

## Appendix A

### RF Test Data for 5.2G WLAN (Conducted Measurement)

Product Name: Wireless Extender

Trade Mark: N/A

Test Model: LKV388mini

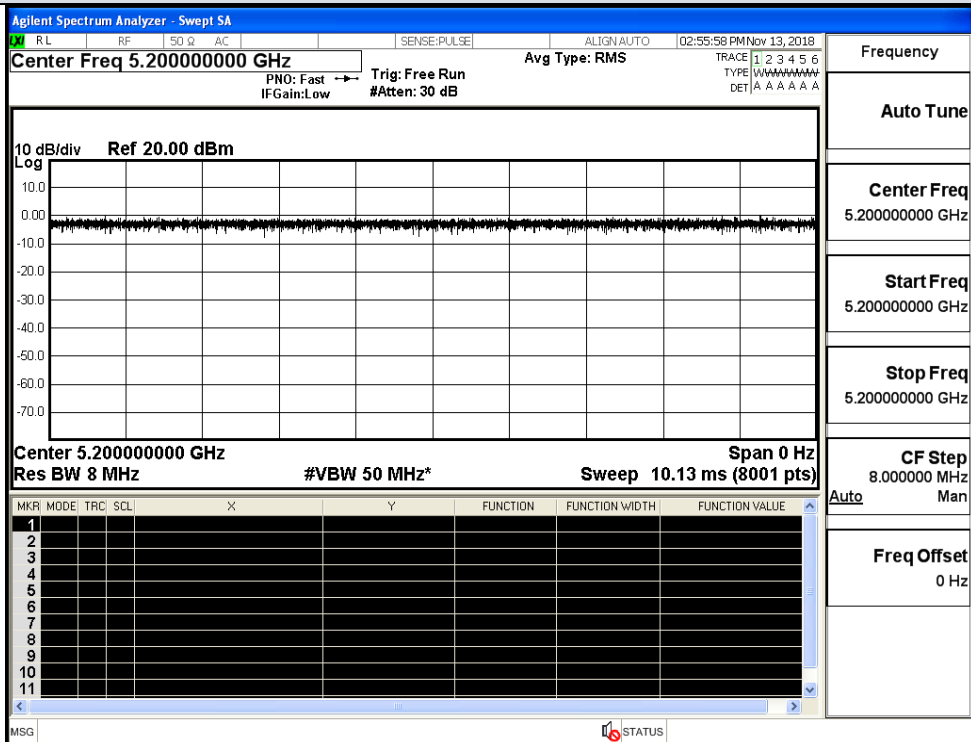
#### Environmental Conditions

|                    |             |
|--------------------|-------------|
| Temperature:       | 23.6 ° C    |
| Relative Humidity: | 53.6%       |
| ATM Pressure:      | 100.0 kPa   |
| Test Engineer:     | Tom Liu     |
| Supervised by:     | Jayden Zhuo |

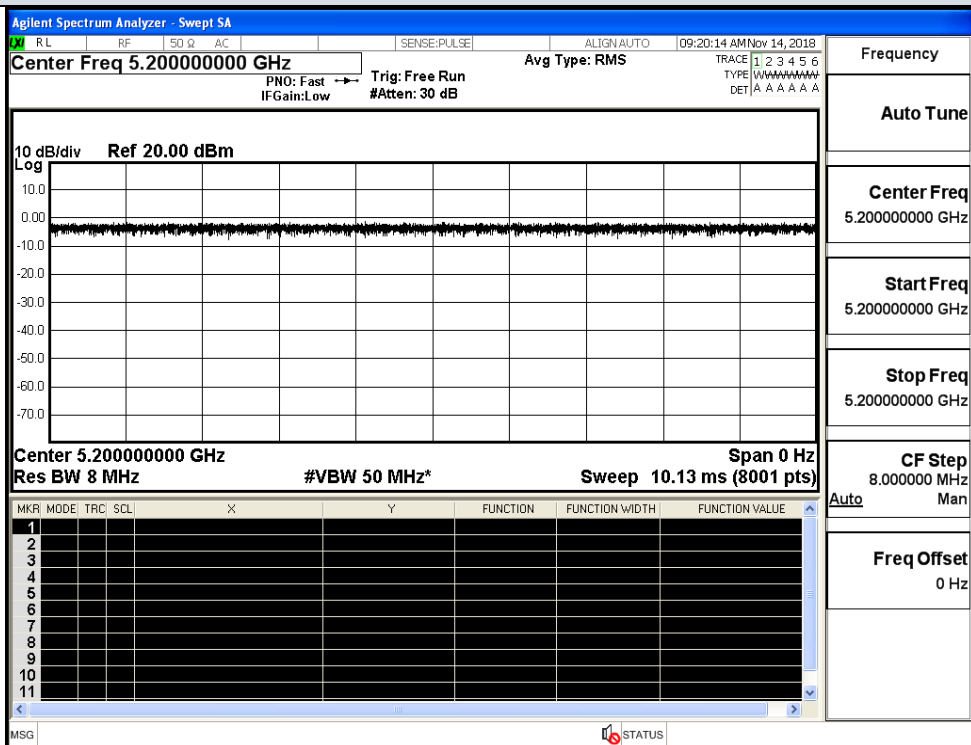
#### A.1 Duty Cycle

| Test Mode   | Test Frequency (MHz) | Duty Cycle (%) | 10log(1/x) Factor (dB) | 1/B Minimum VBW(KHz) |
|-------------|----------------------|----------------|------------------------|----------------------|
| 11A         | 5200                 | 100            | 0.00                   | 0.01                 |
| 11N20 SISO  | 5200                 | 100            | 0.00                   | 0.01                 |
| 11N40 SISO  | 5190                 | 100            | 0.00                   | 0.01                 |
| 11AC20 SISO | 5200                 | 100            | 0.00                   | 0.01                 |
| 11AC40 SISO | 5190                 | 100            | 0.00                   | 0.01                 |
| 11AC80 SISO | 5210                 | 100            | 0.00                   | 0.01                 |

