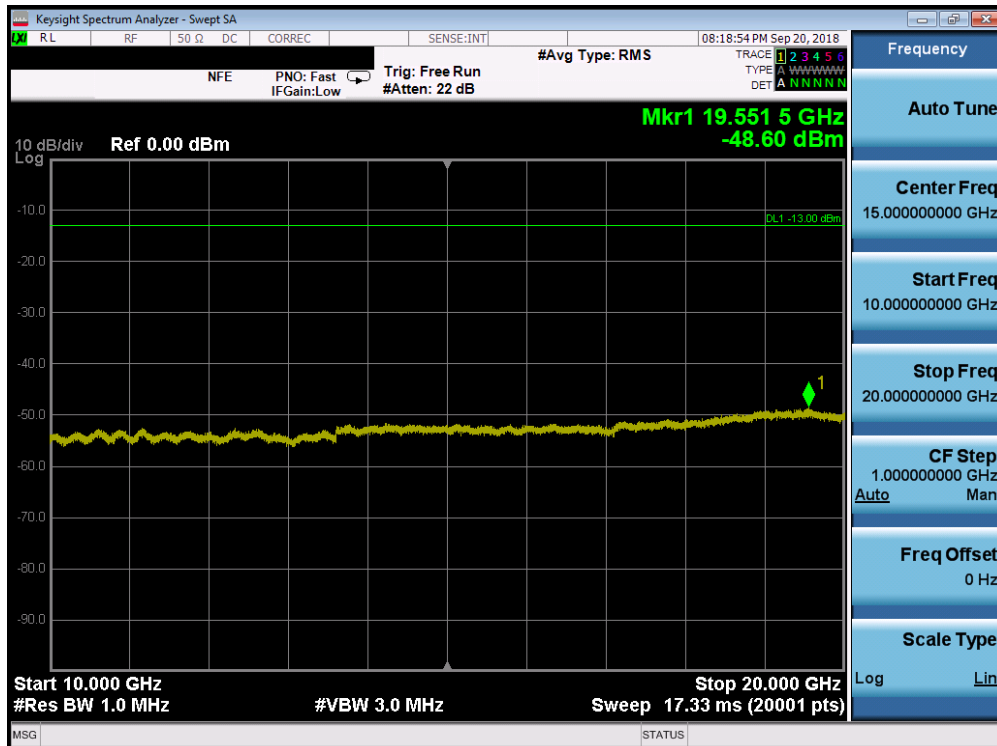
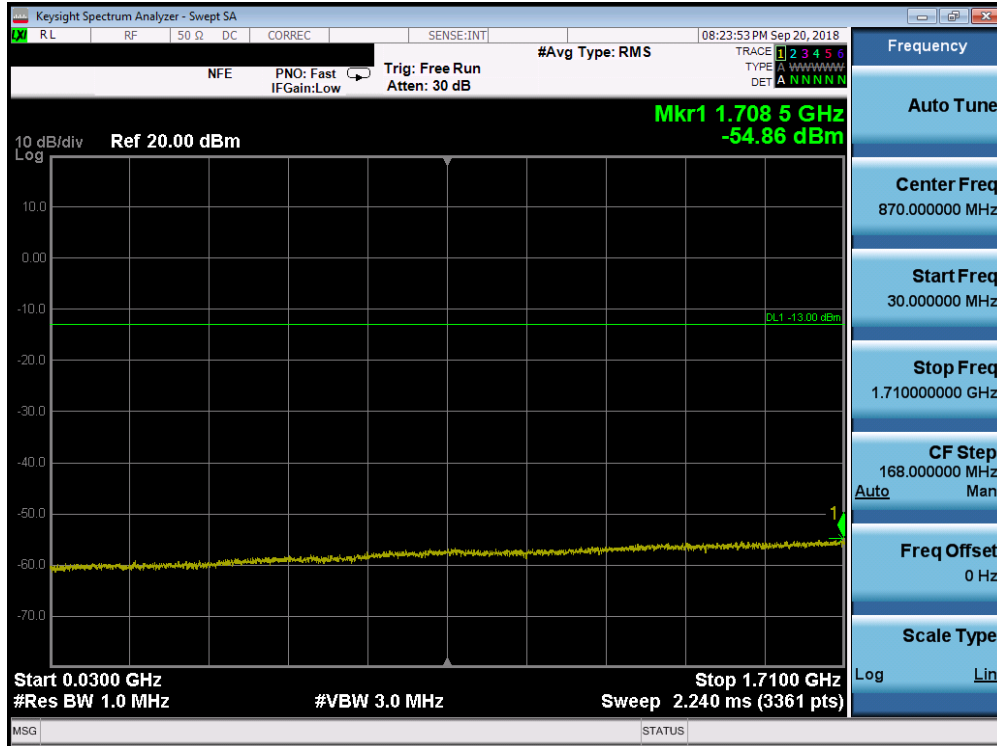


Plot 7-107. Conducted Spurious Plot (Band 66/4 - 15.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

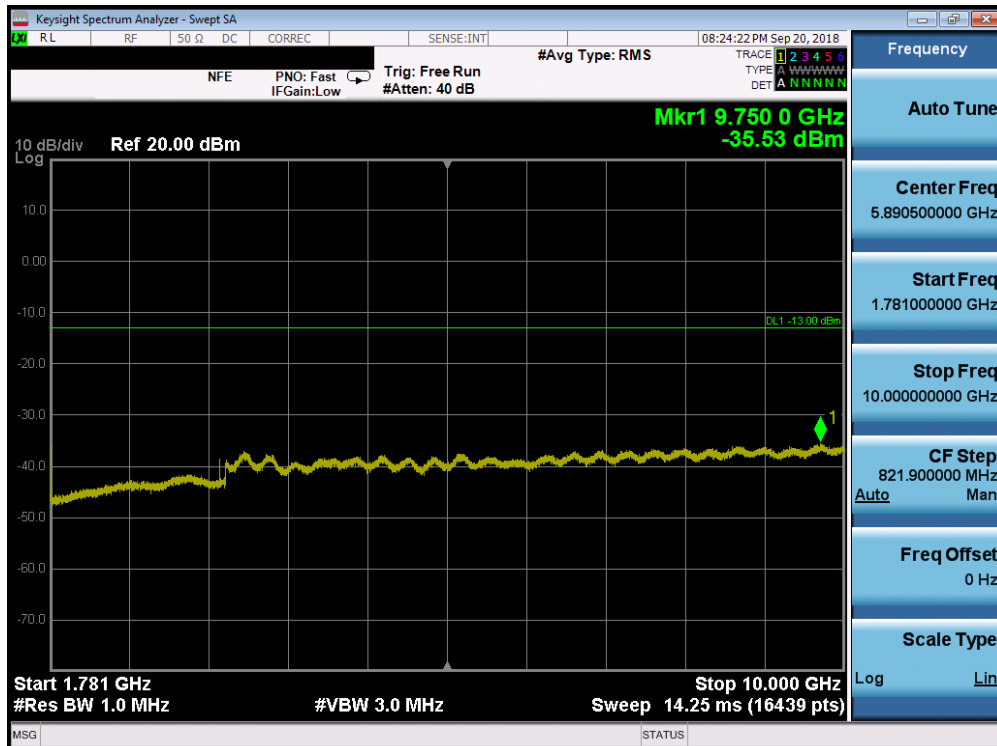


Plot 7-108. Conducted Spurious Plot (Band 66/4 - 15.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 73 of 189 |

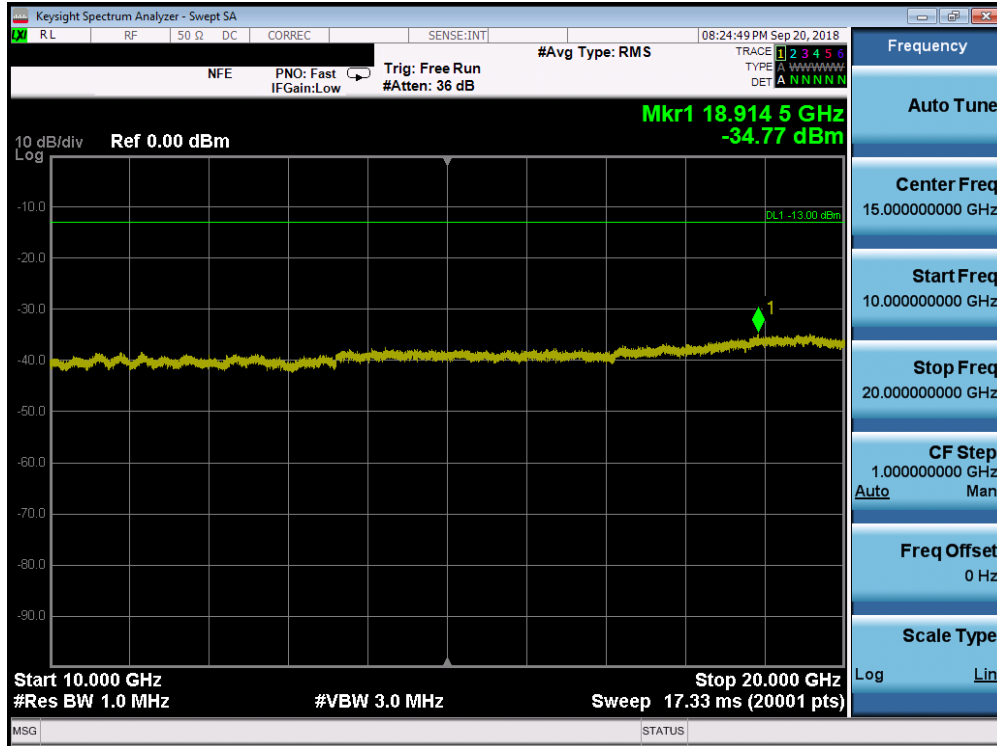


Plot 7-109. Conducted Spurious Plot (Band 66/4 - 15.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-110. Conducted Spurious Plot (Band 66/4 - 15.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

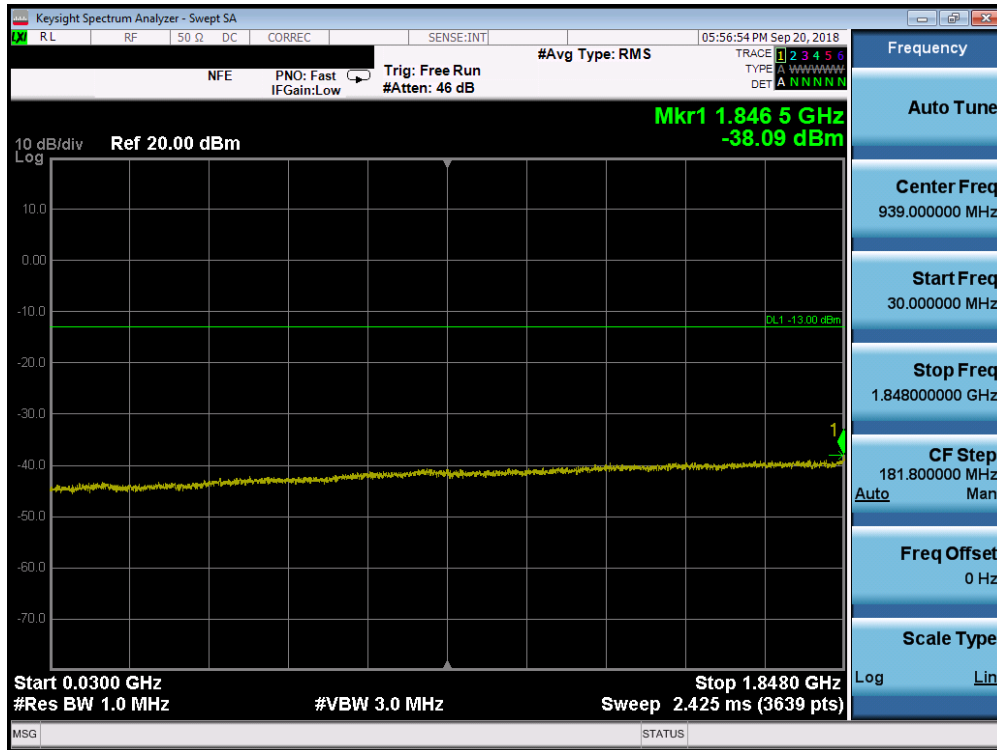
| | | | | |
|---|---|---------------------------------------|---|---------------------------------|
| FCC ID: A3LSMA920F |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 74 of 189 |



Plot 7-111. Conducted Spurious Plot (Band 66/4 - 15.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

| | | | | |
|---|---|-------------------------------|---|---------------------------------|
| FCC ID: A3LSMA920F |  MEASUREMENT REPORT (CERTIFICATION) | |  | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | Page 75 of 189 | |

Band 2

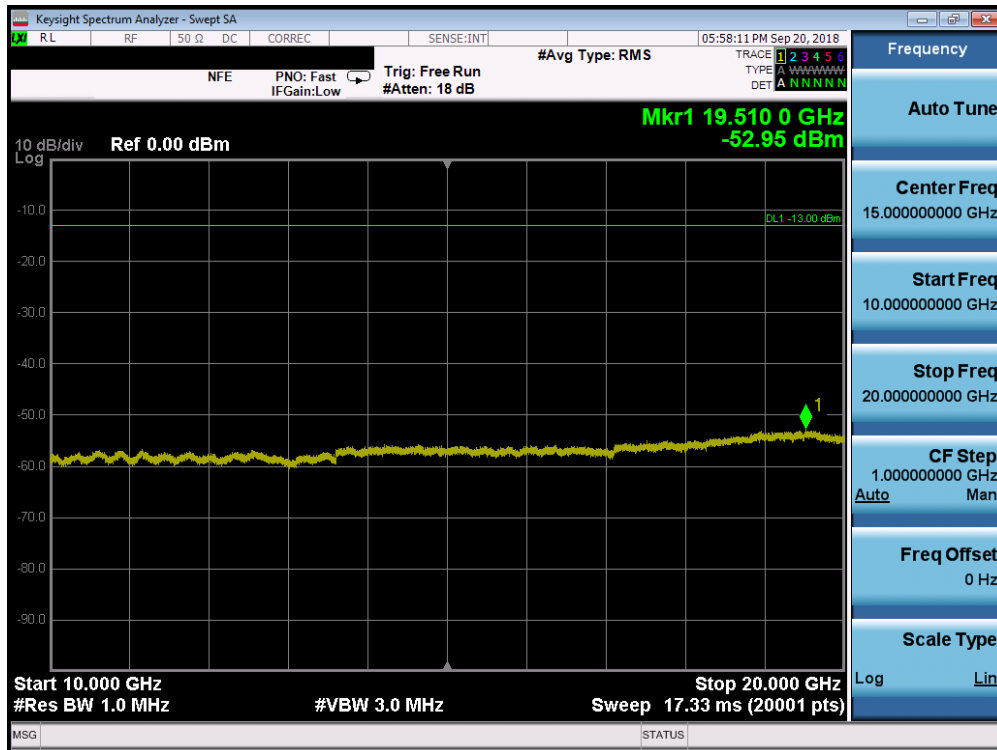


Plot 7-112. Conducted Spurious Plot (Band 2 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

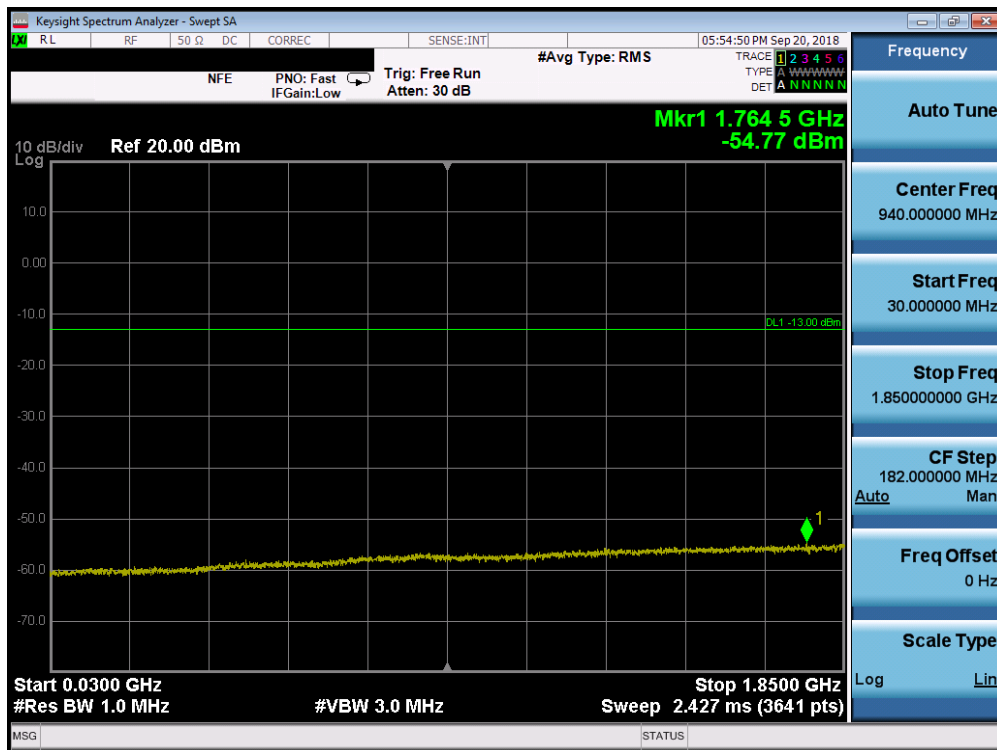


Plot 7-113. Conducted Spurious Plot (Band 2 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

| | | | | |
|---|---|---------------------------------------|---|---------------------------------|
| FCC ID: A3LSMA920F |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 76 of 189 |

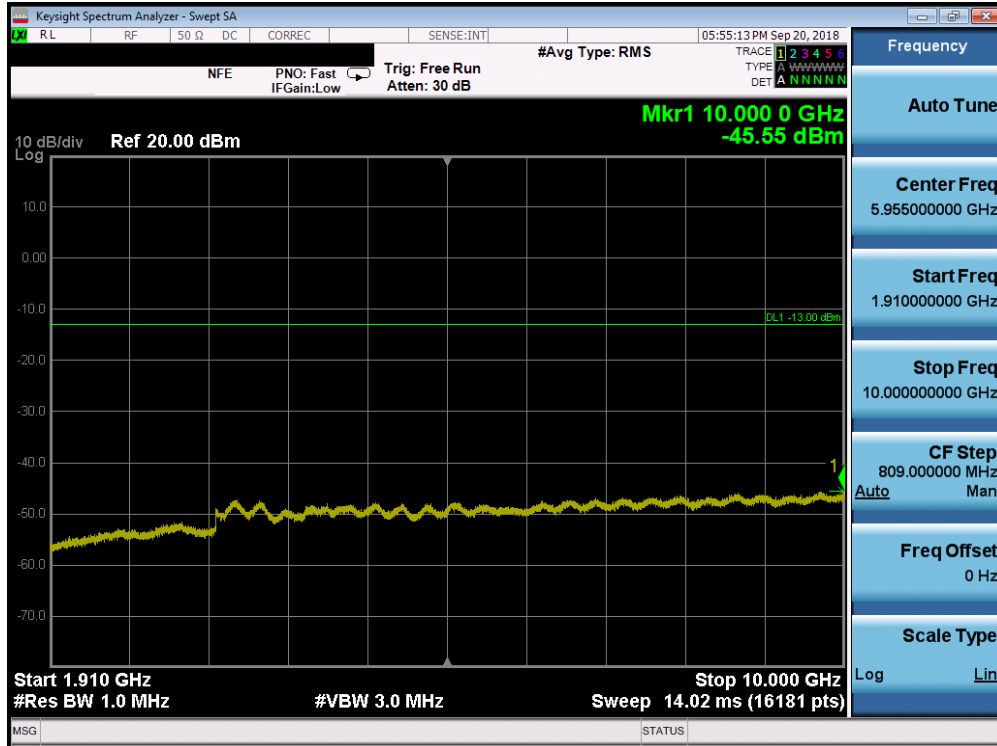


Plot 7-114. Conducted Spurious Plot (Band 2 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

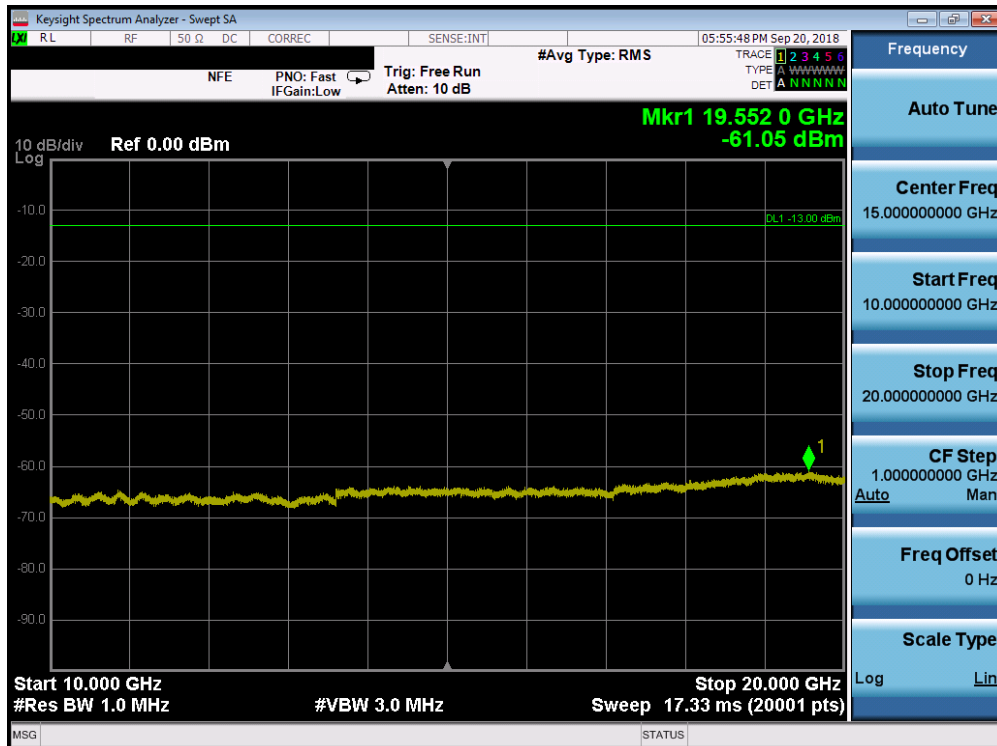


Plot 7-115. Conducted Spurious Plot (Band 2 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 77 of 189 |

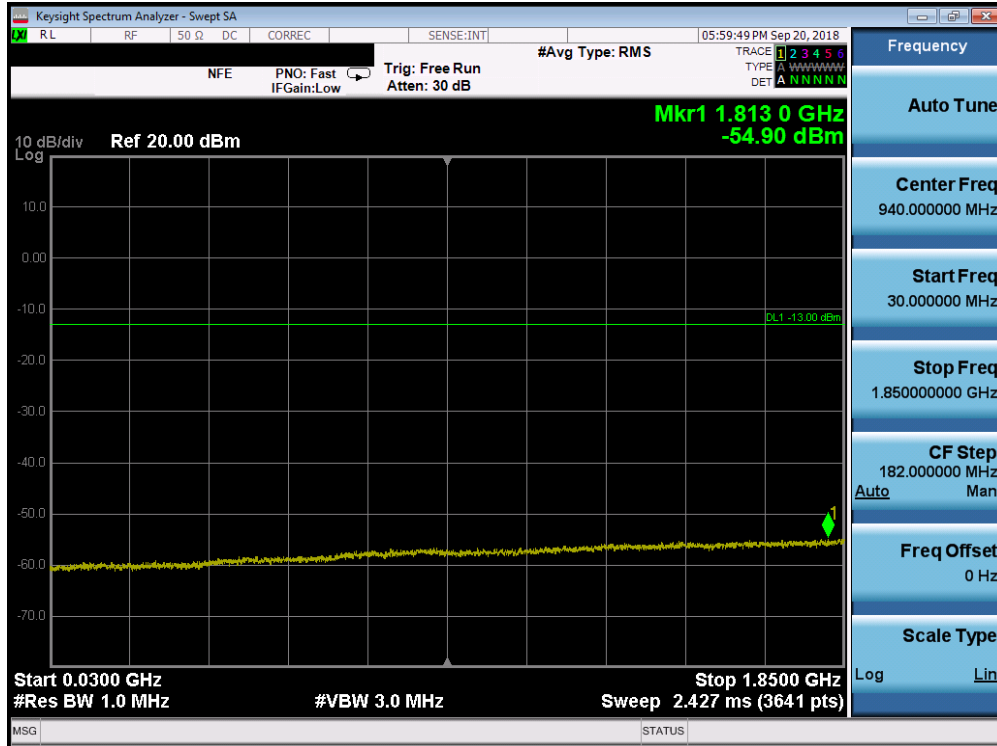


Plot 7-116. Conducted Spurious Plot (Band 2 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

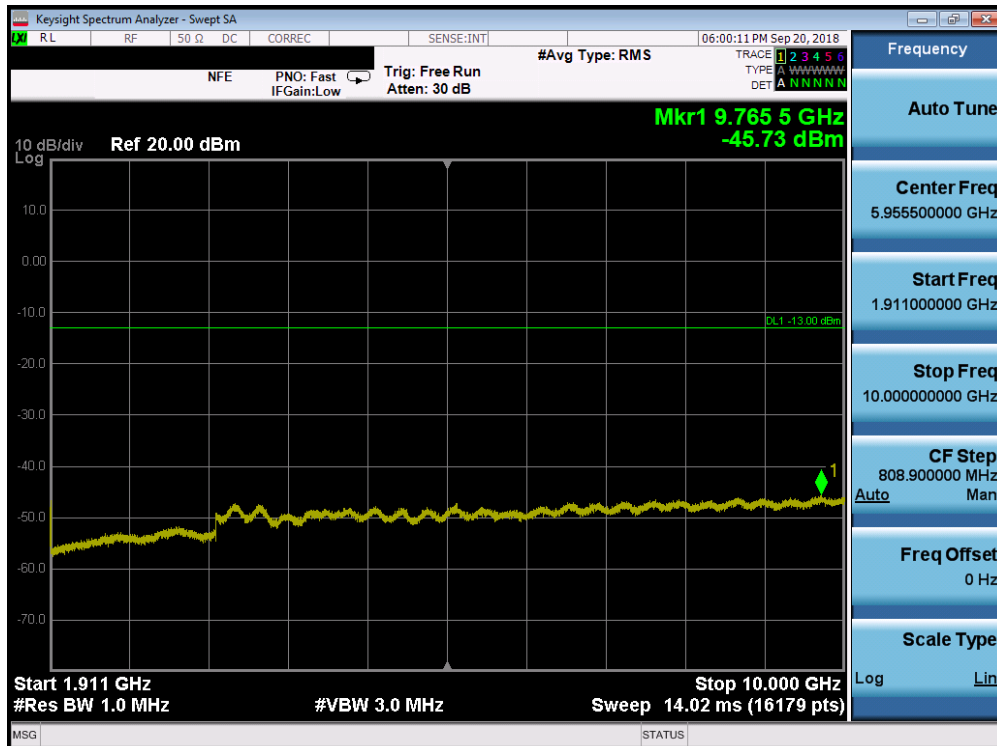


Plot 7-117. Conducted Spurious Plot (Band 2 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 78 of 189 |

