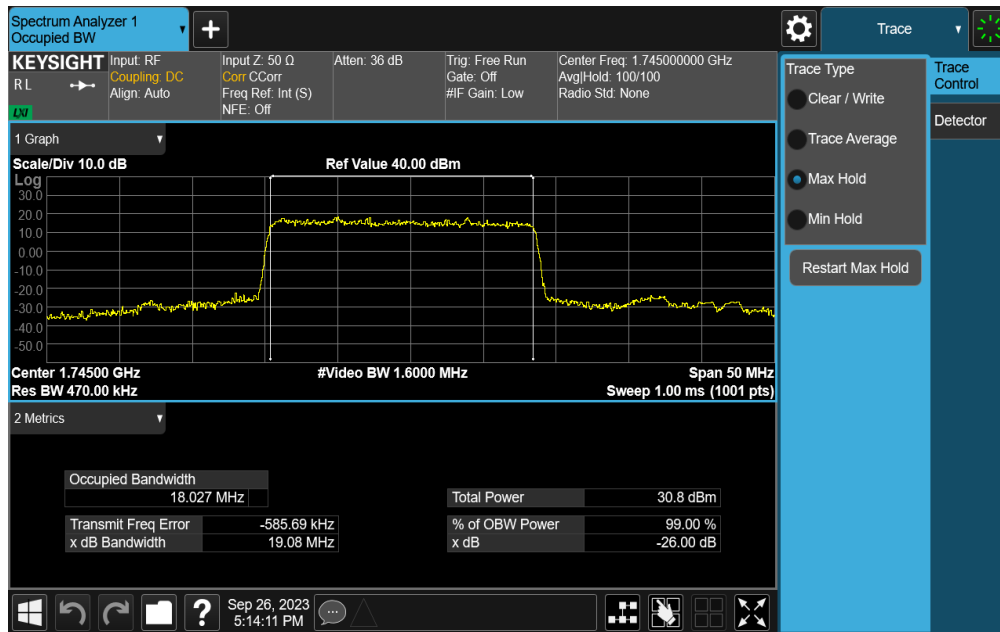
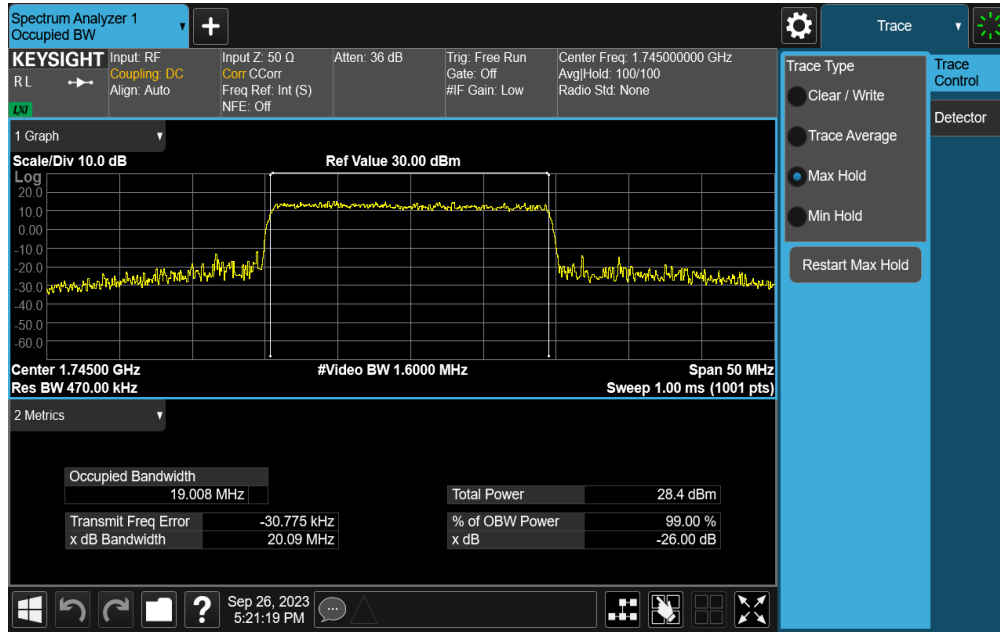


Plot 7-96. Occupied Bandwidth Plot (NR Band n66 - 25.0MHz CP-OFDM 16QAM - Full RB – ANT2)

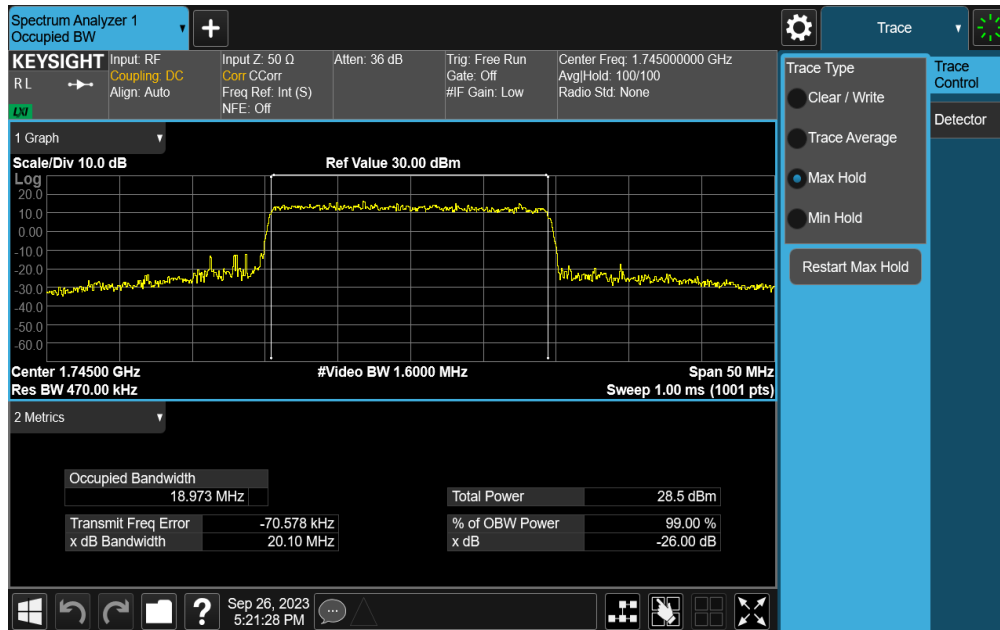


Plot 7-97. Occupied Bandwidth Plot (NR Band n66 - 20.0MHz DFT-s-OFDM BPSK - Full RB – ANT2)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 70 of 179 |

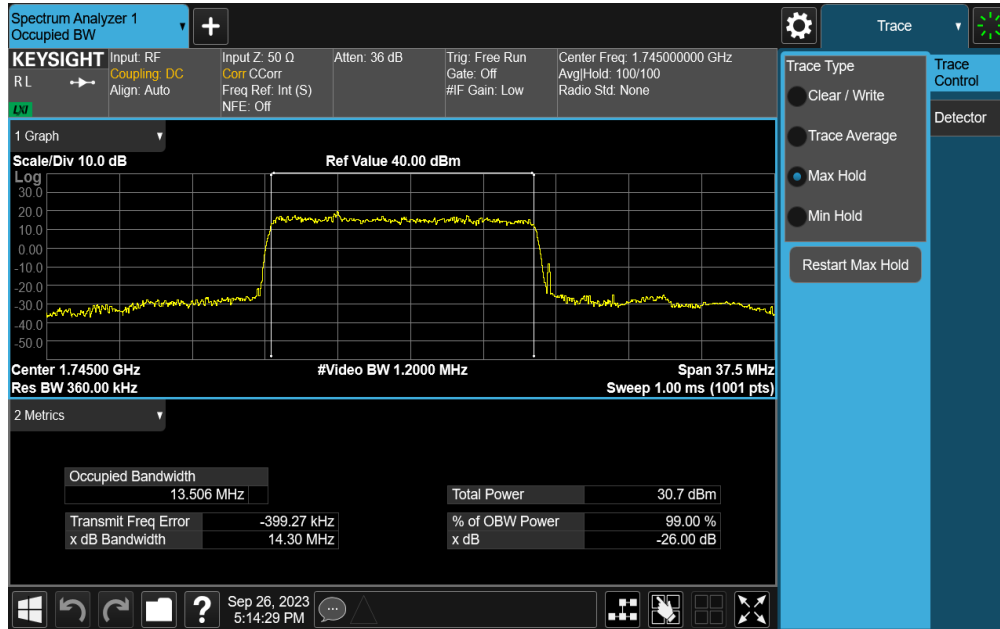


Plot 7-98. Occupied Bandwidth Plot (NR Band n66 - 20.0MHz CP-OFDM QPSK - Full RB – ANT2)

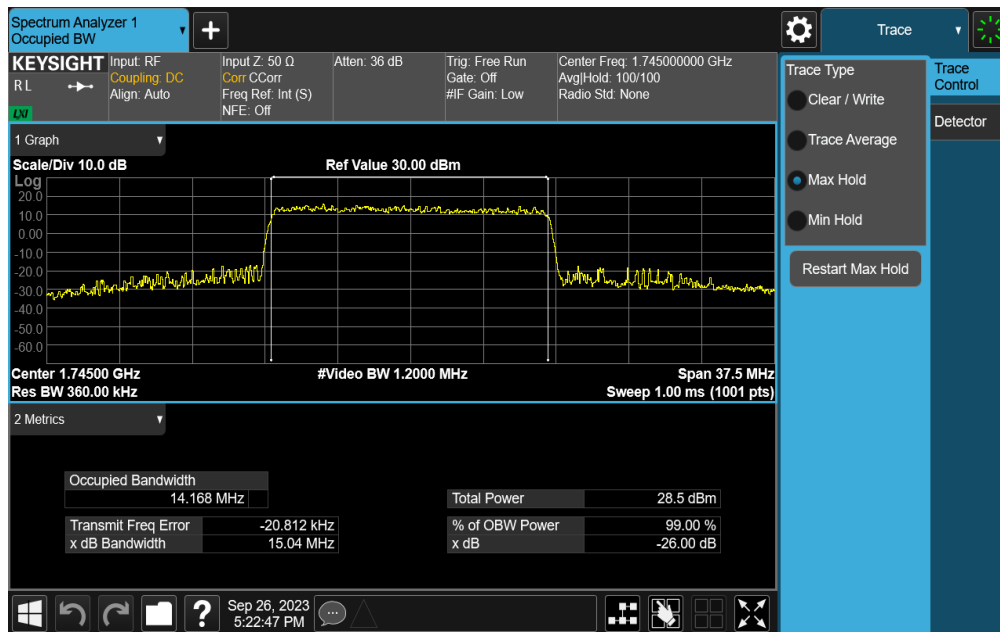


Plot 7-99. Occupied Bandwidth Plot (NR Band n66 - 20.0MHz CP-OFDM 16QAM - Full RB – ANT2)

| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 71 of 179 |

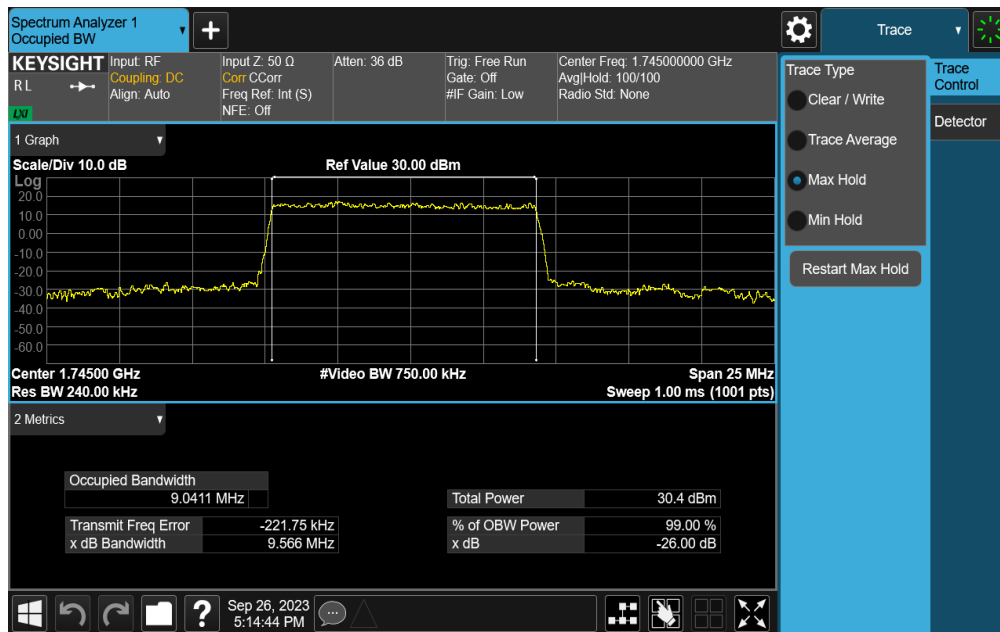
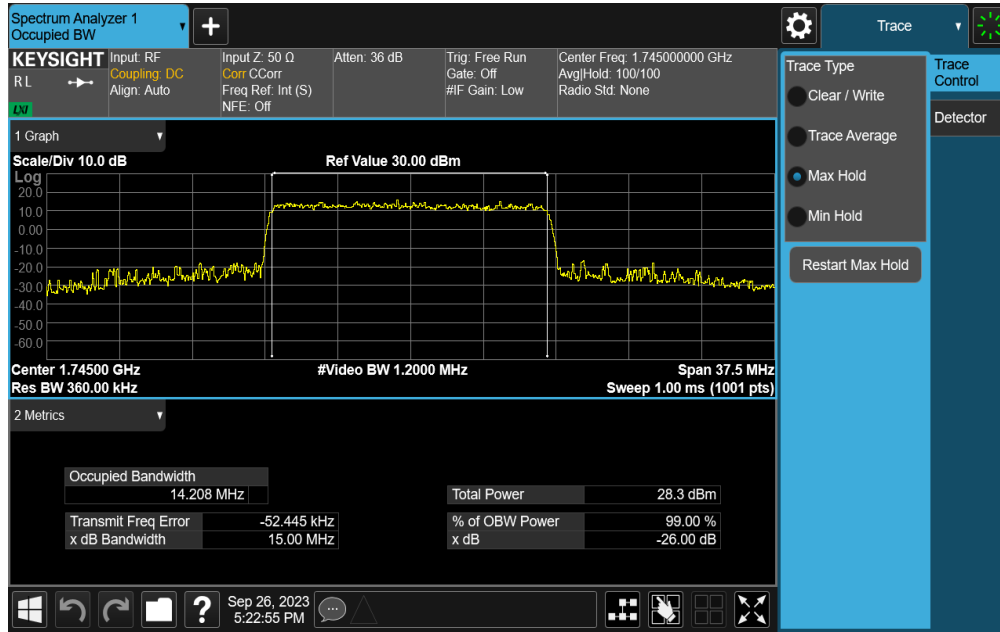


Plot 7-100. Occupied Bandwidth Plot (NR Band n66 - 15.0MHz DFT-s-OFDM BPSK - Full RB - ANT2)

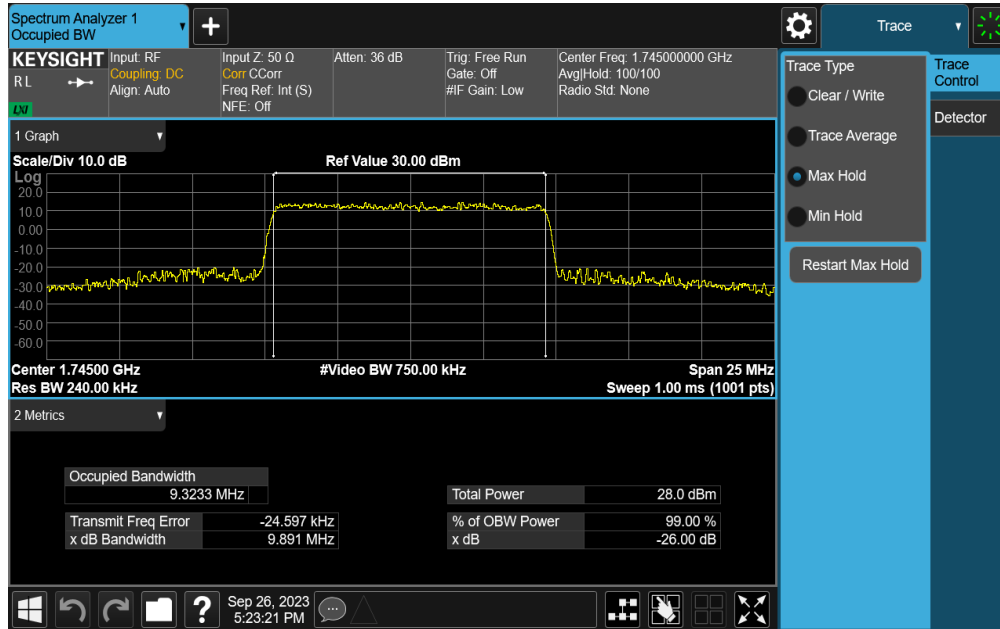


Plot 7-101. Occupied Bandwidth Plot (NR Band n66 - 15.0MHz CP-OFDM QPSK - Full RB - ANT2)

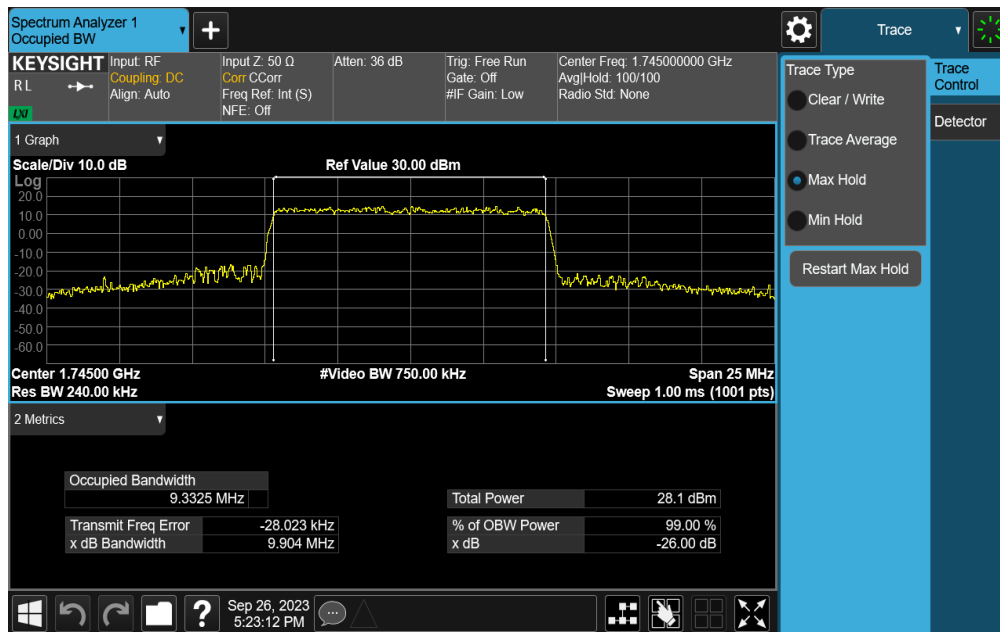
| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 72 of 179 |



| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 73 of 179 |

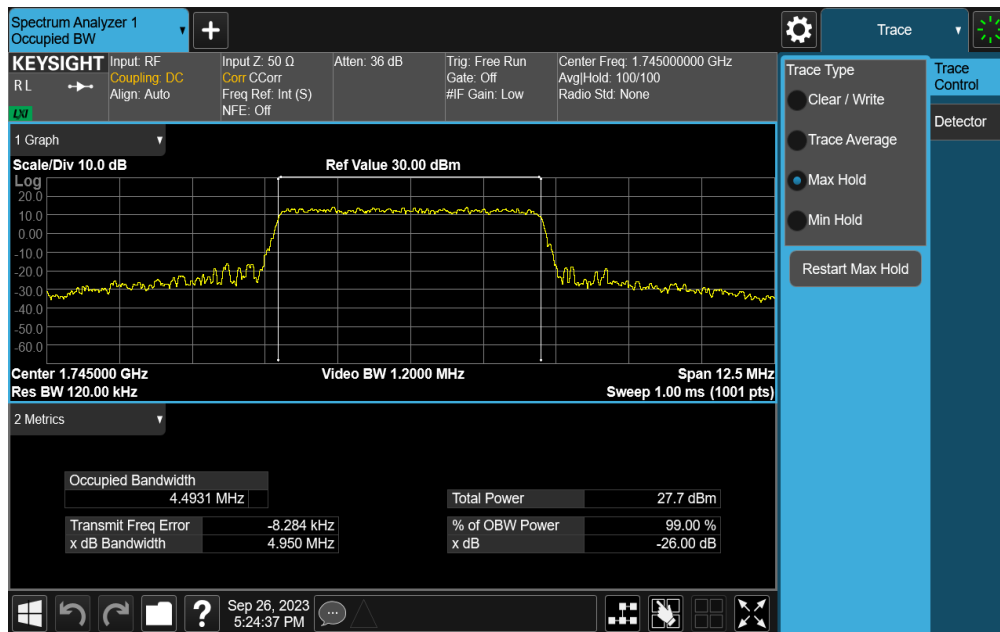
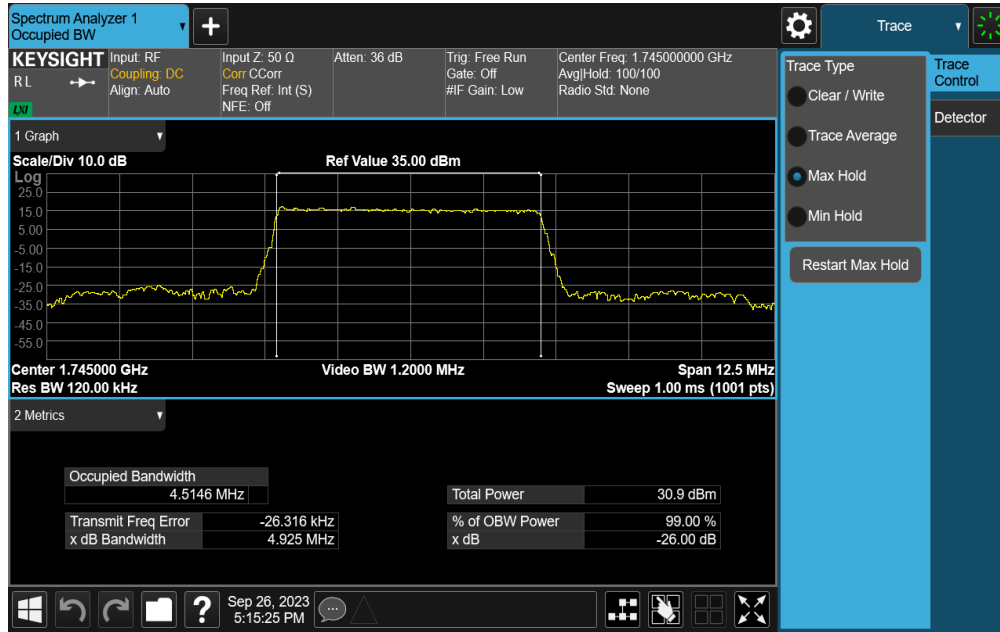


Plot 7-104. Occupied Bandwidth Plot (NR Band n66 - 10.0MHz CP-OFDM QPSK - Full RB – ANT2)

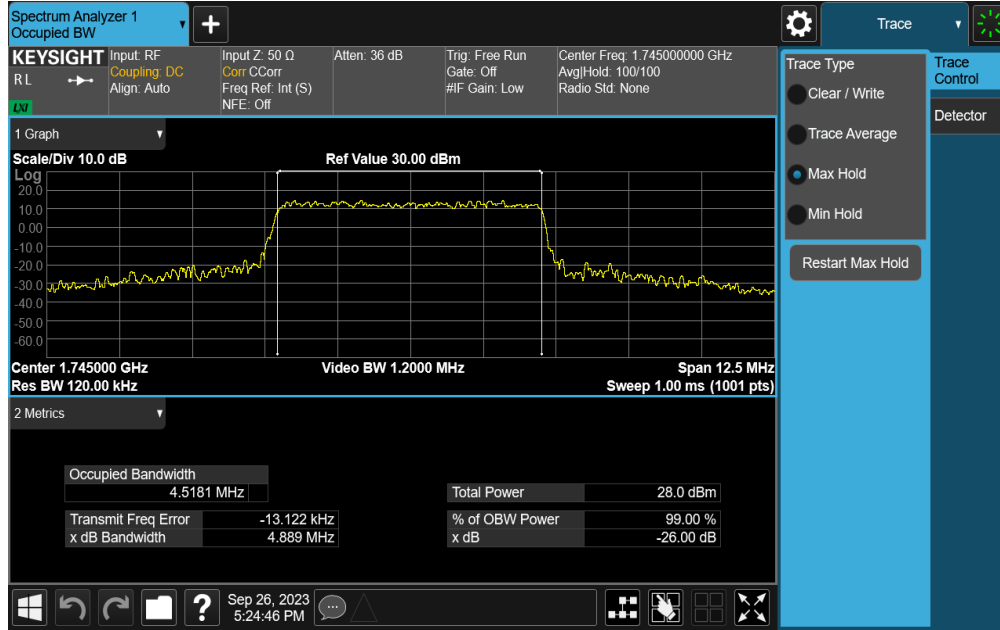


Plot 7-105. Occupied Bandwidth Plot (NR Band n66 - 10.0MHz CP-OFDM 16QAM - Full RB – ANT2)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 74 of 179 |



| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 75 of 179 |



Plot 7-108. Occupied Bandwidth Plot (NR Band n66 - 5.0MHz CP-OFDM 16QAM - Full RB – ANT2)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 76 of 179 |

7.4 Spurious and Harmonic Emissions at Antenna Terminal

Test Overview

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

The minimum permissible attenuation level of any spurious emission is $43 + 10 \log_{10}(P_{\text{Watts}})$, where P is the transmitter power in Watts.

