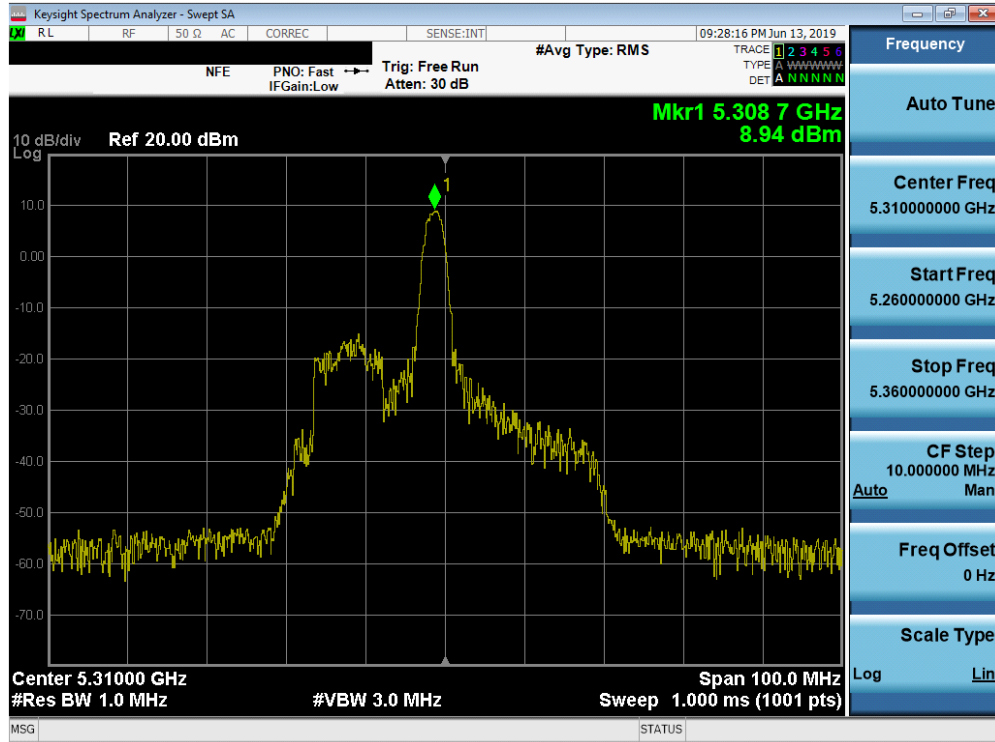
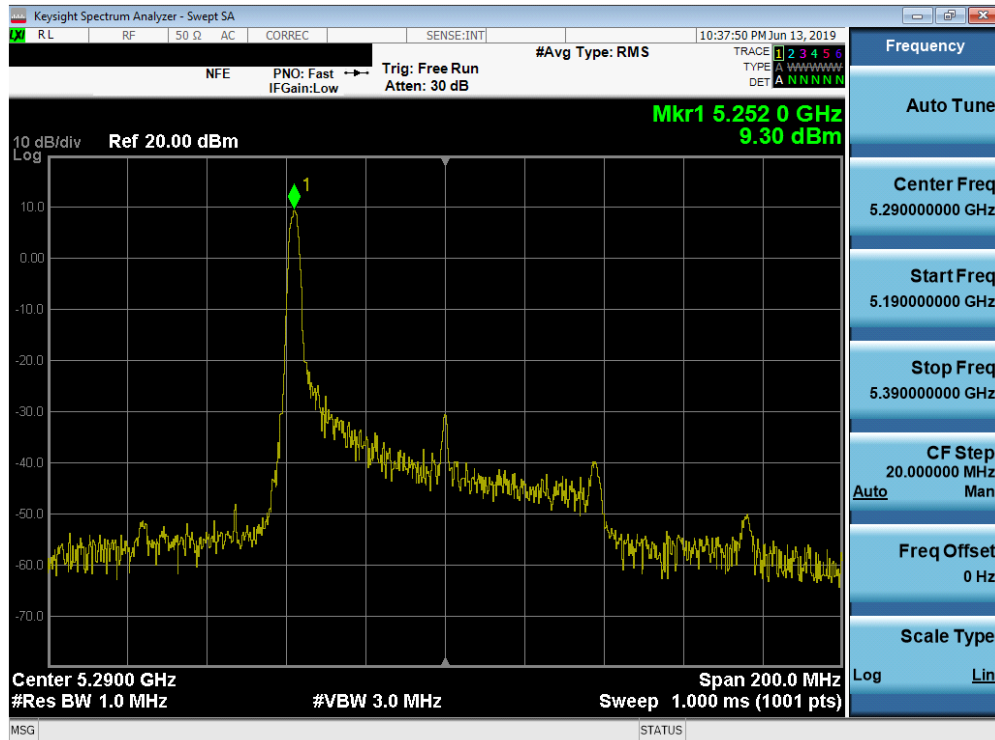


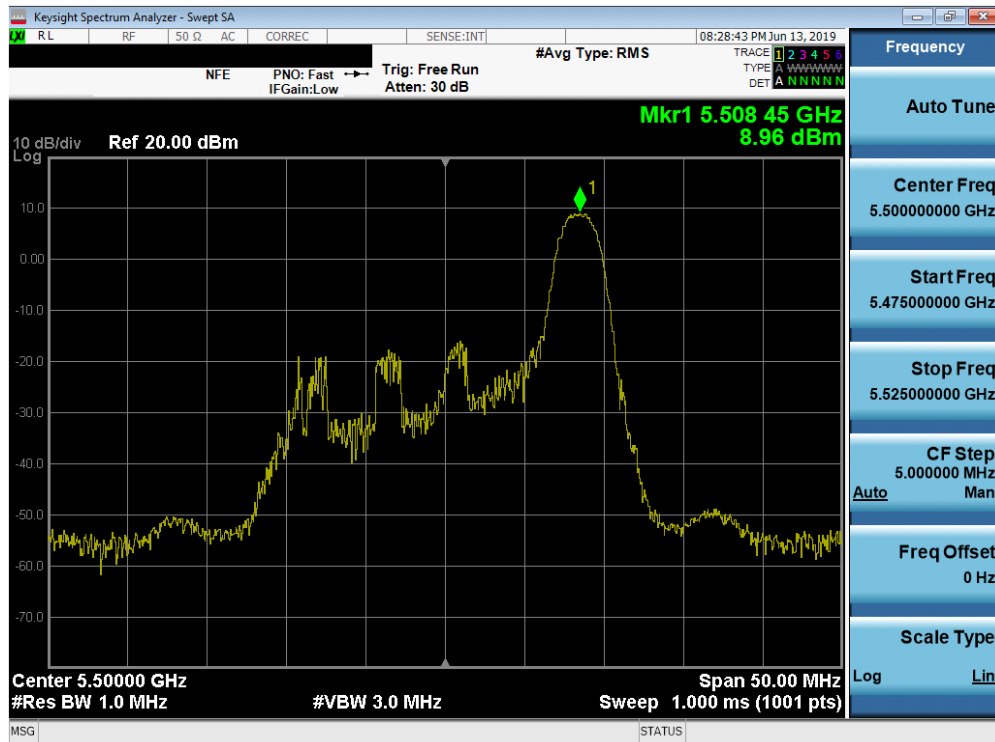


Plot 7-119. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 62)



Plot 7-120. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 58)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 108 of 302                 |

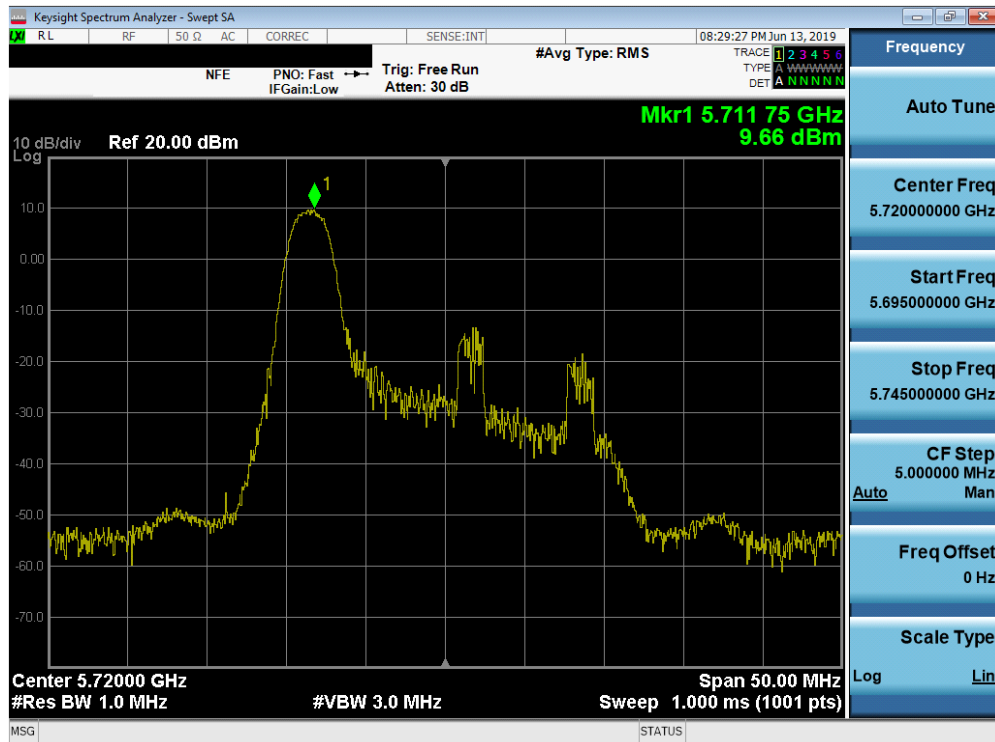


Plot 7-121. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 100)

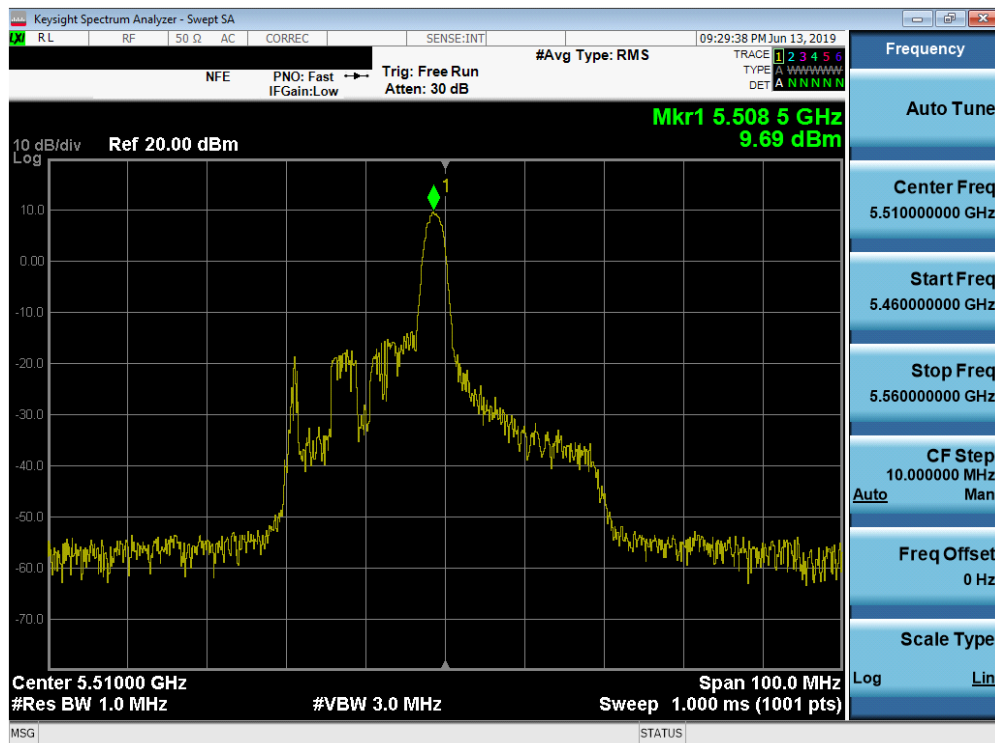


Plot 7-122. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 120)

|                                         |                                              |                               |  |                                 |
|-----------------------------------------|----------------------------------------------|-------------------------------|--|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>MEASUREMENT REPORT</b><br>(CERTIFICATION) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019            | EUT Type:<br>Portable Handset |  | Page 109 of 302                 |

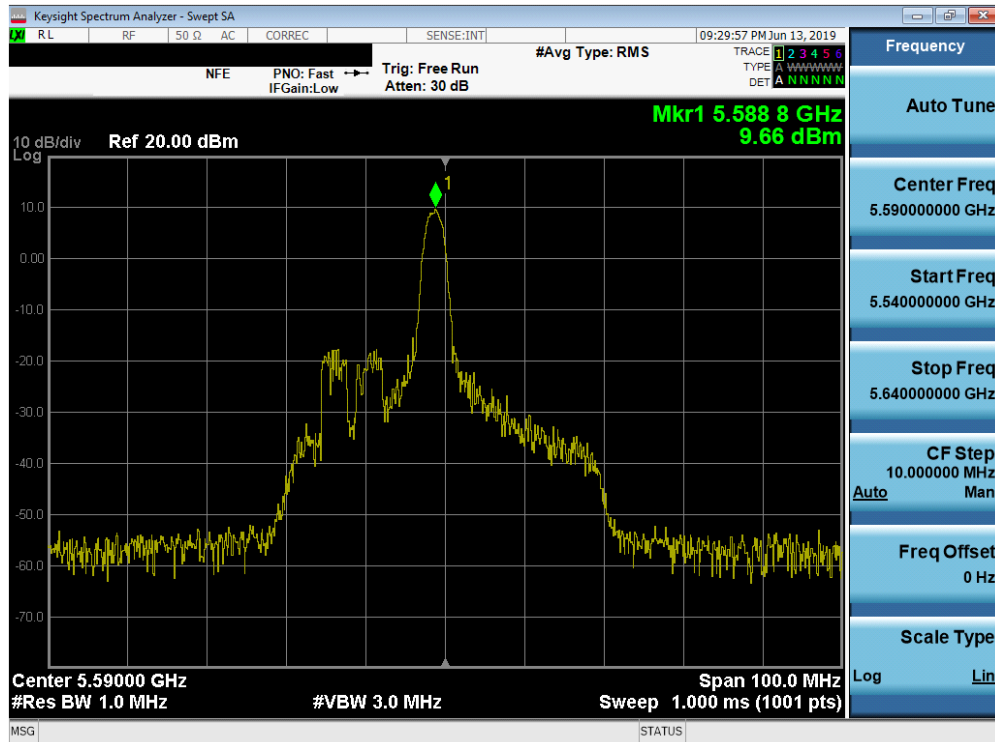


Plot 7-123. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 144)

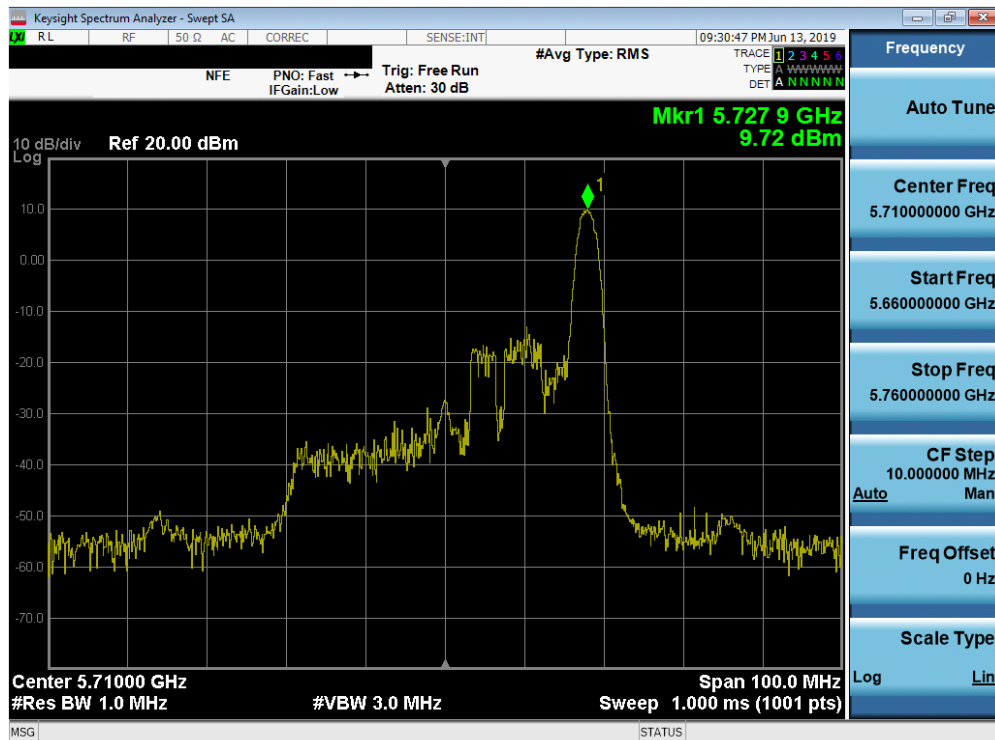


Plot 7-124. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 102)

|                                         |                                               |                               |  |                                 |
|-----------------------------------------|-----------------------------------------------|-------------------------------|--|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset |  | Page 110 of 302                 |

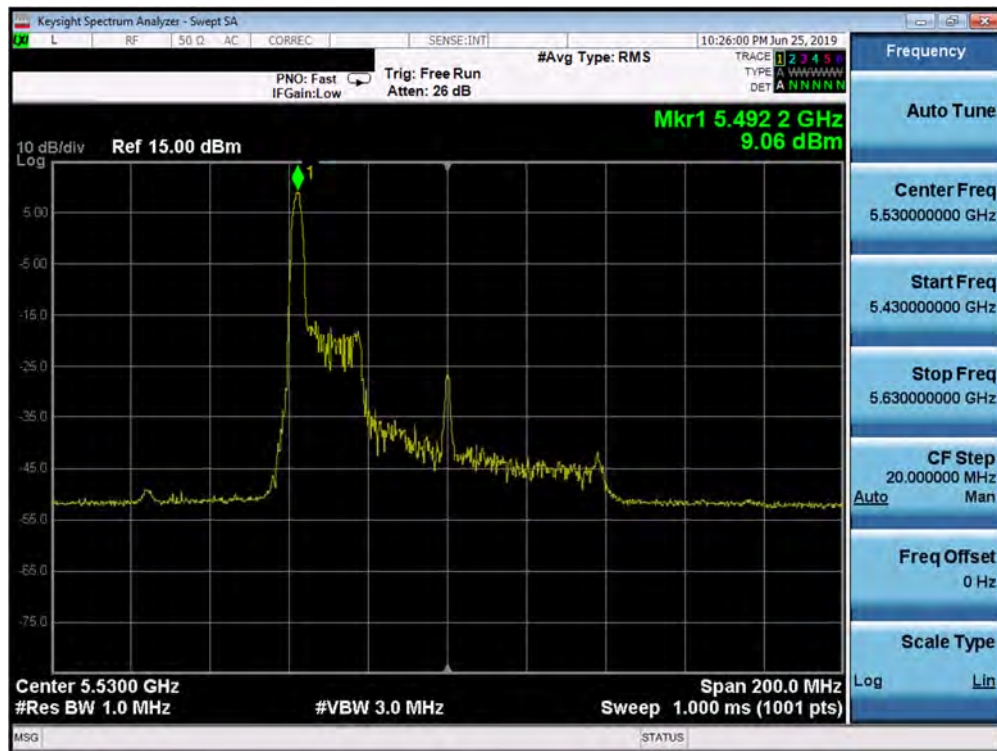


Plot 7-125. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 118)

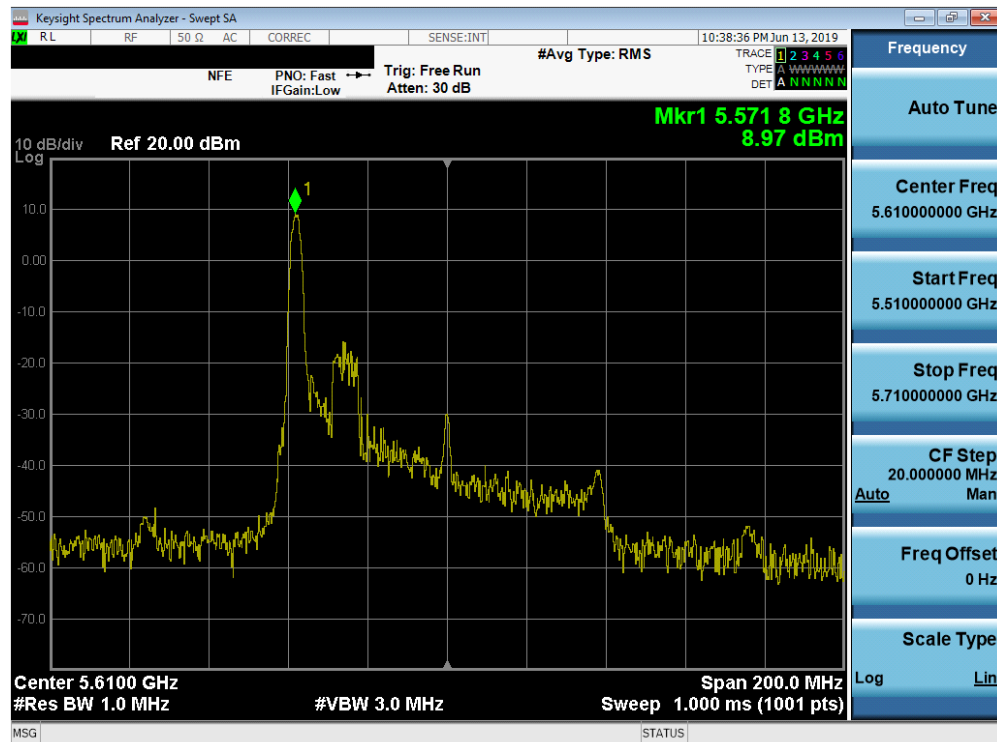


Plot 7-126. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 142)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 111 of 302                 |



Plot 7-127. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 106)



Plot 7-128. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 122)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 112 of 302                 |



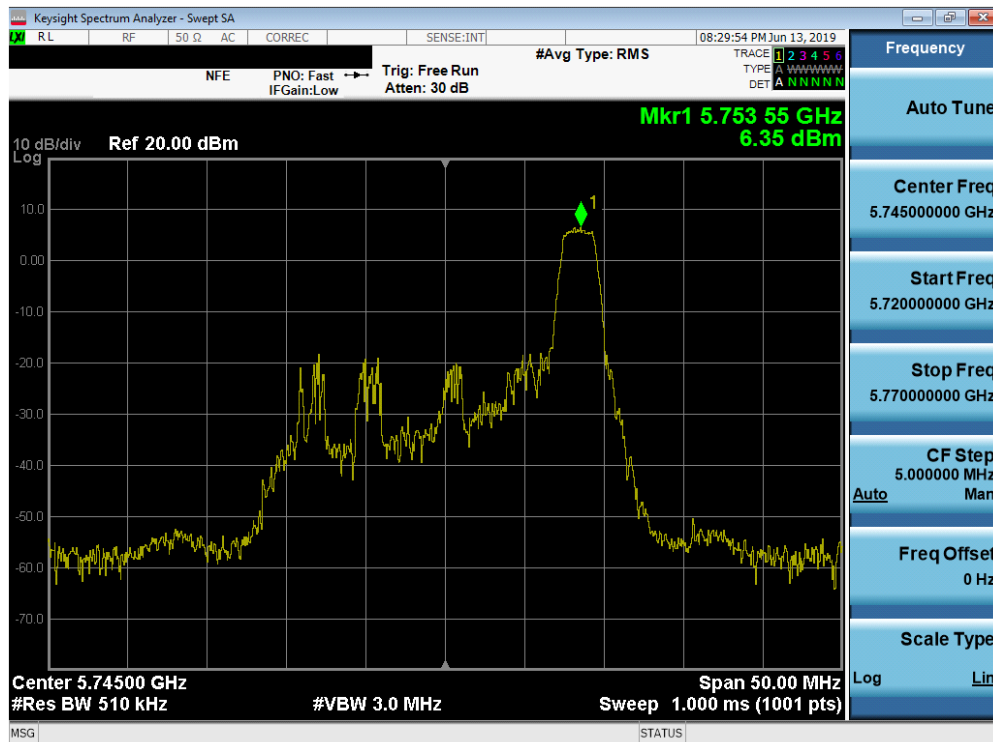
Plot 7-129. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 138)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 113 of 302                 |

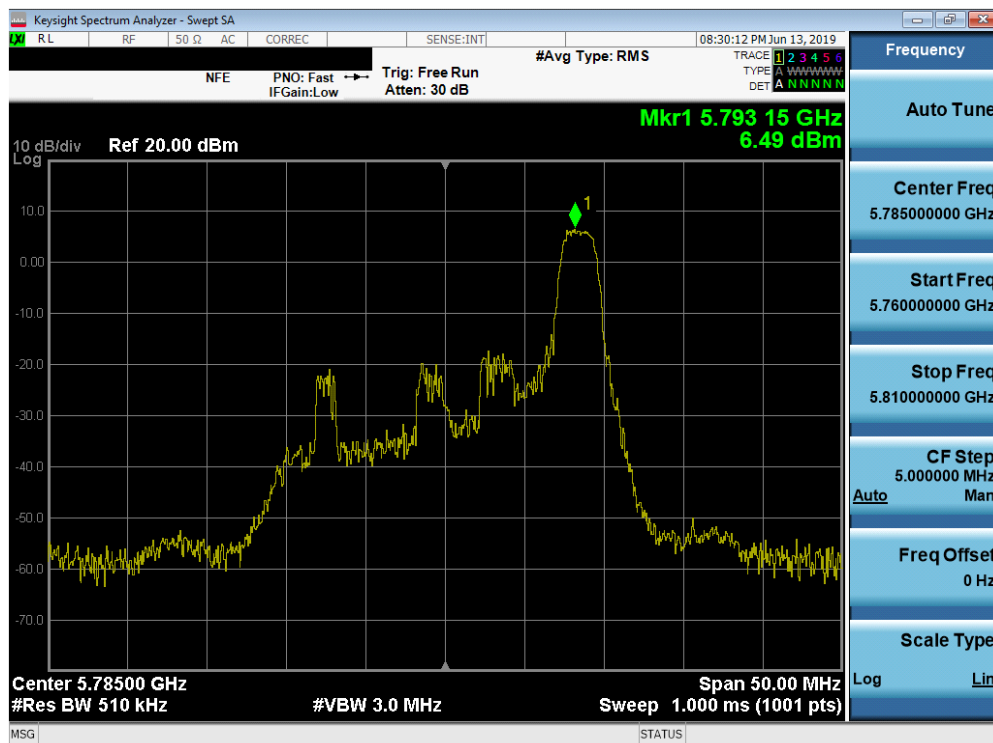
|        | Frequency<br>[MHz] | Channel<br>No. | 802.11 Mode | Tones | Data Rate<br>[Mbps] | Measured Power<br>Density [dBm] | Max<br>Permissible<br>Power<br>Density | Margin<br>[dB] |
|--------|--------------------|----------------|-------------|-------|---------------------|---------------------------------|----------------------------------------|----------------|
| Band 3 | 5745               | 149            | ax (20MHz)  | 26T   | MCS0                | 6.35                            | 30.00                                  | -23.65         |
|        | 5785               | 157            | ax (20MHz)  | 26T   | MCS0                | 6.49                            | 30.00                                  | -23.51         |
|        | 5825               | 165            | ax (20MHz)  | 26T   | MCS0                | 7.30                            | 30.00                                  | -22.70         |
|        | 5755               | 151            | ax (40MHz)  | 26T   | MCS0                | 7.70                            | 30.00                                  | -22.30         |
|        | 5795               | 159            | ax (40MHz)  | 26T   | MCS0                | 6.95                            | 30.00                                  | -23.05         |
|        | 5775               | 155            | ax (80MHz)  | 26T   | MCS0                | 8.78                            | 30.00                                  | -21.22         |

**Table 7-56. Band 3 Conducted Power Spectral Density Measurements SISO ANT1 (26 Tones)**

|                                         |                                                                                                                                                                                                                         |                               |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMN976V                      |  <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019                                                                                                                                                                                       | EUT Type:<br>Portable Handset | Page 114 of 302                 |



Plot 7-130. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 149)

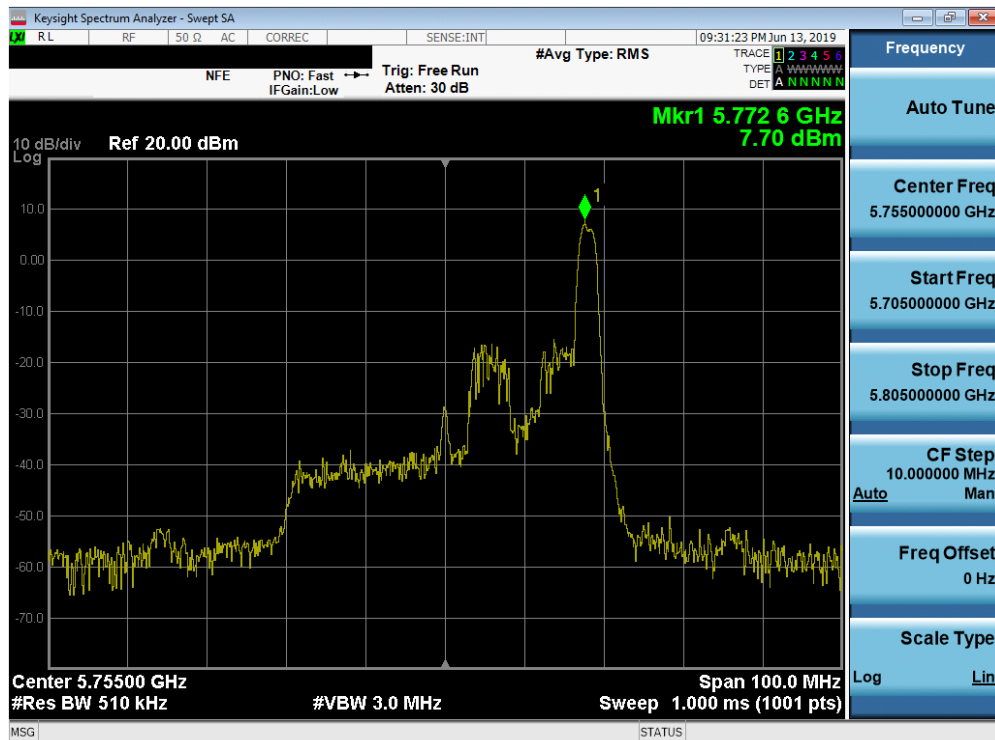


Plot 7-131. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 157)

|                                         |                                                                                                                                   |                               |                                                                                       |                                 |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN976V                      |  <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019                                                                                                 | EUT Type:<br>Portable Handset |                                                                                       | Page 115 of 302                 |

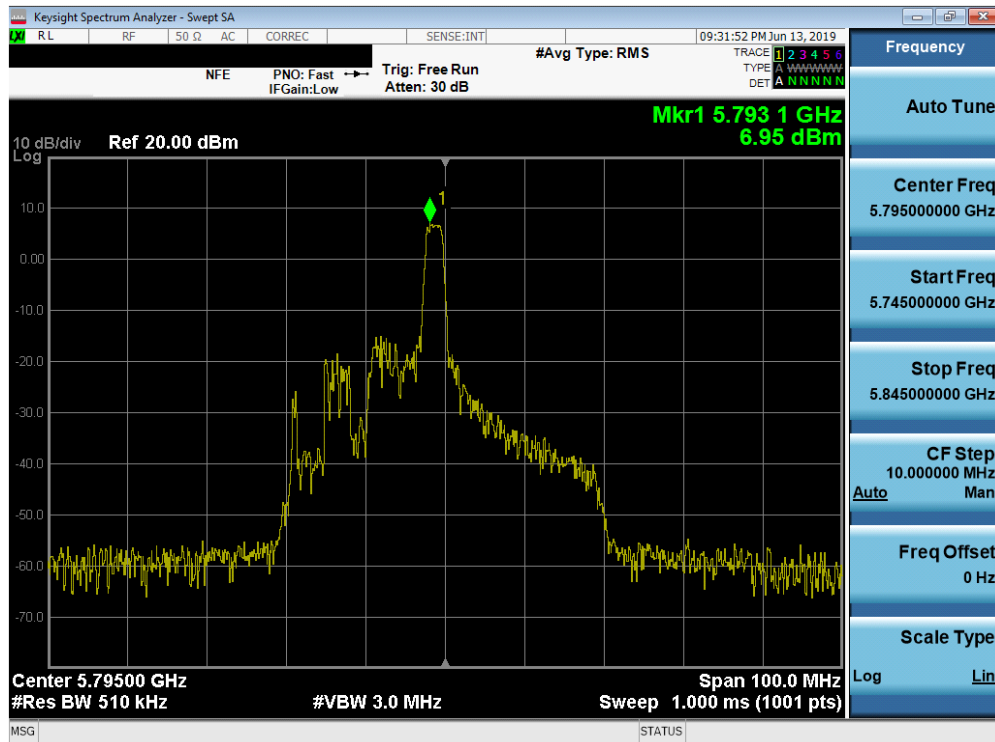


Plot 7-132. Power Spectral Density Plot SISO ANT1 (20 MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 165)

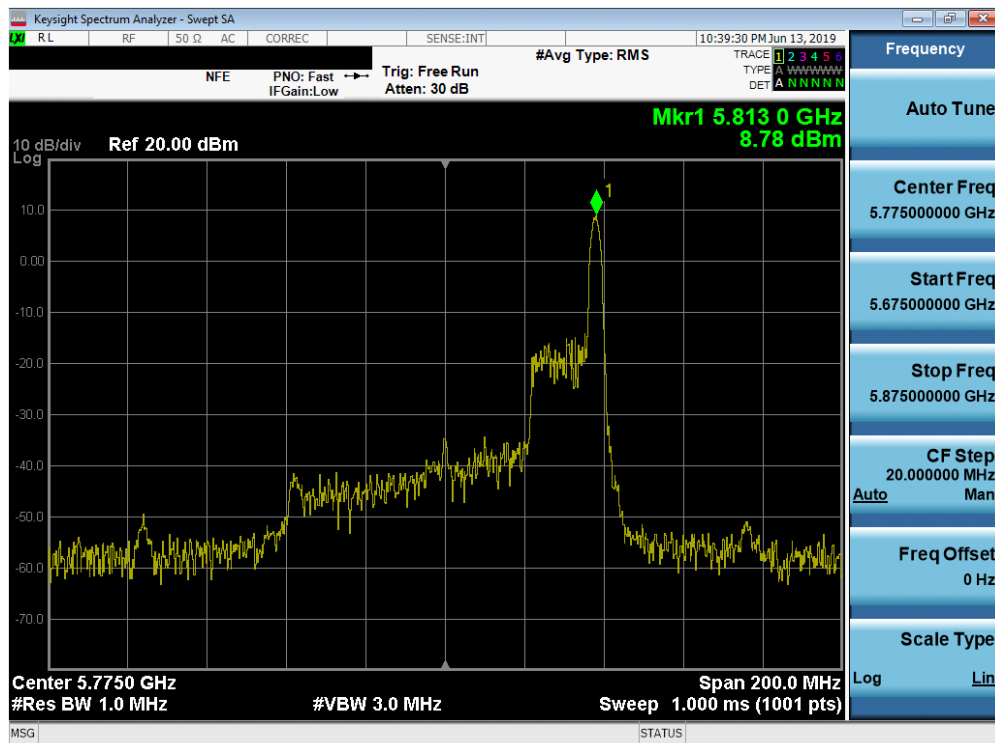


Plot 7-133. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 151)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 116 of 302                 |



Plot 7-134. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 159)



Plot 7-135. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 155)

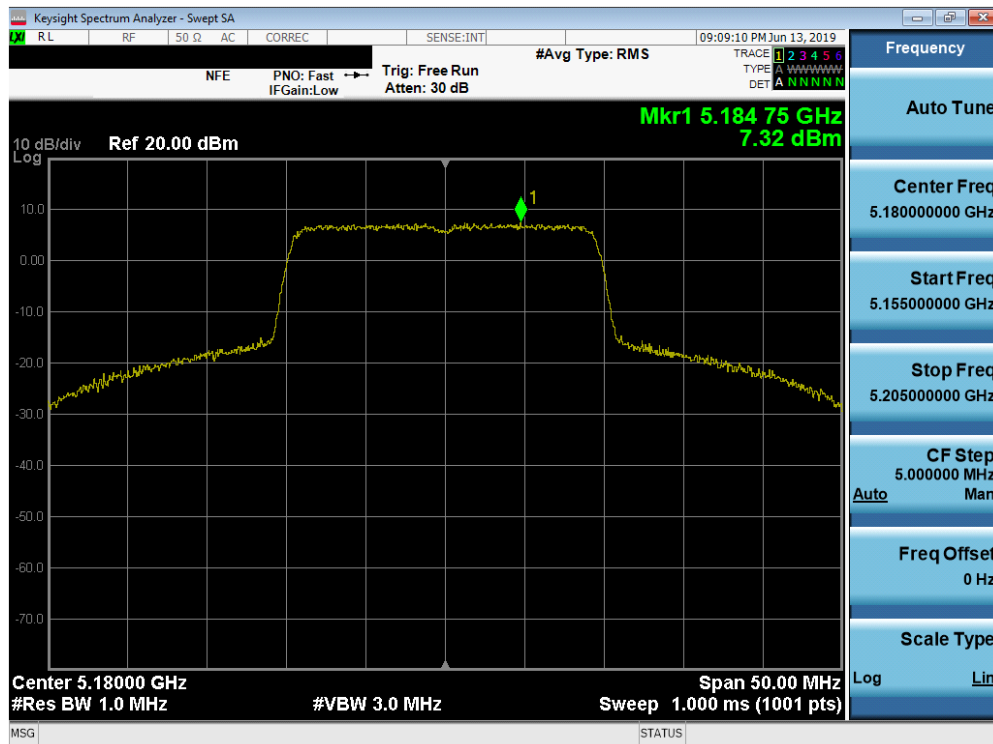
|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 117 of 302                 |

