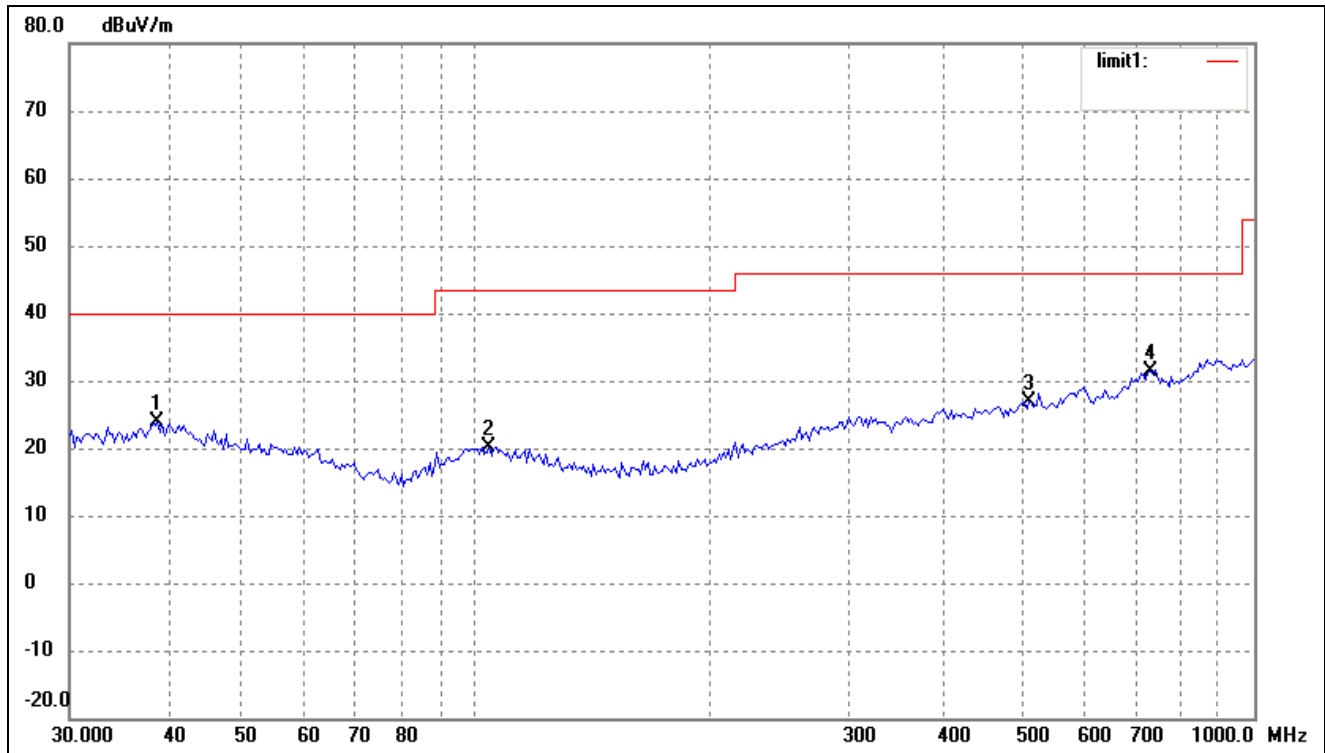


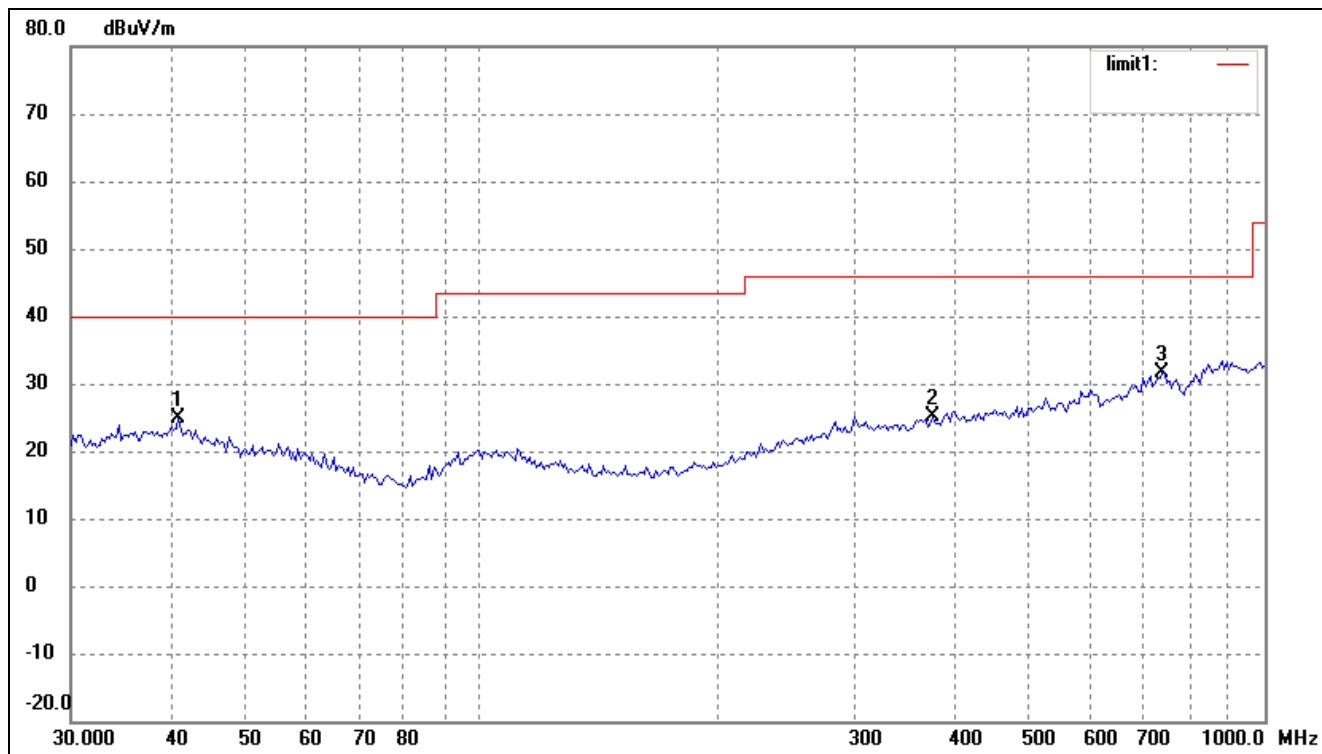
Test mode: Transmitting Channel 5805MHz

Horizontal



| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>Factor(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Degree<br>( ° ) | Height<br>(cm) | Remark |
|-----|--------------------|---------------------|-----------------------|--------------------|-------------------|----------------|-----------------|----------------|--------|
| 1   | 38.8879            | 14.75               | 9.06                  | 23.81              | 40.00             | -16.19         | 177             | 100            | peak   |
| 2   | 103.8055           | 14.46               | 5.73                  | 20.19              | 43.50             | -23.31         | 90              | 100            | peak   |
| 3   | 513.6331           | 15.58               | 11.21                 | 26.79              | 46.00             | -19.21         | 336             | 100            | peak   |
| 4   | 734.4913           | 16.04               | 15.22                 | 31.26              | 46.00             | -14.74         | 360             | 100            | peak   |

Test Specification: Vertical



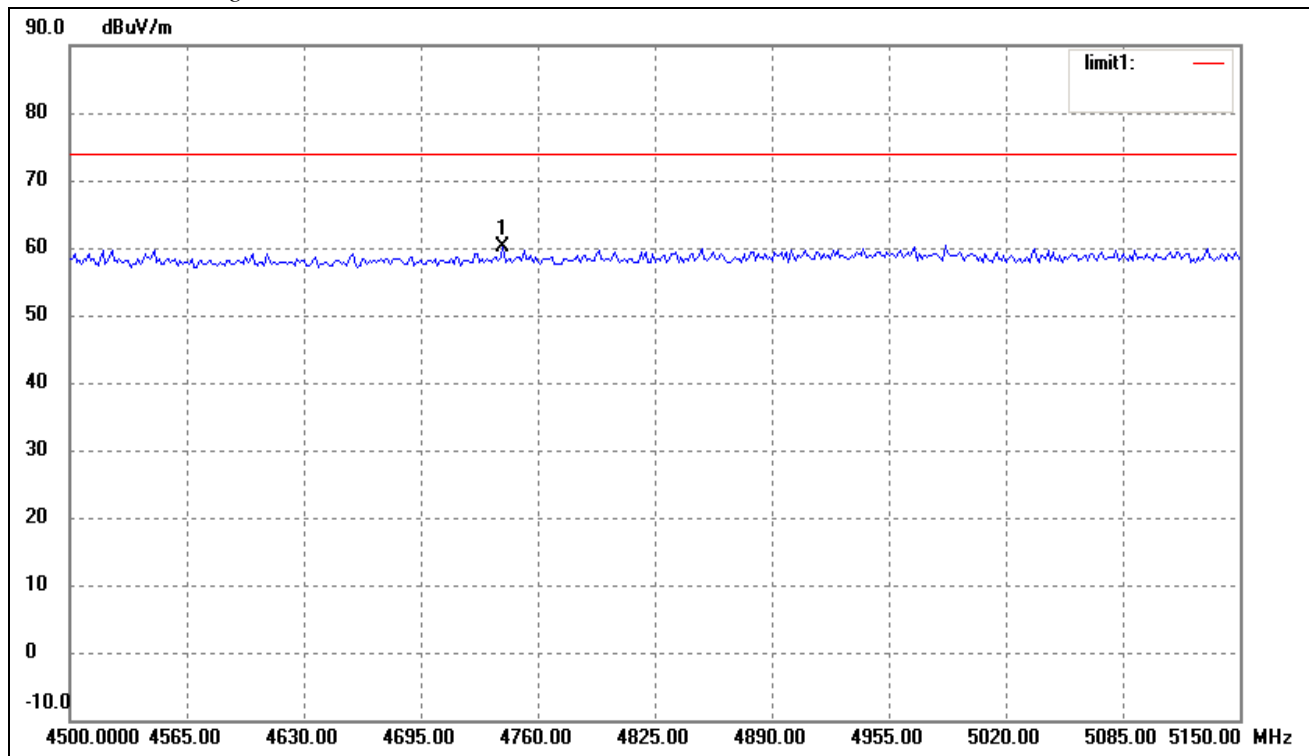
| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>Factor(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Degree<br>( ° ) | Height<br>(cm) | Remark |
|-----|--------------------|---------------------|-----------------------|--------------------|-------------------|----------------|-----------------|----------------|--------|
| 1   | 41.1320            | 15.91               | 8.91                  | 24.82              | 40.00             | -15.18         | 270             | 100            | peak   |
| 2   | 377.2591           | 16.03               | 9.20                  | 25.23              | 46.00             | -20.77         | 164             | 100            | peak   |
| 3   | 739.6605           | 16.06               | 15.53                 | 31.59              | 46.00             | -14.41         | 228             | 200            | peak   |

For 802.11a

Spurious Emission above 1GHz

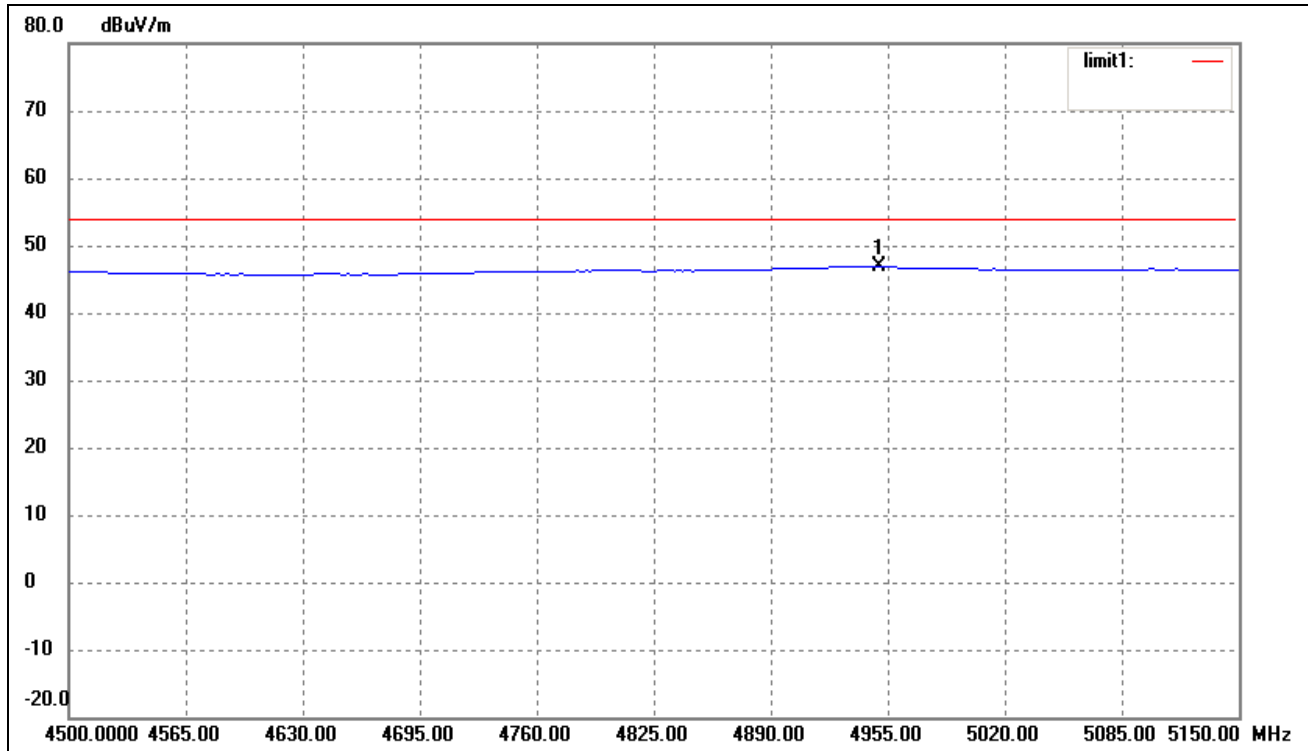
For the frequency band 5.15-5.25GHz(802.11a)

Restricted Bandedge Peak



| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Degree<br>(° ) | Height<br>(cm) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|----------------|----------------|--------|
| 1   | 4740.500           | 29.65               | 30.41           | 60.06              | 74.00             | -13.94         | 360            | 100            | peak   |

### Restricted Bandedge Average



| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Degree<br>(° ) | Height<br>(cm) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|----------------|----------------|--------|
| 1   | 4949.800           | 16.13               | 30.71           | 46.84              | 54.00             | -7.16          | 360            | 100            | Ave    |

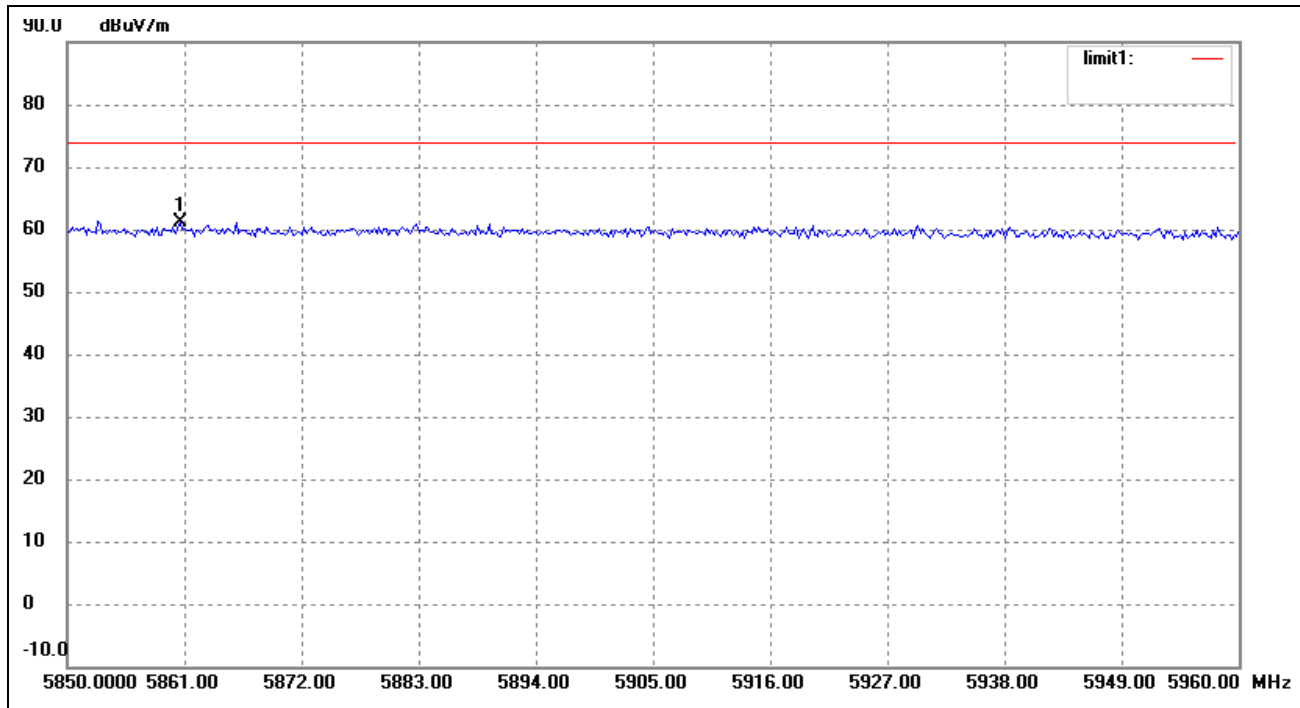
Note: this EUT was tested in the low, high channel and the worst case position data was reported.

*Restricted Band, Harmonics And Spurious Emissions*

| Frequency<br>MHz       | Detector | Meter<br>Reading<br>dBuV | Direction<br>Degree | Polar<br>H / V | Antenna<br>Loss<br>dB | Cable loss<br>dB | Amplifier<br>dB | Correction<br>Amplitude<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB |
|------------------------|----------|--------------------------|---------------------|----------------|-----------------------|------------------|-----------------|-----------------------------------|-----------------|--------------|
| Low Channel (5180MHz)  |          |                          |                     |                |                       |                  |                 |                                   |                 |              |
| 15540                  | PK       | 50.8                     | 360                 | V              | 40.7                  | 10.9             | 39.6            | 62.8                              | 74              | -11.2        |
| 15540                  | PK       | 49.4                     | 360                 | H              | 40.7                  | 10.9             | 39.6            | 61.4                              | 74              | -12.6        |
| 15540                  | AV       | 35.6                     | 360                 | V              | 40.7                  | 10.9             | 39.6            | 47.6                              | 54              | -6.4         |
| 15540                  | AV       | 34.7                     | 360                 | H              | 40.7                  | 10.9             | 39.6            | 46.7                              | 54              | -7.3         |
| High Channel (5240MHz) |          |                          |                     |                |                       |                  |                 |                                   |                 |              |
| 15720                  | PK       | 51.1                     | 360                 | V              | 40.7                  | 10.9             | 39.6            | 63.1                              | 74              | -10.9        |
| 15720                  | PK       | 50.3                     | 360                 | H              | 40.7                  | 10.9             | 39.6            | 62.3                              | 74              | -11.7        |
| 15720                  | AV       | 35.4                     | 360                 | V              | 40.7                  | 10.9             | 39.6            | 47.4                              | 54              | -6.6         |
| 15720                  | AV       | 34.3                     | 360                 | H              | 40.7                  | 10.9             | 39.6            | 46.3                              | 54              | -7.7         |

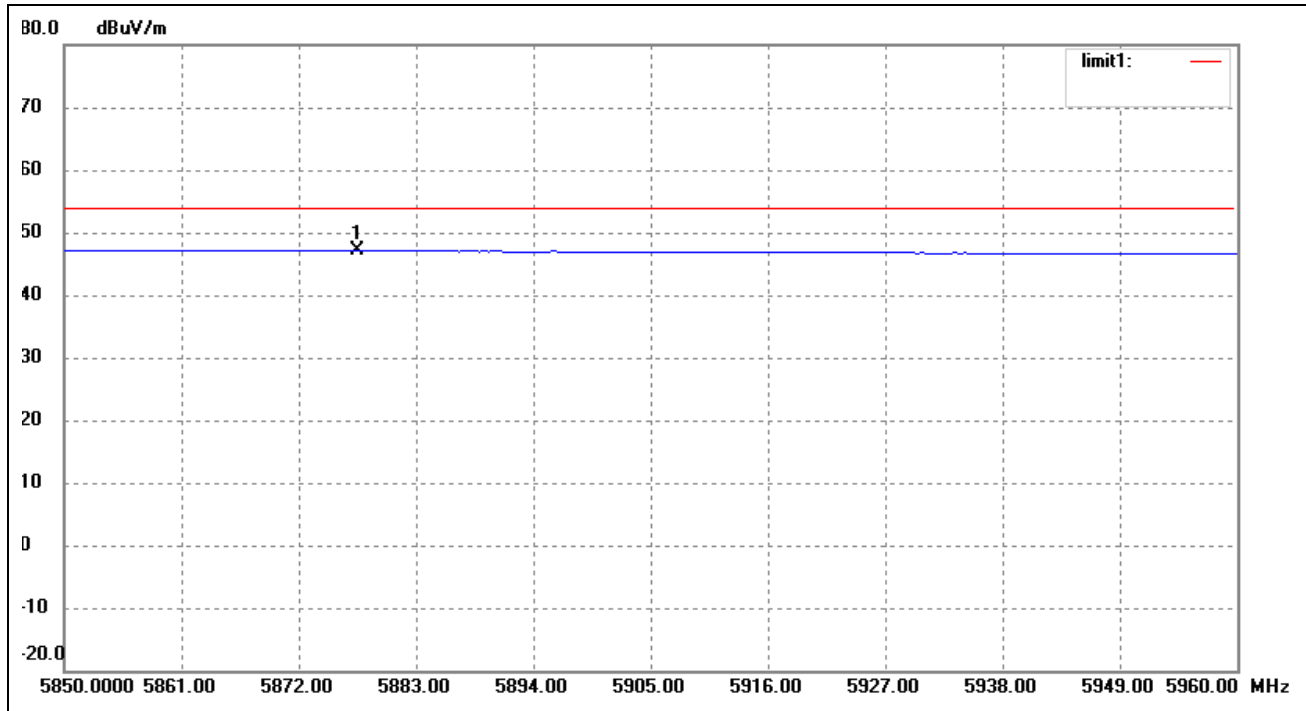
For the frequency band 5.725-5.825GHz (802.11a)

Restricted Bandedge Peak



| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Degree<br>(° ) | Height<br>(cm) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|----------------|----------------|--------|
| 1   | 5859.660           | 30.88               | 31.23           | 62.11              | 74                | -11.89         | 360            | 100            | peak   |

### Restricted Bandedge Average



| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Degree<br>(° ) | Height<br>(cm) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|----------------|----------------|--------|
| 1   | 5876.500           | 16.92               | 31.25           | 48.17              | 54                | -5.83          | 360            | 100            | Ave    |

Note: this EUT was tested in the low, high channel and the worst case position data was reported.

