

# FCC TEST REPORT

## FCC ID: 2A88G-M8S

**Report Number**..... : ZKT-230111L0371

**Date of Test**..... : Nov. 22, 2022

**Date of issue** ..... : Nov. 22, 2022 – Jan. 05, 2023

**Total number of pages** ..... : 66

**Test Result** ..... : PASS

**Testing Laboratory**..... : **Shenzhen ZKT Technology Co., Ltd.**

**Address** ..... : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

**Applicant's name** ..... : Shenzhen Fengdian Technology Co., Ltd

**Address** ..... : Meihe Valley 301, Building 11, Bao 'an Group Industrial Zone, District 28.Dalang Community, Xin 'an Street, Bao 'an District, Shenzhen City,Guangdong Province, China, 518100

**Manufacturer's name** ..... : Shenzhen Fengdian Technology Co., Ltd

**Address** ..... : Meihe Valley 301, Building 11, Bao 'an Group Industrial Zone, District 28.Dalang Community, Xin 'an Street, Bao 'an District, Shenzhen City,Guangdong Province, China, 518100

### Test specification:

**Standard** ..... : FCC CFR Title 47 Part 15 Subpart C Section 15.247  
ANSI C63.10:2013

**Test procedure**..... : KDB558074 D0115.247 Meas Guidance v 05r02

**Non-standard test method** ..... : N/A

**Test Report Form No.** ..... : TRF-EL-110\_V0

**Test Report Form(s) Originator** .... : ZKT Testing

**Master TRF** ..... : Dated: 2020-01-06

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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**Product name**..... : Automobile data recorder

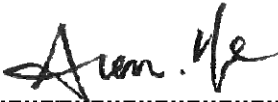
**Trademark** ..... : N/A

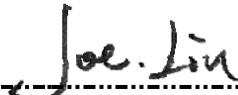
**Model/Type reference** ..... : M8S, i1, i2, i3, i4, i5, i6, i7, i8, i9

**Ratings**..... : DC5.0V 2.5A from car-charger(DC12V input, DC5V output)

Testing procedure and testing location:

Testing Laboratory..... : Shenzhen ZKT Technology Co., Ltd.  
Address..... : 1/F, No. 101, Building B, No. 6, Tangwei Community  
Industrial Avenue, Fuhai Street, Bao'an District,  
Shenzhen, China

Tested by (name + signature)..... : Alen He 

Reviewer (name + signature)..... : Joe Liu 

Approved (name + signature)..... : Lake Xie   


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**1. VERSION**

| Report No.      | Version | Description             | Approved      |
|-----------------|---------|-------------------------|---------------|
| ZKT-230111L0371 | Rev.01  | Initial issue of report | Jan. 05, 2023 |
|                 |         |                         |               |
|                 |         |                         |               |

## 2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

| FCC Part15 (15.247) , Subpart C |                                  |        |        |
|---------------------------------|----------------------------------|--------|--------|
| Standard Section                | Test Item                        | Result | Remark |
| FCC part 15.203/15.247 (c)      | Antenna requirement              | PASS   |        |
| FCC part 15.207                 | AC Power Line Conducted Emission | N/A    |        |
| FCC part 15.247 (b)(3)          | Conducted Peak Output Power      | PASS   |        |
| FCC part 15.247 (a)(2)          | Channel Bandwidth& 99% OCB       | PASS   |        |
| FCC part 15.247 (e)             | Power Spectral Density           | PASS   |        |
| FCC part 15.247(d)              | Band Edge                        | PASS   |        |
| FCC part 15.205/15.209          | Spurious Emission                | PASS   |        |

NOTE:

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

### 2.1 TEST FACILITY

Shenzhen ZKT Technology Co., Ltd.

Add. : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 692225

Designation Number: CN1299

IC Registered No.: 27033

### 2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %

| No. | Item                         | Uncertainty               |
|-----|------------------------------|---------------------------|
| 1   | Conducted Emission Test      | $\pm 1.38\text{dB}$       |
| 2   | RF power conducted           | $\pm 0.16\text{dB}$       |
| 3   | Spurious emissions conducted | $\pm 0.21\text{dB}$       |
| 4   | All emissions radiated(<1G)  | $\pm 4.68\text{dB}$       |
| 5   | All emissions radiated(>1G)  | $\pm 4.89\text{dB}$       |
| 6   | Temperature                  | $\pm 0.5^{\circ}\text{C}$ |
| 7   | Humidity                     | $\pm 2\%$                 |

### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

|                        |                                                                                                                                                                                       |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name:          | Automobile data recorder                                                                                                                                                              |
| Model No.:             | M8S                                                                                                                                                                                   |
| Serial No.:            | i1, i2, i3, i4, i5, i6, i7, i8, i9                                                                                                                                                    |
| Model difference:      | the motherboard design is the same as pcb and bom, all the same, but name is different, but these differences will not affect the performance of EMC and RF, so the test model is M8S |
| Hardware Version:      | V0.1                                                                                                                                                                                  |
| Software Version:      | /                                                                                                                                                                                     |
| Sample(s) Status:      | Engineer sample                                                                                                                                                                       |
| Frequency range:       | 802.11b/802.11g /802.11n(HT20): 2412MHz -2462MHz<br>802.11n(HT40): 2422MHz -2452MHz                                                                                                   |
| Channel numbers:       | 802.11b/802.11g /802.11n(HT20):11<br>802.11n(HT40):7                                                                                                                                  |
| Channel separation:    | 5MHz                                                                                                                                                                                  |
| Modulation technology: | CCK/DSSS/OFDM                                                                                                                                                                         |
| Antenna Type:          | PCB antenna                                                                                                                                                                           |
| Antenna gain:          | 0dBi                                                                                                                                                                                  |
| Power supply:          | DC5.0V 2.5A from car-charger(DC12V input,DC5V output)                                                                                                                                 |

| Operation Frequency each of channel |           |         |           |         |           |         |           |
|-------------------------------------|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel                             | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 1                                   | 2412MHz   | 4       | 2427MHz   | 7       | 2442MHz   | 10      | 2457MHz   |
| 2                                   | 2417MHz   | 5       | 2432MHz   | 8       | 2447MHz   | 11      | 2462MHz   |
| 3                                   | 2422MHz   | 6       | 2437MHz   | 9       | 2452MHz   |         |           |
|                                     |           |         |           |         |           |         |           |

Note:

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

| Test channel    | Frequency (MHz)                |
|-----------------|--------------------------------|
|                 | 802.11b/802.11g /802.11n(HT20) |
| Lowest channel  | 2412MHz                        |
| Middle channel  | 2437MHz                        |
| Highest channel | 2462MHz                        |

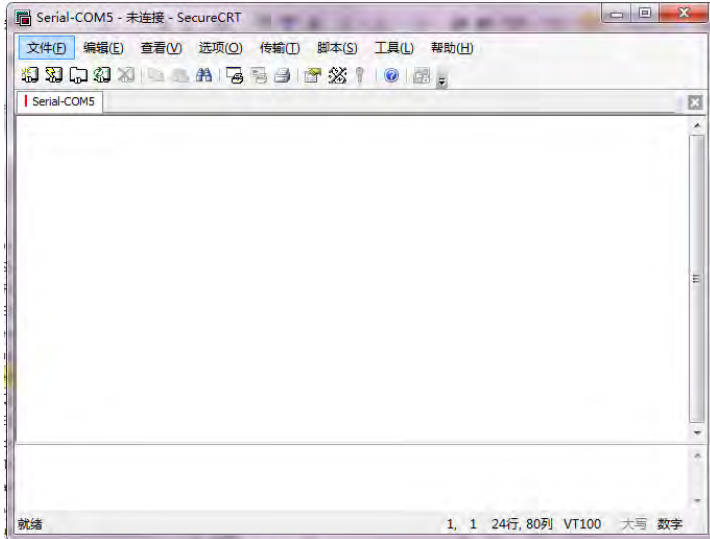
| Test channel   | Frequency (MHz) |
|----------------|-----------------|
|                | 802.11n(HT40)   |
| Lowest channel | 2422MHz         |
| Middle channel | 2437MHz         |

|                 |         |
|-----------------|---------|
| Highest channel | 2452MHz |
|-----------------|---------|

### 3.2 DESCRIPTION OF TEST MODES

|                                                                                                                                                                                                                                                               |                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Transmitting mode                                                                                                                                                                                                                                             | Keep the EUT in continuously transmitting mode |
| Remark: During the test, the duty cycle is 100%, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data. |                                                |

|                                                                                                                                                                                                              |         |         |                |                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------|----------------|----------------|
| We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows: |         |         |                |                |
| Pre-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.                                                                                                         |         |         |                |                |
| Mode                                                                                                                                                                                                         | 802.11b | 802.11g | 802.11n (HT20) | 802.11n (HT40) |
| Data rate                                                                                                                                                                                                    | 11Mbps  | 54Mbps  | MCS7           | MCS7           |

|                   |                                                                                                  |
|-------------------|--------------------------------------------------------------------------------------------------|
| Test Software     | Test Tool<br> |
| Power level setup | <20dBm                                                                                           |

### 3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted Emission  
N/A

Radiated Emission



Conducted Spurious



### 3.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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

| Item | Equipment   | Mfr/Brand | Model/Type No.                      | Series No. | Note |
|------|-------------|-----------|-------------------------------------|------------|------|
| 1    | car-charger | /         | Input:DC12-24V<br>Output: DC5V 2.5A |            | SDOC |
| 2    |             |           |                                     |            |      |
|      |             |           |                                     |            |      |

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

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

## 3.5EQUIPMENTS LIST FOR ALL TEST ITEMS

## Radiation Test equipment

| Item | Equipment                        | Manufacturer   | Type No.        | Serial No.        | Last calibration | Calibrated until |
|------|----------------------------------|----------------|-----------------|-------------------|------------------|------------------|
| 1    | Spectrum Analyzer (9kHz-26.5GHz) | KEYSIGHT       | 9020A           | MY55370835        | Oct. 18, 2022    | Oct. 17, 2023    |
| 2    | Spectrum Analyzer (1GHz-40GHz)   | R&S            | FSQ             | 100363            | Oct. 17, 2022    | Oct. 16, 2023    |
| 3    | EMI Test Receiver (9kHz-7GHz)    | R&S            | ESCI7           | 101169            | Oct. 18, 2022    | Oct. 17, 2023    |
| 4    | Bilog Antenna (30MHz-1500MHz)    | Schwarzbeck    | VULB9168        | N/A               | Oct. 17, 2022    | Oct. 16, 2023    |
| 5    | Horn Antenna (1GHz-18GHz)        | Agilent        | AH-118          | 071145            | Oct. 17, 2022    | Oct. 16, 2023    |
| 6    | Loop Antenna                     | TESEQ          | HLA6121         | 58357             | Oct. 17, 2022    | Oct. 16, 2023    |
| 7    | Amplifier (30-1000MHz)           | EM Electronics | EM330 Amplifier | 060747            | Oct. 17, 2022    | Oct. 16, 2023    |
| 8    | Amplifier (1GHz-26.5GHz)         | Agilent        | 8449B           | 3008A00315        | Oct. 18, 2022    | Oct. 17, 2023    |
| 9    | RF cables1 (9kHz-30MHz)          | N/A            | 9kHz-30MHz      | N/A               | Oct. 18, 2022    | Oct. 17, 2023    |
| 10   | RF cables2 (30MHz-1GHz)          | N/A            | 30MHz-1GHz      | N/A               | Oct. 18, 2022    | Oct. 17, 2023    |
| 11   | RF cables3 (1GHz-40GHz)          | N/A            | 1GHz-40GHz      | N/A               | Oct. 18, 2022    | Oct. 17, 2023    |
| 12   | ESG Signal Generator             | Agilent        | E4421B          | N/A               | Oct. 18, 2022    | Oct. 17, 2023    |
| 13   | Signal Generator                 | Agilent        | N5182A          | N/A               | Oct. 22, 2022    | Oct. 21, 2023    |
| 14   | Magnetic Field Probe Tester      | Narda          | ELT-400         | 0-0344            | Oct. 17, 2022    | Oct. 16, 2023    |
| 15   | MWRF Power Meter Test system     | MW             | MW100-RPC B     | N/A               | Oct. 22, 2022    | Oct. 21, 2023    |
| 16   | Power sensor                     | KEYSIGHT       | U200H           | MY51190005        | Oct. 22, 2022    | Oct. 21, 2023    |
| 17   | D.C. Power Supply                | LongWei        | TPR-6405D       | N/A               | \                | \                |
| 18   | EMC Software                     | Frad           | EZ-EMC          | Ver.EMC-CON 3A1.1 | \                | \                |
| 19   | RF Software                      | MW             | MTS8310         | V2.0.0.0          | \                | \                |
| 20   | Turntable                        | MF             | MF-7802BS       | N/A               | \                | \                |
| 21   | Antenna tower                    | MF             | MF-7802BS       | N/A               | \                | \                |

## Conduction Test equipment

| Item | Kind of Equipment | Manufacturer | Type No. | Serial No.        | Last calibration | Calibrated until |
|------|-------------------|--------------|----------|-------------------|------------------|------------------|
| 1    | LISN              | R&S          | ENV216   | 101471            | Oct. 22, 2022    | Oct. 21, 2023    |
| 2    | LISN              | CYBERTEK     | EM5040A  | E1850400149       | Oct. 22, 2022    | Oct. 21, 2023    |
| 3    | Test Cable        | N/A          | C01      | N/A               | Oct. 18, 2022    | Oct. 17, 2023    |
| 4    | Test Cable        | N/A          | C02      | N/A               | Oct. 18, 2022    | Oct. 17, 2023    |
| 5    | EMI Test Receiver | R&S          | ESCI3    | 101393            | Oct. 17, 2022    | Oct. 16, 2023    |
| 6    | EMC Software      | Frad         | EZ-EMC   | Ver.EMC-CON 3A1.1 | \                | \                |

## 4. EMC EMISSION TEST

### 4.1 CONDUCTED EMISSION MEASUREMENT

|                       |                                      |
|-----------------------|--------------------------------------|
| Test Requirement:     | FCC Part15 C Section 15.207          |
| Test Method:          | ANSI C63.10:2013                     |
| Test Frequency Range: | 150KHz to 30MHz                      |
| Receiver setup:       | RBW=9KHz, VBW=30KHz, Sweep time=auto |

#### 4.1.1 POWER LINE CONDUCTED EMISSION LIMITS

| FREQUENCY (MHz) | Limit (dBuV) |           | Standard |
|-----------------|--------------|-----------|----------|
|                 | Quasi-peak   | Average   |          |
| 0.15 -0.5       | 66 - 56 *    | 56 - 46 * | FCC      |
| 0.50 -5.0       | 56.00        | 46.00     | FCC      |
| 5.0 -30.0       | 60.00        | 50.00     | FCC      |

Note:

(1) \*Decreases with the logarithm of the frequency.

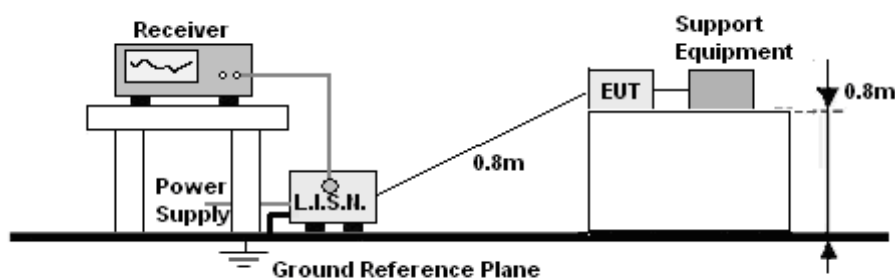
#### 4.1.2 TEST PROCEDURE

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10:2013.
2. Support equipment, if needed, was placed as per ANSI C63.10:2013
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10:2013.
4. The adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.e.
8. For the actual test configuration, please refer to the related Item –EUT Test Photos.

#### 4.1.3 DEVIATION FROM TEST STANDARD

No deviation

#### 4.1.4 TEST SETUP



#### 4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

#### 4.1.6 TEST RESULTS

N/A (Not applicable to this device, which is powered from DC battery.)

## 4.2 RADIATED EMISSION MEASUREMENT

|                       |                             |            |        |        |            |
|-----------------------|-----------------------------|------------|--------|--------|------------|
| Test Requirement:     | FCC Part15 C Section 15.209 |            |        |        |            |
| Test Method:          | ANSI C63.10:2013            |            |        |        |            |
| Test Frequency Range: | 9kHz to 25GHz               |            |        |        |            |
| Test site:            | Measurement Distance: 3m    |            |        |        |            |
| Receiver setup:       | Frequency                   | Detector   | RBW    | VBW    | Value      |
|                       | 9KHz-150KHz                 | Quasi-peak | 200Hz  | 600Hz  | Quasi-peak |
|                       | 150KHz-30MHz                | Quasi-peak | 9KHz   | 30KHz  | Quasi-peak |
|                       | 30MHz-1GHz                  | Quasi-peak | 120KHz | 300KHz | Quasi-peak |
|                       | Above 1GHz                  | Peak       | 1MHz   | 3MHz   | Peak       |
|                       |                             | Peak       | 1MHz   | 10Hz   | Average    |

## 4.2.1 Radiated Emission Limits

| Frequencies (MHz) | Field Strength (micorvolts/meter) | Measurement Distance (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                             |

## LIMITS OF RADIATED EMISSION MEASUREMENT

| FREQUENCY (MHz) | Limit (dBuV/m) (at 3M) |         |
|-----------------|------------------------|---------|
|                 | PEAK                   | AVERAGE |
| Above 1000      | 74                     | 54      |

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

## 4.2.2 TEST PROCEDURE

Below 1GHz test procedure as below:

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

- g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 metre to 1.5 metre( Above 18GHz the distance is 1 meter and table is 1.5 metre).
- h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel

Note:

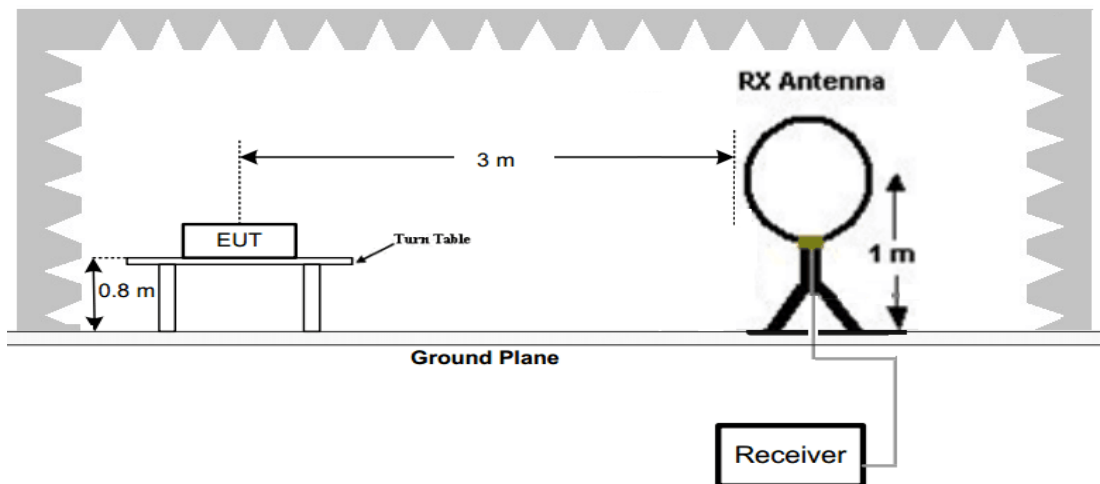
Both horizontal and vertical antenna polarities were tested  
and performed pretest to three orthogonal axis. The worst case emissions were reported