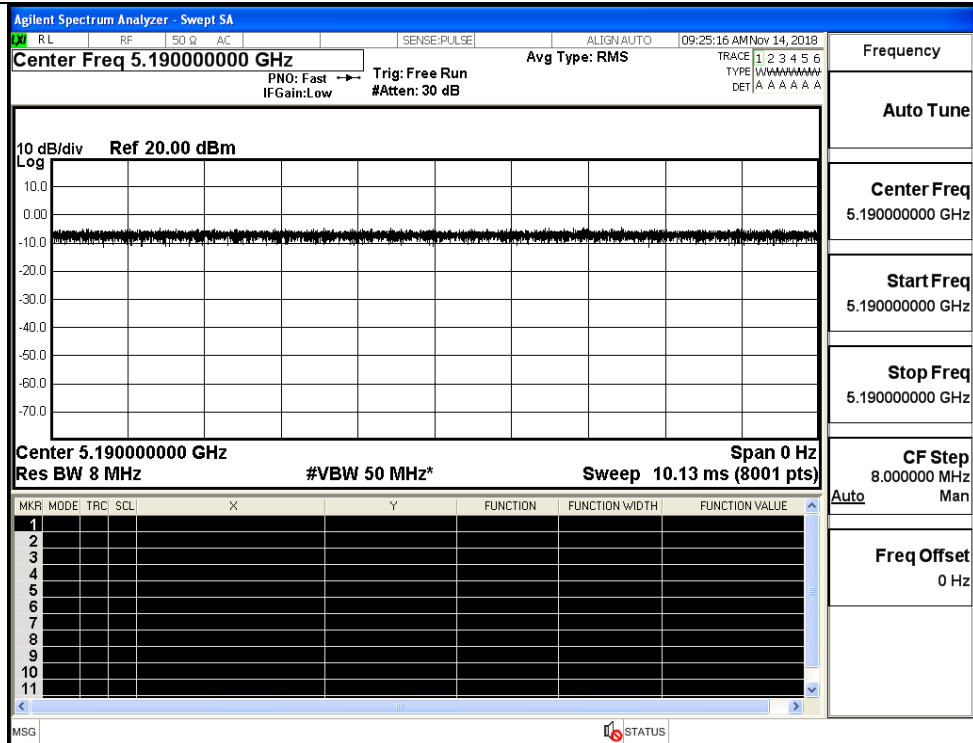
## On Time and Duty Cycle



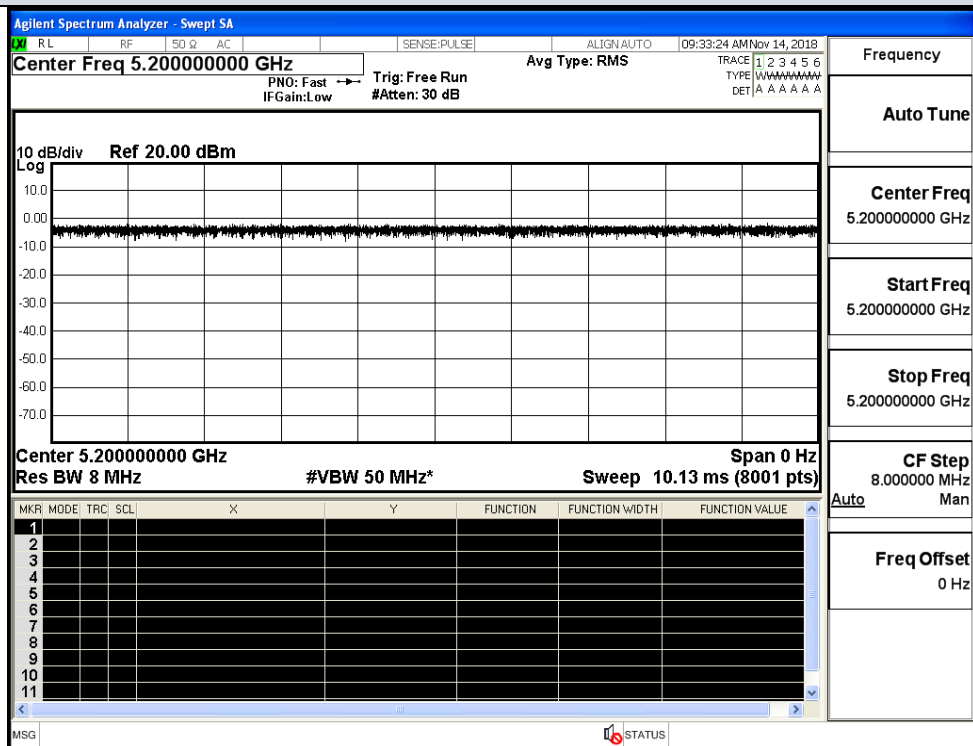
## IEEE 802.11a



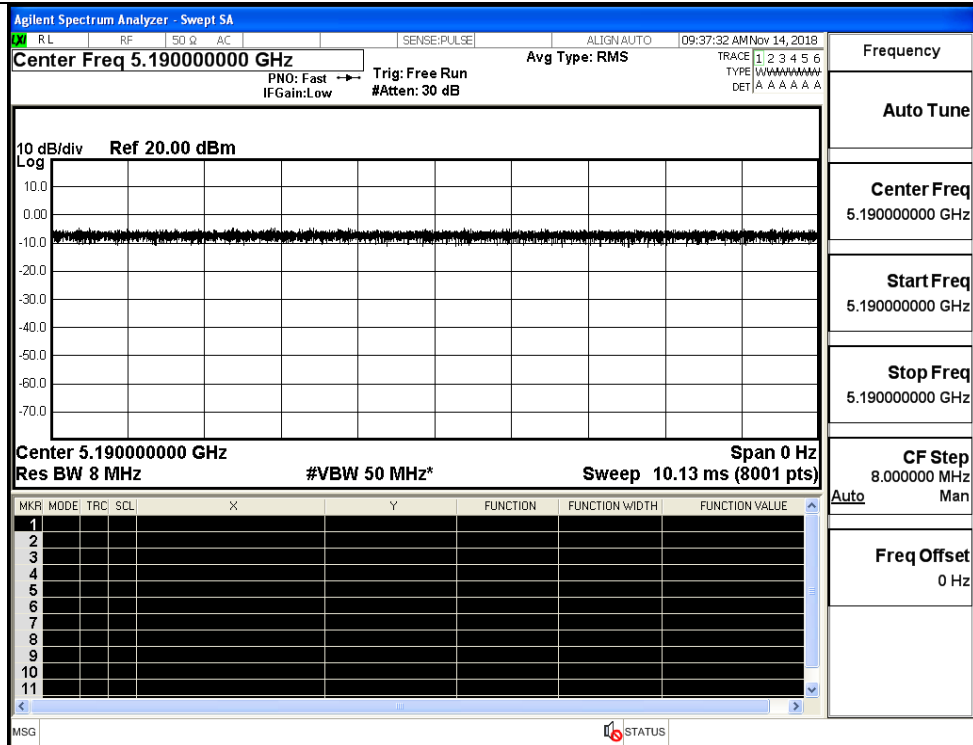
## IEEE 802.11n HT20



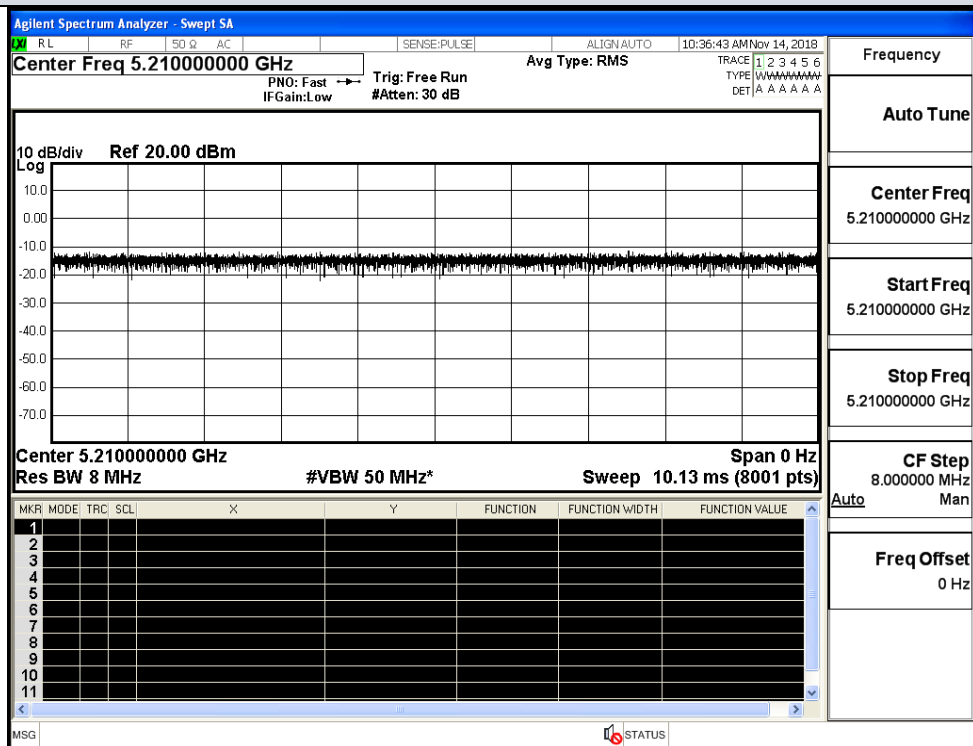
IEEE 802.11n HT40



IEEE 802.11ac VHT20



IEEE 802.11 ac VHT40



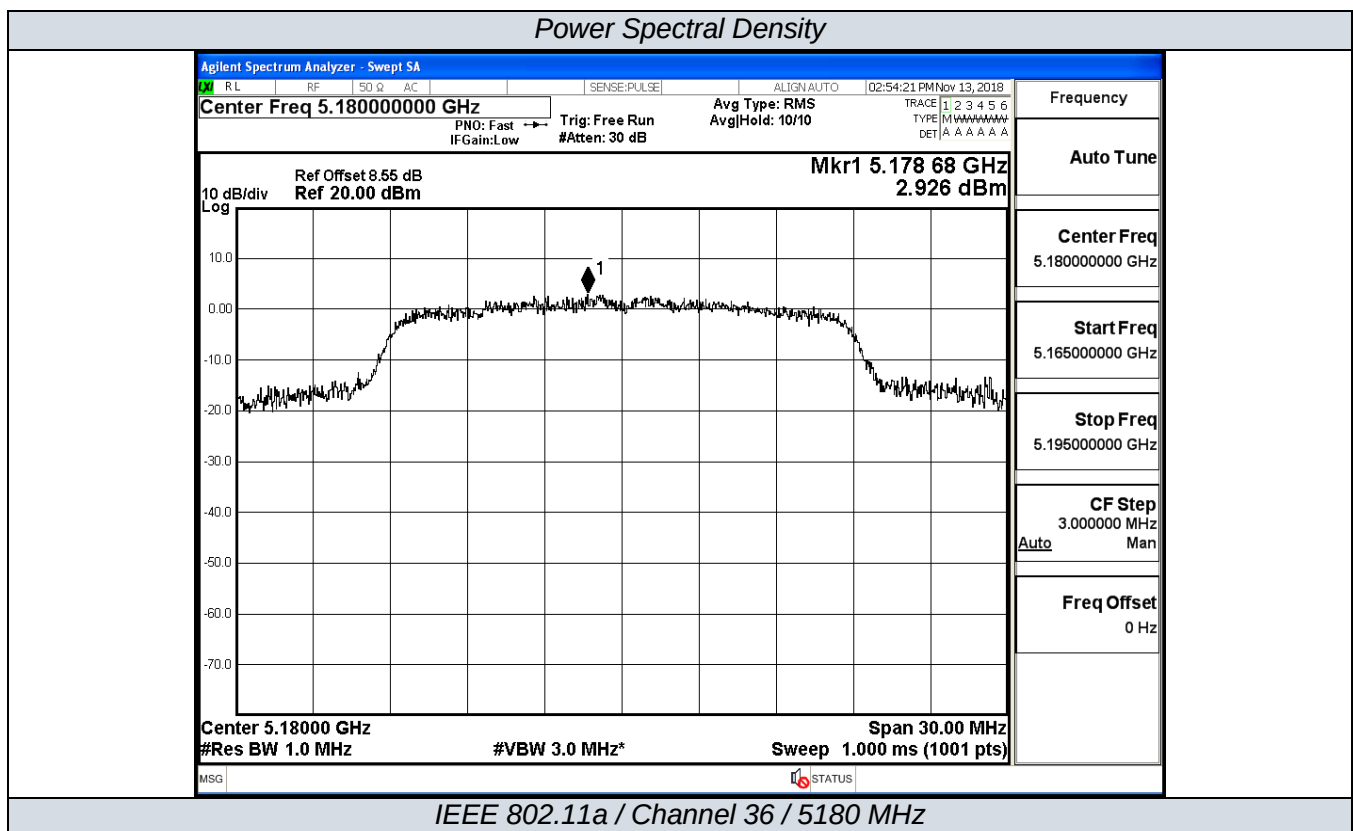
IEEE 802.11 ac VHT80

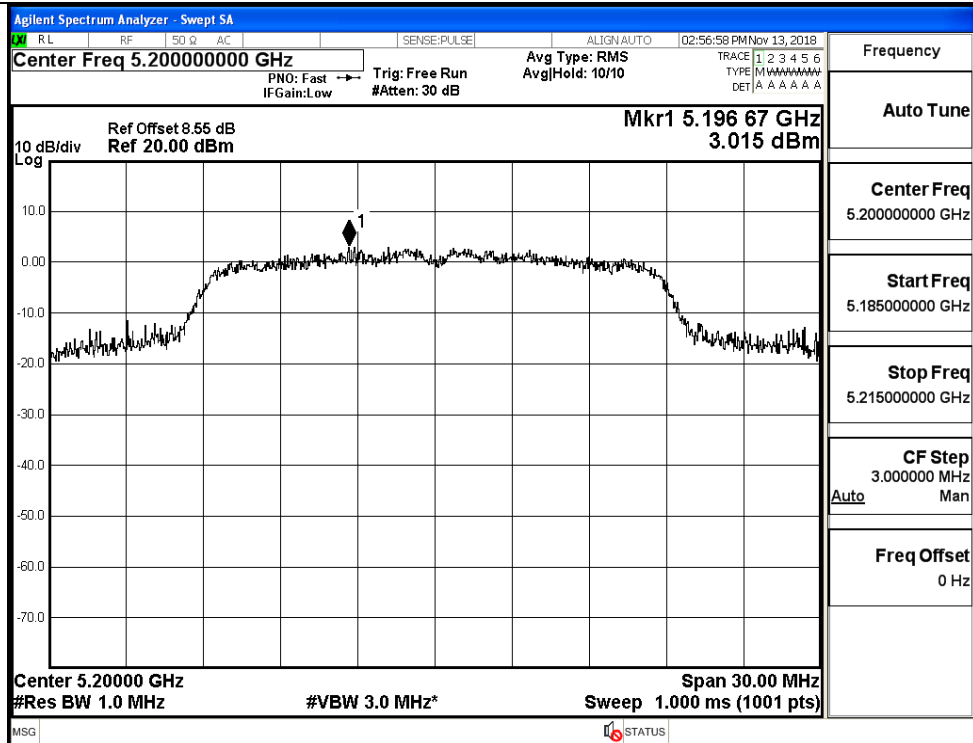
**A.2 Maximum Conduct Output Power**

| Test Mode   | Channel | Frequency (MHz) | AVG Conducted Power (dBm) | Duty Cycle Factor (dB) | Report Conducted Power (dBm) | Limit (dBm) |
|-------------|---------|-----------------|---------------------------|------------------------|------------------------------|-------------|
| 11A         | 36      | 5180            | 12.50                     | 0                      | 12.50                        | 24          |
|             | 40      | 5200            | 12.99                     | 0                      | 12.99                        |             |
|             | 48      | 5240            | 12.67                     | 0                      | 12.67                        |             |
| 11N20 SISO  | 36      | 5180            | 12.44                     | 0                      | 12.44                        | 24          |
|             | 40      | 5200            | 12.04                     | 0                      | 12.04                        |             |
|             | 48      | 5240            | 11.65                     | 0                      | 11.65                        |             |
| 11N40 SISO  | 38      | 5190            | 12.35                     | 0                      | 12.35                        | 24          |
|             | 46      | 5230            | 12.09                     | 0                      | 12.09                        |             |
| 11AC20 SISO | 36      | 5180            | 11.88                     | 0                      | 11.88                        | 24          |
|             | 40      | 5200            | 11.67                     | 0                      | 11.67                        |             |
|             | 48      | 5240            | 11.41                     | 0                      | 11.41                        |             |
| 11AC40 SISO | 38      | 5190            | 12.21                     | 0                      | 12.21                        | 24          |
|             | 46      | 5230            | 12.01                     | 0                      | 12.01                        |             |
| 11AC80 SISO | 42      | 5210            | 9.11                      | 0                      | 9.11                         | 24          |

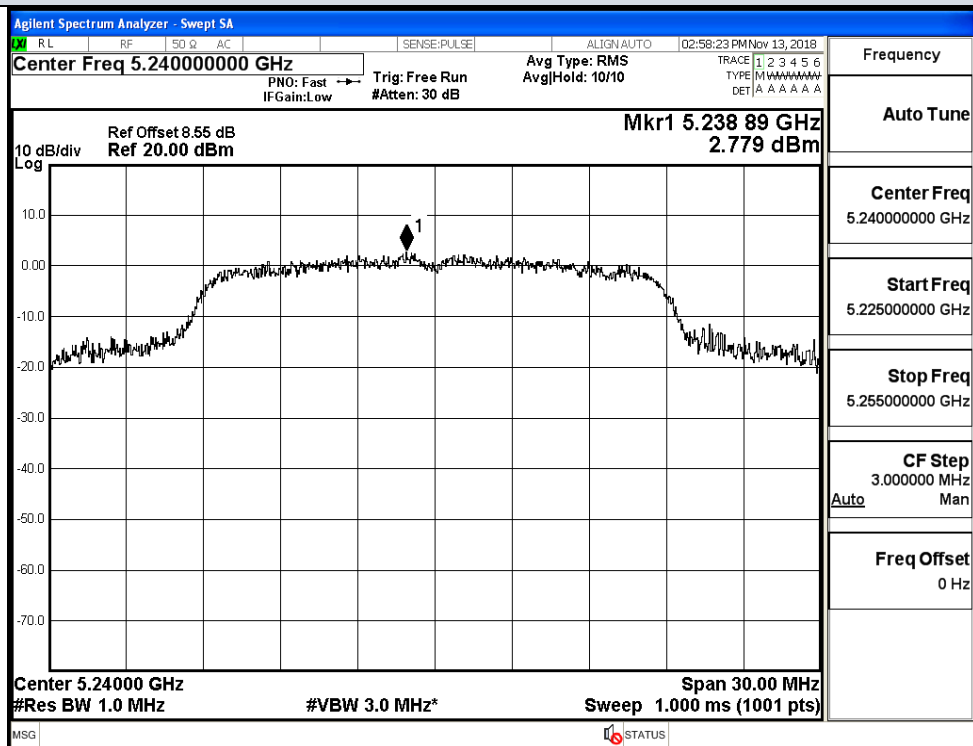
### A.3 Power Spectral Density

| Test Mode   | Channel | Frequency (MHz) | Power Density (dBm/MHz) | Duty Cycle Factor (dB) | Report Power Density (dBm/MHz) | Limit (dBm/MHz) |
|-------------|---------|-----------------|-------------------------|------------------------|--------------------------------|-----------------|
| 11A         | 36      | 5180            | 2.926                   | 0                      | 2.926                          | 11              |
|             | 40      | 5200            | 3.015                   | 0                      | 3.015                          |                 |
|             | 48      | 5240            | 2.779                   | 0                      | 2.779                          |                 |
| 11N20 SISO  | 36      | 5180            | 2.641                   | 0                      | 2.641                          | 11              |
|             | 40      | 5200            | 2.651                   | 0                      | 2.651                          |                 |
|             | 48      | 5240            | 1.930                   | 0                      | 1.930                          |                 |
| 11N40 SISO  | 38      | 5190            | -0.506                  | 0                      | -0.506                         | 11              |
|             | 46      | 5230            | -0.785                  | 0                      | -0.785                         |                 |
| 11AC20 SISO | 36      | 5180            | 1.822                   | 0                      | 1.822                          | 11              |
|             | 40      | 5200            | 2.107                   | 0                      | 2.107                          |                 |
|             | 48      | 5240            | 1.716                   | 0                      | 1.716                          |                 |
| 11AC40 SISO | 38      | 5190            | 0.170                   | 0                      | 0.170                          | 11              |
|             | 46      | 5230            | -0.419                  | 0                      | -0.419                         |                 |
| 11AC80 SISO | 42      | 5210            | -7.477                  | 0                      | -7.477                         | 11              |