*Restricted Band, Harmonics And Spurious Emissions*

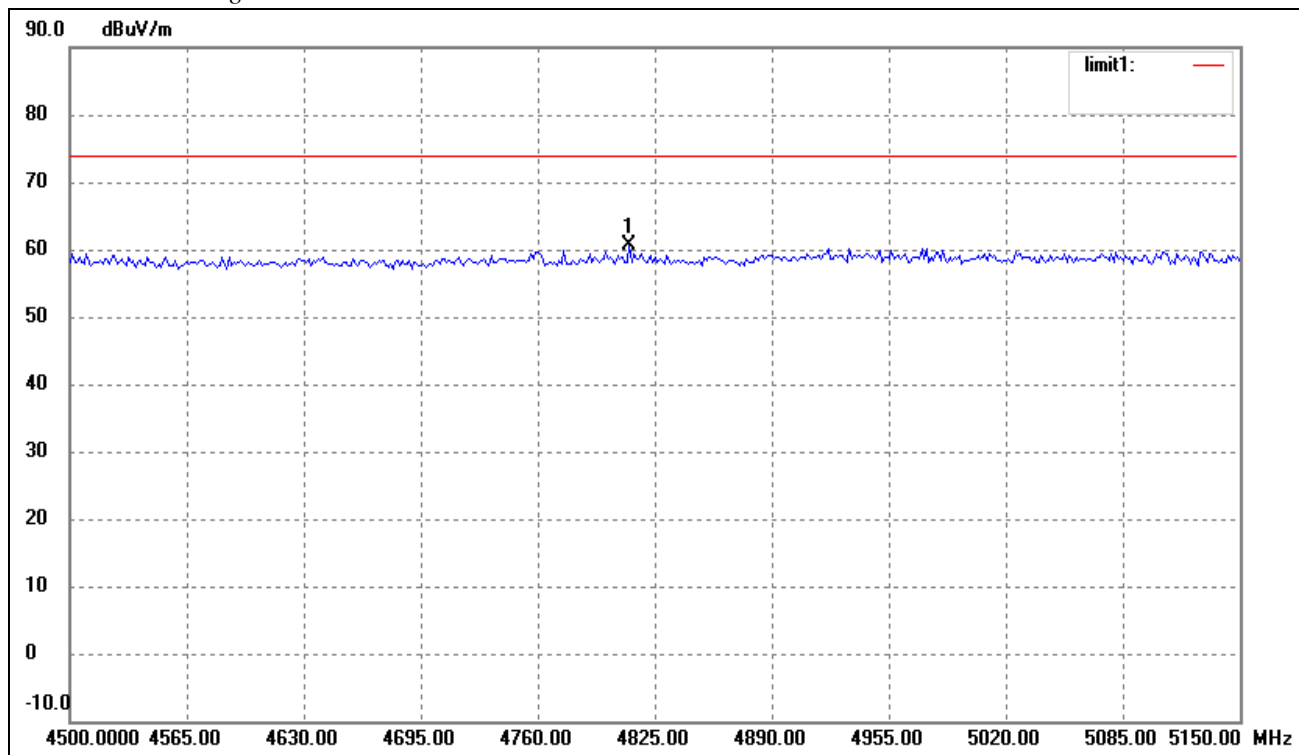
| Frequency<br>MHz       | Detector | Meter<br>Reading<br>dBuV | Direction<br>Degree | Polar<br>H / V | Antenna<br>Loss<br>dB | Cable loss<br>dB | Amplifier<br>dB | Correction<br>Amplitude<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB |
|------------------------|----------|--------------------------|---------------------|----------------|-----------------------|------------------|-----------------|-----------------------------------|-----------------|--------------|
| Low Channel (5745MHz)  |          |                          |                     |                |                       |                  |                 |                                   |                 |              |
| 11490                  | PK       | 55.8                     | 360                 | V              | 38.9                  | 9.8              | 40.1            | 64.4                              | 74              | -9.6         |
| 11490                  | PK       | 54.5                     | 360                 | H              | 38.9                  | 9.8              | 40.1            | 63.1                              | 74              | -10.9        |
| 11490                  | AV       | 36.7                     | 360                 | V              | 38.9                  | 9.8              | 40.1            | 45.3                              | 54              | -8.7         |
| 11490                  | AV       | 35.0                     | 360                 | H              | 38.9                  | 9.8              | 40.1            | 43.6                              | 54              | -10.4        |
| High Channel (5805MHz) |          |                          |                     |                |                       |                  |                 |                                   |                 |              |
| 11610                  | PK       | 54.2                     | 360                 | V              | 38.9                  | 9.8              | 40.1            | 62.8                              | 74              | -11.2        |
| 11610                  | PK       | 53.1                     | 360                 | H              | 38.9                  | 9.8              | 40.1            | 61.7                              | 74              | -12.3        |
| 11610                  | AV       | 37.4                     | 360                 | V              | 38.9                  | 9.8              | 40.1            | 46.0                              | 54              | -8.0         |
| 11610                  | AV       | 36.3                     | 360                 | H              | 38.9                  | 9.8              | 40.1            | 44.9                              | 54              | -9.1         |



802.11n HT20

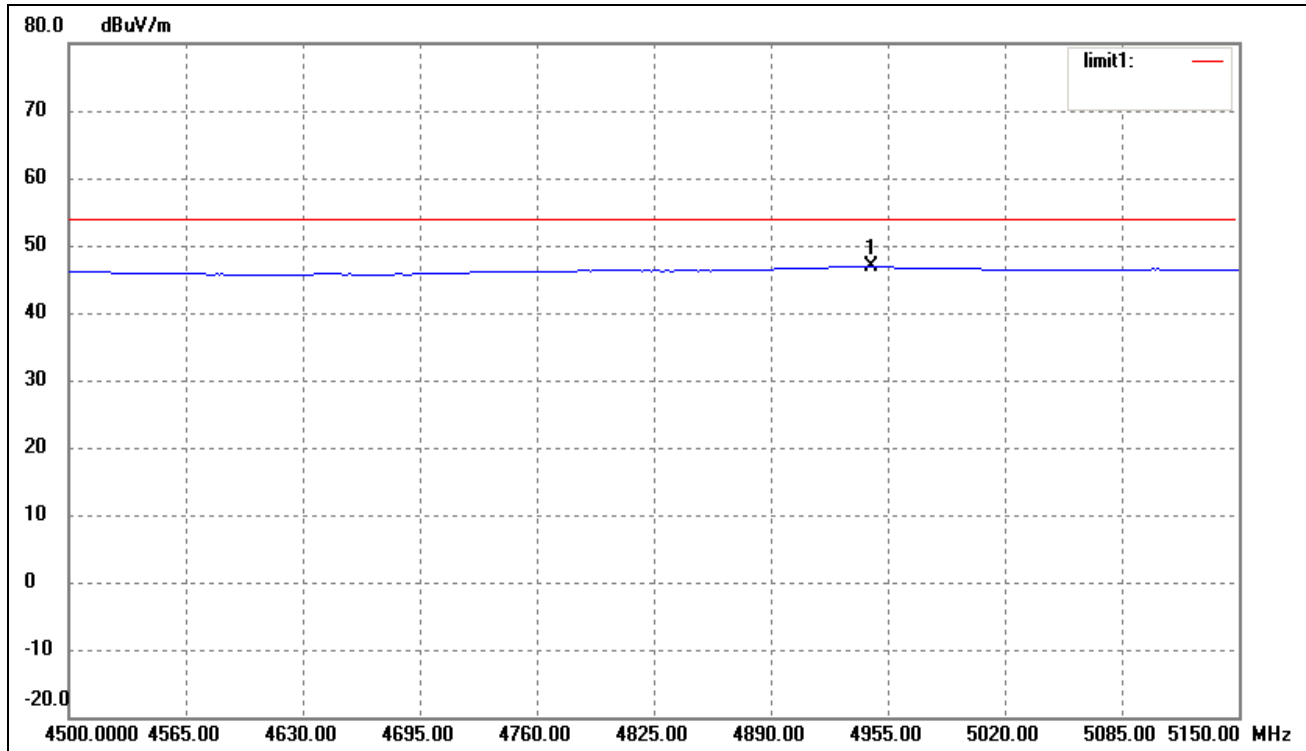
For the frequency band 5.15-5.25GHz(802.11n HT20)

Restricted Bandedge Peak



| No. | Frequency | Reading  | Correct | Result   | Limit    | Margin | Degree | Height | Remark |
|-----|-----------|----------|---------|----------|----------|--------|--------|--------|--------|
|     | (MHz)     | (dBuV/m) | dB/m    | (dBuV/m) | (dBuV/m) | (dB)   | (° )   | (cm)   |        |
| 1   | 4810.700  | 30.04    | 30.52   | 60.56    | 74.00    | -13.44 | 360    | 100    | peak   |

### Restricted Bandedge Average



| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Degree<br>(° ) | Height<br>(cm) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|----------------|----------------|--------|
| 1   | 4945.900           | 16.13               | 30.71           | 46.84              | 54.00             | -7.16          | 360            | 100            | Ave    |

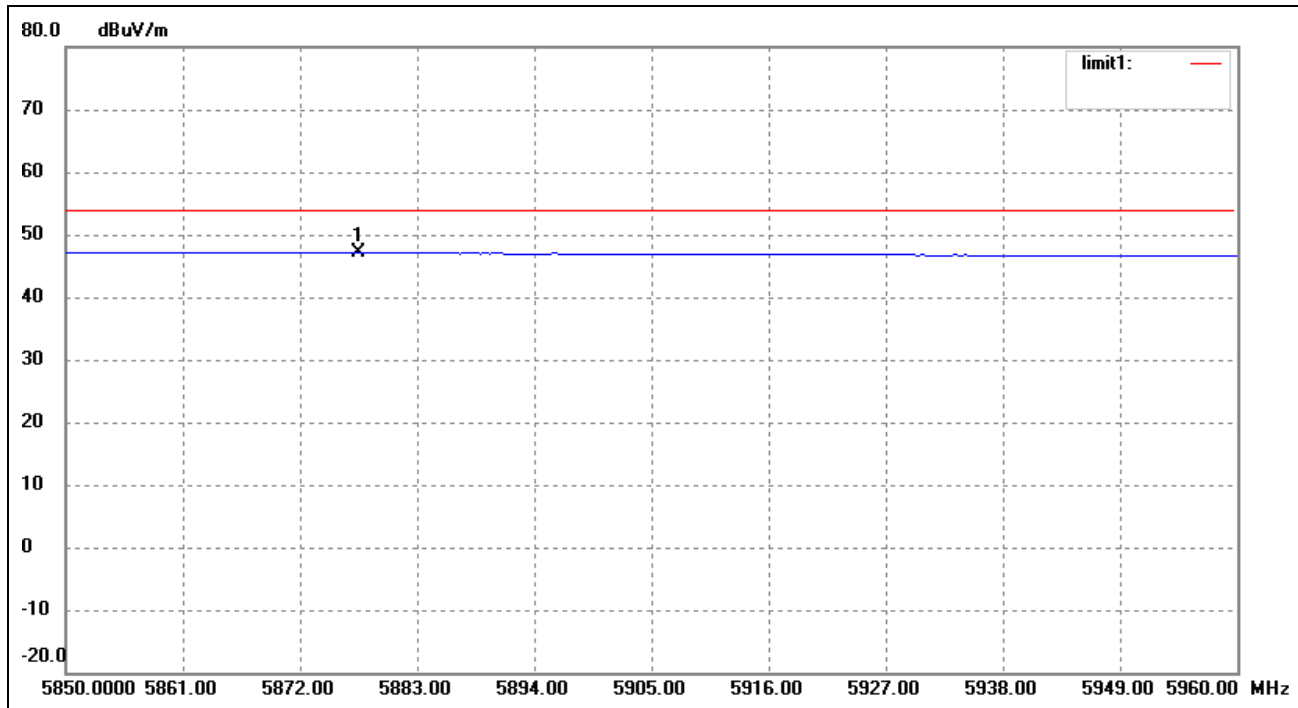
Note: this EUT was tested in the low, high channel and the worst case position data was reported.

*Restricted Band, Harmonics And Spurious Emissions*

| Frequency<br>MHz       | Detector | Meter<br>Reading<br>dBuV | Direction<br>Degree | Polar<br>H / V | Antenna<br>Loss<br>dB | Cable loss<br>dB | Amplifier<br>dB | Correction<br>Amplitude<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB |
|------------------------|----------|--------------------------|---------------------|----------------|-----------------------|------------------|-----------------|-----------------------------------|-----------------|--------------|
| Low Channel (5180MHz)  |          |                          |                     |                |                       |                  |                 |                                   |                 |              |
| 15540                  | PK       | 50.9                     | 360                 | V              | 40.7                  | 10.9             | 39.6            | 62.9                              | 74              | -11.1        |
| 15540                  | PK       | 50.4                     | 360                 | H              | 40.7                  | 10.9             | 39.6            | 62.4                              | 74              | -11.6        |
| 15540                  | AV       | 34.5                     | 360                 | V              | 40.7                  | 10.9             | 39.6            | 46.5                              | 54              | -7.5         |
| 15540                  | AV       | 34.6                     | 360                 | H              | 40.7                  | 10.9             | 39.6            | 46.6                              | 54              | -7.4         |
| High Channel (5240MHz) |          |                          |                     |                |                       |                  |                 |                                   |                 |              |
| 15720                  | PK       | 50.3                     | 360                 | V              | 40.7                  | 10.9             | 39.6            | 62.3                              | 74              | -11.7        |
| 15720                  | PK       | 49.5                     | 360                 | H              | 40.7                  | 10.9             | 39.6            | 61.5                              | 74              | -12.5        |
| 15720                  | AV       | 34.2                     | 360                 | V              | 40.7                  | 10.9             | 39.6            | 46.2                              | 54              | -7.8         |
| 15720                  | AV       | 33.8                     | 360                 | H              | 40.7                  | 10.9             | 39.6            | 45.8                              | 54              | -8.2         |

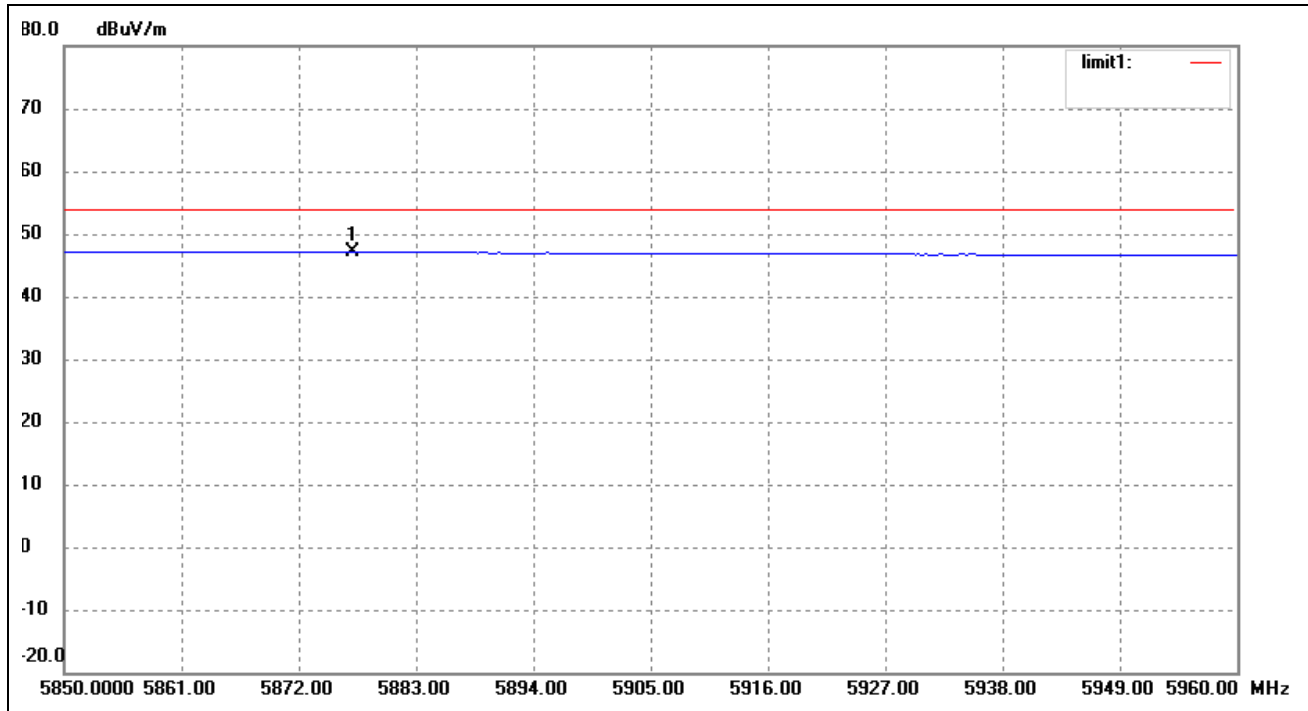
For the frequency band 5.725-5.825GHz (802.11n HT20)

Restricted Bandedge Peak



| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Degree<br>(° ) | Height<br>(cm) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|----------------|----------------|--------|
| 1   | 5888.480           | 30.94               | 31.25           | 62.19              | 74                | -11.81         | 360            | 100            | peak   |

### Restricted Bandedge Average



| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Degree<br>(° ) | Height<br>(cm) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|----------------|----------------|--------|
| 1   | 5878.040           | 16.92               | 31.25           | 48.17              | 54                | -5.83          | 360            | 100            | Ave    |

Note: this EUT was tested in the low, high channel and the worst case position data was reported.

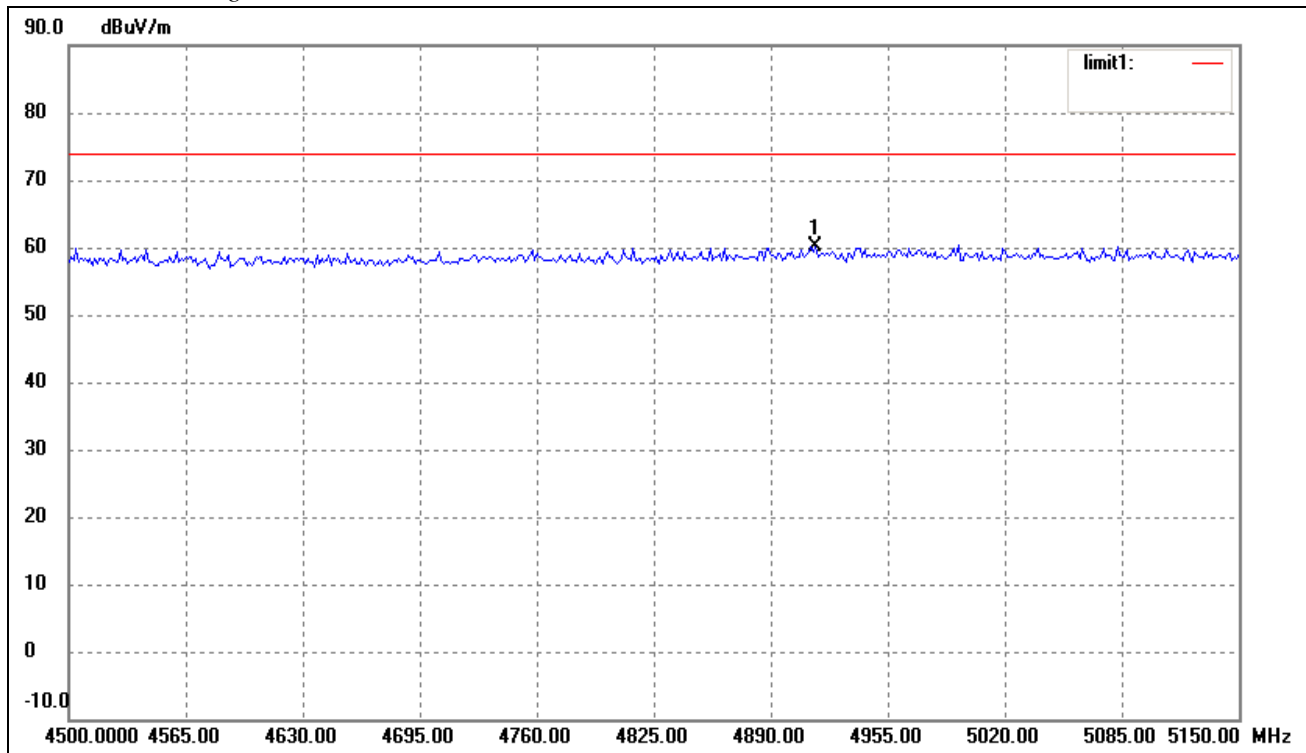
*Restricted Band, Harmonics And Spurious Emissions*

| Frequency<br>MHz       | Detector | Meter<br>Reading<br>dBuV | Direction<br>Degree | Polar<br>H / V | Antenna<br>Loss<br>dB | Cable loss<br>dB | Amplifier<br>dB | Correction<br>Amplitude<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB |
|------------------------|----------|--------------------------|---------------------|----------------|-----------------------|------------------|-----------------|-----------------------------------|-----------------|--------------|
| Low Channel (5725MHz)  |          |                          |                     |                |                       |                  |                 |                                   |                 |              |
| 11450                  | PK       | 54.3                     | 360                 | V              | 38.9                  | 9.8              | 40.1            | 62.9                              | 74              | -11.1        |
| 11450                  | PK       | 54.5                     | 360                 | H              | 38.9                  | 9.8              | 40.1            | 63.1                              | 74              | -10.9        |
| 11450                  | AV       | 35.4                     | 360                 | V              | 38.9                  | 9.8              | 40.1            | 44.0                              | 54              | -10.0        |
| 11450                  | AV       | 36.1                     | 360                 | H              | 38.9                  | 9.8              | 40.1            | 44.7                              | 54              | -9.3         |
| High Channel (5805MHz) |          |                          |                     |                |                       |                  |                 |                                   |                 |              |
| 11610                  | PK       | 54.4                     | 360                 | V              | 38.9                  | 9.8              | 40.1            | 63.0                              | 74              | -11.0        |
| 11610                  | PK       | 53.6                     | 360                 | H              | 38.9                  | 9.8              | 40.1            | 62.2                              | 74              | -11.8        |
| 11610                  | AV       | 36.4                     | 360                 | V              | 38.9                  | 9.8              | 40.1            | 45.0                              | 54              | -9.0         |
| 11610                  | AV       | 34.8                     | 360                 | H              | 38.9                  | 9.8              | 40.1            | 43.4                              | 54              | -10.6        |

802.11ac HT20

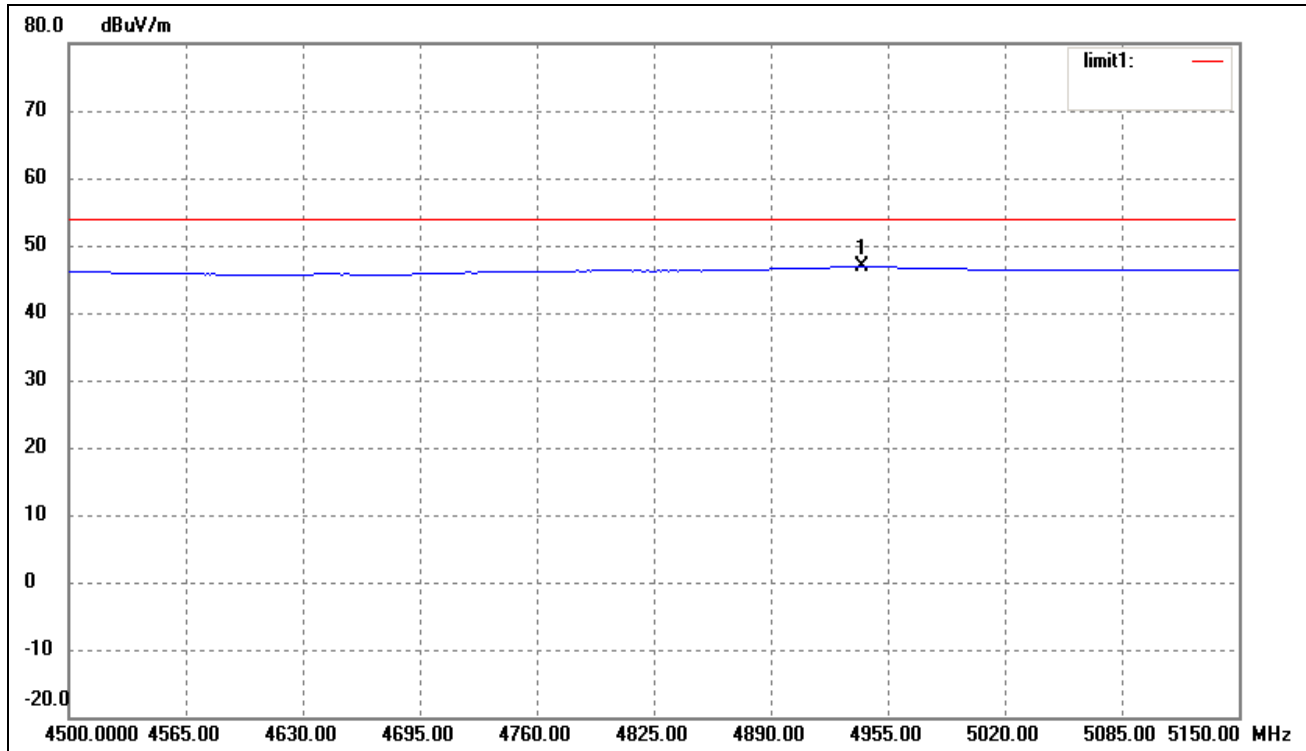
For the frequency band 5.15-5.25GHz(802.11ac HT20)

Restricted Bandedge Peak



| No. | Frequency | Reading  | Correct | Result   | Limit    | Margin | Degree | Height | Remark |
|-----|-----------|----------|---------|----------|----------|--------|--------|--------|--------|
|     | (MHz)     | (dBuV/m) | dB/m    | (dBuV/m) | (dBuV/m) | (dB)   | (° )   | (cm)   |        |
| 1   | 4914.700  | 29.57    | 30.66   | 60.23    | 74.00    | -13.77 | 360    | 100    | peak   |

### Restricted Bandedge Average



| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Degree<br>(° ) | Height<br>(cm) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|----------------|----------------|--------|
| 1   | 4940.700           | 16.14               | 30.70           | 46.84              | 54.00             | -7.16          | 360            | 100            | Ave    |

Note: this EUT was tested in the low, high channel and the worst case position data was reported.

