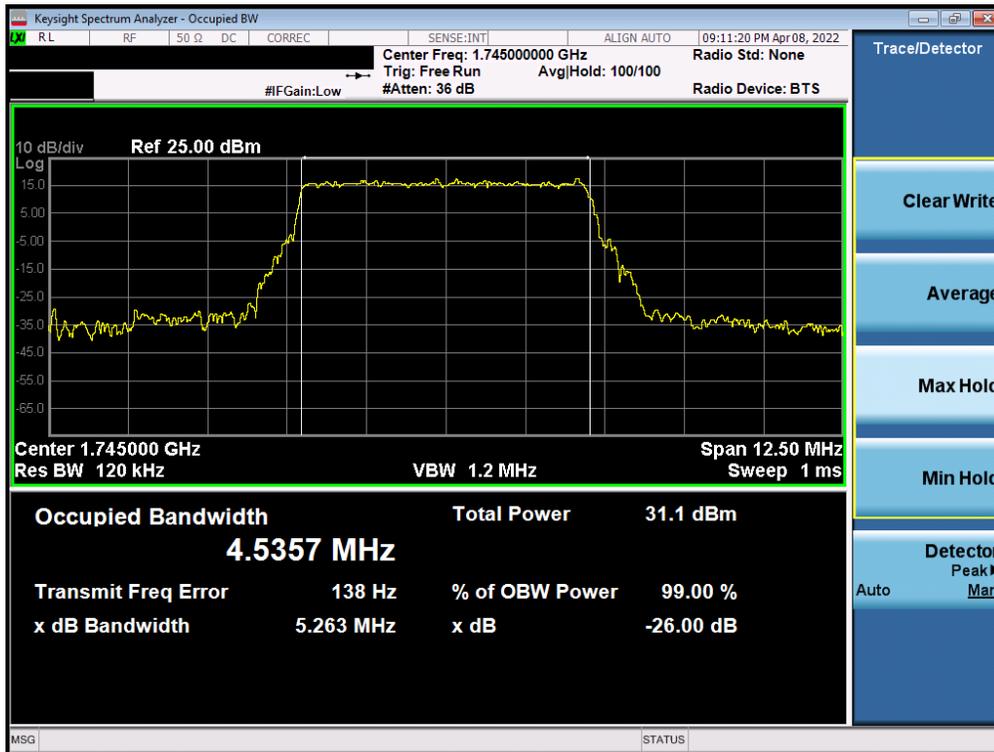
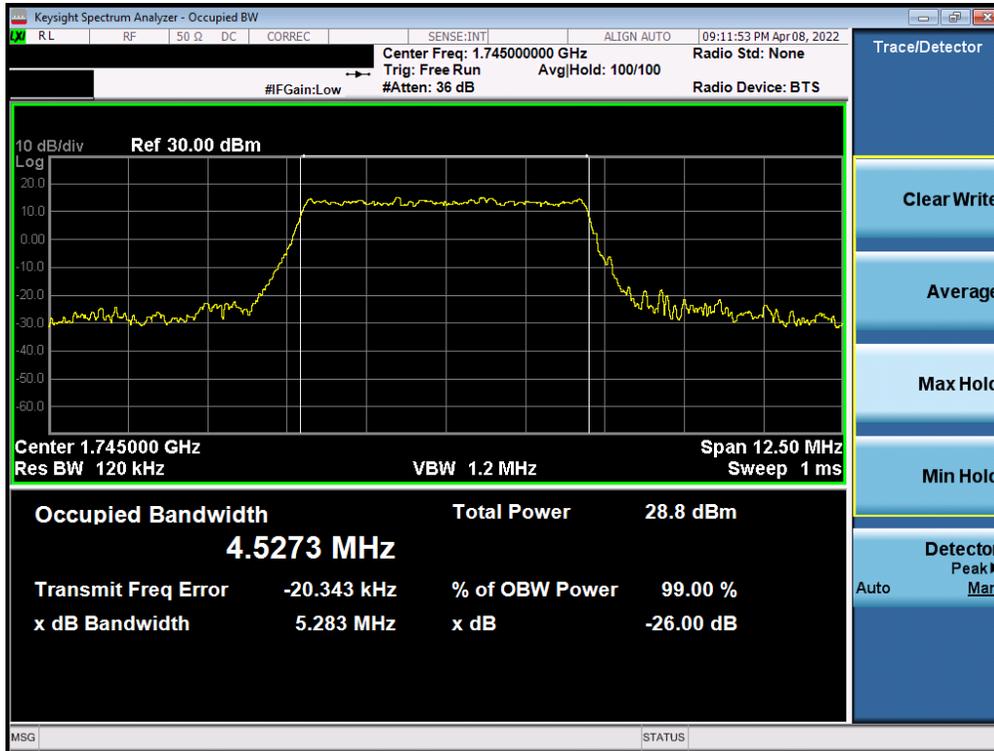


Plot 7-99. Occupied Bandwidth Plot (NR Band n66 - 10.0MHz CP-OFDM 16QAM - Full RB – Ant F)

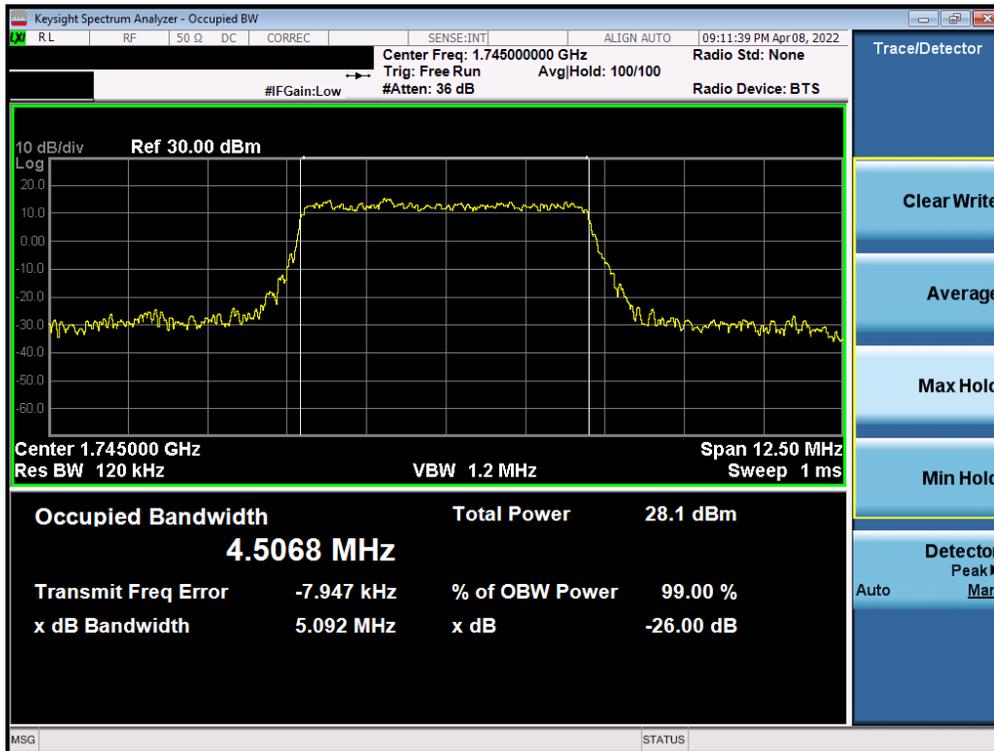


Plot 7-100. Occupied Bandwidth Plot (NR Band n66 - 5.0MHz DFT-S-OFDM BPSK - Full RB – Ant F)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-101. Occupied Bandwidth Plot (NR Band n66 - 5.0MHz CP-OFDM QPSK - Full RB - Ant F)



Plot 7-102. Occupied Bandwidth Plot (NR Band n66 - 5.0MHz CP-OFDM 16QAM - Full RB - Ant F)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 70 of 312

## 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 10<sup>th</sup> 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

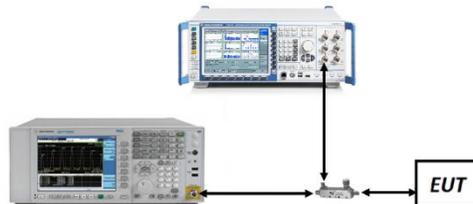
ANSI C63.26-2015 – Section 5.7.4

### 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.



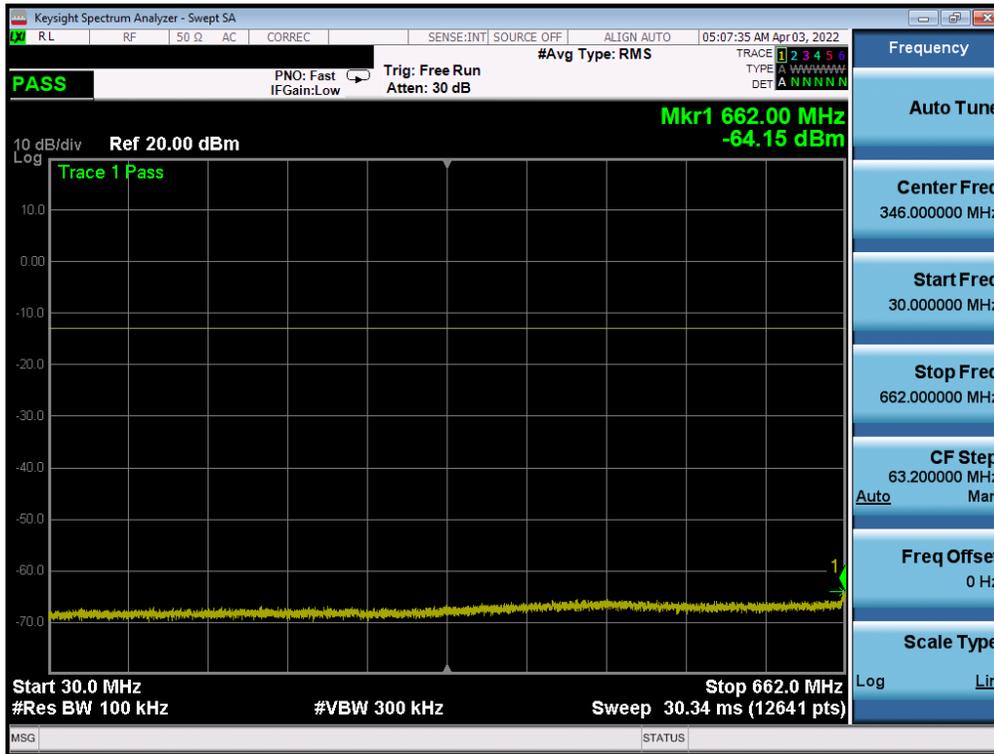
**Figure 7-3. Test Instrument & Measurement Setup**

### Test Notes

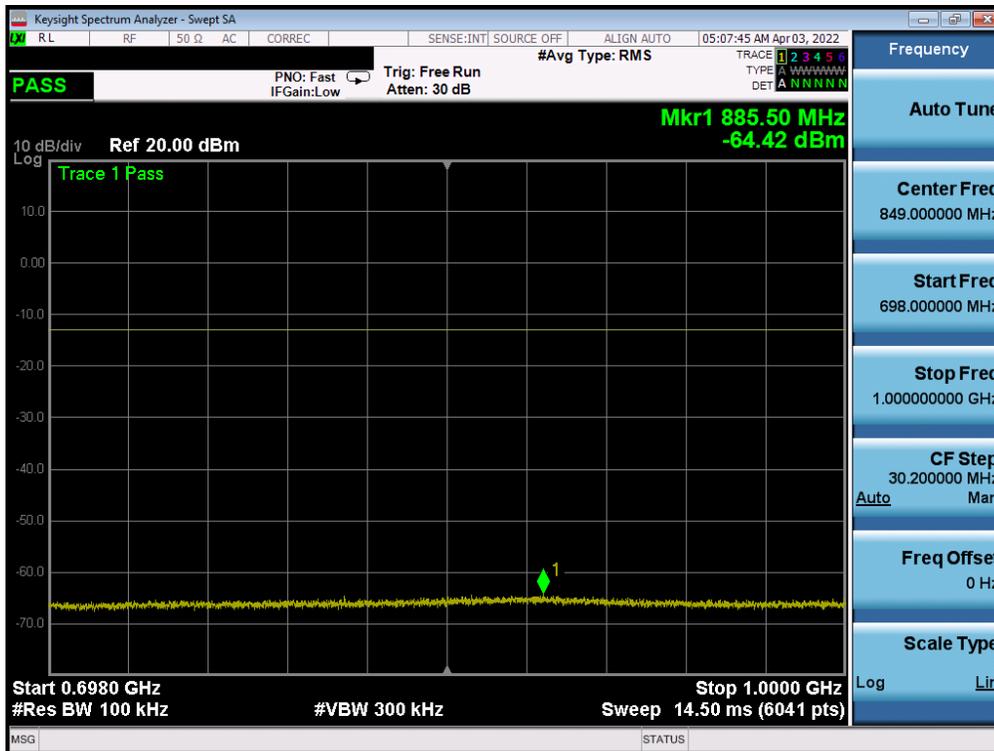
1. Per Part 27 and RSS-139, compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth 100 kHz or greater for measurements below 1GHz.
2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) 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: A3LSMF936U	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
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### LTE Band 71 – Ant A

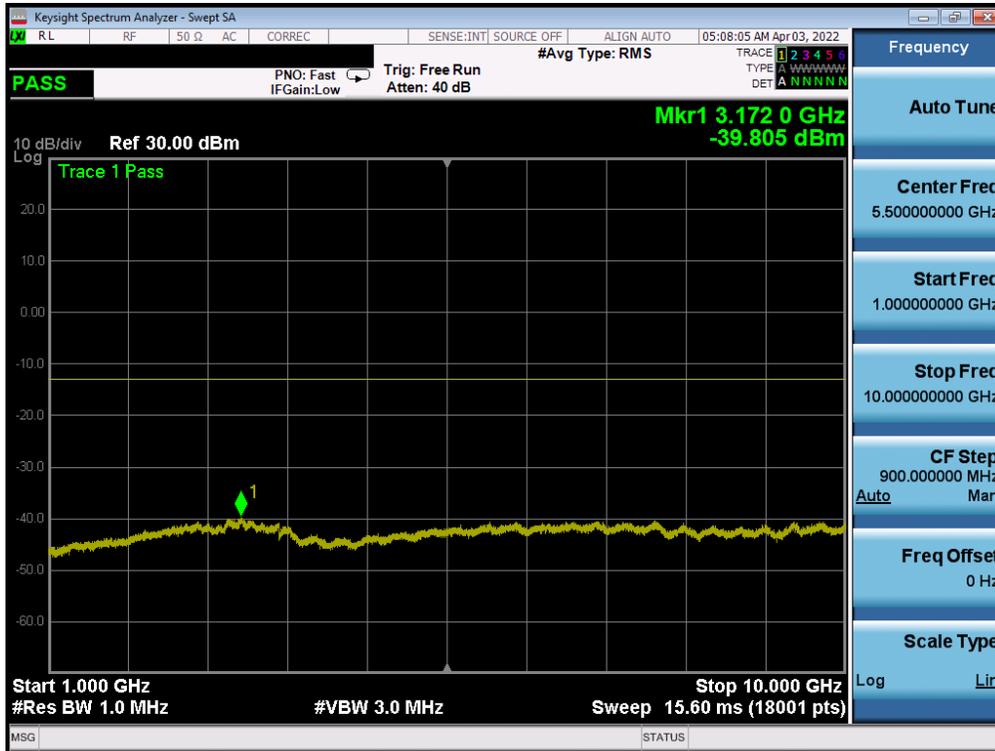


Plot 7-103. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - Low Channel - Ant A)

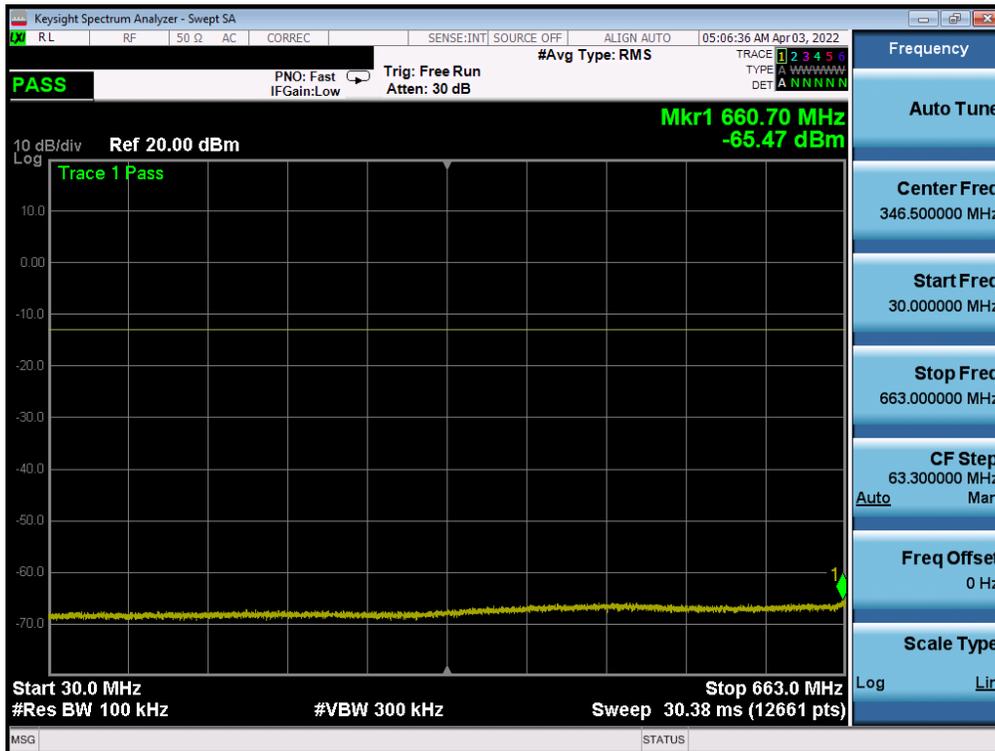


Plot 7-104. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - Low Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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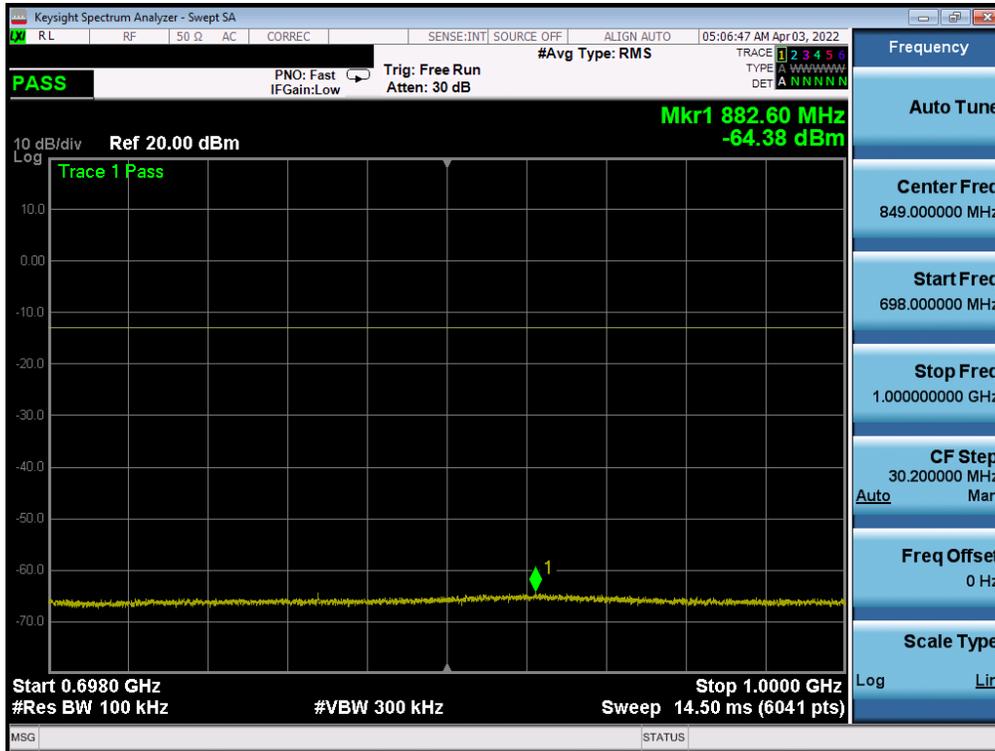


Plot 7-105. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - Low Channel - Ant A)

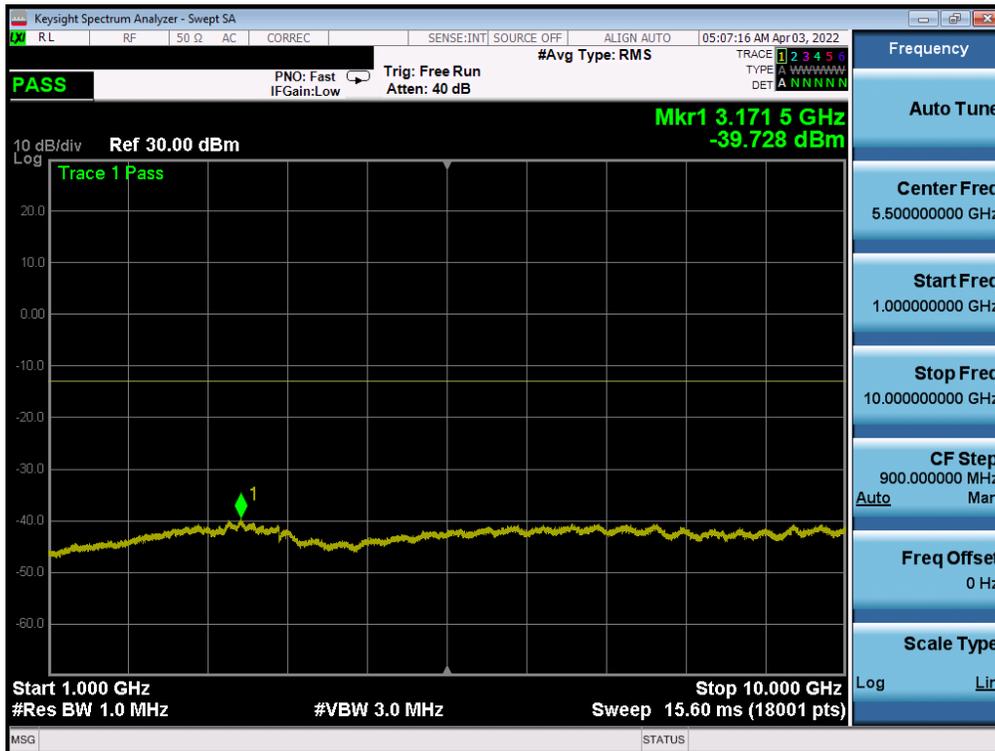


Plot 7-106. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - Mid Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 73 of 312



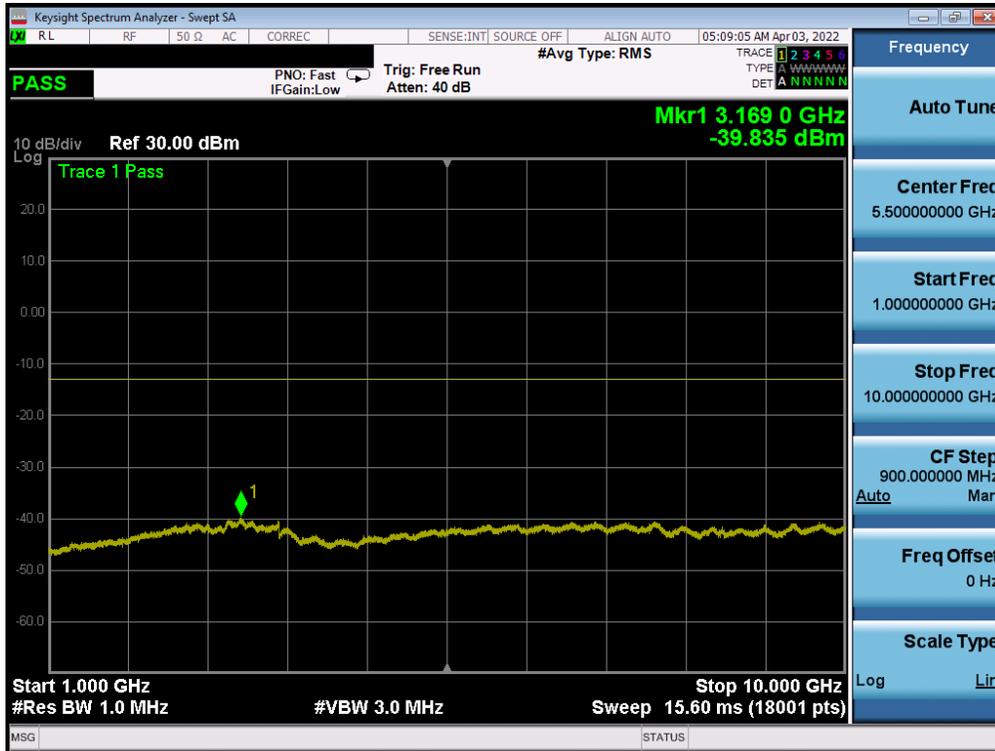
Plot 7-107. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - Mid Channel - Ant A)



Plot 7-108. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - Mid Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 74 of 312

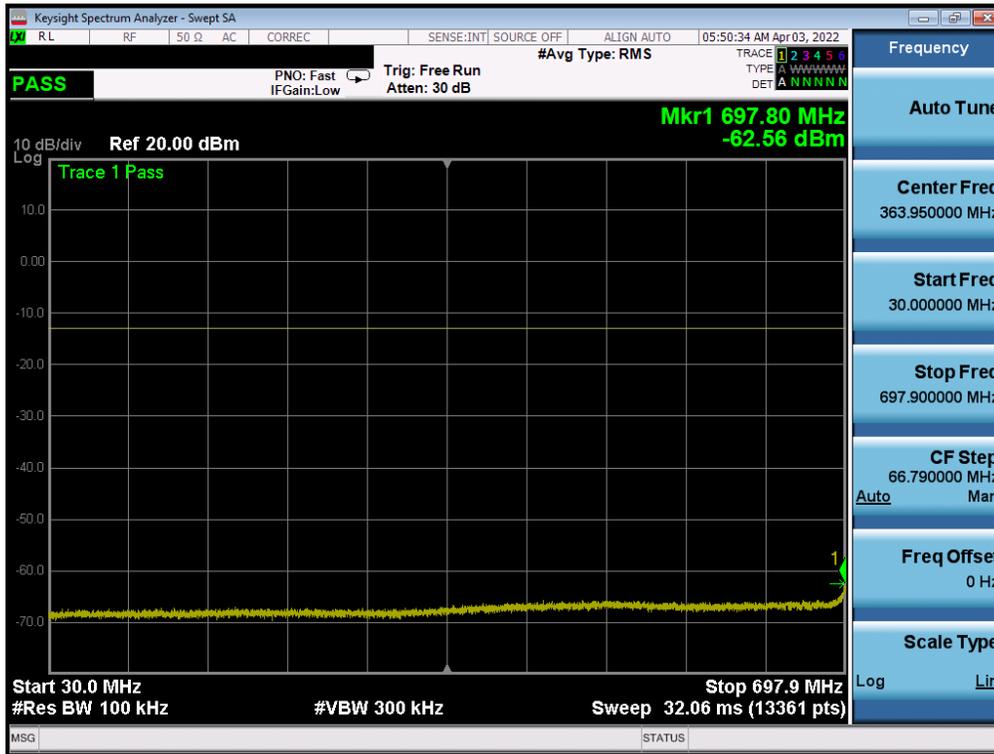




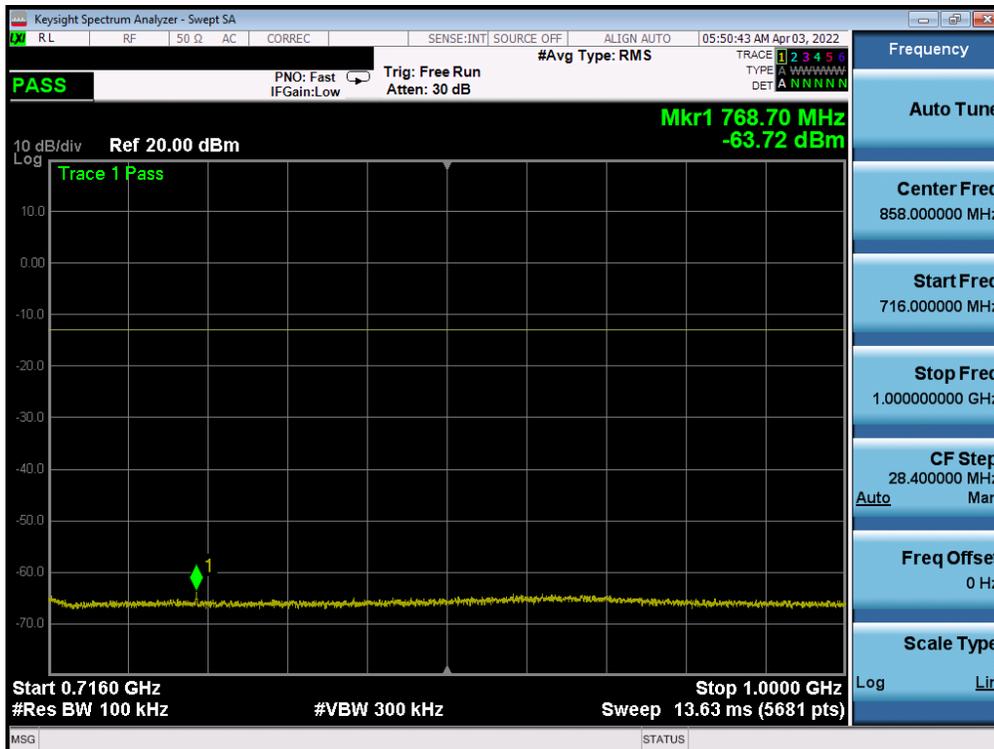
Plot 7-111. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - 1 RB - High Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 76 of 312