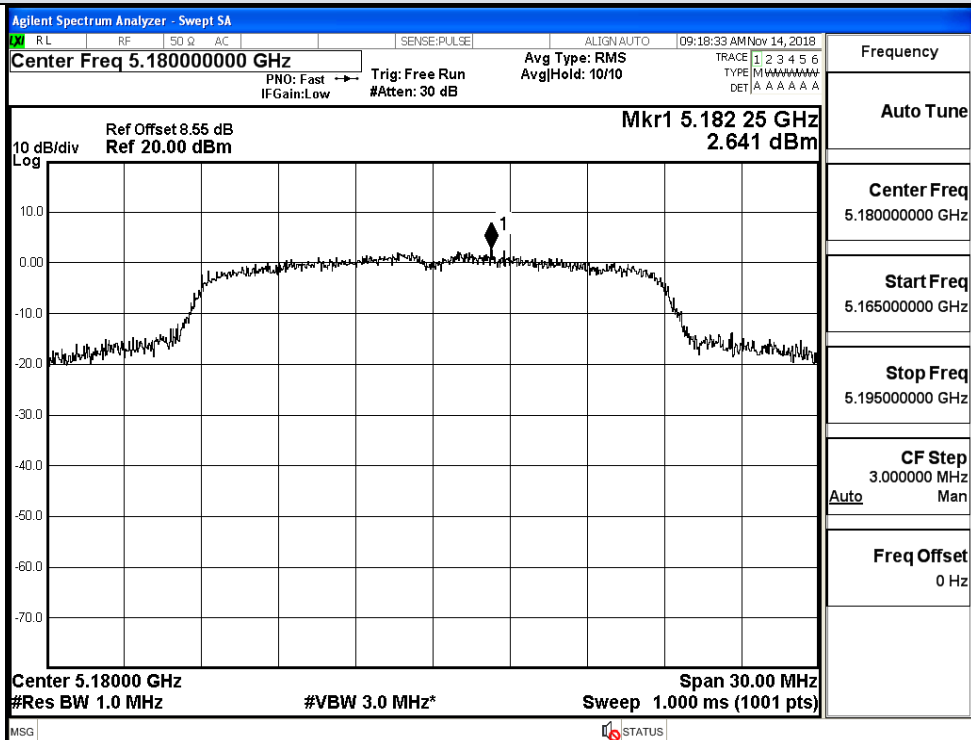


IEEE 802.11a / Channel 40 / 5200 MHz

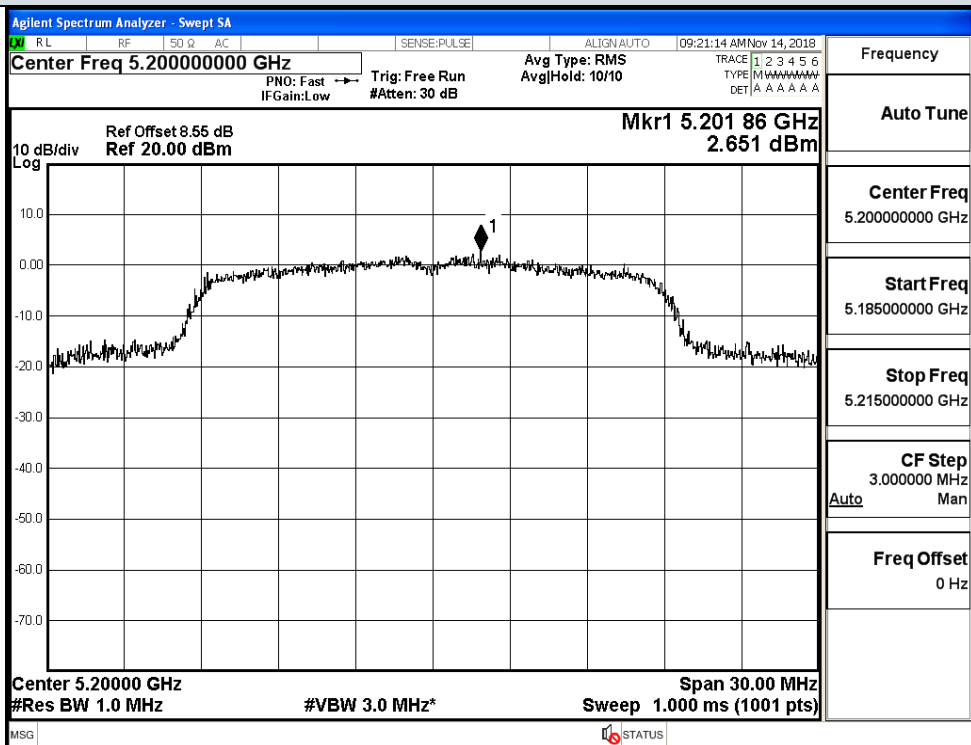


IEEE 802.11a / Channel 48 / 5240 MHz

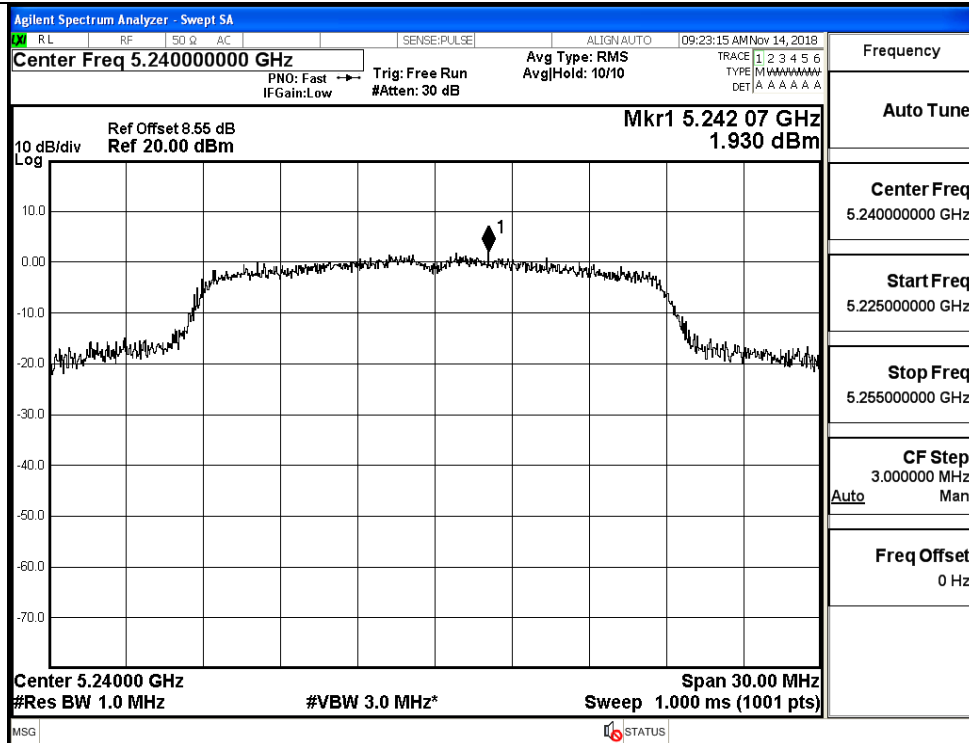
## Power Spectral Density



## IEEE 802.11n HT20 / Channel 36 / 5180 MHz

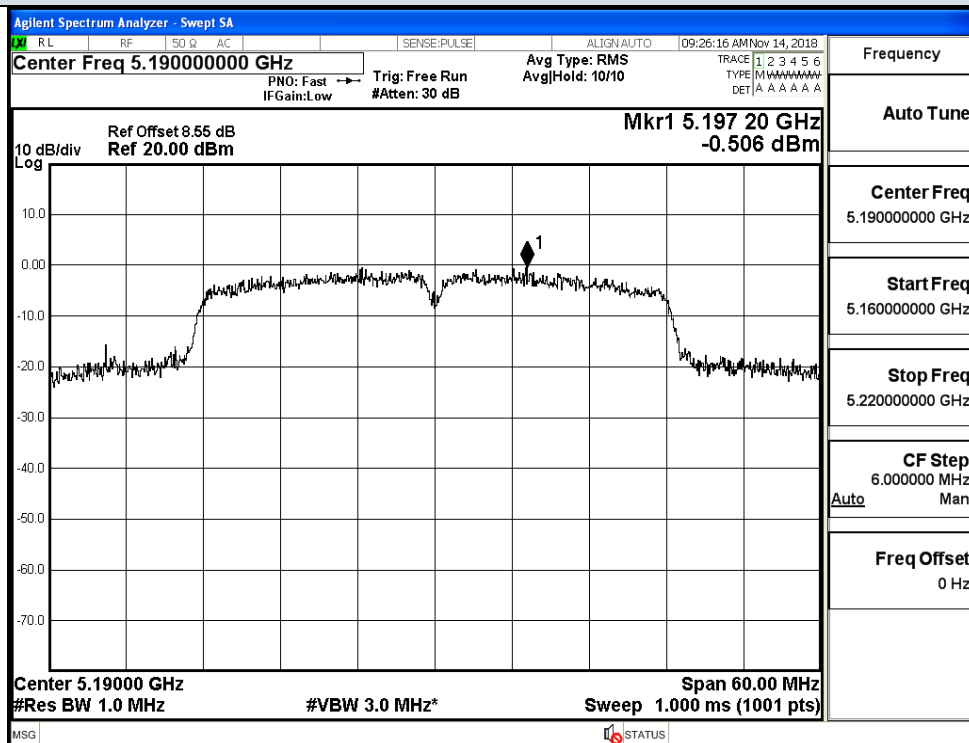


## IEEE 802.11n HT20 / Channel 40 / 5200 MHz

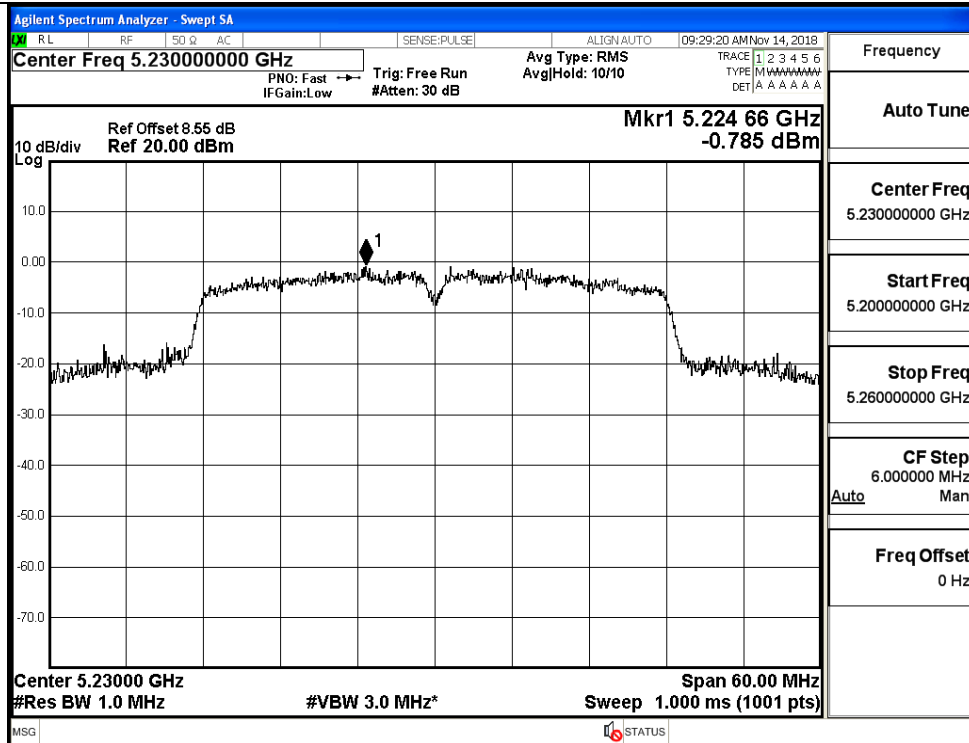


IEEE 802.11n HT20 / Channel 48 / 5240 MHz

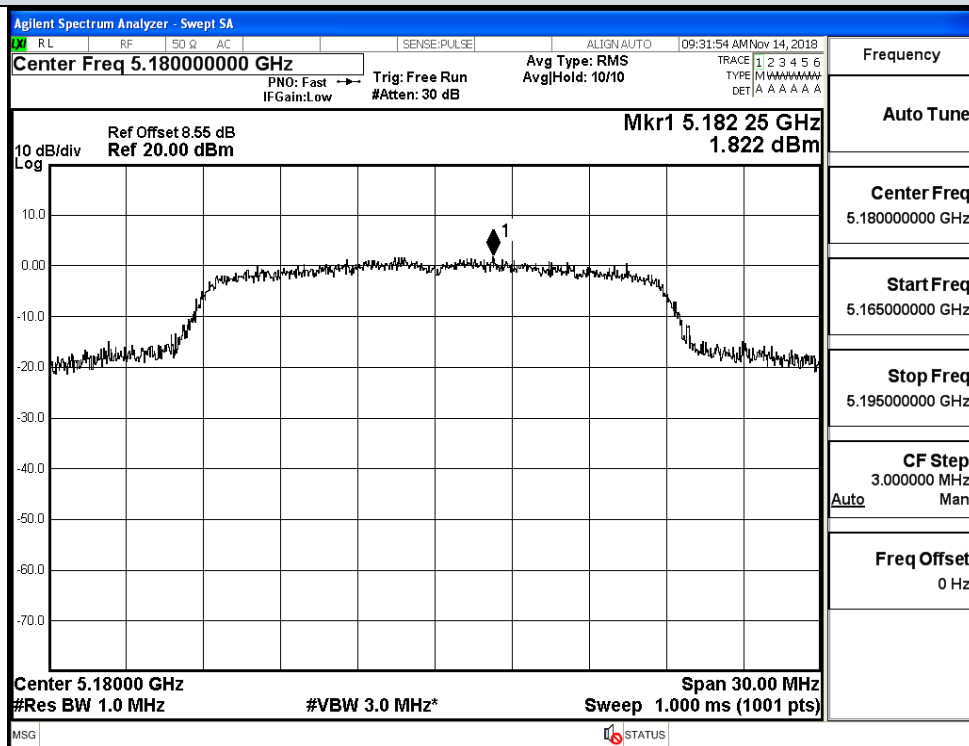
## Power Spectral Density



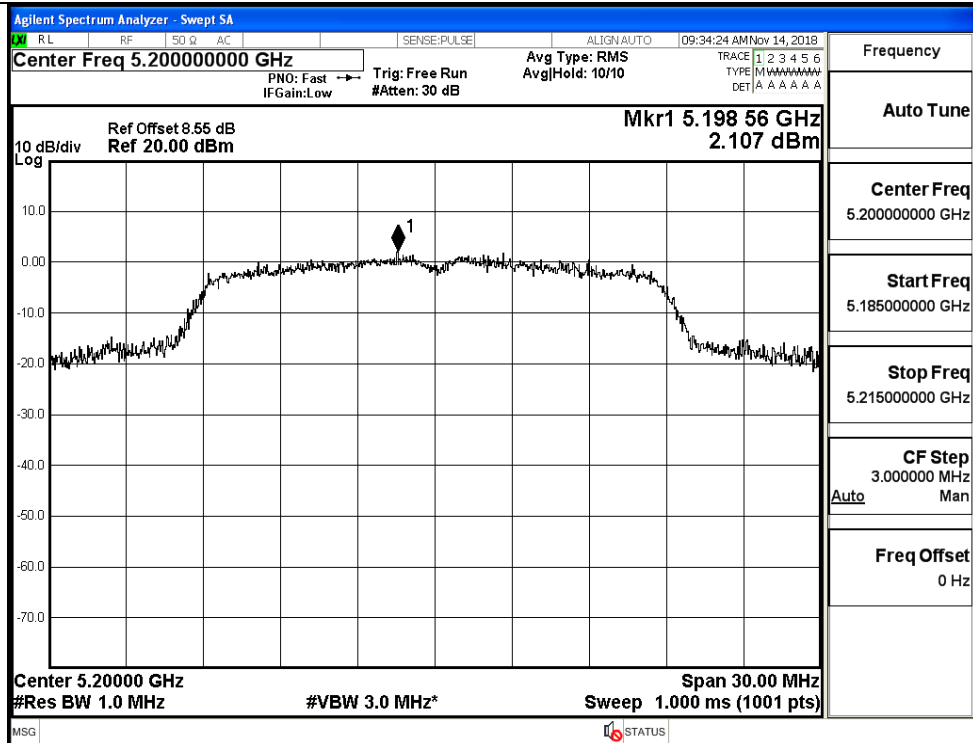
IEEE 802.11n HT40 / Channel 38 / 5190 MHz



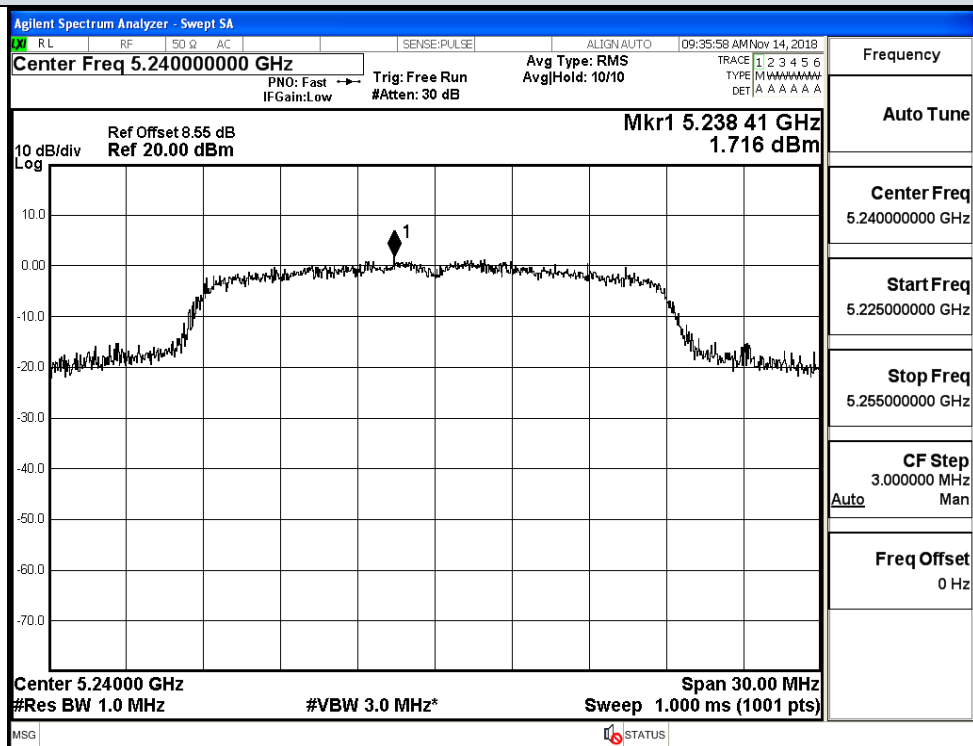
IEEE 802.11n HT40 / Channel 46 / 5230 MHz



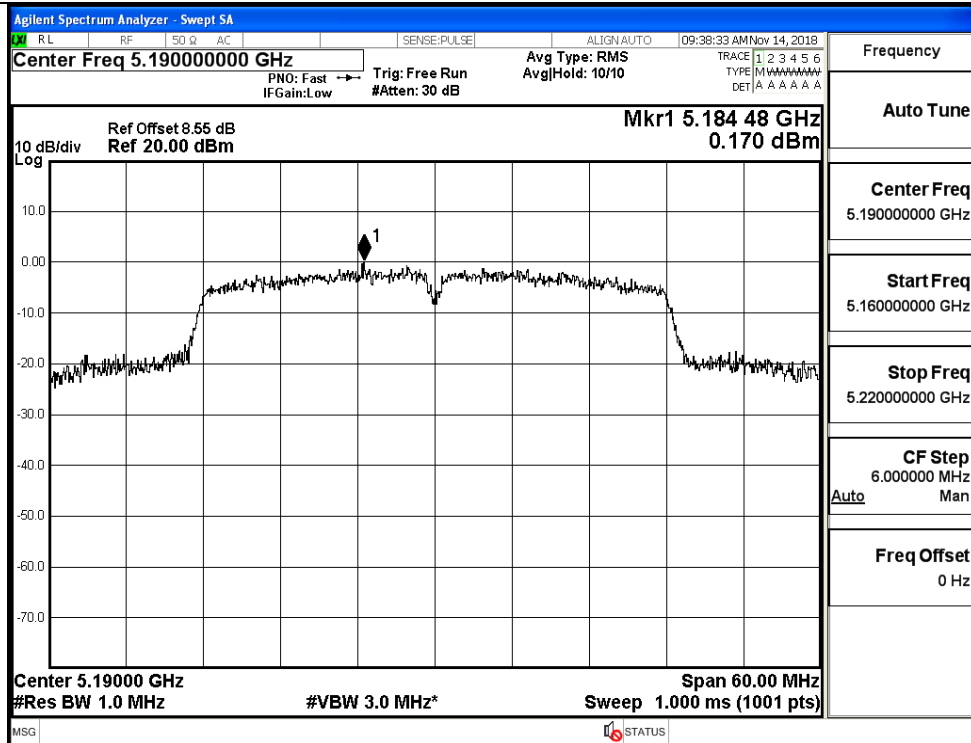
IEEE 802.11ac VHT20 / Channel 36 / 5180 MHz



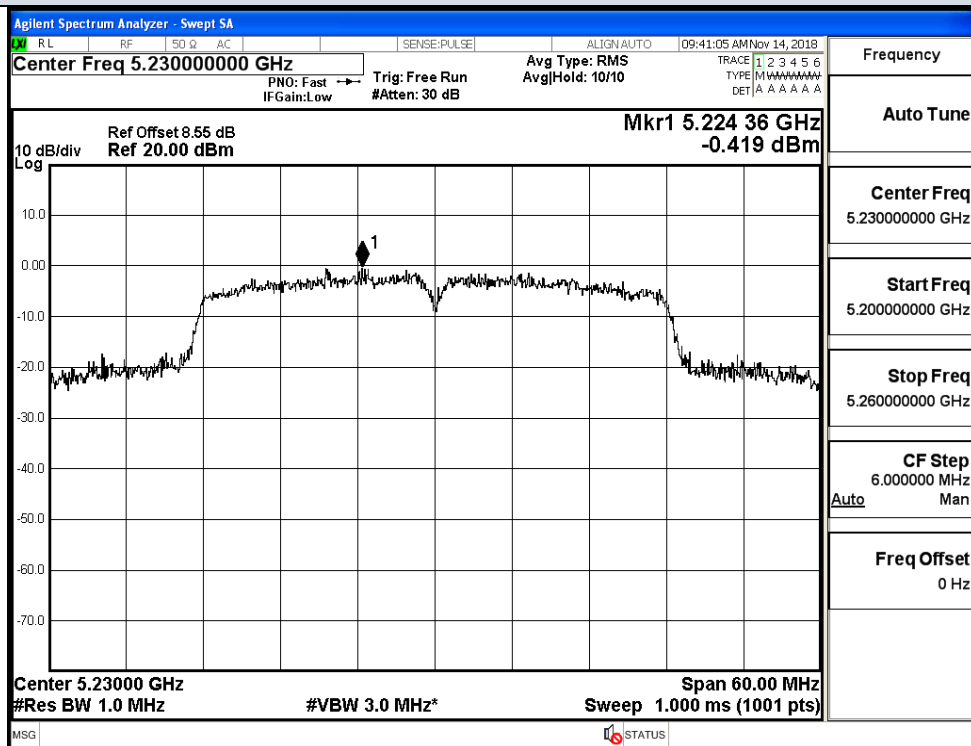
IEEE 802.11ac VHT20 / Channel 40 / 5200 MHz



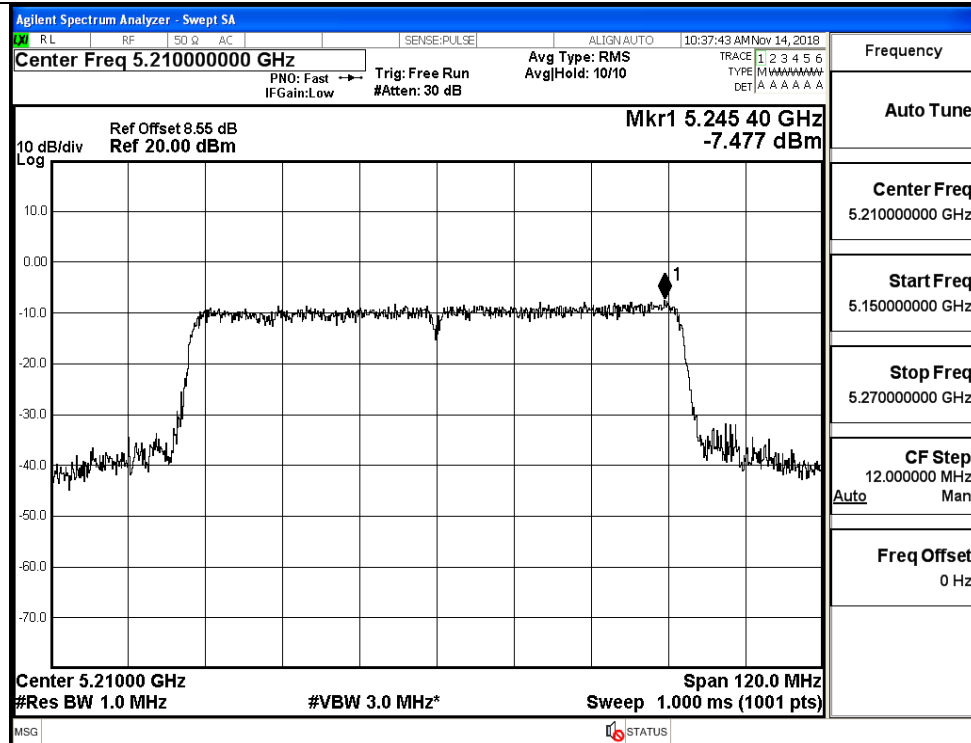
IEEE 802.11ac VHT20 / Channel 48 / 5240 MHz



