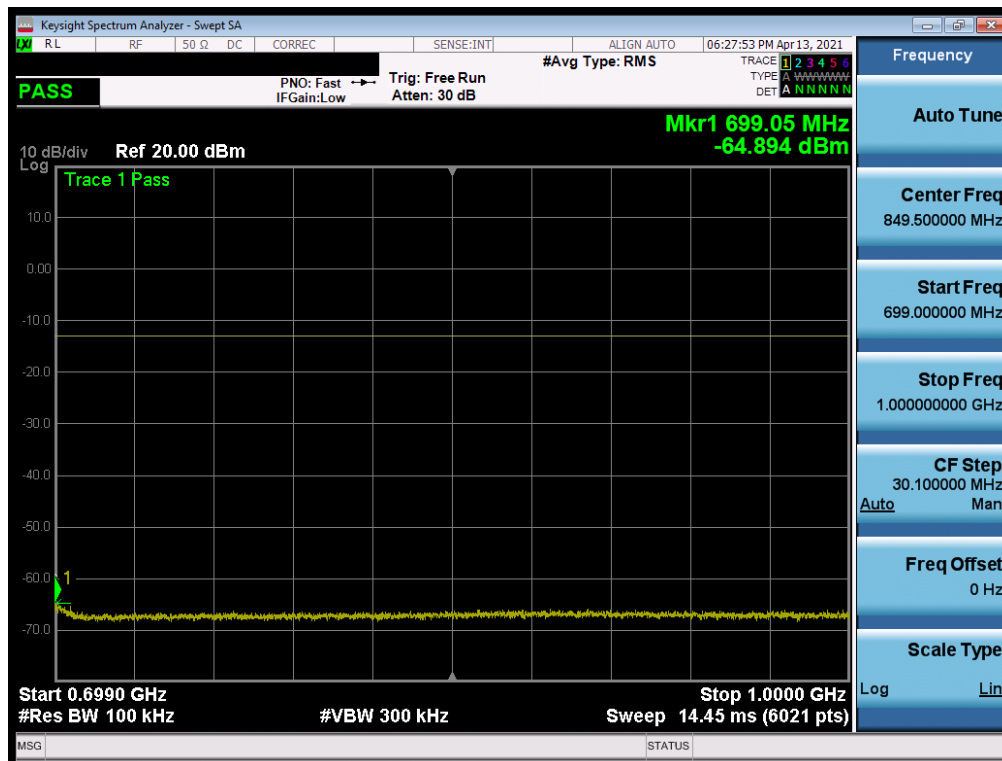


Plot 7-97. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-98. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

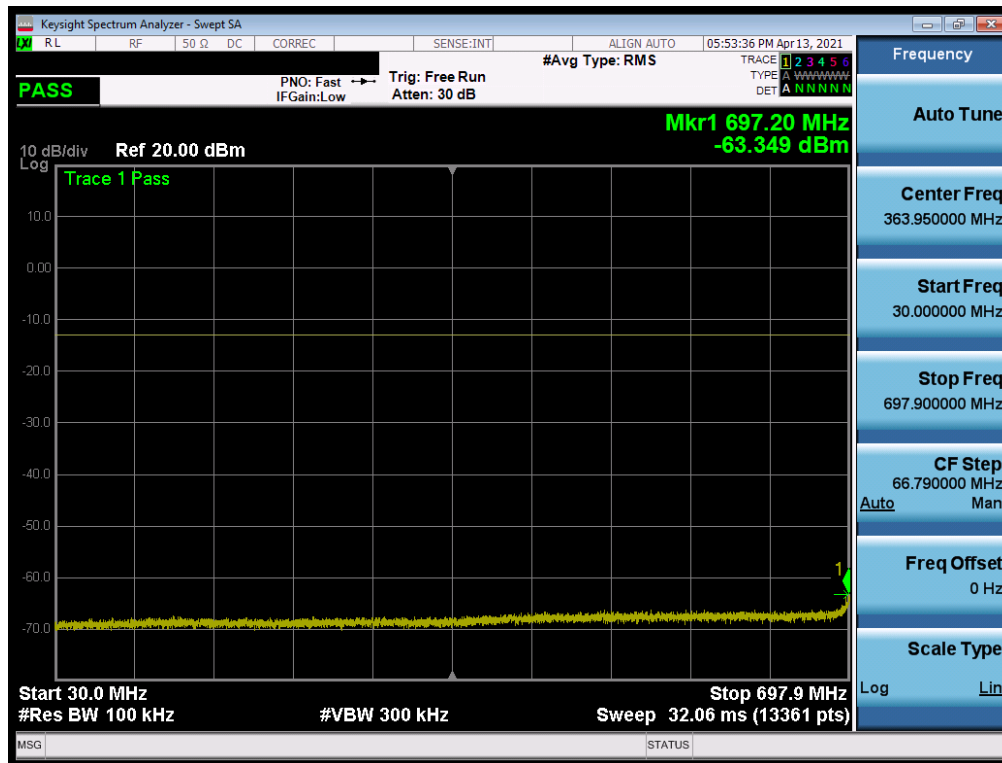
FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04-A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 68 of 254



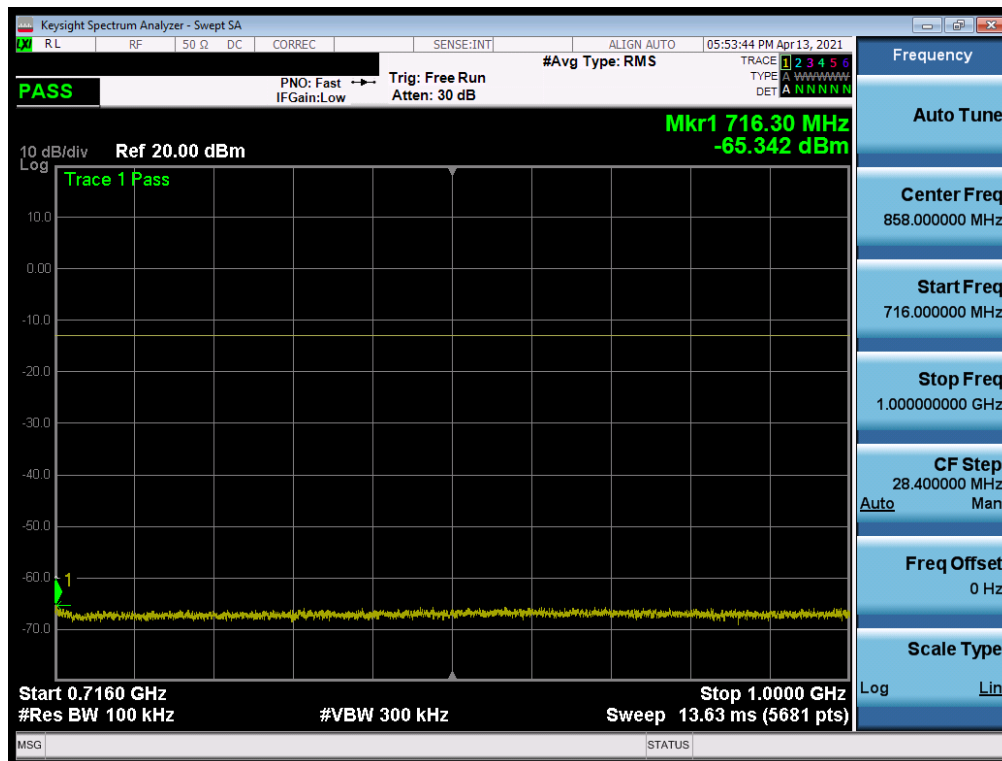
Plot 7-99. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 69 of 254

## LTE Band 12



Plot 7-100. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

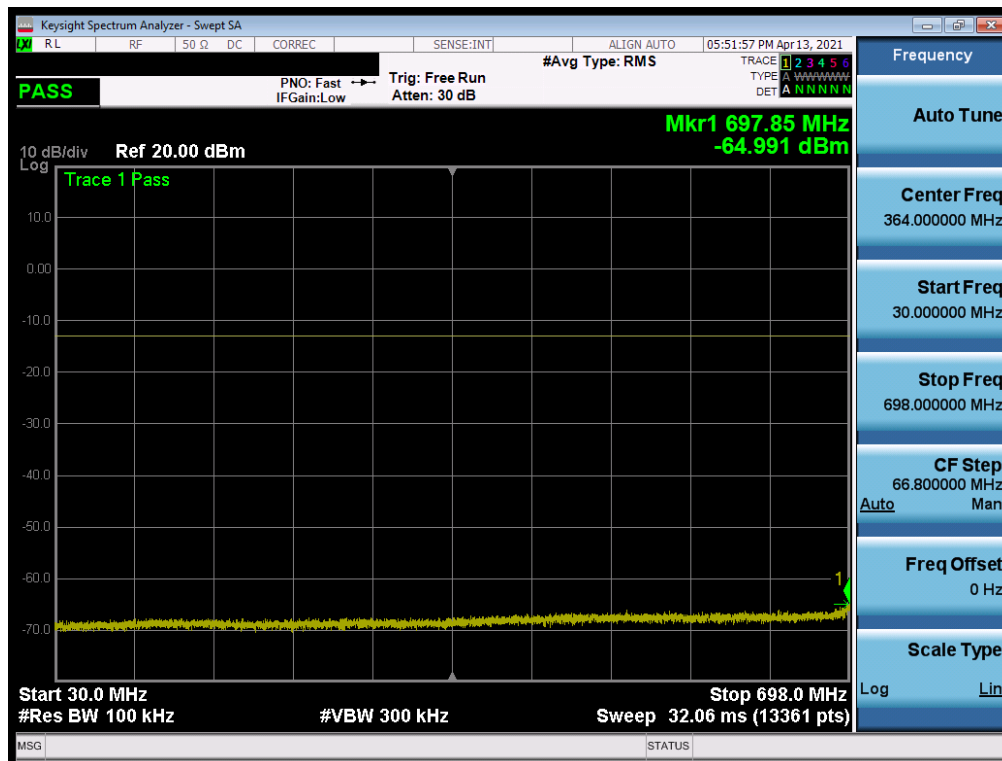


Plot 7-101. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 70 of 254

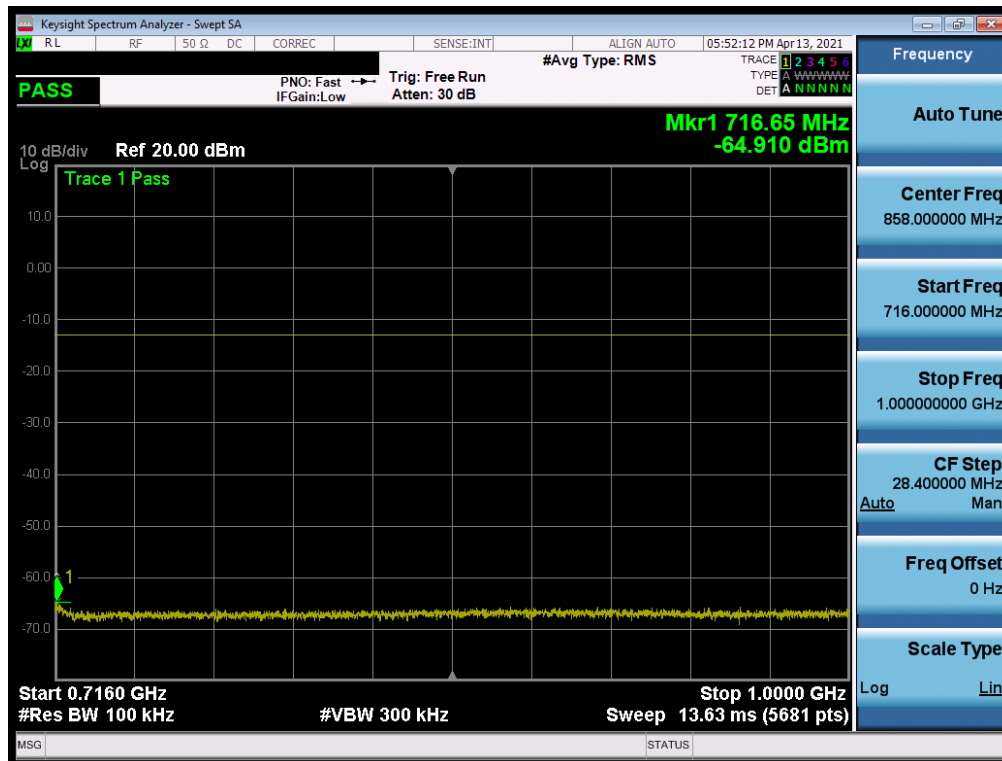


Plot 7-102. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)



Plot 7-103. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04-A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 71 of 254

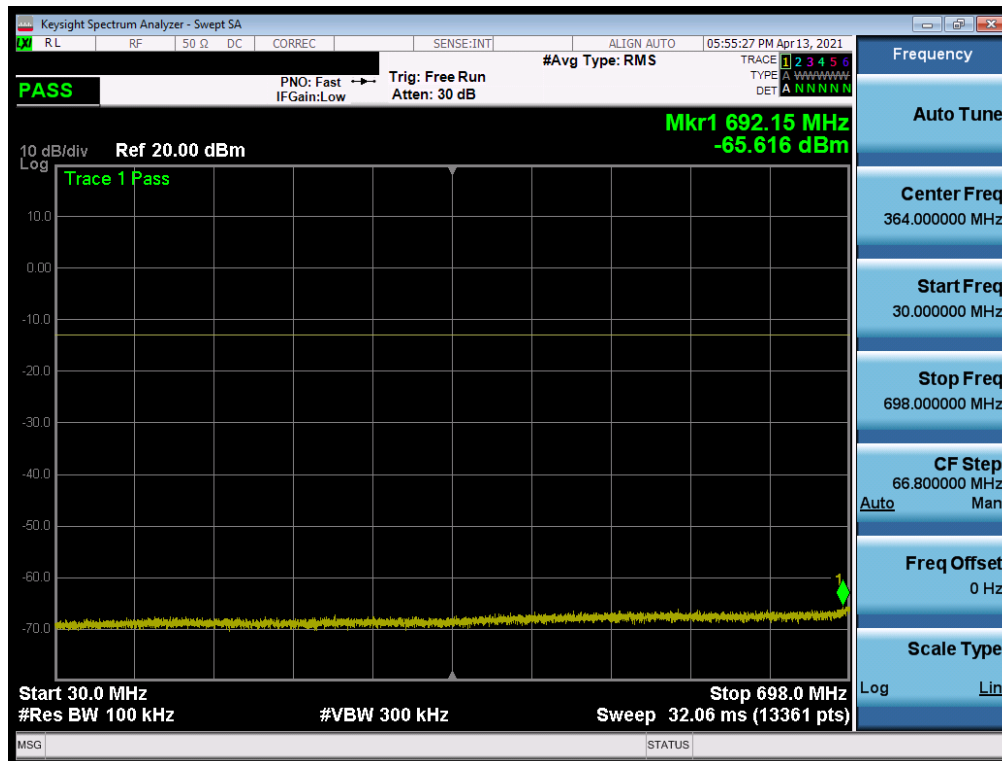


Plot 7-104. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

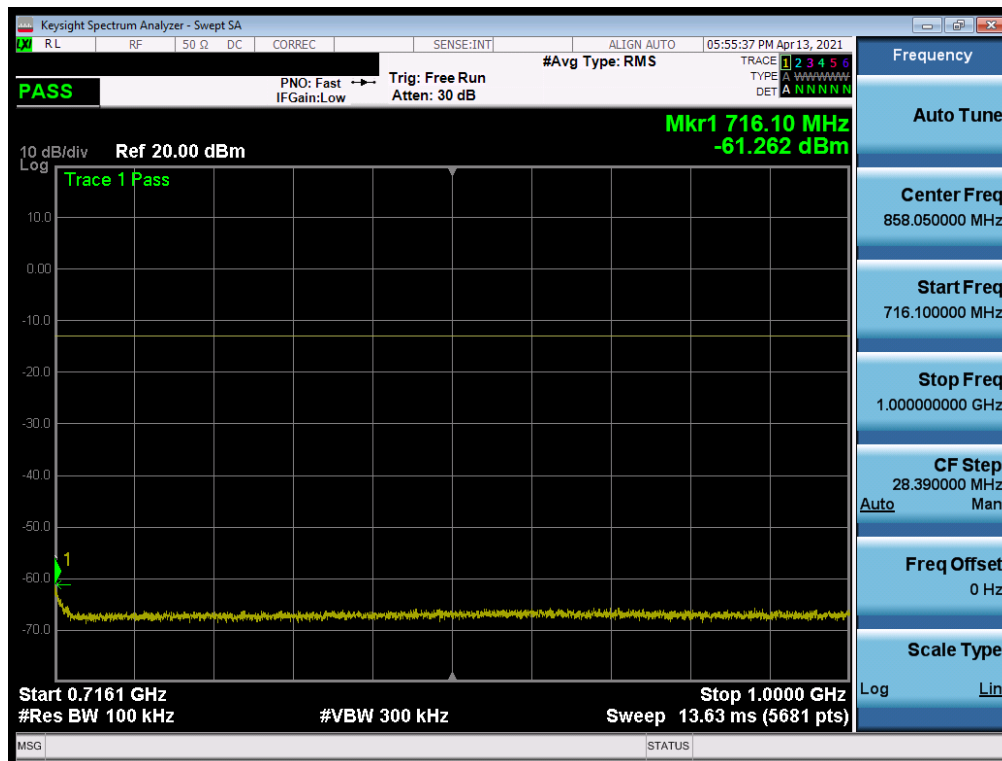


Plot 7-105. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 72 of 254

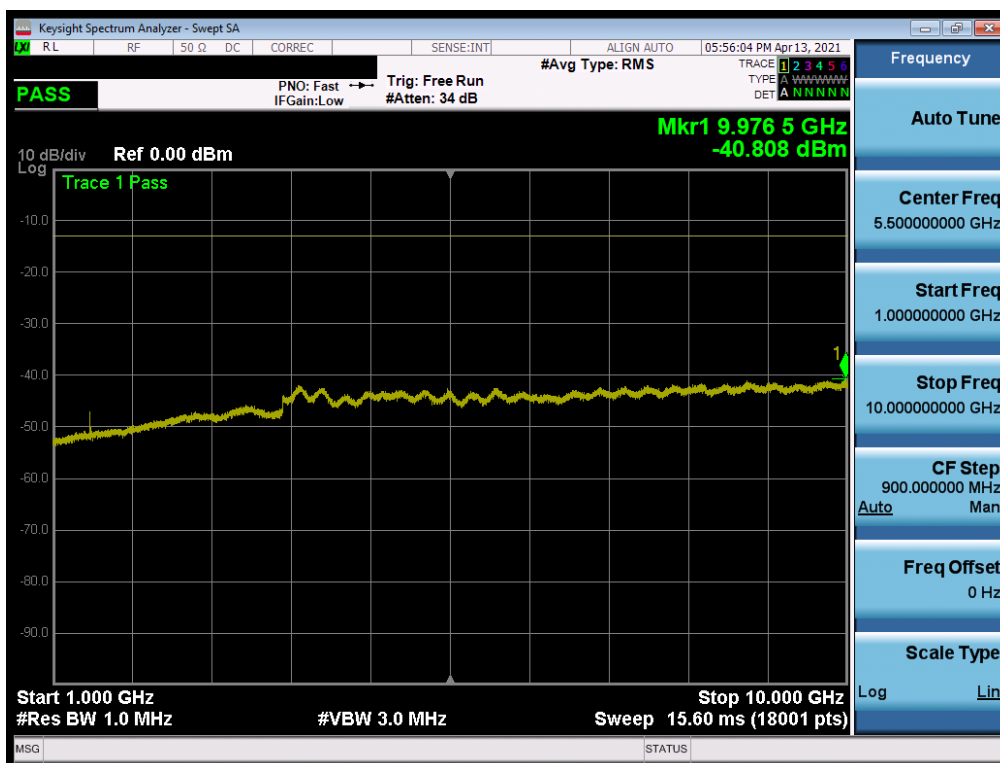


Plot 7-106. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - RB Size 1, RB Offset 0 - High Channel)





Plot 7-107. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

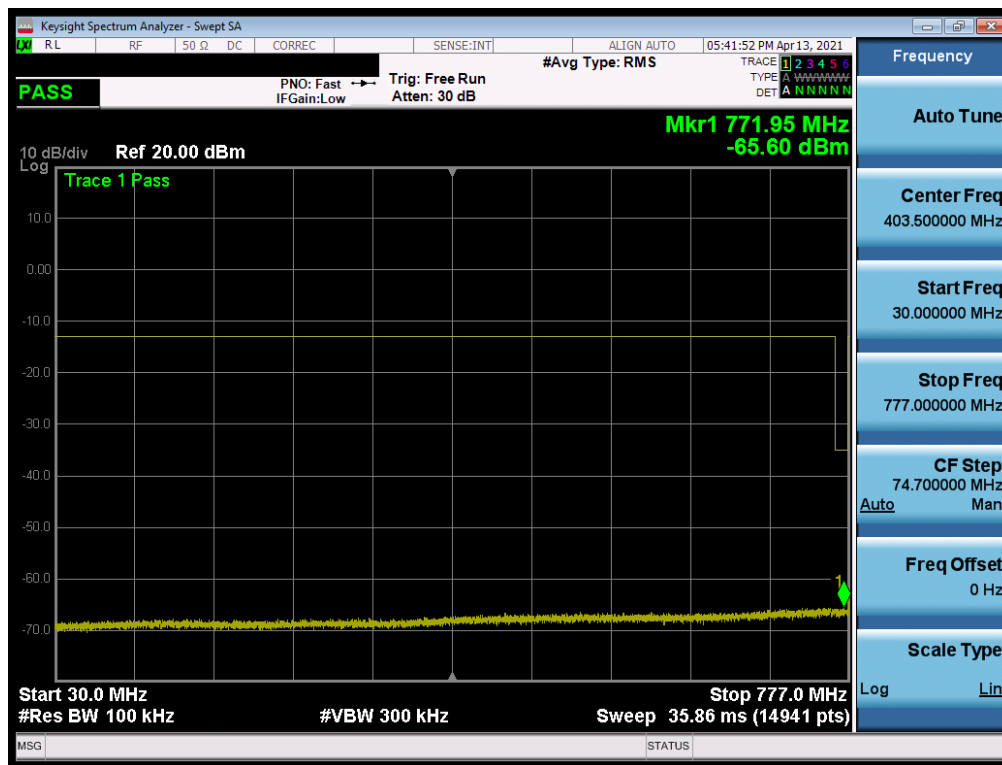
FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04-A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 73 of 254



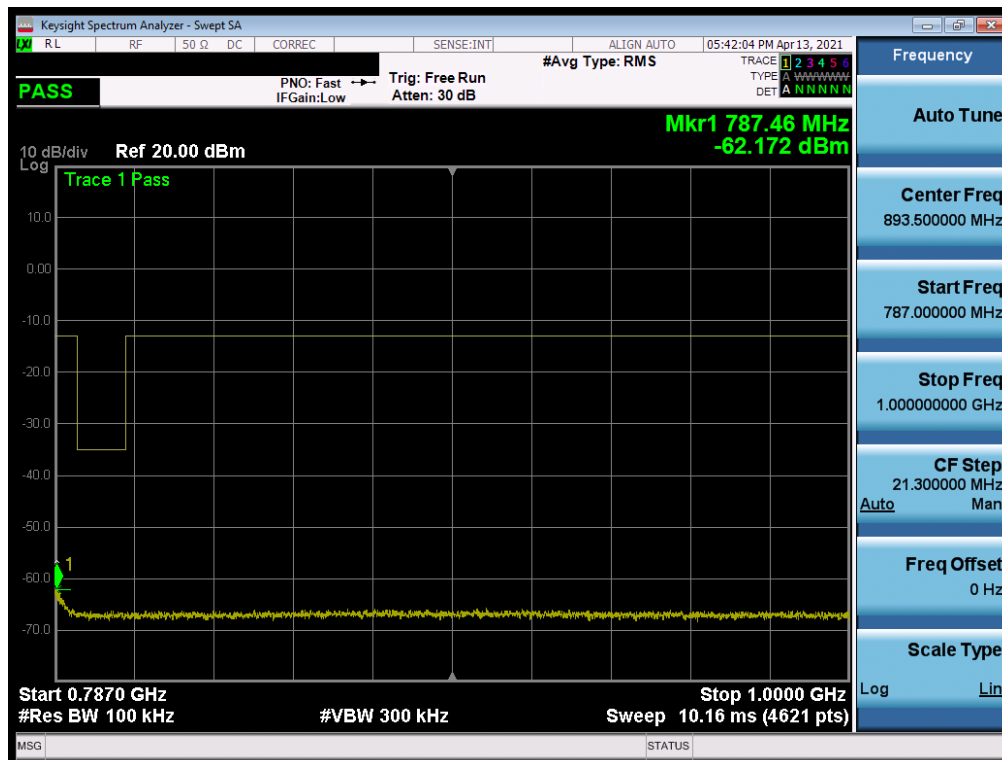
**Plot 7-108. Conducted Spurious Plot (LTE Band 12 - 10MHz QPSK - RB Size 1, RB Offset 0 - High Channel)**

FCC ID: A3LSMF711U	 <b>PART 27 MEASUREMENT REPORT</b> 		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2104070032-04.A3L	<b>Test Dates:</b> 04/12/2021 – 06/04/2021	<b>EUT Type:</b> Portable Handset	Page 74 of 254

## LTE Band 13



Plot 7-109. Conducted Spurious Plot (LTE Band 13 - 10MHz QPSK - RB Size 1, RB Offset 0)



Plot 7-110. Conducted Spurious Plot (LTE Band 13 - 10MHz QPSK - RB Size 1, RB Offset 0)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 75 of 254

