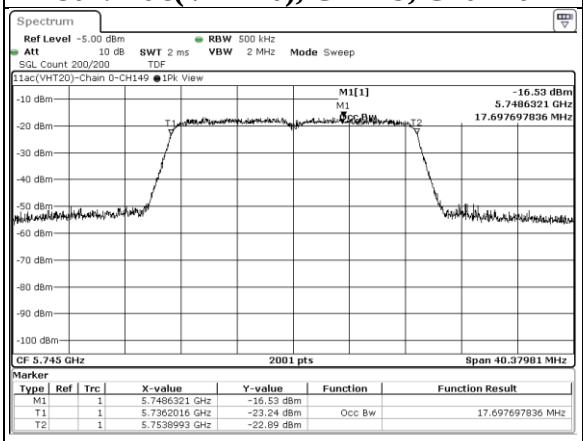
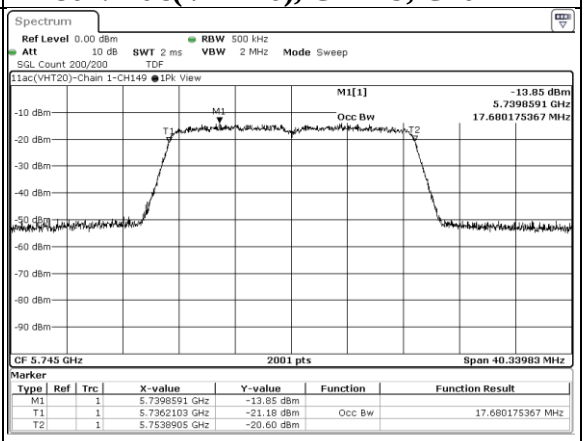
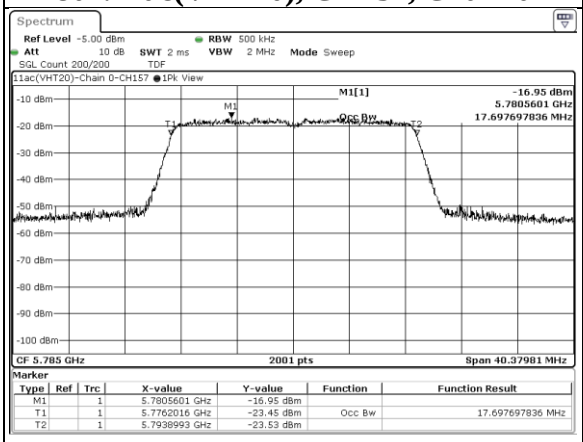
## 802.11ac(VHT20), CH149, Chain 0



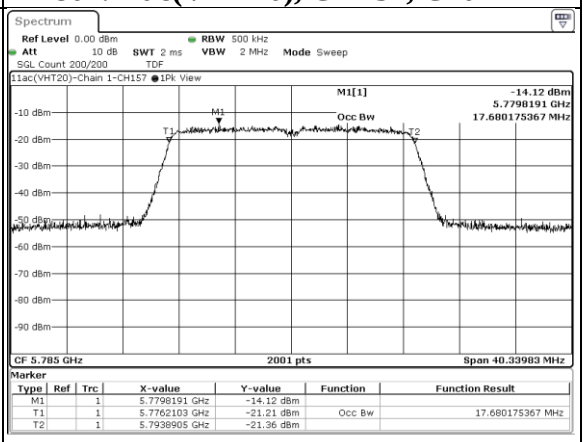

## 802.11ac(VHT20), CH149, Chain 1



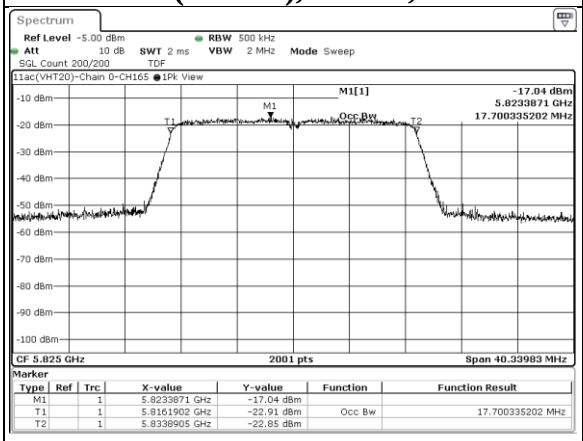

## 802.11ac(VHT20), CH157, Chain 0



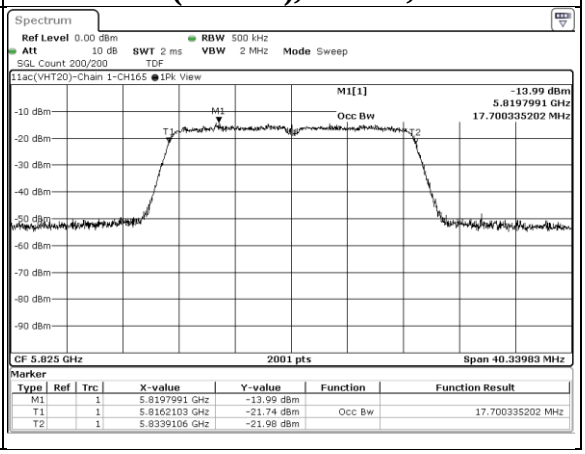

## 802.11ac(VHT20), CH157, Chain 1




## 802.11ac(VHT20), CH165, Chain 0

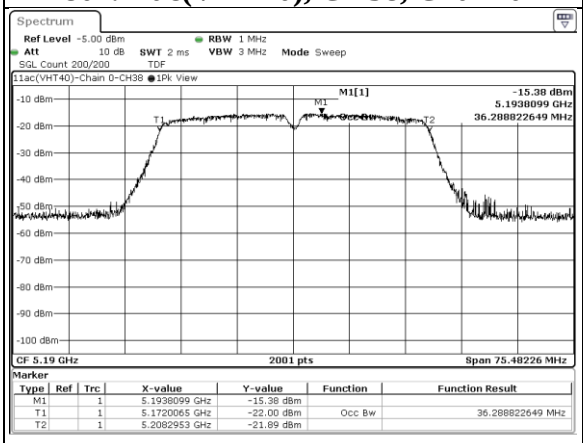



## 802.11ac(VHT20), CH165, Chain 1

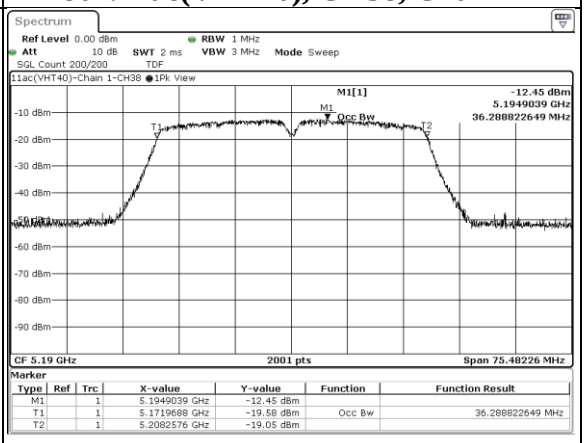


| Mode | CH | Freq (MHz) | OBW (MHz) | | Limit (MHz) | Result |
|---|---|---|---|---|---|---|
| | | | Chain 0 | Chain 1 | | |
| 802.11ac(VHT40) | 38 | 5190 | 36.289 | 36.289 | N/A | PASS |
| | 46 | 5230 | 36.208 | 36.133 | N/A | PASS |
| | 54 | 5270 | 36.252 | 36.251 | N/A | PASS |
| | 62 | 5310 | 36.368 | 36.368 | N/A | PASS |
| | 102 | 5510 | 36.253 | 36.214 | N/A | PASS |
| | 110 | 5550 | 36.214 | 36.291 | N/A | PASS |
| | 134 | 5670 | 36.288 | 36.29 | N/A | PASS |
| | 151 | 5755 | 36.289 | 36.29 | N/A | PASS |
| | 159 | 5795 | 36.252 | 36.329 | N/A | PASS |