Test Procedure Used

ANSI C63.26-2015 – Section 5.7.4

Test Settings

1. Start frequency was set to 30MHz and stop frequency was set to 18GHz (separated into at least two plots per channel)
2. RBW \geq 100kHz
3. VBW \geq 3 x RBW
4. Detector = RMS
5. Trace mode = max hold
6. Sweep time = auto couple
7. The trace was allowed to stabilize

Test Setup

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

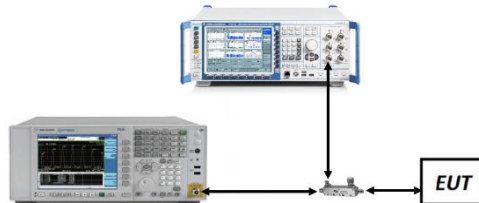


Figure 7-3. Test Instrument & Measurement Setup

Test Notes

1. Per Part 27 and RSS-139, compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth 100 kHz or greater for measurements below 1GHz.
2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 77 of 179 |

| Mode | Bandwidth | Channel | Range [MHz] | Level [dBm] | Limit [dBm] | Margin [dB] |
|-------------|-----------|---------|------------------|-------------|-------------|-------------|
| LTE Band 71 | 20 MHz | Low | 30.0 - 662.0 | -48.30 | -13 | -35.30 |
| | | Low | 698.0 - 1000.0 | -61.96 | -13 | -48.96 |
| | | Low | 1000.0 - 10000.0 | -44.72 | -13 | -31.72 |
| | | Mid | 30.0 - 663.0 | -60.95 | -13 | -47.95 |
| | | Mid | 698.0 - 1000.0 | -59.93 | -13 | -46.93 |
| | | Mid | 1000.0 - 10000.0 | -44.29 | -13 | -31.29 |
| | | High | 30.0 - 663.0 | -53.39 | -13 | -40.39 |
| | | High | 699.0 - 1000.0 | -49.79 | -13 | -36.79 |
| | | High | 1000.0 - 10000.0 | -43.83 | -13 | -30.83 |
| LTE Band 12 | 10 MHz | Low | 30.0 - 697.9 | -48.93 | -13 | -35.93 |
| | | Low | 716.0 - 1000.0 | -61.55 | -13 | -48.55 |
| | | Low | 1000.0 - 10000.0 | -44.48 | -13 | -31.48 |
| | | Mid | 30.0 - 698.0 | -58.07 | -13 | -45.07 |
| | | Mid | 716.0 - 1000.0 | -58.72 | -13 | -45.72 |
| | | Mid | 1000.0 - 10000.0 | -44.12 | -13 | -31.12 |
| | | High | 30.0 - 697.9 | -59.58 | -13 | -46.58 |
| | | High | 716.1 - 1000.0 | -49.40 | -13 | -36.40 |
| | | High | 1000.0 - 10000.0 | -44.37 | -13 | -31.37 |
| LTE Band 13 | 10 MHz | Mid | 30.0 - 777.0 | -45.72 | -35 | -10.72 |
| | | Mid | 787.0 - 1000.0 | -54.39 | -13 | -41.39 |
| | | Mid | 1000.0 - 20000.0 | -45.52 | -13 | -32.52 |
| NR Band n71 | 20 MHz | Low | 30.0 - 663.0 | -51.60 | -13 | -38.60 |
| | | Low | 698.0 - 1000.0 | -64.58 | -13 | -51.58 |
| | | Low | 1000.0 - 10000.0 | -43.73 | -13 | -30.73 |
| | | Mid | 30.0 - 663.0 | -62.93 | -13 | -49.93 |
| | | Mid | 698.0 - 1000.0 | -62.78 | -13 | -49.78 |
| | | Mid | 1000.0 - 10000.0 | -43.40 | -13 | -30.40 |
| | | High | 30.0 - 663.0 | -64.50 | -13 | -51.50 |
| | | High | 698.0 - 1000.0 | -48.86 | -13 | -35.86 |
| | | High | 1000.0 - 10000.0 | -43.68 | -13 | -30.68 |

Table 7-8. Conducted Spurious Emissions Results - Ant1

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 78 of 179 |

| Mode | Bandwidth | Channel | Range [MHz] | Level [dBm] | Limit [dBm] | Margin [dB] |
|---------------|-----------|---------|-------------------|-------------|-------------|-------------|
| WCDMA1700 | N/A | Low | 30.0 - 1705.0 | -42.15 | -13 | -29.15 |
| | | Low | 1755.0 - 10000.0 | -47.11 | -13 | -34.11 |
| | | Low | 10000.0 - 20000.0 | -63.24 | -13 | -50.24 |
| | | Mid | 30.0 - 1710.0 | -53.86 | -13 | -40.86 |
| | | Mid | 1755.0 - 10000.0 | -47.43 | -13 | -34.43 |
| | | Mid | 10000.0 - 20000.0 | -62.91 | -13 | -49.91 |
| | | High | 30.0 - 1710.0 | -53.65 | -13 | -40.65 |
| | | High | 1760.0 - 10000.0 | -45.95 | -13 | -32.95 |
| | | High | 10000.0 - 20000.0 | -63.26 | -13 | -50.26 |
| LTE Band 66/4 | 20 MHz | Low | 30.0 - 1709.0 | -45.47 | -13 | -32.47 |
| | | Low | 1780.0 - 10000.0 | -46.74 | -13 | -33.74 |
| | | Low | 10000.0 - 20000.0 | -61.26 | -13 | -48.26 |
| | | Mid | 30.0 - 1710.0 | -53.86 | -13 | -40.86 |
| | | Mid | 1780.0 - 10000.0 | -47.41 | -13 | -34.41 |
| | | Mid | 10000.0 - 20000.0 | -61.27 | -13 | -48.27 |
| | | High | 30.0 - 1710.0 | -53.93 | -13 | -40.93 |
| | | High | 1781.0 - 10000.0 | -45.16 | -13 | -32.16 |
| | | High | 10000.0 - 20000.0 | -61.53 | -13 | -48.53 |
| NR Band n70 | 15 MHz | Mid | 30.0 - 1695.0 | -39.66 | -13 | -26.66 |
| | | Mid | 1710.0 - 10000.0 | -40.19 | -13 | -27.19 |
| | | Mid | 10000.0 - 20000.0 | -63.86 | -13 | -50.86 |
| NR Band n66 | 40 MHz | Low | 30.0 - 1710.0 | -44.17 | -13 | -31.17 |
| | | Low | 1780.0 - 10000.0 | -46.84 | -13 | -33.84 |
| | | Low | 10000.0 - 20000.0 | -61.13 | -13 | -48.13 |
| | | Mid | 30.0 - 1710.0 | -52.08 | -13 | -39.08 |
| | | Mid | 1780.0 - 10000.0 | -48.16 | -13 | -35.16 |
| | | Mid | 10000.0 - 20000.0 | -61.20 | -13 | -48.20 |
| | | High | 30.0 - 1710.0 | -52.78 | -13 | -39.78 |
| | | High | 1780.0 - 10000.0 | -46.38 | -13 | -33.38 |
| | | High | 10000.0 - 20000.0 | -60.67 | -13 | -47.67 |

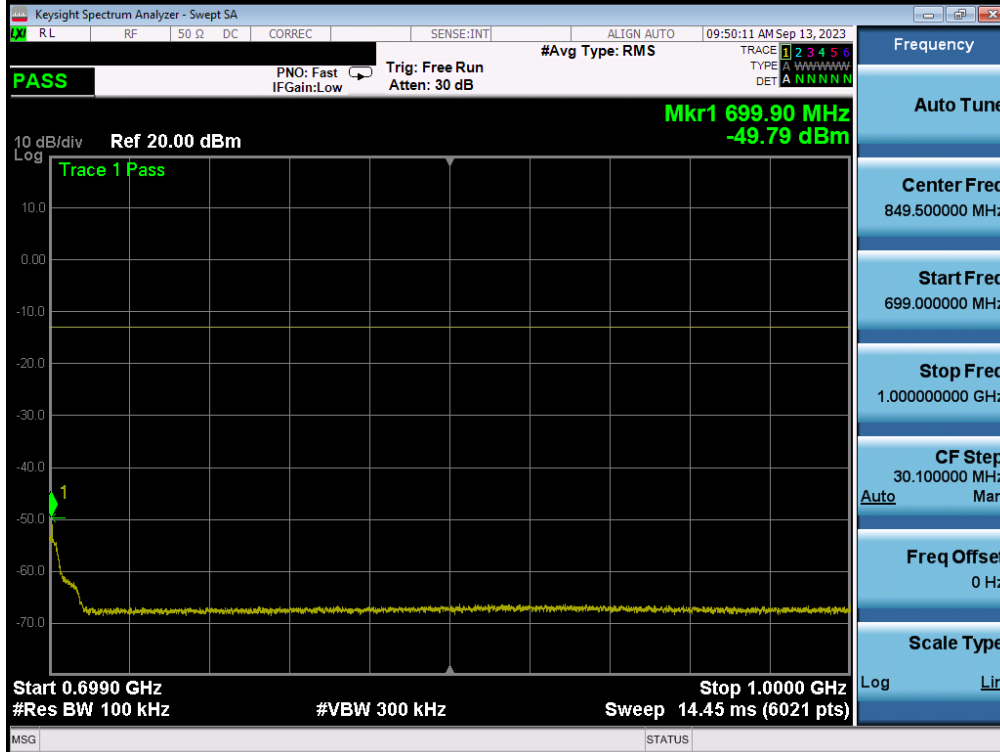
Table 7-9. Conducted Spurious Emissions Results - Ant1

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 79 of 179 |

LTE Band 71 – ANT1

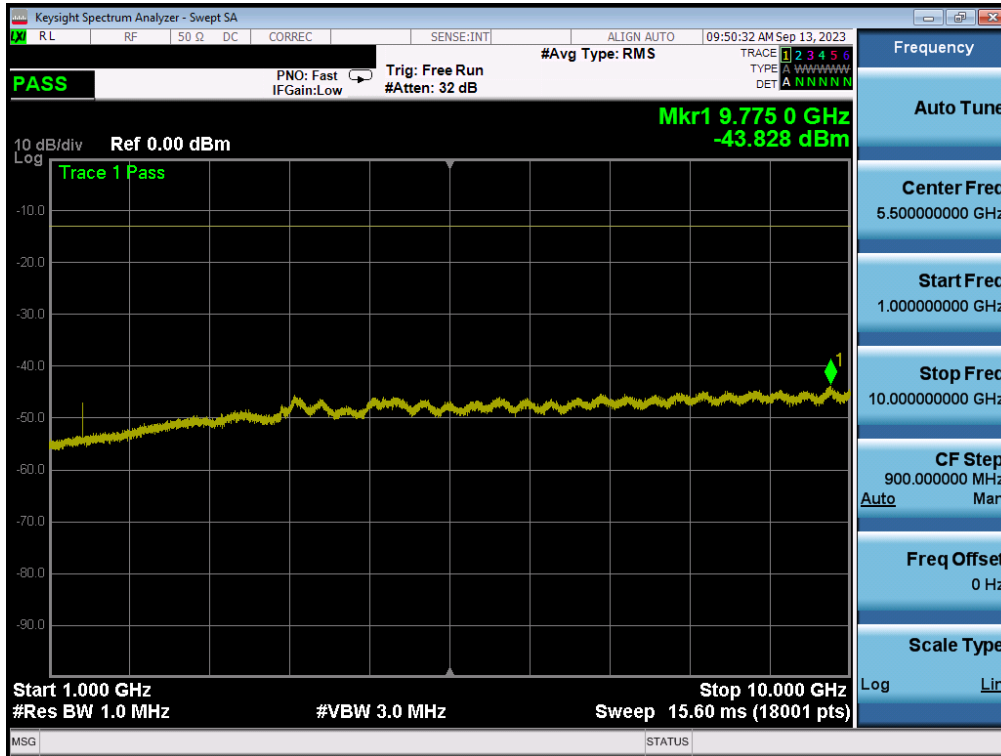


Plot 7-109. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - High Channel - ANT1)



Plot 7-110. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - High Channel - ANT1)

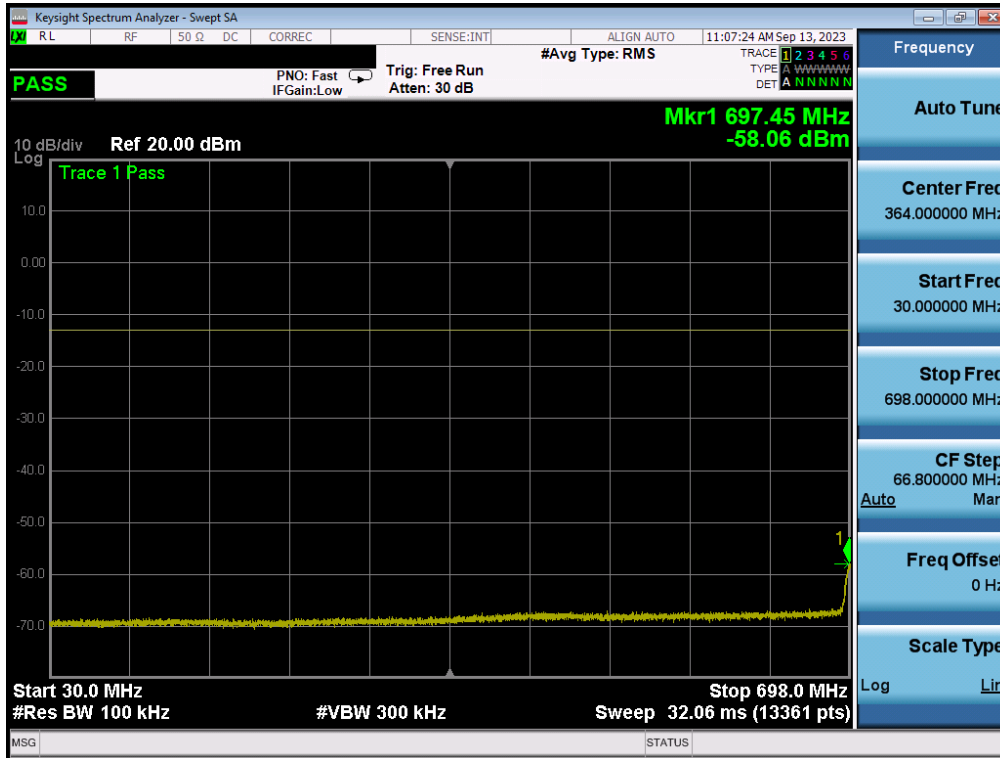
| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 80 of 179 |



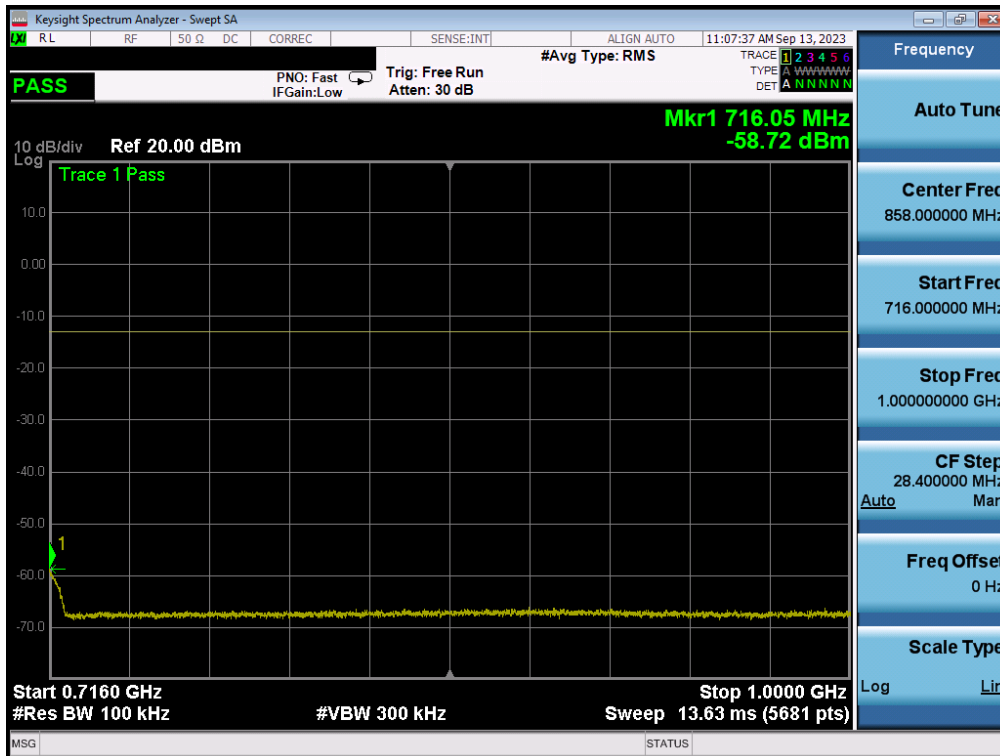
Plot 7-111. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - High Channel - ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 81 of 179 |

LTE Band 12 – ANT1

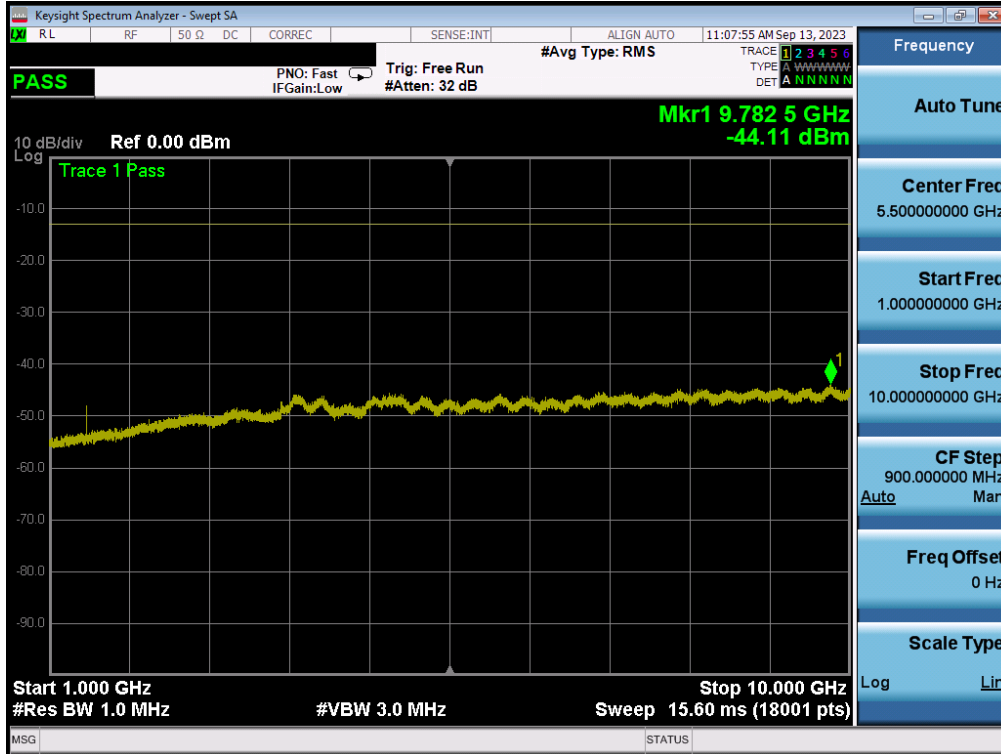


Plot 7-112. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - Mid Channel - ANT1)



Plot 7-113. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - Mid Channel - ANT1)

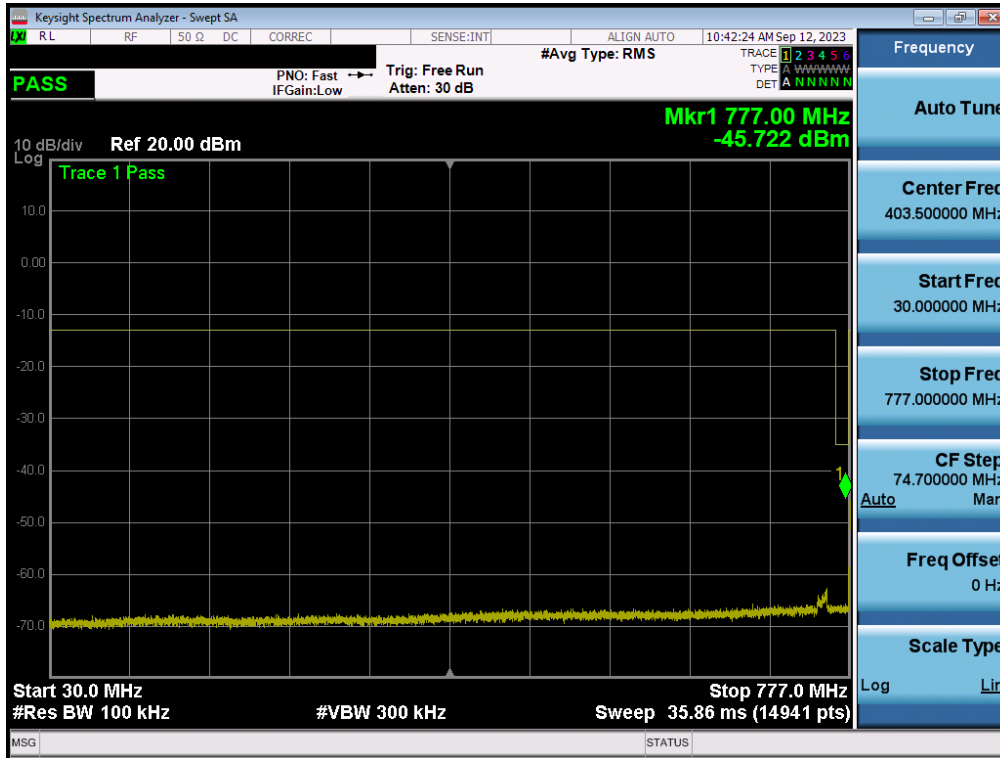
| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 82 of 179 |



