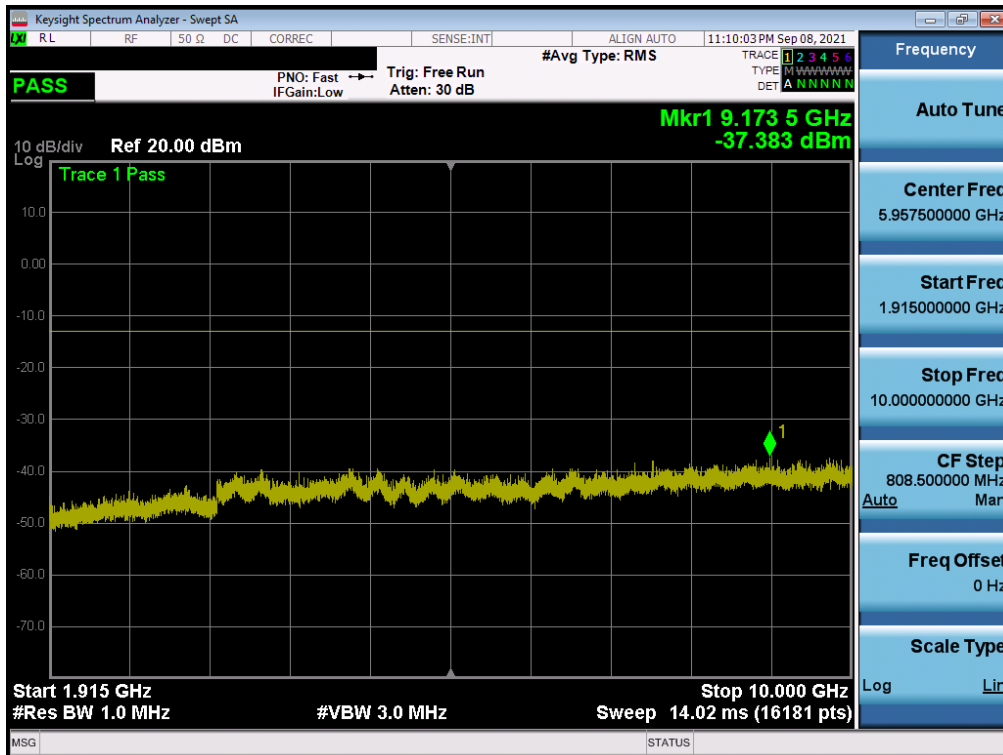


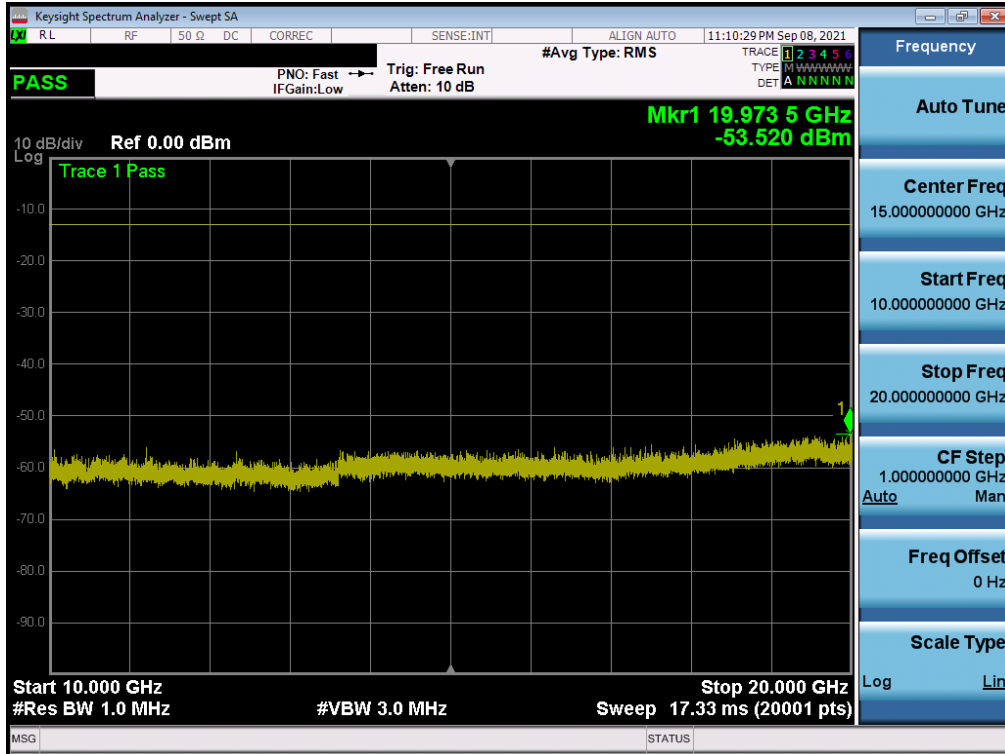


Plot 7-91. Conducted Spurious Plot (GPRS Ch. 810)



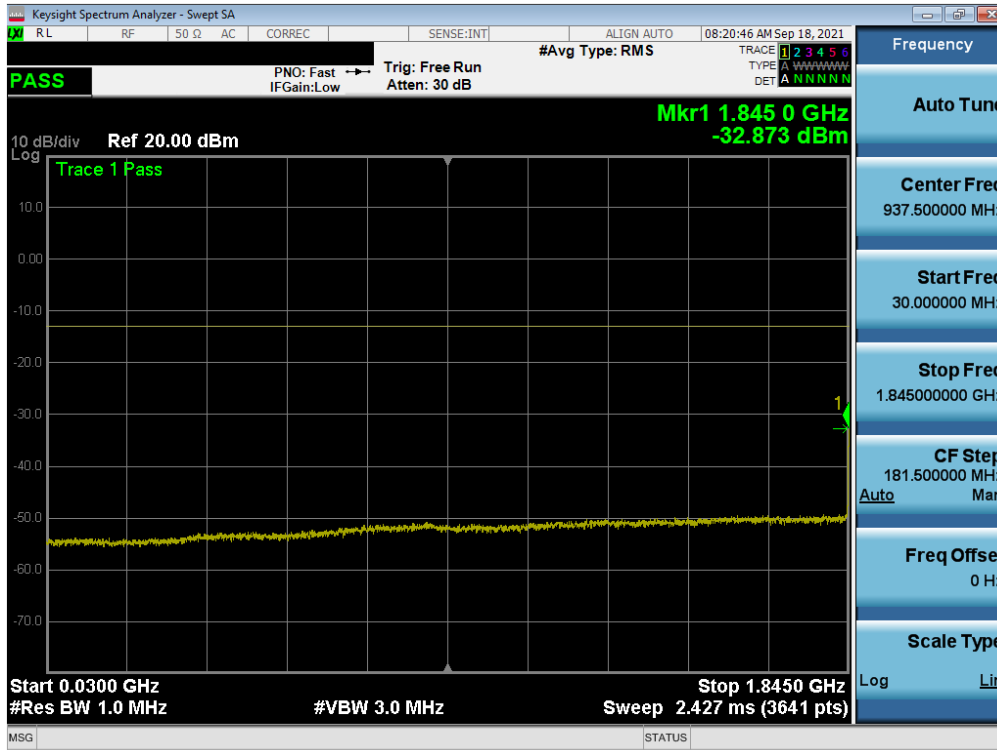
Plot 7-92. Conducted Spurious Plot (GPRS Ch. 810)

FCC ID: A3LSMS901U	 PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset	Page 66 of 164

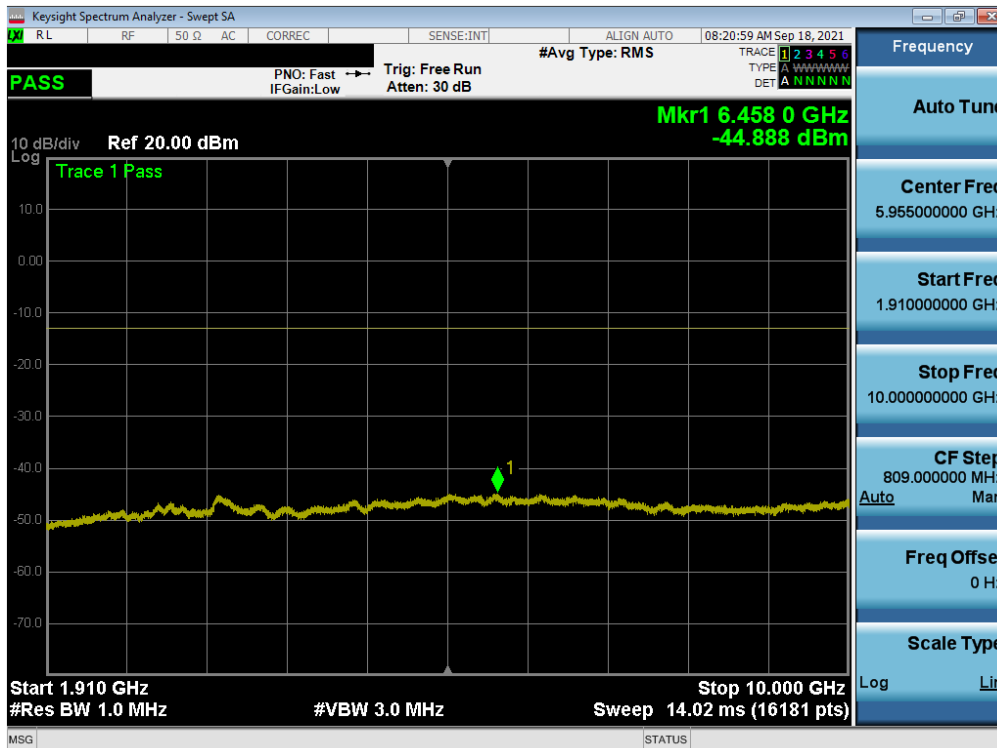


Plot 7-93. Conducted Spurious Plot (GPRS Ch. 810)

FCC ID: A3LSMS901U	PCTEST Proud to be part of Anritsu	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 67 of 164

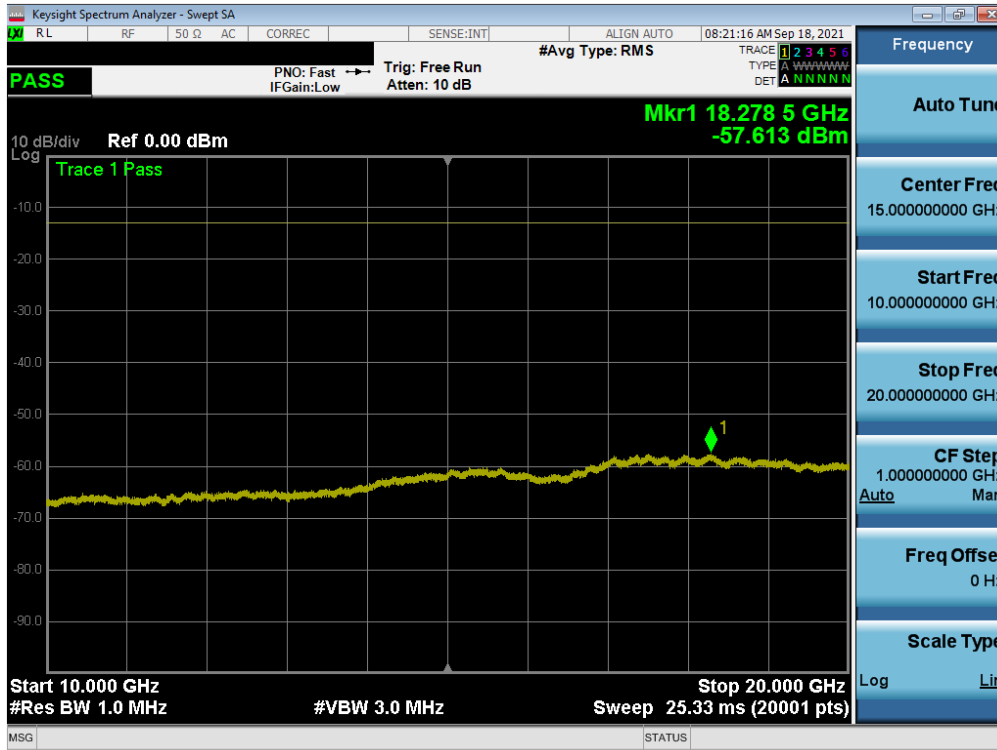


Plot 7-94. Conducted Spurious Plot (WCDMA Ch. 9262)

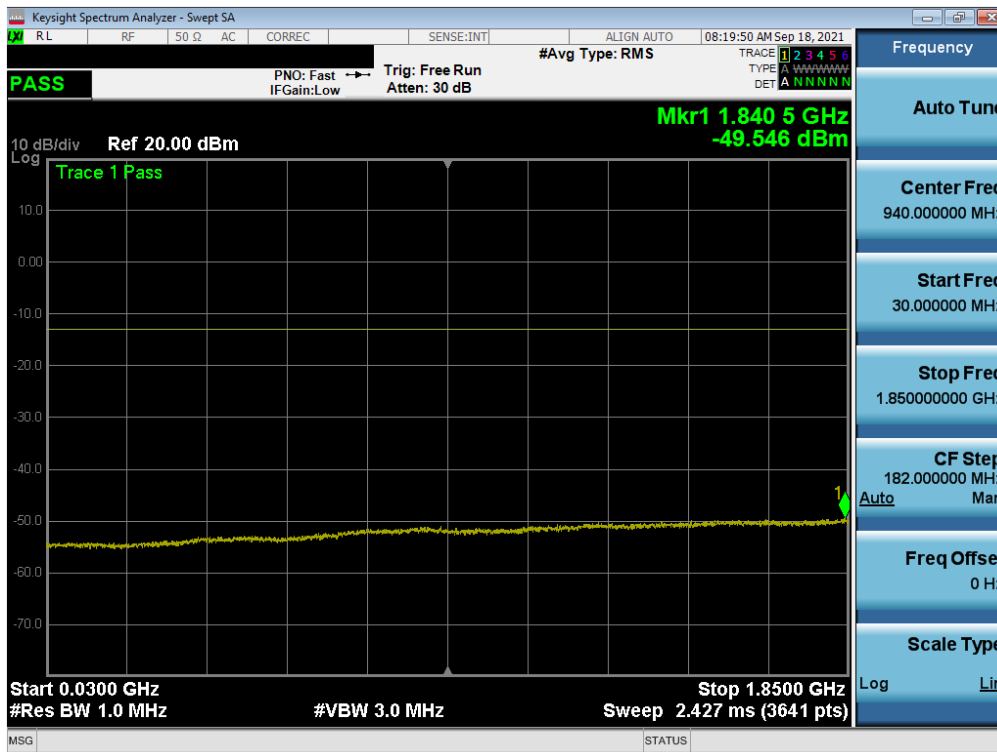


Plot 7-95. Conducted Spurious Plot (WCDMA Ch. 9262)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 68 of 164



Plot 7-96. Conducted Spurious Plot (WCDMA Ch. 9262)

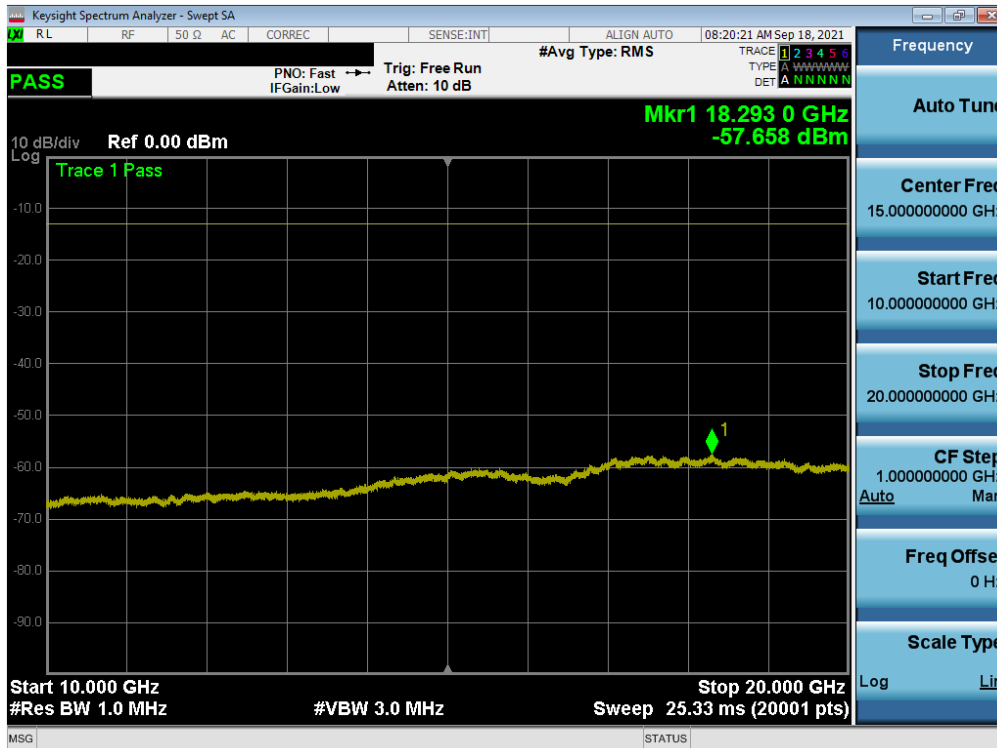


Plot 7-97. Conducted Spurious Plot (WCDMA Ch. 9400)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 69 of 164

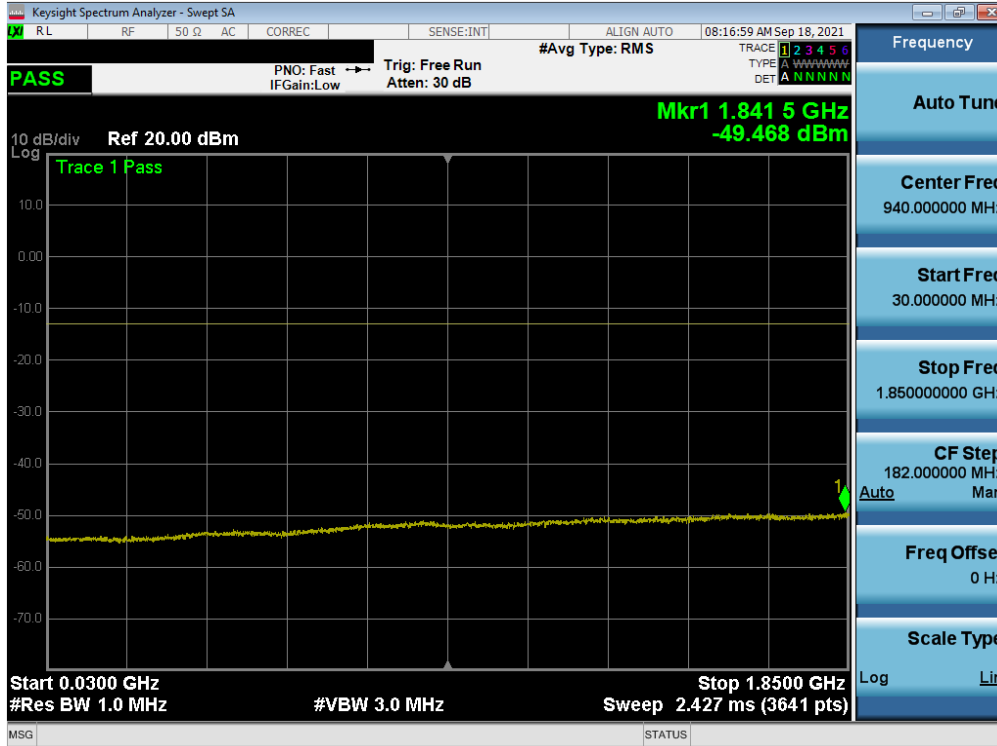


Plot 7-98. Conducted Spurious Plot (WCDMA Ch. 9400)

