

# TEST REPORT

Applicant : SPRING SUNSHINE TECHNOLOGY CO., LIMITED  
Address : Room 2401-2404, 24/F., Fu Fai Commercial Centre 27 Hillier Street,  
Sheung Wan, Hong Kong  
Manufacturer : SPRING SUNSHINE TECHNOLOGY CO., LIMITED  
Address : Room 2401-2404, 24/F., Fu Fai Commercial Centre 27 Hillier Street,  
Sheung Wan, Hong Kong  
Product Name : Smart String Lights  
Model Number : LKHT301  
Trademark : Linkind  
FCC ID : 2AW95LKHT301  
Test Date : Jul. 23, 2026 to Sep. 09 2026  
Date of Report : Sep. 09 2026  
Test Result : This device described above has been tested by BKC, and the test results show that the equipment under test (EUT) is in compliance with the Standard requirements. And it is applicable only to the tested sample identified in the report.

## Test Procedure Used:

Standards : FCC CFR Title 47 Part 15 Subpart C Section 15.247  
ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024

Prepared by(Test Engineer):  
Cindy Qin

*Cindy Qin*

Reviewer(Supervisor):  
Ken Wu

*Ken Wu*

Approved(Manager):  
Abel Yu



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[illegible]

## 1. General Information

### 1.1. Description of Device (EUT)

|                        |   |                                                                                |
|------------------------|---|--------------------------------------------------------------------------------|
| EUT Name               | : | Smart String Lights                                                            |
| Model No.              | : | LKHT301                                                                        |
| Model Difference       | : | N/A                                                                            |
| Power supply           | : | Input:120V~50/60Hz 0.5A<br>Output:29V 689mA 20W                                |
| Operation frequency    | : | 2412-2462MHz for 802.11b/g/n20;<br>2422-2452MHz for 802.11n40                  |
| Modulation             | : | 802.11b:(DQPSK, DBPSK, CCK) DSSS<br>802.11g/n:(64-QAM,16-QAM, QPSK, BPSK) OFDM |
| Antenna Type           | : | PCB antenna, Maximum Gain is 3.86dBi                                           |
| Intend use environment | : | Residential, commercial and light industrial environment                       |

### 1.2. Channel List

Frequency and Channel list for 802.11 b/g/n(HT20/HT40):

| Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) |
|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|
| 1           | 2412            | 2           | 2417            | 3           | 2422            | 4           | 2427            |
| 5           | 2432            | 6           | 2437            | 7           | 2442            | 8           | 2447            |
| 9           | 2452            | 10          | 2457            | 11          | 2462            |             |                 |

Test Frequency and Channel for 802.11 b/g/n(HT20/HT40):

| Lowest Frequency |                 | Middle Frequency |                 | Highest Frequency |                 |
|------------------|-----------------|------------------|-----------------|-------------------|-----------------|
| Channel No.      | Frequency (MHz) | Channel No.      | Frequency (MHz) | Channel No.       | Frequency (MHz) |
| 1                | 2412            | 6                | 2437            | 11                | 2462            |
| 3                | 2422            | 6                | 2437            | 9                 | 2452            |

### 1.3. Test configuration

|                                                                                                                                                                                                                                       |                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| Transmitting mode                                                                                                                                                                                                                     | Keep the EUT in continuously transmitting mode. |
| Remark: During the test, 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. |                                                 |
| Test Software                                                                                                                                                                                                                         | EspRFTTestTool                                  |
| Power level setup                                                                                                                                                                                                                     | default                                         |

## 1.4.Summary of test result

| RF PART                                                                                                                             |                            |        |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------|
| Test Items                                                                                                                          | Test Requirement           | Result |
| Antenna requirement                                                                                                                 | FCC part 15.203/15.247 (b) | PASS   |
| Duty cycle                                                                                                                          | /                          | PASS   |
| AC Power Line Conducted Emission                                                                                                    | FCC part 15.207            | PASS   |
| Conducted Peak Output Power                                                                                                         | FCC part 15.247 (b)(3)     | PASS   |
| Channel Bandwidth& 99% OCB                                                                                                          | FCC part 15.247 (a)(2)     | PASS   |
| Power Spectral Density                                                                                                              | FCC part 15.247 (e)        | PASS   |
| Band Edge                                                                                                                           | FCC part 15.247(d)         | PASS   |
| Spurious Emission                                                                                                                   | FCC part 15.205/15.209     | PASS   |
| Remark:<br>N/A is an abbreviation for Not Applicable.<br>Measurement Uncertainty is not taken into account for conformity statement |                            |        |

## 1.5.Special Accessories and Auxiliary Equipment

| Description | Manufacturer | Model No.   | Hardware Version | Software Version |
|-------------|--------------|-------------|------------------|------------------|
| Adapter     | /            | /           | /                | /                |
| Laptop      | DELL         | Vostro 5490 | /                | /                |
| cable       | /            | /           | /                | /                |

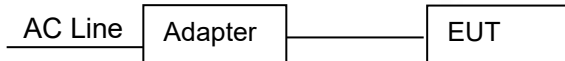
## 1.6.Test mode

The special RF test software was used to control EUT work in Continuous WIFI TX mode, and select test channel, wireless mode.

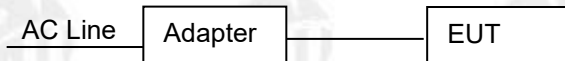
| Test mode                                                                   | Low channel | Middle channel | High channel |
|-----------------------------------------------------------------------------|-------------|----------------|--------------|
| 802.11b                                                                     | 2412MHz     | 2437MHz        | 2462MHz      |
| 802.11g                                                                     | 2412MHz     | 2437MHz        | 2462MHz      |
| 802.11n20                                                                   | 2412MHz     | 2437MHz        | 2462MHz      |
| 802.11n40                                                                   | 2422MHz     | 2437MHz        | 2452MHz      |
| Note: All modes have been tested., Only the worst Data Record in the report |             |                |              |

## 1.7.Block Diagram

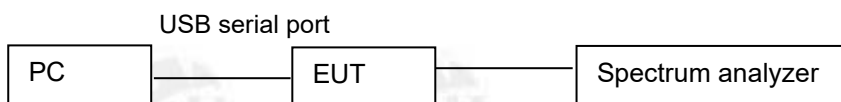
### Radiated Emission



### Conducted Spurious



### RF Conducted Test



## 1.8.Test Conditions

| Category          | Normal Conditions | Extreme Conditions |
|-------------------|-------------------|--------------------|
| Temperature range | 15-35℃            | N/A                |
| Humidity range    | 20-75%            | N/A                |
| Pressure range    | 86-106kPa         | N/A                |
| Power supply      | DC 29V            | N/A                |

Note: N/A is an abbreviation for Not Applicable.

## 1.9.Measurement Uncertainty (95% confidence levels, k=2)

| Item                               | MU                       | Remark |
|------------------------------------|--------------------------|--------|
| Uncertainty for radio frequency    | $\pm 7 \times 10^{-8}$   |        |
| Conducted Emissions (150kHz~30MHz) | $\pm 3.64\text{dB}$      |        |
| Radiated Emission(9KHz~30MHz)      | $\pm 4.51\text{dB}$      |        |
| Radiated Emission(30MHz~1GHz)      | $\pm 5.03\text{dB}$      |        |
| Radiated Emission(1GHz~6GHz)       | $\pm 3.92\text{dB}$      |        |
| Radiated Emission(6GHz~18GHz)      | $\pm 4.33\text{dB}$      |        |
| Radiated Emission(18GHz~40GHz)     | $\pm 3.38\text{dB}$      |        |
| Uncertainty for conducted RF Power | $\pm 0.20\text{dB}$      |        |
| Conducted spurious emissions       | $\pm 0.24\text{dB}$      |        |
| Uncertainty for temperature        | 0.6℃                     |        |
| Uncertainty for humidity           | 1%                       |        |
| Bandwidth                          | $\pm 1.5 \times 10^{-6}$ |        |
| Time                               | $\pm 2\%$                |        |
| Duty Cycle                         | $\pm 2\%$                |        |

Remark: The coverage Factor (k=2), and measurement Uncertainty for a level of Confidence of 95%

## 1.10.Test Facility

|                                   |   |                                                                                                                                                                                                     |
|-----------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Description                  |   |                                                                                                                                                                                                     |
| Name of Firm                      | : | Shenzhen NTT Testing Technology Co.,Ltd.                                                                                                                                                            |
| Site Location                     | : | 1B, Building 2, Factory Building & 103, Building 3, Factory Building, Dayang Industrial Park No.4, Industrial Avenue, Tangwei Community, Fuhai Sub-district, Bao 'an District, Shenzhen City, China |
| FCC Designation Number            | : | CN3446                                                                                                                                                                                              |
| FCC Test Firm Registration Number | : | 129414                                                                                                                                                                                              |

## 1.11.Test Equipment

### Conducted Test Site

| Name              | Model No.     | Serial No. | Manufacturer | Date of Cal. | Due Date  |
|-------------------|---------------|------------|--------------|--------------|-----------|
| 944 Shielded Room | HSRCE944      | /          | HTEC         | 2025/4/30    | 2028/4/29 |
| EMI Test Receiver | ESPI          | /          | RS           | 2025/9/8     | 2026/9/7  |
| LISN              | NNLK 8129     | 00603      | Schwarzbeck  | 2025/9/8     | 2026/9/7  |
| LISN              | NNHV 8123-400 | 00694      | Schwarzbeck  | 2025/9/8     | 2026/9/7  |
| LISN              | NNHV 8123-400 | 00680      | Schwarzbeck  | 2025/9/8     | 2026/9/7  |
| Cable             | RG223-1500MM  | NA         | RG           | 2025/9/8     | 2026/9/7  |

| Name              | Model No. | Serial No. | Manufacturer  | Date of Cal. | Due Date   |
|-------------------|-----------|------------|---------------|--------------|------------|
| 944 Shielded Room | HSRCE944  | /          | HTEC          | 2025/04/30   | 2028/04/29 |
| EMI Test Receiver | ESCI      | 100881/003 | ROHDE&SCHWARZ | 2026/09/04   | 2027/09/03 |
| LISN              | AMN6500   | 101185     | ROHDE&SCHWARZ | 2026/09/04   | 2027/09/03 |
| LISN              | NNLK 8129 | 00603      | SCHWARZBECK   | 2026/09/04   | 2027/09/03 |
| Cable             | RG223-2M  | /          | RG            | 2026/09/04   | 2027/09/03 |

### Radiated Test Site(Below 1G and Above 1G)&RF Test Site

| Name | Model No. | Serial No. | Manufacturer | Date of Cal. | Due Date |
|------|-----------|------------|--------------|--------------|----------|
|------|-----------|------------|--------------|--------------|----------|

|                                                     |                   |            |                 |           |           |
|-----------------------------------------------------|-------------------|------------|-----------------|-----------|-----------|
| 966 Shielded Room                                   | 966 Room          | /          | EMToni          | 2025/7/24 | 2028/7/23 |
| EMI Test Receiver                                   | ESCI              | 101018     | RS              | 2025/9/8  | 2026/9/7  |
| Amplifier<br>(30MHz-1GHz)                           | BBV 9718D         | 00042      | SCHWARZBECK     | 2025/9/8  | 2026/9/7  |
| Bilog Antenna<br>(30MHz-1GHz)                       | VULB9168          | 1858       | SCHWARZBECK     | 2025/9/9  | 2026/9/8  |
| Horn antenna<br>(1GHz-18GHz)                        | BBHA 9120<br>D    | 02622      | SCHWARZBECK     | 2025/9/9  | 2026/9/8  |
| Preamplifier<br>(1GHz-18GHz)                        | BBV 9718D         | 0024       | SCHWARZBECK     | 2025/9/8  | 2026/9/7  |
| Spectrum Analyzer<br>(10Hz-40GHz)                   | FSV 40            | 100952     | Rohde & Schwarz | 2025/9/8  | 2026/9/7  |
| Preamplifier<br>(18GHz-40GHz)                       | BBV 9721          | 0056       | SCHWARZBECK     | 2025/9/8  | 2026/9/7  |
| Double Ridge Guide<br>Horn Antenna<br>(18GHz-40GHz) | SAS-574           | 588        | A.H.System      | 2025/9/8  | 2026/9/7  |
| Loop Antenna<br>(9KHz-30MHz)                        | FMZB1519B         | 014        | SCHWARZBECK     | 2025/9/8  | 2026/9/7  |
| Amplifier<br>(9KHz-30MHz)                           | CVP 9222 C        | 00109      | SCHWARZBECK     | 2025/9/8  | 2026/9/7  |
| MXG Signal Analyzer                                 | N9020A            | MY50510202 | Agilent         | 2025/9/8  | 2026/9/7  |
| MXG Vector Signal<br>Generator                      | N5182A            | MY50140020 | Agilent         | 2025/9/8  | 2026/9/7  |
| MXG Analog Signal<br>Generator                      | N5181A            | MY47420919 | Agilent         | 2025/9/8  | 2026/9/7  |
| Power Sensor                                        | TR1029-2          | 512364     | Techoy          | 2025/9/8  | 2026/9/7  |
| RF Switch                                           | TR1029-1          | 512364     | Techoy          | 2025/9/8  | 2026/9/7  |
| Cable                                               | DA800-<br>4000MM  | NA         | DA              | 2025/9/8  | 2026/9/7  |
| Cable                                               | DA800-<br>11000MM | NA         | DA              | 2025/9/8  | 2026/9/7  |

| Name                      | Model No. | Serial No. | Manufacturer  | Date of Cal. | Due Date   |
|---------------------------|-----------|------------|---------------|--------------|------------|
| 966 Shielded Room         | 966 Room  | /          | EMToni        | 2025/07/24   | 2028/07/23 |
| EMI Test Receiver         | ESPI      | 101018     | ROHDE&SCHWARZ | 2026/09/04   | 2027/09/03 |
| Amplifier<br>(30MHz-1GHz) | BBV 9745  | 00431      | SCHWARZBECK   | 2026/09/04   | 2027/09/03 |

|                                                     |                        |                    |                   |            |            |
|-----------------------------------------------------|------------------------|--------------------|-------------------|------------|------------|
| Bilog Antenna<br>(30MHz-1GHz)                       | VULB9168               | 1858               | SCHWARZBECK       | 2026/09/05 | 2027/09/04 |
| Horn antenna<br>(1GHz-18GHz)                        | BBHA 9120<br>D         | 02622              | SCHWARZBECK       | 2026/09/05 | 2027/09/04 |
| Pream plifier<br>(1GHz-18GHz)                       | BBV 9718D              | 0024               | SCHWARZBECK       | 2026/09/04 | 2027/09/03 |
| Spectrum Analyze<br>(10Hz-40GHz)                    | FSV 40                 | 100952             | ROHDE&SCHWA<br>RZ | 2026/09/04 | 2027/09/03 |
| Pream plifier<br>(18GHz-40GHz)                      | BBV 9721               | 0056               | SCHWARZBECK       | 2026/09/04 | 2027/09/03 |
| Double Ridge Guide<br>Horn Antenna<br>(18GHz-40GHz) | SAS-574                | 588                | A.H.System        | 2026/09/05 | 2027/09/04 |
| Loop Antenna<br>(9KHz-30MHz)                        | FMZB<br>1513-60        | 00115              | SCHWARZBECK       | 2026/09/04 | 2027/09/03 |
| MXG Signal Analyzer                                 | N9020A                 | MY49100730         | Agilent           | 2026/09/04 | 2027/09/03 |
| MXG Vector Signal<br>Generator                      | N5182A                 | MY50144920         | Agilent           | 2026/09/04 | 2027/09/03 |
| WIDEBAND RADIO<br>COMMUNICATION<br>TESTER           | CMW500                 | /                  | ROHDE&SCHWA<br>RZ | 2026/09/07 | 2027/09/06 |
| Power Sensor                                        | MW100-RFC<br>B-2       | MW260105N<br>TT-64 | MWRFTest          | 2026/09/04 | 2027/09/03 |
| RF Swith                                            | MW100-RFC<br>B-1       | MW260105N<br>TT-64 | MWRFTest          | 2026/09/04 | 2027/09/03 |
| Cable                                               | RG223-3M               | /                  | DA                | 2026/09/04 | 2027/09/03 |
| Cable                                               | RG223-12M              | /                  | DA                | 2026/09/04 | 2027/09/03 |
| Cable                                               | SFT205-NM<br>NMSW-2.5M | /                  | DA                | 2026/09/04 | 2027/09/03 |
| Cable                                               | SFT205-NM<br>NM-12M    | /                  | DA                | 2026/09/04 | 2027/09/03 |
| Cable                                               | UCA500-NJ<br>WSM-1.5M  | 017                | MWRFTest          | 2026/09/04 | 2027/09/03 |

**Test software**

| Item | Name                         | Manufacturer | Model  | Software version   |
|------|------------------------------|--------------|--------|--------------------|
| 1    | EMC Conduction Test System   | FALA         | EZ-EMC | Ver.EMC-CON 3A1.1+ |
| 2    | EMC radiation test system    | FALA         | EZ-EMC | Ver.FA-03A2 RE+    |
| 3    | RF test system               | TACHOY       | RFTest | V1.0.0             |
| 4    | RF communication test system | TACHOY       | RFTest | V1.0.0             |

## 2. Conducted emission at the mains terminals test

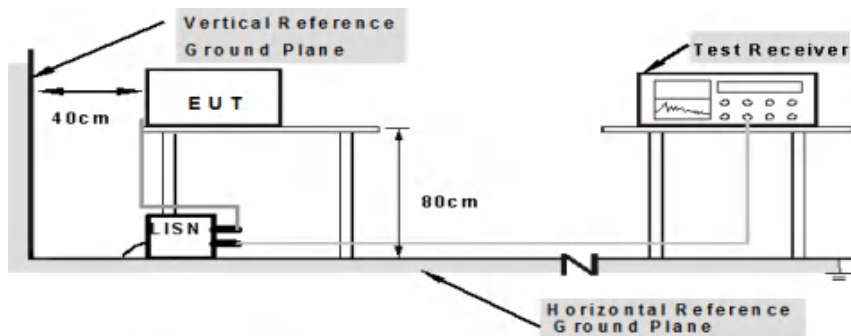
### 2.1.Limit

|                       |                                                                      |
|-----------------------|----------------------------------------------------------------------|
| Test Requirement:     | FCC Part15 C Section 15.207                                          |
| Test Method:          | ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024 |
| Test Frequency Range: | 150KHz to 30MHz                                                      |
| Receiver setup:       | RBW=9KHz, VBW=30KHz, Sweep time=auto                                 |

| Frequency<br>MHz | Limits dB( $\mu$ V) |               |
|------------------|---------------------|---------------|
|                  | Quasi-peak Level    | Average Level |
| 0.15 ~ 0.50      | 66 ~ 56*            | 56 ~ 46*      |
| 0.50 ~ 5.00      | 56                  | 46            |
| 5.00 ~ 30.00     | 60                  | 50            |

Notes: 1. \*Decreasing linearly with logarithm of frequency.  
2. The lower limit shall apply at the transition frequencies.