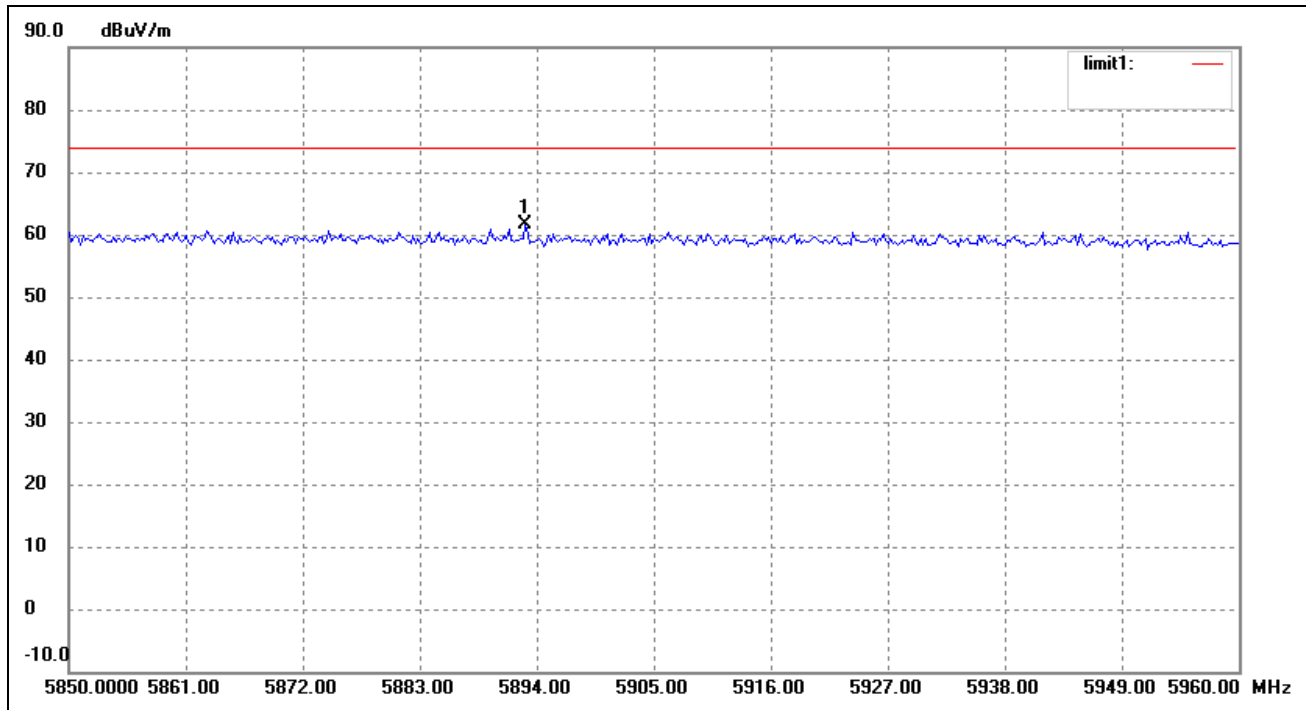


*Restricted Band, Harmonics And Spurious Emissions*

| Frequency<br>MHz       | Detector | Meter<br>Reading<br>dBuV | Direction<br>Degree | Polar<br>H / V | Antenna<br>Loss<br>dB | Cable loss<br>dB | Amplifier<br>dB | Correction<br>Amplitude<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB |
|------------------------|----------|--------------------------|---------------------|----------------|-----------------------|------------------|-----------------|-----------------------------------|-----------------|--------------|
| Low Channel (5180MHz)  |          |                          |                     |                |                       |                  |                 |                                   |                 |              |
| 10360                  | PK       | 49.4                     | 360                 | V              | 40.7                  | 10.9             | 39.6            | 61.4                              | 74              | -12.6        |
| 10360                  | PK       | 48.2                     | 360                 | H              | 40.7                  | 10.9             | 39.6            | 60.2                              | 74              | -13.8        |
| 10360                  | AV       | 33.3                     | 360                 | V              | 40.7                  | 10.9             | 39.6            | 45.3                              | 54              | -8.7         |
| 10360                  | AV       | 31.2                     | 360                 | H              | 40.7                  | 10.9             | 39.6            | 43.2                              | 54              | -10.8        |
| High Channel (5240MHz) |          |                          |                     |                |                       |                  |                 |                                   |                 |              |
| 10480                  | PK       | 48.6                     | 360                 | V              | 40.7                  | 10.9             | 39.6            | 60.6                              | 74              | -13.4        |
| 10480                  | PK       | 47.4                     | 360                 | H              | 40.7                  | 10.9             | 39.6            | 59.4                              | 74              | -14.6        |
| 10480                  | AV       | 33.2                     | 360                 | V              | 40.7                  | 10.9             | 39.6            | 45.2                              | 54              | -8.8         |
| 10480                  | AV       | 31.7                     | 360                 | H              | 40.7                  | 10.9             | 39.6            | 43.7                              | 54              | -10.3        |

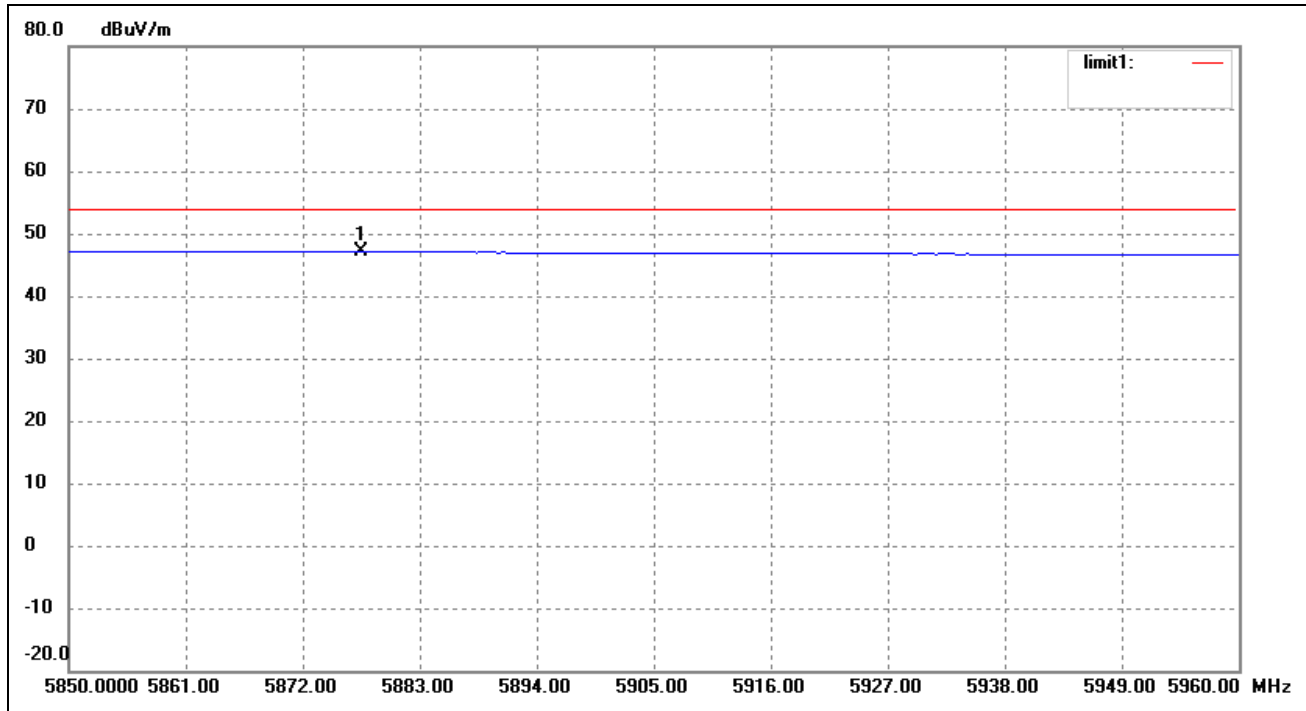
For the frequency band 5.725-5.825GHz(802.11ac HT20)

Restricted Bandedge Peak



| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Degree<br>(° ) | Height<br>(cm) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|----------------|----------------|--------|
| 1   | 5892.900           | 31.24               | 31.27           | 62.51              | 74.00             | -11.49         | 360            | 100            | peak   |

### Restricted Bandedge Average



| No. | Frequency<br>(MHz) | Reading<br>(dBuV/m) | Correct<br>dB/m | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Degree<br>(° ) | Height<br>(cm) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|----------------|----------------|--------|
| 1   | 5878.500           | 16.93               | 31.25           | 48.18              | 54.00             | -5.82          | 360            | 100            | Ave    |

Note: this EUT was tested in the low, high channel and the worst case position data was reported.

# *Restricted Band, Harmonics And Spurious Emissions*

| Frequency<br>MHz       | Detector | Meter<br>Reading<br>dBuV | Direction<br>Degree | Polar<br>H / V | Antenna<br>Loss<br>dB | Cable loss<br>dB | Amplifier<br>dB | Correction<br>Amplitude<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB |
|------------------------|----------|--------------------------|---------------------|----------------|-----------------------|------------------|-----------------|-----------------------------------|-----------------|--------------|
| Low Channel (5745MHz)  |          |                          |                     |                |                       |                  |                 |                                   |                 |              |
| 11490                  | PK       | 54.5                     | 360                 | V              | 38.9                  | 9.8              | 40.1            | 63.1                              | 74              | -10.9        |
| 11490                  | PK       | 53.3                     | 360                 | H              | 38.9                  | 9.8              | 40.1            | 61.9                              | 74              | -12.1        |
| 11490                  | AV       | 37.4                     | 360                 | V              | 38.9                  | 9.8              | 40.1            | 46.0                              | 54              | -8.0         |
| 11490                  | AV       | 36.6                     | 360                 | H              | 38.9                  | 9.8              | 40.1            | 45.2                              | 54              | -8.8         |
| High Channel (5805MHz) |          |                          |                     |                |                       |                  |                 |                                   |                 |              |
| 11610                  | PK       | 53.1                     | 360                 | V              | 38.9                  | 9.8              | 40.1            | 61.7                              | 74              | -12.3        |
| 11610                  | PK       | 53.8                     | 360                 | H              | 38.9                  | 9.8              | 40.1            | 62.4                              | 74              | -11.6        |
| 11610                  | AV       | 37.3                     | 360                 | V              | 38.9                  | 9.8              | 40.1            | 45.9                              | 54              | -8.1         |
| 11610                  | AV       | 36.4                     | 360                 | H              | 38.9                  | 9.8              | 40.1            | 45.0                              | 54              | -9.0         |

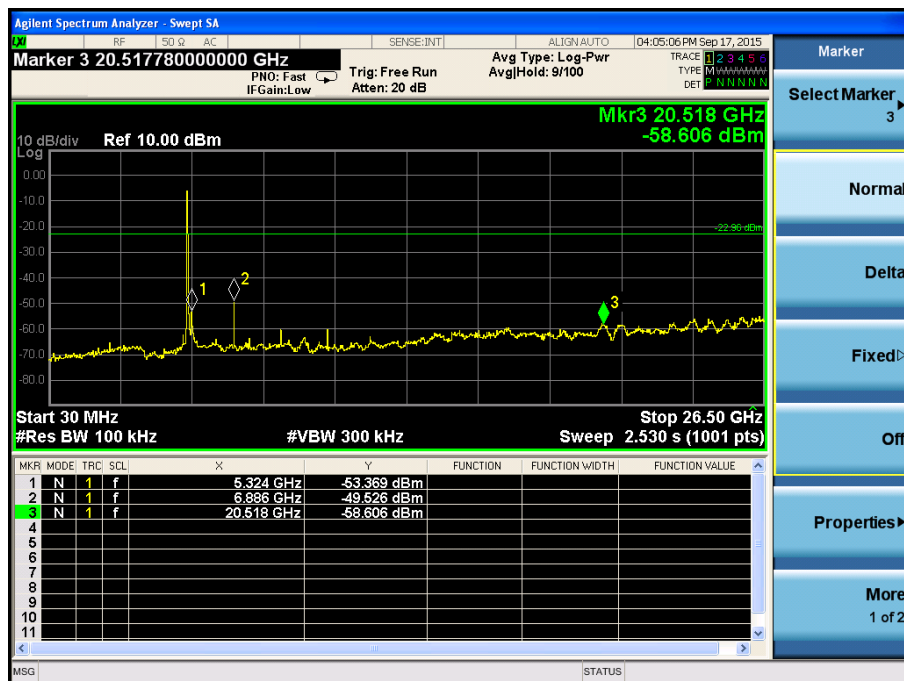
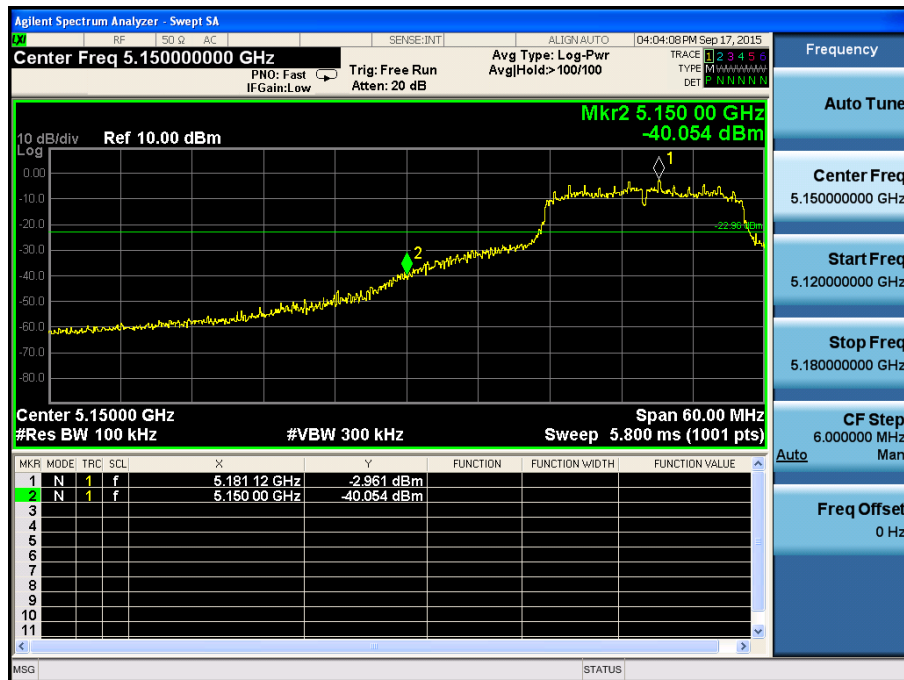
*Note: Testing is carried out with frequency rang 9kHz to 40GHz, which above 3<sup>th</sup> Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*

*The measurements greater than 20dB below the limit from 9kHz to 30MHz.*

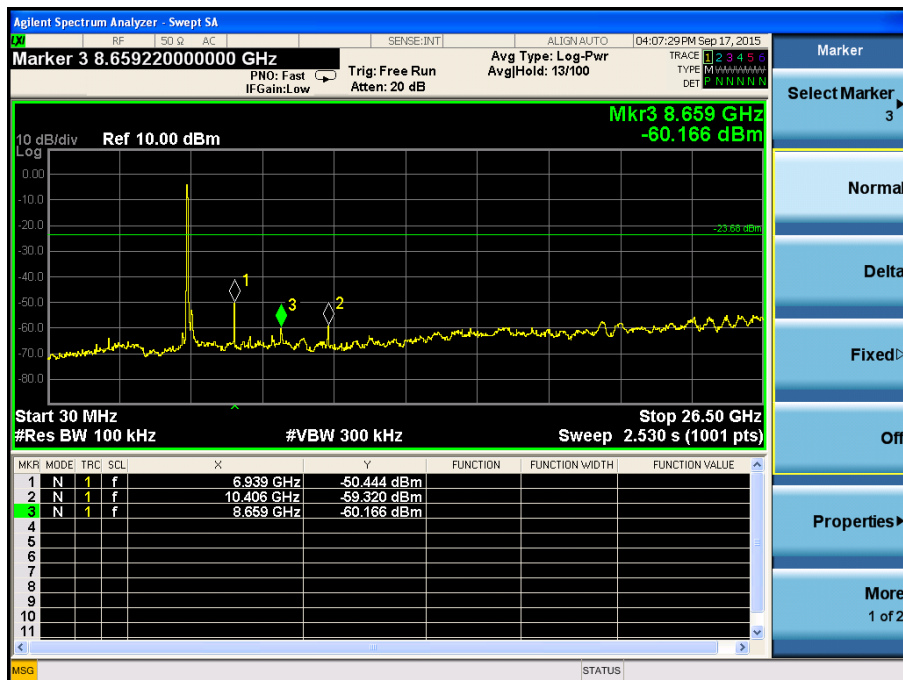
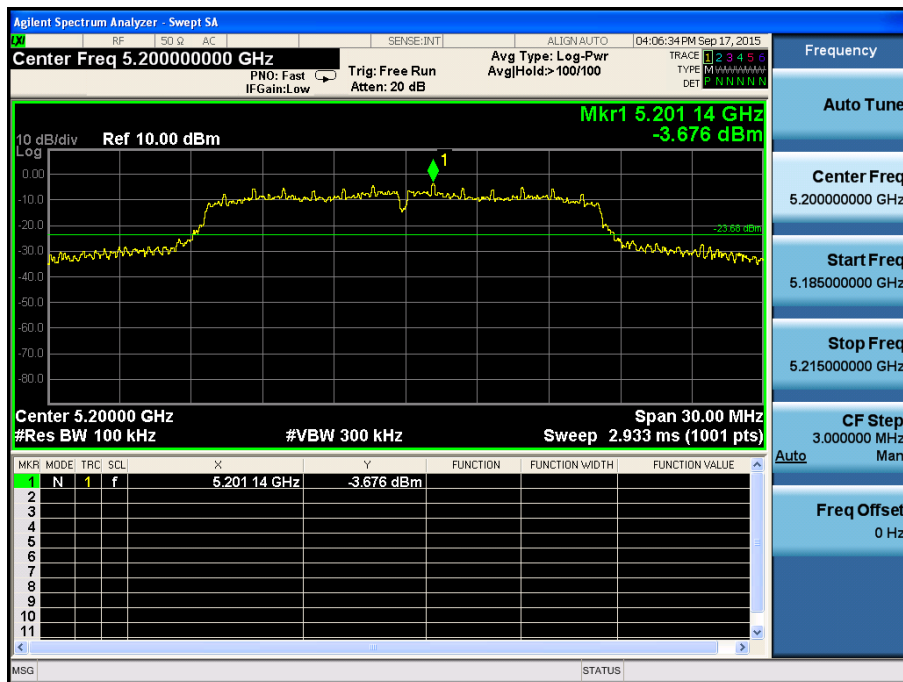
## Antenna 1

802.11a Bandedge (Conducted)

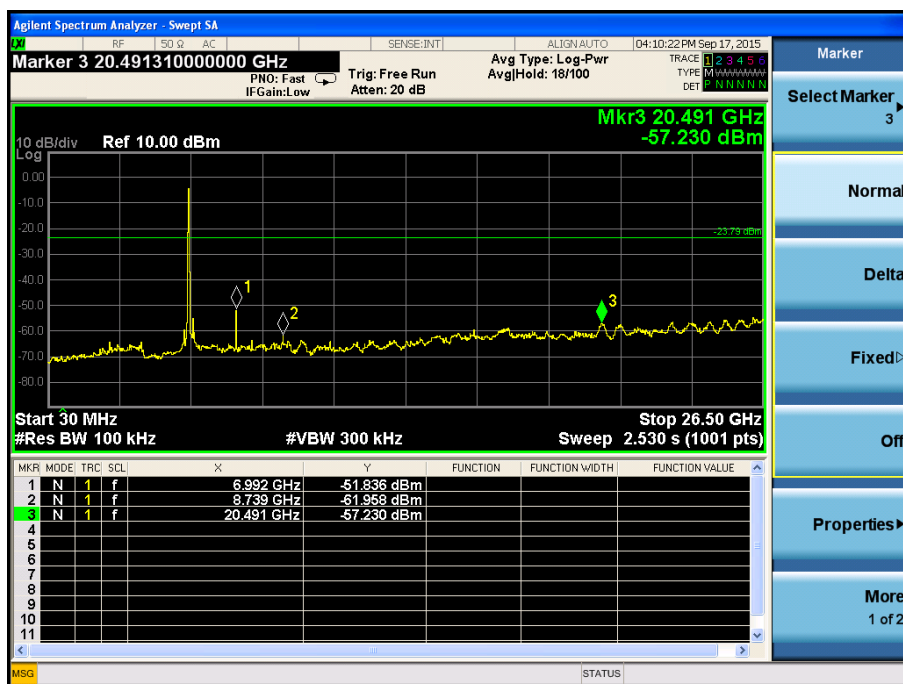
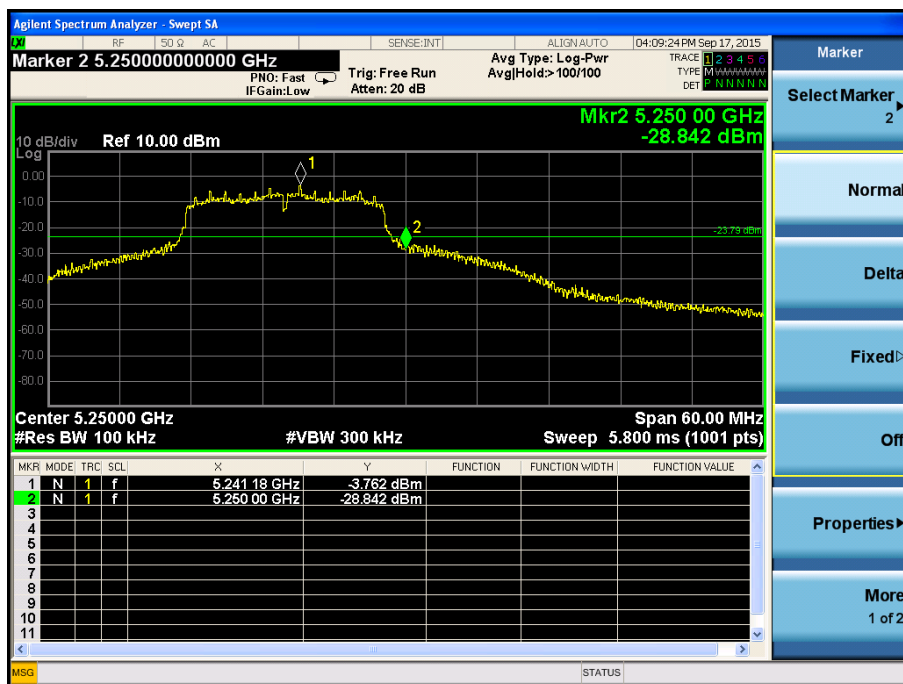
5180MHz



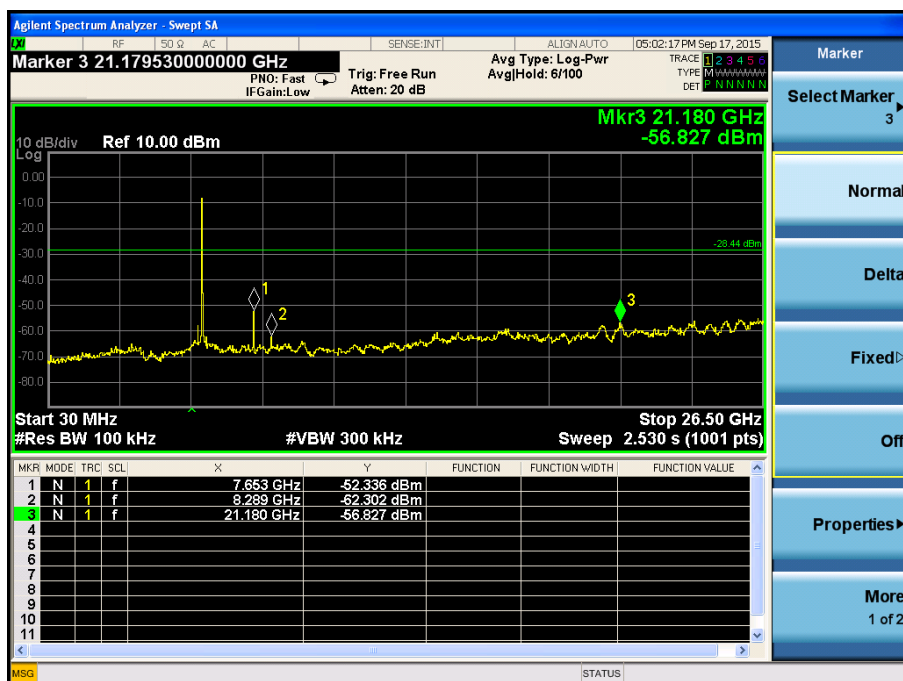
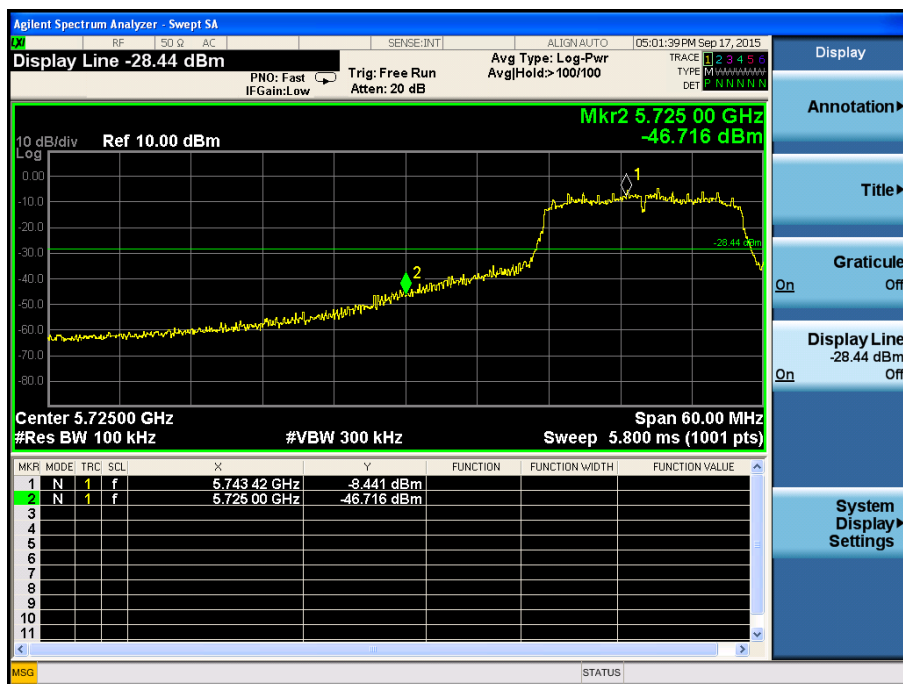
5200MHz



