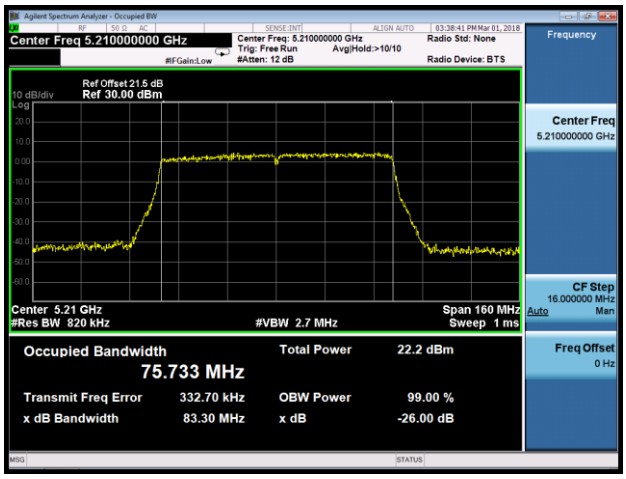
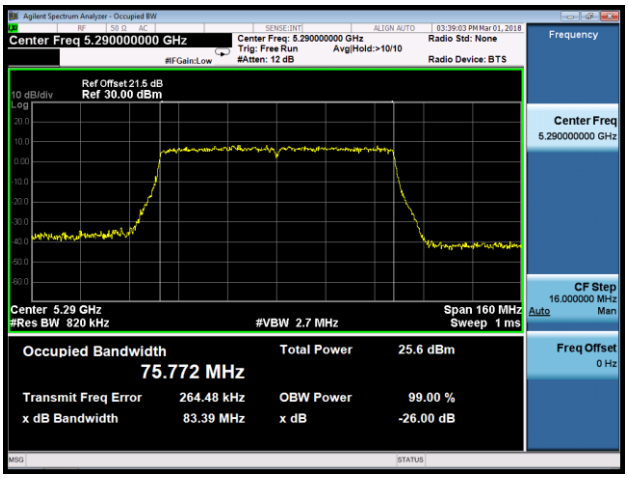
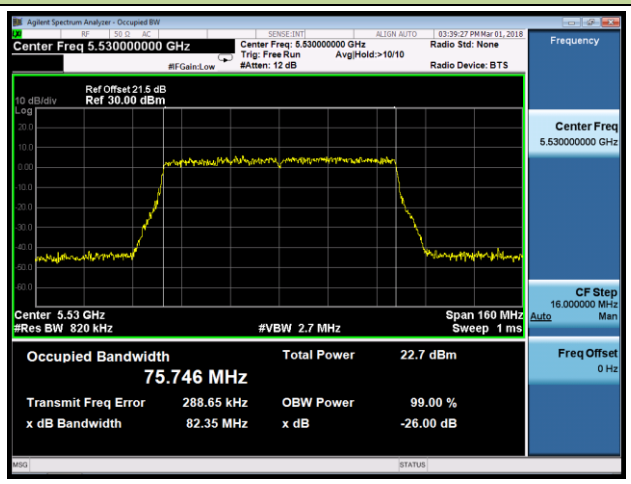
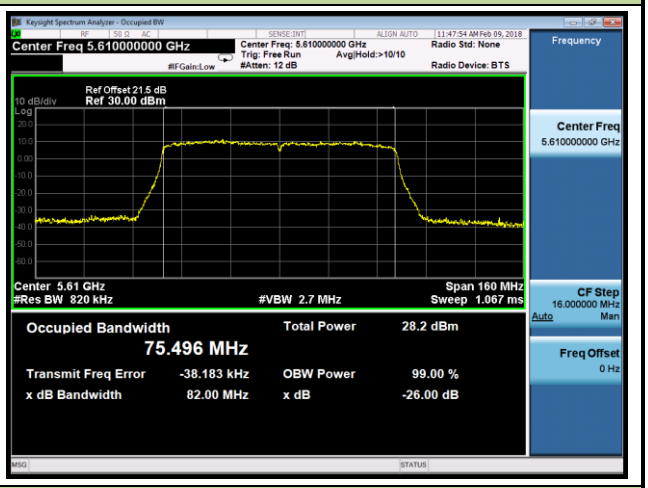
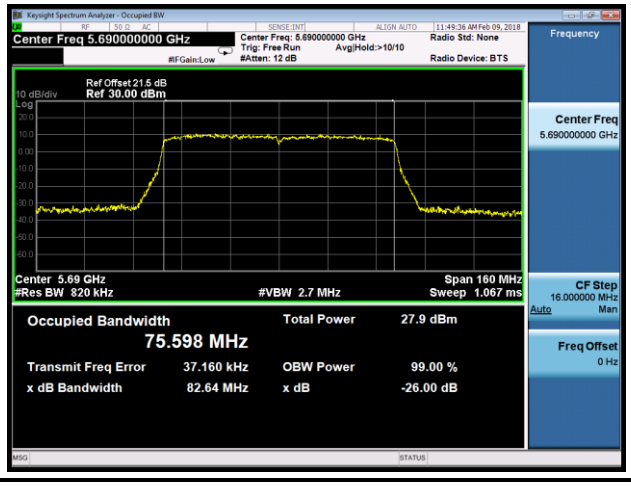
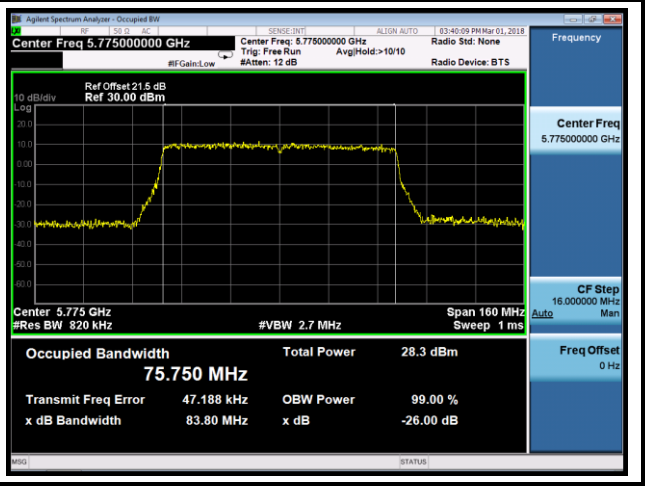
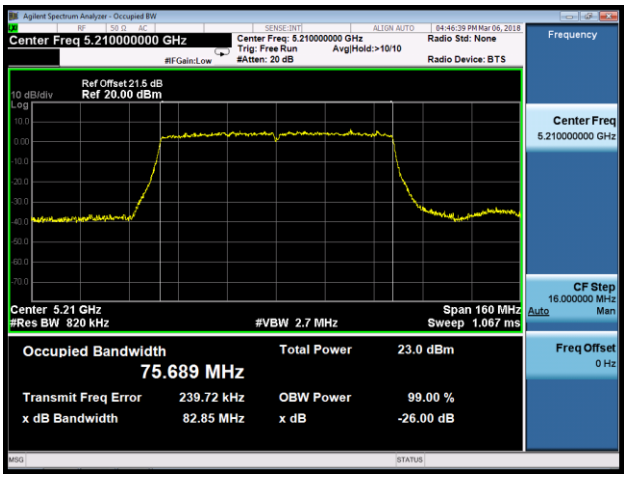
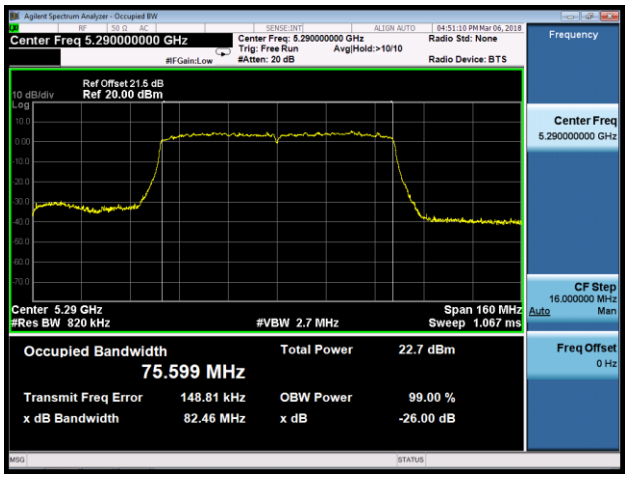
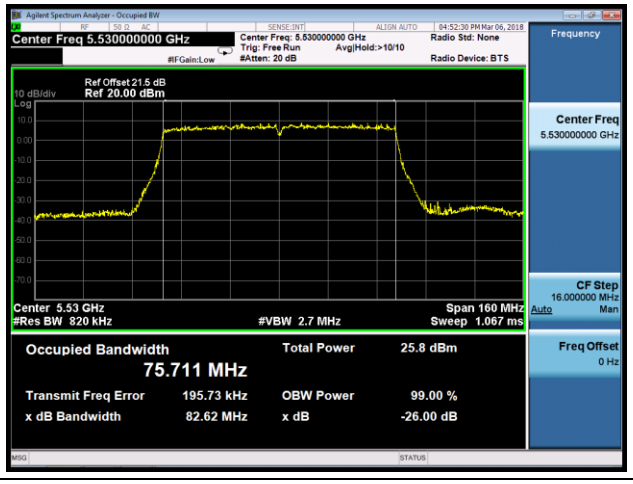
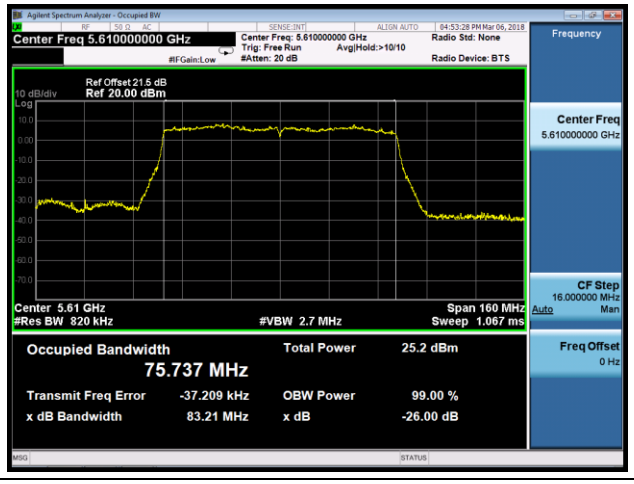
| Non-contiguous 80+80 MHz mode | |
|---|---|
| 802.11ac-VHT80+80 26dB Bandwidth & 99% Bandwidth - Ant 3 / Ant 2 + 3 (Ant 0 + 1 + 2 + 3) | |
| Channel 42 (5210MHz) | Channel 58 (5290MHz) |
|  |  |
| Channel 106 (5530MHz) | Channel 122 (5610MHz) |
|  |  |
| Channel 138 (5690MHz) | Channel 155 (5775MHz) |
|  |  |

| Contiguous 80+80 MHz mode | |
|---|---|
| 802.11ac-VHT80+80 26dB Bandwidth & 99% Bandwidth - Ant 0 + 1 + 2 + 3 | |
| Channel 42 (5210MHz) | Channel 58 (5290MHz) |
|  |  |
| Note: 26dB OCW = [5290 + (82.46/2)] - [5210 - (82.85/2)] = 162.655 MHz<br>99% OCW = [5290 + (75.599/2)] - [5210 - (75.689/2)] = 155.644 MHz | |
| 802.11ac-VHT80+80 26dB Bandwidth & 99% Bandwidth - Ant 0 + 1 + 2 + 3 | |
| Channel 106 (5530MHz) | Channel 122 (5610MHz) |
|  |  |
| Note: 26dB OCW = [5610 + (83.21/2)] - [5530 - (82.62/2)] = 162.915 MHz<br>99% OCW = [5610 + (75.737/2)] - [5530 - (75.711/2)] = 155.724 MHz | |

## 7.3. 6dB Bandwidth Measurement

### 7.3.1.Test Limit

The minimum 6dBbandwidth shall be at least 500 kHz.

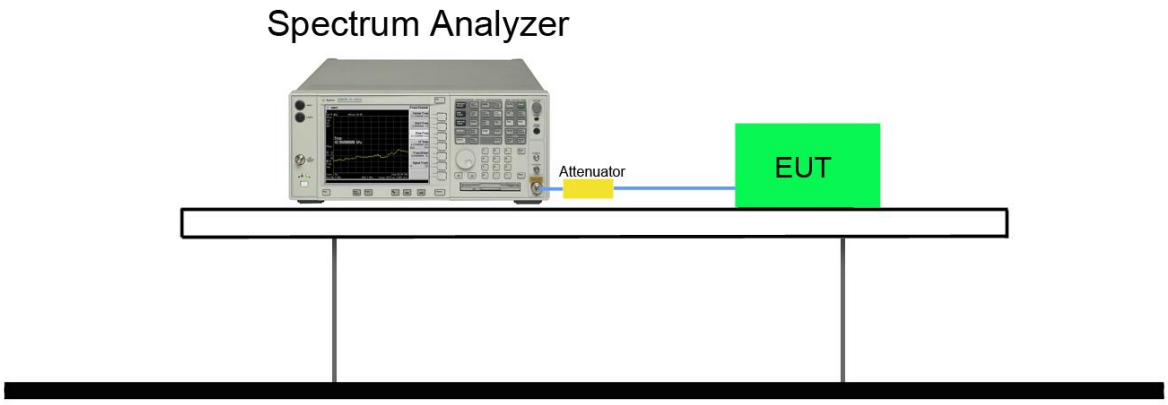
### 7.3.2.Test Procedure used

KDB 789033 D02v02r01 - Section C.2

### 7.3.3.TestSetting

1. Set center frequency to the nominal EUT channel center frequency.
2. RBW = 100 kHz.
3. VBW≧ 3 × RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Sweep = auto couple.
7. Allow the trace to stabilize.
8. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

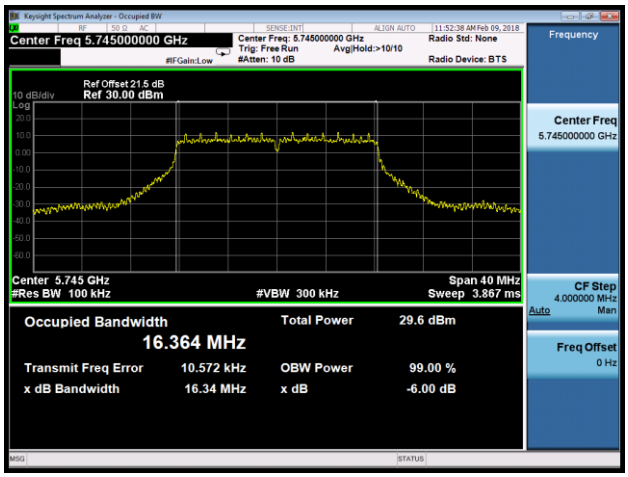
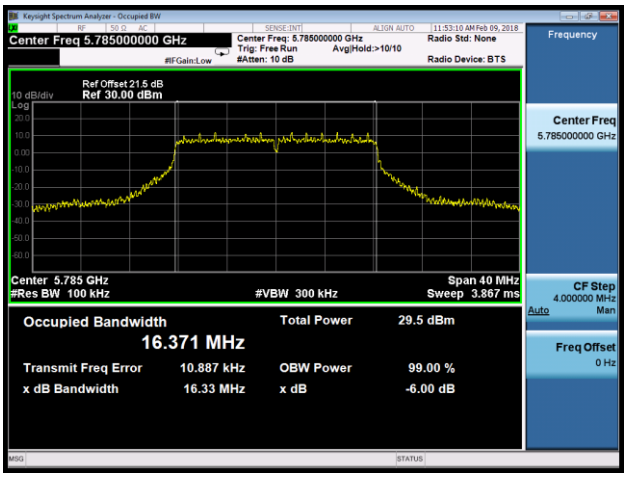
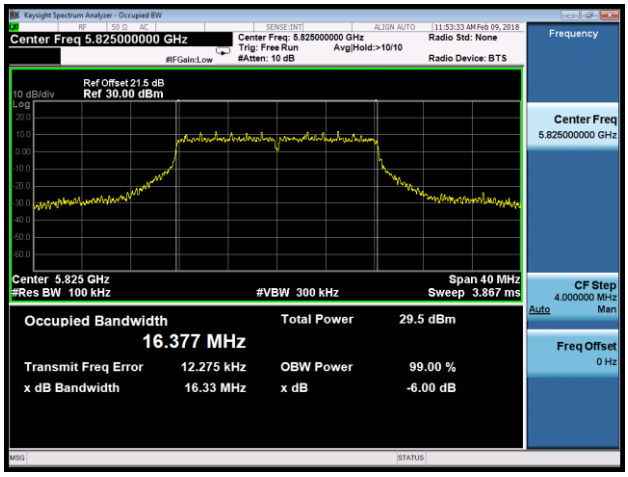
### 7.3.4.Test Setup

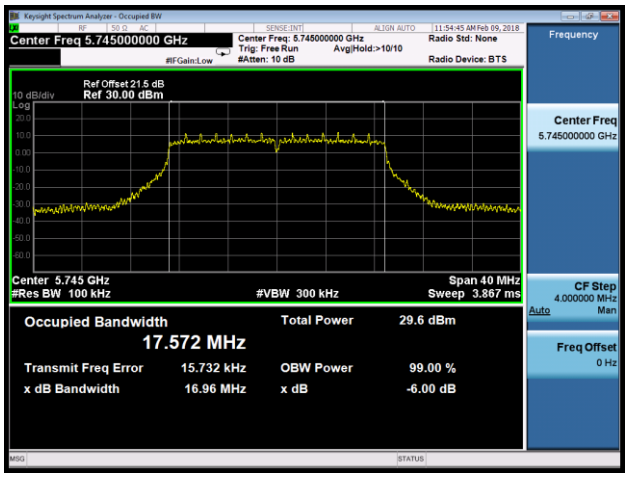
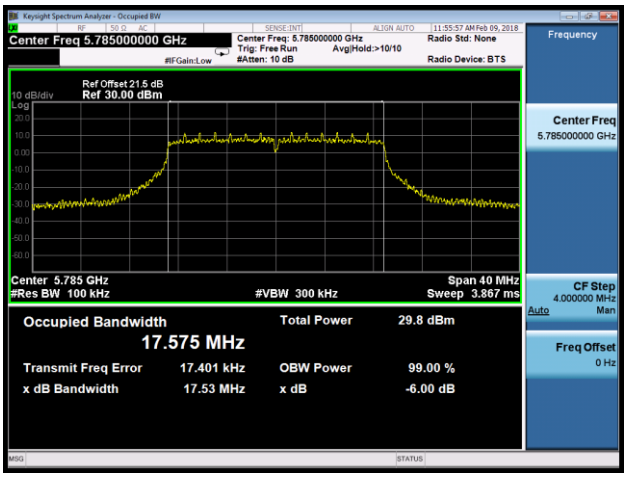
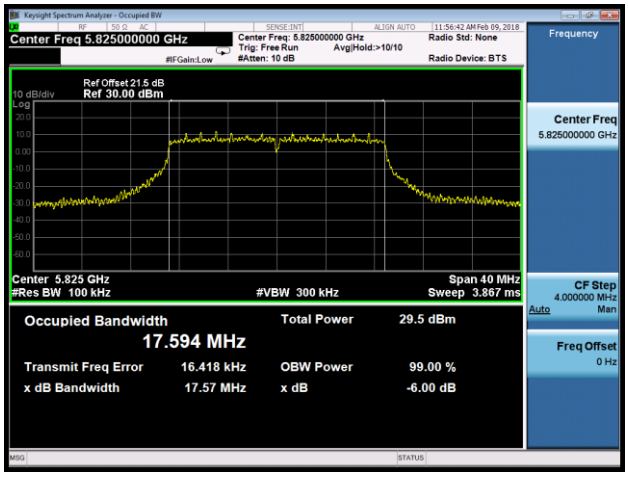


