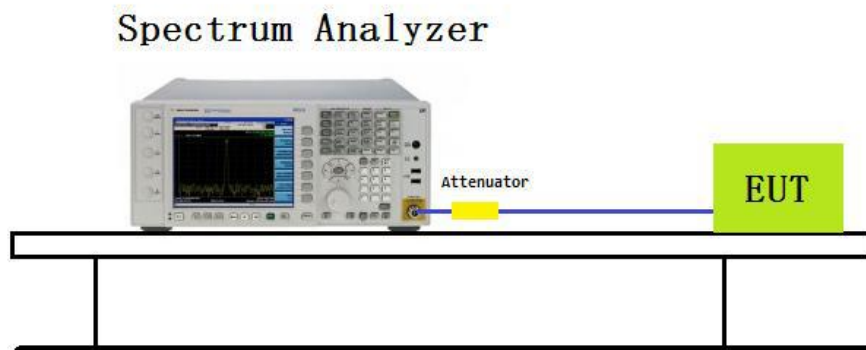
### 6.2 Test Standard

KDB 558074 D01v04– Section 8.2 Option 2

### 6.3 Test Procedures

1. Set RBW=100KHz
2. VBW $\geq$ 3 $\times$ RBW
3. Detector=Peak
4. Trace mode=Max hold
5. Sweep time=Auto couple
6. Allow the trace to stabilize
7. The Spectrum's automatic bandwidth measurement capability was used to perform the 6dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 6. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.

### 6.4 Test Setup Layout



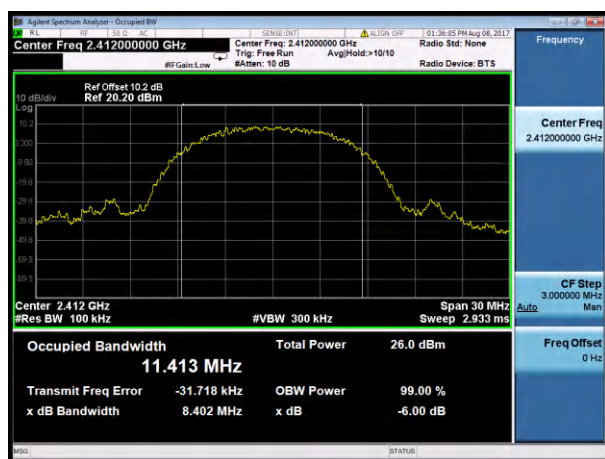


## 6.5 Test Result

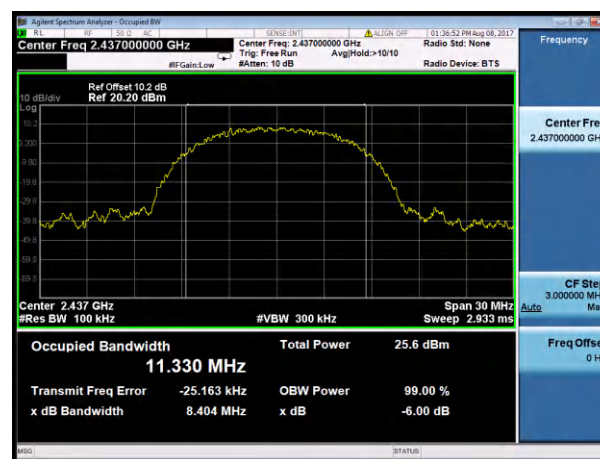
|           |                             |
|-----------|-----------------------------|
| Test Item | Occupied Bandwidth          |
| Test Mode | Mode 1: Transmit by 802.11b |

| Channel No. | Frequency(MHz) | 6dB Bandwidth(MHz) | 99% Bandwidth(MHz) |
|-------------|----------------|--------------------|--------------------|
| 1           | 2412           | 8.402              | 11.413             |
| 6           | 2437           | 8.404              | 11.330             |
| 11          | 2462           | 8.340              | 11.237             |

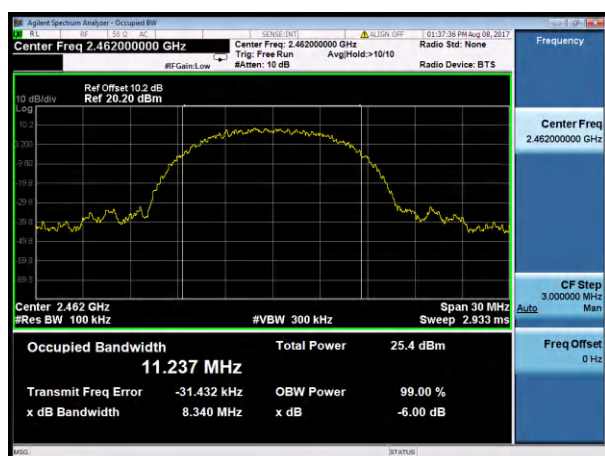
Channel 1 (2412MHz)



Channel 6 (2437MHz)



Channel 11 (2462MHz)

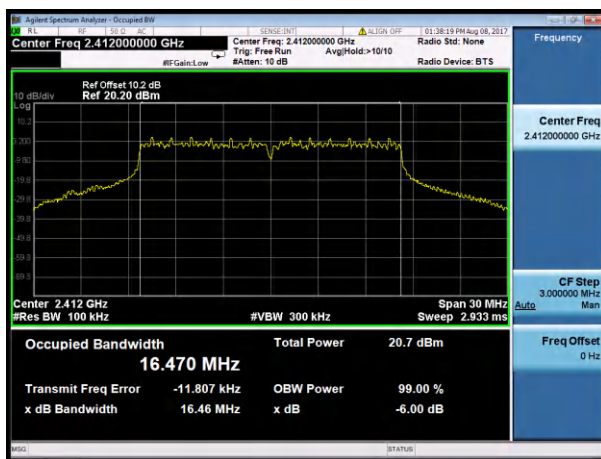




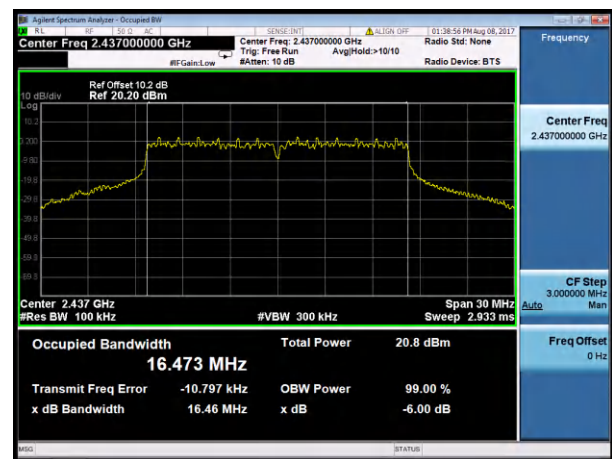
|           |                             |
|-----------|-----------------------------|
| Test Item | Occupied Bandwidth          |
| Test Mode | Mode 2: Transmit by 802.11g |

| Channel No. | Frequency(MHz) | 6dB Bandwidth(MHz) | 99% Bandwidth(MHz) |
|-------------|----------------|--------------------|--------------------|
| 1           | 2412           | 16.46              | 16.470             |
| 6           | 2437           | 16.46              | 16.473             |
| 11          | 2462           | 16.46              | 16.470             |

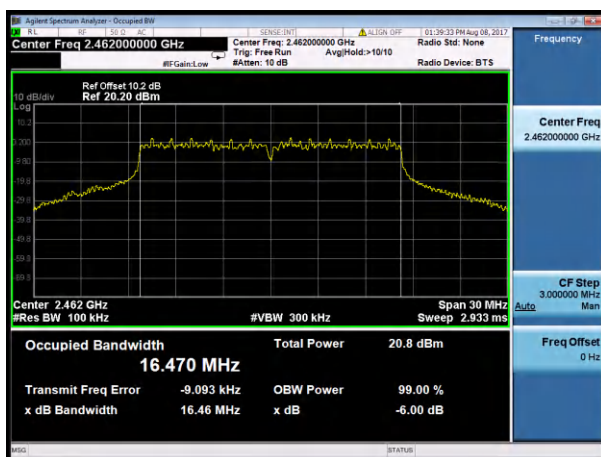
Channel 1 (2412MHz)



Channel 6 (2437MHz)



Channel 11 (2462MHz)

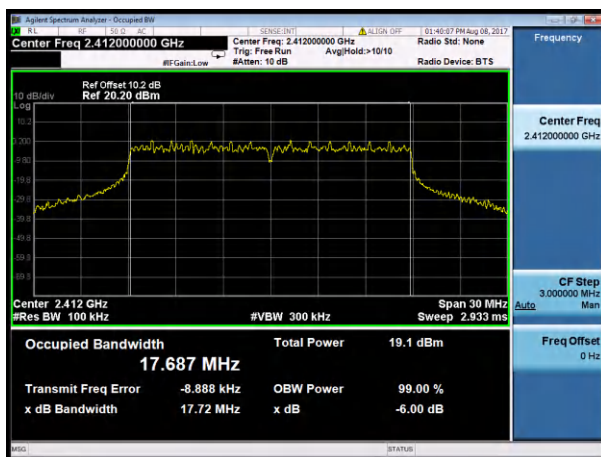




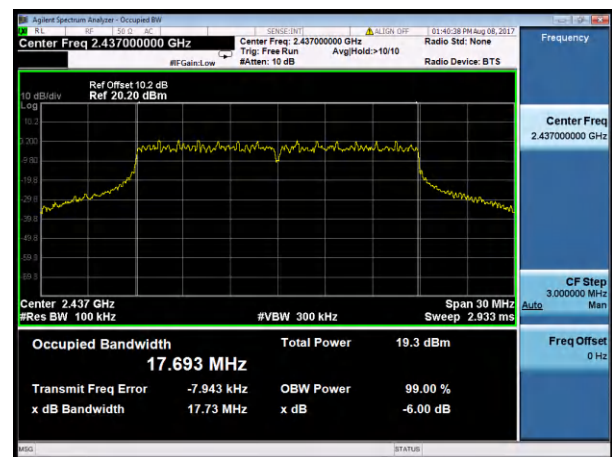
|           |                                    |
|-----------|------------------------------------|
| Test Item | Occupied Bandwidth                 |
| Test Mode | Mode 3: Transmit by 802.11n(20MHz) |

| Channel No. | Frequency(MHz) | 6dB Bandwidth(MHz) | 99% Bandwidth(MHz) |
|-------------|----------------|--------------------|--------------------|
| 1           | 2412           | 17.72              | 17.687             |
| 6           | 2437           | 17.73              | 17.693             |
| 11          | 2462           | 17.72              | 17.693             |

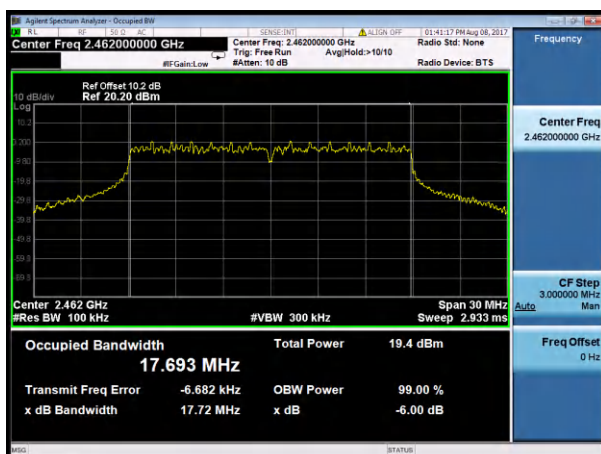
Channel 1 (2412MHz)



Channel 6 (2437MHz)



Channel 11 (2462MHz)





## 7. Output Power Measurement

### 7.1 Test Limit

According to FCC part15.247 (b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

Per RSS247 Issue 2 Section 5.4(d), for DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1W.

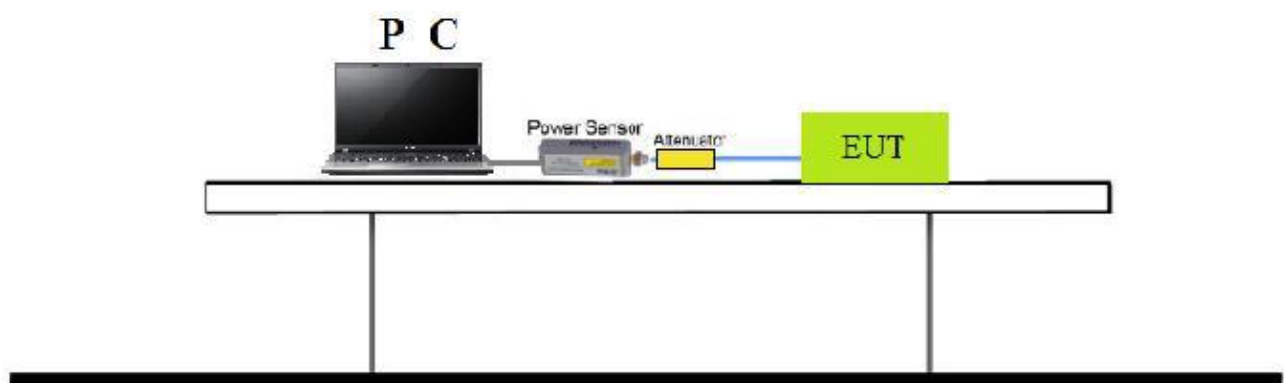
### 7.2 Test Standard

KDB 558074 D01v04 - Section 9.1.2 PKPM1 Peak Power Method (for signals with BW  $\leq$ 50MHz)

### 7.3 Test Procedures

Out power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The pulse sensor employs a VBW = 50MHz so this method was only used for signals whose DTS bandwidth was less than or equal to 50MHz.

### 7.4 Test Setup Layout





## 7.5 Test Result

### For Peak Power :

| Test Mode      | Channel No. | Frequency (MHz) | Peak Output Power (dBm) | Limit (dBm) | Result |
|----------------|-------------|-----------------|-------------------------|-------------|--------|
| 802.11b        | 1           | 2412            | 22.09                   | 30.         | Pass   |
|                | 6           | 2437            | 21.72                   | 30          | Pass   |
|                | 11          | 2462            | 21.29                   | 30.         | Pass   |
| 802.11g        | 1           | 2412            | 22.22                   | 30          | Pass   |
|                | 6           | 2437            | 22.34                   | 30.         | Pass   |
|                | 11          | 2462            | 22.24                   | 30          | Pass   |
| 802.11n(20MHz) | 1           | 2412            | 21.27                   | 30.         | Pass   |
|                | 6           | 2437            | 21.34                   | 30          | Pass   |
|                | 11          | 2462            | 21.11                   | 30.         | Pass   |

### For Average Power :

| Test Mode      | Channel No. | Frequency (MHz) | Average Output Power (dBm) | Limit (dBm) | Result |
|----------------|-------------|-----------------|----------------------------|-------------|--------|
| 802.11b        | 1           | 2412            | 15.44                      | 30.         | Pass   |
|                | 6           | 2437            | 15.31                      | 30          | Pass   |
|                | 11          | 2462            | 15.05                      | 30.         | Pass   |
| 802.11g        | 1           | 2412            | 10.41                      | 30          | Pass   |
|                | 6           | 2437            | 10.50                      | 30.         | Pass   |
|                | 11          | 2462            | 10.49                      | 30          | Pass   |
| 802.11n(20MHz) | 1           | 2412            | 8.77                       | 30.         | Pass   |
|                | 6           | 2437            | 8.85                       | 30          | Pass   |
|                | 11          | 2462            | 8.81                       | 30.         | Pass   |



## 8. Power Spectral Density Measurement

### 8.1 Test Limit

According to FCC part15.247 - Section (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. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

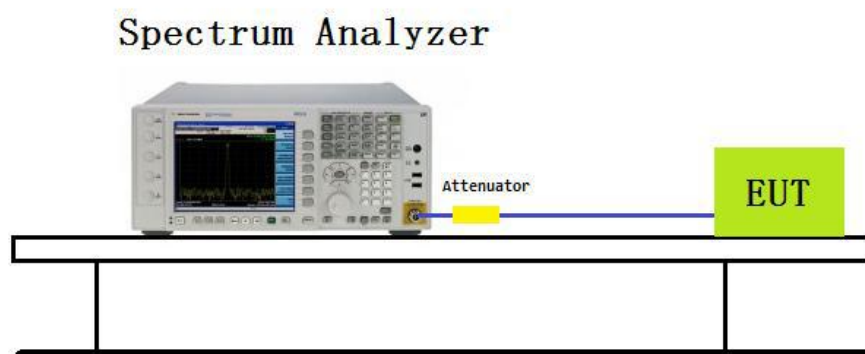
### 8.2 Test Standard

KDB 558074 D01v04- Section 10.2 Method PKPSD

### 8.3 Test Procedures

1. Set RBW=3kHz
2. Set RBW=10kHz
3. Span = 1.5 times the DTS channel bandwidth
4. Detector=Peak
5. Trace mode=Max hold
6. Sweep time=Auto couple
7. Allow the trace to stabilize
8. Analyzer was set to the center frequency of the DTS channel under investigation.

