

## Appendix B

### RF Test Data for 5.8G WLAN (Conducted Measurement)

Product Name: wireless transmission system

Trade Mark: Hollyland

Test Model: Mars300

#### Environmental Conditions

|                    |             |
|--------------------|-------------|
| Temperature:       | 24.5 ° C    |
| Relative Humidity: | 52.8%       |
| ATM Pressure:      | 100.0 kPa   |
| Test Engineer:     | Tom Liu     |
| Supervised by:     | Jayden Zhuo |

#### B.1 Duty Cycle

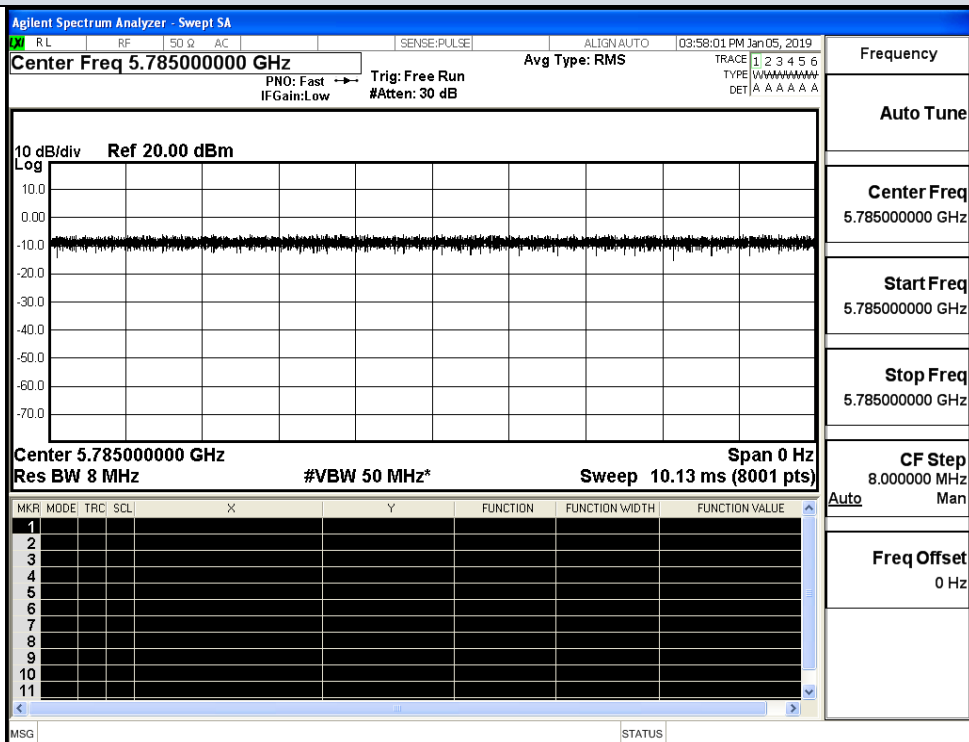
##### Antenna 0

| Test Mode | Test Frequency (MHz) | Duty Cycle (%) | 10log(1/x) Factor (dB) | 1/B Minimum VBW (KHz) |
|-----------|----------------------|----------------|------------------------|-----------------------|
| 11A       | 5785                 | 100            | 0.00                   | 0.01                  |
| 11N20     | 5785                 | 100            | 0.00                   | 0.01                  |
| 11N40     | 5755                 | 100            | 0.00                   | 0.01                  |

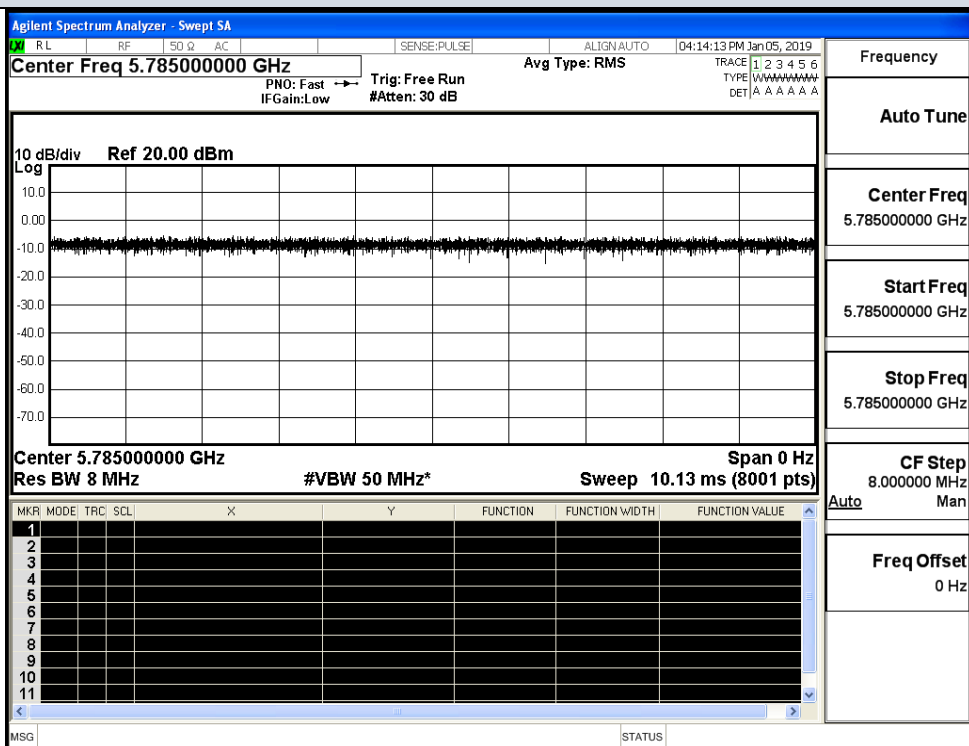
##### Antenna 1

| Test Mode | Test Frequency (MHz) | Duty Cycle (%) | 10log(1/x) Factor (dB) | 1/B Minimum VBW (KHz) |
|-----------|----------------------|----------------|------------------------|-----------------------|
| 11A       | 5785                 | 100            | 0.00                   | 0.01                  |
| 11N20     | 5785                 | 100            | 0.00                   | 0.01                  |
| 11N40     | 5755                 | 100            | 0.00                   | 0.01                  |

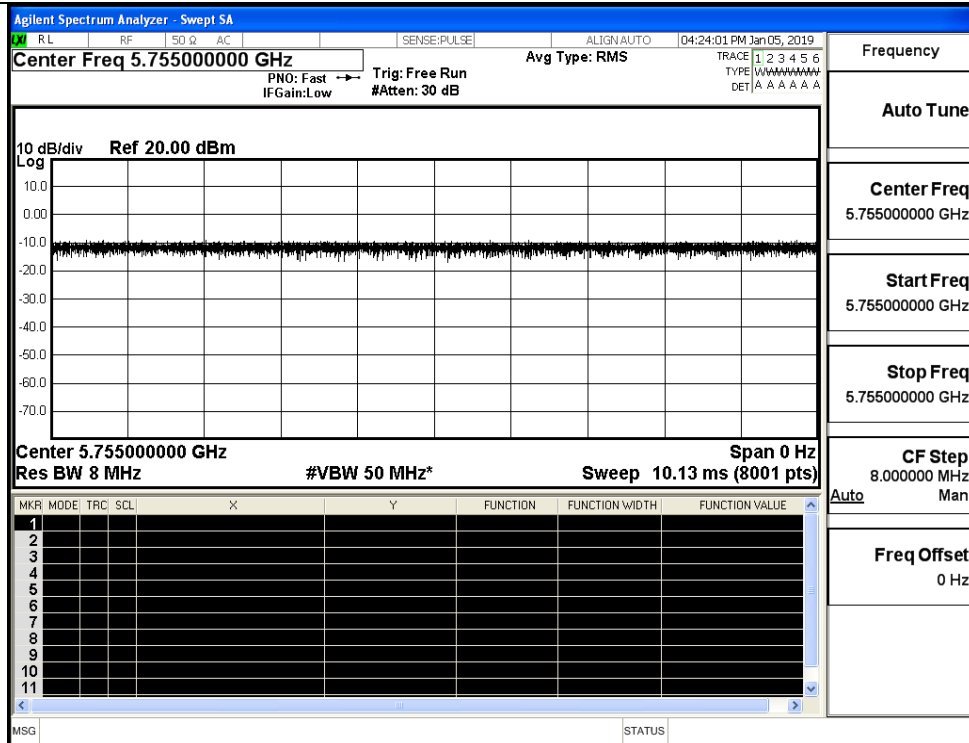
## On Time and Duty Cycle\_Ant0



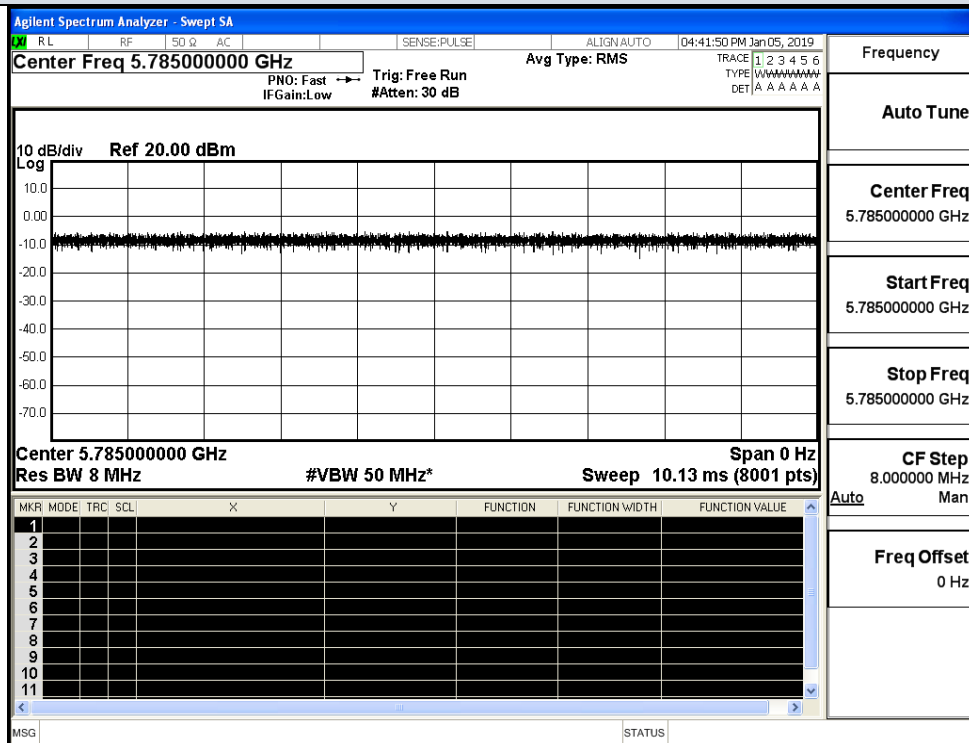
## IEEE 802.11a\_Ant0

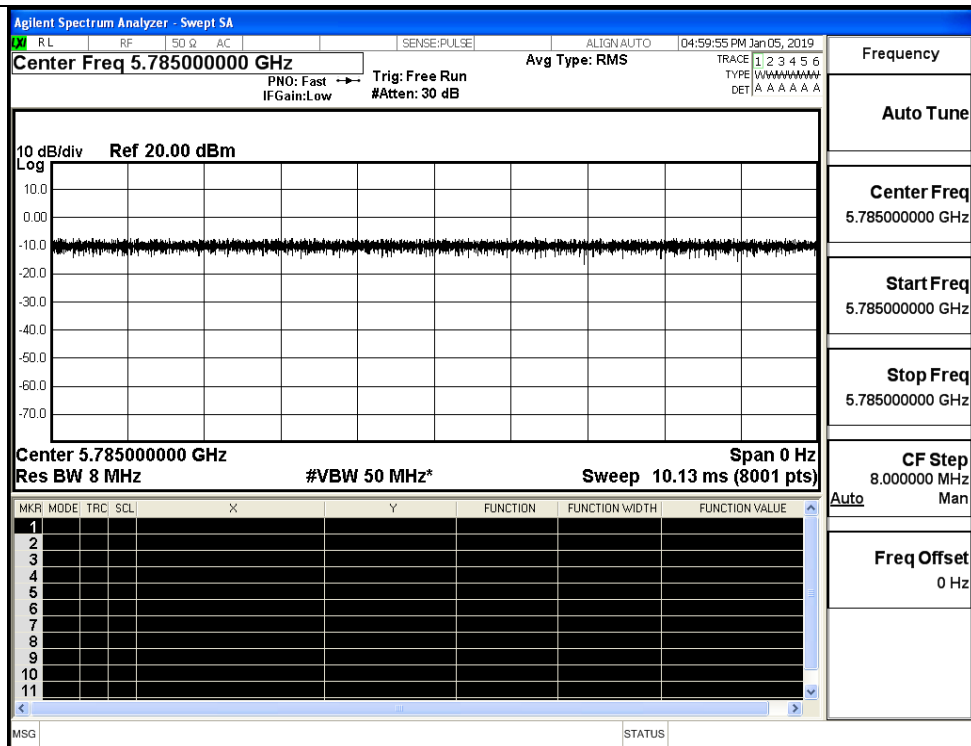


## IEEE 802.11n HT20\_Ant0

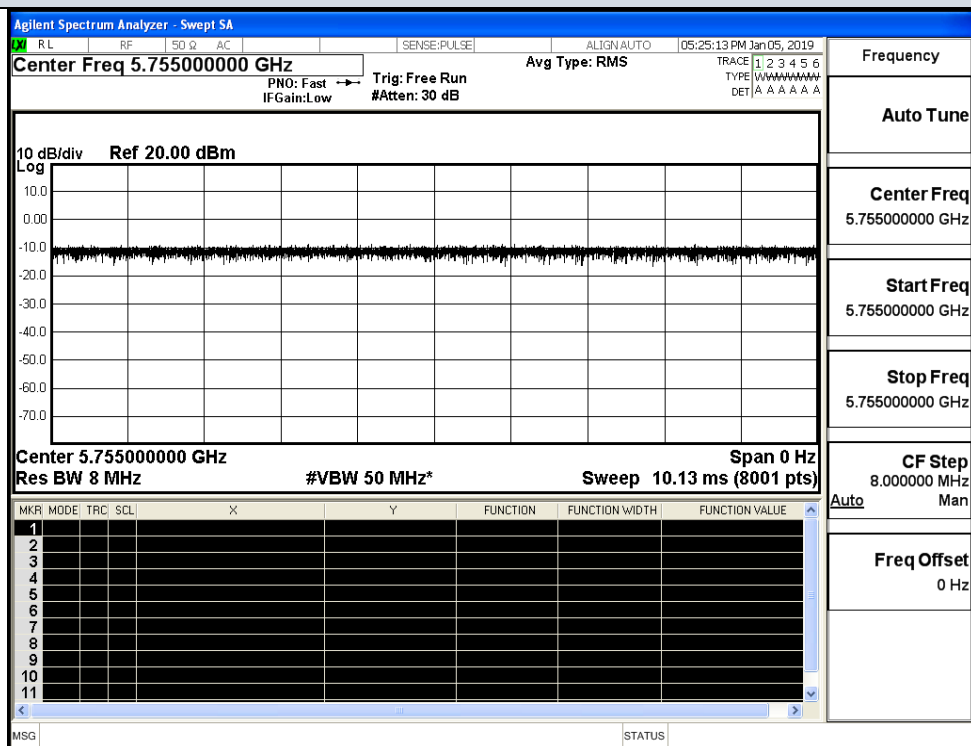


## On Time and Duty Cycle\_Ant1





IEEE 802.11n HT20\_Ant1



IEEE 802.11n HT40\_Ant1

**B.2 Maximum Conduct Output Power****Antenna 0**

| Test Mode         | Channel | Frequency (MHz) | AVG Conducted Power (dBm) | Duty Cycle Factor (dB) | Report Conducted Power (dBm) | Limit (dBm) |
|-------------------|---------|-----------------|---------------------------|------------------------|------------------------------|-------------|
| IEEE 802.11a      | 149     | 5745            | 16.75                     | 0                      | 16.75                        | 30          |
|                   | 157     | 5785            | 16.93                     | 0                      | 16.93                        |             |
|                   | 165     | 5825            | 16.22                     | 0                      | 16.22                        |             |
| IEEE 802.11n HT20 | 149     | 5745            | 15.81                     | 0                      | 15.81                        | 30          |
|                   | 157     | 5785            | 15.41                     | 0                      | 15.41                        |             |
|                   | 165     | 5825            | 15.17                     | 0                      | 15.17                        |             |
| IEEE 802.11n HT40 | 151     | 5755            | 14.73                     | 0                      | 14.73                        | 30          |
|                   | 159     | 5795            | 14.45                     | 0                      | 14.45                        |             |

**Antenna 1**

| Test Mode         | Channel | Frequency (MHz) | AVG Conducted Power (dBm) | Duty Cycle Factor (dB) | Report Conducted Power (dBm) | Limit (dBm) |
|-------------------|---------|-----------------|---------------------------|------------------------|------------------------------|-------------|
| IEEE 802.11a      | 149     | 5745            | 16.63                     | 0                      | 16.63                        | 30          |
|                   | 157     | 5785            | 16.86                     | 0                      | 16.86                        |             |
|                   | 165     | 5825            | 16.49                     | 0                      | 16.49                        |             |
| IEEE 802.11n HT20 | 149     | 5745            | 15.83                     | 0                      | 15.83                        | 30          |
|                   | 157     | 5785            | 15.49                     | 0                      | 15.49                        |             |
|                   | 165     | 5825            | 15.28                     | 0                      | 15.28                        |             |
| IEEE 802.11n HT40 | 151     | 5755            | 14.79                     | 0                      | 14.79                        | 30          |
|                   | 159     | 5795            | 14.47                     | 0                      | 14.47                        |             |

