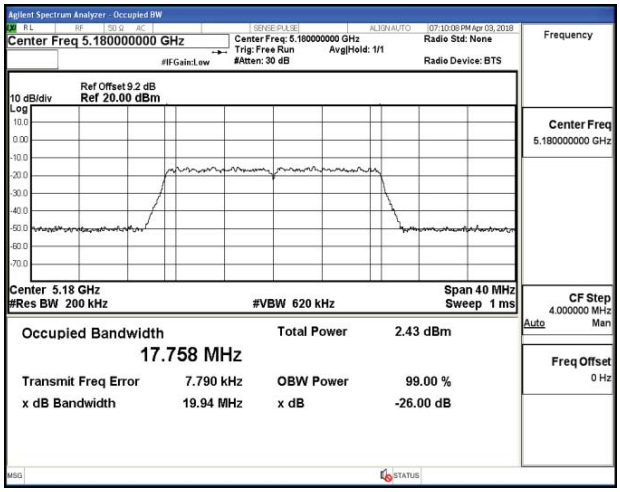
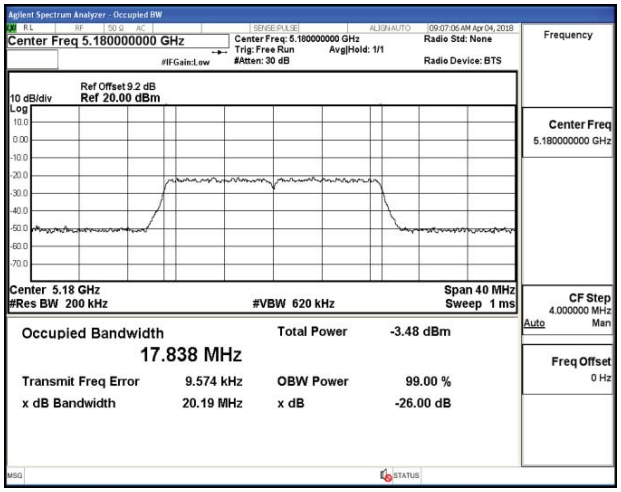
## 99% and 26dB Occupied Bandwidth-ant 1

### IEEE 802.11a

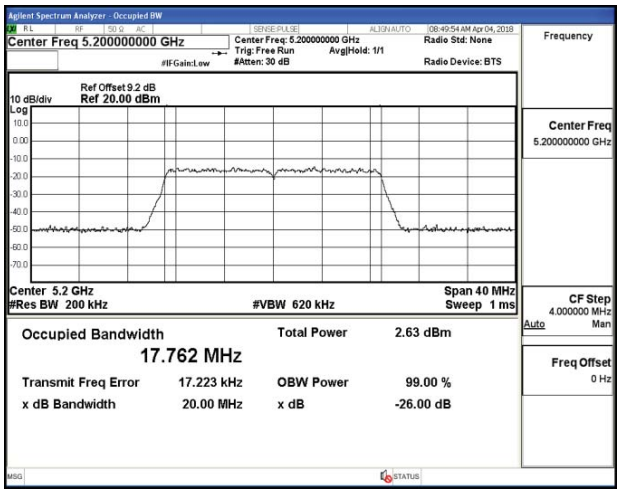



Channel 36 / 5180 MHz

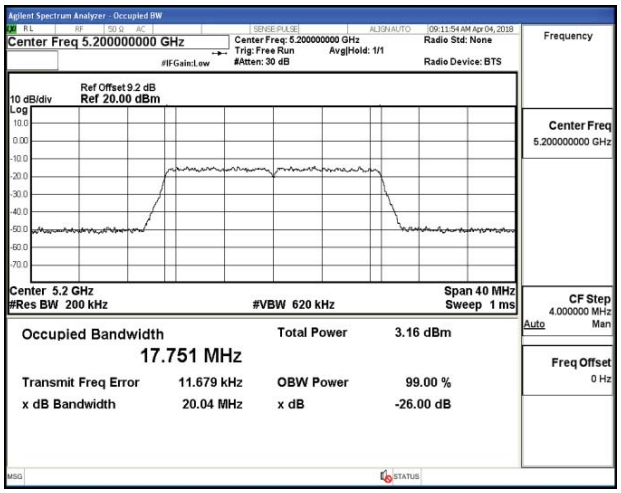
### IEEE 802.11n HT20



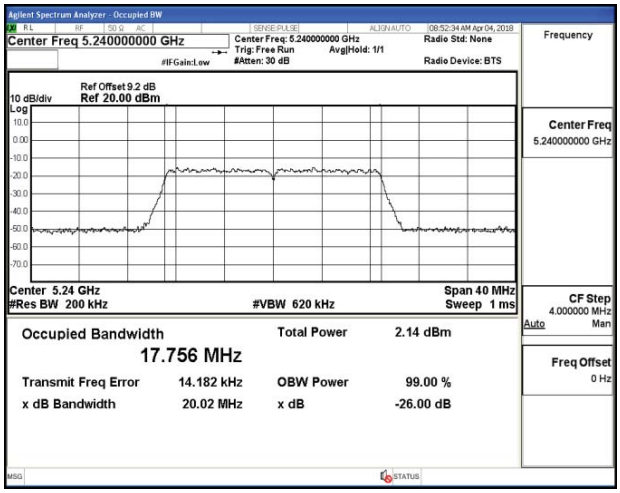

Channel 36 / 5180 MHz



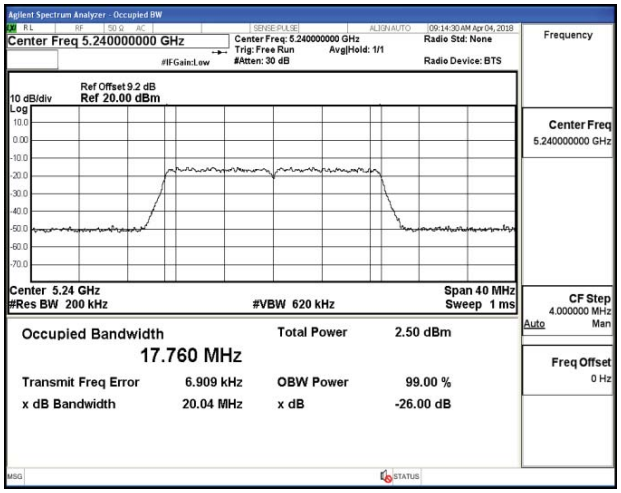

Channel 40 / 5200 MHz




Channel 40 / 5200 MHz



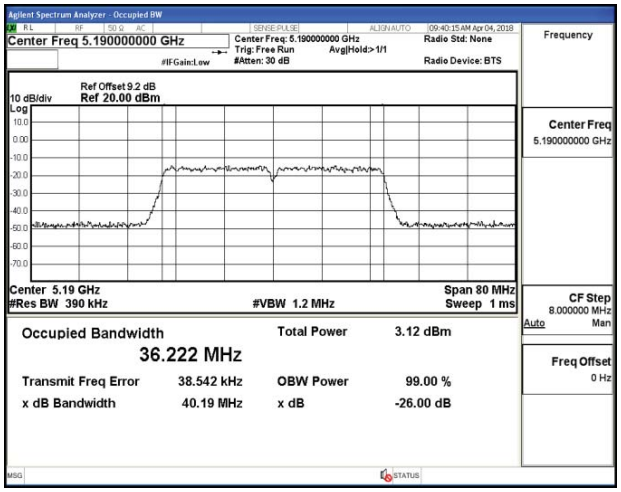

Channel 48 / 5240 MHz



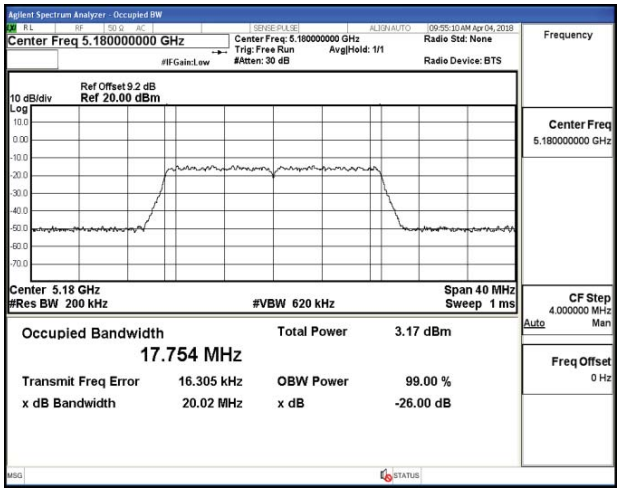

Channel 48 / 5240 MHz

## 99% and 26dB Occupied Bandwidth-ant 1

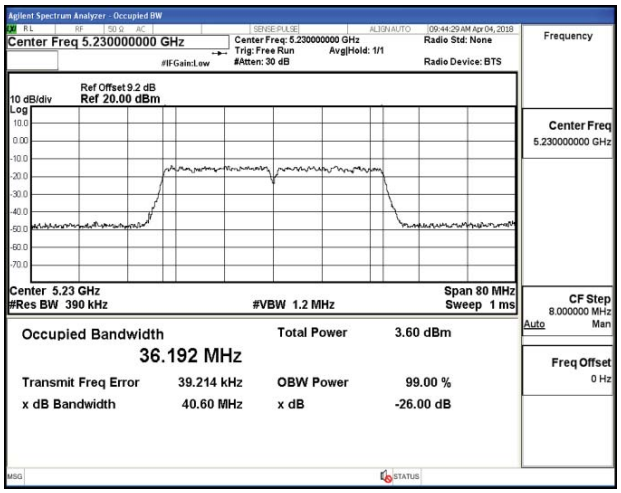
### IEEE 802.11n HT40



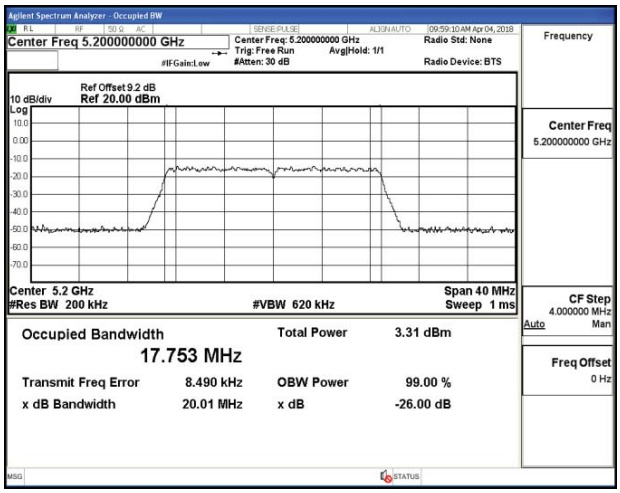

### IEEE 802.11ac VHT20




### Channel 38 / 5190 MHz

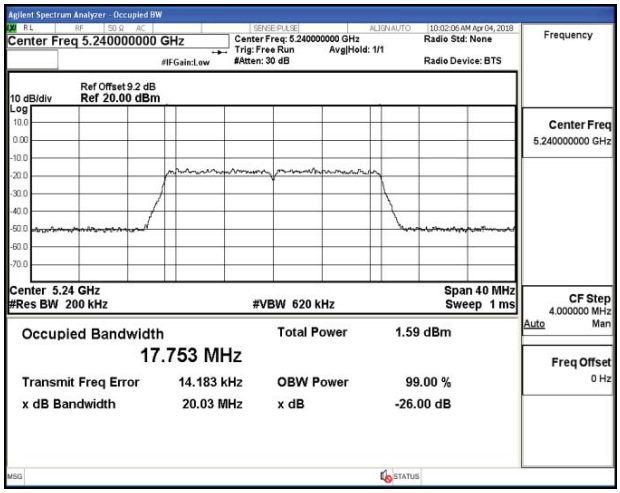



### Channel 36 / 5180 MHz

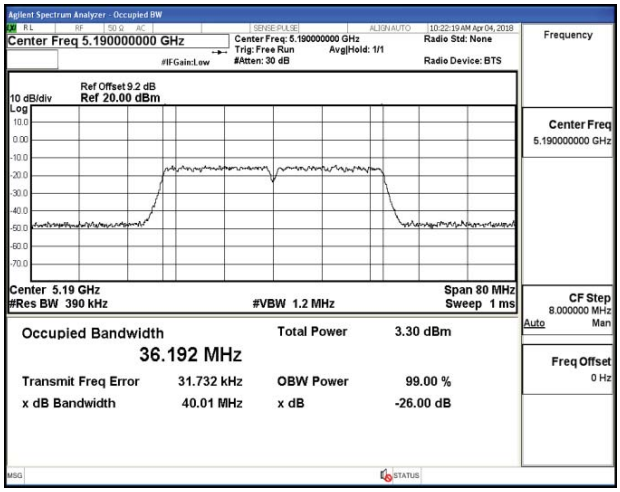
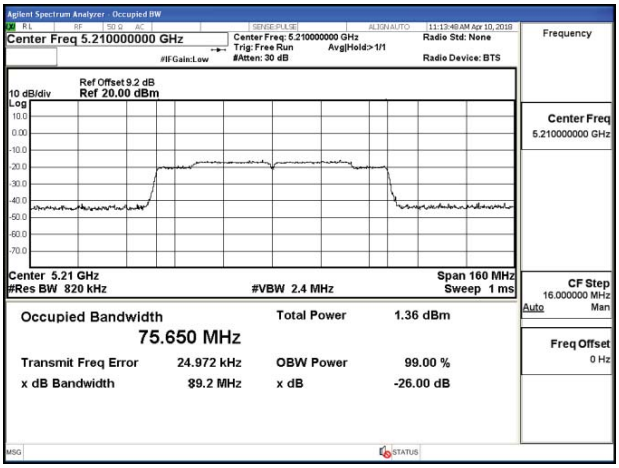
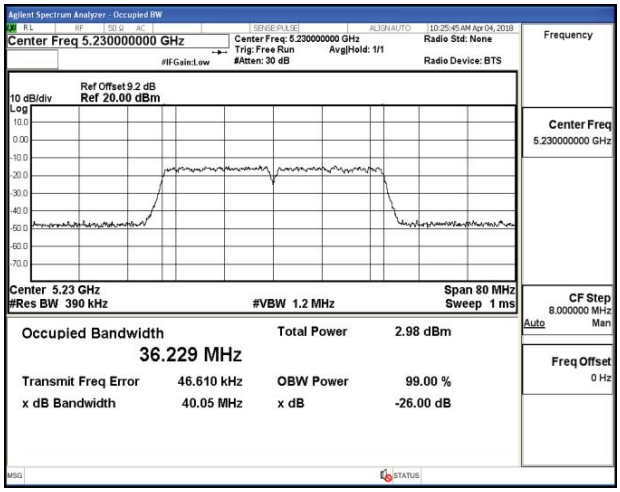



### Channel 46 / 5230 MHz

### Channel 40 / 5200 MHz




### Channel 48 / 5240 MHz

| 99% and 26dB Occupied Bandwidth-ant 1 | |
|---|---|
| IEEE 802.11ac VHT40 | IEEE 802.11ac VHT80 |
|  |  |
| Channel 38 / 5190 MHz | Channel 42 / 5210 MHz |
|  | |
| Channel 46 / 5230 MHz | |

## 5.5. 6dB Occupied Bandwidth Measurement

### 5.5.1. Standard Applicable

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

### 5.5.2. Measuring Instruments and Setting

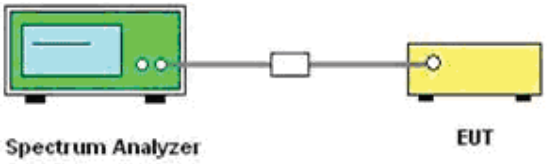
Please refer to equipment list in this report. The following table is the setting of the Spectrum Analyzer.

| Spectrum Parameter | Setting |
|---|---|
| Attenuation | Auto |
| Span | > 26dB Bandwidth |
| Detector | Peak |
| Trace | Max Hold |
| Sweep Time | Auto |

### 5.5.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer in peak hold mode.
2. The resolution bandwidth of 100 KHz and the video bandwidth of 300 KHz were used.
3. Measured the spectrum width with power higher than 6dB below carrier.