### 8.4 Test Setup Layout





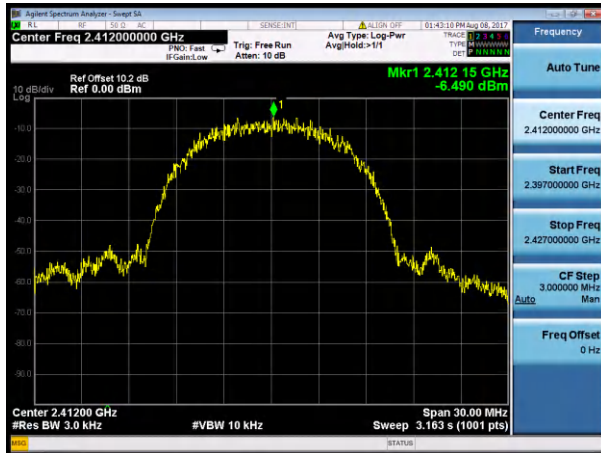
## 8.5 Test Result

| Test Mode      | Channel No. | Frequency(MHz) | Power Spectral Density<br>(dBm/3kHz) | Limit<br>(dBm/3kHz) | Result |
|----------------|-------------|----------------|--------------------------------------|---------------------|--------|
| 802.11b        | 1           | 2412           | -6.490                               | 8                   | Pass   |
|                | 6           | 2437           | -6.431                               | 8                   | Pass   |
|                | 11          | 2462           | -6.375                               | 8                   | Pass   |
| 802.11g        | 1           | 2412           | -11.172                              | 8                   | Pass   |
|                | 6           | 2437           | -12.529                              | 8                   | Pass   |
|                | 11          | 2462           | -12.493                              | 8                   | Pass   |
| 802.11n(20MHz) | 1           | 2412           | -14.226                              | 8                   | Pass   |
|                | 6           | 2437           | -14.046                              | 8                   | Pass   |
|                | 11          | 2462           | -14.045                              | 8                   | Pass   |

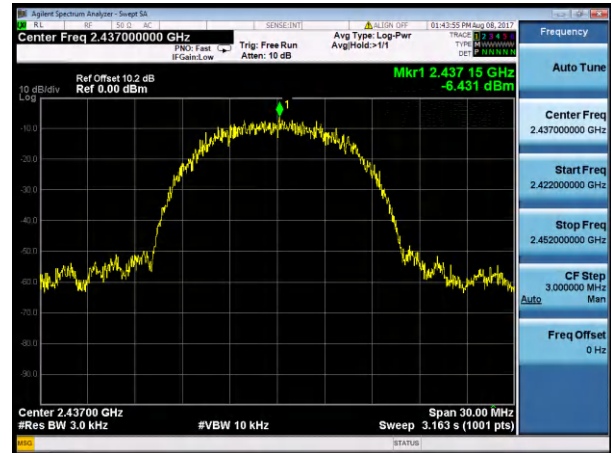


|           |                             |
|-----------|-----------------------------|
| Test Item | Power Spectral Density      |
| Test Mode | Mode 1: Transmit by 802.11b |

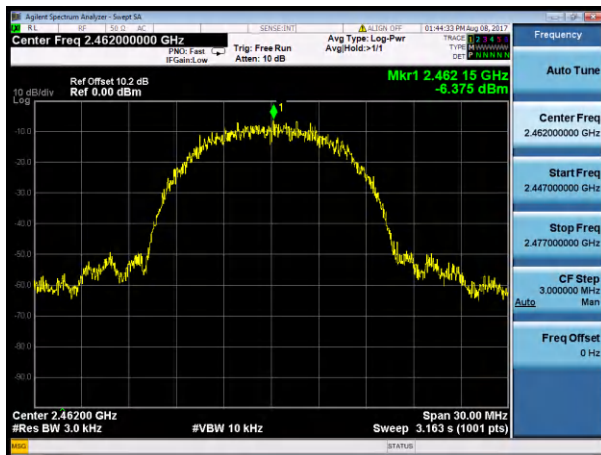
Channel 1 (2412MHz)



Channel 6 (2437MHz)



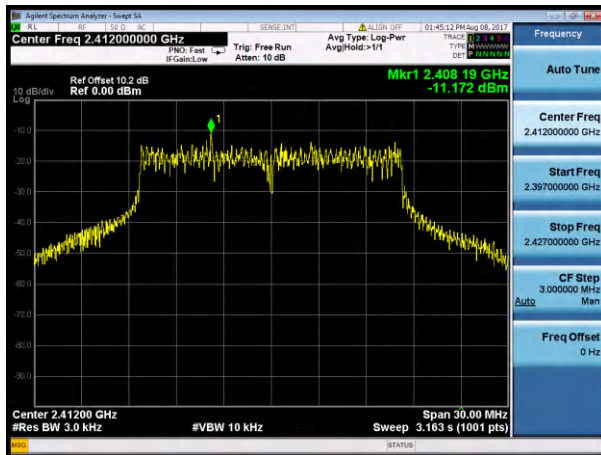
Channel 11 (2462MHz)



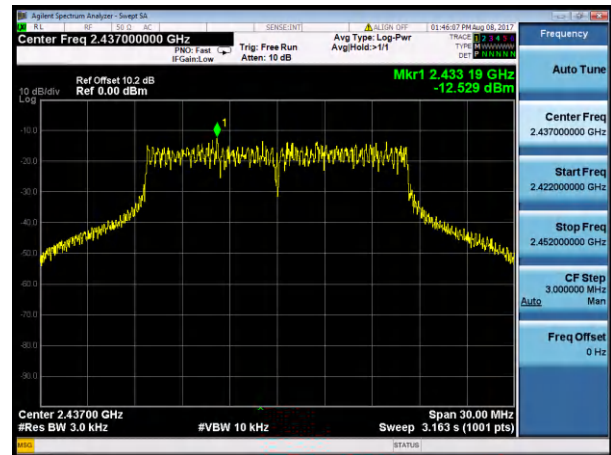


|           |                             |
|-----------|-----------------------------|
| Test Item | Power Spectral Density      |
| Test Mode | Mode 2: Transmit by 802.11g |

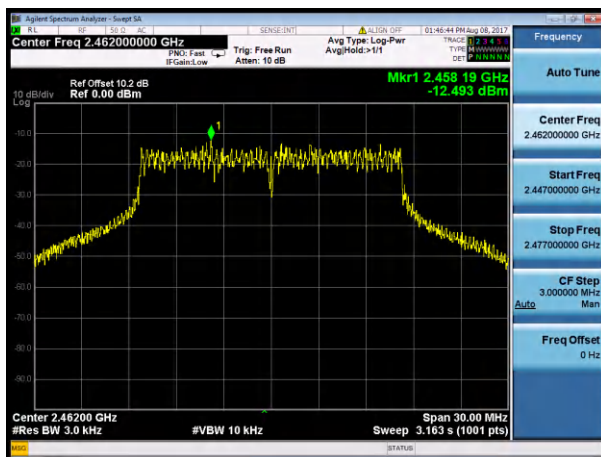
Channel 1 (2412MHz)



Channel 6 (2437MHz)



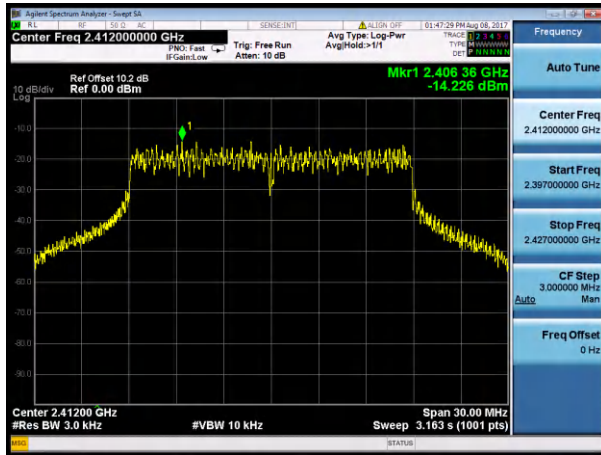
Channel 11 (2462MHz)



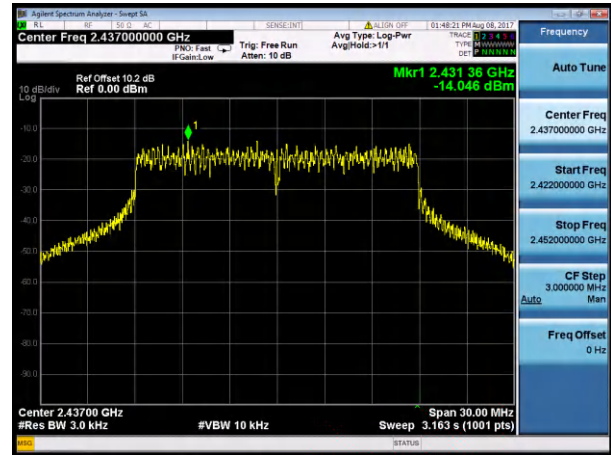


|           |                                    |
|-----------|------------------------------------|
| Test Item | Power Spectral Density             |
| Test Mode | Mode 3: Transmit by 802.11n(20MHz) |

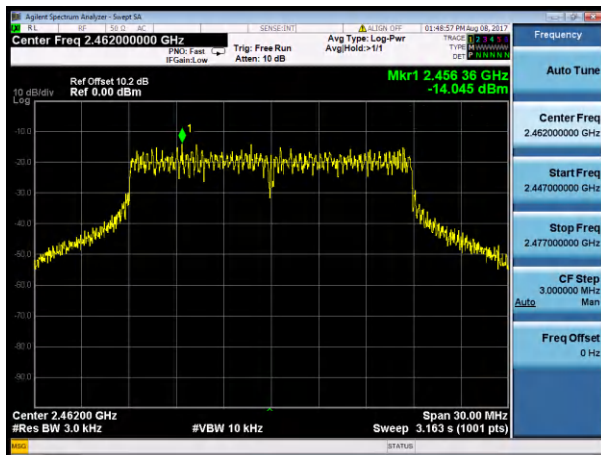
Channel 1 (2412MHz)



Channel 6 (2437MHz)



Channel 11 (2462MHz)





## **9. Conducted Band Edge and Out-of-Band Emissions Measurement**

### **9.1 Test Limit**

According to FCC part 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 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, 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) of FCC part 15 is not required.

### **9.2 Test Standard**

KDB 558074 D01v04 - Section 11.2 & Section 11.3



### 9.3 Test Procedures

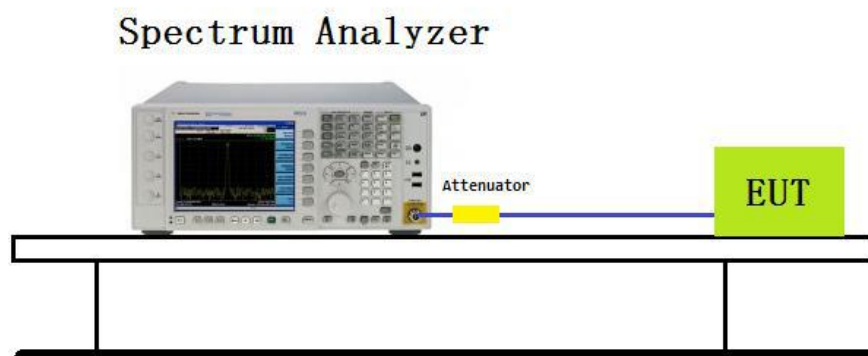
#### Reference level measurement:

1. Set the RBW = 100 kHz
2. Set the VBW  $\geq 3 \times$  RBW
3. Set the span to  $\geq 1.5$  times the DTS bandwidth
4. Detector = peak
5. Trace mode = max hold
6. Sweep time = auto couple
7. Allow trace to fully stabilize
8. Set instrument center frequency to DTS channel center frequency

#### Emission level measurement:

1. RBW = 100kHz
2. VBW = 300kHz
3. Detector = Peak
4. Trace mode = max hold
5. Sweep time = auto couple
6. The trace was allowed to stabilize
7. Set the center frequency and span to encompass frequency range to be measured

### 9.4 Test Setup Layout





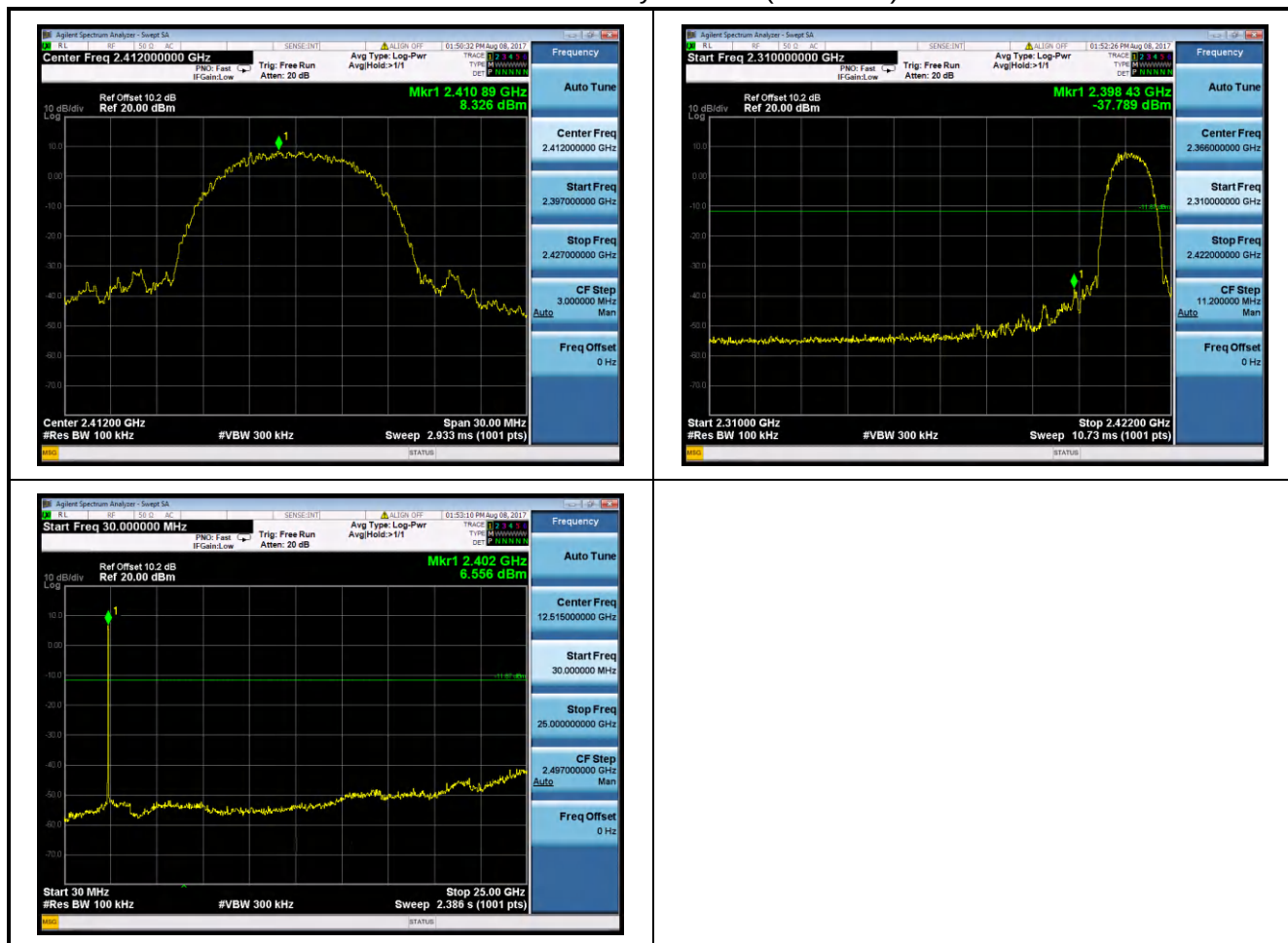
## 9.5 Test Result

| Test Mode      | Channel No. | Frequency (MHz) | Limit | Result |
|----------------|-------------|-----------------|-------|--------|
| 802.11b        | 1           | 2412            | 20dBc | Pass   |
|                | 6           | 2437            | 20dBc | Pass   |
|                | 11          | 2462            | 20dBc | Pass   |
| 802.11g        | 1           | 2412            | 20dBc | Pass   |
|                | 6           | 2437            | 20dBc | Pass   |
|                | 11          | 2462            | 20dBc | Pass   |
| 802.11n(20MHz) | 1           | 2412            | 20dBc | Pass   |
|                | 6           | 2437            | 20dBc | Pass   |
|                | 11          | 2462            | 20dBc | Pass   |



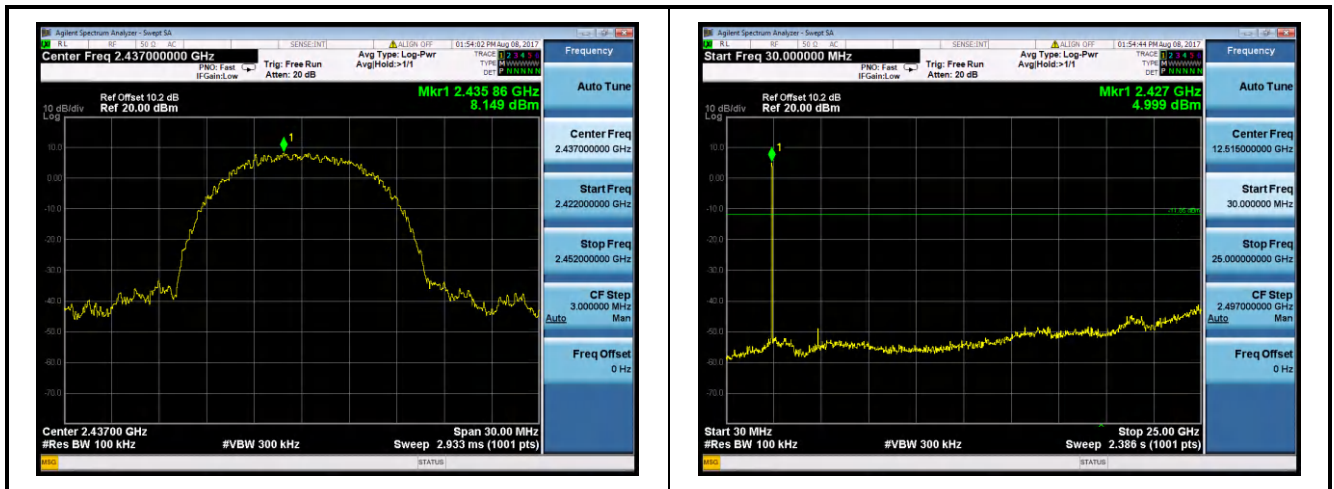
|           |   |                                               |
|-----------|---|-----------------------------------------------|
| Test Item | : | Conducted Band Edge and Out-of-Band Emissions |
| Test Mode | : | Mode 1: Transmit by 802.11b                   |