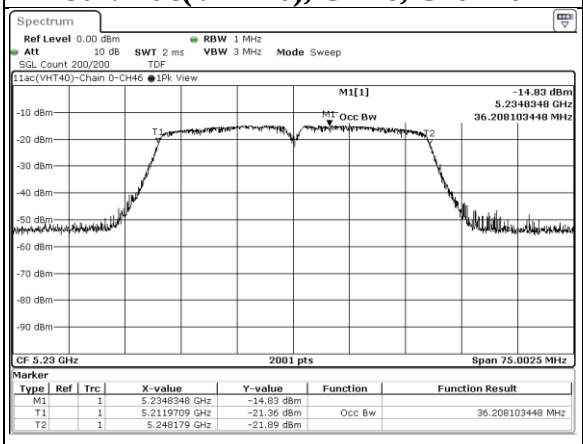
## 802.11ac(VHT40), CH38, Chain 0



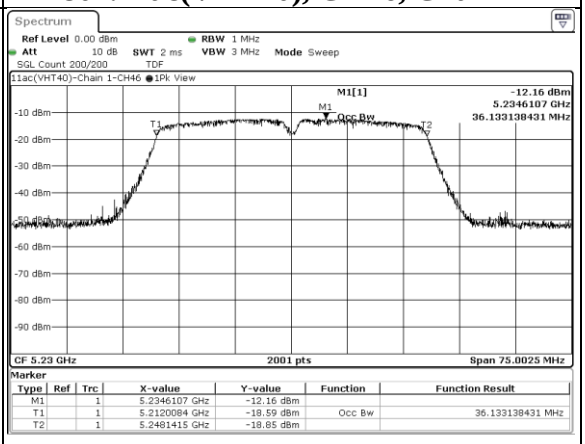

## 802.11ac(VHT40), CH38, Chain 1



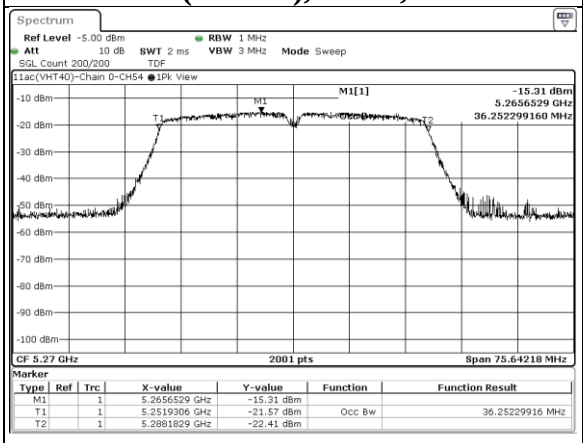

## 802.11ac(VHT40), CH46, Chain 0



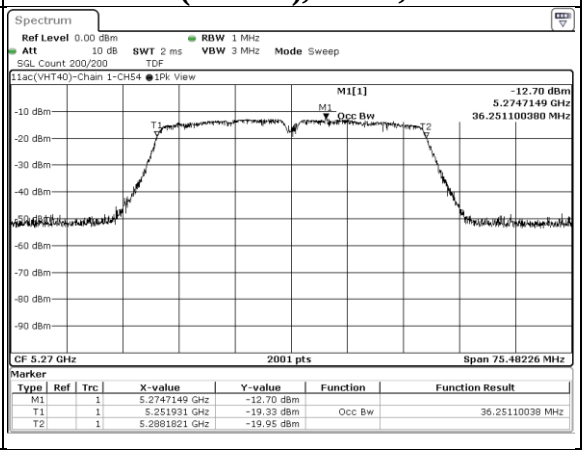

## 802.11ac(VHT40), CH46, Chain 1



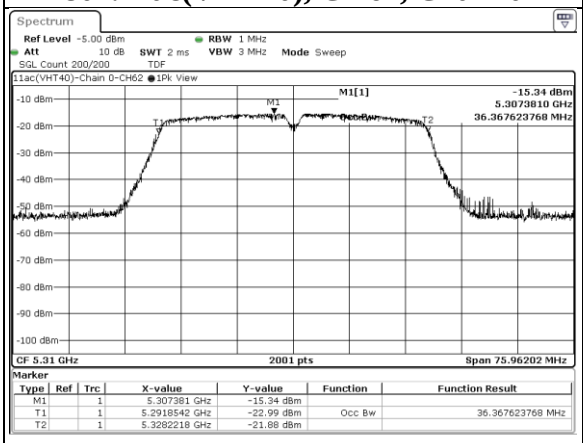

## 802.11ac(VHT40), CH54, Chain 0



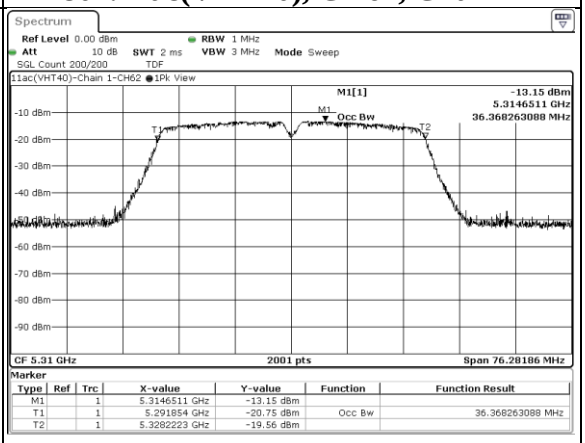

## 802.11ac(VHT40), CH54, Chain 1



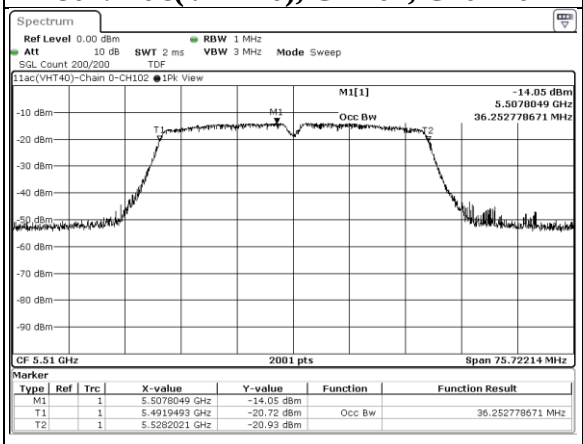
## 802.11ac(VHT40), CH62, Chain 0



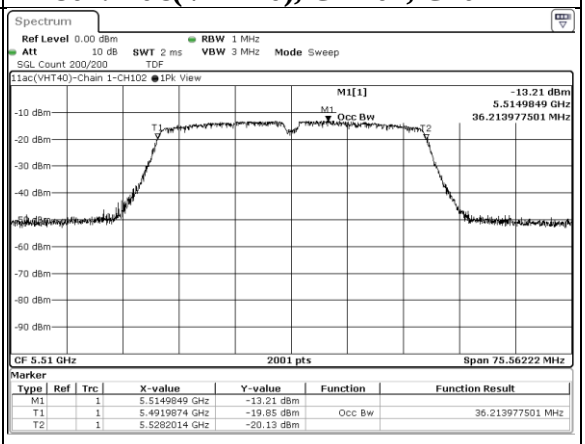

## 802.11ac(VHT40), CH62, Chain 1



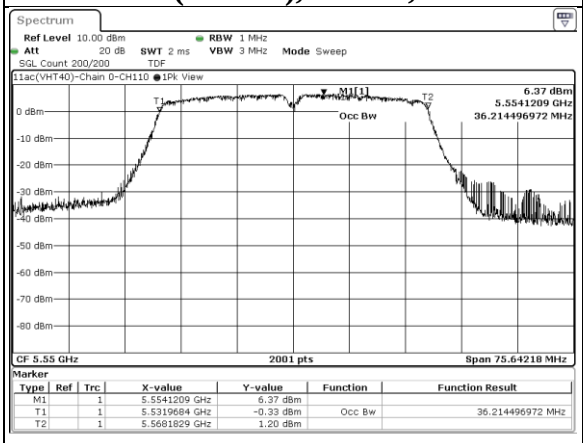

## 802.11ac(VHT40), CH102, Chain 0



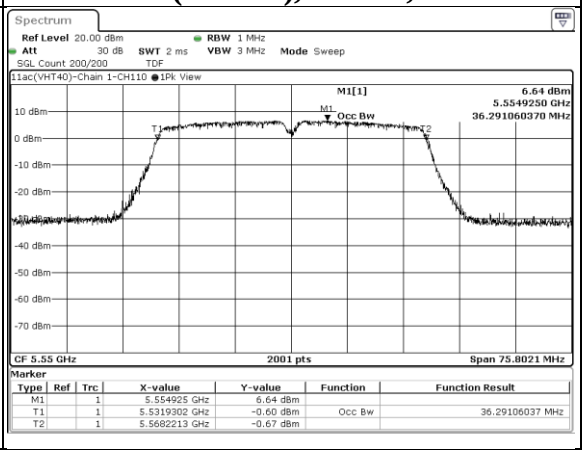

## 802.11ac(VHT40), CH102, Chain 1



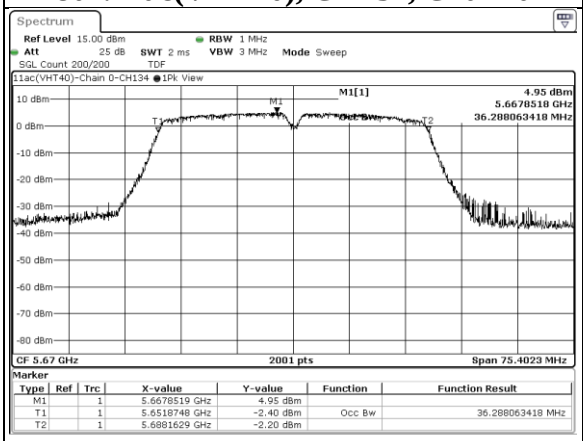

## 802.11ac(VHT40), CH110, Chain 0



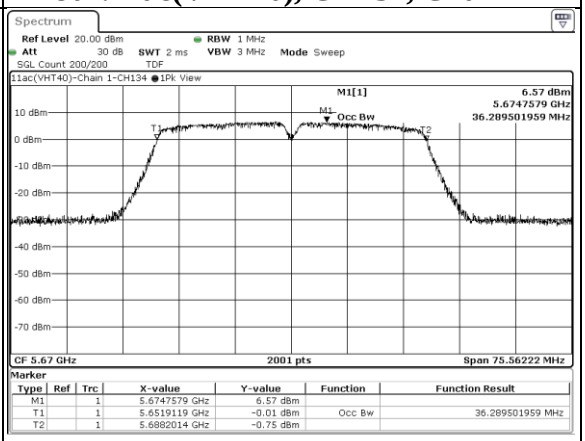

## 802.11ac(VHT40), CH110, Chain 1



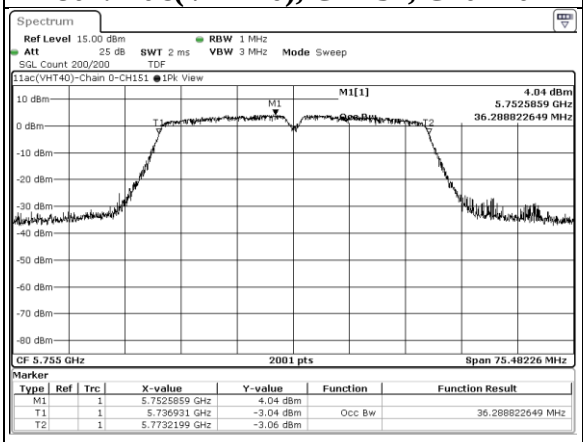
## 802.11ac(VHT40), CH134, Chain 0



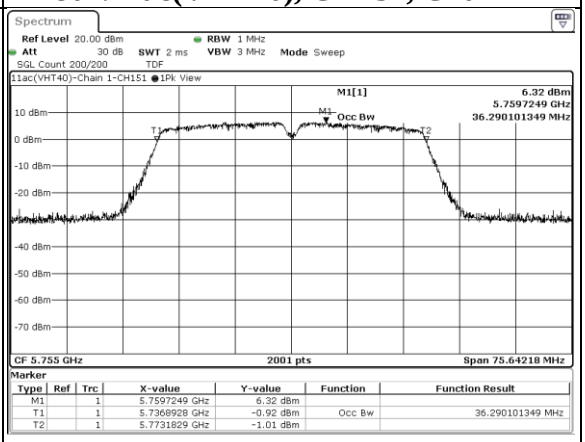

## 802.11ac(VHT40), CH134, Chain 1



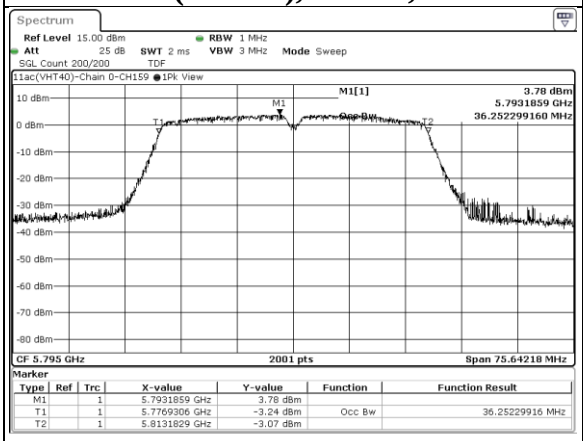

## 802.11ac(VHT40), CH151, Chain 0



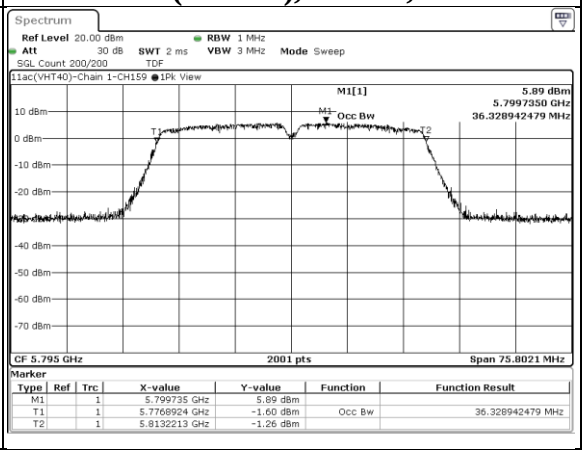

## 802.11ac(VHT40), CH151, Chain 1




## 802.11ac(VHT40), CH159, Chain 0




## 802.11ac(VHT40), CH159, Chain 1



## 9.4. Conducted output power

### Requirements

| Operation Band | EUT Category | | Limit |
|---|---|---|---|
| U-NII-1 | | Outdoor Access Point | 1 Watt (30 dBm)<br>Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon<br>If $G_{TX}$ > 6 dBi, then $P_{Out}$ = 30 – ($G_{TX}$ – 6) |
| | | Fixed point-to-point Access Point | 1 Watt (30 dBm)<br>If $G_{TX}$ > 23 dBi, then $P_{Out}$ = 30 – ($G_{TX}$ – 23) |
| | | Indoor Access Point | 1 Watt (30 dBm)<br>If $G_{TX}$ > 6 dBi, then $P_{Out}$ = 30 – ($G_{TX}$ – 6) |
| | √ | Client device | 250mW (24 dBm)<br>If $G_{TX}$ > 6 dBi, then $P_{Out}$ = 23.98 – ($G_{TX}$ – 6) |
| U-NII-2A | √ | | 250mW (24 dBm) or 11 dBm+10 log B*<br>If $G_{TX}$ > 6 dBi, then $P_{Out}$ = 23.98 – ($G_{TX}$ – 6) |
| U-NII-2C | √ | | 250mW (24 dBm) or 11 dBm+10 log B*<br>If $G_{TX}$ > 6 dBi, then $P_{Out}$ = 23.98 – ($G_{TX}$ – 6) |
| U-NII-3 | √ | | For Point-to-multipoint systems (P2M): 1 Watt (30 dBm). If $G_{TX}$ > 6 dBi, then $P_{Out}$ = 30 – ($G_{TX}$ – 6)<br>For Point-to-point systems (P2P): 1 Watt (30 dBm) |

Note:
1. $P_{Out}$ = maximum conducted output power in dBm,
2. $G_{TX}$ = the maximum transmitting antenna directional gain in dBi.
3. B is the 26 dB emission bandwidth in megahertz
4. Directional Gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{Gn/20})^2$ / Nant] dBi.

   Nant: Number of Transmit Antennas
   G1, G2,..., Gn: Gain of Individual Antennas

5. Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

   Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
   Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any $N_{ANT}$;
   Array Gain = 5 log($N_{ANT}/N_{SS}$) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

## Test Procedure

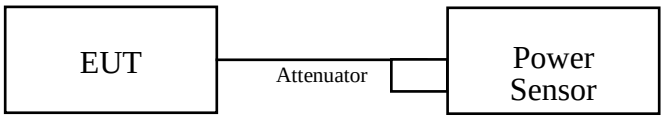
### For Average Power Measurement

**Test method PM**

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst and set the detector to AVERAGE. Duty factor is not added to measured value.

## Test Setup

### For Average Power Measurement




The loss between RF output port of the EUT and the input port of the Power Meter has been taken into consideration.

## Test Data

### 802.11a

| Channel | Channel Frequency (MHz) | Maximum Conducted Power (dBm) | | Total Power (mW) | Total Power (dBm) | Power Limit (dBm) | Pass/Fail |
|---|---|---|---|---|---|---|---|
| | | Chain 0 | Chain 1 | | | | |
| 36 | 5180 | 16.02 | 17.43 | 95.28 | 19.79 | 23.98 | PASS |
| 44 | 5220 | 16.23 | 17.74 | 101.391 | 20.06 | 23.98 | PASS |
| 48 | 5240 | 16.33 | 17.87 | 104.232 | 20.18 | 23.98 | PASS |
| 52 | 5260 | 16.46 | 17.68 | 102.802 | 20.12 | 23.9 | PASS |
| 60 | 5300 | 16.41 | 17.30 | 97.499 | 19.89 | 23.9 | PASS |
| 64 | 5320 | 16.11 | 17.46 | 96.605 | 19.85 | 23.9 | PASS |
| 100 | 5500 | 16.97 | 17.19 | 102.094 | 20.09 | 23.9 | PASS |
| 116 | 5580 | 16.94 | 16.94 | 98.855 | 19.95 | 23.9 | PASS |
| 140 | 5700 | 15.48 | 15.84 | 73.621 | 18.67 | 23.9 | PASS |
| 149 | 5745 | 15.25 | 15.33 | 67.608 | 18.30 | 30 | PASS |
| 157 | 5785 | 15.67 | 15.05 | 68.865 | 18.38 | 30 | PASS |
| 165 | 5825 | 14.97 | 15.67 | 68.234 | 18.34 | 30 | PASS |

Note: The directional gain = 5.62 dBi < 6 dBi, so the power limit shall not be reduced.

### 802.11ac (VHT20)

| Channel | Channel Frequency (MHz) | Maximum Conducted Power (dBm) | | Total Power (mW) | Total Power (dBm) | Power Limit (dBm) | Pass/Fail |
|---|---|---|---|---|---|---|---|
| | | Chain 0 | Chain 1 | | | | |
| 36 | 5180 | 14.32 | 14.83 | 57.412 | 17.59 | 23.98 | PASS |
| 44 | 5220 | 15.54 | 14.83 | 66.222 | 18.21 | 23.98 | PASS |
| 48 | 5240 | 13.98 | 14.08 | 50.582 | 17.04 | 23.98 | PASS |
| 52 | 5260 | 15.61 | 14.58 | 65.163 | 18.14 | 23.9 | PASS |
| 60 | 5300 | 14.39 | 13.86 | 51.761 | 17.14 | 23.9 | PASS |
| 64 | 5320 | 14.28 | 13.89 | 51.286 | 17.10 | 23.9 | PASS |
| 100 | 5500 | 15.26 | 14.90 | 64.417 | 18.09 | 23.9 | PASS |
| 116 | 5580 | 15.00 | 13.77 | 55.463 | 17.44 | 23.9 | PASS |
| 140 | 5700 | 12.61 | 11.93 | 33.806 | 15.29 | 23.9 | PASS |
| 149 | 5745 | 12.14 | 10.32 | 27.102 | 14.33 | 30 | PASS |
| 157 | 5785 | 12.26 | 10.75 | 28.708 | 14.58 | 30 | PASS |
| 165 | 5825 | 11.33 | 11.85 | 28.907 | 14.61 | 30 | PASS |

Note: The directional gain = 5.62 dBi < 6 dBi, so the power limit shall not be reduced.

### 802.11ac (VHT40)

| Channel | Channel Frequency (MHz) | Maximum Conducted Power (dBm) | | Total Power (mW) | Total Power (dBm) | Power Limit (dBm) | Pass/Fail |
|---|---|---|---|---|---|---|---|
| | | Chain 0 | Chain 1 | | | | |
| 38 | 5190 | 15.22 | 15.59 | 69.502 | 18.42 | 23.98 | PASS |
| 46 | 5230 | 15.16 | 14.90 | 63.68 | 18.04 | 23.98 | PASS |
| 54 | 5270 | 14.19 | 13.97 | 51.168 | 17.09 | 23.98 | PASS |
| 62 | 5310 | 14.16 | 13.22 | 47.098 | 16.73 | 23.98 | PASS |
| 102 | 5510 | 15.57 | 14.44 | 63.826 | 18.05 | 23.98 | PASS |
| 110 | 5550 | 15.31 | 14.27 | 60.674 | 17.83 | 23.98 | PASS |
| 134 | 5670 | 13.77 | 12.30 | 40.832 | 16.11 | 23.98 | PASS |
| 151 | 5755 | 12.51 | 11.12 | 30.761 | 14.88 | 30 | PASS |
| 159 | 5795 | 12.04 | 11.33 | 29.58 | 14.71 | 30 | PASS |

Note: The directional gain = 5.62 dBi < 6 dBi, so the power limit shall not be reduced.

