

802.11g

Channel 1

| Freq.<br>MHz | Reading<br>dBuv | Ant.<br>Fac.<br>dB/m | Pre.<br>Fac.<br>dB | Cab.<br>Loss<br>dB | Measured<br>dBuv/m | Limit<br>dBuv/m | Margin<br>dB | Remark  | Pol.       |
|--------------|-----------------|----------------------|--------------------|--------------------|--------------------|-----------------|--------------|---------|------------|
| 4824.00      | 47.52           | 33.06                | 35.04              | 3.94               | 49.48              | 74              | -24.52       | Peak    | Horizontal |
| 4824.00      | 32.50           | 33.06                | 35.04              | 3.94               | 34.46              | 54              | -19.54       | Average | Horizontal |
| 4824.00      | 53.27           | 33.06                | 35.04              | 3.94               | 55.23              | 74              | -18.77       | Peak    | Vertical   |
| 4824.00      | 35.83           | 33.06                | 35.04              | 3.94               | 37.79              | 54              | -16.21       | Average | Vertical   |

Channel 6

| Freq.<br>MHz | Reading<br>dBuv | Ant.<br>Fac.<br>dB/m | Pre.<br>Fac.<br>dB | Cab.<br>Loss<br>dB | Measured<br>dBuv/m | Limit<br>dBuv/m | Margin<br>dB | Remark  | Pol.       |
|--------------|-----------------|----------------------|--------------------|--------------------|--------------------|-----------------|--------------|---------|------------|
| 4874.00      | 51.53           | 33.16                | 35.15              | 3.96               | 53.50              | 74              | -20.50       | Peak    | Horizontal |
| 4874.00      | 35.76           | 33.16                | 35.15              | 3.96               | 37.73              | 54              | -16.27       | Average | Horizontal |
| 4874.00      | 48.32           | 33.16                | 35.15              | 3.96               | 50.29              | 74              | -23.71       | Peak    | Vertical   |
| 4874.00      | 37.36           | 33.16                | 35.15              | 3.96               | 39.33              | 54              | -14.67       | Average | Vertical   |

Channel 11

| Freq.<br>MHz | Reading<br>dBuv | Ant.<br>Fac.<br>dB/m | Pre.<br>Fac.<br>dB | Cab.<br>Loss<br>dB | Measured<br>dBuv/m | Limit<br>dBuv/m | Margin<br>dB | Remark  | Pol.       |
|--------------|-----------------|----------------------|--------------------|--------------------|--------------------|-----------------|--------------|---------|------------|
| 4924.00      | 51.84           | 33.26                | 35.14              | 3.98               | 53.94              | 74              | -20.06       | Peak    | Horizontal |
| 4924.00      | 36.45           | 33.26                | 35.14              | 3.98               | 38.55              | 54              | -15.45       | Average | Horizontal |
| 4924.00      | 55.03           | 33.26                | 35.14              | 3.98               | 57.13              | 74              | -16.87       | Peak    | Vertical   |
| 4924.00      | 35.45           | 33.26                | 35.14              | 3.98               | 37.55              | 54              | -16.45       | Average | Vertical   |

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Channel 1

| Freq.<br>MHz | Reading<br>dBuv | Ant.<br>Fac.<br>dB/m | Pre.<br>Fac.<br>dB | Cab.<br>Loss<br>dB | Measured<br>dBuv/m | Limit<br>dBuv/m | Margin<br>dB | Remark  | Pol.       |
|--------------|-----------------|----------------------|--------------------|--------------------|--------------------|-----------------|--------------|---------|------------|
| 4824.00      | 44.93           | 33.06                | 35.04              | 3.94               | 46.89              | 74              | -27.11       | Peak    | Horizontal |
| 4824.00      | 35.44           | 33.06                | 35.04              | 3.94               | 37.40              | 54              | -16.60       | Average | Horizontal |
| 4824.00      | 50.35           | 33.06                | 35.04              | 3.94               | 52.31              | 74              | -21.69       | Peak    | Vertical   |
| 4824.00      | 36.32           | 33.06                | 35.04              | 3.94               | 38.28              | 54              | -15.72       | Average | Vertical   |

Channel 6

| Freq.<br>MHz | Reading<br>dBuv | Ant.<br>Fac.<br>dB/m | Pre.<br>Fac.<br>dB | Cab.<br>Loss<br>dB | Measure<br>d<br>dBuv/m | Limit<br>dBuv/m | Margin<br>dB | Remark  | Pol.       |
|--------------|-----------------|----------------------|--------------------|--------------------|------------------------|-----------------|--------------|---------|------------|
| 4874.00      | 52.35           | 33.16                | 35.15              | 3.96               | 54.32                  | 74              | -19.68       | Peak    | Horizontal |
| 4874.00      | 36.79           | 33.16                | 35.15              | 3.96               | 38.76                  | 54              | -15.24       | Average | Horizontal |
| 4874.00      | 51.44           | 33.16                | 35.15              | 3.96               | 53.41                  | 74              | -20.59       | Peak    | Vertical   |
| 4874.00      | 33.62           | 33.16                | 35.15              | 3.96               | 35.59                  | 54              | -18.41       | Average | Vertical   |

Channel 11

| Freq.<br>MHz | Reading<br>dBuv | Ant.<br>Fac.<br>dB/m | Pre.<br>Fac.<br>dB | Cab.<br>Loss<br>dB | Measured<br>dBuv/m | Limit<br>dBuv/m | Margin<br>dB | Remark  | Pol.       |
|--------------|-----------------|----------------------|--------------------|--------------------|--------------------|-----------------|--------------|---------|------------|
| 4924.00      | 46.63           | 33.26                | 35.14              | 3.98               | 48.73              | 74              | -25.27       | Peak    | Horizontal |
| 4924.00      | 35.91           | 33.26                | 35.14              | 3.98               | 38.01              | 54              | -15.99       | Average | Horizontal |
| 4924.00      | 47.46           | 33.26                | 35.14              | 3.98               | 49.56              | 74              | -24.44       | Peak    | Vertical   |
| 4924.00      | 35.86           | 33.26                | 35.14              | 3.98               | 37.96              | 54              | -16.04       | Average | Vertical   |

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## Channel 3

| Freq. MHz | Reading dBuv | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuv/m | Limit dBuv/m | Margin dB | Remark  | Pol.       |
|-----------|--------------|----------------|--------------|--------------|-----------------|--------------|-----------|---------|------------|
| 4844.00   | 42.23        | 33.06          | 35.04        | 3.94         | 44.19           | 74           | -29.81    | Peak    | Horizontal |
| 4844.00   | 33.08        | 33.06          | 35.04        | 3.94         | 35.04           | 54           | -18.96    | Average | Horizontal |
| 4844.00   | 46.20        | 33.06          | 35.04        | 3.94         | 48.16           | 74           | -25.84    | Peak    | Vertical   |
| 4844.00   | 35.18        | 33.06          | 35.04        | 3.94         | 37.14           | 54           | -16.86    | Average | Vertical   |

## Channel 6

| Freq. MHz | Reading dBuv | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuv/m | Limit dBuv/m | Margin dB | Remark  | Pol.       |
|-----------|--------------|----------------|--------------|--------------|-----------------|--------------|-----------|---------|------------|
| 4874.00   | 42.49        | 33.16          | 35.15        | 3.96         | 44.46           | 74           | -29.54    | Peak    | Horizontal |
| 4874.00   | 35.07        | 33.16          | 35.15        | 3.96         | 37.04           | 54           | -16.96    | Average | Horizontal |
| 4874.00   | 46.04        | 33.16          | 35.15        | 3.96         | 48.01           | 74           | -25.99    | Peak    | Vertical   |
| 4874.00   | 35.60        | 33.16          | 35.15        | 3.96         | 37.57           | 54           | -16.43    | Average | Vertical   |

## Channel 9

| Freq. MHz | Reading dBuv | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuv/m | Limit dBuv/m | Margin dB | Remark  | Pol.       |
|-----------|--------------|----------------|--------------|--------------|-----------------|--------------|-----------|---------|------------|
| 4904.00   | 37.16        | 33.26          | 35.14        | 3.98         | 39.26           | 74           | -34.74    | Peak    | Horizontal |
| 4904.00   | 39.67        | 33.26          | 35.14        | 3.98         | 41.77           | 54           | -12.23    | Average | Horizontal |
| 4904.00   | 41.26        | 33.26          | 35.14        | 3.98         | 43.36           | 74           | -30.64    | Peak    | Vertical   |
| 4904.00   | 34.62        | 33.26          | 35.14        | 3.98         | 36.72           | 54           | -17.28    | Average | Vertical   |

**Notes:**

1. Measuring frequencies from 9k~10th harmonic or 26.5GHz (which is less), No emission found between lowest internal used/generated frequency to 30MHz.
2. Radiated emissions measured in frequency range from 9k~10th harmonic or 40GHz (which is less) were made with an instrument using Peak detector mode.
3. Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

## 6.5.9. Results of Band Edges Test (Radiated)

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Tx-2412

| Freq.<br>MHz | Reading<br>Level<br>dBuV | Ant.<br>Fac.<br>dB/m | Pre.<br>Fac.<br>dB | Cab.<br>Loss<br>dB | Measured<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB | Remark  | Pol.       |
|--------------|--------------------------|----------------------|--------------------|--------------------|--------------------|-----------------|--------------|---------|------------|
| 2390.00      | 55.88                    | 32.89                | 35.16              | 3.51               | 57.12              | 74              | -16.88       | Peak    | Horizontal |
| 2390.00      | 34.60                    | 32.89                | 35.16              | 3.51               | 35.85              | 54              | -18.15       | Average | Horizontal |
| 2400.00      | 58.32                    | 32.92                | 35.16              | 3.54               | 59.62              | 74              | -14.38       | Peak    | Horizontal |
| 2400.00      | 41.06                    | 32.92                | 35.16              | 3.54               | 42.36              | 54              | -11.64       | Average | Horizontal |
| 2390.00      | 49.44                    | 32.89                | 35.16              | 3.51               | 50.68              | 74              | -23.32       | Peak    | Vertical   |
| 2390.00      | 35.76                    | 32.89                | 35.16              | 3.51               | 37.01              | 54              | -16.99       | Average | Vertical   |
| 2400.00      | 57.58                    | 32.92                | 35.16              | 3.54               | 58.88              | 74              | -15.12       | Peak    | Vertical   |
| 2400.00      | 37.07                    | 32.92                | 35.16              | 3.54               | 38.37              | 54              | -15.63       | Average | Vertical   |

Tx-2462

| Freq.<br>MHz | Reading<br>Level<br>dBuV | Ant.<br>Fac.<br>dB/m | Pre.<br>Fac.<br>dB | Cab.<br>Loss<br>dB | Measured<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB | Remark  | Pol.       |
|--------------|--------------------------|----------------------|--------------------|--------------------|--------------------|-----------------|--------------|---------|------------|
| 2483.50      | 56.56                    | 33.06                | 35.18              | 3.60               | 58.04              | 74              | -15.96       | Peak    | Horizontal |
| 2483.50      | 39.48                    | 33.06                | 35.18              | 3.60               | 40.96              | 54              | -13.04       | Average | Horizontal |
| 2483.50      | 55.86                    | 33.06                | 35.18              | 3.60               | 57.34              | 74              | -16.66       | Peak    | Vertical   |
| 2483.50      | 38.59                    | 33.06                | 35.18              | 3.60               | 40.07              | 54              | -13.93       | Average | Vertical   |