**Antenna 0+Antenna 1**

| Test Mode | Channel | Frequency (MHz) | AVG Conducted Power (dBm) |       |       | Duty Cycle Factor (dB) | Report Conducted Power (dBm) |       |       | Limit (dBm) |
|-----------|---------|-----------------|---------------------------|-------|-------|------------------------|------------------------------|-------|-------|-------------|
|           |         |                 | Ant0                      | Ant1  | Sum   |                        | Ant0                         | Ant1  | Sum   |             |
| 11N20     | 149     | 5745            | 15.81                     | 15.83 | 18.83 | 0                      | 15.81                        | 15.83 | 18.83 | 30          |
|           | 157     | 5785            | 15.41                     | 15.49 | 18.46 | 0                      | 15.41                        | 15.49 | 18.46 |             |
|           | 165     | 5825            | 15.17                     | 15.28 | 18.24 | 0                      | 15.17                        | 15.28 | 18.24 |             |
| 11N40     | 151     | 5755            | 14.73                     | 14.79 | 17.77 | 0                      | 14.73                        | 14.79 | 17.77 | 30          |
|           | 159     | 5795            | 14.45                     | 14.47 | 17.47 | 0                      | 14.45                        | 14.47 | 17.47 |             |

**B.3 Power Spectral Density****Antenna 0**

| Test Mode | Channel | Frequency (MHz) | Power Density (dBm/300KHz) | Duty Cycle Factor (dB) | RBW Factor (dB) | Report Power Density (dBm/500KHz) | Limit (dBm/500KHz) |
|-----------|---------|-----------------|----------------------------|------------------------|-----------------|-----------------------------------|--------------------|
| 11A       | 149     | 5745            | -7.827                     | 0                      | 2.218           | -5.609                            | 30                 |
|           | 157     | 5785            | -7.399                     | 0                      | 2.218           | -5.181                            |                    |
|           | 165     | 5825            | -6.186                     | 0                      | 2.218           | -3.968                            |                    |
| 11N20     | 149     | 5745            | -6.456                     | 0                      | 2.218           | -4.238                            | 30                 |
|           | 157     | 5785            | -6.266                     | 0                      | 2.218           | -4.048                            |                    |
|           | 165     | 5825            | -3.932                     | 0                      | 2.218           | -1.714                            |                    |
| 11N40     | 151     | 5755            | -9.990                     | 0                      | 2.218           | -7.772                            | 30                 |
|           | 159     | 5795            | -10.348                    | 0                      | 2.218           | -8.130                            |                    |

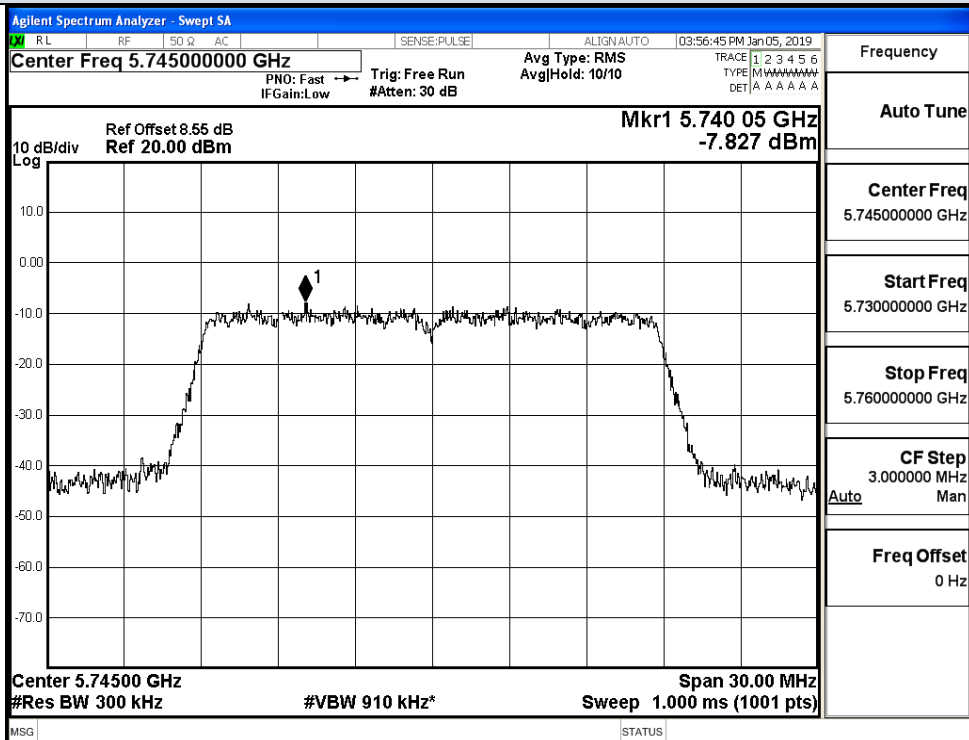
**Antenna 1**

| Test Mode | Channel | Frequency (MHz) | Power Density (dBm/300KHz) | Duty Cycle Factor (dB) | RBW Factor (dB) | Report Power Density (dBm/500KHz) | Limit (dBm/500KHz) |
|-----------|---------|-----------------|----------------------------|------------------------|-----------------|-----------------------------------|--------------------|
| 11A       | 149     | 5745            | -5.463                     | 0                      | 2.218           | -3.245                            | 30                 |
|           | 157     | 5785            | -6.397                     | 0                      | 2.218           | -4.179                            |                    |
|           | 165     | 5825            | -6.759                     | 0                      | 2.218           | -4.541                            |                    |
| 11N20     | 149     | 5745            | -5.875                     | 0                      | 2.218           | -3.657                            | 30                 |
|           | 157     | 5785            | -7.931                     | 0                      | 2.218           | -5.713                            |                    |
|           | 165     | 5825            | -8.502                     | 0                      | 2.218           | -6.284                            |                    |
| 11N40     | 151     | 5755            | -9.476                     | 0                      | 2.218           | -7.258                            | 30                 |
|           | 159     | 5795            | -9.204                     | 0                      | 2.218           | -6.986                            |                    |

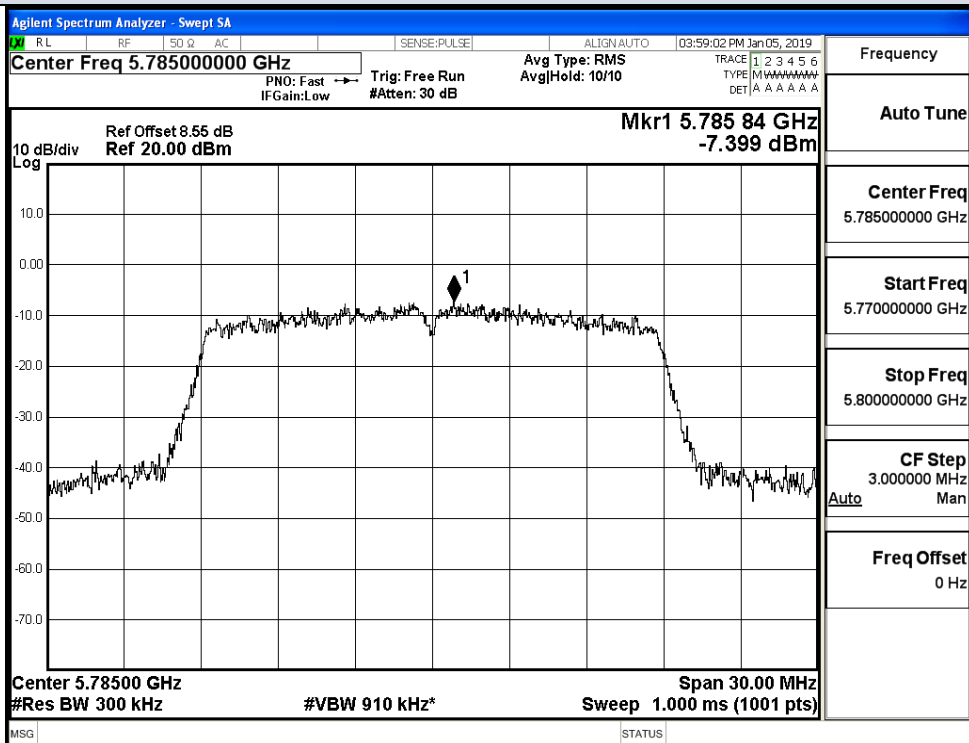
**Antenna 0+Antenna 1**

| Test Mode | Channel | Frequency (MHz) | Power Density (dBm/300KHz) |        |        | Duty Cycle Factor (dB) | RBW Factor (dB) | Report Power Density (dBm/500KHz) |        |        | Limit (dBm/500 KHz) |
|-----------|---------|-----------------|----------------------------|--------|--------|------------------------|-----------------|-----------------------------------|--------|--------|---------------------|
|           |         |                 | Ant0                       | Ant1   | Sum    |                        |                 | Ant0                              | Ant1   | Sum    |                     |
| 11N20     | 149     | 5745            | -6.456                     | -5.875 | -3.145 | 0                      | 2.218           | -4.238                            | -3.657 | -0.927 | 30                  |
|           | 157     | 5785            | -6.266                     | -7.931 | -4.009 | 0                      | 2.218           | -4.048                            | -5.713 | -1.791 |                     |
|           | 165     | 5825            | -3.932                     | -8.502 | -2.631 | 0                      | 2.218           | -1.714                            | -6.284 | -0.413 |                     |
| 11N40     | 151     | 5755            | -9.990                     | -9.476 | -6.715 | 0                      | 2.218           | -7.772                            | -7.258 | -4.497 | 30                  |
|           | 159     | 5795            | -10.348                    | -9.204 | -6.728 | 0                      | 2.218           | -8.130                            | -6.986 | -4.510 |                     |

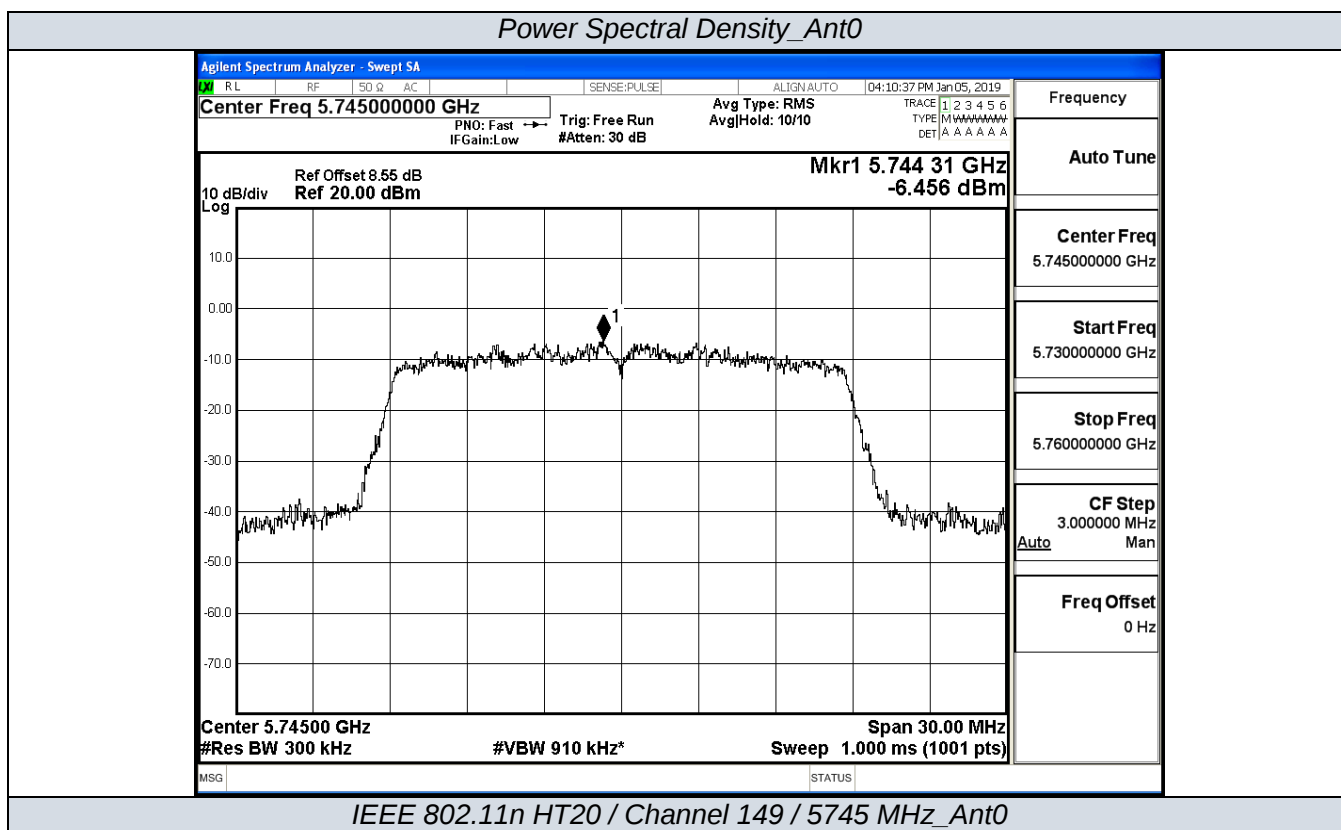
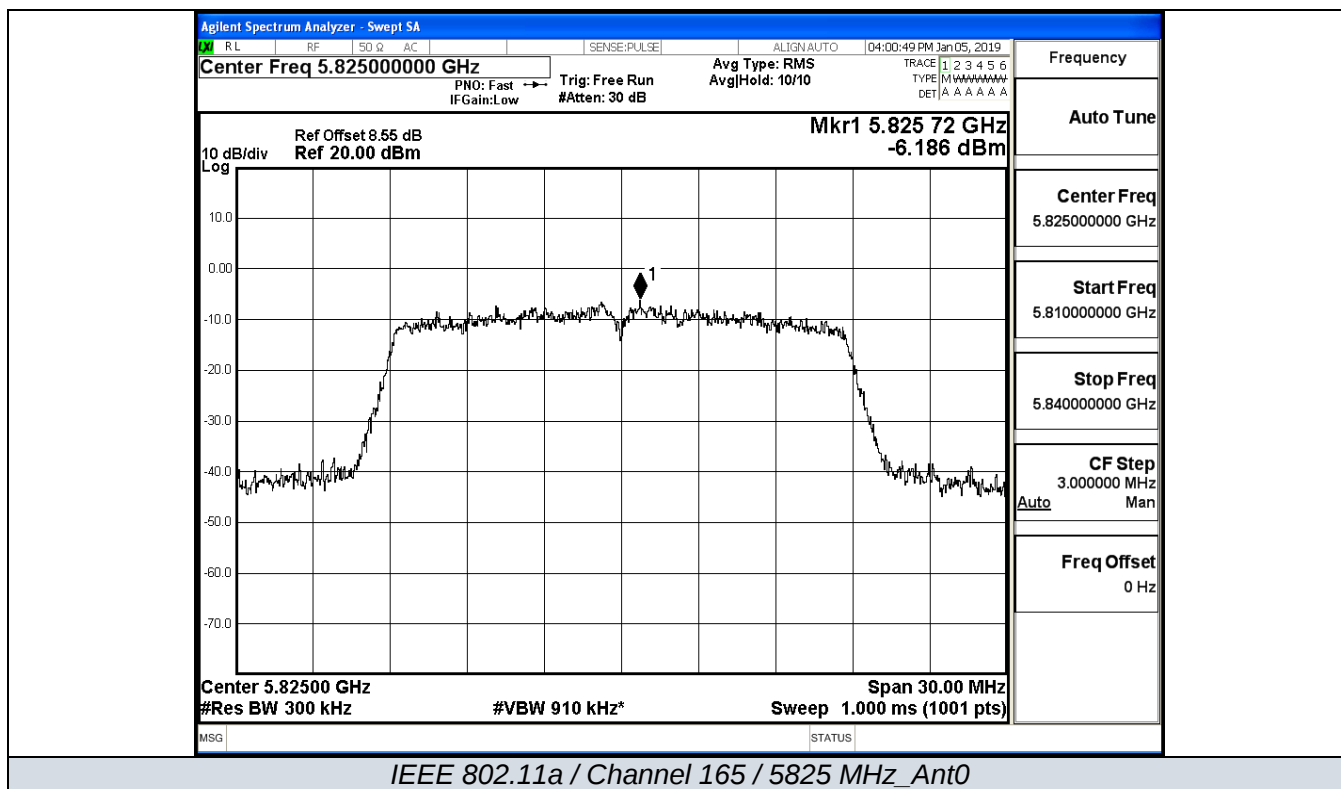
## Power Spectral Density\_Ant0