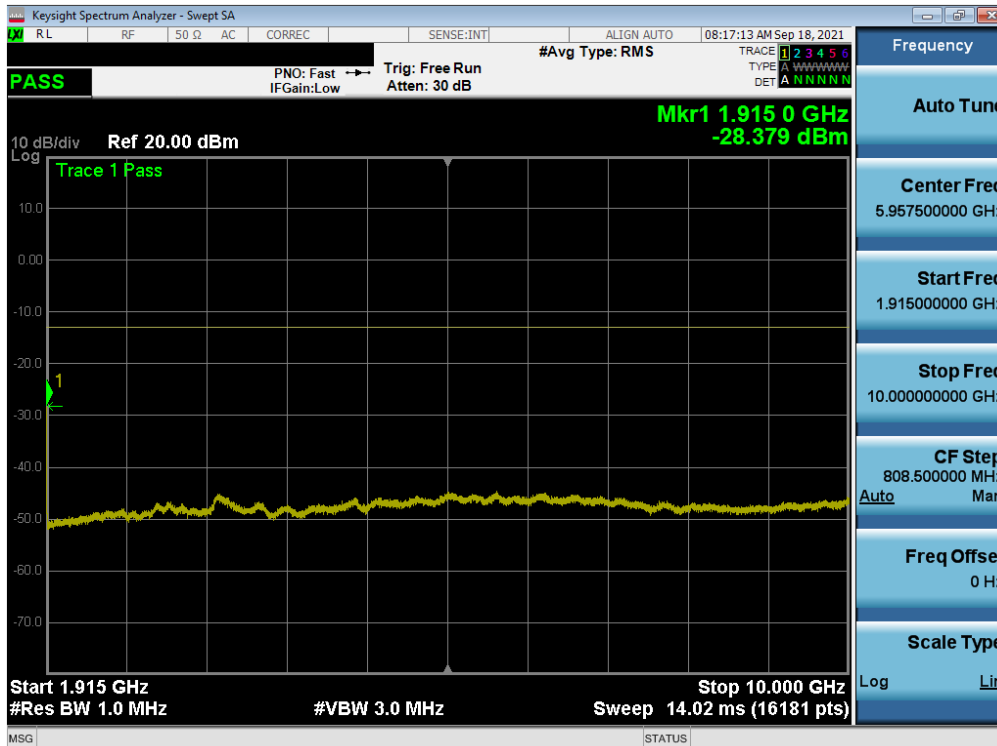


Plot 7-99. Conducted Spurious Plot (WCDMA Ch. 9400)




FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 70 of 164

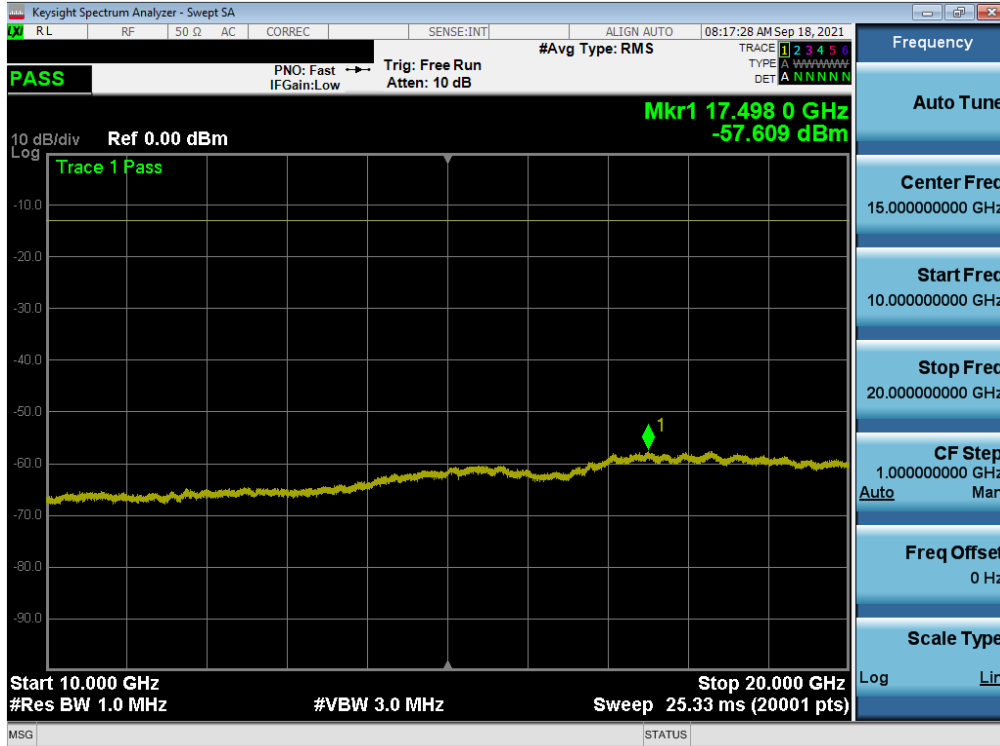


Plot 7-100. Conducted Spurious Plot (WCDMA Ch. 9538)






Plot 7-101. Conducted Spurious Plot (WCDMA Ch. 9538)

FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 71 of 164



Plot 7-102. Conducted Spurious Plot (WCDMA Ch. 9538)

FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 72 of 164

7.5 Band Edge Emissions at Antenna Terminal

Test Overview

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

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

Test Procedure Used

KDB 971168 D01 v03r01 – Section 6.0

Test Settings

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

Test Setup

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

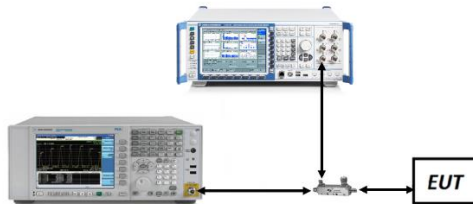






Figure 7-4. Test Instrument & Measurement Setup

FCC ID: A3LSMS901U	 PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 73 of 164

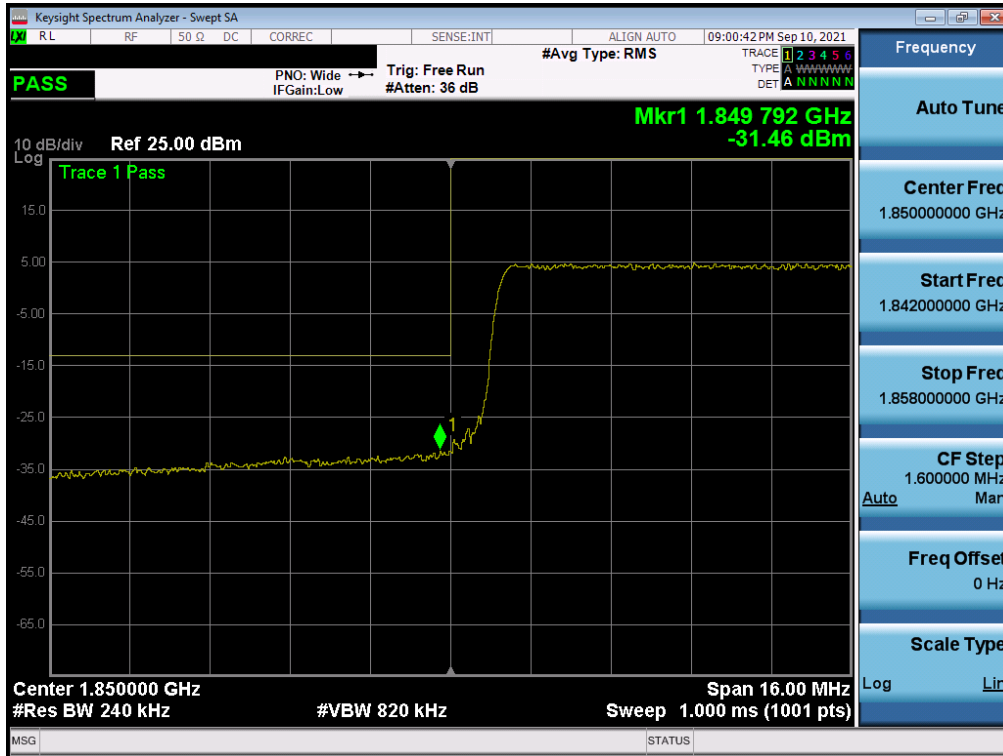
Test Notes

1. Per 24.238(b) 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.

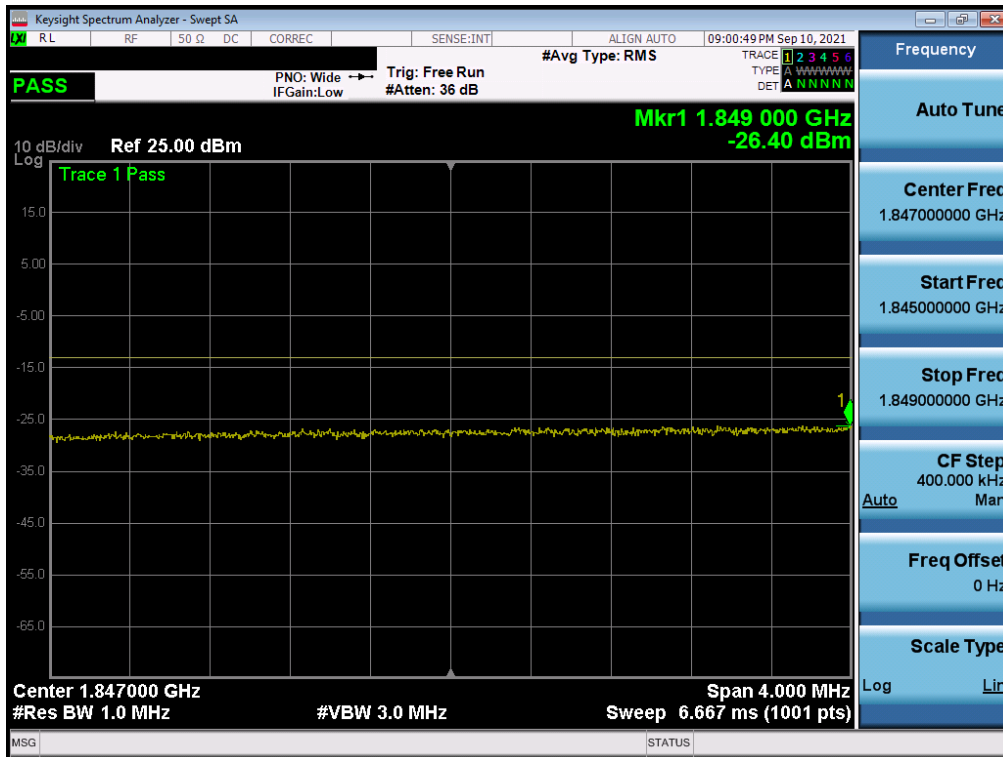
2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g., CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

FCC ID: A3LSMS901U	 PART 24 MEASUREMENT REPORT 		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset	Page 74 of 164

LTE Band 25/2

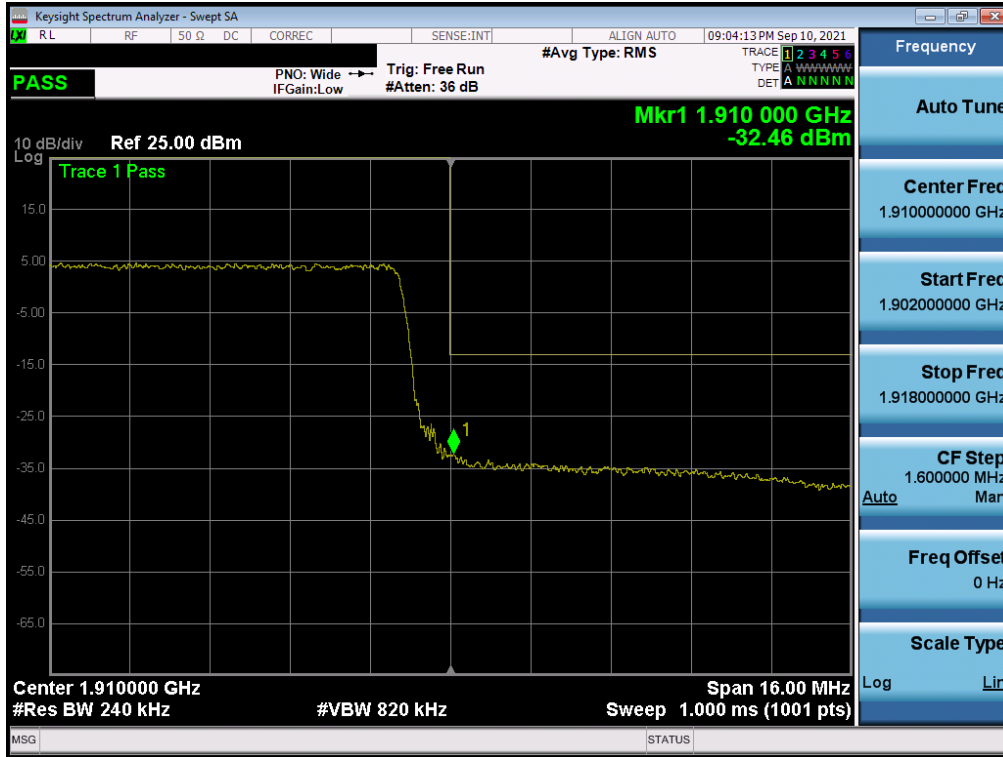


Plot 7-103. Lower Band Edge Plot (LTE Band 25/2 - 20MHz QPSK – Full RB)

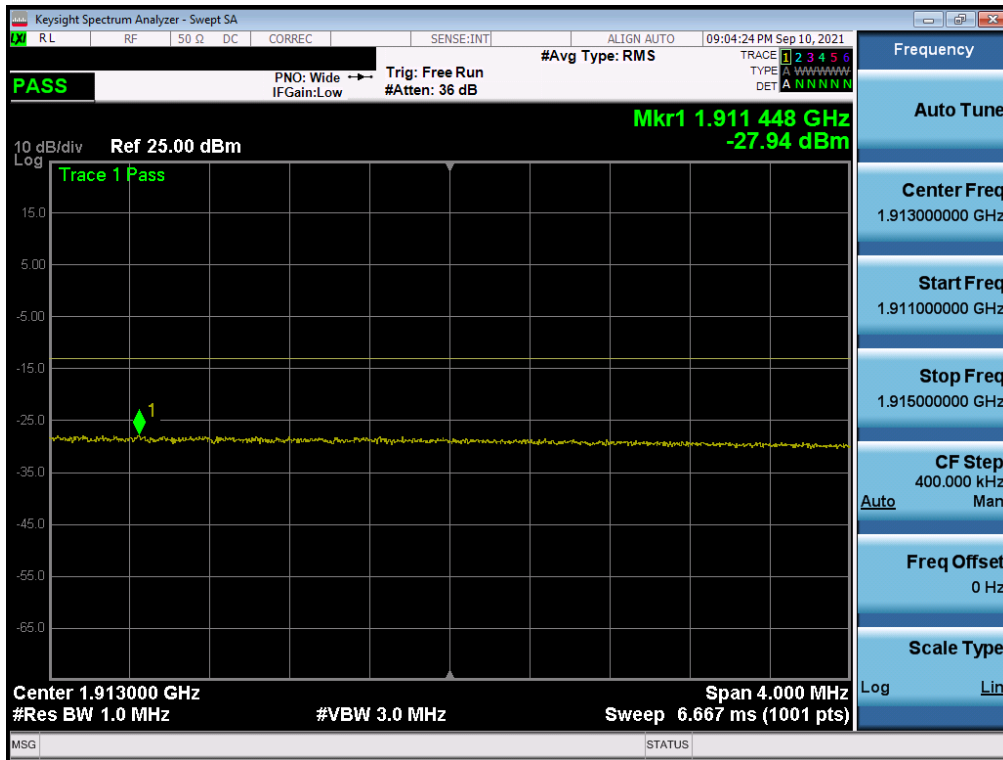


Plot 7-104. Extended Lower Band Edge Plot (LTE Band 25/2 - 20MHz QPSK – Full RB)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 75 of 164

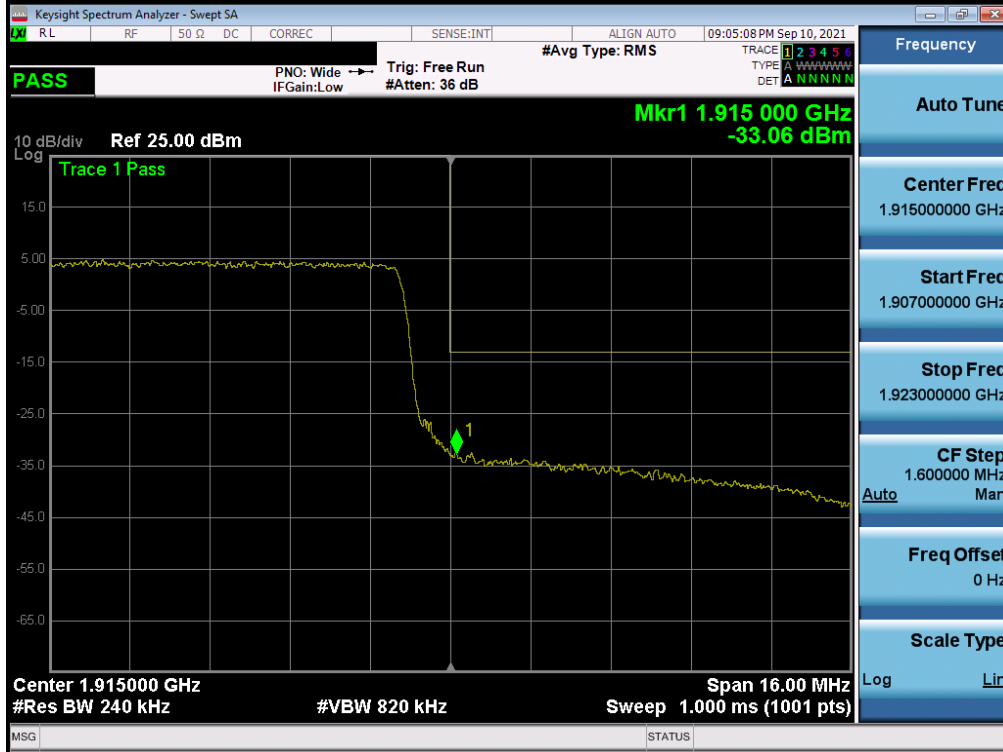


Plot 7-105. Upper Band Edge Plot (LTE Band 2 - 20MHz QPSK – Full RB)



Plot 7-106. Extended Upper Band Edge Plot (LTE Band 2 - 20MHz QPSK – Full RB)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 76 of 164

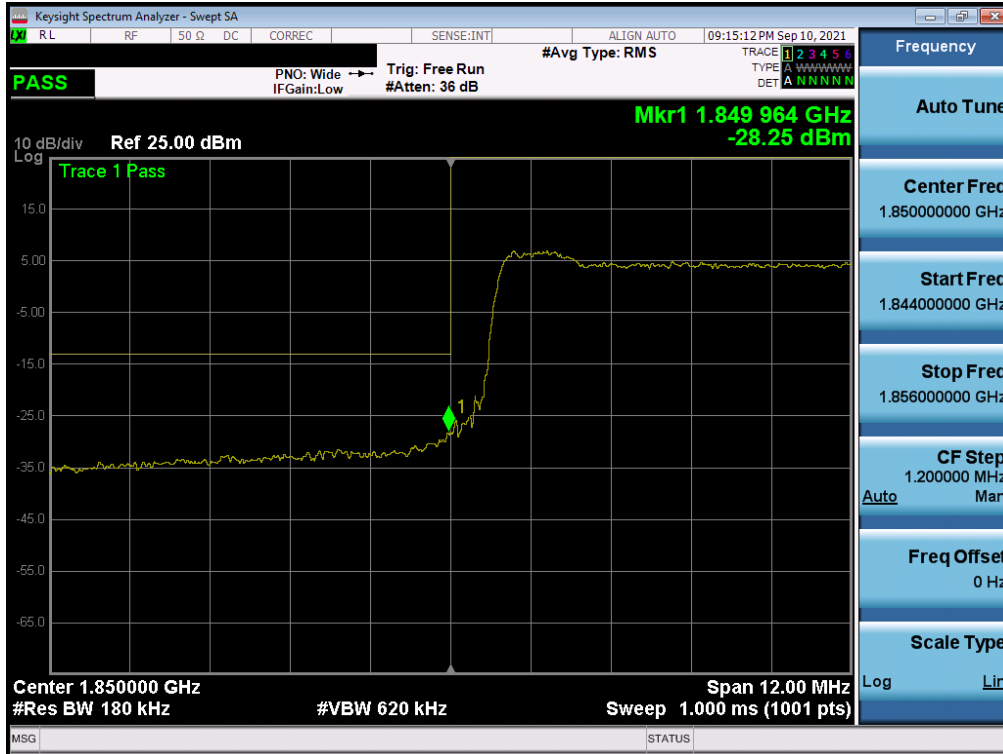


Plot 7-107. Upper Band Edge Plot (LTE Band 25 - 20MHz QPSK – Full RB)