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Tx-2412

| Freq.<br>MHz | Reading<br>Level<br>dBuV | Ant.<br>Fac.<br>dB/m | Pre.<br>Fac.<br>dB | Cab.<br>Loss<br>dB | Measured<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB | Remark  | Pol.       |
|--------------|--------------------------|----------------------|--------------------|--------------------|--------------------|-----------------|--------------|---------|------------|
| 2390.00      | 52.16                    | 32.89                | 35.16              | 3.51               | 53.40              | 74              | -20.60       | Peak    | Horizontal |
| 2390.00      | 39.07                    | 32.89                | 35.16              | 3.51               | 40.32              | 54              | -13.68       | Average | Horizontal |
| 2400.00      | 51.44                    | 32.92                | 35.16              | 3.54               | 52.74              | 74              | -21.26       | Peak    | Horizontal |
| 2400.00      | 38.29                    | 32.92                | 35.16              | 3.54               | 39.59              | 54              | -14.41       | Average | Horizontal |
| 2390.00      | 53.47                    | 32.89                | 35.16              | 3.51               | 54.71              | 74              | -19.29       | Peak    | Vertical   |
| 2390.00      | 44.00                    | 32.89                | 35.16              | 3.51               | 45.25              | 54              | -8.75        | Average | Vertical   |
| 2400.00      | 57.60                    | 32.92                | 35.16              | 3.54               | 58.90              | 74              | -15.10       | Peak    | Vertical   |
| 2400.00      | 37.21                    | 32.92                | 35.16              | 3.54               | 38.51              | 54              | -15.49       | Average | Vertical   |

Tx-2462

| Freq.<br>MHz | Reading<br>Level<br>dBuV | Ant.<br>Fac.<br>dB/m | Pre.<br>Fac.<br>dB | Cab.<br>Loss<br>dB | Measured<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB | Remark  | Pol.       |
|--------------|--------------------------|----------------------|--------------------|--------------------|--------------------|-----------------|--------------|---------|------------|
| 2483.50      | 57.94                    | 33.06                | 35.18              | 3.60               | 59.42              | 74              | -14.58       | Peak    | Horizontal |
| 2483.50      | 38.19                    | 33.06                | 35.18              | 3.60               | 39.67              | 54              | -14.33       | Average | Horizontal |
| 2483.50      | 56.20                    | 33.06                | 35.18              | 3.60               | 57.68              | 74              | -16.32       | Peak    | Vertical   |
| 2483.50      | 37.85                    | 33.06                | 35.18              | 3.60               | 39.33              | 54              | -14.67       | Average | Vertical   |

## 802.11n (HT20)

## Tx-2412

| Freq.<br>MHz | Reading<br>Level<br>dBuV | Ant.<br>Fac.<br>dB/m | Pre.<br>Fac.<br>dB | Cab.<br>Loss<br>dB | Measured<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB | Remark  | Pol.       |
|--------------|--------------------------|----------------------|--------------------|--------------------|--------------------|-----------------|--------------|---------|------------|
| 2390.00      | 52.68                    | 32.89                | 35.16              | 3.51               | 53.92              | 74              | -20.08       | Peak    | Horizontal |
| 2390.00      | 38.84                    | 32.89                | 35.16              | 3.51               | 40.09              | 54              | -13.91       | Average | Horizontal |
| 2400.00      | 55.58                    | 32.92                | 35.16              | 3.54               | 56.88              | 74              | -17.12       | Peak    | Horizontal |
| 2400.00      | 38.98                    | 32.92                | 35.16              | 3.54               | 40.28              | 54              | -13.72       | Average | Horizontal |
| 2390.00      | 58.32                    | 32.89                | 35.16              | 3.51               | 59.56              | 74              | -14.44       | Peak    | Vertical   |
| 2390.00      | 38.34                    | 32.89                | 35.16              | 3.51               | 39.59              | 54              | -14.41       | Average | Vertical   |
| 2400.00      | 54.44                    | 32.92                | 35.16              | 3.54               | 55.74              | 74              | -18.26       | Peak    | Vertical   |
| 2400.00      | 35.39                    | 32.92                | 35.16              | 3.54               | 36.69              | 54              | -17.31       | Average | Vertical   |

## Tx-2462

| Freq.<br>MHz | Reading<br>Level<br>dBuV | Ant.<br>Fac.<br>dB/m | Pre.<br>Fac.<br>dB | Cab.<br>Loss<br>dB | Measured<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB | Remark  | Pol.       |
|--------------|--------------------------|----------------------|--------------------|--------------------|--------------------|-----------------|--------------|---------|------------|
| 2483.50      | 54.71                    | 33.06                | 35.18              | 3.60               | 56.19              | 74              | -17.81       | Peak    | Horizontal |
| 2483.50      | 37.54                    | 33.06                | 35.18              | 3.60               | 39.02              | 54              | -14.98       | Average | Horizontal |
| 2483.50      | 53.25                    | 33.06                | 35.18              | 3.60               | 54.73              | 74              | -19.27       | Peak    | Vertical   |
| 2483.50      | 39.61                    | 33.06                | 35.18              | 3.60               | 41.09              | 54              | -12.91       | Average | Vertical   |

## 802.11n (HT40)

## Tx-2422

| Freq.<br>MHz | Reading<br>Level<br>dBuV | Ant.<br>Fac.<br>dB/m | Pre.<br>Fac.<br>dB | Cab.<br>Loss<br>dB | Measured<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB | Remark  | Pol.       |
|--------------|--------------------------|----------------------|--------------------|--------------------|--------------------|-----------------|--------------|---------|------------|
| 2390.00      | 49.26                    | 32.89                | 35.16              | 3.51               | 50.50              | 74              | -23.50       | Peak    | Horizontal |
| 2390.00      | 35.94                    | 32.89                | 35.16              | 3.51               | 37.19              | 54              | -16.81       | Average | Horizontal |
| 2400.00      | 56.22                    | 32.92                | 35.16              | 3.54               | 57.52              | 74              | -16.48       | Peak    | Horizontal |
| 2400.00      | 42.79                    | 32.92                | 35.16              | 3.54               | 44.09              | 54              | -9.91        | Average | Horizontal |
| 2390.00      | 51.75                    | 32.89                | 35.16              | 3.51               | 52.99              | 74              | -21.01       | Peak    | Vertical   |
| 2390.00      | 39.44                    | 32.89                | 35.16              | 3.51               | 40.69              | 54              | -13.31       | Average | Vertical   |
| 2400.00      | 56.65                    | 32.92                | 35.16              | 3.54               | 57.95              | 74              | -16.05       | Peak    | Vertical   |
| 2400.00      | 40.34                    | 32.92                | 35.16              | 3.54               | 41.64              | 54              | -12.36       | Average | Vertical   |

## Tx-2452

| Freq.<br>MHz | Reading<br>Level<br>dBuV | Ant.<br>Fac.<br>dB/m | Pre.<br>Fac.<br>dB | Cab.<br>Loss<br>dB | Measured<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB | Remark  | Pol.       |
|--------------|--------------------------|----------------------|--------------------|--------------------|--------------------|-----------------|--------------|---------|------------|
| 2483.50      | 57.89                    | 33.06                | 35.18              | 3.60               | 59.37              | 74              | -14.63       | Peak    | Horizontal |
| 2483.50      | 37.05                    | 33.06                | 35.18              | 3.60               | 38.53              | 54              | -15.47       | Average | Horizontal |
| 2483.50      | 55.53                    | 33.06                | 35.18              | 3.60               | 57.01              | 74              | -16.99       | Peak    | Vertical   |
| 2483.50      | 37.97                    | 33.06                | 35.18              | 3.60               | 39.45              | 54              | -14.55       | Average | Vertical   |

## 6.6. Conducted Spurious Emissions and Band Edges Test

### 6.6.1. Standard Applicable

According to §15.247 (d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. 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)).

### 6.6.2. Measuring Instruments and Setting

Please refer to section 6 of equipments list in this report. The following table is the setting of the spectrum analyzer.

| Spectrum Parameter                        | Setting       |
|---|---------------|
| Detector                                  | Peak          |
| Attenuation                               | Auto          |
| RB / VB (Emission in restricted band)     | 100KHz/300KHz |
| RB / VB (Emission in non-restricted band) | 100KHz/300KHz |

### 6.6.3. Test Procedures

The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz

The spectrum from 9 kHz to 40GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

Preliminary tests on individual chains. The worst-case configuration was with a combiner, therefore final test were performed with all chains feeding a combiner.

### 6.6.4. Test Setup Layout

This test setup layout is the same as that shown in section 5.4.4.

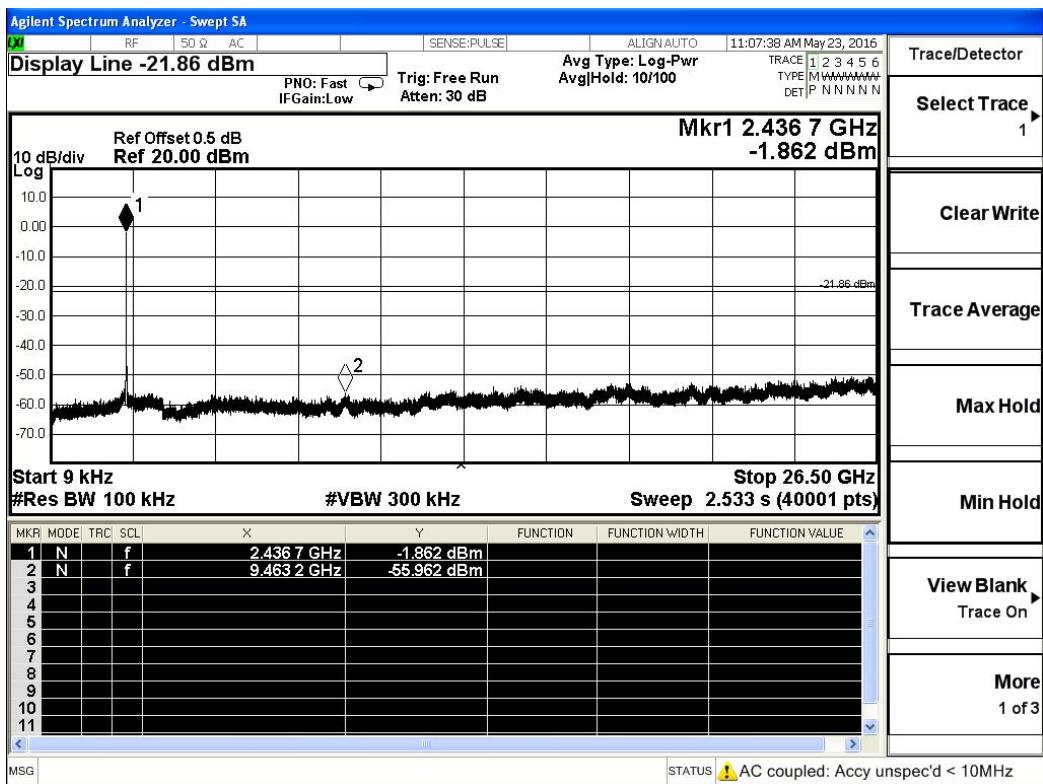
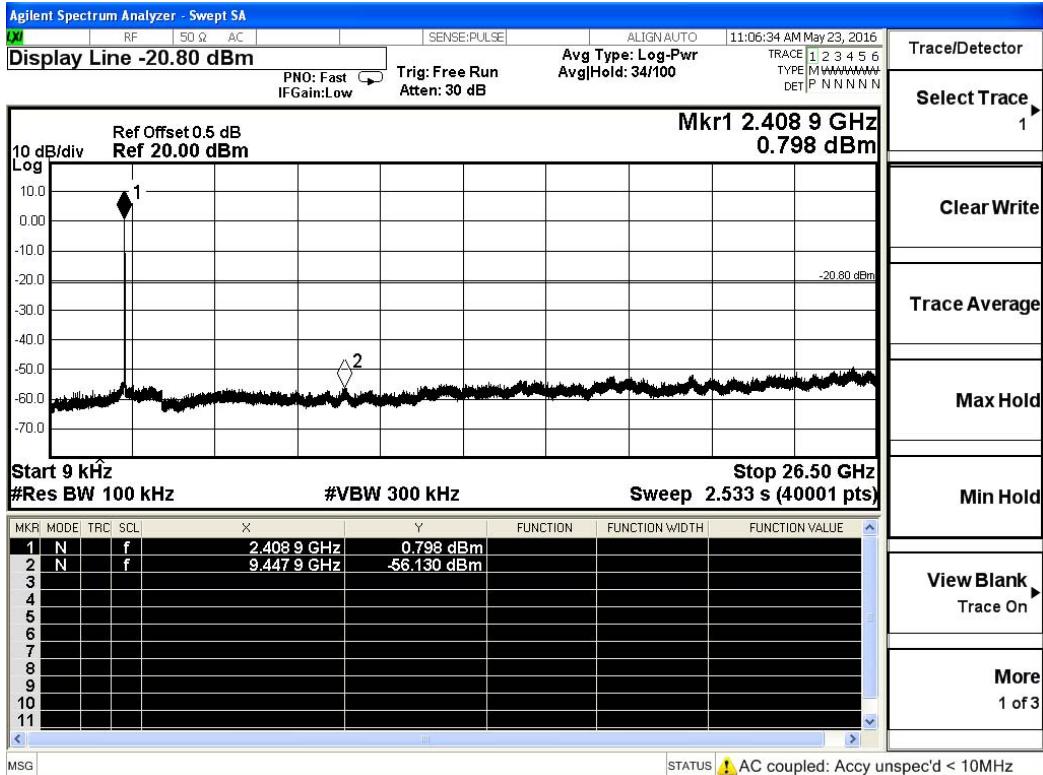
### 6.6.5. EUT Operation during Test