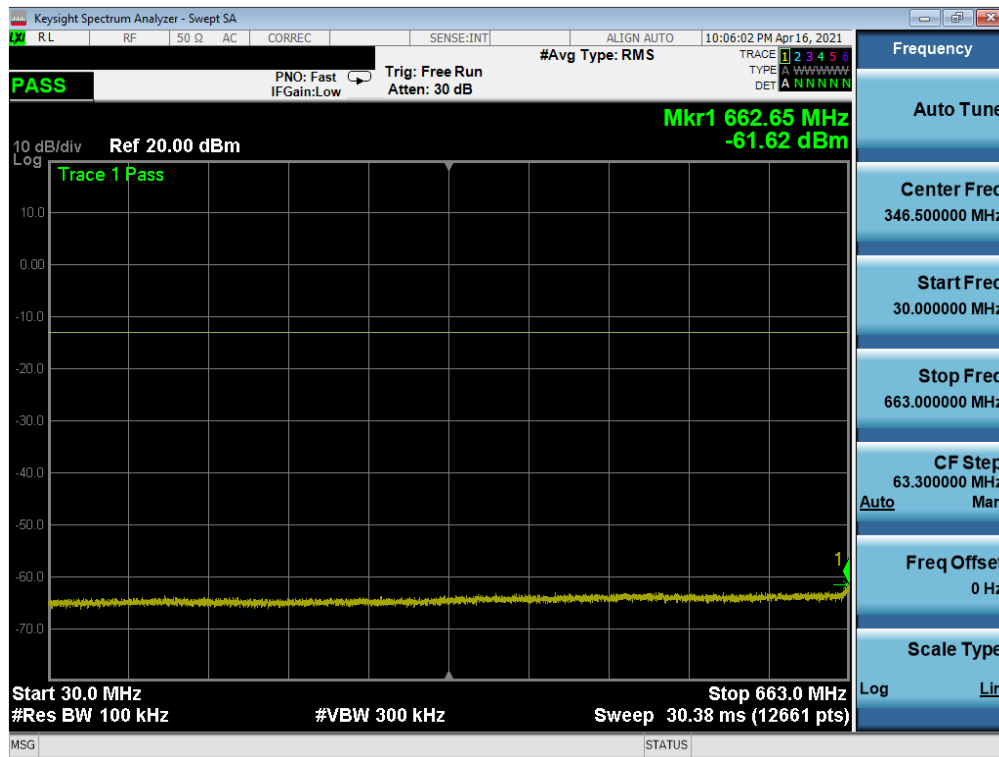




Plot 7-111. Conducted Spurious Plot (LTE Band 13 - 10MHz QPSK - RB Size 1, RB Offset 0)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 76 of 254

## NR Band n71

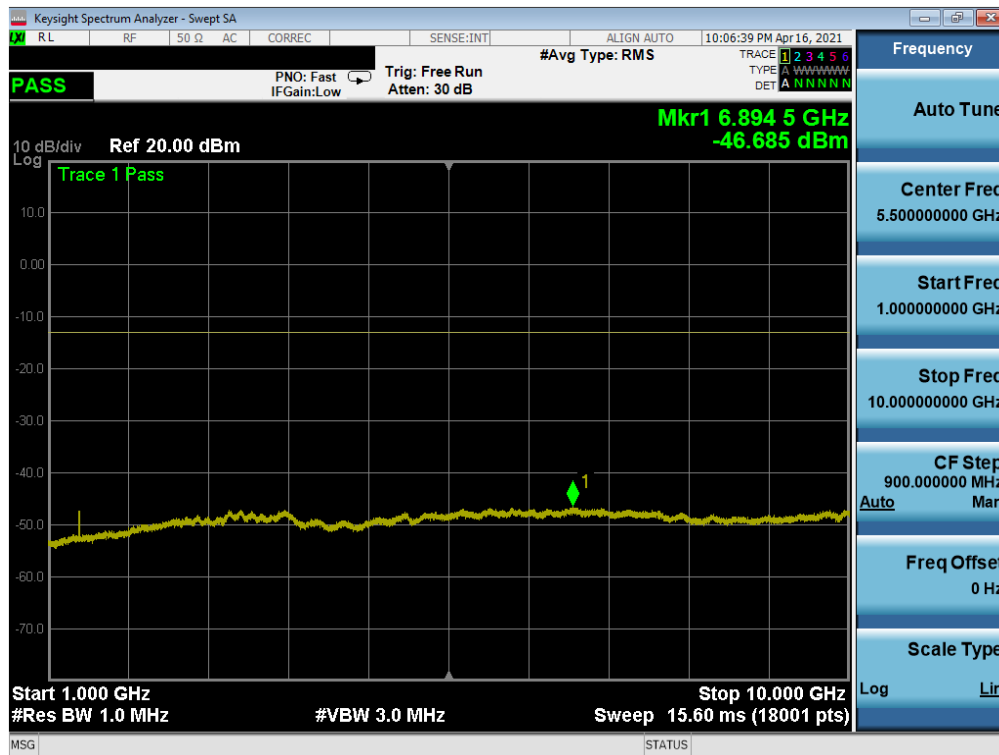


Plot 7-112. Conducted Spurious Plot (NR Band n71 - 20.0MHz - RB Size 1, RB Offset 0 - Low Channel)

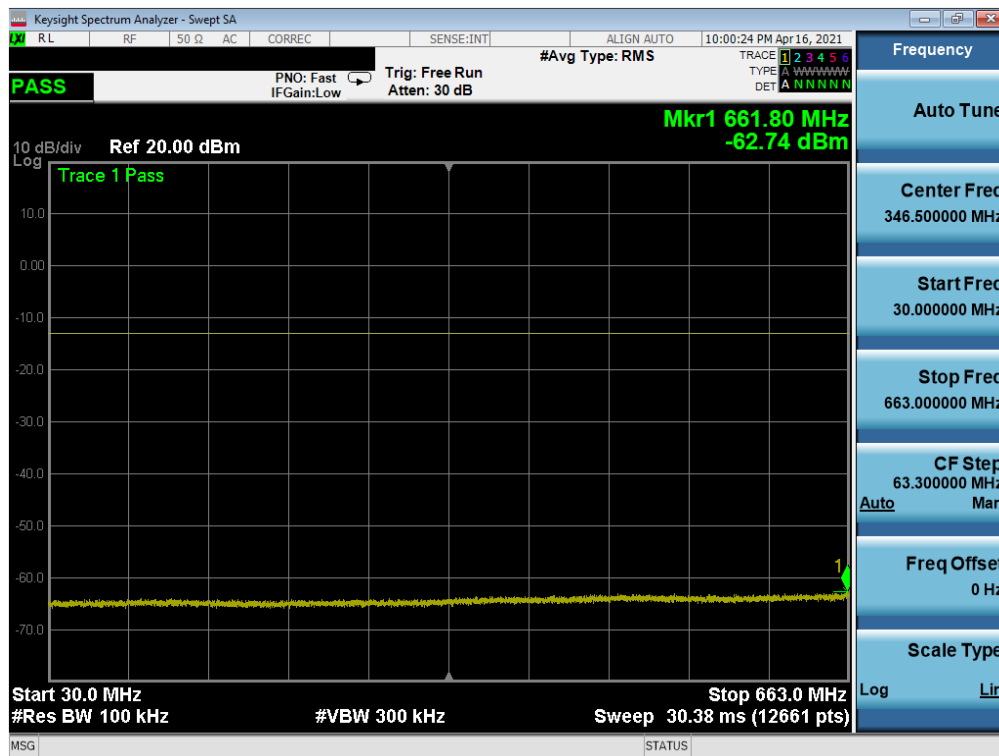


Plot 7-113. Conducted Spurious Plot (NR Band n71 - 20.0MHz - RB Size 1, RB Offset 0 - Low Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 77 of 254

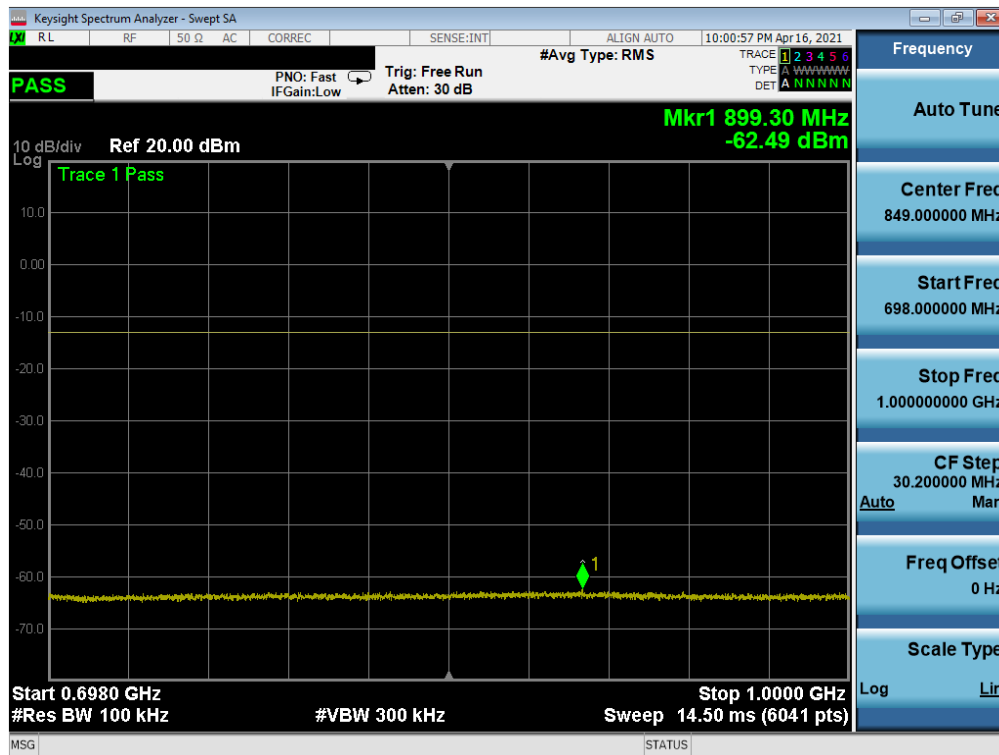


Plot 7-114. Conducted Spurious Plot (NR Band n71 - 20.0MHz - RB Size 1, RB Offset 0 - Low Channel)

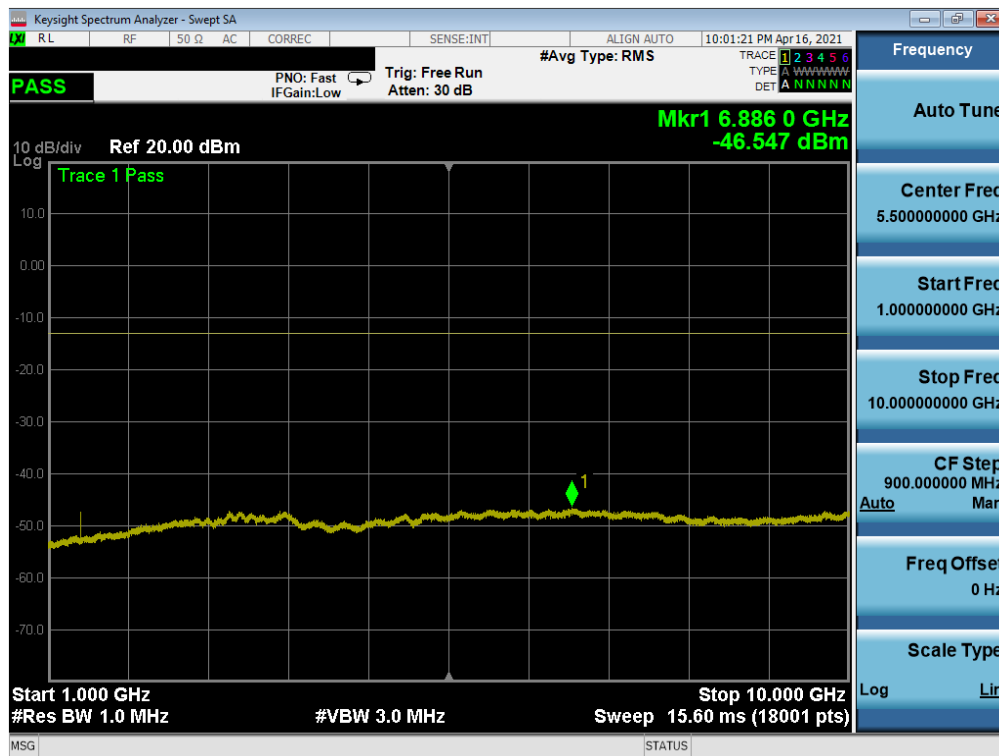


Plot 7-115. Conducted Spurious Plot (NR Band n71 - 20.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 78 of 254

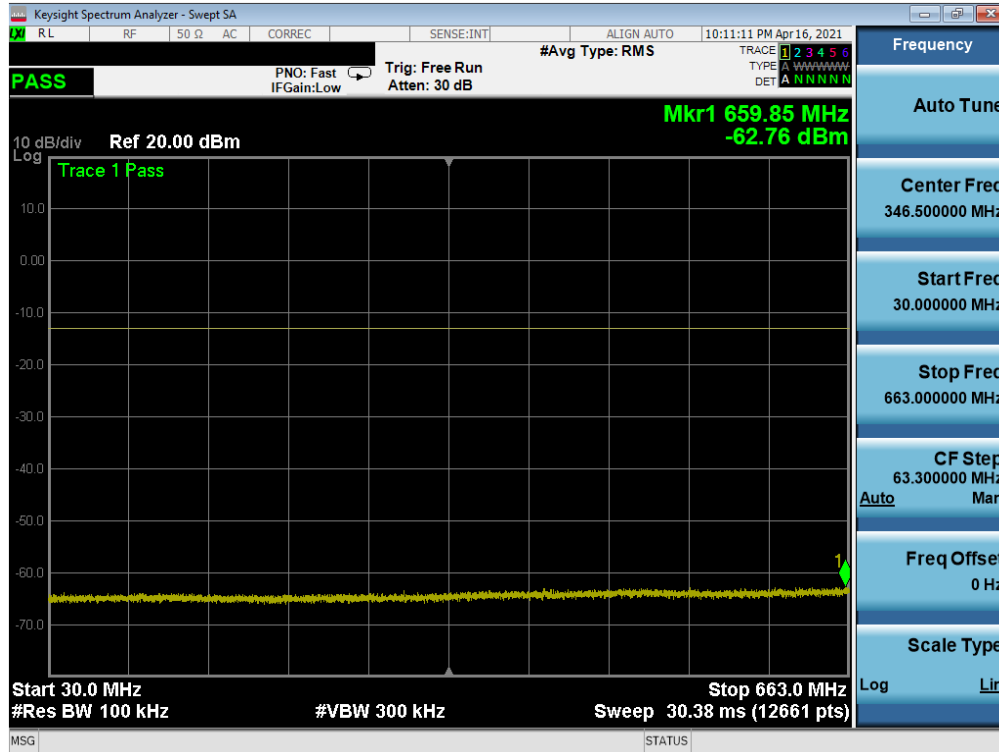


Plot 7-116. Conducted Spurious Plot (NR Band n71 - 20.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

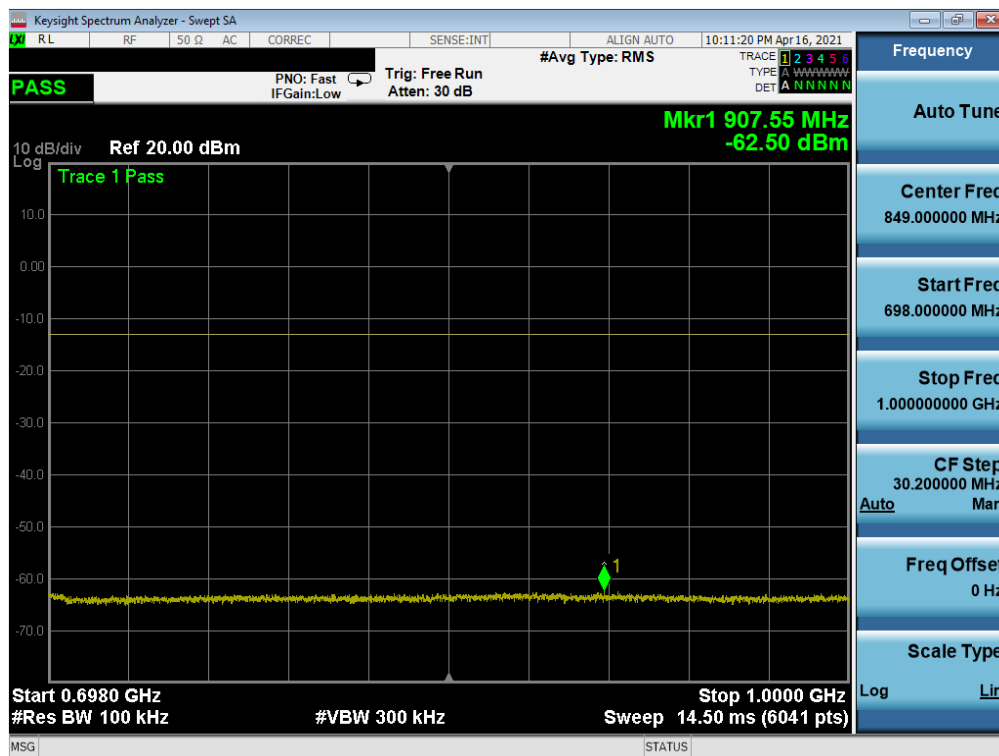


Plot 7-117. Conducted Spurious Plot (NR Band n71 - 20.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 79 of 254

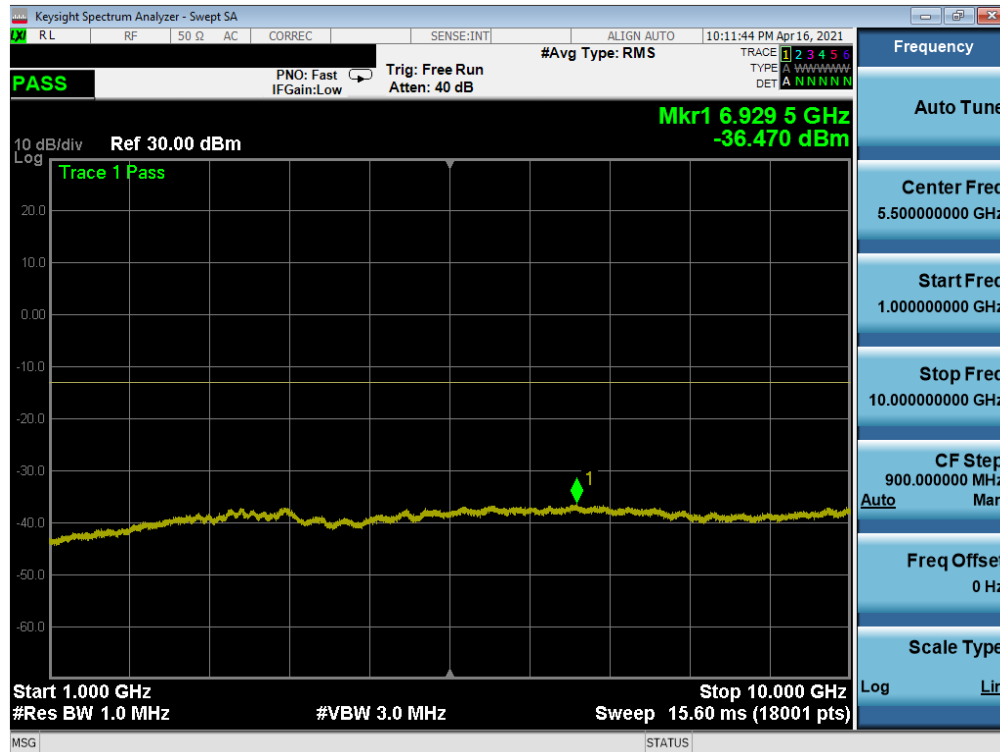


Plot 7-118. Conducted Spurious Plot (NR Band n71 - 20.0MHz - RB Size 1, RB Offset 0 - High Channel)



Plot 7-119. Conducted Spurious Plot (NR Band n71 - 20.0MHz - RB Size 1, RB Offset 0 - High Channel)

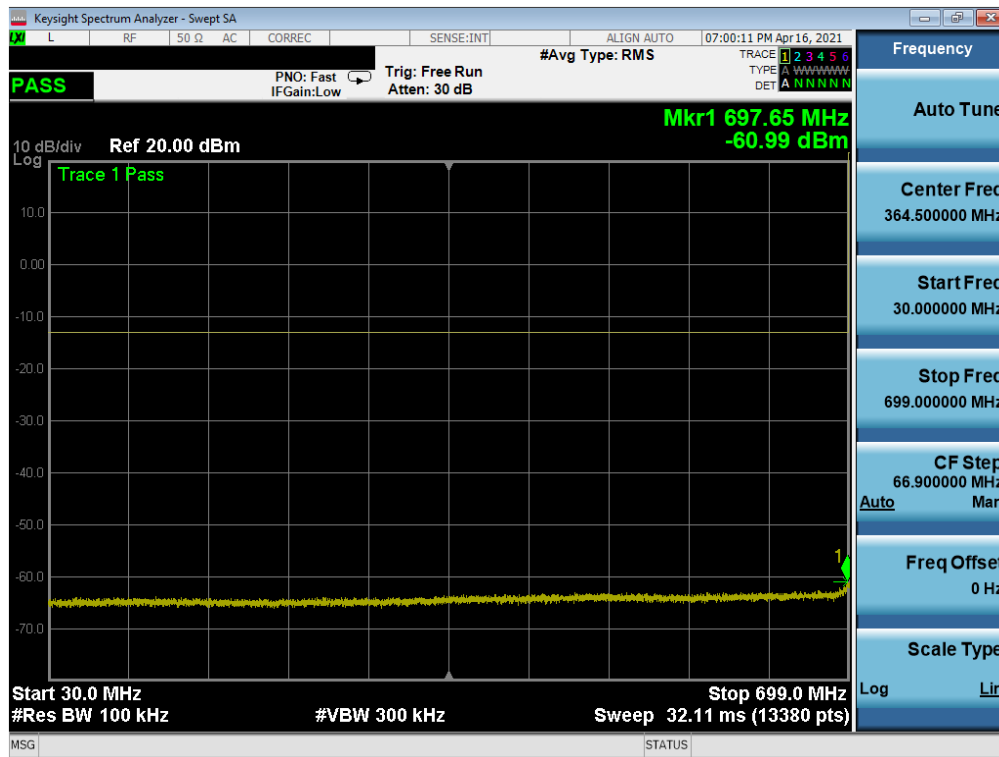
FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 80 of 254



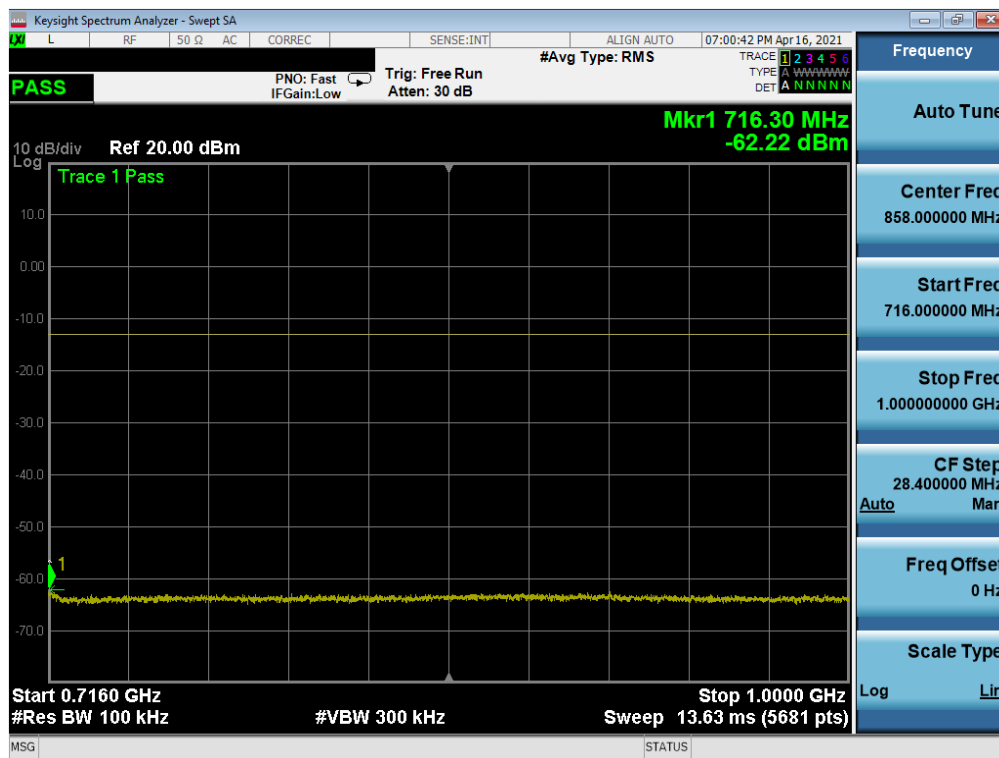
**Plot 7-120. Conducted Spurious Plot (NR Band n71 - 20.0MHz - RB Size 1, RB Offset 0 - High Channel)**

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 81 of 254

## NR Band n12

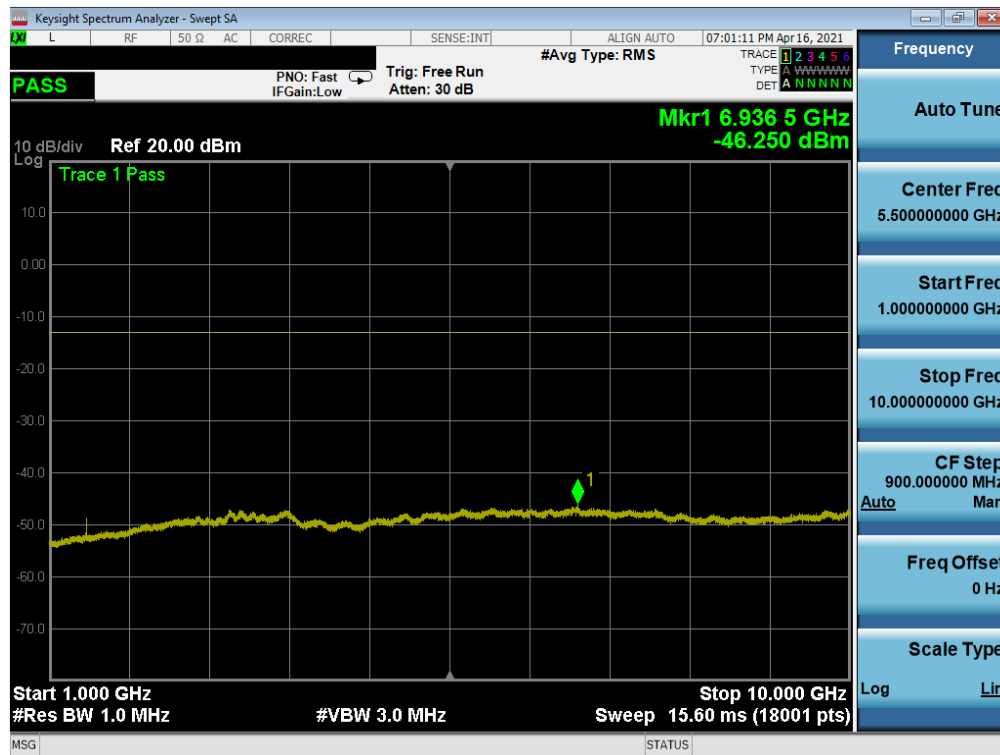


Plot 7-121. Conducted Spurious Plot (NR Band n12 -15.0MHz - RB Size 1, RB Offset 0 - Low Channel)

