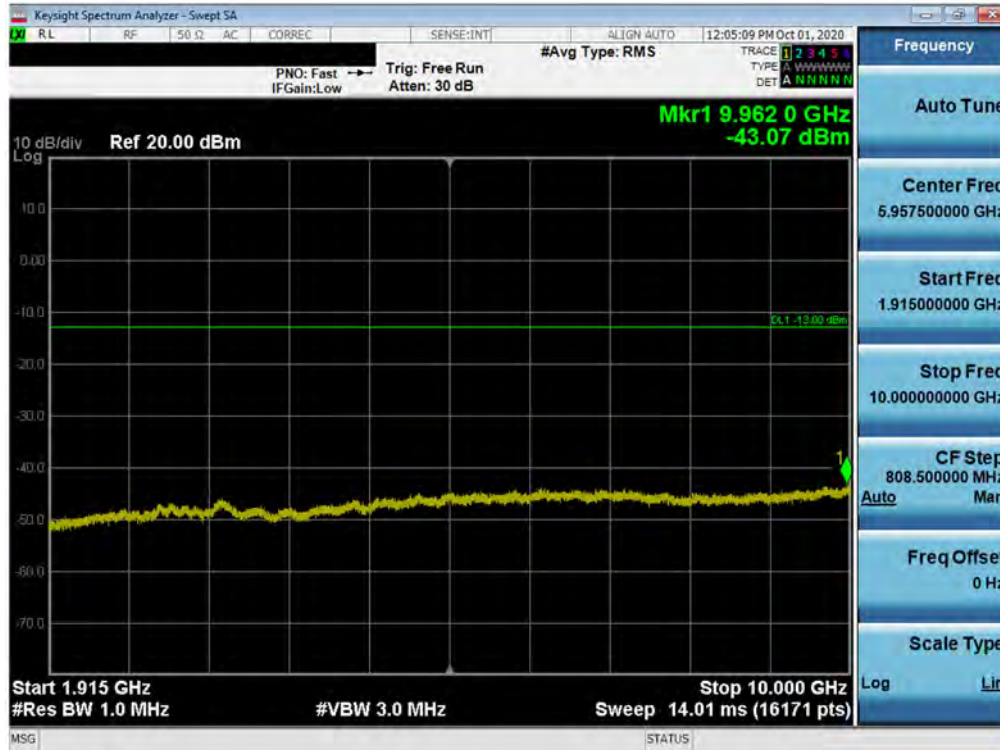
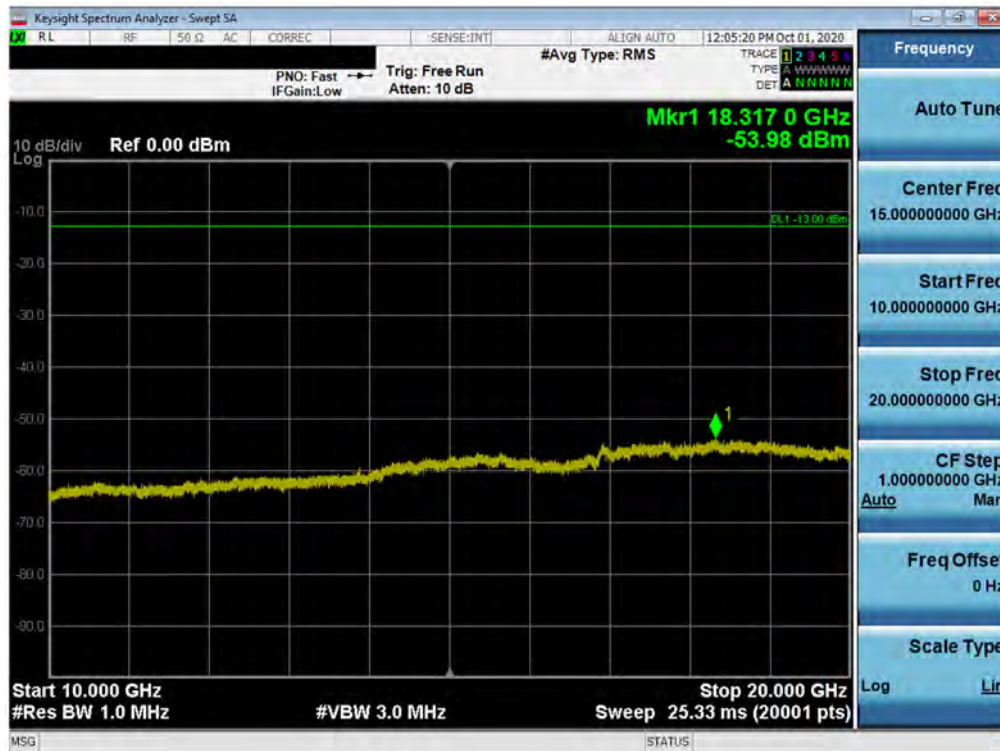




Plot 7-103. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



Plot 7-104. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMG998U	PCTEST Proud to be part of the Samsung ecosystem	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
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Plot 7-105. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-106. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

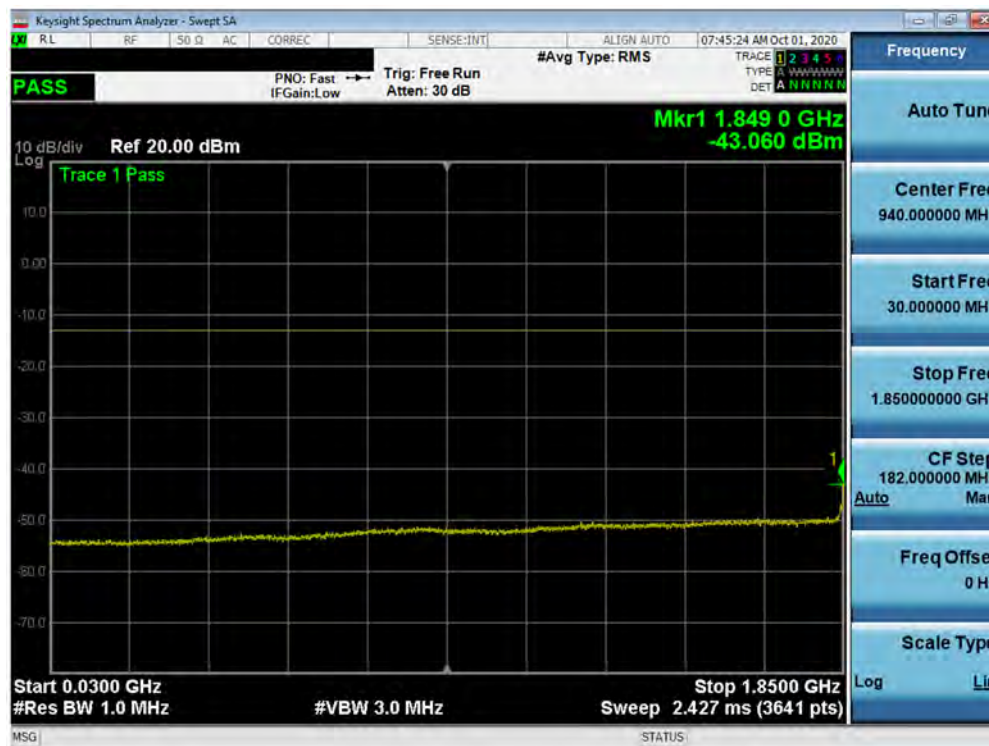
FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 84 of 241



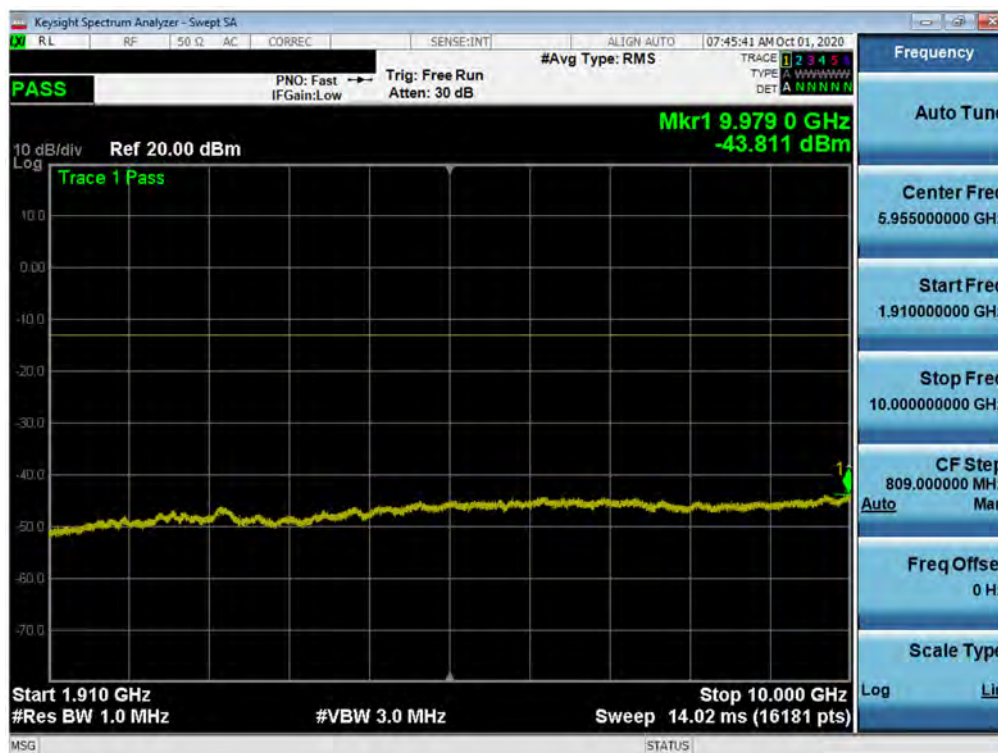
Plot 7-107. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

FCC ID: A3LSMG998U	 PART 24 MEASUREMENT REPORT 		Approved by: Quality Manager
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NR Band n25/n2 ANT A



Plot 7-108. Conducted Spurious Plot (NR Band n25/n2 -20.0MHz - RB Size 1, RB Offset 0 - Low Channel)



Plot 7-109. Conducted Spurious Plot (NR Band n25/n2 - 20.0MHz - RB Size 1, RB Offset 0 - Low Channel)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 86 of 241

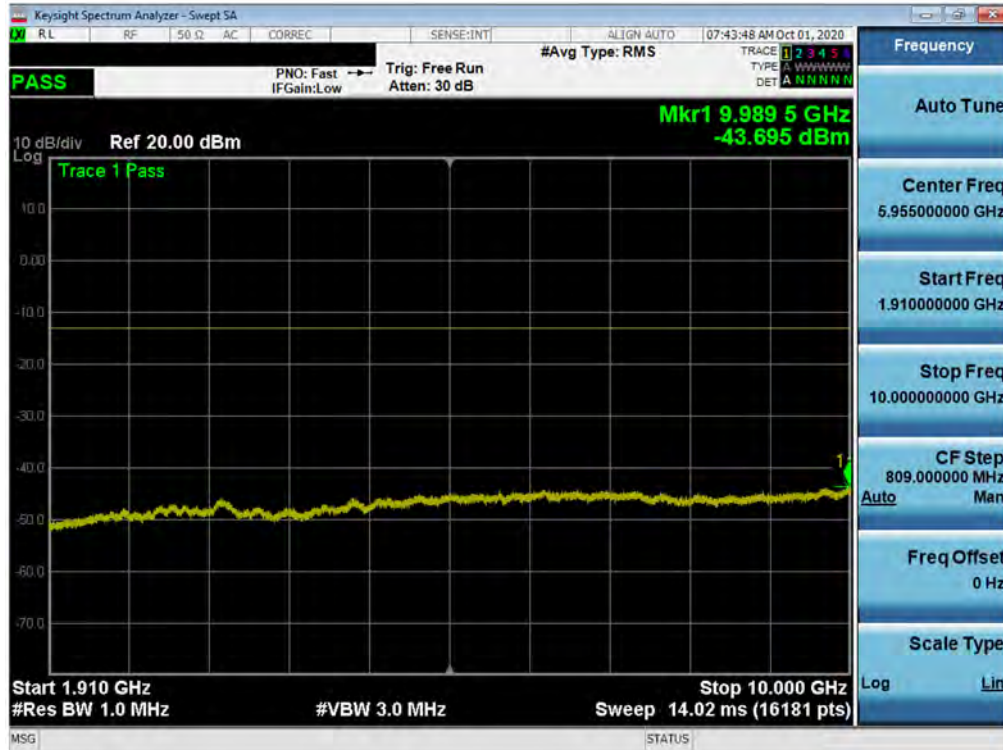


Plot 7-110. Conducted Spurious Plot (NR Band n25/n2 - 20.0MHz - RB Size 1, RB Offset 0 - Low Channel)



Plot 7-111. Conducted Spurious Plot (NR Band n25/n2 - 20.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
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Plot 7-112. Conducted Spurious Plot (NR Band n25/n2 - 20.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

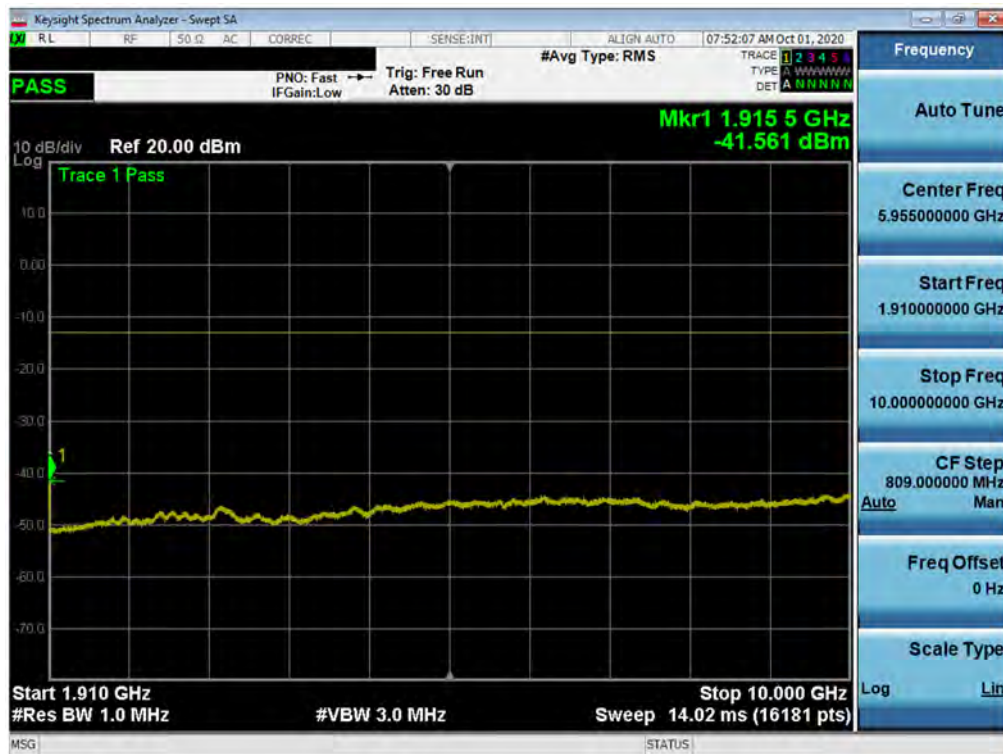


Plot 7-113. Conducted Spurious Plot (NR Band n25/n2 - 20.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
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Plot 7-114. Conducted Spurious Plot (NR Band n25/n2 - 20.0MHz - RB Size 1, RB Offset 0 - High Channel)



Plot 7-115. Conducted Spurious Plot (NR Band n25/n2 - 20.0MHz - RB Size 1, RB Offset 0 - High Channel)

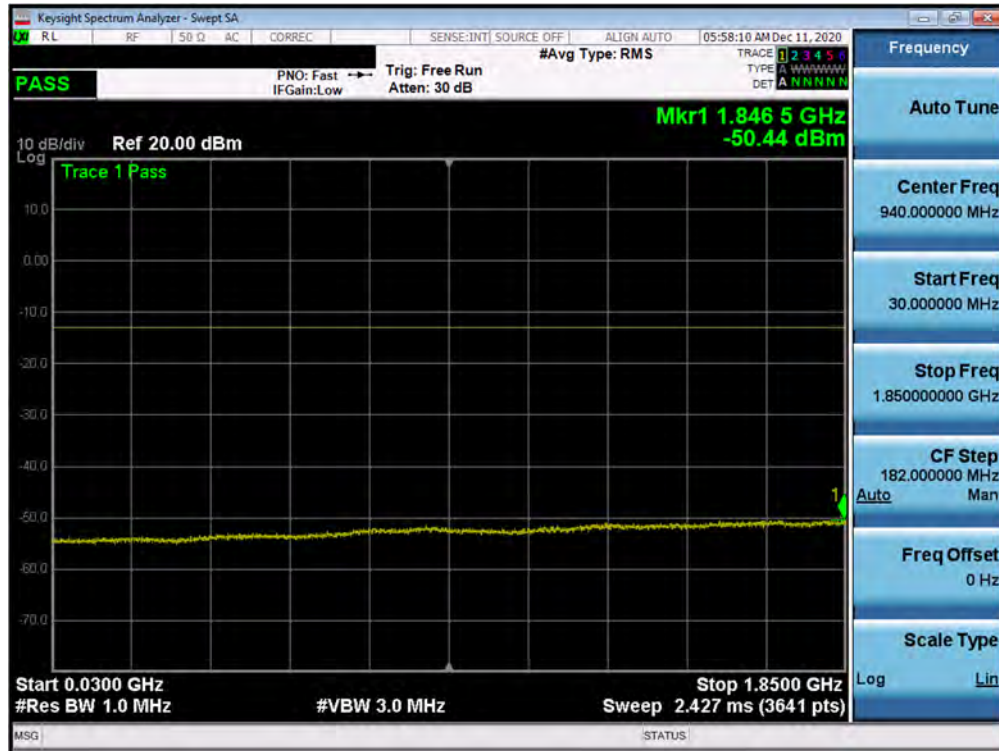
FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 89 of 241



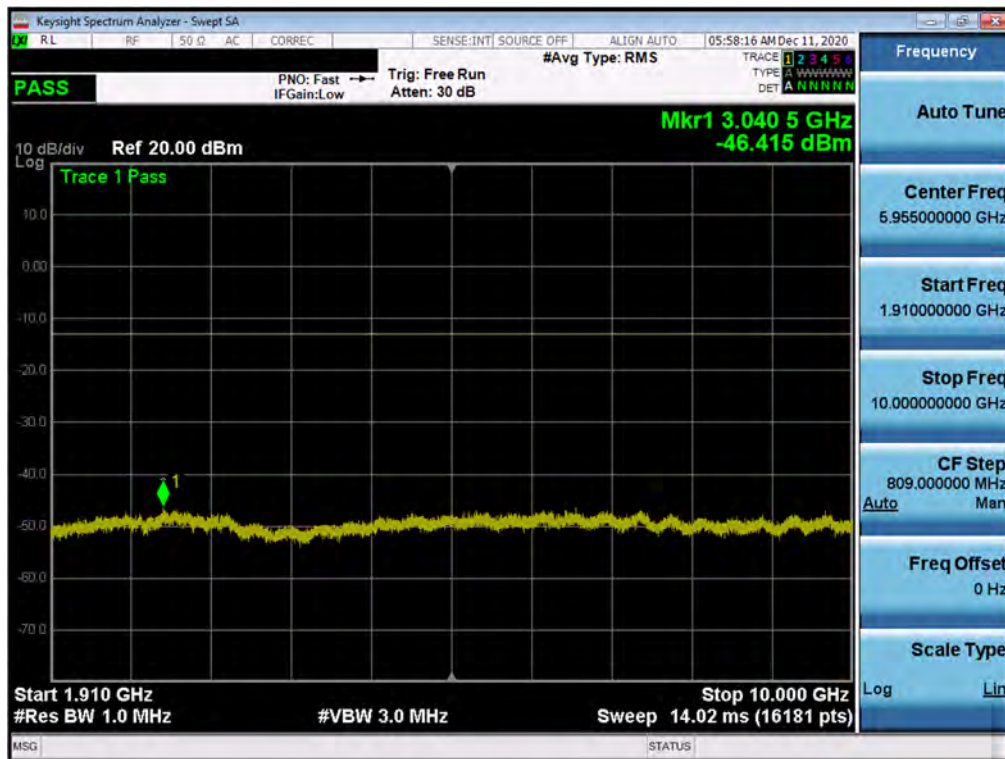
Plot 7-116. Conducted Spurious Plot (NR Band n25/n2 - 20.0MHz - RB Size 1, RB Offset 0 - High Channel)

FCC ID: A3LSMG998U	 PART 24 MEASUREMENT REPORT 		Approved by: Quality Manager
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NR Band n25/n2 ANT E



Plot 7-117. Conducted Spurious Plot (NR Band n25/n2 -20.0MHz - RB Size 1, RB Offset 0 - Low Channel)



Plot 7-118. Conducted Spurious Plot (NR Band n25/n2 - 20.0MHz - RB Size 1, RB Offset 0 - Low Channel)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 91 of 241

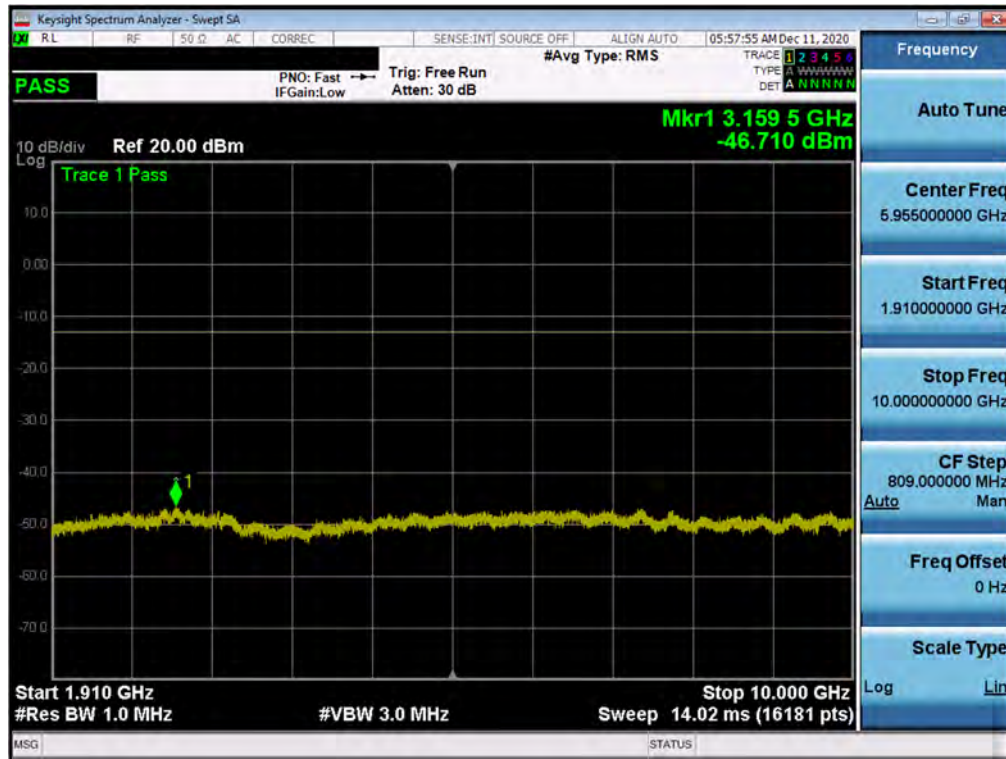


Plot 7-119. Conducted Spurious Plot (NR Band n25/n2 - 20.0MHz - RB Size 1, RB Offset 0 - Low Channel)

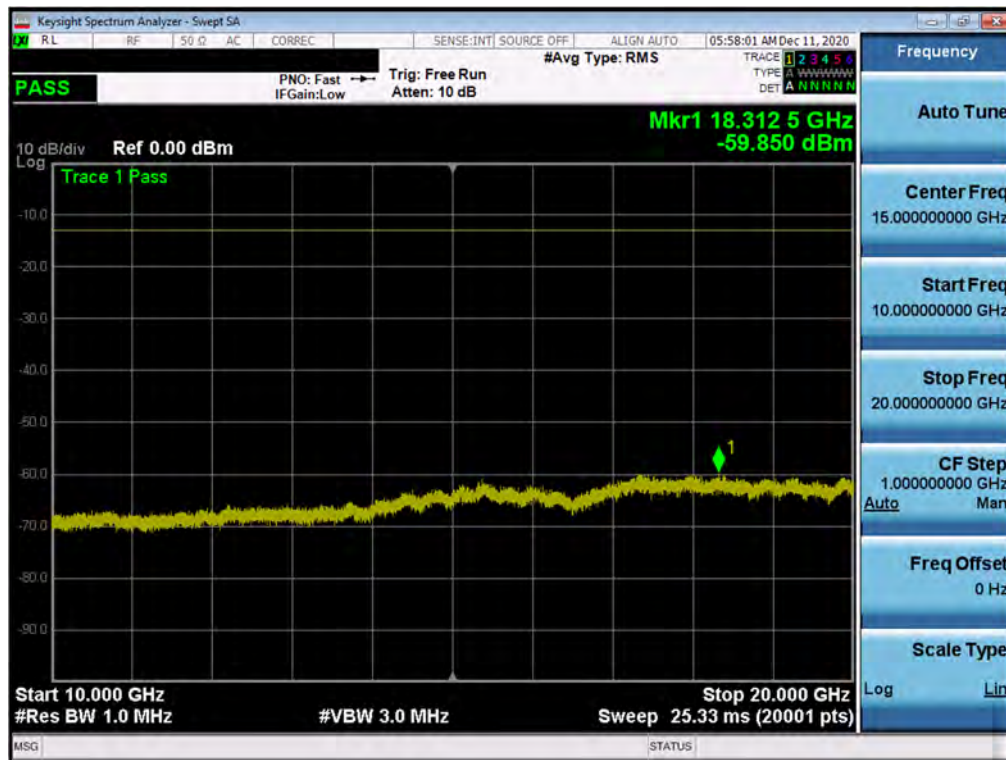


Plot 7-120. Conducted Spurious Plot (NR Band n25/n2 - 20.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 92 of 241

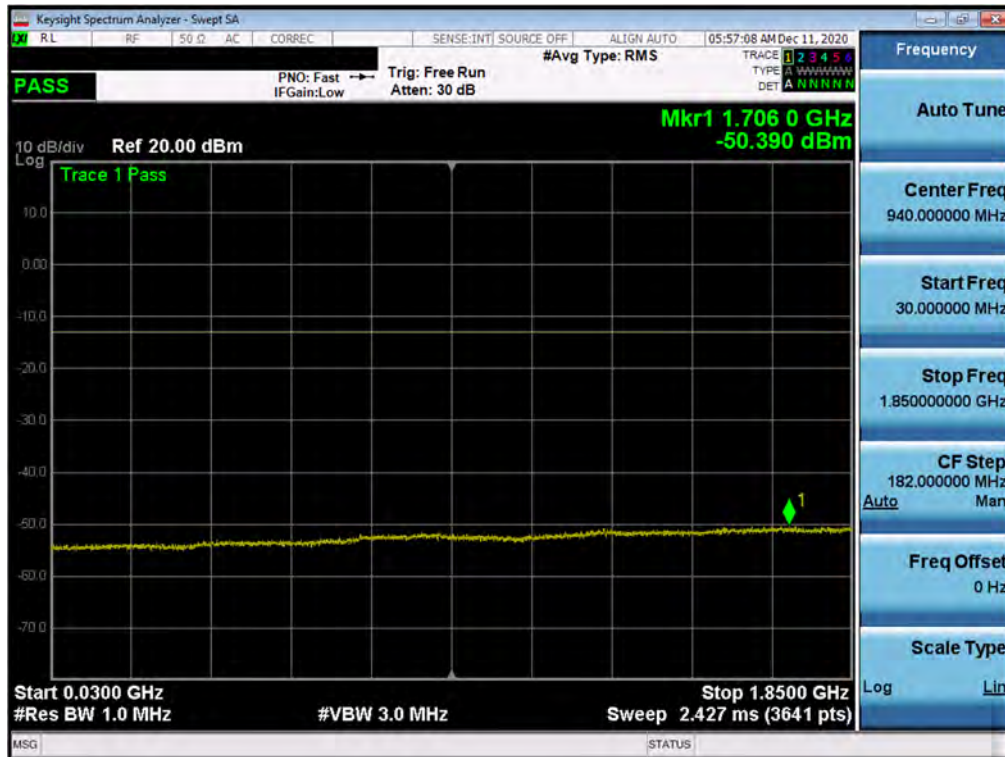


Plot 7-121. Conducted Spurious Plot (NR Band n25/n2 - 20.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

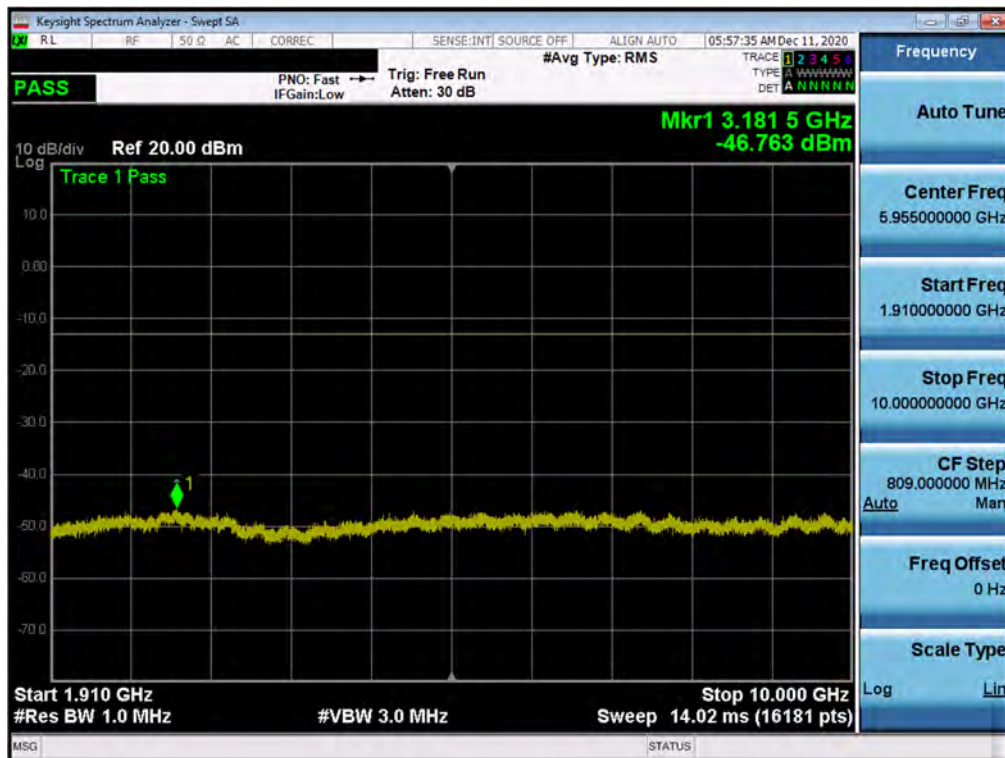


Plot 7-122. Conducted Spurious Plot (NR Band n25/n2 - 20.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 - 12/11/2020	EUT Type: Portable Handset		Page 93 of 241