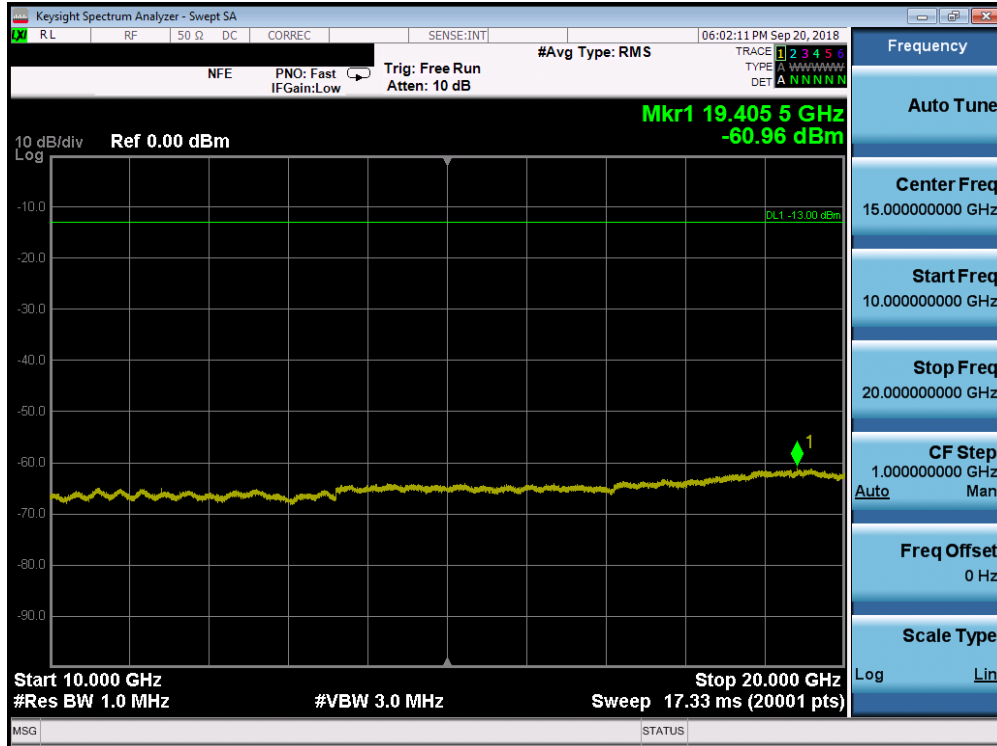


Plot 7-118. Conducted Spurious Plot (Band 2 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-119. Conducted Spurious Plot (Band 2 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

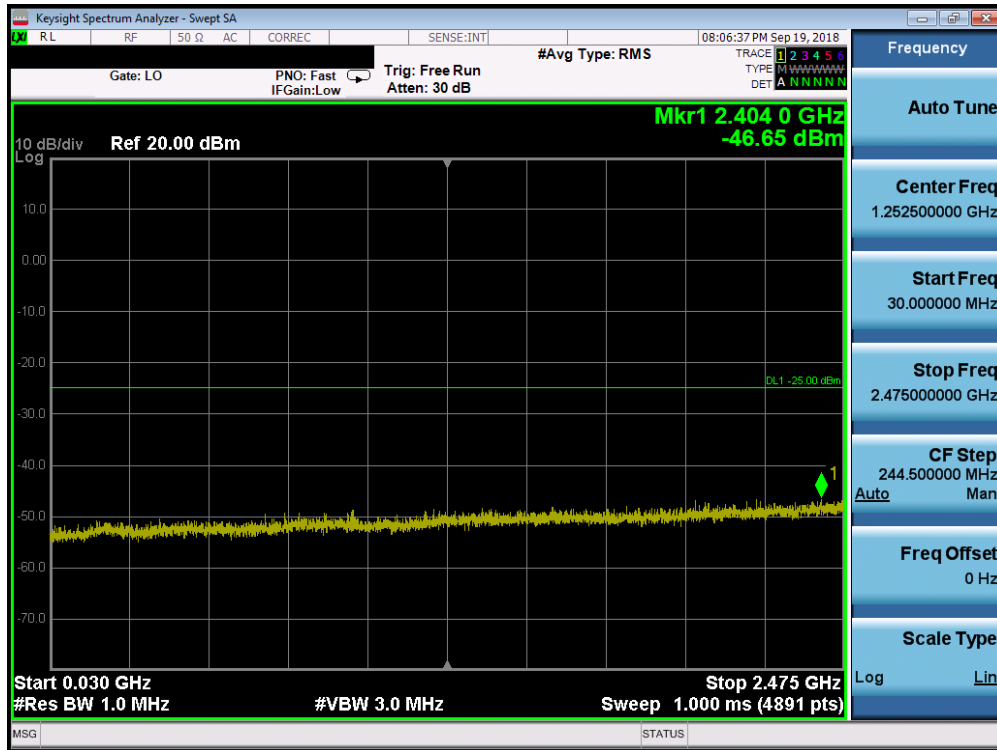
| | | | | |
|---|---|---------------------------------------|---|---------------------------------|
| FCC ID: A3LSMA920F |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 79 of 189 |



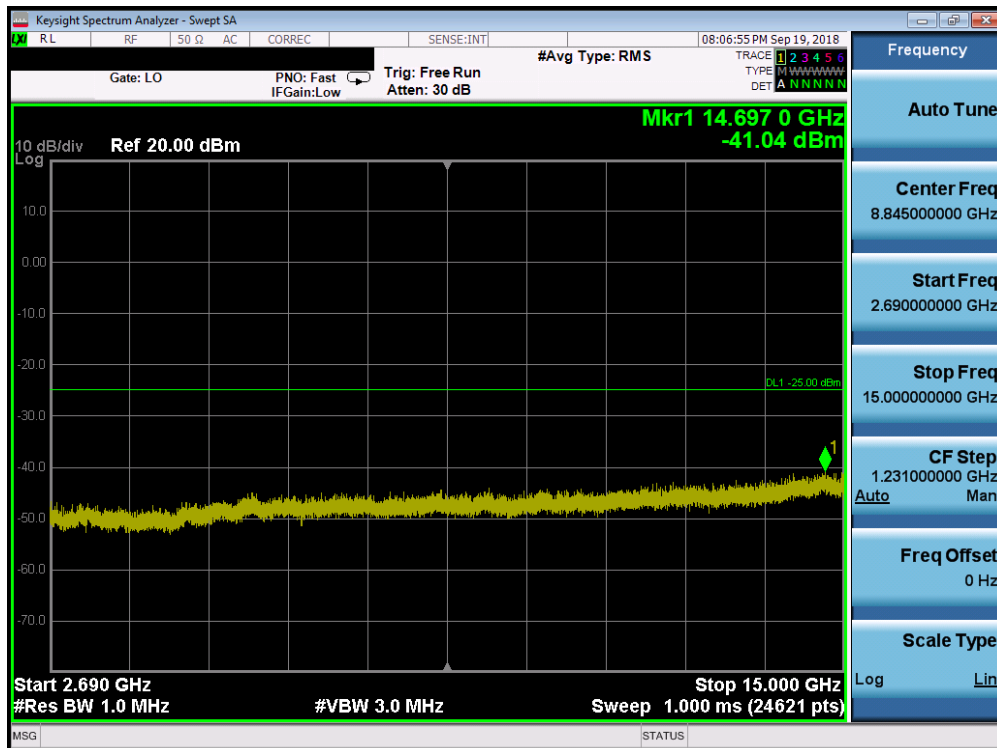
Plot 7-120. Conducted Spurious Plot (Band 2 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

| | | | |
|---|---|-------------------------------|---------------------------------|
| FCC ID: A3LSMA920F |  MEASUREMENT REPORT (CERTIFICATION)  | | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | Page 80 of 189 |

Band 41

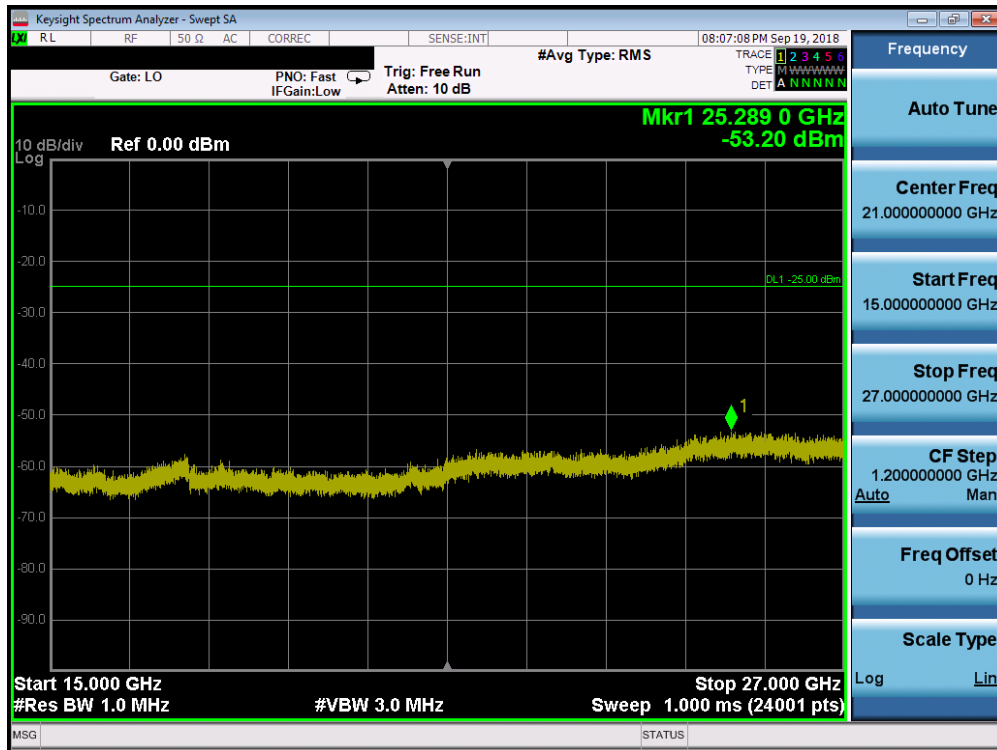


Plot 7-121. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

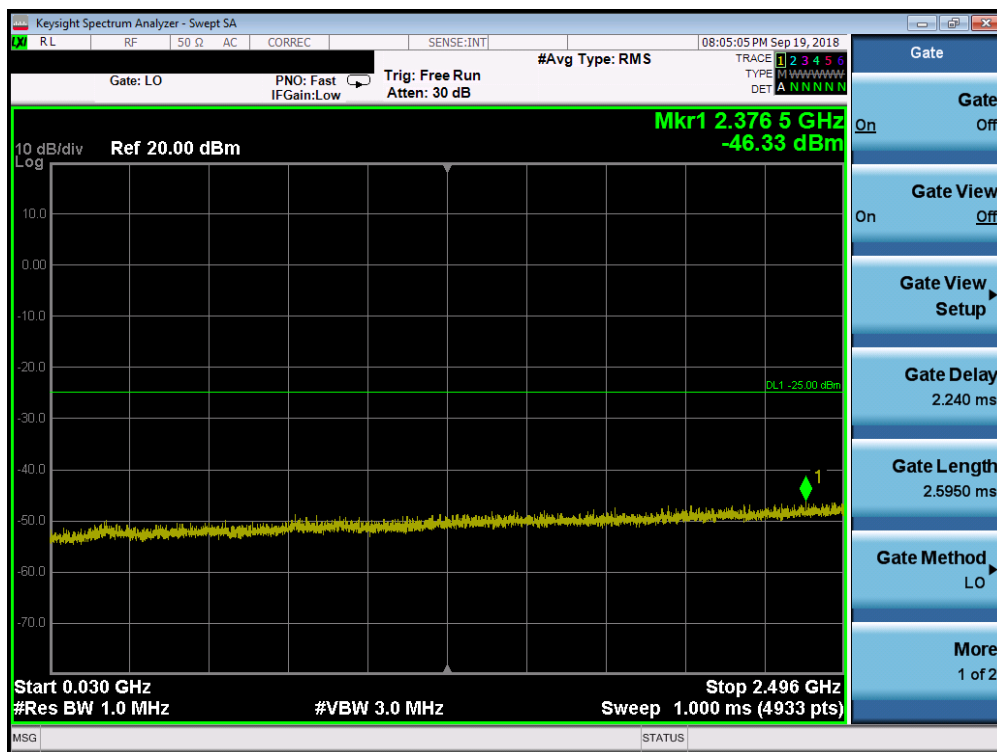


Plot 7-122. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

| | | | | |
|---|-------------------------------------|------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 81 of 189 |

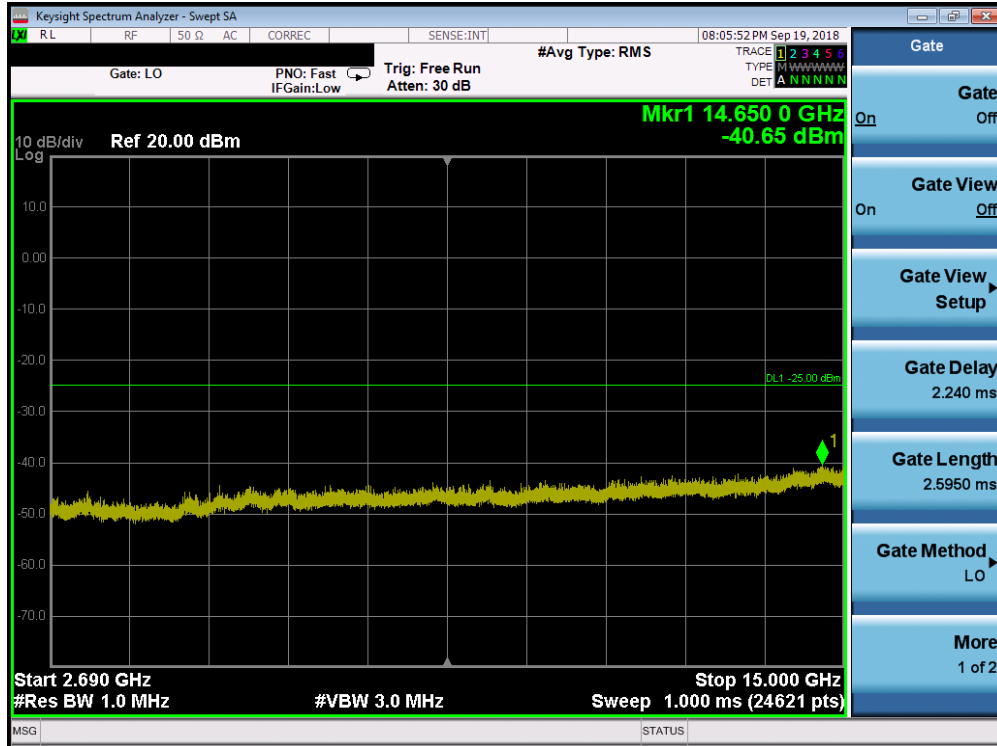


Plot 7-123. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

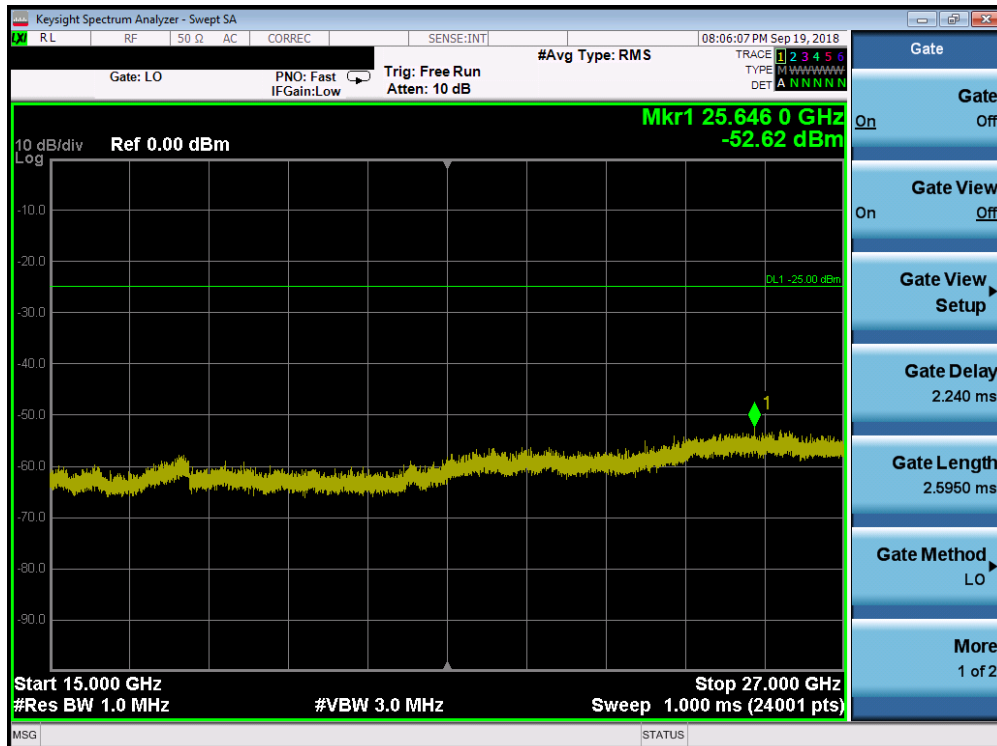


Plot 7-124. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 82 of 189 |

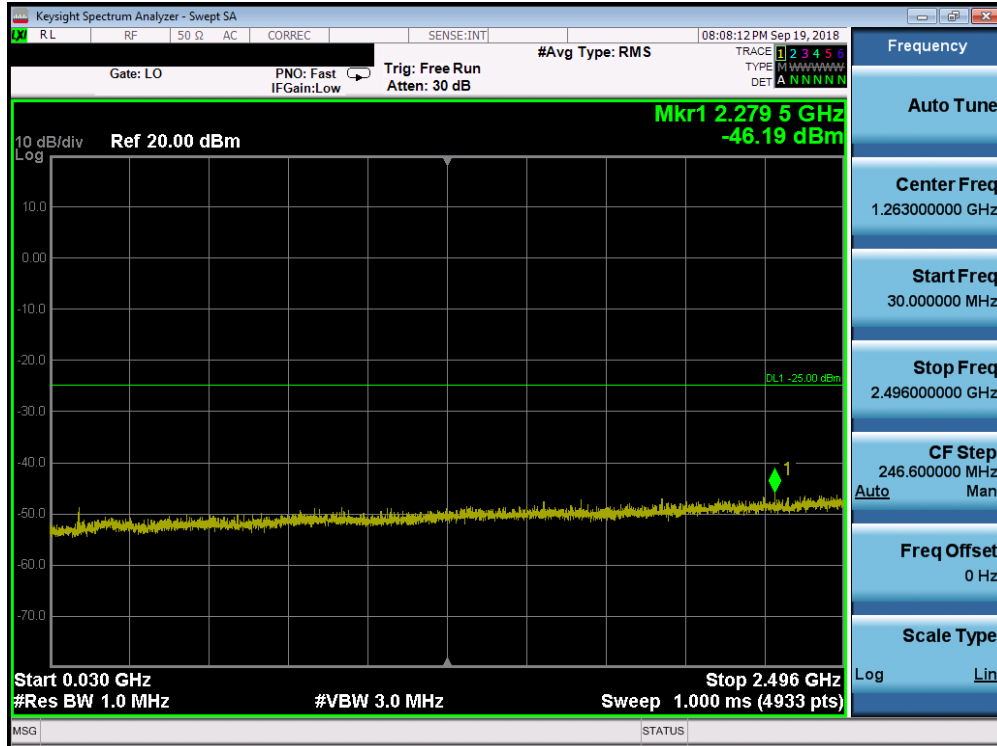


Plot 7-125. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

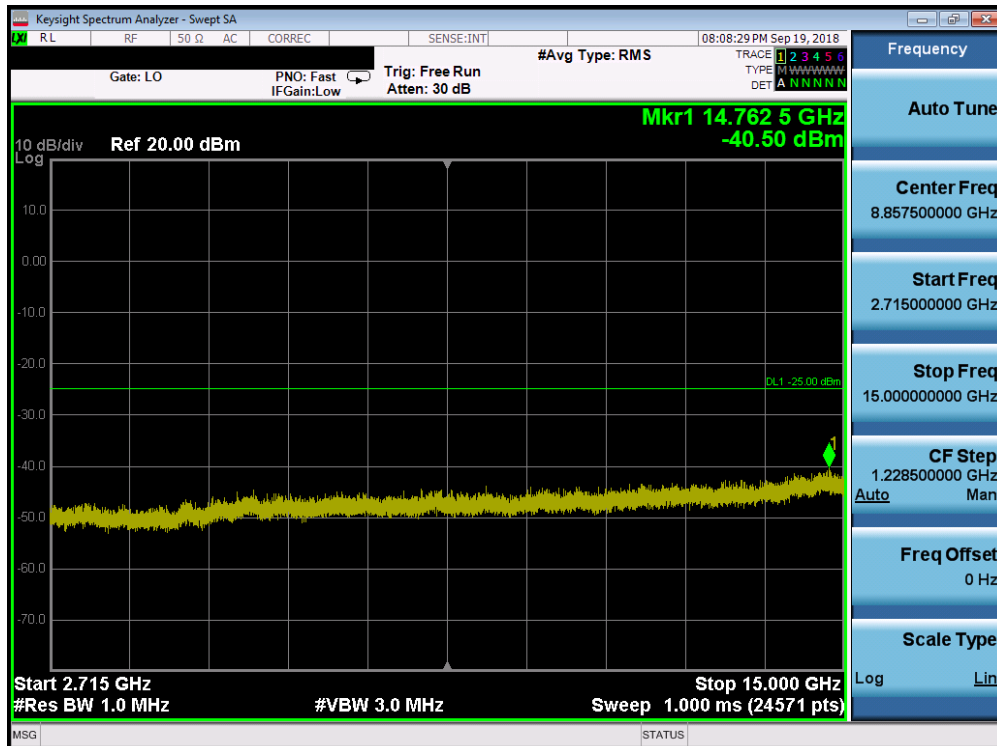


Plot 7-126. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

| | | | | |
|---|---|---------------------------------------|---|---------------------------------|
| FCC ID: A3LSMA920F |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 83 of 189 |



Plot 7-127. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-128. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 84 of 189 |



Plot 7-129. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

| | | | | |
|---|---|-------------------------------|---|---------------------------------|
| FCC ID: A3LSMA920F |  MEASUREMENT REPORT (CERTIFICATION) | |  | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 85 of 189 |

7.4 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 $43 + \log_{10}(P_{[Watts]})$, where P is the transmitter power in Watts.

The minimum permissible attenuation level for Band 41 is as noted in the Test Notes on the following page.

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.

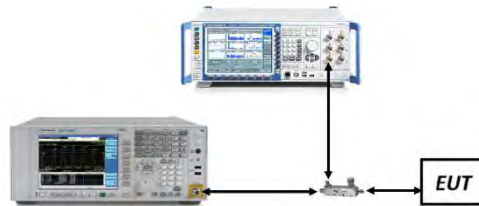


Figure 7-3. Test Instrument & Measurement Setup

| | | | | |
|--|---|--------------------------------------|---|--|
| FCC ID: A3LSMA920F |  MEASUREMENT REPORT (CERTIFICATION) | |  | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | Page 86 of 189 | |

Test Notes

Per 22.917(b) 24.238(a) 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.

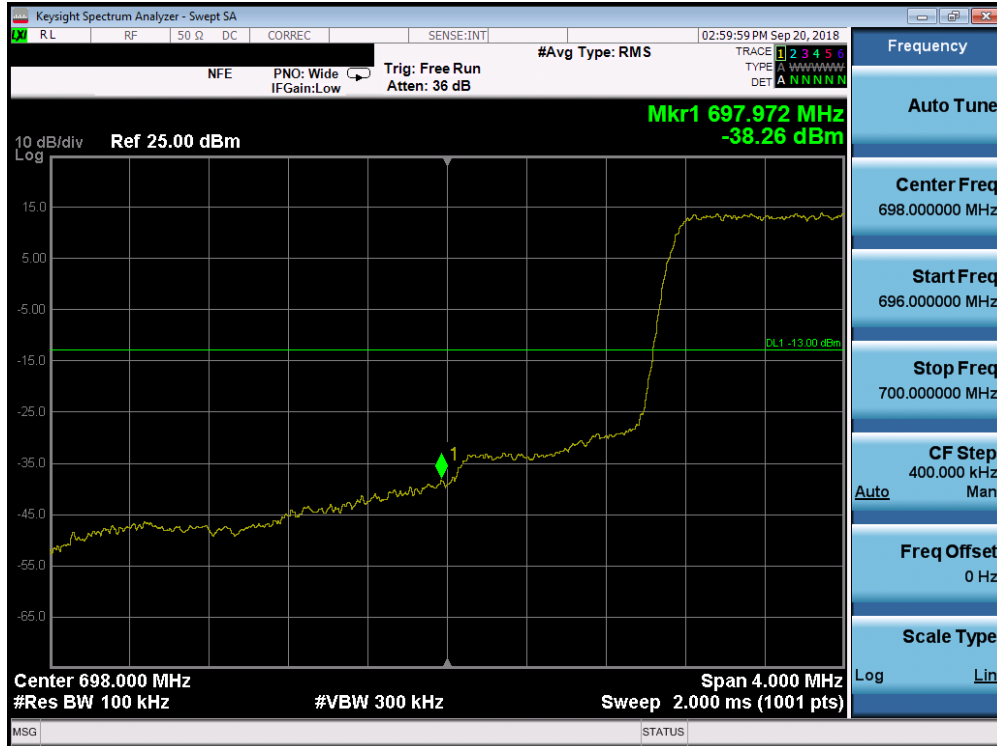
Per 27.53(g) for operations in the 698-746 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.

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.

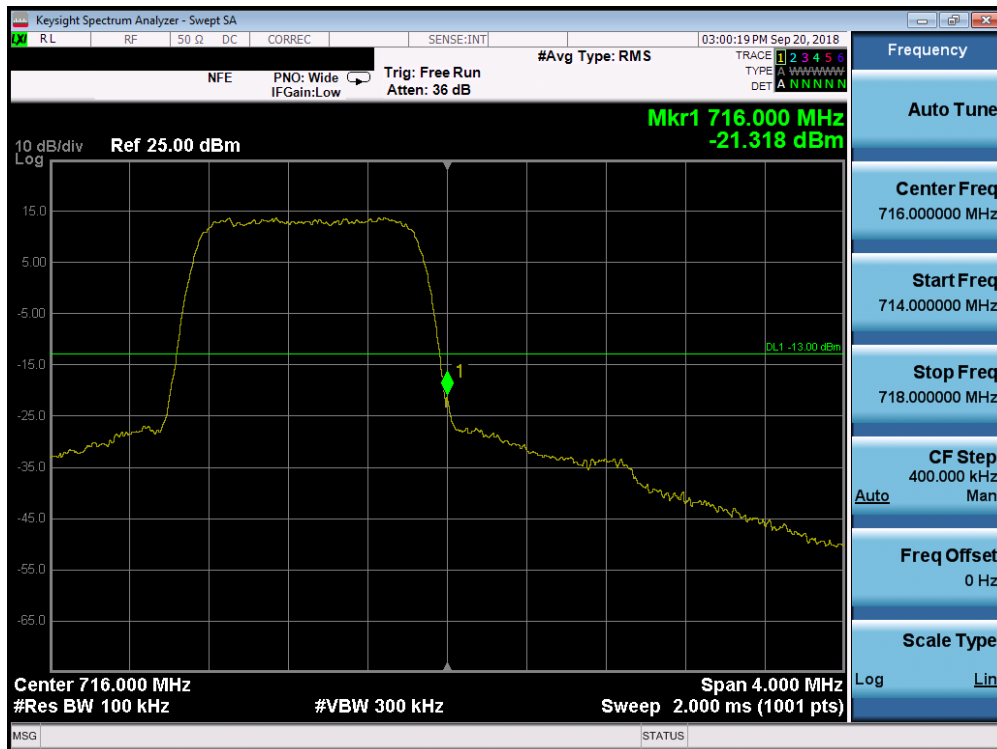
For all plots showing emissions in the 763 – 775MHz and 793 – 805MHz band, the FCC limit per 27.53(c)(4) is $65 + 10\log_{10}(P) = -35\text{dBm}$ in a 6.25kHz bandwidth.