# LTE Band 12 – Ant A



Plot 7-112. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - Low Channel - Ant A)

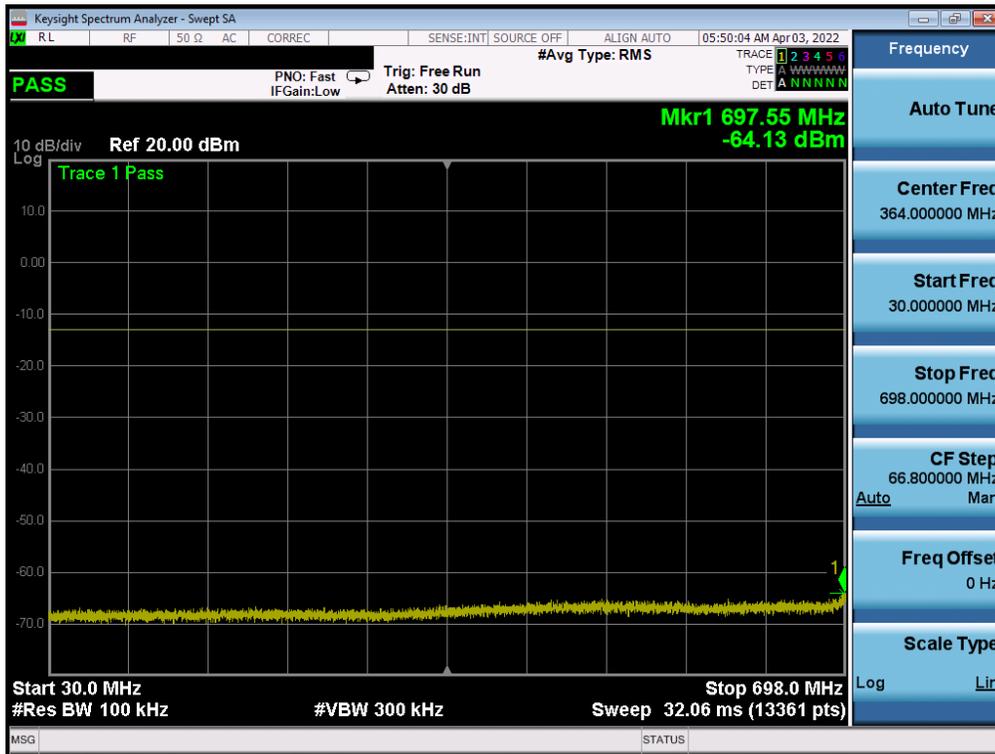


Plot 7-113. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - Low Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 77 of 312

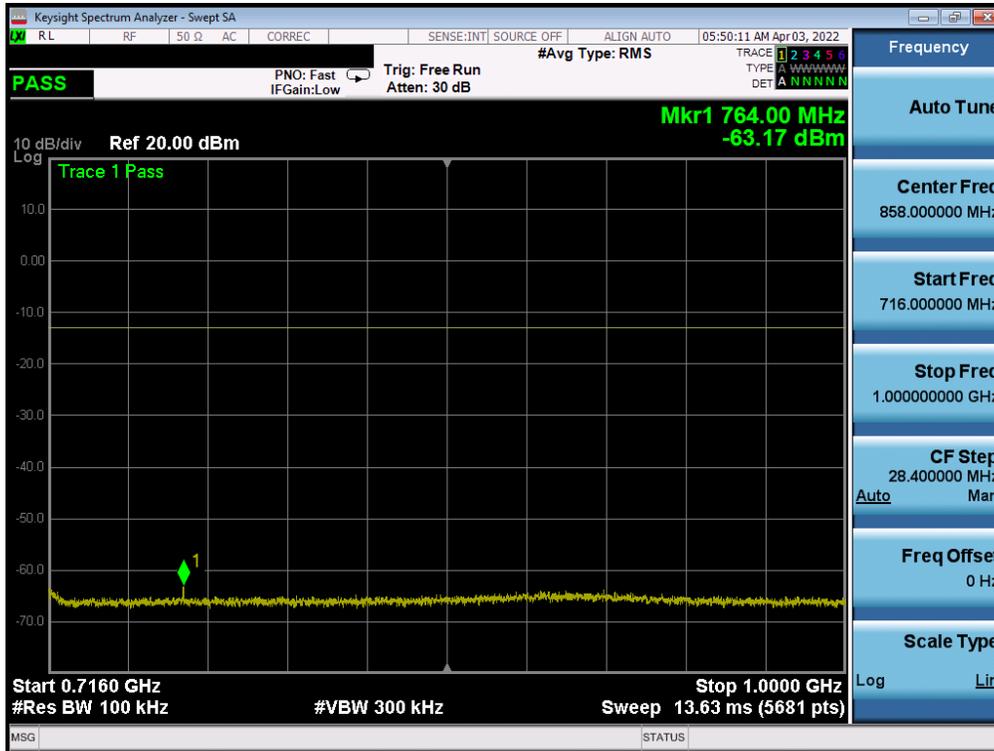


Plot 7-114. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - Low Channel - Ant A)

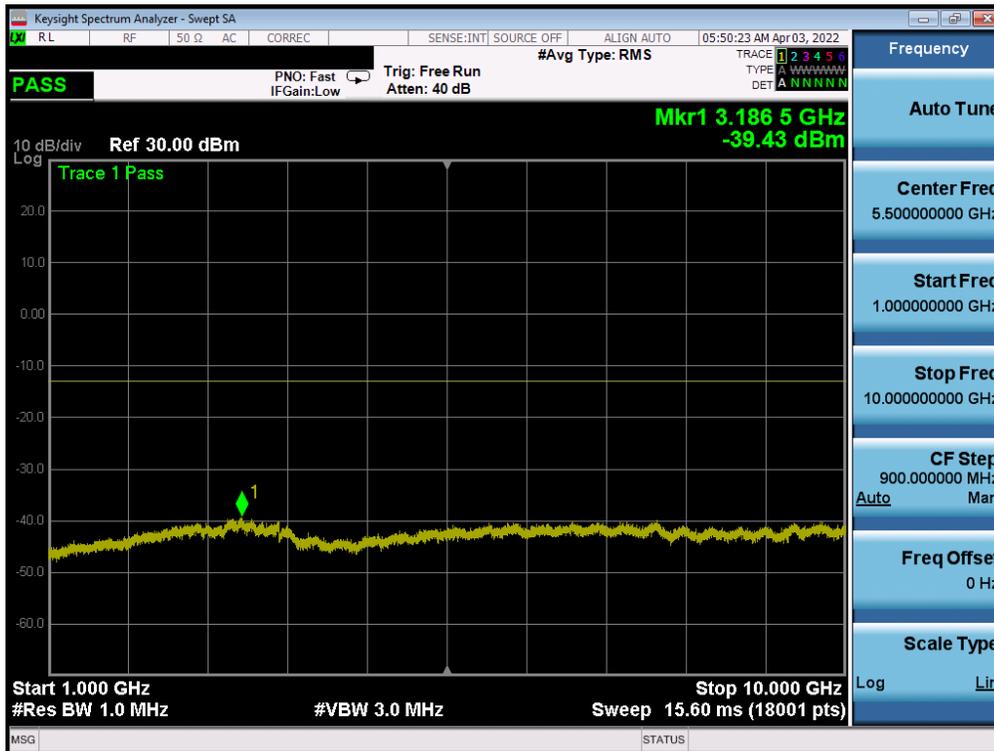


Plot 7-115. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - Mid Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 78 of 312

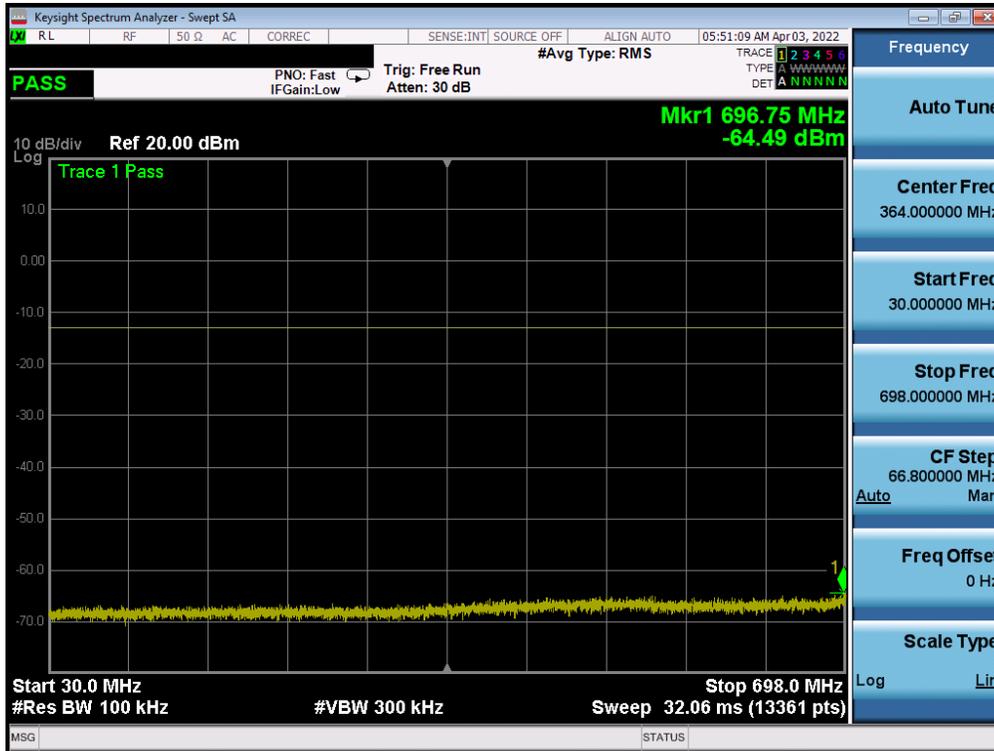


Plot 7-116. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - Mid Channel - Ant A)

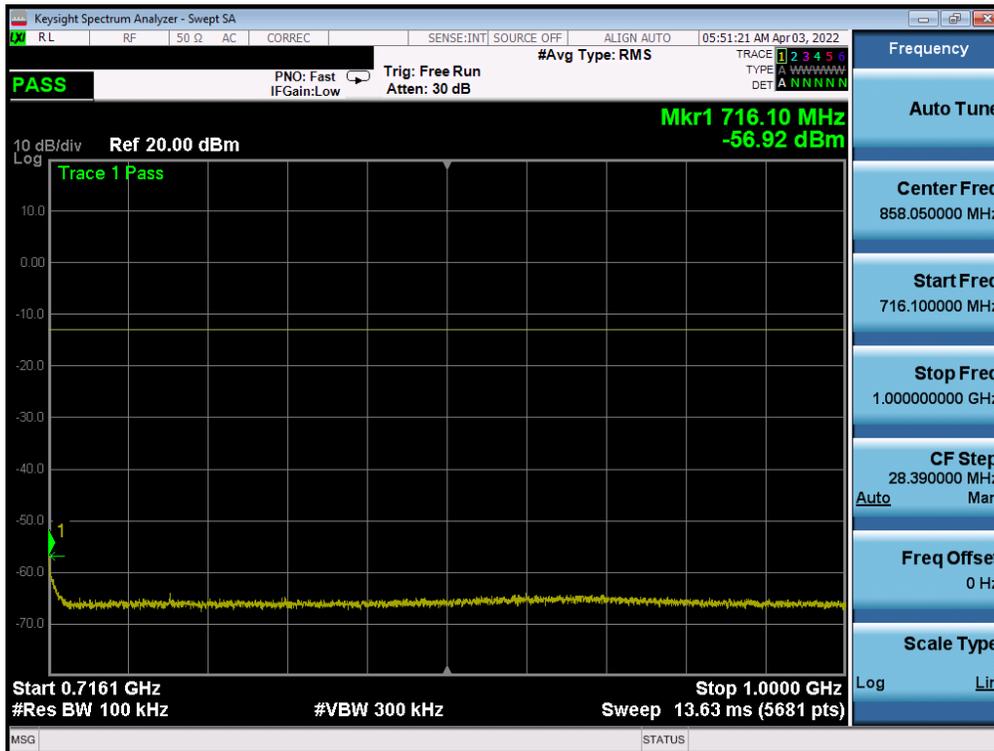


Plot 7-117. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - Mid Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 79 of 312

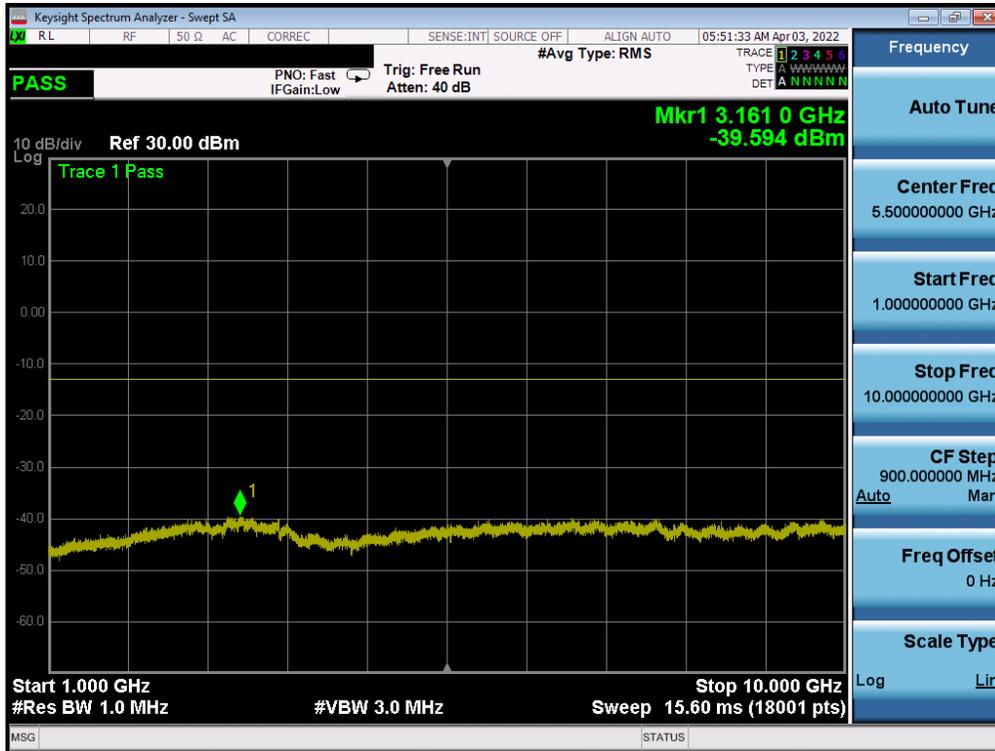


Plot 7-118. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - High Channel - Ant A)



Plot 7-119. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - High Channel - Ant A)

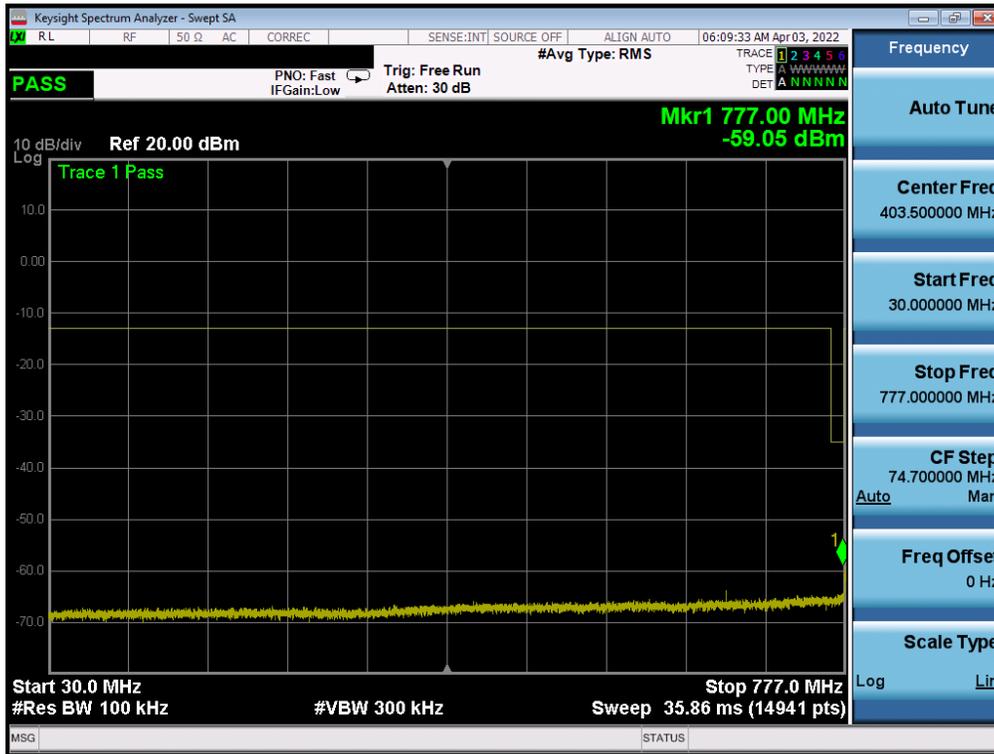
FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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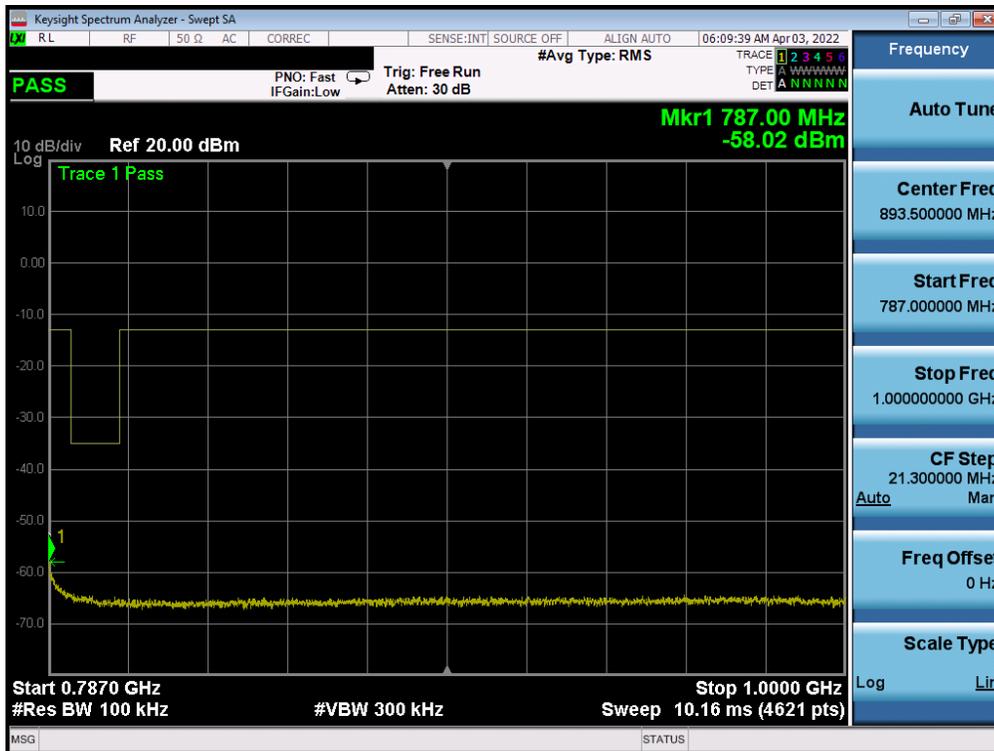
Plot 7-120. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - 1 RB - High Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 81 of 312

# LTE Band 13 – Ant A



Plot 7-121. Conducted Spurious Plot (LTE Band 13 - 10MHz QPSK - 1 RB – Ant A)



Plot 7-122. Conducted Spurious Plot (LTE Band 13 - 10MHz QPSK - 1 RB – Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 82 of 312



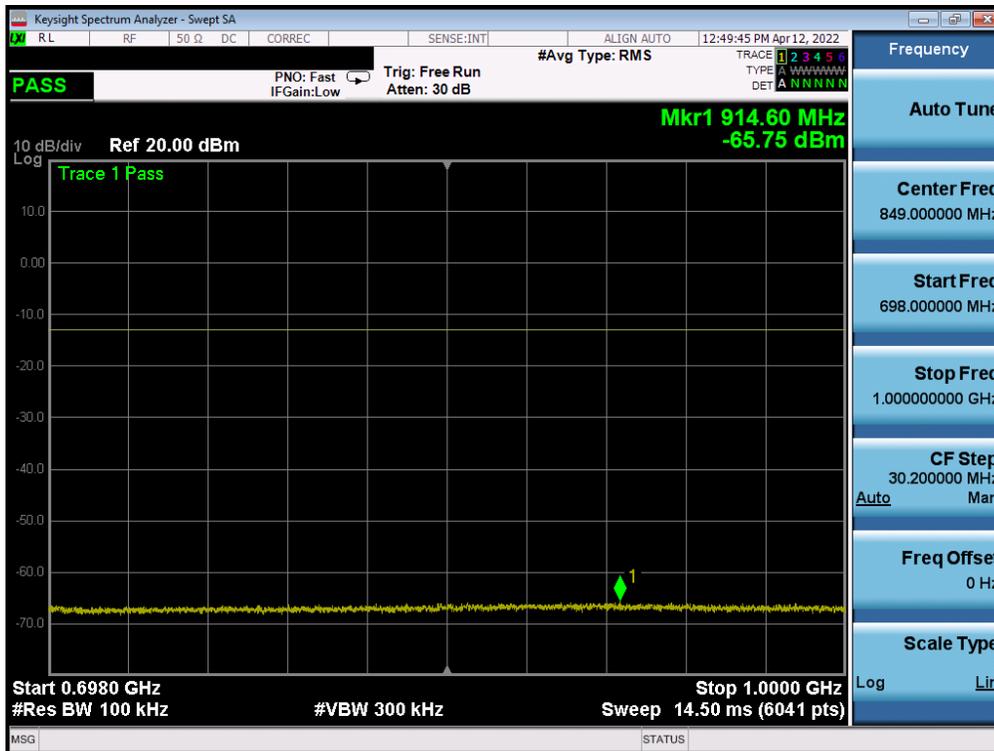
Plot 7-123. Conducted Spurious Plot (LTE Band 13 - 10MHz QPSK - 1 RB – Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 83 of 312

# NR Band n71 – Ant A



Plot 7-124. Conducted Spurious Plot (NR Band n71 -20.0MHz - 1 RB - Low Channel - Ant A)

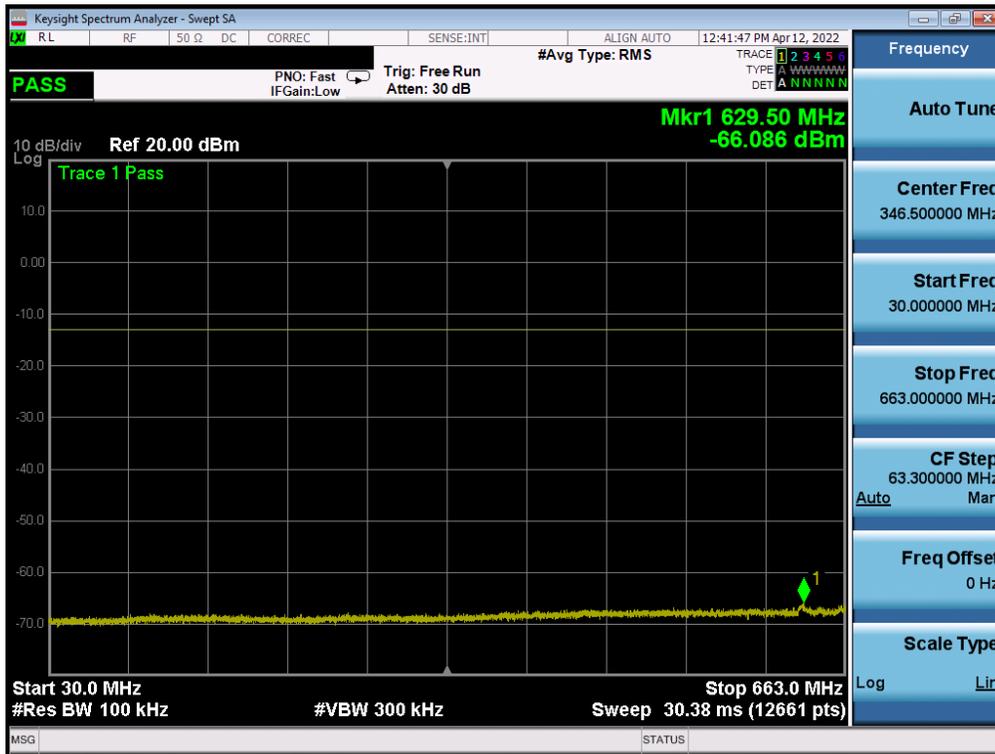


Plot 7-125. Conducted Spurious Plot (NR Band n71 - 20.0MHz - 1 RB - Low Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 84 of 312

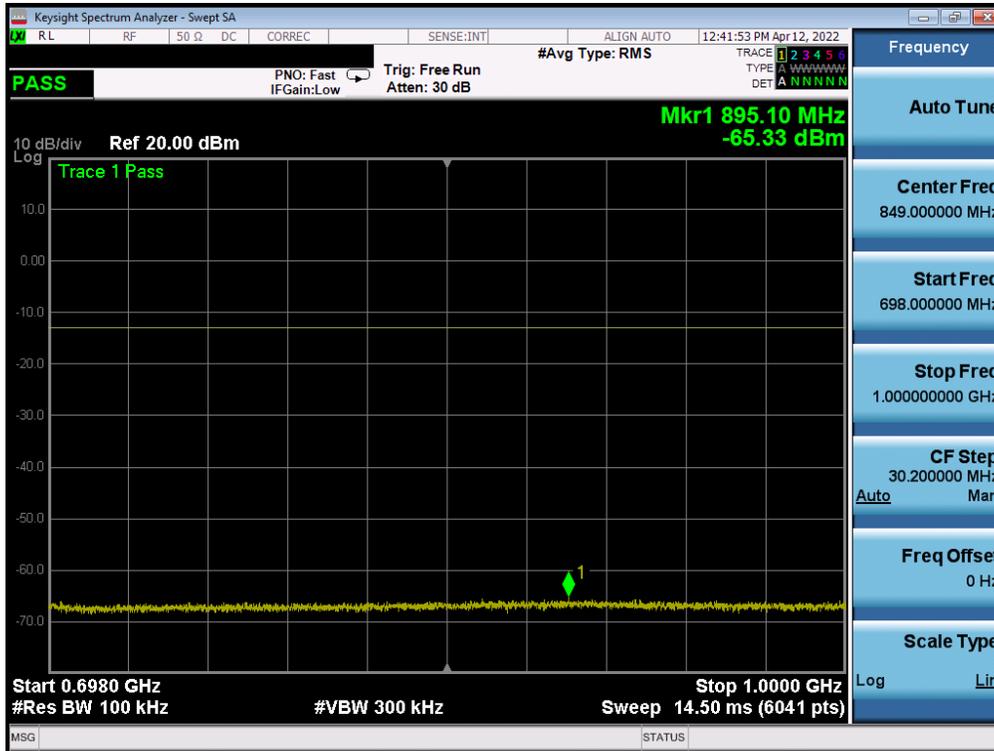


Plot 7-126. Conducted Spurious Plot (NR Band n71 - 20.0MHz - 1 RB - Low Channel - Ant A)

