

## 8.5 Test Result

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Polar<br>(H/V)       | Frequency<br>(MHz) | Reading<br>Level<br>(dBuV/m) | Correct<br>Factor<br>(dB) | Measure-<br>ment<br>(dBuV/m) | Limits<br>(dBuV/m) |       | Result |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|------------------------------|---------------------------|------------------------------|--------------------|-------|--------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                    |                              |                           | PK                           | PK                 | AV    |        |
| 802.11b                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Low Channel 2412MHz  |                    |                              |                           |                              |                    |       |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | H                    | 2390.00            | 57.08                        | -6.70                     | 50.38                        | 74.00              | 54.00 | PASS   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | H                    | 2400.00            | 48.24                        | -6.71                     | 41.53                        | 74.00              | 54.00 | PASS   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | V                    | 2390.00            | 57.89                        | -6.70                     | 51.19                        | 74.00              | 54.00 | PASS   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | V                    | 2400.00            | 49.66                        | -6.71                     | 42.95                        | 74.00              | 54.00 | PASS   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | High Channel 2462MHz |                    |                              |                           |                              |                    |       |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | H                    | 2483.50            | 56.08                        | -6.79                     | 49.29                        | 74.00              | 54.00 | PASS   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | H                    | 2485.00            | 49.48                        | -6.81                     | 42.67                        | 74.00              | 54.00 | PASS   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | V                    | 2483.50            | 58.28                        | -6.79                     | 51.49                        | 74.00              | 54.00 | PASS   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | V                    | 2485.00            | 50.58                        | -6.81                     | 43.77                        | 74.00              | 54.00 | PASS   |
| 802.11g                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Low Channel 2412MHz  |                    |                              |                           |                              |                    |       |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | H                    | 2390.00            | 56.67                        | -6.70                     | 49.97                        | 74.00              | 54.00 | PASS   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | H                    | 2400.00            | 48.38                        | -6.71                     | 41.67                        | 74.00              | 54.00 | PASS   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | V                    | 2390.00            | 57.10                        | -6.70                     | 50.40                        | 74.00              | 54.00 | PASS   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | V                    | 2400.00            | 49.99                        | -6.71                     | 43.28                        | 74.00              | 54.00 | PASS   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | High Channel 2462MHz |                    |                              |                           |                              |                    |       |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | H                    | 2483.50            | 56.96                        | -6.79                     | 50.17                        | 74.00              | 54.00 | PASS   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | H                    | 2485.00            | 48.06                        | -6.81                     | 41.25                        | 74.00              | 54.00 | PASS   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | V                    | 2483.50            | 56.72                        | -6.79                     | 49.93                        | 74.00              | 54.00 | PASS   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | V                    | 2485.00            | 48.22                        | -6.81                     | 41.41                        | 74.00              | 54.00 | PASS   |
| <b>Remark:</b><br>1. Emission Level = Meter Reading + Factor,<br>Factor = Antenna Factor + Cable Loss – Pre-amplifier.<br>Over= Emission Level - Limit<br>2. If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.<br>3 In restricted bands of operation, The spurious emissions below the permissible value more than 20dB<br>4. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported. |                      |                    |                              |                           |                              |                    |       |        |

|               | Polar<br>(H/V)       | Frequency<br>(MHz) | Reading<br>Level<br>(dBuV/m) | Correct<br>Factor<br>(dB) | Measure-<br>ment<br>(dBuV/m) | Limits<br>(dBuV/m) |       | Result |
|---------------|----------------------|--------------------|------------------------------|---------------------------|------------------------------|--------------------|-------|--------|
|               |                      |                    |                              |                           | PK                           | PK                 | AV    |        |
| 802.11<br>n20 | Low Channel 2412MHz  |                    |                              |                           |                              |                    |       |        |
|               | H                    | 2390.00            | 56.84                        | -6.70                     | 50.14                        | 74.00              | 54.00 | PASS   |
|               | H                    | 2400.00            | 48.55                        | -6.71                     | 41.84                        | 74.00              | 54.00 | PASS   |
|               | V                    | 2390.00            | 57.34                        | -6.70                     | 50.64                        | 74.00              | 54.00 | PASS   |
|               | V                    | 2400.00            | 48.39                        | -6.71                     | 41.68                        | 74.00              | 54.00 | PASS   |
|               | High Channel 2462MHz |                    |                              |                           |                              |                    |       |        |
|               | H                    | 2483.50            | 57.18                        | -6.79                     | 50.39                        | 74.00              | 54.00 | PASS   |
|               | H                    | 2500.00            | 48.84                        | -6.81                     | 42.03                        | 74.00              | 54.00 | PASS   |
|               | V                    | 2483.50            | 55.75                        | -6.79                     | 48.96                        | 74.00              | 54.00 | PASS   |
|               | V                    | 2500.00            | 47.22                        | -6.81                     | 40.41                        | 74.00              | 54.00 | PASS   |
| 802.11<br>n40 | Low Channel 2422MHz  |                    |                              |                           |                              |                    |       |        |
|               | H                    | 2390.00            | 57.61                        | -6.70                     | 50.91                        | 74.00              | 54.00 | PASS   |
|               | H                    | 2400.00            | 49.80                        | -6.71                     | 43.09                        | 74.00              | 54.00 | PASS   |
|               | V                    | 2390.00            | 57.59                        | -6.70                     | 50.89                        | 74.00              | 54.00 | PASS   |
|               | V                    | 2400.00            | 49.51                        | -6.71                     | 42.80                        | 74.00              | 54.00 | PASS   |
|               | High Channel 2452MHz |                    |                              |                           |                              |                    |       |        |
|               | H                    | 2483.50            | 57.79                        | -6.79                     | 51.00                        | 74.00              | 54.00 | PASS   |
|               | H                    | 2500.00            | 49.39                        | -6.81                     | 42.58                        | 74.00              | 54.00 | PASS   |
|               | V                    | 2483.50            | 55.76                        | -6.79                     | 48.97                        | 74.00              | 54.00 | PASS   |
|               | V                    | 2500.00            | 47.09                        | -6.81                     | 40.28                        | 74.00              | 54.00 | PASS   |

**Remark:**

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

Over= Emission Level - Limit

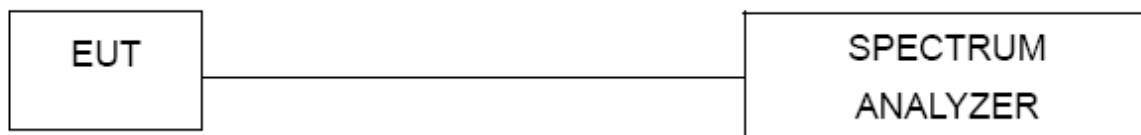
2. If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

3 In restricted bands of operation, The spurious emissions below the permissible value more than 20dB

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

## 9. Power Spectral Density Test

### 9.1 Block Diagram Of Test Setup



### 9.2 Limit

| FCC Part15 (15.247) , Subpart C |                        |                        |                       |        |
|---------------------------------|------------------------|------------------------|-----------------------|--------|
| Section                         | Test Item              | Limit                  | Frequency Range (MHz) | Result |
| 15.247                          | Power Spectral Density | 8 dBm<br>(in any 3KHz) | 2400-2483.5           | PASS   |

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

### 9.3 Test Procedure

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

### 9.4 EUT Operating Conditions

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

Note: Power Spectral Density(dBm)=Reading+Cable Loss

## 9.5 Test Result

|               |           |                     |             |
|---------------|-----------|---------------------|-------------|
| Temperature : | 26°C      | Relative Humidity : | 54%         |
| Pressure :    | 101kPa    | Test Voltage :      | AC120V/60Hz |
| Test Mode :   | TX b Mode |                     |             |

| Frequency | Power Spectral Density(dBm/3kHz) | Limit (dBm/3kHz) | Result |
|-----------|----------------------------------|------------------|--------|
| 2412 MHz  | -9.873                           | 8                | PASS   |
| 2437 MHz  | -10.342                          | 8                | PASS   |
| 2462 MHz  | -11.309                          | 8                | PASS   |