IEEE 802.11ac VHT40 / Channel 38 / 5190 MHz



IEEE 802.11ac VHT40 / Channel 46 / 5230 MHz

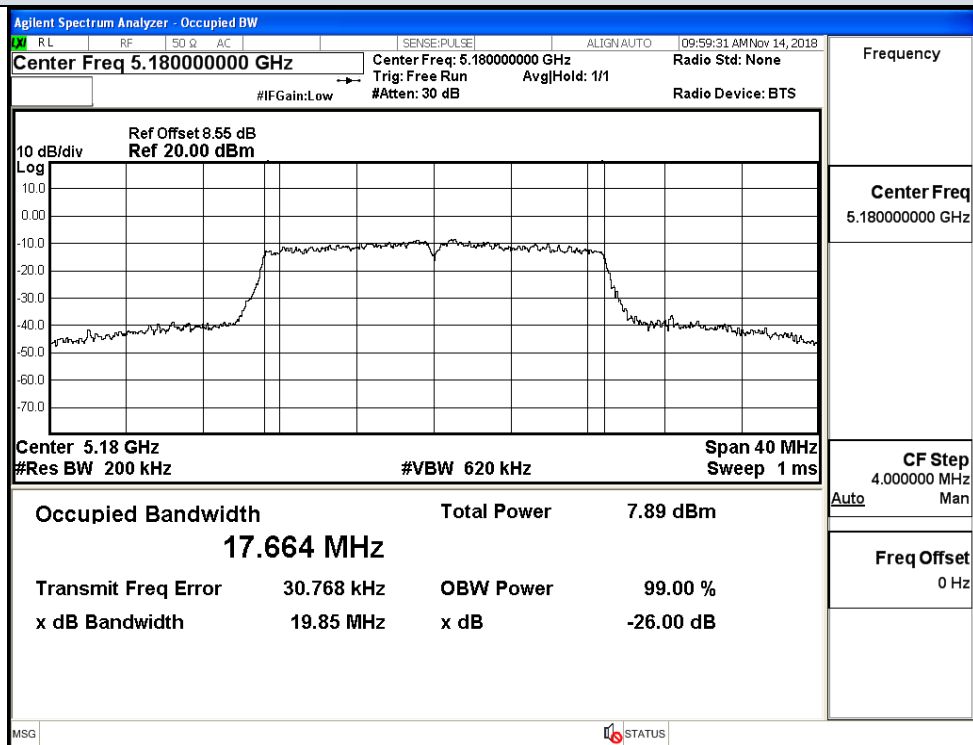


IEEE 802.11ac VHT80 / Channel 42 / 5210 MHz

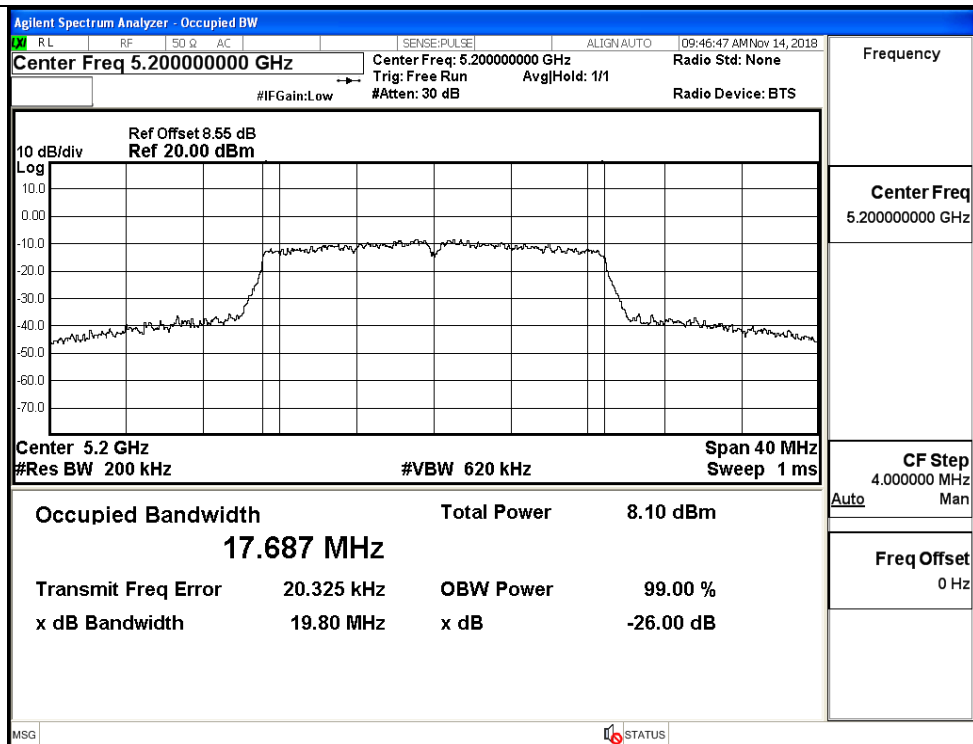
## A.4 Emission Bandwidth

| Test Mode   | Channel | Frequency (MHz) | 99% Bandwidth (MHz) | 26dB Bandwidth (MHz) | Limit (MHz) |
|-------------|---------|-----------------|---------------------|----------------------|-------------|
| 11A         | 36      | 5180            | 17.664              | 19.820               | No Limit    |
|             | 40      | 5200            | 17.687              | 19.800               |             |
|             | 48      | 5240            | 17.640              | 19.800               |             |
| 11N20 SISO  | 36      | 5180            | 17.640              | 19.620               | No Limit    |
|             | 40      | 5200            | 17.677              | 19.770               |             |
|             | 48      | 5240            | 17.658              | 19.840               |             |
| 11N40 SISO  | 38      | 5190            | 35.963              | 39.450               | No Limit    |
|             | 46      | 5230            | 36.034              | 39.410               |             |
| 11AC20 SISO | 36      | 5180            | 17.618              | 19.940               | No Limit    |
|             | 40      | 5200            | 17.667              | 19.700               |             |
|             | 48      | 5240            | 17.672              | 19.690               |             |
| 11AC40 SISO | 38      | 5190            | 36.052              | 39.410               | No Limit    |
|             | 46      | 5230            | 35.915              | 39.540               |             |
| 11AC80 SISO | 42      | 5210            | 75.688              | 91.110               | No Limit    |