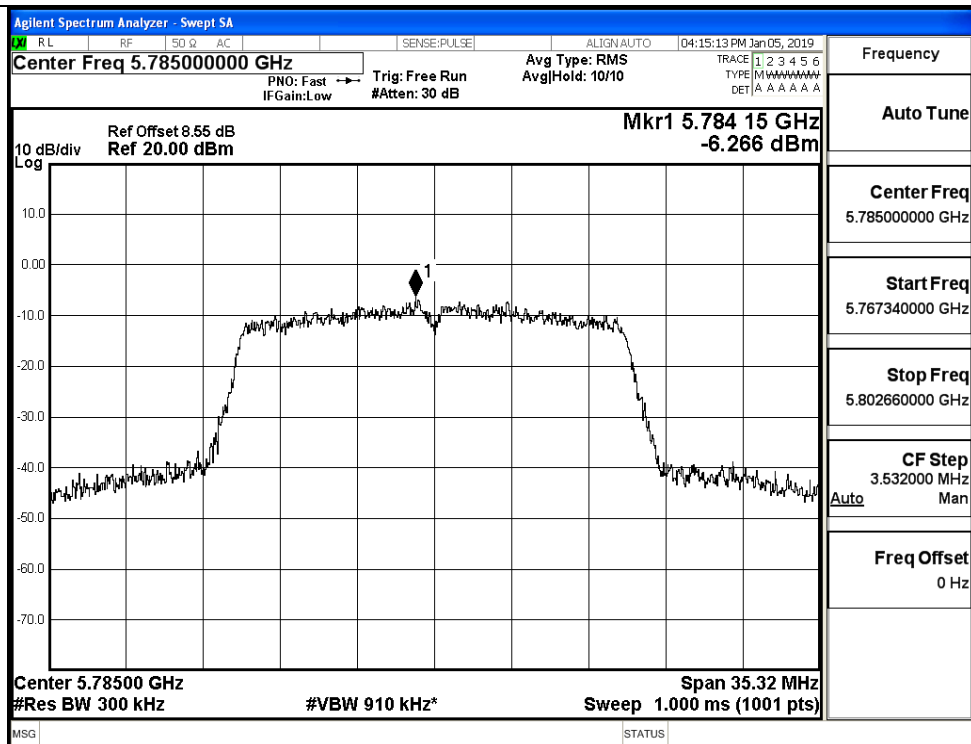


## IEEE 802.11a / Channel 149 / 5745 MHz\_Ant0

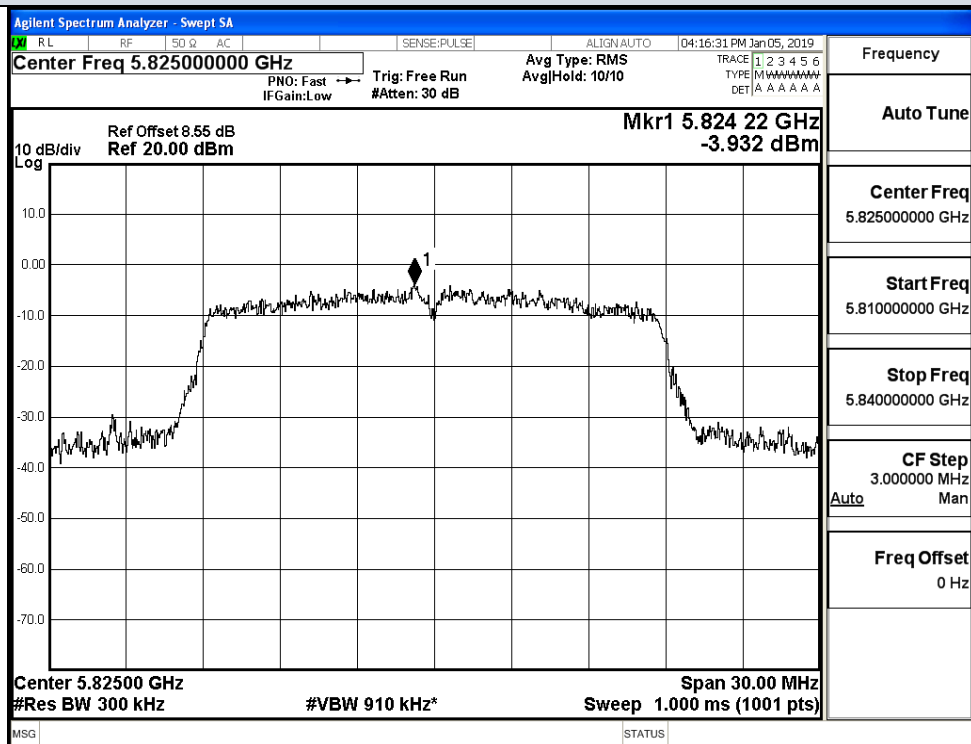


## IEEE 802.11a / Channel 157 / 5785 MHz\_Ant0



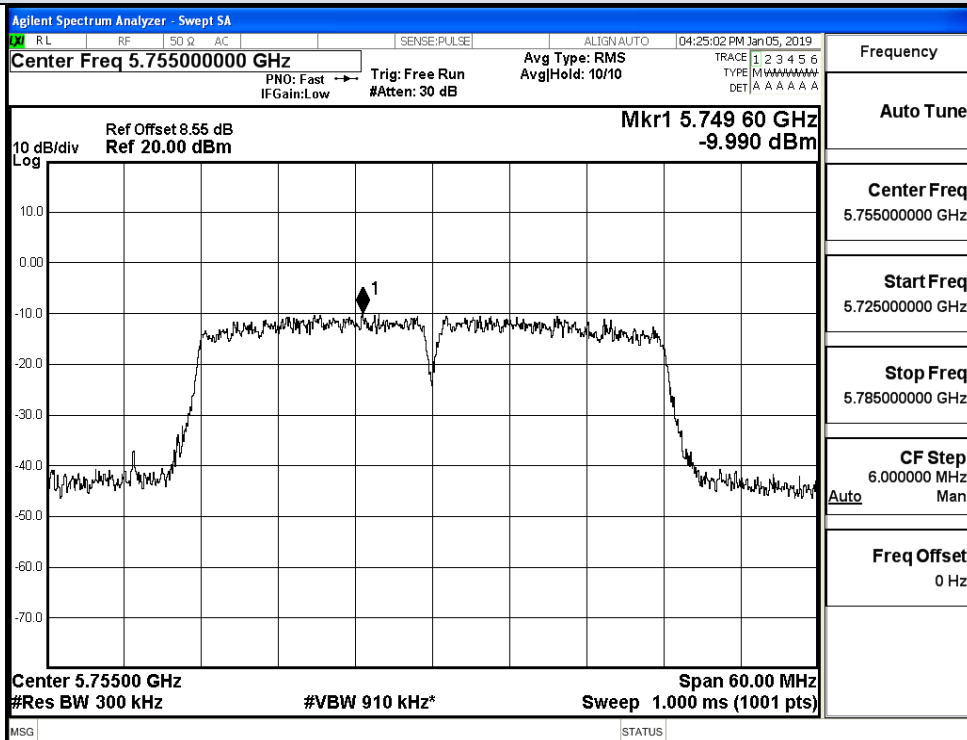


IEEE 802.11n HT20 / Channel 157 / 5785 MHz\_Ant0

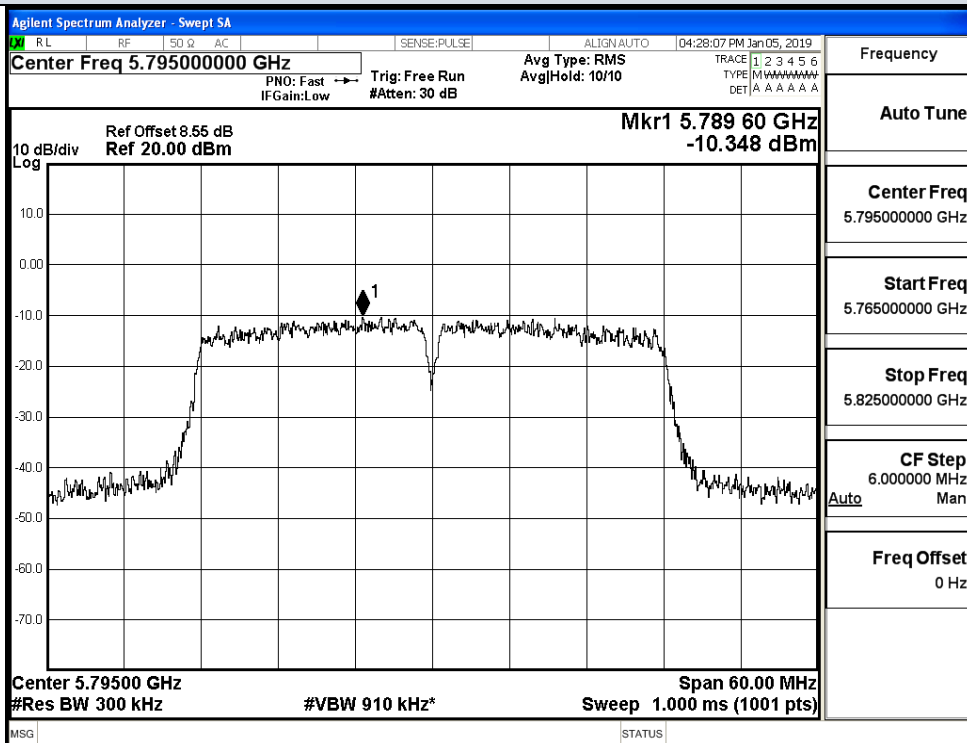


IEEE 802.11n HT20 / Channel 165 / 5825 MHz\_Ant0

## Power Spectral Density\_Ant0

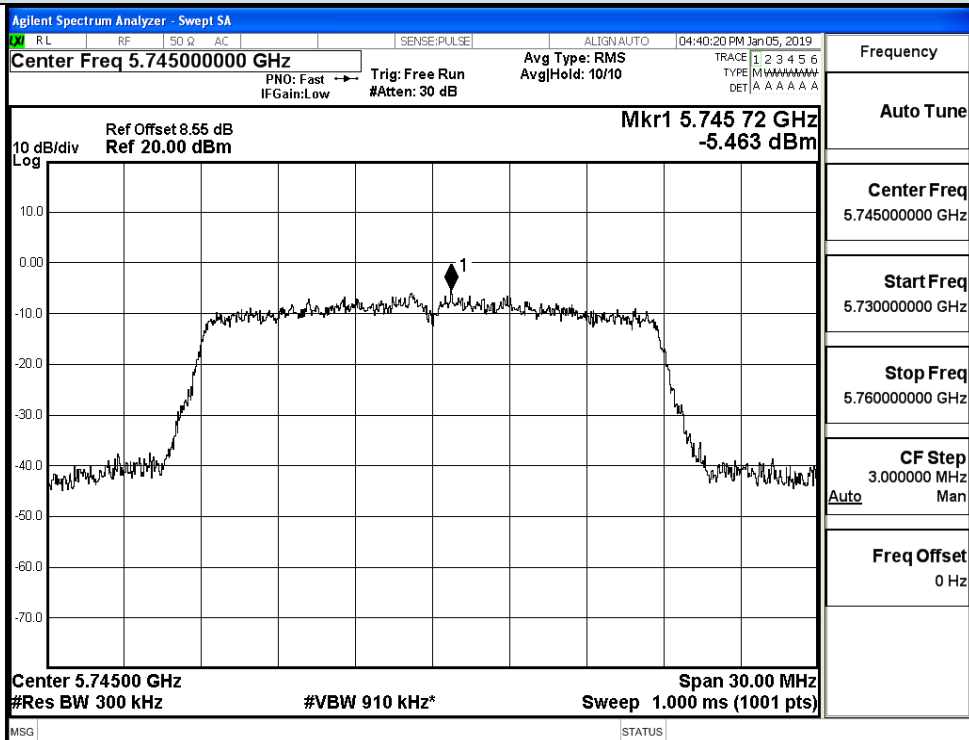


## IEEE 802.11n HT40 / Channel 151 / 5755 MHz\_Ant0

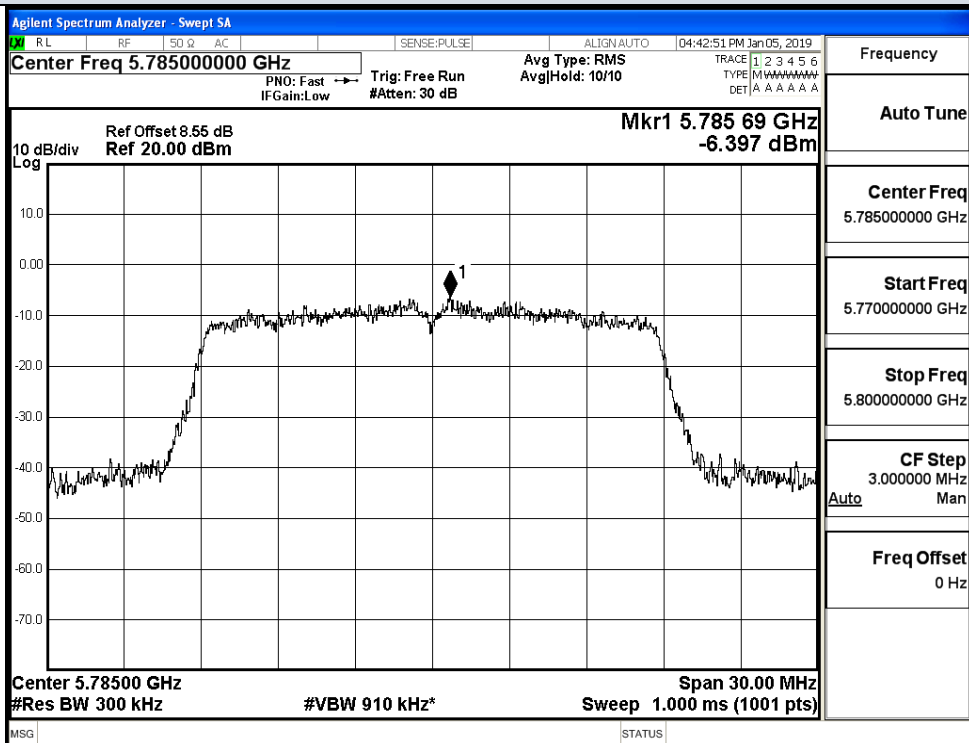


## IEEE 802.11n HT40 / Channel 159 / 5795 MHz\_Ant0

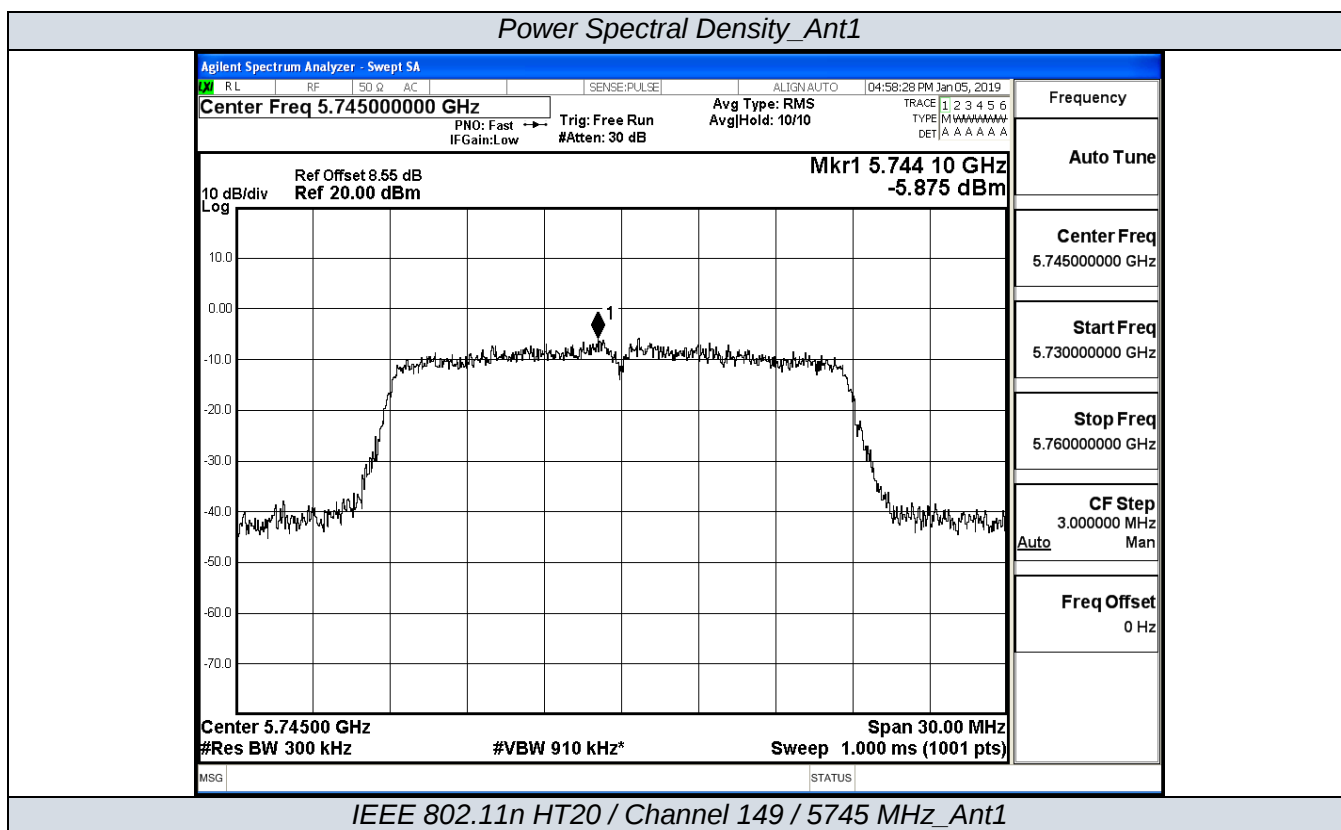
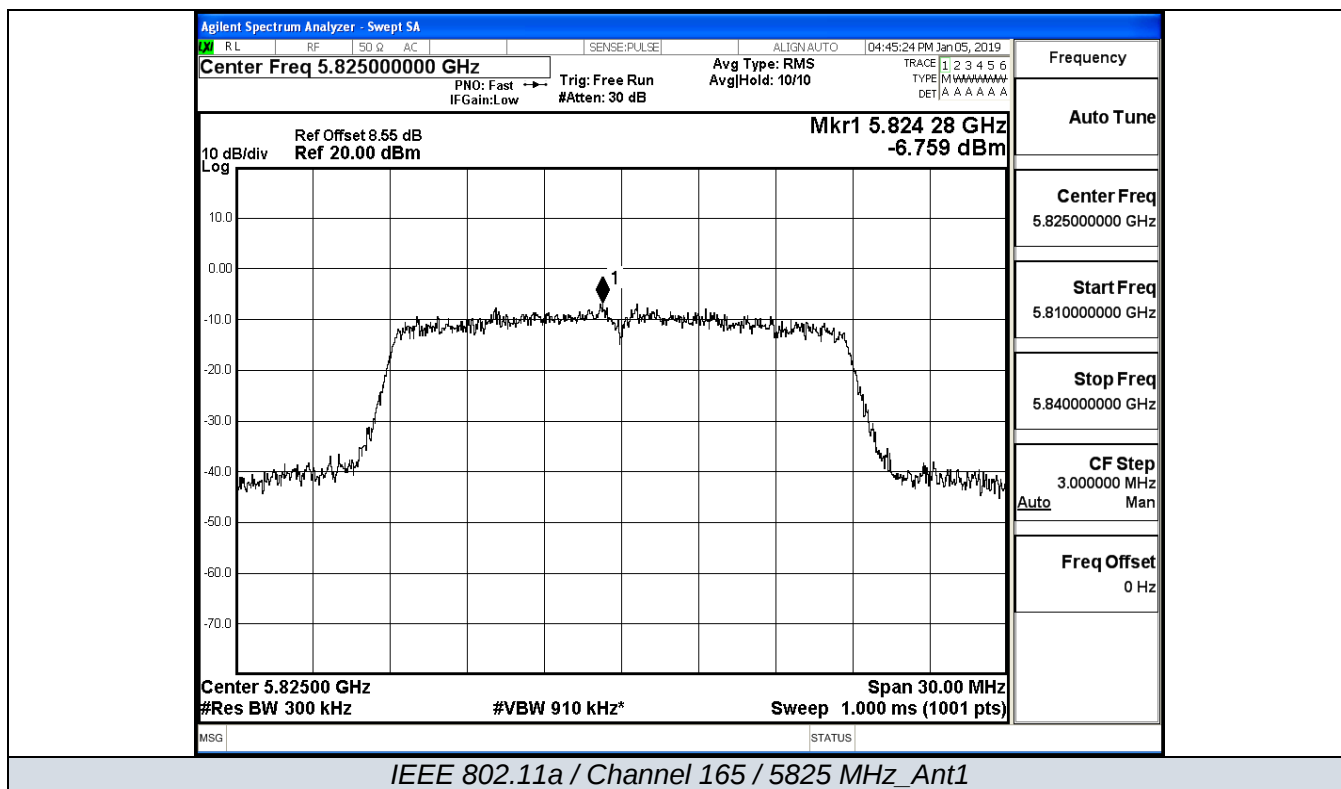
## Power Spectral Density\_Ant1