Per 27.53(m) for operations in the BRS/EBS bands, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth. In addition, the attenuation factor shall not be less that $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz.

| | | | |
|--|---|--------------------------------------|--|
| FCC ID: A3LSMA920F |  MEASUREMENT REPORT (CERTIFICATION)  | | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | Page 87 of 189 |

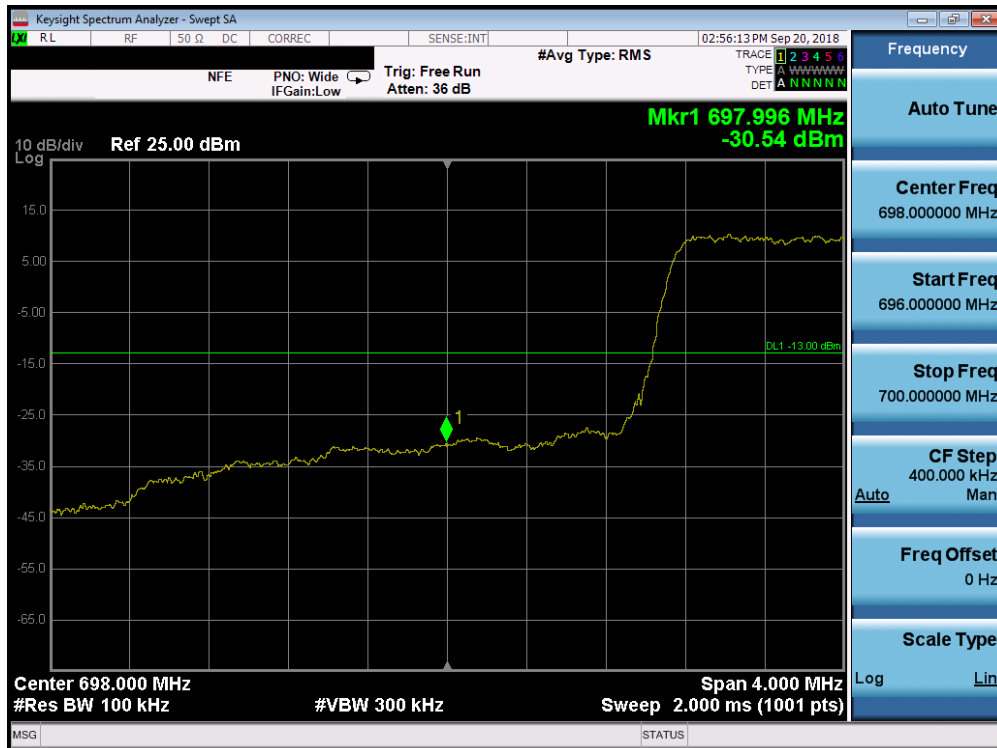


Plot 7-130. Lower Band Edge Plot (Band 12 - 1.4MHz QPSK - Full RB Configuration)

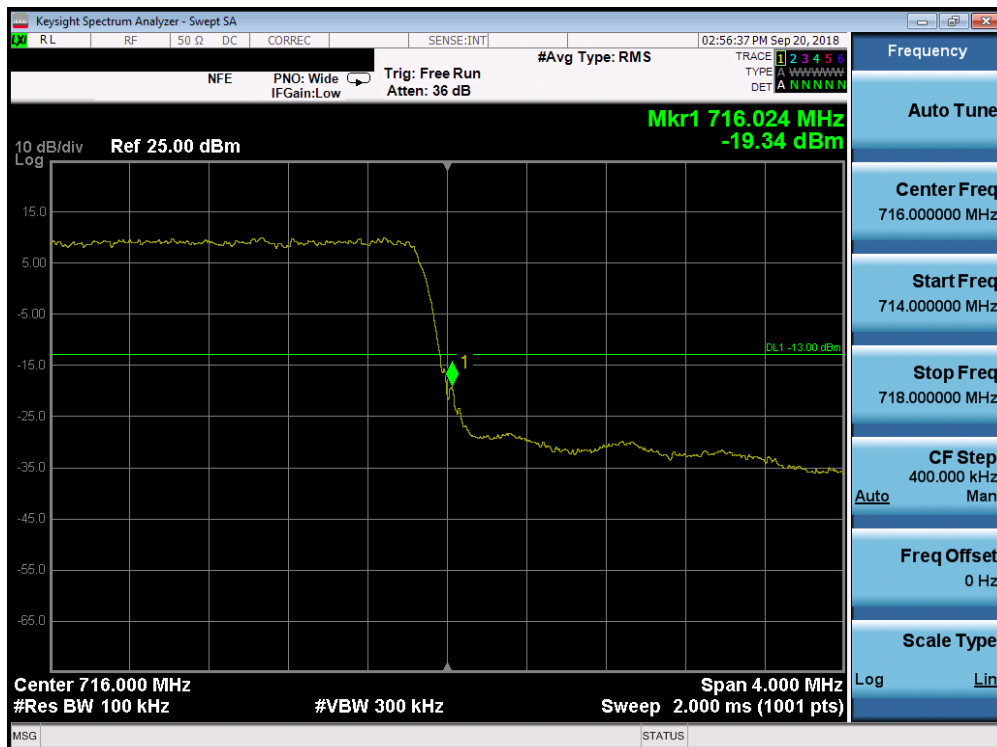


Plot 7-131. Upper Band Edge Plot (Band 12 - 1.4MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 88 of 189 |

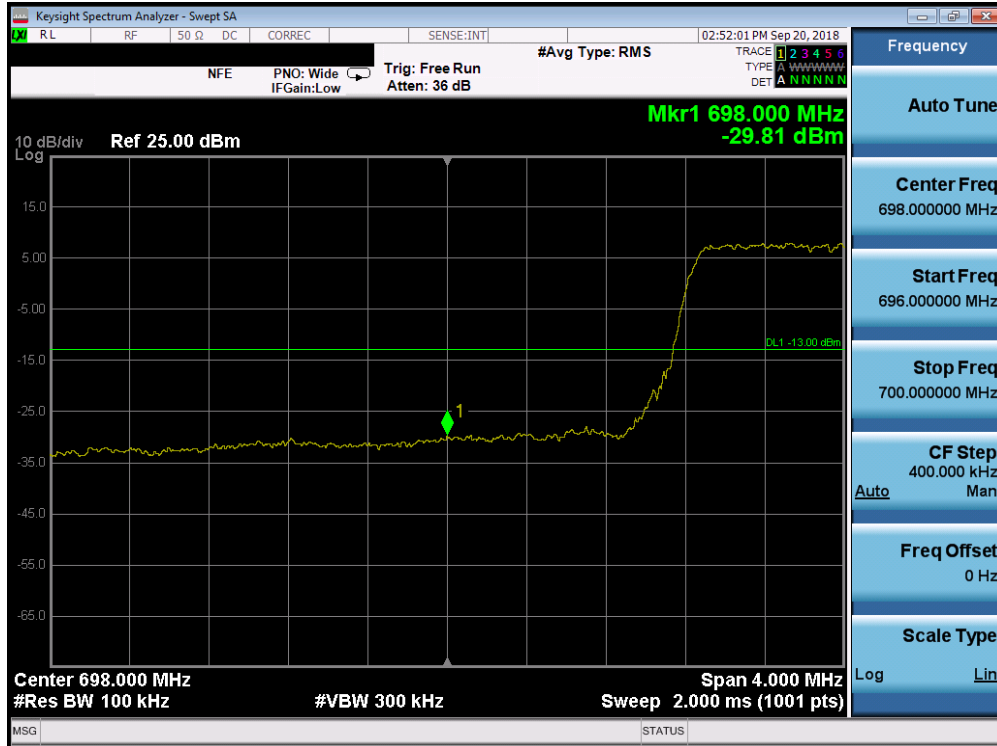


Plot 7-132. Lower Band Edge Plot (Band 12 - 3.0MHz QPSK - Full RB Configuration)

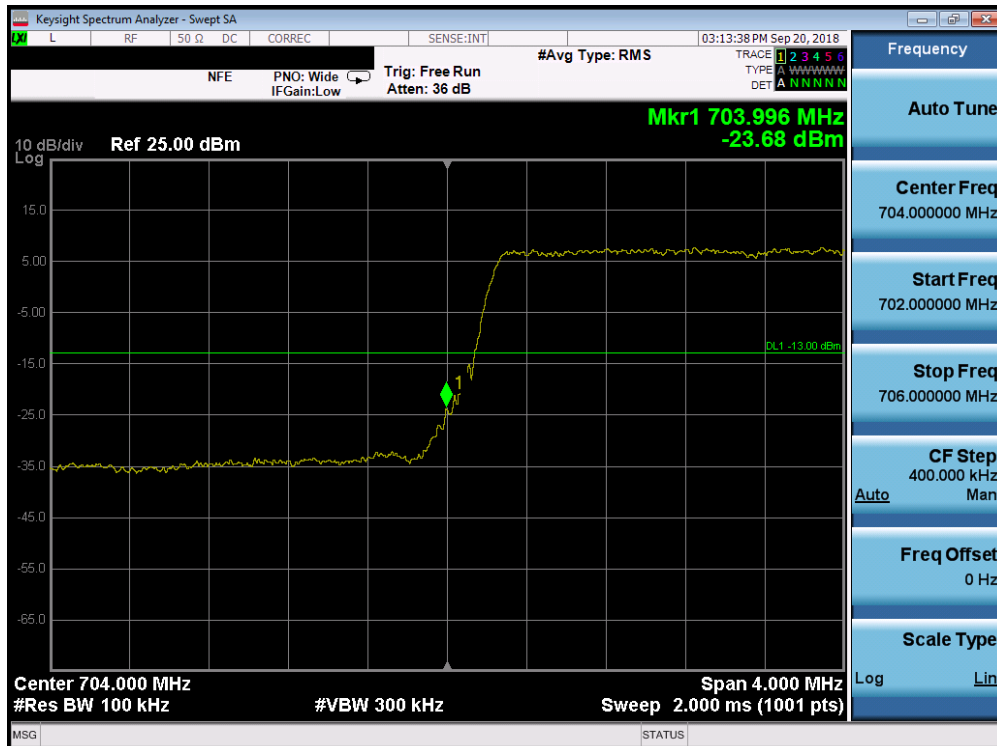


Plot 7-133. Upper Band Edge Plot (Band 12 - 3.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|---|---------------------------------------|---|---------------------------------|
| FCC ID: A3LSMA920F |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 89 of 189 |

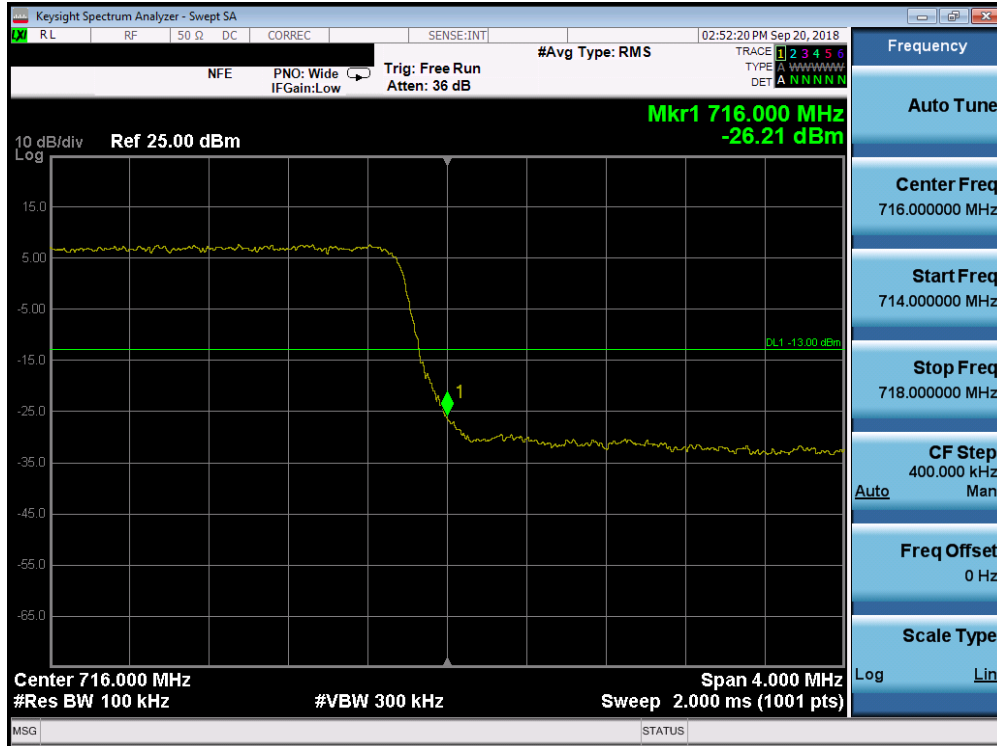


Plot 7-134. Lower Band Edge Plot (Band 12 - 5.0MHz QPSK - Full RB Configuration)

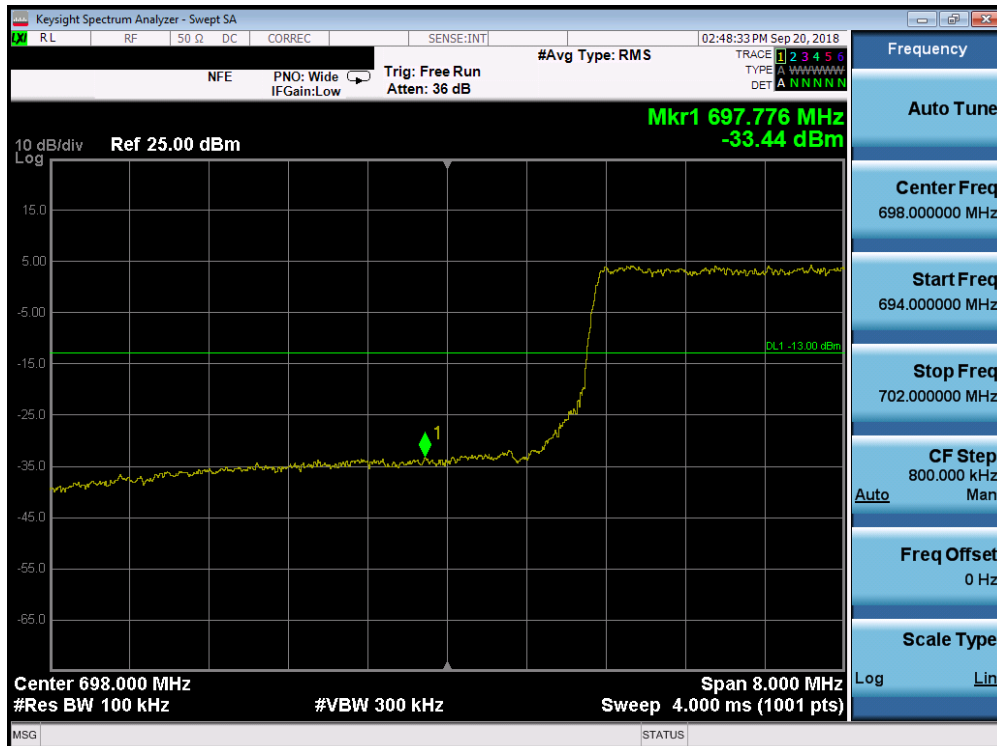


Plot 7-135. Lower Band Edge Plot (Band 17 - 5.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 90 of 189 |

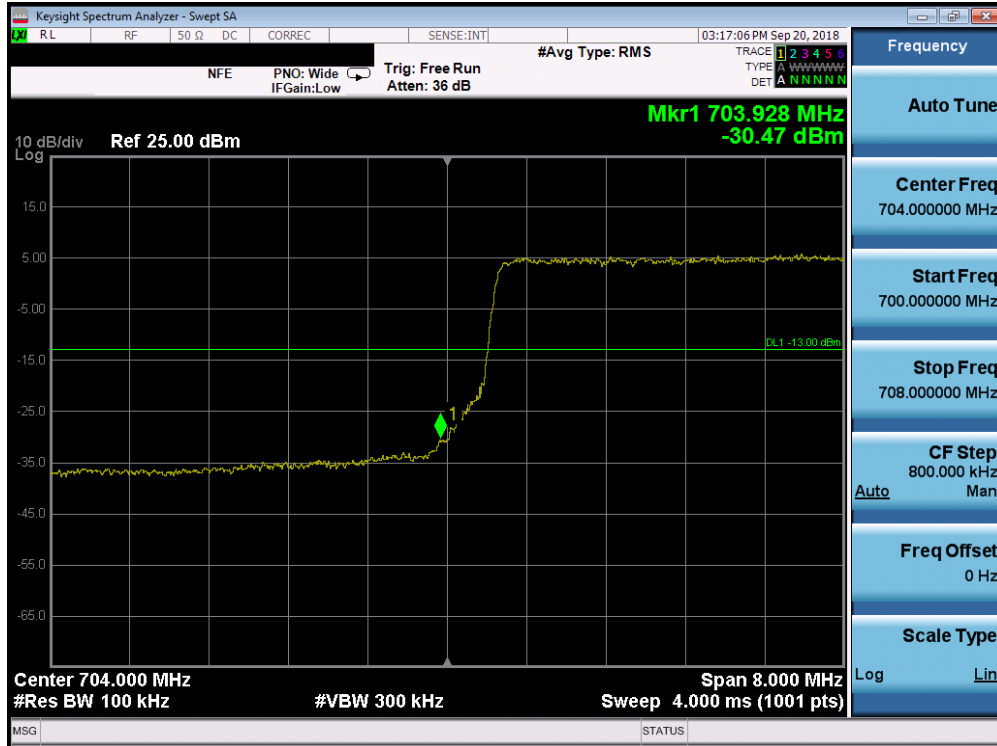


Plot 7-136. Upper Band Edge Plot (Band 12/17 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-137. Lower Band Edge Plot (Band 12 - 10.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 91 of 189 |



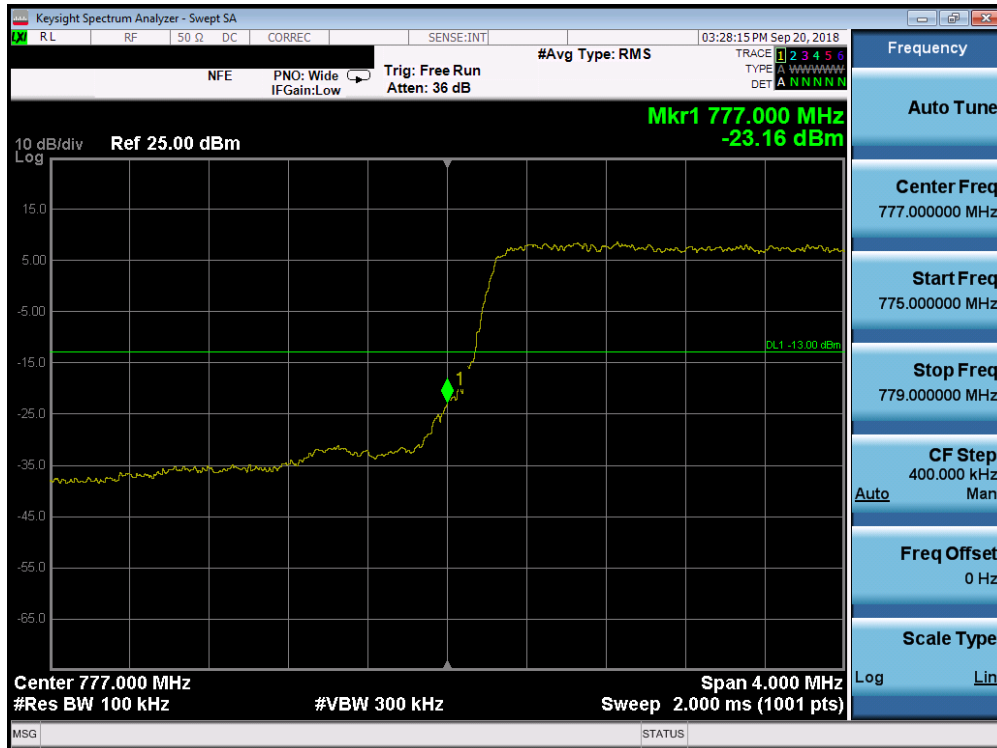
Plot 7-138. Lower Band Edge Plot (Band 17 - 10.0MHz QPSK - Full RB Configuration)



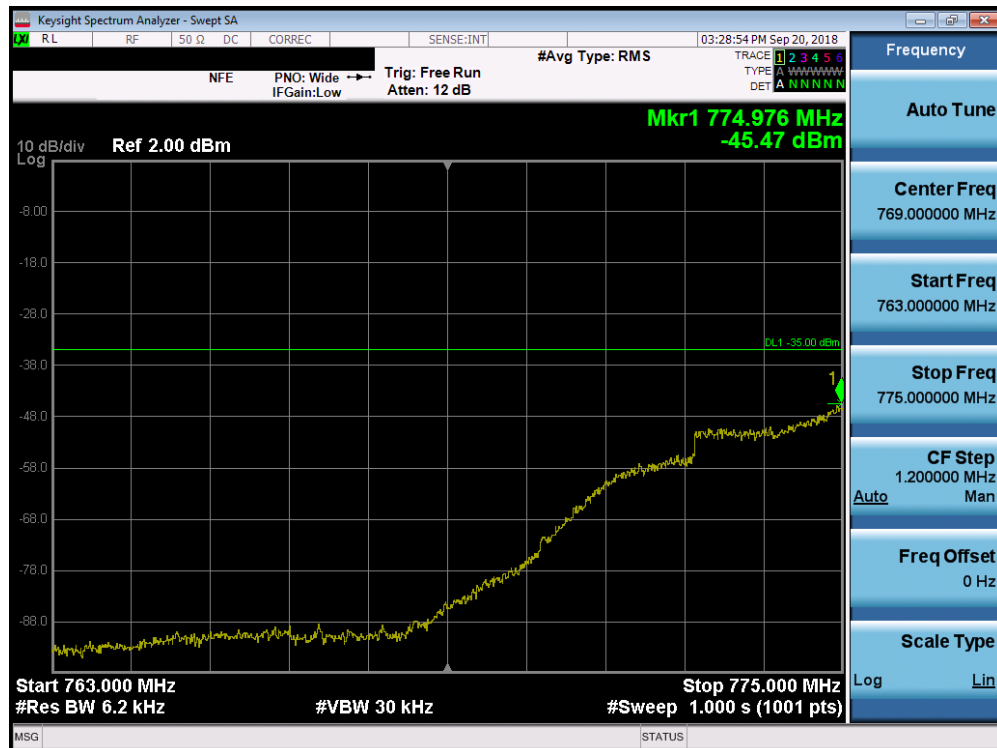
Plot 7-139. Upper Band Edge Plot (Band 12/17 - 10.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 92 of 189 |

Band 13

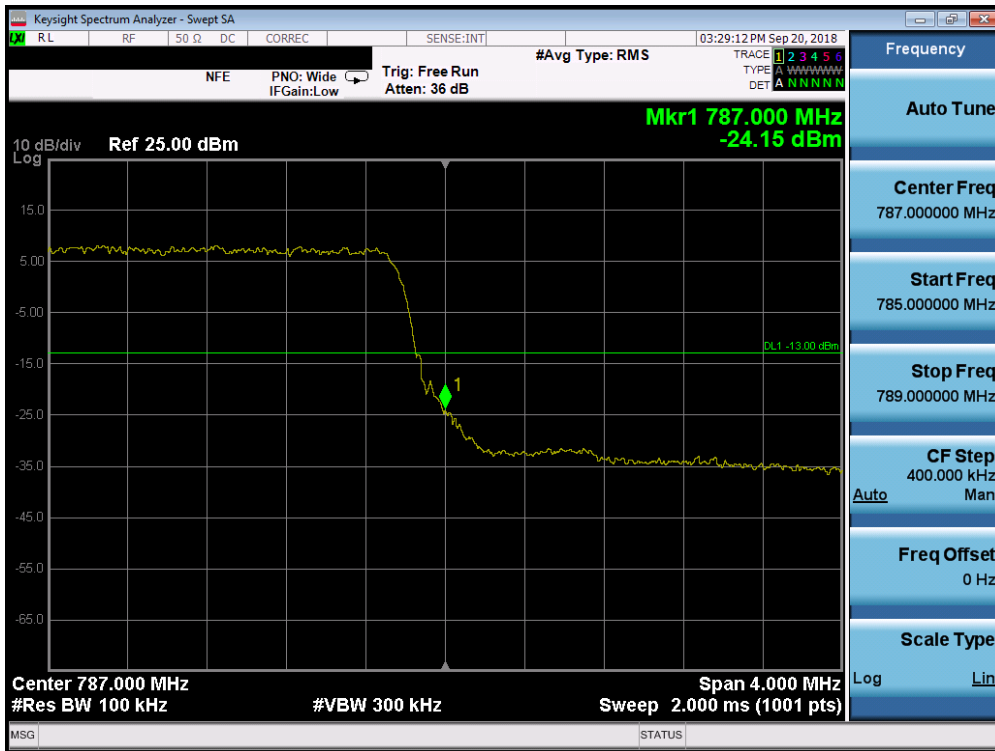


Plot 7-140. Lower Band Edge Plot (Band 13 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-141. Lower Emission Mask Plot (Band 13 - 5.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|-------------------------------------|------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 93 of 189 |

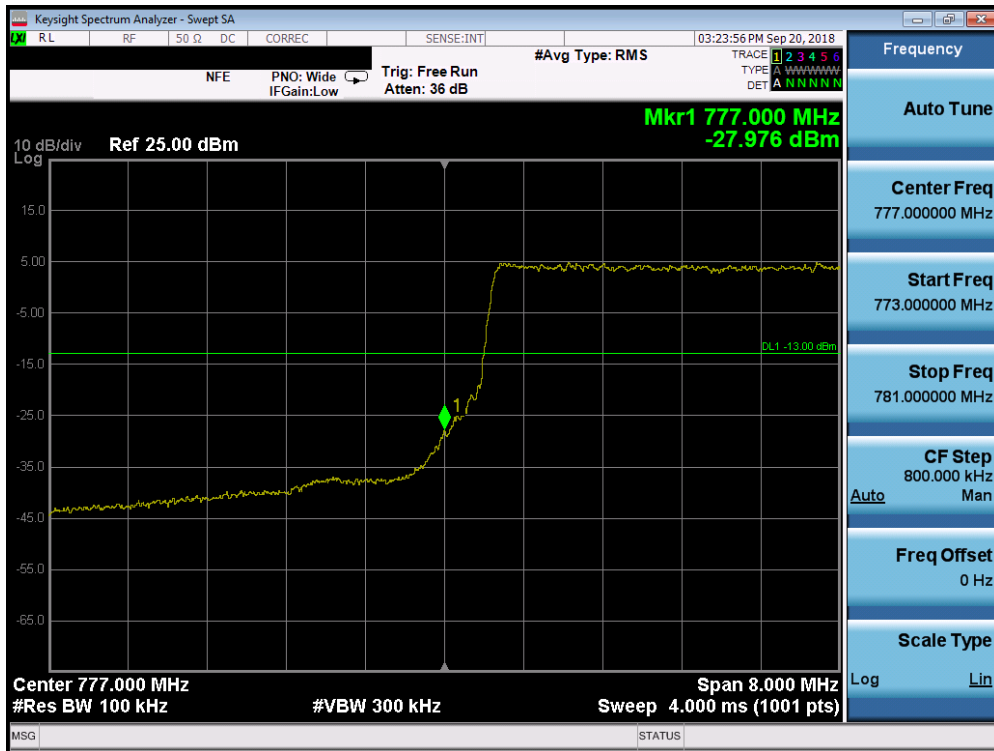


Plot 7-142. Upper Band Edge Plot (Band 13 - 5.0MHz QPSK - Full RB Configuration)

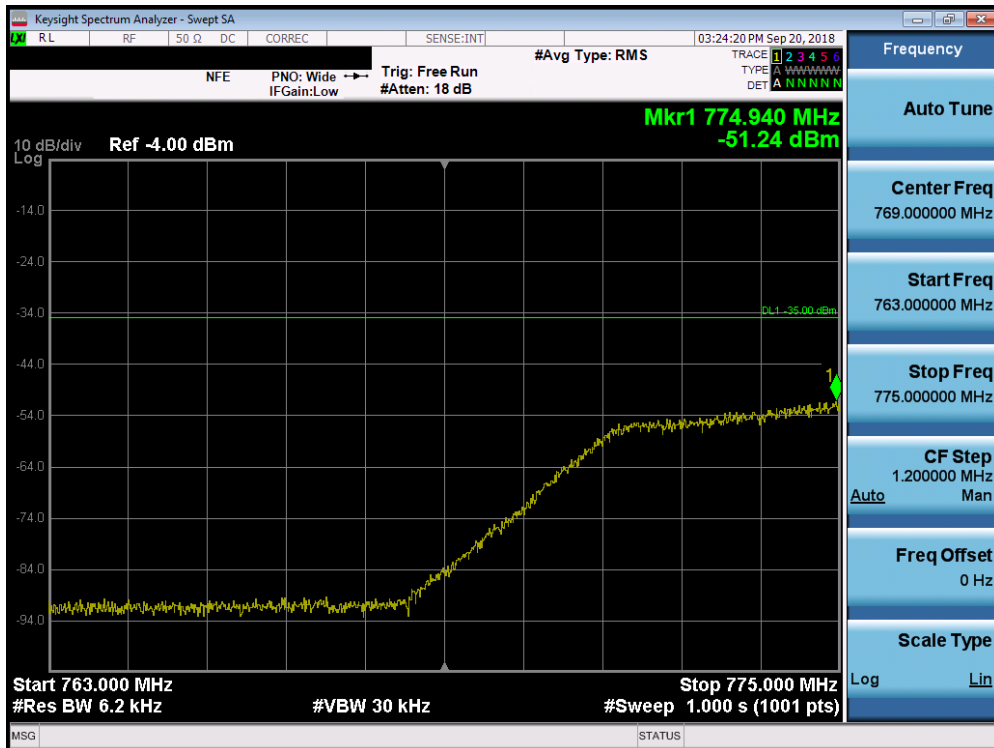


Plot 7-143. Upper Emission Mask Plot (Band 13 - 5.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 94 of 189 |