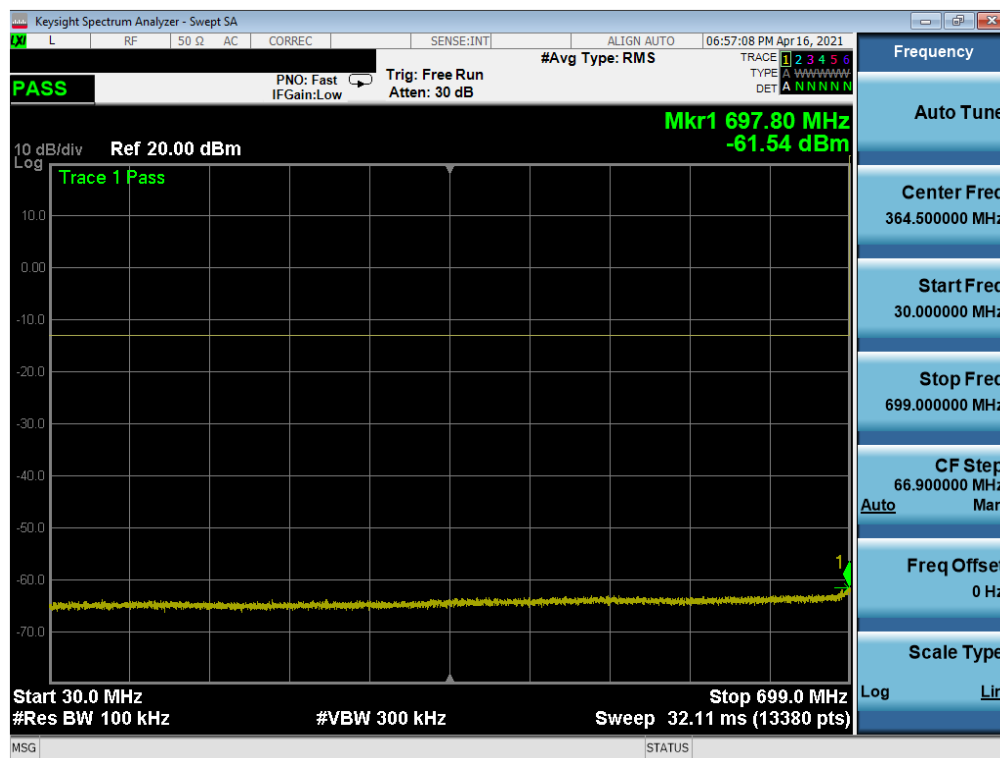


Plot 7-122. Conducted Spurious Plot (NR Band n12 - 15.0MHz - RB Size 1, RB Offset 0 - Low Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 82 of 254



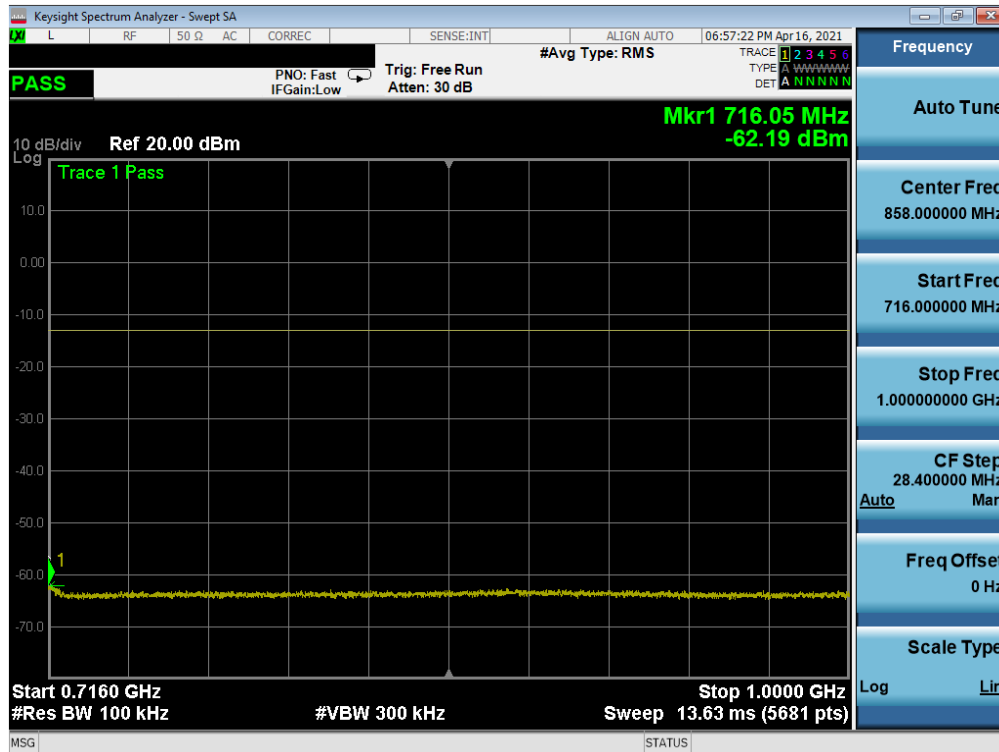
Plot 7-123. Conducted Spurious Plot (NR Band n12 - 15.0MHz - RB Size 1, RB Offset 0 - Low Channel)



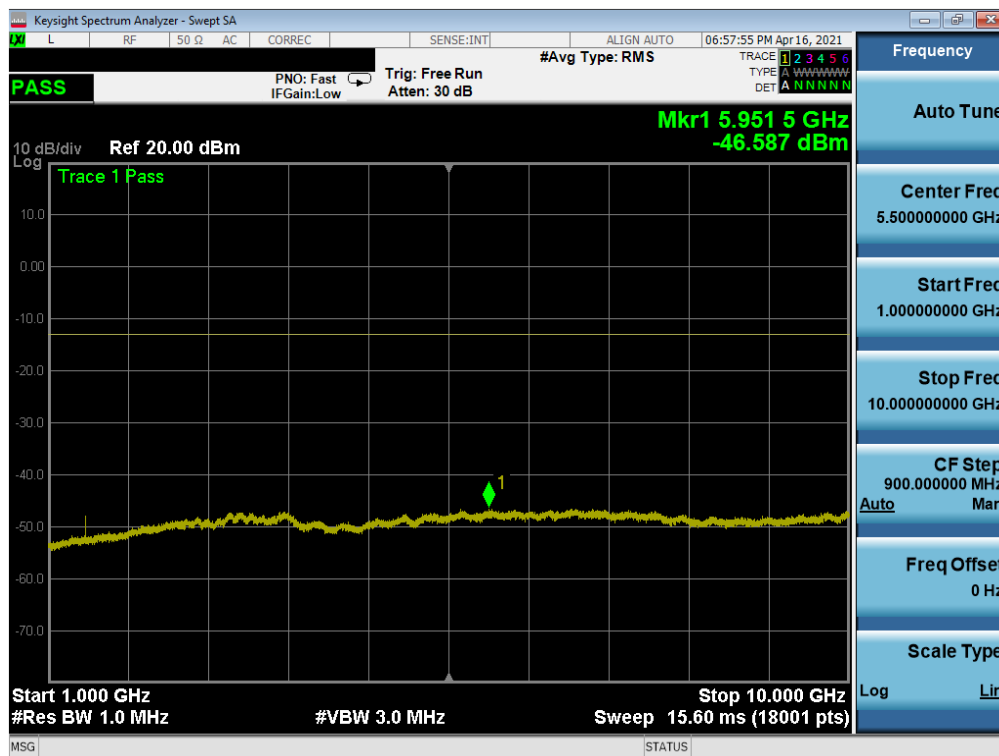
Plot 7-124. Conducted Spurious Plot (NR Band n12 - 15.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 83 of 254



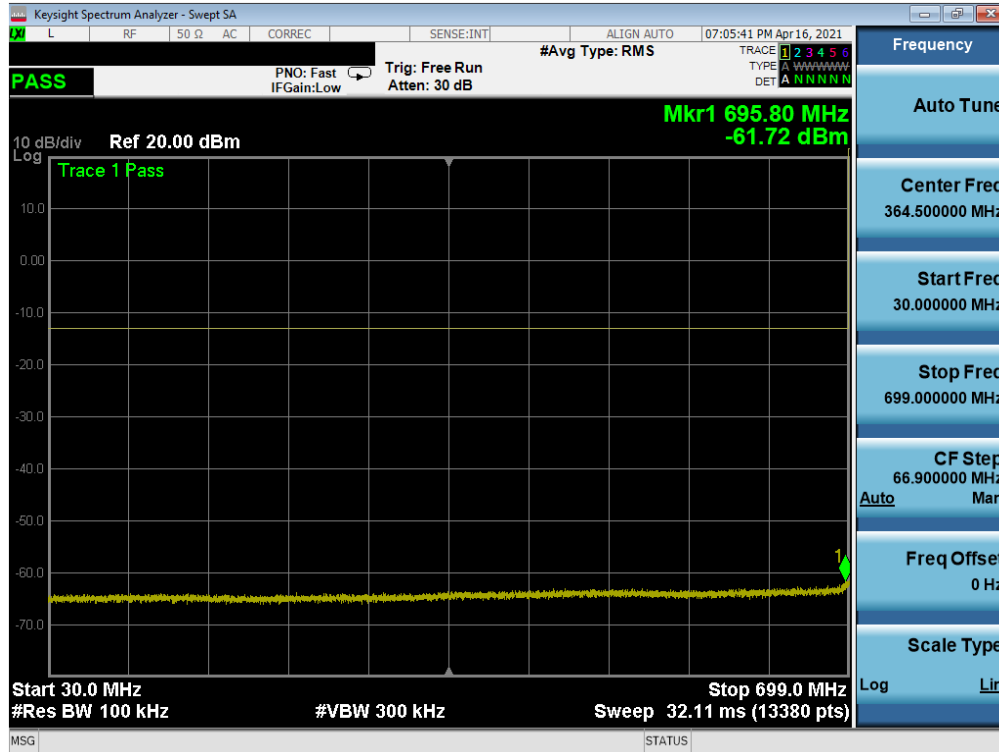


Plot 7-125. Conducted Spurious Plot (NR Band n12 - 15.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

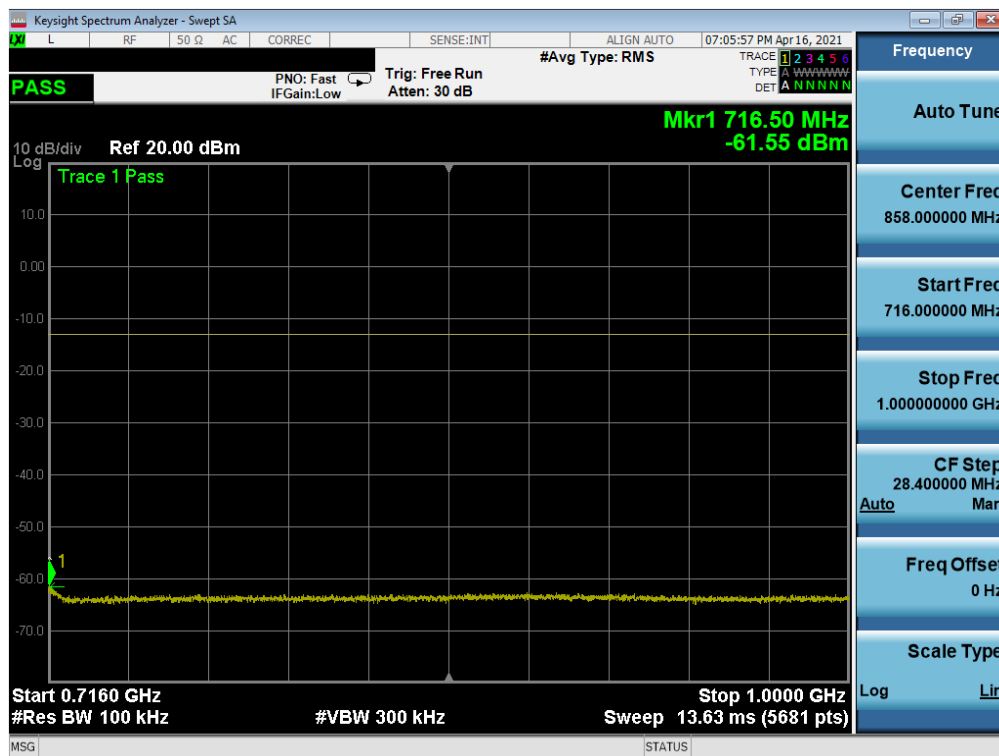


Plot 7-126. Conducted Spurious Plot (NR Band n12 - 15.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 84 of 254

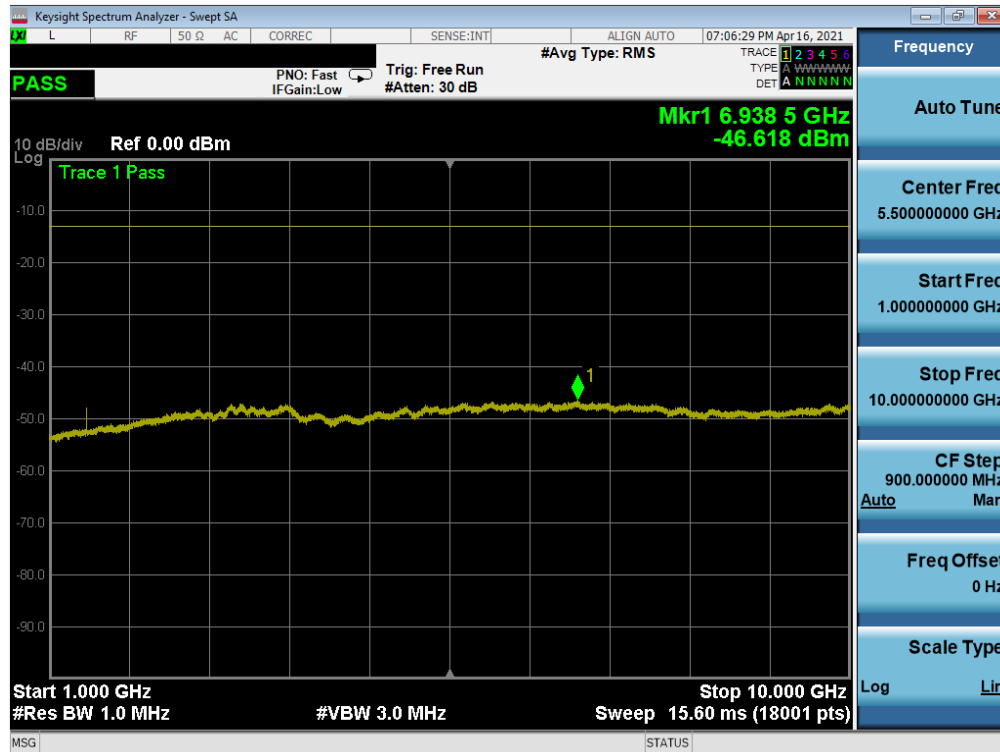


Plot 7-127. Conducted Spurious Plot (NR Band n12 - 15.0MHz - RB Size 1, RB Offset 0 - High Channel)



Plot 7-128. Conducted Spurious Plot (NR Band n12 - 15.0MHz - RB Size 1, RB Offset 0 - High Channel)

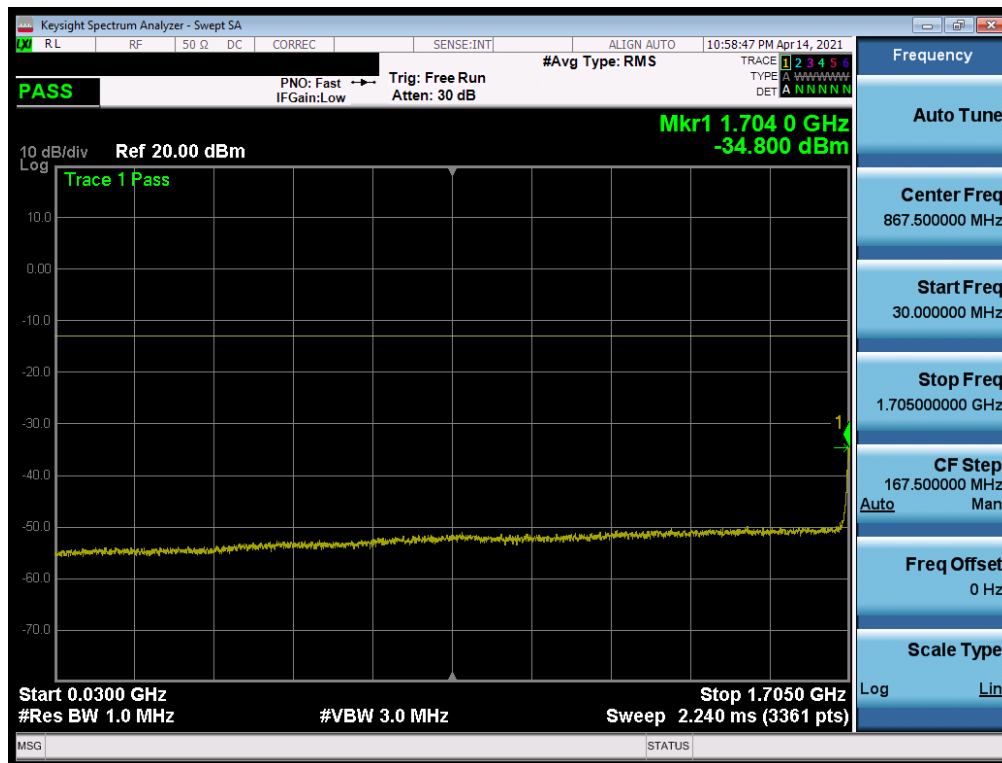
FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 85 of 254



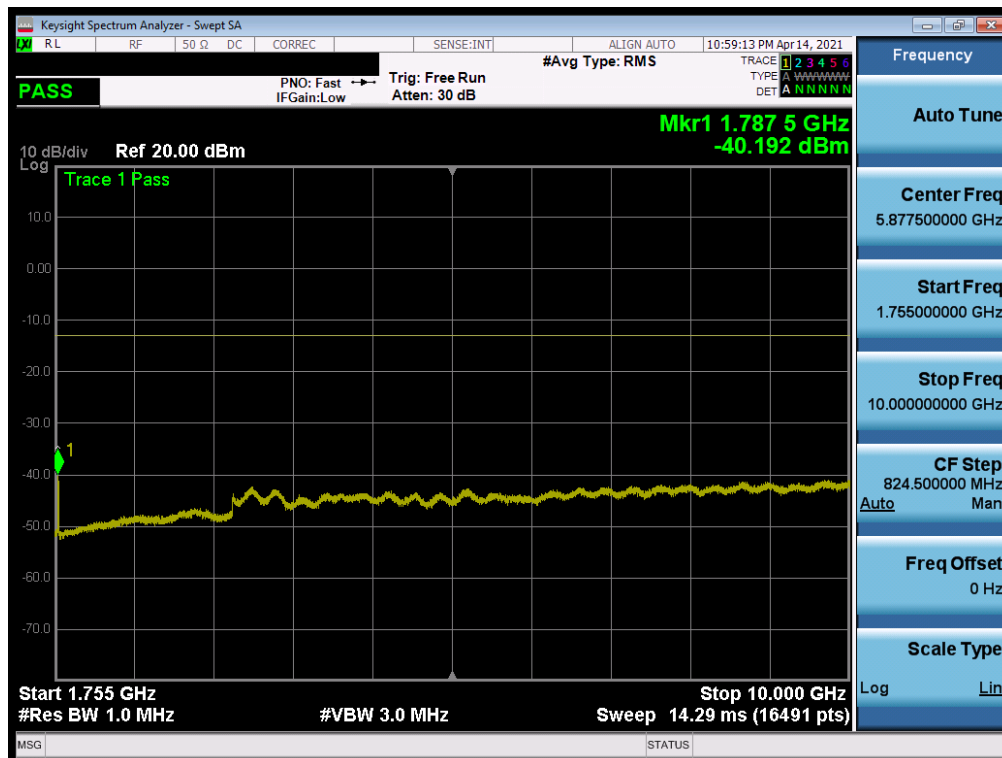
**Plot 7-129. Conducted Spurious Plot (NR Band n12 - 15.0MHz - RB Size 1, RB Offset 0 - High Channel)**

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 86 of 254

## WCDMA AWS

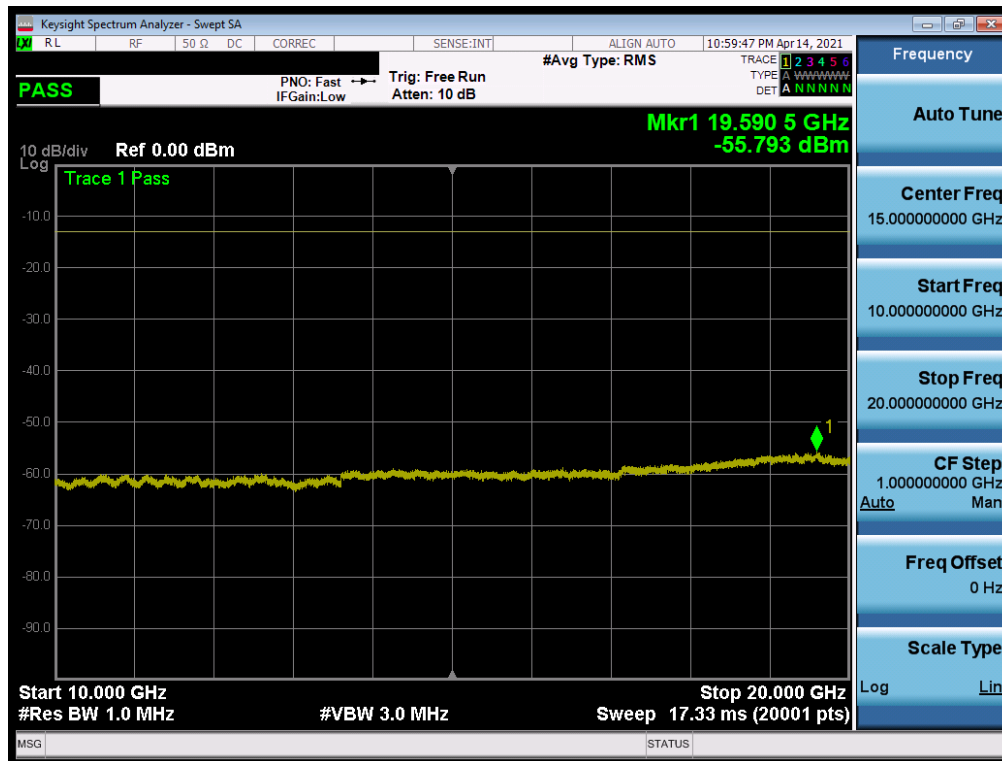


Plot 7-130. Conducted Spurious Plot (WCDMA Ch. 1312- Low Channel)

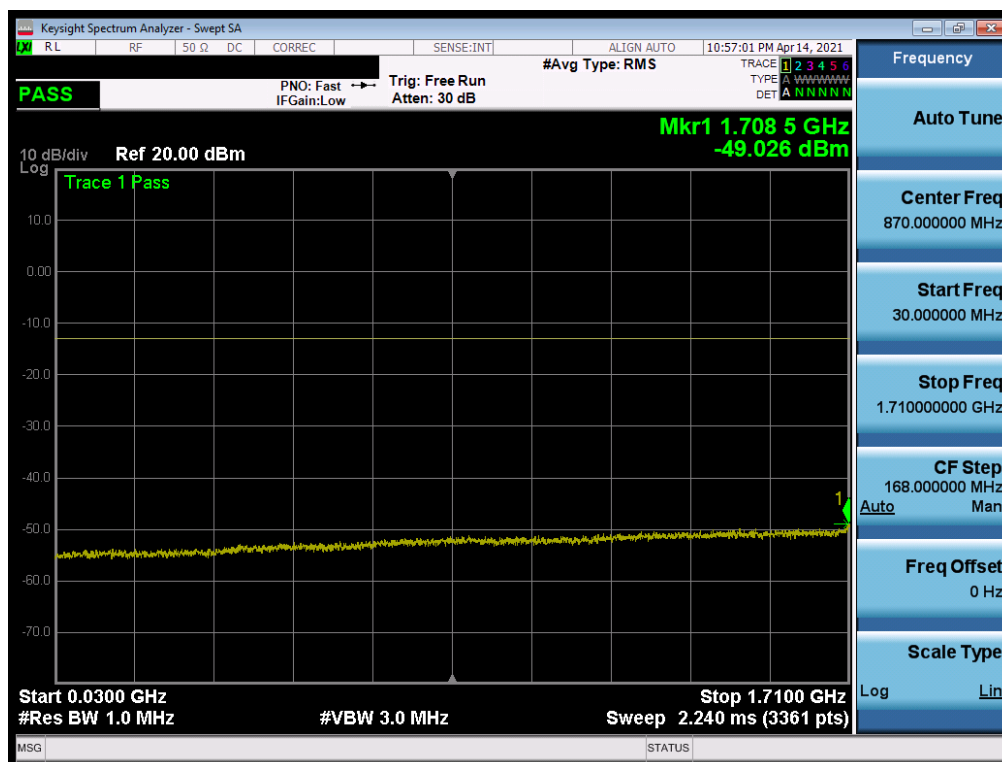


Plot 7-131. Conducted Spurious Plot (WCDMA Ch. 1312- Low Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04-A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 87 of 254