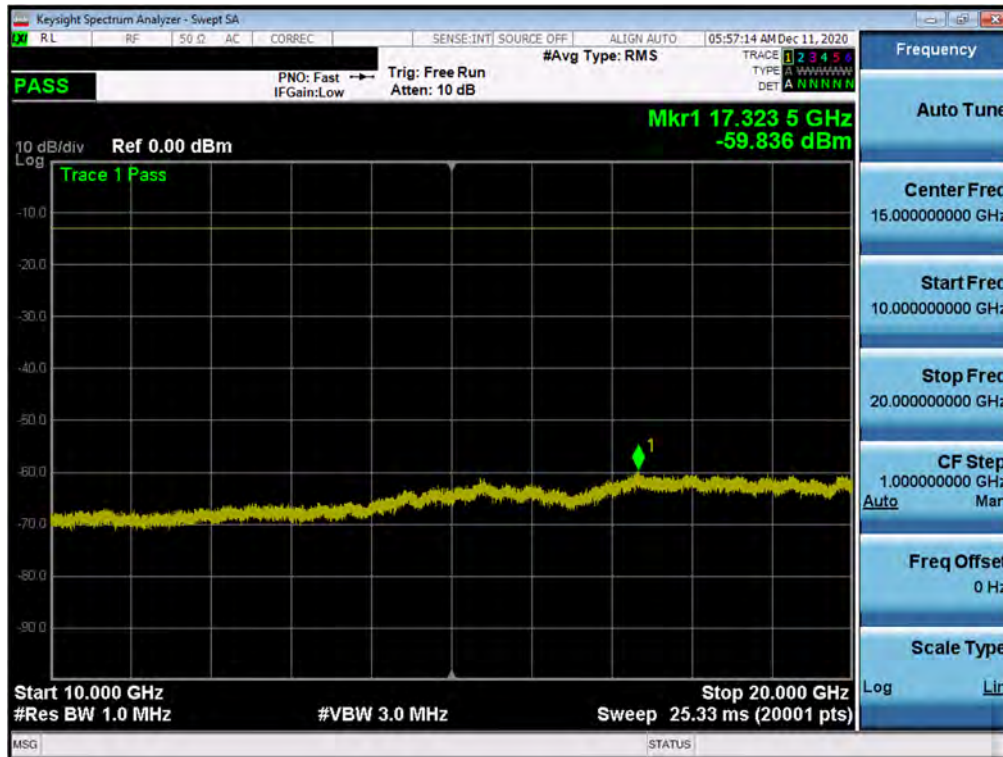


Plot 7-123. Conducted Spurious Plot (NR Band n25/n2 - 20.0MHz - RB Size 1, RB Offset 0 - High Channel)



Plot 7-124. Conducted Spurious Plot (NR Band n25/n2 - 20.0MHz - RB Size 1, RB Offset 0 - High Channel)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 94 of 241



Plot 7-125. Conducted Spurious Plot (NR Band n25/n2 - 20.0MHz - RB Size 1, RB Offset 0 - High Channel)

FCC ID: A3LSMG998U	 PART 24 MEASUREMENT REPORT 		Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset	Page 95 of 241

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 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. $VBW \geq 3 \times RBW$
5. Detector = RMS
6. Number of sweep points $\geq 2 \times \text{Span}/RBW$
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

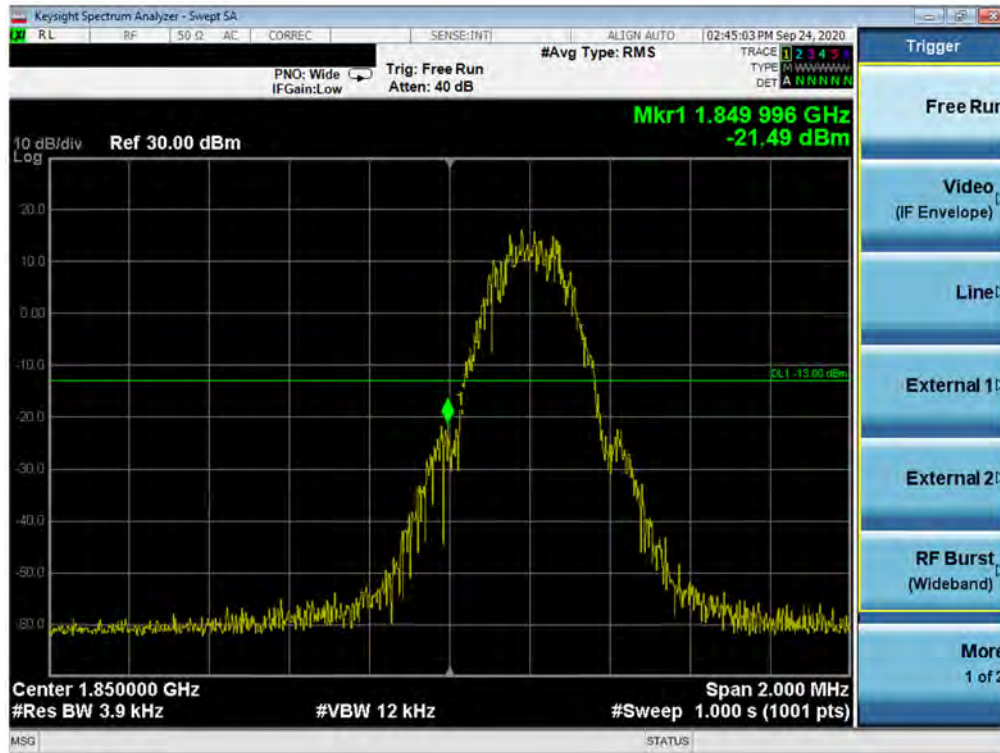
FCC ID: A3LSMG998U	 PART 24 MEASUREMENT REPORT 		Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset	Page 96 of 241

Test Notes

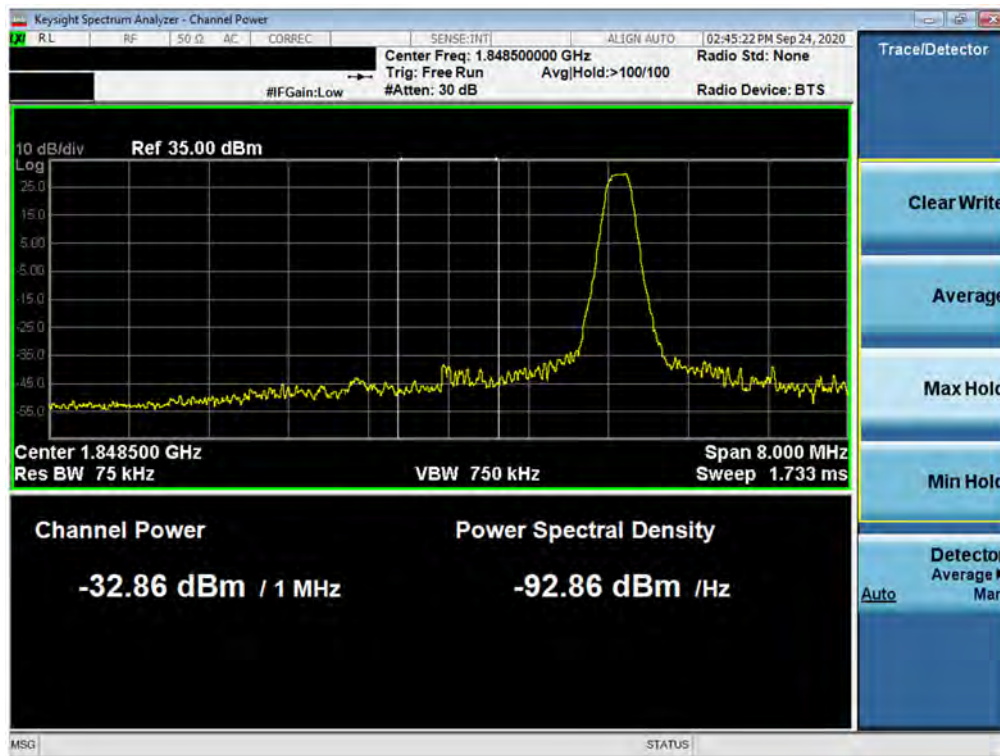
1. Per 24.238(a) and RSS-133(6.5), in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to demonstrate compliance with the out-of-band emissions limit. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.
2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

FCC ID: A3LSMG998U	 PART 24 MEASUREMENT REPORT 		Approved by: Quality Manager
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GSM/GPRS PCS

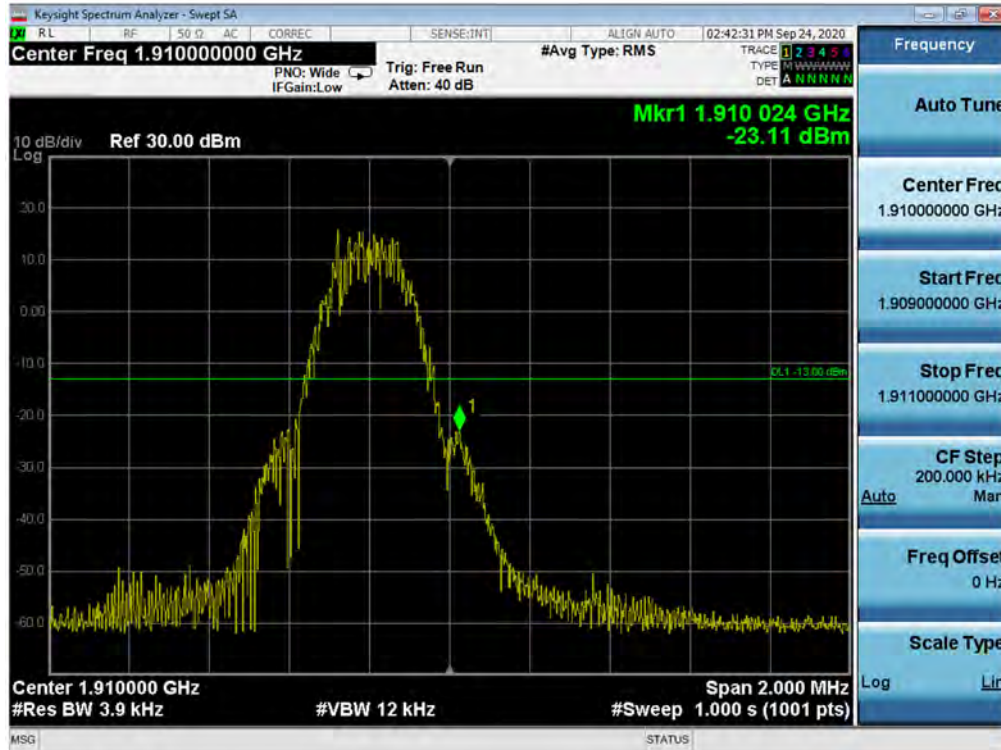


Plot 7-126. Lower Band Edge Plot (GPRS PCS – Ch. 512)

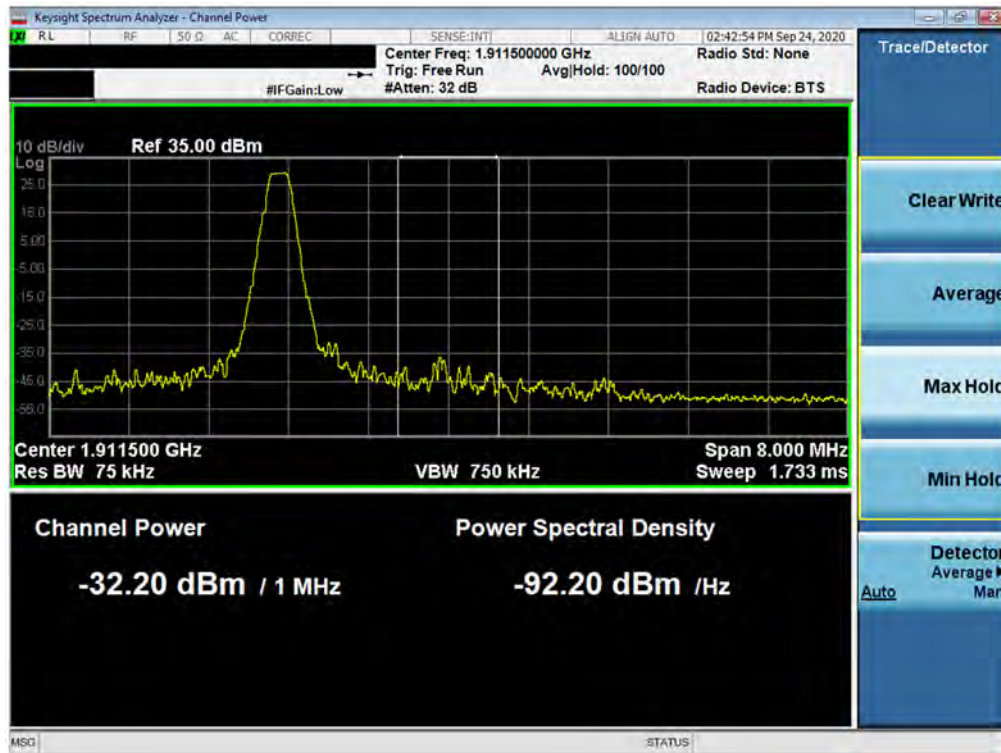


Plot 7-127. Extended Lower Band Edge Plot (GPRS PCS – Ch. 512)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
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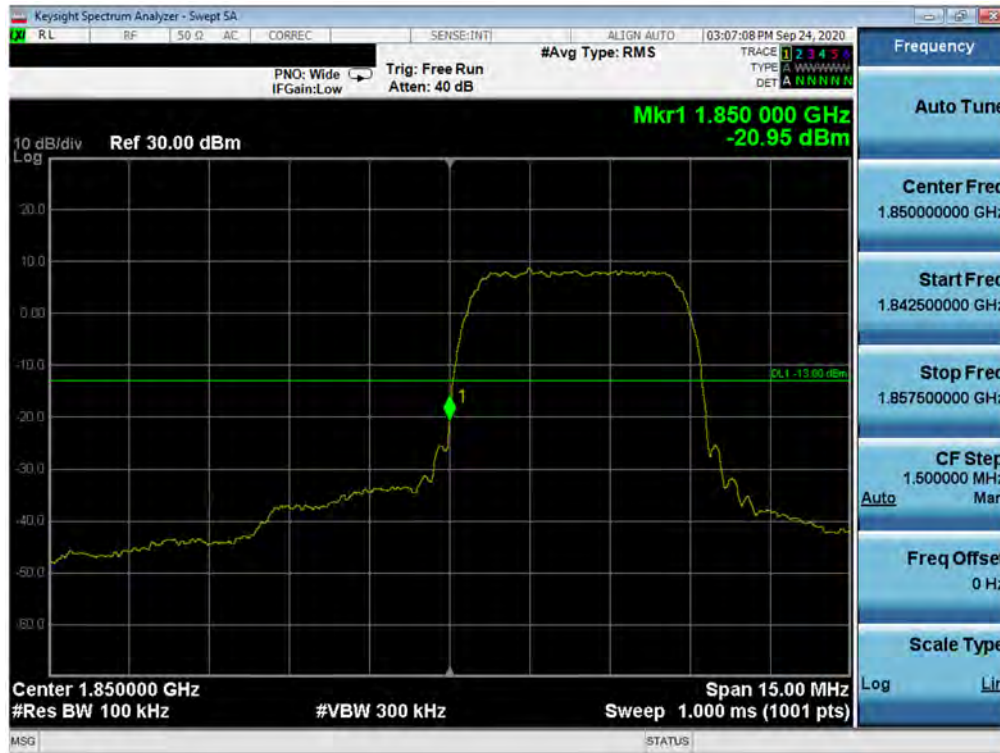
Plot 7-128. Upper Band Edge Plot (GPRS PCS – Ch. 810)



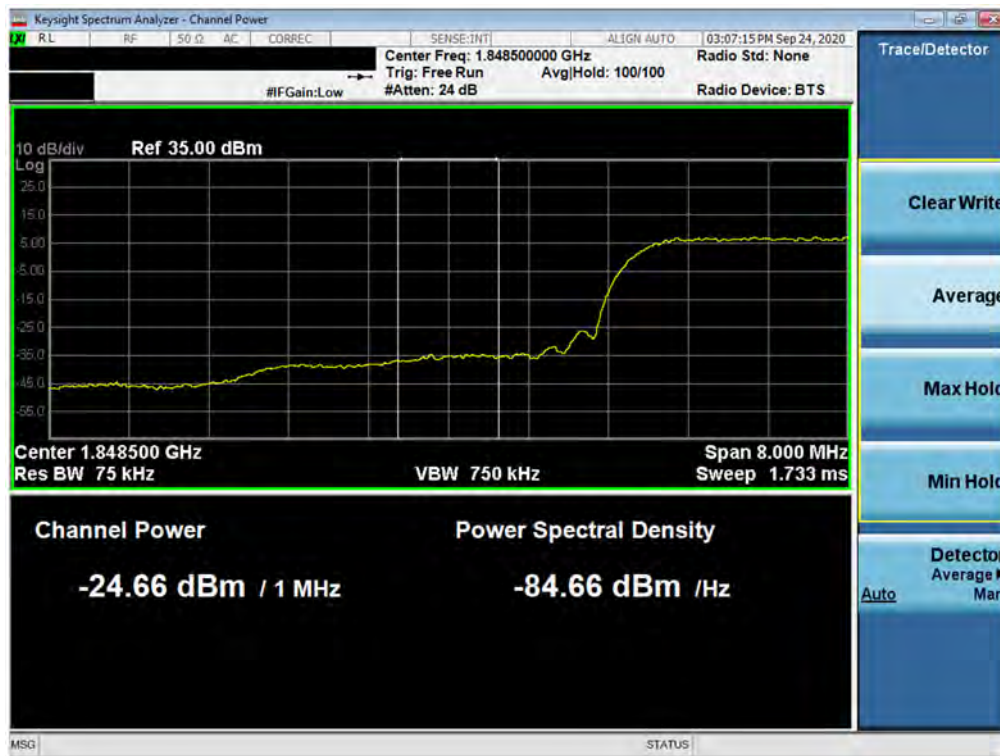
Plot 7-129. Extended Upper Band Edge Plot (GPRS PCS – Ch. 810)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 99 of 241

WCDMA PCS



Plot 7-130. Lower Band Edge Plot (WCDMA PCS – Ch. 9262)

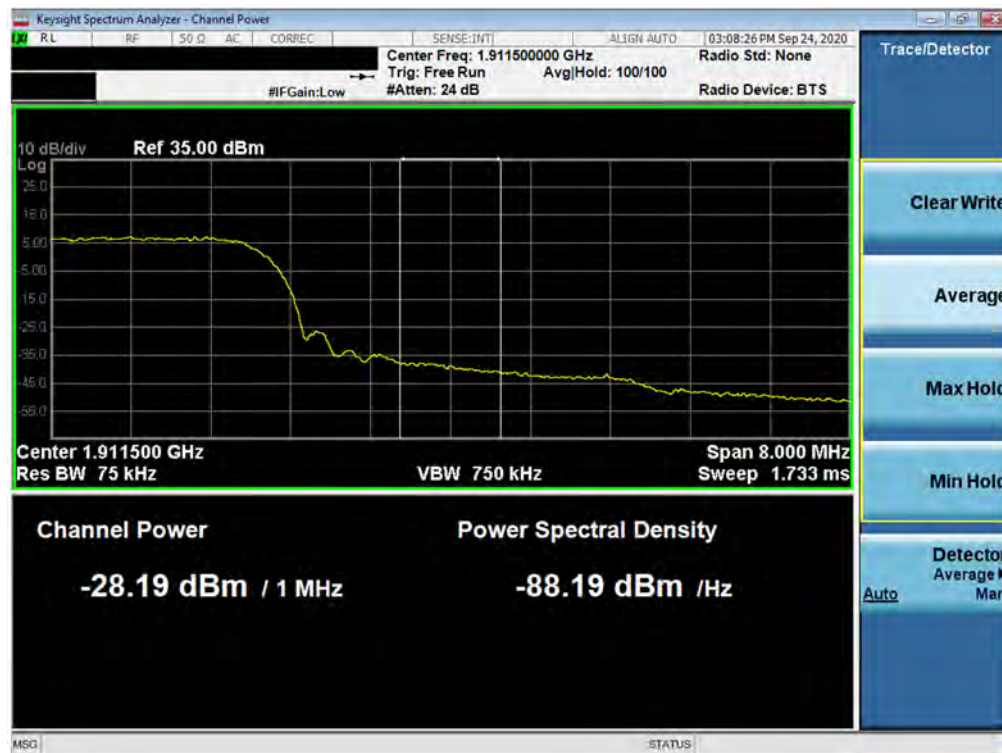


Plot 7-131. Extended Lower Band Edge Plot (WCDMA PCS – Ch. 9262)

FCC ID: A3LSMG998U	PCTEST Proud to be part of the Samsung family	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 100 of 241



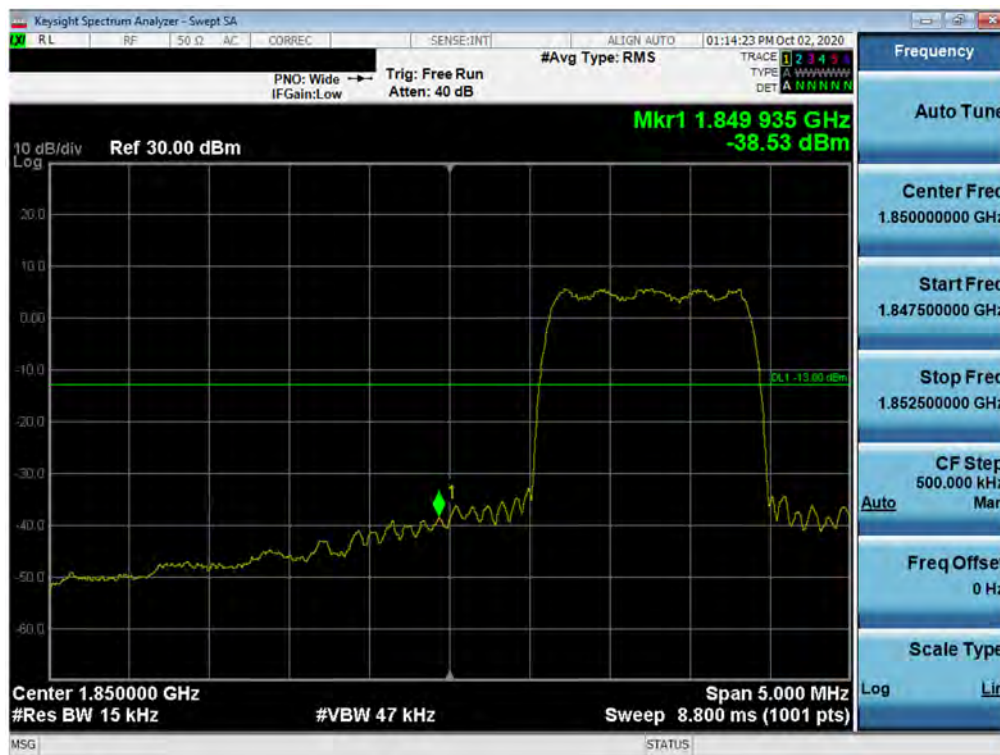
Plot 7-132. Upper Band Edge Plot (WCDMA PCS – Ch. 9538)



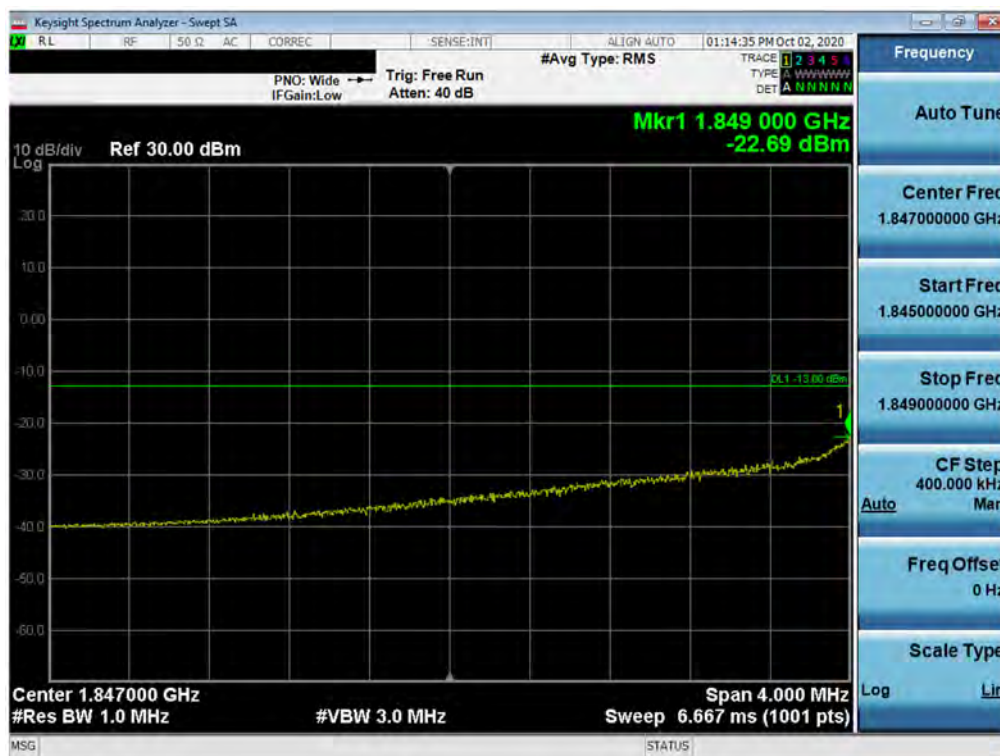
Plot 7-133. Extended Upper Band Edge Plot (WCDMA PCS – Ch. 9538)

FCC ID: A3LSMG998U	PCTEST PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset	Page 101 of 241

CDMA PCS

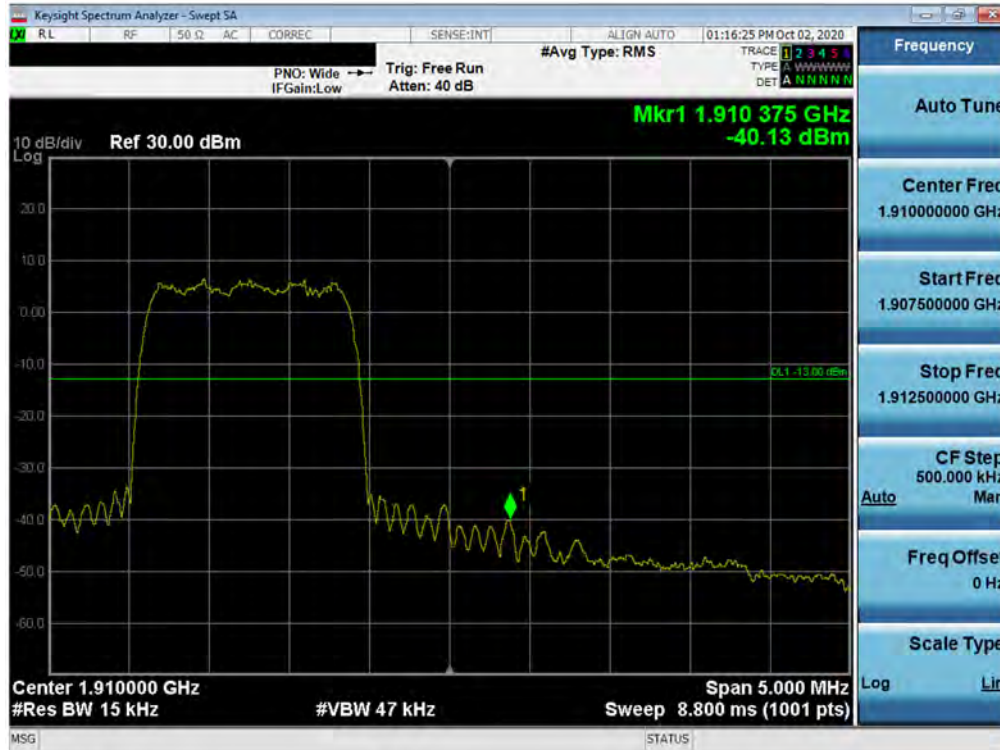


Plot 7-134. Lower Band Edge Plot (CDMA PCS – Ch. 25)

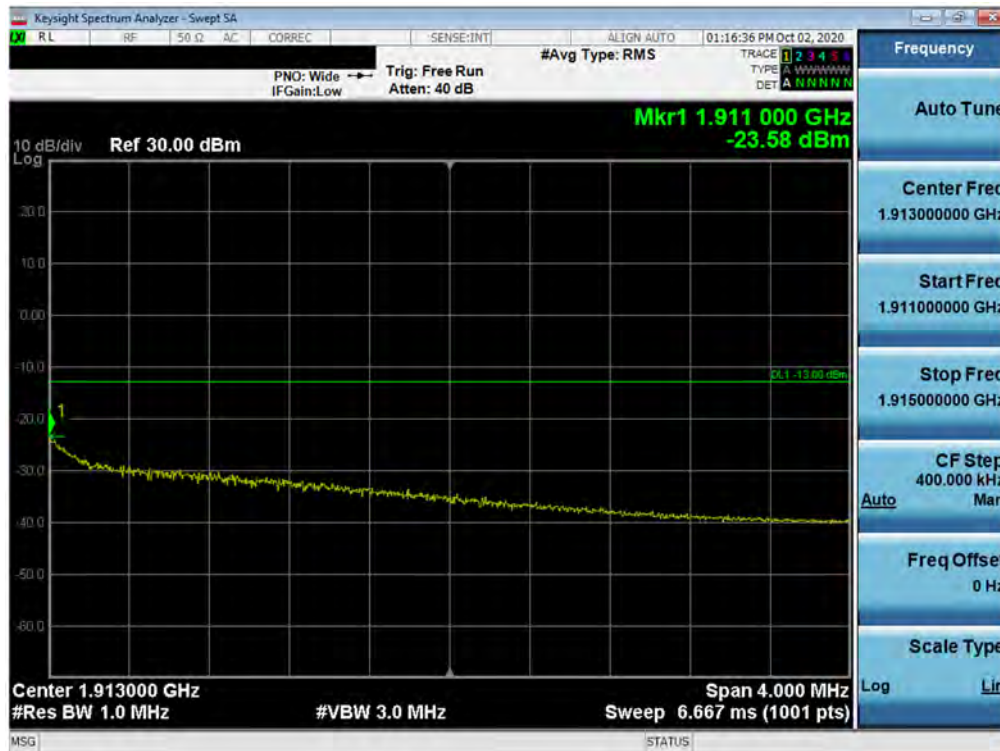


Plot 7-135. Extended Lower Band Edge Plot (CDMA PCS – Ch. 25)

