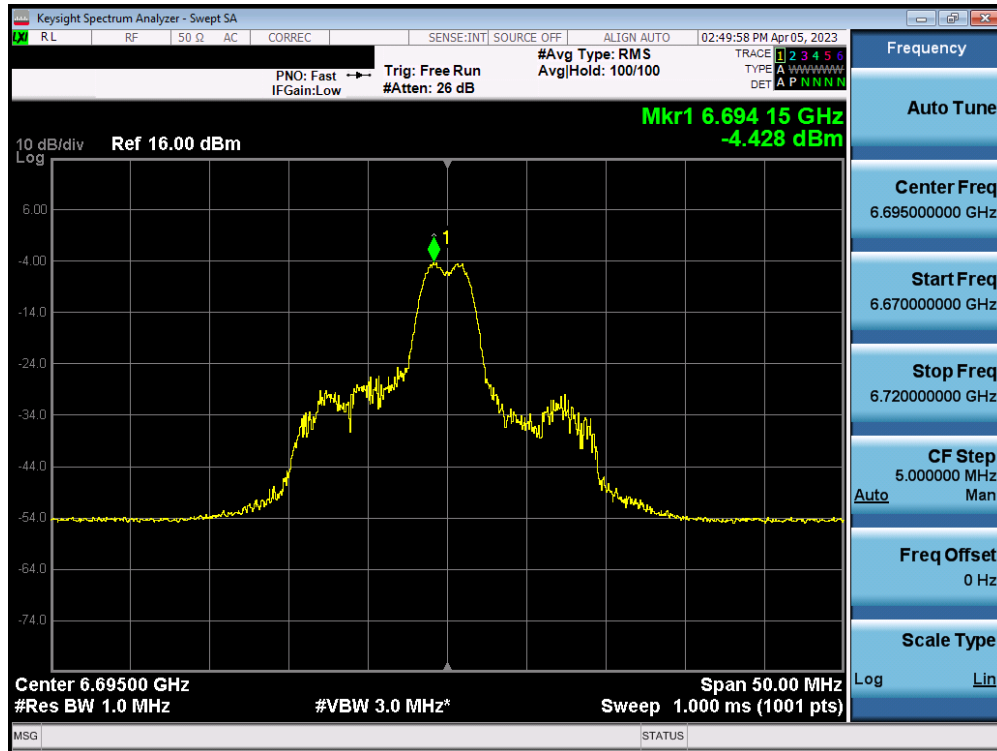
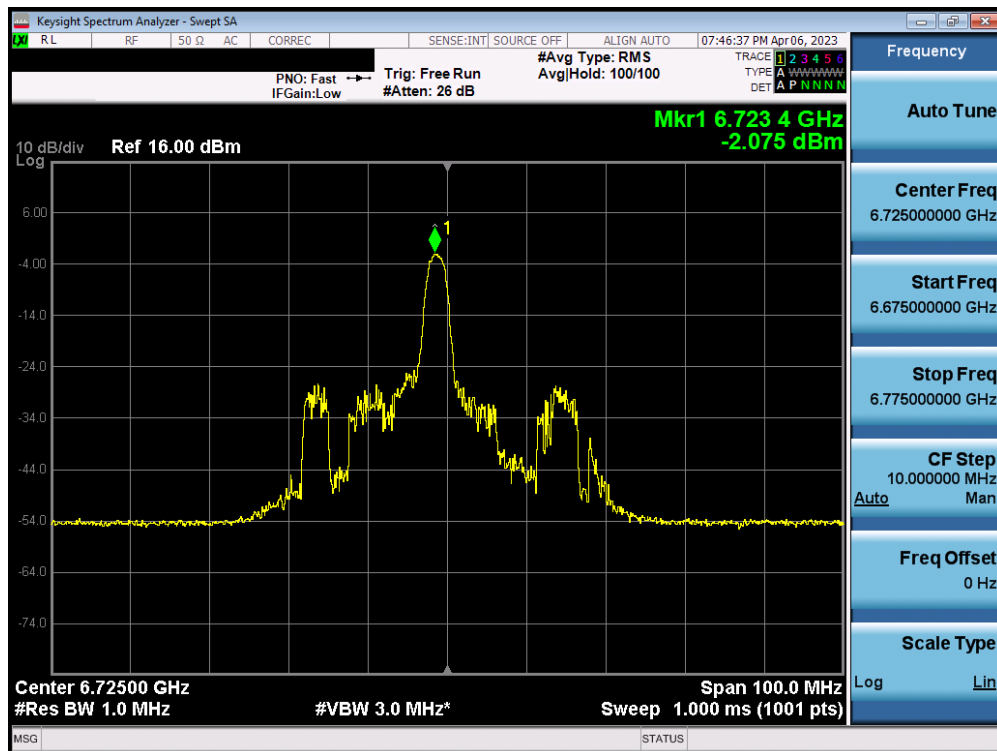


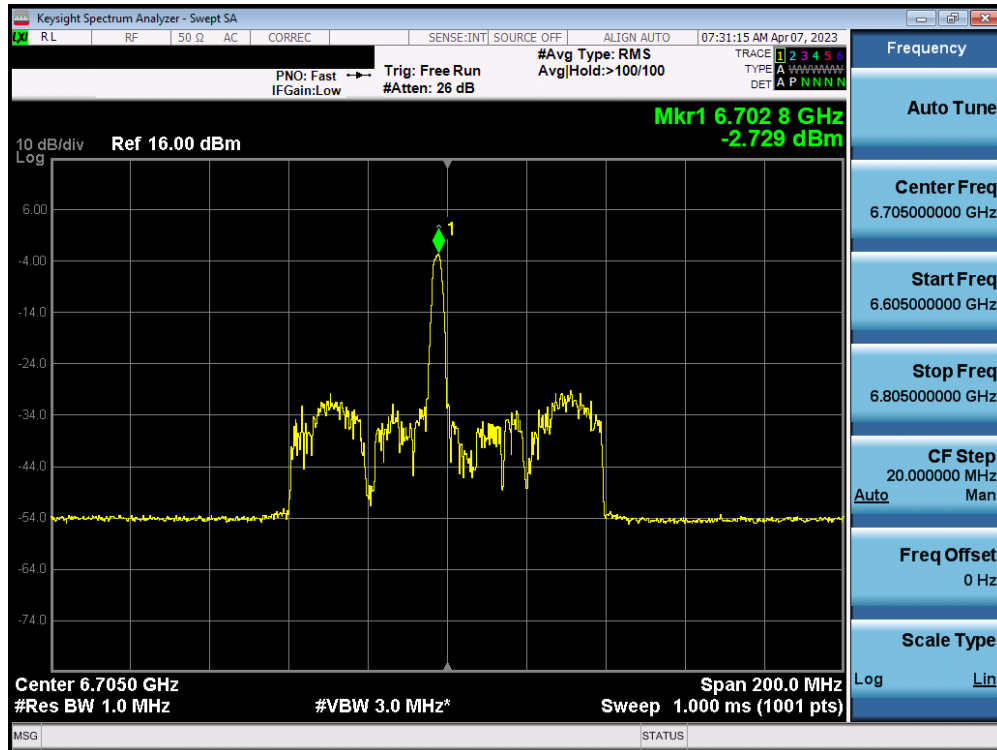


Plot 7-105. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 7) – Ch. 149)

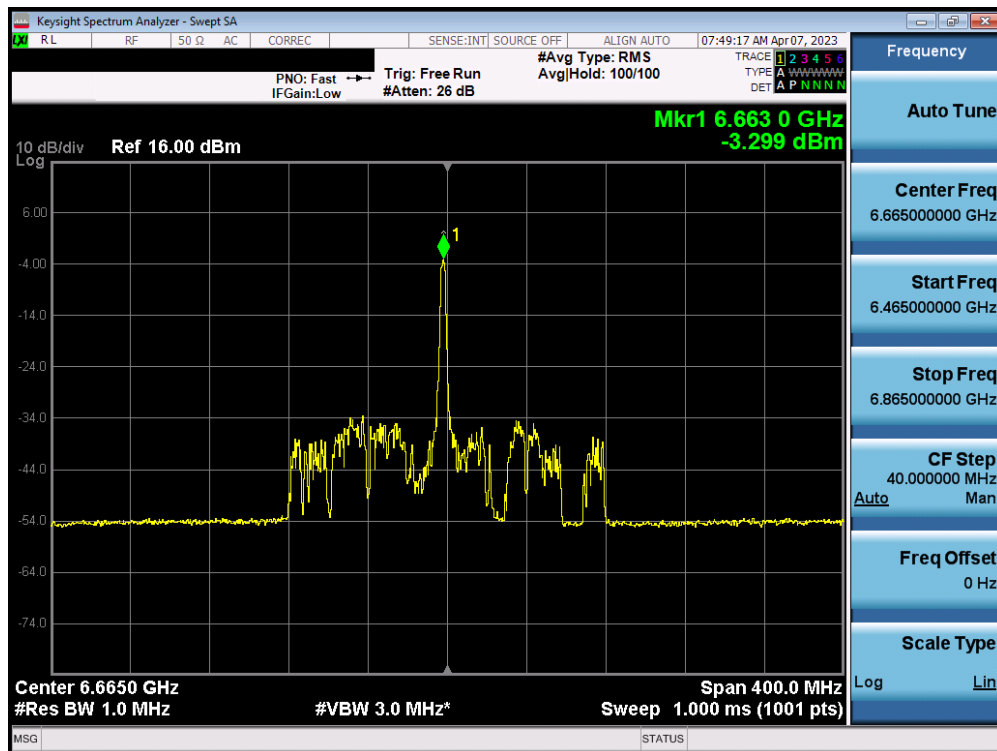


Plot 7-106. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 7) – Ch. 155)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 85 of 178                    |



Plot 7-107. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 7) – Ch. 151)

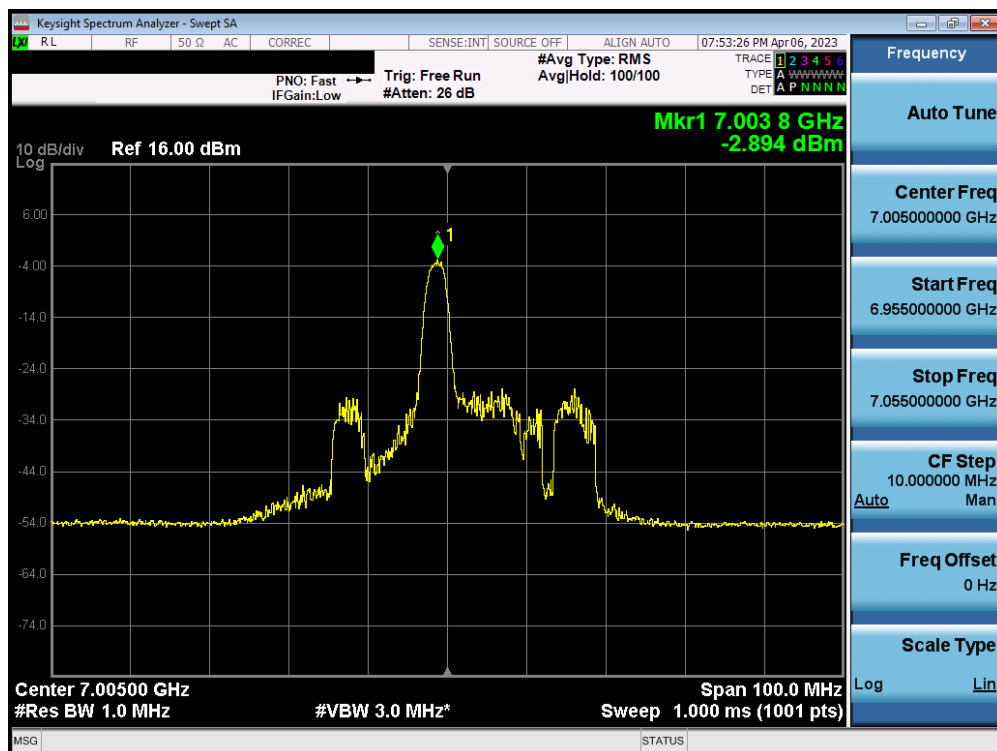


Plot 7-108. Power Spectral Density Plot MIMO ANT2 (160MHz BW 802.11ax (26 Tones) (UNII Band 7) – Ch. 143)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 86 of 178                    |



Plot 7-109. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 8) – Ch. 209)

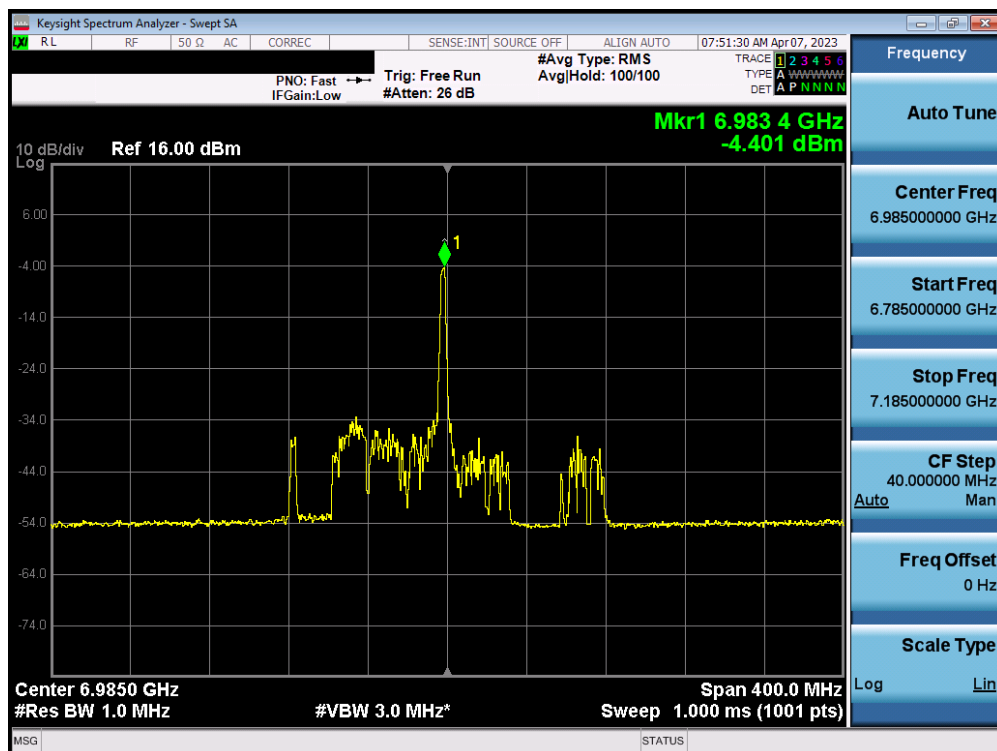


Plot 7-110. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 8) – Ch. 211)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 87 of 178                    |

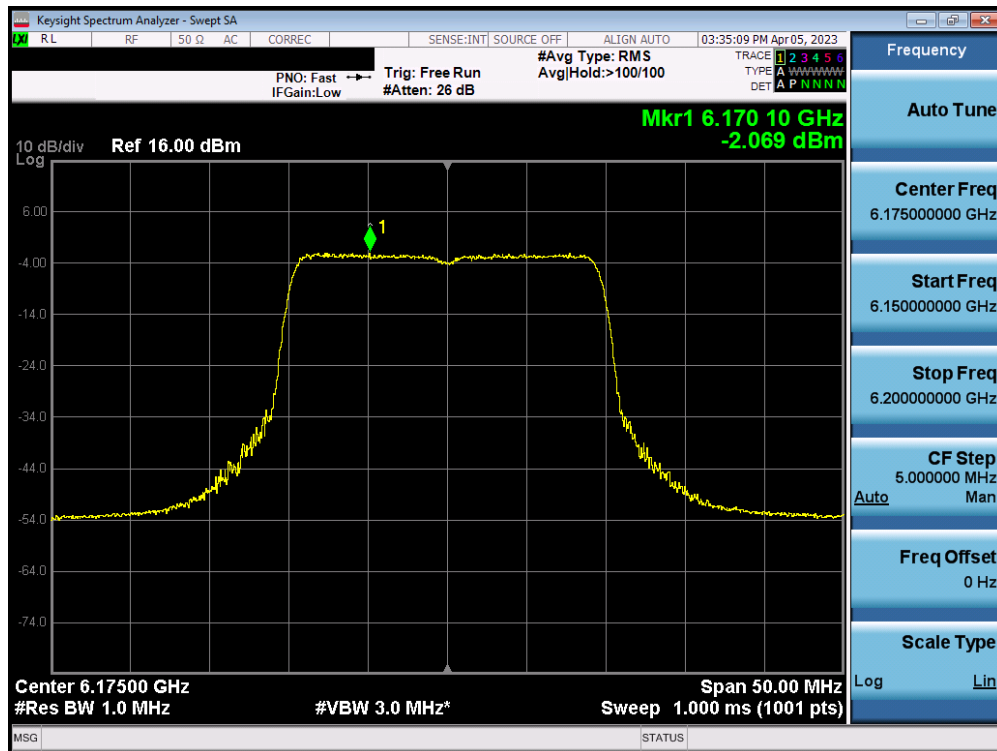


Plot 7-111. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 8) – Ch. 199)

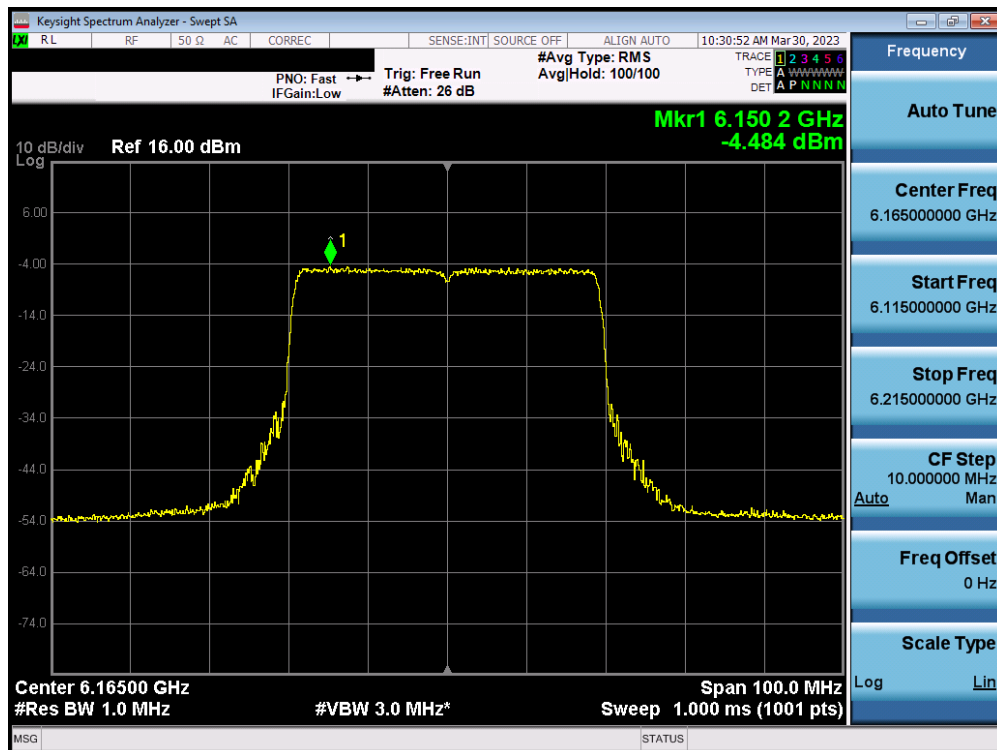


Plot 7-112. Power Spectral Density Plot MIMO ANT2 (160MHz BW 802.11ax (26 Tones) (UNII Band 8) – Ch. 207)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 88 of 178                    |

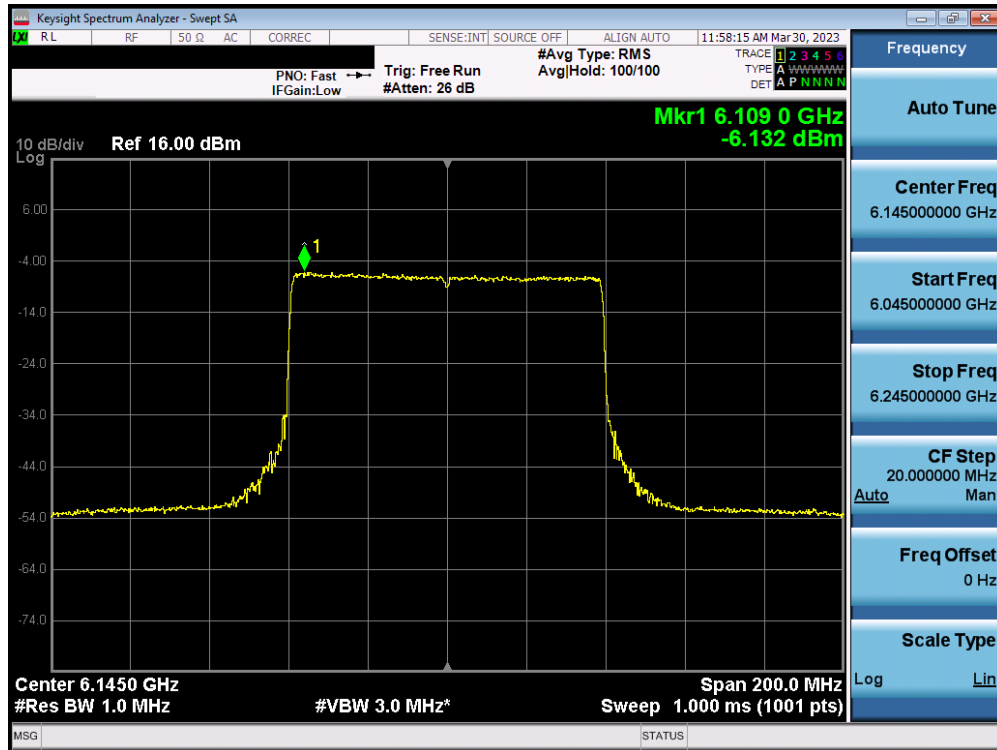


Plot 7-113. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax (Full Tone) (UNII Band 5) – Ch. 45)

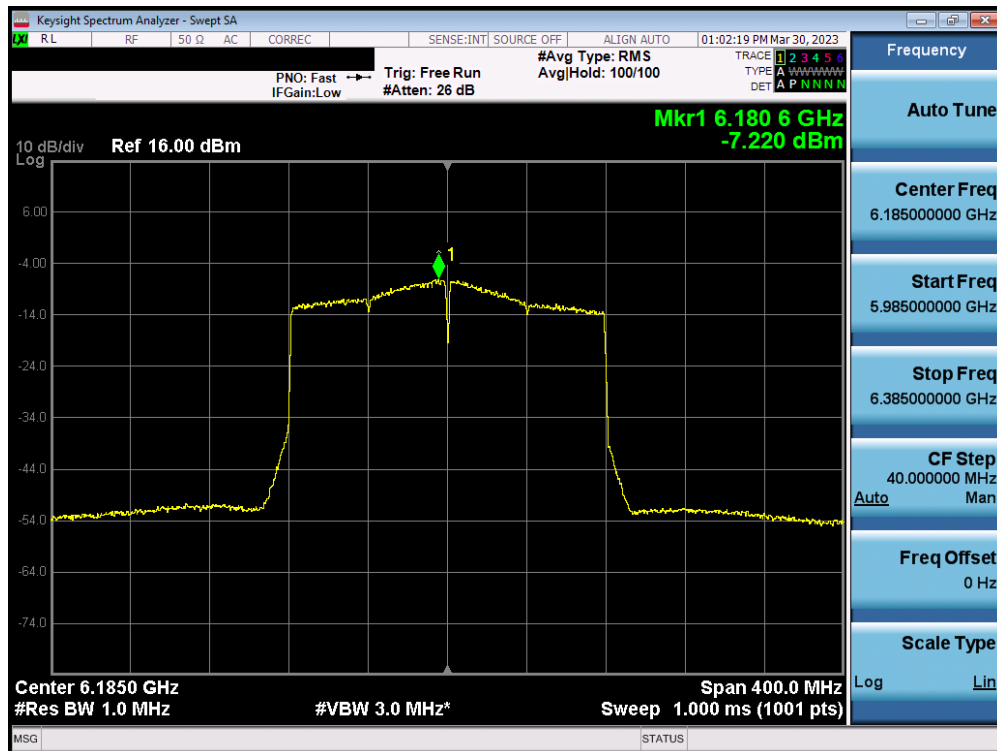


Plot 7-114. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax (Full Tone) (UNII Band 5) – Ch. 43)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 89 of 178                    |

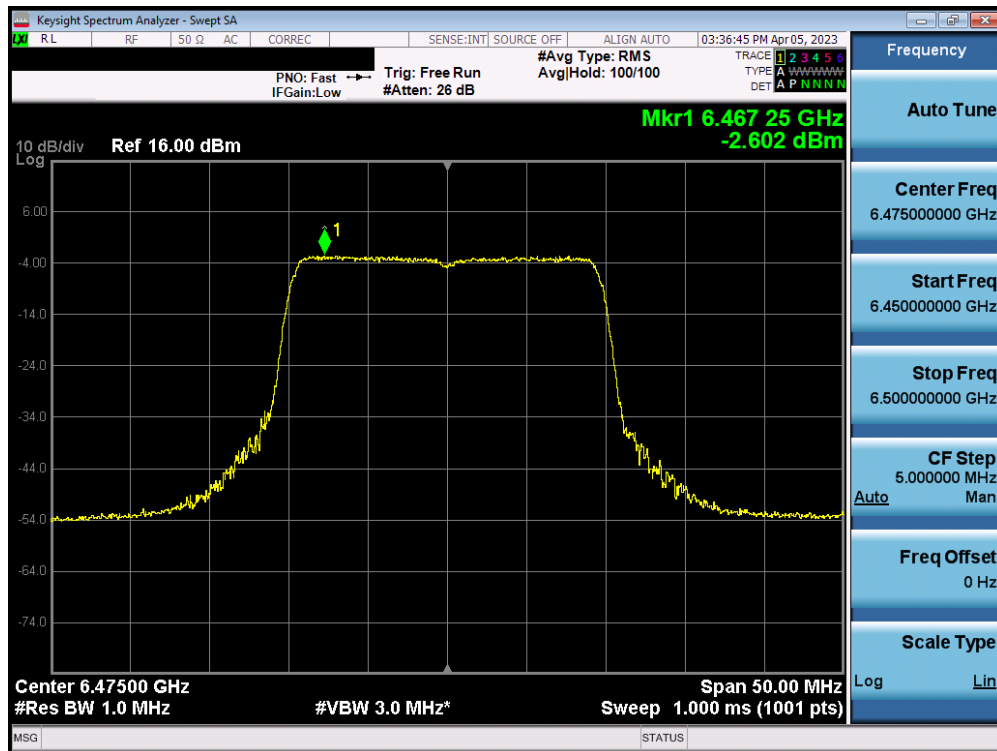


Plot 7-115. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax (Full Tone) (UNII Band 5) – Ch. 39)

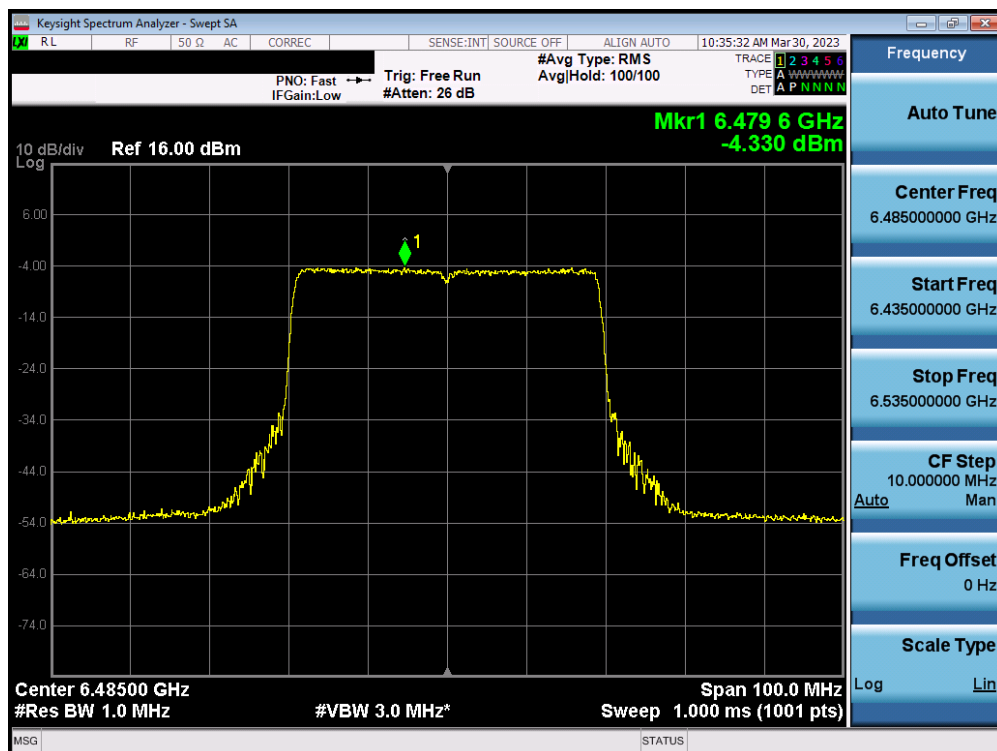


Plot 7-116. Power Spectral Density Plot MIMO ANT2 (160MHz BW 802.11ax (Full Tone) (UNII Band 5) – Ch. 47)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 90 of 178                    |

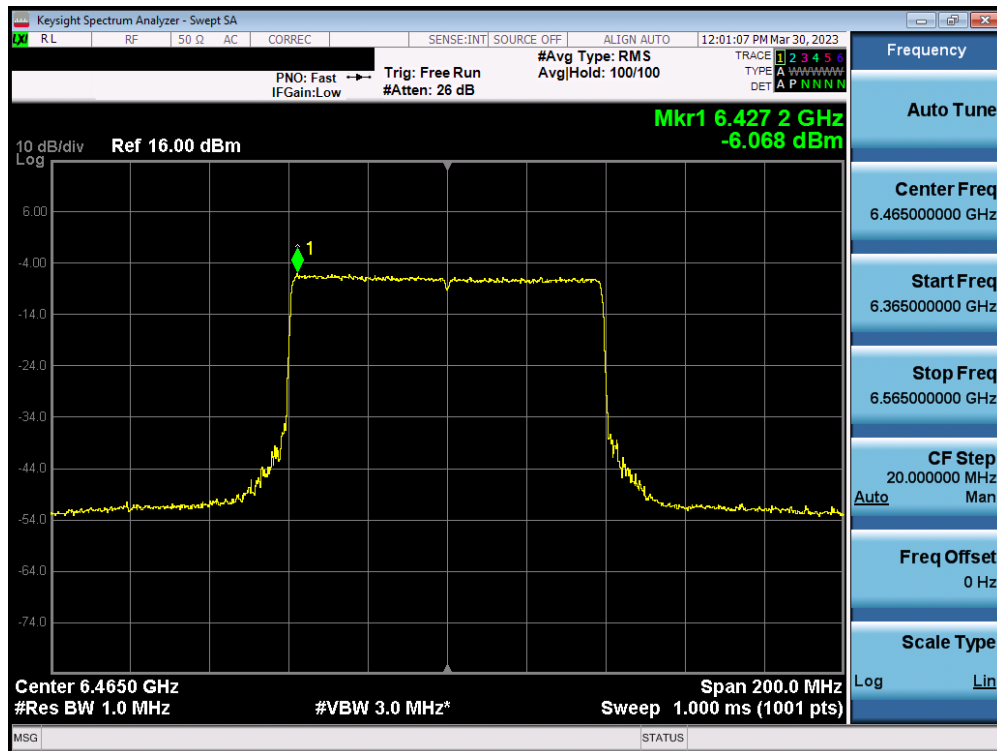


Plot 7-117. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax (Full Tone) (UNII Band 6) – Ch. 105)