### 7.3.5.Test Result

| Product | ACCESS POINT | Temperature | 24°C |
|---|---|---|---|
| Test Engineer | Kevin Ker | Relative Humidity | 59% |
| Test Site | SR2 | Test Date | 2018/02/09 |
| Antenna Type | Omin Antenna (AP-ANT-20W) | | |

| Test Mode | Data Rate/ MCS | Channel No. | Frequency (MHz) | 6dB Bandwidth (MHz) | Limit (MHz) | Result |
|---|---|---|---|---|---|---|
| Ant 0 / Ant 0 + 1 + 2 + 3 | | | | | | |
| 802.11a | 6Mbps | 149 | 5745 | 16.34 | ≥0.5 | Pass |
| 802.11a | 6Mbps | 157 | 5785 | 16.33 | ≥0.5 | Pass |
| 802.11a | 6Mbps | 165 | 5825 | 16.33 | ≥0.5 | Pass |
| 802.11ac-VHT20 | MCS0 | 149 | 5745 | 16.96 | ≥0.5 | Pass |
| 802.11ac-VHT20 | MCS0 | 157 | 5785 | 17.53 | ≥0.5 | Pass |
| 802.11ac-VHT20 | MCS0 | 165 | 5825 | 17.57 | ≥0.5 | Pass |
| 802.11ac-VHT40 | MCS0 | 151 | 5755 | 35.12 | ≥0.5 | Pass |
| 802.11ac-VHT40 | MCS0 | 159 | 5795 | 35.15 | ≥0.5 | Pass |
| 802.11ac-VHT80 | MCS0 | 155 | 5775 | 76.12 | ≥0.5 | Pass |
| Non-contiguous 80+80 MHz mode_Ant 0 / Ant 0 + 1 (Ant 0 + 1 + 2 + 3) | | | | | | |
| 802.11ac-VHT80+80 | MCS0 | 155 | 5775 | 76.20 | ≥0.5 | Pass |
| Non-contiguous 80+80 MHz mode_Ant 3 / Ant 2 + 3 (Ant 0 + 1 + 2 + 3) | | | | | | |
| 802.11ac-VHT80+80 | MCS0 | 155 | 5775 | 76.17 | ≥0.5 | Pass |

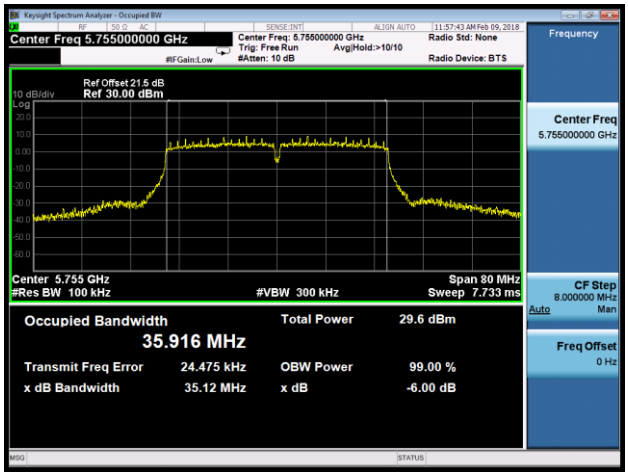
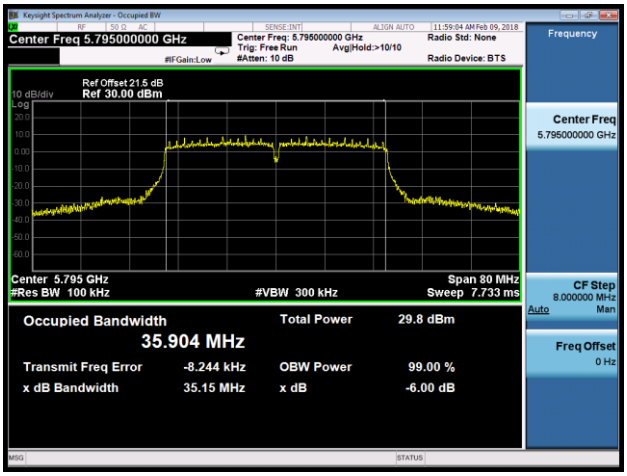
| 802.11a 6dB Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3 | |
|---|---|
| **Channel 149 (5745MHz)** | **Channel 157 (5785MHz)** |
|  |  |
| **Channel 165 (5825MHz)** | |
|  | |

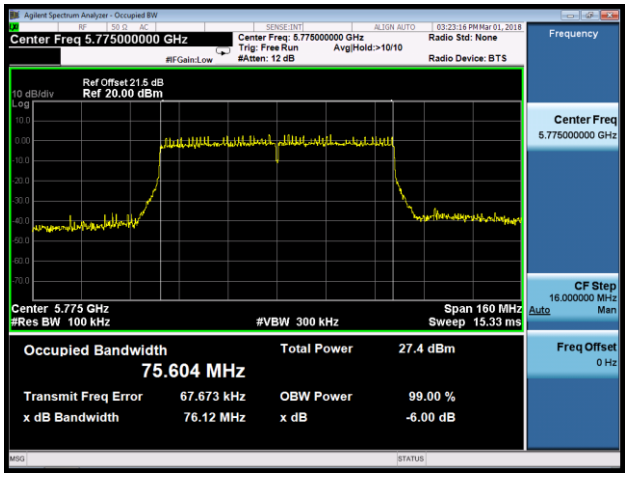
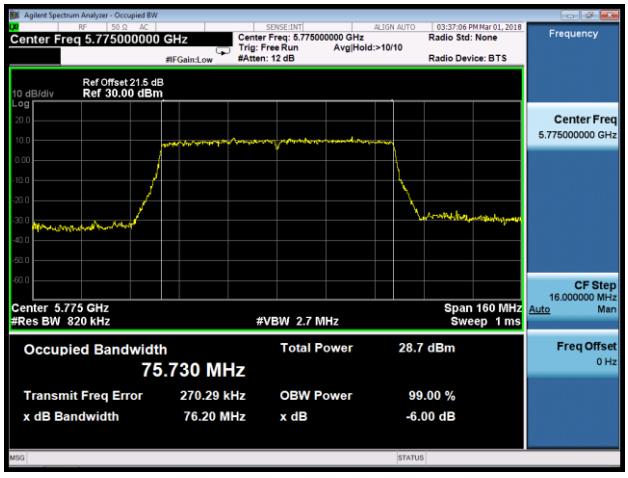
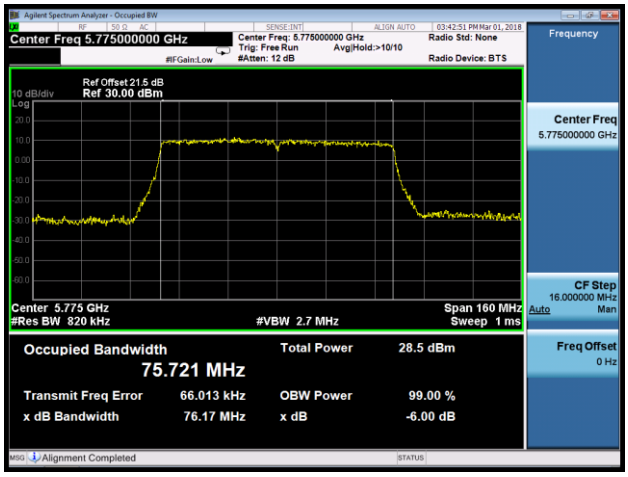
| 802.11ac-VHT20 6dB Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3 | |
|---|---|
| **Channel 149 (5745MHz)** | **Channel 157 (5785MHz)** |
|  |  |
| **Channel 165 (5825MHz)** | |
|  | |







| 802.11ac-VHT40 6dB Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3 | |
|---|---|
| **Channel 151 (5755MHz)** | **Channel 159 (5795MHz)** |
|  |  |

| 802.11ac-VHT80 6dB Bandwidth - Ant 0 / Ant 0 + 1 + 2 + 3 | |
|---|---|
| **Channel 155 (5775MHz)** | |
|  | |
| **802.11ac-VHT80+80 Non-contiguous 6dB Bandwidth - Ant 0 / Ant 0 + 1 (Ant 0 + 1 + 2 + 3)** | |
| **Channel 155 (5775MHz)** | |
|  | |
| **802.11ac-VHT80+80 Non-contiguous 6dB Bandwidth - Ant 3 / Ant 2 + 3 (Ant 0 + 1 + 2 + 3)** | |
| **Channel 155 (5775MHz)** | |
|  | |

## 7.4. Output Power Measurement

### 7.4.1.Test Limit

For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conductedoutput power over the frequency band of operation shall not exceed 1 W provided the maximumantenna gain does not exceed 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm).

If transmitting antennas of directional gain greater than 6dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

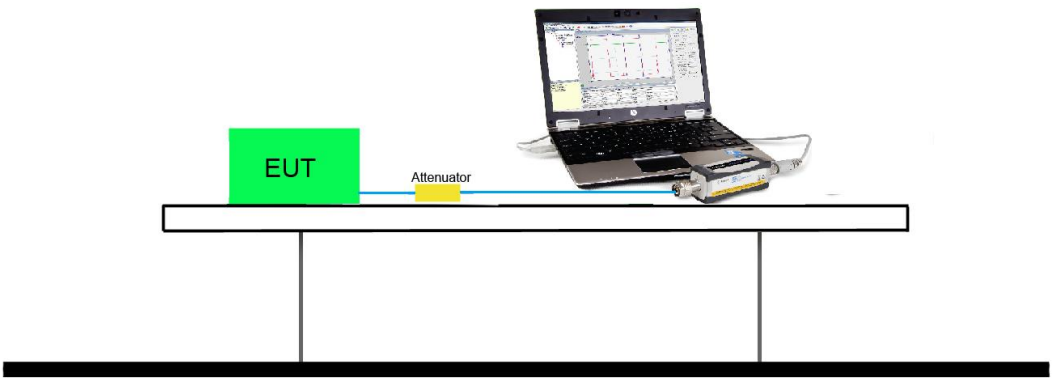
### 7.4.2.Test Procedure Used

KDB 789033 D02v02r01 - Section E) 3) b) Method PM-G

### 7.4.3.Test Setting

Average power measurements were perform only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

### 7.4.4.Test Setup



### 7.4.5.Test Result

Power output test was verified over all data rates of each mode shown as below table, and then choose the maximum power output (gray marker) for final test of each channel.

For Ant 0 / Ant 0 + 1 + 2 + 3 port of Omni Antenna (AP-ANT-20W) / CDD Mode:

| Test Mode | Bandwidth | Channel | Frequency (MHz) | Data Rate/ MCS | Average Power (dBm) |
|---|---|---|---|---|---|
| 802.11a | 20 | 36 | 5180 | 6Mbps | 19.40 |
| | | | | 24Mbps | 19.18 |
| | | | | 54Mbps | 18.96 |
| 802.11ac | 20 | 36 | 5180 | MCS0 | 20.13 |
| | | | | MCS4 | 19.91 |
| | | | | MCS8 | 19.75 |
| 802.11ac | 40 | 38 | 5190 | MCS0 | 14.73 |
| | | | | MCS4 | 14.52 |
| | | | | MCS9 | 14.31 |
| 802.11ac | 80 | 42 | 5210 | MCS0 | 11.88 |
| | | | | MCS4 | 11.62 |
| | | | | MCS9 | 11.43 |
| 802.11ac | 80+80 Non-contiguous | 42 | 5210 | MCS0 | 14.71 |
| | | | | MCS4 | 14.57 |
| | | | | MCS9 | 14.38 |
| 802.11ac | 80+80 Contiguous | 42 | 5210 | MCS0 | 15.17 |
| | | | | MCS4 | 14.97 |
| | | | | MCS9 | 14.75 |

| Product | ACCESS POINT | Temperature | 24°C |
|---|---|---|---|
| Test Engineer | Kevin Ker | Relative Humidity | 59% |
| Test Site | SR2 | Test Date | 2018/01/30 |
| Antenna Type | Omni Antenna (AP-ANT-20W) | Test Item | Output Power |

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 Average Power (dBm) | Ant 1 Average Power (dBm) | Ant 2 Average Power (dBm) | Ant 3 Average Power (dBm) | Total Average Power (dBm) | Average Power Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|---|---|
| Ant 0 + 1 + 2 + 3 (CDD Mode) | | | | | | | | | | |
| 11a | 6Mbps | 36 | 5180 | 19.40 | 18.95 | 19.01 | 19.02 | 25.12 | ≤ 30.00 | Pass |
| 11a | 6Mbps | 44 | 5220 | 19.94 | 19.46 | 19.70 | 19.57 | 25.69 | ≤ 30.00 | Pass |
| 11a | 6Mbps | 48 | 5240 | 20.01 | 19.52 | 19.52 | 19.54 | 25.67 | ≤ 30.00 | Pass |
| 11a | 6Mbps | 52 | 5260 | 13.97 | 13.60 | 13.41 | 13.58 | 19.67 | ≤ 23.89 | Pass |
| 11a | 6Mbps | 60 | 5300 | 14.26 | 13.96 | 13.71 | 14.06 | 20.02 | ≤ 23.89 | Pass |
| 11a | 6Mbps | 64 | 5320 | 14.40 | 13.79 | 13.62 | 13.56 | 19.88 | ≤ 23.89 | Pass |
| 11a | 6Mbps | 100 | 5500 | 13.22 | 12.72 | 12.64 | 12.88 | 18.89 | ≤ 23.89 | Pass |
| 11a | 6Mbps | 120 | 5600 | 13.20 | 12.70 | 12.75 | 13.02 | 18.94 | ≤ 23.89 | Pass |
| 11a | 6Mbps | 140 | 5700 | 13.40 | 12.54 | 12.82 | 13.17 | 19.02 | ≤ 23.89 | Pass |
| 11a | 6Mbps | 144 | 5720 | 13.90 | 13.13 | 13.30 | 13.65 | 19.53 | ≤ 23.89 | Pass |
| 11a | 6Mbps | 149 | 5745 | 22.30 | 21.54 | 22.06 | 22.04 | 28.01 | ≤ 30.00 | Pass |
| 11a | 6Mbps | 157 | 5785 | 22.39 | 21.73 | 22.02 | 22.10 | 28.09 | ≤ 30.00 | Pass |
| 11a | 6Mbps | 165 | 5825 | 22.38 | 21.78 | 22.00 | 21.97 | 28.06 | ≤ 30.00 | Pass |
| 11ac-VHT20 | MCS0 | 36 | 5180 | 20.13 | 19.83 | 20.12 | 20.15 | 26.08 | ≤ 30.00 | Pass |
| 11ac-VHT20 | MCS0 | 44 | 5220 | 20.29 | 19.80 | 20.02 | 20.06 | 26.07 | ≤ 30.00 | Pass |
| 11ac-VHT20 | MCS0 | 48 | 5240 | 20.31 | 19.91 | 19.94 | 20.02 | 26.07 | ≤ 30.00 | Pass |
| 11ac-VHT20 | MCS0 | 52 | 5260 | 14.17 | 13.89 | 13.78 | 14.09 | 20.01 | ≤ 23.98 | Pass |
| 11ac-VHT20 | MCS0 | 60 | 5300 | 14.46 | 14.43 | 14.06 | 13.59 | 20.17 | ≤ 23.98 | Pass |
| 11ac-VHT20 | MCS0 | 64 | 5320 | 14.66 | 14.23 | 14.07 | 14.15 | 20.30 | ≤ 23.98 | Pass |
| 11ac-VHT20 | MCS0 | 100 | 5500 | 13.40 | 13.10 | 12.91 | 13.42 | 19.23 | ≤ 23.98 | Pass |
| 11ac-VHT20 | MCS0 | 120 | 5600 | 13.51 | 13.03 | 13.06 | 13.42 | 19.28 | ≤ 23.98 | Pass |
| 11ac-VHT20 | MCS0 | 140 | 5700 | 13.82 | 13.06 | 13.22 | 13.71 | 19.48 | ≤ 23.98 | Pass |
| 11ac-VHT20 | MCS0 | 144 | 5720 | 13.72 | 13.09 | 13.20 | 13.62 | 19.44 | ≤ 23.98 | Pass |
| 11ac-VHT20 | MCS0 | 149 | 5745 | 22.11 | 21.47 | 21.91 | 21.95 | 27.89 | ≤ 30.00 | Pass |
| 11ac-VHT20 | MCS0 | 157 | 5785 | 22.24 | 21.63 | 21.90 | 22.01 | 27.97 | ≤ 30.00 | Pass |
| 11ac-VHT20 | MCS0 | 165 | 5825 | 22.22 | 21.64 | 21.88 | 21.85 | 27.92 | ≤ 30.00 | Pass |

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 Average Power (dBm) | Ant 1 Average Power (dBm) | Ant 2 Average Power (dBm) | Ant 3 Average Power (dBm) | Total Average Power (dBm) | Average Power Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|---|---|
| Ant 0 + 1 + 2 + 3 (CDD Mode) | | | | | | | | | | |
| 11ac-VHT40 | MCS0 | 38 | 5190 | 14.73 | 14.37 | 14.03 | 14.54 | 20.45 | ≤ 30.00 | Pass |
| 11ac-VHT40 | MCS0 | 46 | 5230 | 22.12 | 21.53 | 21.65 | 21.56 | 27.74 | ≤ 30.00 | Pass |
| 11ac-VHT40 | MCS0 | 54 | 5270 | 16.81 | 16.54 | 16.43 | 16.41 | 22.57 | ≤ 23.98 | Pass |
| 11ac-VHT40 | MCS0 | 62 | 5310 | 16.55 | 16.37 | 16.09 | 16.36 | 22.37 | ≤ 23.98 | Pass |
| 11ac-VHT40 | MCS0 | 102 | 5510 | 16.89 | 16.13 | 16.14 | 16.32 | 22.40 | ≤ 23.98 | Pass |
| 11ac-VHT40 | MCS0 | 118 | 5590 | 16.41 | 15.63 | 15.70 | 15.95 | 21.95 | ≤ 23.98 | Pass |
| 11ac-VHT40 | MCS0 | 134 | 5670 | 16.54 | 15.60 | 15.91 | 15.77 | 21.99 | ≤ 23.98 | Pass |
| 11ac-VHT40 | MCS0 | 142 | 5710 | 16.79 | 15.83 | 15.97 | 16.52 | 22.32 | ≤ 23.98 | Pass |
| 11ac-VHT40 | MCS0 | 151 | 5755 | 22.13 | 21.35 | 21.74 | 21.92 | 27.81 | ≤ 30.00 | Pass |
| 11ac-VHT40 | MCS0 | 159 | 5795 | 22.20 | 21.59 | 21.74 | 22.01 | 27.91 | ≤ 30.00 | Pass |
| 11ac-VHT80 | MCS0 | 42 | 5210 | 11.88 | 11.26 | 11.16 | 11.80 | 17.56 | ≤ 30.00 | Pass |
| 11ac-VHT80 | MCS0 | 58 | 5290 | 15.38 | 15.20 | 14.94 | 15.27 | 21.22 | ≤ 23.98 | Pass |
| 11ac-VHT80 | MCS0 | 106 | 5530 | 13.93 | 13.54 | 13.68 | 13.47 | 19.68 | ≤ 23.98 | Pass |
| 11ac-VHT80 | MCS0 | 122 | 5610 | 17.90 | 17.23 | 17.51 | 17.54 | 23.57 | ≤ 23.98 | Pass |
| 11ac-VHT80 | MCS0 | 138 | 5690 | 18.10 | 17.19 | 17.67 | 17.54 | 23.66 | ≤ 23.98 | Pass |
| 11ac-VHT80 | MCS0 | 155 | 5775 | 19.82 | 19.01 | 19.45 | 18.75 | 25.30 | ≤ 30.00 | Pass |
| Non-contiguous 80+80 MHz mode fall within different UNII band | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | 14.71 | 14.27 | -- | -- | 17.51 | ≤ 30.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | -- | -- | 13.75 | 14.66 | 17.24 | ≤ 30.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 58 | 5290 | 18.43 | 18.15 | -- | -- | 21.30 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 58 | 5290 | -- | -- | 17.94 | 18.32 | 21.14 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | 15.84 | 15.33 | -- | -- | 18.60 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -- | -- | 15.43 | 15.60 | 18.53 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 122 | 5610 | 20.65 | 20.37 | -- | -- | 23.52 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 122 | 5610 | -- | -- | 20.31 | 20.62 | 23.48 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | 20.84 | 20.31 | -- | -- | 23.59 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -- | -- | 20.35 | 20.64 | 23.51 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 155 | 5775 | 21.18 | 20.53 | -- | -- | 23.88 | ≤ 30.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 155 | 5775 | -- | -- | 21.01 | 21.30 | 24.17 | ≤ 30.00 | Pass |

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 Average Power (dBm) | Ant 1 Average Power (dBm) | Ant 2 Average Power (dBm) | Ant 3 Average Power (dBm) | Total Average Power (dBm) | Average Power Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|---|---|
| Non-contiguous 80+80MHz mode fall within same UNII band | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | 16.43 | 15.80 | -- | -- | 22.17 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -- | -- | 15.97 | 16.35 | | | |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -- | -- | 17.44 | 17.72 | 23.63 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | 17.94 | 17.32 | -- | -- | | | |
| 11ac-VHT80+80 (Contiguous 80+80 MHz mode) | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | 15.17 | 14.61 | -- | -- | 17.91 | ≤ 30.00 | Pass |
| | MCS0 | 58 | 5290 | -- | -- | 14.53 | 14.73 | 17.64 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | 18.05 | 17.12 | -- | -- | 23.56 | ≤ 23.98 | Pass |
| | MCS0 | 122 | 5610 | -- | -- | 17.46 | 17.49 | | | |

Note 1: Total Average Power (dBm) = $10*\log\{10^{(\text{Ant 0 Average Power }/10)} + 10^{(\text{Ant 1 Average Power }/10)} + 10^{(\text{Ant 2 Average Power }/10)} + 10^{(\text{Ant 3 Average Power }/10)}\}$.