### TX CH01



## TX CH06



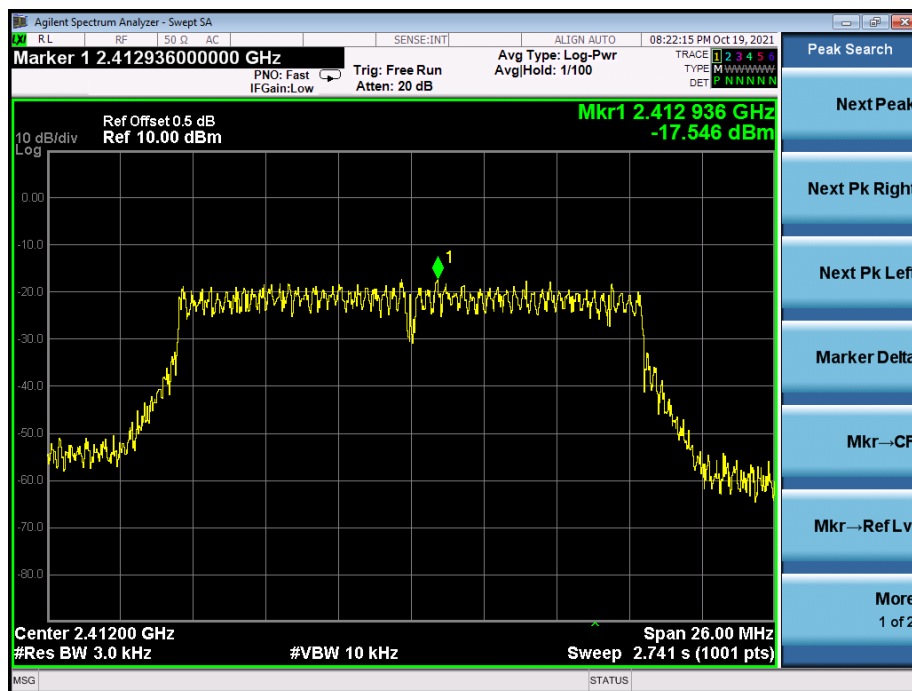
## TX CH11



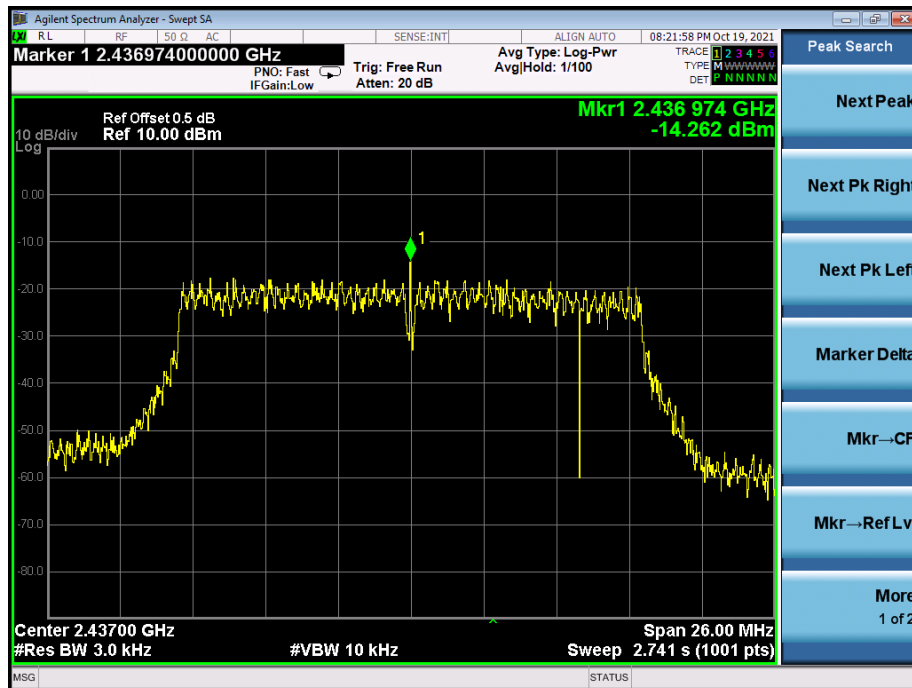
|               |           |                     |             |
|---------------|-----------|---------------------|-------------|
| Temperature : | 26°C      | Relative Humidity : | 54%         |
| Pressure :    | 101kPa    | Test Voltage :      | AC120V/60Hz |
| Test Mode :   | TX g Mode |                     |             |

| Frequency | Power Spectral Density(dBm/3kHz) | Limit (dBm/3kHz) | Result |
|-----------|----------------------------------|------------------|--------|
| 2412 MHz  | -17.546                          | 8                | PASS   |
| 2437 MHz  | -14.262                          | 8                | PASS   |
| 2462 MHz  | -18.016                          | 8                | PASS   |

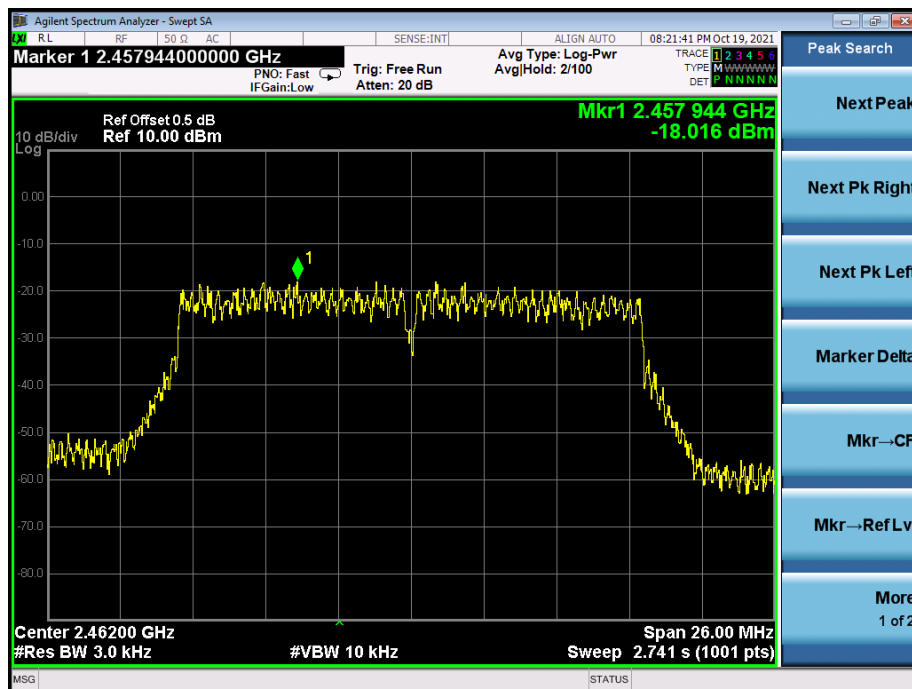
### TX CH01



## TX CH06



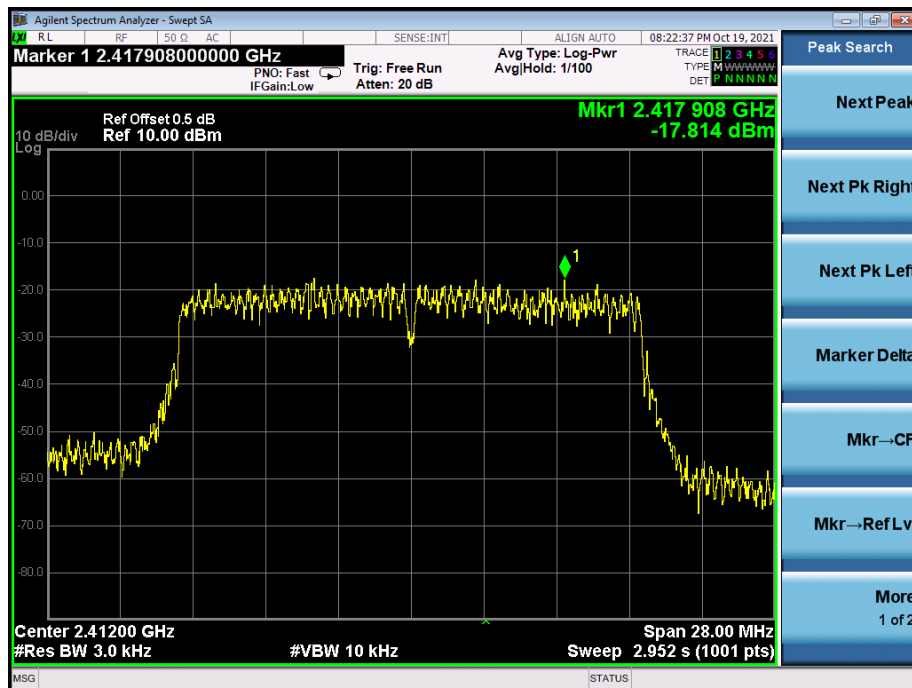
## TX CH11



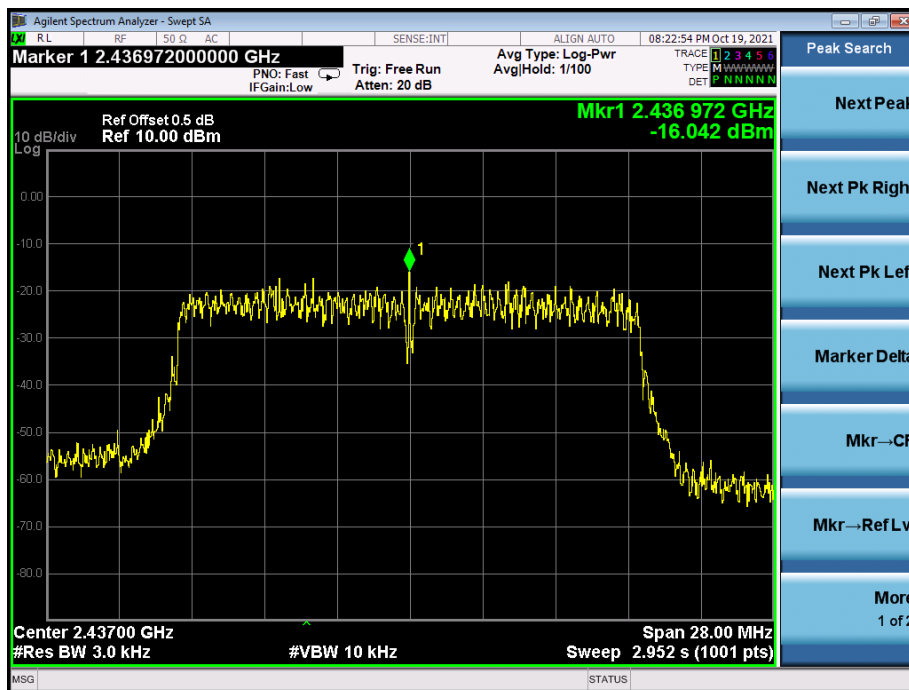
|               |                |                     |             |
|---------------|----------------|---------------------|-------------|
| Temperature : | 26°C           | Relative Humidity : | 54%         |
| Pressure :    | 101kPa         | Test Voltage :      | AC120V/60Hz |
| Test Mode :   | TX n Mode(20M) |                     |             |

| Frequency | Power Spectral Density(dBm/3kHz) | Limit (dBm/3kHz) | Result |
|-----------|----------------------------------|------------------|--------|
| 2412 MHz  | -17.814                          | 8                | PASS   |
| 2437 MHz  | -16.042                          | 8                | PASS   |
| 2462 MHz  | -18.180                          | 8                | PASS   |