## SISO Antenna-1 Power Spectral Density Measurements (Full Tones)

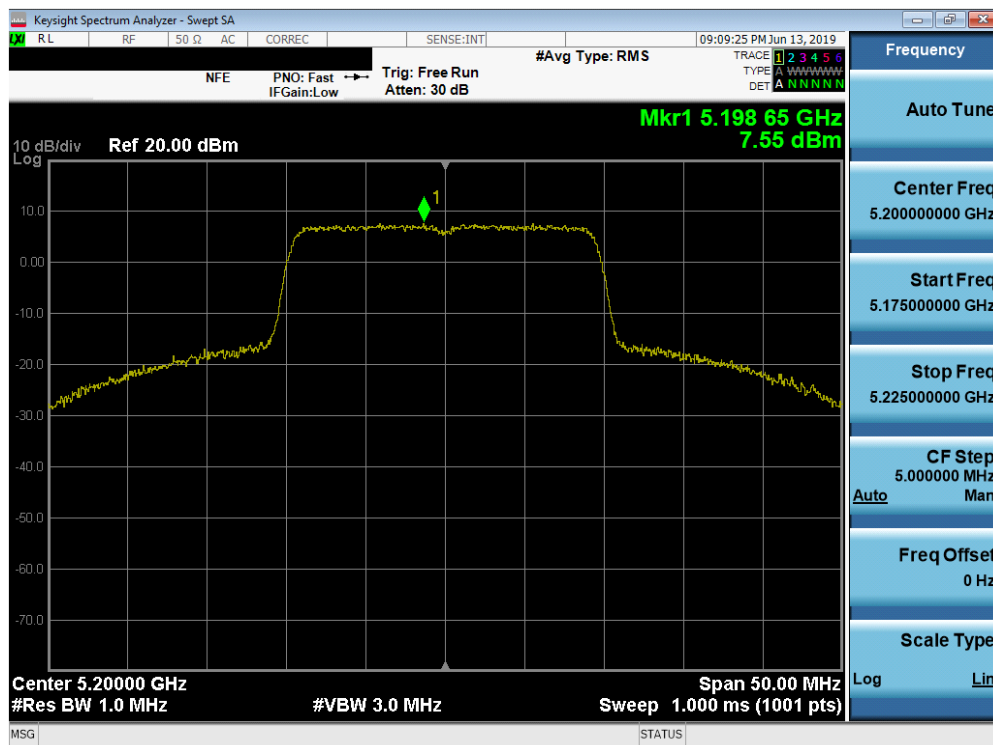
|         | Frequency [MHz] | Channel No. | 802.11 Mode | Tones | Data Rate [Mbps] | Measured Power Density [dBm] | Max Power Density [dBm/MHz] | Margin [dB] |
|---------|-----------------|-------------|-------------|-------|------------------|------------------------------|-----------------------------|-------------|
| Band 1  | 5180            | 36          | ax (20MHz)  | 242T  | MCS0             | 7.32                         | 11.0                        | -3.68       |
|         | 5200            | 40          | ax (20MHz)  | 242T  | MCS0             | 7.55                         | 11.0                        | -3.45       |
|         | 5240            | 48          | ax (20MHz)  | 242T  | MCS0             | 7.73                         | 11.0                        | -3.27       |
|         | 5190            | 38          | ax (40MHz)  | 484T  | MCS0             | 3.59                         | 11.0                        | -7.41       |
|         | 5230            | 46          | ax (40MHz)  | 484T  | MCS0             | 3.97                         | 11.0                        | -7.03       |
|         | 5210            | 42          | ax (80MHz)  | 996T  | MCS0             | -1.39                        | 11.0                        | -12.39      |
| Band 2A | 5260            | 52          | ax (20MHz)  | 242T  | MCS0             | 7.42                         | 11.0                        | -3.58       |
|         | 5280            | 56          | ax (20MHz)  | 242T  | MCS0             | 7.28                         | 11.0                        | -3.72       |
|         | 5320            | 64          | ax (20MHz)  | 242T  | MCS0             | 7.46                         | 11.0                        | -3.54       |
|         | 5270            | 54          | ax (40MHz)  | 484T  | MCS0             | 3.70                         | 11.0                        | -7.30       |
|         | 5310            | 62          | ax (40MHz)  | 484T  | MCS0             | 3.65                         | 11.0                        | -7.35       |
|         | 5290            | 58          | ax (80MHz)  | 996T  | MCS0             | -5.11                        | 11.0                        | -16.11      |
| Band 2C | 5500            | 100         | ax (20MHz)  | 242T  | MCS0             | 7.21                         | 11.0                        | -3.79       |
|         | 5600            | 120         | ax (20MHz)  | 242T  | MCS0             | 7.21                         | 11.0                        | -3.79       |
|         | 5720            | 144         | ax (20MHz)  | 242T  | MCS0             | 7.38                         | 11.0                        | -3.62       |
|         | 5510            | 102         | ax (40MHz)  | 484T  | MCS0             | 2.88                         | 11.0                        | -8.12       |
|         | 5590            | 118         | ax (40MHz)  | 484T  | MCS0             | 3.60                         | 11.0                        | -7.40       |
|         | 5710            | 142         | ax (40MHz)  | 484T  | MCS0             | 2.98                         | 11.0                        | -8.02       |
|         | 5530            | 106         | ax (80MHz)  | 996T  | MCS0             | -6.56                        | 11.0                        | -17.56      |
|         | 5610            | 122         | ax (80MHz)  | 996T  | MCS0             | -3.10                        | 11.0                        | -14.10      |
|         | 5690            | 138         | ax (80MHz)  | 996T  | MCS0             | -3.02                        | 11.0                        | -14.02      |

Table 7-57. Bands 1, 2A, 2C Conducted Power Spectral Density Measurements SISO ANT1 (Full Tones)

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMN976V                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 118 of 302                 |

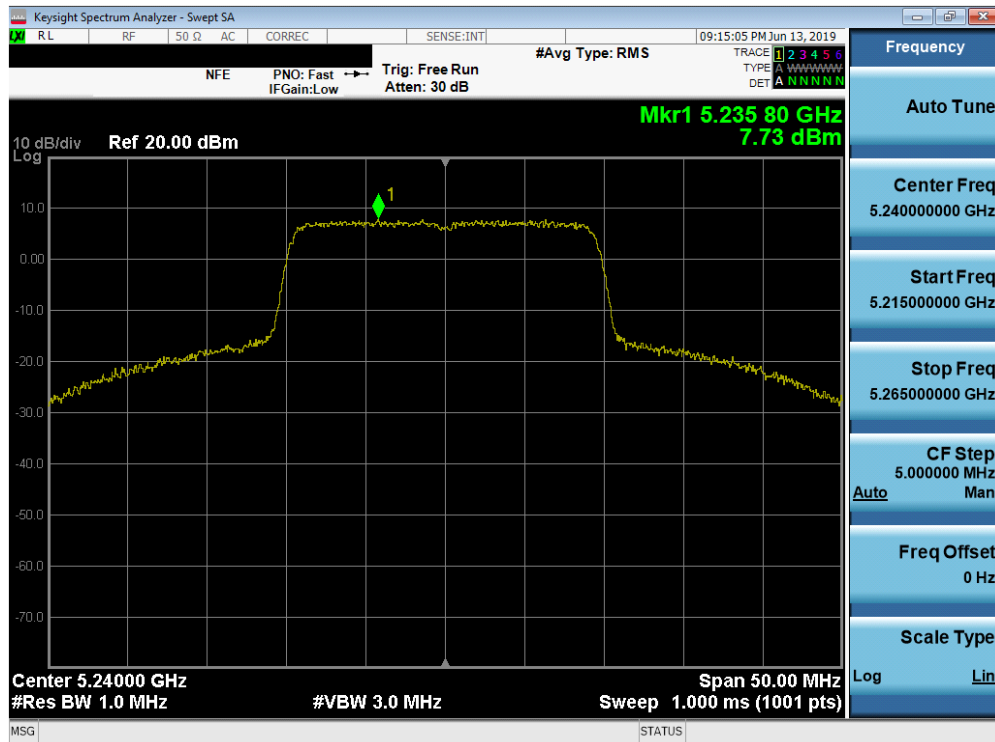


Plot 7-136. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 36)

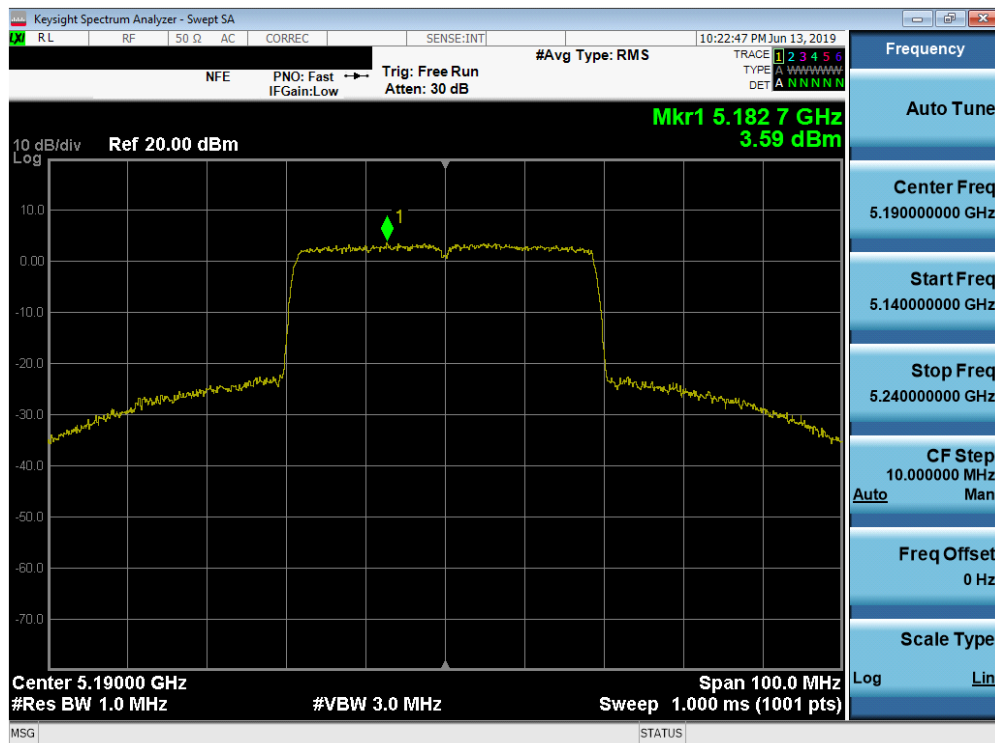


Plot 7-137. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 40)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 119 of 302                 |

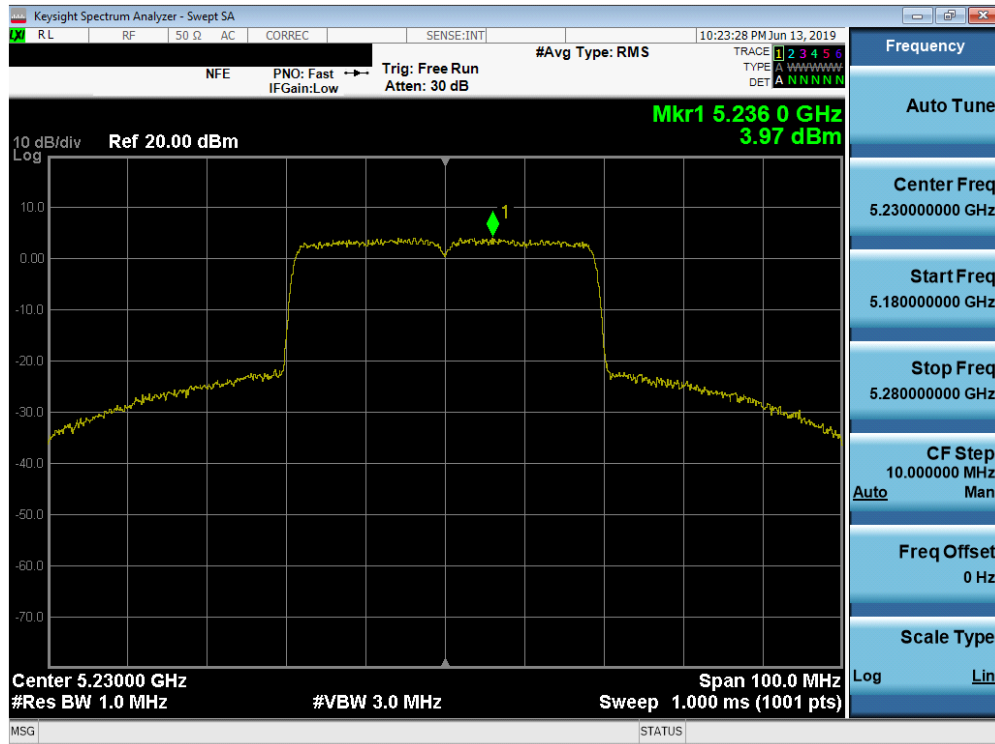


Plot 7-138. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 48)

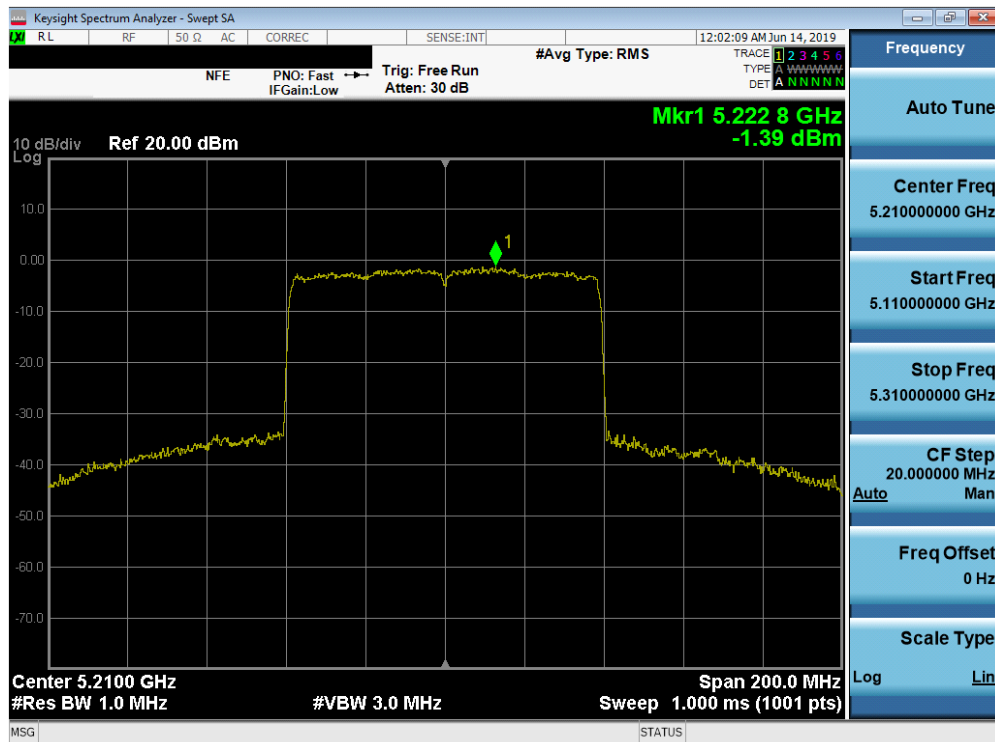


Plot 7-139. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 38)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 120 of 302                 |

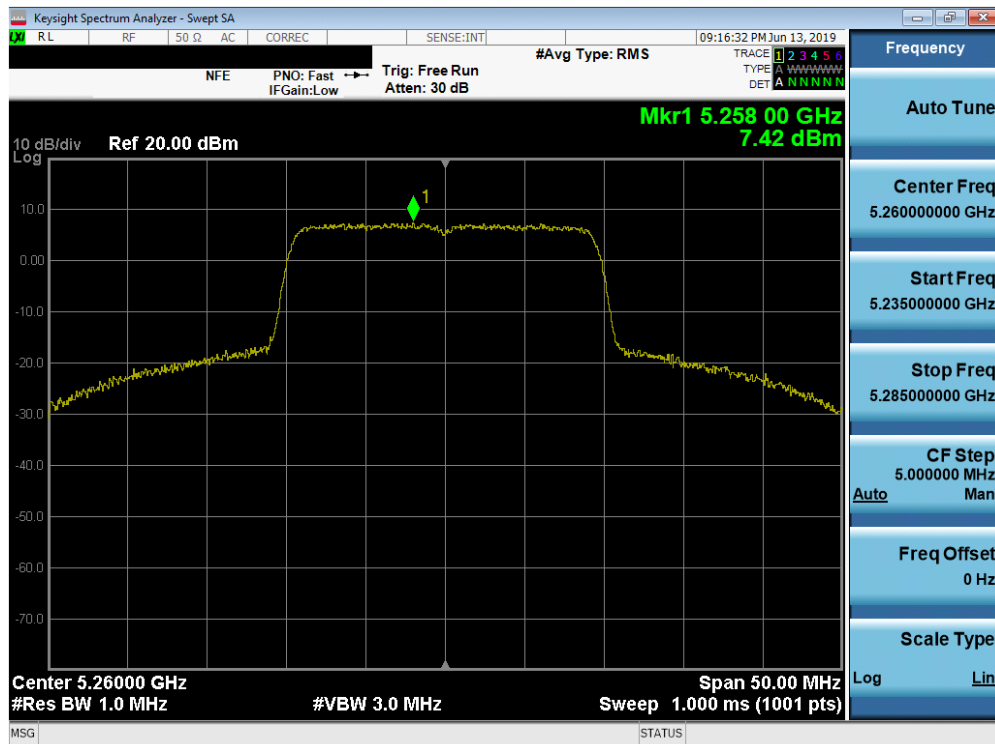


Plot 7-140. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 46)

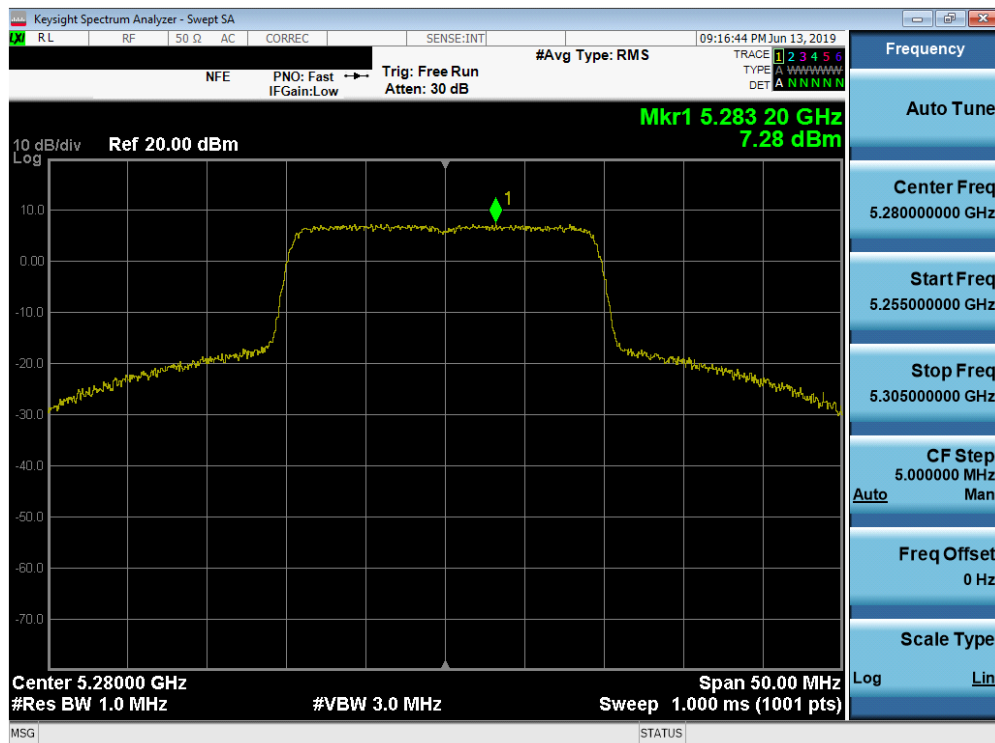


Plot 7-141. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 42)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 121 of 302                 |

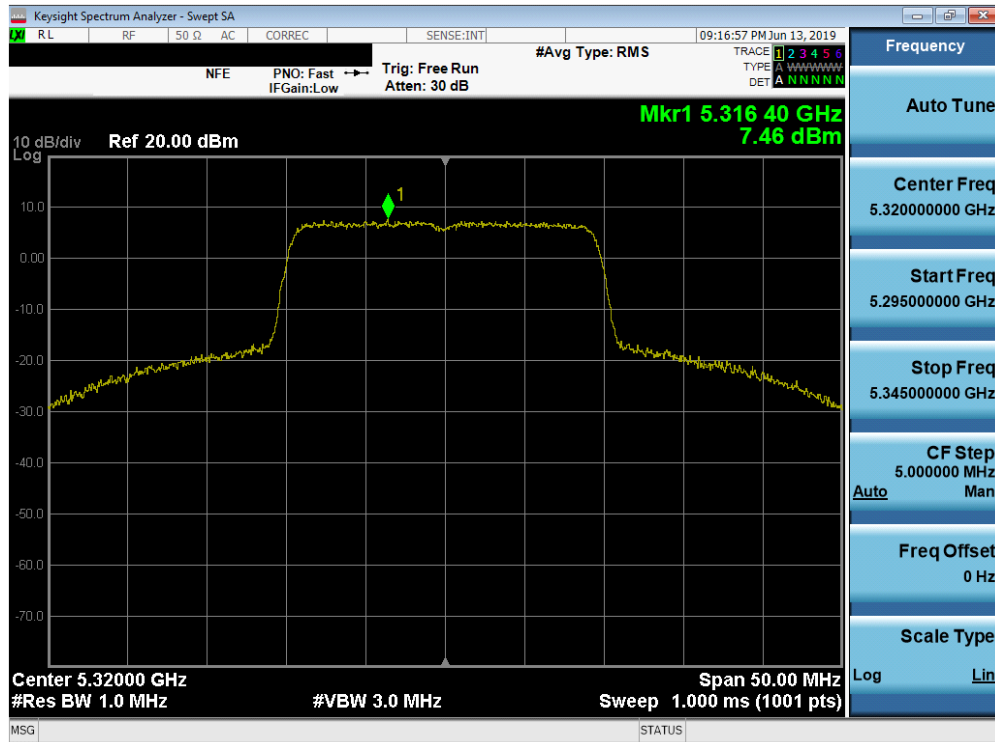


Plot 7-142. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 52)

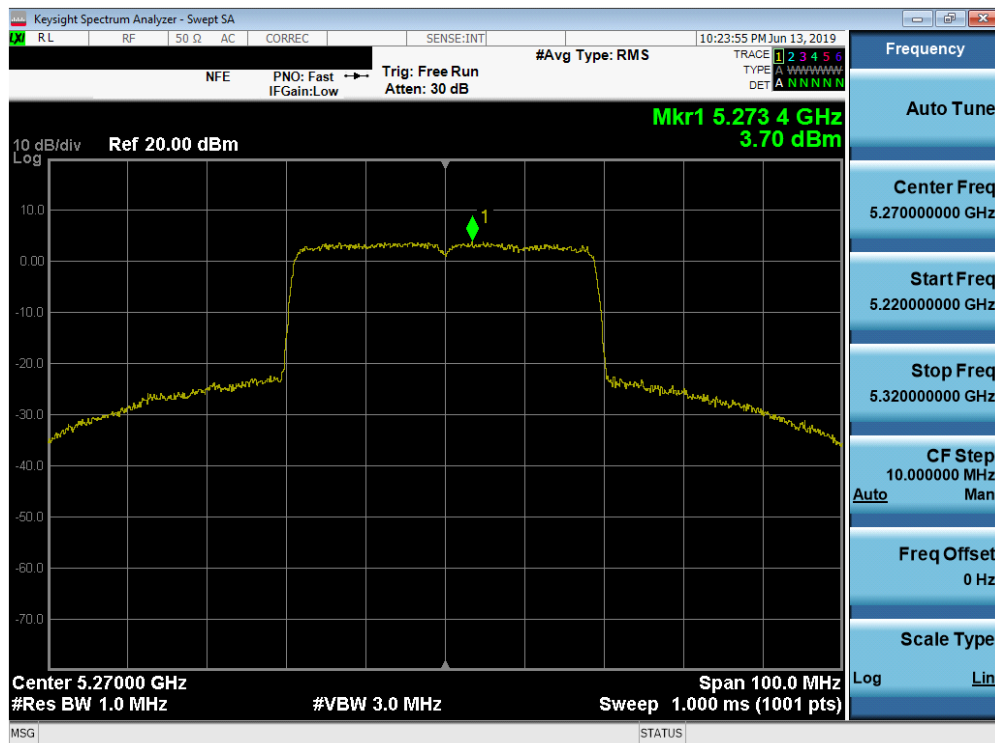


Plot 7-143. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 56)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 122 of 302                 |

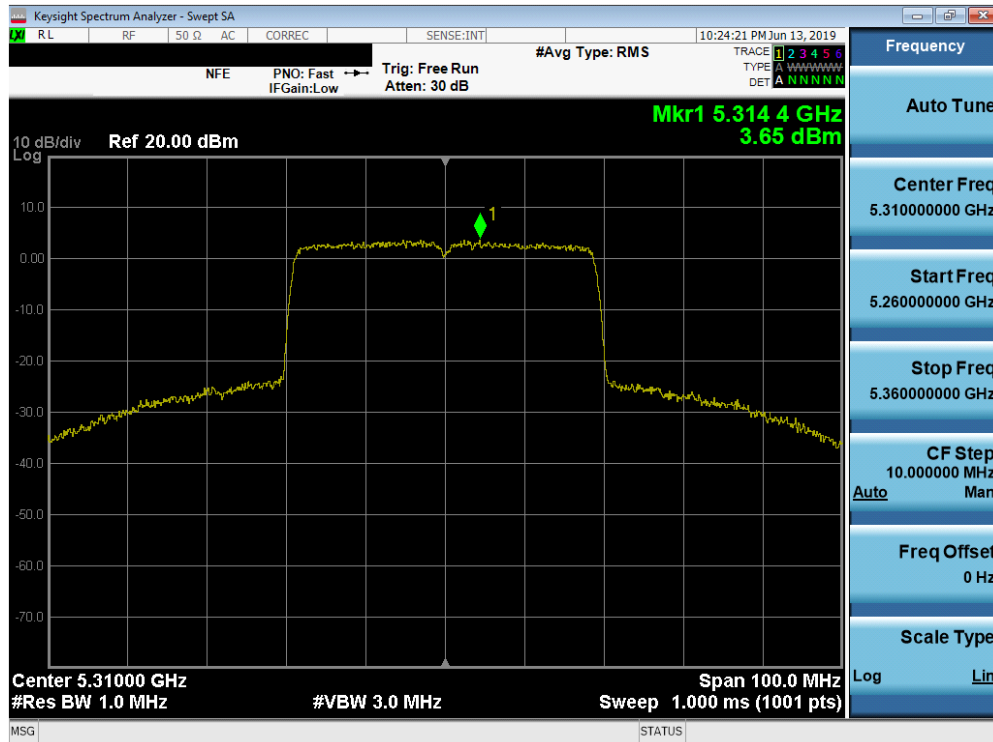


Plot 7-144. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 64)

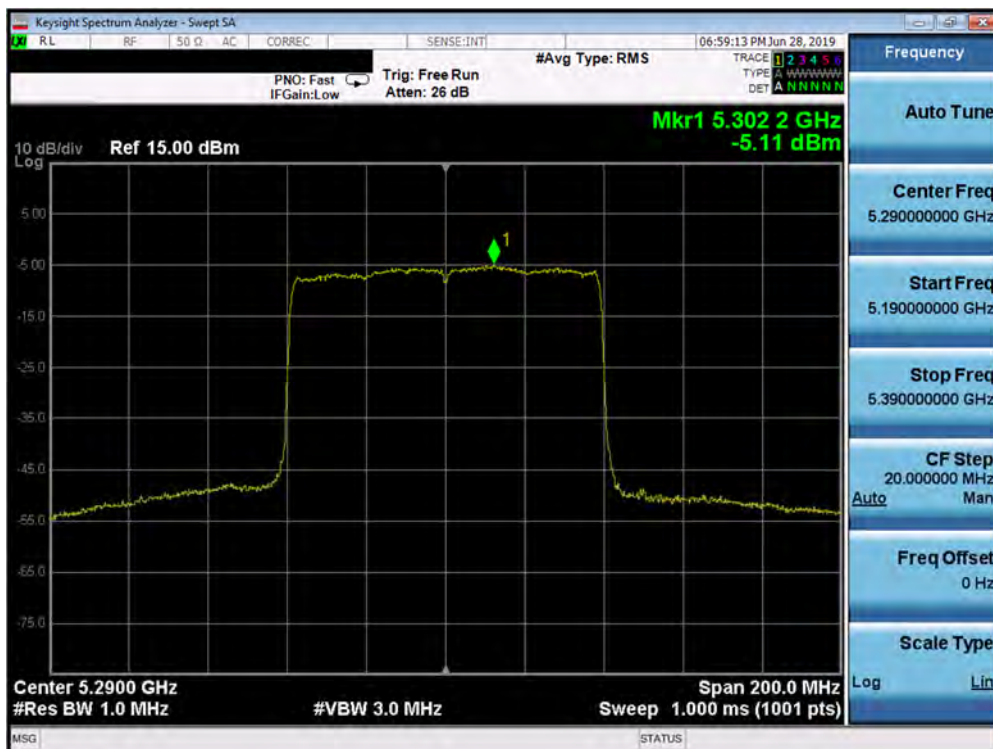


Plot 7-145. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 54)

|                                         |                                              |                               |  |                                 |
|-----------------------------------------|----------------------------------------------|-------------------------------|--|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>MEASUREMENT REPORT</b><br>(CERTIFICATION) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019            | EUT Type:<br>Portable Handset |  | Page 123 of 302                 |

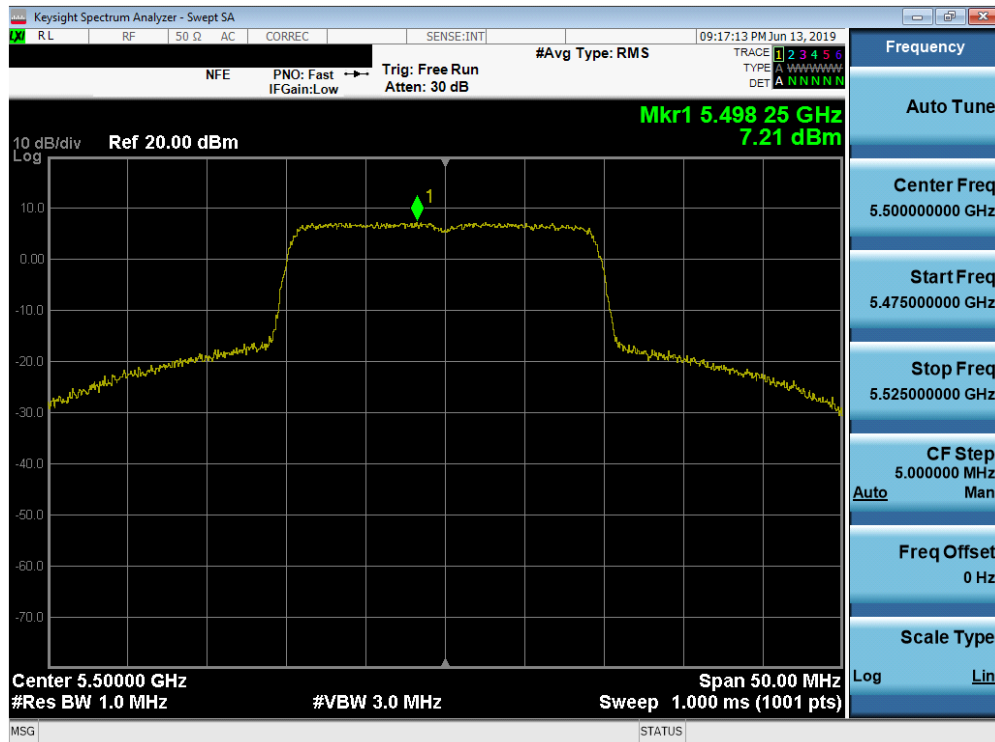


Plot 7-146. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 62)

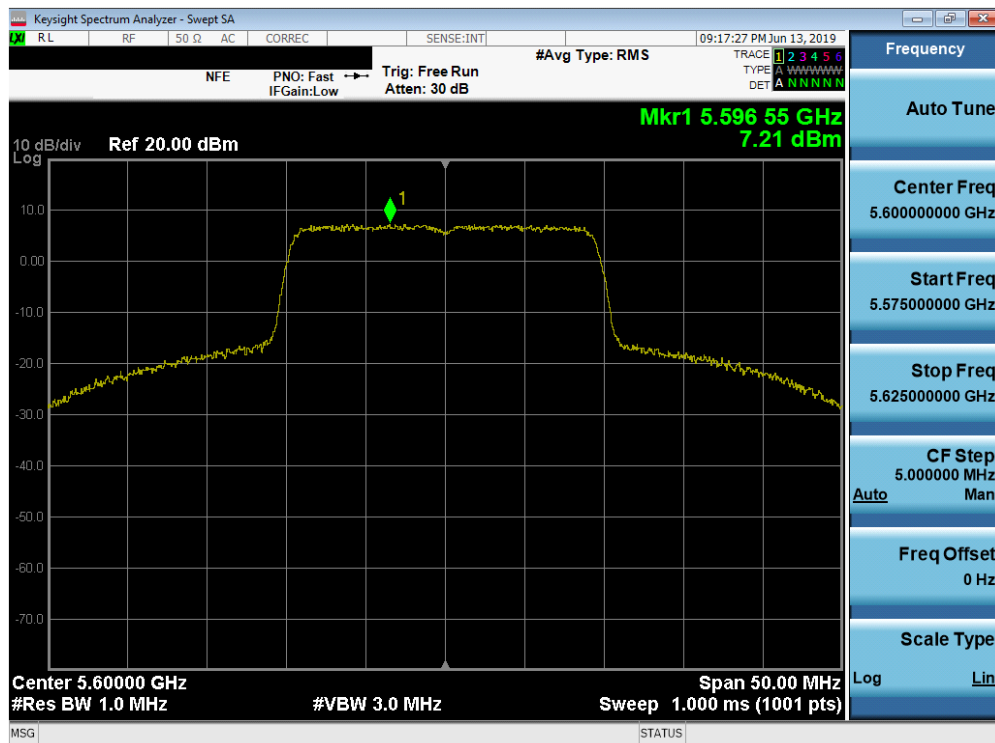


Plot 7-147. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 58)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 124 of 302                 |

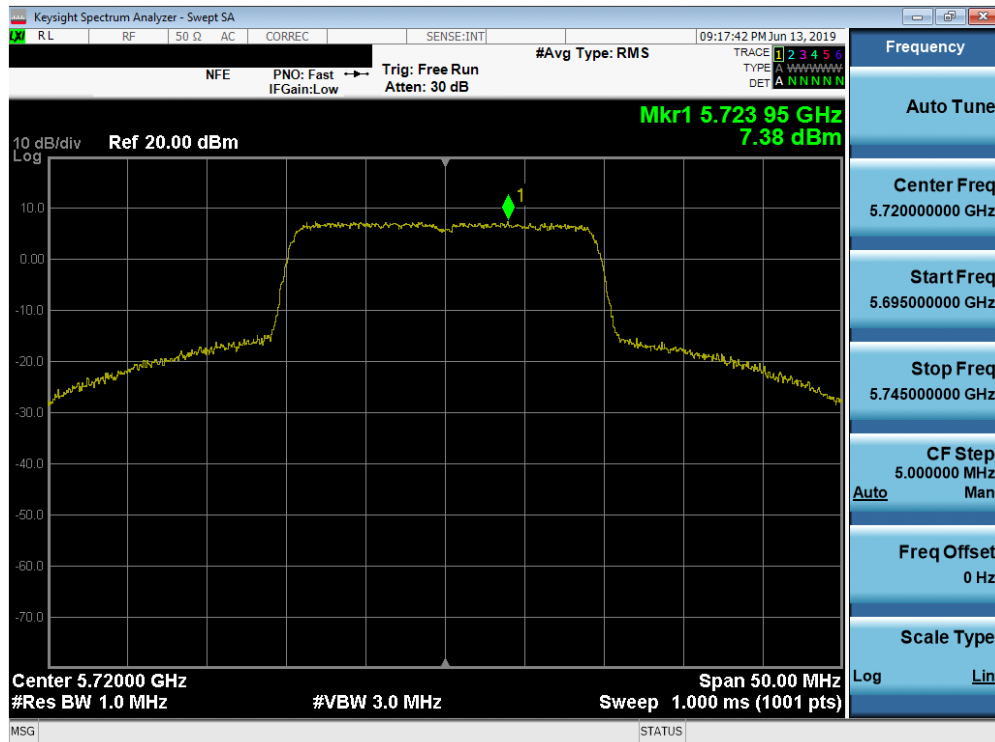


Plot 7-148. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 100)