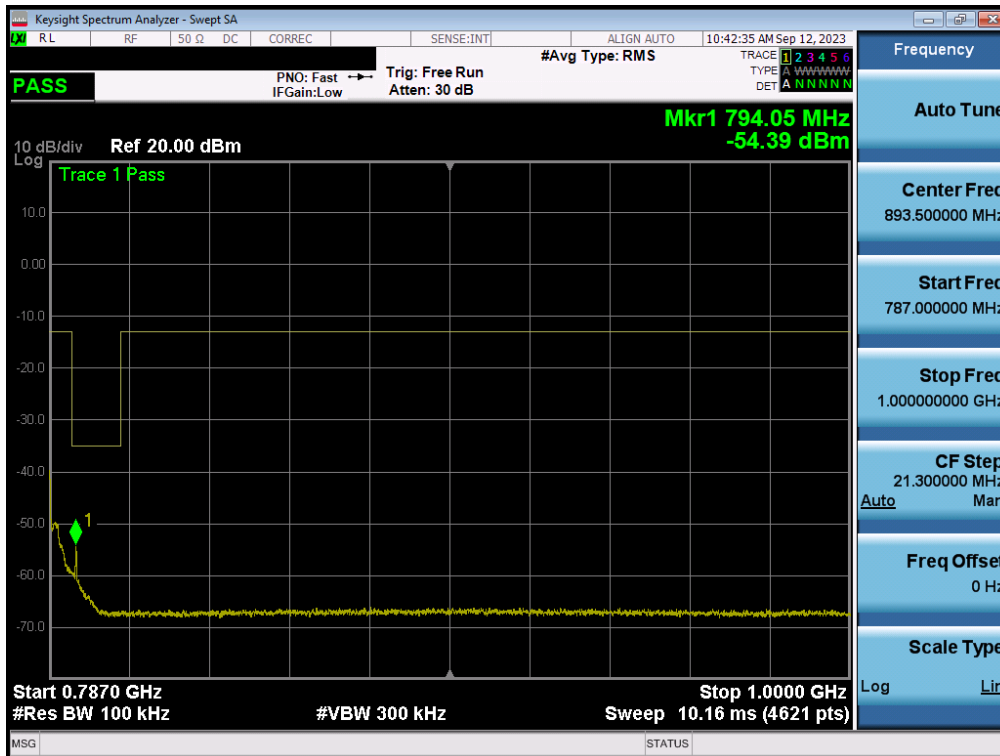
Plot 7-114. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - Mid Channel - ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 83 of 179 |

LTE Band 13 – ANT1



Plot 7-115. Conducted Spurious Plot (LTE Band 13 - 10MHz QPSK - 1 RB)



Plot 7-116. Conducted Spurious Plot (LTE Band 13 - 10MHz QPSK - 1 RB)

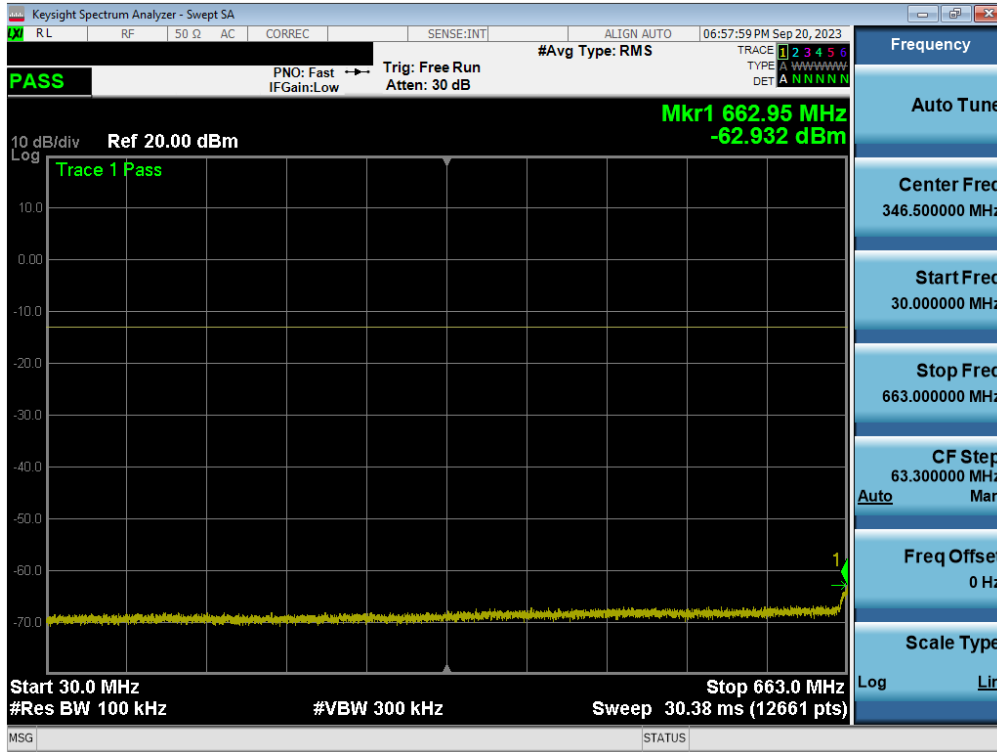
| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 84 of 179 |



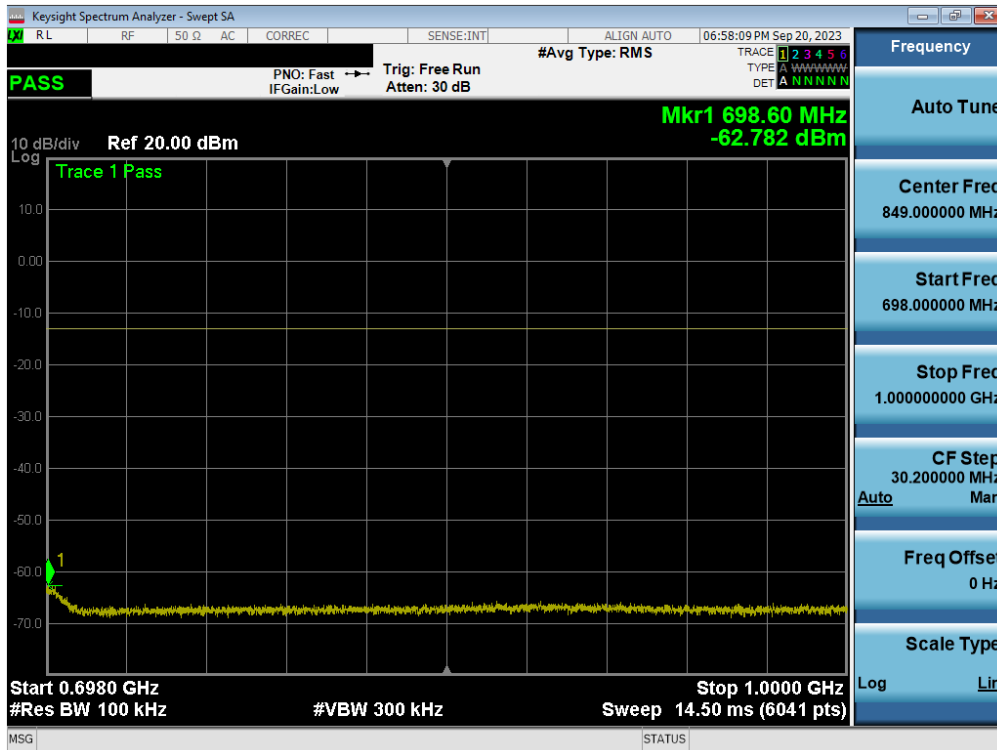
Plot 7-117. Conducted Spurious Plot (LTE Band 13 - 10MHz QPSK - 1 RB)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 85 of 179 |

NR Band n71 – ANT1

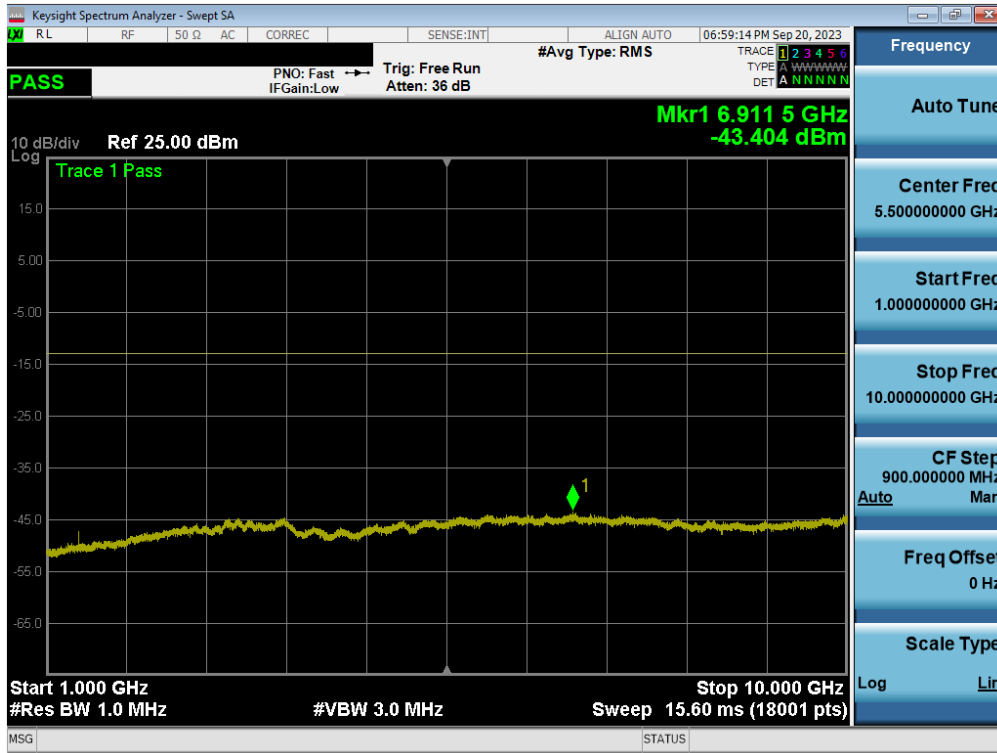


Plot 7-118. Conducted Spurious Plot (NR Band n71 - 20.0MHz - 1 RB - Mid Channel - ANT1)



Plot 7-119. Conducted Spurious Plot (NR Band n71 - 20.0MHz - 1 RB - Mid Channel - ANT1)

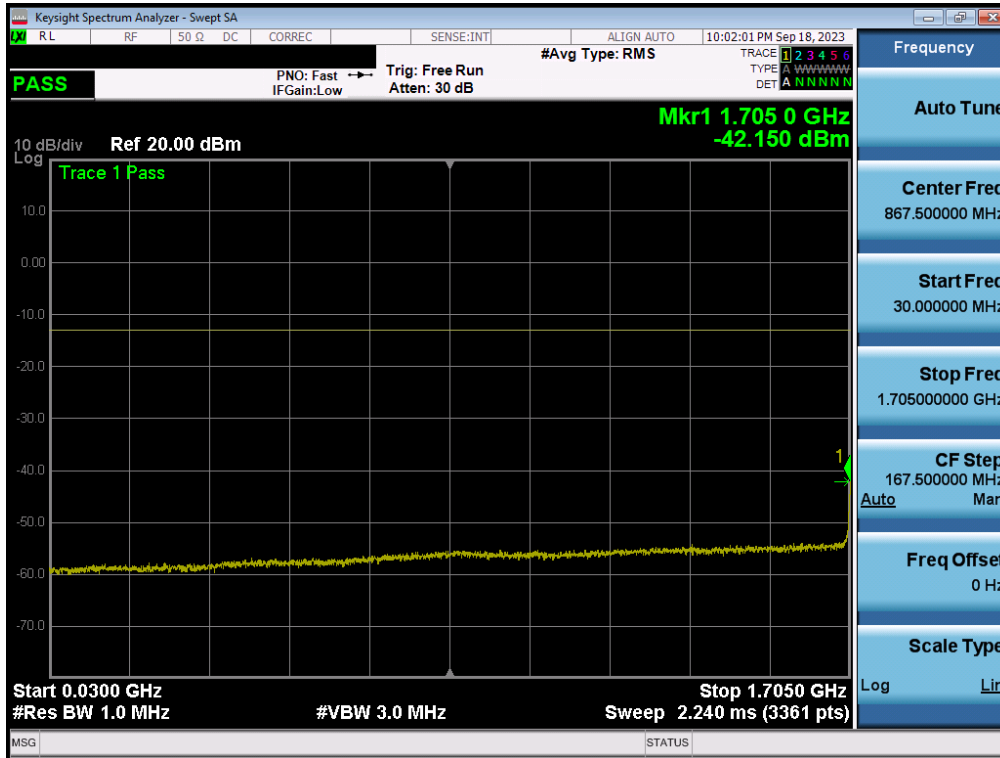
| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 86 of 179 |



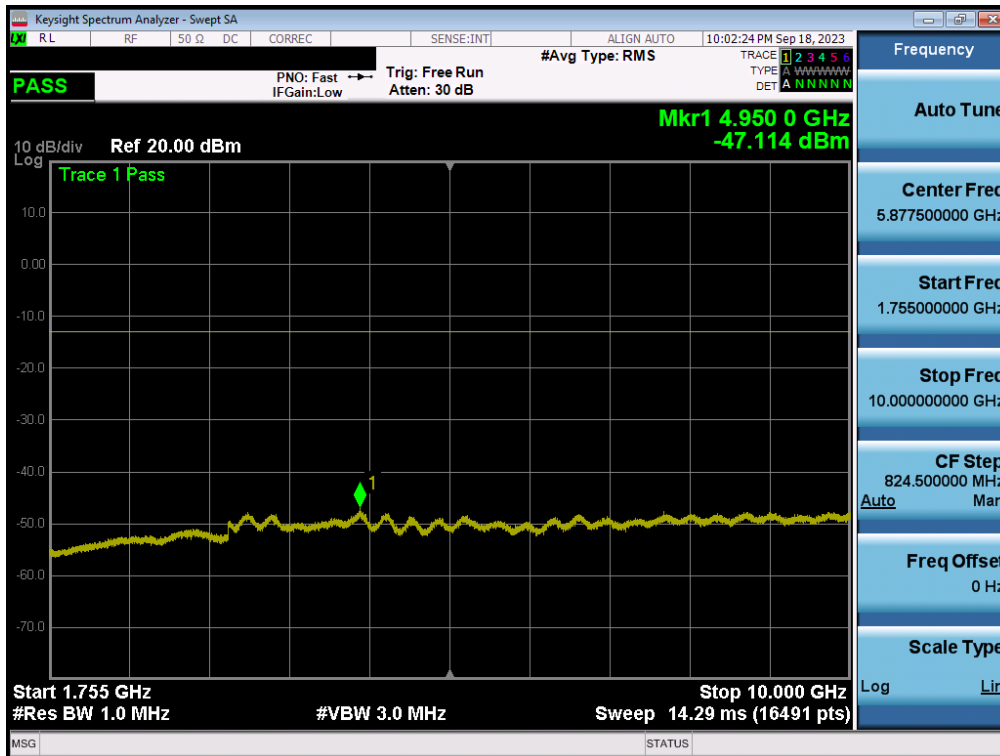
Plot 7-120. Conducted Spurious Plot (NR Band n71 - 20.0MHz - 1 RB - Mid Channel - ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 87 of 179 |

WCDMA-AWS – ANT1

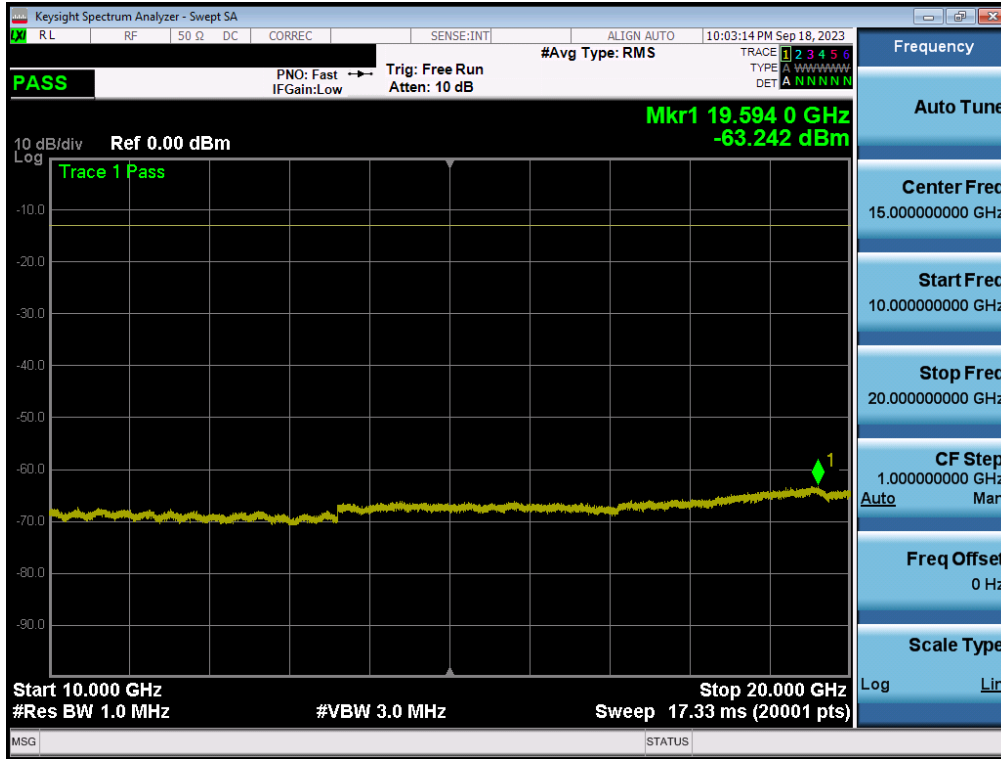


Plot 7-121. Conducted Spurious Plot (WCDMA-AWS - 5MHz QPSK - 1 RB – Low Channel)



Plot 7-122. Conducted Spurious Plot (WCDMA-AWS - 5MHz QPSK - 1 RB – Low Channel)

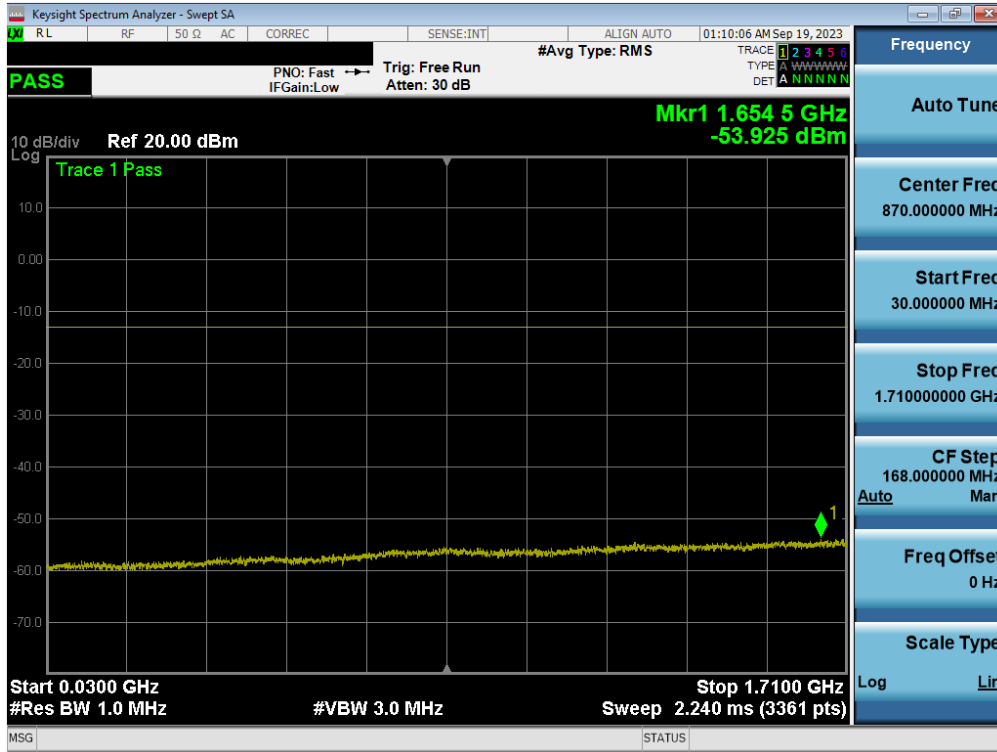
| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 88 of 179 |



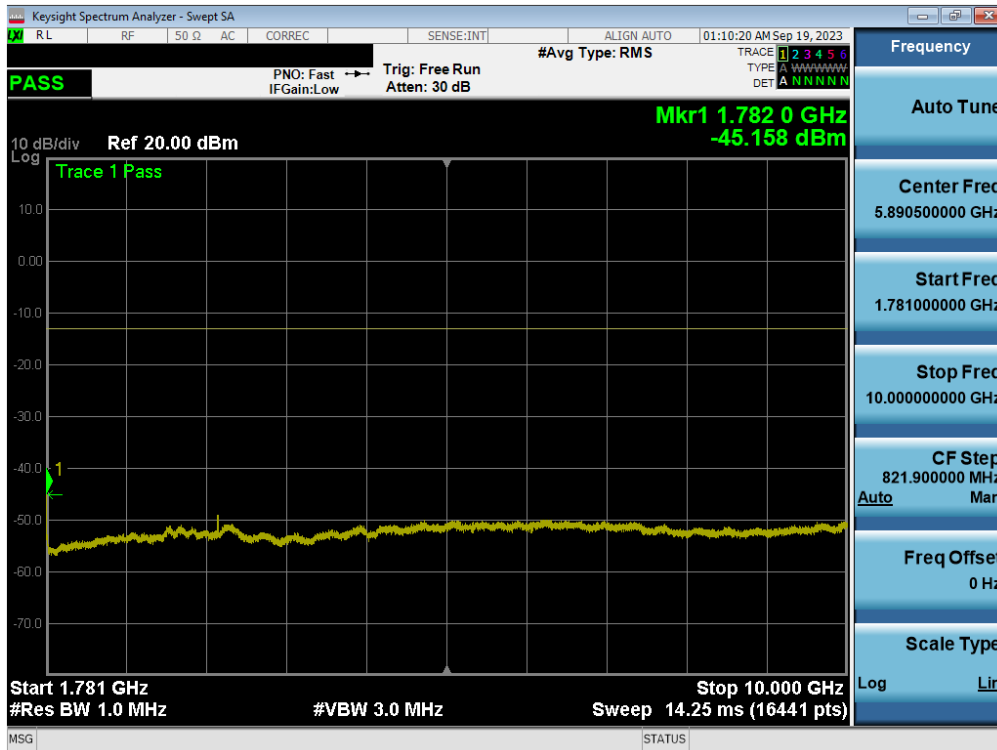
Plot 7-123. Conducted Spurious Plot (WCDMA-AWS - 5MHz QPSK - 1 RB - Low Channel)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 89 of 179 |

LTE Band 66/4 – ANT1

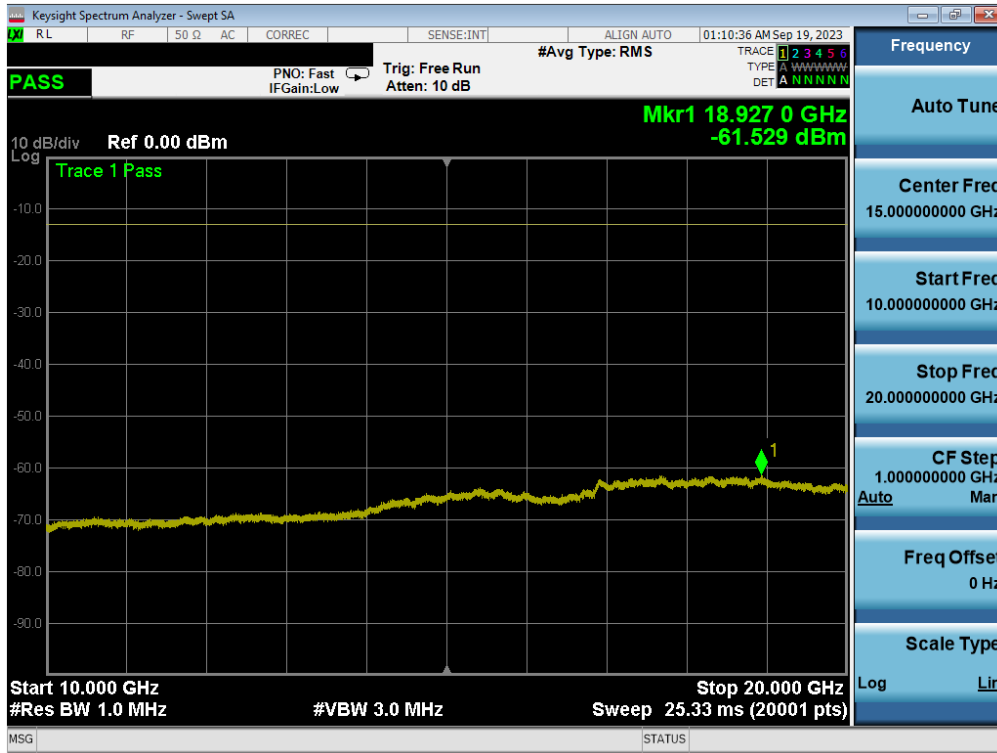


Plot 7-124. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB – High Channel)