## Mode 1: Transmit by 802.11b (2412MHz)

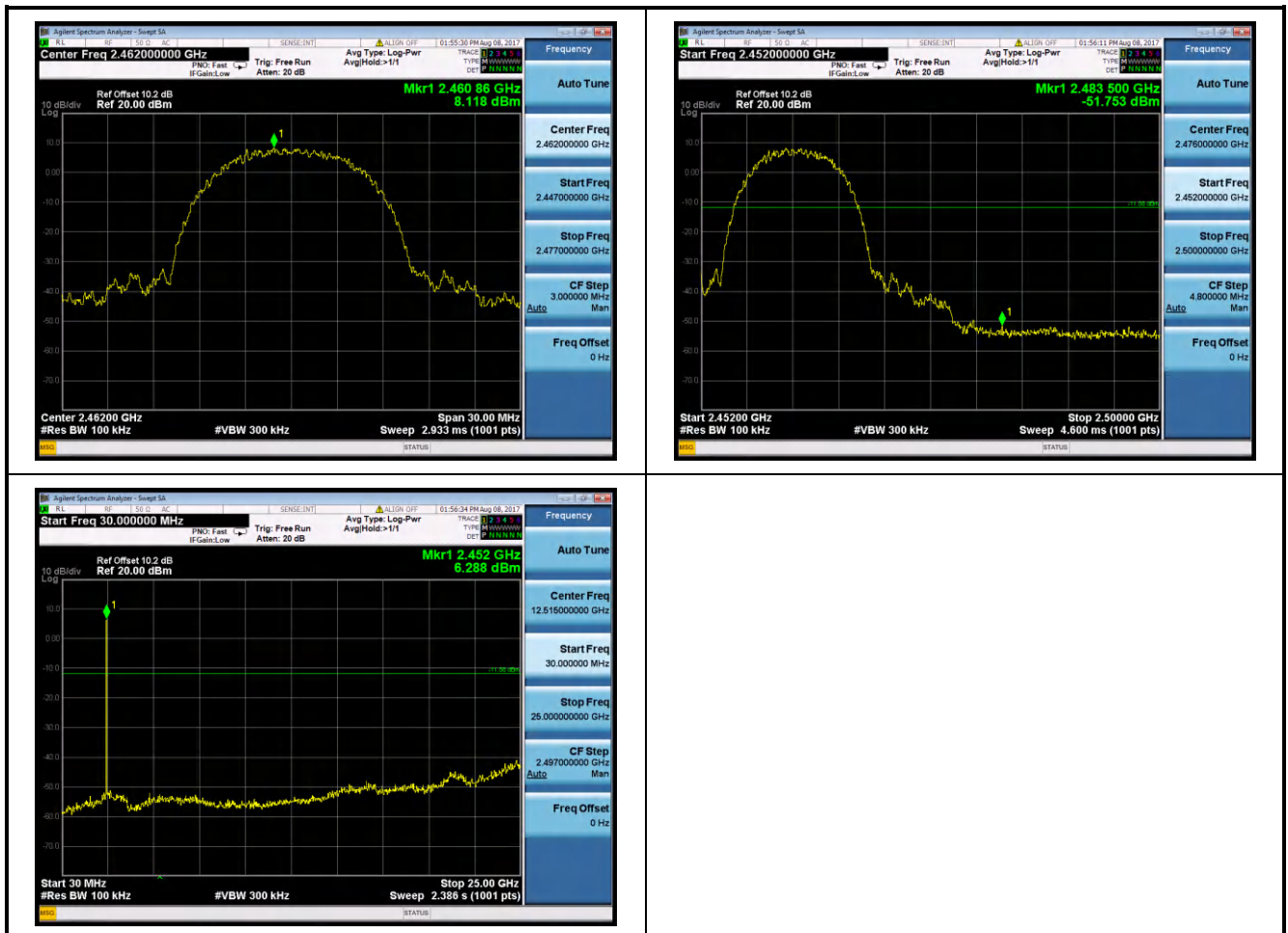




## Mode 1: Transmit by 802.11b (2437MHz)



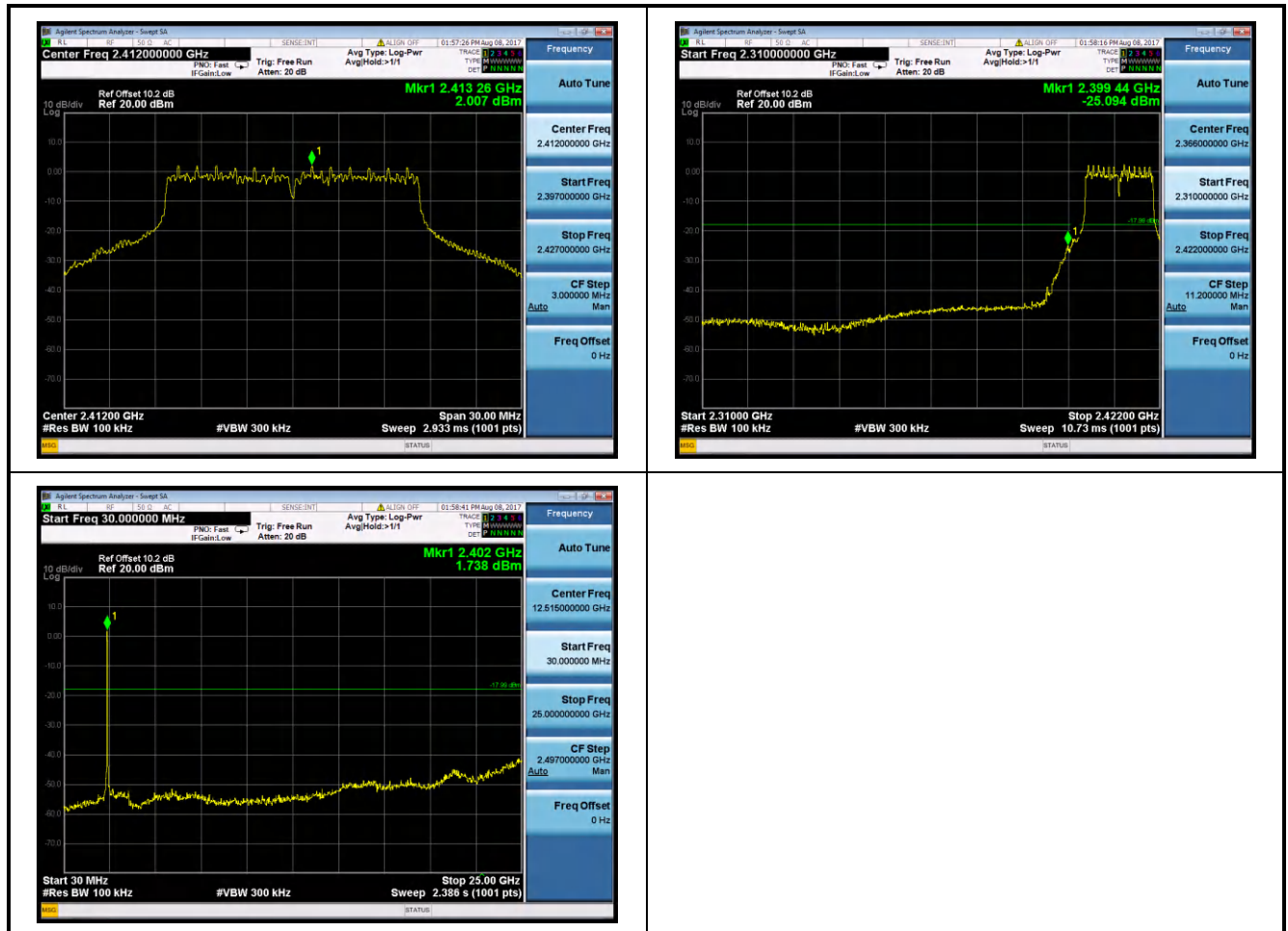
## Mode 1: Transmit by 802.11b (2462MHz)





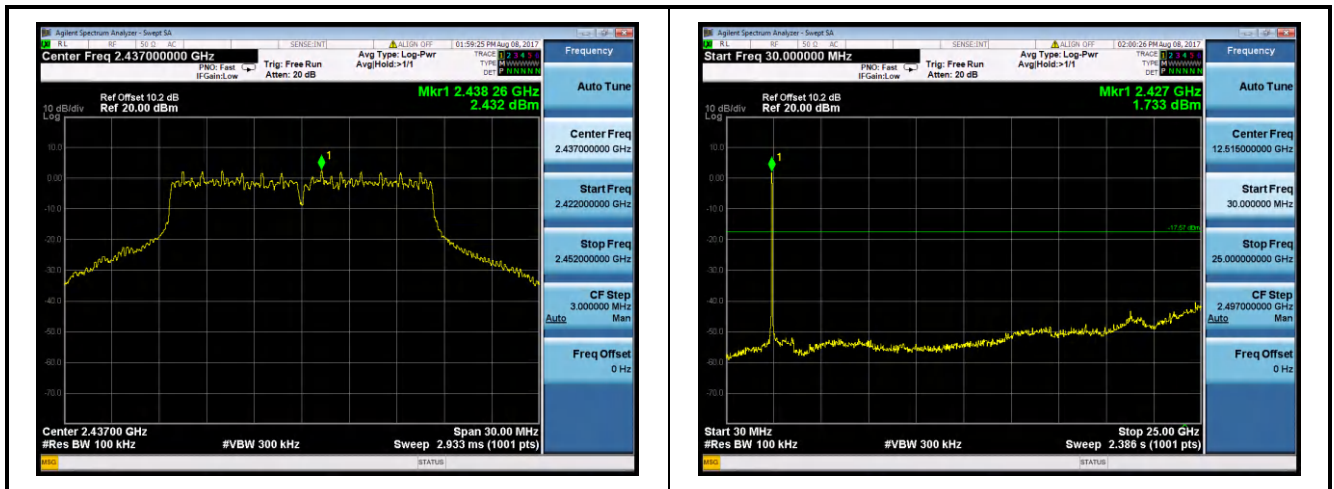
|           |   |                                                     |
|-----------|---|-----------------------------------------------------|
| Test Item | : | Band-edge Compliance & Conducted Spurious Emissions |
| Test Mode | : | Mode 2: Transmit by 802.11g                         |

Mode 2: Transmit by 802.11g (2412MHz)

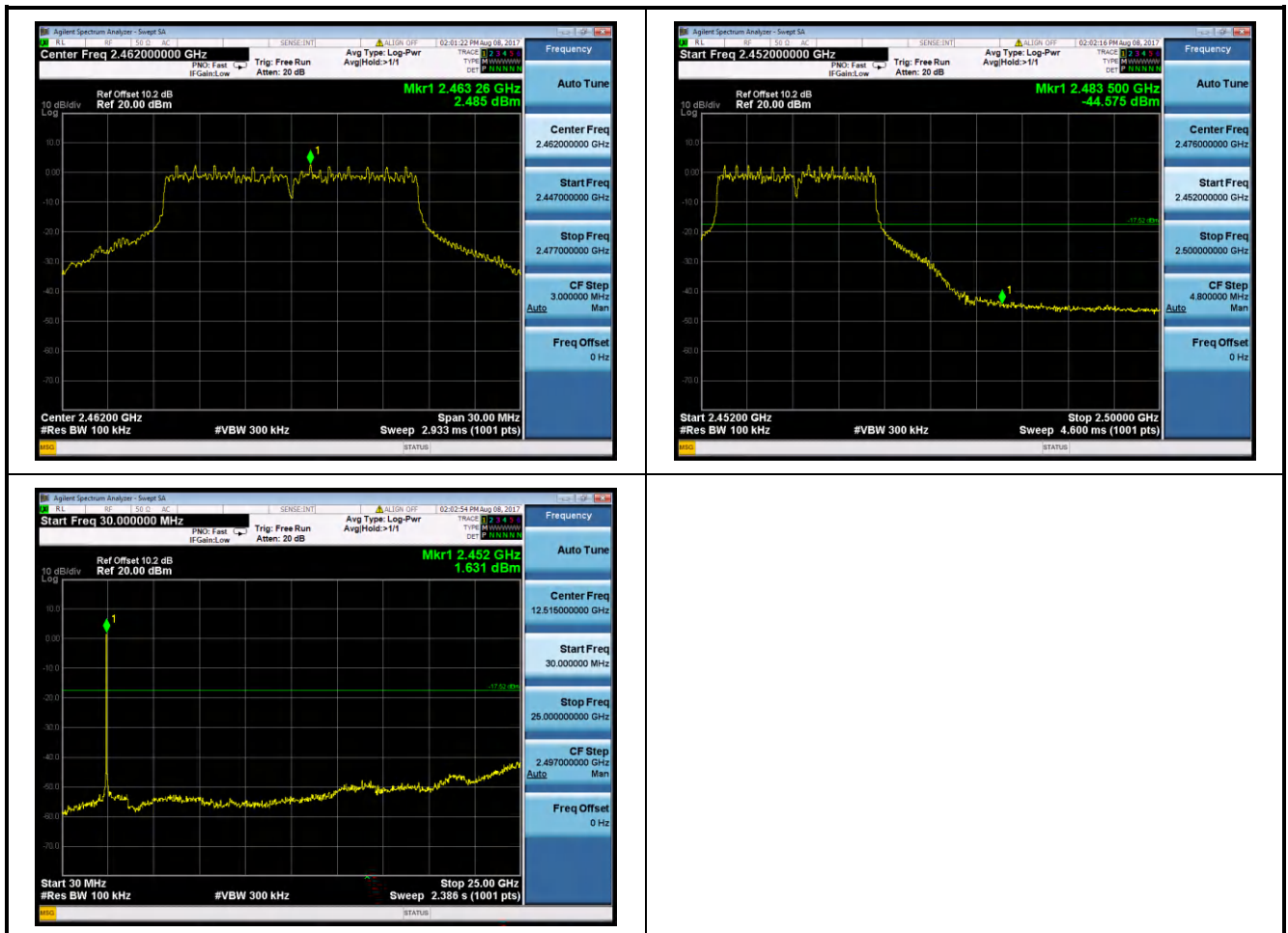




## Mode 2: Transmit by 802.11g (2437MHz)



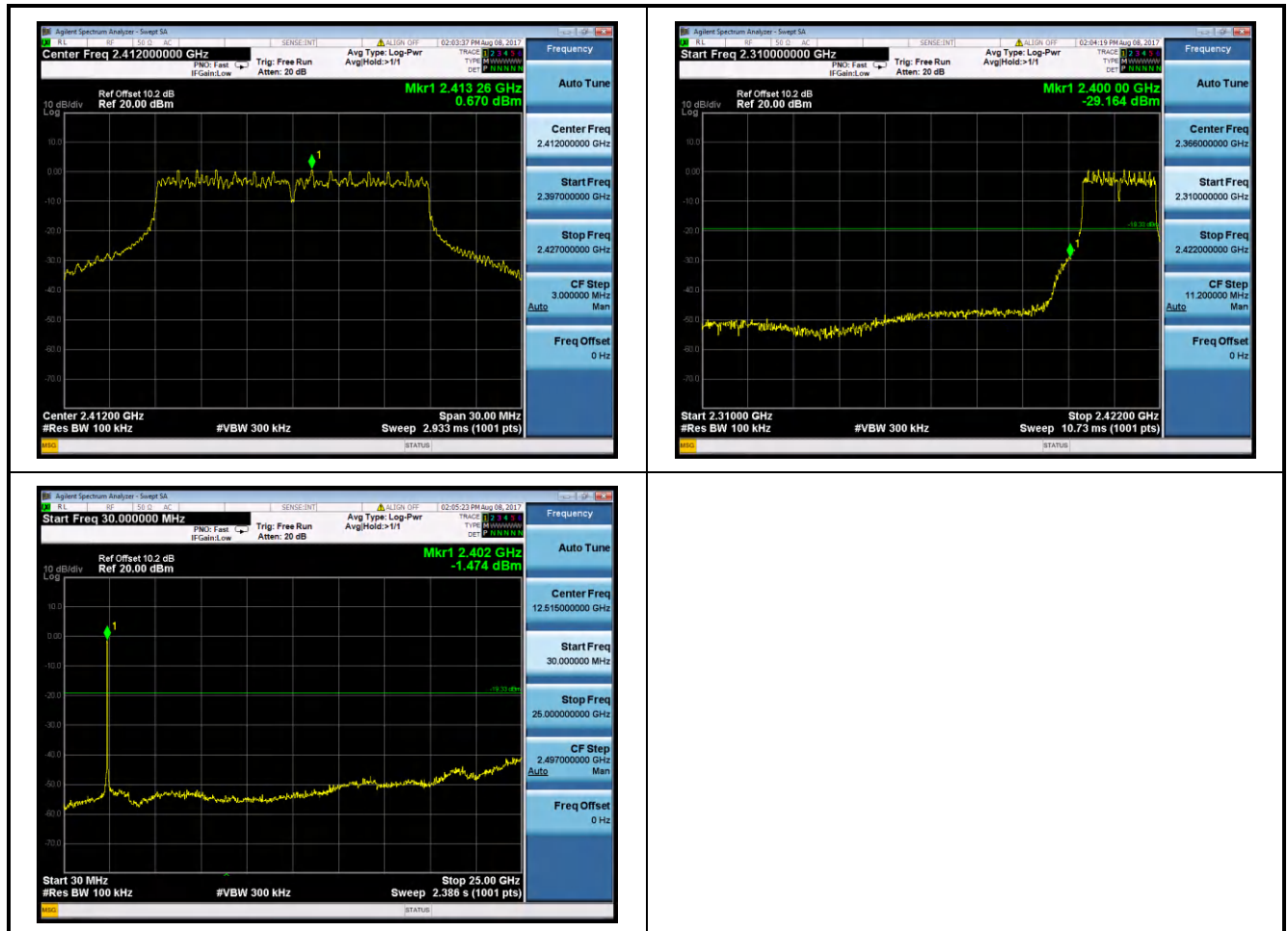
## Mode 2: Transmit by 802.11g (2462MHz)