FCC ID: A3LSMG998U	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
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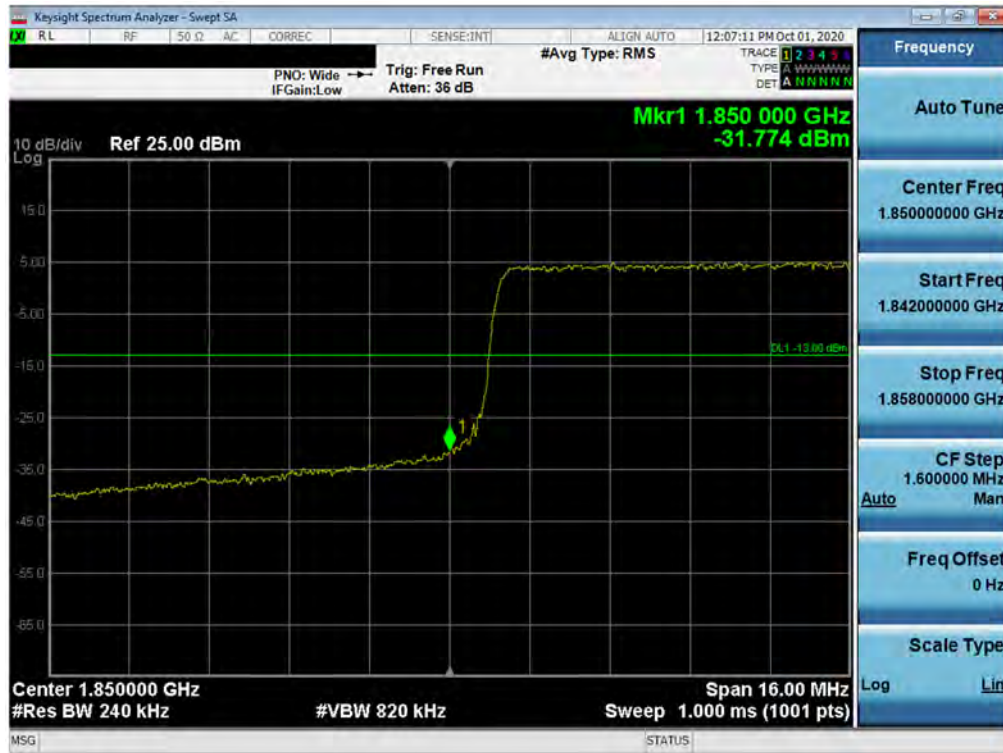
Plot 7-136. Upper Band Edge Plot (CDMA PCS – Ch. 1175)



Plot 7-137. Extended Upper Band Edge Plot (CDMA PCS – Ch. 1175)

FCC ID: A3LSMG998U				Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	PART 24 MEASUREMENT REPORT EUT Type: Portable Handset		Page 103 of 241

LTE Band 25/2

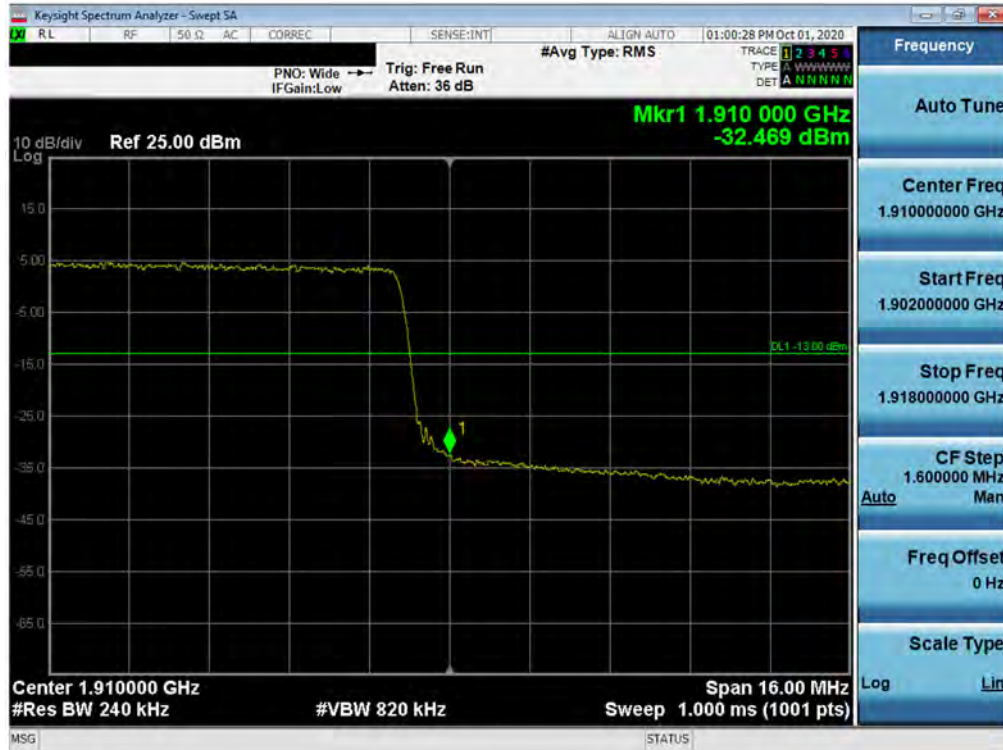


Plot 7-138. Lower Band Edge Plot (LTE Band 25/2 - 20MHz QPSK – Full RB Configuration)

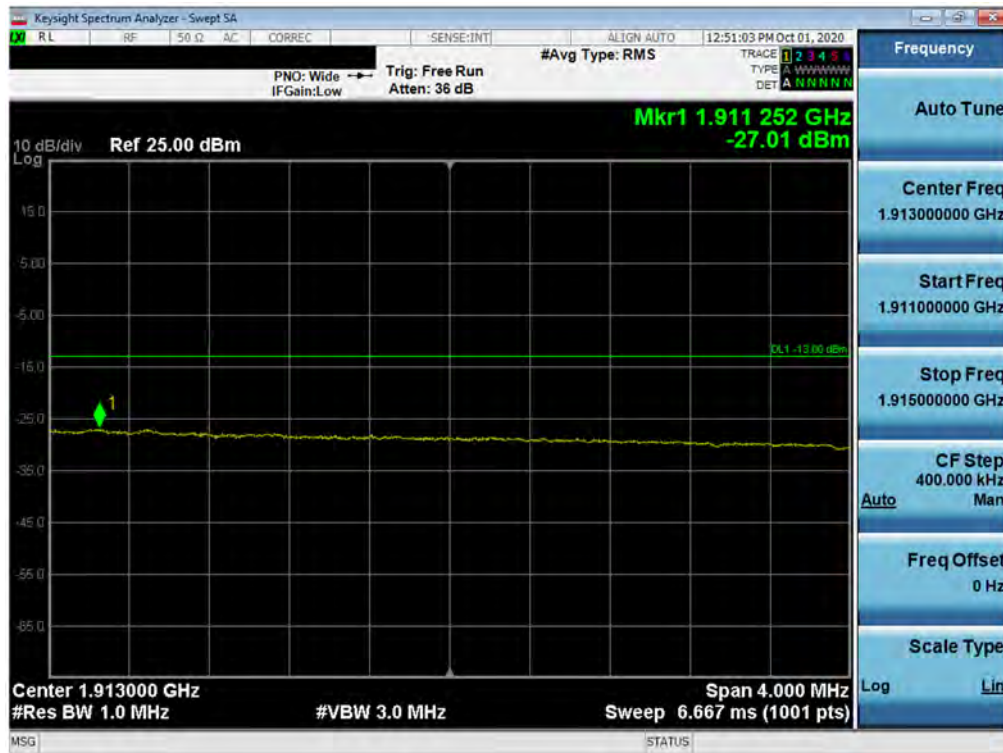


Plot 7-139. Extended Lower Band Edge Plot (LTE Band 25/2 - 20MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of the Samsung ecosystem	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 104 of 241

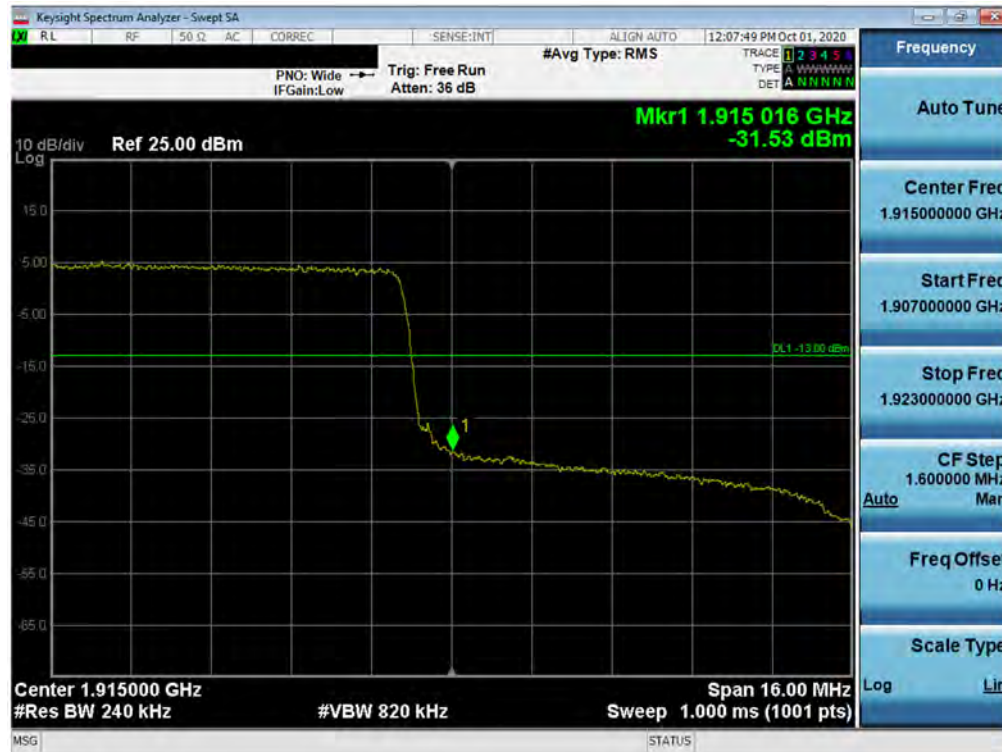


Plot 7-140. Upper Band Edge Plot (LTE Band 2 - 20MHz QPSK – Full RB Configuration)

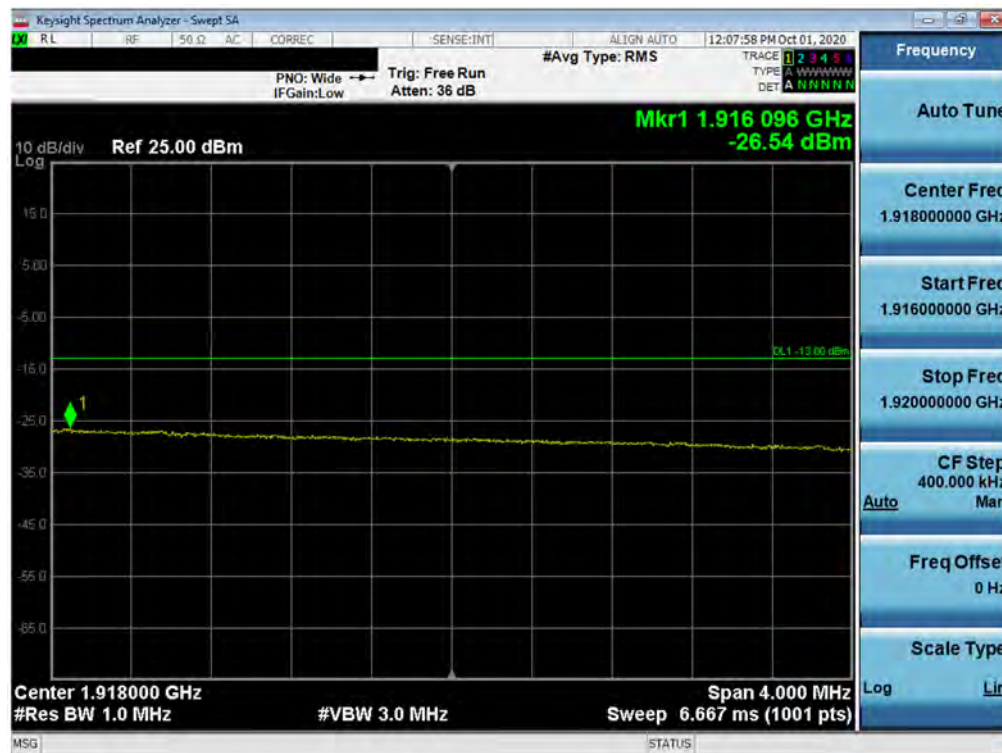


Plot 7-141. Extended Upper Band Edge Plot (LTE Band 2 - 20MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 105 of 241

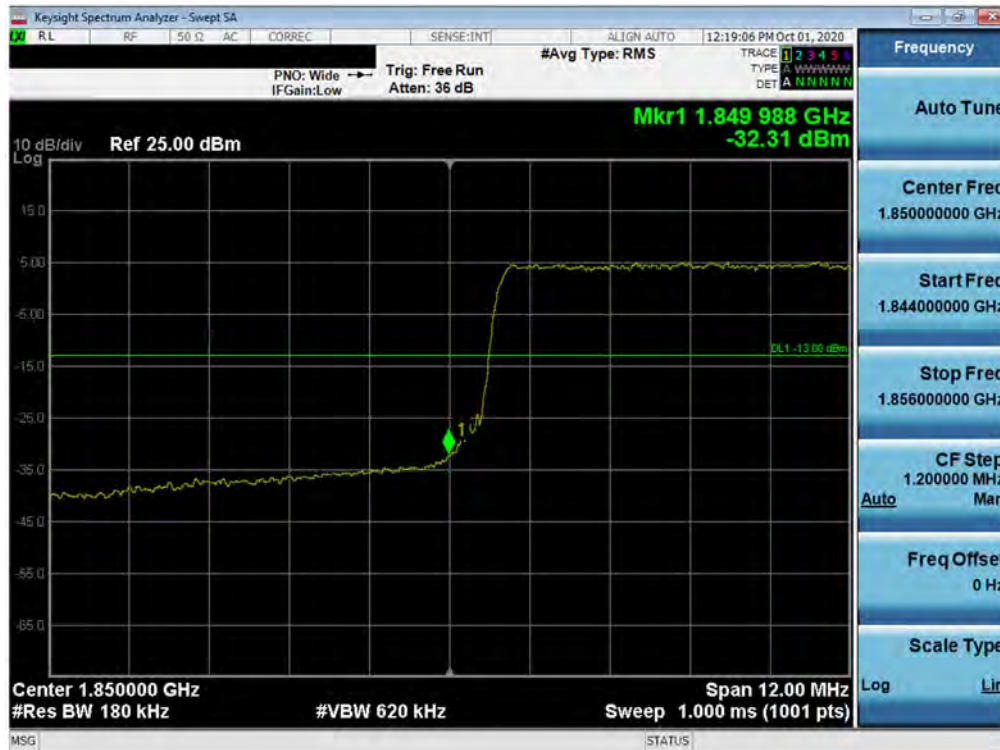


Plot 7-142. Upper Band Edge Plot (LTE Band 25 - 20MHz QPSK – Full RB Configuration)

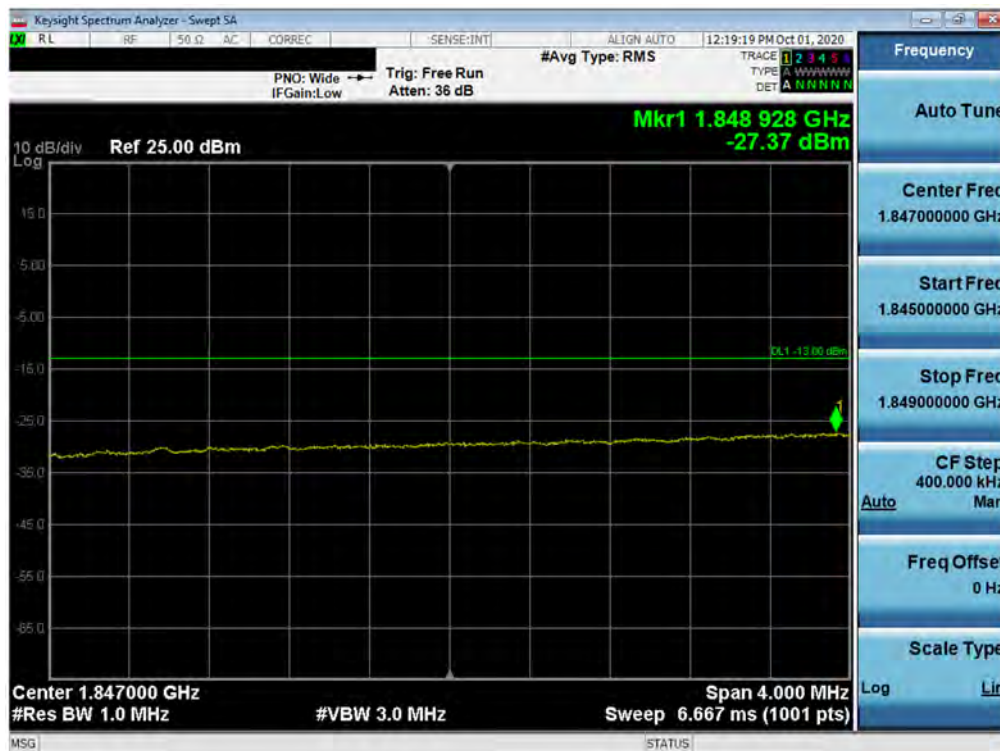


Plot 7-143. Extended Upper Band Edge Plot (LTE Band 25 - 20MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG998U	 PART 24 MEASUREMENT REPORT 		Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset	Page 106 of 241

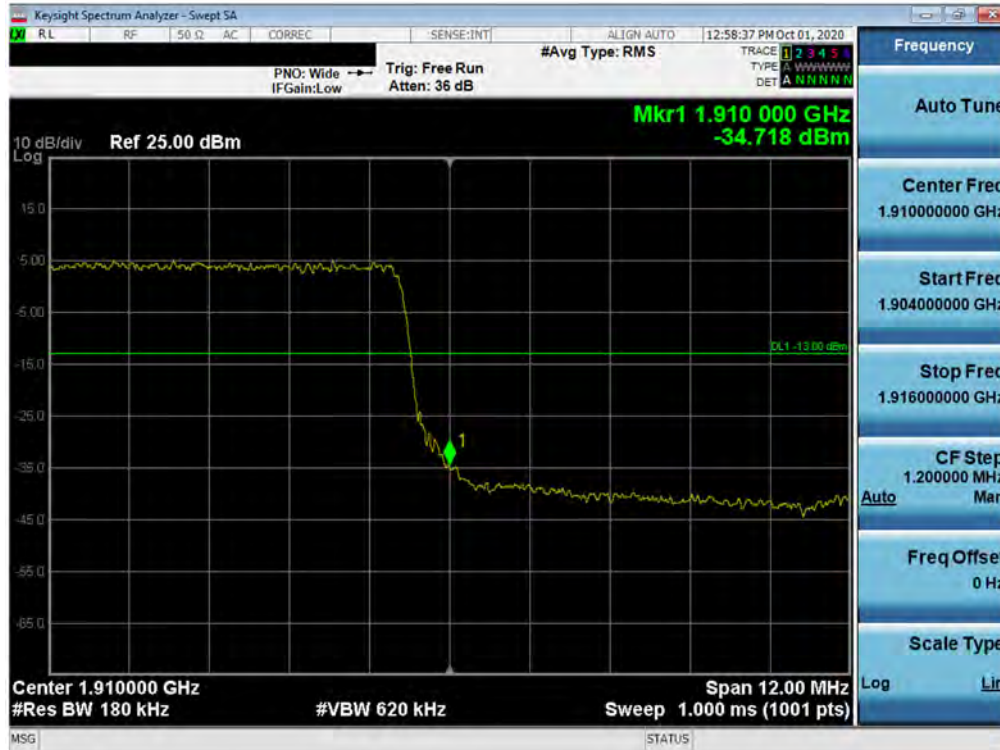


Plot 7-144. Lower Band Edge Plot (LTE Band 25/2 - 15MHz QPSK – Full RB Configuration)

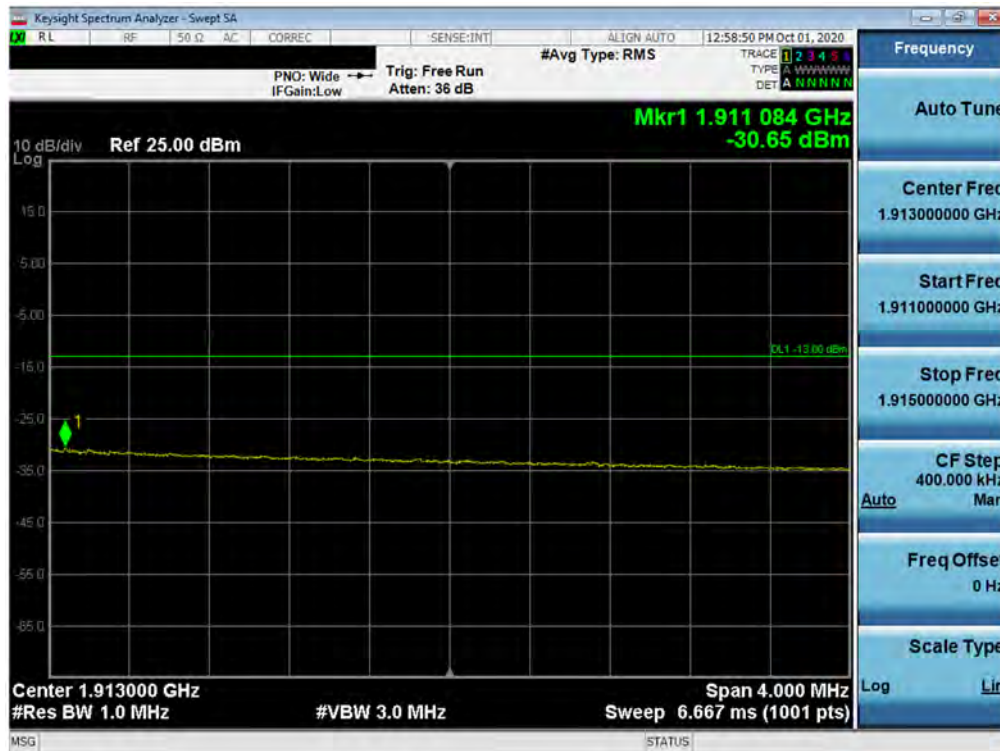


Plot 7-145. Extended Lower Band Edge Plot (LTE Band 25/2 - 15MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG998U	 PART 24 MEASUREMENT REPORT 		Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset	Page 107 of 241

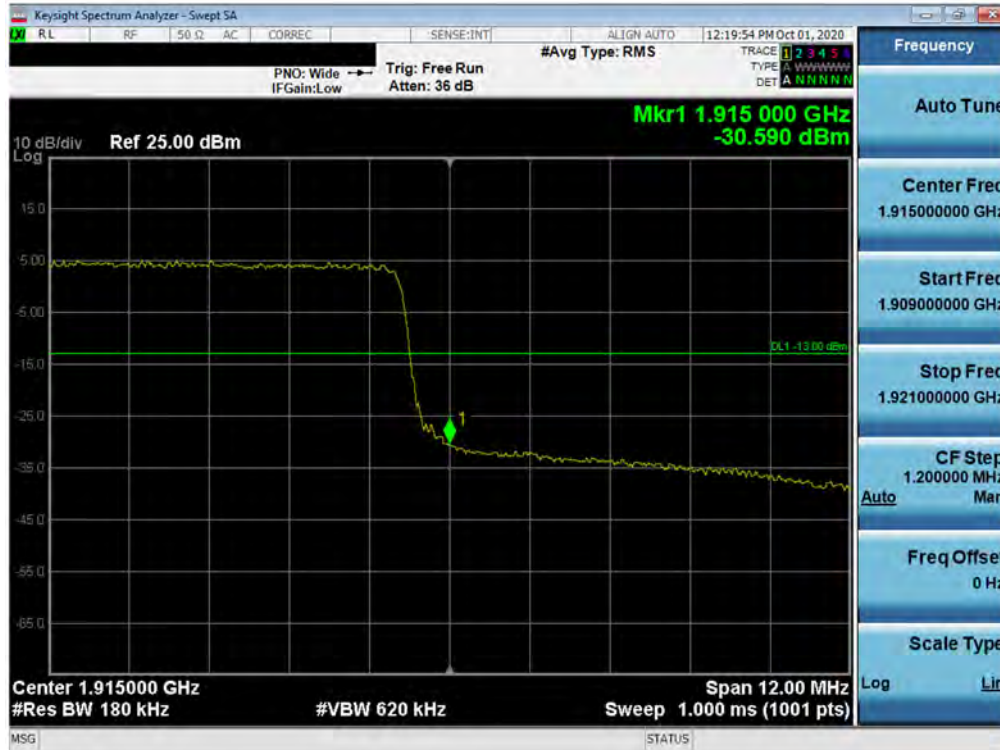


Plot 7-146. Upper Band Edge Plot (LTE Band 2 - 15MHz QPSK – Full RB Configuration)



Plot 7-147. Extended Upper Band Edge Plot (LTE Band 2 - 15MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of the Samsung family	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 108 of 241

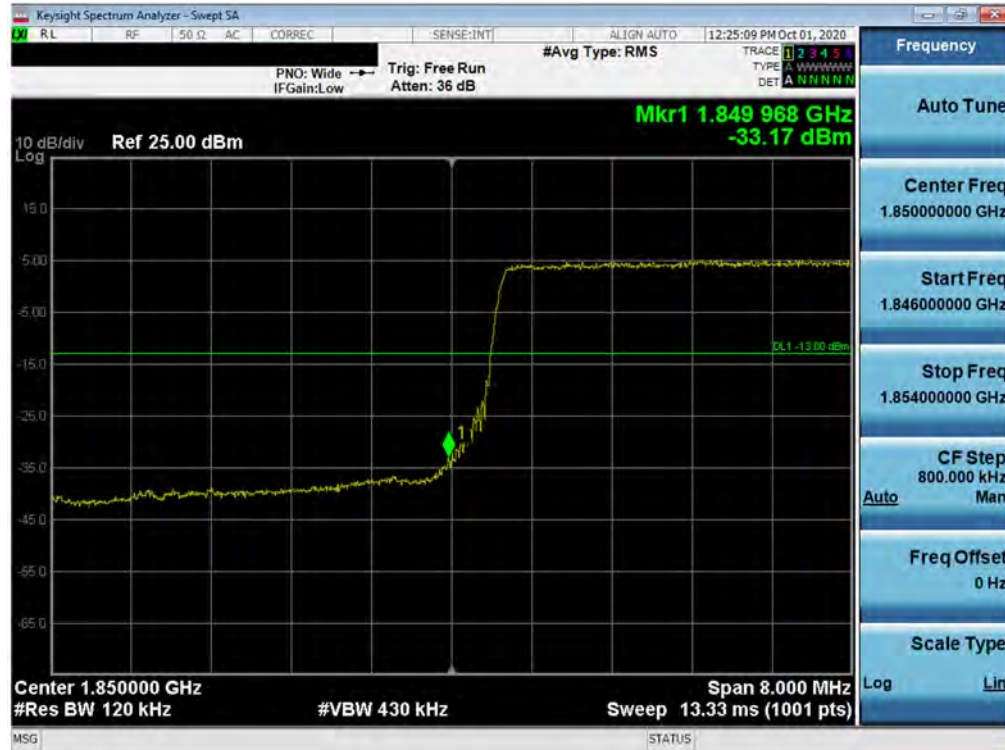


Plot 7-148. Upper Band Edge Plot (LTE Band 25 - 15MHz QPSK – Full RB Configuration)

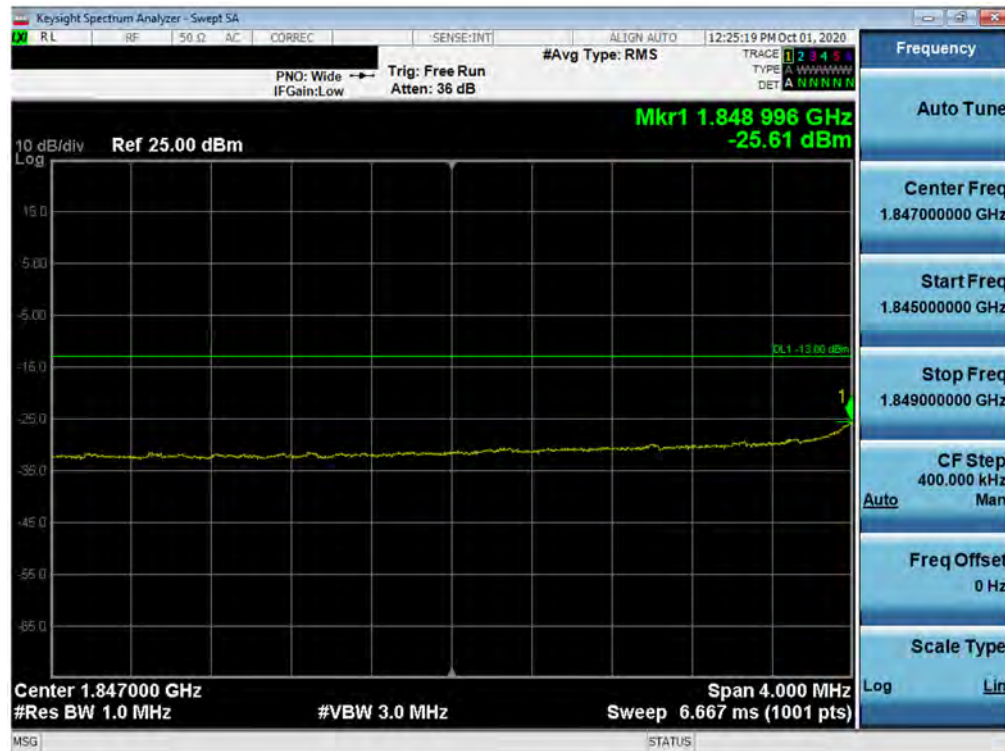


Plot 7-149. Extended Upper Band Edge Plot (LTE Band 25 - 15MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
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Plot 7-150. Lower Band Edge Plot (LTE Band 25/2 - 10MHz QPSK – Full RB Configuration)