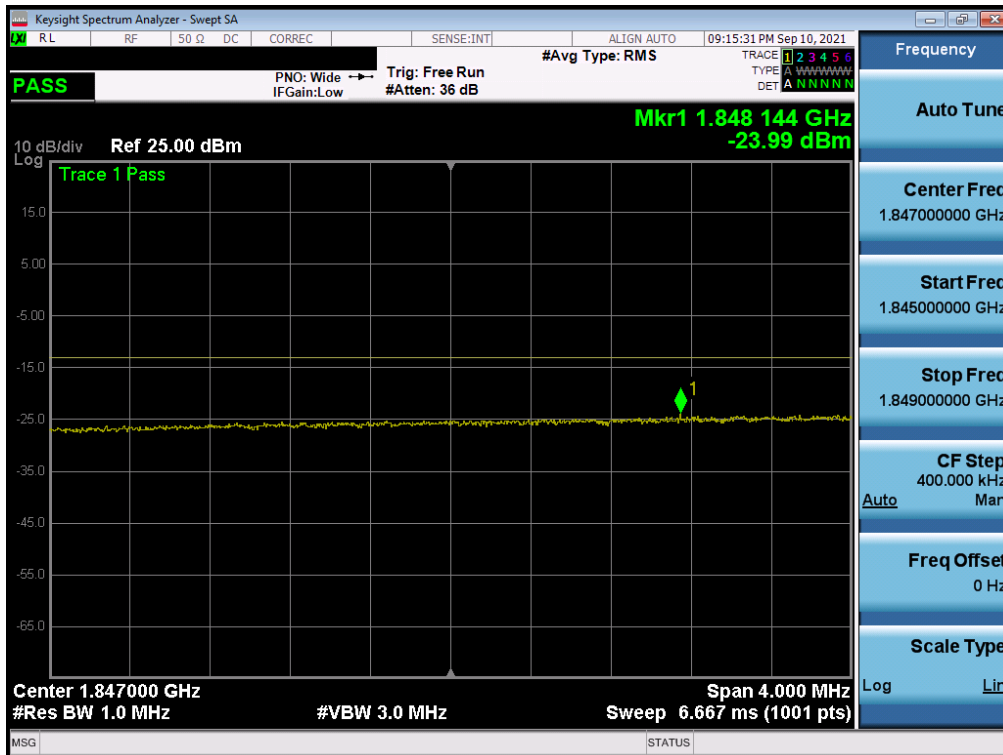


Plot 7-108. Extended Upper Band Edge Plot (LTE Band 25 - 20MHz QPSK – Full RB)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 77 of 164



Plot 7-109. Lower Band Edge Plot (LTE Band 25/2 - 15MHz QPSK – Full RB)

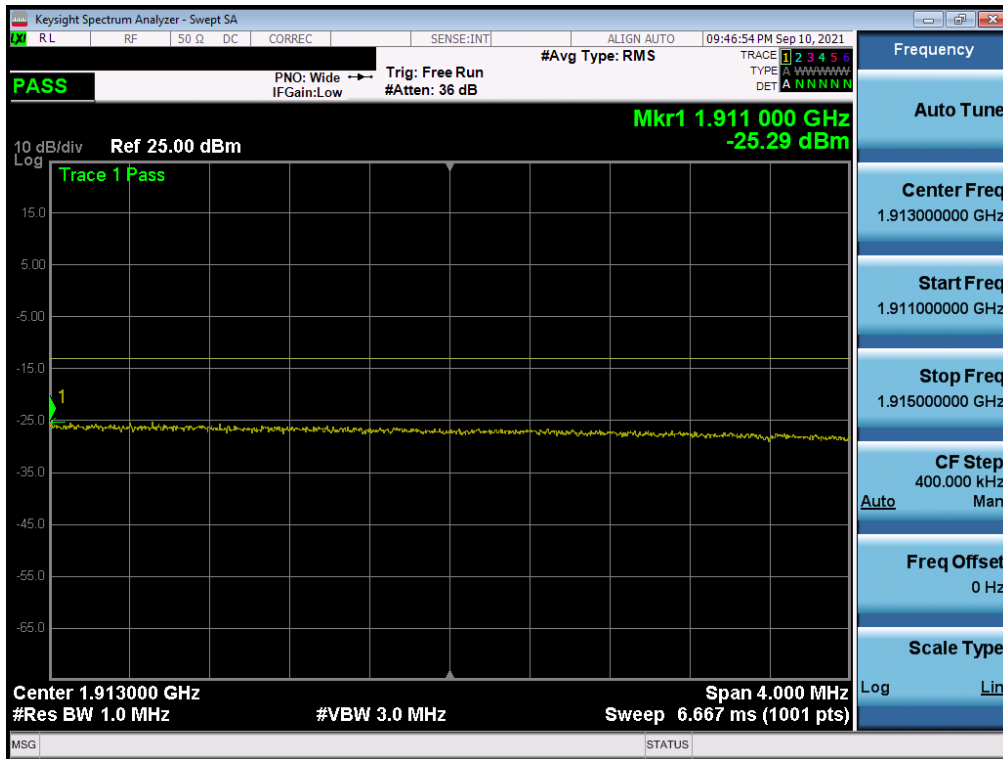


Plot 7-110. Extended Lower Band Edge Plot (LTE Band 25/2 - 15MHz QPSK – Full RB)




FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset	Page 78 of 164



Plot 7-111. Upper Band Edge Plot (LTE Band 2 - 15MHz QPSK – Full RB)



Plot 7-112. Extended Upper Band Edge Plot (LTE Band 2 - 15MHz QPSK – Full RB)

FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 79 of 164

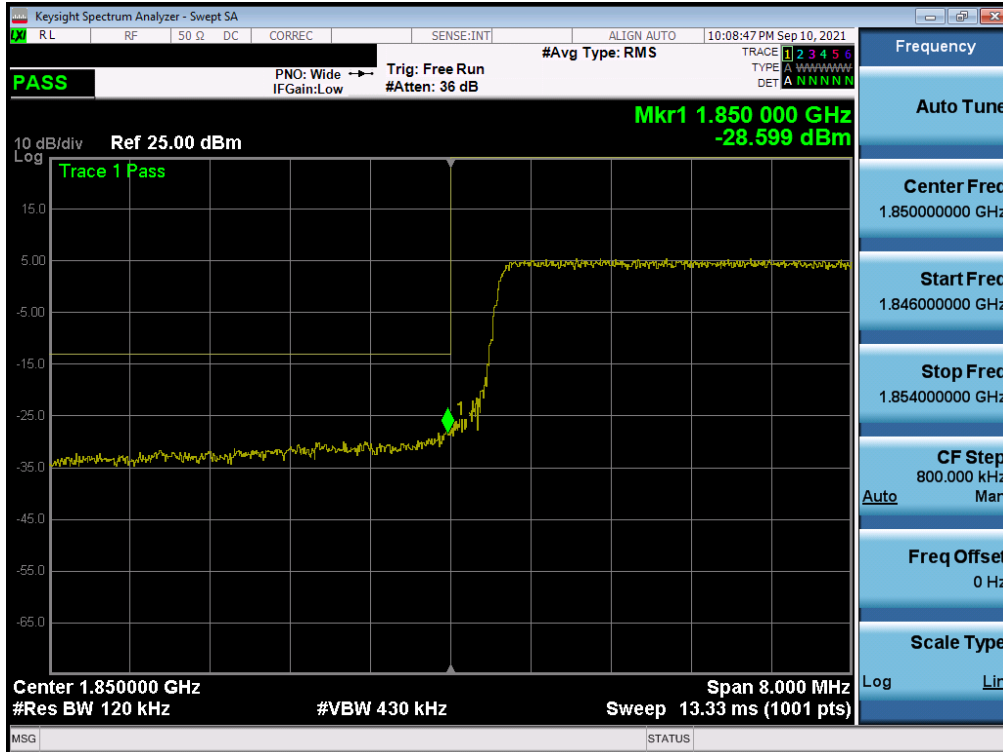


Plot 7-113. Upper Band Edge Plot (LTE Band 25 - 15MHz QPSK – Full RB)

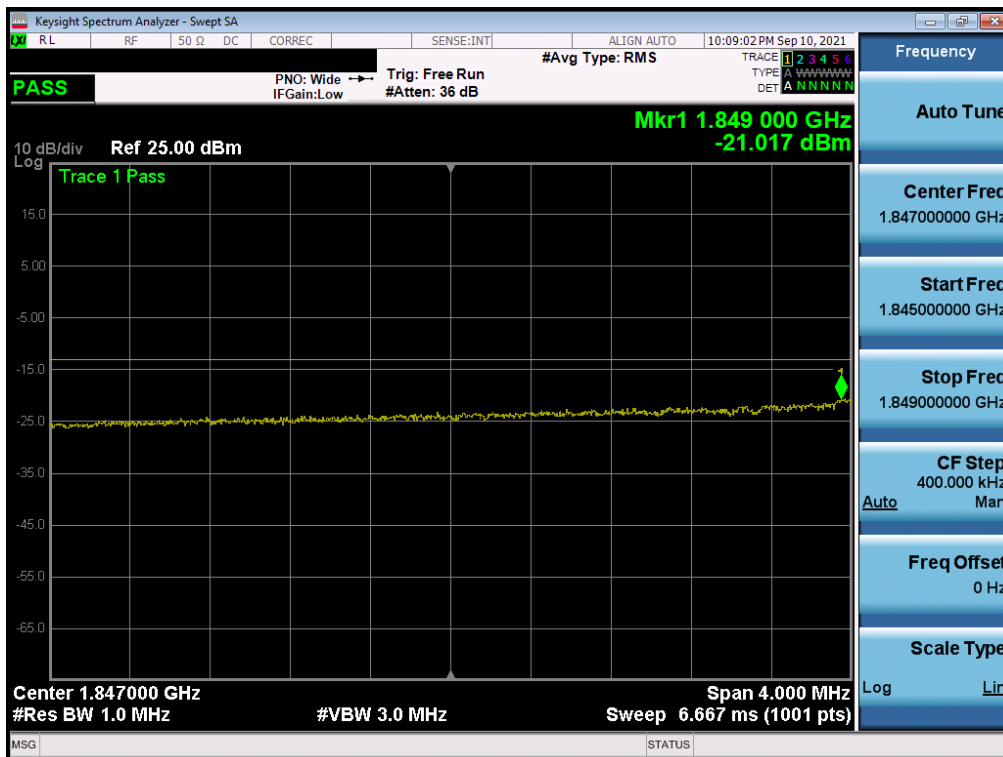


Plot 7-114. Extended Upper Band Edge Plot (LTE Band 25 - 15MHz QPSK – Full RB)




FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 80 of 164



Plot 7-115. Lower Band Edge Plot (LTE Band 25/2 - 10MHz QPSK – Full RB)

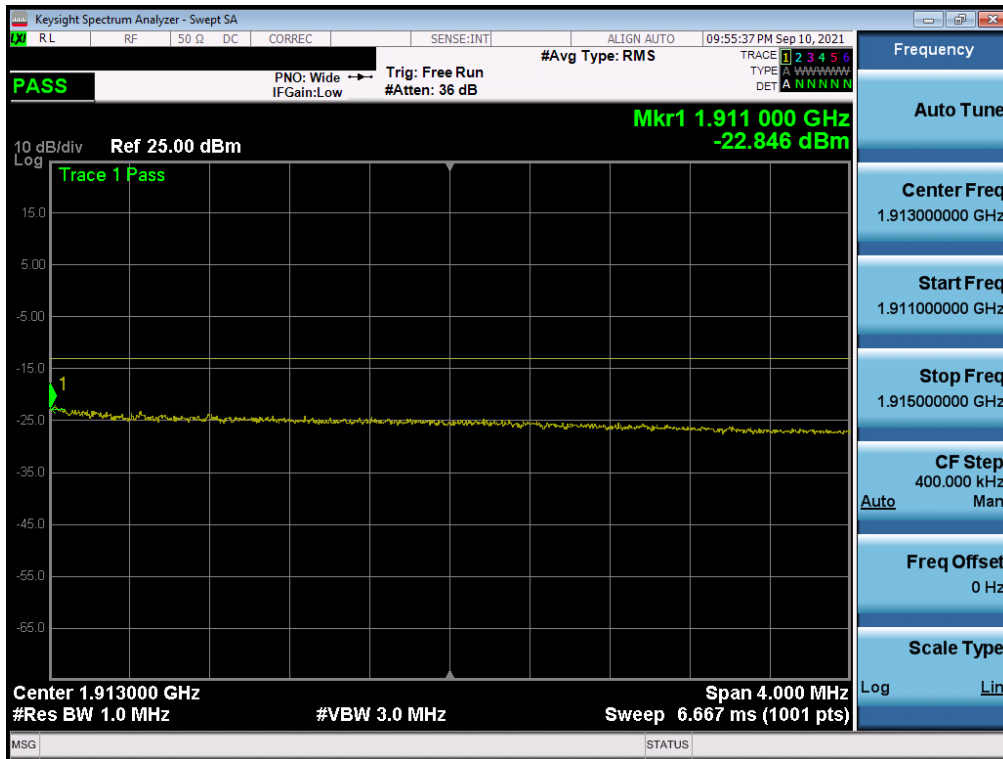


Plot 7-116. Extended Lower Band Edge Plot (LTE Band 25/2 - 10MHz QPSK – Full RB)




FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 81 of 164



Plot 7-117. Upper Band Edge Plot (LTE Band 2 - 10MHz QPSK – Full RB)

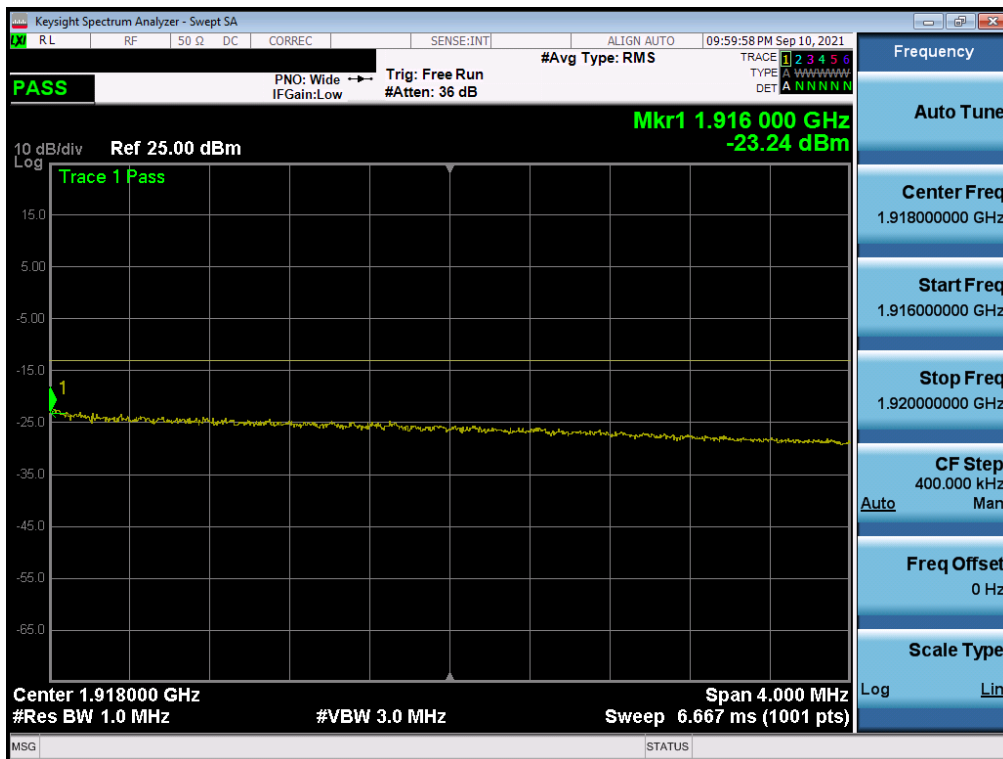


Plot 7-118. Extended Upper Band Edge Plot (LTE Band 2 - 10MHz QPSK – Full RB)




FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 82 of 164

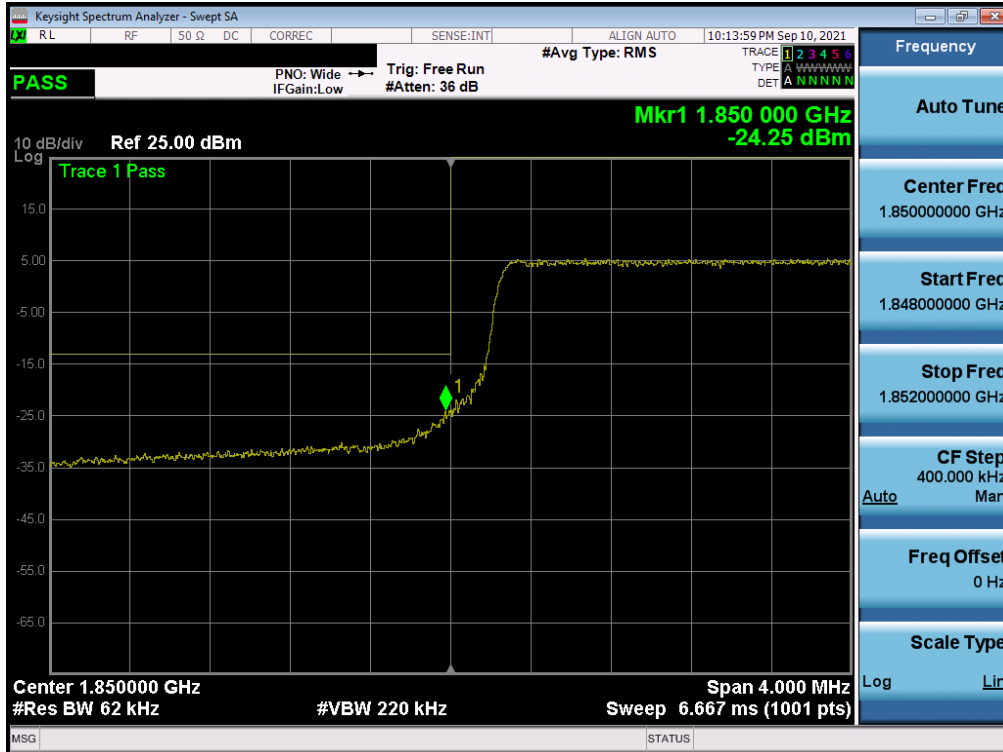


Plot 7-119. Upper Band Edge Plot (LTE Band 25 - 10MHz QPSK – Full RB)

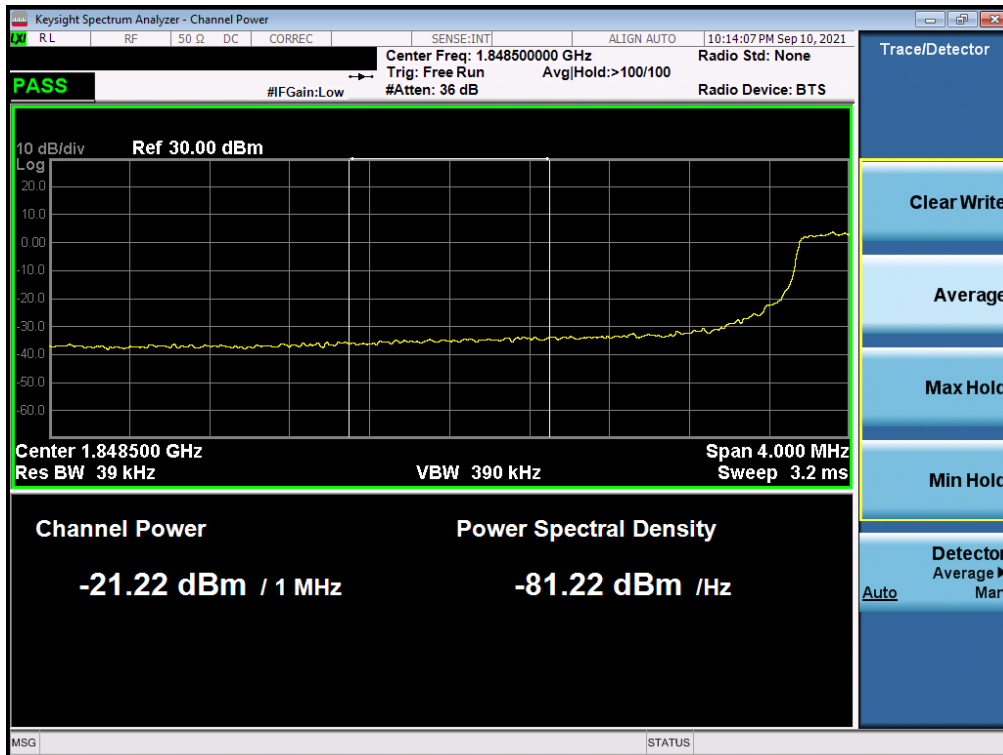


Plot 7-120. Extended Upper Band Edge Plot (LTE Band 25 - 10MHz QPSK – Full RB)




FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 83 of 164



Plot 7-121. Lower Band Edge Plot (LTE Band 25/2 - 5MHz QPSK – Full RB)