#### 4.2.3 DEVIATION FROM TEST STANDARD

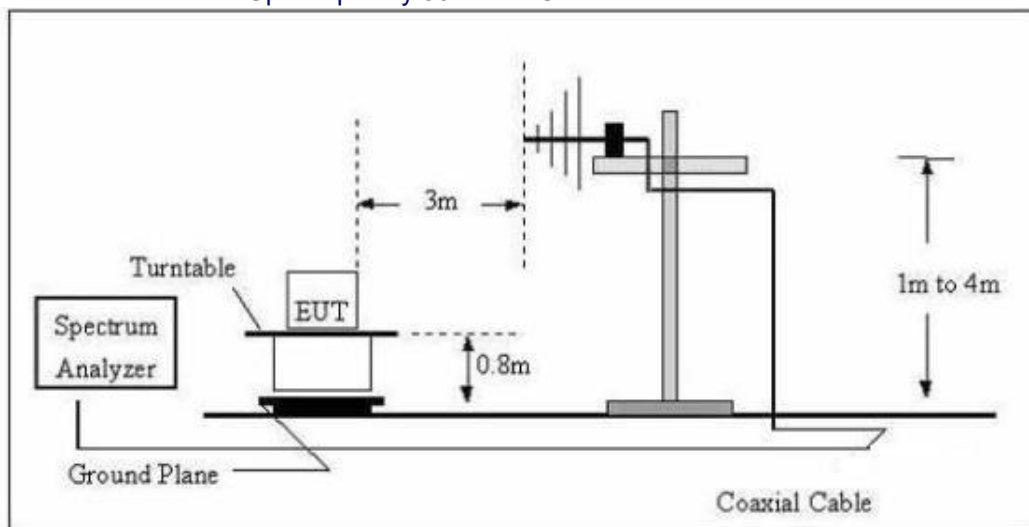
No deviation

#### 4.2.4 TEST SETUP

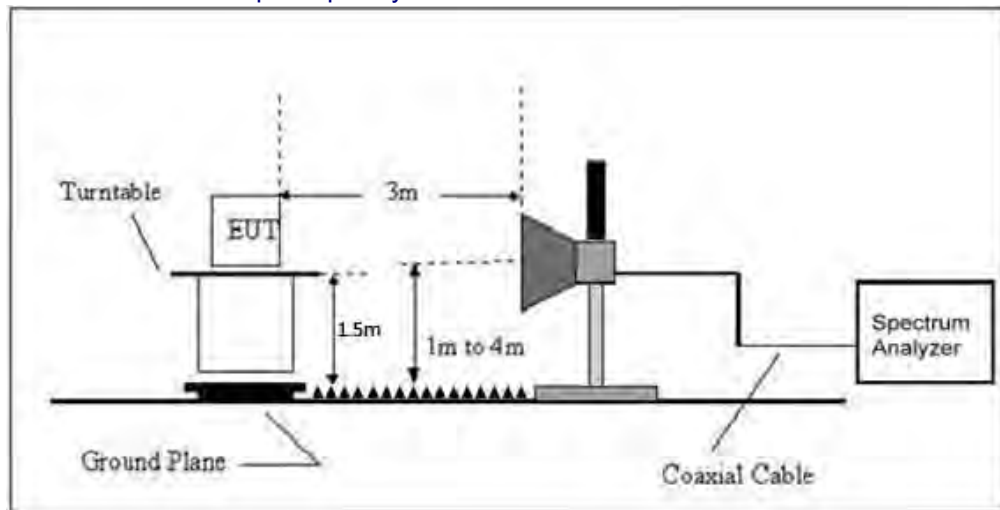
##### (A) Radiated Emission Test-Up Frequency Below 30MHz



##### (B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



#### 4.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

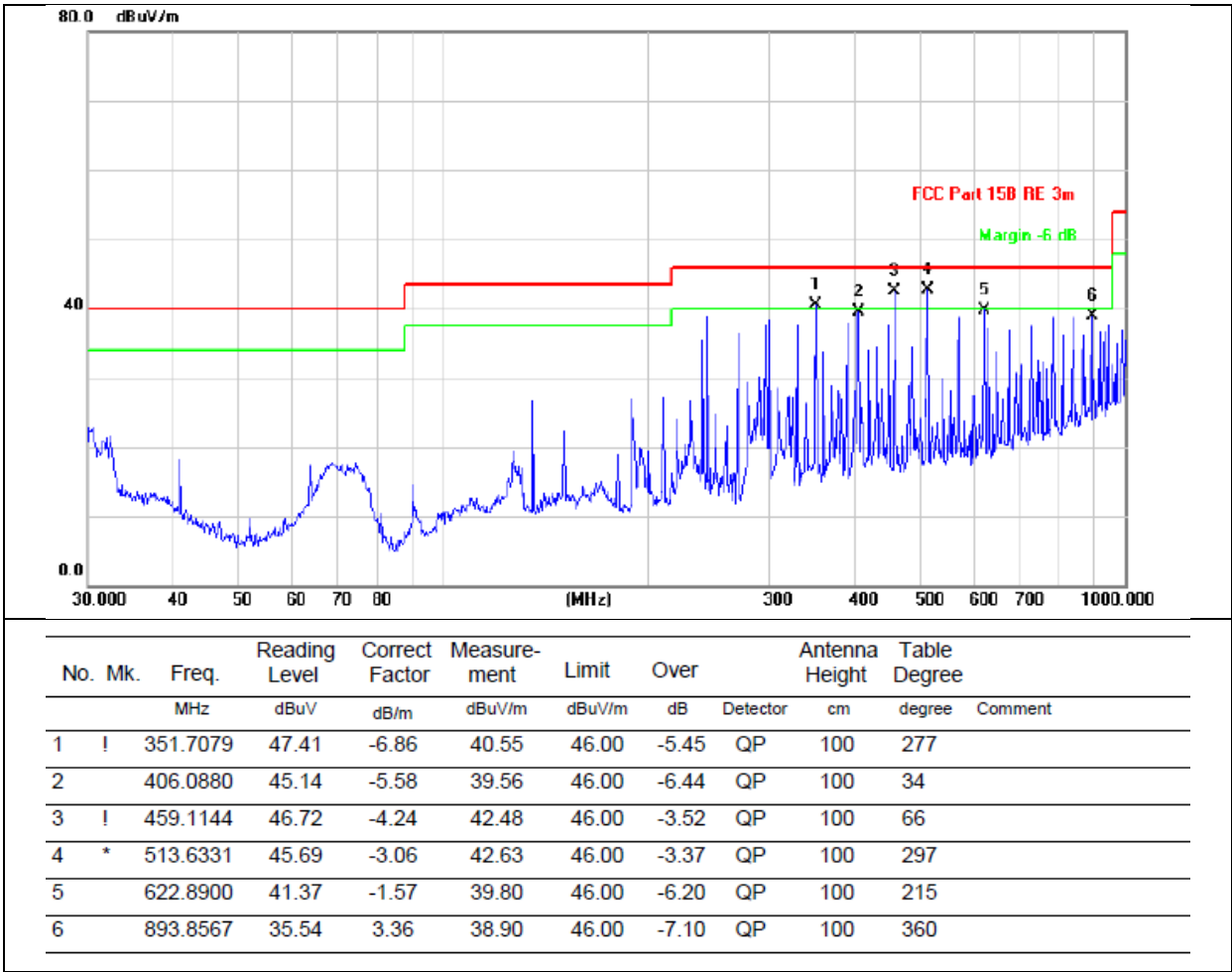
#### 4.2.6 TEST RESULTS

Between 9KHz – 30MHz

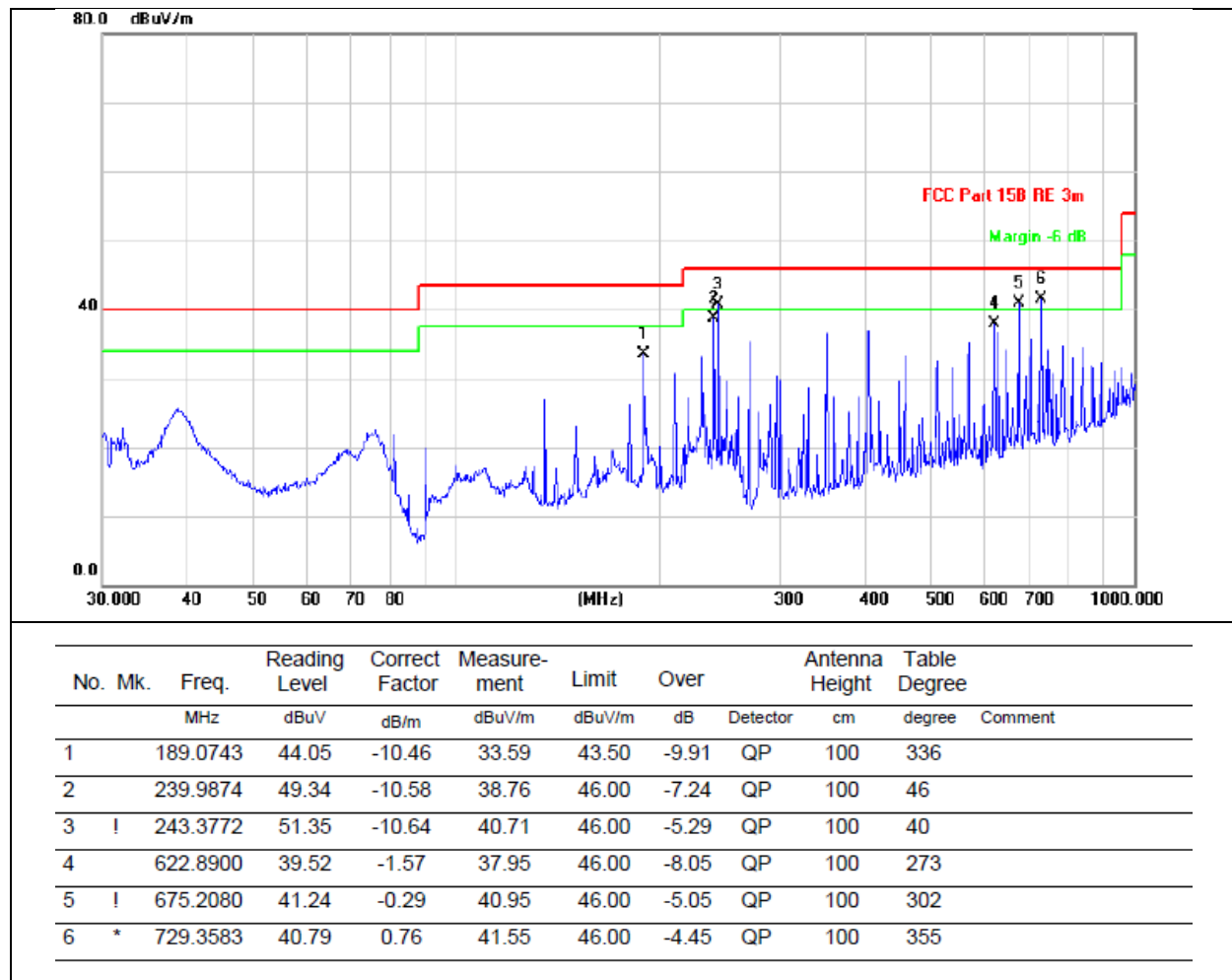
The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o) & RSS-Gen 6.13, the test result no need to reported.

Between 30MHz – 1GHz

|               |         |                    |                  |
|---------------|---------|--------------------|------------------|
| Temperature:  | 26°C    | Relative Humidity: | 54%              |
| Pressure:     | 101 kPa | Polarization:      | Horizontal       |
| Test Voltage: | DC 12V  | Test Mode:         | 802.11b -2412MHz |



|               |        |                    |                  |
|---------------|--------|--------------------|------------------|
| Temperature:  | 26°C   | Relative Humidity: | 54%              |
| Pressure:     | 101kPa | Polarization:      | Vertical         |
| Test Voltage: | DC 12V | Test Mode:         | 802.11b -2412MHz |



## Remarks:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

1GHz~25GHz

## 802.11b

| Polar<br>(H/V)      | Frequency | Meter<br>Reading | Pre-amplif<br>ier | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits   | Margin | Detector<br>Type |
|---------------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|----------|--------|------------------|
|                     | (MHz)     | (dBuV)           | (dB)              | (dB)          | (dB)              | (dBuV/m)          | (dBuV/m) | (dB)   |                  |
| Low Channel:2412MHz |           |                  |                   |               |                   |                   |          |        |                  |
| V                   | 4824      | 47.34            | 30.55             | 5.77          | 24.66             | 47.22             | 74.00    | -26.78 | PK               |
| V                   | 4824      | 35.87            | 30.55             | 5.77          | 24.66             | 35.75             | 54.00    | -18.25 | AV               |
| V                   | 7236      | 46.01            | 30.33             | 6.32          | 24.55             | 46.55             | 74.00    | -27.45 | PK               |
| V                   | 7236      | 33.75            | 30.33             | 6.32          | 24.55             | 34.29             | 54.00    | -19.71 | AV               |
| V                   | 9648      | 46.36            | 30.85             | 7.45          | 24.69             | 47.65             | 74.00    | -26.35 | PK               |
| V                   | 9648      | 34.51            | 30.85             | 7.45          | 24.69             | 35.80             | 54.00    | -18.20 | AV               |
| H                   | 4824      | 48.47            | 30.55             | 5.77          | 24.66             | 48.35             | 74.00    | -25.65 | PK               |
| H                   | 4824      | 35.89            | 30.55             | 5.77          | 24.66             | 35.77             | 54.00    | -18.23 | AV               |
| H                   | 7236      | 47.27            | 30.33             | 6.32          | 24.55             | 47.81             | 74.00    | -26.19 | PK               |
| H                   | 7236      | 33.37            | 30.33             | 6.32          | 24.55             | 33.91             | 54.00    | -20.09 | AV               |
| H                   | 9648      | 46.63            | 30.85             | 7.45          | 24.69             | 47.92             | 74.00    | -26.08 | PK               |
| H                   | 9648      | 35.20            | 30.85             | 7.45          | 24.69             | 36.49             | 54.00    | -17.51 | AV               |

| Polar<br>(H/V)         | Frequency | Meter<br>Reading | Pre-amplif<br>ier | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits   | Margin | Detector<br>Type |
|------------------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|----------|--------|------------------|
|                        | (MHz)     | (dBuV)           | (dB)              | (dB)          | (dB)              | (dBuV/m)          | (dBuV/m) | (dB)   |                  |
| Middle Channel:2437MHz |           |                  |                   |               |                   |                   |          |        |                  |
| V                      | 4874      | 48.63            | 30.55             | 5.77          | 24.66             | 48.51             | 74.00    | -25.49 | PK               |
| V                      | 4874      | 37.64            | 30.55             | 5.77          | 24.66             | 37.52             | 54.00    | -16.48 | AV               |
| V                      | 7311      | 45.77            | 30.33             | 6.32          | 24.55             | 46.31             | 74.00    | -27.69 | PK               |
| V                      | 7311      | 34.01            | 30.33             | 6.32          | 24.55             | 34.55             | 54.00    | -19.45 | AV               |
| V                      | 9748      | 45.98            | 30.85             | 7.45          | 24.69             | 47.27             | 74.00    | -26.73 | PK               |
| V                      | 9748      | 32.64            | 30.85             | 7.45          | 24.69             | 33.93             | 54.00    | -20.07 | AV               |
| H                      | 4874      | 47.40            | 30.55             | 5.77          | 24.66             | 47.28             | 74.00    | -26.72 | PK               |
| H                      | 4874      | 35.51            | 30.55             | 5.77          | 24.66             | 35.39             | 54.00    | -18.61 | AV               |
| H                      | 7311      | 46.66            | 30.33             | 6.32          | 24.55             | 47.20             | 74.00    | -26.80 | PK               |
| H                      | 7311      | 34.48            | 30.33             | 6.32          | 24.55             | 35.02             | 54.00    | -18.98 | AV               |
| H                      | 9748      | 46.02            | 30.85             | 7.45          | 24.69             | 47.31             | 74.00    | -26.69 | PK               |
| H                      | 9748      | 34.21            | 30.85             | 7.45          | 24.69             | 35.50             | 54.00    | -18.50 | AV               |

| Polar<br>(H/V)       | Frequency | Meter<br>Reading | Pre-amplifi<br>er | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits   | Margin | Detector<br>Type |
|----------------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|----------|--------|------------------|
|                      | (MHz)     | (dBuV)           | (dB)              | (dB)          | (dB)              | (dBuV/m)          | (dBuV/m) | (dB)   |                  |
| High Channel:2462MHz |           |                  |                   |               |                   |                   |          |        |                  |
| V                    | 4924      | 46.84            | 30.55             | 5.77          | 24.66             | 46.72             | 74.00    | -27.28 | PK               |
| V                    | 4924      | 37.41            | 30.55             | 5.77          | 24.66             | 37.29             | 54.00    | -16.71 | AV               |
| V                    | 7386      | 47.29            | 30.33             | 6.32          | 24.55             | 47.83             | 74.00    | -26.17 | PK               |
| V                    | 7386      | 32.89            | 30.33             | 6.32          | 24.55             | 33.43             | 54.00    | -20.57 | AV               |
| V                    | 9848      | 47.71            | 30.85             | 7.45          | 24.69             | 49.00             | 74.00    | -25.00 | PK               |
| V                    | 9848      | 33.60            | 30.85             | 7.45          | 24.69             | 34.89             | 54.00    | -19.11 | AV               |
| H                    | 4924      | 46.52            | 30.55             | 5.77          | 24.66             | 46.40             | 74.00    | -27.60 | PK               |
| H                    | 4924      | 36.19            | 30.55             | 5.77          | 24.66             | 36.07             | 54.00    | -17.93 | AV               |
| H                    | 7386      | 47.76            | 30.33             | 6.32          | 24.55             | 48.30             | 74.00    | -25.70 | PK               |
| H                    | 7386      | 35.56            | 30.33             | 6.32          | 24.55             | 36.10             | 54.00    | -17.90 | AV               |
| H                    | 9848      | 47.18            | 30.85             | 7.45          | 24.69             | 48.47             | 74.00    | -25.53 | PK               |
| H                    | 9848      | 34.38            | 30.85             | 7.45          | 24.69             | 35.67             | 54.00    | -18.33 | AV               |

## 802.11g

| Polar<br>(H/V) | Frequency | Meter<br>Reading | Pre-ampli<br>fier | Cable<br>Loss | Antenna<br>Factor | Emission<br>Level | Limits | Margin | Detector<br>Type |
|----------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|--------|--------|------------------|
|----------------|-----------|------------------|-------------------|---------------|-------------------|-------------------|--------|--------|------------------|

|                     | (MHz) | (dBuV) | (dB)  | (dB) | (dB)  | (dBuV/m) | (dBuV/m) | (dB)   |    |
|---------------------|-------|--------|-------|------|-------|----------|----------|--------|----|
| Low Channel:2412MHz |       |        |       |      |       |          |          |        |    |
| V                   | 4824  | 45.96  | 30.55 | 5.77 | 24.66 | 45.84    | 74.00    | -28.16 | PK |
| V                   | 4824  | 35.82  | 30.55 | 5.77 | 24.66 | 35.70    | 54.00    | -18.30 | AV |
| V                   | 7236  | 46.11  | 30.33 | 6.32 | 24.55 | 46.65    | 74.00    | -27.35 | PK |
| V                   | 7236  | 34.38  | 30.33 | 6.32 | 24.55 | 34.92    | 54.00    | -19.08 | AV |
| V                   | 9648  | 46.68  | 30.85 | 7.45 | 24.69 | 47.97    | 74.00    | -26.03 | PK |
| V                   | 9648  | 32.91  | 30.85 | 7.45 | 24.69 | 34.20    | 54.00    | -19.80 | AV |
| H                   | 4824  | 46.86  | 30.55 | 5.77 | 24.66 | 46.74    | 74.00    | -27.26 | PK |
| H                   | 4824  | 37.32  | 30.55 | 5.77 | 24.66 | 37.20    | 54.00    | -16.80 | AV |
| H                   | 7236  | 46.12  | 30.33 | 6.32 | 24.55 | 46.66    | 74.00    | -27.34 | PK |
| H                   | 7236  | 34.29  | 30.33 | 6.32 | 24.55 | 34.83    | 54.00    | -19.17 | AV |
| H                   | 9648  | 46.82  | 30.85 | 7.45 | 24.69 | 48.11    | 74.00    | -25.89 | PK |
| H                   | 9648  | 34.25  | 30.85 | 7.45 | 24.69 | 35.54    | 54.00    | -18.46 | AV |

| Polar (H/V)            | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detect or Type |
|------------------------|-----------------|----------------------|--------------------|-----------------|---------------------|-------------------------|-----------------|-------------|----------------|
| Middle Channel:2437MHz |                 |                      |                    |                 |                     |                         |                 |             |                |
| V                      | 4874            | 46.51                | 30.55              | 5.77            | 24.66               | 46.39                   | 74.00           | -27.61      | PK             |
| V                      | 4874            | 37.70                | 30.55              | 5.77            | 24.66               | 37.58                   | 54.00           | -16.42      | AV             |
| V                      | 7311            | 46.76                | 30.33              | 6.32            | 24.55               | 47.30                   | 74.00           | -26.70      | PK             |
| V                      | 7311            | 34.02                | 30.33              | 6.32            | 24.55               | 34.56                   | 54.00           | -19.44      | AV             |
| V                      | 9748            | 47.35                | 30.85              | 7.45            | 24.69               | 48.64                   | 74.00           | -25.36      | PK             |
| V                      | 9748            | 33.88                | 30.85              | 7.45            | 24.69               | 35.17                   | 54.00           | -18.83      | AV             |
| H                      | 4874            | 46.23                | 30.55              | 5.77            | 24.66               | 46.11                   | 74.00           | -27.89      | PK             |
| H                      | 4874            | 37.08                | 30.55              | 5.77            | 24.66               | 36.96                   | 54.00           | -17.04      | AV             |
| H                      | 7311            | 46.91                | 30.33              | 6.32            | 24.55               | 47.45                   | 74.00           | -26.55      | PK             |
| H                      | 7311            | 35.53                | 30.33              | 6.32            | 24.55               | 36.07                   | 54.00           | -17.93      | AV             |
| H                      | 9748            | 44.89                | 30.85              | 7.45            | 24.69               | 46.18                   | 74.00           | -27.82      | PK             |
| H                      | 9748            | 34.59                | 30.85              | 7.45            | 24.69               | 35.88                   | 54.00           | -18.12      | AV             |

| Polar (H/V)          | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detect or Type |
|----------------------|-----------------|----------------------|--------------------|-----------------|---------------------|-------------------------|-----------------|-------------|----------------|
| High Channel:2462MHz |                 |                      |                    |                 |                     |                         |                 |             |                |
| V                    | 4924            | 46.96                | 30.55              | 5.77            | 24.66               | 46.84                   | 74.00           | -27.16      | PK             |
| V                    | 4924            | 36.11                | 30.55              | 5.77            | 24.66               | 35.99                   | 54.00           | -18.01      | AV             |
| V                    | 7386            | 47.34                | 30.33              | 6.32            | 24.55               | 47.88                   | 74.00           | -26.12      | PK             |
| V                    | 7386            | 34.82                | 30.33              | 6.32            | 24.55               | 35.36                   | 54.00           | -18.64      | AV             |
| V                    | 9848            | 46.68                | 30.85              | 7.45            | 24.69               | 47.97                   | 74.00           | -26.03      | PK             |
| V                    | 9848            | 33.00                | 30.85              | 7.45            | 24.69               | 34.29                   | 54.00           | -19.71      | AV             |
| H                    | 4924            | 48.33                | 30.55              | 5.77            | 24.66               | 48.21                   | 74.00           | -25.79      | PK             |
| H                    | 4924            | 35.62                | 30.55              | 5.77            | 24.66               | 35.50                   | 54.00           | -18.50      | AV             |
| H                    | 7386            | 46.52                | 30.33              | 6.32            | 24.55               | 47.06                   | 74.00           | -26.94      | PK             |
| H                    | 7386            | 35.15                | 30.33              | 6.32            | 24.55               | 35.69                   | 54.00           | -18.31      | AV             |
| H                    | 9848            | 44.85                | 30.85              | 7.45            | 24.69               | 46.14                   | 74.00           | -27.86      | PK             |
| H                    | 9848            | 34.91                | 30.85              | 7.45            | 24.69               | 36.20                   | 54.00           | -17.80      | AV             |