## 9.5. Power Spectral Density

### Requirements

| Operation Band | EUT Category | | Limit |
|---|---|---|---|
| U-NII-1 | | Outdoor Access Point | 17dBm/ MHz<br>If $G_{TX}$ > 6 dBi, then PSD = 17 – ($G_{TX}$ – 6) |
| | | Fixed point-to-point Access Point | 17dBm/ MHz<br>If $G_{TX}$ > 23 dBi, then PSD = 17 – ($G_{TX}$ – 23) |
| | | Indoor Access Point | 17dBm/ MHz<br>If $G_{TX}$ > 6 dBi, then PSD = 17 – ($G_{TX}$ – 6) |
| | √ | Client device | 11dBm/ MHz<br>If $G_{TX}$ > 6 dBi, then PSD = 11 – ($G_{TX}$ – 6) |
| U-NII-2A | √ | | 11dBm/ MHz<br>If $G_{TX}$ > 6 dBi, then PSD = 11 – ($G_{TX}$ – 6) |
| U-NII-2C | √ | | 11dBm/ MHz<br>If $G_{TX}$ > 6 dBi, then PSD = 11 – ($G_{TX}$ – 6) |
| U-NII-3 | √ | | For Point-to-multipoint systems (P2M): 30dBm/ 500kHz. If $G_{TX}$ > 6 dBi, then PSD = 30 – ($G_{TX}$ – 6)<br>For Point-to-point systems (P2P): 30dBm/ 500kHz |

Note:
1. PSD = power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz
2. $G_{TX}$ = the maximum transmitting antenna directional gain in dBi.
3. Directional Gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{Gn/20})^2$ / Nant] dBi.

   Nant: Number of Transmit Antennas
   G1, G2,..., Gn: Gain of Individual Antennas

4. "PSD per chain" of the report shown is maximum value for each chain, at the "Total PSD" is summing entire spectra across corresponding frequency bins on the various outputs by computer, refer KDB 662911 Method a) for calculating total power density.

## Test procedure

**For U-NII-1, U-NII-2A, U-NII-2C band:**

**Using method as below:**

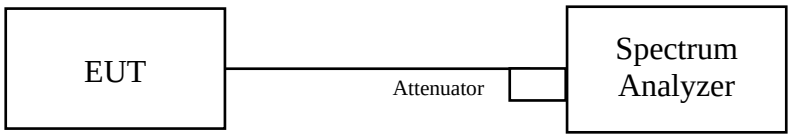
a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
b. Set RBW = 1 MHz, Set VBW ≥ 3 RBW, Detector = RMS
c. Sweep time = auto, trigger set to "free run".
d. Trace average at least 100 traces in power averaging mode.
e. Record the max value. (if Duty cycle <98 %, add 10 log (1/duty cycle))

**For U-NII-3 band:**

**Using method as below:**

a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
b. Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
c. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
d. Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10 log (500 kHz/300kHz)
e. Sweep time = auto, trigger set to "free run".
f. Trace average at least 100 traces in power averaging mode.
g. Record the max value. (if Duty cycle <98 %, add 10 log (1/duty cycle))

## Test Setup



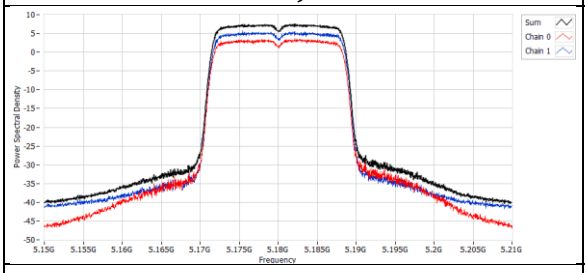

The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.

## Test Data

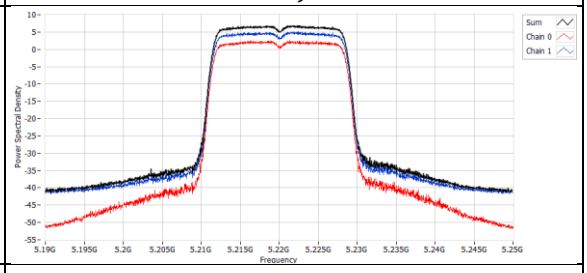
| Mode (U-NII-1) | CH | Freq (MHz) | Directional Gain (dBi) | Total PSD (dBm/MHz) | Limit (dBm/MHz) | Result |
|---|---|---|---|---|---|---|
| 802.11a | 36 | 5180 | 7.13 | 7.63 | 9.87 | PASS |
| | 44 | 5220 | 7.13 | 6.91 | 9.87 | PASS |
| | 48 | 5240 | 7.13 | 6.8 | 9.87 | PASS |

| Mode (U-NII-1) | CH | Freq (MHz) | PSD per Chain (dBm/MHz) | |
|---|---|---|---|---|
| | | | Chain 0 | Chain 1 |
| 802.11a | 36 | 5180 | 3.557 | 5.648 |
| | 44 | 5220 | 2.475 | 5.118 |
| | 48 | 5240 | 2.483 | 5.052 |

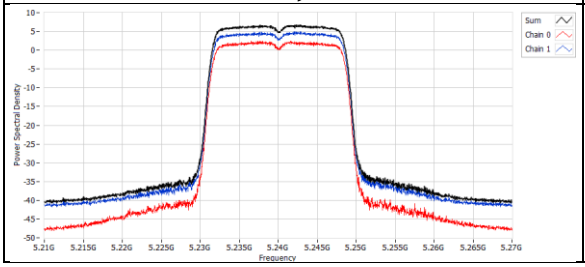
**802.11a, CH36**




**802.11a, CH44**



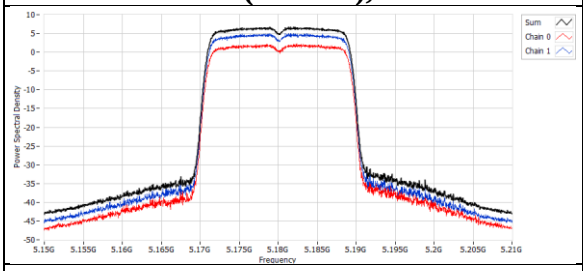

**802.11a, CH48**



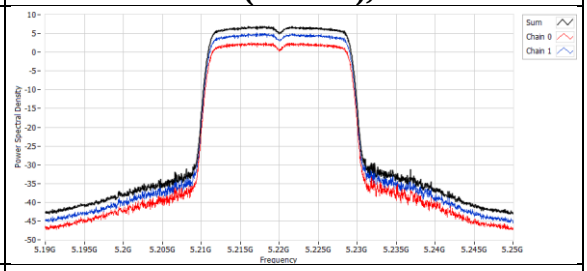
| Mode (U-NII-1) | CH | Freq (MHz) | Directional Gain (dBi) | Total PSD (dBm/MHz) | Limit (dBm/MHz) | Result |
|---|---|---|---|---|---|---|
| 802.11ac(VHT20) | 36 | 5180 | 7.13 | 6.76 | 9.87 | PASS |
| | 44 | 5220 | 7.13 | 6.87 | 9.87 | PASS |
| | 48 | 5240 | 7.13 | 7.01 | 9.87 | PASS |

| Mode (U-NII-1) | CH | Freq (MHz) | PSD per Chain (dBm/MHz) | |
|---|---|---|---|---|
| | | | Chain 0 | Chain 1 |
| 802.11ac(VHT20) | 36 | 5180 | 2.284 | 5.037 |
| | 44 | 5220 | 2.616 | 5.163 |
| | 48 | 5240 | 3.036 | 5.248 |

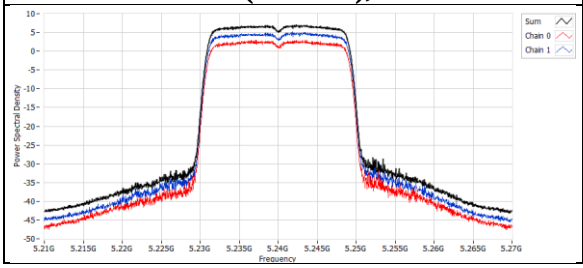
**802.11ac(VHT20), CH36**




**802.11ac(VHT20), CH44**



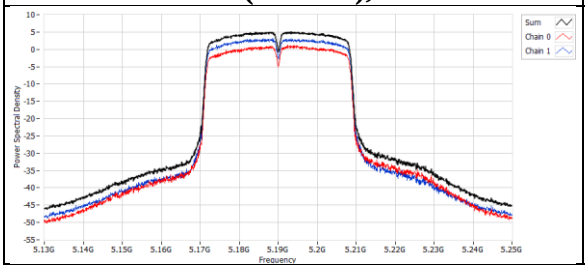

**802.11ac(VHT20), CH48**



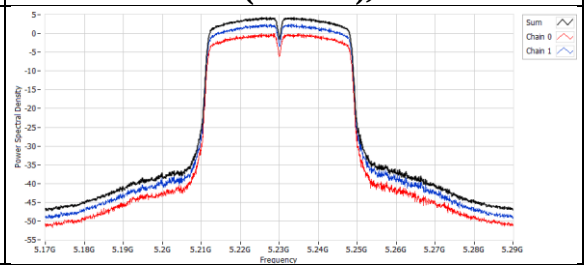
| Mode (U-NII-1) | CH | Freq (MHz) | Directional Gain (dBi) | Total PSD (dBm/MHz) | Limit (dBm/MHz) | Result |
|---|---|---|---|---|---|---|
| 802.11ac(VHT40) | 38 | 5190 | 7.13 | 5.13 | 9.87 | PASS |
| | 46 | 5230 | 7.13 | 4.3 | 9.87 | PASS |

| Mode (U-NII-1) | CH | Freq (MHz) | PSD per Chain (dBm/MHz) | |
|---|---|---|---|---|
| | | | Chain 0 | Chain 1 |
| 802.11ac(VHT40) | 38 | 5190 | 1.199 | 3.155 |
| | 46 | 5230 | 0.097 | 2.445 |

**802.11ac(VHT40), CH38**



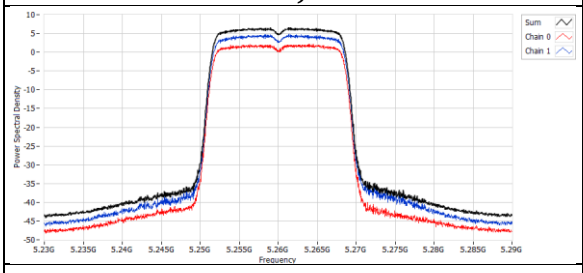

**802.11ac(VHT40), CH46**



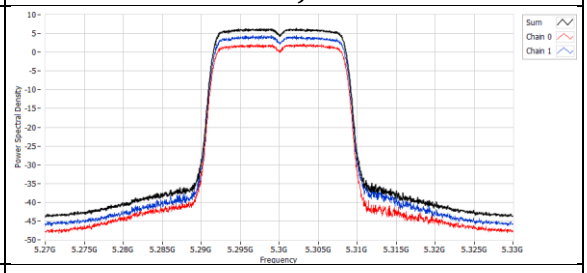
| Mode (U-NII-2A) | CH | Freq (MHz) | Directional Gain (dBi) | Total PSD (dBm/MHz) | Limit (dBm/MHz) | Result |
|---|---|---|---|---|---|---|
| 802.11a | 52 | 5260 | 7.13 | 6.61 | 9.87 | PASS |
| | 60 | 5300 | 7.13 | 6.32 | 9.87 | PASS |
| | 64 | 5320 | 7.13 | 6.6 | 9.87 | PASS |

| Mode (U-NII-2A) | CH | Freq (MHz) | PSD per Chain (dBm/MHz) | |
|---|---|---|---|---|
| | | | Chain 0 | Chain 1 |
| 802.11a | 52 | 5260 | 2.15 | 4.9 |
| | 60 | 5300 | 2.192 | 4.565 |
| | 64 | 5320 | 2.664 | 4.581 |

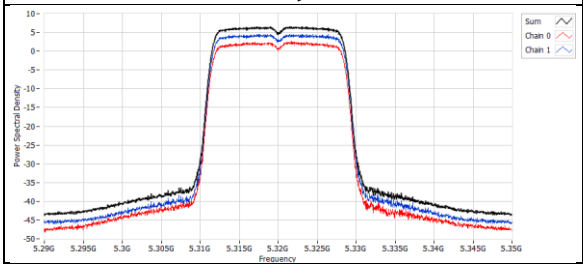
**802.11a, CH52**




**802.11a, CH60**



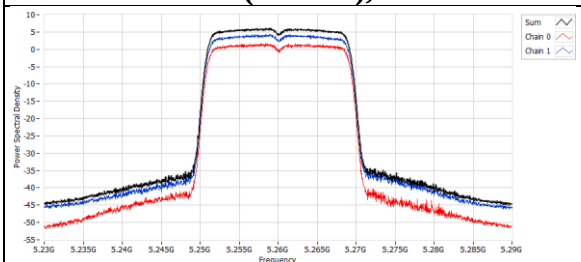

**802.11a, CH64**



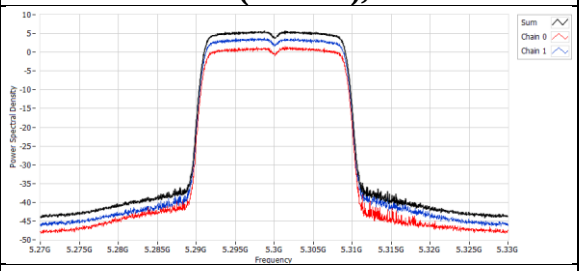
| Mode (U-NII-2A) | CH | Freq (MHz) | Directional Gain (dBi) | Total PSD (dBm/MHz) | Limit (dBm/MHz) | Result |
|---|---|---|---|---|---|---|
| 802.11ac(VHT20) | 52 | 5260 | 7.13 | 6.09 | 9.87 | PASS |
| | 60 | 5300 | 7.13 | 5.73 | 9.87 | PASS |
| | 64 | 5320 | 7.13 | 5.52 | 9.87 | PASS |

| Mode (U-NII-2A) | CH | Freq (MHz) | PSD per Chain (dBm/MHz) | |
|---|---|---|---|---|
| | | | Chain 0 | Chain 1 |
| 802.11ac(VHT20) | 52 | 5260 | 1.671 | 4.292 |
| | 60 | 5300 | 1.546 | 3.873 |
| | 64 | 5320 | 1.316 | 3.637 |