Plot 7-125. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB – High Channel)

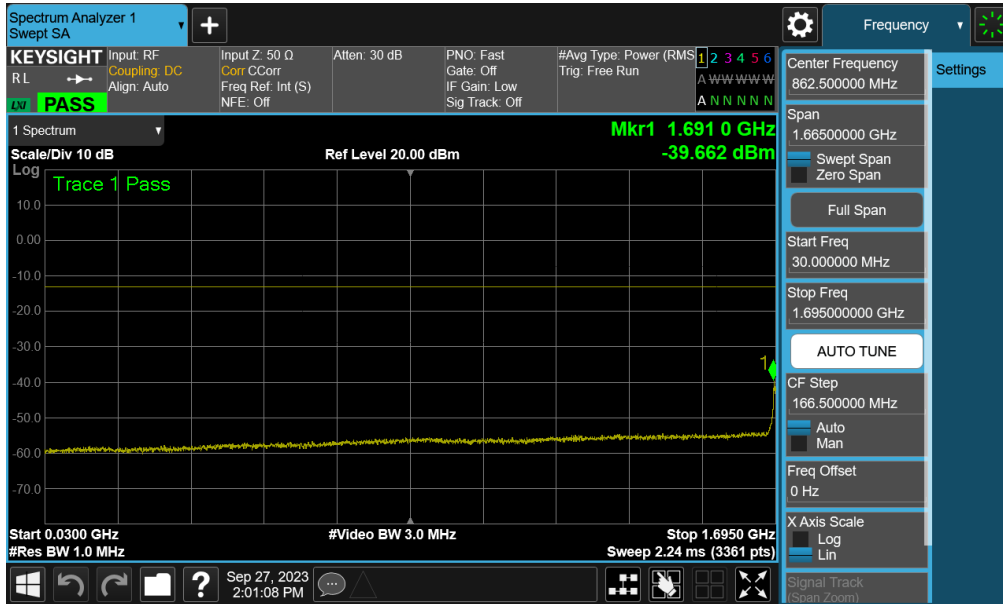
| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 90 of 179 |



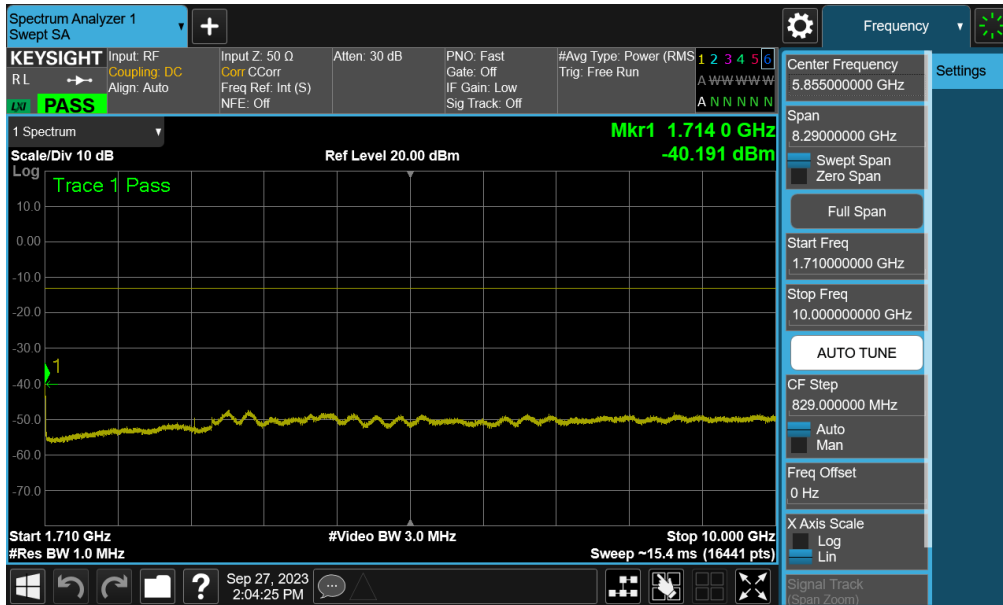
Plot 7-126. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB – High Channel)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 91 of 179 |

NR Band n70 – ANT1

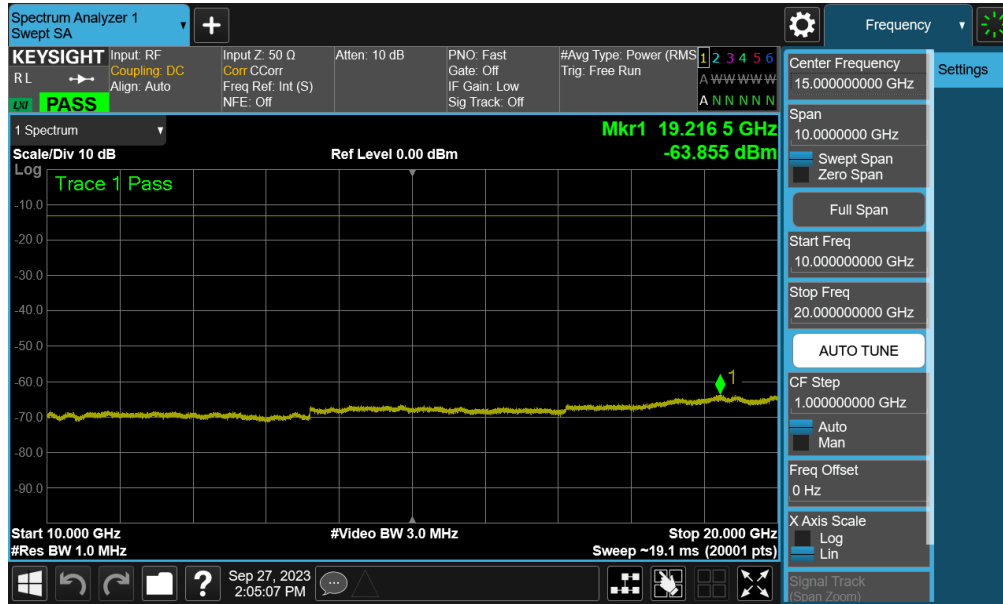


Plot 7-127. Conducted Spurious Plot (NR Band n70 - 15.0MHz - 1 RB - Mid Channel - ANT1)



Plot 7-128. Conducted Spurious Plot (NR Band n70 - 15.0MHz - 1 RB - Mid Channel - ANT1)

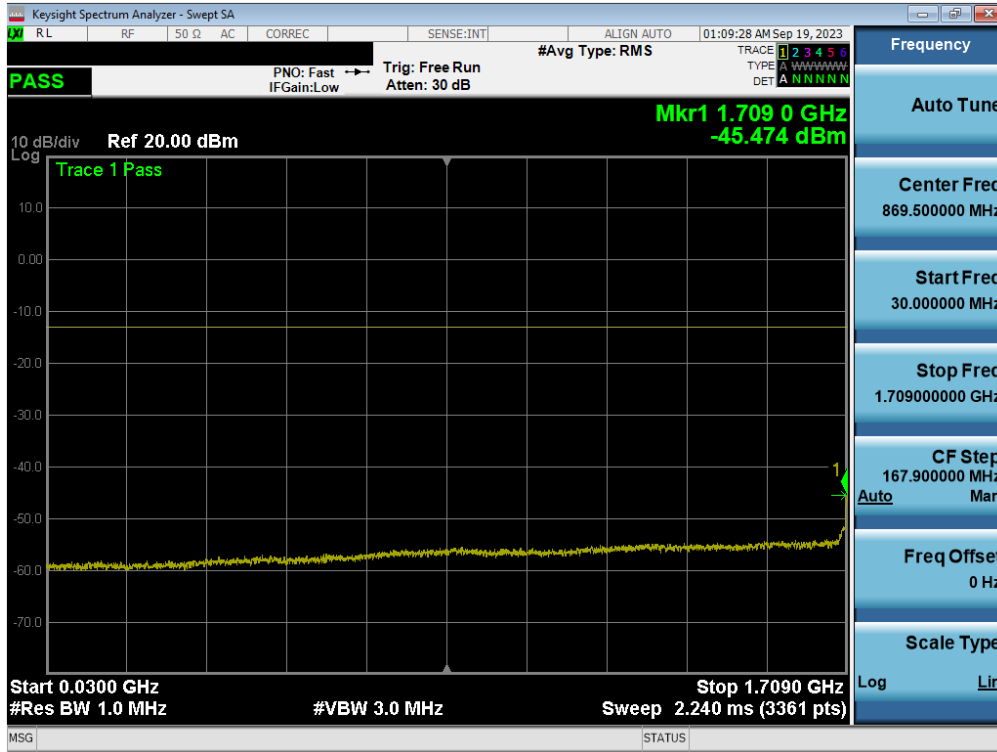
| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 92 of 179 |



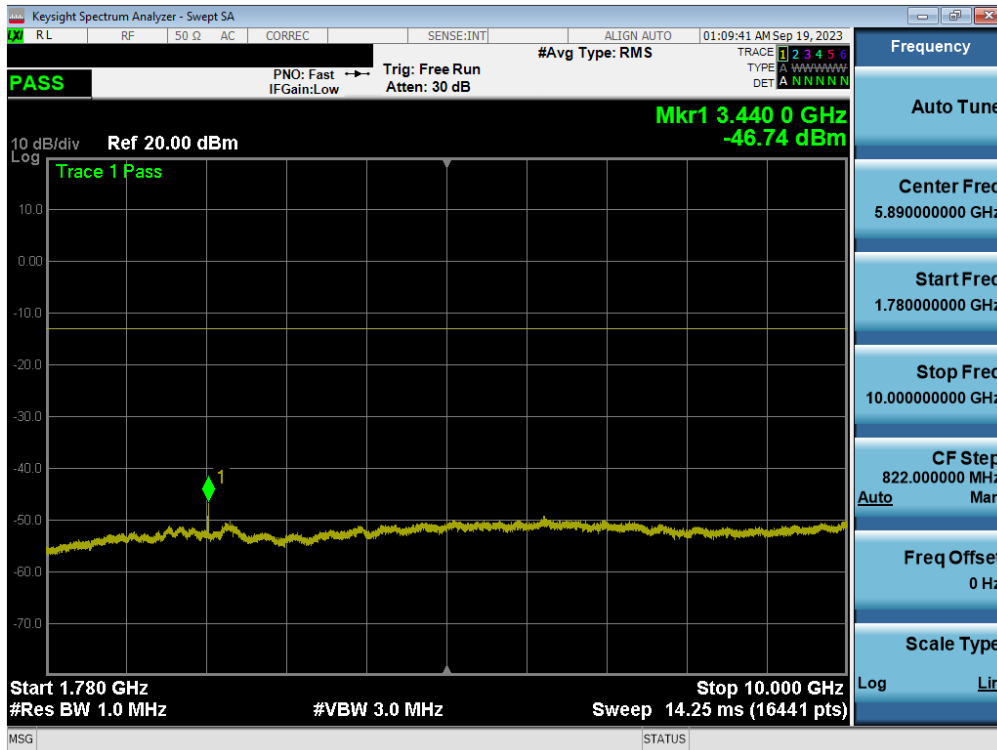
Plot 7-129. Conducted Spurious Plot (NR Band n70 - 15.0MHz - 1 RB - Mid Channel - ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 93 of 179 |

NR Band n66 – ANT1

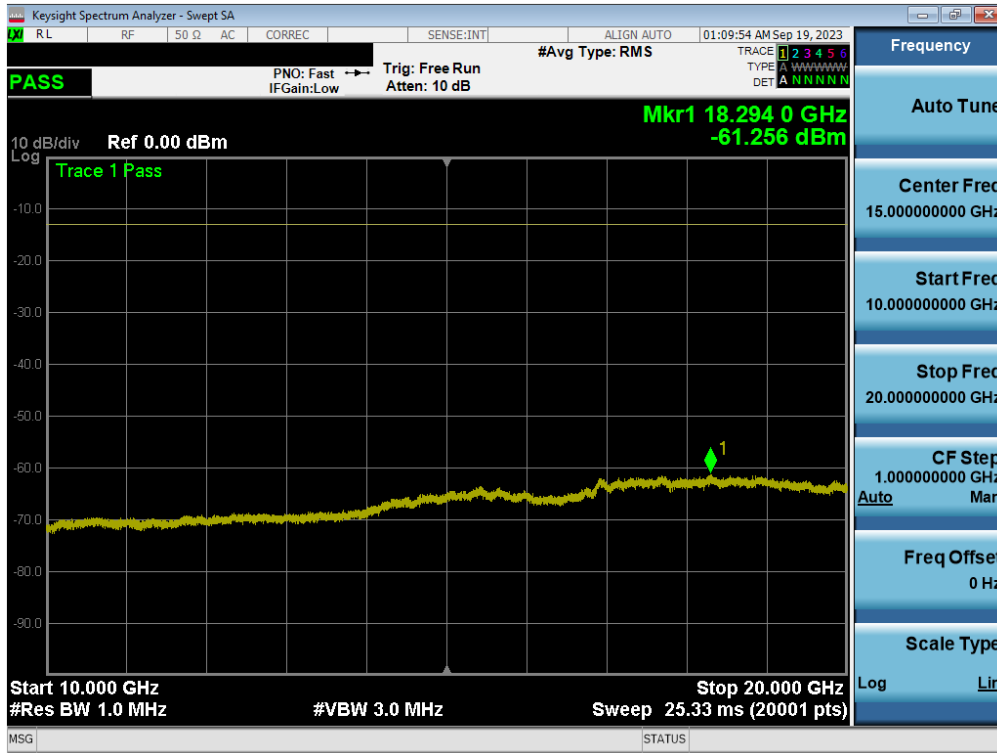


Plot 7-130. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - Low Channel - ANT1)



Plot 7-131. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - Low Channel - ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 94 of 179 |



Plot 7-132. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - Low Channel - ANT1)

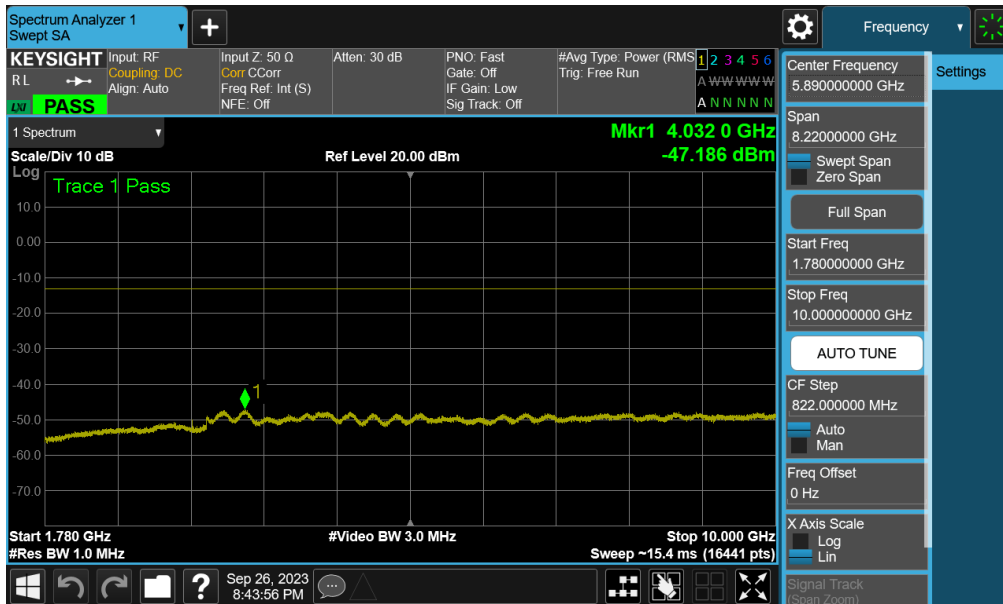
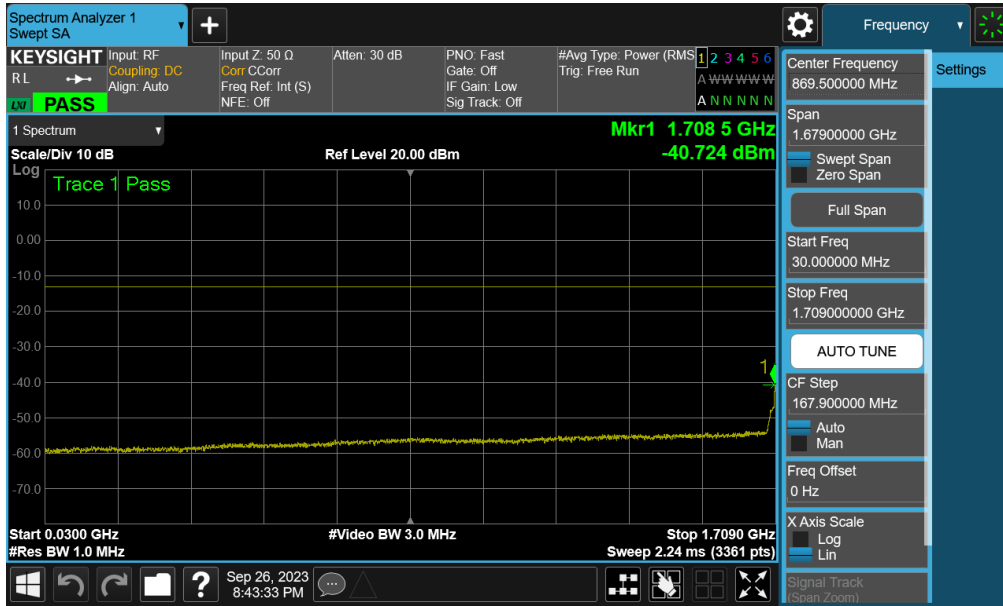
| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 95 of 179 |

| Mode | Bandwidth | Channel | Range [MHz] | Level [dBm] | Limit [dBm] | Margin [dB] |
|---------------|-----------|---------|-------------------|-------------|-------------|-------------|
| LTE Band 66/4 | 20 MHz | Low | 30.0 - 1709.0 | -40.72 | -13 | -27.72 |
| | | Low | 1780.0 - 10000.0 | -47.19 | -13 | -34.19 |
| | | Low | 10000.0 - 20000.0 | -62.96 | -13 | -49.96 |
| | | Mid | 30.0 - 1710.0 | -53.63 | -13 | -40.63 |
| | | Mid | 1780.0 - 10000.0 | -47.22 | -13 | -34.22 |
| | | Mid | 10000.0 - 20000.0 | -63.07 | -13 | -50.07 |
| | | High | 30.0 - 1710.0 | -53.70 | -13 | -40.70 |
| | | High | 1781.0 - 10000.0 | -41.98 | -13 | -28.98 |
| | | High | 10000.0 - 20000.0 | -63.08 | -13 | -50.08 |
| NR Band n66 | 40 MHz | Low | 30.0 - 1710.0 | -43.44 | -13 | -30.44 |
| | | Low | 1780.0 - 10000.0 | -48.26 | -13 | -35.26 |
| | | Low | 10000.0 - 20000.0 | -43.46 | -13 | -30.46 |
| | | Mid | 30.0 - 1710.0 | -50.51 | -13 | -37.51 |
| | | Mid | 1780.0 - 10000.0 | -48.18 | -13 | -35.18 |
| | | Mid | 10000.0 - 20000.0 | -43.66 | -13 | -30.66 |
| | | High | 30.0 - 1710.0 | -51.58 | -13 | -38.58 |
| | | High | 1780.0 - 10000.0 | -45.05 | -13 | -32.05 |
| | | High | 10000.0 - 20000.0 | -43.62 | -13 | -30.62 |

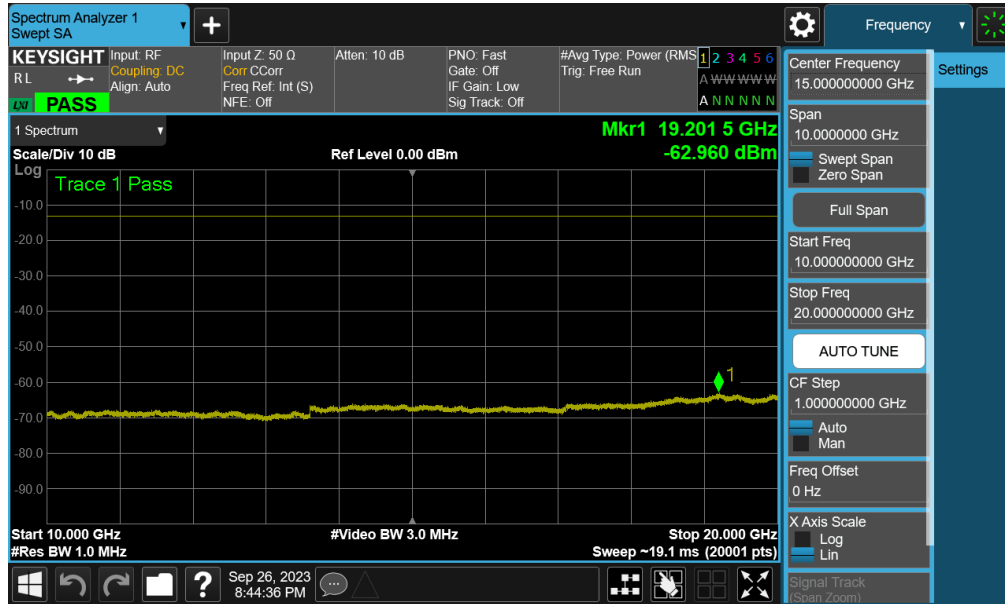
Table 7-10. Conducted Spurious Emissions Results – Ant2

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 96 of 179 |

LTE Band 66/4 – ANT2



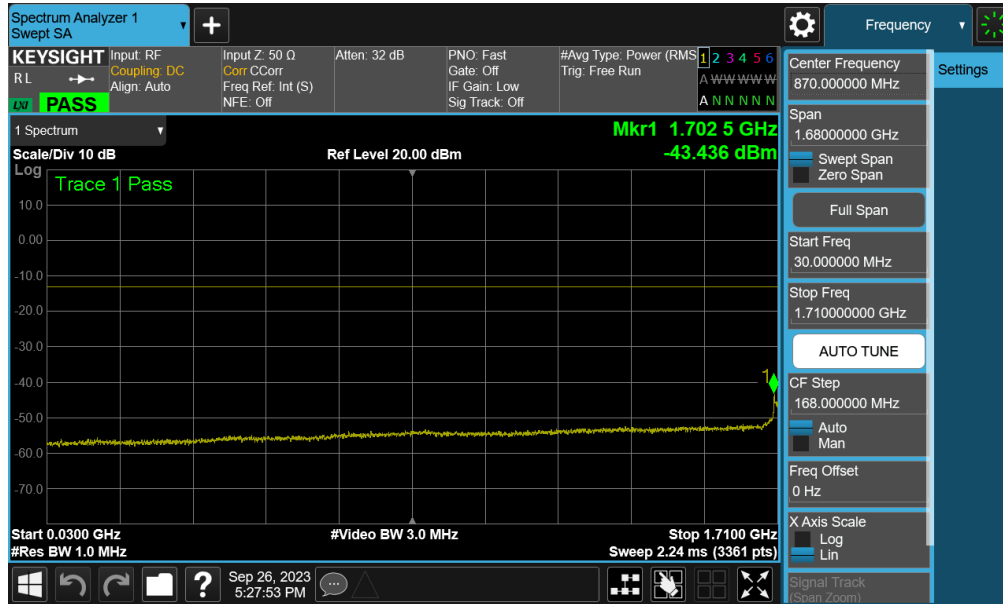
| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 97 of 179 |



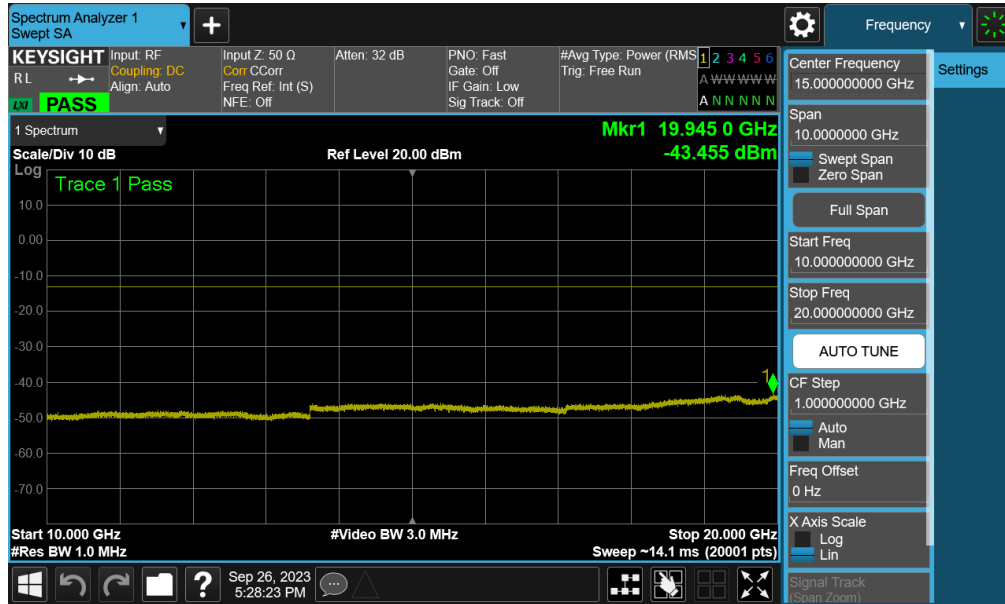
Plot 7-135. Conducted Spurious Plot (LTE Band 66/4 - 10MHz QPSK - 1 RB -Low Channel -Ant 2)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 98 of 179 |

NR Band n66 – ANT2



| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 99 of 179 |



Plot 7-138. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - Low Channel - ANT2)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 100 of 179 |

7.5 Band Edge Emissions at Antenna Terminal

Test Overview

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst-case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.