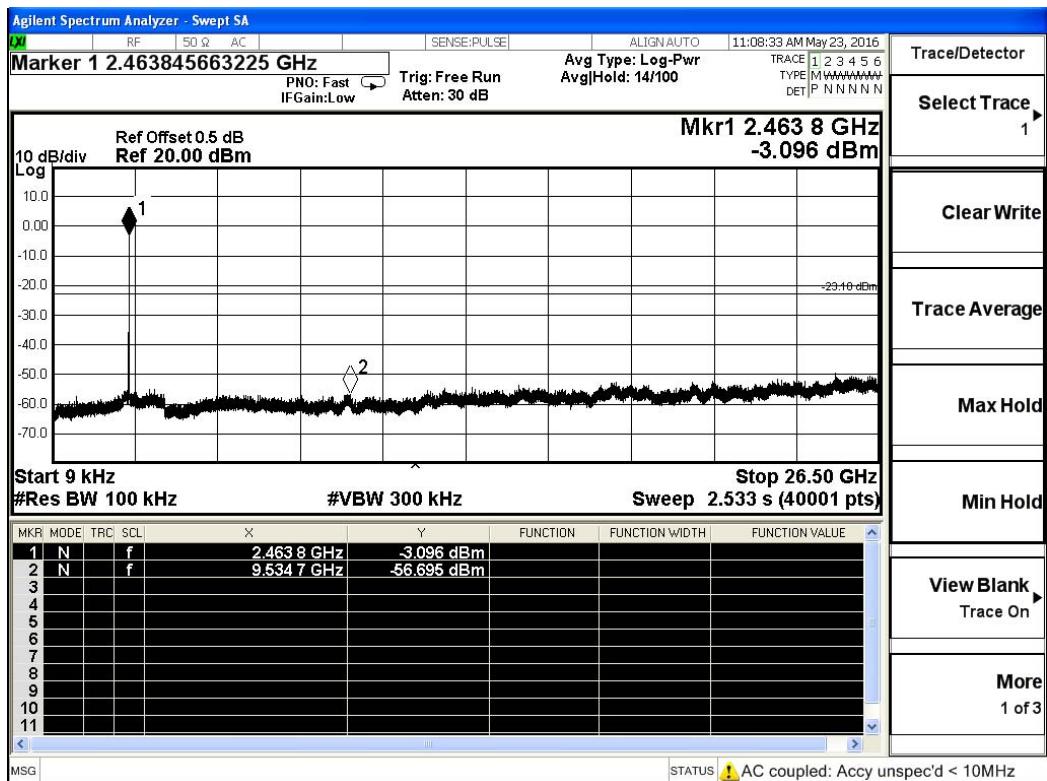
The EUT was programmed to be in continuously transmitting mode.

### 6.6.6. Test Results of Conducted Spurious Emissions

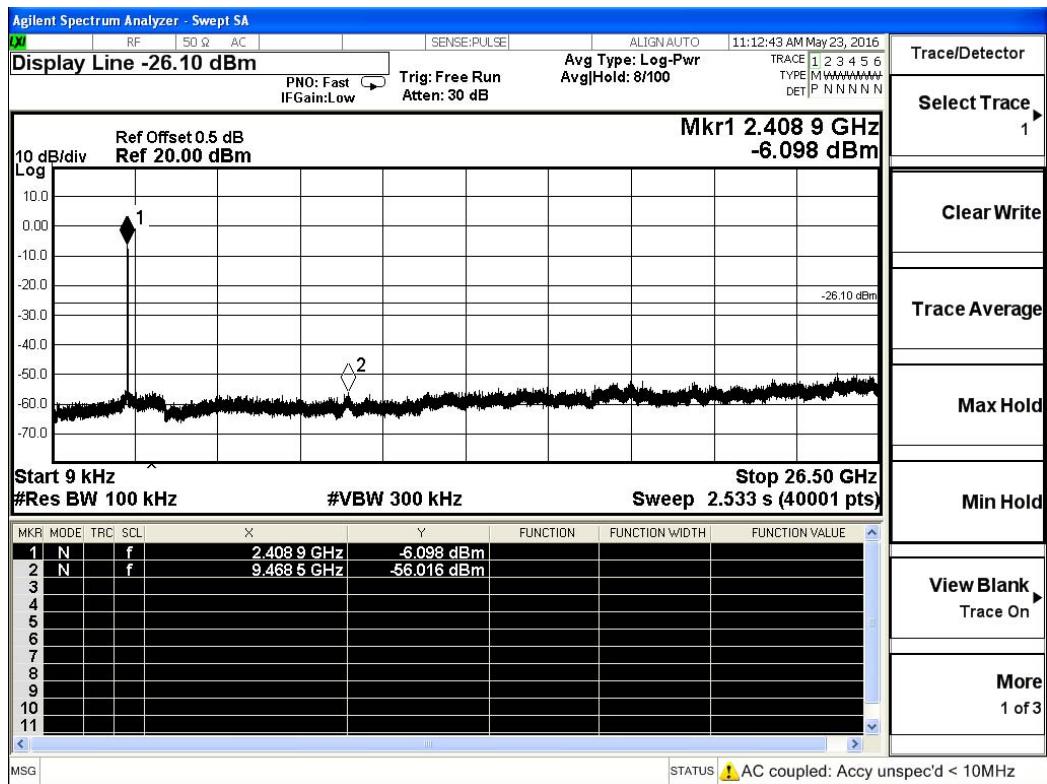
Emissions that fall into restricted frequency bands were blow the emission limits in Section 15.209.