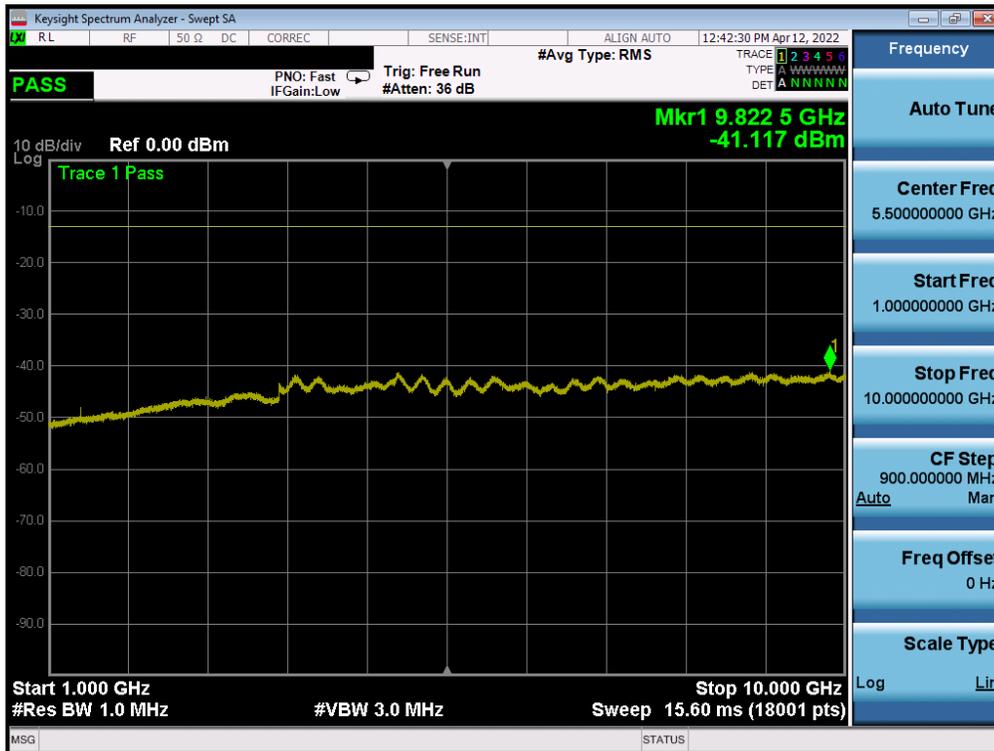


Plot 7-127. Conducted Spurious Plot (NR Band n71 - 20.0MHz - 1 RB - Mid Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 85 of 312

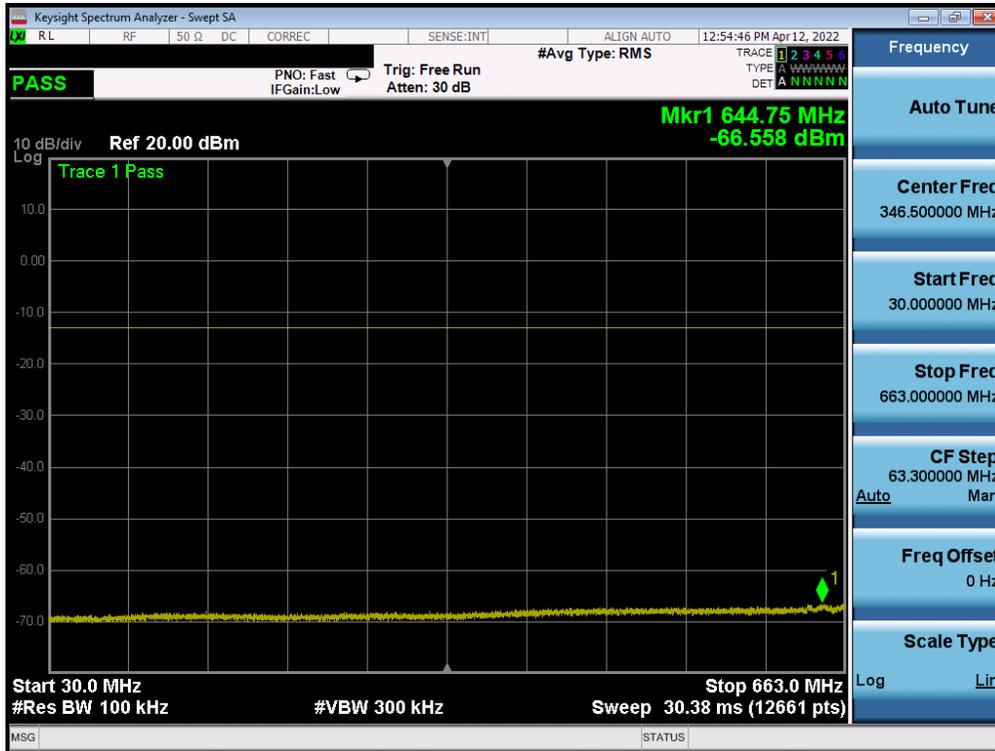


Plot 7-128. Conducted Spurious Plot (NR Band n71 - 20.0MHz - 1 RB - Mid Channel - Ant A)

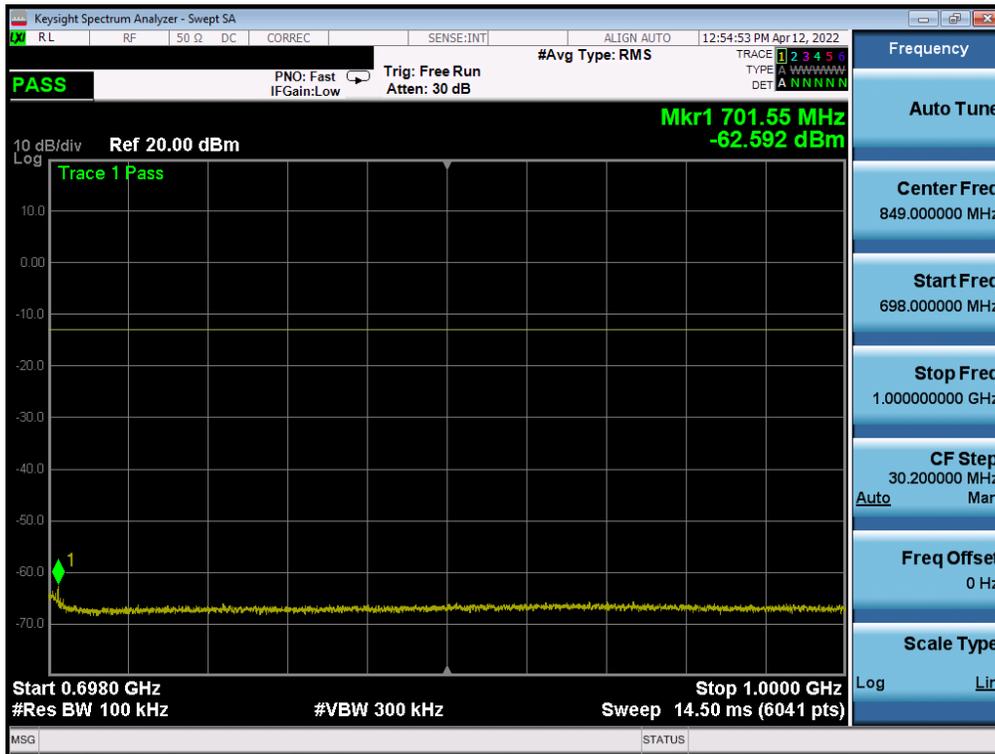


Plot 7-129. Conducted Spurious Plot (NR Band n71 - 20.0MHz - 1 RB - Mid Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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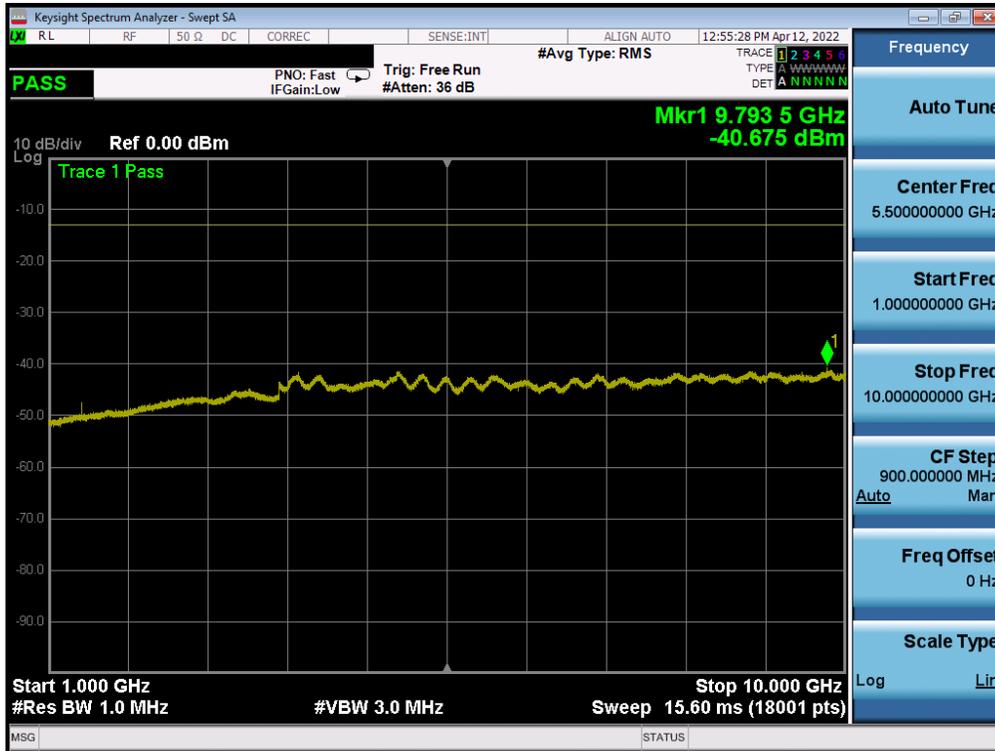


Plot 7-130. Conducted Spurious Plot (NR Band n71 - 20.0MHz - 1 RB - High Channel - Ant A)



Plot 7-131. Conducted Spurious Plot (NR Band n71 - 20.0MHz - 1 RB - High Channel - Ant A)

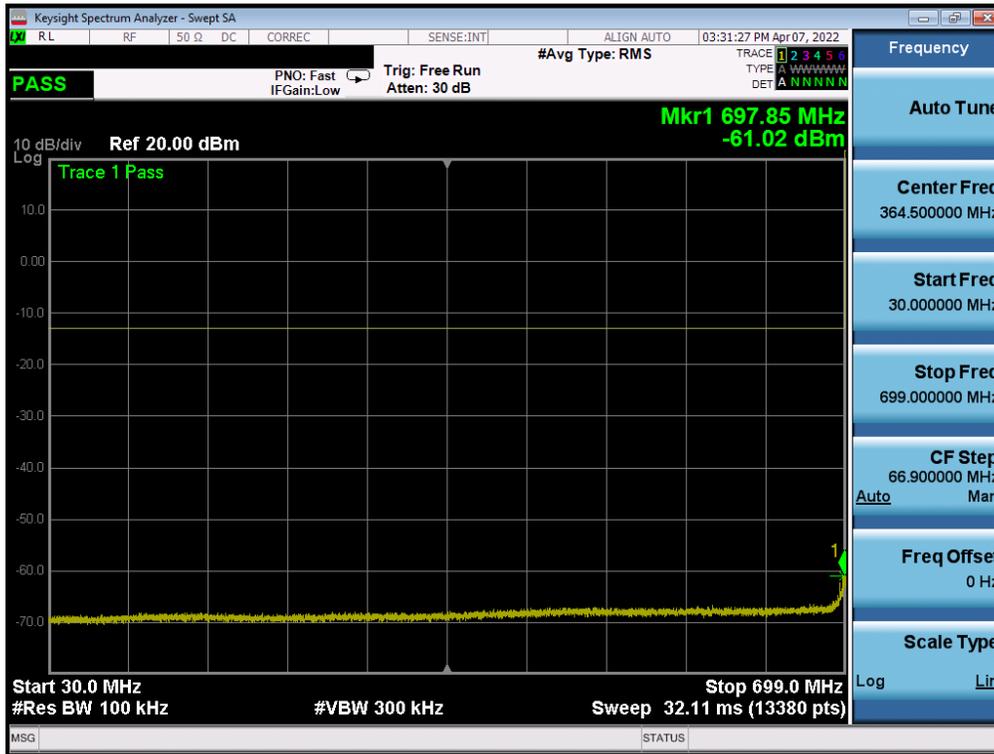
FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 87 of 312



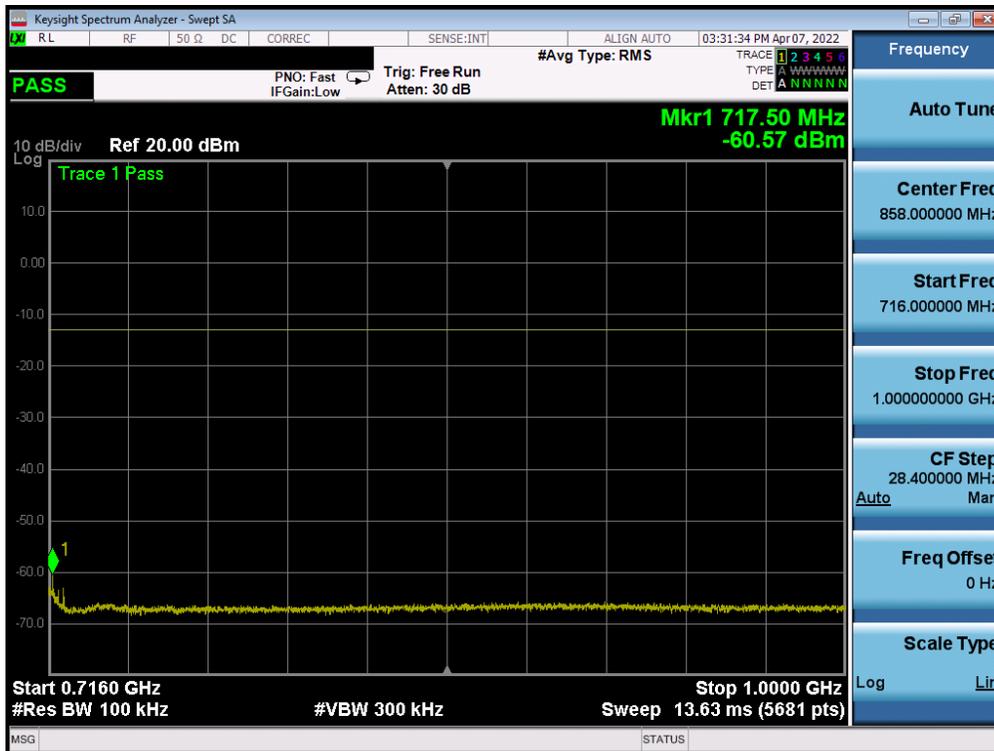
Plot 7-132. Conducted Spurious Plot (NR Band n71 - 20.0MHz - 1 RB - High Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 88 of 312

# NR Band n12 – Ant A

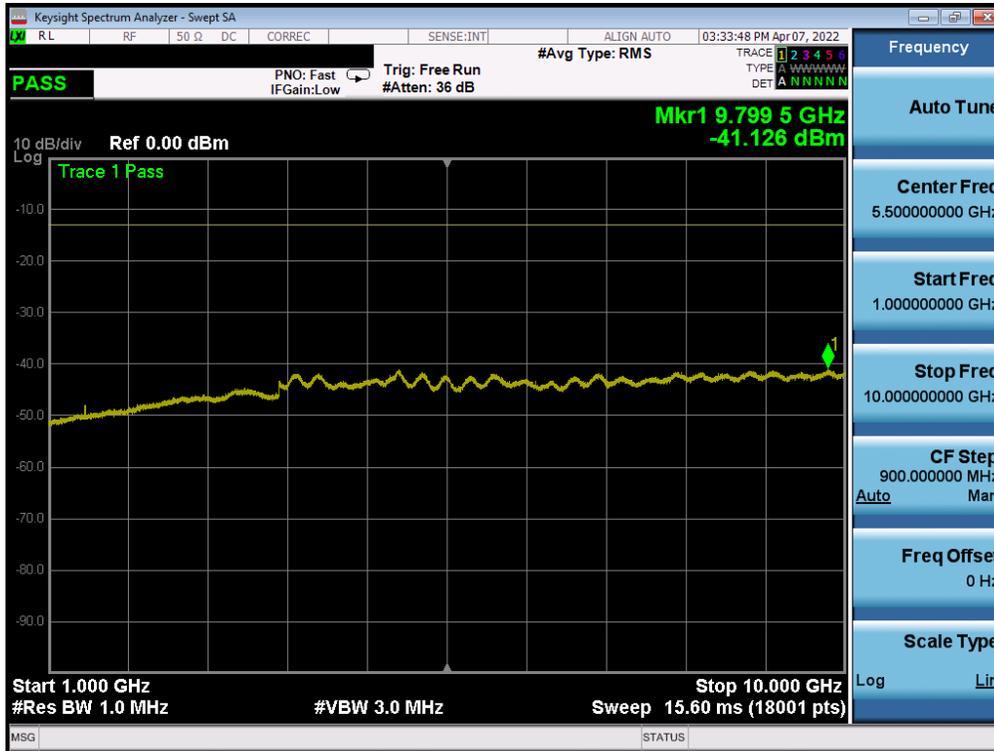


Plot 7-133. Conducted Spurious Plot (NR Band n12 -15.0MHz - 1 RB - Low Channel - Ant A)

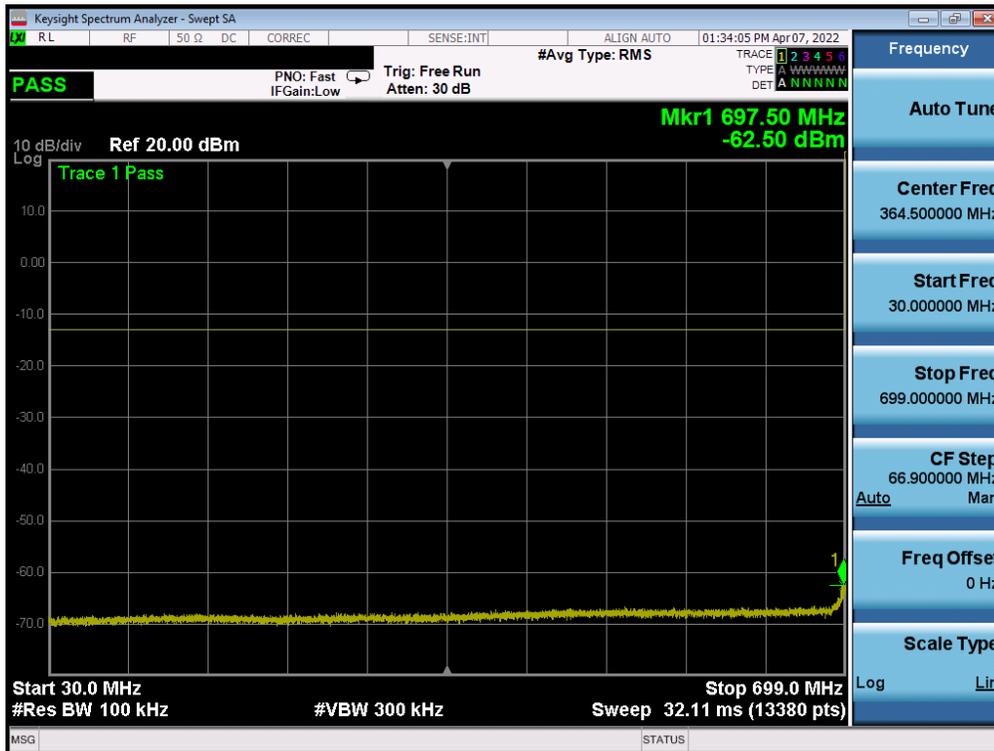


Plot 7-134. Conducted Spurious Plot (NR Band n12 - 15.0MHz - 1 RB - Low Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 89 of 312

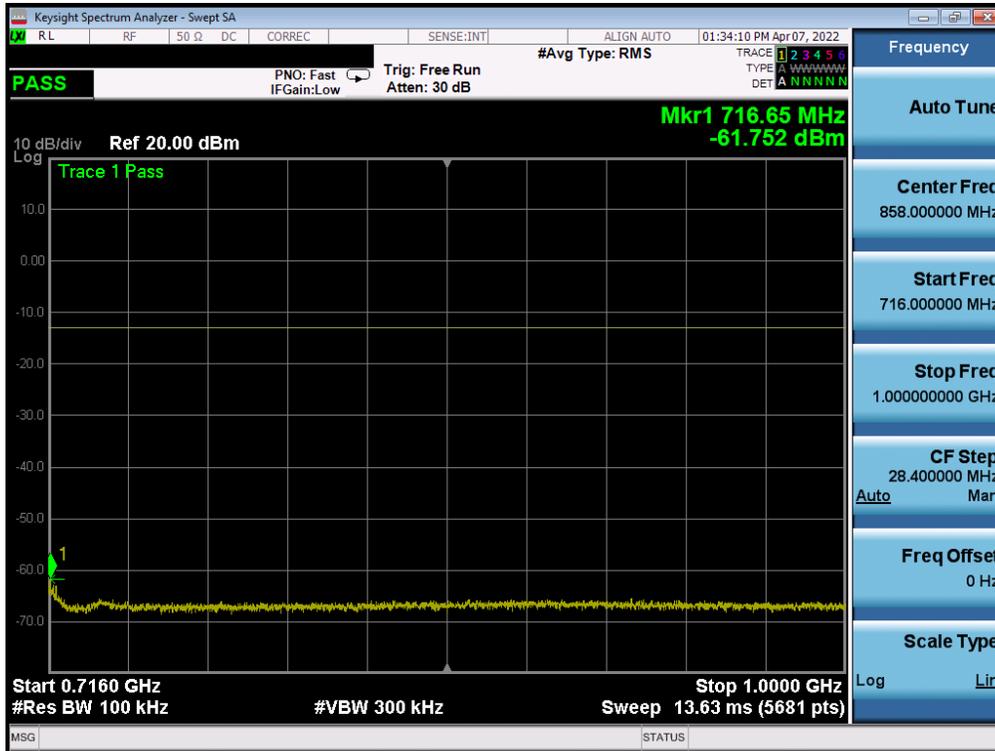


Plot 7-135. Conducted Spurious Plot (NR Band n12 - 15.0MHz - 1 RB - Low Channel - Ant A)

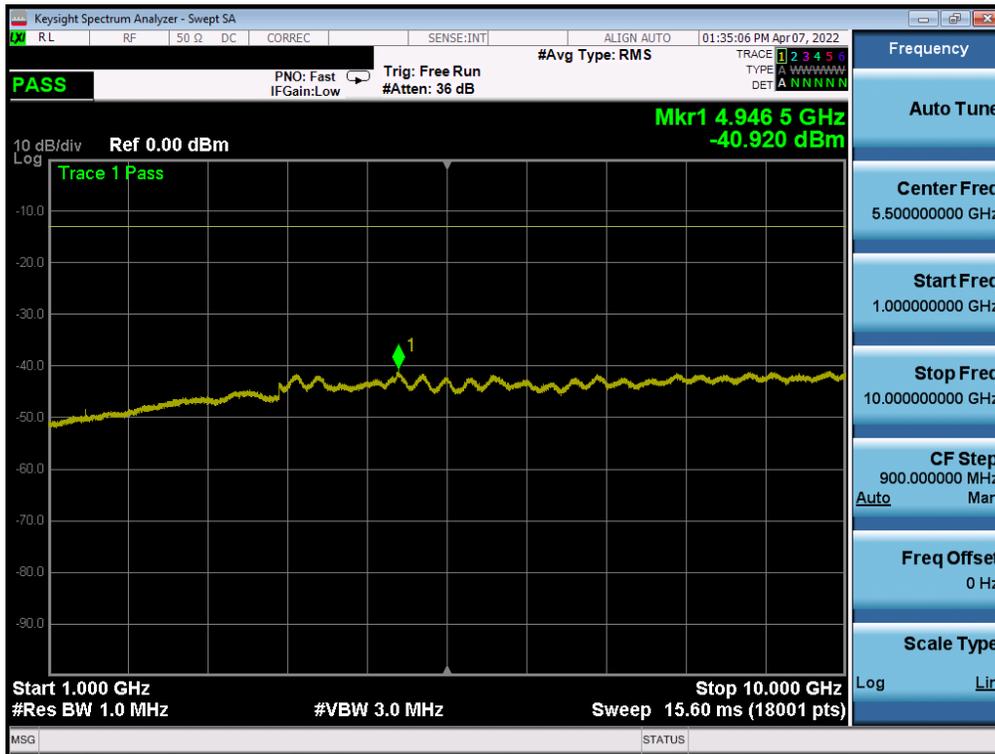


Plot 7-136. Conducted Spurious Plot (NR Band n12 - 15.0MHz - 1 RB - Mid Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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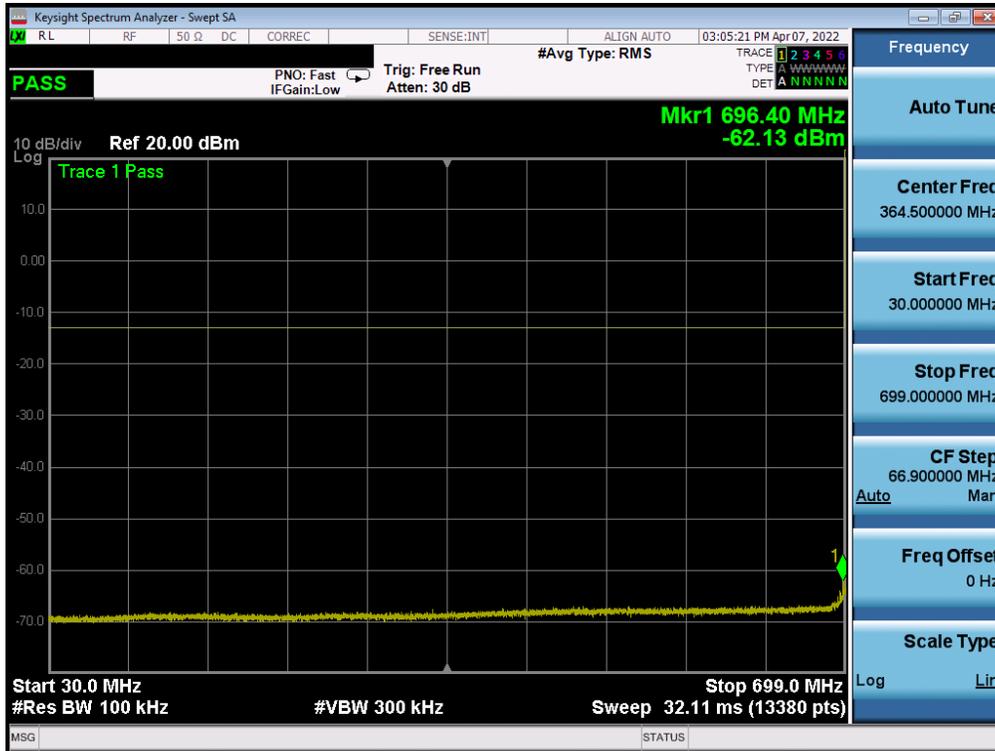


Plot 7-137. Conducted Spurious Plot (NR Band n12 - 15.0MHz - 1 RB - Mid Channel - Ant A)

