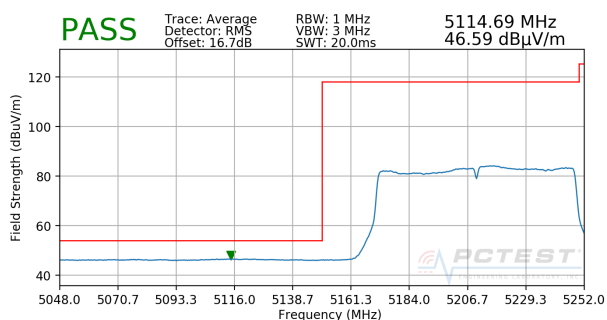


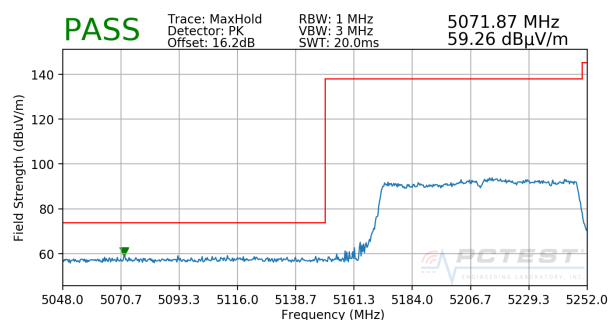
## 7.6.9 SISO Antenna-2 Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209; RSS-Gen [8.9]

|                           |          |
|---------------------------|----------|
| Worst Case Mode:          | 802.11ac |
| Worst Case Transfer Rate: | MCS0     |
| Distance of Measurements: | 3 Meters |
| Operating Frequency:      | 5210MHz  |
| Channel:                  | 42       |

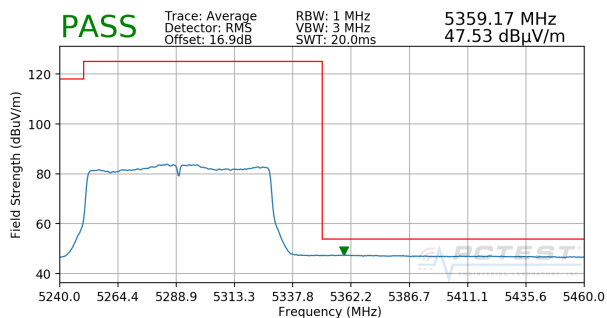


**Plot 7-85. Radiated Lower Band Edge Plot SISO ANT2 (Average – UNII Band 1)**

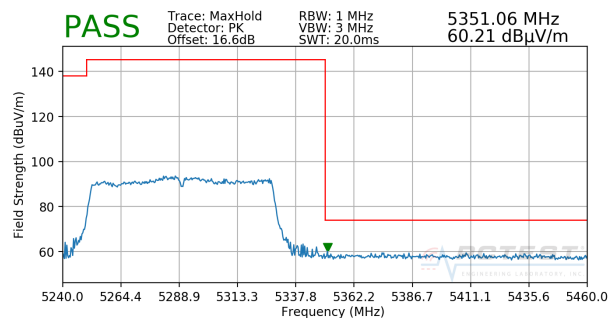


**Plot 7-86. Radiated Lower Band Edge Plot SISO ANT2 (Peak – UNII Band 1)**

|                           |          |
|---------------------------|----------|
| Worst Case Mode:          | 802.11ac |
| Worst Case Transfer Rate: | MCS0     |
| Distance of Measurements: | 3 Meters |
| Operating Frequency:      | 5290MHz  |
| Channel:                  | 58       |



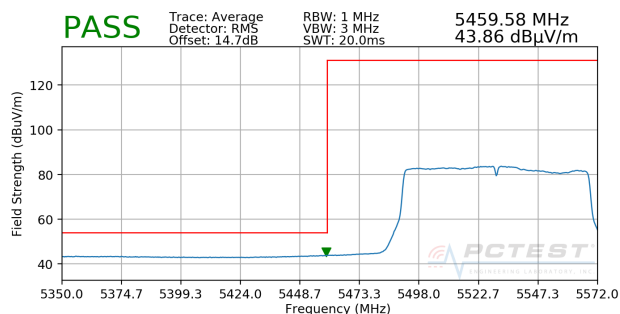
**Plot 7-87. Radiated Upper Band Edge Plot SISO ANT2 (Average – UNII Band 2A)**



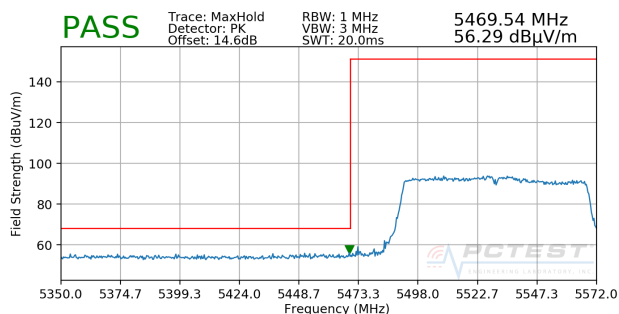
**Plot 7-88. Radiated Upper Band Edge Plot SISO ANT2 (Peak – UNII Band 2A)**

|                                            |                                               |                                                           |           |                                 |
|--------------------------------------------|-----------------------------------------------|-----------------------------------------------------------|-----------|---------------------------------|
| FCC ID: ZNFG850UM                          | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | <b>MEASUREMENT REPORT</b><br>(CLASS II PERMISSIVE CHANGE) | <b>LG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                | EUT Type:<br>Portable Handset                             |           | Page 82 of 104                  |

Worst Case Mode: 802.11ac  
Worst Case Transfer Rate: MCS0  
Distance of Measurements: 3 Meters  
Operating Frequency: 5530MHz  
Channel: 106

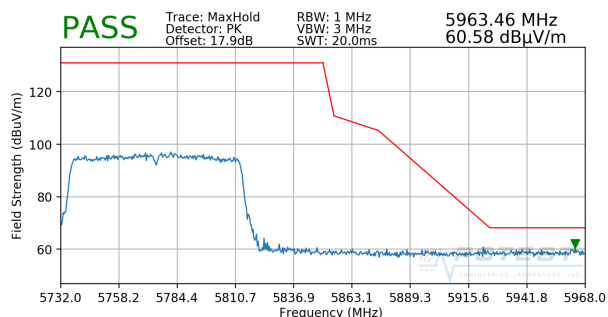


**Plot 7-89. Radiated Lower Band Edge Plot SISO ANT2 (Average - UNII Band 2C)**



**Plot 7-90. Radiated Lower Band Edge Plot SISO ANT2 (Peak - UNII Band 2C)**

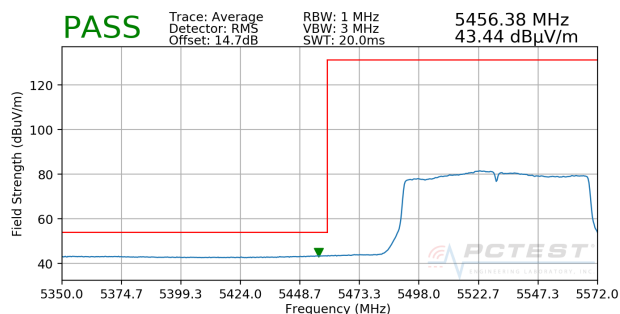
Worst Case Mode: 802.11ac  
Worst Case Transfer Rate: MCS0  
Distance of Measurements: 3 Meters  
Operating Frequency: 5775MHz  
Channel: 155



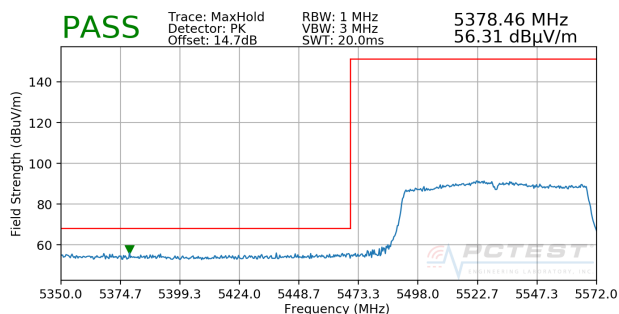
**Plot 7-91. Radiated Upper Band Edge Plot SISO ANT2 (Peak - UNII Band 3)**

|                                            |                                                                                                                                               |                               |                                                                                       |                                 |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: ZNFG850UM                          |  <b>MEASUREMENT REPORT</b><br>(CLASS II PERMISSIVE CHANGE) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                                                                                                                | EUT Type:<br>Portable Handset |                                                                                       | Page 83 of 104                  |

Worst Case Mode: 802.11ac  
Worst Case Transfer Rate: MCS0  
Distance of Measurements: 3 Meters  
Operating Frequency: 5530MHz  
Channel: 106