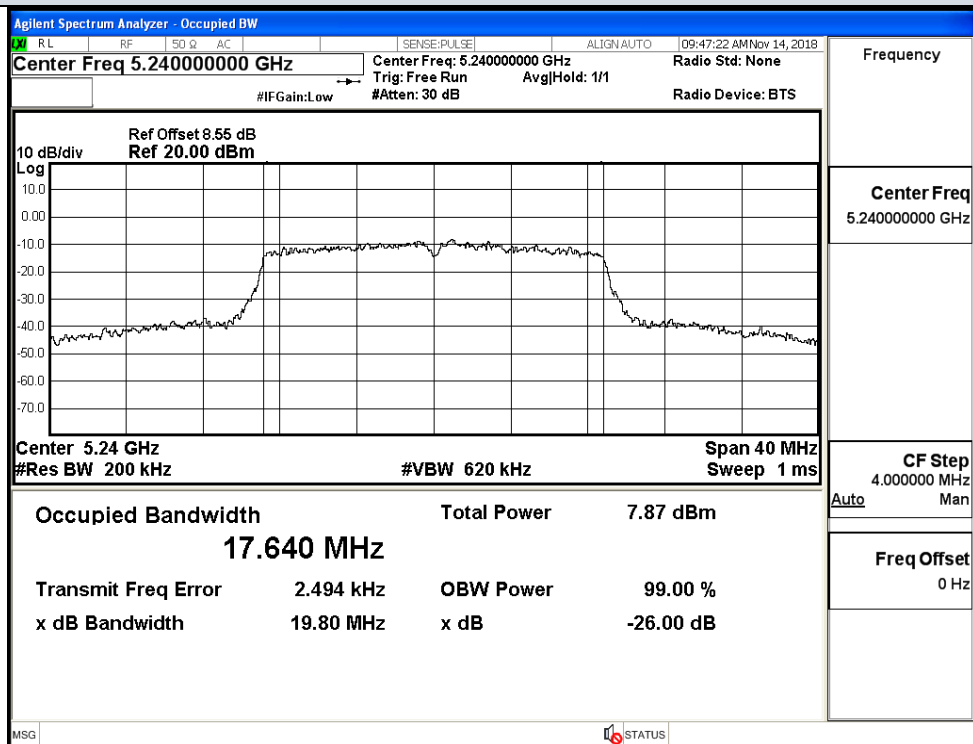
### 26dB Bandwidth



IEEE 802.11a / Channel 36 / 5180 MHz

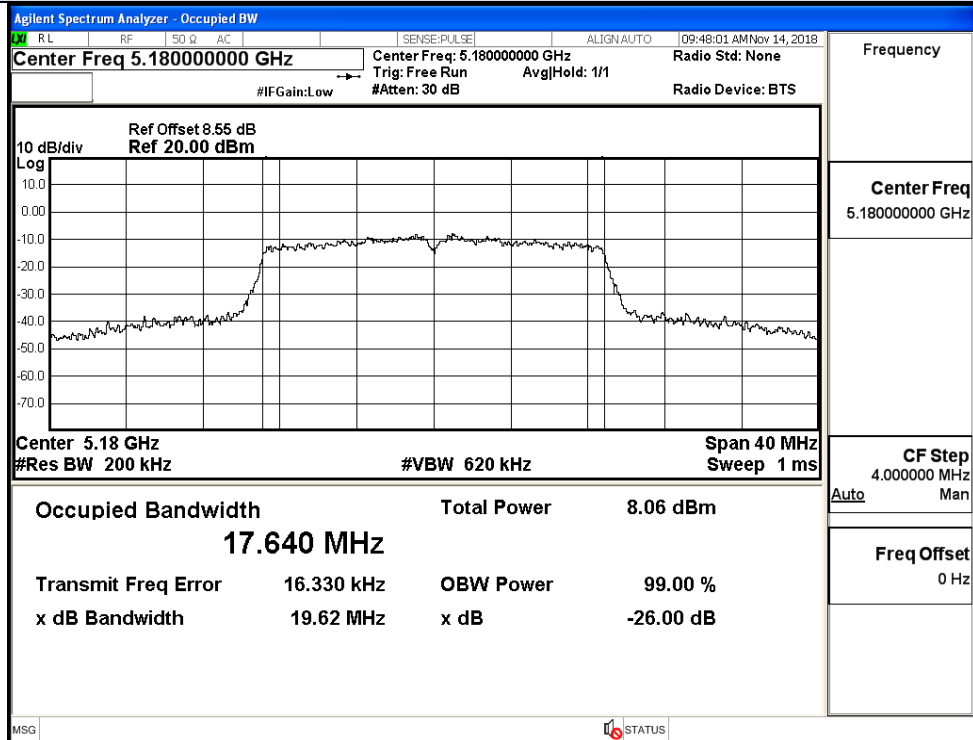


## IEEE 802.11a / Channel 40 / 5200 MHz

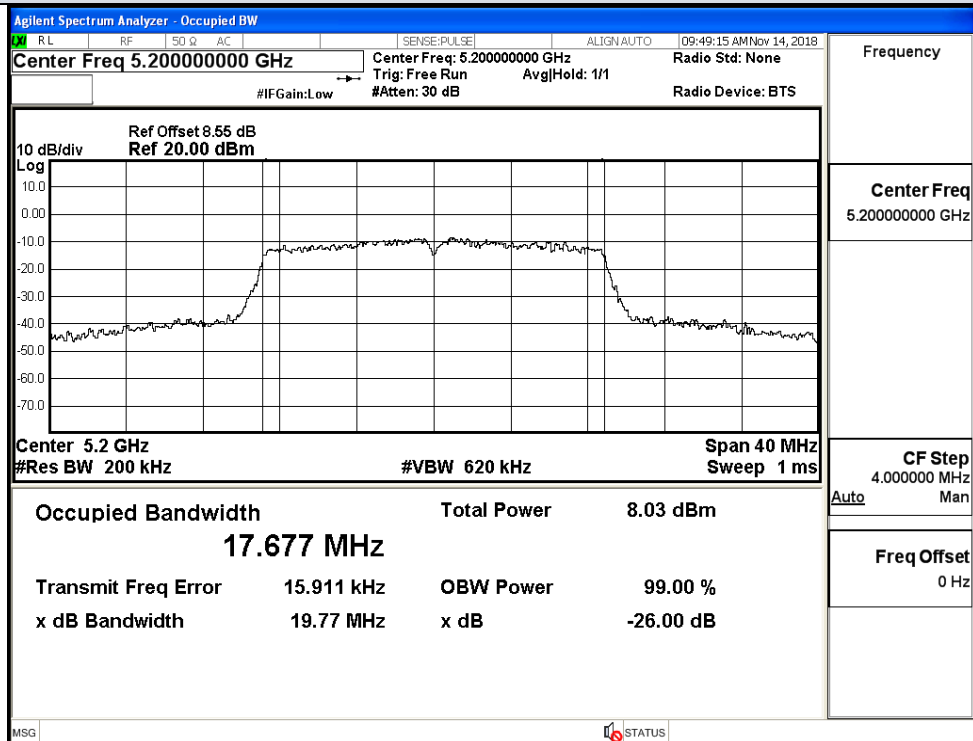


## IEEE 802.11a / Channel 48 / 5240 MHz

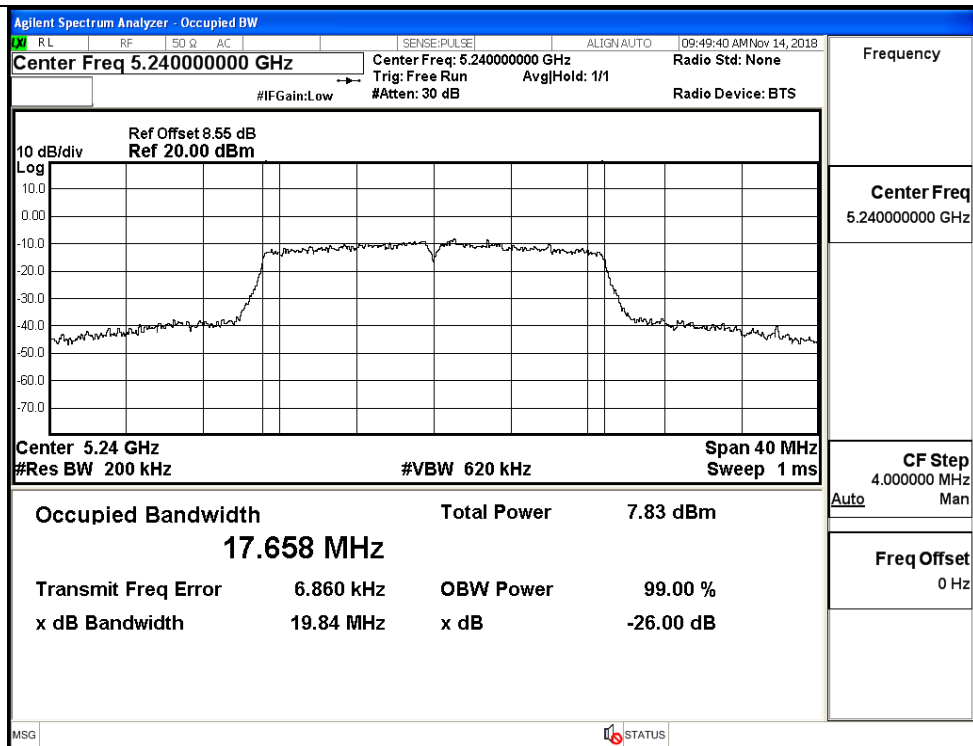
## 26dB Bandwidth



## IEEE 802.11n HT20 / Channel 36 / 5180 MHz

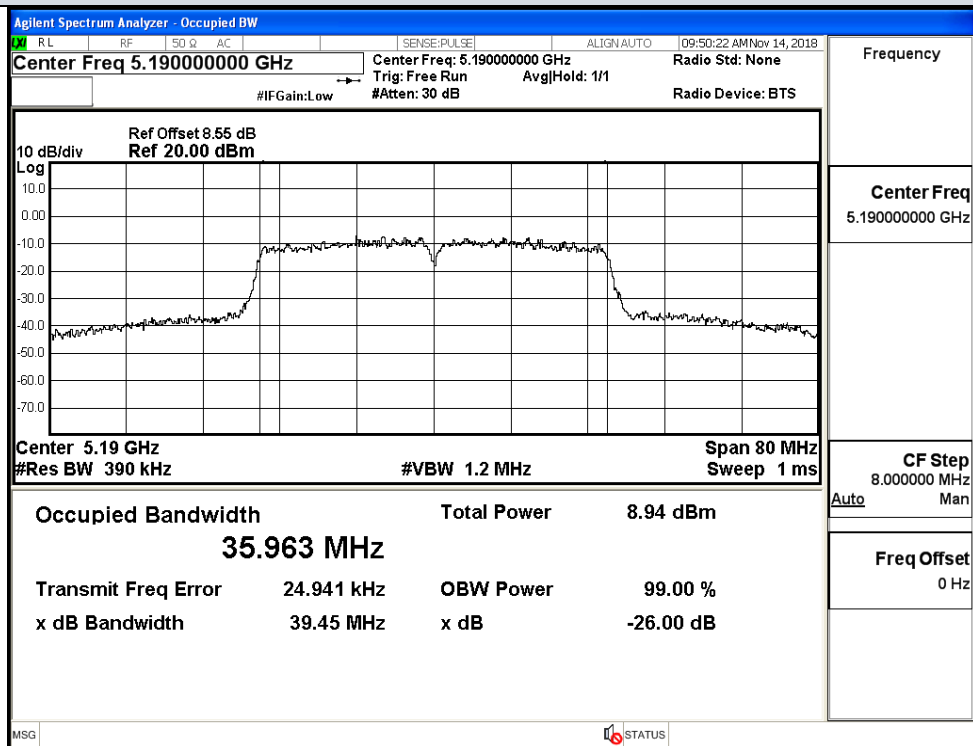


## IEEE 802.11n HT20 / Channel 40 / 5200 MHz

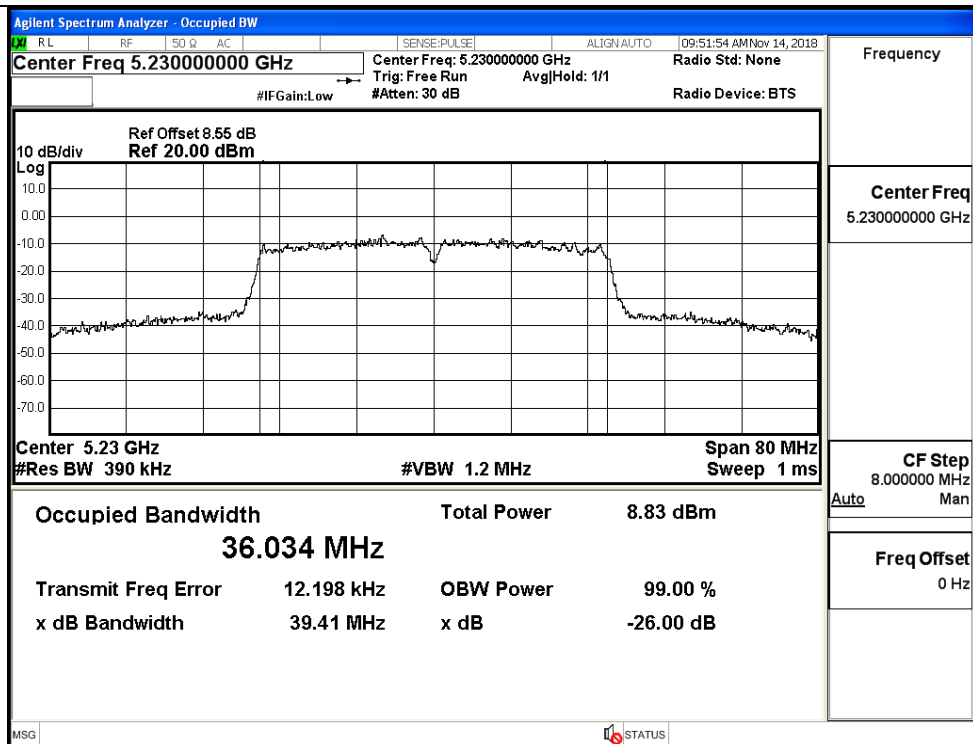


IEEE 802.11n HT20 / Channel 48 / 5240 MHz

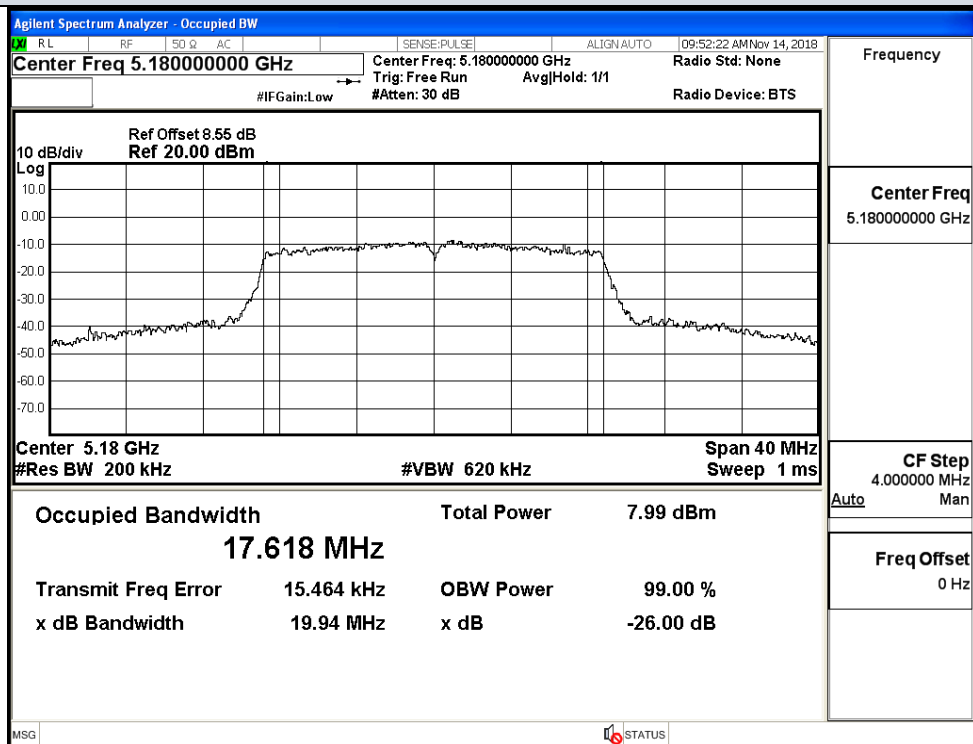
## 26dB Bandwidth



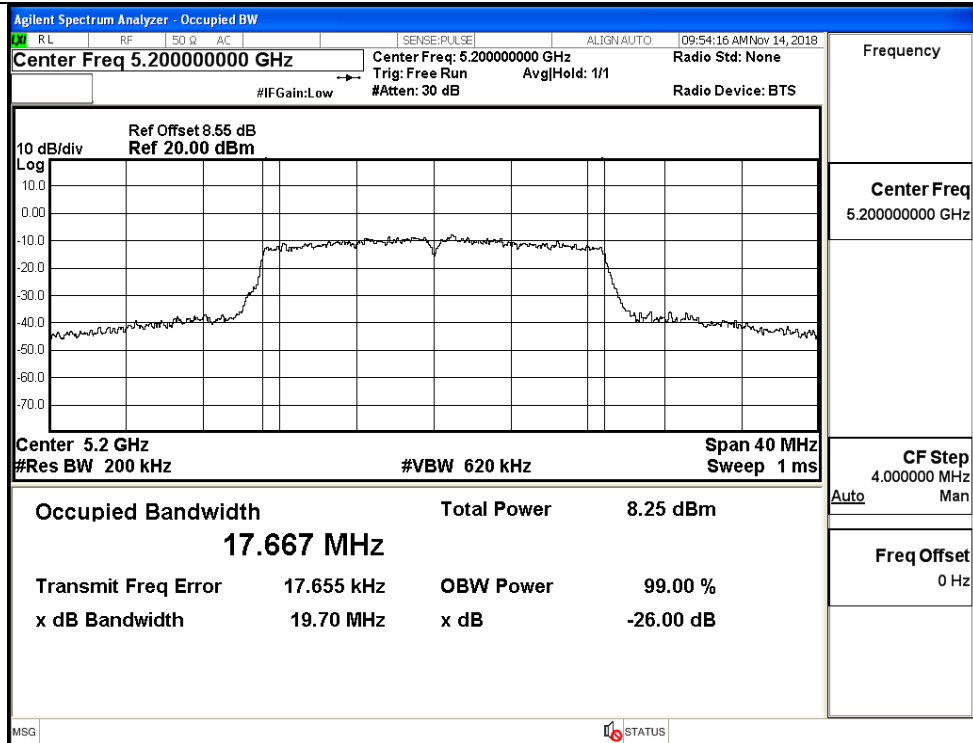
IEEE 802.11n HT40 / Channel 38 / 5190 MHz



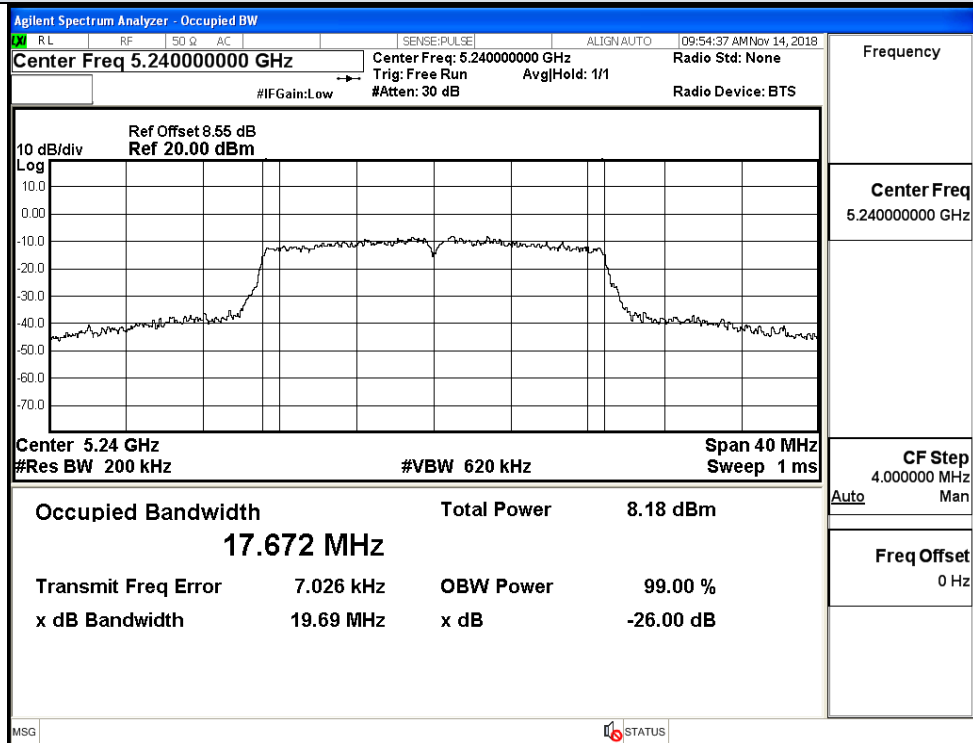
## IEEE 802.11n HT40 / Channel 46 / 5230 MHz



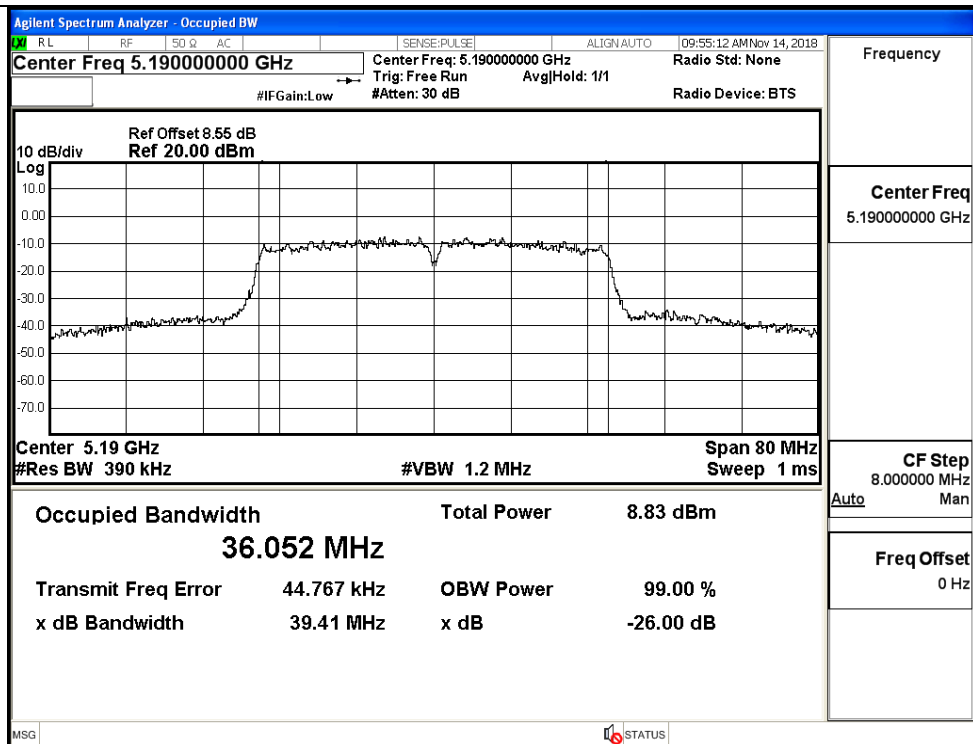
## IEEE 802.11ac VHT20 / Channel 36 / 5180 MHz



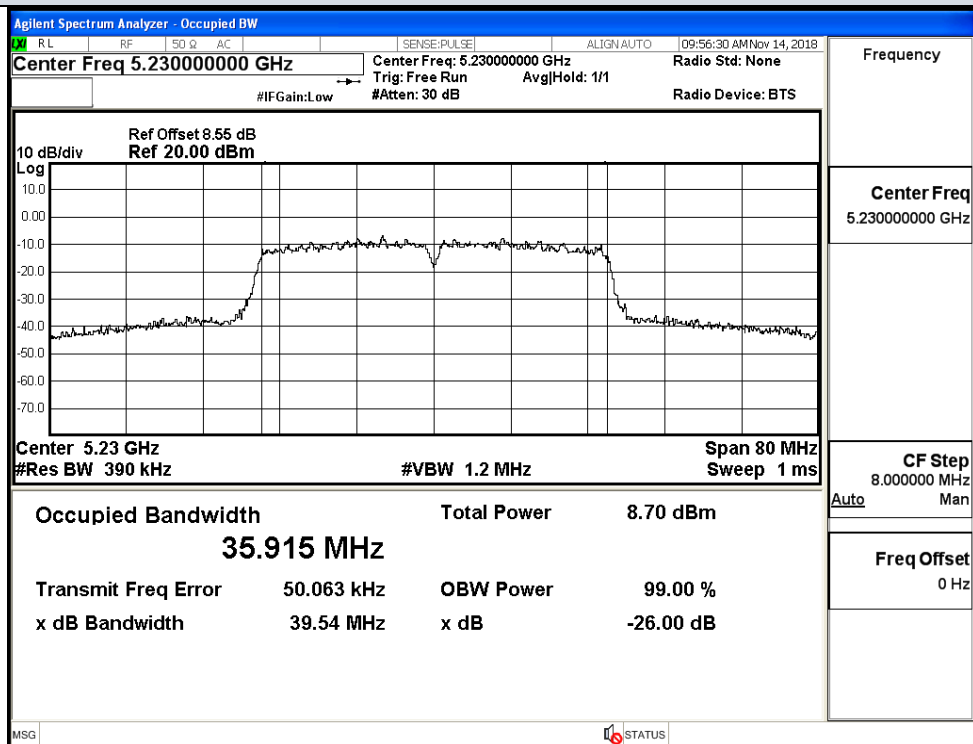
## IEEE 802.11ac VHT20 / Channel 40 / 5200 MHz



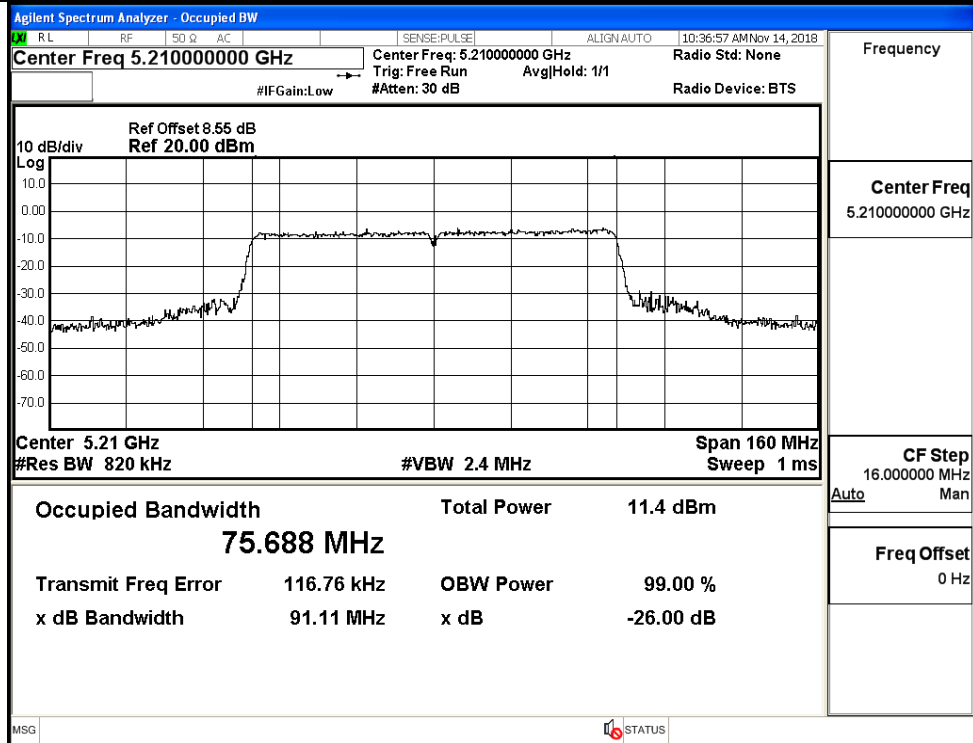
## IEEE 802.11ac VHT20 / Channel 48 / 5240 MHz



## IEEE 802.11ac VHT40 / Channel 38 / 5190 MHz



## IEEE 802.11ac VHT40 / Channel 46 / 5230 MHz



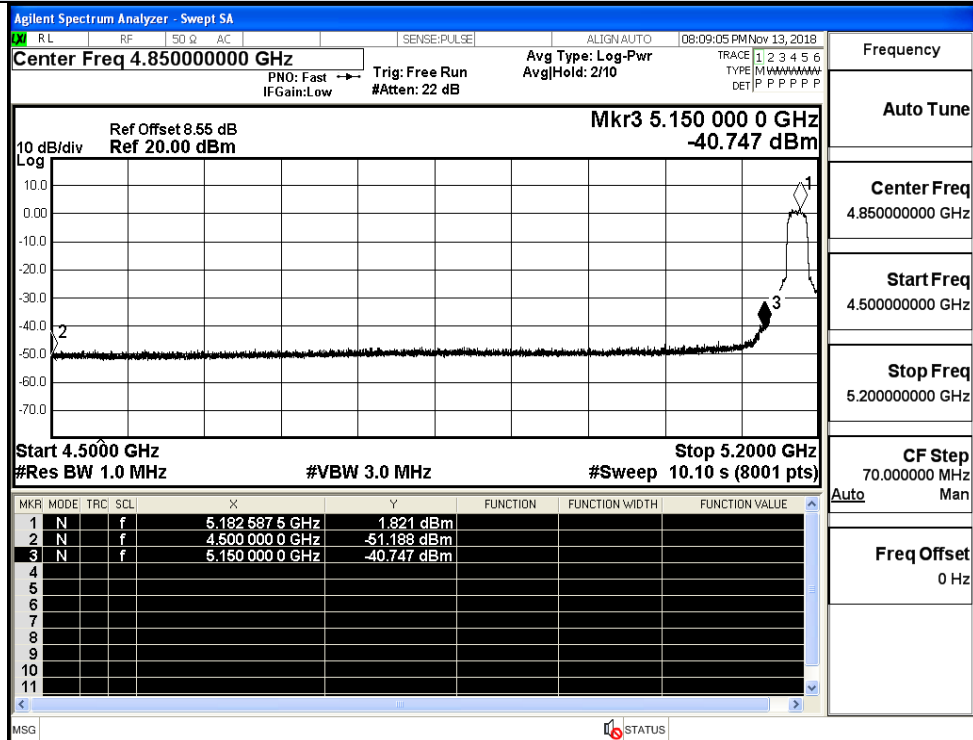
IEEE 802.11ac VHT80 / Channel 42 / 5210 MHz