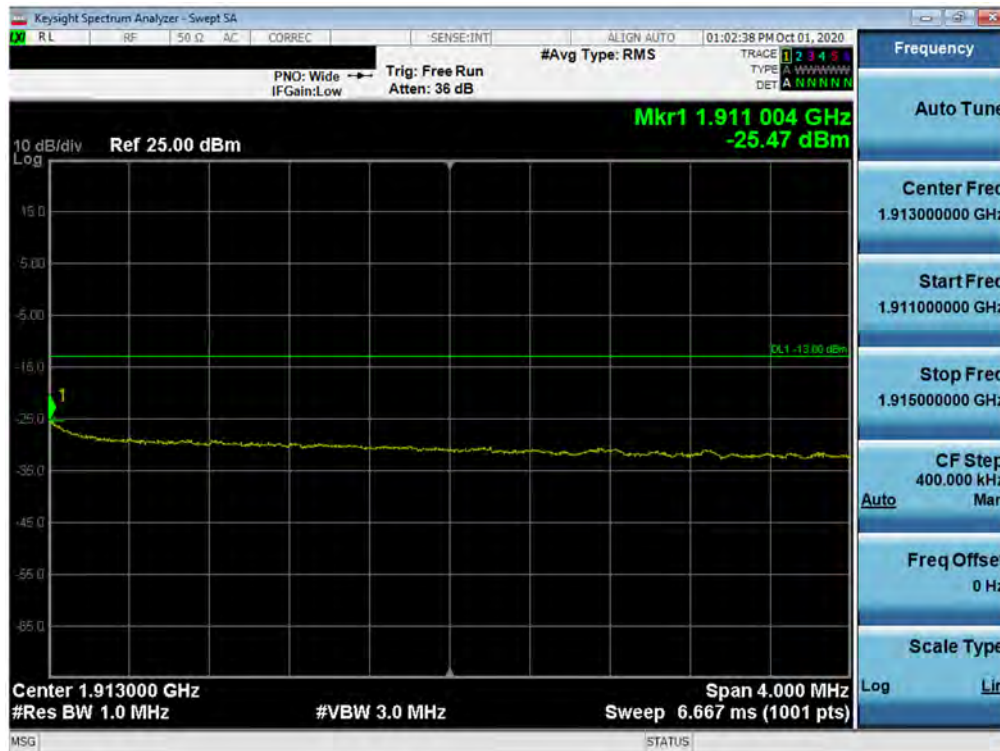


Plot 7-151. Extended Lower Band Edge Plot (LTE Band 25/2 - 10MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
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Plot 7-152. Upper Band Edge Plot (LTE Band 2 - 10MHz QPSK – Full RB Configuration)



Plot 7-153. Extended Upper Band Edge Plot (LTE Band 2 - 10MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 111 of 241

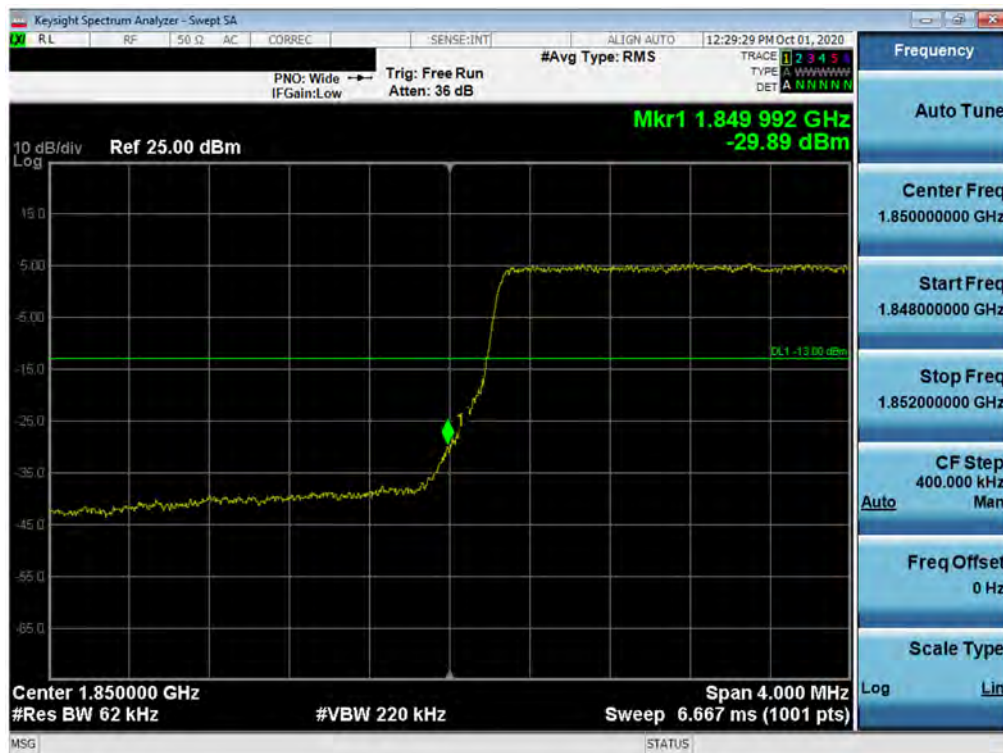


Plot 7-154. Upper Band Edge Plot (LTE Band 25 - 10MHz QPSK – Full RB Configuration)



Plot 7-155. Extended Upper Band Edge Plot (LTE Band 25 - 10MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
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Plot 7-156. Lower Band Edge Plot (LTE Band 25/2 - 5MHz QPSK – Full RB Configuration)

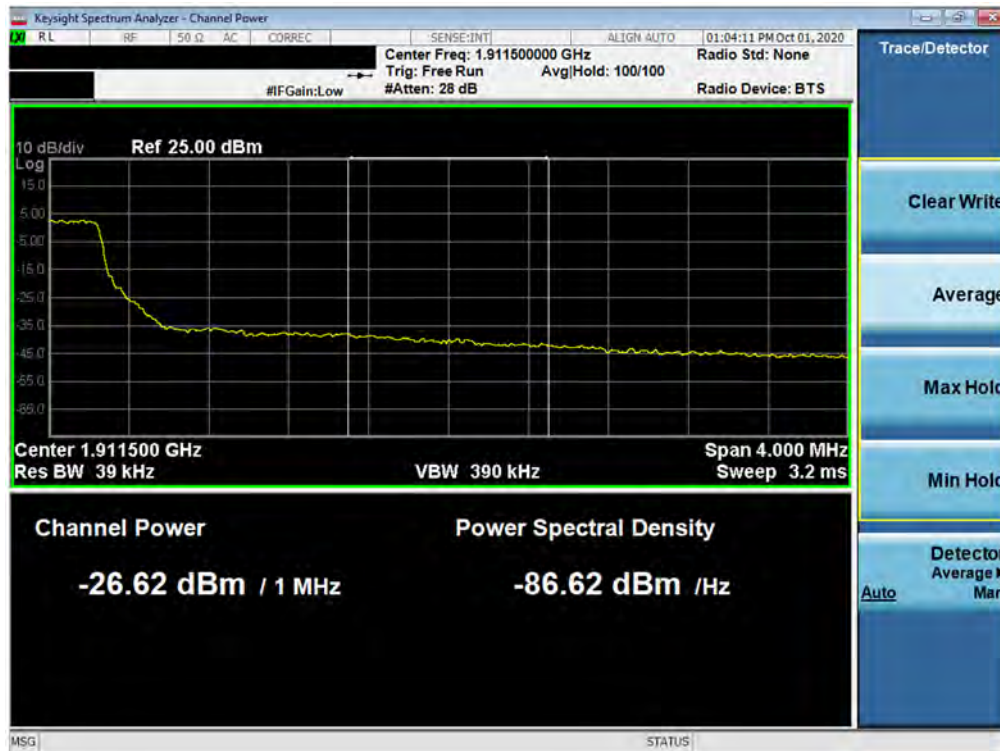


Plot 7-157. Extended Lower Band Edge Plot (LTE Band 25/2 - 5MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 113 of 241

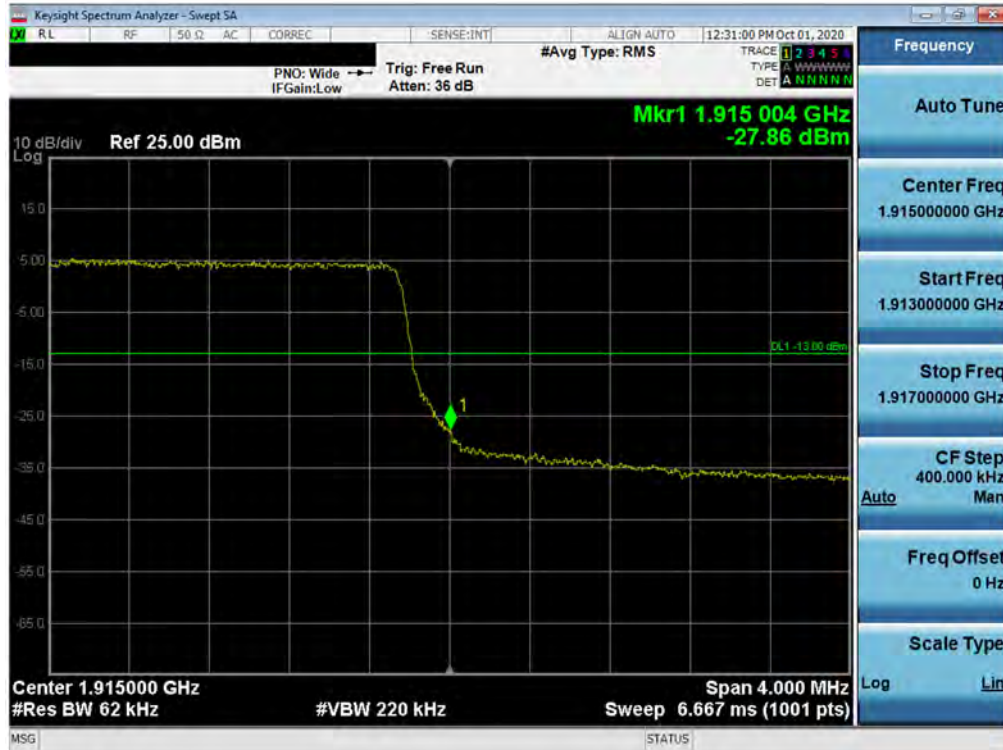


Plot 7-158. Upper Band Edge Plot (LTE Band 2 - 5MHz QPSK – Full RB Configuration)

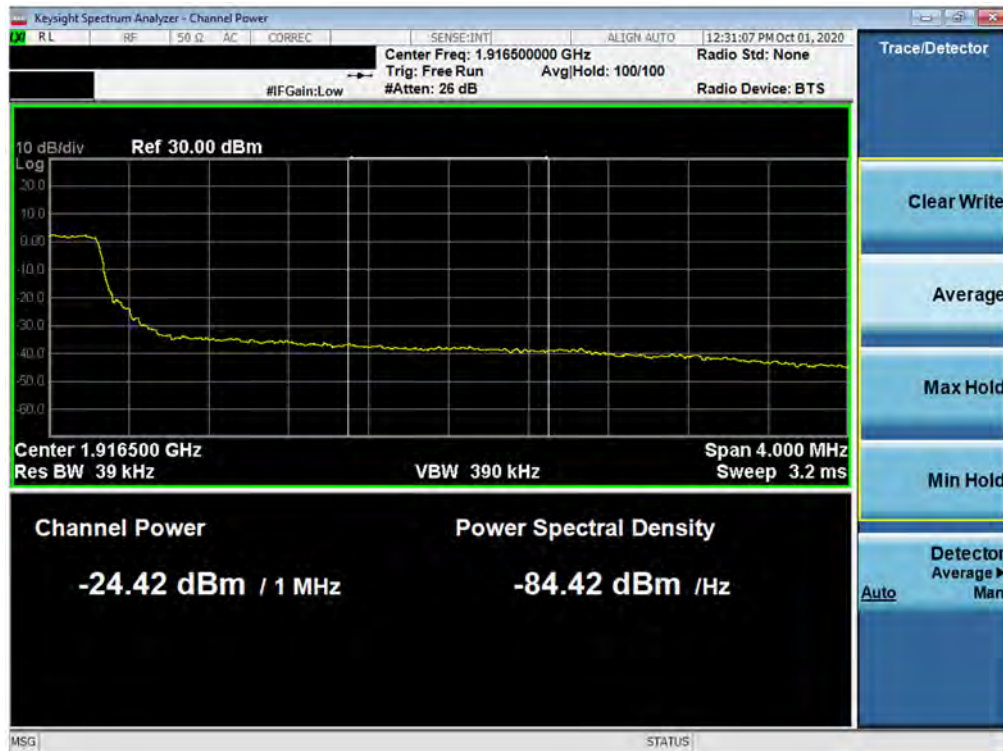


Plot 7-159. Extended Upper Band Edge Plot (LTE Band 2 - 5MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 114 of 241

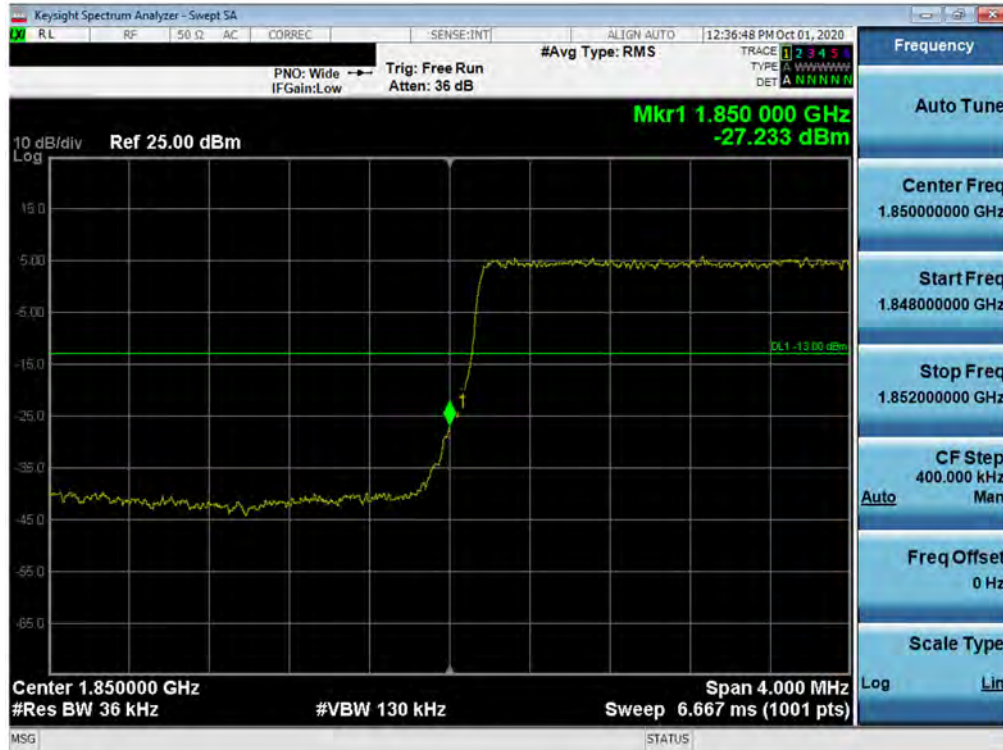


Plot 7-160. Upper Band Edge Plot (LTE Band 25 - 5MHz QPSK – Full RB Configuration)

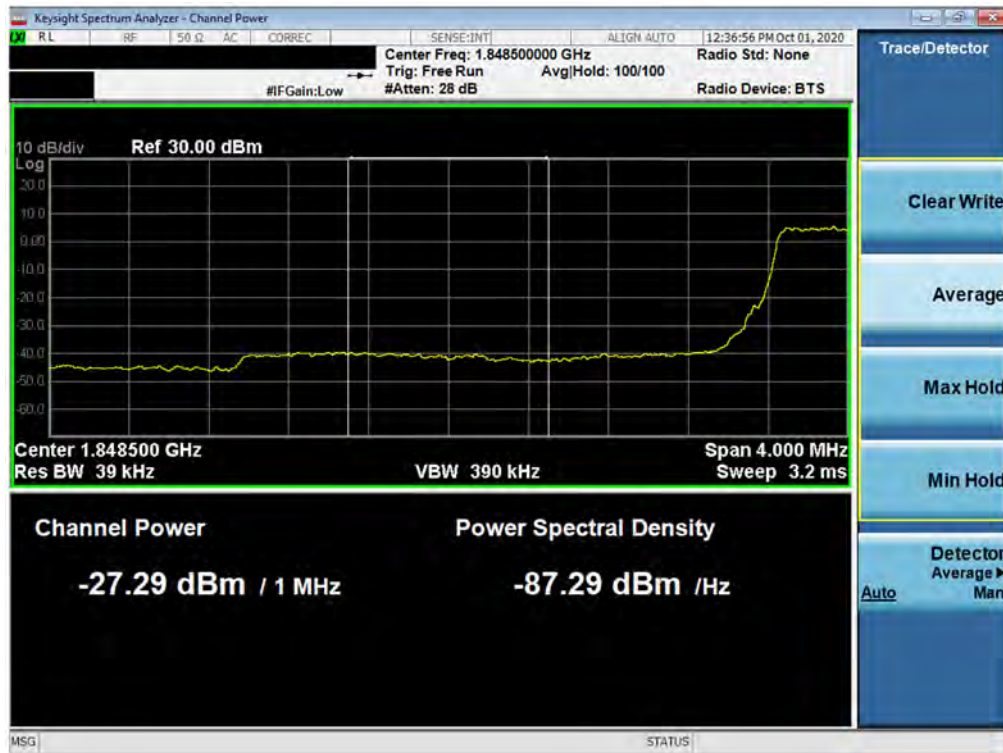


Plot 7-161. Extended Upper Band Edge Plot (LTE Band 25 - 5MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of the Samsung ecosystem	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 115 of 241



Plot 7-162. Lower Band Edge Plot (LTE Band 25/2 - 3MHz QPSK – Full RB Configuration)

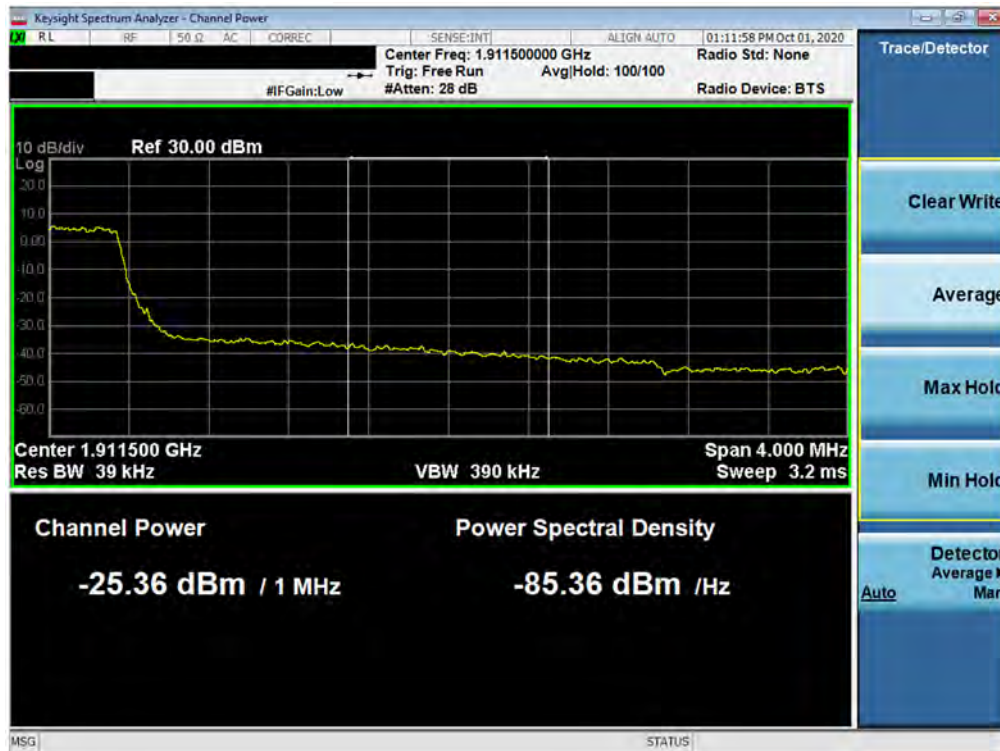


Plot 7-163. Extended Lower Band Edge Plot (LTE Band 25/2 - 3MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG998U				Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	PART 24 MEASUREMENT REPORT EUT Type: Portable Handset		Page 116 of 241



Plot 7-164. Upper Band Edge Plot (LTE Band 2 - 3MHz QPSK – Full RB Configuration)

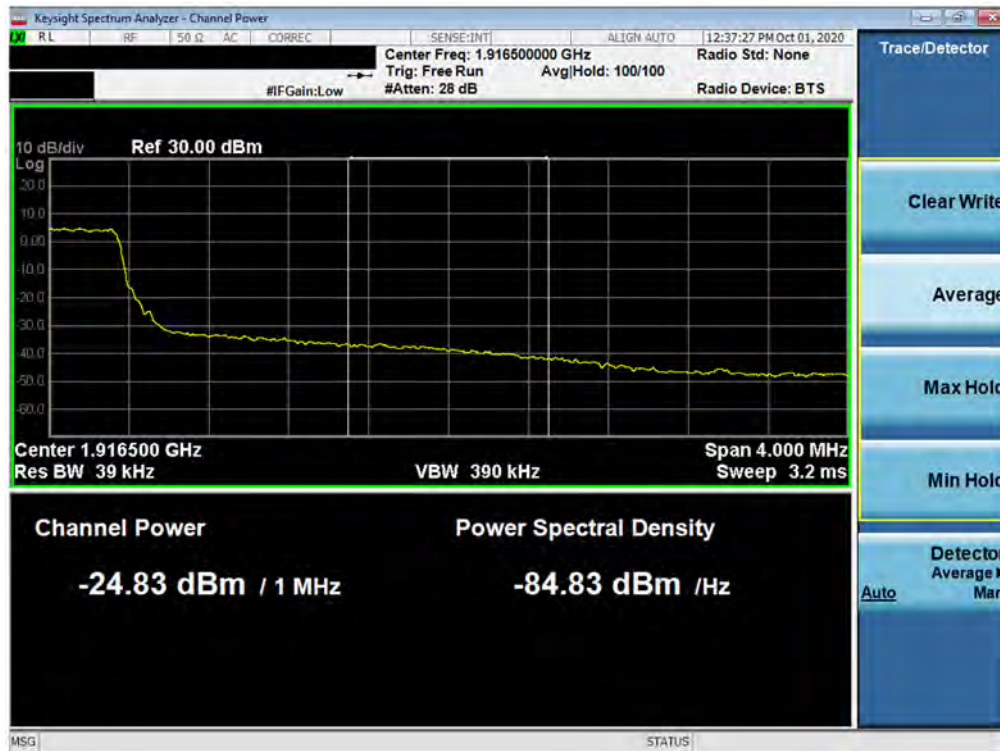


Plot 7-165. Extended Upper Band Edge Plot (LTE Band 2 - 3MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 117 of 241

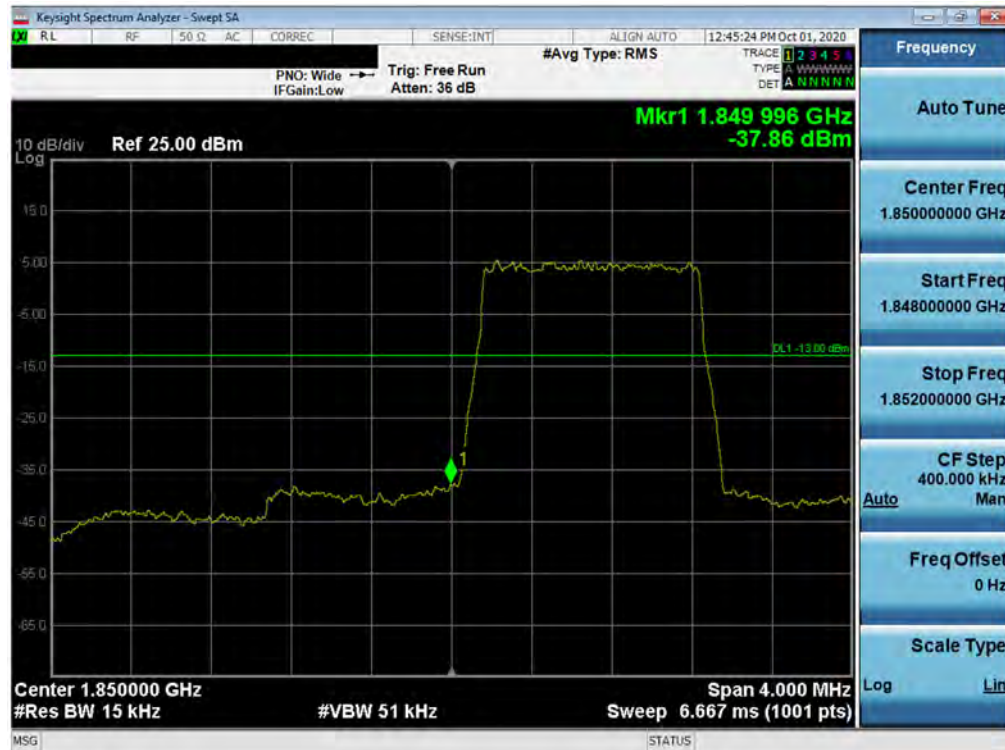


Plot 7-166. Upper Band Edge Plot (LTE Band 25 - 3MHz QPSK – Full RB Configuration)

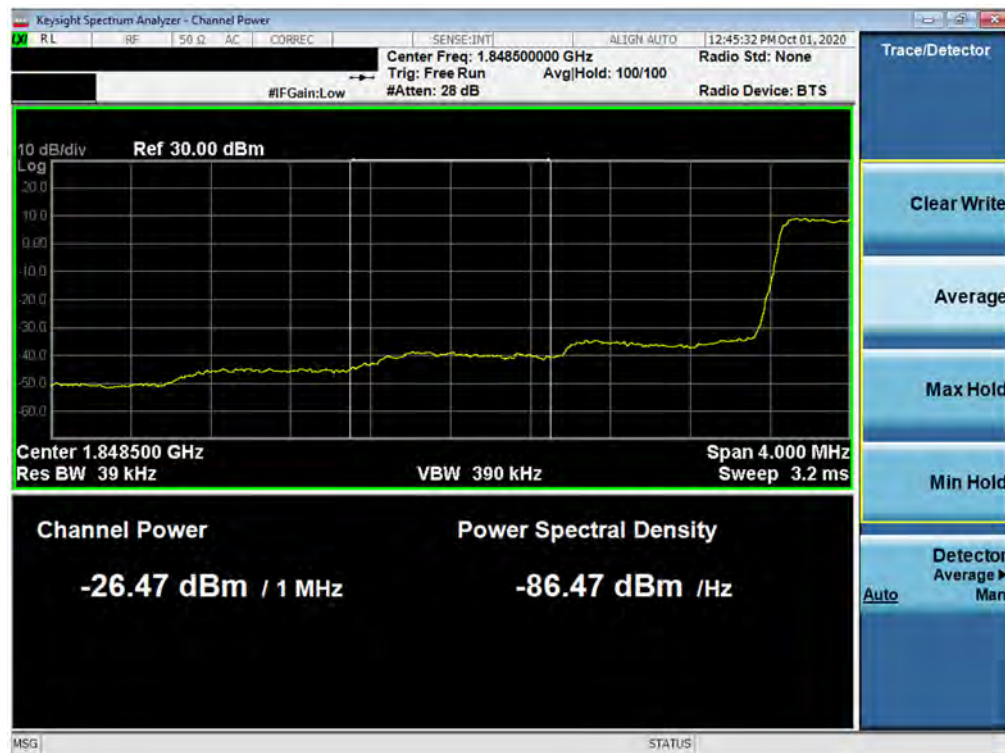


Plot 7-167. Extended Upper Band Edge Plot (LTE Band 25 - 3MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of the Samsung ecosystem	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 118 of 241



Plot 7-168. Lower Band Edge Plot (LTE Band 25/2 – 1.4MHz QPSK – Full RB Configuration)

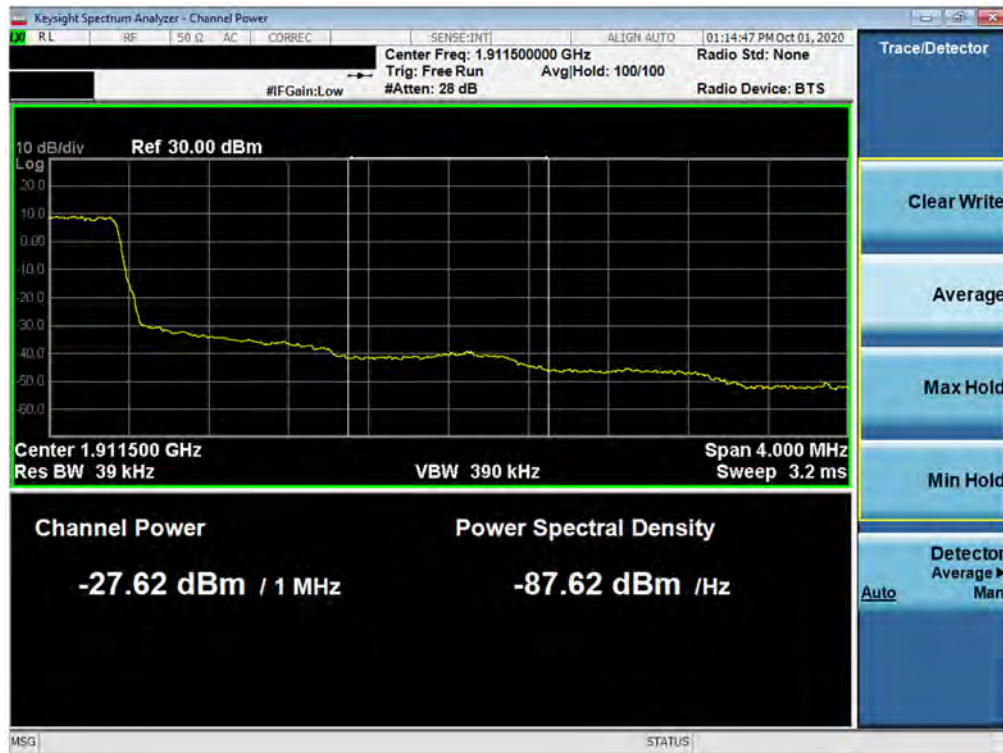


Plot 7-169. Extended Lower Band Edge Plot (LTE Band 25/2 – 1.4MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG998U	 PART 24 MEASUREMENT REPORT 		Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset	Page 119 of 241