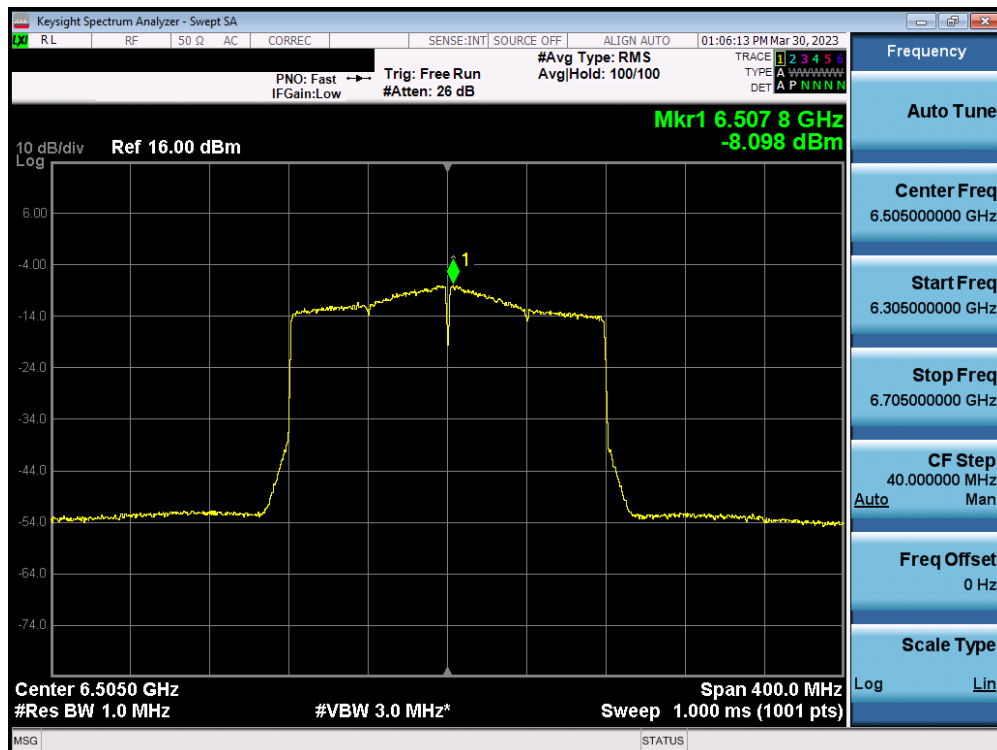


Plot 7-118. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax (Full Tone) (UNII Band 6) – Ch. 107)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 91 of 178                    |

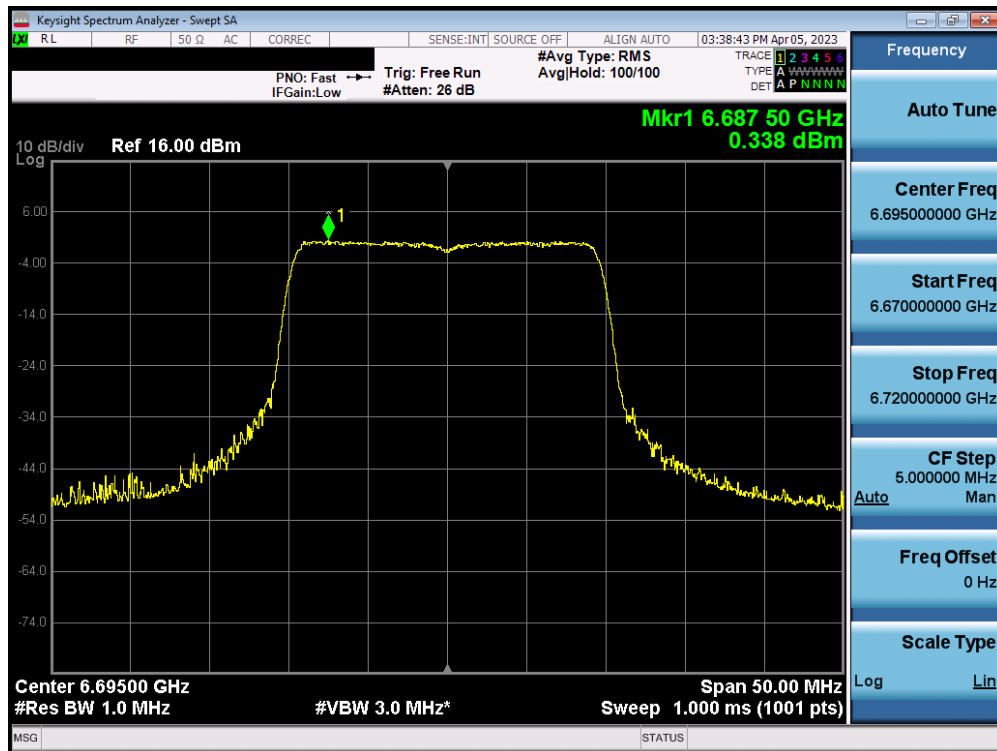


Plot 7-119. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax (Full Tone) (UNII Band 6) – Ch. 103)

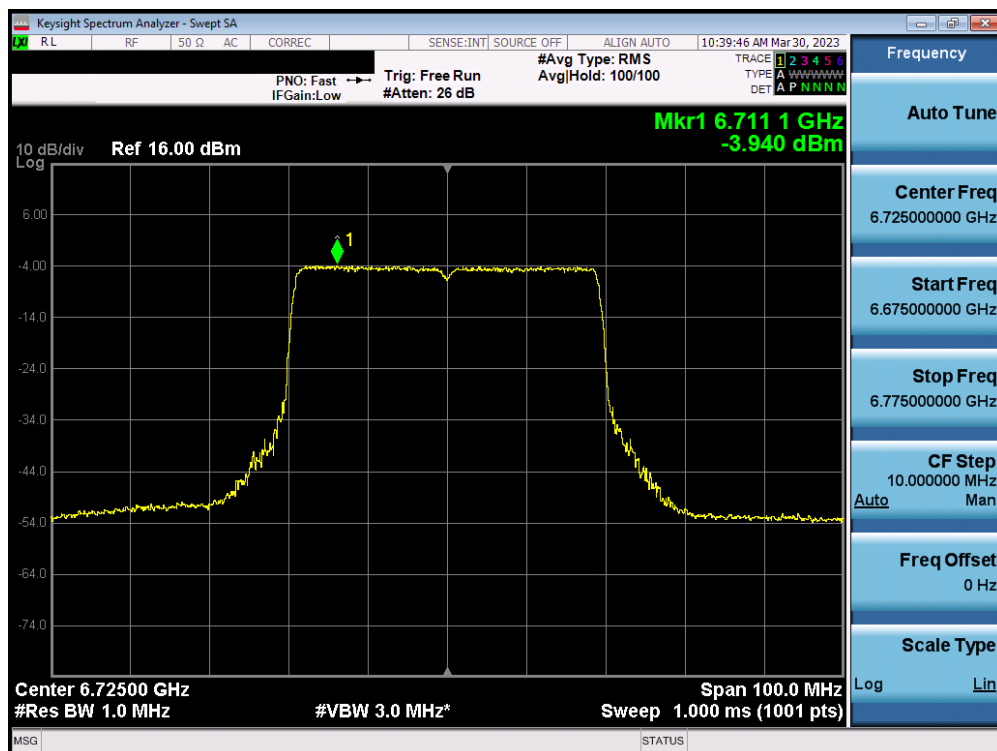


Plot 7-120. Power Spectral Density Plot MIMO ANT2 (160MHz BW 802.11ax (Full Tone) (UNII Band 6) – Ch. 111)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 92 of 178                    |

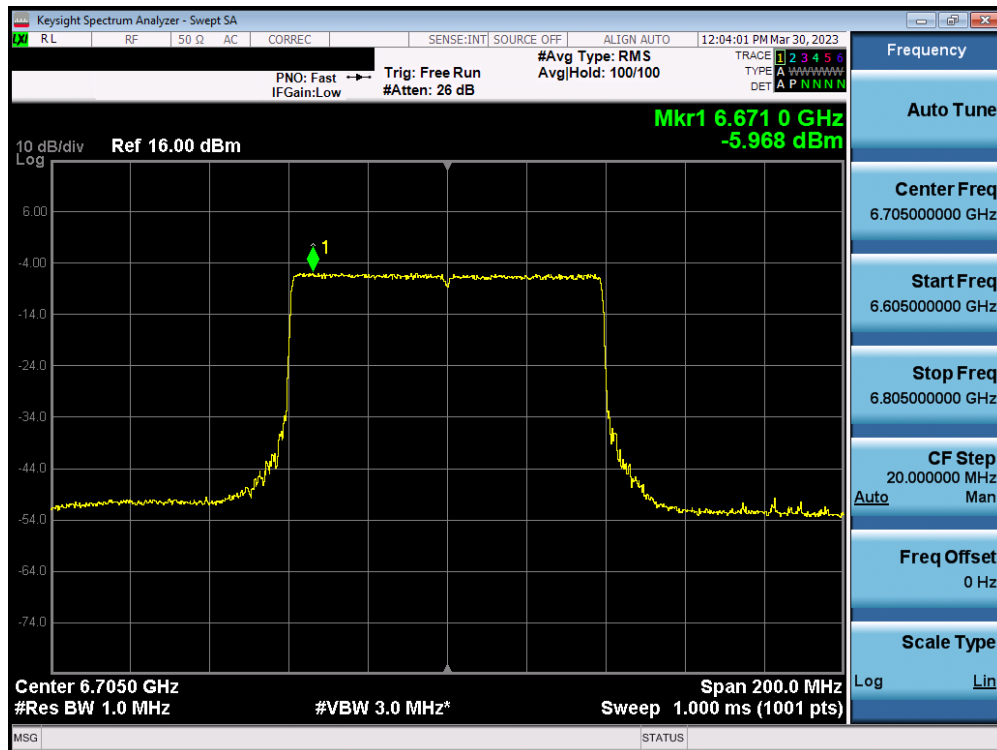


Plot 7-121. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax (Full Tone) (UNII Band 7) – Ch. 149)

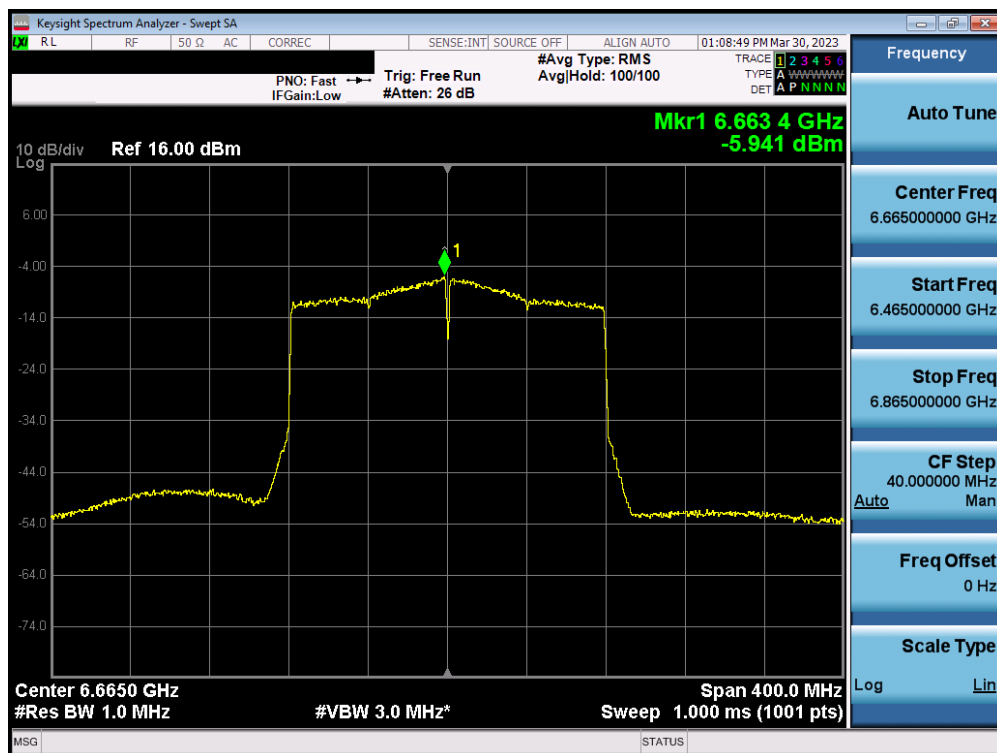


Plot 7-122. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax (Full Tone) (UNII Band 7) – Ch. 155)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 93 of 178                    |

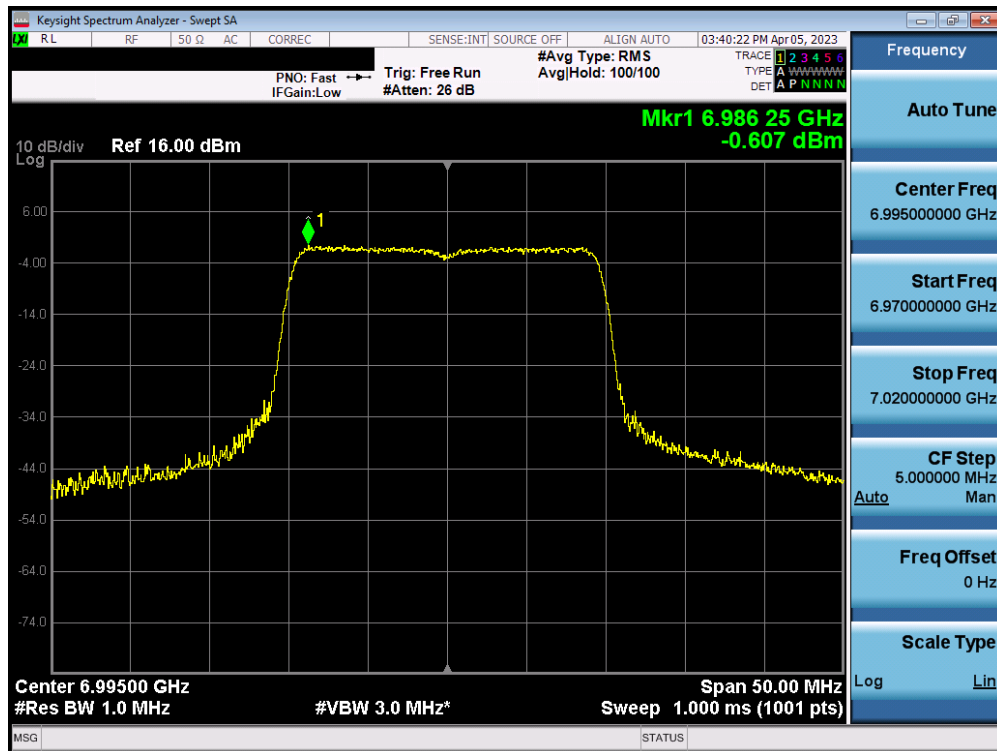


Plot 7-123. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax (Full Tone) (UNII Band 7) – Ch. 151)

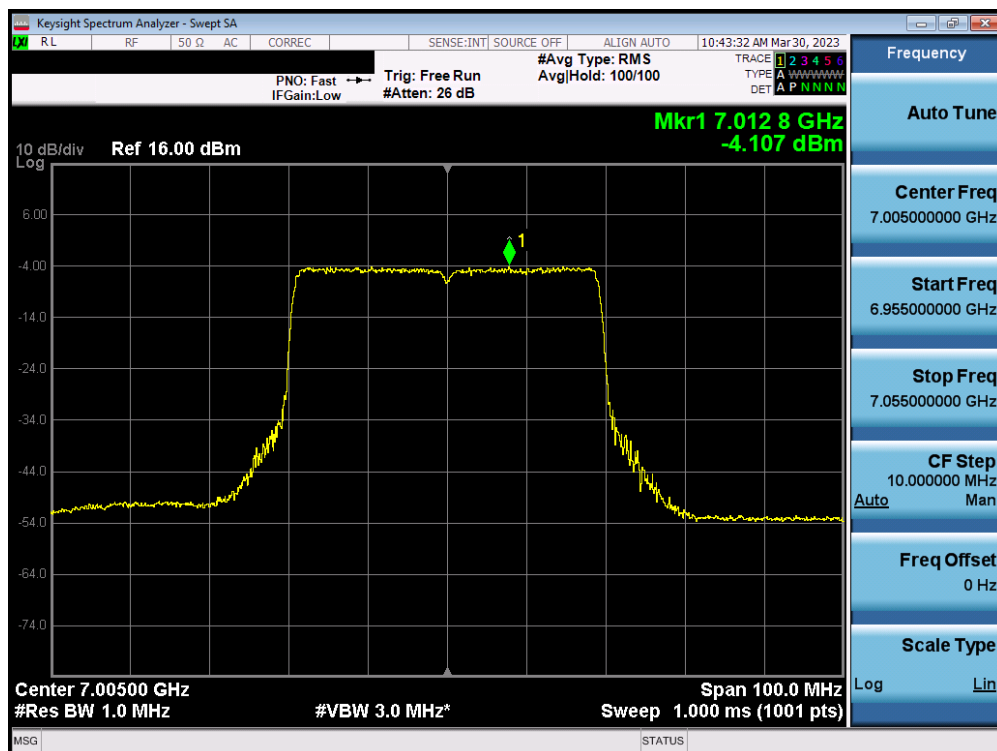


Plot 7-124. Power Spectral Density Plot MIMO ANT2 (160MHz BW 802.11ax (Full Tone) (UNII Band 7) – Ch. 143)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 94 of 178                    |

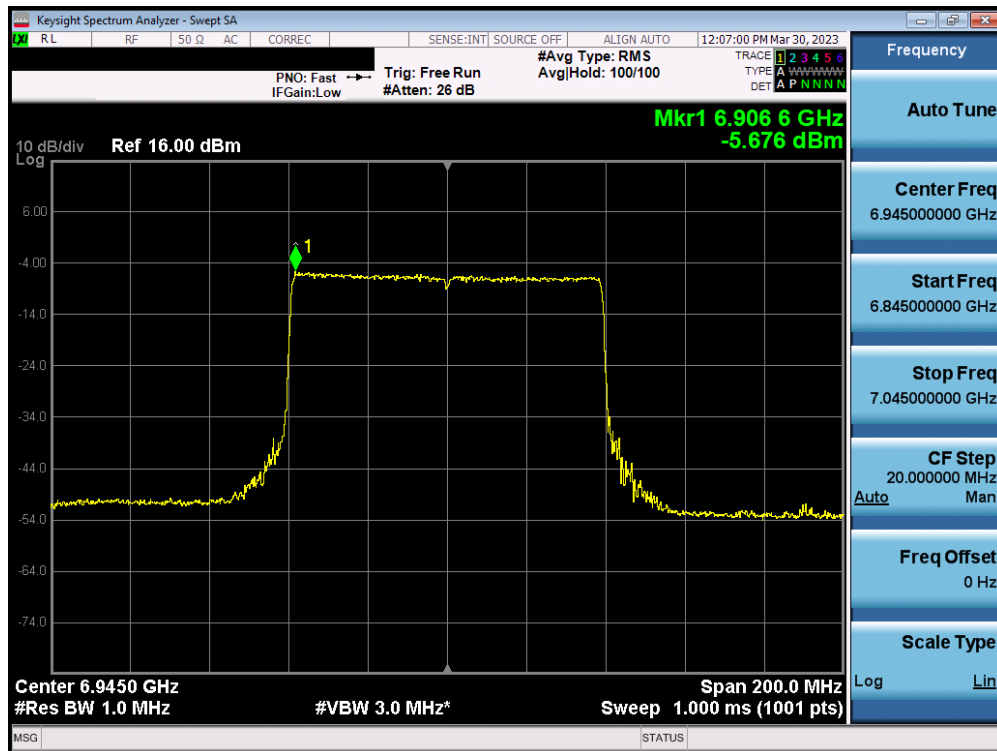


Plot 7-125. Power Spectral Density Plot MIMO ANT2 (20MHz BW 802.11ax (Full Tone) (UNII Band 8) – Ch. 209)

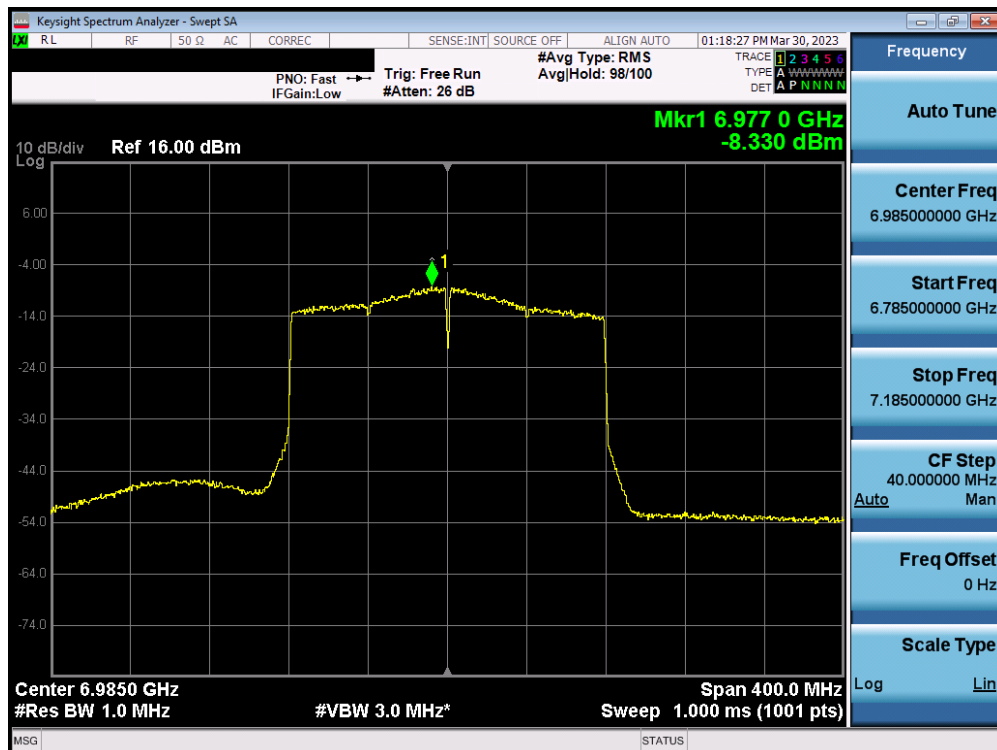


Plot 7-126. Power Spectral Density Plot MIMO ANT2 (40MHz BW 802.11ax (Full Tone) (UNII Band 8) – Ch. 211)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 95 of 178                    |



Plot 7-127. Power Spectral Density Plot MIMO ANT2 (80MHz BW 802.11ax (Full Tone) (UNII Band 8) – Ch. 199)



Plot 7-128. Power Spectral Density Plot MIMO ANT2 (160MHz BW 802.11ax (Full Tone) (UNII Band 8) – Ch. 207)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 96 of 178                    |

**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 as shown in the section above. The measured values were then summed in linear power units then converted back to dBm.

Per ANSI C63.10-2013 Section 14.4.3, the directional gain is calculated using the following formula, where GN is the gain of the nth antenna and NANT, the total number of antennas used.

$$\text{Directional gain} = 10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{\text{ANT}}] \text{ dBi}$$

**Sample MIMO Calculation:**

At 5935MHz in 802.11ax (20MHz BW) mode, the average conducted power spectral density was measured to be -3.38 dBm for Antenna-1 and -3.86 dBm for Antenna-2.

Antenna 1 + Antenna 2 = MIMO

$$(-3.38 \text{ dBm} + -3.86 \text{ dBm}) = (0.459 \text{ mW} + 0.411 \text{ mW}) = 0.870 \text{ mW} = 0.60 \text{ dBm}$$

**Sample e.i.r.p Power Spectral Density Calculation:**

At 5935 MHz in 802.11ax (20MHz BW) mode, the average MIMO power density was calculated to be 0.60 dBm with directional gain of -7.55 dBi.

$$\text{e.i.r.p. Power Spectral Density(dBm)} = \text{Power Spectral Density (dBm)} + \text{Ant gain (dBi)}$$

$$0.60 \text{ dBm} + -7.55 \text{ dBi} = -8.15 \text{ dBm}$$

|                                                |                                       |                                      |                                          |
|------------------------------------------------|---------------------------------------|--------------------------------------|------------------------------------------|
| <b>FCC ID:</b> A3LSMF731B                      | <b>MEASUREMENT REPORT</b>             |                                      | <b>Approved by:</b><br>Technical Manager |
| <b>Test Report S/N:</b><br>1M2303170032-14.A3L | <b>Test Dates:</b><br>3/4 – 5/26/2023 | <b>EUT Type:</b><br>Portable Handset | Page 97 of 178                           |

## 7.5 In-Band Emissions

### Test Overview and Limit

The spectrum analyzer was connected to the antenna terminal while the EUT was operating at its maximum duty cycle, at its maximum power control level, as defined in ANSI C63.10-2013, and at the appropriate frequencies.

**For transmitters operating within the 5.925-7.125 GHz bands: Power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 dB.**

### Test Procedure Used

KDB 987594 D02 v01r01

### Test Settings

1. Connect output of the antenna port to a spectrum analyzer or EMI receiver, with appropriate attenuation, as to not damage the instrumentation.
2. Set the reference level of the measuring equipment in accordance with procedure 4.1.5.2 of ANSI C63.10-2013.
3. Measure the 26 dB EBW using the test procedure 12.4.1 of ANSI C63.10-2013. (This will be used to determine the channel edge.)
4. Measure the power spectral density (which will be used for emissions mask reference) using the following procedure:
  - a) Set the span to encompass the entire 26 dB EBW of the signal.
  - b) Set RBW = same RBW used for 26 dB EBW measurement.
  - c) Set VBW  $\geq 3 \times$  RBW
  - d) Number of points in sweep  $\geq [2 \times \text{span} / \text{RBW}]$ .
  - e) Sweep time = auto.
  - f) Detector = RMS (i.e., power averaging)
  - g) Trace average at least 100 traces in power averaging (rms) mode.
  - h) Use the peak search function on the instrument to find the peak of the spectrum.
5. For the purposes of developing the emission mask, the channel bandwidth is defined as the 26 dB EBW.
6. Using the measuring equipment limit line function, develop the emissions mask based on the following requirements. The emissions power spectral density must be reduced below the peak power spectral density (in dB) as follows:
  - a) Suppressed by 20 dB at 1 MHz outside of the channel edge. (The channel edge is defined as the 26-dB point on either side of the carrier center frequency.)
  - b) Suppressed by 28 dB at one channel bandwidth from the channel center.
  - c) Suppressed by 40 dB at one- and one-half times the channel bandwidth from the channel center.
7. Adjust the span to encompass the entire mask as necessary.
8. Clear trace.
9. Trace average at least 100 traces in power averaging (rms) mode.
10. Adjust the reference level as necessary so that the crest of the channel touches the top of the emission mask.

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 98 of 178                    |

**Test Setup**

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



**Figure 7-4. Test Instrument & Measurement Setup**

**Test Notes**

None.

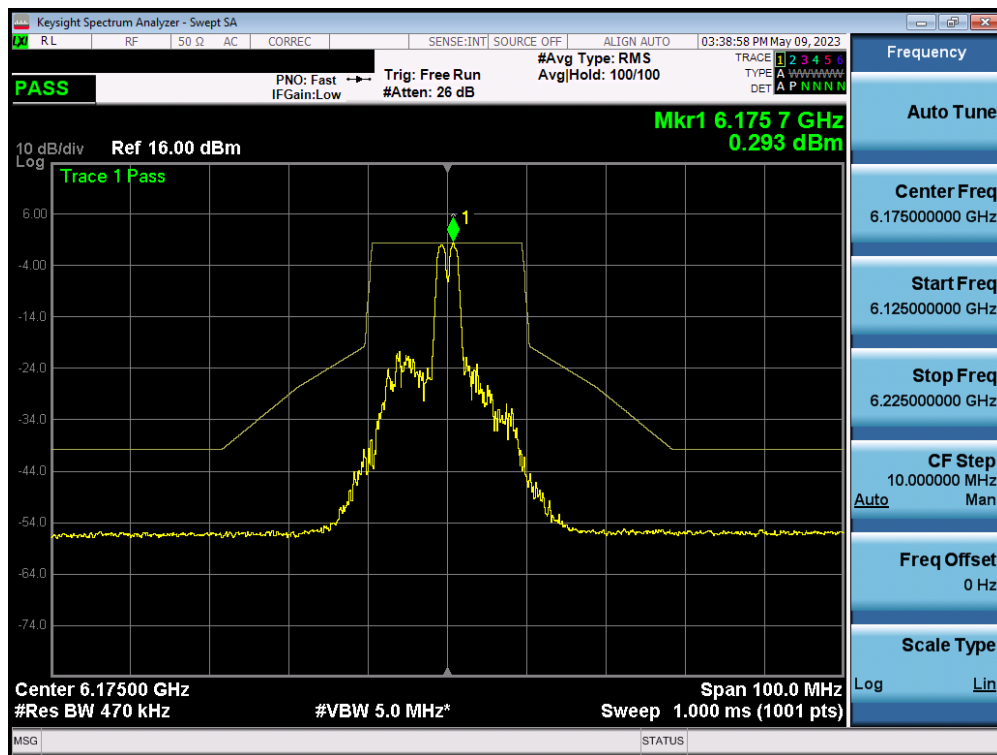
|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 99 of 178                    |

|        | Frequency<br>[MHz] | Channel | 802.11<br>MODE | Antenna-1<br>Emission Mask | Antenna-2<br>Emission Mask |
|--------|--------------------|---------|----------------|----------------------------|----------------------------|
| Band 5 | 5935               | 2       | ax (20MHz)     | Pass                       | Pass                       |
|        | 6175               | 45      | ax (20MHz)     | Pass                       | Pass                       |
|        | 6415               | 93      | ax (20MHz)     | Pass                       | Pass                       |
|        | 5965               | 3       | ax (40MHz)     | Pass                       | Pass                       |
|        | 6165               | 43      | ax (40MHz)     | Pass                       | Pass                       |
|        | 6405               | 91      | ax (40MHz)     | Pass                       | Pass                       |
|        | 5985               | 7       | ax (80MHz)     | Pass                       | Pass                       |
|        | 6145               | 39      | ax (80MHz)     | Pass                       | Pass                       |
|        | 6385               | 87      | ax (80MHz)     | Pass                       | Pass                       |
|        | 6025               | 15      | ax (160MHz)    | Pass                       | Pass                       |
|        | 6185               | 47      | ax (160MHz)    | Pass                       | Pass                       |
|        | 6345               | 79      | ax (160MHz)    | Pass                       | Pass                       |
| Band 6 | 6435               | 97      | ax (20MHz)     | Pass                       | Pass                       |
|        | 6475               | 105     | ax (20MHz)     | Pass                       | Pass                       |
|        | 6515               | 113     | ax (20MHz)     | Pass                       | Pass                       |
|        | 6445               | 99      | ax (40MHz)     | Pass                       | Pass                       |
|        | 6485               | 107     | ax (40MHz)     | Pass                       | Pass                       |
|        | 6525               | 115     | ax (40MHz)     | Pass                       | Pass                       |
|        | 6465               | 103     | ax (80MHz)     | Pass                       | Pass                       |
|        | 6505               | 111     | ax (160MHz)    | Pass                       | Pass                       |
| Band 7 | 6535               | 117     | ax (20MHz)     | Pass                       | Pass                       |
|        | 6695               | 149     | ax (20MHz)     | Pass                       | Pass                       |
|        | 6875               | 185     | ax (20MHz)     | Pass                       | Pass                       |
|        | 6565               | 123     | ax (40MHz)     | Pass                       | Pass                       |
|        | 6685               | 155     | ax (40MHz)     | Pass                       | Pass                       |
|        | 6845               | 179     | ax (40MHz)     | Pass                       | Pass                       |
|        | 6545               | 119     | ax (80MHz)     | Pass                       | Pass                       |
|        | 6705               | 151     | ax (80MHz)     | Pass                       | Pass                       |
|        | 6865               | 183     | ax (80MHz)     | Pass                       | Pass                       |
|        | 6665               | 143     | ax (160MHz)    | Pass                       | Pass                       |
| Band 8 | 6825               | 175     | ax (160MHz)    | Pass                       | Pass                       |
|        | 6895               | 189     | ax (20MHz)     | Pass                       | Pass                       |
|        | 6995               | 209     | ax (20MHz)     | Pass                       | Pass                       |
|        | 7115               | 233     | ax (20MHz)     | Pass                       | Pass                       |
|        | 6885               | 187     | ax (40MHz)     | Pass                       | Pass                       |
|        | 6965               | 211     | ax (40MHz)     | Pass                       | Pass                       |
|        | 7085               | 227     | ax (40MHz)     | Pass                       | Pass                       |
|        | 6945               | 199     | ax (80MHz)     | Pass                       | Pass                       |
|        | 7025               | 215     | ax (80MHz)     | Pass                       | Pass                       |
|        | 6985               | 207     | ax (160MHz)    | Pass                       | Pass                       |