### 5.5.4. Test Setup Layout




### 5.5.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

### 5.5.6. Test Result of 6dB Occupied Bandwidth

5.5.6.1 UNII Band 3

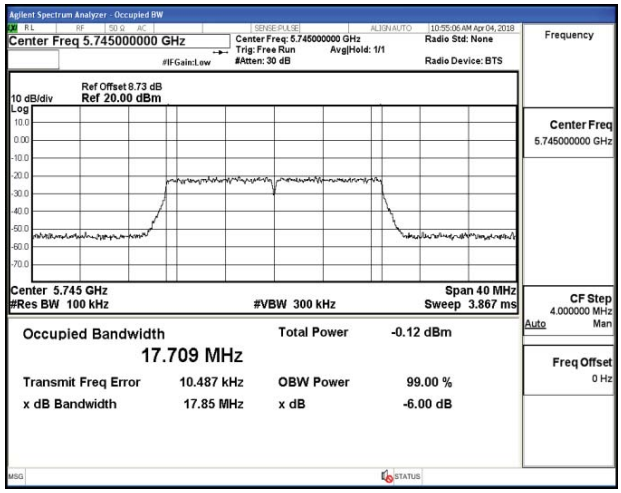
| Test Mode | Channel | Frequency (MHz) | 6dB Bandwidth (MHz) | | Limits (MHz) | Verdict |
|---|---|---|---|---|---|---|
| | | | Chain0 | Chain1 | | |
| IEEE 802.11a | 149 | 5745 | 17.85 | 17.83 | ≥0.500 | Complies |
| | 157 | 5785 | 17.85 | 17.85 | | |
| | 163 | 5825 | 17.86 | 17.87 | | |
| IEEE 802.11n HT20 | 149 | 5745 | 17.79 | 17.82 | ≥0.500 | Complies |
| | 157 | 5785 | 17.86 | 17.86 | | |
| | 163 | 5825 | 17.84 | 17.82 | | |
| IEEE 802.11n HT40 | 151 | 5755 | 36.56 | 36.57 | ≥0.500 | Complies |
| | 159 | 5795 | 36.53 | 36.55 | | |
| IEEE 802.11 ac VHT20 | 149 | 5745 | 17.83 | 17.81 | ≥0.500 | Complies |
| | 157 | 5785 | 17.84 | 17.82 | | |
| | 165 | 5825 | 17.84 | 17.85 | | |
| IEEE 802.11 ac VHT40 | 151 | 5755 | 36.55 | 36.53 | ≥0.500 | Complies |
| | 159 | 5795 | 36.54 | 36.57 | | |
| IEEE 802.11 ac VHT80 | 155 | 5775 | 75.21 | 75.24 | ≥0.500 | Complies |

*Remark:*

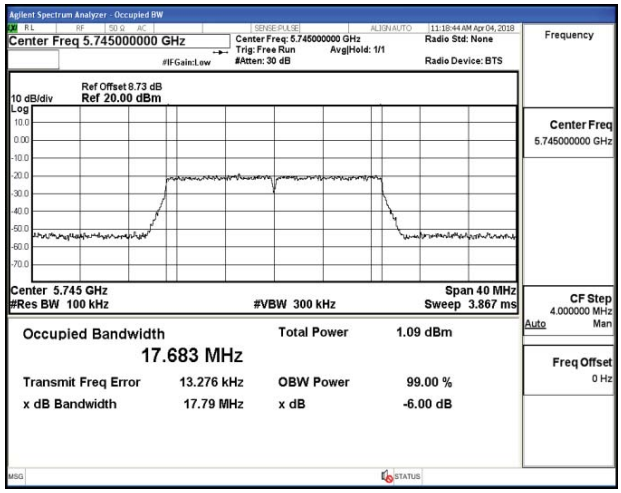
1. *Measured 6dB bandwidth at difference data rate for each mode and recorded worst case for each mode.*
2. *Test results including cable loss;*
3. *Worst case data at 6Mbps at IEEE 802.11a; MCS0 at IEEE 802.11n HT20, IEEE 802.11n HT40, IEEE 802.11ac VHT20, IEEE 802.11ac VHT40, IEEE 802.11ac VHT80;*
4. *Please refer to following test plots;*

## 6dB Occupied Bandwidth-ant 0

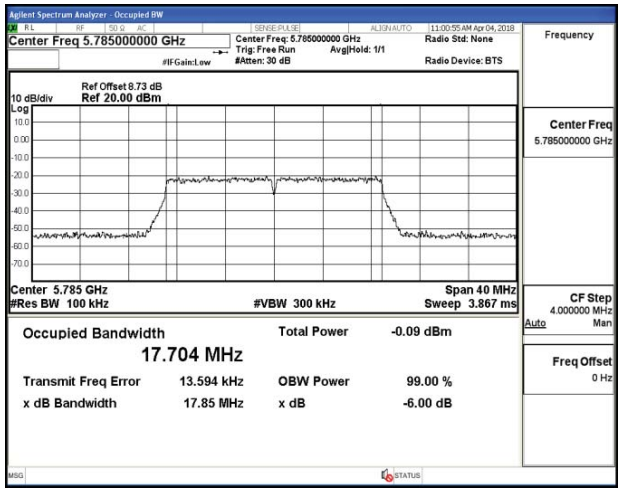
### IEEE 802.11a



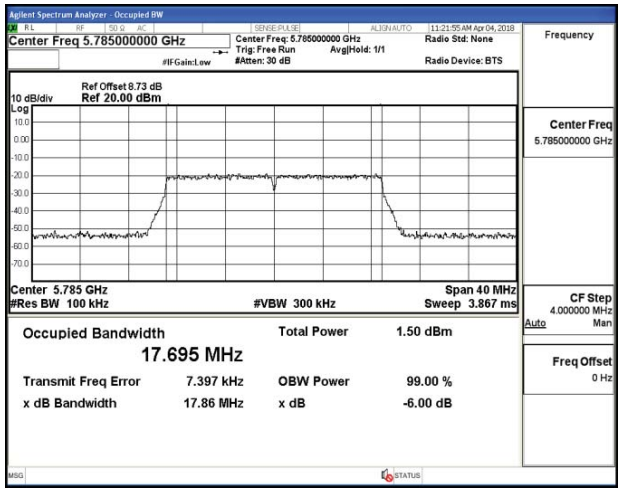

### IEEE 802.11n HT20



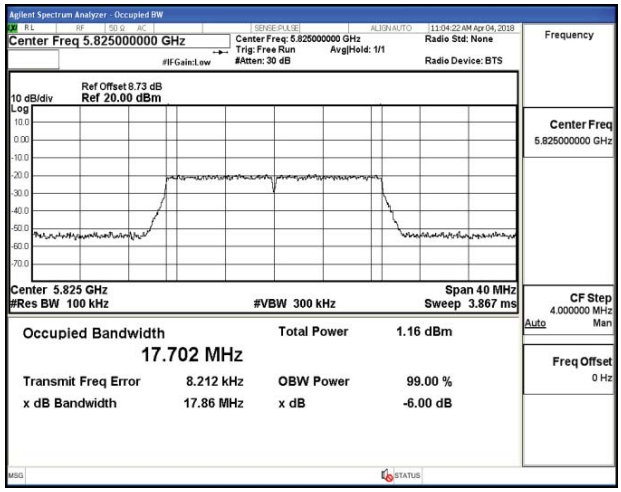

### Channel 149 / 5745 MHz



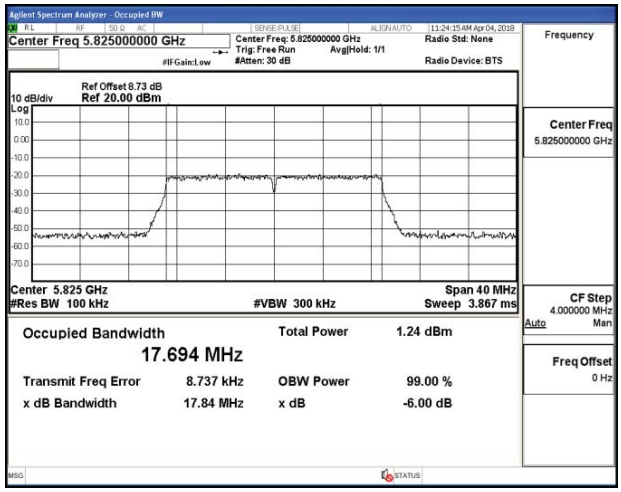

### Channel 149 / 5745 MHz




### Channel 157 / 5785 MHz



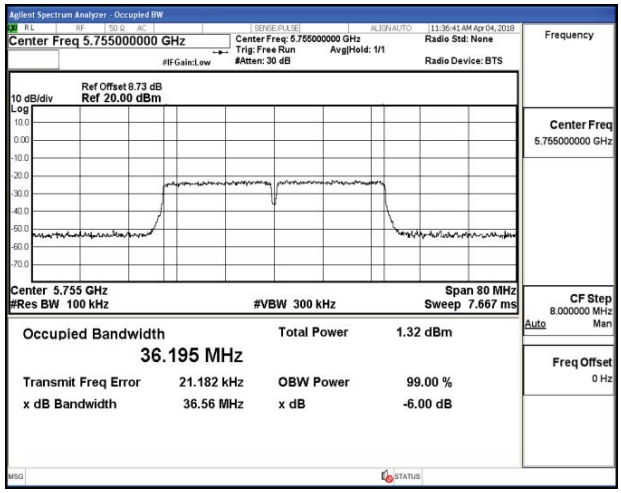

### Channel 157 / 5785 MHz



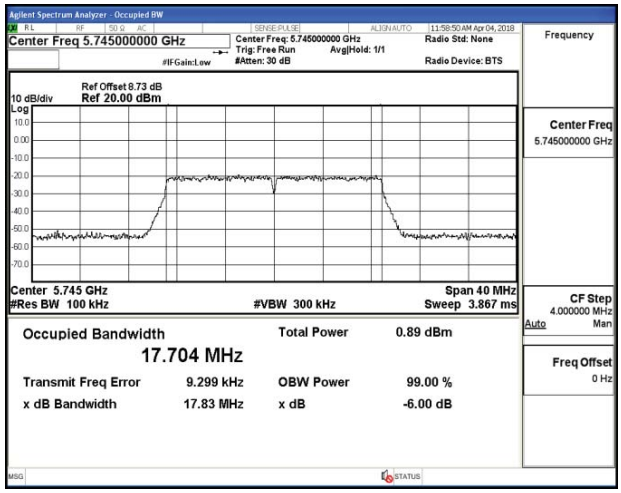

### Channel 165 / 5825 MHz

## 6dB Occupied Bandwidth-ant 0

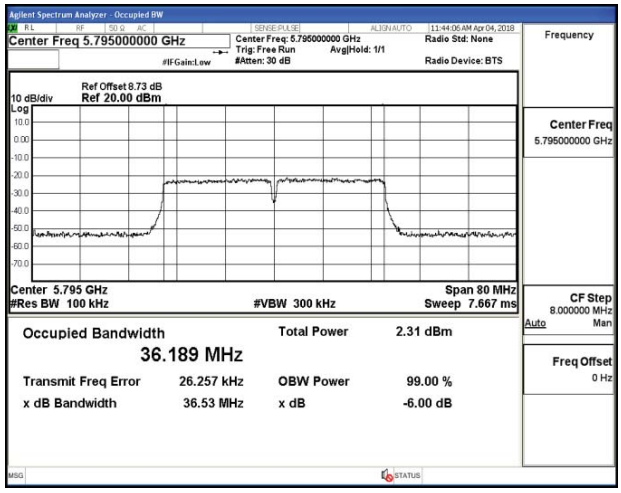
### IEEE 802.11n HT40



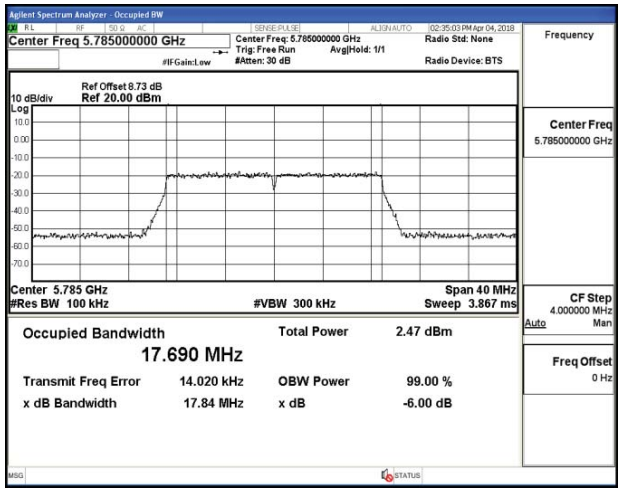

### IEEE 802.11ac VHT20




### Channel 151 / 5755 MHz

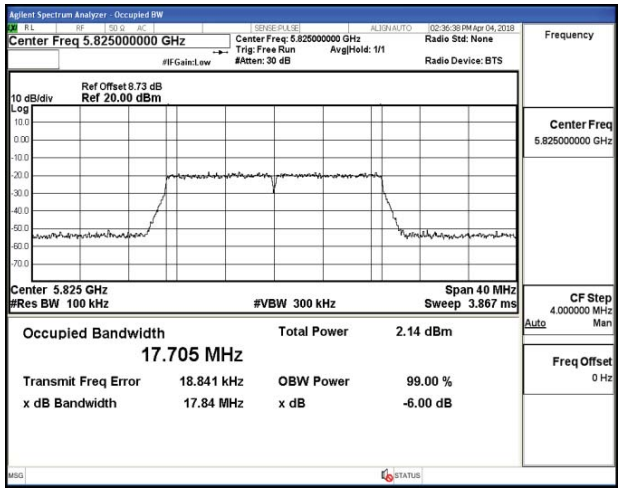



### Channel 149 / 5745 MHz

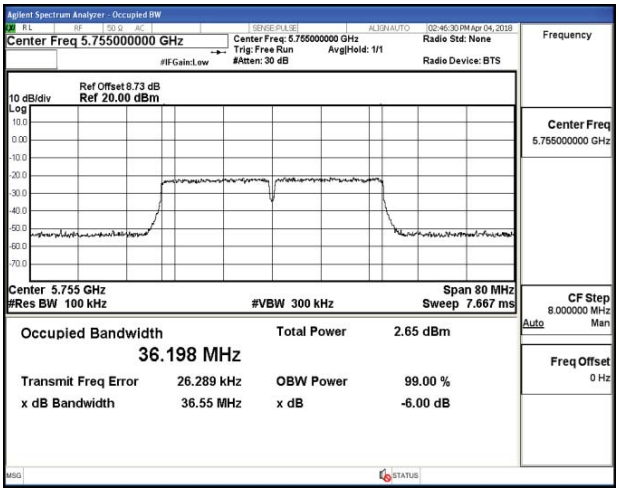
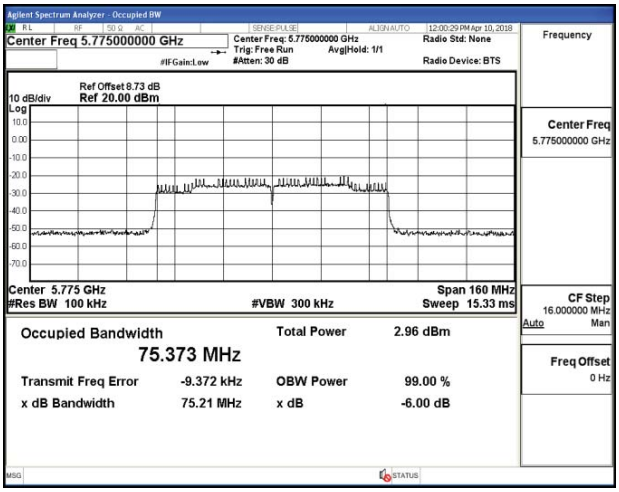
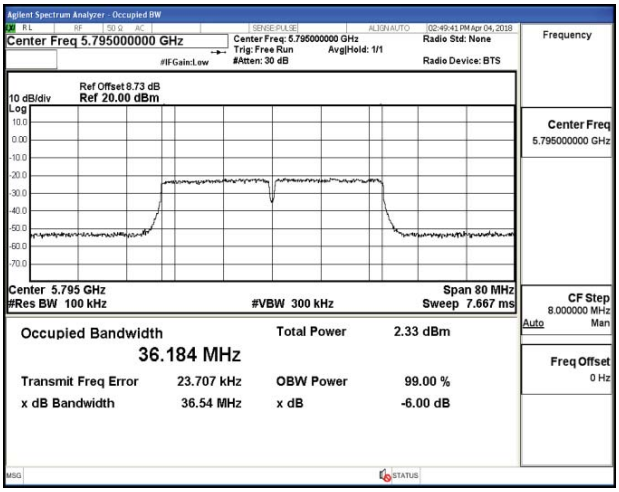



### Channel 159 / 5795 MHz

### Channel 157 / 5785 MHz

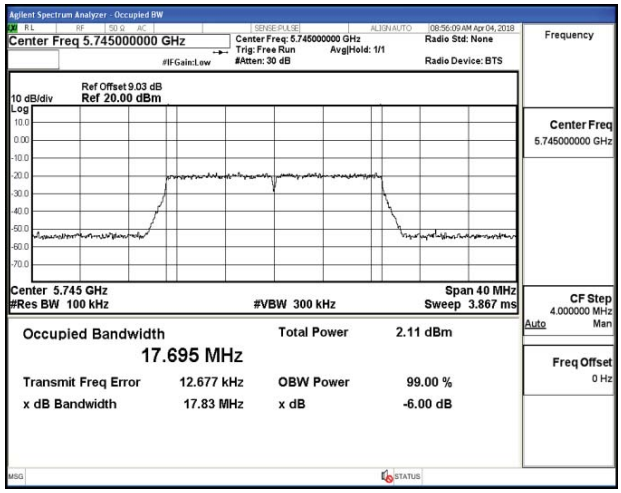



### Channel 165 / 5825 MHz

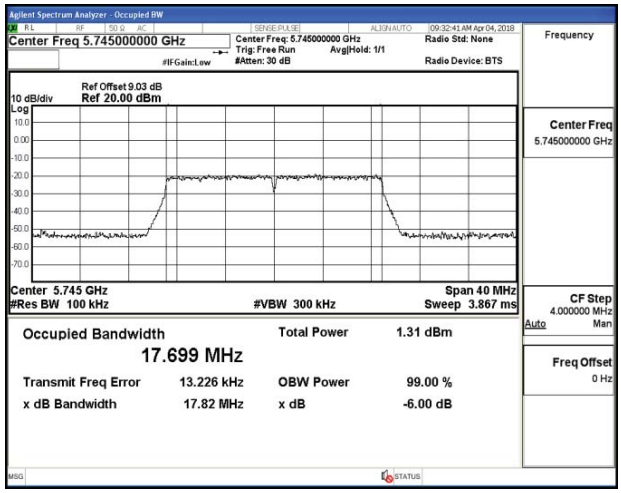
| 6dB Occupied Bandwidth-ant 0 | |
|---|---|
| IEEE 802.11ac VHT40 | IEEE 802.11ac VHT80 |
|  |  |
| Channel 151 / 5755 MHz | Channel 155 / 5775 MHz |
|  | |
| Channel 159 / 5795 MHz | |