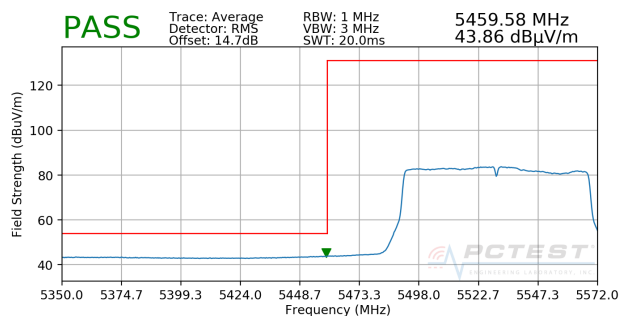


**Plot 7-92. Radiated Band Edge Plot SISO ANT2 (Average – WCP)**

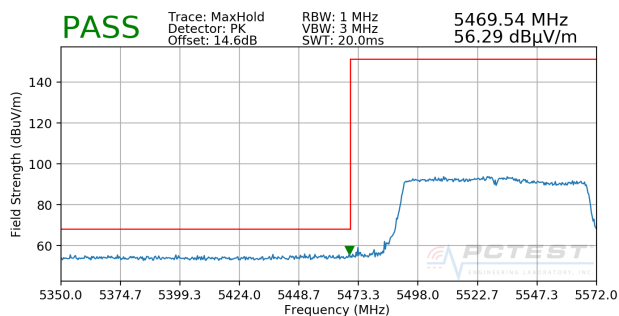


**Plot 7-93. Radiated Band Edge Plot SISO ANT2 (Peak – WCP)**

Worst Case Mode: 802.11ac  
Worst Case Transfer Rate: MCS0  
Distance of Measurements: 3 Meters  
Operating Frequency: 5530MHz  
Channel: 106



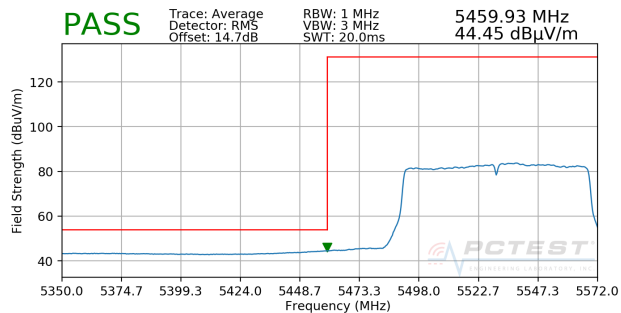
**Plot 7-94. Radiated Band Edge Plot SISO ANT2 (Average – Dual Display)**



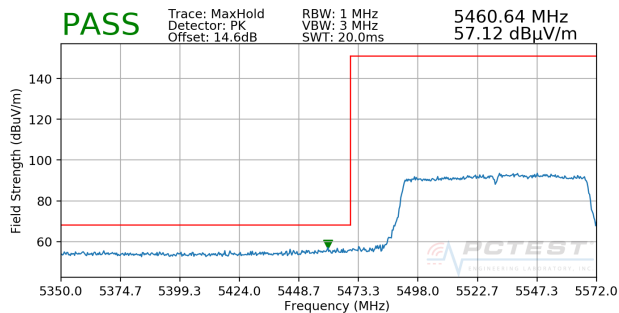
**Plot 7-95. Radiated Band Edge Plot SISO ANT2 (Peak – Dual Display)**

|                                            |                                                           |                               |  |                                 |
|--------------------------------------------|-----------------------------------------------------------|-------------------------------|--|---------------------------------|
| FCC ID: ZNFG850UM                          | <b>MEASUREMENT REPORT</b><br>(CLASS II PERMISSIVE CHANGE) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1-ZNF | Test Dates:<br>8/19 - 9/4/2019                            | EUT Type:<br>Portable Handset |  | Page 84 of 104                  |

|                           |          |
|---------------------------|----------|
| Worst Case Mode:          | 802.11ac |
| Worst Case Transfer Rate: | MCS0     |
| Distance of Measurements: | 3 Meters |
| Operating Frequency:      | 5530MHz  |
| Channel:                  | 106      |



**Plot 7-96. Radiated Band Edge Plot SISO ANT2  
(Average - Dual Display and WCP)**



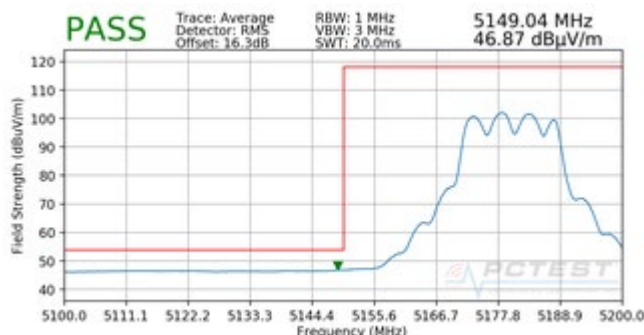
**Plot 7-97. Radiated Band Edge Plot SISO ANT2  
(Peak - Dual Display and WCP)**

|                                            |                                                                                                                                                                                                                                      |                               |                                 |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: ZNFG850UM                          |  <b>MEASUREMENT REPORT<br/>(CLASS II PERMISSIVE CHANGE)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                                                                                                                                                                                                       | EUT Type:<br>Portable Handset | Page 85 of 104                  |

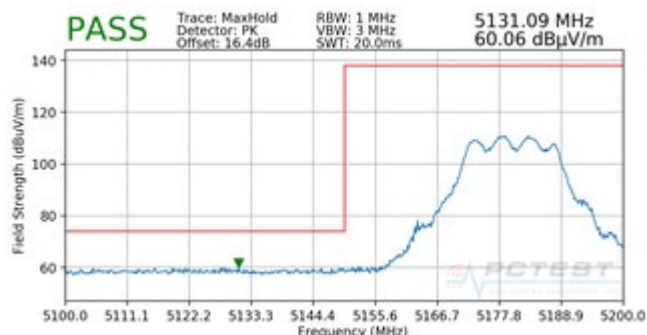
## 7.6.10 MIMO Radiated Band Edge Measurements (20MHz BW)

\$15.407(b.1)(b.2) \$15.205 \$15.209; RSS-Gen [8.9]

|                           |          |
|---------------------------|----------|
| Worst Case Mode:          | 802.11a  |
| Worst Case Transfer Rate: | 6Mbps    |
| Distance of Measurements: | 3 Meters |
| Operating Frequency:      | 5180MHz  |
| Channel:                  | 36       |

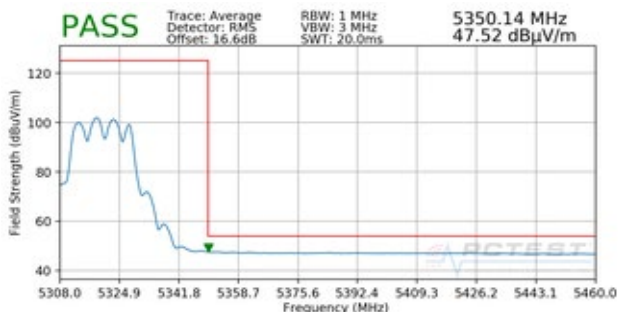


**Plot 7-98. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1)**

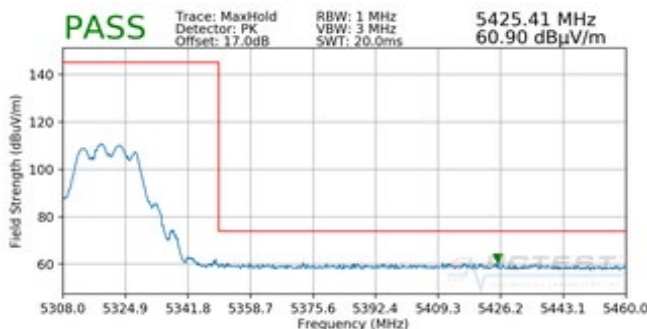


**Plot 7-99. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1)**

|                           |          |
|---------------------------|----------|
| Worst Case Mode:          | 802.11a  |
| Worst Case Transfer Rate: | 6Mbps    |
| Distance of Measurements: | 3 Meters |
| Operating Frequency:      | 5320MHz  |
| Channel:                  | 64       |



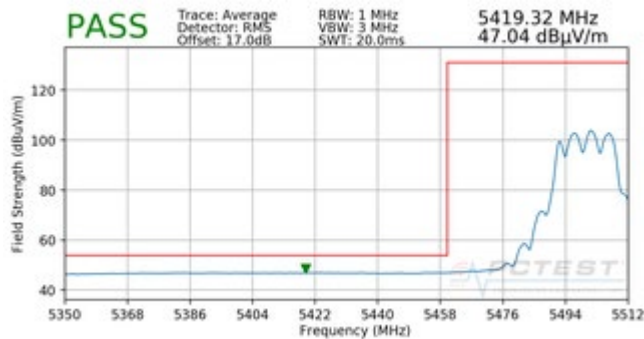
**Plot 7-100. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A)**