**A.5 Undesirable Emissions Measurement**

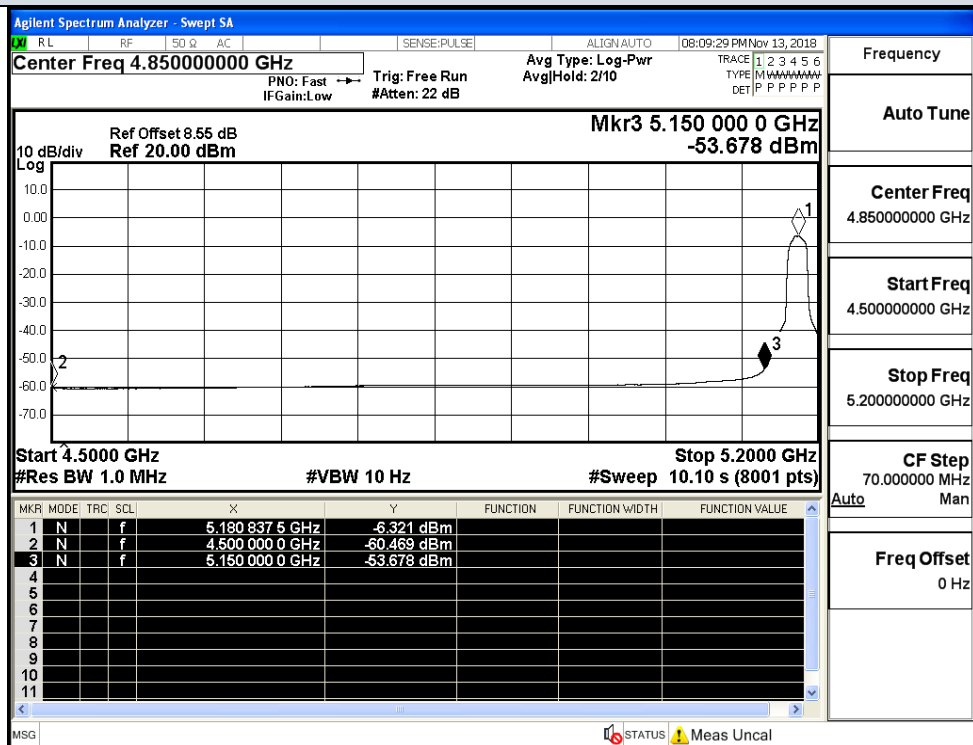
| Test Mode   | Channel | Frequency (MHz) | Conducted Power (dBm) | Antenna Gain (dBi) | Ground Reflection Factor (dB) | Covert Radiated E Level At 3m (dBuV/m) | Detector | Limit (dBuV/m) |
|-------------|---------|-----------------|-----------------------|--------------------|-------------------------------|----------------------------------------|----------|----------------|
| 11A         | 36      | 4500.0          | -51.188               | 2.00               | 0                             | 46.040                                 | Peak     | 68.20          |
|             |         | 4500.0          | -60.469               | 2.00               | 0                             | 36.759                                 | Average  | 54.00          |
|             |         | 5150.0          | -40.747               | 2.00               | 0                             | 56.481                                 | Peak     | 68.20          |
|             |         | 5150.0          | -53.678               | 2.00               | 0                             | 43.550                                 | Average  | 54.00          |
|             | 48      | 5350.0          | -49.219               | 2.00               | 0                             | 48.009                                 | Peak     | 68.20          |
|             |         | 5350.0          | -60.261               | 2.00               | 0                             | 36.967                                 | Average  | 54.00          |
|             |         | 5460.0          | -50.016               | 2.00               | 0                             | 47.212                                 | Peak     | 68.20          |
|             |         | 5460.0          | -60.740               | 2.00               | 0                             | 36.488                                 | Average  | 54.00          |
| 11N20 SISO  | 36      | 4500.0          | -49.926               | 2.00               | 0                             | 47.302                                 | Peak     | 68.20          |
|             |         | 4500.0          | -60.573               | 2.00               | 0                             | 36.655                                 | Average  | 54.00          |
|             |         | 5150.0          | -44.158               | 2.00               | 0                             | 53.070                                 | Peak     | 68.20          |
|             |         | 5150.0          | -55.979               | 2.00               | 0                             | 41.249                                 | Average  | 54.00          |
|             | 48      | 5350.0          | -49.825               | 2.00               | 0                             | 47.403                                 | Peak     | 68.20          |
|             |         | 5350.0          | -60.232               | 2.00               | 0                             | 36.996                                 | Average  | 54.00          |
|             |         | 5460.0          | -50.170               | 2.00               | 0                             | 47.058                                 | Peak     | 68.20          |
|             |         | 5460.0          | -60.825               | 2.00               | 0                             | 36.403                                 | Average  | 54.00          |
| 11N40 SISO  | 38      | 4500.0          | -50.431               | 2.00               | 0                             | 46.797                                 | Peak     | 68.20          |
|             |         | 4500.0          | -60.560               | 2.00               | 0                             | 36.668                                 | Average  | 54.00          |
|             |         | 5150.0          | -37.662               | 2.00               | 0                             | 59.566                                 | Peak     | 68.20          |
|             |         | 5150.0          | -48.970               | 2.00               | 0                             | 48.258                                 | Average  | 54.00          |
|             | 46      | 5350.0          | -50.218               | 2.00               | 0                             | 47.010                                 | Peak     | 68.20          |
|             |         | 5350.0          | -59.740               | 2.00               | 0                             | 37.488                                 | Average  | 54.00          |
|             |         | 5460.0          | -50.647               | 2.00               | 0                             | 46.581                                 | Peak     | 68.20          |
|             |         | 5460.0          | -60.558               | 2.00               | 0                             | 36.670                                 | Average  | 54.00          |
| 11AC20 SISO | 36      | 4500.0          | -50.052               | 2.00               | 0                             | 47.176                                 | Peak     | 68.20          |
|             |         | 4500.0          | -60.525               | 2.00               | 0                             | 36.703                                 | Average  | 54.00          |
|             |         | 5150.0          | -46.269               | 2.00               | 0                             | 50.959                                 | Peak     | 68.20          |
|             |         | 5150.0          | -56.395               | 2.00               | 0                             | 40.833                                 | Average  | 54.00          |
|             | 48      | 4500.0          | -49.854               | 2.00               | 0                             | 47.374                                 | Peak     | 68.20          |
|             |         | 4500.0          | -60.206               | 2.00               | 0                             | 37.022                                 | Average  | 54.00          |
|             |         | 5150.0          | -50.826               | 2.00               | 0                             | 46.402                                 | Peak     | 68.20          |
|             |         | 5150.0          | -60.826               | 2.00               | 0                             | 36.402                                 | Average  | 54.00          |
| 11AC40 SISO | 38      | 4500.0          | -49.970               | 2.00               | 0                             | 47.258                                 | Peak     | 68.20          |
|             |         | 4500.0          | -60.561               | 2.00               | 0                             | 36.667                                 | Average  | 54.00          |
|             |         | 5150.0          | -36.759               | 2.00               | 0                             | 60.469                                 | Peak     | 68.20          |
|             |         | 5150.0          | -48.868               | 2.00               | 0                             | 48.360                                 | Average  | 54.00          |
|             | 46      | 5350.0          | -48.807               | 2.00               | 0                             | 48.421                                 | Peak     | 68.20          |
|             |         | 5350.0          | -59.768               | 2.00               | 0                             | 37.460                                 | Average  | 54.00          |
|             |         | 5460.0          | -50.751               | 2.00               | 0                             | 46.477                                 | Peak     | 68.20          |
|             |         | 5460.0          | -60.254               | 2.00               | 0                             | 36.974                                 | Average  | 54.00          |
| 11AC80 SISO | 42      | 4500.0          | -47.767               | 2.00               | 0                             | 49.461                                 | Peak     | 68.20          |
|             |         | 5150.0          | -58.956               | 2.00               | 0                             | 38.272                                 | Average  | 54.00          |
|             |         | 4500.0          | -48.730               | 2.00               | 0                             | 48.498                                 | Peak     | 68.20          |
|             |         | 5150.0          | -59.802               | 2.00               | 0                             | 37.426                                 | Average  | 54.00          |
|             |         | 5350.0          | -49.614               | 2.00               | 0                             | 47.614                                 | Peak     | 68.20          |

|  |  |        |         |      |   |        |         |       |
|--|--|--------|---------|------|---|--------|---------|-------|
|  |  | 5460.0 | -60.538 | 2.00 | 0 | 36.690 | Average | 54.00 |
|  |  | 5350.0 | -38.152 | 2.00 | 0 | 59.076 | Peak    | 68.20 |
|  |  | 5460.0 | -49.627 | 2.00 | 0 | 47.601 | Average | 54.00 |