### 2.2.Test Setup



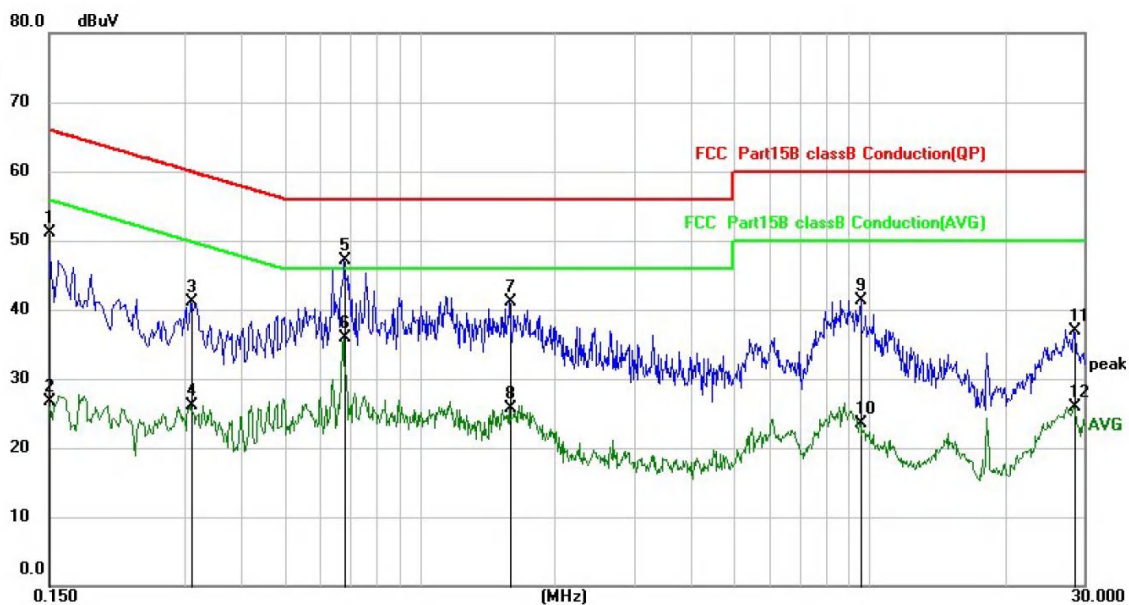
Note: 1.Support units were connected to second LISN.  
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

### 2.3.Test Procedure

1. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
2. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
3. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
4. LISN at least 80 cm from nearest part of EUT chassis.
- 5.For the actual test configuration, please refer to the related Item - EUT Test Photos.

## 2.4.Test Result

| Conducted Emission At The Mains Terminals Test Data |              |                    |               |
|-----------------------------------------------------|--------------|--------------------|---------------|
| Temperature:                                        | 25.1℃        | Relative Humidity: | 56%           |
| Pressure:                                           | 1008hPa      | Phase :            | Line          |
| Test Voltage :                                      | AC 120V/60Hz | Test Mode:         | 802.11b(CH00) |



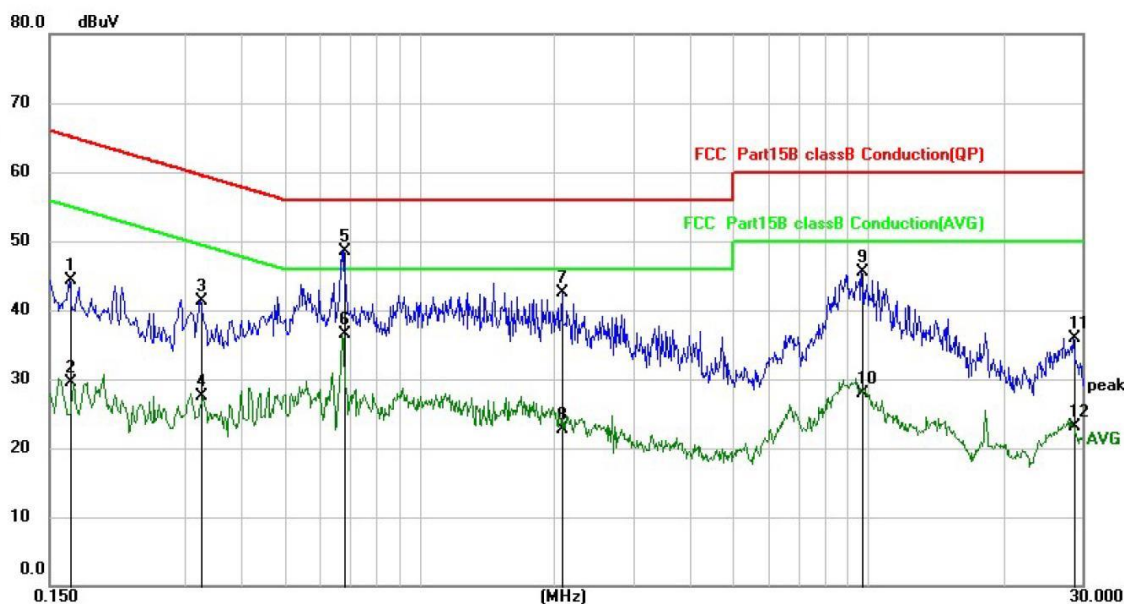
| No. | Mk. | Freq.   | Reading Level | Correct Factor | Measurement | Limit | Over   |          |
|-----|-----|---------|---------------|----------------|-------------|-------|--------|----------|
|     |     | MHz     | dBuV          | dB             | dBuV        | dBuV  | dB     | Detector |
| 1   |     | 0.1500  | 40.32         | 10.88          | 51.20       | 66.00 | -14.80 | QP       |
| 2   |     | 0.1500  | 15.92         | 10.88          | 26.80       | 56.00 | -29.20 | AVG      |
| 3   |     | 0.3100  | 30.42         | 10.65          | 41.07       | 59.97 | -18.90 | QP       |
| 4   |     | 0.3100  | 15.43         | 10.65          | 26.08       | 49.97 | -23.89 | AVG      |
| 5   | *   | 0.6820  | 36.66         | 10.46          | 47.12       | 56.00 | -8.88  | QP       |
| 6   |     | 0.6820  | 25.45         | 10.46          | 35.91       | 46.00 | -10.09 | AVG      |
| 7   |     | 1.5900  | 30.66         | 10.47          | 41.13       | 56.00 | -14.87 | QP       |
| 8   |     | 1.5900  | 15.24         | 10.47          | 25.71       | 46.00 | -20.29 | AVG      |
| 9   |     | 9.5859  | 30.82         | 10.53          | 41.35       | 60.00 | -18.65 | QP       |
| 10  |     | 9.5859  | 12.99         | 10.53          | 23.52       | 50.00 | -26.48 | AVG      |
| 11  |     | 28.4579 | 25.53         | 11.43          | 36.96       | 60.00 | -23.04 | QP       |
| 12  |     | 28.4579 | 14.39         | 11.43          | 25.82       | 50.00 | -24.18 | AVG      |

Note:

1. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
2. Margin = Reading level + Correct Factor - Limit
3. All the modes have tested and recorded the worst mode(802.11b) in the report

Conducted Emission At The Mains Terminals Test Data

|                |              |                    |               |
|----------------|--------------|--------------------|---------------|
| Temperature:   | 25.1°C       | Relative Humidity: | 56%           |
| Pressure:      | 1008hPa      | Phase :            | Neutral       |
| Test Voltage : | AC 120V/60Hz | Test Mode:         | 802.11b(CH00) |



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|
| 1   |     | 0.1660       | 33.37                    | 10.84                   | 44.21                    | 65.16         | -20.95     | QP       |
| 2   |     | 0.1660       | 18.59                    | 10.84                   | 29.43                    | 55.16         | -25.73     | AVG      |
| 3   |     | 0.3260       | 30.73                    | 10.64                   | 41.37                    | 59.55         | -18.18     | QP       |
| 4   |     | 0.3260       | 16.82                    | 10.64                   | 27.46                    | 49.55         | -22.09     | AVG      |
| 5   | *   | 0.6820       | 38.01                    | 10.46                   | 48.47                    | 56.00         | -7.53      | QP       |
| 6   |     | 0.6820       | 25.98                    | 10.46                   | 36.44                    | 46.00         | -9.56      | AVG      |
| 7   |     | 2.0859       | 32.04                    | 10.47                   | 42.51                    | 56.00         | -13.49     | QP       |
| 8   |     | 2.0859       | 12.17                    | 10.47                   | 22.64                    | 46.00         | -23.36     | AVG      |
| 9   |     | 9.6859       | 34.93                    | 10.53                   | 45.46                    | 60.00         | -14.54     | QP       |
| 10  |     | 9.6859       | 17.33                    | 10.53                   | 27.86                    | 50.00         | -22.14     | AVG      |
| 11  |     | 28.6260      | 24.39                    | 11.44                   | 35.83                    | 60.00         | -24.17     | QP       |
| 12  |     | 28.6260      | 11.63                    | 11.44                   | 23.07                    | 50.00         | -26.93     | AVG      |

Note:

1. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
2. Margin = Reading level + Correct Factor - Limit
3. All the modes have tested and recorded the worst mode(802.11b) in the report

### 3. Radiated Spurious Emissions

#### 3.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 15.247  
 Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019;  
 ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024  
 Test Result: PASS  
 Measurement Distance: 3m

| 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 | 360KHz | Quasi-peak |
| Above 1GHz   | Peak       | 1MHz   | 3MHz   | Peak       |
|              | Peak       | 1MHz   | 10Hz   | Average    |

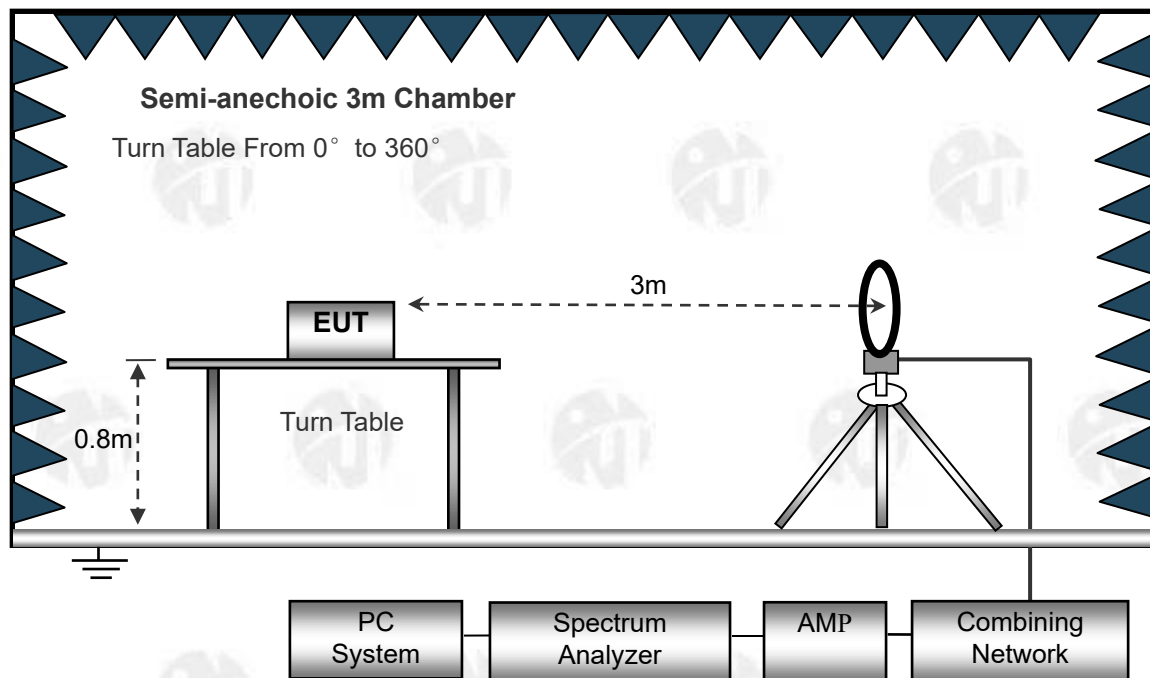
Limit:

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

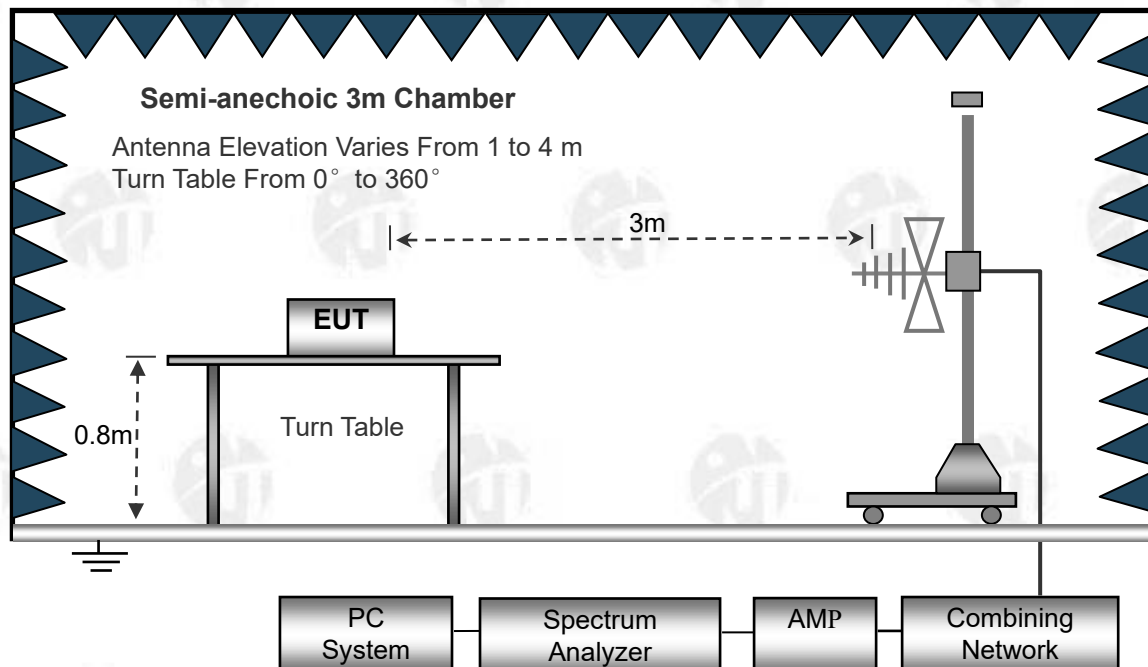
### 3.2.Test Setup

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

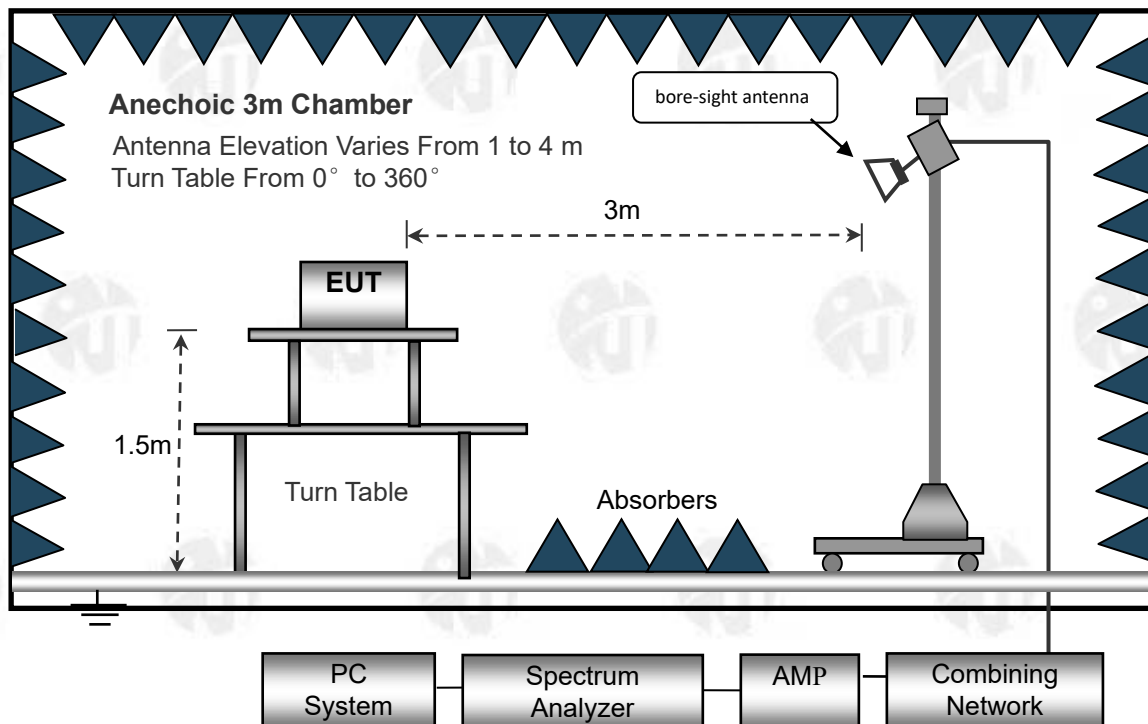
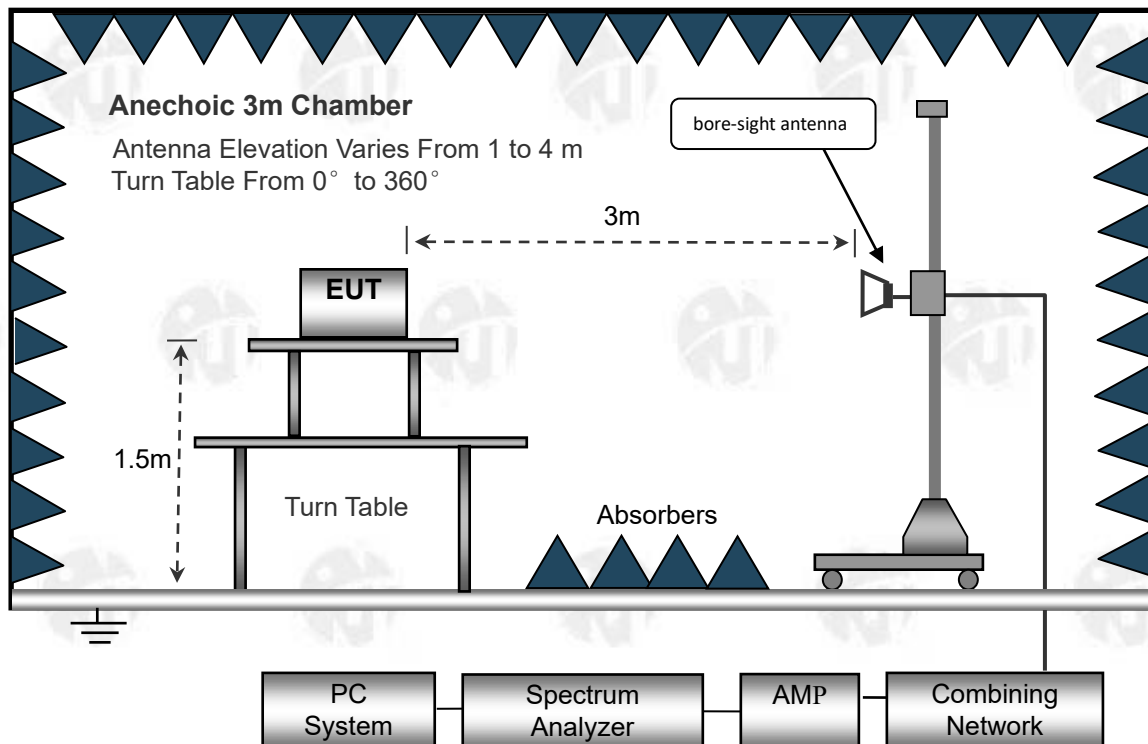
The test setup for emission measurement below 30MHz.



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



The test setup for emission measurement above 1 GHz.