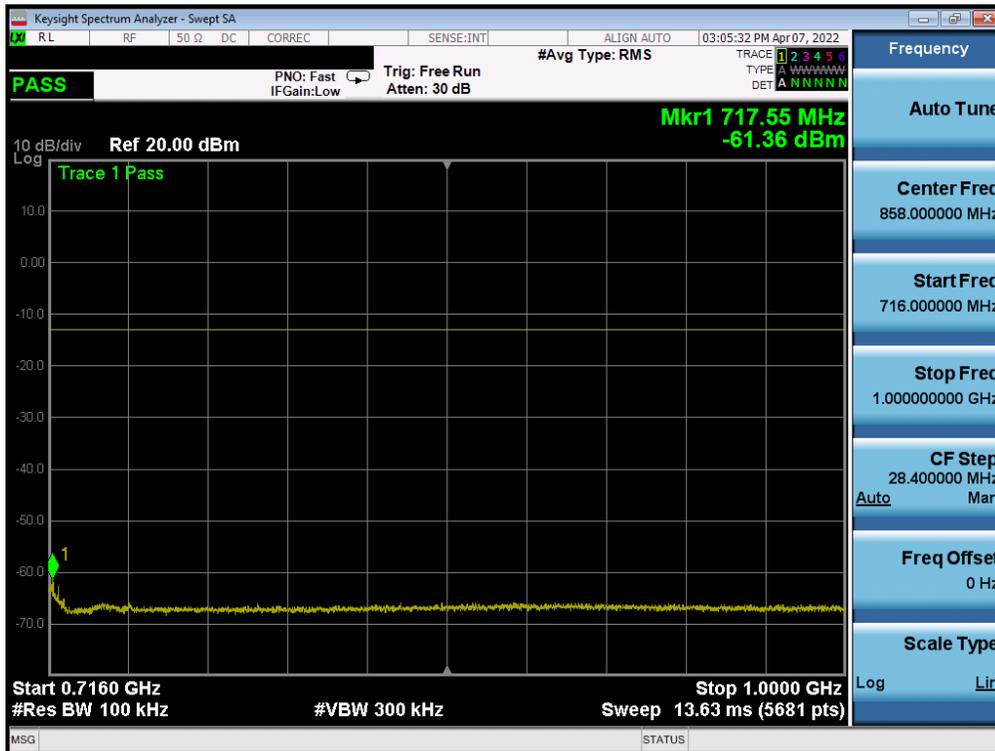


Plot 7-138. Conducted Spurious Plot (NR Band n12 - 15.0MHz - 1 RB - Mid Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-139. Conducted Spurious Plot (NR Band n12 - 15.0MHz - 1 RB - High Channel - Ant A)

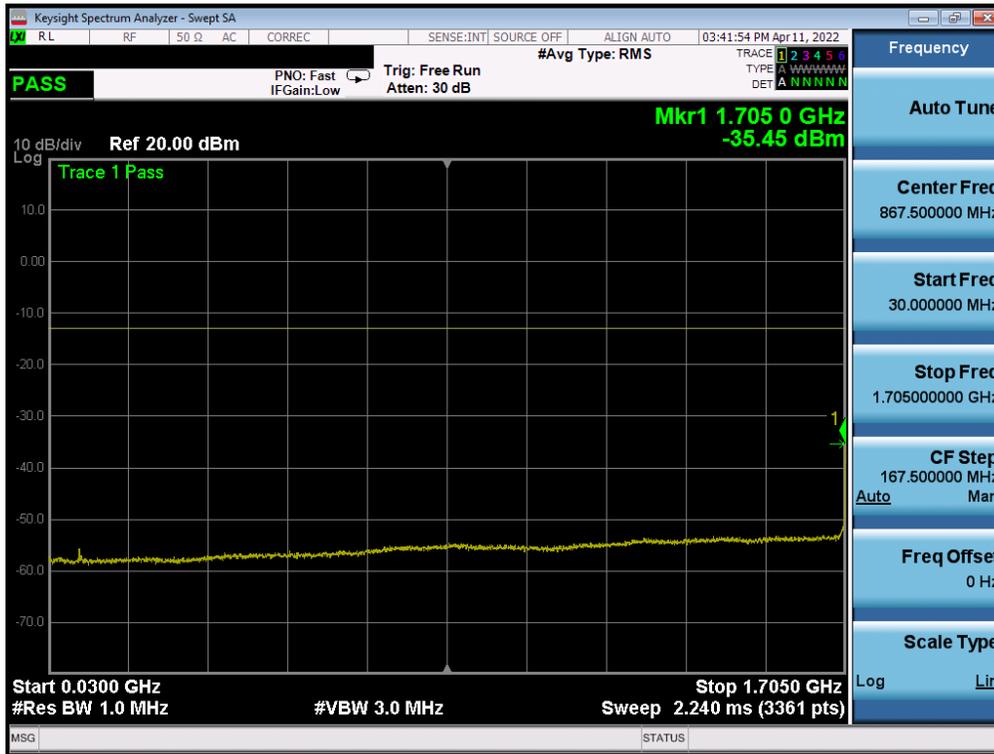


Plot 7-140. Conducted Spurious Plot (NR Band n12 - 15.0MHz - 1 RB - High Channel - Ant A)

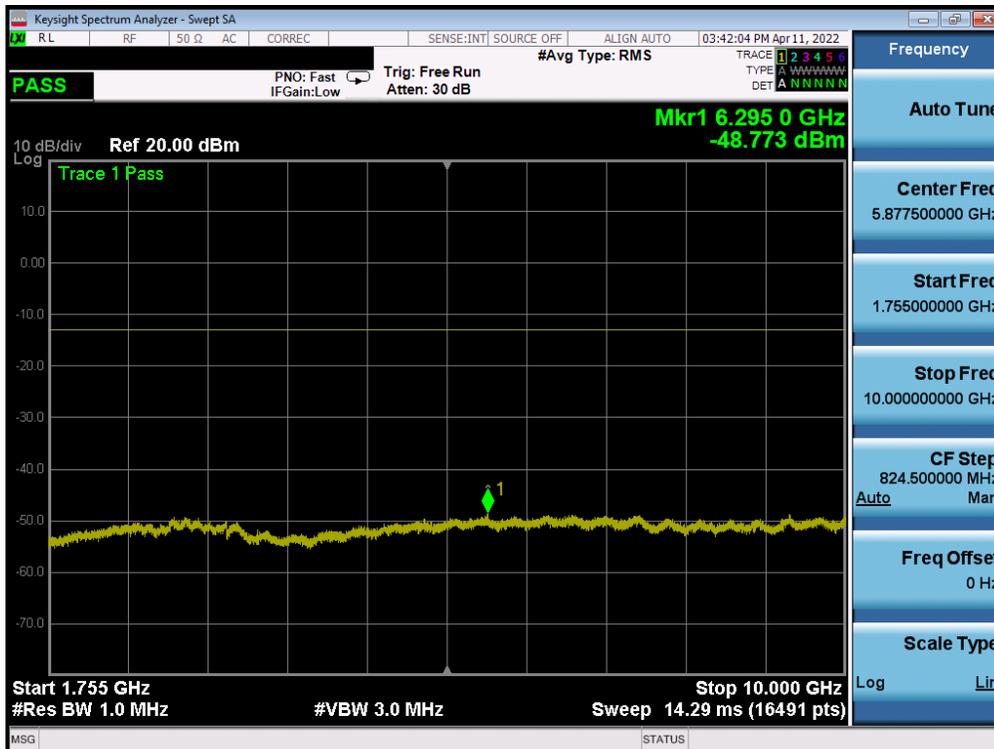
FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 92 of 312



# WCDMA AWS – Ant A

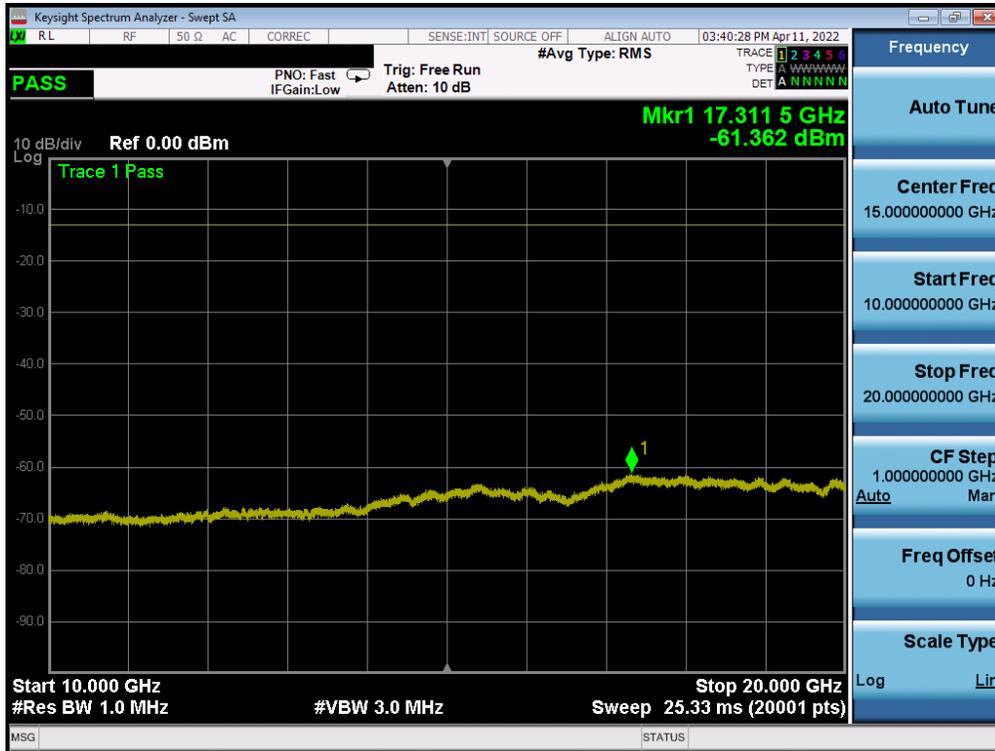


Plot 7-142. Conducted Spurious Plot (WCDMA Ch. 1312- Low Channel - Ant A)

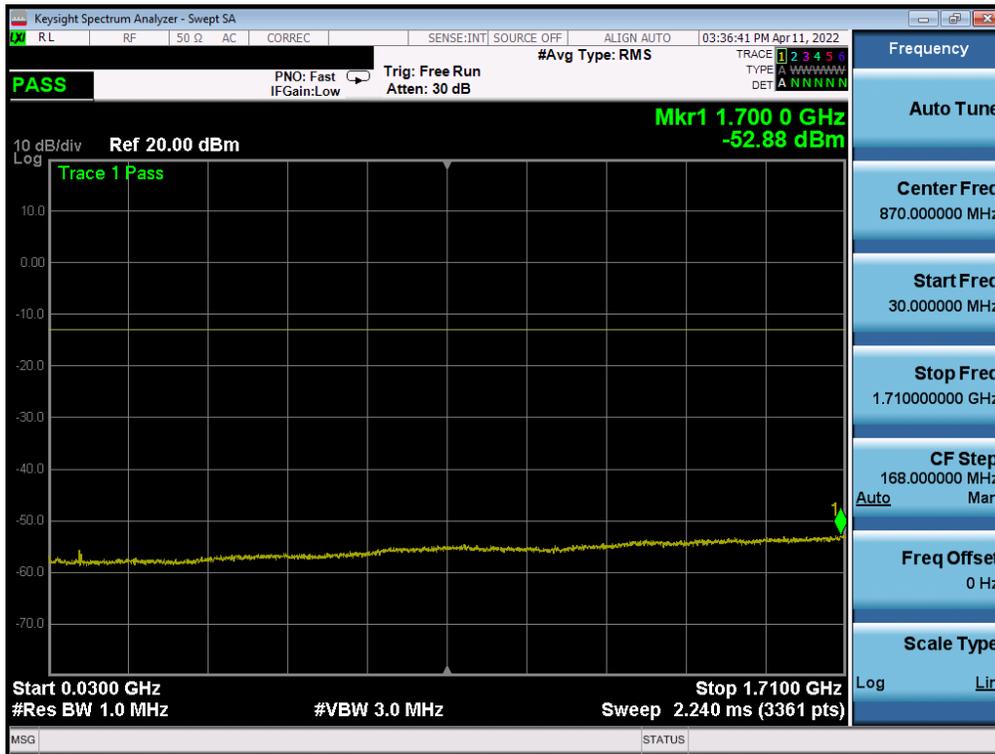


Plot 7-143. Conducted Spurious Plot (WCDMA Ch. 1312- Low Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-144. Conducted Spurious Plot (WCDMA Ch. 1312- Low Channel - Ant A)

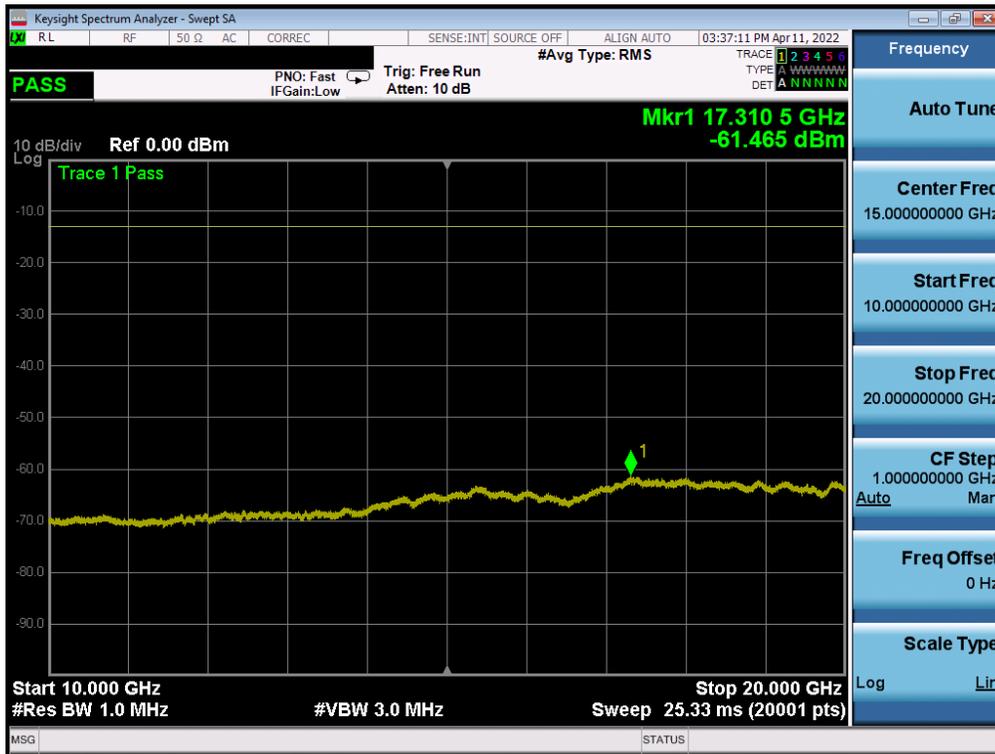


Plot 7-145. Conducted Spurious Plot (WCDMA Ch. 1413- Mid Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 95 of 312

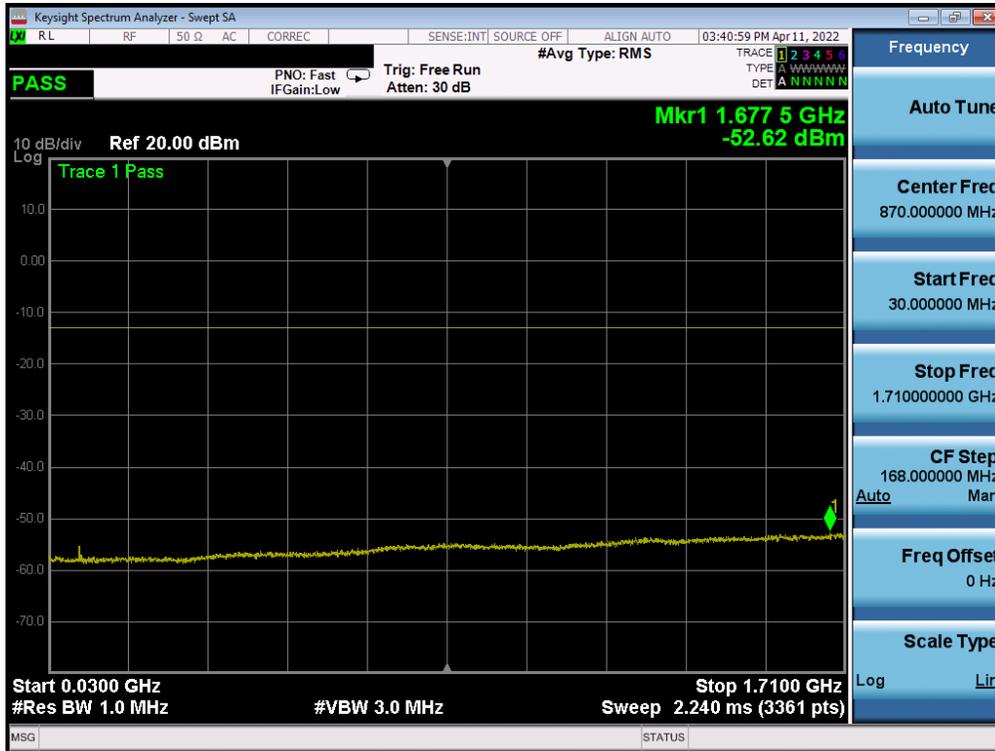


Plot 7-146. Conducted Spurious Plot (WCDMA Ch. 1413- Mid Channel - Ant A)

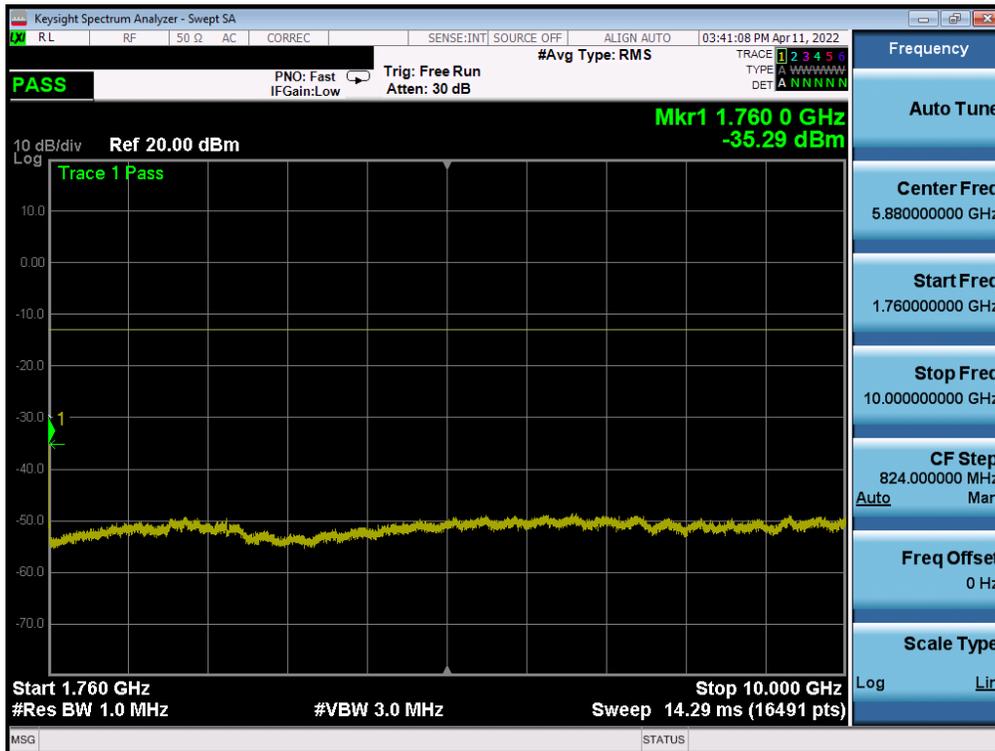


Plot 7-147. Conducted Spurious Plot (WCDMA Ch. 1413- Mid Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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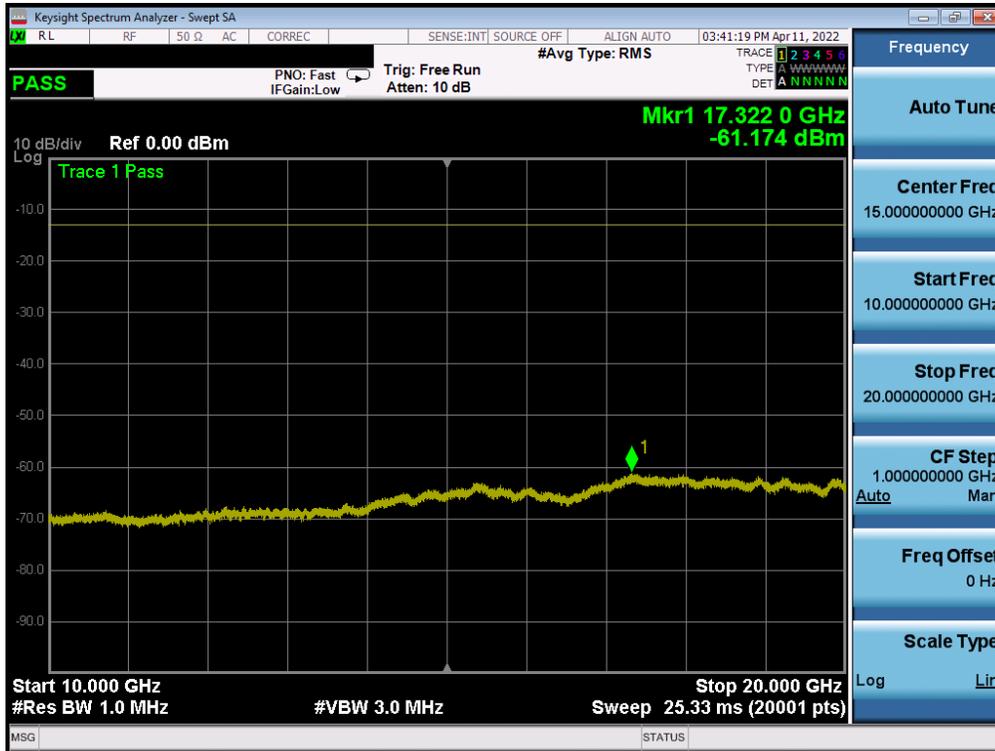


Plot 7-148. Conducted Spurious Plot (WCDMA Ch. 1513- High Channel - Ant A)



Plot 7-149. Conducted Spurious Plot (WCDMA Ch. 1513- High Channel - Ant A)

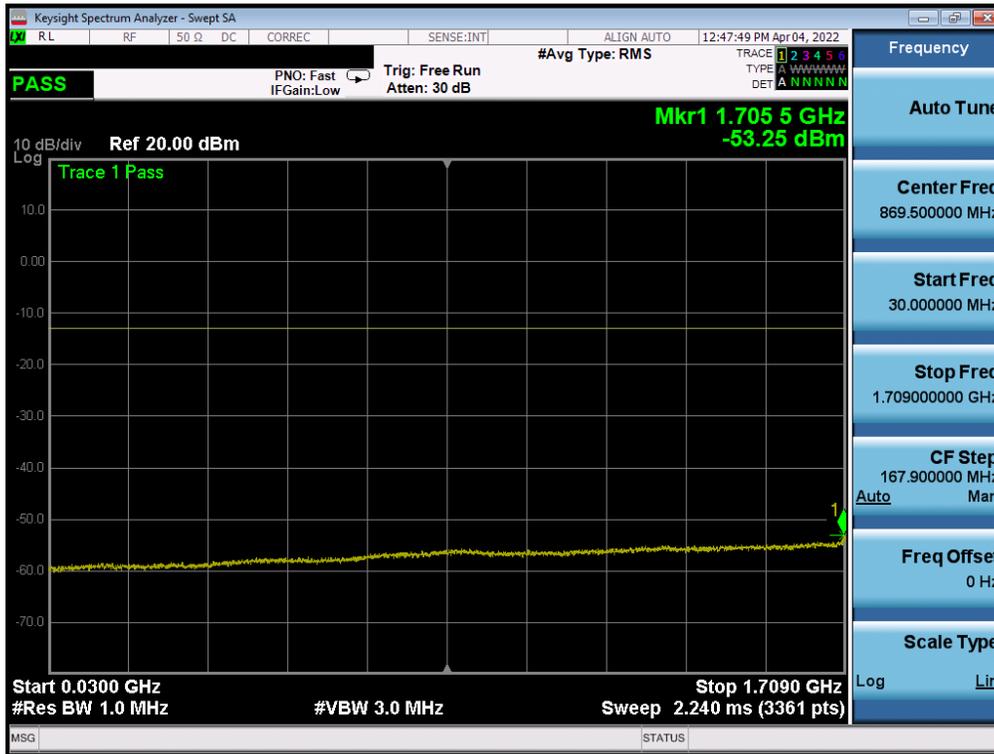
FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 97 of 312



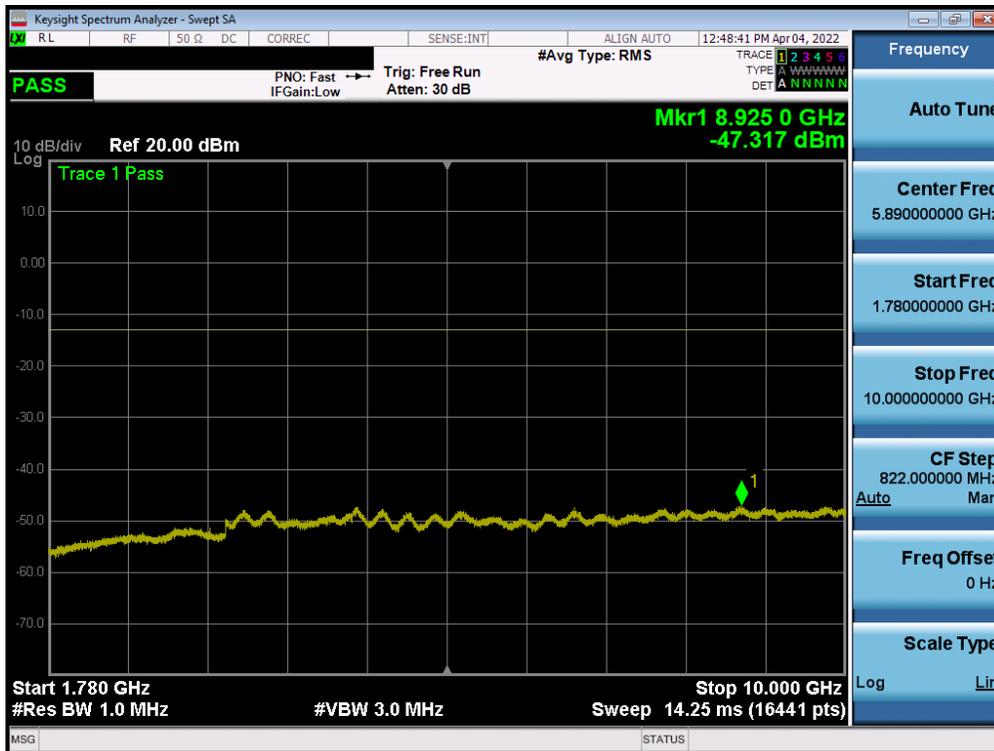
Plot 7-150. Conducted Spurious Plot (WCDMA Ch. 1513- High Channel - Ant A)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 98 of 312