## 6dB Occupied Bandwidth-ant 1

### IEEE 802.11a

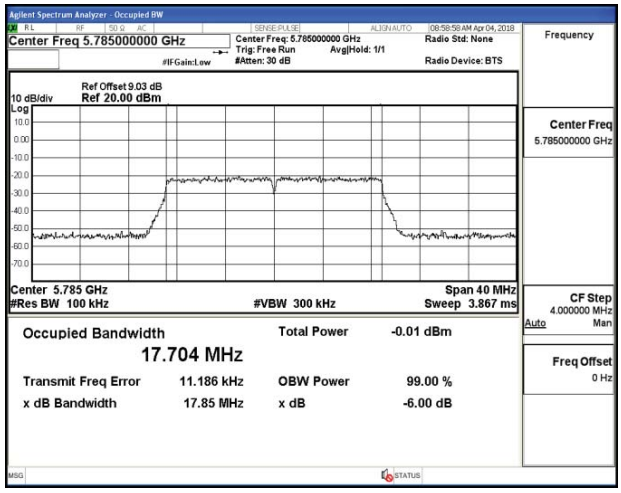


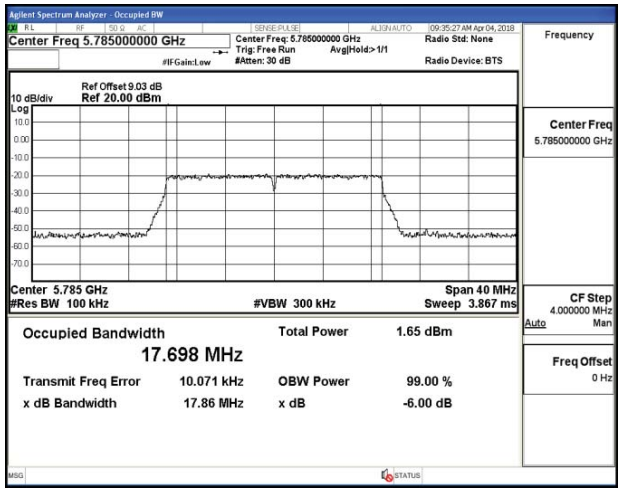

### IEEE 802.11n HT20




### Channel 149 / 5745 MHz

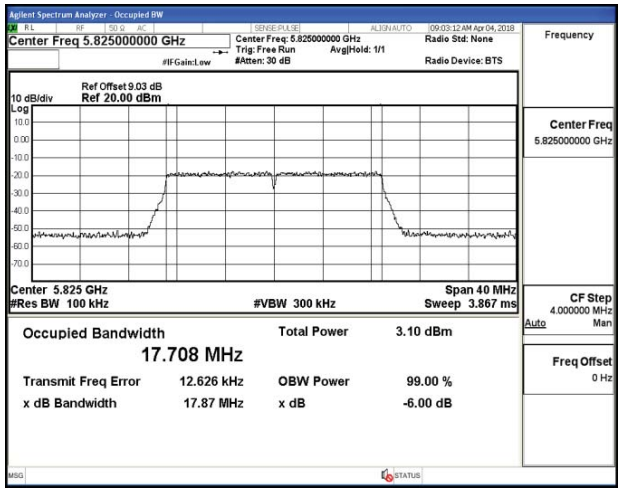
### Channel 149 / 5745 MHz

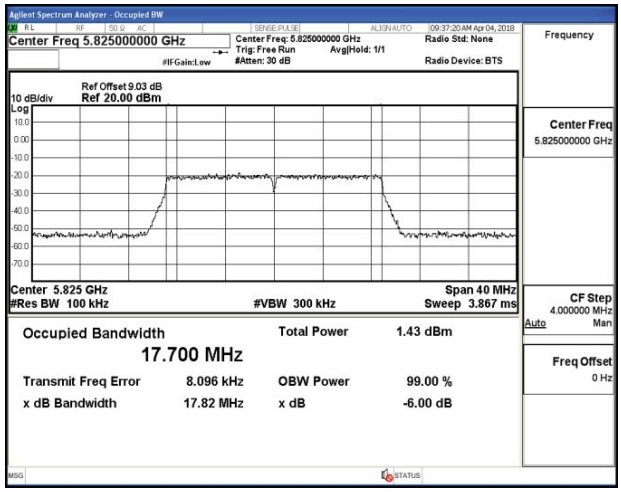



### Channel 157 / 5785 MHz

### Channel 157 / 5785 MHz



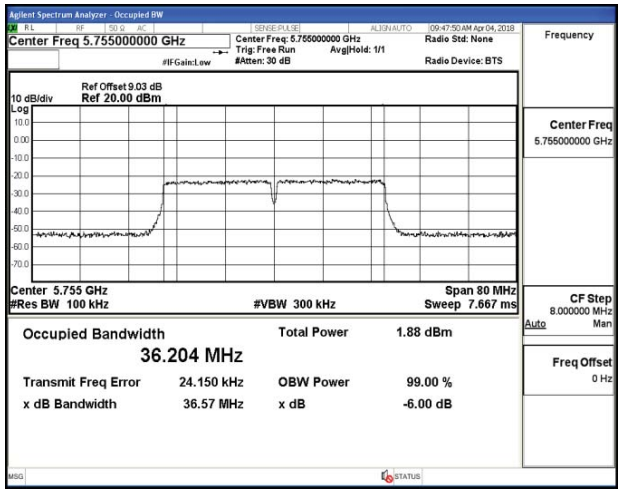




### Channel 165 / 5825 MHz

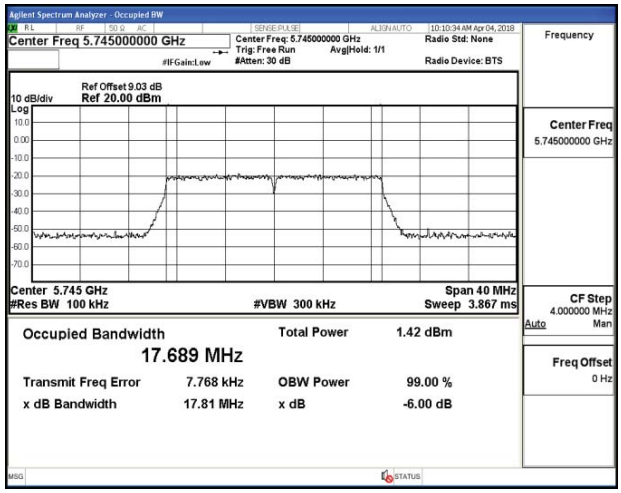
### Channel 165 / 5825 MHz

## 6dB Occupied Bandwidth-ant 1

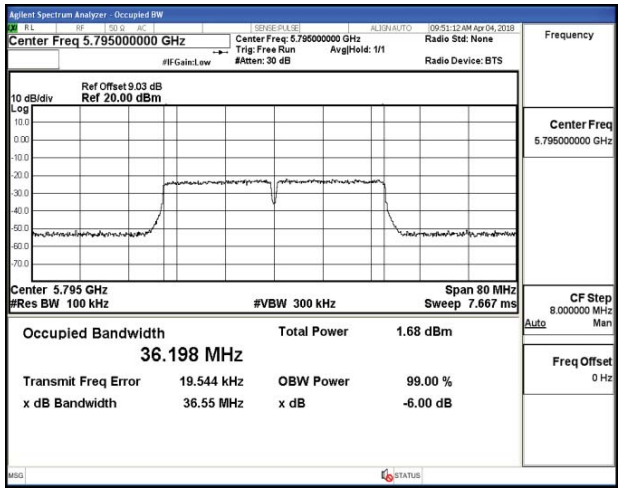
### IEEE 802.11n HT40



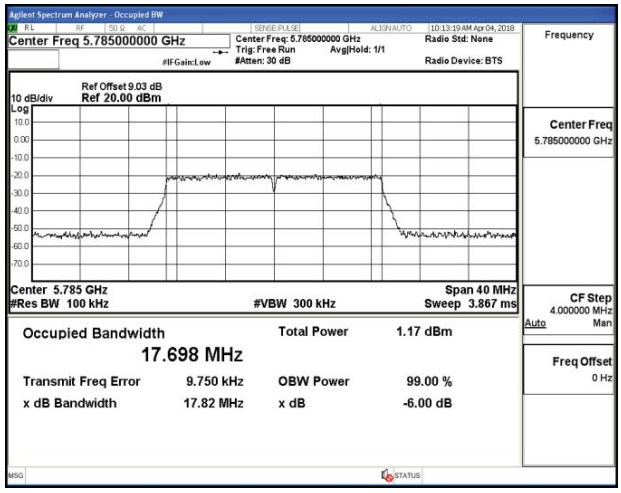

### IEEE 802.11ac VHT20




### Channel 151 / 5755 MHz

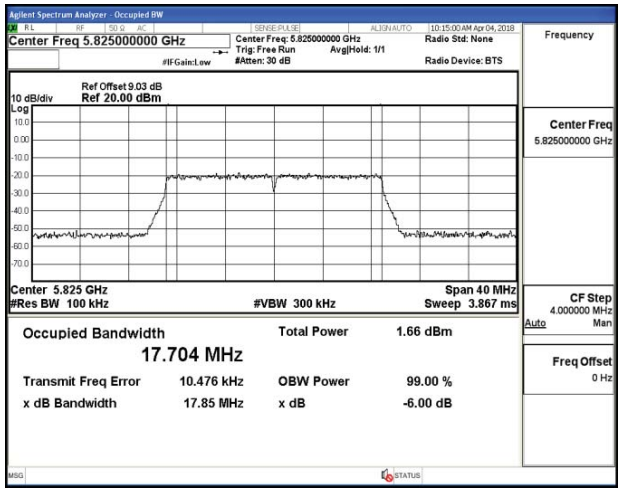



### Channel 149 / 5745 MHz

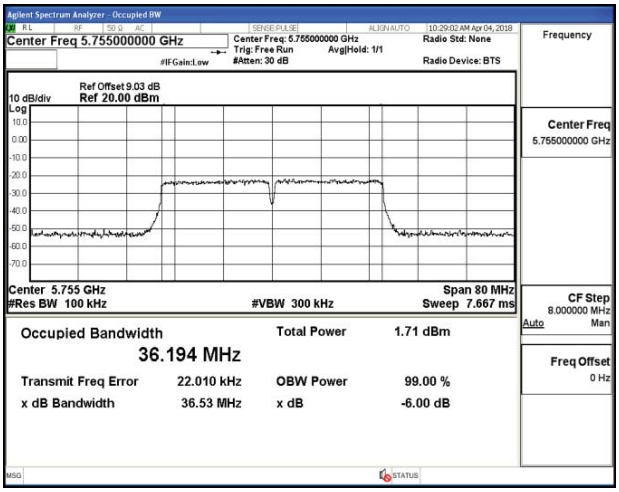
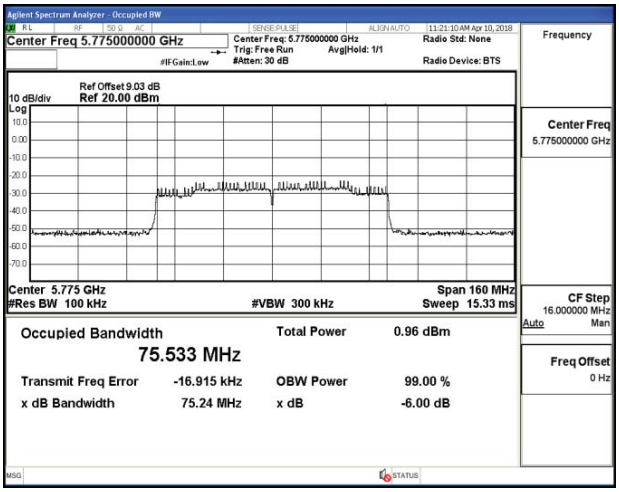
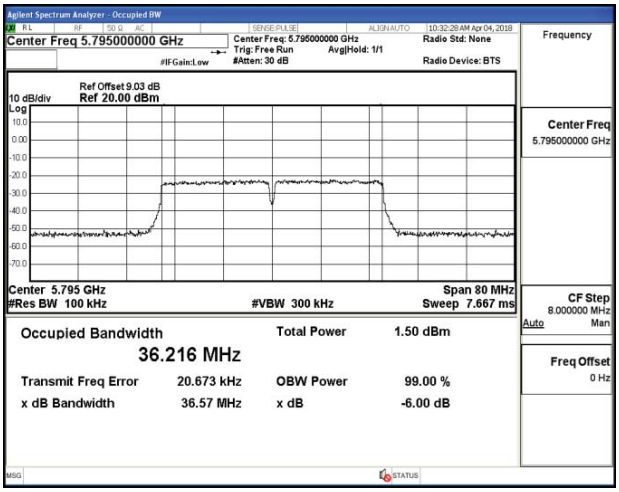



### Channel 159 / 5795 MHz

### Channel 157 / 5785 MHz




### Channel 165 / 5825 MHz

| 6dB Occupied Bandwidth-ant 1 | |
|---|---|
| IEEE 802.11ac VHT40 | IEEE 802.11ac VHT80 |
|  |  |
| Channel 151 / 5755 MHz | Channel 155 / 5775 MHz |
|  | |
| Channel 159 / 5795 MHz | |

## 5.6. Radiated Emissions Measurement

### 5.6.1. Standard Applicable

15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| \1\ 0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293. | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | (\2\) |
| 13.36-13.41 | | | |

\1\ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
\2\ Above 38.6

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz (68.2dBuV/m at 3m).

For transmitters operating in the 5.725-5.85 GHz band:

All emissions shall be limited to a level of −27 dBm/MHz(68.2dBuV/m at 3m) at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz(105.2dBuV/m at 3m) at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6(110.8dBuV/m at 3m) dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz(122.2dBuV/m at 3m) at the band edge

In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

| Frequencies (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|---|---|---|
| 0.009~0.490 | 2400/F(KHz) | 300 |
| 0.490~1.705 | 24000/F(KHz) | 30 |
| 1.705~30.0 | 30 | 30 |
| 30~88 | 100 | 3 |
| 88~216 | 150 | 3 |
| 216~960 | 200 | 3 |
| Above 960 | 500 | 3 |

### 5.6.2. Measuring Instruments and Setting

Please refer to equipment list in this report. The following table is the setting of spectrum analyzer and receiver.

| Spectrum Parameter | Setting |
|---|---|
| Attenuation | Auto |
| Start Frequency | 1000 MHz |
| Stop Frequency | 10th carrier harmonic |
| RB / VB (Emission in restricted band) | 1MHz / 1MHz for Peak, 1 MHz / 1/B kHz for Average |
| RB / VB (Emission in non-restricted band) | 1MHz / 1MHz for Peak, 1 MHz / 1/B kHz for Average |

| Receiver Parameter | Setting |
|---|---|
| Attenuation | Auto |
| Start ~ Stop Frequency | 9kHz~150kHz / RB 200Hz for QP/AVG |
| Start ~ Stop Frequency | 150kHz~30MHz / RB 9kHz for QP/AVG |
| Start ~ Stop Frequency | 30MHz~1000MHz / RB 100kHz for QP |

5.6.3. Test Procedures

**1) Sequence of testing 9 kHz to 30 MHz**

**Setup:**

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions.

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

**Premeasurement:**

--- The turntable rotates from 0° to 315° using 45° steps.

--- The antenna height is 0.8 meter.

--- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

**Final measurement:**

--- Identified emissions during the premeasurement the software maximizes by rotating the turntable position (0° to 360°) and by rotating the elevation axes (0° to 360°).

--- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QPK detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

**2) Sequence of testing 30 MHz to 1 GHz**

**Setup:**

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

**Premeasurement:**

--- The turntable rotates from 0° to 315° using 45° steps.

--- The antenna is polarized vertical and horizontal.

--- The antenna height changes from 1 to 3 meter.

--- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

**Final measurement:**

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position (± 45°) and antenna movement between 1 and 4 meter.

--- The final measurement will be done with QP detector with an EMI receiver.

--- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

**3) Sequence of testing 1 GHz to 18 GHz**

**Setup:**

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

**Premeasurement:**

--- The turntable rotates from 0° to 315° using 45° steps.

--- The antenna is polarized vertical and horizontal.

--- The antenna height scan range is 1 meter to 2.5 meter.

--- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

**Final measurement:**

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position (± 45°) and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.

--- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

**4) Sequence of testing above 18 GHz**

**Setup:**

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 1 meter.

--- The EUT was set into operation.

**Premeasurement:**

--- The antenna is moved spherical over the EUT in different polarizations of the antenna.