The minimum permissible attenuation level of any spurious emission is $43 + 10 \log_{10}(P_{[Watts]})$, where P is the transmitter power in Watts.

Test Procedure Used

ANSI C63.26-2015 – Section 5.7.3

Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW \geq 1% of the emission bandwidth
4. VBW \geq 3 x RBW
5. Detector = RMS
6. Number of sweep points \geq 2 x Span/RBW
7. Trace mode = trace average for continuous emissions, max hold for pulse emissions
8. Sweep time = auto couple
9. The trace was allowed to stabilize

Test Setup

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

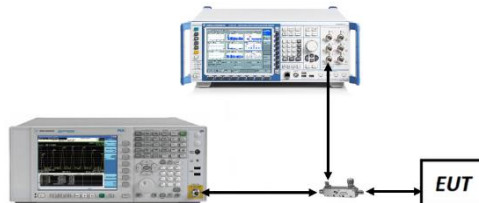


Figure 7-4. Test Instrument & Measurement Setup

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 101 of 179 |

Test Notes

1. Per 27.53(h) for AWS band operation, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to demonstrate compliance with the out-of-band emissions limit. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.
2. Per 27.53(g) for operations in the 663 - 698 MHz and 698 – 746MHz bands, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.
3. Per 27.53(c)(5) for operations in the 776-788 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.
4. For all plots showing emissions in the 763 – 775MHz and 793 – 805MHz band, the FCC limit per 27.53(c)(4) is $65 + 10 \log_{10}(P) = -35\text{dBm}$ in a 6.25kHz bandwidth.

| | | | |
|--|--|--------------------------------------|--|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 102 of 179 |

| Mode | Bandwidth | Channel | Test Case | Level [dBm] | Limit [dBm] | Margin [dB] |
|-------------|-----------|---------|-------------|-------------|-------------|-------------|
| LTE Band 71 | 20 MHz | Low | Band Edge | -38.20 | -13 | -25.20 |
| | | High | Band Edge | -33.48 | -13 | -20.48 |
| | 15 MHz | Low | Band Edge | -35.51 | -13 | -22.51 |
| | | High | Band Edge | -31.82 | -13 | -18.82 |
| | 10 MHz | Low | Band Edge | -35.12 | -13 | -22.12 |
| | | High | Band Edge | -31.49 | -13 | -18.49 |
| | 5 MHz | Low | Band Edge | -25.88 | -13 | -12.88 |
| | | High | Band Edge | -26.35 | -13 | -13.35 |
| LTE Band 12 | 10 MHz | Low | Band Edge | -32.72 | -13 | -19.72 |
| | | High | Band Edge | -33.78 | -13 | -20.78 |
| | 5 MHz | Low | Band Edge | -26.41 | -13 | -13.41 |
| | | High | Band Edge | -26.54 | -13 | -13.54 |
| | 3 MHz | Low | Band Edge | -23.07 | -13 | -10.07 |
| | | High | Band Edge | -22.80 | -13 | -9.80 |
| | 1.4 MHz | Low | Band Edge | -19.15 | -13 | -6.15 |
| | | High | Band Edge | -20.33 | -13 | -7.33 |
| LTE Band 13 | 10 MHz | Low | Band Edge | -34.27 | -13 | -21.27 |
| | | Low | mission Mas | -68.86 | -35 | -33.86 |
| | | High | Band Edge | -31.93 | -13 | -18.93 |
| | | High | mission Mas | -50.48 | -35 | -15.48 |
| | 5 MHz | Low | Band Edge | -29.00 | -13 | -16.00 |
| | | Low | mission Mas | -61.46 | -35 | -26.46 |
| | | High | Band Edge | -27.86 | -13 | -14.86 |
| | | High | EmMask | -57.45 | -35 | -22.45 |

Table 7-11. Band Edge Test Results - Ant1

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 103 of 179 |

| Mode | Bandwidth | Channel | Test Case | Level [dBm] | Limit [dBm] | Margin [dB] |
|---------------|-----------|------------|-----------|-------------|-------------|-------------|
| WCDMA1700 | N/A | Low | Band Edge | -24.03 | -13 | -11.03 |
| | | Low | Extended | -15.74 | -13 | -2.74 |
| | | High | Band Edge | -24.98 | -13 | -11.98 |
| | | High | Extended | -20.67 | -13 | -7.67 |
| LTE Band 66/4 | 20MHz | Low | Band Edge | -29.07 | -13 | -16.07 |
| | | Low | Extended | -27.18 | -13 | -14.18 |
| | | High (B4) | Band Edge | -31.70 | -13 | -18.70 |
| | | High (B4) | Extended | -32.96 | -13 | -19.96 |
| | | High (B66) | Band Edge | -31.91 | -13 | -18.91 |
| | | High (B66) | Extended | -30.40 | -13 | -17.40 |
| | 15MHz | Low | Band Edge | -28.28 | -13 | -15.28 |
| | | Low | Extended | -25.21 | -13 | -12.21 |
| | | High (B4) | Band Edge | -30.01 | -13 | -17.01 |
| | | High (B4) | Extended | -27.62 | -13 | -14.62 |
| | | High (B66) | Band Edge | -30.10 | -13 | -17.10 |
| | | High (B66) | Extended | -29.78 | -13 | -16.78 |
| | 10MHz | Low | Band Edge | -27.80 | -13 | -14.80 |
| | | Low | Extended | -24.60 | -13 | -11.60 |
| | | High (B4) | Band Edge | -28.62 | -13 | -15.62 |
| | | High (B4) | Extended | -27.13 | -13 | -14.13 |
| | | High (B66) | Band Edge | -27.92 | -13 | -14.92 |
| | | High (B66) | Extended | -28.64 | -13 | -15.64 |
| | 5MHz | Low | Band Edge | -26.21 | -13 | -13.21 |
| | | Low | Extended | -23.42 | -13 | -10.42 |
| | | High (B4) | Band Edge | -25.68 | -13 | -12.68 |
| | | High (B4) | Extended | -25.34 | -13 | -12.34 |
| | | High (B66) | Band Edge | -28.49 | -13 | -15.49 |
| | | High (B66) | Extended | -23.91 | -13 | -10.91 |
| | 3MHz | Low | Band Edge | -24.86 | -13 | -11.86 |
| | | Low | Extended | -23.19 | -13 | -10.19 |
| | | High (B4) | Band Edge | -25.98 | -13 | -12.98 |
| | | High (B4) | Extended | -25.38 | -13 | -12.38 |
| | | High (B66) | Band Edge | -25.36 | -13 | -12.36 |
| | | High (B66) | Extended | -22.05 | -13 | -9.05 |
| | 1.4MHz | Low | Band Edge | -25.33 | -13 | -12.33 |
| | | Low | Extended | -37.25 | -13 | -24.25 |
| High (B4) | | Band Edge | -26.66 | -13 | -13.66 | |
| High (B4) | | Extended | -31.88 | -13 | -18.88 | |
| High (B66) | | Band Edge | -24.03 | -13 | -11.03 | |
| High (B66) | | Extended | -27.99 | -13 | -14.99 | |

Table 7-12. Band Edge Test Results - Ant1

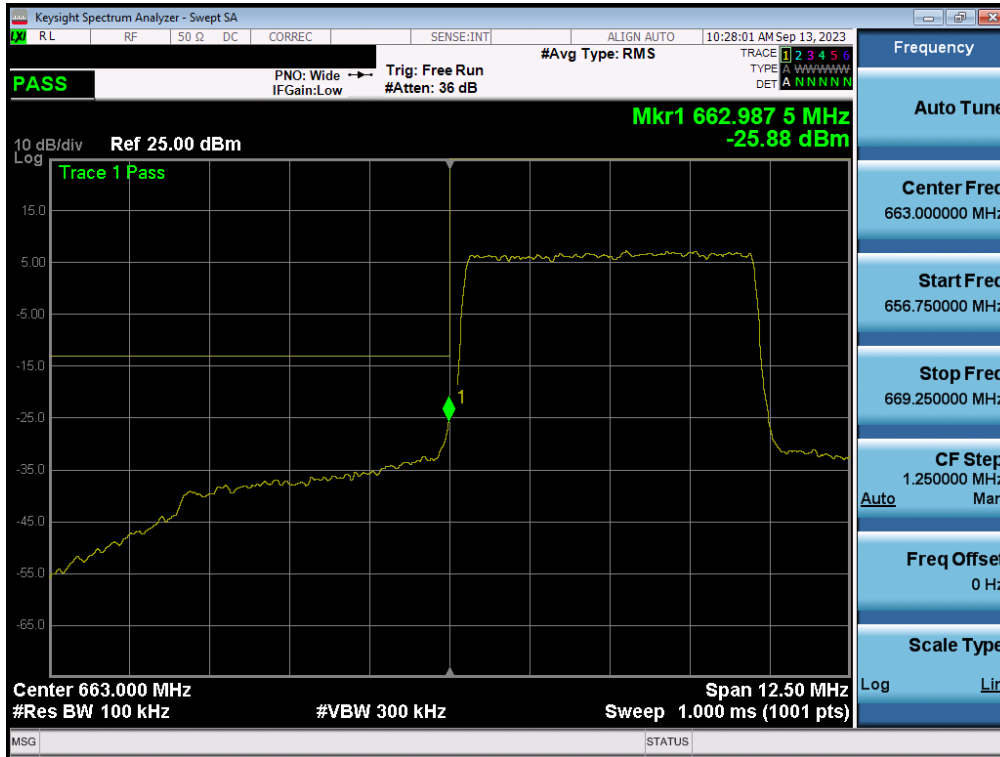
| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 104 of 179 |

| Mode | Bandwidth | Channel | Test Case | Level [dBm] | Limit [dBm] | Margin [dB] | |
|-------------|-------------|-------------|-----------|-------------|-------------|-------------|--------|
| NR Band n71 | 20 MHz | Low | Band Edge | -35.66 | -13 | -22.66 | |
| | | High | Band Edge | -30.96 | -13 | -17.96 | |
| | 15 MHz | Low | Band Edge | -34.06 | -13 | -21.06 | |
| | | High | Band Edge | -31.76 | -13 | -18.76 | |
| | 10 MHz | Low | Band Edge | -34.50 | -13 | -21.50 | |
| | | High | Band Edge | -31.70 | -13 | -18.70 | |
| | 5 MHz | Low | Band Edge | -28.35 | -13 | -15.35 | |
| | | High | Band Edge | -27.06 | -13 | -14.06 | |
| | NR Band n70 | 15 MHz | Low | Band Edge | -31.58 | -13 | -18.58 |
| | | | Low | Extended | -20.62 | -13 | -7.62 |
| High | | | Band Edge | -32.00 | -13 | -19.00 | |
| High | | | Extended | -22.42 | -13 | -9.42 | |
| 10 MHz | | Low | Band Edge | -29.33 | -13 | -16.33 | |
| | | Low | Extended | -15.76 | -13 | -2.76 | |
| | | High | Band Edge | -33.77 | -13 | -20.77 | |
| 5 MHz | | High | Extended | -19.41 | -13 | -6.41 | |
| | | Low | Band Edge | -29.16 | -13 | -16.16 | |
| | | Low | Extended | -20.84 | -13 | -7.84 | |
| | | High | Band Edge | -29.84 | -13 | -16.84 | |
| High | | Extended | -26.23 | -13 | -13.23 | | |
| | | NR Band n66 | 40 MHz | Low | Band Edge | -27.72 | -13 |
| Low | | Extended | | -30.68 | -13 | -17.68 | |
| High | Band Edge | -24.58 | | -13 | -11.58 | | |
| High | Extended | -32.17 | | -13 | -19.17 | | |
| 30 MHz | Low | Band Edge | -26.26 | -13 | -13.26 | | |
| | Low | Extended | -28.45 | -13 | -15.45 | | |
| | High | Band Edge | -28.11 | -13 | -15.11 | | |
| High | Extended | -30.72 | -13 | -17.72 | | | |
| | 25 MHz | Low | Band Edge | -33.76 | -13 | -20.76 | |
| | | Low | Extended | -28.74 | -13 | -15.74 | |
| High | | Band Edge | -34.97 | -13 | -21.97 | | |
| High | Extended | -29.35 | -13 | -16.35 | | | |
| | 20 MHz | Low | Band Edge | -32.36 | -13 | -19.36 | |
| | | Low | Extended | -24.68 | -13 | -11.68 | |
| High | | Band Edge | -33.40 | -13 | -20.40 | | |
| High | | Extended | -26.45 | -13 | -13.45 | | |
| 15 MHz | Low | Band Edge | -33.00 | -13 | -20.00 | | |
| | Low | Extended | -20.85 | -13 | -7.85 | | |
| | High | Band Edge | -39.92 | -13 | -26.92 | | |
| | High | Extended | -33.88 | -13 | -20.88 | | |
| 10 MHz | Low | Band Edge | -31.26 | -13 | -18.26 | | |
| | Low | Extended | -16.85 | -13 | -3.85 | | |
| | High | Band Edge | -29.89 | -13 | -16.89 | | |
| | High | Extended | -19.66 | -13 | -6.66 | | |
| 5 MHz | Low | Band Edge | -29.36 | -13 | -16.36 | | |
| | Low | Extended | -24.56 | -13 | -11.56 | | |
| | High | Band Edge | -30.94 | -13 | -17.94 | | |
| | High | Extended | -26.97 | -13 | -13.97 | | |

Table 7-13. Band Edge Test Results - Ant1

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 105 of 179 |

LTE Band 71 – ANT1



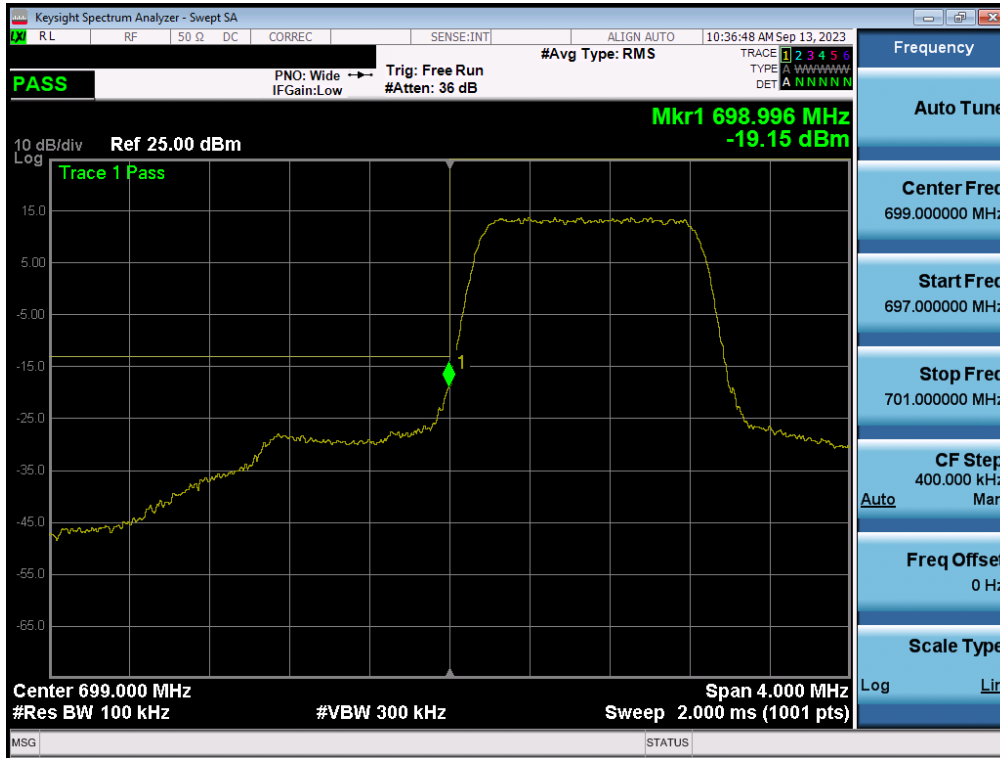
Plot 7-139. Lower Band Edge Plot (LTE Band 71 - 5MHz QPSK – Full RB - ANT1)



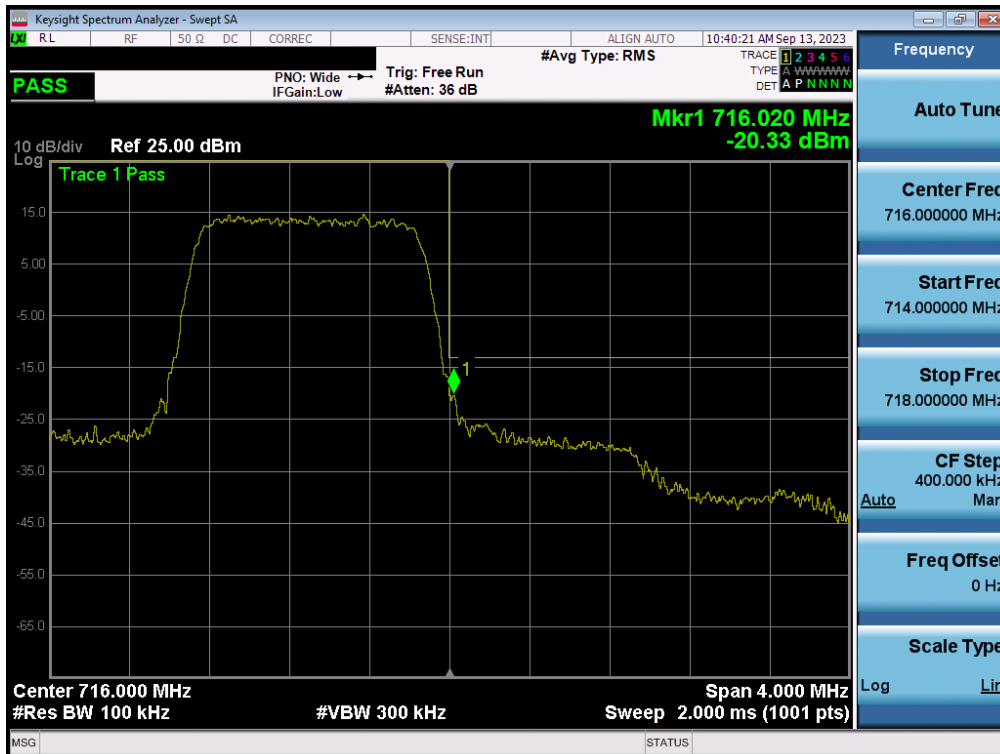
Plot 7-140. Upper Band Edge Plot (LTE Band 71 - 5MHz QPSK – Full RB - ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 106 of 179 |

LTE Band 12 – ANT1



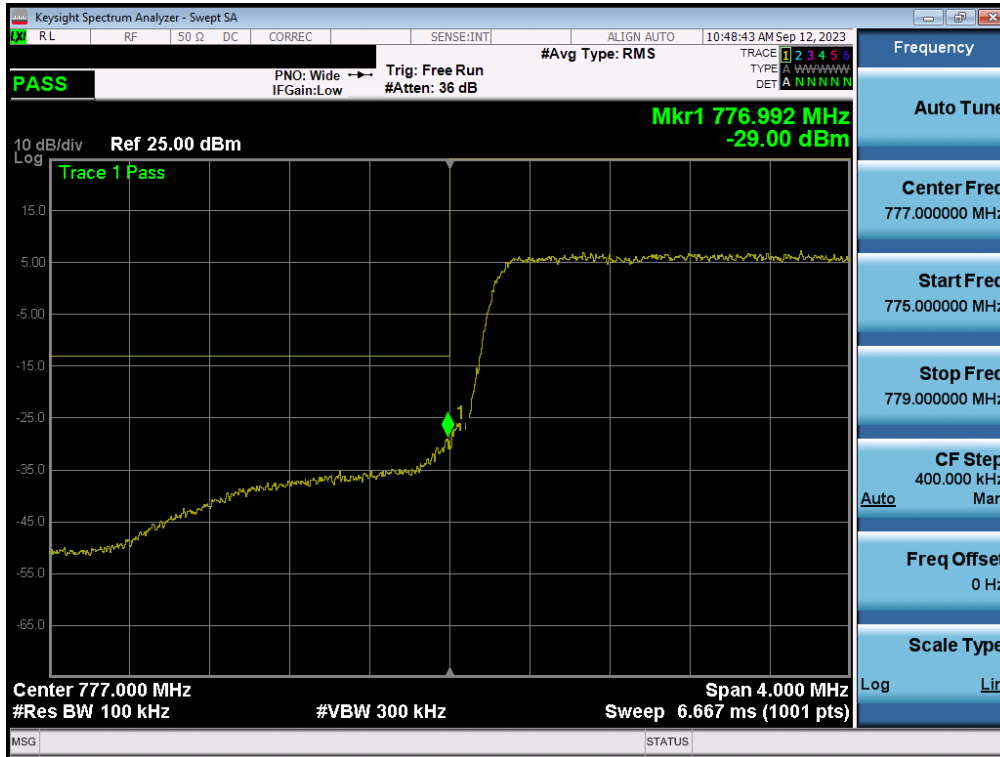
Plot 7-141. Lower Band Edge Plot (LTE Band 12 – 1.4MHz QPSK – Full RB - ANT1)