## 802.11n20

| Polar (H/V)         | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detector Type |
|---------------------|-----------------|----------------------|--------------------|-----------------|---------------------|-------------------------|-----------------|-------------|---------------|
| Low Channel:2412MHz |                 |                      |                    |                 |                     |                         |                 |             |               |
| V                   | 4824            | 47.20                | 30.55              | 5.77            | 24.66               | 47.08                   | 74.00           | -26.92      | PK            |

|   |      |       |       |      |       |       |       |        |    |
|---|------|-------|-------|------|-------|-------|-------|--------|----|
| V | 4824 | 37.76 | 30.55 | 5.77 | 24.66 | 37.64 | 54.00 | -16.36 | AV |
| V | 7236 | 47.71 | 30.33 | 6.32 | 24.55 | 48.25 | 74.00 | -25.75 | PK |
| V | 7236 | 33.99 | 30.33 | 6.32 | 24.55 | 34.53 | 54.00 | -19.47 | AV |
| V | 9648 | 47.05 | 30.85 | 7.45 | 24.69 | 48.34 | 74.00 | -25.66 | PK |
| V | 9648 | 35.04 | 30.85 | 7.45 | 24.69 | 36.33 | 54.00 | -17.67 | AV |
| H | 4824 | 47.51 | 30.55 | 5.77 | 24.66 | 47.39 | 74.00 | -26.61 | PK |
| H | 4824 | 36.52 | 30.55 | 5.77 | 24.66 | 36.40 | 54.00 | -17.60 | AV |
| H | 7236 | 45.91 | 30.33 | 6.32 | 24.55 | 46.45 | 74.00 | -27.55 | PK |
| H | 7236 | 35.30 | 30.33 | 6.32 | 24.55 | 35.84 | 54.00 | -18.16 | AV |
| H | 9648 | 45.92 | 30.85 | 7.45 | 24.69 | 47.21 | 74.00 | -26.79 | PK |
| H | 9648 | 34.13 | 30.85 | 7.45 | 24.69 | 35.42 | 54.00 | -18.58 | AV |

| Polar (H/V)            | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detector Type |
|------------------------|-----------------|----------------------|--------------------|-----------------|---------------------|-------------------------|-----------------|-------------|---------------|
| Middle Channel:2437MHz |                 |                      |                    |                 |                     |                         |                 |             |               |
| V                      | 4874            | 46.72                | 30.55              | 5.77            | 24.66               | 46.60                   | 74.00           | -27.40      | PK            |
| V                      | 4874            | 37.45                | 30.55              | 5.77            | 24.66               | 37.33                   | 54.00           | -16.67      | AV            |
| V                      | 7311            | 46.45                | 30.33              | 6.32            | 24.55               | 46.99                   | 74.00           | -27.01      | PK            |
| V                      | 7311            | 33.04                | 30.33              | 6.32            | 24.55               | 33.58                   | 54.00           | -20.42      | AV            |
| V                      | 9748            | 46.54                | 30.85              | 7.45            | 24.69               | 47.83                   | 74.00           | -26.17      | PK            |
| V                      | 9748            | 32.37                | 30.85              | 7.45            | 24.69               | 33.66                   | 54.00           | -20.34      | AV            |
| H                      | 4874            | 47.26                | 30.55              | 5.77            | 24.66               | 47.14                   | 74.00           | -26.86      | PK            |
| H                      | 4874            | 35.98                | 30.55              | 5.77            | 24.66               | 35.86                   | 54.00           | -18.14      | AV            |
| H                      | 7311            | 46.69                | 30.33              | 6.32            | 24.55               | 47.23                   | 74.00           | -26.77      | PK            |
| H                      | 7311            | 35.58                | 30.33              | 6.32            | 24.55               | 36.12                   | 54.00           | -17.88      | AV            |
| H                      | 9748            | 45.07                | 30.85              | 7.45            | 24.69               | 46.36                   | 74.00           | -27.64      | PK            |
| H                      | 9748            | 34.37                | 30.85              | 7.45            | 24.69               | 35.66                   | 54.00           | -18.34      | AV            |

| Polar (H/V)          | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detector Type |
|----------------------|-----------------|----------------------|--------------------|-----------------|---------------------|-------------------------|-----------------|-------------|---------------|
| High Channel:2462MHz |                 |                      |                    |                 |                     |                         |                 |             |               |
| V                    | 4924            | 47.48                | 30.55              | 5.77            | 24.66               | 47.36                   | 74.00           | -26.64      | PK            |
| V                    | 4924            | 36.92                | 30.55              | 5.77            | 24.66               | 36.80                   | 54.00           | -17.20      | AV            |
| V                    | 7386            | 46.81                | 30.33              | 6.32            | 24.55               | 47.35                   | 74.00           | -26.65      | PK            |
| V                    | 7386            | 33.38                | 30.33              | 6.32            | 24.55               | 33.92                   | 54.00           | -20.08      | AV            |
| V                    | 9848            | 45.25                | 30.85              | 7.45            | 24.69               | 46.54                   | 74.00           | -27.46      | PK            |
| V                    | 9848            | 34.09                | 30.85              | 7.45            | 24.69               | 35.38                   | 54.00           | -18.62      | AV            |
| H                    | 4924            | 48.11                | 30.55              | 5.77            | 24.66               | 47.99                   | 74.00           | -26.01      | PK            |
| H                    | 4924            | 35.63                | 30.55              | 5.77            | 24.66               | 35.51                   | 54.00           | -18.49      | AV            |
| H                    | 7386            | 46.70                | 30.33              | 6.32            | 24.55               | 47.24                   | 74.00           | -26.76      | PK            |
| H                    | 7386            | 35.38                | 30.33              | 6.32            | 24.55               | 35.92                   | 54.00           | -18.08      | AV            |
| H                    | 9848            | 46.54                | 30.85              | 7.45            | 24.69               | 47.83                   | 74.00           | -26.17      | PK            |
| H                    | 9848            | 34.29                | 30.85              | 7.45            | 24.69               | 35.58                   | 54.00           | -18.42      | AV            |

## 802.11n40

| Polar (H/V)         | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Detector Type |
|---------------------|-----------------|----------------------|--------------------|-----------------|---------------------|-------------------------|-----------------|-------------|---------------|
| Low Channel:2422MHz |                 |                      |                    |                 |                     |                         |                 |             |               |
| V                   | 4824            | 48.76                | 30.55              | 5.77            | 24.66               | 48.64                   | 74.00           | -25.36      | PK            |
| V                   | 4824            | 37.98                | 30.55              | 5.77            | 24.66               | 37.86                   | 54.00           | -16.14      | AV            |
| V                   | 7236            | 45.85                | 30.33              | 6.32            | 24.55               | 46.39                   | 74.00           | -27.61      | PK            |
| V                   | 7236            | 32.83                | 30.33              | 6.32            | 24.55               | 33.37                   | 54.00           | -20.63      | AV            |
| V                   | 9648            | 47.59                | 30.85              | 7.45            | 24.69               | 48.88                   | 74.00           | -25.12      | PK            |

|   |      |       |       |      |       |       |       |        |    |
|---|------|-------|-------|------|-------|-------|-------|--------|----|
| V | 9648 | 34.47 | 30.85 | 7.45 | 24.69 | 35.76 | 54.00 | -18.24 | AV |
| H | 4824 | 47.92 | 30.55 | 5.77 | 24.66 | 47.80 | 74.00 | -26.20 | PK |
| H | 4824 | 37.68 | 30.55 | 5.77 | 24.66 | 37.56 | 54.00 | -16.44 | AV |
| H | 7236 | 45.89 | 30.33 | 6.32 | 24.55 | 46.43 | 74.00 | -27.57 | PK |
| H | 7236 | 33.32 | 30.33 | 6.32 | 24.55 | 33.86 | 54.00 | -20.14 | AV |
| H | 9648 | 45.17 | 30.85 | 7.45 | 24.69 | 46.46 | 74.00 | -27.54 | PK |
| H | 9648 | 33.61 | 30.85 | 7.45 | 24.69 | 34.90 | 54.00 | -19.10 | AV |

| Polar<br>(H/V)         | Frequency<br>(MHz) | Meter<br>Reading<br>(dBuV) | Pre-amplif<br>ier<br>(dB) | Cable<br>Loss<br>(dB) | Antenna<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Detector<br>Type |
|------------------------|--------------------|----------------------------|---------------------------|-----------------------|---------------------------|-------------------------------|--------------------|----------------|------------------|
| Middle Channel:2437MHz |                    |                            |                           |                       |                           |                               |                    |                |                  |
| V                      | 4874               | 47.21                      | 30.55                     | 5.77                  | 24.66                     | 47.09                         | 74.00              | -26.91         | PK               |
| V                      | 4874               | 37.88                      | 30.55                     | 5.77                  | 24.66                     | 37.76                         | 54.00              | -16.24         | AV               |
| V                      | 7311               | 46.40                      | 30.33                     | 6.32                  | 24.55                     | 46.94                         | 74.00              | -27.06         | PK               |
| V                      | 7311               | 33.56                      | 30.33                     | 6.32                  | 24.55                     | 34.10                         | 54.00              | -19.90         | AV               |
| V                      | 9748               | 47.74                      | 30.85                     | 7.45                  | 24.69                     | 49.03                         | 74.00              | -24.97         | PK               |
| V                      | 9748               | 32.40                      | 30.85                     | 7.45                  | 24.69                     | 33.69                         | 54.00              | -20.31         | AV               |
| H                      | 4874               | 47.66                      | 30.55                     | 5.77                  | 24.66                     | 47.54                         | 74.00              | -26.46         | PK               |
| H                      | 4874               | 36.25                      | 30.55                     | 5.77                  | 24.66                     | 36.13                         | 54.00              | -17.87         | AV               |
| H                      | 7311               | 47.44                      | 30.33                     | 6.32                  | 24.55                     | 47.98                         | 74.00              | -26.02         | PK               |
| H                      | 7311               | 33.22                      | 30.33                     | 6.32                  | 24.55                     | 33.76                         | 54.00              | -20.24         | AV               |
| H                      | 9748               | 46.42                      | 30.85                     | 7.45                  | 24.69                     | 47.71                         | 74.00              | -26.29         | PK               |
| H                      | 9748               | 33.04                      | 30.85                     | 7.45                  | 24.69                     | 34.33                         | 54.00              | -19.67         | AV               |

| Polar<br>(H/V)       | Frequency<br>(MHz) | Meter<br>Reading<br>(dBuV) | Pre-amplif<br>ier<br>(dB) | Cable<br>Loss<br>(dB) | Antenna<br>Factor<br>(dB) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Detector<br>Type |
|----------------------|--------------------|----------------------------|---------------------------|-----------------------|---------------------------|-------------------------------|--------------------|----------------|------------------|
| High Channel:2452MHz |                    |                            |                           |                       |                           |                               |                    |                |                  |
| V                    | 4924               | 48.69                      | 30.55                     | 5.77                  | 24.66                     | 48.57                         | 74.00              | -25.43         | PK               |
| V                    | 4924               | 35.58                      | 30.55                     | 5.77                  | 24.66                     | 35.46                         | 54.00              | -18.54         | AV               |
| V                    | 7386               | 46.49                      | 30.33                     | 6.32                  | 24.55                     | 47.03                         | 74.00              | -26.97         | PK               |
| V                    | 7386               | 34.31                      | 30.33                     | 6.32                  | 24.55                     | 34.85                         | 54.00              | -19.15         | AV               |
| V                    | 9848               | 44.95                      | 30.85                     | 7.45                  | 24.69                     | 46.24                         | 74.00              | -27.76         | PK               |
| V                    | 9848               | 32.45                      | 30.85                     | 7.45                  | 24.69                     | 33.74                         | 54.00              | -20.26         | AV               |
| H                    | 4924               | 47.33                      | 30.55                     | 5.77                  | 24.66                     | 47.21                         | 74.00              | -26.79         | PK               |
| H                    | 4924               | 37.12                      | 30.55                     | 5.77                  | 24.66                     | 37.00                         | 54.00              | -17.00         | AV               |
| H                    | 7386               | 47.20                      | 30.33                     | 6.32                  | 24.55                     | 47.74                         | 74.00              | -26.26         | PK               |
| H                    | 7386               | 34.08                      | 30.33                     | 6.32                  | 24.55                     | 34.62                         | 54.00              | -19.38         | AV               |
| H                    | 9848               | 46.57                      | 30.85                     | 7.45                  | 24.69                     | 47.86                         | 74.00              | -26.14         | PK               |
| H                    | 9848               | 32.25                      | 30.85                     | 7.45                  | 24.69                     | 33.54                         | 54.00              | -20.46         | AV               |

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,  
Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

**5.RADIATED BAND EMISSIONMEASUREMENT****5.1 TEST REQUIREMENT:**

|                       |                                                                                                    |          |      |      |         |
|-----------------------|----------------------------------------------------------------------------------------------------|----------|------|------|---------|
| Test Requirement:     | FCC Part15 C Section 15.209 and 15.205                                                             |          |      |      |         |
| Test Method:          | ANSI C63.10: 2013                                                                                  |          |      |      |         |
| Test Frequency Range: | All of the restrict bands were tested, only the worst band's (2310MHz to 2500MHz) data was showed. |          |      |      |         |
| Test site:            | Measurement Distance: 3m                                                                           |          |      |      |         |
| Receiver setup:       | Frequency                                                                                          | Detector | RBW  | VBW  | Value   |
|                       | Above                                                                                              | Peak     | 1MHz | 3MHz | Peak    |
|                       | 1GHz                                                                                               | Average  | 1MHz | 3MHz | Average |

**LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)**

| FREQUENCY (MHz) | Class B (dBuV/m) (at 3M) |         |
|-----------------|--------------------------|---------|
|                 | PEAK                     | AVERAGE |
| Above 1000      | 74                       | 54      |

**Notes:**

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

**5.2 TEST PROCEDURE**

Above 1GHz test procedure as below:

- a. 1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could bestopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dBmargin would be re-tested one by one using peak, quasi-peak or average method as specified and then reportedin a data sheet.
- g. Test the EUT in the lowest channel,the Highest channel

**Note:**

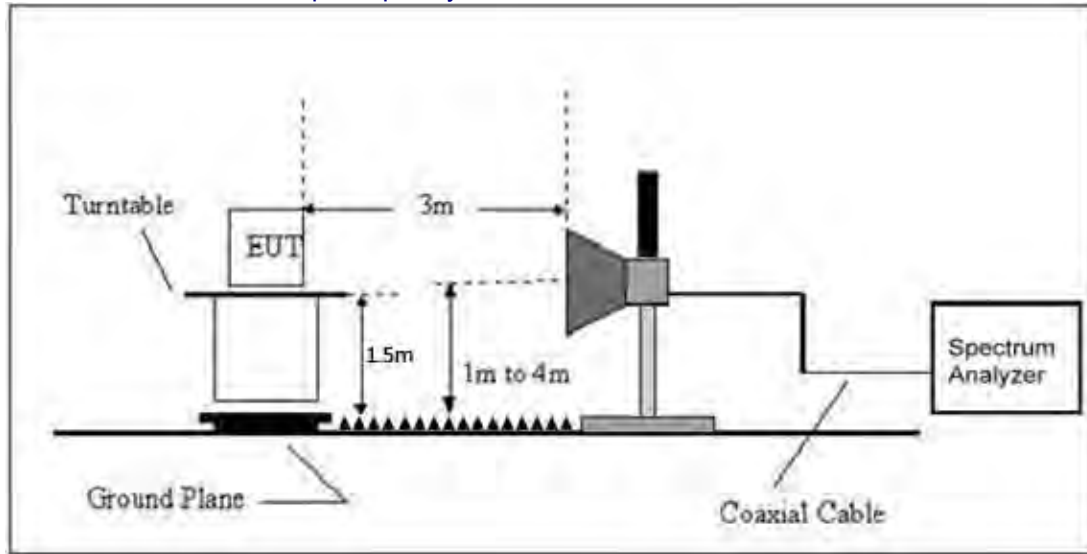
Both horizontal and vertical antenna polarities were tested  
and performed pretest to three orthogonal axis. The worst case emissions were reported

**5.3 DEVIATION FROM TEST STANDARD**

No deviation

## 5.4 TEST SETUP

### Radiated Emission Test-Up Frequency Above 1GHz



## 5.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

802.11b

802.11g

802.11n20

| 302.1MHz             |                 |                      |                    |                 |                       |                         |                |                  |                |        |
|----------------------|-----------------|----------------------|--------------------|-----------------|-----------------------|-------------------------|----------------|------------------|----------------|--------|
| Polar (H/V)          | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB/m) | Emission level (dBuV/m) | Limit (dBuV/m) | Margin( dBuV/ m) | Detect or Type | Result |
| Low Channel 2412MHz  |                 |                      |                    |                 |                       |                         |                |                  |                |        |
| H                    | 2390.00         | 51.64                | 30.22              | 4.85            | 23.98                 | 50.25                   | 74.00          | -23.75           | PK             | PASS   |
| H                    | 2390.00         | 38.39                | 30.22              | 4.85            | 23.98                 | 37.00                   | 54.00          | -17.00           | AV             | PASS   |
| H                    | 2400.00         | 54.37                | 30.22              | 4.85            | 23.98                 | 52.98                   | 74.00          | -21.02           | PK             | PASS   |
| H                    | 2400.00         | 38.26                | 30.22              | 4.85            | 23.98                 | 36.87                   | 54.00          | -17.13           | AV             | PASS   |
| V                    | 2390.00         | 52.03                | 30.22              | 4.85            | 23.98                 | 50.64                   | 74.00          | -23.36           | PK             | PASS   |
| V                    | 2390.00         | 40.02                | 30.22              | 4.85            | 23.98                 | 38.63                   | 54.00          | -15.37           | AV             | PASS   |
| V                    | 2400.00         | 53.17                | 30.22              | 4.85            | 23.98                 | 51.78                   | 74.00          | -22.22           | PK             | PASS   |
| V                    | 2400.00         | 37.25                | 30.22              | 4.85            | 23.98                 | 35.86                   | 54.00          | -18.14           | AV             | PASS   |
| High Channel 2462MHz |                 |                      |                    |                 |                       |                         |                |                  |                |        |

|   |         |       |       |      |       |       |       |        |    |      |
|---|---------|-------|-------|------|-------|-------|-------|--------|----|------|
| H | 2483.50 | 51.92 | 30.22 | 4.85 | 23.98 | 50.53 | 74.00 | -23.47 | PK | PASS |
| H | 2483.50 | 38.23 | 30.22 | 4.85 | 23.98 | 36.84 | 54.00 | -17.16 | AV | PASS |
| H | 2500.00 | 54.62 | 30.22 | 4.85 | 23.98 | 53.23 | 74.00 | -20.77 | PK | PASS |
| H | 2500.00 | 38.40 | 30.22 | 4.85 | 23.98 | 37.01 | 54.00 | -16.99 | AV | PASS |
| V | 2483.50 | 52.58 | 30.22 | 4.85 | 23.98 | 51.19 | 74.00 | -22.81 | PK | PASS |
| V | 2483.50 | 39.59 | 30.22 | 4.85 | 23.98 | 38.20 | 54.00 | -15.80 | AV | PASS |
| V | 2500.00 | 52.77 | 30.22 | 4.85 | 23.98 | 51.38 | 74.00 | -22.62 | PK | PASS |
| V | 2500.00 | 38.29 | 30.22 | 4.85 | 23.98 | 36.90 | 54.00 | -17.10 | AV | PASS |