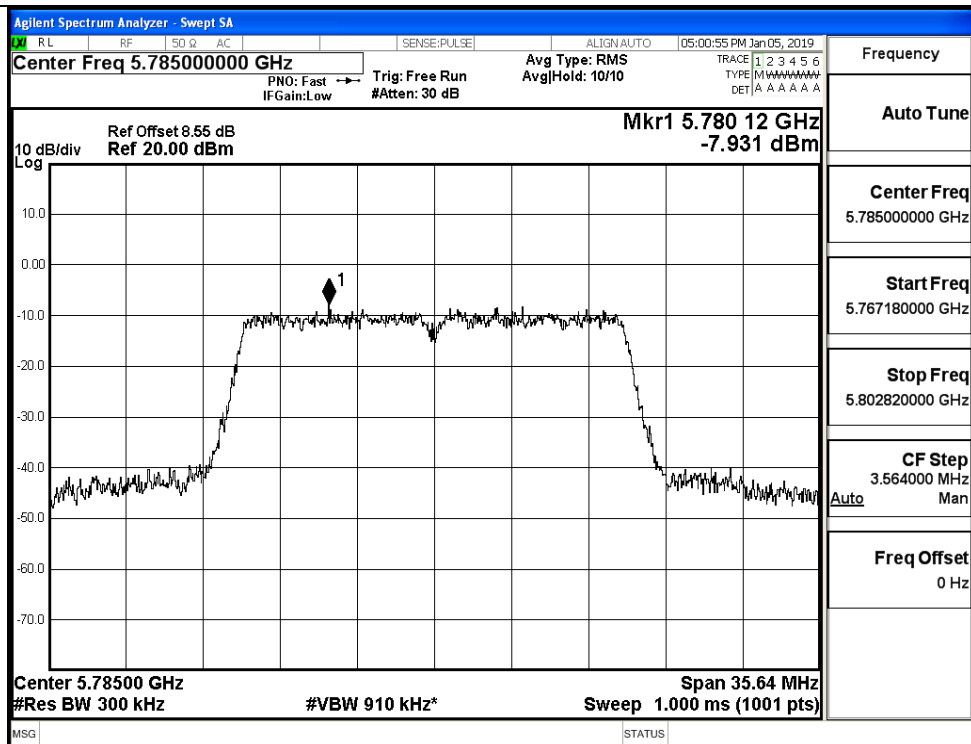


## IEEE 802.11a / Channel 149 / 5745 MHz\_Ant1

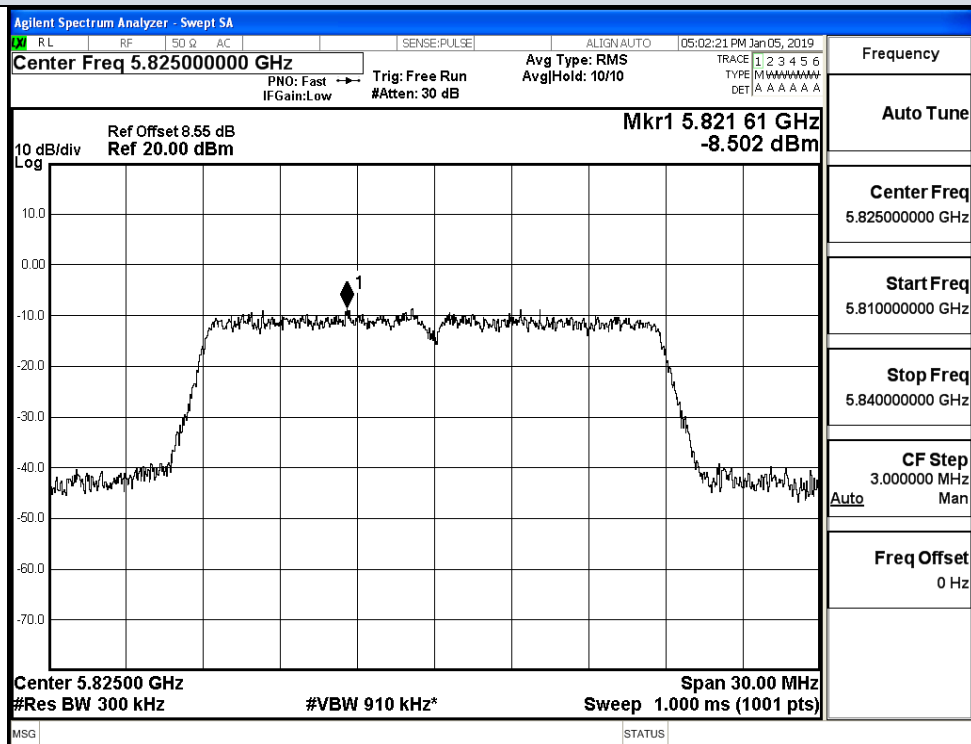


## IEEE 802.11a / Channel 157 / 5785 MHz\_Ant1



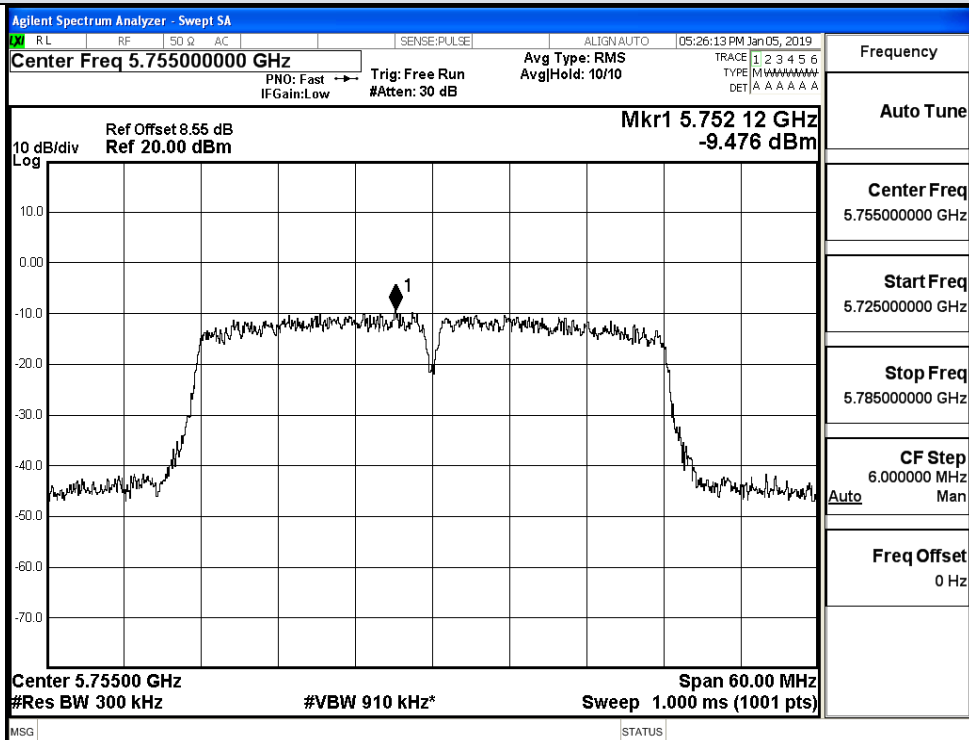


IEEE 802.11n HT20 / Channel 157 / 5785 MHz\_Ant1

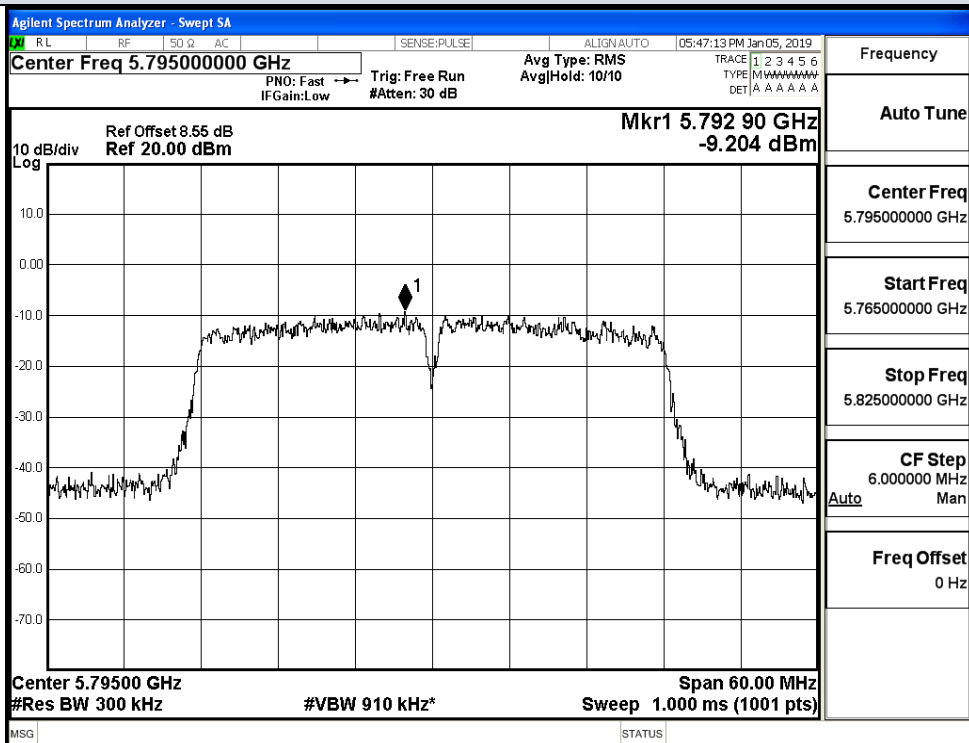


IEEE 802.11n HT20 / Channel 165 / 5825 MHz\_Ant1

## Power Spectral Density\_Ant1



## IEEE 802.11n HT40 / Channel 151 / 5755 MHz\_Ant1



## IEEE 802.11n HT40 / Channel 159 / 5795 MHz\_Ant1

## B.4 Emission Bandwidth

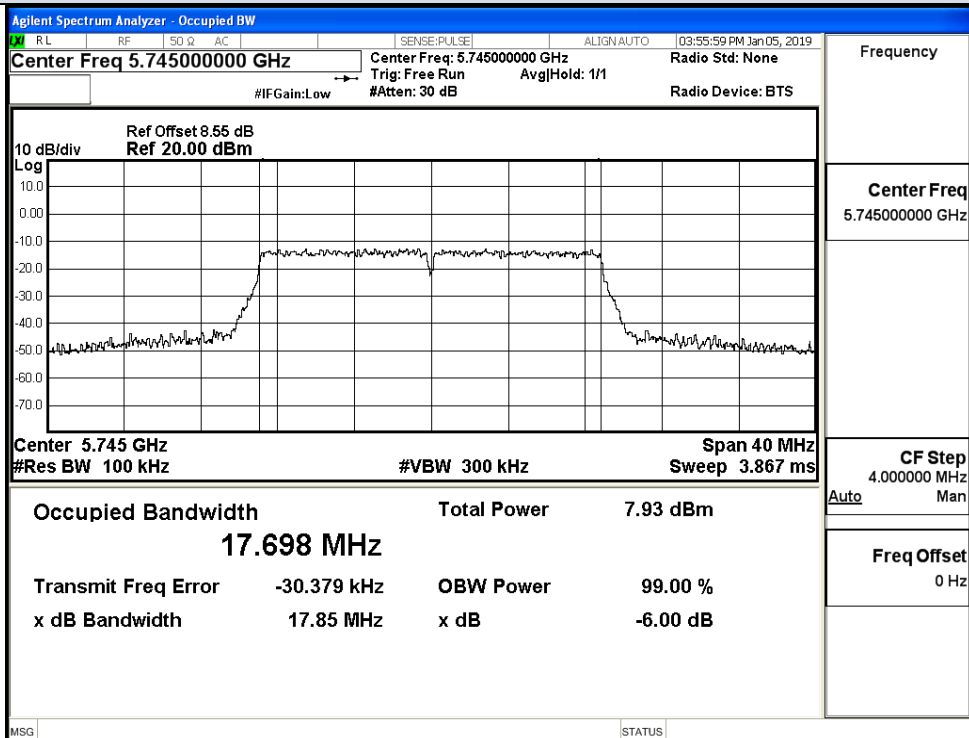
### Antenna 0

| Test Mode         | Channel | Frequency (MHz) | 6dB Bandwidth (MHz) | Limit (MHz) |
|-------------------|---------|-----------------|---------------------|-------------|
| IEEE 802.11a      | 149     | 5745            | 17.850              | >=0.5       |
|                   | 157     | 5785            | 17.650              |             |
|                   | 165     | 5825            | 17.640              |             |
| IEEE 802.11n HT20 | 149     | 5745            | 17.630              | >=0.5       |
|                   | 157     | 5785            | 17.660              |             |
|                   | 165     | 5825            | 17.630              |             |
| IEEE 802.11n HT40 | 151     | 5755            | 36.190              | >=0.5       |
|                   | 159     | 5795            | 36.340              |             |

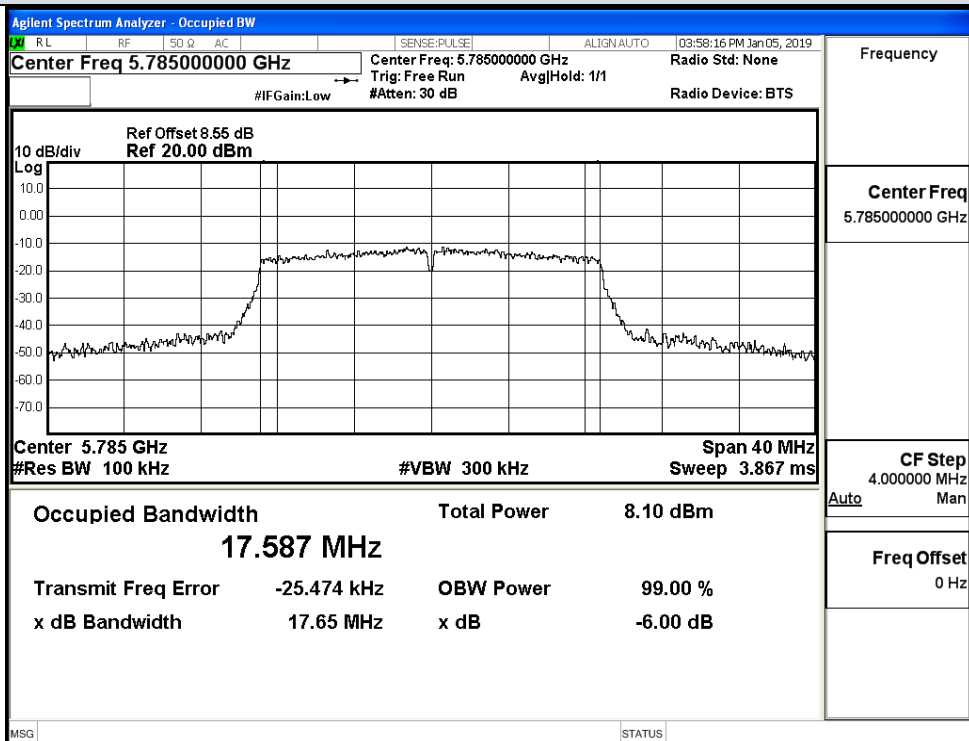
### Antenna 1

| Test Mode         | Channel | Frequency (MHz) | 6dB Bandwidth (MHz) | Limit (MHz) |
|-------------------|---------|-----------------|---------------------|-------------|
| IEEE 802.11a      | 149     | 5745            | 17.610              | >=0.5       |
|                   | 157     | 5785            | 17.670              |             |
|                   | 165     | 5825            | 17.650              |             |
| IEEE 802.11n HT20 | 149     | 5745            | 17.640              | >=0.5       |
|                   | 157     | 5785            | 17.820              |             |
|                   | 165     | 5825            | 17.790              |             |
| IEEE 802.11n HT40 | 151     | 5755            | 36.420              | >=0.5       |
|                   | 159     | 5795            | 36.290              |             |