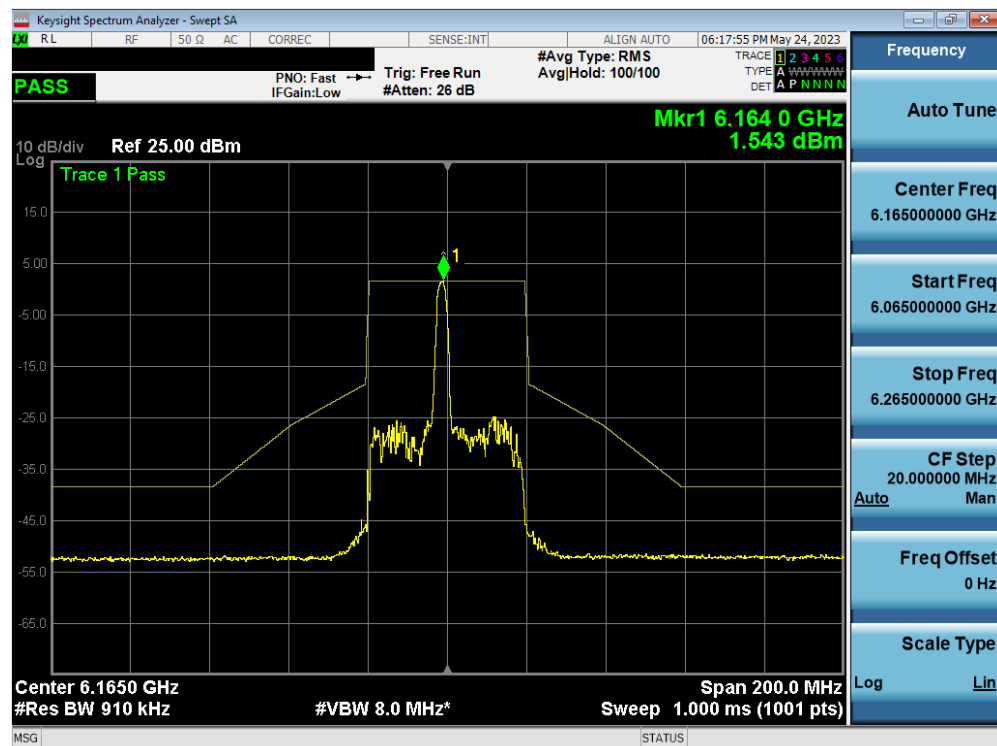
**Table 7-28. In-Band Emission Mask Test Results**

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 100 of 178                   |

## 7.5.1 MIMO Antenna-1 In-Band Emission Measurements

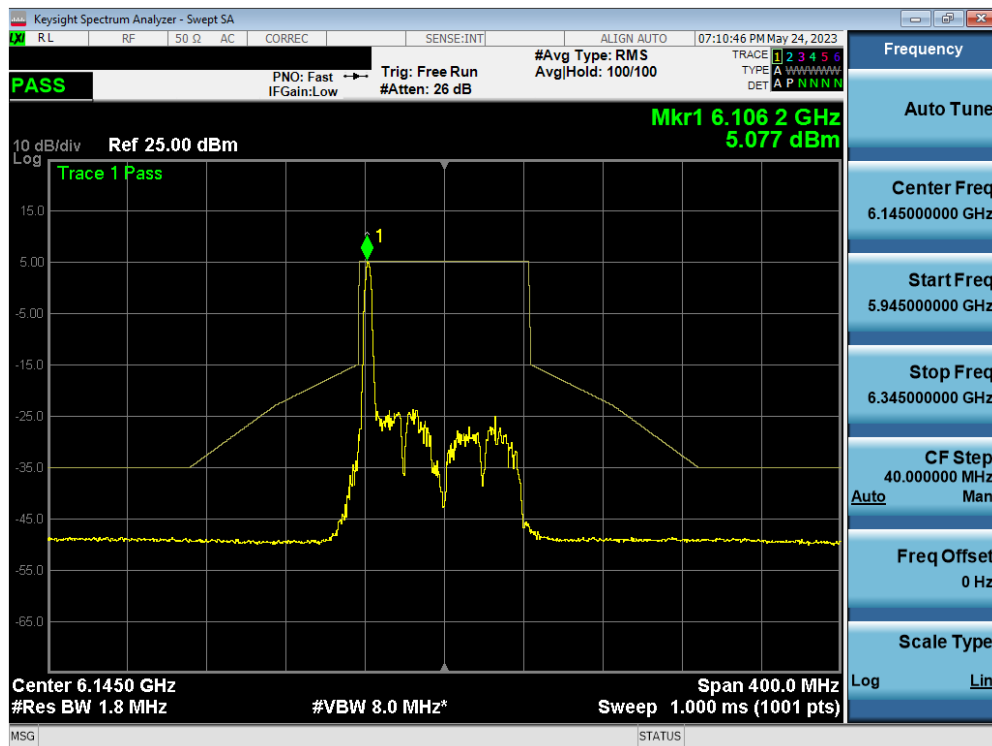


Plot 7-129. In-Band Emission Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 5) – Ch. 45)

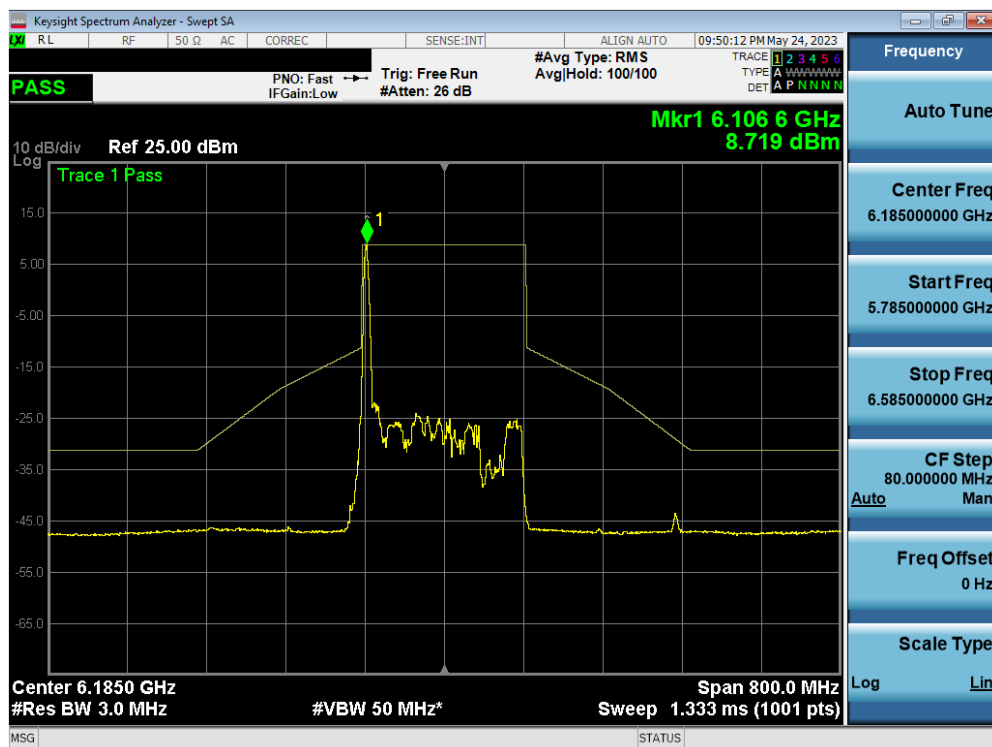


Plot 7-130. In-Band Emission Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 5) – Ch. 43)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 101 of 178                   |

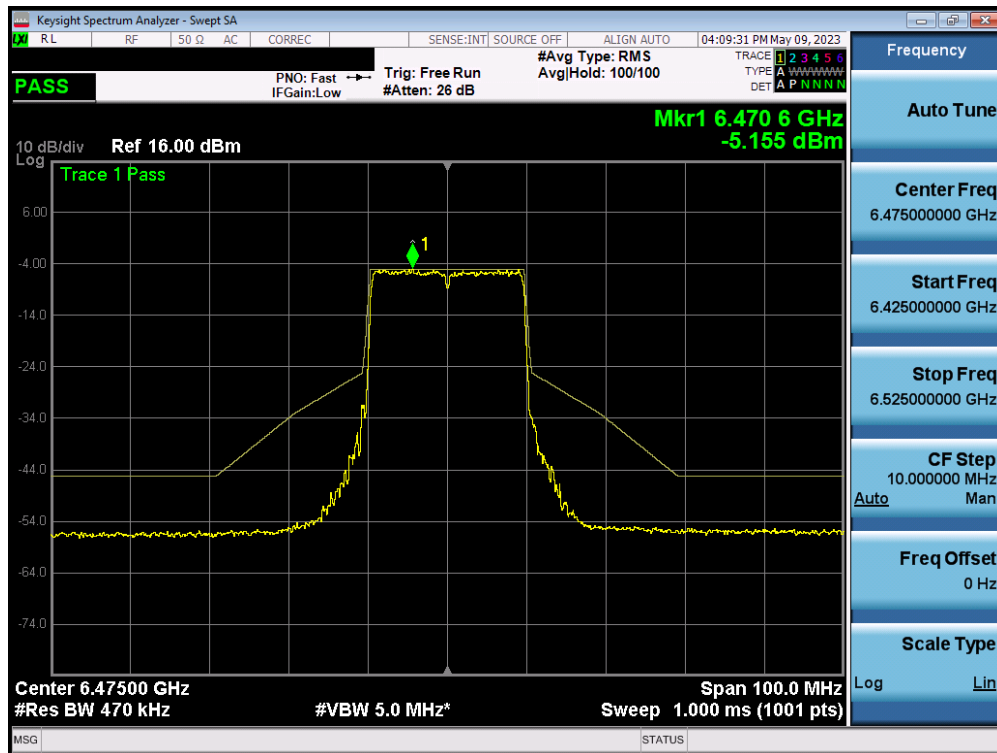


Plot 7-131. In-Band Emission Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 5) – Ch. 39)

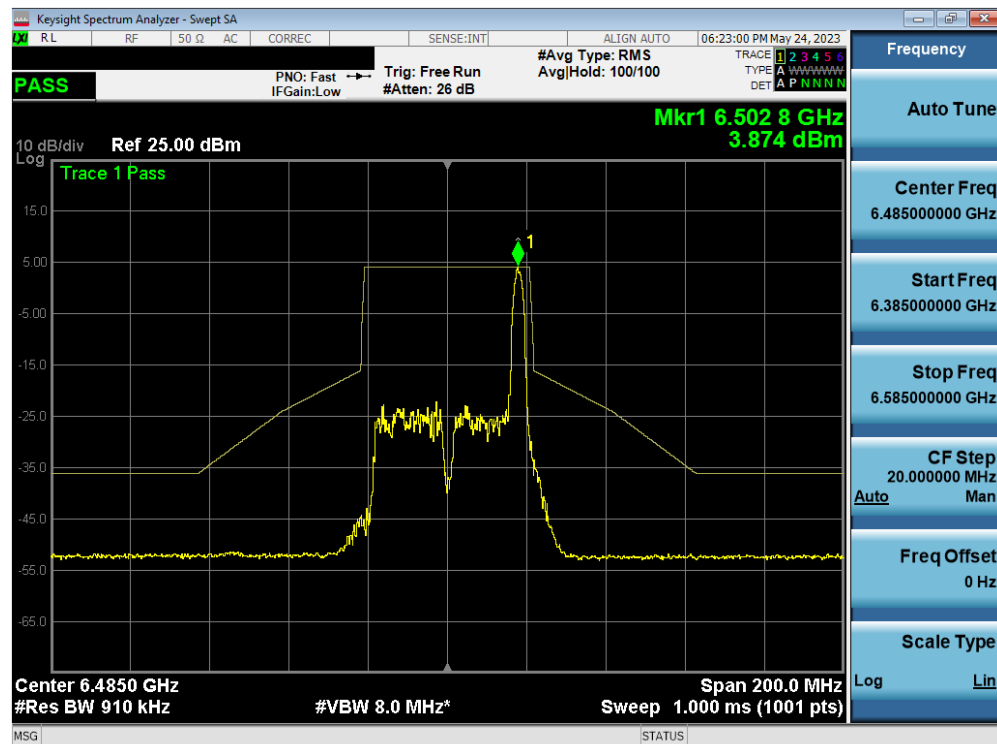


Plot 7-132. In-Band Emission Plot MIMO ANT1 (160MHz BW 802.11ax (26 Tones) (UNII Band 5) – Ch. 47)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 102 of 178                   |



Plot 7-133. In-Band Emission Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 6) – Ch. 105)

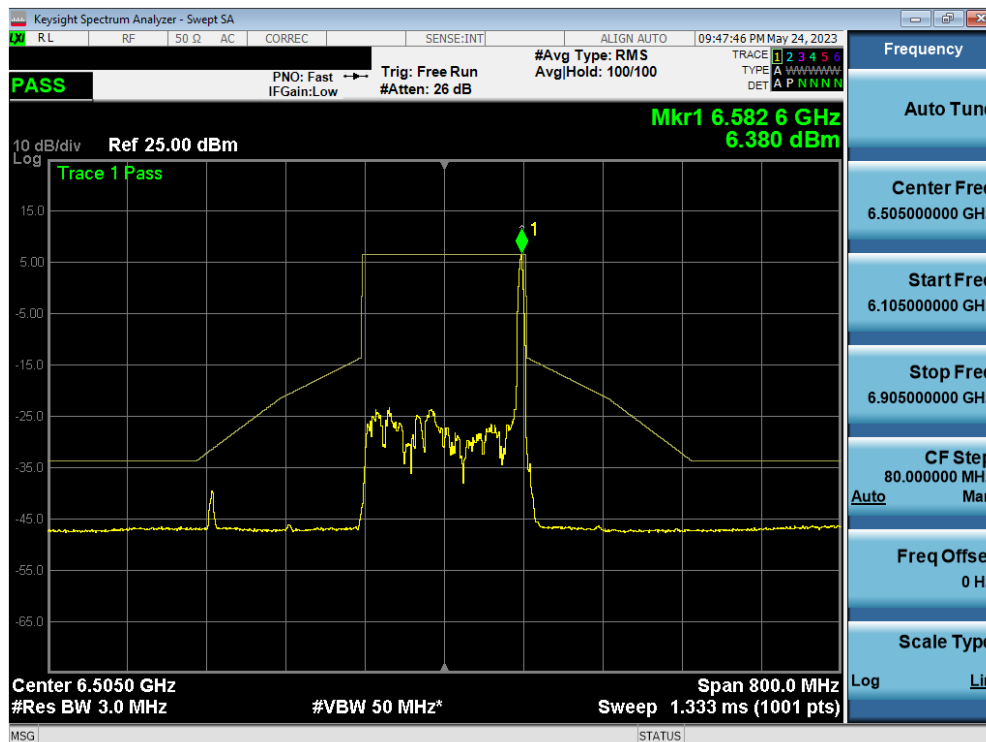


Plot 7-134. In-Band Emission Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 6) – Ch. 107)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 103 of 178                   |

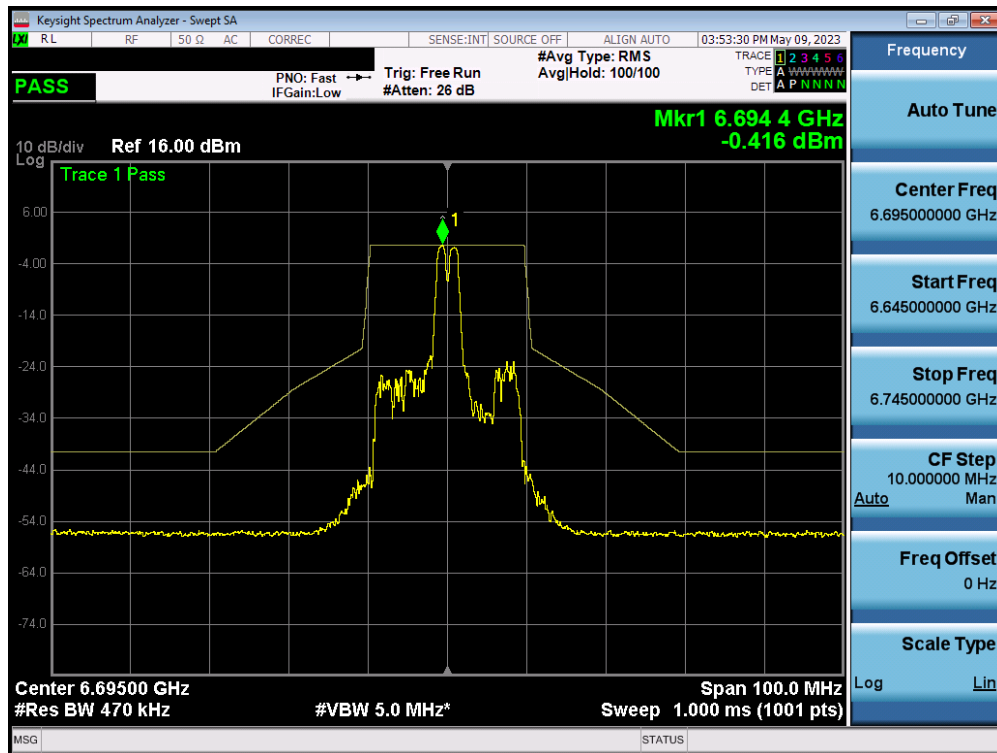


Plot 7-135. In-Band Emission Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 6) – Ch. 103)

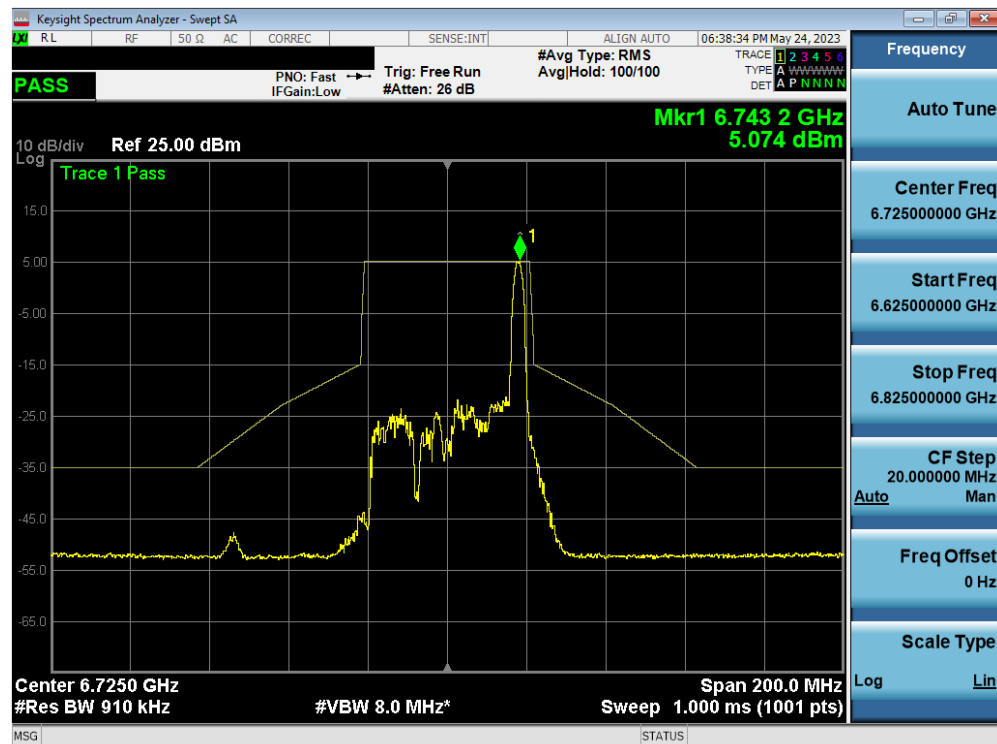


Plot 7-136. In-Band Emission Plot MIMO ANT1 (160MHz BW 802.11ax (26 Tones) (UNII Band 6) – Ch. 111)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 104 of 178                   |

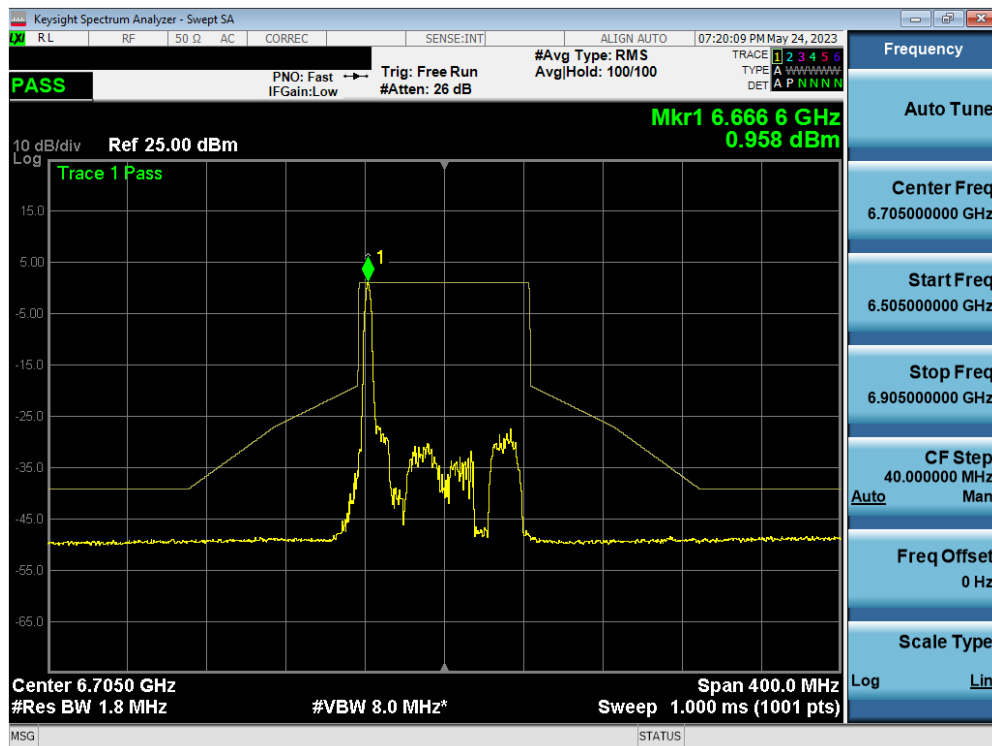


Plot 7-137. In-Band Emission Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 7) – Ch. 149)

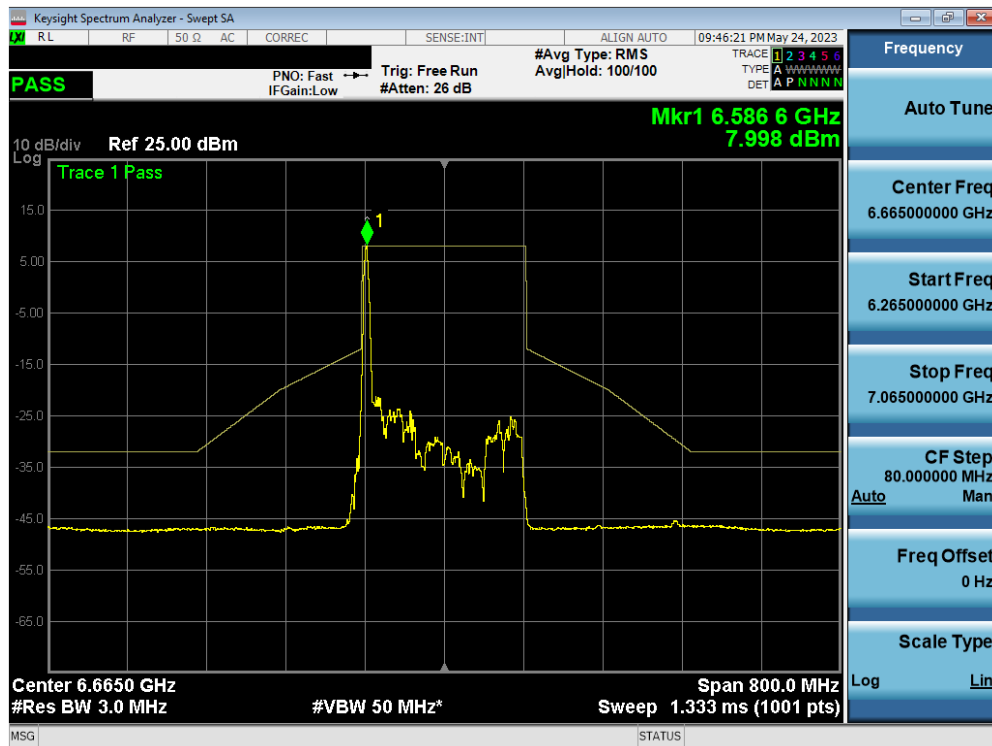


Plot 7-138. In-Band Emission Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 7) – Ch. 155)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 105 of 178                   |

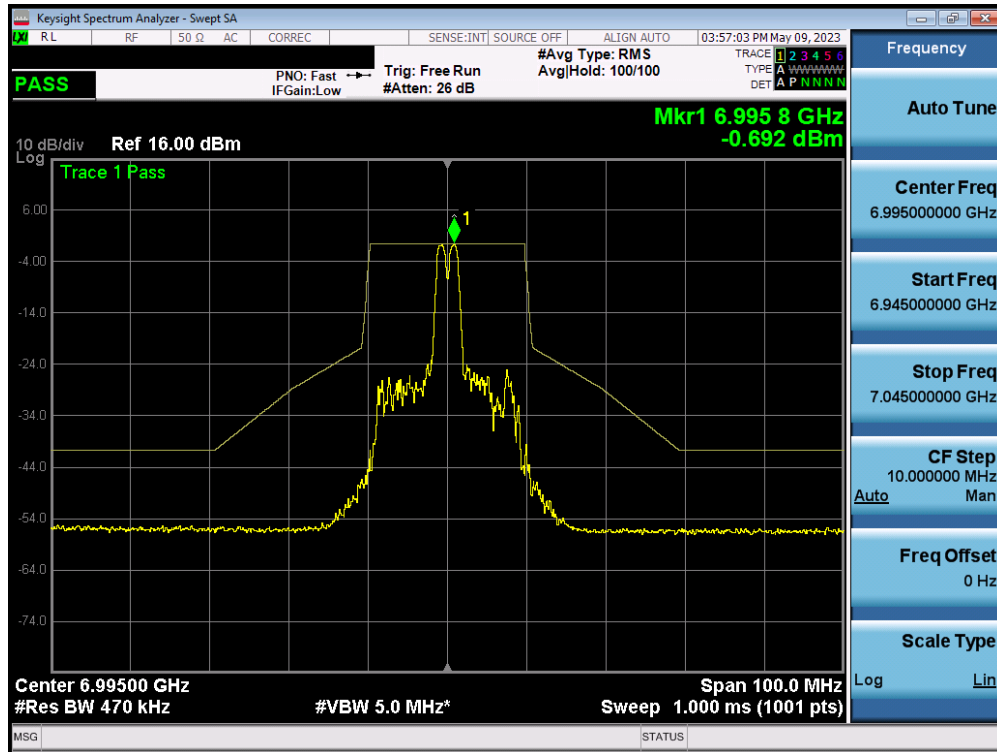


Plot 7-139. In-Band Emission Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 7) – Ch. 151)

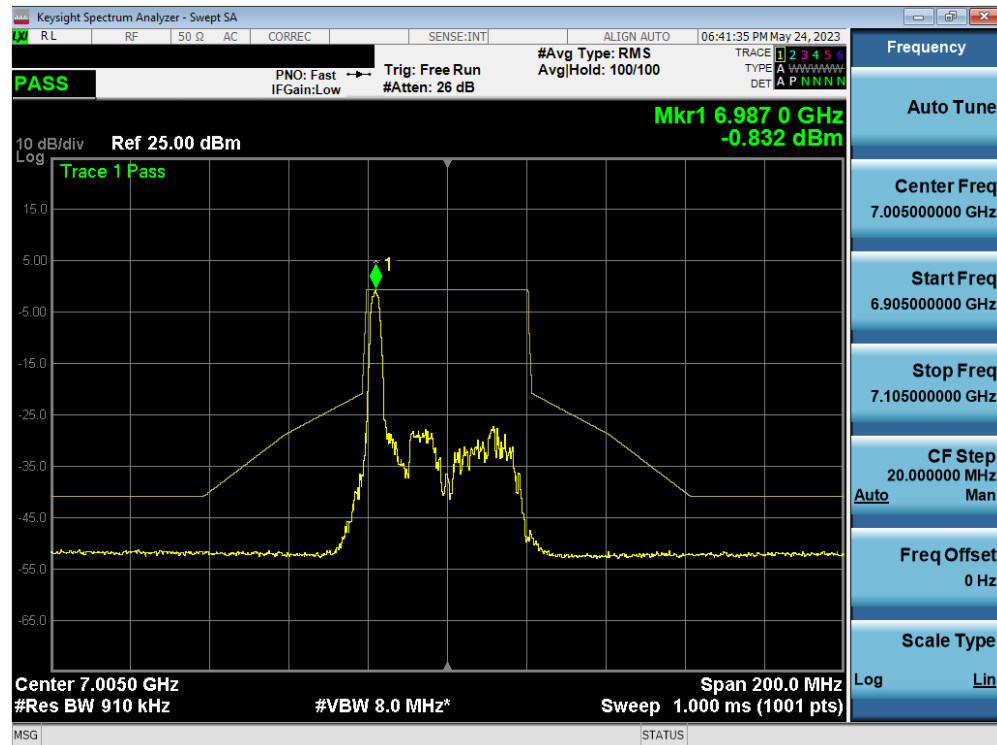


Plot 7-140. In-Band Emission Plot MIMO ANT1 (160MHz BW 802.11ax (26 Tones) (UNII Band 7) – Ch. 143)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 106 of 178                   |

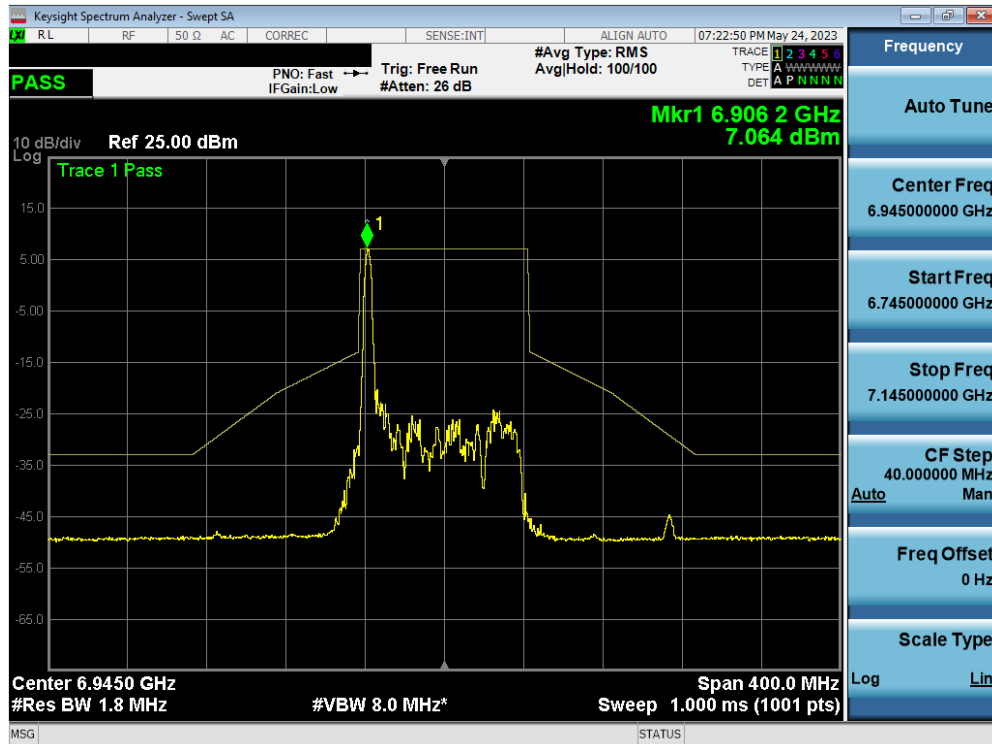


Plot 7-141. In-Band Emission Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 8) – Ch. 209)