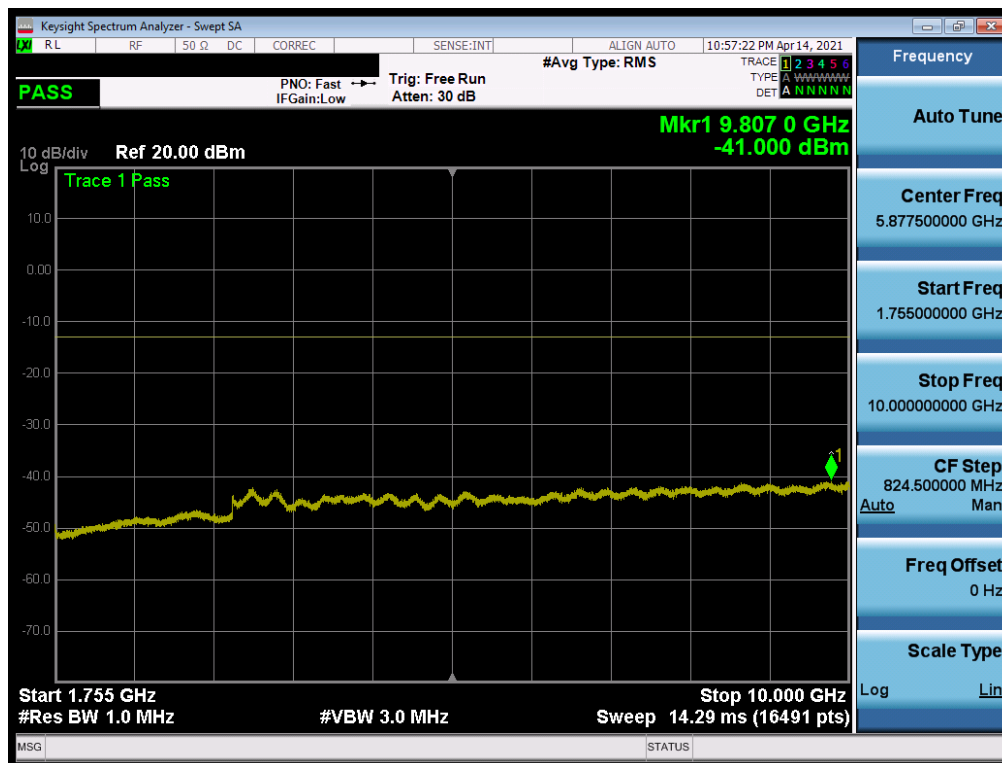


Plot 7-132. Conducted Spurious Plot (WCDMA Ch. 1312- Low Channel)

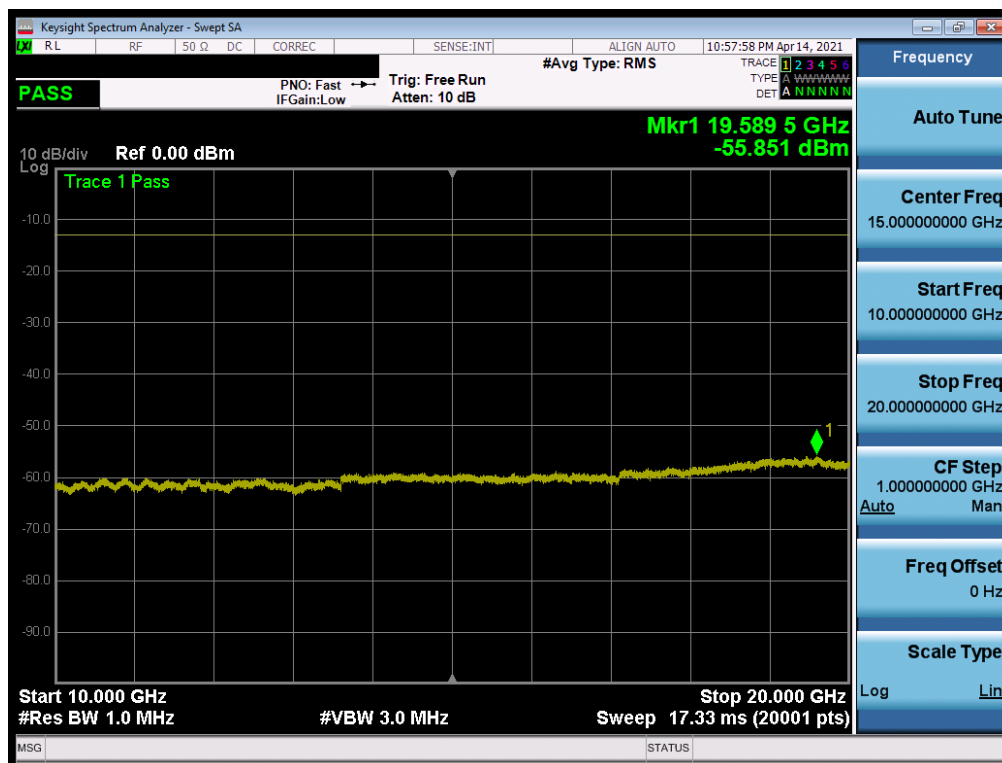


Plot 7-133. Conducted Spurious Plot (WCDMA Ch. 1413- Mid Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 88 of 254

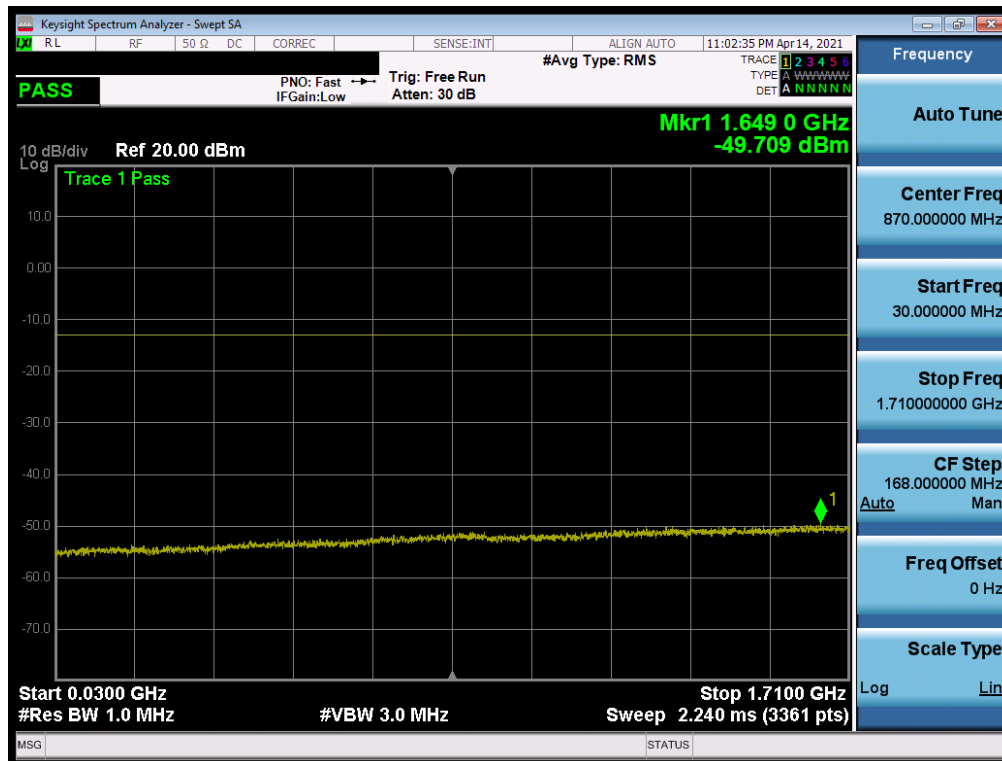


Plot 7-134. Conducted Spurious Plot (WCDMA Ch. 1413- Mid Channel)

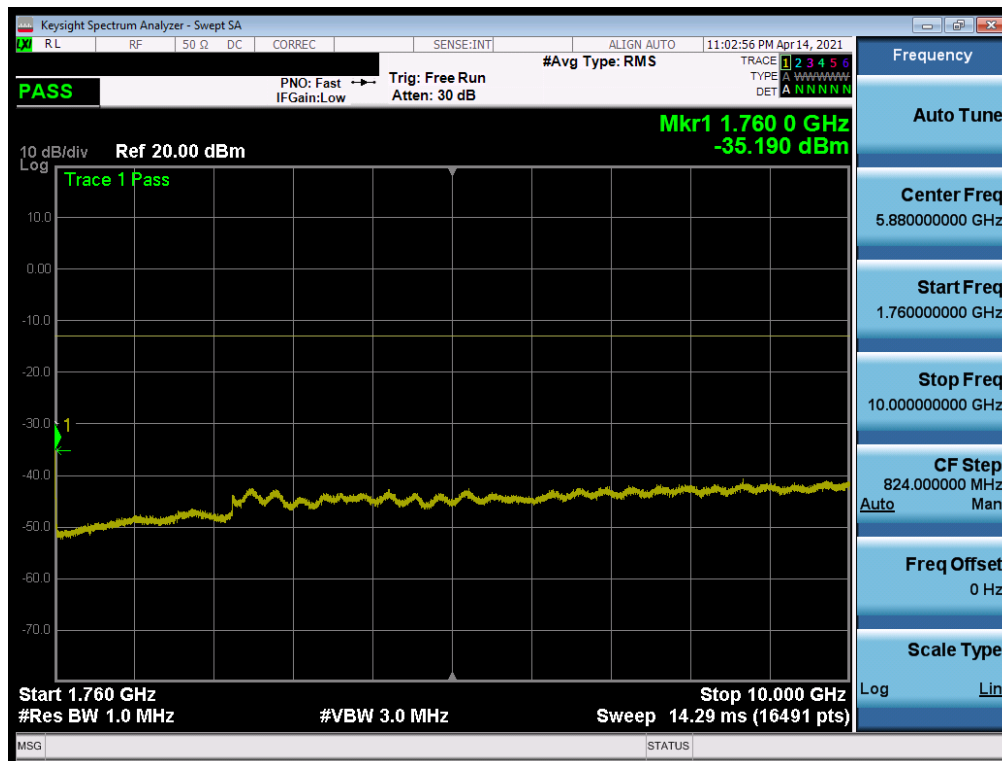


Plot 7-135. Conducted Spurious Plot (WCDMA Ch. 1413- Mid Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 89 of 254

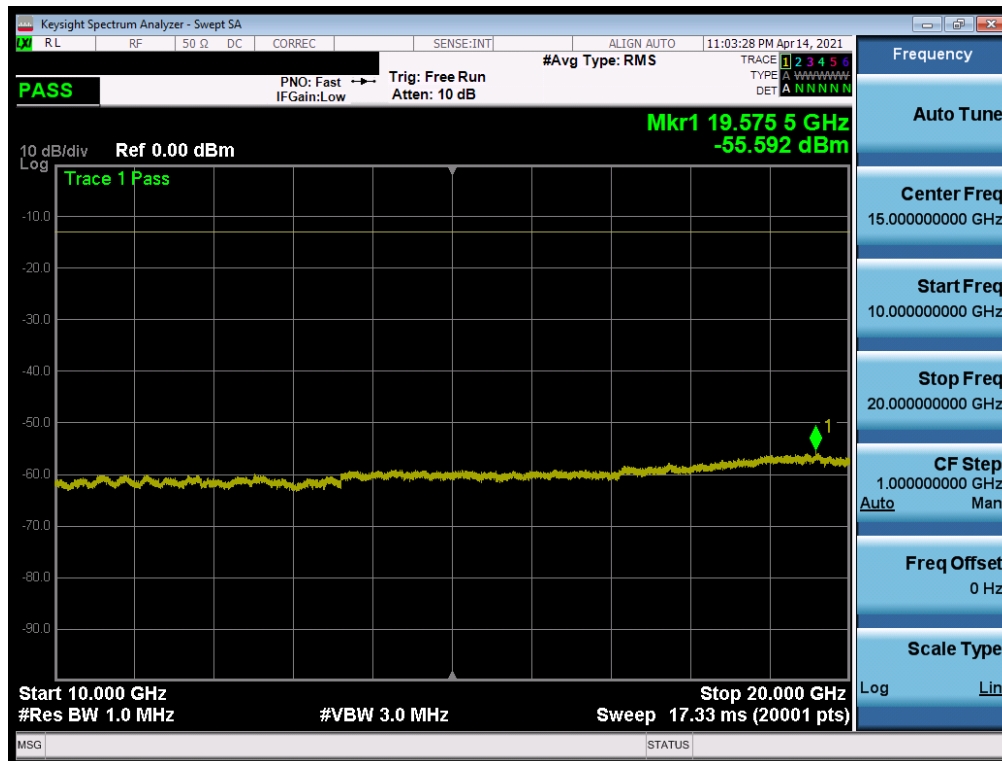


Plot 7-136. Conducted Spurious Plot (WCDMA Ch. 1513- High Channel)



Plot 7-137. Conducted Spurious Plot (WCDMA Ch. 1513- High Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 90 of 254

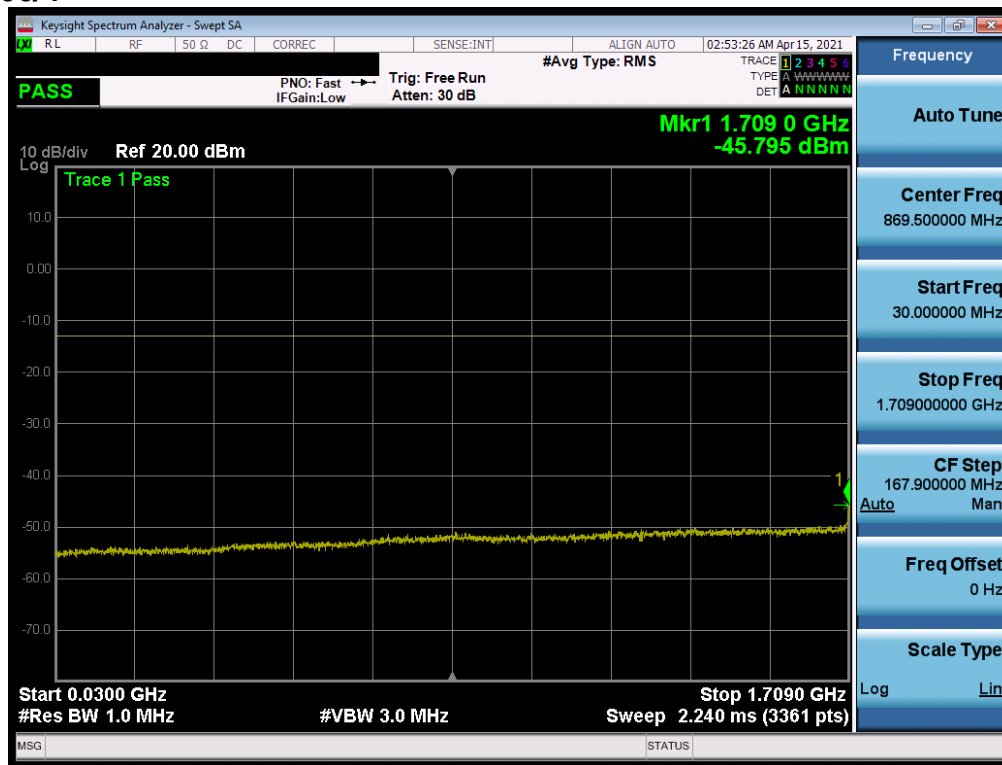


Plot 7-138. Conducted Spurious Plot (WCDMA Ch. 1513- High Channel)

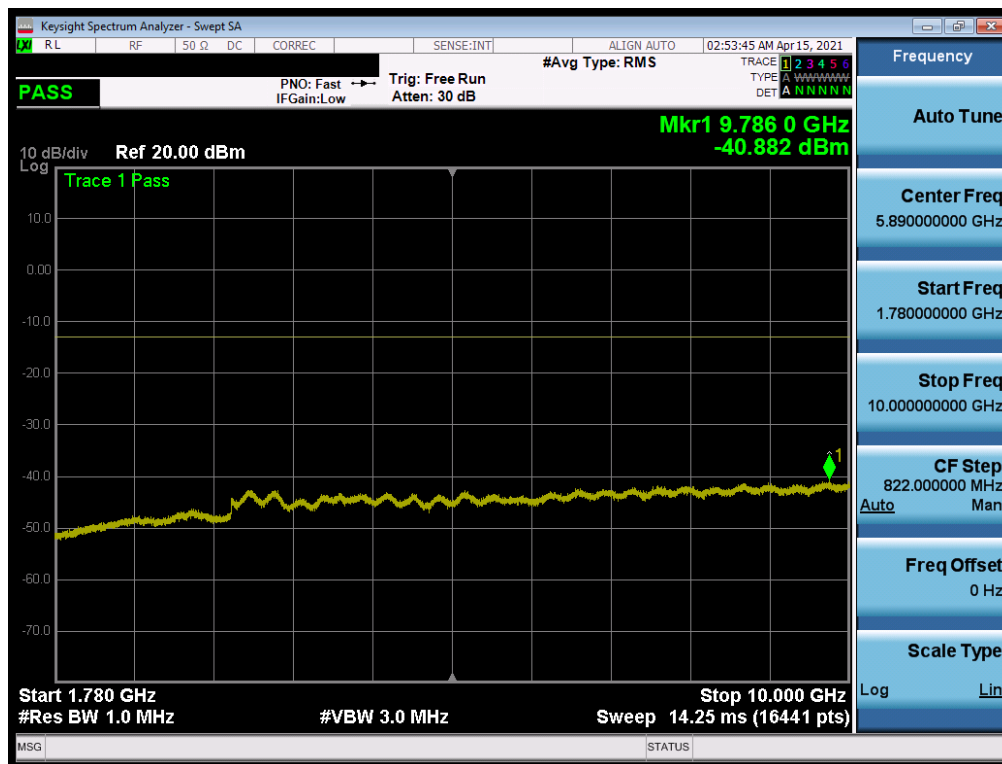
FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 91 of 254