Plot 7-170. Upper Band Edge Plot (LTE Band 2 – 1.4MHz QPSK – Full RB Configuration)

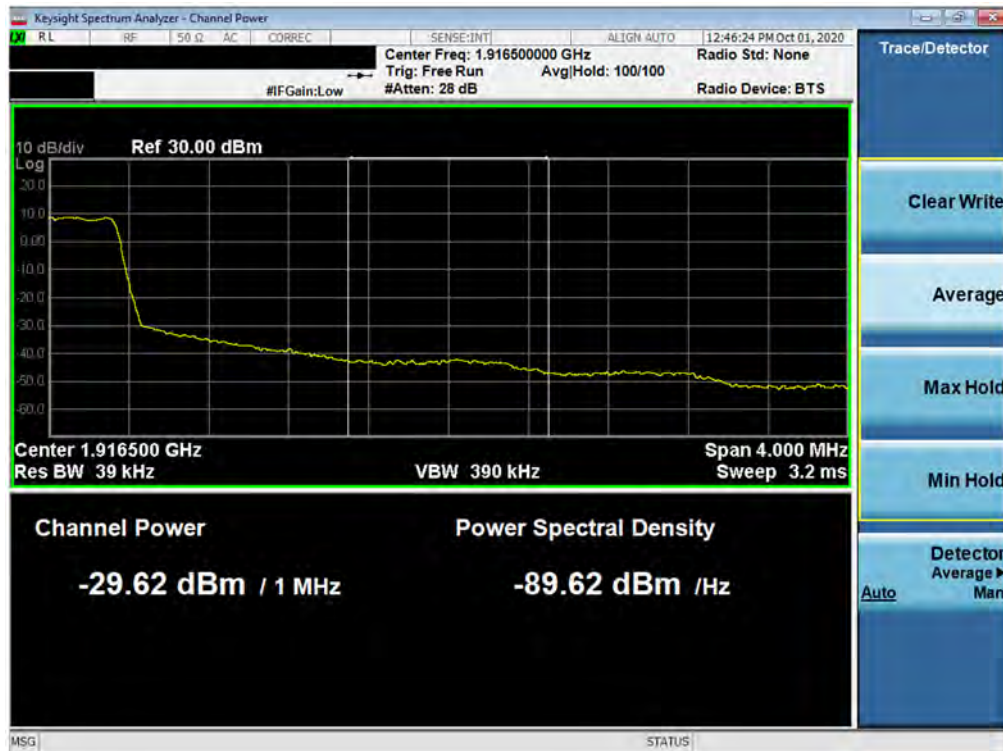


Plot 7-171. Extended Upper Band Edge Plot (LTE Band 2 – 1.4MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 120 of 241



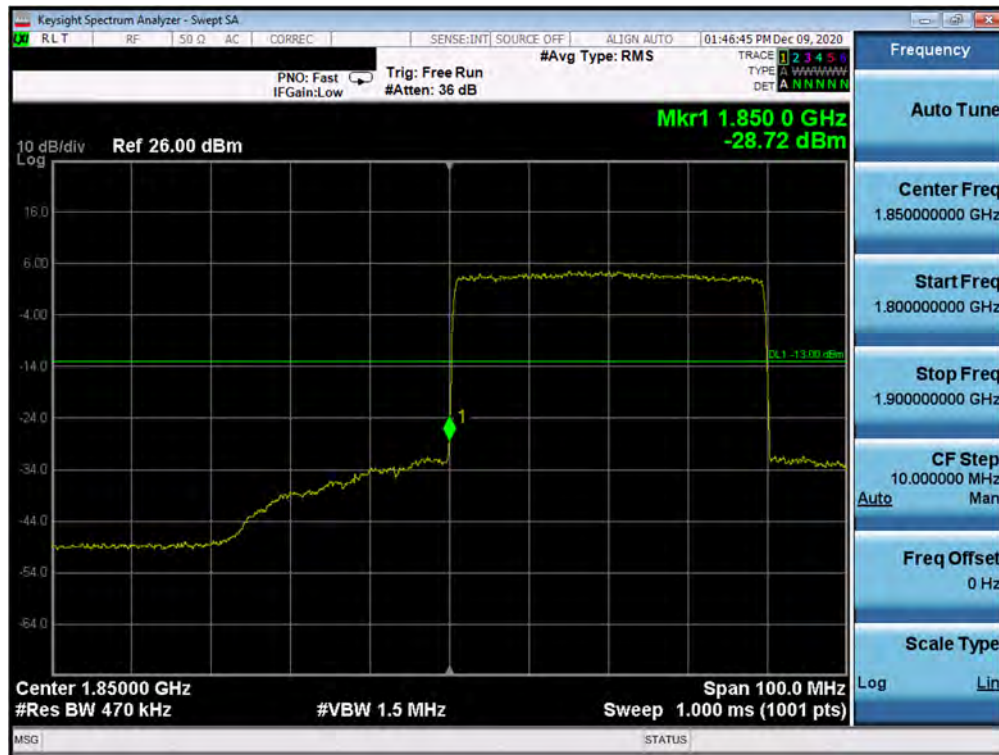
Plot 7-172. Upper Band Edge Plot (LTE Band 25 – 1.4MHz QPSK – Full RB Configuration)



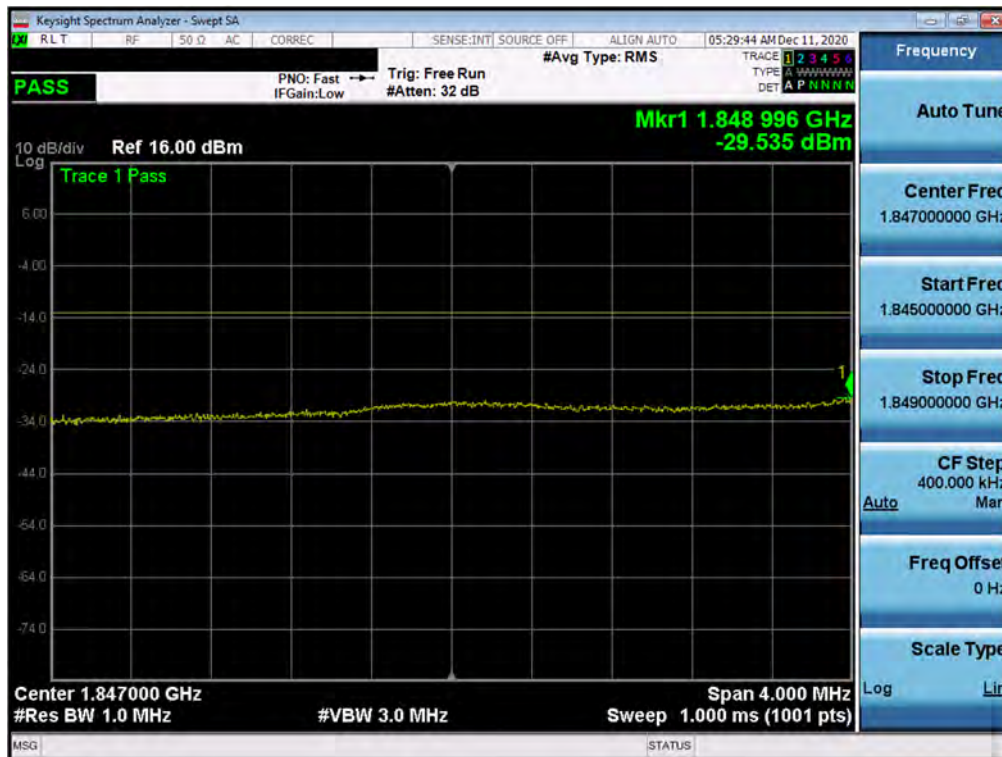
Plot 7-173. Extended Upper Band Edge Plot (LTE Band 25 – 1.4MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 121 of 241

NR Band n25/n2 – ANT A



Plot 7-174. Lower Band Edge Plot (NR Band n25 – 40.0MHz - Full RB)

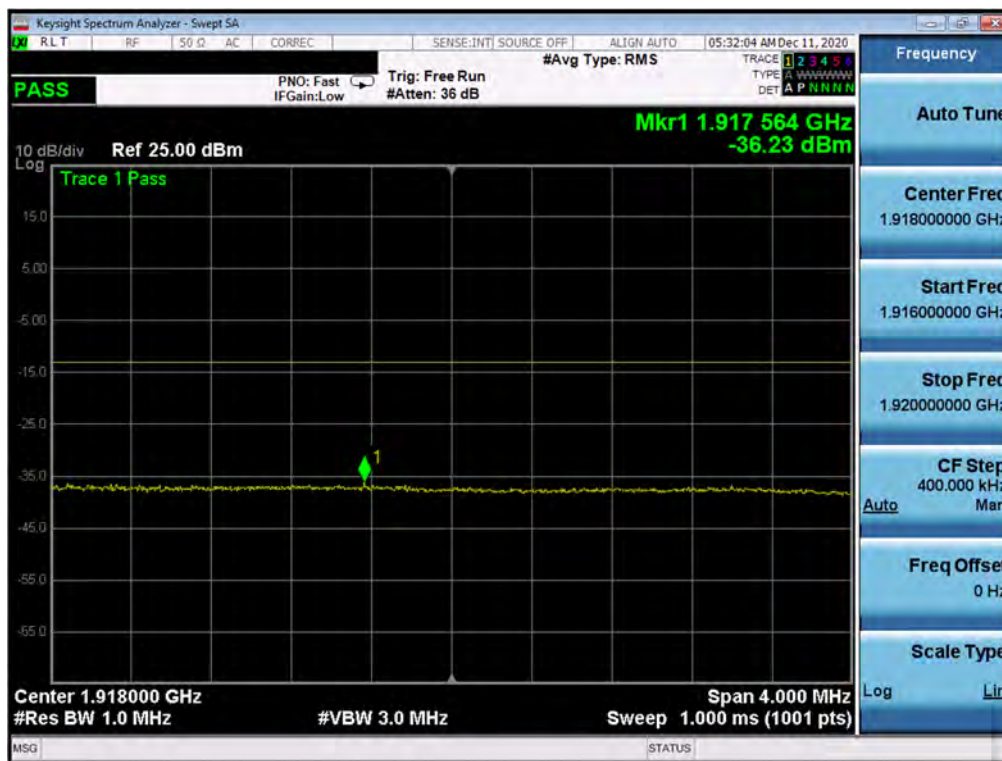


Plot 7-175. Extended Lower Band Edge Plot (LTE Band n25 – 40.0MHz– Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 122 of 241

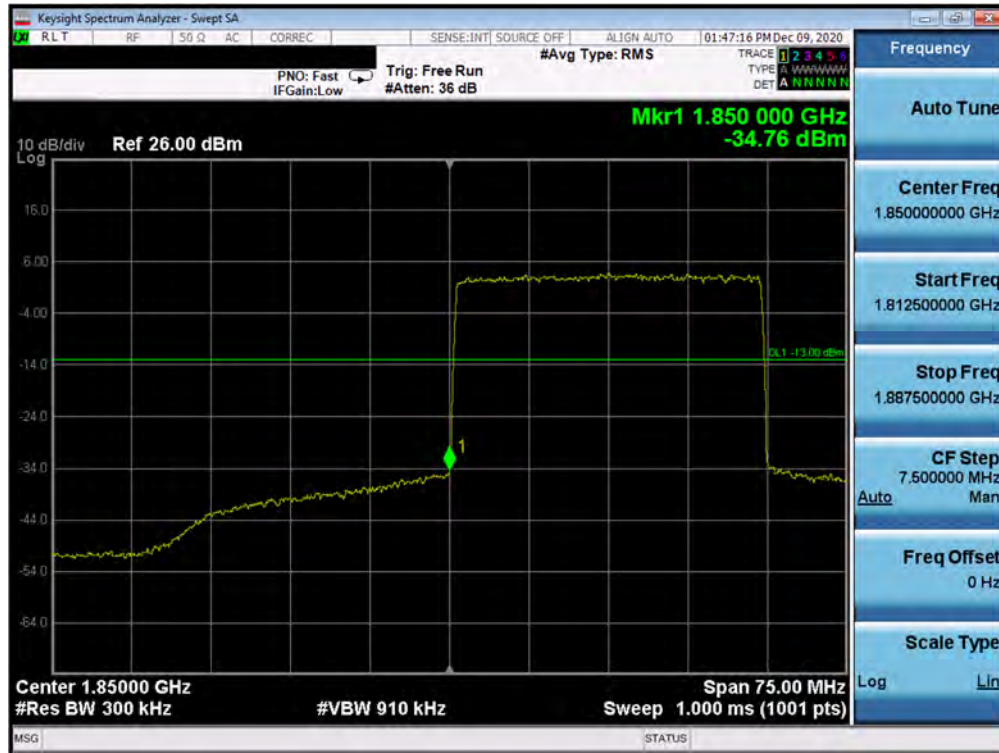


Plot 7-176. Upper Band Edge Plot (NR Band n25 - 40.0MHz - Full RB)

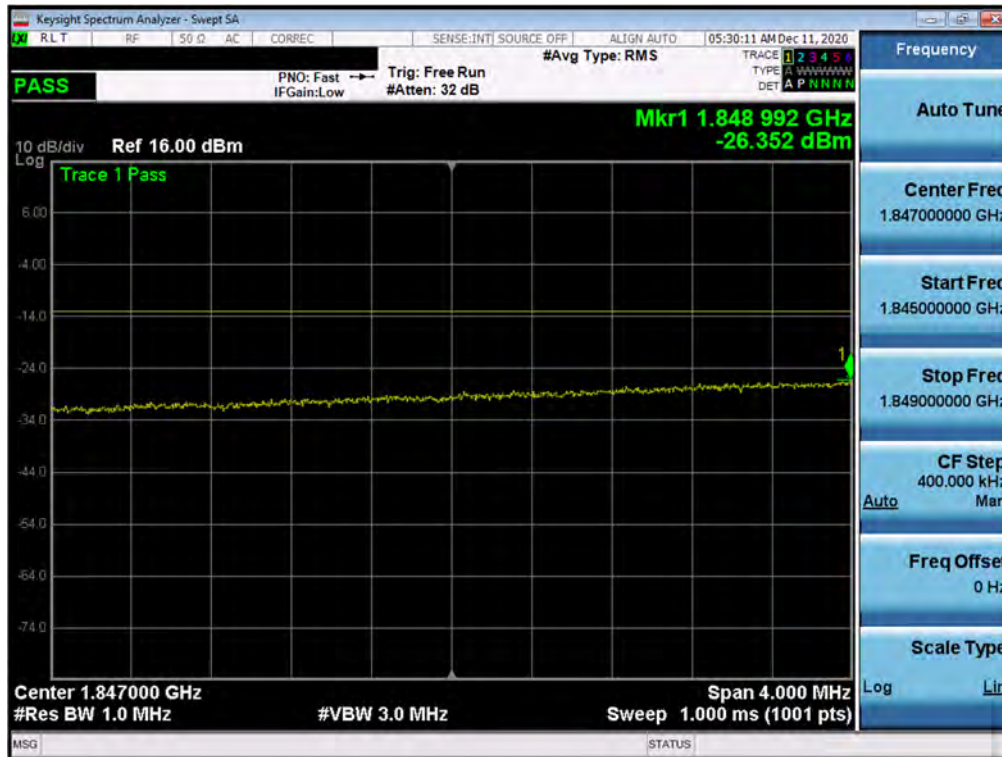


Plot 7-177. Extended Upper Band Edge Plot (LTE Band n25 - 40.0MHz - Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 - 12/11/2020	EUT Type: Portable Handset		Page 123 of 241



Plot 7-178. Lower Band Edge Plot (NR Band n25 – 30.0MHz - Full RB)

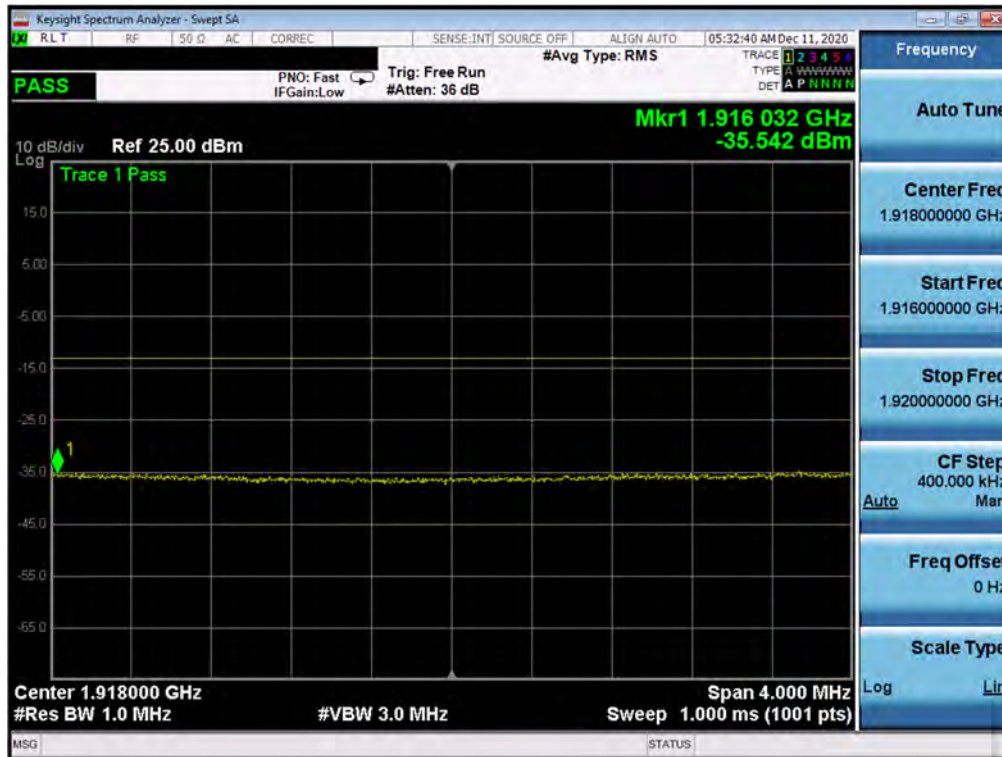


Plot 7-179. Extended Lower Band Edge Plot (LTE Band n25 – 30.0MHz– Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 124 of 241

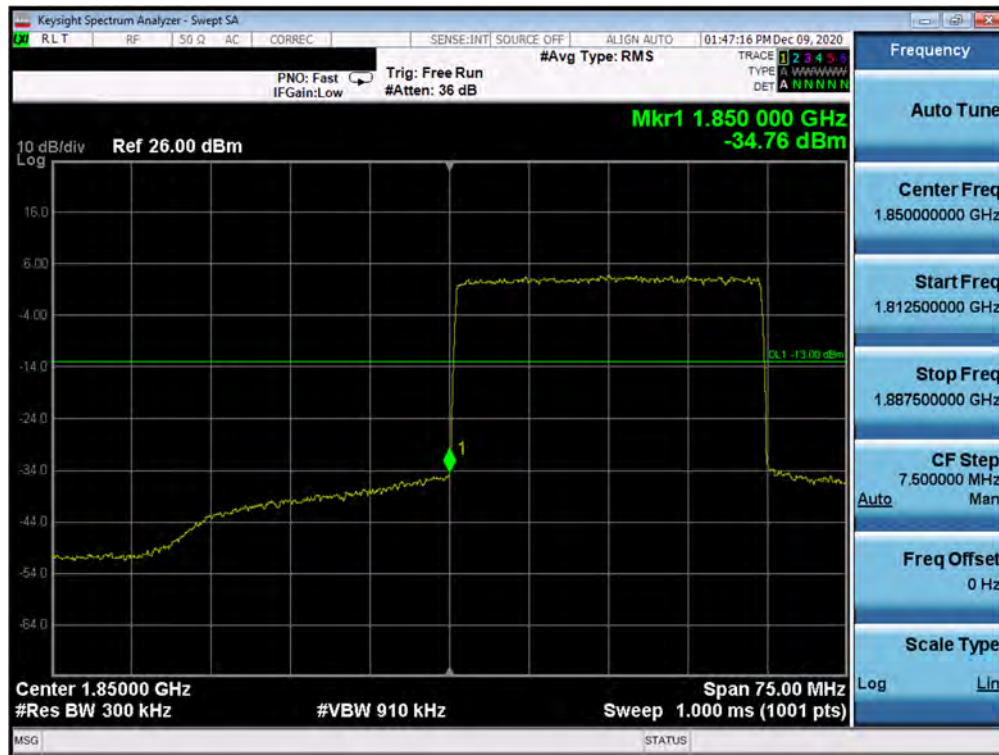


Plot 7-180. Upper Band Edge Plot (NR Band n25 - 30.0MHz - Full RB)

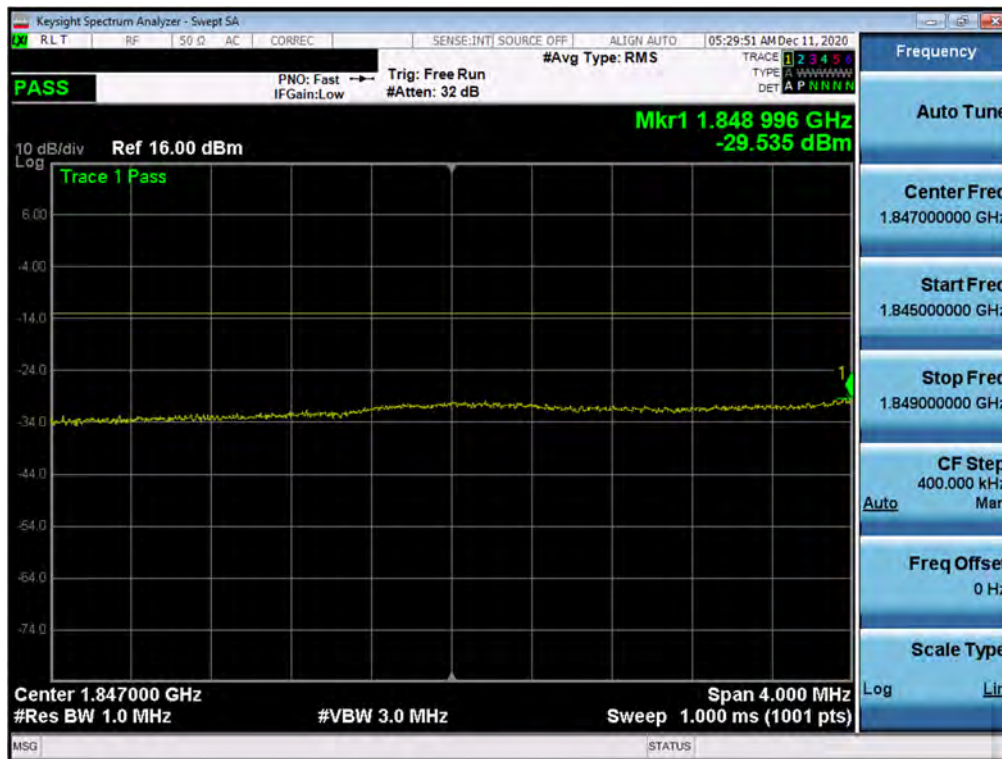


Plot 7-181. Extended Upper Band Edge Plot (LTE Band n25 - 30.0MHz - Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 - 12/11/2020	EUT Type: Portable Handset		Page 125 of 241



Plot 7-182. Lower Band Edge Plot (NR Band n25 – 25.0MHz - Full RB)

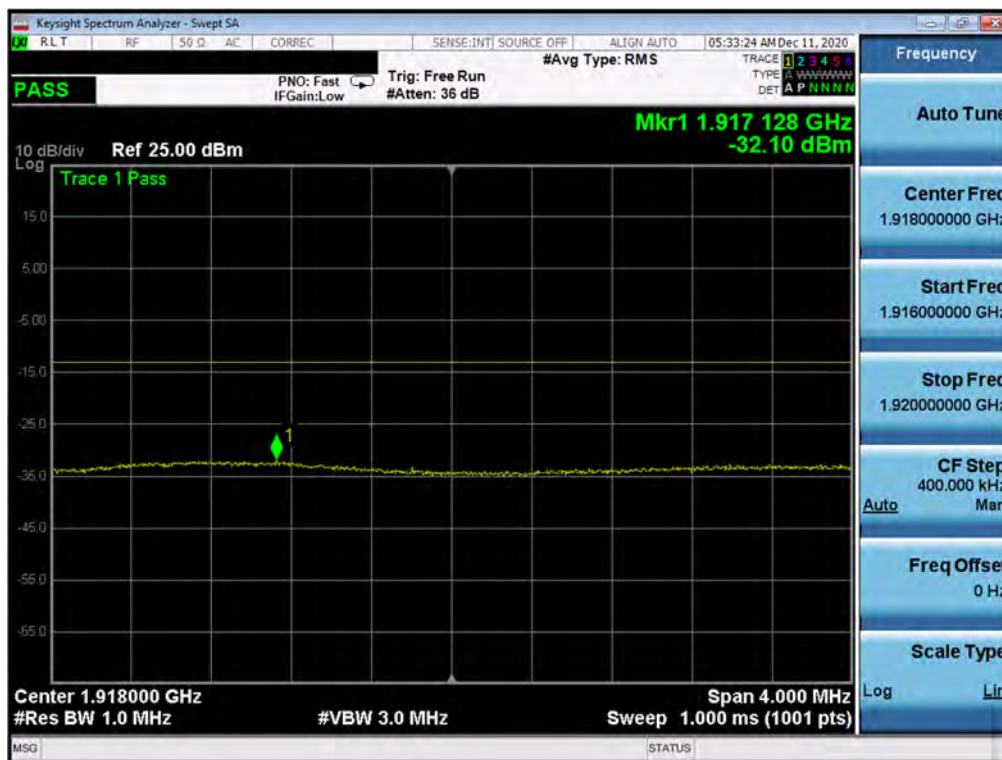


Plot 7-183. Extended Lower Band Edge Plot (LTE Band n25 – 25.0MHz - Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 126 of 241

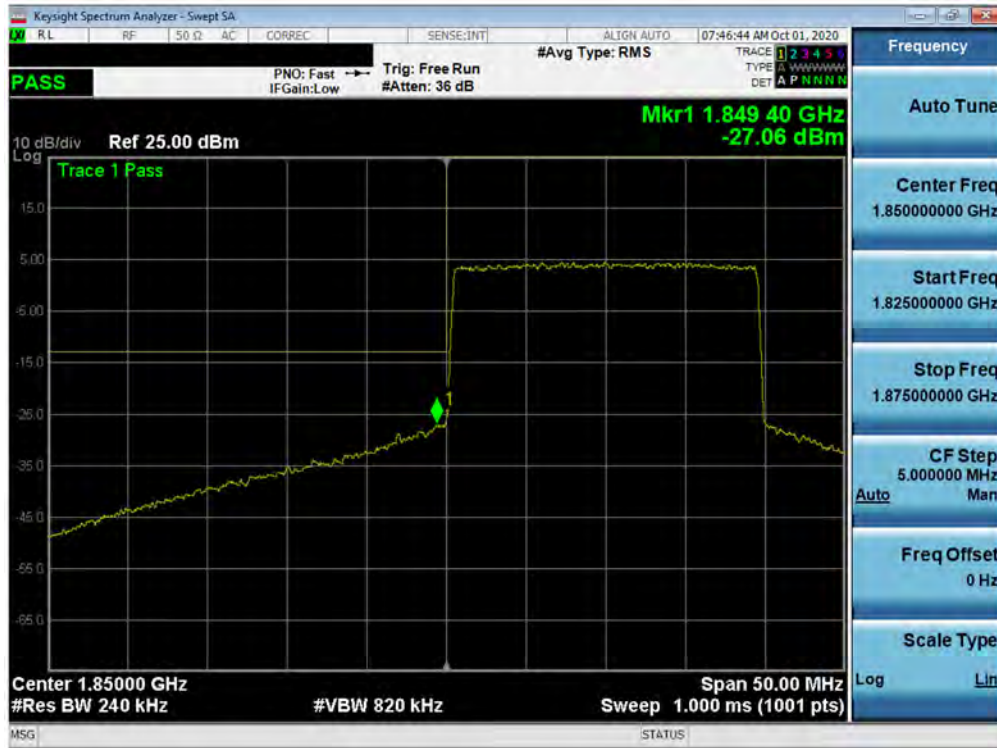


Plot 7-184. Upper Band Edge Plot (NR Band n25 - 25.0MHz - Full RB)

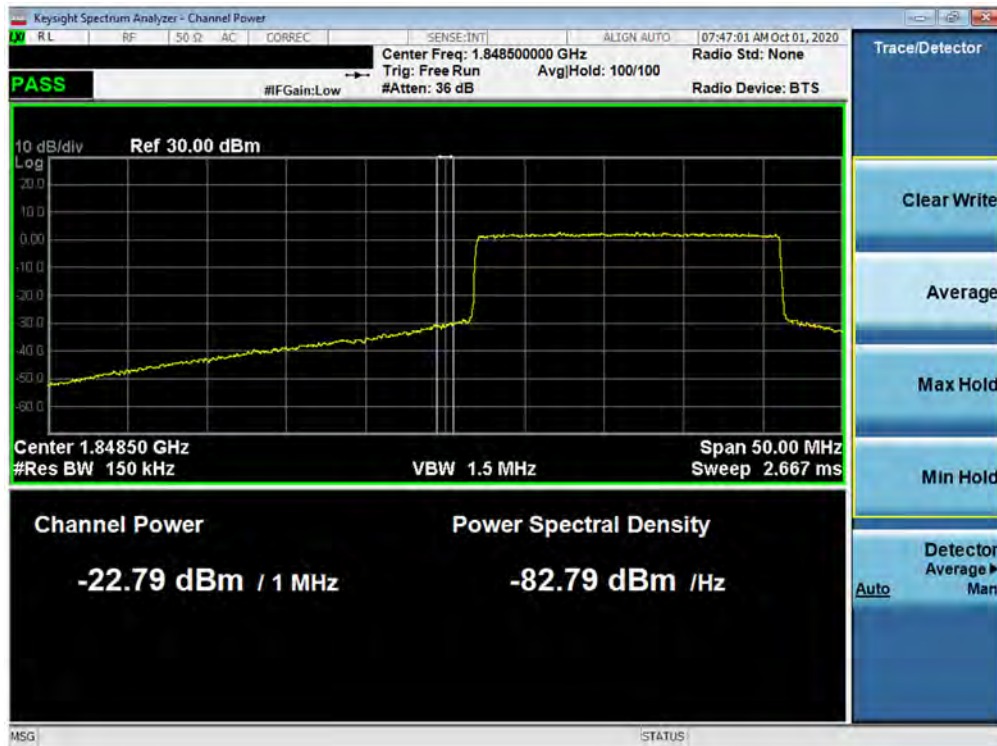


Plot 7-185. Extended Upper Band Edge Plot (LTE Band n25 - 25.0MHz - Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 - 12/11/2020	EUT Type: Portable Handset		Page 127 of 241