## Undesirable Emissions Measurement

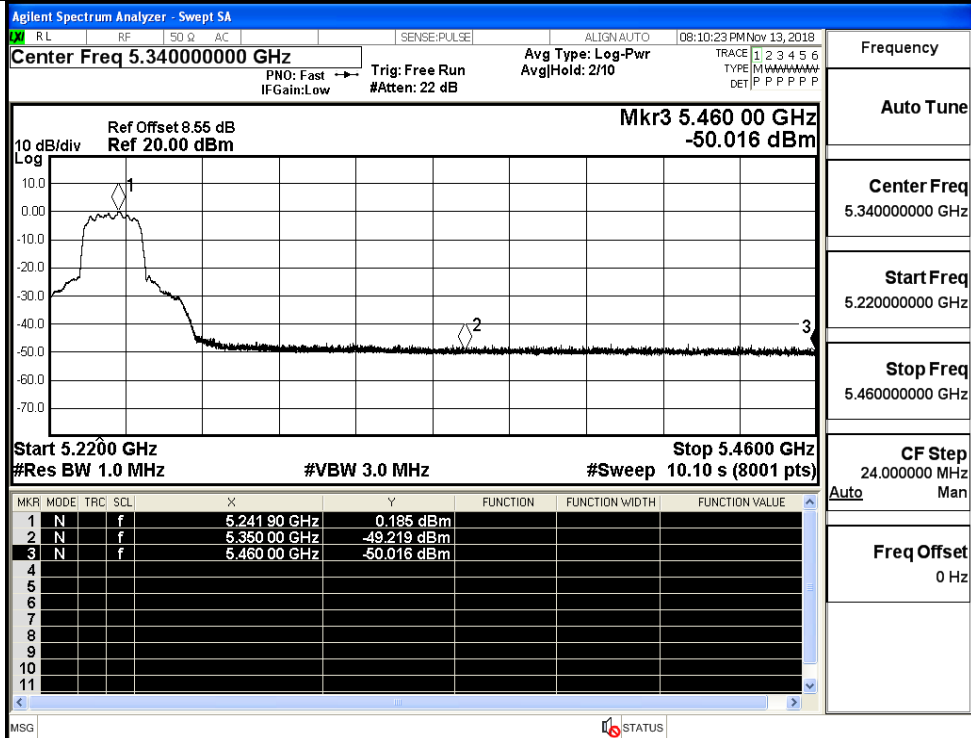


## IEEE 802.11a / Channel 36 / 5180 MHz / Peak

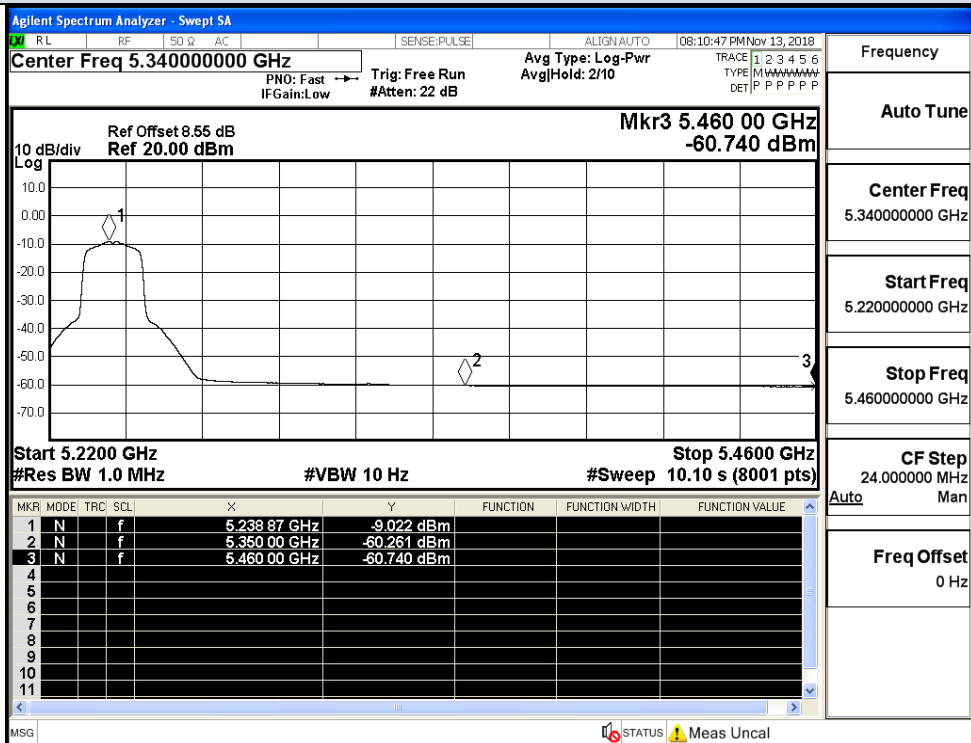


## IEEE 802.11a / Channel 36 / 5180 MHz / Average

## Undesirable Emissions Measurement

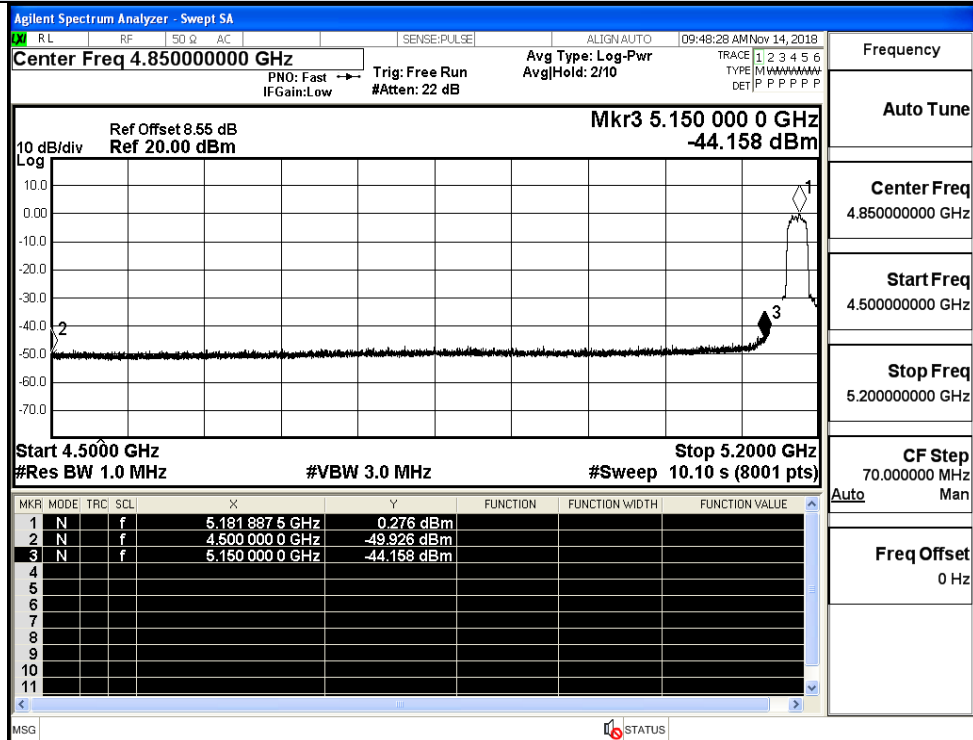


## IEEE 802.11a / Channel 48 / 5240 MHz / Peak

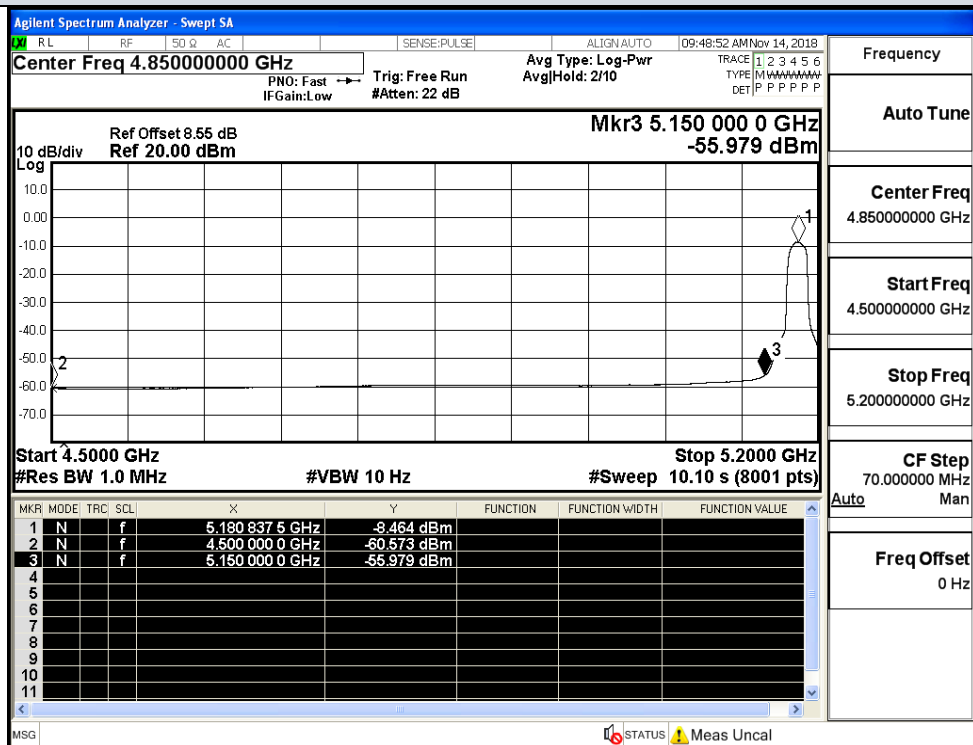


## IEEE 802.11a / Channel 48 / 5240 MHz / Average

## Undesirable Emissions Measurement

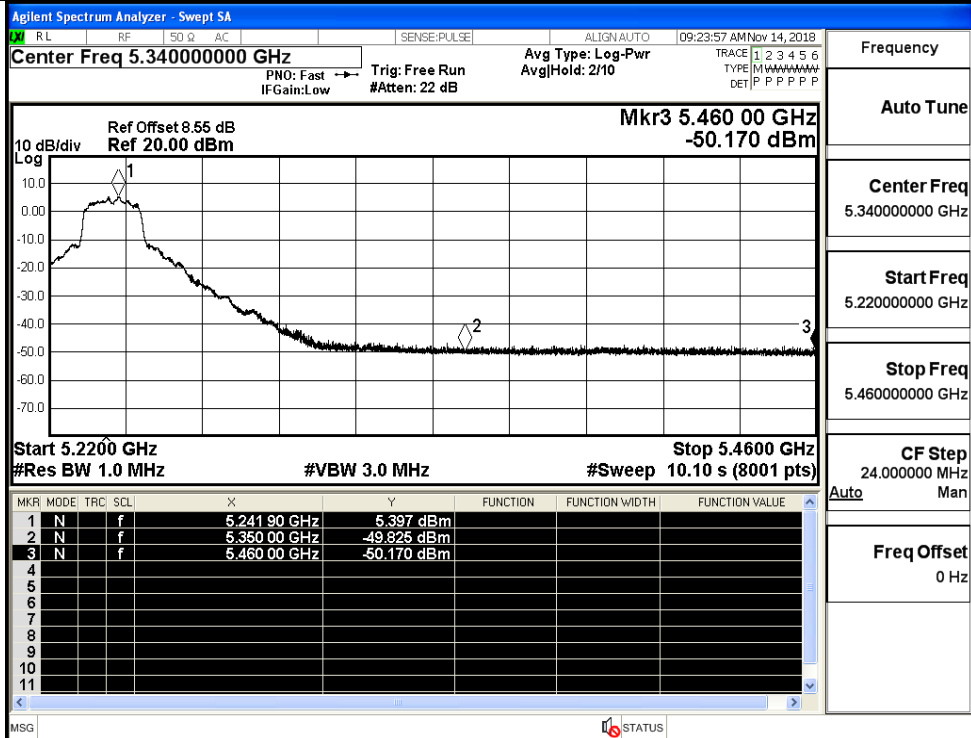


## IEEE 802.11n HT20 / Channel 36 / 5180 MHz / Peak

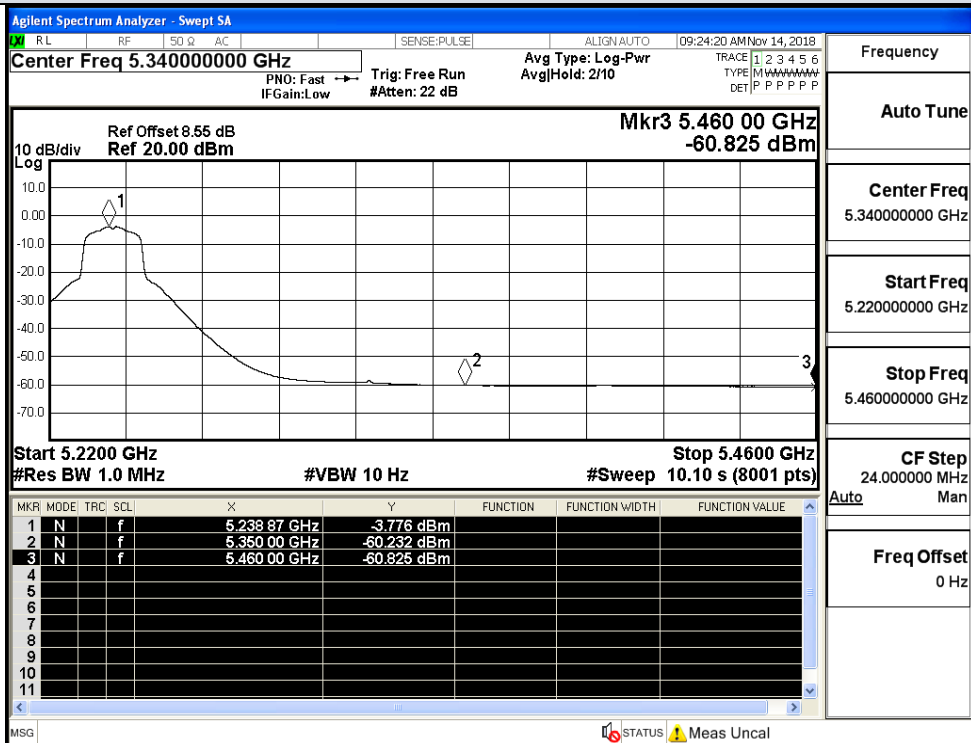


## IEEE 802.11n HT20 / Channel 36 / 5180 MHz / Average

## Undesirable Emissions Measurement

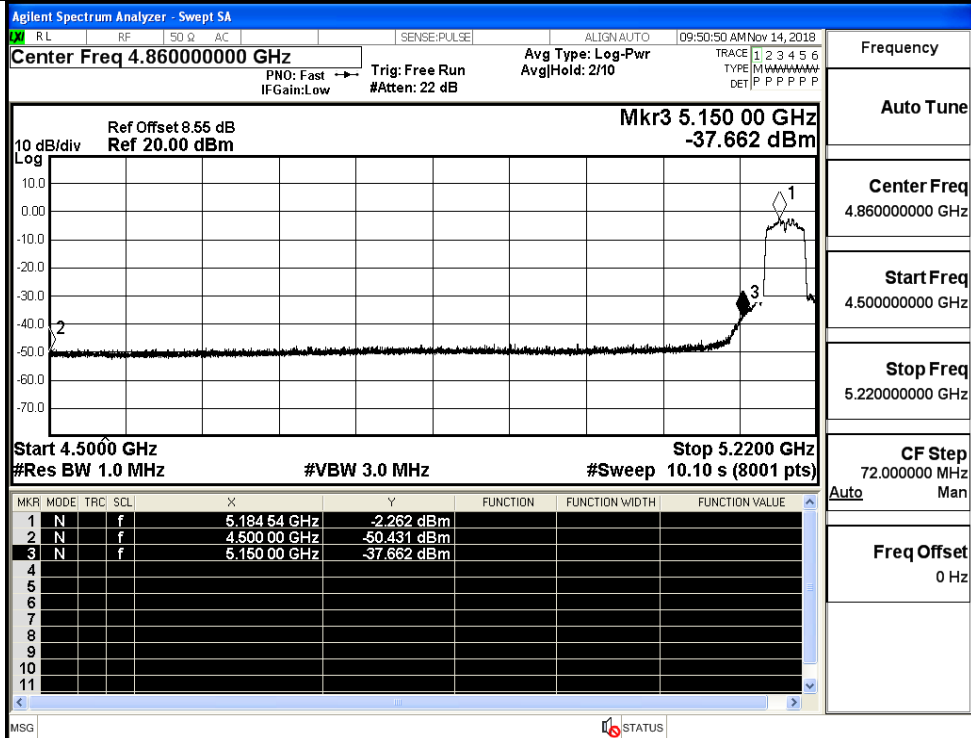


## IEEE 802.11n HT20 / Channel 48 / 5240 MHz / Peak

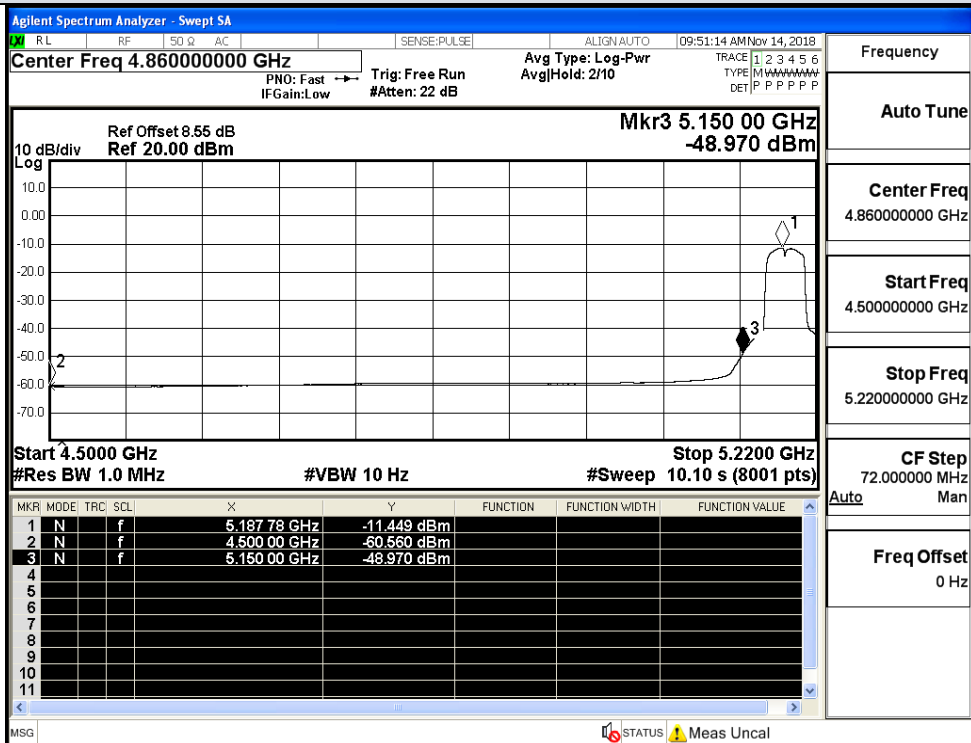


## IEEE 802.11n HT20 / Channel 48 / 5240 MHz / Average

## Undesirable Emissions Measurement

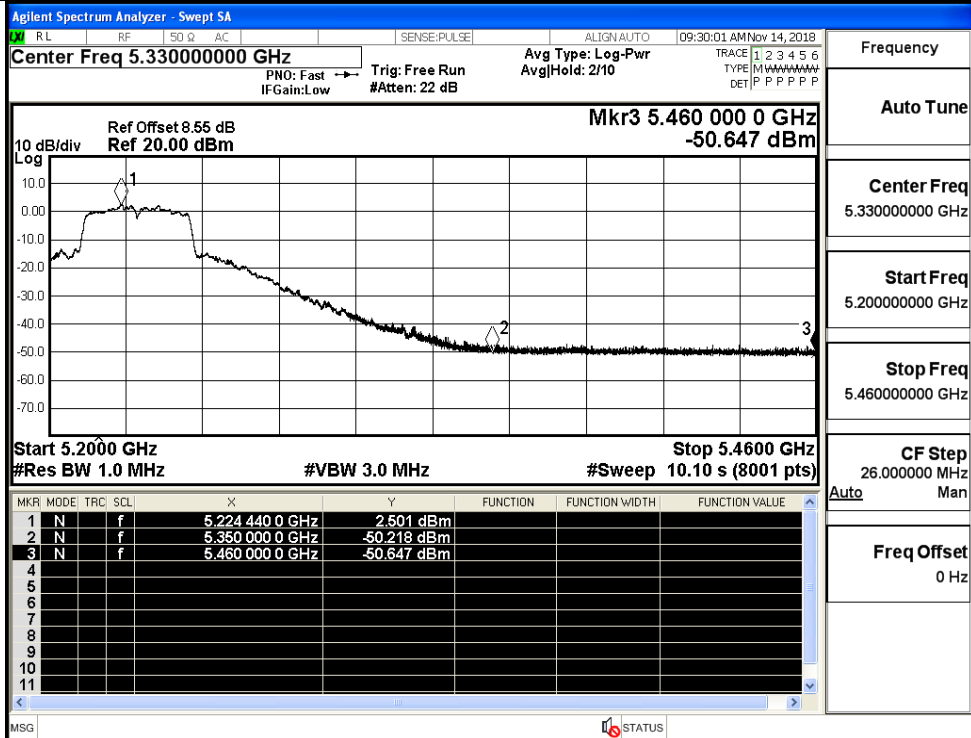


## IEEE 802.11n HT40 / Channel 38 / 5190 MHz / Peak

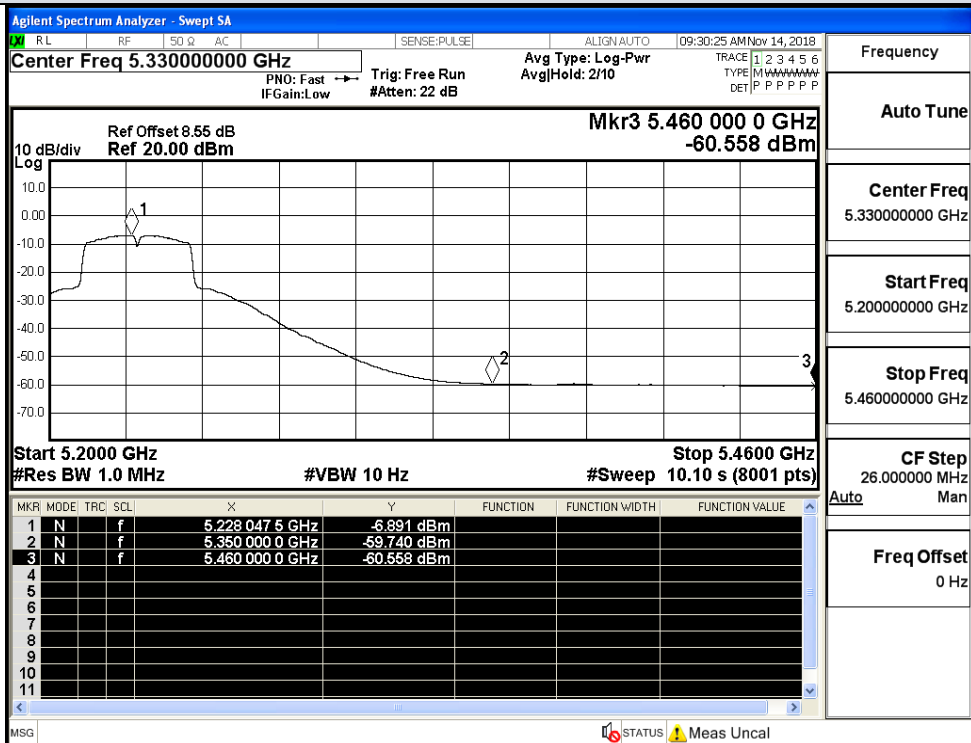


## IEEE 802.11n HT40 / Channel 38 / 5190 MHz / Average

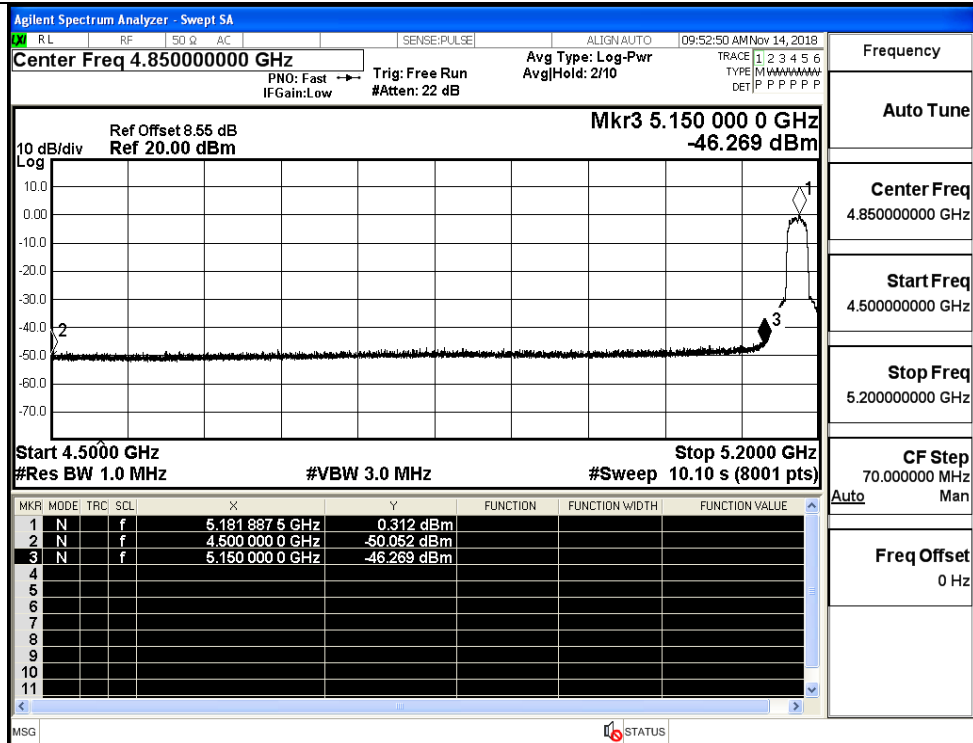
## Undesirable Emissions Measurement



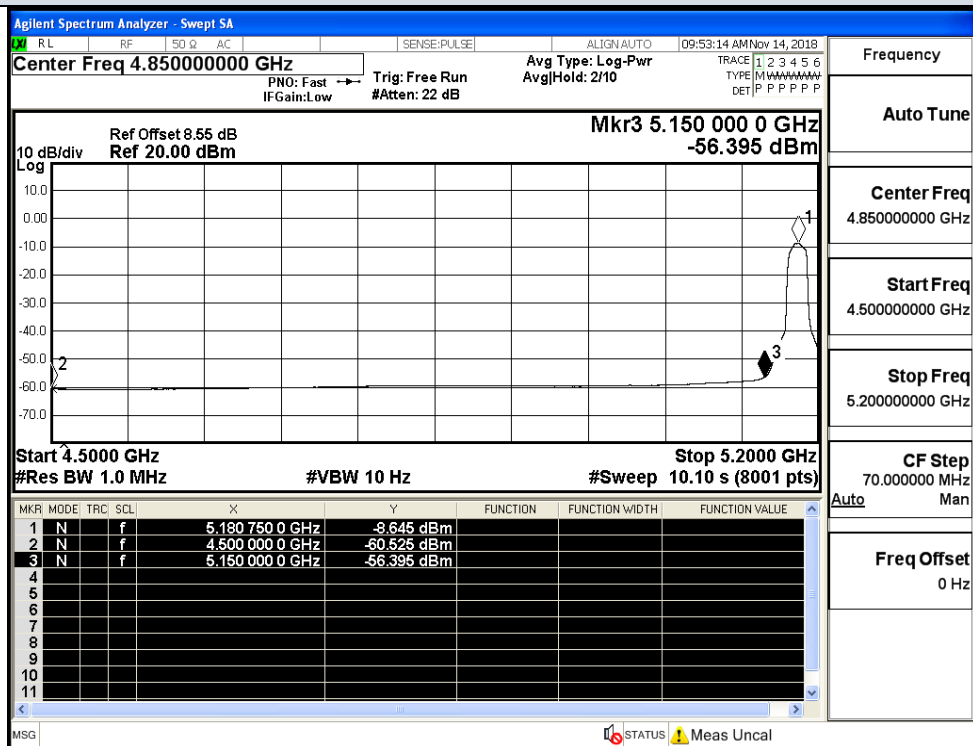
## IEEE 802.11n HT40 / Channel 46 / 5230 MHz / Peak



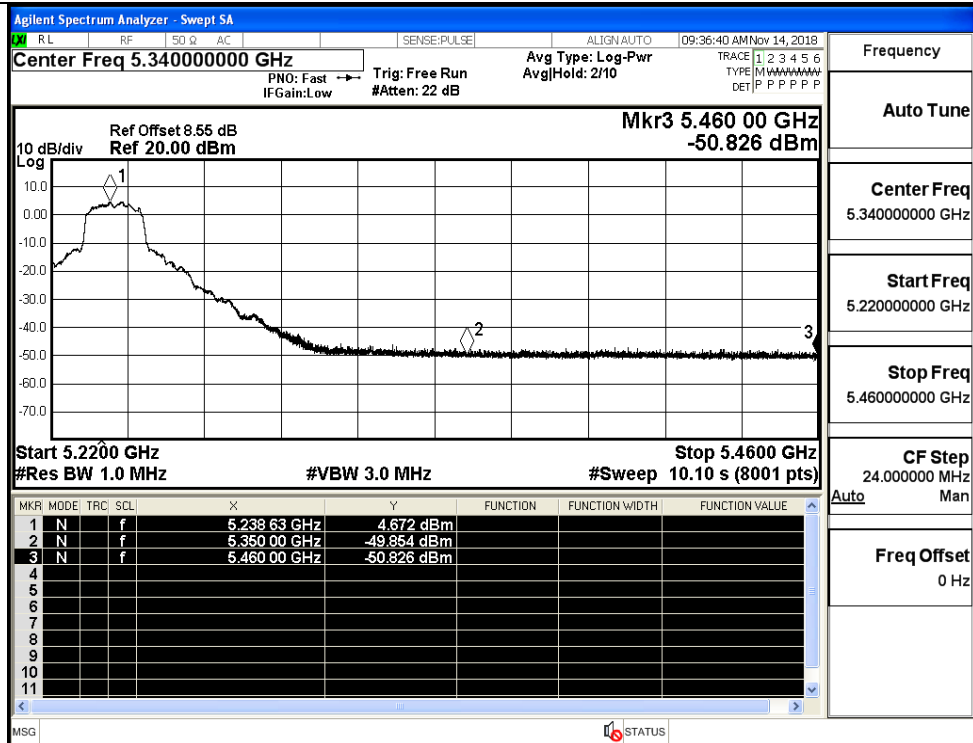
## IEEE 802.11n HT40 / Channel 46 / 5230 MHz / Average