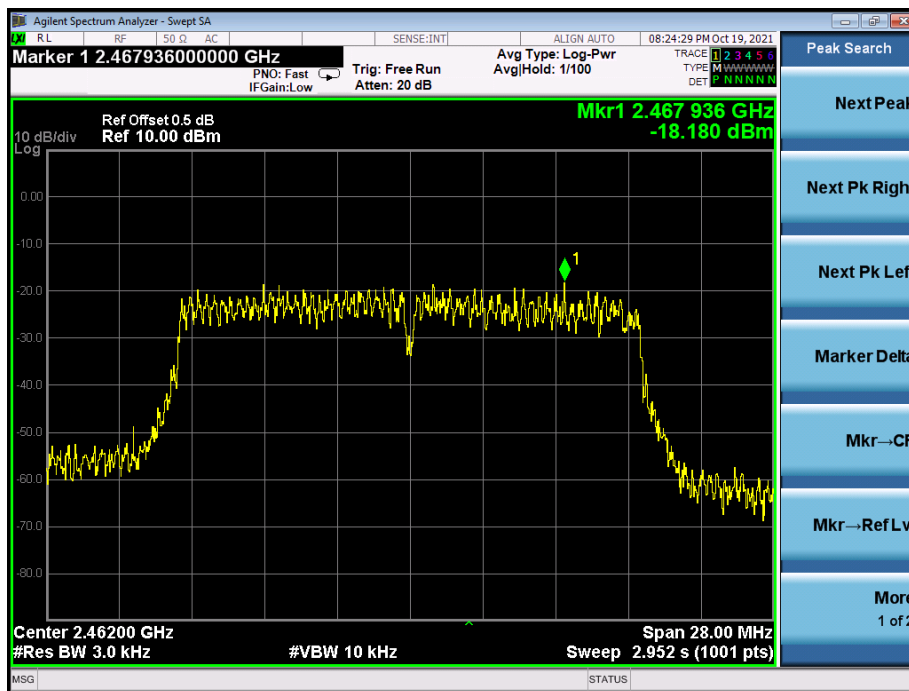
### TX CH01



## TX CH06



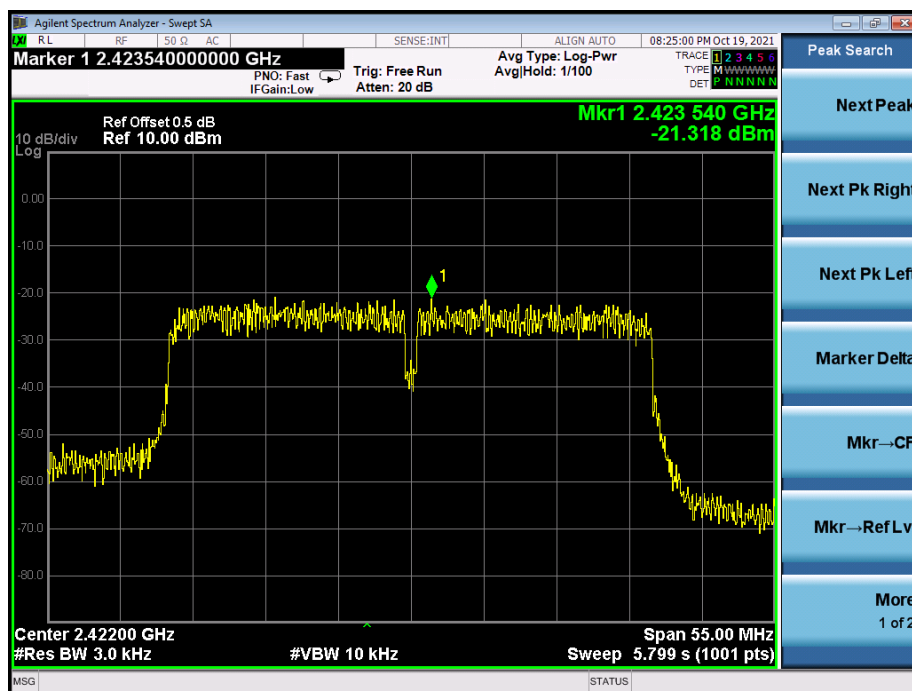
## TX CH11



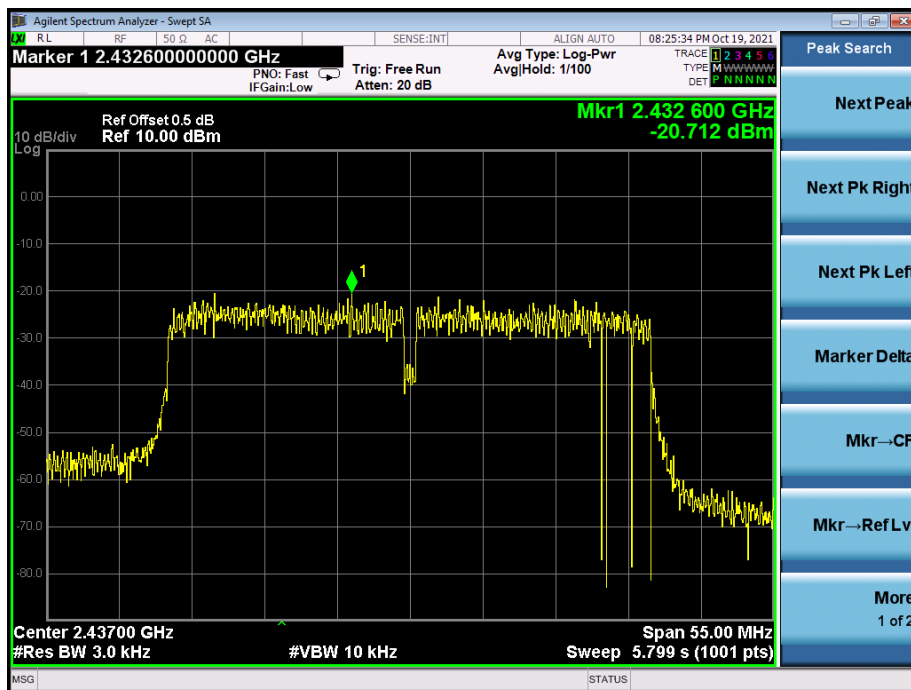
|               |                |                     |             |
|---------------|----------------|---------------------|-------------|
| Temperature : | 26°C           | Relative Humidity : | 54%         |
| Pressure :    | 101kPa         | Test Voltage :      | AC120V/60Hz |
| Test Mode :   | TX n Mode(40M) |                     |             |

| Frequency | Power Spectral Density(dBm) | Limit (dBm) | Result |
|-----------|-----------------------------|-------------|--------|
| 2422 MHz  | -21.318                     | 8           | PASS   |
| 2437 MHz  | -20.712                     | 8           | PASS   |
| 2452 MHz  | -21.160                     | 8           | PASS   |