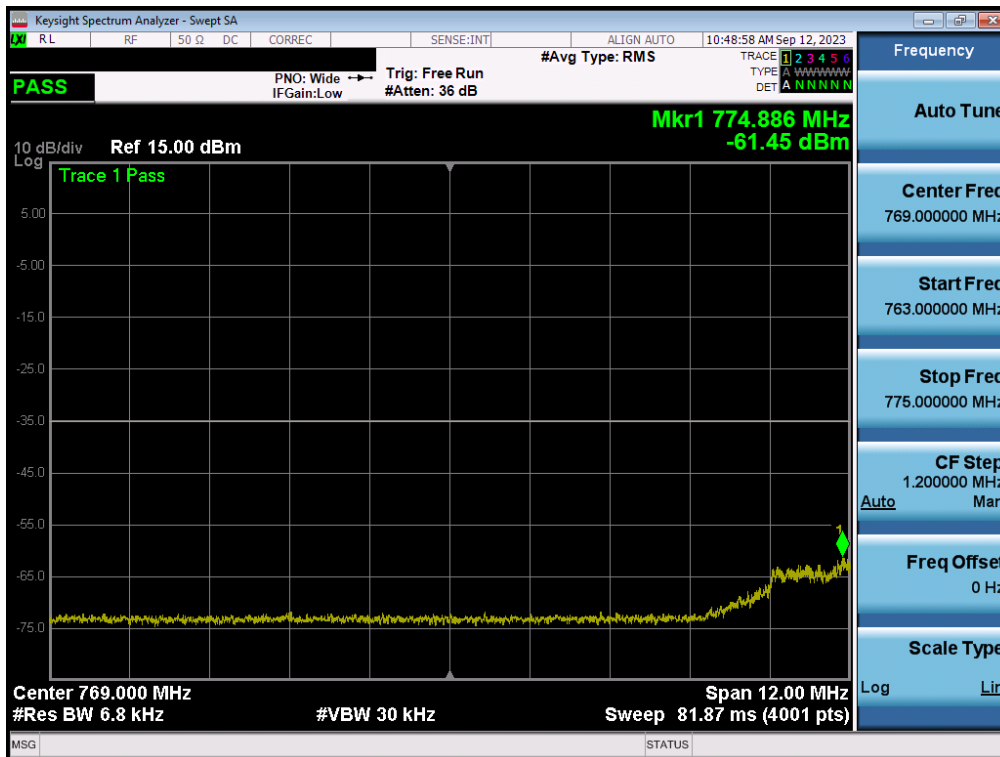
Plot 7-142. Upper Band Edge Plot (LTE Band 12 – 1.4MHz QPSK – Full RB - ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 107 of 179 |

LTE Band 13 – ANT1

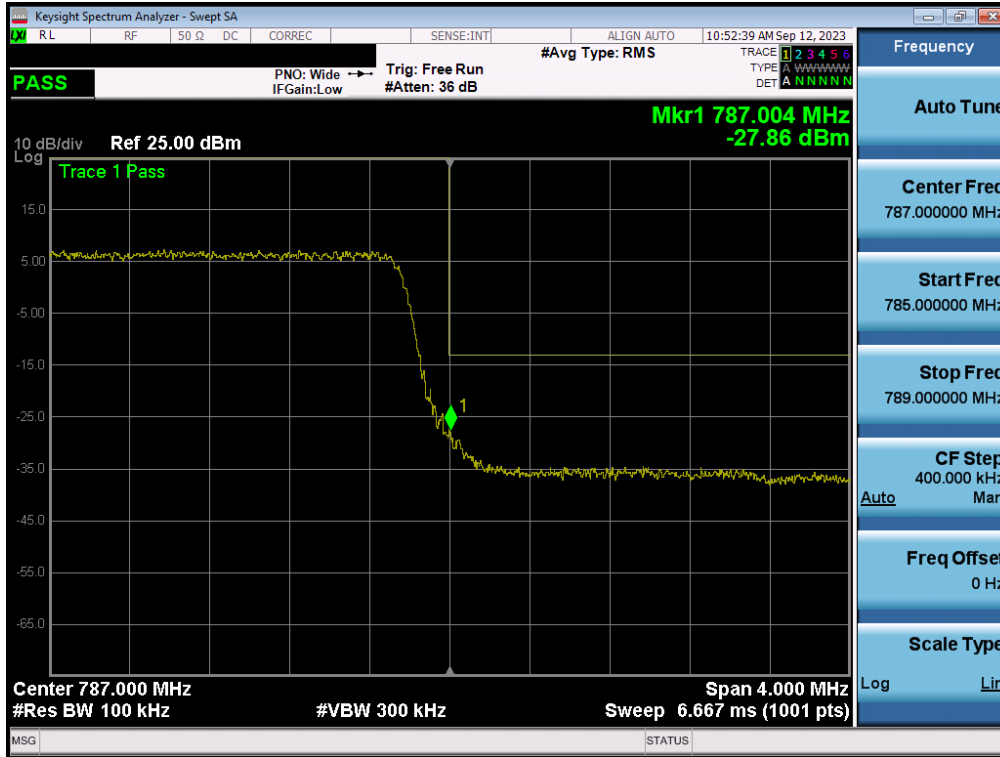


Plot 7-143. Lower Band Edge Plot (LTE Band 13 - 5MHz QPSK – Full RB - ANT1)

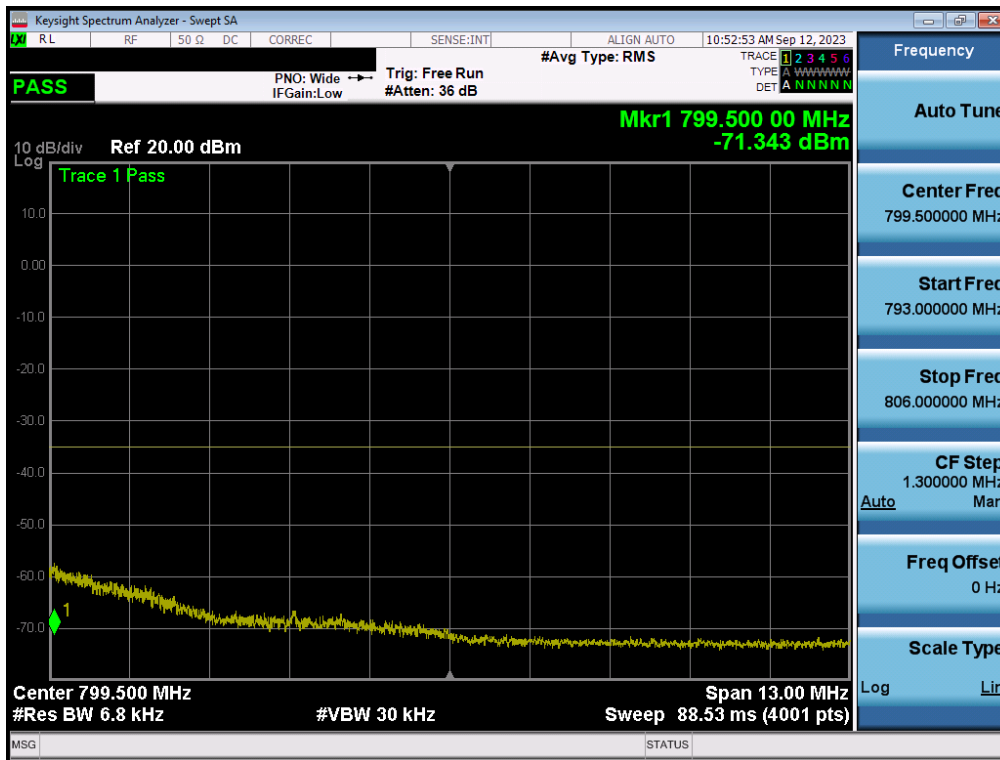


Plot 7-144. Lower Emission Mask Plot (LTE Band 13 - 5MHz QPSK – Full RB - ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 108 of 179 |



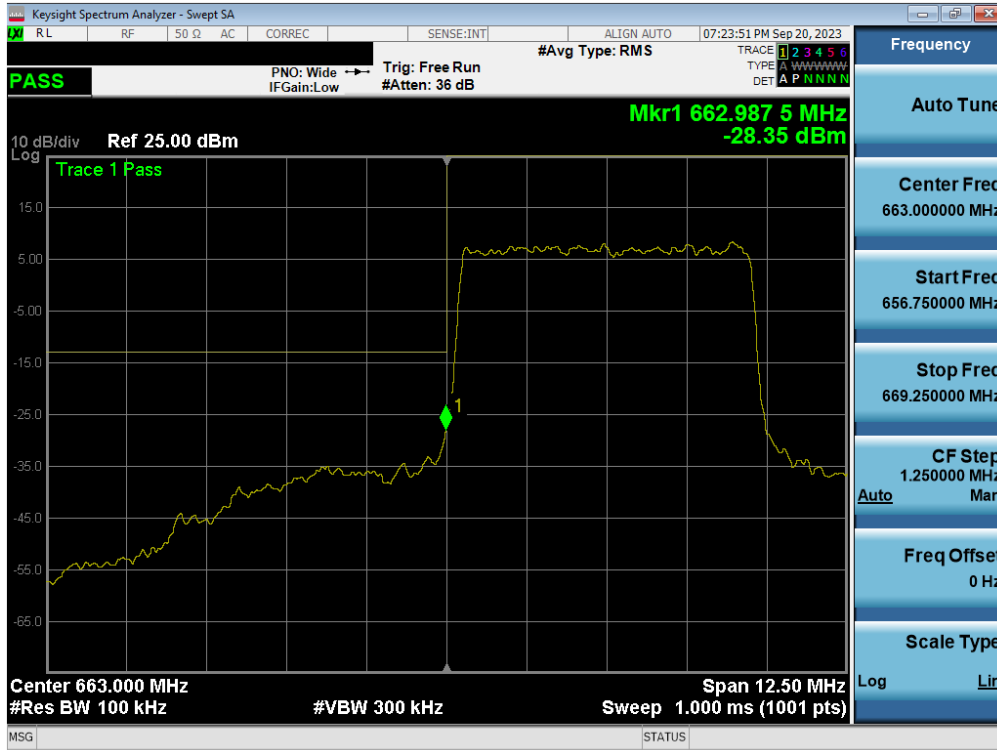
Plot 7-145. Upper Band Edge Plot (LTE Band 13 - 5MHz QPSK – Full RB - ANT1)



Plot 7-146. Upper Emission Mask Plot (LTE Band 13 - 5MHz QPSK – Full RB - ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 109 of 179 |

NR Band n71 – ANT1



Plot 7-147. Lower Band Edge Plot (NR Band n71 – 5.0MHz - Full RB - ANT1)



Plot 7-148. Upper Band Edge Plot (NR Band n71 – 5.0MHz - Full RB - ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 110 of 179 |

WCDMA AWS – ANT1



Plot 7-149. Lower Band Edge Plot (WCDMA AWS – Ch. 1312 – ANT1)



Plot 7-150. Lower Extended Band Edge Plot (WCDMA AWS – Ch. 1312 – ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 111 of 179 |



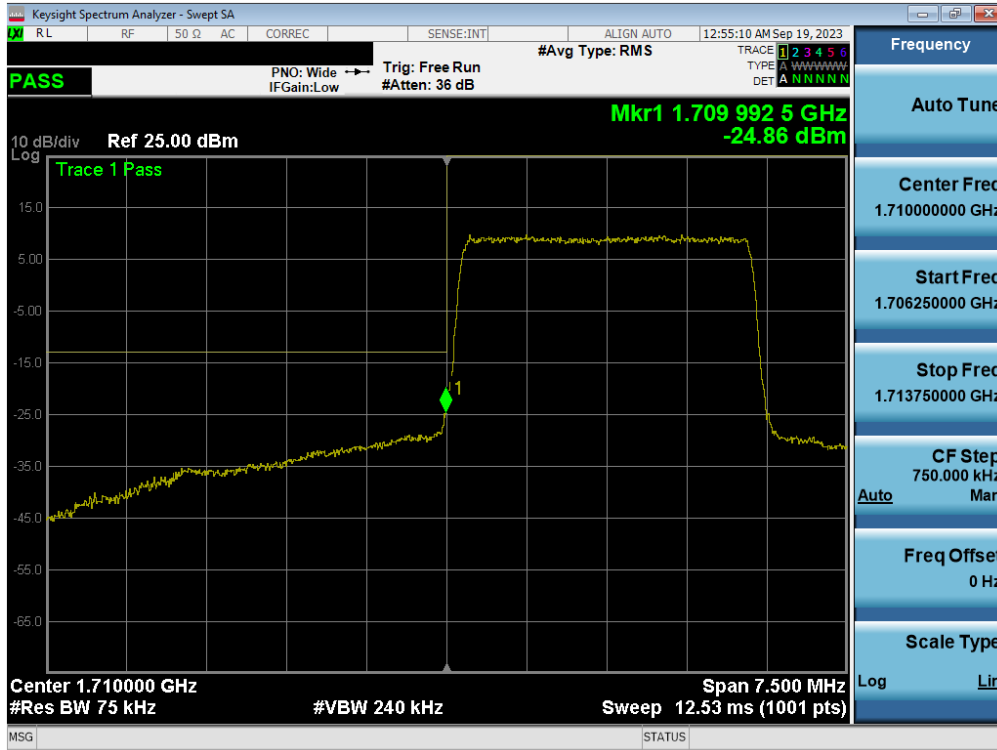
Plot 7-151. Upper Band Edge Plot (WCDMA AWS – Ch. 1513 – ANT1)



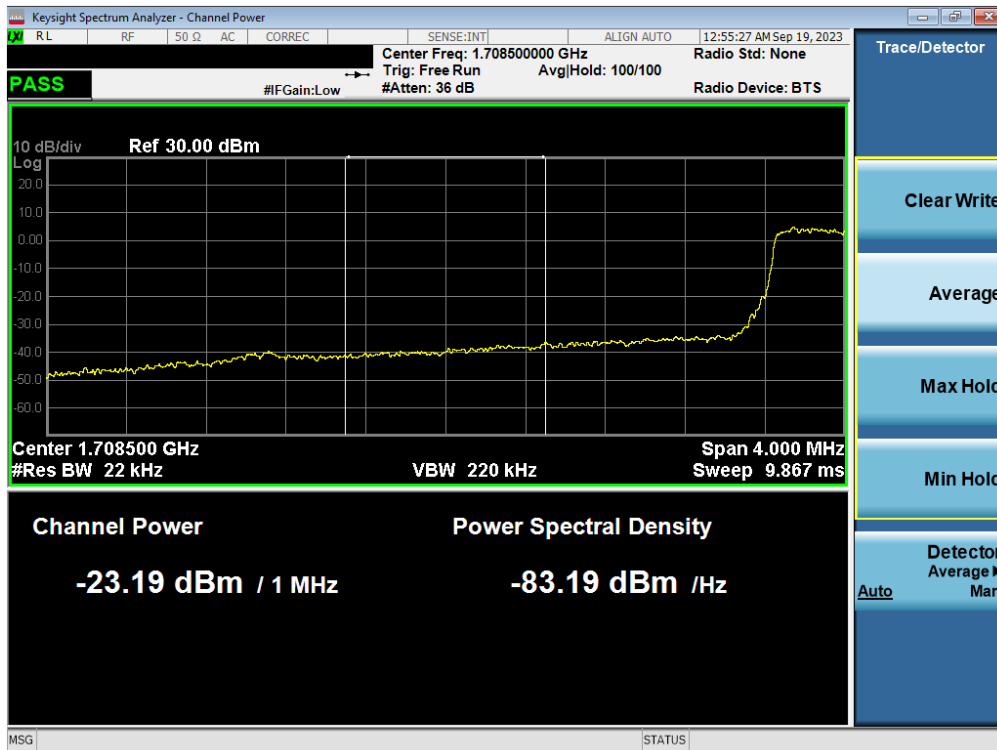
Plot 7-152. Upper Extended Band Edge Plot (WCDMA AWS – Ch. 1513– ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 112 of 179 |

LTE Band 66/4 – ANT1



Plot 7-153. Lower Band Edge Plot (LTE Band 66/4 - 3MHz QPSK – Full RB - ANT1)

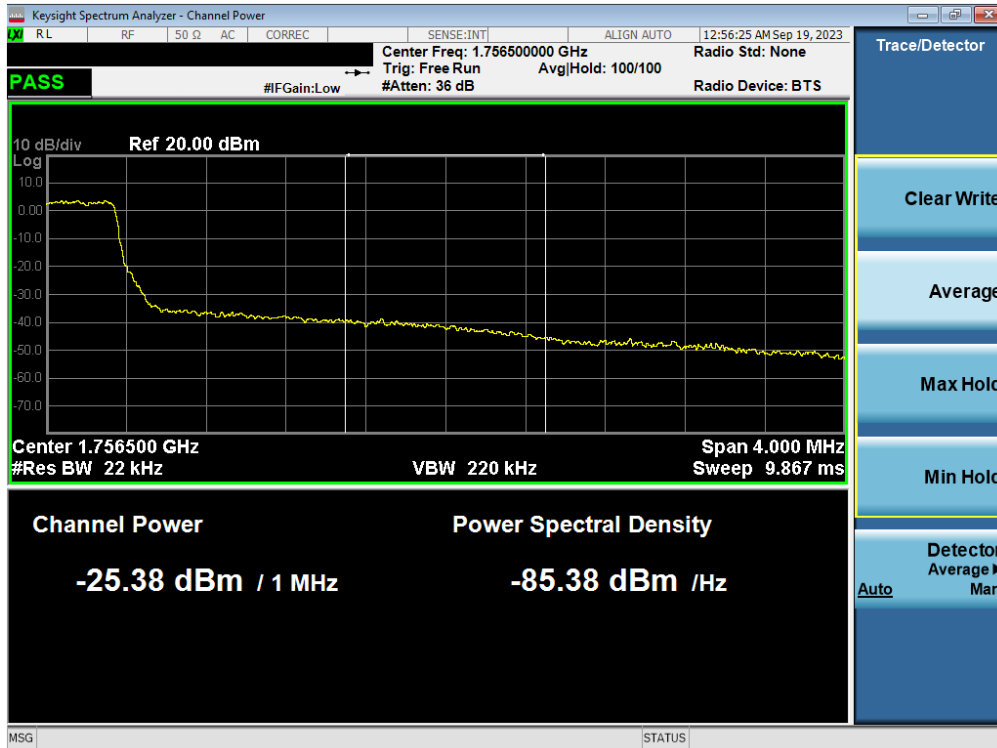


Plot 7-154. Lower Extended Band Edge Plot (LTE Band 66/4 - 3MHz QPSK – Full RB - ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 113 of 179 |



Plot 7-155. Upper Band Edge Plot (LTE Band 4 - 3MHz QPSK – Full RB - ANT1)

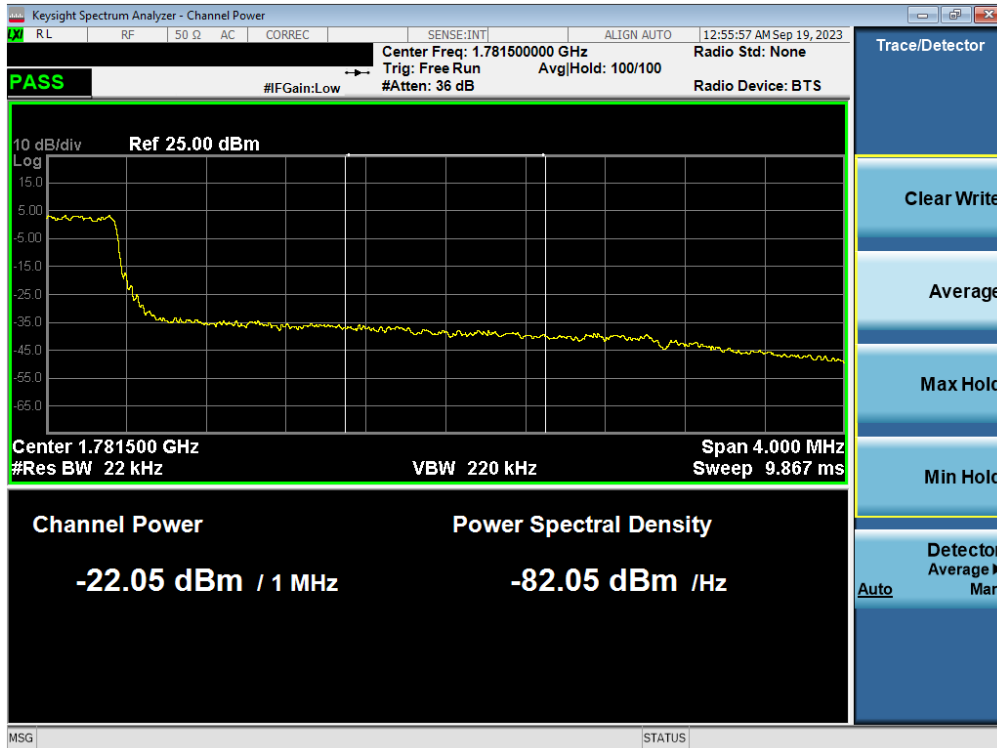


Plot 7-156. Upper Extended Band Edge Plot (LTE Band 4 - 3MHz QPSK – Full RB - ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 114 of 179 |



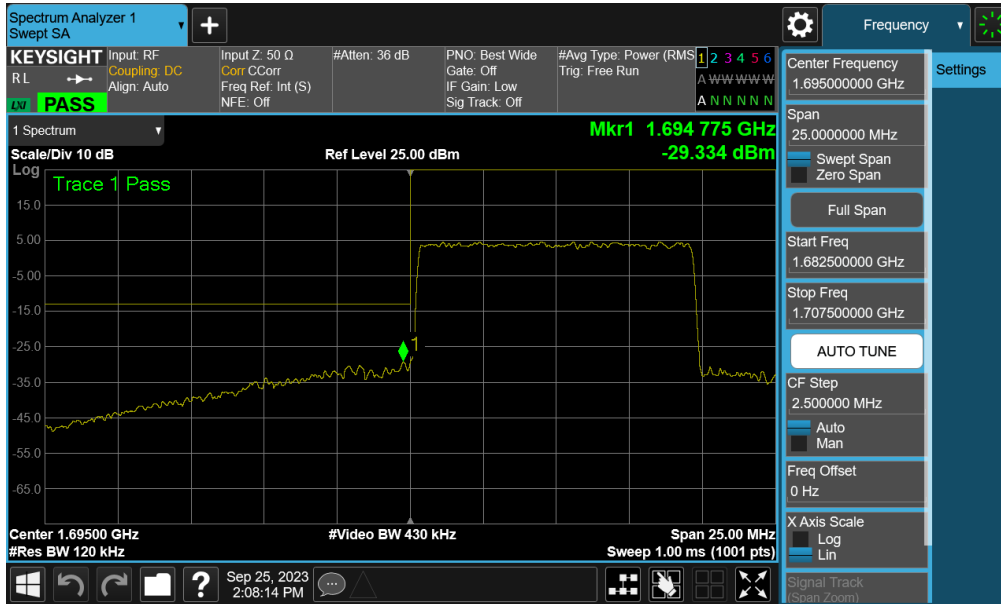
Plot 7-157. Upper Band Edge Plot (LTE Band 66 - 3MHz QPSK – Full RB - ANT1)



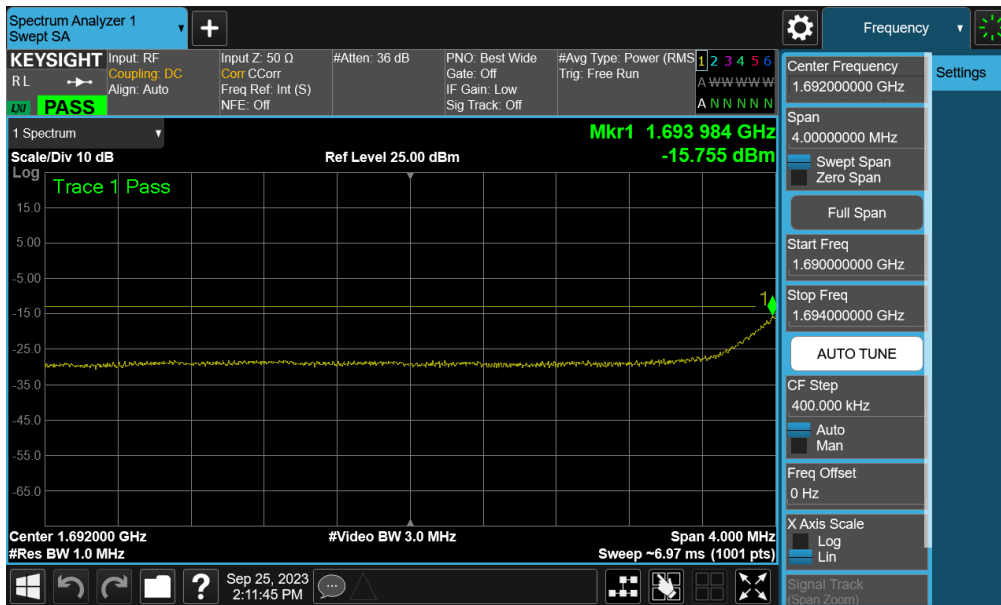
Plot 7-158. Upper Extended Band Edge Plot (LTE Band 66 - 3MHz QPSK – Full RB - ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 115 of 179 |