### 3.3.Test Procedure

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

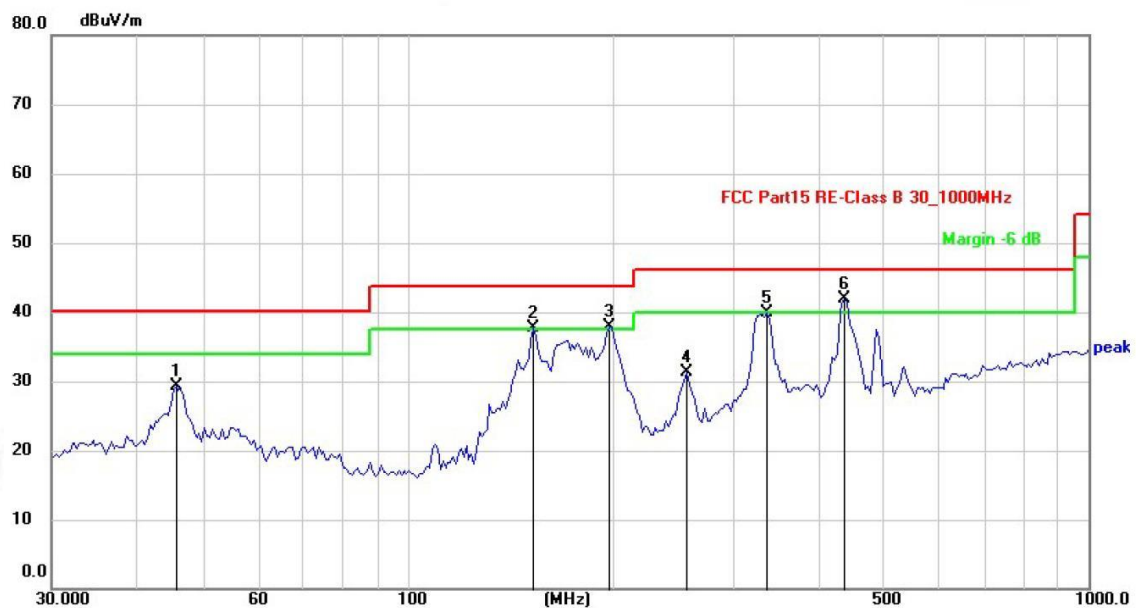
### 3.4.Test Result

Test Frequency: 9KHz~30MHz

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

Test Frequency : 30MHz ~ 1GHz

| Radiation Emission Test Data |              |                    |                     |
|------------------------------|--------------|--------------------|---------------------|
| Temperature:                 | 25.1℃        | Relative Humidity: | 56%                 |
| Pressure:                    | 1008hPa      | Phase :            | Horizontal          |
| Test Voltage :               | AC 120V/60Hz | Test Mode :        | 802.11b(2462.00MHz) |



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV/m | Limit<br>dB/m | Over<br>dB | Detector |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|---------------|------------|----------|
| 1   |     | 45.6946      | 34.98                    | -5.65                   | 29.33                      | 40.00         | -10.67     | QP       |
| 2   | !   | 153.2002     | 42.14                    | -4.44                   | 37.70                      | 43.50         | -5.80      | QP       |
| 3   | !   | 197.5460     | 45.46                    | -7.51                   | 37.95                      | 43.50         | -5.55      | QP       |
| 4   |     | 256.9712     | 37.16                    | -5.85                   | 31.31                      | 46.00         | -14.69     | QP       |
| 5   |     | 337.2155     | 42.57                    | -2.75                   | 39.82                      | 46.00         | -6.18      | QP       |
| 6   | *   | 438.6553     | 43.42                    | -1.51                   | 41.91                      | 46.00         | -4.09      | QP       |

Note:

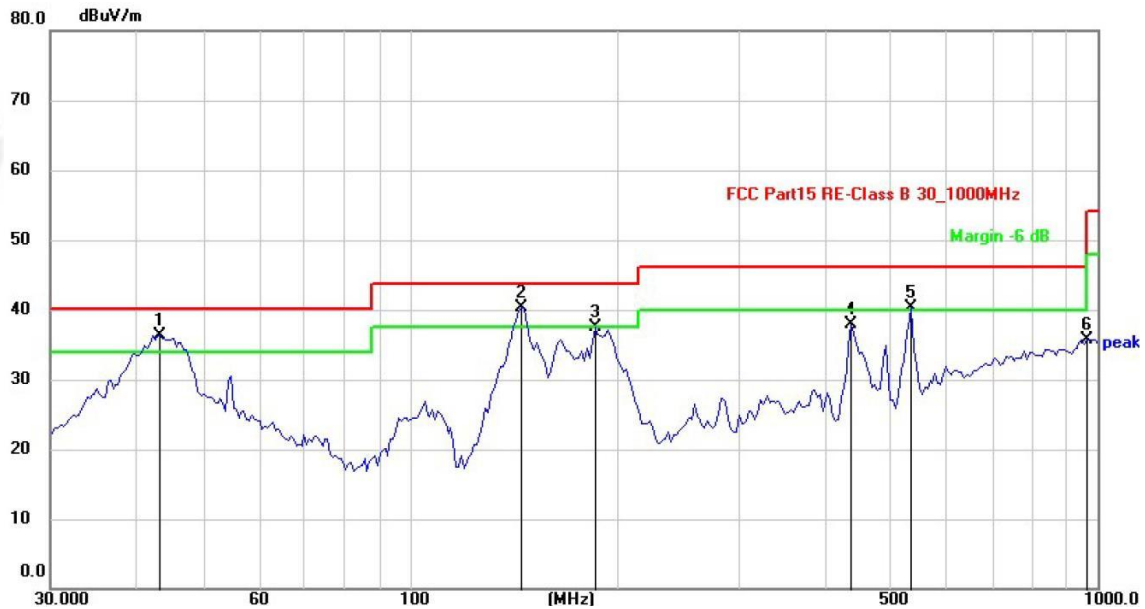
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Emission Level = Reading + Factor

Margin=Emission Level-Limit

2. All the modes have tested and recorded the worst mode(802.11b) in the report

| Radiation Emission Test Data |              |                    |                     |
|------------------------------|--------------|--------------------|---------------------|
| Temperature:                 | 25.1°C       | Relative Humidity: | 56%                 |
| Pressure:                    | 1008hPa      | Phase :            | Vertical            |
| Test Voltage :               | AC 120V/60Hz | Test Mode :        | 802.11b(2462.00MHz) |



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV/m | Limit<br>dB/m | Over<br>dB | Detector |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|---------------|------------|----------|
| 1   | !   | 43.3534      | 42.07                    | -5.81                   | 36.26                      | 40.00         | -3.74      | QP       |
| 2   | *   | 145.3505     | 45.25                    | -4.85                   | 40.40                      | 43.50         | -3.10      | QP       |
| 3   |     | 185.7882     | 43.59                    | -6.15                   | 37.44                      | 43.50         | -6.06      | QP       |
| 4   |     | 438.6554     | 39.51                    | -1.51                   | 38.00                      | 46.00         | -8.00      | QP       |
| 5   | !   | 536.6473     | 39.50                    | 0.76                    | 40.26                      | 46.00         | -5.74      | QP       |
| 6   |     | 965.5420     | 26.70                    | 9.03                    | 35.73                      | 54.00         | -18.27     | QP       |

Note:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Emission Level = Reading + Factor

Margin=Emission Level-Limit

2. All the modes have tested and recorded the worst mode(802.11b) in the report

**Test Frequency 1GHz-25GHz**

| 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                   | 4824.00   | 45.14            | 34.12             | 5.03          | 32.39             | 48.44             | 74       | -25.56 | Pk               |
| V                   | 4824.00   | 34.48            | 34.12             | 5.03          | 32.39             | 37.78             | 54       | -16.22 | AV               |
| V                   | 7236.00   | 45.67            | 32.54             | 6.29          | 35.86             | 55.28             | 74       | -18.72 | Pk               |
| V                   | 7236.00   | 32.01            | 32.54             | 6.29          | 35.86             | 41.62             | 54       | -12.38 | AV               |
| V                   | 9648.00   | 37.27            | 32.98             | 7.55          | 38.4              | 50.24             | 74       | -23.76 | Pk               |
| V                   | 9648.00   | 27.08            | 32.98             | 7.55          | 38.4              | 40.05             | 54       | -13.95 | AV               |
| V                   | 12060.00  | 38.10            | 32.09             | 8.93          | 39                | 53.94             | 74       | -20.06 | Pk               |
| V                   | 12060.00  | 24.60            | 32.09             | 8.93          | 39                | 40.44             | 54       | -13.56 | AV               |
| H                   | 4824.00   | 46.17            | 34.12             | 5.03          | 32.39             | 49.47             | 74       | -24.53 | Pk               |
| H                   | 4824.00   | 34.50            | 34.12             | 5.03          | 32.39             | 37.80             | 54       | -16.20 | AV               |
| H                   | 7236.00   | 41.81            | 32.54             | 6.29          | 35.86             | 51.42             | 74       | -22.58 | Pk               |
| H                   | 7236.00   | 27.63            | 32.54             | 6.29          | 35.86             | 37.24             | 54       | -16.76 | AV               |
| H                   | 9648.00   | 36.83            | 32.98             | 7.55          | 38.4              | 49.80             | 74       | -24.20 | Pk               |
| H                   | 9648.00   | 25.42            | 32.98             | 7.55          | 38.4              | 38.39             | 54       | -15.61 | AV               |
| H                   | 12060.00  | 36.67            | 32.09             | 8.93          | 39                | 52.51             | 74       | -21.49 | Pk               |
| H                   | 12060.00  | 26.47            | 32.09             | 8.93          | 39                | 42.31             | 54       | -11.69 | AV               |

| 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)   |                  |
| Middle Channel:2437MHz |           |                  |                   |               |                   |                   |          |        |                  |
| V                      | 4874.00   | 51.92            | 34.07             | 5.09          | 32.59             | 55.53             | 74       | -18.47 | Pk               |
| V                      | 4874.00   | 36.92            | 34.07             | 5.09          | 32.59             | 40.53             | 54       | -13.47 | AV               |
| V                      | 7311.00   | 46.69            | 32.63             | 6.34          | 35.96             | 56.36             | 74       | -17.64 | Pk               |
| V                      | 7311.00   | 32.85            | 32.63             | 6.34          | 35.96             | 42.52             | 54       | -11.48 | AV               |
| V                      | 9748.00   | 41.57            | 32.92             | 7.59          | 38.4              | 54.64             | 74       | -19.36 | Pk               |
| V                      | 9748.00   | 32.36            | 32.92             | 7.59          | 38.4              | 45.43             | 54       | -8.57  | AV               |
| V                      | 12815.00  | 45.49            | 31.96             | 8.88          | 39.04             | 61.45             | 74       | -12.55 | Pk               |
| V                      | 12815.00  | 30.73            | 31.96             | 8.88          | 39.04             | 46.69             | 54       | -7.31  | AV               |
| H                      | 4874.00   | 47.64            | 34.07             | 5.09          | 32.59             | 51.25             | 74       | -22.75 | Pk               |
| H                      | 4874.00   | 31.98            | 34.07             | 5.09          | 32.59             | 35.59             | 54       | -18.41 | AV               |
| H                      | 7311.00   | 40.19            | 32.63             | 6.34          | 35.96             | 49.86             | 74       | -24.14 | Pk               |
| H                      | 7311.00   | 33.71            | 32.63             | 6.34          | 35.96             | 43.38             | 54       | -10.62 | AV               |
| H                      | 9748.00   | 45.45            | 32.92             | 7.59          | 38.4              | 58.52             | 74       | -15.48 | Pk               |
| H                      | 9748.00   | 27.98            | 32.92             | 7.59          | 38.4              | 41.05             | 54       | -12.95 | AV               |
| H                      | 12815.00  | 35.74            | 31.96             | 8.88          | 39.04             | 51.70             | 74       | -22.30 | Pk               |
| H                      | 12815.00  | 26.67            | 31.96             | 8.88          | 39.04             | 42.63             | 54       | -11.37 | AV               |

| 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)   |                  |
| High Channel:2462MHz |           |                  |                   |               |                   |                   |          |        |                  |
| V                    | 4924.00   | 48.88            | 34.02             | 5.15          | 32.8              | 52.81             | 74       | -21.19 | Pk               |
| V                    | 4924.00   | 32.26            | 34.02             | 5.15          | 32.8              | 36.19             | 54       | -17.81 | AV               |
| V                    | 7386.00   | 38.63            | 32.71             | 6.4           | 36.05             | 48.37             | 74       | -25.63 | Pk               |
| V                    | 7386.00   | 32.17            | 32.71             | 6.4           | 36.05             | 41.91             | 54       | -12.09 | AV               |
| V                    | 9848.00   | 40.57            | 32.86             | 7.62          | 38.4              | 53.73             | 74       | -20.27 | Pk               |
| V                    | 9848.00   | 27.40            | 32.86             | 7.62          | 38.4              | 40.56             | 54       | -13.44 | AV               |
| V                    | 12310.00  | 39.40            | 31.82             | 8.84          | 39.08             | 55.50             | 74       | -18.50 | Pk               |
| V                    | 12310.00  | 27.75            | 31.82             | 8.84          | 39.08             | 43.85             | 54       | -10.15 | AV               |
| H                    | 4924.00   | 44.21            | 34.02             | 5.15          | 32.8              | 48.14             | 74       | -25.86 | Pk               |
| H                    | 4924.00   | 36.52            | 34.02             | 5.15          | 32.8              | 40.45             | 54       | -13.55 | AV               |
| H                    | 7386.00   | 44.18            | 32.71             | 6.4           | 36.05             | 53.92             | 74       | -20.08 | Pk               |
| H                    | 7386.00   | 29.04            | 32.71             | 6.4           | 36.05             | 38.78             | 54       | -15.22 | AV               |
| H                    | 9848.00   | 38.74            | 32.86             | 7.62          | 38.4              | 51.90             | 74       | -22.10 | Pk               |
| H                    | 9848.00   | 29.96            | 32.86             | 7.62          | 38.4              | 43.12             | 54       | -10.88 | AV               |
| H                    | 12310.00  | 37.48            | 31.82             | 8.84          | 39.08             | 53.58             | 74       | -20.42 | Pk               |
| H                    | 12310.00  | 26.22            | 31.82             | 8.84          | 39.08             | 42.32             | 54       | -11.68 | AV               |

Note: 1. The testing has been conformed to 10\*2480MHz=24800MHz.

2. All other emissions more than 30dB below the limit.

3. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Emission Level = Reading + Factor

Margin=Emission Level-Limit

All the modes have tested and recorded the worst mode(802.11b) in the report.

The 1-25GHz range has been tested, and the report only records the worst performance of the 1-18G range.

**Radiated Band Emission Measurement:**

|               | Polar<br>(H/V)        | Frequency<br>(MHz) | Meter<br>Reading<br>(dBuV) | Pre-<br>amplifier<br>(dB) | Cable<br>Loss<br>(dB) | Antenna<br>Factor<br>(dB/m) | Emission<br>level<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Detector<br>Type |
|---------------|-----------------------|--------------------|----------------------------|---------------------------|-----------------------|-----------------------------|-------------------------------|-------------------|----------------|------------------|
| 802.11b       | Low Channel: 2412MHz  |                    |                            |                           |                       |                             |                               |                   |                |                  |
|               | H                     | 2390               | 60.37                      | 35.17                     | 3.48                  | 27.49                       | 56.17                         | 74                | -17.83         | PK               |
|               | H                     | 2390               | 52.09                      | 35.17                     | 3.48                  | 27.49                       | 47.89                         | 54                | -6.11          | AV               |
|               | H                     | 2400               | 61.26                      | 35.16                     | 3.49                  | 27.52                       | 57.11                         | 74                | -16.89         | PK               |
|               | H                     | 2400               | 52.01                      | 35.16                     | 3.49                  | 27.52                       | 47.86                         | 54                | -6.14          | AV               |
|               | V                     | 2390               | 58.28                      | 35.17                     | 3.48                  | 27.49                       | 54.08                         | 74                | -19.92         | PK               |
|               | V                     | 2390               | 50.37                      | 35.17                     | 3.48                  | 27.49                       | 46.17                         | 54                | -7.83          | AV               |
|               | V                     | 2400               | 62.03                      | 35.16                     | 3.49                  | 27.52                       | 57.88                         | 74                | -16.12         | PK               |
|               | V                     | 2400               | 53.23                      | 35.16                     | 3.49                  | 27.52                       | 49.08                         | 54                | -4.92          | AV               |
|               | High Channel: 2462MHz |                    |                            |                           |                       |                             |                               |                   |                |                  |
|               | H                     | 2483.5             | 58.57                      | 35.11                     | 3.56                  | 27.75                       | 54.77                         | 74                | -19.23         | PK               |
|               | H                     | 2483.5             | 51.21                      | 35.11                     | 3.56                  | 27.75                       | 47.41                         | 54                | -6.59          | AV               |
|               | H                     | 2500               | 60.81                      | 35.1                      | 3.57                  | 27.8                        | 57.08                         | 74                | -16.92         | PK               |
|               | H                     | 2500               | 51.96                      | 35.1                      | 3.57                  | 27.8                        | 48.23                         | 54                | -5.77          | AV               |
|               | V                     | 2483.5             | 61.64                      | 35.11                     | 3.56                  | 27.75                       | 57.84                         | 74                | -16.16         | PK               |
|               | V                     | 2483.5             | 52.80                      | 35.11                     | 3.56                  | 27.75                       | 49.00                         | 54                | -5.00          | AV               |
|               | V                     | 2500               | 59.34                      | 35.1                      | 3.57                  | 27.8                        | 55.61                         | 74                | -18.39         | PK               |
|               | V                     | 2500               | 51.10                      | 35.1                      | 3.57                  | 27.8                        | 47.37                         | 54                | -6.63          | AV               |
| 802.11g       | Low Channel: 2412MHz  |                    |                            |                           |                       |                             |                               |                   |                |                  |
|               | H                     | 2390               | 60.54                      | 35.17                     | 3.48                  | 27.49                       | 56.34                         | 74                | -17.66         | PK               |
|               | H                     | 2390               | 52.27                      | 35.17                     | 3.48                  | 27.49                       | 48.07                         | 54                | -5.93          | AV               |
|               | H                     | 2400               | 59.76                      | 35.16                     | 3.49                  | 27.52                       | 55.61                         | 74                | -18.39         | PK               |
|               | H                     | 2400               | 52.85                      | 35.16                     | 3.49                  | 27.52                       | 48.70                         | 54                | -5.30          | AV               |
|               | V                     | 2390               | 59.31                      | 35.17                     | 3.48                  | 27.49                       | 55.11                         | 74                | -18.89         | PK               |
|               | V                     | 2390               | 50.27                      | 35.17                     | 3.48                  | 27.49                       | 46.07                         | 54                | -7.93          | AV               |
|               | V                     | 2400               | 60.94                      | 35.16                     | 3.49                  | 27.52                       | 56.79                         | 74                | -17.21         | PK               |
|               | V                     | 2400               | 48.93                      | 35.16                     | 3.49                  | 27.52                       | 44.78                         | 54                | -9.22          | AV               |
|               | High Channel: 2462MHz |                    |                            |                           |                       |                             |                               |                   |                |                  |
|               | H                     | 2483.5             | 59.71                      | 35.11                     | 3.56                  | 27.75                       | 55.91                         | 74                | -18.09         | PK               |
|               | H                     | 2483.5             | 49.36                      | 35.11                     | 3.56                  | 27.75                       | 45.56                         | 54                | -8.44          | AV               |
|               | H                     | 2500               | 59.31                      | 35.1                      | 3.57                  | 27.8                        | 55.58                         | 74                | -18.42         | PK               |
|               | H                     | 2500               | 50.18                      | 35.1                      | 3.57                  | 27.8                        | 46.45                         | 54                | -7.55          | AV               |
|               | V                     | 2483.5             | 58.47                      | 35.11                     | 3.56                  | 27.75                       | 54.67                         | 74                | -19.33         | PK               |
|               | V                     | 2483.5             | 51.59                      | 35.11                     | 3.56                  | 27.75                       | 47.79                         | 54                | -6.21          | AV               |
|               | V                     | 2500               | 60.38                      | 35.1                      | 3.57                  | 27.8                        | 56.65                         | 74                | -17.35         | PK               |
|               | V                     | 2500               | 51.76                      | 35.1                      | 3.57                  | 27.8                        | 48.03                         | 54                | -5.97          | AV               |
| 802.11<br>n20 | Low Channel: 2412MHz  |                    |                            |                           |                       |                             |                               |                   |                |                  |
|               | H                     | 2390               | 60.46                      | 35.17                     | 3.48                  | 27.49                       | 56.26                         | 74                | -17.74         | PK               |
|               | H                     | 2390               | 51.56                      | 35.17                     | 3.48                  | 27.49                       | 47.36                         | 54                | -6.64          | AV               |
|               | H                     | 2400               | 61.18                      | 35.16                     | 3.49                  | 27.52                       | 57.03                         | 74                | -16.97         | PK               |
|               | H                     | 2400               | 49.77                      | 35.16                     | 3.49                  | 27.52                       | 45.62                         | 54                | -8.38          | AV               |
|               | V                     | 2390               | 60.25                      | 35.17                     | 3.48                  | 27.49                       | 56.05                         | 74                | -17.95         | PK               |
|               | V                     | 2390               | 51.44                      | 35.17                     | 3.48                  | 27.49                       | 47.24                         | 54                | -6.76          | AV               |
|               | V                     | 2400               | 60.90                      | 35.16                     | 3.49                  | 27.52                       | 56.75                         | 74                | -17.25         | PK               |
|               | V                     | 2400               | 50.03                      | 35.16                     | 3.49                  | 27.52                       | 45.88                         | 54                | -8.12          | AV               |
|               | High Channel: 2462MHz |                    |                            |                           |                       |                             |                               |                   |                |                  |
|               | H                     | 2483.5             | 59.93                      | 35.11                     | 3.56                  | 27.75                       | 56.13                         | 74                | -17.87         | PK               |
|               | H                     | 2483.5             | 50.99                      | 35.11                     | 3.56                  | 27.75                       | 47.19                         | 54                | -6.81          | AV               |
|               | H                     | 2500               | 59.48                      | 35.1                      | 3.57                  | 27.8                        | 55.75                         | 74                | -18.25         | PK               |