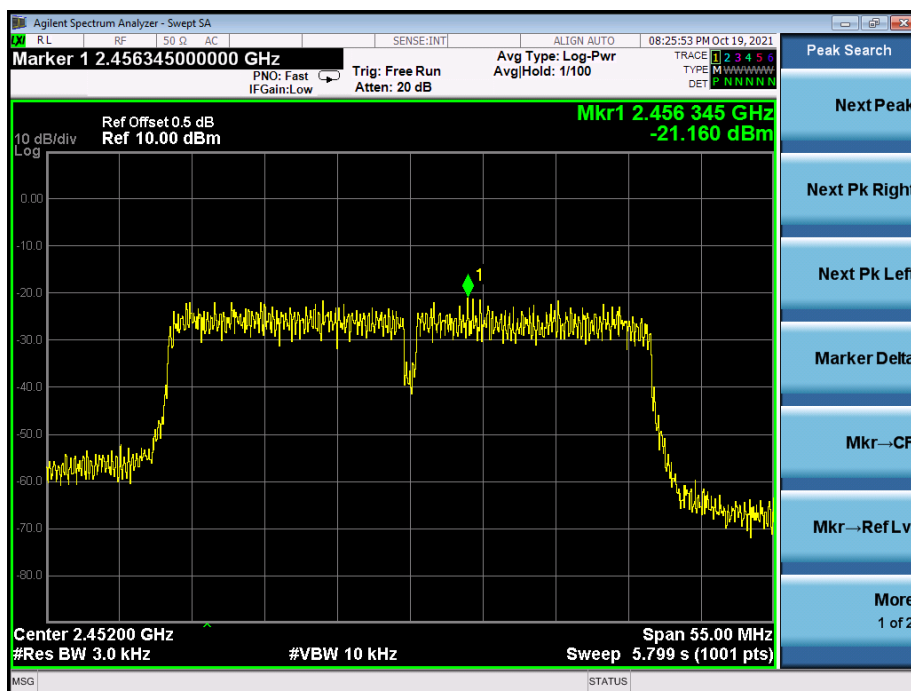
### TX CH03



## TX CH06



## TX CH09



## 10. Bandwidth Test

### 10.1 Block Diagram Of Test Setup



### 10.2 Limit

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

### 10.3 Test Procedure

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

### 10.4 EUT Operating Conditions

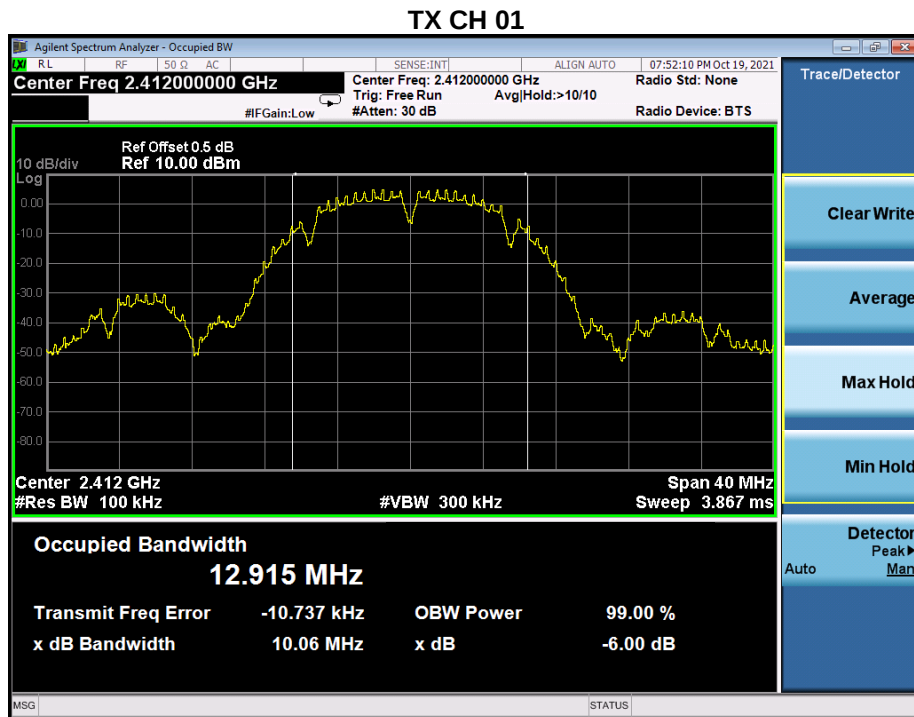
The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

Note: Power Spectral Density(dBm)=Reading+Cable Loss

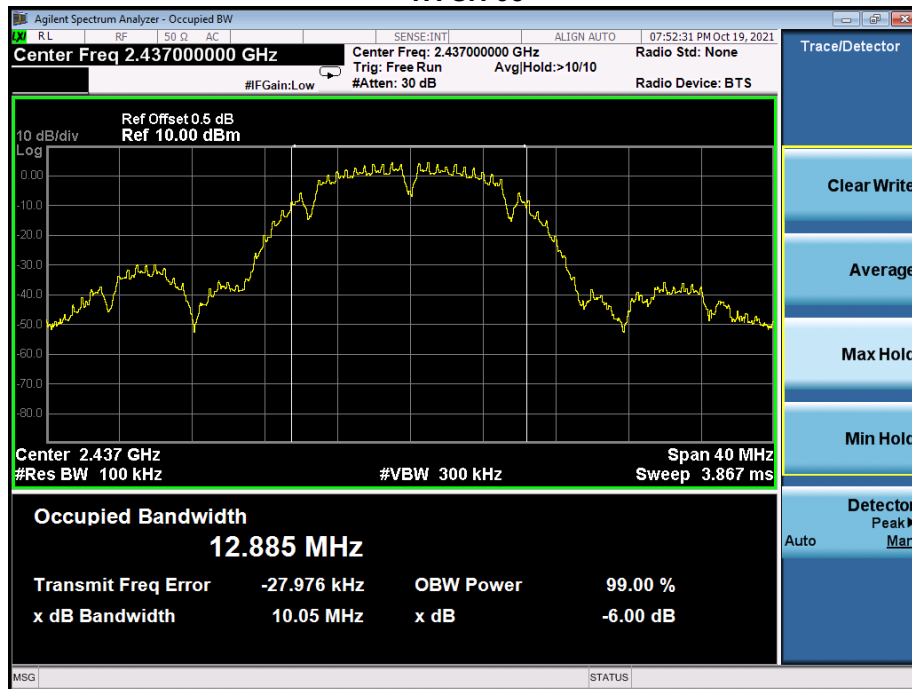
## 10.5 Test Result

|               |           |                     |             |
|---------------|-----------|---------------------|-------------|
| Temperature : | 26°C      | Relative Humidity : | 54%         |
| Pressure :    | 101kPa    | Test Voltage :      | AC120V/60Hz |
| Test Mode :   | TX b Mode |                     |             |

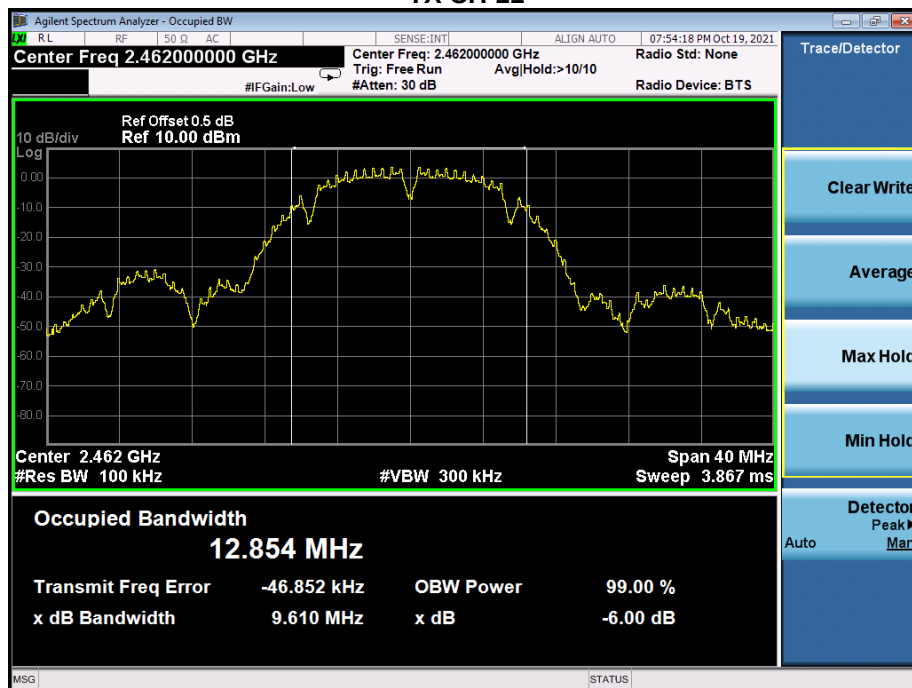
| Frequency (MHz) | 6dB bandwidth (MHz) | Limit (kHz) | Result |
|-----------------|---------------------|-------------|--------|
| 2412            | 10.06               | 500         | Pass   |
| 2437            | 10.05               | 500         | Pass   |
| 2462            | 9.61                | 500         | Pass   |