5240MHz

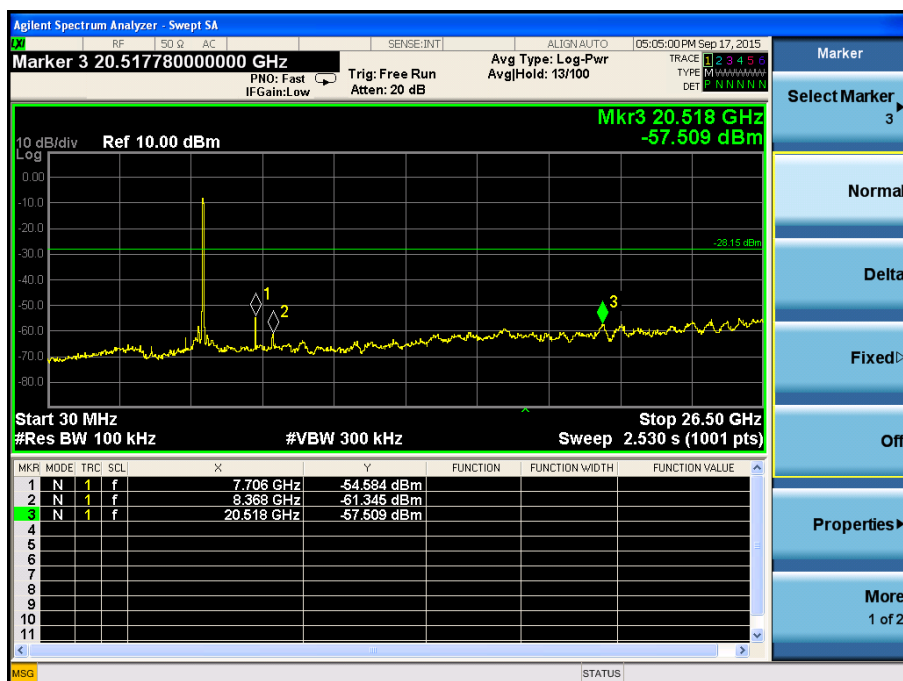
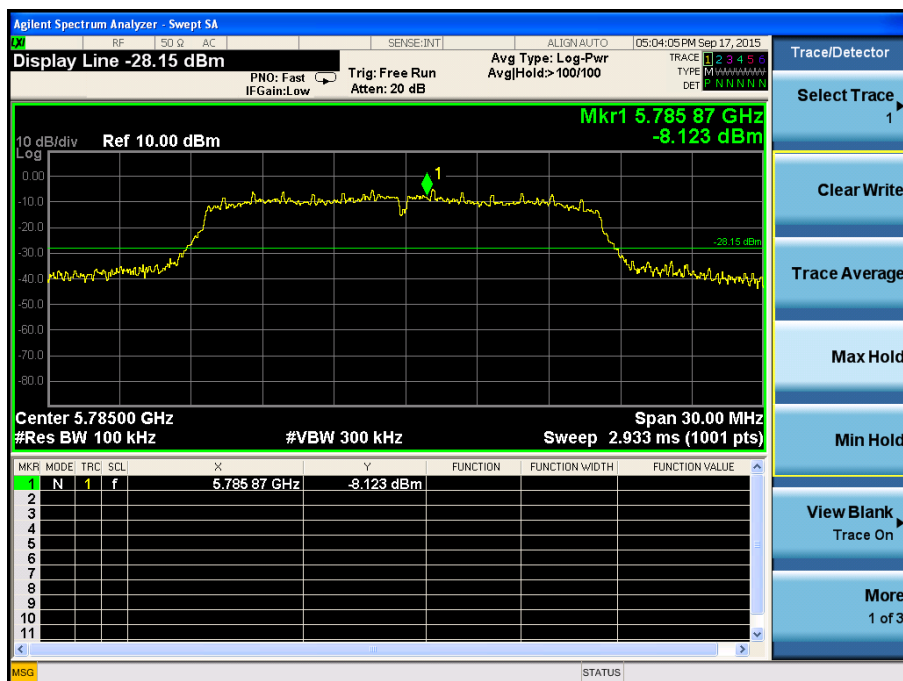


5745MHz

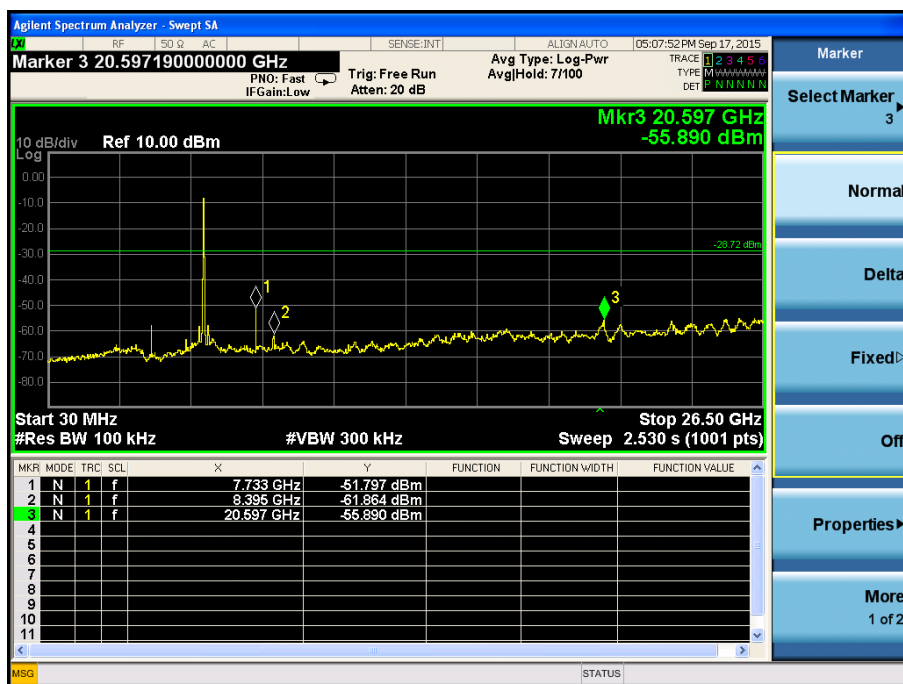
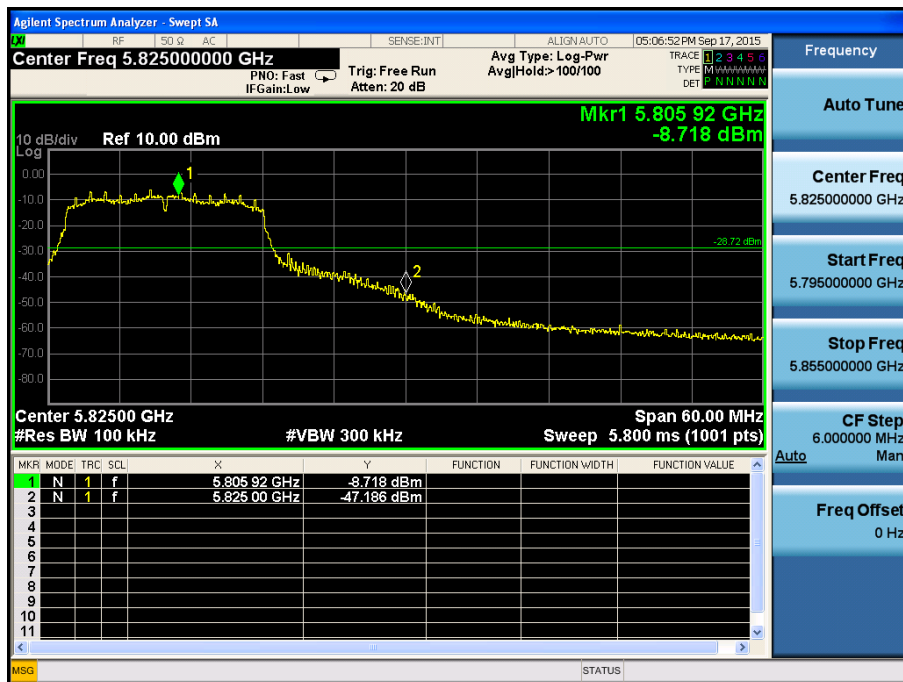




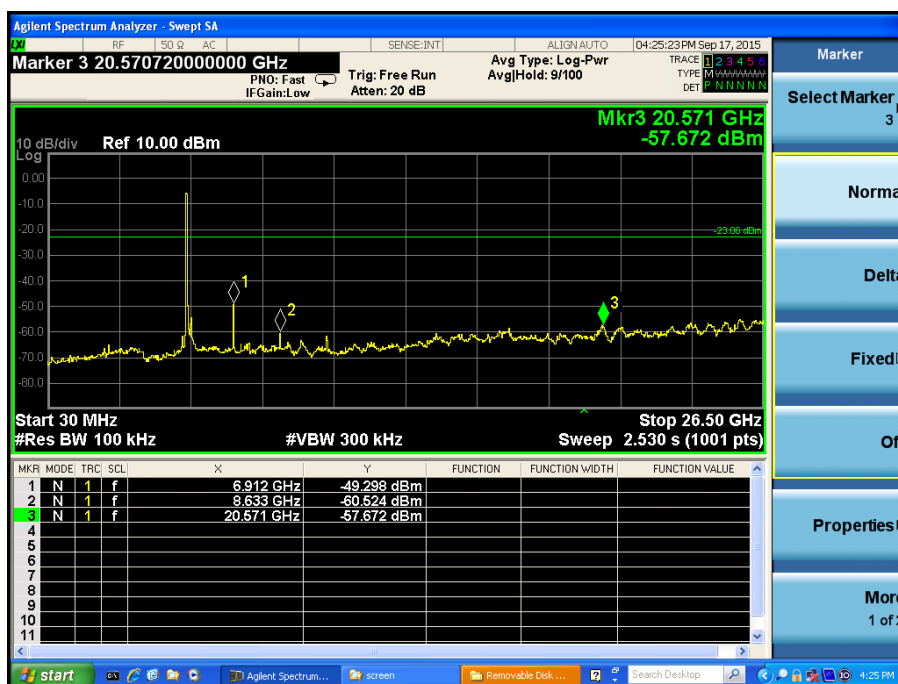
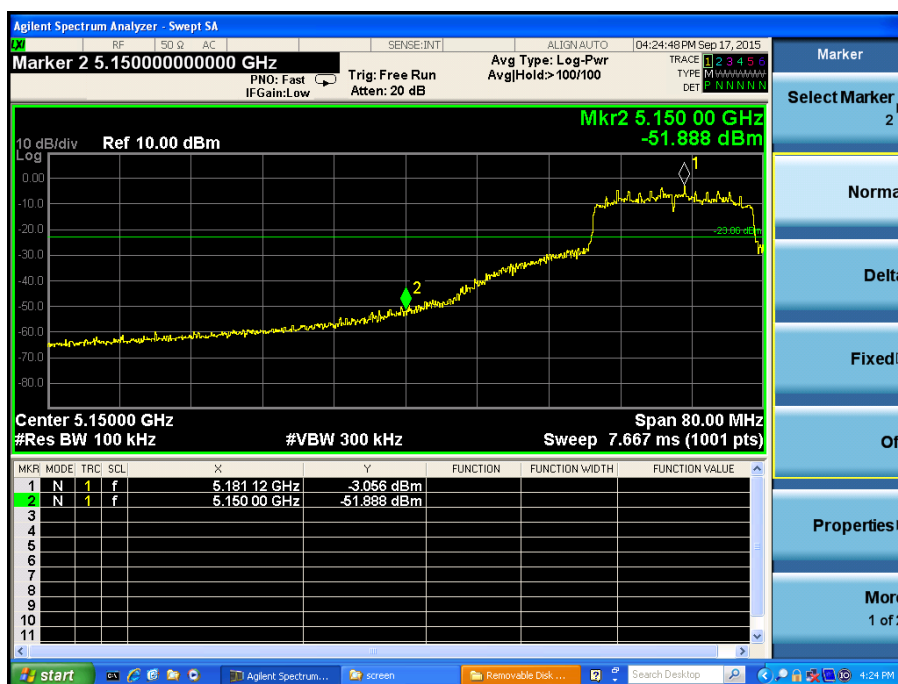
5785MHz



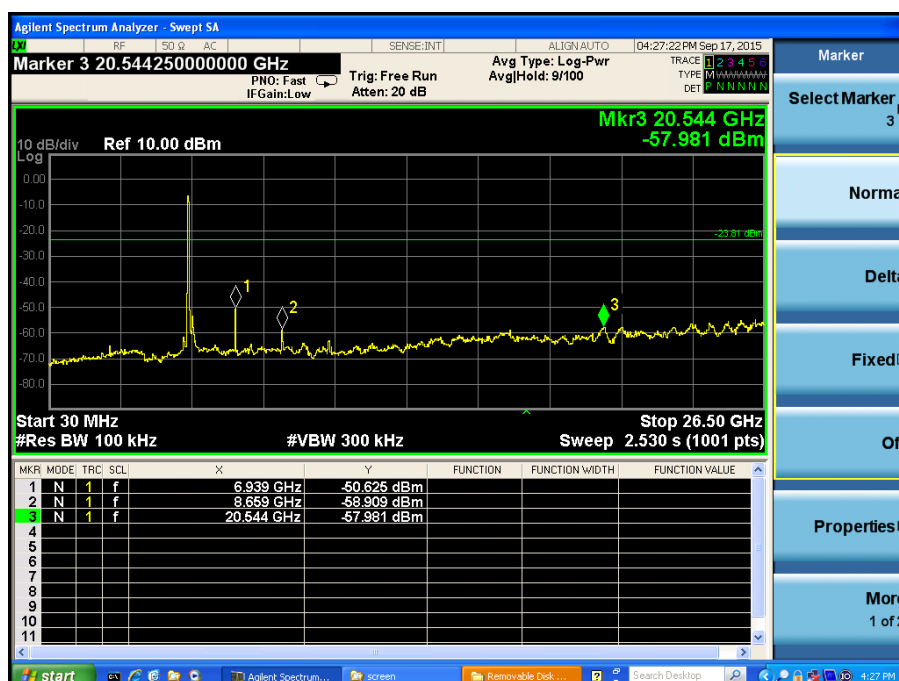
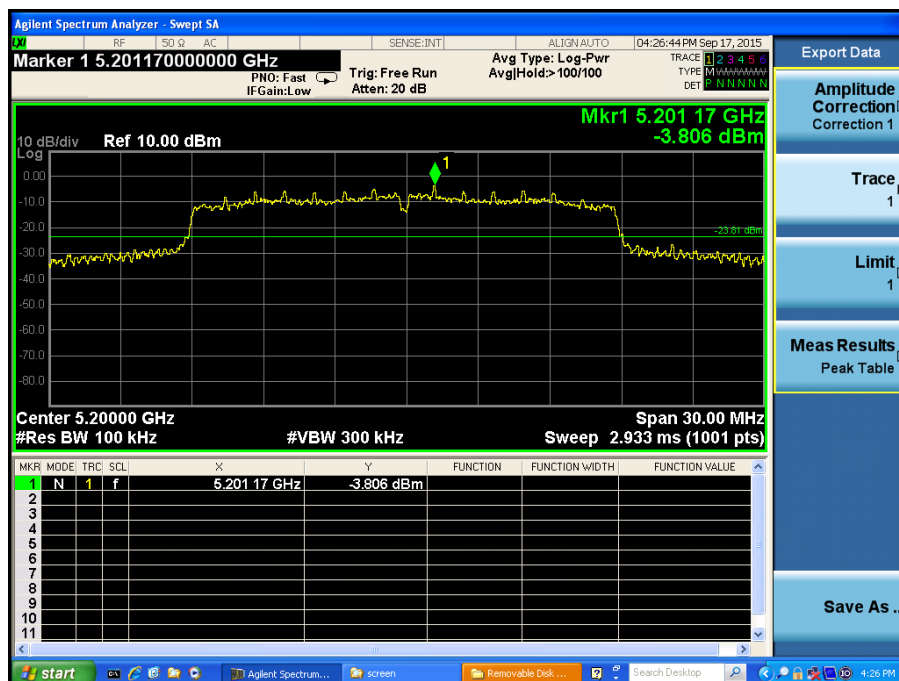
5805MHz



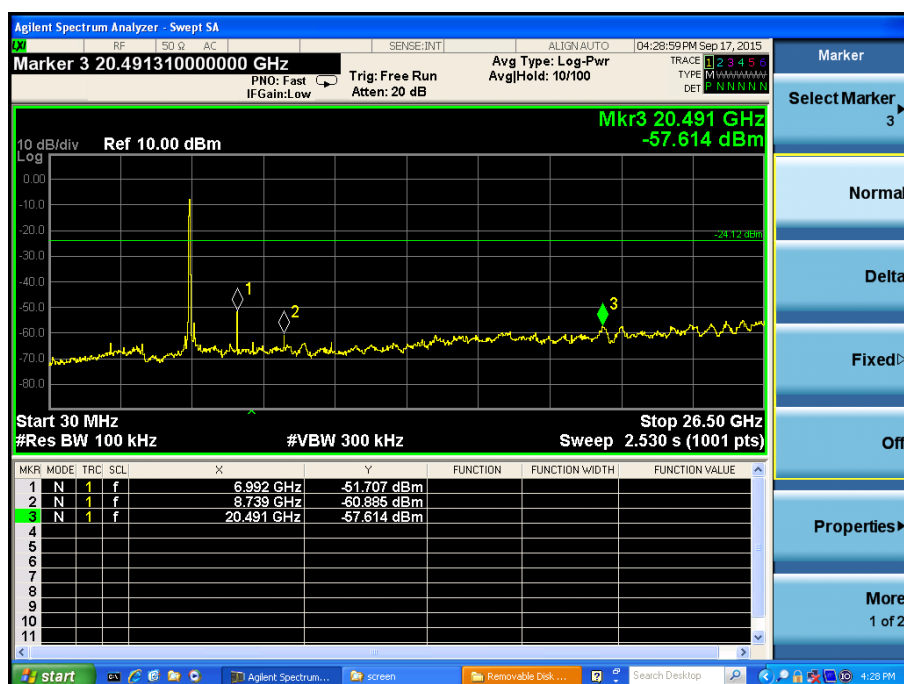
802.11n-HT20 Bandedge (Conducted)  
5180MHz



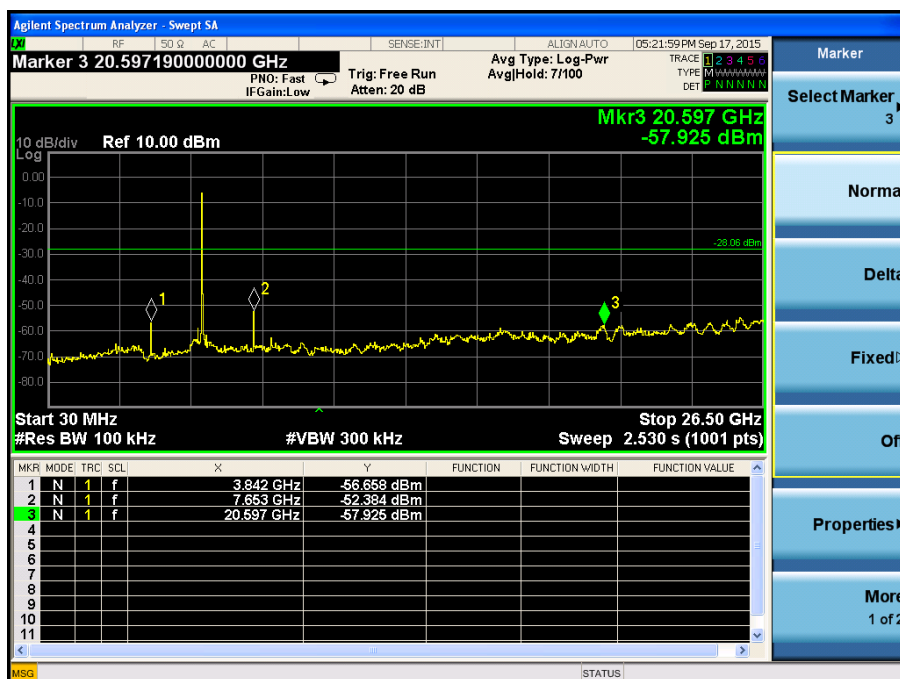
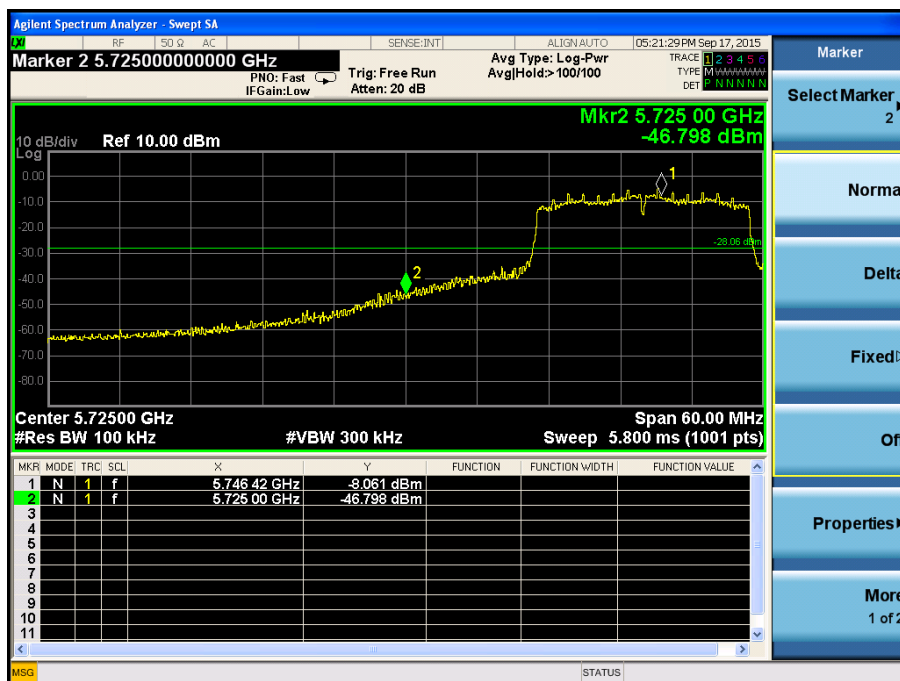
5200MHz



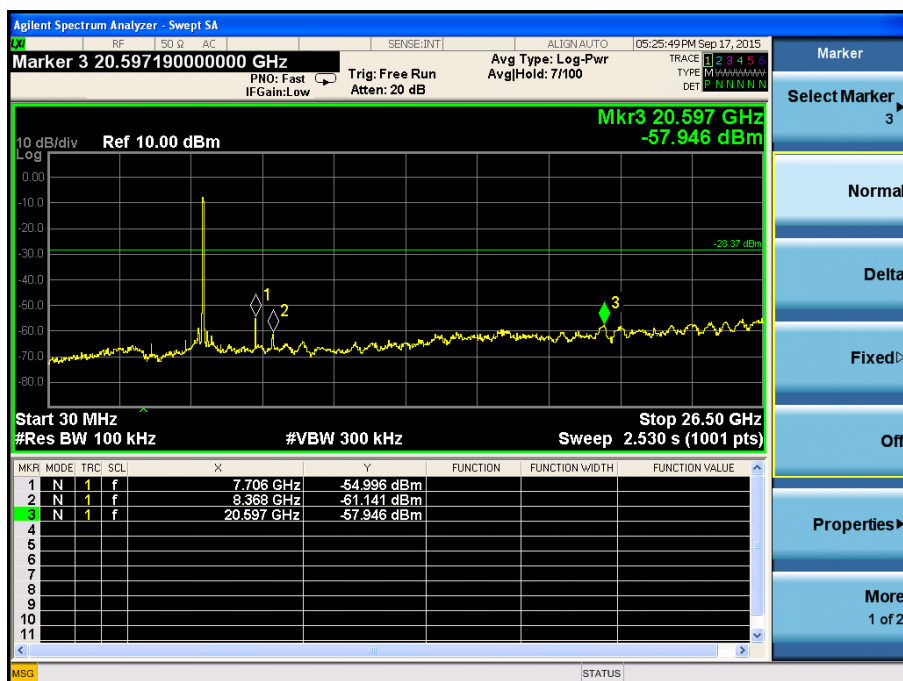
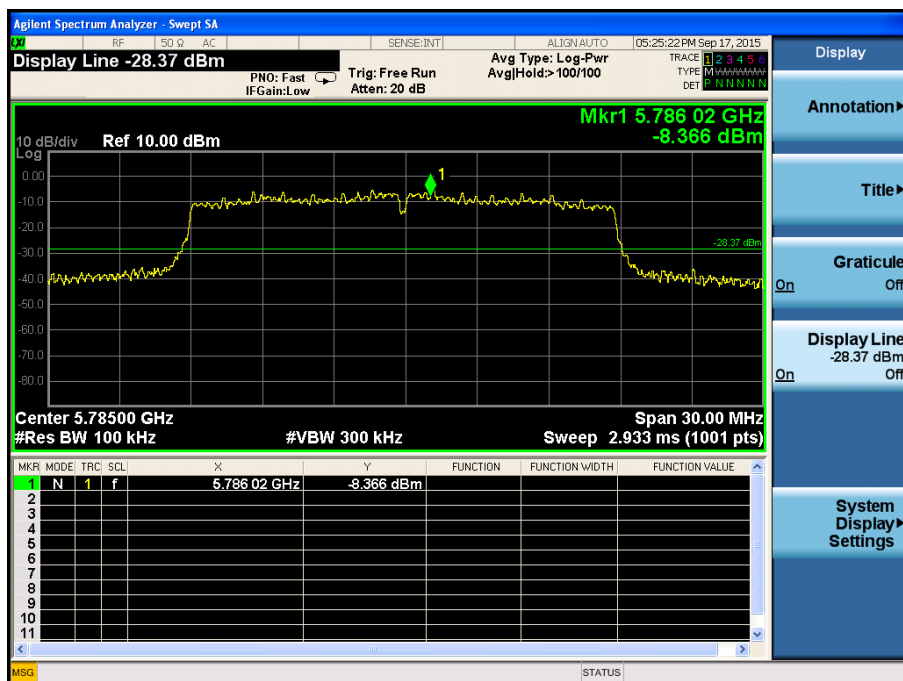
5240MHz