|               |                      |         |       |       |      |       |       |    |        |    |
|---------------|----------------------|---------|-------|-------|------|-------|-------|----|--------|----|
|               | H                    | 2500    | 49.79 | 35.1  | 3.57 | 27.8  | 46.06 | 54 | -7.94  | AV |
|               | V                    | 2483.5  | 60.56 | 35.11 | 3.56 | 27.75 | 56.76 | 74 | -17.24 | PK |
|               | V                    | 2483.5  | 52.13 | 35.11 | 3.56 | 27.75 | 48.33 | 54 | -5.67  | AV |
|               | V                    | 2500    | 59.68 | 35.1  | 3.57 | 27.8  | 55.95 | 74 | -18.05 | PK |
|               | V                    | 2500    | 50.31 | 35.1  | 3.57 | 27.8  | 46.58 | 54 | -7.42  | AV |
| 802.11<br>n40 | Low Channel 2422MHz  |         |       |       |      |       |       |    |        |    |
|               | H                    | 2390.00 | 60.30 | 35.17 | 3.48 | 27.49 | 56.10 | 74 | -17.90 | PK |
|               | H                    | 2390.00 | 50.00 | 35.17 | 3.48 | 27.49 | 45.80 | 54 | -8.20  | AV |
|               | H                    | 2400.00 | 59.79 | 35.16 | 3.49 | 27.52 | 55.64 | 74 | -18.36 | PK |
|               | H                    | 2400.00 | 51.25 | 35.16 | 3.49 | 27.52 | 47.10 | 54 | -6.90  | AV |
|               | V                    | 2390.00 | 60.81 | 35.17 | 3.48 | 27.49 | 56.61 | 74 | -17.39 | PK |
|               | V                    | 2390.00 | 49.59 | 35.17 | 3.48 | 27.49 | 45.39 | 54 | -8.61  | AV |
|               | V                    | 2400.00 | 61.31 | 35.16 | 3.49 | 27.52 | 57.16 | 74 | -16.84 | PK |
|               | V                    | 2400.00 | 51.74 | 35.16 | 3.49 | 27.52 | 47.59 | 54 | -6.41  | AV |
|               | H                    | 2390.00 | 59.84 | 35.17 | 3.48 | 27.49 | 55.64 | 74 | -18.36 | PK |
|               | High Channel 2452MHz |         |       |       |      |       |       |    |        |    |
|               | H                    | 2483.50 | 57.93 | 35.11 | 3.56 | 27.75 | 54.13 | 74 | -19.87 | PK |
|               | H                    | 2483.50 | 51.35 | 35.11 | 3.56 | 27.75 | 47.55 | 54 | -6.45  | AV |
|               | H                    | 2500.00 | 59.16 | 35.1  | 3.57 | 27.8  | 55.43 | 74 | -18.57 | PK |
|               | H                    | 2500.00 | 51.45 | 35.1  | 3.57 | 27.8  | 47.72 | 54 | -6.28  | AV |
|               | V                    | 2483.50 | 59.06 | 35.11 | 3.56 | 27.75 | 55.26 | 74 | -18.74 | PK |
|               | V                    | 2483.50 | 52.71 | 35.11 | 3.56 | 27.75 | 48.91 | 54 | -5.09  | AV |
|               | V                    | 2500.00 | 59.09 | 35.1  | 3.57 | 27.8  | 55.36 | 74 | -18.64 | PK |
|               | V                    | 2500.00 | 50.15 | 35.1  | 3.57 | 27.8  | 46.42 | 54 | -7.58  | 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.

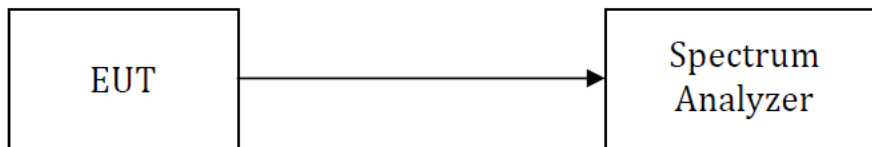
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

## 4. Duty cycle

### 4.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247  
 Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02 April 2,2019;  
 ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024  
 Test Result: PASS

### 4.2.Test Setup



### 4.3.Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer:
  - a) Set the center frequency of the instrument to the center frequency of the transmission.
  - b) Set RBW  $\geq$  OBW if possible; otherwise, set RBW to the largest available value.
  - c) Set VBW  $\geq$  RBW. Detector = peak or average.
  - d) Sweep time = auto couple.
  - e) Trace mode = max hold.
  - f) Allow trace to fully stabilize.

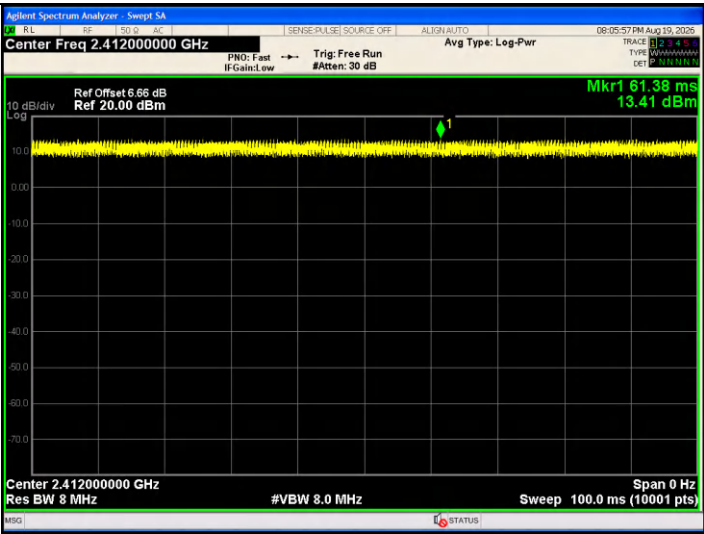
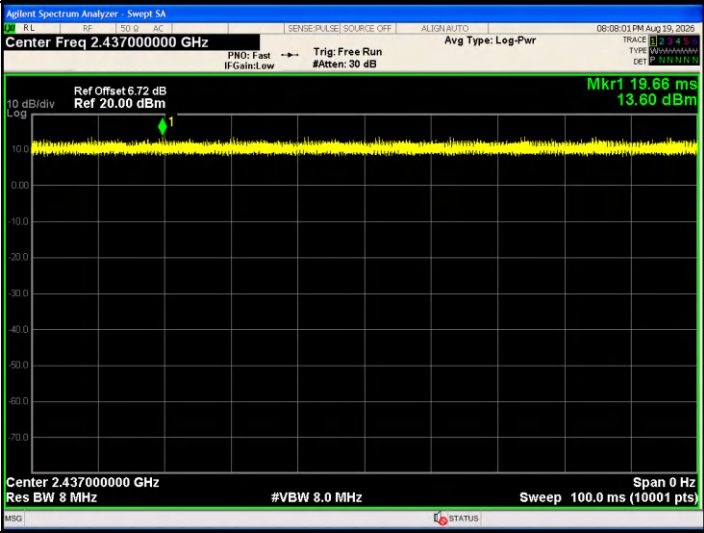
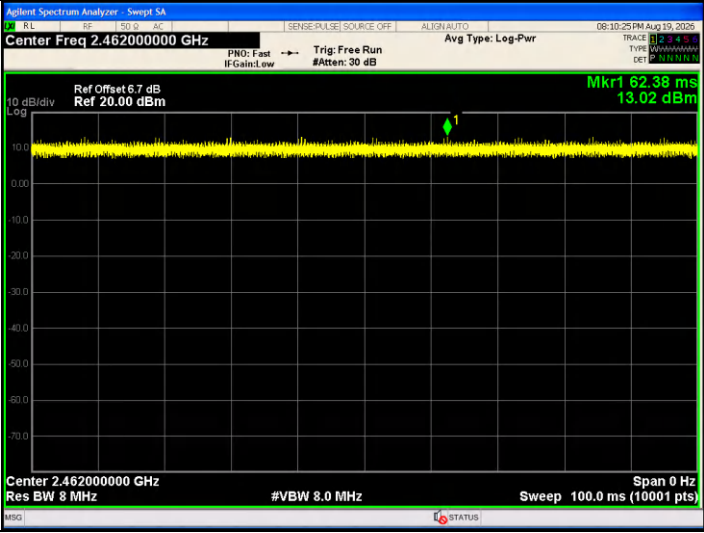
### 4.4.Test Result

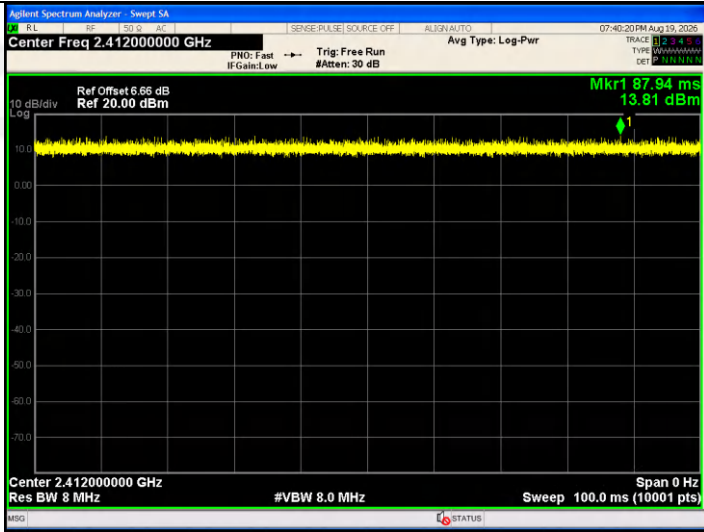
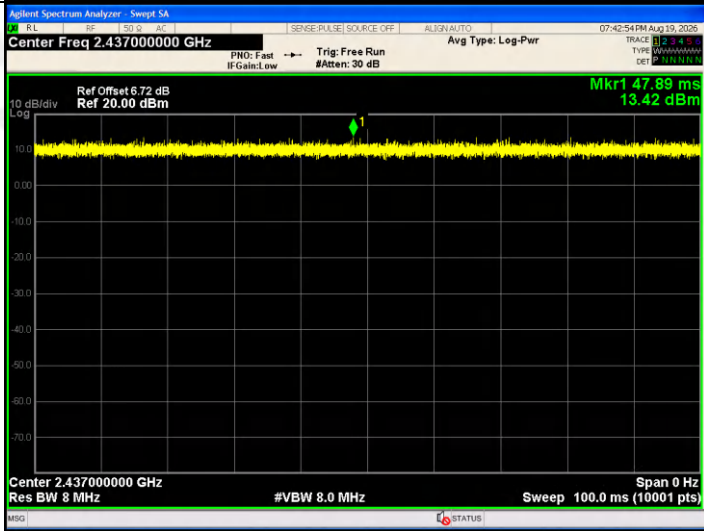
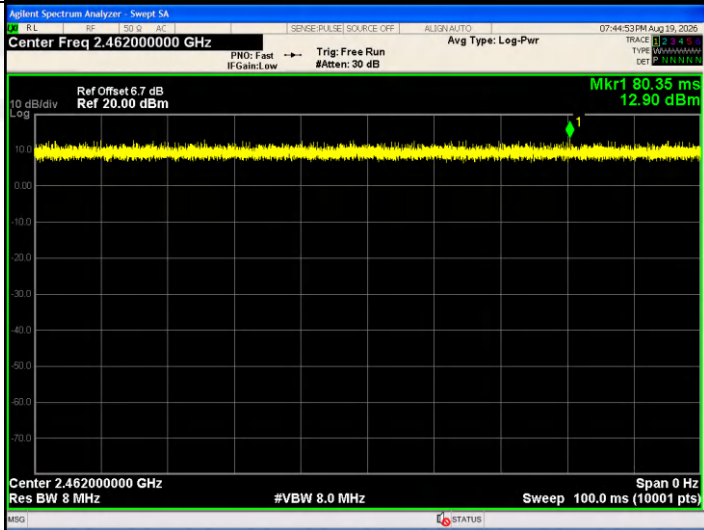
Duty Cycle

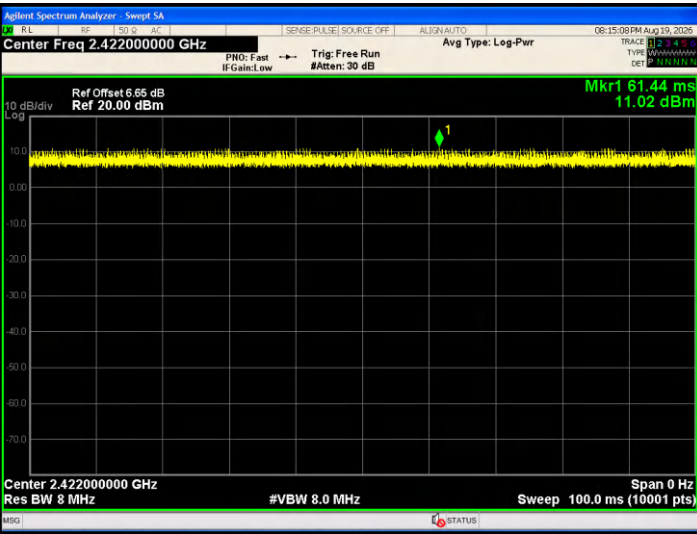
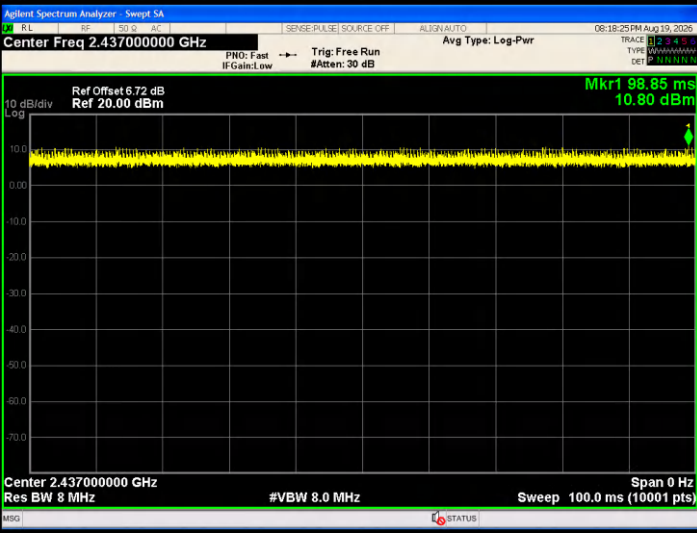
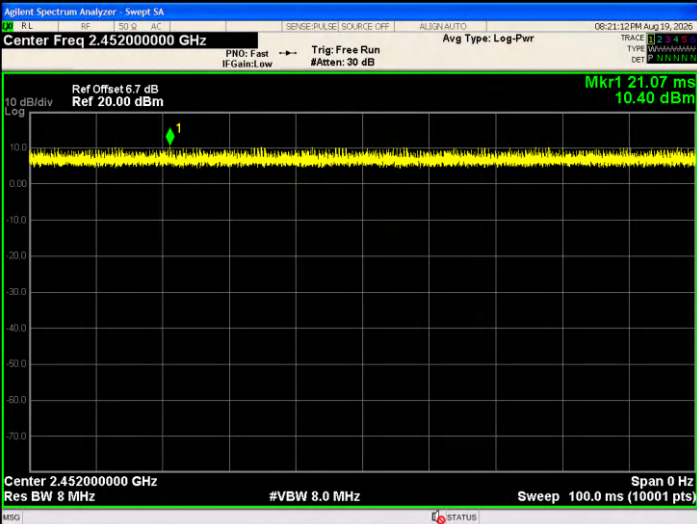
| Mode          | Channel. | Duty Cycle(%) | Correction Factor (dB) |
|---------------|----------|---------------|------------------------|
| 802.11b       | LCH      | 100           | 0                      |
|               | MCH      | 100           | 0                      |
|               | HCH      | 100           | 0                      |
| 802.11g       | LCH      | 100           | 0                      |
|               | MCH      | 100           | 0                      |
|               | HCH      | 100           | 0                      |
| 802.11n(HT20) | LCH      | 100           | 0                      |
|               | MCH      | 100           | 0                      |
|               | HCH      | 100           | 0                      |
| 802.11n(HT40) | LCH      | 100           | 0                      |
|               | MCH      | 100           | 0                      |
|               | HCH      | 100           | 0                      |

Test Graph:



|             |                                                                                                                                                                                                                                                                                                                                      |  |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 802.11g/LCH |  <p>Agilent Spectrum Analyzer - Swept SA<br/>Center Freq 2.412000000 GHz<br/>Ref Offset 6.66 dB<br/>Ref 20.00 dBm<br/>Mkr1 61.38 ms<br/>13.41 dBm<br/>Center 2.412000000 GHz<br/>Res BW 8 MHz<br/>#VBW 8.0 MHz<br/>Sweep 100.0 ms (10001 pts)</p>  |  |
| 802.11g/MCH |  <p>Agilent Spectrum Analyzer - Swept SA<br/>Center Freq 2.437000000 GHz<br/>Ref Offset 6.72 dB<br/>Ref 20.00 dBm<br/>Mkr1 19.66 ms<br/>13.60 dBm<br/>Center 2.437000000 GHz<br/>Res BW 8 MHz<br/>#VBW 8.0 MHz<br/>Sweep 100.0 ms (10001 pts)</p> |  |
| 802.11g/HCH |  <p>Agilent Spectrum Analyzer - Swept SA<br/>Center Freq 2.462000000 GHz<br/>Ref Offset 6.7 dB<br/>Ref 20.00 dBm<br/>Mkr1 62.38 ms<br/>13.02 dBm<br/>Center 2.462000000 GHz<br/>Res BW 8 MHz<br/>#VBW 8.0 MHz<br/>Sweep 100.0 ms (10001 pts)</p> |  |

|                   |                                                                                                                                                                                                                                                                                                                                                    |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 802.11n(HT20)/LCH |  <p>Agilent Spectrum Analyzer - Sweep SA<br/>Center Freq 2.412000000 GHz<br/>Ref Offset 6.66 dB<br/>Ref 20.00 dBm<br/>Mkr1 87.94 ms<br/>13.81 dBm<br/>Center 2.412000000 GHz<br/>Res BW 8 MHz<br/>#VBW 8.0 MHz<br/>Sweep 100.0 ms (10001 pts)<br/>Span 0 Hz</p>  |
| 802.11n(HT20)/MCH |  <p>Agilent Spectrum Analyzer - Sweep SA<br/>Center Freq 2.437000000 GHz<br/>Ref Offset 6.72 dB<br/>Ref 20.00 dBm<br/>Mkr1 47.89 ms<br/>13.42 dBm<br/>Center 2.437000000 GHz<br/>Res BW 8 MHz<br/>#VBW 8.0 MHz<br/>Sweep 100.0 ms (10001 pts)<br/>Span 0 Hz</p> |
| 802.11n(HT20)/HCH |  <p>Agilent Spectrum Analyzer - Sweep SA<br/>Center Freq 2.462000000 GHz<br/>Ref Offset 6.7 dB<br/>Ref 20.00 dBm<br/>Mkr1 80.35 ms<br/>12.90 dBm<br/>Center 2.462000000 GHz<br/>Res BW 8 MHz<br/>#VBW 8.0 MHz<br/>Sweep 100.0 ms (10001 pts)<br/>Span 0 Hz</p> |

|                   |                                                                                      |
|-------------------|--------------------------------------------------------------------------------------|
| 802.11n(HT40)/LCH |    |
| 802.11n(HT40)/MCH |   |
| 802.11n(HT40)/HCH |  |