NR Band n70 – ANT1

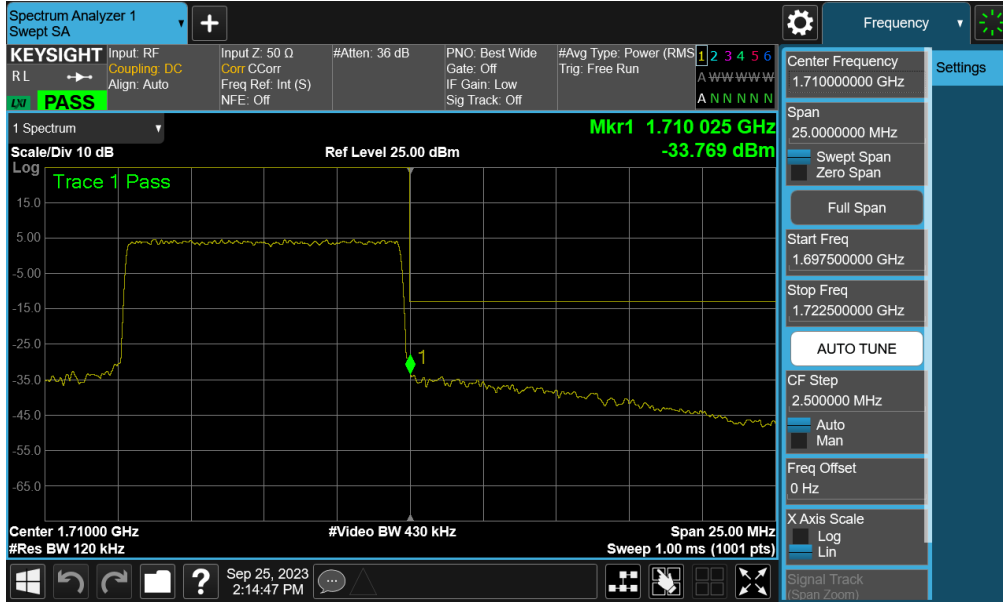


Plot 7-159. Lower Band Edge Plot (NR Band n70 – 10.0MHz - Full RB - ANT1)

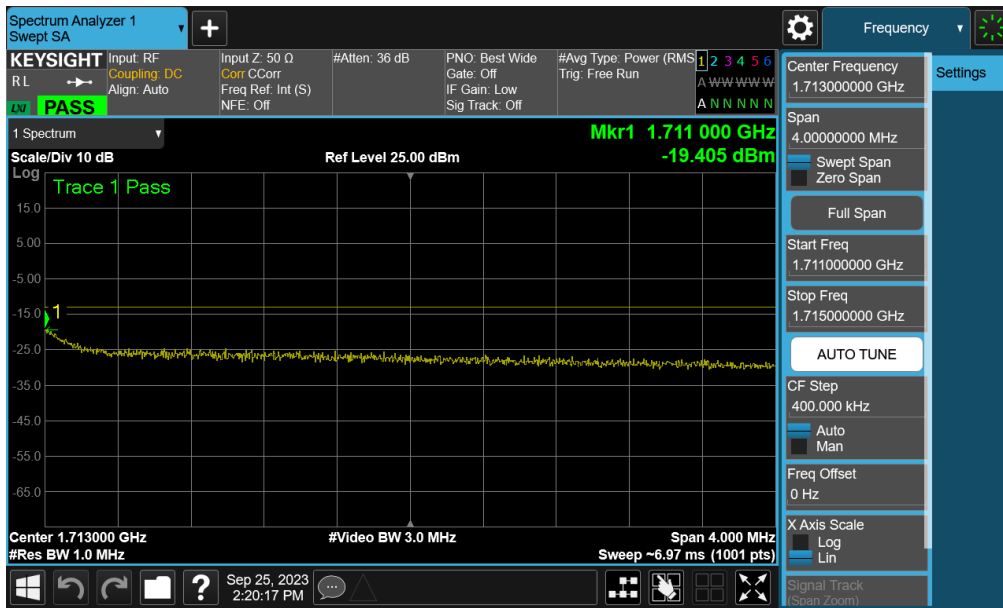


Plot 7-160. Lower Extended Band Edge Plot (NR Band n70 – 10.0MHz - Full RB - ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 116 of 179 |



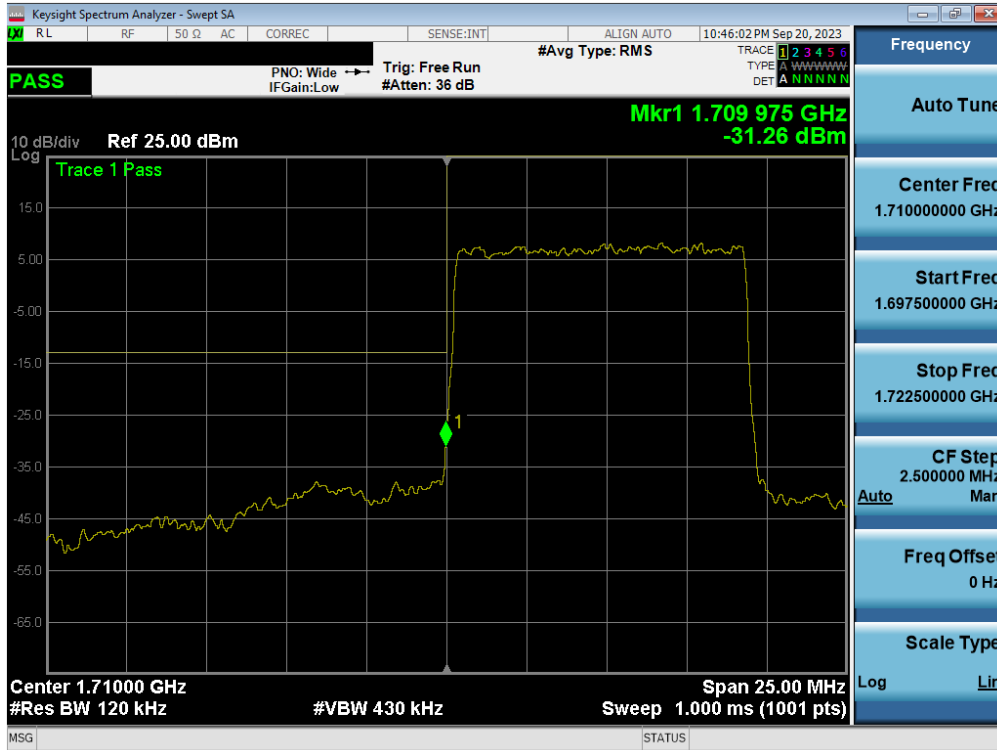
Plot 7-161. Upper Band Edge Plot (NR Band n70 – 10.0MHz - Full RB - ANT1)



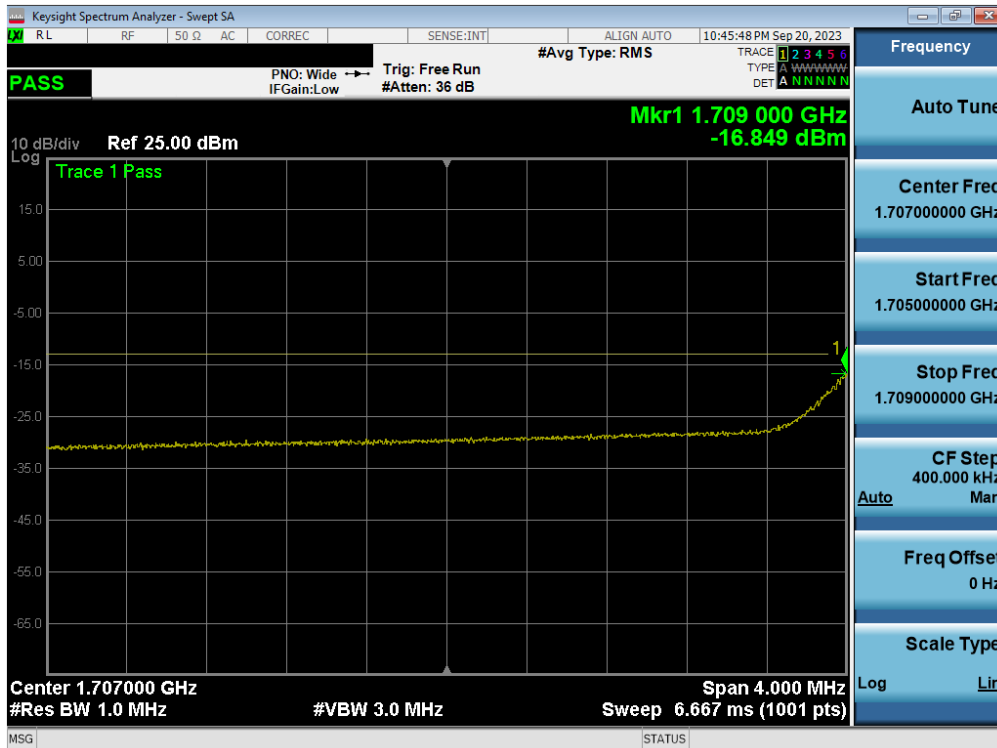
Plot 7-162. Upper Extended Band Edge Plot (NR Band n70 – 10.0MHz - Full RB - ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 117 of 179 |

NR Band n66 – ANT1



Plot 7-163. Lower Band Edge Plot (NR Band n66 – 10.0MHz - Full RB - ANT1)

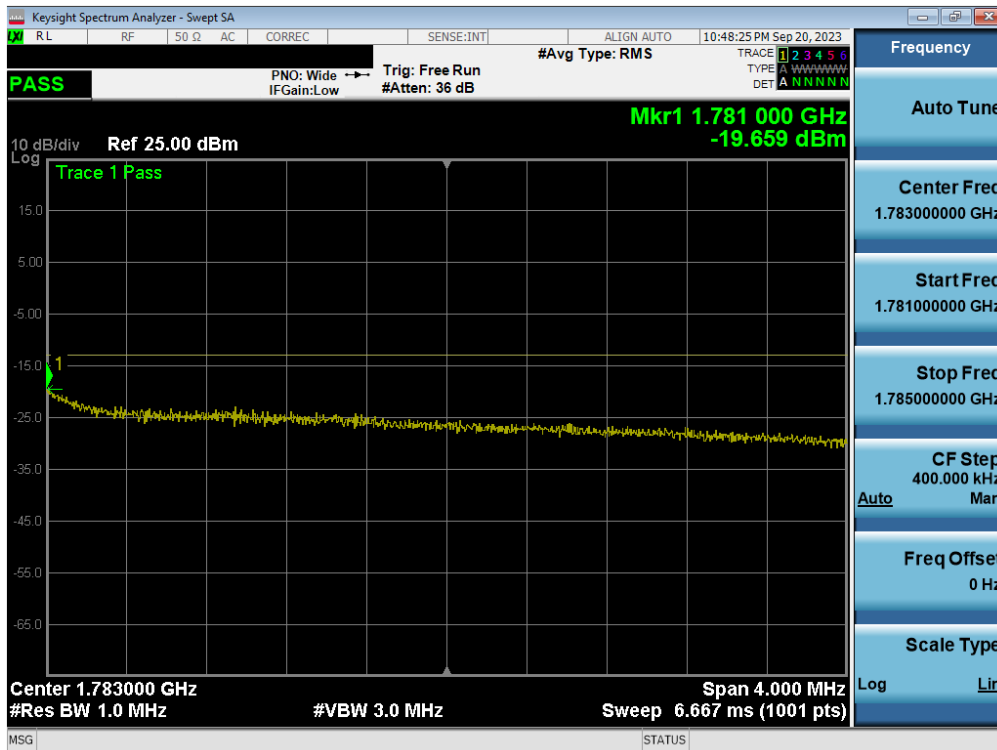


Plot 7-164. Lower Extended Band Edge Plot (NR Band n66 – 10.0MHz - Full RB - ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 118 of 179 |



Plot 7-165. Upper Band Edge Plot (NR Band n66 – 10.0MHz - Full RB - ANT1)



Plot 7-166. Upper Extended Band Edge Plot (NR Band n66 – 10.0MHz - Full RB - ANT1)

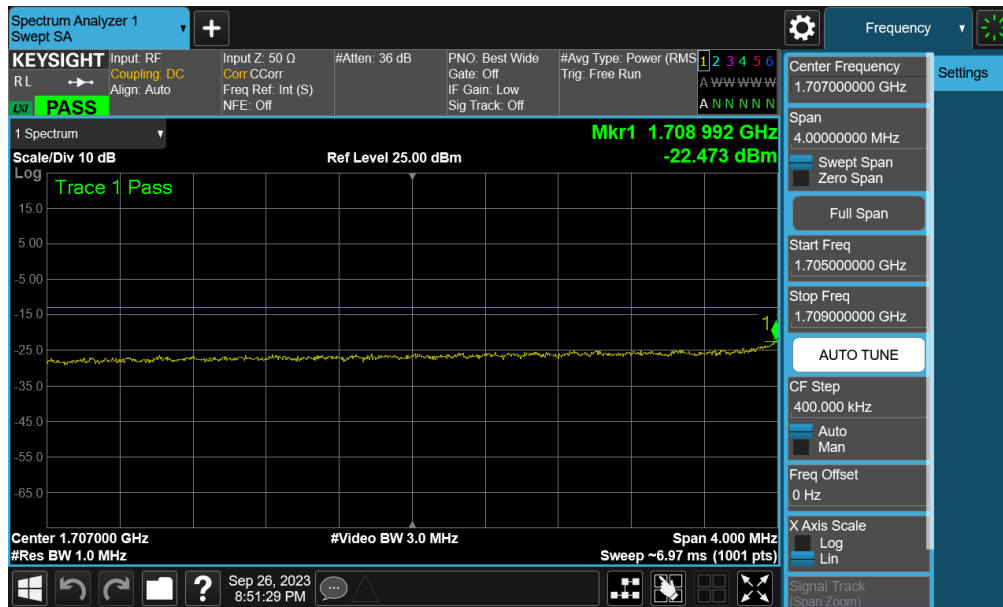
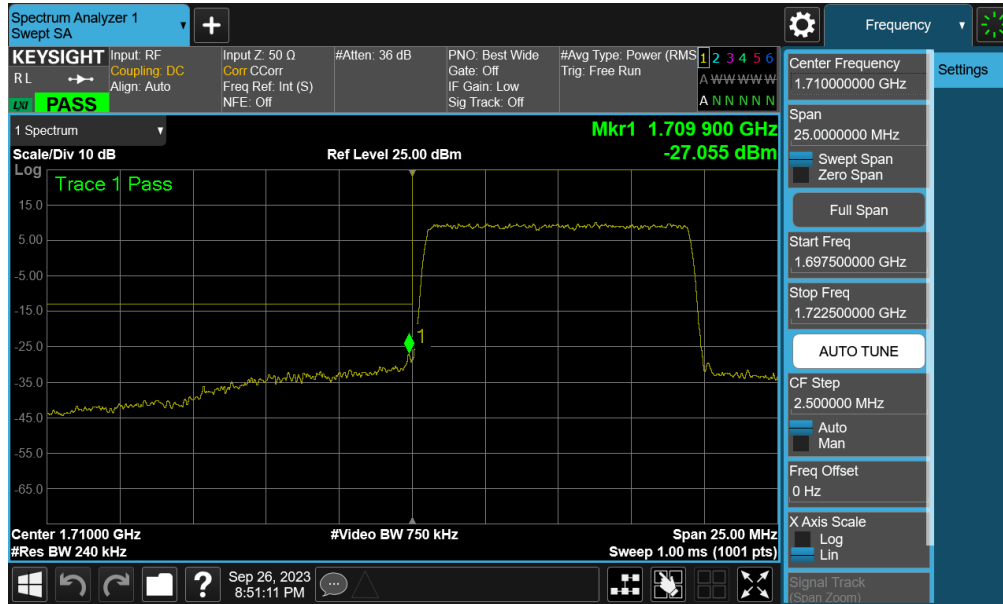
| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 119 of 179 |

| Mode | Bandwidth | Channel | Test Case | Level [dBm] | Limit [dBm] | Margin [dB] |
|---------------|-----------|------------|-----------|-------------|-------------|-------------|
| LTE Band 66/4 | 20MHz | Low | Band Edge | -30.94 | -13 | -17.94 |
| | | Low | Extended | -28.21 | -13 | -15.21 |
| | | High (B4) | Band Edge | -28.63 | -13 | -15.63 |
| | | High (B4) | Extended | -25.79 | -13 | -12.79 |
| | | High (B66) | Band Edge | -30.01 | -13 | -17.01 |
| | | High (B66) | Extended | -27.36 | -13 | -14.36 |
| | 15MHz | Low | Band Edge | -30.10 | -13 | -17.10 |
| | | Low | Extended | -26.96 | -13 | -13.96 |
| | | High (B4) | Band Edge | -29.49 | -13 | -16.49 |
| | | High (B4) | Extended | -25.88 | -13 | -12.88 |
| | | High (B66) | Band Edge | -30.31 | -13 | -17.31 |
| | | High (B66) | Extended | -25.84 | -13 | -12.84 |
| | 10MHz | Low | Band Edge | -27.06 | -13 | -14.06 |
| | | Low | Extended | -22.47 | -13 | -9.47 |
| | | High (B4) | Band Edge | -29.66 | -13 | -16.66 |
| | | High (B4) | Extended | -24.32 | -13 | -11.32 |
| | | High (B66) | Band Edge | -30.03 | -13 | -17.03 |
| | | High (B66) | Extended | -23.71 | -13 | -10.71 |
| | 5MHz | Low | Band Edge | -27.53 | -13 | -14.53 |
| | | Low | Extended | -23.78 | -13 | -10.78 |
| | | High (B4) | Band Edge | -25.54 | -13 | -12.54 |
| | | High (B4) | Extended | -28.35 | -13 | -15.35 |
| | | High (B66) | Band Edge | -29.97 | -13 | -16.97 |
| | | High (B66) | Extended | -28.10 | -13 | -15.10 |
| | 3MHz | Low | Band Edge | -23.49 | -13 | -10.49 |
| | | Low | Extended | -22.60 | -13 | -9.60 |
| | | High (B4) | Band Edge | -26.56 | -13 | -13.56 |
| | | High (B4) | Extended | -26.60 | -13 | -13.60 |
| | | High (B66) | Band Edge | -25.71 | -13 | -12.71 |
| | | High (B66) | Extended | -26.88 | -13 | -13.88 |
| | 1.4MHz | Low | Band Edge | -25.18 | -13 | -12.18 |
| | | Low | Extended | -27.67 | -13 | -14.67 |
| | | High (B4) | Band Edge | -28.68 | -13 | -15.68 |
| | | High (B4) | Extended | -28.06 | -13 | -15.06 |
| | | High (B66) | Band Edge | -28.21 | -13 | -15.21 |
| | | High (B66) | Extended | -27.22 | -13 | -14.22 |
| NR Band n66 | 40 MHz | Low | Band Edge | -28.05 | -13 | -15.05 |
| | | Low | Extended | -30.40 | -13 | -17.40 |
| | | High | Band Edge | -24.10 | -13 | -11.10 |
| | | High | Extended | -31.85 | -13 | -18.85 |
| | 30 MHz | Low | Band Edge | -27.35 | -13 | -14.35 |
| | | Low | Extended | -27.36 | -13 | -14.36 |
| | | High | Band Edge | -27.90 | -13 | -14.90 |
| | | High | Extended | -27.31 | -13 | -14.31 |
| | 25 MHz | Low | Band Edge | -30.67 | -13 | -17.67 |
| | | Low | Extended | -25.14 | -13 | -12.14 |
| | | High | Band Edge | -36.01 | -13 | -23.01 |
| | | High | Extended | -30.12 | -13 | -17.12 |
| | 20 MHz | Low | Band Edge | -30.88 | -13 | -17.88 |
| | | Low | Extended | -23.68 | -13 | -10.68 |
| | | High | Band Edge | -35.30 | -13 | -22.30 |
| | | High | Extended | -28.20 | -13 | -15.20 |
| | 15 MHz | Low | Band Edge | -30.53 | -13 | -17.53 |
| | | Low | Extended | -20.21 | -13 | -7.21 |
| | | High | Band Edge | -35.61 | -13 | -22.61 |
| | | High | Extended | -25.35 | -13 | -12.35 |
| | 10 MHz | Low | Band Edge | -31.01 | -13 | -18.01 |
| | | Low | Extended | -16.12 | -13 | -3.12 |
| | | High | Band Edge | -36.70 | -13 | -23.70 |
| | | High | Extended | -21.20 | -13 | -8.20 |
| | 5 MHz | Low | Band Edge | -27.82 | -13 | -14.82 |
| | | Low | Extended | -22.82 | -13 | -9.82 |
| | | High | Band Edge | -32.61 | -13 | -19.61 |
| | | High | Extended | -28.40 | -13 | -15.40 |

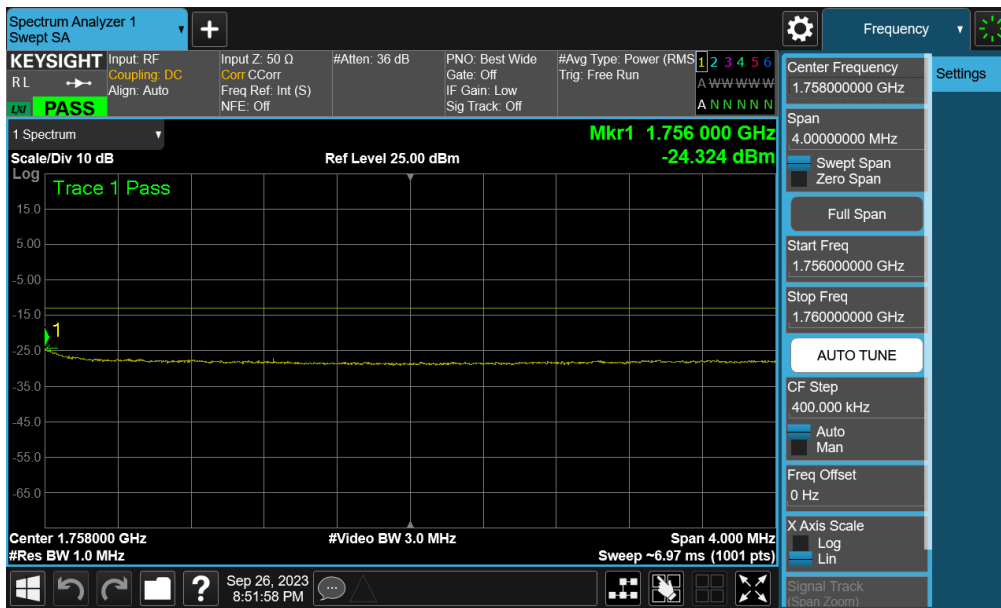
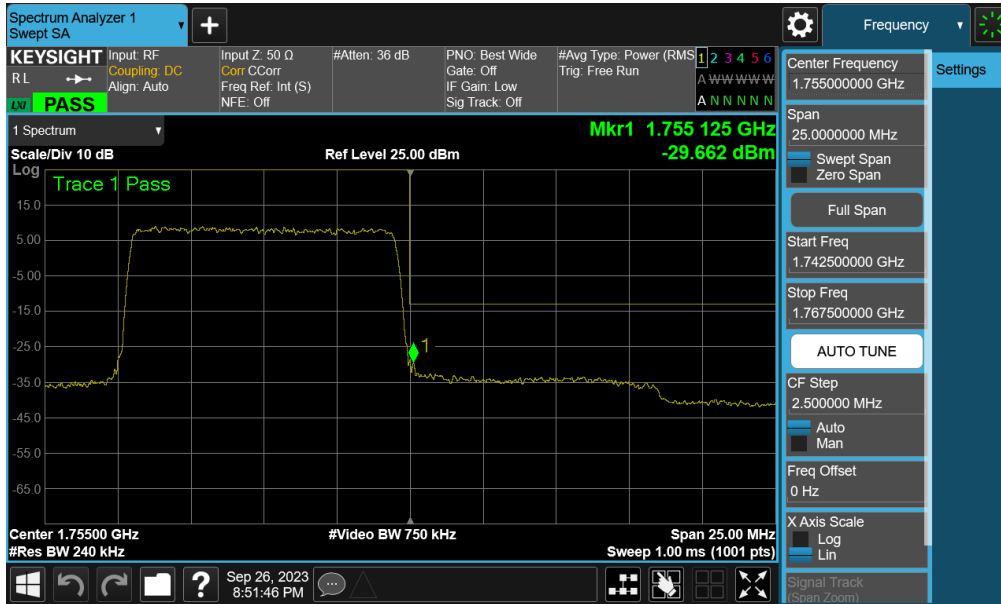
Table 7-14. Conducted Band Edge Test Results - Ant2