### TX CH 06



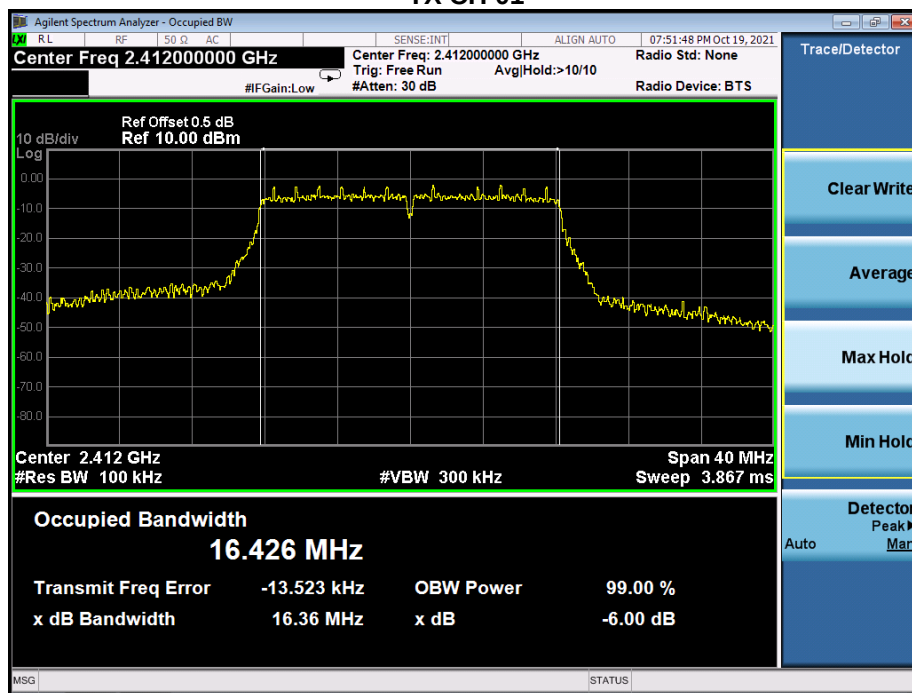
### TX CH 11



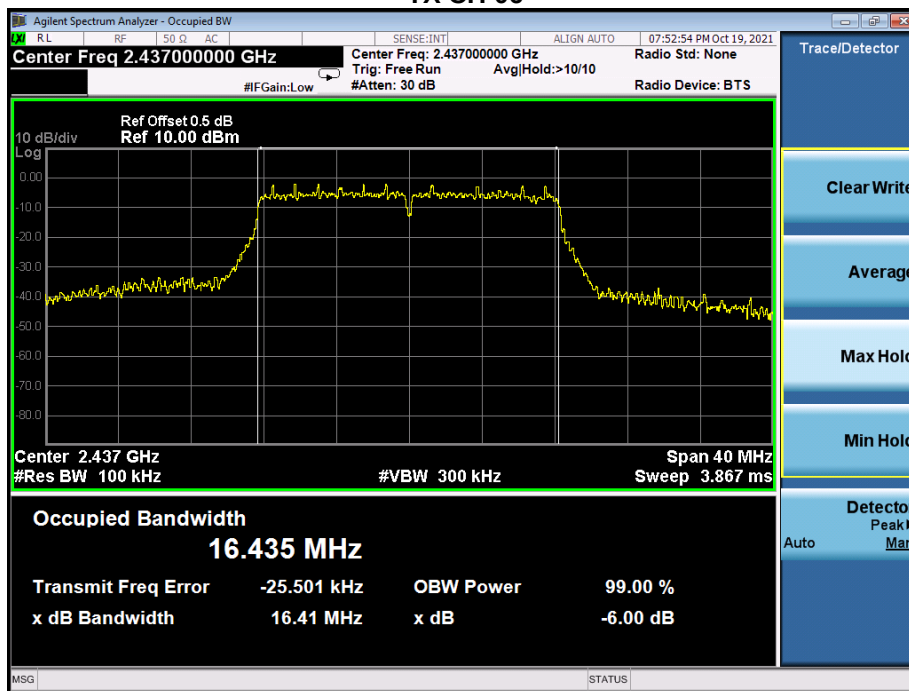
|               |           |                     |             |
|---------------|-----------|---------------------|-------------|
| Temperature : | 26°C      | Relative Humidity : | 54%         |
| Pressure :    | 101kPa    | Test Voltage :      | AC120V/60Hz |
| Test Mode :   | TX g Mode |                     |             |

| Frequency (MHz) | 6dB bandwidth (MHz) | Limit (kHz) | Result |
|-----------------|---------------------|-------------|--------|
| 2412            | 16.36               | 500         | Pass   |
| 2437            | 16.41               | 500         | Pass   |
| 2462            | 16.38               | 500         | Pass   |

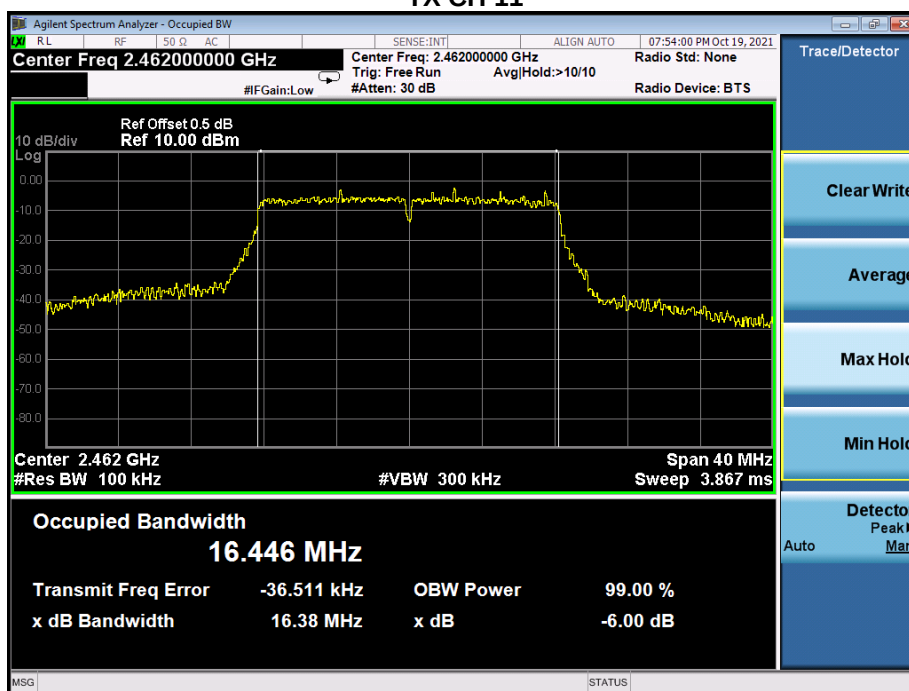
### TX CH 01



### TX CH 06



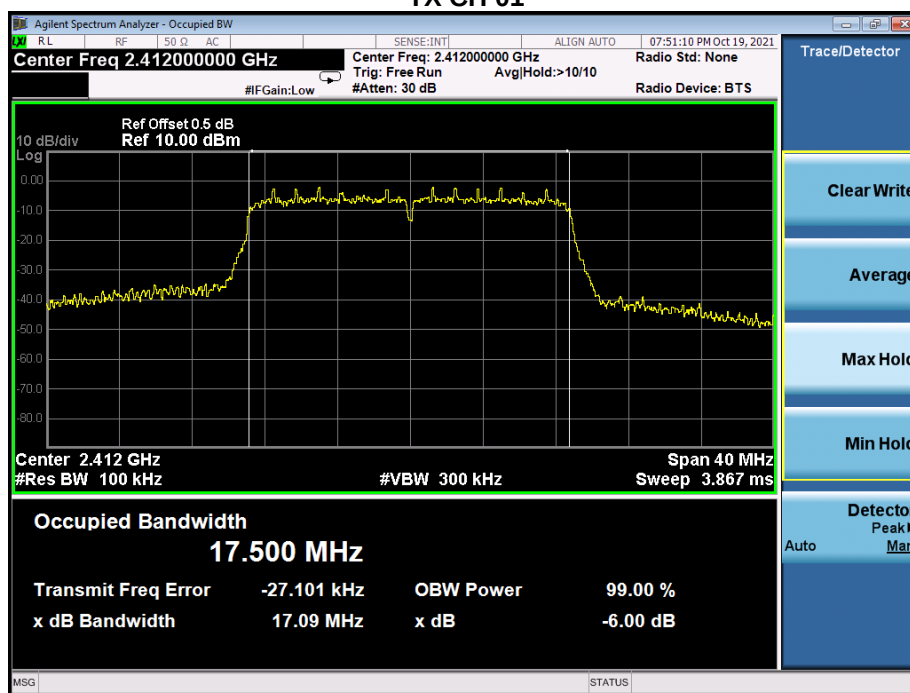
### TX CH 11



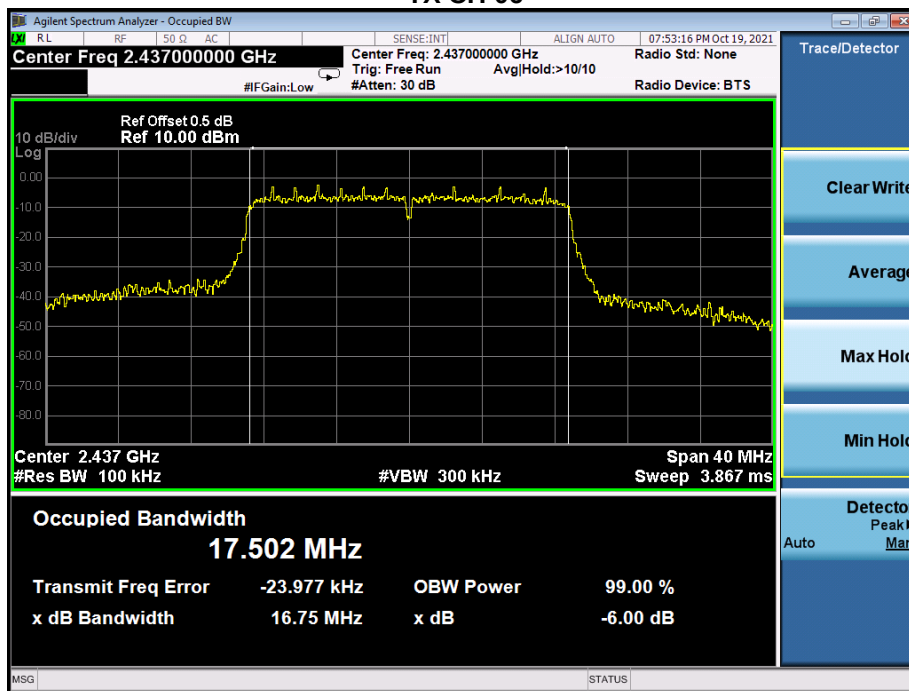
|               |                |                     |             |
|---------------|----------------|---------------------|-------------|
| Temperature : | 26°C           | Relative Humidity : | 54%         |
| Pressure :    | 101kPa         | Test Voltage :      | AC120V/60Hz |
| Test Mode :   | TX n Mode(20M) |                     |             |