## 5. Conducted Spurious Emissions

### 5.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247  
Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019;  
ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024  
Test Result: PASS

#### Limit:

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

### 5.2.Test Setup



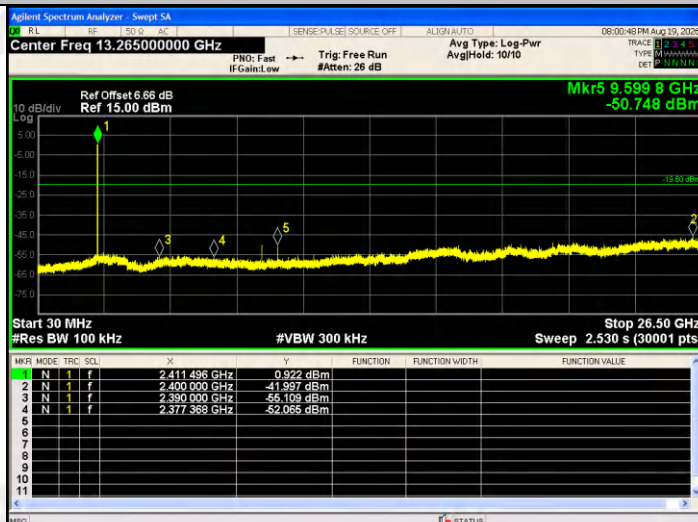
### 5.3.Test Procedure

- Set instrument center frequency to DTS channel center frequency.
  - Set the span to  $\geq 1.5$  times the DTS bandwidth.
  - Set the RBW = 100 kHz.
  - Set the VBW  $\geq [3 \times \text{RBW}]$ .
  - Detector = peak.
  - Sweep time = No faster than coupled (auto) time.
  - Trace mode = max-hold.
  - Allow trace to fully stabilize.
  - Use the peak marker function to determine the maximum PSD level.
- Note that the channel found to contain the maximum PSD level can be used to establish the reference level  
Establish an emission level by using the following procedure:
- Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.
- NOTE—the number of points can also be increased for large spans to retain frequency resolution
- Set the RBW = 100 kHz.
  - Set the VBW  $\geq [3 \times \text{RBW}]$ .
  - Detector = peak.
  - Sweep time = No faster than coupled (auto) time.
  - Trace mode = max-hold.
  - Allow trace to fully stabilize.
  - Use the peak marker function to determine the maximum amplitude level.

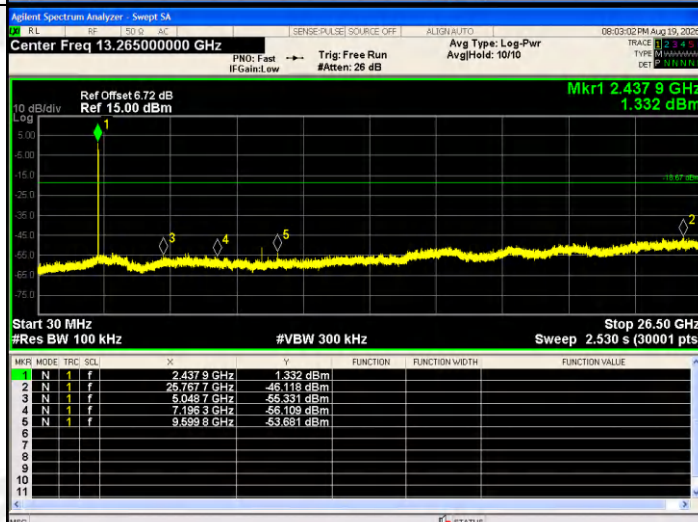
## 5.4.Test Result

### RF Conducted Spurious Emissions Graphs

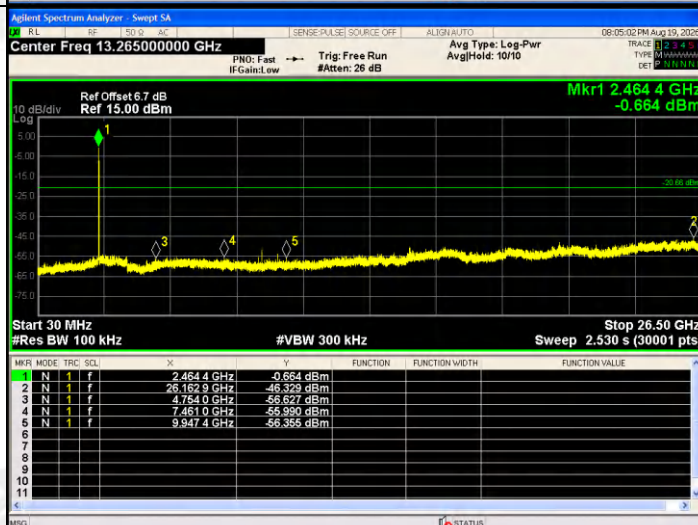
802.11b/LCH



802.11b/MCH

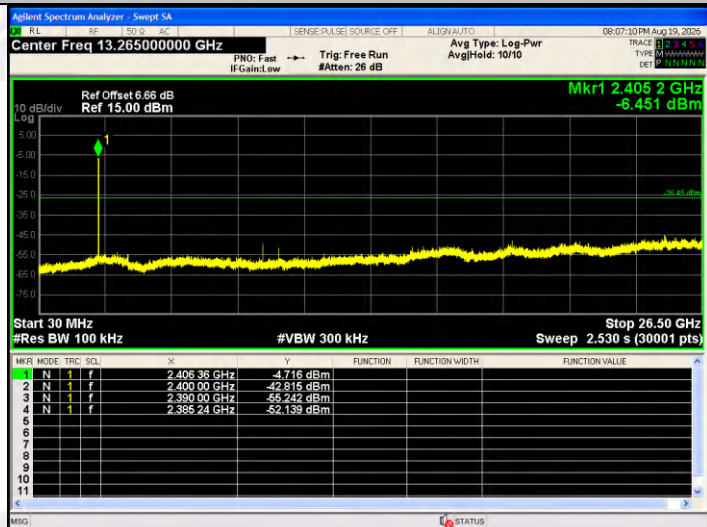


802.11b/HCH

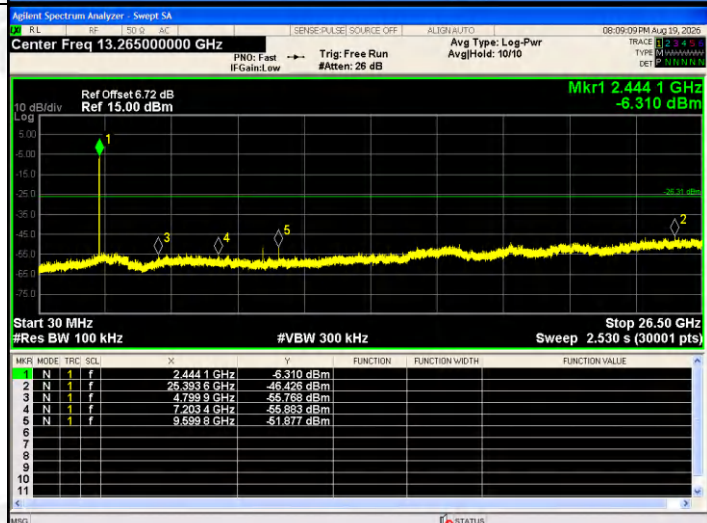


## RF Conducted Spurious Emissions Graphs

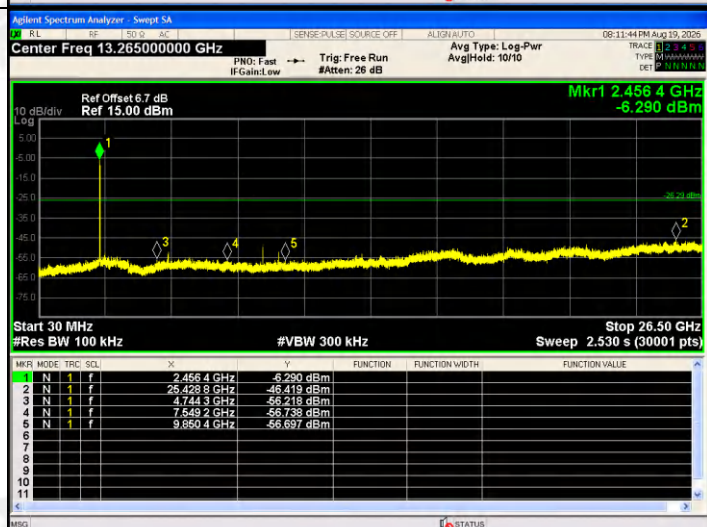
802.11g/LCH



802.11g/MCH

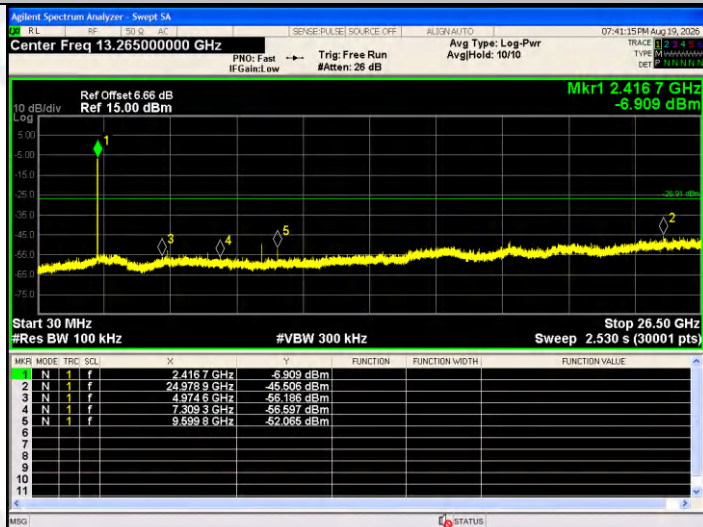


802.11g/HCH

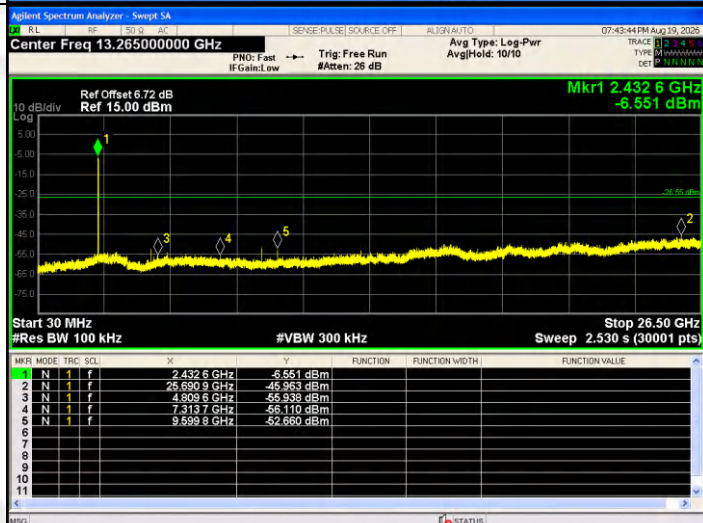


RF Conducted Spurious Emissions Graphs

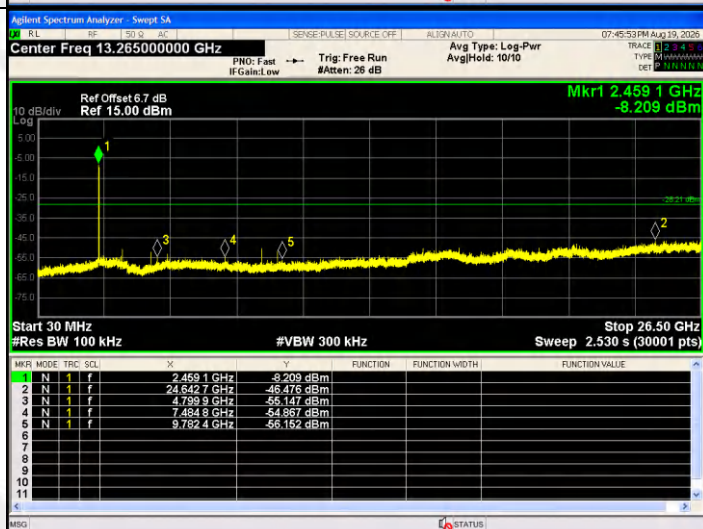
802.11n(HT20)/LCH



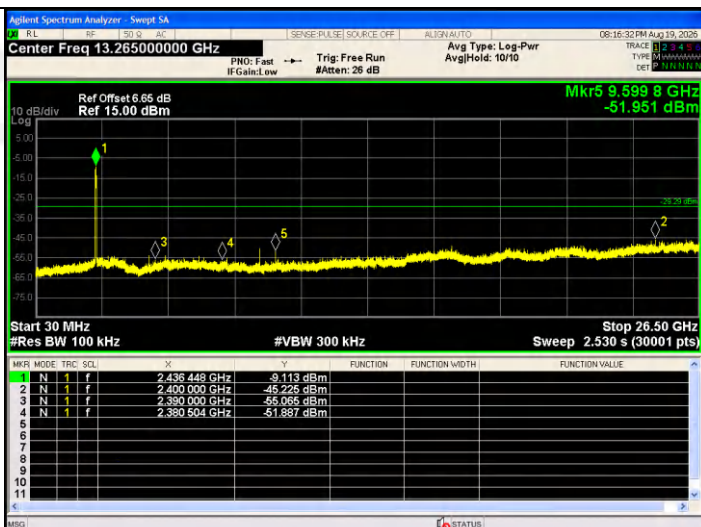
802.11n(HT20)/MCH



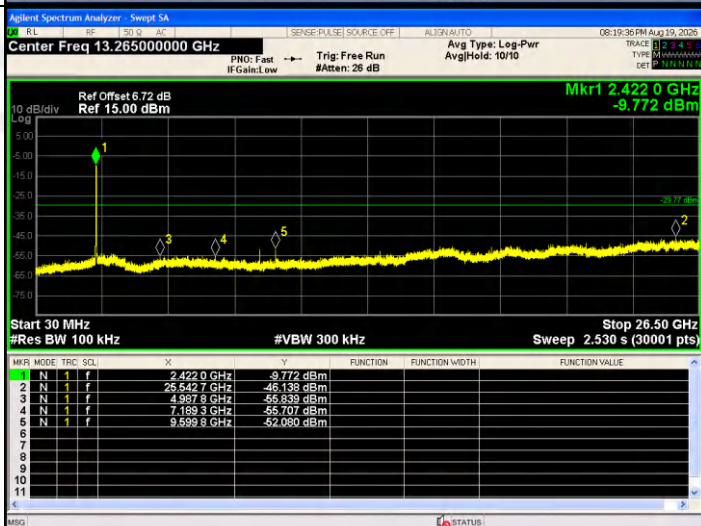
802.11n(HT20)/HCH



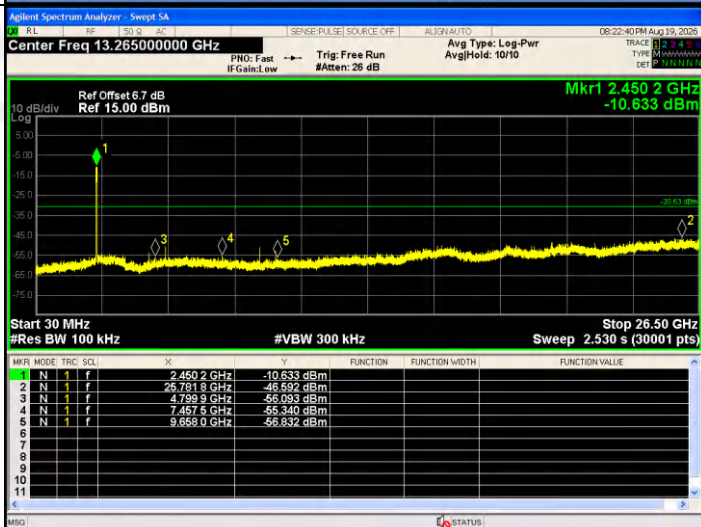
802.11n(HT40)/LCH



802.11n(HT40)/MCH



802.11n(HT40)/HCH



## 6. Band Edge Measurement

### 6.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019;

ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024

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

Test Mode: Transmitting

### 6.2.Test setup



### 6.3.Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer:
3. Establish a reference level by using the following procedure
  - a) Set instrument center frequency to DTS channel center frequency.
  - b) Set the span to  $\approx 1.5$  times the DTS bandwidth.
  - c) Set the RBW = 100 kHz.
  - d) Set the VBW  $\geq [3 \times \text{RBW}]$ .
  - e) Detector = peak.
  - f) Sweep time = No faster than coupled (auto) time.
  - g) Trace mode = max hold.
  - h) Allow trace to fully stabilize.
  - i) Use the peak marker function to determine the maximum PSD level.

Note that the channel found to contain the maximum PSD level can be used to establish the reference level.

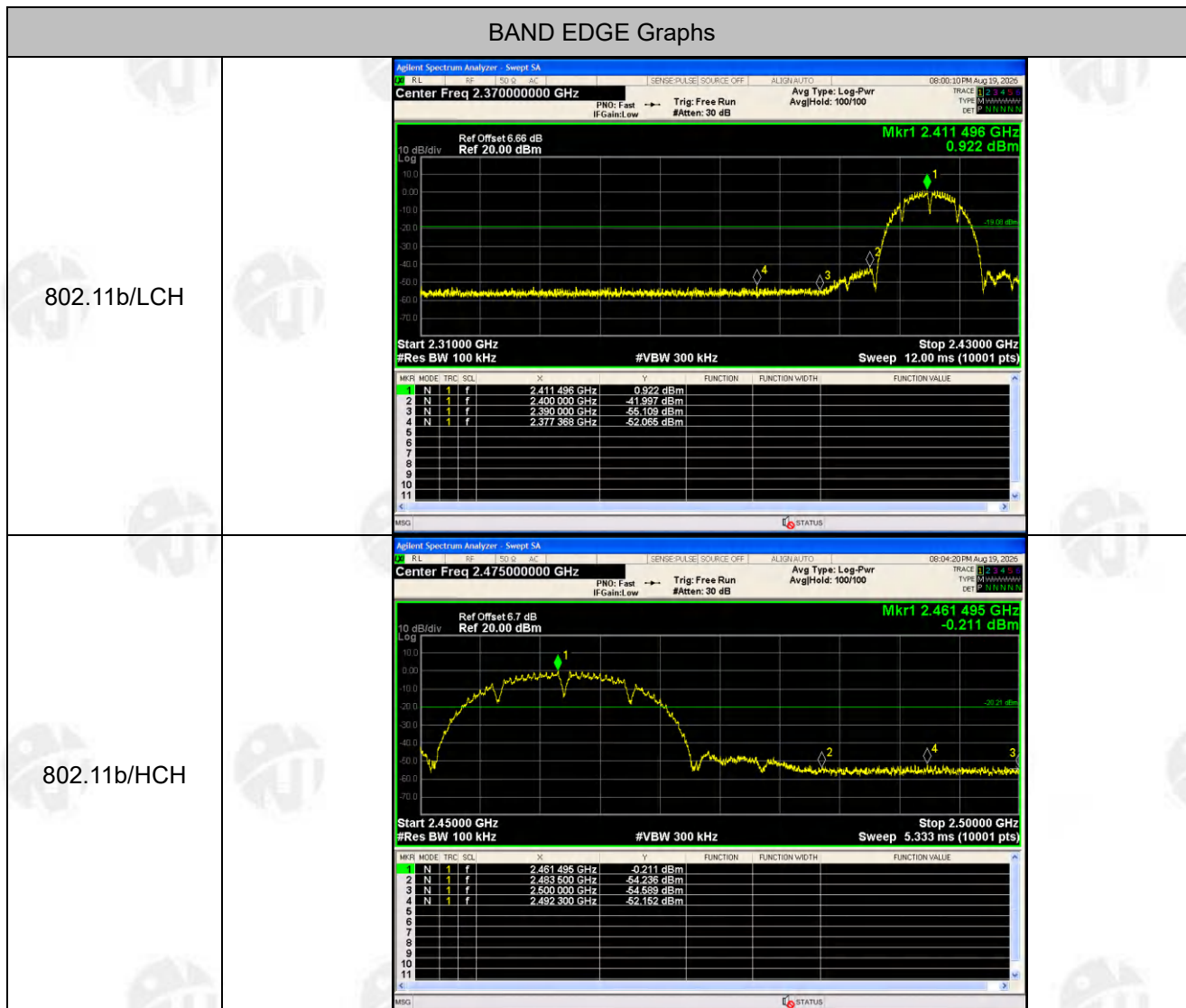
4. Establish an emission level by using the following procedure:

- a) Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.