Plot 7-186. Lower Band Edge Plot (NR Band n25/2 – 20.0MHz - Full RB)

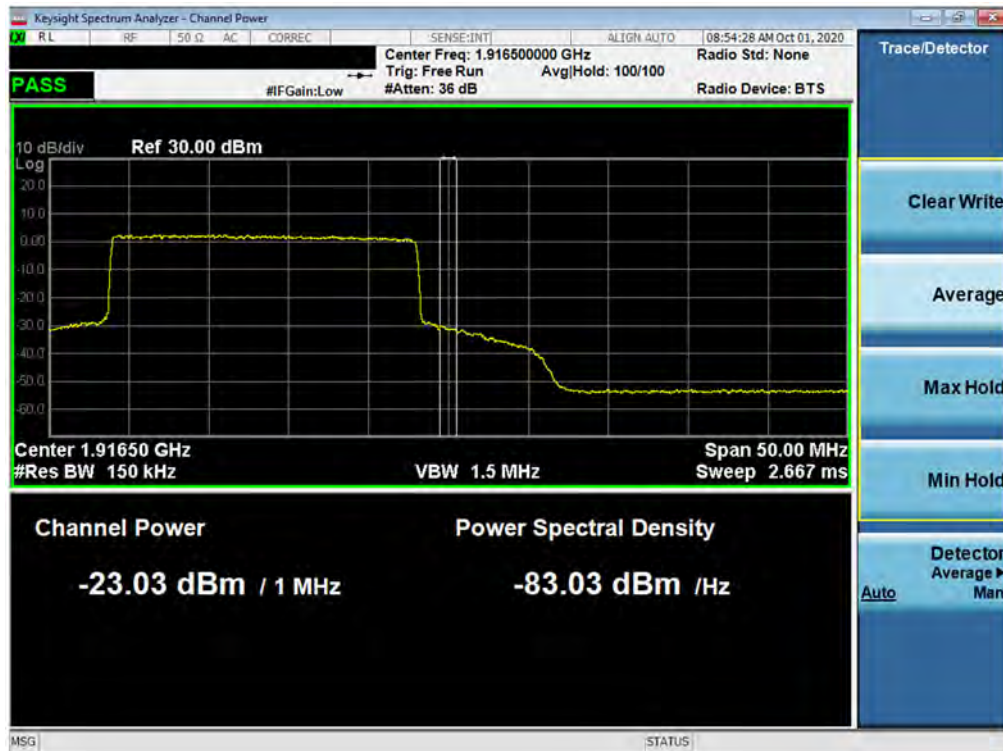


Plot 7-187. Lower Extended Band Edge Plot (NR Band n25/2 – 20.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 128 of 241



Plot 7-188. Upper Band Edge Plot (NR Band n25 – 20.0MHz - Full RB)



Plot 7-189. Upper Extended Band Edge Plot (NR Band n25 – 20.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 129 of 241



Plot 7-190. Upper Band Edge Plot (NR Band n2 – 20.0MHz - Full RB)

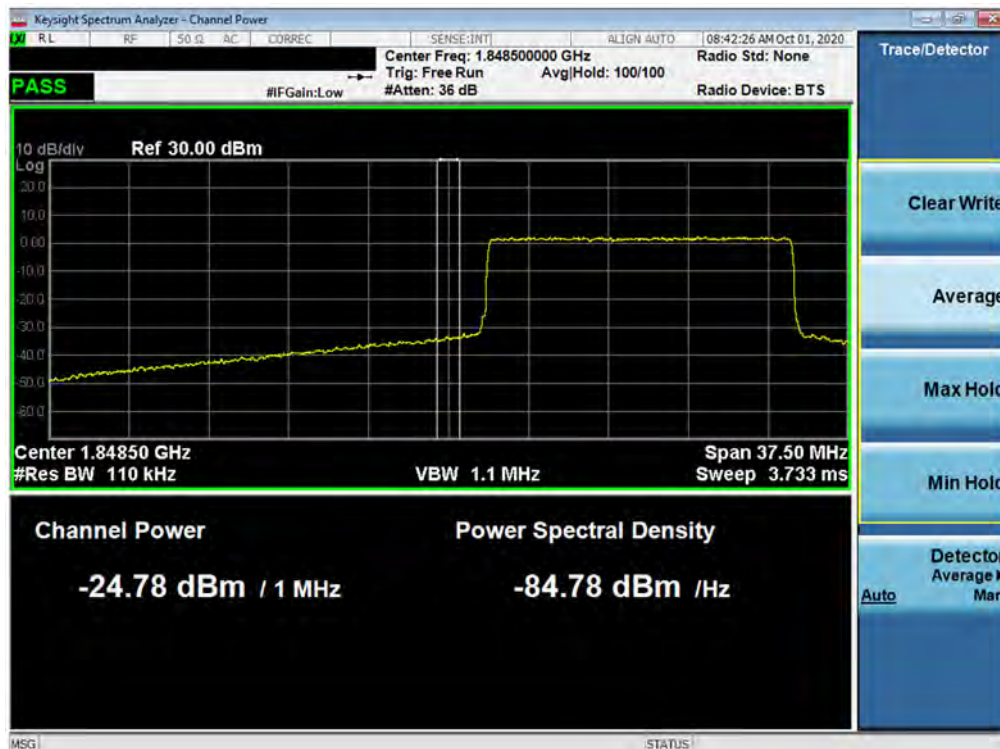


Plot 7-191. Upper Extended Band Edge Plot (NR Band n2 – 20.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 130 of 241



Plot 7-192. Lower Band Edge Plot (NR Band n25/2 – 15.0MHz - Full RB)

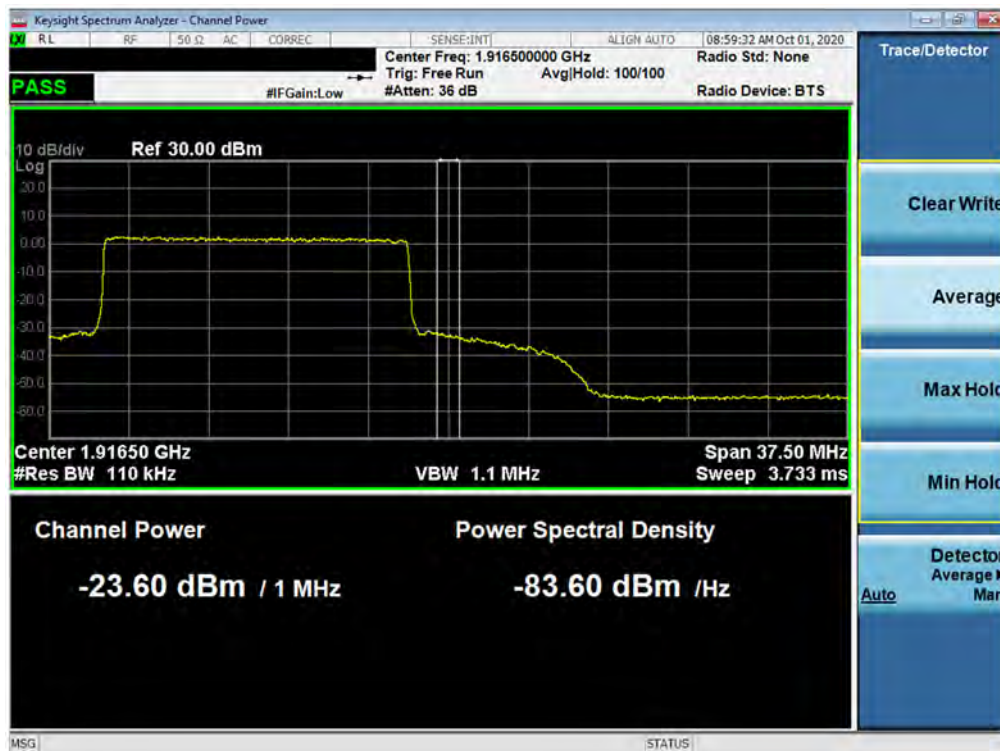


Plot 7-193. Lower Extended Band Edge Plot (NR Band n25/2 – 15.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of the Samsung family	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 131 of 241



Plot 7-194. Upper Band Edge Plot (NR Band n25 – 15.0MHz - Full RB)

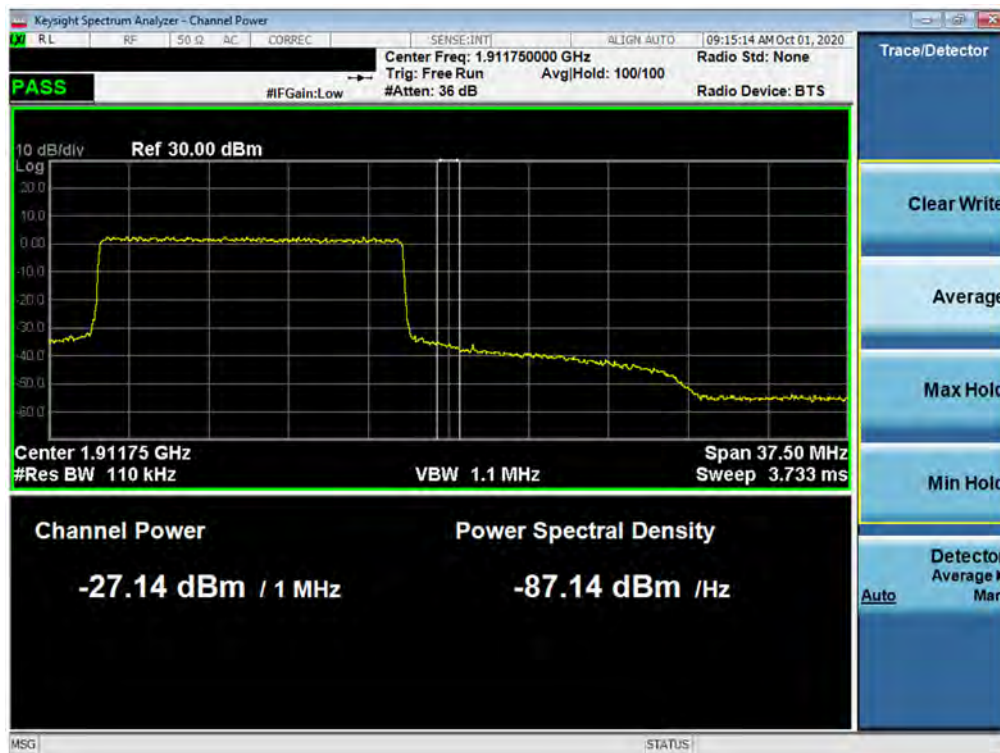


Plot 7-195. Upper Extended Band Edge Plot (NR Band n25 – 15.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 132 of 241

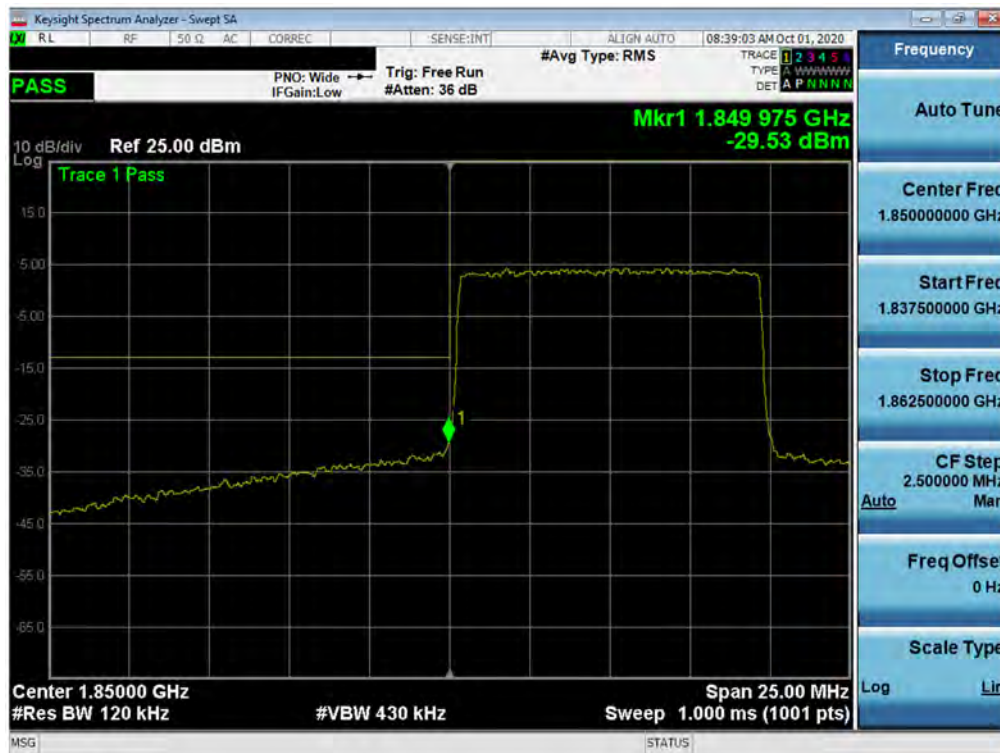


Plot 7-196. Upper Band Edge Plot (NR Band n2 – 15.0MHz - Full RB)

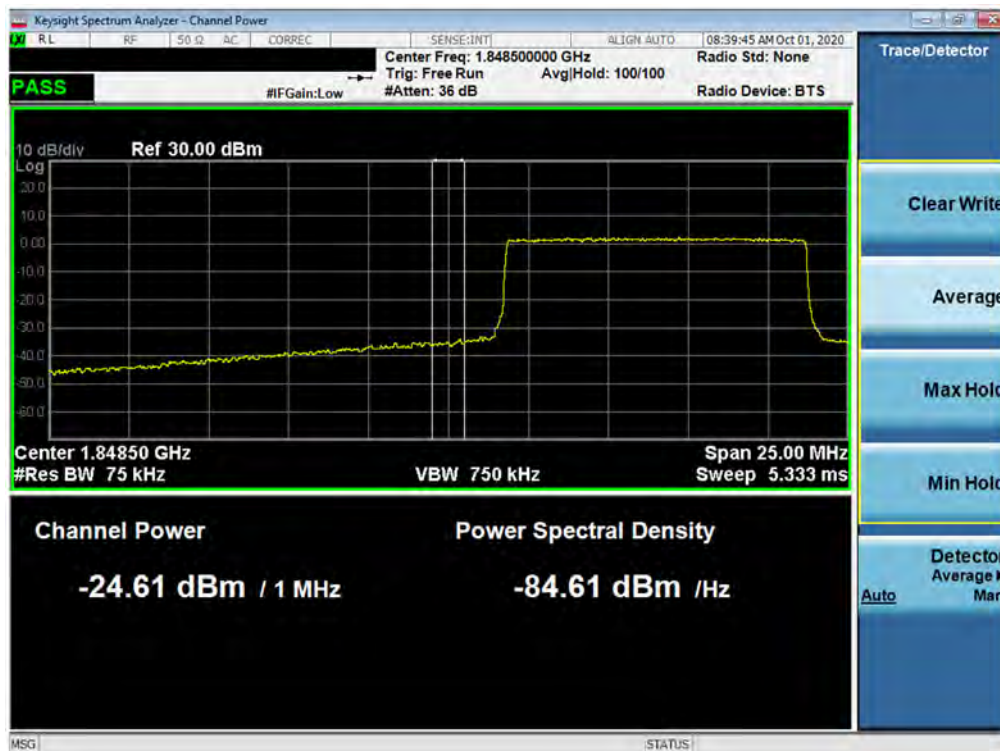


Plot 7-197. Upper Extended Band Edge Plot (NR Band n2 – 15.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of the Samsung family	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 133 of 241



Plot 7-198. Lower Band Edge Plot (NR Band n25/2 – 10.0MHz - Full RB)

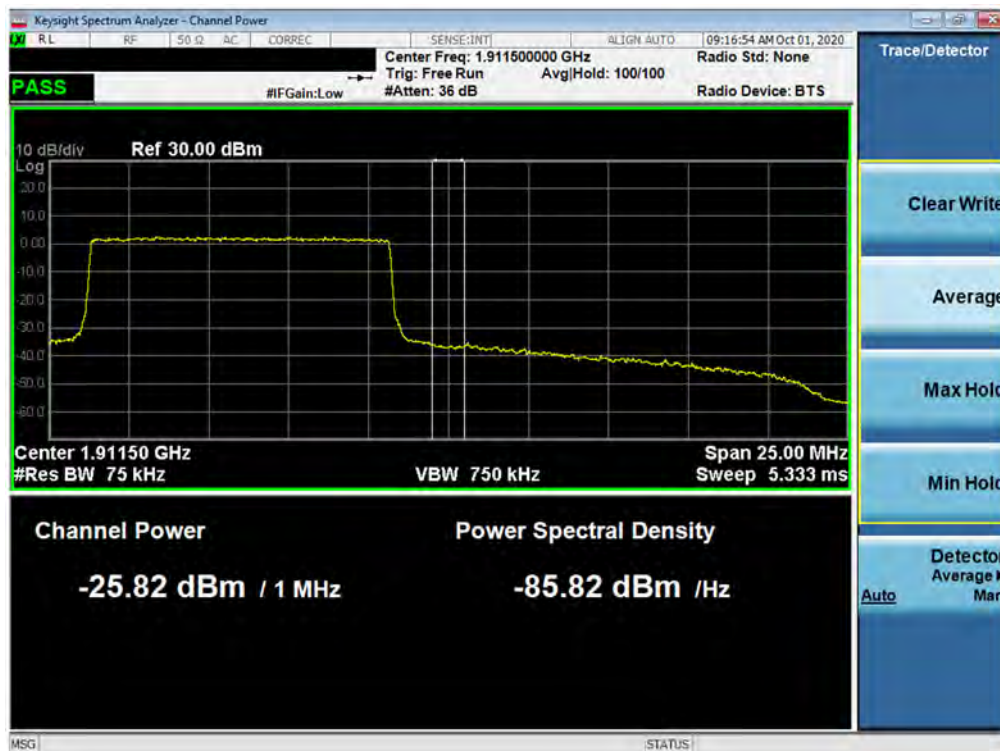


Plot 7-199. Lower Extended Band Edge Plot (NR Band n25/2 – 10.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 134 of 241



Plot 7-200. Upper Band Edge Plot (NR Band n2 – 10.0MHz - Full RB)

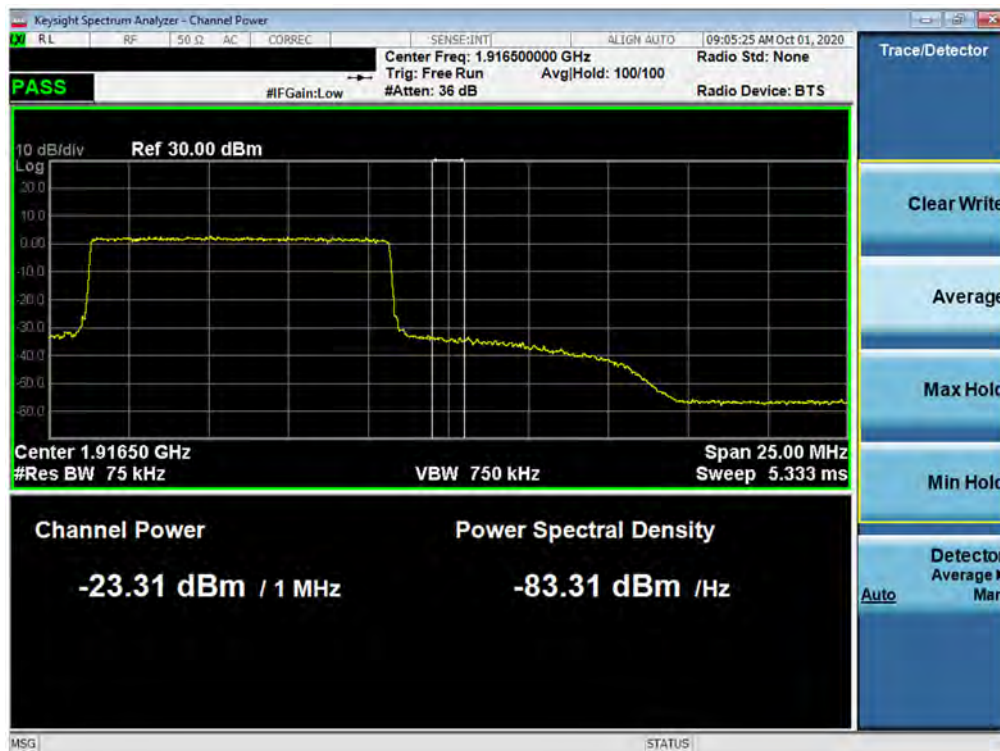


Plot 7-201. Upper Extended Band Edge Plot (NR Band n2 – 10.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 135 of 241

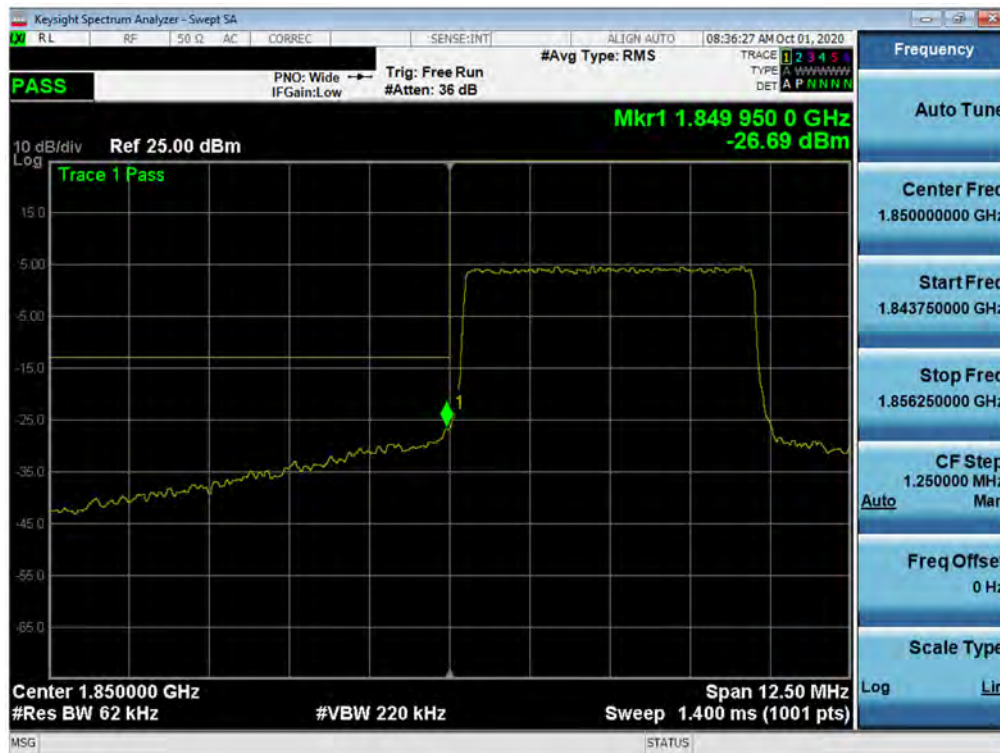


Plot 7-202. Upper Band Edge Plot (NR Band n25 – 10.0MHz - Full RB)

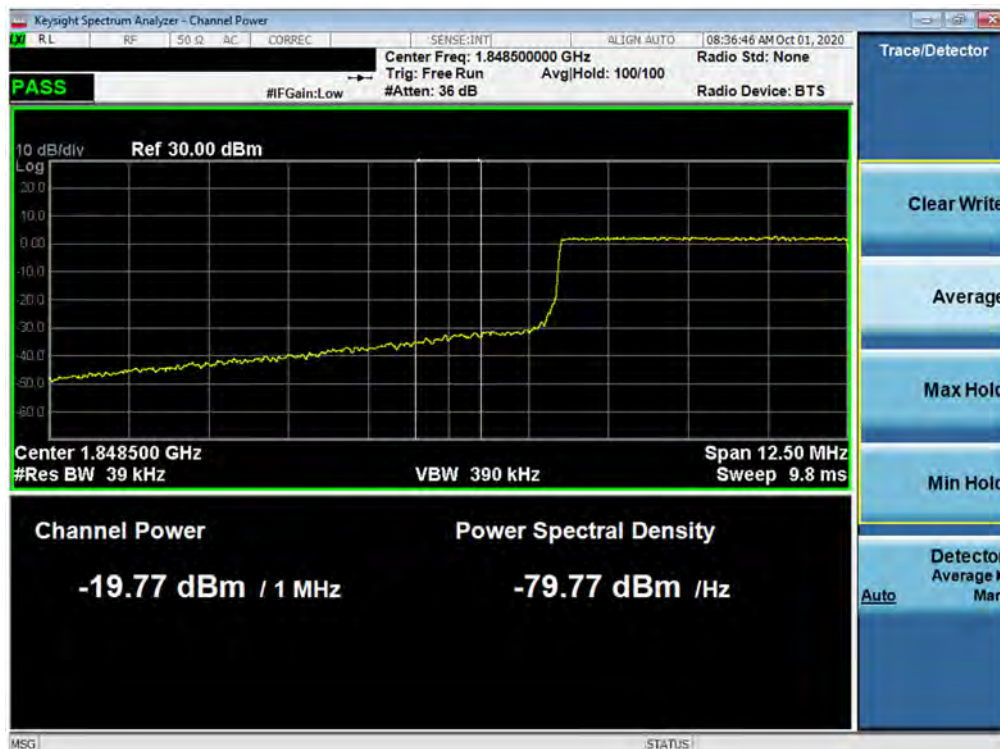


Plot 7-203. Upper Extended Band Edge Plot (NR Band n25 – 10.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 136 of 241



Plot 7-204. Lower Band Edge Plot (NR Band n25/2 – 5.0MHz - Full RB)

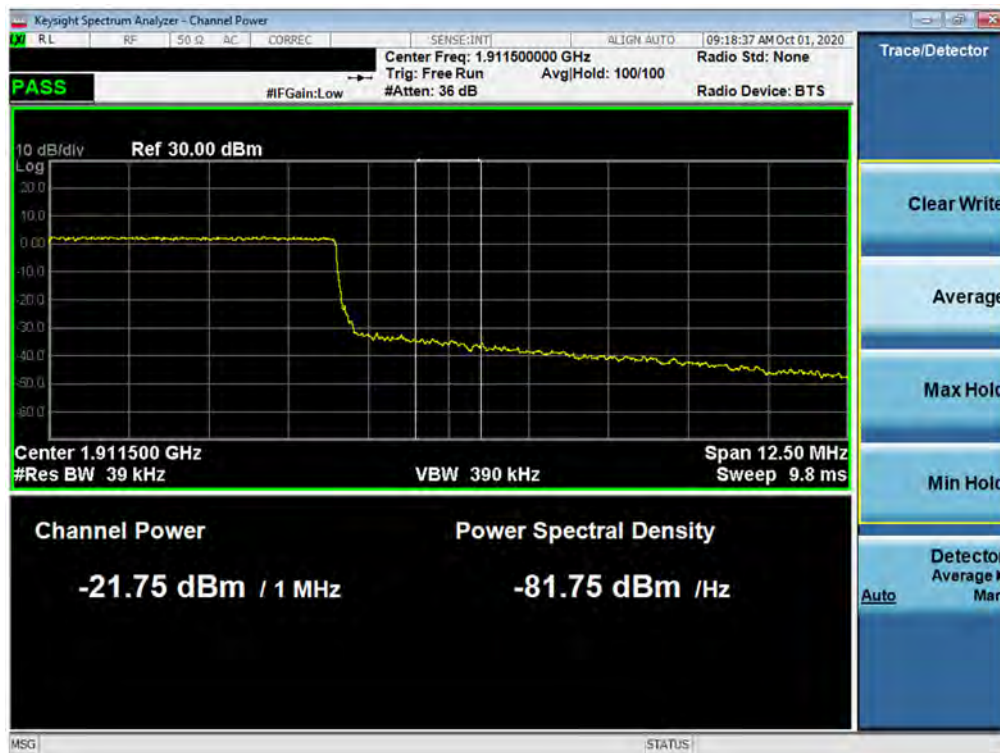


Plot 7-205. Lower Extended Band Edge Plot (NR Band n25/2 – 5.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 137 of 241



Plot 7-206. Upper Band Edge Plot (NR Band n2 – 5.0MHz - Full RB)

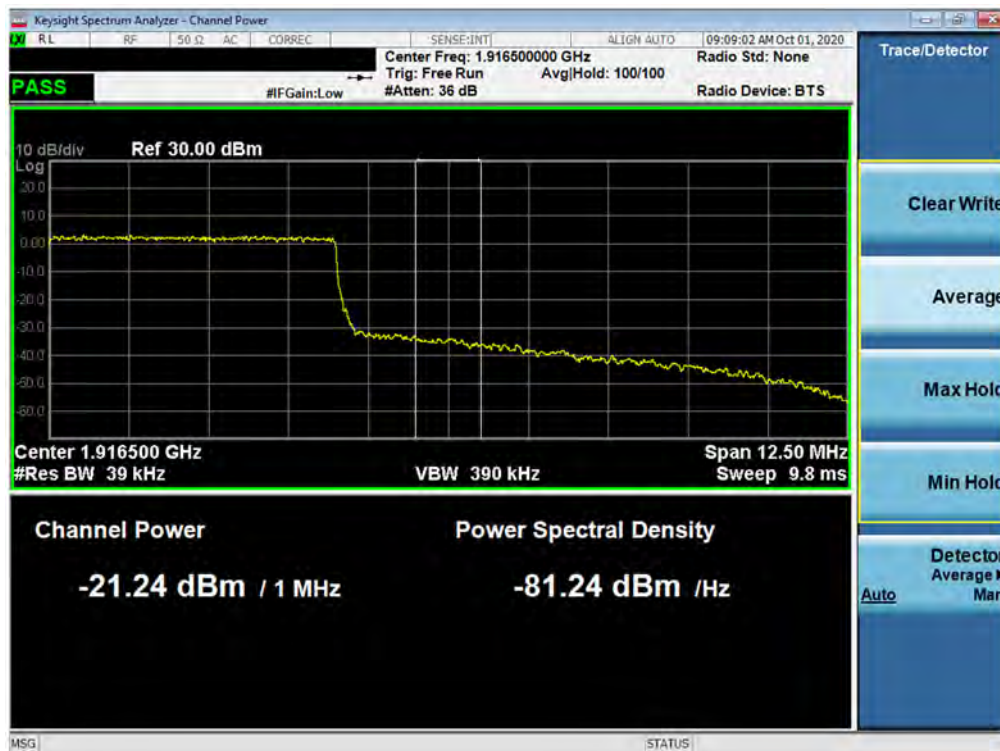


Plot 7-207. Upper Extended Band Edge Plot (NR Band n2 – 5.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 138 of 241