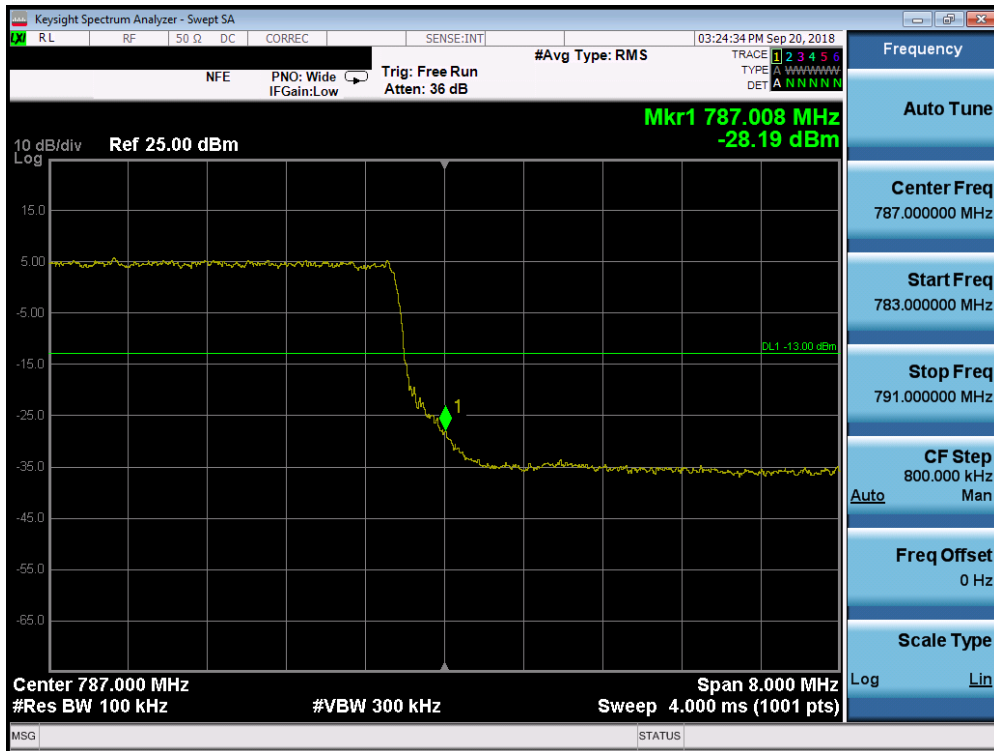


Plot 7-144. Lower Band Edge Plot (Band 13 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-145. Lower Emission Mask Plot (Band 13 - 10.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 95 of 189 |



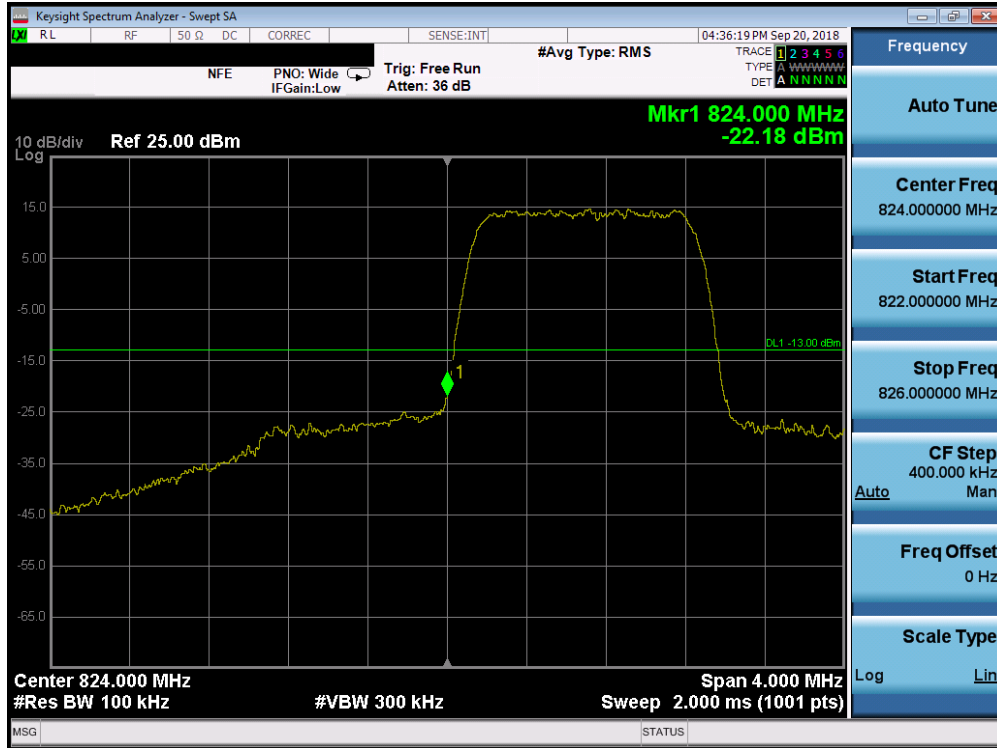
Plot 7-146. Upper Band Edge Plot (Band 13 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-147. Upper Emission Mask Plot (Band 13 - 10.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 96 of 189 |

Band 26/5

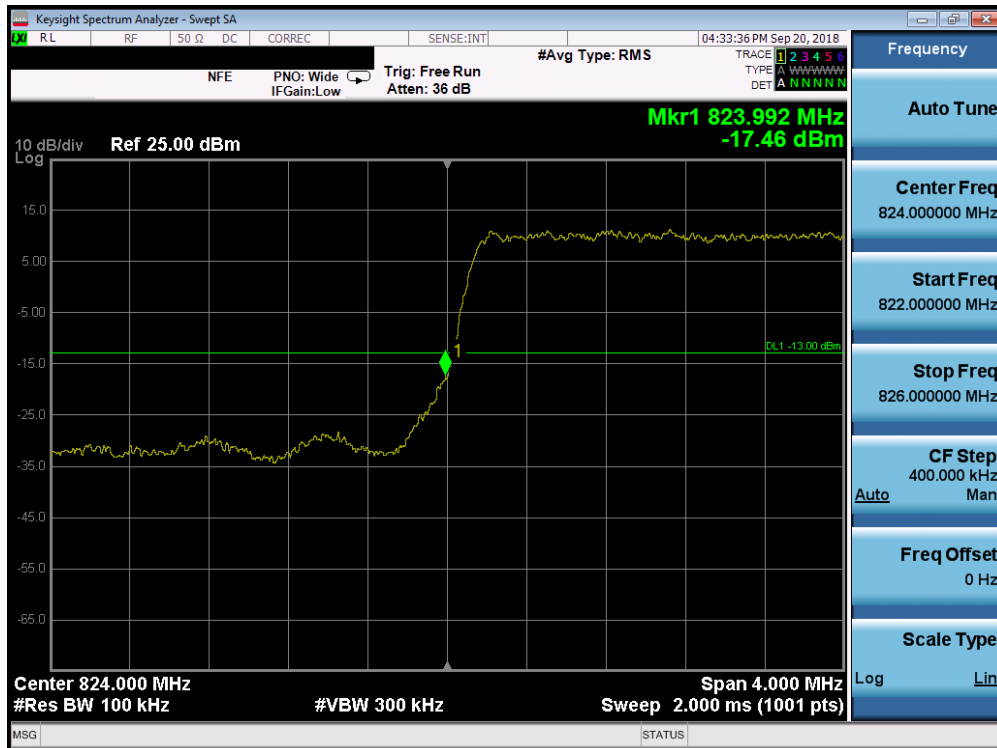


Plot 7-148. Lower Band Edge Plot (Band 26/5 - 1.4MHz QPSK - Full RB Configuration)



Plot 7-149. Upper Band Edge Plot (Band 26/5 - 1.4MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 97 of 189 |

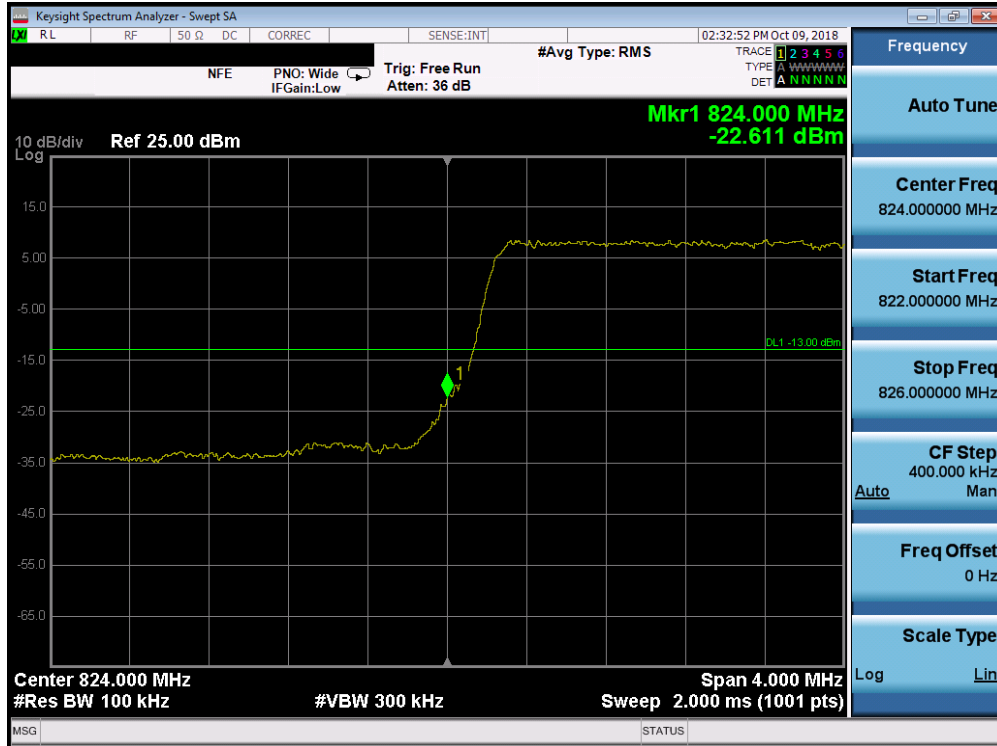


Plot 7-150. Lower Band Edge Plot (Band 26/5 - 3.0MHz QPSK - Full RB Configuration)

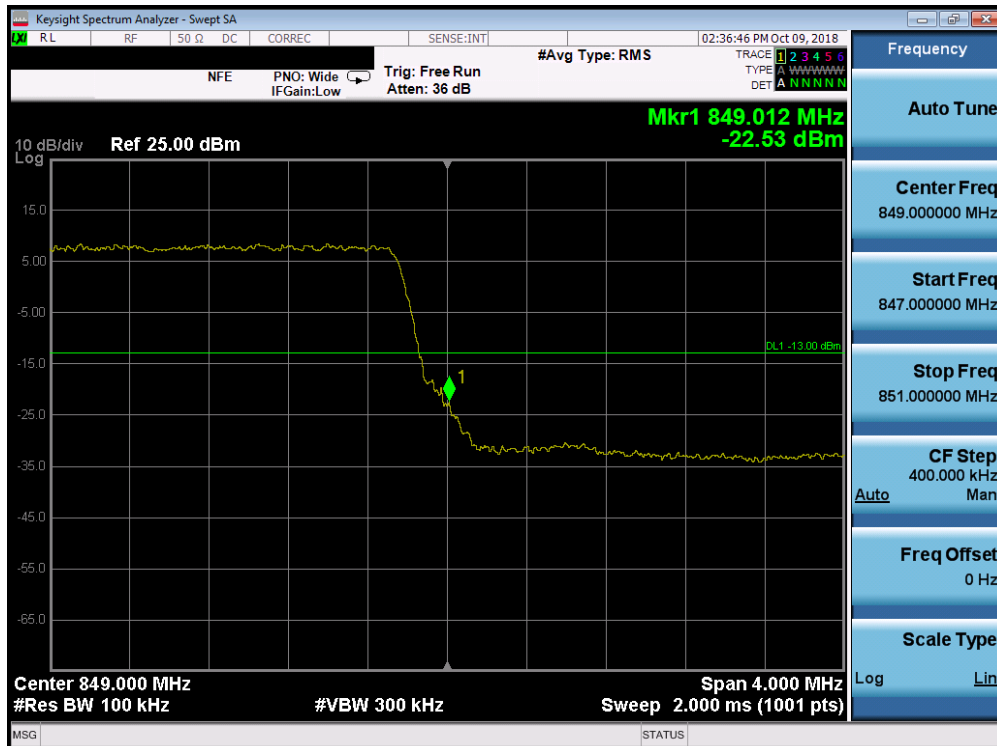


Plot 7-151. Upper Band Edge Plot (Band 26/5 - 3.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|----------------------------------|---------------------------------------|--|---------------------------------|
| FCC ID: A3LSMA920F | | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 98 of 189 |

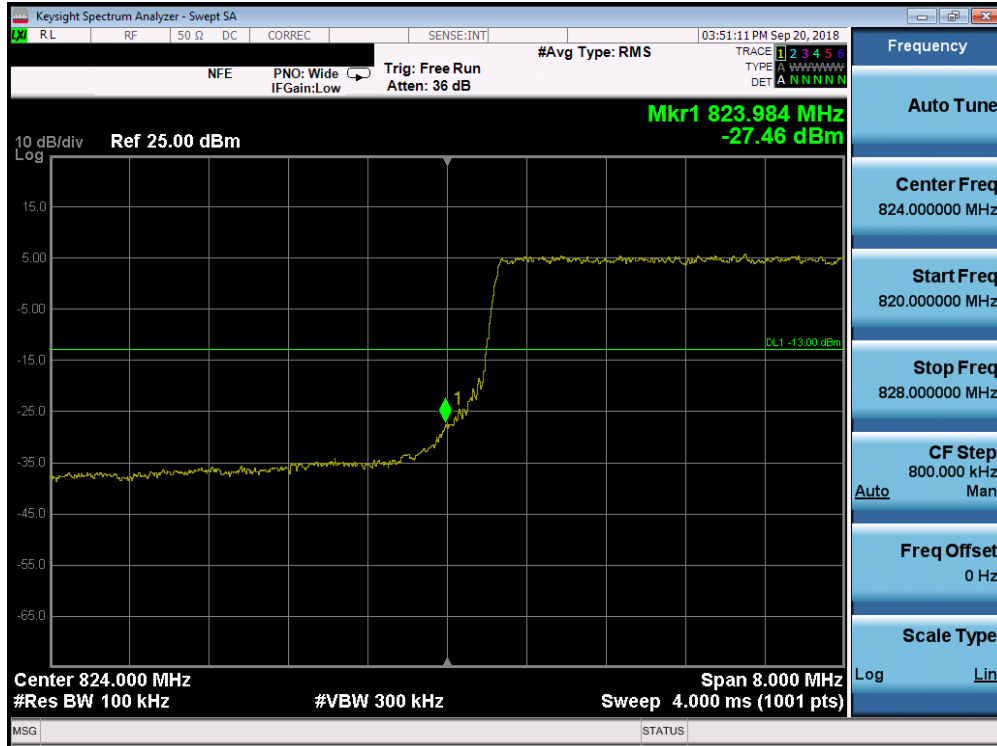


Plot 7-152. Lower Band Edge Plot (Band 26/5 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-153. Upper Band Edge Plot (Band 26/5 - 5.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 99 of 189 |

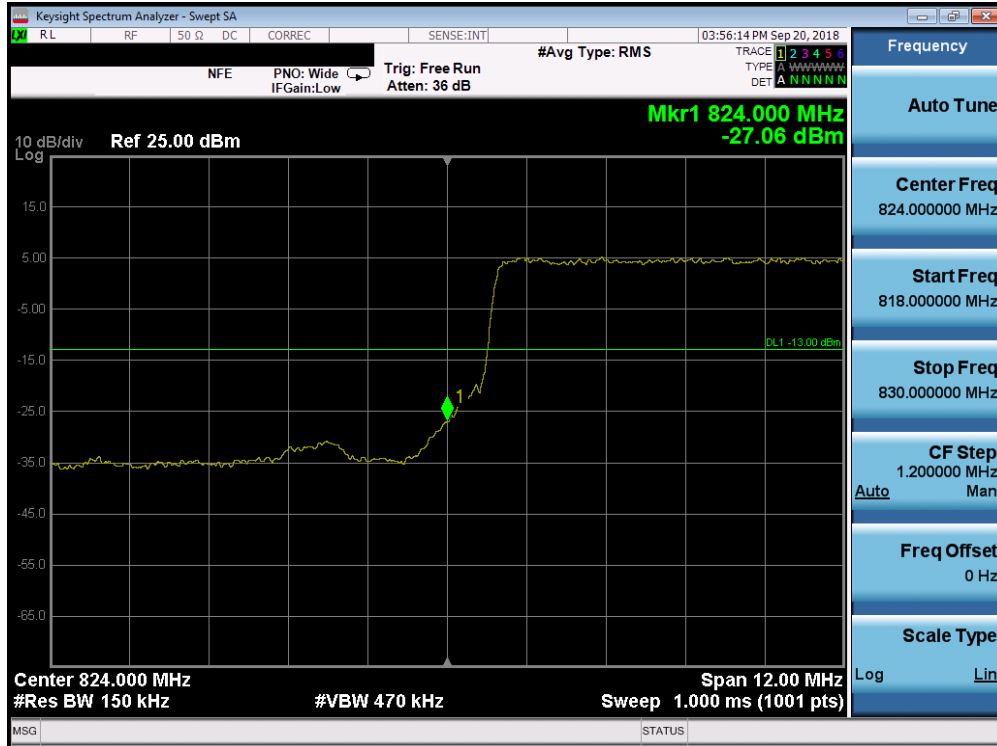


Plot 7-154. Lower Band Edge Plot (Band 26/5 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-155. Upper Band Edge Plot (Band 26/5 - 10.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|----------------------------------|---------------------------------------|--|---------------------------------|
| FCC ID: A3LSMA920F | | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 100 of 189 |



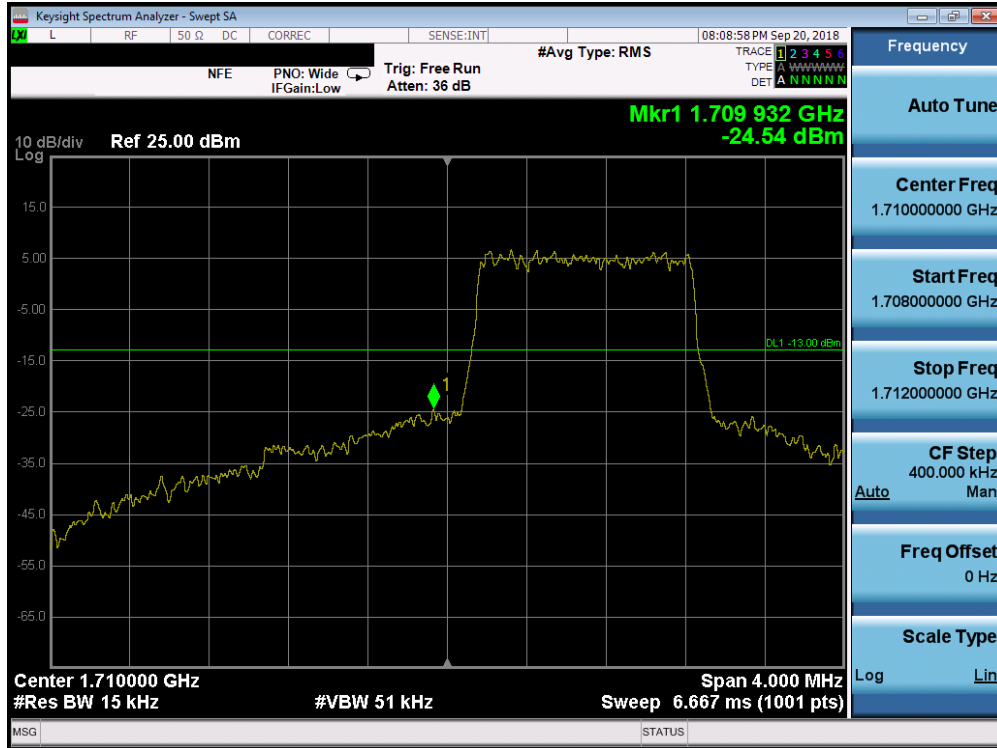
Plot 7-156. Lower Band Edge Plot (Band 26 - 15.0MHz QPSK - Full RB Configuration)



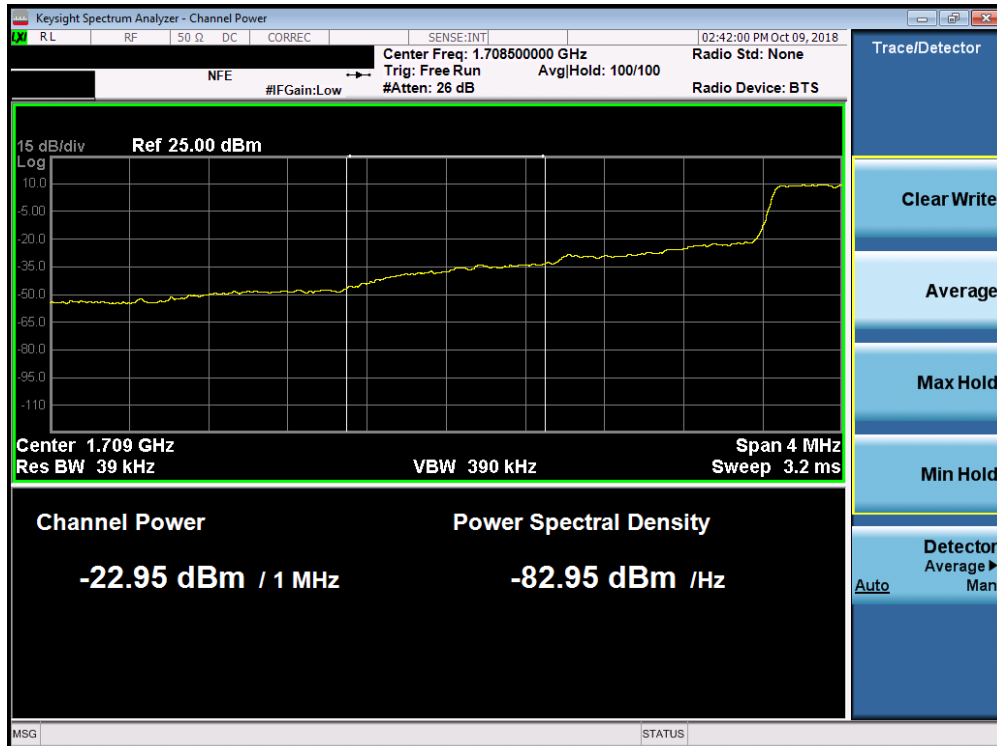
Plot 7-157. Upper Band Edge Plot (Band 26 - 15.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 101 of 189 |

Band 66/4



Plot 7-158. Lower Band Edge Plot (Band 66/4 - 1.4MHz QPSK - Full RB Configuration)

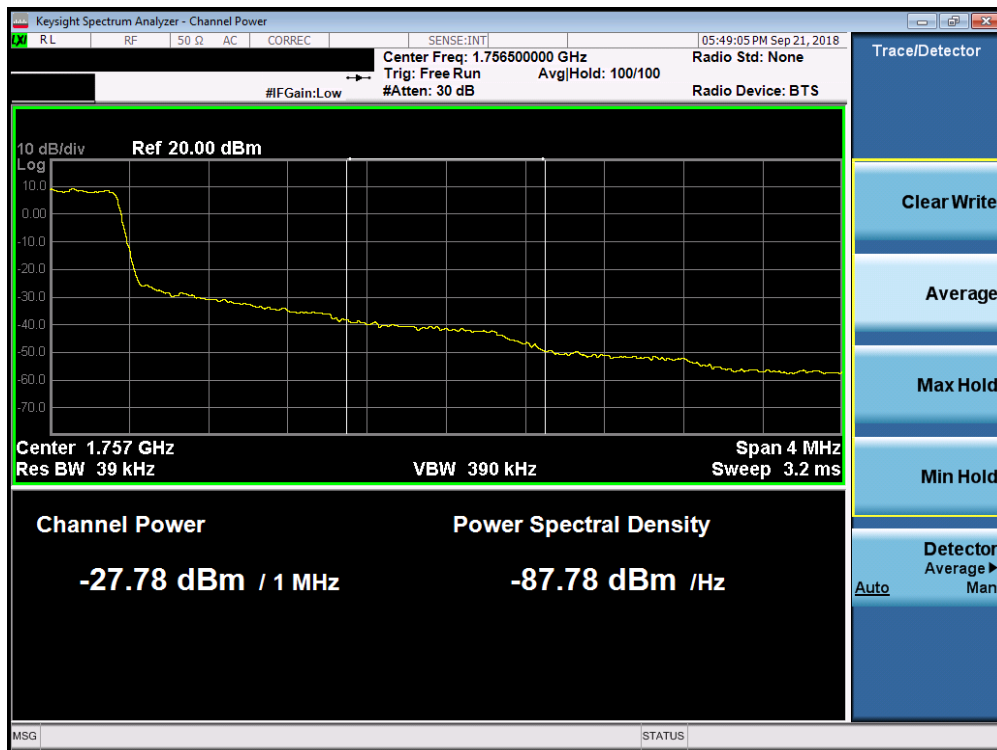


Plot 7-159. Lower Extended Band Edge Plot (Band 66/4 - 1.4MHz QPSK - Full RB Configuration)

| | | | | |
|---|-------------------------------------|------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 102 of 189 |



Plot 7-160. Upper Band Edge Plot (Band 4 - 1.4MHz QPSK - Full RB Configuration)

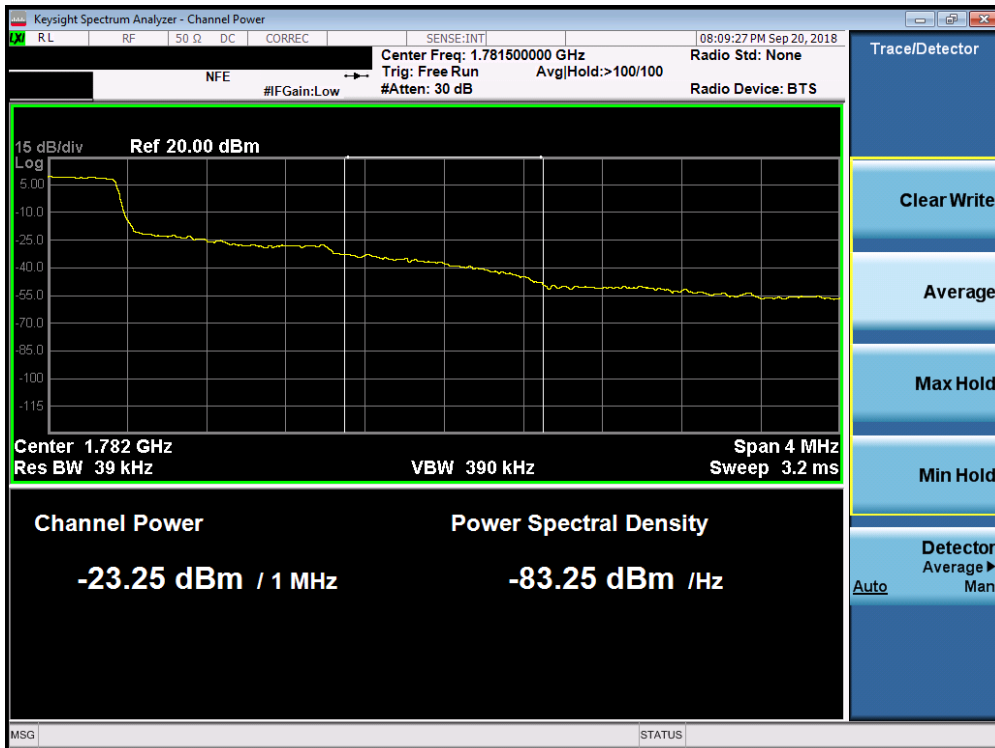


Plot 7-161. Upper Extended Band Edge Plot (Band 4 - 1.4MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 103 of 189 |