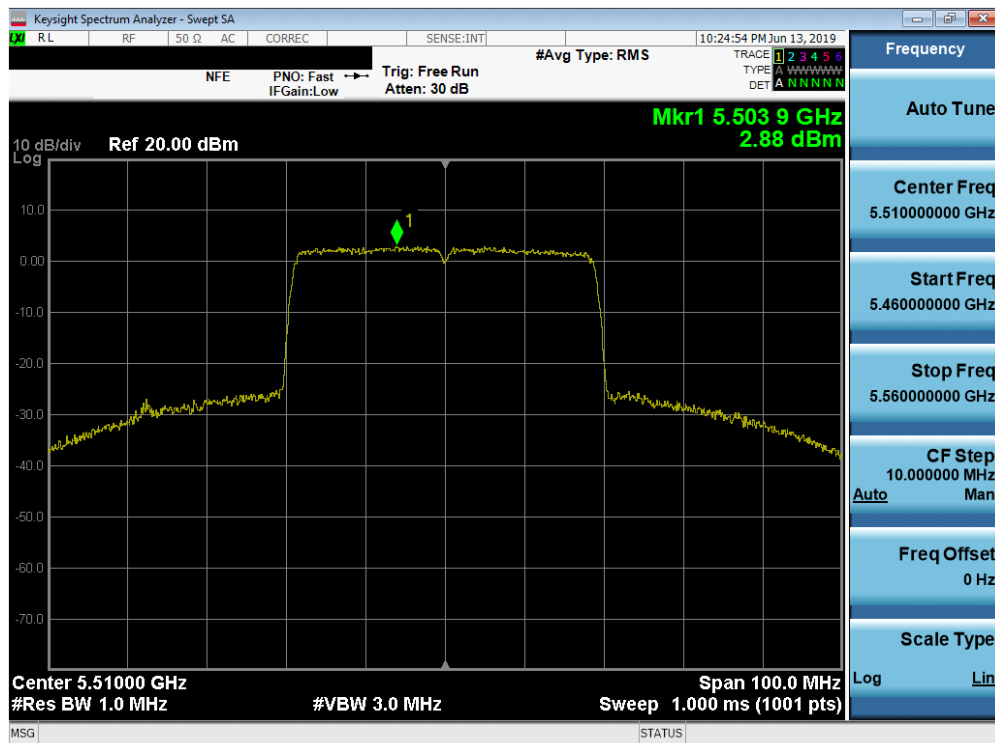


Plot 7-149. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 120)

|                                         |                                                                                                                                                                                                                         |                               |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMN976V                      |  <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019                                                                                                                                                                                       | EUT Type:<br>Portable Handset | Page 125 of 302                 |

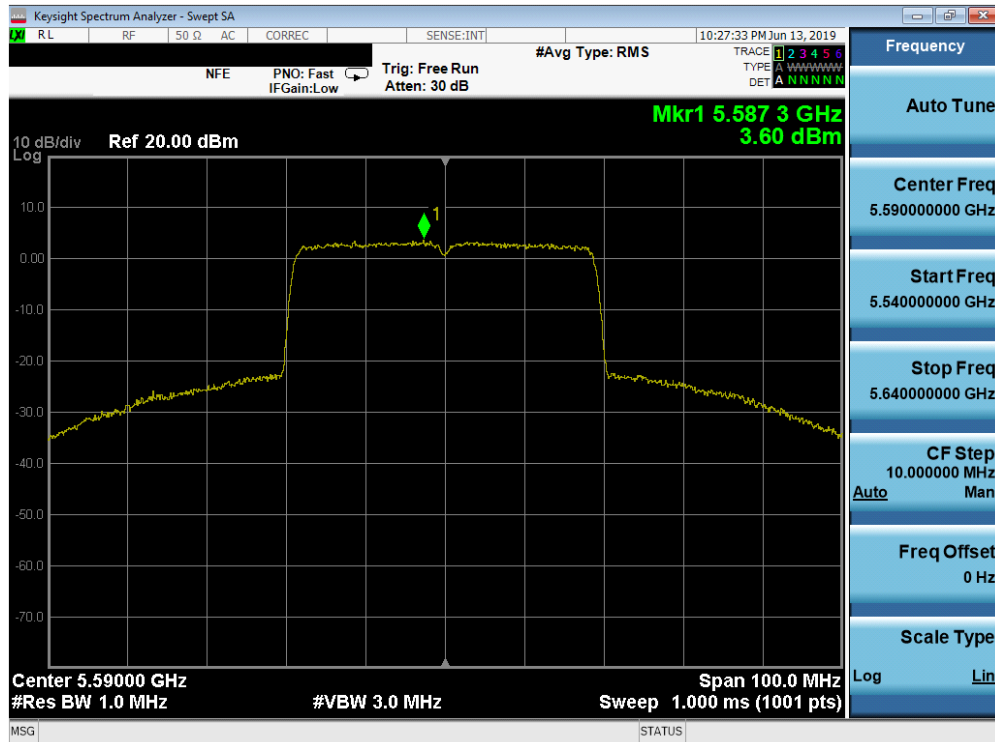


Plot 7-150. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 144)

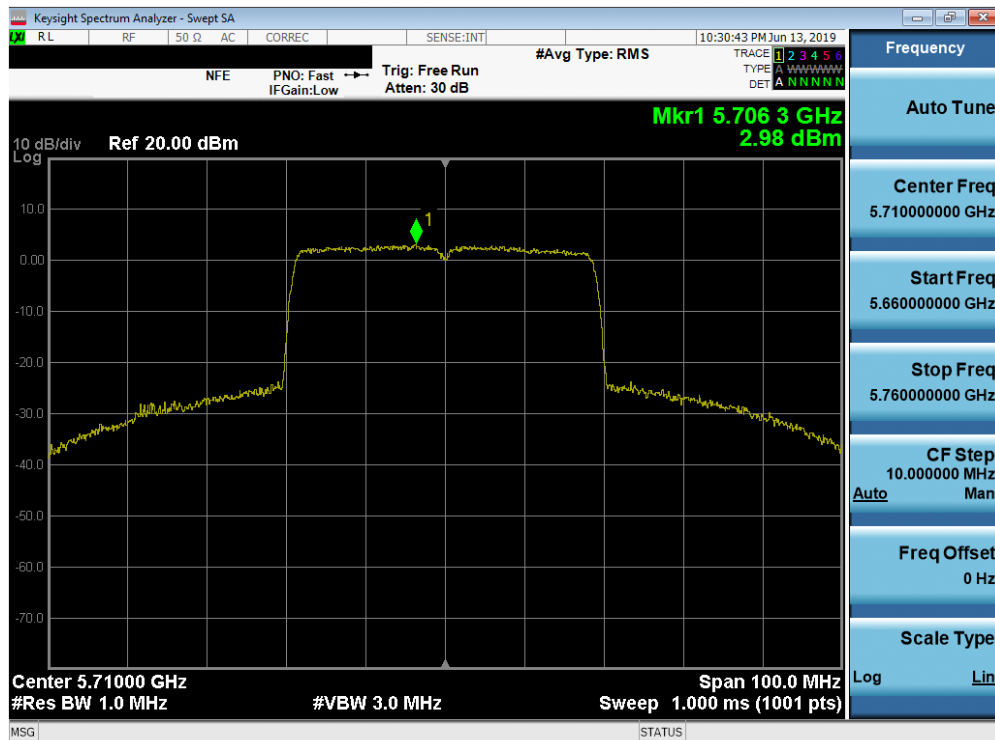


Plot 7-151. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 102)

|                                         |                                                                                                                                  |                               |                                                                                       |                                 |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN976V                      |  <b>MEASUREMENT REPORT</b><br>(CERTIFICATION) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019                                                                                                | EUT Type:<br>Portable Handset |                                                                                       | Page 126 of 302                 |

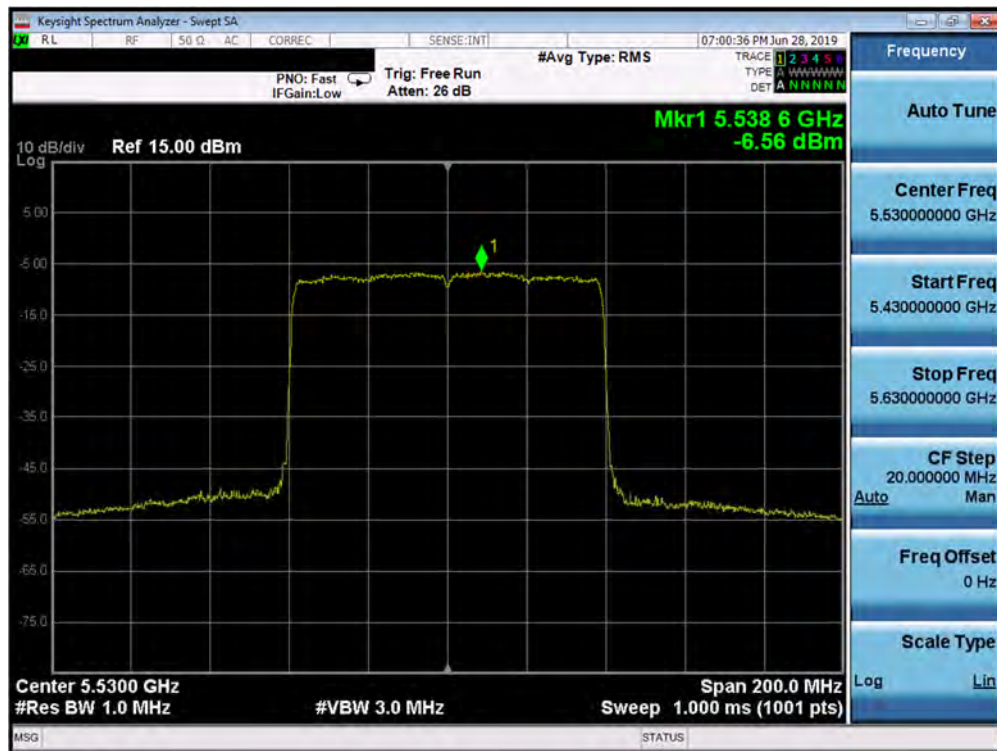


Plot 7-152. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 118)

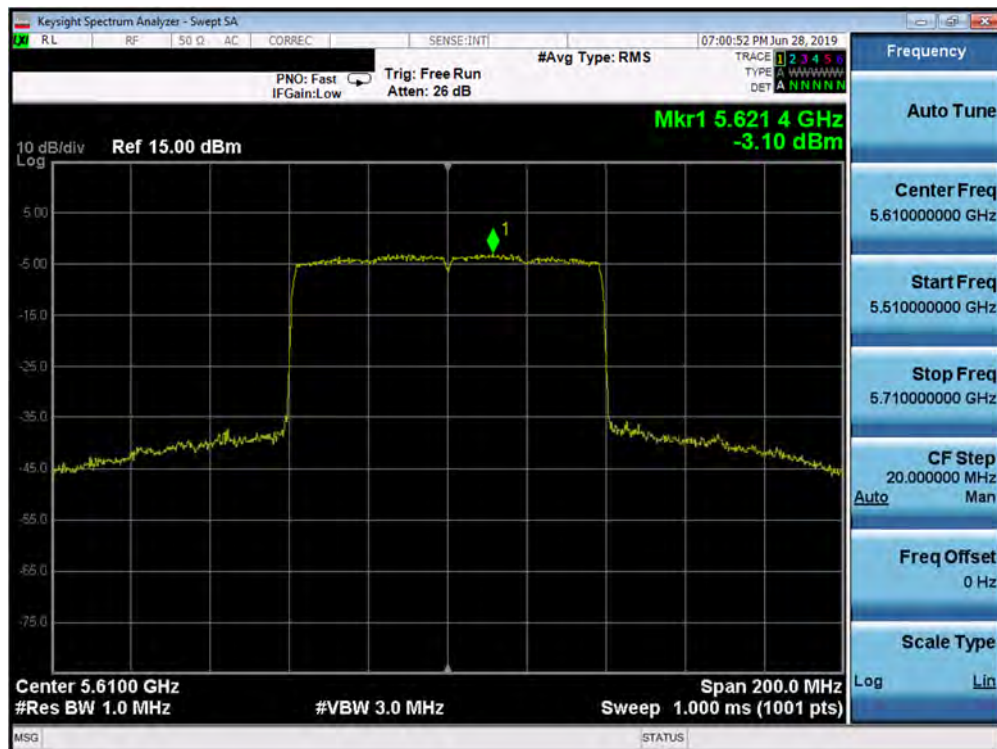


Plot 7-153. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 142)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 127 of 302                 |

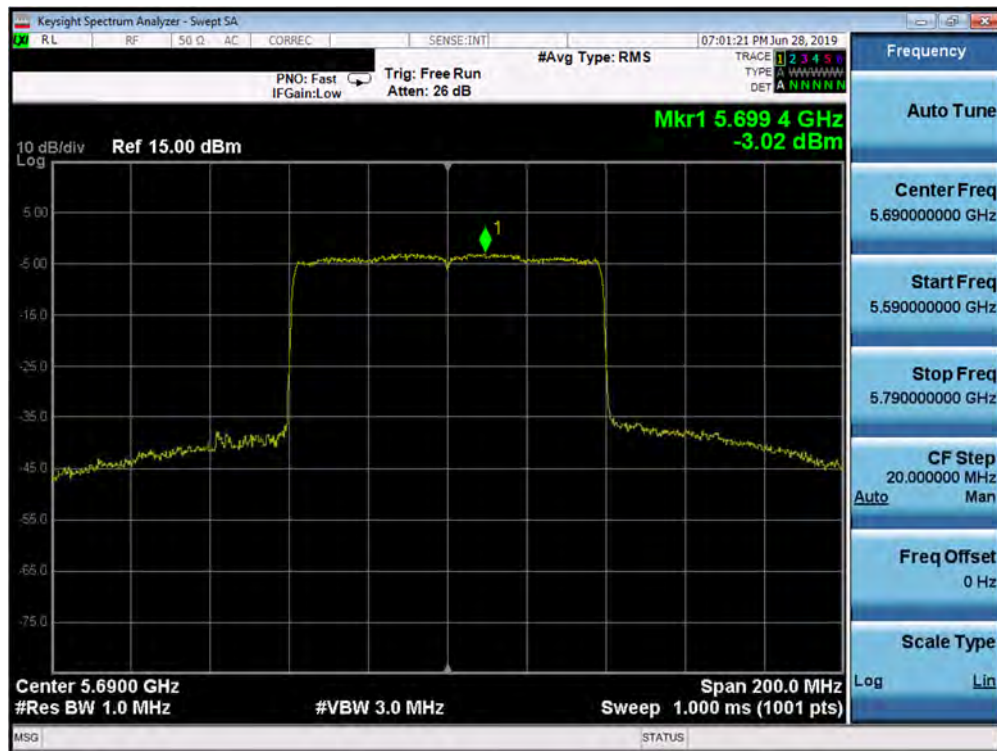


Plot 7-154. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 106)



Plot 7-155. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 122)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 128 of 302                 |



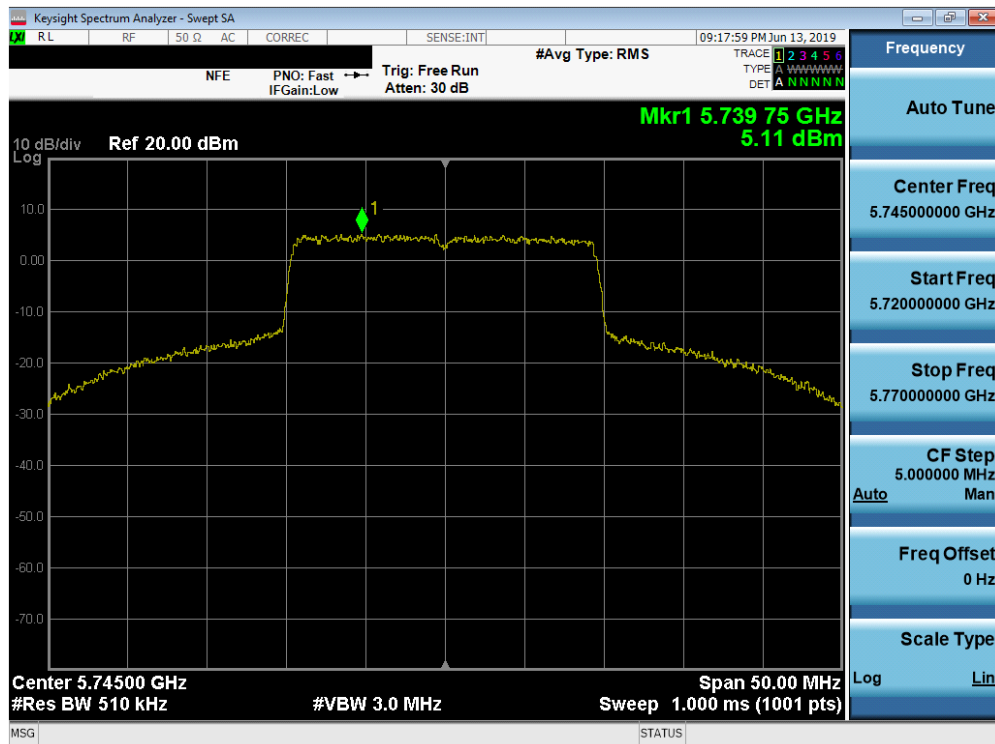
Plot 7-156. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 138)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 129 of 302                 |

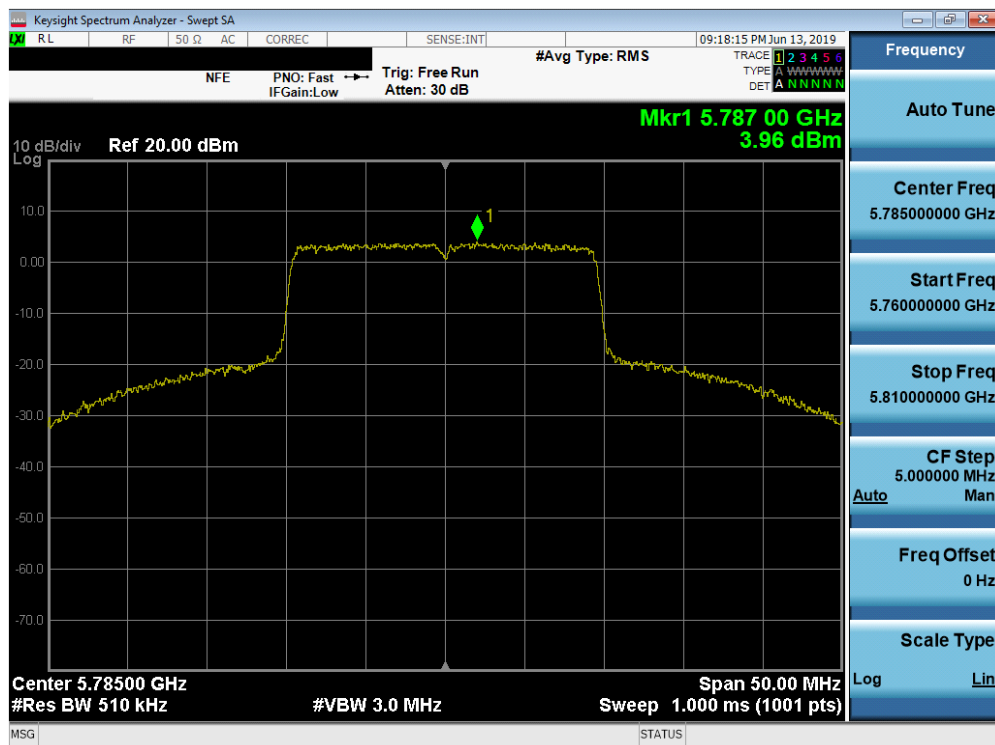
|        | Frequency [MHz] | Channel No. | 802.11 Mode | Tones | Data Rate [Mbps] | Measured Power Density [dBm] | Max Permissible Power Density | Margin [dB] |
|--------|-----------------|-------------|-------------|-------|------------------|------------------------------|-------------------------------|-------------|
| Band 3 | 5745            | 149         | ax (20MHz)  | 242T  | MCS0             | 5.11                         | 30.00                         | -24.89      |
|        | 5785            | 157         | ax (20MHz)  | 242T  | MCS0             | 3.96                         | 30.00                         | -26.04      |
|        | 5825            | 165         | ax (20MHz)  | 242T  | MCS0             | 5.20                         | 30.00                         | -24.80      |
|        | 5755            | 151         | ax (40MHz)  | 484T  | MCS0             | 0.67                         | 30.00                         | -29.33      |
|        | 5795            | 159         | ax (40MHz)  | 484T  | MCS0             | 1.54                         | 30.00                         | -28.46      |
|        | 5775            | 155         | ax (80MHz)  | 996T  | MCS0             | -0.89                        | 30.00                         | -30.89      |

**Table 7-58. Band 3 Conducted Power Spectral Density Measurements SISO ANT1 (Full Tones)**

|                                         |                                                                                     |                                       |  |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|--|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN976V                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019                                                   | EUT Type:<br>Portable Handset         |  |                                                                                       | Page 130 of 302                 |

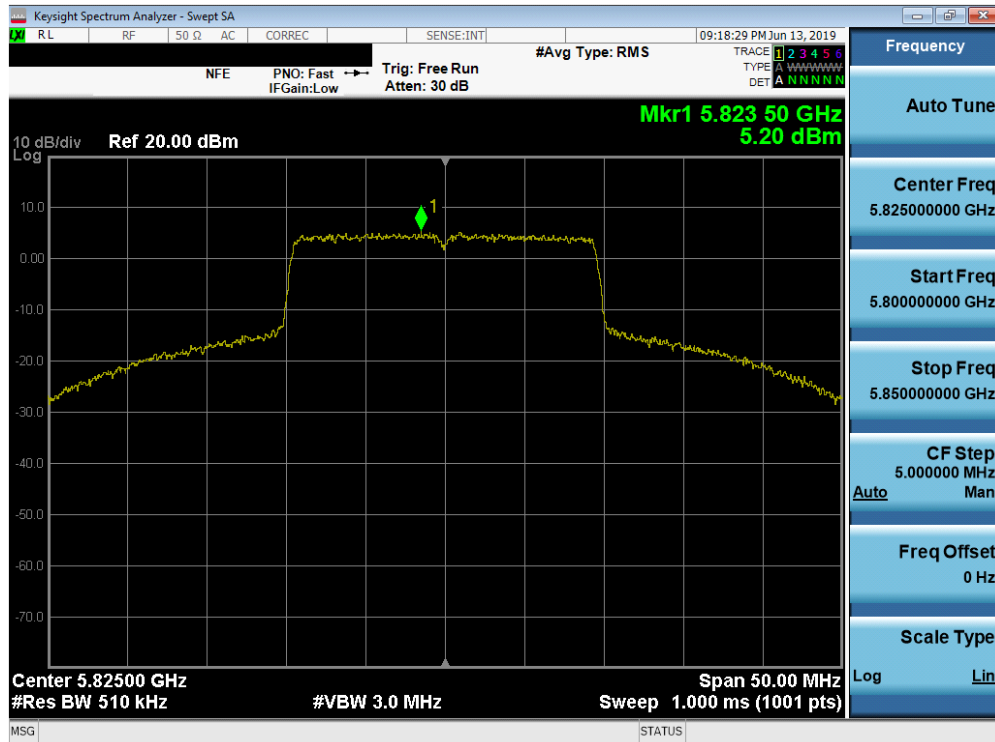


Plot 7-157. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 149)

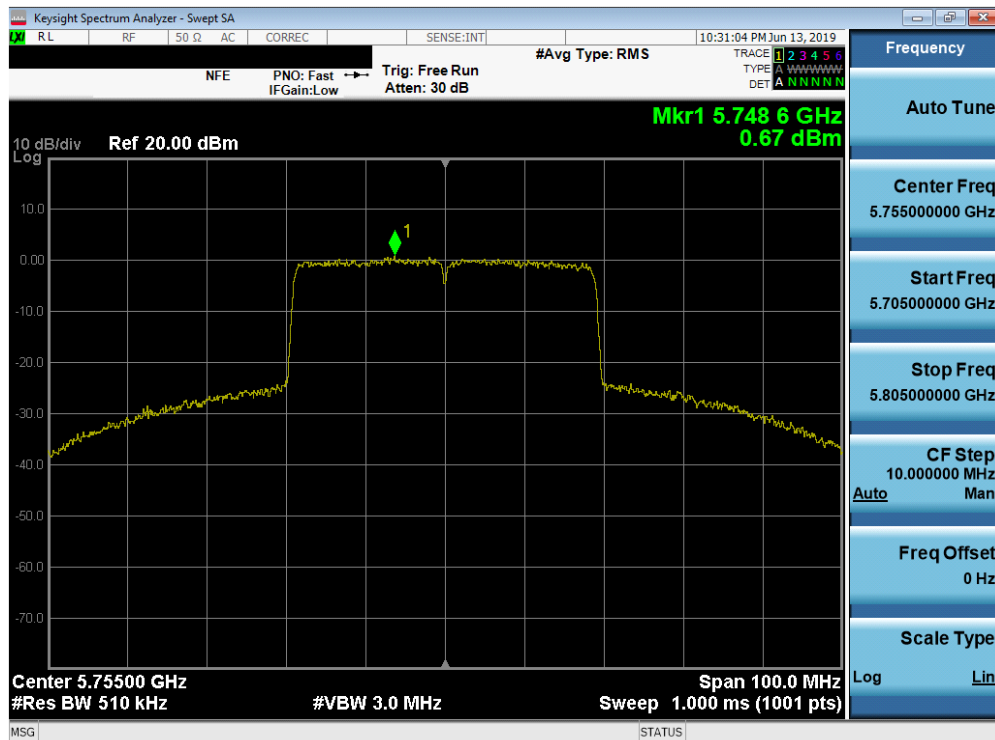


Plot 7-158. Power Spectral Density Plot SISO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 157)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 131 of 302                 |

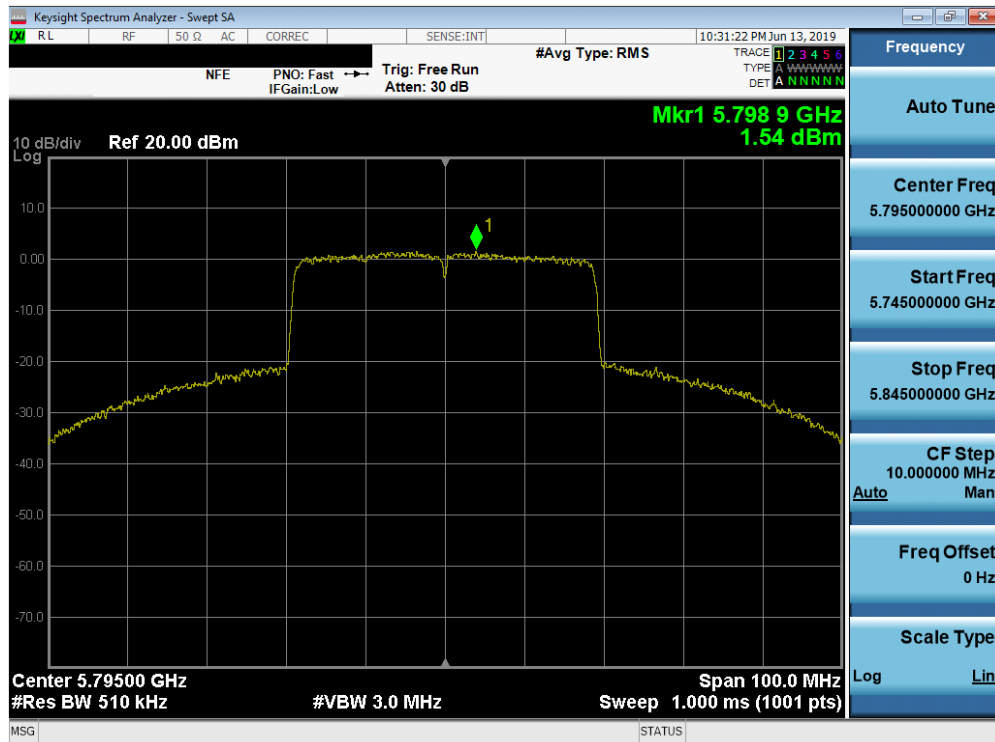


Plot 7-159. Power Spectral Density Plot SISO ANT1 (20 MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 165)

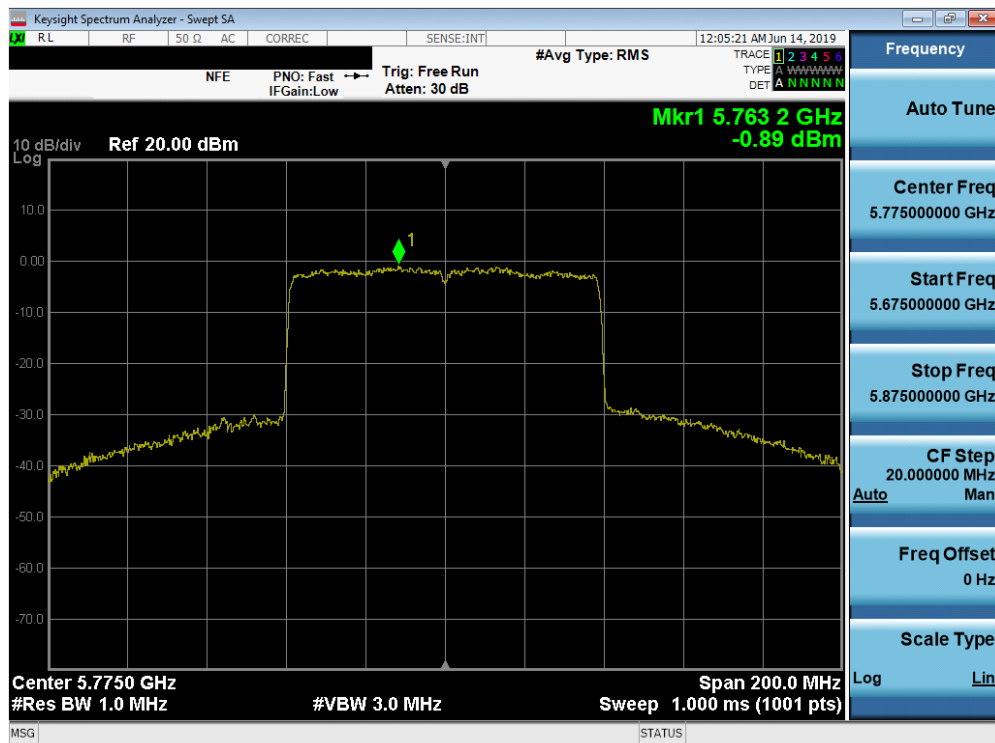


Plot 7-160. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 151)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 132 of 302                 |



Plot 7-161. Power Spectral Density Plot SISO ANT1 (40MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 159)



Plot 7-162. Power Spectral Density Plot SISO ANT1 (80MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 155)

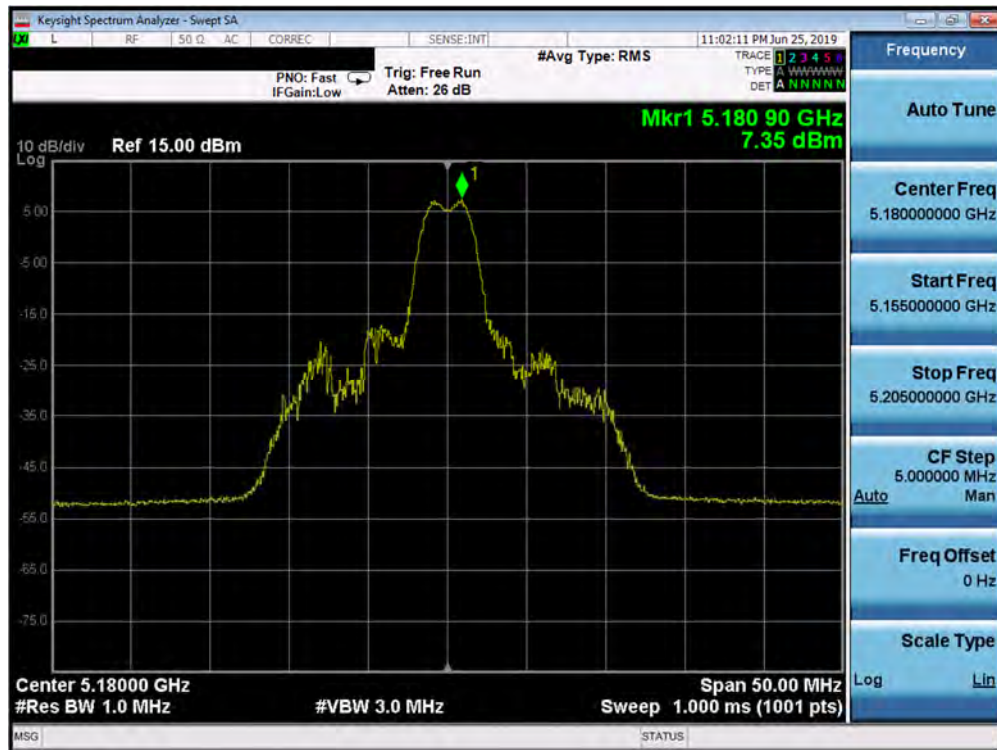
|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 133 of 302                 |

## SISO Antenna-2 Power Spectral Density Measurements (26 Tones)

|         | Frequency [MHz] | Channel No. | 802.11 Mode | Tones | Data Rate [Mbps] | Measured Power Density [dBm] | Max Power Density [dBm/MHz] | Margin [dB] |
|---------|-----------------|-------------|-------------|-------|------------------|------------------------------|-----------------------------|-------------|
| Band 1  | 5180            | 36          | ax (20MHz)  | 26T   | MCS0             | 7.35                         | 11.0                        | -3.65       |
|         | 5200            | 40          | ax (20MHz)  | 26T   | MCS0             | 8.82                         | 11.0                        | -2.18       |
|         | 5240            | 48          | ax (20MHz)  | 26T   | MCS0             | 9.84                         | 11.0                        | -1.16       |
|         | 5190            | 38          | ax (40MHz)  | 26T   | MCS0             | 9.98                         | 11.0                        | -1.02       |
|         | 5230            | 46          | ax (40MHz)  | 26T   | MCS0             | 9.99                         | 11.0                        | -1.01       |
|         | 5210            | 42          | ax (80MHz)  | 26T   | MCS0             | 9.44                         | 11.0                        | -1.56       |
| Band 2A | 5260            | 52          | ax (20MHz)  | 26T   | MCS0             | 9.67                         | 11.0                        | -1.33       |
|         | 5280            | 56          | ax (20MHz)  | 26T   | MCS0             | 8.57                         | 11.0                        | -2.43       |
|         | 5320            | 64          | ax (20MHz)  | 26T   | MCS0             | 9.33                         | 11.0                        | -1.67       |
|         | 5270            | 54          | ax (40MHz)  | 26T   | MCS0             | 9.98                         | 11.0                        | -1.02       |
|         | 5310            | 62          | ax (40MHz)  | 26T   | MCS0             | 9.42                         | 11.0                        | -1.58       |
|         | 5290            | 58          | ax (80MHz)  | 26T   | MCS0             | 8.88                         | 11.0                        | -2.12       |
| Band 2C | 5500            | 100         | ax (20MHz)  | 26T   | MCS0             | 9.91                         | 11.0                        | -1.09       |
|         | 5600            | 120         | ax (20MHz)  | 26T   | MCS0             | 8.81                         | 11.0                        | -2.19       |
|         | 5720            | 144         | ax (20MHz)  | 26T   | MCS0             | 9.68                         | 11.0                        | -1.32       |
|         | 5510            | 102         | ax (40MHz)  | 26T   | MCS0             | 8.28                         | 11.0                        | -2.72       |
|         | 5590            | 118         | ax (40MHz)  | 26T   | MCS0             | 9.16                         | 11.0                        | -1.84       |
|         | 5710            | 142         | ax (40MHz)  | 26T   | MCS0             | 9.86                         | 11.0                        | -1.14       |
|         | 5530            | 106         | ax (80MHz)  | 26T   | MCS0             | 6.95                         | 11.0                        | -4.05       |
|         | 5610            | 122         | ax (80MHz)  | 26T   | MCS0             | 9.09                         | 11.0                        | -1.91       |
|         | 5690            | 138         | ax (80MHz)  | 26T   | MCS0             | 8.73                         | 11.0                        | -2.27       |

**Table 7-59. Conducted Power Spectral Density Measurements SISO ANT2 (26 Tones)**

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMN976V                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 134 of 302                 |