## LTE Band 66/4

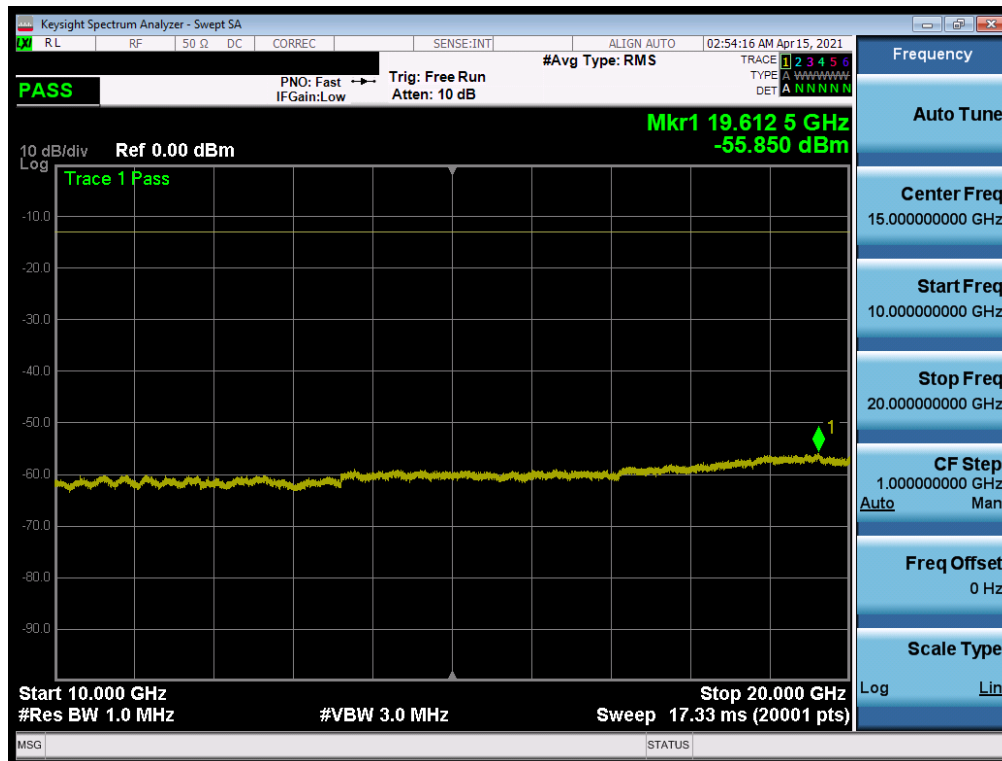


Plot 7-139. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

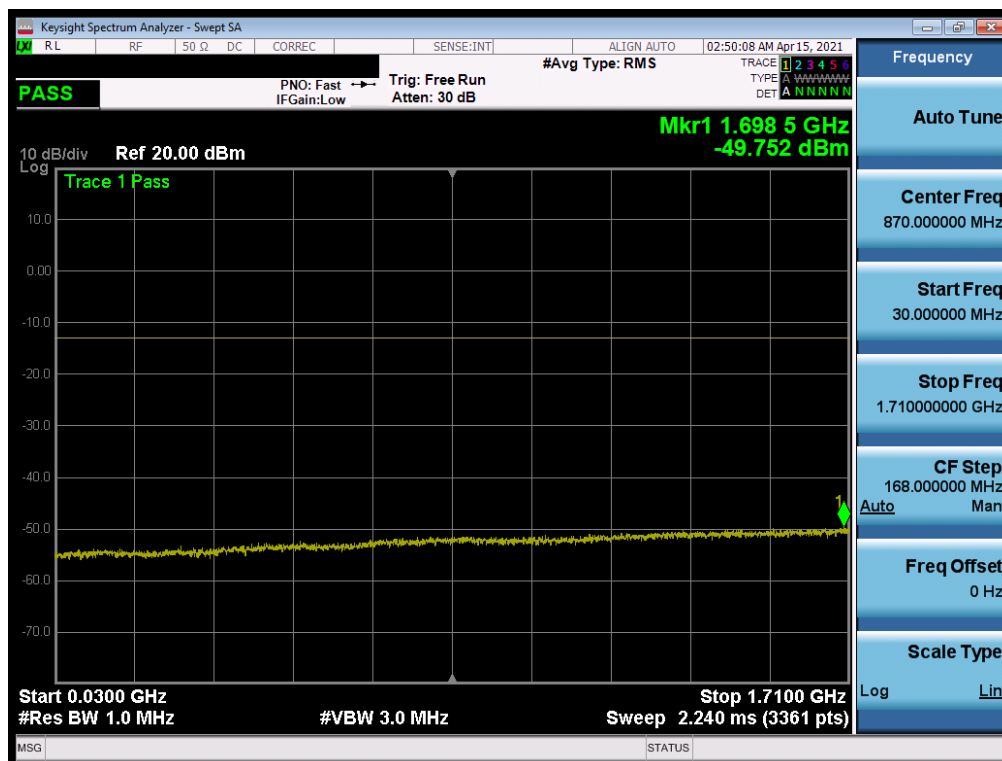


Plot 7-140. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 92 of 254

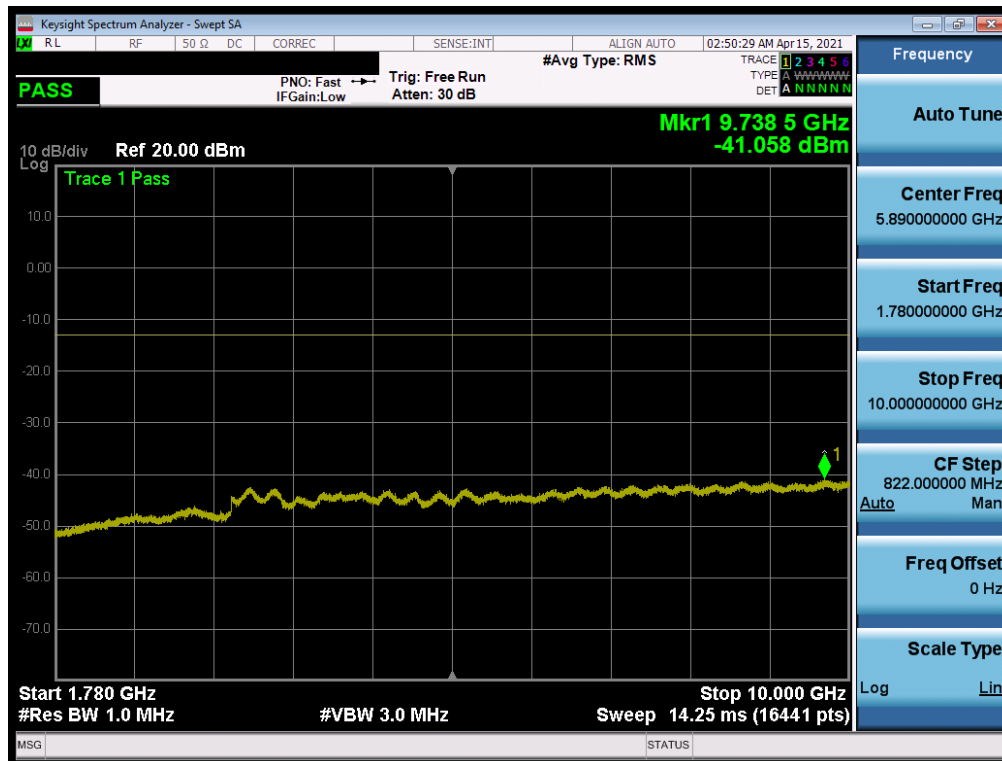


Plot 7-141. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

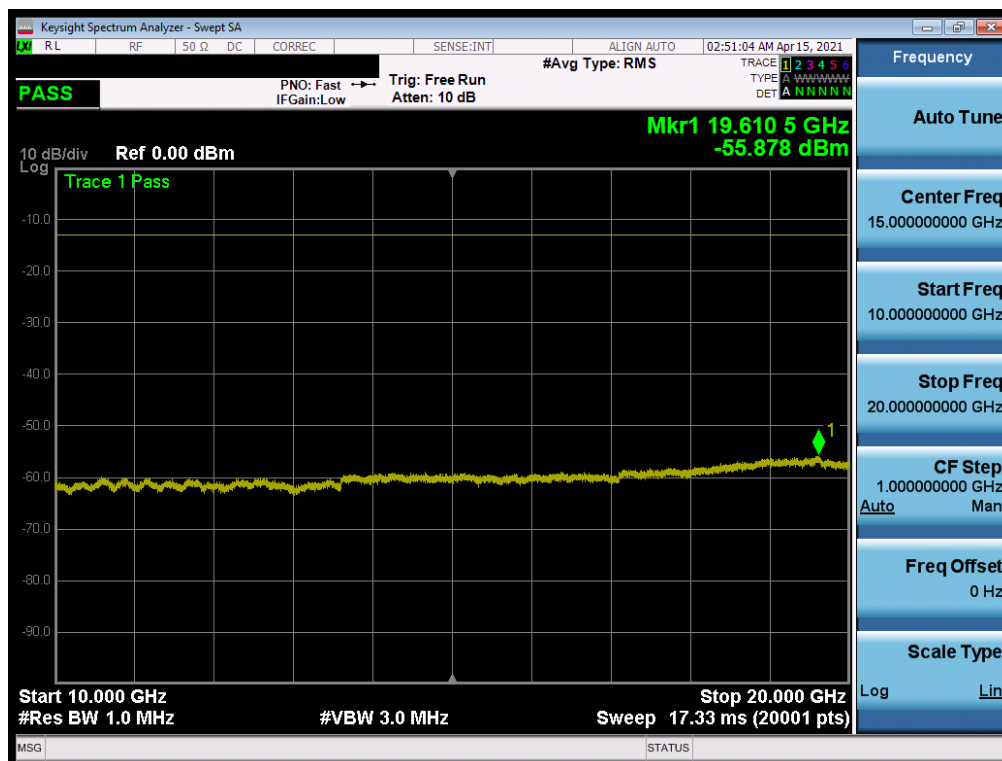


Plot 7-142. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 93 of 254

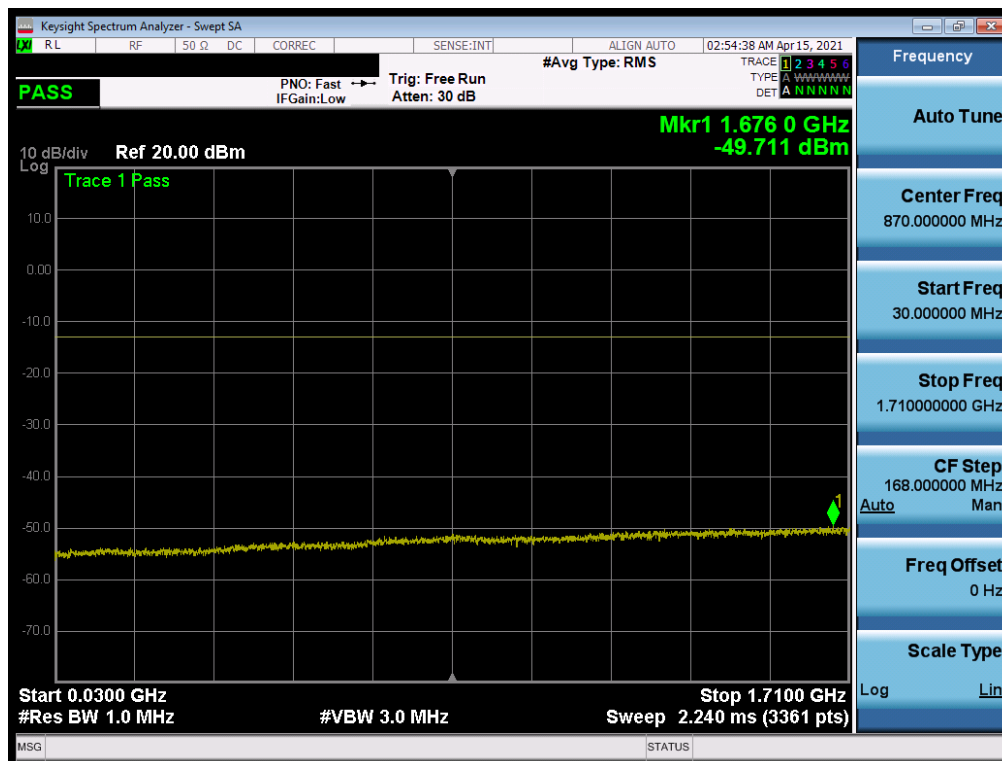


Plot 7-143. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

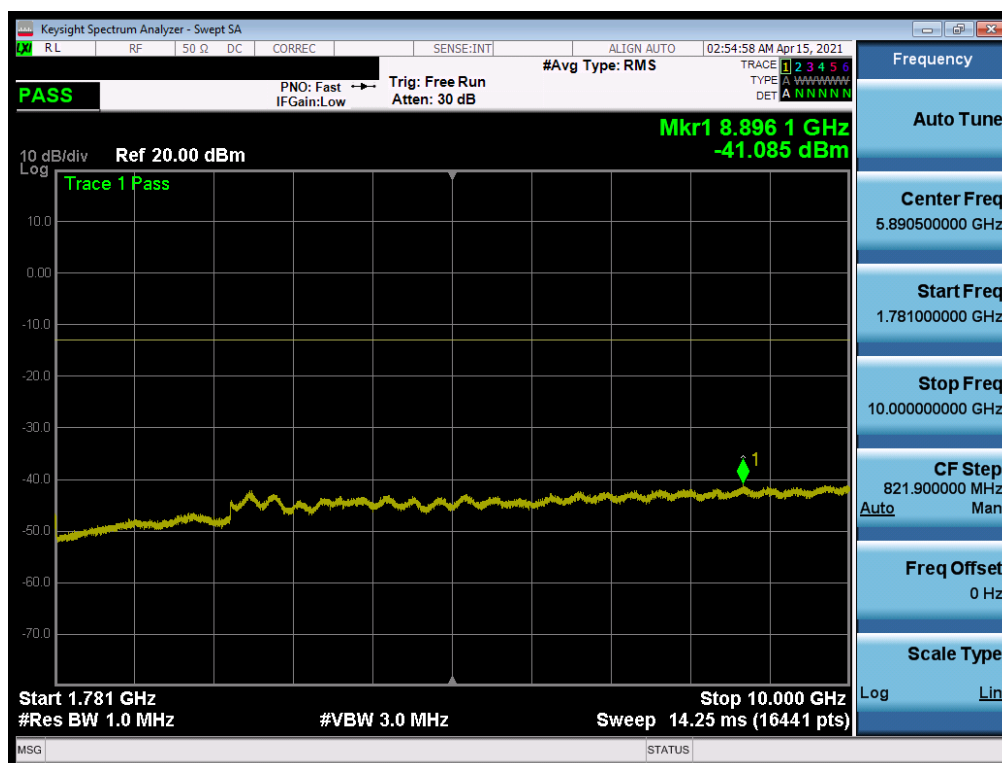


Plot 7-144. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 94 of 254

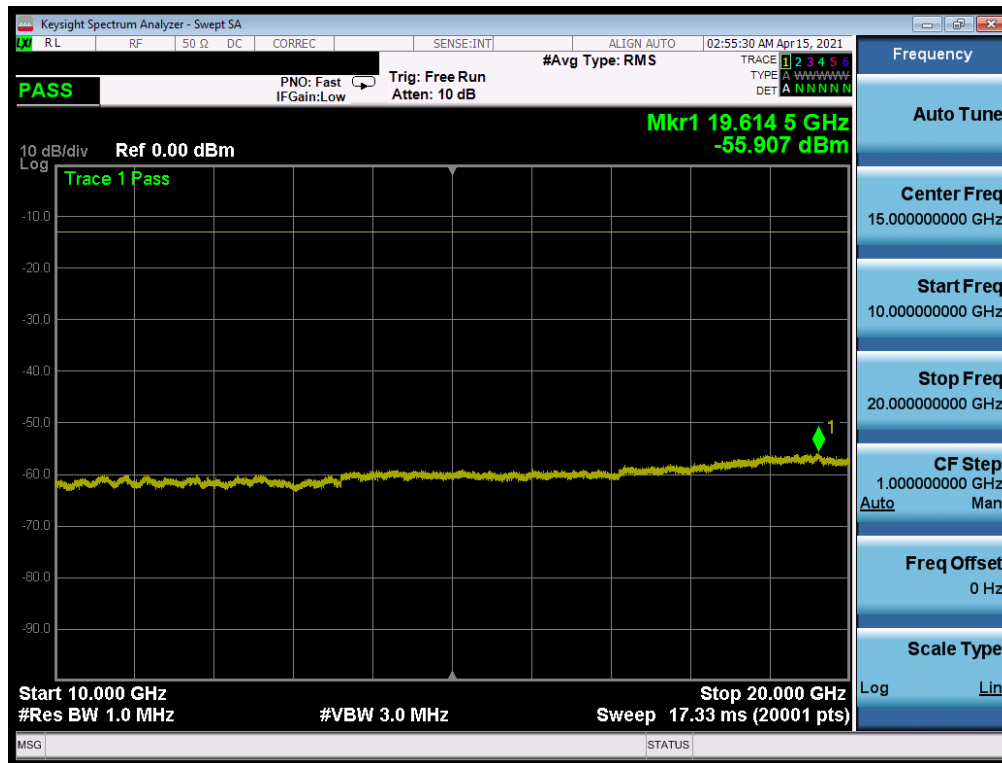


Plot 7-145. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-146. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

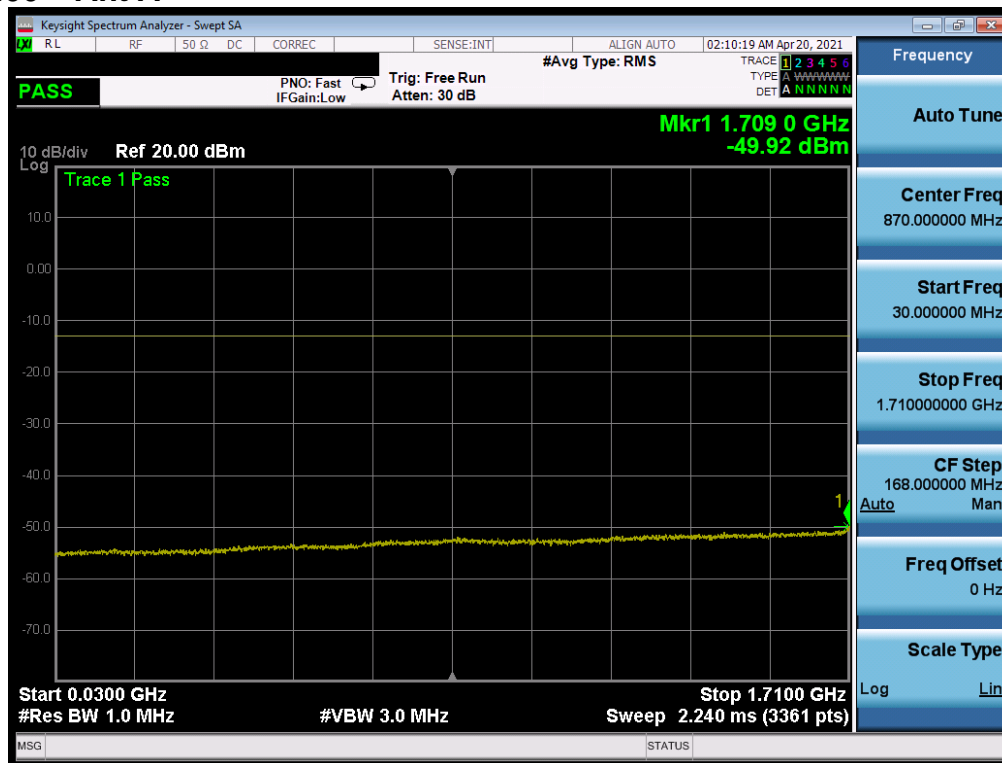
FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04-A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 95 of 254



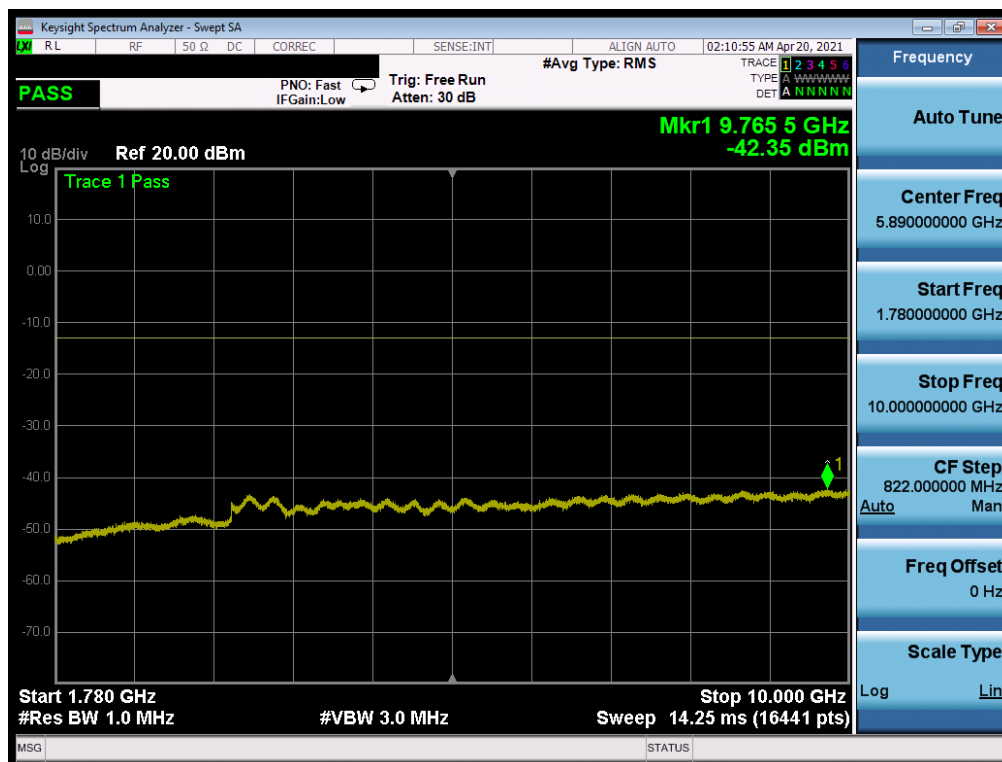
Plot 7-147. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 96 of 254

## NR Band n66 – Ant A

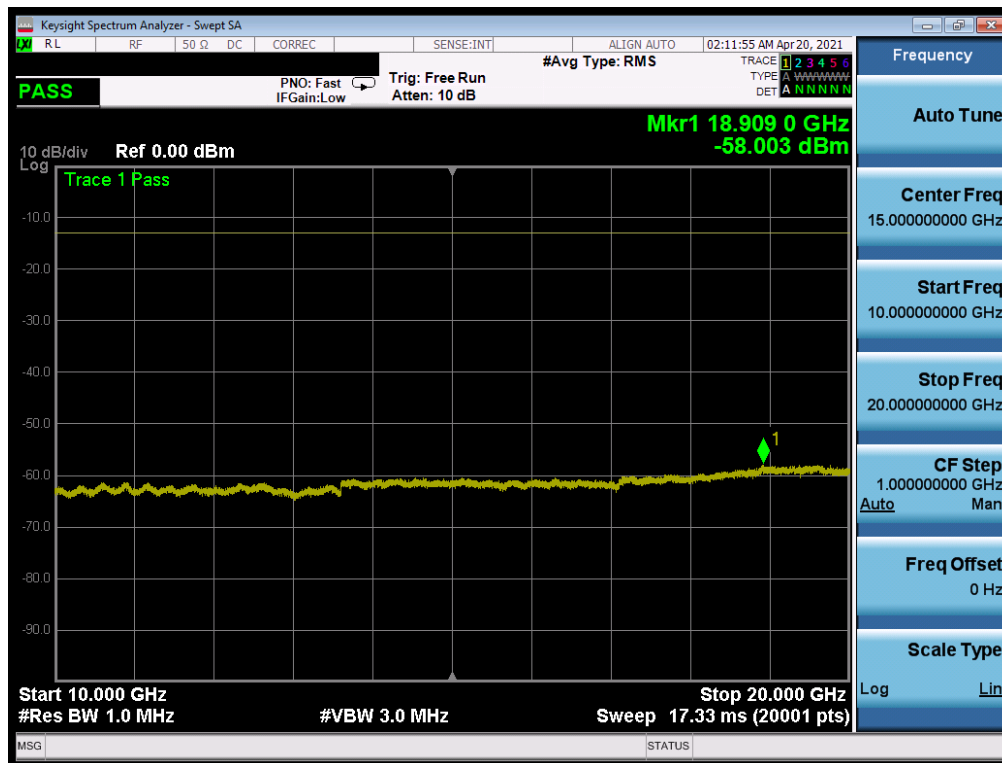


Plot 7-148. Conducted Spurious Plot (NR Band n66 -40.0MHz - RB Size 1, RB Offset 0 - Low Channel)

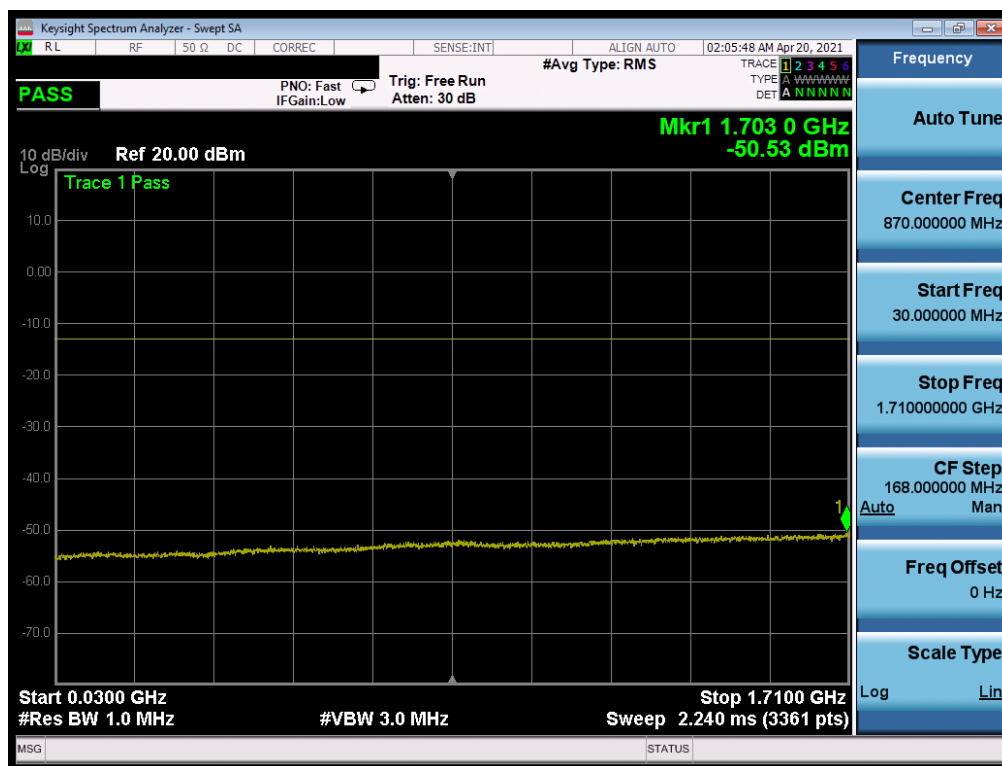


Plot 7-149. Conducted Spurious Plot (NR Band n66 - 40.0MHz - RB Size 1, RB Offset 0 - Low Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 97 of 254

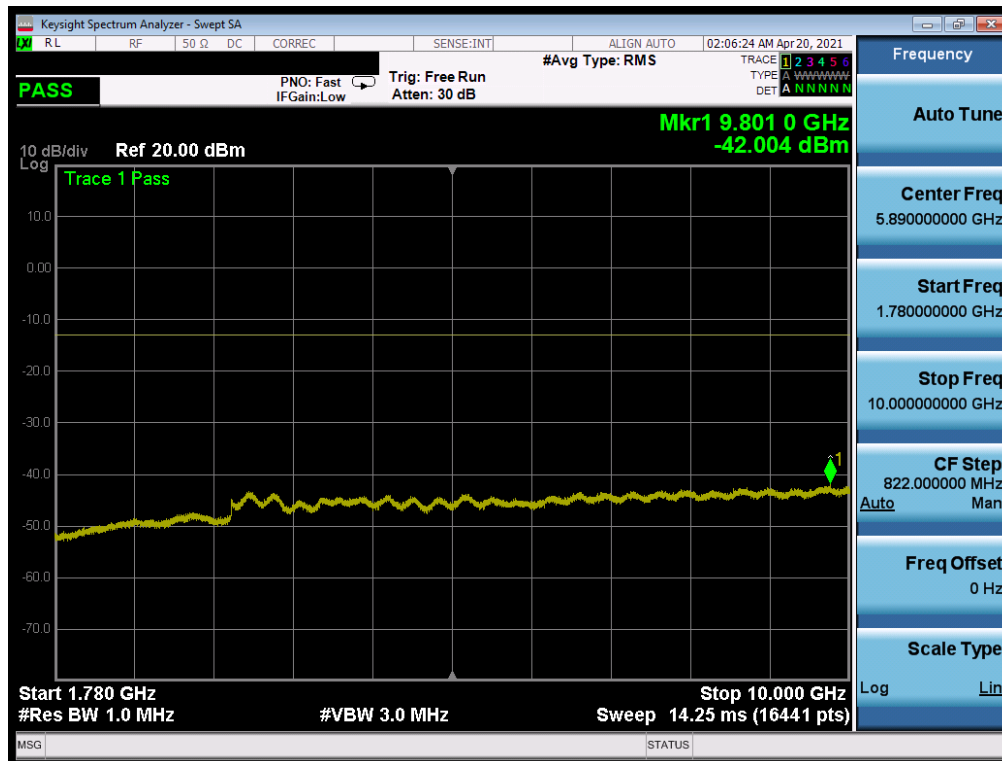


Plot 7-150. Conducted Spurious Plot (NR Band n66 - 40.0MHz - RB Size 1, RB Offset 0 - Low Channel)

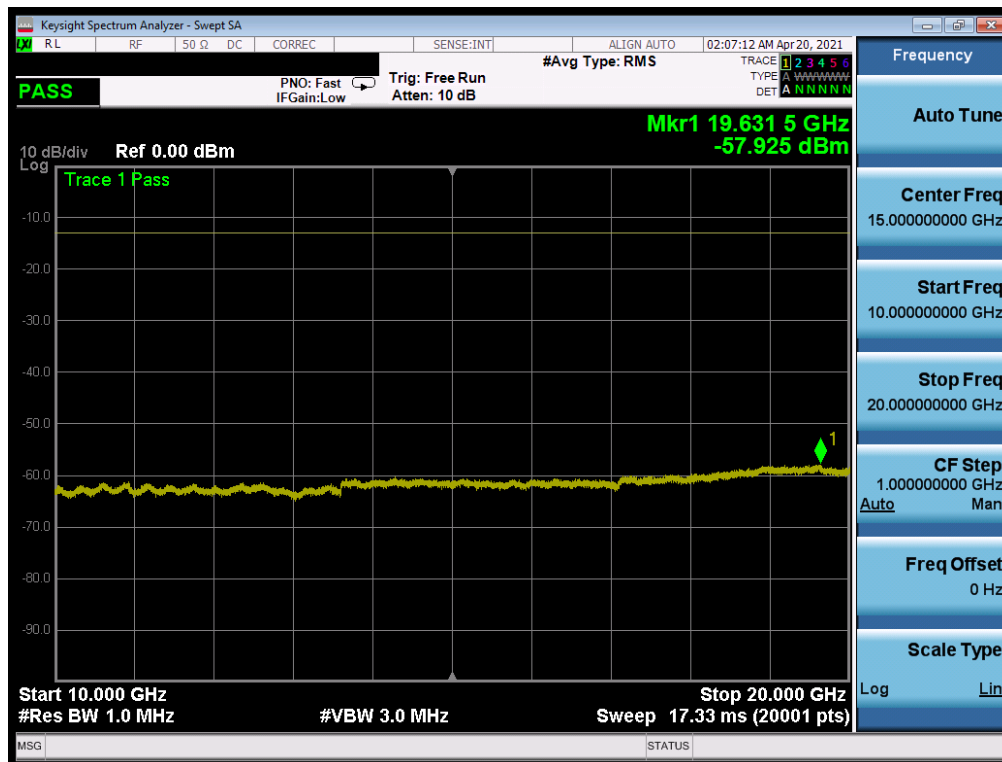


Plot 7-151. Conducted Spurious Plot (NR Band n66 - 40.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 98 of 254



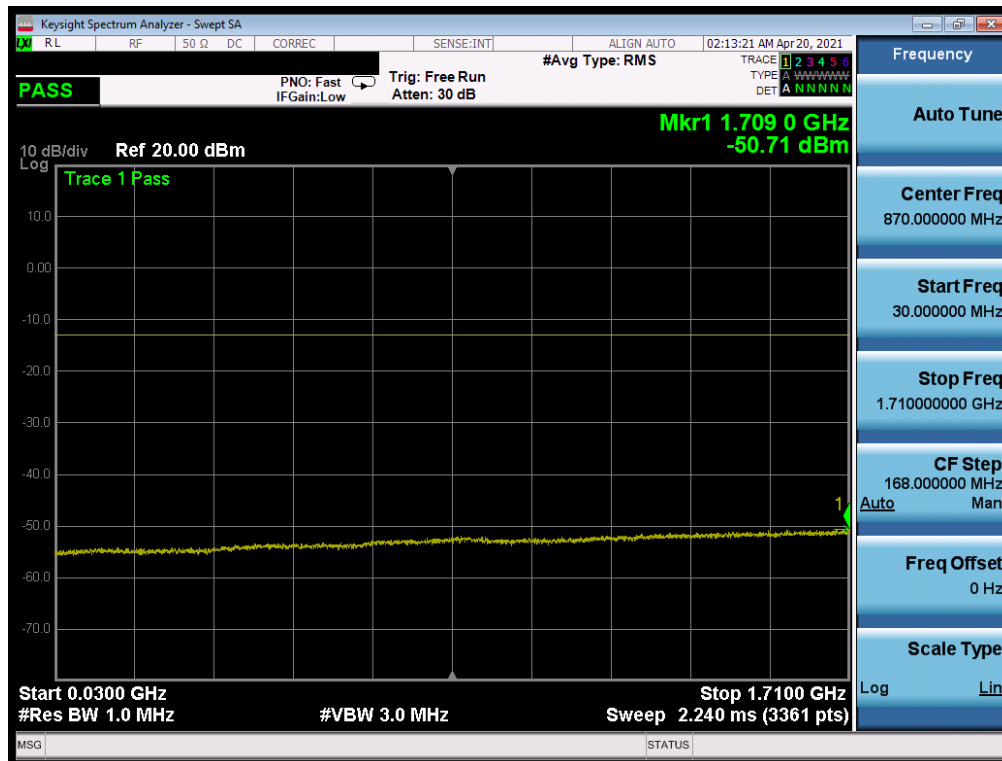
Plot 7-152. Conducted Spurious Plot (NR Band n66 - 40.0MHz - RB Size 1, RB Offset 0 - Mid Channel)