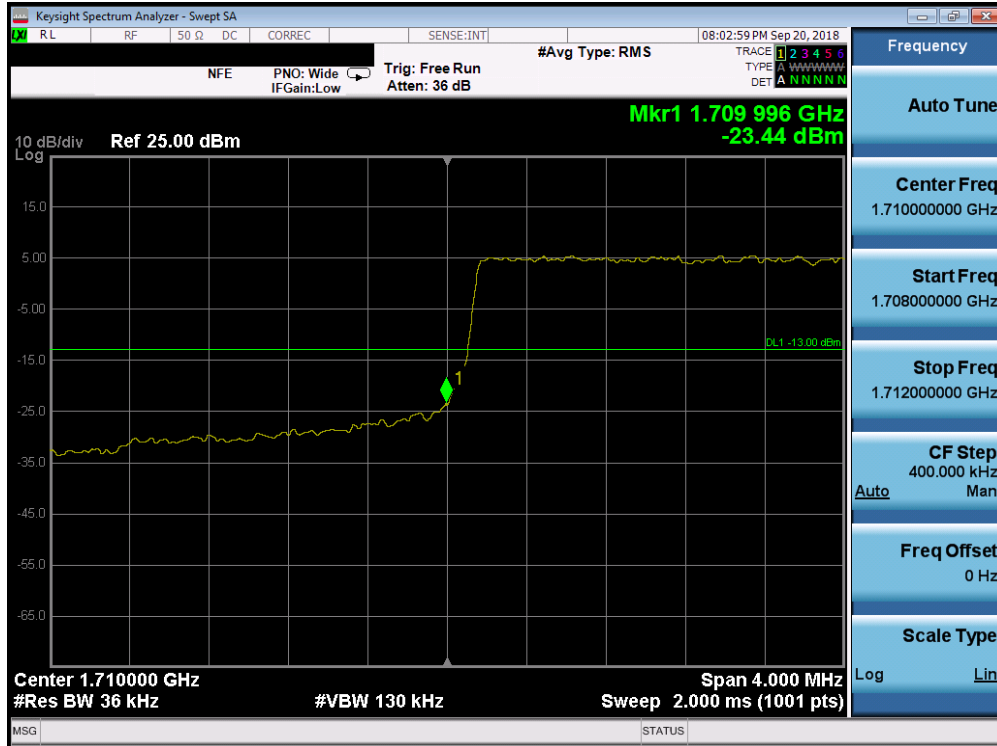


Plot 7-162. Upper Band Edge Plot (Band 66 - 1.4MHz QPSK - Full RB Configuration)

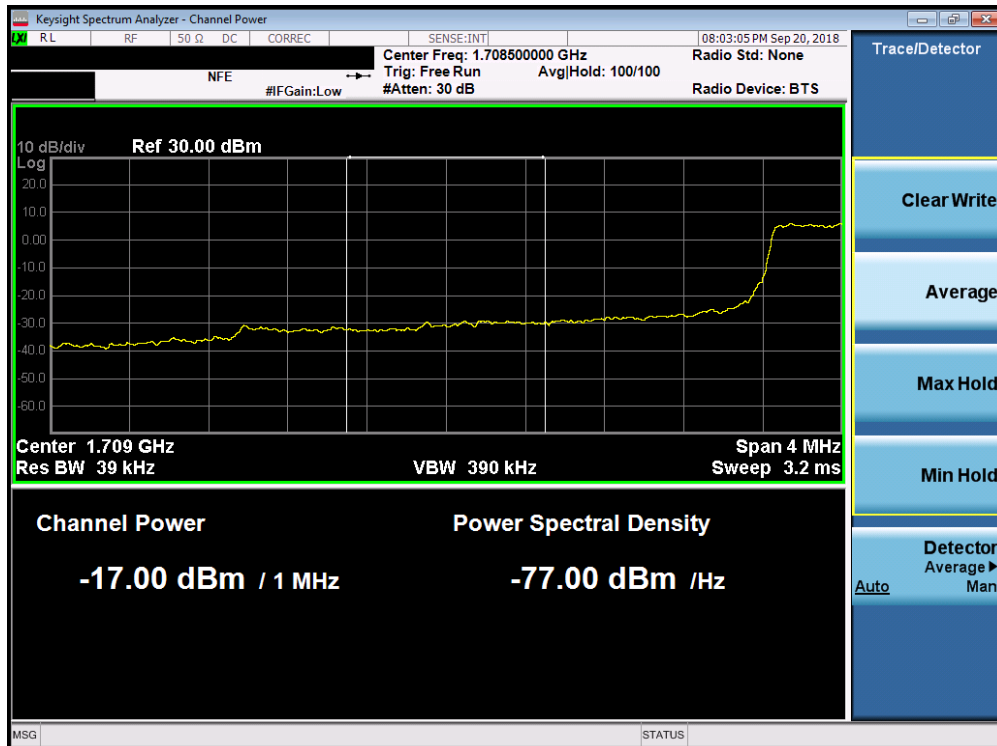


Plot 7-163. Upper Extended Band Edge Plot (Band 66 - 1.4MHz QPSK - Full RB Configuration)

| | | | | |
|---|---|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 104 of 189 |



Plot 7-164. Lower Band Edge Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)

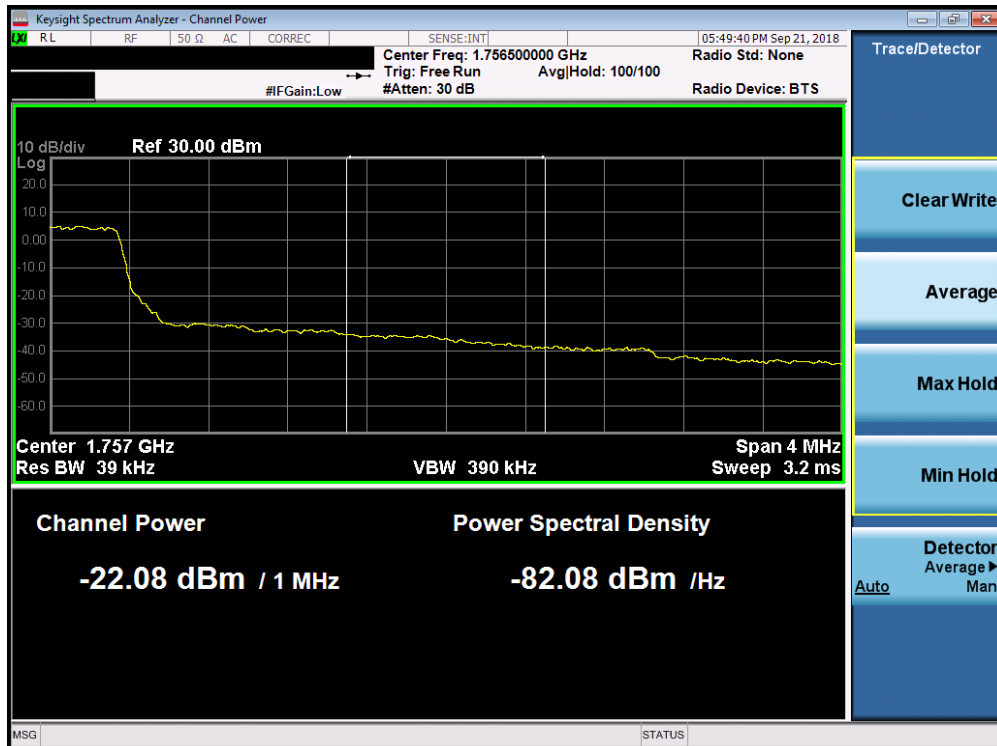


Plot 7-165. Lower Extended Band Edge Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 105 of 189 |

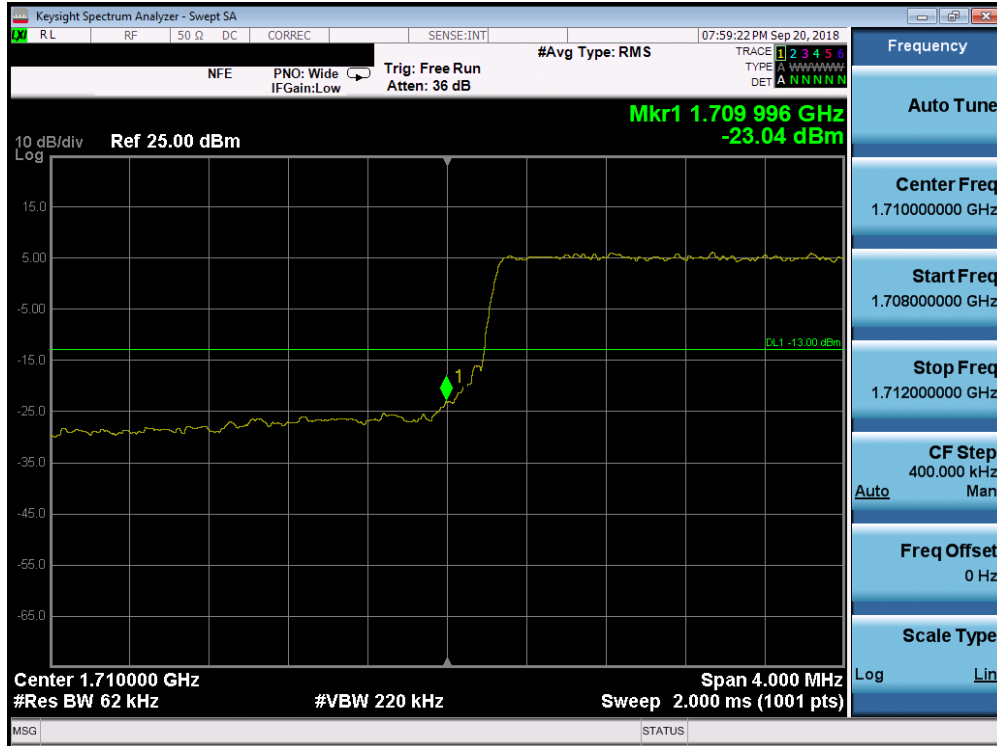


Plot 7-166. Upper Band Edge Plot (Band 4 - 3.0MHz QPSK - Full RB Configuration)

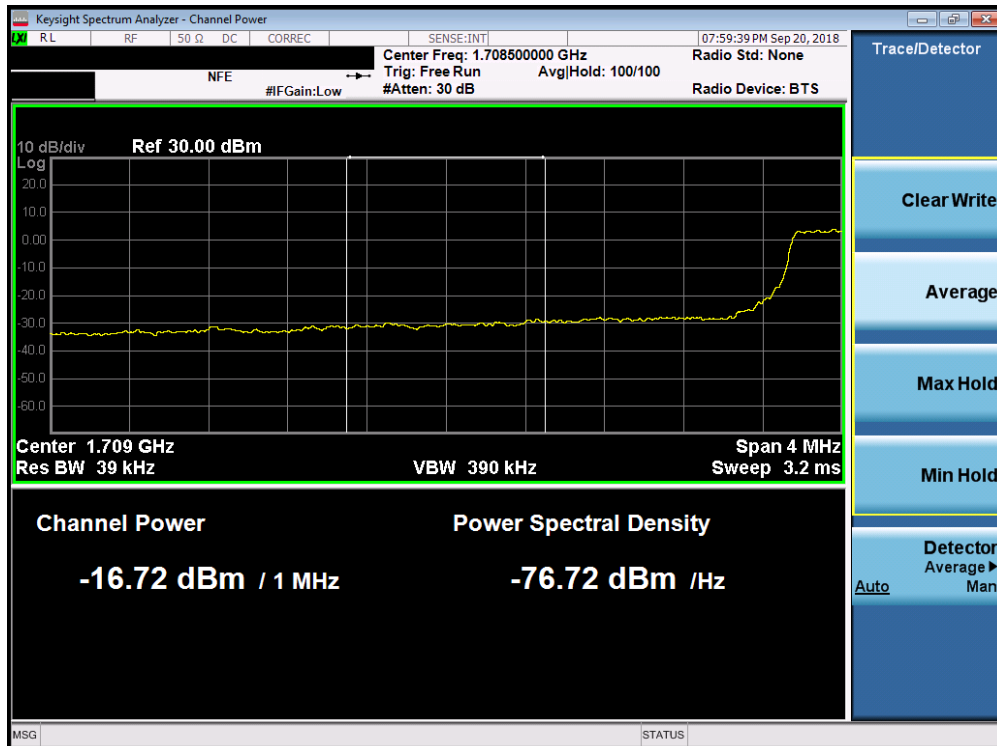


Plot 7-167. Upper Extended Band Edge Plot (Band 4 - 3.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 106 of 189 |



Plot 7-170. Lower Band Edge Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)

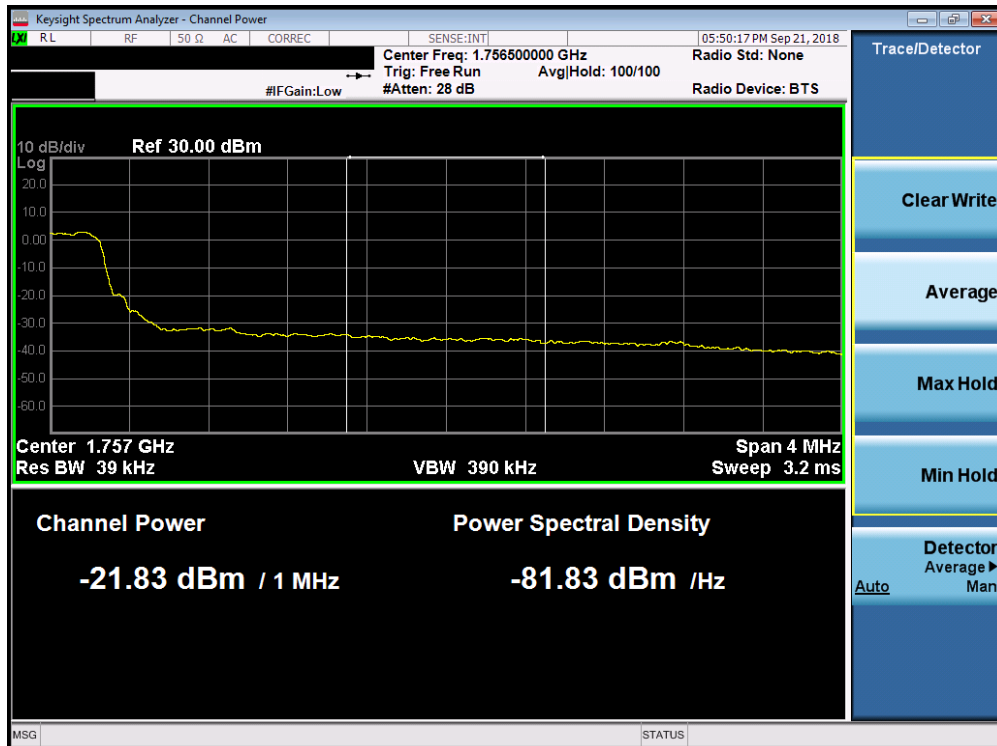


Plot 7-171. Lower Extended Band Edge Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|---|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 108 of 189 |

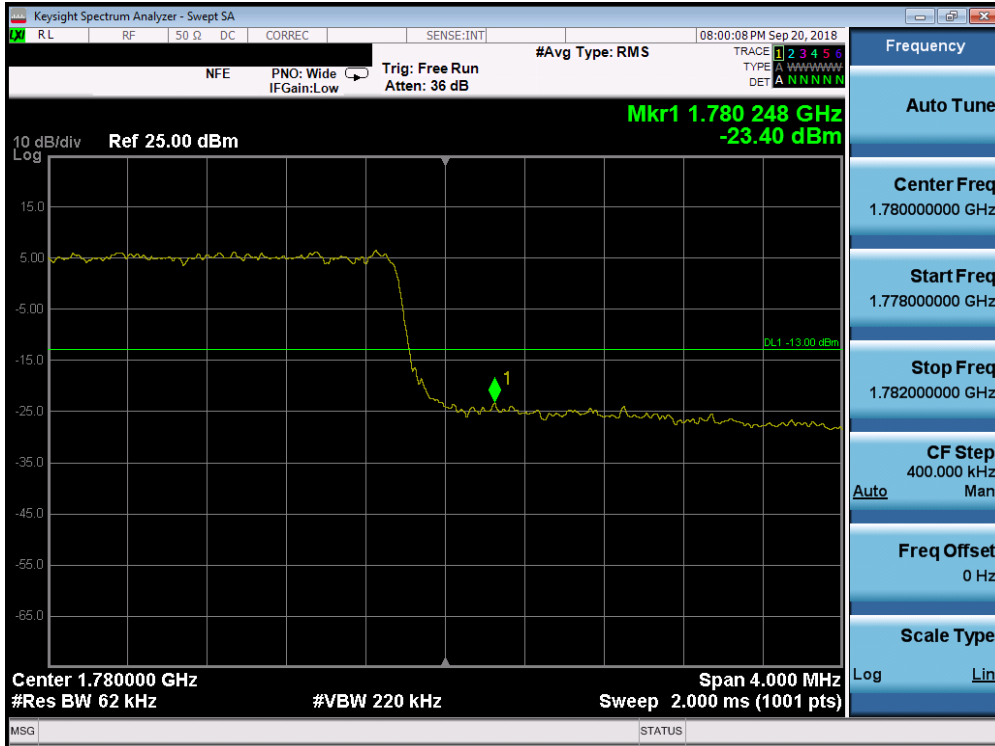


Plot 7-172. Upper Band Edge Plot (Band 4 - 5.0MHz QPSK - Full RB Configuration)

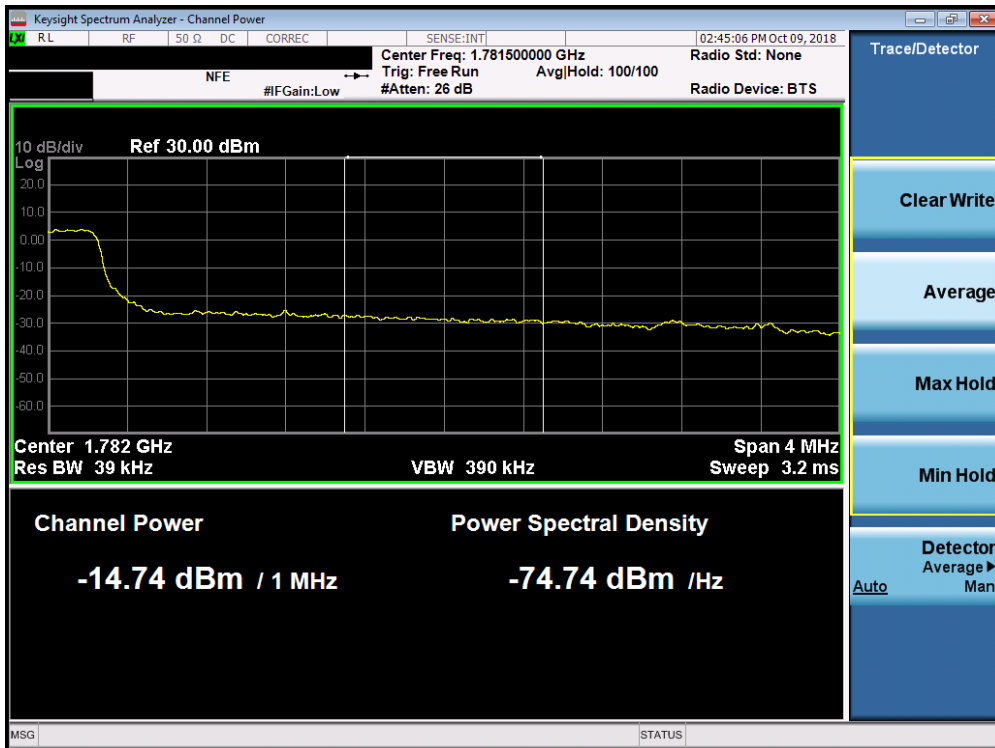


Plot 7-173. Upper Extended Band Edge Plot (Band 4 - 5.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|---|---------------------------------------|---|---------------------------------|
| FCC ID: A3LSMA920F |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 109 of 189 |

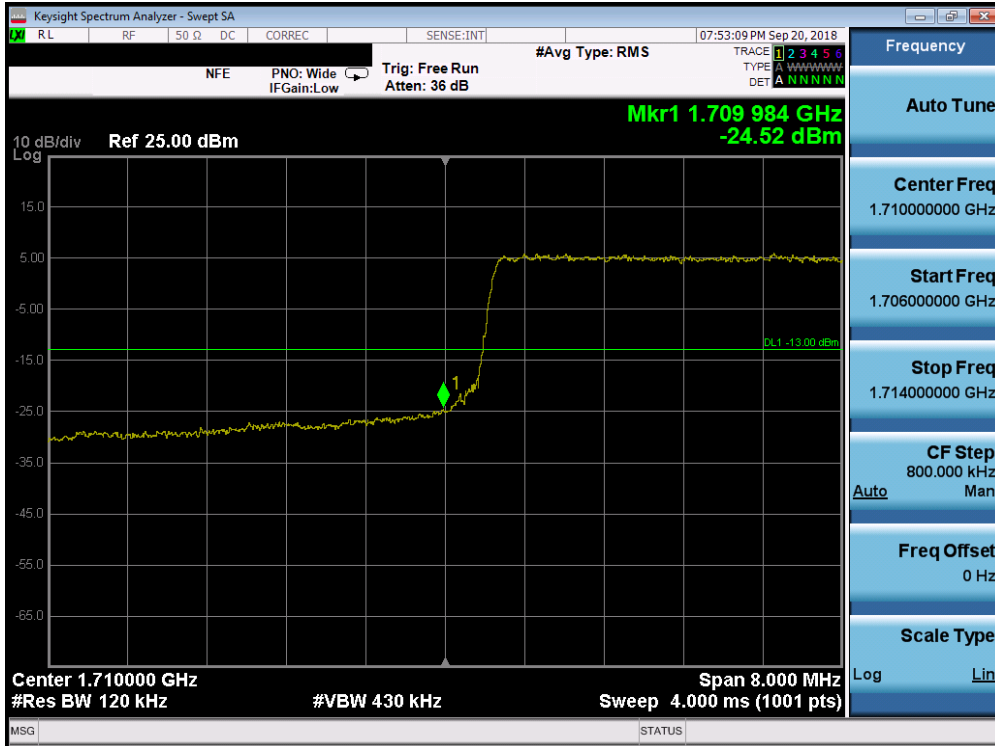


Plot 7-174. Upper Band Edge Plot (Band 66 - 5.0MHz QPSK - Full RB Configuration)

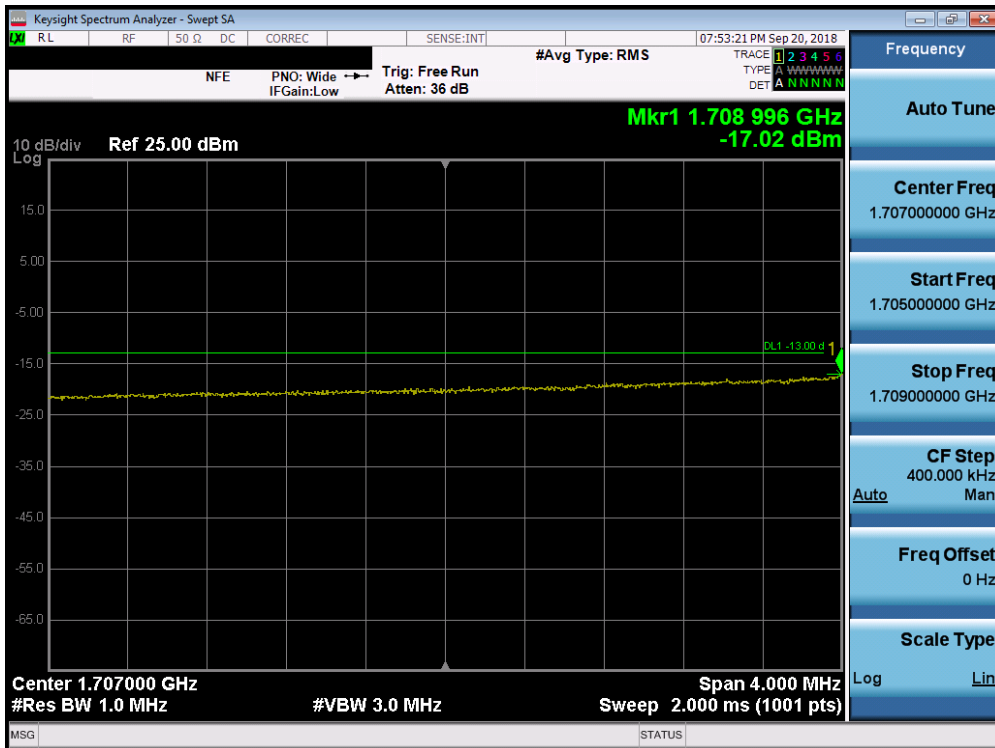


Plot 7-175. Upper Extended Band Edge Plot (Band 66 - 5.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|---|---------------------------------------|---|---------------------------------|
| FCC ID: A3LSMA920F |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 110 of 189 |



Plot 7-176. Lower Band Edge Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)

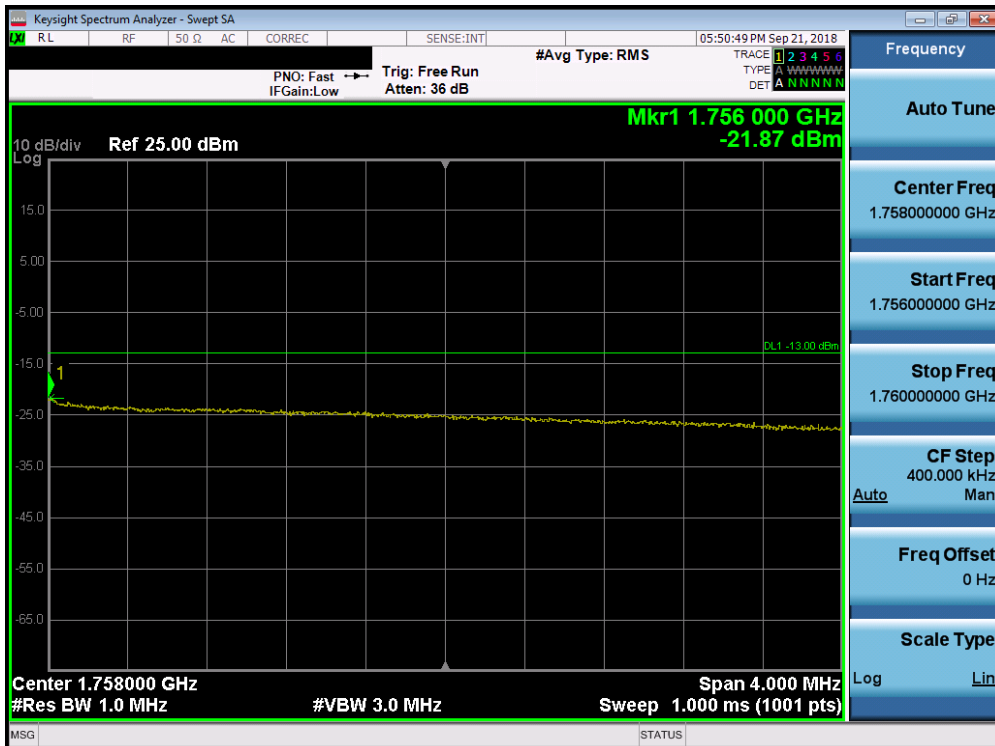


Plot 7-177. Lower Extended Band Edge Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 111 of 189 |