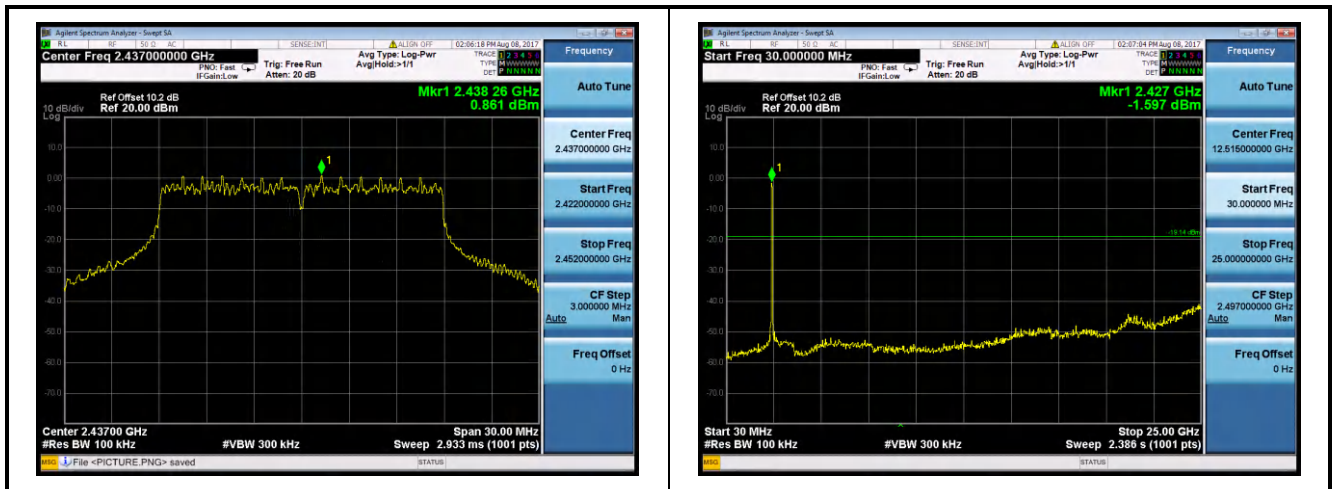
|           |   |                                                     |
|-----------|---|-----------------------------------------------------|
| Test Item | : | Band-edge Compliance & Conducted Spurious Emissions |
| Test Mode | : | Mode 3: Transmit by 802.11n(20MHz)                  |

Mode 3: Transmit by 802.11n(20MHz) (2412MHz)

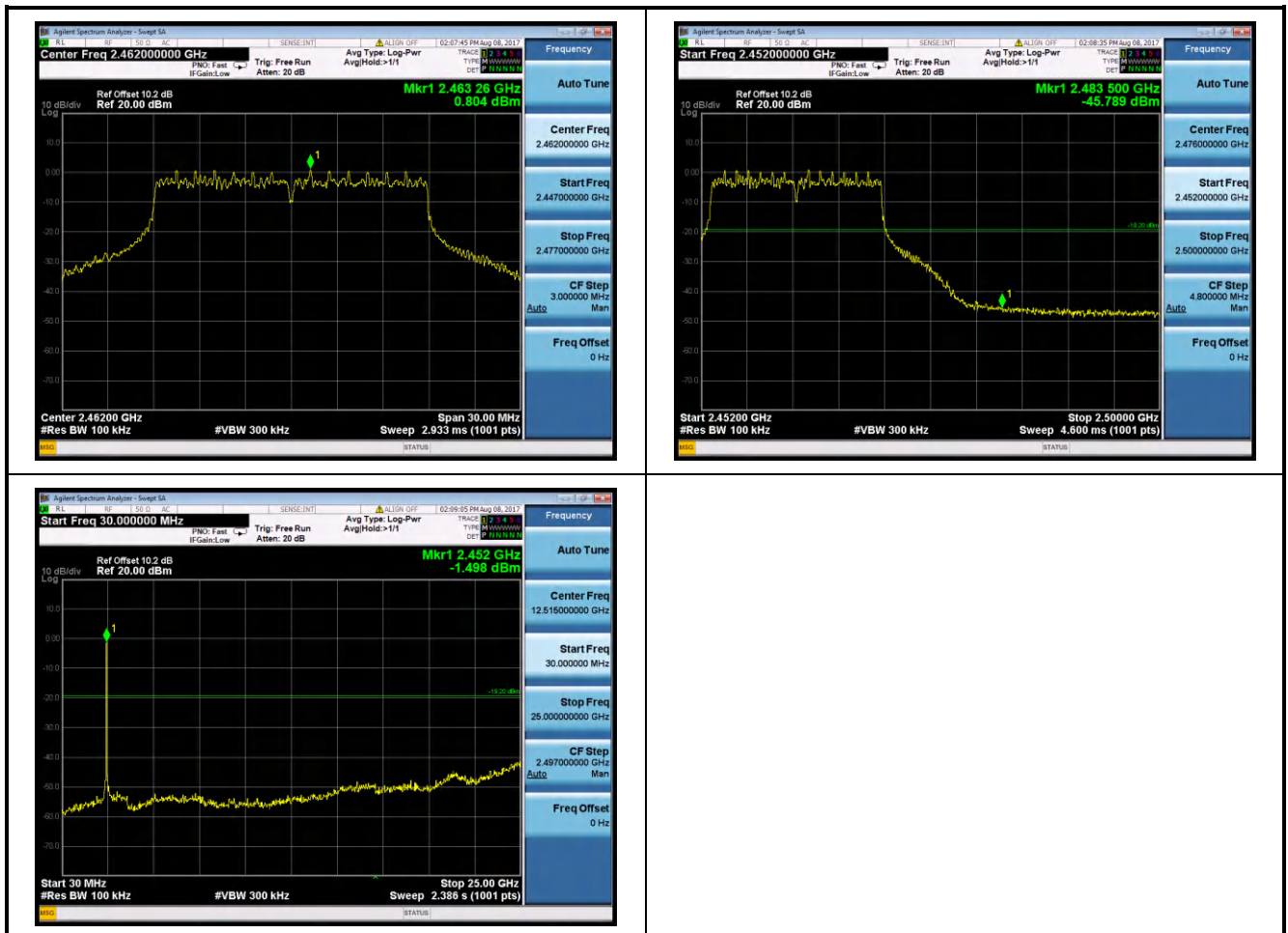




## Mode 3: Transmit by 802.11n(20MHz) (2437MHz)



## Mode 3: Transmit by 802.11n(20MHz) (2462MHz)





## 10. Radiated Emission Band Edge Measurement

### 10.1 Test Limit

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a) of FCC part 15.

### 10.2 Test Standard

ANSI C63.10-2013 Section 6.10.5

### 10.3 Test Procedure

Peak Field Strength Measurements:

Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

7. RBW=As specified in Table 1
8. VBW=3×RBW
9. Detector=Peak
10. Trace mode=Max hold
11. Sweep time=Auto couple
12. Allow the trace to stabilize

Table 1-RBW as a function of frequency

| Frequency    | RBW          |
|--------------|--------------|
| 9 ~ 150kHz   | 200 ~ 300Hz  |
| 0.15 ~ 30MHz | 9 ~ 10kHz    |
| 30 ~ 1000MHz | 100 ~ 120kHz |
| > 1000MHz    | 1MHz         |



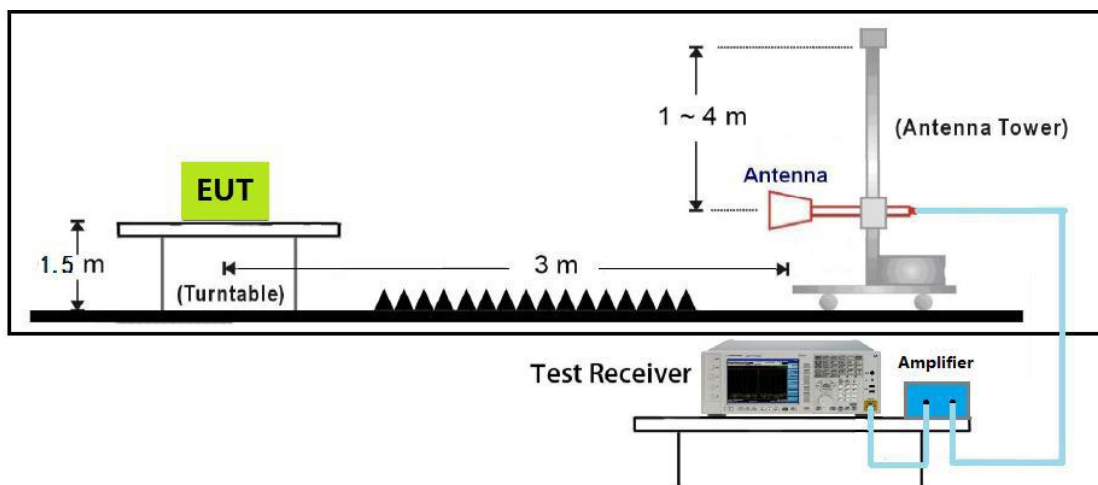
#### AVE Field Strength Measurements:

Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

7. RBW= 1MHz
8. VBW $\geq$ 1/T
9. Detector=Peak
10. Trace mode=Max hold
11. Sweep time=Auto couple
12. Allow max hold to run for at least 50 times(1/duty cycle) trace

Do as an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode

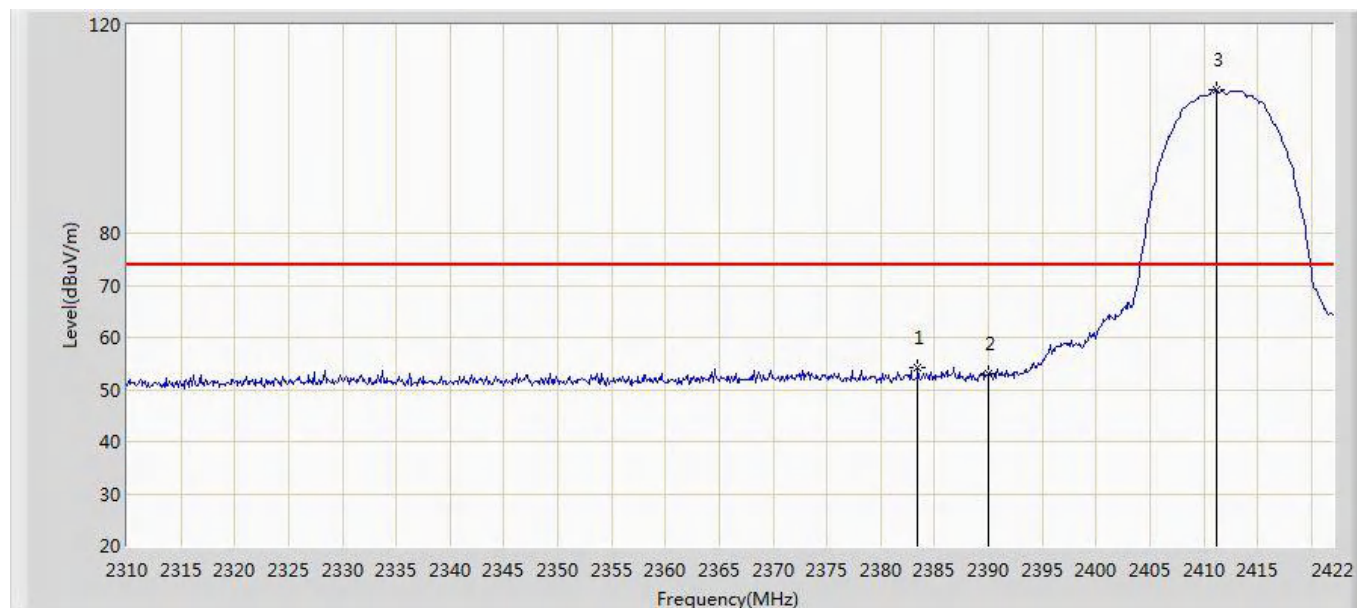
### 10.4 Test Setup Layout





## 10.5 Test Result

|                                        |                          |
|----------------------------------------|--------------------------|
| Site: AC102                            | Time: 2017/08/07 - 09:42 |
| Limit: FCC_Part15.209_RE(3m)           | Margin: 0                |
| Probe: N/A                             | Polarity: Horizontal     |
| EUT: WiFi Module                       | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11b at 2412MHz |                          |



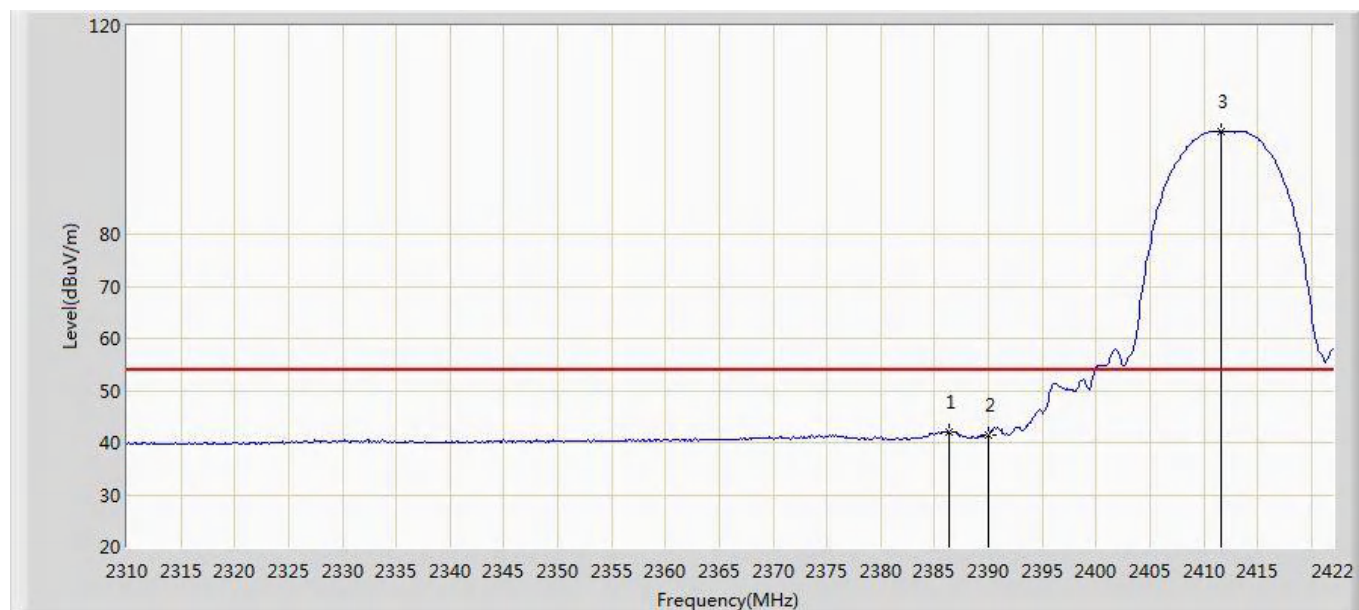
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  |      | 2383.472        | 54.332                 | 56.598               | -19.668         | 74.000         | -2.266      | PK   |
| 2  |      | 2390.000        | 52.916                 | 55.157               | -21.084         | 74.000         | -2.241      | PK   |
| 3  | *    | 2411.136        | 107.485                | 109.647              | N/A             | N/A            | -2.162      | PK   |

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                        |                          |
|----------------------------------------|--------------------------|
| Site: AC102                            | Time: 2017/08/07 - 09:52 |
| Limit: FCC_Part15.209_RE(3m)           | Margin: 0                |
| Probe: N/A                             | Polarity: Horizontal     |
| EUT: WiFi Module                       | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11b at 2412MHz |                          |