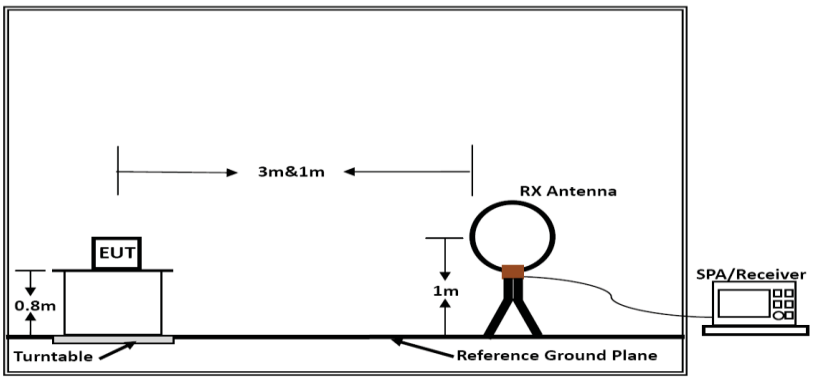
**Final measurement:**

--- The final measurement will be performed at the position and antenna orientation for all detected emissions that were found during the premeasurements with Peak and Average detector.

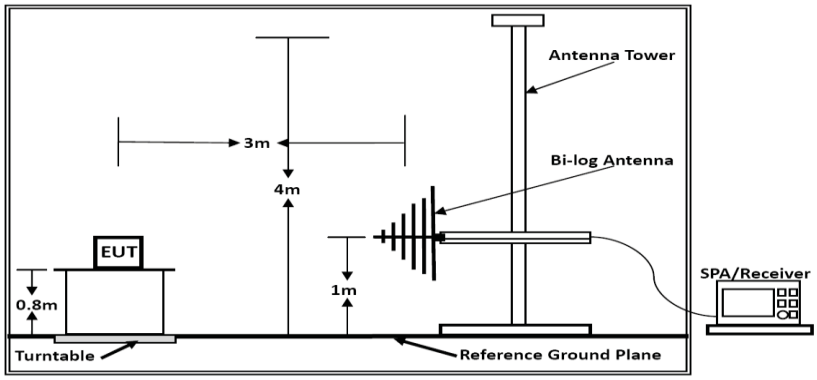
--- The final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

5.6.4. Test Setup Layout

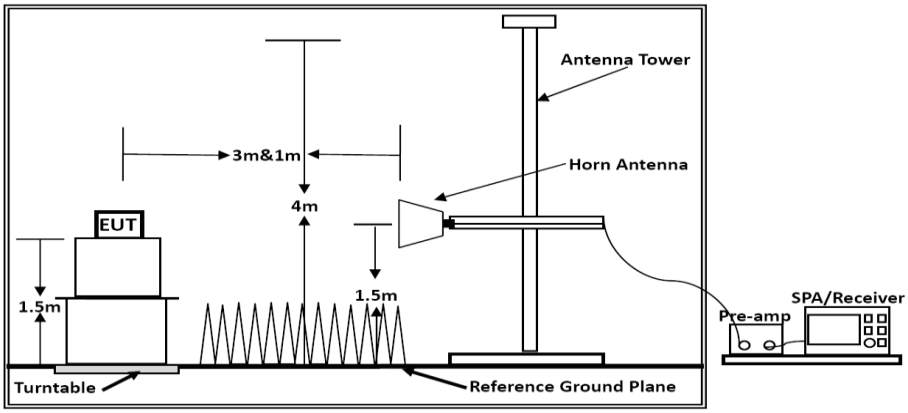
For radiated emissions below 30MHz




**Below 30MHz**




**Below 1GHz**




**Above 1GHz**

Above 18 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade form 3m to 1m.

Distance extrapolation factor = 20 log (specific distanc [3m] / test distance [1.5m]) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor [6 dB].

5.6.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.6.6. Results of Radiated Emissions (9 KHz~30MHz)

| Temperature | 22.3℃ | Humidity | 53.2% |
|---|---|---|---|
| Test Engineer | Tom Liu | Configurations | IEEE 802.11a/n/ac |

| Freq. (MHz) | Level (dBuV) | Over Limit (dB) | Over Limit (dB) | Remark |
|---|---|---|---|---|
| - | - | - | - | See Note |

Note:

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

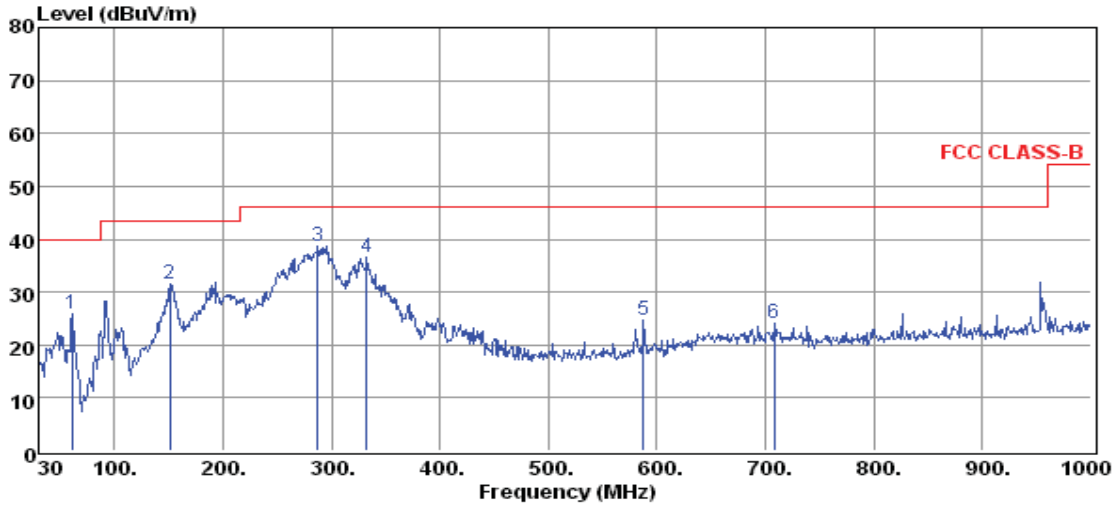
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

5.6.7. Results of Radiated Emissions (30MHz~1GHz)

***Test result for IEEE 802.11a***

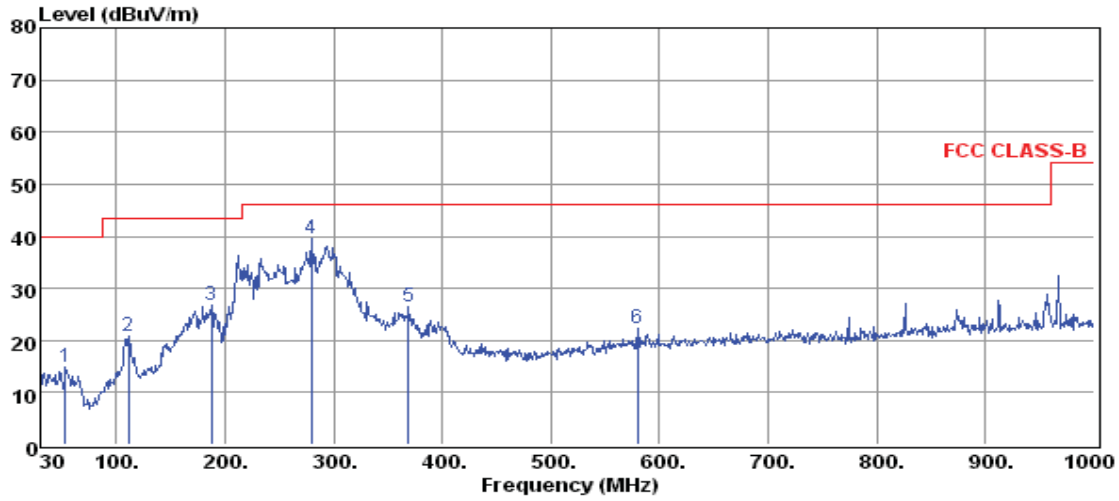
*Vertical*




| | Freq | Reading | CabLos | Antfac | Measured | Limit | Over | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dB/m | dBuV/m | dBuV/m | dB | |
| 1 | 61.04 | 13.00 | 0.49 | 12.28 | 25.77 | 40.00 | -14.23 | QP |
| 2 | 151.25 | 22.38 | 0.73 | 8.31 | 31.42 | 43.50 | -12.08 | QP |
| 3 | 287.05 | 24.91 | 1.05 | 12.81 | 38.77 | 46.00 | -7.23 | QP |
| 4 | 332.64 | 21.54 | 1.11 | 13.83 | 36.48 | 46.00 | -9.52 | QP |
| 5 | 587.75 | 5.09 | 1.40 | 18.22 | 24.71 | 46.00 | -21.29 | QP |
| 6 | 708.03 | 3.70 | 1.60 | 18.91 | 24.21 | 46.00 | -21.79 | QP |

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that ate 20db blow the offficial limit are not reported

*Horizontal*




| | Freq | Reading | CabLos | Antfac | Measured | Limit | Over | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dB/m | dBuV/m | dBuV/m | dB | |
| 1 | 53.28 | 1.18 | 0.46 | 13.10 | 14.74 | 40.00 | -25.26 | QP |
| 2 | 111.48 | 8.28 | 0.61 | 11.99 | 20.88 | 43.50 | -22.62 | QP |
| 3 | 187.14 | 15.38 | 0.98 | 10.31 | 26.67 | 43.50 | -16.83 | QP |
| 4 | 279.29 | 25.75 | 1.01 | 12.65 | 39.41 | 46.00 | -6.59 | QP |
| 5 | 368.53 | 10.85 | 1.22 | 14.50 | 26.57 | 46.00 | -19.43 | QP |
| 6 | 579.99 | 2.66 | 1.44 | 18.08 | 22.18 | 46.00 | -23.82 | QP |

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that ate 20db blow the offficial limit are not reported

****Note:*

*Pre-scan all mode and recorded the worst case results in this report (IEEE 802.11*ac VHT20 mode (Mid Channel*, 5200 MHz).*

*Emission level (dBuV/m) = 20 log Emission level (uV/m).*

*Corrected Reading: Antenna Factor + Cable Loss + Read Level = Level.*

*Only recorded the worst test case data in this report.*

5.6.8. Results for Radiated Emissions (Above 1GHz)

*Note: Only recorded the worst test result in this report.*

5.6.8.1 UNII Band 1

*IEEE 802.11a-ant 0*

*Channel 36 / 5180 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 10.36 | 45.50 | 33.21 | 35.82 | 9.52 | 52.41 | 74.00 | -21.59 | Peak | Horizontal |
| 10.36 | 34.84 | 33.21 | 35.82 | 9.52 | 41.75 | 54.00 | -12.25 | Average | Horizontal |
| 10.36 | 46.75 | 32.82 | 35.82 | 9.52 | 53.27 | 74.00 | -20.73 | Peak | Vertical |
| 10.36 | 35.21 | 32.82 | 35.82 | 9.52 | 41.73 | 54.00 | -12.27 | Average | Vertical |

*Channel 40 / 5200 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 10.44 | 45.96 | 33.21 | 35.82 | 9.52 | 52.87 | 74.00 | -21.13 | Peak | Horizontal |
| 10.44 | 35.44 | 33.21 | 35.82 | 9.52 | 42.35 | 54.00 | -11.65 | Average | Horizontal |
| 10.44 | 47.13 | 32.82 | 35.82 | 9.52 | 53.65 | 74.00 | -20.35 | Peak | Vertical |
| 10.44 | 35.57 | 32.82 | 35.82 | 9.52 | 42.09 | 54.00 | -11.91 | Average | Vertical |

*Channel 48 / 5240 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 10.48 | 46.70 | 33.21 | 35.82 | 9.52 | 53.61 | 74.00 | -20.39 | Peak | Horizontal |
| 10.48 | 35.66 | 33.21 | 35.82 | 9.52 | 42.57 | 54.00 | -11.43 | Average | Horizontal |
| 10.48 | 47.74 | 32.82 | 35.82 | 9.52 | 54.26 | 74.00 | -19.74 | Peak | Vertical |
| 10.48 | 36.05 | 32.82 | 35.82 | 9.52 | 42.57 | 54.00 | -11.43 | Average | Vertical |

*IEEE 802.11n HT20-combined ant 0 & ant 1*

*Channel 36 / 5180 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 10.36 | 45.37 | 33.21 | 35.82 | 9.52 | 52.28 | 74.00 | -21.72 | Peak | Horizontal |
| 10.36 | 34.30 | 33.21 | 35.82 | 9.52 | 41.21 | 54.00 | -12.79 | Average | Horizontal |
| 10.36 | 46.38 | 32.82 | 35.82 | 9.52 | 52.90 | 74.00 | -21.10 | Peak | Vertical |
| 10.36 | 34.71 | 32.82 | 35.82 | 9.52 | 41.23 | 54.00 | -12.77 | Average | Vertical |

*Channel 40 / 5200 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 10.44 | 45.80 | 33.21 | 35.82 | 9.52 | 52.71 | 74.00 | -21.29 | Peak | Horizontal |
| 10.44 | 35.00 | 33.21 | 35.82 | 9.52 | 41.91 | 54.00 | -12.09 | Average | Horizontal |
| 10.44 | 46.89 | 32.82 | 35.82 | 9.52 | 53.41 | 74.00 | -20.59 | Peak | Vertical |
| 10.44 | 35.53 | 32.82 | 35.82 | 9.52 | 42.05 | 54.00 | -11.95 | Average | Vertical |

*Channel 48 / 5240 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 10.48 | 46.22 | 33.21 | 35.82 | 9.52 | 53.13 | 74.00 | -20.87 | Peak | Horizontal |
| 10.48 | 35.35 | 33.21 | 35.82 | 9.52 | 42.26 | 54.00 | -11.74 | Average | Horizontal |
| 10.48 | 47.37 | 32.82 | 35.82 | 9.52 | 53.89 | 74.00 | -20.11 | Peak | Vertical |
| 10.48 | 36.03 | 32.82 | 35.82 | 9.52 | 42.55 | 54.00 | -11.45 | Average | Vertical |

*IEEE 802.11n HT40-combined ant 0 & ant 1*

*Channel 38 / 5190 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 10.38 | 45.87 | 33.21 | 35.82 | 9.52 | 52.78 | 74.00 | -21.22 | Peak | Horizontal |
| 10.38 | 35.17 | 33.21 | 35.82 | 9.52 | 42.08 | 54.00 | -11.92 | Average | Horizontal |
| 10.38 | 47.25 | 32.82 | 35.82 | 9.52 | 53.77 | 74.00 | -20.23 | Peak | Vertical |
| 10.38 | 35.63 | 32.82 | 35.82 | 9.52 | 42.15 | 54.00 | -11.85 | Average | Vertical |

*Channel 46 / 5230 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 10.46 | 46.00 | 33.21 | 35.82 | 9.52 | 52.91 | 74.00 | -21.09 | Peak | Horizontal |
| 10.46 | 35.64 | 33.21 | 35.82 | 9.52 | 42.55 | 54.00 | -11.45 | Average | Horizontal |
| 10.46 | 47.38 | 32.82 | 35.82 | 9.52 | 53.90 | 74.00 | -20.10 | Peak | Vertical |
| 10.46 | 35.61 | 32.82 | 35.82 | 9.52 | 42.13 | 54.00 | -11.87 | Average | Vertical |

*IEEE 802.11ac VHT20-combined ant 0 & ant 1*

*Channel 36 / 5180 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 10.36 | 45.25 | 33.21 | 35.82 | 9.52 | 52.16 | 74.00 | -21.84 | Peak | Horizontal |
| 10.36 | 34.51 | 33.21 | 35.82 | 9.52 | 41.42 | 54.00 | -12.58 | Average | Horizontal |
| 10.36 | 46.42 | 32.82 | 35.82 | 9.52 | 52.94 | 74.00 | -21.06 | Peak | Vertical |
| 10.36 | 35.11 | 32.82 | 35.82 | 9.52 | 41.63 | 54.00 | -12.37 | Average | Vertical |

*Channel 40 / 5200 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 10.44 | 45.70 | 33.21 | 35.82 | 9.52 | 52.61 | 74.00 | -21.39 | Peak | Horizontal |
| 10.44 | 35.01 | 33.21 | 35.82 | 9.52 | 41.92 | 54.00 | -12.08 | Average | Horizontal |
| 10.44 | 47.03 | 32.82 | 35.82 | 9.52 | 53.55 | 74.00 | -20.45 | Peak | Vertical |
| 10.44 | 35.50 | 32.82 | 35.82 | 9.52 | 42.02 | 54.00 | -11.98 | Average | Vertical |

*Channel 48 / 5240 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 10.48 | 46.36 | 33.21 | 35.82 | 9.52 | 53.27 | 74.00 | -20.73 | Peak | Horizontal |
| 10.48 | 35.56 | 33.21 | 35.82 | 9.52 | 42.47 | 54.00 | -11.53 | Average | Horizontal |
| 10.48 | 47.53 | 32.82 | 35.82 | 9.52 | 54.05 | 74.00 | -19.95 | Peak | Vertical |
| 10.48 | 36.00 | 32.82 | 35.82 | 9.52 | 42.52 | 54.00 | -11.48 | Average | Vertical |

*IEEE 802.11ac VHT40-combined ant 0 & ant 1*

*Channel 38 / 5190 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 10.38 | 45.40 | 33.21 | 35.82 | 9.52 | 52.31 | 68.20 | -15.89 | Peak | Horizontal |
| 10.38 | 34.78 | 33.21 | 35.82 | 9.52 | 41.69 | 54.00 | -12.31 | Average | Horizontal |
| 10.38 | 46.74 | 32.82 | 35.82 | 9.52 | 53.26 | 68.20 | -14.94 | Peak | Vertical |
| 10.38 | 35.01 | 32.82 | 35.82 | 9.52 | 41.53 | 54.00 | -12.47 | Average | Vertical |