## 802.11n40

| Polar (H/V)          | Frequency (MHz) | Meter Reading (dBuV) | Pre-amplifier (dB) | Cable Loss (dB) | Antenna Factor (dB/m) | Emission level (dBuV/m) | Limit (dBuV/m) | Margin (dBuV/m) | Detect or Type | Result |
|----------------------|-----------------|----------------------|--------------------|-----------------|-----------------------|-------------------------|----------------|-----------------|----------------|--------|
| Low Channel 2422MHz  |                 |                      |                    |                 |                       |                         |                |                 |                |        |
| H                    | 2390.00         | 53.29                | 30.22              | 4.85            | 23.98                 | 51.90                   | 74.00          | -22.10          | PK             | PASS   |
| H                    | 2390.00         | 38.99                | 30.22              | 4.85            | 23.98                 | 37.60                   | 54.00          | -16.40          | AV             | PASS   |
| H                    | 2400.00         | 53.01                | 30.22              | 4.85            | 23.98                 | 51.62                   | 74.00          | -22.38          | PK             | PASS   |
| H                    | 2400.00         | 37.20                | 30.22              | 4.85            | 23.98                 | 35.81                   | 54.00          | -18.19          | AV             | PASS   |
| V                    | 2390.00         | 51.22                | 30.22              | 4.85            | 23.98                 | 49.83                   | 74.00          | -24.17          | PK             | PASS   |
| V                    | 2390.00         | 39.14                | 30.22              | 4.85            | 23.98                 | 37.75                   | 54.00          | -16.25          | AV             | PASS   |
| V                    | 2400.00         | 53.81                | 30.22              | 4.85            | 23.98                 | 52.42                   | 74.00          | -21.58          | PK             | PASS   |
| V                    | 2400.00         | 36.87                | 30.22              | 4.85            | 23.98                 | 35.48                   | 54.00          | -18.52          | AV             | PASS   |
| High Channel 2452MHz |                 |                      |                    |                 |                       |                         |                |                 |                |        |
| H                    | 2483.50         | 53.01                | 30.22              | 4.85            | 23.98                 | 51.62                   | 74.00          | -22.38          | PK             | PASS   |
| H                    | 2483.50         | 39.63                | 30.22              | 4.85            | 23.98                 | 38.24                   | 54.00          | -15.76          | AV             | PASS   |
| H                    | 2500.00         | 54.03                | 30.22              | 4.85            | 23.98                 | 52.64                   | 74.00          | -21.36          | PK             | PASS   |
| H                    | 2500.00         | 37.69                | 30.22              | 4.85            | 23.98                 | 36.30                   | 54.00          | -17.70          | AV             | PASS   |
| V                    | 2483.50         | 52.94                | 30.22              | 4.85            | 23.98                 | 51.55                   | 74.00          | -22.45          | PK             | PASS   |
| V                    | 2483.50         | 38.63                | 30.22              | 4.85            | 23.98                 | 37.24                   | 54.00          | -16.76          | AV             | PASS   |
| V                    | 2500.00         | 53.73                | 30.22              | 4.85            | 23.98                 | 52.34                   | 74.00          | -21.66          | PK             | PASS   |
| V                    | 2500.00         | 36.95                | 30.22              | 4.85            | 23.98                 | 35.56                   | 54.00          | -18.44          | AV             | PASS   |

**Remark:**

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier, Margin= Emission Level - Limit

**6. POWER SPECTRAL DENSITY TEST**

|                   |                                           |
|-------------------|-------------------------------------------|
| Test Requirement: | FCC Part15 C Section 15.247 (e)           |
| Test Method:      | KDB558074 D0115.247 Meas Guidance v 05r02 |

**6.1 APPLIED PROCEDURES / LIMIT**

| FCC Part15 (15.247) , Subpart C |                        |           |                       |        |
|---------------------------------|------------------------|-----------|-----------------------|--------|
| Section                         | Test Item              | Limit     | Frequency Range (MHz) | Result |
| 15.247                          | Power Spectral Density | 8dBm/3kHz | 2400-2483.5           | PASS   |

**6.2 TEST PROCEDURE**

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
4. Set the VBW  $\geq 3 \times \text{RBW}$ .
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

**6.3 DEVIATION FROM STANDARD**

No deviation.

**6.4 TEST SETUP****6.5 EUT OPERATION CONDITIONS**

The EUT tested system was configured as the statements of 2.1 Unless otherwise a special operating condition is specified in the follows during the testing.

**6.6 TEST RESULT**

PASS: PLEASE REFER TO APPENDIX: APPENDIX1 FOR DETAILS

## 7. CHANNEL BANDWIDTH

|                   |                                          |
|-------------------|------------------------------------------|
| Test Requirement: | FCC Part15 C Section 15.247 (a)(2)       |
| Test Method:      | KDB558074 D0115.247 Meas Guidance v05r02 |

### 7.1 APPLIED PROCEDURES / LIMIT

| FCC Part15 (15.247) , Subpart C |           |                                         |                       |        |
|---------------------------------|-----------|-----------------------------------------|-----------------------|--------|
| Section                         | Test Item | Limit                                   | Frequency Range (MHz) | Result |
| 15.247(a)(2)                    | Bandwidth | $\geq 500\text{KHz}$<br>(6dB bandwidth) | 2400-2483.5           | PASS   |

### 7.2 TEST PROCEDURE

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW)  $\geq 3 \times \text{RBW}$ .
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

### 7.3 DEVIATION FROM STANDARD

No deviation.

### 7.4 TEST SETUP



### 7.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

### 7.6 TEST RESULT

PASS: PLEASE REFER TO APPENDIX: APPENDIX1 FOR DETAILS

## 8. OUTPUT POWER TEST

|                   |                                          |
|-------------------|------------------------------------------|
| Test Requirement: | FCC Part15 C Section 15.247 (b)(3)       |
| Test Method:      | KDB558074 D0115.247 Meas Guidance v05r02 |

### 8.1 APPLIED PROCEDURES/LIMIT

| FCC Part15 (15.247) , Subpart C |                   |                 |                       |        |
|---------------------------------|-------------------|-----------------|-----------------------|--------|
| Section                         | Test Item         | Limit           | Frequency Range (MHz) | Result |
| 15.247(b)(3)                    | Peak Output Power | 1 watt or 30dBm | 2400-2483.5           | PASS   |

### 8.2 TEST PROCEDURE

- a. The EUT was directly connected to the Power meter

### 8.3 DEVIATION FROM STANDARD

No deviation.

### 8.4 TEST SETUP



### 8.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

### 8.6 TEST RESULT

PASS: PLEASE REFER TO APPENDIX: APPENDIX1 FOR DETAILS

## 9. CONDUCTED BAND EDGE AND SPURIOUS EMISSION

|                   |                                          |
|-------------------|------------------------------------------|
| Test Requirement: | FCC Part15 C Section 15.247 (d)          |
| Test Method:      | KDB558074 D0115.247 Meas Guidance v05r02 |

### 9.1 APPLICABLE STANDARD

in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum 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, In addition, radiated emissions which fall in the restricted bands, as defined in§15.205(a), must also comply with the radiated emission limits specified in15.209(a).

### 9.2 TEST PROCEDURE

Using the following spectrum analyzer setting:

- A) Set the RBW = 100KHz.
- B) Set the VBW = 300KHz.
- C) Sweep time = auto couple.
- D) Detector function = peak.
- E) Trace mode = max hold.
- F) Allow trace to fully stabilize.

### 9.3 DEVIATION FROM STANDARD

No deviation.

### 9.4 TEST SETUP



### 9.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

### 9.6 TEST RESULTS

PASS: PLEASE REFER TO APPENDIX: APPENDIX1 FOR DETAILS

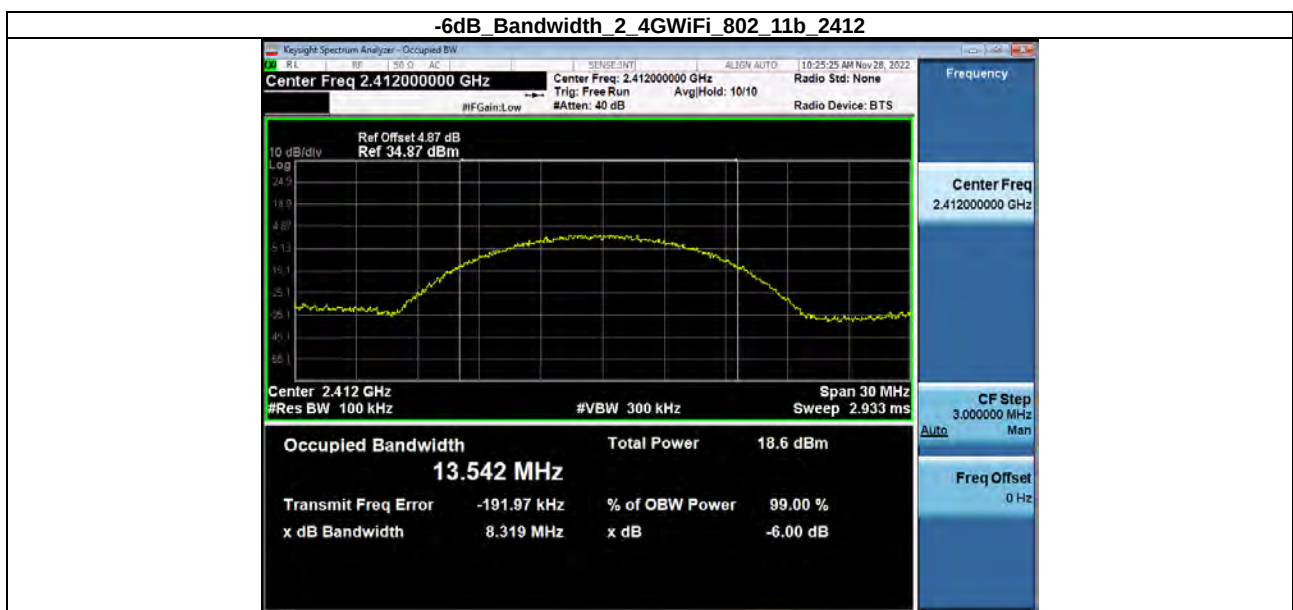
10. ANTENNA REQUIREMENT

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Standard requirement:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | FCC Part15 C Section 15.203 /247(c) |
| <p>For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247, if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.</p> <p>Refer to statement below for compliance.</p> <p>The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.</p> <p>Antenna Connected Construction</p> <p>The antenna is Internal antenna, the best case gain of the antenna is 0dBi, reference to the below photo for details</p> |                                     |
| <div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                     |

## 11. APPENDIX1

## 11.1. -6dB BANDWIDTH

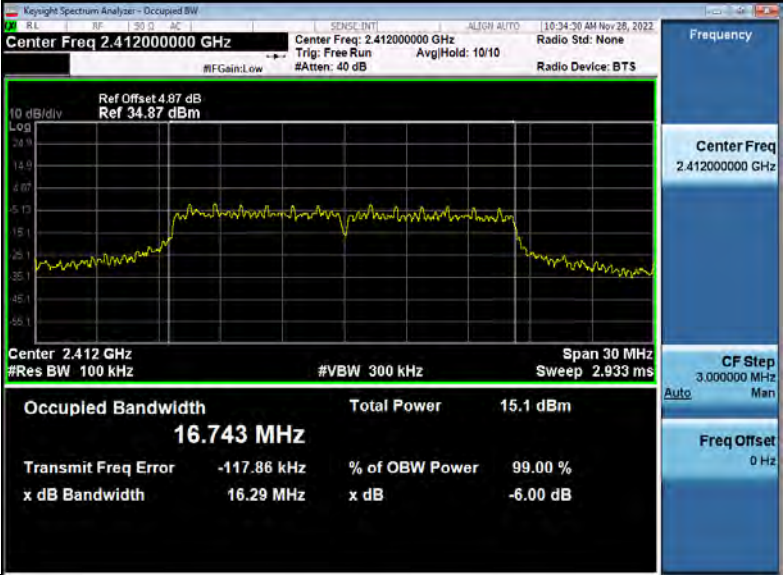
| Condition | Antenna | Modulation    | Frequency (MHz) | -6dB BW(MHz) | limit(kHz) | Result |
|-----------|---------|---------------|-----------------|--------------|------------|--------|
| NVNT      | ANT1    | 802.11b       | 2412.00         | 8.32         | 500        | Pass   |
| NVNT      | ANT1    | 802.11b       | 2437.00         | 8.84         | 500        | Pass   |
| NVNT      | ANT1    | 802.11b       | 2462.00         | 8.36         | 500        | Pass   |
| NVNT      | ANT1    | 802.11g       | 2412.00         | 16.29        | 500        | Pass   |
| NVNT      | ANT1    | 802.11g       | 2437.00         | 16.07        | 500        | Pass   |
| NVNT      | ANT1    | 802.11g       | 2462.00         | 16.37        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00         | 17.52        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00         | 16.96        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00         | 17.34        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2422.00         | 35.74        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2437.00         | 35.75        | 500        | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2452.00         | 35.77        | 500        | Pass   |



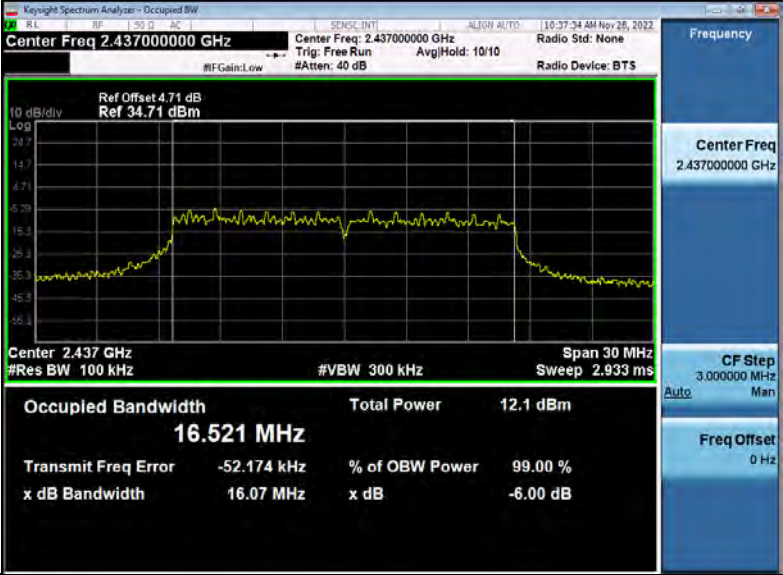
-6dB Bandwidth 2\_4GWiFi 802\_11b\_2462



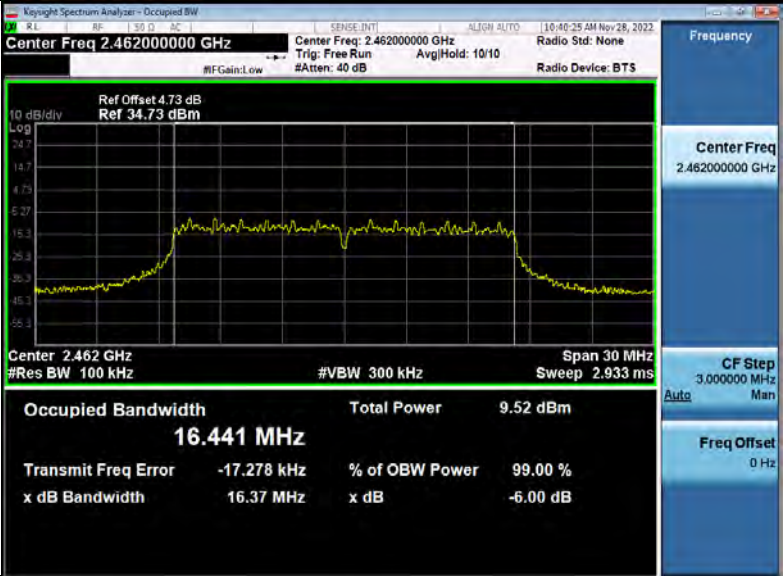
-6dB Bandwidth 2\_4GWiFi 802\_11g\_2412



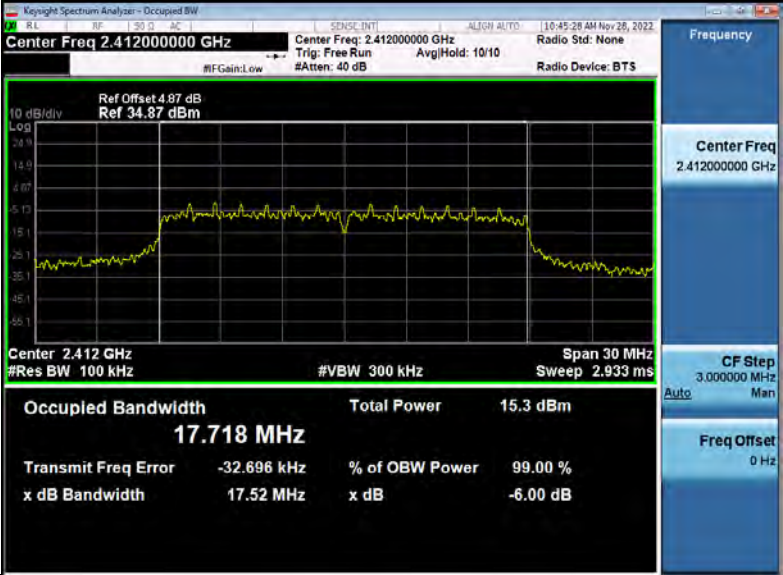
-6dB Bandwidth 2\_4GWiFi 802\_11g\_2437



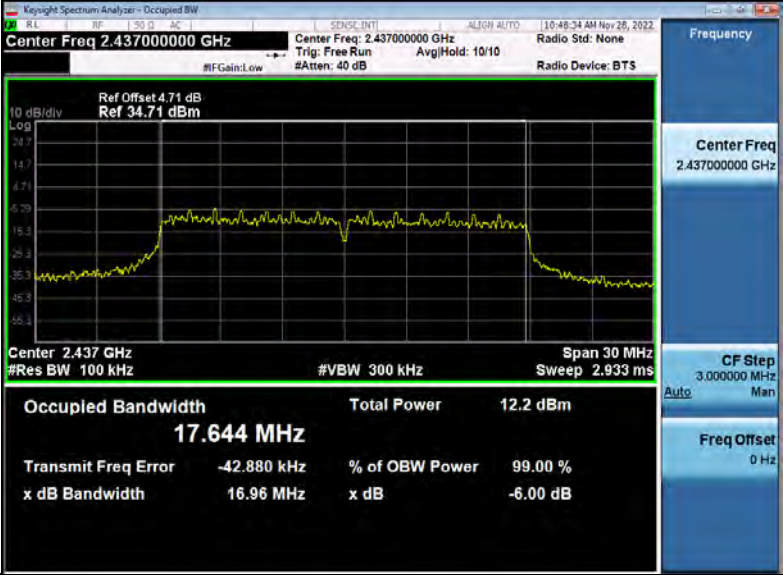
-6dB\_Bandwidth\_2\_4WiFi\_802\_11g\_2462



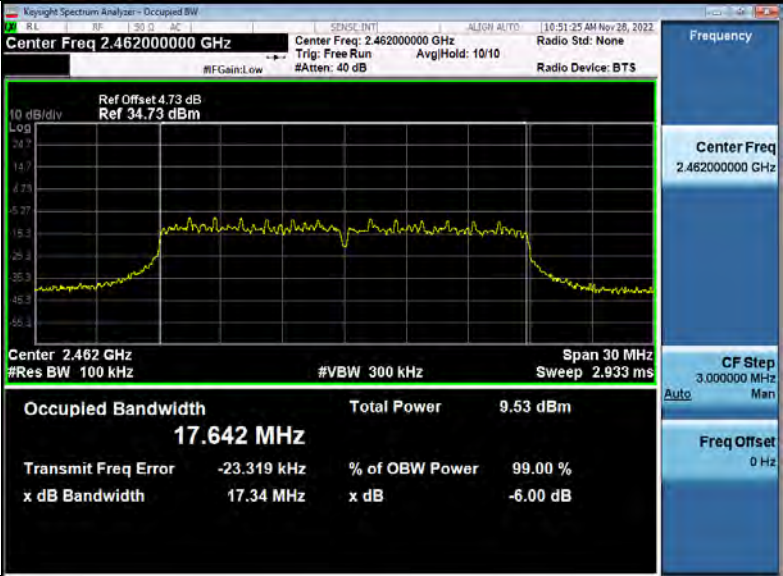
-6dB\_Bandwidth\_2\_4WiFi\_802\_11n(HT20)\_2412