Note 2: For 802.11ac-VHT80+80 mode fall within different UNII band:

Ant 0 & Ant 1: Total Average Power (dBm) = $10*\log\{10^{(\text{Ant 0 Average Power }/10)} + 10^{(\text{Ant 1 Average Power }/10)}\}$ (dBm)

Ant 2 & Ant 3: Total Average Power (dBm) = $10*\log\{10^{(\text{Ant 2 Average Power }/10)} + 10^{(\text{Ant 3 Average Power }/10)}\}$ (dBm)

For 802.11ac-VHT80+80 mode fall within same UNII band:

Total Average Power (dBm) = $10*\log\{10^{(\text{Ant 0 Average Power }/10)} + 10^{(\text{Ant 1 Average Power }/10)} + 10^{(\text{Ant 2 Average Power }/10)} + 10^{(\text{Ant 3 Average Power }/10)}\}$.

Note 3: For 802.11ac-VHT80+80 Contiguous Mode:

5210MHz fall within UNII-1: Total Average Power (dBm) = $10*\log\{10^{(\text{Ant 0 Average Power }/10)} + 10^{(\text{Ant 1 Average Power }/10)}\}$.

5290MHz fall within UNII-2A: Total Average Power (dBm) = $10*\log\{10^{(\text{Ant 2 Average Power }/10)} + 10^{(\text{Ant 3 Average Power }/10)}\}$.

5530MHz & 5610MHz Fall within UNII-2C: Total Average Power (dBm) = $10*\log\{10^{(\text{Ant 0 Average Power }/10)} + 10^{(\text{Ant 1 Average Power }/10)} + 10^{(\text{Ant 2 Average Power }/10)} + 10^{(\text{Ant 3 Average Power }/10)}\}$.

Note 4: Average Power Limit Calculation as below:

For 5150-5250MHz & 5725-5850MHz: Limit (dBm) = 30.00dBm.

For 5250-5350MHz & 5470-5725MHz:

802.11a: Limit (dBm) = 11 + 10*log (19.47MHz) = 23.89dBm

802.11ac: Limit (dBm) = 23.98dBm.

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 Average Power (dBm) | Ant 1 Average Power (dBm) | Ant 2 Average Power (dBm) | Ant 3 Average Power (dBm) | Total Average Power (dBm) | Average Power Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|---|---|
| Ant 0 + 1 + 2 + 3 (Beam-Forming Mode) | | | | | | | | | | |
| 11ac-VHT20 | MCS0 | 36 | 5180 | 20.13 | 19.83 | 20.12 | 20.15 | 26.08 | ≤ 27.98 | Pass |
| 11ac-VHT20 | MCS0 | 44 | 5220 | 20.29 | 19.80 | 20.02 | 20.06 | 26.07 | ≤ 27.98 | Pass |
| 11ac-VHT20 | MCS0 | 48 | 5240 | 20.31 | 19.91 | 19.94 | 20.02 | 26.07 | ≤ 27.98 | Pass |
| 11ac-VHT20 | MCS0 | 52 | 5260 | 14.17 | 13.89 | 13.78 | 14.09 | 20.01 | ≤ 21.96 | Pass |
| 11ac-VHT20 | MCS0 | 60 | 5300 | 14.46 | 14.43 | 14.06 | 13.59 | 20.17 | ≤ 21.96 | Pass |
| 11ac-VHT20 | MCS0 | 64 | 5320 | 14.66 | 14.23 | 14.07 | 14.15 | 20.30 | ≤ 21.96 | Pass |
| 11ac-VHT20 | MCS0 | 100 | 5500 | 13.40 | 13.10 | 12.91 | 13.42 | 19.23 | ≤ 21.96 | Pass |
| 11ac-VHT20 | MCS0 | 120 | 5600 | 13.51 | 13.03 | 13.06 | 13.42 | 19.28 | ≤ 21.96 | Pass |
| 11ac-VHT20 | MCS0 | 140 | 5700 | 13.82 | 13.06 | 13.22 | 13.71 | 19.48 | ≤ 21.96 | Pass |
| 11ac-VHT20 | MCS0 | 144 | 5720 | 13.72 | 13.09 | 13.20 | 13.62 | 19.44 | ≤ 21.96 | Pass |
| 11ac-VHT20 | MCS0 | 149 | 5745 | 21.63 | 21.12 | 21.35 | 21.59 | 27.45 | ≤ 27.98 | Pass |
| 11ac-VHT20 | MCS0 | 157 | 5785 | 21.70 | 21.16 | 21.37 | 21.68 | 27.50 | ≤ 27.98 | Pass |
| 11ac-VHT20 | MCS0 | 165 | 5825 | 21.71 | 21.21 | 21.36 | 21.55 | 27.48 | ≤ 27.98 | Pass |
| 11ac-VHT40 | MCS0 | 38 | 5190 | 21.10 | 20.82 | 21.03 | 20.78 | 26.96 | ≤ 27.98 | Pass |
| 11ac-VHT40 | MCS0 | 46 | 5230 | 22.05 | 21.66 | 21.60 | 21.68 | 27.77 | ≤ 27.98 | Pass |
| 11ac-VHT40 | MCS0 | 54 | 5270 | 15.87 | 15.62 | 15.42 | 15.67 | 21.67 | ≤ 21.96 | Pass |
| 11ac-VHT40 | MCS0 | 62 | 5310 | 15.67 | 15.59 | 15.23 | 15.57 | 21.54 | ≤ 21.96 | Pass |
| 11ac-VHT40 | MCS0 | 102 | 5510 | 15.87 | 15.31 | 15.21 | 15.52 | 21.51 | ≤ 21.96 | Pass |
| 11ac-VHT40 | MCS0 | 118 | 5590 | 15.89 | 15.34 | 15.32 | 15.58 | 21.56 | ≤ 21.96 | Pass |
| 11ac-VHT40 | MCS0 | 134 | 5670 | 15.94 | 15.24 | 15.54 | 15.48 | 21.58 | ≤ 21.96 | Pass |
| 11ac-VHT40 | MCS0 | 142 | 5710 | 15.80 | 15.32 | 15.15 | 15.73 | 21.53 | ≤ 21.96 | Pass |
| 11ac-VHT40 | MCS0 | 151 | 5755 | 21.70 | 21.13 | 21.19 | 21.62 | 27.44 | ≤ 27.98 | Pass |
| 11ac-VHT40 | MCS0 | 159 | 5795 | 21.77 | 21.26 | 21.24 | 21.68 | 27.51 | ≤ 27.98 | Pass |
| 11ac-VHT80 | MCS0 | 42 | 5210 | 18.76 | 18.57 | 18.66 | 18.29 | 24.59 | ≤ 27.98 | Pass |
| 11ac-VHT80 | MCS0 | 58 | 5290 | 15.98 | 15.72 | 15.51 | 15.72 | 21.76 | ≤ 21.96 | Pass |
| 11ac-VHT80 | MCS0 | 106 | 5530 | 16.06 | 15.50 | 15.42 | 15.64 | 21.68 | ≤ 21.96 | Pass |
| 11ac-VHT80 | MCS0 | 122 | 5610 | 15.91 | 15.42 | 15.45 | 15.56 | 21.61 | ≤ 21.96 | Pass |
| 11ac-VHT80 | MCS0 | 138 | 5690 | 16.08 | 15.33 | 15.60 | 15.51 | 21.66 | ≤ 21.96 | Pass |
| 11ac-VHT80 | MCS0 | 155 | 5775 | 21.61 | 21.21 | 21.34 | 21.57 | 27.46 | ≤ 27.98 | Pass |

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 Average Power (dBm) | Ant 1 Average Power (dBm) | Ant 2 Average Power (dBm) | Ant 3 Average Power (dBm) | Total Average Power (dBm) | Average Power Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|---|---|
| Non-contiguous 80+80 MHz mode fall within different UNII band | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | 20.65 | 20.24 | -- | -- | 23.46 | ≤ 30.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | -- | -- | 22.33 | 22.10 | 25.23 | ≤ 30.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 58 | 5290 | 18.81 | 18.58 | -- | -- | 21.71 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 58 | 5290 | -- | -- | 18.45 | 18.70 | 21.59 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | 18.78 | 18.21 | -- | -- | 21.51 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -- | -- | 18.28 | 18.60 | 21.45 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 122 | 5610 | 18.62 | 18.23 | -- | -- | 21.44 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 122 | 5610 | -- | -- | 18.34 | 18.54 | 21.45 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | 18.86 | 18.18 | -- | -- | 21.54 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -- | -- | 18.46 | 18.52 | 21.50 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 155 | 5775 | 22.20 | 21.66 | -- | -- | 24.95 | ≤ 30.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 155 | 5775 | -- | -- | 22.04 | 22.20 | 25.13 | ≤ 30.00 | Pass |
| Non-contiguous 80+80 MHz mode fall within same UNII band | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | 15.90 | 15.49 | -- | -- | 21.67 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -- | -- | 15.60 | 15.60 | | | |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -- | -- | 15.35 | 15.61 | 21.59 | ≤ 23.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | 15.94 | 15.33 | -- | -- | | | |

Note 1: Total Average Power (dBm) = 10*log {$10^{(\text{Ant 0 Average Power /10})}$ + $10^{(\text{Ant 1 Average Power /10})}$ + $10^{(\text{Ant 2 Average Power /10})}$ + $10^{(\text{Ant 3 Average Power /10})}$}.

Note 2: For 802.11ac-VHT80+80 mode fall within different UNII band:

Ant 0 & Ant 1: Total Average Power (dBm) = 10*log {$10^{(\text{Ant 0 Average Power /10})}$ + $10^{(\text{Ant 1 Average Power /10})}$} (dBm)

Ant 2 & Ant 3: Total Average Power (dBm) = 10*log {$10^{(\text{Ant 2 Average Power /10})}$ + $10^{(\text{Ant 3 Average Power /10})}$} (dBm)

For 802.11ac-VHT80+80 mode fall within same UNII band:

Total Average Power (dBm) = 10*log {$10^{(\text{Ant 0 Average Power /10})}$ + $10^{(\text{Ant 1 Average Power /10})}$ + $10^{(\text{Ant 2 Average Power /10})}$ + $10^{(\text{Ant 3 Average Power /10})}$}.

Note 3: Average Power Limit Calculation as below:

For 5150-5250MHz & 5725-5850MHz:

802.11ac-VHT20/ac-VHT40/ac-VHT80: Limit (dBm) = 30dBm - (2dBi + 6.02dBi - 6dBi) = 27.98 dBm

802.11ac-VHT80+80: Limit (dBm) = 30.00 dBm

For 5250-5350MHz & 5470-5725MHz:

802.11ac-VHT20/ac-VHT40/ac-VHT80: Limit (dBm) = 23.98dBm - (2dBi + 6.02dBi - 6dBi) = 21.96 dBm.

802.11ac-VHT80+80: Limit (dBm) = 23.98 dBm.

| Product | ACCESS POINT | Temperature | 24°C |
|---|---|---|---|
| Test Engineer | Kevin Ker | Relative Humidity | 59% |
| Test Site | SR2 | Test Date | 2018/01/31 |
| Antenna Type | Directional Antenna (ANT-4x4-5314) | Test Item | Output Power |

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 Average Power (dBm) | Ant 1 Average Power (dBm) | Ant 2 Average Power (dBm) | Ant 3 Average Power (dBm) | Total Average Power (dBm) | Average Power Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|---|---|
| Ant 0 + 1 + 2 + 3 (CDD Mode) | | | | | | | | | | |
| 11a | 6Mbps | 36 | 5180 | 11.29 | 10.75 | 10.96 | 10.83 | 16.98 | ≤ 22.00 | Pass |
| 11a | 6Mbps | 44 | 5220 | 11.35 | 10.82 | 10.97 | 10.85 | 17.02 | ≤ 22.00 | Pass |
| 11a | 6Mbps | 48 | 5240 | 11.23 | 10.87 | 10.78 | 10.85 | 16.96 | ≤ 22.00 | Pass |
| 11a | 6Mbps | 52 | 5260 | 4.58 | 4.34 | 4.06 | 4.09 | 10.29 | ≤ 15.89 | Pass |
| 11a | 6Mbps | 60 | 5300 | 4.29 | 4.19 | 3.76 | 4.05 | 10.10 | ≤ 15.89 | Pass |
| 11a | 6Mbps | 64 | 5320 | 4.75 | 4.47 | 4.18 | 4.37 | 10.47 | ≤ 15.89 | Pass |
| 11a | 6Mbps | 100 | 5500 | 4.13 | 3.83 | 3.60 | 4.01 | 9.92 | ≤ 15.89 | Pass |
| 11a | 6Mbps | 120 | 5600 | 4.18 | 3.86 | 3.44 | 4.02 | 9.90 | ≤ 15.89 | Pass |
| 11a | 6Mbps | 140 | 5700 | 4.83 | 4.22 | 4.20 | 4.46 | 10.46 | ≤ 15.89 | Pass |
| 11a | 6Mbps | 144 | 5720 | 5.23 | 4.70 | 4.70 | 4.87 | 10.90 | ≤ 15.89 | Pass |
| 11a | 6Mbps | 149 | 5745 | 15.78 | 15.53 | 15.36 | 15.57 | 21.58 | ≤ 22.00 | Pass |
| 11a | 6Mbps | 157 | 5785 | 15.74 | 15.38 | 15.42 | 15.61 | 21.56 | ≤ 22.00 | Pass |
| 11a | 6Mbps | 165 | 5825 | 14.75 | 14.23 | 14.31 | 14.31 | 20.43 | ≤ 22.00 | Pass |
| 11ac-VHT20 | MCS0 | 36 | 5180 | 11.48 | 10.85 | 11.20 | 11.03 | 17.17 | ≤ 22.00 | Pass |
| 11ac-VHT20 | MCS0 | 44 | 5220 | 11.02 | 10.47 | 10.76 | 10.65 | 16.75 | ≤ 22.00 | Pass |
| 11ac-VHT20 | MCS0 | 48 | 5240 | 10.92 | 10.49 | 10.49 | 10.63 | 16.66 | ≤ 22.00 | Pass |
| 11ac-VHT20 | MCS0 | 52 | 5260 | 4.91 | 4.45 | 4.38 | 4.40 | 10.56 | ≤ 15.98 | Pass |
| 11ac-VHT20 | MCS0 | 60 | 5300 | 4.71 | 4.46 | 4.08 | 4.43 | 10.45 | ≤ 15.98 | Pass |
| 11ac-VHT20 | MCS0 | 64 | 5320 | 5.06 | 4.80 | 4.37 | 4.66 | 10.75 | ≤ 15.98 | Pass |
| 11ac-VHT20 | MCS0 | 100 | 5500 | 4.43 | 4.04 | 3.87 | 4.24 | 10.17 | ≤ 15.98 | Pass |
| 11ac-VHT20 | MCS0 | 120 | 5600 | 4.48 | 4.06 | 3.65 | 4.29 | 10.15 | ≤ 15.98 | Pass |
| 11ac-VHT20 | MCS0 | 140 | 5700 | 5.21 | 4.25 | 4.45 | 4.80 | 10.71 | ≤ 15.98 | Pass |
| 11ac-VHT20 | MCS0 | 144 | 5720 | 5.13 | 4.47 | 4.52 | 4.68 | 10.73 | ≤ 15.98 | Pass |
| 11ac-VHT20 | MCS0 | 149 | 5745 | 16.03 | 15.67 | 15.65 | 15.87 | 21.83 | ≤ 22.00 | Pass |
| 11ac-VHT20 | MCS0 | 157 | 5785 | 15.92 | 15.48 | 15.64 | 15.90 | 21.76 | ≤ 22.00 | Pass |
| 11ac-VHT20 | MCS0 | 165 | 5825 | 14.58 | 14.08 | 14.18 | 14.21 | 20.29 | ≤ 22.00 | Pass |

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 Average Power (dBm) | Ant 1 Average Power (dBm) | Ant 2 Average Power (dBm) | Ant 3 Average Power (dBm) | Total Average Power (dBm) | Average Power Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|---|---|
| Ant 0 + 1 + 2 + 3 (CDD Mode) | | | | | | | | | | |
| 11ac-VHT40 | MCS0 | 38 | 5190 | 11.96 | 11.48 | 11.65 | 11.61 | 17.70 | ≤ 22.00 | Pass |
| 11ac-VHT40 | MCS0 | 46 | 5230 | 13.59 | 13.87 | 13.12 | 13.23 | 19.48 | ≤ 22.00 | Pass |
| 11ac-VHT40 | MCS0 | 54 | 5270 | 7.21 | 7.19 | 6.87 | 6.96 | 13.08 | ≤ 15.98 | Pass |
| 11ac-VHT40 | MCS0 | 62 | 5310 | 7.15 | 7.16 | 6.61 | 6.91 | 12.98 | ≤ 15.98 | Pass |
| 11ac-VHT40 | MCS0 | 102 | 5510 | 7.03 | 6.74 | 6.48 | 6.63 | 12.75 | ≤ 15.98 | Pass |
| 11ac-VHT40 | MCS0 | 118 | 5590 | 7.17 | 6.67 | 6.52 | 6.84 | 12.83 | ≤ 15.98 | Pass |
| 11ac-VHT40 | MCS0 | 134 | 5670 | 7.82 | 7.19 | 7.16 | 7.28 | 13.39 | ≤ 15.98 | Pass |
| 11ac-VHT40 | MCS0 | 142 | 5710 | 7.63 | 7.01 | 7.10 | 7.22 | 13.27 | ≤ 15.98 | Pass |
| 11ac-VHT40 | MCS0 | 151 | 5755 | 16.03 | 15.48 | 15.58 | 15.81 | 21.75 | ≤ 22.00 | Pass |
| 11ac-VHT40 | MCS0 | 159 | 5795 | 16.08 | 15.55 | 15.72 | 15.79 | 21.81 | ≤ 22.00 | Pass |
| 11ac-VHT80 | MCS0 | 42 | 5210 | 9.04 | 8.61 | 8.69 | 8.47 | 14.73 | ≤ 22.00 | Pass |
| 11ac-VHT80 | MCS0 | 58 | 5290 | 10.01 | 9.65 | 9.48 | 9.65 | 15.72 | ≤ 15.98 | Pass |
| 11ac-VHT80 | MCS0 | 106 | 5530 | 9.92 | 9.63 | 9.26 | 9.54 | 15.61 | ≤ 15.98 | Pass |
| 11ac-VHT80 | MCS0 | 122 | 5610 | 10.02 | 9.72 | 9.12 | 9.57 | 15.64 | ≤ 15.98 | Pass |
| 11ac-VHT80 | MCS0 | 138 | 5690 | 10.17 | 9.53 | 9.40 | 9.39 | 15.66 | ≤ 15.98 | Pass |
| 11ac-VHT80 | MCS0 | 155 | 5775 | 15.05 | 14.62 | 14.74 | 14.66 | 20.79 | ≤ 22.00 | Pass |
| Non-contiguous 80+80 MHz mode fall within different UNII band | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | 12.98 | 12.42 | -- | -- | 15.72 | ≤ 22.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | -- | -- | 13.50 | 12.64 | 16.10 | ≤ 22.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 58 | 5290 | 13.09 | 12.49 | -- | -- | 15.81 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 58 | 5290 | -- | -- | 12.38 | 12.85 | 15.63 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | 12.93 | 12.39 | -- | -- | 15.68 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -- | -- | 12.22 | 12.57 | 15.41 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 122 | 5610 | 12.80 | 12.48 | -- | -- | 15.65 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 122 | 5610 | -- | -- | 12.19 | 12.57 | 15.39 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | 12.97 | 12.35 | -- | -- | 15.68 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -- | -- | 12.54 | 12.41 | 15.49 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 155 | 5775 | 17.80 | 17.32 | -- | -- | 20.58 | ≤ 22.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 155 | 5775 | -- | -- | 18.78 | 18.77 | 21.79 | ≤ 22.00 | Pass |

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 Average Power (dBm) | Ant 1 Average Power (dBm) | Ant 2 Average Power (dBm) | Ant 3 Average Power (dBm) | Total Average Power (dBm) | Average Power Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|---|---|
| Non-contiguous 80+80 MHz mode fall within same UNII band | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | 9.87 | 9.33 | -- | -- | 15.48 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -- | -- | 9.35 | 9.28 | | | |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -- | -- | 9.17 | 9.42 | 15.50 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | 9.98 | 9.32 | -- | -- | | | |
| 11ac-VHT80+80 (Contiguous 80+80 MHz mode) | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | 11.26 | 10.54 | -- | -- | 13.93 | ≤ 22.00 | Pass |
| | MCS0 | 58 | 5290 | -- | -- | 10.32 | 10.72 | 13.53 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | 9.75 | 9.36 | -- | -- | 15.40 | ≤ 15.98 | Pass |
| | MCS0 | 122 | 5610 | -- | -- | 8.97 | 9.39 | | | |

Note 1: Total Average Power (dBm) = 10*log {$10^{(\text{Ant 0 Average Power /10})}$ + $10^{(\text{Ant 1 Average Power /10})}$ + $10^{(\text{Ant 2 Average Power /10})}$ +$10^{(\text{Ant 3 Average Power /10})}$}.