*Channel 46 / 5230 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 10.46 | 45.97 | 33.21 | 35.82 | 9.52 | 52.88 | 68.20 | -15.32 | Peak | Horizontal |
| 10.46 | 35.28 | 33.21 | 35.82 | 9.52 | 42.19 | 54.00 | -11.81 | Average | Horizontal |
| 10.46 | 47.39 | 32.82 | 35.82 | 9.52 | 53.91 | 68.20 | -14.29 | Peak | Vertical |
| 10.46 | 35.61 | 32.82 | 35.82 | 9.52 | 42.13 | 54.00 | -11.87 | Average | Vertical |

*IEEE 802.11ac VHT80-combined ant 0 & ant 1*

*Channel 42 / 5210 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 10.42 | 45.10 | 33.21 | 35.82 | 9.52 | 52.01 | 68.20 | -16.19 | Peak | Horizontal |
| 10.42 | 34.35 | 33.21 | 35.82 | 9.52 | 41.26 | 54.00 | -12.74 | Average | Horizontal |
| 10.42 | 46.38 | 32.82 | 35.82 | 9.52 | 52.90 | 68.20 | -15.30 | Peak | Vertical |
| 10.42 | 34.55 | 32.82 | 35.82 | 9.52 | 41.07 | 54.00 | -12.93 | Average | Vertical |

*Notes:*

*1). Measuring frequencies from 9 KHz ~ 40 GHz, No emission found between lowest internal used/generated frequency to 30MHz.*
*2). Radiated emissions measured in frequency range from 9 KHz ~ 40 GHz were made with an instrument using Peak detector mode.*
*3). 18~40GHz at least have 20dB margin. No recording in the test report.*
*4). Worst case data at 6Mbps at IEEE 802.11a; MCS0 at IEEE 802.11n HT20, IEEE 802.11n HT40, IEEE 802.11ac VHT20, IEEE 802.11ac VHT40, IEEE 802.11ac VHT80;*
*5). Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*

5.6.8.2 UNII Band 3

*IEEE 802.11a-ant 0*

*Channel 149 / 5745 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 11.49 | 46.78 | 33.92 | 36.09 | 10.26 | 54.87 | 74.00 | -19.13 | Peak | Horizontal |
| 11.49 | 36.41 | 33.92 | 36.09 | 10.26 | 44.50 | 54.00 | -9.50 | Average | Horizontal |
| 11.49 | 48.28 | 33.99 | 35.99 | 10.26 | 56.54 | 74.00 | -17.46 | Peak | Vertical |
| 11.49 | 36.77 | 33.99 | 35.99 | 10.26 | 45.03 | 54.00 | -8.97 | Average | Vertical |

*Channel 157 / 5785 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 11.57 | 46.77 | 33.92 | 36.09 | 10.26 | 54.86 | 74.00 | -19.14 | Peak | Horizontal |
| 11.57 | 35.75 | 33.92 | 36.09 | 10.26 | 43.84 | 54.00 | -10.16 | Average | Horizontal |
| 11.57 | 47.72 | 33.99 | 35.99 | 10.26 | 55.98 | 74.00 | -18.02 | Peak | Vertical |
| 11.57 | 36.29 | 33.99 | 35.99 | 10.26 | 44.55 | 54.00 | -9.45 | Average | Vertical |

*Channel 163 / 5825 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 11.65 | 46.44 | 33.92 | 36.09 | 10.26 | 54.53 | 74.00 | -19.47 | Peak | Horizontal |
| 11.65 | 35.64 | 33.92 | 36.09 | 10.26 | 43.73 | 54.00 | -10.27 | Average | Horizontal |
| 11.65 | 47.37 | 33.99 | 35.99 | 10.26 | 55.63 | 74.00 | -18.37 | Peak | Vertical |
| 11.65 | 35.87 | 33.99 | 35.99 | 10.26 | 44.13 | 54.00 | -9.87 | Average | Vertical |

*IEEE 802.11n HT20-combined ant 0 & ant 1*

*Channel 149 / 5745 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 11.49 | 46.85 | 33.92 | 36.09 | 10.26 | 54.94 | 74.00 | -19.06 | Peak | Horizontal |
| 11.49 | 36.03 | 33.92 | 36.09 | 10.26 | 44.12 | 54.00 | -9.88 | Average | Horizontal |
| 11.49 | 47.88 | 33.99 | 35.99 | 10.26 | 56.14 | 74.00 | -17.86 | Peak | Vertical |
| 11.49 | 36.87 | 33.99 | 35.99 | 10.26 | 45.13 | 54.00 | -8.87 | Average | Vertical |

*Channel 157 / 5785 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 11.57 | 46.91 | 33.92 | 36.09 | 10.26 | 55.00 | 74.00 | -19.00 | Peak | Horizontal |
| 11.57 | 36.25 | 33.92 | 36.09 | 10.26 | 44.34 | 54.00 | -9.66 | Average | Horizontal |
| 11.57 | 48.14 | 33.99 | 35.99 | 10.26 | 56.40 | 74.00 | -17.60 | Peak | Vertical |
| 11.57 | 36.78 | 33.99 | 35.99 | 10.26 | 45.04 | 54.00 | -8.96 | Average | Vertical |

*Channel 163 / 5825 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 11.65 | 46.69 | 33.92 | 36.09 | 10.26 | 54.78 | 74.00 | -19.22 | Peak | Horizontal |
| 11.65 | 35.87 | 33.92 | 36.09 | 10.26 | 43.96 | 54.00 | -10.04 | Average | Horizontal |
| 11.65 | 47.77 | 33.99 | 35.99 | 10.26 | 56.03 | 74.00 | -17.97 | Peak | Vertical |
| 11.65 | 36.14 | 33.99 | 35.99 | 10.26 | 44.40 | 54.00 | -9.60 | Average | Vertical |

*IEEE 802.11n HT40-combined ant 0 & ant 1*

*Channel 151 / 5755 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 11.51 | 50.10 | 33.92 | 36.09 | 10.26 | 58.19 | 74.00 | -15.81 | Peak | Horizontal |
| 11.51 | 38.99 | 33.92 | 36.09 | 10.26 | 47.08 | 54.00 | -6.92 | Average | Horizontal |
| 11.51 | 50.87 | 33.99 | 35.99 | 10.26 | 59.13 | 74.00 | -14.87 | Peak | Vertical |
| 11.51 | 39.47 | 33.99 | 35.99 | 10.26 | 47.73 | 54.00 | -6.27 | Average | Vertical |

*Channel 159 / 5795 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 11.59 | 49.72 | 33.92 | 36.09 | 10.26 | 57.81 | 74.00 | -16.19 | Peak | Horizontal |
| 11.59 | 38.93 | 33.92 | 36.09 | 10.26 | 47.02 | 54.00 | -6.98 | Average | Horizontal |
| 11.59 | 50.55 | 33.99 | 35.99 | 10.26 | 58.81 | 74.00 | -15.19 | Peak | Vertical |
| 11.59 | 39.15 | 33.99 | 35.99 | 10.26 | 47.41 | 54.00 | -6.59 | Average | Vertical |

*IEEE 802.11ac VHT20-combined ant 0 & ant 1*

*Channel 149 / 5745 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 11.49 | 49.50 | 33.92 | 36.09 | 10.26 | 57.59 | 74.00 | -16.41 | Peak | Horizontal |
| 11.49 | 38.87 | 33.92 | 36.09 | 10.26 | 46.96 | 54.00 | -7.04 | Average | Horizontal |
| 11.49 | 50.72 | 33.99 | 35.99 | 10.26 | 58.98 | 74.00 | -15.02 | Peak | Vertical |
| 11.49 | 39.35 | 33.99 | 35.99 | 10.26 | 47.61 | 54.00 | -6.39 | Average | Vertical |

*Channel 157 / 5785 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 11.57 | 49.34 | 33.92 | 36.09 | 10.26 | 57.43 | 74.00 | -16.57 | Peak | Horizontal |
| 11.57 | 39.04 | 33.92 | 36.09 | 10.26 | 47.13 | 54.00 | -6.87 | Average | Horizontal |
| 11.57 | 50.28 | 33.99 | 35.99 | 10.26 | 58.54 | 74.00 | -15.46 | Peak | Vertical |
| 11.57 | 39.38 | 33.99 | 35.99 | 10.26 | 47.64 | 54.00 | -6.36 | Average | Vertical |

*Channel 163 / 5825 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 11.65 | 49.01 | 33.92 | 36.09 | 10.26 | 57.10 | 74.00 | -16.90 | Peak | Horizontal |
| 11.65 | 38.36 | 33.92 | 36.09 | 10.26 | 46.45 | 54.00 | -7.55 | Average | Horizontal |
| 11.65 | 50.21 | 33.99 | 35.99 | 10.26 | 58.47 | 74.00 | -15.53 | Peak | Vertical |
| 11.65 | 38.97 | 33.99 | 35.99 | 10.26 | 47.23 | 54.00 | -6.77 | Average | Vertical |

*IEEE 802.11ac VHT40-combined ant 0 & ant 1*

*Channel 151 / 5755 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 11.51 | 49.28 | 33.92 | 36.09 | 10.26 | 57.37 | 74.00 | -16.63 | Peak | Horizontal |
| 11.51 | 38.74 | 33.92 | 36.09 | 10.26 | 46.83 | 54.00 | -7.17 | Average | Horizontal |
| 11.51 | 50.53 | 33.99 | 35.99 | 10.26 | 58.79 | 74.00 | -15.21 | Peak | Vertical |
| 11.51 | 39.03 | 33.99 | 35.99 | 10.26 | 47.29 | 54.00 | -6.71 | Average | Vertical |

*Channel 159 / 5795 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 11.59 | 49.28 | 33.92 | 36.09 | 10.26 | 57.37 | 74.00 | -16.63 | Peak | Horizontal |
| 11.59 | 38.45 | 33.92 | 36.09 | 10.26 | 46.54 | 54.00 | -7.46 | Average | Horizontal |
| 11.59 | 49.91 | 33.99 | 35.99 | 10.26 | 58.17 | 74.00 | -15.83 | Peak | Vertical |
| 11.59 | 38.73 | 33.99 | 35.99 | 10.26 | 46.99 | 54.00 | -7.01 | Average | Vertical |

*IEEE 802.11ac VHT80-combined ant 0 & ant 1*

*Channel 155 / 5775 MHz*

| Freq. GHz | Reading Level dBuV | Ant. Fac. dB/m | Pre. Fac. dB | Cab. Loss dB | Measured dBuV/m | Limit dBuV/m | Margin dB | Remark | Pol. |
|---|---|---|---|---|---|---|---|---|---|
| 11.51 | 49.41 | 33.92 | 36.09 | 10.26 | 57.50 | 74.00 | -16.50 | Peak | Horizontal |
| 11.51 | 38.75 | 33.92 | 36.09 | 10.26 | 46.84 | 54.00 | -7.16 | Average | Horizontal |
| 11.51 | 50.48 | 33.99 | 35.99 | 10.26 | 58.74 | 74.00 | -15.26 | Peak | Vertical |
| 11.51 | 38.73 | 33.99 | 35.99 | 10.26 | 46.99 | 54.00 | -7.01 | Average | Vertical |

*Notes:*

*1). Measuring frequencies from 9 KHz ~ 40 GHz, No emission found between lowest internal used/generated frequency to 30MHz.*

*2). Radiated emissions measured in frequency range from 9 KHz ~ 40 GHz were made with an instrument using Peak detector mode.*

*3). 18~40GHz at least have 20dB margin. No recording in the test report.*

*4). Worst case data at 6Mbps at IEEE 802.11a; MCS0 at IEEE 802.11n HT20, IEEE 802.11n HT40, IEEE 802.11ac VHT20, IEEE 802.11ac VHT40, IEEE 802.11ac VHT80;*

*5). Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.*

## 5.7. Power line conducted emissions

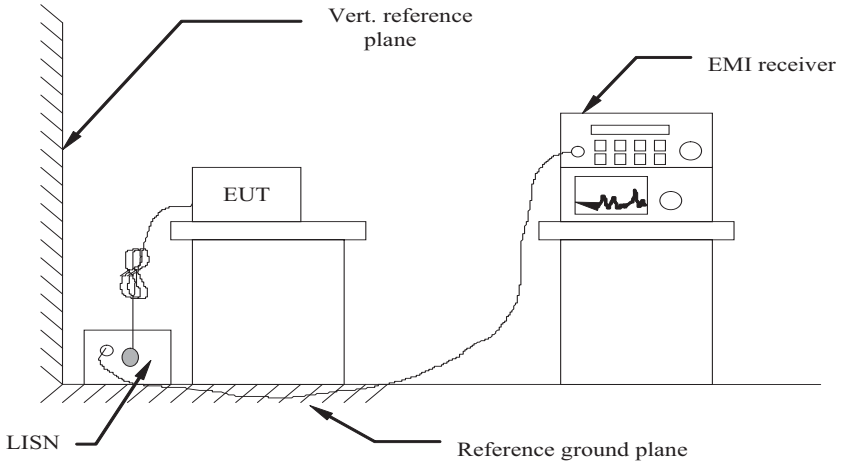
### 5.7.1 Standard Applicable

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

| Frequency Range (MHz) | Limits (dBμV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.15 to 0.50 | 66 to 56* | 56 to 46* |
| 0.50 to 5 | 56 | 46 |
| 5 to 30 | 60 | 50 |

* Decreasing linearly with the logarithm of the frequency

### 5.7.2 Block Diagram of Test Setup



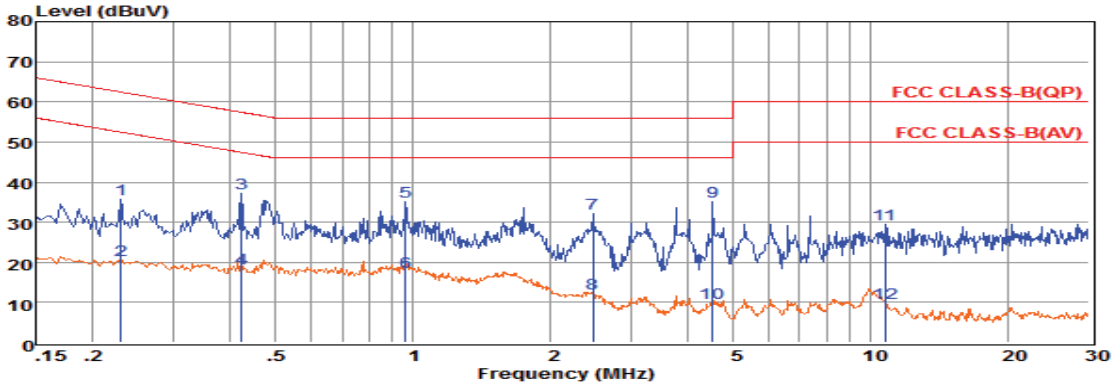

### 5.7.3 Test Results

**PASS.**

The test data please refer to following page.

***AC Conducted Emission of power by adapter @ AC 120V/60Hz @ IEEE 802.11ac VHT20 (worst case)***

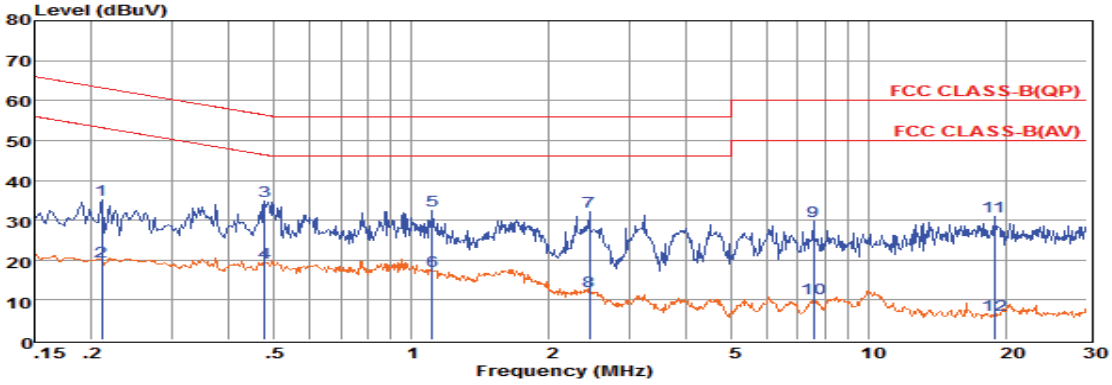
*Line*




| | Freq | Reading | LISNFac | CabLos | Aux2Fac | Measured | Limit | Over | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dB | dB | dBuV | dBuV | dB | |
| 1 | 0.23 | 15.94 | 9.63 | 0.03 | 10.00 | 35.60 | 62.44 | -26.84 | QP |
| 2 | 0.23 | 0.89 | 9.63 | 0.03 | 10.00 | 20.55 | 52.43 | -31.88 | Average |
| 3 | 0.42 | 17.47 | 9.62 | 0.04 | 10.00 | 37.13 | 57.42 | -20.29 | QP |
| 4 | 0.42 | -1.14 | 9.62 | 0.04 | 10.00 | 18.52 | 47.42 | -28.90 | Average |
| 5 | 0.96 | 15.49 | 9.63 | 0.05 | 10.00 | 35.17 | 56.00 | -20.83 | QP |
| 6 | 0.96 | -2.03 | 9.63 | 0.05 | 10.00 | 17.65 | 46.00 | -28.35 | Average |
| 7 | 2.47 | 12.57 | 9.64 | 0.05 | 10.00 | 32.26 | 56.00 | -23.74 | QP |
| 8 | 2.47 | -7.45 | 9.64 | 0.05 | 10.00 | 12.24 | 46.00 | -33.76 | Average |
| 9 | 4.53 | 15.53 | 9.65 | 0.06 | 10.00 | 35.24 | 56.00 | -20.76 | QP |
| 10 | 4.53 | -9.86 | 9.65 | 0.06 | 10.00 | 9.85 | 46.00 | -36.15 | Average |
| 11 | 10.73 | 9.66 | 9.69 | 0.08 | 10.00 | 29.43 | 60.00 | -30.57 | QP |
| 12 | 10.73 | -9.92 | 9.69 | 0.08 | 10.00 | 9.85 | 50.00 | -40.15 | Average |

Remarks: 1. Measured = Reading + LISNFac + Cable Loss + Aux2 Fac.
2. The emission levels that are 20dB below the official limit are not reported.