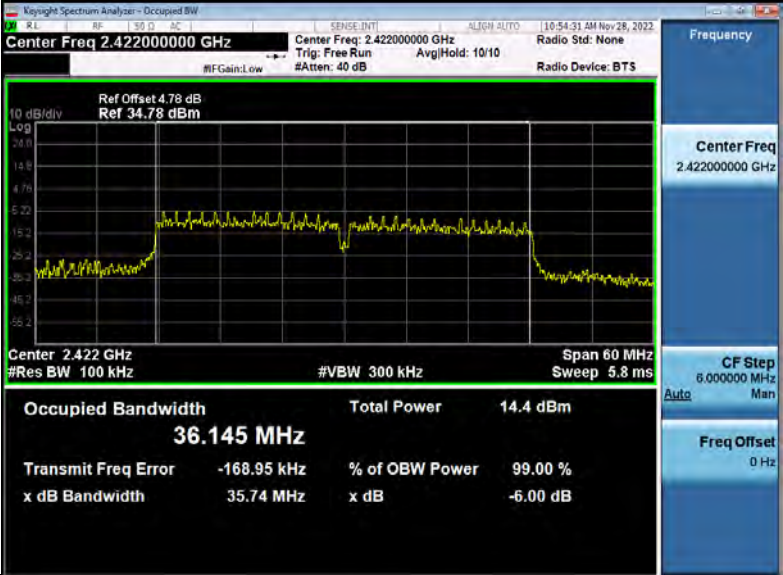
-6dB\_Bandwidth\_2\_4WiFi\_802\_11n(HT20)\_2437



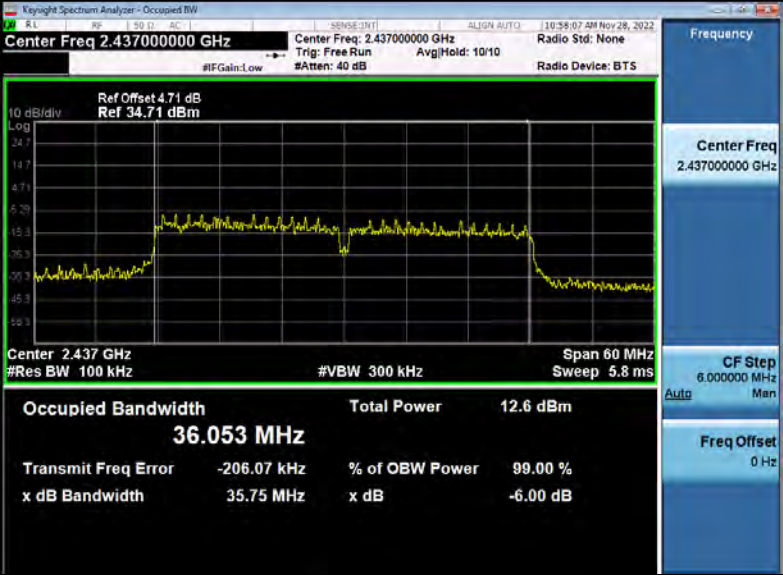
-6dB Bandwidth 2 4GWiFi 802 11n(HT20) 2462

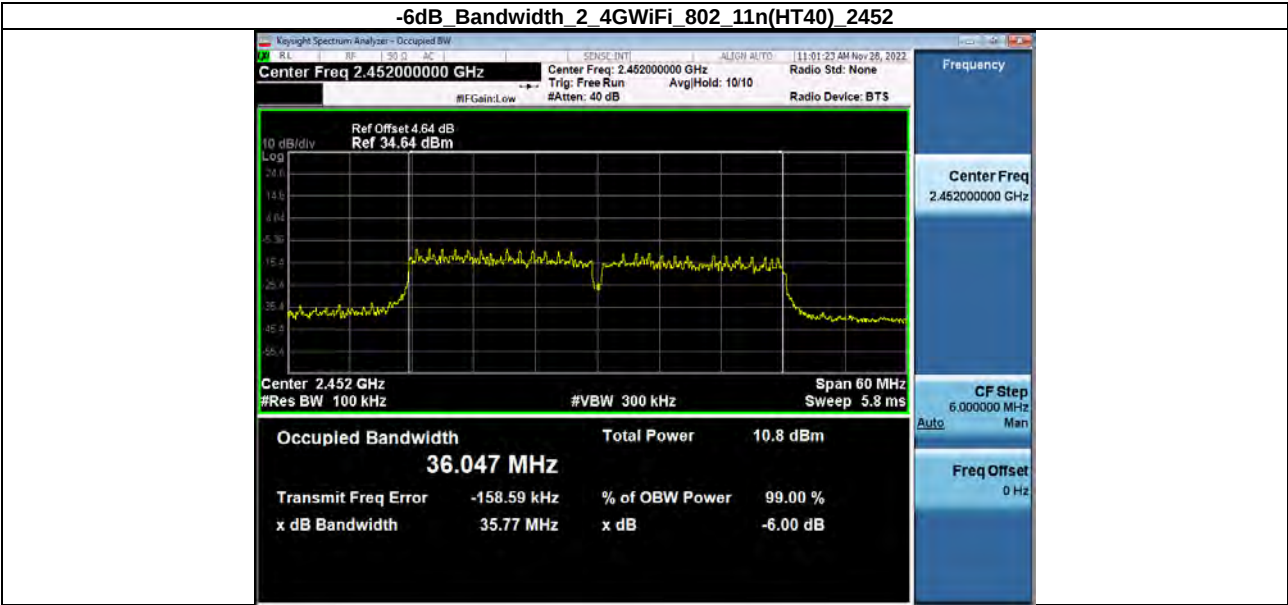


-6dB Bandwidth 2 4GWiFi 802 11n(HT40) 2422



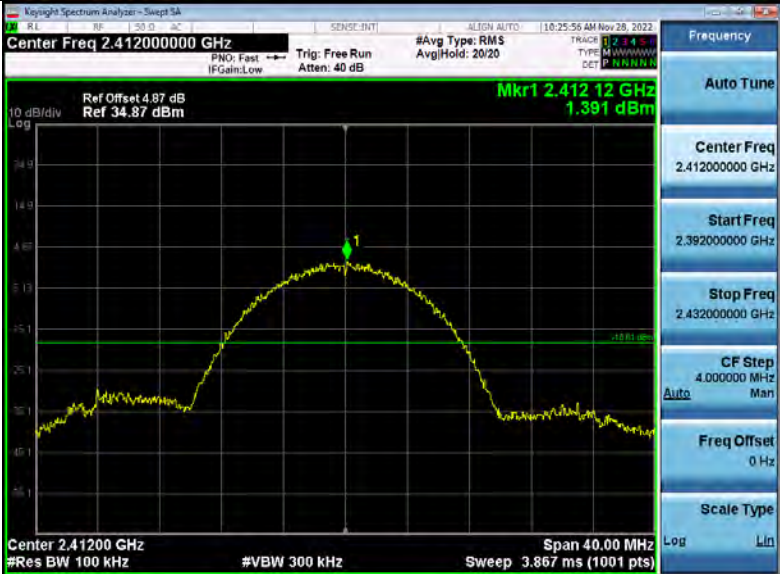
-6dB Bandwidth 2 4GWiFi 802 11n(HT40) 2437



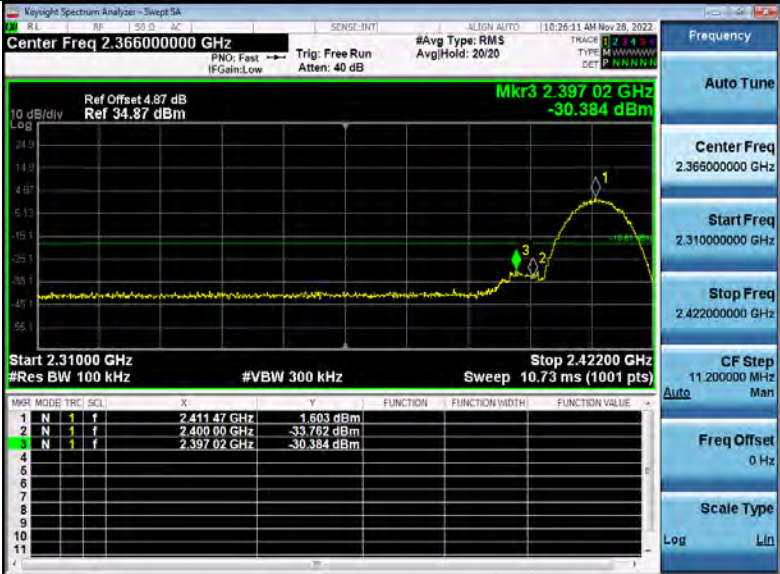


11.2. BANDEGE

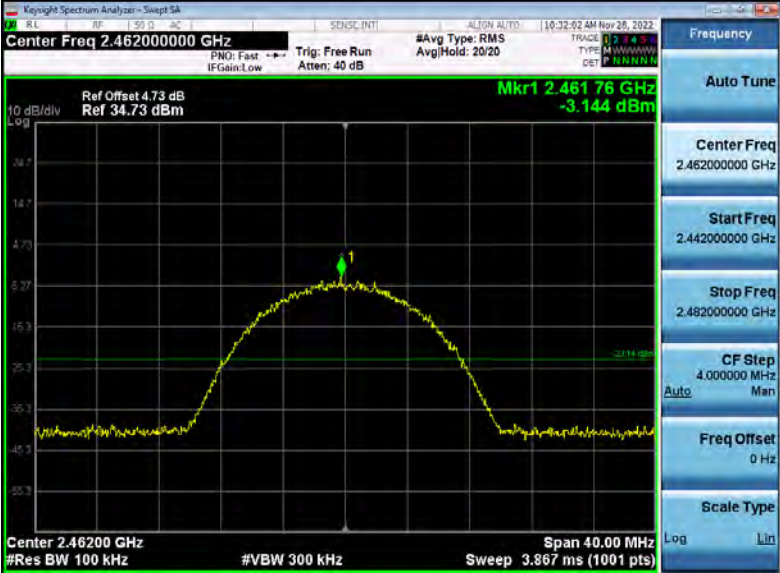
1 Reference Level 2\_4GWiFi 802\_11b 2412



2 Bandedge 2\_4GWiFi NVNT ANT1 802\_11b 2412



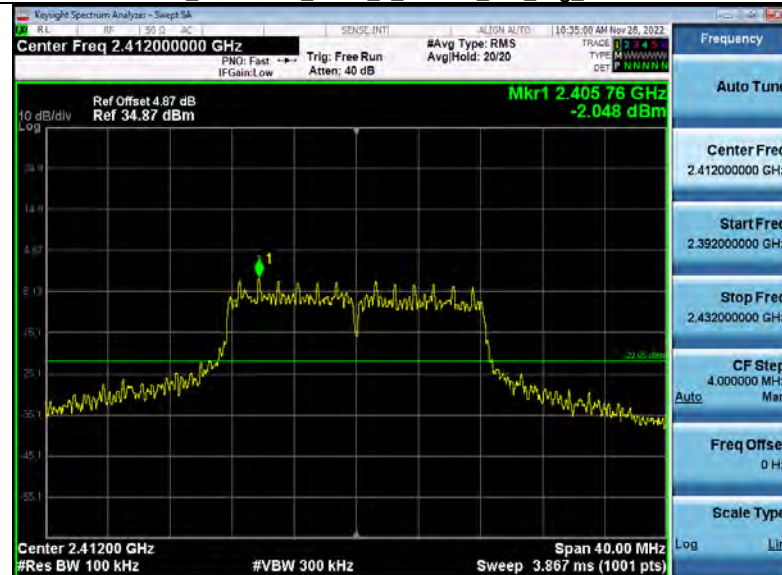
1 Reference Level 2\_4GWiFi 802\_11b 2462



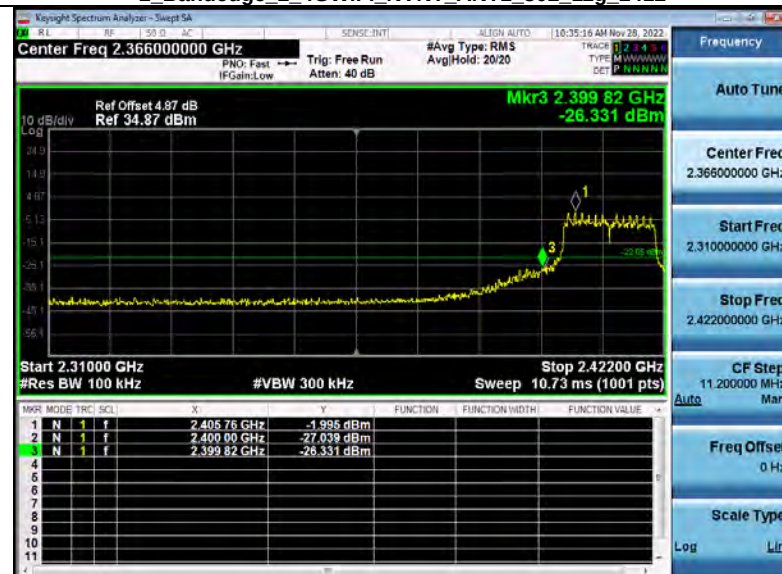
## 2\_Bandedge 2\_4GWiFi\_NVNT\_ANT1\_802\_11b\_2462



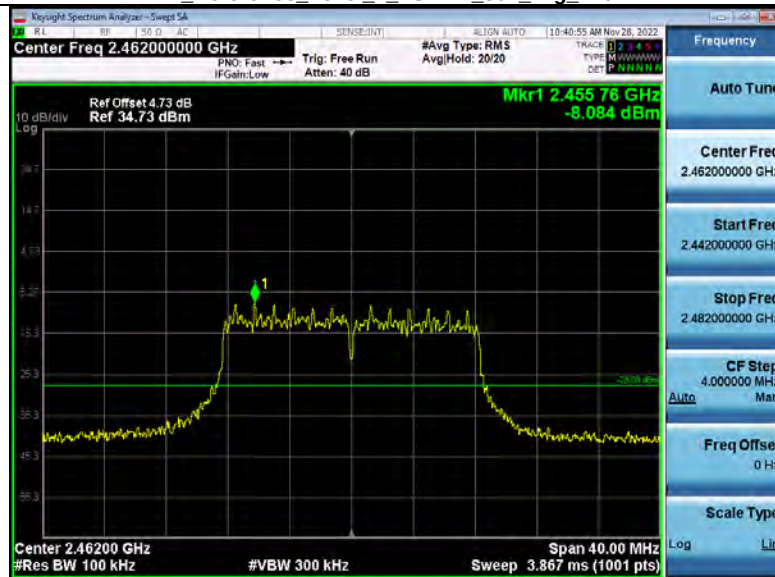
## 1 Reference Level 2\_4GWiFi\_802\_11g\_2412



## 2\_Bandedge 2\_4GWiFi\_NVNT\_ANT1\_802\_11g\_2412



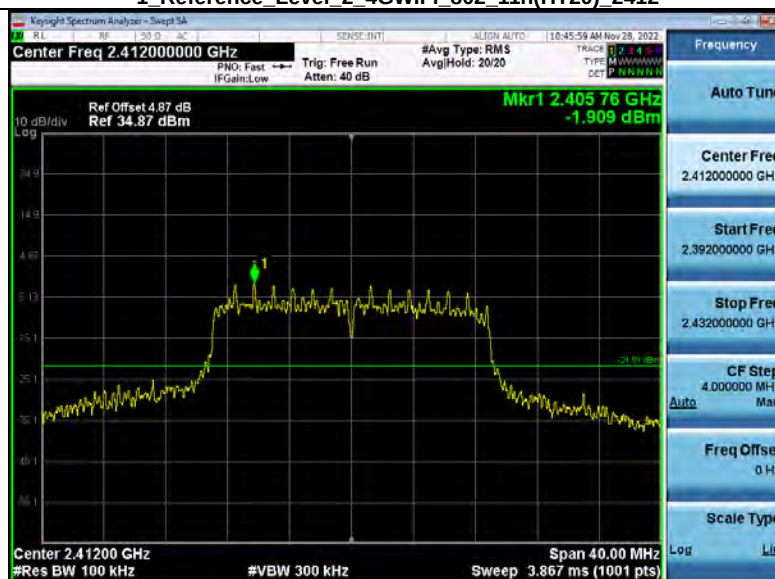
## 1 Reference Level 2 4GWiFi 802\_11g 2462



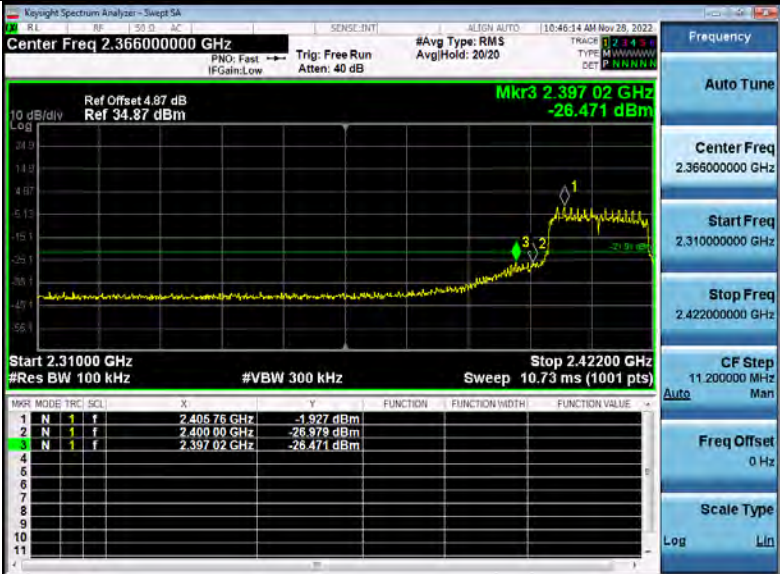
## 2 Bandedge 2 4GWiFi NVNT ANT1 802\_11g 2462



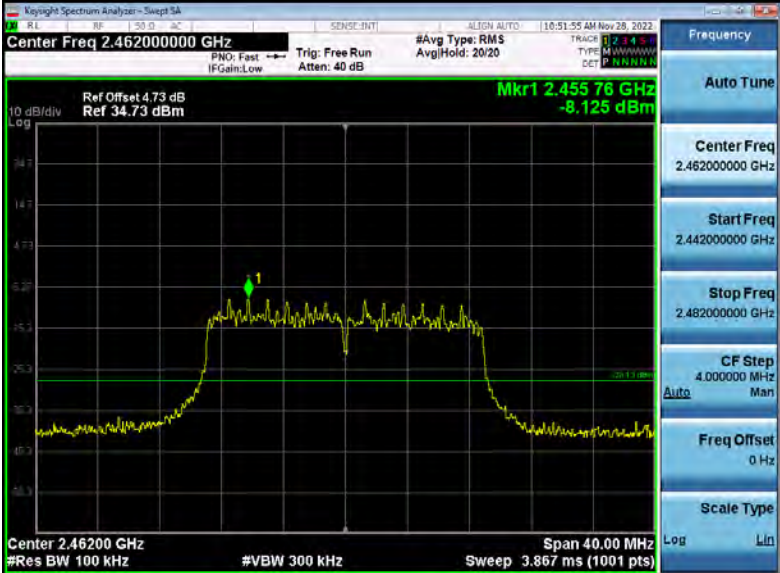
## 1 Reference Level 2 4GWiFi 802\_11n(HT20) 2412



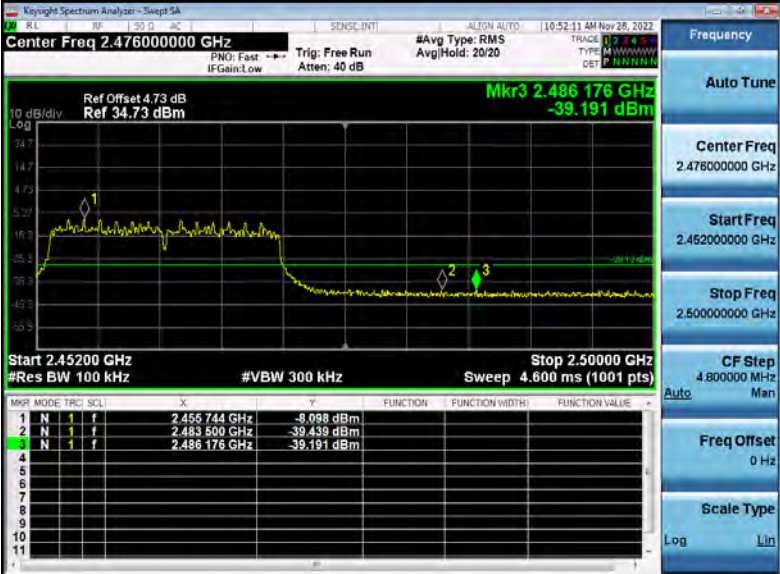
2\_Bandedge 2 4GWiFi NVNT ANT1 802 11n(HT20) 2412