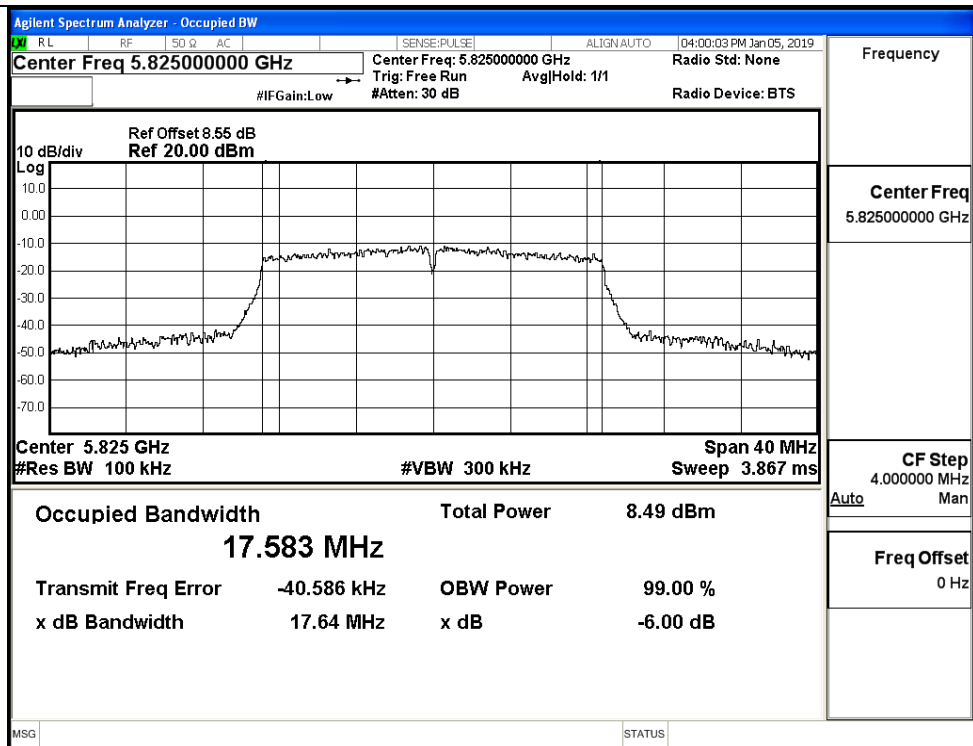
## 6dB Bandwidth\_Ant0



## IEEE 802.11a / Channel 149 / 5745 MHz\_Ant0

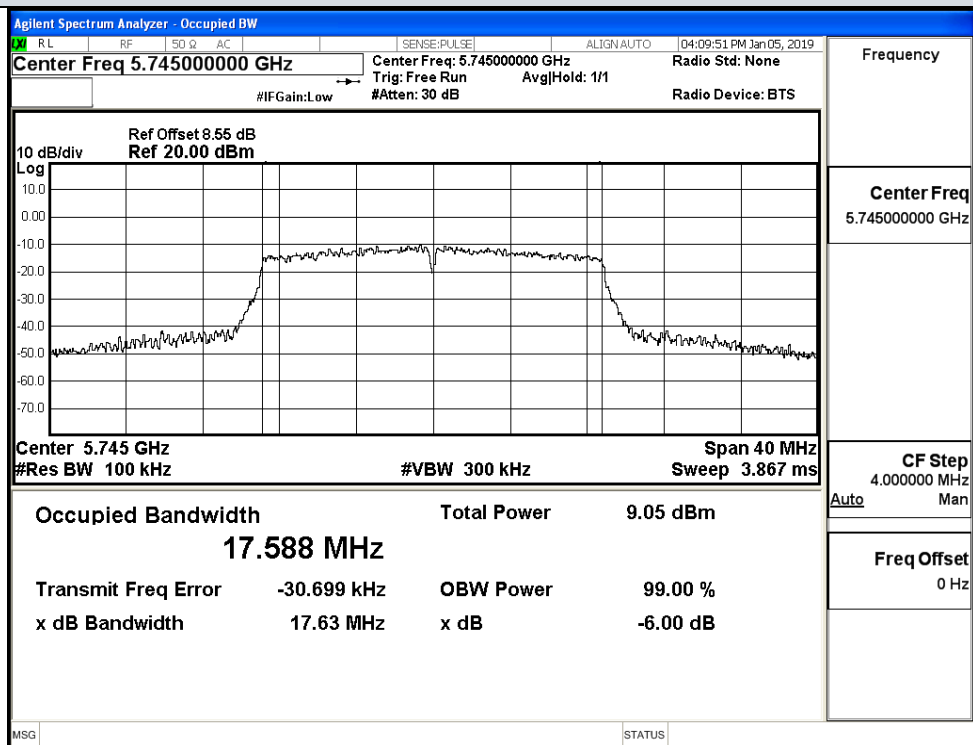


## IEEE 802.11a / Channel 157 / 5785 MHz\_Ant0

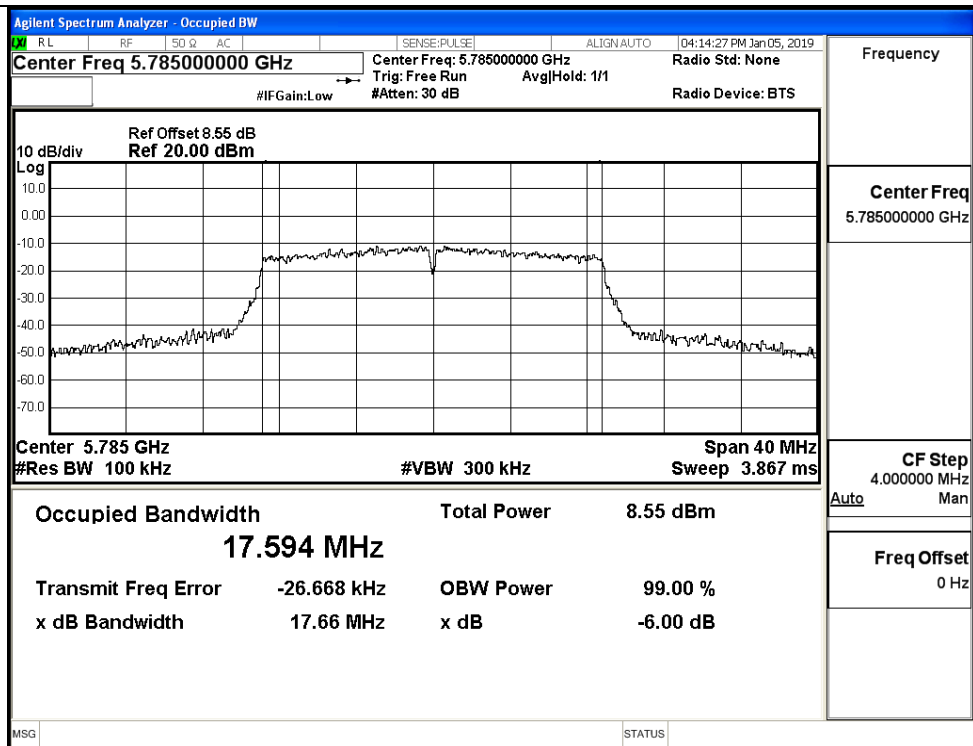


IEEE 802.11a / Channel 165 / 5825 MHz\_Ant0

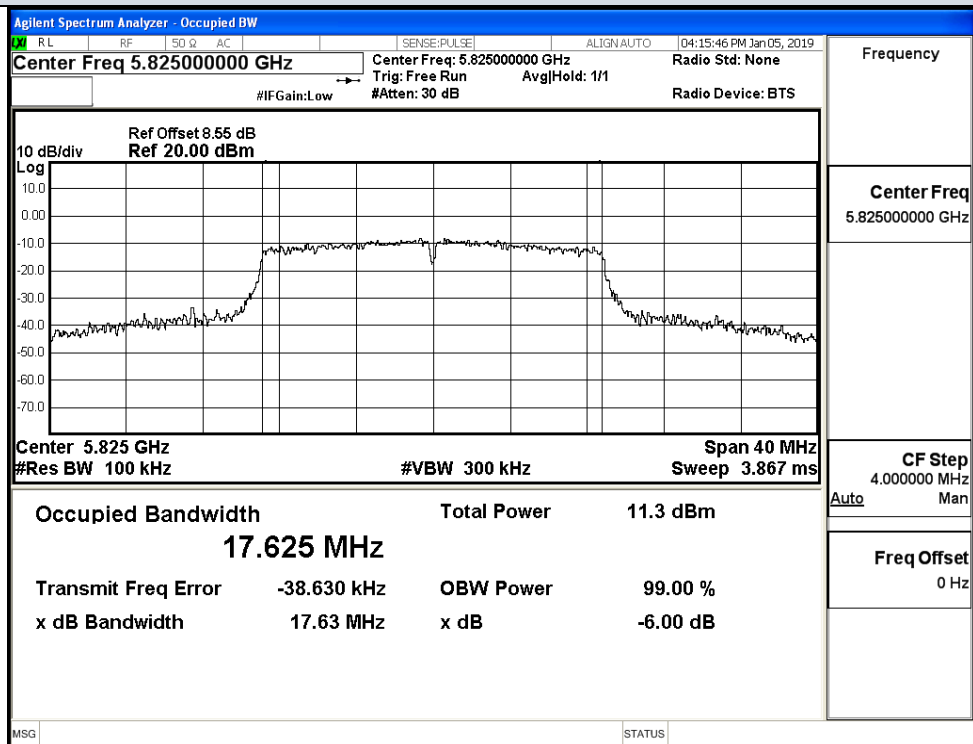
## 6dB Bandwidth\_Ant0



IEEE 802.11n HT20 / Channel 149 / 5745 MHz\_Ant0

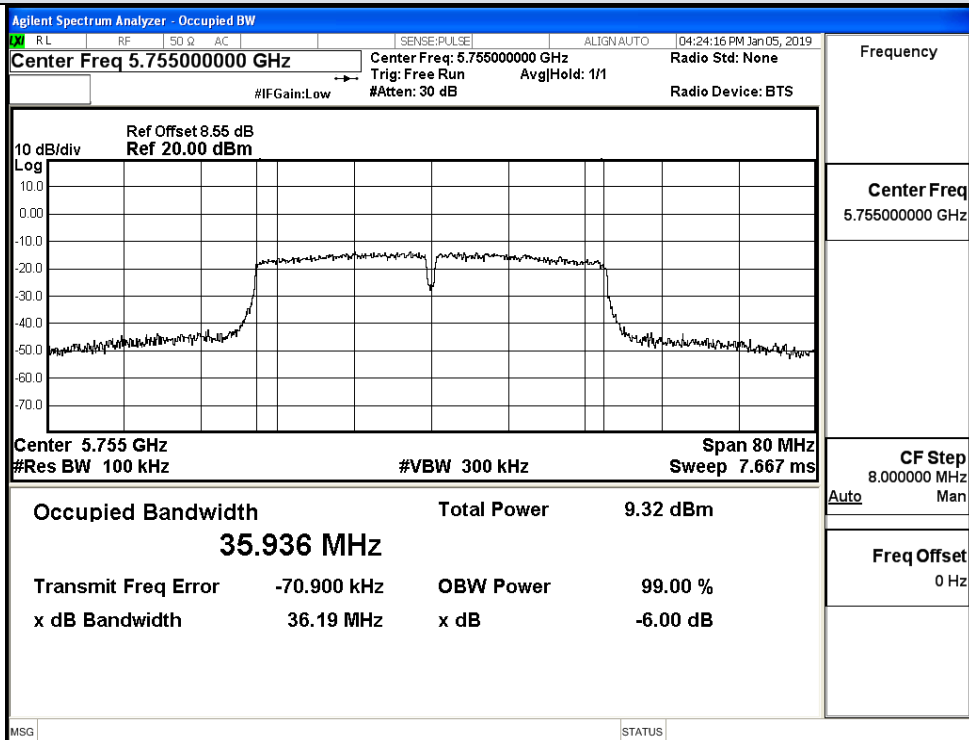


IEEE 802.11n HT20 / Channel 157 / 5785 MHz\_Ant0

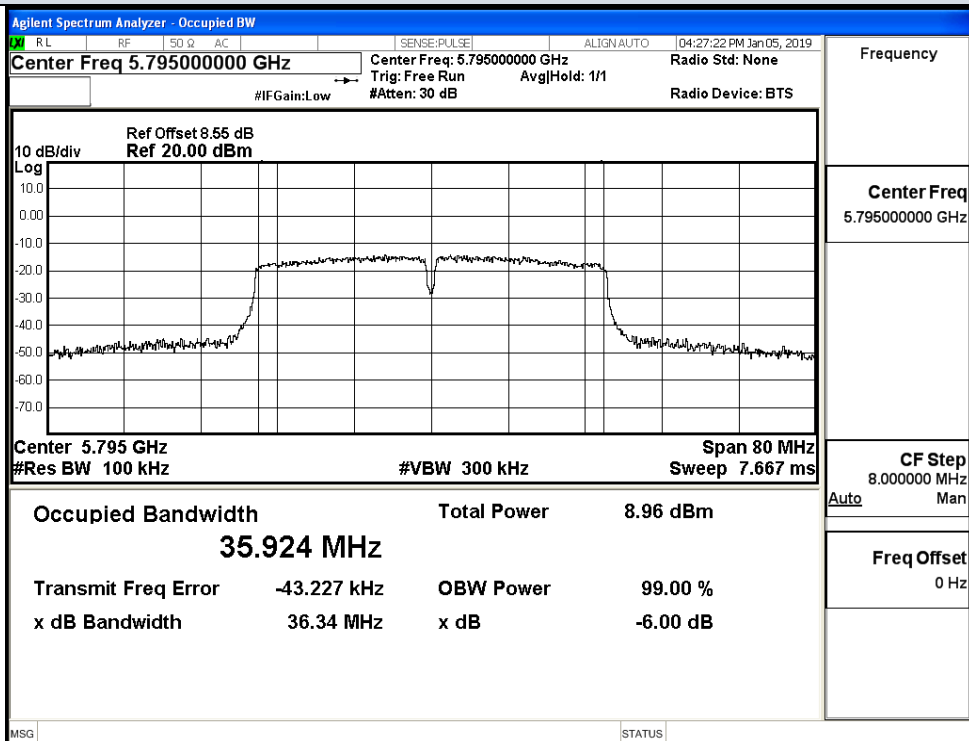


IEEE 802.11n HT20 / Channel 165 / 5825 MHz\_Ant0

## 6dB Bandwidth\_Ant0

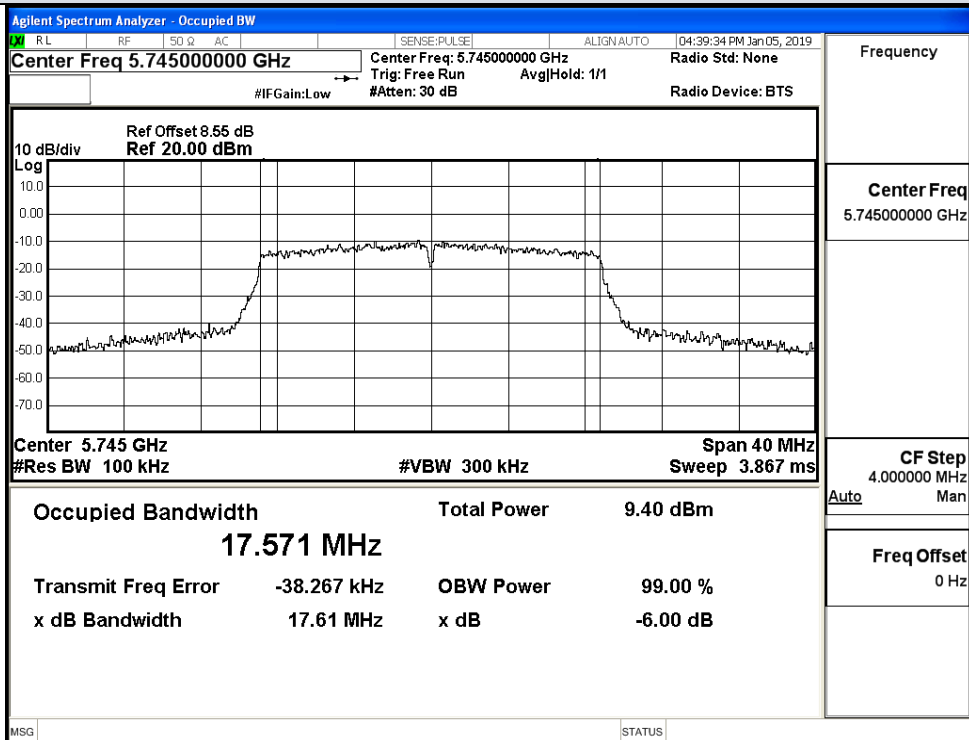


## IEEE 802.11n HT40 / Channel 151 / 5755 MHz\_Ant0

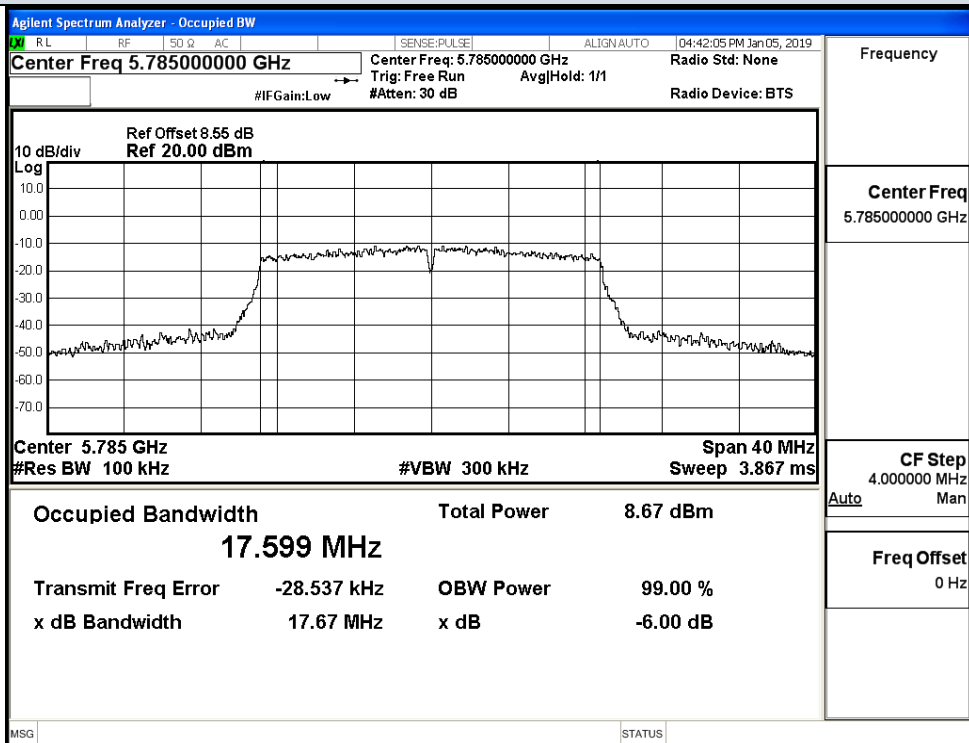


## IEEE 802.11n HT40 / Channel 159 / 5795 MHz\_Ant0

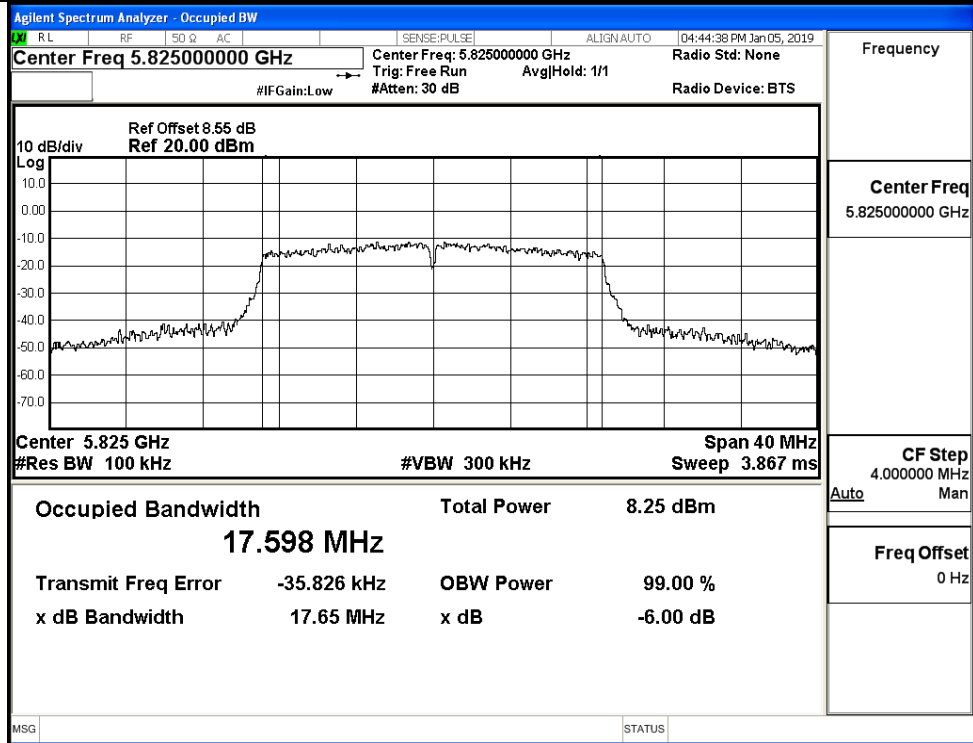
## 6dB Bandwidth\_Ant1



## IEEE 802.11a / Channel 149 / 5745 MHz\_Ant1

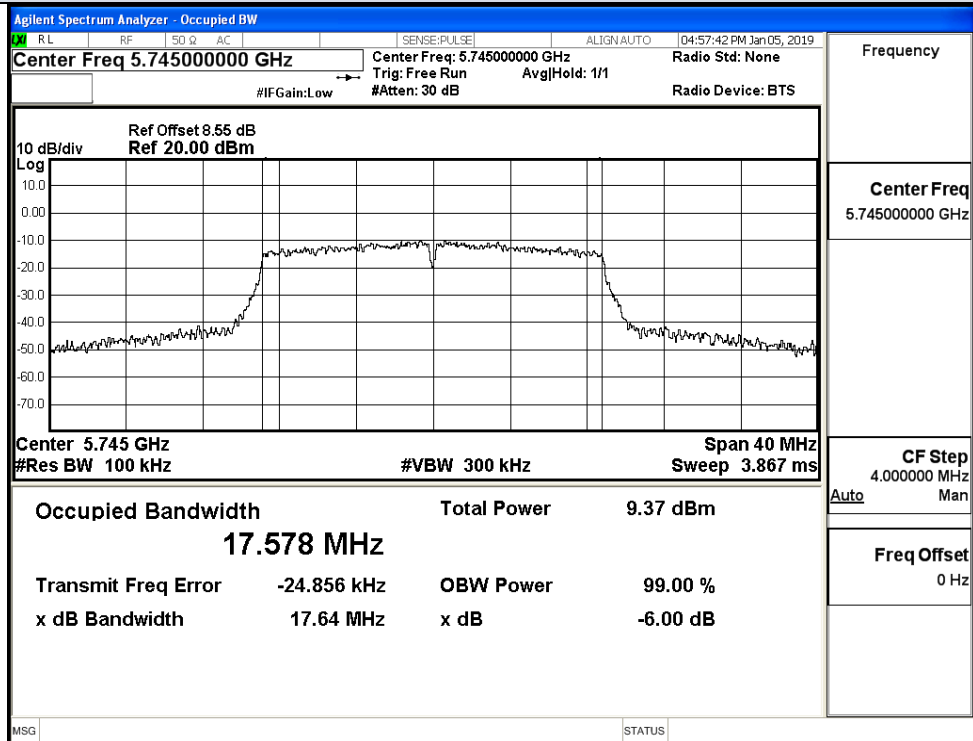


## IEEE 802.11a / Channel 157 / 5785 MHz\_Ant1

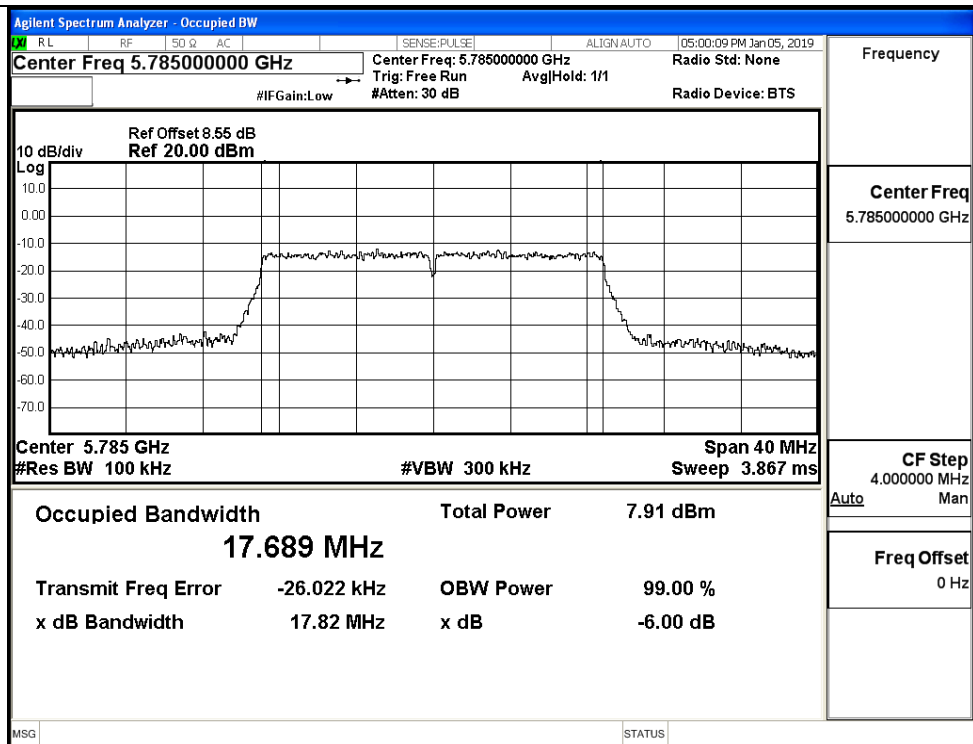


IEEE 802.11a / Channel 165 / 5825 MHz\_Ant1

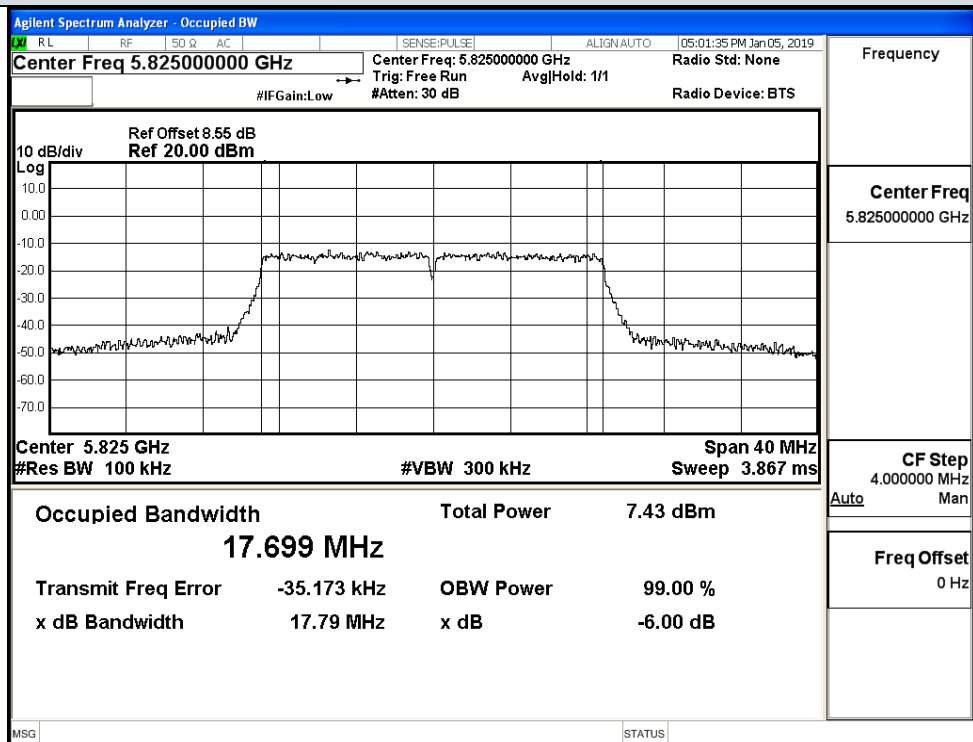
## 6dB Bandwidth\_Ant1



IEEE 802.11n HT20 / Channel 149 / 5745 MHz\_Ant1

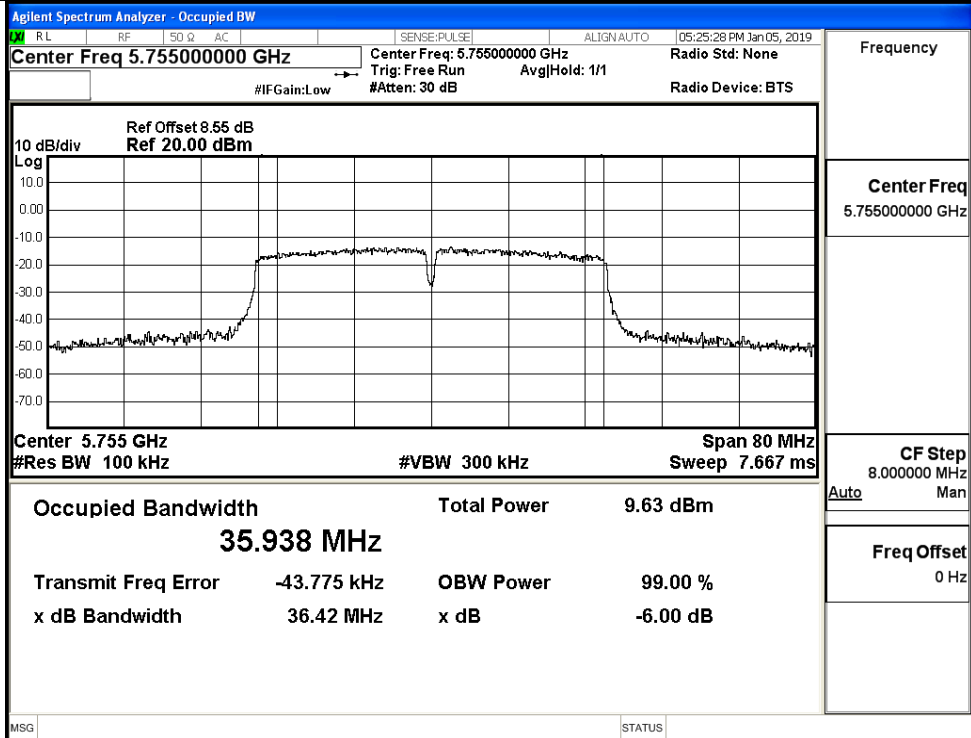


IEEE 802.11n HT20 / Channel 157 / 5785 MHz\_Ant1

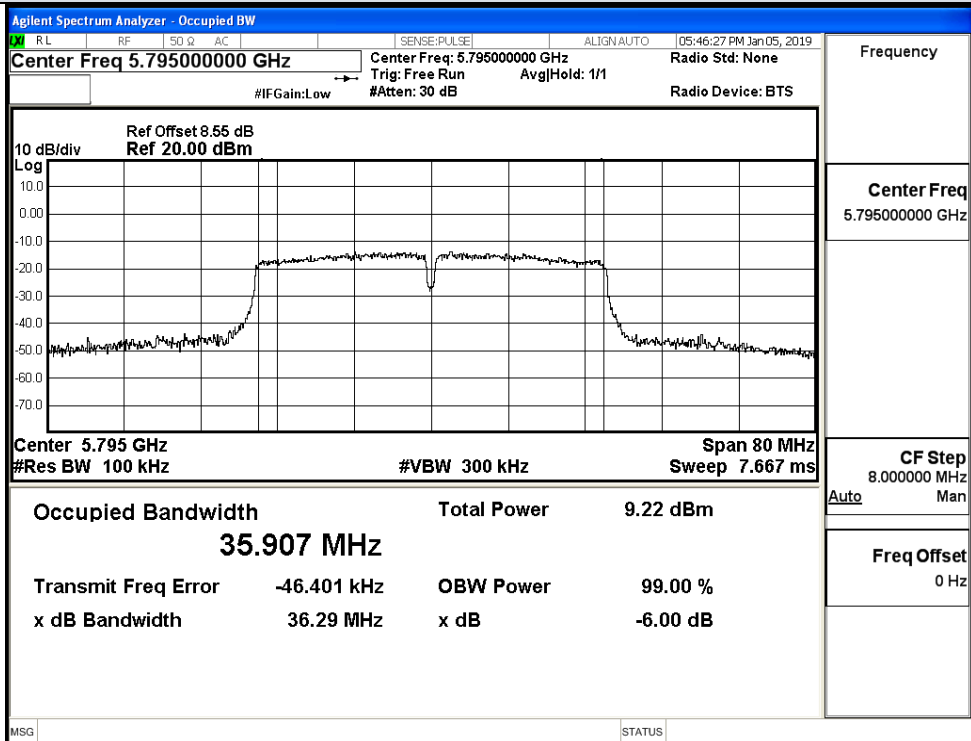


IEEE 802.11n HT20 / Channel 165 / 5825 MHz\_Ant1

## 6dB Bandwidth\_Ant1



## IEEE 802.11n HT40 / Channel 151 / 5755 MHz\_Ant1



## IEEE 802.11n HT40 / Channel 159 / 5795 MHz\_Ant1

## B.5 Undesirable Emissions Measurement

### Antenna 0

| Test Mode | Channel | Frequency (MHz) | Conducted Power (dBm) | Antenna Gain (dBi) | EIRP (dBm/MHz) | Detector | Limit (dBm/MHz) |
|-----------|---------|-----------------|-----------------------|--------------------|----------------|----------|-----------------|
| 11A       | 149     | 5650.0          | -49.791               | 2.00               | -47.791        | Peak     | -27.0           |
|           |         | 5700.0          | -47.939               | 2.00               | -45.939        | Peak     | 10.0            |
|           |         | 5720.0          | -41.377               | 2.00               | -39.377        | Peak     | 15.6            |
|           |         | 5725.0          | -36.185               | 2.00               | -34.185        | Peak     | 27.0            |
|           | 165     | 5850.0          | -41.569               | 2.00               | -39.569        | Peak     | 27.0            |