*Neutral*




| | Freq | Reading | LISNFac | CabLos | Aux2Fac | Measured | Limit | Over | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV | dB | dB | dB | dBuV | dBuV | dB | |
| 1 | 0.21 | 15.62 | 9.59 | 0.03 | 10.00 | 35.24 | 63.18 | -27.94 | QP |
| 2 | 0.21 | -0.09 | 9.59 | 0.03 | 10.00 | 19.53 | 53.18 | -33.65 | Average |
| 3 | 0.48 | 15.27 | 9.62 | 0.04 | 10.00 | 34.93 | 56.36 | -21.43 | QP |
| 4 | 0.48 | -0.27 | 9.62 | 0.04 | 10.00 | 19.39 | 46.36 | -26.97 | Average |
| 5 | 1.11 | 12.79 | 9.63 | 0.05 | 10.00 | 32.47 | 56.00 | -23.53 | QP |
| 6 | 1.11 | -2.47 | 9.63 | 0.05 | 10.00 | 17.21 | 46.00 | -28.79 | Average |
| 7 | 2.45 | 12.34 | 9.64 | 0.05 | 10.00 | 32.03 | 56.00 | -23.97 | QP |
| 8 | 2.45 | -7.51 | 9.64 | 0.05 | 10.00 | 12.18 | 46.00 | -33.82 | Average |
| 9 | 7.57 | 10.03 | 9.70 | 0.07 | 10.00 | 29.80 | 60.00 | -30.20 | QP |
| 10 | 7.57 | -9.43 | 9.70 | 0.07 | 10.00 | 10.34 | 50.00 | -39.66 | Average |
| 11 | 18.82 | 11.10 | 9.84 | 0.11 | 10.00 | 31.05 | 60.00 | -28.95 | QP |
| 12 | 18.82 | -13.75 | 9.84 | 0.11 | 10.00 | 6.20 | 50.00 | -43.80 | Average |

Remarks: 1. Measured = Reading + LISNFac + Cable Loss + Aux2 Fac.
2. The emission levels that are 20dB below the official limit are not reported.

****Note: Pre-scan all modes and recorded the worst case results in this report (IEEE 802.11acVHT20).*

## 5.8 Undesirable Emissions Measurement

### 5.8.1 Limit

According to ξ15.407 (b) Undesirable emission limits. Except as shown in paragraph (b) (7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(a) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(b) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(c) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(d) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

(e) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(f) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(g) The provisions of §15.205 apply to intentional radiators operating under this section.

(h) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

### 5.8.2 Test Configuration


### 5.8.3 Test Procedure

According to KDB789033 D02 General UNII Test Procedures New Rules Section G: Unwanted Emission Measurement

1. Unwanted Emissions in the Restricted Bands

a) For all measurements, follow the requirements in section II.G.3. “General Requirements for Unwanted Emissions Measurements.”

b) At frequencies below 1000 MHz, use the procedure described in section II.G.4. “Procedure for Unwanted Emissions Measurements below 1000 MHz.”

c) At frequencies above 1000 MHz, measurements performed using the peak and average measurement procedures described in sections II.G.5. and II.G.6, respectively, must satisfy the respective peak and average limits. If all peak measurements satisfy the average limit, then average measurements are not required.

d) For conducted measurements above 1000 MHz, EIRP shall be computed as specified in section II.G.3.b) and then field strength shall be computed as follows (see KDB Publication 412172):

i) E[dBμV/m] = EIRP[dBm] - 20 log (d[meters]) + 104.77, where E = field strength and d = distance at which field strength limit is specified in the rules;

ii) E[dBμV/m] = EIRP[dBm] + 95.2, for d = 3 meters

e) For conducted measurements below 1000 MHz, the field strength shall be computed as specified in d), above, and then an additional 4.7 dB shall be added as an upper bound on the field strength that would be observed on a test range with a ground plane for frequencies between 30 MHz and 1000 MHz, or an additional 6 dB shall be added for frequencies below 30 MHz.

2. Unwanted Emissions that fall Outside of the Restricted Bands

a) For all measurements, follow the requirements in section II.G.3. “General Requirements for Unwanted Emissions Measurements.”

b) At frequencies below 1000 MHz, use the procedure described in section II.G.4. “Procedure for Unwanted Emissions Measurements below 1000 MHz.”

c) At frequencies above 1000 MHz, use the procedure for maximum emissions described in section II.G.5., “Procedure for Unwanted Maximum Unwanted Emissions Measurements Above 1000 MHz.”

d) Section 15.407(b) (1-3) specifies the unwanted emissions limit for the U-NII-1 and 2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz. However, an out-of-band emission that complies with both the average and peak limits of Section 15.209 is not required to satisfy the -27 dBm/MHz dBm/MHz peak emission limit.

i) Section 15.407(b) (4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b) (4) (i). An alternative to the band emissions mask is specified in Section 15.407(b) (4) (ii). The alternative limits are based on the highest antenna gain specified in the filing. There are also marketing and importation restrictions for the alternative limit.

e) If radiated measurements are performed, field strength is then converted to EIRP as follows:

i) EIRP = ((E×d) ^2) / 30

Where:

- E is the field strength in V/m;
- d is the measurement distance in meters;
- EIRP is the equivalent isotopically radiated power in watts;

ii) Working in dB units, the above equation is equivalent to:
EIRP [dBm] = E [dBμV/m] + 20 log (d [meters]) - 104.77

iii) Or, if d is 3 meters:
EIRP [dBm] = E [dBμV/m] - 95.23

3) Radiated versus Conducted Measurements.

The unwanted emission limits in both the restricted and non-restricted bands are based on radiated measurements; however, as an alternative, antenna-port conducted measurements in conjunction with cabinet emissions tests will be permitted to demonstrate compliance provided that the following steps are performed:

(i) Cabinet emissions measurements. A radiated test shall be performed to ensure that cabinet emissions are below the emission limits. For the cabinet-emission measurements the antenna may be replaced by a termination matching the nominal impedance of the antenna.

(ii) Impedance matching. Conducted tests shall be performed using equipment that matches the nominal impedance of the antenna assembly used with the EUT.

(iii) EIRP calculation. A value representative of an upper bound on out-of-band antenna gain (in dBi) shall be added to the measured antenna-port conducted emission power to compute EIRP within the specified measurement bandwidth. (For emissions in the restricted bands, additional calculations are required to convert EIRP to field strength at the specified distance.) The upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands or 2 dBi, whichever is greater.3 However, for devices that operate in multiple bands using the same transmit antenna, the highest gain of the antenna within the operating band nearest to the out-of-band frequency being measured may be used in lieu of the overall highest gain when measuring emissions at frequencies within 20% of the absolute frequency at the nearest edge of that band, but in no case shall a value less than 2 dBi be selected.

(iv) EIRP adjustments for multiple outputs. For devices with multiple outputs occupying the same or overlapping frequency ranges in the same band (e.g., MIMO or beamforming devices), compute the total EIRP as follows:

- Compute EIRP for each output, as described in (iii), above.
- Follow the procedures specified in KDB Publication 662911 for summing emissions across the outputs or adjusting emission levels measured on individual outputs by 10 log ($N_{ANT}$), where $N_{ANT}$ is the number of outputs.
- Add the array gain term specified in KDB Publication 662911 for out-of-band and spurious signals.

(v) Direction of maximum emission.

For all radiated emissions tests, measurements shall correspond to the direction of maximum emission level for each measured emission (see ANSI C63.10 for guidance).

## 5.8.4 Test Results

### 5.8.4.1 UNII Band 1

| IEEE 802.11a | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | | Antenna Gain (dBi) | Ground Reflection Factor (dB) | Convert Radiated E Level At 3m (dBuV/m) | | Detector | Limit (dBuV/m) | Verdict |
| | chain 0 | chain 1 | | | chain 0 | chain 1 | | | |
| 4500.000 | -42.97 | -42.42 | 2.00 | 0.00 | 54.23 | 54.78 | Peak | 74.00 | PASS |
| 4500.000 | -52.73 | -52.42 | 2.00 | 0.00 | 44.47 | 44.78 | Average | 54.00 | PASS |
| 5150.000 | -41.27 | -41.70 | 2.00 | 0.00 | 55.93 | 55.50 | Peak | 74.00 | PASS |
| 5150.000 | -51.37 | -51.06 | 2.00 | 0.00 | 45.83 | 46.14 | Average | 54.00 | PASS |
| 5350.000 | -41.66 | -42.88 | 2.00 | 0.00 | 55.54 | 54.32 | Peak | 74.00 | PASS |
| 5350.000 | -52.83 | -52.89 | 2.00 | 0.00 | 44.37 | 44.31 | Average | 54.00 | PASS |
| 5460.000 | -42.12 | -43.21 | 2.00 | 0.00 | 55.08 | 53.99 | Peak | 74.00 | PASS |
| 5460.000 | -53.05 | -53.16 | 2.00 | 0.00 | 44.15 | 44.04 | Average | 54.00 | PASS |

| IEEE 802.11n HT20 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | | | Antenna Gain(dBi) | Directional Gain(dBi) | Ground Reflection Factor (dB) | Convert Radiated E Level At 3m (dBuV/m) | | | Detector | Limit (dBuV/m) | Verdict |
| | chain 0 | chain 1 | Sum | | | | chain 0 | chain 1 | Sum | | | |
| 4500.000 | -42.83 | -42.81 | -39.81 | 2.00 | 5.01 | 0.00 | 54.37 | 54.39 | 60.40 | Peak | 74.00 | PASS |
| 4500.000 | -52.73 | -52.51 | -49.61 | 2.00 | 5.01 | 0.00 | 44.47 | 44.69 | 50.60 | Average | 54.00 | PASS |
| 5150.000 | -41.49 | -41.98 | -38.72 | 2.00 | 5.01 | 0.00 | 55.71 | 55.22 | 61.49 | Peak | 74.00 | PASS |
| 5150.000 | -51.32 | -51.10 | -48.20 | 2.00 | 5.01 | 0.00 | 45.88 | 46.10 | 52.01 | Average | 54.00 | PASS |
| 5350.000 | -41.83 | -41.83 | -38.82 | 2.00 | 5.01 | 0.00 | 55.37 | 55.37 | 61.39 | Peak | 74.00 | PASS |
| 5350.000 | -52.85 | -52.56 | -49.69 | 2.00 | 5.01 | 0.00 | 44.35 | 44.64 | 50.52 | Average | 54.00 | PASS |
| 5460.000 | -42.93 | -42.18 | -39.53 | 2.00 | 5.01 | 0.00 | 54.27 | 55.02 | 60.68 | Peak | 74.00 | PASS |
| 5460.000 | -53.09 | -52.85 | -49.96 | 2.00 | 5.01 | 0.00 | 44.11 | 44.35 | 50.25 | Average | 54.00 | PASS |

| IEEE 802.11n HT40 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | | | Antenna Gain(dBi) | Directional Gain(dBi) | Ground Reflection Factor (dB) | Convert Radiated E Level At 3m (dBuV/m) | | | Detector | Limit (dBuV/m) | Verdict |
| | chain 0 | chain 1 | Sum | | | | chain 0 | chain 1 | Sum | | | |
| 4500.000 | -43.01 | -42.30 | -40.00 | 2.00 | 5.01 | 0.00 | 54.19 | 54.90 | 60.21 | Peak | 74.00 | PASS |
| 4500.000 | -52.77 | -52.44 | -49.76 | 2.00 | 5.01 | 0.00 | 44.43 | 44.76 | 50.45 | Average | 54.00 | PASS |
| 5150.000 | -41.97 | -41.34 | -38.96 | 2.00 | 5.01 | 0.00 | 55.23 | 55.86 | 61.25 | Peak | 74.00 | PASS |
| 5150.000 | -51.32 | -51.04 | -48.31 | 2.00 | 5.01 | 0.00 | 45.88 | 46.16 | 51.90 | Average | 54.00 | PASS |
| 5350.000 | -41.55 | -42.01 | -38.54 | 2.00 | 5.01 | 0.00 | 55.65 | 55.19 | 61.67 | Peak | 74.00 | PASS |
| 5350.000 | -52.55 | -52.22 | -49.54 | 2.00 | 5.01 | 0.00 | 44.65 | 44.98 | 50.67 | Average | 54.00 | PASS |
| 5460.000 | -42.49 | -42.74 | -39.48 | 2.00 | 5.01 | 0.00 | 54.71 | 54.46 | 60.73 | Peak | 74.00 | PASS |
| 5460.000 | -52.75 | -52.50 | -49.74 | 2.00 | 5.01 | 0.00 | 44.45 | 44.70 | 50.47 | Average | 54.00 | PASS |