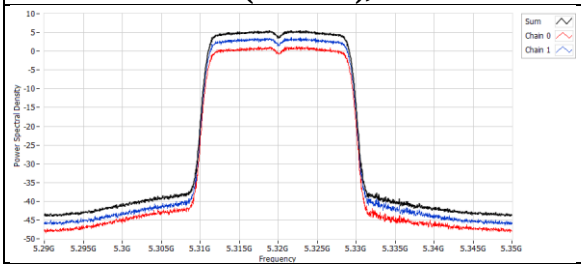
**802.11ac(VHT20), CH52**




**802.11ac(VHT20), CH60**



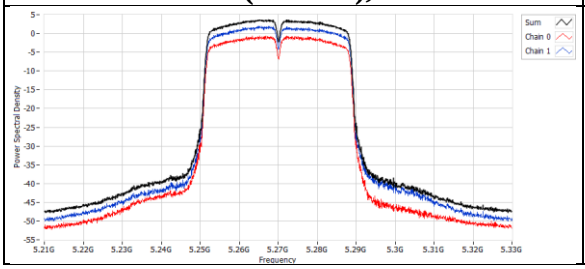

**802.11ac(VHT20), CH64**



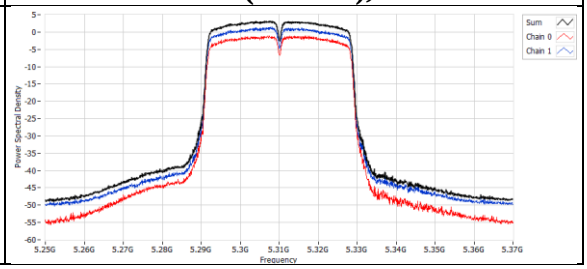
| Mode (U-NII-2A) | CH | Freq (MHz) | Directional Gain (dBi) | Total PSD (dBm/MHz) | Limit (dBm/MHz) | Result |
|---|---|---|---|---|---|---|
| 802.11ac(VHT40) | 54 | 5270 | 7.13 | 3.68 | 9.87 | PASS |
| | 62 | 5310 | 7.13 | 3.17 | 9.87 | PASS |

| Mode (U-NII-2A) | CH | Freq (MHz) | PSD per Chain (dBm/MHz) | |
|---|---|---|---|---|
| | | | Chain 0 | Chain 1 |
| 802.11ac(VHT40) | 54 | 5270 | -0.717 | 1.938 |
| | 62 | 5310 | -1.124 | 1.413 |

**802.11ac(VHT40), CH54**



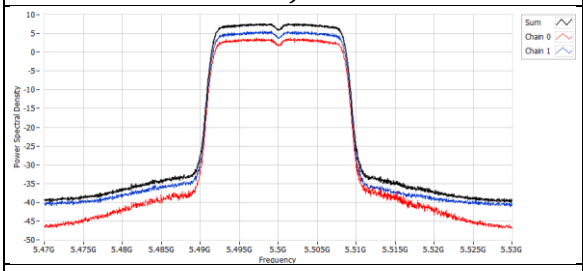

**802.11ac(VHT40), CH62**



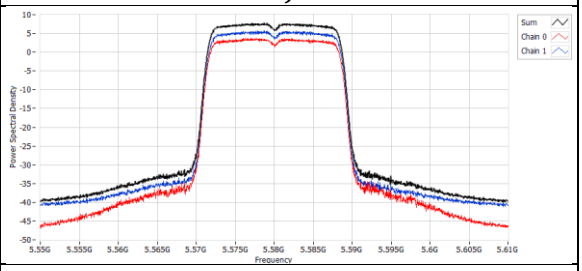
| Mode (U-NII-2C) | CH | Freq (MHz) | Directional Gain (dBi) | Total PSD (dBm/MHz) | Limit (dBm/MHz) | Result |
|---|---|---|---|---|---|---|
| 802.11a | 100 | 5500 | 7.13 | 7.64 | 9.87 | PASS |
| | 116 | 5580 | 7.13 | 7.76 | 9.87 | PASS |
| | 140 | 5700 | 7.13 | 6.64 | 9.87 | PASS |

| Mode (U-NII-2C) | CH | Freq (MHz) | PSD per Chain (dBm/MHz) | |
|---|---|---|---|---|
| | | | Chain 0 | Chain 1 |
| 802.11a | 100 | 5500 | 3.821 | 5.74 |
| | 116 | 5580 | 3.73 | 5.78 |
| | 140 | 5700 | 1.275 | 5.281 |

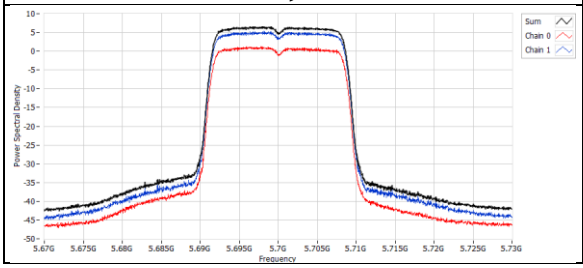
**802.11a, CH100**




**802.11a, CH116**



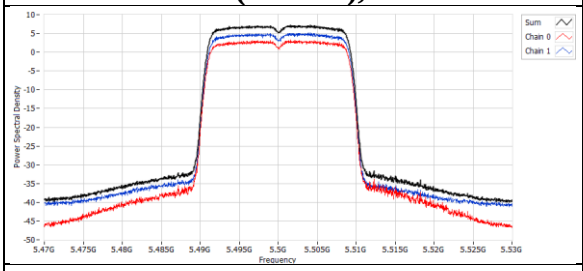

**802.11a, CH140**



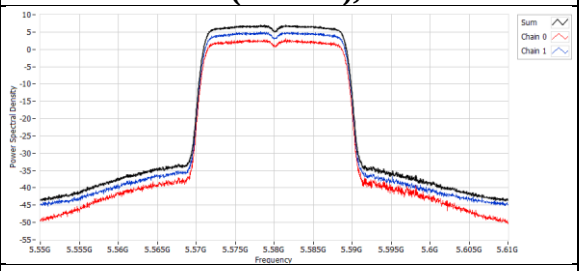
| Mode (U-NII-2C) | CH | Freq (MHz) | Directional Gain (dBi) | Total PSD (dBm/MHz) | Limit (dBm/MHz) | Result |
|---|---|---|---|---|---|---|
| 802.11ac(VHT20) | 100 | 5500 | 7.13 | 7.19 | 9.87 | PASS |
| | 116 | 5580 | 7.13 | 7 | 9.87 | PASS |
| | 140 | 5700 | 7.13 | 5.94 | 9.87 | PASS |

| Mode (U-NII-2C) | CH | Freq (MHz) | PSD per Chain (dBm/MHz) | |
|---|---|---|---|---|
| | | | Chain 0 | Chain 1 |
| 802.11ac(VHT20) | 100 | 5500 | 3.216 | 5.247 |
| | 116 | 5580 | 3.106 | 5.097 |
| | 140 | 5700 | 0.794 | 4.526 |

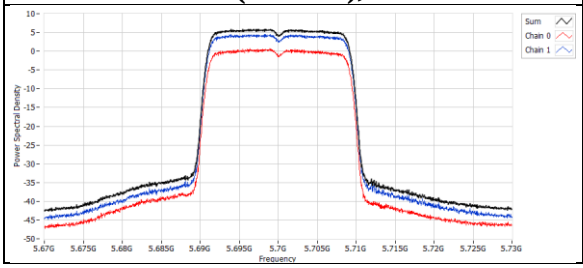
**802.11ac(VHT20), CH100**




**802.11ac(VHT20), CH116**



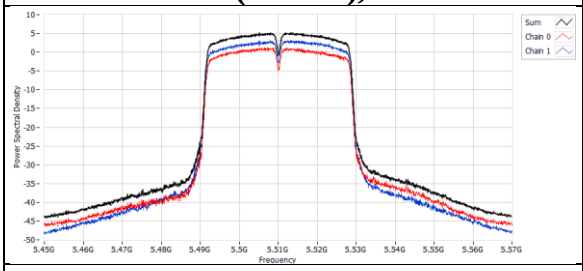

**802.11ac(VHT20), CH140**



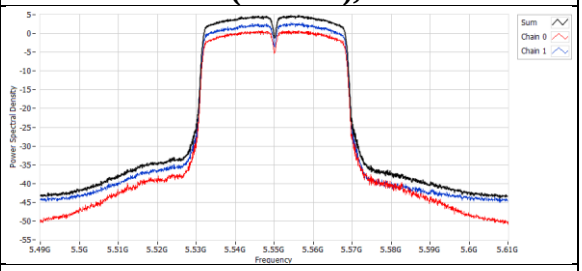
| Mode (U-NII-2C) | CH | Freq (MHz) | Directional Gain (dBi) | Total PSD (dBm/MHz) | Limit (dBm/MHz) | Result |
|---|---|---|---|---|---|---|
| 802.11ac(VHT40) | 102 | 5510 | 7.13 | 5.21 | 9.87 | PASS |
| | 110 | 5550 | 7.13 | 4.87 | 9.87 | PASS |
| | 134 | 5670 | 7.13 | 4.05 | 9.87 | PASS |

| Mode (U-NII-2C) | CH | Freq (MHz) | PSD per Chain (dBm/MHz) | |
|---|---|---|---|---|
| | | | Chain 0 | Chain 1 |
| 802.11ac(VHT40) | 102 | 5510 | 1.248 | 3.193 |
| | 110 | 5550 | 0.75 | 2.856 |
| | 134 | 5670 | -0.508 | 2.513 |

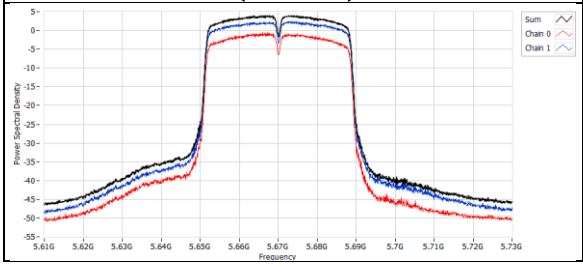
**802.11ac(VHT40), CH102**




**802.11ac(VHT40), CH110**



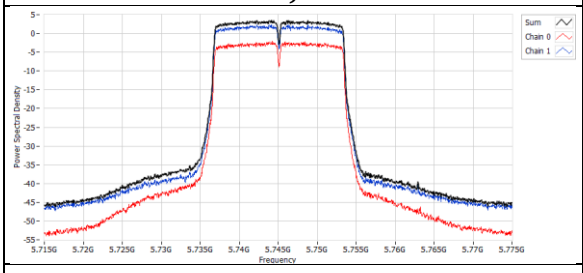

**802.11ac(VHT40), CH134**



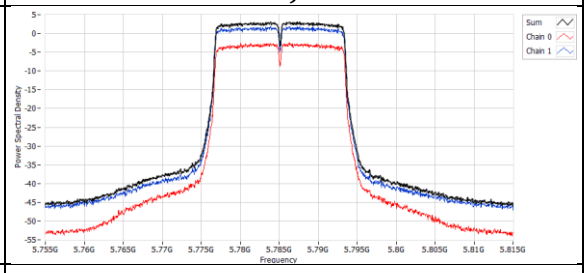
| Mode (U-NII-3) | CH | Freq (MHz) | BWCF | Directional Gain (dBi) | Total PSD (dBm/500kHz) | Limit (dBm/500kHz) | Result |
|---|---|---|---|---|---|---|---|
| 802.11a | 149 | 5745 | 2.22 | 7.13 | 5.68 | 28.87 | PASS |
| | 157 | 5785 | 2.22 | 7.13 | 5.36 | 28.87 | PASS |
| | 165 | 5825 | 2.22 | 7.13 | 4.9 | 28.87 | PASS |

| Mode (U-NII-3) | CH | Freq (MHz) | PSD per Chain (dBm/500kHz) | |
|---|---|---|---|---|
| | | | Chain 0 | Chain 1 |
| 802.11a | 149 | 5745 | -2.082 | 2.251 |
| | 157 | 5785 | -2.417 | 1.882 |
| | 165 | 5825 | -2.743 | 1.445 |

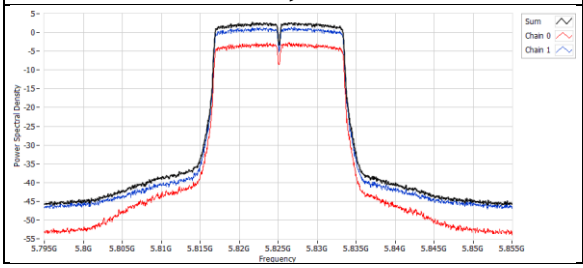
**802.11a, CH149**




**802.11a, CH157**



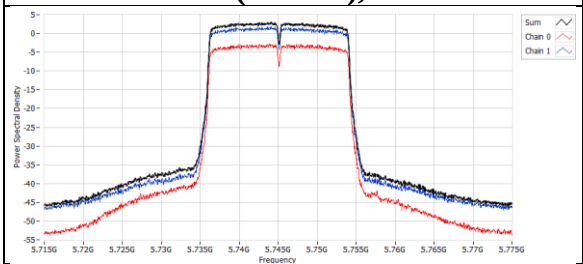

**802.11a, CH165**



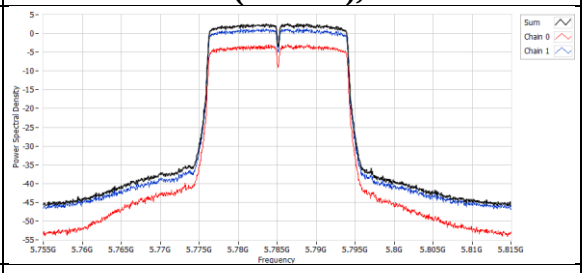
| Mode (U-NII-3) | CH | Freq (MHz) | BWCF | Directional Gain (dBi) | Total PSD (dBm/500kHz) | Limit (dBm/500kHz) | Result |
|---|---|---|---|---|---|---|---|
| 802.11ac(VHT20) | 149 | 5745 | 2.22 | 7.13 | 5.34 | 28.87 | PASS |
| | 157 | 5785 | 2.22 | 7.13 | 4.83 | 28.87 | PASS |
| | 165 | 5825 | 2.22 | 7.13 | 4.49 | 28.87 | PASS |

| Mode (U-NII-3) | CH | Freq (MHz) | PSD per Chain (dBm/500kHz) | |
|---|---|---|---|---|
| | | | Chain 0 | Chain 1 |
| 802.11ac(VHT20) | 149 | 5745 | -2.865 | 1.928 |
| | 157 | 5785 | -2.828 | 1.343 |
| | 165 | 5825 | -3.167 | 0.986 |