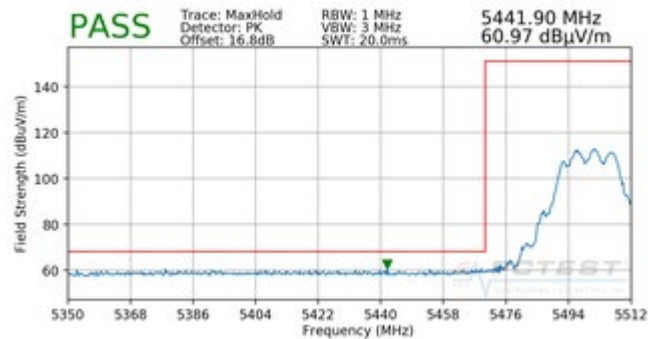
**Plot 7-101. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A)**

|                                            |                                               |                                                    |    |                                 |
|--------------------------------------------|-----------------------------------------------|----------------------------------------------------|----|---------------------------------|
| FCC ID: ZNFG850UM                          | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CLASS II PERMISSIVE CHANGE) | LG | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                | EUT Type:<br>Portable Handset                      |    | Page 86 of 104                  |

Worst Case Mode: 802.11a  
Worst Case Transfer Rate: 6Mbps  
Distance of Measurements: 3 Meters  
Operating Frequency: 5500MHz  
Channel: 100

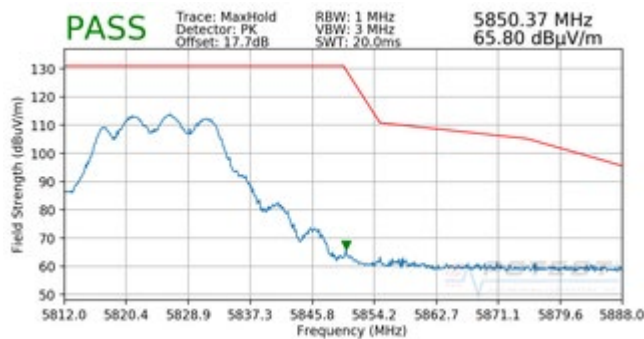


**Plot 7-102. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 2C)**



**Plot 7-103. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 2C)**

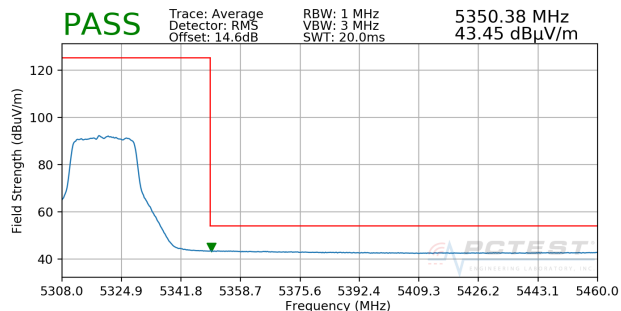
Worst Case Mode: 802.11a  
Worst Case Transfer Rate: 6Mbps  
Distance of Measurements: 3 Meters  
Operating Frequency: 5825MHz  
Channel: 165



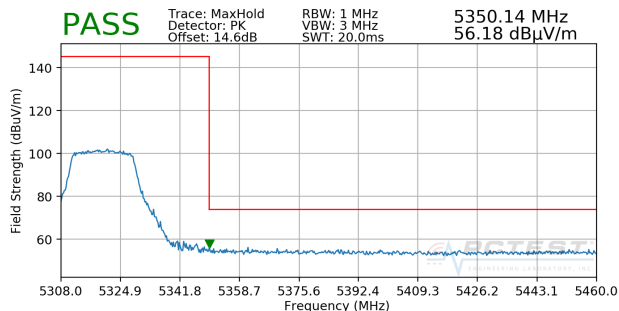
**Plot 7-104. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 3)**

|                                            |                                                                                                                                               |                               |                                                                                       |                                 |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: ZNFG850UM                          |  <b>MEASUREMENT REPORT</b><br>(CLASS II PERMISSIVE CHANGE) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                                                                                                                | EUT Type:<br>Portable Handset |                                                                                       | Page 87 of 104                  |

Worst Case Mode: 802.11a  
Worst Case Transfer Rate: 6Mbps  
Distance of Measurements: 3 Meters  
Operating Frequency: 5320MHz  
Channel: 64

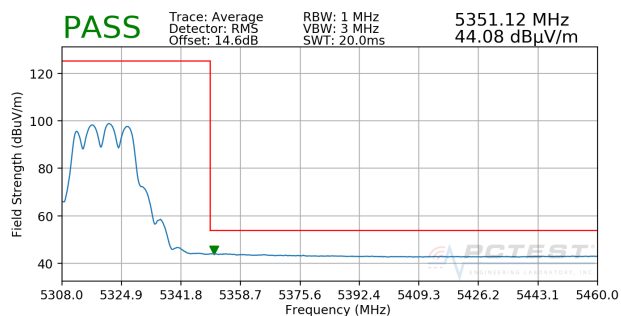


**Plot 7-105. Radiated Band Edge Plot MIMO  
(Average - WCP)**

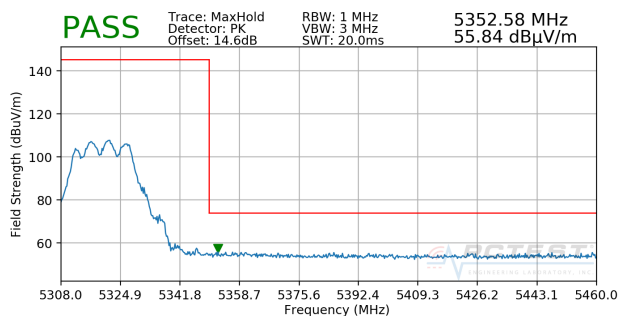


**Plot 7-106. Radiated Band Edge Plot MIMO (Peak -  
WCP)**

Worst Case Mode: 802.11a  
Worst Case Transfer Rate: 6Mbps  
Distance of Measurements: 3 Meters  
Operating Frequency: 5320MHz  
Channel: 64



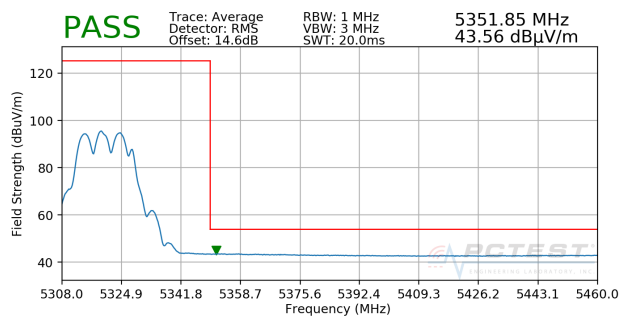
**Plot 7-107. Radiated Band Edge Plot MIMO  
(Average - Dual Display)**



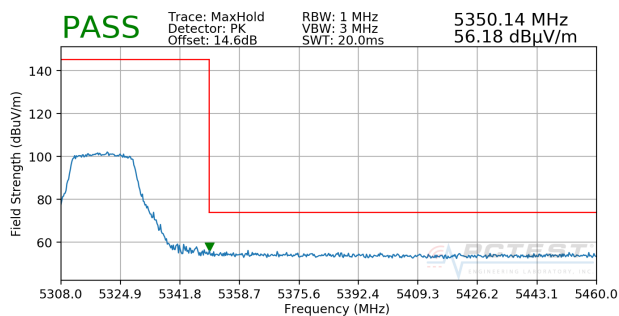
**Plot 7-108. Radiated Band Edge Plot MIMO  
(Peak - Dual Display)**

|                                            |                                                                                                                                                                                                                                      |                               |                                 |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: ZNFG850UM                          |  <b>MEASUREMENT REPORT<br/>(CLASS II PERMISSIVE CHANGE)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                                                                                                                                                                                                       | EUT Type:<br>Portable Handset | Page 88 of 104                  |

|                           |          |
|---------------------------|----------|
| Worst Case Mode:          | 802.11a  |
| Worst Case Transfer Rate: | 6Mbps    |
| Distance of Measurements: | 3 Meters |
| Operating Frequency:      | 5320MHz  |
| Channel:                  | 64       |



**Plot 7-109. Radiated Band Edge Plot MIMO  
(Average - Dual Display and WCP)**



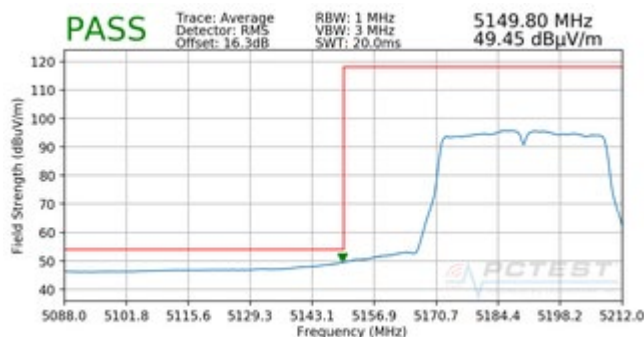
**Plot 7-110. Radiated Band Edge Plot MIMO  
(Peak - Dual Display and WCP)**

|                                            |                                                                                                                                                                                                                                      |                               |                                 |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: ZNFG850UM                          |  <b>MEASUREMENT REPORT<br/>(CLASS II PERMISSIVE CHANGE)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                                                                                                                                                                                                       | EUT Type:<br>Portable Handset | Page 89 of 104                  |