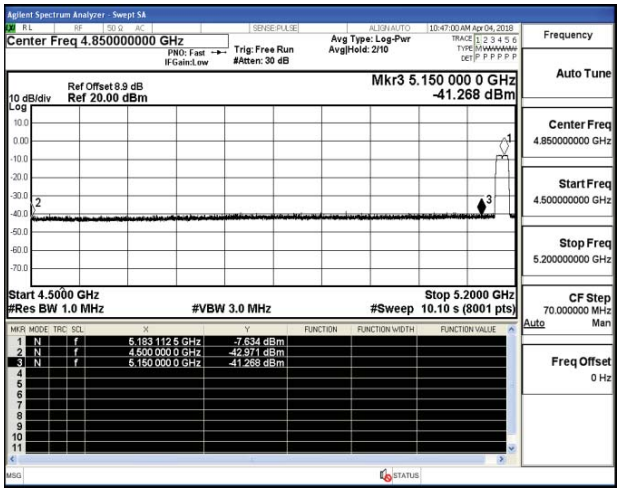
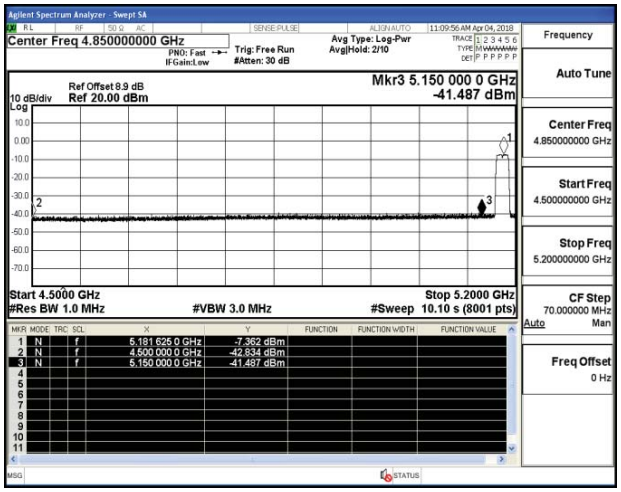
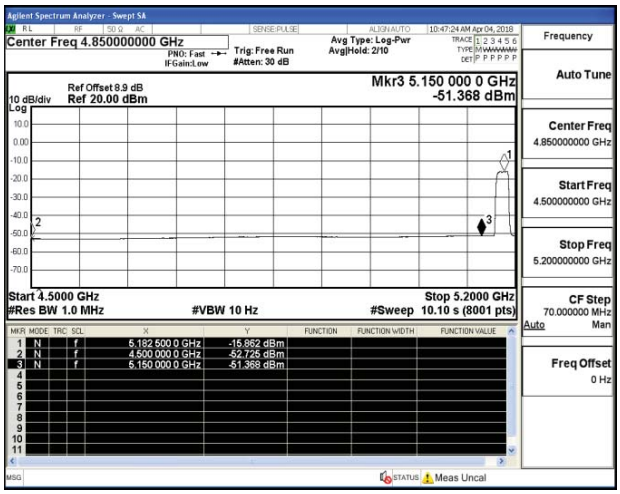
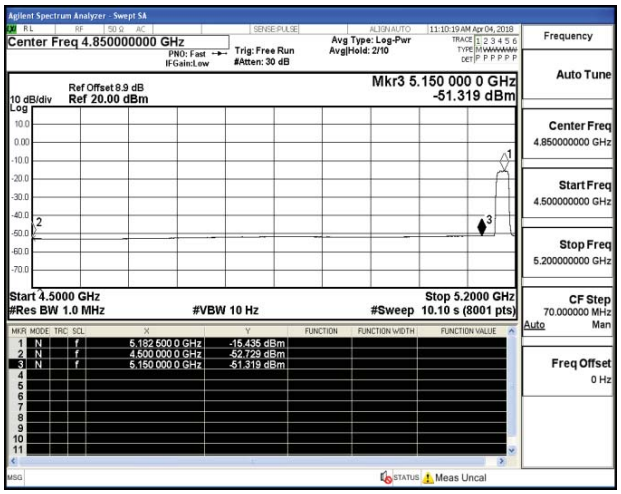
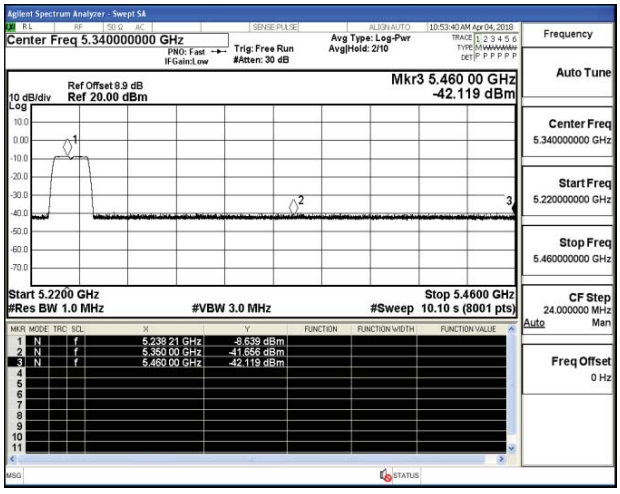
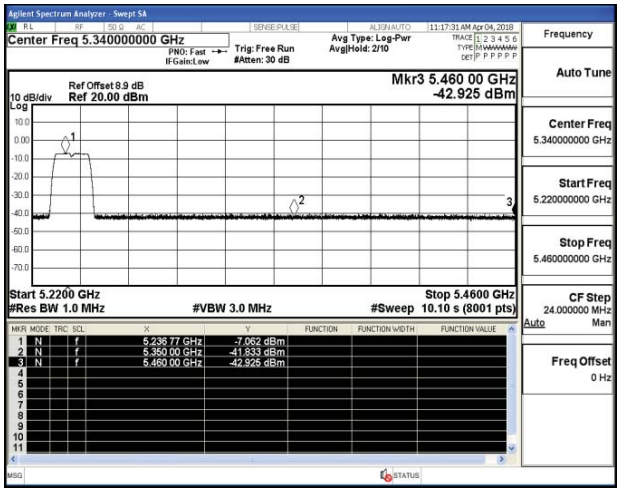
| IEEE 802.11ac VHT20 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | | | Antenna Gain(dBi) | Directional Gain(dBi) | Ground Reflection Factor (dB) | Convert Radiated E Level At 3m (dBuV/m) | | | Detector | Limit (dBuV/m) | Verdict |
| | chain 0 | chain 1 | Sum | | | | chain 0 | chain 1 | Sum | | | |
| 4500.000 | -43.14 | -43.35 | -40.13 | 2.00 | 5.01 | 0.00 | 54.06 | 53.85 | 60.08 | Peak | 74.00 | PASS |
| 4500.000 | -52.75 | -52.44 | -49.74 | 2.00 | 5.01 | 0.00 | 44.45 | 44.76 | 50.47 | Average | 54.00 | PASS |
| 5150.000 | -41.66 | -40.86 | -38.65 | 2.00 | 5.01 | 0.00 | 55.54 | 56.34 | 61.56 | Peak | 74.00 | PASS |
| 5150.000 | -51.32 | -51.05 | -48.31 | 2.00 | 5.01 | 0.00 | 45.88 | 46.15 | 51.90 | Average | 54.00 | PASS |
| 5350.000 | -43.14 | -43.35 | -40.13 | 2.00 | 5.01 | 0.00 | 54.06 | 53.85 | 60.08 | Peak | 74.00 | PASS |
| 5350.000 | -52.75 | -52.44 | -49.74 | 2.00 | 5.01 | 0.00 | 44.45 | 44.76 | 50.47 | Average | 54.00 | PASS |
| 5460.000 | -41.66 | -40.86 | -38.65 | 2.00 | 5.01 | 0.00 | 55.54 | 56.34 | 61.56 | Peak | 74.00 | PASS |
| 5460.000 | -51.32 | -51.05 | -48.31 | 2.00 | 5.01 | 0.00 | 45.88 | 46.15 | 51.90 | Average | 54.00 | PASS |

| IEEE 802.11ac VHT40 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | | | Antenna Gain(dBi) | Directional Gain(dBi) | Ground Reflection Factor (dB) | Convert Radiated E Level At 3m (dBuV/m) | | | Detector | Limit (dBuV/m) | Verdict |
| | chain 0 | chain 1 | Sum | | | | chain 0 | chain 1 | Sum | | | |
| 4500.000 | -42.36 | -42.92 | -39.35 | 2.00 | 5.01 | 0.00 | 54.84 | 54.28 | 60.86 | Peak | 74.00 | PASS |
| 4500.000 | -52.71 | -52.42 | -49.70 | 2.00 | 5.01 | 0.00 | 44.49 | 44.78 | 50.51 | Average | 54.00 | PASS |
| 5150.000 | -41.25 | -40.79 | -38.24 | 2.00 | 5.01 | 0.00 | 55.95 | 56.41 | 61.97 | Peak | 74.00 | PASS |
| 5150.000 | -51.32 | -51.04 | -48.31 | 2.00 | 5.01 | 0.00 | 45.88 | 46.16 | 51.90 | Average | 54.00 | PASS |
| 5350.000 | -42.51 | -40.57 | -39.50 | 2.00 | 5.01 | 0.00 | 54.69 | 56.63 | 60.71 | Peak | 74.00 | PASS |
| 5350.000 | -52.54 | -52.23 | -49.53 | 2.00 | 5.01 | 0.00 | 44.66 | 44.97 | 50.68 | Average | 54.00 | PASS |
| 5460.000 | -42.12 | -42.15 | -39.11 | 2.00 | 5.01 | 0.00 | 55.08 | 55.05 | 61.10 | Peak | 74.00 | PASS |
| 5460.000 | -52.77 | -52.43 | -49.76 | 2.00 | 5.01 | 0.00 | 44.43 | 44.77 | 50.45 | Average | 54.00 | PASS |

| IEEE 802.11ac VHT80 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Conducted Power (dBm) | | | Antenna Gain(dBi) | Directional Gain(dBi) | Ground Reflection Factor (dB) | Convert Radiated E Level At 3m (dBuV/m) | | | Detector | Limit (dBuV/m) | Verdict |
| | chain 0 | chain 1 | Sum | | | | chain 0 | chain 1 | Sum | | | |
| 4500.000 | -41.28 | -41.96 | -38.27 | 2.00 | 5.01 | 0.00 | 55.92 | 55.24 | 61.94 | Peak | 74.00 | PASS |
| 4500.000 | -51.94 | -51.68 | -48.93 | 2.00 | 5.01 | 0.00 | 45.26 | 45.52 | 51.28 | Average | 54.00 | PASS |
| 5150.000 | -42.18 | -42.53 | -39.17 | 2.00 | 5.01 | 0.00 | 55.02 | 54.67 | 61.04 | Peak | 74.00 | PASS |
| 5150.000 | -52.24 | -51.95 | -49.23 | 2.00 | 5.01 | 0.00 | 44.96 | 45.25 | 50.98 | Average | 54.00 | PASS |
| 5350.000 | -41.28 | -41.96 | -38.27 | 2.00 | 5.01 | 0.00 | 55.92 | 55.24 | 61.94 | Peak | 74.00 | PASS |
| 5350.000 | -51.94 | -51.68 | -48.93 | 2.00 | 5.01 | 0.00 | 45.26 | 45.52 | 51.28 | Average | 54.00 | PASS |
| 5460.000 | -42.18 | -42.53 | -39.17 | 2.00 | 5.01 | 0.00 | 55.02 | 54.67 | 61.04 | Peak | 74.00 | PASS |
| 5460.000 | -52.24 | -51.95 | -49.23 | 2.00 | 5.01 | 0.00 | 44.96 | 45.25 | 50.98 | Average | 54.00 | PASS |

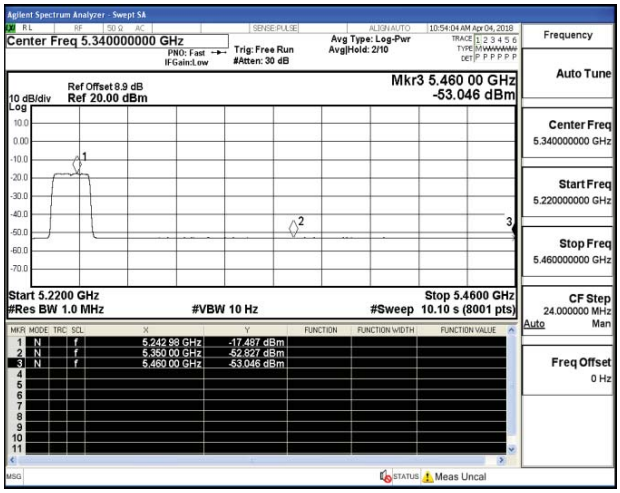
*Remark:*

1. *Measured Undesirable emission at difference data rate for each mode and recorded worst case for each mode.*
2. *Test results including cable loss;*
3. *Worst case data at 6Mbps at IEEE 802.11a; MCS0 at IEEE 802.11n HT20, IEEE 802.11n HT40, IEEE 802.11ac VHT20, IEEE 802.11ac VHT40, IEEE 802.11ac VHT80;*
4. *Covert Radiated E Level At 3m = Conducted average power + Directional Gain + 104.77-20*log(3);*
5. *Please refer to following test plots;*

| Undesirable emission-ant 0 | |
|---|---|
| IEEE 802.11a | IEEE 802.11n HT20 |
|  |  |
| Channel 36 / 5180 MHz – Peak | Channel 36 / 5180 MHz – Peak |
|  |  |
| Channel 36 / 5180 MHz – Average | Channel 36 / 5180 MHz – Average |
|  |  |
| Channel 48 / 5240 MHz – Peak | Channel 48 / 5240 MHz – Peak |