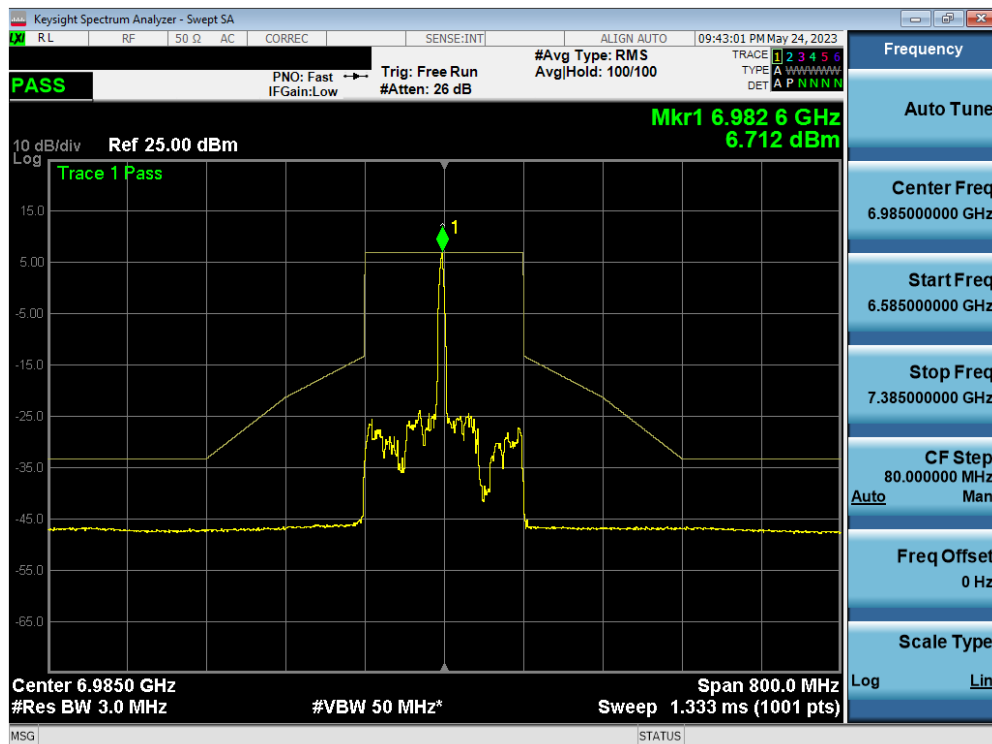


Plot 7-142. In-Band Emission Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 8) – Ch. 211)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 107 of 178                   |

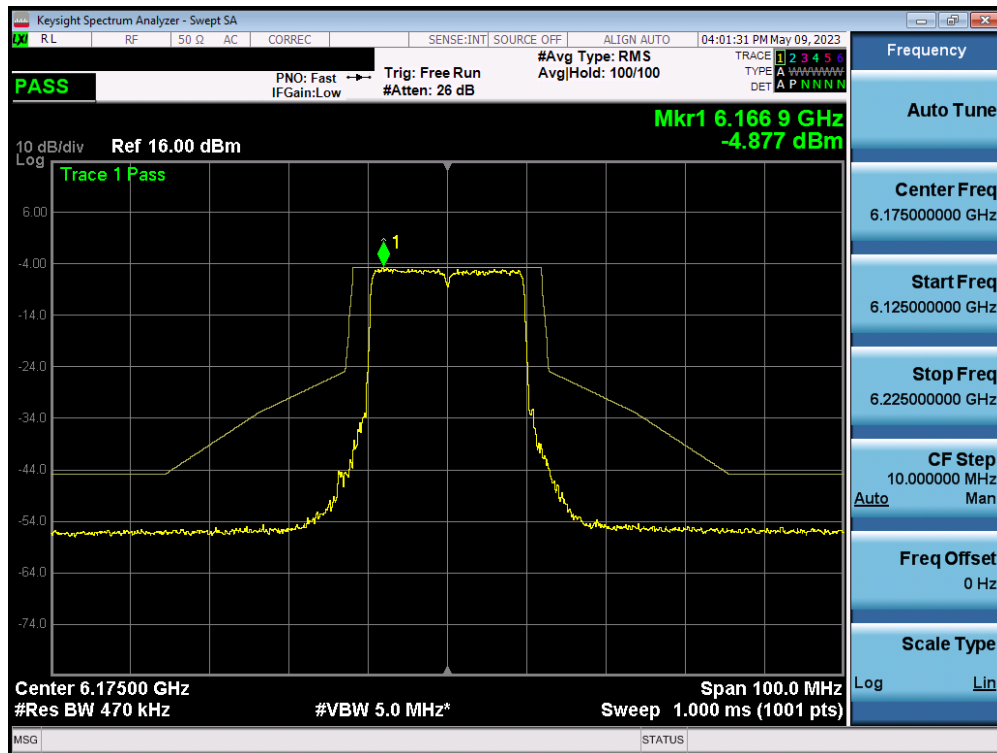


Plot 7-143. In-Band Emission Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 8) – Ch. 199)

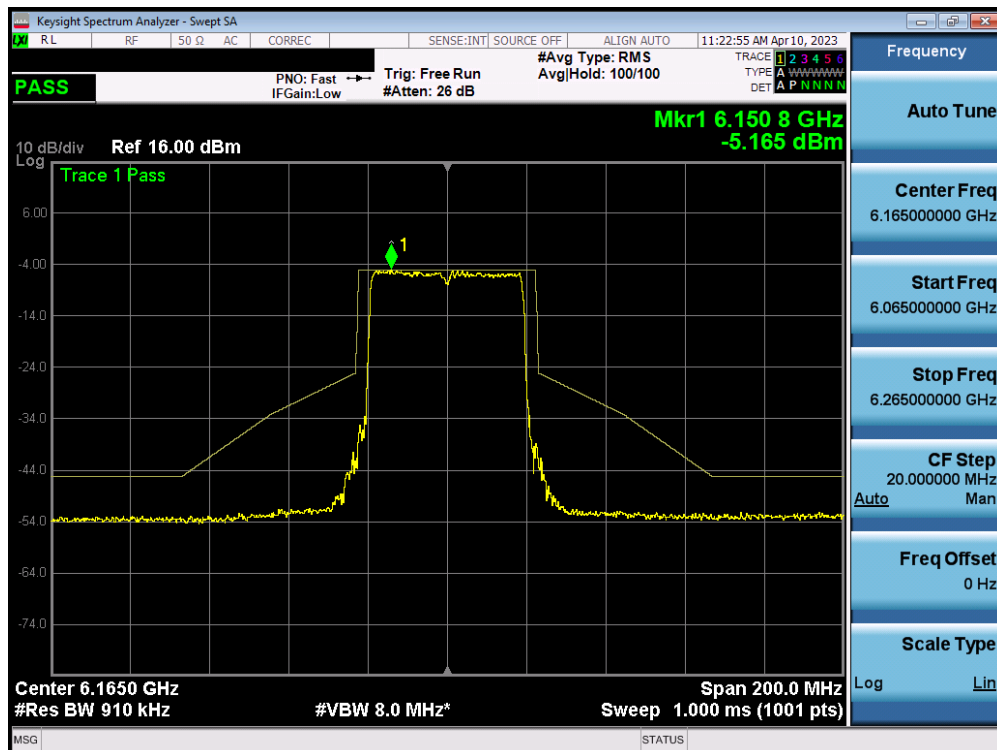


Plot 7-144. In-Band Emission Plot MIMO ANT1 (160MHz BW 802.11ax (26 Tones) (UNII Band 8) – Ch. 207)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 108 of 178                   |

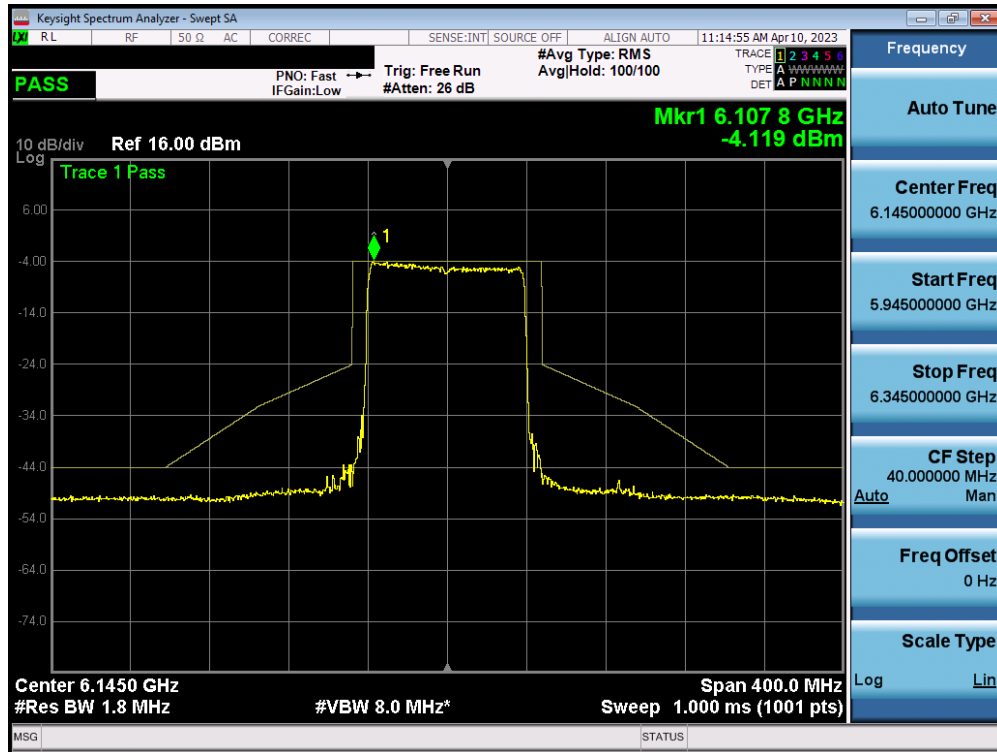


Plot 7-145. In-Band Emission Plot MIMO ANT1 (20MHz BW 802.11ax (Full Tone) (UNII Band 5) – Ch. 45)

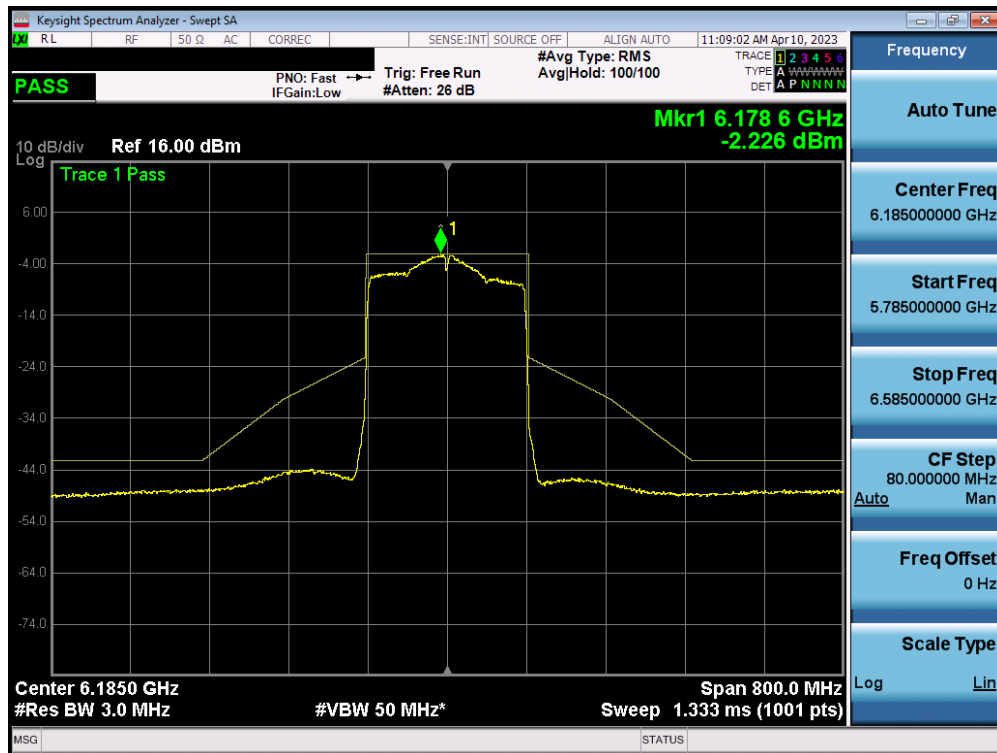


Plot 7-146. In-Band Emission Plot MIMO ANT1 (40MHz BW 802.11ax (Full Tone) (UNII Band 5) – Ch. 43)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 109 of 178                   |

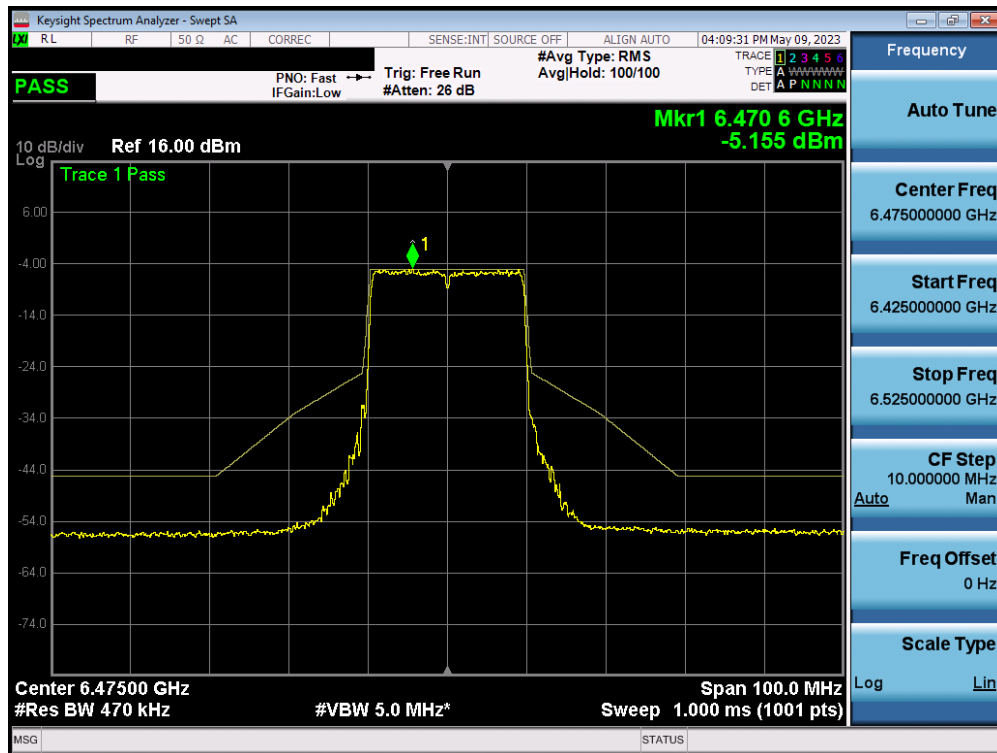


Plot 7-147. In-Band Emission Plot MIMO ANT1 (80MHz BW 802.11ax (Full Tone) (UNII Band 5) – Ch. 39)

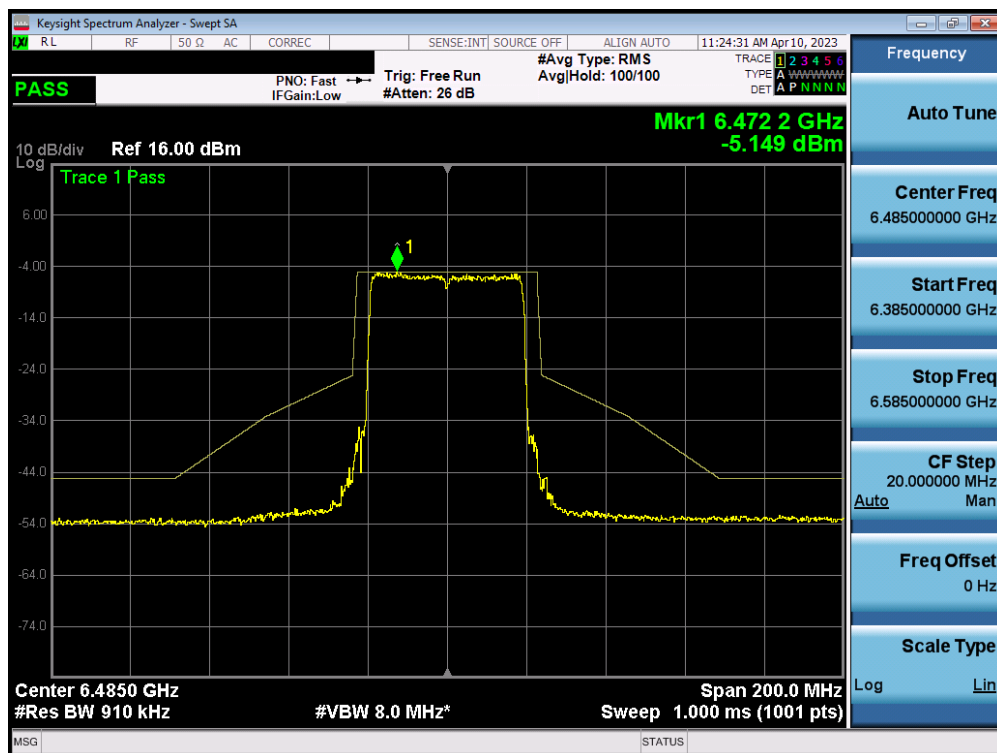


Plot 7-148. In-Band Emission Plot MIMO ANT1 160MHz BW 802.11ax (Full Tone) (UNII Band 5) – Ch. 47)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 110 of 178                   |

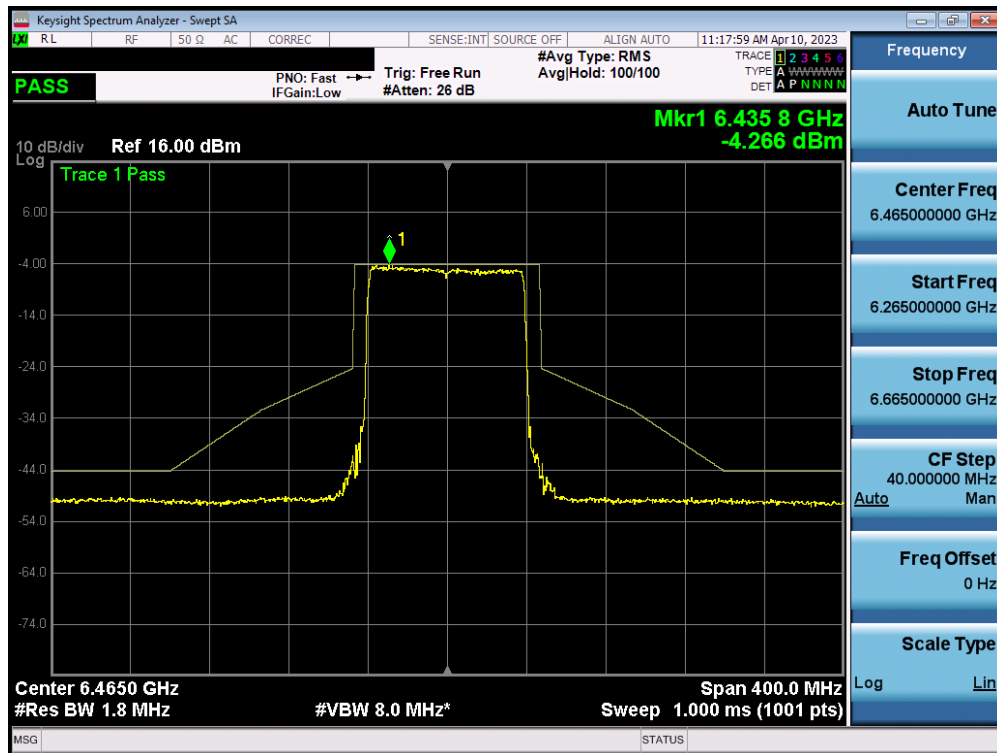


Plot 7-149. In-Band Emission Plot MIMO ANT1 (20MHz BW 802.11ax (Full Tone) (UNII Band 6) – Ch. 105)

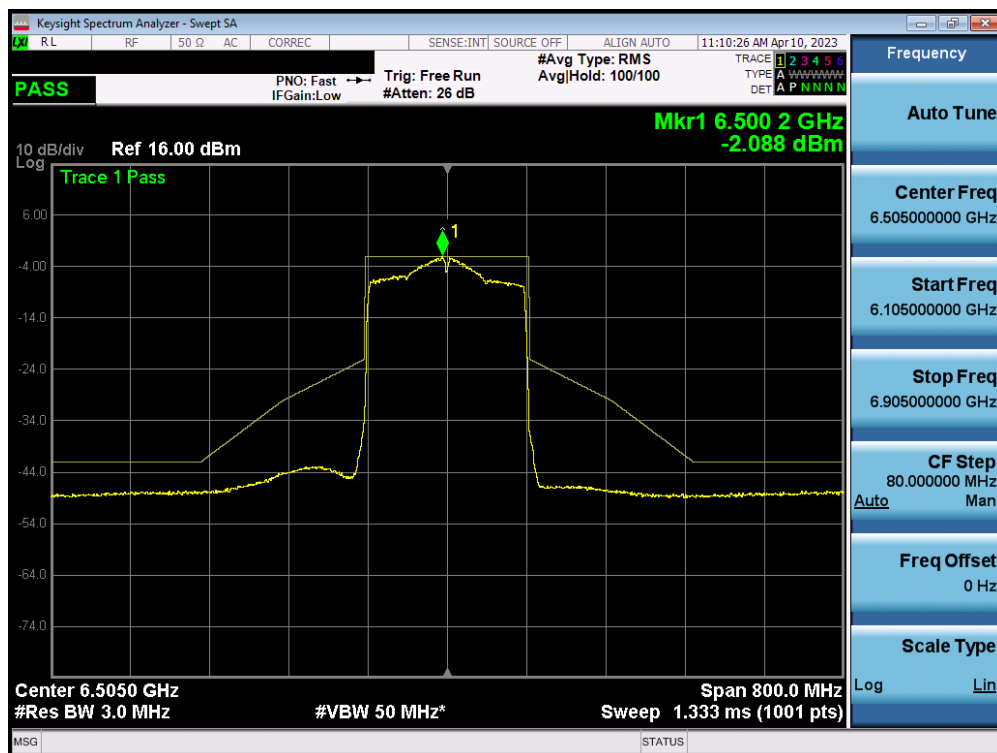


Plot 7-150. In-Band Emission Plot MIMO ANT1 (40MHz BW 802.11ax (Full Tone) (UNII Band 6) – Ch. 107)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 111 of 178                   |

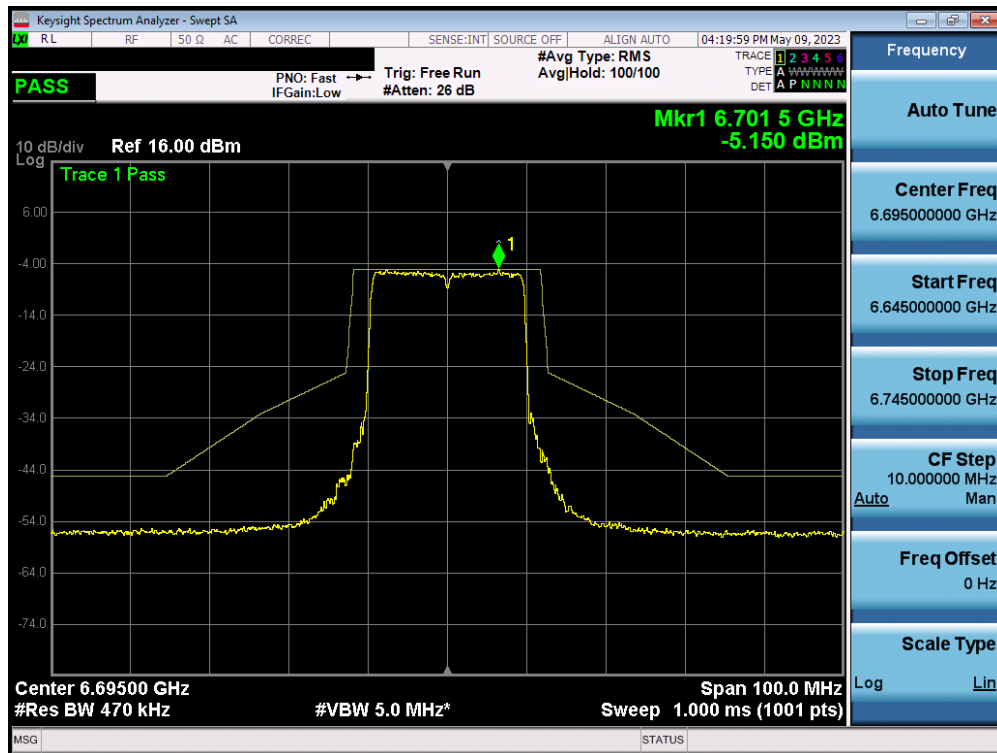


Plot 7-151. In-Band Emission Plot MIMO ANT1 (80MHz BW 802.11ax (Full Tone) (UNII Band 6) – Ch. 103)

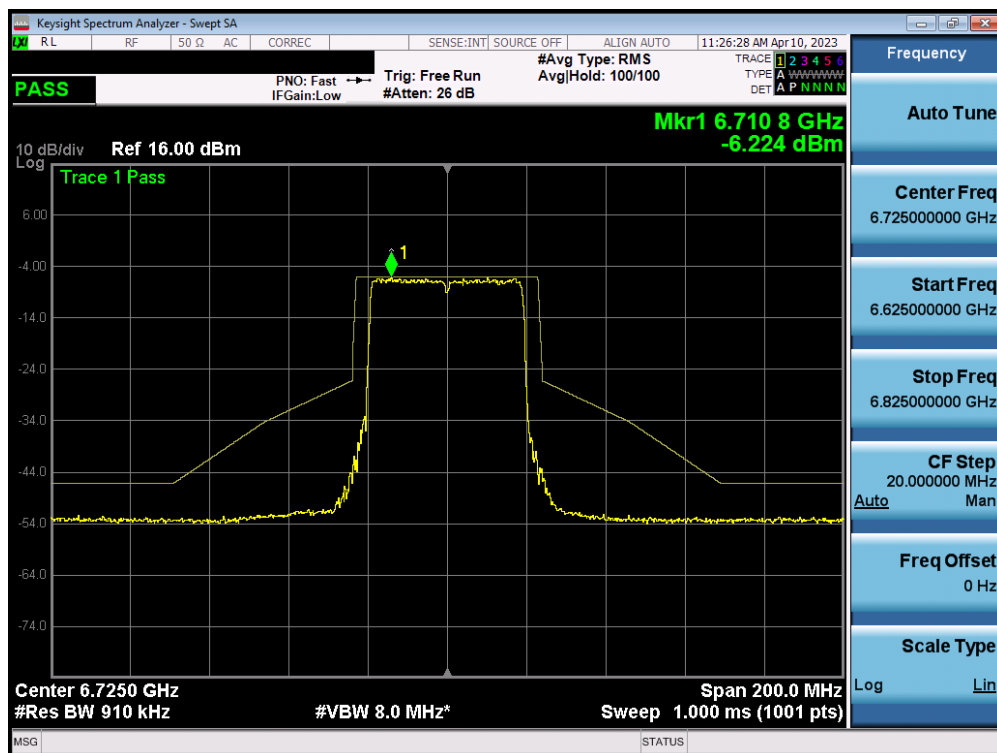


Plot 7-152. In-Band Emission Plot MIMO ANT1 (160MHz BW 802.11ax (Full Tone) (UNII Band 6) – Ch. 111)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 112 of 178                   |

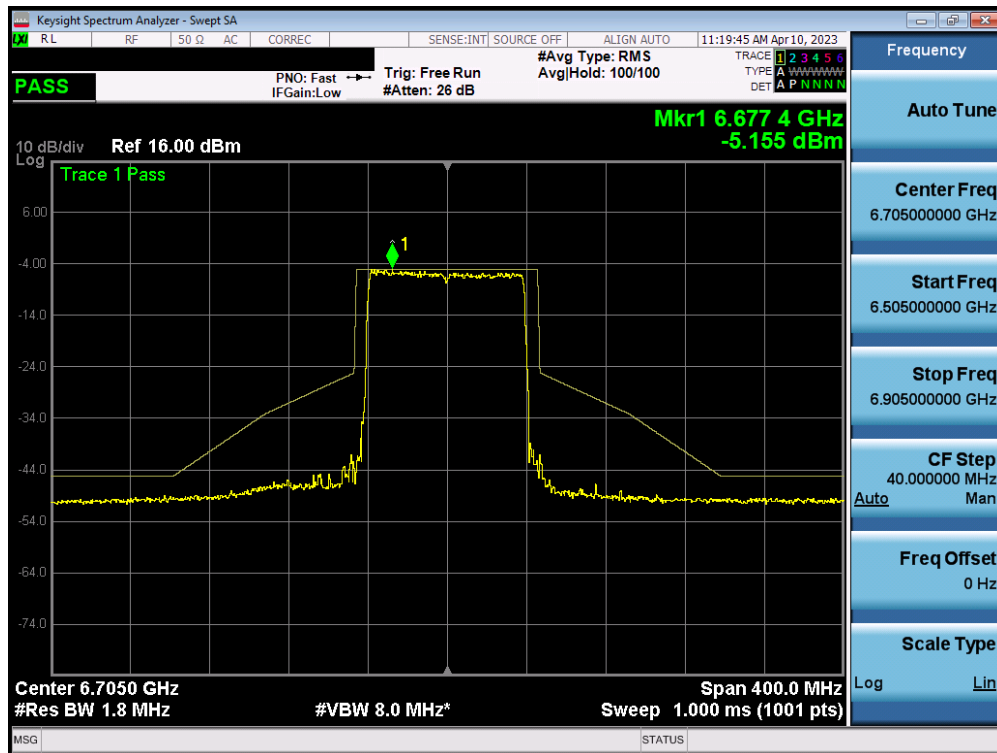


Plot 7-153. In-Band Emission Plot MIMO ANT1 (20MHz BW 802.11ax (Full Tone) (UNII Band 7) – Ch. 149)

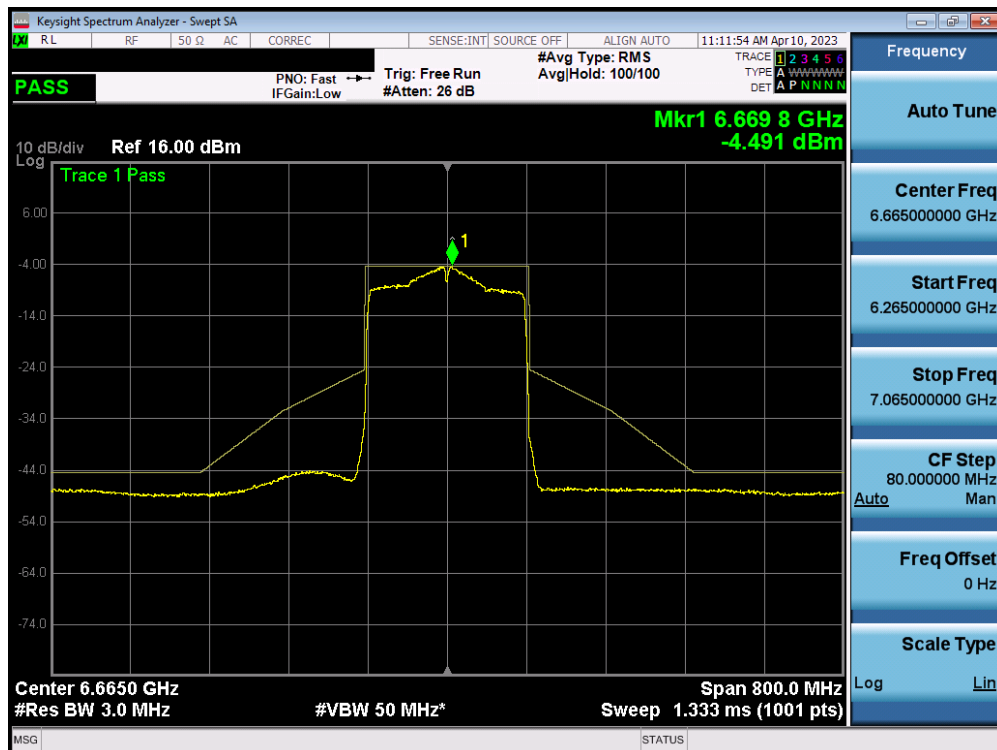


Plot 7-154. In-Band Emission Plot MIMO ANT1 (40MHz BW 802.11ax (Full Tone) (UNII Band 7) – Ch. 155)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 113 of 178                   |