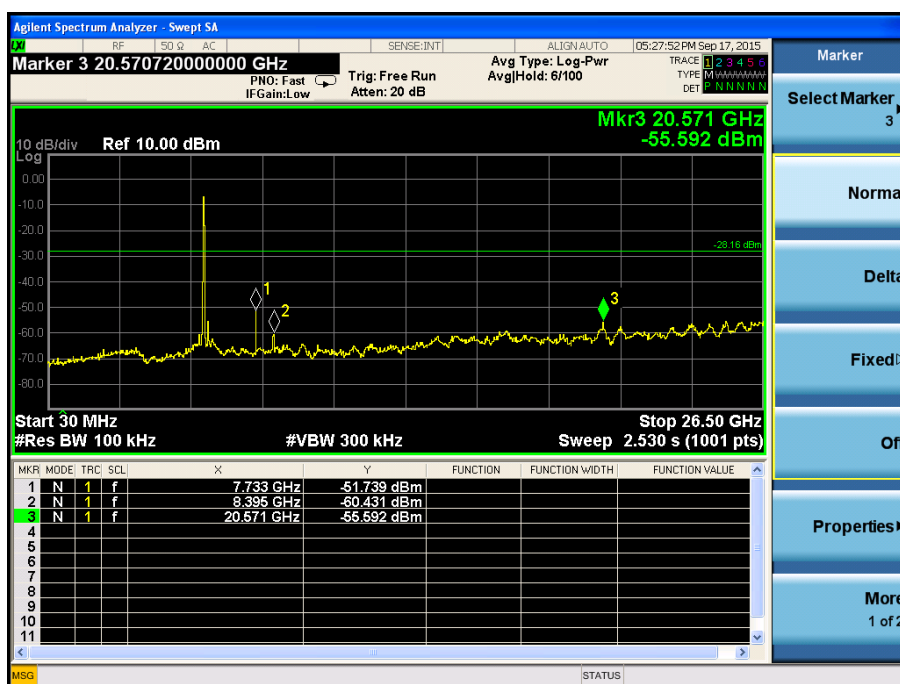
5745MHz



5785MHz



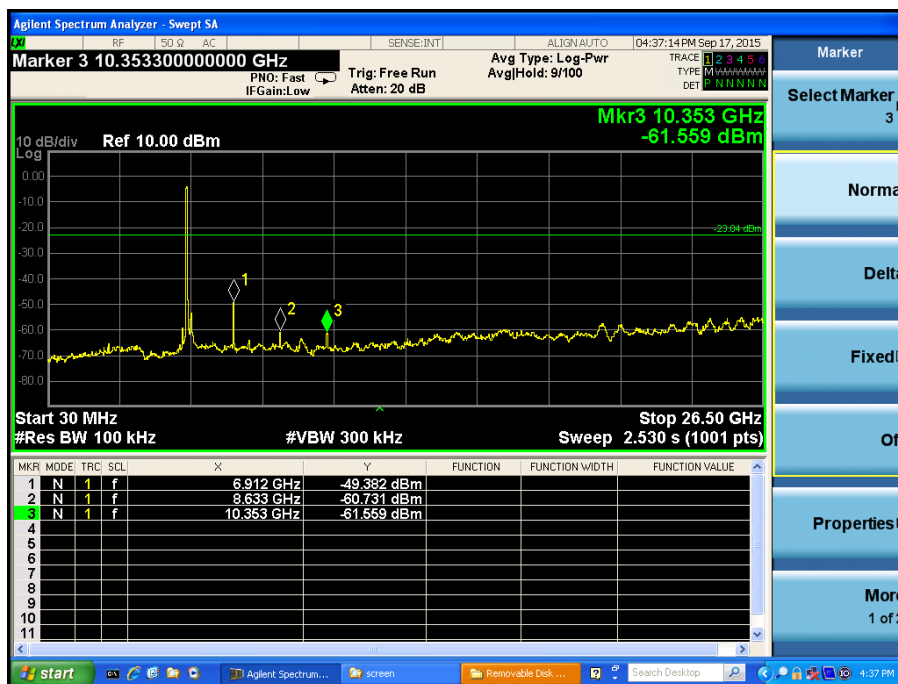
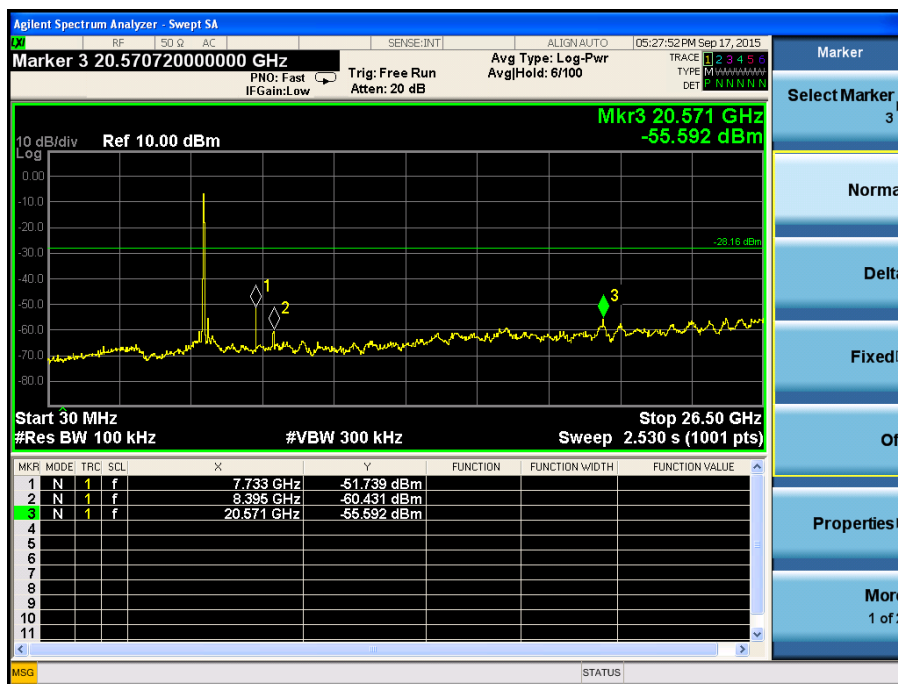
5805MHz



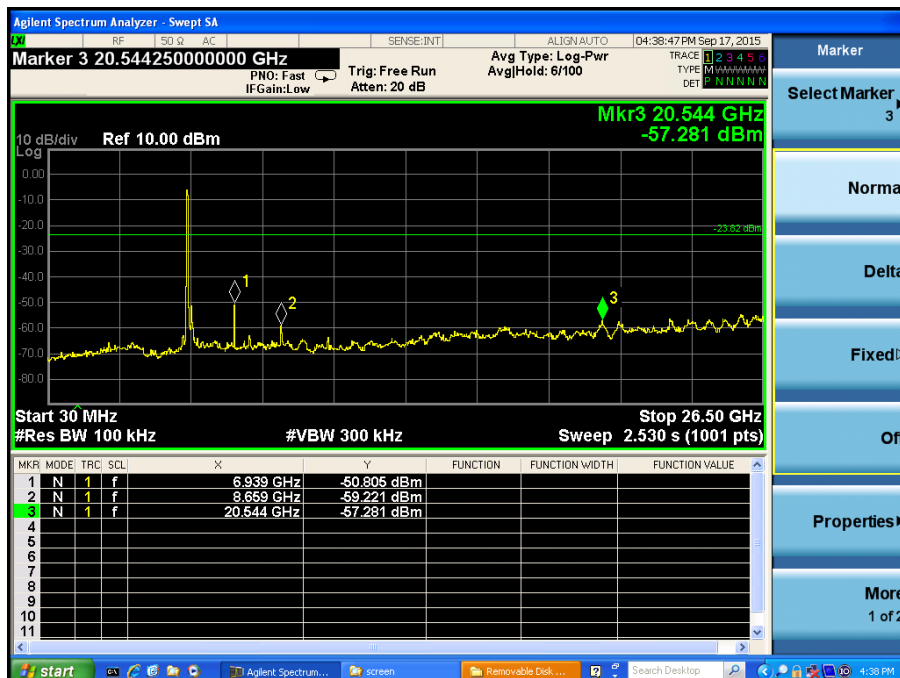
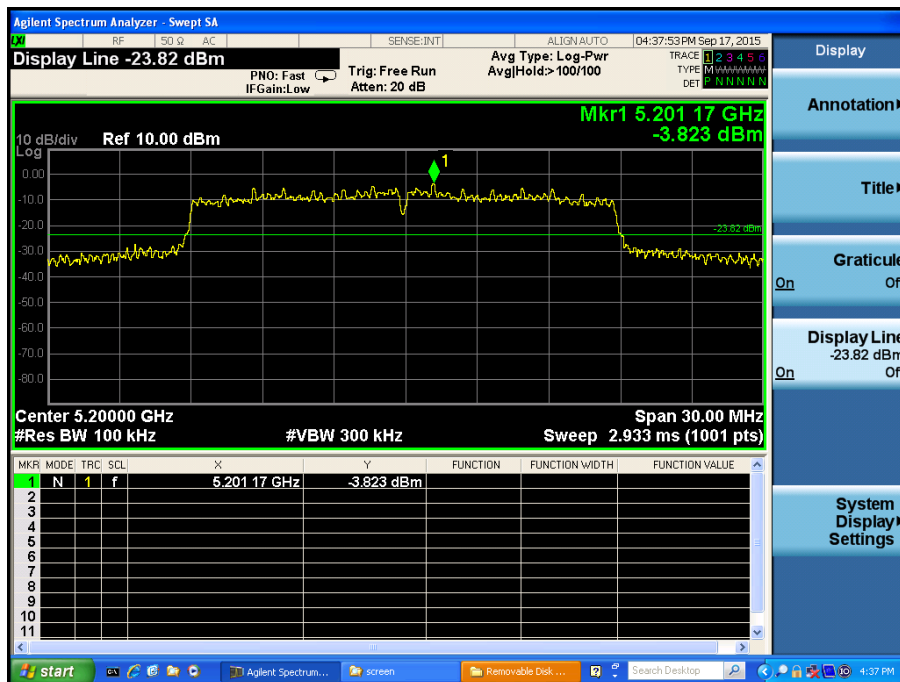


802.11ac Bandedge (Conducted)

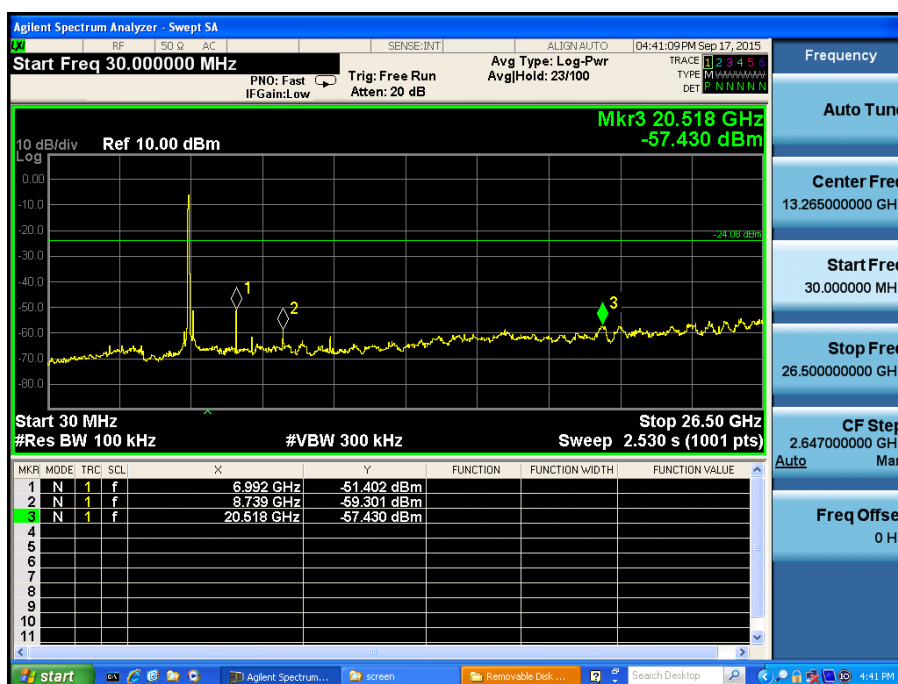
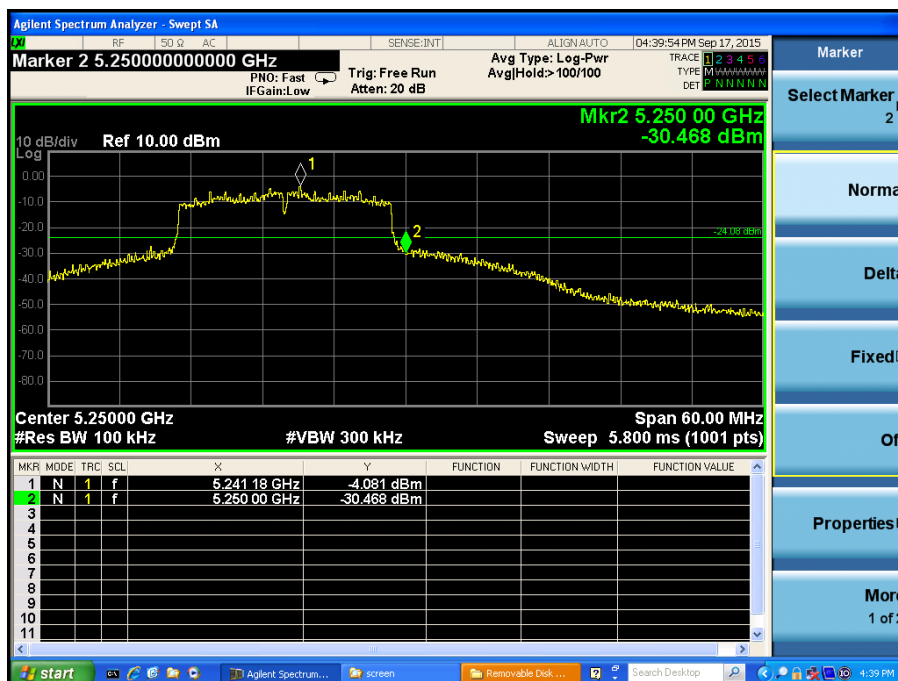
5180MHz



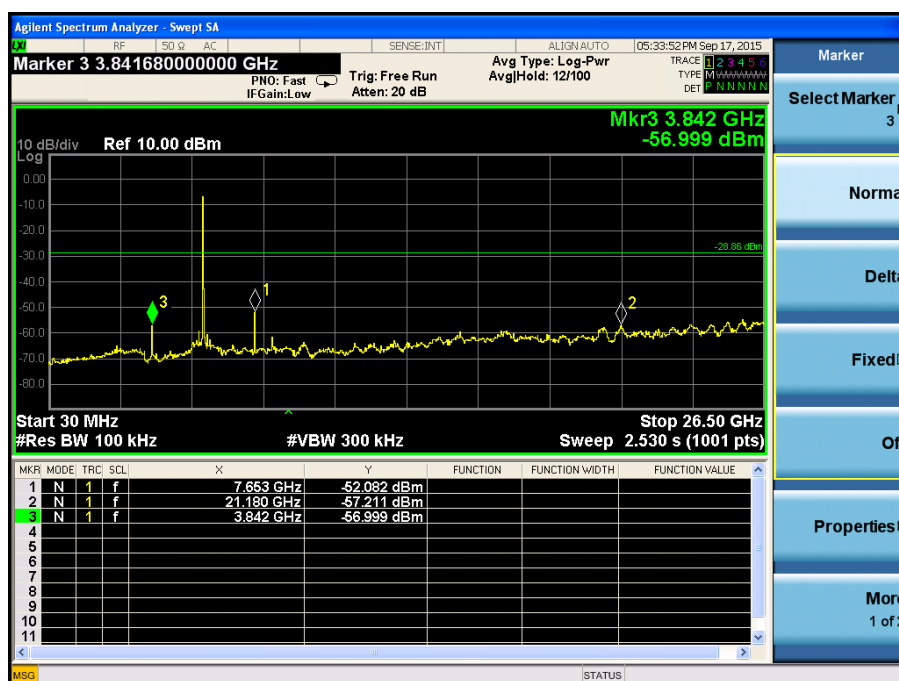
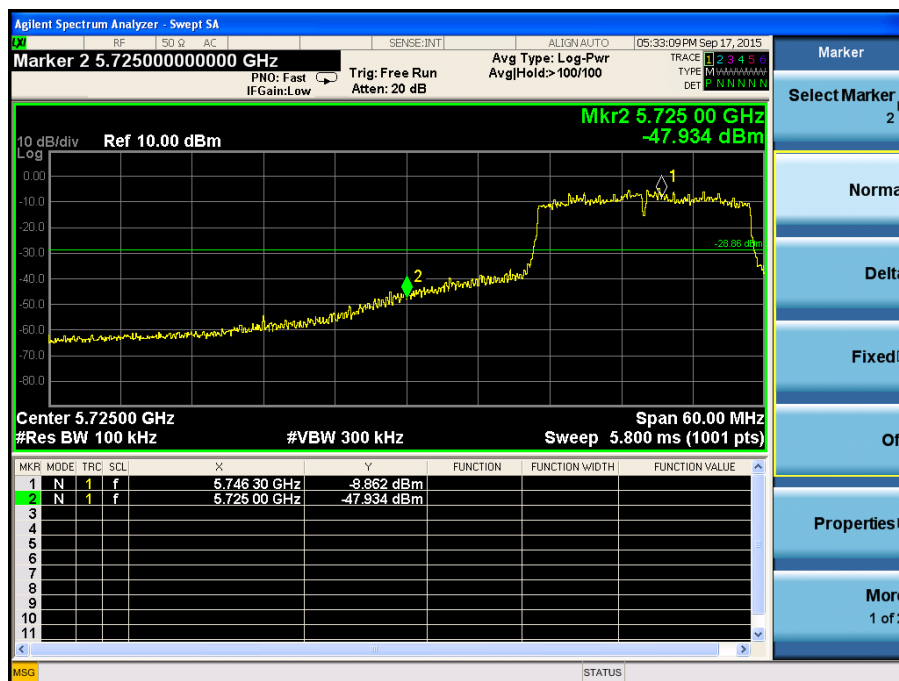
5200MHz



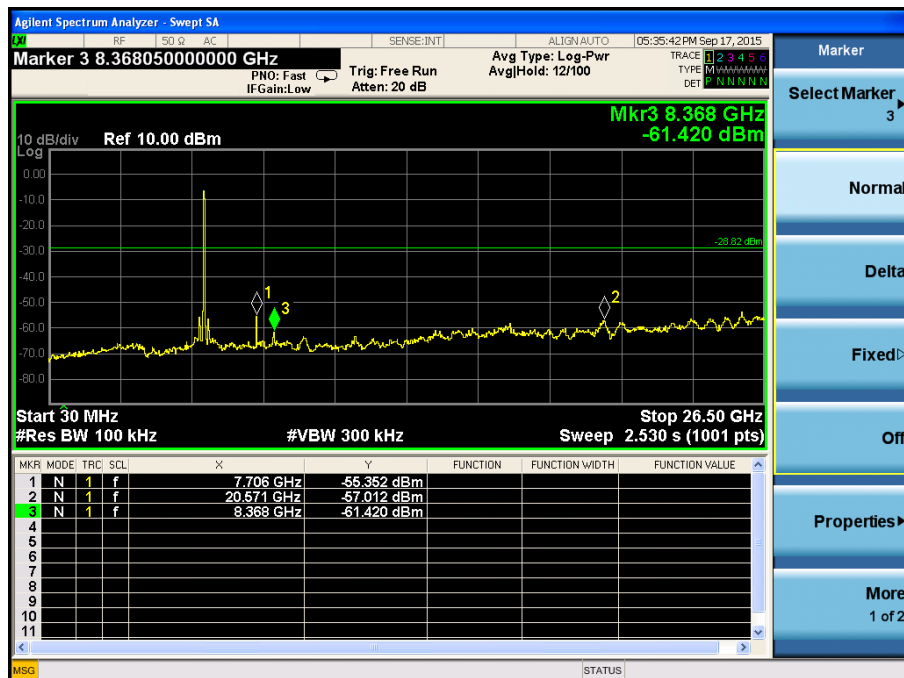
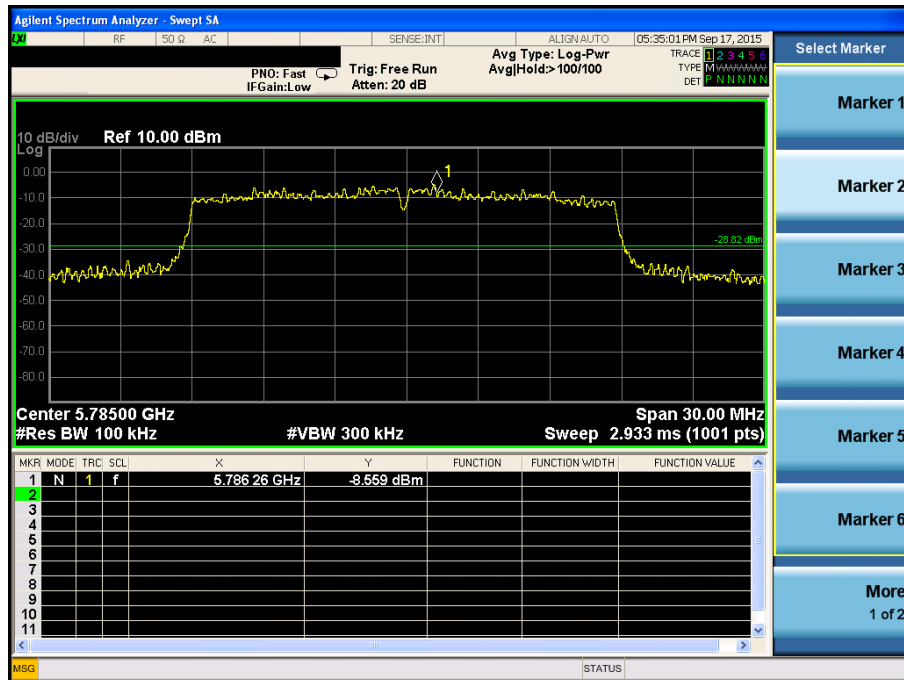
5240MHz