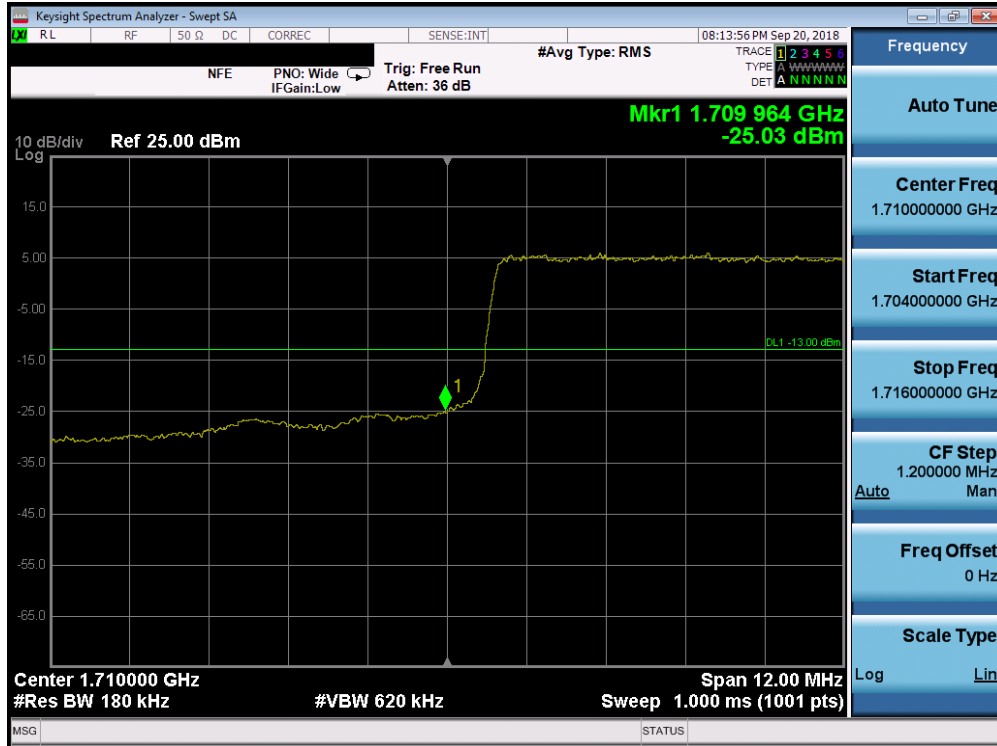


Plot 7-178. Upper Band Edge Plot (Band 4 - 10.0MHz QPSK - Full RB Configuration)

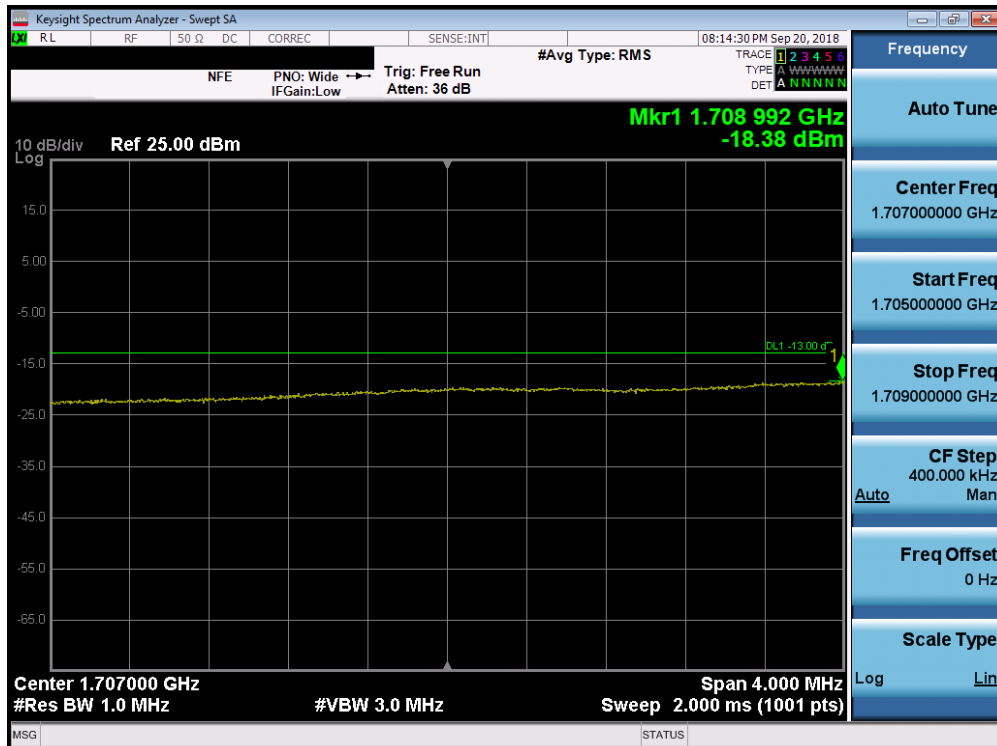


Plot 7-179. Upper Extended Band Edge Plot (Band 4 - 10.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 112 of 189 |

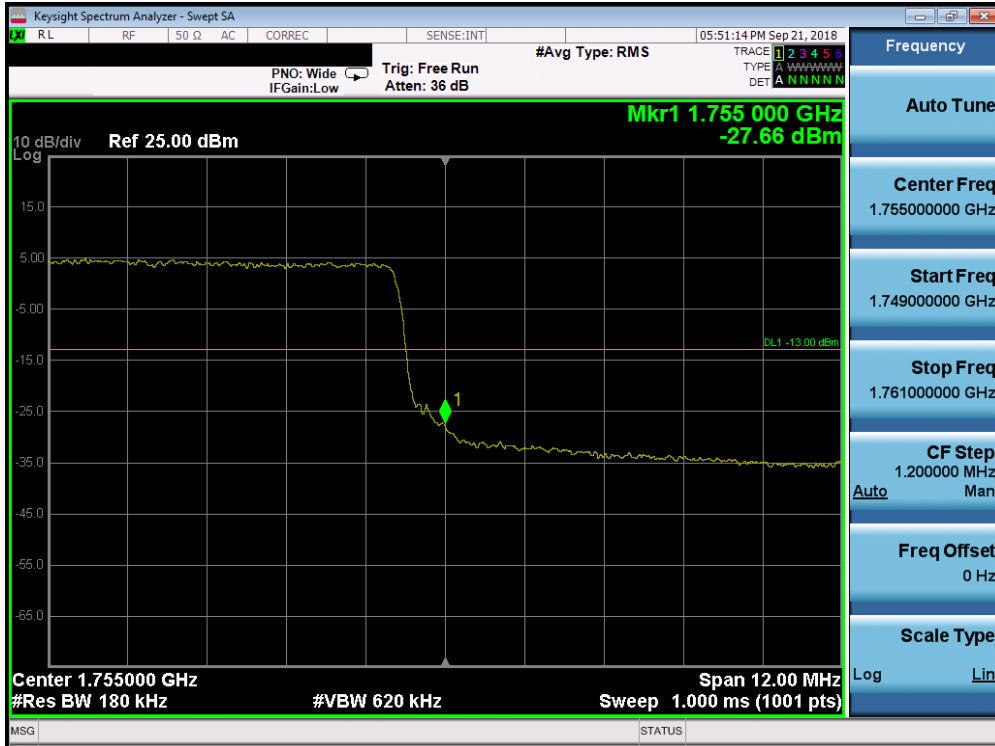


Plot 7-182. Lower Band Edge Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)

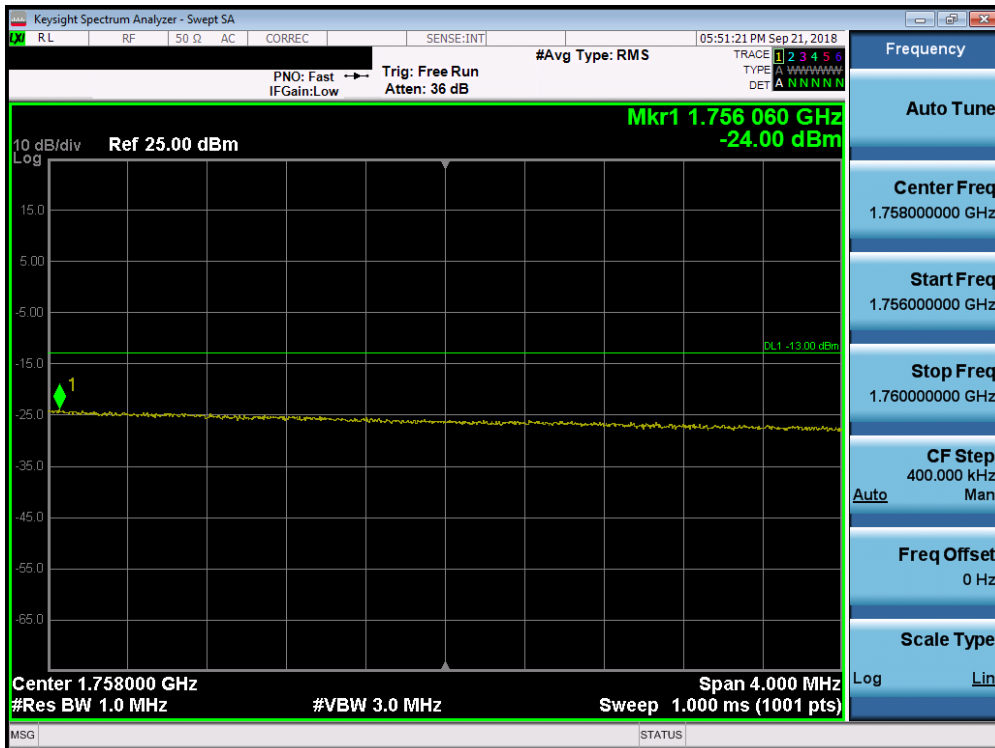


Plot 7-183. Lower Extended Band Edge Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 114 of 189 |

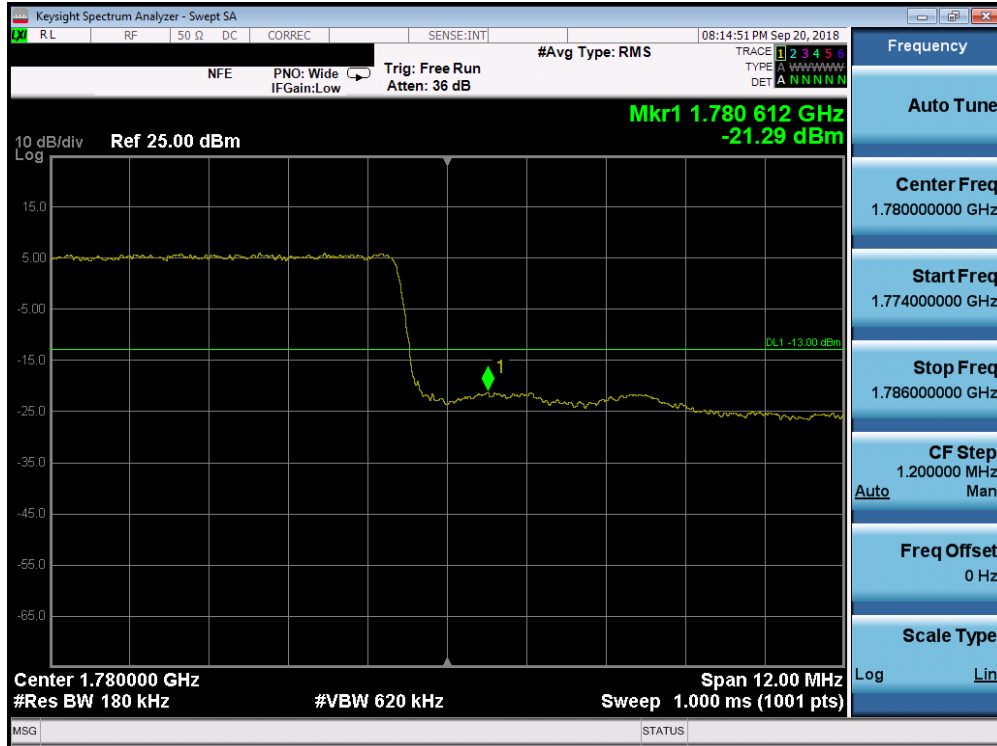


Plot 7-184. Upper Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)

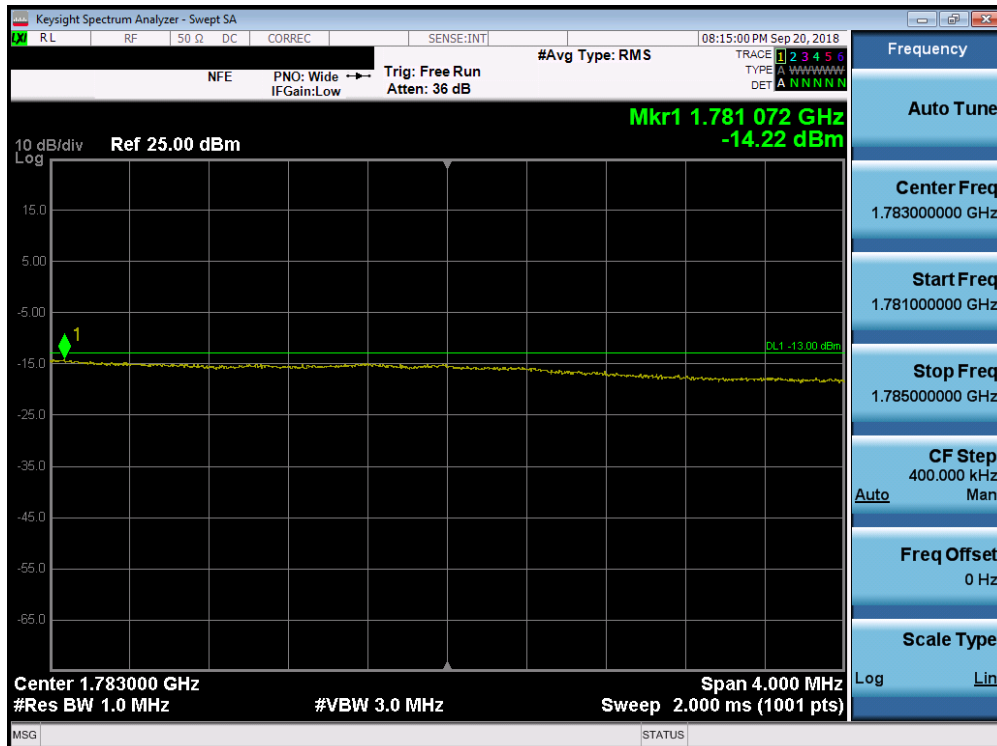


Plot 7-185. Upper Extended Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 115 of 189 |

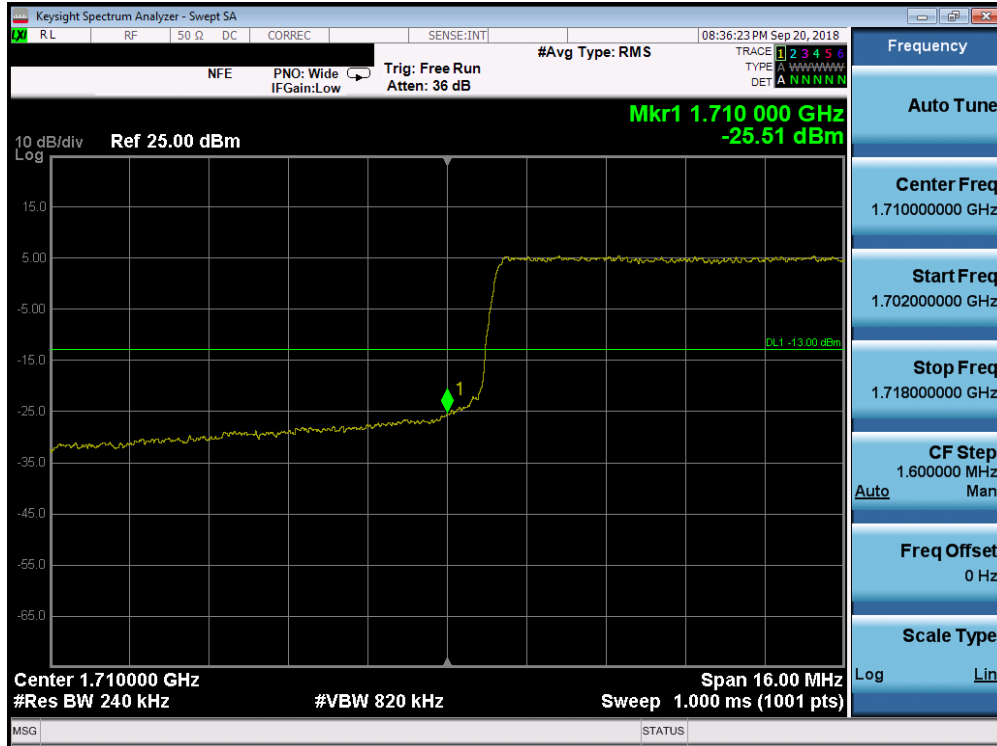


Plot 7-186. Upper Band Edge Plot (Band 66 - 15.0MHz QPSK - Full RB Configuration)

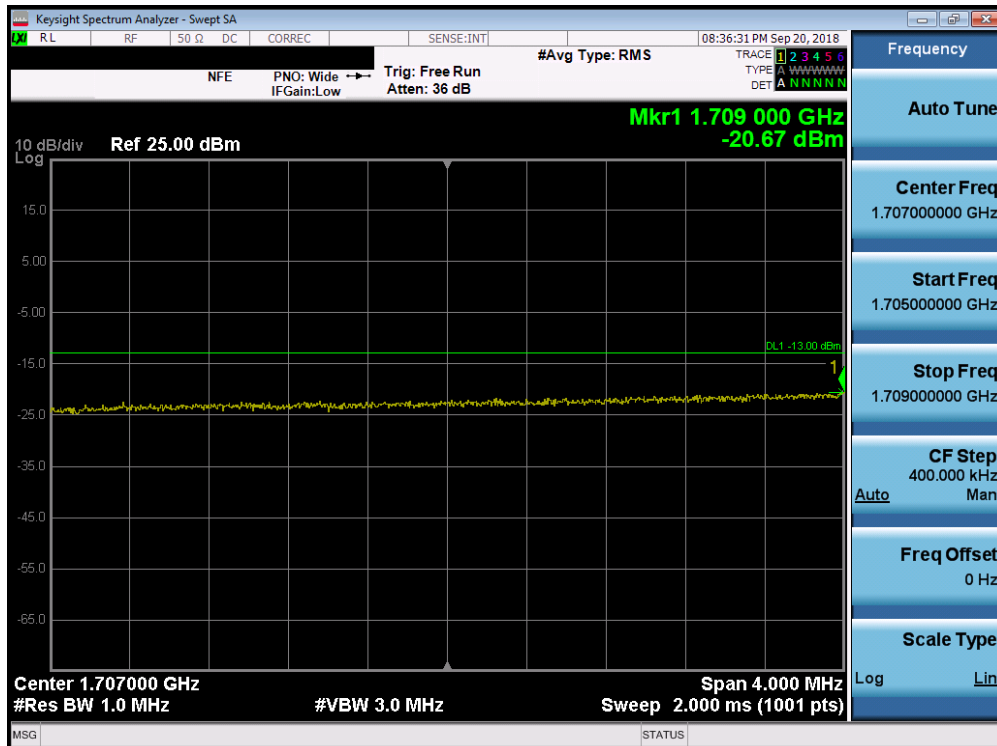


Plot 7-187. Upper Extended Band Edge Plot (Band 66 - 15.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|---|---------------------------------------|---|---------------------------------|
| FCC ID: A3LSMA920F |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 116 of 189 |



Plot 7-188. Lower Band Edge Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)

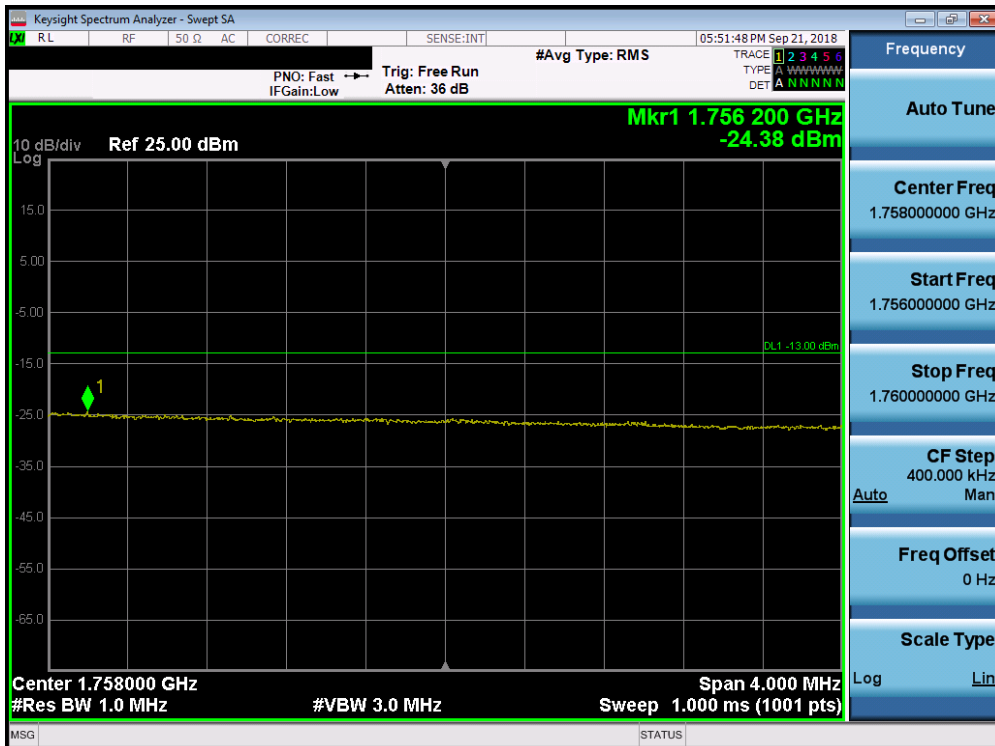


Plot 7-189. Lower Extended Band Edge Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|---|---------------------------------------|---|---------------------------------|
| FCC ID: A3LSMA920F |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 117 of 189 |

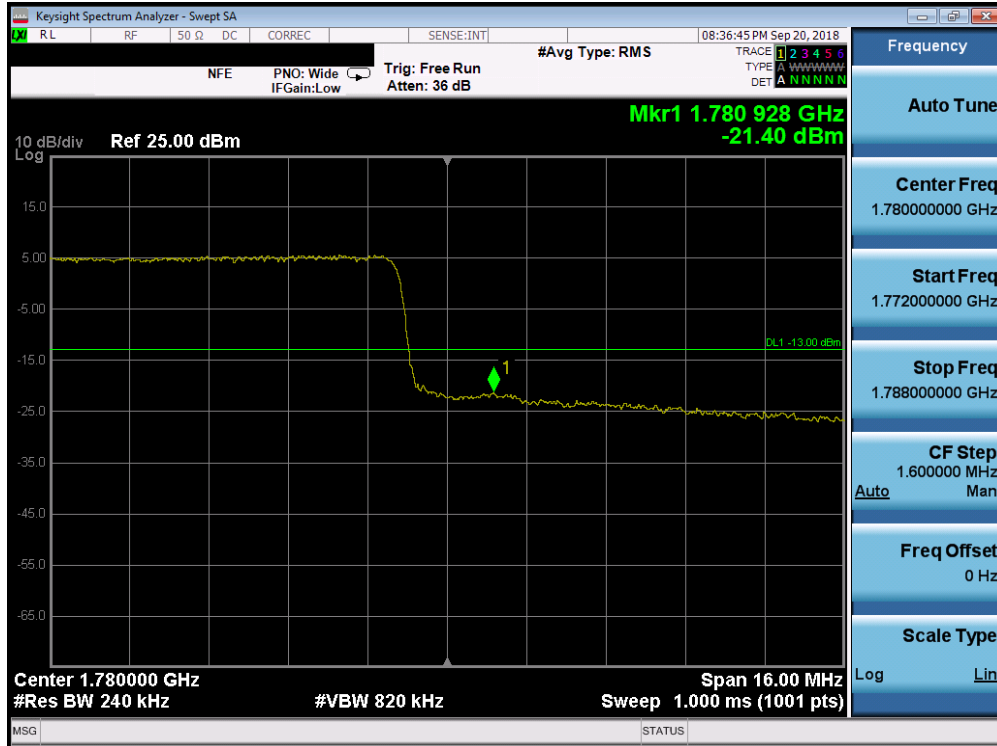


Plot 7-190. Upper Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)

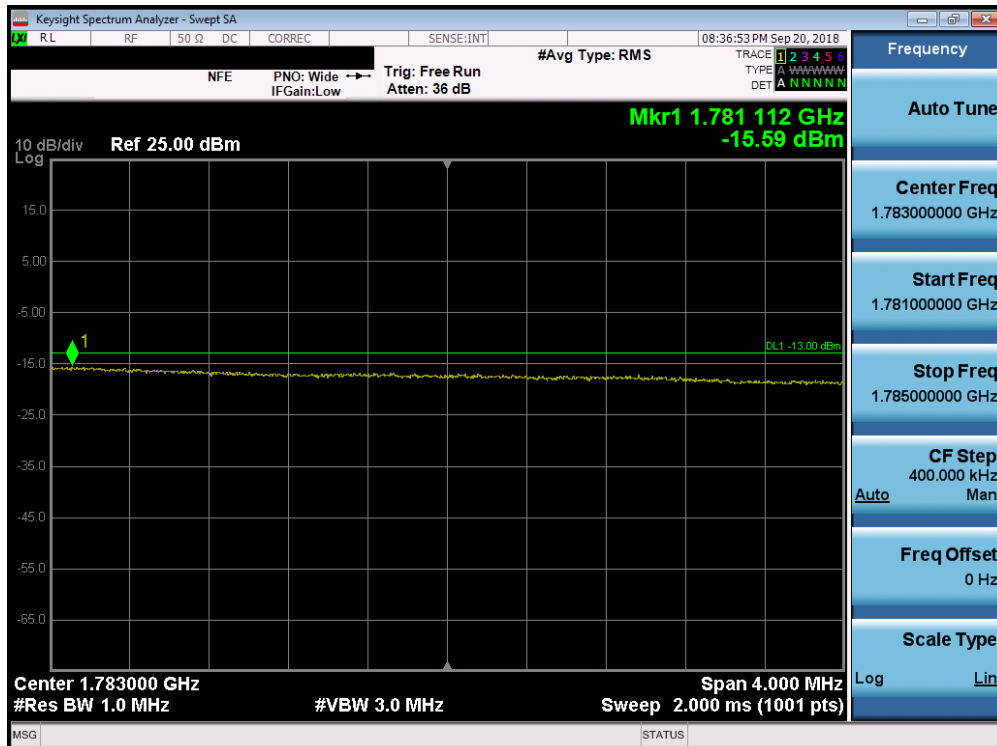


Plot 7-191. Upper Extended Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 118 of 189 |



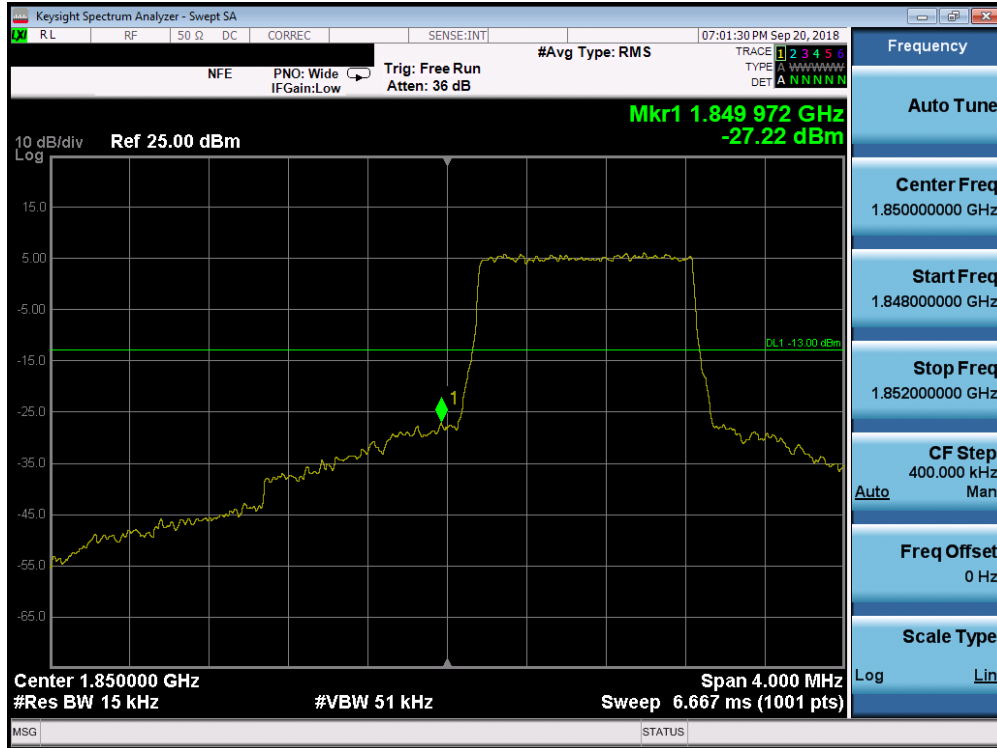
Plot 7-192. Upper Band Edge Plot (Band 66 - 20.0MHz QPSK - Full RB Configuration)