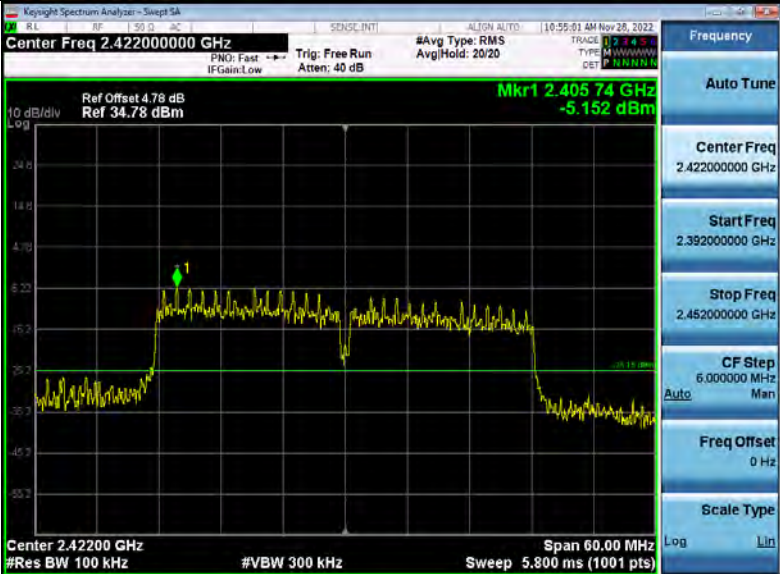
1 Reference Level 2 4GWiFi 802 11n(HT20) 2462



2\_Bandedge 2 4GWiFi NVNT ANT1 802 11n(HT20) 2462



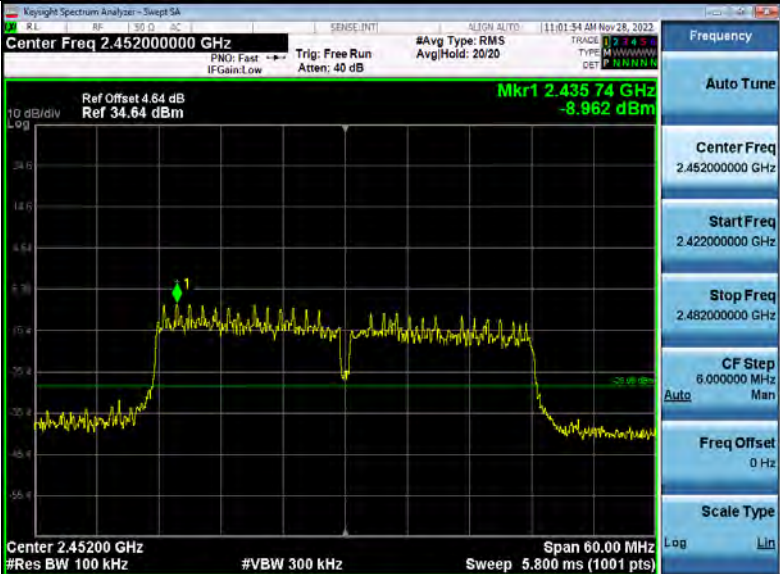
1 Reference Level 2 4GWiFi 802\_11n(HT40) 2422



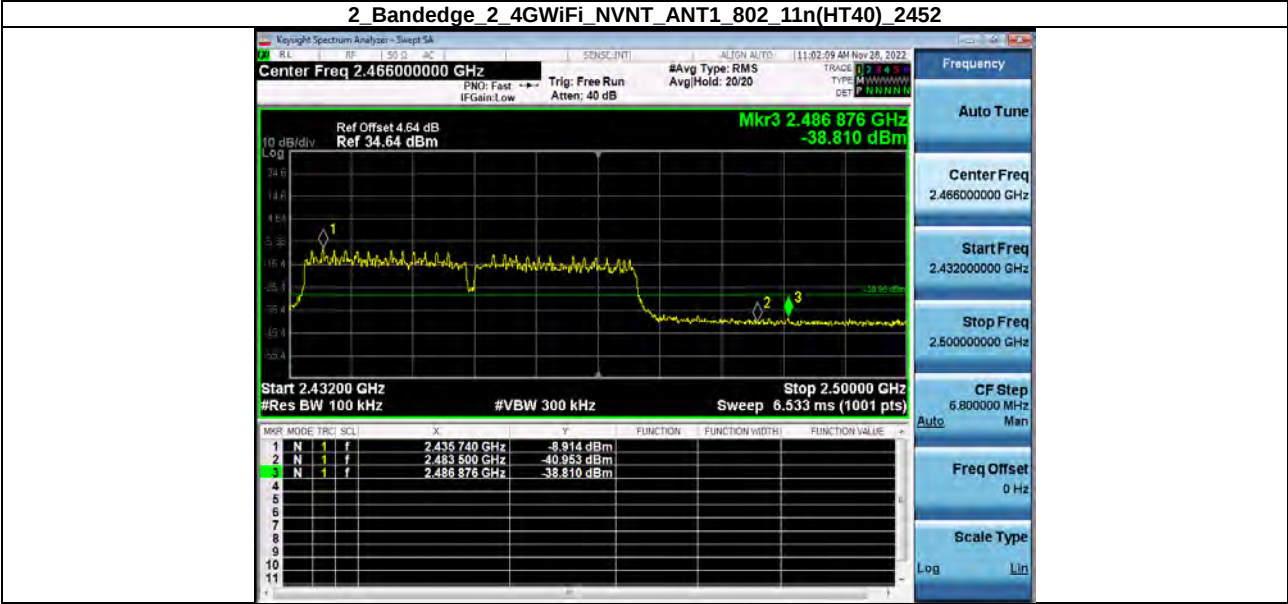
2 Bandedge 2 4GWiFi NVNT ANT1 802\_11n(HT40) 2422



1 Reference Level 2 4GWiFi 802\_11n(HT40) 2452



2\_Bandedge\_2 4GWiFi\_NVNT\_ANT1\_802\_11n(HT40)\_2452

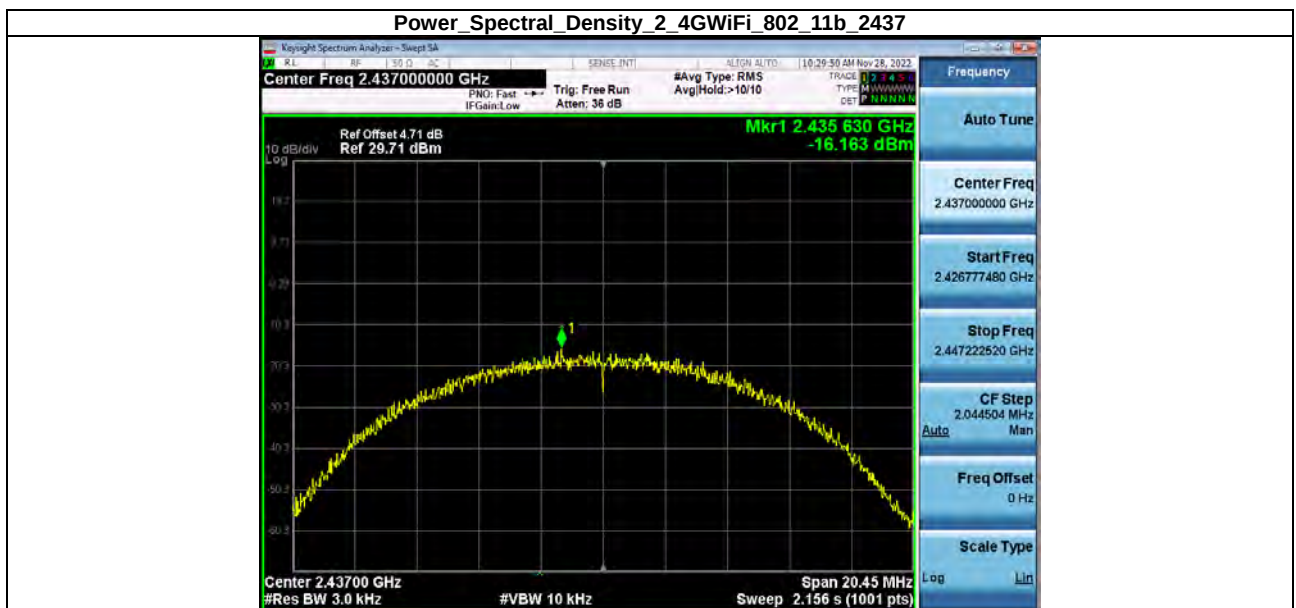
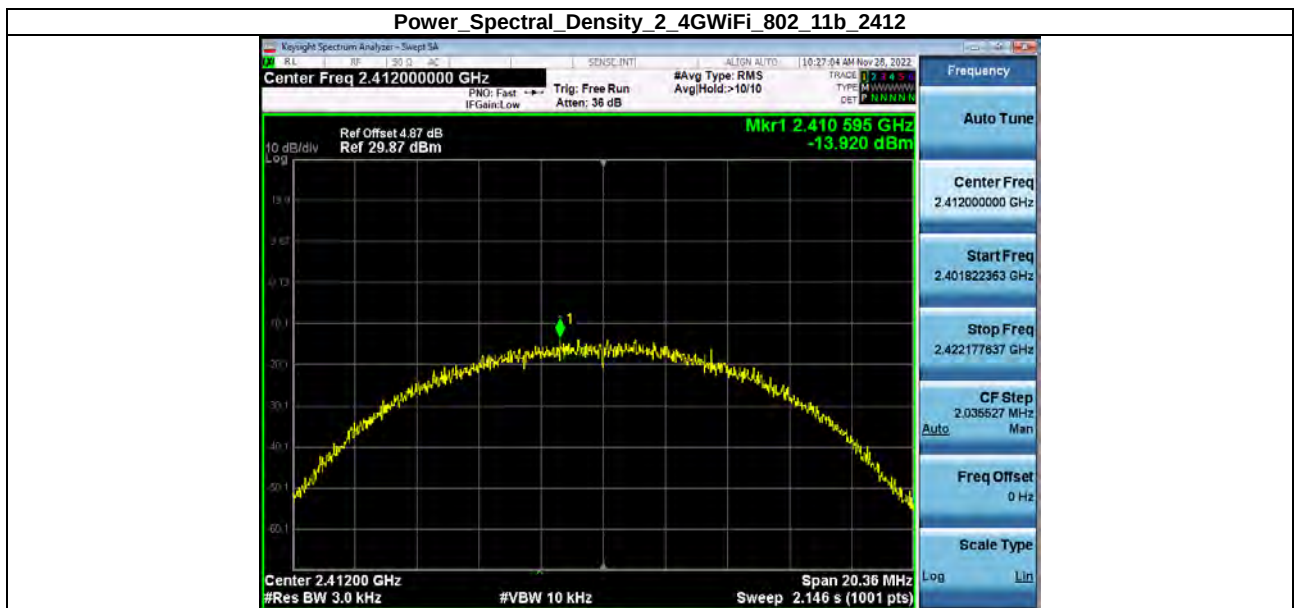


## 11.3. MAX. OUTPUT POWER

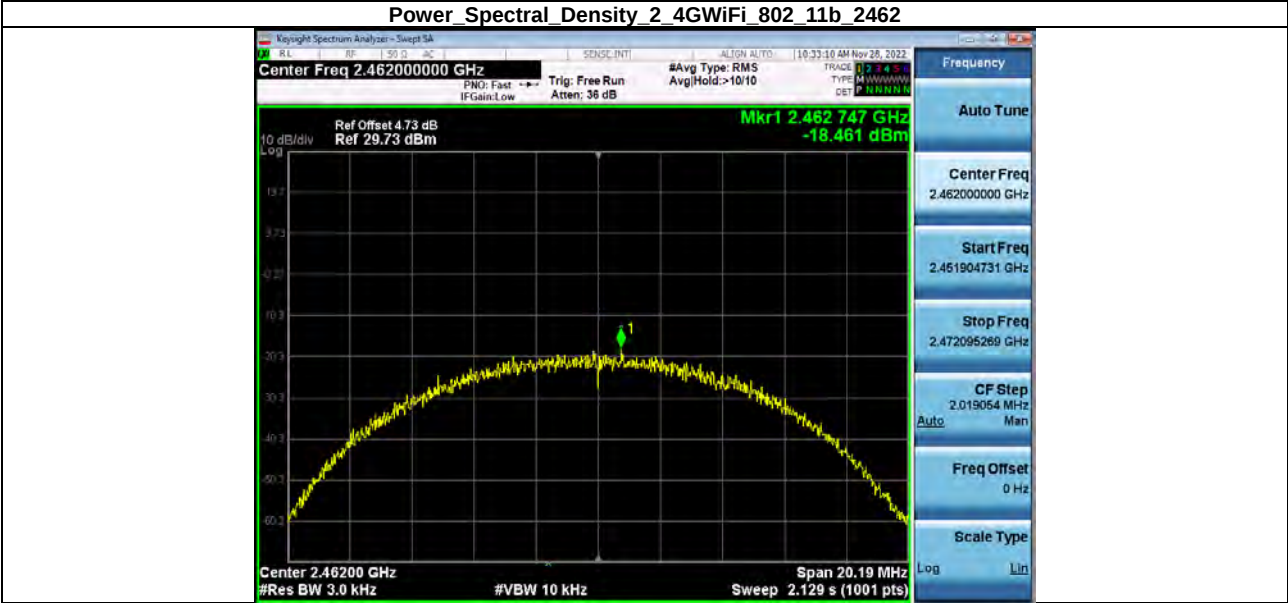
| Condition | Antenna | Modulation    | Frequency (MHz) | Detector | Conducted Power(dBm) | limit(dBm) | Result |
|-----------|---------|---------------|-----------------|----------|----------------------|------------|--------|
| NVNT      | ANT1    | 802.11b       | 2412.00         | Peak     | 15.85                | 30         | Pass   |
| NVNT      | ANT1    | 802.11b       | 2437.00         | Peak     | 13.11                | 30         | Pass   |
| NVNT      | ANT1    | 802.11b       | 2462.00         | Peak     | 12.73                | 30         | Pass   |
| NVNT      | ANT1    | 802.11g       | 2412.00         | Peak     | 15.47                | 30         | Pass   |
| NVNT      | ANT1    | 802.11g       | 2437.00         | Peak     | 12.97                | 30         | Pass   |
| NVNT      | ANT1    | 802.11g       | 2462.00         | Peak     | 12.07                | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00         | Peak     | 15.69                | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00         | Peak     | 12.67                | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00         | Peak     | 12.10                | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2422.00         | Peak     | 12.55                | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2437.00         | Peak     | 11.86                | 30         | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2452.00         | Peak     | 10.29                | 30         | Pass   |

## 11.4. POWER SPECTRAL DENSITY

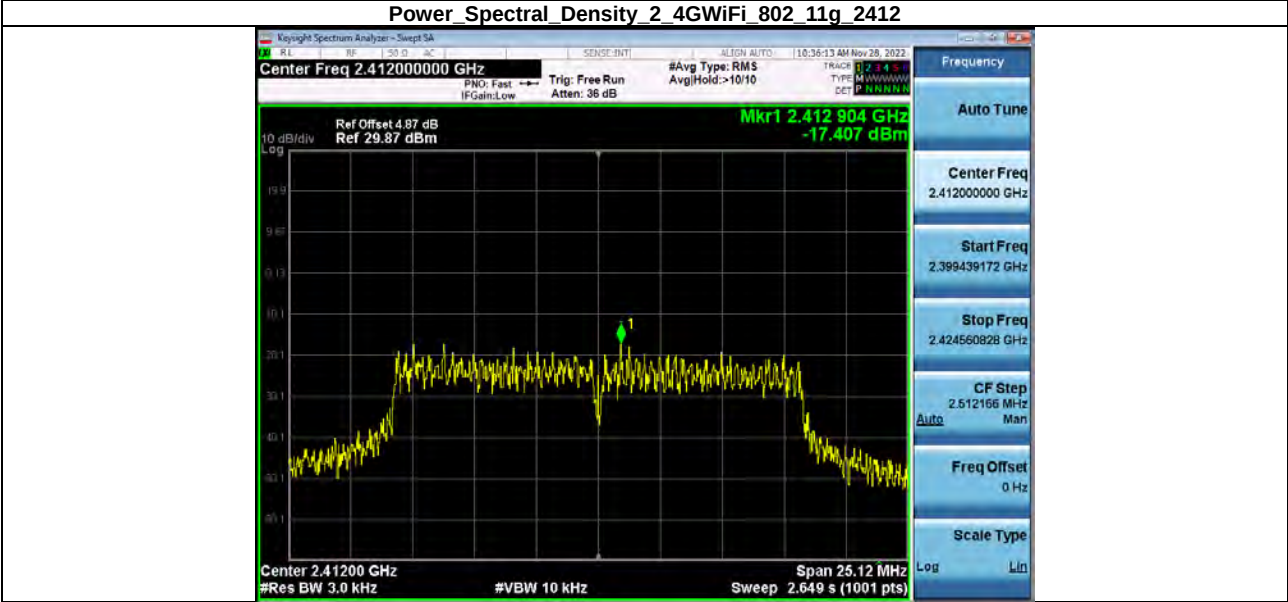
| Condition | Antenna | Modulation    | Frequency (MHz) | PSD(dBm/3kHz) | limit(dBm/3kHz) | Result |
|-----------|---------|---------------|-----------------|---------------|-----------------|--------|
| NVNT      | ANT1    | 802.11b       | 2412.00         | -13.92        | 8               | Pass   |
| NVNT      | ANT1    | 802.11b       | 2437.00         | -16.16        | 8               | Pass   |
| NVNT      | ANT1    | 802.11b       | 2462.00         | -18.46        | 8               | Pass   |
| NVNT      | ANT1    | 802.11g       | 2412.00         | -17.41        | 8               | Pass   |
| NVNT      | ANT1    | 802.11g       | 2437.00         | -19.81        | 8               | Pass   |
| NVNT      | ANT1    | 802.11g       | 2462.00         | -24.07        | 8               | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2412.00         | -18.25        | 8               | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2437.00         | -21.47        | 8               | Pass   |
| NVNT      | ANT1    | 802.11n(HT20) | 2462.00         | -24.02        | 8               | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2422.00         | -20.98        | 8               | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2437.00         | -22.27        | 8               | Pass   |
| NVNT      | ANT1    | 802.11n(HT40) | 2452.00         | -24.57        | 8               | Pass   |



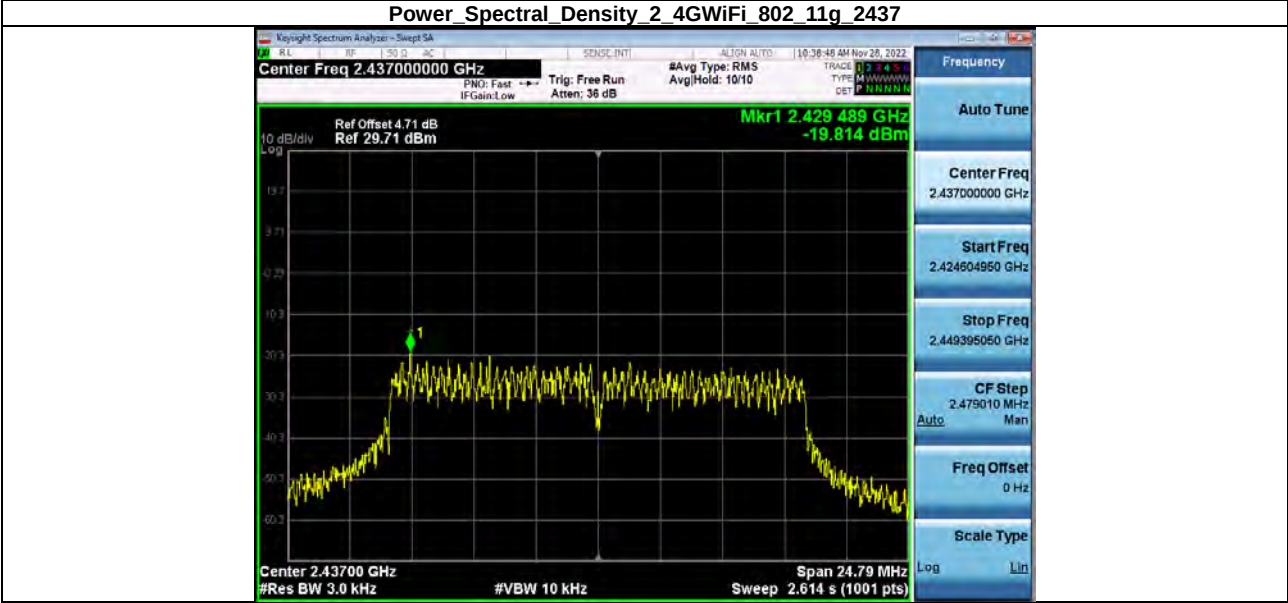
Power Spectral Density 2\_4GWiFi\_802\_11b\_2462