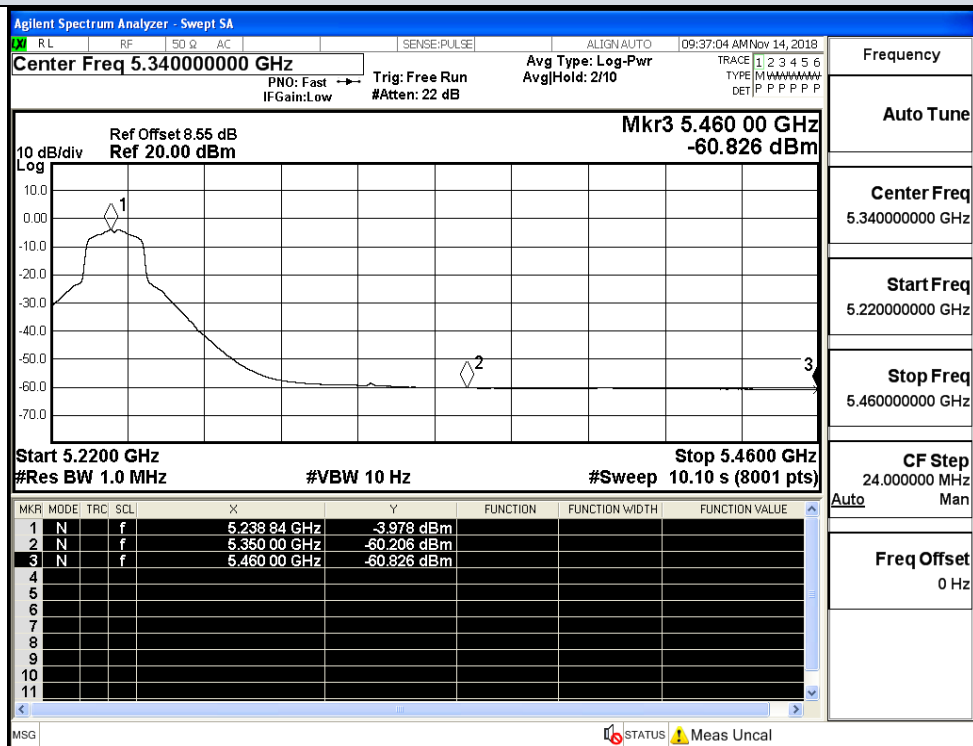
IEEE 802.11ac VHT20 / Channel 36 / 5180 MHz / Peak



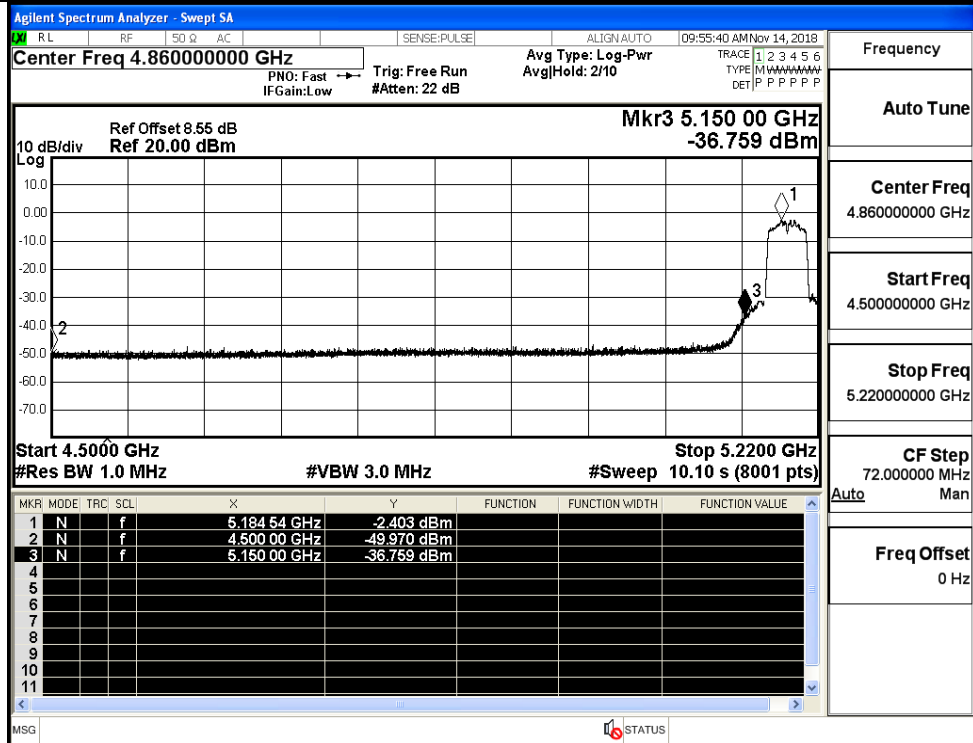
IEEE 802.11ac VHT20 / Channel 36 / 5180 MHz / Average



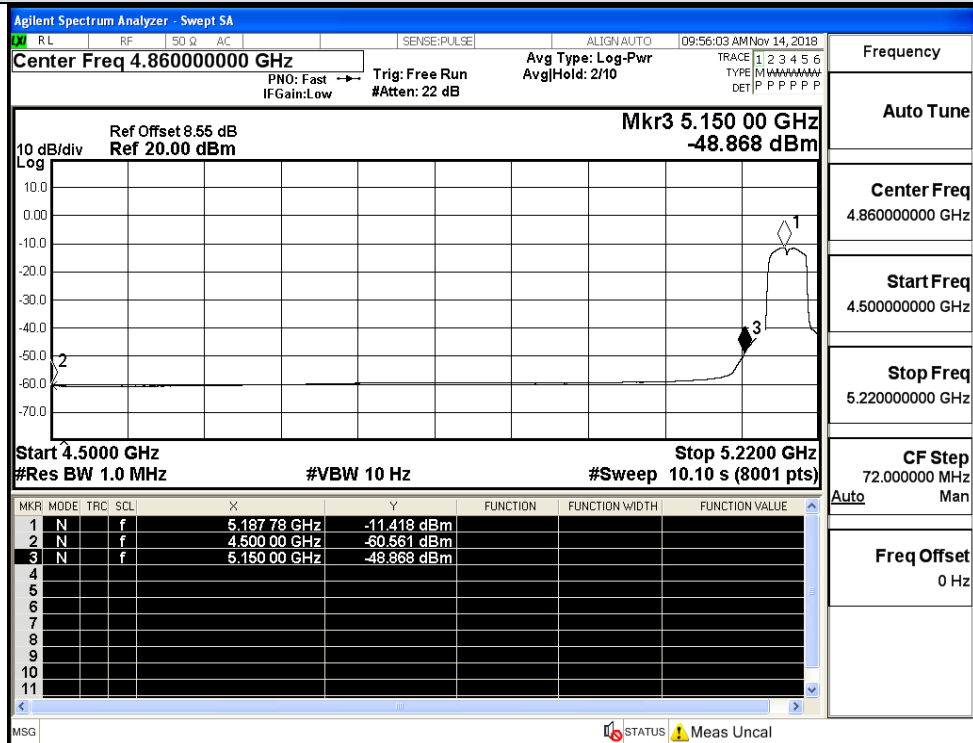
IEEE 802.11ac VHT20 / Channel 48 / 5240 MHz / Peak



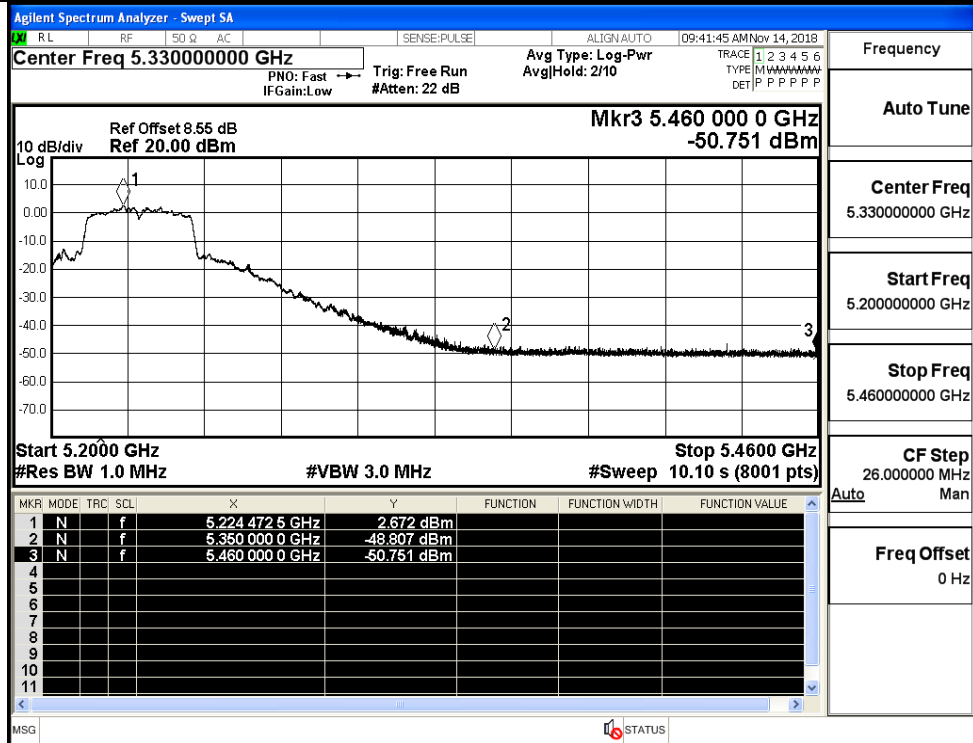
IEEE 802.11ac VHT20 / Channel 48 / 5240 MHz / Average



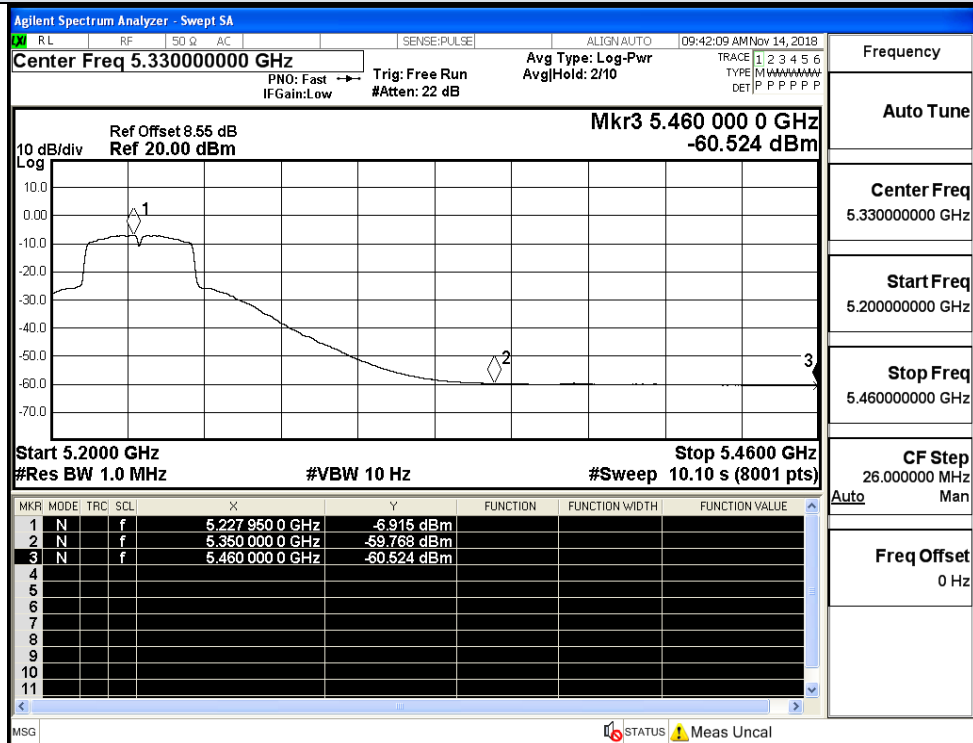
IEEE 802.11ac VHT40 / Channel 38 / 5190 MHz / Peak



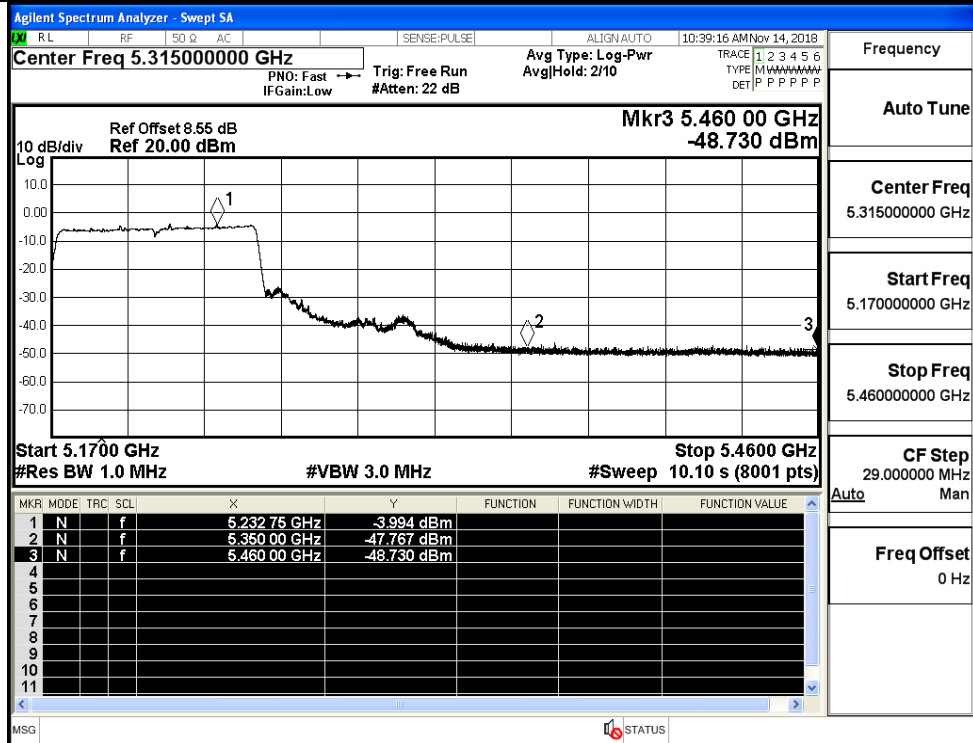
IEEE 802.11ac VHT40 / Channel 38 / 5190 MHz / Average



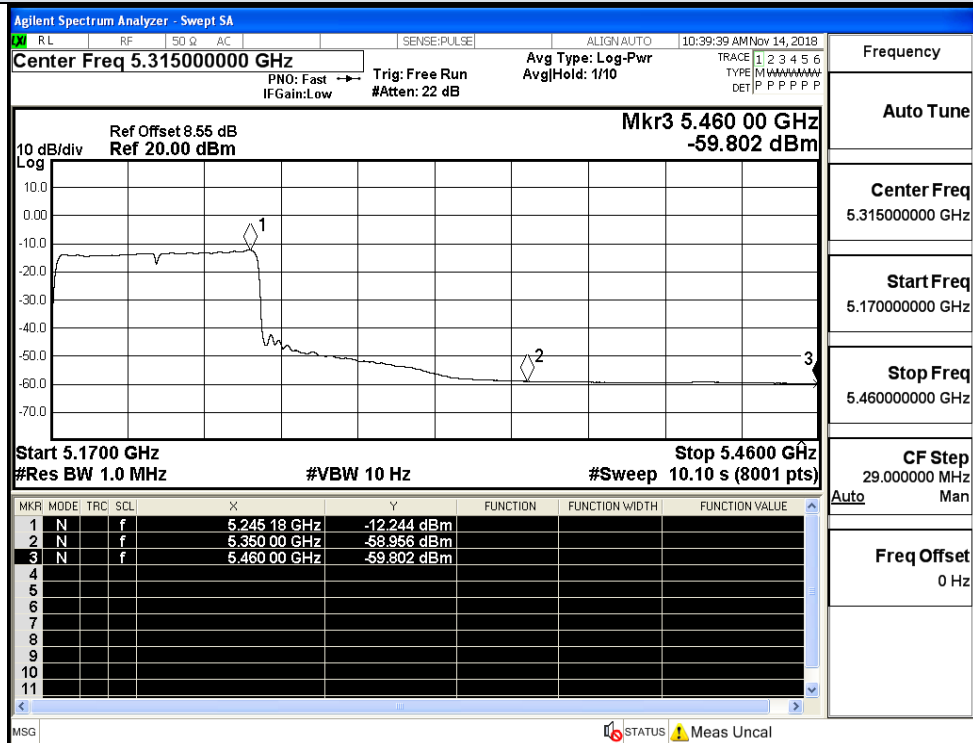
IEEE 802.11ac VHT40 / Channel 46 / 5230 MHz / Peak



IEEE 802.11ac VHT40 / Channel 46 / 5230 MHz / Average



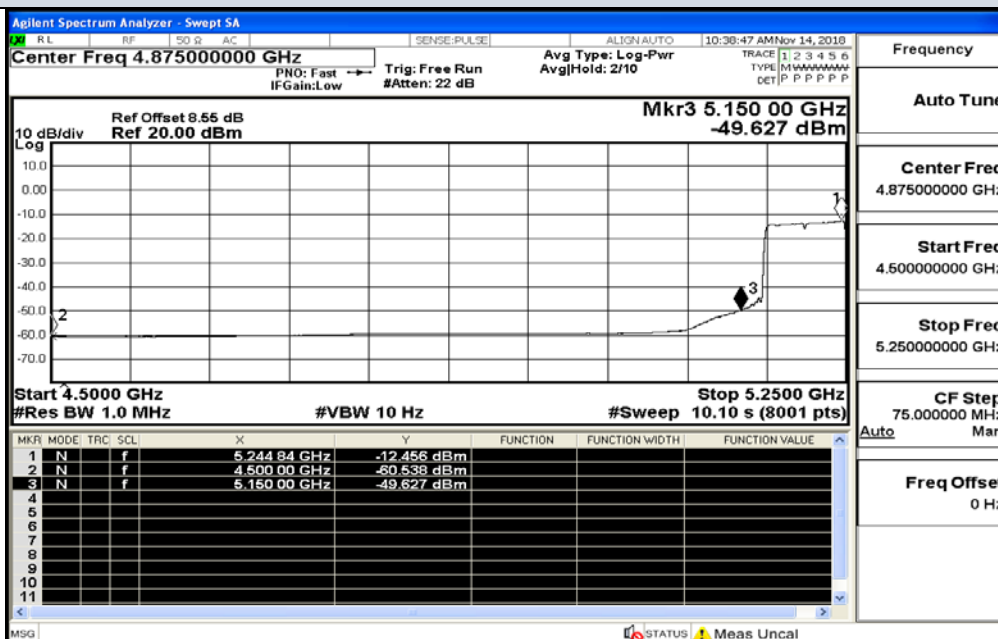
IEEE 802.11ac VHT80 / Channel 42 / 5210 MHz / Peak



IEEE 802.11ac VHT80 / Channel 42 / 5210 MHz / Average



## IEEE 802.11ac VHT80 / Channel 42 / 5210 MHz / Peak



## IEEE 802.11ac VHT80 / Channel 42 / 5210 MHz / Average