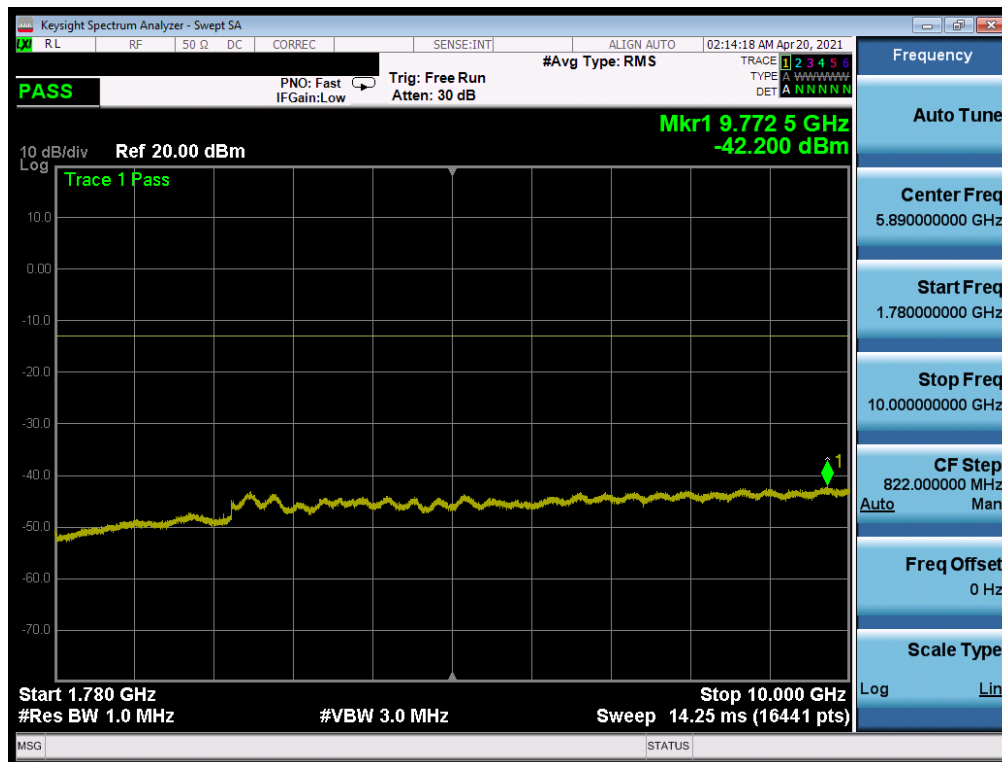
Plot 7-153. Conducted Spurious Plot (NR Band n66 - 40.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 99 of 254



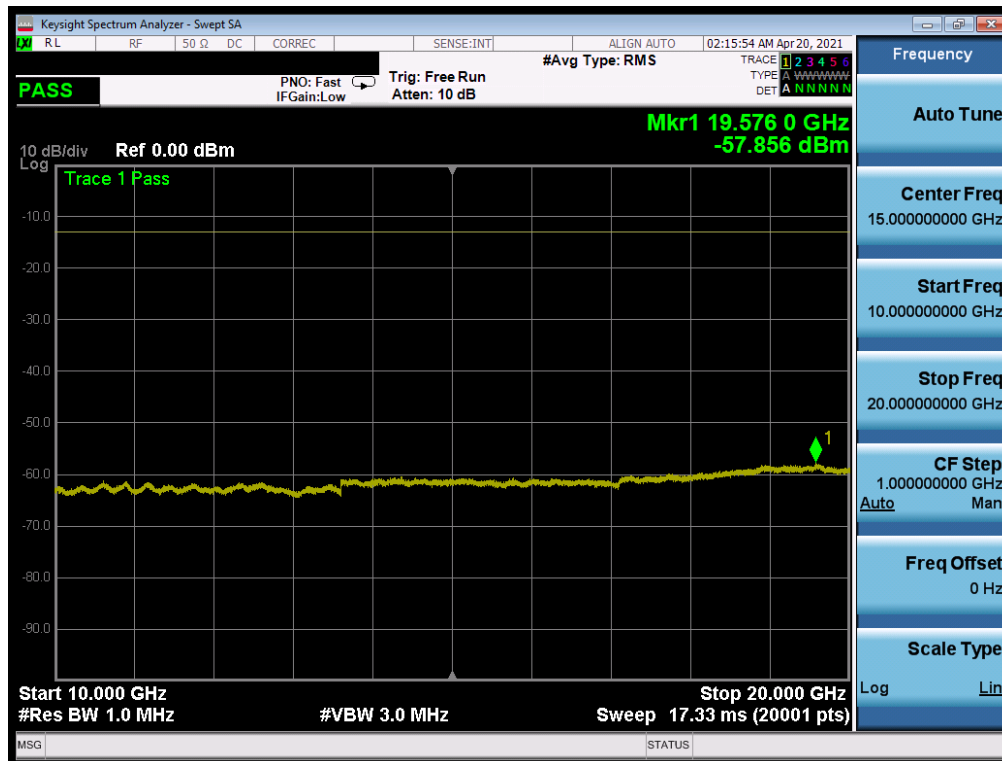


Plot 7-154. Conducted Spurious Plot (NR Band n66 - 40.0MHz - RB Size 1, RB Offset 0 - High Channel)



Plot 7-155. Conducted Spurious Plot (NR Band n66 - 40.0MHz - RB Size 1, RB Offset 0 - High Channel)

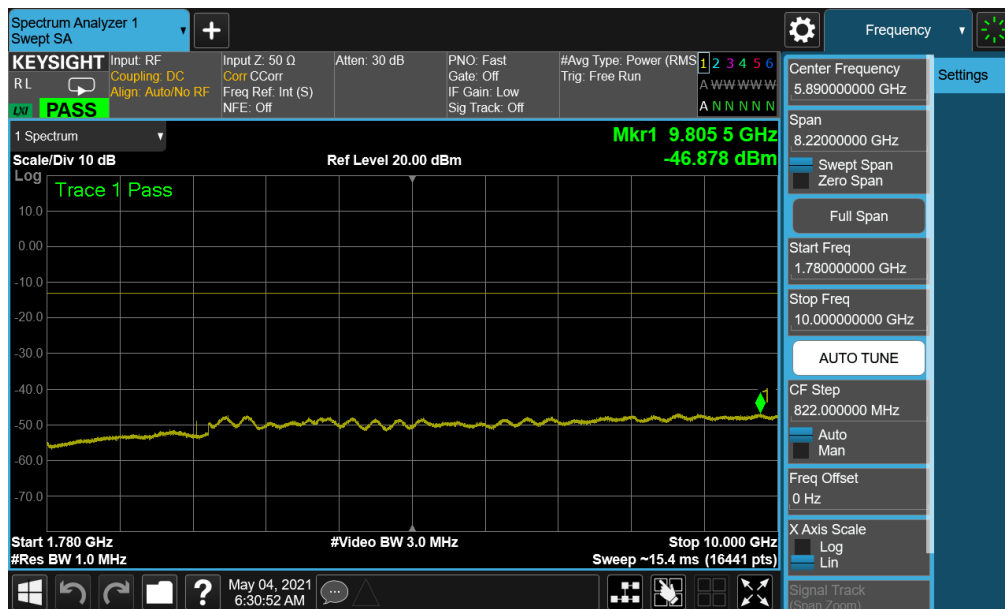
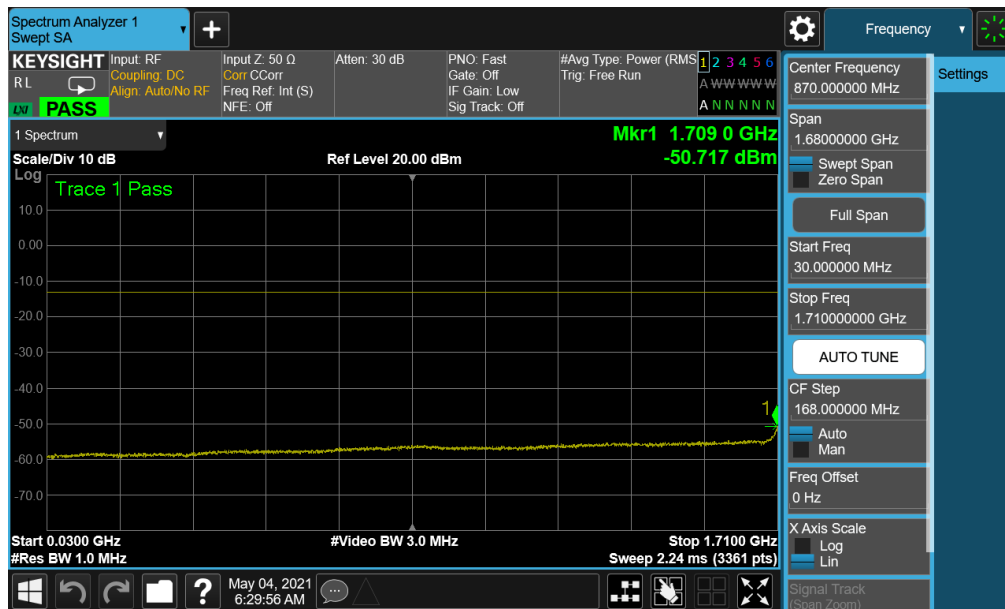
FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 100 of 254



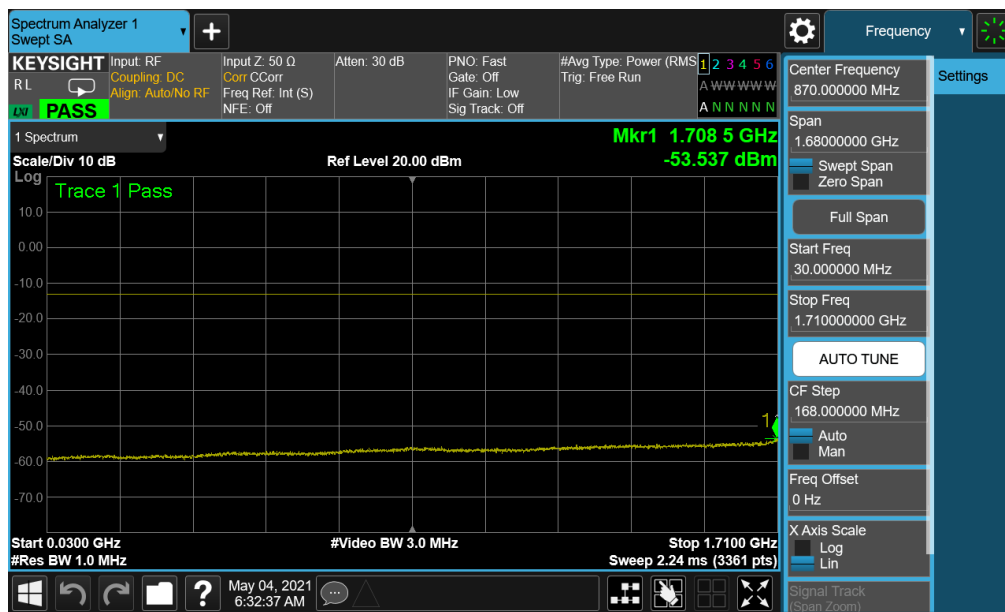
Plot 7-156. Conducted Spurious Plot (NR Band n66 - 40.0MHz - RB Size 1, RB Offset 0 - High Channel)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 101 of 254

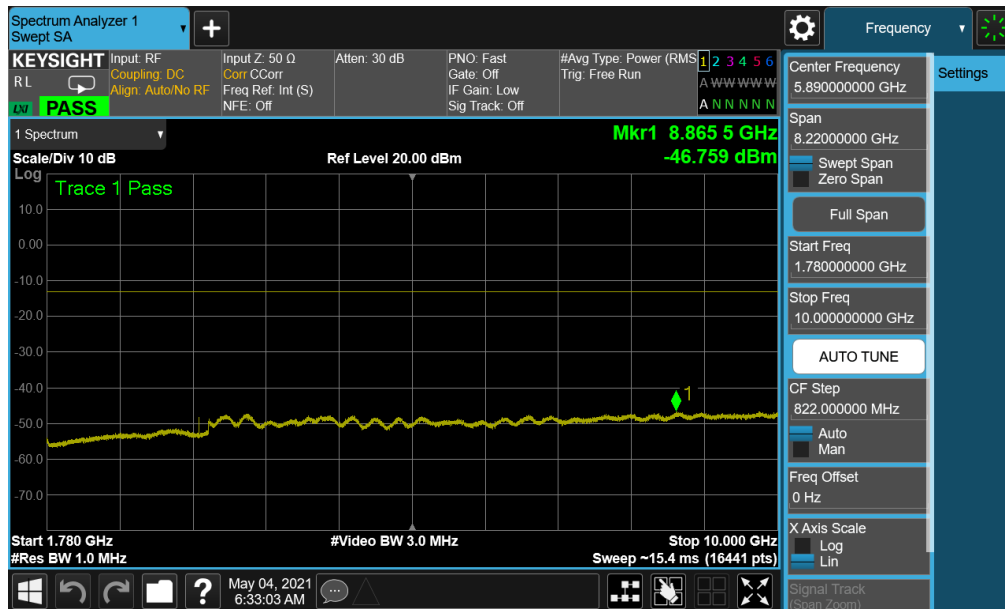
## NR Band n66 – Ant I



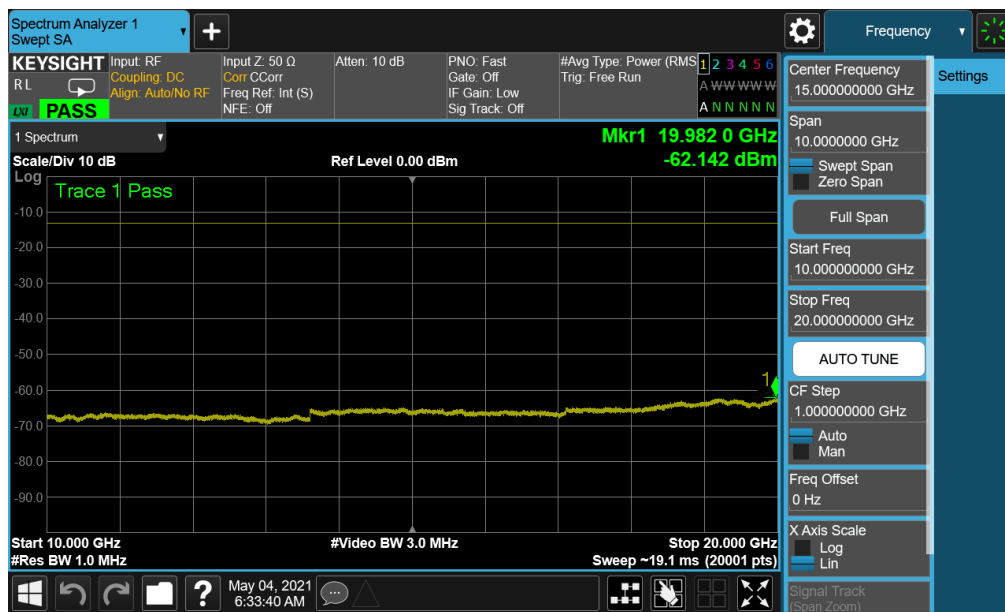
FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 102 of 254



FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 103 of 254

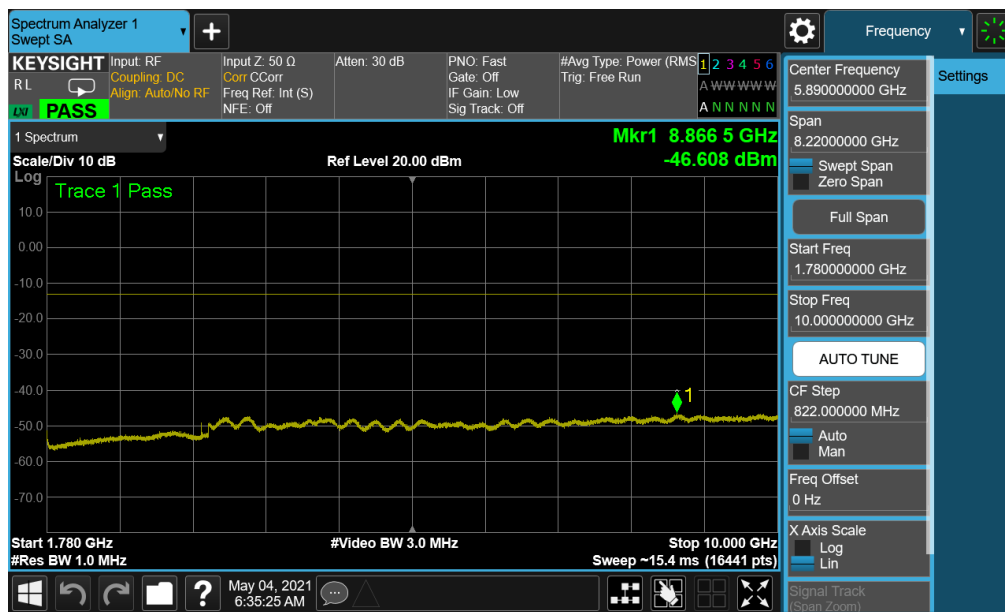
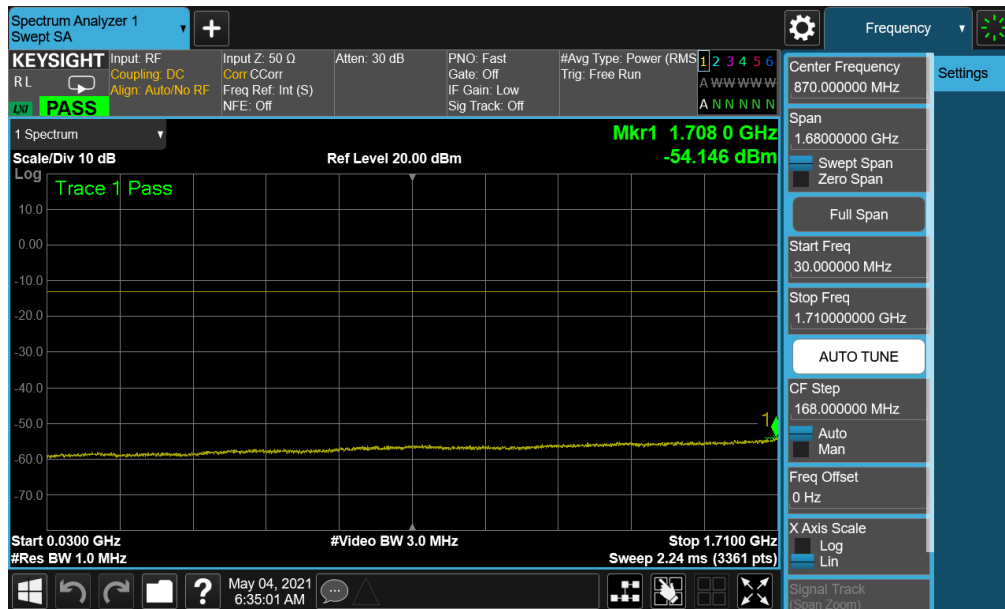


Plot 7-161. Conducted Spurious Plot (NR Band n66 - 40.0MHz - 1 RB - Mid Channel)



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

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 104 of 254



FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 105 of 254



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

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 106 of 254

## 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

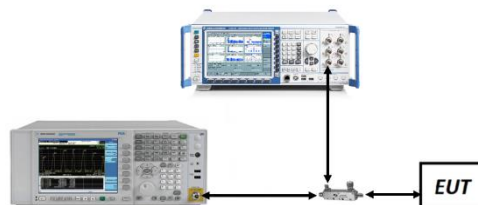
KDB 971168 D01 v03r01 – Section 6.0

### 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: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	<b>PART 27 MEASUREMENT REPORT</b>	<b>SAMSUNG</b>	Approved by: Technical Manager
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## Test Notes



Per 27.53(h) 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.

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.

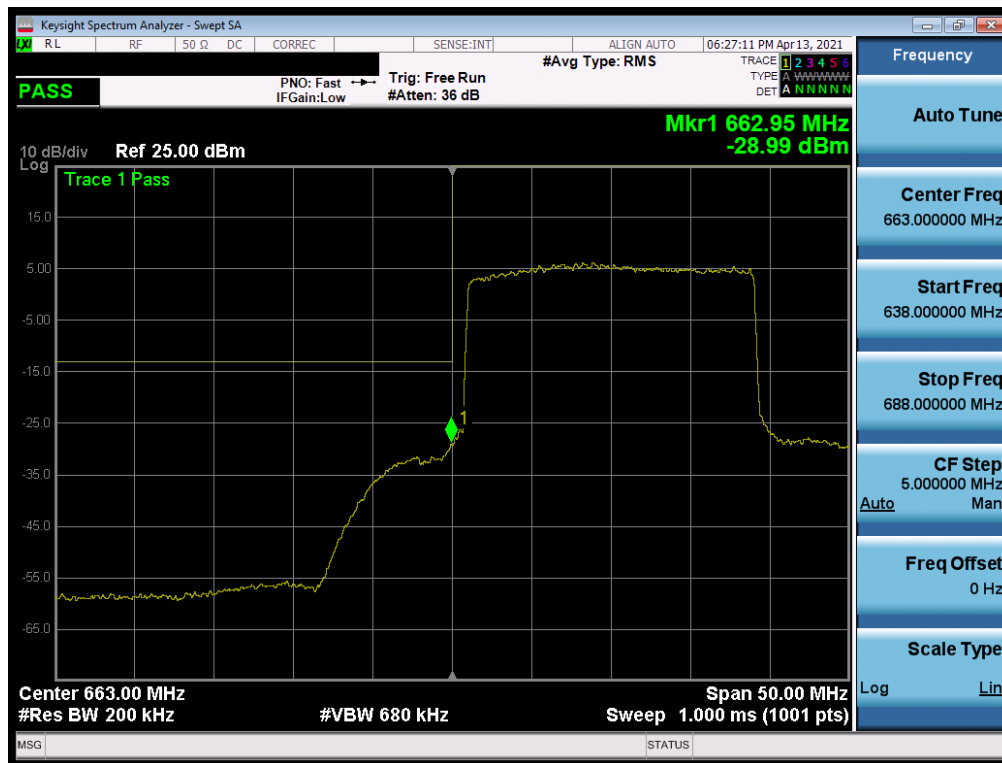
Per 27.53(c)(5) for operations in the 776-788 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.

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.

This device employs UMTS technology with WCDMA (AMR/RMC), HSDPA, and HSUPA capabilities. For WCDMA and HSUPA transmission, all configurations were investigated and the worst case UMTS emissions were reported.