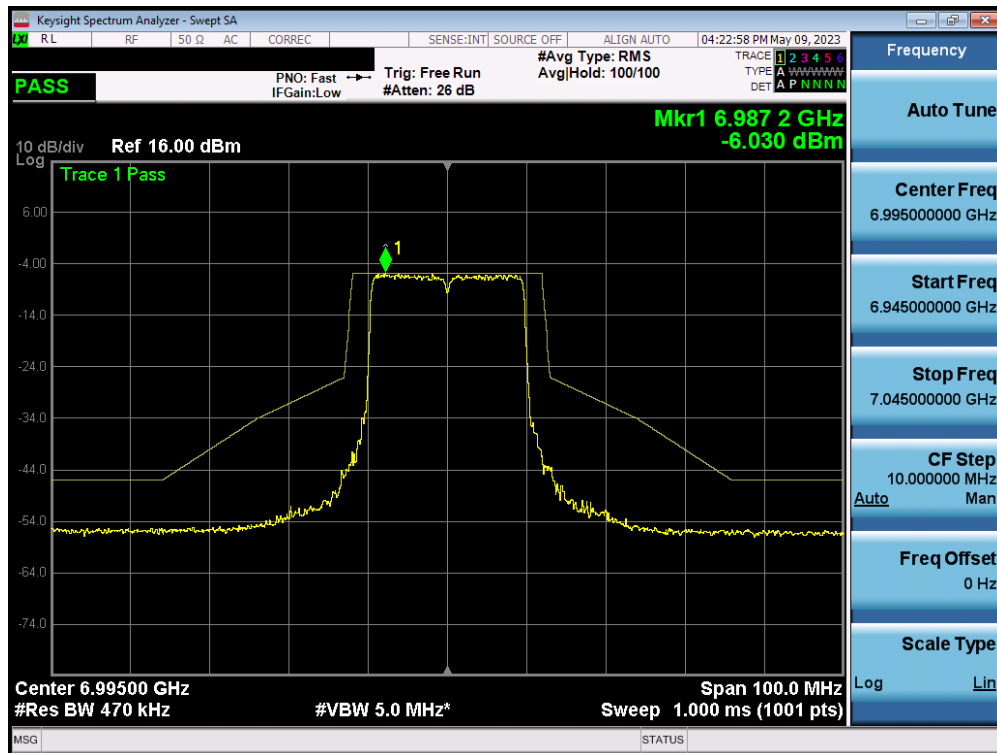


Plot 7-155. In-Band Emission Plot MIMO ANT1 (80MHz BW 802.11ax (Full Tone) (UNII Band 7) – Ch. 151)



Plot 7-156. In-Band Emission Plot MIMO ANT1 (160MHz BW 802.11ax (Full Tone) (UNII Band 7) – Ch. 143)

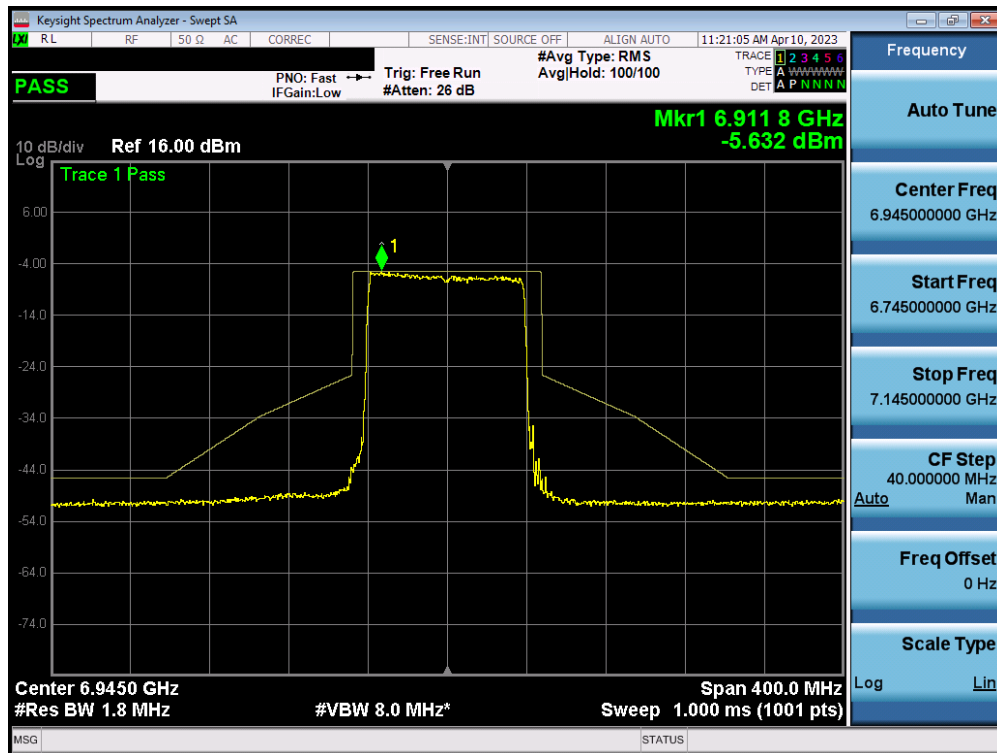
|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 114 of 178                   |



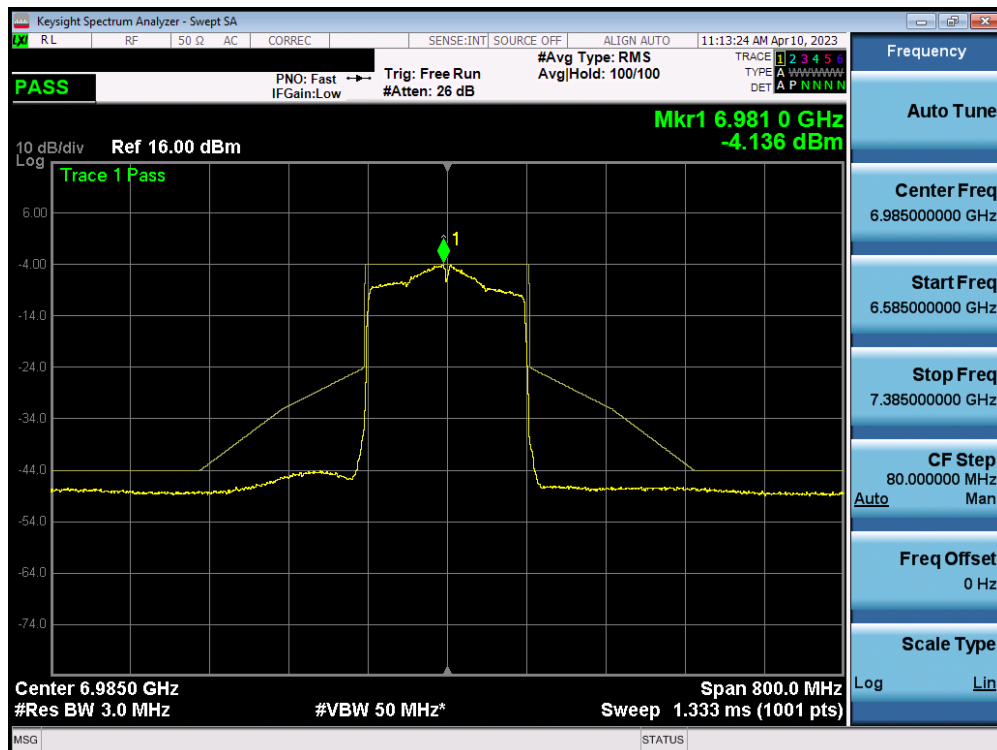
**Plot 7-157. In-Band Emission Plot MIMO ANT1 (20MHz BW 802.11ax (Full Tone) (UNII Band 8) – Ch. 209)**

**Plot 7-158. In-Band Emission Plot MIMO ANT1 (40MHz BW 802.11ax (Full Tone) (UNII Band 8) – Ch. 211)**

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 115 of 178                   |



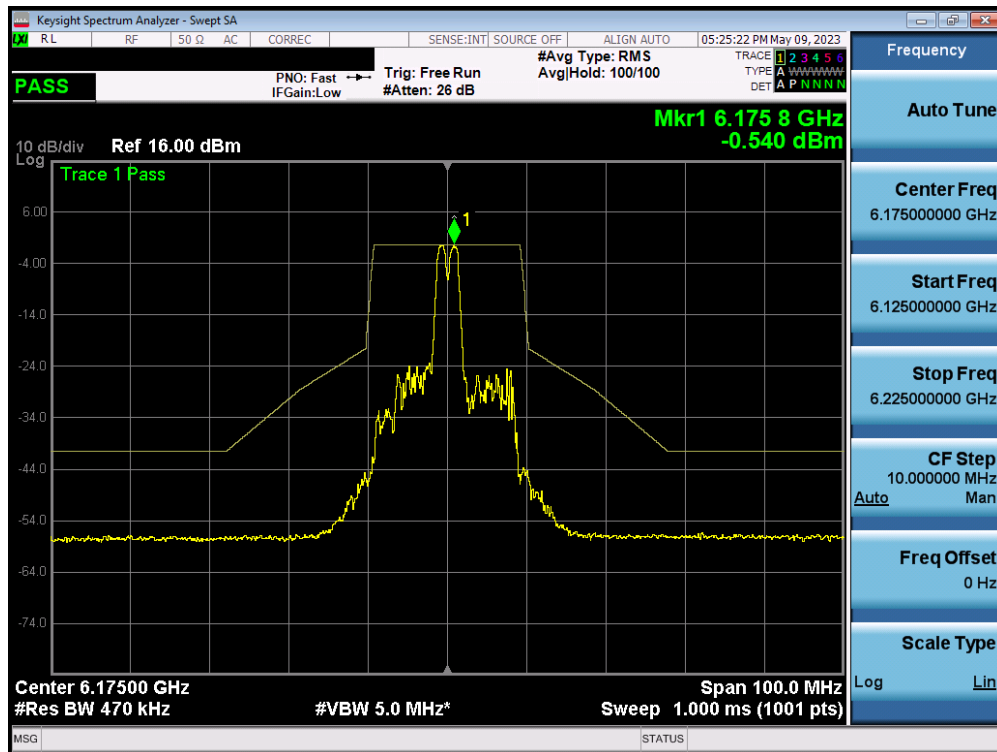
Plot 7-159. In-Band Emission Plot MIMO ANT1 (80MHz BW 802.11ax (Full Tone) (UNII Band 8) – Ch. 199)



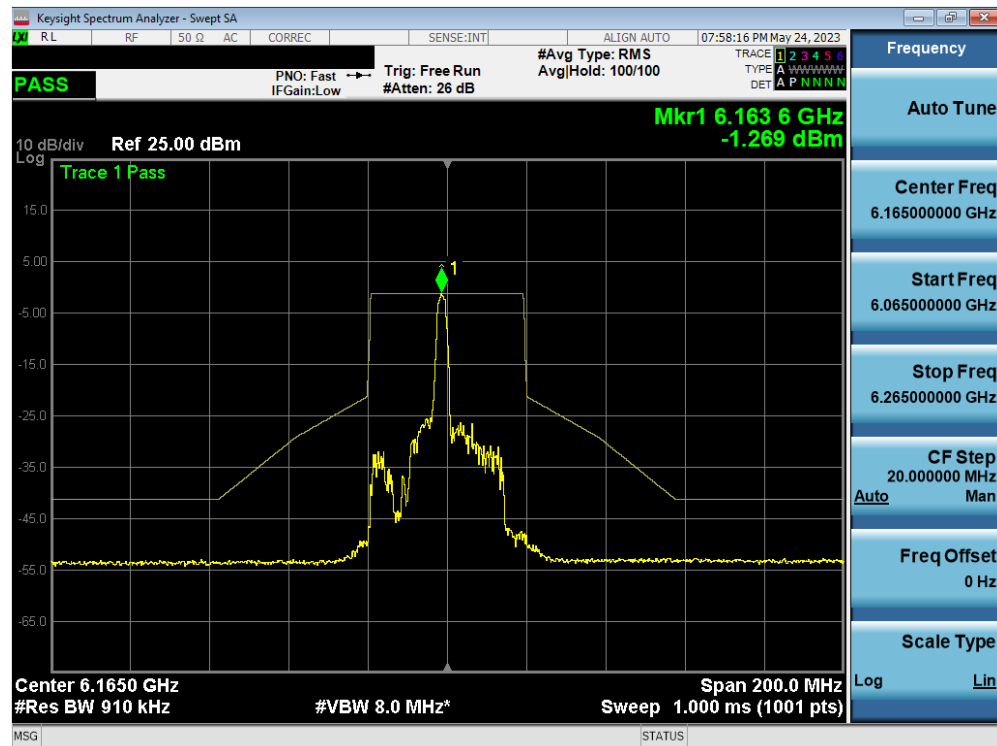
Plot 7-160. In-Band Emission Plot MIMO ANT1 (160MHz BW 802.11ax (Full Tone) (UNII Band 8) – Ch. 207)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 116 of 178                   |

## 7.5.2 MIMO Antenna-2 In-Band Emission Measurements



Plot 7-161. In-Band Emission Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 5) – Ch. 45)

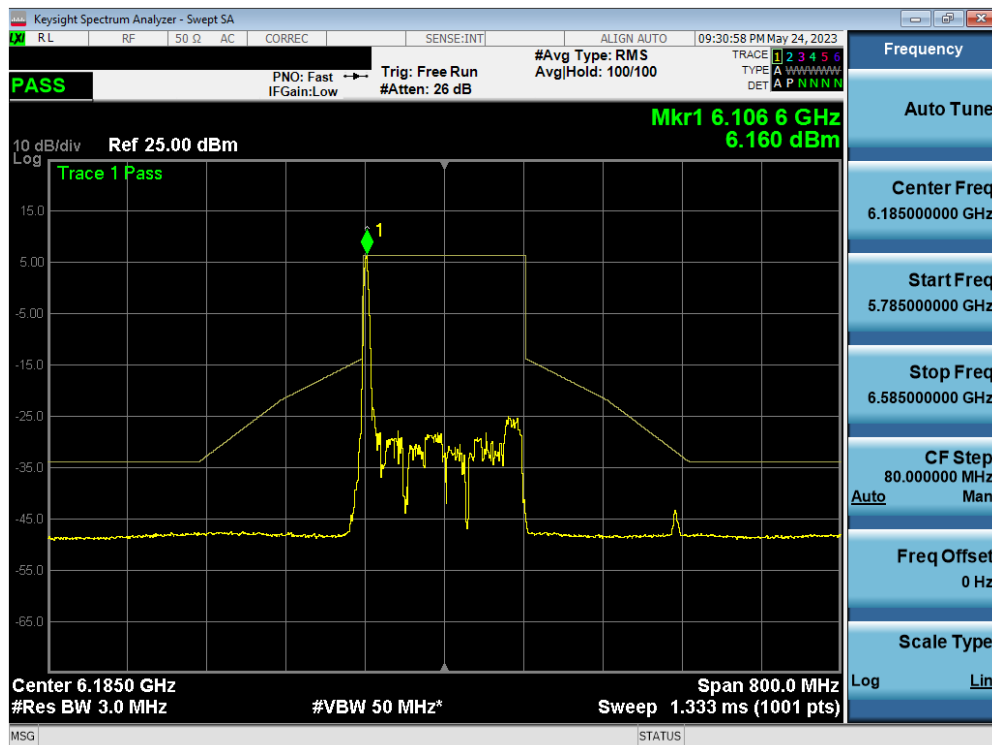


Plot 7-162. In-Band Emission Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 5) – Ch. 43)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 117 of 178                   |

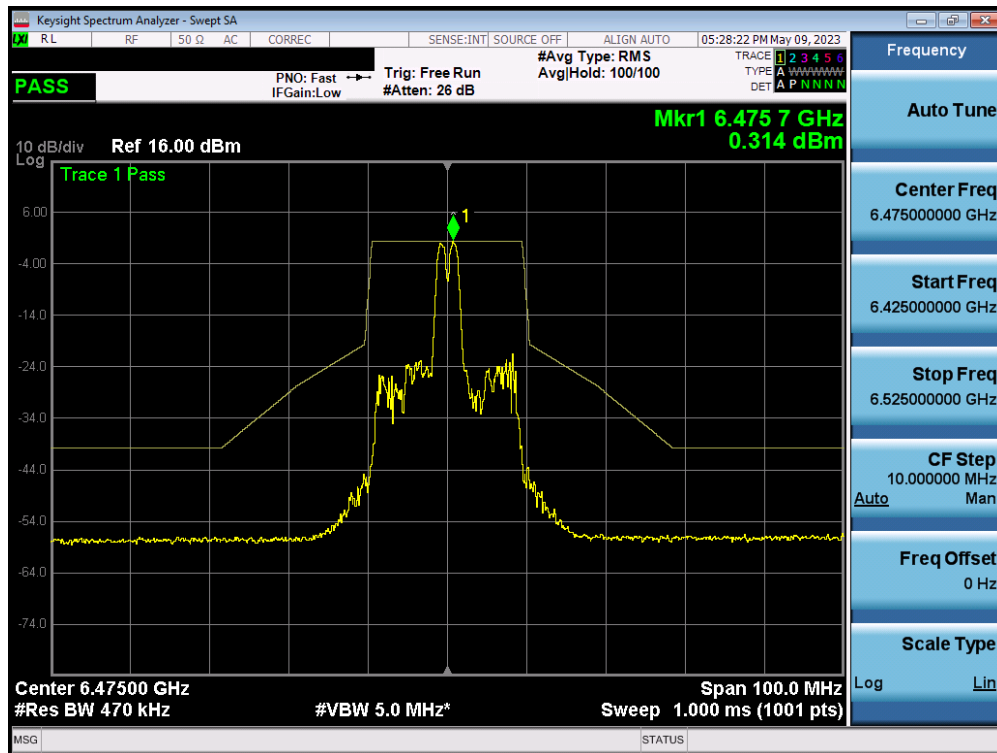


Plot 7-163. In-Band Emission Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 5) – Ch. 39)

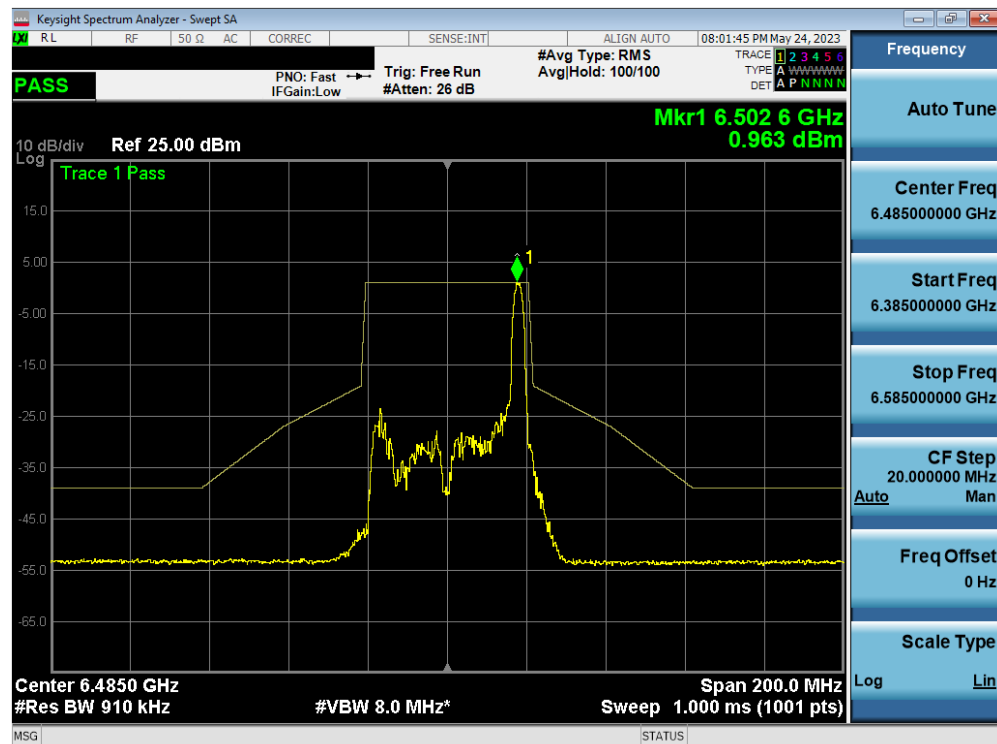


Plot 7-164. In-Band Emission Plot MIMO ANT2 (160MHz BW 802.11ax (26 Tones) (UNII Band 5) – Ch. 47)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 118 of 178                   |

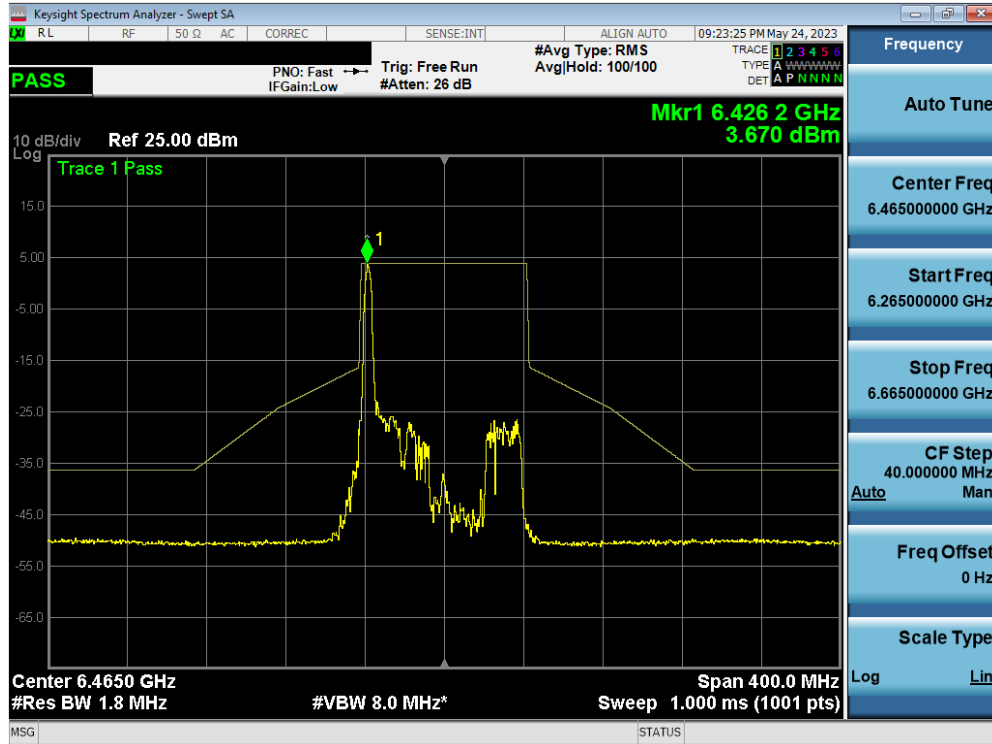


Plot 7-165. In-Band Emission Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 6) – Ch. 105)

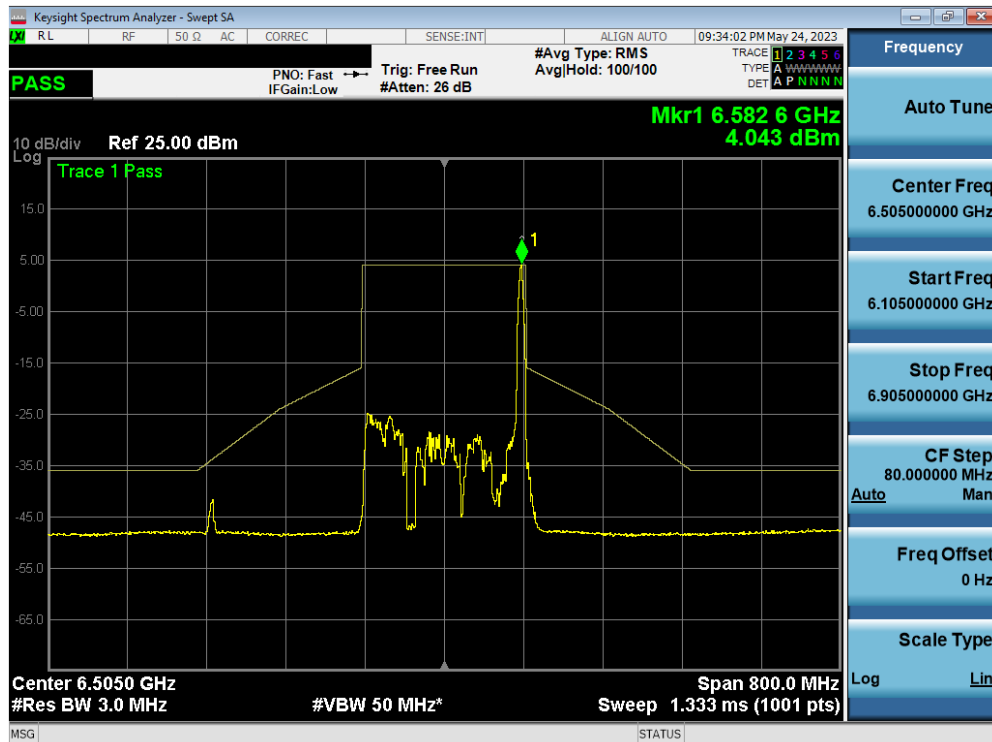


Plot 7-166. In-Band Emission Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 6) – Ch. 107)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 119 of 178                   |

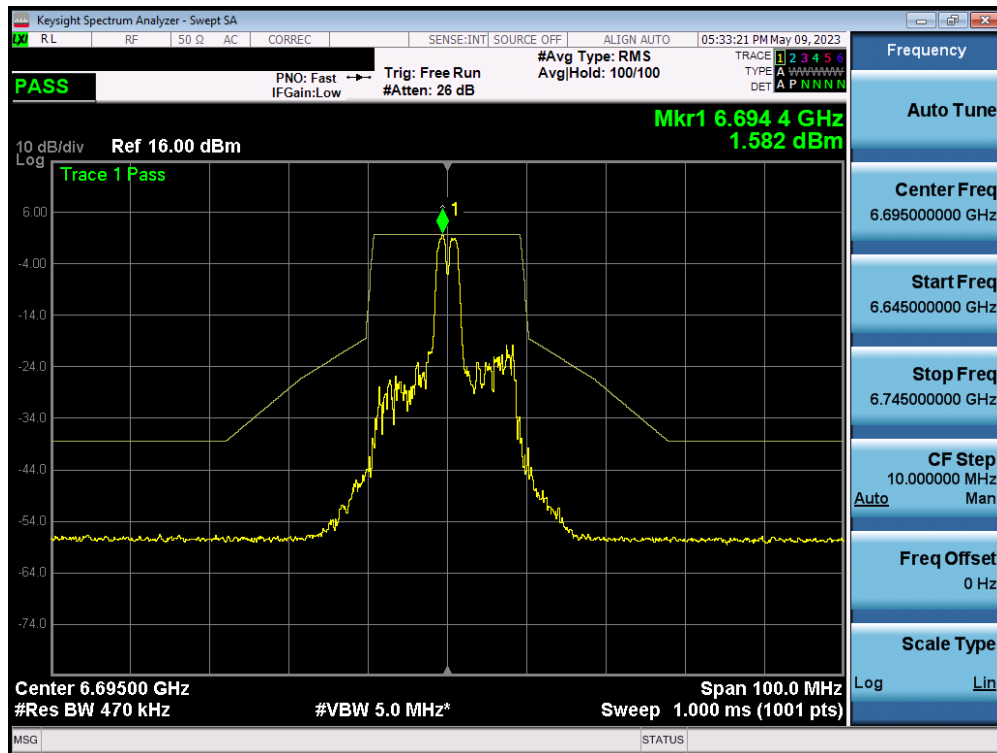


Plot 7-167. In-Band Emission Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 6) – Ch. 103)

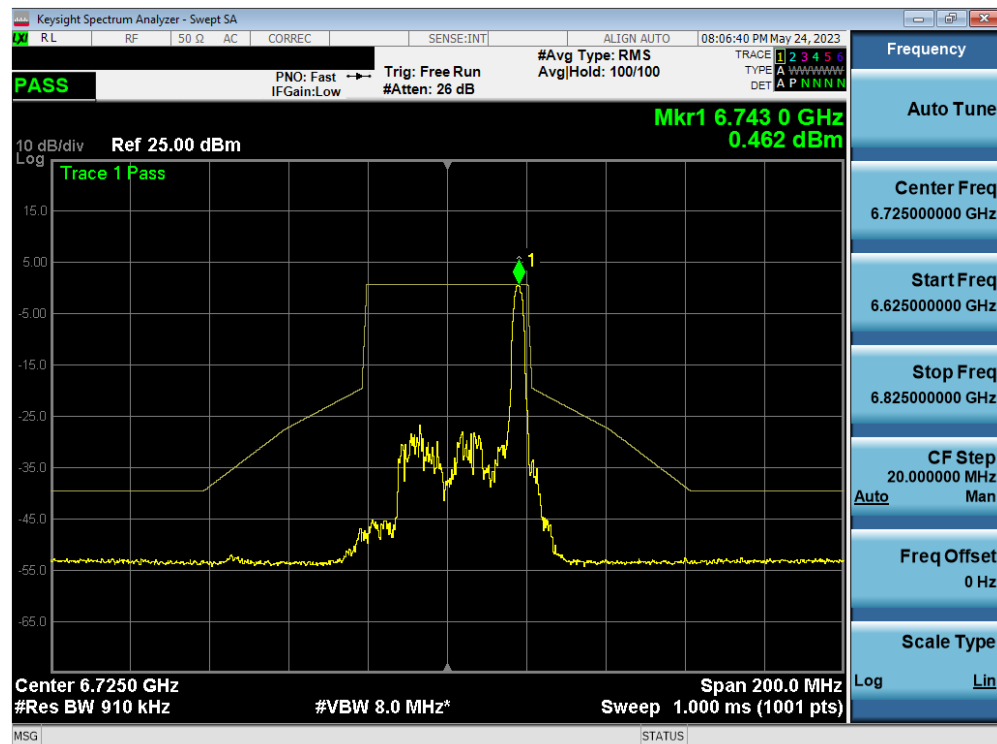


Plot 7-168. In-Band Emission Plot MIMO ANT2 (160MHz BW 802.11ax (26 Tones) (UNII Band 6) – Ch. 111)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 120 of 178                   |

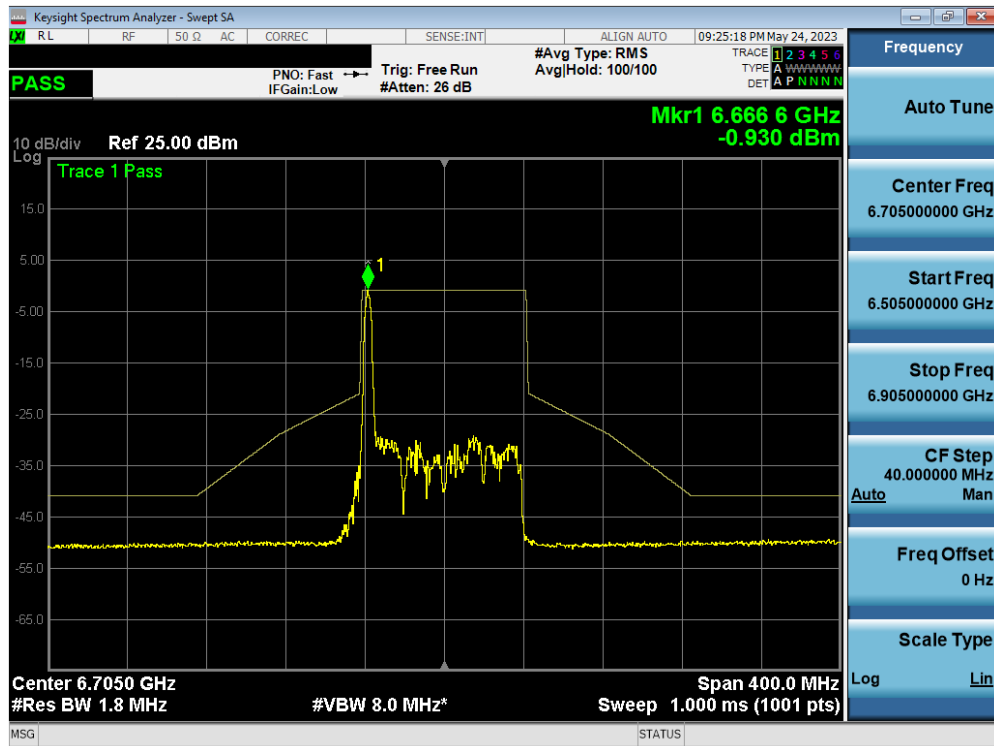


Plot 7-169. In-Band Emission Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 7) – Ch. 149)