### LTE Band 66/4 – Ant B

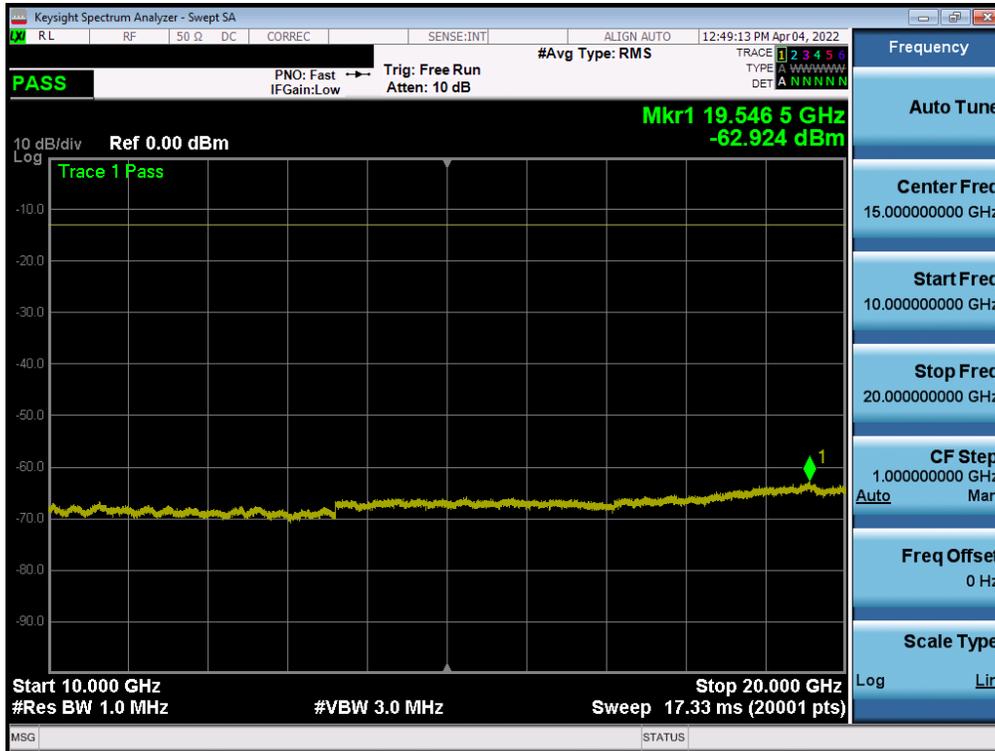


Plot 7-151. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB - Low Channel – Ant B)

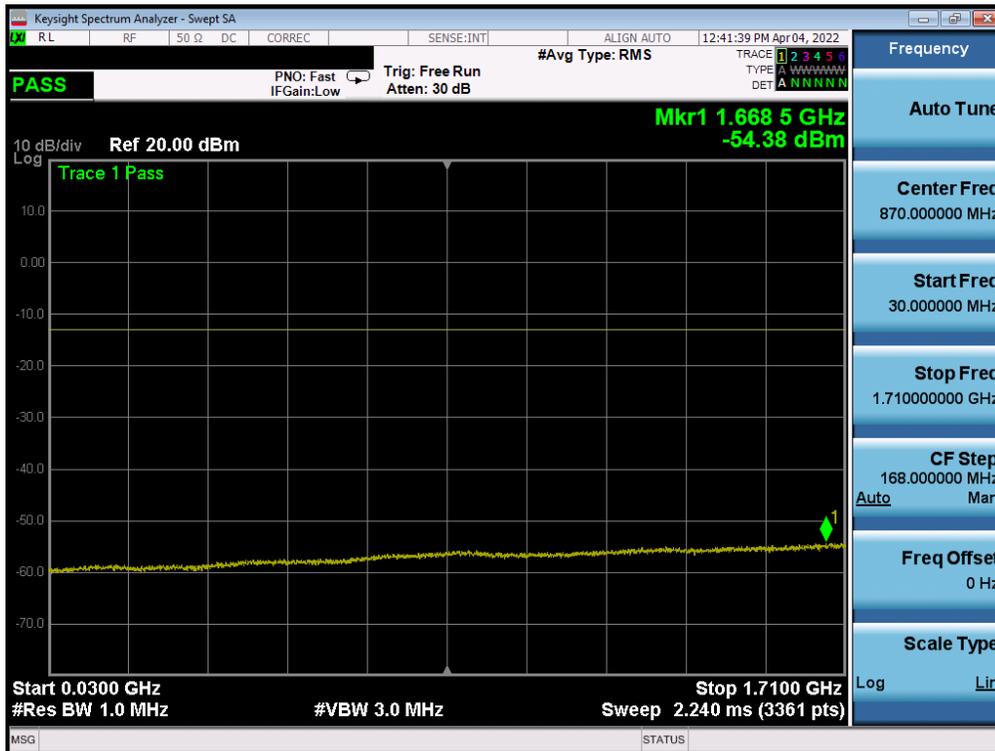


Plot 7-152. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB - Low Channel – Ant B)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 99 of 312



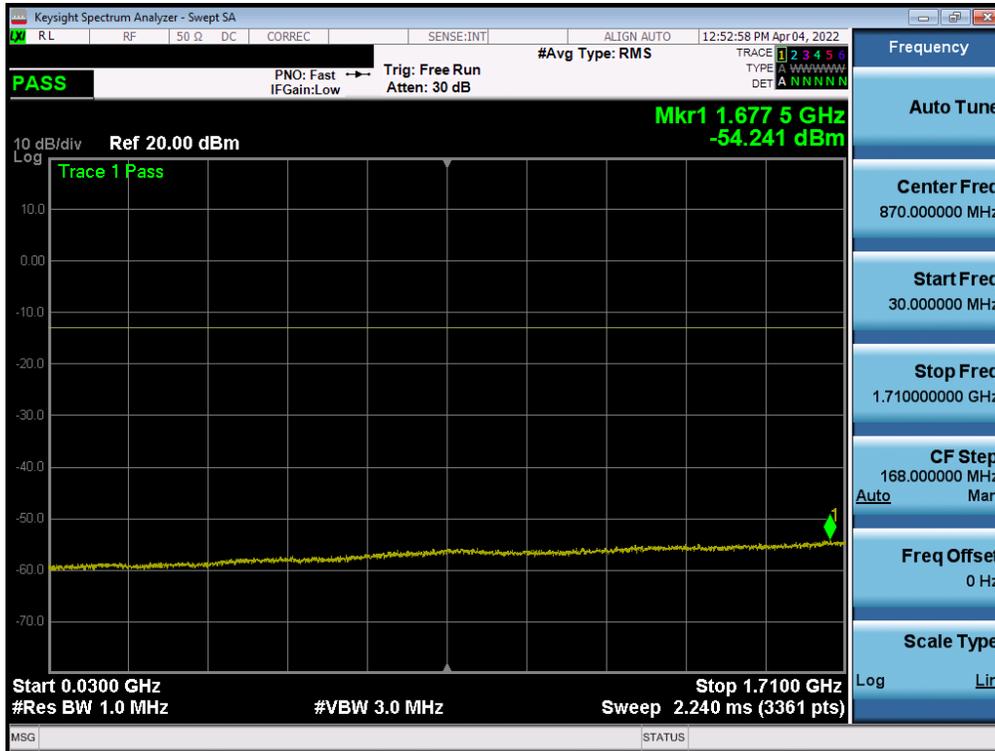
Plot 7-153. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB - Low Channel – Ant B)



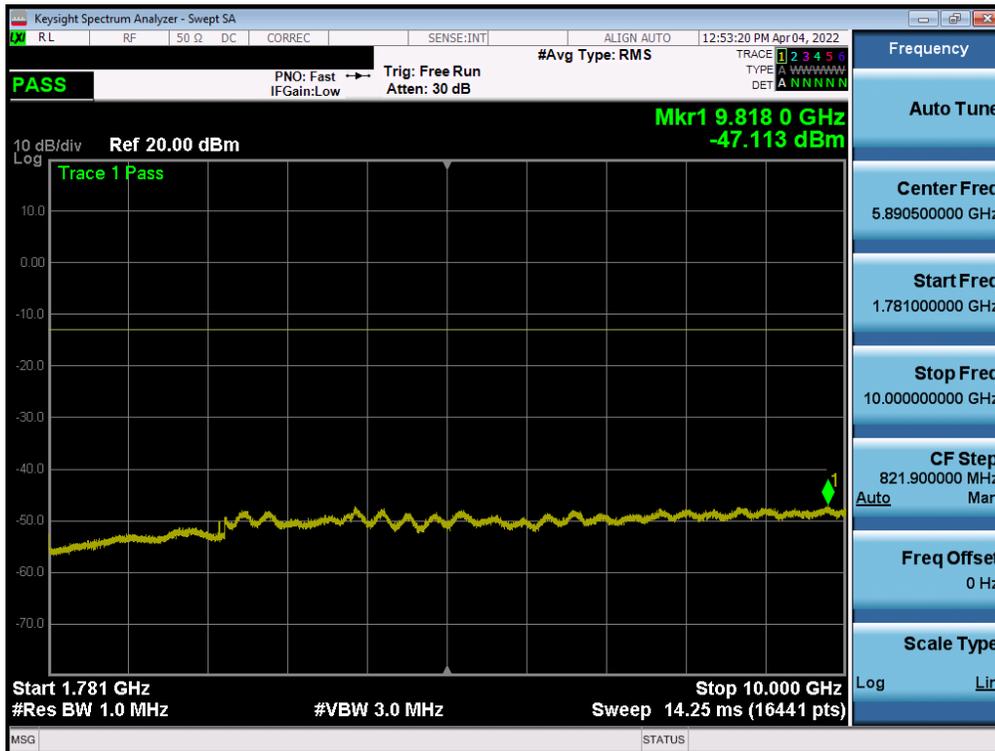
Plot 7-154. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB - Mid Channel – Ant B)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 100 of 312



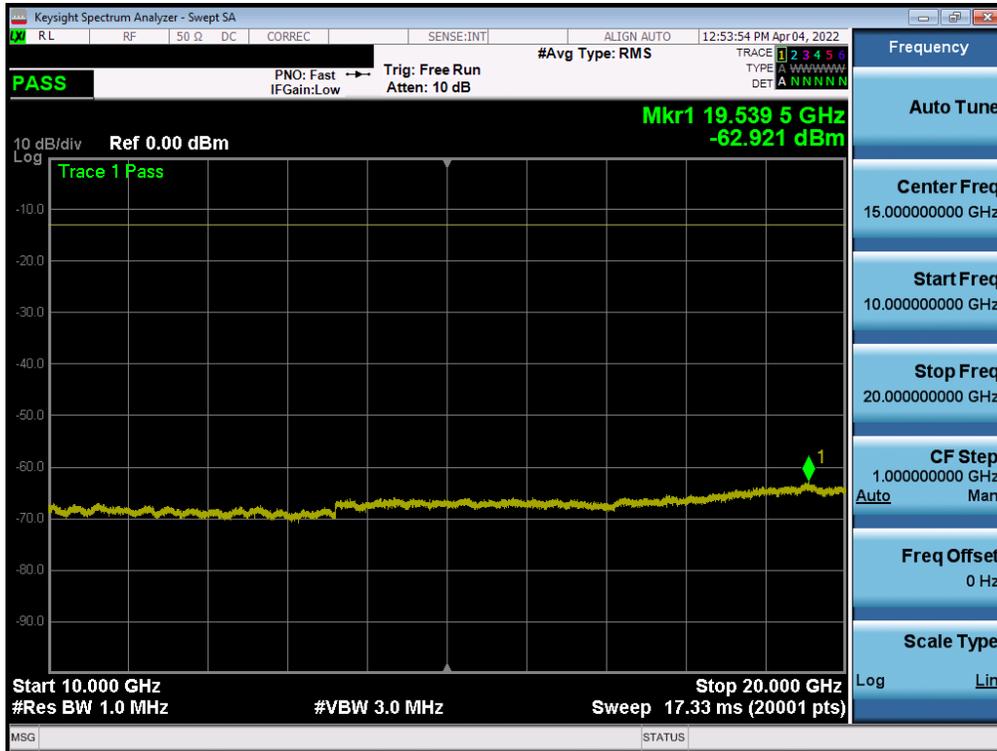


Plot 7-157. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB - High Channel – Ant B)



Plot 7-158. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB - High Channel – Ant B)

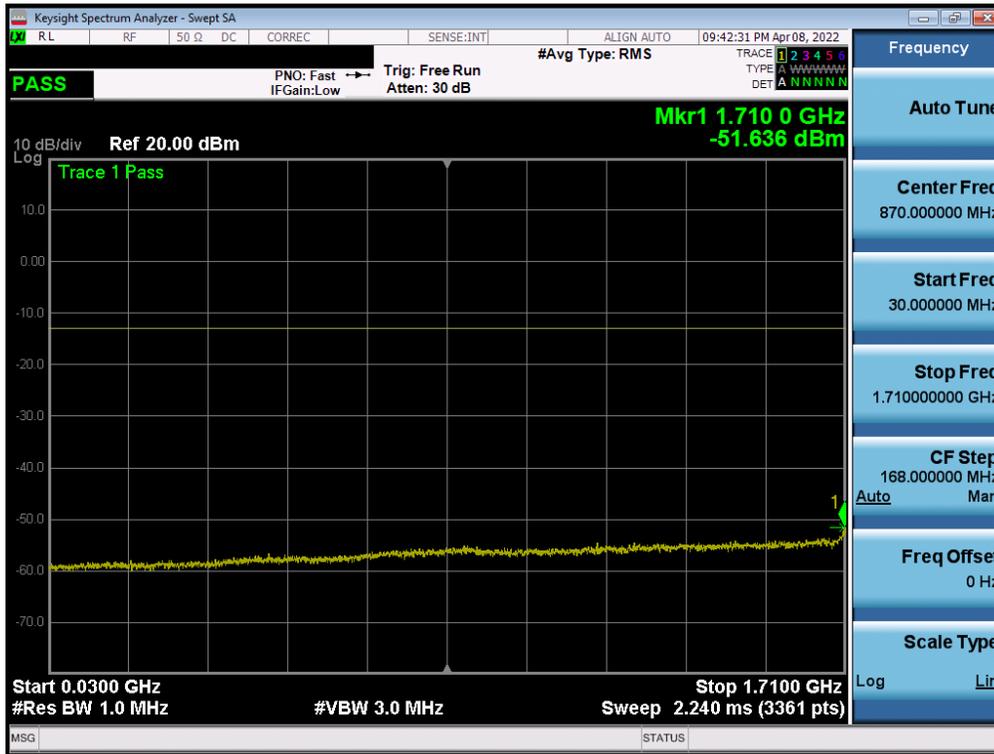
FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 102 of 312



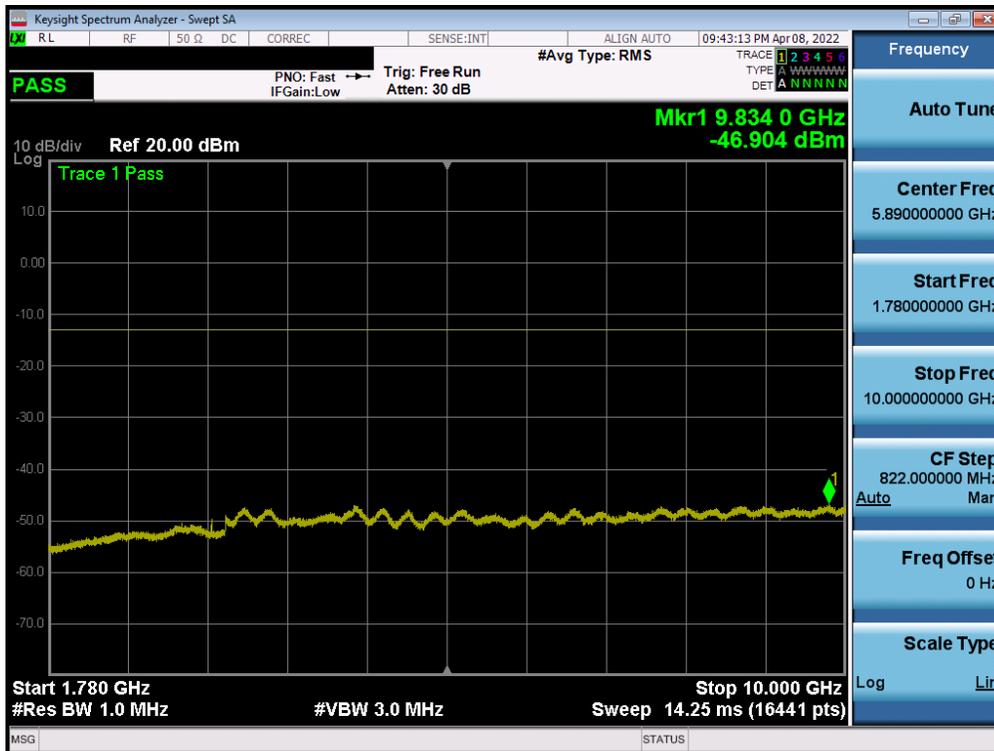
Plot 7-159. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB - High Channel – Ant B)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 103 of 312

## NR Band n66 – Ant B

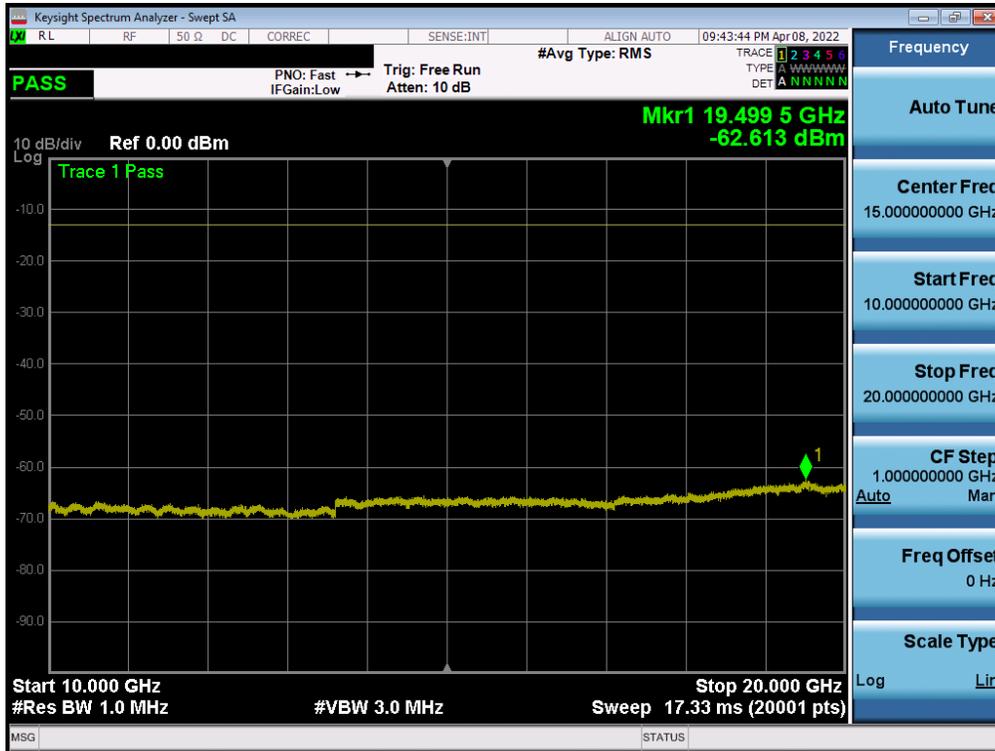


Plot 7-160. Conducted Spurious Plot (NR Band n66 -40.0MHz - 1 RB - Low Channel - Ant B)

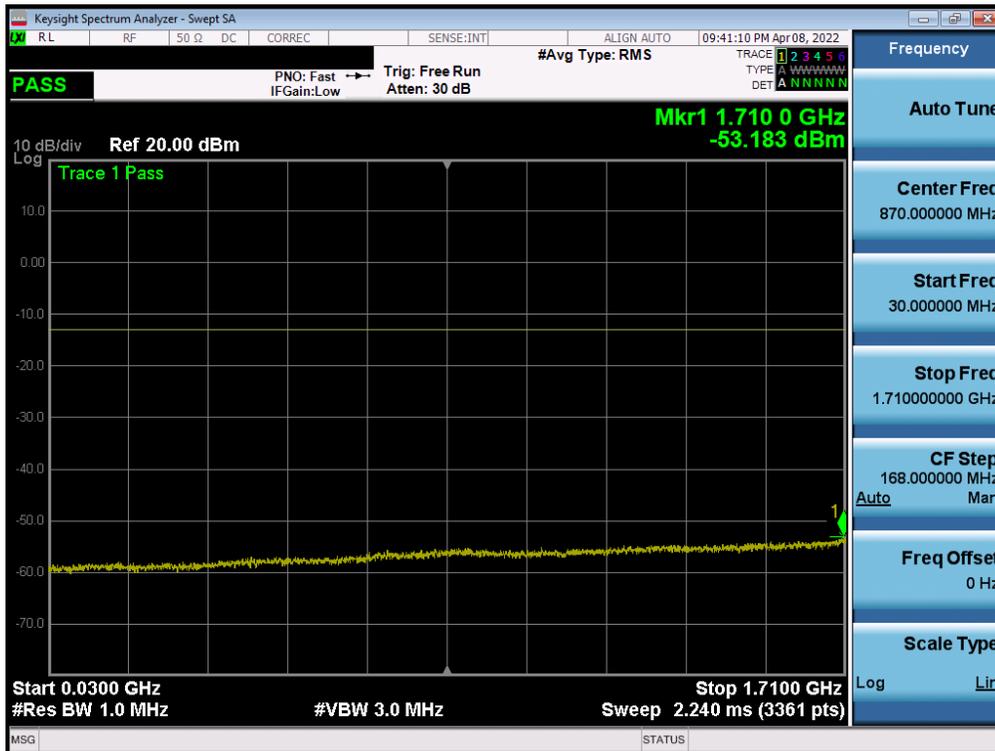


Plot 7-161. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - Low Channel - Ant B)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 104 of 312

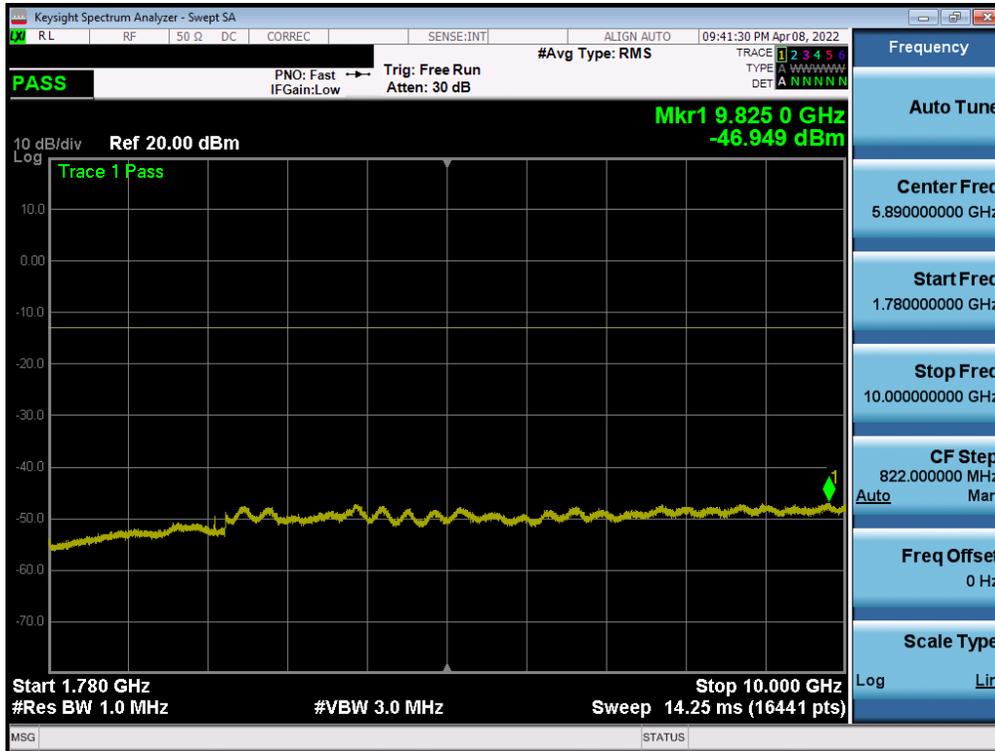


Plot 7-162. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - Low Channel - Ant B)

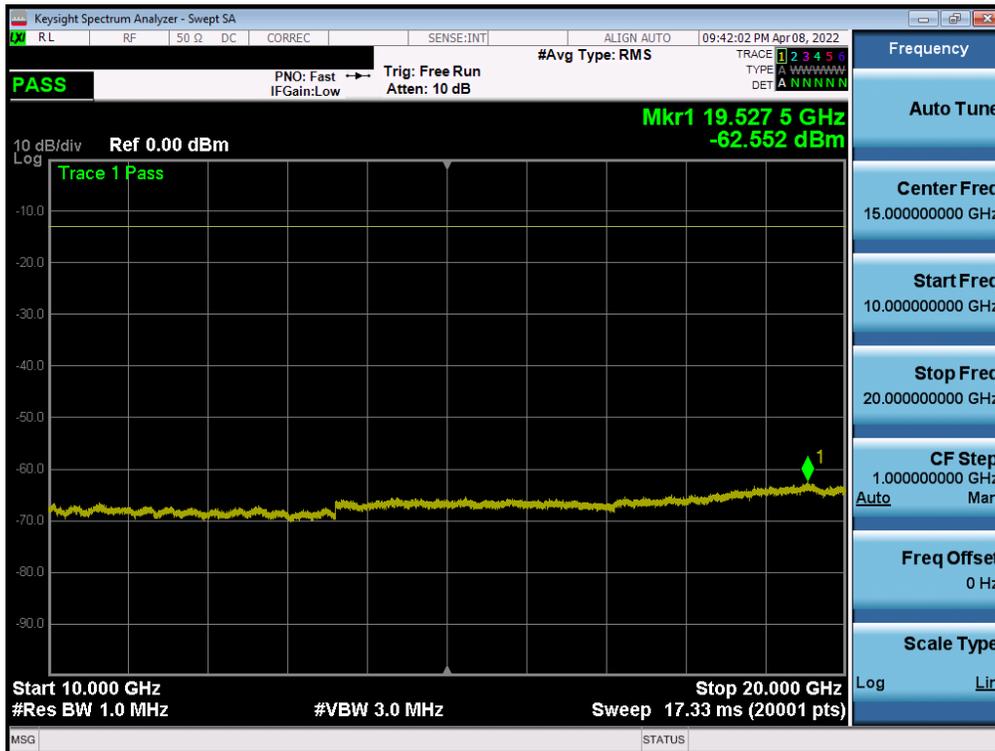


Plot 7-163. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - Mid Channel - Ant B)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 105 of 312

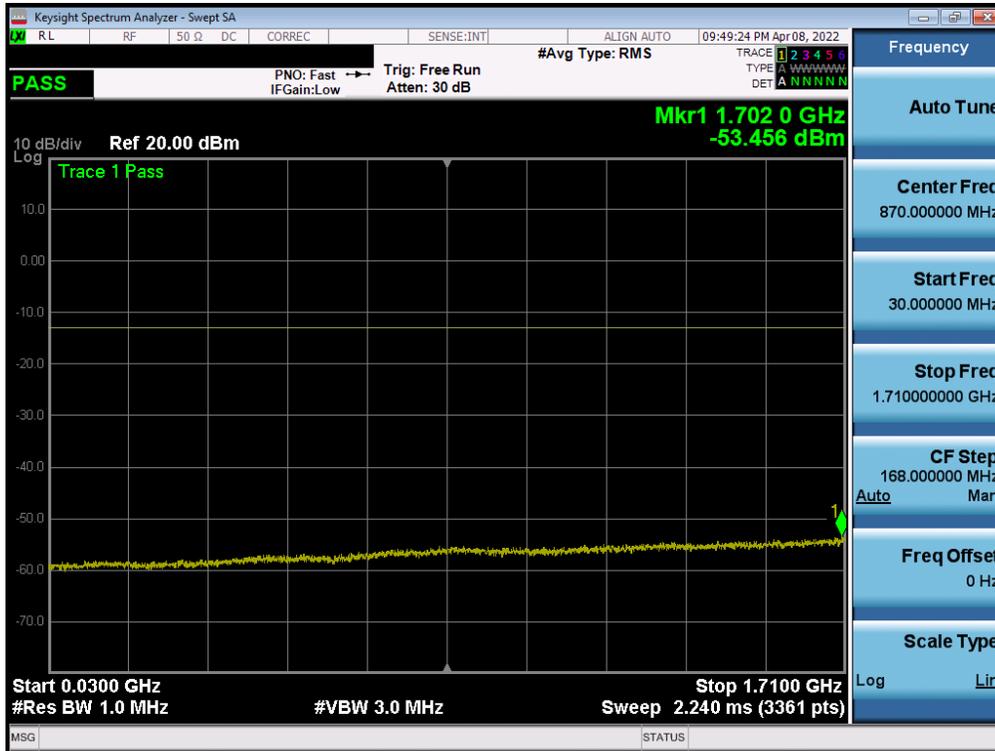


Plot 7-164. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - Mid Channel - Ant B)