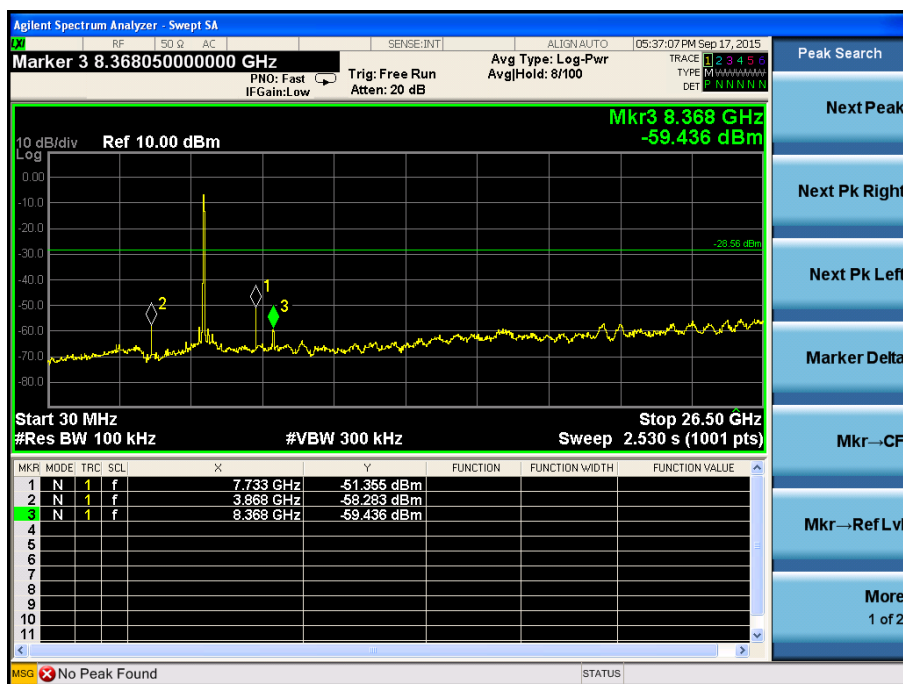
5745MHz



5785MHz



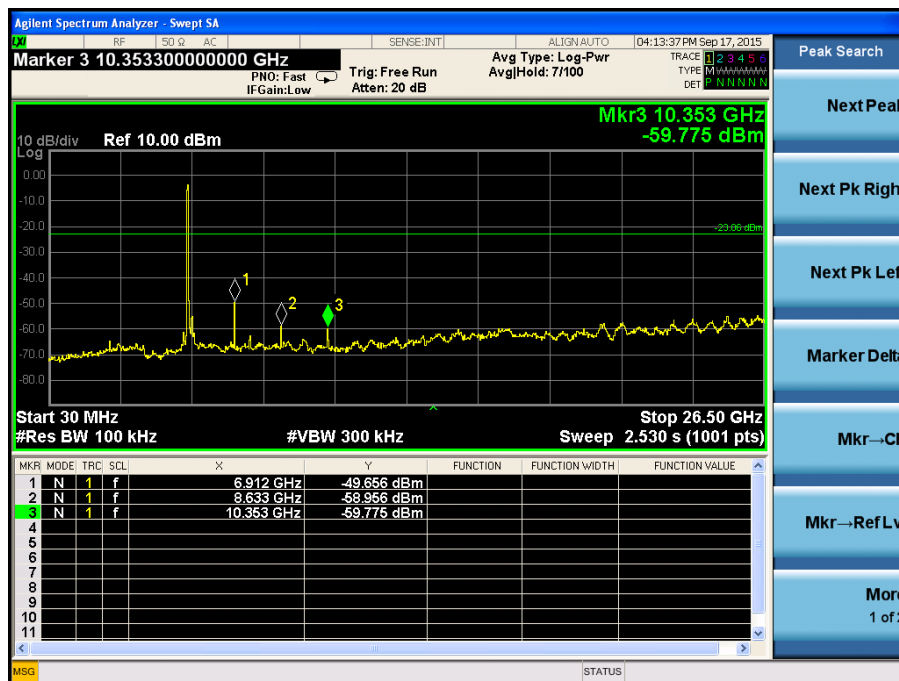
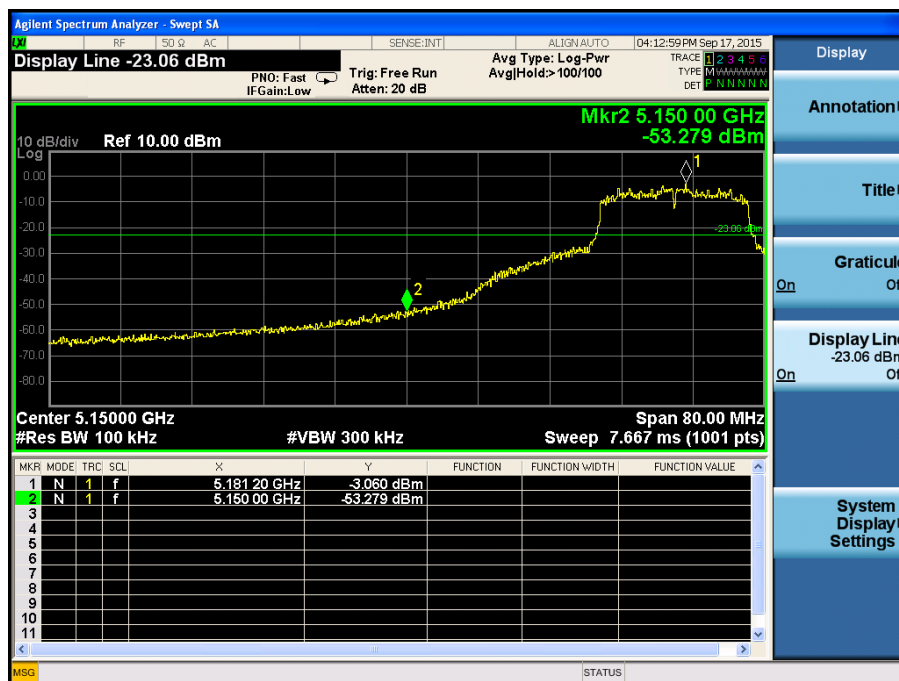
5805MHz



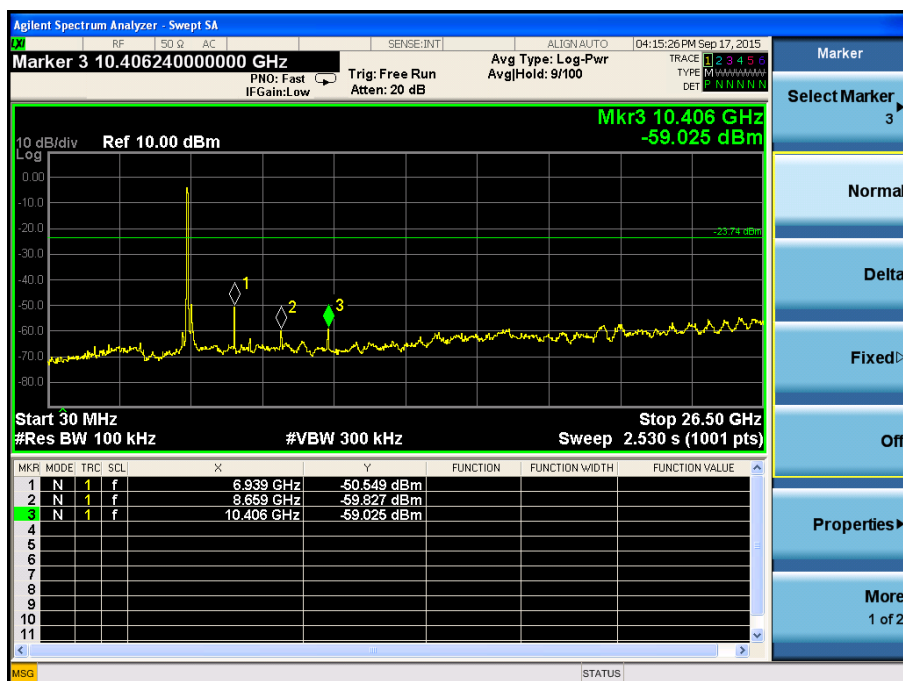
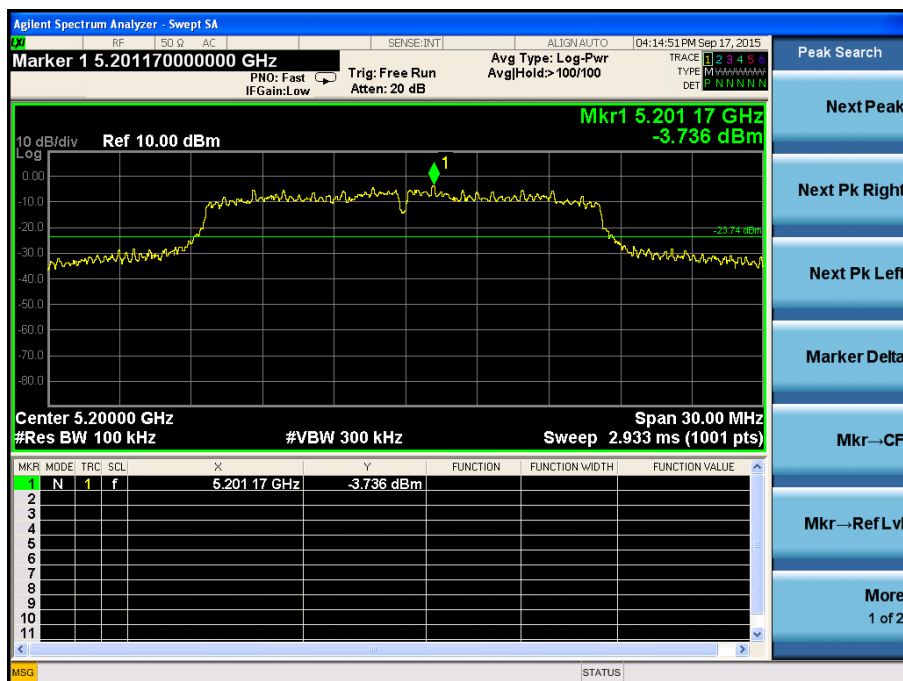
## Antenna 2

802.11a Bandedge (Conducted)

5180MHz

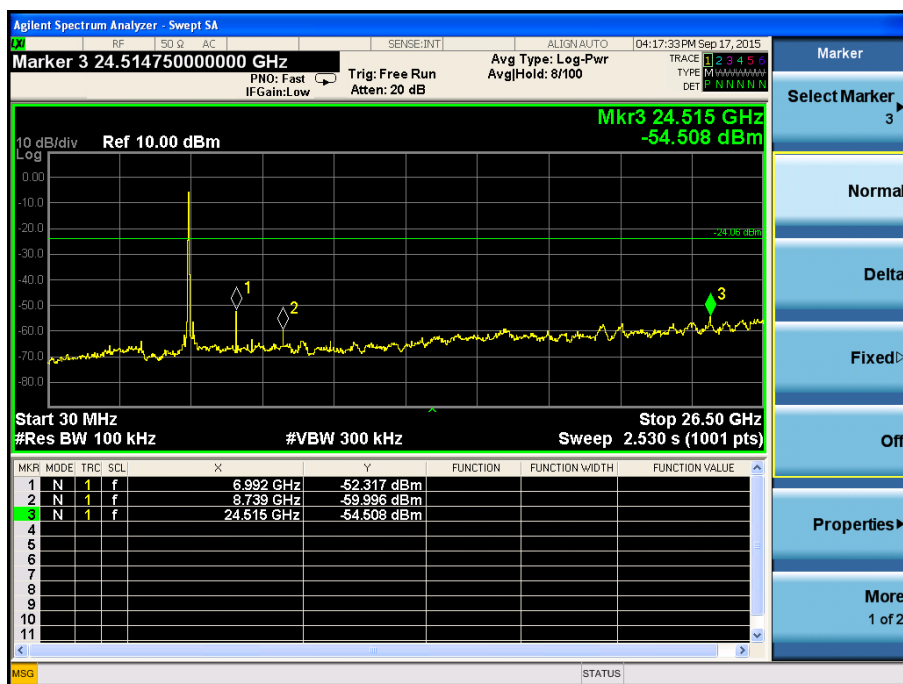


5200MHz

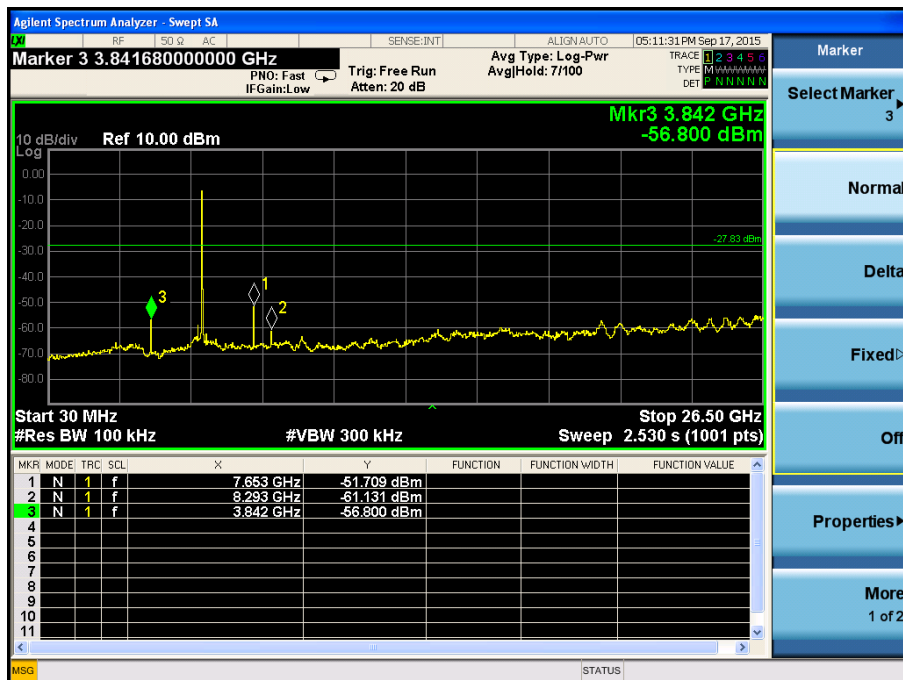
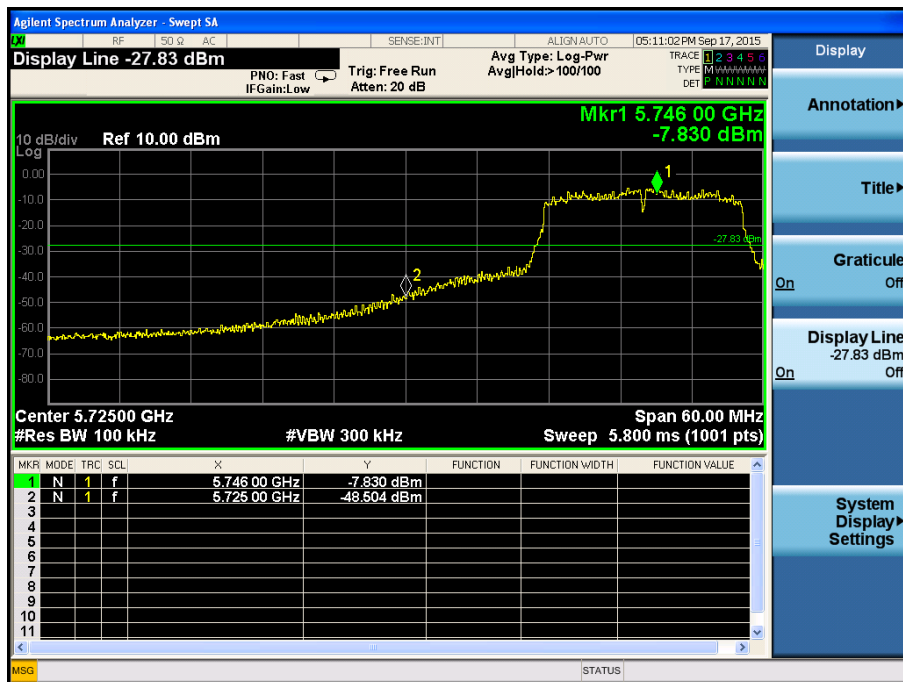




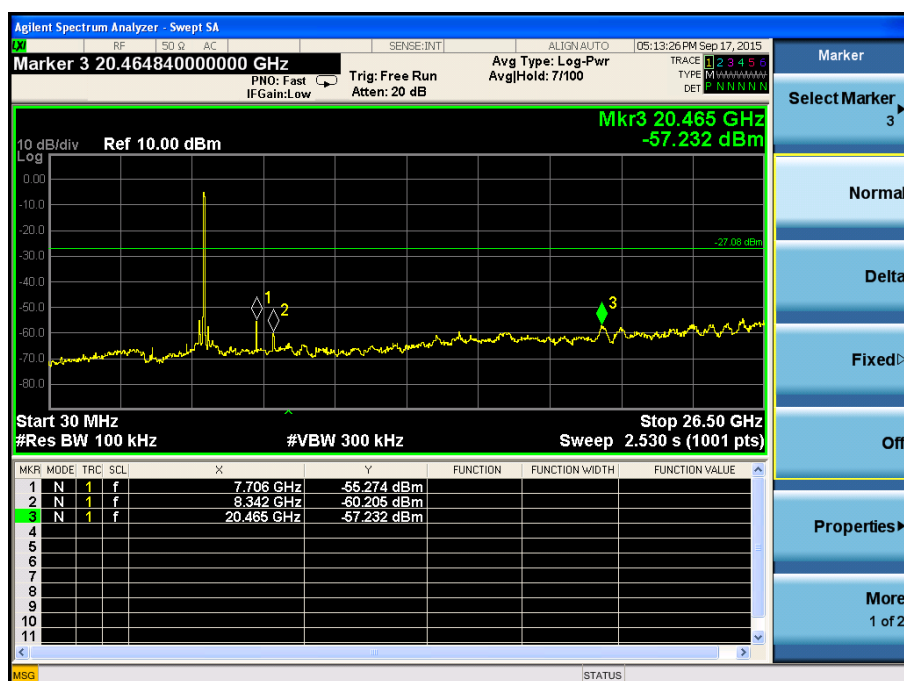
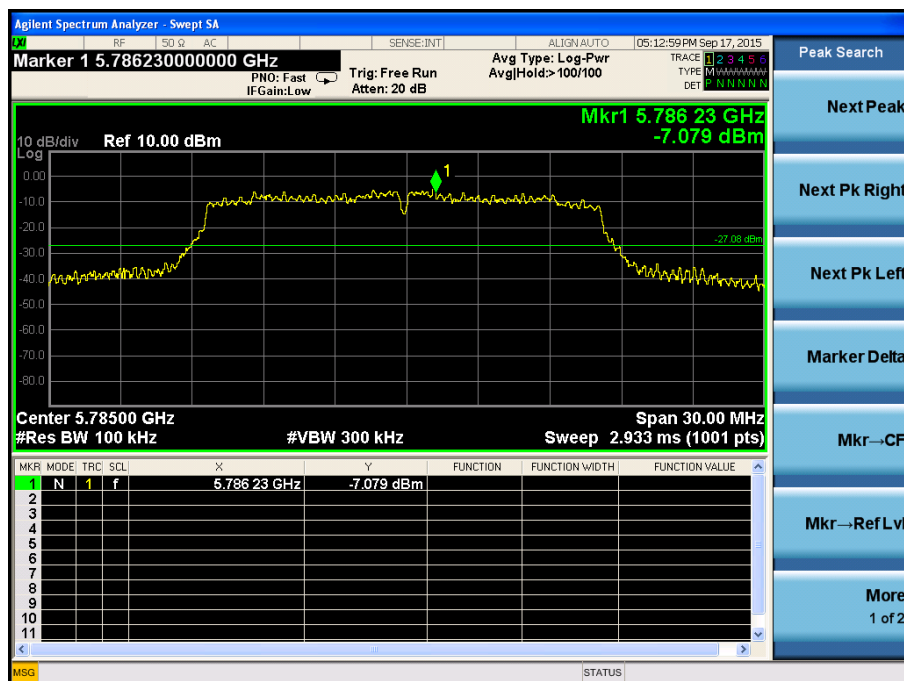
5240MHz



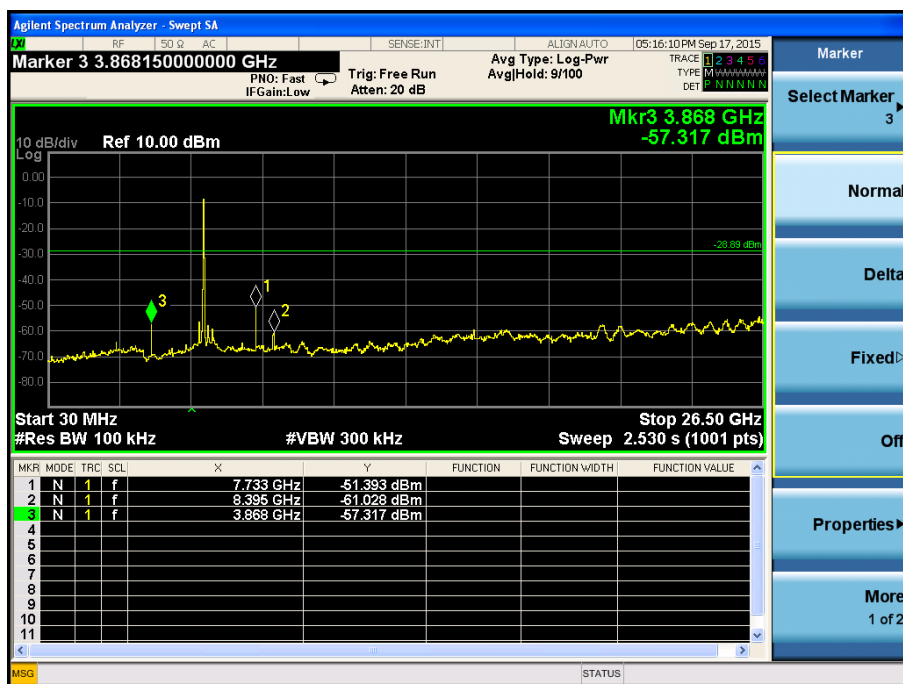
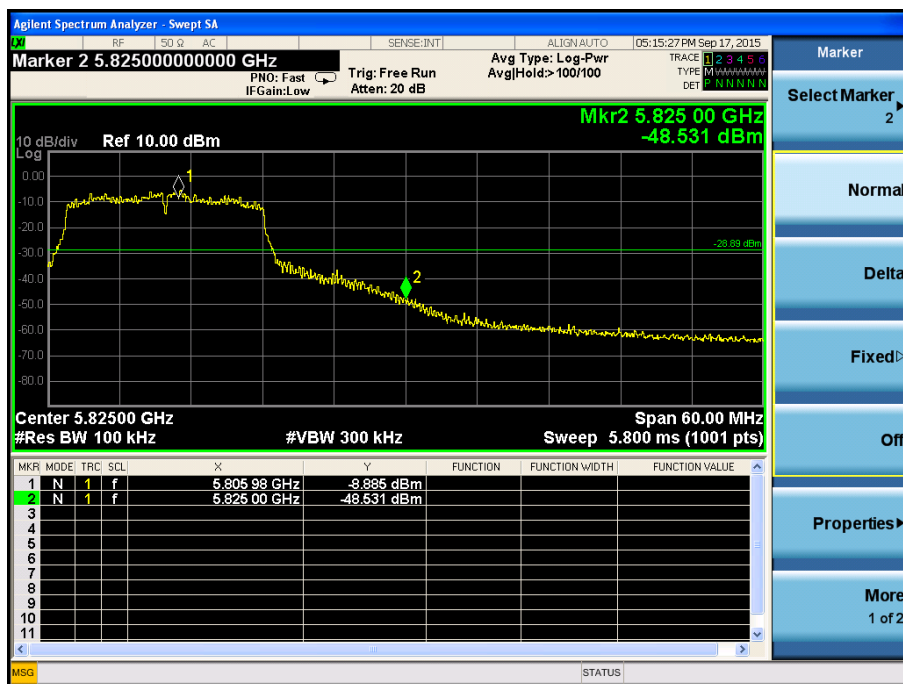
5745MHz



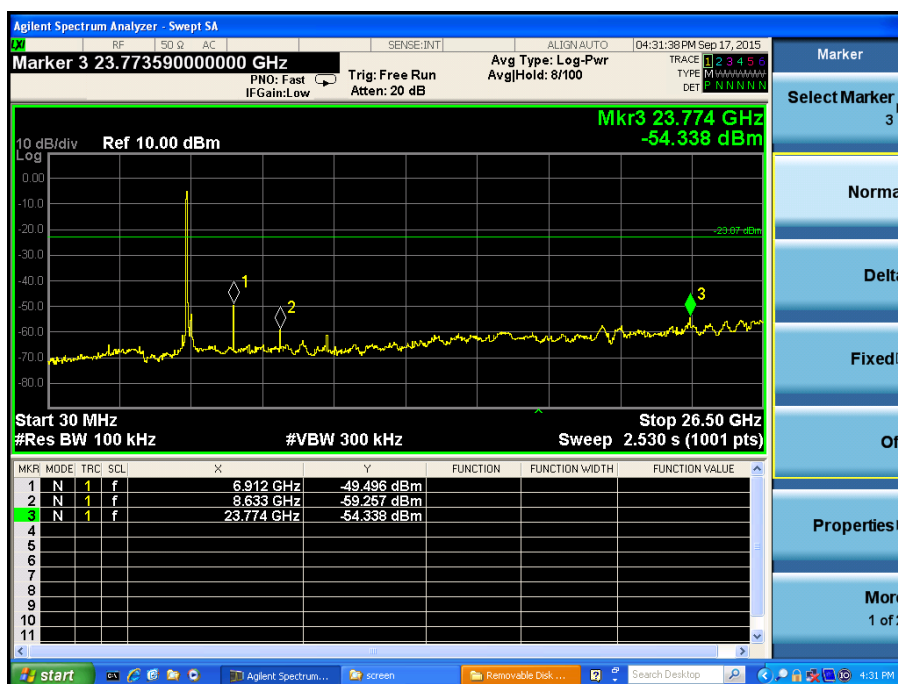
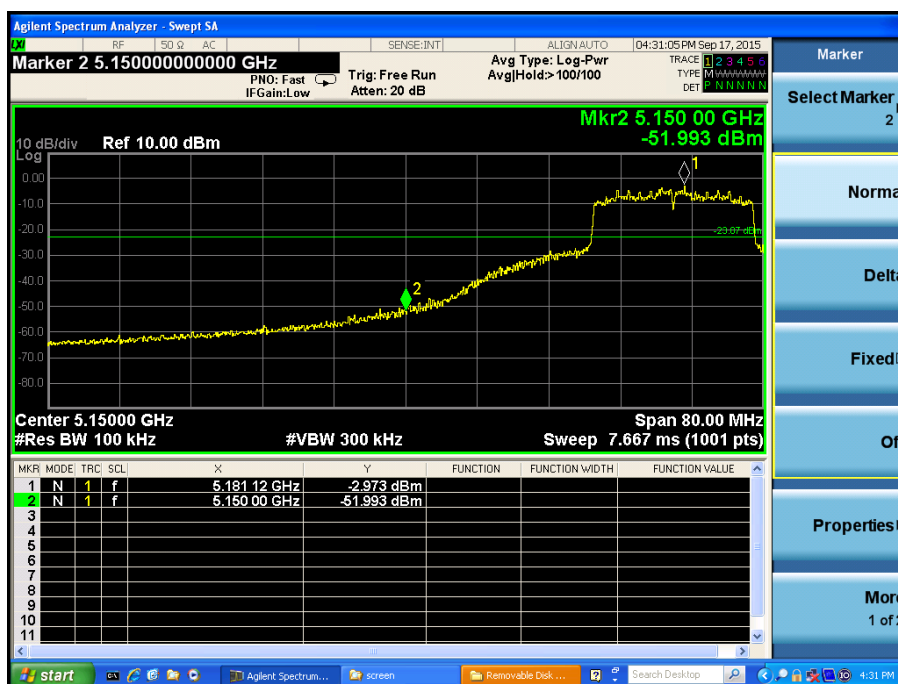
5785MHz