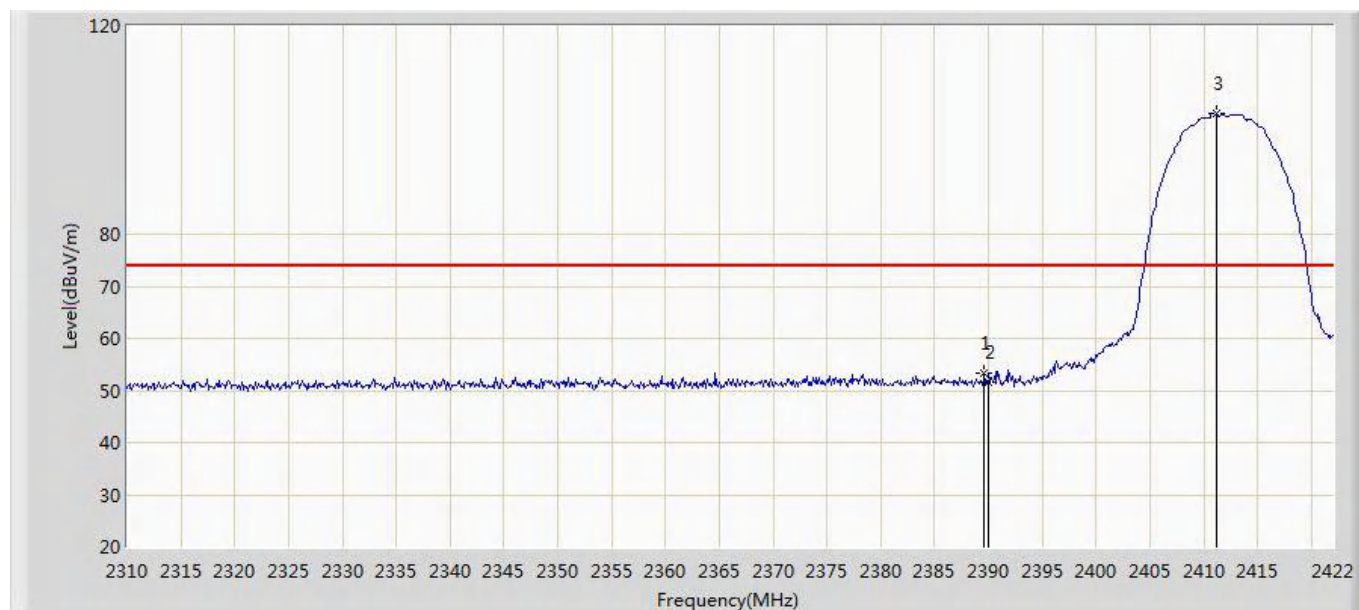
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  |      | 2386.384        | 41.998                 | 44.253               | -12.002         | 54.000         | -2.255      | AV   |
| 2  |      | 2390.000        | 41.458                 | 43.699               | -12.542         | 54.000         | -2.241      | AV   |
| 3  | *    | 2411.584        | 99.824                 | 101.985              | N/A             | N/A            | -2.161      | AV   |

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                        |                          |
|----------------------------------------|--------------------------|
| Site: AC102                            | Time: 2017/08/07 - 09:53 |
| Limit: FCC_Part15.209_RE(3m)           | Margin: 0                |
| Probe: N/A                             | Polarity: Vertical       |
| EUT: WiFi Module                       | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11b at 2412MHz |                          |



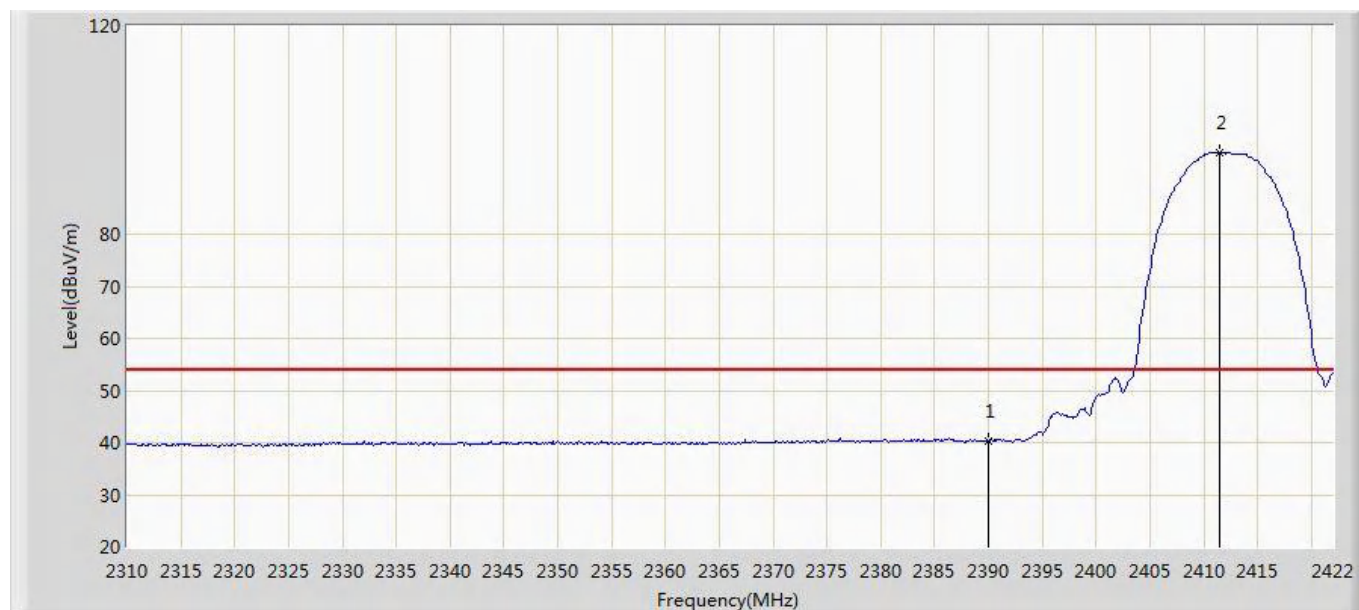
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  |      | 2389.632        | 53.398                 | 55.640               | -20.602         | 74.000         | -2.242      | PK   |
| 2  |      | 2390.000        | 51.638                 | 53.879               | -22.362         | 74.000         | -2.241      | PK   |
| 3  | *    | 2411.248        | 103.099                | 105.261              | N/A             | N/A            | -2.162      | PK   |

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                        |                          |
|----------------------------------------|--------------------------|
| Site: AC102                            | Time: 2017/08/07 - 09:59 |
| Limit: FCC_Part15.209_RE(3m)           | Margin: 0                |
| Probe: N/A                             | Polarity: Vertical       |
| EUT: WiFi Module                       | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11b at 2412MHz |                          |



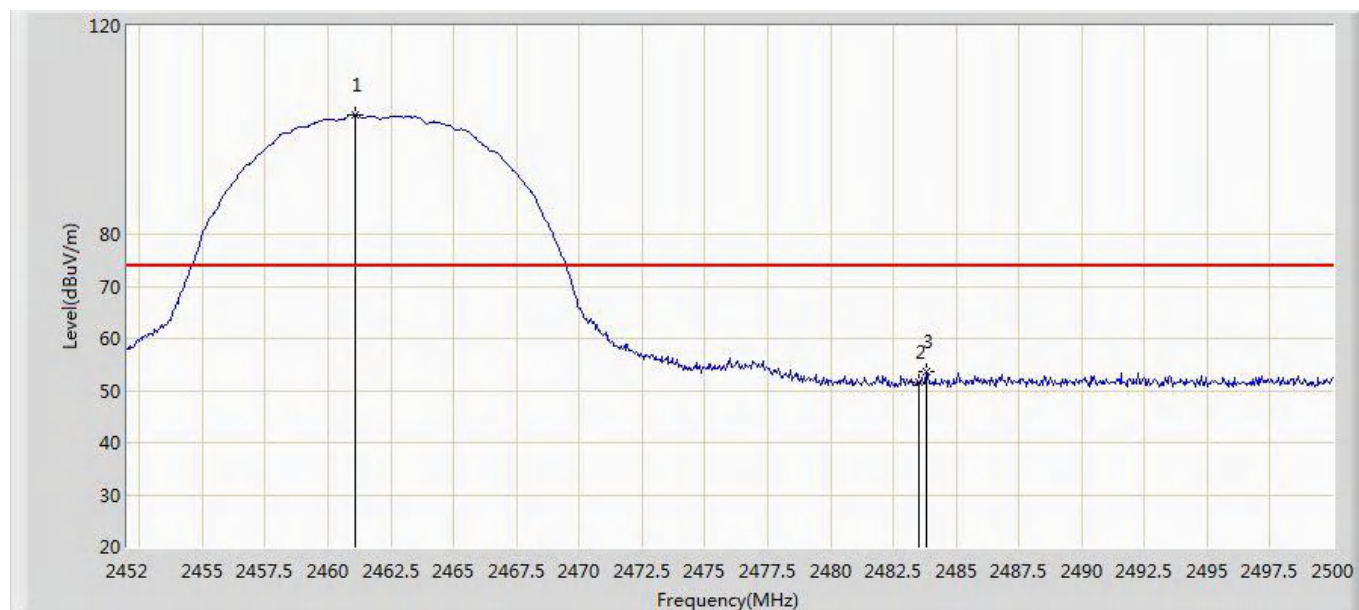
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  |      | 2390.000        | 40.249                 | 42.490               | -13.751         | 54.000         | -2.241      | AV   |
| 2  | *    | 2411.472        | 95.668                 | 97.829               | N/A             | N/A            | -2.161      | AV   |

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                        |                          |
|----------------------------------------|--------------------------|
| Site: AC102                            | Time: 2017/08/07 - 09:59 |
| Limit: FCC_Part15.209_RE(3m)           | Margin: 0                |
| Probe: N/A                             | Polarity: Vertical       |
| EUT: WiFi Module                       | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11b at 2462MHz |                          |



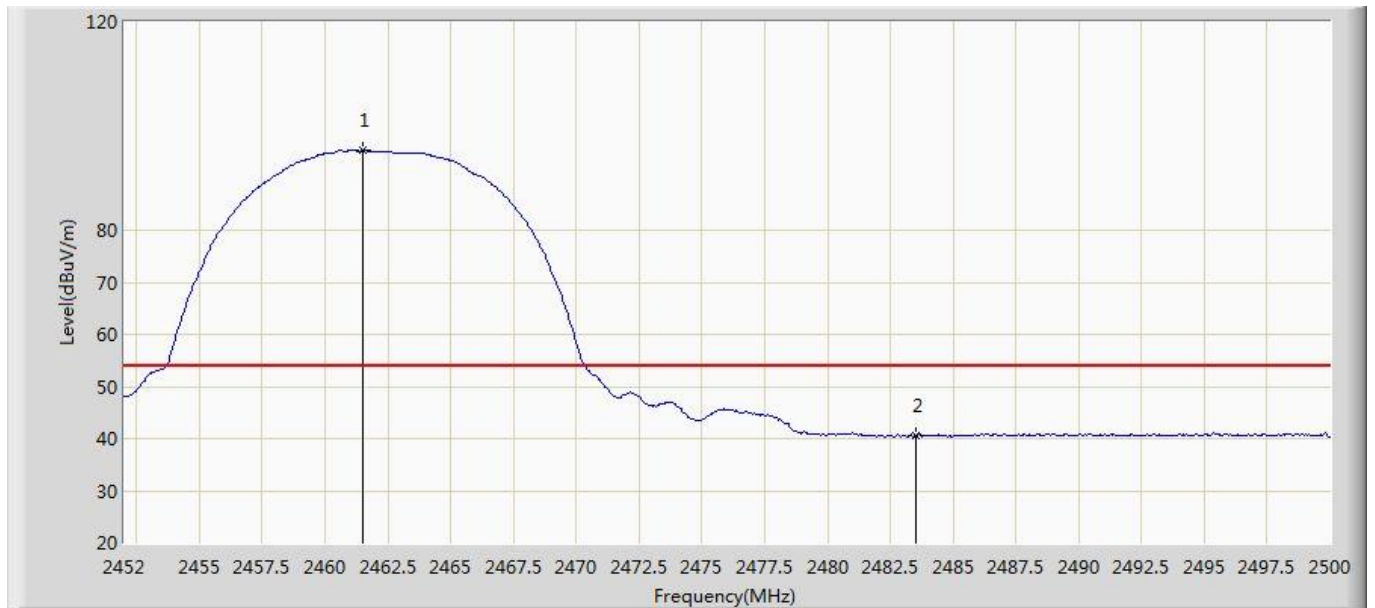
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  | *    | 2461.072        | 102.992                | 104.967              | N/A             | N/A            | -1.975      | PK   |
| 2  |      | 2483.500        | 51.645                 | 53.537               | -22.355         | 74.000         | -1.892      | PK   |
| 3  |      | 2483.824        | 53.634                 | 55.525               | -20.366         | 74.000         | -1.891      | PK   |

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                        |                          |
|----------------------------------------|--------------------------|
| Site: AC102                            | Time: 2017/08/07 - 10:04 |
| Limit: FCC_Part15.209_RE(3m)           | Margin: 0                |
| Probe: N/A                             | Polarity: Vertical       |
| EUT: WiFi Module                       | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11b at 2462MHz |                          |



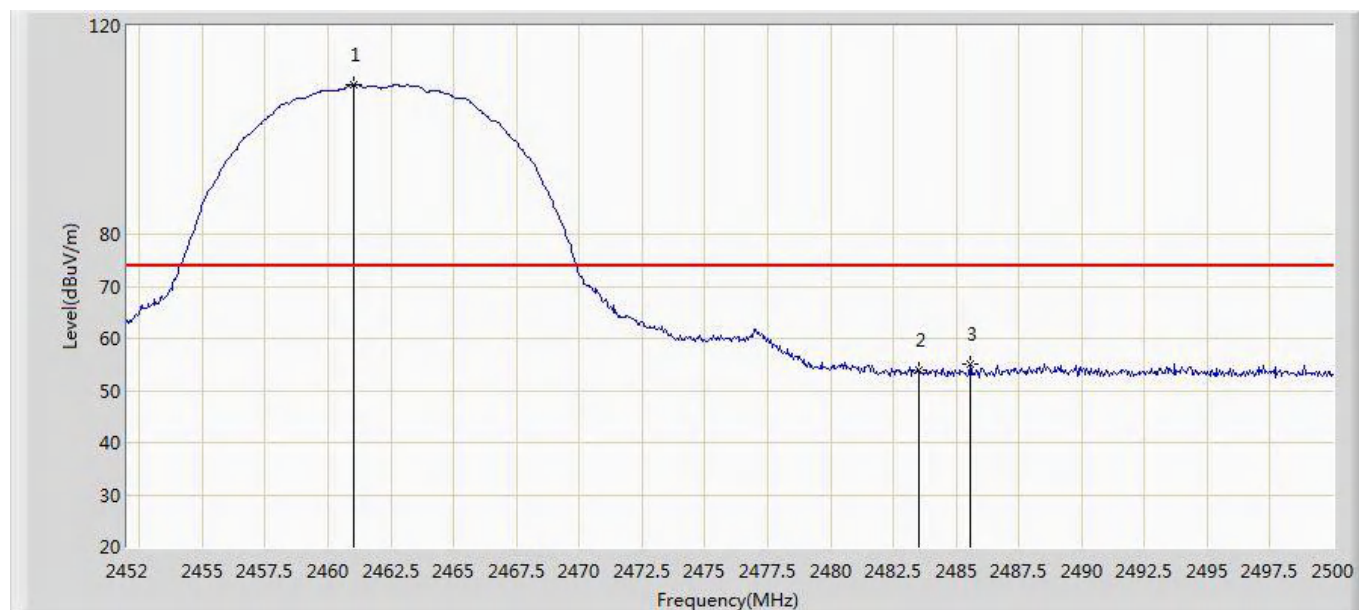
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  | *    | 2461.504        | 95.240                 | 97.214               | N/A             | N/A            | -1.974      | AV   |
| 2  |      | 2483.500        | 40.461                 | 42.353               | -13.539         | 54.000         | -1.892      | AV   |

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                        |                          |
|----------------------------------------|--------------------------|
| Site: AC102                            | Time: 2017/08/07 - 10:04 |
| Limit: FCC_Part15.209_RE(3m)           | Margin: 0                |
| Probe: N/A                             | Polarity: Horizontal     |
| EUT: WiFi Module                       | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11b at 2462MHz |                          |