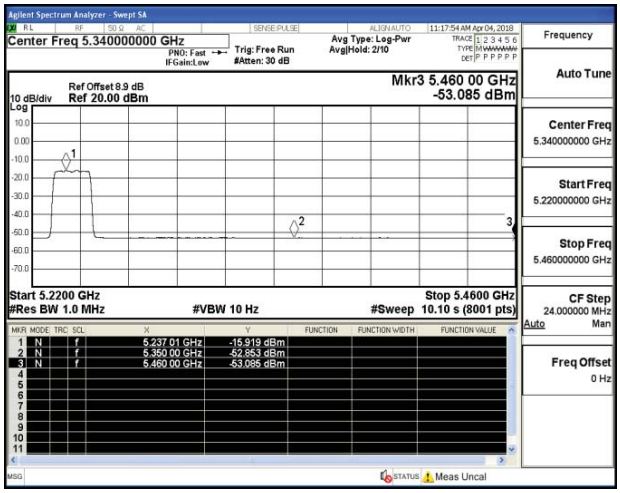
## Undesirable emission-ant 0

### IEEE 802.11a



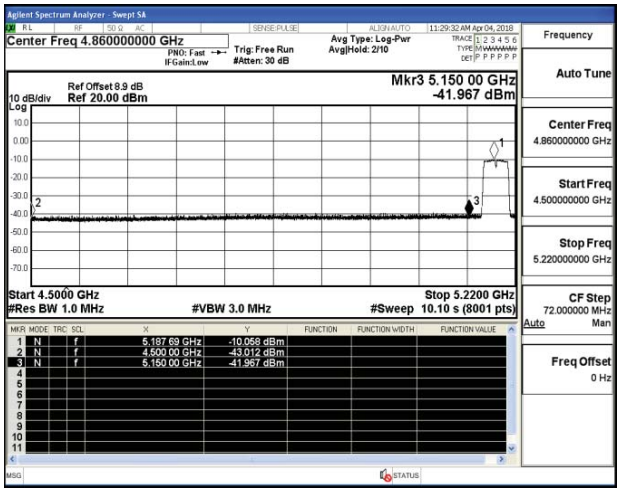

Channel 48 / 5240 MHz – Average

### IEEE 802.11n HT20



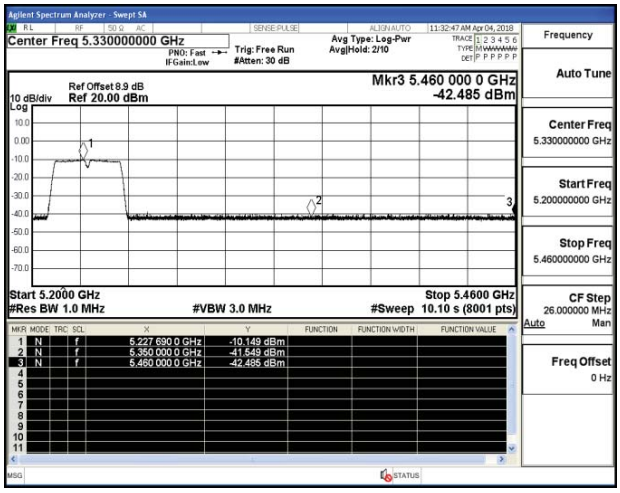

Channel 48 / 5240 MHz – Average

### IEEE 802.11n HT40

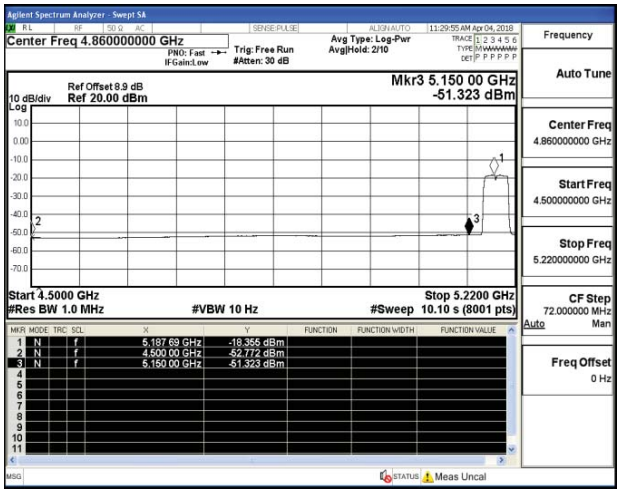



Channel 38 / 5190 MHz – Peak

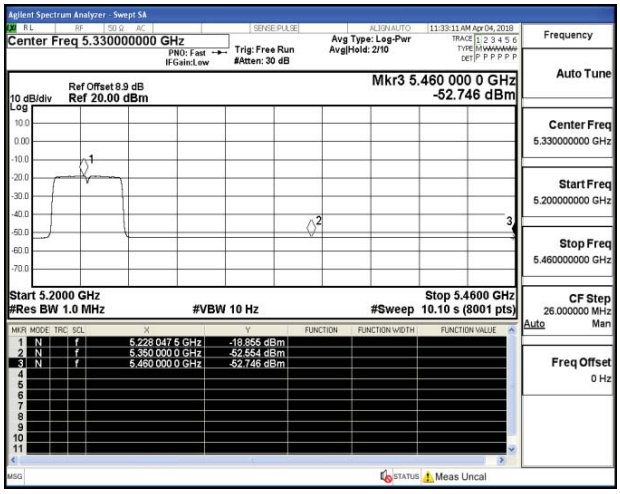
### IEEE 802.11n HT40




Channel 46 / 5230 MHz – Peak



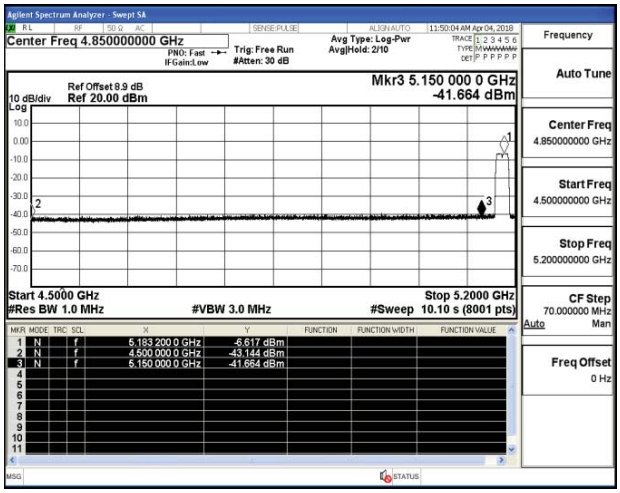

Channel 38 / 5190 MHz – Average




Channel 46 / 5230 MHz – Average

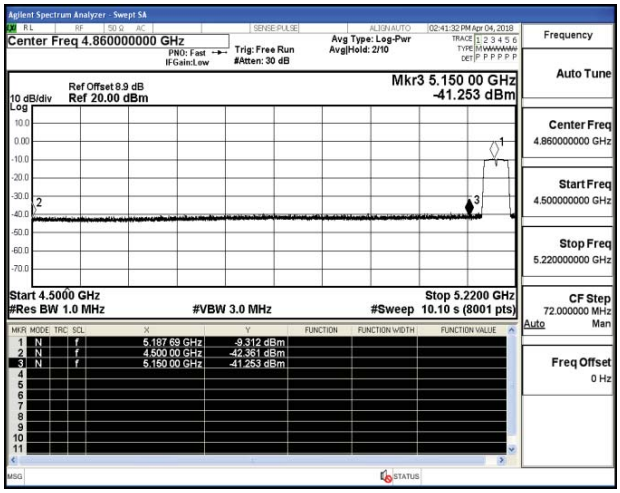
## Undesirable emission-ant 0

### IEEE 802.11ac VHT20

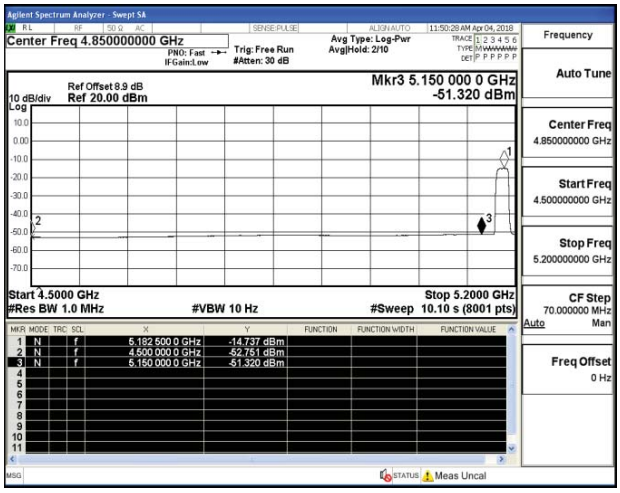



Channel 36 / 5180 MHz – Peak

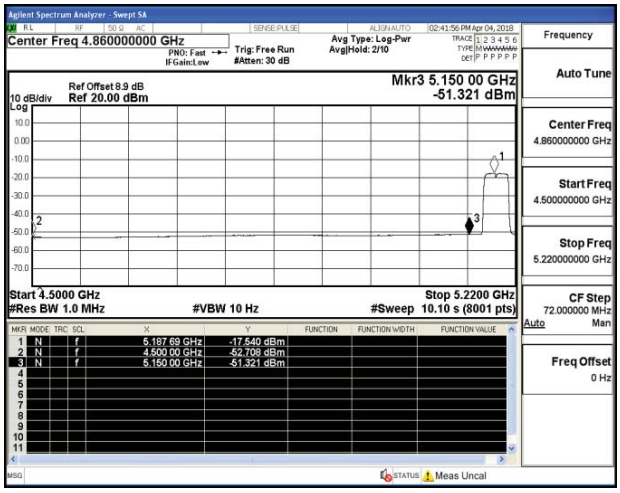
### IEEE 802.11ac VHT40



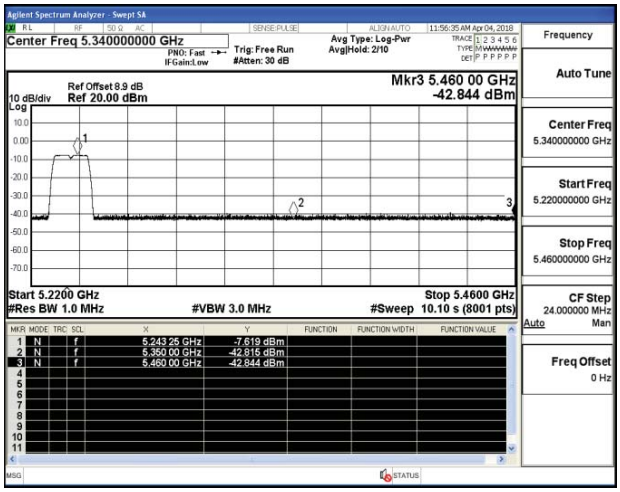

Channel 38 / 5190 MHz – Peak



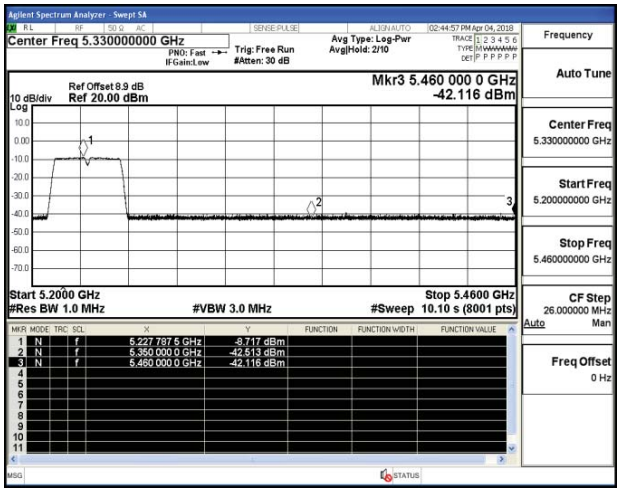

Channel 36 / 5180 MHz – Average




Channel 38 / 5190 MHz – Average



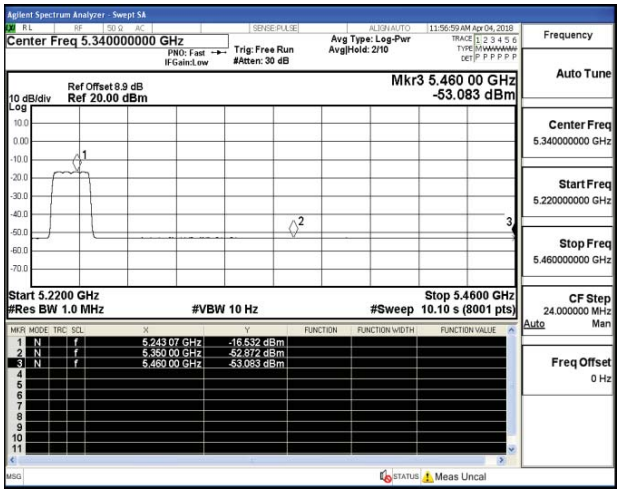

Channel 48 / 5240 MHz – Peak




Channel 46 / 5230 MHz – Peak

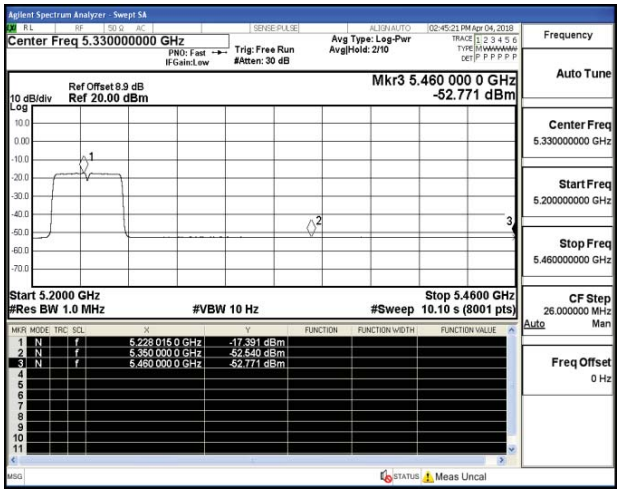
## Undesirable emission-ant 0

### IEEE 802.11ac VHT20



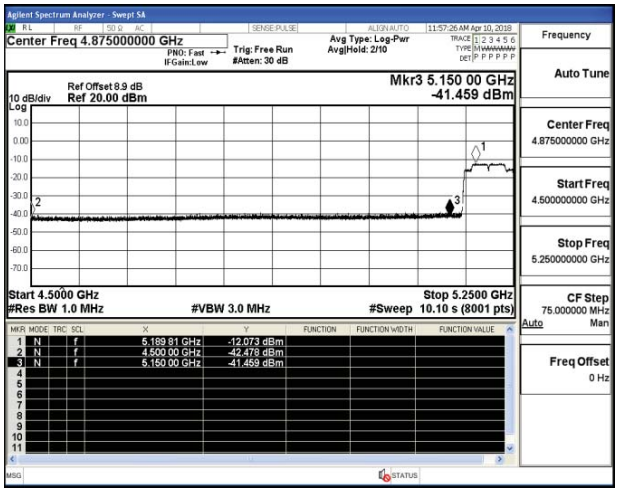

Channel 48 / 5240 MHz – Average

### IEEE 802.11ac VHT40



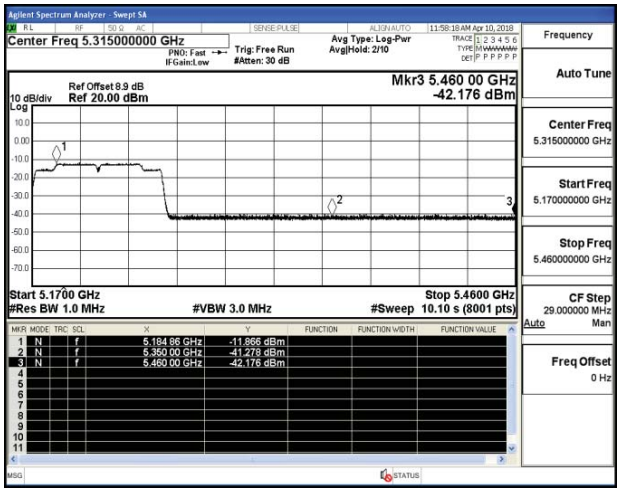

Channel 46 / 5230 MHz – Average

### IEEE 802.11ac VHT80

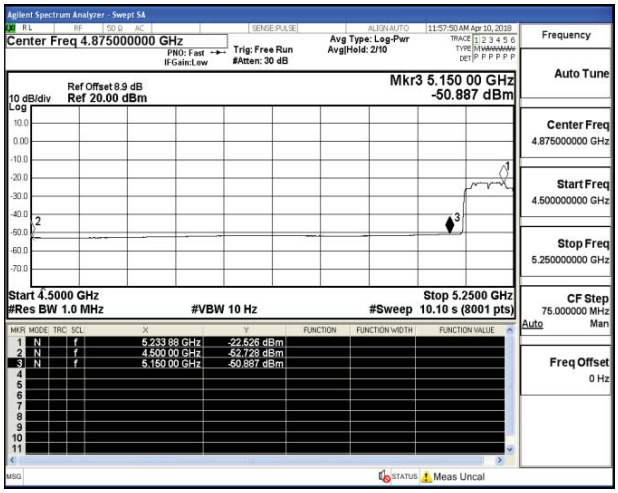



Channel 42 / 5210 MHz – Peak(left)

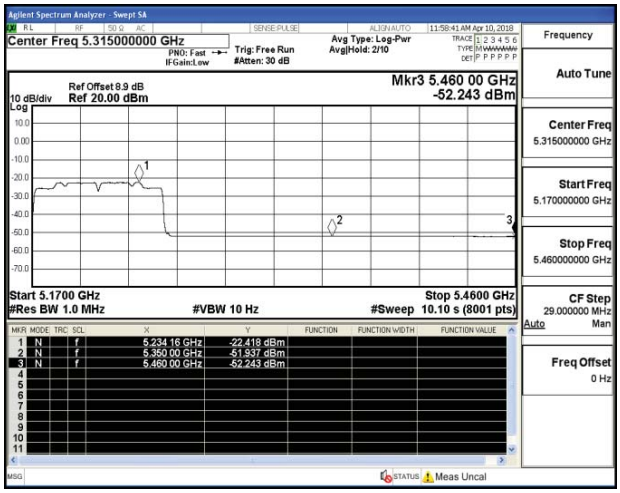
### IEEE 802.11ac VHT80



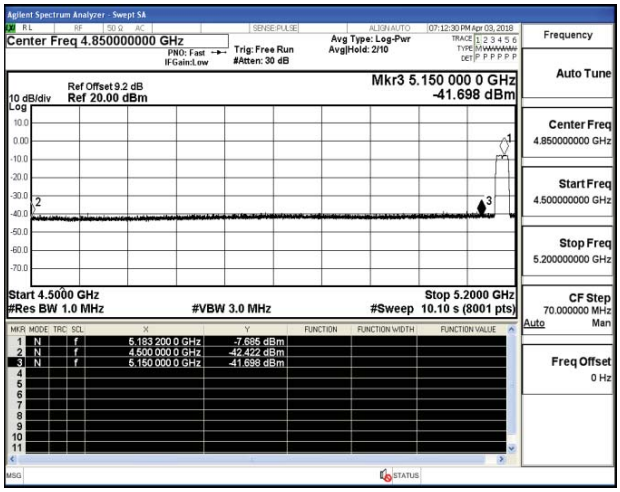
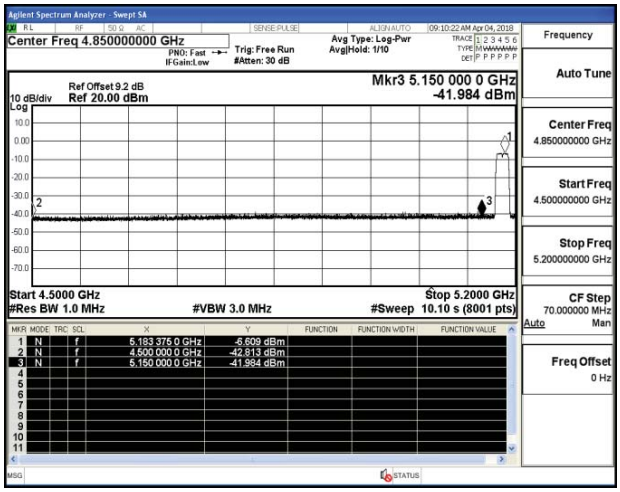
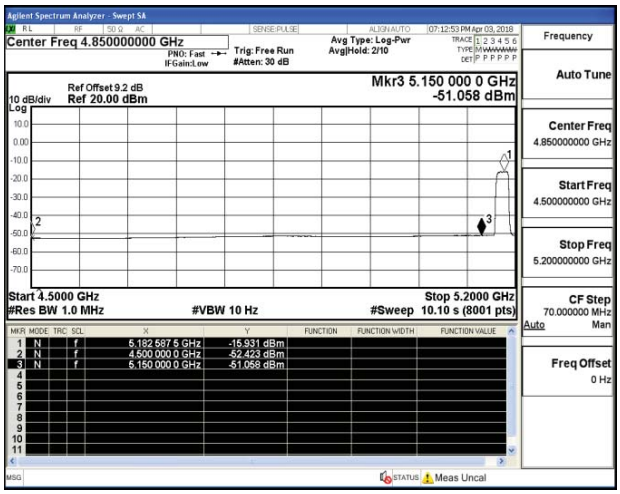
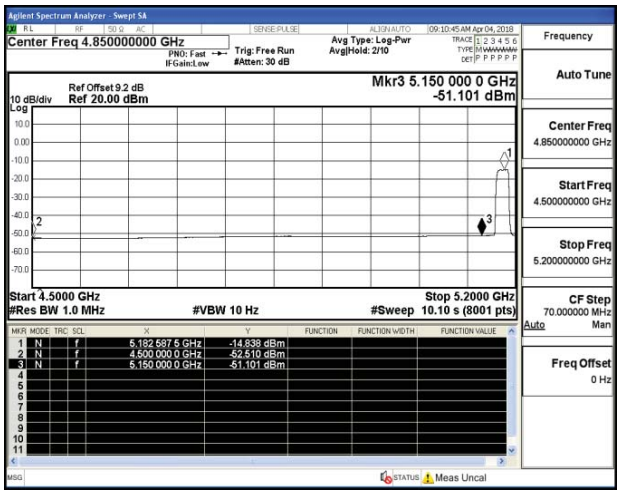
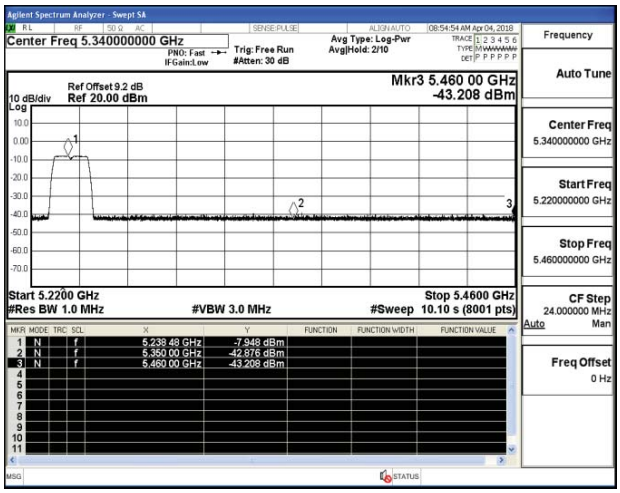
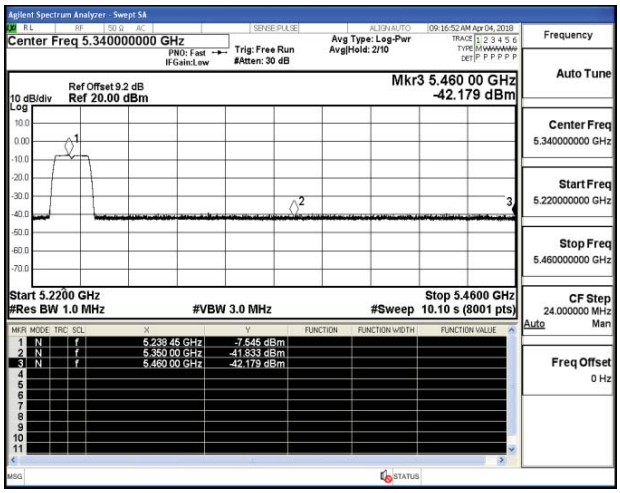

Channel 46 / 5230 MHz – Peak(right)




Channel 42 / 5210 MHz – Average(left)




Channel 46 / 5230 MHz – Average(right)

| Undesirable emission-ant 1 | |
|---|---|
| IEEE 802.11a | IEEE 802.11n HT20 |
|  |  |
| Channel 36 / 5180 MHz – Peak | Channel 36 / 5180 MHz – Peak |
|  |  |
| Channel 36 / 5180 MHz – Average | Channel 36 / 5180 MHz – Average |
|  |  |
| Channel 48 / 5240 MHz – Peak | Channel 48 / 5240 MHz – Peak |