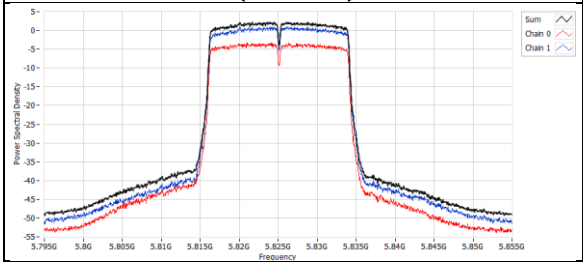
**802.11ac(VHT20), CH149**




**802.11ac(VHT20), CH157**



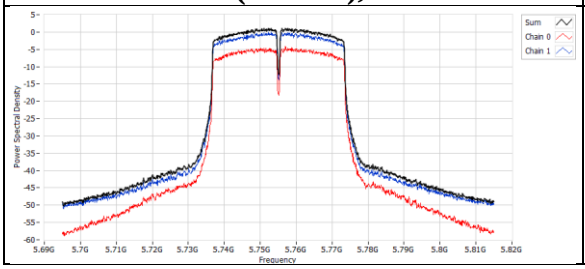

**802.11ac(VHT20), CH165**



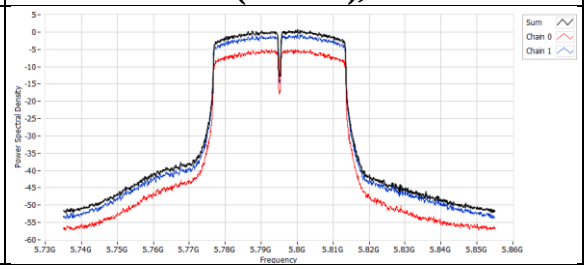
| Mode (U-NII-3) | CH | Freq (MHz) | BWCF | Directional Gain (dBi) | Total PSD (dBm/500kHz) | Limit (dBm/500kHz) | Result |
|---|---|---|---|---|---|---|---|
| 802.11ac(VHT40) | 151 | 5755 | 2.22 | 7.13 | 3.34 | 28.87 | PASS |
| | 159 | 5795 | 2.22 | 7.13 | 2.89 | 28.87 | PASS |

| Mode (U-NII-3) | CH | Freq (MHz) | PSD per Chain (dBm/500kHz) | |
|---|---|---|---|---|
| | | | Chain 0 | Chain 1 |
| 802.11ac(VHT40) | 151 | 5755 | -4.116 | 0.038 |
| | 159 | 5795 | -5.046 | -0.562 |

**802.11ac(VHT40), CH151**




**802.11ac(VHT40), CH159**



## 9.6. Frequency Stability

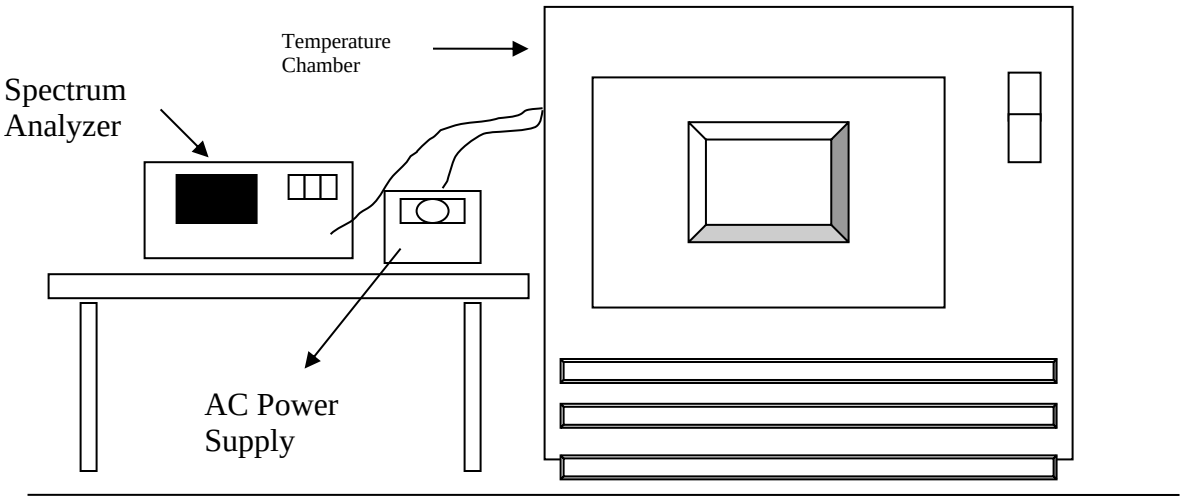
### Requirements

The frequency of the carrier signal shall be maintained within band of operation.

### Test procedure

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
b. Turn the EUT on and couple its output to a spectrum analyzer.
c. Turn the EUT off and set the chamber to the highest temperature specified.
d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.
e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

### Test Setup



## Test Data

| Frequency Stability Versus Temp. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Operating Frequency: 5180 MHz | | | | | | | | | |
| TEMP. (°C) | Power Supply (Vac) | 0 Minute | | 2 Minute | | 5 Minute | | 10 Minute | |
| | | Measured Frequency (MHz) | Freq. Drift (ppm) | Measured Frequency (MHz) | Freq. Drift (ppm) | Measured Frequency (MHz) | Freq. Drift (ppm) | Measured Frequency (MHz) | Freq. Drift (ppm) |
| 50 | 120 | 5180.0161 | 3.11 | 5180.0191 | 3.69 | 5180.0182 | 3.51 | 5180.0162 | 3.13 |
| 40 | 120 | 5179.9827 | -3.34 | 5179.9793 | -4.00 | 5179.9802 | -3.82 | 5179.9839 | -3.11 |
| 30 | 120 | 5179.9895 | -2.03 | 5179.9909 | -1.76 | 5179.9892 | -2.08 | 5179.9879 | -2.34 |
| 20 | 120 | 5180.0162 | 3.13 | 5180.0168 | 3.24 | 5180.0196 | 3.78 | 5180.0204 | 3.94 |
| 10 | 120 | 5180.0165 | 3.19 | 5180.0188 | 3.63 | 5180.0174 | 3.36 | 5180.0188 | 3.63 |
| 0 | 120 | 5179.996 | -0.77 | 5179.9972 | -0.54 | 5179.9967 | -0.64 | 5179.9986 | -0.27 |
| -10 | 120 | 5180.0081 | 1.56 | 5180.0073 | 1.41 | 5180.0092 | 1.78 | 5180.0115 | 2.22 |
| -20 | 120 | 5179.9939 | -1.18 | 5179.9931 | -1.33 | 5179.9931 | -1.33 | 5179.992 | -1.54 |
| TEMP. (°C) | Power Supply (Vac) | 0 Minute | | 2 Minute | | 5 Minute | | 10 Minute | |
| | | Measured Frequency (MHz) | Freq. Drift (ppm) | Measured Frequency (MHz) | Freq. Drift (ppm) | Measured Frequency (MHz) | Freq. Drift (ppm) | Measured Frequency (MHz) | Freq. Drift (ppm) |
| 20 | 138 | 5180.0159 | 3.07 | 5180.0161 | 3.11 | 5180.0199 | 3.84 | 5180.0202 | 3.90 |
| 20 | 120 | 5180.0162 | 3.13 | 5180.0168 | 3.24 | 5180.0196 | 3.78 | 5180.0204 | 3.94 |
| 20 | 102 | 5180.0165 | 3.19 | 5180.016 | 3.09 | 5180.0187 | 3.61 | 5180.0203 | 3.92 |

## 9.7. Radiated Spurious Emission

**Requirements**

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

| Frequency(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 |

NOTE:
1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

| Applicable To | | Limit | |
|---|---|---|---|
| 789033 D02 General UNII Test Procedure New Rules v02r01 | | Field Strength at 3m | |
| | | PK:74 (dBµV/m) | AV:54 (dBµV/m) |
| **Frequency Band** | **Applicable To** | **EIRP Limit** | **Equivalent Field Strength at 3m** |
| 5150~5250 MHz | 15.407(b)(1) | PK:-27 (dBm/MHz) | PK:68.2(dBµV/m) |
| 5250~5350 MHz | 15.407(b)(2) | | |
| 5470~5725 MHz | 15.407(b)(3) | | |
| 5725~5850 MHz | 15.407(b)(4)(i) | PK:-27 (dBm/MHz) *1<br>PK:10 (dBm/MHz) *2<br>PK:15.6 (dBm/MHz) *3<br>PK:27 (dBm/MHz) *4 | PK: 68.2(dBµV/m) *1<br>PK:105.2 (dBµV/m) *2<br>PK: 110.8(dBµV/m) *3<br>PK:122.2 (dBµV/m) *4 |
| *1 beyond 75 MHz or more above of the band edge.<br>*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.<br>*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.<br>*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. | | | |

**Note:**
The following formula is used to convert the effective isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3}$$ µV/m, where P is the eirp (Watts).

## Test Procedures

[For 9 kHz ~ 30 MHz]

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. For measurement below 30MHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

NOTE:
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

[For above 30 MHz]

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
f. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

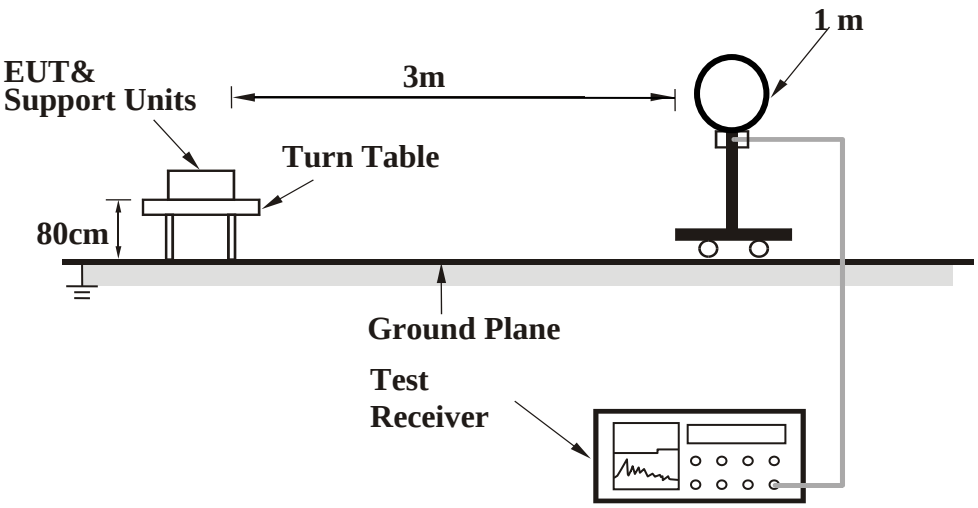
a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
b. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
c. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.

| Configuration | Average | |
|---|---|---|
| | RBW | VBW |
| 802.11a | 1MHz | Refer to section 6.6 for duty cycle. |
| 802.11ac (VHT20) | | |
| 802.11ac (VHT40) | | |

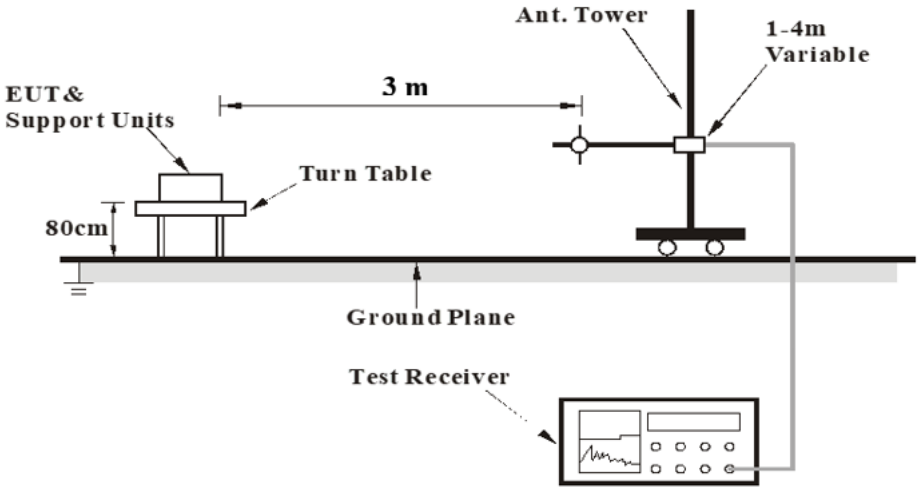
d. All modes of operation were investigated (includes all external accessories) and the worst-case emissions are reported, the other emission levels were low against the limit.
e. Test data of Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
f. Test data of Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
g. Test data of Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
h. Test data of Notation "@" = Fundamental Frequency
i. Test data of Notation " * " = Only required peak limit or the peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.

## Test Setup

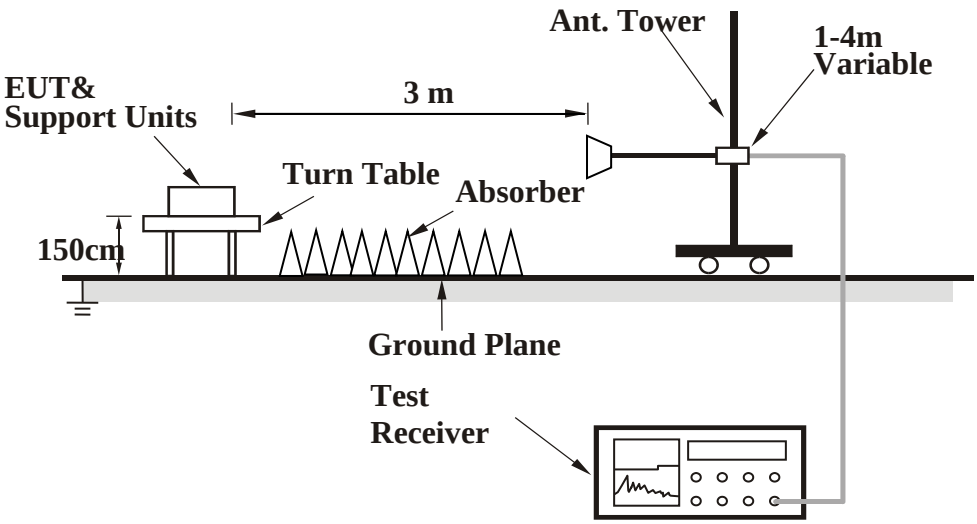
<Frequency Range 9 kHz ~ 30 MHz>




<Frequency Range 30 MHz ~ 1 GHz >



<Frequency Range above 1 GHz>




For the actual test configuration, please refer to the Setup Configurations.