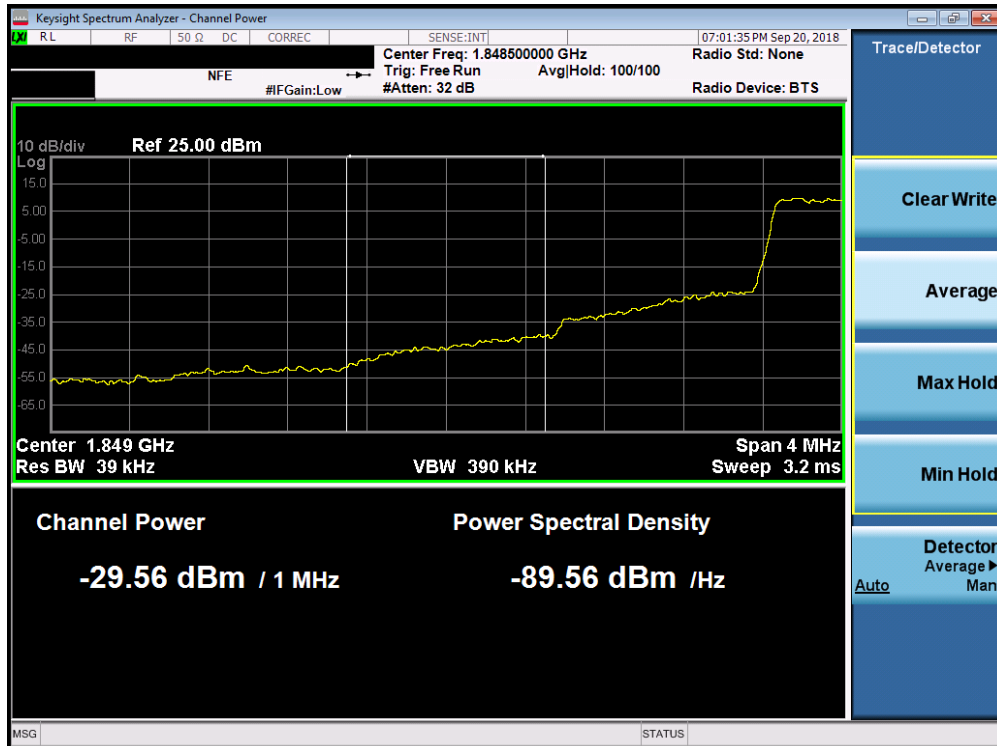
Plot 7-193. Upper Extended Band Edge Plot (Band 66 - 20.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 119 of 189 |

Band 2



Plot 7-194. Lower Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

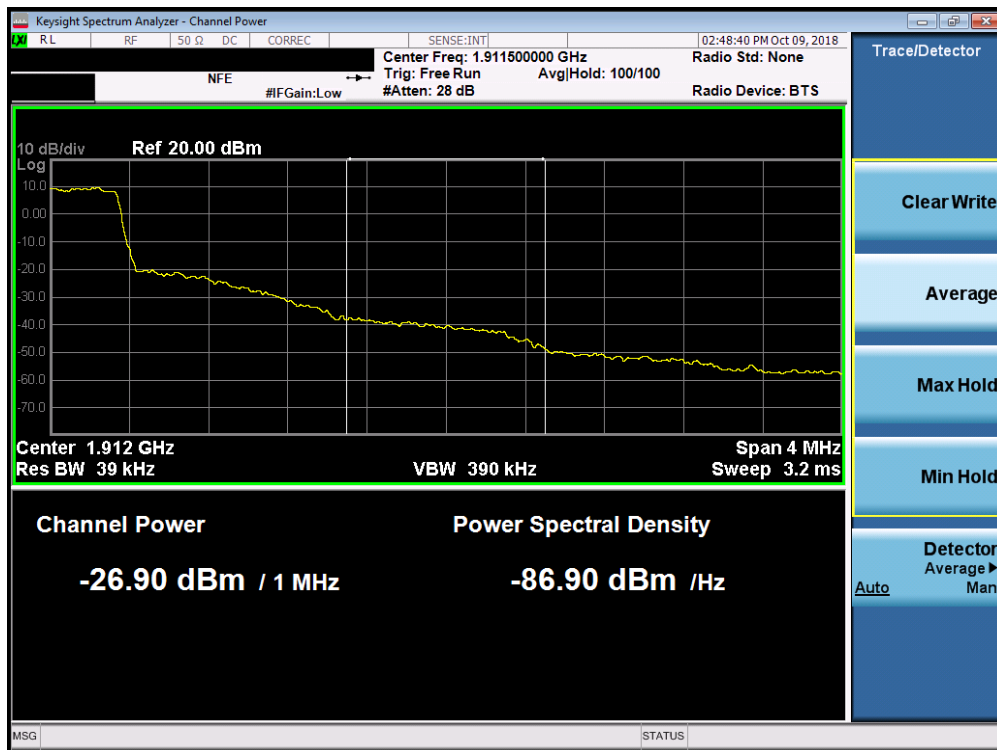


Plot 7-195. Lower Extended Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 120 of 189 |

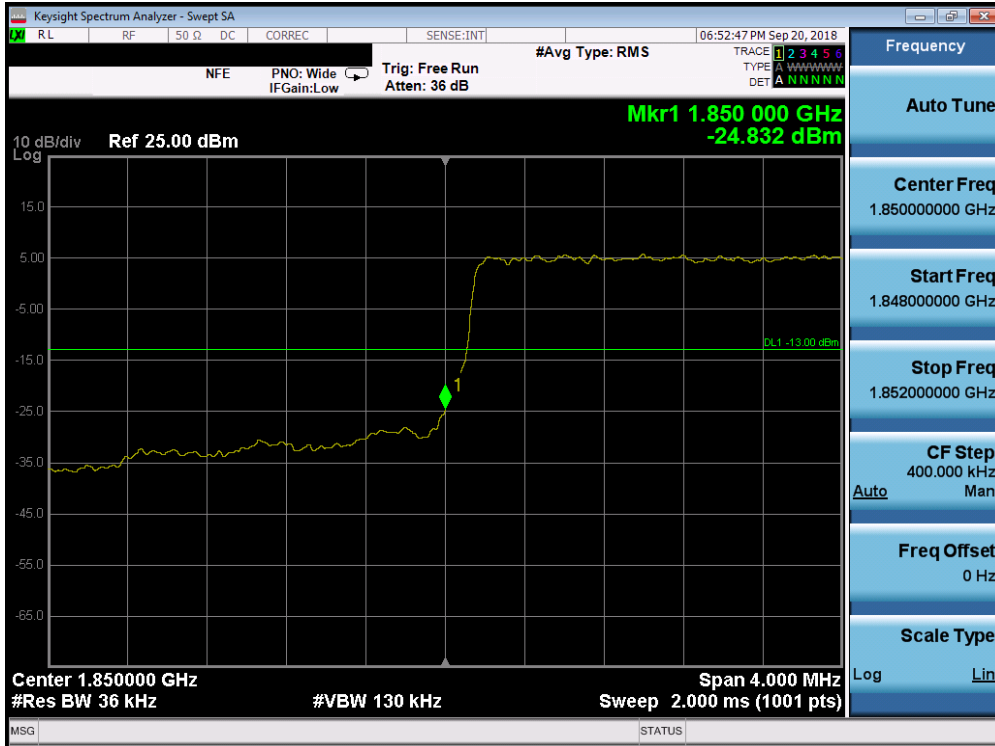


Plot 7-196. Upper Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

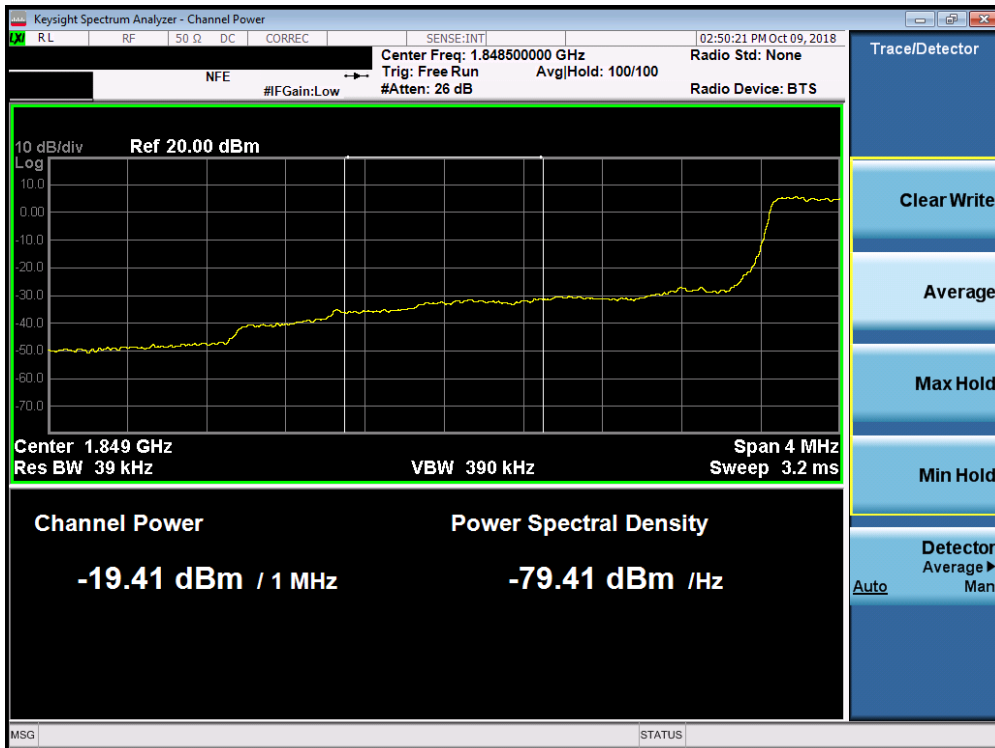


Plot 7-197. Upper Extended Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 121 of 189 |



Plot 7-198. Lower Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

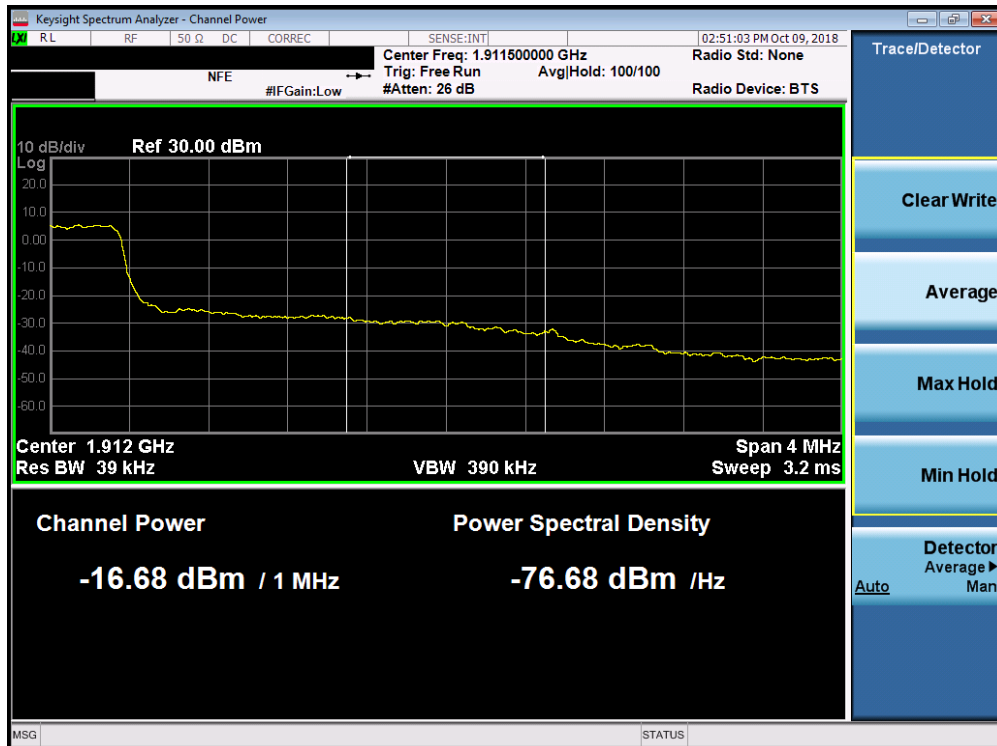


Plot 7-199. Lower Extended Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|---|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 122 of 189 |

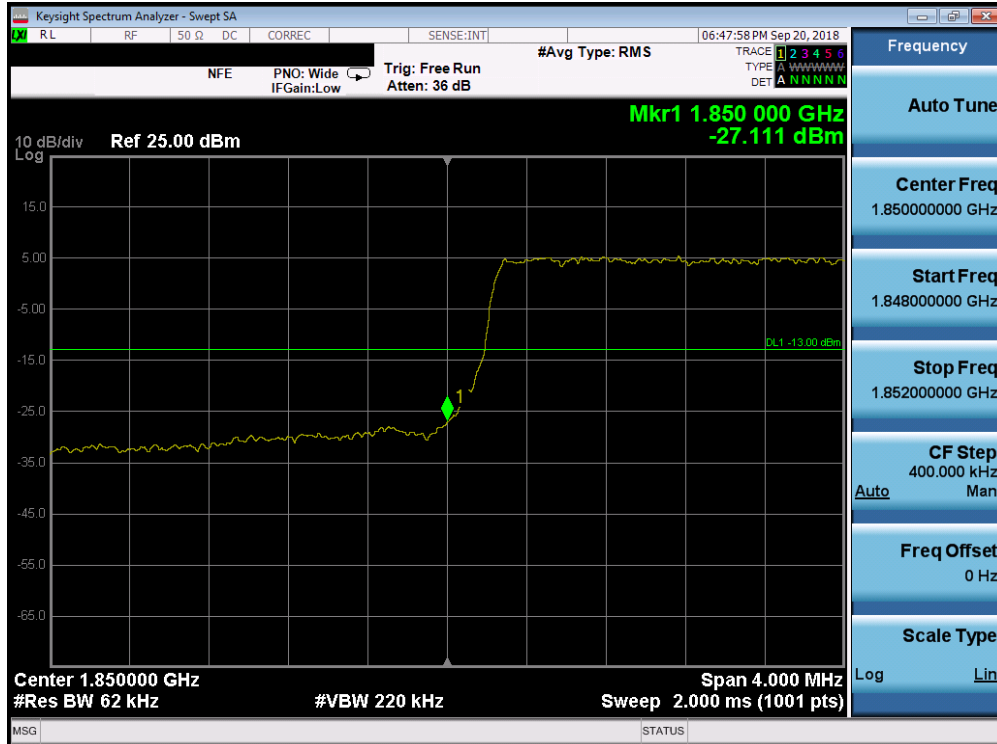


Plot 7-200. Upper Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

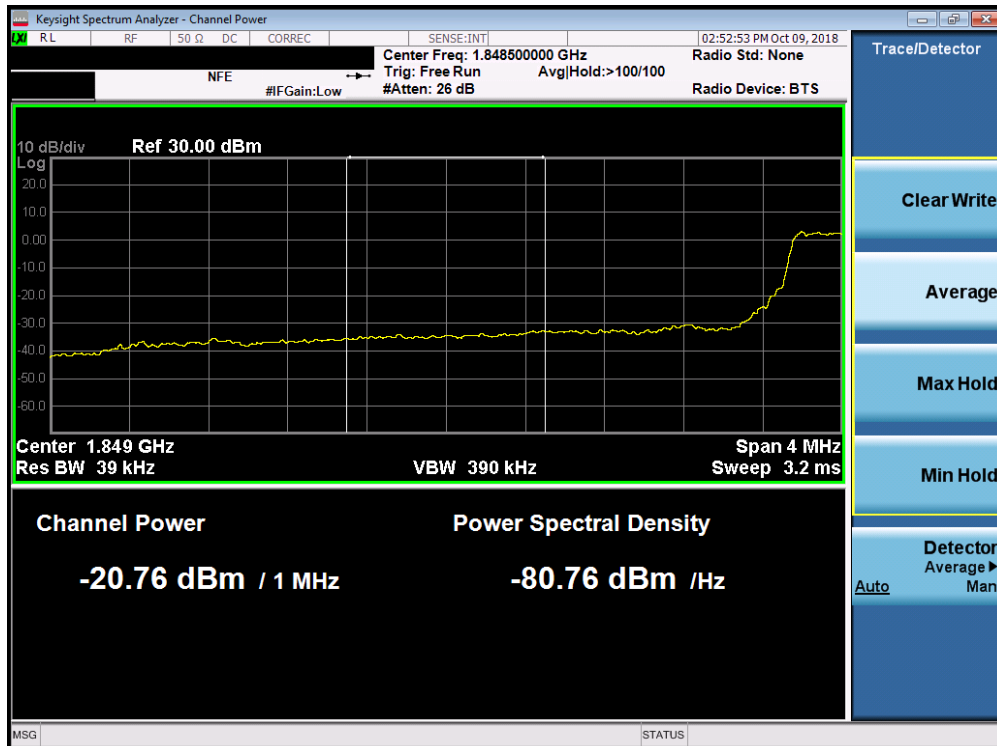


Plot 7-201. Upper Extended Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|---|---------------------------------------|---|---------------------------------|
| FCC ID: A3LSMA920F |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 123 of 189 |

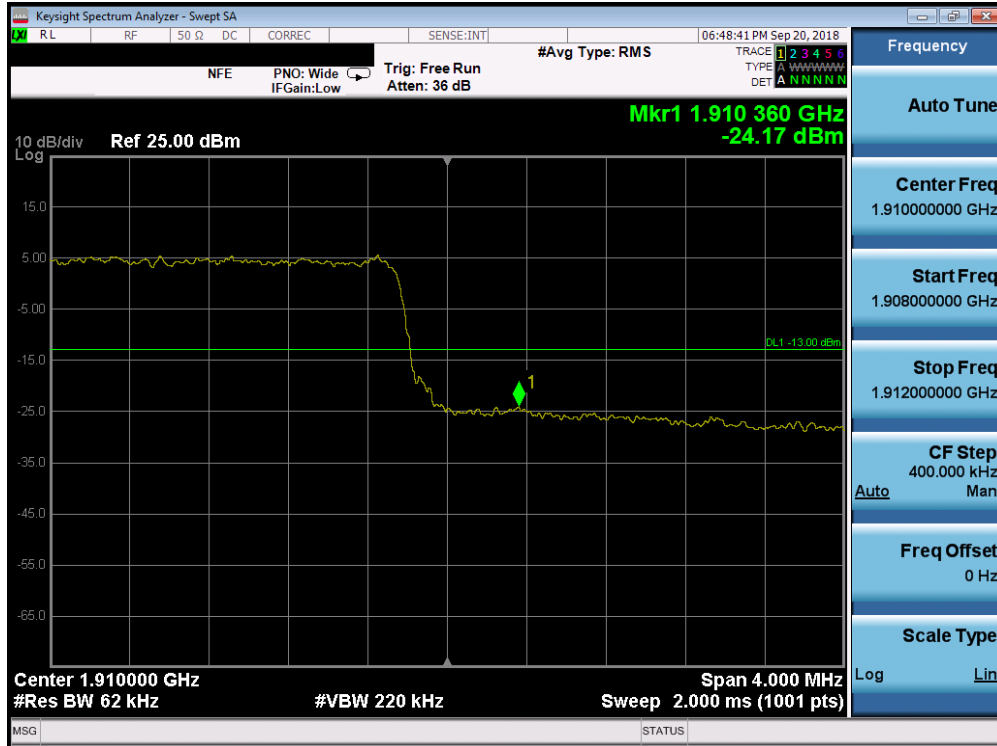


Plot 7-202. Lower Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

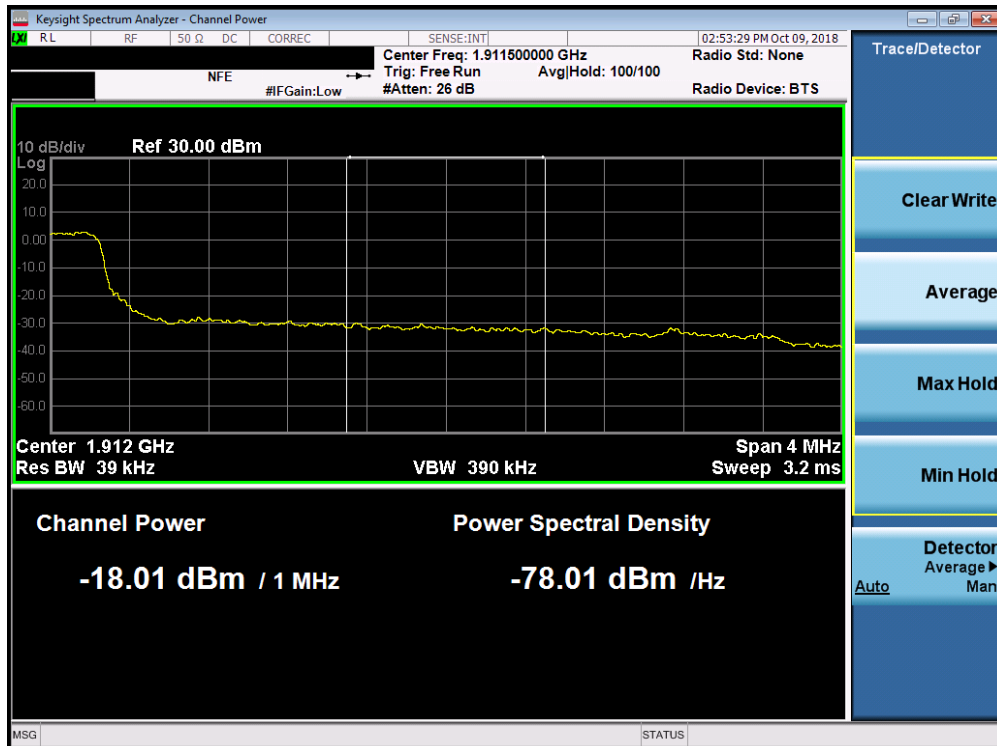


Plot 7-203. Lower Extended Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|---|---------------------------------------|----------------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 124 of 189 |

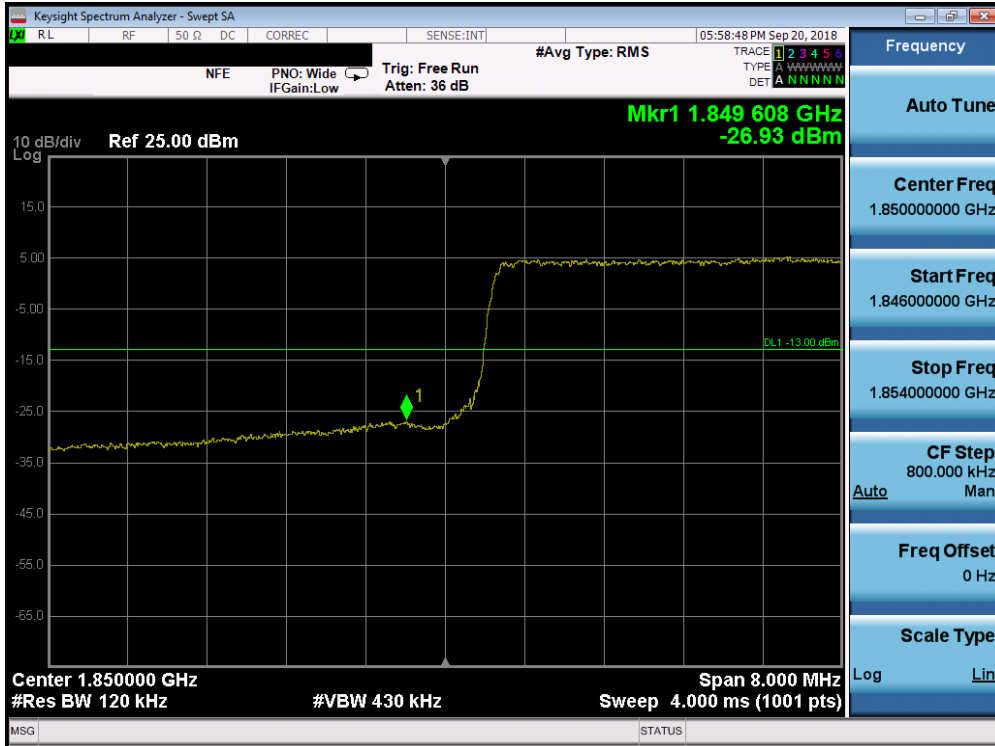


Plot 7-204. Upper Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

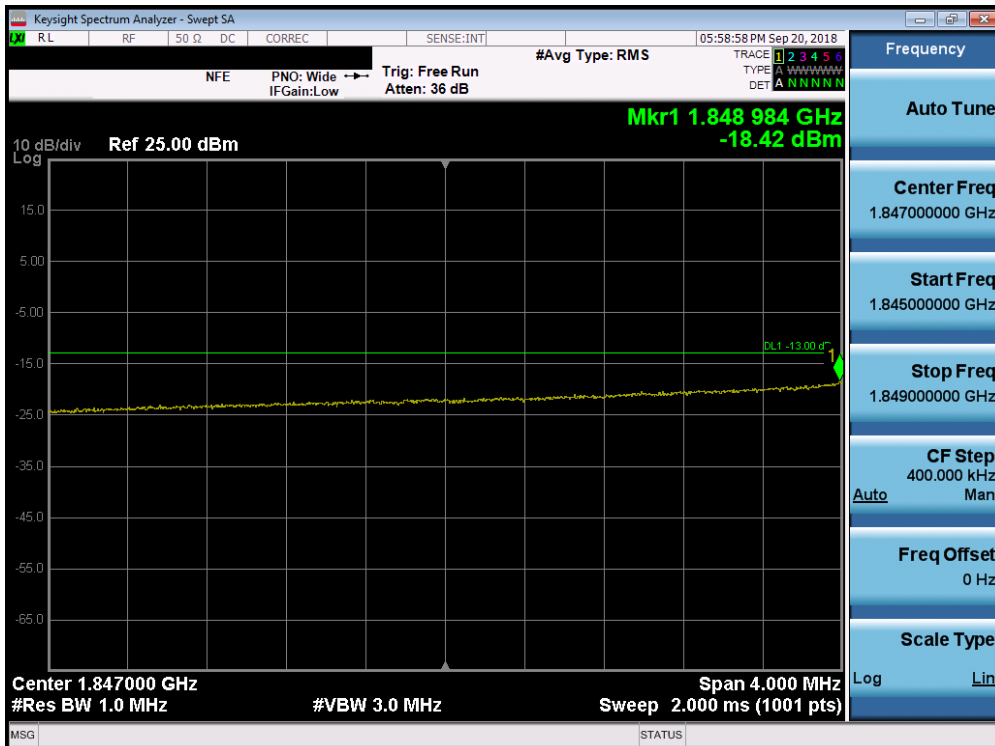


Plot 7-205. Upper Extended Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 125 of 189 |