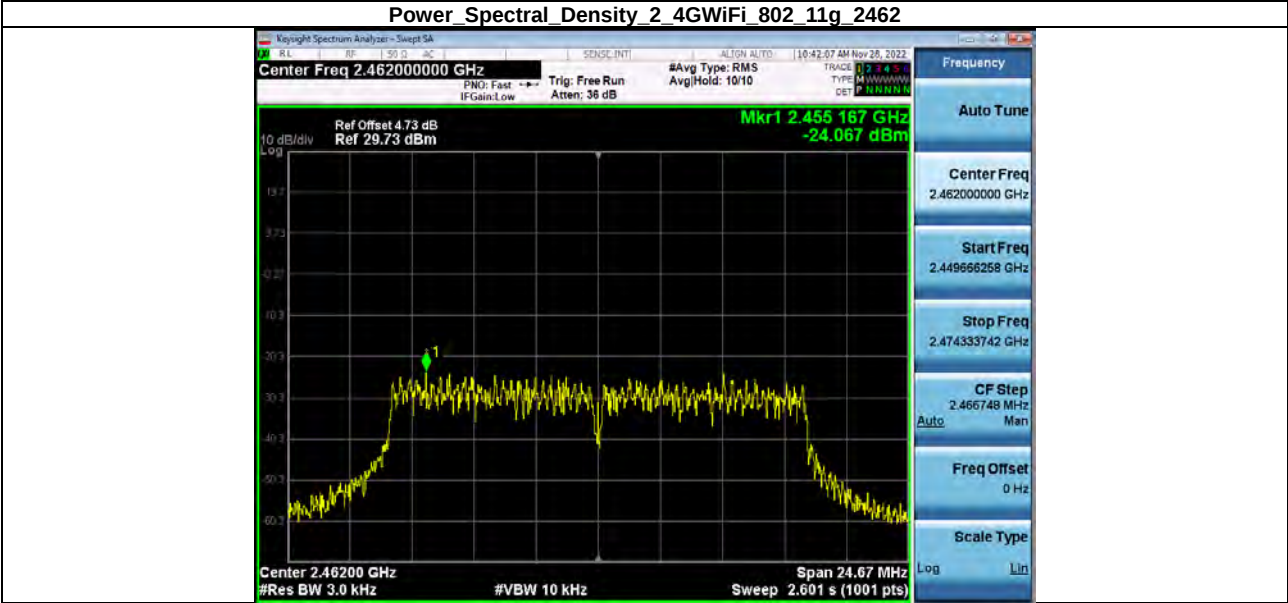
Power Spectral Density 2\_4GWiFi\_802\_11g\_2412



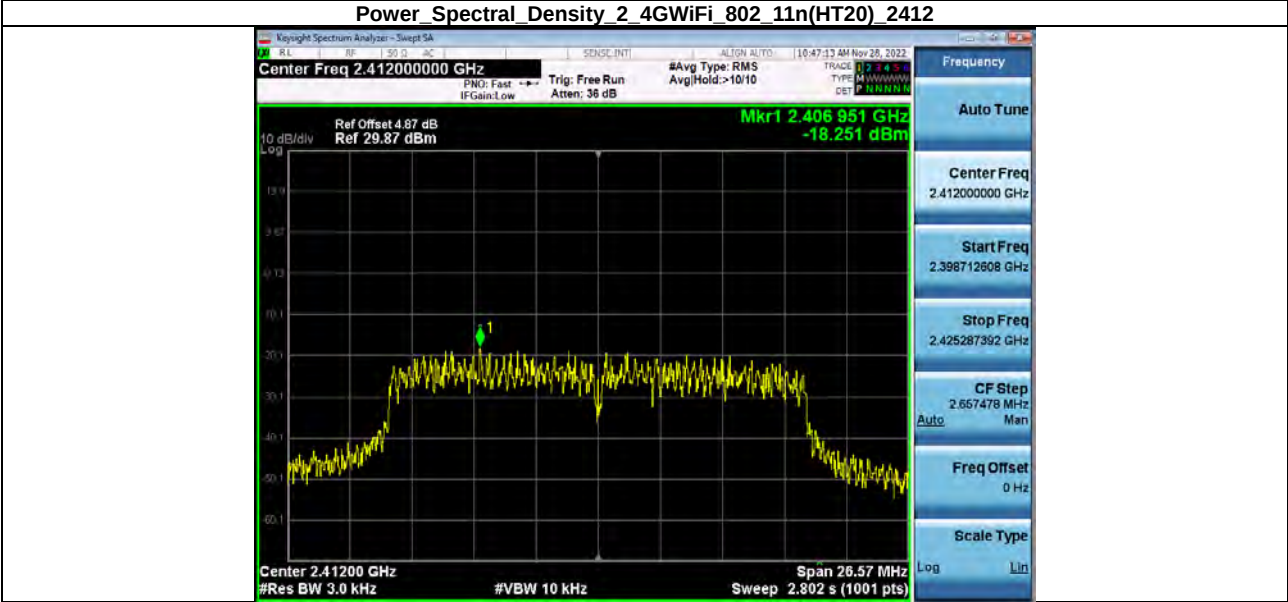
Power Spectral Density 2\_4GWiFi\_802\_11g\_2437



Power Spectral Density 2 4GWiFi 802\_11g\_2462



Power Spectral Density 2 4GWiFi 802\_11n(HT20)\_2412



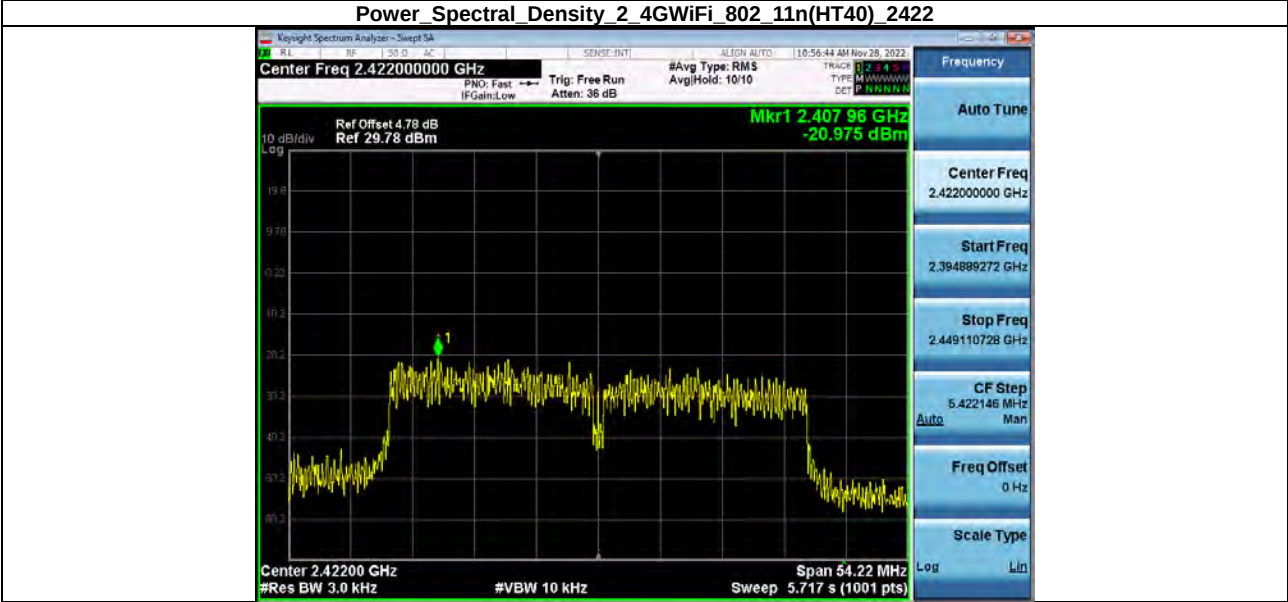
Power Spectral Density 2 4GWiFi 802\_11n(HT20)\_2437



Power Spectral Density 2\_4GWiFi\_802\_11n(HT20)\_2462



Power Spectral Density 2\_4GWiFi\_802\_11n(HT40)\_2422



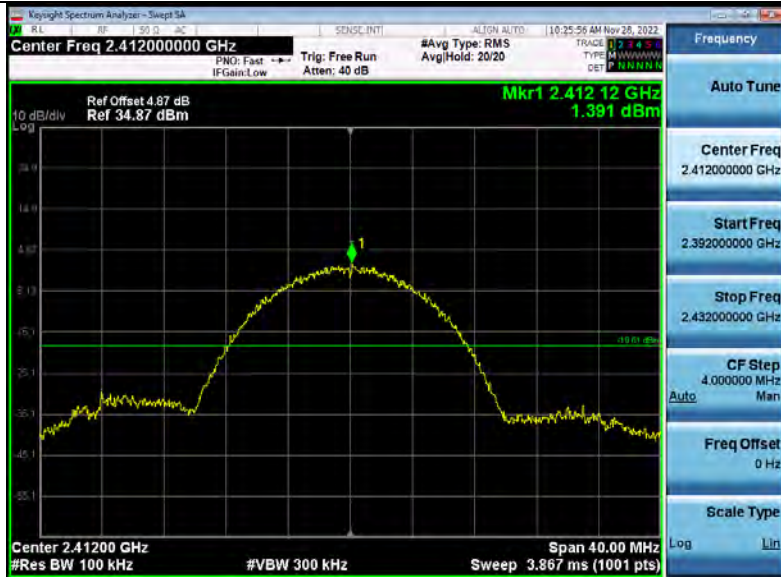
Power Spectral Density 2\_4GWiFi\_802\_11n(HT40)\_2437



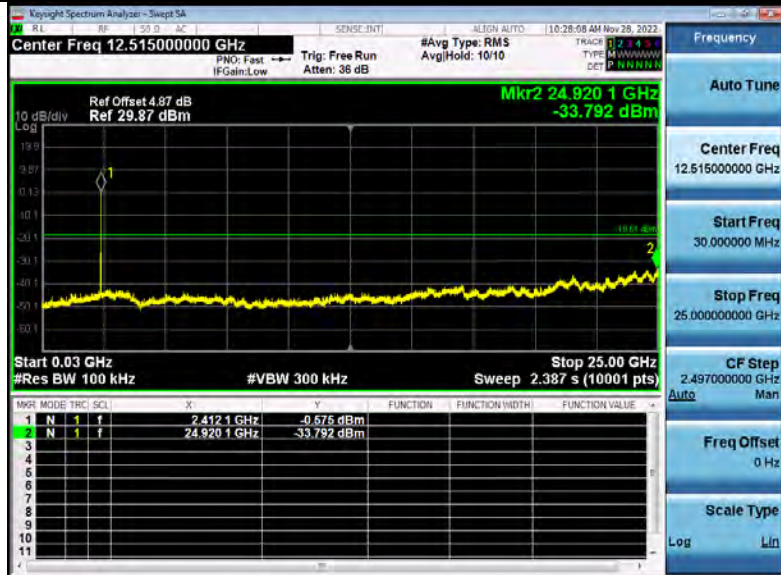


11.5. SPURIOUS EMISSION

1 Reference Level 2 4GWiFi 802 11b 2412



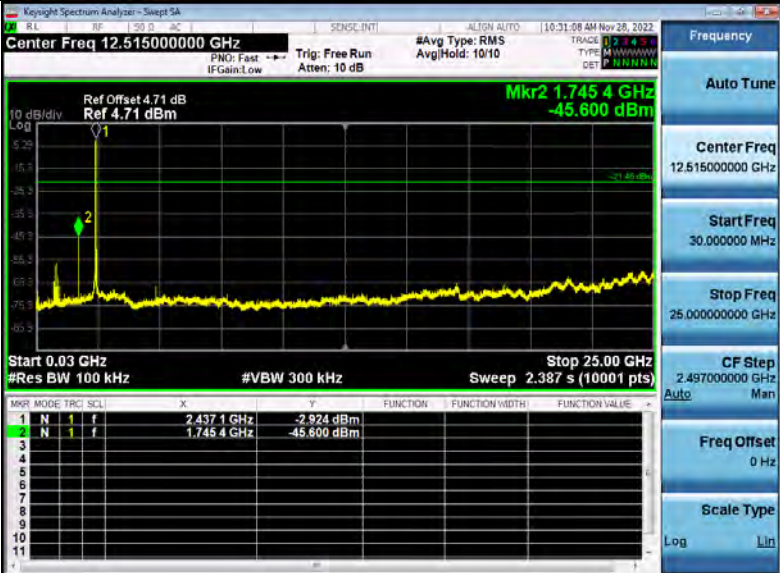
2 Spurious Emission 2 4GWiFi NVNT ANT1 802 11b 2412



1 Reference Level 2\_4GWiFi 802\_11b 2437



2 Spurious Emission 2\_4GWiFi NVNT ANT1 802\_11b 2437



1. Reference Level 2 4GWiFi 802 11b 2462

The screenshot shows a Keysight Spectrum Analyzer interface. The main display area shows a frequency plot with a peak at 2.46176 GHz. The peak is labeled with a marker 'Mkr1' and a value of -3.144 dBm. The plot has a grid with a vertical axis labeled '10 dB/div' and a horizontal axis labeled 'Log'. The plot shows a signal with a peak at 2.46176 GHz and a reference level at -3.144 dBm. The plot also shows a signal with a peak at 2.46176 GHz and a reference level at -3.144 dBm. The plot also shows a signal with a peak at 2.46176 GHz and a reference level at -3.144 dBm.

Keysight Spectrum Analyzer - Sweep SA

Center Freq 2.462000000 GHz

Trig: Free Run

#Avg Type: RMS

Avl Hold: 20/20

Ref Offset 4.73 dB

Ref 34.73 dBm

Mkr1 2.46176 GHz

-3.144 dBm

10 dB/div

Log

Center 2.46200 GHz

#Res BW 100 kHz

#VBW 300 kHz

Span 40.00 MHz

Sweep 3.867 ms (1001 pts)

Frequency

Auto Tune

Center Freq 2.462000000 GHz

Start Freq 2.442000000 GHz

Stop Freq 2.482000000 GHz

CF Step 4.000000 MHz

Auto Man

Freq Offset 0 Hz

Scale Type

Log Lin

2. Spurious Emission\_2\_4GWiFi\_NVNT\_ANT1\_802\_11b\_2462

Keysight Spectrum Analyzer - Sweep SA

Center Freq 12.515000000 GHz

Ref Offset 4.73 dB  
Ref 29.73 dBm

Mkr2 24.500 6 GHz  
-34.334 dBm

Start 0.03 GHz  
Res BW 100 kHz

Stop 25.00 GHz  
Sweep 2.387 s (10001 pts)

| Mkr | Mode | Trc | Sc | X            | Y           | Function | Function Width | Function Value |
|-----|------|-----|----|--------------|-------------|----------|----------------|----------------|
| 1   | N    | 1   | f  | 2.462 1 GHz  | -5.202 dBm  |          |                |                |
| 2   | N    | 1   | f  | 24.500 6 GHz | -34.334 dBm |          |                |                |
| 3   |      |     |    |              |             |          |                |                |
| 4   |      |     |    |              |             |          |                |                |
| 5   |      |     |    |              |             |          |                |                |
| 6   |      |     |    |              |             |          |                |                |
| 7   |      |     |    |              |             |          |                |                |
| 8   |      |     |    |              |             |          |                |                |
| 9   |      |     |    |              |             |          |                |                |
| 10  |      |     |    |              |             |          |                |                |
| 11  |      |     |    |              |             |          |                |                |

Frequency

Auto Tune

Center Freq  
12.515000000 GHz

Start Freq  
30.000000 MHz

Stop Freq  
25.000000000 GHz

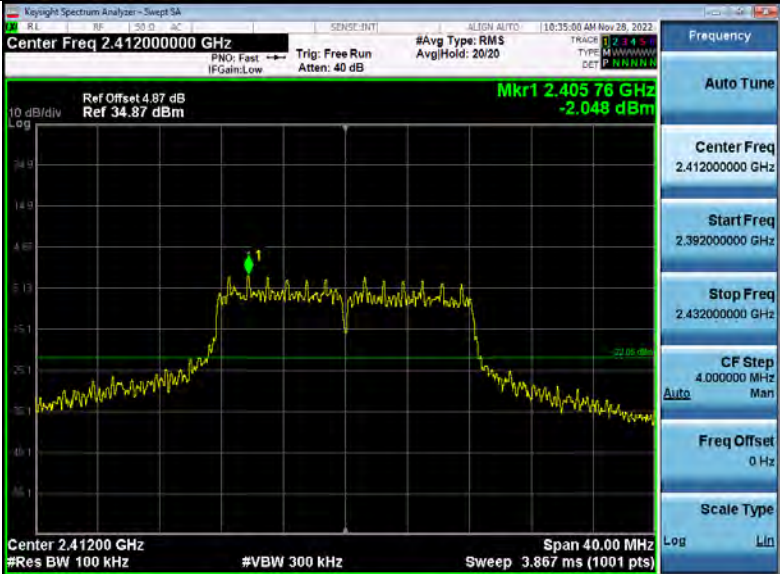
CF Step  
2.497000000 GHz

Auto Man

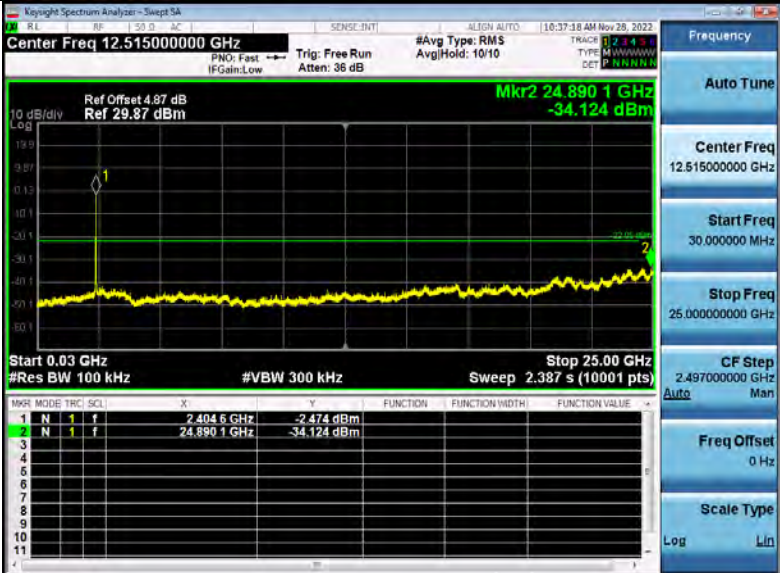
Freq Offset  
0 Hz

Scale Type  
Log Lin

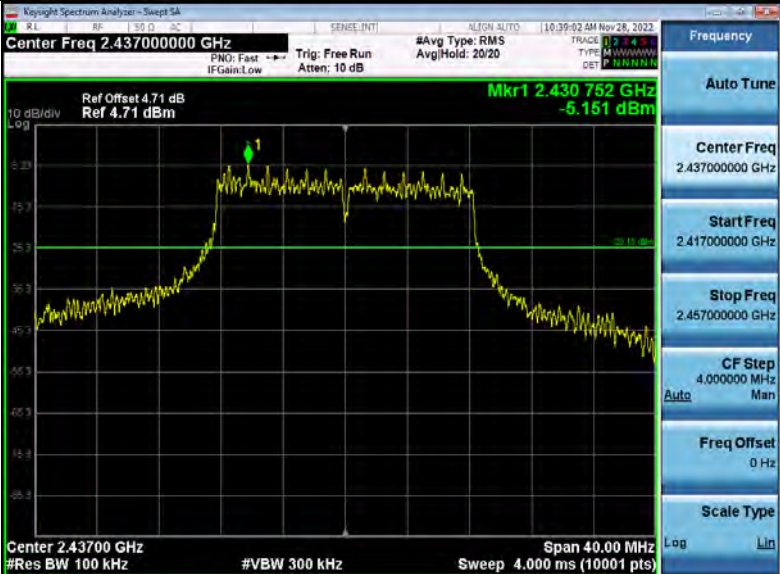
1 Reference Level 2 4GWiFi 802 11g 2412



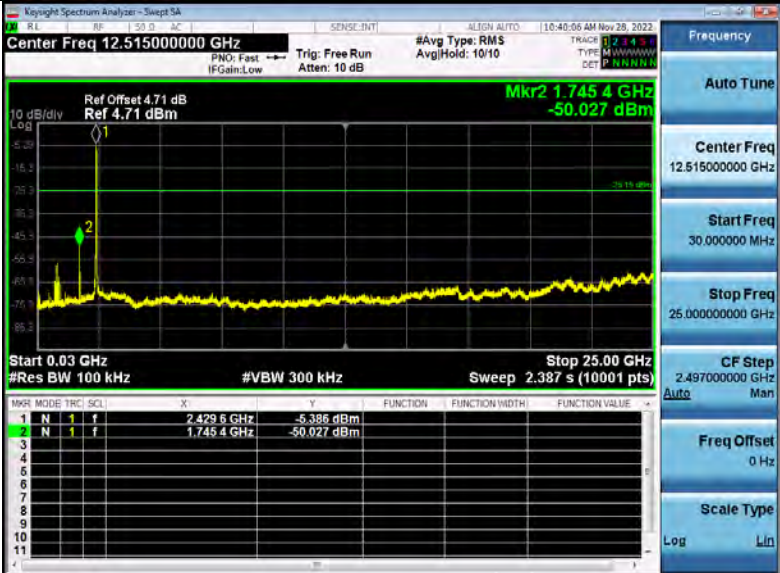
2 Spurious Emission 2 4GWiFi NVNT ANT1 802 11g 2412