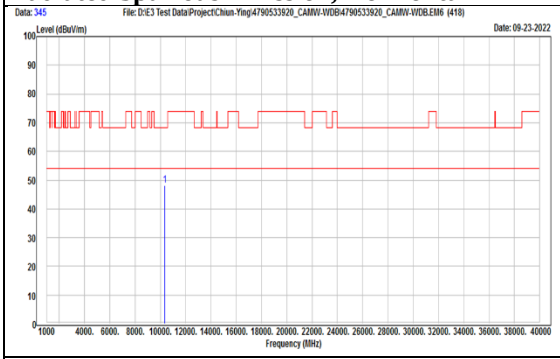
## Test Data

### Above 1 GHz

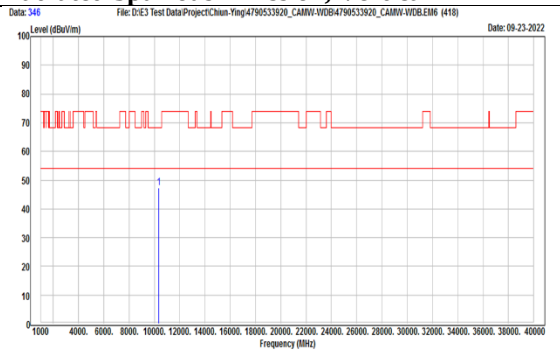
| Mode | 802.11a | Channel | 36 |
|---|---|---|---|

| Polarization | Notation | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| Horizontal | | 5089.6 | 42.43 | 19.37 | 61.8 | 74 | -12.2 | PK |
| | | 5105.7 | 29.75 | 19.44 | 49.19 | 54 | -4.81 | AVG |
| | @ | 5180 | 83.48 | 19.31 | 102.79 | N/A | N/A | PK |
| | @ | 5180 | 74.23 | 19.31 | 93.54 | N/A | N/A | AVG |
| | * | 10360 | 30.73 | 17.51 | 48.24 | 68.2 | -19.96 | PK |
| Vertical | | 5085.4 | 41.9 | 19.34 | 61.24 | 74 | -12.76 | PK |
| | | 5086.1 | 29.87 | 19.35 | 49.22 | 54 | -4.78 | AVG |
| | @ | 5180 | 82.92 | 19.31 | 102.23 | N/A | N/A | PK |
| | @ | 5180 | 71.84 | 19.31 | 91.15 | N/A | N/A | AVG |
| | * | 10360 | 29.94 | 17.51 | 47.45 | 68.2 | -20.75 | PK |

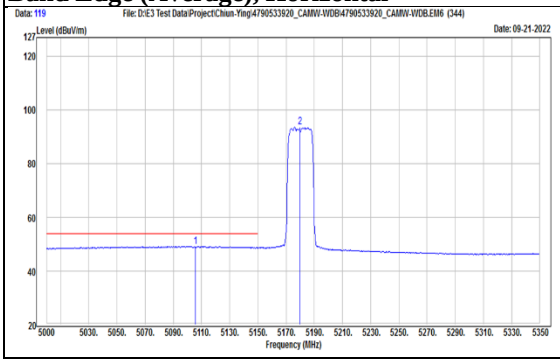
**TX, 802.11a (Ch 36)**
**Radiated Spurious Emission, Horizontal**



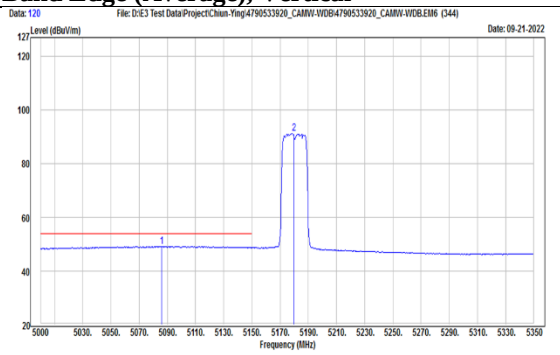

**TX, 802.11a (Ch 36)**
**Radiated Spurious Emission, Vertical**



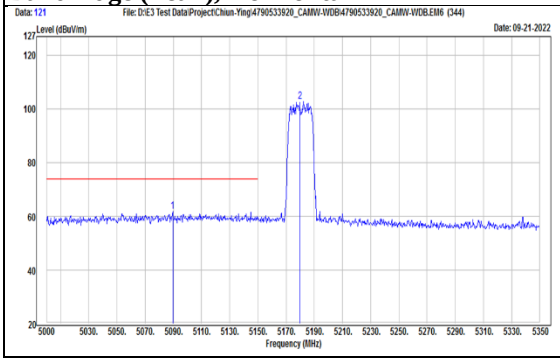

**TX, 802.11a (Ch 36)**
**Band Edge (Average), Horizontal**



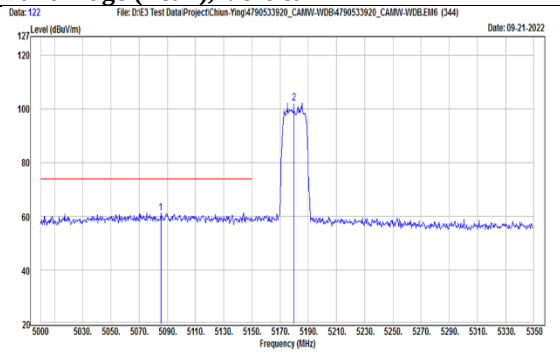

**TX, 802.11a (Ch 36)**
**Band Edge (Average), Vertical**




**TX, 802.11a (Ch 36)**
**Band Edge (Peak), Horizontal**



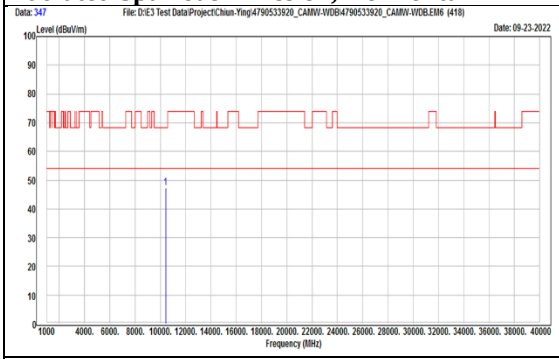

**TX, 802.11a (Ch 36)**
**Band Edge (Peak), Vertical**



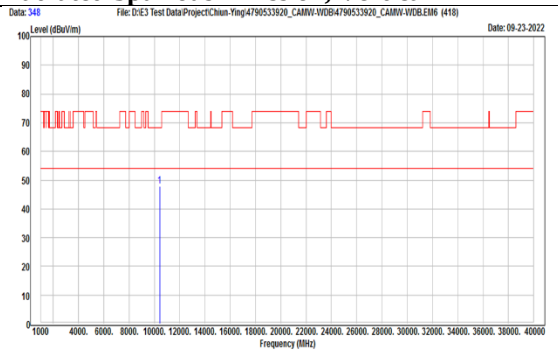
| Mode | 802.11a | Channel | 44 |
|---|---|---|---|

| Polarization | Notation | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| Horizontal | | 5095.55 | 29.83 | 19.41 | 49.24 | 54 | -4.76 | AVG |
| | | 5136.15 | 42.97 | 19.41 | 62.38 | 74 | -11.62 | PK |
| | @ | 5220 | 83.16 | 19.12 | 102.28 | N/A | N/A | PK |
| | @ | 5220 | 73 | 19.12 | 92.12 | N/A | N/A | AVG |
| | * | 10440 | 29.54 | 17.81 | 47.35 | 68.2 | -20.85 | PK |
| Vertical | | 5081.2 | 42.62 | 19.31 | 61.93 | 74 | -12.07 | PK |
| | | 5105 | 29.78 | 19.44 | 49.22 | 54 | -4.78 | AVG |
| | @ | 5220 | 80.78 | 19.12 | 99.9 | N/A | N/A | PK |
| | @ | 5220 | 71.66 | 19.12 | 90.78 | N/A | N/A | AVG |
| | * | 10440 | 30.1 | 17.81 | 47.91 | 68.2 | -20.29 | PK |

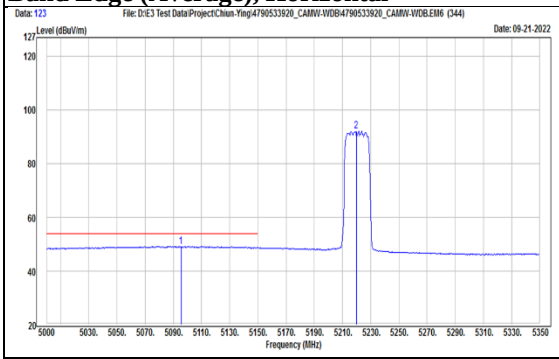
**TX, 802.11a (Ch 44)**
**Radiated Spurious Emission, Horizontal**



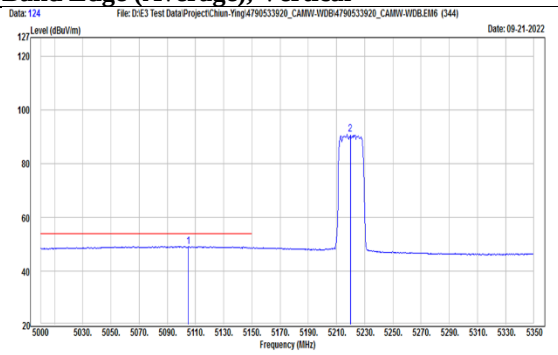

**TX, 802.11a (Ch 44)**
**Radiated Spurious Emission, Vertical**



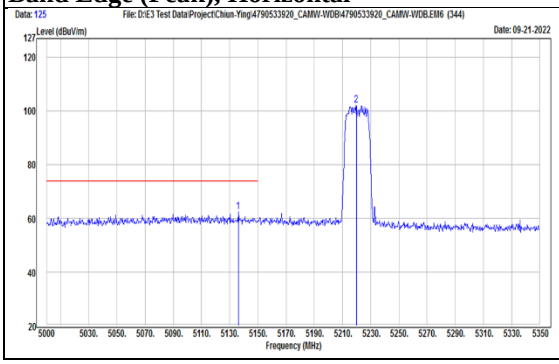

**TX, 802.11a (Ch 44)**
**Band Edge (Average), Horizontal**



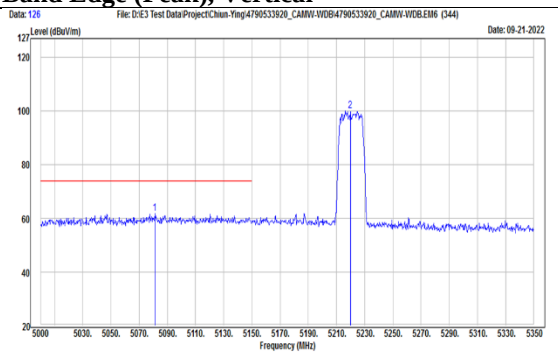

**TX, 802.11a (Ch 44)**
**Band Edge (Average), Vertical**




**TX, 802.11a (Ch 44)**
**Band Edge (Peak), Horizontal**



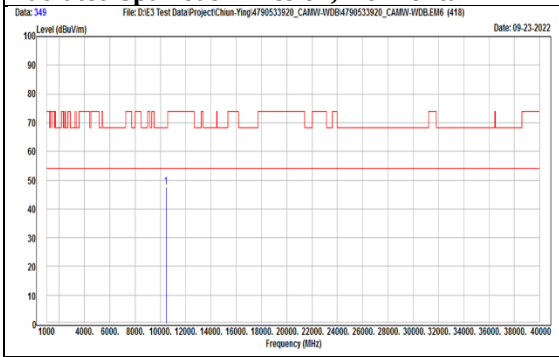

**TX, 802.11a (Ch 44)**
**Band Edge (Peak), Vertical**



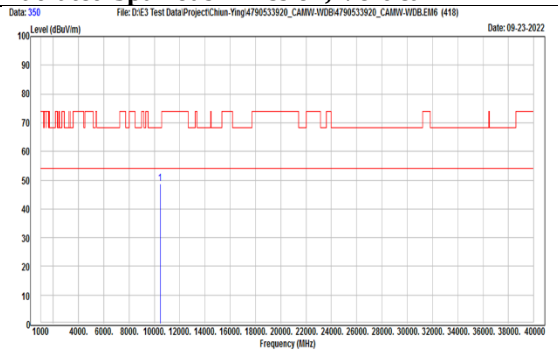
| Mode | 802.11a | Channel | 48 |
|---|---|---|---|

| Polarization | Notation | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| Horizontal | | 5112.35 | 41.77 | 19.44 | 61.21 | 74 | -12.79 | PK |
| | | 5125.3 | 29.76 | 19.42 | 49.18 | 54 | -4.82 | AVG |
| | @ | 5240 | 84.42 | 18.97 | 103.39 | N/A | N/A | PK |
| | @ | 5240 | 72.99 | 18.97 | 91.96 | N/A | N/A | AVG |
| | * | 10480 | 29.8 | 17.92 | 47.72 | 68.2 | -20.48 | PK |
| Vertical | | 5087.5 | 29.9 | 19.35 | 49.25 | 54 | -4.75 | AVG |
| | | 5119 | 42.22 | 19.43 | 61.65 | 74 | -12.35 | PK |
| | @ | 5240 | 79.96 | 18.97 | 98.93 | N/A | N/A | PK |
| | @ | 5240 | 71.77 | 18.97 | 90.74 | N/A | N/A | AVG |
| | * | 10480 | 30.77 | 17.92 | 48.69 | 68.2 | -19.51 | PK |

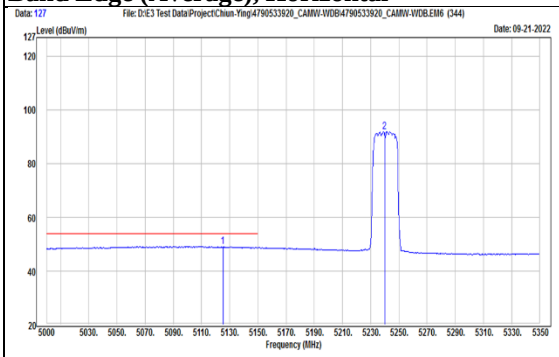
**TX, 802.11a (Ch 48)**
**Radiated Spurious Emission, Horizontal**