|           |         | 5855.0          | -46.816               | 2.00               | -44.816        | Peak     | 15.6            |
|           |         | 5875.0          | -48.482               | 2.00               | -46.482        | Peak     | 10.0            |
|           |         | 5925.0          | -50.679               | 2.00               | -48.679        | Peak     | -27.0           |
| 11N20     | 149     | 5650.0          | -49.371               | 2.00               | -47.371        | Peak     | -27.0           |
|           |         | 5700.0          | -48.952               | 2.00               | -46.952        | Peak     | 10.0            |
|           |         | 5720.0          | -40.810               | 2.00               | -38.810        | Peak     | 15.6            |
|           |         | 5725.0          | -36.425               | 2.00               | -34.425        | Peak     | 27.0            |
|           | 165     | 5850.0          | -35.165               | 2.00               | -33.165        | Peak     | 27.0            |
|           |         | 5855.0          | -38.531               | 2.00               | -36.531        | Peak     | 15.6            |
|           |         | 5875.0          | -48.402               | 2.00               | -46.402        | Peak     | 10.0            |
|           |         | 5925.0          | -49.397               | 2.00               | -47.397        | Peak     | -27.0           |
| 11N40     | 151     | 5650.0          | -49.426               | 2.00               | -47.426        | Peak     | -27.0           |
|           |         | 5700.0          | -45.949               | 2.00               | -43.949        | Peak     | 10.0            |
|           |         | 5720.0          | -35.559               | 2.00               | -33.559        | Peak     | 15.6            |
|           |         | 5725.0          | -35.609               | 2.00               | -33.609        | Peak     | 27.0            |
|           | 159     | 5850.0          | -46.198               | 2.00               | -44.198        | Peak     | 27.0            |
|           |         | 5855.0          | -47.122               | 2.00               | -45.122        | Peak     | 15.6            |
|           |         | 5875.0          | -48.701               | 2.00               | -46.701        | Peak     | 10.0            |
|           |         | 5925.0          | -50.091               | 2.00               | -48.091        | Peak     | -27.0           |