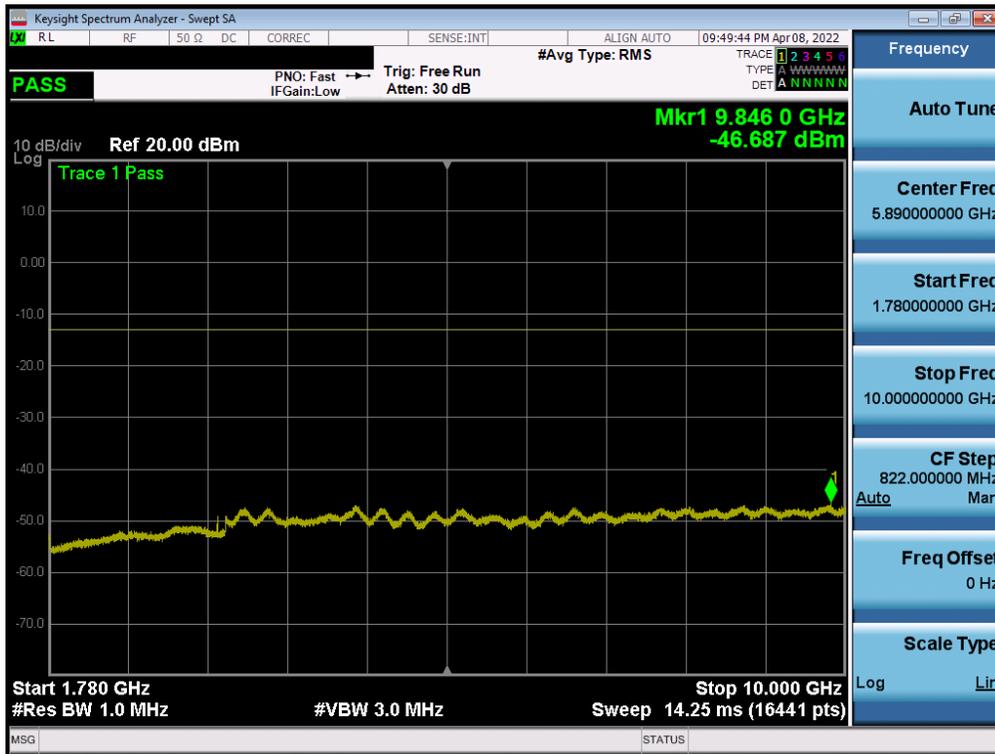


Plot 7-165. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - Mid Channel - Ant B)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 106 of 312

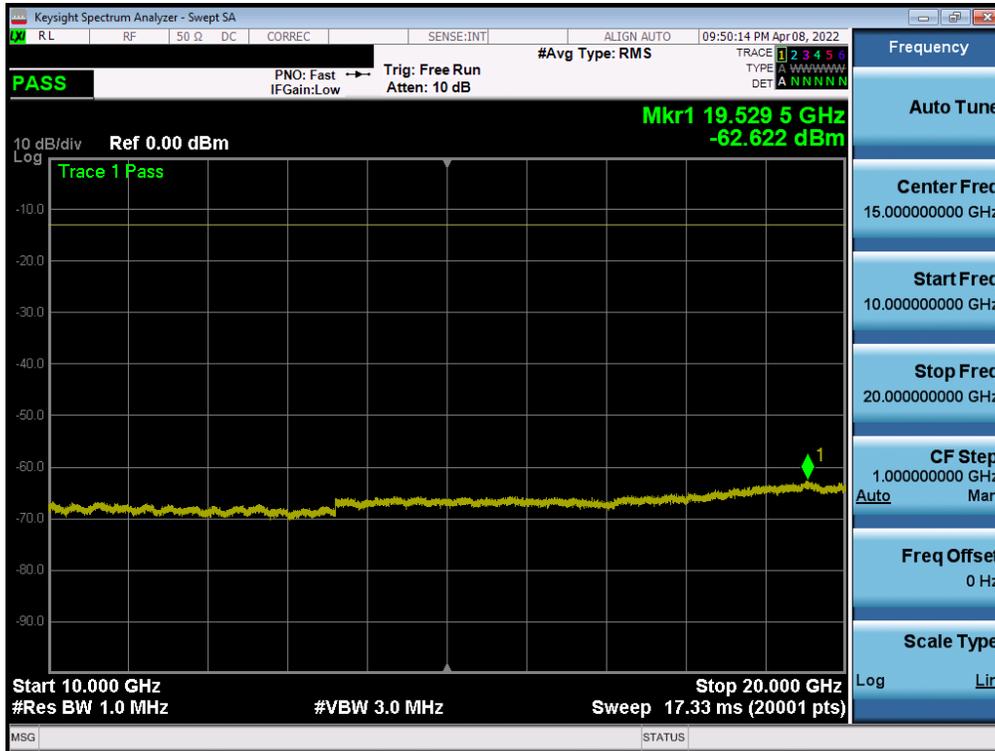


Plot 7-166. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - High Channel - Ant B)



Plot 7-167. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - High Channel - Ant B)

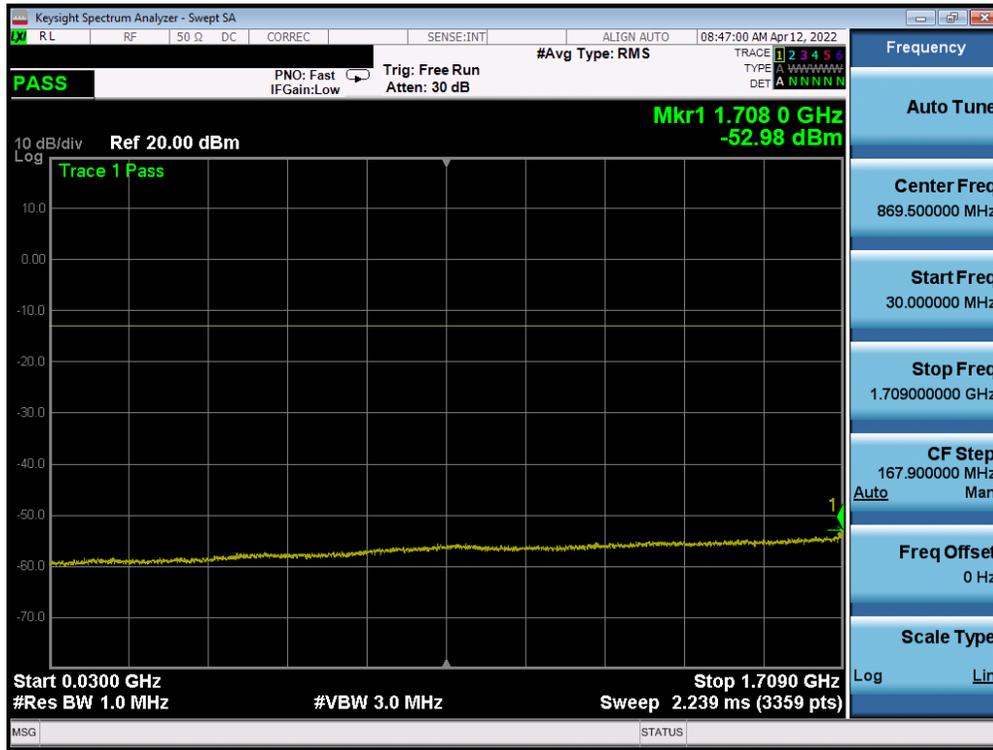
FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 107 of 312



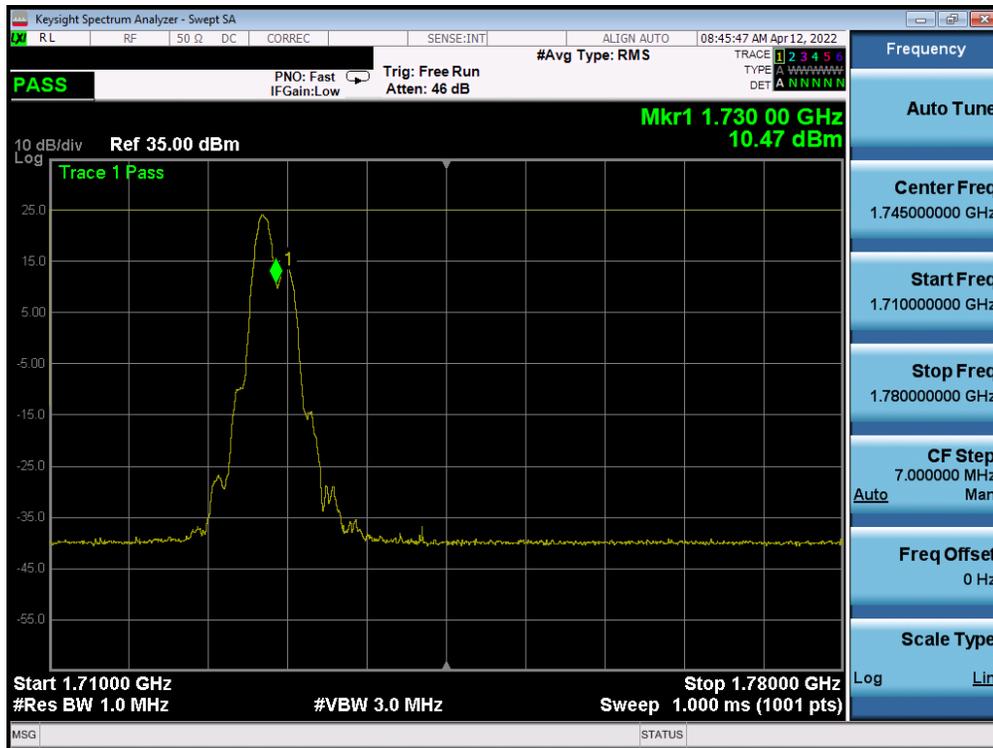
Plot 7-168. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - High Channel - Ant B)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 108 of 312

## Uplink CA LTE Band 66B/C – Ant B

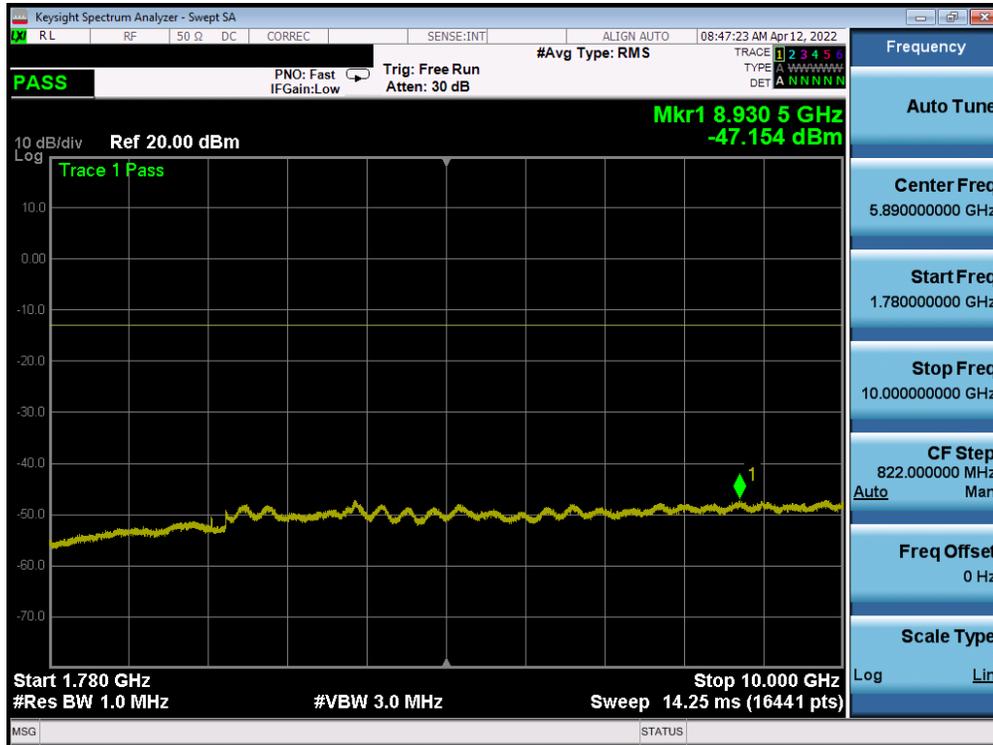


Plot 7-169. Conducted Spurious Plot (ULCA LTE Band 66 Low Channel - Ant B)

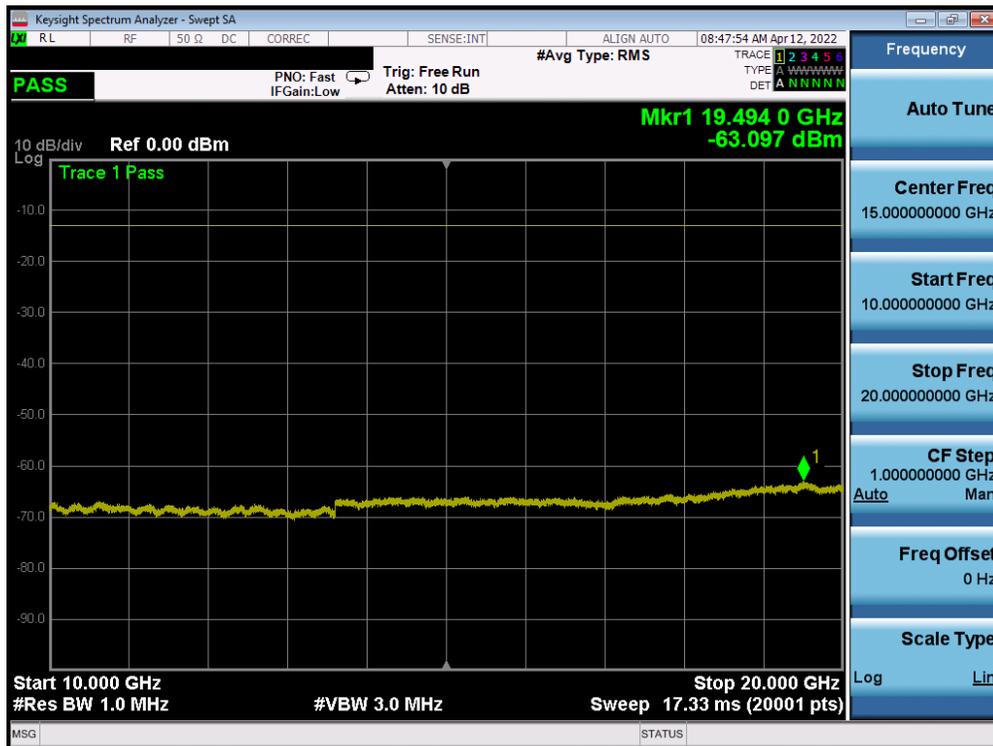


Plot 7-170. Conducted Spurious Plot (ULCA LTE Band 66 Low Channel - Ant B)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 109 of 312

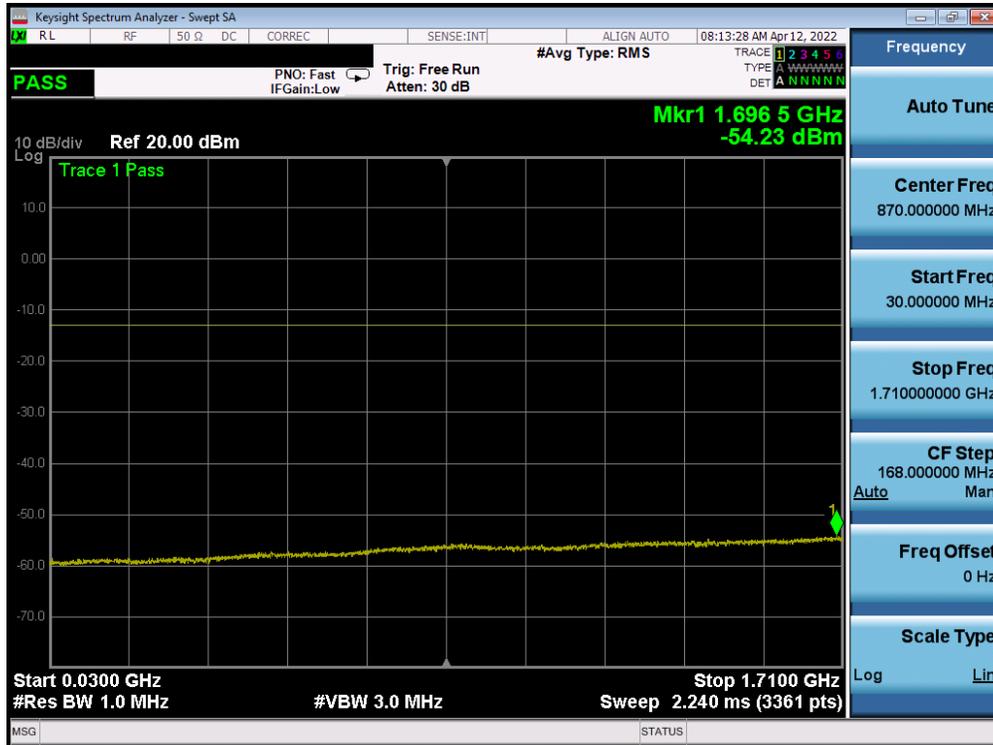


Plot 7-171. Conducted Spurious Plot (ULCA LTE Band 66 Low Channel - Ant B)

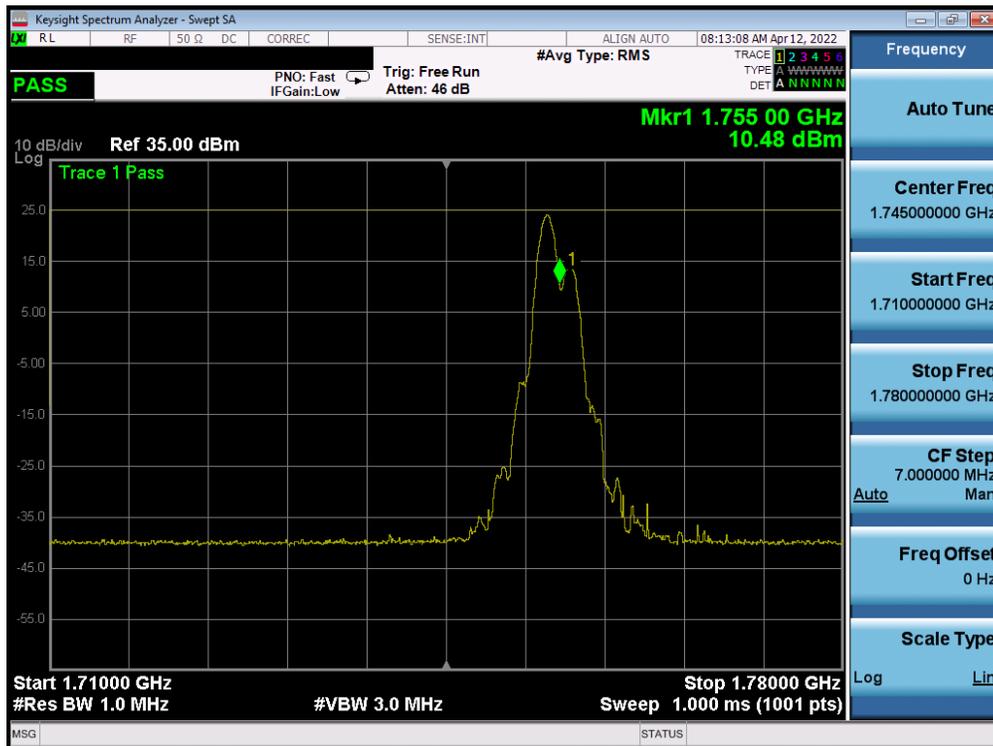


Plot 7-172. Conducted Spurious Plot (ULCA LTE Band 66 Low Channel - Ant B)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 110 of 312

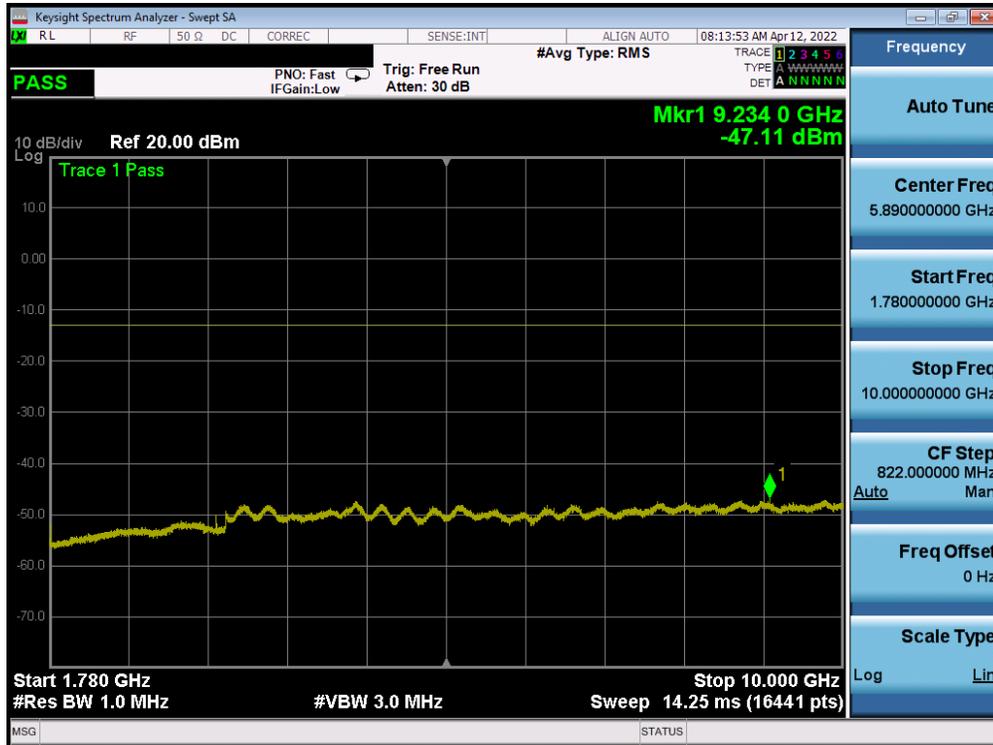


Plot 7-173. Conducted Spurious Plot (ULCA LTE Band 66 Mid Channel - Ant B)

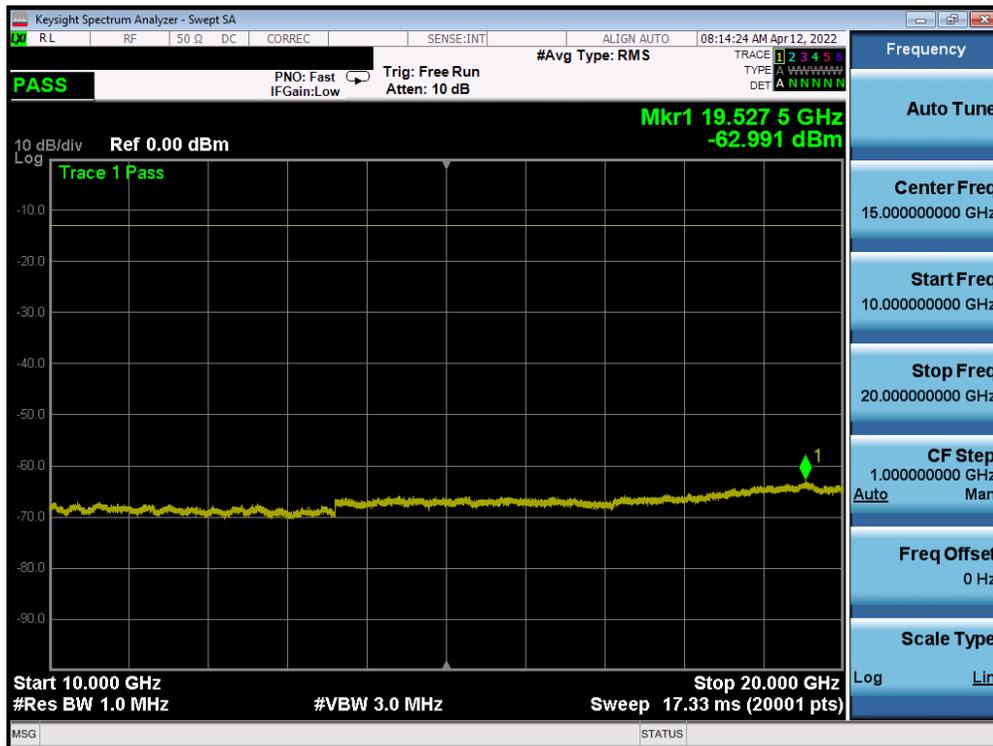


Plot 7-174. Conducted Spurious Plot (ULCA LTE Band 66 Mid Channel - Ant B)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 111 of 312

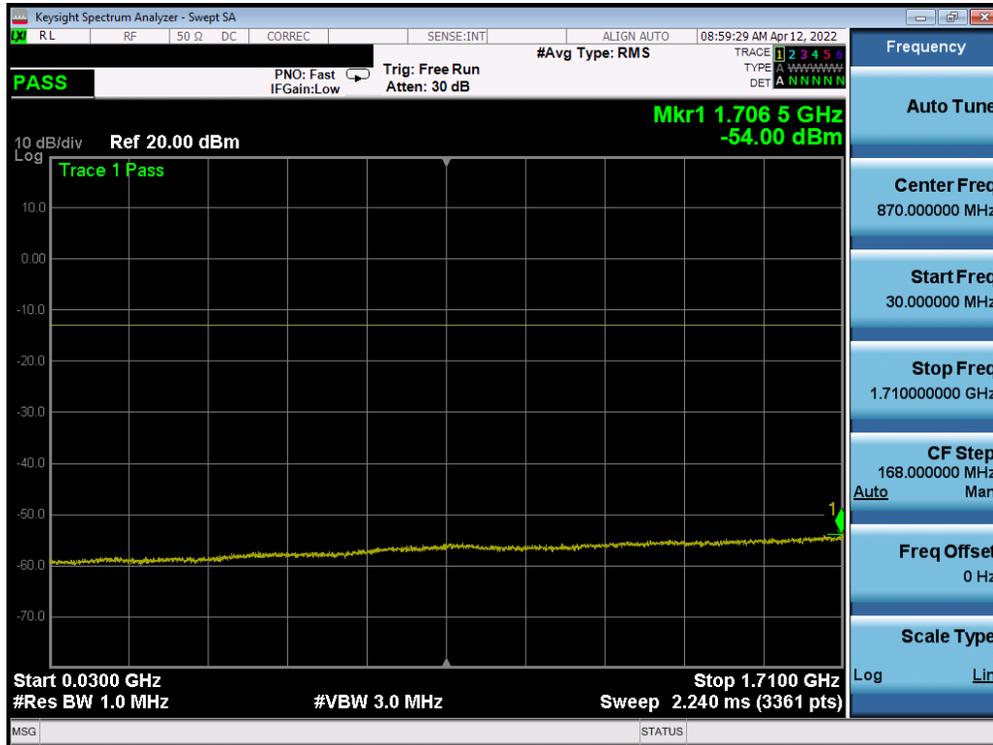


Plot 7-175. Conducted Spurious Plot (ULCA LTE Band 66 Mid Channel - Ant B)

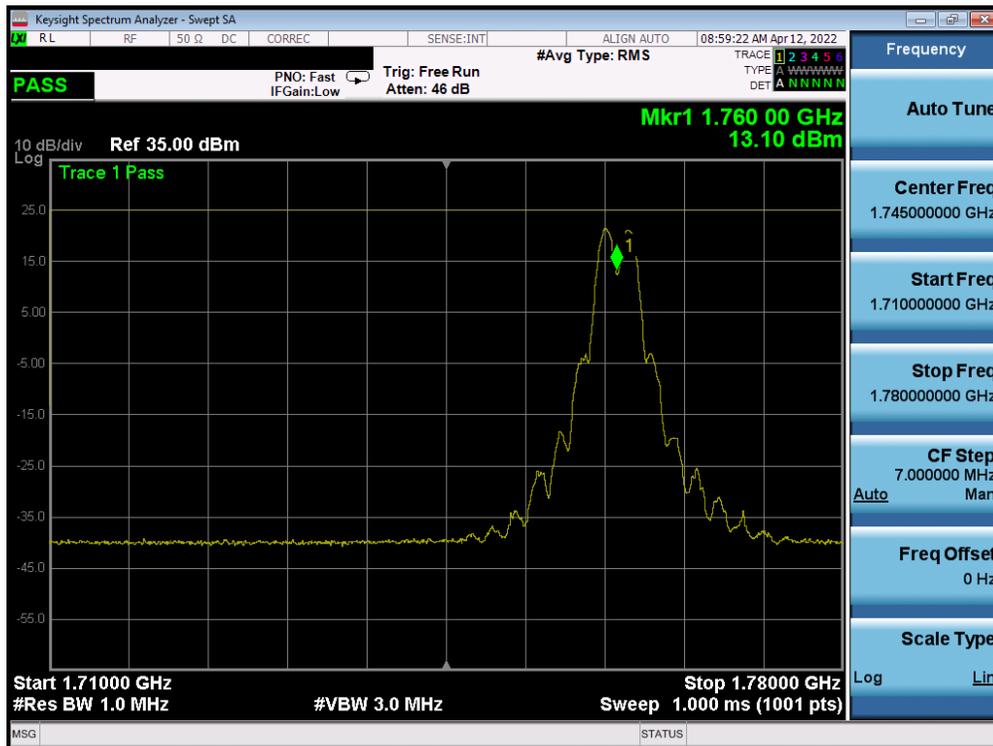


Plot 7-176. Conducted Spurious Plot (ULCA LTE Band 66 Mid Channel - Ant B)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 112 of 312