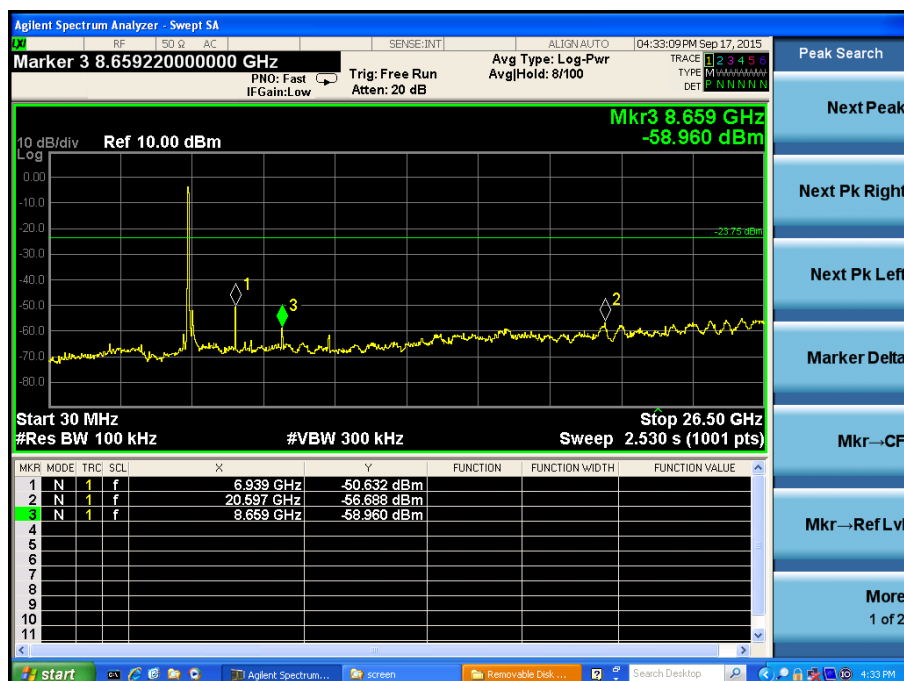
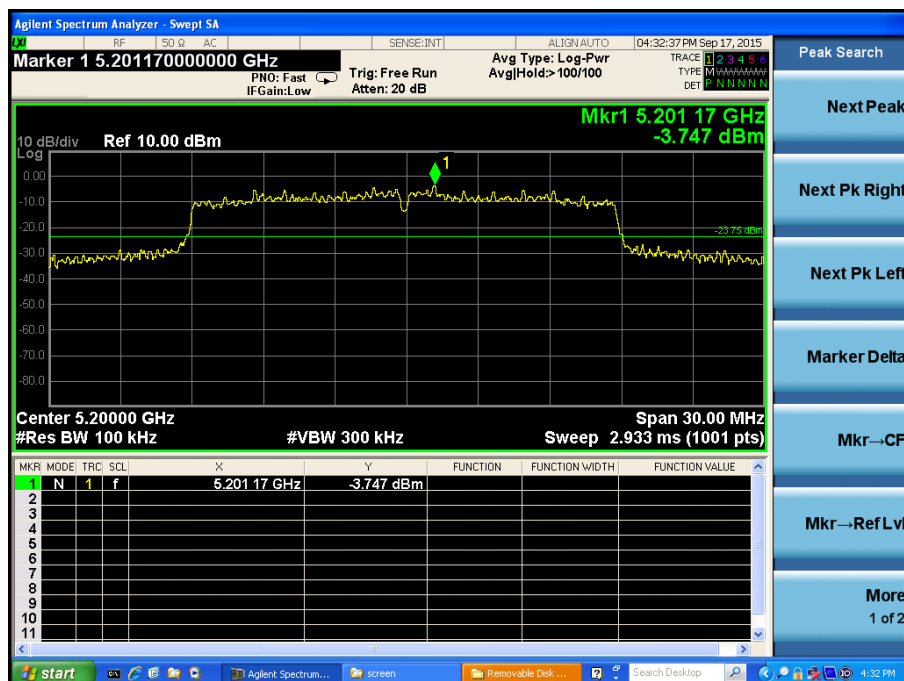
5805MHz



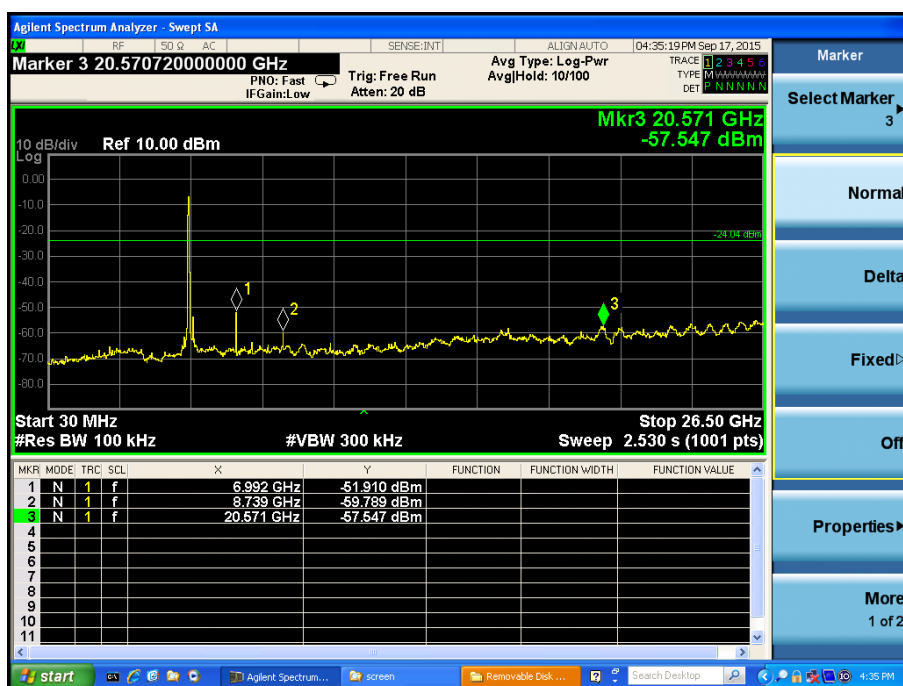
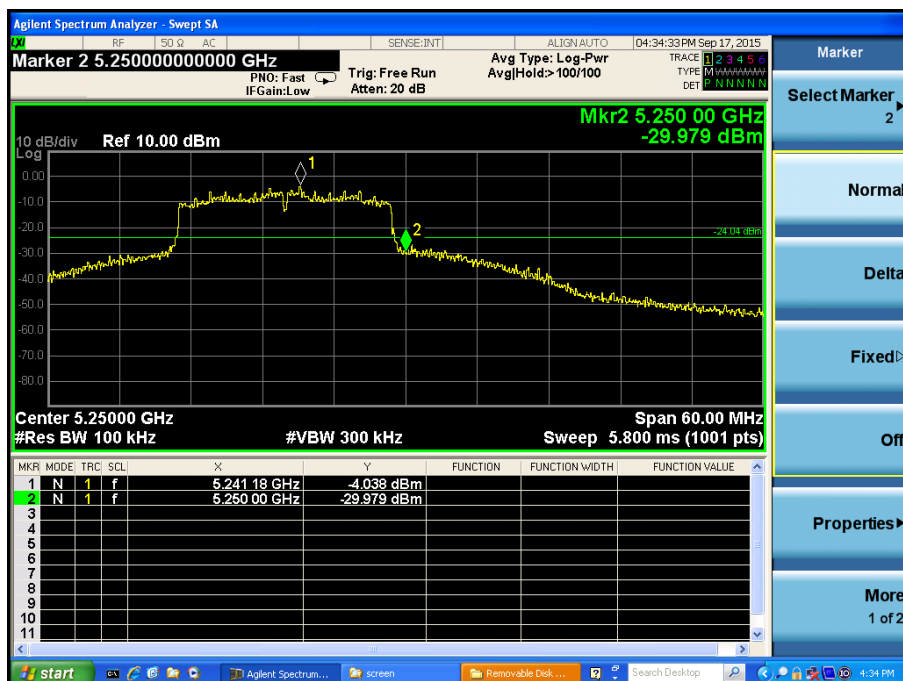
802.11n-HT20 Bandedge (Conducted)  
5180MHz



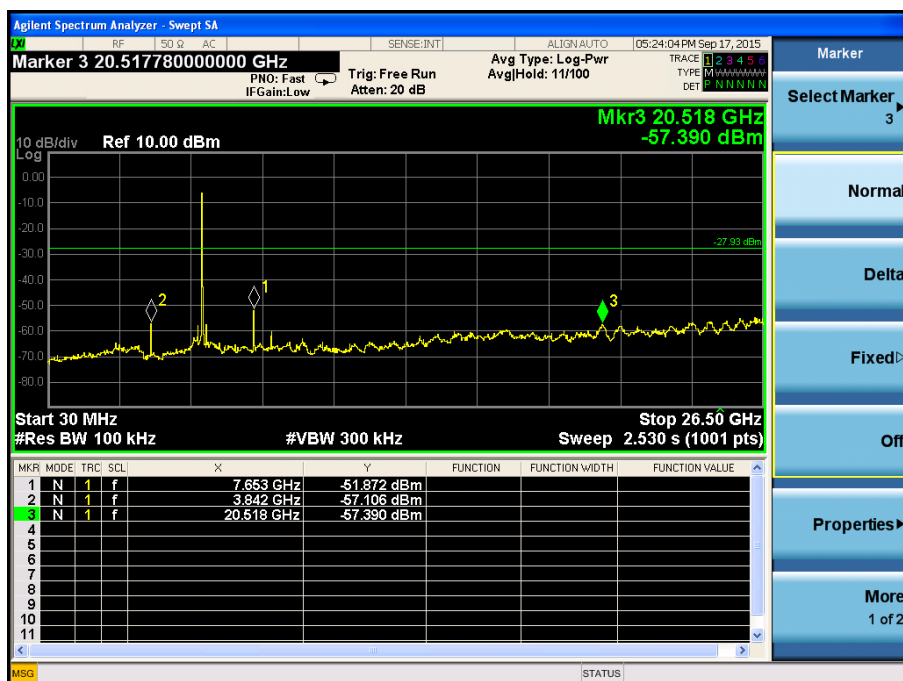
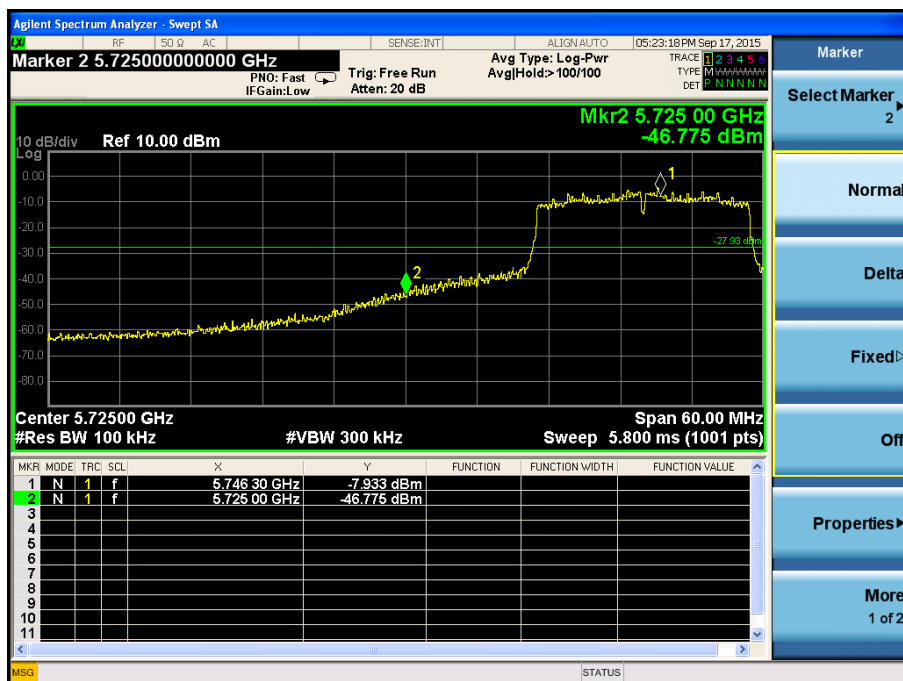
5200MHz



5240MHz

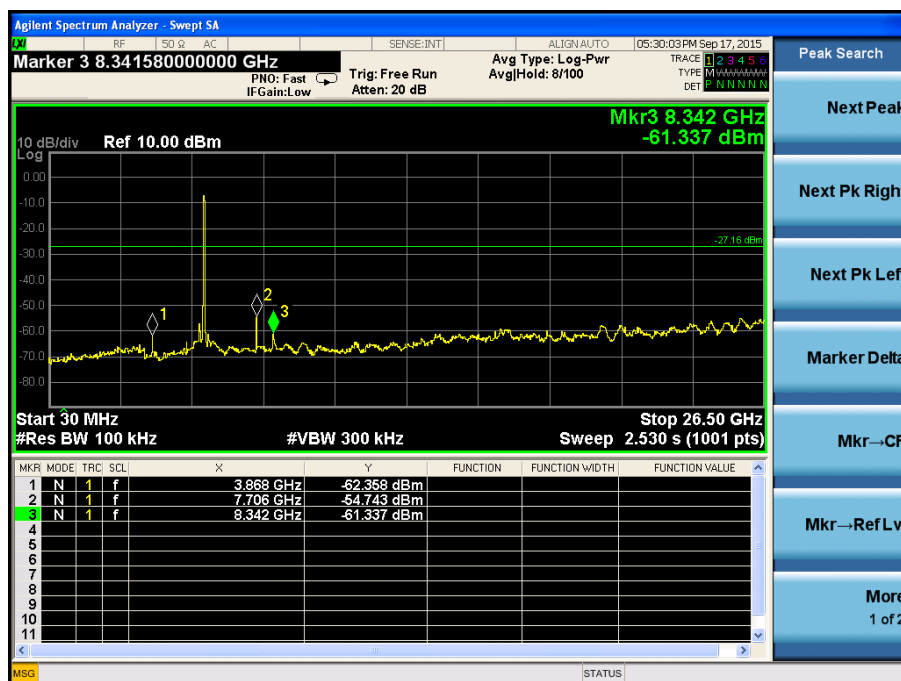
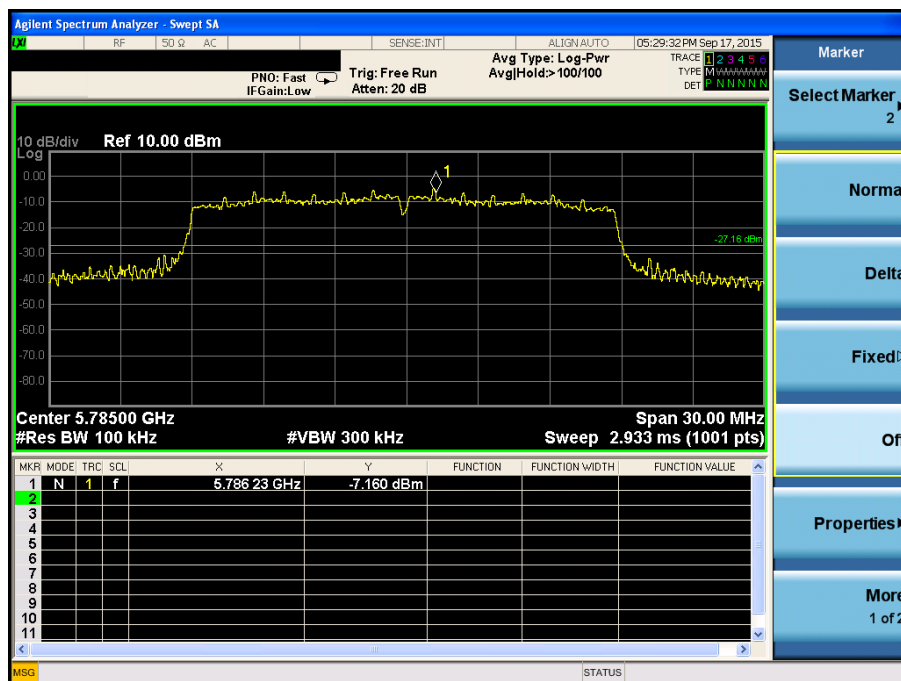


5745MHz

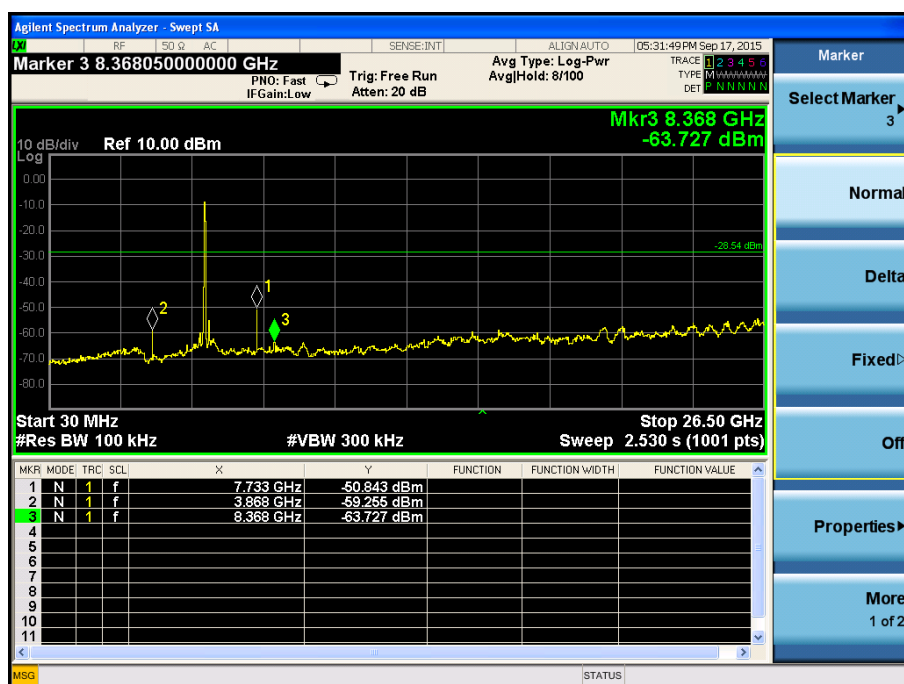
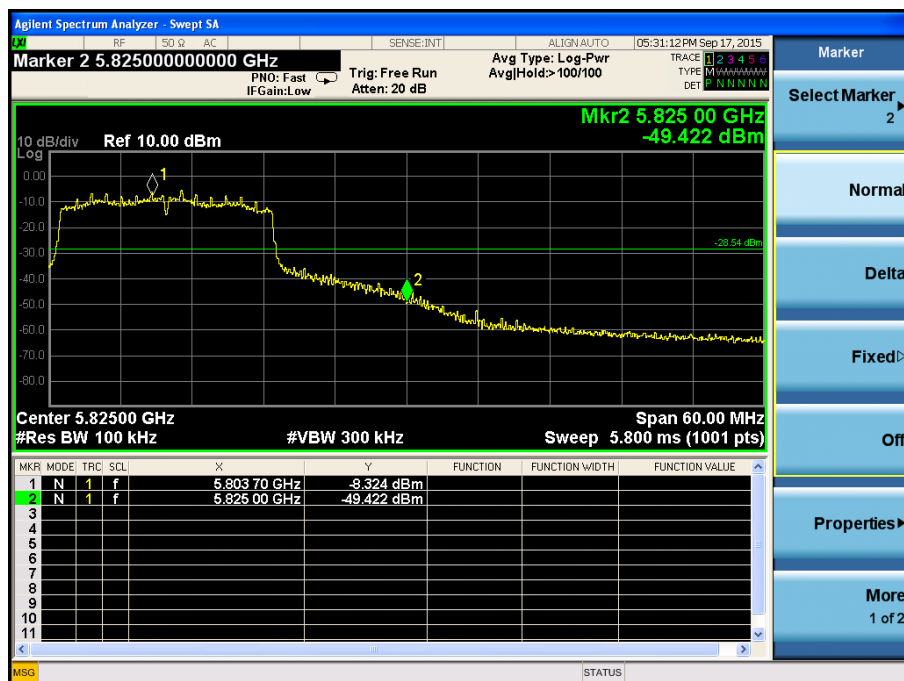




5785MHz

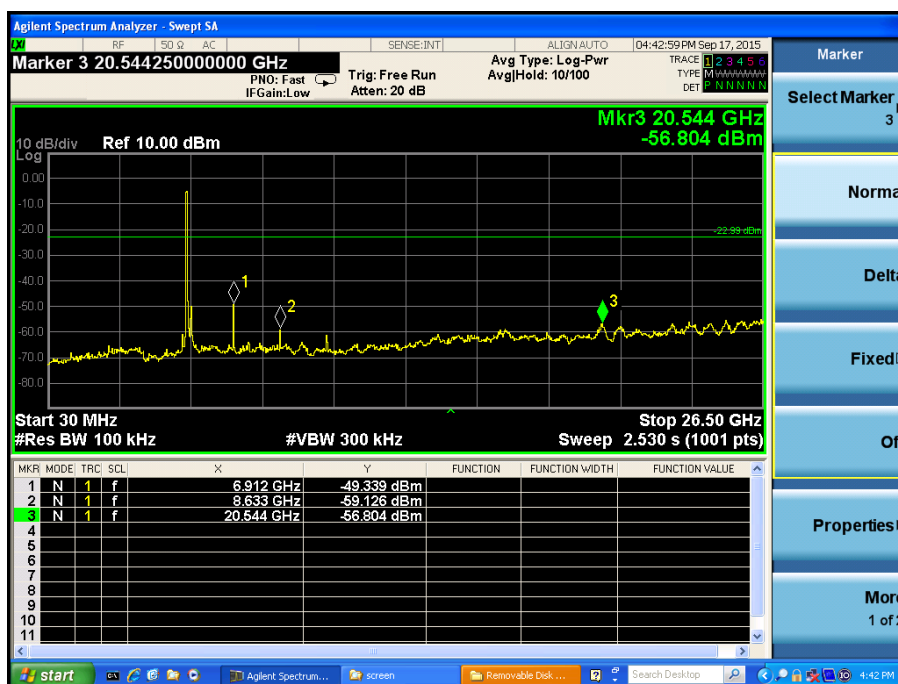
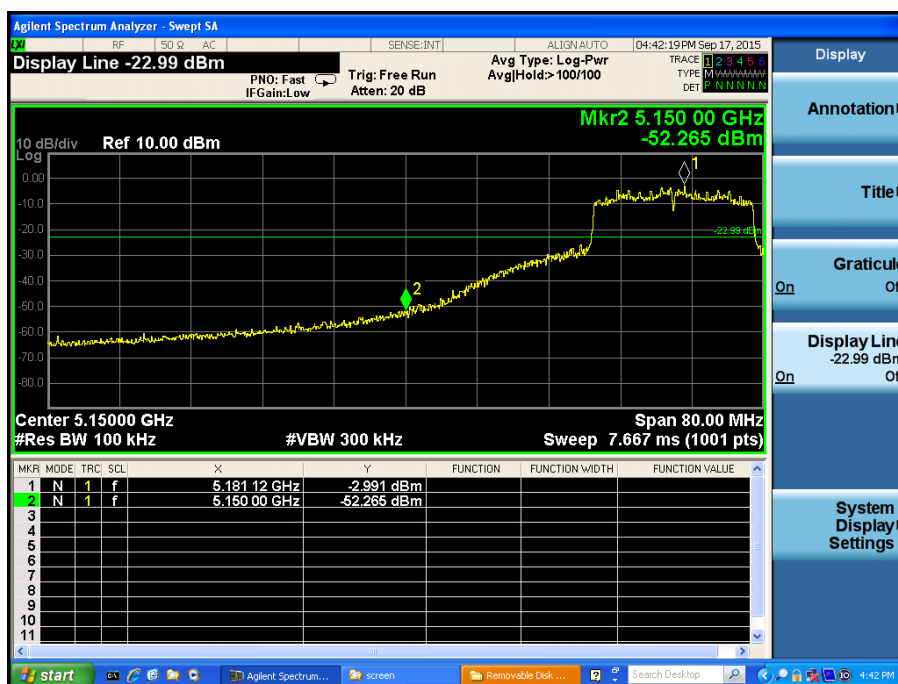