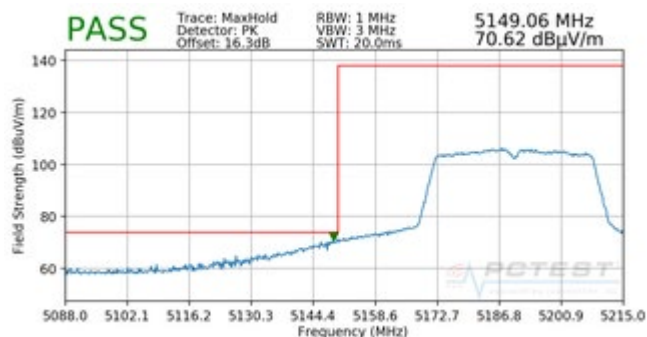
## 7.6.11 MIMO Radiated Band Edge Measurements (40MHz BW)

\$15.407(b.1)(b.2) \$15.205 \$15.209; RSS-Gen [8.9]

|                           |          |
|---------------------------|----------|
| Worst Case Mode:          | 802.11n  |
| Worst Case Transfer Rate: | MCS8     |
| Distance of Measurements: | 3 Meters |
| Operating Frequency:      | 5190MHz  |
| Channel:                  | 38       |

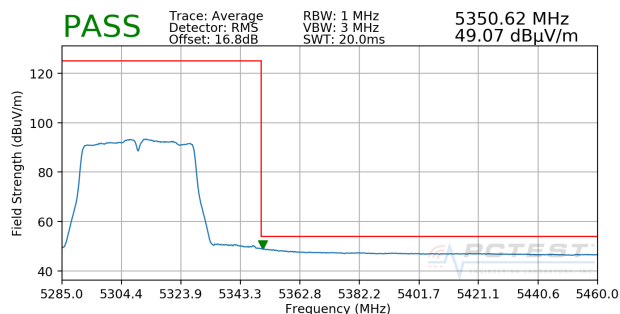


**Plot 7-111. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1)**

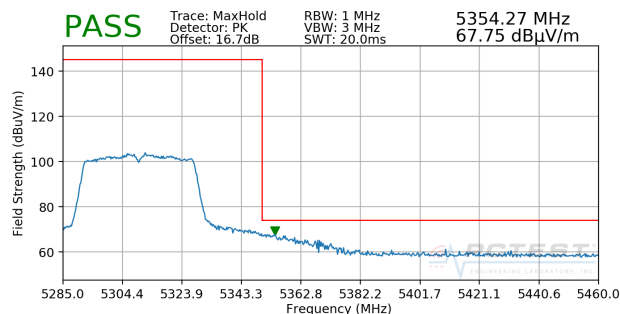


**Plot 7-112. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1)**

|                           |          |
|---------------------------|----------|
| Worst Case Mode:          | 802.11n  |
| Worst Case Transfer Rate: | MCS8     |
| Distance of Measurements: | 3 Meters |
| Operating Frequency:      | 5310MHz  |
| Channel:                  | 62       |



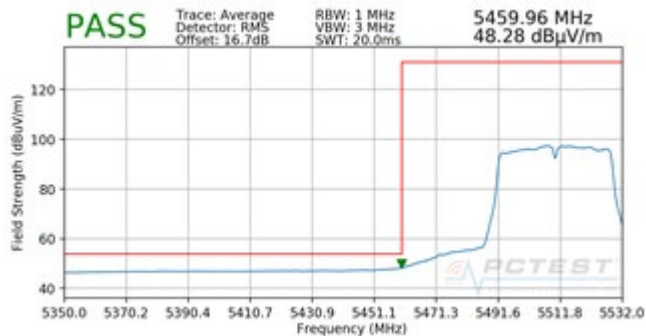
**Plot 7-113. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A)**



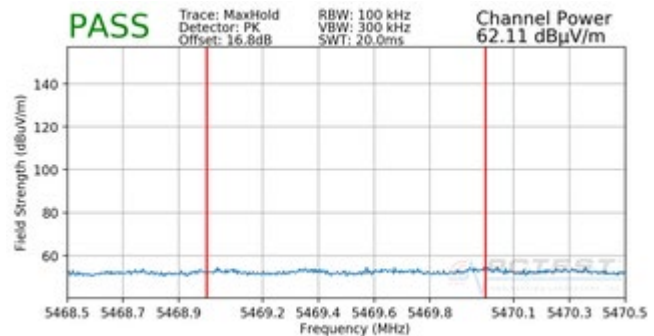
**Plot 7-114. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A)**

|                                            |                                               |                                                    |    |                                 |
|--------------------------------------------|-----------------------------------------------|----------------------------------------------------|----|---------------------------------|
| FCC ID: ZNFG850UM                          | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CLASS II PERMISSIVE CHANGE) | LG | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                | EUT Type:<br>Portable Handset                      |    | Page 90 of 104                  |

|                           |          |
|---------------------------|----------|
| Worst Case Mode:          | 802.11n  |
| Worst Case Transfer Rate: | MCS8     |
| Distance of Measurements: | 3 Meters |
| Operating Frequency:      | 5510MHz  |
| Channel:                  | 102      |

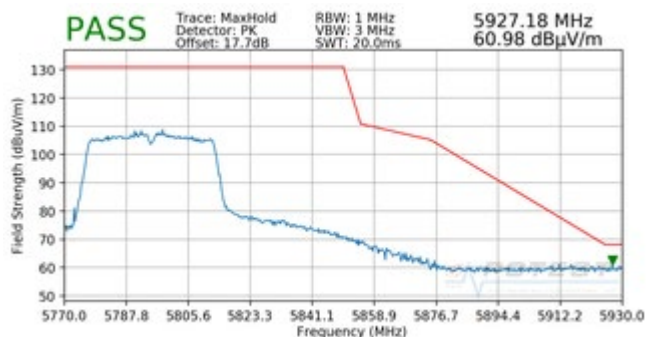


**Plot 7-115. Radiated Lower Band Edge Plot MIMO  
(Average – UNII Band 2C)**



**Plot 7-116. Radiated Lower Band Edge Plot MIMO  
(Peak – UNII Band 2C)**

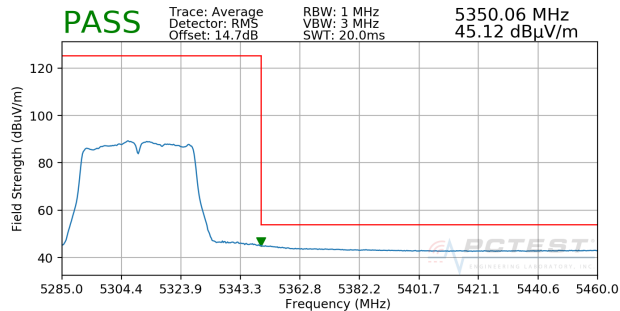
|                           |          |
|---------------------------|----------|
| Worst Case Mode:          | 802.11n  |
| Worst Case Transfer Rate: | MCS8     |
| Distance of Measurements: | 3 Meters |
| Operating Frequency:      | 5795MHz  |
| Channel:                  | 159      |



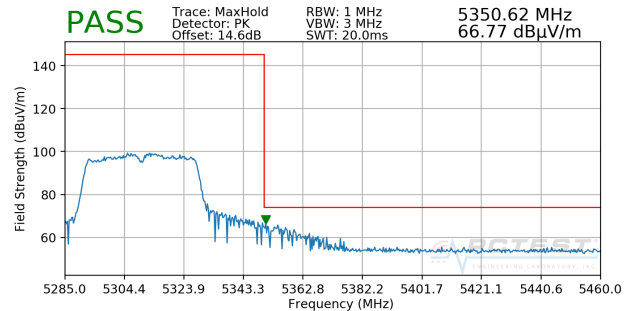
**Plot 7-117. Radiated Upper Band Edge Plot MIMO  
(Peak – UNII Band 3)**

|                                            |                                                            |                               |  |                                 |
|--------------------------------------------|------------------------------------------------------------|-------------------------------|--|---------------------------------|
| FCC ID: ZNFG850UM                          | <b>MEASUREMENT REPORT<br/>(CLASS II PERMISSIVE CHANGE)</b> |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                             | EUT Type:<br>Portable Handset |  | Page 91 of 104                  |

Worst Case Mode: 802.11n  
Worst Case Transfer Rate: MCS0  
Distance of Measurements: 3 Meters  
Operating Frequency: 5310MHz  
Channel: 62