NOTE—the number of points can also be increased for large spans to retain frequency resolution

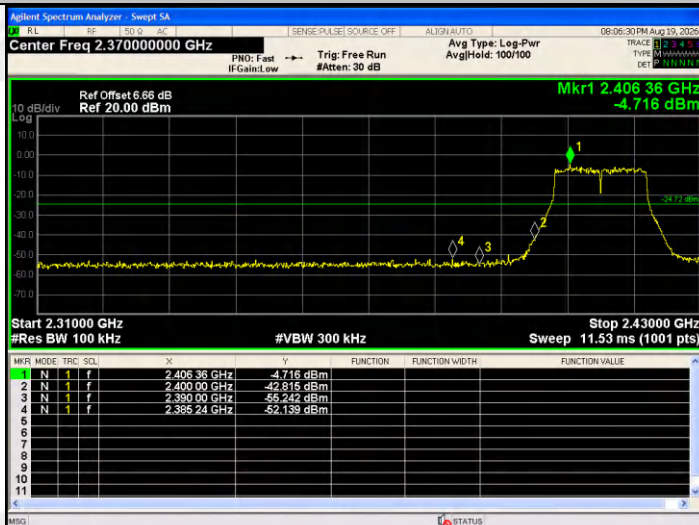
- b) Set the RBW = 100 kHz.
- c) Set the VBW  $\geq [3 \times \text{RBW}]$ .
- d) Detector = peak.
- e) Sweep time = No faster than coupled (auto) time.
- f) Trace mode = max-hold.
- g) Allow trace to fully stabilize.
- h) Use the peak marker function to determine the maximum amplitude level.

## 6.4.Test Result

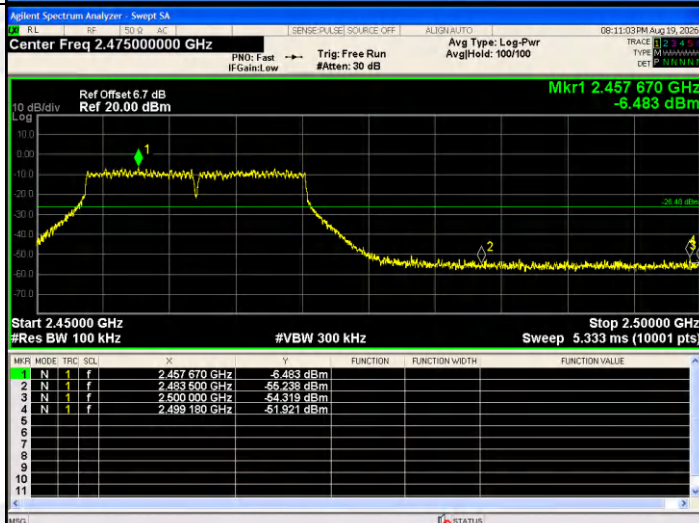


# BAND EDGE Graphs

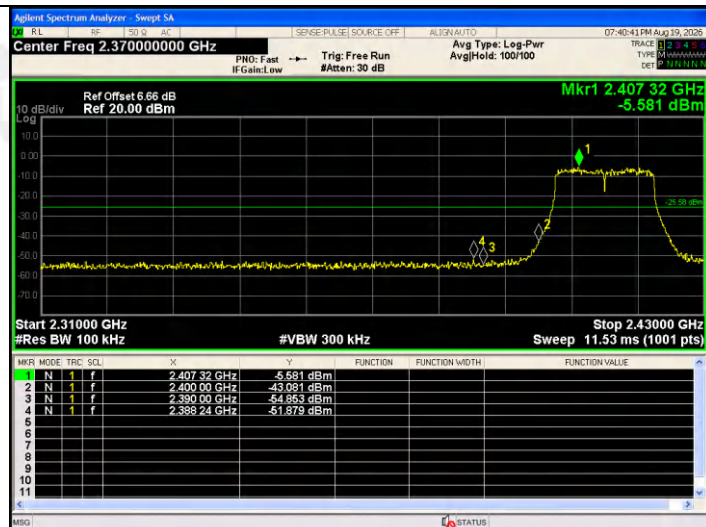
802.11g/LCH



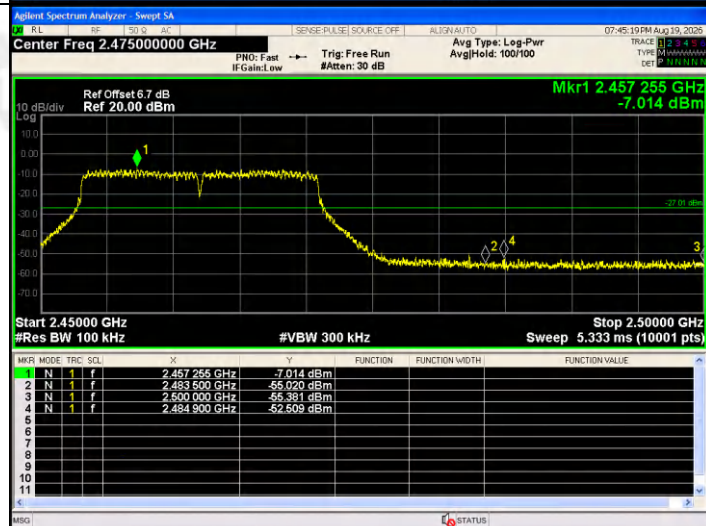
802.11g/HCH



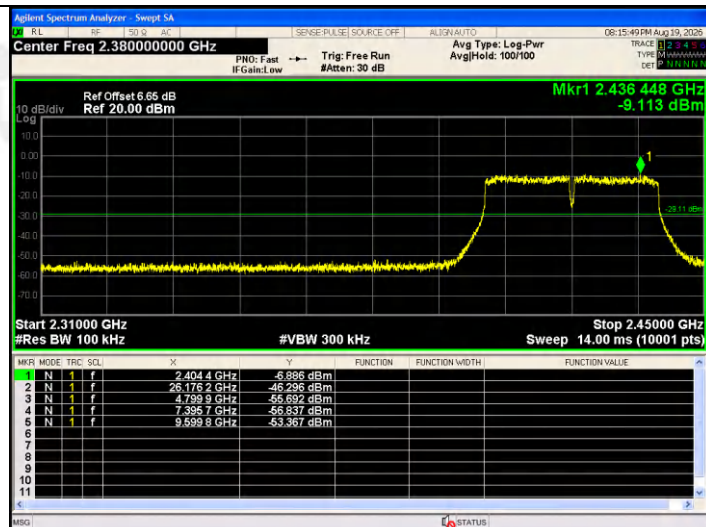
802.11n(HT20)/LCH



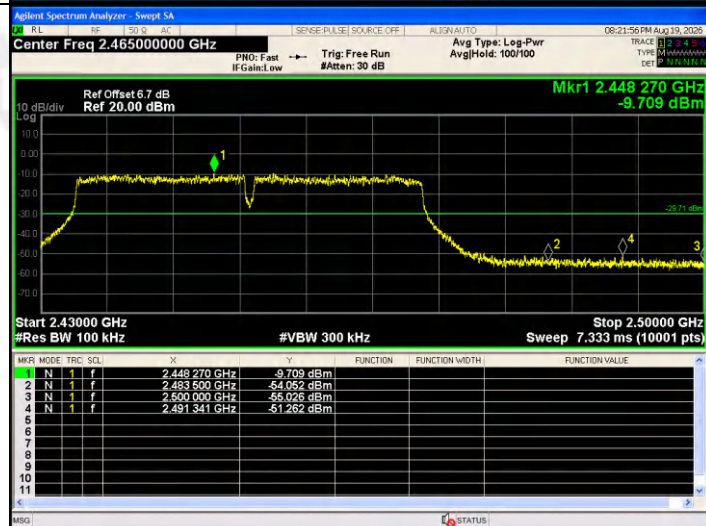
802.11n(HT20)/HCH



802.11n(HT40)/LCH



802.11n(HT40)/HCH



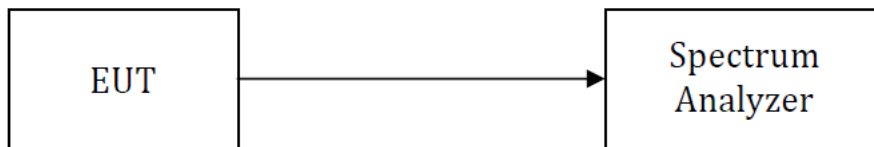
## 7. -6 dB Bandwidth and 99% Bandwidth Measurement

### 7.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02April 2,2019; ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024

### 7.2.Test Setup



### 7.3.Test Procedure

#### DTS Bandwidth

- a) Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
- b) Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz.
- c) Set the VBW  $\geq [3 \times \text{RBW}]$ .
- d) Detector = peak.
- e) Trace mode = max-hold.
- f) Sweep = No faster than coupled (auto) time.
- g) Allow the trace to stabilize.

#### 99% Bandwidth

- a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be at least three times the RBW, unless otherwise specified by the applicable requirement
- c) Detector = peak.
- d) Trace mode = max-hold.
- e) Sweep = No faster than coupled (auto) time.
- f) Allow the trace to stabilize.

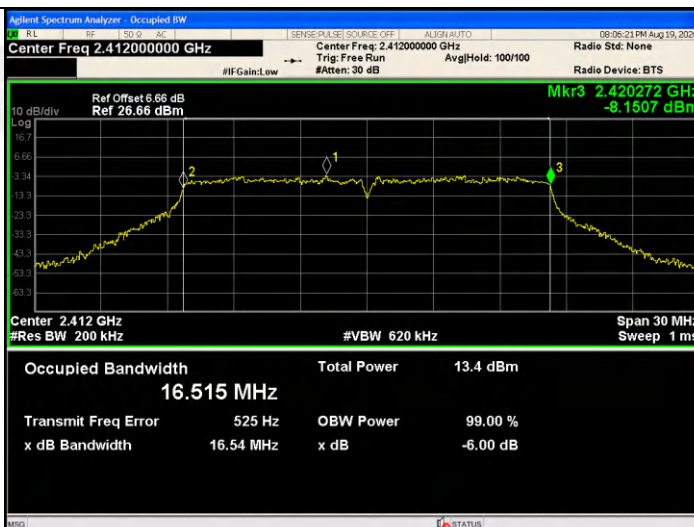
## 7.4.Test Result

| Test Mode     | Frequency | 6dB Bandwidth (MHz) | 99% Bandwidth (MHz) | Limit(kHz) | Result |
|---------------|-----------|---------------------|---------------------|------------|--------|
| 802.11b       | LCH       | 10.184              | 14.9907             | 500        | PASS   |
|               | MCH       | 10.191              | 14.9944             | 500        | PASS   |
|               | HCH       | 10.187              | 14.9997             | 500        | PASS   |
| 802.11g       | LCH       | 16.543              | 16.4969             | 500        | PASS   |
|               | MCH       | 16.537              | 16.5368             | 500        | PASS   |
|               | HCH       | 16.567              | 16.5185             | 500        | PASS   |
| 802.11n(HT20) | LCH       | 17.614              | 17.6754             | 500        | PASS   |
|               | MCH       | 17.759              | 17.6391             | 500        | PASS   |
|               | HCH       | 17.721              | 17.6207             | 500        | PASS   |
| 802.11n(HT40) | LCH       | 36.344              | 36.1776             | 500        | PASS   |
|               | MCH       | 36.344              | 36.1843             | 500        | PASS   |
|               | HCH       | 36.335              | 36.1831             | 500        | PASS   |