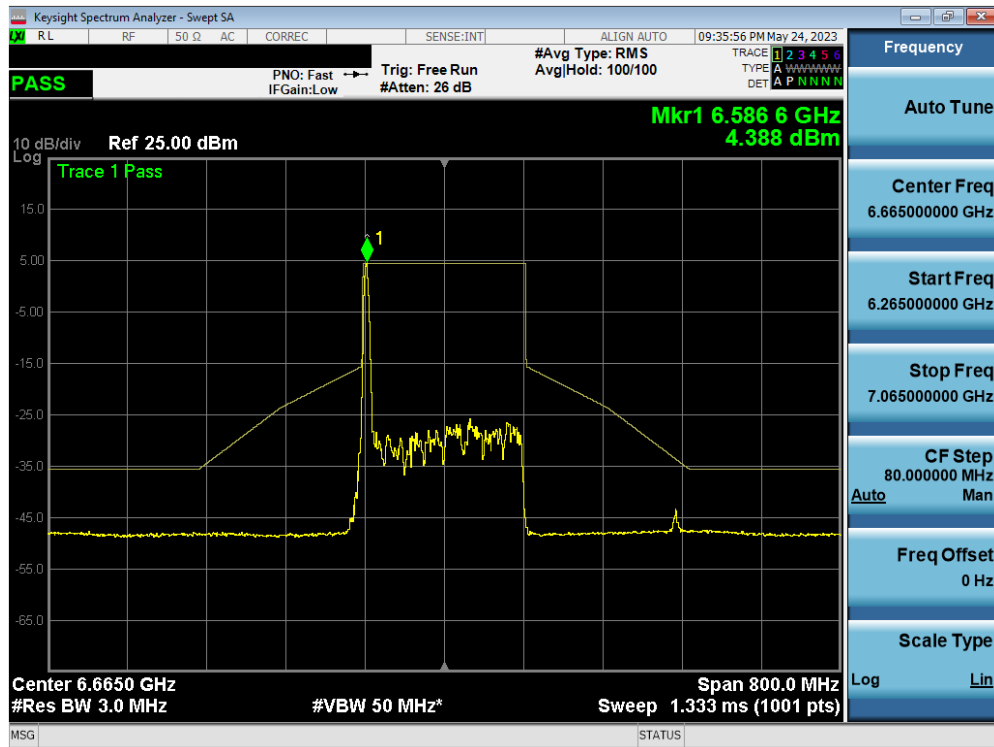


Plot 7-170. In-Band Emission Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 7) – Ch. 155)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 121 of 178                   |

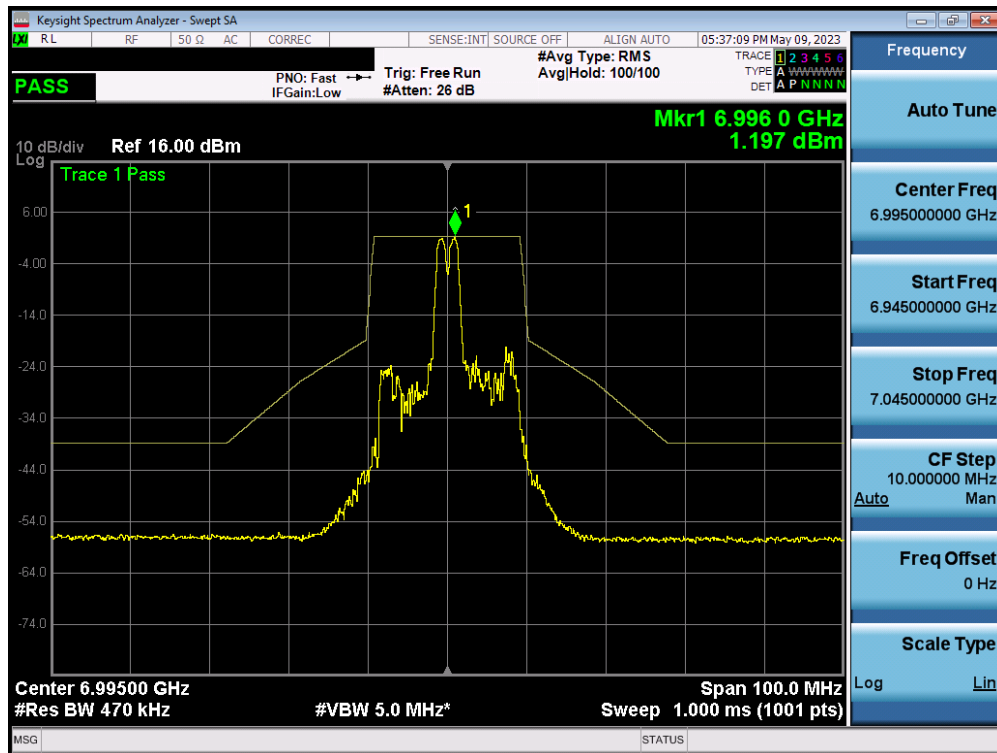


Plot 7-171. In-Band Emission Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 7) – Ch. 151)

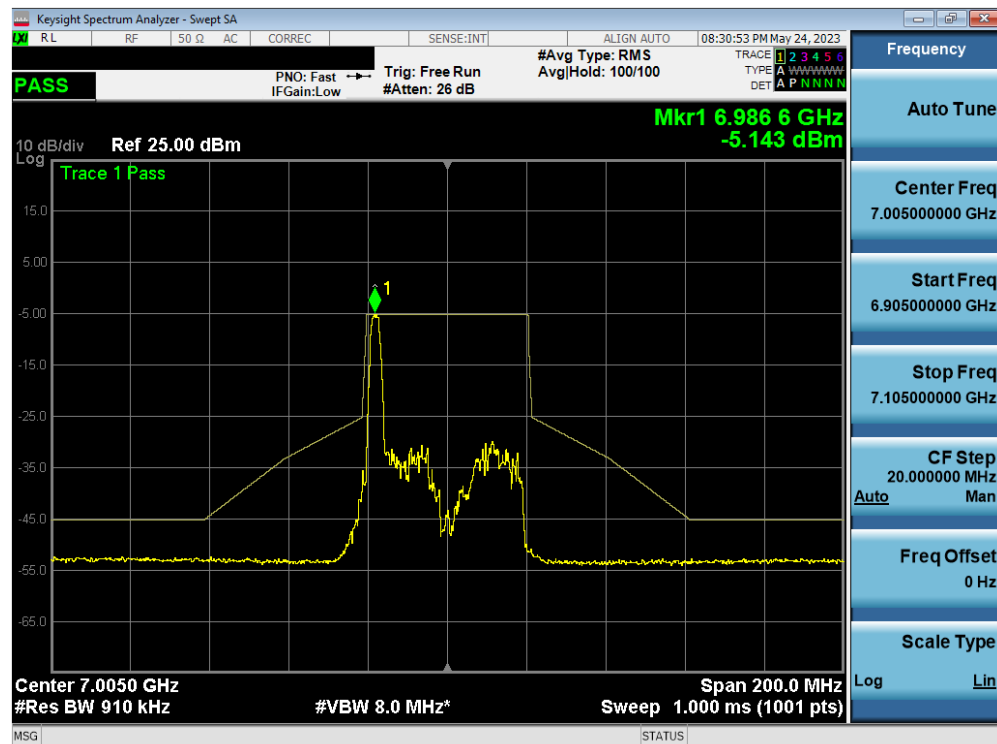


Plot 7-172. In-Band Emission Plot MIMO ANT2 (160MHz BW 802.11ax (26 Tones) (UNII Band 7) – Ch. 143)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 122 of 178                   |

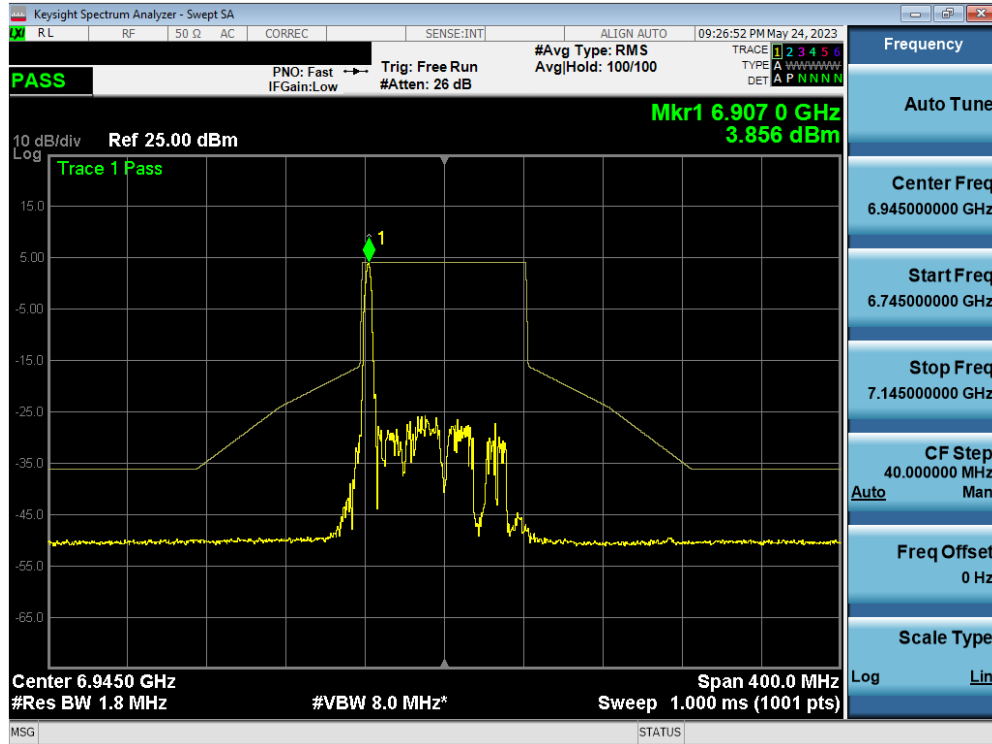


Plot 7-173. In-Band Emission Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 8) – Ch. 209)

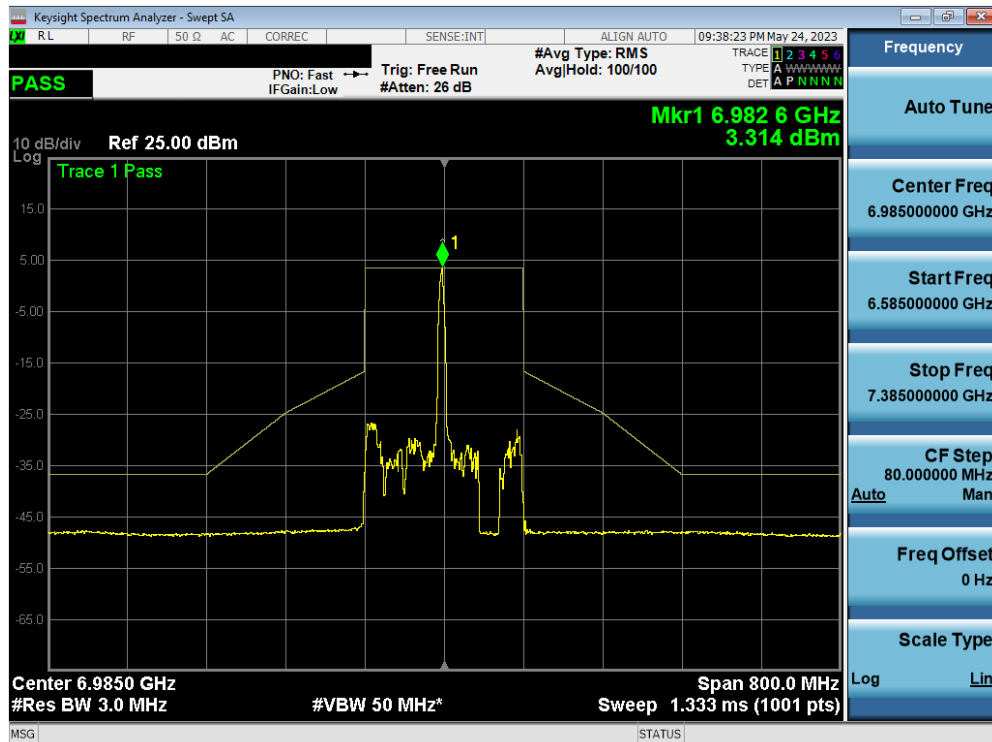


Plot 7-174. In-Band Emission Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 8) – Ch. 211)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 123 of 178                   |

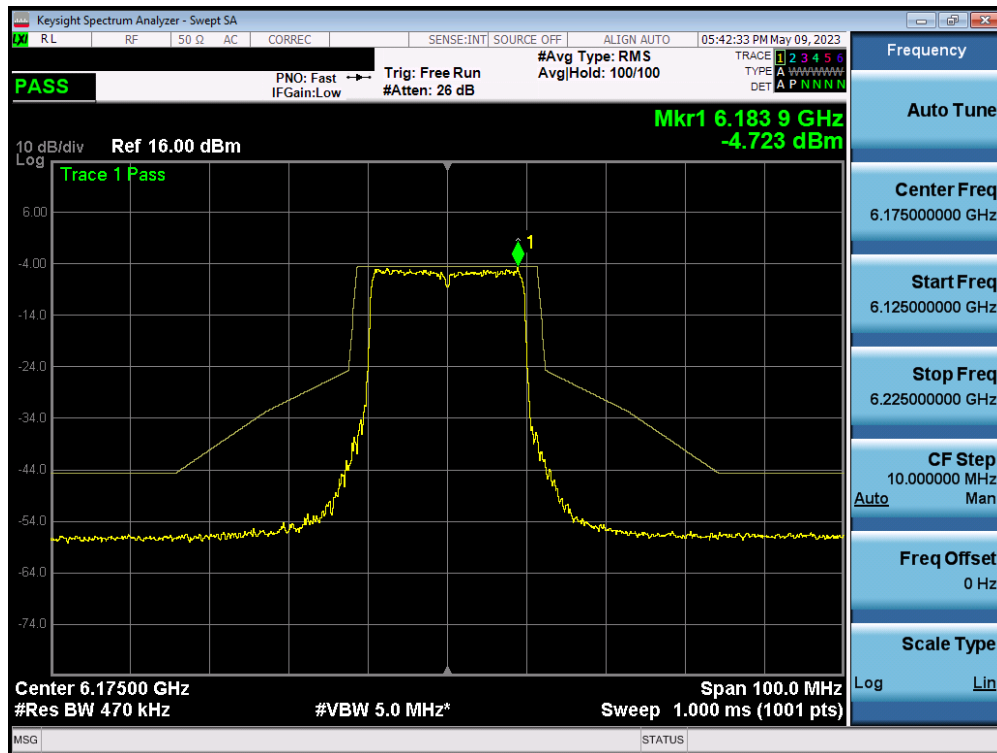


Plot 7-175. In-Band Emission Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 8) – Ch. 199)

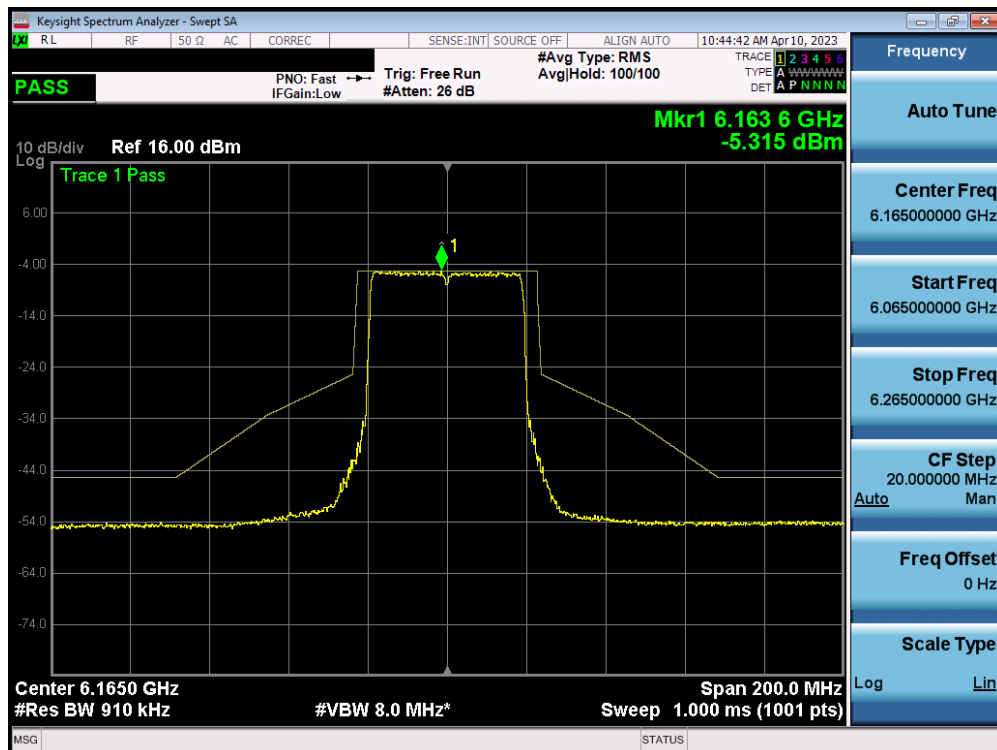


Plot 7-176. In-Band Emission Plot MIMO ANT2 (160MHz BW 802.11ax (26 Tones) (UNII Band 8) – Ch. 207)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 124 of 178                   |

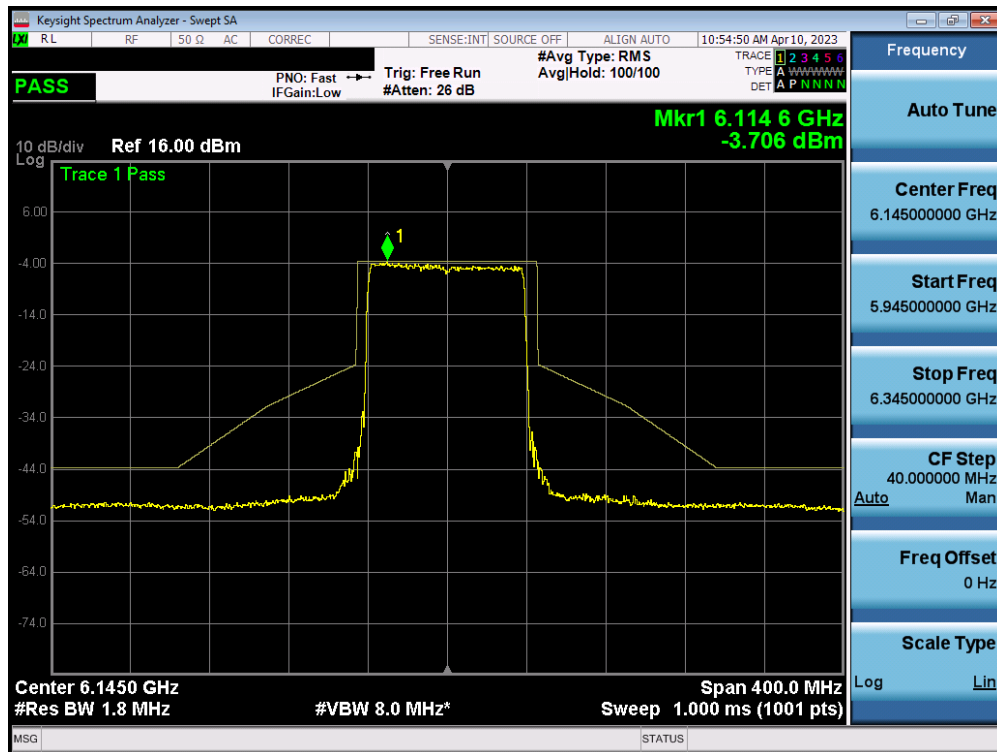


Plot 7-177. In-Band Emission Plot MIMO ANT2 (20MHz BW 802.11ax (Full Tone) (UNII Band 5) – Ch. 45)

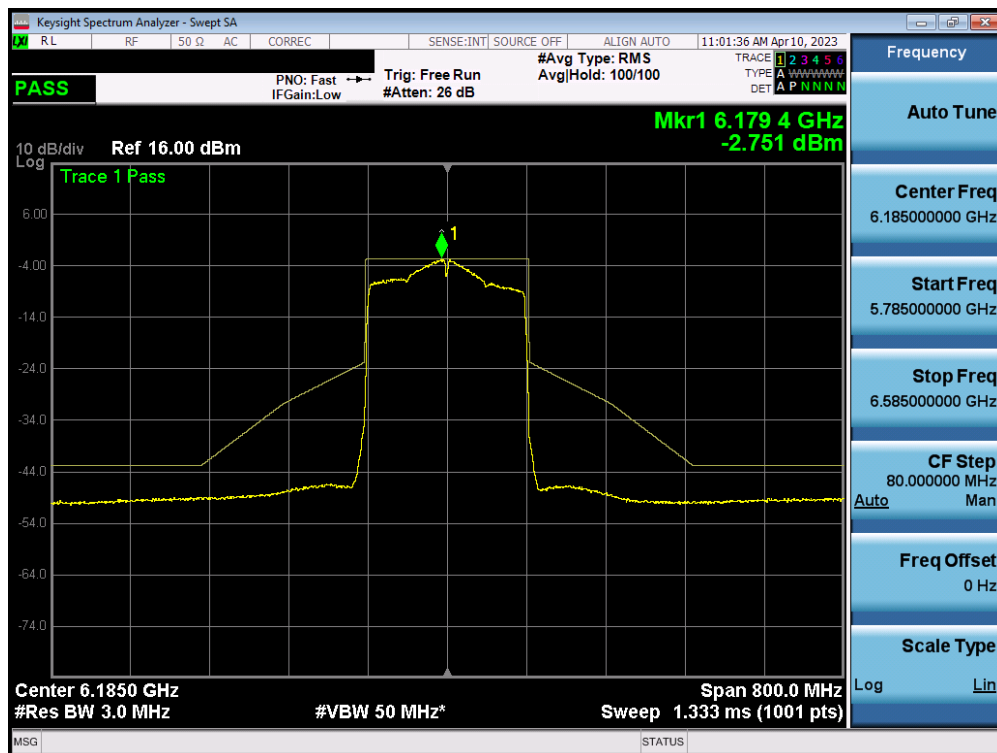


Plot 7-178. In-Band Emission Plot MIMO ANT2 (40MHz BW 802.11ax (Full Tone) (UNII Band 5) – Ch. 43)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 125 of 178                   |

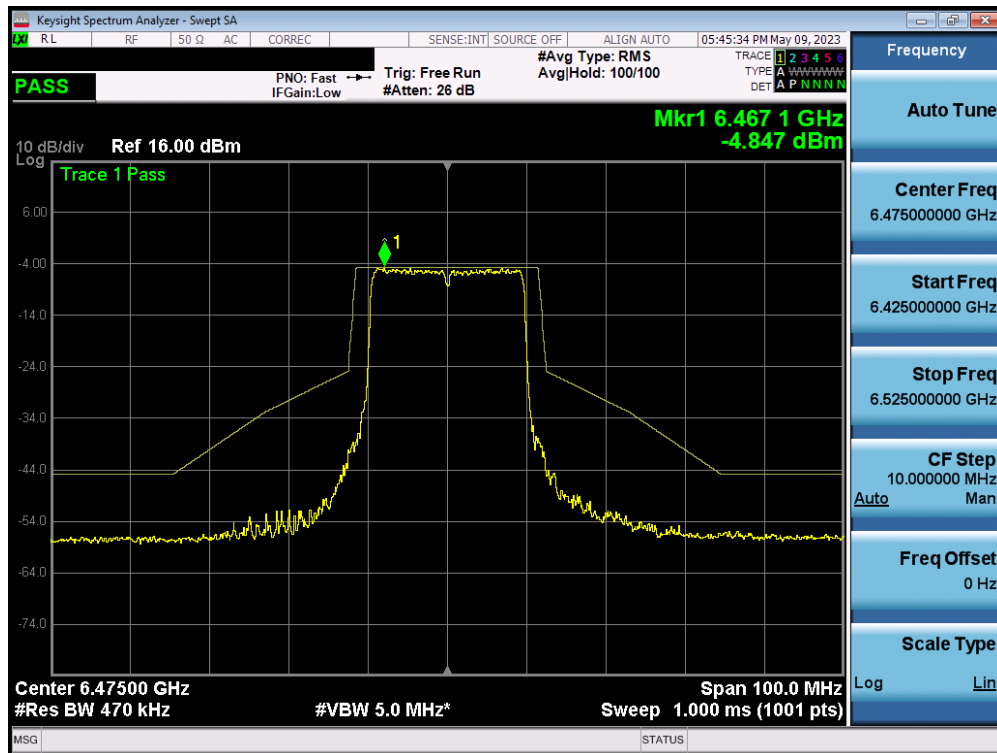


Plot 7-179. In-Band Emission Plot MIMO ANT2 (80MHz BW 802.11ax (Full Tone) (UNII Band 5) – Ch. 39)

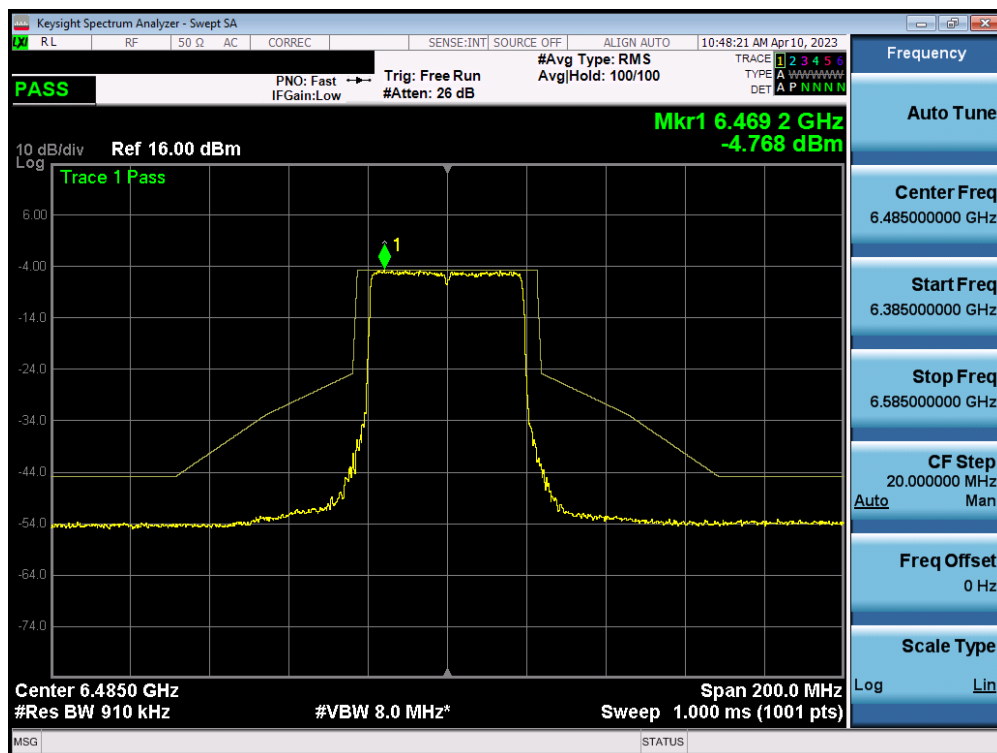


Plot 7-180. In-Band Emission Plot MIMO ANT2 160MHz BW 802.11ax (Full Tone) (UNII Band 5) – Ch. 47)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 126 of 178                   |

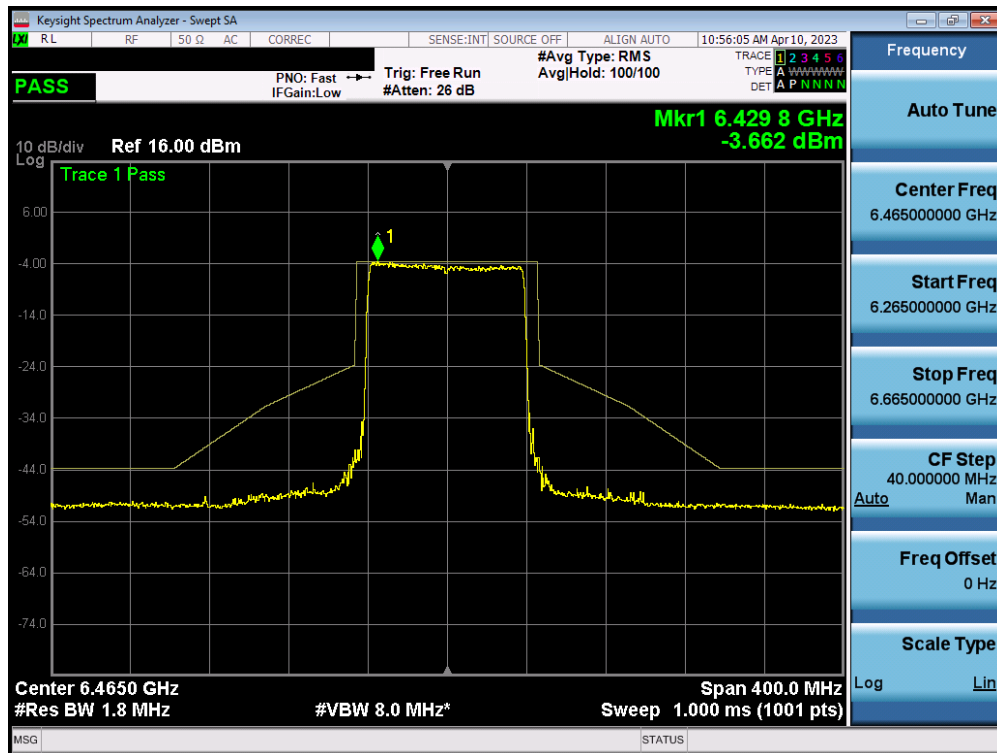


Plot 7-181. In-Band Emission Plot MIMO ANT2 (20MHz BW 802.11ax (Full Tone) (UNII Band 6) – Ch. 105)

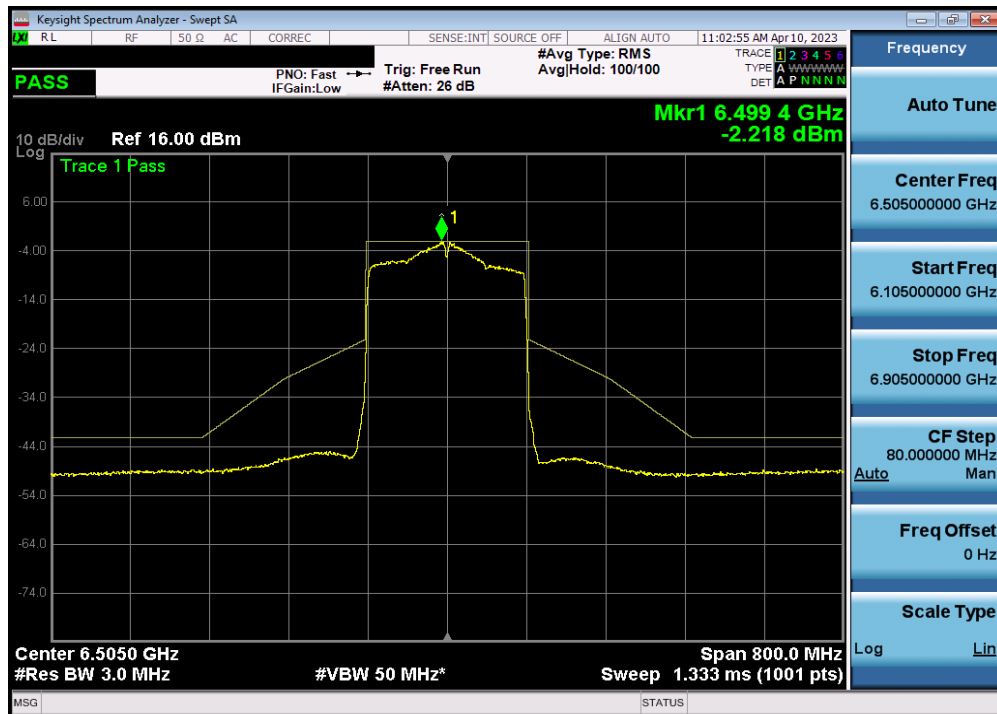


Plot 7-182. In-Band Emission Plot MIMO ANT2 (40MHz BW 802.11ax (Full Tone) (UNII Band 6) – Ch. 107)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 127 of 178                   |