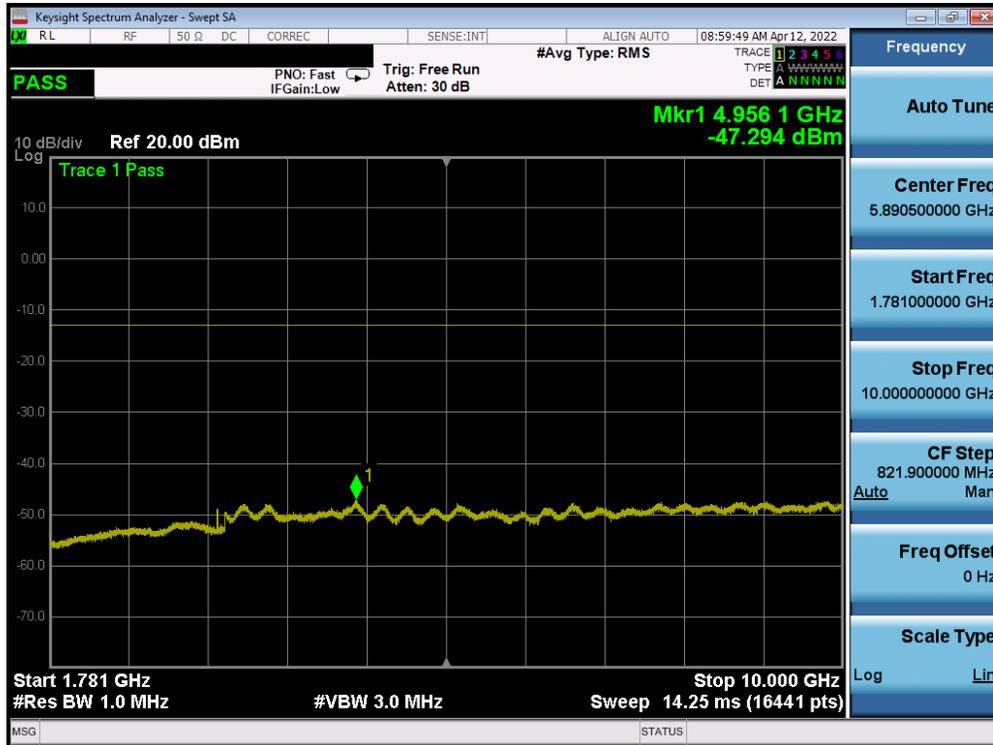


Plot 7-177. Conducted Spurious Plot (ULCA LTE Band 66 High Channel - Ant B)

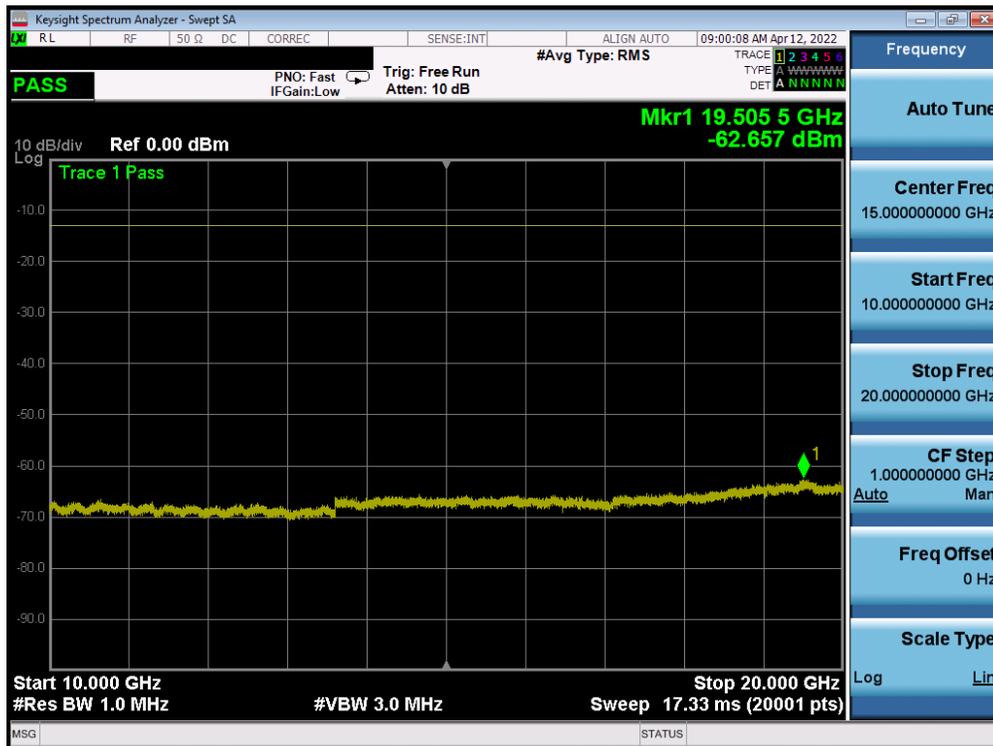


Plot 7-178. Conducted Spurious Plot (ULCA LTE Band 66 High Channel - Ant B)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 113 of 312



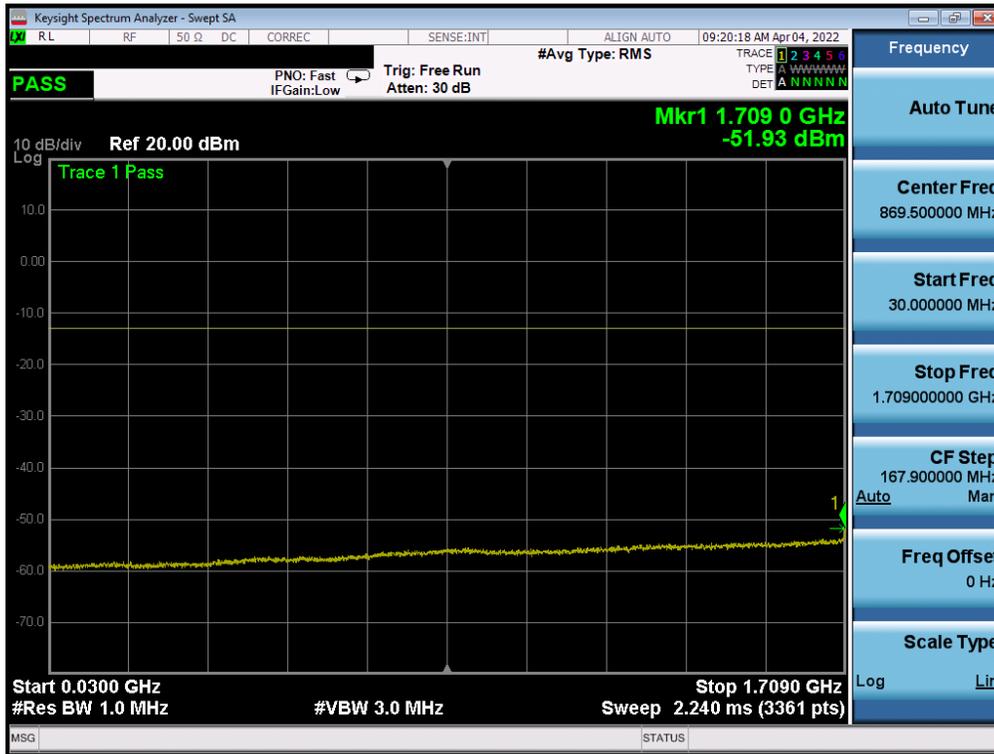
Plot 7-179. Conducted Spurious Plot (ULCA LTE Band 66 High Channel - Ant B)



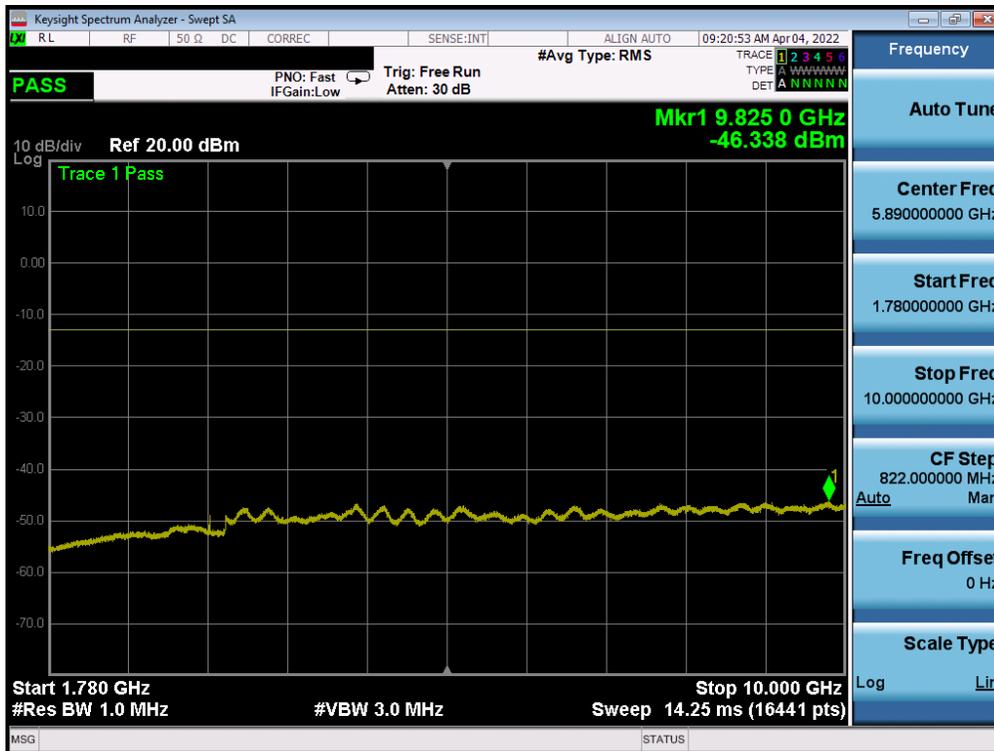
Plot 7-180. Conducted Spurious Plot (ULCA LTE Band 66 High Channel - Ant B)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 114 of 312

# LTE Band 66/4 – Ant F



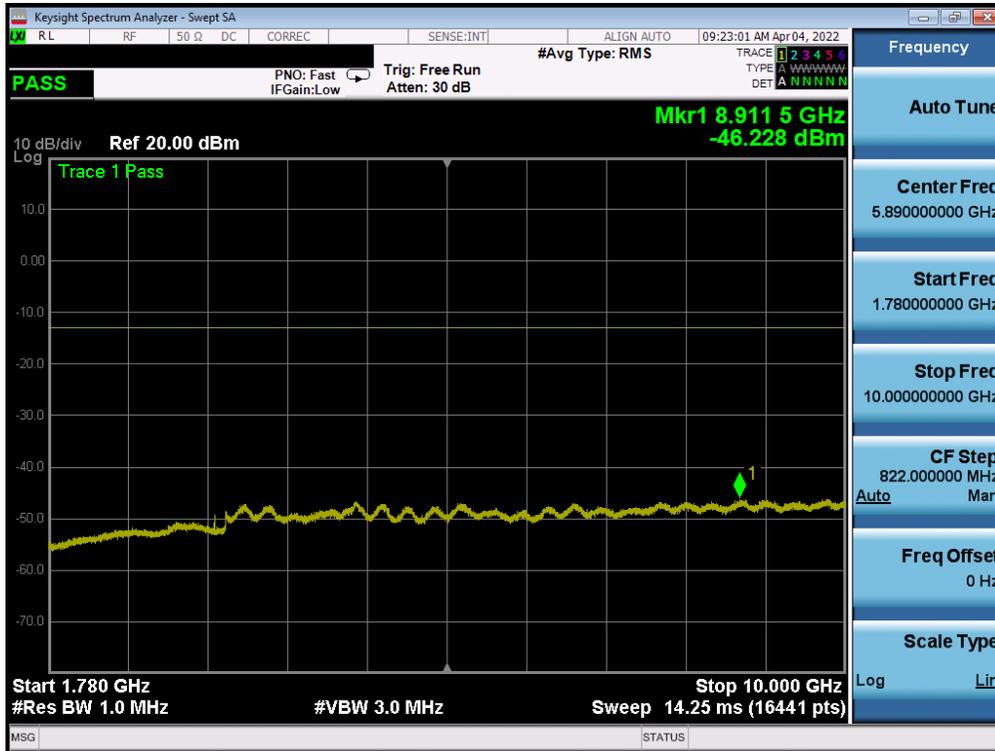
Plot 7-181. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB - Low Channel – Ant F)



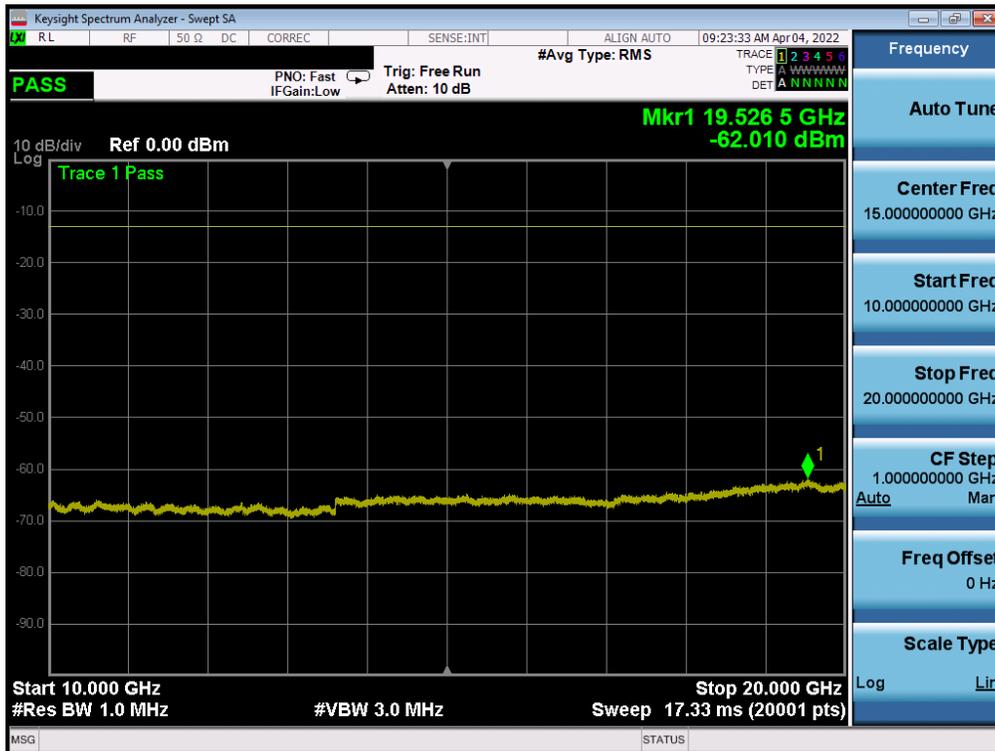
Plot 7-182. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB - Low Channel – Ant F)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 115 of 312



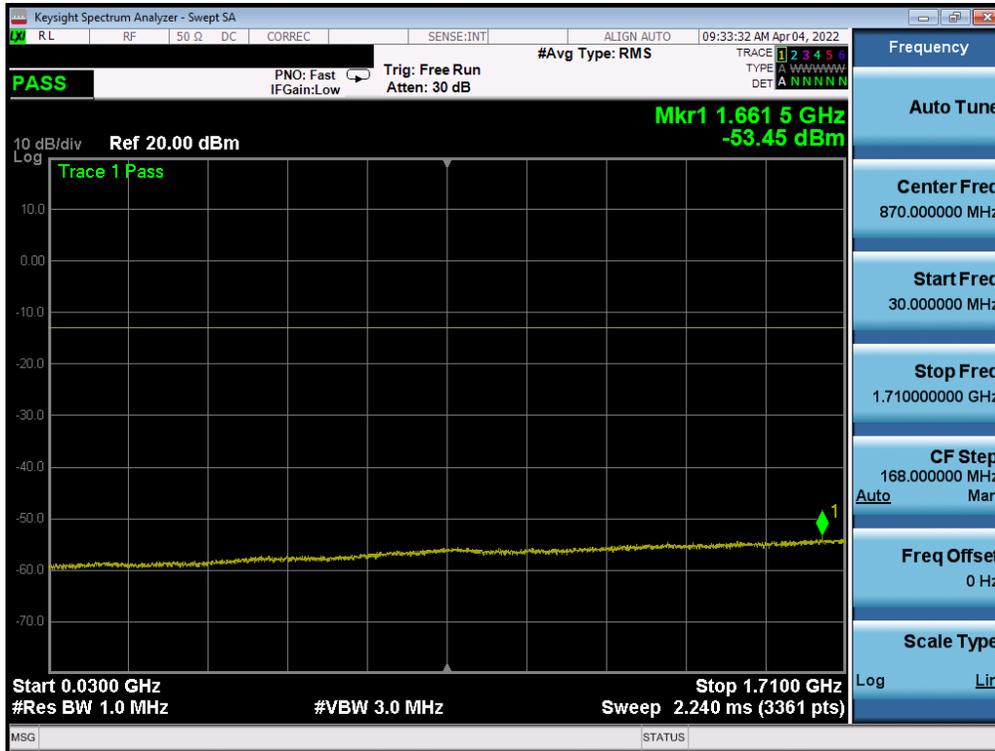


Plot 7-185. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB - Mid Channel – Ant F)

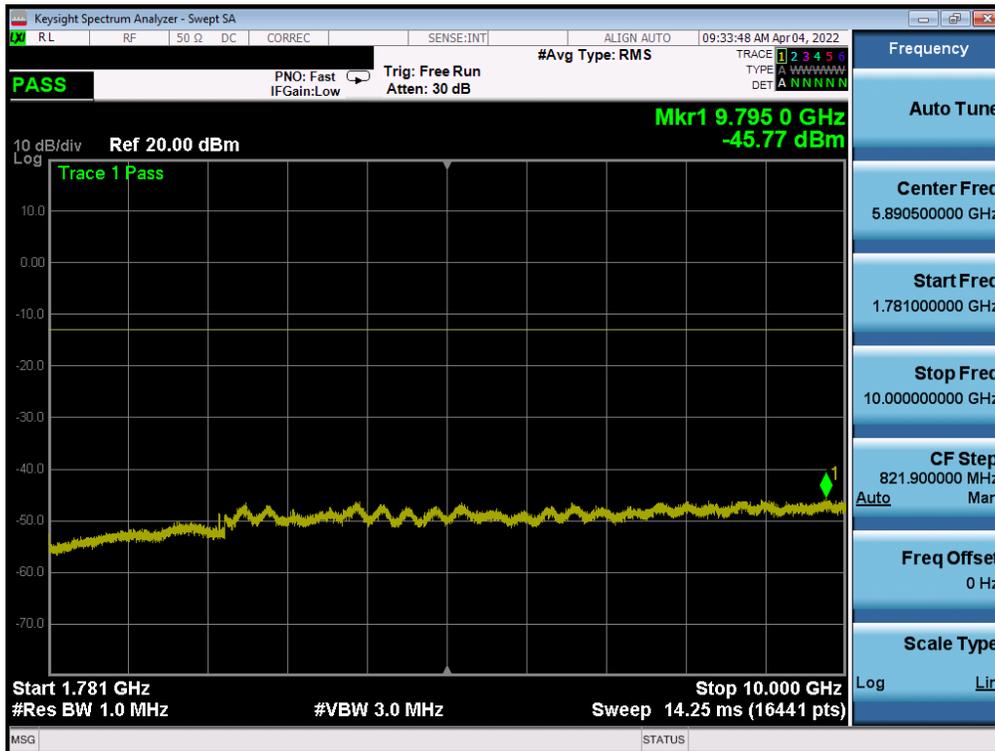


Plot 7-186. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB - Mid Channel – Ant F)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 117 of 312

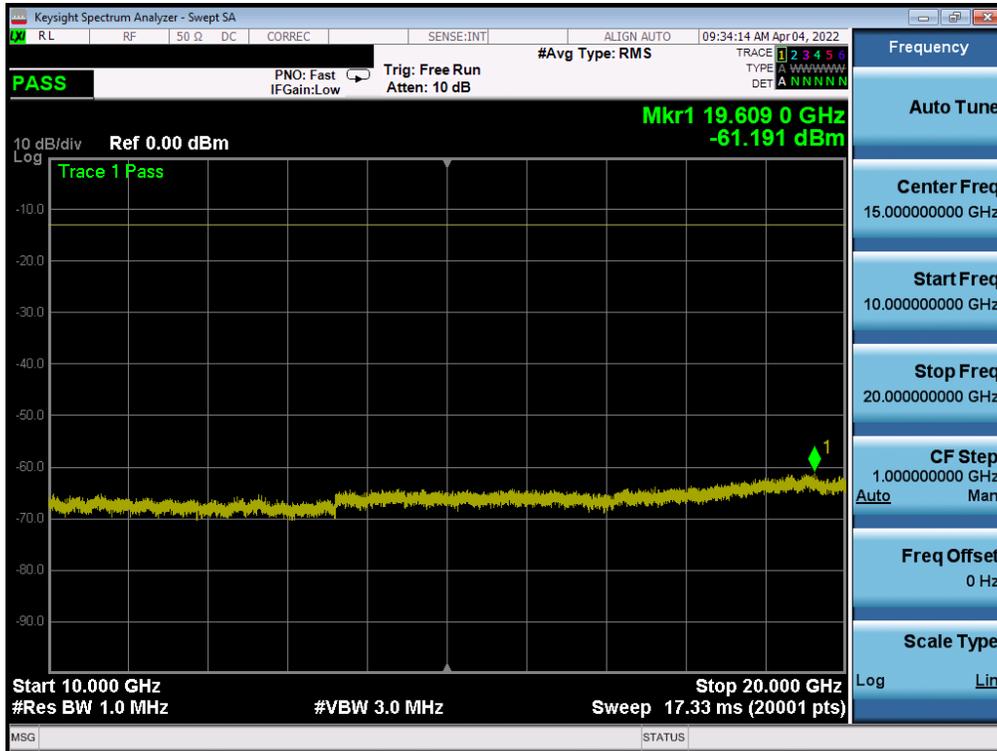


Plot 7-187. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB - High Channel – Ant F)



Plot 7-188. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB - High Channel – Ant F)

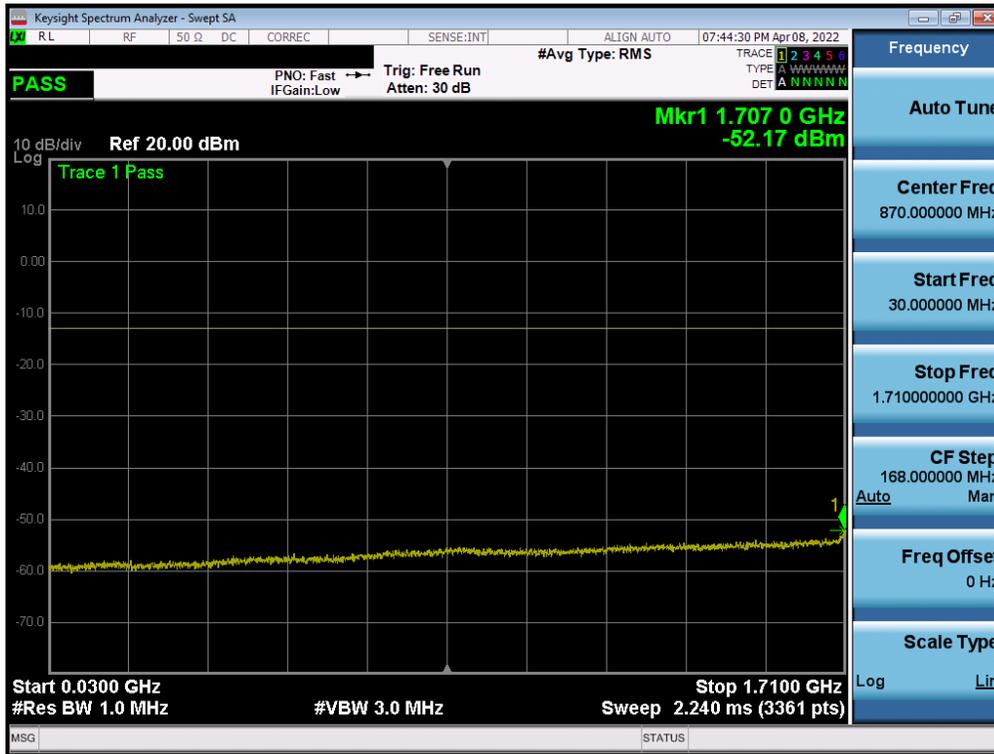
FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 118 of 312



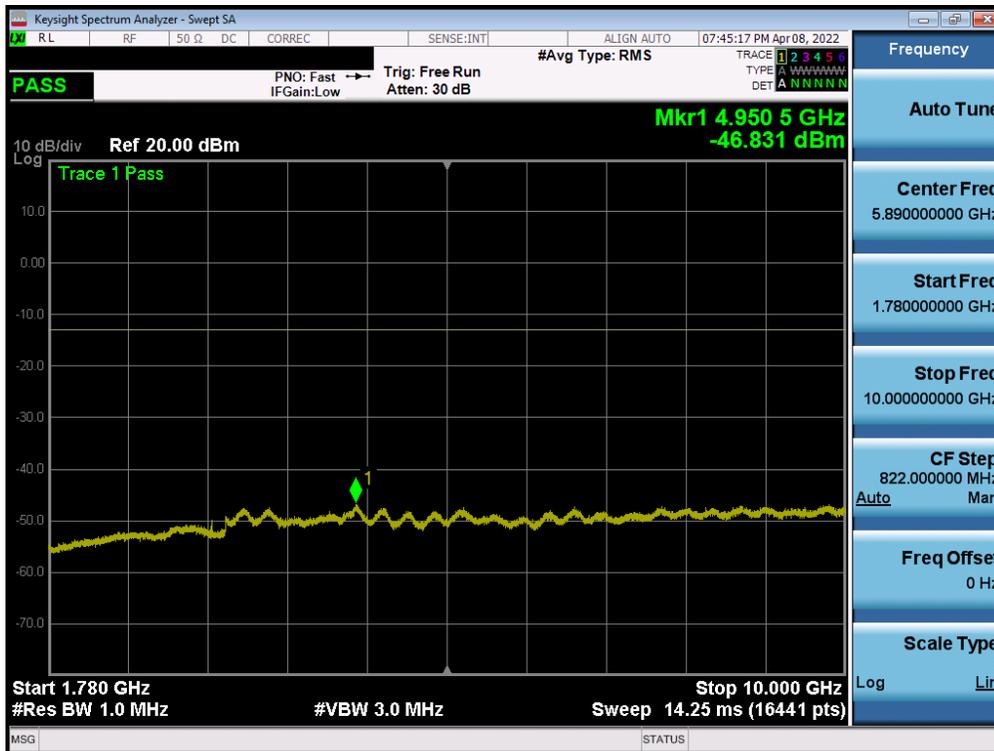
Plot 7-189. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - 1 RB - High Channel – Ant F)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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# NR Band n66 – Ant F