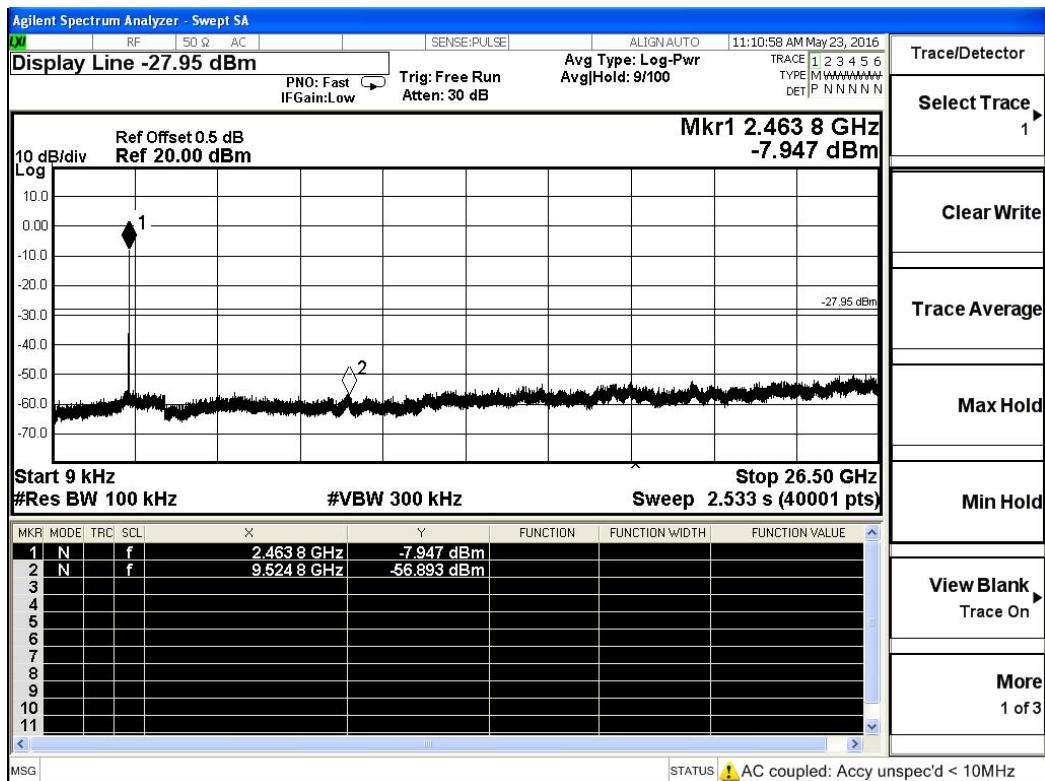
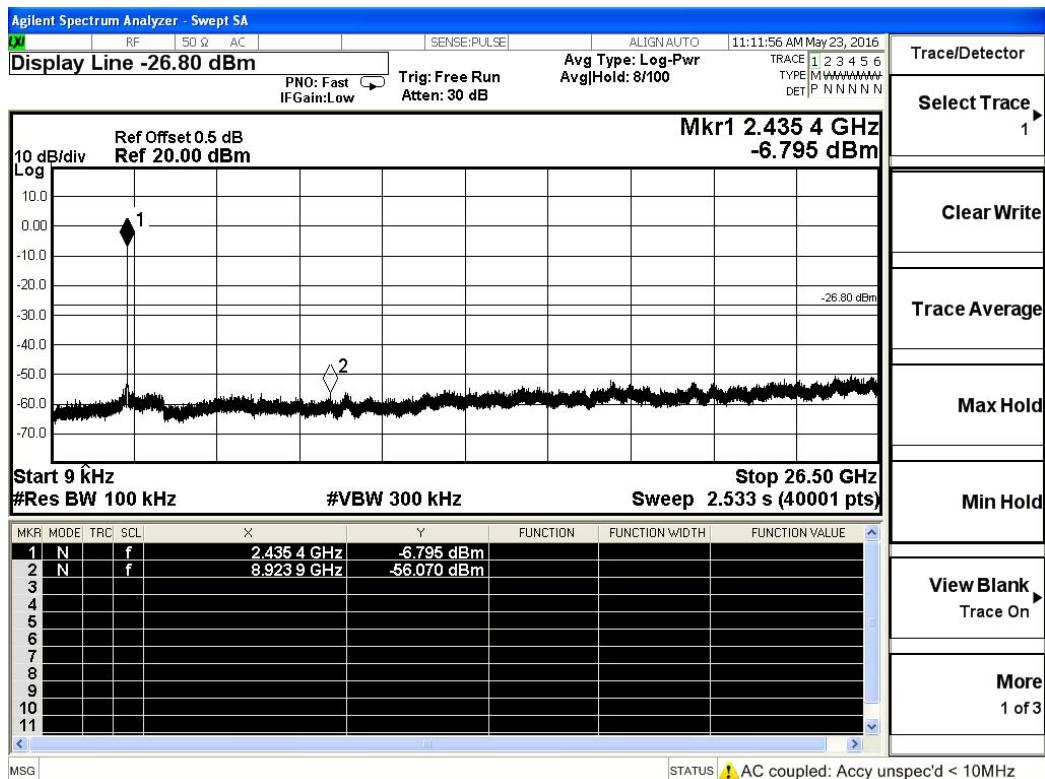
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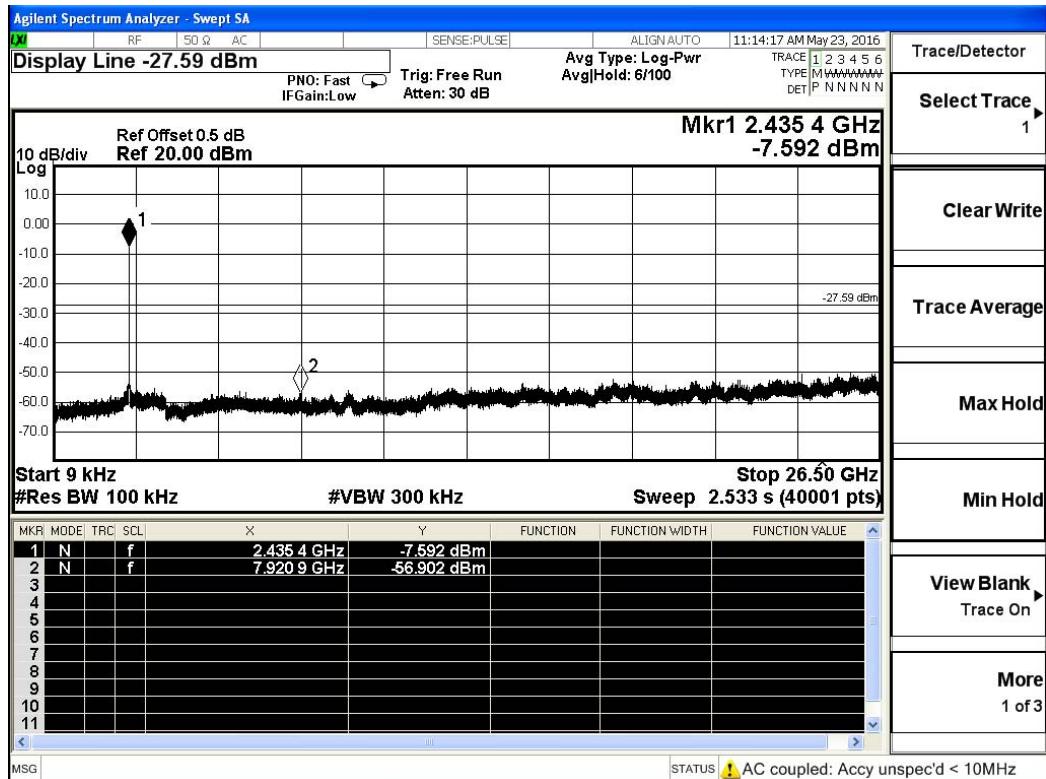
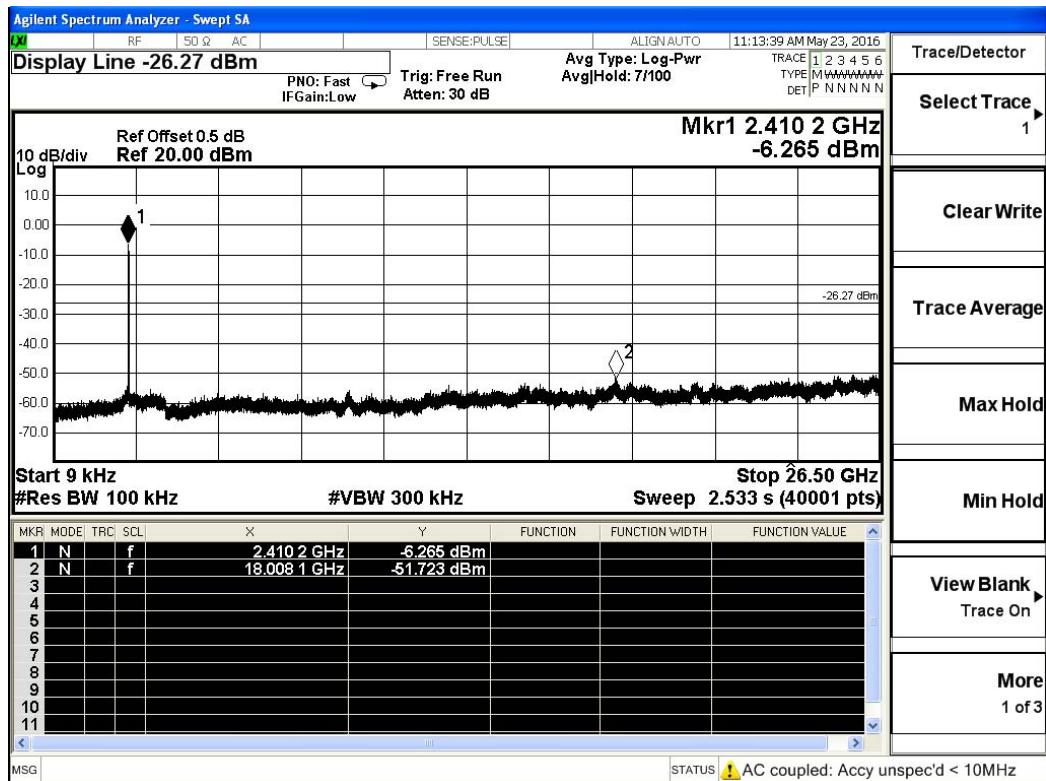


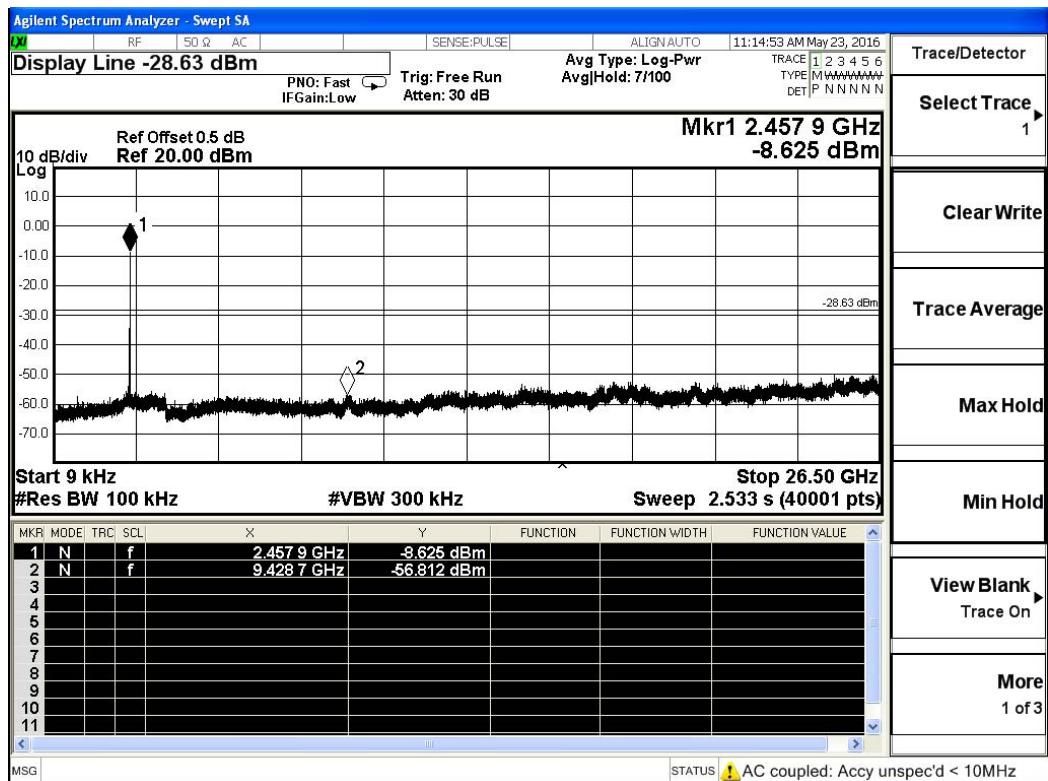
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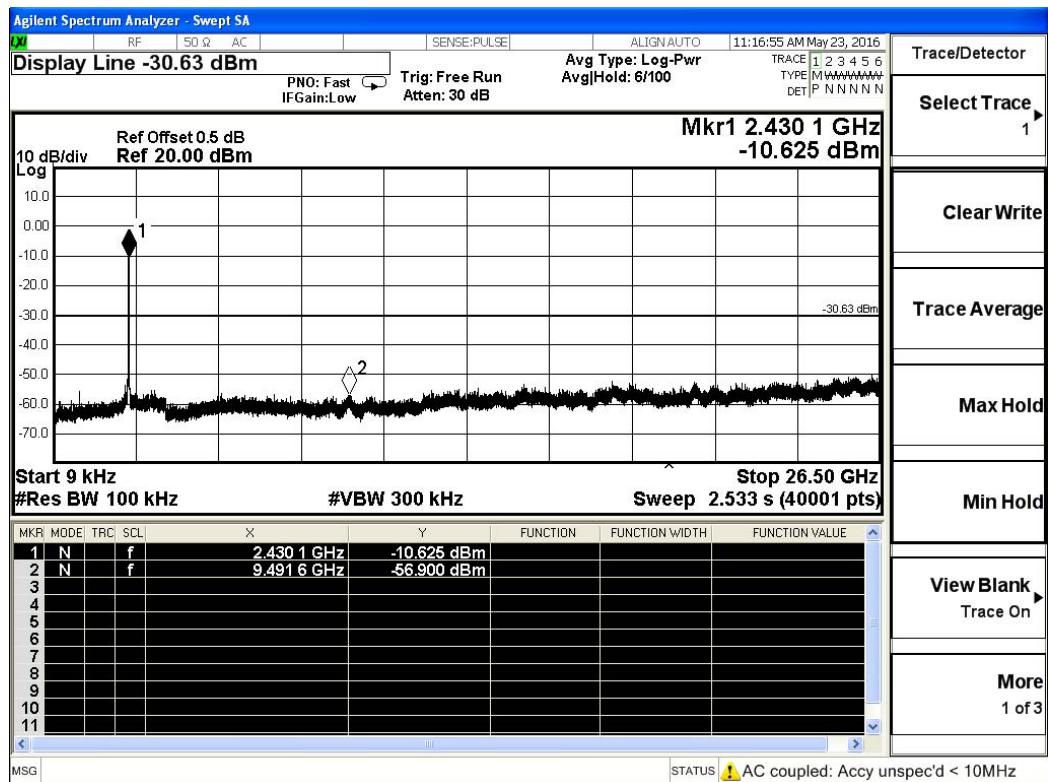