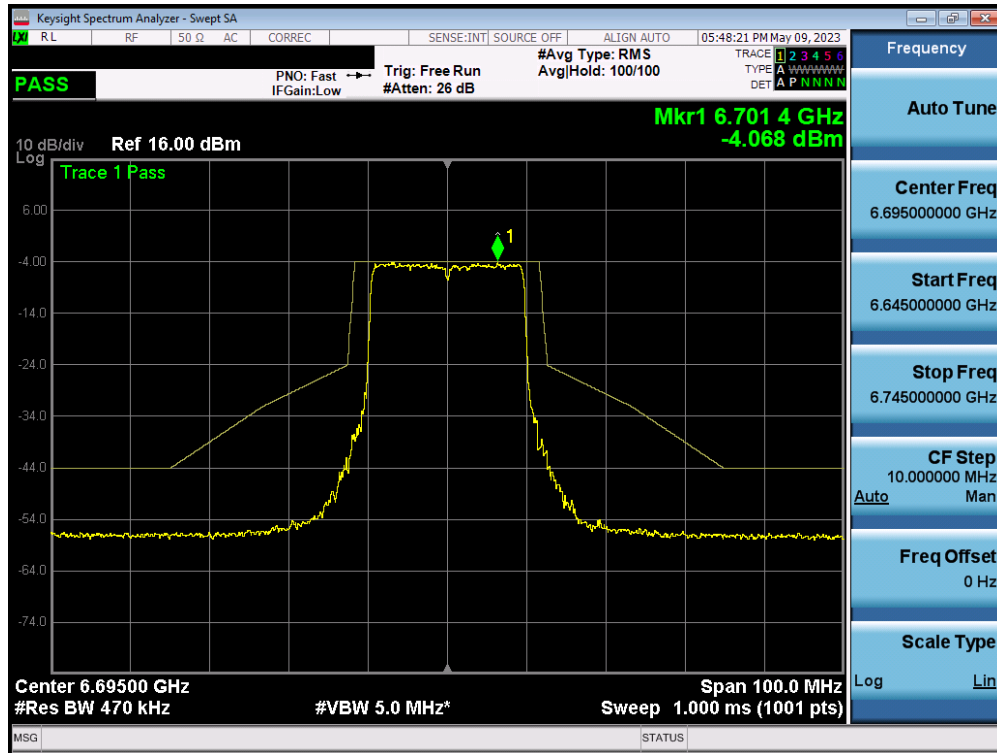


Plot 7-183. In-Band Emission Plot MIMO ANT2 (80MHz BW 802.11ax (Full Tone) (UNII Band 6) – Ch. 103)

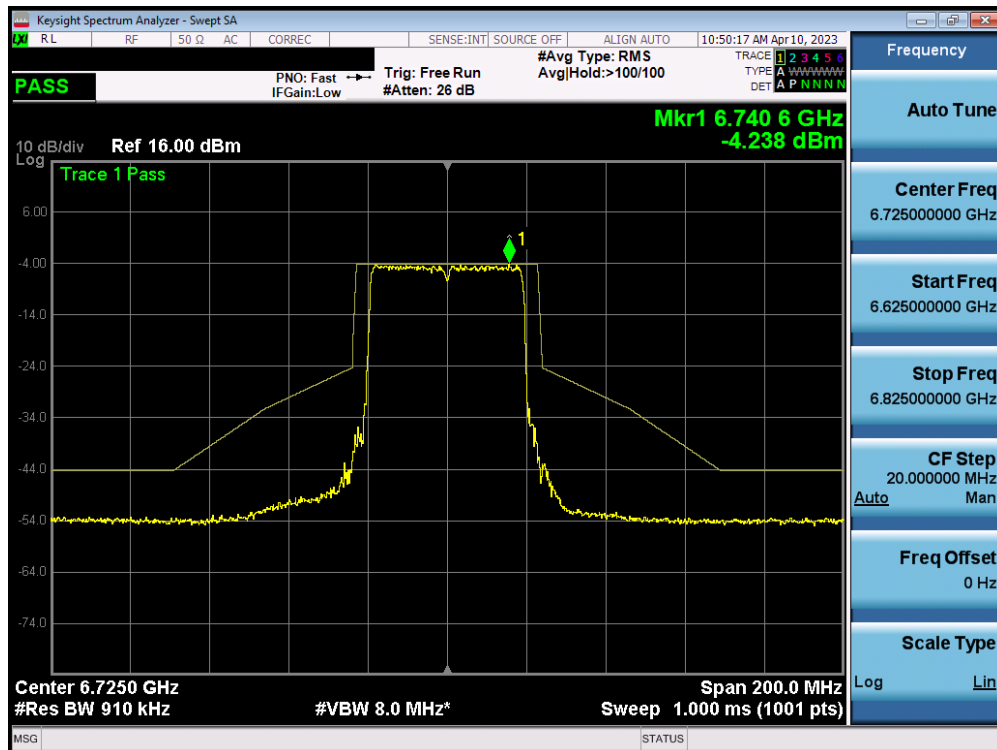


Plot 7-184. In-Band Emission Plot MIMO ANT2 (160MHz BW 802.11ax (Full Tone) (UNII Band 6) – Ch. 111)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 128 of 178                   |

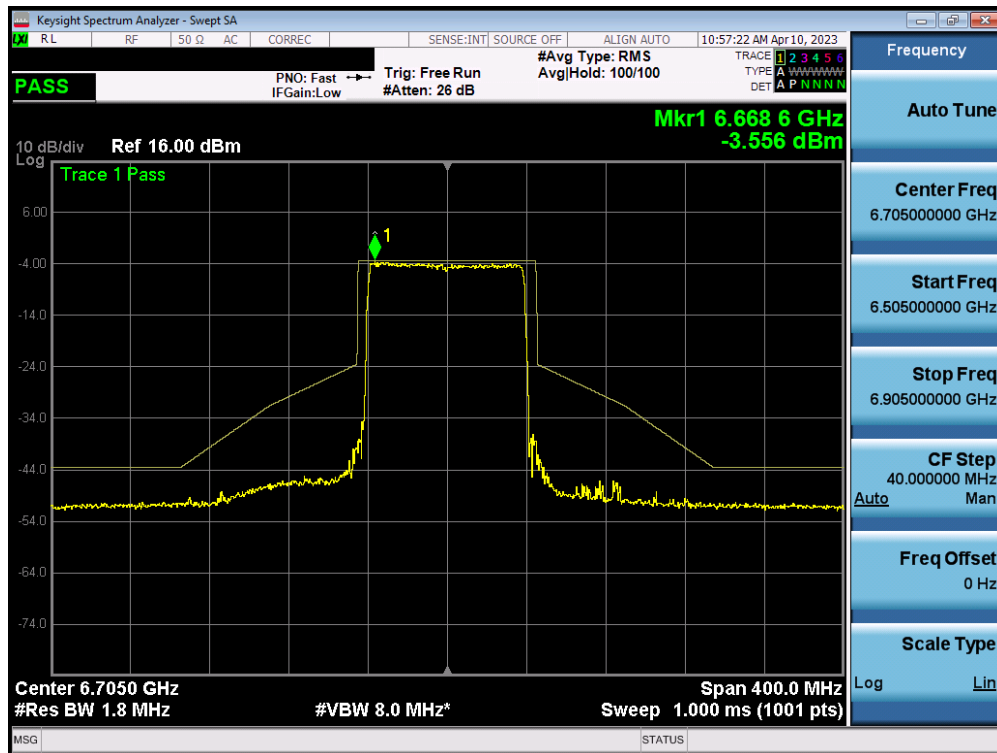


Plot 7-185. In-Band Emission Plot MIMO ANT2 (20MHz BW 802.11ax (Full Tone) (UNII Band 7) – Ch. 149)

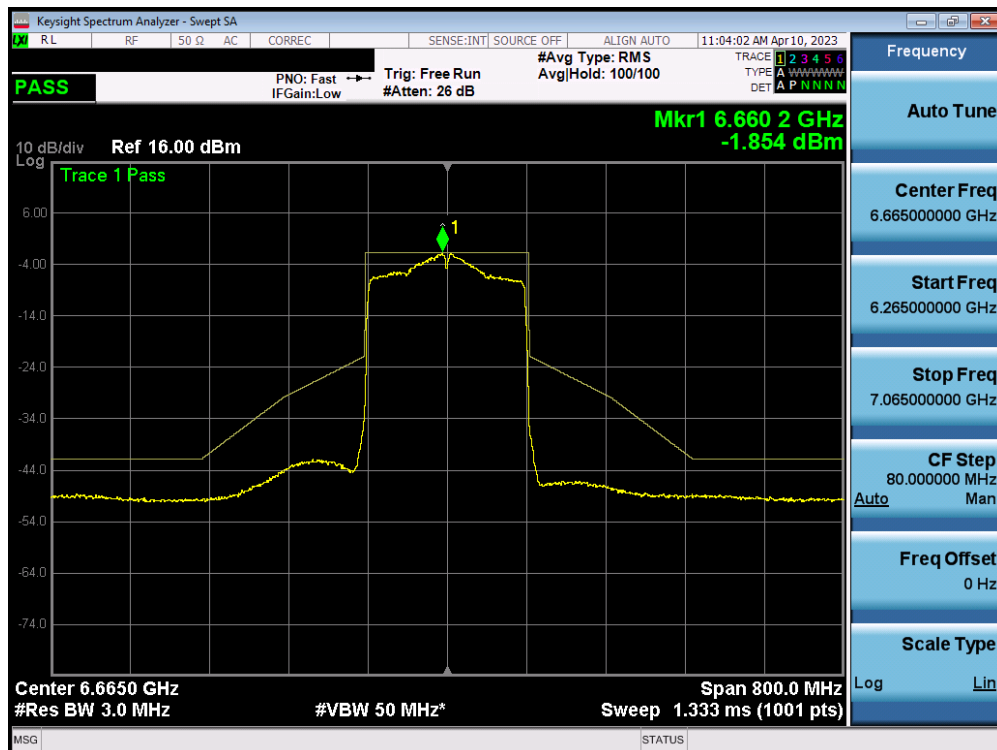


Plot 7-186. In-Band Emission Plot MIMO ANT2 (40MHz BW 802.11ax (Full Tone) (UNII Band 7) – Ch. 155)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 129 of 178                   |

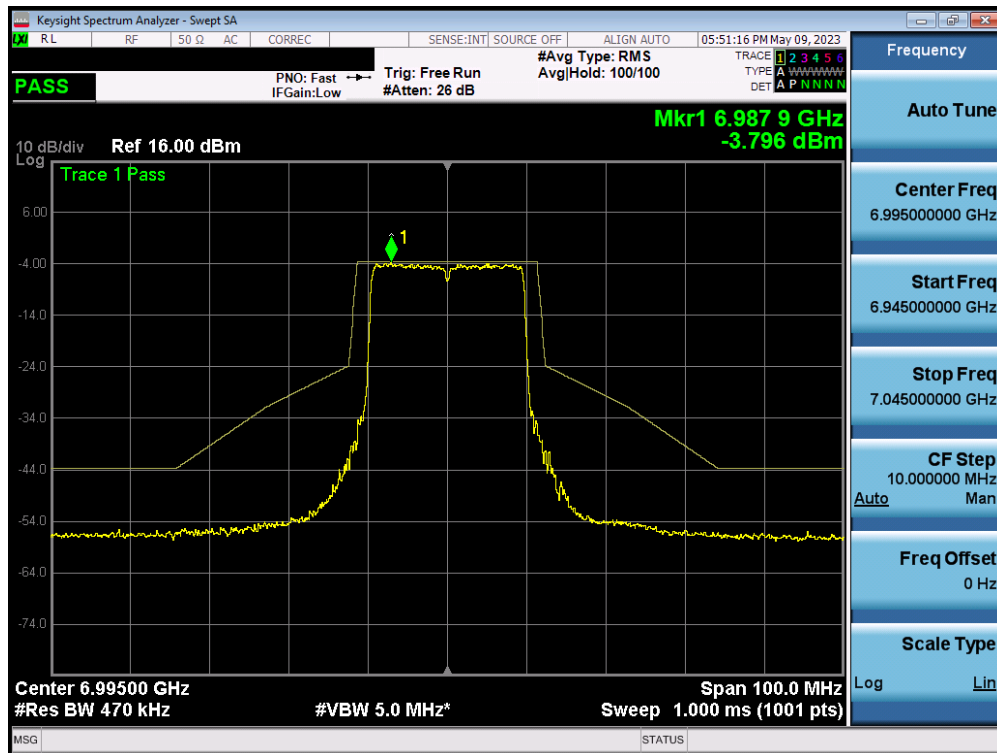


Plot 7-187. In-Band Emission Plot MIMO ANT2 (80MHz BW 802.11ax (Full Tone) (UNII Band 7) – Ch. 151)

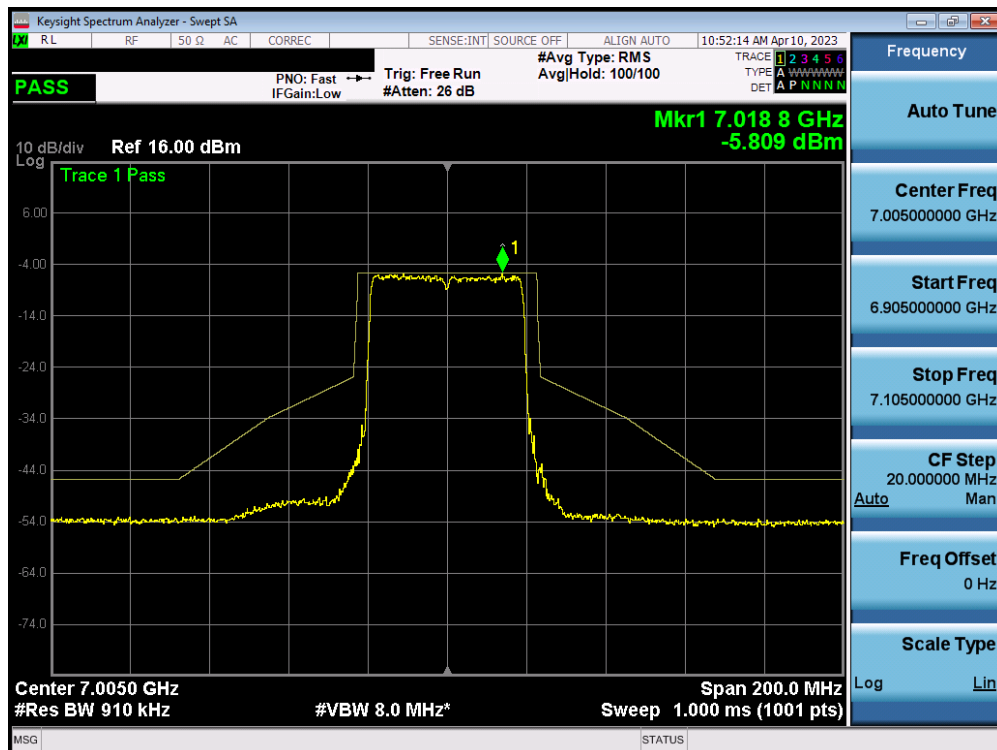


Plot 7-188. In-Band Emission Plot MIMO ANT2 (160MHz BW 802.11ax (Full Tone) (UNII Band 7) – Ch. 143)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 130 of 178                   |

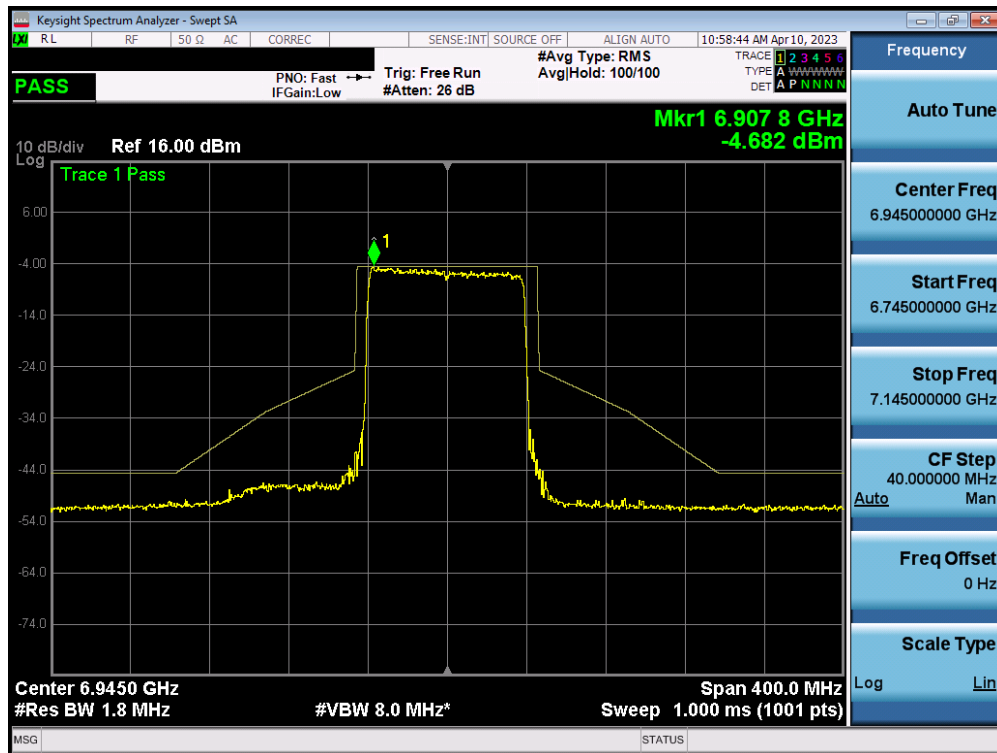


Plot 7-189. In-Band Emission Plot MIMO ANT2 (20MHz BW 802.11ax (Full Tone) (UNII Band 8) – Ch. 209)

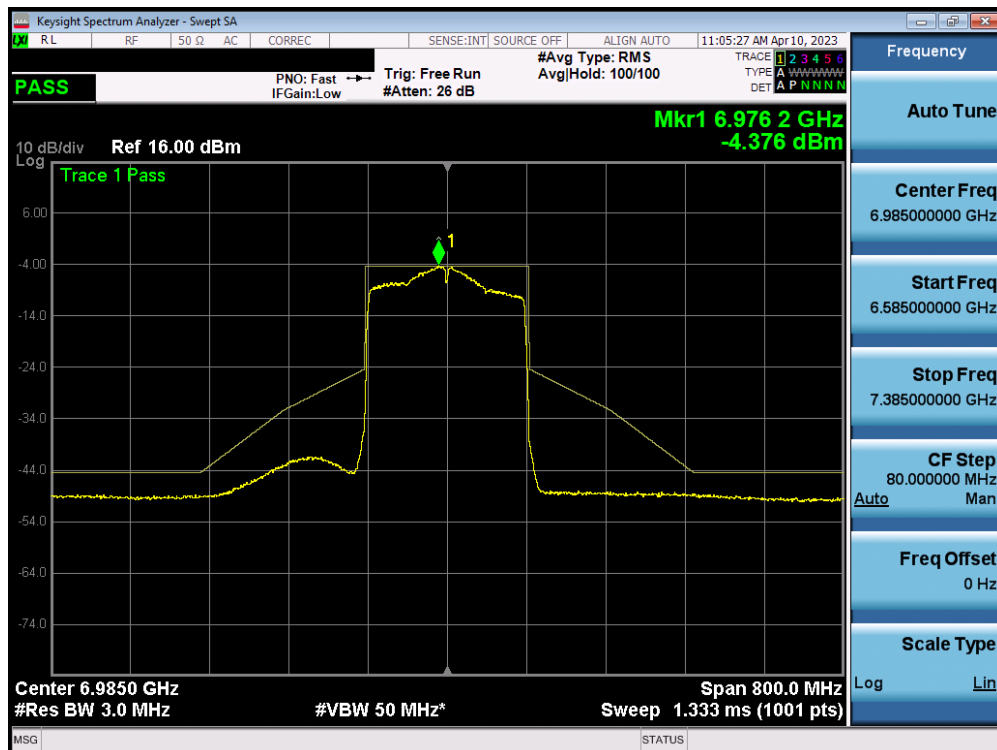


Plot 7-190. In-Band Emission Plot MIMO ANT2 (40MHz BW 802.11ax (Full Tone) (UNII Band 8) – Ch. 211)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 131 of 178                   |



Plot 7-191. In-Band Emission Plot MIMO ANT2 (80MHz BW 802.11ax (Full Tone) (UNII Band 8) – Ch. 199)



Plot 7-192. In-Band Emission Plot MIMO ANT2 (160MHz BW 802.11ax (Full Tone) (UNII Band 8) – Ch. 207)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 132 of 178                   |

## 7.6 Contention Based Protocol

### Test Overview and Limit

Indoor access points, subordinate devices and client devices operating in the 5.925-7.125 GHz band (herein referred to as unlicensed devices) are required to use technologies that include a contention-based protocol to avoid co-channel interference with incumbent devices sharing the band. To ensure incumbent co-channel operations are detected in a technology-agnostic manner, unlicensed devices are required to detect co-channel radio frequency energy (energy detect) and avoid simultaneous transmission.

Unlicensed indoor low-power devices must detect co-channel radio frequency power that is at least -62 dBm or lower. Upon detection of energy in the band, unlicensed low power indoor devices must vacate the channel and stay off the channel if detected radio frequency power is equal to or greater than the threshold (-62 dBm). The -62 dBm (or lower) threshold is referenced to a 0 dBi antenna gain.

To ensure incumbent operations are reliably detected in the band, low power indoor devices must detect RF energy throughout their intended operating channel.

### Test Procedure Used

KDB 987594 D02 v01r01

### Test Settings

1. Configure the EUT to transmit with a constant duty cycle.
2. Set the operating parameters of the EUT including power level, operating frequency, modulation, and bandwidth.
3. Set the signal analyzer center frequency to the nominal EUT channel center frequency. The span range of the signal analyzer shall be between two times and five times the OBW of the EUT. Connect the output port of the EUT to the signal analyzer 2. Ensure that the attenuator 2 provides enough attenuation to not overload the signal analyzer 2 receiver.
4. Monitoring the signal analyzer 2, verify the EUT is operating and transmitting with the parameters set at step two.
5. Using an AWGN signal source, generate (but do not transmit, i.e., RF OFF) a 10 MHz-wide AWGN signal. Use Table 1 to determine the center frequency of the 10 MHz AWGN signal relative to the EUT's channel bandwidth and center frequency.
6. Set the AWGN signal power to an extremely low level (more than 20 dB below the -62 dBm threshold). Connect the AWGN signal source, via a 3-dB splitter, to the signal analyzer 1 and the EUT as shown in Figure 2.
7. Transmit the AWGN signal (RF ON) and verify its characteristics on the signal analyzer 1.
8. Monitor the signal analyzer 2 to verify if the AWGN signal has been detected and the EUT has ceased transmission. If the EUT continues to transmit, then incrementally increase the AWGN signal power level until the EUT stops transmitting.
9. (Including all losses in the RF paths) Determine and record the AWGN signal power level (at the EUT's antenna port) at which the EUT ceased transmission. Repeat the procedure at least 10 times to verify the EUT can detect an AWGN signal with 90% (or better) level of certainty.
10. Refer to Table 1 of KDB 987594 D02 v01r01 to determine the number of times the detection threshold testing needs to be repeated. If testing is required more than once, then go back to step 5, choose a different center frequency for the AWGN signal, and repeat the process.

|                                                |                                       |                                      |                                          |
|------------------------------------------------|---------------------------------------|--------------------------------------|------------------------------------------|
| <b>FCC ID:</b> A3LSMF731B                      | <b>MEASUREMENT REPORT</b>             |                                      | <b>Approved by:</b><br>Technical Manager |
| <b>Test Report S/N:</b><br>1M2303170032-14.A3L | <b>Test Dates:</b><br>3/4 – 5/26/2023 | <b>EUT Type:</b><br>Portable Handset | Page 133 of 178                          |

## Test Setup

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

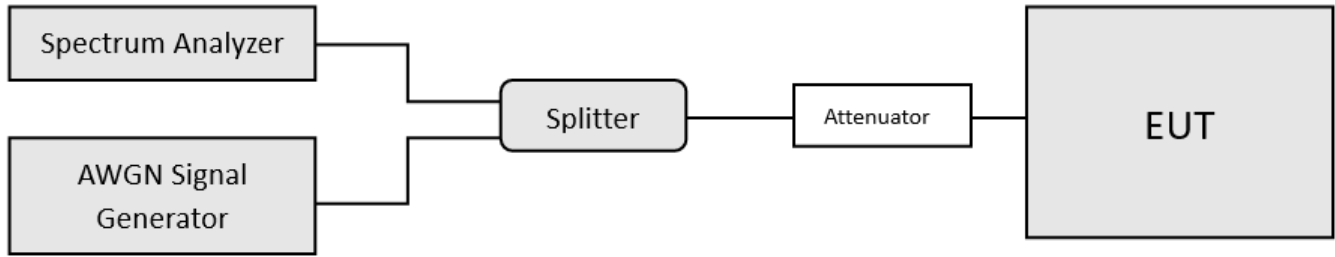


Figure 7-5. Contention-based protocol test setup, conducted method

## Test Notes

1. Per guidance from KDB 987594 D02 v01r01, contention based protocol was tested using an AWGN signal with a bandwidth of 10MHz. The amplitude of the signal was increased until detected by the EUT, signaled by the ceasing of transmission, M1 indicates the point at which the AWGN signal is introduced. D1 indicates where the AWGN signal is terminated, at least 10 seconds following M1.
2. 15 trials were run in order to ensure certainty of 90%
3. Per Guidance from KDB 987594 D04 v01, contention based protocol was tested with receiver with the lowest antenna gain.
4. All CBP Timing Plots shown are for the ceased condition. Some spikes that may be shown are from adjacent portions of the spectrum that are still transmitting.

$$\text{Detection Level} = \text{Injected AWGN Power (dBm)} - \text{Antenna Gain (dBi)} + \text{Path Loss (dB)}$$

### Equation 7-1. Detection Level Calculation

| Band        | Channel | Channel Freq [MHz] | Channel BW [MHz] | Incumbent Freq [MHz] | Injected (AWGN) [dBm] | Antenna Gain [dBi] | Adjusted Power Level [dBm] | Detection Limit [dBm] | Margin [dB] |
|-------------|---------|--------------------|------------------|----------------------|-----------------------|--------------------|----------------------------|-----------------------|-------------|
| UNII Band 5 | 53      | 6215               | 20               | 6215                 | -78.50                | -10.95             | -67.55                     | -62.0                 | -5.55       |
|             |         |                    |                  | 6110                 | -88.95                | -10.95             | -78.00                     | -62.0                 | -16.00      |
|             | 47      | 6185               | 160              | 6185                 | -84.24                | -10.95             | -73.29                     | -62.0                 | -11.29      |
|             |         |                    |                  | 6260                 | -87.33                | -10.95             | -76.38                     | -62.0                 | -14.38      |
| UNII Band 6 | 101     | 6455               | 20               | 6455                 | -78.87                | -10.77             | -68.10                     | -62.0                 | -6.10       |
|             |         |                    |                  | 6430                 | -84.24                | -10.77             | -73.47                     | -62.0                 | -11.47      |
|             | 111     | 6505               | 160              | 6505                 | -79.59                | -10.77             | -68.82                     | -62.0                 | -6.82       |
|             |         |                    |                  | 6580                 | -84.27                | -10.77             | -73.50                     | -62.0                 | -11.50      |
| UNII Band 7 | 149     | 6695               | 20               | 6695                 | -78.49                | -10.77             | -67.72                     | -62.0                 | -5.72       |
|             |         |                    |                  | 6750                 | -83.76                | -10.77             | -72.99                     | -62.0                 | -10.99      |
|             | 175     | 6825               | 160              | 6825                 | -80.71                | -10.77             | -69.94                     | -62.0                 | -7.94       |
|             |         |                    |                  | 6900                 | -82.03                | -10.77             | -71.26                     | -62.0                 | -9.26       |
| UNII Band 8 | 197     | 6935               | 20               | 6935                 | -76.65                | -10.74             | -65.91                     | -62.0                 | -3.91       |
|             |         |                    |                  | 6910                 | -82.33                | -10.74             | -71.59                     | -62.0                 | -9.59       |
|             | 207     | 6985               | 160              | 6985                 | -79.11                | -10.74             | -68.37                     | -62.0                 | -6.37       |
|             |         |                    |                  | 7060                 | -83.53                | -10.74             | -72.79                     | -62.0                 | -10.79      |

Table 7-29. Contention Based Protocol – Incumbent Detection Results

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 134 of 178                   |

| Band           | Channel | Channel Freq [MHz] | Channel BW [MHz] | Incumbent Freq [MHz] | Antenna Gain [dBi] | EUT Transmission Status   |         |        | Detection Limit [dBm] | Margin [dB] |
|----------------|---------|--------------------|------------------|----------------------|--------------------|---------------------------|---------|--------|-----------------------|-------------|
|                |         |                    |                  |                      |                    | Adjusted AWGN Power (dBm) |         |        |                       |             |
|                |         |                    |                  |                      |                    | Normal                    | Minimal | Ceased |                       |             |
| UNII<br>Band 5 | 53      | 6215               | 20               | 6215                 | -10.95             | -71.35                    | -68.65  | -67.55 | -62.0                 | -5.55       |
|                | 47      | 6185               | 160              | 6110                 | -10.95             | -81.80                    | -79.10  | -78.00 | -62.0                 | -16.00      |
|                |         |                    |                  | 6185                 | -10.95             | -77.09                    | -74.39  | -73.29 | -62.0                 | -11.29      |
|                |         |                    |                  | 6260                 | -10.95             | -80.18                    | -77.48  | -76.38 | -62.0                 | -14.38      |
| UNII<br>Band 6 | 101     | 6455               | 20               | 6455                 | -10.77             | -71.90                    | -69.20  | -68.10 | -62.0                 | -6.10       |
|                | 111     | 6505               | 160              | 6430                 | -10.77             | -77.27                    | -74.57  | -73.47 | -62.0                 | -11.47      |
|                |         |                    |                  | 6505                 | -10.77             | -72.62                    | -69.92  | -68.82 | -62.0                 | -6.82       |
|                |         |                    |                  | 6580                 | -10.77             | -77.30                    | -74.60  | -73.50 | -62.0                 | -11.50      |
| UNII<br>Band 7 | 149     | 6695               | 20               | 6695                 | -10.77             | -71.52                    | -68.82  | -67.72 | -62.0                 | -5.72       |
|                | 175     | 6825               | 160              | 6750                 | -10.77             | -76.79                    | -74.09  | -72.99 | -62.0                 | -10.99      |
|                |         |                    |                  | 6825                 | -10.77             | -73.74                    | -71.04  | -69.94 | -62.0                 | -7.94       |
|                |         |                    |                  | 6900                 | -10.77             | -75.06                    | -72.36  | -71.26 | -62.0                 | -9.26       |
| UNII<br>Band 8 | 197     | 6935               | 20               | 6935                 | -10.74             | -69.71                    | -67.01  | -65.91 | -62.0                 | -3.91       |
|                | 207     | 6985               | 160              | 6910                 | -10.74             | -75.39                    | -72.69  | -71.59 | -62.0                 | -9.59       |
|                |         |                    |                  | 6985                 | -10.74             | -72.17                    | -69.47  | -68.37 | -62.0                 | -6.37       |
|                |         |                    |                  | 7060                 | -10.74             | -76.59                    | -73.89  | -72.79 | -62.0                 | -10.79      |