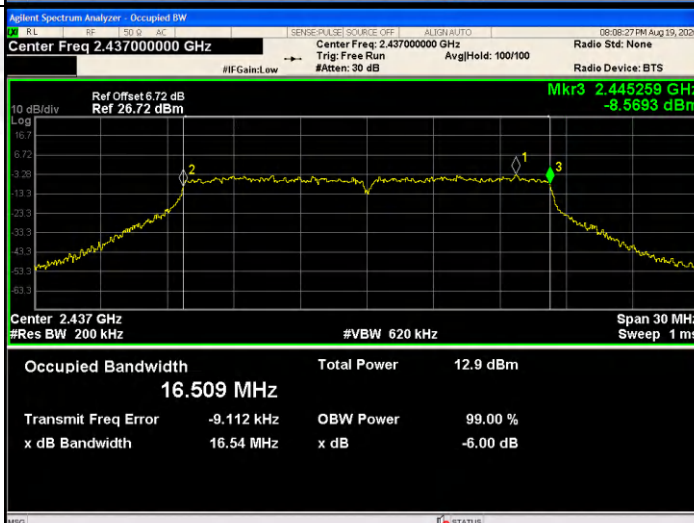
Test Graph:  
6dB Bandwidth



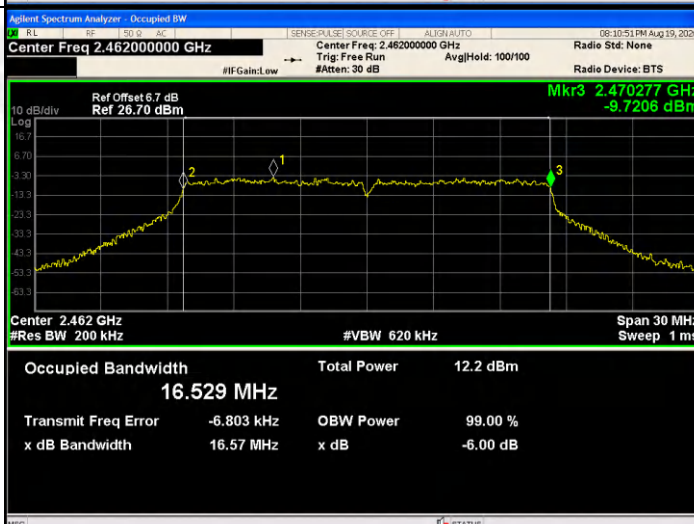
802.11g/LCH



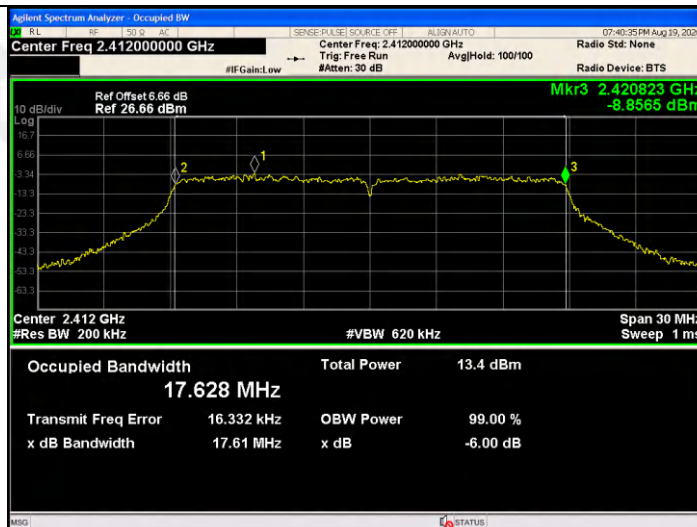
802.11g/MCH



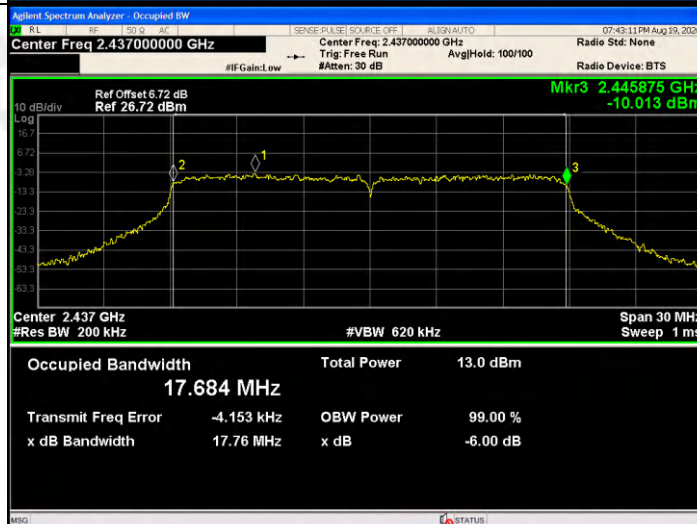
802.11g/HCH



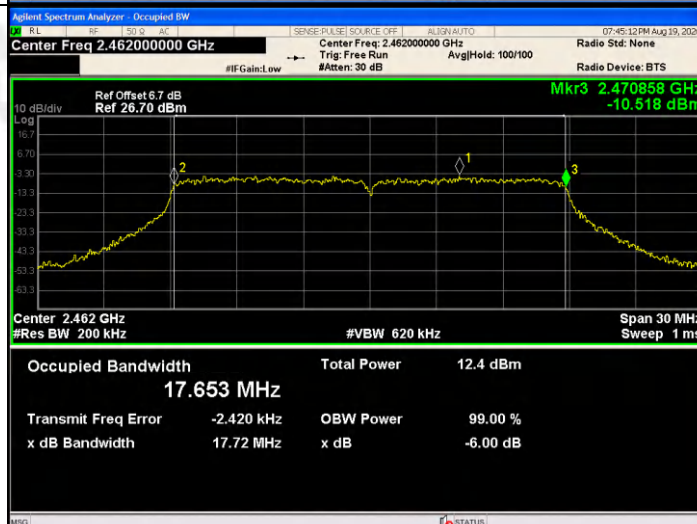
802.11n(HT20)/LCH



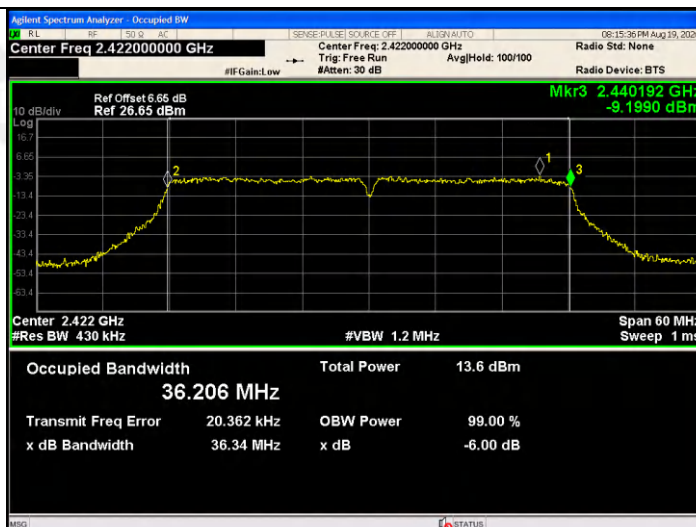
802.11n(HT20)/MCH



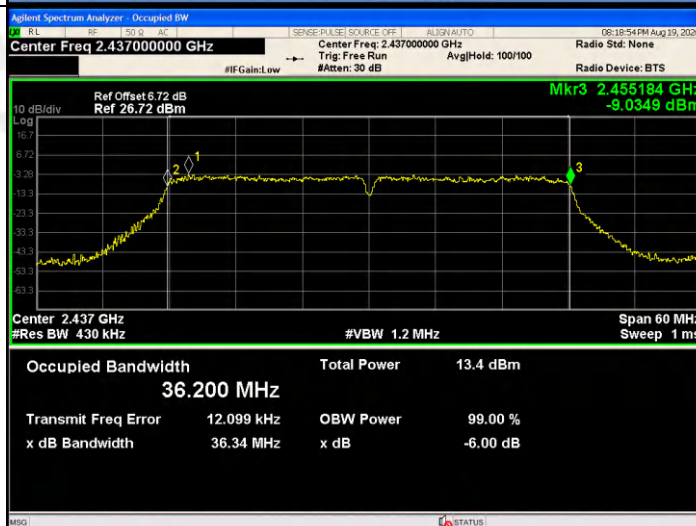
802.11n(HT20)/HCH



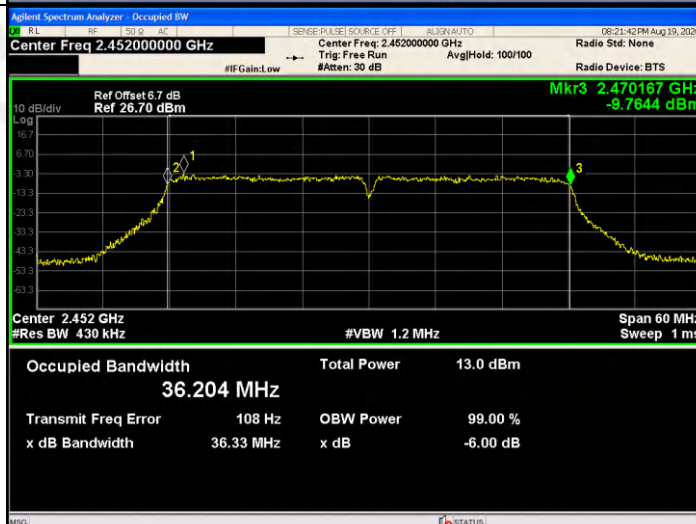
802.11n(HT40)/LCH



802.11n(HT40)/MCH



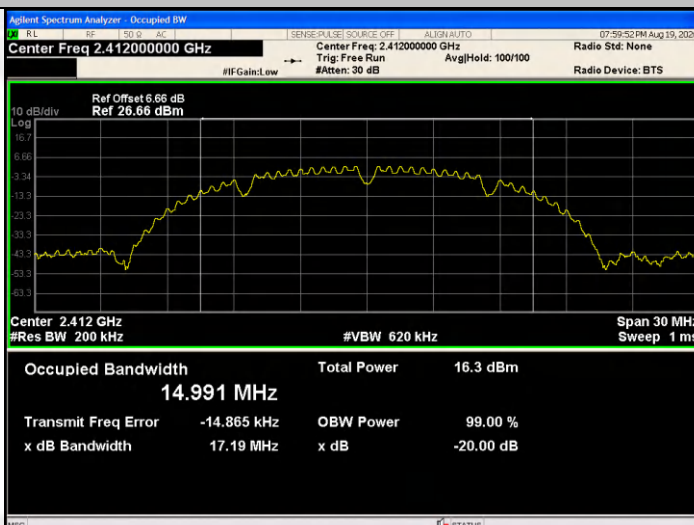
802.11n(HT40)/HCH



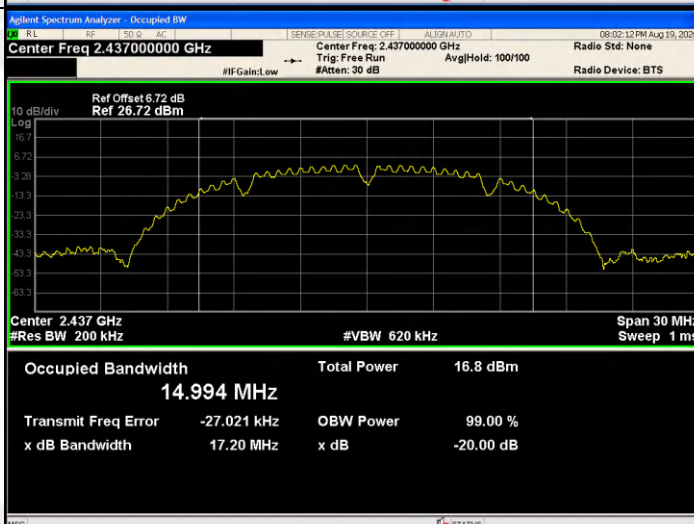
99% Bandwidth

Graphs

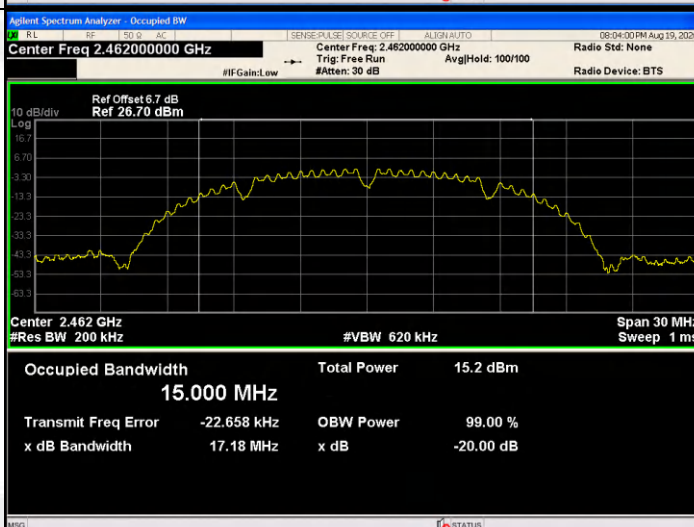
802.11b/LCH



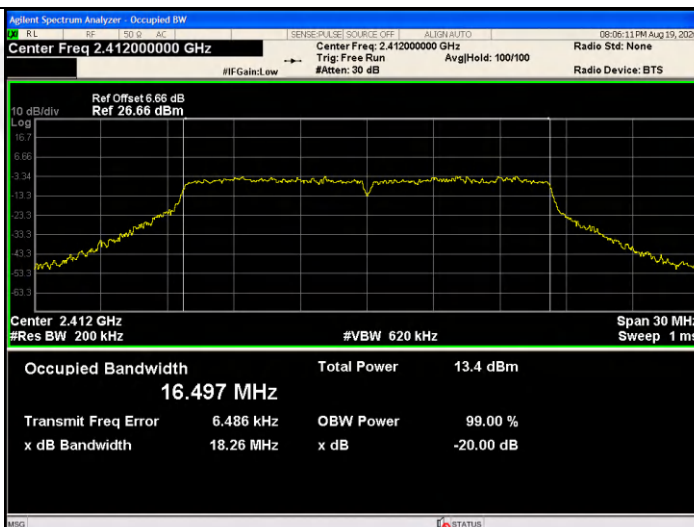
802.11b/MCH



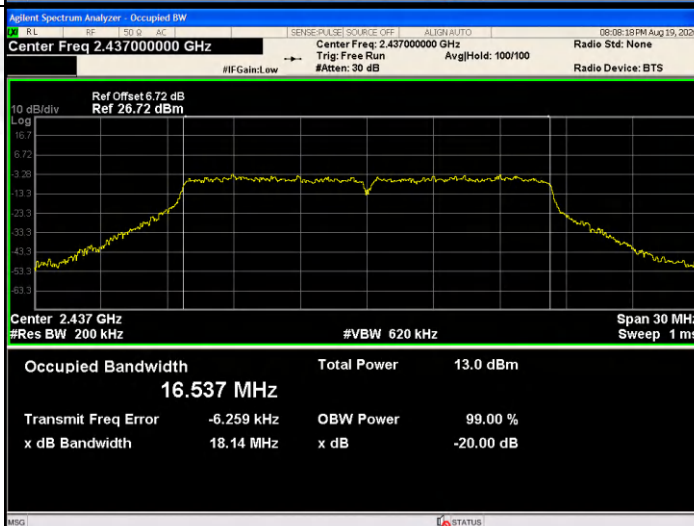
802.11b/HCH



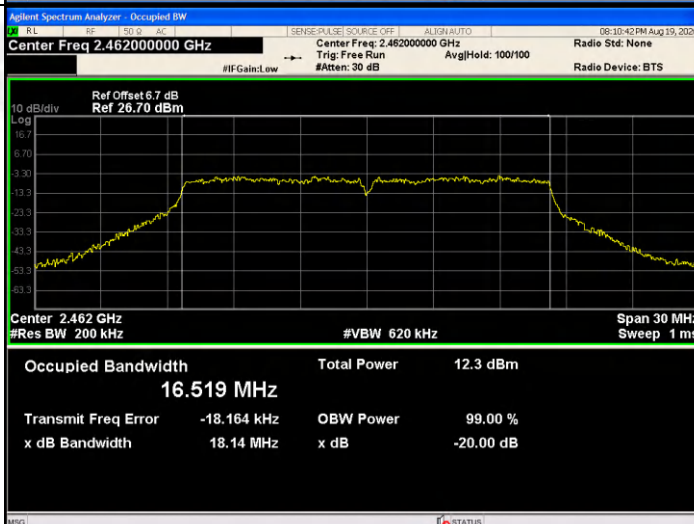
802.11g/LCH

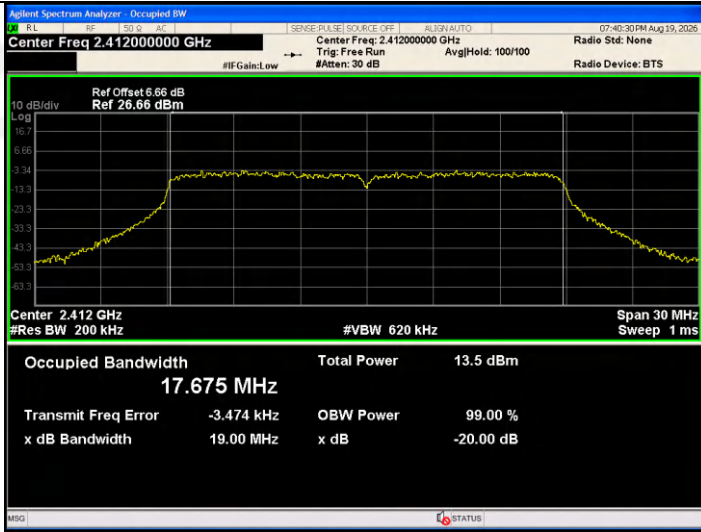
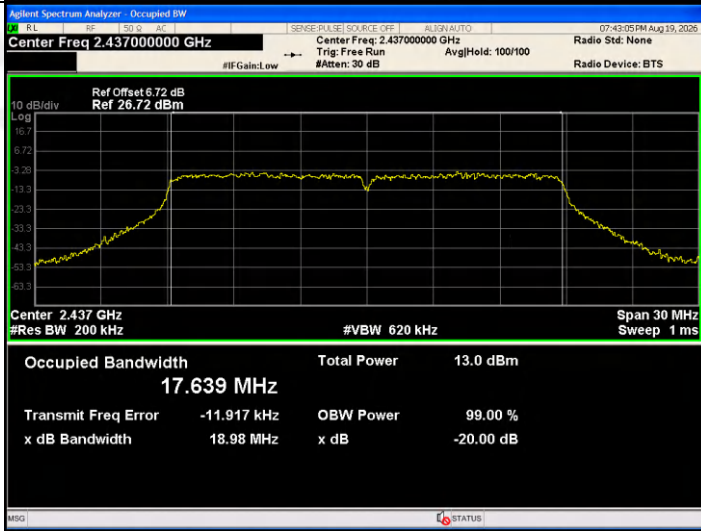
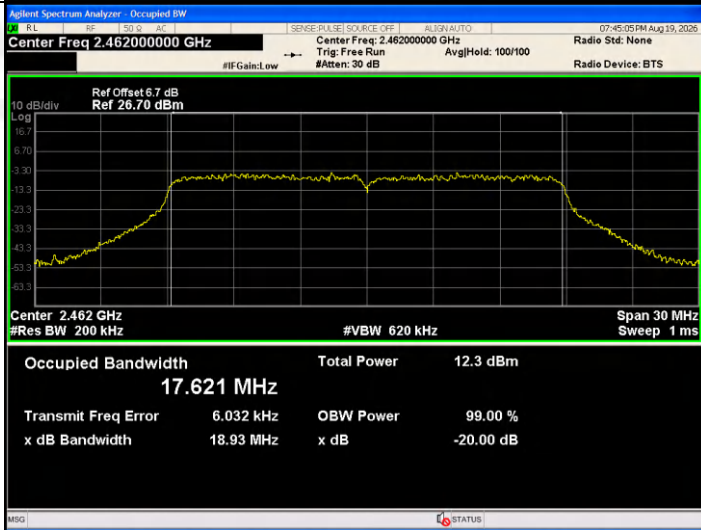


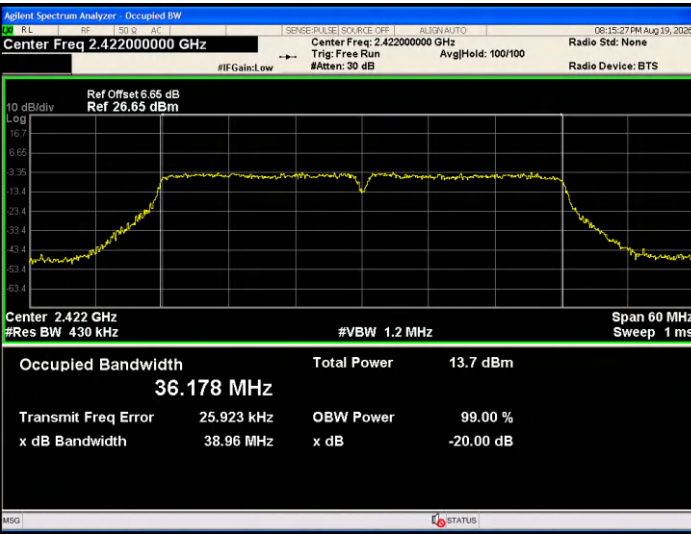
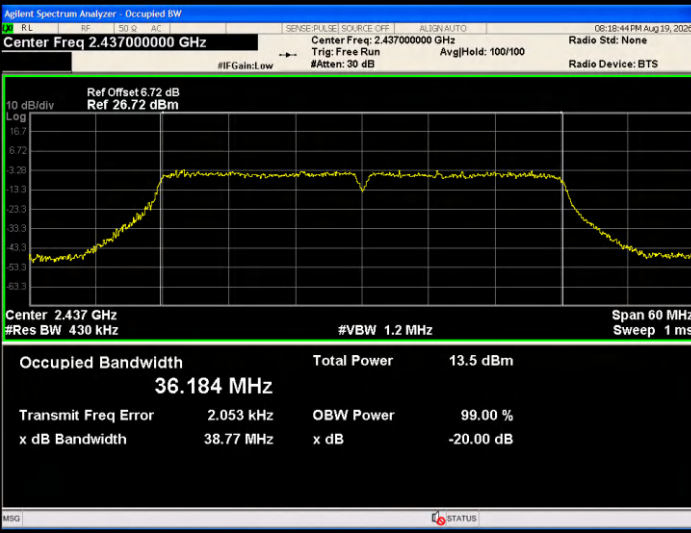
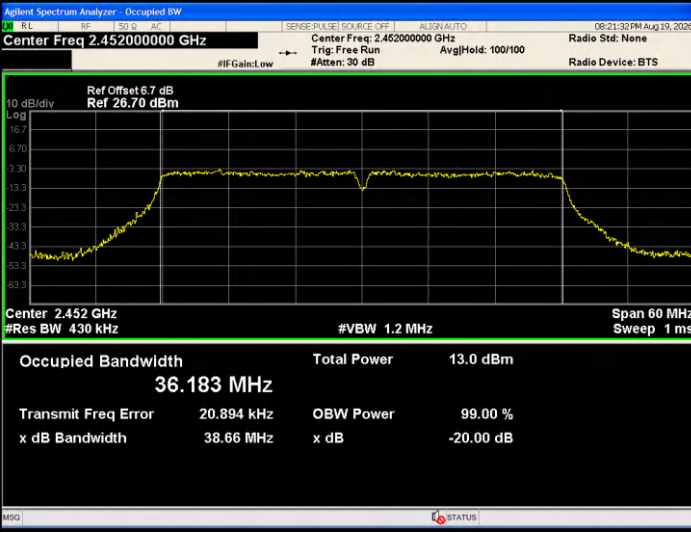
802.11g/MCH



802.11g/HCH



|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 802.11n(HT20)/LCH |  <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.41200000 GHz</p> <p>Ref Offset 6.66 dB<br/>Ref 26.66 dBm</p> <p>Center 2.412 GHz<br/>#Res BW 200 kHz</p> <p>Occupied Bandwidth 17.675 MHz</p> <p>Total Power 13.5 dBm</p> <p>Transmit Freq Error -3.474 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 19.00 MHz</p> <p>x dB -20.00 dB</p>    |
| 802.11n(HT20)/MCH |  <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.437000000 GHz</p> <p>Ref Offset 6.72 dB<br/>Ref 26.72 dBm</p> <p>Center 2.437 GHz<br/>#Res BW 200 kHz</p> <p>Occupied Bandwidth 17.639 MHz</p> <p>Total Power 13.0 dBm</p> <p>Transmit Freq Error -11.917 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 18.98 MHz</p> <p>x dB -20.00 dB</p> |
| 802.11n(HT20)/HCH |  <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq 2.462000000 GHz</p> <p>Ref Offset 6.7 dB<br/>Ref 26.70 dBm</p> <p>Center 2.462 GHz<br/>#Res BW 200 kHz</p> <p>Occupied Bandwidth 17.621 MHz</p> <p>Total Power 12.3 dBm</p> <p>Transmit Freq Error 6.032 kHz</p> <p>OBW Power 99.00 %</p> <p>x dB Bandwidth 18.93 MHz</p> <p>x dB -20.00 dB</p>   |

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 802.11n(HT40)/LCH |  <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.42200000 GHz</p> <p>Ref Offset: 6.66 dB<br/>Ref: 26.65 dBm</p> <p>Center: 2.422 GHz<br/>#Res BW: 430 kHz<br/>#VBW: 1.2 MHz<br/>Span: 60 MHz<br/>Sweep: 1 ms</p> <p>Occupied Bandwidth: 36.178 MHz</p> <p>Total Power: 13.7 dBm</p> <p>Transmit Freq Error: 25.923 kHz</p> <p>OBW Power: 99.00 %</p> <p>x dB Bandwidth: 38.96 MHz</p> <p>x dB: -20.00 dB</p>  |
| 802.11n(HT40)/MCH |  <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.43700000 GHz</p> <p>Ref Offset: 6.72 dB<br/>Ref: 26.72 dBm</p> <p>Center: 2.437 GHz<br/>#Res BW: 430 kHz<br/>#VBW: 1.2 MHz<br/>Span: 60 MHz<br/>Sweep: 1 ms</p> <p>Occupied Bandwidth: 36.184 MHz</p> <p>Total Power: 13.5 dBm</p> <p>Transmit Freq Error: 2.053 kHz</p> <p>OBW Power: 99.00 %</p> <p>x dB Bandwidth: 38.77 MHz</p> <p>x dB: -20.00 dB</p>  |
| 802.11n(HT40)/HCH |  <p>Agilent Spectrum Analyzer - Occupied BW</p> <p>Center Freq: 2.45200000 GHz</p> <p>Ref Offset: 6.7 dB<br/>Ref: 26.70 dBm</p> <p>Center: 2.452 GHz<br/>#Res BW: 430 kHz<br/>#VBW: 1.2 MHz<br/>Span: 60 MHz<br/>Sweep: 1 ms</p> <p>Occupied Bandwidth: 36.183 MHz</p> <p>Total Power: 13.0 dBm</p> <p>Transmit Freq Error: 20.894 kHz</p> <p>OBW Power: 99.00 %</p> <p>x dB Bandwidth: 38.66 MHz</p> <p>x dB: -20.00 dB</p> |

## 8. Maximum Output Power

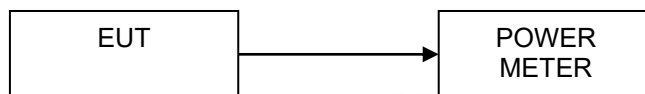
### 8.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02April 2,2019;ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024

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

### 8.2.Test Setup



### 8.3.Test Procedure

ANSI C63.10-2020 section 11.9.2.2.5

Method AVGSA-2A uses rms detection with slow sweep with spectrum bin averaging across ON and OFF times of the EUT transmissions, followed by duty cycle correction. The procedure for this method is as follows:

- Measure the duty cycle D of the transmitter output signal as described in 11.6.
- Set span to >1.5 times the OBW.
- Set RBW = 1% to 5% of the OBW, but do not exceed 1 MHz.
- Set VBW  $\geq [3 \times \text{RBW}]$ .
- Number of points in sweep  $\geq [2 \times \text{span} / \text{RBW}]$ . (This gives bin-to-bin spacing  $\leq \text{RBW} / 2$ , so that narrowband signals are not lost between frequency bins.)
- Manually set sweep time  $\geq [10 \times (\text{number of points in sweep}) \times (\text{total ON/OFF period of the transmitted signal})]$ .
- Set detector = Power averaging (rms).
- Perform a single sweep.
- Compute power by integrating the spectrum across the OBW of the signal using the instrument's band-power measurement function with band limits set equal to the OBW band-edges. If the instrument does not have a band-power function, then sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW.
- Add  $[10 \log (1 / D)]$ , where D is the duty cycle, to the measured power to compute the average power during the actual transmission times.