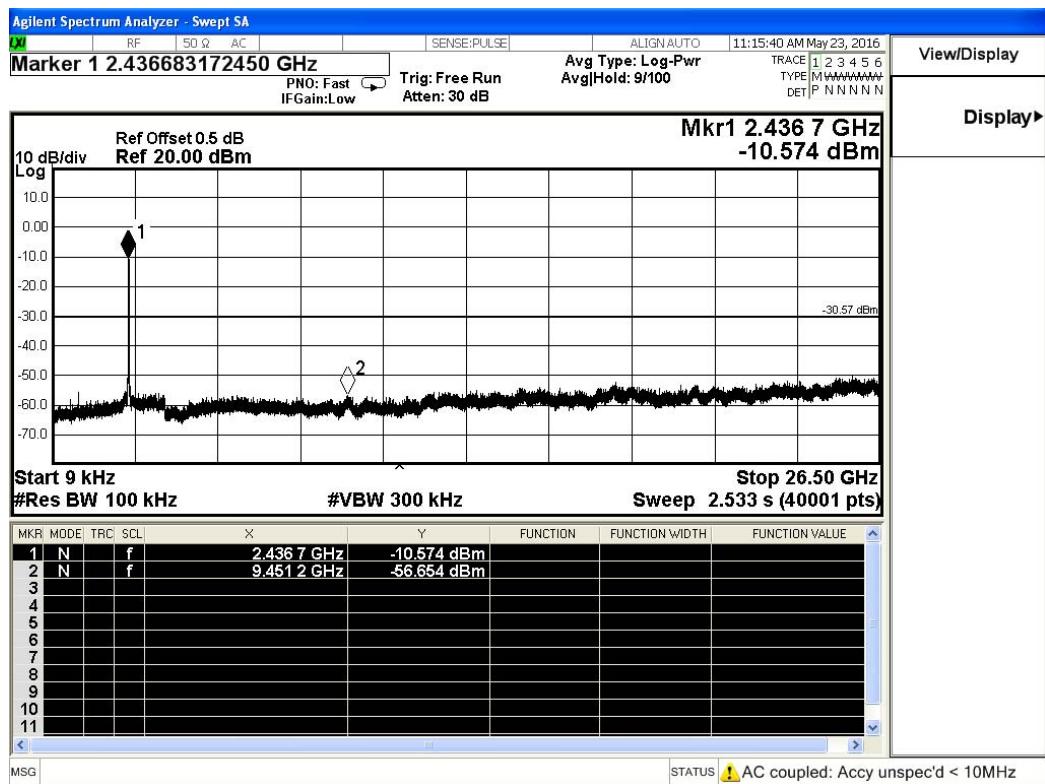
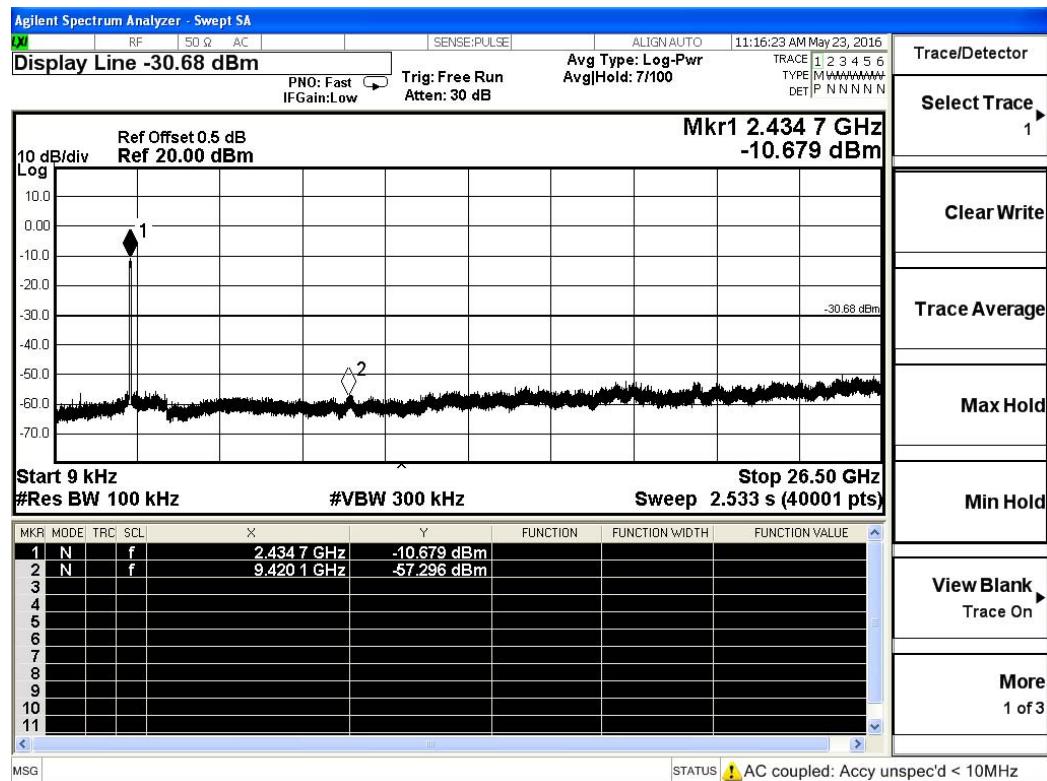
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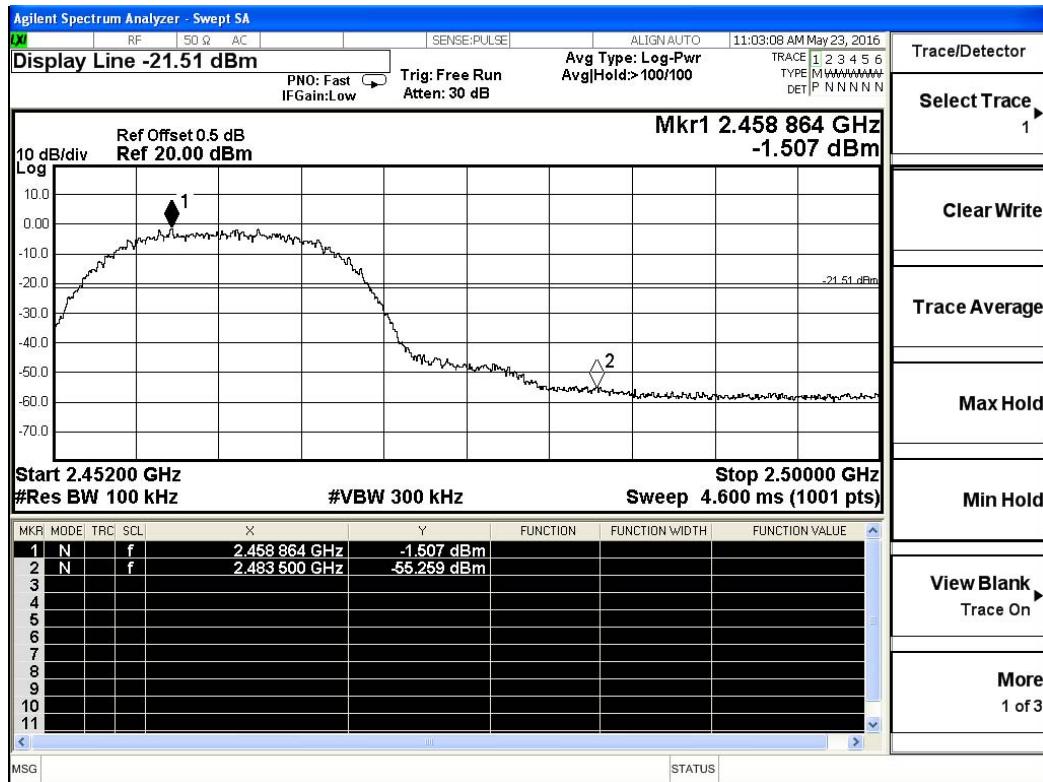
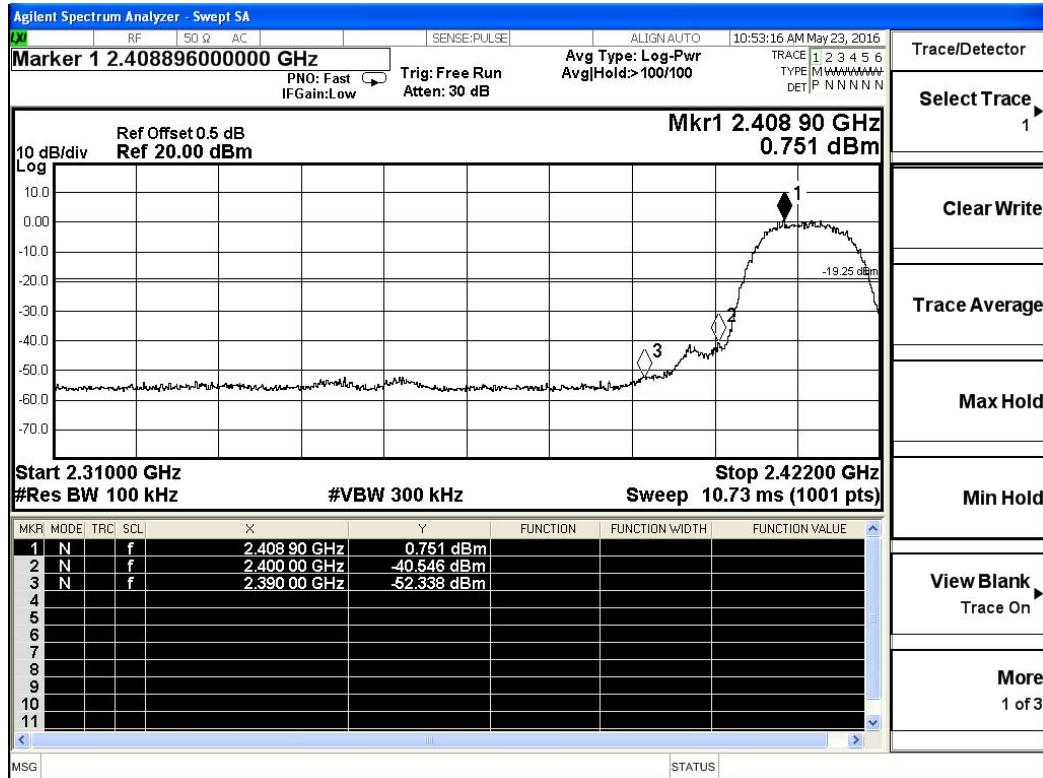
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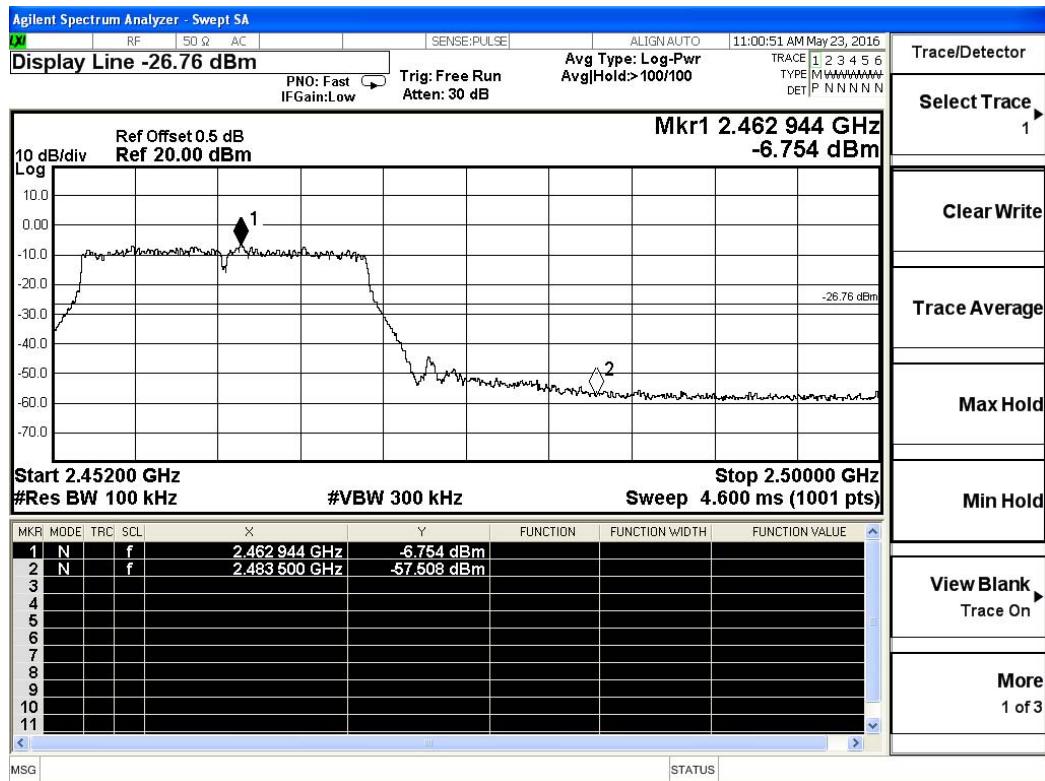
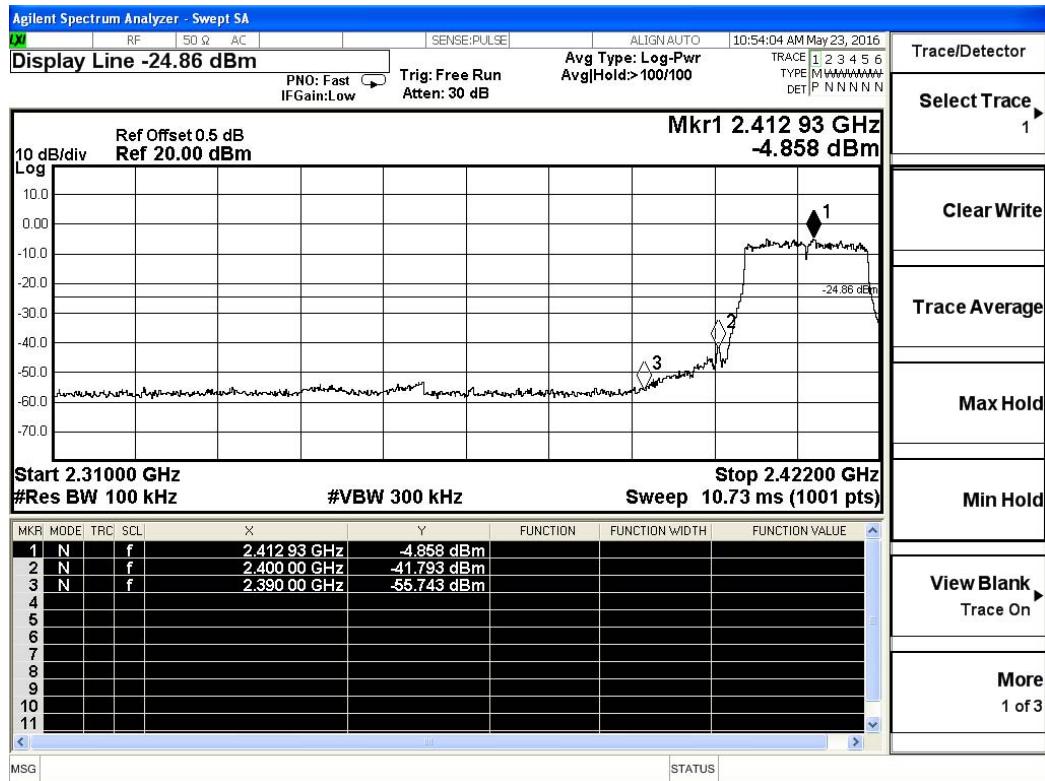