5805MHz

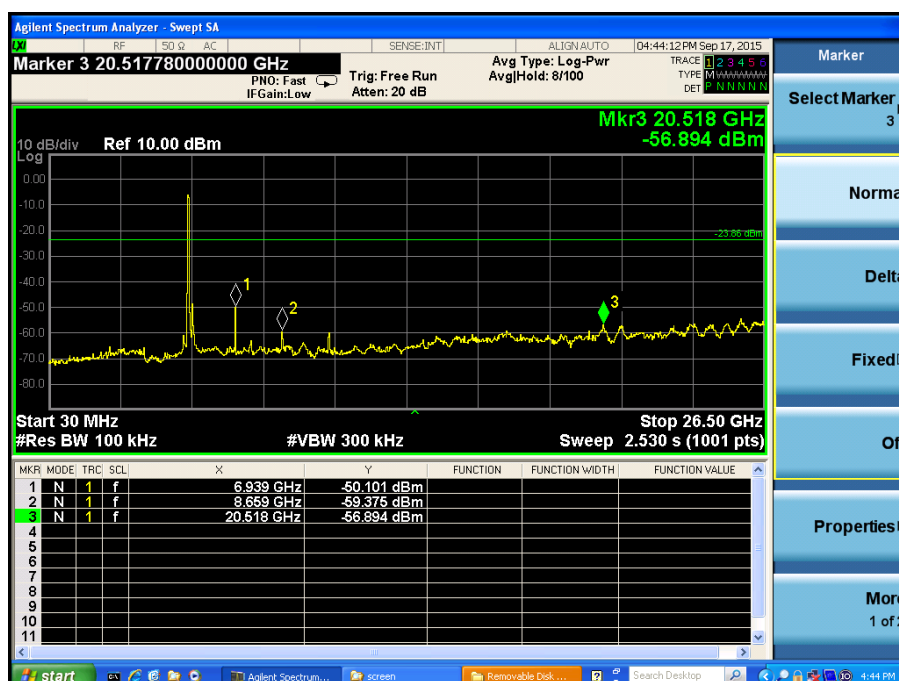
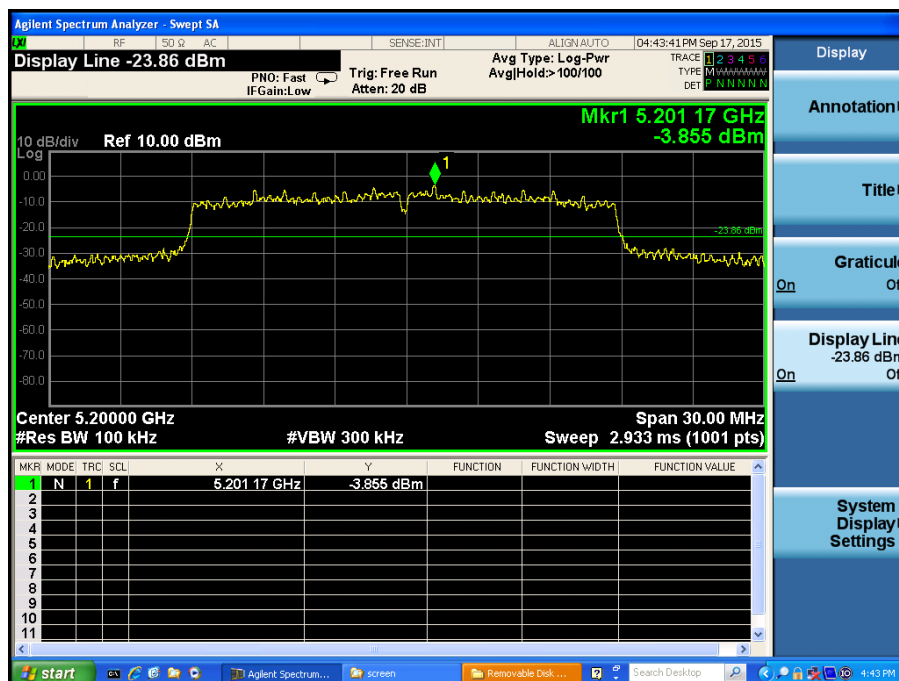


802.11ac Bandedge (Conducted)

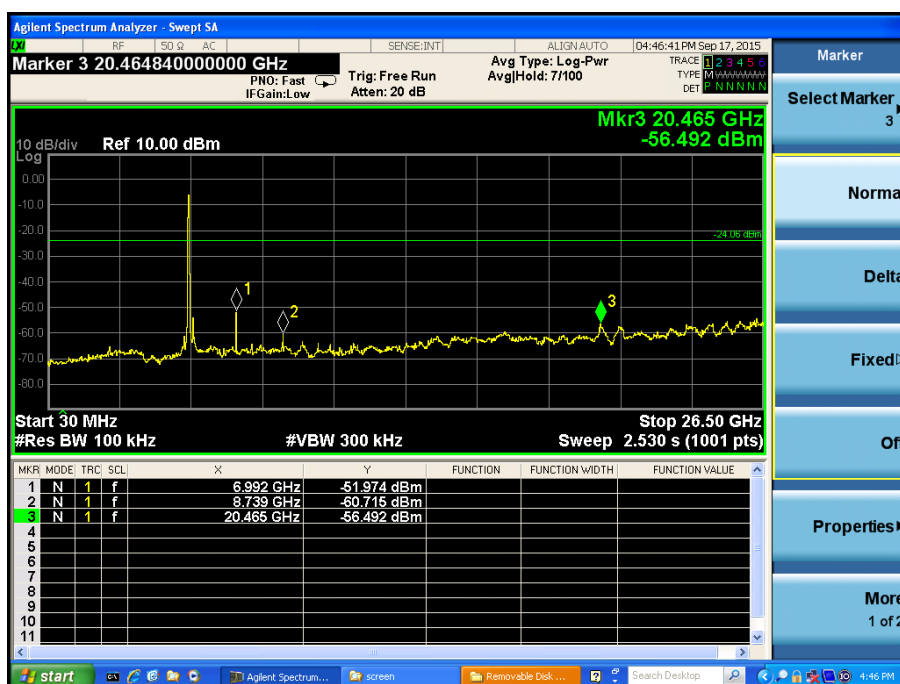
5180MHz



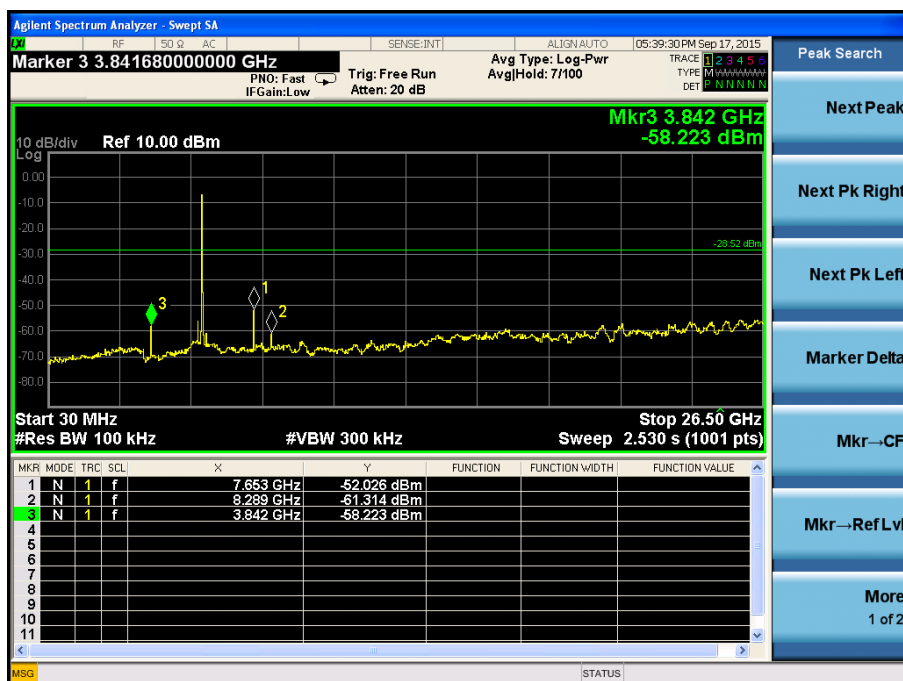
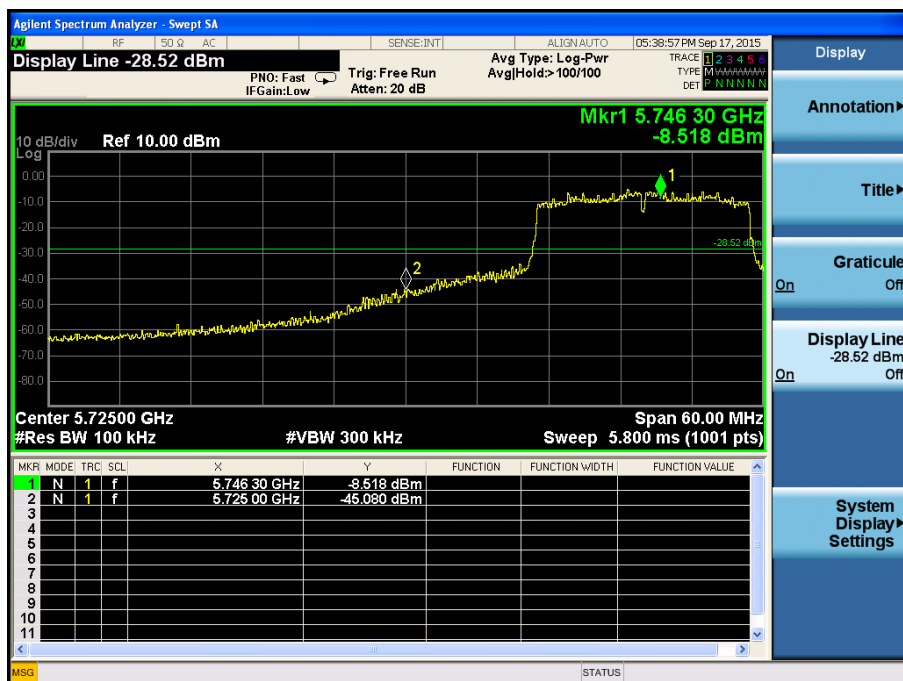
5200MHz



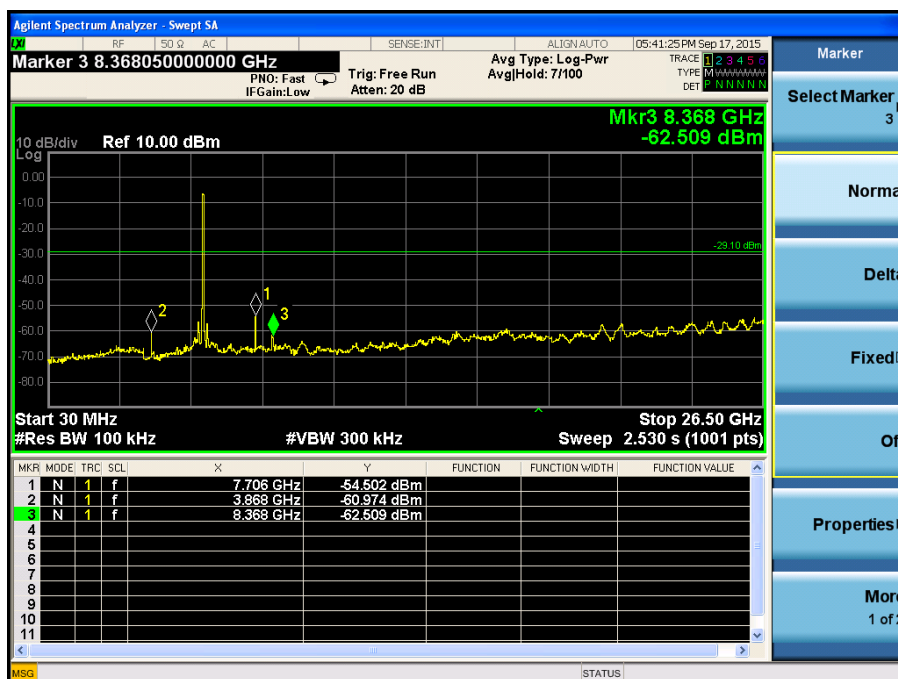
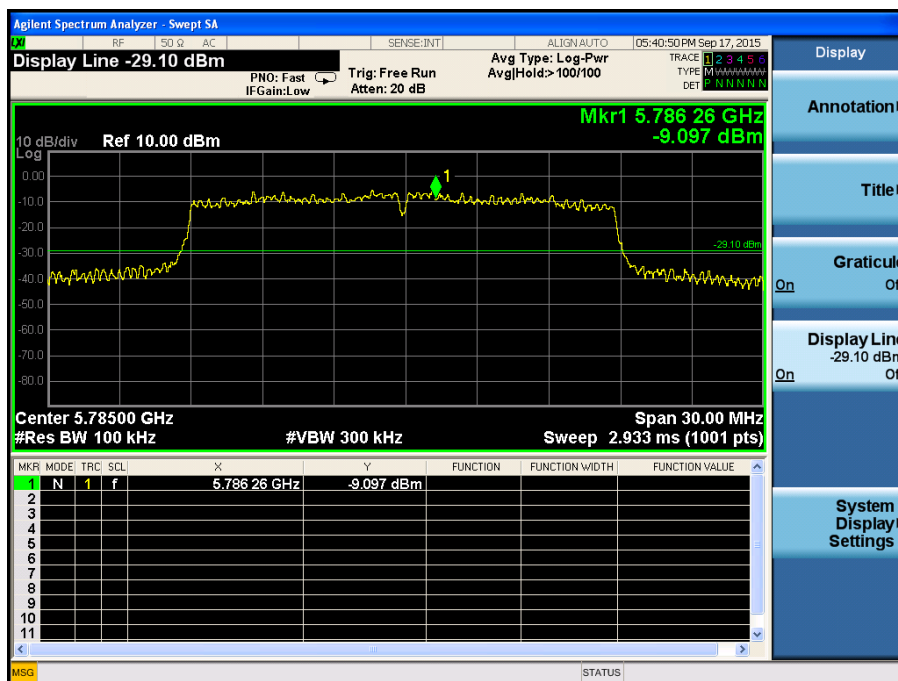
5240MHz



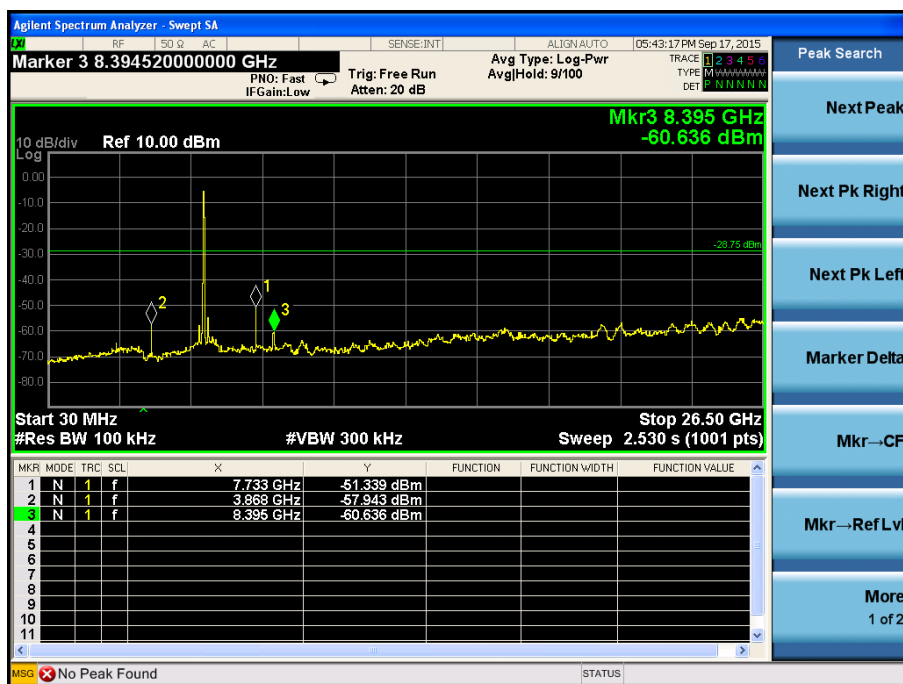
5745MHz



5785MHz



5805MHz





## 11. Frequency Stability

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### 11.1 Standard Applicable

According to §15.407(g), Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

### 11.2 Test Procedure

According to §2.1055, the following test procedure was performed.

The Frequency Stability is measured directly with a Frequency Domain Analyzer. Frequency Deviation in ppm is calculated from the measured peak to peak value.

The Carrier Frequency Stability over Power Supply Voltage and over Temperature is measured with a Frequency Domain Analyzer in histogram mode

| Temperature:   | Supply Voltage                      |
|----------------|-------------------------------------|
| 20°C           | 85-115% of declared nominal voltage |
| -30°C to +50°C | Normal                              |

### 11.3 Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 20°C      |
| Relative Humidity: | 54%       |
| ATM Pressure:      | 1011 mbar |

### 11.4 Summary of Test Results/Plots

5150-5250MHz

802.11a

| Reference Frequency(Middle Channel): 5200 MHz |                      |                                     |             |
|---|----------------------|-------------------------------------|-------------|
| Environment Temperature (°C)                  | Power Supplied (VDC) | Frequency Measure with Time Elapsed |             |
|   |                      | MCF (Hz)                            | Error (ppm) |
| 50  | 7.4                  | 121                                 | 0.0231      |
| 40  | 7.4                  | 118                                 | 0.0225      |
| 30  | 7.4                  | 116                                 | 0.0221      |
| 20  | 7.4                  | 124                                 | 0.0237      |
| 10  | 7.4                  | 136                                 | 0.0260      |
| 0   | 7.4                  | 141                                 | 0.0269      |
| -10   | 7.4                  | 133                                 | 0.0254      |
| -20   | 7.4                  | 128                                 | 0.0244      |
| -30   | 7.4                  | 144                                 | 0.0275      |

802.11n\_HT20

| Reference Frequency(Middle Channel): 5200 MHz |                      |                                     |             |
|---|----------------------|-------------------------------------|-------------|
| Environment Temperature (°C)                  | Power Supplied (VDC) | Frequency Measure with Time Elapsed |             |
|   |                      | MCF (Hz)                            | Error (ppm) |
| 50  | 7.4                  | 141                                 | 0.0269      |
| 40  | 7.4                  | 128                                 | 0.0244      |
| 30  | 7.4                  | 124                                 | 0.0237      |
| 20  | 7.4                  | 154                                 | 0.0294      |
| 10  | 7.4                  | 114                                 | 0.0218      |
| 0   | 7.4                  | 134                                 | 0.0256      |
| -10   | 7.4                  | 147                                 | 0.0281      |
| -20   | 7.4                  | 118                                 | 0.0225      |
| -30   | 7.4                  | 126                                 | 0.0240      |

## 802.11ac\_HT20

| Reference Frequency(Middle Channel): 5200 MHz |                      |                                     |             |
|---|----------------------|-------------------------------------|-------------|
| Environment Temperature (°C)                  | Power Supplied (VDC) | Frequency Measure with Time Elapsed |             |
|   |                      | MCF (Hz)                            | Error (ppm) |
| 50  | 7.4                  | 141                                 | 0.0270      |
| 40  | 7.4                  | 145                                 | 0.0277      |
| 30  | 7.4                  | 141                                 | 0.0270      |
| 20  | 7.4                  | 131                                 | 0.0250      |
| 10  | 7.4                  | 148                                 | 0.0283      |
| 0   | 7.4                  | 152                                 | 0.0291      |
| -10   | 7.4                  | 158                                 | 0.0302      |
| -20   | 7.4                  | 151                                 | 0.0289      |
| -30   | 7.4                  | 149                                 | 0.0285      |

## 5725-5850MHz

## 802.11a

| Reference Frequency(Middle Channel): 5785 MHz |                      |                                     |             |
|---|----------------------|-------------------------------------|-------------|
| Environment Temperature (°C)                  | Power Supplied (VDC) | Frequency Measure with Time Elapsed |             |
|   |                      | MCF (Hz)                            | Error (ppm) |
| 50  | 7.4                  | 118                                 | 0.0284      |
| 40  | 7.4                  | 124                                 | 0.0286      |
| 30  | 7.4                  | 134                                 | 0.0290      |
| 20  | 7.4                  | 125                                 | 0.0276      |
| 10  | 7.4                  | 116                                 | 0.0290      |
| 0   | 7.4                  | 147                                 | 0.0299      |
| -10   | 7.4                  | 157                                 | 0.0309      |
| -20   | 7.4                  | 184                                 | 0.0296      |
| -30   | 7.4                  | 164                                 | 0.0307      |

## 802.11n\_HT20

| Reference Frequency(Middle Channel): 5785MHz |                      |                                     |             |
|--|----------------------|-------------------------------------|-------------|
| Environment Temperature (°C)                 | Power Supplied (VDC) | Frequency Measure with Time Elapsed |             |
|  |                      | MCF (Hz)                            | Error (ppm) |
| 50   | 7.4                  | 117                                 | 0.0267      |
| 40   | 7.4                  | 127                                 | 0.0260      |
| 30   | 7.4                  | 145                                 | 0.0271      |
| 20   | 7.4                  | 154                                 | 0.0260      |
| 10   | 7.4                  | 165                                 | 0.0265      |
| 0  | 7.4                  | 185                                 | 0.0278      |
| -10  | 7.4                  | 154                                 | 0.0288      |
| -20  | 7.4                  | 181                                 | 0.0278      |
| -30  | 7.4                  | 157                                 | 0.0285      |

## 802.11ac\_HT20

| Reference Frequency(Middle Channel): 5785 MHz |                      |                                     |             |
|---|----------------------|-------------------------------------|-------------|
| Environment Temperature (°C)                  | Power Supplied (VDC) | Frequency Measure with Time Elapsed |             |
|   |                      | MCF (Hz)                            | Error (ppm) |
| 50  | 7.4                  | 141                                 | 0.0254      |
| 40  | 7.4                  | 148                                 | 0.0262      |
| 30  | 7.4                  | 147                                 | 0.0251      |
| 20  | 7.4                  | 134                                 | 0.0227      |
| 10  | 7.4                  | 115                                 | 0.0227      |
| 0   | 7.4                  | 185                                 | 0.0314      |
| -10   | 7.4                  | 155                                 | 0.0222      |
| -20   | 7.4                  | 152                                 | 0.0219      |
| -30   | 7.4                  | 145                                 | 0.0257      |

So, Frequency Stability Versus Input Voltage is:

5150-5250MHz

802.11a

| Reference Frequency(Middle Channel): 5200 MHz |                      |                                     |             |
|---|----------------------|-------------------------------------|-------------|
| Environment Temperature (°C)                  | Power Supplied (VAC) | Frequency Measure with Time Elapsed |             |
|   |                      | Frequency (Hz)                      | Error (ppm) |
| 20  | 6.3                  | 139                                 | 0.0265      |
|   | 7.4                  | 136                                 | 0.0260      |
|   | 8.5                  | 133                                 | 0.0254      |

802.11n\_HT20

| Reference Frequency(Middle Channel): 5200 MHz |                      |                                     |             |
|---|----------------------|-------------------------------------|-------------|
| Environment Temperature (°C)                  | Power Supplied (VAC) | Frequency Measure with Time Elapsed |             |
|   |                      | Frequency (Hz)                      | Error (ppm) |
| 20  | 6.3                  | 145                                 | 0.0277      |
|   | 7.4                  | 148                                 | 0.0282      |
|   | 8.5                  | 152                                 | 0.0290      |

802.11ac\_HT20

| Reference Frequency(Middle Channel): 5200 MHz |                      |                                     |             |
|---|----------------------|-------------------------------------|-------------|
| Environment Temperature (°C)                  | Power Supplied (VAC) | Frequency Measure with Time Elapsed |             |
|   |                      | Frequency (Hz)                      | Error (ppm) |
| 20  | 6.3                  | 145                                 | 0.0257      |
|   | 7.4                  | 148                                 | 0.0268      |
|   | 8.5                  | 152                                 | 0.0284      |

5725-5850MHz

802.11a\_HT20

| Reference Frequency(Middle Channel): 5785 MHz |                      |                                     |             |
|---|----------------------|-------------------------------------|-------------|
| Environment Temperature (°C)                  | Power Supplied (VAC) | Frequency Measure with Time Elapsed |             |
|   |                      | Frequency (Hz)                      | Error (ppm) |
| 20  | 6.3                  | 147                                 | 0.0260      |
|   | 7.4                  | 154                                 | 0.0296      |
|   | 8.5                  | 186                                 | 0.0357      |

## 802.11n\_HT20

| Reference Frequency(Middle Channel): 5785 MHz |                      |                                     |             |
|---|----------------------|-------------------------------------|-------------|
| Environment Temperature (°C)                  | Power Supplied (VAC) | Frequency Measure with Time Elapsed |             |
|   |                      | Frequency (Hz)                      | Error (ppm) |
| 20  | 6.3                  | 184                                 | 0.0325      |
|   | 7.4                  | 149                                 | 0.0286      |
|   | 8.5                  | 158                                 | 0.0303      |

## 802.11ac\_HT20

| Reference Frequency(Middle Channel): 5785 MHz |                      |                                     |             |
|---|----------------------|-------------------------------------|-------------|
| Environment Temperature (°C)                  | Power Supplied (VAC) | Frequency Measure with Time Elapsed |             |
|   |                      | Frequency (Hz)                      | Error (ppm) |
| 20  | 6.3                  | 184                                 | 0.0257      |
|   | 7.4                  | 149                                 | 0.0388      |
|   | 8.5                  | 158                                 | 0.0342      |

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