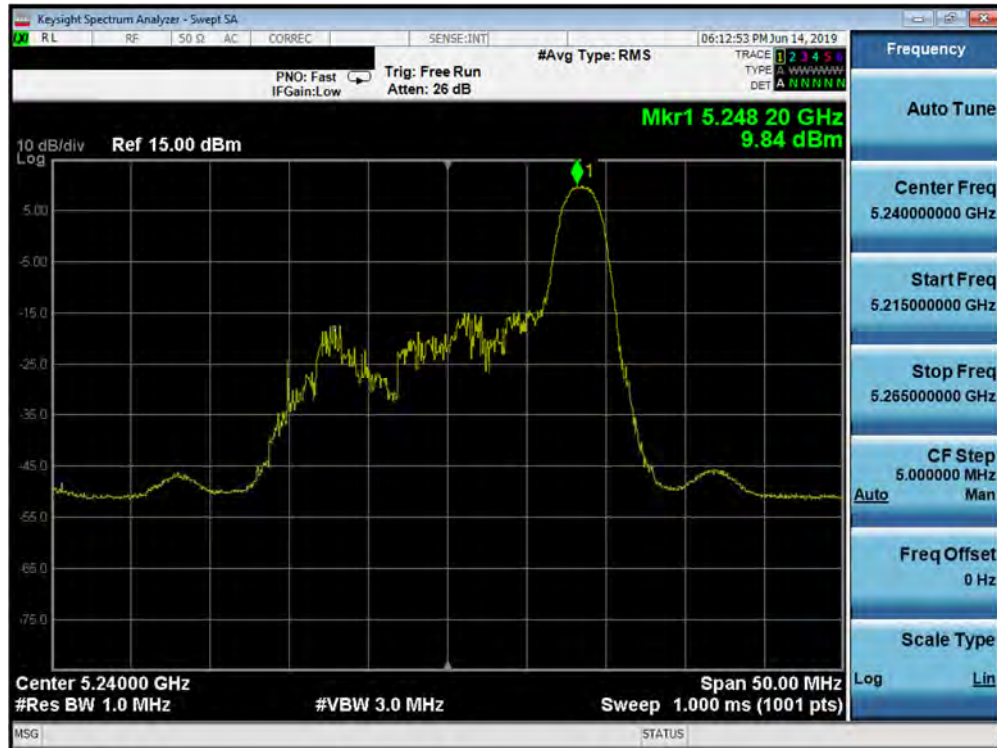


Plot 7-163. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 36)



Plot 7-164. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 40)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 135 of 302                 |



Plot 7-165. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 48)

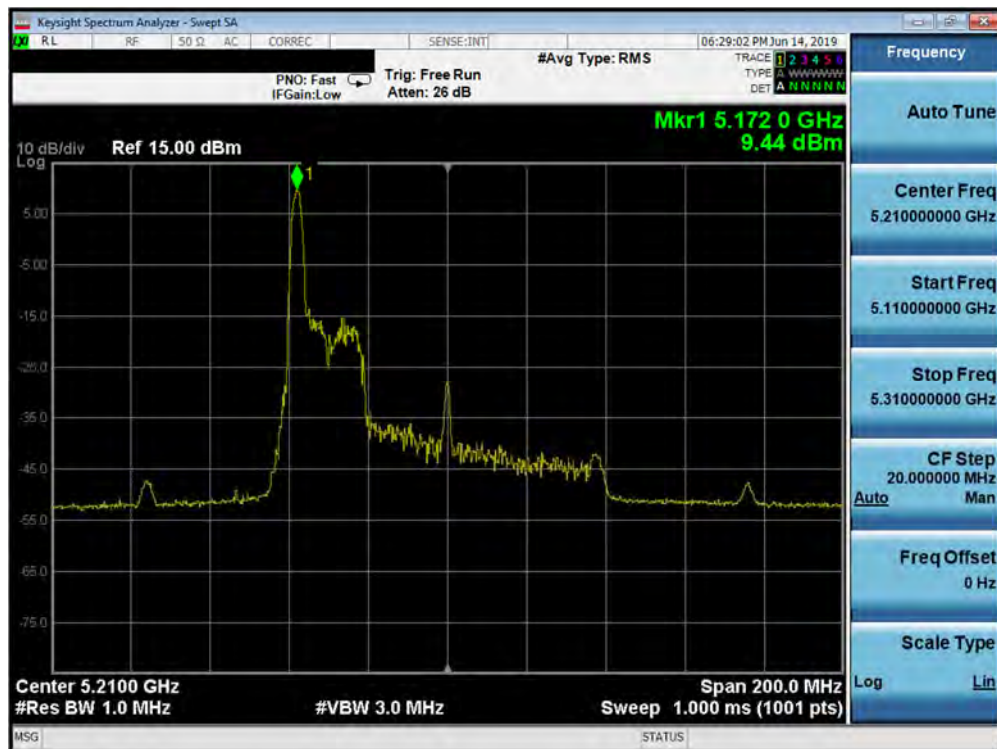


Plot 7-166. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 38)

|                                         |                                              |                               |  |                                 |
|-----------------------------------------|----------------------------------------------|-------------------------------|--|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>MEASUREMENT REPORT</b><br>(CERTIFICATION) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019            | EUT Type:<br>Portable Handset |  | Page 136 of 302                 |



Plot 7-167. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 46)



Plot 7-168. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 42)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 137 of 302                 |



Plot 7-169. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 52)

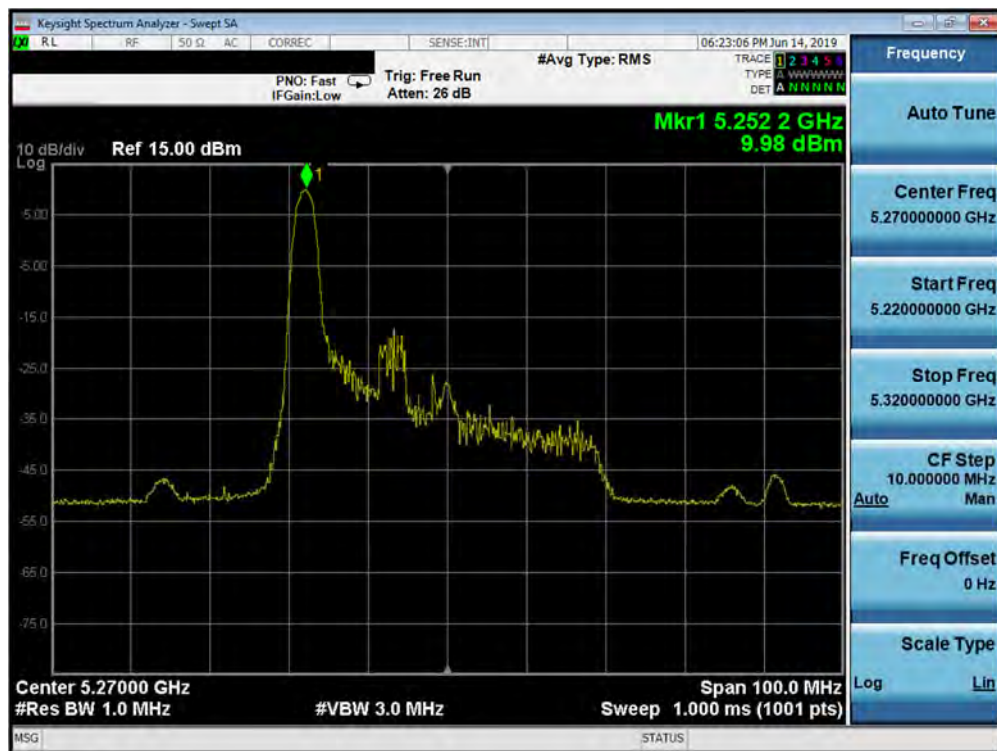


Plot 7-170. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 56)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 138 of 302                 |

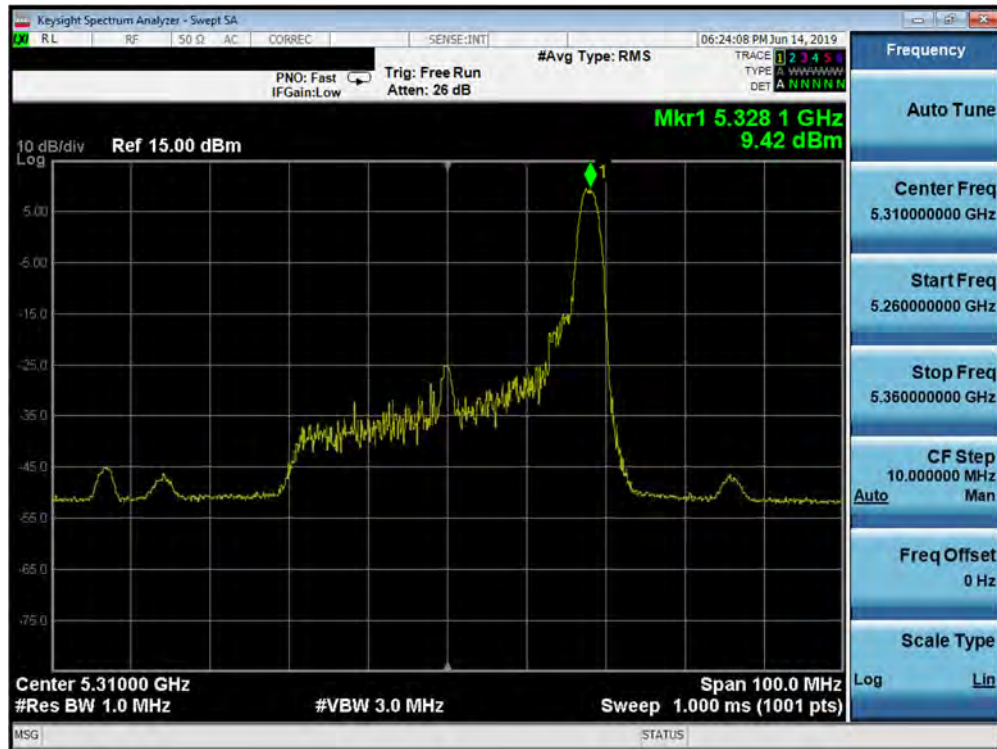


Plot 7-171. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 64)

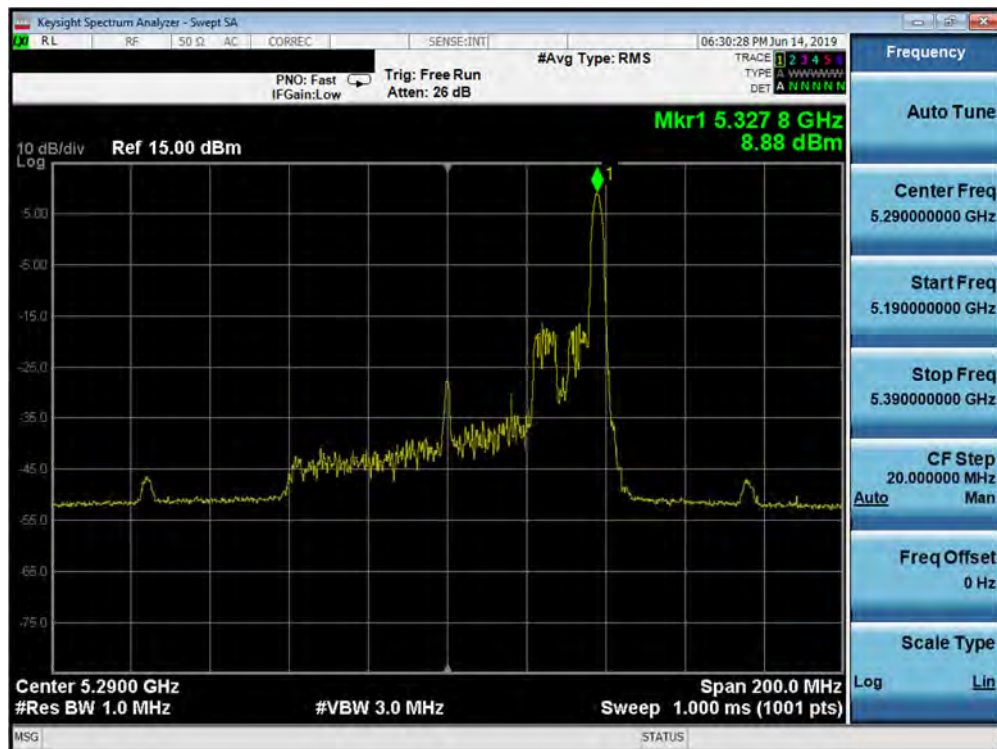


Plot 7-172. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 54)

|                                         |                                                                                                                                  |                               |                                                                                       |                                 |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN976V                      |  <b>MEASUREMENT REPORT</b><br>(CERTIFICATION) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019                                                                                                | EUT Type:<br>Portable Handset |                                                                                       | Page 139 of 302                 |



Plot 7-173. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 62)



Plot 7-174. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 58)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 140 of 302                 |

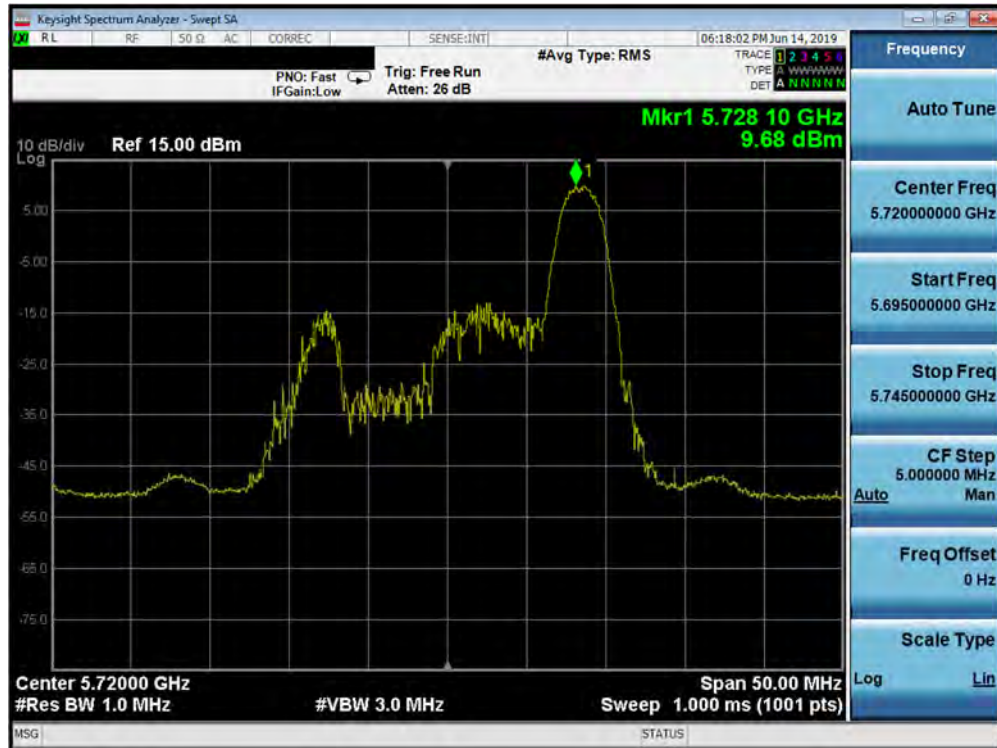


Plot 7-175. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 100)

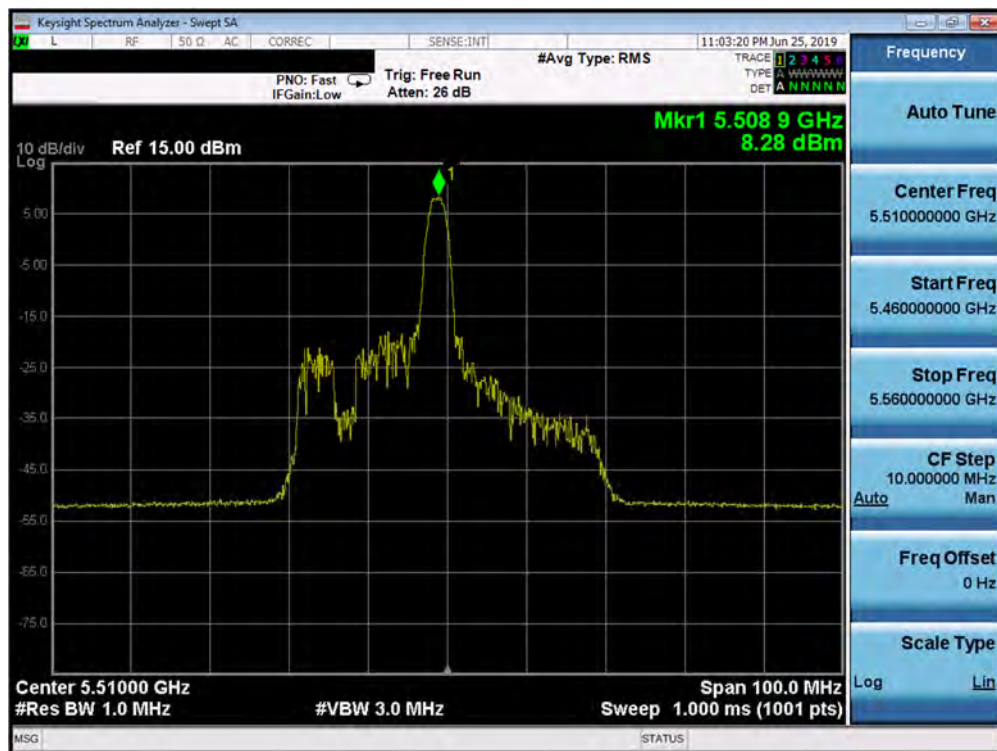


Plot 7-176. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 120)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 141 of 302                 |

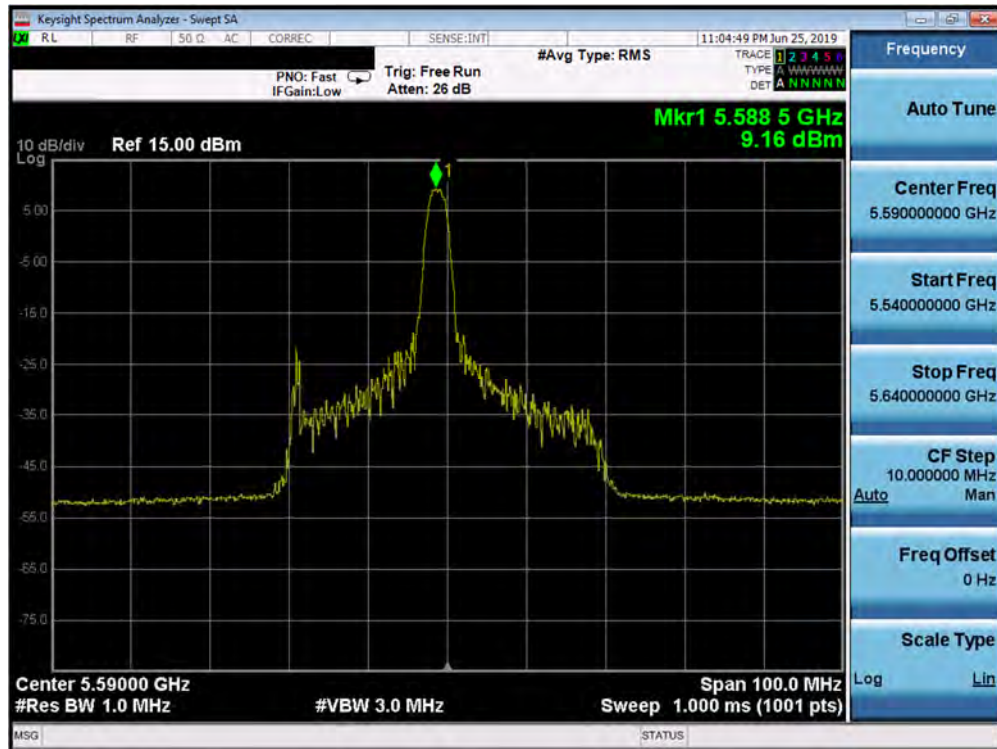


Plot 7-177. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 144)



Plot 7-178. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 102)

|                                         |                                              |                               |  |                                 |
|-----------------------------------------|----------------------------------------------|-------------------------------|--|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>MEASUREMENT REPORT</b><br>(CERTIFICATION) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019            | EUT Type:<br>Portable Handset |  | Page 142 of 302                 |

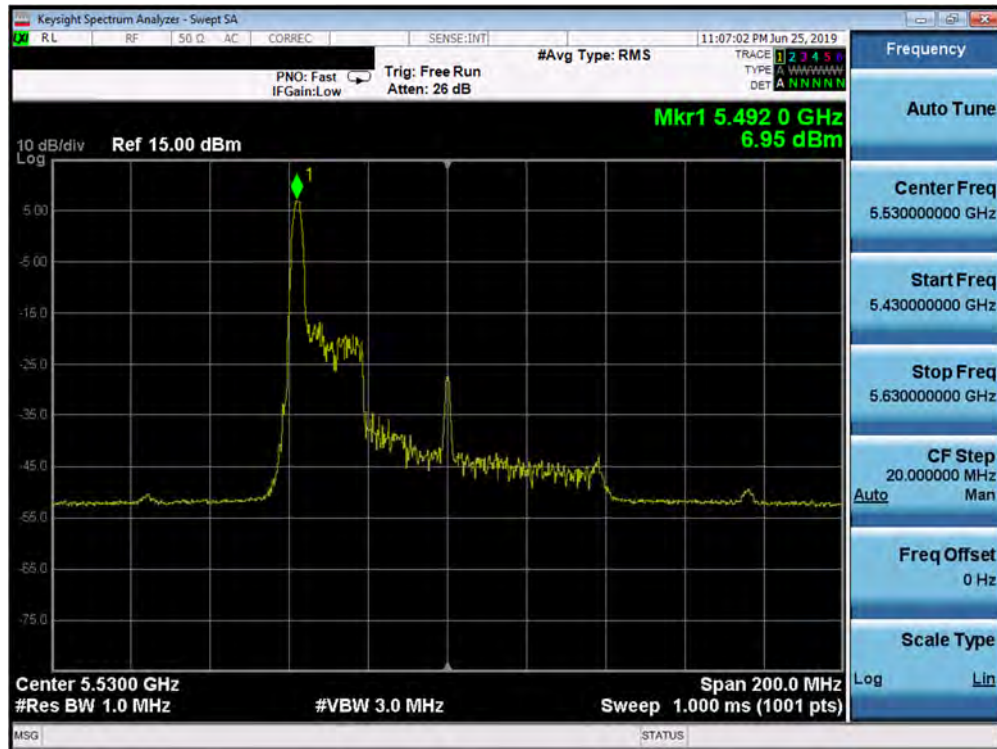


Plot 7-179. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 118)



Plot 7-180. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 142)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 143 of 302                 |

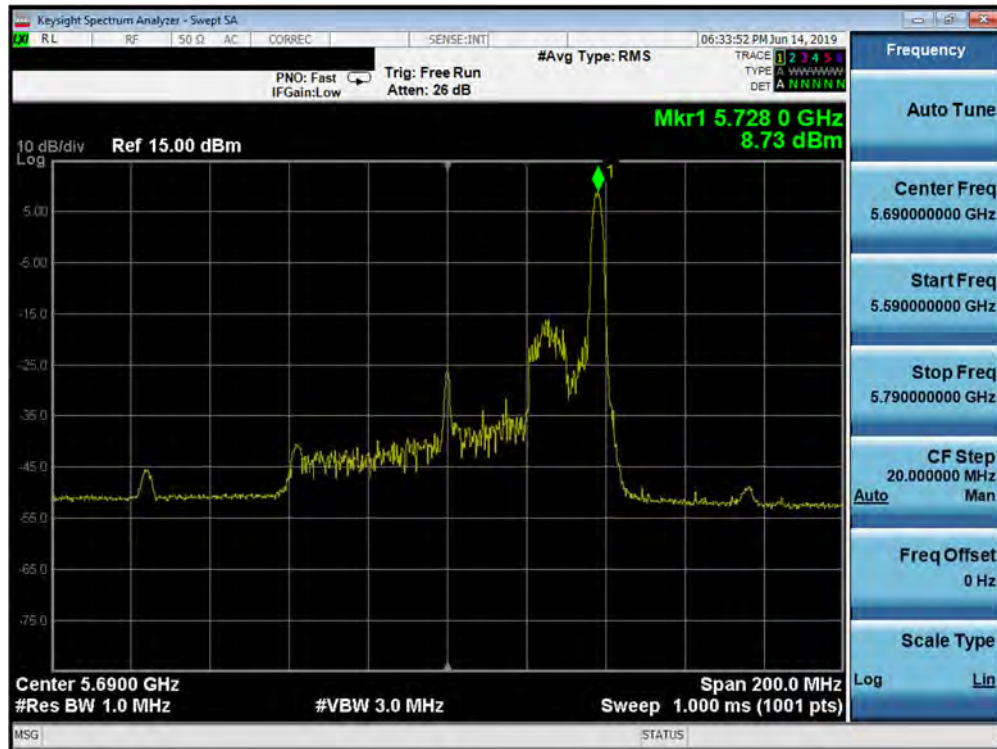


Plot 7-181. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 106)



Plot 7-182. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 122)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 144 of 302                 |



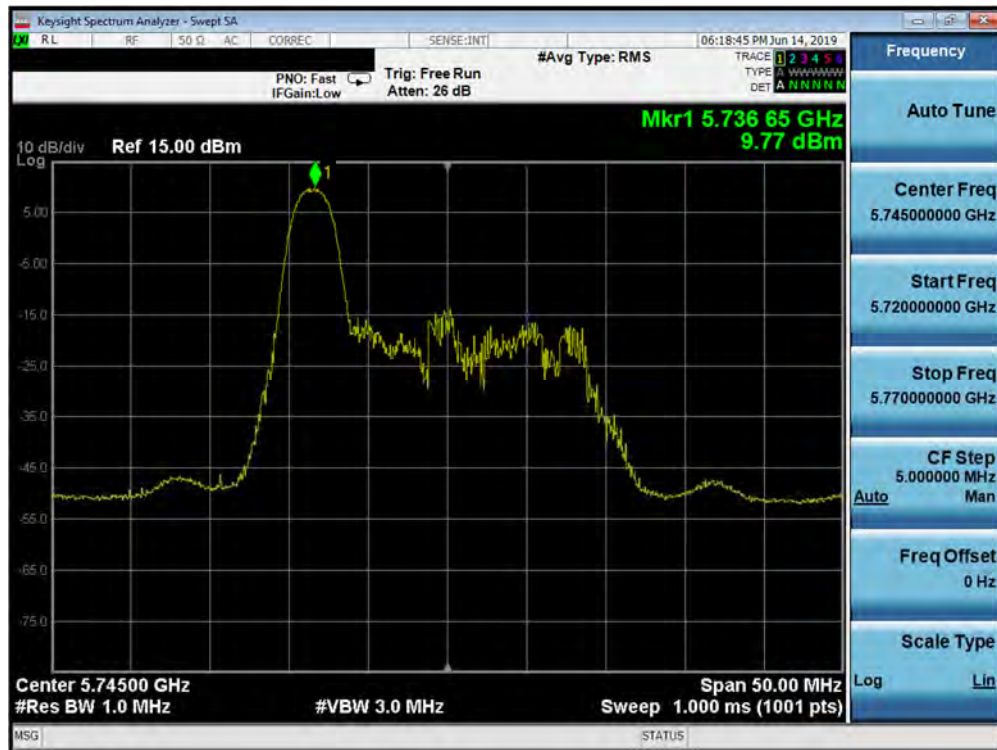
Plot 7-183. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 138)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 145 of 302                 |

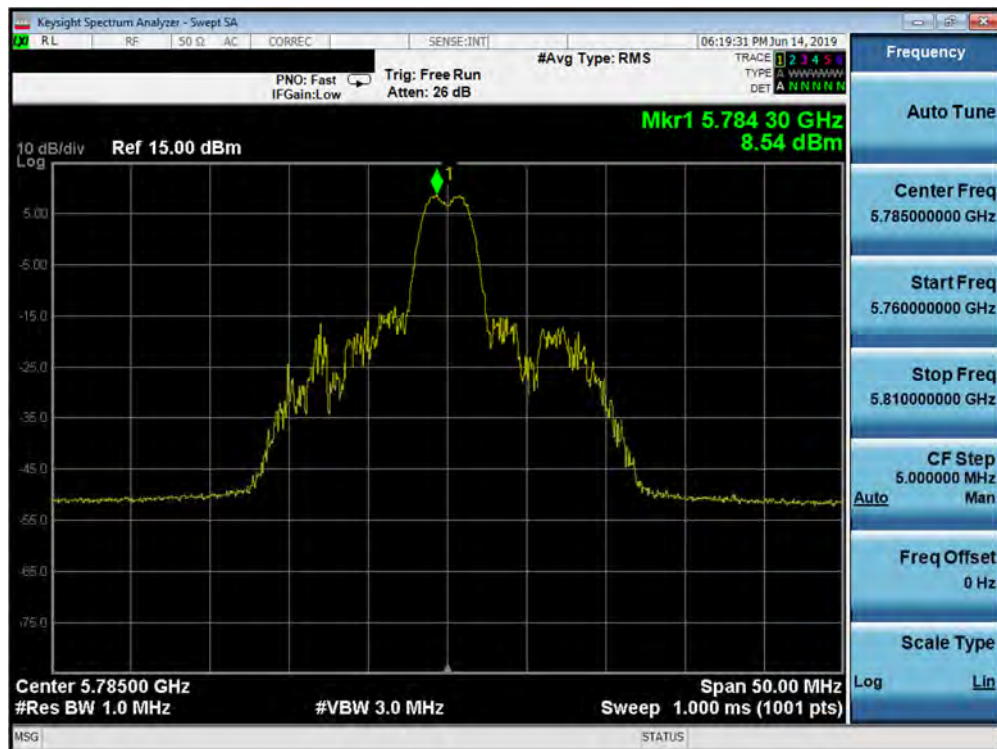
|        | Frequency [MHz] | Channel No. | 802.11 Mode | Tones | Data Rate [Mbps] | Measured Power Density [dBm] | Max Permissible Power Density | Margin [dB] |
|--------|-----------------|-------------|-------------|-------|------------------|------------------------------|-------------------------------|-------------|
| Band 3 | 5745            | 149         | ax (20MHz)  | 26T   | MCS0             | 9.77                         | 30.00                         | -20.23      |
|        | 5785            | 157         | ax (20MHz)  | 26T   | MCS0             | 8.54                         | 30.00                         | -21.46      |
|        | 5825            | 165         | ax (20MHz)  | 26T   | MCS0             | 8.89                         | 30.00                         | -21.11      |
|        | 5755            | 151         | ax (40MHz)  | 26T   | MCS0             | 9.32                         | 30.00                         | -20.68      |
|        | 5795            | 159         | ax (40MHz)  | 26T   | MCS0             | 9.48                         | 30.00                         | -20.52      |
|        | 5775            | 155         | ax (80MHz)  | 26T   | MCS0             | 8.44                         | 30.00                         | -21.56      |

**Table 7-60. Band 3 Conducted Power Spectral Density Measurements SISO ANT2 (26 Tones)**

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMN976V                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 146 of 302                 |

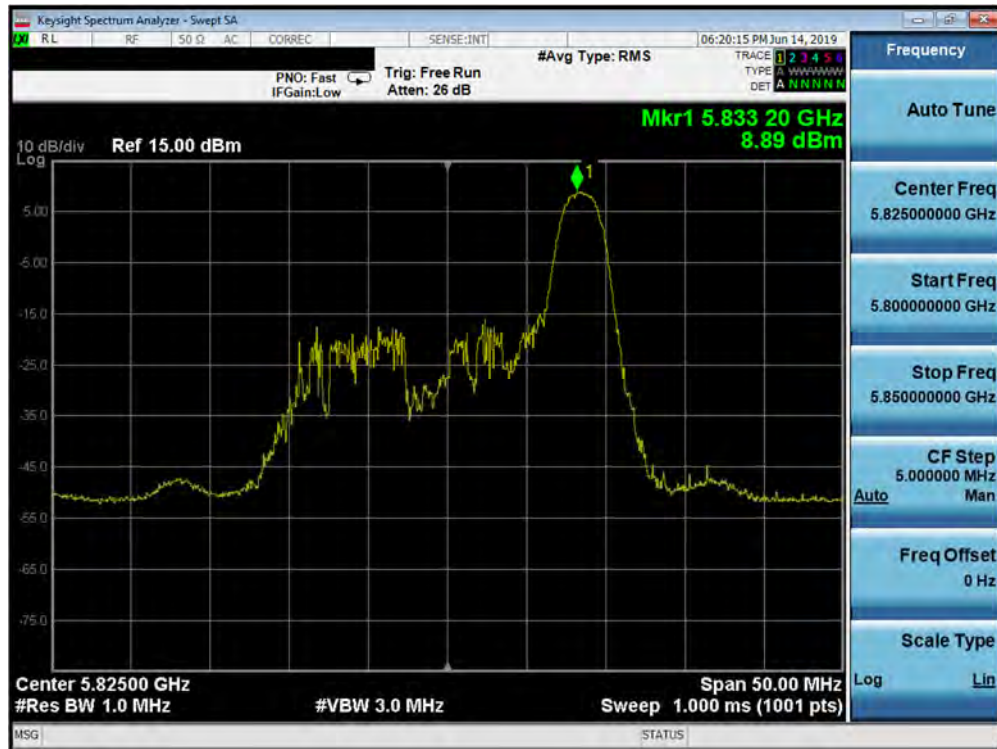


Plot 7-184. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 149)

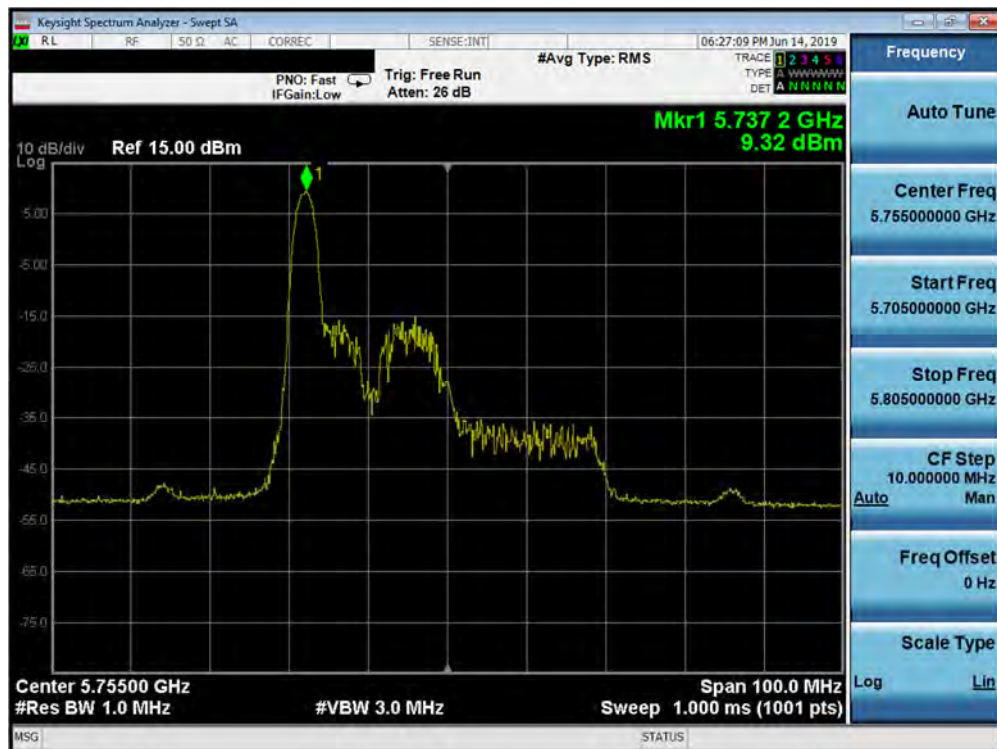


Plot 7-185. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 157)

|                                         |                                              |                               |  |                                 |
|-----------------------------------------|----------------------------------------------|-------------------------------|--|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>MEASUREMENT REPORT</b><br>(CERTIFICATION) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019            | EUT Type:<br>Portable Handset |  | Page 147 of 302                 |



Plot 7-186. Power Spectral Density Plot SISO ANT2 (20 MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 165)

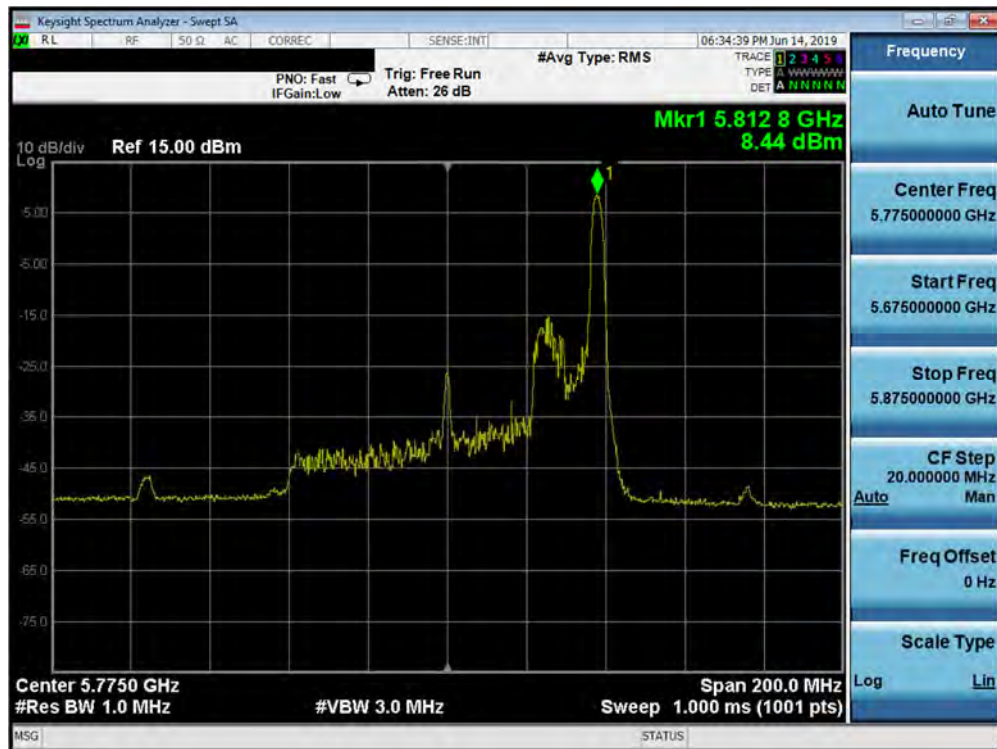


Plot 7-187. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 151)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 148 of 302                 |



Plot 7-188. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 159)