## 6.6.7. Test Results of Band Edges Test

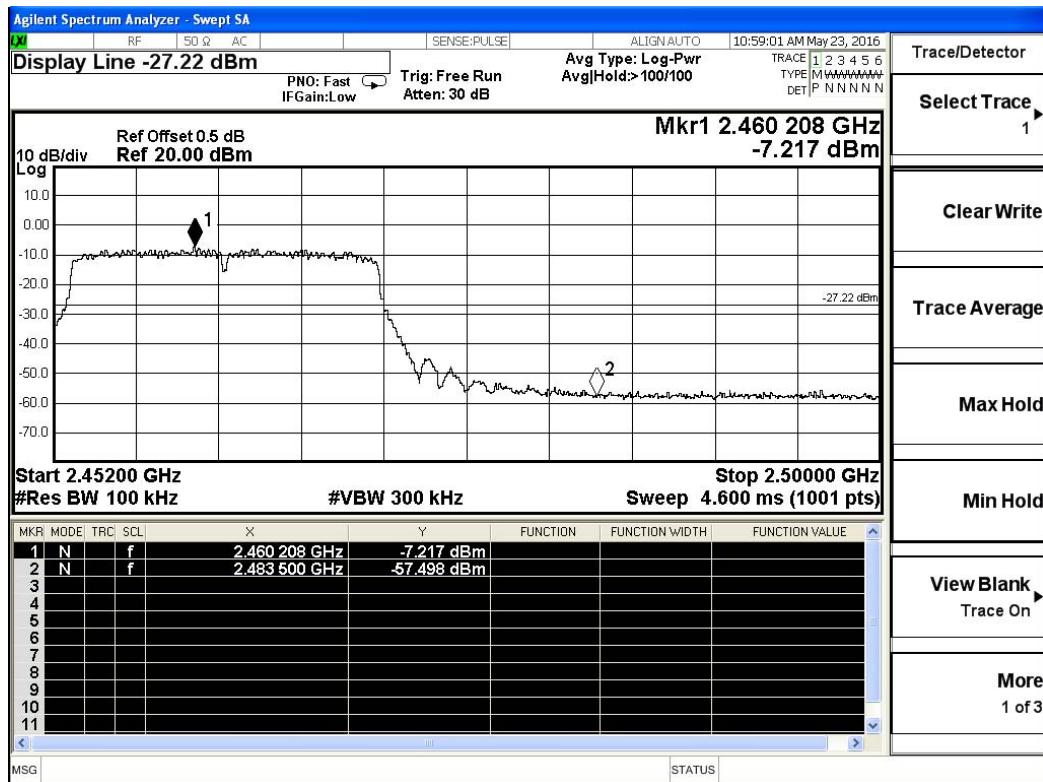
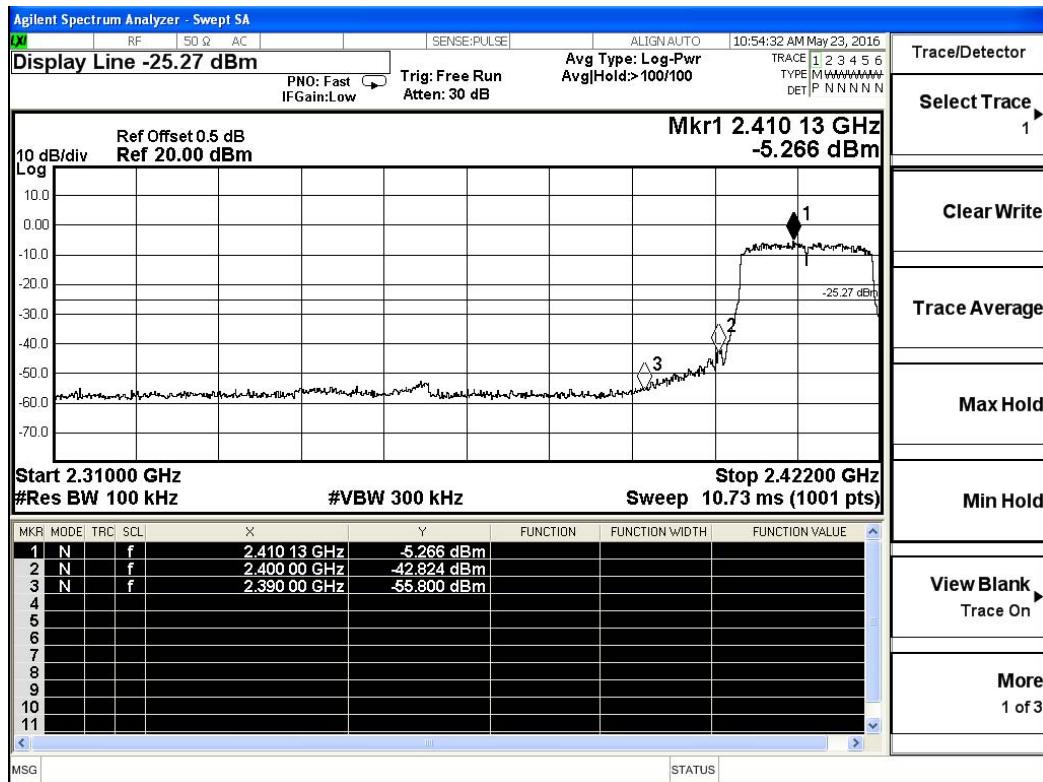
## 802.11b