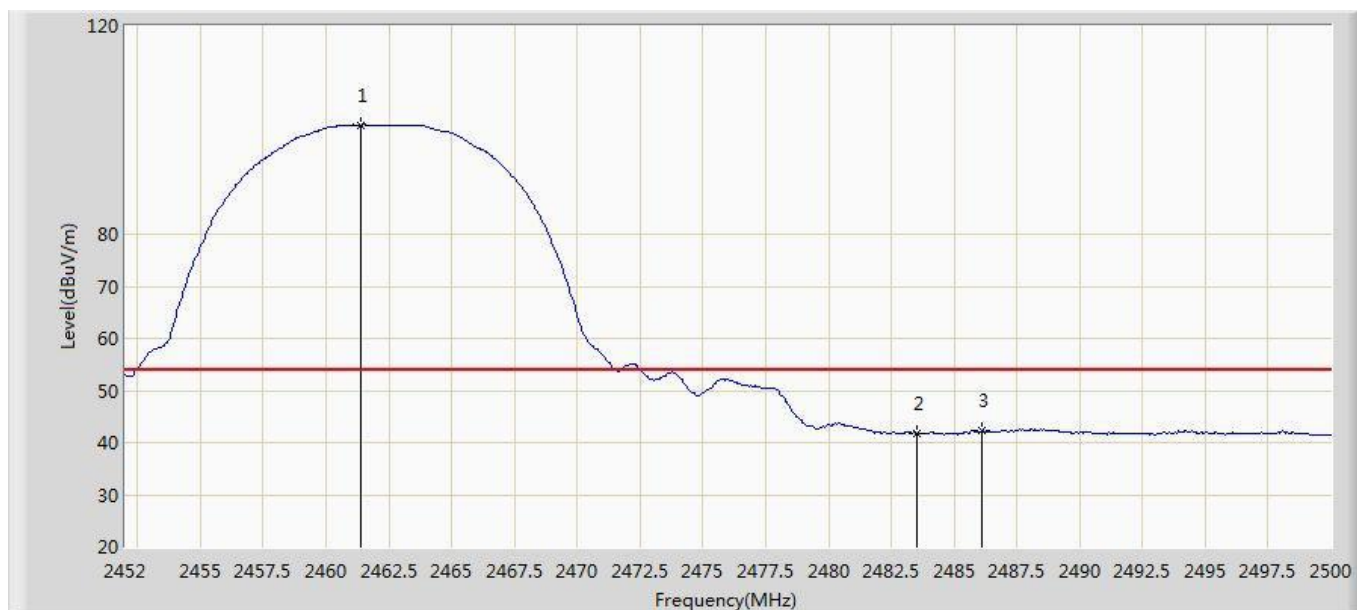
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  | *    | 2461.024        | 108.783                | 110.759              | N/A             | N/A            | -1.976      | PK   |
| 2  |      | 2483.500        | 53.825                 | 55.717               | -20.175         | 74.000         | -1.892      | PK   |
| 3  |      | 2485.552        | 55.163                 | 57.047               | -18.837         | 74.000         | -1.884      | PK   |

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                        |                          |
|----------------------------------------|--------------------------|
| Site: AC102                            | Time: 2017/08/07 - 10:08 |
| Limit: FCC_Part15.209_RE(3m)           | Margin: 0                |
| Probe: N/A                             | Polarity: Horizontal     |
| EUT: WiFi Module                       | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11b at 2462MHz |                          |



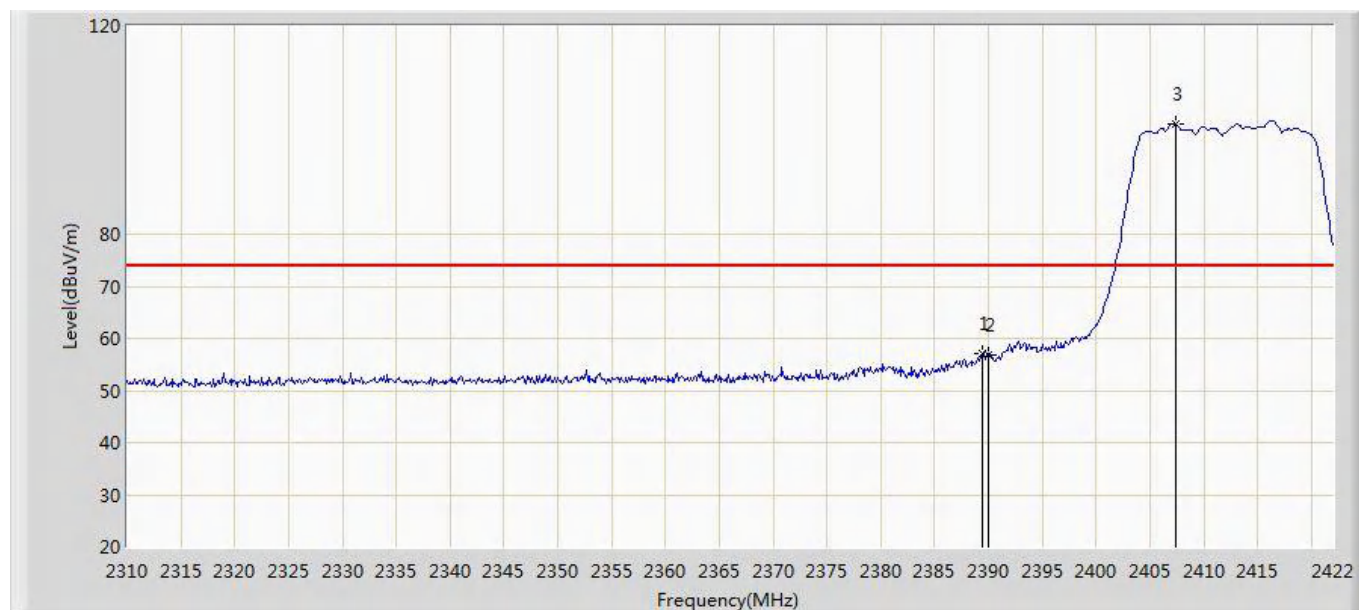
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  | *    | 2461.360        | 100.944                | 102.918              | N/A             | N/A            | -1.974      | AV   |
| 2  |      | 2483.500        | 41.692                 | 43.584               | -12.308         | 54.000         | -1.892      | AV   |
| 3  |      | 2486.128        | 42.337                 | 44.219               | -11.663         | 54.000         | -1.882      | AV   |

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                        |                          |
|----------------------------------------|--------------------------|
| Site: AC102                            | Time: 2017/08/07 - 10:08 |
| Limit: FCC_Part15.209_RE(3m)           | Margin: 0                |
| Probe: N/A                             | Polarity: Horizontal     |
| EUT: WiFi Module                       | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11g at 2412MHz |                          |



| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  |      | 2389.408        | 57.061                 | 59.304               | -16.939         | 74.000         | -2.243      | PK   |
| 2  |      | 2390.000        | 56.777                 | 59.018               | -17.223         | 74.000         | -2.241      | PK   |
| 3  | *    | 2407.440        | 101.213                | 103.389              | N/A             | N/A            | -2.176      | PK   |

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                        |                          |
|----------------------------------------|--------------------------|
| Site: AC102                            | Time: 2017/08/07 - 10:10 |
| Limit: FCC_Part15.209_RE(3m)           | Margin: 0                |
| Probe: N/A                             | Polarity: Horizontal     |
| EUT: WiFi Module                       | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11g at 2412MHz |                          |



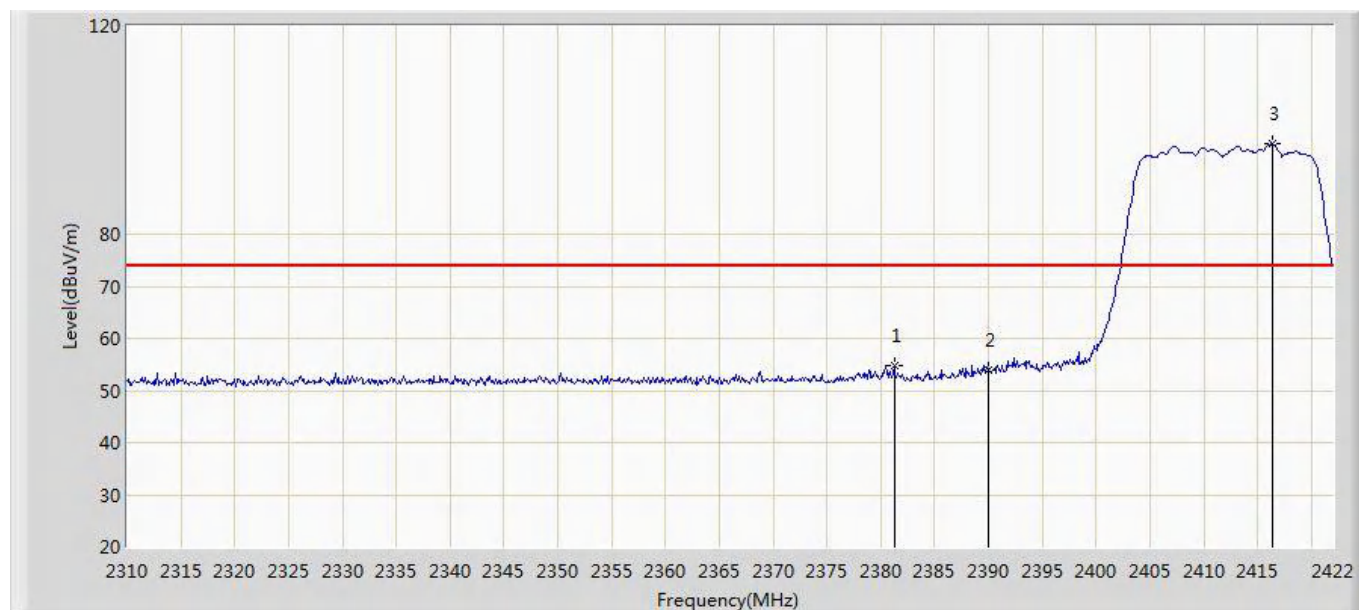
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  |      | 2388.960        | 44.582                 | 46.827               | -9.418          | 54.000         | -2.245      | AV   |
| 2  |      | 2390.000        | 44.064                 | 46.305               | -9.936          | 54.000         | -2.241      | AV   |
| 3  | *    | 2407.776        | 92.919                 | 95.094               | N/A             | N/A            | -2.175      | AV   |

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                        |                          |
|----------------------------------------|--------------------------|
| Site: AC102                            | Time: 2017/08/07 - 10:11 |
| Limit: FCC_Part15.209_RE(3m)           | Margin: 0                |
| Probe: N/A                             | Polarity: Vertical       |
| EUT: WiFi Module                       | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11g at 2412MHz |                          |



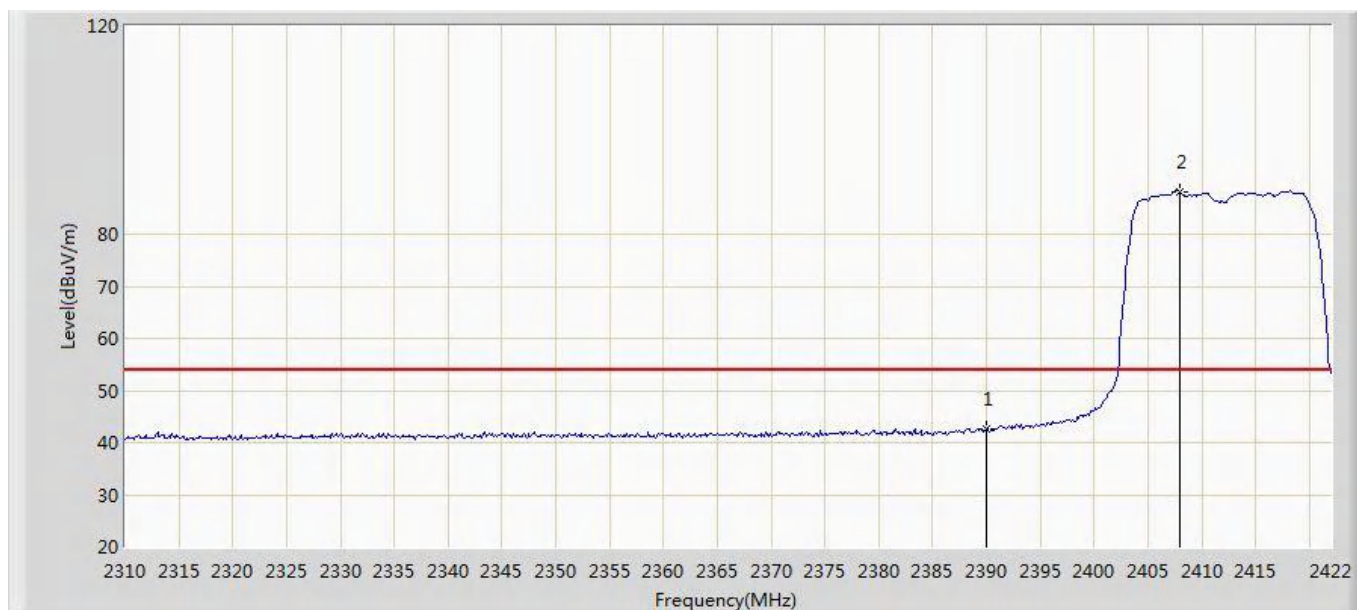
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  |      | 2381.232        | 54.705                 | 56.979               | -19.295         | 74.000         | -2.274      | PK   |
| 2  |      | 2390.000        | 53.971                 | 56.212               | -20.029         | 74.000         | -2.241      | PK   |
| 3  | *    | 2416.400        | 97.274                 | 99.417               | N/A             | N/A            | -2.143      | PK   |

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                        |                          |
|----------------------------------------|--------------------------|
| Site: AC102                            | Time: 2017/08/07 - 10:13 |
| Limit: FCC_Part15.209_RE(3m)           | Margin: 0                |
| Probe: N/A                             | Polarity: Vertical       |
| EUT: WiFi Module                       | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11g at 2412MHz |                          |



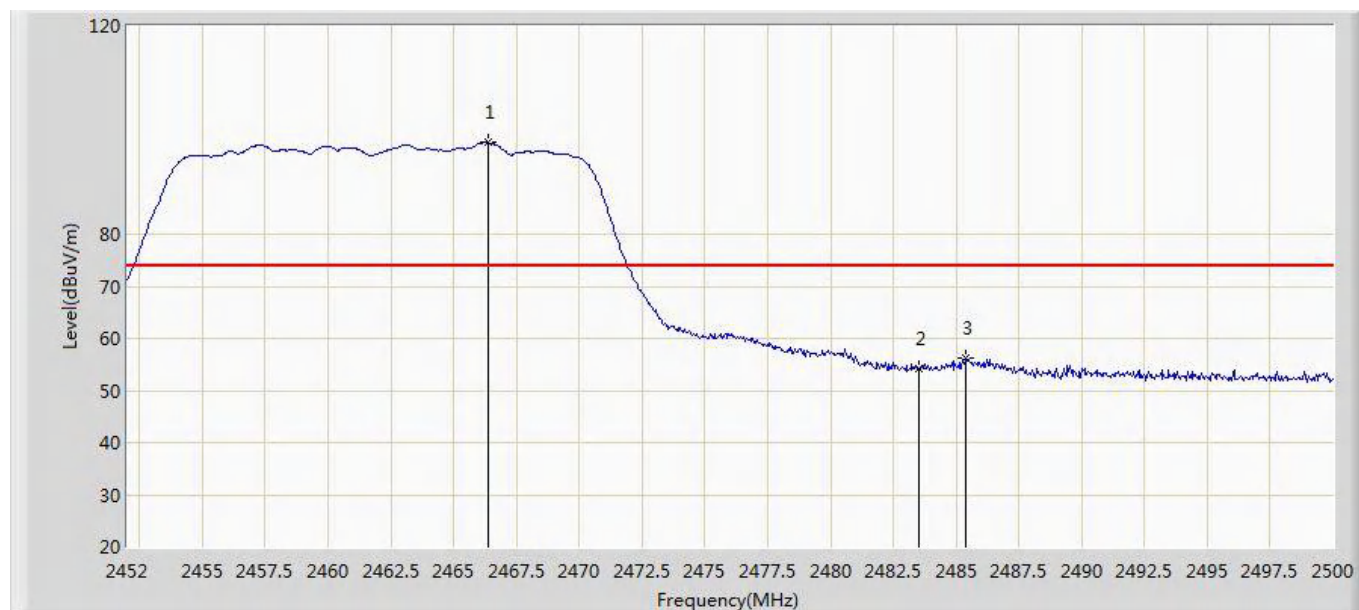
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  |      | 2390.000        | 42.559                 | 44.800               | -11.441         | 54.000         | -2.241      | AV   |
| 2  | *    | 2408.000        | 88.243                 | 90.417               | N/A             | N/A            | -2.174      | AV   |

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                        |                          |
|----------------------------------------|--------------------------|
| Site: AC102                            | Time: 2017/08/07 - 10:14 |
| Limit: FCC_Part15.209_RE(3m)           | Margin: 0                |
| Probe: N/A                             | Polarity: Vertical       |
| EUT: WiFi Module                       | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11g at 2462MHz |                          |



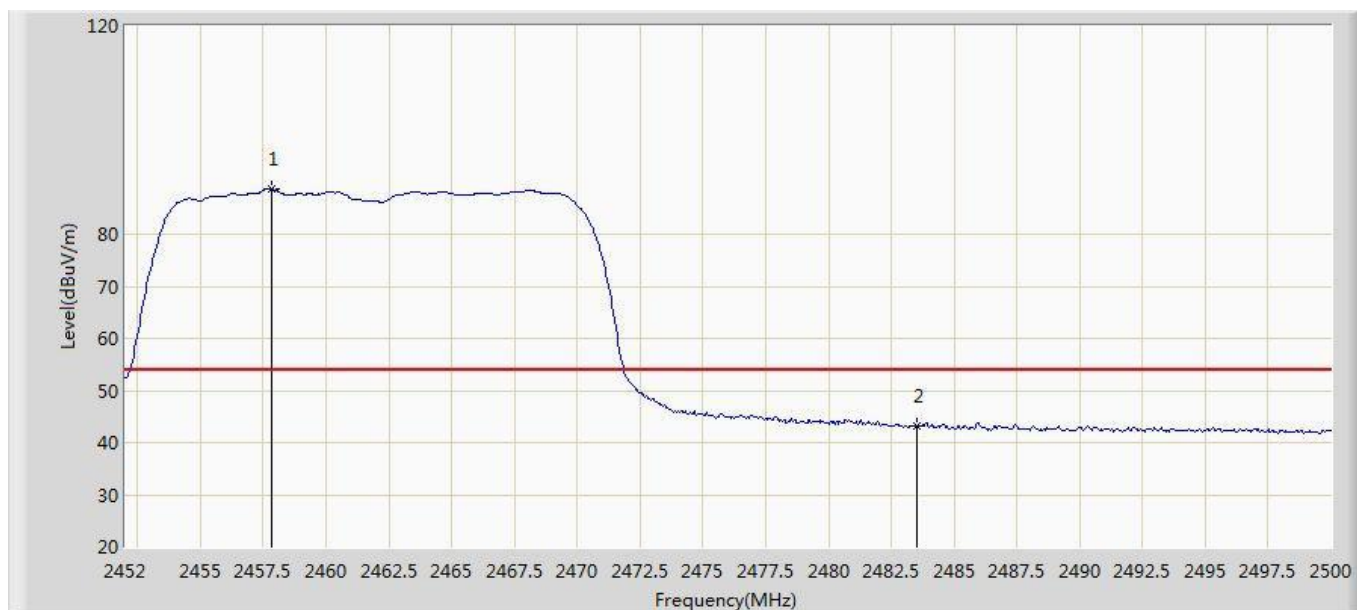
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  | *    | 2466.400        | 97.539                 | 99.495               | N/A             | N/A            | -1.956      | PK   |
| 2  |      | 2483.500        | 54.081                 | 55.973               | -19.919         | 74.000         | -1.892      | PK   |
| 3  |      | 2485.408        | 56.207                 | 58.092               | -17.793         | 74.000         | -1.885      | PK   |