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 120 of 179 |

LTE Band 66/4 – ANT2



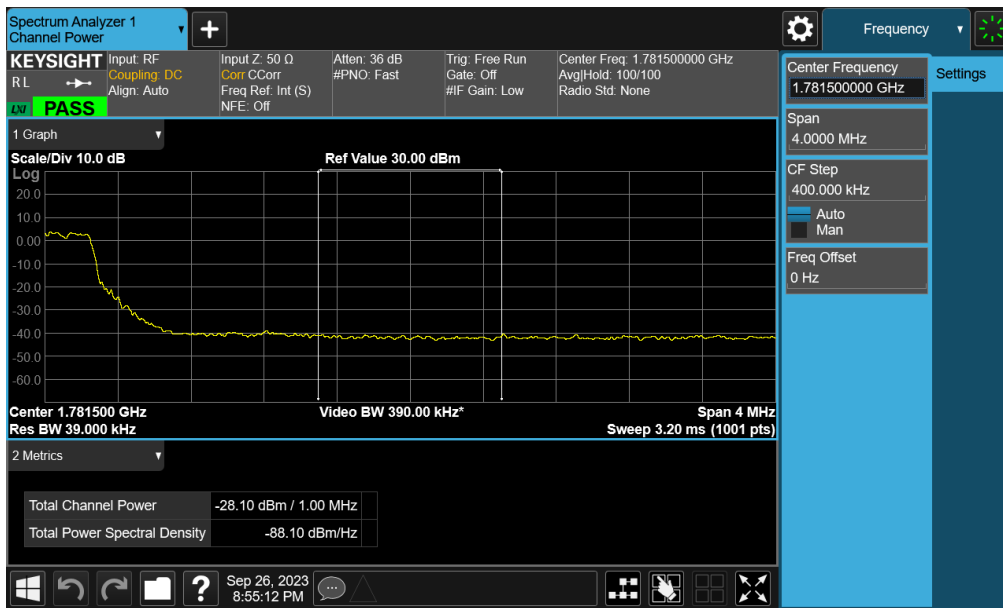
| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 121 of 179 |



| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 122 of 179 |



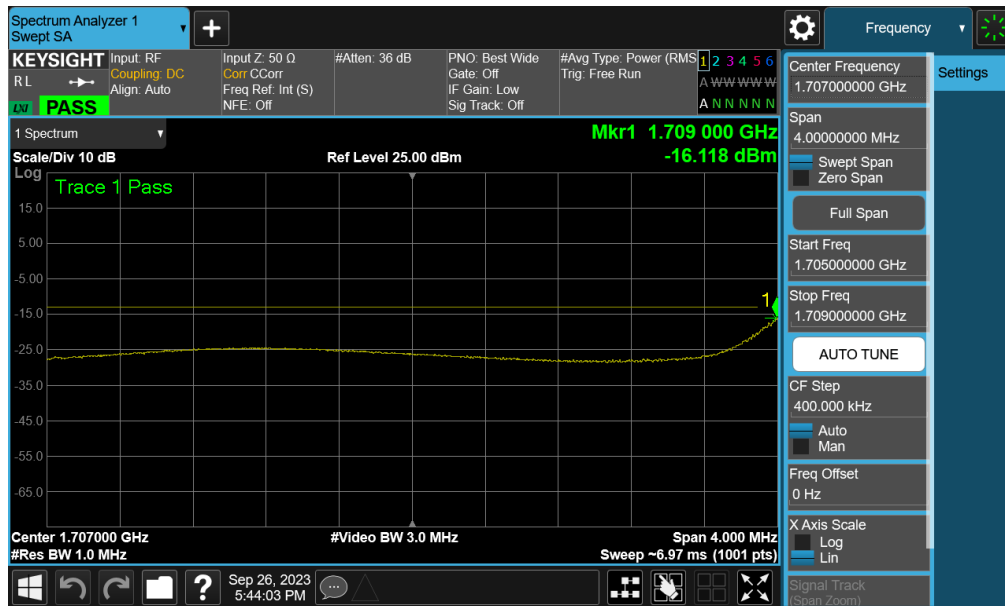
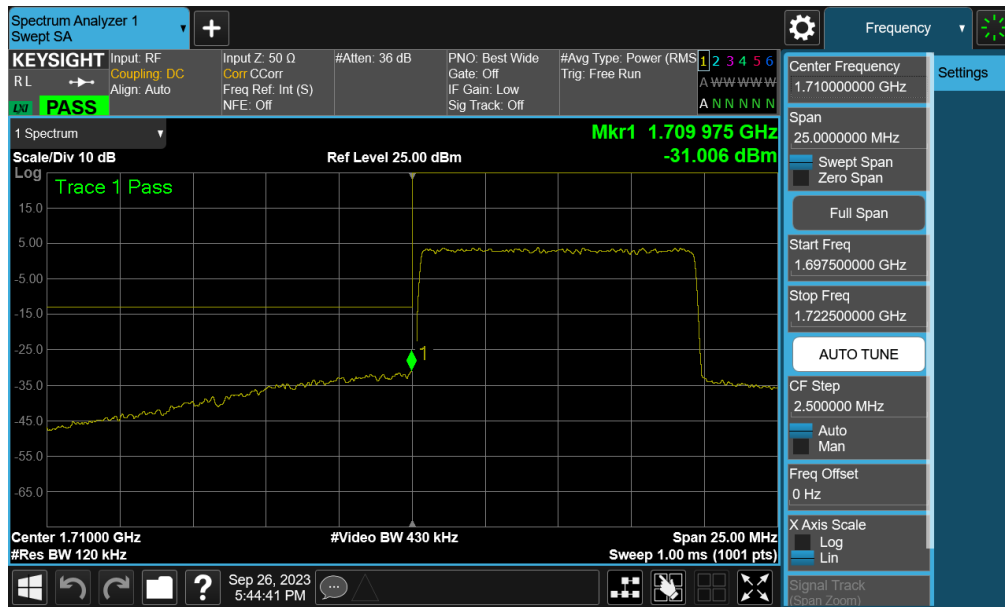
Plot 7-171. Upper Band Edge Plot (LTE Band 66 - 10MHz QPSK – Full RB - ANT2)



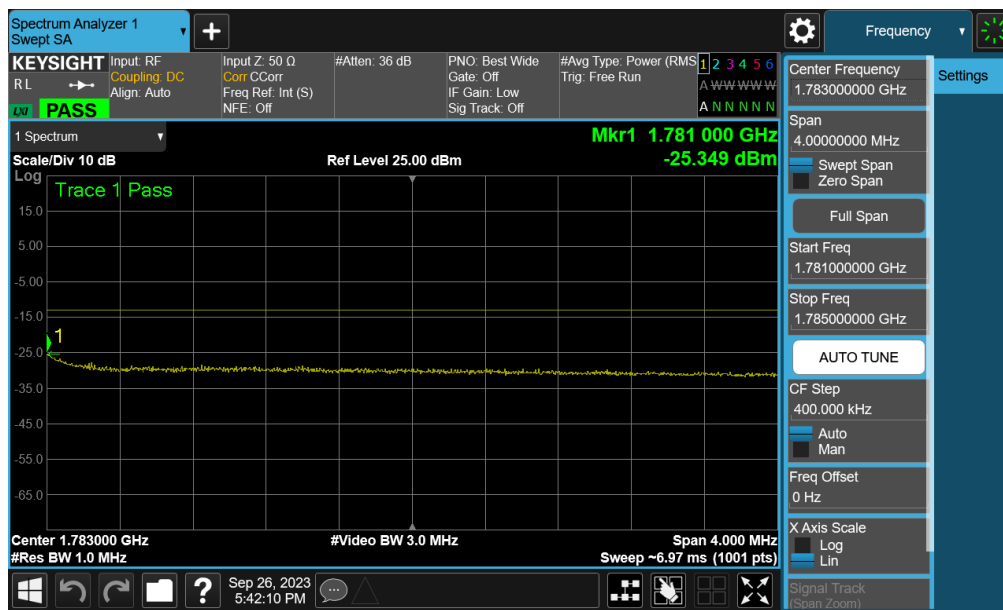
Plot 7-172. Upper Extended Band Edge Plot (LTE Band 66 - 10MHz QPSK – Full RB - ANT2)

NR Band n66 – ANT2

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 123 of 179 |



| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 124 of 179 |



| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 125 of 179 |

7.6 Peak-Average Ratio

Test Overview

A peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

Test Procedure Used

ANSI C63.26-2015 – Section 5.2.3.4

Test Settings

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW \geq OBW or specified reference bandwidth
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

Test Setup

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

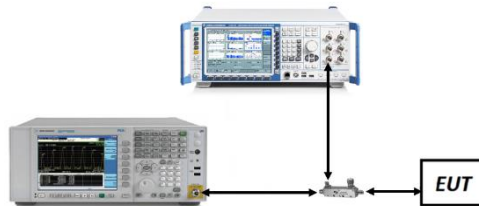


Figure 7-5. Test Instrument & Measurement Setup

Test Notes

For the QAM modulations, 256QAM was found to have the worst-case peak-to-average ratio so it is the only QAM measurement included in this section.

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 126 of 179 |



| Mode | Bandwidth | Modulation | Average Power [dBm] | PAR at 0.1% [dB] | PAR Limit [dB] | Margin [dB] |
|-----------|-----------|------------|---------------------|------------------|----------------|-------------|
| WCDMA-AWS | 5MHz | GMSK | 22.75 | 3.11 | 13 | -9.89 |
| LTE-B66-4 | 20MHz | QPSK | 23.54 | 5.74 | 13 | -7.26 |
| | | 256QAM | 19.61 | 6.89 | 13 | -6.11 |
| | 15MHz | QPSK | 23.52 | 5.79 | 13 | -7.21 |
| | | 256QAM | 19.58 | 6.87 | 13 | -6.13 |
| | 10MHz | QPSK | 23.52 | 5.82 | 13 | -7.18 |
| | | 256QAM | 19.61 | 6.82 | 13 | -6.18 |
| | 5MHz | QPSK | 23.55 | 5.82 | 13 | -7.18 |
| | | 256QAM | 19.62 | 6.85 | 13 | -6.15 |
| | 3MHz | QPSK | 23.48 | 5.92 | 13 | -7.08 |
| | | 256QAM | 19.59 | 6.86 | 13 | -6.14 |
| | 1.4MHz | QPSK | 23.46 | 5.86 | 13 | -7.14 |
| | | 256QAM | 19.58 | 7.04 | 13 | -5.96 |

Table 7-15. Peak-Average Ratio Test Results - Ant1

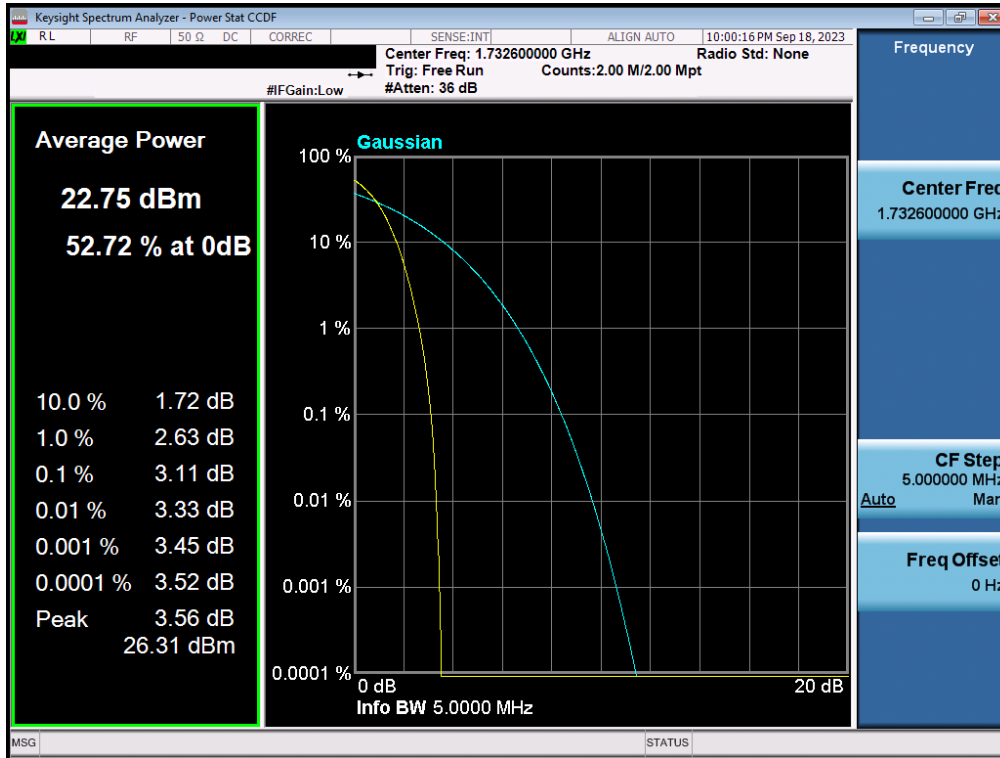
| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 127 of 179 |

| Mode | Bandwidth | Modulation | Average Power [dBm] | PAR at 0.1% [dB] | PAR Limit [dB] | Margin [dB] |
|--------|-----------|--------------|---------------------|------------------|----------------|-------------|
| NR-n70 | 15MHz | $\pi/2$ BPSK | 25.01 | 4.43 | 13 | -8.57 |
| | | QPSK | 22.46 | 7.87 | 13 | -5.13 |
| | | 256QAM | 18.98 | 8.57 | 13 | -4.43 |
| | 10MHz | $\pi/2$ BPSK | 25.01 | 4.44 | 13 | -8.56 |
| | | QPSK | 22.49 | 7.83 | 13 | -5.17 |
| | | 256QAM | 19.03 | 8.54 | 13 | -4.46 |
| | 5MHz | $\pi/2$ BPSK | 25.08 | 4.41 | 13 | -8.59 |
| | | QPSK | 22.52 | 7.82 | 13 | -5.18 |
| | | 256QAM | 19.04 | 8.68 | 13 | -4.32 |
| NR-n66 | 40MHz | $\pi/2$ BPSK | 24.62 | 5.07 | 13 | -7.93 |
| | | QPSK | 22.05 | 8.21 | 13 | -4.79 |
| | | 256QAM | 18.59 | 8.62 | 13 | -4.38 |
| | 30MHz | $\pi/2$ BPSK | 24.53 | 4.64 | 13 | -8.36 |
| | | QPSK | 21.98 | 8.26 | 13 | -4.74 |
| | | 256QAM | 18.57 | 8.51 | 13 | -4.49 |
| | 25MHz | $\pi/2$ BPSK | 24.57 | 4.85 | 13 | -8.15 |
| | | QPSK | 22.06 | 8.07 | 13 | -4.93 |
| | | 256QAM | 18.58 | 8.64 | 13 | -4.36 |
| | 20MHz | $\pi/2$ BPSK | 24.67 | 4.51 | 13 | -8.49 |
| | | QPSK | 22.15 | 8.04 | 13 | -4.96 |
| | | 256QAM | 18.76 | 8.60 | 13 | -4.40 |
| | 15MHz | $\pi/2$ BPSK | 24.61 | 4.56 | 13 | -8.44 |
| | | QPSK | 22.12 | 8.06 | 13 | -4.94 |
| | | 256QAM | 18.76 | 8.54 | 13 | -4.46 |
| | 10MHz | $\pi/2$ BPSK | 24.61 | 4.64 | 13 | -8.36 |
| | | QPSK | 22.06 | 8.09 | 13 | -4.91 |
| | | 256QAM | 18.77 | 8.51 | 13 | -4.50 |
| | 5MHz | $\pi/2$ BPSK | 24.62 | 4.48 | 13 | -8.52 |
| | | QPSK | 22.08 | 7.99 | 13 | -5.01 |
| | | 256QAM | 18.74 | 8.52 | 13 | -4.48 |

Table 7-16. Peak-Average Ratio Test Results - Ant1

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 128 of 179 |

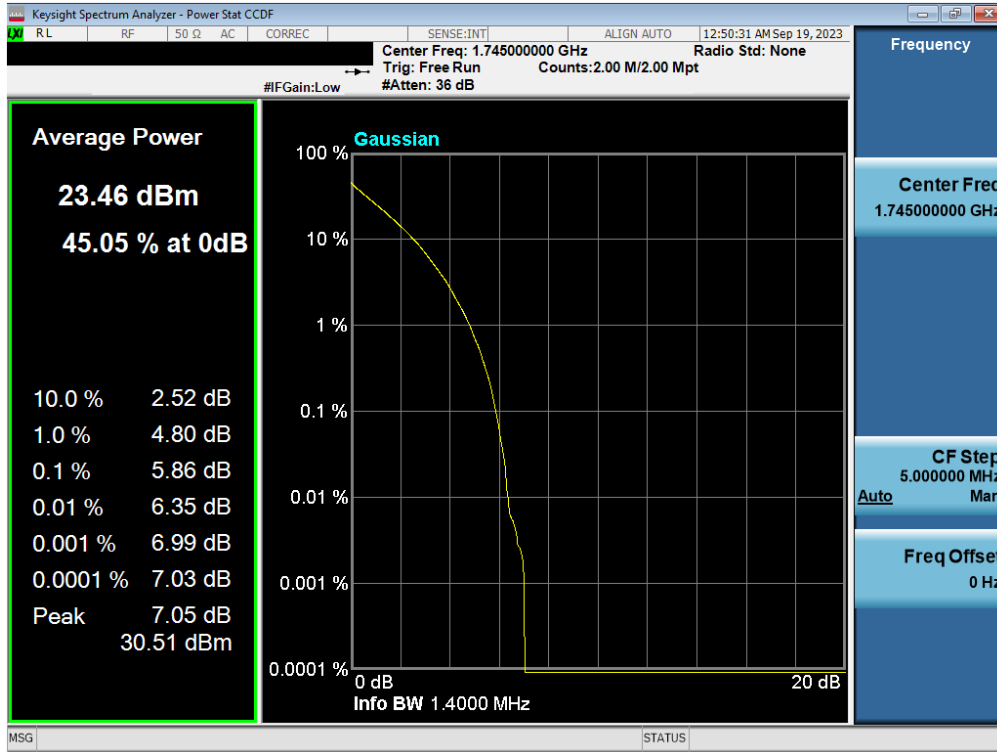
WCDMA AWS – ANT1



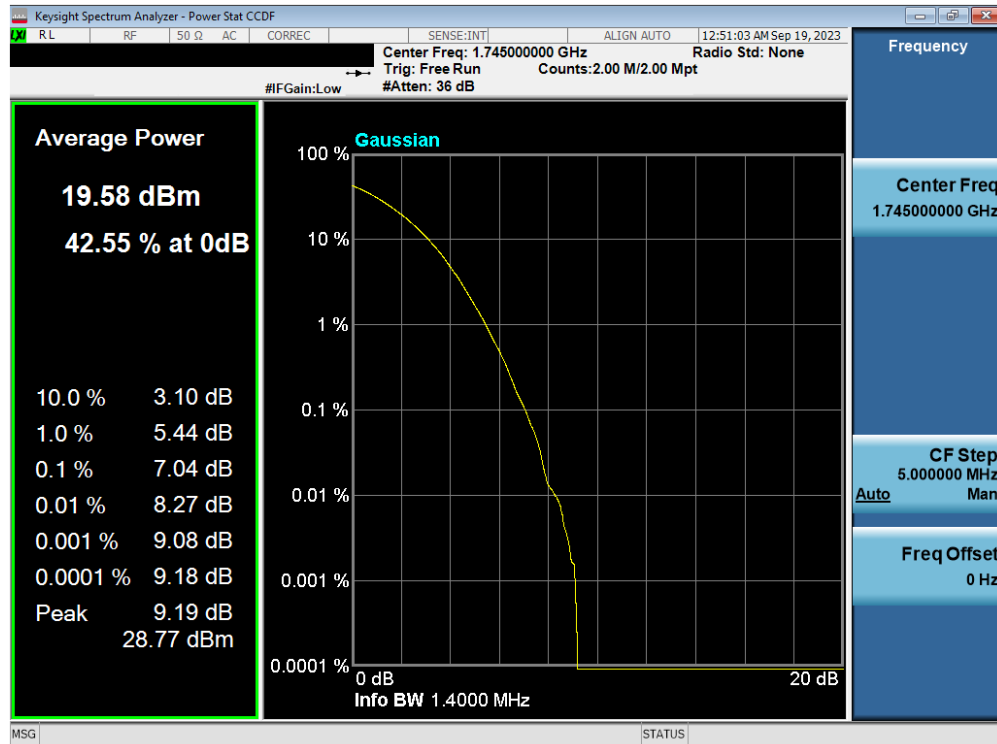
Plot 7-177. PAR Plot (WCDMA, Ch. 1413 – ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 129 of 179 |

LTE Band 66/4 – ANT1



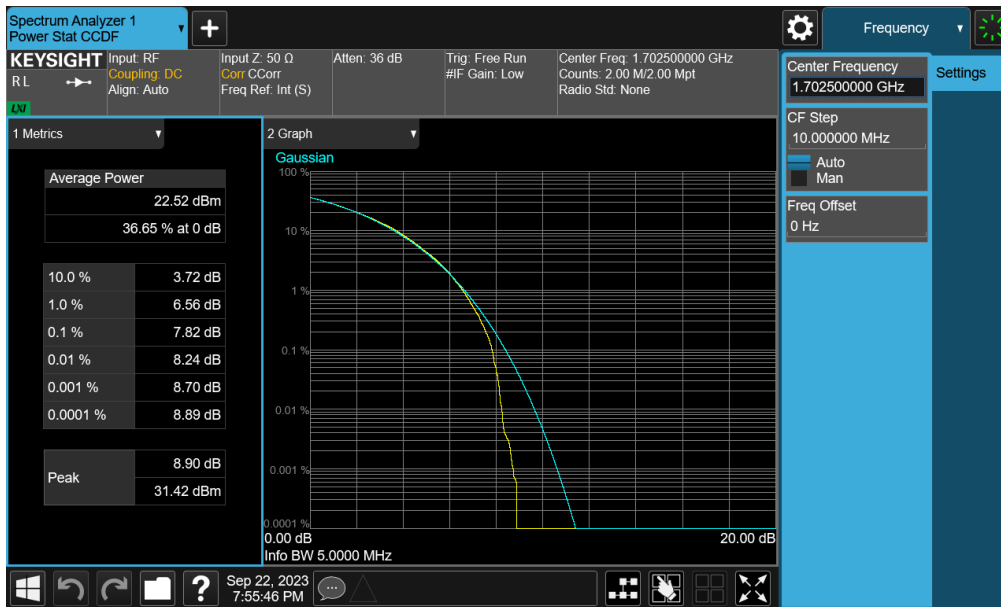
Plot 7-178. PAR Plot (LTE Band 66/4 - 1.4MHz QPSK - Full RB - ANT1)



Plot 7-179. PAR Plot (LTE Band 66/4 - 1.4MHz 256-QAM - Full RB - ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 130 of 179 |

NR Band n70 – ANT1



| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 131 of 179 |



Plot 7-182. PAR Plot (NR Band n70 - 5.0MHz CP-OFDM 256-QAM - Full RB - ANT1)

| | | | |
|---|-------------------------------------|-------------------------------|-----------------------------------|
| FCC ID: A3LSMA156U | PART 27 MEASUREMENT REPORT | | Approved by: Technical Manager |
| Test Report S/N: 1M2309070100-03.A3L | Test Dates: 9/8/2023 - 11/2/2023 | EUT Type: Portable Handset | Page 132 of 179 |