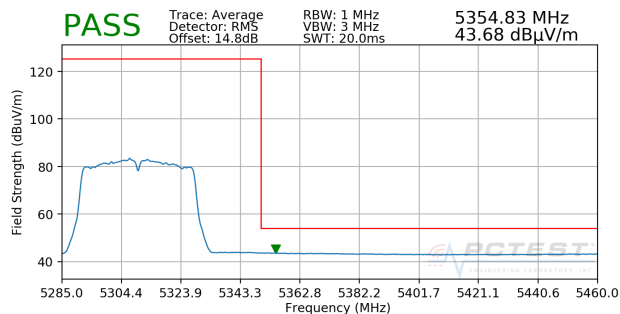


**Plot 7-118. Radiated Band Edge Plot MIMO (Average – WCP)**

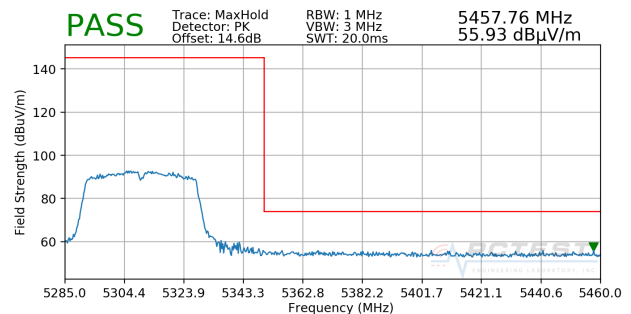


**Plot 7-119. Radiated Band Edge Plot MIMO (Peak – WCP)**

Worst Case Mode: 802.11n  
Worst Case Transfer Rate: MCS0  
Distance of Measurements: 3 Meters  
Operating Frequency: 5310MHz  
Channel: 62



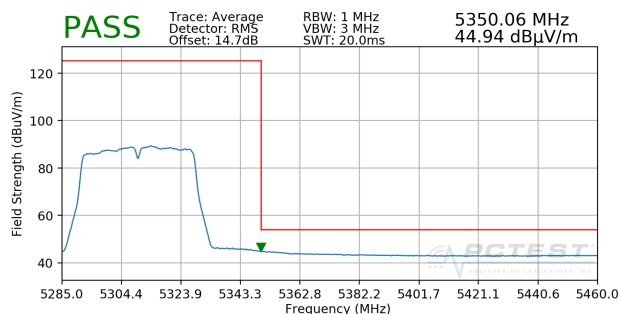
**Plot 7-120. Radiated Band Edge Plot MIMO (Average – Dual Display)**



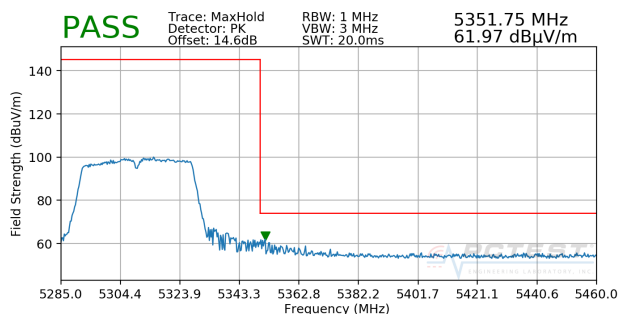
**Plot 7-121. Radiated Band Edge Plot MIMO (Peak – Dual Display)**

|                                            |                                                                                                                                               |                               |                                                                                       |                                 |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: ZNFG850UM                          |  <b>MEASUREMENT REPORT</b><br>(CLASS II PERMISSIVE CHANGE) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                                                                                                                | EUT Type:<br>Portable Handset | Page 92 of 104                                                                        |                                 |

Worst Case Mode: 802.11n  
 Worst Case Transfer Rate: MCS0  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 5310MHz  
 Channel: 62



**Plot 7-122. Radiated Band Edge Plot MIMO (Average - Dual Display and WCP)**



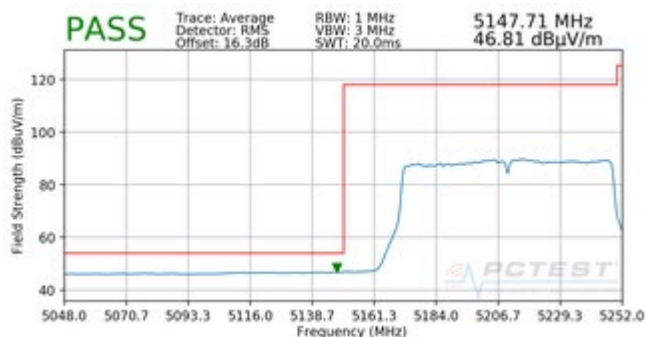
**Plot 7-123. Radiated Band Edge Plot MIMO (Peak - Dual Display and WCP)**

|                                                   |                                                                                                                                                      |                                      |                                                                                       |                                        |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| FCC ID: ZNFG850UM                                 |  <b>MEASUREMENT REPORT</b><br><b>(CLASS II PERMISSIVE CHANGE)</b> |                                      |  | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1M1908190143-07-R1.ZNF | <b>Test Dates:</b><br>8/19 - 9/4/2019                                                                                                                | <b>EUT Type:</b><br>Portable Handset |                                                                                       | Page 93 of 104                         |

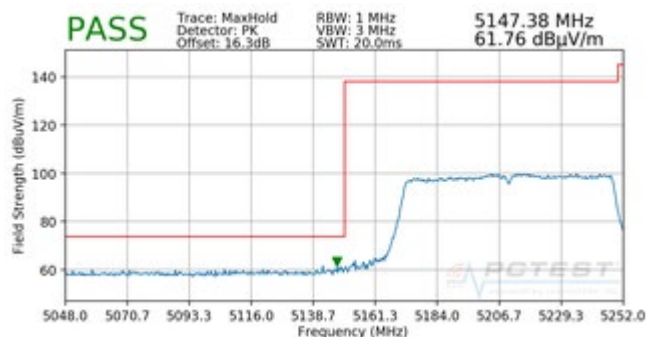
## 7.6.12 MIMO Radiated Band Edge Measurements (80MHz BW)

\$15.407(b.1)(b.2) \$15.205 \$15.209; RSS-Gen [8.9]

|                           |          |
|---------------------------|----------|
| Worst Case Mode:          | 802.11ac |
| Worst Case Transfer Rate: | MCS0     |
| Distance of Measurements: | 3 Meters |
| Operating Frequency:      | 5210MHz  |
| Channel:                  | 42       |

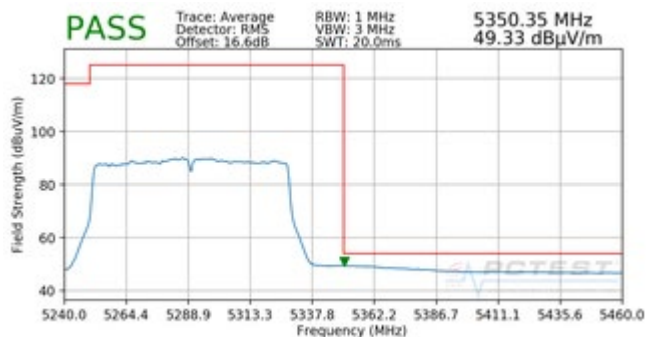


**Plot 7-124. Radiated Lower Band Edge Plot MIMO (Average – UNII Band 1)**

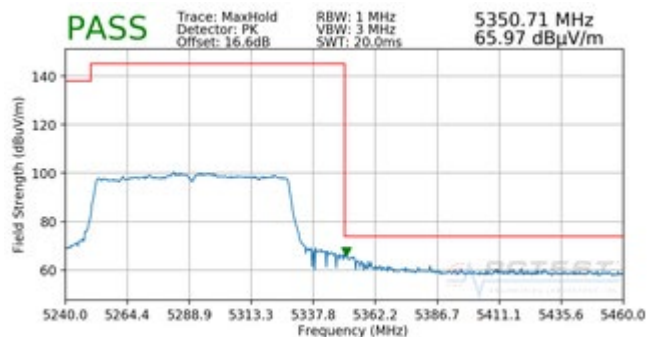


**Plot 7-125. Radiated Lower Band Edge Plot MIMO (Peak – UNII Band 1)**

|                           |          |
|---------------------------|----------|
| Worst Case Mode:          | 802.11ac |
| Worst Case Transfer Rate: | MCS0     |
| Distance of Measurements: | 3 Meters |
| Operating Frequency:      | 5290MHz  |
| Channel:                  | 58       |