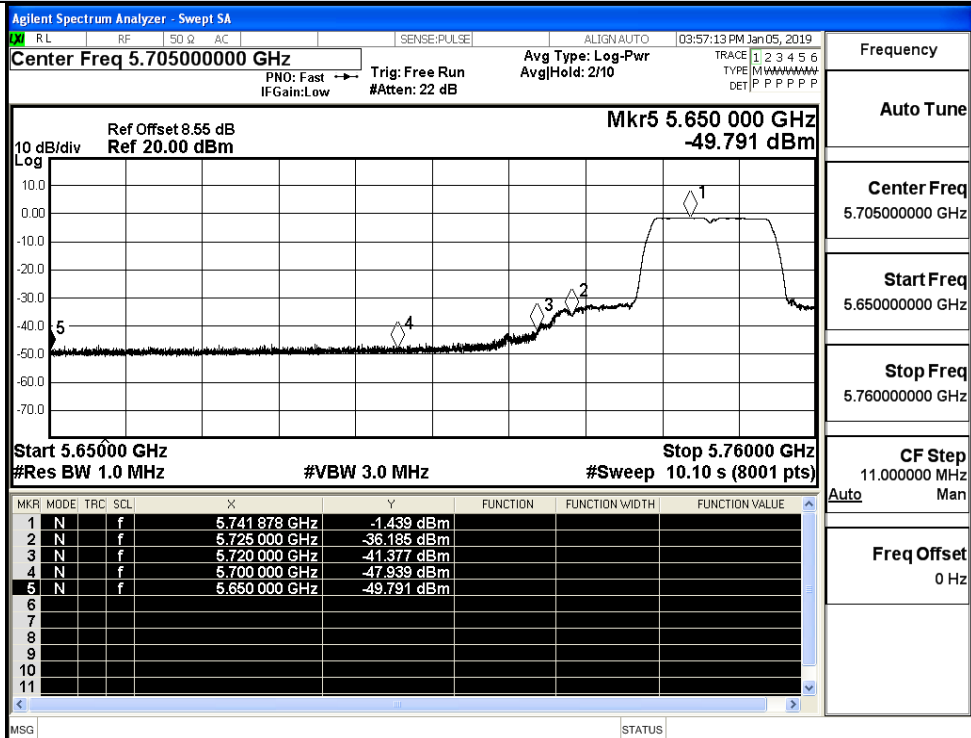
**Antenna 1**

| Test Mode | Channel | Frequency (MHz) | Conducted Power (dBm) | Antenna Gain (dBi) | EIRP (dBm/MHz) | Detector | Limit (dBm/MHz) |
|-----------|---------|-----------------|-----------------------|--------------------|----------------|----------|-----------------|
| 11A       | 149     | 5650.0          | -48.808               | 2.00               | -46.808        | Peak     | -27.0           |
|           |         | 5700.0          | -47.655               | 2.00               | -45.655        | Peak     | 10.0            |
|           |         | 5720.0          | -40.449               | 2.00               | -38.449        | Peak     | 15.6            |
|           |         | 5725.0          | -35.634               | 2.00               | -33.634        | Peak     | 27.0            |
|           | 165     | 5850.0          | -43.315               | 2.00               | -41.315        | Peak     | 27.0            |
|           |         | 5855.0          | -47.106               | 2.00               | -45.106        | Peak     | 15.6            |
|           |         | 5875.0          | -48.494               | 2.00               | -46.494        | Peak     | 10.0            |
|           |         | 5925.0          | -49.865               | 2.00               | -47.865        | Peak     | -27.0           |
| 11N20     | 149     | 5650.0          | -49.003               | 2.00               | -47.003        | Peak     | -27.0           |
|           |         | 5700.0          | -47.175               | 2.00               | -45.175        | Peak     | 10.0            |
|           |         | 5720.0          | -41.949               | 2.00               | -39.949        | Peak     | 15.6            |
|           |         | 5725.0          | -35.532               | 2.00               | -33.532        | Peak     | 27.0            |
|           | 165     | 5850.0          | -42.039               | 2.00               | -40.039        | Peak     | 27.0            |
|           |         | 5855.0          | -47.866               | 2.00               | -45.866        | Peak     | 15.6            |
|           |         | 5875.0          | -49.873               | 2.00               | -47.873        | Peak     | 10.0            |
|           |         | 5925.0          | -50.175               | 2.00               | -48.175        | Peak     | -27.0           |
| 11N40     | 151     | 5650.0          | -48.667               | 2.00               | -46.667        | Peak     | -27.0           |
|           |         | 5700.0          | -45.832               | 2.00               | -43.832        | Peak     | 10.0            |
|           |         | 5720.0          | -38.600               | 2.00               | -36.600        | Peak     | 15.6            |
|           |         | 5725.0          | -36.453               | 2.00               | -34.453        | Peak     | 27.0            |
|           | 159     | 5850.0          | -46.594               | 2.00               | -44.594        | Peak     | 27.0            |
|           |         | 5855.0          | -46.029               | 2.00               | -44.029        | Peak     | 15.6            |
|           |         | 5875.0          | -49.241               | 2.00               | -47.241        | Peak     | 10.0            |
|           |         | 5925.0          | -49.335               | 2.00               | -47.335        | Peak     | -27.0           |

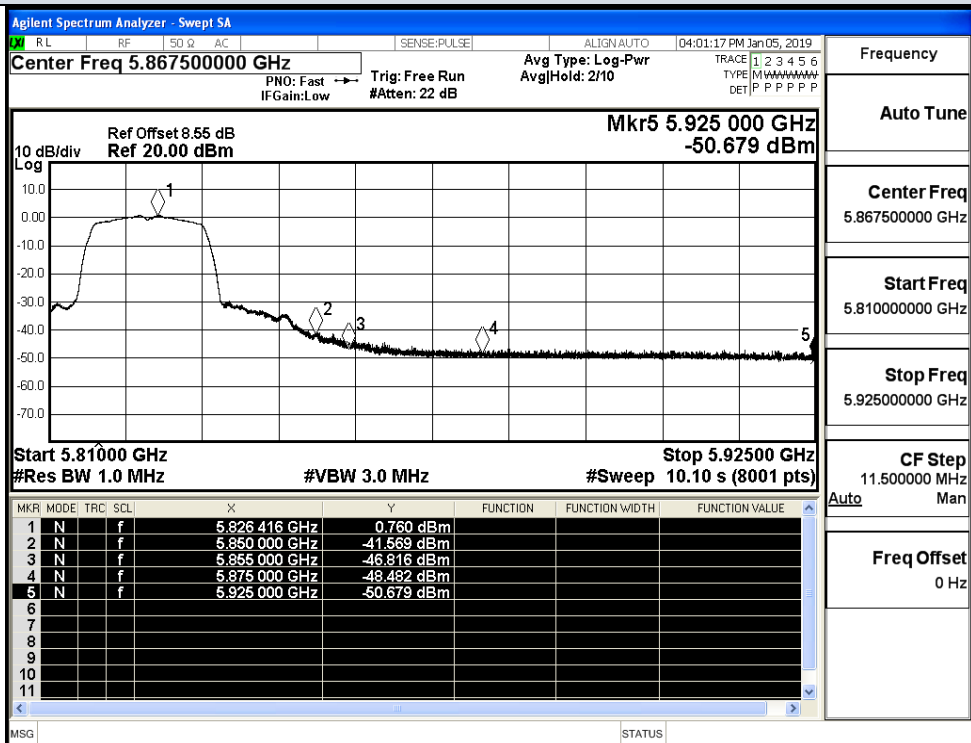
**Antenna 0+Antenn 1**

| Test Mode | Channel | Frequency (MHz) | Conducted Power (dBm) |         |         | Directional Antenna Gain (dBi) | EIRP (dBm/MHz) | Detector | Limit (dBm/MHz) |
|-----------|---------|-----------------|-----------------------|---------|---------|--------------------------------|----------------|----------|-----------------|
|           |         |                 | Ant0                  | Ant1    | Sum     |                                |                |          |                 |
| 11N20     | 149     | 5650.0          | -49.371               | -49.003 | -46.173 | 5.01                           | -41.163        | Peak     | -27.0           |
|           |         | 5700.0          | -48.952               | -47.175 | -44.963 | 5.01                           | -39.953        | Peak     | 10.0            |
|           |         | 5720.0          | -40.810               | -41.949 | -38.332 | 5.01                           | -33.322        | Peak     | 15.6            |
|           |         | 5725.0          | -36.425               | -35.532 | -32.945 | 5.01                           | -27.935        | Peak     | 27.0            |
|           | 165     | 5850.0          | -35.165               | -42.039 | -34.354 | 5.01                           | -29.344        | Peak     | 27.0            |
|           |         | 5855.0          | -38.531               | -47.866 | -38.052 | 5.01                           | -33.042        | Peak     | 15.6            |
|           |         | 5875.0          | -48.402               | -49.873 | -46.065 | 5.01                           | -41.055        | Peak     | 10.0            |
|           |         | 5925.0          | -49.397               | -50.175 | -46.758 | 5.01                           | -41.748        | Peak     | -27.0           |
| 11N40     | 151     | 5650.0          | -49.426               | -48.667 | -46.020 | 5.01                           | -41.010        | Peak     | -27.0           |
|           |         | 5700.0          | -45.949               | -45.832 | -42.880 | 5.01                           | -37.870        | Peak     | 10.0            |
|           |         | 5720.0          | -35.559               | -38.600 | -33.808 | 5.01                           | -28.798        | Peak     | 15.6            |
|           |         | 5725.0          | -35.609               | -36.453 | -33.000 | 5.01                           | -27.990        | Peak     | 27.0            |
|           | 159     | 5850.0          | -46.198               | -46.594 | -43.381 | 5.01                           | -38.371        | Peak     | 27.0            |
|           |         | 5855.0          | -47.122               | -46.029 | -43.531 | 5.01                           | -38.521        | Peak     | 15.6            |
|           |         | 5875.0          | -48.701               | -49.241 | -45.952 | 5.01                           | -40.942        | Peak     | 10.0            |
|           |         | 5925.0          | -50.091               | -49.335 | -46.686 | 5.01                           | -41.676        | Peak     | -27.0           |