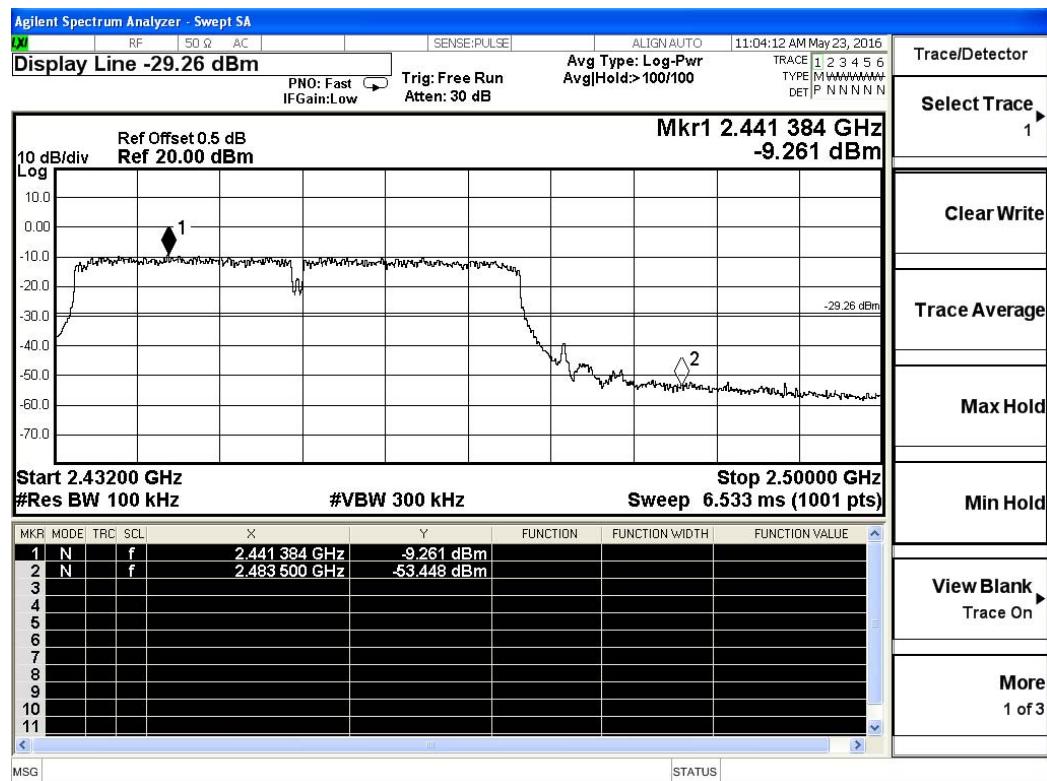
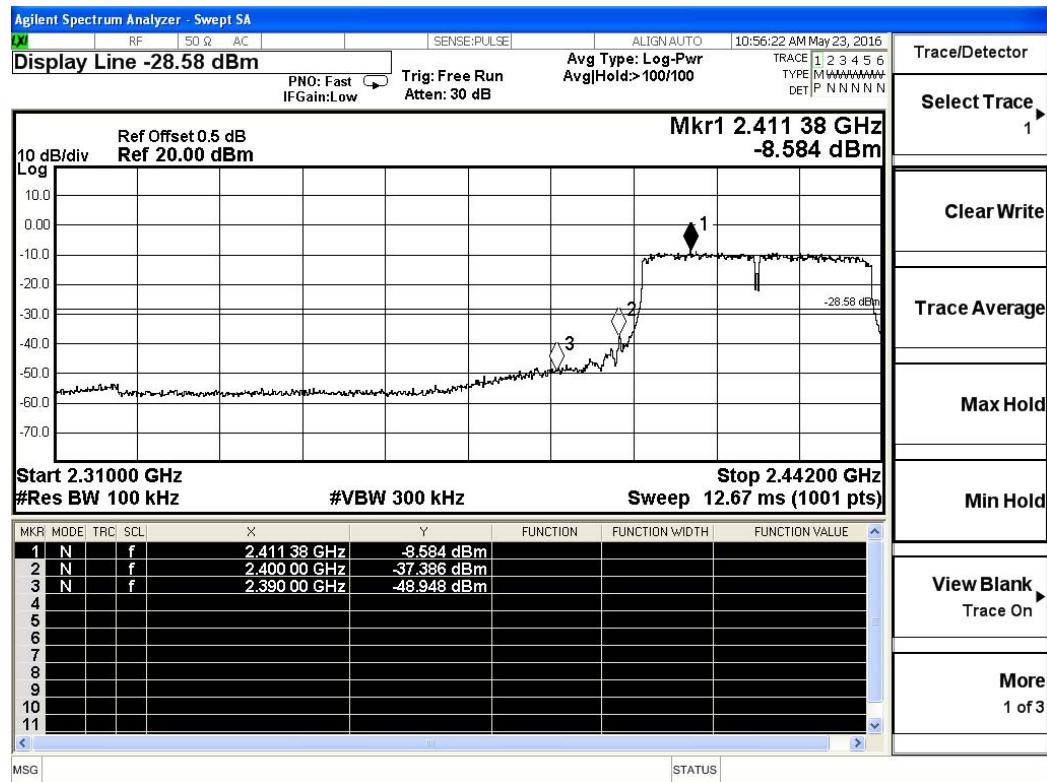
## 802.11g



## 802.11n HT20



## 802.11n HT40



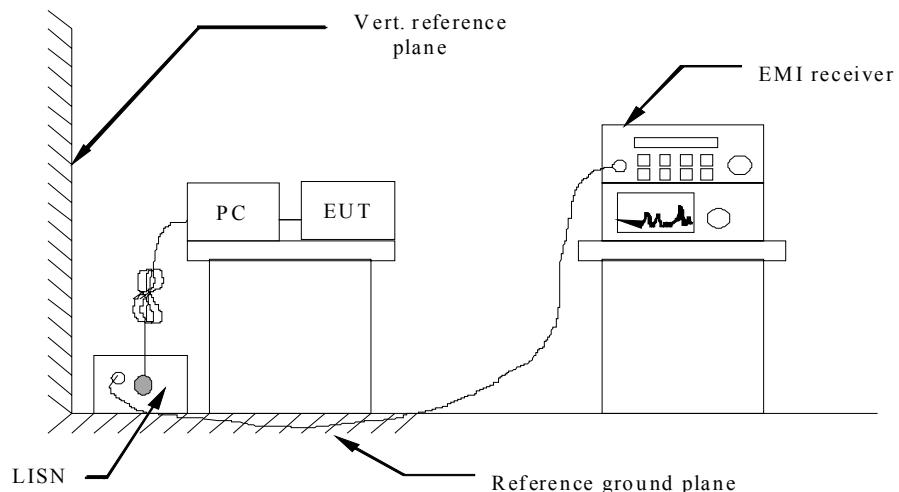
## 6.7. Power line conducted emissions

### 6.7.1 Standard Applicable

According to §15.207 (a): For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

| Frequency Range<br>(MHz) | Limits (dB $\mu$ V) |          |
|--------------------------|---------------------|----------|
|                          | Quasi-peak          | Average  |
| 0.15 to 0.50             | 66 to 56            | 56 to 46 |
| 0.50 to 5                | 56                  | 46       |
| 5 to 30                  | 60                  | 50       |

### 6.7.2 Block Diagram of Test Setup

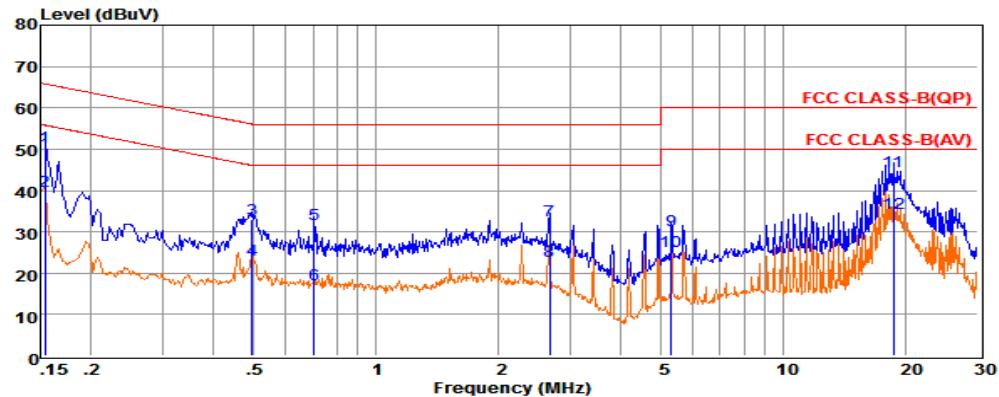


### 6.7.3 Test Results

PASS.

The test data please refer to following page.

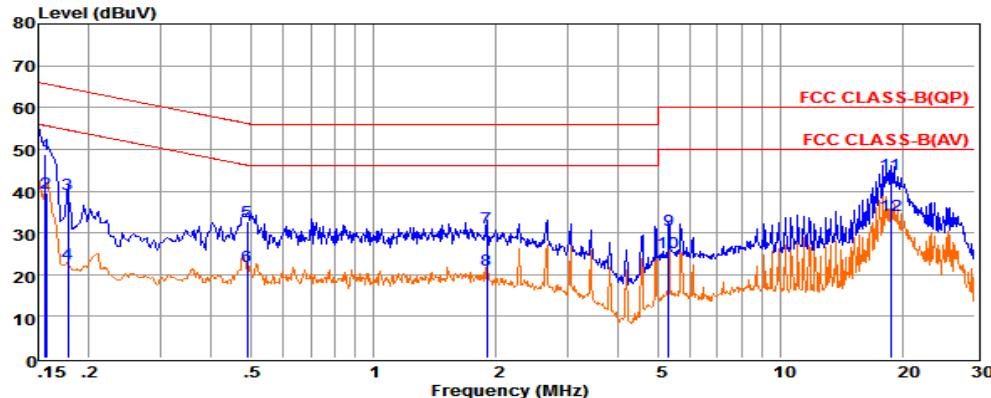
## Test Result for Line Power Input AC 120V/60Hz



Env. Ins: 24\*/56%  
 Pol: LINE

| Freq       | Reading | LisnFac | CabLos | Atten_Fac | Measured | Limit | Over   | Remark  |
|------------|---------|---------|--------|-----------|----------|-------|--------|---------|
| MHz        | dBuV    | dB      | dB     | dB        | dBuV     | dBuV  | dB     |         |
| 1 0.15403  | 30.87   | 9.58    | 0.02   | 10.00     | 50.47    | 65.78 | -15.31 | QP      |
| 2 0.15413  | 20.23   | 9.58    | 0.02   | 10.00     | 39.83    | 55.77 | -15.94 | Average |
| 3 0.49673  | 13.24   | 9.62    | 0.04   | 10.00     | 32.90    | 56.05 | -23.15 | QP      |
| 4 0.49683  | 3.67    | 9.62    | 0.04   | 10.00     | 23.33    | 46.05 | -22.72 | Average |
| 5 0.70468  | 12.03   | 9.64    | 0.04   | 10.00     | 31.71    | 56.00 | -24.29 | QP      |
| 6 0.70478  | -2.55   | 9.64    | 0.04   | 10.00     | 17.13    | 46.00 | -28.87 | Average |
| 7 2.66410  | 12.88   | 9.64    | 0.05   | 10.00     | 32.57    | 56.00 | -23.43 | QP      |
| 8 2.66510  | 3.18    | 9.64    | 0.05   | 10.00     | 22.87    | 46.00 | -23.13 | Average |
| 9 5.30499  | 10.58   | 9.66    | 0.06   | 10.00     | 30.30    | 60.00 | -29.70 | QP      |
| 10 5.30599 | 5.50    | 9.66    | 0.06   | 10.00     | 25.22    | 50.00 | -24.78 | Average |
| 1118.62210 | 24.72   | 9.75    | 0.11   | 10.00     | 44.58    | 60.00 | -15.42 | QP      |
| 1218.62310 | 14.78   | 9.75    | 0.11   | 10.00     | 34.64    | 50.00 | -15.36 | Average |

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss+Atten\_Fac.  
 2. The emission levels that are 20dB below the official limit are not reported.