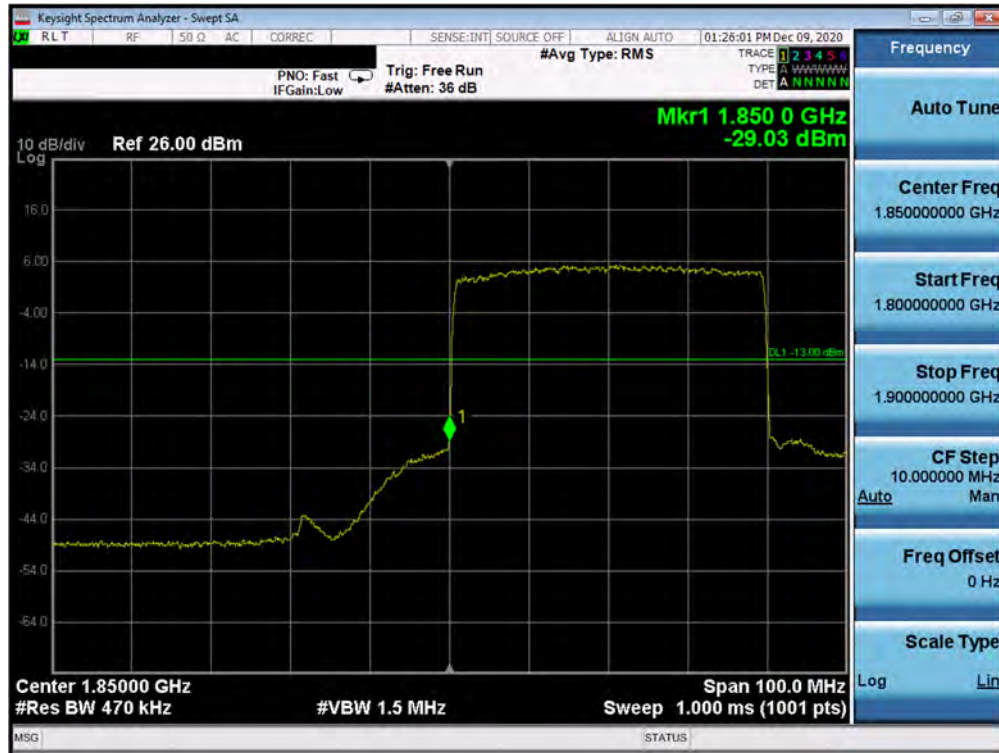
Plot 7-208. Upper Band Edge Plot (NR Band n25 – 5.0MHz - Full RB)



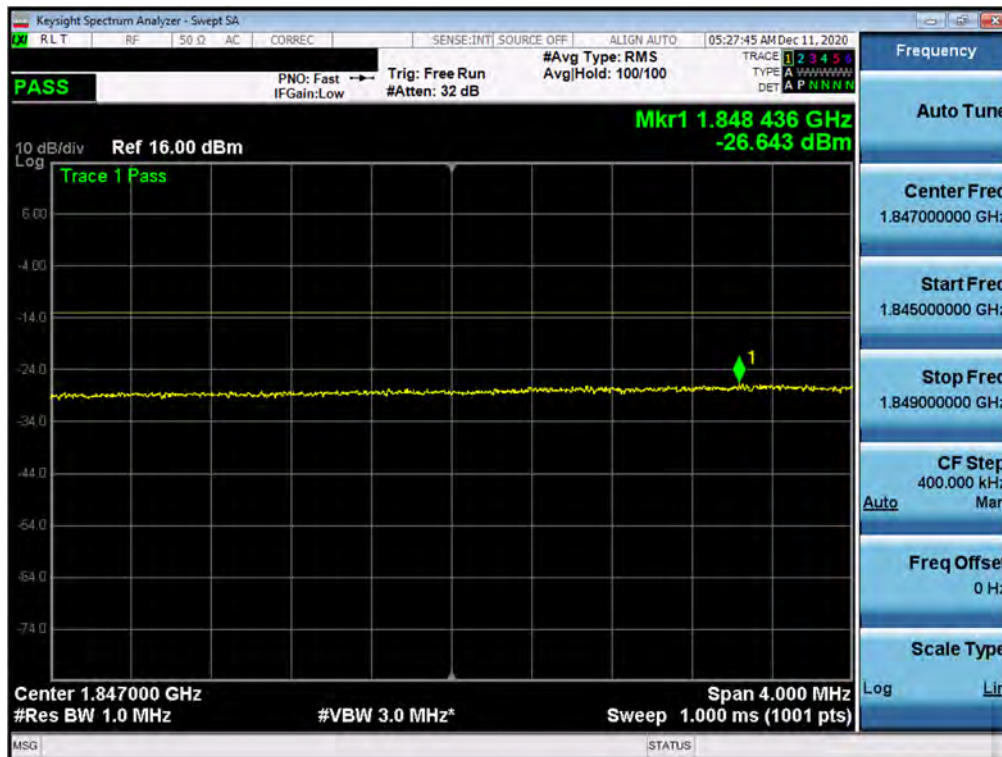
Plot 7-209. Upper Extended Band Edge Plot (NR Band n25 – 5.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 139 of 241

NR Band n25/n2 – ANT E



Plot 7-210. Lower Band Edge Plot (NR Band n25 – 40.0MHz - Full RB)

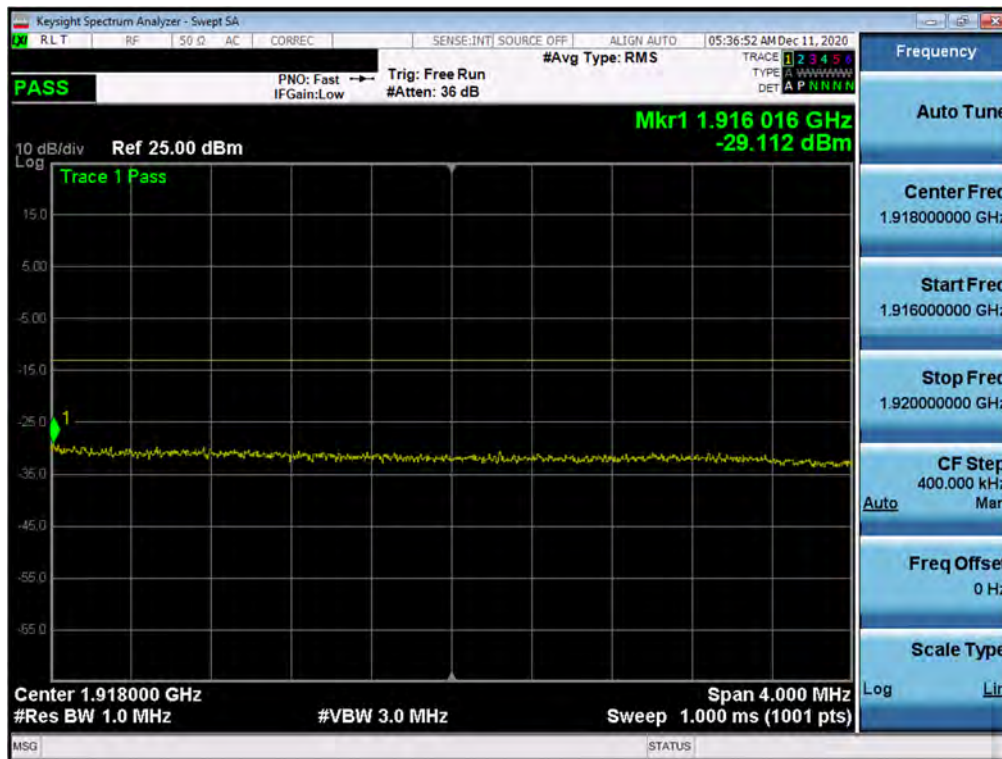


Plot 7-211. Extended Lower Band Edge Plot (LTE Band n25 – 40.0MHz– Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 140 of 241



Plot 7-212. Upper Band Edge Plot (NR Band n25 – 40.0MHz - Full RB)

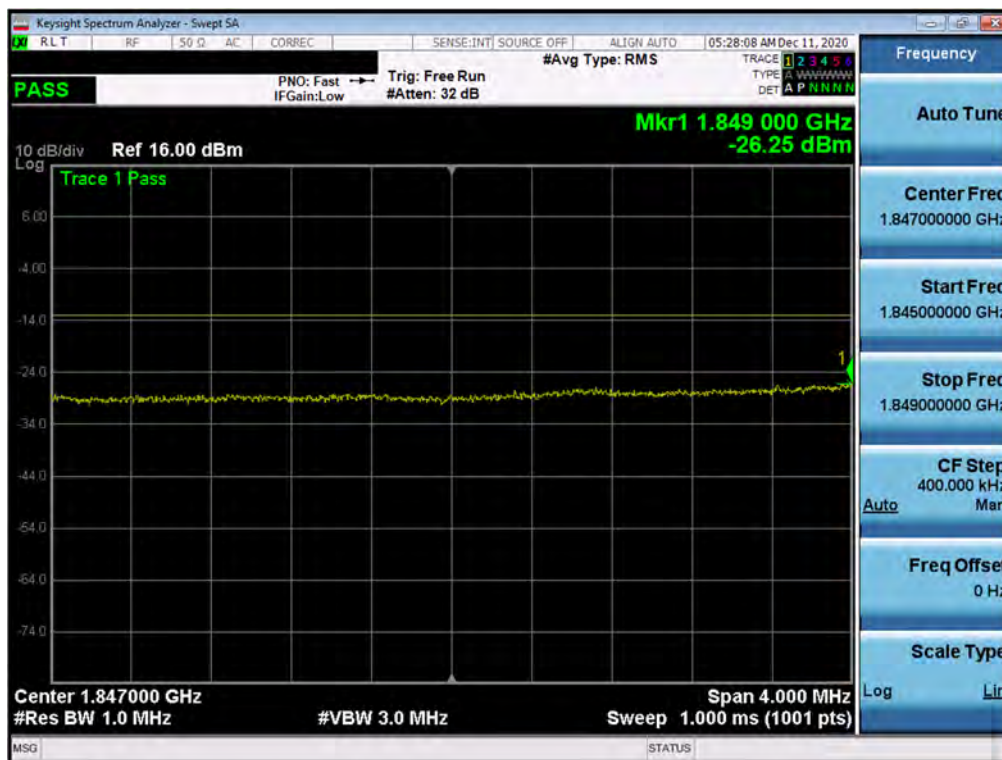


Plot 7-213. Extended Upper Band Edge Plot (LTE Band n25 – 40.0MHz– Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 141 of 241



Plot 7-214. Lower Band Edge Plot (NR Band n25 – 30.0MHz - Full RB)

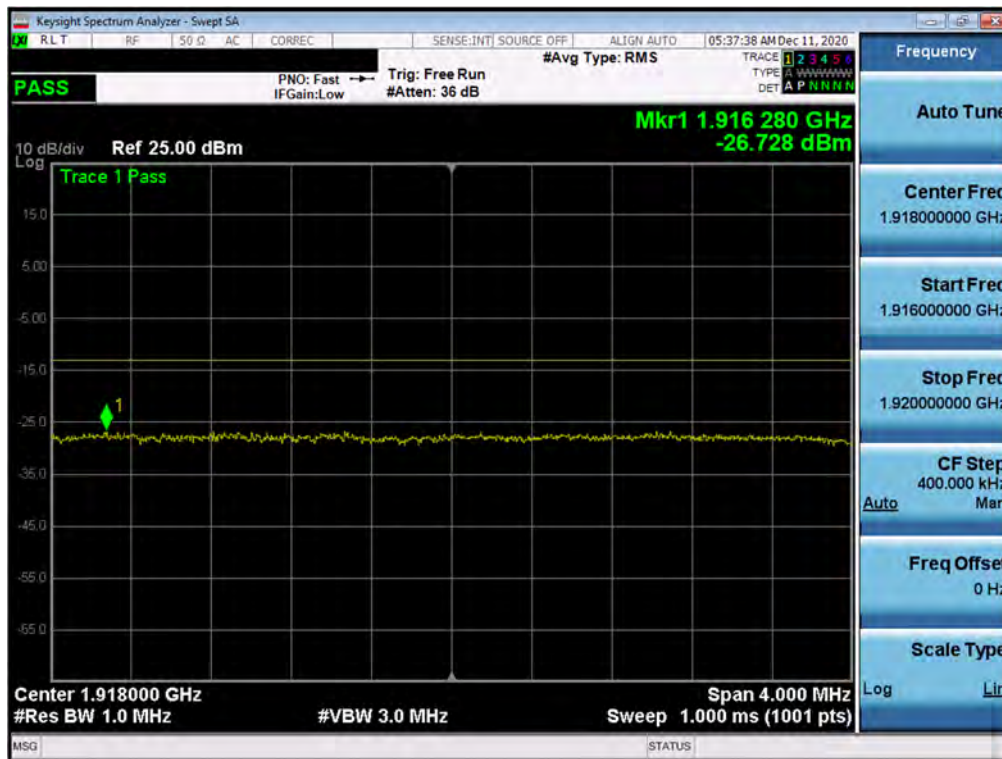


Plot 7-215. Extended Lower Band Edge Plot (LTE Band n25 – 30.0MHz– Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of the Samsung ecosystem	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 142 of 241

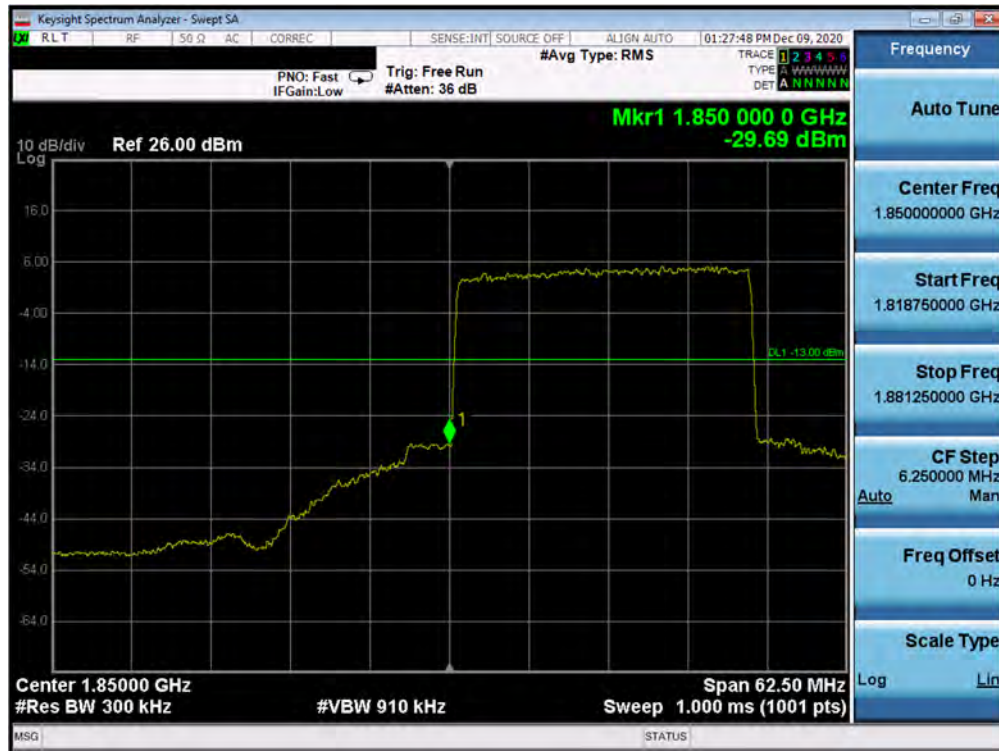


Plot 7-216. Upper Band Edge Plot (NR Band n25 - 30.0MHz - Full RB)

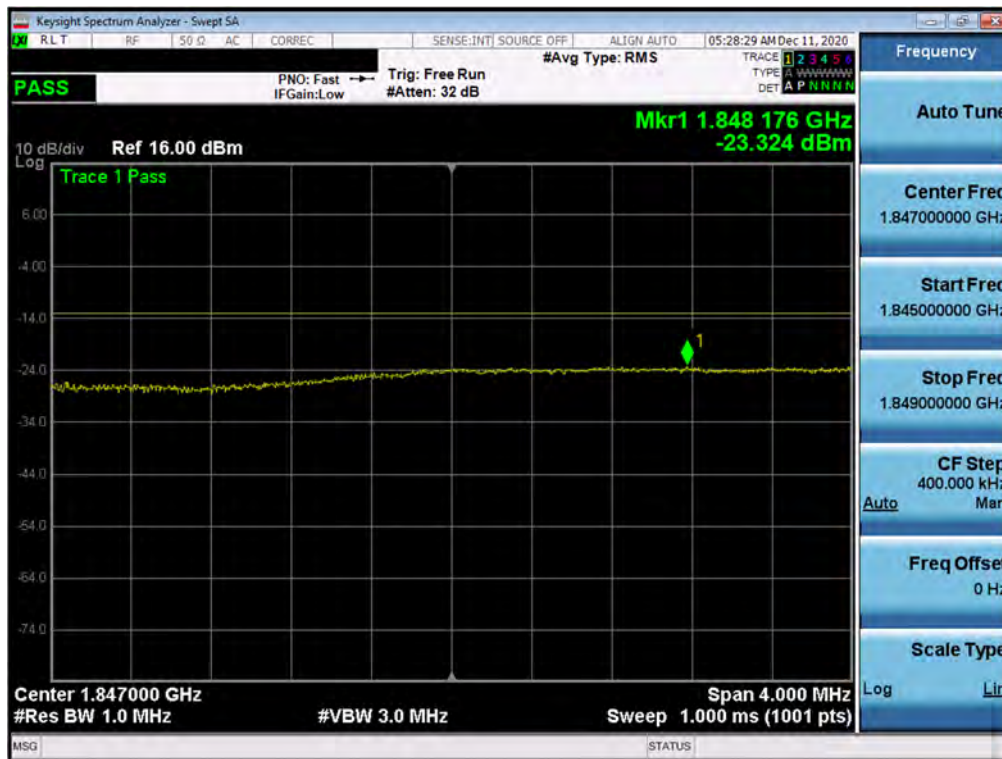


Plot 7-217. Extended Upper Band Edge Plot (LTE Band n25 - 30.0MHz - Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
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Plot 7-218. Lower Band Edge Plot (NR Band n25 – 25.0MHz - Full RB)

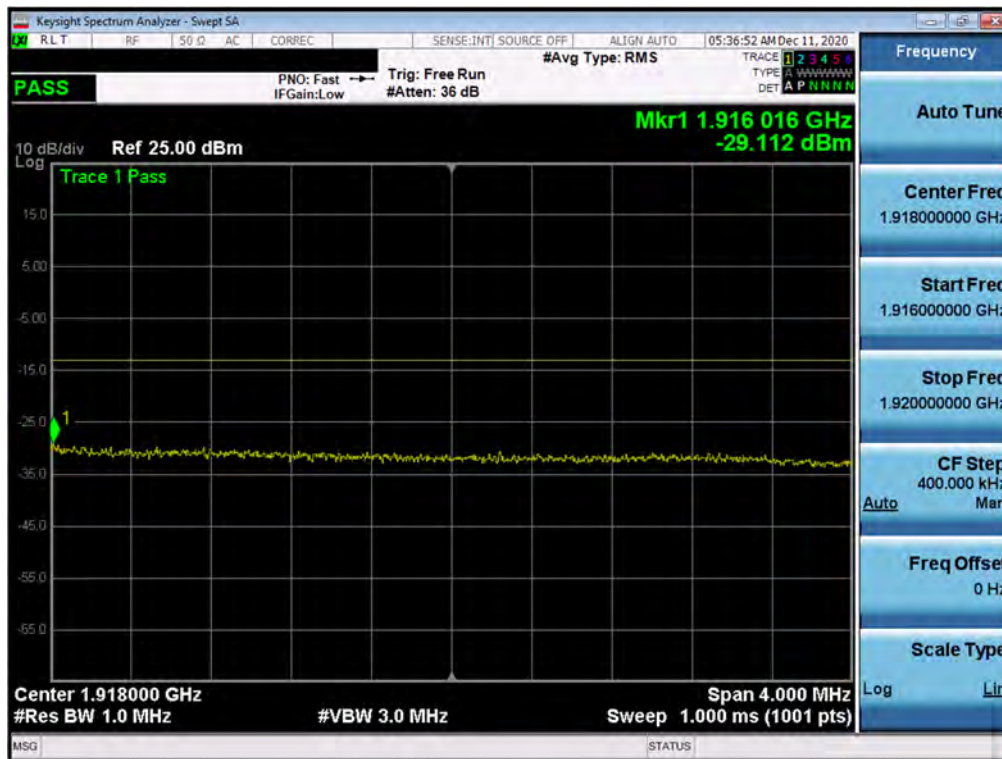


Plot 7-219. Extended Lower Band Edge Plot (LTE Band n25 – 25.0MHz– Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 144 of 241

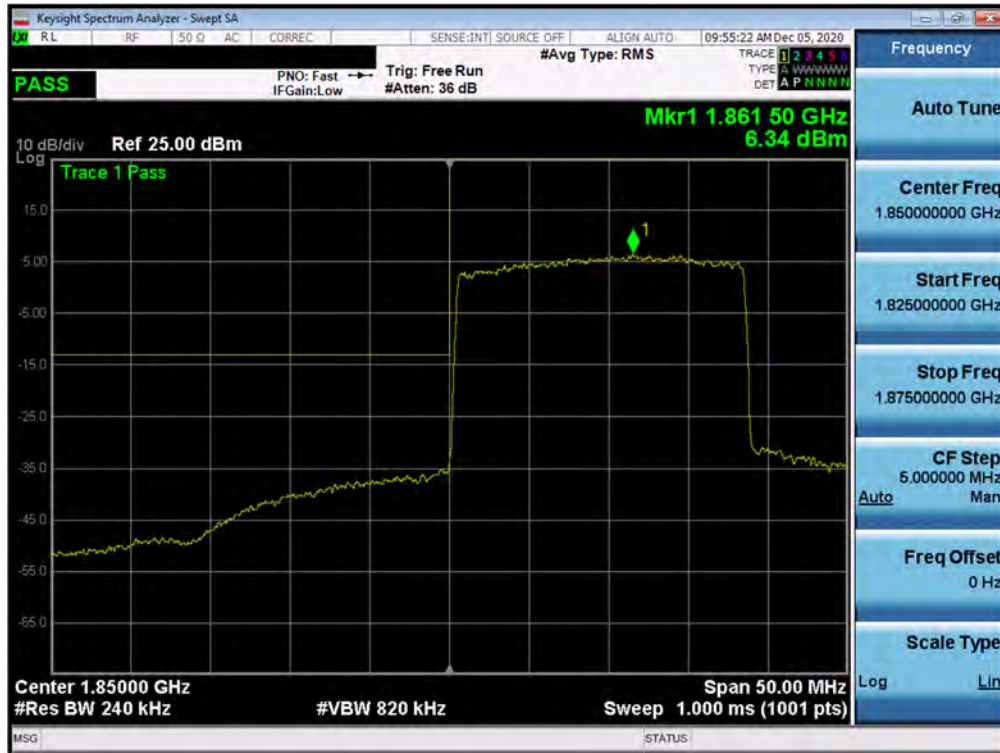


Plot 7-220. Upper Band Edge Plot (NR Band n25 - 25.0MHz - Full RB)

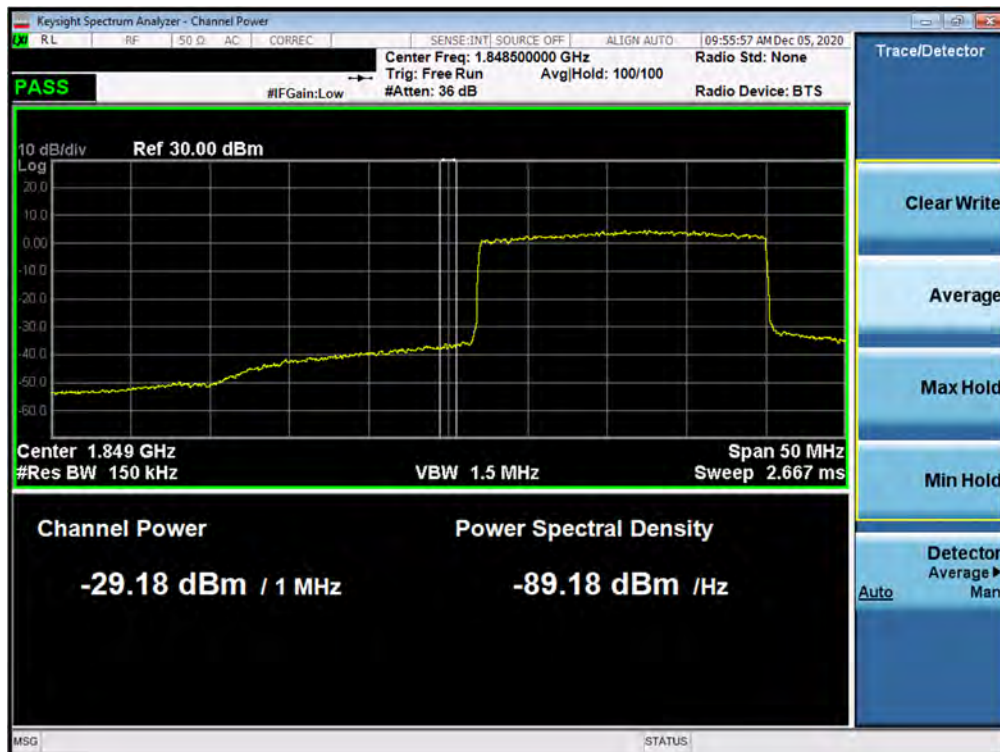


Plot 7-221. Extended Upper Band Edge Plot (LTE Band n25 - 25.0MHz - Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 - 12/11/2020	EUT Type: Portable Handset		Page 145 of 241



Plot 7-222. Lower Band Edge Plot (NR Band n25/2 – 20.0MHz - Full RB)

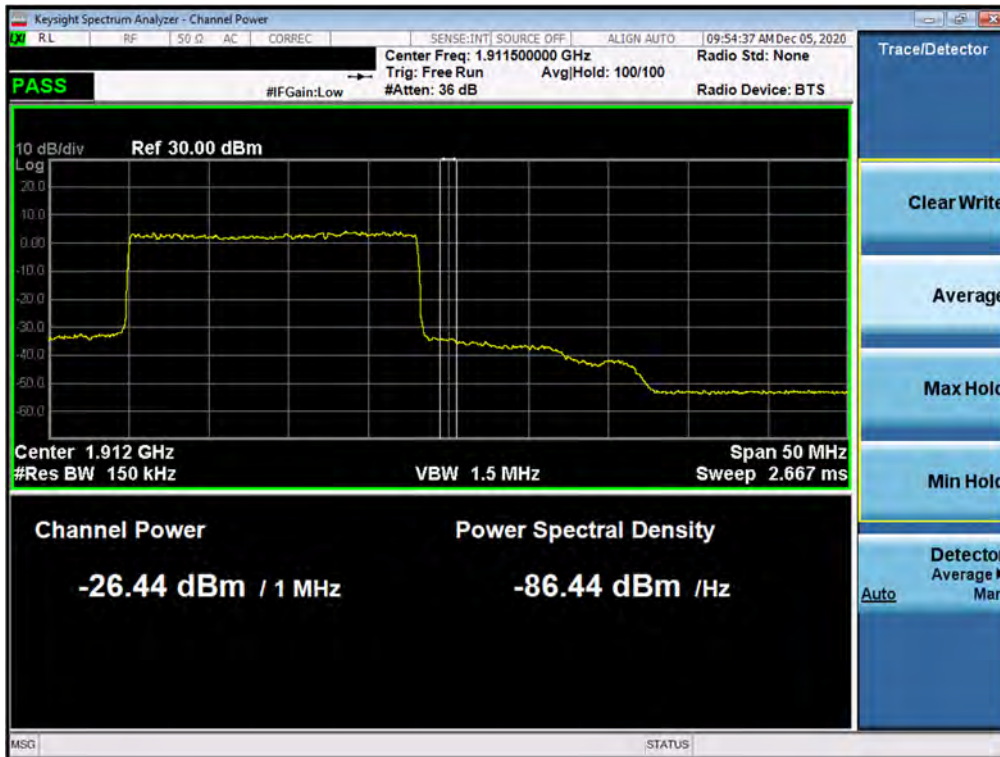


Plot 7-223. Lower Extended Band Edge Plot (NR Band n25/2 – 20.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 146 of 241



Plot 7-224. Upper Band Edge Plot (NR Band n2 – 20.0MHz - Full RB)



Plot 7-225. Upper Extended Band Edge Plot (NR Band n2 – 20.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 147 of 241

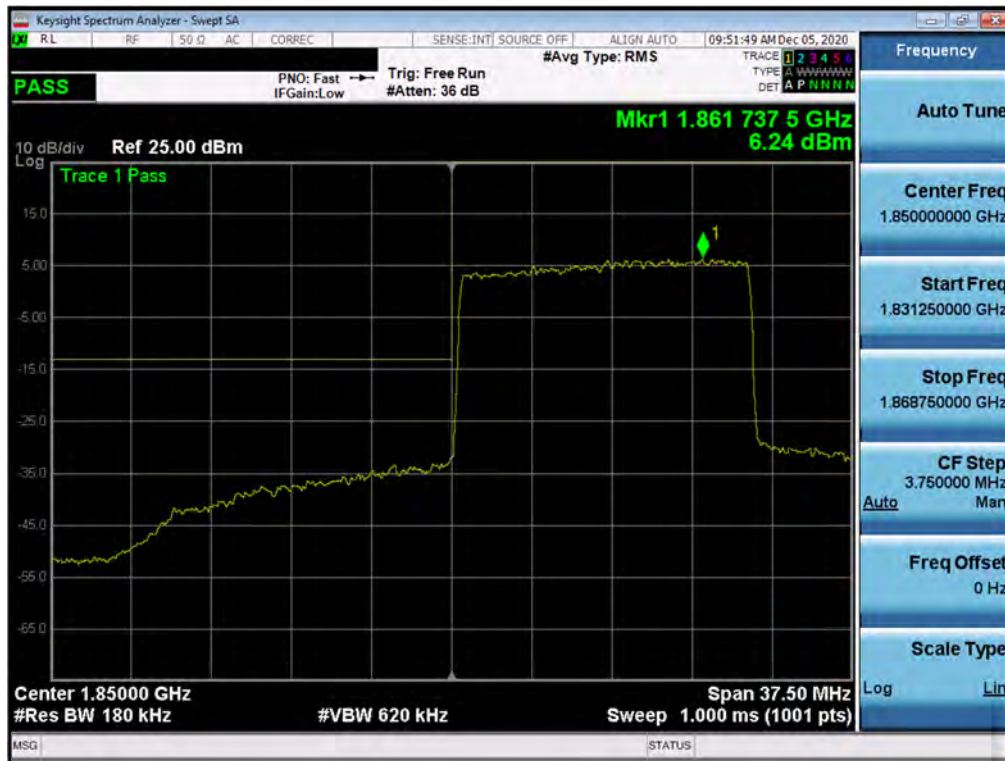


Plot 7-226. Upper Band Edge Plot (NR Band n25 – 20.0MHz - Full RB)