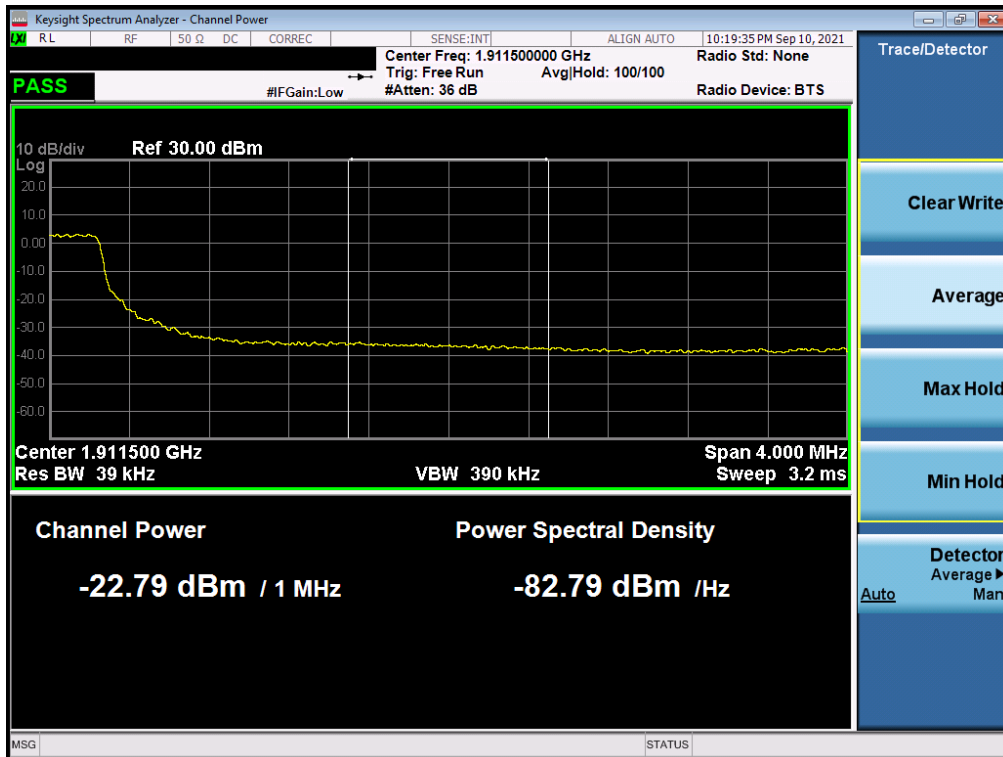


Plot 7-122. Extended Lower Band Edge Plot (LTE Band 25/2 - 5MHz QPSK – Full RB)

FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 84 of 164

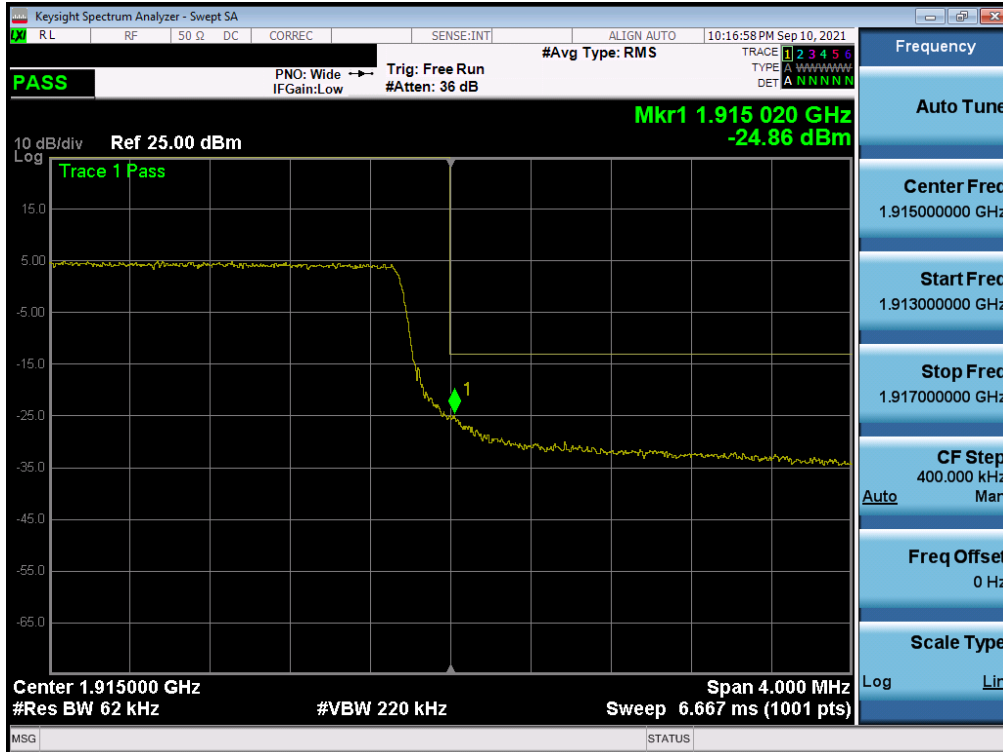


Plot 7-123. Upper Band Edge Plot (LTE Band 2 - 5MHz QPSK – Full RB)

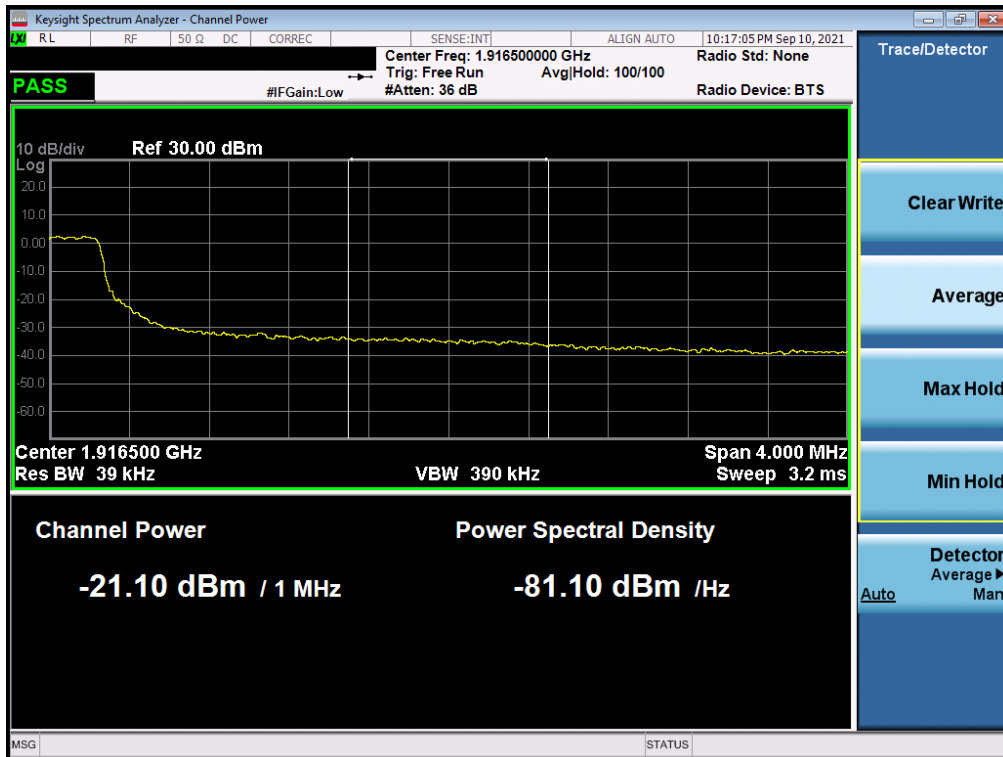


Plot 7-124. Extended Upper Band Edge Plot (LTE Band 2 - 5MHz QPSK – Full RB)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset	Page 85 of 164

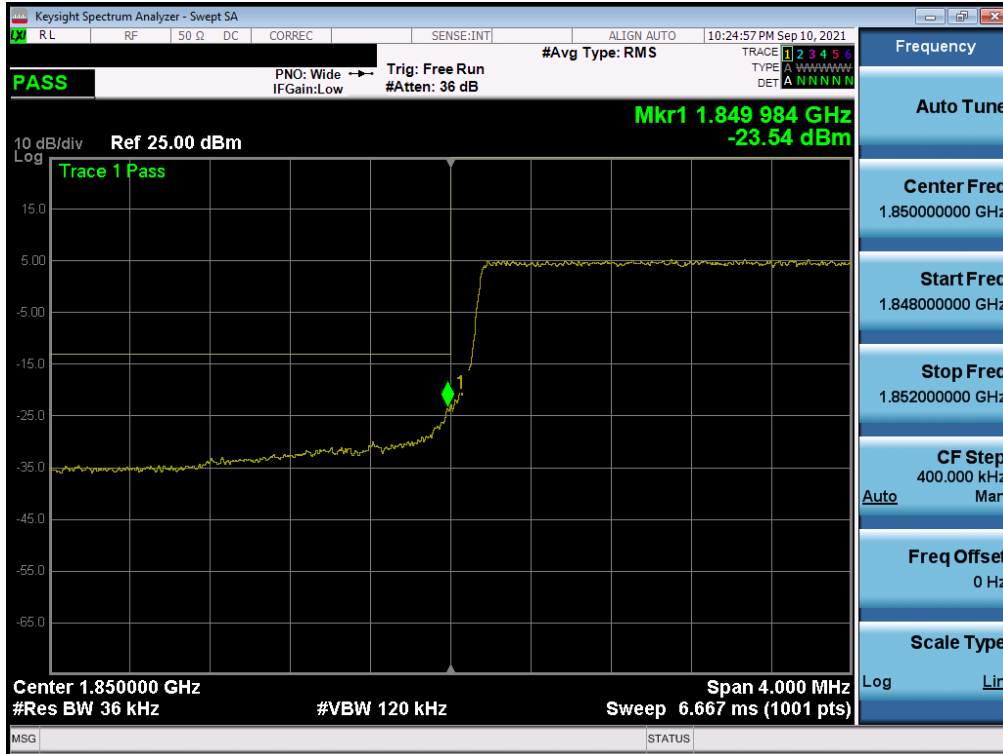


Plot 7-125. Upper Band Edge Plot (LTE Band 25 - 5MHz QPSK – Full RB)

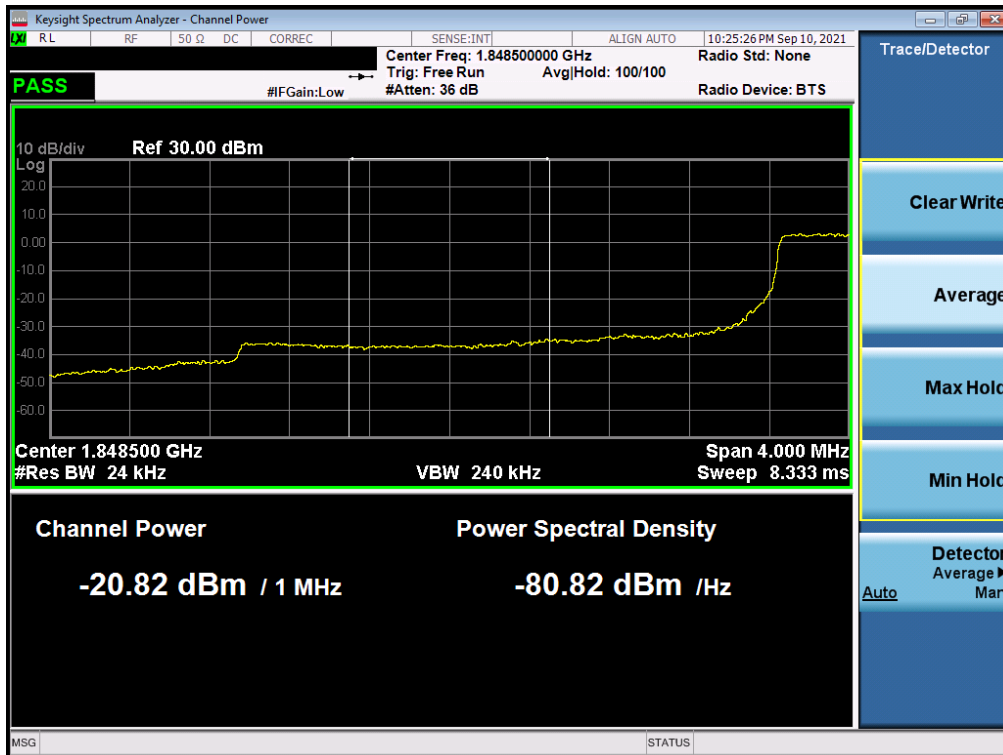


Plot 7-126. Extended Upper Band Edge Plot (LTE Band 25 - 5MHz QPSK – Full RB)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset	Page 86 of 164



Plot 7-127. Lower Band Edge Plot (LTE Band 25/2 - 3MHz QPSK – Full RB)

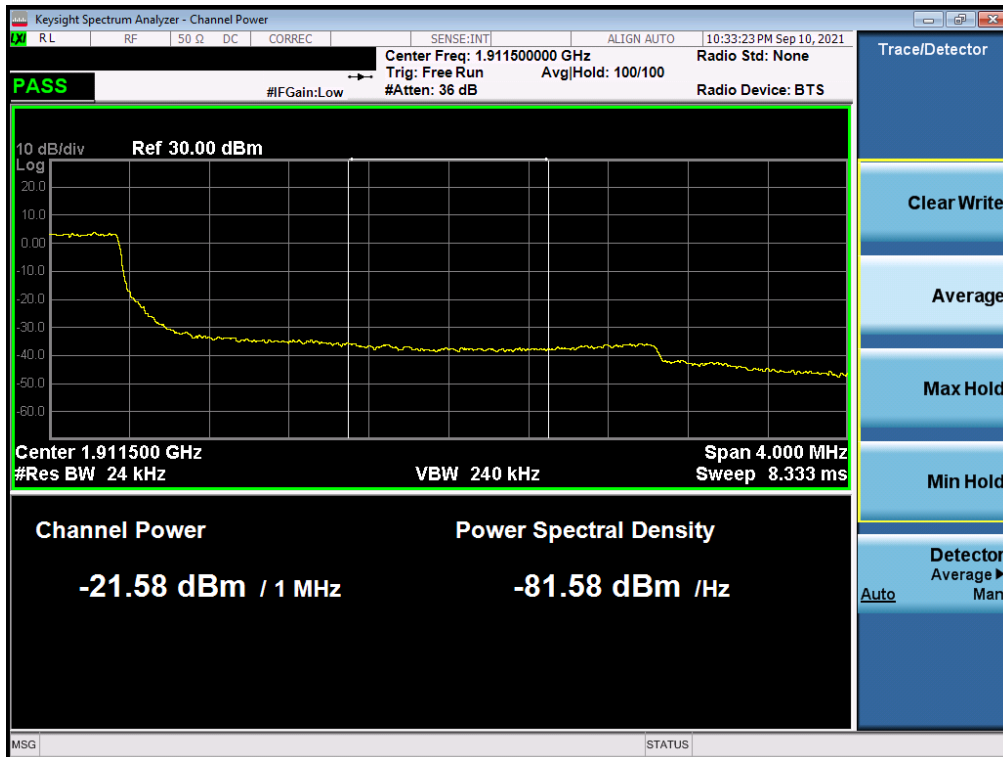


Plot 7-128. Extended Lower Band Edge Plot (LTE Band 25/2 - 3MHz QPSK – Full RB)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 87 of 164

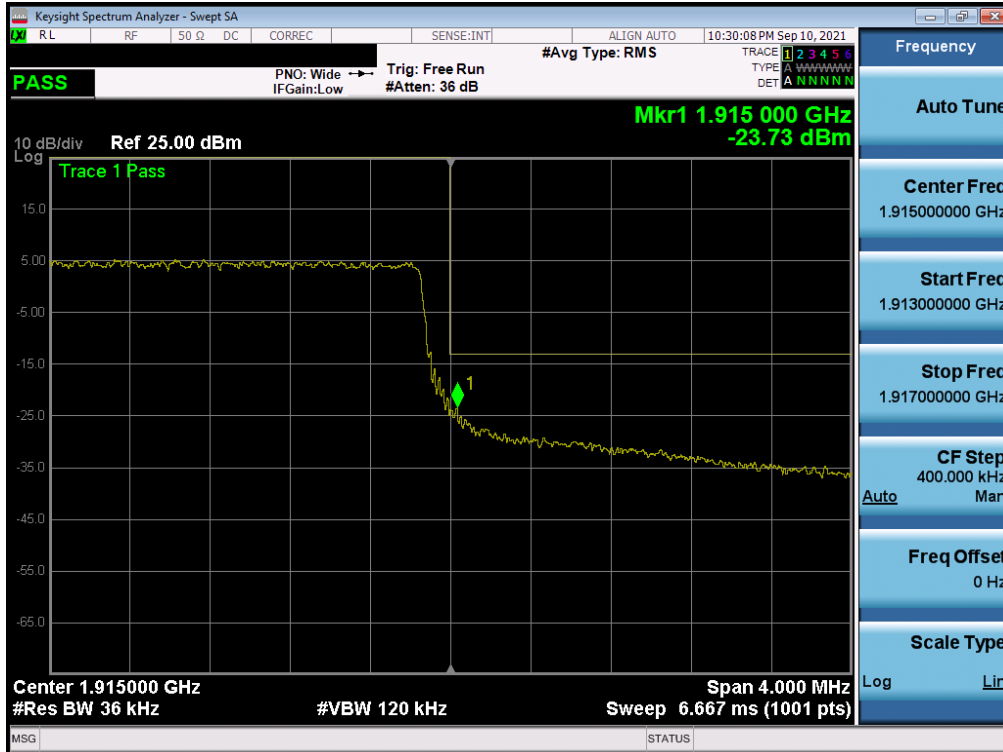


Plot 7-129. Upper Band Edge Plot (LTE Band 2 - 3MHz QPSK – Full RB)

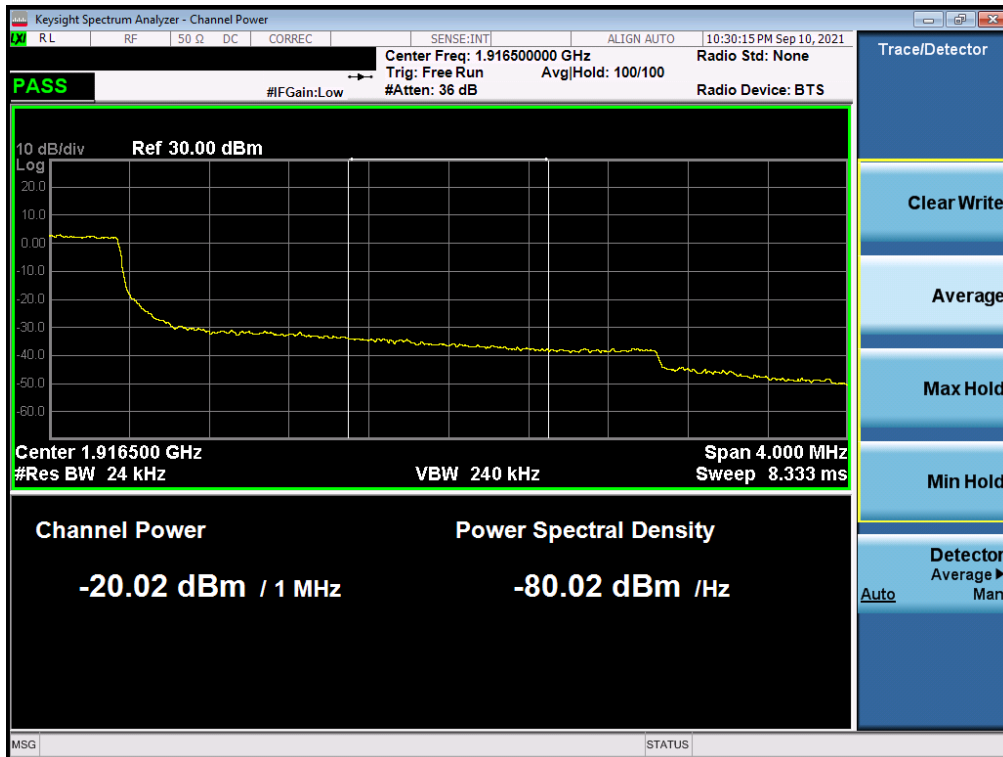


Plot 7-130. Extended Upper Band Edge Plot (LTE Band 2 - 3MHz QPSK – Full RB)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset	Page 88 of 164



Plot 7-131. Upper Band Edge Plot (LTE Band 25 - 3MHz QPSK – Full RB)