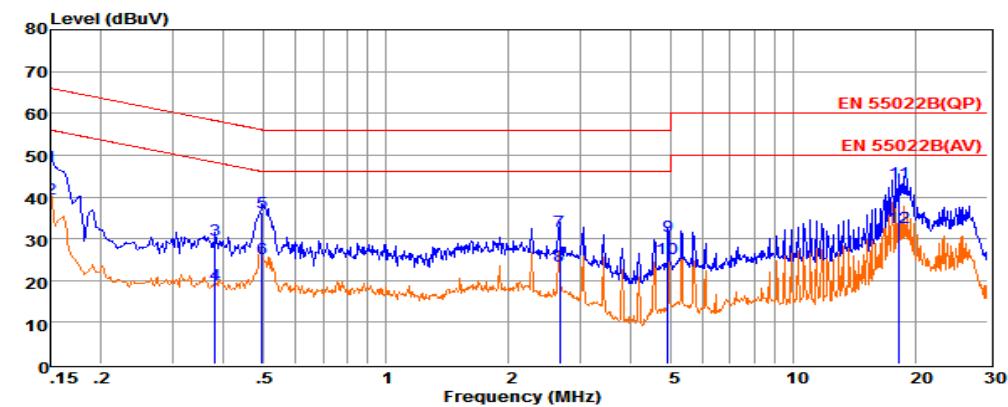


Env. Ins: 24\*/56%  
 Pol: NEUTRAL

| Freq       | Reading | LisnFac | CabLos | Atten_Fac | Measured | Limit | Over   | Remark  |
|------------|---------|---------|--------|-----------|----------|-------|--------|---------|
| MHz        | dBuV    | dB      | dB     | dB        | dBuV     | dBuV  | dB     |         |
| 1 0.15649  | 29.02   | 9.68    | 0.02   | 10.00     | 48.72    | 65.65 | -16.93 | QP      |
| 2 0.15659  | 19.71   | 9.68    | 0.02   | 10.00     | 39.41    | 55.64 | -16.23 | Average |
| 3 0.17772  | 19.71   | 9.64    | 0.02   | 10.00     | 39.37    | 64.59 | -25.22 | QP      |
| 4 0.17782  | 3.01    | 9.63    | 0.02   | 10.00     | 22.66    | 54.59 | -31.93 | Average |
| 5 0.48890  | 13.00   | 9.62    | 0.04   | 10.00     | 32.66    | 56.19 | -23.53 | QP      |
| 6 0.48900  | 2.23    | 9.62    | 0.04   | 10.00     | 21.89    | 46.18 | -24.29 | Average |
| 7 1.89795  | 11.43   | 9.63    | 0.05   | 10.00     | 31.11    | 56.00 | -24.89 | QP      |
| 8 1.89895  | 1.34    | 9.63    | 0.05   | 10.00     | 21.02    | 46.00 | -24.98 | Average |
| 9 5.30499  | 10.93   | 9.67    | 0.06   | 10.00     | 30.66    | 60.00 | -29.34 | QP      |
| 10 5.30599 | 5.47    | 9.67    | 0.06   | 10.00     | 25.20    | 50.00 | -24.80 | Average |
| 1118.62210 | 24.06   | 9.83    | 0.11   | 10.00     | 44.00    | 60.00 | -16.00 | QP      |
| 1218.62310 | 14.38   | 9.83    | 0.11   | 10.00     | 34.32    | 50.00 | -15.68 | Average |

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss+Atten\_Fac.  
 2. The emission levels that are 20dB below the official limit are not reported.

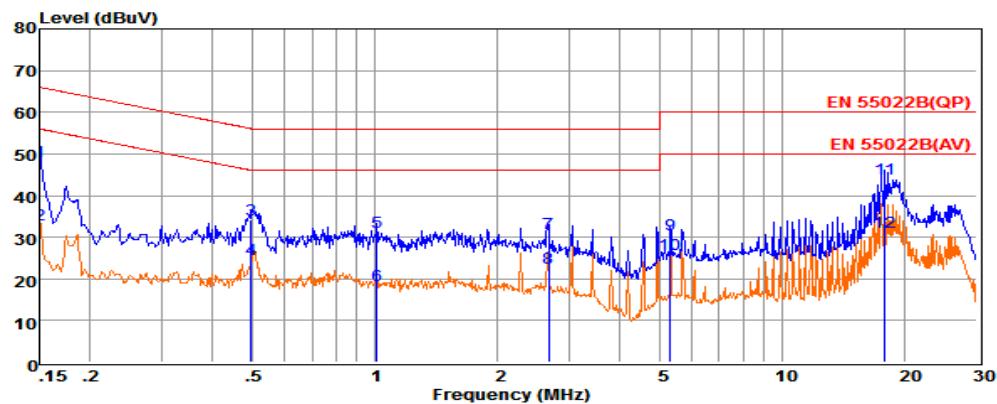
## Test Result for Line Power Input AC 240V/60Hz



Env. Ins: 24\*/56%  
Pol: LINE

| Freq       | Reading | LisnFac | CabLos | Atten_Fac | Measured | Limit | Over   | Remark  |
|------------|---------|---------|--------|-----------|----------|-------|--------|---------|
| MHz        | dBuV    | dB      | dB     | dB        | dBuV     | dBuV  | dB     |         |
| 1 0.15000  | 27.83   | 9.57    | 0.02   | 10.00     | 47.42    | 66.00 | -18.58 | QP      |
| 2 0.15010  | 20.03   | 9.57    | 0.02   | 10.00     | 39.62    | 55.99 | -16.37 | Average |
| 3 0.38113  | 10.00   | 9.62    | 0.04   | 10.00     | 29.66    | 58.25 | -28.59 | QP      |
| 4 0.38123  | -0.60   | 9.62    | 0.04   | 10.00     | 19.06    | 48.25 | -29.19 | Average |
| 5 0.49673  | 16.77   | 9.62    | 0.04   | 10.00     | 36.43    | 56.05 | -19.62 | QP      |
| 6 0.49683  | 5.67    | 9.62    | 0.04   | 10.00     | 25.33    | 46.05 | -20.72 | Average |
| 7 2.66410  | 12.07   | 9.64    | 0.05   | 10.00     | 31.76    | 56.00 | -24.24 | QP      |
| 8 2.66510  | 3.67    | 9.64    | 0.05   | 10.00     | 23.36    | 46.00 | -22.64 | Average |
| 9 4.92572  | 10.96   | 9.65    | 0.06   | 10.00     | 30.67    | 56.00 | -25.33 | QP      |
| 10 4.92672 | 5.42    | 9.65    | 0.06   | 10.00     | 25.13    | 46.00 | -20.87 | Average |
| 1118.23158 | 23.55   | 9.74    | 0.11   | 10.00     | 43.40    | 60.00 | -16.60 | QP      |
| 1218.23258 | 12.78   | 9.74    | 0.11   | 10.00     | 32.63    | 50.00 | -17.37 | Average |

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss+Atten\_Fac.  
2. The emission levels that are 20dB below the official limit are not reported.



Env. Ins: 24\*/56%  
Pol: NEUTRAL

| Freq       | Reading | LisnFac | CabLos | Atten_Fac | Measured | Limit | Over   | Remark  |
|------------|---------|---------|--------|-----------|----------|-------|--------|---------|
| MHz        | dBuV    | dB      | dB     | dB        | dBuV     | dBuV  | dB     |         |
| 1 0.15000  | 28.47   | 9.70    | 0.02   | 10.00     | 48.19    | 66.00 | -17.81 | QP      |
| 2 0.15010  | 13.24   | 9.70    | 0.02   | 10.00     | 32.96    | 55.99 | -23.03 | Average |
| 3 0.49673  | 14.56   | 9.62    | 0.04   | 10.00     | 34.22    | 56.05 | -21.83 | QP      |
| 4 0.49683  | 5.01    | 9.62    | 0.04   | 10.00     | 24.67    | 46.05 | -21.38 | Average |
| 5 1.01033  | 11.54   | 9.63    | 0.05   | 10.00     | 31.22    | 56.00 | -24.78 | QP      |
| 6 1.01133  | -1.30   | 9.63    | 0.05   | 10.00     | 18.38    | 46.00 | -27.62 | Average |
| 7 2.66410  | 11.31   | 9.64    | 0.05   | 10.00     | 31.00    | 56.00 | -25.00 | QP      |
| 8 2.66510  | 2.89    | 9.64    | 0.05   | 10.00     | 22.58    | 46.00 | -23.42 | Average |
| 9 5.30499  | 11.05   | 9.67    | 0.06   | 10.00     | 30.78    | 60.00 | -29.22 | QP      |
| 10 5.30599 | 6.09    | 9.67    | 0.06   | 10.00     | 25.82    | 50.00 | -24.18 | Average |
| 1117.84926 | 24.08   | 9.80    | 0.11   | 10.00     | 43.99    | 60.00 | -16.01 | QP      |
| 1217.85026 | 11.42   | 9.80    | 0.11   | 10.00     | 31.33    | 50.00 | -18.67 | Average |

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss+Atten\_Fac.  
2. The emission levels that are 20dB below the official limit are not reported.

\*\*\*Note: Pre-scan all modes and recorded the worst case results in this report (802.11b (Low Channel)).

## 7. ANTENNA REQUIREMENT

### 7.1 Standard Applicable

According to antenna requirement of §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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be re-placed by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

And according to §15.247(4)(1), system operating in the 2400-2483.5MHz bands that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

### 7.2 Antenna Connected Construction

#### 7.2.1. Standard Applicable

According to § 15.203 & RSS-Gen, 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.

#### 7.2.2. Antenna Connector Construction

The WLAN modular use reverse SMA antenna connector in order to meet FCC Part 15.212 for modular approval antenna requirement, use external antenna and maximum antenna gain is 2.0dBi for test. Please see EUT photo for details.

#### 7.2.3. Results: Compliance.

### Measurement

The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module.

Conducted power refers ANSI C63.10:2013 Output power test procedure for DTS devices.

Radiated power refers to ANSI C63.10:2013 Radiated emissions tests.

**Measurement parameters**

| Measurement parameter |          |
|-----------------------|----------|
| Detector:             | Peak     |
| Sweep Time:           | Auto     |
| Resolution bandwidth: | 1MHz     |
| Video bandwidth:      | 3MHz     |
| Trace-Mode:           | Max hold |

**Limits**

| FCC          | IC |
|--------------|----|
| Antenna Gain |    |
| 6 dBi        |    |

Note: The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module. For WLAN devices, the DSSS mode is used;

| T <sub>nom</sub>  | V <sub>nom</sub> | Lowest Channel<br>2412 MHz         | Middle Channel<br>2437 MHz | Highest Channel<br>2462 MHz |
|---|------------------|------------------------------------|----------------------------|-----------------------------|
| Conducted power [dBm]<br>Measured with<br>DSSS modulation |                  | 10.09                              | 10.22                      | 10.17                       |
| Radiated power [dBm]<br>Measured with<br>DSSS modulation  |                  | 10.23                              | 11.97                      | 10.78                       |
| Gain [dBi] Calculated                                     |                  | 0.14                               | 1.75                       | 0.61                        |
| Measurement uncertainty                                   |                  | ± 1.6 dB (cond.) / ± 3.8 dB (rad.) |                            |                             |

**Result:** -/-

-----THE END OF TEST REPORT-----