Note 2: For 802.11ac-VHT80+80 mode fall within different UNII band:

Ant 0 & Ant 1: Total Average Power (dBm) = 10*log {$10^{(\text{Ant 0 Average Power /10})}$ + $10^{(\text{Ant 1 Average Power /10})}$} (dBm)

Ant 2 & Ant 3: Total Average Power (dBm) = 10*log {$10^{(\text{Ant 2 Average Power /10})}$ + $10^{(\text{Ant 3 Average Power /10})}$} (dBm)

For 802.11ac-VHT80+80 mode fall within same UNII band:

Total Average Power (dBm) = 10*log {$10^{(\text{Ant 0 Average Power /10})}$ + $10^{(\text{Ant 1 Average Power /10})}$ + $10^{(\text{Ant 2 Average Power /10})}$ + $10^{(\text{Ant 3 Average Power /10})}$}.

Note 3: For 802.11ac-VHT80+80 Contiguous Mode:

5210MHz fall within UNII-1: Total Average Power (dBm) = 10*log {$10^{(\text{Ant 0 Average Power /10})}$ + $10^{(\text{Ant 1 Average Power /10})}$}.

5290MHz fall within UNII-2A: Total Average Power (dBm) = 10*log {$10^{(\text{Ant 2 Average Power /10})}$ + $10^{(\text{Ant 3 Average Power /10})}$}.

5530MHz & 5610MHz Fall within UNII-2C: Total Average Power (dBm) = 10*log {$10^{(\text{Ant 0 Average Power /10})}$ + $10^{(\text{Ant 1 Average Power /10}) +}$ $10^{(\text{Ant 2 Average Power /10})}$ + $10^{(\text{Ant 3 Average Power /10})}$}.

Note 4: Average Power Limit Calculation as below:

For 5150-5250MHz & 5725-5850MHz: Limit (dBm) = 30.00dBm - (14dBi - 6dBi) = 22.00 dBm.

For 5250-5350MHz & 5470-5725MHz:

802.11a: Limit (dBm) = [11 + 10*log (19.47MHz)] - (14dBi - 6dBi) = 15.89dBm

802.11ac: Limit (dBm) = 23.98dBm - (14dBi - 6dBi) = 15.98dBm.

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 Average Power (dBm) | Ant 1 Average Power (dBm) | Ant 2 Average Power (dBm) | Ant 3 Average Power (dBm) | Total Average Power (dBm) | Average Power Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|---|---|
| Ant 0 + 1 + 2 + 3 (Beam-Forming Mode) | | | | | | | | | | |
| 11ac-VHT20 | MCS0 | 36 | 5180 | 11.48 | 10.85 | 11.20 | 11.03 | 17.17 | ≤ 18.99 | Pass |
| 11ac-VHT20 | MCS0 | 44 | 5220 | 11.02 | 10.47 | 10.76 | 10.65 | 16.75 | ≤ 18.99 | Pass |
| 11ac-VHT20 | MCS0 | 48 | 5240 | 10.92 | 10.49 | 10.49 | 10.63 | 16.66 | ≤ 18.99 | Pass |
| 11ac-VHT20 | MCS0 | 52 | 5260 | 4.91 | 4.45 | 4.38 | 4.40 | 10.56 | ≤ 12.97 | Pass |
| 11ac-VHT20 | MCS0 | 60 | 5300 | 4.71 | 4.46 | 4.08 | 4.43 | 10.45 | ≤ 12.97 | Pass |
| 11ac-VHT20 | MCS0 | 64 | 5320 | 5.06 | 4.80 | 4.37 | 4.66 | 10.75 | ≤ 12.97 | Pass |
| 11ac-VHT20 | MCS0 | 100 | 5500 | 4.43 | 4.04 | 3.87 | 4.24 | 10.17 | ≤ 12.97 | Pass |
| 11ac-VHT20 | MCS0 | 120 | 5600 | 4.48 | 4.06 | 3.65 | 4.29 | 10.15 | ≤ 12.97 | Pass |
| 11ac-VHT20 | MCS0 | 140 | 5700 | 5.21 | 4.25 | 4.45 | 4.80 | 10.71 | ≤ 12.97 | Pass |
| 11ac-VHT20 | MCS0 | 144 | 5720 | 5.13 | 4.47 | 4.52 | 4.68 | 10.73 | ≤ 12.97 | Pass |
| 11ac-VHT20 | MCS0 | 149 | 5745 | 12.69 | 12.13 | 12.36 | 12.42 | 18.43 | ≤ 18.99 | Pass |
| 11ac-VHT20 | MCS0 | 157 | 5785 | 12.60 | 12.23 | 12.35 | 12.53 | 18.45 | ≤ 18.99 | Pass |
| 11ac-VHT20 | MCS0 | 165 | 5825 | 12.71 | 12.17 | 12.40 | 12.46 | 18.46 | ≤ 18.99 | Pass |
| 11ac-VHT40 | MCS0 | 38 | 5190 | 11.96 | 11.48 | 11.65 | 11.61 | 17.70 | ≤ 18.99 | Pass |
| 11ac-VHT40 | MCS0 | 46 | 5230 | 13.04 | 13.32 | 12.60 | 12.68 | 18.94 | ≤ 18.99 | Pass |
| 11ac-VHT40 | MCS0 | 54 | 5270 | 7.13 | 7.15 | 6.61 | 6.73 | 12.93 | ≤ 12.97 | Pass |
| 11ac-VHT40 | MCS0 | 62 | 5310 | 7.11 | 7.13 | 6.63 | 6.81 | 12.95 | ≤ 12.97 | Pass |
| 11ac-VHT40 | MCS0 | 102 | 5510 | 7.03 | 6.74 | 6.48 | 6.63 | 12.75 | ≤ 12.97 | Pass |
| 11ac-VHT40 | MCS0 | 118 | 5590 | 7.17 | 6.67 | 6.52 | 6.84 | 12.83 | ≤ 12.97 | Pass |
| 11ac-VHT40 | MCS0 | 134 | 5670 | 7.31 | 6.63 | 6.58 | 6.68 | 12.83 | ≤ 12.97 | Pass |
| 11ac-VHT40 | MCS0 | 142 | 5710 | 7.12 | 6.47 | 6.54 | 6.71 | 12.74 | ≤ 12.97 | Pass |
| 11ac-VHT40 | MCS0 | 151 | 5755 | 13.21 | 12.64 | 12.70 | 12.89 | 18.89 | ≤ 18.99 | Pass |
| 11ac-VHT40 | MCS0 | 159 | 5795 | 12.73 | 12.22 | 12.26 | 12.45 | 18.44 | ≤ 18.99 | Pass |
| 11ac-VHT80 | MCS0 | 42 | 5210 | 12.98 | 12.44 | 12.48 | 12.54 | 18.64 | ≤ 18.99 | Pass |
| 11ac-VHT80 | MCS0 | 58 | 5290 | 6.72 | 6.31 | 6.18 | 6.24 | 12.39 | ≤ 12.97 | Pass |
| 11ac-VHT80 | MCS0 | 106 | 5530 | 7.05 | 6.50 | 6.26 | 6.55 | 12.62 | ≤ 12.97 | Pass |
| 11ac-VHT80 | MCS0 | 122 | 5610 | 6.94 | 6.52 | 6.10 | 6.62 | 12.58 | ≤ 12.97 | Pass |
| 11ac-VHT80 | MCS0 | 138 | 5690 | 7.15 | 6.42 | 6.32 | 6.43 | 12.61 | ≤ 12.97 | Pass |
| 11ac-VHT80 | MCS0 | 155 | 5775 | 12.83 | 12.46 | 12.48 | 12.53 | 18.60 | ≤ 18.99 | Pass |

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 Average Power (dBm) | Ant 1 Average Power (dBm) | Ant 2 Average Power (dBm) | Ant 3 Average Power (dBm) | Total Average Power (dBm) | Average Power Limit (dBm) | Result |
|---|---|---|---|---|---|---|---|---|---|---|
| Non-contiguous 80+80 MHz mode fall within different UNII band | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | 12.98 | 12.42 | -- | -- | 15.72 | ≤ 22.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | -- | -- | 13.50 | 12.64 | 16.10 | ≤ 22.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 58 | 5290 | 13.09 | 12.49 | -- | -- | 15.81 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 58 | 5290 | -- | -- | 12.38 | 12.85 | 15.63 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | 12.93 | 12.39 | -- | -- | 15.68 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -- | -- | 12.22 | 12.57 | 15.41 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 122 | 5610 | 12.80 | 12.48 | -- | -- | 15.65 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 122 | 5610 | -- | -- | 12.19 | 12.57 | 15.39 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | 12.97 | 12.35 | -- | -- | 15.68 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -- | -- | 12.54 | 12.41 | 15.49 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 155 | 5775 | 17.80 | 17.32 | -- | -- | 20.58 | ≤ 22.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 155 | 5775 | -- | -- | 18.78 | 18.77 | 21.79 | ≤ 22.00 | Pass |
| Non-contiguous 80+80 MHz mode fall within same UNII band | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | 9.87 | 9.33 | -- | -- | 15.48 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -- | -- | 9.35 | 9.28 | | | |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -- | -- | 9.17 | 9.42 | 15.50 | ≤ 15.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | 9.98 | 9.32 | -- | -- | | | |

Note 1: Total Average Power (dBm) = 10*log {$10^{(\text{Ant 0 Average Power }/10)}$ + $10^{(\text{Ant 1 Average Power }/10)}$ + $10^{(\text{Ant 2 Average Power }/10)}$ +$10^{(\text{Ant 3 Average Power }/10)}$}.

Note 2: For 802.11ac-VHT80+80 mode fall within different UNII band:

Ant 0 & Ant 1: Total Average Power (dBm) = 10*log {$10^{(\text{Ant 0 Average Power }/10)}$ + $10^{(\text{Ant 1 Average Power }/10)}$} (dBm)

Ant 2 & Ant 3: Total Average Power (dBm) = 10*log {$10^{(\text{Ant 2 Average Power }/10)}$ + $10^{(\text{Ant 3 Average Power }/10)}$} (dBm)

For 802.11ac-VHT80+80 mode fall within same UNII band:

Total Average Power (dBm) = 10*log {$10^{(\text{Ant 0 Average Power }/10)}$ + $10^{(\text{Ant 1 Average Power }/10)}$ + $10^{(\text{Ant 2 Average Power }/10)}$ + $10^{(\text{Ant 3 Average Power }/10)}$}.

Note 3: Average Power Limit Calculation as below:

For 5150-5250MHz, 5725-5850MHz:

802.11ac-VHT20/ac-VHT40/ac-VHT80: Limit (dBm) = 30dBm - (14dBi +3.01dBi - 6dBi) = 18.99dBm.

802.11ac-VHT80+80: Limit (dBm) = 30dBm - (14dBi - 6dBi) = 22.00dBm.

For 5250-5350MHz, 5470-5725MHz:

802.11ac-VHT20/ac-VHT40/ac-VHT80: Limit (dBm) = 23.98dBm - (14dBi + 3.01dBi - 6dBi) = 12.97dBm.

802.11ac-VHT80+80: Limit (dBm) = 23.98dBm - (14dBi - 6dBi) = 15.98dBm.

## 7.5. Transmit Power Control

### 7.5.1.Test Limit

The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm.

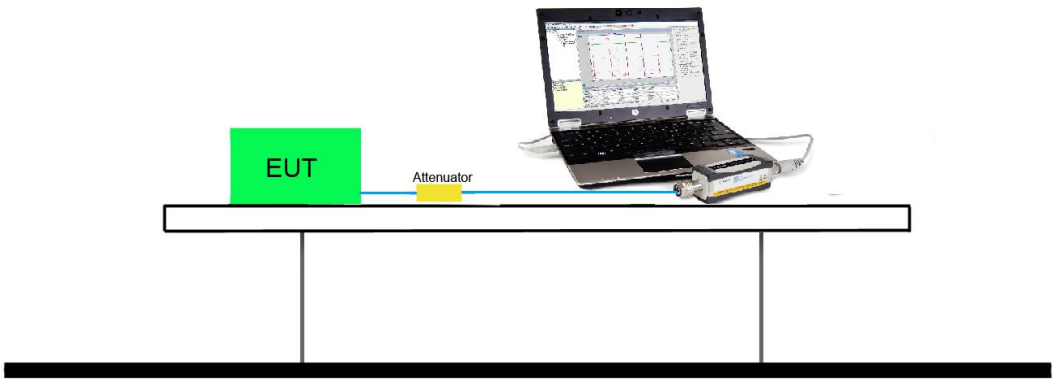
### 7.5.2.Test Procedure Used

KDB 789033 D02v01- Section E) 3) b) Method PM-G

### 7.5.3.Test Setting

Average power measurements were perform only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

### 7.5.4.Test Setup




### 7.5.5.Test Result

It gets addressed in the operational description.

## 7.6. Power Spectral Density Measurement

### 7.6.1.Test Limit

For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

If transmitting antennas of directional gain greater than 6dBi are used, the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

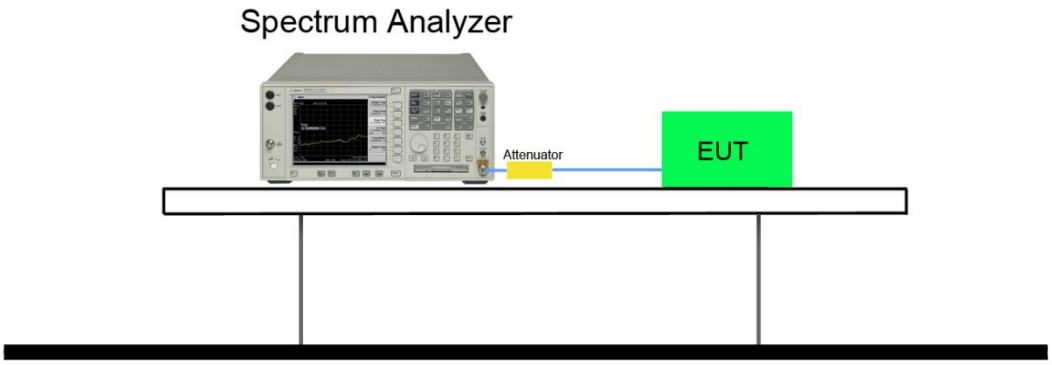
### 7.6.2.Test Procedure Used

KDB 789033 D02v02r01 - Section F

### 7.6.3.Test Setting

1. Analyzer was set to the center frequency of the UNII channel under investigation
2. Span was set to encompass the entire 26dB EBW of the signal.
3. RBW = 1MHz, if measurement bandwidth of Maximum PSD is specified in 500 kHz, RBW = 100 kHz
4. VBW = 3MHz
5. Number of sweep points ≥ 2 × (span / RBW)
6. Detector = power averaging (Average)
7. Sweep time = auto
8. Trigger = free run
9. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
10. Add 10*log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission). For example, add 10*log(1/0.25) = 6 dB if the duty cycle is 25 percent.
11. When the measurement bandwidth of Maximum PSD is specified in 500 kHz, add a constant factor 10*log(500kHz/100kHz) = 6.99 dB to the measured result.

### 7.6.4.Test Setup



### 7.6.5.Test Result

| Product | ACCESS POINT | Temperature | 24°C |
|---|---|---|---|
| Test Engineer | Kevin Ker | Relative Humidity | 59% |
| Test Site | SR2 | Test Date | 2018/02/08 |
| Test Item | Power Spectral Density (UNII-Band 1 & UNII-2A & UNII-2C) | | |
| Antenna Type | Omni Antenna (AP-ANT-20W) | | |

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 PSD (dBm/ MHz) | Ant 1 PSD (dBm/ MHz) | Ant 2 PSD (dBm/ MHz) | Ant 3 PSD (dBm/ MHz) | Duty Cycle (%) | Total PSD (dBm/ MHz) | PSD Limit (dBm/ MHz) | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ant 0 + 1 + 2 + 3 (CDD Mode) | | | | | | | | | | | |
| 11a | 6Mbps | 36 | 5180 | 8.45 | 8.20 | 8.20 | 8.29 | 97.18 | 14.43 | ≤ 14.98 | Pass |
| 11a | 6Mbps | 44 | 5220 | 8.76 | 8.25 | 8.61 | 8.61 | 97.18 | 14.71 | ≤ 14.98 | Pass |
| 11a | 6Mbps | 48 | 5240 | 8.72 | 8.43 | 8.24 | 8.33 | 97.18 | 14.58 | ≤ 14.98 | Pass |
| 11a | 6Mbps | 52 | 5260 | 2.56 | 2.74 | 2.27 | 2.32 | 97.18 | 8.62 | ≤ 8.98 | Pass |
| 11a | 6Mbps | 60 | 5300 | 2.74 | 2.66 | 2.55 | 2.67 | 97.18 | 8.80 | ≤ 8.98 | Pass |
| 11a | 6Mbps | 64 | 5320 | 2.87 | 2.43 | 2.50 | 2.22 | 97.18 | 8.66 | ≤ 8.98 | Pass |
| 11a | 6Mbps | 100 | 5500 | 2.21 | 2.70 | 1.90 | 2.34 | 97.18 | 8.44 | ≤ 8.98 | Pass |
| 11a | 6Mbps | 120 | 5600 | 2.33 | 2.77 | 2.30 | 2.78 | 97.18 | 8.70 | ≤ 8.98 | Pass |
| 11a | 6Mbps | 140 | 5700 | 2.12 | 2.13 | 2.11 | 2.74 | 97.18 | 8.43 | ≤ 8.98 | Pass |
| 11a | 6Mbps | 144 | 5720 | 2.94 | 2.63 | 2.29 | 2.94 | 97.18 | 8.85 | ≤ 8.98 | Pass |
| 11ac-VHT20 | MCS0 | 36 | 5180 | 8.90 | 8.34 | 8.59 | 8.82 | 98.23 | 14.69 | ≤ 14.98 | Pass |
| 11ac-VHT20 | MCS0 | 44 | 5220 | 8.71 | 8.41 | 8.61 | 8.55 | 98.23 | 14.59 | ≤ 14.98 | Pass |
| 11ac-VHT20 | MCS0 | 48 | 5240 | 8.90 | 8.56 | 8.57 | 8.57 | 98.23 | 14.67 | ≤ 14.98 | Pass |
| 11ac-VHT20 | MCS0 | 52 | 5260 | 2.50 | 2.49 | 2.16 | 2.60 | 98.23 | 8.46 | ≤ 8.98 | Pass |
| 11ac-VHT20 | MCS0 | 60 | 5300 | 2.93 | 2.56 | 2.31 | 2.78 | 98.23 | 8.67 | ≤ 8.98 | Pass |
| 11ac-VHT20 | MCS0 | 64 | 5320 | 2.89 | 2.48 | 2.63 | 2.33 | 98.23 | 8.61 | ≤ 8.98 | Pass |
| 11ac-VHT20 | MCS0 | 100 | 5500 | 2.29 | 2.33 | 2.16 | 2.66 | 98.23 | 8.38 | ≤ 8.98 | Pass |
| 11ac-VHT20 | MCS0 | 120 | 5600 | 2.27 | 2.72 | 2.26 | 2.70 | 98.23 | 8.51 | ≤ 8.98 | Pass |
| 11ac-VHT20 | MCS0 | 140 | 5700 | 2.32 | 2.25 | 2.12 | 2.73 | 98.23 | 8.38 | ≤ 8.98 | Pass |
| 11ac-VHT20 | MCS0 | 144 | 5720 | 2.49 | 2.32 | 2.07 | 2.79 | 98.23 | 8.45 | ≤ 8.98 | Pass |