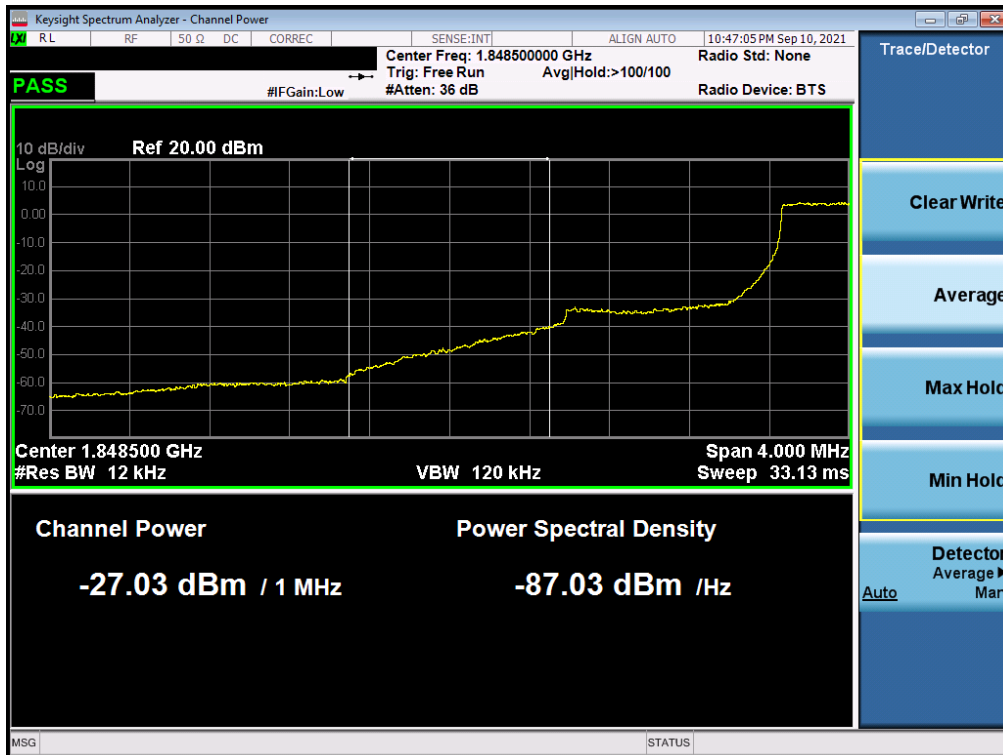


Plot 7-132. Extended Upper Band Edge Plot (LTE Band 25 - 3MHz QPSK – Full RB)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 89 of 164



Plot 7-133. Lower Band Edge Plot (LTE Band 25/2 – 1.4MHz QPSK – Full RB)

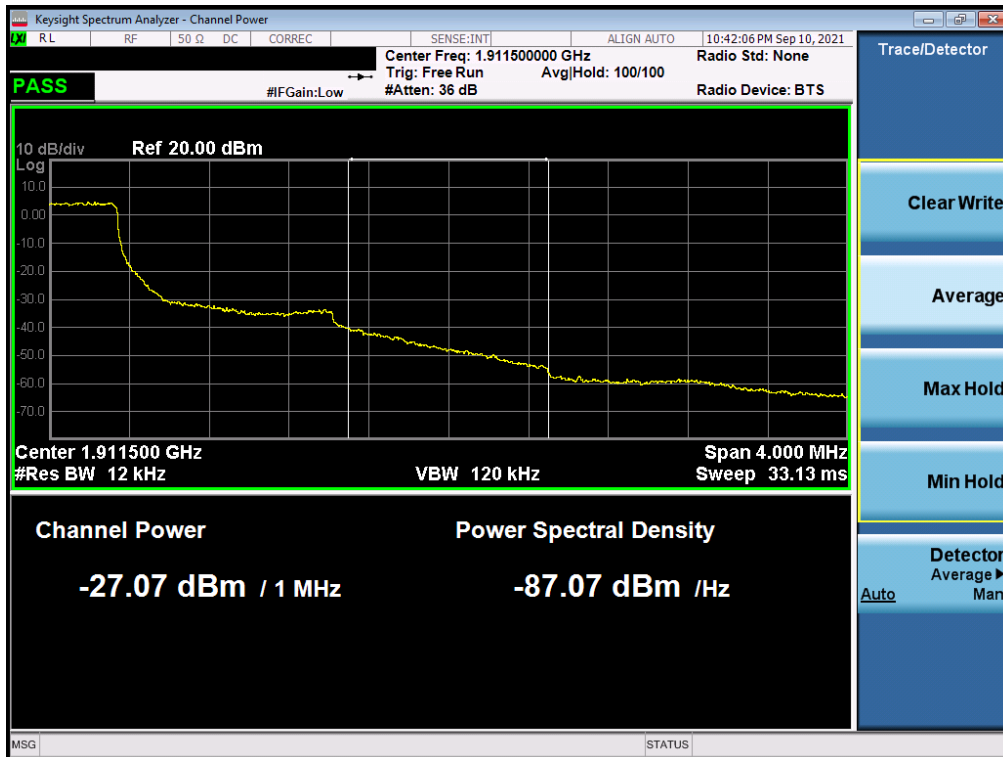


Plot 7-134. Extended Lower Band Edge Plot (LTE Band 25/2 – 1.4MHz QPSK – Full RB)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset	Page 90 of 164



Plot 7-135. Upper Band Edge Plot (LTE Band 2 – 1.4MHz QPSK – Full RB)

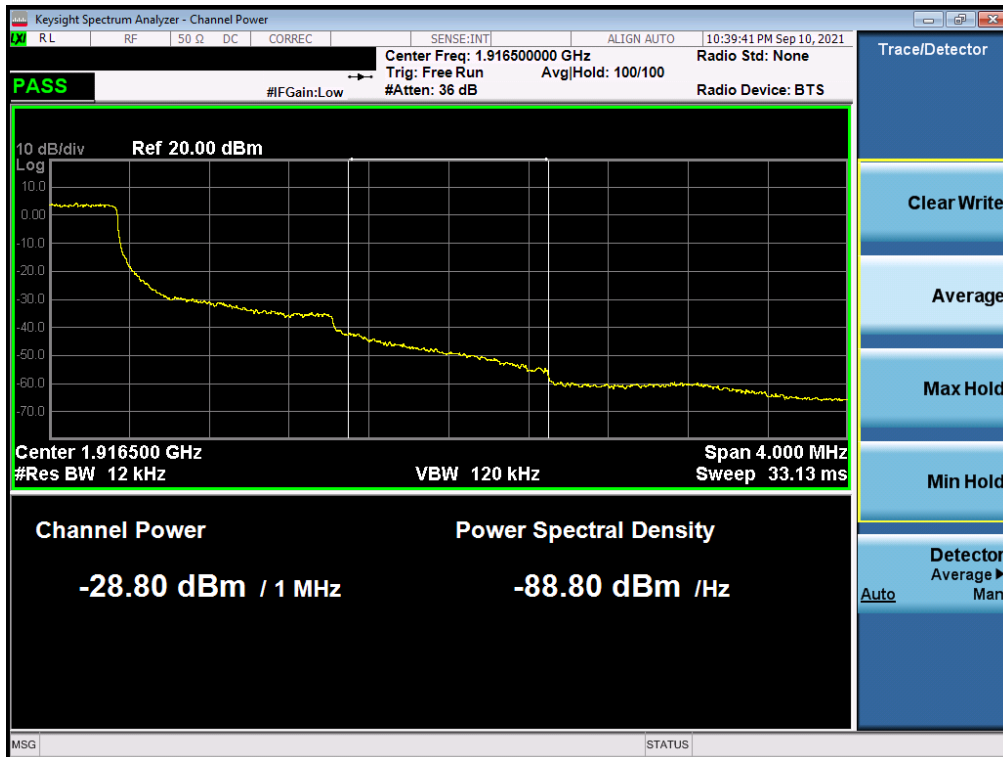


Plot 7-136. Extended Upper Band Edge Plot (LTE Band 2 – 1.4MHz QPSK – Full RB)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 91 of 164



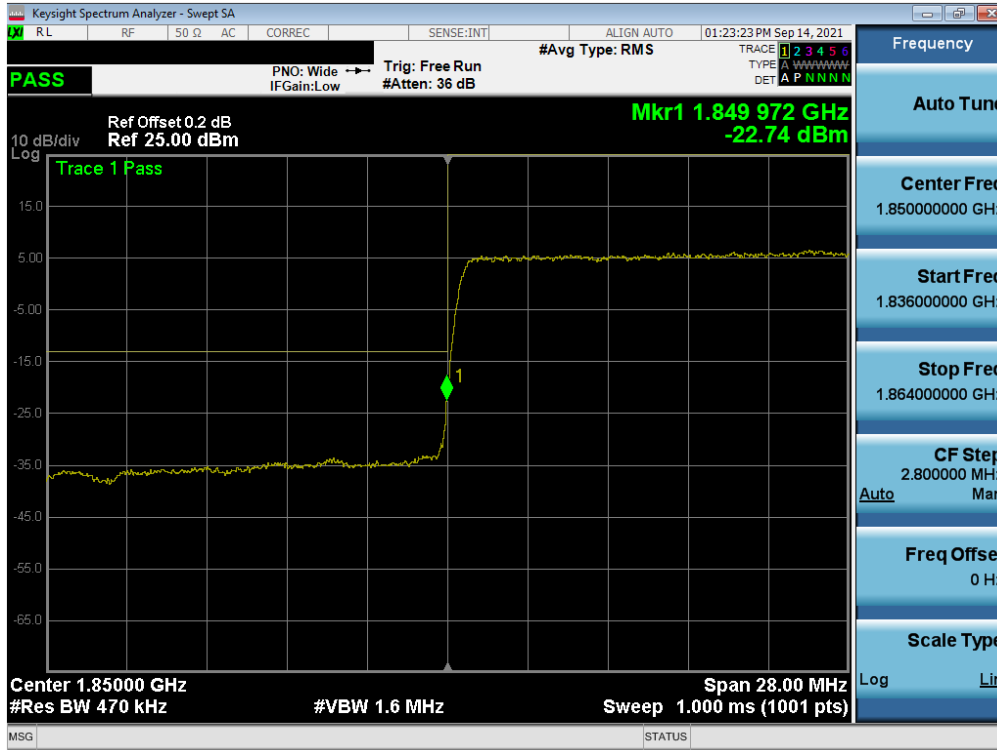
Plot 7-137. Upper Band Edge Plot (LTE Band 25 – 1.4MHz QPSK – Full RB)



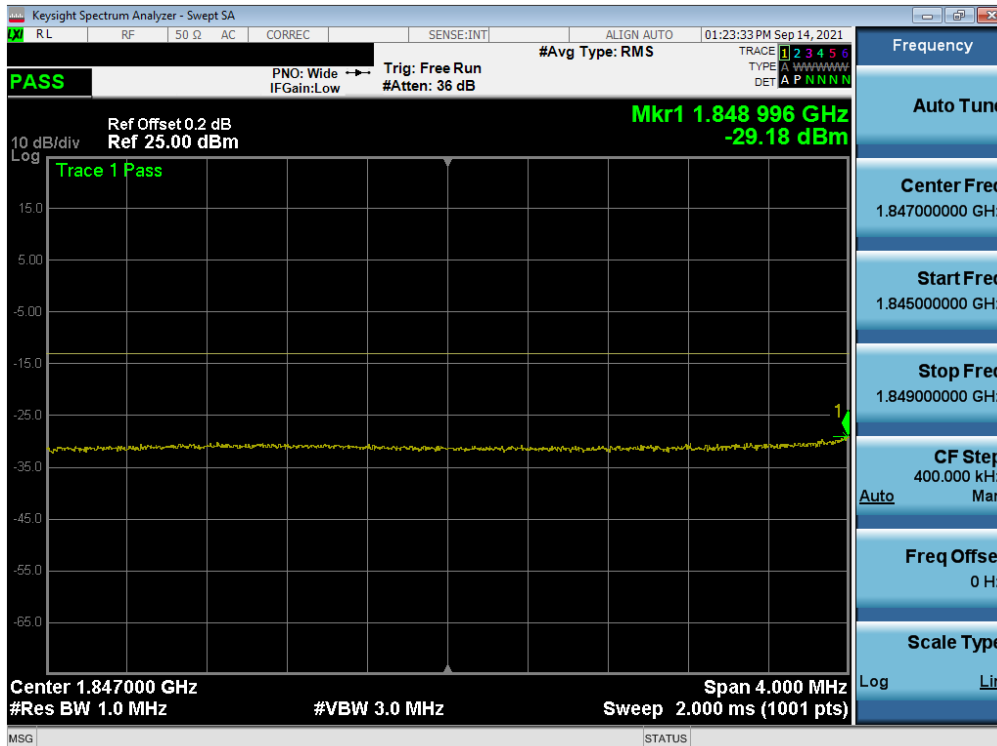
Plot 7-138. Extended Upper Band Edge Plot (LTE Band 25 – 1.4MHz QPSK – Full RB)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset	Page 92 of 164

NR Band n25/2 – Ant A



Plot 7-139. Lower Band Edge Plot (NR Band n25 - 40MHz QPSK – Full RB - Ant A)

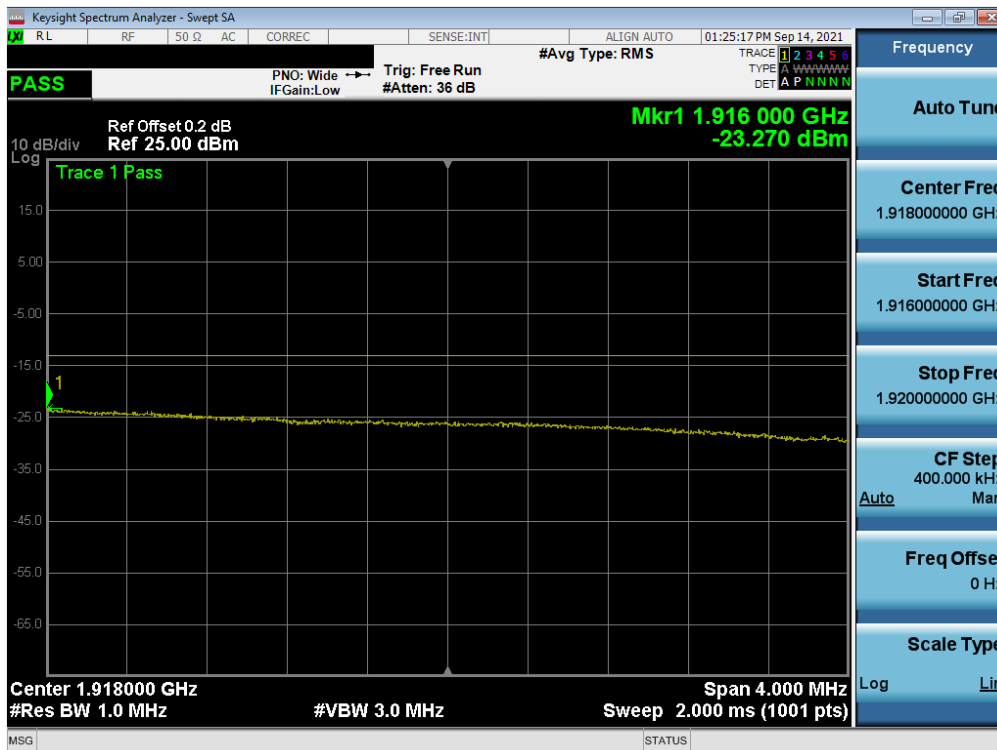


Plot 7-140. Extended Lower Band Edge Plot (NR Band n25 - 40MHz QPSK – Full RB - Ant A)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 93 of 164

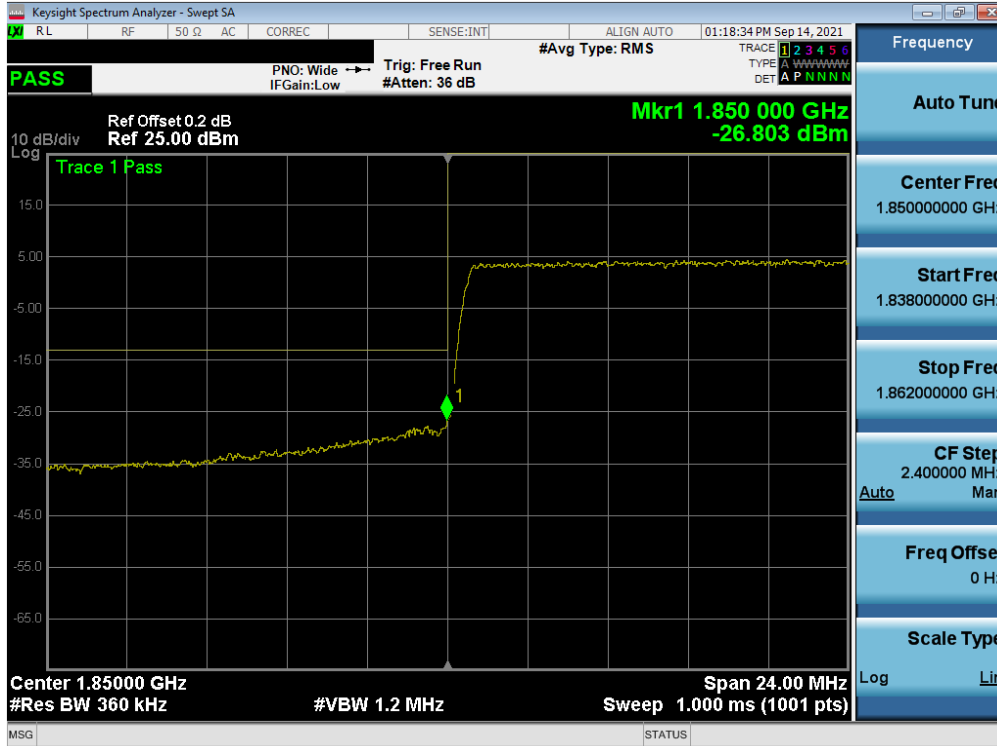


Plot 7-141. Upper Band Edge Plot (NR Band n25 - 40MHz QPSK – Full RB - Ant A)

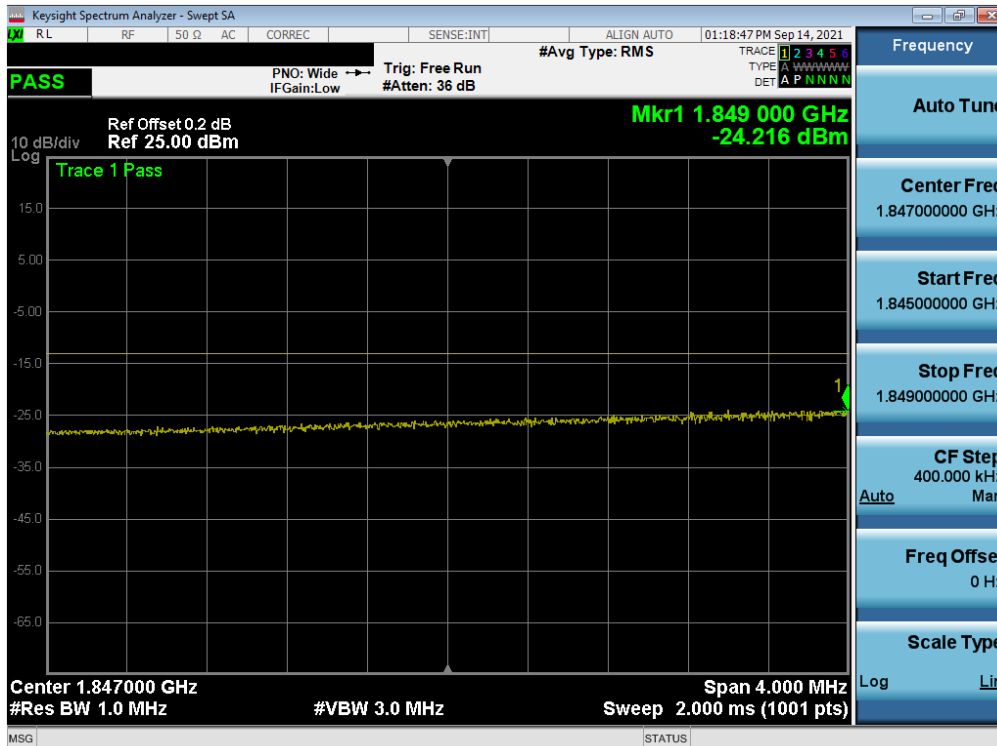


Plot 7-142. Extended Upper Band Edge Plot (NR Band n25 - 40MHz QPSK – Full RB - Ant A)




FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 94 of 164



Plot 7-143. Lower Band Edge Plot (NR Band n25 - 30MHz QPSK – Full RB - Ant A)