| Frequency (MHz) | 6dB bandwidth (MHz) | Limit (kHz) | Result |
|-----------------|---------------------|-------------|--------|
| 2412            | 17.09               | 500         | Pass   |
| 2437            | 16.75               | 500         | Pass   |
| 2462            | 17.00               | 500         | Pass   |

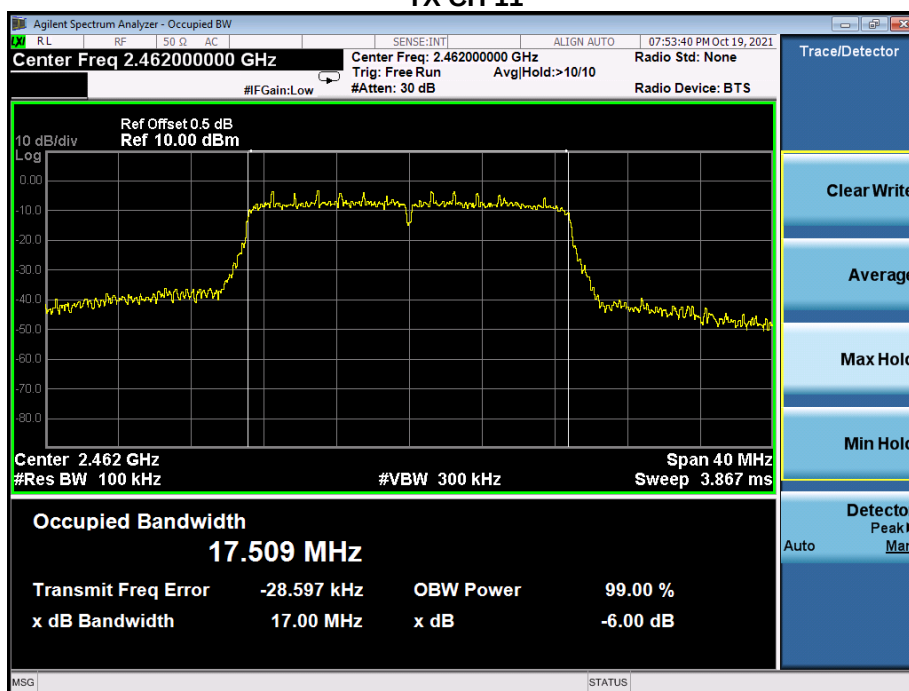
### TX CH 01



### TX CH 06



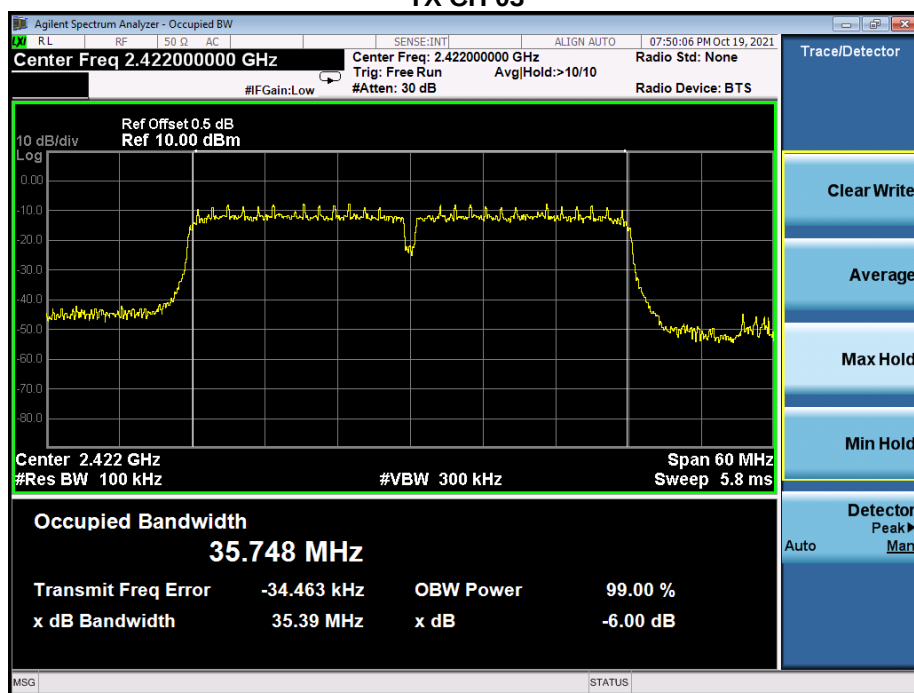
### TX CH 11



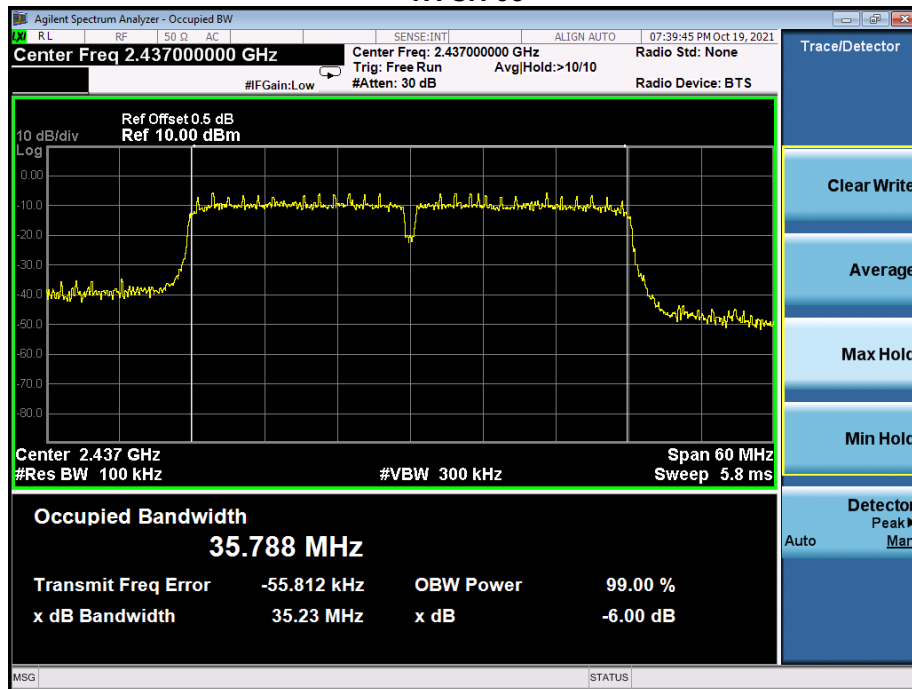
|               |                |                     |             |
|---------------|----------------|---------------------|-------------|
| Temperature : | 26°C           | Relative Humidity : | 54%         |
| Pressure :    | 101kPa         | Test Voltage :      | AC120V/60Hz |
| Test Mode :   | TX n Mode(40M) |                     |             |

| Frequency (MHz) | 6dB bandwidth (MHz) | Limit (kHz) | Result |
|-----------------|---------------------|-------------|--------|
| 2422            | 35.39               | 500         | Pass   |
| 2437            | 35.23               | 500         | Pass   |
| 2452            | 35.20               | 500         | Pass   |