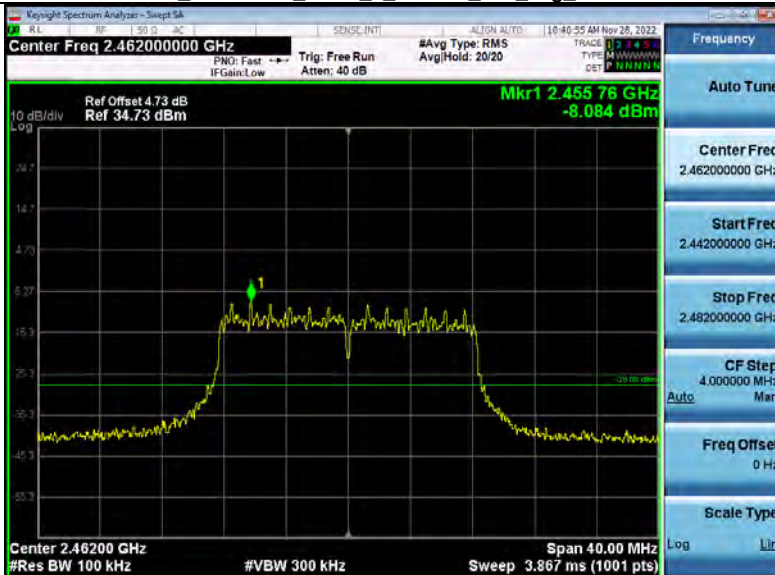
1 Reference Level 2 4GWiFi 802\_11g 2437



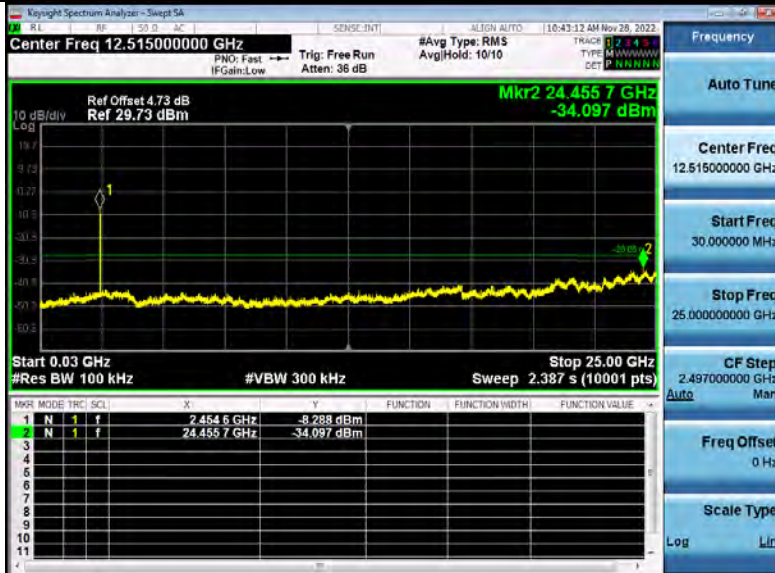
2 Spurious Emission 2 4GWiFi NVNT ANT1 802\_11g 2437



|   |           |         |        |     |     |      |
|---|-----------|---------|--------|-----|-----|------|
| 1 | Reference | Level 2 | 4GWiFi | 802 | 11g | 2462 |
|---|-----------|---------|--------|-----|-----|------|

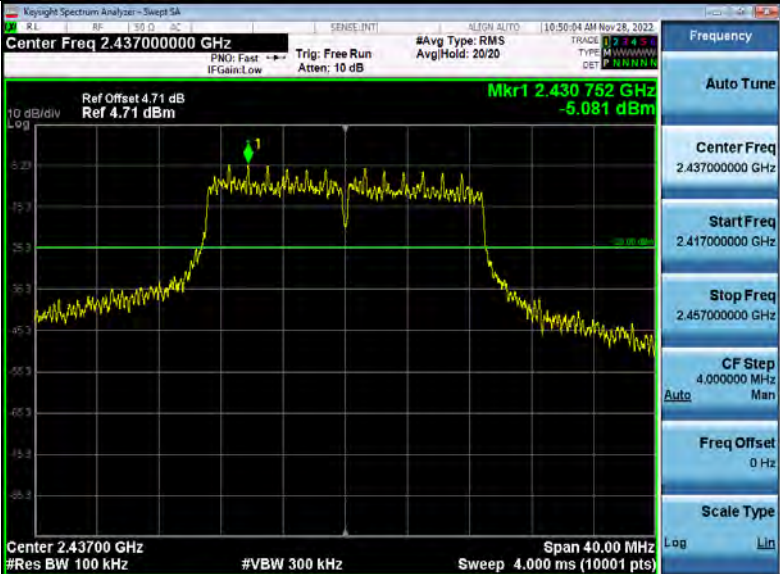


## 2 Spurious Emission 2 4GWiFi NVNT ANT1 802 11g 2462

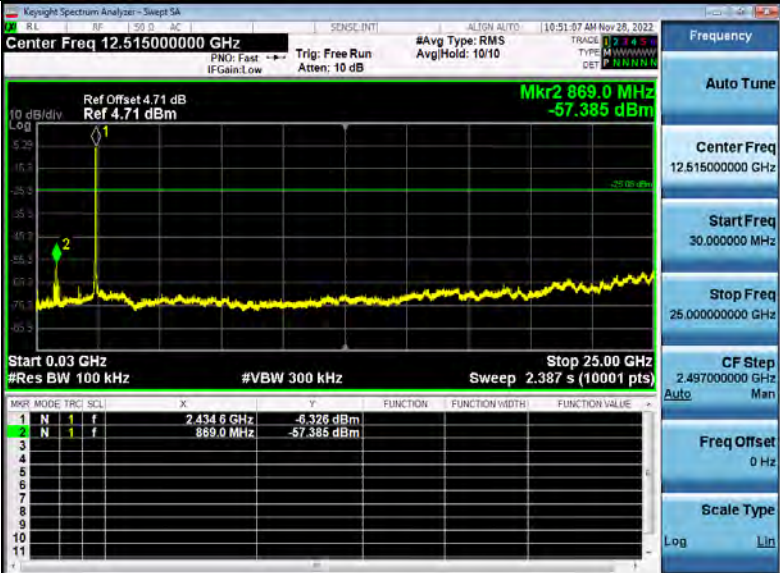




1 Reference Level 2 4GWiFi 802\_11n(HT20) 2437

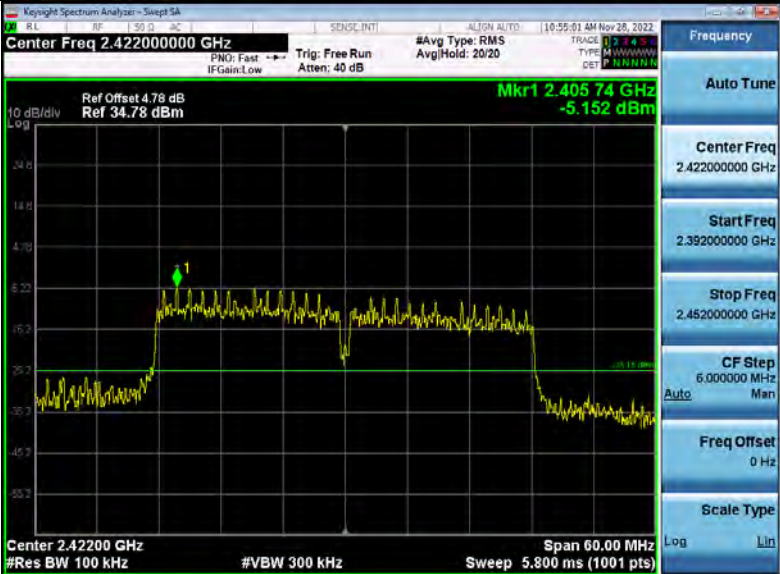


2 Spurious Emission 2 4GWiFi NVNT ANT1 802\_11n(HT20) 2437





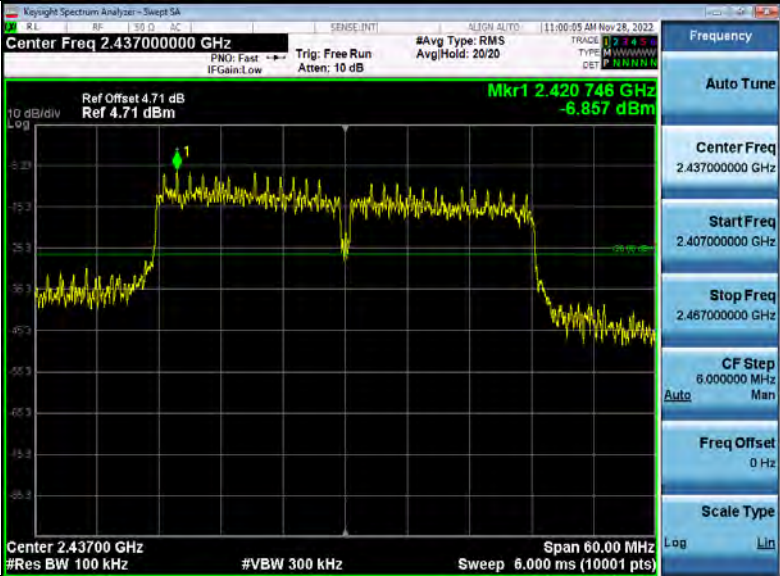
1 Reference Level 2 4GWiFi 802\_11n(HT40) 2422



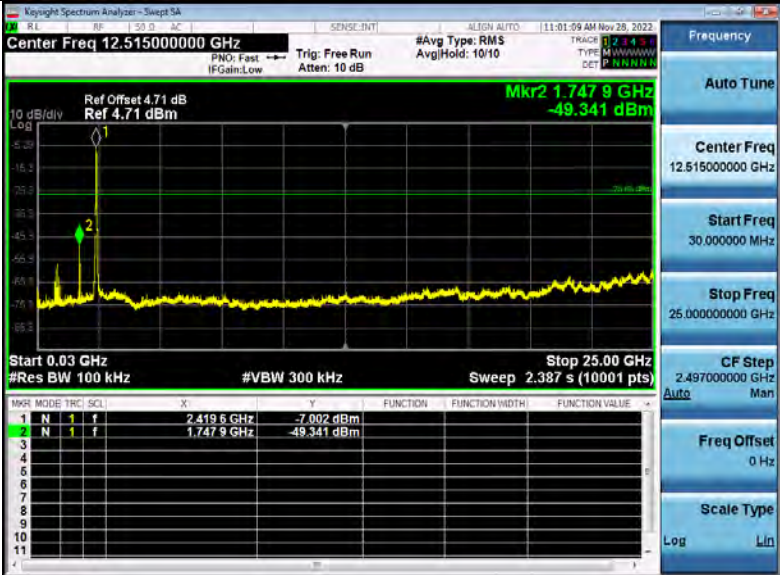
2 Spurious Emission 2 4GWiFi NVNT ANT1 802\_11n(HT40) 2422



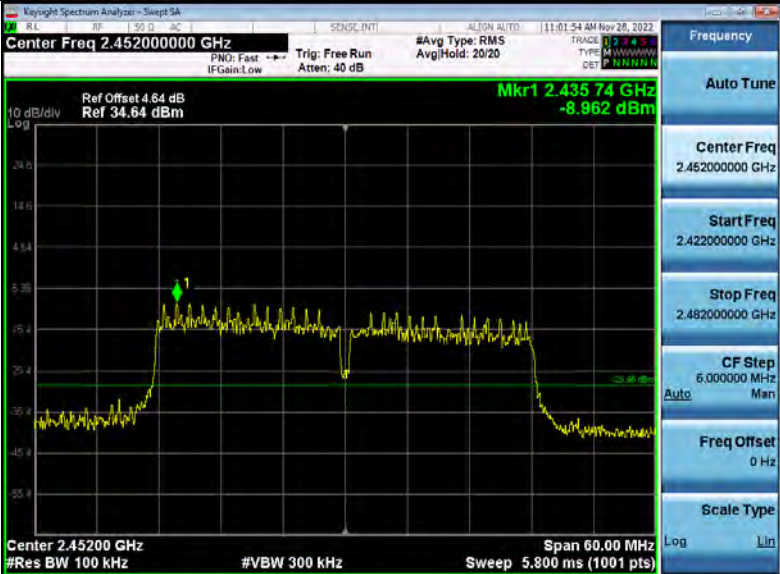
1. Reference Level 2\_4GWiFi\_802\_11n(HT40)\_2437



2. Spurious Emission 2\_4GWiFi\_NVNT\_ANT1\_802\_11n(HT40)\_2437



1 Reference Level 2 4GWiFi 802\_11n(HT40) 2452



2 Spurious Emission 2 4GWiFi NVNT ANT1 802\_11n(HT40) 2452



## 12. TEST SETUP PHOTO



13. EUT CONSTRUCTIONAL DETAILS

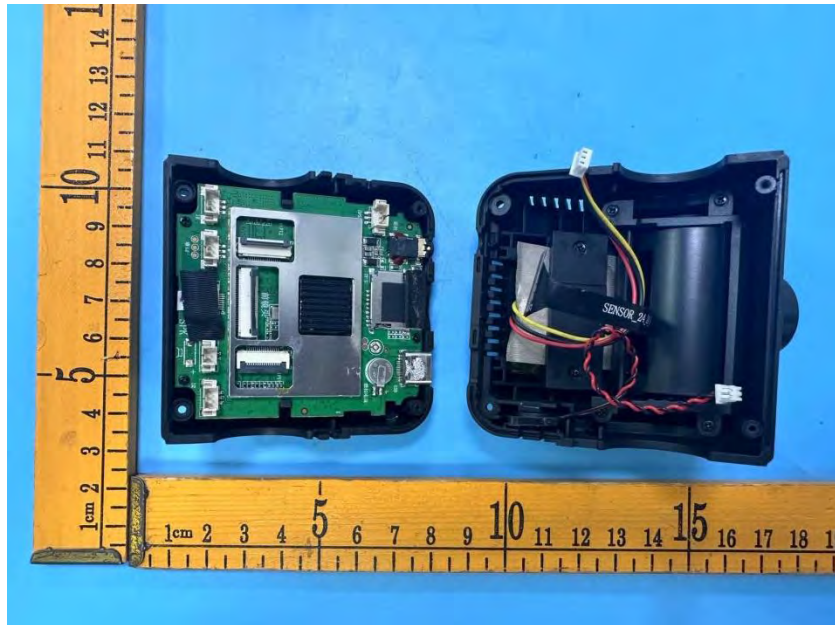
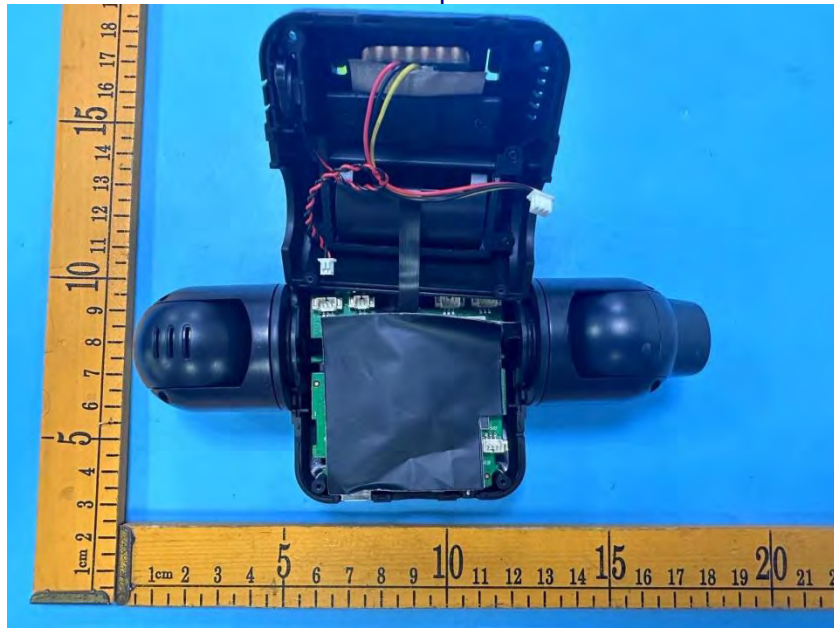
External photos

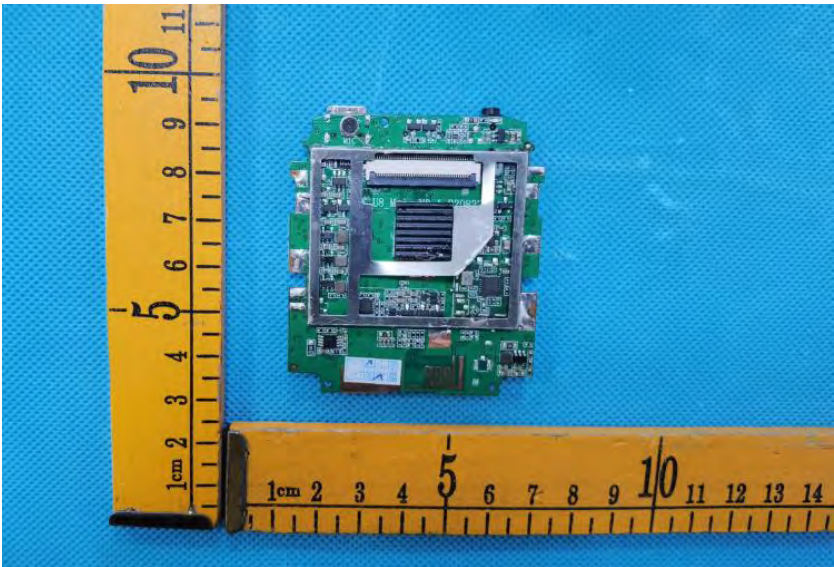
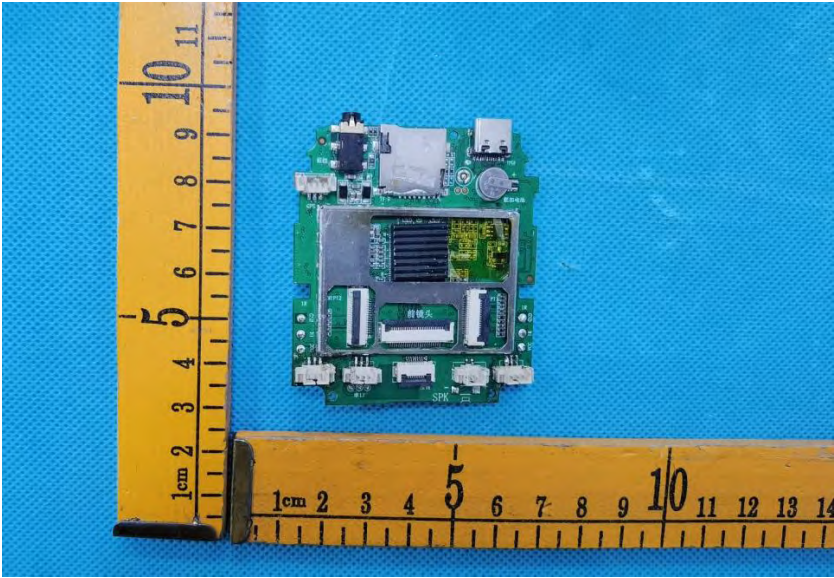
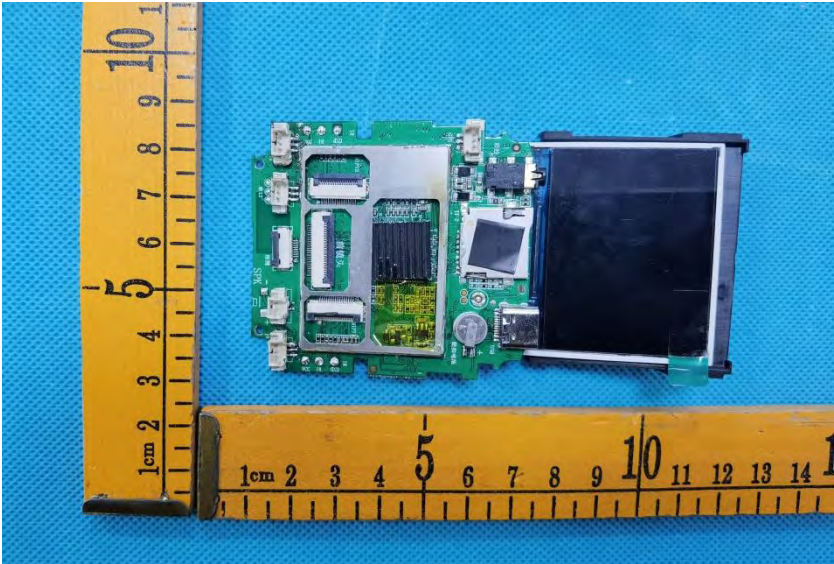






Internal photos







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