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                        |                          |
|----------------------------------------|--------------------------|
| Site: AC102                            | Time: 2017/08/07 - 10:16 |
| Limit: FCC_Part15.209_RE(3m)           | Margin: 0                |
| Probe: N/A                             | Polarity: Vertical       |
| EUT: WiFi Module                       | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11g at 2462MHz |                          |



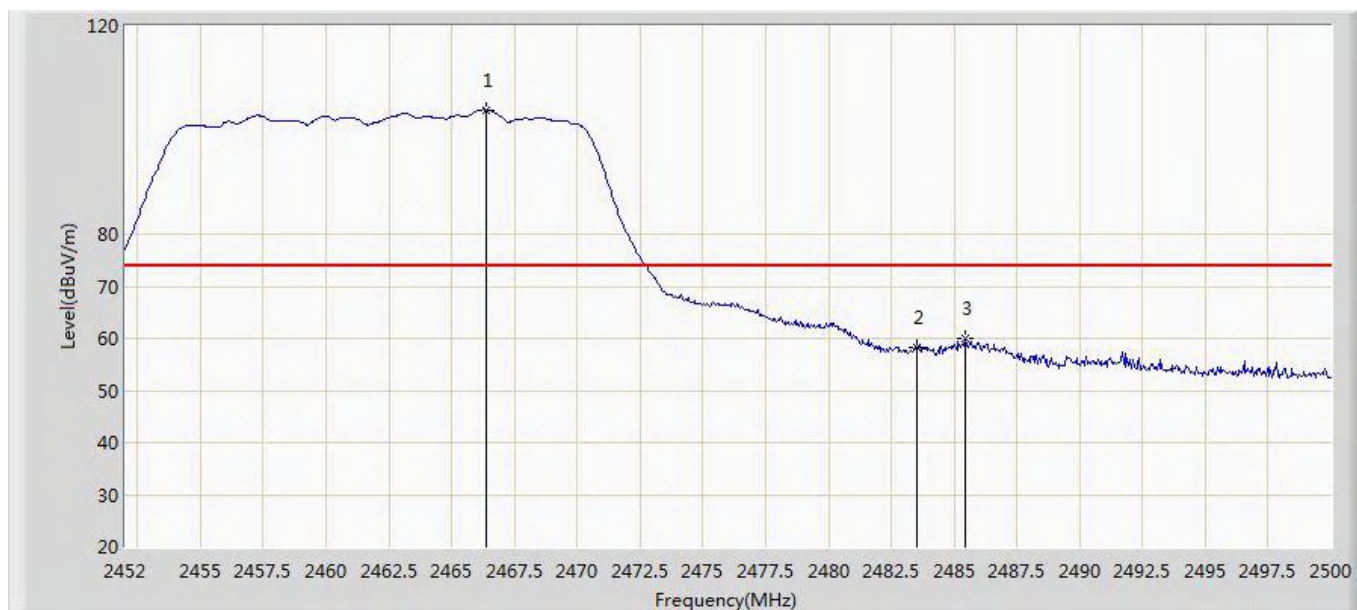
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  | *    | 2457.856        | 88.643                 | 90.631               | N/A             | N/A            | -1.988      | AV   |
| 2  |      | 2483.500        | 43.269                 | 45.161               | -10.731         | 54.000         | -1.892      | AV   |

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                        |                          |
|----------------------------------------|--------------------------|
| Site: AC102                            | Time: 2017/08/07 - 10:17 |
| Limit: FCC_Part15.209_RE(3m)           | Margin: 0                |
| Probe: N/A                             | Polarity: Horizontal     |
| EUT: WiFi Module                       | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11g at 2462MHz |                          |



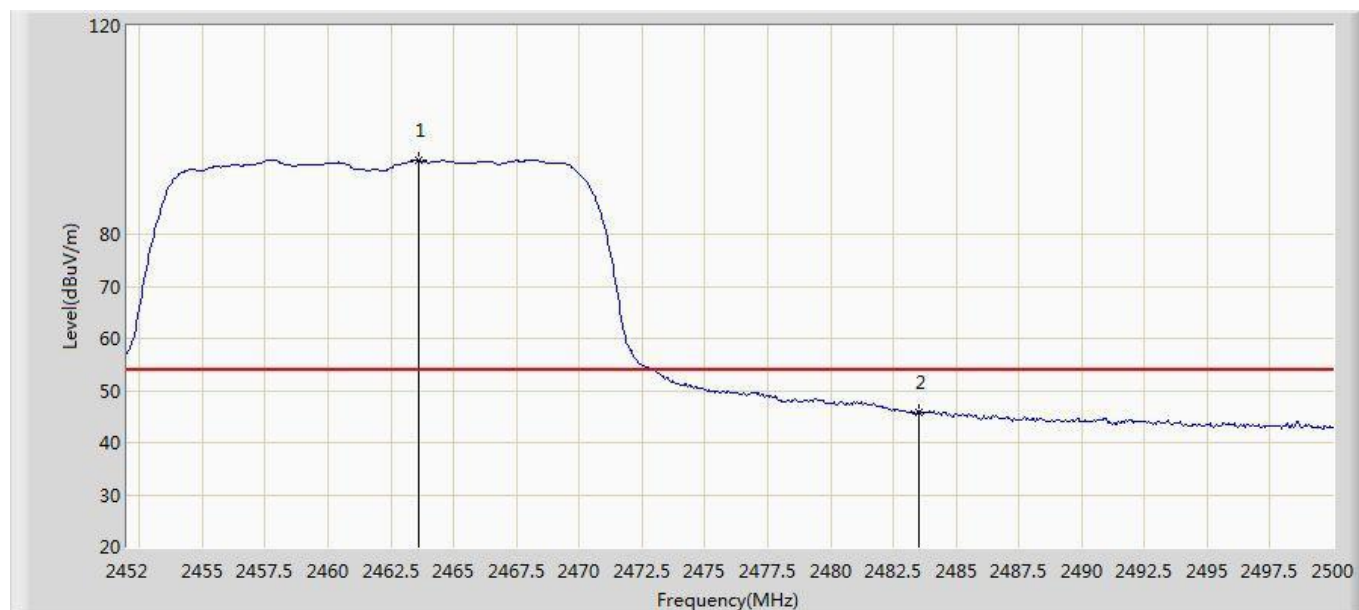
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  | *    | 2466.352        | 103.903                | 105.859              | N/A             | N/A            | -1.956      | PK   |
| 2  |      | 2483.500        | 58.261                 | 60.153               | -15.739         | 74.000         | -1.892      | PK   |
| 3  |      | 2485.456        | 59.953                 | 61.838               | -14.047         | 74.000         | -1.885      | PK   |

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                        |                          |
|----------------------------------------|--------------------------|
| Site: AC102                            | Time: 2017/08/07 - 10:19 |
| Limit: FCC_Part15.209_RE(3m)           | Margin: 0                |
| Probe: N/A                             | Polarity: Horizontal     |
| EUT: WiFi Module                       | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11g at 2462MHz |                          |



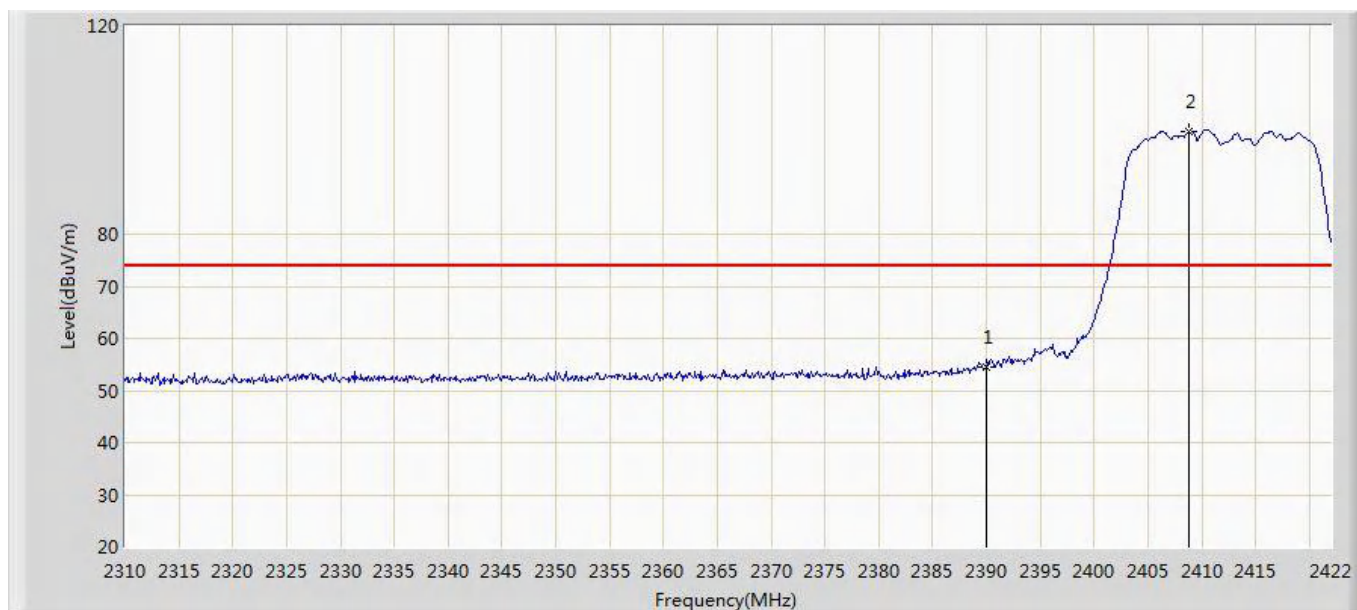
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  | *    | 2463.616        | 94.122                 | 96.088               | N/A             | N/A            | -1.966      | AV   |
| 2  |      | 2483.500        | 45.802                 | 47.694               | -8.198          | 54.000         | -1.892      | AV   |

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                               |                          |
|-----------------------------------------------|--------------------------|
| Site: AC102                                   | Time: 2017/08/07 - 10:20 |
| Limit: FCC_Part15.209_RE(3m)                  | Margin: 0                |
| Probe: N/A                                    | Polarity: Horizontal     |
| EUT: WiFi Module                              | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11n(20MHz) at 2412MHz |                          |



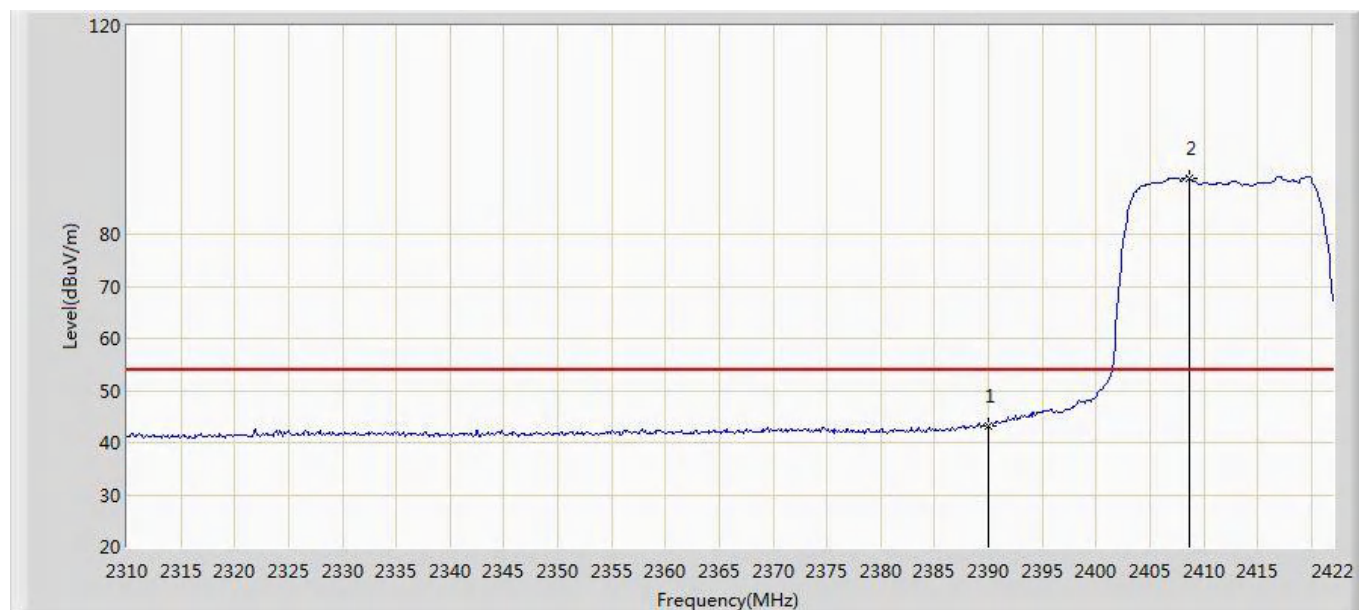
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  |      | 2390.000        | 54.581                 | 56.822               | -19.419         | 74.000         | -2.241      | PK   |
| 2  | *    | 2408.784        | 99.784                 | 101.955              | N/A             | N/A            | -2.171      | PK   |

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                               |                          |
|-----------------------------------------------|--------------------------|
| Site: AC102                                   | Time: 2017/08/07 - 10:22 |
| Limit: FCC_Part15.209_RE(3m)                  | Margin: 0                |
| Probe: N/A                                    | Polarity: Horizontal     |
| EUT: WiFi Module                              | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11n(20MHz) at 2412MHz |                          |



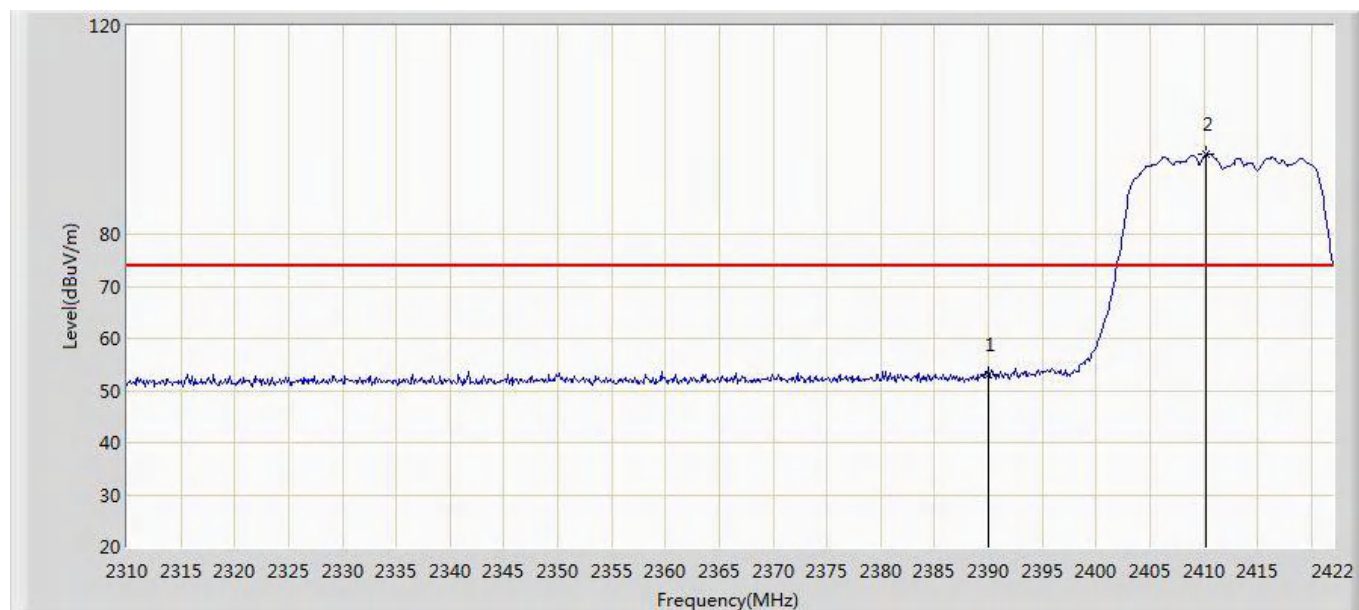
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  |      | 2390.000        | 43.331                 | 45.572               | -10.669         | 54.000         | -2.241      | AV   |
| 2  | *    | 2408.672        | 90.742                 | 92.914               | N/A             | N/A            | -2.172      | AV   |