FCC ID: A3LSMF711U	 PART 27 MEASUREMENT REPORT 	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset
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## LTE Band 71

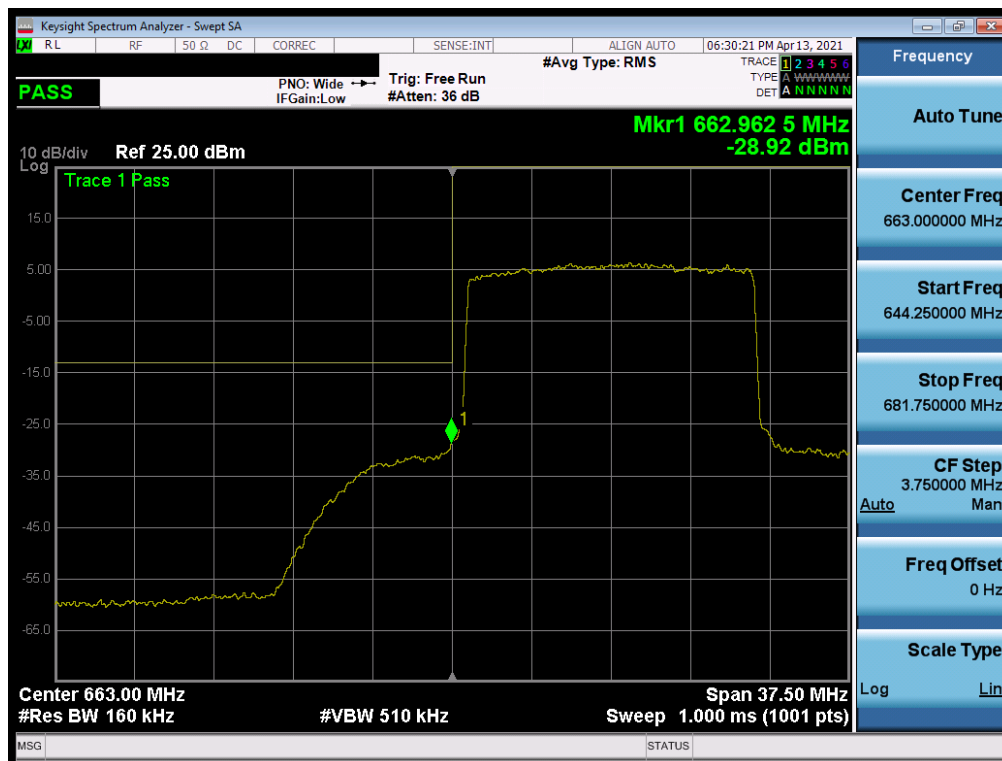


Plot 7-166. Lower Band Edge Plot (LTE Band 71 - 20MHz QPSK – Full RB)



Plot 7-167. Upper Band Edge Plot (LTE Band 71 - 20MHz QPSK – Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 109 of 254

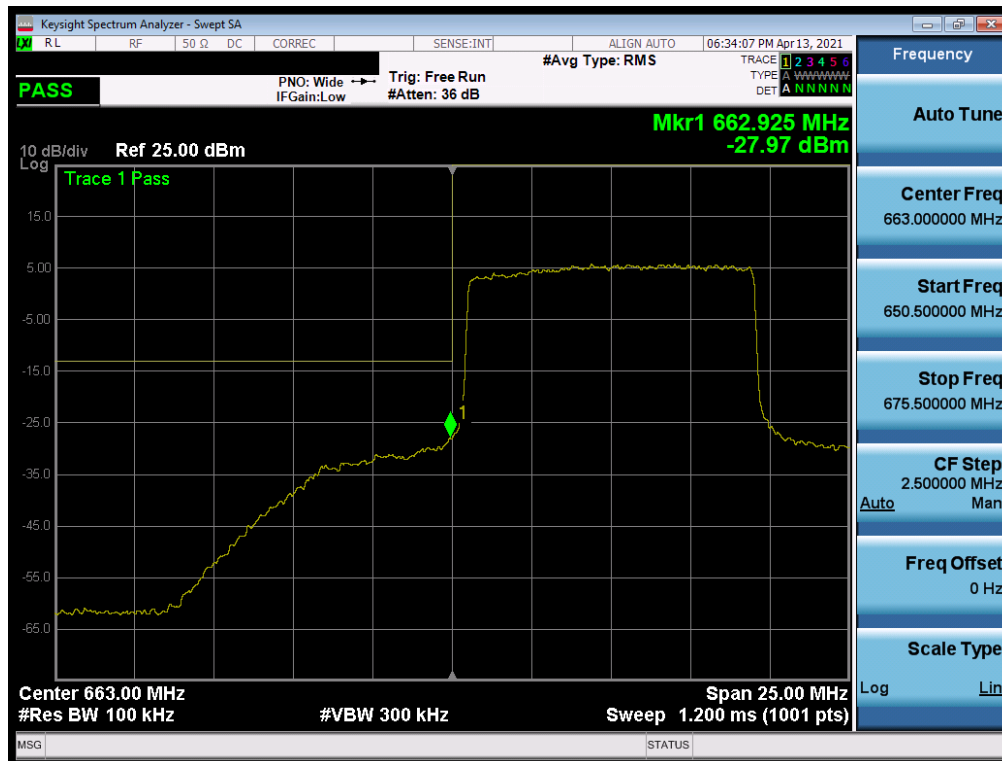


Plot 7-168. Lower Band Edge Plot (LTE Band 71 - 15MHz QPSK – Full RB)



Plot 7-169. Upper Band Edge Plot (LTE Band 71 - 15MHz QPSK – Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 110 of 254

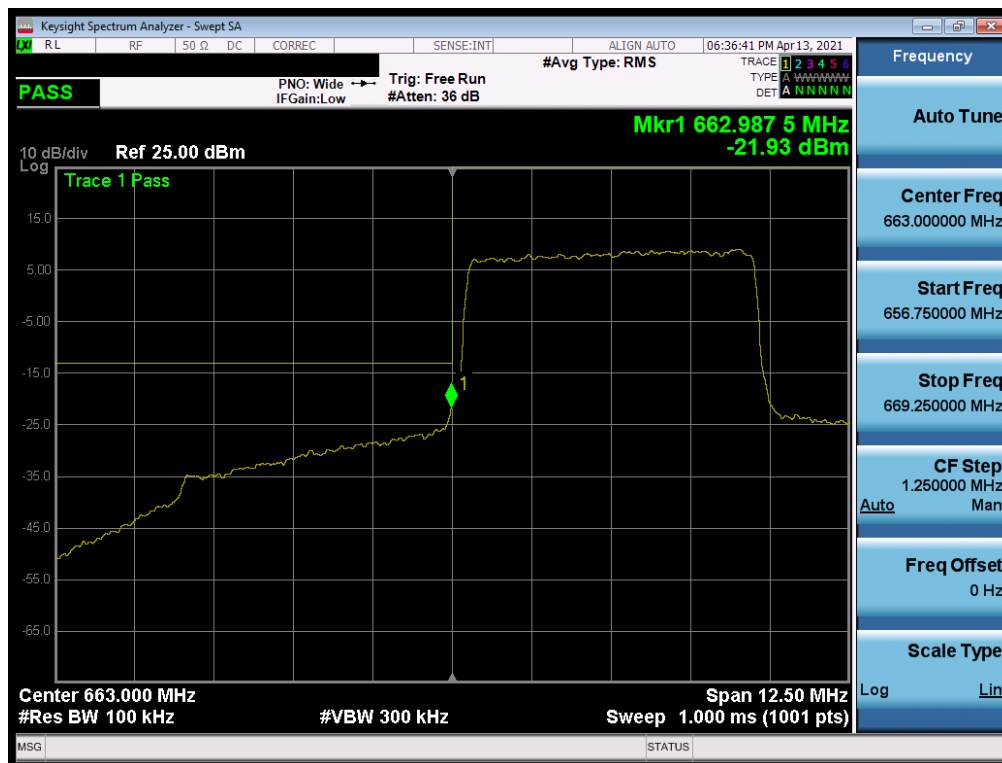


Plot 7-170. Lower Band Edge Plot (LTE Band 71 - 10MHz QPSK - Full RB)



Plot 7-171. Upper Band Edge Plot (LTE Band 71 - 10MHz QPSK - Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 - 06/04/2021	EUT Type: Portable Handset		Page 111 of 254



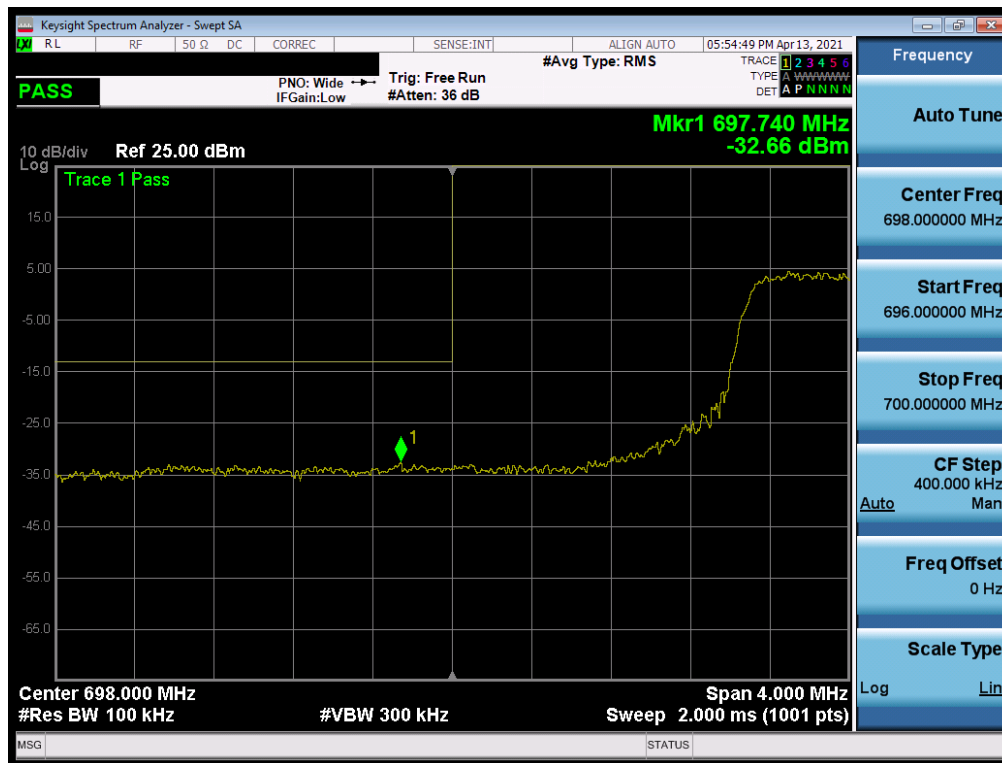
Plot 7-172. Lower Band Edge Plot (LTE Band 71 - 5MHz QPSK - Full RB)



Plot 7-173. Upper Band Edge Plot (LTE Band 71 - 5MHz QPSK - Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 - 06/04/2021	EUT Type: Portable Handset		Page 112 of 254

## LTE Band 12

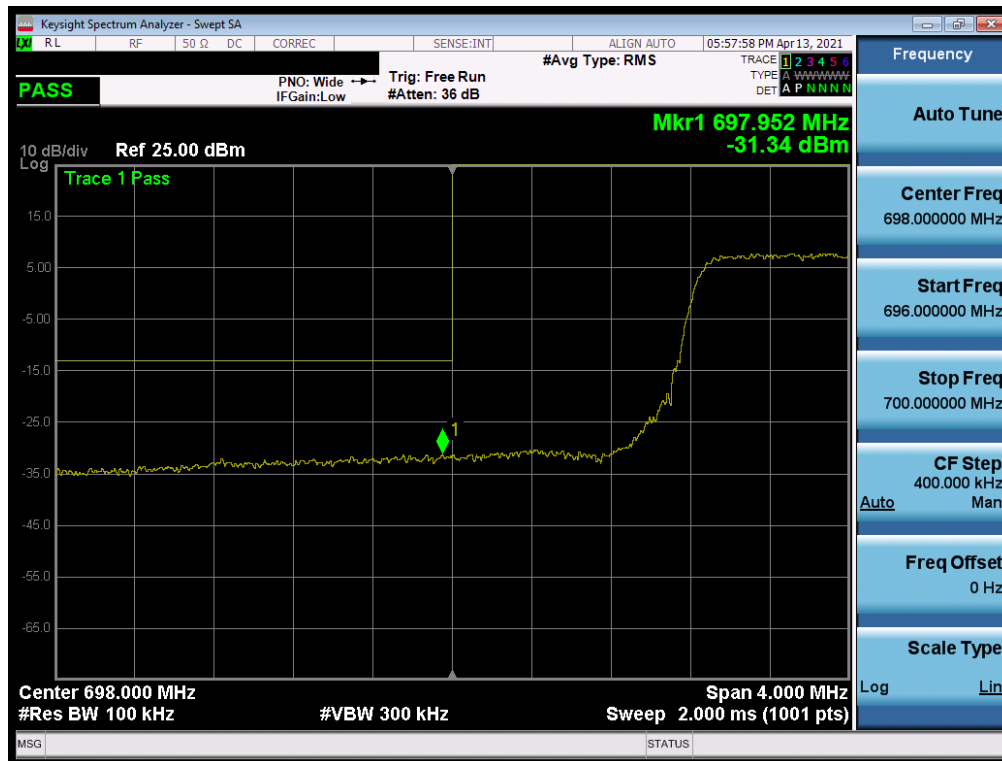


Plot 7-174. Lower Band Edge Plot (LTE Band 12 - 10MHz QPSK – Full RB)

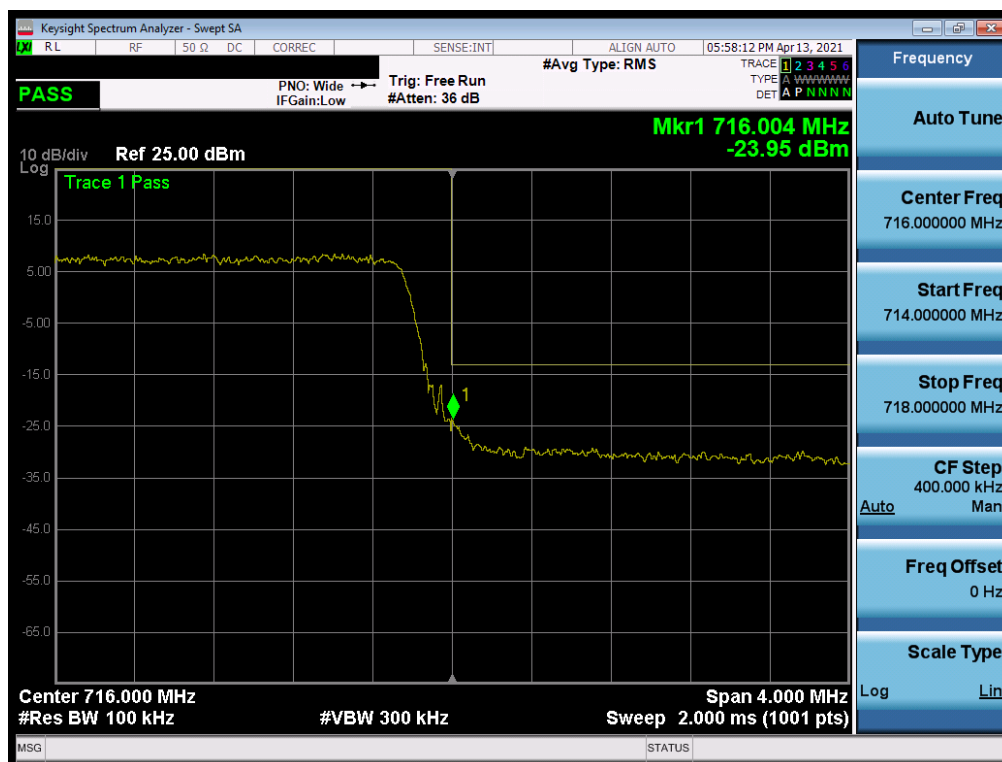


Plot 7-175. Upper Band Edge Plot (LTE Band 12 - 10MHz QPSK – Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 113 of 254

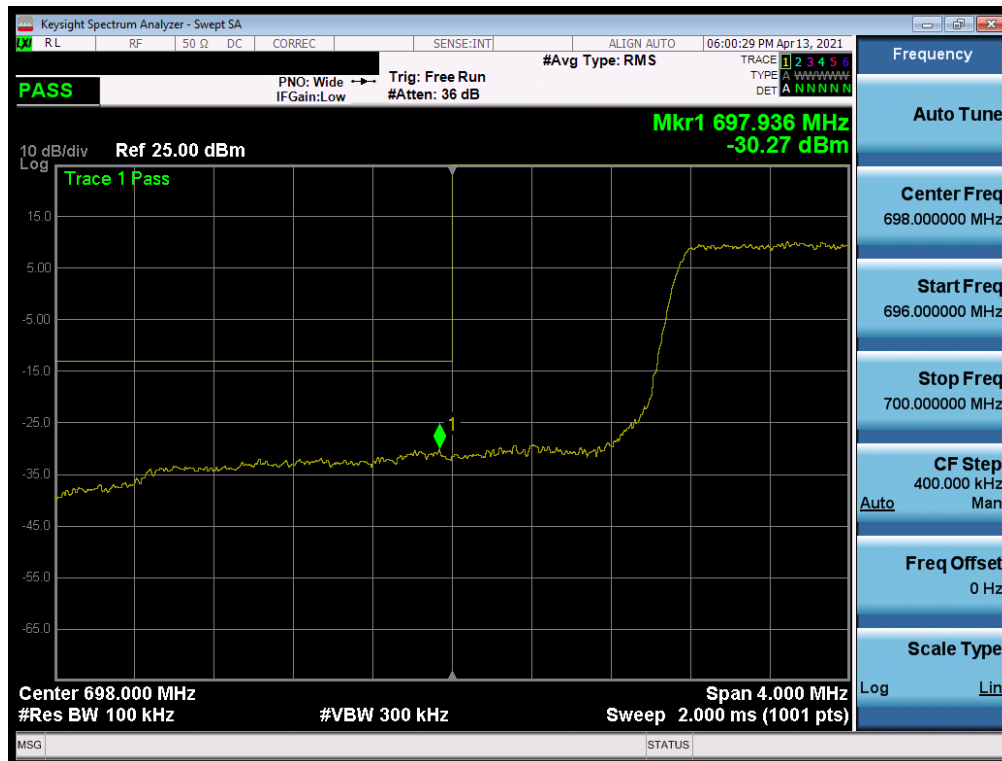


Plot 7-176. Lower Band Edge Plot (LTE Band 12 - 5MHz QPSK – Full RB)



Plot 7-177. Upper Band Edge Plot (LTE Band 12 - 5MHz QPSK – Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 114 of 254



Plot 7-178. Lower Band Edge Plot (LTE Band 12 - 3MHz QPSK – Full RB)



Plot 7-179. Upper Band Edge Plot (LTE Band 12 - 3MHz QPSK – Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 115 of 254





Plot 7-180. Lower Band Edge Plot (LTE Band 12 – 1.4MHz QPSK – Full RB)



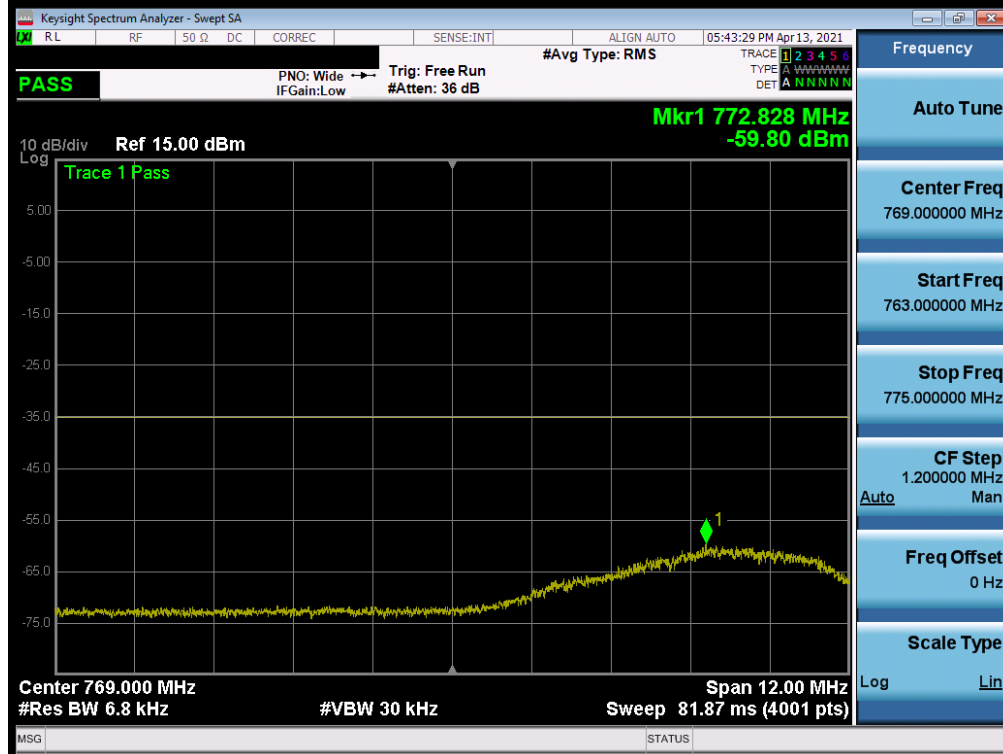
Plot 7-181. Upper Band Edge Plot (LTE Band 12 – 1.4MHz QPSK – Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 116 of 254

## LTE Band 13



Plot 7-182. Lower Band Edge Plot (LTE Band 13 - 10MHz QPSK – Full RB)



Plot 7-183. Lower Emission Mask Plot (LTE Band 13 - 10MHz QPSK – Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 117 of 254

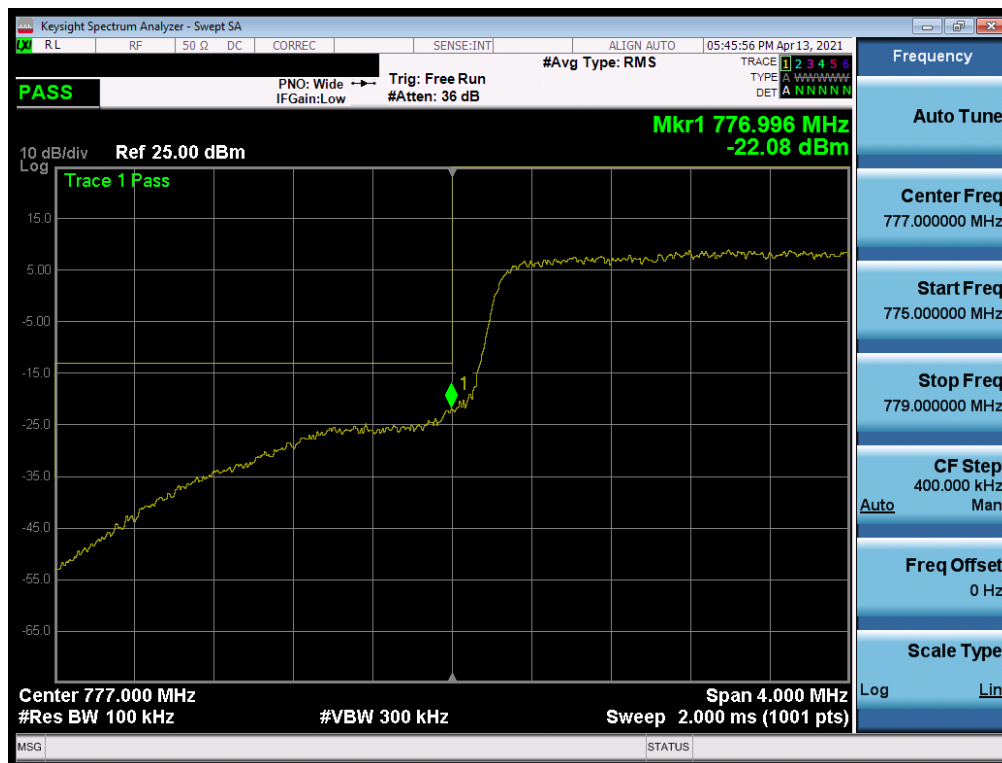


Plot 7-184. Upper Band Edge Plot (LTE Band 13 - 10MHz QPSK – Full RB)

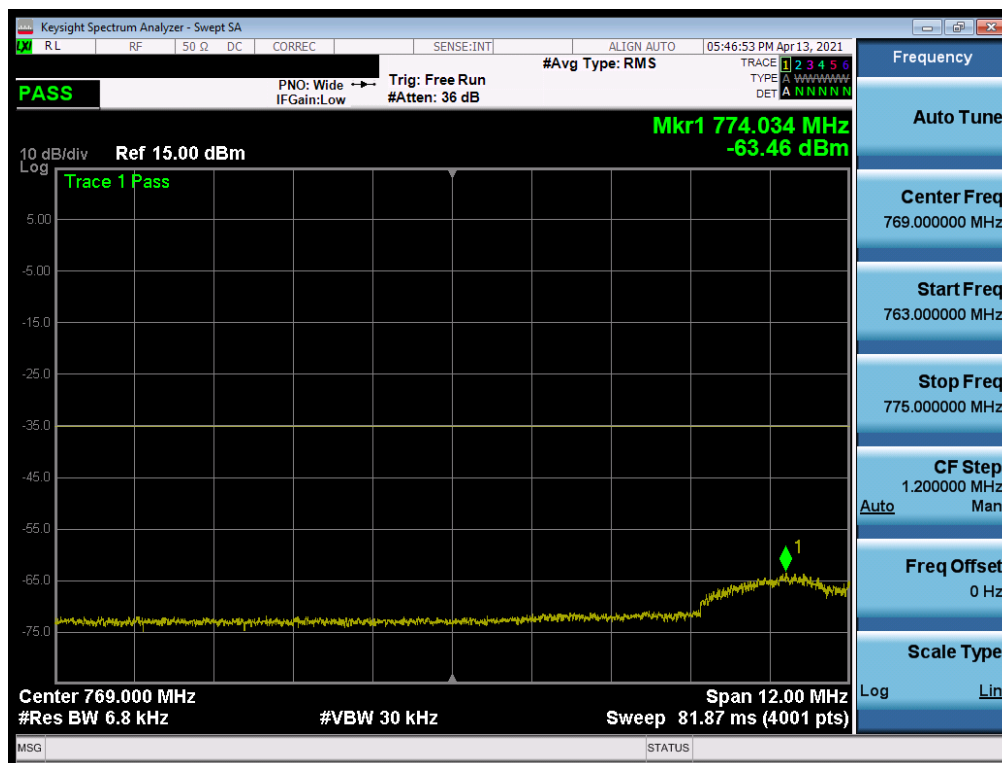


Plot 7-185. Upper Emission Mask Plot (LTE Band 13 - 10MHz QPSK – Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 118 of 254

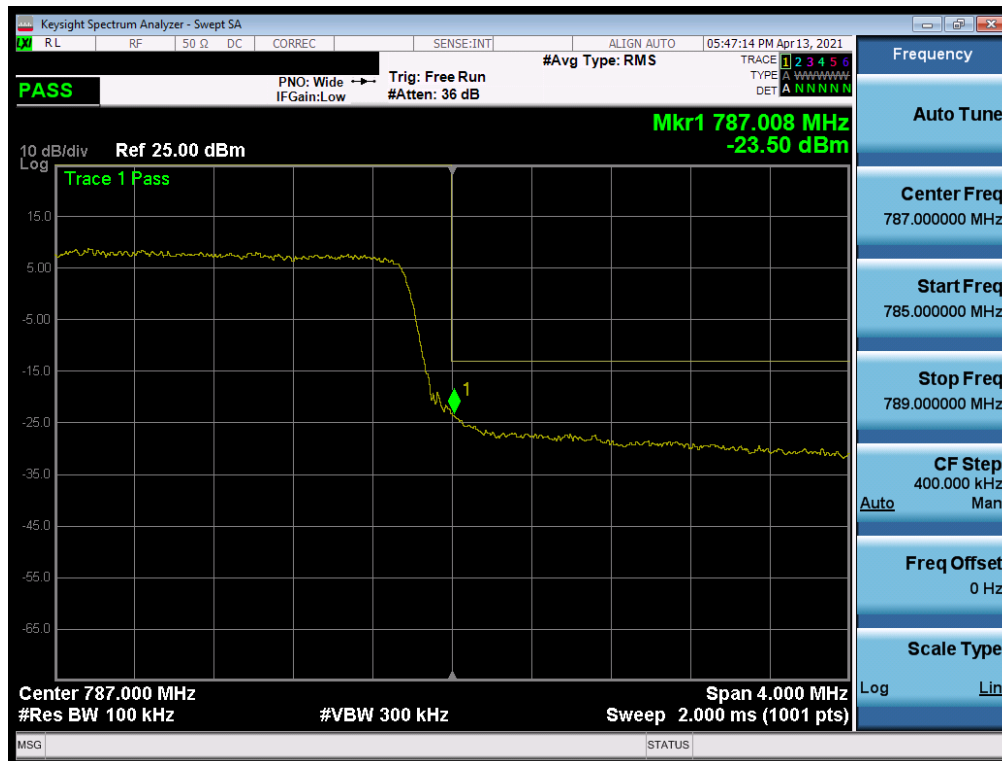


Plot 7-186. Lower Band Edge Plot (LTE Band 13 - 5MHz QPSK – Full RB)