## Undesirable Emissions Measurement\_Ant0

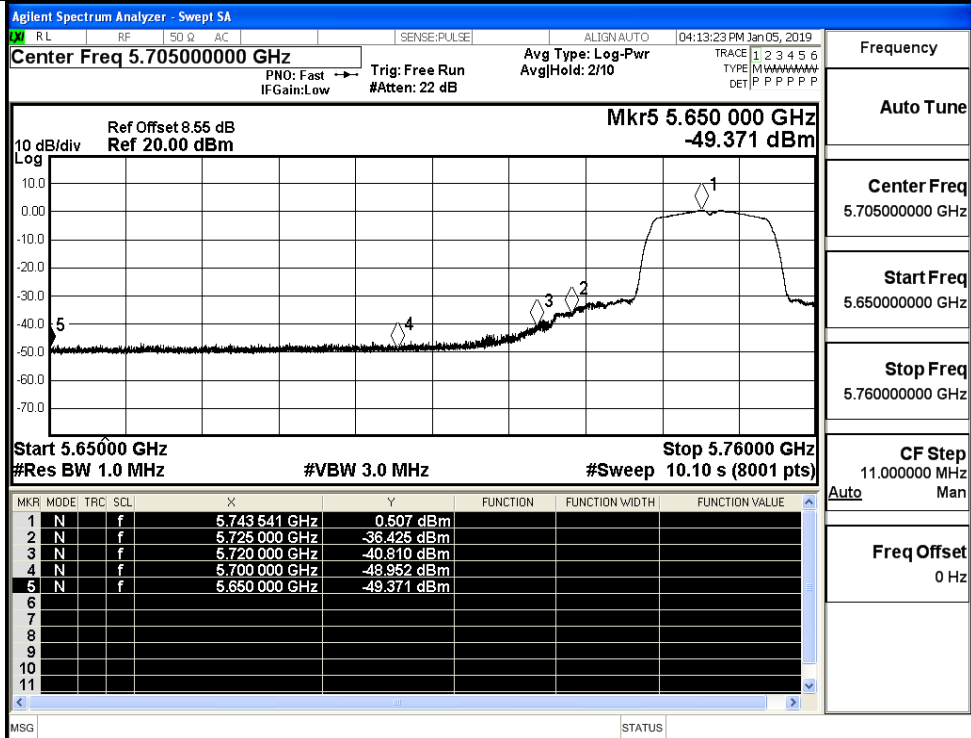


## IEEE 802.11a / Channel 149 / 5745 MHz / Peak\_Ant0

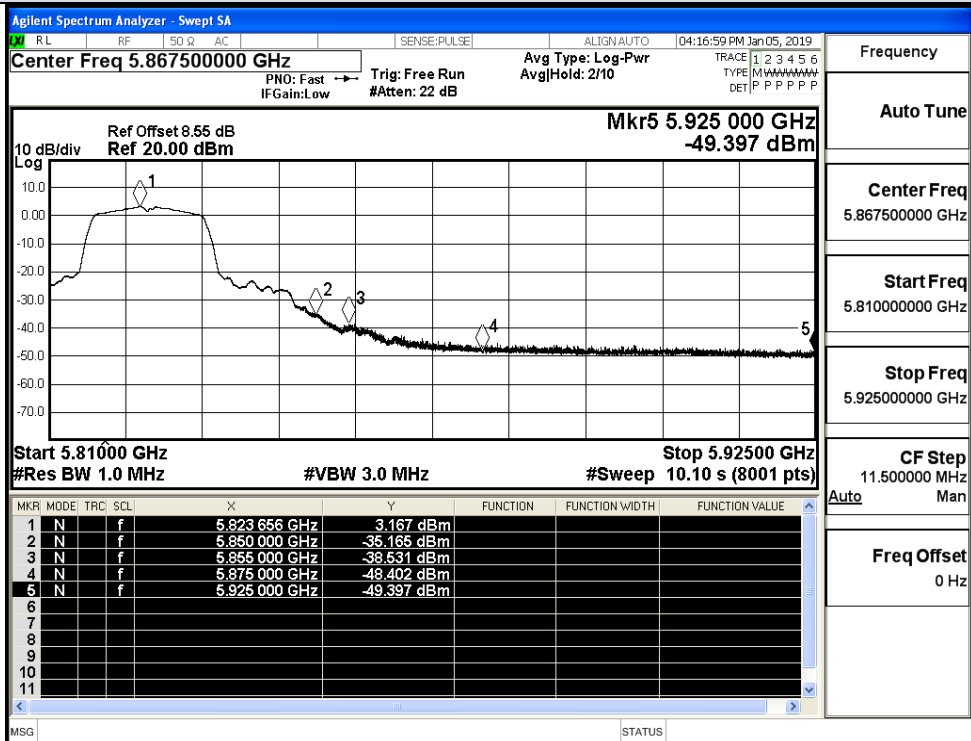


## IEEE 802.11a / Channel 165 / 5825 MHz / Peak\_Ant0

## Undesirable Emissions Measurement\_Ant0

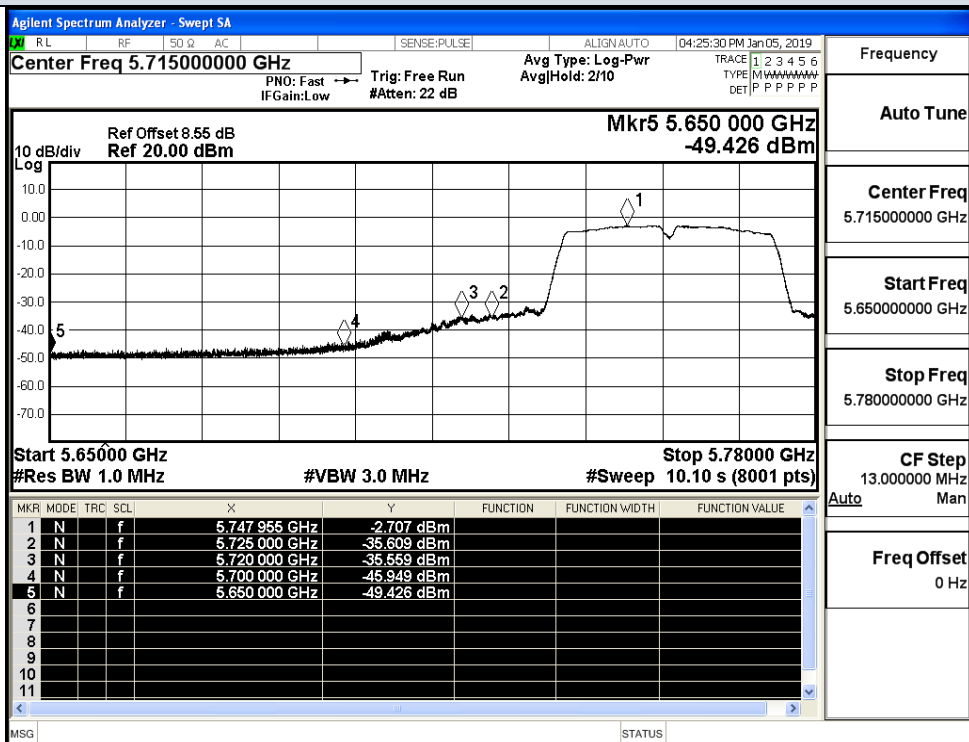


## IEEE 802.11n HT20 / Channel 149 / 5745MHz / Peak\_Ant0

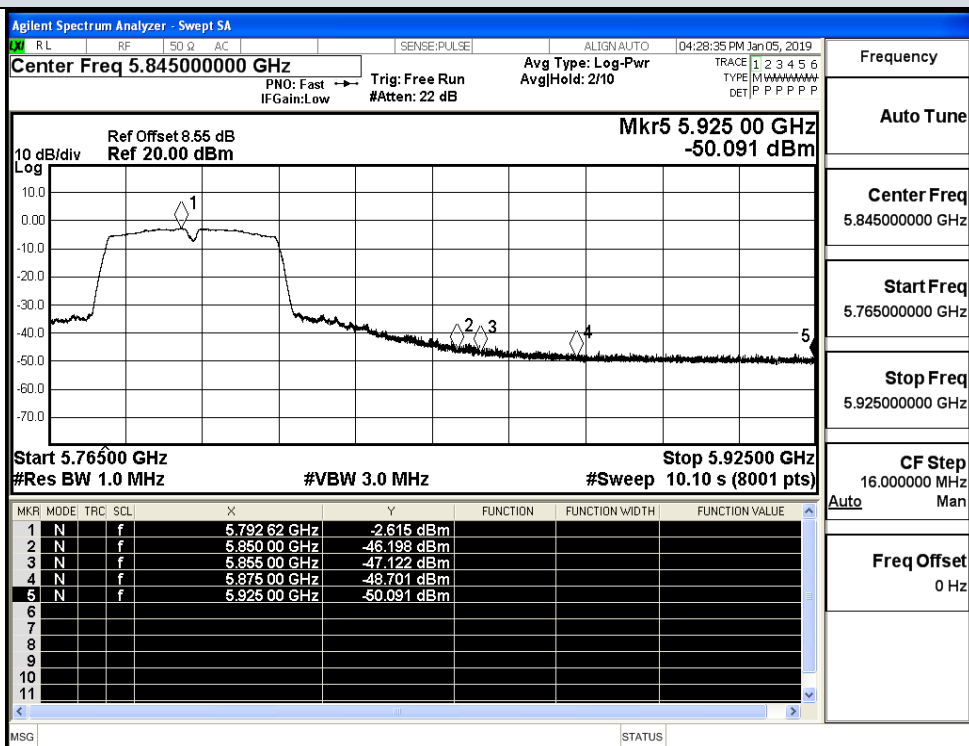


## IEEE 802.11n HT20 / Channel 165 / 5825 MHz / Peak\_Ant0

## Undesirable Emissions Measurement\_Ant0

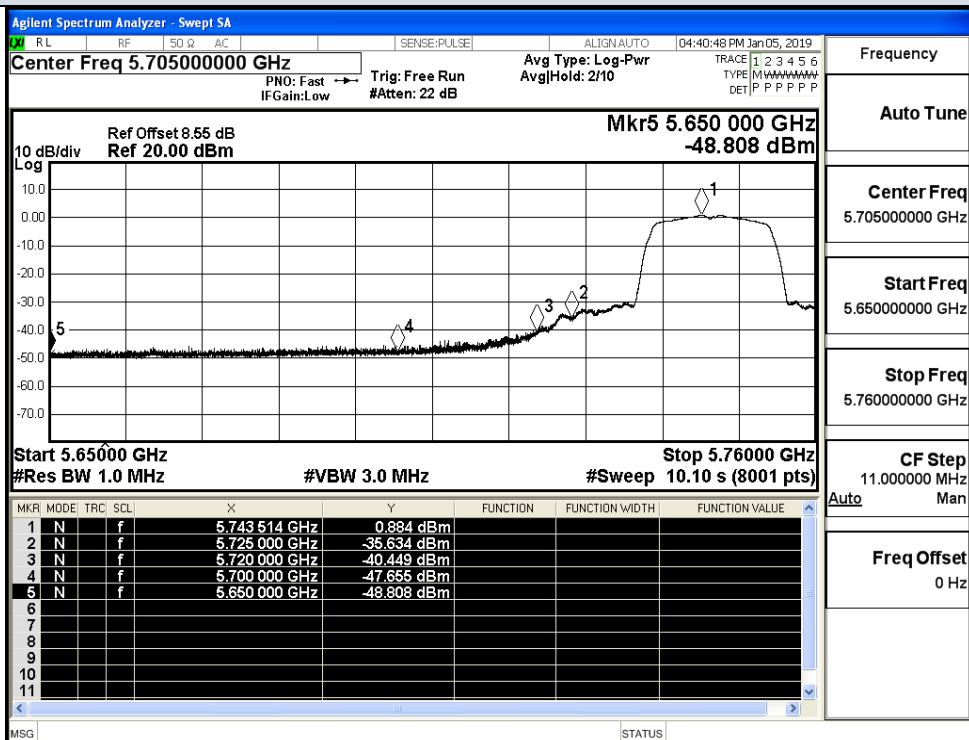


## IEEE 802.11n HT40 / Channel 151 / 5755 MHz / Peak\_Ant0

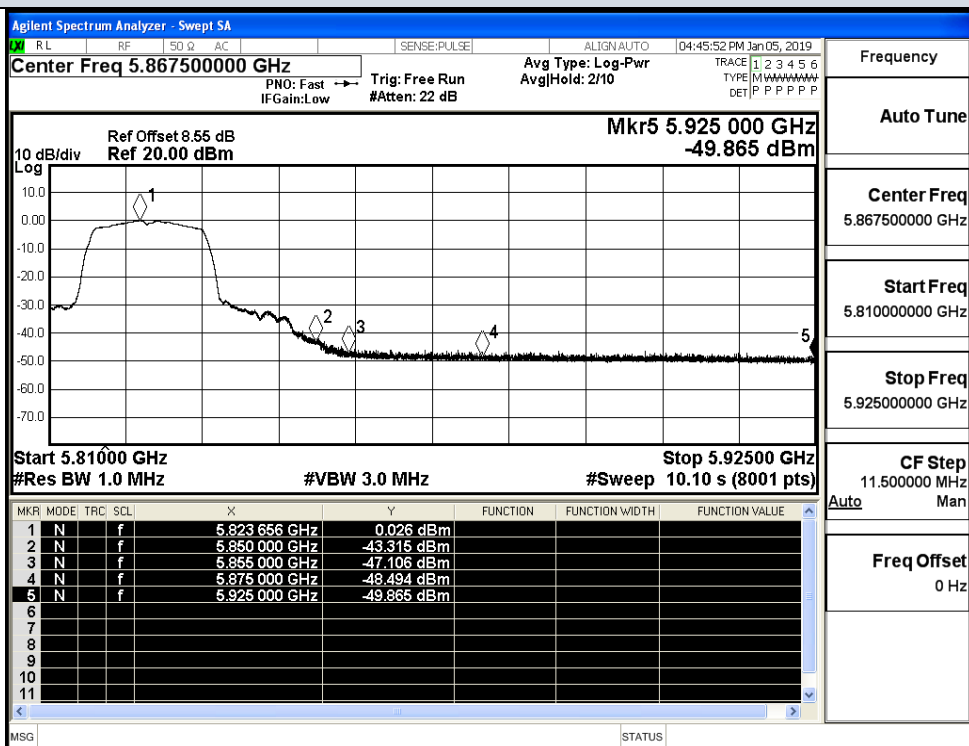


## IEEE 802.11n HT40 / Channel 159 / 5795 MHz / Peak\_Ant0

## Undesirable Emissions Measurement\_Ant1

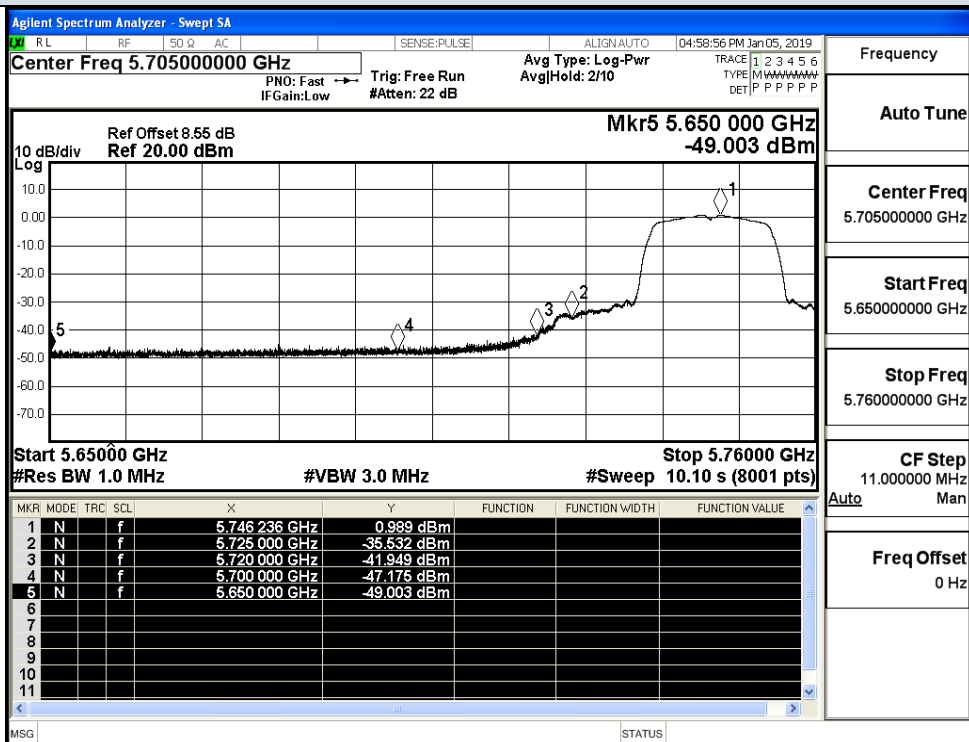


## IEEE 802.11a / Channel 149 / 5745 MHz / Peak\_Ant1

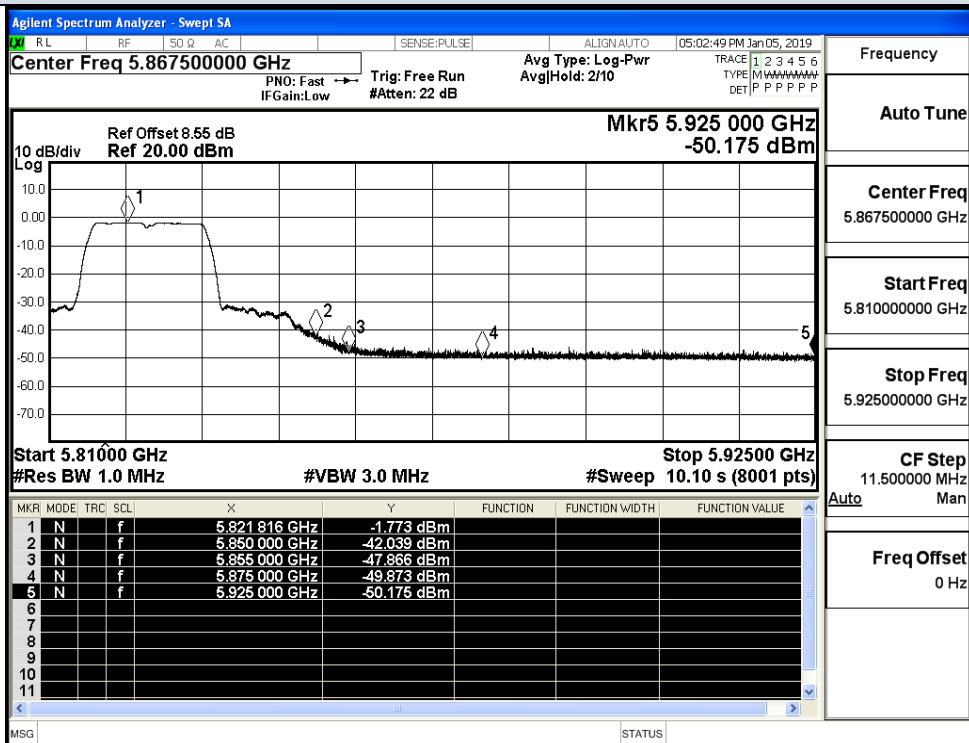


## IEEE 802.11a / Channel 165 / 5825 MHz / Peak\_Ant1

## Undesirable Emissions Measurement\_Ant1

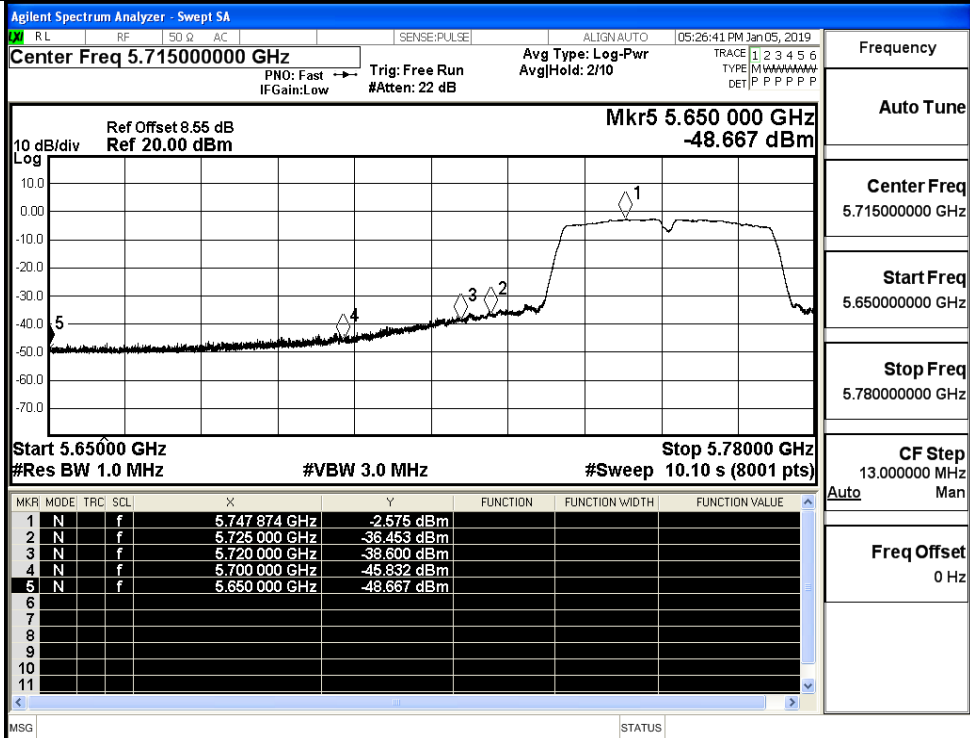


## IEEE 802.11n HT20 / Channel 149 / 5745 MHz / Peak\_Ant1

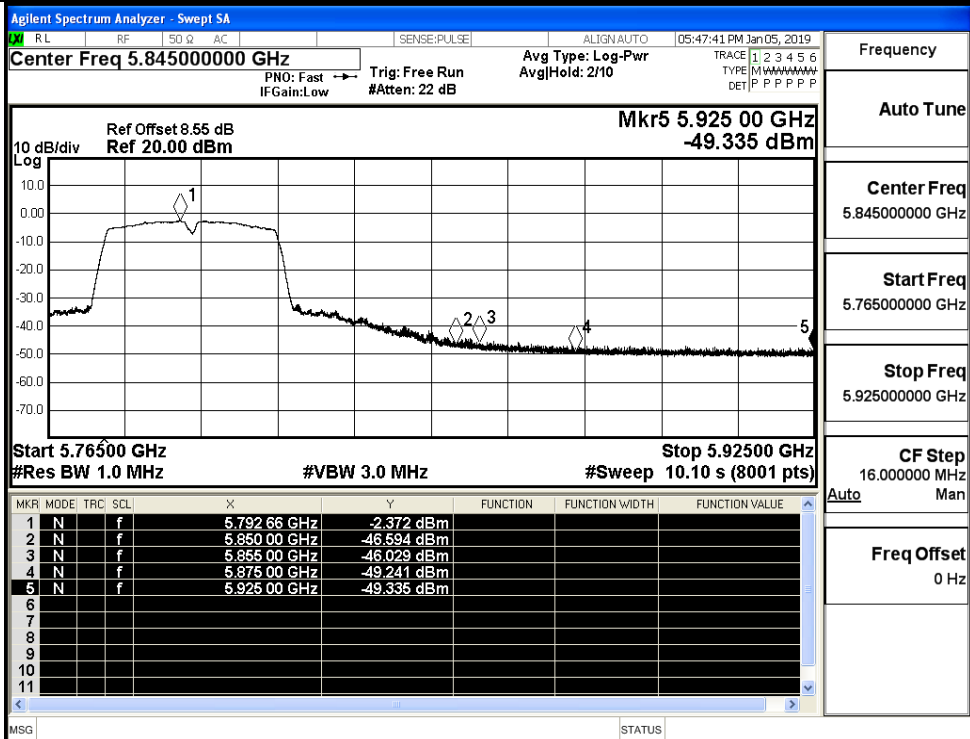


## IEEE 802.11n HT20 / Channel 165 / 5825 MHz / Peak\_Ant1

## Undesirable Emissions Measurement\_Ant1



## IEEE 802.11n HT40 / Channel 151 / 5755 MHz / Peak\_Ant1



## IEEE 802.11n HT40 / Channel 159 / 5795 MHz / Peak\_Ant1