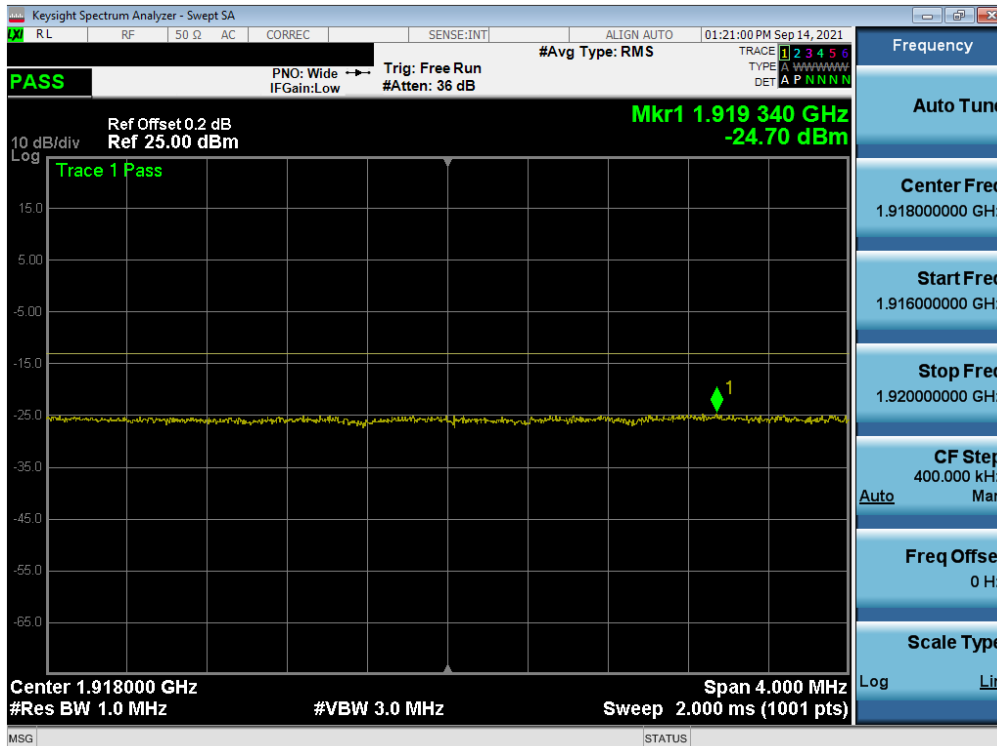


Plot 7-144. Extended Lower Band Edge Plot (NR Band n25 - 30MHz QPSK – Full RB - Ant A)




FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 95 of 164

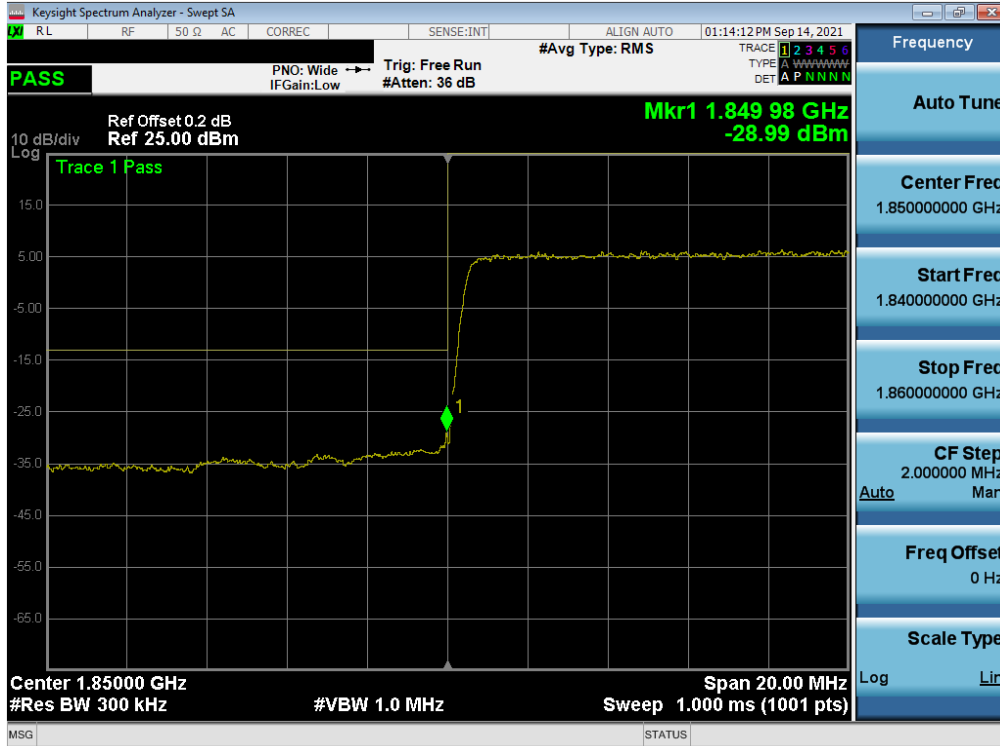


Plot 7-145. Upper Band Edge Plot (NR Band n25 - 30MHz QPSK – Full RB - Ant A)

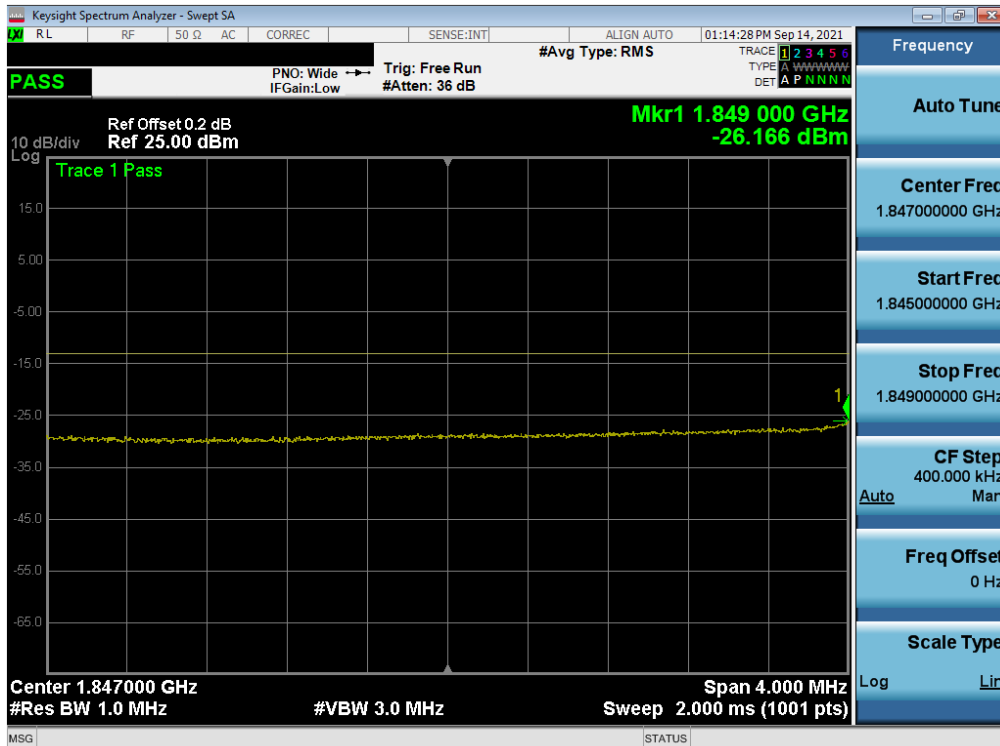


Plot 7-146. Extended Upper Band Edge Plot (NR Band n25 - 30MHz QPSK – Full RB - Ant A)




FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 96 of 164



Plot 7-147. Lower Band Edge Plot (NR Band n25 - 25MHz QPSK – Full RB - Ant A)



Plot 7-148. Extended Lower Band Edge Plot (NR Band n25 - 25MHz QPSK – Full RB - Ant A)

FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 97 of 164

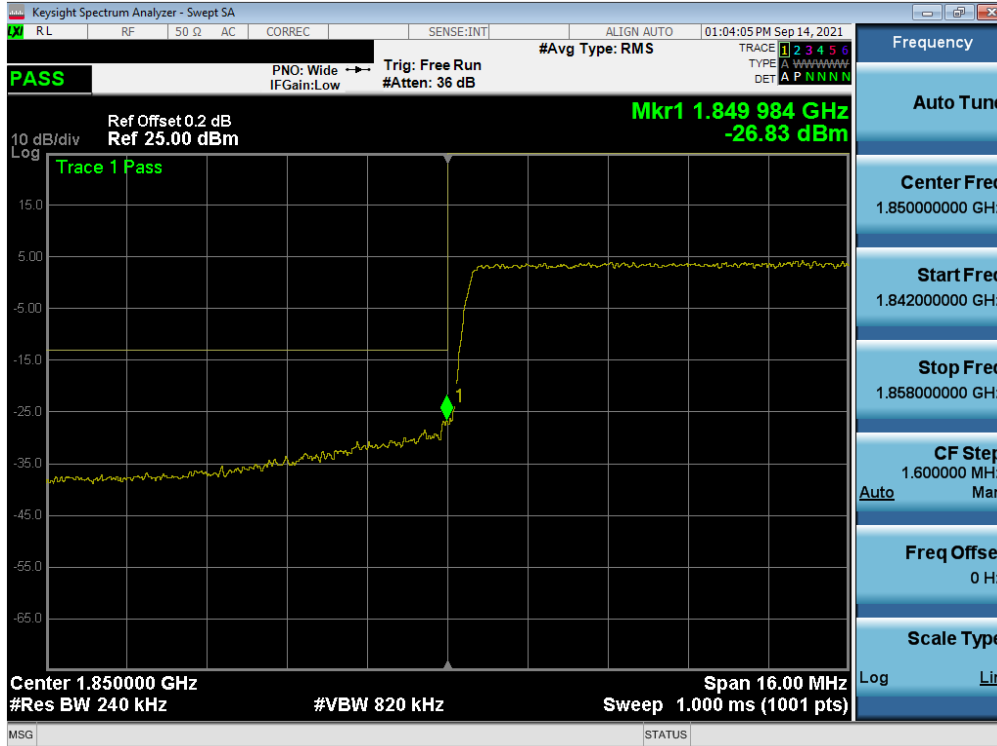


Plot 7-149. Upper Band Edge Plot (NR Band n25 - 25MHz QPSK – Full RB - Ant A)

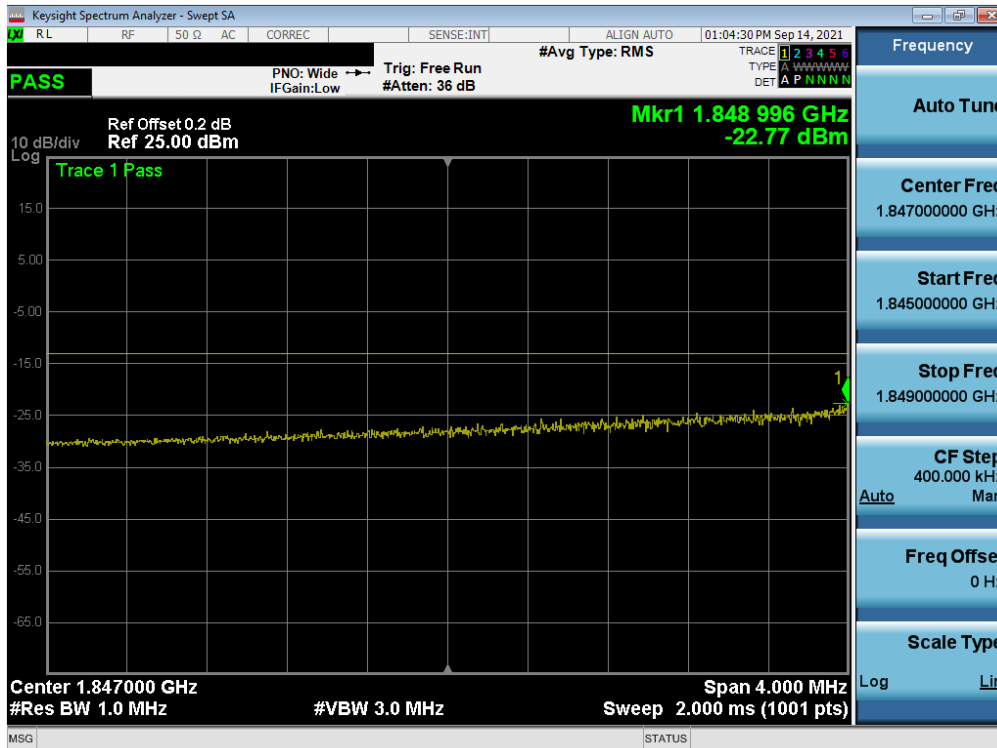


Plot 7-150. Extended Upper Band Edge Plot (NR Band n25 - 25MHz QPSK – Full RB - Ant A)




FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 98 of 164

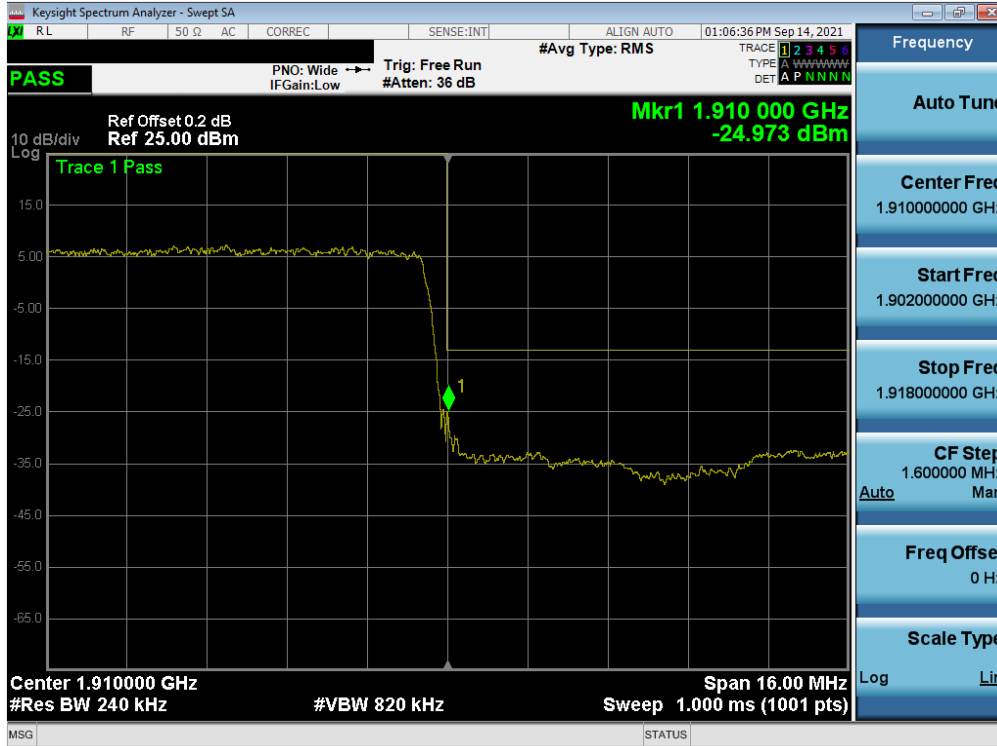


Plot 7-151. Lower Band Edge Plot (NR Band n25/2 - 20MHz QPSK – Full RB - Ant A)

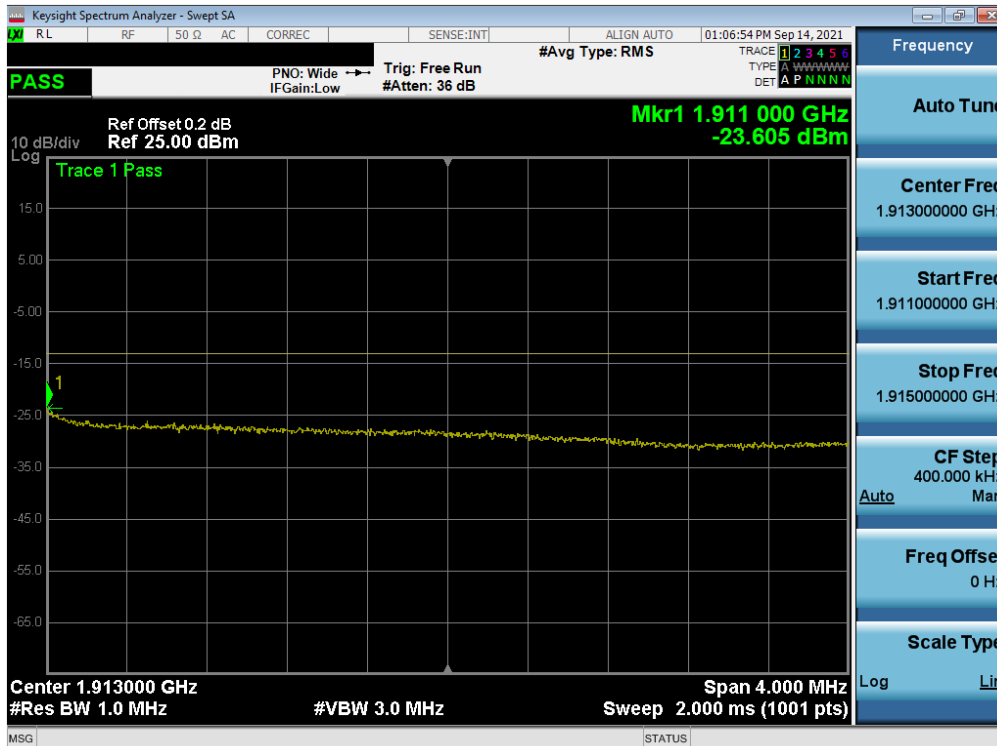


Plot 7-152. Extended Lower Band Edge Plot (NR Band n25/2 - 20MHz QPSK – Full RB - Ant A)

FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 99 of 164



Plot 7-153. Upper Band Edge Plot (NR Band n2 - 20MHz QPSK – Full RB - Ant A)

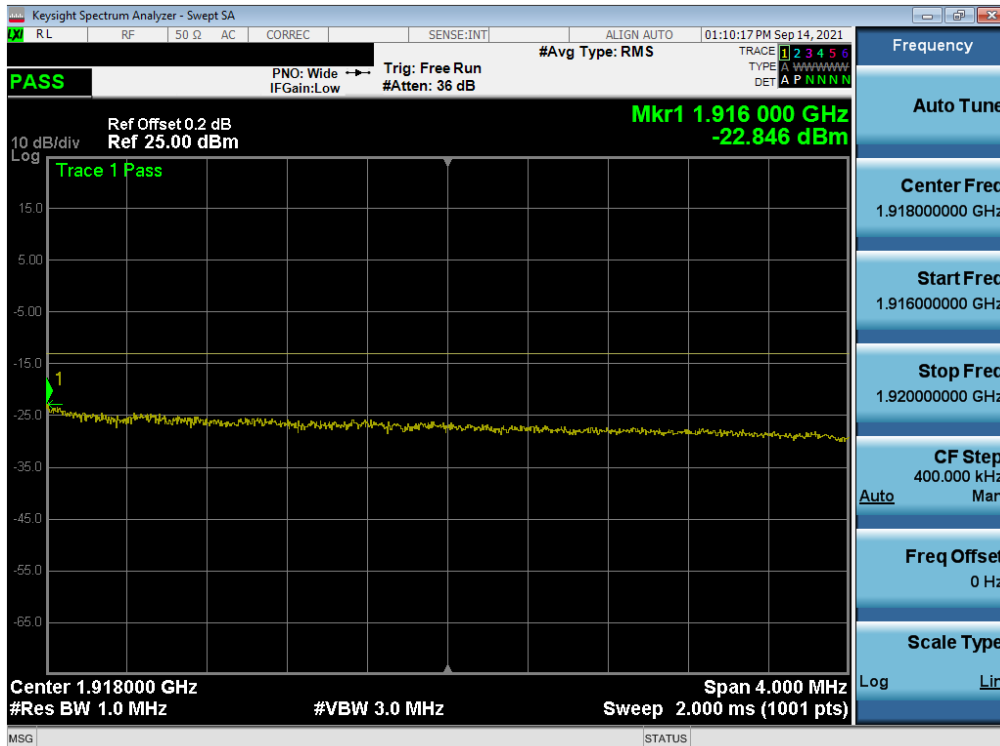


Plot 7-154. Extended Upper Band Edge Plot (NR Band n2 - 20MHz QPSK – Full RB - Ant A)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 100 of 164

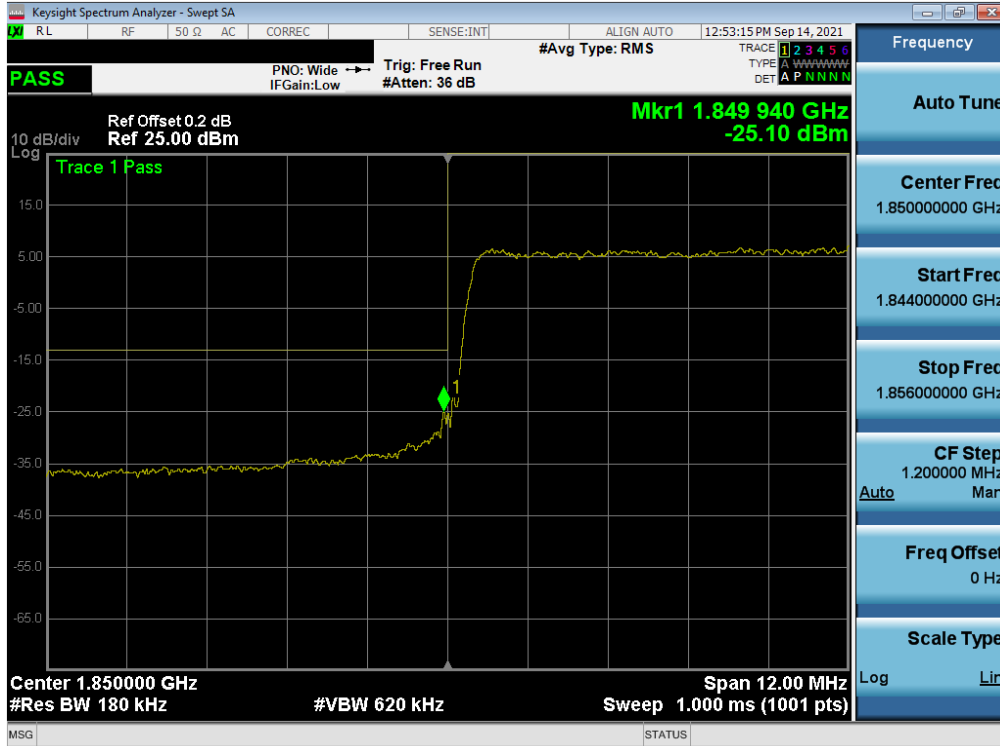


Plot 7-155. Upper Band Edge Plot (NR Band n25 - 20MHz QPSK – Full RB - Ant A)