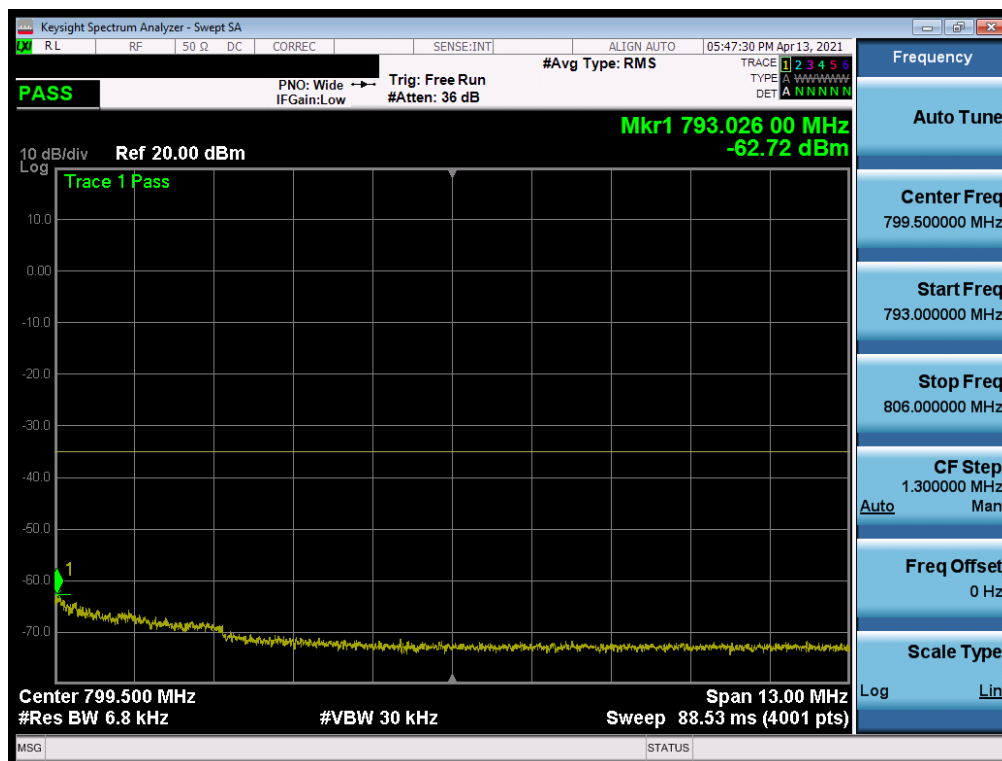


Plot 7-187. Lower Emission Mask Plot (LTE Band 13 - 5MHz QPSK – Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 119 of 254



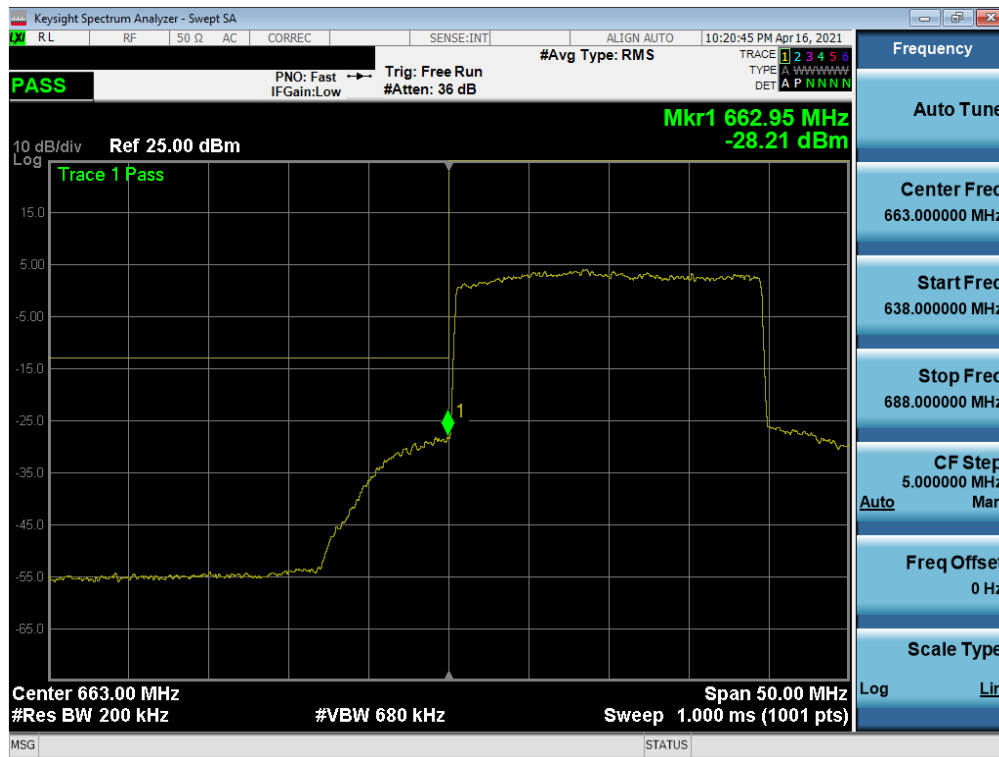
Plot 7-188. Upper Band Edge Plot (LTE Band 13 - 5MHz QPSK – Full RB)



Plot 7-189. Upper Emission Mask Plot (LTE Band 13 - 5MHz QPSK – Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 120 of 254

## NR Band n71

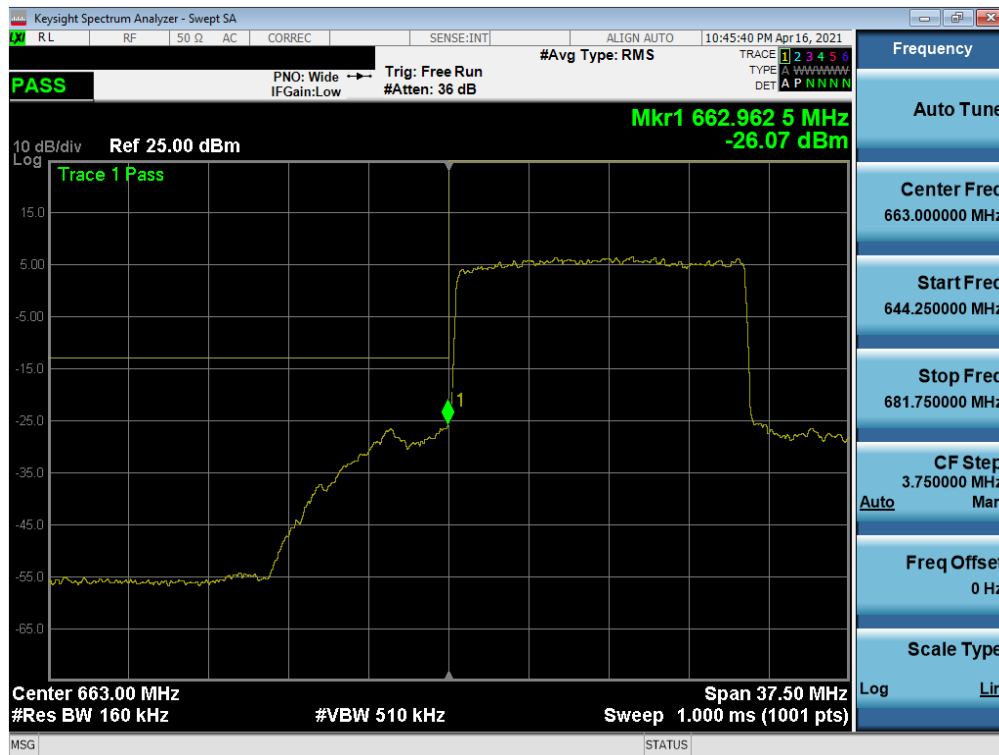


Plot 7-190. Lower Band Edge Plot (NR Band n71 – 20.0MHz - Full RB)

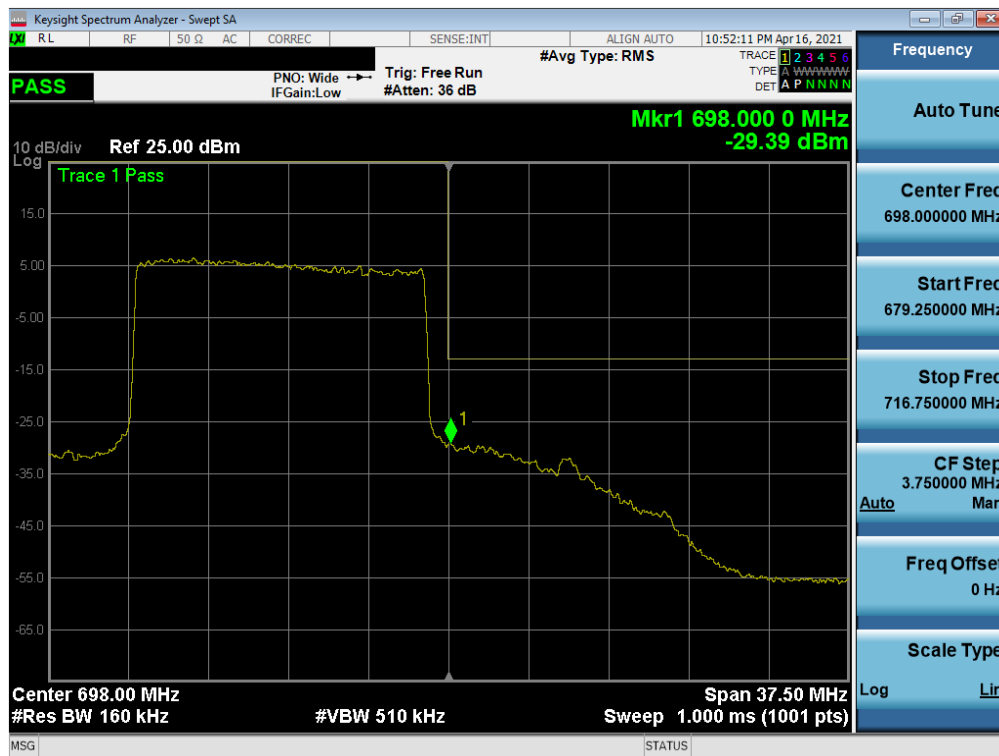


Plot 7-191. Upper Band Edge Plot (NR Band n71 – 20.0MHz - Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 – 06/04/2021	EUT Type: Portable Handset		Page 121 of 254

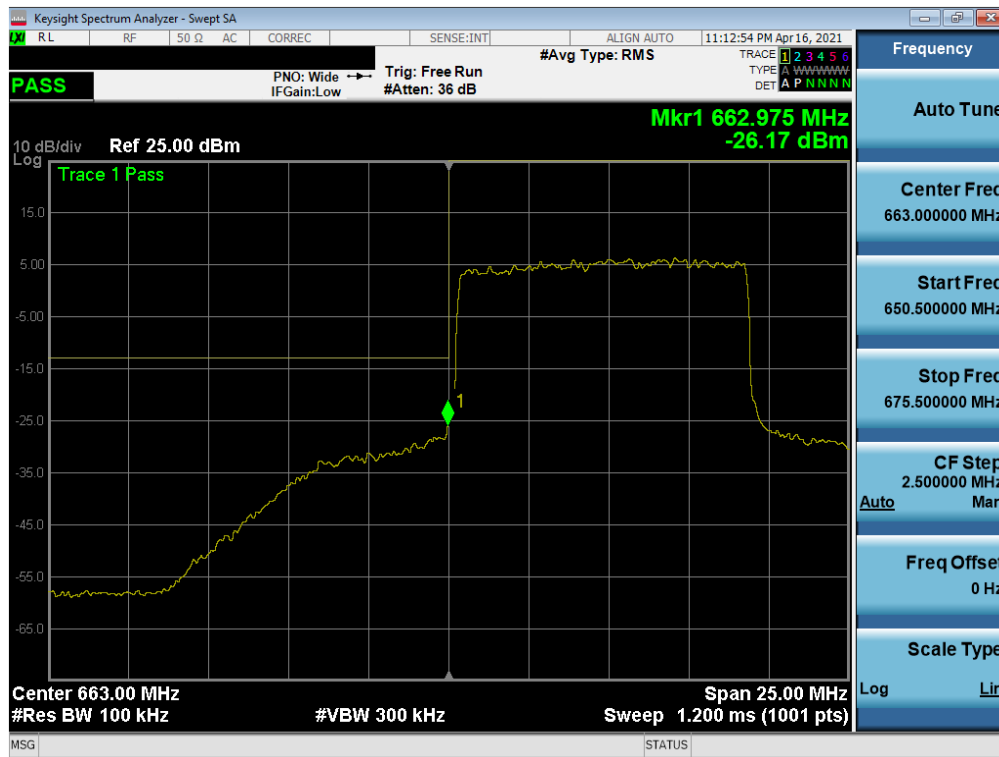


Plot 7-192. Lower Band Edge Plot (NR Band n71 - 15.0MHz - Full RB)

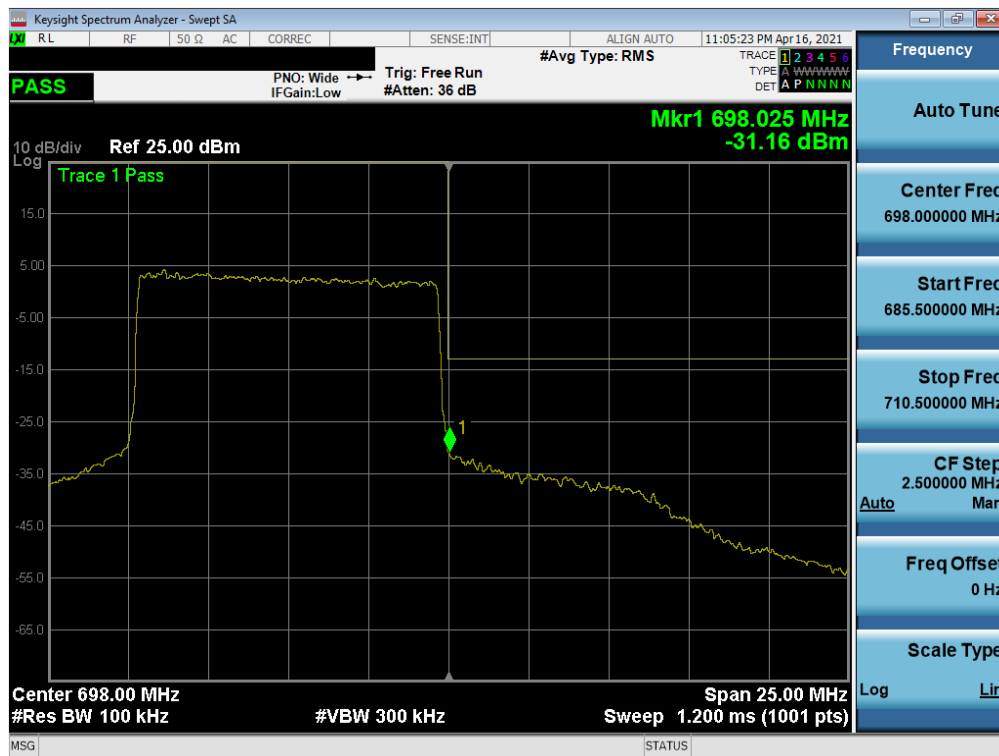


Plot 7-193. Upper Band Edge Plot (NR Band n71 - 15.0MHz - Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 - 06/04/2021	EUT Type: Portable Handset		Page 122 of 254



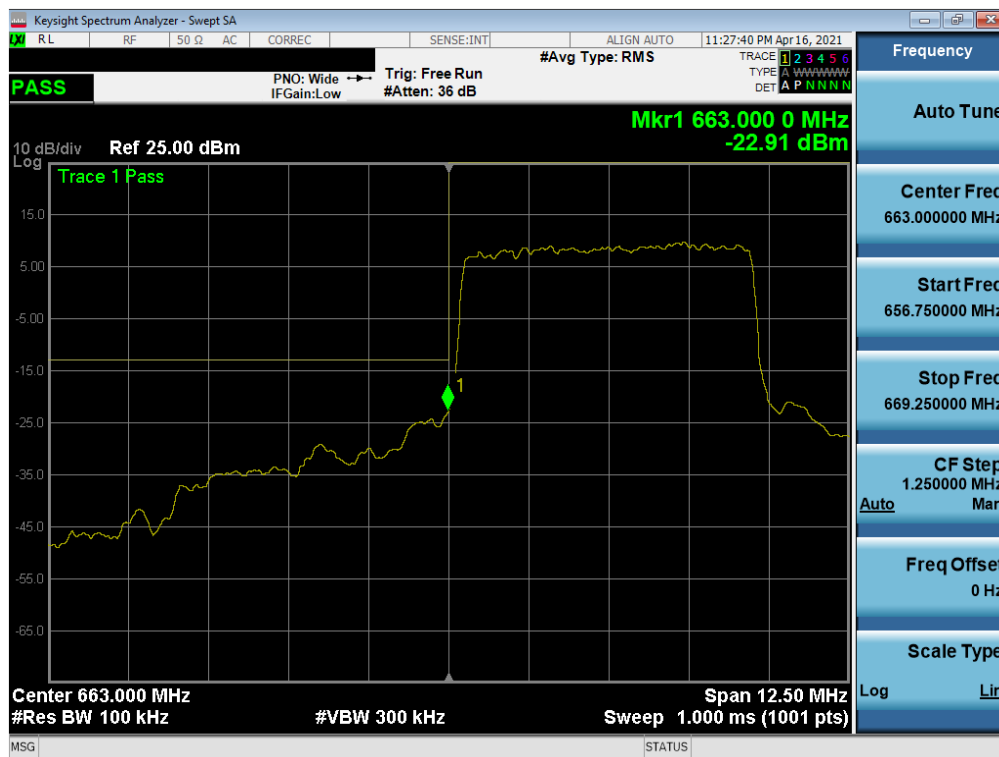
Plot 7-194. Lower Band Edge Plot (NR Band n71 - 10.0MHz - Full RB)



Plot 7-195. Upper Band Edge Plot (NR Band n71 - 10.0MHz - Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
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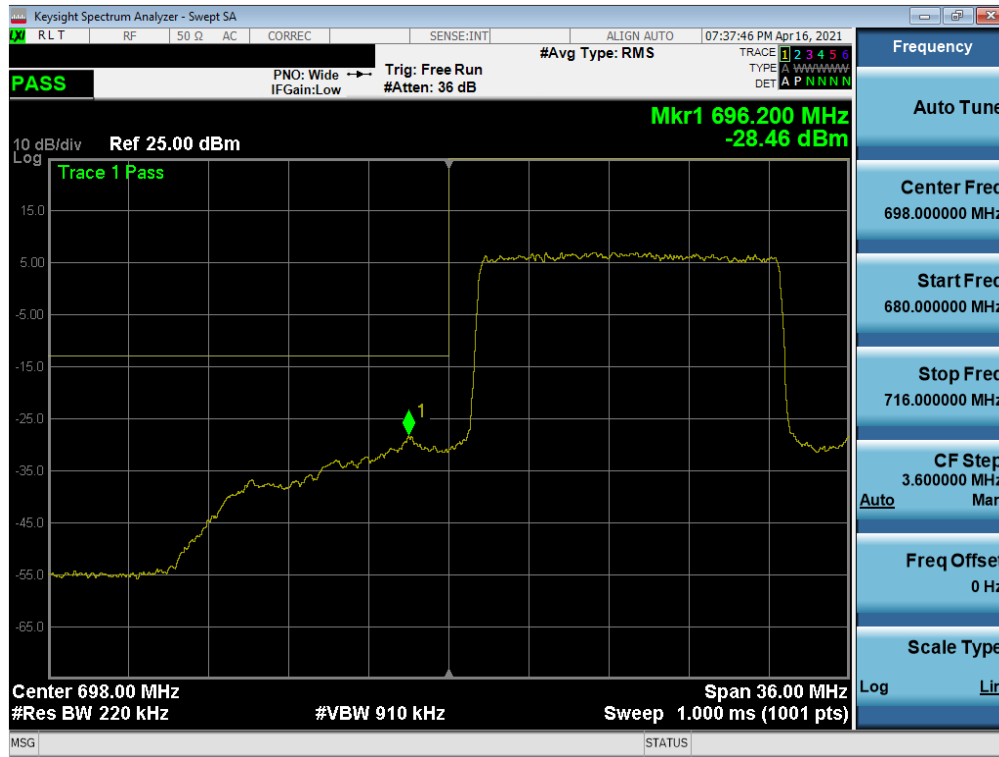
Plot 7-196. Lower Band Edge Plot (NR Band n71 - 5.0MHz - Full RB)



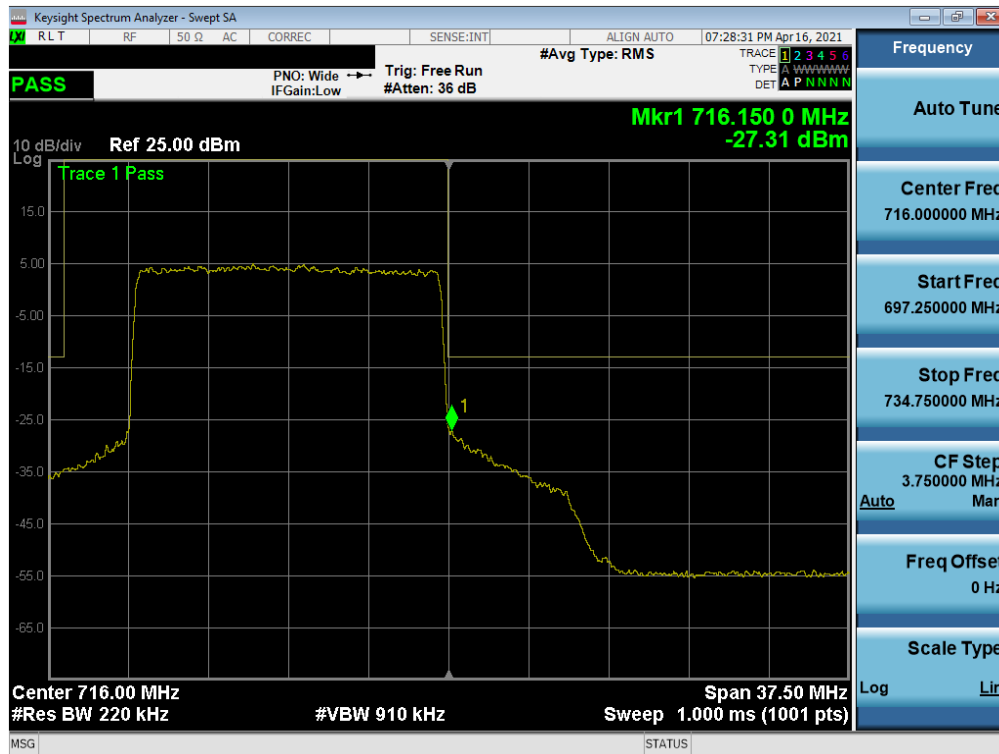
Plot 7-197. Upper Band Edge Plot (NR Band n71 - 5.0MHz - Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
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## NR Band n12



Plot 7-198. Lower Band Edge Plot (NR Band n12 – 15.0MHz - Full RB)



Plot 7-199. Upper Band Edge Plot (NR Band n12 – 15.0MHz - Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
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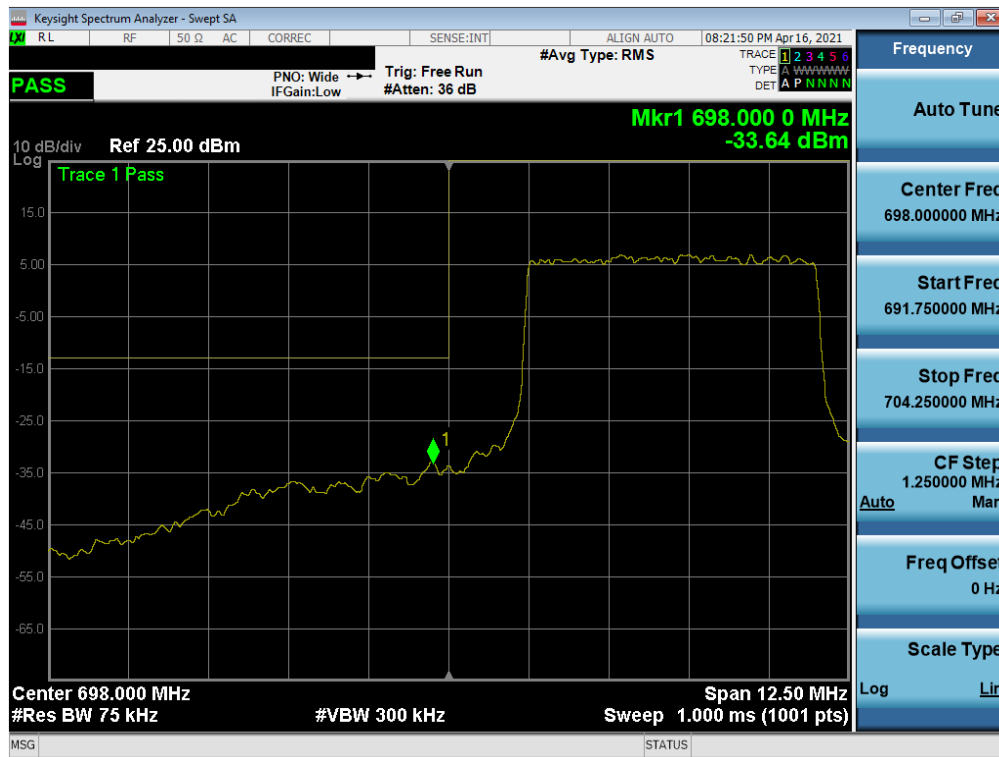


Plot 7-200. Lower Band Edge Plot (NR Band n12 - 10.0MHz - Full RB)



Plot 7-201. Upper Band Edge Plot (NR Band n12 - 10.0MHz - Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
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Plot 7-202. Lower Band Edge Plot (NR Band n12 - 5.0MHz - Full RB)



Plot 7-203. Upper Band Edge Plot (NR Band n12 - 5.0MHz - Full RB)

FCC ID: A3LSMF711U	<b>PCTEST</b> Proud to be part of element	PART 27 MEASUREMENT REPORT	<b>SAMSUNG</b>	Approved by: Technical Manager
Test Report S/N: 1M2104070032-04.A3L	Test Dates: 04/12/2021 - 06/04/2021	EUT Type: Portable Handset		Page 127 of 254