Plot 7-189. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 155)

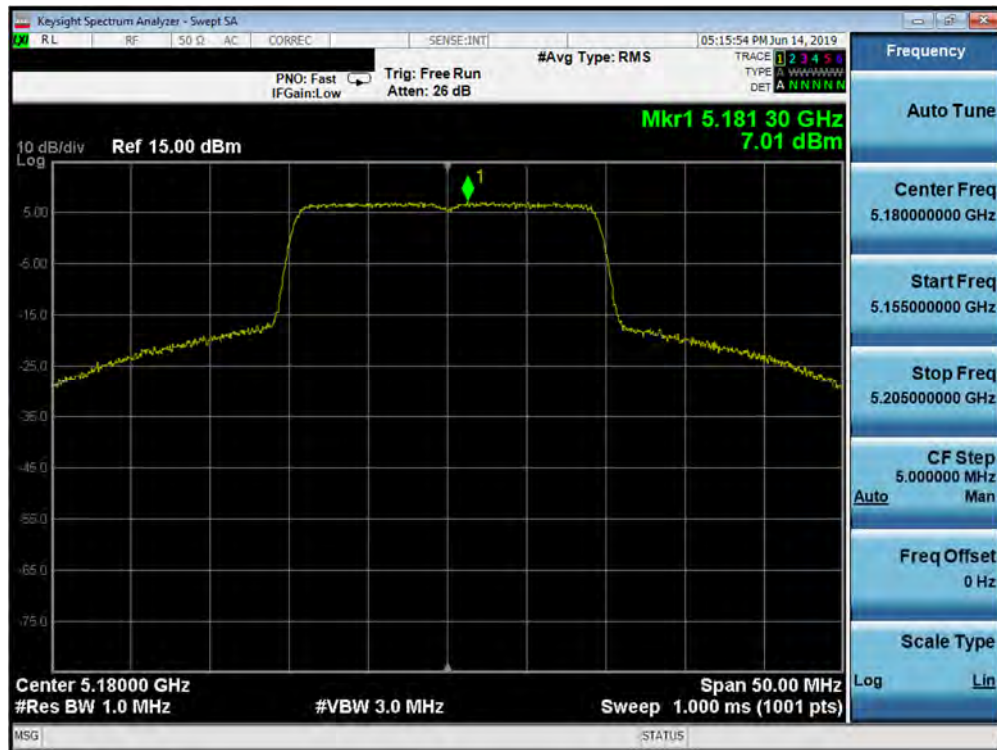
|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 149 of 302                 |

## SISO Antenna-2 Power Spectral Density Measurements (Full Tones)

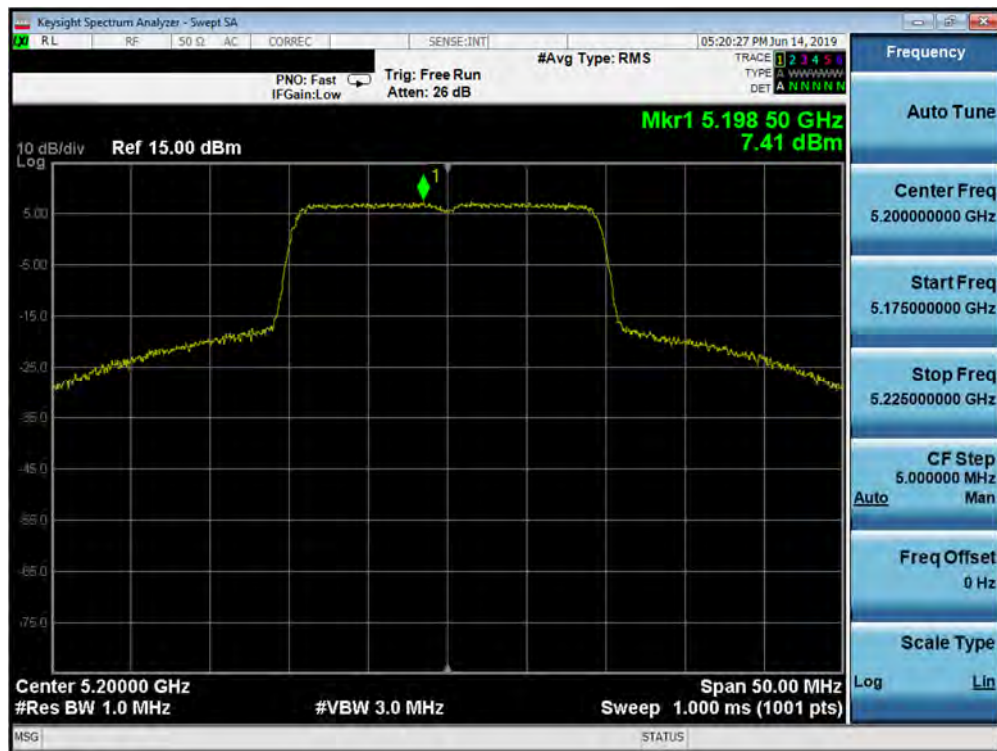
|         | Frequency [MHz] | Channel No. | 802.11 Mode | Tones | Data Rate [Mbps] | Measured Power Density [dBm] | Max Power Density [dBm/MHz] | Margin [dB] |
|---------|-----------------|-------------|-------------|-------|------------------|------------------------------|-----------------------------|-------------|
| Band 1  | 5180            | 36          | ax (20MHz)  | 242T  | MCS0             | 7.01                         | 11.0                        | -3.99       |
|         | 5200            | 40          | ax (20MHz)  | 242T  | MCS0             | 7.41                         | 11.0                        | -3.59       |
|         | 5240            | 48          | ax (20MHz)  | 242T  | MCS0             | 7.30                         | 11.0                        | -3.70       |
|         | 5190            | 38          | ax (40MHz)  | 484T  | MCS0             | 3.46                         | 11.0                        | -7.54       |
|         | 5230            | 46          | ax (40MHz)  | 484T  | MCS0             | 3.81                         | 11.0                        | -7.19       |
|         | 5210            | 42          | ax (80MHz)  | 996T  | MCS0             | 0.18                         | 11.0                        | -10.82      |
| Band 2A | 5260            | 52          | ax (20MHz)  | 242T  | MCS0             | 6.72                         | 11.0                        | -4.28       |
|         | 5280            | 56          | ax (20MHz)  | 242T  | MCS0             | 6.81                         | 11.0                        | -4.19       |
|         | 5320            | 64          | ax (20MHz)  | 242T  | MCS0             | 6.67                         | 11.0                        | -4.33       |
|         | 5270            | 54          | ax (40MHz)  | 484T  | MCS0             | 3.13                         | 11.0                        | -7.87       |
|         | 5310            | 62          | ax (40MHz)  | 484T  | MCS0             | 3.09                         | 11.0                        | -7.91       |
|         | 5290            | 58          | ax (80MHz)  | 996T  | MCS0             | -0.40                        | 11.0                        | -11.40      |
| Band 2C | 5500            | 100         | ax (20MHz)  | 242T  | MCS0             | 7.16                         | 11.0                        | -3.84       |
|         | 5600            | 120         | ax (20MHz)  | 242T  | MCS0             | 6.90                         | 11.0                        | -4.10       |
|         | 5720            | 144         | ax (20MHz)  | 242T  | MCS0             | 7.03                         | 11.0                        | -3.97       |
|         | 5510            | 102         | ax (40MHz)  | 484T  | MCS0             | 3.58                         | 11.0                        | -7.42       |
|         | 5590            | 118         | ax (40MHz)  | 484T  | MCS0             | 3.12                         | 11.0                        | -7.88       |
|         | 5710            | 142         | ax (40MHz)  | 484T  | MCS0             | 4.03                         | 11.0                        | -6.97       |
|         | 5530            | 106         | ax (80MHz)  | 996T  | MCS0             | -0.26                        | 11.0                        | -11.26      |
|         | 5610            | 122         | ax (80MHz)  | 996T  | MCS0             | -0.71                        | 11.0                        | -11.71      |
|         | 5690            | 138         | ax (80MHz)  | 996T  | MCS0             | -0.37                        | 11.0                        | -11.37      |

**Table 7-61. Conducted Power Spectral Density Measurements SISO ANT2 (Full Tones)**

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMN976V                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 150 of 302                 |

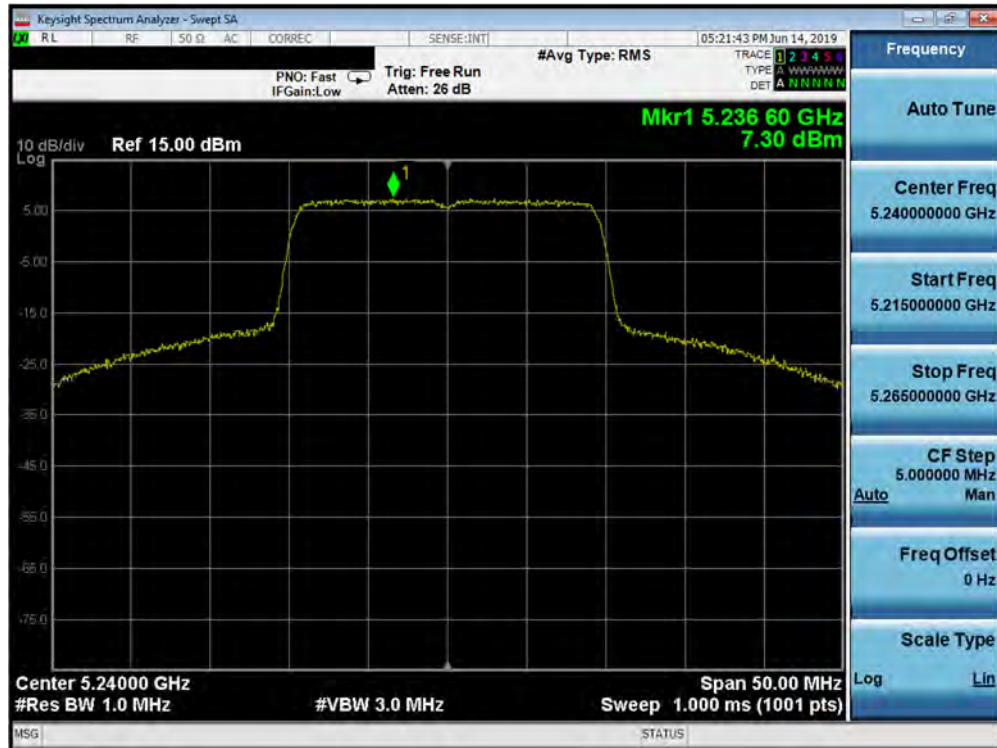


Plot 7-190. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 36)

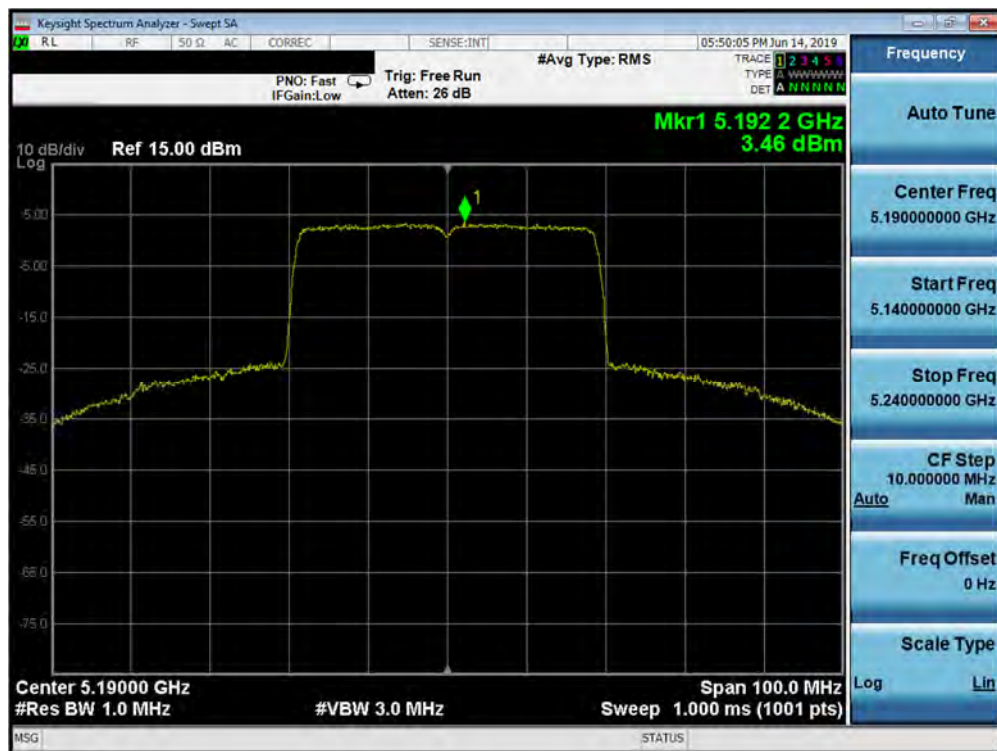


Plot 7-191. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 40)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 151 of 302                 |

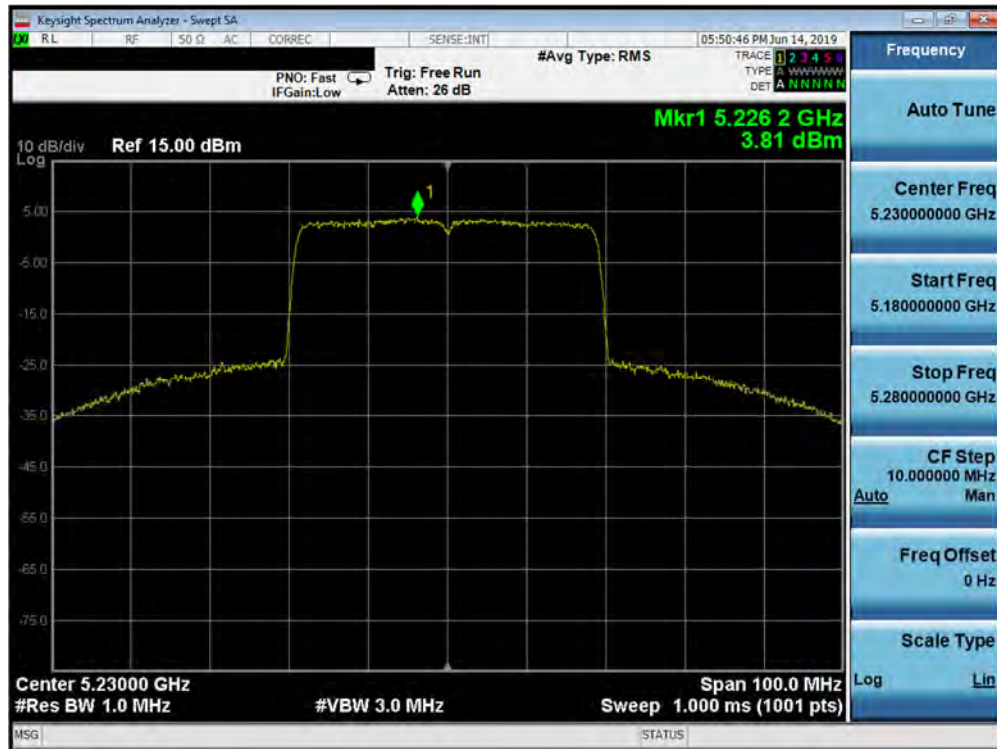


Plot 7-192. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 48)

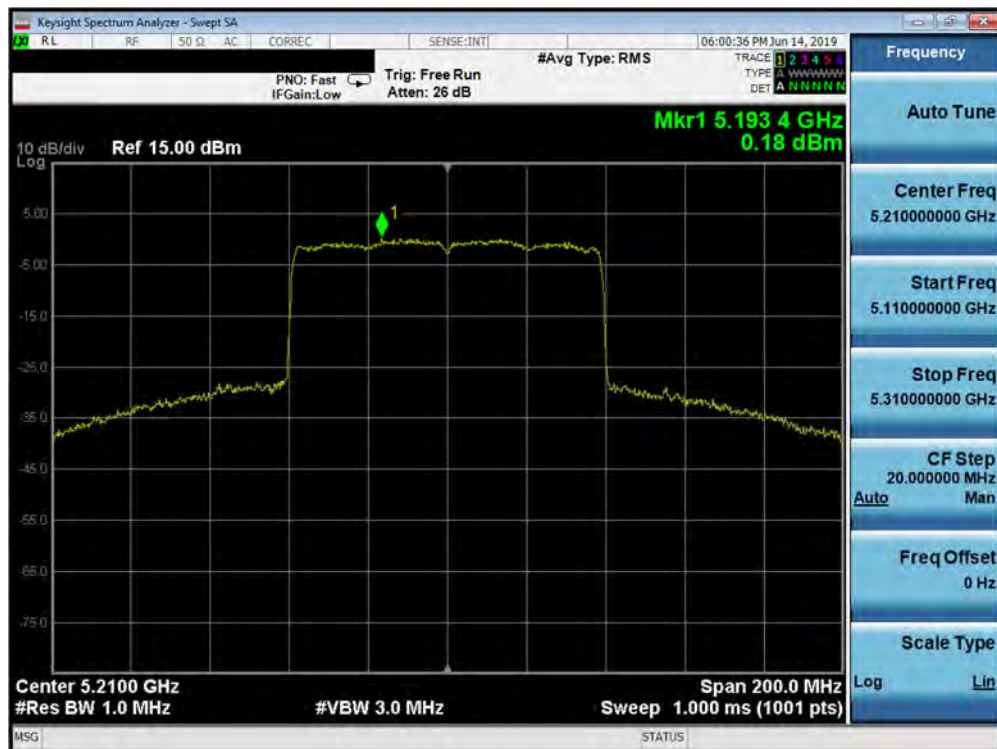


Plot 7-193. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 38)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 152 of 302                 |

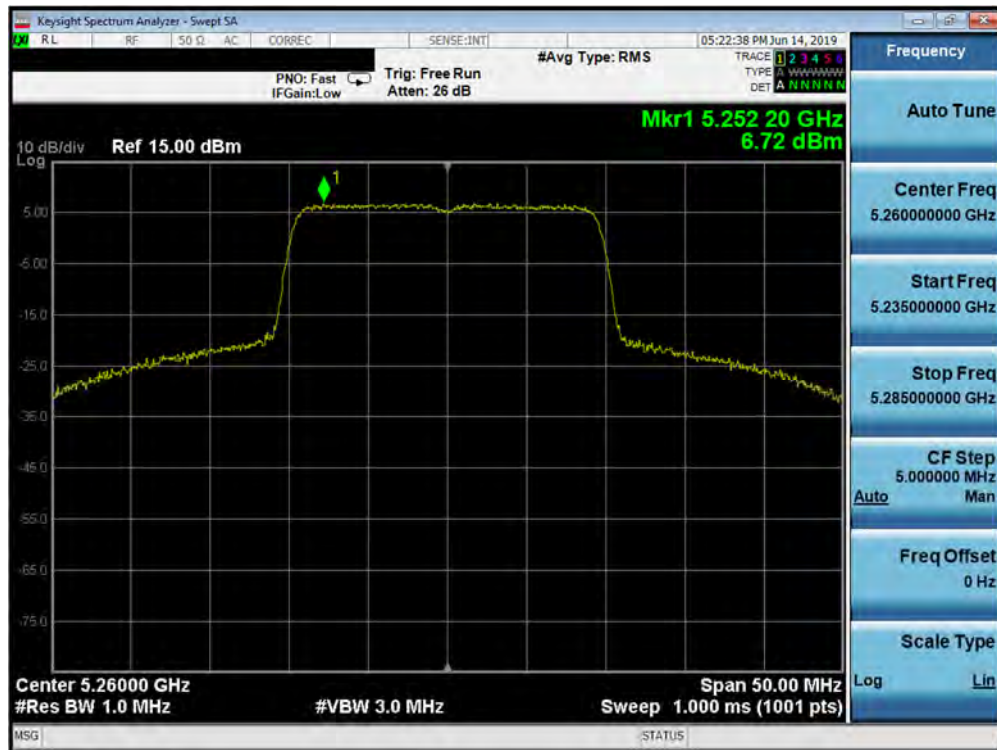


Plot 7-194. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 46)

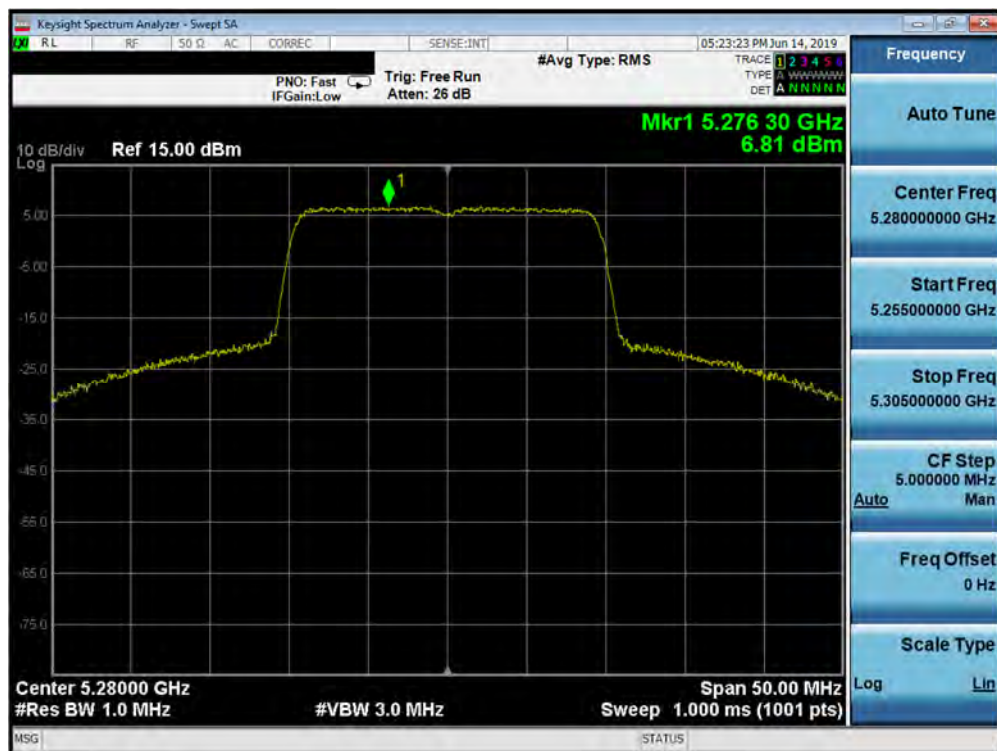


Plot 7-195. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 42)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 153 of 302                 |

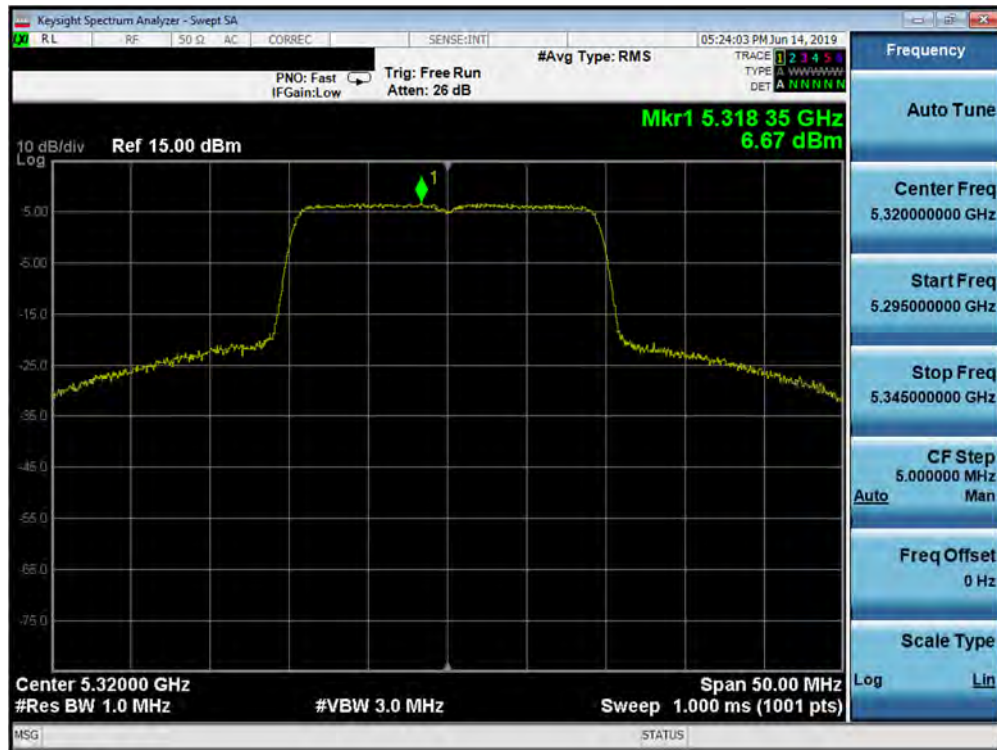


Plot 7-196. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 52)

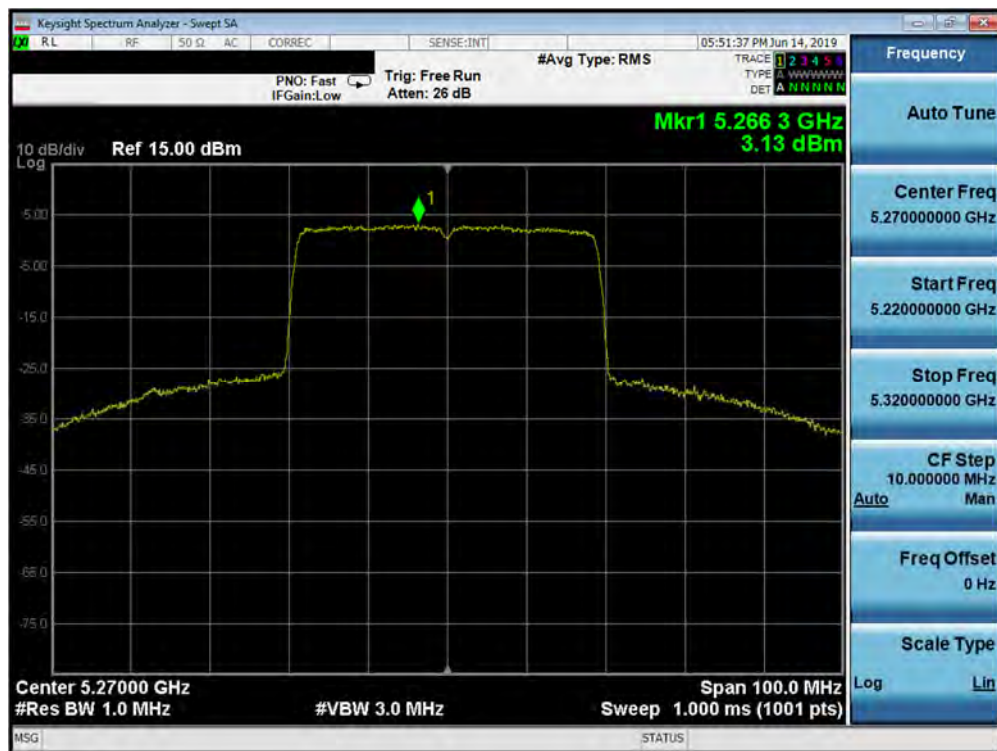


Plot 7-197. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 56)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 154 of 302                 |

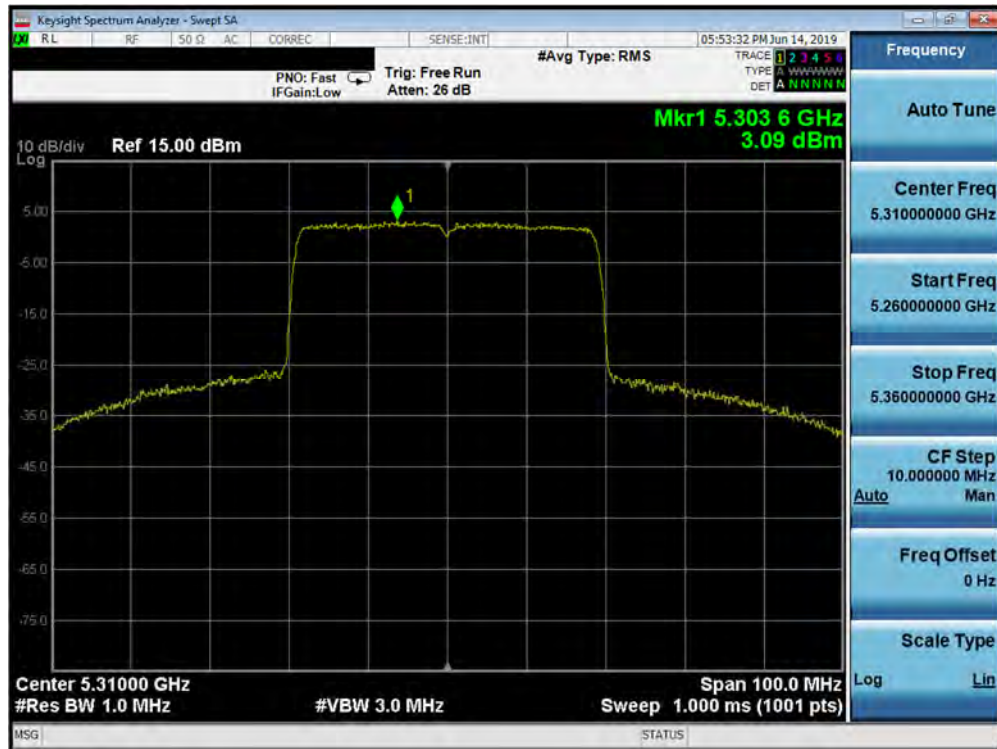


Plot 7-198. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 64)



Plot 7-199. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 54)

|                                         |                                                                                                                                  |                               |                                                                                       |                                 |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN976V                      |  <b>MEASUREMENT REPORT</b><br>(CERTIFICATION) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019                                                                                                | EUT Type:<br>Portable Handset |                                                                                       | Page 155 of 302                 |

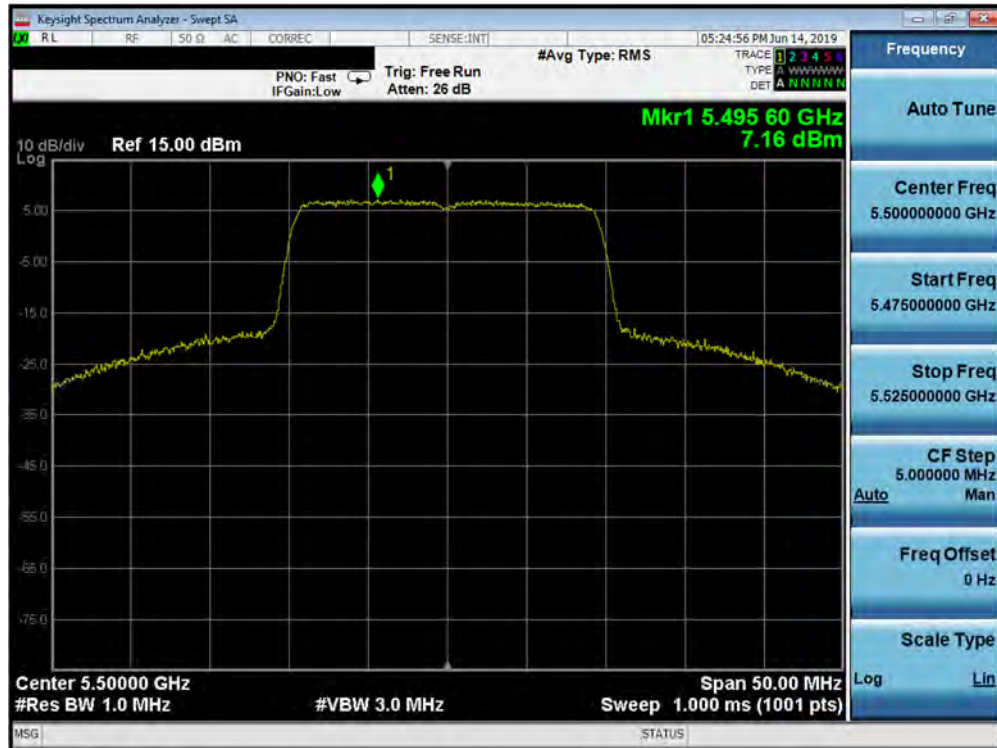


Plot 7-200. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 62)

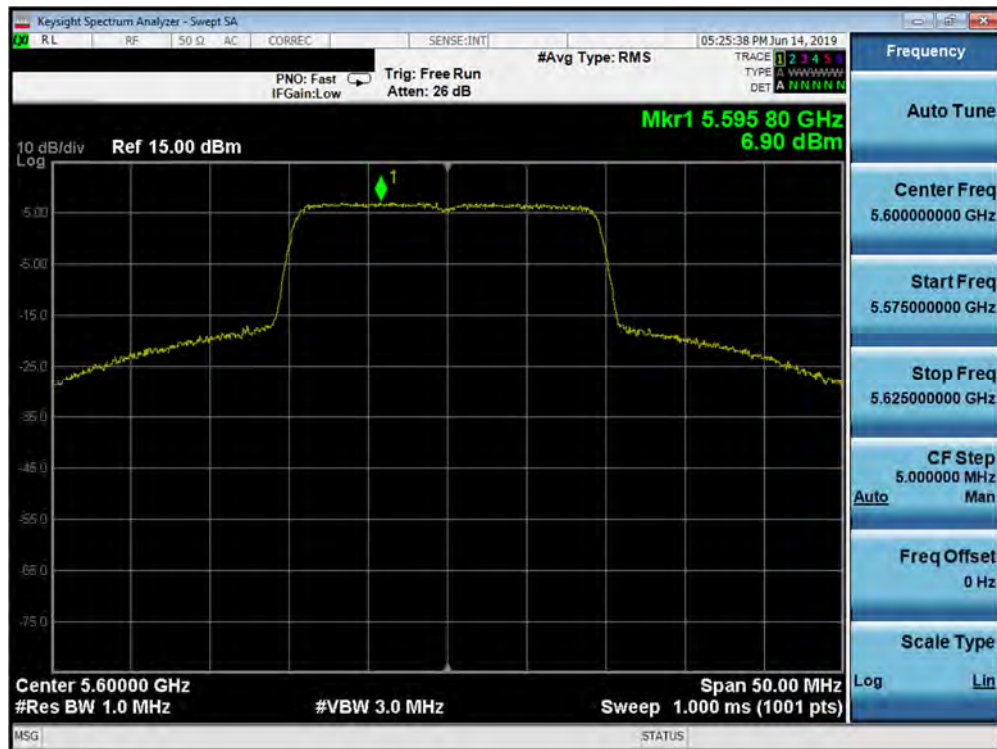


**Plot 7-201. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – Full Tones (UNII Band 2A) – Ch. 58)**

|                                                |                                                                                                                                                                                                                         |                                      |                                        |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------------------|
| FCC ID: A3LSMN976V                             |  <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b>  |                                      | <b>Approved by:</b><br>Quality Manager |
| <b>Test Report S/N:</b><br>1M1905130071-09.A3L | <b>Test Dates:</b><br>05/14 - 07/02/2019                                                                                                                                                                                | <b>EUT Type:</b><br>Portable Handset | Page 156 of 302                        |

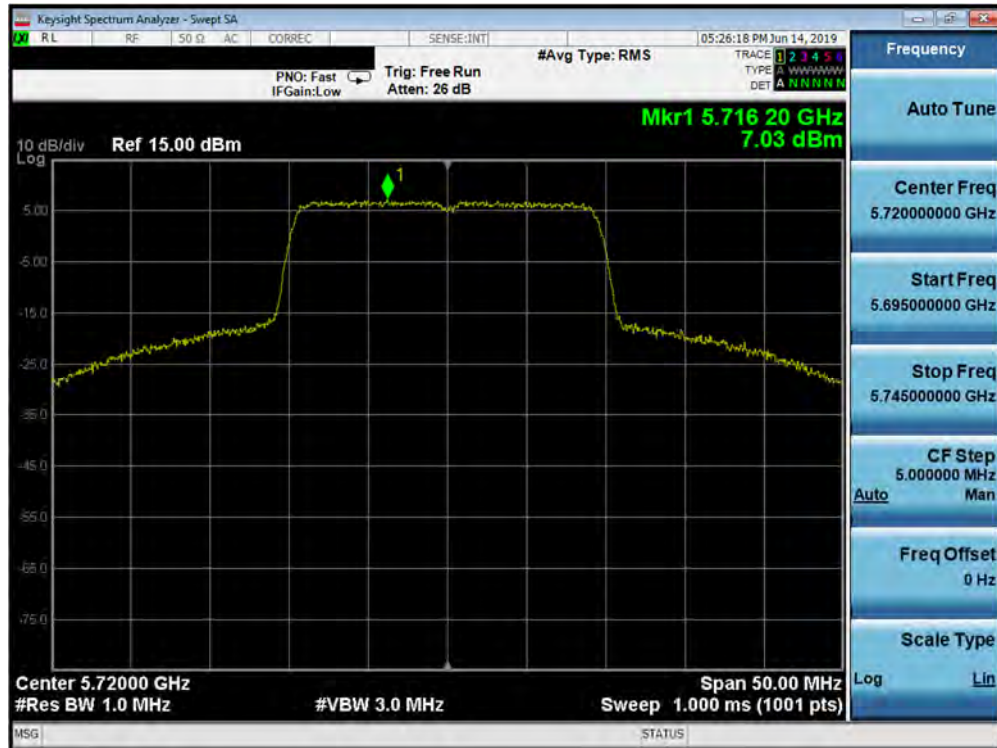


Plot 7-202. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 100)