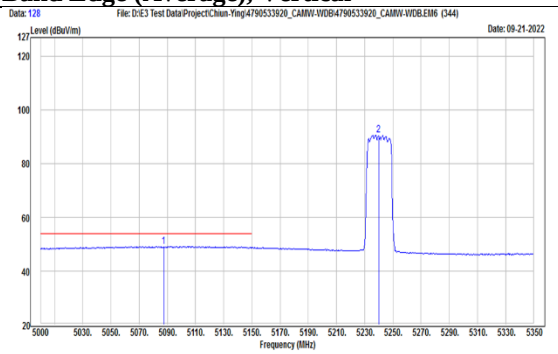

**TX, 802.11a (Ch 48)**
**Radiated Spurious Emission, Vertical**



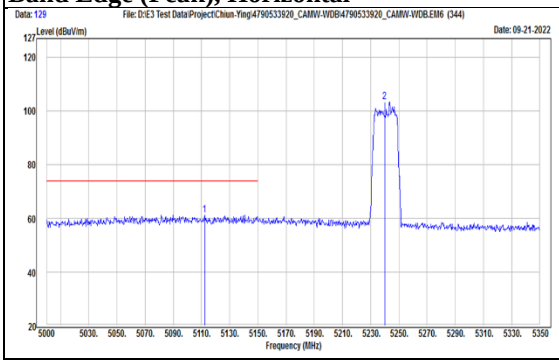

**TX, 802.11a (Ch 48)**
**Band Edge (Average), Horizontal**



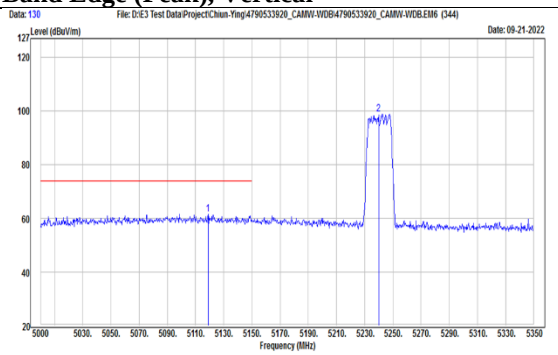

**TX, 802.11a (Ch 48)**
**Band Edge (Average), Vertical**




**TX, 802.11a (Ch 48)**
**Band Edge (Peak), Horizontal**



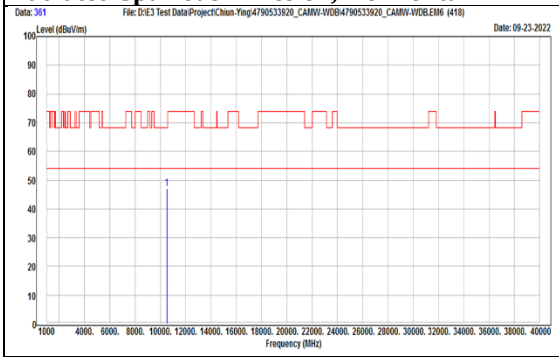

**TX, 802.11a (Ch 48)**
**Band Edge (Peak), Vertical**



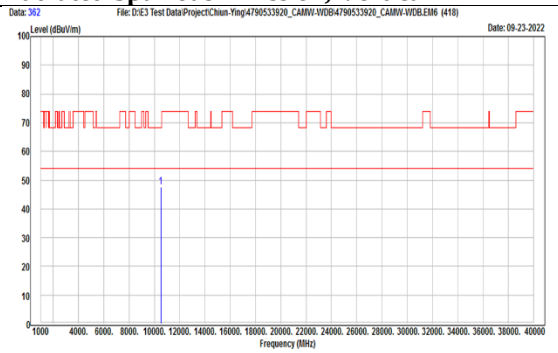
| Mode | 802.11a | Channel | 52 |
|---|---|---|---|

| Polarization | Notation | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| Horizontal | @ | 5260 | 85.25 | 18.88 | 104.13 | N/A | N/A | PK |
| | @ | 5260 | 75.14 | 18.88 | 94.02 | N/A | N/A | AVG |
| | | 5380.5 | 40.12 | 19.16 | 59.28 | 74 | -14.72 | PK |
| | | 5459.7 | 28.03 | 19.57 | 47.6 | 54 | -6.4 | AVG |
| | * | 10520 | 28.99 | 17.99 | 46.98 | 68.2 | -21.22 | PK |
| Vertical | @ | 5260 | 84.31 | 18.88 | 103.19 | N/A | N/A | PK |
| | @ | 5260 | 73.97 | 18.88 | 92.85 | N/A | N/A | AVG |
| | | 5453.1 | 40.45 | 19.53 | 59.98 | 74 | -14.02 | PK |
| | | 5458.5 | 28.09 | 19.56 | 47.65 | 54 | -6.35 | AVG |
| | * | 10520 | 29.67 | 17.99 | 47.66 | 68.2 | -20.54 | PK |

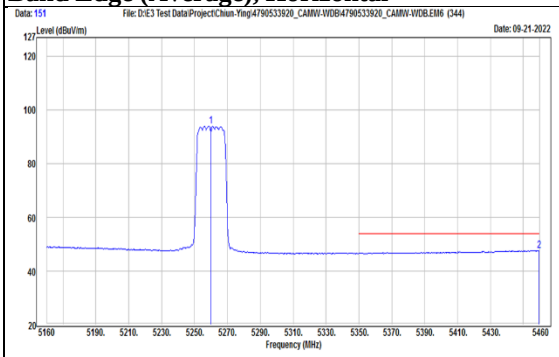
**TX, 802.11a (Ch 52)**
**Radiated Spurious Emission, Horizontal**



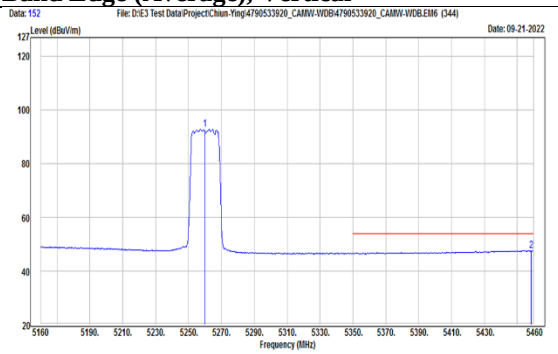

**TX, 802.11a (Ch 52)**
**Radiated Spurious Emission, Vertical**



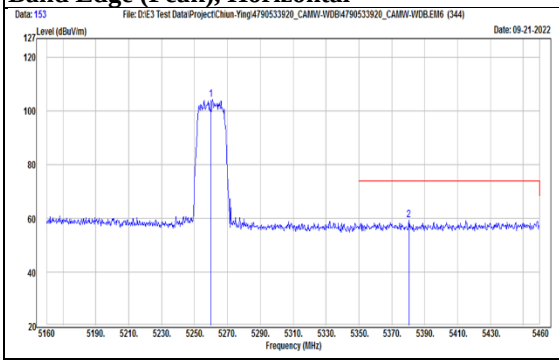

**TX, 802.11a (Ch 52)**
**Band Edge (Average), Horizontal**



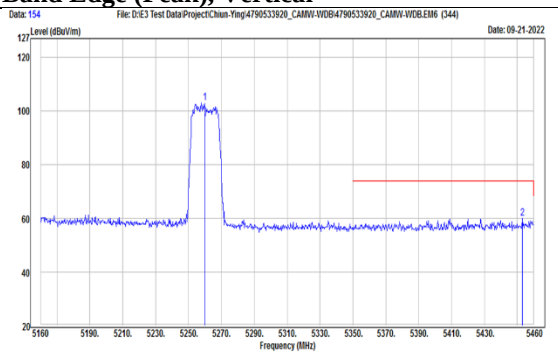

**TX, 802.11a (Ch 52)**
**Band Edge (Average), Vertical**




**TX, 802.11a (Ch 52)**
**Band Edge (Peak), Horizontal**



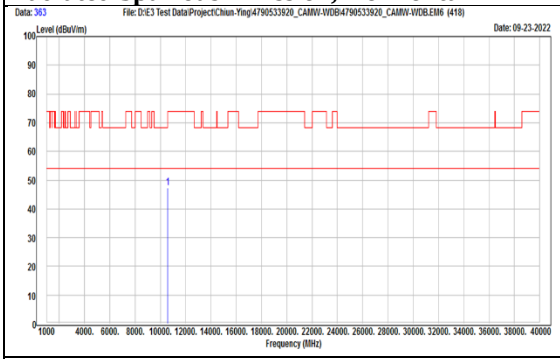

**TX, 802.11a (Ch 52)**
**Band Edge (Peak), Vertical**



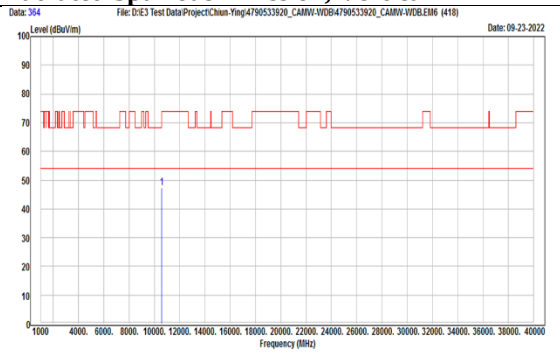
| Mode | 802.11a | Channel | 60 |
|---|---|---|---|

| Polarization | Notation | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| Horizontal | @ | 5300 | 84.37 | 18.77 | 103.14 | N/A | N/A | PK |
| | @ | 5300 | 74.38 | 18.77 | 93.15 | N/A | N/A | AVG |
| | | 5357.4 | 40.47 | 19.05 | 59.52 | 74 | -14.48 | PK |
| | | 5458.8 | 28.05 | 19.57 | 47.62 | 54 | -6.38 | AVG |
| | * | 10600 | 29.21 | 18.04 | 47.25 | 68.2 | -20.95 | PK |
| Vertical | @ | 5300 | 82.34 | 18.77 | 101.11 | N/A | N/A | PK |
| | @ | 5300 | 72.6 | 18.77 | 91.37 | N/A | N/A | AVG |
| | | 5393.4 | 41.16 | 19.23 | 60.39 | 74 | -13.61 | PK |
| | | 5456.1 | 28.03 | 19.54 | 47.57 | 54 | -6.43 | AVG |
| | * | 10600 | 29.28 | 18.04 | 47.32 | 68.2 | -20.88 | PK |

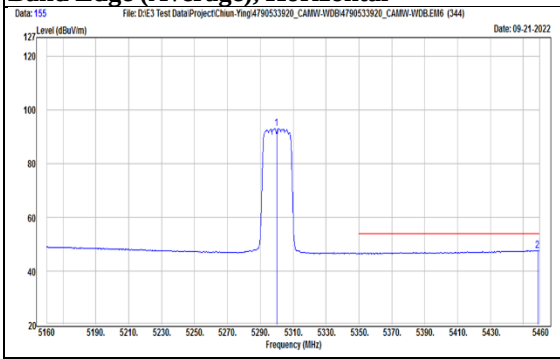
**TX, 802.11a (Ch 60)**
**Radiated Spurious Emission, Horizontal**



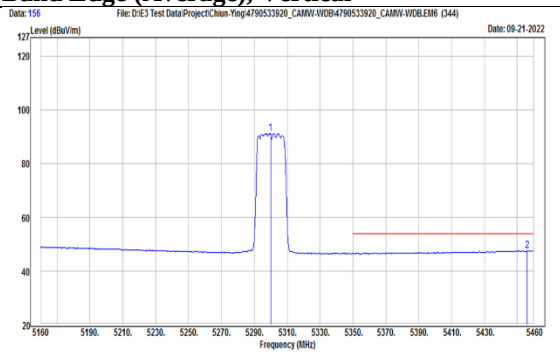

**TX, 802.11a (Ch 60)**
**Radiated Spurious Emission, Vertical**



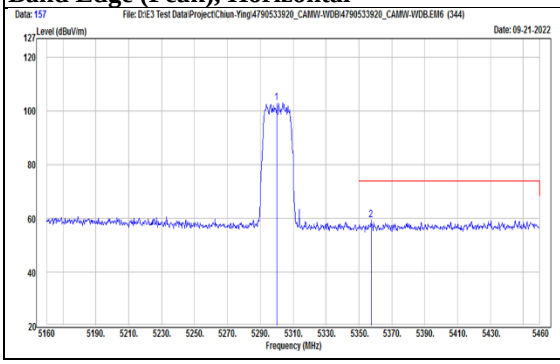

**TX, 802.11a (Ch 60)**
**Band Edge (Average), Horizontal**



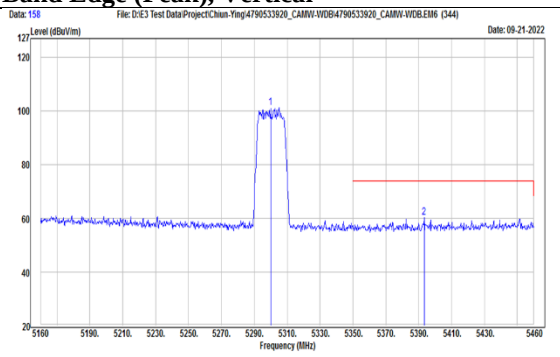

**TX, 802.11a (Ch 60)**
**Band Edge (Average), Vertical**




**TX, 802.11a (Ch 60)**
**Band Edge (Peak), Horizontal**



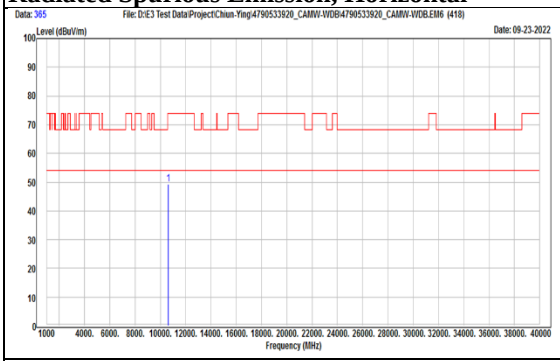

**TX, 802.11a (Ch 60)**
**Band Edge (Peak), Vertical**



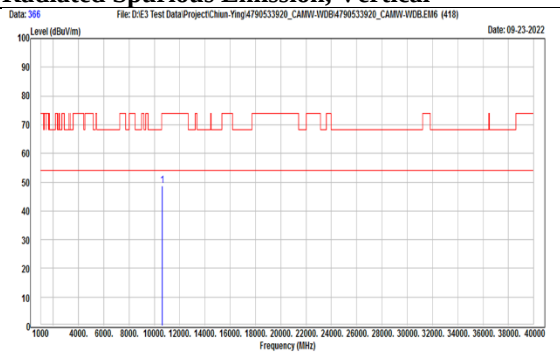
| Mode | 802.11a | Channel | 64 |
|---|---|---|---|

| Polarization | Notation | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| Horizontal | @ | 5320 | 82.61 | 18.86 | 101.47 | N/A | N/A | PK |
| | @ | 5320 | 73.68 | 18.86 | 92.54 | N/A | N/A | AVG |
| | | 5454.6 | 28.09 | 19.54 | 47.63 | 54 | -6.37 | AVG |
| | | 5457.6 | 40.69 | 19.55 | 60.24 | 74 | -13.76 | PK |
| | * | 10640 | 31.25 | 18.03 | 49.28 | 74 | -24.72 | PK |
| Vertical | @ | 5320 | 80.23 | 18.86 | 99.09 | N/A | N/A | PK |
| | @ | 5320 | 71.41 | 18.86 | 90.27 | N/A | N/A | AVG |
| | | 5456.1 | 40.34 | 19.54 | 59.88 | 74 | -14.12 | PK |
| | | 5459.1 | 28 | 19.57 | 47.57 | 54 | -6.43 | AVG |
| | * | 10640 | 30.59 | 18.03 | 48.62 | 74 | -25.38 | PK |

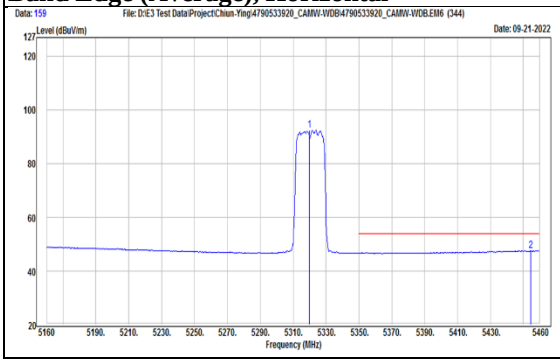
**TX, 802.11a (Ch 64)**
**Radiated Spurious Emission, Horizontal**