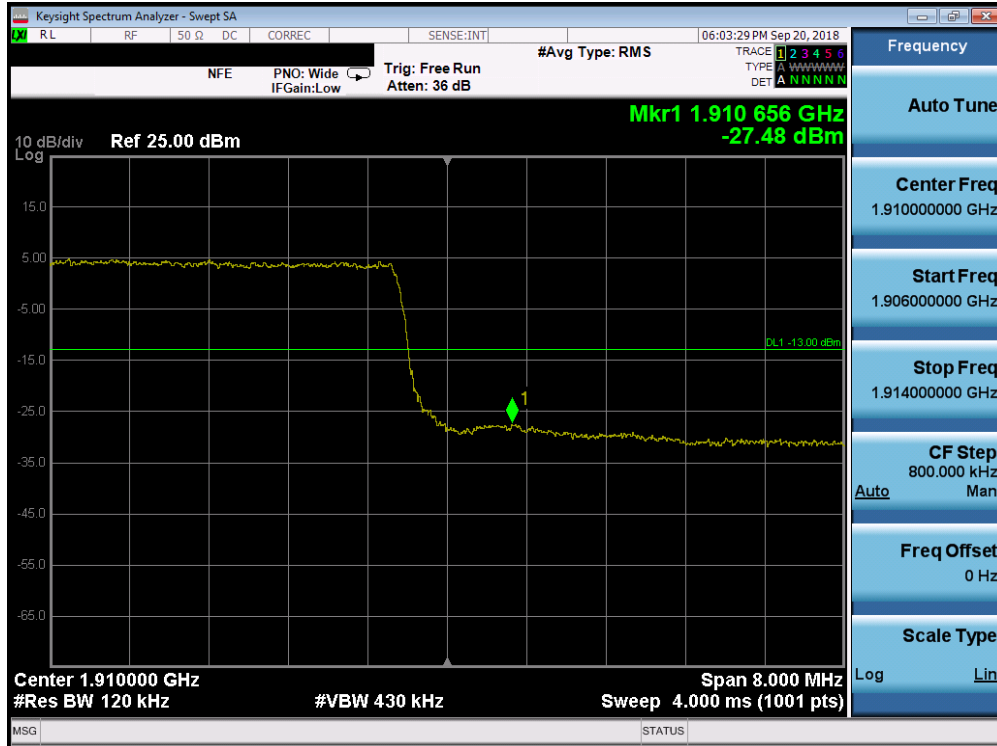


Plot 7-206. Lower Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

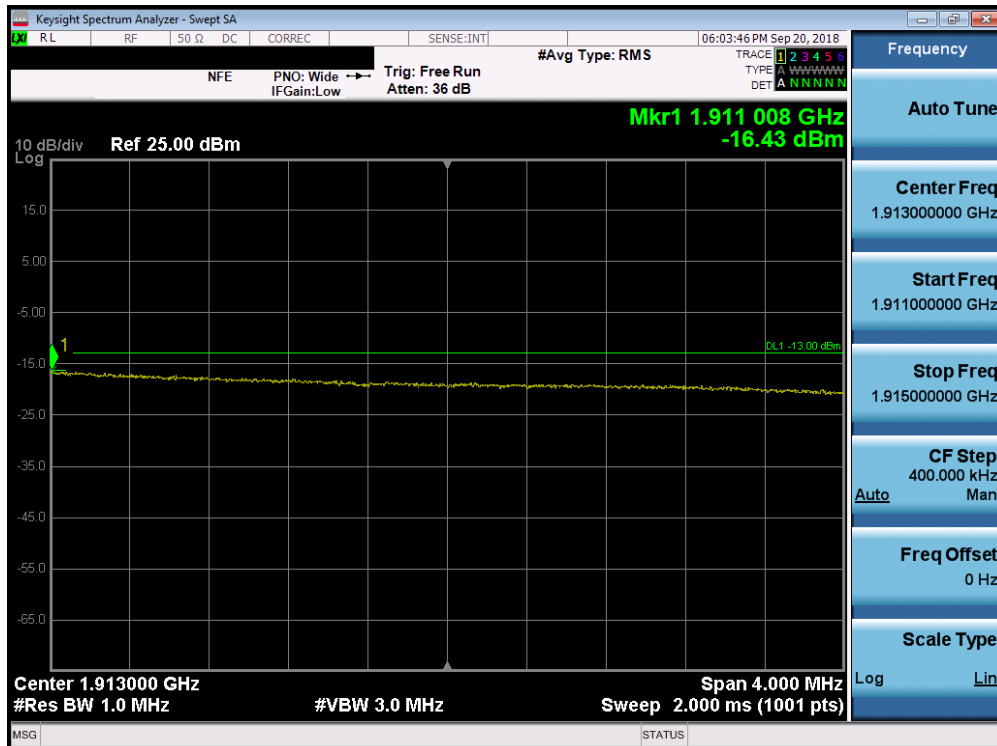


Plot 7-207. Lower Extended Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|---|---------------------------------------|---|---------------------------------|
| FCC ID: A3LSMA920F |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 126 of 189 |

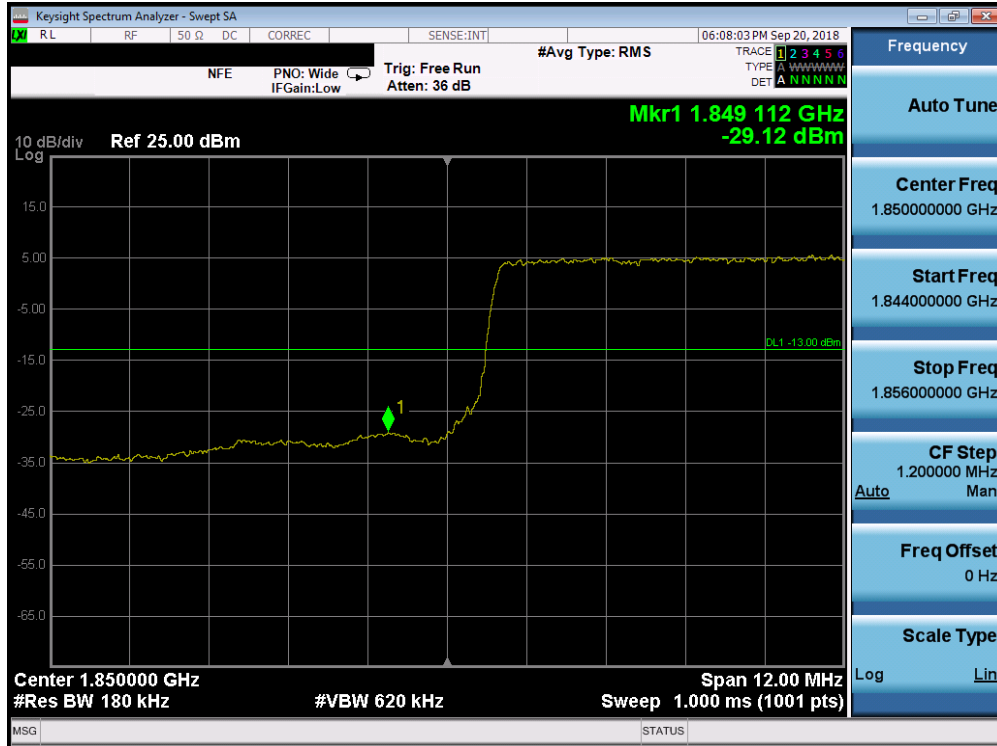


Plot 7-208. Upper Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

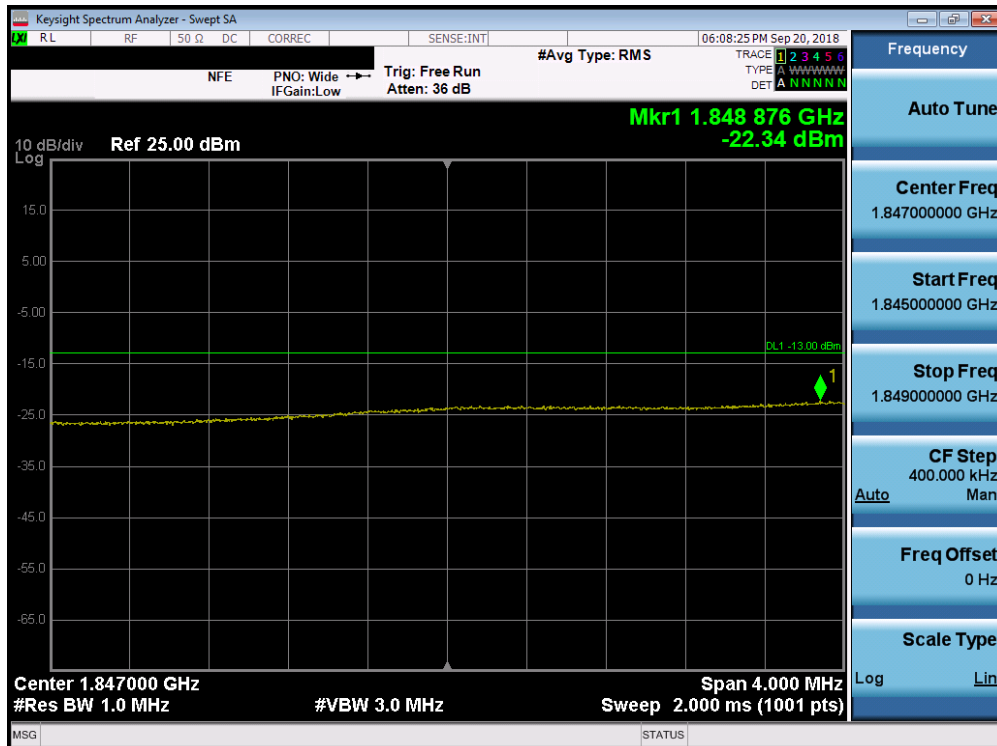


Plot 7-209. Upper Extended Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|----------------------------------|---------------------------------------|--|---------------------------------|
| FCC ID: A3LSMA920F | | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 127 of 189 |

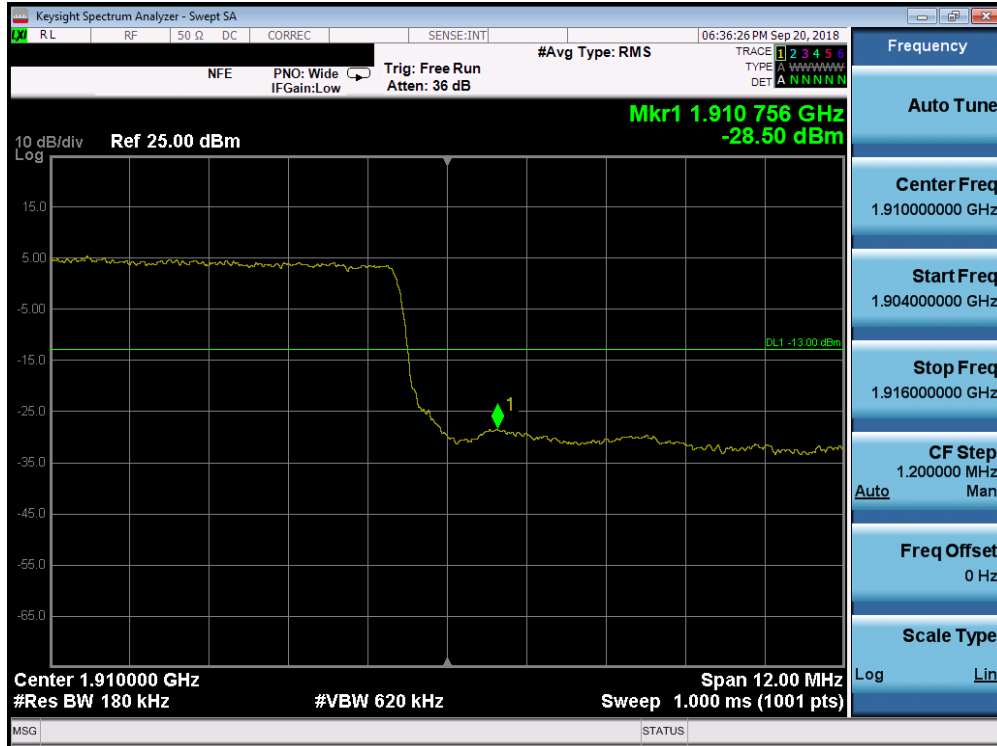


Plot 7-210. Lower Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

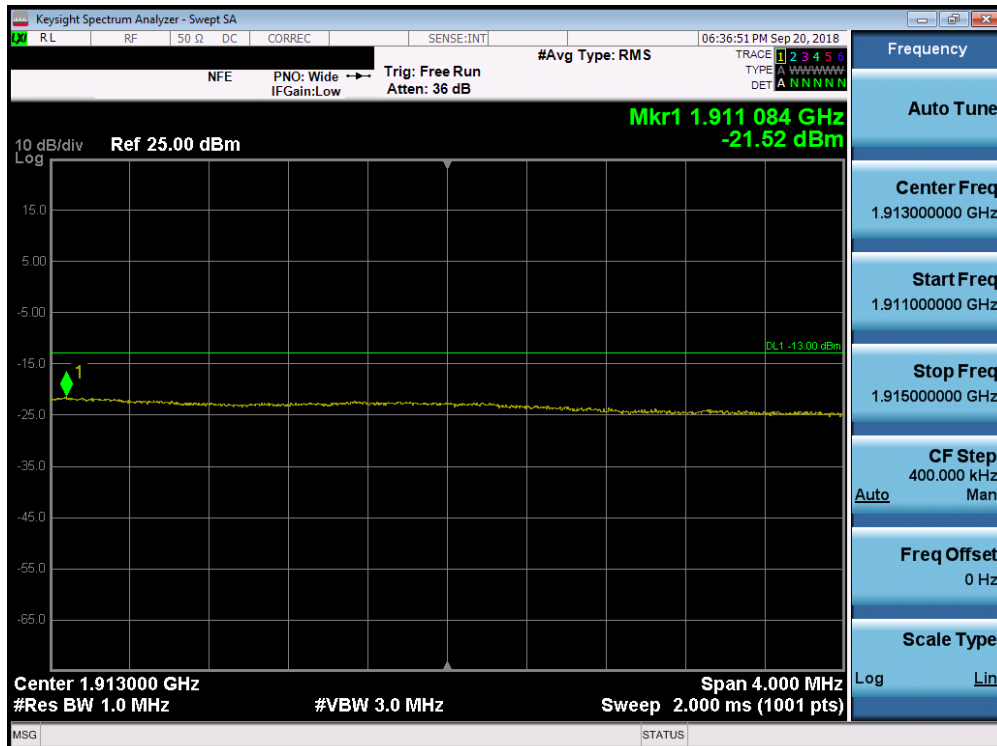


Plot 7-211. Lower Extended Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

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|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 128 of 189 |

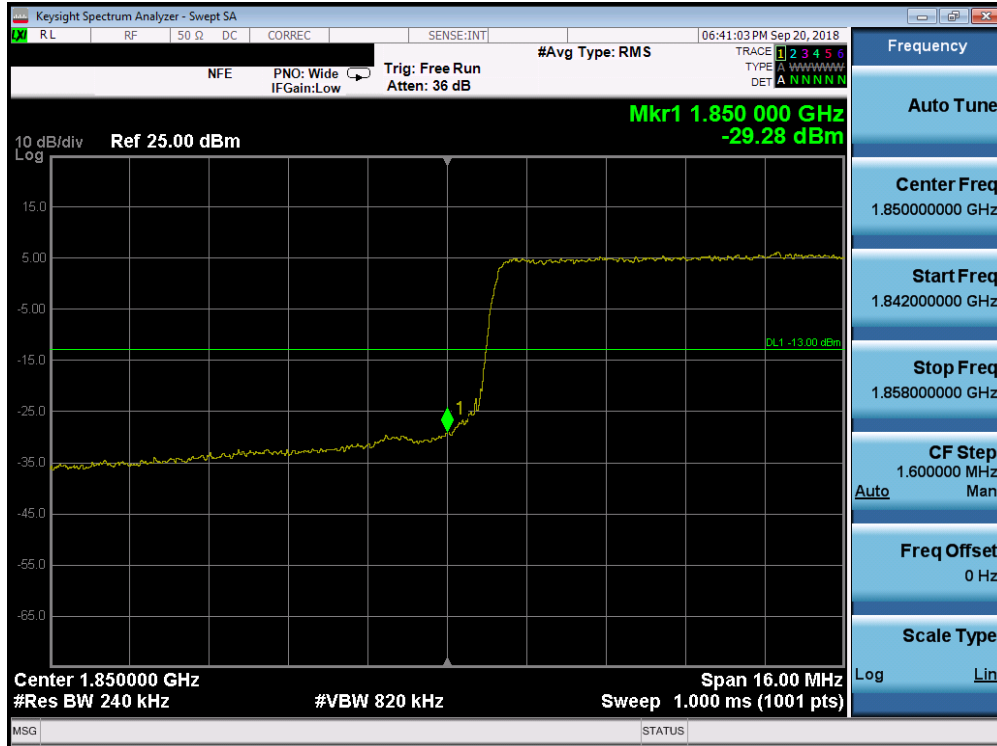


Plot 7-212. Upper Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

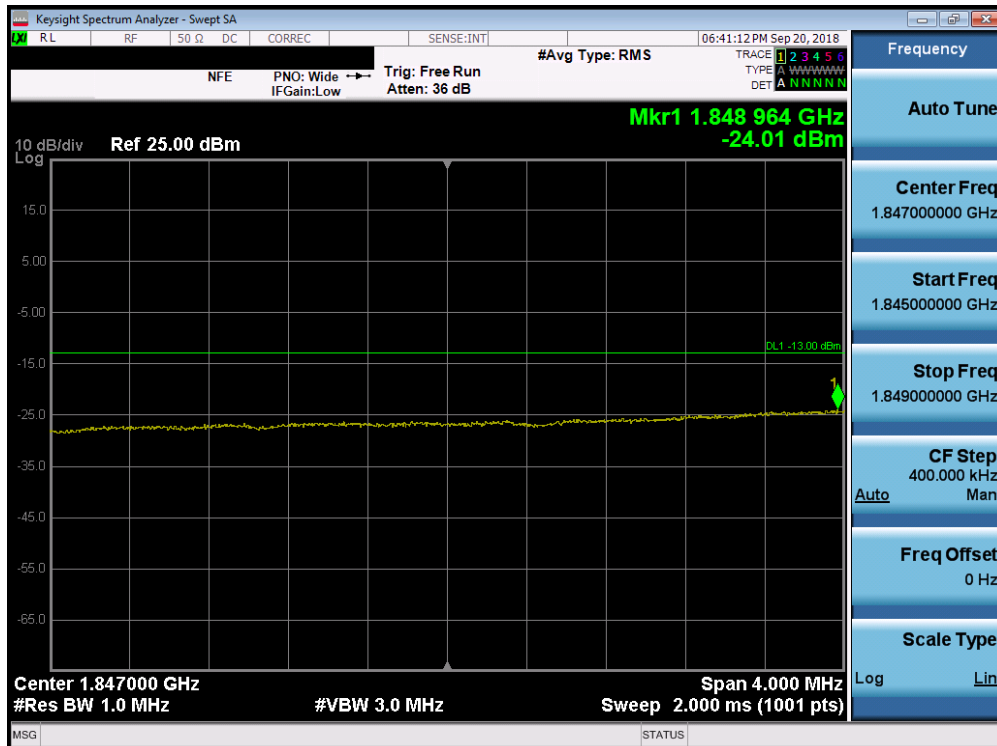


Plot 7-213. Upper Extended Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 129 of 189 |

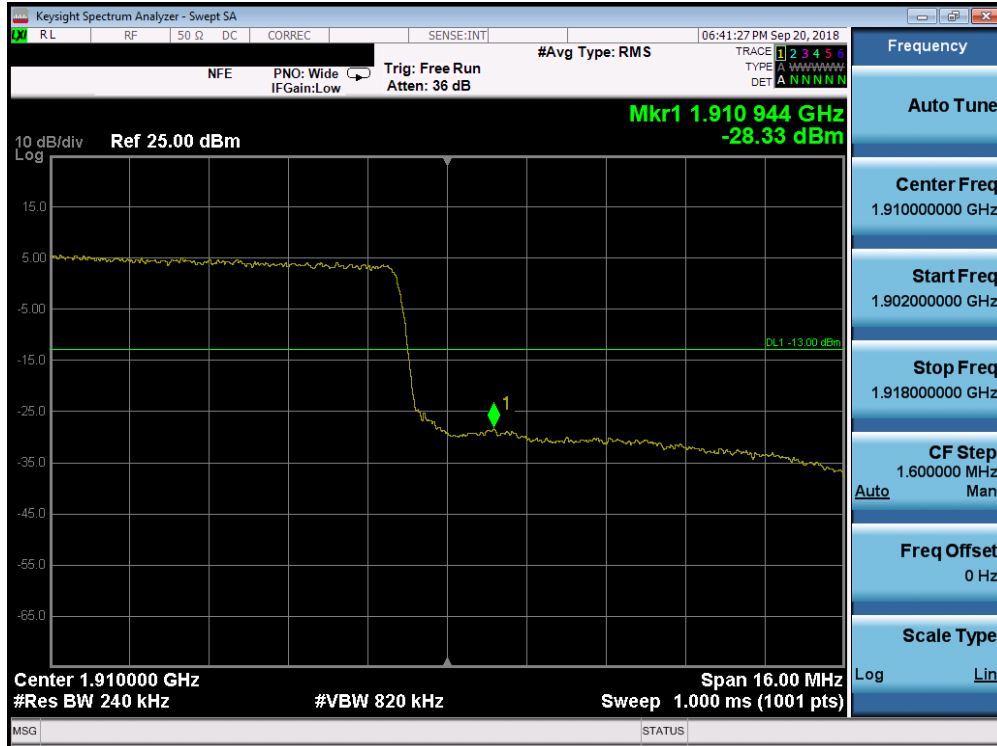


Plot 7-214. Lower Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

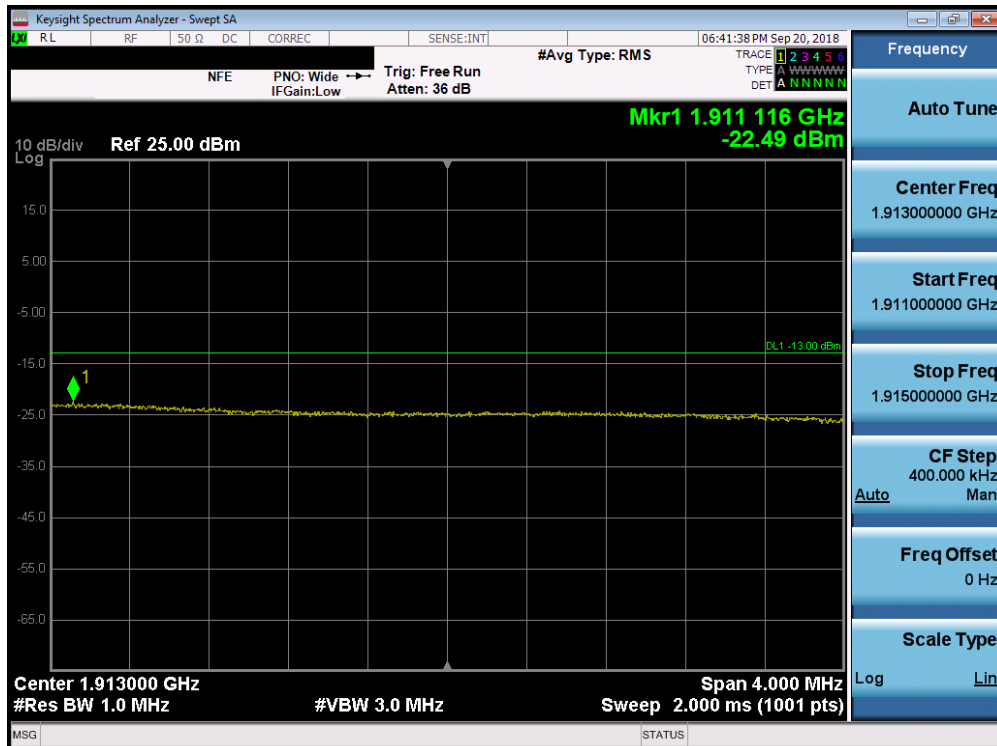


Plot 7-215. Lower Extended Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|----------------------------------|---------------------------------------|--|---------------------------------|
| FCC ID: A3LSMA920F | | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 130 of 189 |



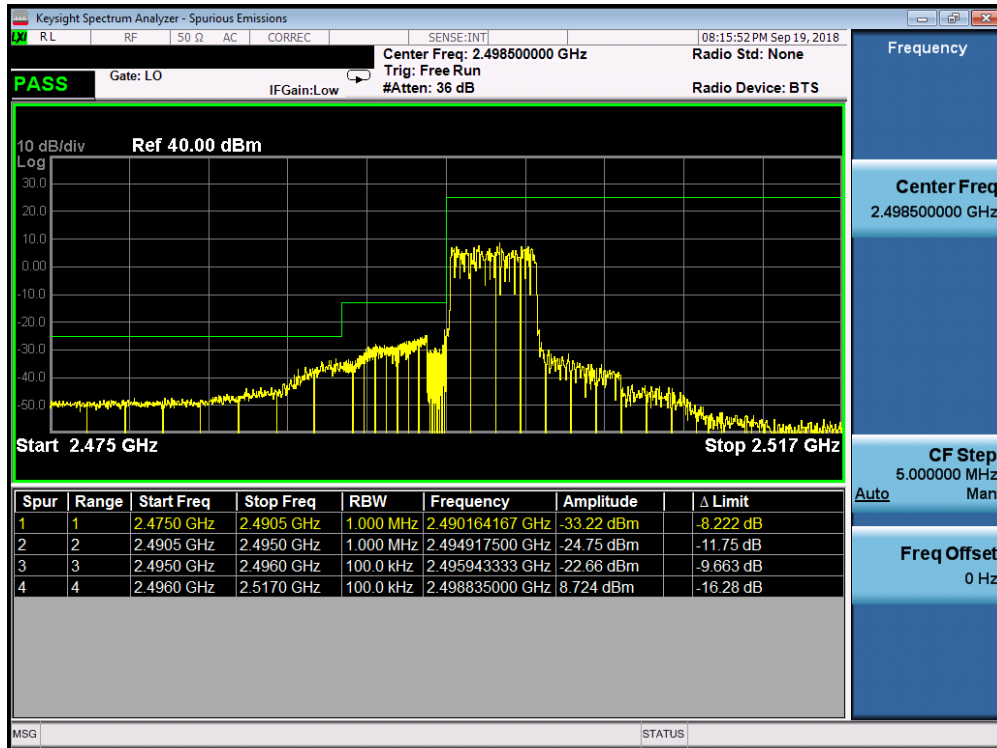
Plot 7-216. Upper Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)



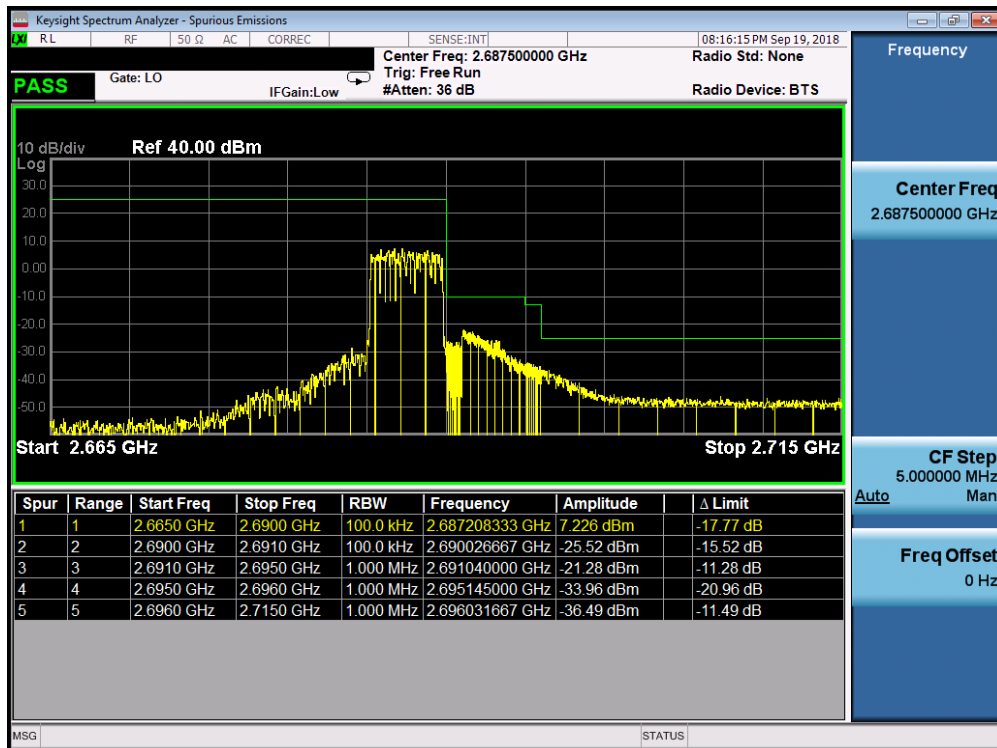
Plot 7-217. Upper Extended Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

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|---|--|---------------------------------------|---------|---------------------------------|
| FCC ID: A3LSMA920F | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 131 of 189 |

Band 41



Plot 7-218. Lower ACP Plot at 2496 MHz (Band 41 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-219. Upper ACP Plot (Band 41 - 5.0MHz QPSK - Full RB Configuration)

| | | | | |
|---|----------------------------------|---------------------------------------|--|---------------------------------|
| FCC ID: A3LSMA920F | | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Quality Manager |
| Test Report S/N: 1M1808310176-03.A3L | Test Dates: 8/30 - 10/12/2018 | EUT Type: Portable Handset | | Page 132 of 189 |