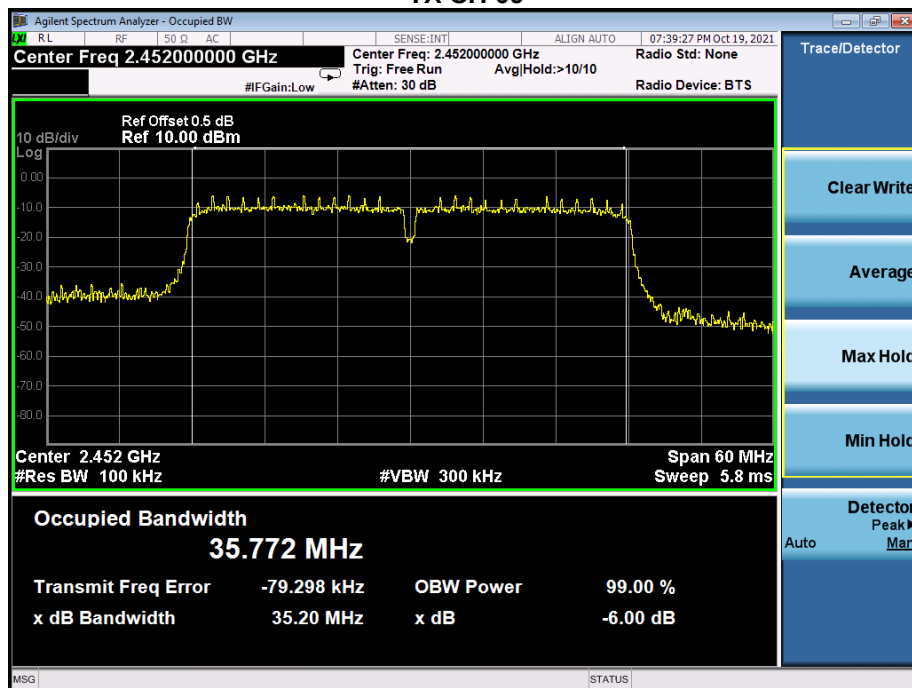
### TX CH 03



### TX CH 06



### TX CH 09



## 11. Peak Output Power Test

### 11.1 Block Diagram Of Test Setup



### 11.2 Limit

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

### 11.3 Test Procedure

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

### 11.4 EUT Operating Conditions

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

Note: Power Spectral Density(dBm)=Reading+Cable Loss

## 11.5 Test Result

|               |        |                     |             |
|---------------|--------|---------------------|-------------|
| Temperature : | 26℃    | Relative Humidity : | 54%         |
| Pressure :    | 101kPa | Test Voltage :      | AC120V/60Hz |

|           | Frequency | Maximum Conducted Output Power(PK) | LIMIT |
|-----------|-----------|------------------------------------|-------|
|           | (MHz)     | (dBm)                              | dBm   |
| 802.11b   | 2412      | 14.427                             | 30    |
|           | 2437      | 14.805                             | 30    |
|           | 2462      | 13.919                             | 30    |
| 802.11g   | 2412      | 13.682                             | 30    |
|           | 2437      | 12.906                             | 30    |
|           | 2462      | 12.224                             | 30    |
| 802.11n20 | 2412      | 11.798                             | 30    |
|           | 2437      | 11.229                             | 30    |
|           | 2462      | 11.061                             | 30    |
| 802.11n40 | 2422      | 9.493                              | 30    |
|           | 2437      | 7.733                              | 30    |
|           | 2452      | 8.099                              | 30    |

## 12. 100 KHz Bandwidth Of Frequency Band Edge

### 12.1 Block Diagram Of Test Setup



### 12.2 Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.

### 12.3 Test Procedure

Using the following spectrum analyzer setting:

- a) Set the RBW = 100KHz.
- b) Set the VBW = 300KHz.
- c) Sweep time = auto couple.
- d) Detector function = peak.
- e) Trace mode = max hold.
- f) Allow trace to fully stabilize..

### 12.4 EUT Operating Conditions

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

Note: Power Spectral Density(dBm)=Reading+Cable Loss

## 12.5 Test Result

|               |        |                     |             |
|---------------|--------|---------------------|-------------|
| Temperature : | 26°C   | Relative Humidity : | 54%         |
| Pressure :    | 101kPa | Test Voltage :      | AC120V/60Hz |