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 PSD (dBm/ MHz) | Ant 1 PSD (dBm/ MHz) | Ant 2 PSD (dBm/ MHz) | Ant 3 PSD (dBm/ MHz) | Duty Cycle (%) | Total PSD (dBm/ MHz) | PSD Limit (dBm/ MHz) | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ant 0 + 1 + 2 + 3 (CDD Mode) | | | | | | | | | | | |
| 11ac-VHT40 | MCS0 | 38 | 5190 | 0.62 | 0.58 | 0.17 | 0.37 | 96.12 | 6.63 | ≤ 14.98 | Pass |
| 11ac-VHT40 | MCS0 | 46 | 5230 | 7.76 | 7.61 | 7.19 | 7.20 | 96.12 | 13.64 | ≤ 14.98 | Pass |
| 11ac-VHT40 | MCS0 | 54 | 5270 | 2.31 | 2.09 | 2.11 | 2.14 | 96.12 | 8.36 | ≤ 8.98 | Pass |
| 11ac-VHT40 | MCS0 | 62 | 5310 | 2.10 | 2.07 | 1.87 | 1.82 | 96.12 | 8.16 | ≤ 8.98 | Pass |
| 11ac-VHT40 | MCS0 | 102 | 5510 | 2.86 | 2.57 | 2.40 | 2.81 | 96.12 | 8.86 | ≤ 8.98 | Pass |
| 11ac-VHT40 | MCS0 | 118 | 5590 | 2.84 | 2.82 | 2.14 | 2.57 | 96.12 | 8.79 | ≤ 8.98 | Pass |
| 11ac-VHT40 | MCS0 | 134 | 5670 | 2.52 | 2.22 | 2.31 | 2.20 | 96.12 | 8.51 | ≤ 8.98 | Pass |
| 11ac-VHT40 | MCS0 | 142 | 5710 | 2.65 | 2.20 | 2.15 | 2.65 | 96.12 | 8.61 | ≤ 8.98 | Pass |
| 11ac-VHT80 | MCS0 | 42 | 5210 | -5.05 | -5.64 | -5.73 | -5.40 | 93.75 | 0.86 | ≤ 14.98 | Pass |
| 11ac-VHT80 | MCS0 | 58 | 5290 | -1.68 | -1.87 | -1.97 | -1.42 | 93.75 | 4.57 | ≤ 8.98 | Pass |
| 11ac-VHT80 | MCS0 | 106 | 5530 | -2.61 | -2.39 | -2.46 | -2.81 | 93.75 | 3.74 | ≤ 8.98 | Pass |
| 11ac-VHT80 | MCS0 | 122 | 5610 | 0.61 | 0.34 | 0.08 | 0.63 | 93.75 | 6.72 | ≤ 8.98 | Pass |
| 11ac-VHT80 | MCS0 | 138 | 5690 | 0.60 | 0.19 | 0.08 | 0.26 | 93.75 | 6.59 | ≤ 8.98 | Pass |
| Non-contiguous 80+80 MHz mode fall within different UNII band | | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | -2.37 | -2.75 | -- | -- | 93.75 | 0.73 | ≤ 17.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | -- | -- | -2.21 | -1.91 | 93.75 | 1.23 | ≤ 17.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 58 | 5290 | 1.38 | 1.32 | -- | -- | 93.75 | 4.64 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 58 | 5290 | -- | -- | 1.03 | 1.36 | 93.75 | 4.49 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -0.82 | -0.72 | -- | -- | 93.75 | 2.52 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -- | -- | -0.19 | -0.71 | 93.75 | 2.85 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 122 | 5610 | 3.47 | 3.71 | -- | -- | 93.75 | 6.88 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 122 | 5610 | -- | -- | 2.89 | 3.83 | 93.75 | 6.68 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | 3.62 | 3.59 | -- | -- | 93.75 | 6.90 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -- | -- | 2.96 | 3.74 | 93.75 | 6.66 | ≤ 11.00 | Pass |
| Non-contiguous 80+80 MHz mode fall within same UNII band | | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -0.28 | -0.35 | -- | -- | 93.75 | 5.72 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -- | -- | -0.93 | -0.82 | | | | |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -- | -- | -0.06 | 0.25 | 93.75 | 6.48 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | 0.61 | -0.11 | -- | -- | | | | |

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 PSD (dBm/ MHz) | Ant 1 PSD (dBm/ MHz) | Ant 2 PSD (dBm/ MHz) | Ant 3 PSD (dBm/ MHz) | Duty Cycle (%) | Total PSD (dBm/ MHz) | PSD Limit (dBm/ MHz) | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Contiguous 80+80 MHz mode | | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | -1.88 | -2.02 | -- | -- | 96.71 | 1.21 | ≤ 17.00 | Pass |
| | MCS0 | 58 | 5290 | -- | -- | -2.44 | -2.22 | 96.71 | 0.83 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | 0.44 | 0.19 | -- | -- | 96.71 | 6.54 | ≤ 11.00 | Pass |
| | MCS0 | 122 | 5610 | -- | -- | 0.21 | 0.64 | | | | |

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$ + $10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/MHz).

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$ + $10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/MHz) + 10*log (1/Duty Cycle).

Note 3: For Non-contiguous 80+80 MHz mode fall within different UNII band:

Ant 0 & Ant 1: Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$} (dBm/MHz) + 10*log (1/Duty Cycle).

Ant 2 & Ant 3: Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/MHz) + 10*log (1/Duty Cycle).

For Non-contiguous 80+80 MHz mode fall within same UNII band:

Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$ + $10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/MHz) + 10*log (1/Duty Cycle).

Note 4: For 802.11ac-VHT80+80 Contiguous Mode:

5210MHz Fall within UNII-1:

Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$} (dBm/MHz) + 10*log (1/Duty Cycle).

5290MHz Fall within UNII-2A:

Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/MHz) + 10*log (1/Duty Cycle).

5530MHz & 5610MHz Fall within UNII-2C:

Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$ + $10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/MHz) + 10*log (1/Duty Cycle).

Note 5: PSD Limit Calculation as below:

For 5150-5250MHz:

802.11a/ac-VHT20/ac-VHT40/ac-VHT80: Limit (dBm/MHz) = 17dBm/MHz - (8.02dBi - 6dBi) = 14.98 dBm/MHz.

802.11ac-VHT80+80: Limit (dBm/MHz) = 17.00 dBm/MHz.

For 5250-5350MHz & 5470-5725MHz:

802.11a/ac-VHT20/ac-VHT40/ac-VHT80: Limit (dBm/MHz) = 11dBm/MHz - (8.02dBi - 6dBi) = 8.98 dBm/MHz.

802.11ac-VHT80+80: Limit (dBm/MHz) = 11.00 dBm/MHz.

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 PSD (dBm/ MHz) | Ant 1 PSD (dBm/ MHz) | Ant 2 PSD (dBm/ MHz) | Ant 3 PSD (dBm/ MHz) | Duty Cycle (%) | Total PSD (dBm/ MHz) | PSD Limit (dBm/ MHz) | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ant 0 + 1 + 2 + 3 (Beam-Forming Mode) | | | | | | | | | | | |
| 11ac-VHT20 | MCS0 | 36 | 5180 | 8.90 | 8.34 | 8.59 | 8.82 | 98.23 | 14.69 | ≤ 14.98 | Pass |
| 11ac-VHT20 | MCS0 | 44 | 5220 | 8.71 | 8.41 | 8.61 | 8.55 | 98.23 | 14.59 | ≤ 14.98 | Pass |
| 11ac-VHT20 | MCS0 | 48 | 5240 | 8.90 | 8.56 | 8.57 | 8.57 | 98.23 | 14.67 | ≤ 14.98 | Pass |
| 11ac-VHT20 | MCS0 | 52 | 5260 | 2.50 | 2.49 | 2.16 | 2.60 | 98.23 | 8.46 | ≤ 8.98 | Pass |
| 11ac-VHT20 | MCS0 | 60 | 5300 | 2.93 | 2.56 | 2.31 | 2.78 | 98.23 | 8.67 | ≤ 8.98 | Pass |
| 11ac-VHT20 | MCS0 | 64 | 5320 | 2.89 | 2.48 | 2.63 | 2.33 | 98.23 | 8.61 | ≤ 8.98 | Pass |
| 11ac-VHT20 | MCS0 | 100 | 5500 | 2.29 | 2.33 | 2.16 | 2.66 | 98.23 | 8.38 | ≤ 8.98 | Pass |
| 11ac-VHT20 | MCS0 | 120 | 5600 | 2.27 | 2.72 | 2.26 | 2.70 | 98.23 | 8.51 | ≤ 8.98 | Pass |
| 11ac-VHT20 | MCS0 | 140 | 5700 | 2.32 | 2.25 | 2.12 | 2.73 | 98.23 | 8.38 | ≤ 8.98 | Pass |
| 11ac-VHT20 | MCS0 | 144 | 5720 | 2.49 | 2.32 | 2.07 | 2.79 | 98.23 | 8.45 | ≤ 8.98 | Pass |
| 11ac-VHT40 | MCS0 | 38 | 5190 | 6.91 | 6.55 | 7.05 | 6.61 | 96.12 | 12.98 | ≤ 14.98 | Pass |
| 11ac-VHT40 | MCS0 | 46 | 5230 | 7.99 | 7.21 | 7.29 | 7.28 | 96.12 | 13.65 | ≤ 14.98 | Pass |
| 11ac-VHT40 | MCS0 | 54 | 5270 | 1.46 | 1.26 | 0.94 | 1.01 | 96.12 | 7.36 | ≤ 8.98 | Pass |
| 11ac-VHT40 | MCS0 | 62 | 5310 | 1.33 | 1.13 | 0.90 | 1.07 | 96.12 | 7.30 | ≤ 8.98 | Pass |
| 11ac-VHT40 | MCS0 | 102 | 5510 | 1.80 | 1.60 | 1.28 | 1.59 | 96.12 | 7.76 | ≤ 8.98 | Pass |
| 11ac-VHT40 | MCS0 | 118 | 5590 | 1.98 | 1.88 | 1.72 | 1.99 | 96.12 | 8.09 | ≤ 8.98 | Pass |
| 11ac-VHT40 | MCS0 | 134 | 5670 | 1.88 | 1.56 | 1.72 | 1.85 | 96.12 | 7.95 | ≤ 8.98 | Pass |
| 11ac-VHT40 | MCS0 | 142 | 5710 | 1.76 | 1.31 | 1.07 | 1.94 | 96.12 | 7.73 | ≤ 8.98 | Pass |
| 11ac-VHT80 | MCS0 | 42 | 5210 | 1.22 | 1.12 | 0.91 | 0.52 | 93.75 | 7.25 | ≤ 14.98 | Pass |
| 11ac-VHT80 | MCS0 | 58 | 5290 | 2.26 | -2.16 | -2.58 | -2.48 | 93.75 | 5.61 | ≤ 8.98 | Pass |
| 11ac-VHT80 | MCS0 | 106 | 5530 | -1.57 | -1.61 | -2.38 | -1.81 | 93.75 | 4.47 | ≤ 8.98 | Pass |
| 11ac-VHT80 | MCS0 | 122 | 5610 | -1.42 | -1.53 | -1.96 | -1.64 | 93.75 | 4.67 | ≤ 8.98 | Pass |
| 11ac-VHT80 | MCS0 | 138 | 5690 | -1.17 | -1.74 | -1.92 | -1.84 | 93.75 | 4.64 | ≤ 8.98 | Pass |

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 PSD (dBm/ MHz) | Ant 1 PSD (dBm/ MHz) | Ant 2 PSD (dBm/ MHz) | Ant 3 PSD (dBm/ MHz) | Duty Cycle (%) | Total PSD (dBm/ MHz) | PSD Limit (dBm/ MHz) | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Non-contiguous 80+80 MHz mode fall within different UNII band | | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | 3.29 | 2.77 | -- | -- | 93.75 | 6.33 | ≤ 17.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | -- | -- | 4.99 | 4.56 | 93.75 | 8.07 | ≤ 17.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 58 | 5290 | 1.12 | 0.86 | -- | -- | 93.75 | 4.28 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 58 | 5290 | -- | -- | 0.80 | 1.10 | 93.75 | 4.24 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | 1.32 | 1.12 | -- | -- | 93.75 | 4.51 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -- | -- | 1.13 | 1.44 | 93.75 | 4.58 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 122 | 5610 | 1.68 | 1.47 | -- | -- | 93.75 | 4.87 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 122 | 5610 | -- | -- | 1.09 | 1.74 | 93.75 | 4.72 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | 1.49 | 1.00 | -- | -- | 93.75 | 4.54 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -- | -- | 1.33 | 1.48 | 93.75 | 4.70 | ≤ 11.00 | Pass |
| Non-contiguous 80+80 MHz mode fall within same UNII band | | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -1.77 | -2.09 | -- | -- | 93.75 | 4.56 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -- | -- | -1.84 | -1.31 | | | | |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -- | -- | -2.52 | -1.68 | 93.75 | 4.41 | ≤ 11.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -1.60 | -1.82 | -- | -- | | | | |

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD}/10)}$ + $10^{(\text{Ant 1 PSD}/10)}$ + $10^{(\text{Ant 2 PSD}/10)}$ + $10^{(\text{Ant 3 PSD}/10)}$} (dBm/MHz).

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD}/10)}$ + $10^{(\text{Ant 1 PSD}/10)}$ + $10^{(\text{Ant 2 PSD}/10)}$ + $10^{(\text{Ant 3 PSD}/10)}$} (dBm/MHz) + 10*log (1/Duty Cycle).

Note 3: For Non-contiguous 80+80 MHz mode fall within different UNII band:

Ant 0 & Ant 1: Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD}/10)}$ + $10^{(\text{Ant 1 PSD}/10)}$} (dBm/MHz) + 10*log (1/Duty Cycle).

Ant 2 & Ant 3: Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 2 PSD}/10)}$ + $10^{(\text{Ant 3 PSD}/10)}$} (dBm/MHz) + 10*log (1/Duty Cycle).

For Non-contiguous 80+80 MHz mode fall within same UNII band:

Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD}/10)}$ + $10^{(\text{Ant 1 PSD}/10)}$ + $10^{(\text{Ant 2 PSD}/10)}$ + $10^{(\text{Ant 3 PSD}/10)}$} (dBm/MHz) + 10*log (1/Duty Cycle).

Note 4: PSD Limit Calculation as below:

For 5150-5250MHz:

802.11ac-VHT20/ac-VHT40/ac-VHT80: Limit (dBm/MHz) = 17dBm/MHz - (8.02dBi - 6dBi) = 14.98 dBm/MHz.

802.11ac-VHT80+80: Limit (dBm/MHz) = 17.00 dBm/MHz.

For 5250-5350MHz & 5470-5725MHz:

802.11ac-VHT20/ac-VHT40/ac-VHT80: Limit (dBm/MHz) = 11dBm/MHz - (8.02dBi - 6dBi) = 8.98 dBm/MHz.

802.11ac-VHT80+80: Limit (dBm/MHz) = 11.00 dBm/MHz.

| Product | ACCESS POINT | Temperature | 22°C |
|---|---|---|---|
| Test Engineer | Kevin Ker | Relative Humidity | 54% |
| Test Site | SR2 | Test Date | 2018/02/08 |
| Test Item | Power Spectral Density (UNII-Band 3) | | |
| Antenna Type | Omin Antenna (AP-ANT-20W) | | |

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 PSD (dBm/ 100kHz) | Ant 1 PSD (dBm/ 100kHz) | Ant 2 PSD (dBm/ 100kHz) | Ant 3 PSD (dBm/ 100kHz) | Duty Cycle (%) | Constant Factor | Total PSD (dBm/ 500kHz) | Limit (dBm/ 500kHz) | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ant 0 + 1 + 2 + 3 (CDD Mode) | | | | | | | | | | | | |
| 11a | 6Mbps | 149 | 5745 | 2.01 | 1.76 | 2.03 | 1.95 | 97.18 | 6.99 | 15.07 | ≤ 27.98 | Pass |
| 11a | 6Mbps | 157 | 5785 | 2.21 | 1.94 | 2.27 | 2.31 | 97.18 | 6.99 | 15.32 | ≤ 27.98 | Pass |
| 11a | 6Mbps | 165 | 5825 | 2.58 | 1.64 | 1.73 | 2.37 | 97.18 | 6.99 | 15.23 | ≤ 27.98 | Pass |
| 11ac-VHT20 | MCS0 | 149 | 5745 | 1.98 | 1.29 | 2.16 | 1.76 | 98.23 | 6.99 | 14.82 | ≤ 27.98 | Pass |
| 11ac-VHT20 | MCS0 | 157 | 5785 | 2.11 | 1.38 | 2.55 | 1.91 | 98.23 | 6.99 | 15.02 | ≤ 27.98 | Pass |
| 11ac-VHT20 | MCS0 | 165 | 5825 | 1.84 | 1.86 | 1.68 | 1.77 | 98.23 | 6.99 | 14.80 | ≤ 27.98 | Pass |
| 11ac-VHT40 | MCS0 | 151 | 5755 | -0.81 | -1.24 | -1.18 | -0.82 | 96.12 | 6.99 | 12.17 | ≤ 27.98 | Pass |
| 11ac-VHT40 | MCS0 | 159 | 5795 | -0.79 | -0.99 | -1.26 | -1.05 | 96.12 | 6.99 | 12.16 | ≤ 27.98 | Pass |
| 11ac-VHT80 | MCS0 | 155 | 5775 | 2.83 | 2.42 | 2.88 | 2.70 | 93.75 | 6.99 | 16.00 | ≤ 27.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 155 | 5775 | 4.28 | 4.10 | -- | -- | 93.75 | 6.99 | 14.47 | ≤ 30.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 155 | 5775 | -- | -- | 4.02 | 4.60 | 93.75 | 6.99 | 14.60 | ≤ 30.00 | Pass |

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/500kHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$ + $10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/100kHz) + Constant Factor.

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/500kHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$ + $10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/100kHz) + Constant Factor + 10*log (1/Duty Cycle).

Note 3: For 802.11ac-VHT80+80:

Ant 0 & Ant 1: Total PSD (dBm/500kHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$} (dBm/100kHz) + Constant Factor + 10*log (1/Duty Cycle).

Ant 2 & Ant 3: Total PSD (dBm/500kHz) = 10*log {$10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/100kHz) + Constant Factor + 10*log (1/Duty Cycle).

Note 4: PSD Limit Calculation as below:

For 802.11a/ac-VHT20/ac-VHT40/ac-VHT80: Limit (dBm/500kHz) = 30dBm/500kHz - (8.02dBi - 6dBi) = 27.98 dBm/500kHz.

For 802.11ac-VHT80+80: Limit (dBm/500kHz) = 30.00 dBm/500kHz.

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 PSD (dBm/ 100kHz) | Ant 1 PSD (dBm/ 100kHz) | Ant 2 PSD (dBm/ 100kHz) | Ant 3 PSD (dBm/ 100kHz) | Duty Cycle (%) | Constant Factor | Total PSD (dBm/ 500kHz) | Limit (dBm/ 500kHz) | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ant 0 + 1 + 2 + 3 (Beam-Forming Mode) | | | | | | | | | | | | |
| 11ac-VHT20 | MCS0 | 149 | 5745 | 1.82 | 0.96 | 1.57 | 1.37 | 98.23 | 6.99 | 14.45 | ≤ 27.98 | Pass |
| 11ac-VHT20 | MCS0 | 157 | 5785 | 1.68 | 0.80 | 1.29 | 1.89 | 98.23 | 6.99 | 14.44 | ≤ 27.98 | Pass |
| 11ac-VHT20 | MCS0 | 165 | 5825 | 1.25 | 0.82 | 1.35 | 1.68 | 98.23 | 6.99 | 14.30 | ≤ 27.98 | Pass |
| 11ac-VHT40 | MCS0 | 151 | 5755 | -0.97 | -1.21 | -1.35 | -0.69 | 96.12 | 6.99 | 12.13 | ≤ 27.98 | Pass |
| 11ac-VHT40 | MCS0 | 159 | 5795 | -0.64 | -1.07 | -1.18 | -0.85 | 96.12 | 6.99 | 12.25 | ≤ 27.98 | Pass |
| 11ac-VHT80 | MCS0 | 155 | 5775 | -4.65 | -4.91 | -5.20 | -4.55 | 93.75 | 6.99 | 8.47 | ≤ 27.98 | Pass |
| 11ac-VHT80+80 | MCS0 | 155 | 5775 | -4.07 | -4.82 | -- | -- | 93.75 | 6.99 | 5.85 | ≤ 30.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 155 | 5775 | -- | -- | -3.93 | -3.87 | 93.75 | 6.99 | 6.38 | ≤ 30.00 | Pass |

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/500kHz) = 10*log {$10^{(\text{Ant 0 PSD}/10)}$ + $10^{(\text{Ant 1 PSD}/10)}$ + $10^{(\text{Ant 2 PSD}/10)}$ + $10^{(\text{Ant 3 PSD}/10)}$} (dBm/100kHz) + Constant Factor.