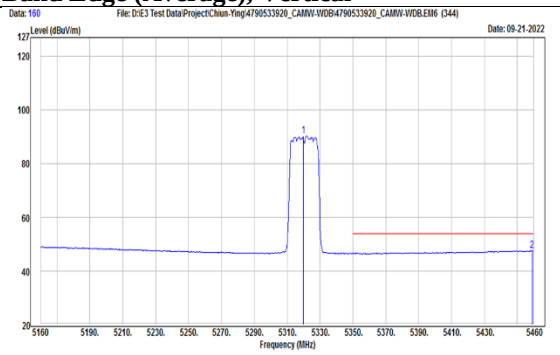

**TX, 802.11a (Ch 64)**
**Radiated Spurious Emission, Vertical**



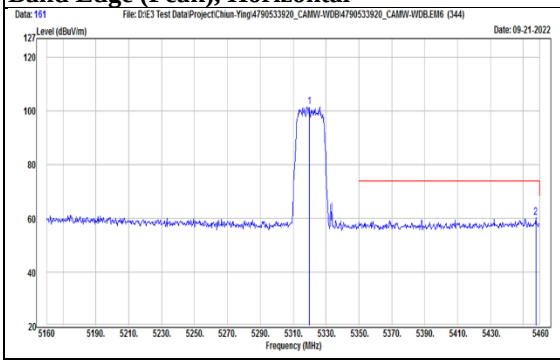

**TX, 802.11a (Ch 64)**
**Band Edge (Average), Horizontal**



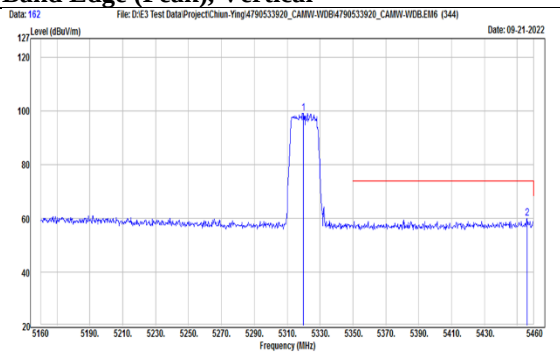

**TX, 802.11a (Ch 64)**
**Band Edge (Average), Vertical**




**TX, 802.11a (Ch 64)**
**Band Edge (Peak), Horizontal**



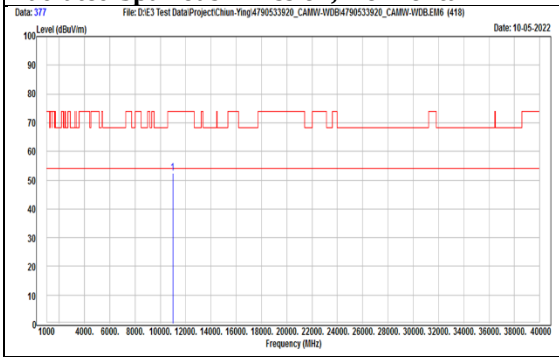

**TX, 802.11a (Ch 64)**
**Band Edge (Peak), Vertical**



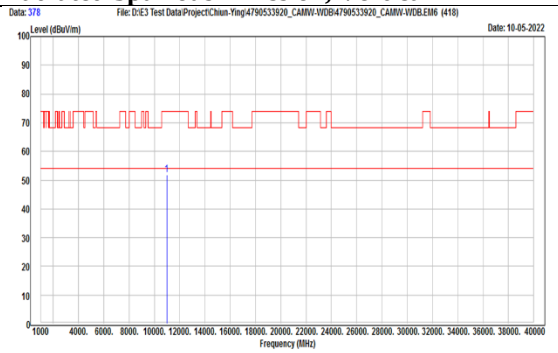
| Mode | 802.11a | Channel | 100 |
|---|---|---|---|

| Polarization | Notation | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| Horizontal | | 5421.35 | 40.34 | 19.38 | 59.72 | 74 | -14.28 | PK |
| | | 5455.65 | 28.11 | 19.54 | 47.65 | 54 | -6.35 | AVG |
| | | 5461.6 | 39.62 | 19.58 | 59.2 | 68.2 | -9 | PK |
| | @ | 5500 | 84.45 | 19.77 | 104.22 | N/A | N/A | PK |
| | @ | 5500 | 75.85 | 19.77 | 95.62 | N/A | N/A | AVG |
| | * | 11000 | 33.98 | 18.41 | 52.39 | 74 | -21.61 | PK |
| Vertical | | 5455.65 | 40.1 | 19.54 | 59.64 | 74 | -14.36 | PK |
| | | 5459.5 | 27.99 | 19.57 | 47.56 | 54 | -6.44 | AVG |
| | | 5466.15 | 39.52 | 19.6 | 59.12 | 68.2 | -9.08 | PK |
| | @ | 5500 | 80.94 | 19.77 | 100.71 | N/A | N/A | PK |
| | @ | 5500 | 71.43 | 19.77 | 91.2 | N/A | N/A | AVG |
| | * | 11000 | 33.46 | 18.41 | 51.87 | 74 | -22.13 | PK |

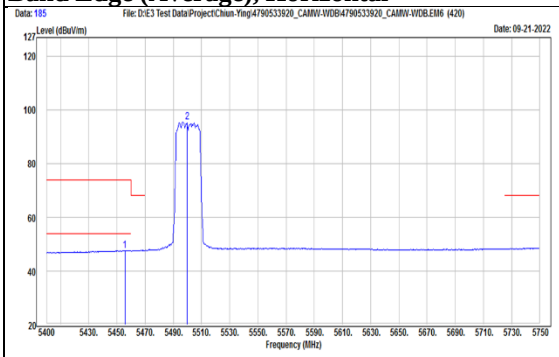
**TX, 802.11a (Ch 100)**
**Radiated Spurious Emission, Horizontal**



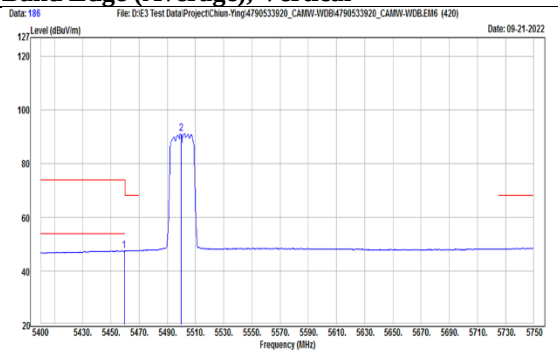

**TX, 802.11a (Ch 100)**
**Radiated Spurious Emission, Vertical**



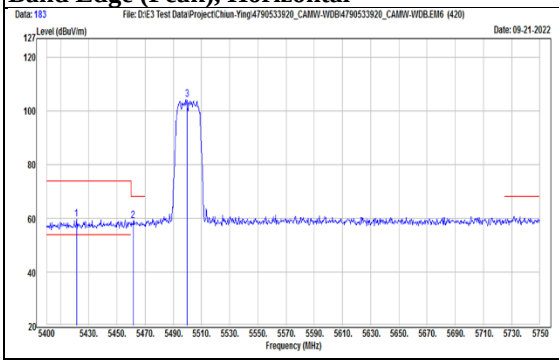

**TX, 802.11a (Ch 100)**
**Band Edge (Average), Horizontal**



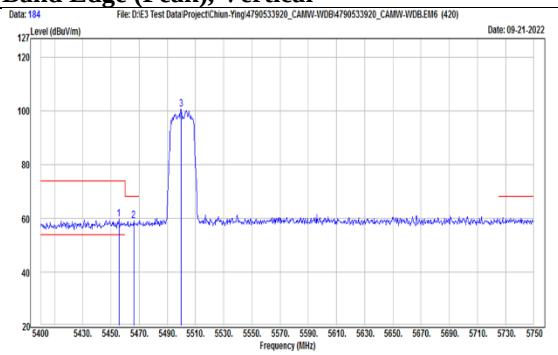

**TX, 802.11a (Ch 100)**
**Band Edge (Average), Vertical**




**TX, 802.11a (Ch 100)**
**Band Edge (Peak), Horizontal**



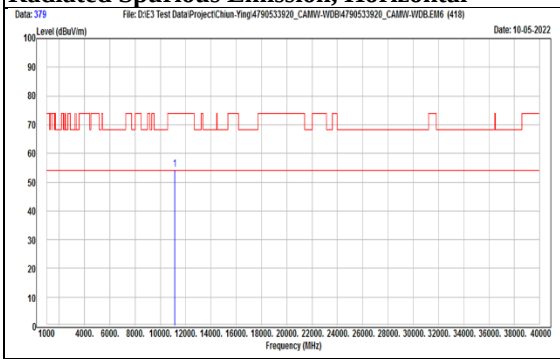

**TX, 802.11a (Ch 100)**
**Band Edge (Peak), Vertical**



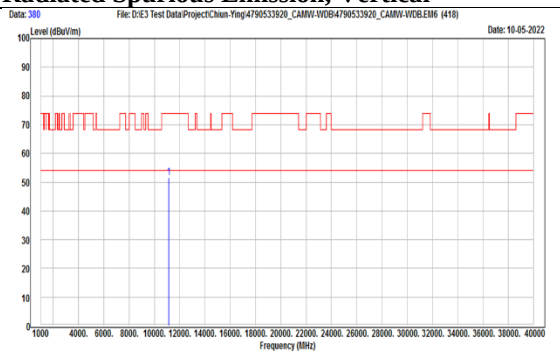
| Mode | 802.11a | Channel | 116 |
|---|---|---|---|

| Polarization | Notation | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| Horizontal | | 5444.45 | 40.17 | 19.5 | 59.67 | 74 | -14.33 | PK |
| | | 5454.95 | 28.19 | 19.54 | 47.73 | 54 | -6.27 | AVG |
| | | 5464.75 | 40.02 | 19.59 | 59.61 | 68.2 | -8.59 | PK |
| | @ | 5580 | 85.87 | 19.76 | 105.63 | N/A | N/A | PK |
| | @ | 5580 | 76.62 | 19.76 | 96.38 | N/A | N/A | AVG |
| | | 5737.4 | 40.92 | 20.08 | 61 | 68.2 | -7.2 | PK |
| | * | 11160 | 35.87 | 18.47 | 54.34 | 74 | -19.66 | PK |
| Vertical | | 5418.2 | 40.51 | 19.35 | 59.86 | 74 | -14.14 | PK |
| | | 5454.6 | 28.15 | 19.54 | 47.69 | 54 | -6.31 | AVG |
| | | 5463.7 | 40.55 | 19.58 | 60.13 | 68.2 | -8.07 | PK |
| | @ | 5580 | 81.1 | 19.76 | 100.86 | N/A | N/A | PK |
| | @ | 5580 | 70.53 | 19.76 | 90.29 | N/A | N/A | AVG |
| | | 5747.2 | 40.48 | 20.17 | 60.65 | 68.2 | -7.55 | PK |
| | * | 11160 | 33.21 | 18.47 | 51.68 | 74 | -22.32 | PK |

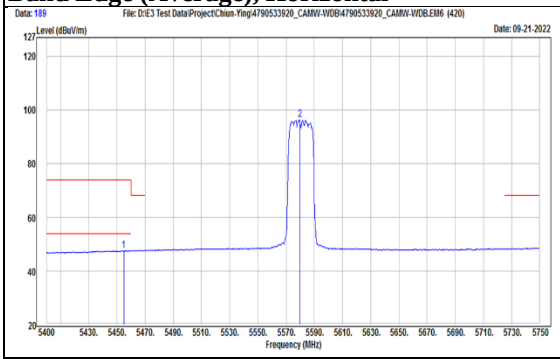
**TX, 802.11a (Ch 116)**
**Radiated Spurious Emission, Horizontal**



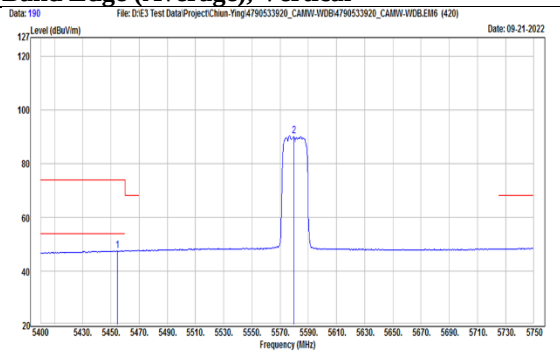

**TX, 802.11a (Ch 116)**
**Radiated Spurious Emission, Vertical**



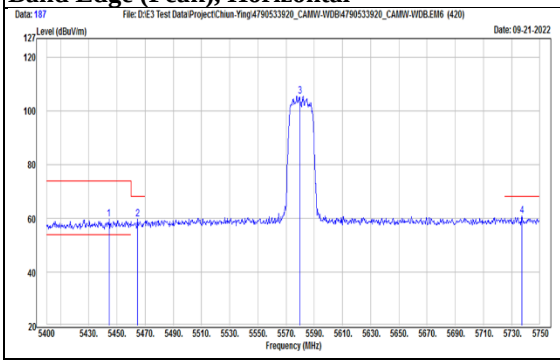

**TX, 802.11a (Ch 116)**
**Band Edge (Average), Horizontal**



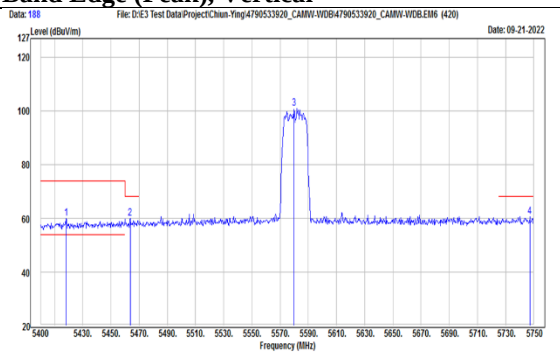

**TX, 802.11a (Ch 116)**
**Band Edge (Average), Vertical**




**TX, 802.11a (Ch 116)**
**Band Edge (Peak), Horizontal**




**TX, 802.11a (Ch 116)**
**Band Edge (Peak), Vertical**



| Mode | 802.11a | Channel | 140 |
|---|---|---|---|

| Polarization | Notation | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| Horizontal | | 5459.15 | 28 | 19.57 | 47.57 | 54 | -6.43 | AVG |
| | @ | 5700 | 88.5 | 19.73 | 108.23 | N/A | N/A | PK |
| | @ | 5700 | 75.54 | 19.73 | 95.27 | N/A | N/A | AVG |
| | | 5732.5 | 40.82 | 20.03 | 60.85 | 68.2 | -7.35 | PK |
| | * | 11400 | 34.85 | 18.85 | 53.7 | 74 | -20.3 | PK |
| Vertical | | 5458.8 | 27.87 | 19.57 | 47.44 | 54 | -6.56 | AVG |
| | @ | 5700 | 80.4 | 19.73 | 100.13 | N/A | N/A | PK |
| | @ | 5700 | 69.31 | 19.73 | 89.04 | N/A | N/A | AVG |
| | | 5740.2 | 41.03 | 20.1 | 61.13 | 68.2 | -7.07 | PK |
| | * | 11400 | 33.22 | 18.85 | 52.07 | 74 | -21.93 | PK |