#### 8.4.Test Result

| Mode          | Channel. | Maximum Peak Output Power [dBm] | Limit [dBm] | Verdict |
|---------------|----------|---------------------------------|-------------|---------|
| 802.11b       | LCH      | 14.404                          | 30          | PASS    |
|               | MCH      | 14.729                          | 30          | PASS    |
|               | HCH      | 13.131                          | 30          | PASS    |
| 802.11g       | LCH      | 14.812                          | 30          | PASS    |
|               | MCH      | 14.434                          | 30          | PASS    |
|               | HCH      | 13.691                          | 30          | PASS    |
| 802.11n(HT20) | LCH      | 14.61                           | 30          | PASS    |
|               | MCH      | 14.028                          | 30          | PASS    |
|               | HCH      | 13.435                          | 30          | PASS    |
| 802.11n(HT40) | LCH      | 14.618                          | 30          | PASS    |
|               | MCH      | 14.302                          | 30          | PASS    |
|               | HCH      | 13.92                           | 30          | PASS    |

## 9. Power Spectral density

### 9.1.Limit

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: KDB 558074 D01 15.247 Meas Guidance v05r02 April 2, 2019; ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024

| 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   |

### 9.2.Test Setup



### 9.3.Test Procedure

KDB 558074 D01 15.247 Meas Guidance v05r02;

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set instrument center frequency to DTS channel center frequency
3. Set span to > 1.5 times the OBW.
4. Set RBW to:  $3\text{ kHz} \leq \text{RBW} \leq 100\text{ kHz}$
5. Set VBW  $\geq [3 \times \text{RBW}]$
6. Detector = power averaging (rms) or sample detector (when rms not available).
7. Ensure that the number of measurement points in the sweep  $\geq [2 \times \text{span} / \text{RBW}]$ .
8. Sweep time = auto couple.
9. Employ trace averaging (rms) mode over a minimum of 100 traces.
10. Use the peak marker function to determine the maximum amplitude level.
11. If the measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat(note that this might require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced).
12. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.

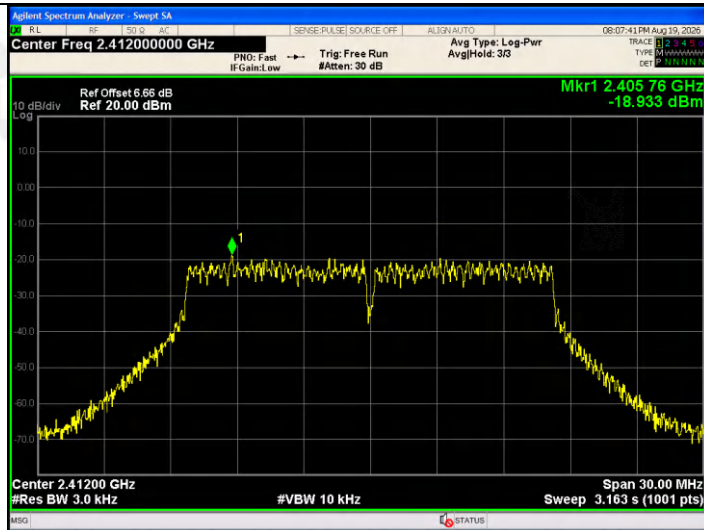
## 9.4.Test Result

| Mode          | Channel. | Power Spectral Density [dBm /3kHz] | Limit(8 dBm (in any 3kHz)) | Verdict |
|---------------|----------|------------------------------------|----------------------------|---------|
| 802.11b       | LCH      | -19.114                            | 8                          | PASS    |
|               | MCH      | -18.731                            | 8                          | PASS    |
|               | HCH      | -20.244                            | 8                          | PASS    |
| 802.11g       | LCH      | -18.933                            | 8                          | PASS    |
|               | MCH      | -19.644                            | 8                          | PASS    |
|               | HCH      | -20.261                            | 8                          | PASS    |
| 802.11n(HT20) | LCH      | -19.804                            | 8                          | PASS    |
|               | MCH      | -20.373                            | 8                          | PASS    |
|               | HCH      | -21.041                            | 8                          | PASS    |
| 802.11n(HT40) | LCH      | -21.962                            | 8                          | PASS    |
|               | MCH      | -22.057                            | 8                          | PASS    |
|               | HCH      | -22.429                            | 8                          | PASS    |

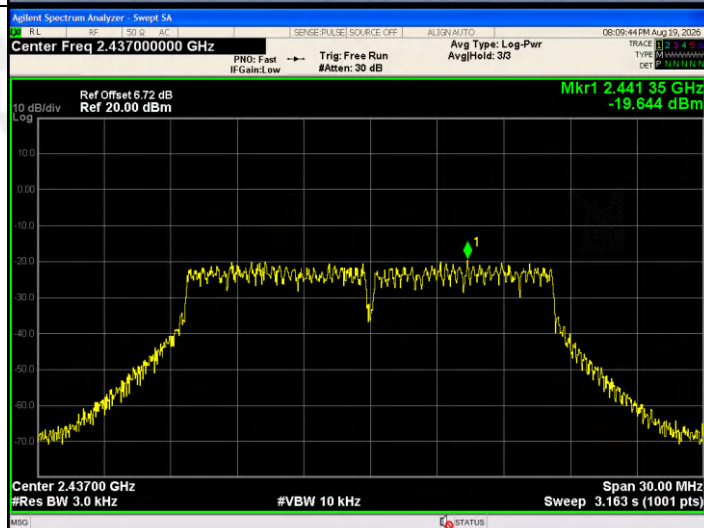
# Test Graph

| Graphs      |                                                                                                                                                                                                                                                                  |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 802.11b/LCH | <p>Agilent Spectrum Analyzer - Sweep SA<br/>Center Freq 2.41200000 GHz<br/>Ref Offset 6.66 dB<br/>Ref 20.00 dBm<br/>Mkr1 2.412 69 GHz -19.114 dBm<br/>Center 2.41200 GHz<br/>#Res BW 3.0 kHz<br/>#VBW 10 kHz<br/>Span 30.00 MHz<br/>Sweep 3.163 s (1001 pts)</p> |
| 802.11b/MCH | <p>Agilent Spectrum Analyzer - Sweep SA<br/>Center Freq 2.43700000 GHz<br/>Ref Offset 6.72 dB<br/>Ref 20.00 dBm<br/>Mkr1 2.437 72 GHz -18.731 dBm<br/>Center 2.43700 GHz<br/>#Res BW 3.0 kHz<br/>#VBW 10 kHz<br/>Span 30.00 MHz<br/>Sweep 3.163 s (1001 pts)</p> |
| 802.11b/HCH | <p>Agilent Spectrum Analyzer - Sweep SA<br/>Center Freq 2.46200000 GHz<br/>Ref Offset 6.7 dB<br/>Ref 20.00 dBm<br/>Mkr1 2.461 28 GHz -20.244 dBm<br/>Center 2.46200 GHz<br/>#Res BW 3.0 kHz<br/>#VBW 10 kHz<br/>Span 30.00 MHz<br/>Sweep 3.163 s (1001 pts)</p>  |

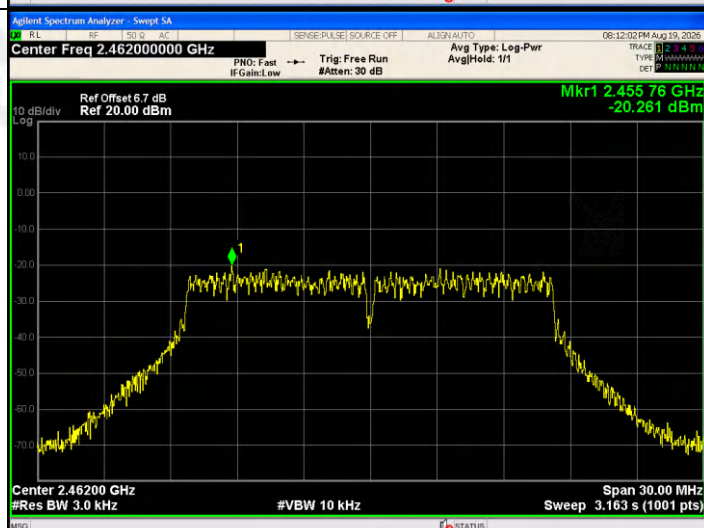
802.11g/LCH

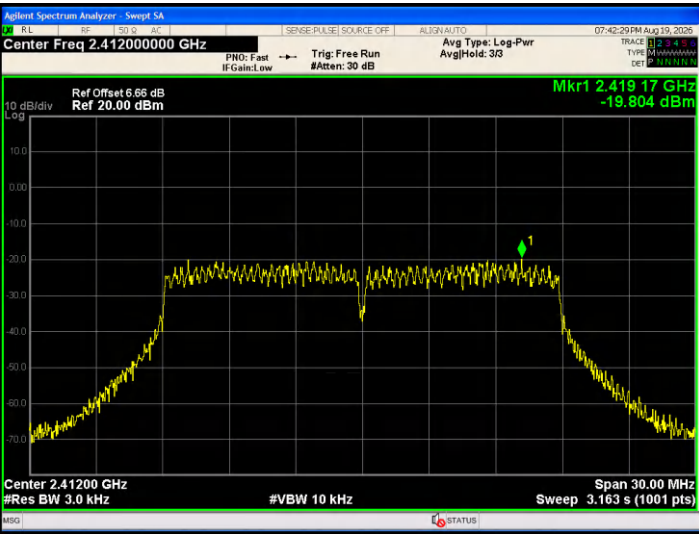
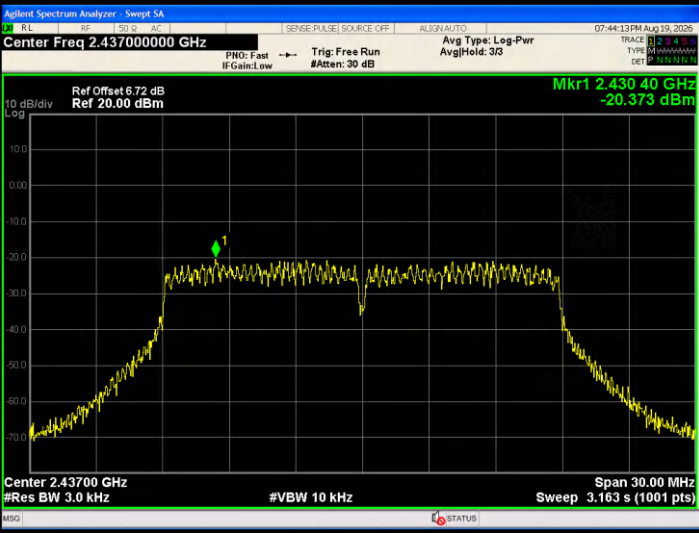
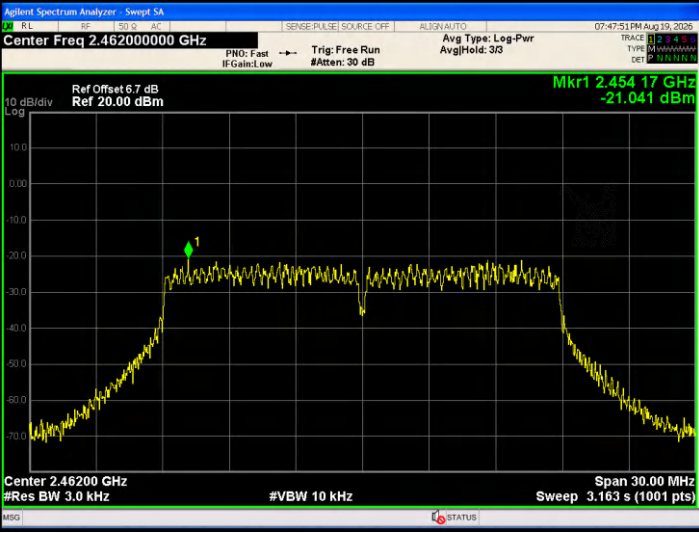


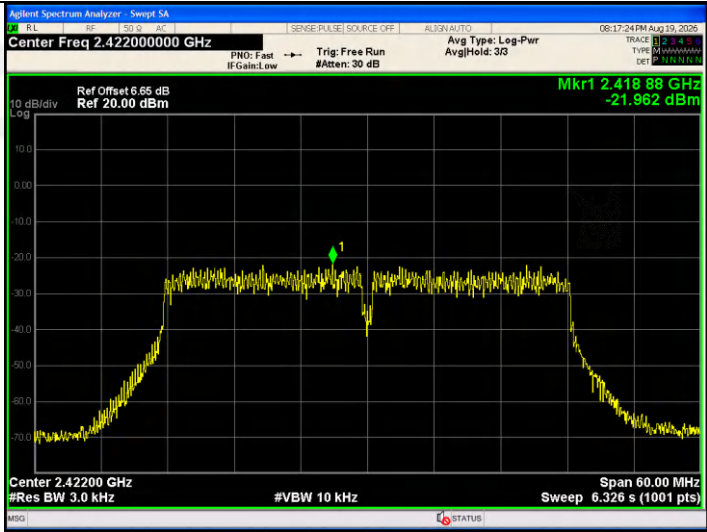
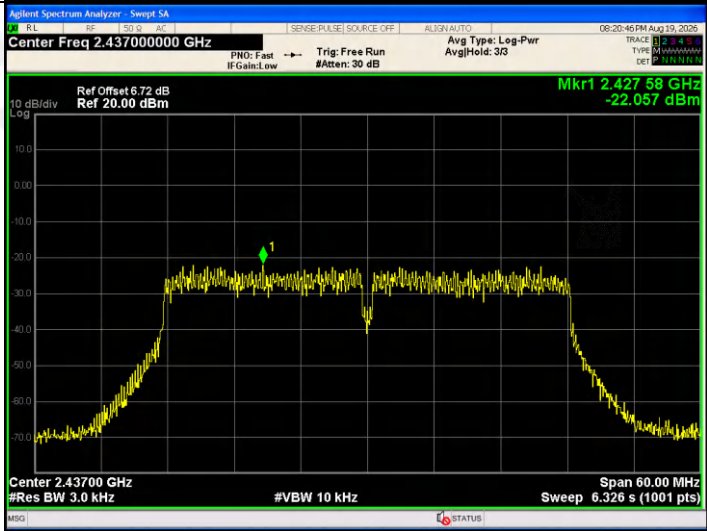
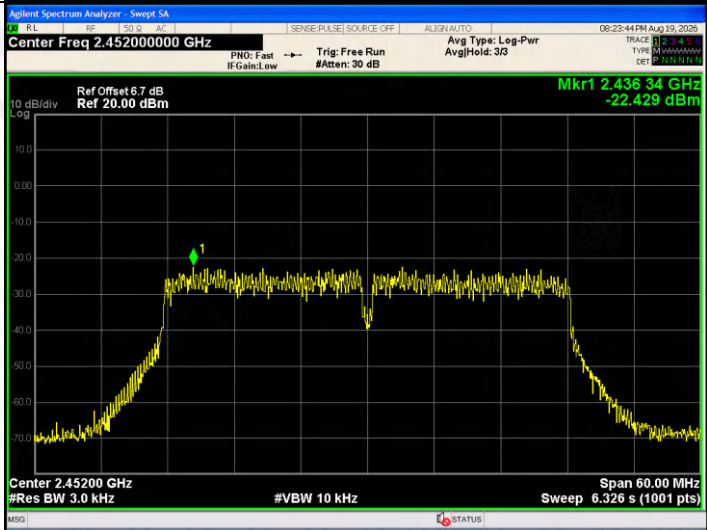
802.11g/MCH



802.11g/HCH



|                   |                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 802.11n(HT20)/LCH |  <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.41200000 GHz</p> <p>Ref Offset 6.66 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.41917 GHz<br/>-19.804 dBm</p> <p>Center 2.41200 GHz<br/>#Res BW 3.0 kHz</p> <p>#VBW 10 kHz</p> <p>Span 30.00 MHz<br/>Sweep 3.163 s (1001 pts)</p>  |
| 802.11n(HT20)/MCH |  <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.43700000 GHz</p> <p>Ref Offset 6.72 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.43040 GHz<br/>-20.373 dBm</p> <p>Center 2.43700 GHz<br/>#Res BW 3.0 kHz</p> <p>#VBW 10 kHz</p> <p>Span 30.00 MHz<br/>Sweep 3.163 s (1001 pts)</p> |
| 802.11n(HT20)/HCH |  <p>Agilent Spectrum Analyzer - Swept SA</p> <p>Center Freq 2.46200000 GHz</p> <p>Ref Offset 6.7 dB<br/>Ref 20.00 dBm</p> <p>Mkr1 2.45417 GHz<br/>-21.041 dBm</p> <p>Center 2.46200 GHz<br/>#Res BW 3.0 kHz</p> <p>#VBW 10 kHz</p> <p>Span 30.00 MHz<br/>Sweep 3.163 s (1001 pts)</p> |

|                   |                                                                                      |
|-------------------|--------------------------------------------------------------------------------------|
| 802.11n(HT40)/LCH |    |
| 802.11n(HT40)/MCH |   |
| 802.11n(HT40)/HCH |  |

## 10. Antenna Requirement

According to the FCC Part 15 Paragraph 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. This product has an integrated antenna fulfill the requirement of this section.

This product has an PCB antenna, and the maximum antenna gain is 3.86dBi, fulfill the requirement of this section.

## 11. TEST SETUP & EUT PHOTOGRAPH

Reference to EUT photo attachment for details.

----- End of Report -----