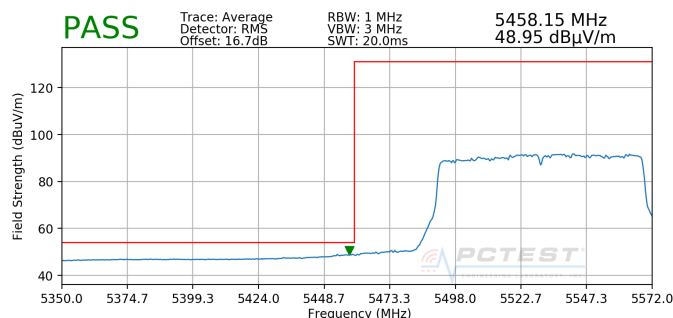
**Plot 7-126. Radiated Upper Band Edge Plot MIMO (Average – UNII Band 2A)**



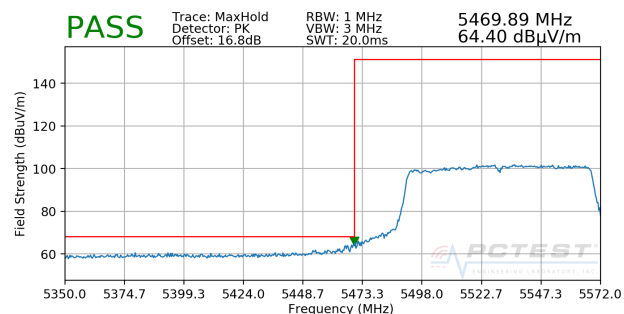
**Plot 7-127. Radiated Upper Band Edge Plot MIMO (Peak – UNII Band 2A)**

|                                            |                                               |                                                    |    |                                 |
|--------------------------------------------|-----------------------------------------------|----------------------------------------------------|----|---------------------------------|
| FCC ID: ZNFG850UM                          | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CLASS II PERMISSIVE CHANGE) | LG | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                | EUT Type:<br>Portable Handset                      |    | Page 94 of 104                  |

Worst Case Mode: 802.11ac  
Worst Case Transfer Rate: MCS0  
Distance of Measurements: 3 Meters  
Operating Frequency: 5530MHz  
Channel: 106

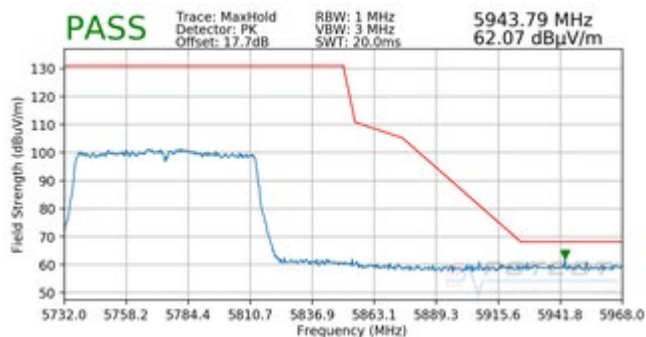


**Plot 7-128. Radiated Lower Band Edge Plot MIMO  
(Average – UNII Band 2C)**



**Plot 7-129. Radiated Lower Band Edge Plot MIMO  
(Peak – UNII Band 2C)**

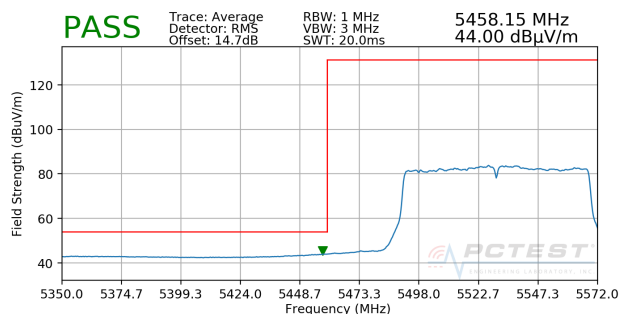
Worst Case Mode: 802.11ac  
Worst Case Transfer Rate: MCS0  
Distance of Measurements: 3 Meters  
Operating Frequency: 5775MHz  
Channel: 155



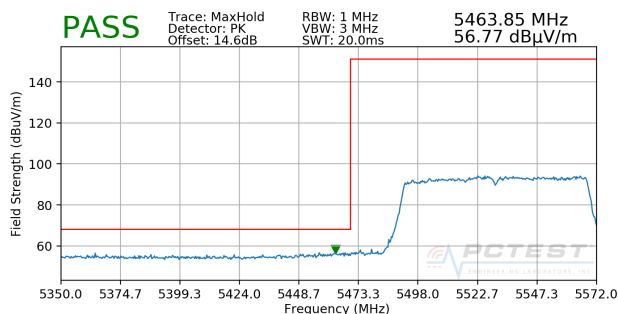
**Plot 7-130. Radiated Upper Band Edge Plot MIMO  
(Peak – UNII Band 3)**

|                                            |                                                            |                               |  |                                 |
|--------------------------------------------|------------------------------------------------------------|-------------------------------|--|---------------------------------|
| FCC ID: ZNFG850UM                          | <b>MEASUREMENT REPORT<br/>(CLASS II PERMISSIVE CHANGE)</b> |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                             | EUT Type:<br>Portable Handset |  | Page 95 of 104                  |

Worst Case Mode: 802.11ac  
Worst Case Transfer Rate: MCS0  
Distance of Measurements: 3 Meters  
Operating Frequency: 5530MHz  
Channel: 106

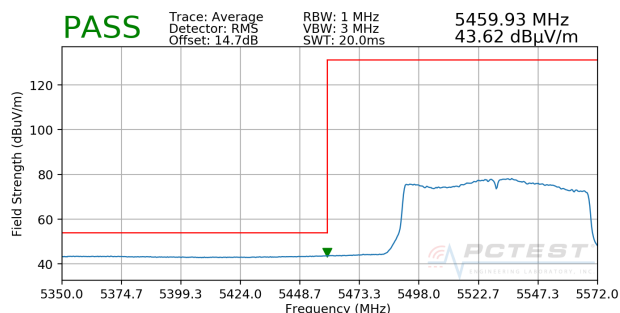


**Plot 7-131. Radiated Band Edge Plot MIMO (Average - WCP)**

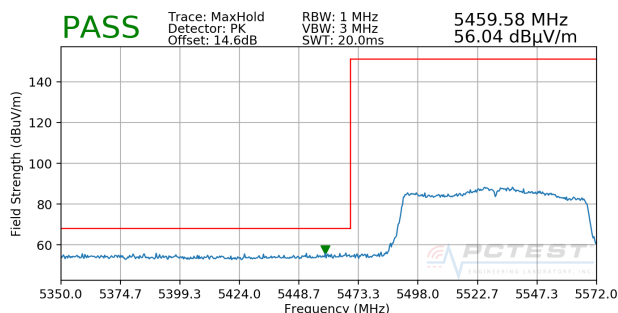


**Plot 7-132. Radiated Band Edge Plot MIMO (Peak - WCP)**

Worst Case Mode: 802.11ac  
Worst Case Transfer Rate: MCS0  
Distance of Measurements: 3 Meters  
Operating Frequency: 5530MHz  
Channel: 106



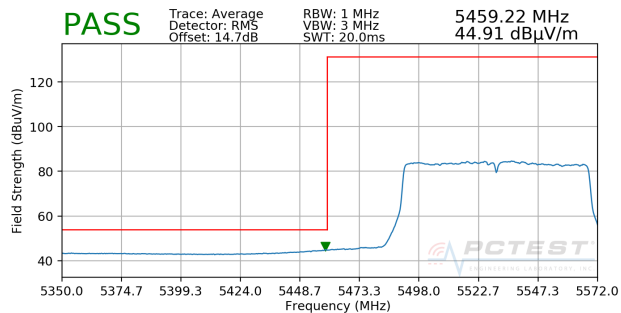
**Plot 7-133. Radiated Band Edge Plot MIMO (Average - Dual Display)**



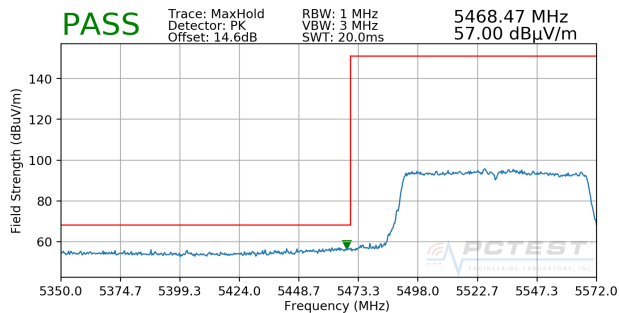
**Plot 7-134. Radiated Band Edge Plot MIMO (Peak - Dual Display)**

|                                            |                                                                                                                                               |                               |                                                                                       |                                 |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: ZNFG850UM                          |  <b>MEASUREMENT REPORT</b><br>(CLASS II PERMISSIVE CHANGE) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                                                                                                                | EUT Type:<br>Portable Handset |                                                                                       | Page 96 of 104                  |

|                           |          |
|---------------------------|----------|
| Worst Case Mode:          | 802.11ac |
| Worst Case Transfer Rate: | MCS0     |
| Distance of Measurements: | 3 Meters |
| Operating Frequency:      | 5530MHz  |
| Channel:                  | 106      |