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                               |                          |
|-----------------------------------------------|--------------------------|
| Site: AC102                                   | Time: 2017/08/07 - 10:22 |
| Limit: FCC_Part15.209_RE(3m)                  | Margin: 0                |
| Probe: N/A                                    | Polarity: Vertical       |
| EUT: WiFi Module                              | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11n(20MHz) at 2412MHz |                          |



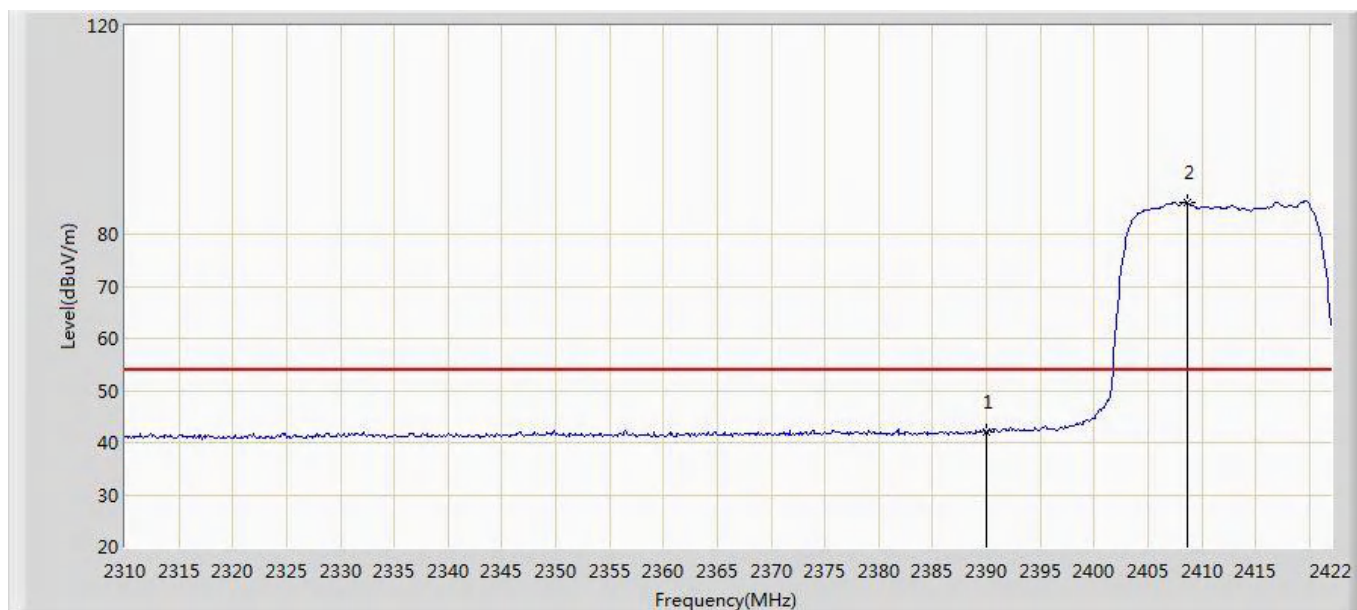
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  |      | 2390.000        | 53.180                 | 55.421               | -20.820         | 74.000         | -2.241      | PK   |
| 2  | *    | 2410.240        | 95.335                 | 97.501               | N/A             | N/A            | -2.166      | PK   |

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                               |                          |
|-----------------------------------------------|--------------------------|
| Site: AC102                                   | Time: 2017/08/07 - 10:25 |
| Limit: FCC_Part15.209_RE(3m)                  | Margin: 0                |
| Probe: N/A                                    | Polarity: Vertical       |
| EUT: WiFi Module                              | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11n(20MHz) at 2412MHz |                          |



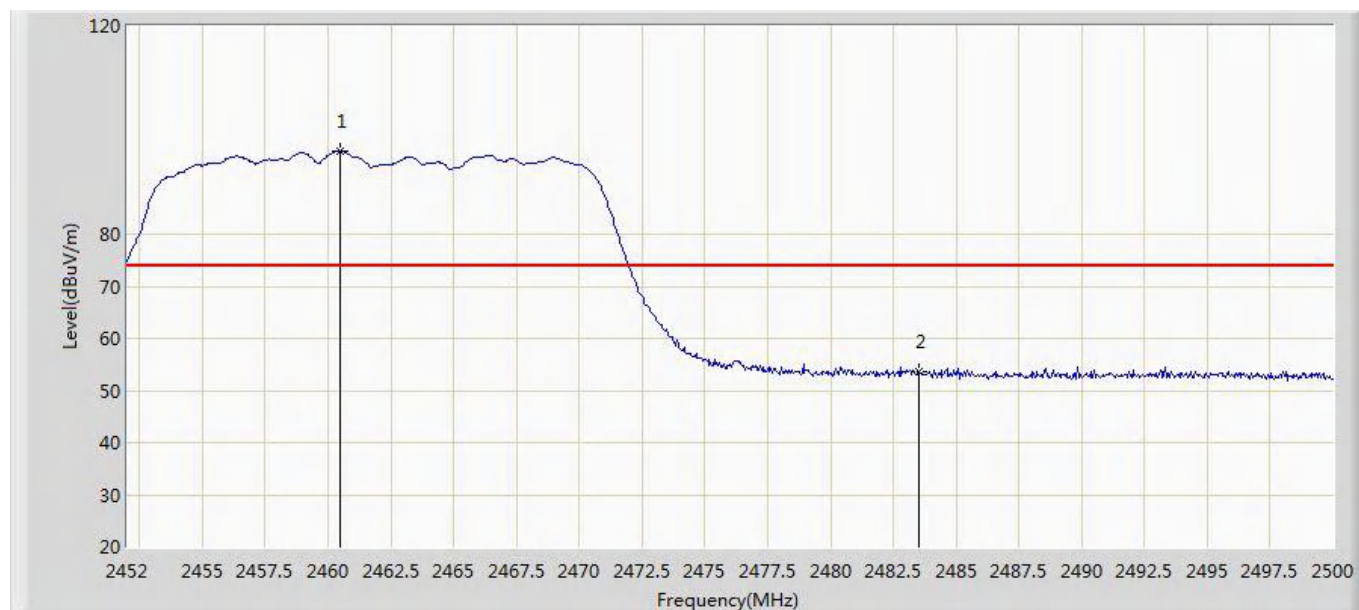
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  |      | 2390.000        | 42.001                 | 44.242               | -11.999         | 54.000         | -2.241      | AV   |
| 2  | *    | 2408.672        | 86.072                 | 88.244               | N/A             | N/A            | -2.172      | AV   |

Note: Measure Level (dB $\mu$ V/m) = Reading Level (dB $\mu$ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                               |                          |
|-----------------------------------------------|--------------------------|
| Site: AC102                                   | Time: 2017/08/07 - 10:26 |
| Limit: FCC_Part15.209_RE(3m)                  | Margin: 0                |
| Probe: N/A                                    | Polarity: Vertical       |
| EUT: WiFi Module                              | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11n(20MHz) at 2462MHz |                          |



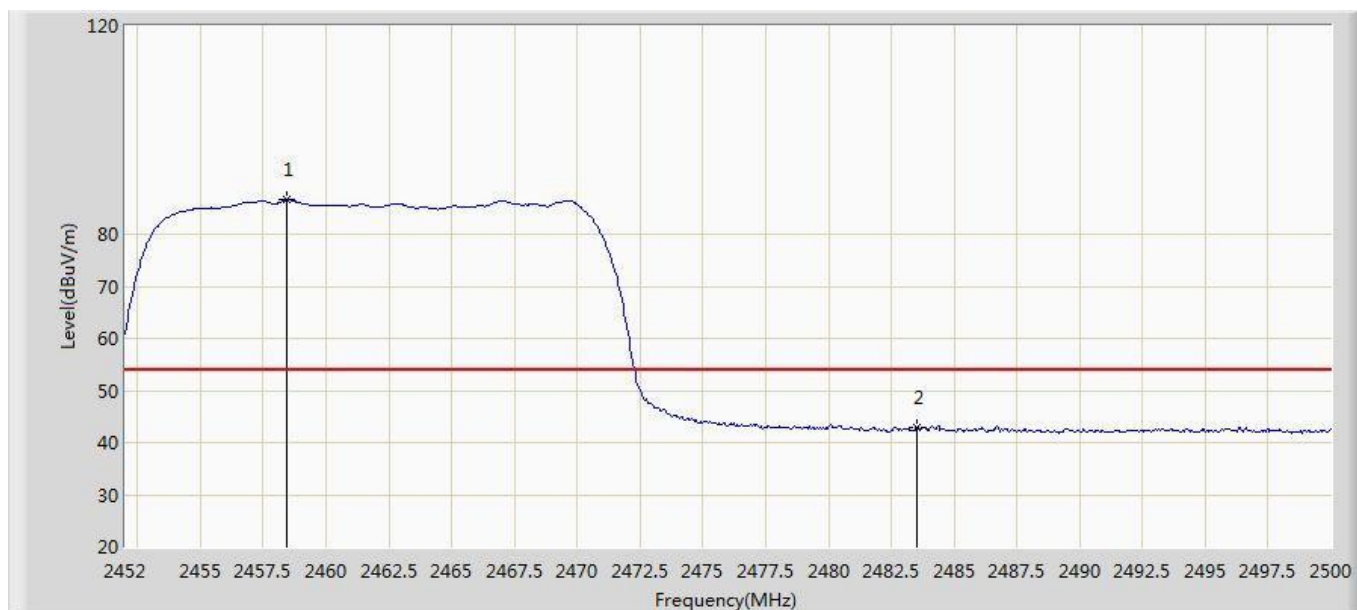
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  | *    | 2460.496        | 95.896                 | 97.874               | N/A             | N/A            | -1.978      | PK   |
| 2  |      | 2483.500        | 53.649                 | 55.541               | -20.351         | 74.000         | -1.892      | PK   |

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                               |                          |
|-----------------------------------------------|--------------------------|
| Site: AC102                                   | Time: 2017/08/07 - 10:30 |
| Limit: FCC_Part15.209_RE(3m)                  | Margin: 0                |
| Probe: N/A                                    | Polarity: Vertical       |
| EUT: WiFi Module                              | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11n(20MHz) at 2462MHz |                          |



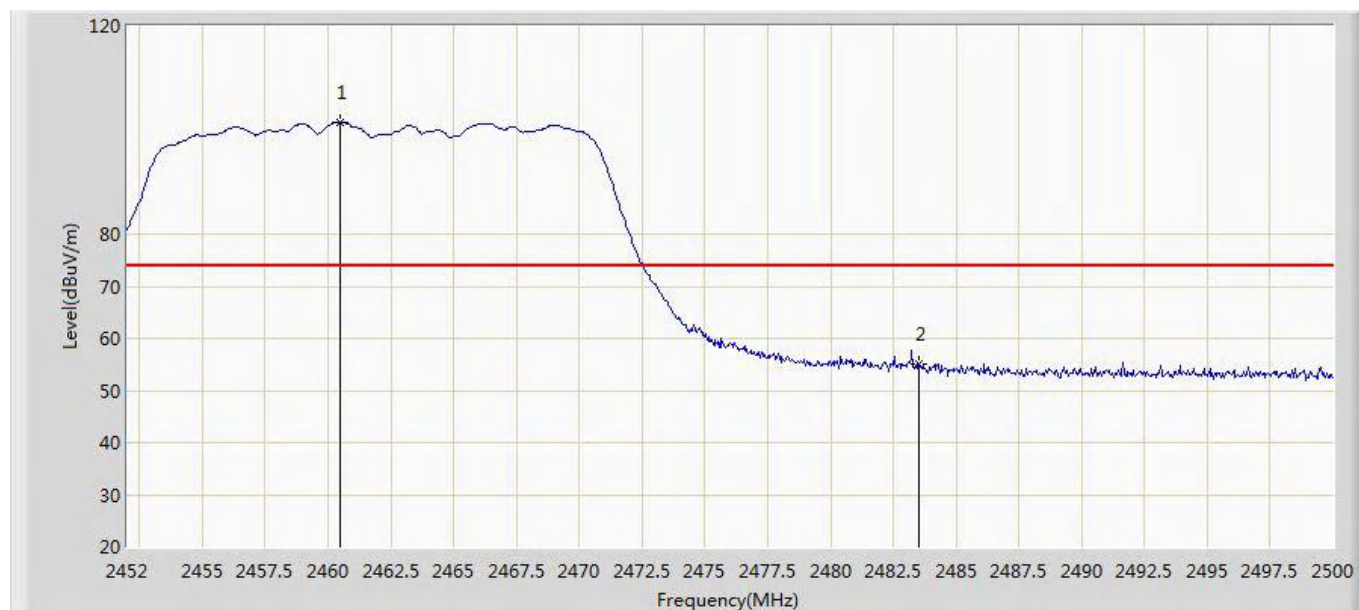
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  | *    | 2458.432        | 86.621                 | 88.606               | N/A             | N/A            | -1.985      | AV   |
| 2  |      | 2483.500        | 42.787                 | 44.679               | -11.213         | 54.000         | -1.892      | AV   |

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                               |                          |
|-----------------------------------------------|--------------------------|
| Site: AC102                                   | Time: 2017/08/07 - 10:32 |
| Limit: FCC_Part15.209_RE(3m)                  | Margin: 0                |
| Probe: N/A                                    | Polarity: Horizontal     |
| EUT: WiFi Module                              | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11n(20MHz) at 2462MHz |                          |



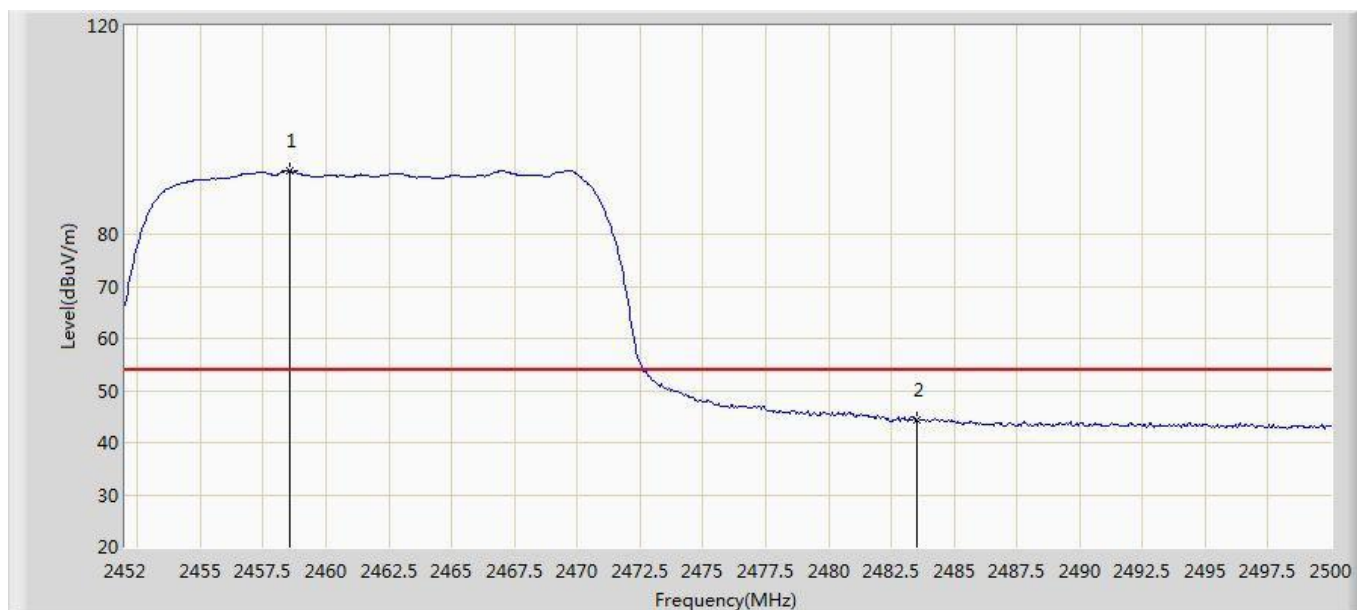
| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  | *    | 2460.496        | 101.576                | 103.554              | N/A             | N/A            | -1.978      | PK   |
| 2  |      | 2483.500        | 55.200                 | 57.092               | -18.800         | 74.000         | -1.892      | PK   |

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).



|                                               |                          |
|-----------------------------------------------|--------------------------|
| Site: AC102                                   | Time: 2017/08/07 - 10:34 |
| Limit: FCC_Part15.209_RE(3m)                  | Margin: 0                |
| Probe: N/A                                    | Polarity: Horizontal     |
| EUT: WiFi Module                              | Power: 120V/60Hz         |
| Note: Mode:Transmit 802.11n(20MHz) at 2462MHz |                          |



| No | Mark | Frequency (MHz) | Measure Level (dBuV/m) | Reading Level (dBuV) | Over Limit (dB) | Limit (dBuV/m) | Factor (dB) | Type |
|----|------|-----------------|------------------------|----------------------|-----------------|----------------|-------------|------|
| 1  | *    | 2458.576        | 92.084                 | 94.069               | N/A             | N/A            | -1.985      | AV   |
| 2  |      | 2483.500        | 44.428                 | 46.320               | -9.572          | 54.000         | -1.892      | AV   |

Note: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

\_\_\_\_\_ The End \_\_\_\_\_