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/500kHz) = 10*log {$10^{(\text{Ant 0 PSD}/10)}$ + $10^{(\text{Ant 1 PSD}/10)}$ + $10^{(\text{Ant 2 PSD}/10)}$ + $10^{(\text{Ant 3 PSD}/10)}$} (dBm/100kHz) + Constant Factor + 10*log (1/Duty Cycle).

Note 3: For 802.11ac-VHT80+80:

Ant 0 & Ant 1: Total PSD (dBm/500kHz) = 10*log {$10^{(\text{Ant 0 PSD}/10)}$ + $10^{(\text{Ant 1 PSD}/10)}$} (dBm/100kHz) + Constant Factor + 10*log (1/Duty Cycle).

Ant 2 & Ant 3: Total PSD (dBm/500kHz) = 10*log {$10^{(\text{Ant 2 PSD}/10)}$ + $10^{(\text{Ant 3 PSD}/10)}$} (dBm/100kHz) + Constant Factor + 10*log (1/Duty Cycle).

Note 4: PSD Limit Calculation as below:

For 802.11ac-VHT20/ac-VHT40/ac-VHT80: Limit (dBm/500kHz) = 30dBm/500kHz - (8.02dBi - 6dBi) = 27.98dBm/500kHz.

For 802.11ac-VHT80+80: Limit (dBm/500kHz) = 30.00dBm/500kHz.

| Product | ACCESS POINT | Temperature | 24°C |
|---|---|---|---|
| Test Engineer | Kevin Ker | Relative Humidity | 59% |
| Test Site | SR2 | Test Date | 2018/02/08 |
| Test Item | Power Spectral Density (UNII-Band 1 & UNII-2A & UNII-2C) | | |
| Antenna Type | Directional Antenna (ANT-4x4-5314) | | |

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 PSD (dBm/ MHz) | Ant 1 PSD (dBm/ MHz) | Ant 2 PSD (dBm/ MHz) | Ant 3 PSD (dBm/ MHz) | Duty Cycle (%) | Total PSD (dBm/ MHz) | PSD Limit (dBm/ MHz) | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ant 0 + 1 + 2 + 3 (CDD Mode) | | | | | | | | | | | |
| 11a | 6Mbps | 36 | 5180 | -0.45 | -0.73 | -0.66 | -0.50 | 97.18 | 5.56 | ≤ 5.99 | Pass |
| 11a | 6Mbps | 44 | 5220 | -0.25 | -0.35 | -0.26 | -0.19 | 97.18 | 5.88 | ≤ 5.99 | Pass |
| 11a | 6Mbps | 48 | 5240 | -0.37 | -0.40 | -0.68 | -0.64 | 97.18 | 5.62 | ≤ 5.99 | Pass |
| 11a | 6Mbps | 52 | 5260 | -6.21 | -6.28 | -6.76 | -6.51 | 97.18 | -0.29 | ≤ -0.01 | Pass |
| 11a | 6Mbps | 60 | 5300 | -6.63 | -6.36 | -7.15 | -6.51 | 97.18 | -0.51 | ≤ -0.01 | Pass |
| 11a | 6Mbps | 64 | 5320 | -6.44 | -6.57 | -6.44 | -6.66 | 97.18 | -0.38 | ≤ -0.01 | Pass |
| 11a | 6Mbps | 100 | 5500 | -6.74 | -6.61 | -6.93 | -6.47 | 97.18 | -0.54 | ≤ -0.01 | Pass |
| 11a | 6Mbps | 120 | 5600 | -6.60 | -6.40 | -6.96 | -6.36 | 97.18 | -0.43 | ≤ -0.01 | Pass |
| 11a | 6Mbps | 140 | 5700 | -6.44 | -6.53 | -7.05 | -6.77 | 97.18 | -0.55 | ≤ -0.01 | Pass |
| 11a | 6Mbps | 144 | 5720 | -6.20 | -6.45 | -6.52 | -6.09 | 97.18 | -0.17 | ≤ -0.01 | Pass |
| 11ac-VHT20 | MCS0 | 36 | 5180 | -0.08 | -0.37 | -0.16 | -0.19 | 98.62 | 5.82 | ≤ 5.99 | Pass |
| 11ac-VHT20 | MCS0 | 44 | 5220 | -0.24 | -0.42 | -0.40 | -0.33 | 98.62 | 5.67 | ≤ 5.99 | Pass |
| 11ac-VHT20 | MCS0 | 48 | 5240 | -0.17 | -0.39 | -0.55 | -0.29 | 98.62 | 5.67 | ≤ 5.99 | Pass |
| 11ac-VHT20 | MCS0 | 52 | 5260 | -6.12 | -6.23 | -6.46 | -6.33 | 98.62 | -0.26 | ≤ -0.01 | Pass |
| 11ac-VHT20 | MCS0 | 60 | 5300 | -6.29 | -6.62 | -6.80 | -6.69 | 98.62 | -0.58 | ≤ -0.01 | Pass |
| 11ac-VHT20 | MCS0 | 64 | 5320 | -6.23 | -6.18 | -6.37 | -6.38 | 98.62 | -0.27 | ≤ -0.01 | Pass |
| 11ac-VHT20 | MCS0 | 100 | 5500 | -6.28 | -6.23 | -6.73 | -6.16 | 98.62 | -0.32 | ≤ -0.01 | Pass |
| 11ac-VHT20 | MCS0 | 120 | 5600 | -6.26 | -6.07 | -6.65 | -6.21 | 98.62 | -0.27 | ≤ -0.01 | Pass |
| 11ac-VHT20 | MCS0 | 140 | 5700 | -6.26 | -6.24 | -6.71 | -6.30 | 98.62 | -0.35 | ≤ -0.01 | Pass |
| 11ac-VHT20 | MCS0 | 144 | 5720 | -6.26 | -6.58 | -6.79 | -6.32 | 98.62 | -0.46 | ≤ -0.01 | Pass |

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 PSD (dBm/ MHz) | Ant 1 PSD (dBm/ MHz) | Ant 2 PSD (dBm/ MHz) | Ant 3 PSD (dBm/ MHz) | Duty Cycle (%) | Total PSD (dBm/ MHz) | PSD Limit (dBm/ MHz) | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ant 0 + 1 + 2 + 3 (CDD Mode) | | | | | | | | | | | |
| 11ac-VHT40 | MCS0 | 38 | 5190 | -2.17 | -2.48 | -2.25 | -2.83 | 96.12 | 3.77 | ≤ 5.99 | Pass |
| 11ac-VHT40 | MCS0 | 46 | 5230 | -0.15 | -0.87 | -0.44 | -0.47 | 96.12 | 5.72 | ≤ 5.99 | Pass |
| 11ac-VHT40 | MCS0 | 54 | 5270 | -6.31 | -6.54 | -6.86 | -6.75 | 96.12 | -0.42 | ≤ -0.01 | Pass |
| 11ac-VHT40 | MCS0 | 62 | 5310 | -6.66 | -6.55 | -7.20 | -6.74 | 96.12 | -0.59 | ≤ -0.01 | Pass |
| 11ac-VHT40 | MCS0 | 102 | 5510 | -6.16 | -6.31 | -6.98 | -6.32 | 96.12 | -0.24 | ≤ -0.01 | Pass |
| 11ac-VHT40 | MCS0 | 118 | 5590 | -6.51 | -6.14 | -6.85 | -6.59 | 96.12 | -0.32 | ≤ -0.01 | Pass |
| 11ac-VHT40 | MCS0 | 134 | 5670 | -6.50 | -6.27 | -7.18 | -6.79 | 96.12 | -0.48 | ≤ -0.01 | Pass |
| 11ac-VHT40 | MCS0 | 142 | 5710 | -6.50 | -6.83 | -7.17 | -6.49 | 96.12 | -0.55 | ≤ -0.01 | Pass |
| 11ac-VHT80 | MCS0 | 42 | 5210 | -8.12 | -8.35 | -8.46 | -8.77 | 93.75 | -2.12 | ≤ 5.99 | Pass |
| 11ac-VHT80 | MCS0 | 58 | 5290 | -7.55 | -7.48 | -7.84 | -7.56 | 93.75 | -1.30 | ≤ -0.01 | Pass |
| 11ac-VHT80 | MCS0 | 106 | 5530 | -6.81 | -6.93 | -7.75 | -6.76 | 93.75 | -0.74 | ≤ -0.01 | Pass |
| 11ac-VHT80 | MCS0 | 122 | 5610 | -7.52 | -7.41 | -8.42 | -7.41 | 93.75 | -1.37 | ≤ -0.01 | Pass |
| 11ac-VHT80 | MCS0 | 138 | 5690 | -7.35 | -7.72 | -7.96 | -7.85 | 93.75 | -1.41 | ≤ -0.01 | Pass |
| Non-contiguous 80+80 MHz mode fall within different UNII band | | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | -4.73 | -4.93 | -- | -- | 93.75 | -1.54 | ≤ 9.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | -- | -- | -4.06 | -4.88 | 93.75 | -1.16 | ≤ 9.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 58 | 5290 | -4.28 | -4.46 | -- | -- | 93.75 | -1.08 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 58 | 5290 | -- | -- | -4.96 | -4.39 | 93.75 | -1.38 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -3.88 | -3.88 | -- | -- | 93.75 | -0.59 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -- | -- | -4.75 | -3.62 | 93.75 | -0.86 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 122 | 5610 | -4.78 | -4.84 | -- | -- | 93.75 | -1.52 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 122 | 5610 | -- | -- | -4.86 | -4.00 | 93.75 | -1.12 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -4.66 | -4.72 | -- | -- | 93.75 | -1.40 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -- | -- | -4.97 | -4.39 | 93.75 | -1.38 | ≤ 3.00 | Pass |
| Non-contiguous 80+80 MHz mode fall within same UNII band | | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -7.05 | -6.83 | -- | -- | 93.75 | -1.23 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -- | -- | -8.48 | -7.97 | | | | |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -- | -- | -7.69 | -7.07 | 93.75 | -1.26 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -7.54 | -7.99 | -- | -- | | | | |

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 PSD (dBm/ MHz) | Ant 1 PSD (dBm/ MHz) | Ant 2 PSD (dBm/ MHz) | Ant 3 PSD (dBm/ MHz) | Duty Cycle (%) | Total PSD (dBm/ MHz) | PSD Limit (dBm/ MHz) | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11ac-VHT80+80 (Contiguous 80+80 MHz mode) | | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | -6.79 | -6.50 | -- | -- | 96.71 | -3.49 | ≤ 9.00 | Pass |
| | MCS0 | 58 | 5290 | -- | -- | -7.23 | -7.22 | 96.71 | -4.07 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -7.11 | -6.61 | -- | -- | 96.71 | -1.17 | ≤ 3.00 | Pass |
| | MCS0 | 122 | 5610 | -- | -- | -8.43 | -7.40 | | | | |

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$ + $10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/MHz).

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$ + $10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/MHz) + 10*log (1/Duty Cycle).

Note 3: For Non-contiguous 80+80 MHz mode fall within different UNII band:

Ant 0 & Ant 1: Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$} (dBm/MHz) + 10*log (1/Duty Cycle).

Ant 2 & Ant 3: Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/MHz) + 10*log (1/Duty Cycle).

For Non-contiguous 80+80 MHz mode fall within same UNII band:

Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$ + $10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/MHz) + 10*log (1/Duty Cycle).

Note 4: For 802.11ac-VHT80+80 Contiguous Mode:

5210MHz Fall within UNII-1:

Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$} + 10*log (1/Duty Cycle).

5290MHz Fall within UNII-2A:

Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} + 10*log (1/Duty Cycle).

5530MHz & 5610MHz Fall within UNII-2C:

Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$ + $10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} + 10*log (1/Duty Cycle).

Note 5: PSD Limit Calculation as below:

For 5150-5250MHz:

802.11a/ac-VHT20/ac-VHT40/ac-VHT80: Limit (dBm/MHz) = 17dBm/MHz - (17.01dBi - 6dBi) = 5.99 dBm/MHz.

802.11ac-VHT80+80: Limit (dBm/MHz) = 17dBm/MHz - (14dBi - 6dBi) = 9.00 dBm/MHz.

For 5250-5350MHz & 5470-5725MHz:

802.11a/ac-VHT20/ac-VHT40/ac-VHT80: Limit (dBm/MHz) = 11dBm/MHz - (17.01dBi - 6dBi) = -0.01 dBm/MHz.

802.11ac-VHT80+80: Limit (dBm/MHz) = 11dBm/MHz - (14dBi - 6dBi) = 3.00 dBm/MHz.

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 PSD (dBm/ MHz) | Ant 1 PSD (dBm/ MHz) | Ant 2 PSD (dBm/ MHz) | Ant 3 PSD (dBm/ MHz) | Duty Cycle (%) | Total PSD (dBm/ MHz) | PSD Limit (dBm/ MHz) | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ant 0 + 1 + 2 + 3 (Beam-Forming Mode) | | | | | | | | | | | |
| 11ac-VHT20 | MCS0 | 36 | 5180 | -0.08 | -0.37 | -0.16 | -0.19 | 98.23 | 5.82 | ≤ 5.99 | Pass |
| 11ac-VHT20 | MCS0 | 44 | 5220 | -0.24 | -0.42 | -0.40 | -0.33 | 98.23 | 5.67 | ≤ 5.99 | Pass |
| 11ac-VHT20 | MCS0 | 48 | 5240 | -0.17 | -0.39 | -0.55 | -0.29 | 98.23 | 5.67 | ≤ 5.99 | Pass |
| 11ac-VHT20 | MCS0 | 52 | 5260 | -6.12 | -6.23 | -6.46 | -6.33 | 98.23 | -0.26 | ≤ -0.01 | Pass |
| 11ac-VHT20 | MCS0 | 60 | 5300 | -6.29 | -6.62 | -6.80 | -6.69 | 98.23 | -0.58 | ≤ -0.01 | Pass |
| 11ac-VHT20 | MCS0 | 64 | 5320 | -6.23 | -6.18 | -6.37 | -6.38 | 98.23 | -0.27 | ≤ -0.01 | Pass |
| 11ac-VHT20 | MCS0 | 100 | 5500 | -6.28 | -6.23 | -6.73 | -6.16 | 98.23 | -0.32 | ≤ -0.01 | Pass |
| 11ac-VHT20 | MCS0 | 120 | 5600 | -6.26 | -6.07 | -6.65 | -6.21 | 98.23 | -0.27 | ≤ -0.01 | Pass |
| 11ac-VHT20 | MCS0 | 140 | 5700 | -6.26 | -6.24 | -6.71 | -6.30 | 98.23 | -0.35 | ≤ -0.01 | Pass |
| 11ac-VHT20 | MCS0 | 144 | 5720 | -6.26 | -6.58 | -6.79 | -6.32 | 98.23 | -0.46 | ≤ -0.01 | Pass |
| 11ac-VHT40 | MCS0 | 38 | 5190 | -2.17 | -2.48 | -2.25 | -2.83 | 96.12 | 3.77 | ≤ 5.99 | Pass |
| 11ac-VHT40 | MCS0 | 46 | 5230 | -0.15 | -0.87 | -0.44 | -0.47 | 96.12 | 5.72 | ≤ 5.99 | Pass |
| 11ac-VHT40 | MCS0 | 54 | 5270 | -6.31 | -6.54 | -6.86 | -6.75 | 96.12 | -0.42 | ≤ -0.01 | Pass |
| 11ac-VHT40 | MCS0 | 62 | 5310 | -6.66 | -6.55 | -7.20 | -6.74 | 96.12 | -0.59 | ≤ -0.01 | Pass |
| 11ac-VHT40 | MCS0 | 102 | 5510 | -6.16 | -6.31 | -6.98 | -6.32 | 96.12 | -0.24 | ≤ -0.01 | Pass |
| 11ac-VHT40 | MCS0 | 118 | 5590 | -6.51 | -6.14 | -6.85 | -6.59 | 96.12 | -0.32 | ≤ -0.01 | Pass |
| 11ac-VHT40 | MCS0 | 134 | 5670 | -6.50 | -6.27 | -7.18 | -6.79 | 96.12 | -0.48 | ≤ -0.01 | Pass |
| 11ac-VHT40 | MCS0 | 142 | 5710 | -6.50 | -6.83 | -7.17 | -6.49 | 96.12 | -0.55 | ≤ -0.01 | Pass |
| 11ac-VHT80 | MCS0 | 42 | 5210 | -4.34 | -4.94 | -5.03 | -4.85 | 93.75 | 1.52 | ≤ 5.99 | Pass |
| 11ac-VHT80 | MCS0 | 58 | 5290 | -10.87 | -10.94 | -11.51 | -11.38 | 93.75 | -4.87 | ≤ -0.01 | Pass |
| 11ac-VHT80 | MCS0 | 106 | 5530 | -10.07 | -10.08 | -11.07 | -10.11 | 93.75 | -4.01 | ≤ -0.01 | Pass |
| 11ac-VHT80 | MCS0 | 122 | 5610 | -10.72 | -10.74 | -11.42 | -10.55 | 93.75 | -4.54 | ≤ -0.01 | Pass |
| 11ac-VHT80 | MCS0 | 138 | 5690 | -10.86 | -11.16 | -11.44 | -10.86 | 93.75 | -4.77 | ≤ -0.01 | Pass |

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 PSD (dBm/ MHz) | Ant 1 PSD (dBm/ MHz) | Ant 2 PSD (dBm/ MHz) | Ant 3 PSD (dBm/ MHz) | Duty Cycle (%) | Total PSD (dBm/ MHz) | PSD Limit (dBm/ MHz) | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Non-contiguous 80+80 MHz mode fall within different UNII band | | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | -4.73 | -4.93 | -- | -- | 93.75 | -1.54 | ≤ 9.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 42 | 5210 | -- | -- | -4.06 | -4.88 | 93.75 | -1.16 | ≤ 9.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 58 | 5290 | -4.28 | -4.46 | -- | -- | 93.75 | -1.08 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 58 | 5290 | -- | -- | -4.96 | -4.39 | 93.75 | -1.38 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -3.88 | -3.88 | -- | -- | 93.75 | -0.59 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -- | -- | -4.75 | -3.62 | 93.75 | -0.86 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 122 | 5610 | -4.78 | -4.84 | -- | -- | 93.75 | -1.52 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 122 | 5610 | -- | -- | -4.86 | -4.00 | 93.75 | -1.12 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -4.66 | -4.72 | -- | -- | 93.75 | -1.40 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -- | -- | -4.97 | -4.39 | 93.75 | -1.38 | ≤ 3.00 | Pass |
| Non-contiguous 80+80 MHz mode fall within same UNII band | | | | | | | | | | | |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -7.05 | -6.83 | -- | -- | 93.75 | -1.23 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -- | -- | -8.48 | -7.97 | | | | |
| 11ac-VHT80+80 | MCS0 | 106 | 5530 | -- | -- | -7.69 | -7.07 | 93.75 | -1.26 | ≤ 3.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 138 | 5690 | -7.54 | -7.99 | -- | -- | | | | |

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD}/10)}$ + $10^{(\text{Ant 1 PSD}/10)}$ + $10^{(\text{Ant 2 PSD}/10)}$ + $10^{(\text{Ant 3 PSD}/10)}$} (dBm/MHz).

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD}/10)}$ + $10^{(\text{Ant 1 PSD}/10)}$ + $10^{(\text{Ant 2 PSD}/10)}$ + $10^{(\text{Ant 3 PSD}/10)}$} (dBm/MHz) + 10*log (1/Duty Cycle).

Note 3: For Non-contiguous 80+80 MHz mode fall within different UNII band:

Ant 0 & Ant 1: Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD}/10)}$ + $10^{(\text{Ant 1 PSD}/10)}$} (dBm/MHz) + 10*log (1/Duty Cycle).

Ant 2 & Ant 3: Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 2 PSD}/10)}$ + $10^{(\text{Ant 3 PSD}/10)}$} (dBm/MHz) + 10*log (1/Duty Cycle).

For Non-contiguous 80+80 MHz mode fall within same UNII band:

Total PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD}/10)}$ + $10^{(\text{Ant 1 PSD}/10)}$ + $10^{(\text{Ant 2 PSD}/10)}$ + $10^{(\text{Ant 3 PSD}/10)}$} (dBm/MHz) + 10*log (1/Duty Cycle).

Note 4: PSD Limit Calculation as below:

For 5150-5250MHz:

802.11a/ac-VHT20/ac-VHT40/ac-VHT80: Limit (dBm/MHz) = 17dBm/MHz - (17.01dBi - 6dBi) = 5.99dBm/MHz.

802.11ac-VHT80+80: Limit (dBm/MHz) = 17dBm/MHz - (14dBi - 6dBi) = 9.00dBm/MHz.