**Plot 7-135. Radiated Band Edge Plot MIMO  
(Average – Dual Display and WCP)**



**Plot 7-136. Radiated Band Edge Plot MIMO (Peak –  
Dual Display and WCP)**

|                                            |                                                                                                                                                |                               |                                                                                       |                                 |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: ZNFG850UM                          |  <b>MEASUREMENT REPORT<br/>(CLASS II PERMISSIVE CHANGE)</b> |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                                                                                                                 | EUT Type:<br>Portable Handset |                                                                                       | Page 97 of 104                  |

## 7.3 Radiated Spurious Emissions Measurements – Below 1GHz

§15.209; RSS-Gen [8.9]

### Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

***All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR and Table 6 of RSS-Gen (8.10) must not exceed the limits shown in Table 7-77 per Section 15.209 and RSS-Gen (8.9).***

| Frequency         | Field Strength<br>[μV/m] | Measured Distance<br>[Meters] |
|-------------------|--------------------------|-------------------------------|
| 0.009 – 0.490 MHz | 2400/F (kHz)             | 300                           |
| 0.490 – 1.705 MHz | 24000/F (kHz)            | 30                            |
| 1.705 – 30.00 MHz | 30                       | 30                            |
| 30.00 – 88.00 MHz | 100                      | 3                             |
| 88.00 – 216.0 MHz | 150                      | 3                             |
| 216.0 – 960.0 MHz | 200                      | 3                             |
| Above 960.0 MHz   | 500                      | 3                             |

**Table 7-77. Radiated Limits**

### Test Procedures Used

ANSI C63.10-2013

### Test Settings

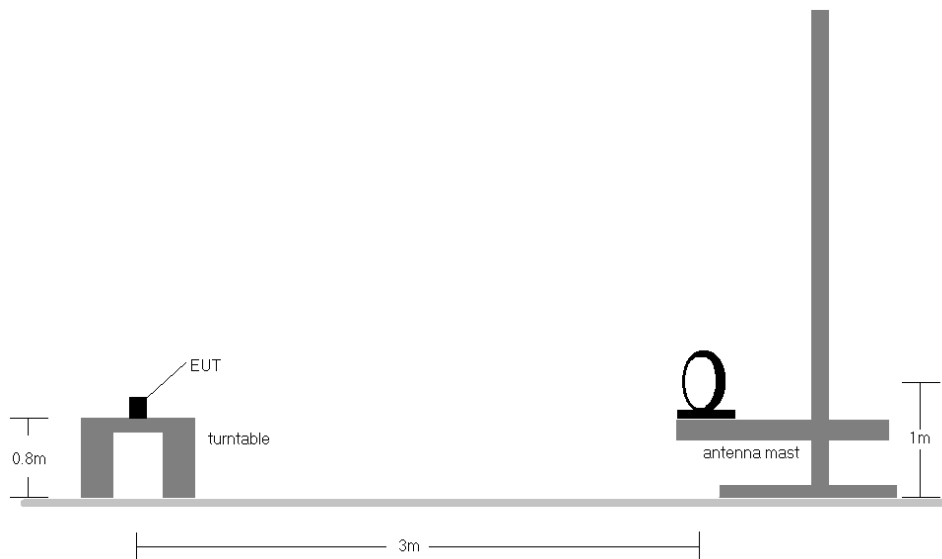
#### Quasi-Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 120kHz (for emissions from 30MHz – 1GHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

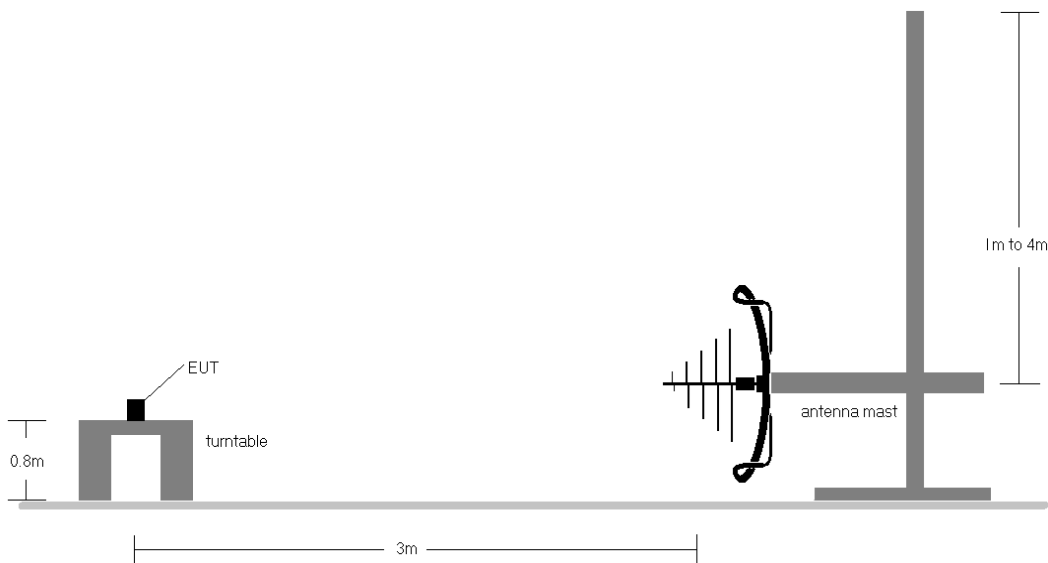
|                                            |                                                                                     |                                                    |                                                                                       |                                 |
|--------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: ZNFG850UM                          |  | MEASUREMENT REPORT<br>(CLASS II PERMISSIVE CHANGE) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                                                      | EUT Type:<br>Portable Handset                      |                                                                                       | Page 98 of 104                  |

## Test Setup

The EUT and measurement equipment were set up as shown in the diagrams below.



**Figure 7-2. Radiated Test Setup < 30MHz**



**Figure 7-3. Radiated Test Setup < 1GHz**

|                                            |                                                                                                                                               |                               |                                                                                       |                                 |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: ZNFG850UM                          |  <b>MEASUREMENT REPORT</b><br>(CLASS II PERMISSIVE CHANGE) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                                                                                                                | EUT Type:<br>Portable Handset |                                                                                       | Page 99 of 104                  |

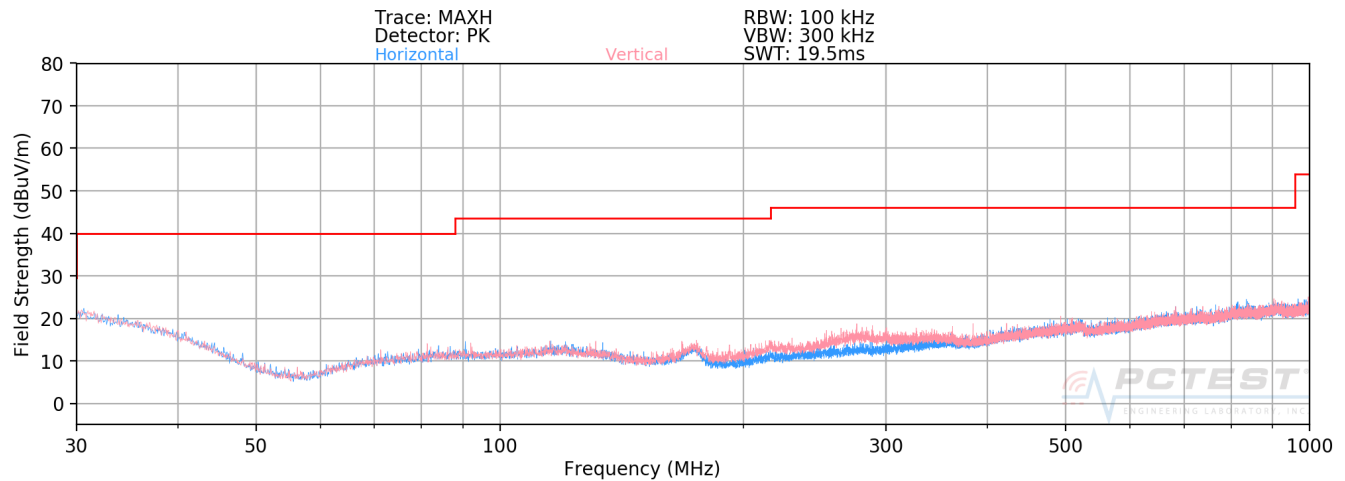
## Test Notes

1. All emissions lying in restricted bands specified in §15.205 and RSS-Gen (8.10) are below the limit shown in Table 7-77.
2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes.
3. This unit was tested with its standard battery.
4. The spectrum is investigated using a peak detector and final measurements are recorded using CISPR quasi peak detector. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
5. Emissions were measured at a 3 meter test distance.
6. Emissions are investigated while operating on the center channel of the mode, band, and modulation that produced the worst case results during the transmitter spurious emissions testing.
7. No spurious emissions were detected within 20dB of the limit below 30MHz.
8. The results recorded using the broadband antenna is known to correlate with the results obtained by using a tuned dipole with an acceptable degree of accuracy. The VSWR for the measurement antenna was found to be less than 2:1.
9. The wide spectrum spurious emissions plots shown on the following pages are used only for the purpose of emission identification. There were no emissions detected in the 30MHz – 1GHz frequency range, as shown in the subsequent plots.