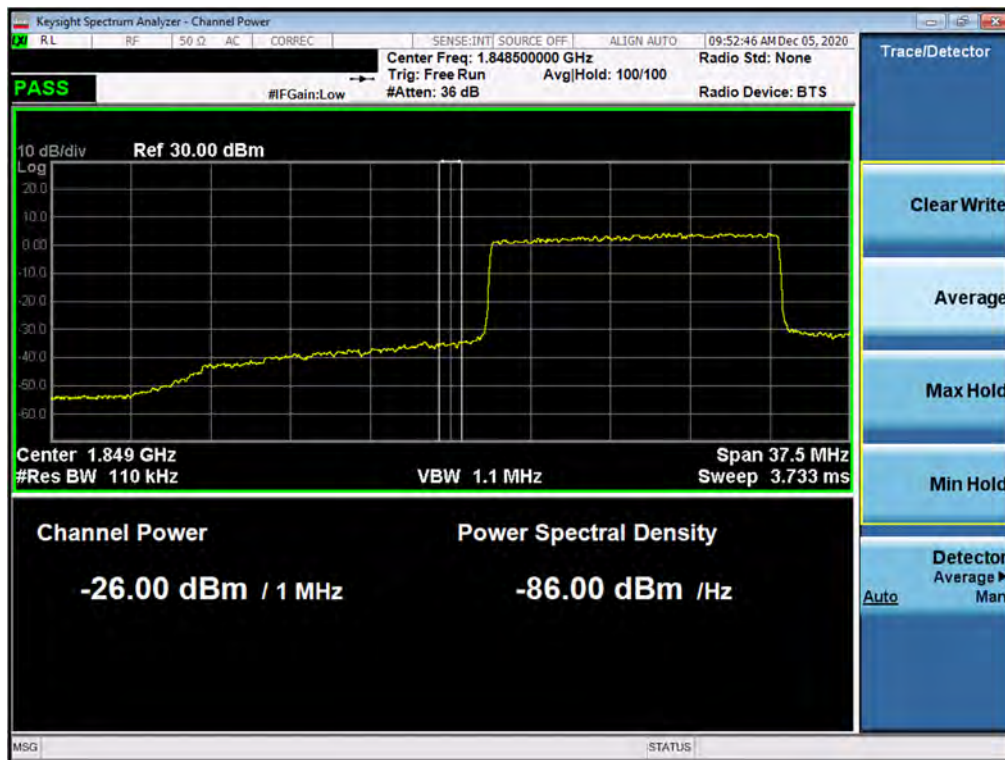


Plot 7-227. Upper Extended Band Edge Plot (NR Band n25 – 20.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 148 of 241



Plot 7-228. Lower Band Edge Plot (NR Band n25/2 – 15.0MHz - Full RB)

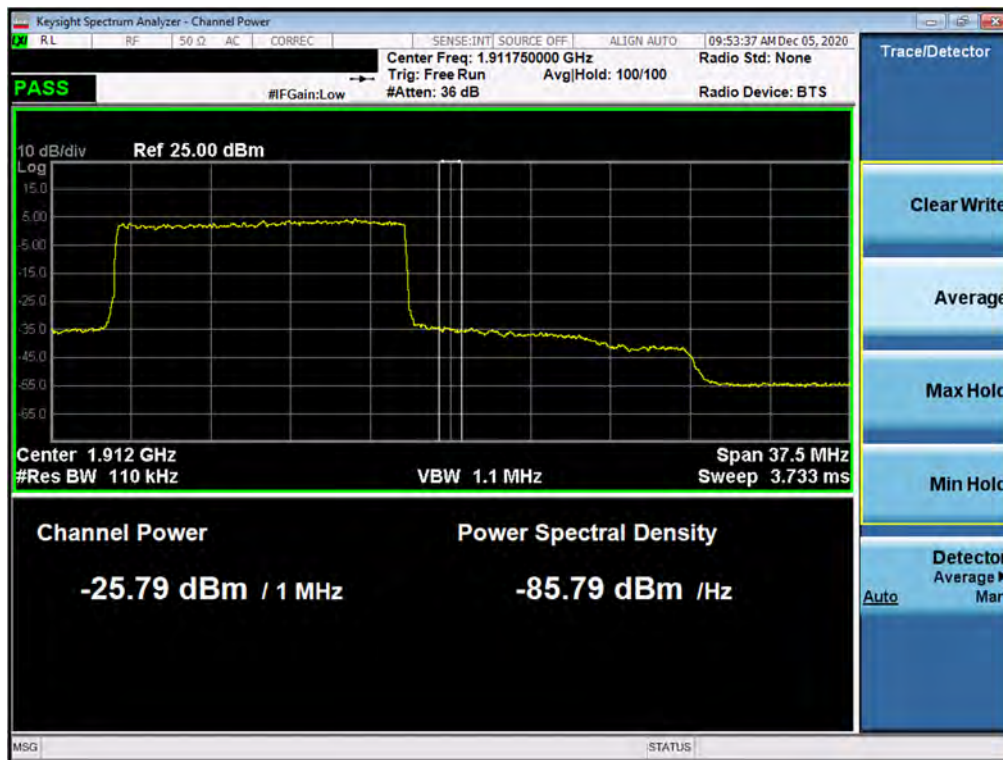


Plot 7-229. Lower Extended Band Edge Plot (NR Band n25/2 – 15.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
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Plot 7-230. Upper Band Edge Plot (NR Band n2 – 15.0MHz - Full RB)

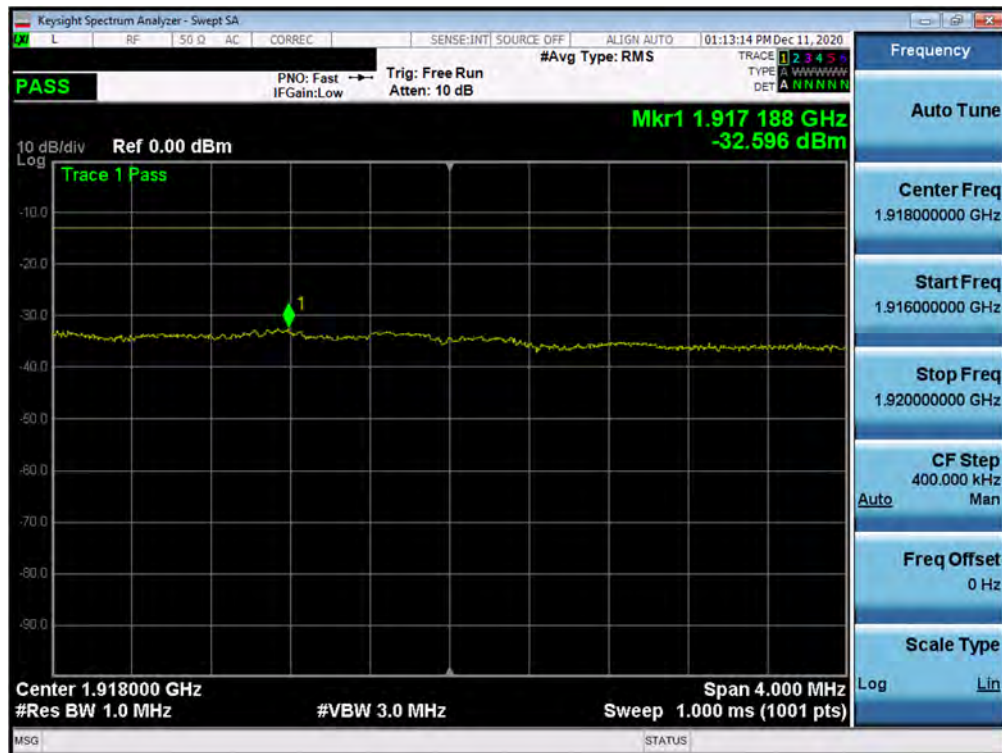


Plot 7-231. Upper Extended Band Edge Plot (NR Band n2 – 15.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 150 of 241



Plot 7-232. Upper Band Edge Plot (NR Band n25 - 15.0MHz - Full RB)

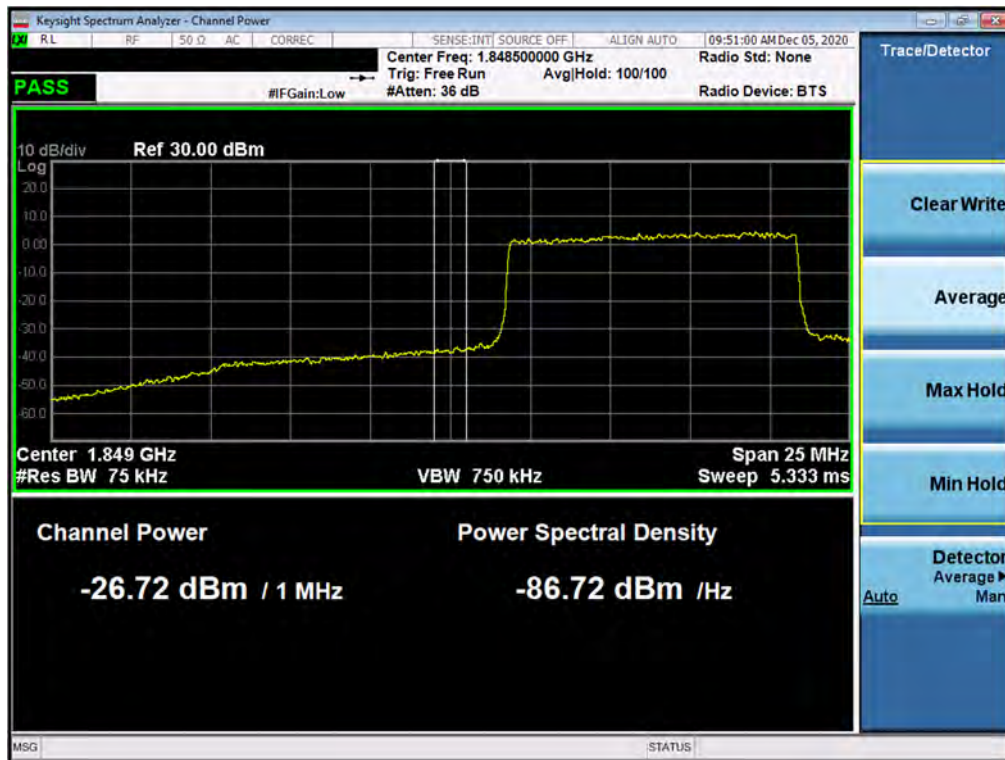


Plot 7-233. Upper Extended Band Edge Plot (NR Band n25 - 15.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 - 12/11/2020	EUT Type: Portable Handset		Page 151 of 241



Plot 7-234. Lower Band Edge Plot (NR Band n25/2 – 10.0MHz - Full RB)

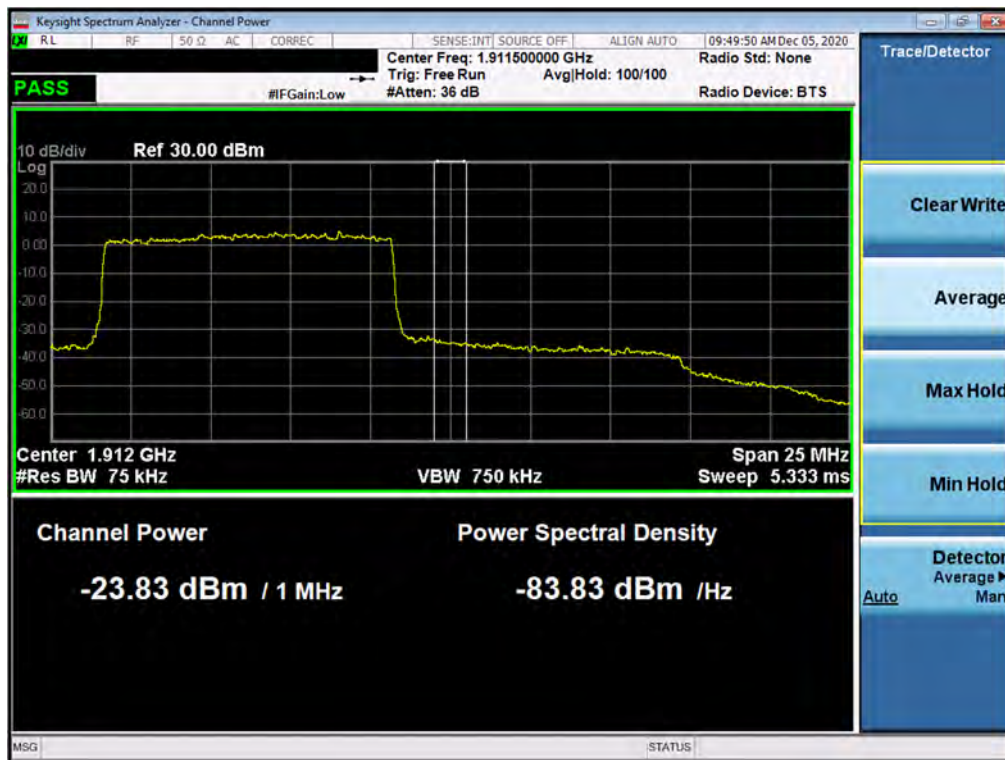


Plot 7-235. Lower Extended Band Edge Plot (NR Band n25/2 – 10.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 152 of 241



Plot 7-236. Upper Band Edge Plot (NR Band n2 - 10.0MHz - Full RB)

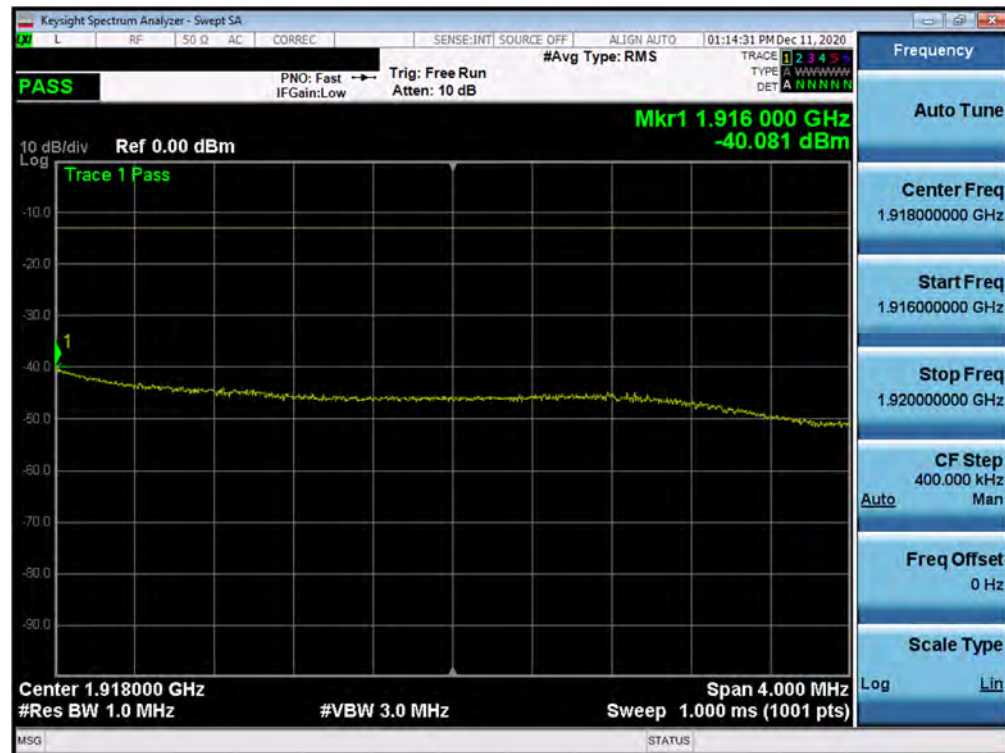


Plot 7-237. Upper Extended Band Edge Plot (NR Band n2 - 10.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 - 12/11/2020	EUT Type: Portable Handset		Page 153 of 241

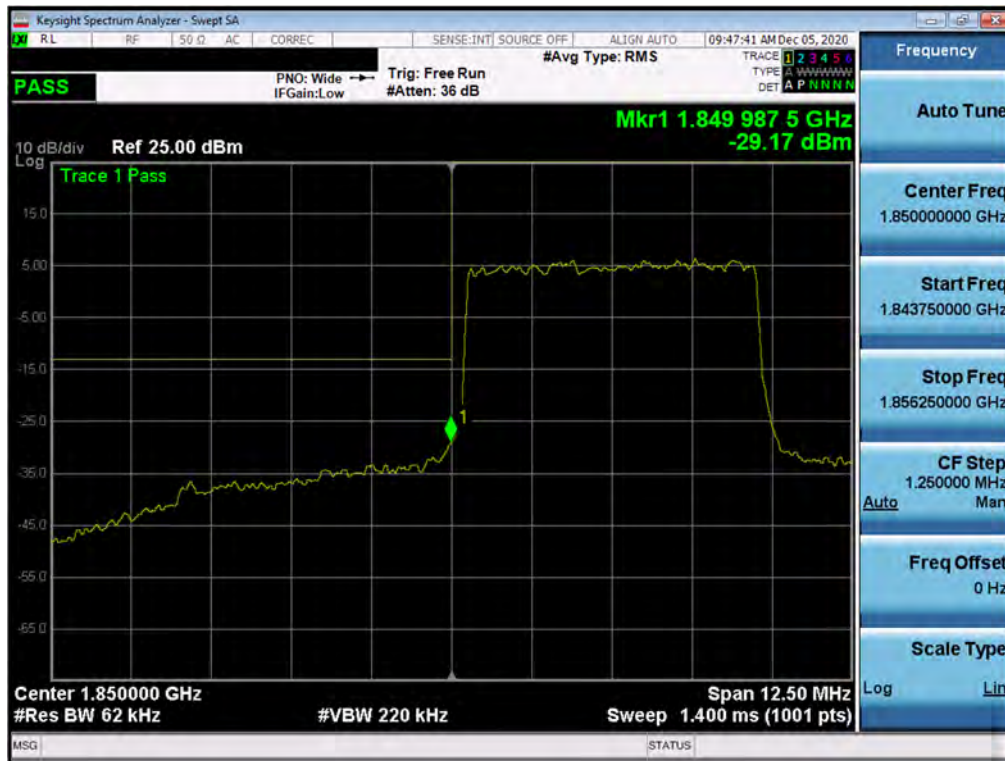


Plot 7-238. Upper Band Edge Plot (NR Band n25 – 10.0MHz - Full RB)

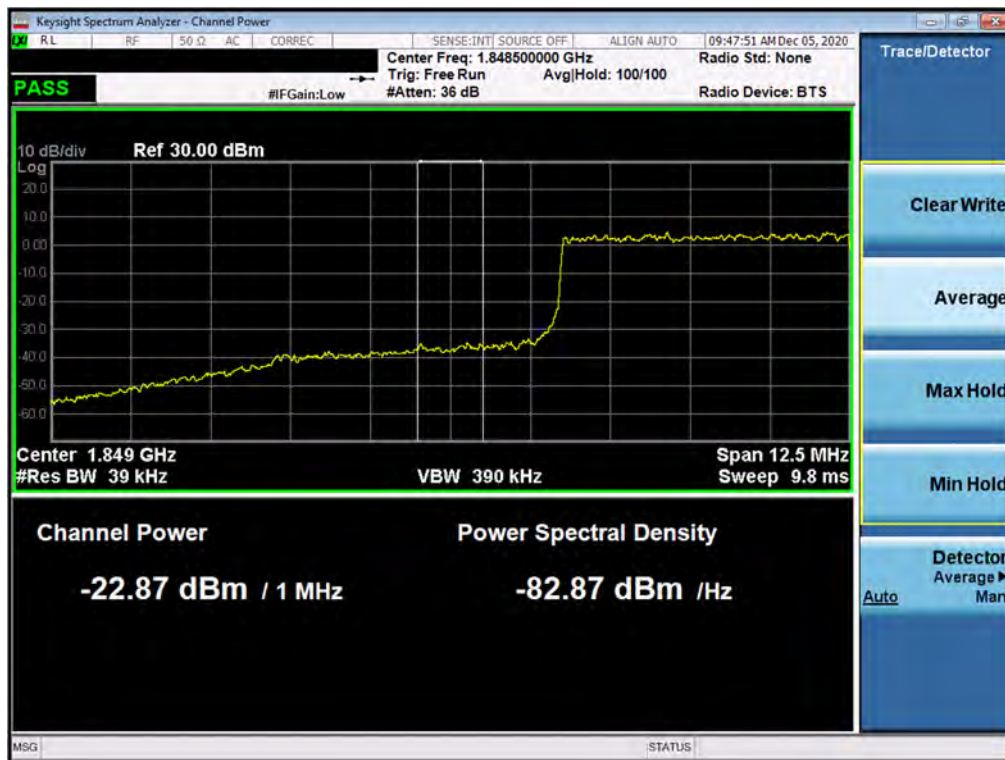


Plot 7-239. Upper Extended Band Edge Plot (NR Band n25 – 10.0MHz - Full RB)

FCC ID: A3LSMG998U	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset	Page 154 of 241



Plot 7-240. Lower Band Edge Plot (NR Band n25/2 – 5.0MHz - Full RB)

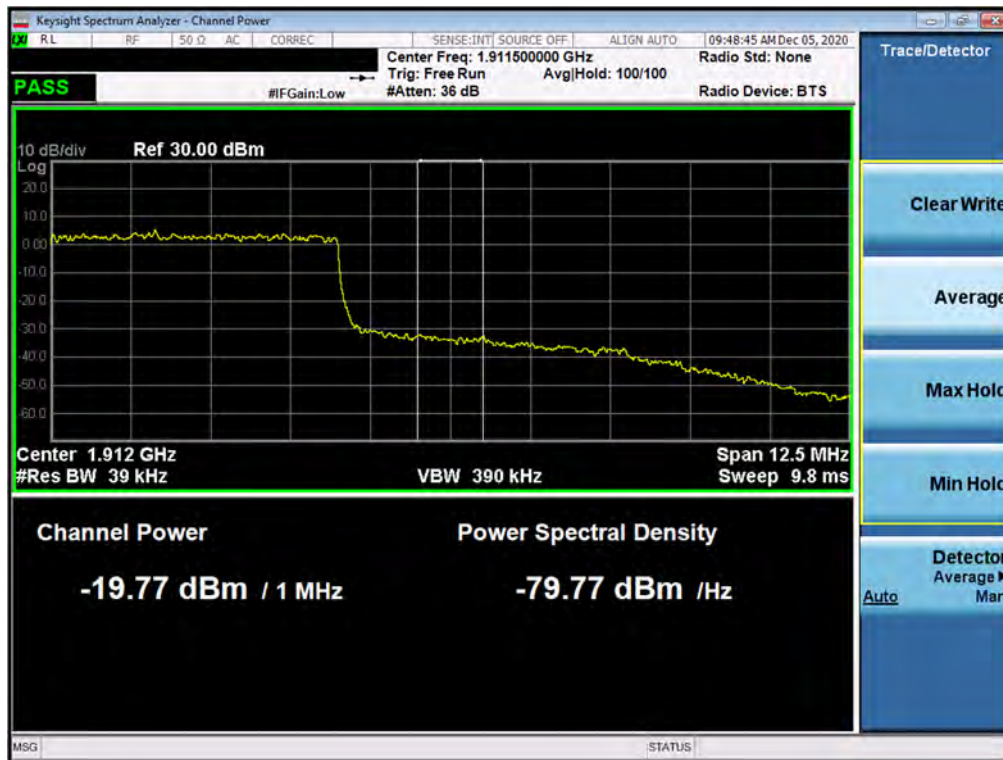


Plot 7-241. Lower Extended Band Edge Plot (NR Band n25/2 – 5.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 155 of 241



Plot 7-242. Upper Band Edge Plot (NR Band n2 – 5.0MHz - Full RB)



Plot 7-243. Upper Extended Band Edge Plot (NR Band n2 – 5.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of the Samsung family	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 – 12/11/2020	EUT Type: Portable Handset		Page 156 of 241



Plot 7-244. Upper Band Edge Plot (NR Band n25 - 5.0MHz - Full RB)



Plot 7-245. Upper Extended Band Edge Plot (NR Band n25 - 5.0MHz - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of the Samsung family	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-19.A3L	Test Dates: 9/23/2020 - 12/11/2020	EUT Type: Portable Handset		Page 157 of 241

7.5 Peak-Average Ratio

Test Overview

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

Test Procedure Used

KDB 971168 D01 v03r01 – Section 5.7.1

Test Settings

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

Test Setup

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



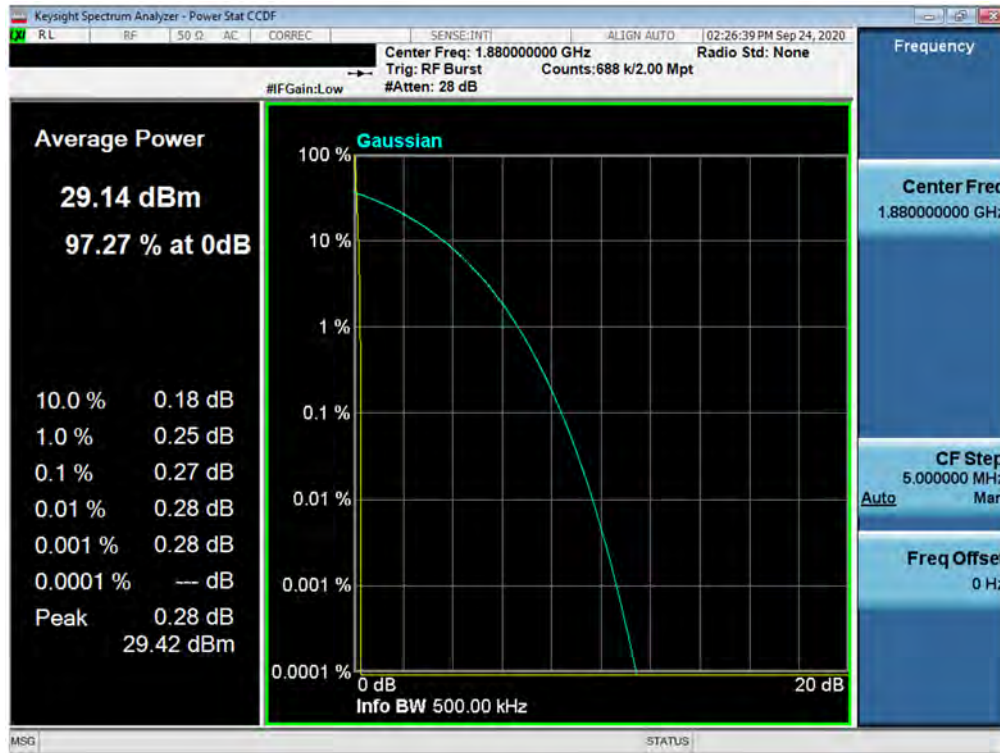
Figure 7-4. Test Instrument & Measurement Setup

Test Notes

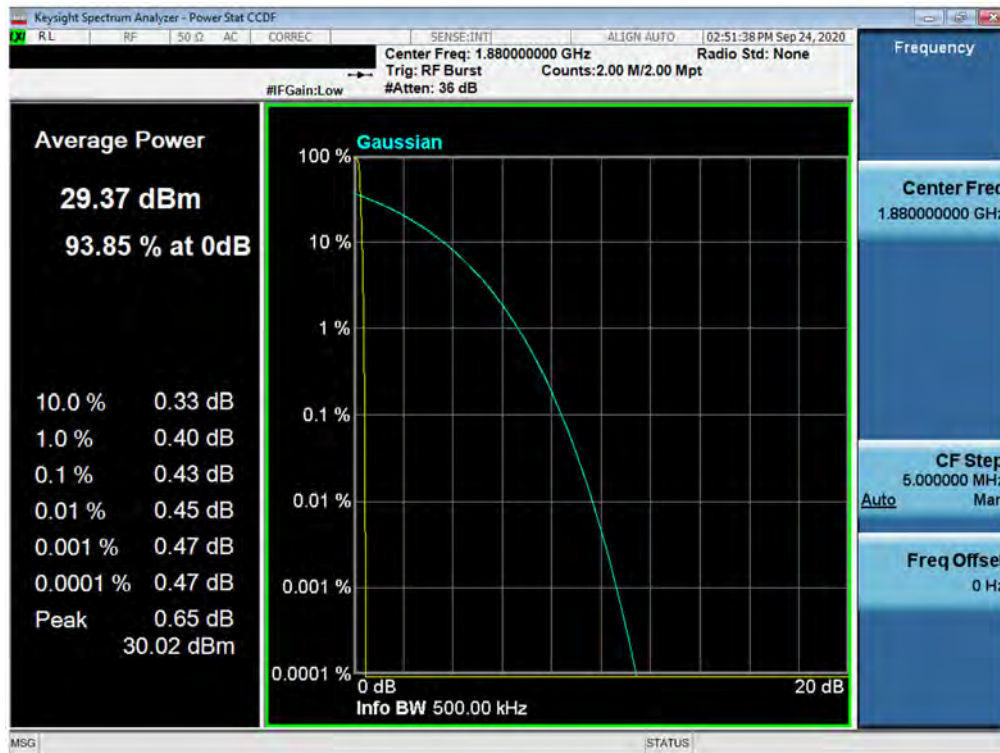
None.

FCC ID: A3LSMG998U	PCTEST Proud to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
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GSM/GPRS PCS



Plot 7-246. PAR Plot (GPRS, Ch. 661)



Plot 7-247. PAR Plot (EDGE, Ch. 661)

FCC ID: A3LSMG998U	PCTEST PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
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