For 5250-5350MHz & 5470-5725MHz:

802.11a/ac-VHT20/ac-VHT40/ac-VHT80: Limit (dBm/MHz) = 11dBm/MHz - (17.01dBi - 6dBi) = -0.01dBm/MHz.

802.11ac-VHT80+80: Limit (dBm/MHz) = 11dBm/MHz - (14dBi - 6dBi) = 3.00dBm/MHz.

| Product | ACCESS POINT | Temperature | 22°C |
|---|---|---|---|
| Test Engineer | Kevin Ker | Relative Humidity | 54% |
| Test Site | SR2 | Test Date | 2018/02/08 |
| Test Item | Power Spectral Density (UNII-Band 3) | | |
| Antenna Type | Directional Antenna (ANT-4x4-5314) | | |

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 PSD (dBm/ 100kHz) | Ant 1 PSD (dBm/ 100kHz) | Ant 2 PSD (dBm/ 100kHz) | Ant 3 PSD (dBm/ 100kHz) | Duty Cycle (%) | Constant Factor | Total PSD (dBm/ 500kHz) | Limit (dBm/ 500kHz) | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ant 0 + 1 + 2 + 3 (CDD Mode) | | | | | | | | | | | | |
| 11a | 6Mbps | 149 | 5745 | -4.27 | -4.42 | -4.42 | -4.40 | 97.18 | 6.99 | 8.76 | ≤ 18.99 | Pass |
| 11a | 6Mbps | 157 | 5785 | -4.14 | -4.45 | -4.48 | -4.28 | 97.18 | 6.99 | 8.80 | ≤ 18.99 | Pass |
| 11a | 6Mbps | 165 | 5825 | -5.32 | -5.36 | -5.42 | -5.19 | 97.18 | 6.99 | 7.81 | ≤ 18.99 | Pass |
| 11ac-VHT20 | MCS0 | 149 | 5745 | -3.94 | -4.37 | -4.70 | -4.45 | 98.23 | 6.99 | 8.65 | ≤ 18.99 | Pass |
| 11ac-VHT20 | MCS0 | 157 | 5785 | -4.42 | -4.39 | -4.19 | -4.28 | 98.23 | 6.99 | 8.69 | ≤ 18.99 | Pass |
| 11ac-VHT20 | MCS0 | 165 | 5825 | -5.53 | -5.60 | -5.61 | -5.49 | 98.23 | 6.99 | 7.45 | ≤ 18.99 | Pass |
| 11ac-VHT40 | MCS0 | 151 | 5755 | -7.18 | -7.12 | -7.37 | -6.97 | 96.12 | 6.99 | 6.02 | ≤ 18.99 | Pass |
| 11ac-VHT40 | MCS0 | 159 | 5795 | -7.00 | -7.07 | -7.25 | -6.64 | 96.12 | 6.99 | 6.20 | ≤ 18.99 | Pass |
| 11ac-VHT80 | MCS0 | 155 | 5775 | -11.44 | -11.44 | -11.76 | -11.40 | 93.75 | 6.99 | 1.78 | ≤ 18.99 | Pass |
| 11ac-VHT80+80 | MCS0 | 155 | 5775 | -9.10 | -9.61 | -- | -- | 93.75 | 6.99 | 0.93 | ≤ 22.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 155 | 5775 | -- | -- | -7.72 | -7.12 | 93.75 | 6.99 | 2.87 | ≤ 22.00 | Pass |

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/500kHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$ + $10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/100kHz) + Constant Factor.

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/500kHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$ + $10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/100kHz) + Constant Factor + 10*log (1/Duty Cycle).

Note 3: For 802.11ac-VHT80+80:

Ant 0 & Ant 1: Total PSD (dBm/500kHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$} (dBm/100kHz) + Constant Factor + 10*log (1/Duty Cycle).

Ant 2 & Ant 3: Total PSD (dBm/500kHz) = 10*log {$10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/100kHz) + Constant Factor + 10*log (1/Duty Cycle).

Note 4: PSD Limit Calculation as below:

For 802.11a/ac-VHT20/ac-VHT40/ac-VHT80: Limit (dBm/500kHz) = 30dBm/500kHz - (17.01dBi - 6dBi) = 18.99 dBm/500kHz.

For 802.11ac-VHT80+80: Limit (dBm/500kHz) = 30dBm/500kHz - (14dBi - 6dBi) = 22.00 dBm/500kHz.

| Test Mode | Data Rate/ MCS | Channel No. | Freq. (MHz) | Ant 0 PSD (dBm/ 100kHz) | Ant 1 PSD (dBm/ 100kHz) | Ant 2 PSD (dBm/ 100kHz) | Ant 3 PSD (dBm/ 100kHz) | Duty Cycle (%) | Constant Factor | Total PSD (dBm/ 500kHz) | Limit (dBm/ 500kHz) | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ant 0 + 1 + 2 + 3 (Beam-Forming Mode) | | | | | | | | | | | | |
| 11ac-VHT20 | MCS0 | 149 | 5745 | -7.90 | -8.03 | -8.07 | -7.67 | 98.23 | 6.99 | 5.10 | ≤ 18.99 | Pass |
| 11ac-VHT20 | MCS0 | 157 | 5785 | -7.63 | -7.87 | -7.74 | -7.78 | 98.23 | 6.99 | 5.26 | ≤ 18.99 | Pass |
| 11ac-VHT20 | MCS0 | 165 | 5825 | -7.61 | -7.90 | -7.49 | -7.28 | 98.23 | 6.99 | 5.45 | ≤ 18.99 | Pass |
| 11ac-VHT40 | MCS0 | 151 | 5755 | -10.27 | -10.02 | -10.50 | -9.81 | 96.12 | 6.99 | 3.04 | ≤ 18.99 | Pass |
| 11ac-VHT40 | MCS0 | 159 | 5795 | -10.60 | -10.44 | -10.75 | -10.43 | 96.12 | 6.99 | 2.63 | ≤ 18.99 | Pass |
| 11ac-VHT80 | MCS0 | 155 | 5775 | -13.84 | -14.12 | -14.49 | -13.58 | 93.75 | 6.99 | -0.70 | ≤ 18.99 | Pass |
| 11ac-VHT80+80 | MCS0 | 155 | 5775 | -9.10 | -9.61 | -- | -- | 93.75 | 6.99 | 0.93 | ≤ 22.00 | Pass |
| 11ac-VHT80+80 | MCS0 | 155 | 5775 | -- | -- | -7.72 | -7.12 | 93.75 | 6.99 | 2.87 | ≤ 22.00 | Pass |

Note 1: When EUT duty cycle ≥ 98%, Total PSD (dBm/500kHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$ + $10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/100kHz) + Constant Factor.

Note 2: When EUT duty cycle < 98%, Total PSD (dBm/500kHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$ + $10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/100kHz) + Constant Factor + 10*log (1/Duty Cycle).

Note 3: For 802.11ac-VHT80+80:

Ant 0 & Ant 1: Total PSD (dBm/500kHz) = 10*log {$10^{(\text{Ant 0 PSD/10})}$ + $10^{(\text{Ant 1 PSD/10})}$} (dBm/100kHz) + Constant Factor + 10*log (1/Duty Cycle).

Ant 2 & Ant 3: Total PSD (dBm/500kHz) = 10*log {$10^{(\text{Ant 2 PSD/10})}$ + $10^{(\text{Ant 3 PSD/10})}$} (dBm/100kHz) + Constant Factor + 10*log (1/Duty Cycle).

Note 4: PSD Limit Calculation as below:

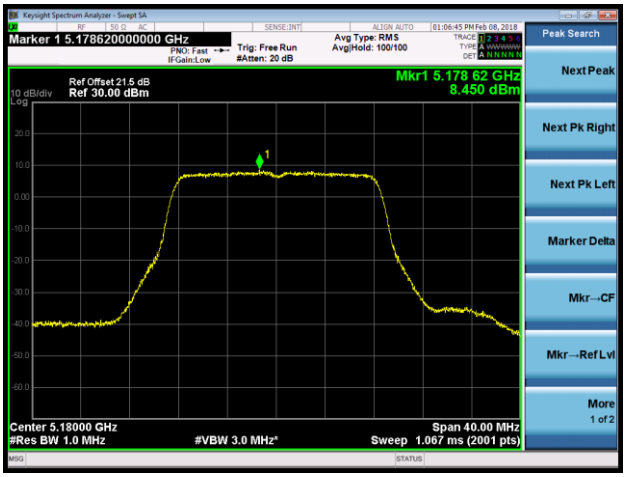
For 802.11a/ac-VHT20/ac-VHT40/ac-VHT80: Limit (dBm/500kHz) = 30dBm/500kHz - (17.01dBi - 6dBi) = 18.99dBm/500kHz.

For 802.11ac-VHT80+80: Limit (dBm/500kHz) = 30dBm/500kHz - (14dBi - 6dBi) = 22.00dBm/500kHz.

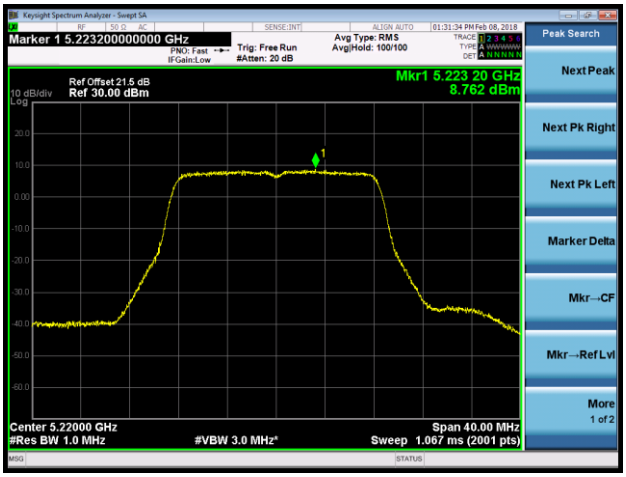
| Product | ACCESS POINT | Temperature | 22°C |
|---|---|---|---|
| Test Engineer | Kevin Ker | Test Date | 2018/02/08 |
| Antenna Type | Omni Antenna (AP-ANT-20W) | | |

## 802.11a Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

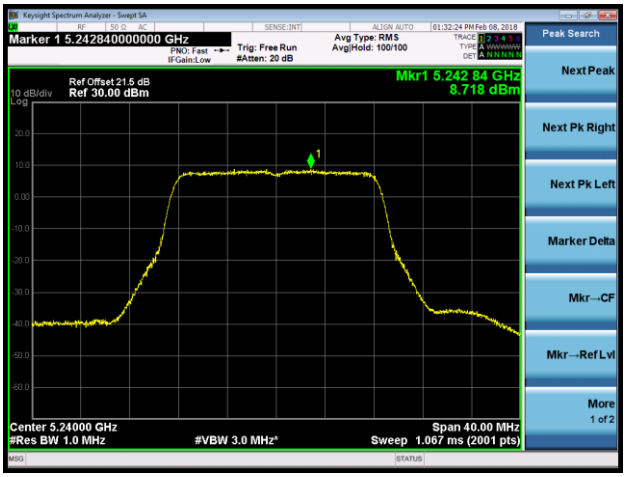
### Channel 36 (5180MHz)



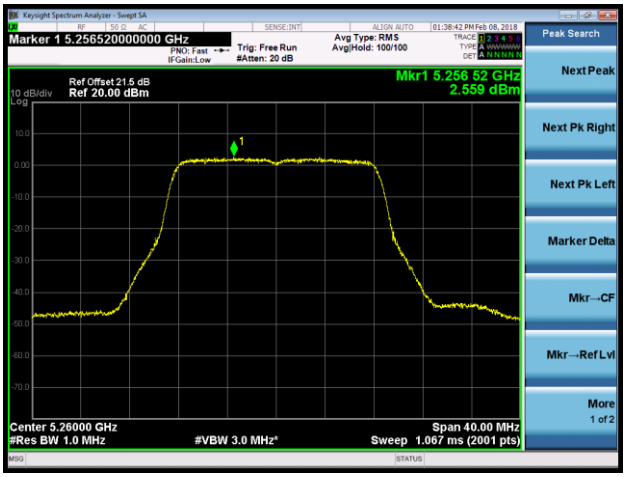

### Channel 44 (5220MHz)



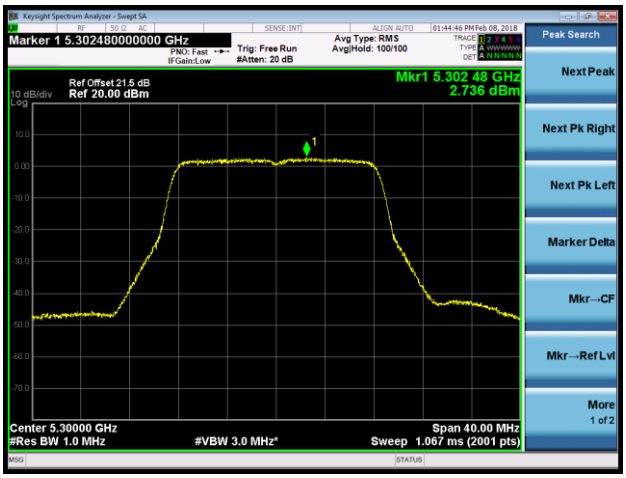

### Channel 48 (5240MHz)



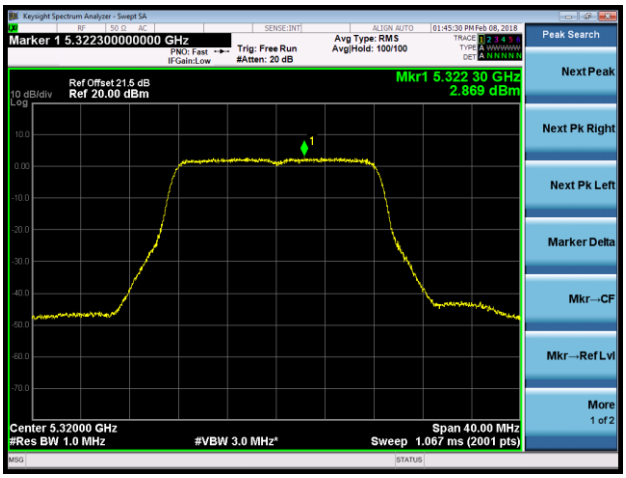

### Channel 52 (5260MHz)




### Channel 60 (5300MHz)

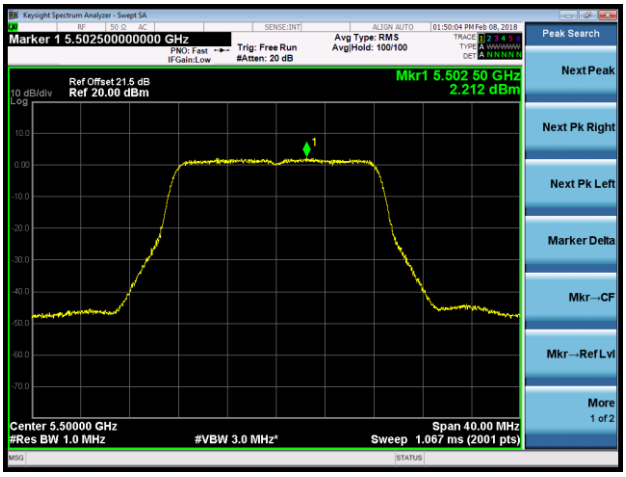



### Channel 64 (5320MHz)

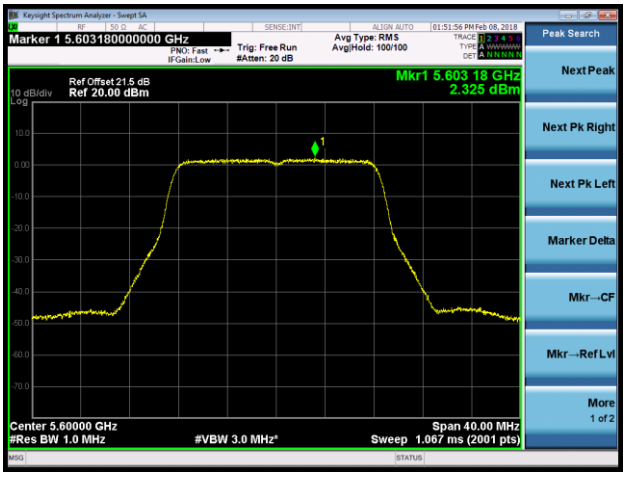


## 802.11a Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

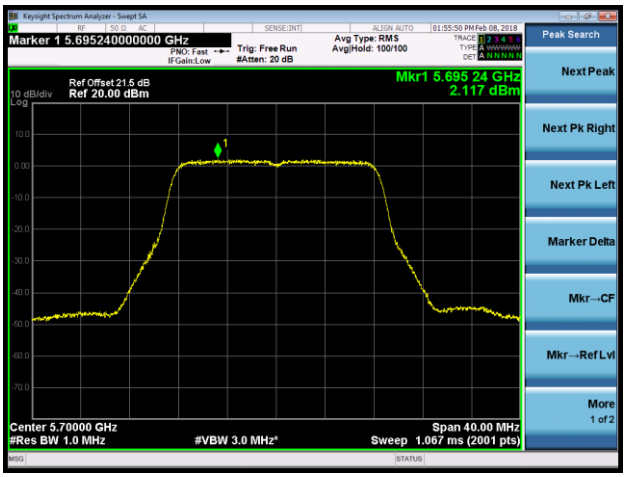
### Channel 100 (5500MHz)



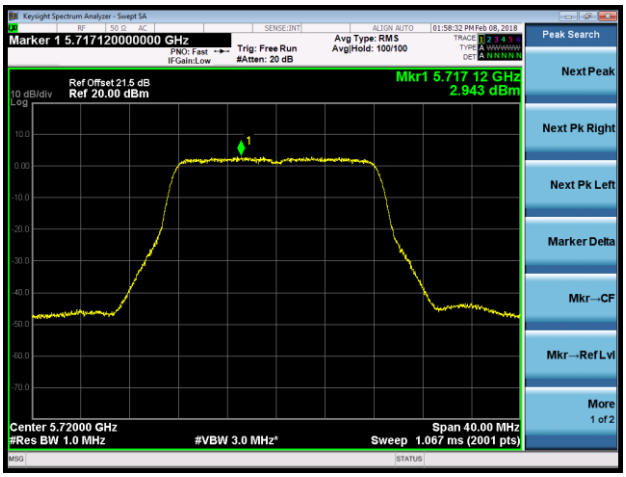

### Channel 120 (5600MHz)



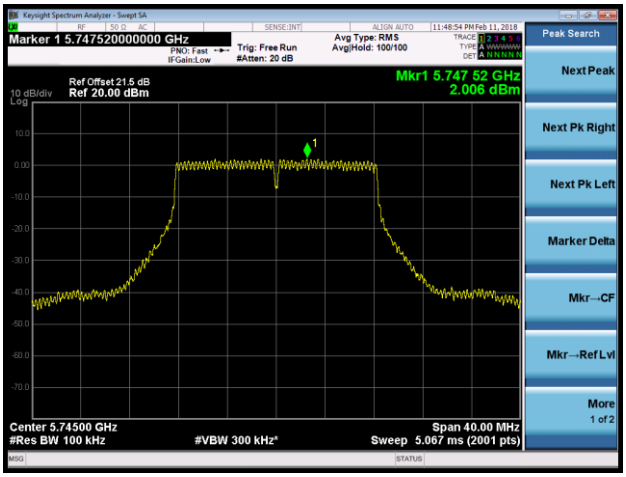

### Channel 140 (5700MHz)



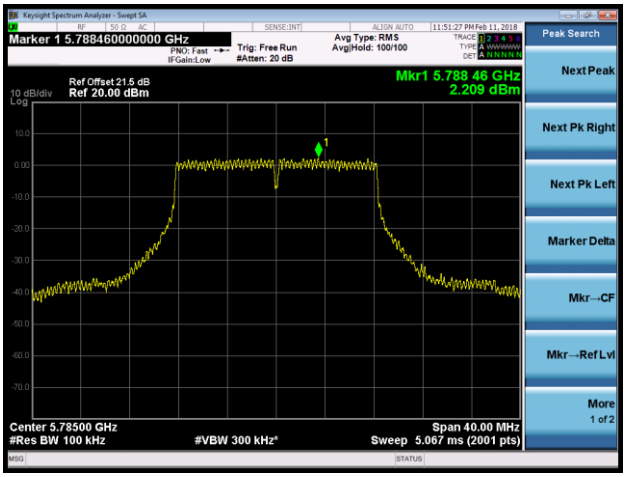

### Channel 144 (5720MHz)

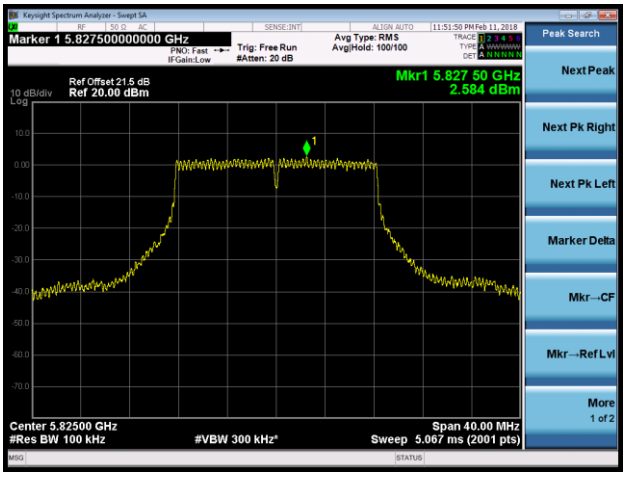



### Channel 149 (5745MHz)



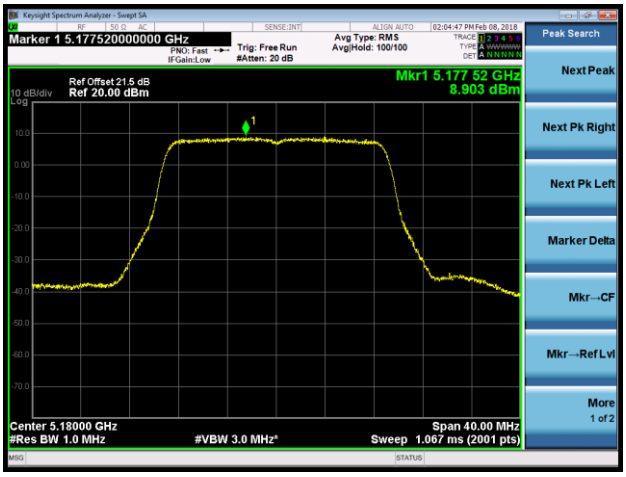

### Channel 157 (5785MHz)



| 802.11a Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode) | |
|---|---|
| **Channel 165 (5825MHz)** | |
|  | |