|                                                   |                                                                                                                                                |                                      |                                                                                       |                                        |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------|
| FCC ID: ZNFG850UM                                 |  <b>MEASUREMENT REPORT<br/>(CLASS II PERMISSIVE CHANGE)</b> |                                      |  | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1M1908190143-07-R1.ZNF | <b>Test Dates:</b><br>8/19 - 9/4/2019                                                                                                          | <b>EUT Type:</b><br>Portable Handset |                                                                                       | Page 100 of 104                        |

# SISO Antenna-1 Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209; RSS-Gen [8.9]

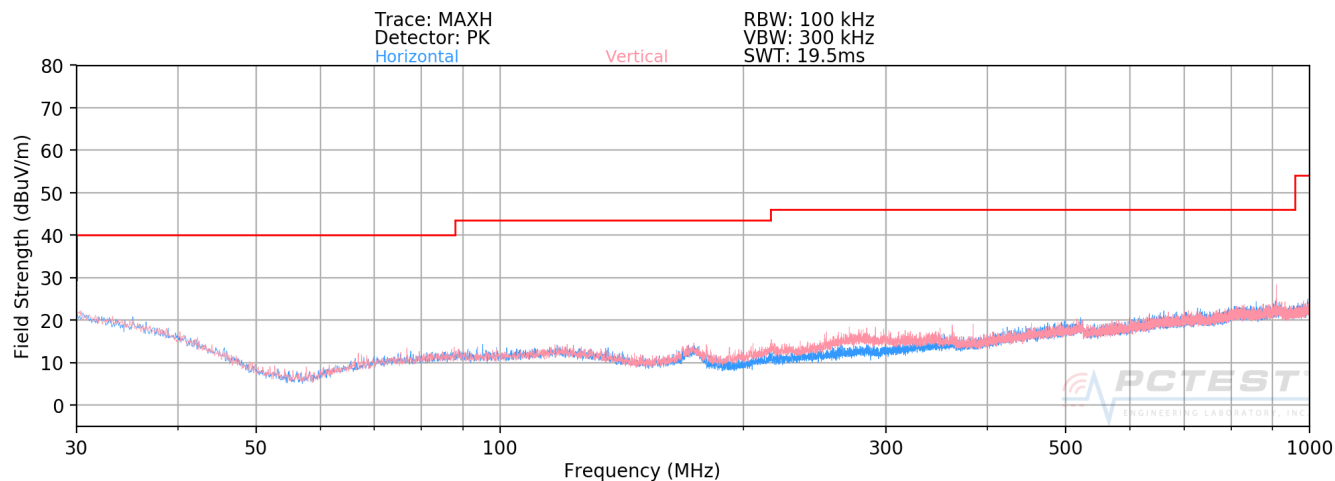


**Plot 7-137. Radiated Spurious Plot below 1GHz SISO ANT1 (802.11a – U3 Ch. 157)**

|                                            |                                                           |                               |                 |                                 |
|--------------------------------------------|-----------------------------------------------------------|-------------------------------|-----------------|---------------------------------|
| FCC ID: ZNFG850UM                          | <b>MEASUREMENT REPORT</b><br>(CLASS II PERMISSIVE CHANGE) |                               |                 | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                            | EUT Type:<br>Portable Handset | Page 101 of 104 |                                 |

## SISO Antenna-2 Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209; RSS-Gen [8.9]

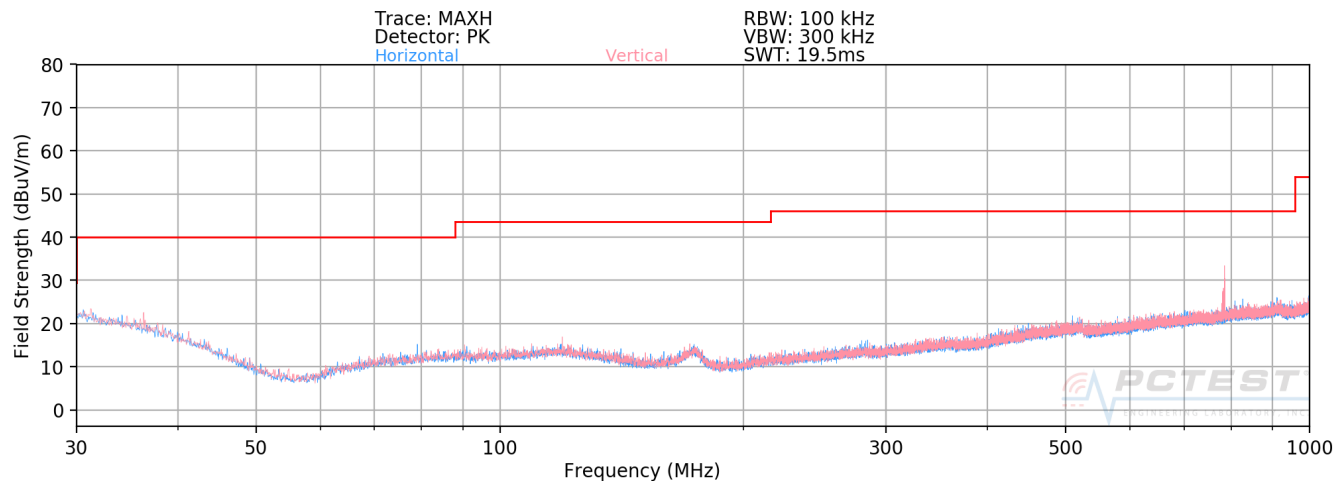


Plot 7-138. Radiated Spurious Plot below 1GHz SISO ANT2 (802.11a – U3 Ch. 157)

|                                                   |                                                           |                                      |                 |                                        |
|---------------------------------------------------|-----------------------------------------------------------|--------------------------------------|-----------------|----------------------------------------|
| FCC ID: ZNFG850UM                                 | <b>MEASUREMENT REPORT</b><br>(CLASS II PERMISSIVE CHANGE) |                                      |                 | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1M1908190143-07-R1.ZNF | <b>Test Dates:</b><br>8/19 - 9/4/2019                     | <b>EUT Type:</b><br>Portable Handset | Page 102 of 104 |                                        |

## Simultaneous Tx Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209; RSS-Gen [8.9]



Plot 7-139. Radiated Spurious Plot below 1GHz (2.4GHz – 5GHz)

| Frequency [MHz] | Detector   | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Analyzer Level [dBm] | AFCL [dB/m] | Field Strength [dBuV/m] | Limit [dBuV/m] | Margin [dB] |
|-----------------|------------|-----------------|---------------------|----------------------------|----------------------|-------------|-------------------------|----------------|-------------|
| 64.58           | Quasi-Peak | H               | -                   | -                          | -77.21               | -18.65      | 11.14                   | 40.00          | -28.86      |
| 134.44          | Quasi-Peak | H               | -                   | -                          | -78.01               | -13.26      | 15.73                   | 43.52          | -27.79      |
| 173.00          | Quasi-Peak | H               | -                   | -                          | -78.65               | -14.39      | 13.96                   | 43.52          | -29.56      |
| 289.11          | Quasi-Peak | H               | -                   | -                          | -76.36               | -12.39      | 18.25                   | 46.02          | -27.77      |
| 673.84          | Quasi-Peak | H               | -                   | -                          | -80.21               | -5.08       | 21.71                   | 46.02          | -24.31      |
| 861.00          | Quasi-Peak | H               | 330                 | 210                        | -65.33               | -2.68       | 38.99                   | 46.02          | -7.03       |

Table 7-78. Radiated Measurements below 1GHz (2.4GHz – 5GHz)

|                                            |                                                           |                               |  |                                 |
|--------------------------------------------|-----------------------------------------------------------|-------------------------------|--|---------------------------------|
| FCC ID: ZNFG850UM                          | <b>MEASUREMENT REPORT</b><br>(CLASS II PERMISSIVE CHANGE) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                            | EUT Type:<br>Portable Handset |  | Page 103 of 104                 |

## 8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **LG Portable Handset FCC ID: ZNFG850UM** is in compliance with Part 15 Subpart E (15.407) of the FCC Rules and RSS-247 of the Innovation, Science and Economic Development Canada Rules.

|                                            |                                                                                                                                                |                               |                                                                                       |                                 |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: ZNFG850UM                          |  <b>MEASUREMENT REPORT<br/>(CLASS II PERMISSIVE CHANGE)</b> |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1908190143-07-R1.ZNF | Test Dates:<br>8/19 - 9/4/2019                                                                                                                 | EUT Type:<br>Portable Handset |                                                                                       | Page 104 of 104                 |