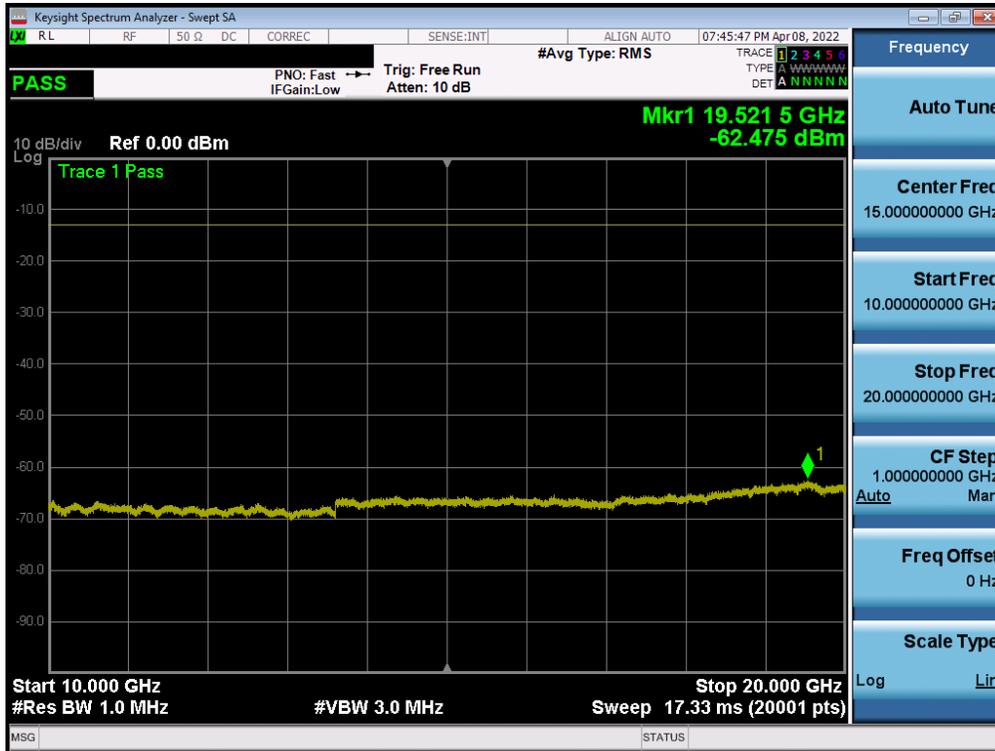


Plot 7-190. Conducted Spurious Plot (NR Band n66 -40.0MHz - 1 RB - Low Channel - Ant F)

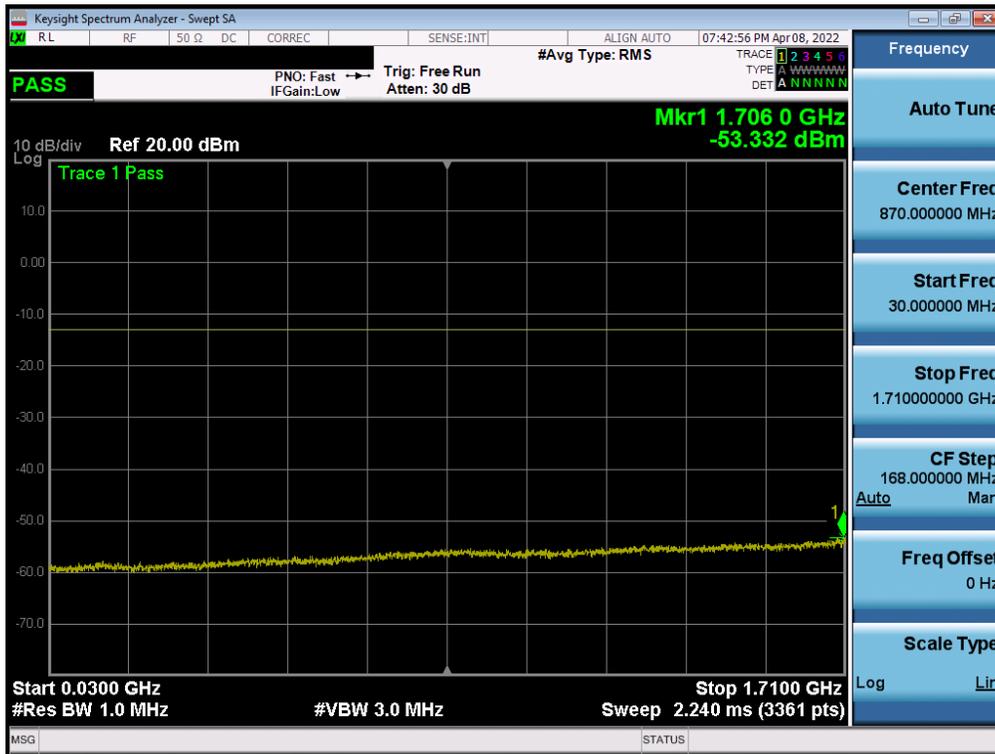


Plot 7-191. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - Low Channel - Ant F)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 120 of 312

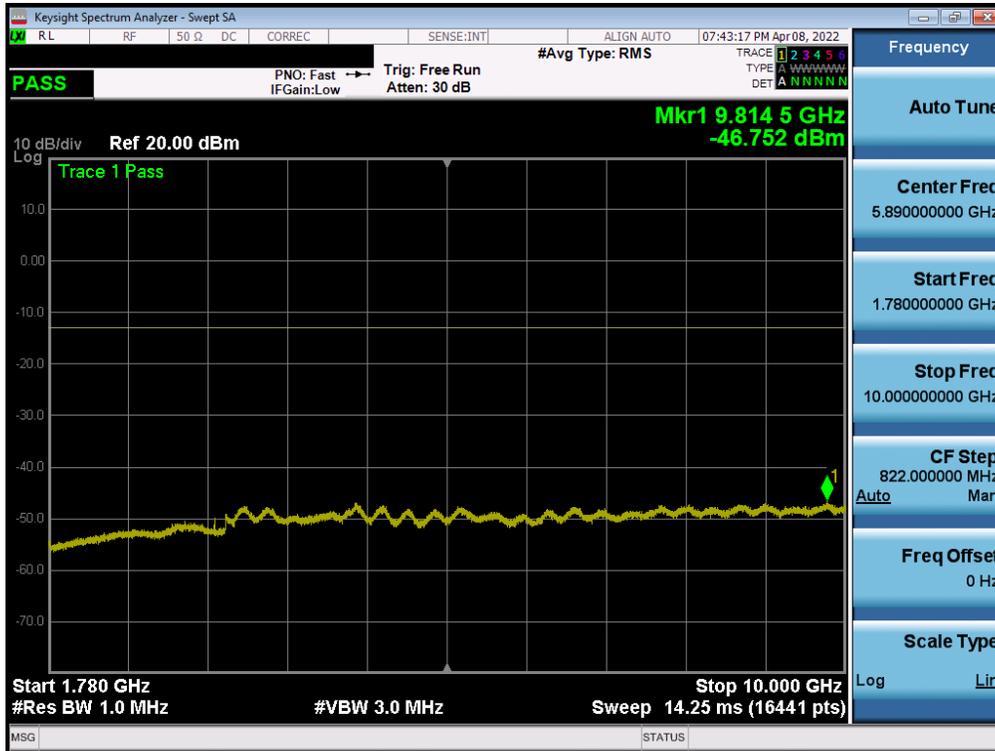


Plot 7-192. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - Low Channel - Ant F)

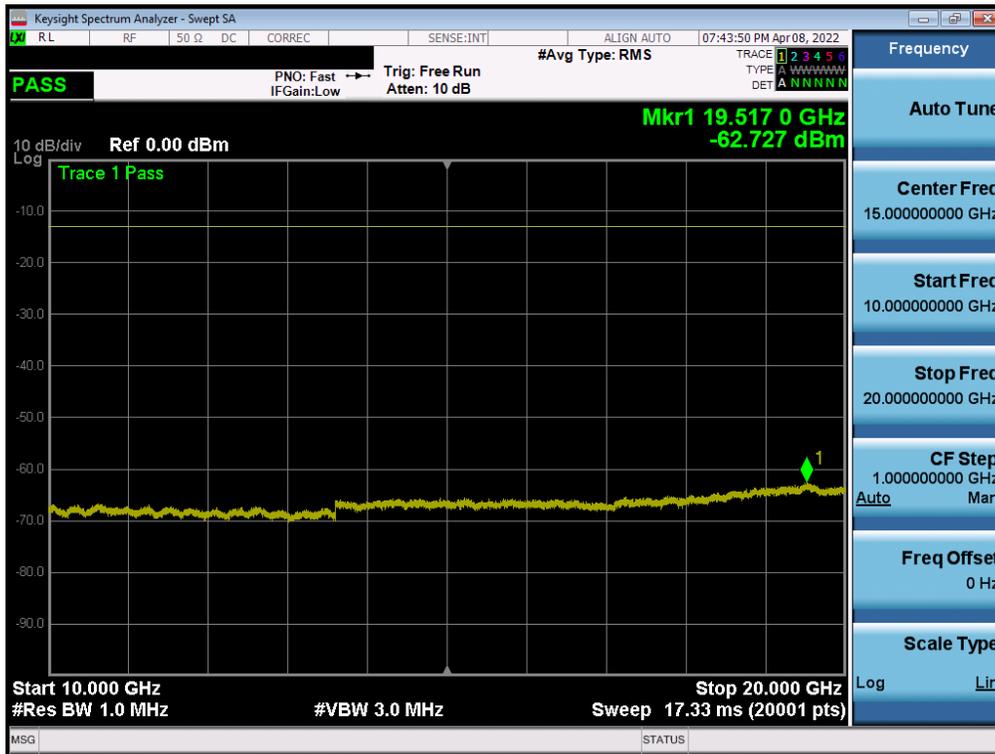


Plot 7-193. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - Mid Channel - Ant F)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 121 of 312

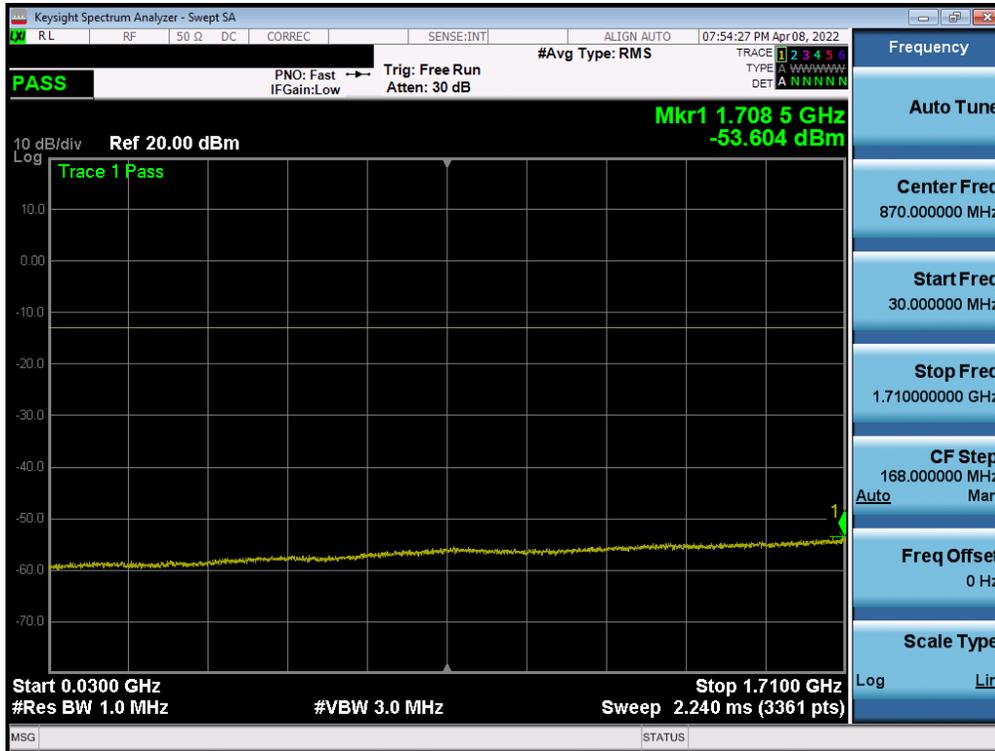


Plot 7-194. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - Mid Channel - Ant F)

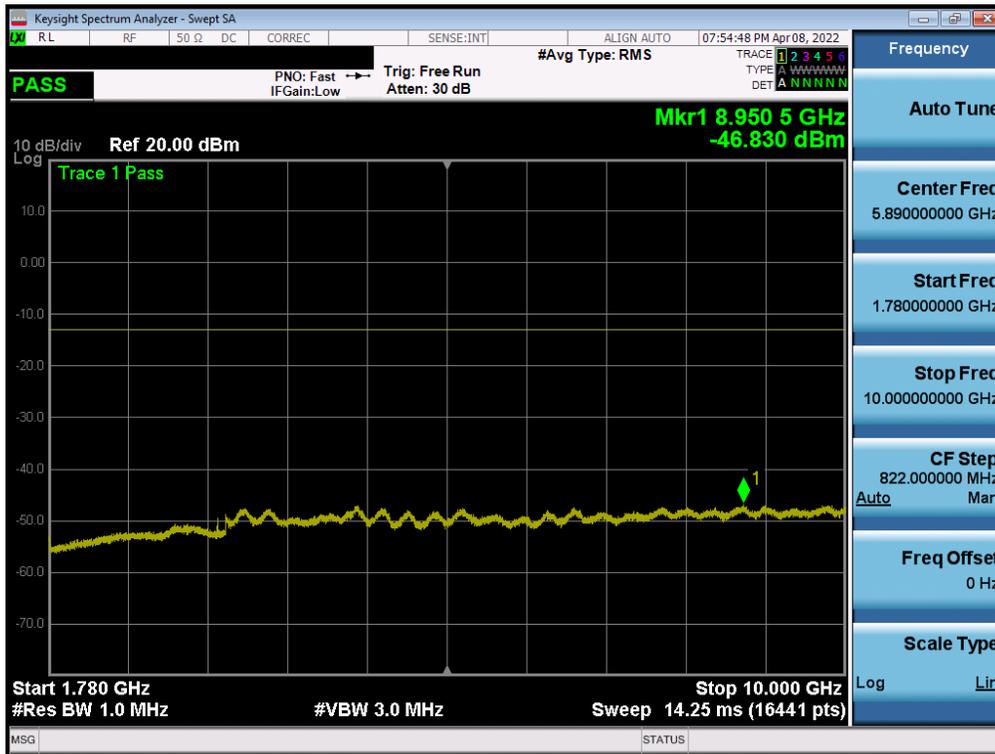


Plot 7-195. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - Mid Channel - Ant F)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 122 of 312

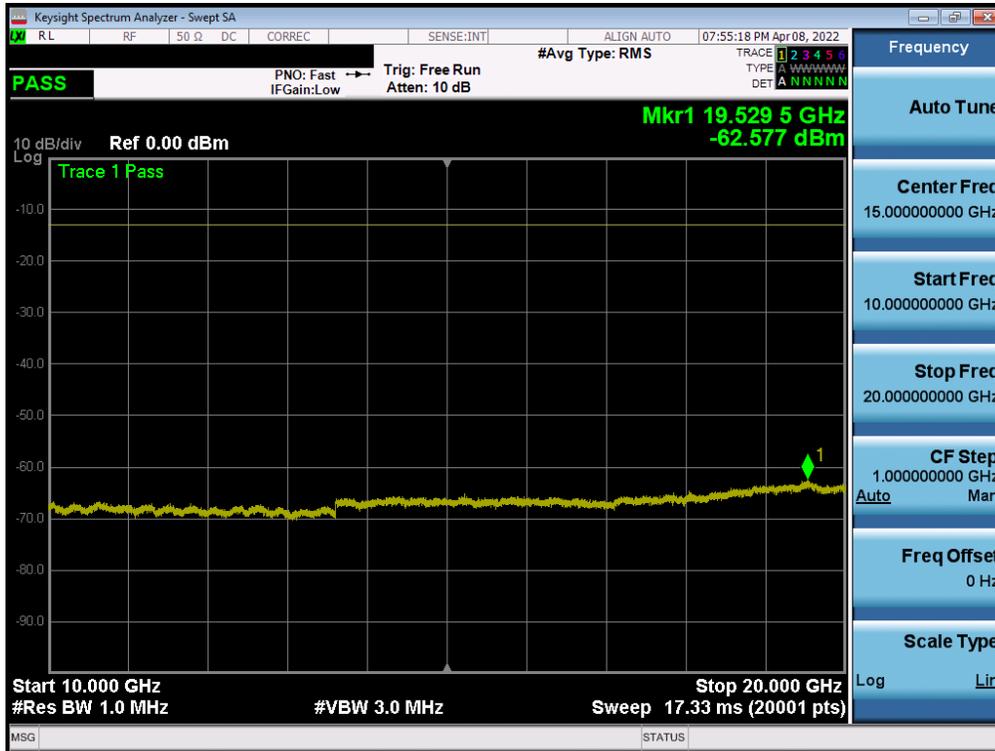


Plot 7-196. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - High Channel - Ant F)



Plot 7-197. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - High Channel - Ant F)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 123 of 312



Plot 7-198. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - High Channel - Ant F)

FCC ID: A3LSMF936U	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2204010046-05.A3L	Test Dates: 4/4/2022 - 6/21/2022	EUT Type: Portable Handset	Page 124 of 312

## 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  $43 + 10 \log_{10}(P_{\text{Watts}})$ , where P is the transmitter power in Watts.***

### Test Procedure Used

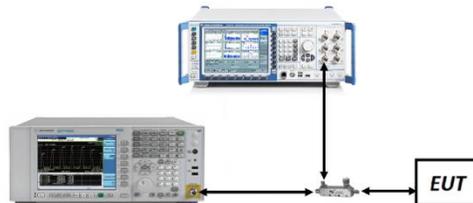
ANSI C63.26-2015 – Section 5.7.3

### 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**

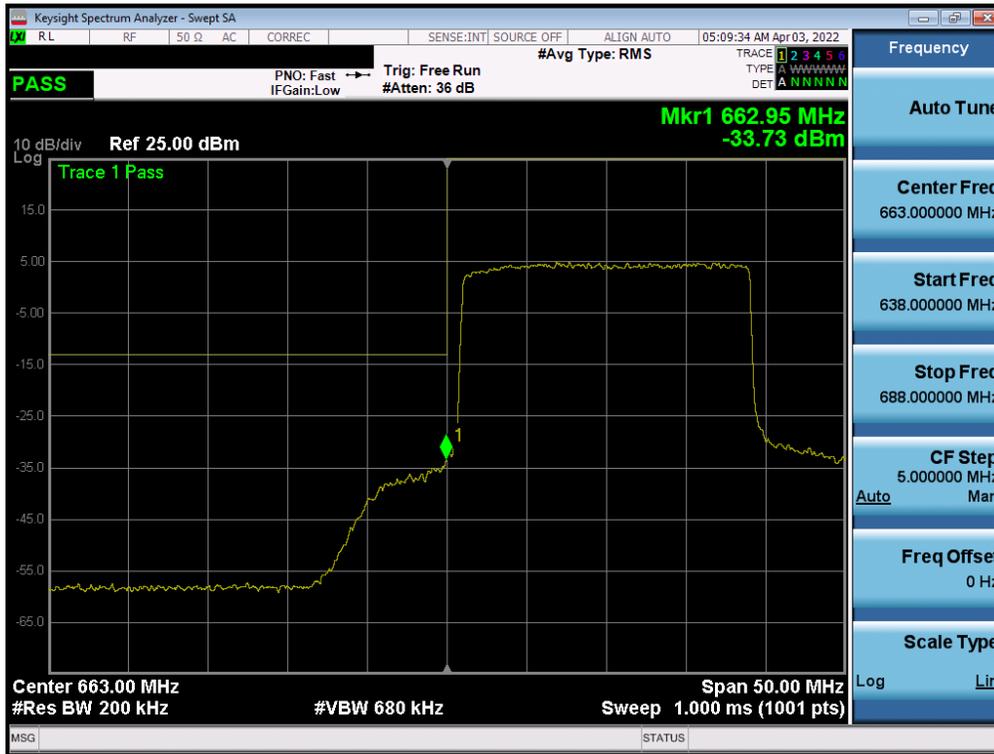
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**Test Notes**

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.

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# LTE Band 71 – Ant A

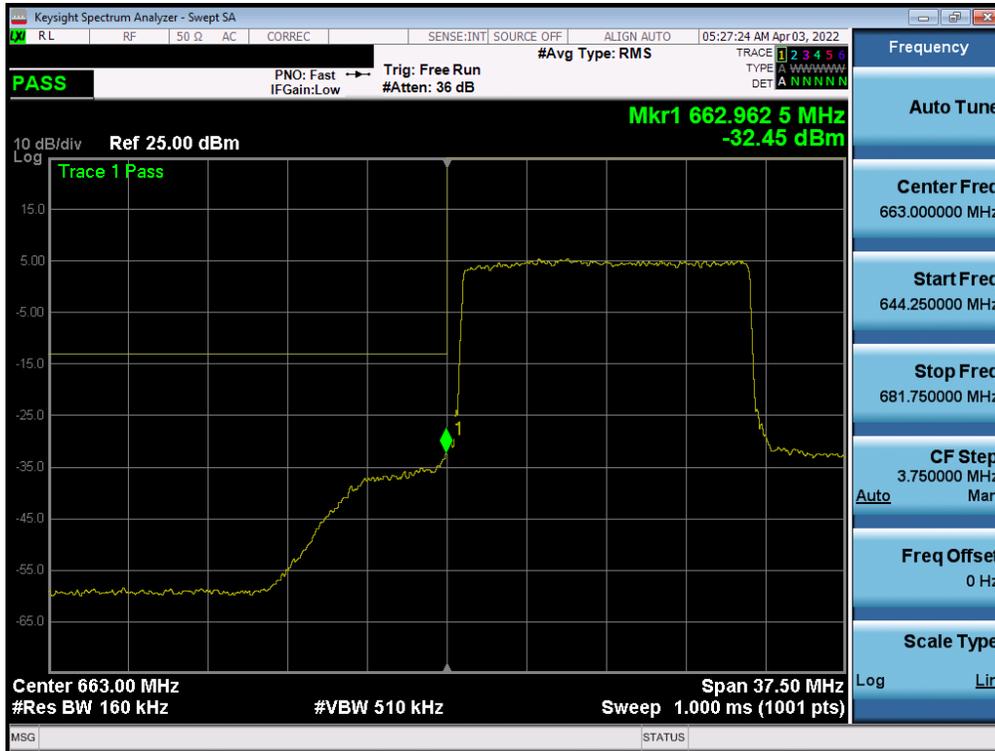


Plot 7-199. Lower Band Edge Plot (LTE Band 71 - 20MHz QPSK – Full RB - Ant A)



Plot 7-200. Upper Band Edge Plot (LTE Band 71 - 20MHz QPSK – Full RB - Ant A)

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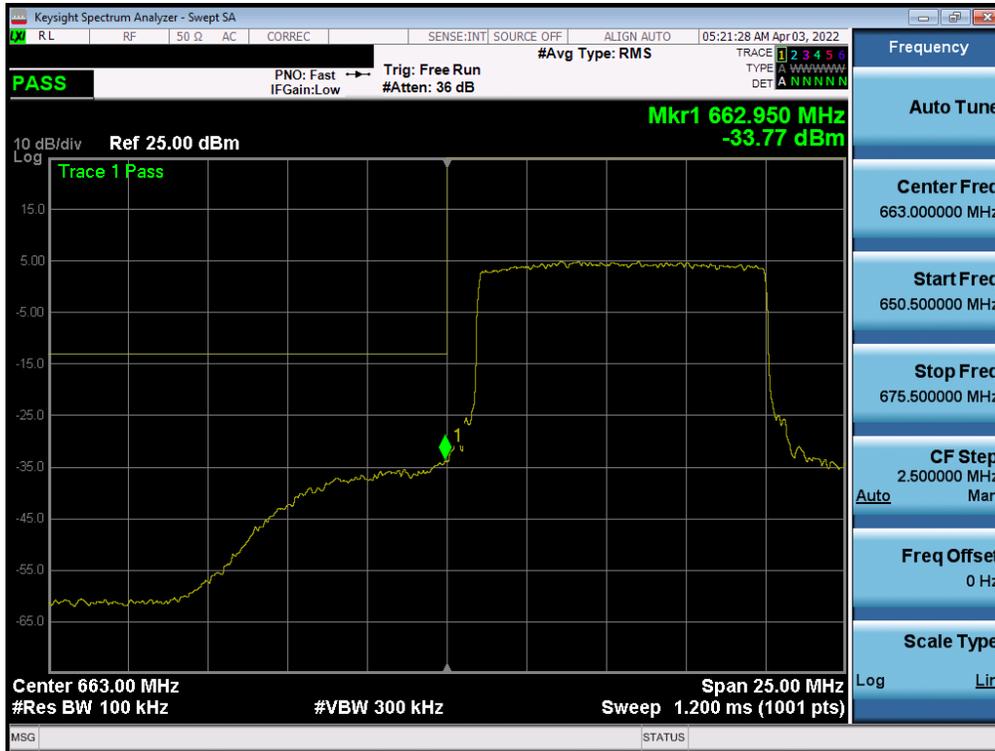


Plot 7-201. Lower Band Edge Plot (LTE Band 71 - 15MHz QPSK – Full RB - Ant A)



Plot 7-202. Upper Band Edge Plot (LTE Band 71 - 15MHz QPSK – Full RB - Ant A)

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Plot 7-203. Lower Band Edge Plot (LTE Band 71 - 10MHz QPSK - Full RB - Ant A)

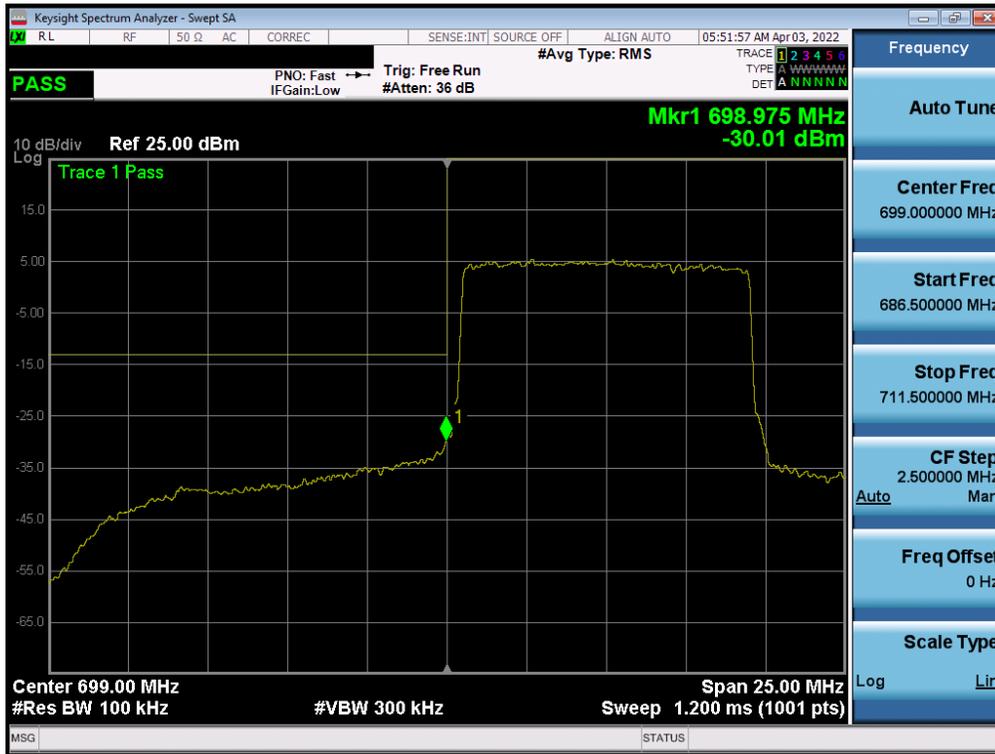


Plot 7-204. Upper Band Edge Plot (LTE Band 71 - 10MHz QPSK - Full RB - Ant A)

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# LTE Band 12 – Ant A



Plot 7-207. Lower Band Edge Plot (LTE Band 12 - 10MHz QPSK – Full RB - Ant A)



Plot 7-208. Upper Band Edge Plot (LTE Band 12 - 10MHz QPSK – Full RB - Ant A)

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