## 802.11ac-VHT20 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

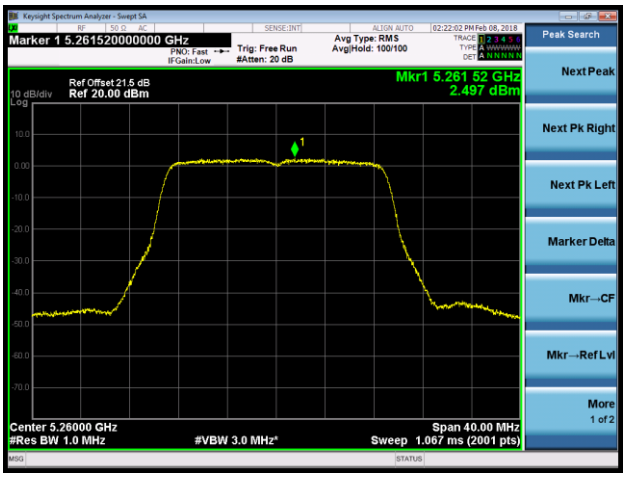
### Channel 36 (5180MHz)



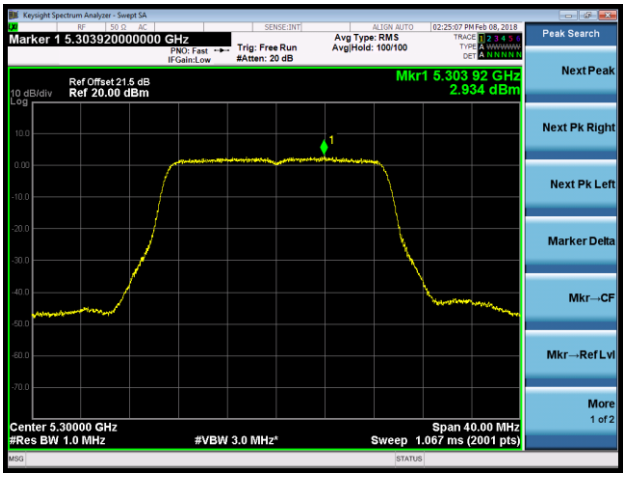

### Channel 44 (5220MHz)


### Channel 48 (5240MHz)

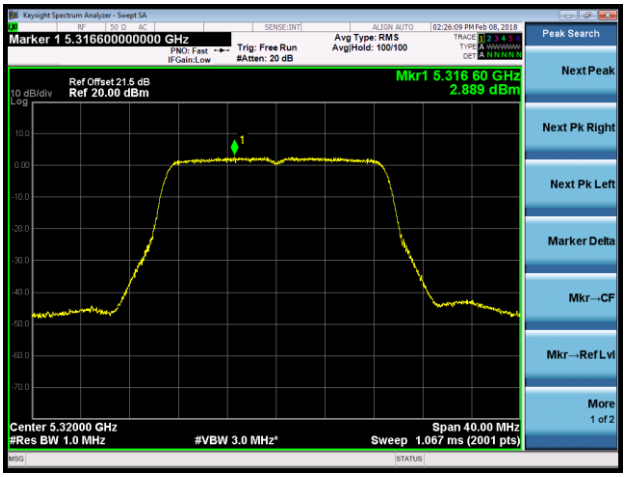

### Channel 52 (5260MHz)




### Channel 60 (5300MHz)

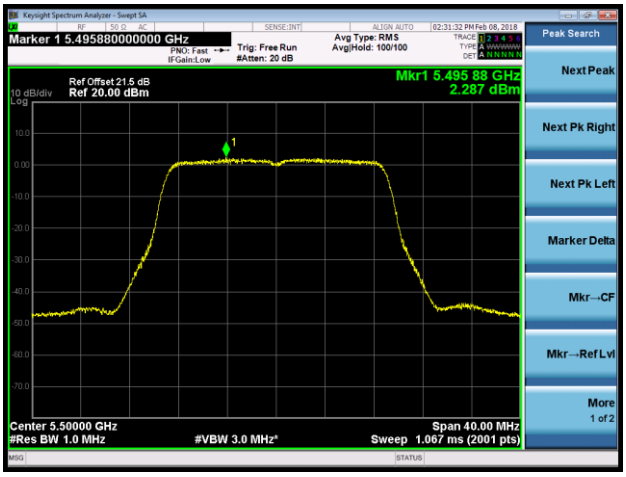



### Channel 64 (5320MHz)

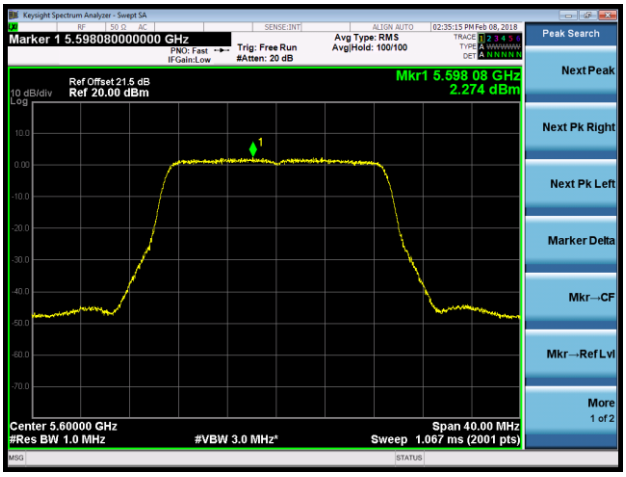


## 802.11ac-VHT20 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

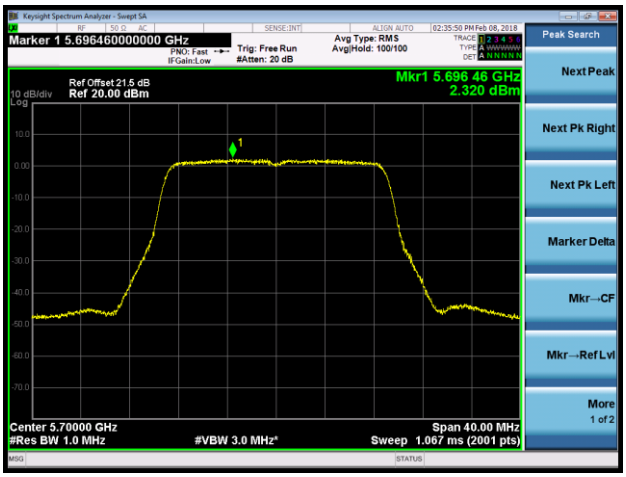
### Channel 100 (5500MHz)



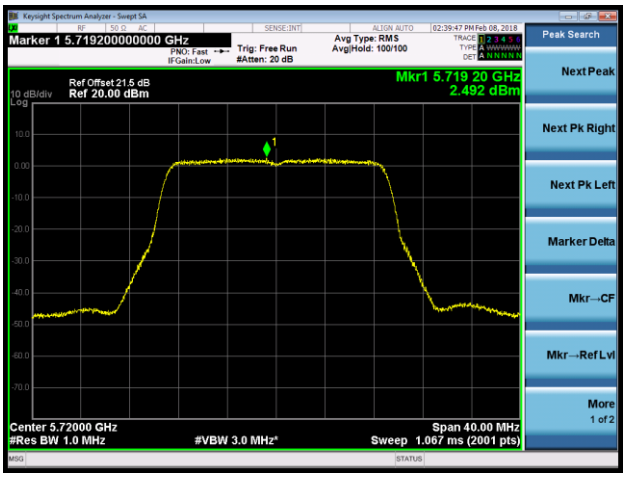

### Channel 120 (5600MHz)



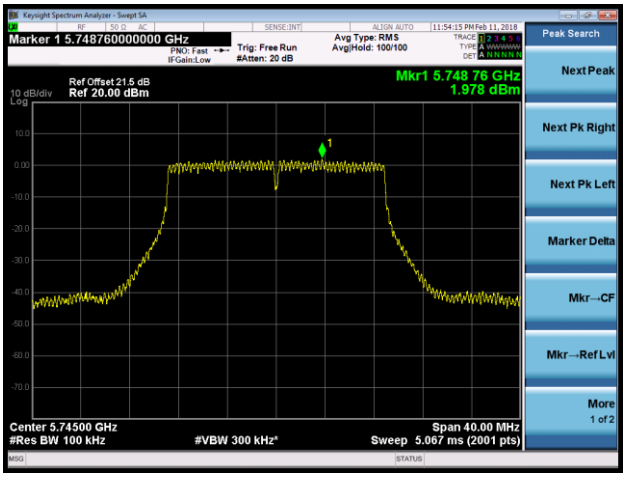

### Channel 140 (5700MHz)



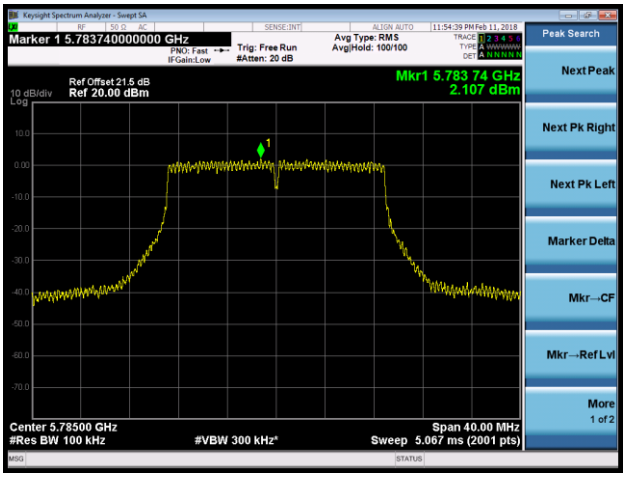

### Channel 144 (5720MHz)

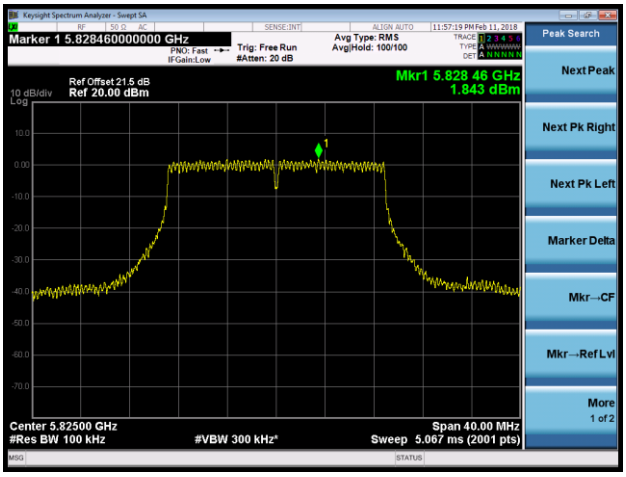



### Channel 149 (5745MHz)



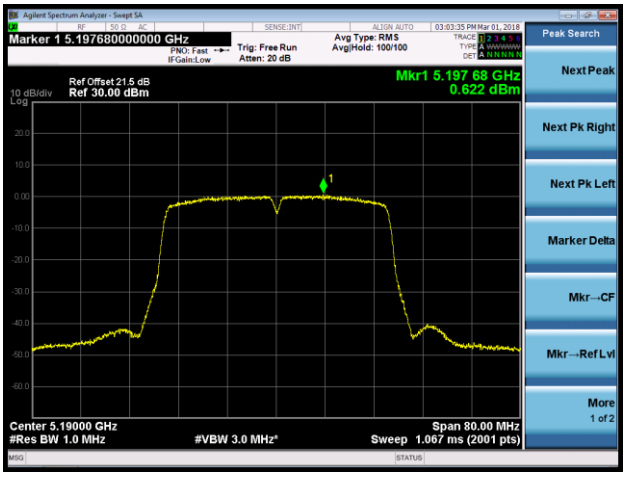

### Channel 157 (5785MHz)



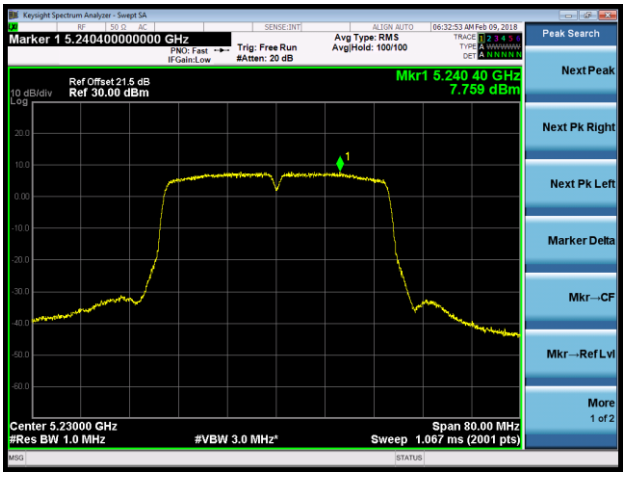
| 802.11ac-VHT20 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode) | |
|---|---|
| **Channel 165 (5825MHz)** | |
|  | |

## 802.11ac-VHT40 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode)

### Channel 38 (5190MHz)



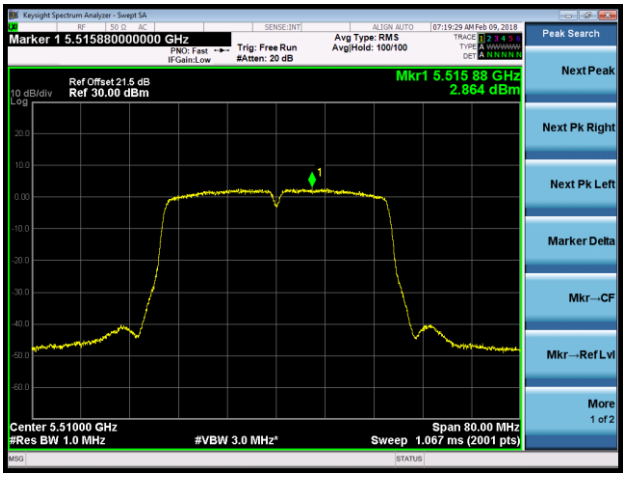

### Channel 46 (5230MHz)



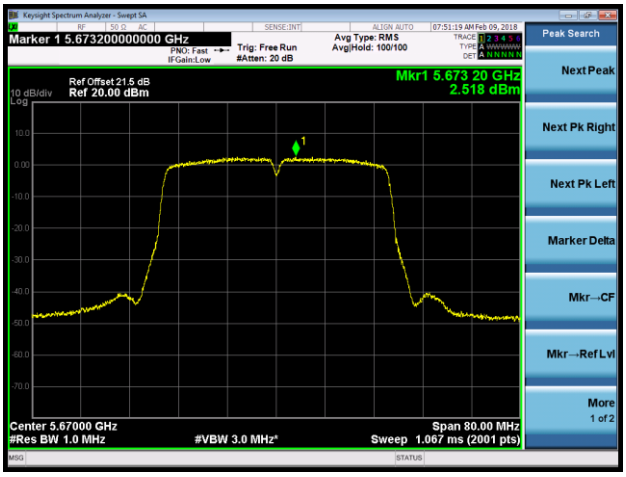
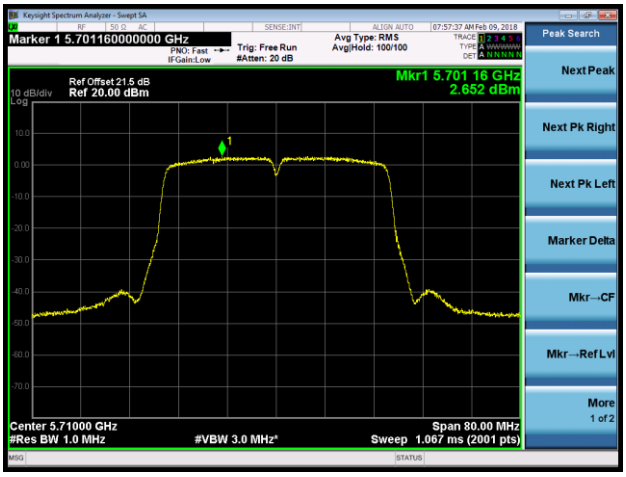
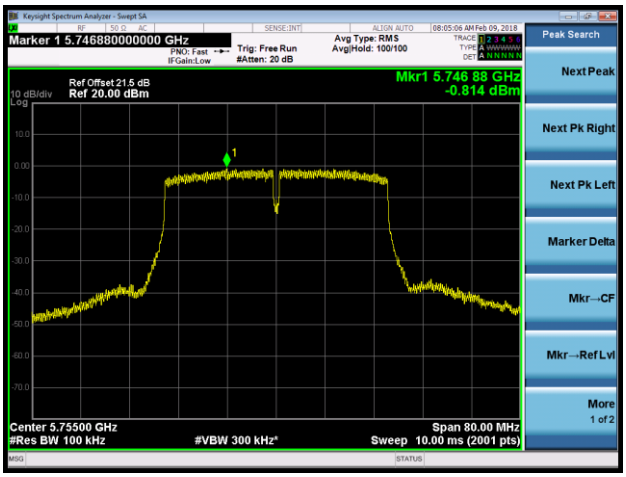
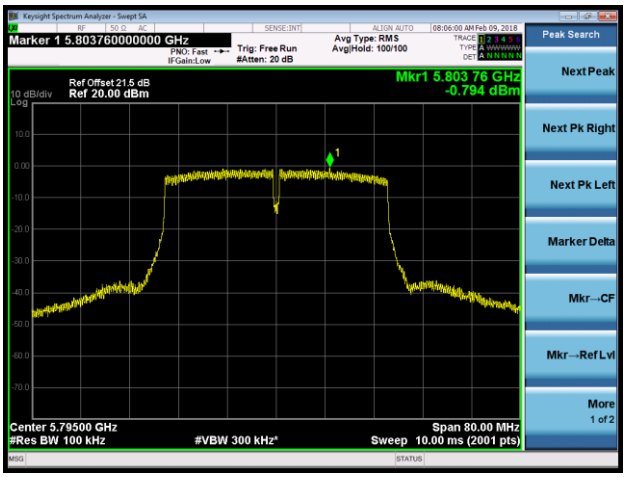

### Channel 54 (5270MHz)


### Channel 62 (5310MHz)


### Channel 102 (5510MHz)




### Channel 118 (5590MHz)

| 802.11ac-VHT40 Power Spectral Density - Ant 0 / Ant 0 + 1 + 2 + 3 (CDD Mode) | |
|---|---|
| **Channel 134 (5670MHz)** | **Channel 142 (5710MHz)** |
|  |  |
| **Channel 151 (5755MHz)** | **Channel 159 (5795MHz)** |
|  |  |