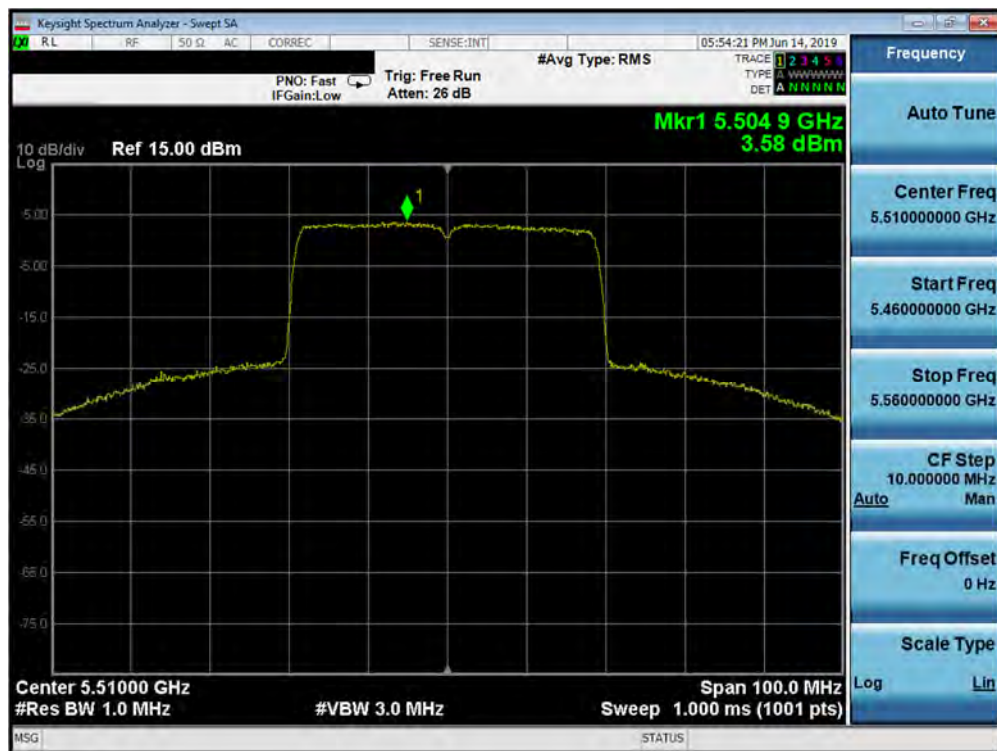


Plot 7-203. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 120)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 157 of 302                 |

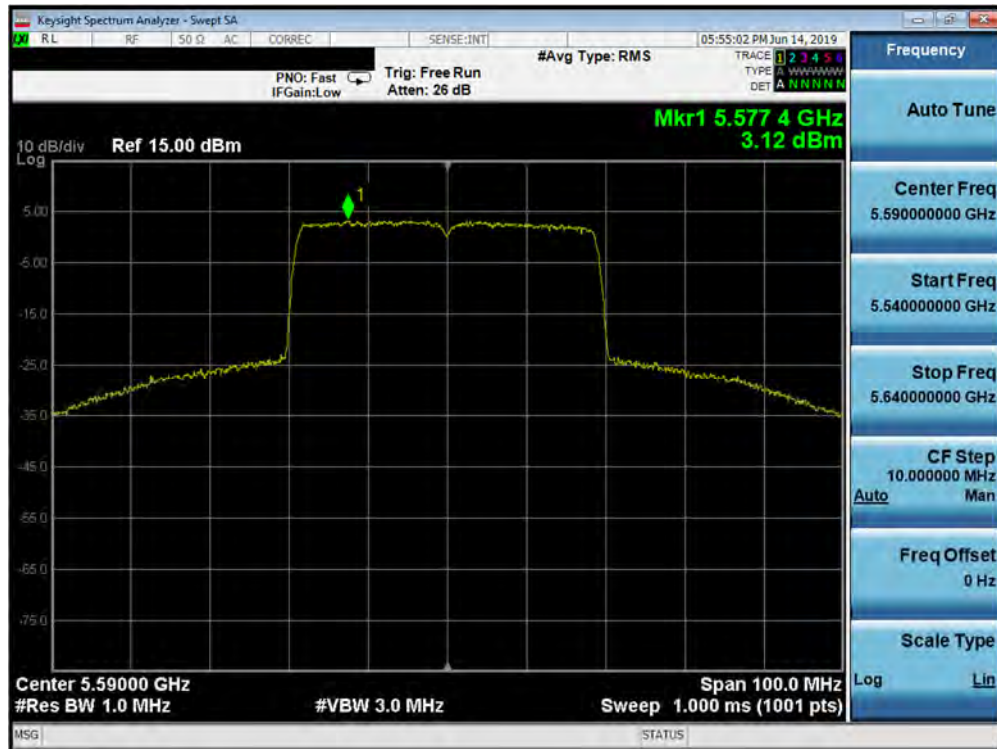


Plot 7-204. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 144)

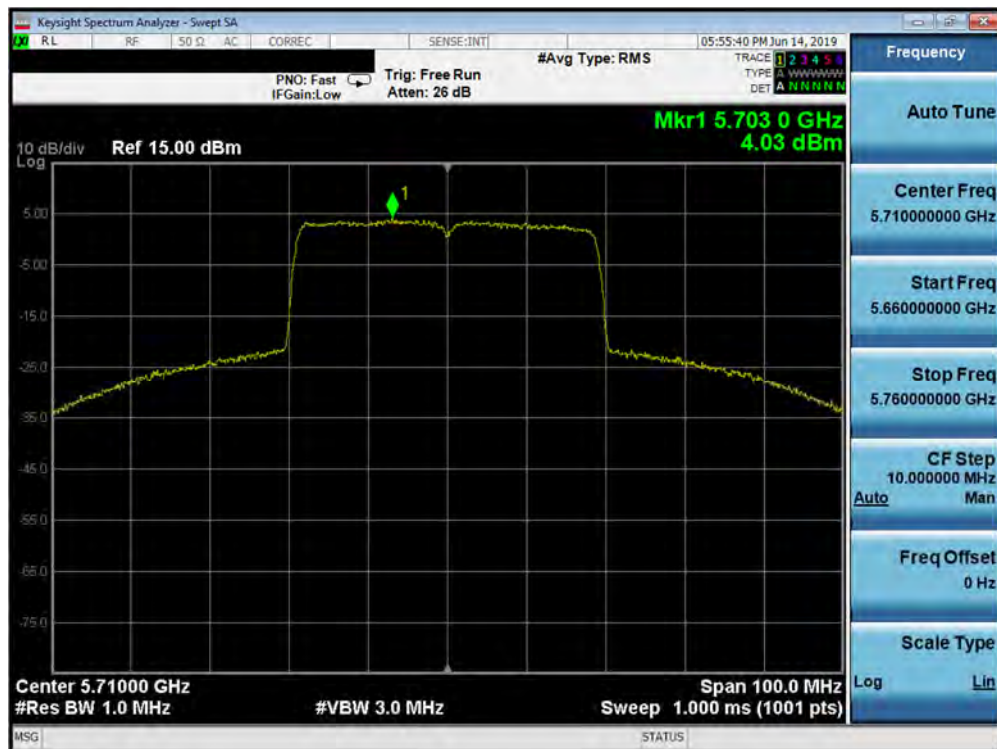


Plot 7-205. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 102)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 158 of 302                 |



Plot 7-206. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 118)



Plot 7-207. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 142)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 159 of 302                 |

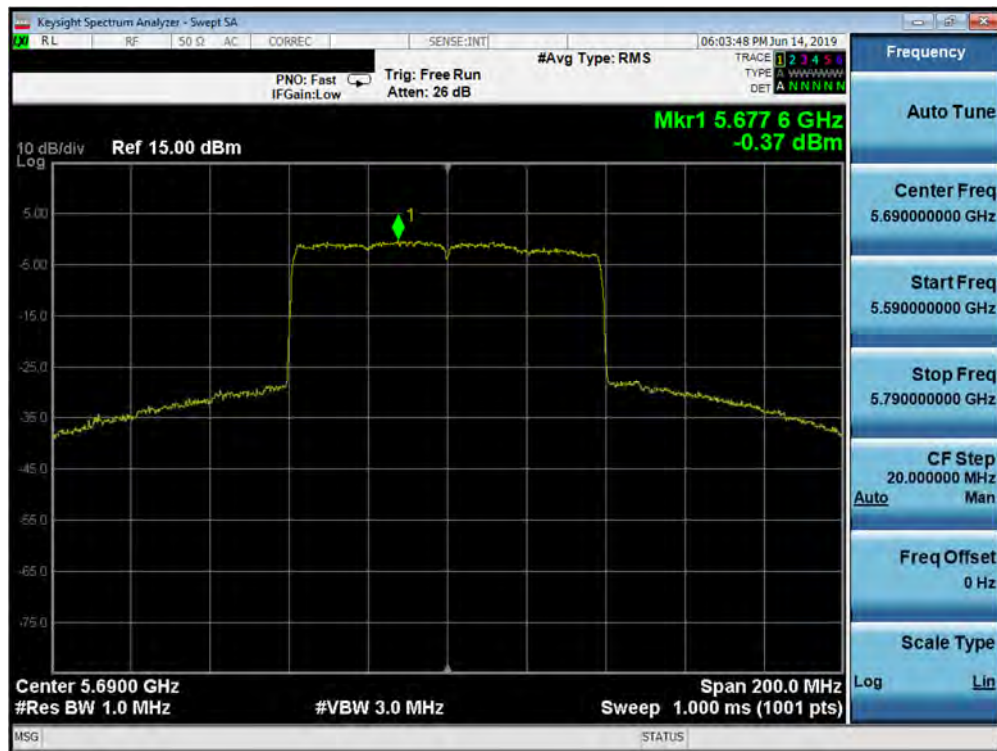


Plot 7-208. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 106)



Plot 7-209. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 122)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 160 of 302                 |



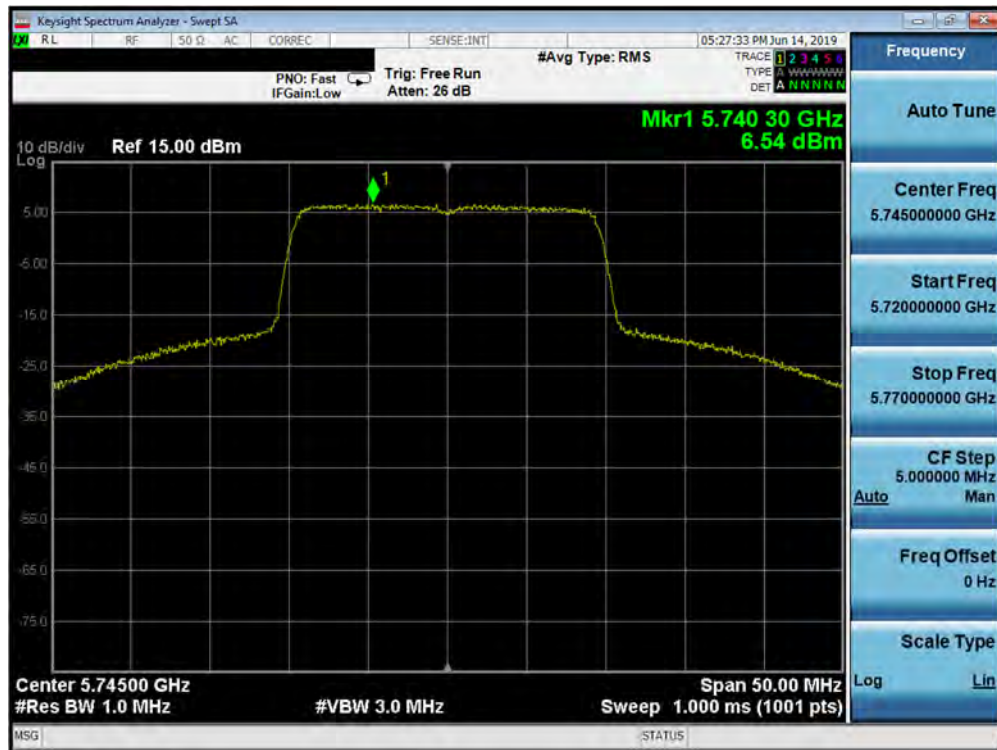
Plot 7-210. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – Full Tones (UNII Band 2C) – Ch. 138)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 161 of 302                 |

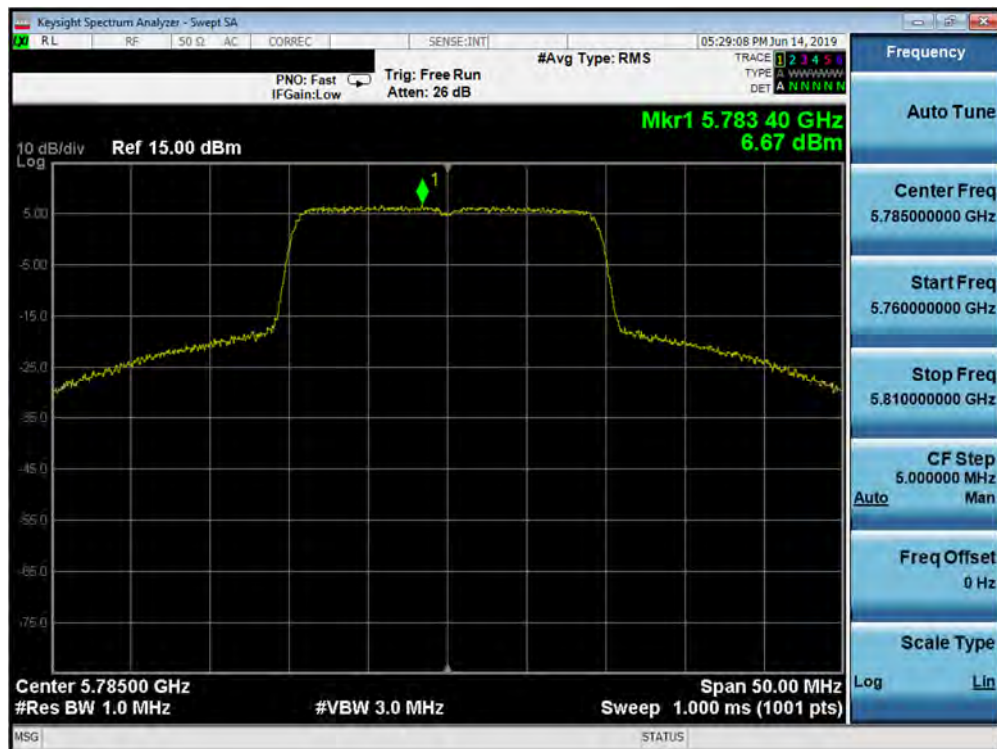
|        | Frequency [MHz] | Channel No. | 802.11 Mode | Tones | Data Rate [Mbps] | Measured Power Density [dBm] | Max Permissible Power Density | Margin [dB] |
|--------|-----------------|-------------|-------------|-------|------------------|------------------------------|-------------------------------|-------------|
| Band 3 | 5745            | 149         | ax (20MHz)  | 242T  | MCS0             | 6.54                         | 30.00                         | -23.46      |
|        | 5785            | 157         | ax (20MHz)  | 242T  | MCS0             | 6.67                         | 30.00                         | -23.33      |
|        | 5825            | 165         | ax (20MHz)  | 242T  | MCS0             | 6.16                         | 30.00                         | -23.84      |
|        | 5755            | 151         | ax (40MHz)  | 484T  | MCS0             | 3.28                         | 30.00                         | -26.72      |
|        | 5795            | 159         | ax (40MHz)  | 484T  | MCS0             | 3.14                         | 30.00                         | -26.86      |
|        | 5775            | 155         | ax (80MHz)  | 996T  | MCS0             | -0.42                        | 30.00                         | -30.42      |

**Table 7-62. Band 3 Conducted Power Spectral Density Measurements SISO ANT2 (Full Tones)**

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMN976V                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset |                                 |
|                                         |                                                                                                                                                                                                                     |                               | Page 162 of 302                 |

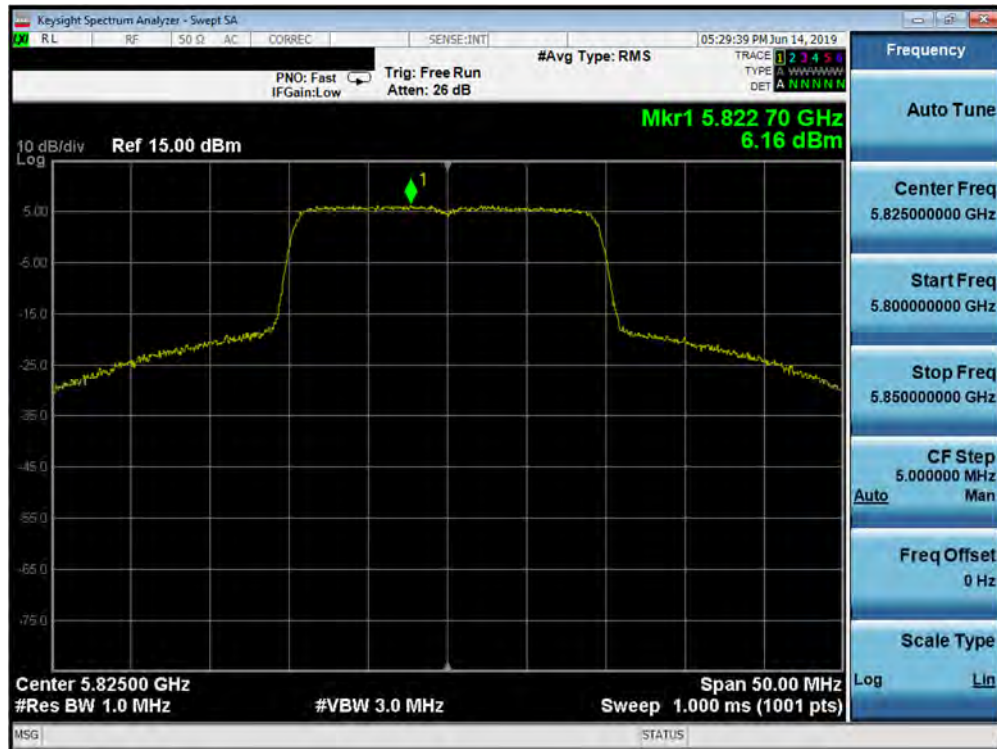


Plot 7-211. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 149)

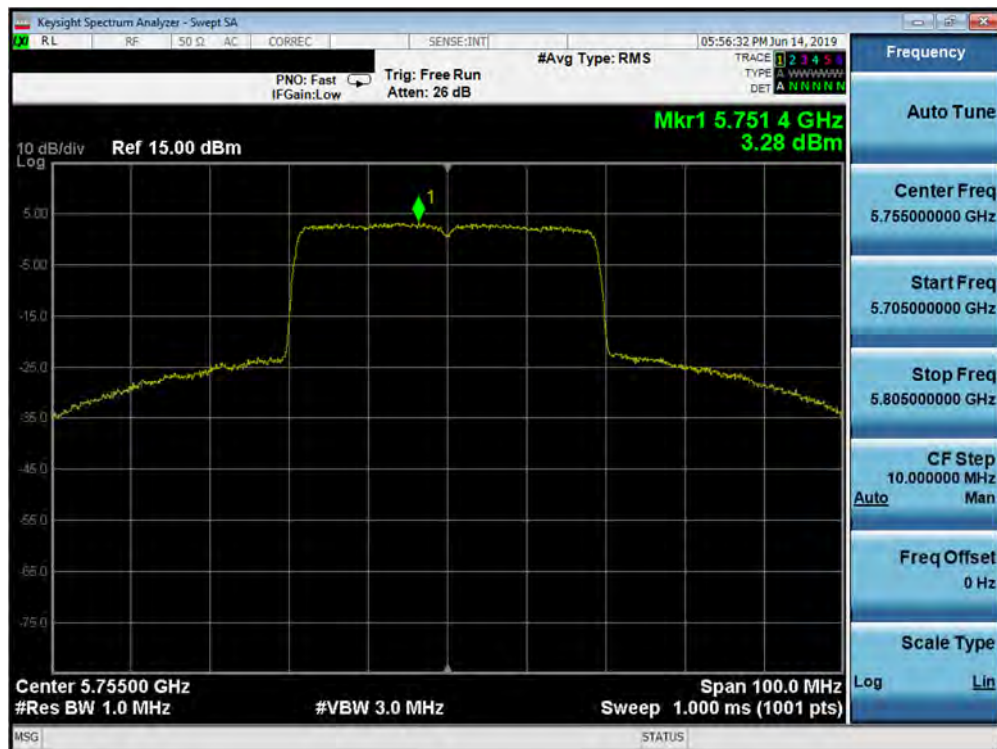


Plot 7-212. Power Spectral Density Plot SISO ANT2 (20MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 157)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 163 of 302                 |

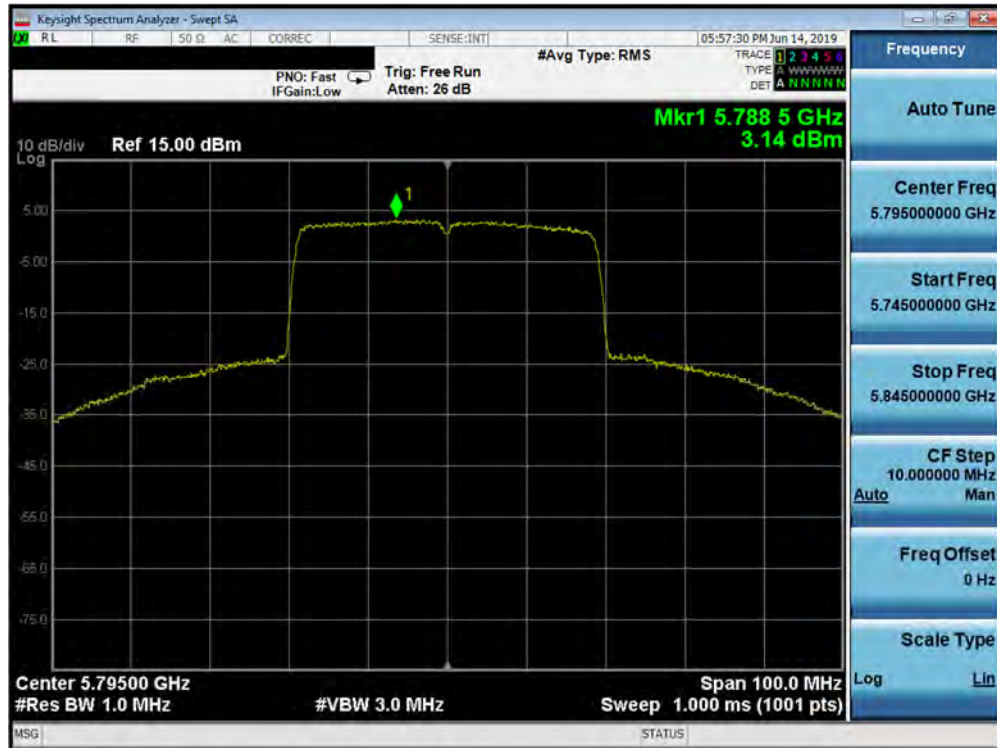


Plot 7-213. Power Spectral Density Plot SISO ANT2 (20 MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 165)

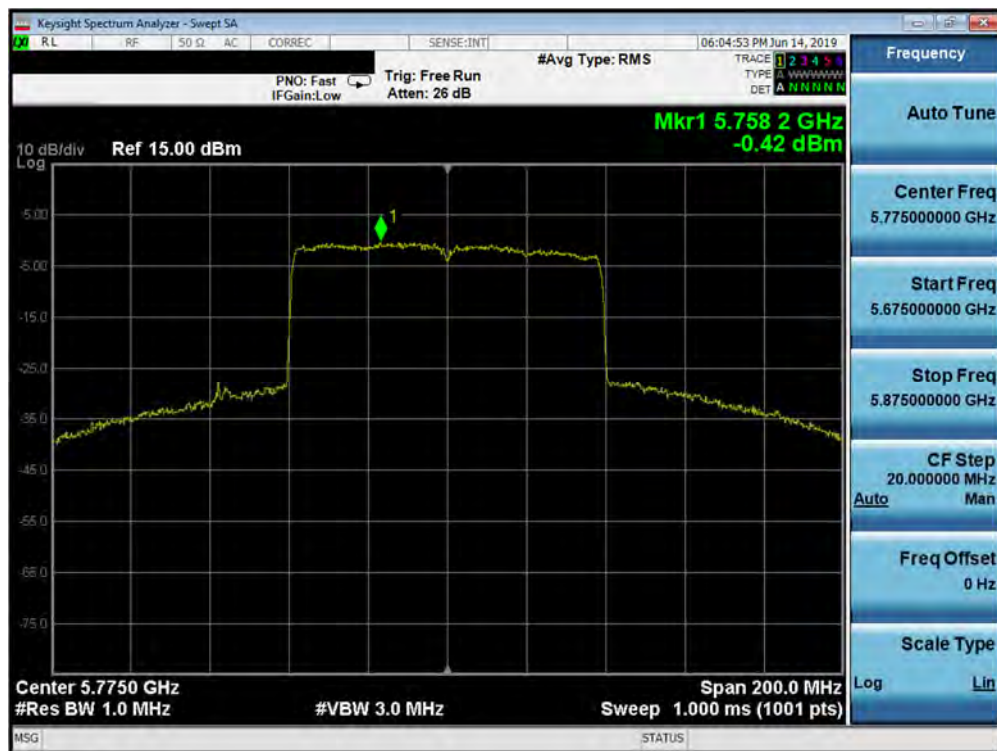


Plot 7-214. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 151)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 164 of 302                 |



Plot 7-215. Power Spectral Density Plot SISO ANT2 (40MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 159)



Plot 7-216. Power Spectral Density Plot SISO ANT2 (80MHz BW 802.11ax – Full Tones (UNII Band 3) – Ch. 155)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 165 of 302                 |

## Summed MIMO Power Spectral Density Measurements (26 Tones)

|         | Frequency [MHz] | Channel No. | 802.11 Mode | Tones | Data Rate [Mbps] | Antenna-1 Power Density [dBm] | Antenna-2 Power Density [dBm] | Summed MIMO Power Density [dBm] | Max Power Density [dBm/MHz] | Margin [dB] |
|---------|-----------------|-------------|-------------|-------|------------------|-------------------------------|-------------------------------|---------------------------------|-----------------------------|-------------|
| Band 1  | 5180            | 36          | ax (20MHz)  | 26T   | MCS0             | 7.05                          | 5.51                          | 9.36                            | 11.00                       | -1.64       |
|         | 5200            | 40          | ax (20MHz)  | 26T   | MCS0             | 6.03                          | 4.79                          | 8.46                            | 11.00                       | -2.54       |
|         | 5240            | 48          | ax (20MHz)  | 26T   | MCS0             | 6.95                          | 5.76                          | 9.41                            | 11.00                       | -1.59       |
|         | 5190            | 38          | ax (40MHz)  | 26T   | MCS0             | 4.92                          | 4.60                          | 7.77                            | 11.00                       | -3.23       |
|         | 5230            | 46          | ax (40MHz)  | 26T   | MCS0             | 5.17                          | 4.50                          | 7.86                            | 11.00                       | -3.14       |
|         | 5210            | 42          | ax (80MHz)  | 26T   | MCS0             | 4.75                          | 4.38                          | 7.58                            | 11.00                       | -3.42       |
| Band 2A | 5260            | 52          | ax (20MHz)  | 26T   | MCS0             | 6.49                          | 5.75                          | 9.15                            | 11.00                       | -1.85       |
|         | 5280            | 56          | ax (20MHz)  | 26T   | MCS0             | 5.77                          | 4.87                          | 8.35                            | 11.00                       | -2.65       |
|         | 5320            | 64          | ax (20MHz)  | 26T   | MCS0             | 6.95                          | 5.68                          | 9.37                            | 11.00                       | -1.63       |
|         | 5270            | 54          | ax (40MHz)  | 26T   | MCS0             | 5.71                          | 4.27                          | 8.06                            | 11.00                       | -2.94       |
|         | 5310            | 62          | ax (40MHz)  | 26T   | MCS0             | 5.17                          | 4.28                          | 7.76                            | 11.00                       | -3.24       |
|         | 5290            | 58          | ax (80MHz)  | 26T   | MCS0             | 5.05                          | 4.26                          | 7.68                            | 11.00                       | -3.32       |
| Band 2C | 5500            | 100         | ax (20MHz)  | 26T   | MCS0             | 6.61                          | 5.00                          | 8.89                            | 11.00                       | -2.11       |
|         | 5600            | 120         | ax (20MHz)  | 26T   | MCS0             | 5.87                          | 3.94                          | 8.02                            | 11.00                       | -2.98       |
|         | 5720            | 144         | ax (20MHz)  | 26T   | MCS0             | 6.74                          | 4.19                          | 8.66                            | 11.00                       | -2.34       |
|         | 5510            | 102         | ax (40MHz)  | 26T   | MCS0             | 6.13                          | 4.40                          | 8.36                            | 11.00                       | -2.64       |
|         | 5590            | 118         | ax (40MHz)  | 26T   | MCS0             | 6.79                          | 4.84                          | 8.93                            | 11.00                       | -2.07       |
|         | 5710            | 142         | ax (40MHz)  | 26T   | MCS0             | 6.43                          | 4.05                          | 8.41                            | 11.00                       | -2.59       |
|         | 5530            | 106         | ax (80MHz)  | 26T   | MCS0             | 5.90                          | 3.98                          | 8.06                            | 11.00                       | -2.94       |
|         | 5610            | 122         | ax (80MHz)  | 26T   | MCS0             | 4.94                          | 3.59                          | 7.33                            | 11.00                       | -3.67       |
|         | 5690            | 138         | ax (80MHz)  | 26T   | MCS0             | 5.97                          | 4.11                          | 8.15                            | 11.00                       | -2.85       |

Table 7-63. Bands 1, 2A, 2C MIMO Conducted Power Spectral Density Measurements MIMO (26 Tones)

|        | Frequency [MHz] | Channel No. | 802.11 Mode | Tones | Data Rate [Mbps] | Antenna-1 Power Density [dBm] | Antenna-2 Power Density [dBm] | Summed MIMO Power Density [dBm] | Max Permissible Power Density | Margin [dB] |
|--------|-----------------|-------------|-------------|-------|------------------|-------------------------------|-------------------------------|---------------------------------|-------------------------------|-------------|
| Band 3 | 5745            | 149         | ax (20MHz)  | 26T   | MCS0             | 6.39                          | 5.07                          | 8.79                            | 30.00                         | -21.21      |
|        | 5785            | 157         | ax (20MHz)  | 26T   | MCS0             | 5.79                          | 3.90                          | 7.96                            | 30.00                         | -22.04      |
|        | 5825            | 165         | ax (20MHz)  | 26T   | MCS0             | 6.14                          | 4.85                          | 8.55                            | 30.00                         | -21.45      |
|        | 5755            | 151         | ax (40MHz)  | 26T   | MCS0             | 6.25                          | 4.43                          | 8.44                            | 30.00                         | -21.56      |
|        | 5795            | 159         | ax (40MHz)  | 26T   | MCS0             | 6.81                          | 3.95                          | 8.62                            | 30.00                         | -21.38      |
|        | 5775            | 155         | ax (80MHz)  | 26T   | MCS0             | 5.80                          | 4.74                          | 8.31                            | 30.00                         | -21.69      |

Table 7-64. Band 3 MIMO Conducted Power Spectral Density Measurements MIMO (26 Tones)

|                                         |                                                                                     |                               |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|-------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN976V                      |  |                               | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019                                                   | EUT Type:<br>Portable Handset |                                       |                                                                                       | Page 166 of 302                 |

|         | Frequency [MHz] | Channel No. | 802.11 Mode | Tones | Data Rate [Mbps] | Antenna-1 Power Density [dBm] | Antenna-2 Power Density [dBm] | Summed MIMO Power Density [dBm] | Max Power Density [dBm/MHz] | Margin [dB] |
|---------|-----------------|-------------|-------------|-------|------------------|-------------------------------|-------------------------------|---------------------------------|-----------------------------|-------------|
| Band 1  | 5180            | 36          | ax (20MHz)  | 242T  | MCS0             | 3.54                          | 2.29                          | 5.97                            | 11.00                       | -5.03       |
|         | 5200            | 40          | ax (20MHz)  | 242T  | MCS0             | 3.65                          | 2.48                          | 6.11                            | 11.00                       | -4.89       |
|         | 5240            | 48          | ax (20MHz)  | 242T  | MCS0             | 3.97                          | 2.58                          | 6.34                            | 11.00                       | -4.66       |
|         | 5190            | 38          | ax (40MHz)  | 484T  | MCS0             | 0.90                          | -1.02                         | 3.06                            | 11.00                       | -7.94       |
|         | 5230            | 46          | ax (40MHz)  | 484T  | MCS0             | 1.07                          | -0.89                         | 3.21                            | 11.00                       | -7.79       |
|         | 5210            | 42          | ax (80MHz)  | 996T  | MCS0             | -2.00                         | -5.31                         | -0.34                           | 11.00                       | -11.34      |
| Band 2A | 5260            | 52          | ax (20MHz)  | 242T  | MCS0             | 3.47                          | 2.65                          | 6.09                            | 11.00                       | -4.91       |
|         | 5280            | 56          | ax (20MHz)  | 242T  | MCS0             | 3.70                          | 2.57                          | 6.18                            | 11.00                       | -4.82       |
|         | 5320            | 64          | ax (20MHz)  | 242T  | MCS0             | 3.87                          | 2.28                          | 6.16                            | 11.00                       | -4.84       |
|         | 5270            | 54          | ax (40MHz)  | 484T  | MCS0             | 0.48                          | -1.35                         | 2.67                            | 11.00                       | -8.33       |
|         | 5310            | 62          | ax (40MHz)  | 484T  | MCS0             | 0.94                          | -1.23                         | 3.00                            | 11.00                       | -8.00       |
|         | 5290            | 58          | ax (80MHz)  | 996T  | MCS0             | -2.16                         | -5.39                         | -0.47                           | 11.00                       | -11.47      |
| Band 2C | 5500            | 100         | ax (20MHz)  | 242T  | MCS0             | 4.16                          | 2.86                          | 6.57                            | 11.00                       | -4.43       |
|         | 5600            | 120         | ax (20MHz)  | 242T  | MCS0             | 4.62                          | 2.61                          | 6.74                            | 11.00                       | -4.26       |
|         | 5720            | 144         | ax (20MHz)  | 242T  | MCS0             | 4.11                          | 2.32                          | 6.32                            | 11.00                       | -4.68       |
|         | 5510            | 102         | ax (40MHz)  | 484T  | MCS0             | 1.34                          | -1.22                         | 3.26                            | 11.00                       | -7.74       |
|         | 5590            | 118         | ax (40MHz)  | 484T  | MCS0             | 1.30                          | -0.98                         | 3.32                            | 11.00                       | -7.68       |
|         | 5710            | 142         | ax (40MHz)  | 484T  | MCS0             | 1.22                          | -1.57                         | 3.06                            | 11.00                       | -7.94       |
|         | 5530            | 106         | ax (80MHz)  | 996T  | MCS0             | -4.31                         | -4.88                         | -1.58                           | 11.00                       | -12.58      |
|         | 5610            | 122         | ax (80MHz)  | 996T  | MCS0             | -4.22                         | -5.28                         | -1.71                           | 11.00                       | -12.71      |
|         | 5690            | 138         | ax (80MHz)  | 996T  | MCS0             | -4.02                         | -5.49                         | -1.68                           | 11.00                       | -12.68      |

**Table 7-65. Bands 1, 2A, 2C MIMO Conducted Power Spectral Density Measurements MIMO (Full Tones)**

|        | Frequency [MHz] | Channel No. | 802.11 Mode | Tones | Data Rate [Mbps] | Antenna-1 Power Density [dBm] | Antenna-2 Power Density [dBm] | Summed MIMO Power Density [dBm] | Max Permissible Power Density | Margin [dB] |
|--------|-----------------|-------------|-------------|-------|------------------|-------------------------------|-------------------------------|---------------------------------|-------------------------------|-------------|
| Band 3 | 5745            | 149         | ax (20MHz)  | 242T  | MCS0             | 4.12                          | 2.32                          | 6.32                            | 30.00                         | -23.68      |
|        | 5785            | 157         | ax (20MHz)  | 242T  | MCS0             | 4.30                          | 2.23                          | 6.40                            | 30.00                         | -23.60      |
|        | 5825            | 165         | ax (20MHz)  | 242T  | MCS0             | 4.25                          | 2.44                          | 6.45                            | 30.00                         | -23.55      |
|        | 5755            | 151         | ax (40MHz)  | 484T  | MCS0             | 1.32                          | -1.33                         | 3.20                            | 30.00                         | -26.80      |
|        | 5795            | 159         | ax (40MHz)  | 484T  | MCS0             | 1.34                          | -1.06                         | 3.31                            | 30.00                         | -26.69      |
|        | 5775            | 155         | ax (80MHz)  | 996T  | MCS0             | -3.47                         | -4.98                         | -1.15                           | 30.00                         | -31.15      |

**Table 7-66. Band 3 MIMO Conducted Power Spectral Density Measurements MIMO (Full Tones)**

|                                         |                                                                                                                                                                                                                     |                               |                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------|
| FCC ID: A3LSMN976V                      |  <b>MEASUREMENT REPORT (CERTIFICATION)</b>  |                               | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019                                                                                                                                                                                   | EUT Type:<br>Portable Handset | Page 167 of 302                 |

**Note:**

Per ANSI C63.10-2013 Section 14.3.2.2 and KDB 662911 v02r01 Section E)2), the power spectral density at Antenna 1 and Antenna 2 were first measured separately with reduced Antenna 1 and Antenna 2 powers per manufacture's tune-up document. The measured values were then summed in linear power units then converted back to dBm.