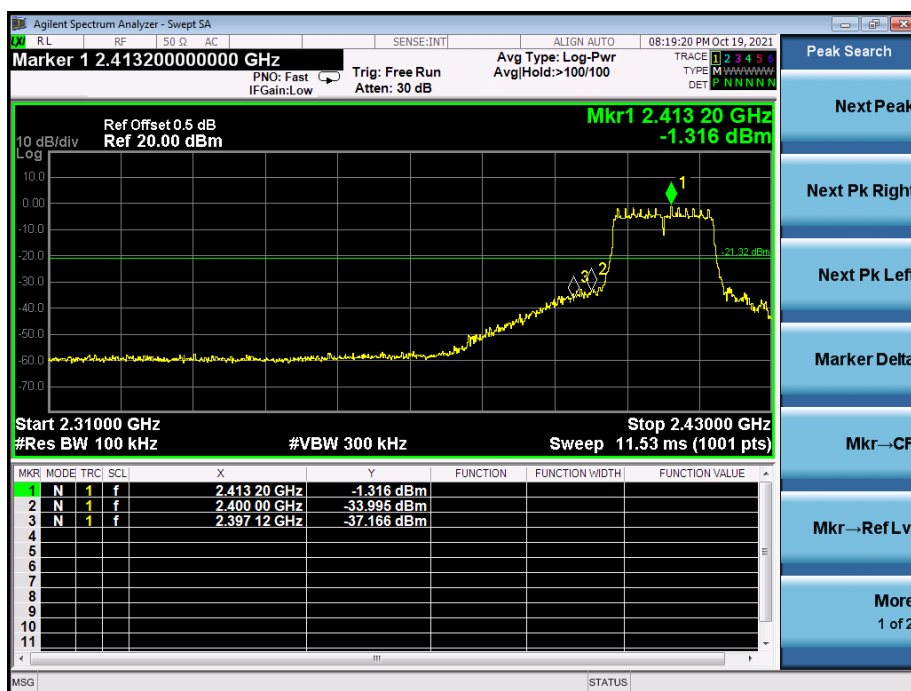
802.11b: Band Edge, Left Side



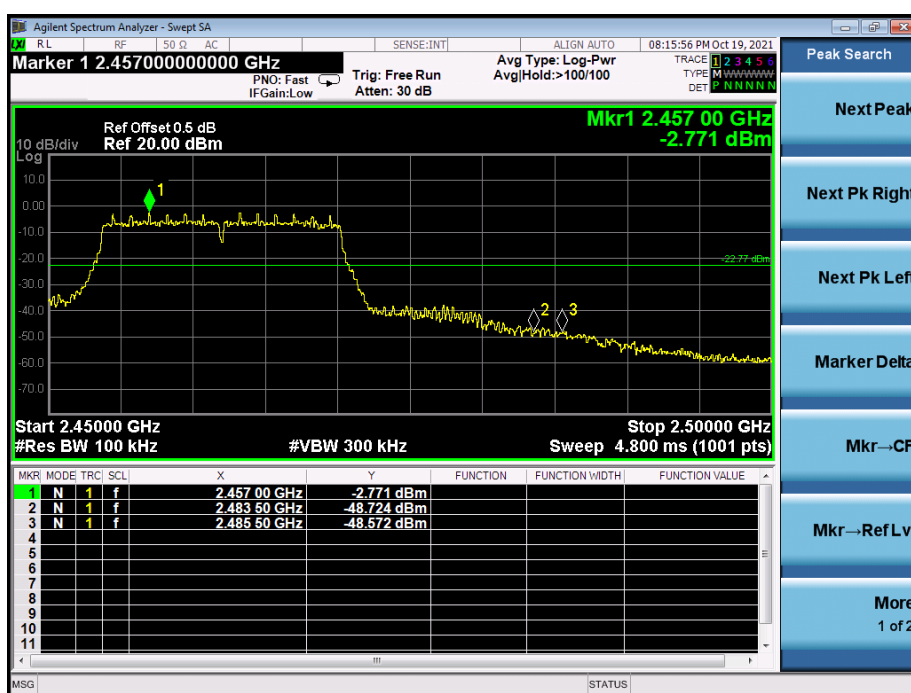
802.11b: Band Edge, Right Side



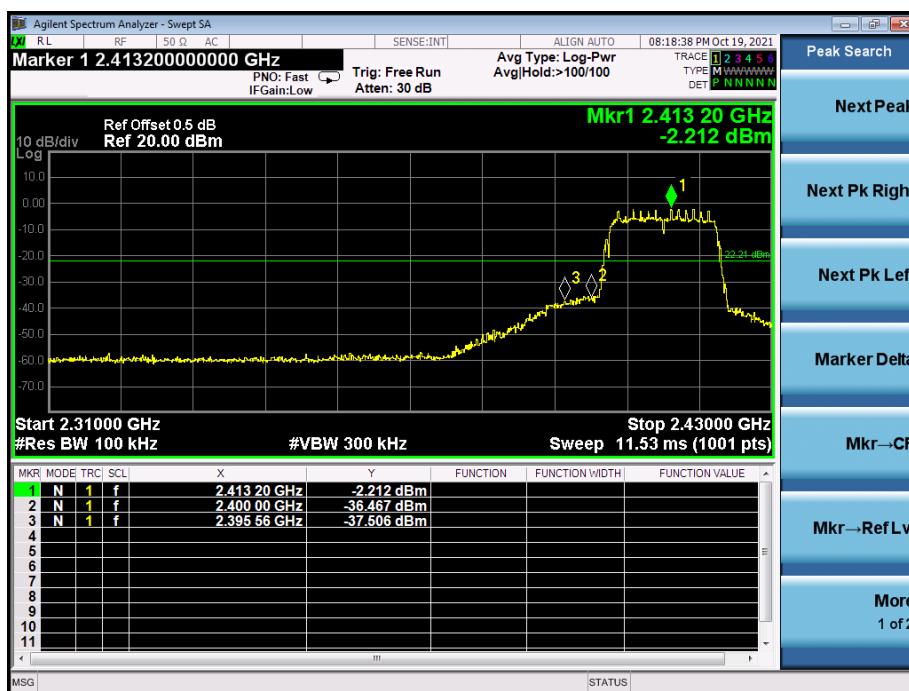
## 802.11g: Band Edge, Left Side



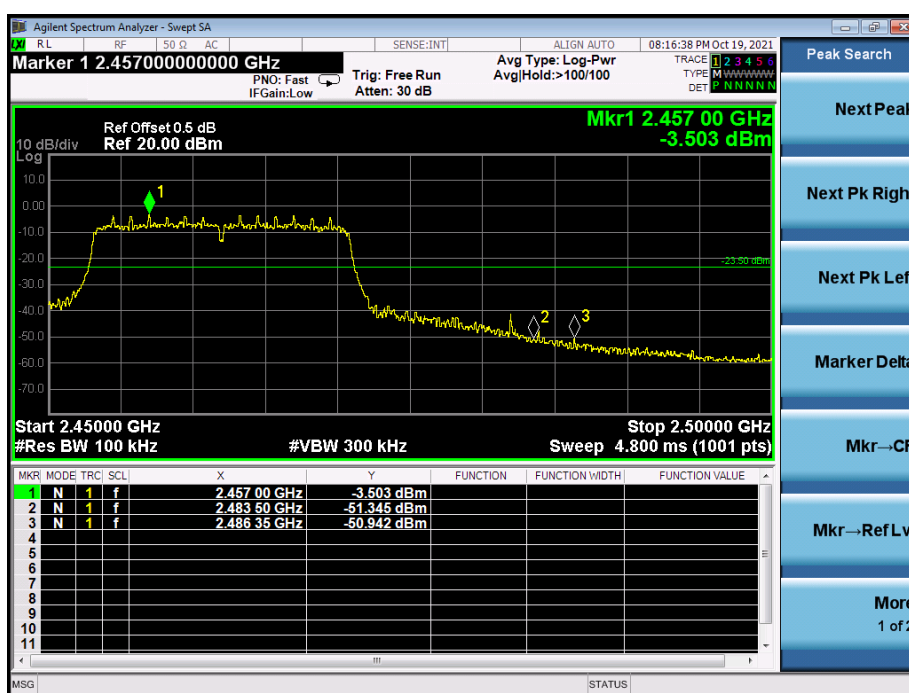
## 802.11g: Band Edge, Right Side



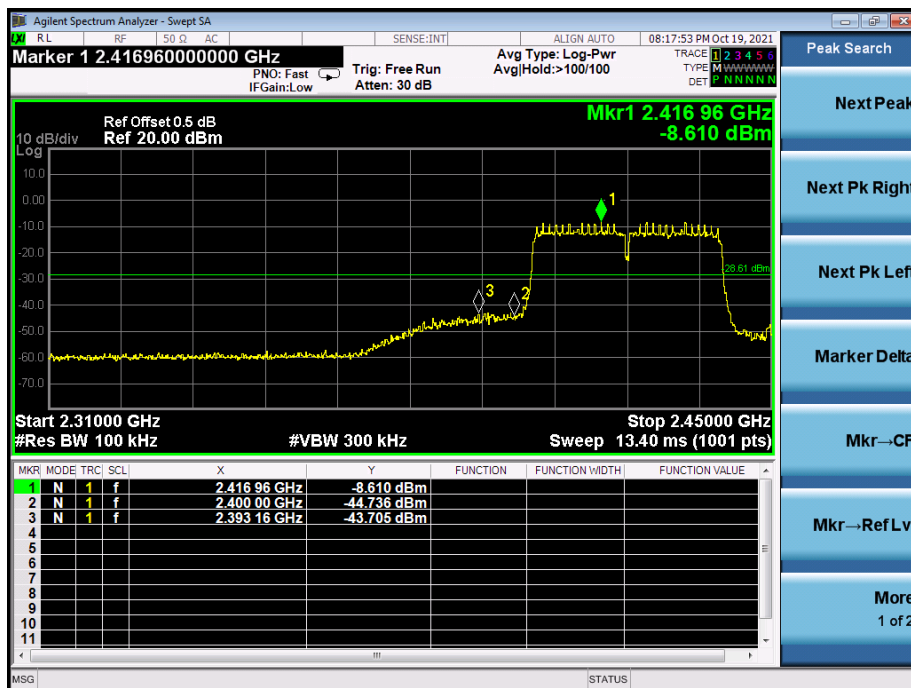
## 802.11n-HT20: Band Edge, Left Side



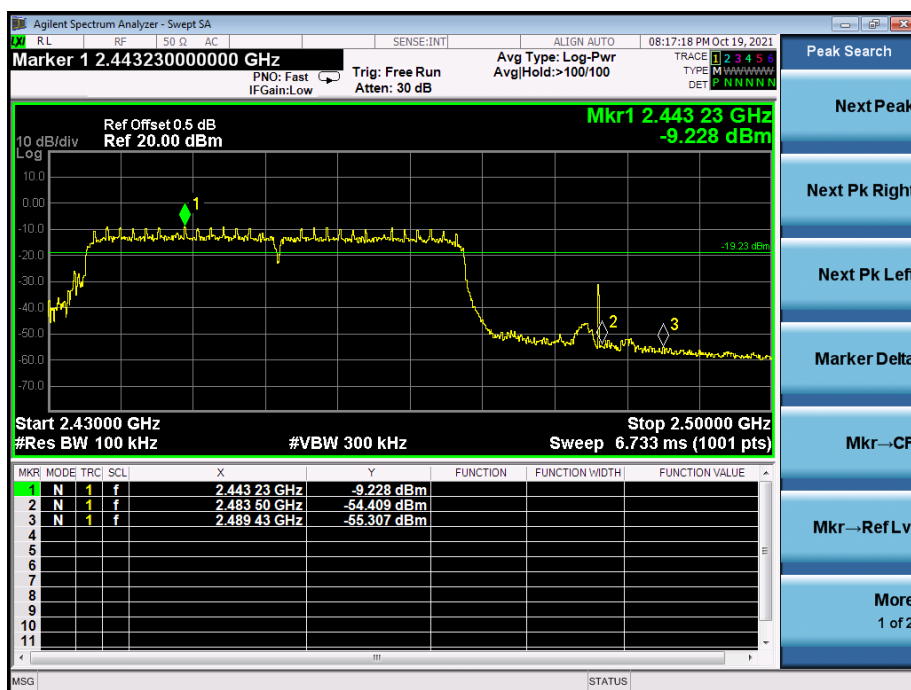
## 802.11n-HT20: Band Edge, Right Side



## 802.11n-HT40: Band Edge, Left Side



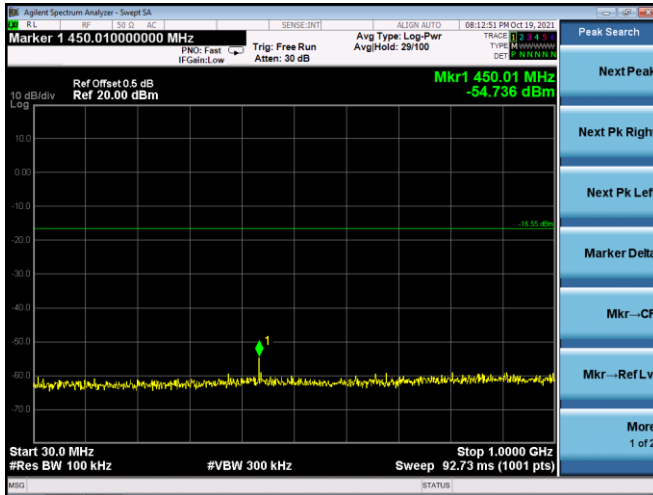
## 802.11n-HT40: Band Edge, Right Side



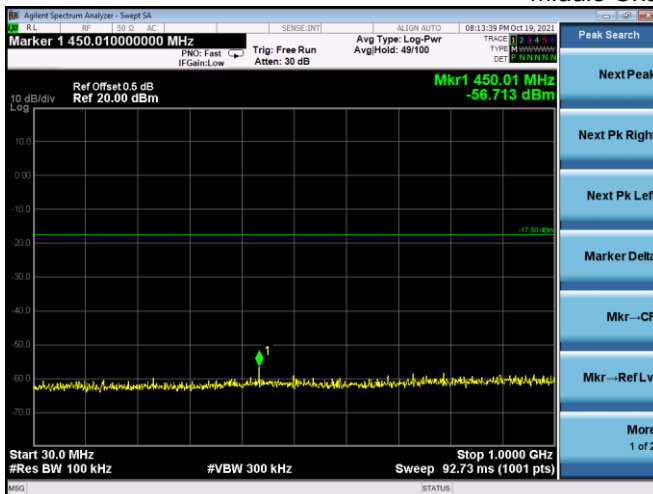
# CONDUCTED EMISSION MEASUREMENT

802.11b

## Low Channel 2412MHz



## Middle Channel 2437MHz



## High Channel 2462MHz