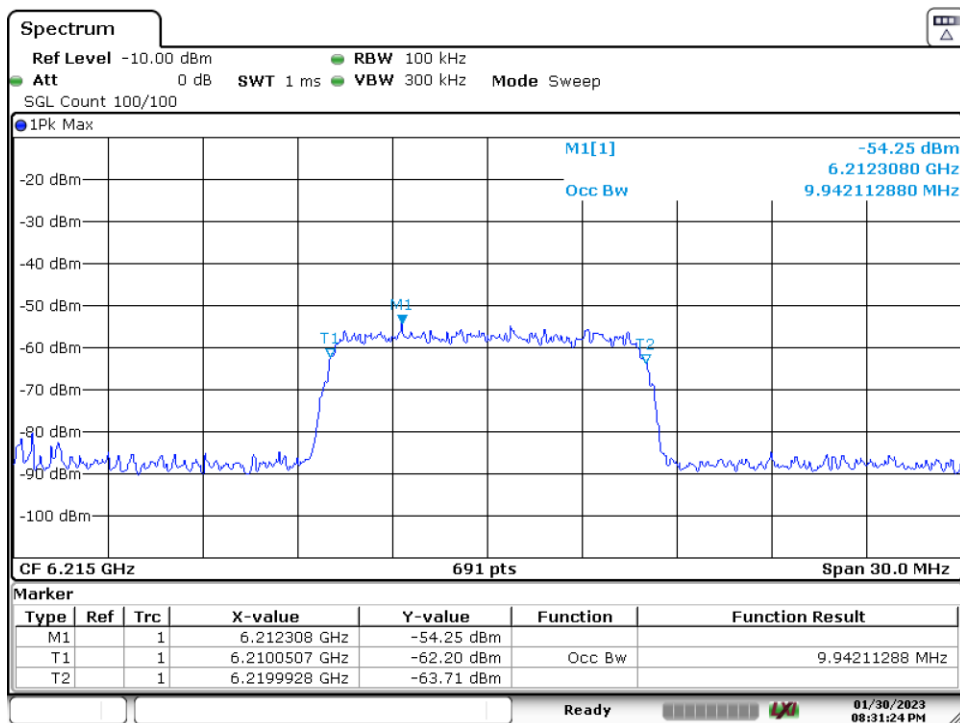
**Table 7-30. Contention Based Protocol – Detection Results – All Tx Cases**

| Band        | Channel | Channel Freq [MHz] | Channel BW [MHz] | Incumbent Freq [MHz] | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | Detection Rate (%) |
|-------------|---------|--------------------|------------------|----------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|--------------------|
| UNII Band 5 | 53      | 6215               | 20               | 6215                 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 100                |
|             | 47      | 6185               | 160              | 6110                 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 100                |
|             |         |                    |                  | 6185                 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 100                |
|             |         |                    |                  | 6260                 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 100                |
| UNII Band 6 | 101     | 6455               | 20               | 6455                 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 100                |
|             | 111     | 6505               | 160              | 6430                 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 100                |
|             |         |                    |                  | 6505                 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 100                |
|             |         |                    |                  | 6580                 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 100                |
| UNII Band 7 | 149     | 6695               | 20               | 6695                 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 100                |
|             | 175     | 6825               | 160              | 6750                 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 100                |
|             |         |                    |                  | 6825                 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 100                |
|             |         |                    |                  | 6900                 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 100                |
| UNII Band 8 | 197     | 6935               | 20               | 6935                 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 100                |
|             | 207     | 6985               | 160              | 6910                 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 100                |
|             |         |                    |                  | 6985                 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 100                |
|             |         |                    |                  | 7060                 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1  | 1  | 1  | 1  | 1  | 1  | 100                |

**Table 7-31. Contention Based Protocol – Incumbent Detection Trial Results**

|                                                |                                       |                                      |                                          |
|------------------------------------------------|---------------------------------------|--------------------------------------|------------------------------------------|
| <b>FCC ID:</b> A3LSMF731B                      | <b>MEASUREMENT REPORT</b>             |                                      | <b>Approved by:</b><br>Technical Manager |
| <b>Test Report S/N:</b><br>1M2303170032-14.A3L | <b>Test Dates:</b><br>3/4 – 5/26/2023 | <b>EUT Type:</b><br>Portable Handset | Page 135 of 178                          |

## 7.6.1 AWGN

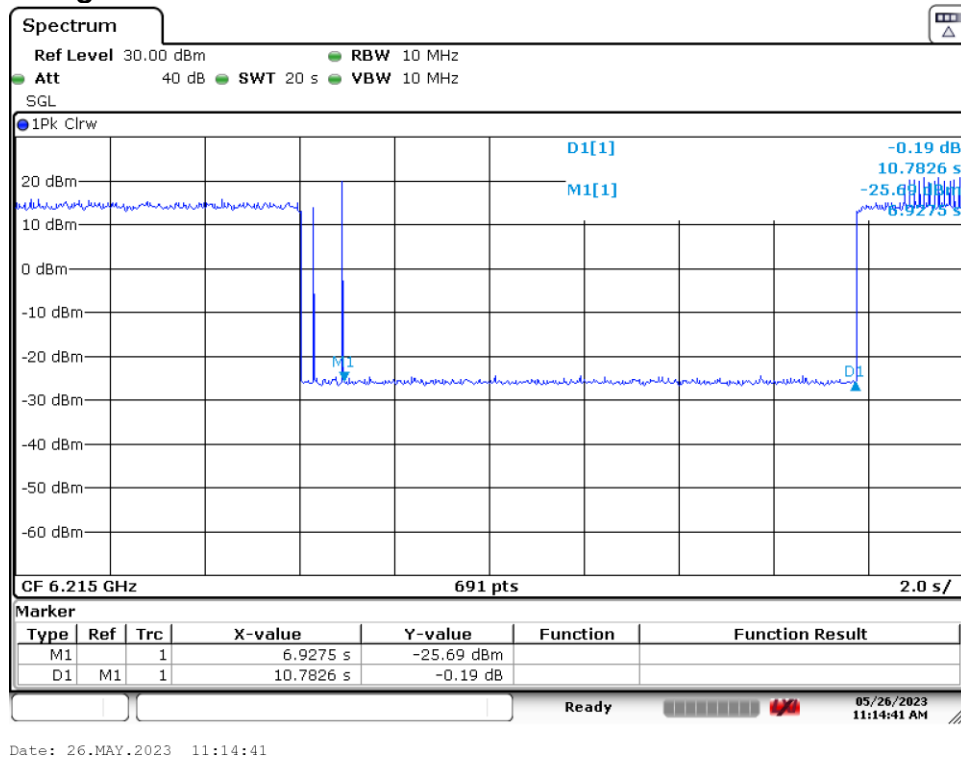


Date: 30.JAN.2023 20:31:24

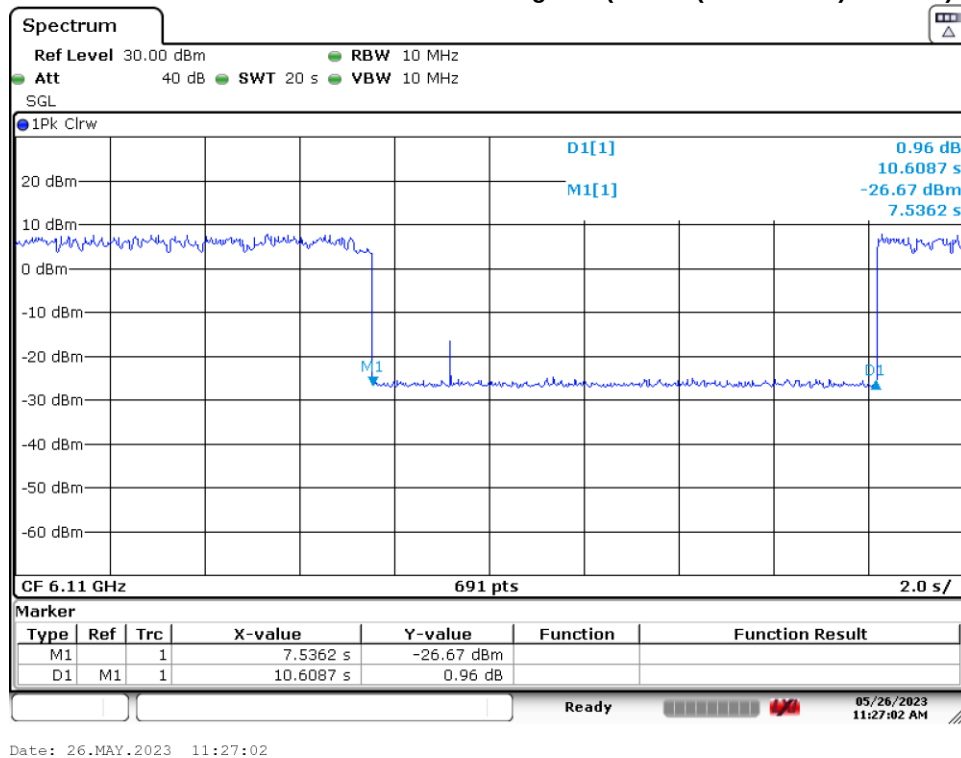
Plot 7-193. AWGN Signal (Demonstration)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 136 of 178                   |

## 7.6.2 CBP Timing Plots

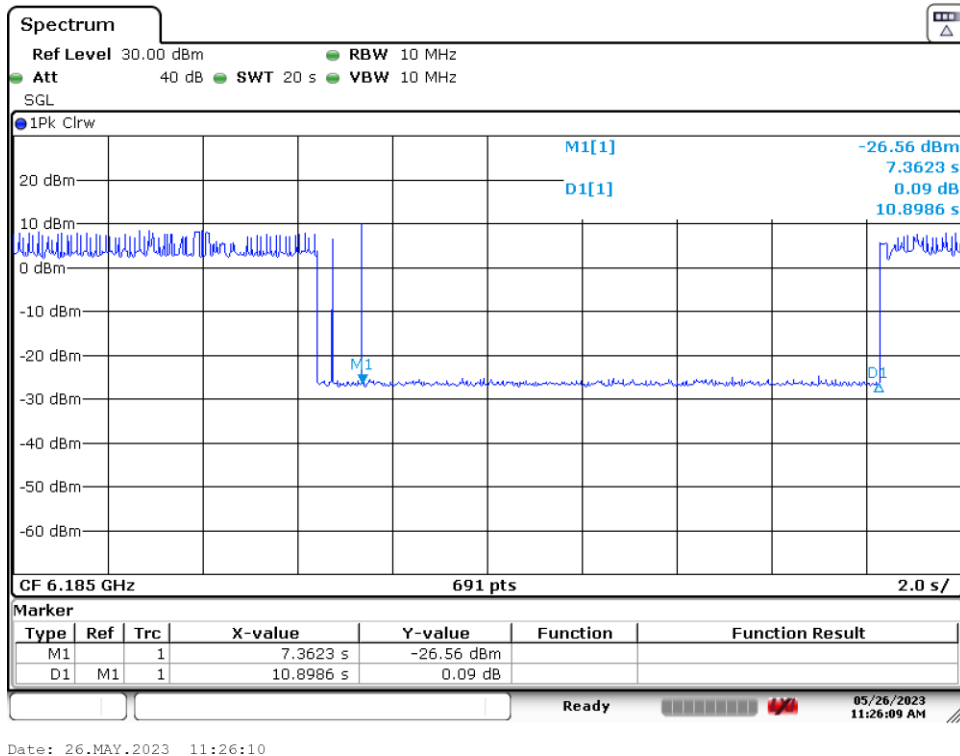


Plot 7-194. Contention Based Protocol Timing Plot (20MHz (UNII Band 5) – Ch. 53)

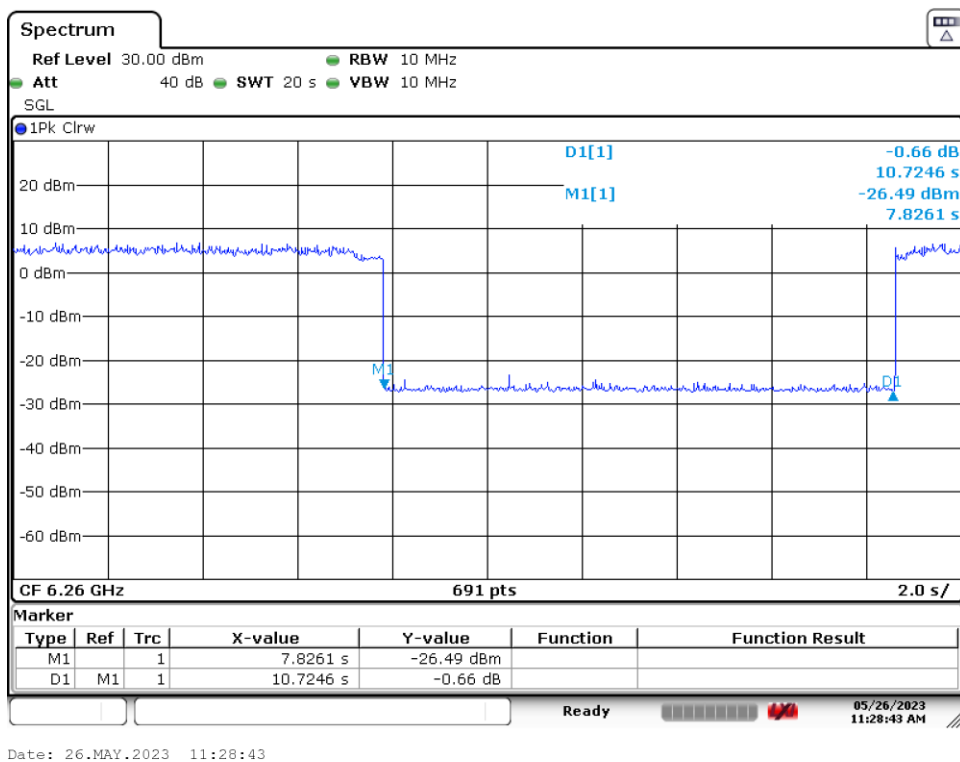


Plot 7-195. Contention Based Protocol Timing Plot (160MHz (UNII Band 5) – Ch. 47 Low)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 137 of 178                   |

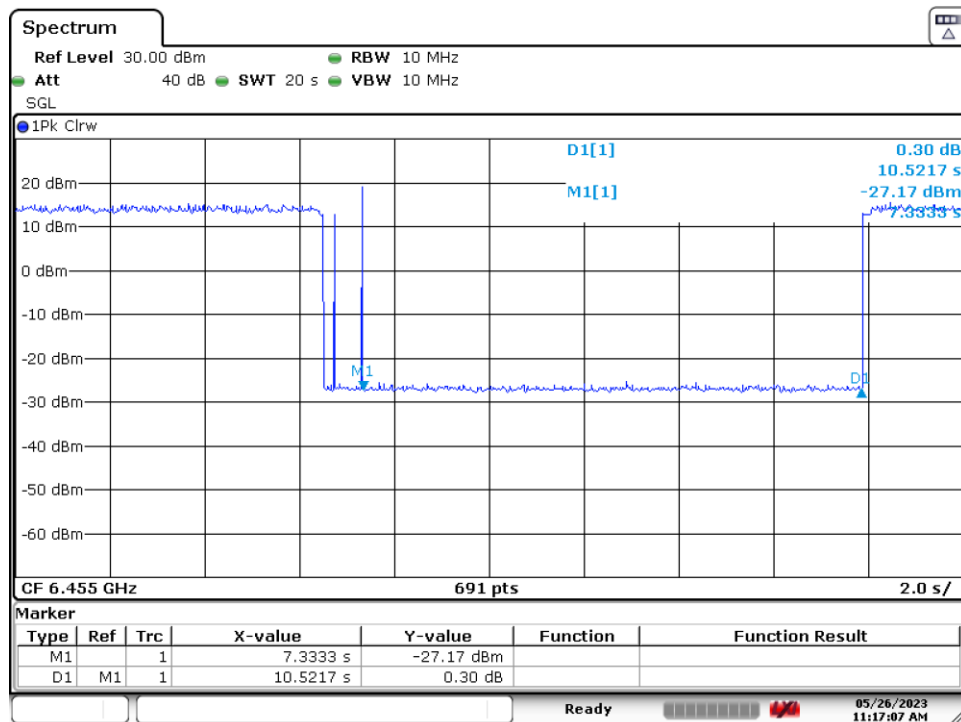


Plot 7-196. Contention Based Protocol Timing Plot (160MHz (UNII Band 5) – Ch. 47 Mid)



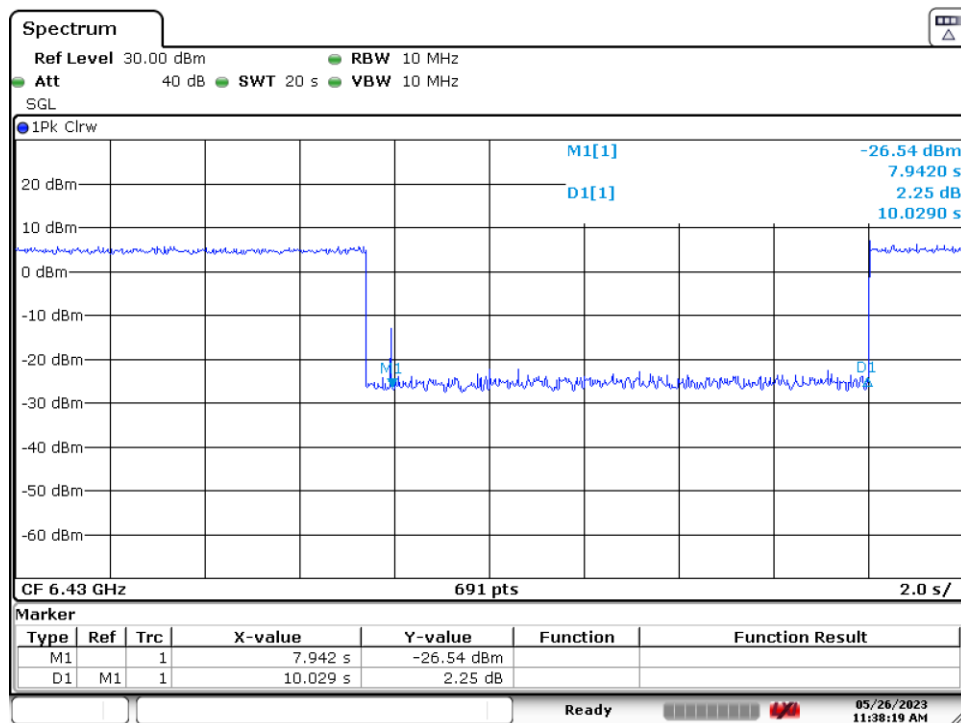
Plot 7-197. Contention Based Protocol Timing Plot (160MHz (UNII Band 5) – Ch. 47 High)

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 138 of 178                   |



Date: 26.MAY.2023 11:17:07

**Plot 7-198. Contention Based Protocol Timing Plot (20MHz (UNII Band 6) – Ch. 101)**

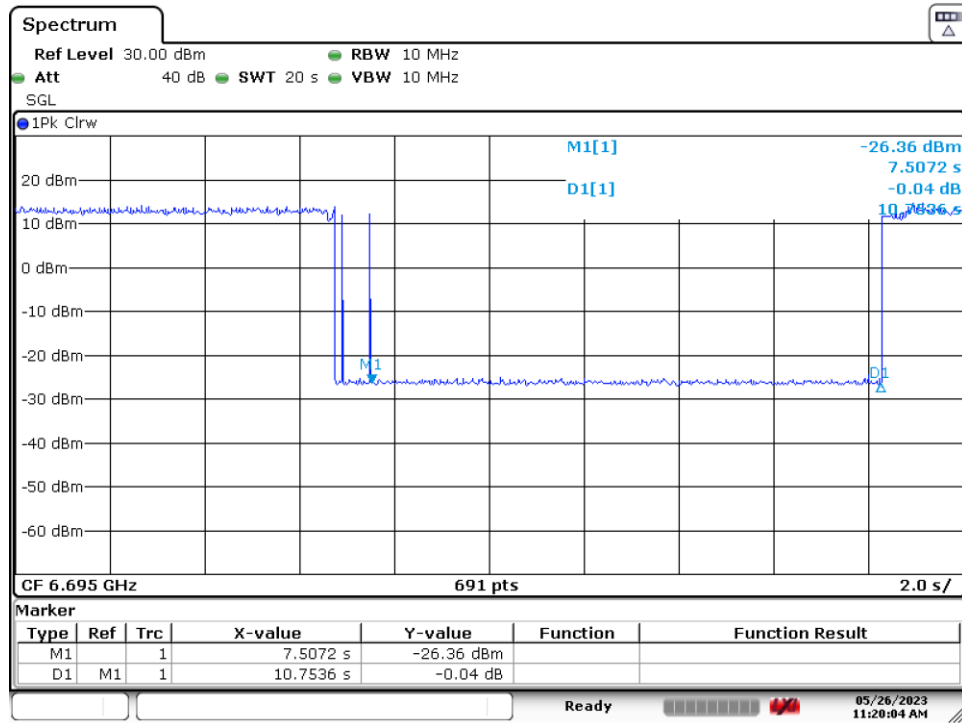


Date: 26.MAY.2023 11:38:19

**Plot 7-199. Contention Based Protocol Timing Plot (160MHz (UNII Band 6) – Ch. 111 Low)**

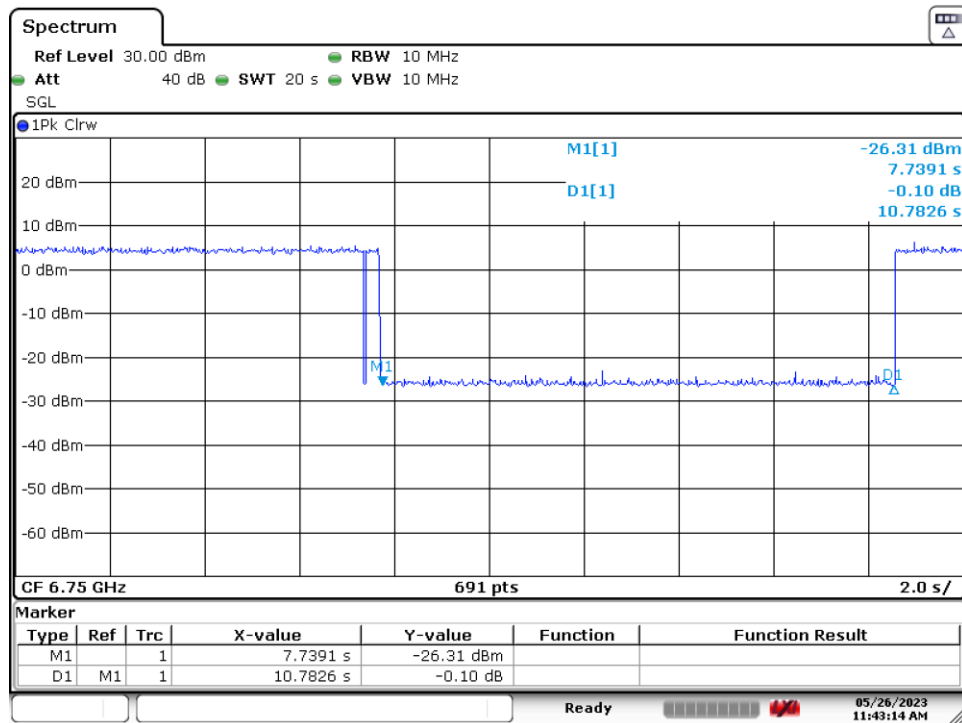
|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 139 of 178                   |





Date: 26.MAY.2023 11:20:04

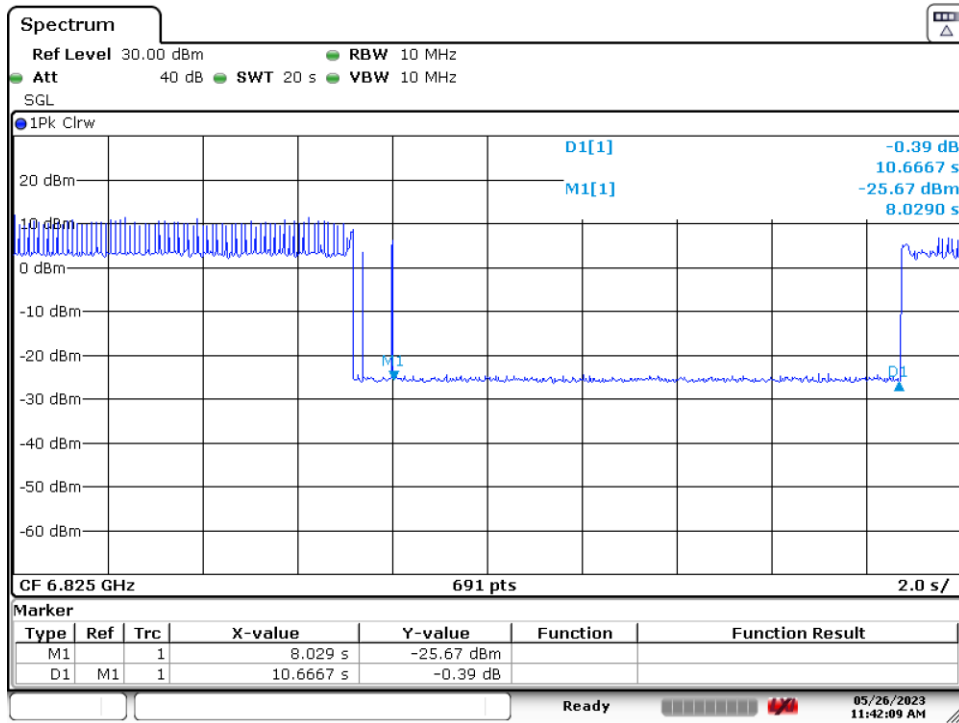
**Plot 7-202. Contention Based Protocol Timing Plot (20MHz (UNII Band 7) – Ch. 149)**



Date: 26.MAY.2023 11:43:14

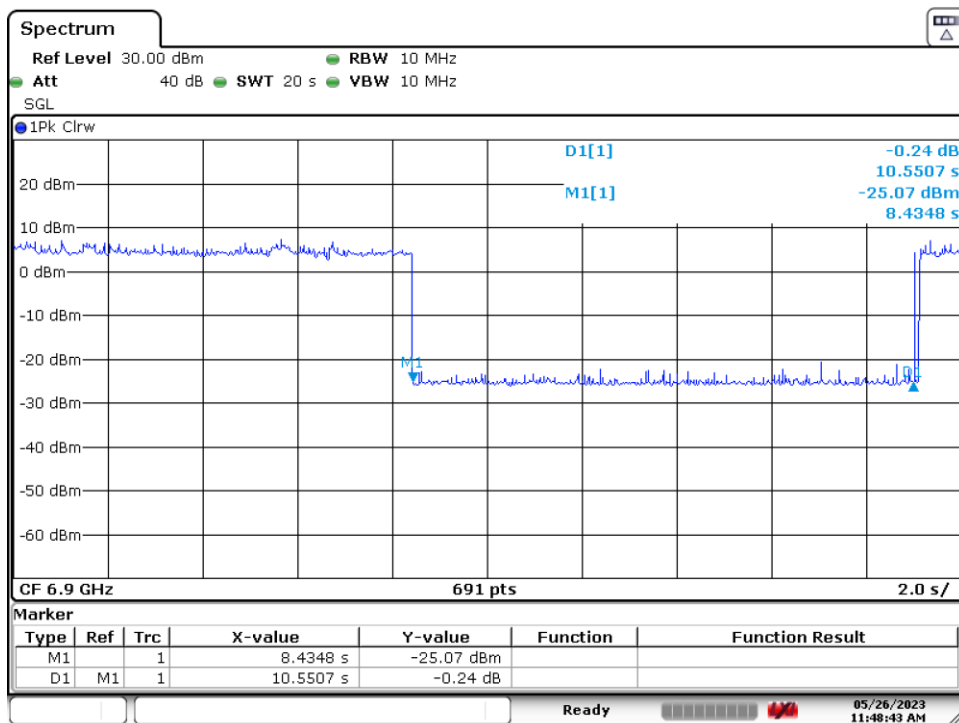
**Plot 7-203. Contention Based Protocol Timing Plot (160MHz (UNII Band 7) – Ch. 175 Low)**

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 141 of 178                   |



Date: 26.MAY.2023 11:42:09

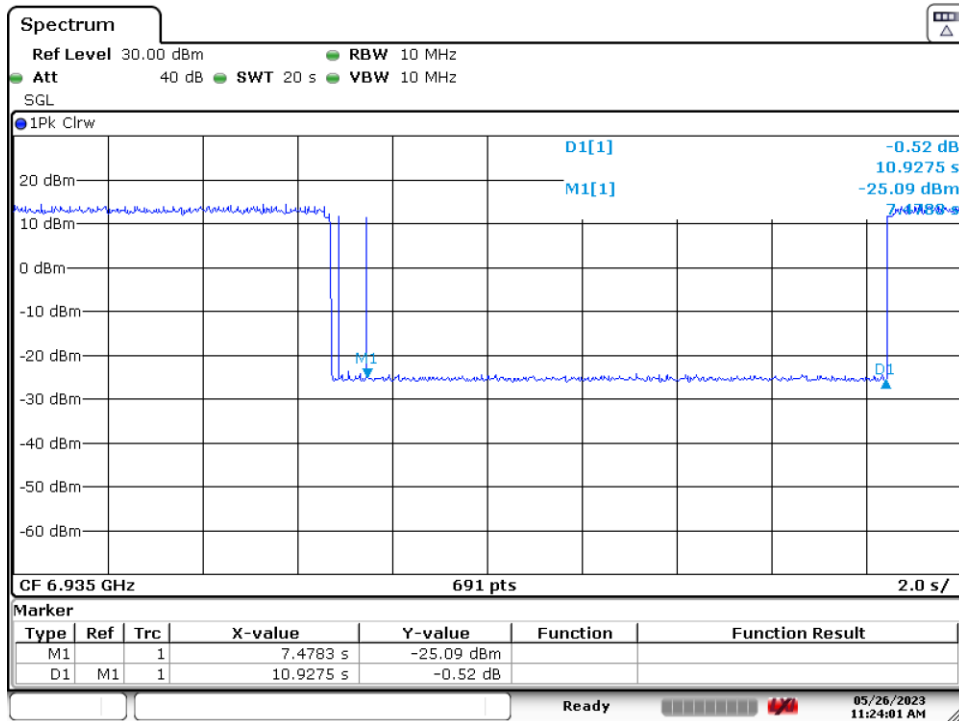
**Plot 7-204. Contention Based Protocol Timing Plot (160MHz (UNII Band 7) – Ch. 175 Mid)**



Date: 26.MAY.2023 11:48:43

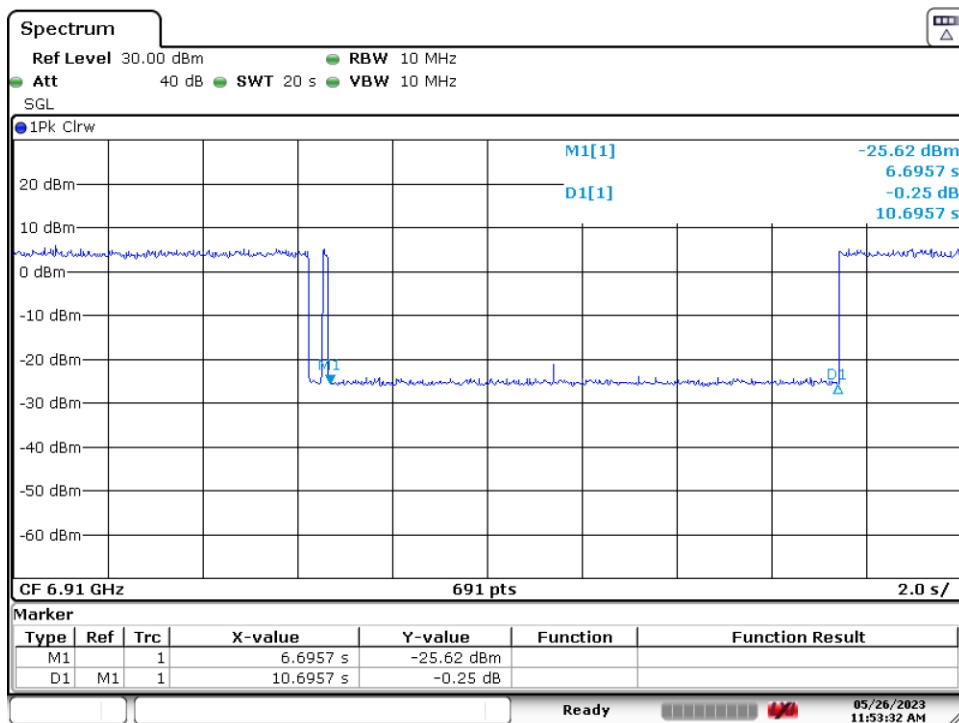
**Plot 7-205. Contention Based Protocol Timing Plot (160MHz (UNII Band 7) – Ch. 175 High)**

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 142 of 178                   |



Date: 26.MAY.2023 11:24:01

**Plot 7-206. Contention Based Protocol Timing Plot (20MHz (UNII Band 8) – Ch. 197)**



Date: 26.MAY.2023 11:53:32

**Plot 7-207. Contention Based Protocol Timing Plot (160MHz (UNII Band 8) – Ch. 207 Low)**

|                                         |                                |                               |                                   |
|-----------------------------------------|--------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMF731B                      | MEASUREMENT REPORT             |                               | Approved by:<br>Technical Manager |
| Test Report S/N:<br>1M2303170032-14.A3L | Test Dates:<br>3/4 – 5/26/2023 | EUT Type:<br>Portable Handset | Page 143 of 178                   |