**Sample MIMO Calculation:**

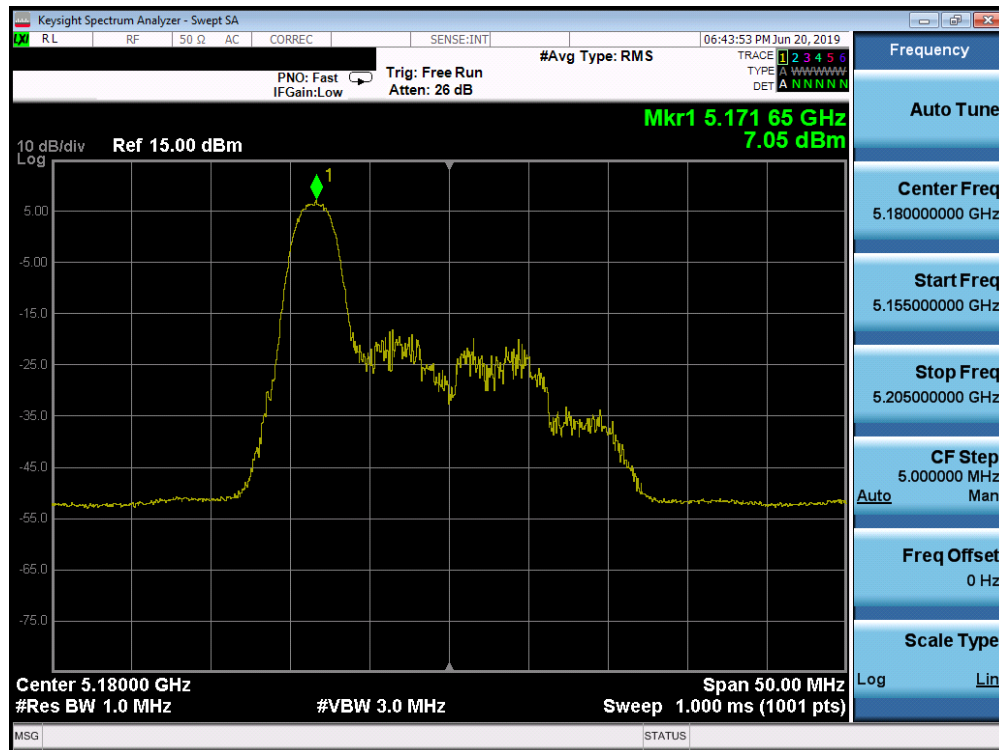
Assuming the average conducted power spectral density was measured to be 5.88 dBm for Antenna-1 and 6.27 dBm for Antenna-2.

Antenna 1 + Antenna 2 = MIMO

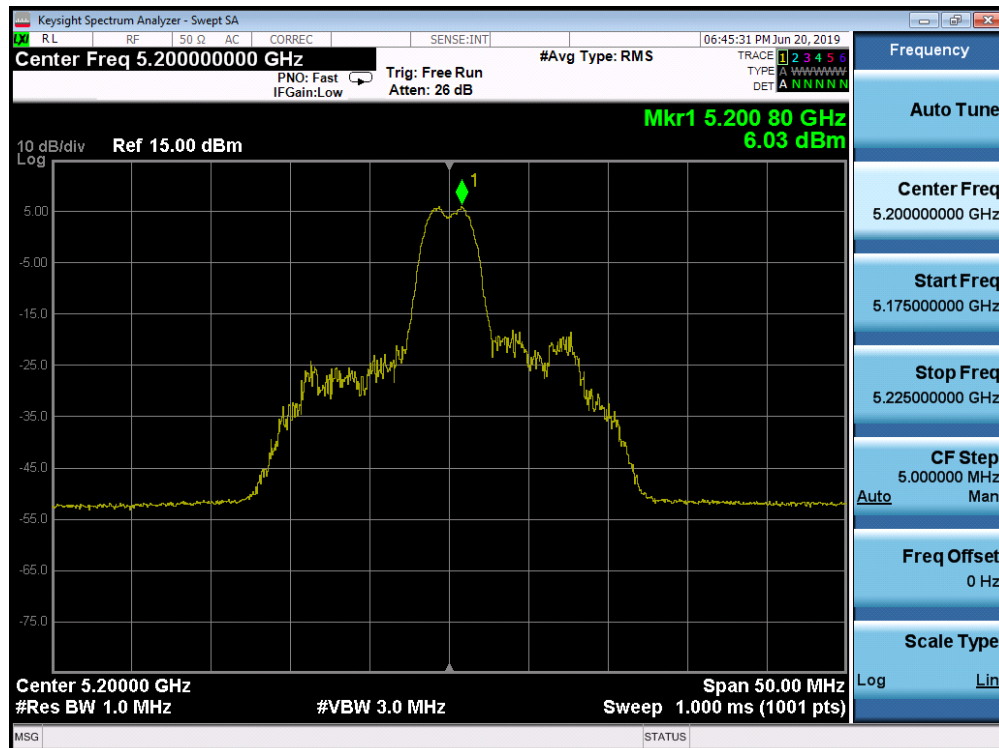
$$(5.88 \text{ dBm} + 6.27 \text{ dBm}) = (3.87 \text{ mW} + 4.24 \text{ mW}) = 8.11 \text{ mW} = 9.09 \text{ dBm}$$

|                                         |                                                                                     |                                       |                                                                                       |                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN976V                      |  | MEASUREMENT REPORT<br>(CERTIFICATION) |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019                                                   | EUT Type:<br>Portable Handset         |                                                                                       | Page 168 of 302                 |

## MIMO Antenna-1 Power Spectral Density Measurements (26 Tones)

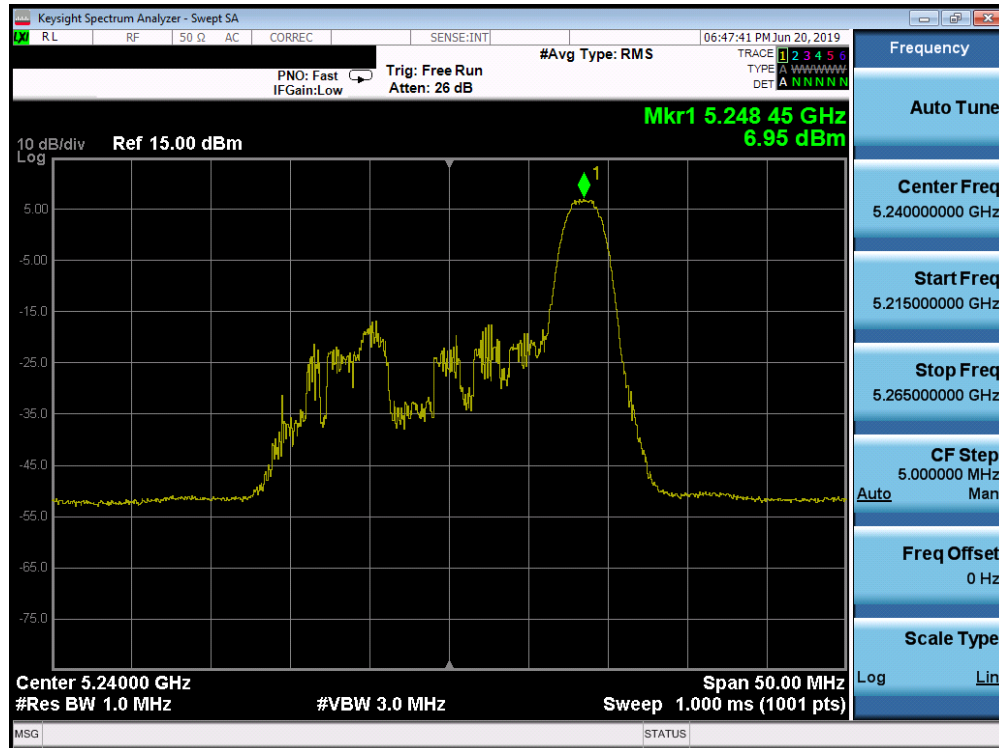


Plot 7-217. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 36)

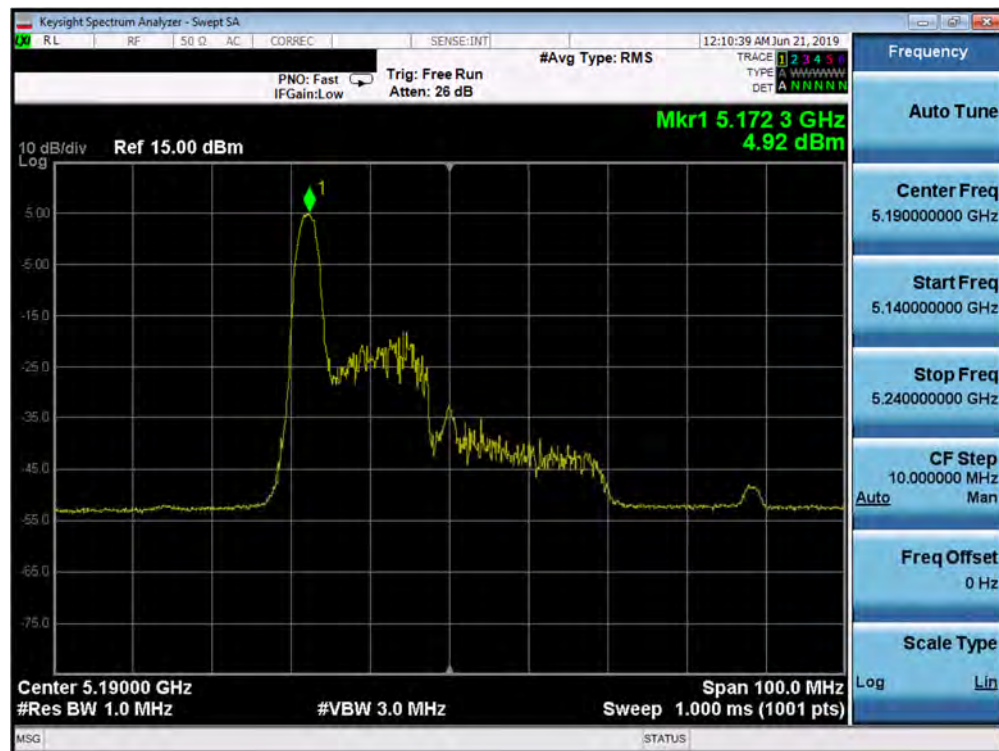


Plot 7-218. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 40)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 169 of 302                 |

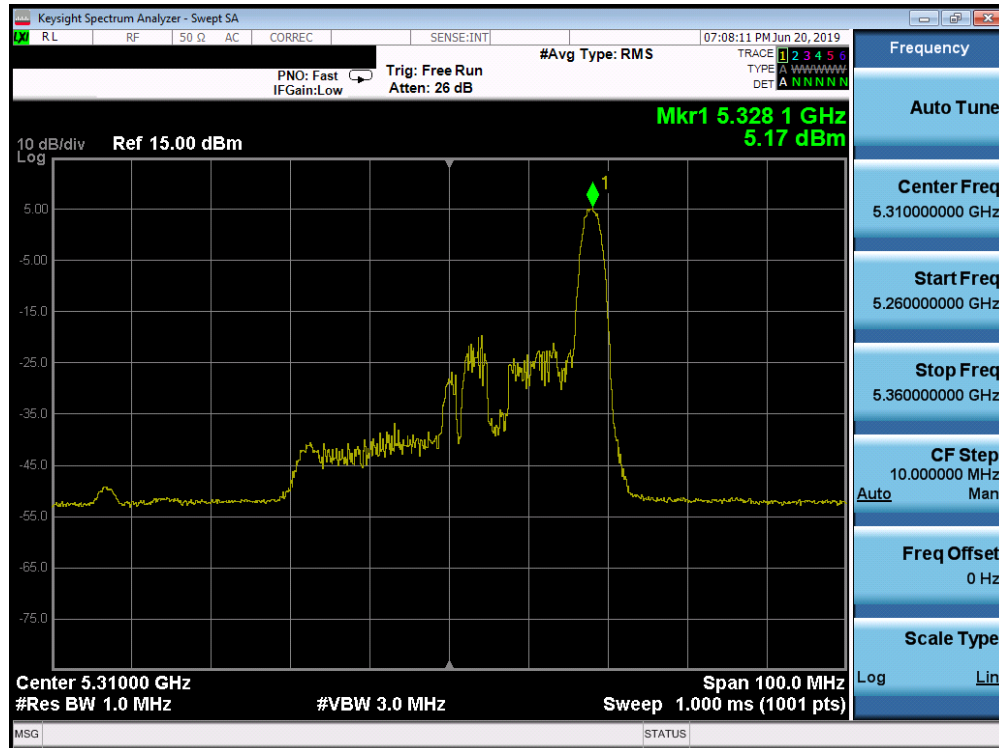


Plot 7-219. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 48)

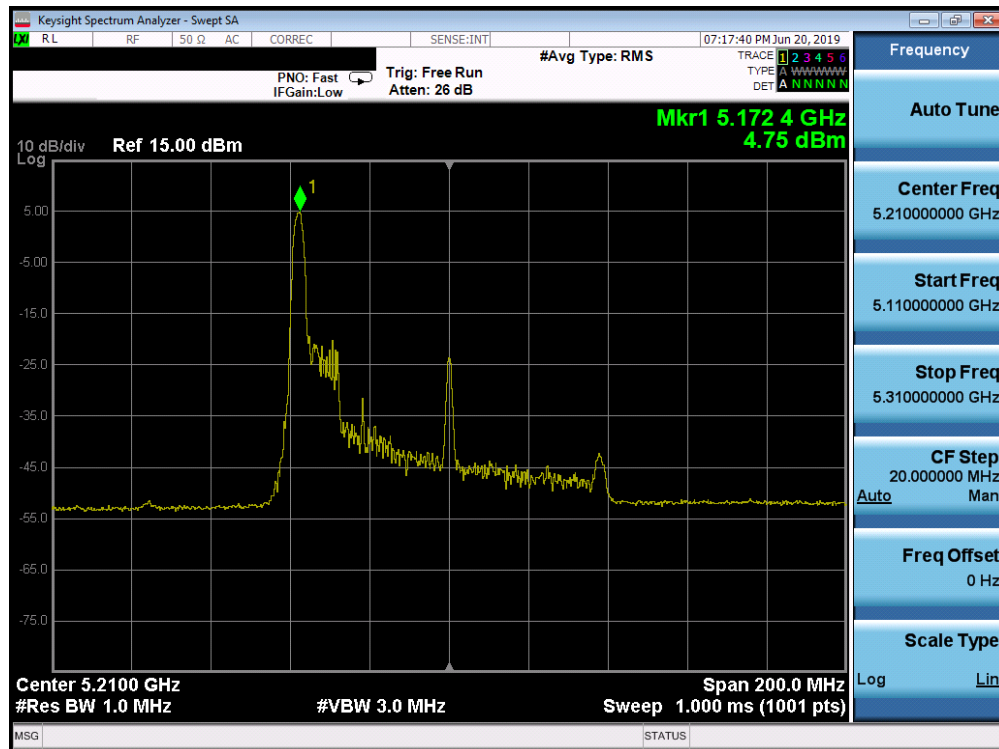


Plot 7-220. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 38)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 170 of 302                 |

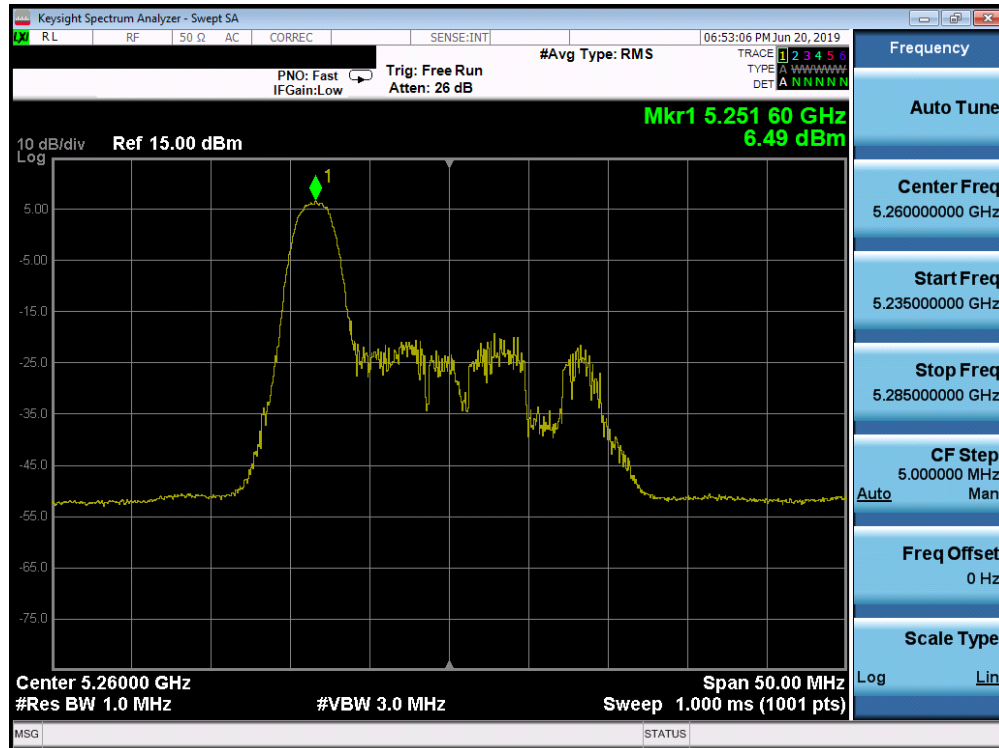


Plot 7-221. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 46)

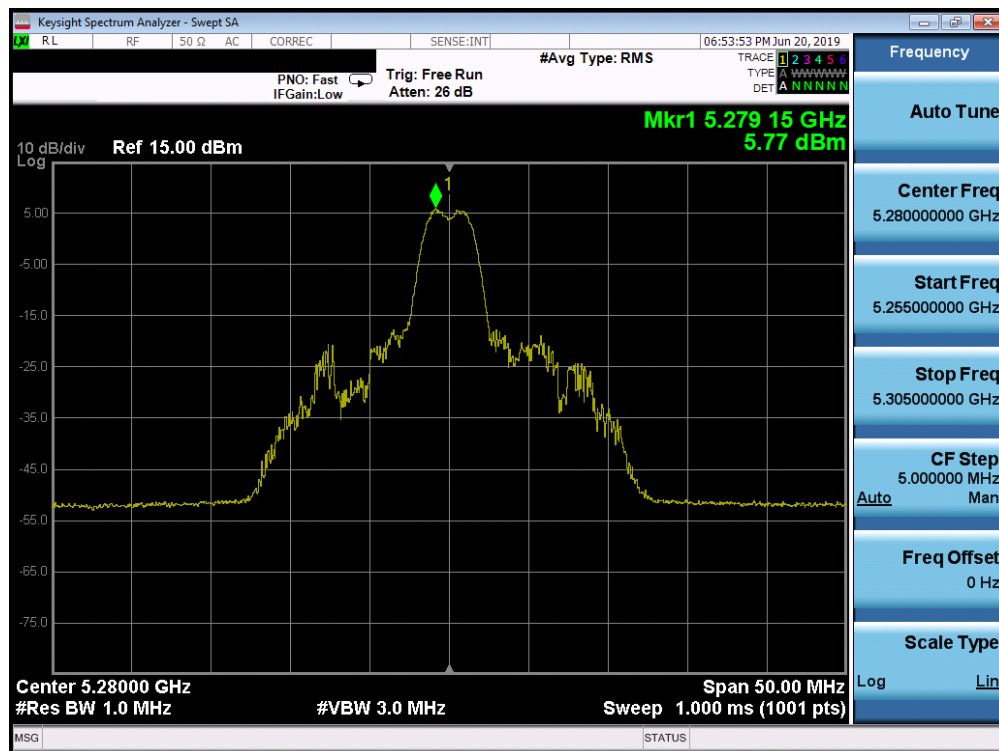


Plot 7-222. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 1) – Ch. 42)

|                                         |                                              |                               |  |                                 |
|-----------------------------------------|----------------------------------------------|-------------------------------|--|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>MEASUREMENT REPORT</b><br>(CERTIFICATION) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019            | EUT Type:<br>Portable Handset |  | Page 171 of 302                 |

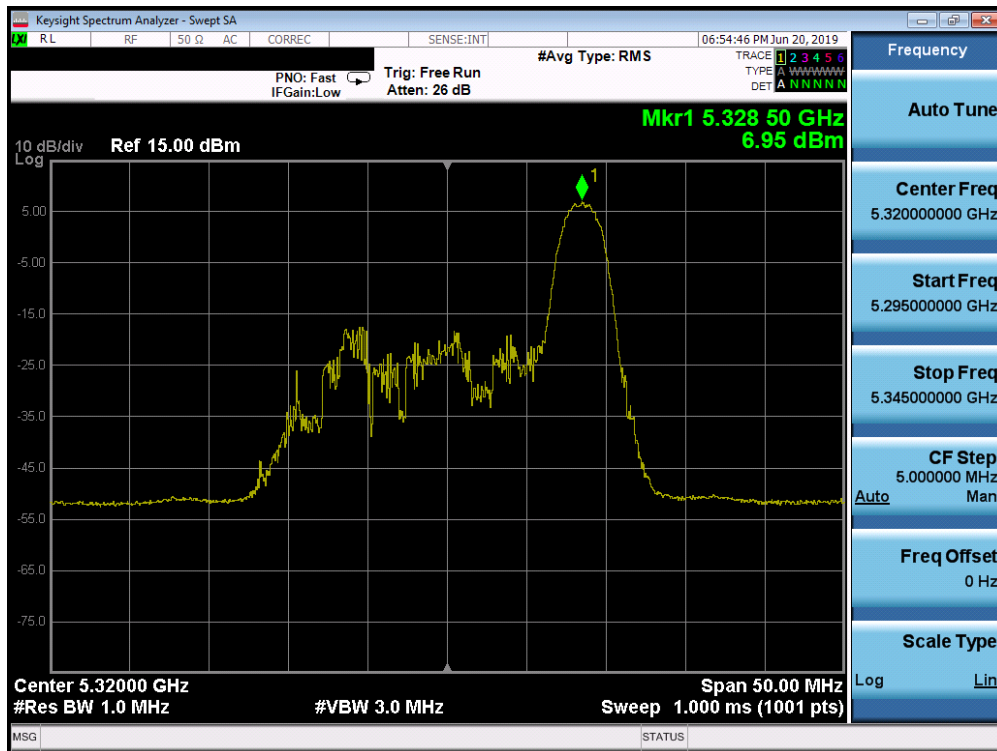


Plot 7-223. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 52)

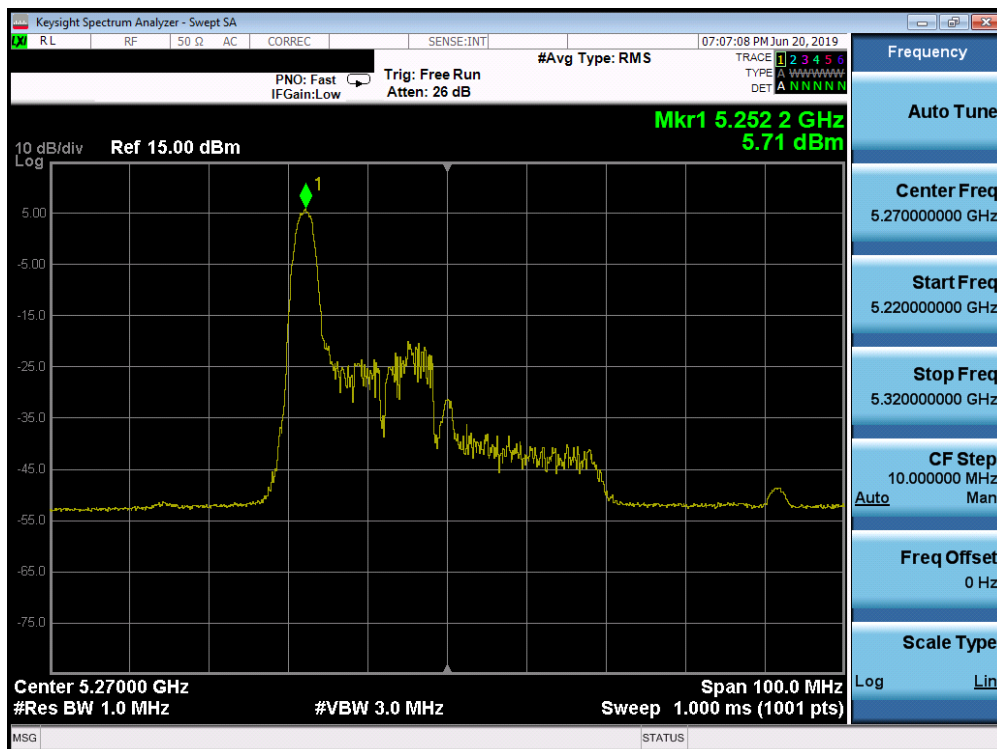


Plot 7-224. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 56)

|                                         |                                              |                               |  |                                 |
|-----------------------------------------|----------------------------------------------|-------------------------------|--|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>MEASUREMENT REPORT</b><br>(CERTIFICATION) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019            | EUT Type:<br>Portable Handset |  | Page 172 of 302                 |

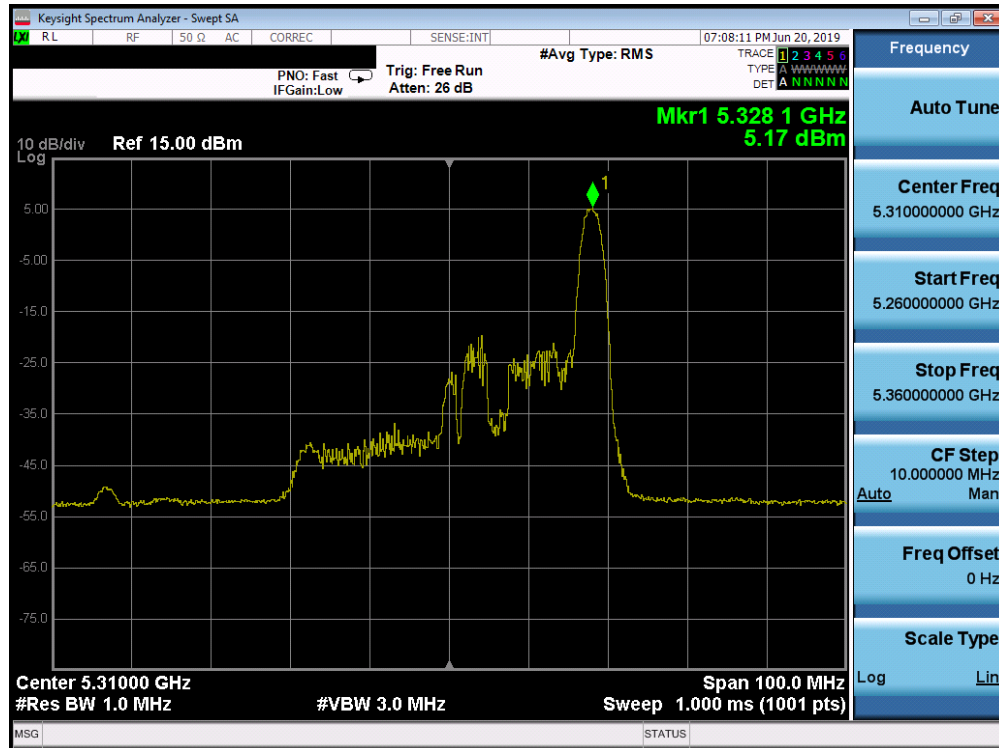


Plot 7-225. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 64)

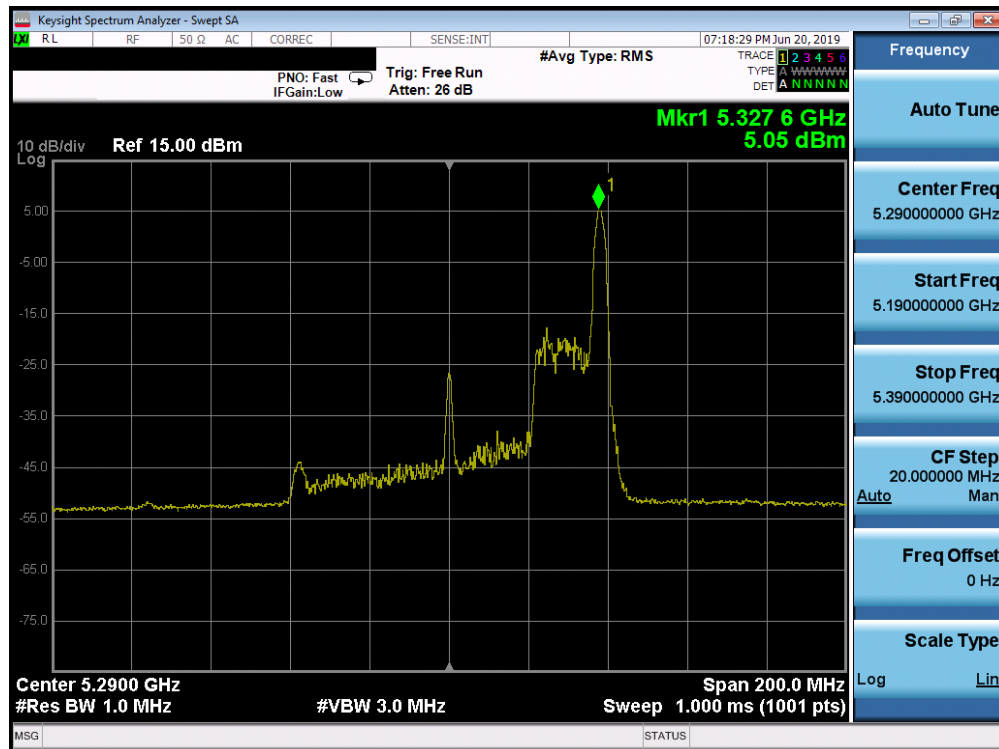


Plot 7-226. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 54)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 173 of 302                 |

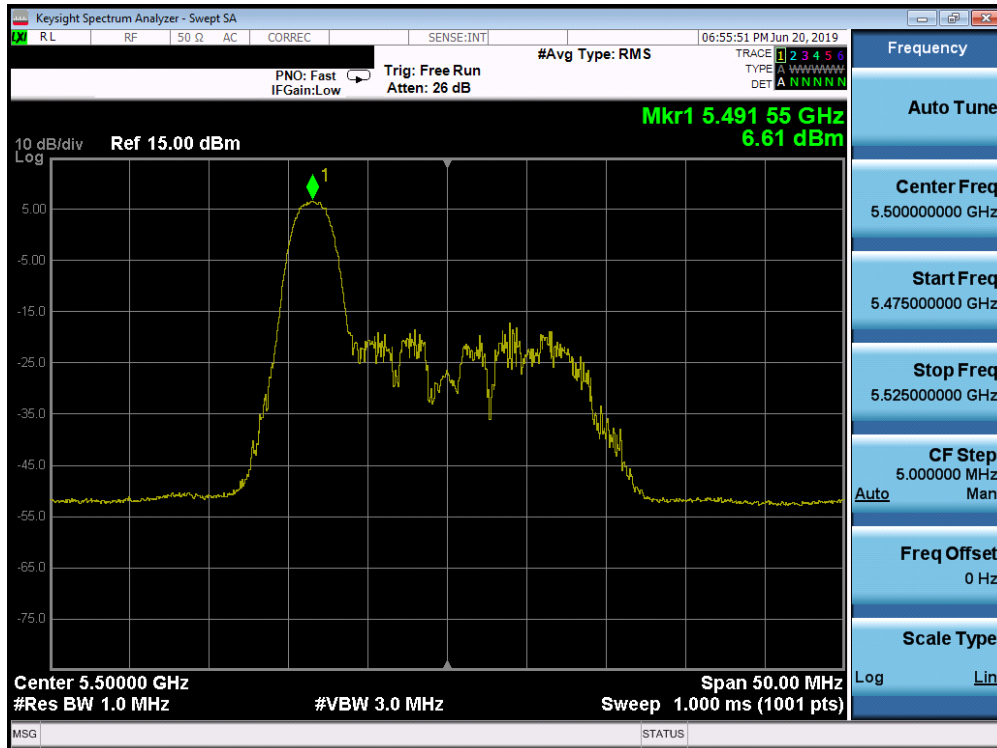


Plot 7-227. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 62)

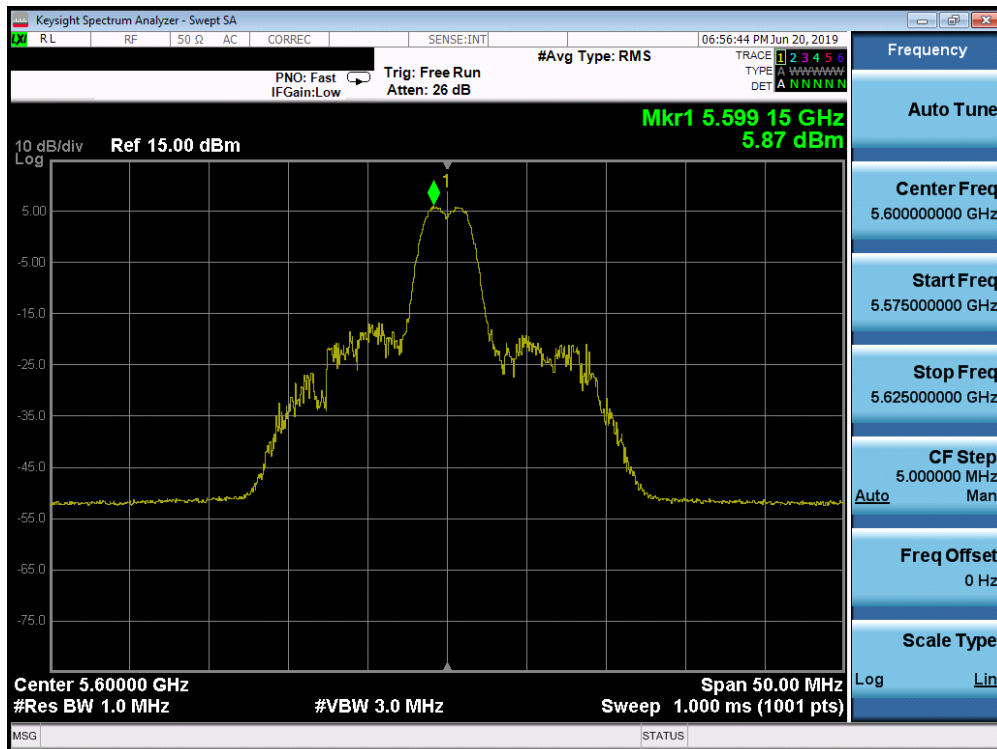


Plot 7-228. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2A) – Ch. 58)

|                                         |                                              |                               |  |                                 |
|-----------------------------------------|----------------------------------------------|-------------------------------|--|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>MEASUREMENT REPORT</b><br>(CERTIFICATION) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019            | EUT Type:<br>Portable Handset |  | Page 174 of 302                 |

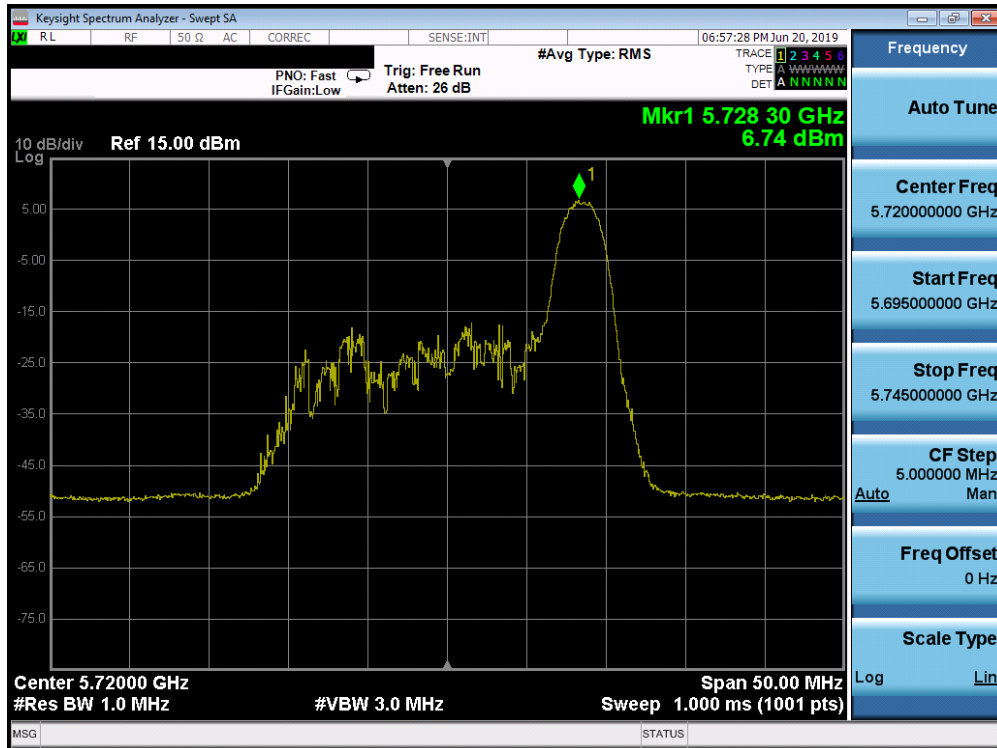


Plot 7-229. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 100)

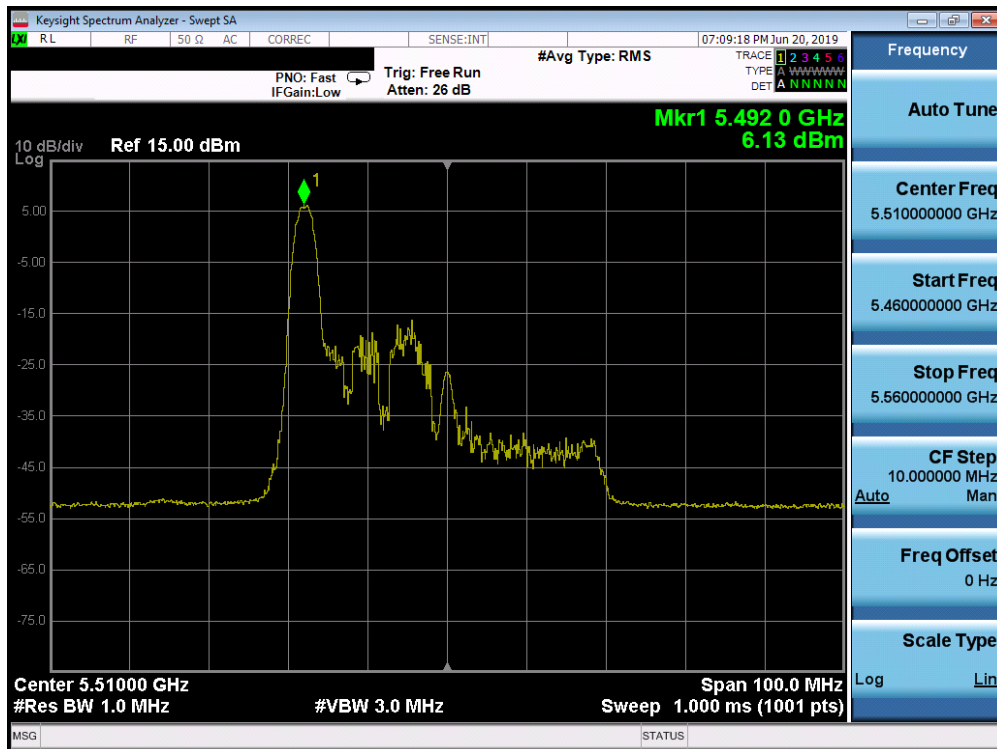


Plot 7-230. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 120)

|                                         |                                                                                                                                  |                               |                                                                                       |                                 |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN976V                      |  <b>MEASUREMENT REPORT</b><br>(CERTIFICATION) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019                                                                                                | EUT Type:<br>Portable Handset |                                                                                       | Page 175 of 302                 |

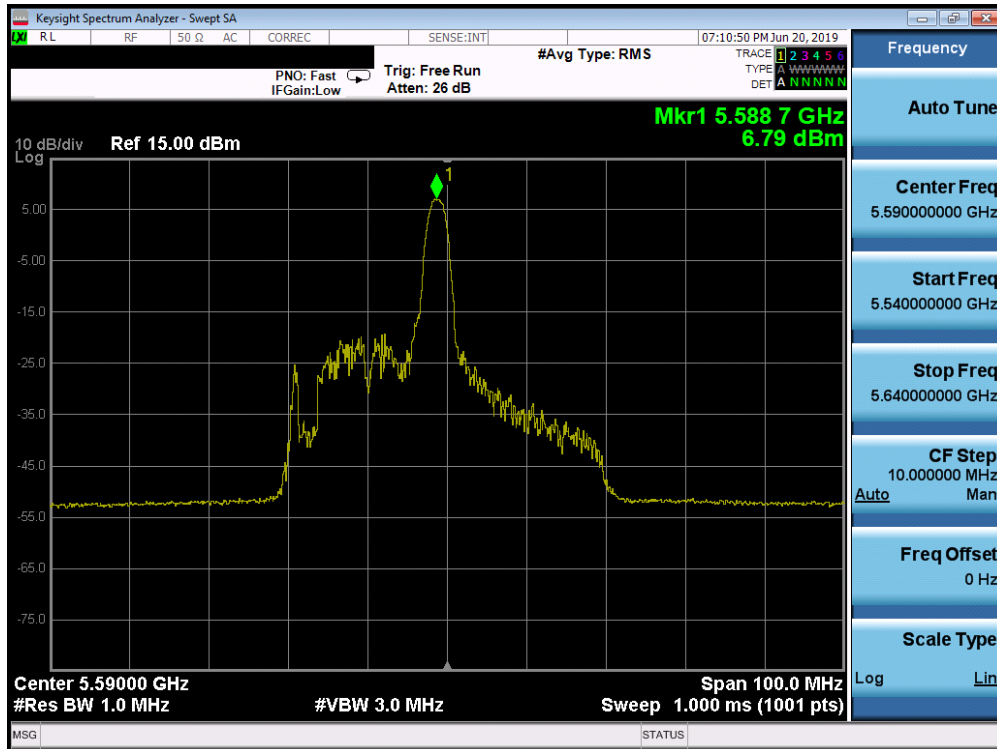


Plot 7-231. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 144)

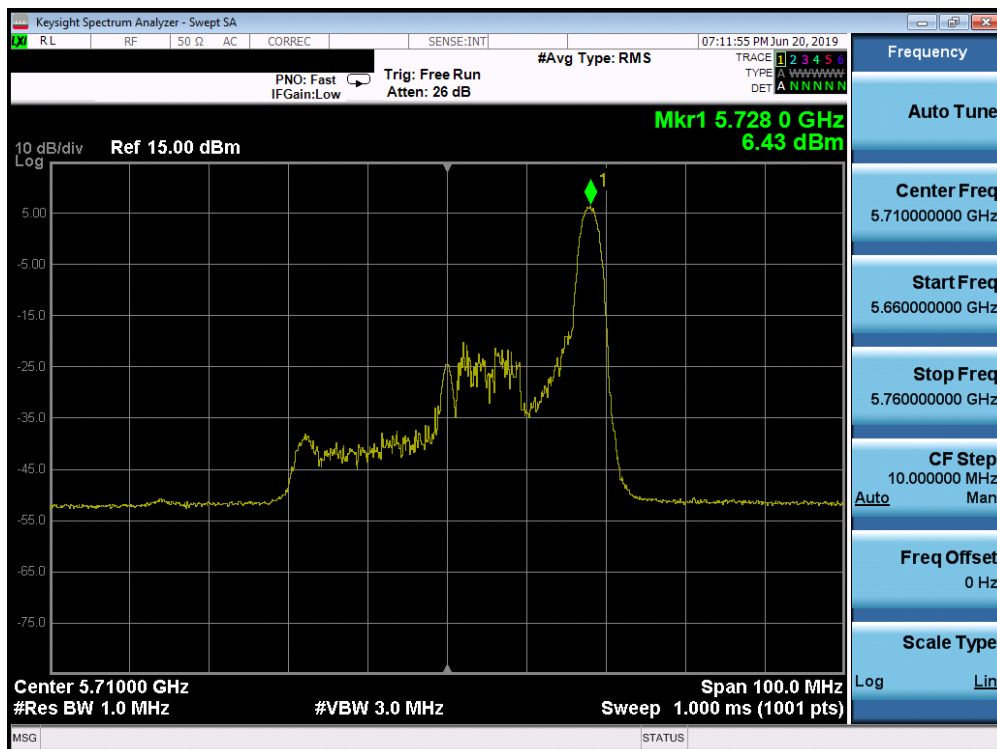


Plot 7-232. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 102)

|                                         |                                              |                               |  |                                 |
|-----------------------------------------|----------------------------------------------|-------------------------------|--|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>MEASUREMENT REPORT</b><br>(CERTIFICATION) |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019            | EUT Type:<br>Portable Handset |  | Page 176 of 302                 |

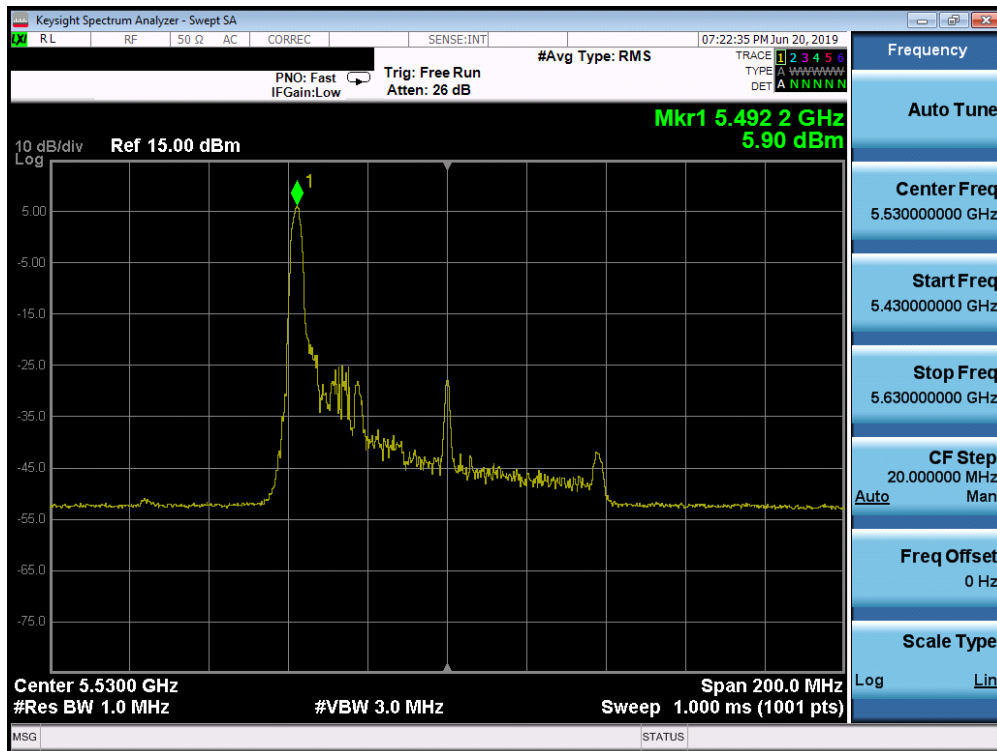


Plot 7-233. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 118)

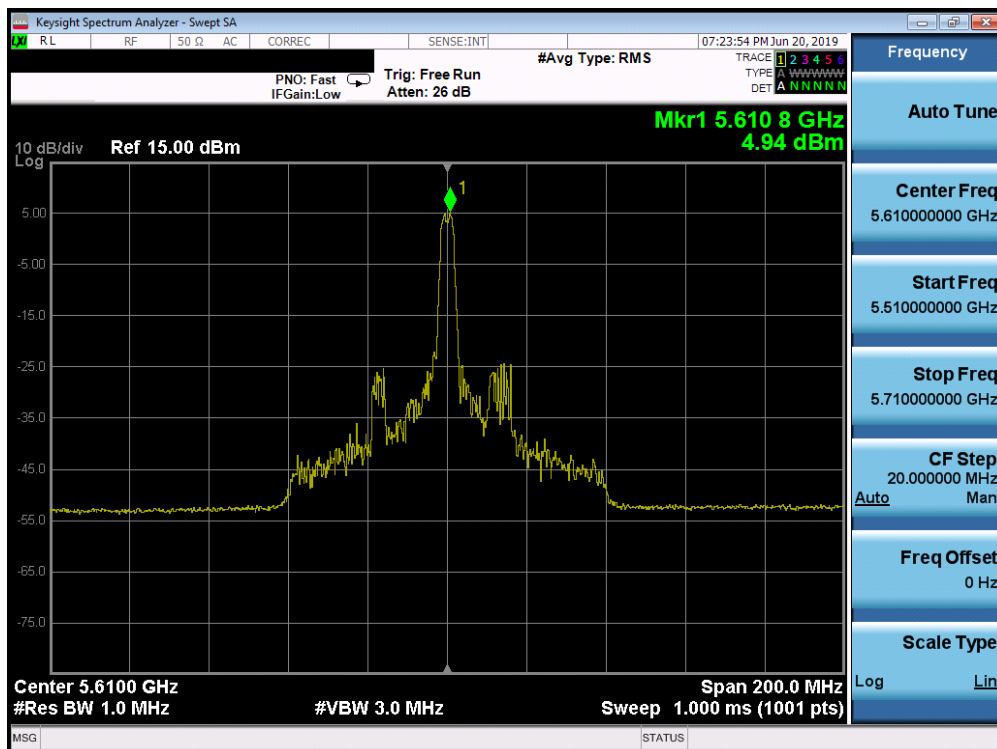


Plot 7-234. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 142)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 177 of 302                 |

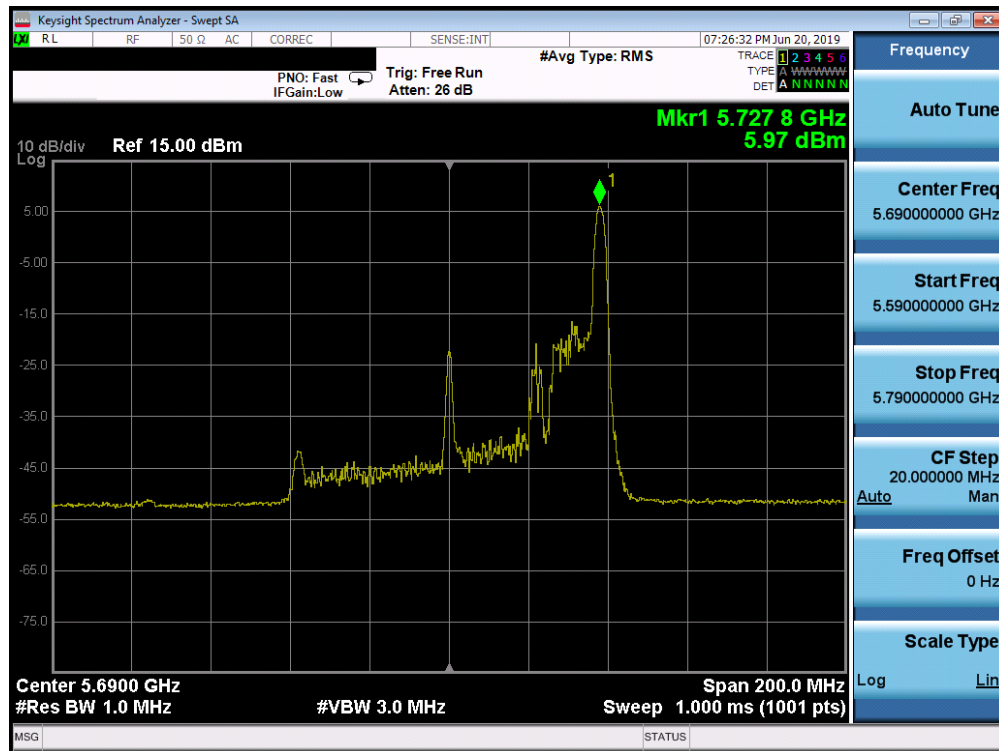


Plot 7-235. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 106)

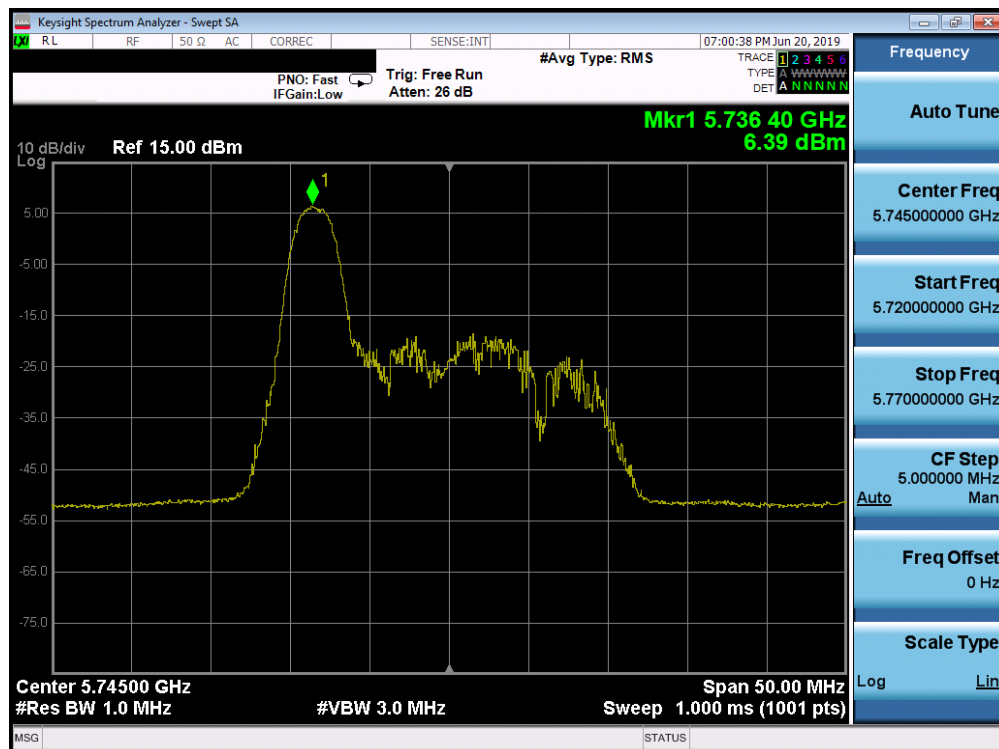


Plot 7-236. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 122)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 178 of 302                 |

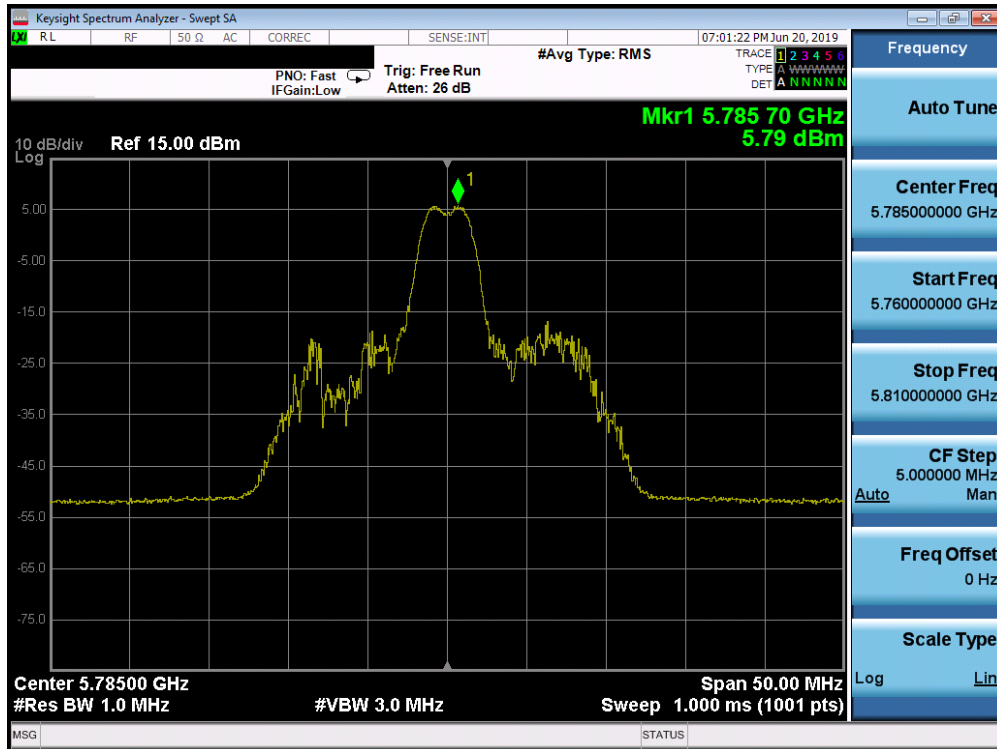


Plot 7-237. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 2C) – Ch. 138)

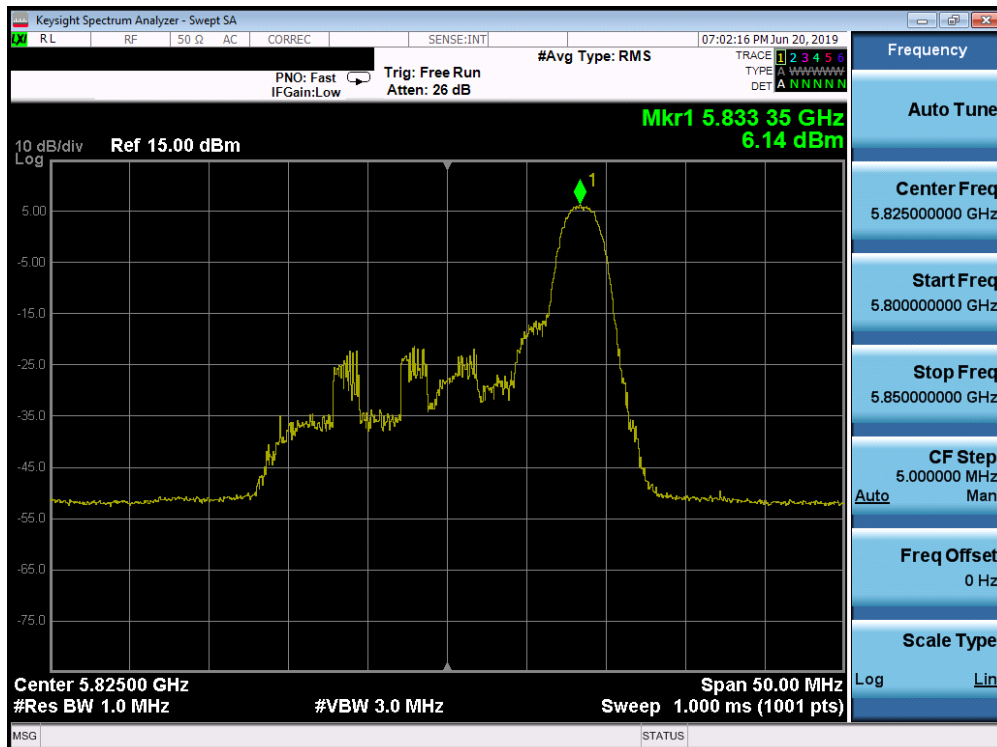


Plot 7-238. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 149)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 179 of 302                 |

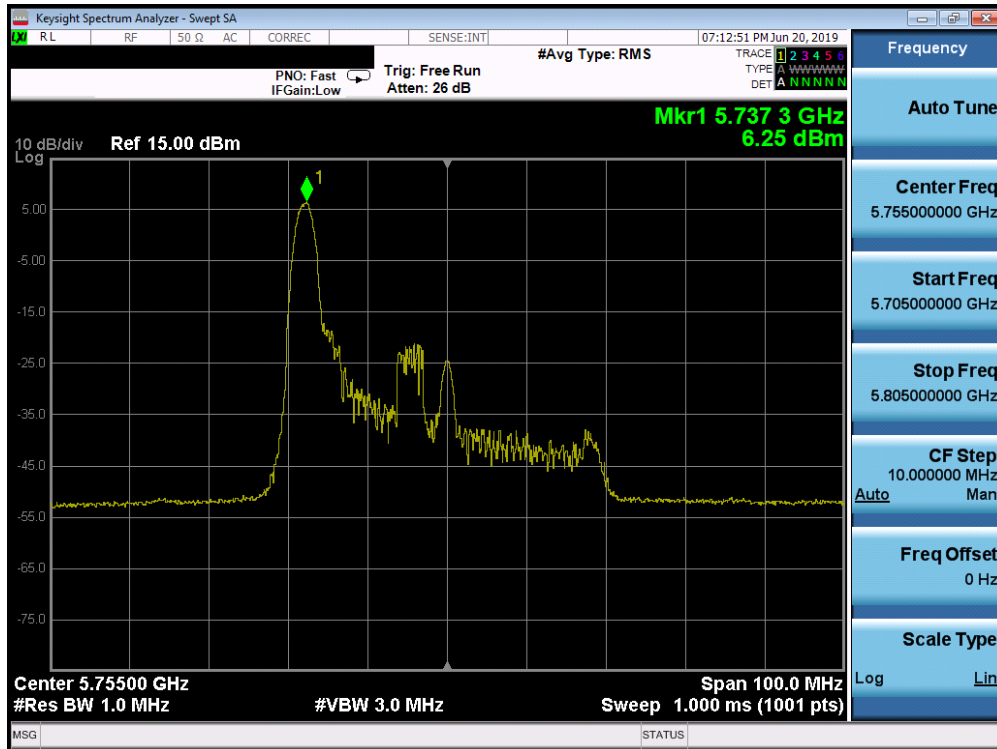


Plot 7-239. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 157)

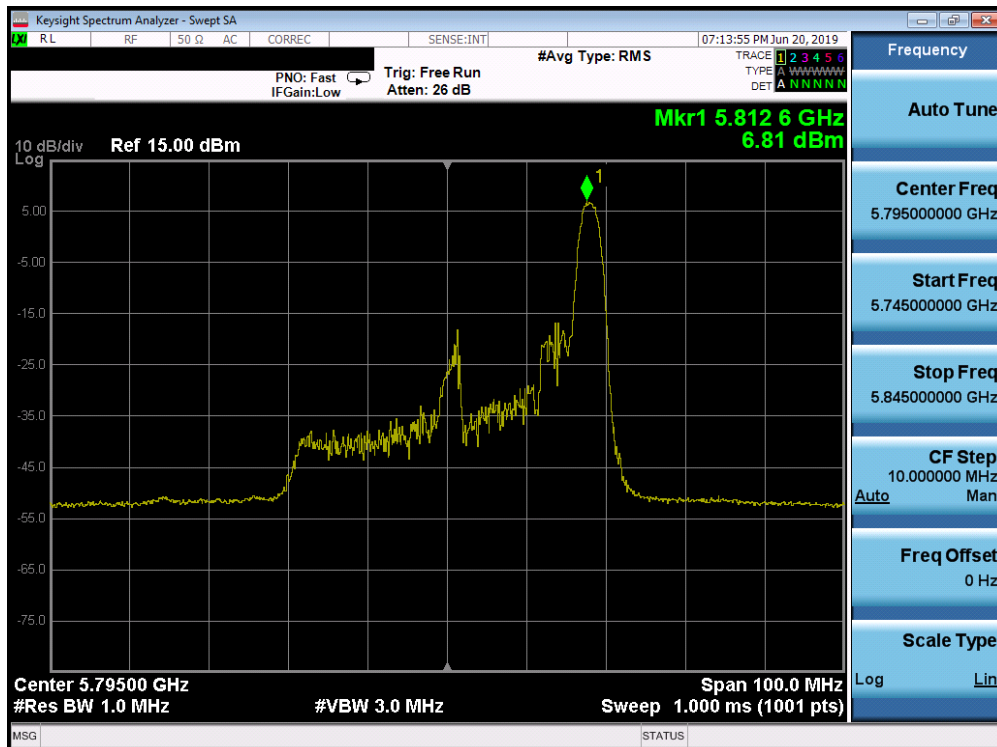


Plot 7-240. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 165)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 180 of 302                 |

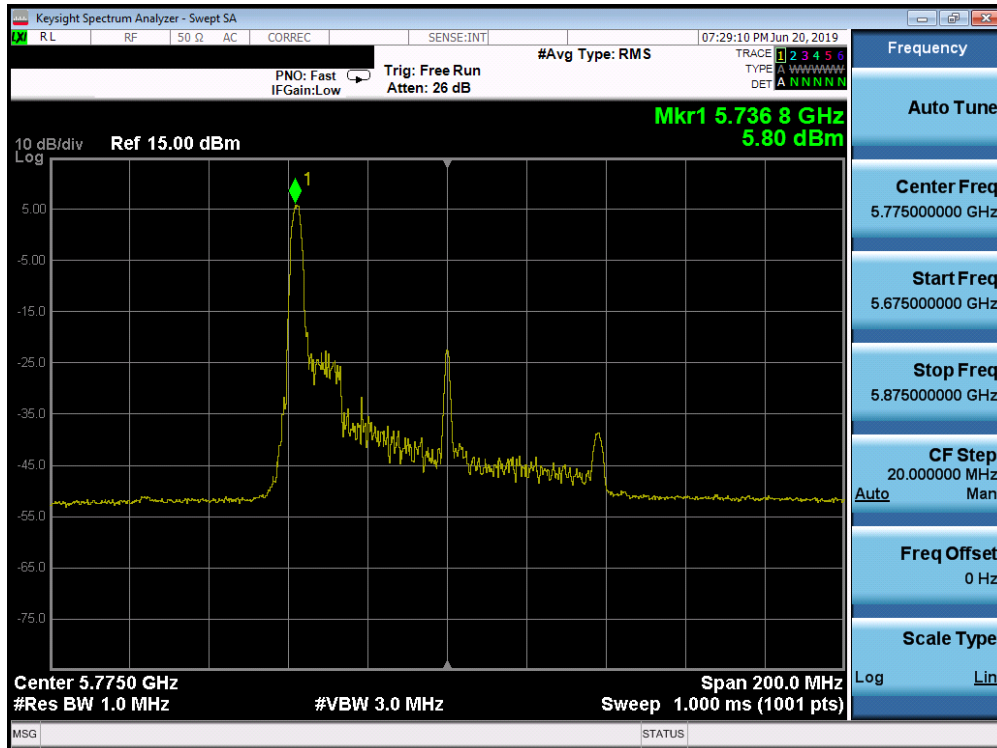


Plot 7-241. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 151)

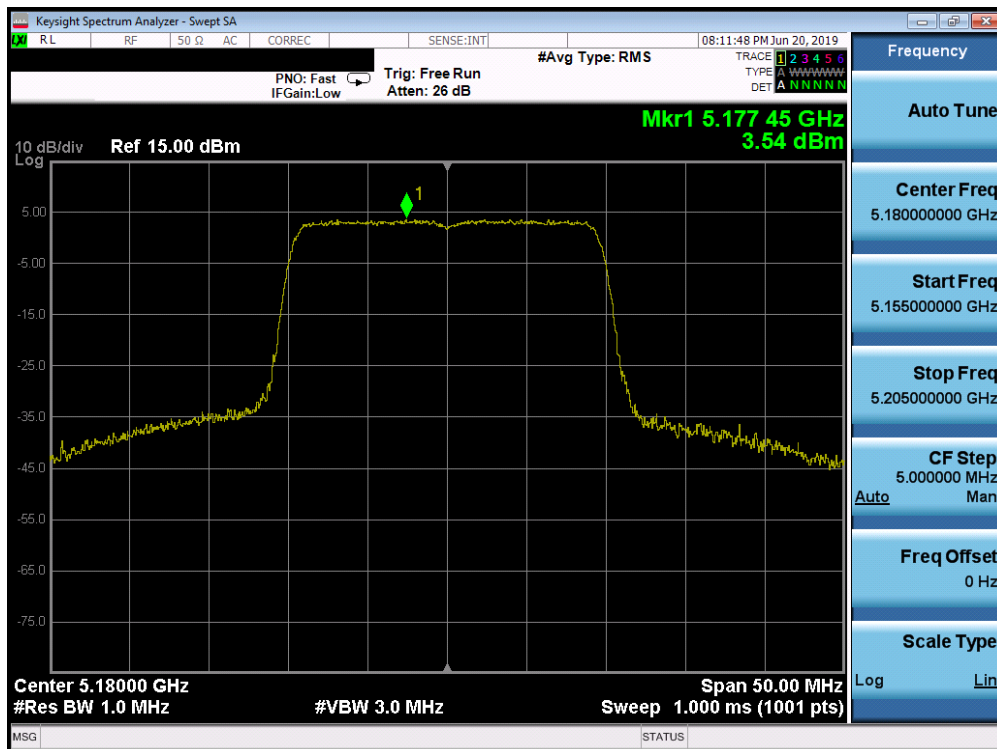


Plot 7-242. Power Spectral Density Plot MIMO ANT1 (40MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 159)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 181 of 302                 |

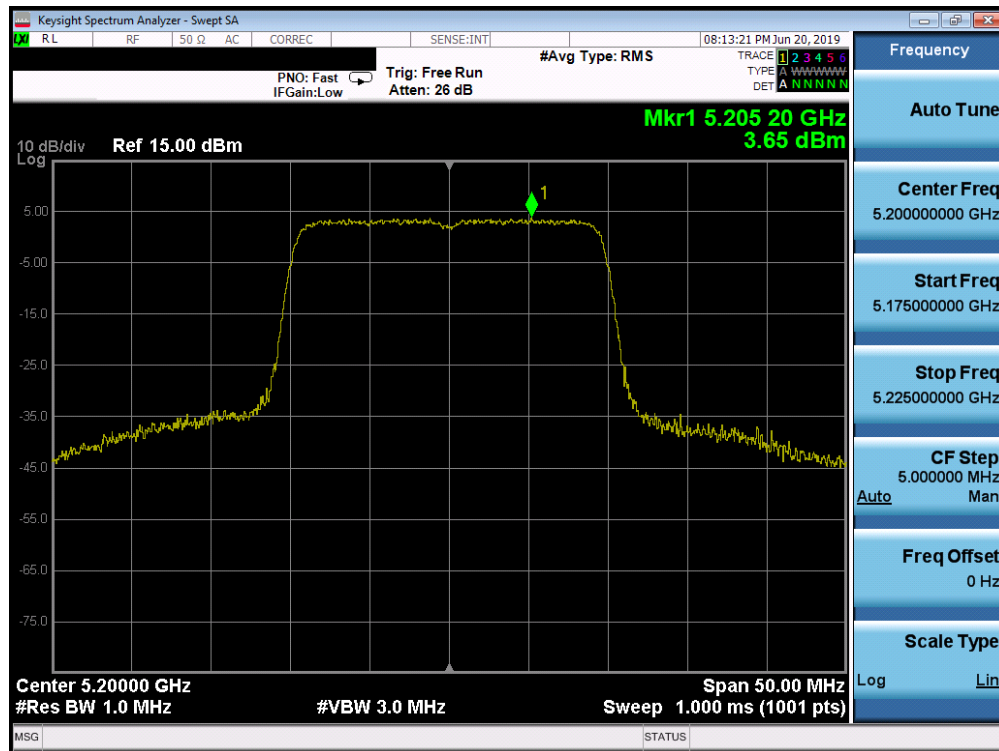


Plot 7-243. Power Spectral Density Plot MIMO ANT1 (80MHz BW 802.11ax – 26 Tones (UNII Band 3) – Ch. 155)

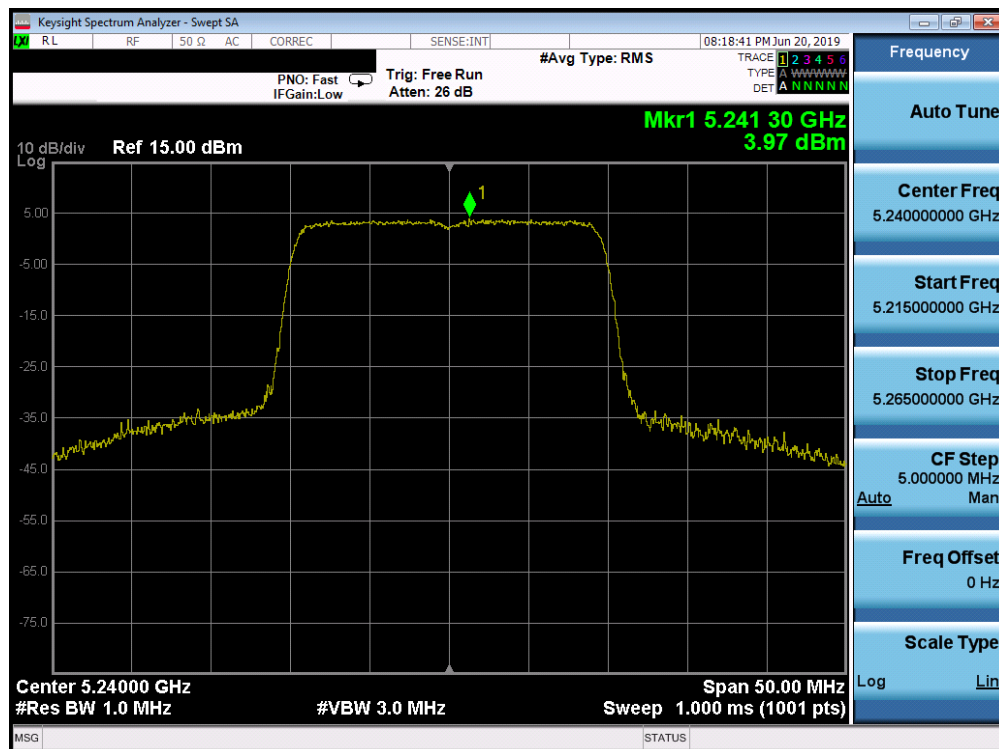


Plot 7-244. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 36)

|                                         |                                                                                                                                   |                               |                                                                                       |                                 |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|---------------------------------|
| FCC ID: A3LSMN976V                      |  <b>MEASUREMENT REPORT<br/>(CERTIFICATION)</b> |                               |  | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019                                                                                                 | EUT Type:<br>Portable Handset |                                                                                       | Page 182 of 302                 |



Plot 7-245. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 40)



Plot 7-246. Power Spectral Density Plot MIMO ANT1 (20MHz BW 802.11ax – Full Tones (UNII Band 1) – Ch. 48)

|                                         |                                               |                                       |                |                                 |
|-----------------------------------------|-----------------------------------------------|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMN976V                      | <b>PCTEST</b><br>ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT<br>(CERTIFICATION) | <b>SAMSUNG</b> | Approved by:<br>Quality Manager |
| Test Report S/N:<br>1M1905130071-09.A3L | Test Dates:<br>05/14 - 07/02/2019             | EUT Type:<br>Portable Handset         |                | Page 183 of 302                 |