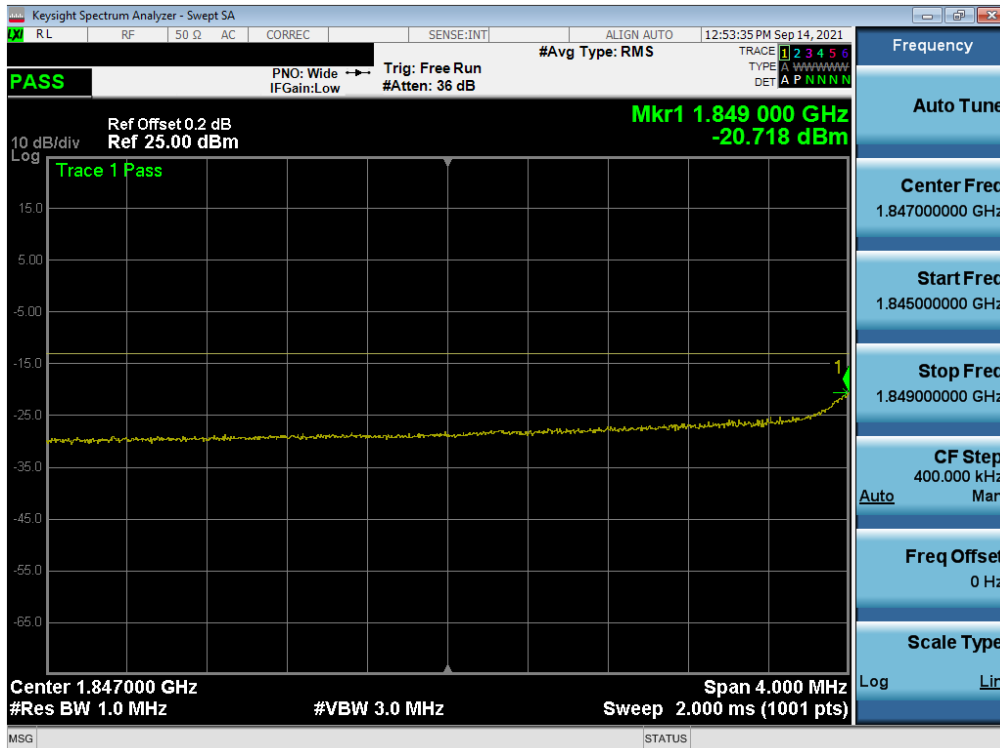


Plot 7-156. Extended Upper Band Edge Plot (NR Band n25 - 20MHz QPSK – Full RB - Ant A)




FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset	Page 101 of 164



Plot 7-157. Lower Band Edge Plot (NR Band n25/2 - 15MHz QPSK – Full RB - Ant A)



Plot 7-158. Extended Lower Band Edge Plot (NR Band n25/2 - 15MHz QPSK – Full RB - Ant A)

FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 102 of 164

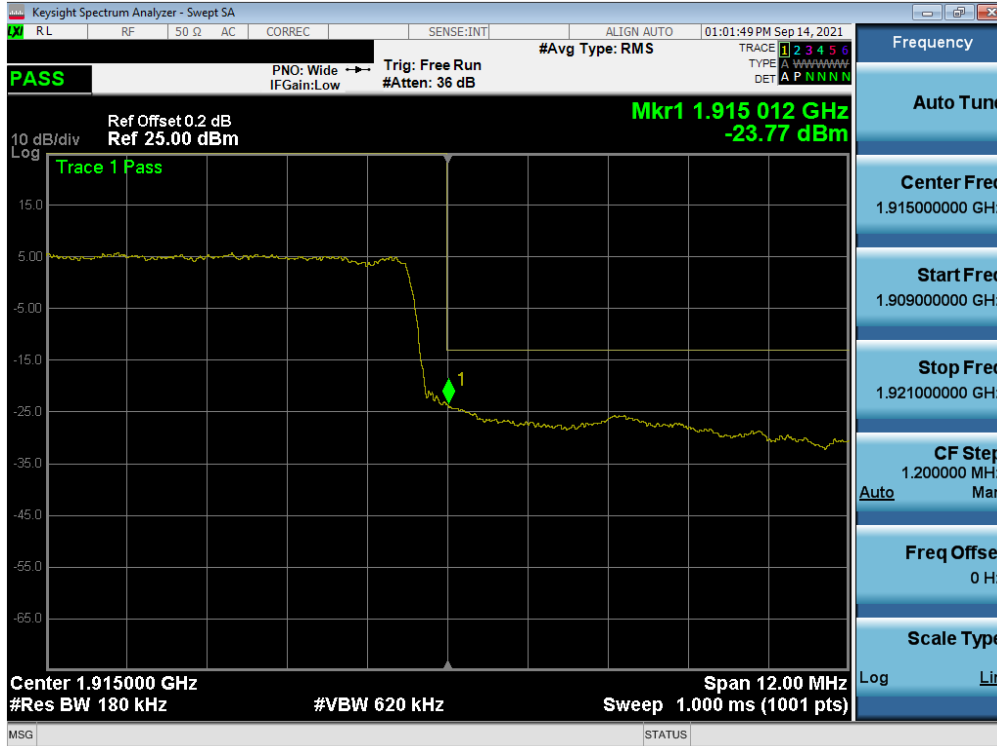


Plot 7-159. Upper Band Edge Plot (NR Band n2 - 15MHz QPSK – Full RB - Ant A)

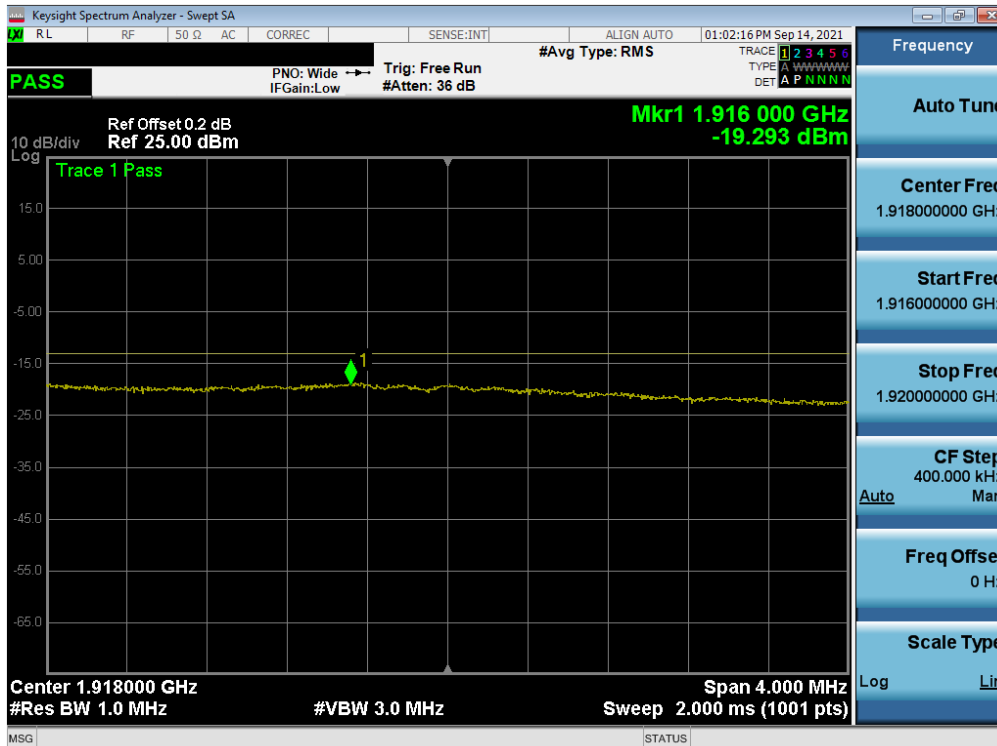


Plot 7-160. Extended Upper Band Edge Plot (NR Band n2 - 15MHz QPSK – Full RB - Ant A)




FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 103 of 164

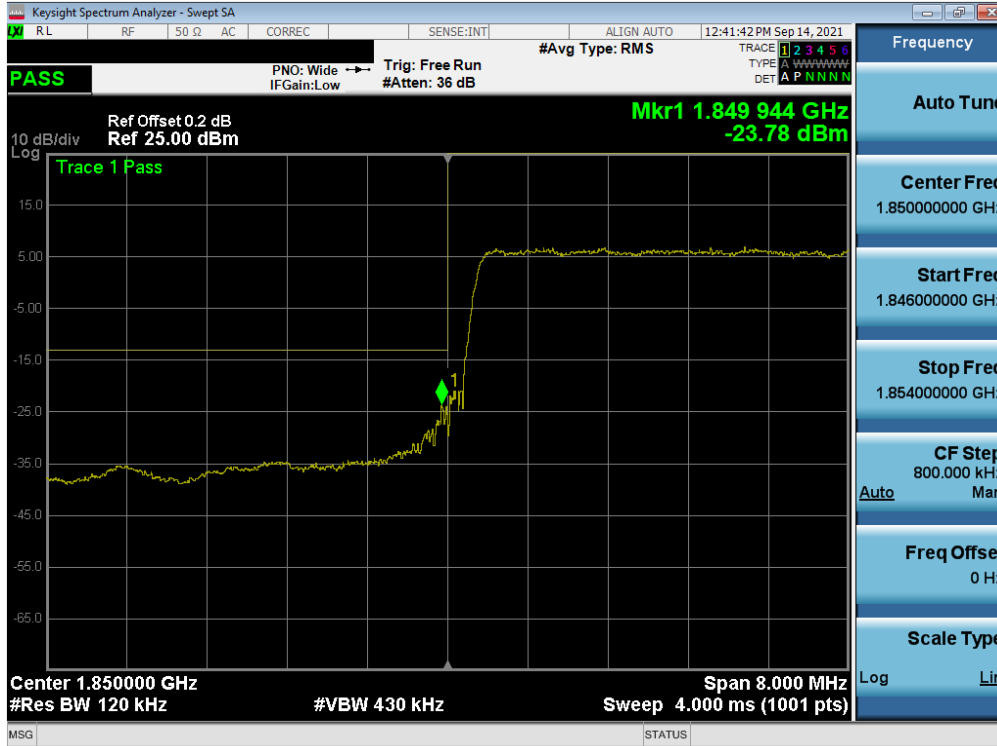


Plot 7-161. Upper Band Edge Plot (NR Band n25 - 15MHz QPSK – Full RB - Ant A)

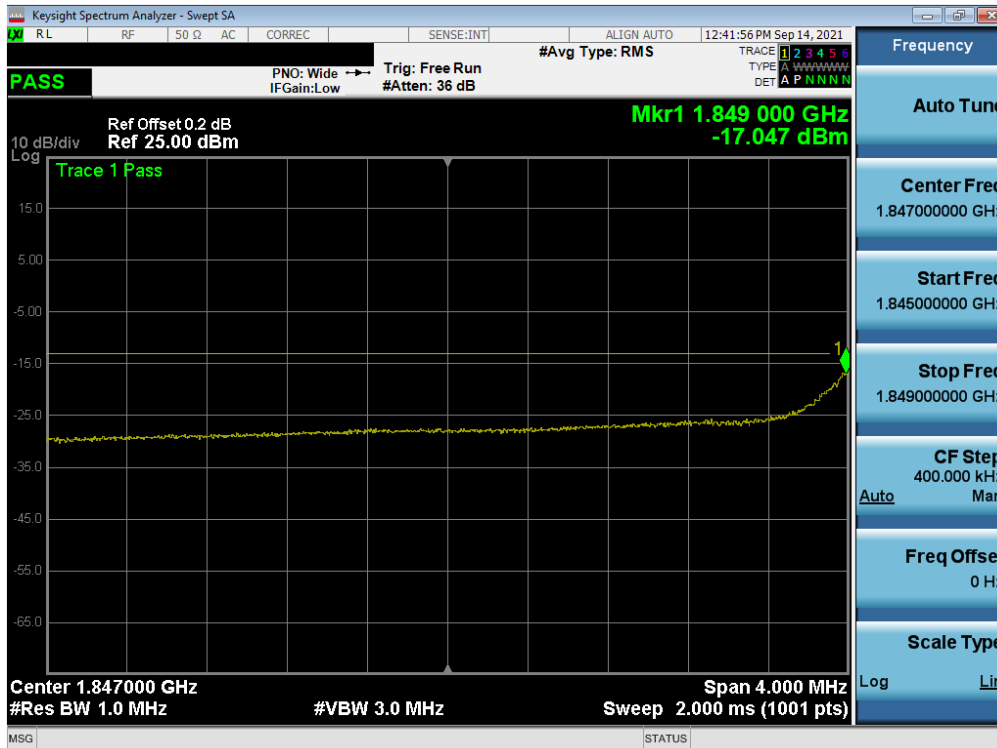


Plot 7-162. Extended Upper Band Edge Plot (NR Band n25 - 15MHz QPSK – Full RB - Ant A)




FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 104 of 164

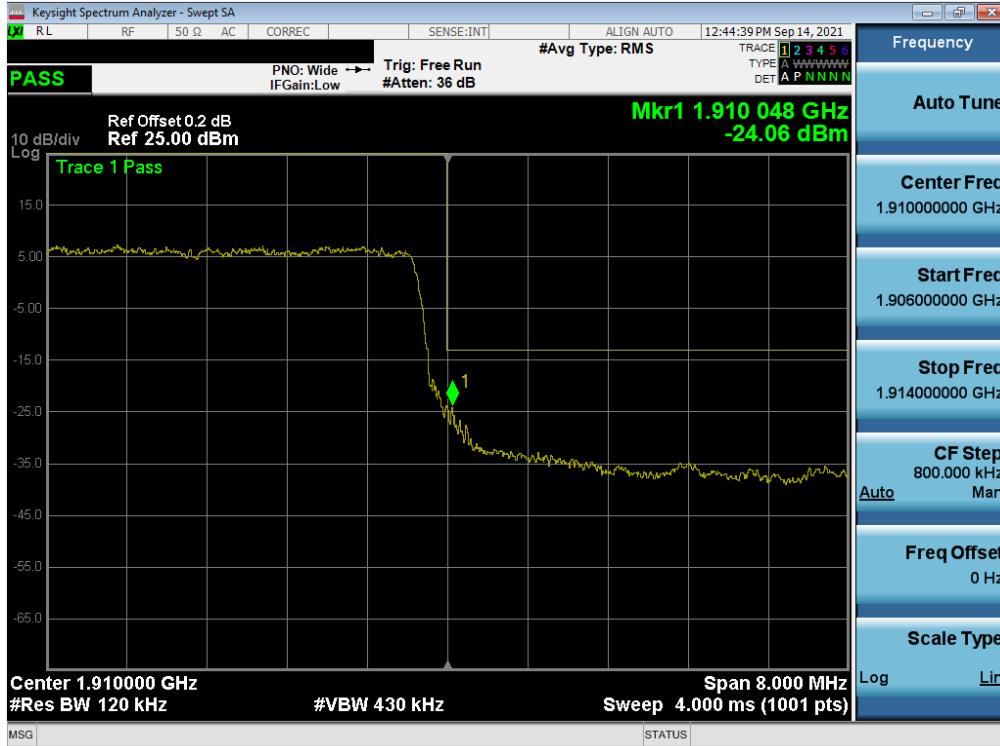


Plot 7-163. Lower Band Edge Plot (NR Band n25/2 - 10MHz QPSK – Full RB - Ant A)

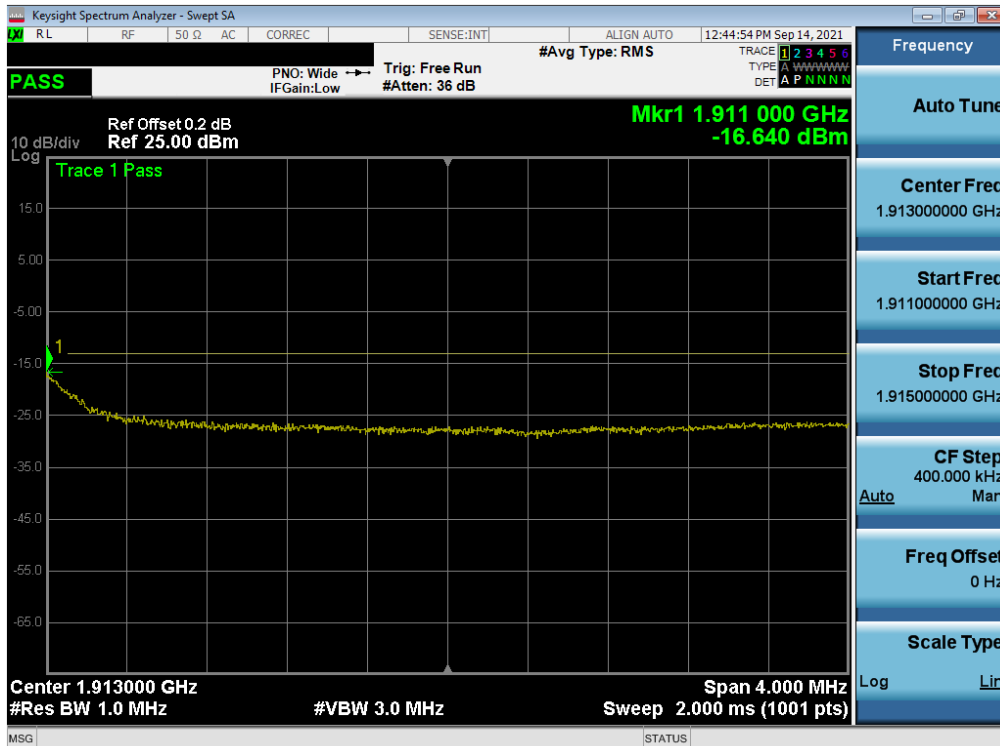


Plot 7-164. Extended Lower Band Edge Plot (NR Band n25/2 - 10MHz QPSK – Full RB - Ant A)




FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 105 of 164



Plot 7-165. Upper Band Edge Plot (NR Band n2 - 10MHz QPSK – Full RB - Ant A)

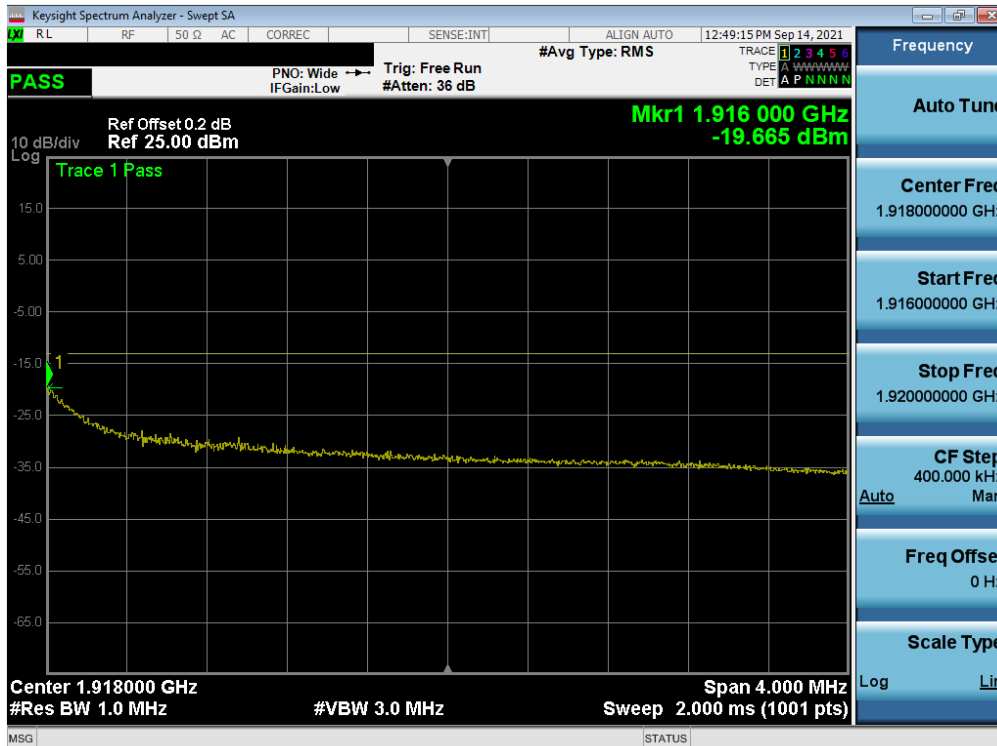


Plot 7-166. Extended Upper Band Edge Plot (NR Band n2 - 10MHz QPSK – Full RB - Ant A)




FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 106 of 164

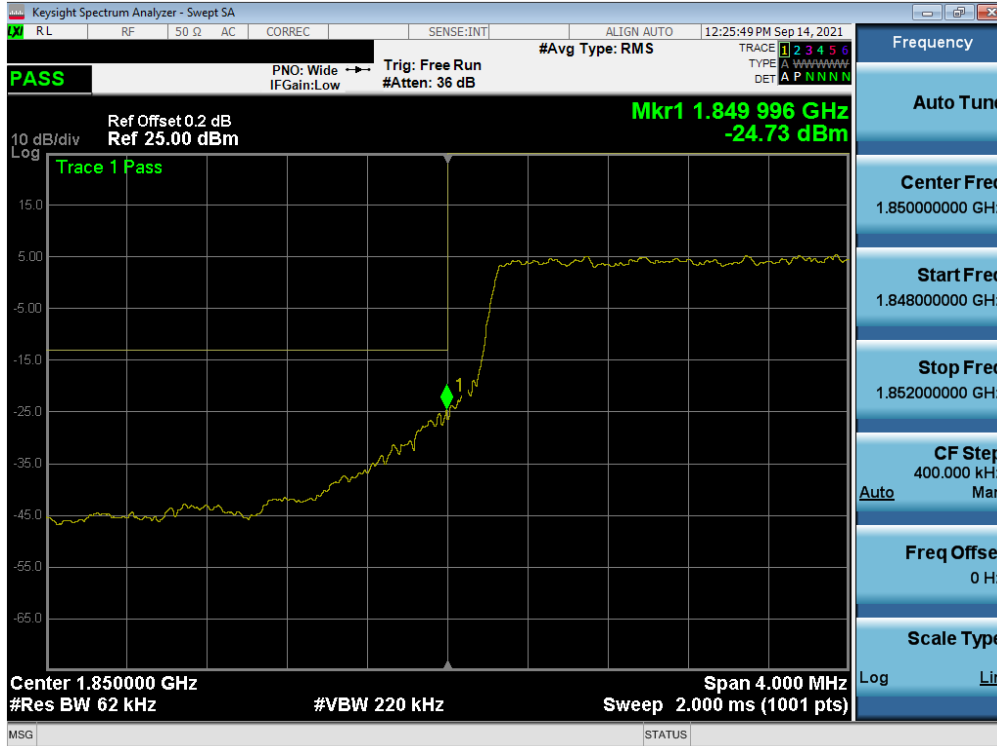


Plot 7-167. Upper Band Edge Plot (NR Band n25 - 10MHz QPSK – Full RB - Ant A)

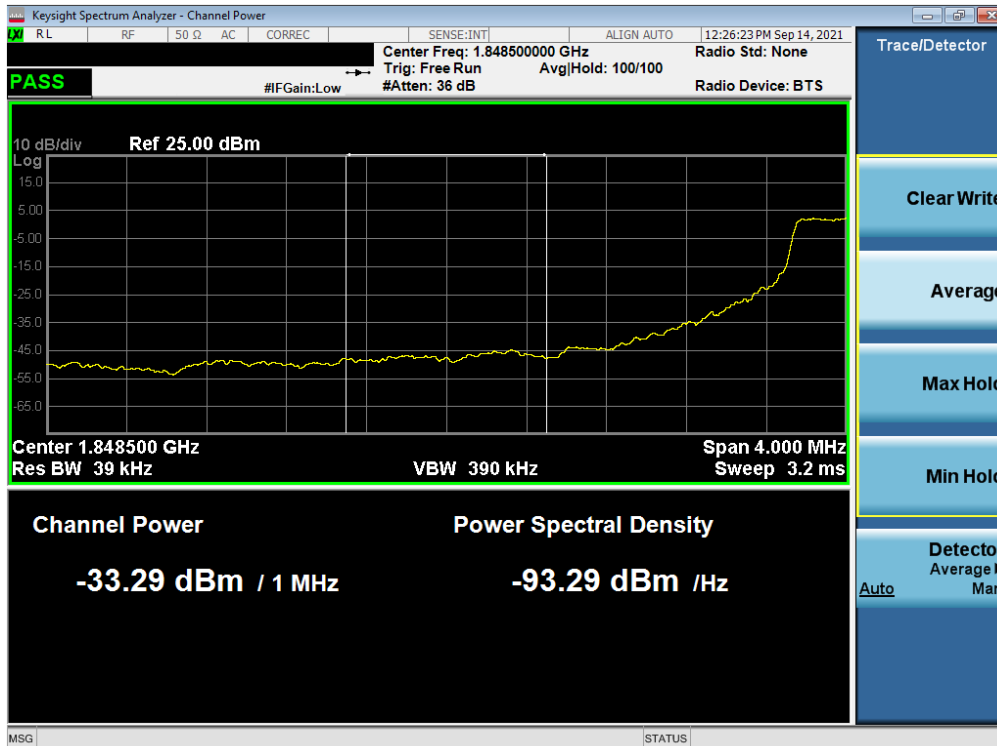


Plot 7-168. Extended Upper Band Edge Plot (NR Band n25 - 10MHz QPSK – Full RB - Ant A)

FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 107 of 164



Plot 7-169. Lower Band Edge Plot (NR Band n25/2 – 5MHz QPSK – Full RB - Ant A)

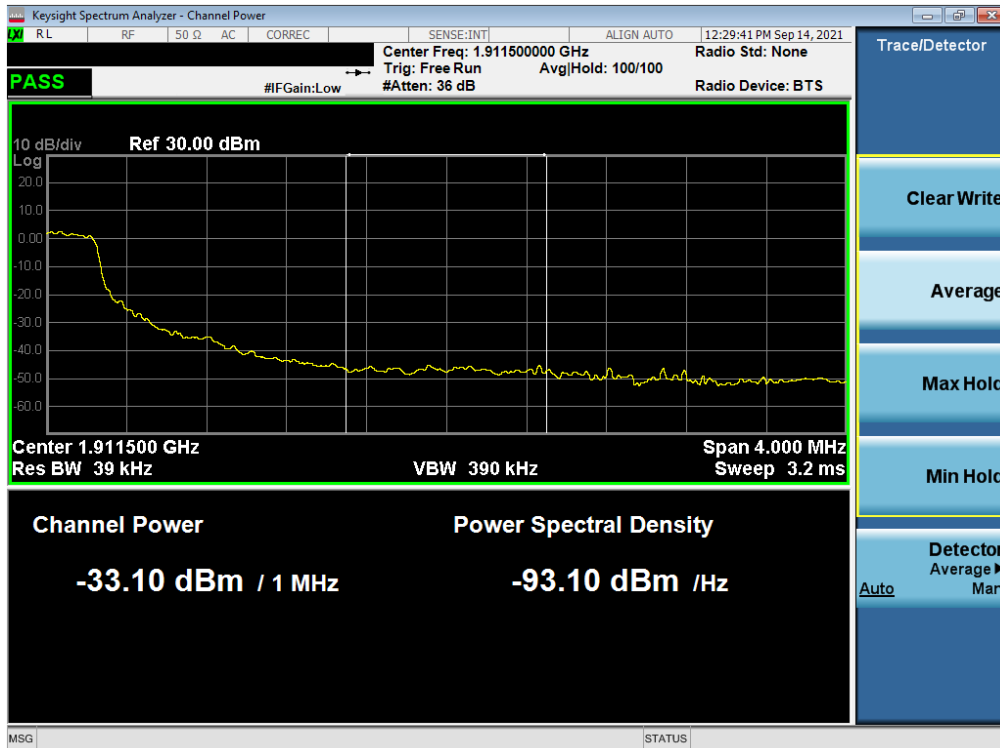


Plot 7-170. Extended Lower Band Edge Plot (NR Band n25/2 – 5MHz QPSK – Full RB - Ant A)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset	Page 108 of 164

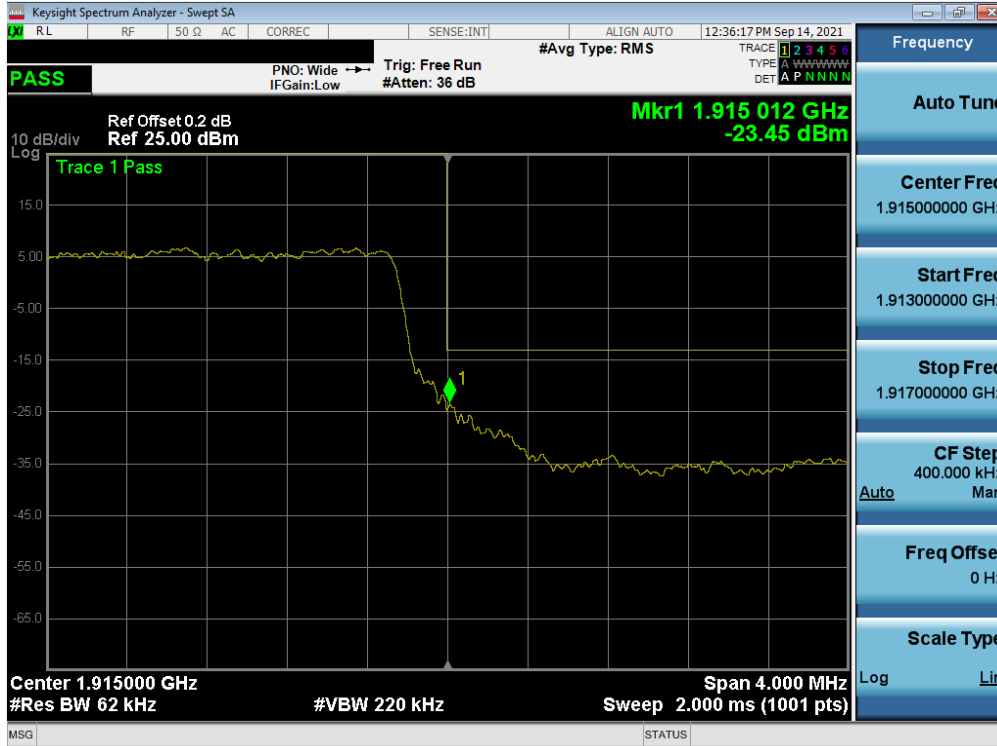


Plot 7-171. Upper Band Edge Plot (NR Band n2 – 5MHz QPSK – Full RB - Ant A)

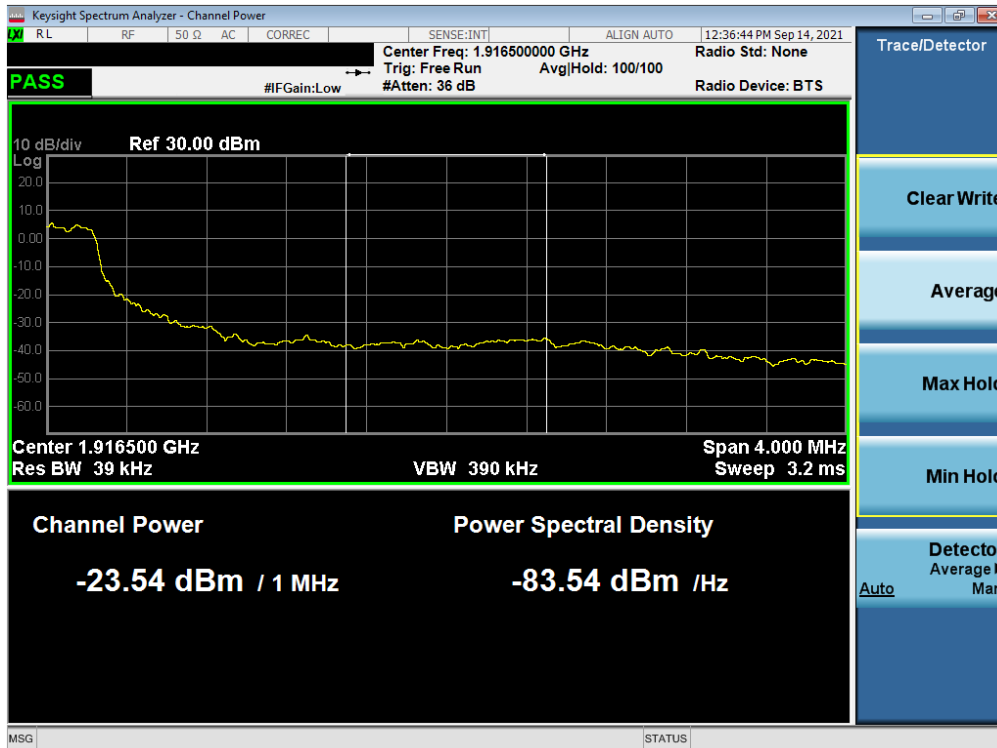


Plot 7-172. Extended Upper Band Edge Plot (NR Band n2 – 5MHz QPSK – Full RB - Ant A)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 109 of 164

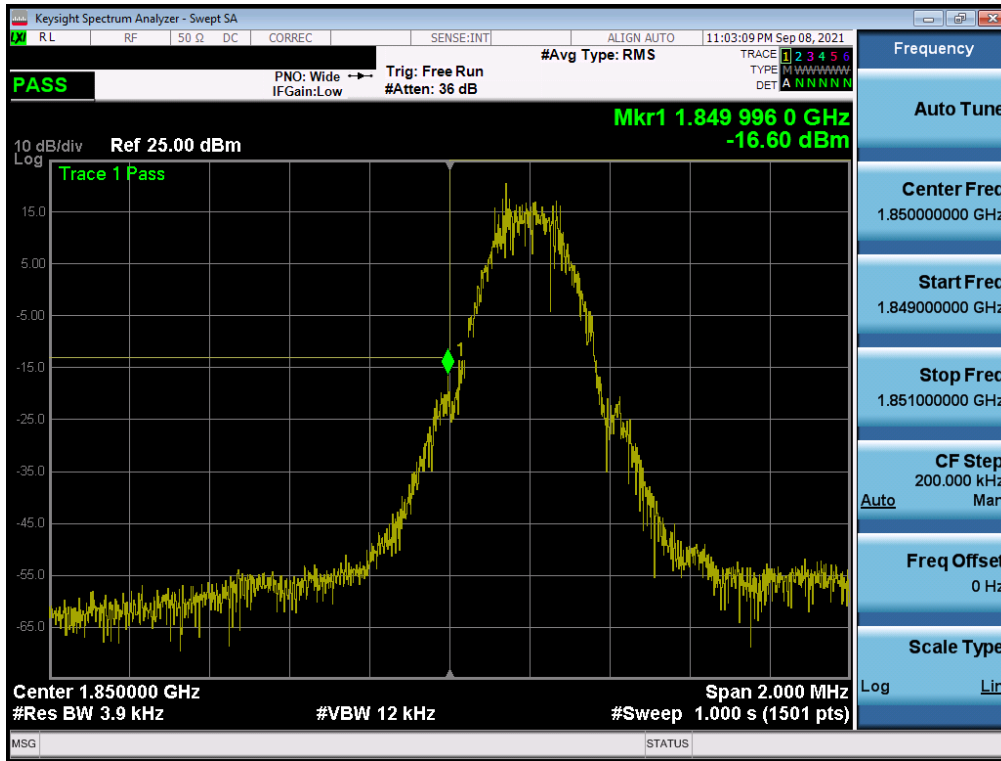


Plot 7-173. Upper Band Edge Plot (NR Band n25 – 5MHz QPSK – Full RB - Ant A)

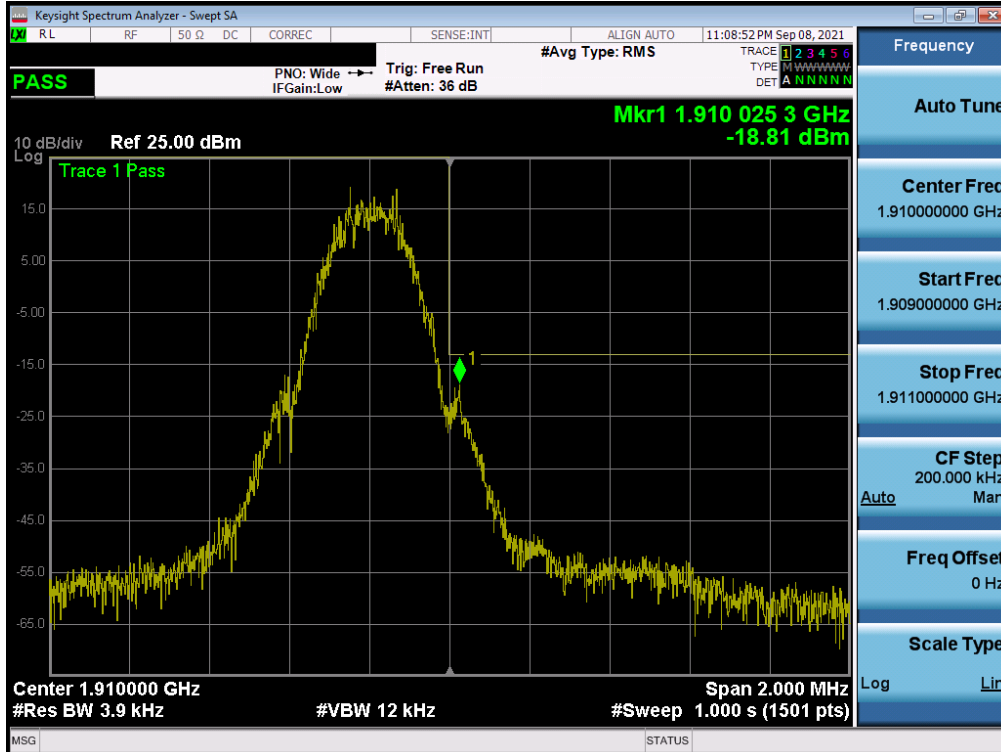


Plot 7-174. Extended Upper Band Edge Plot (NR Band n25 – 5MHz QPSK – Full RB - Ant A)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset	Page 110 of 164

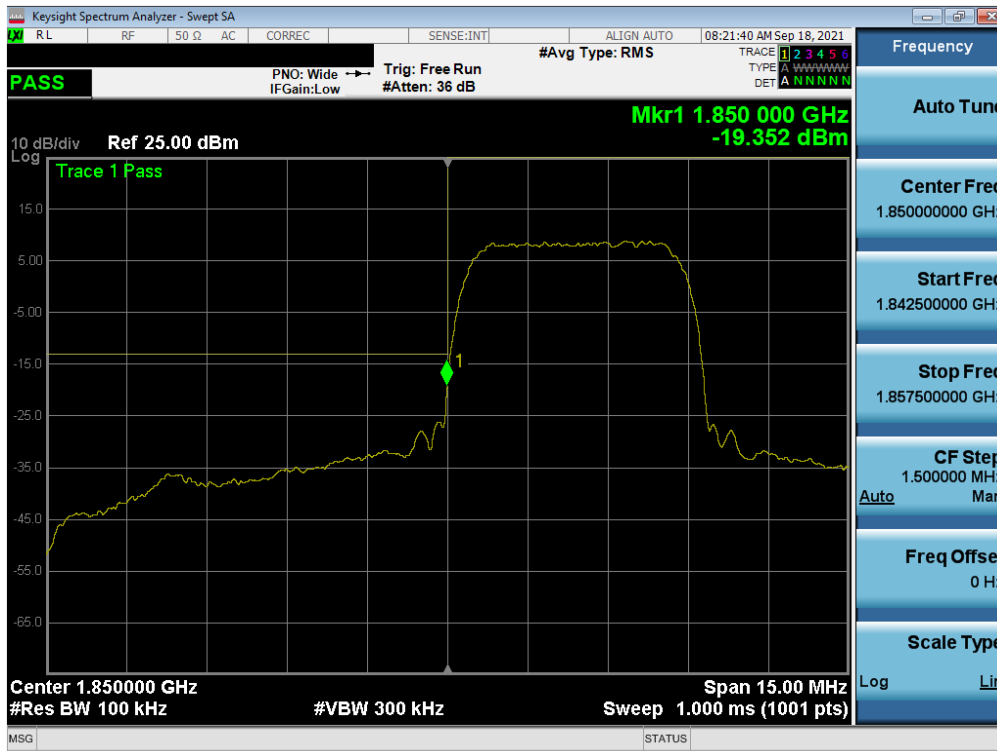


Plot 7-175. Lower Band Edge Plot (GPRS PCS – Ch. 512)

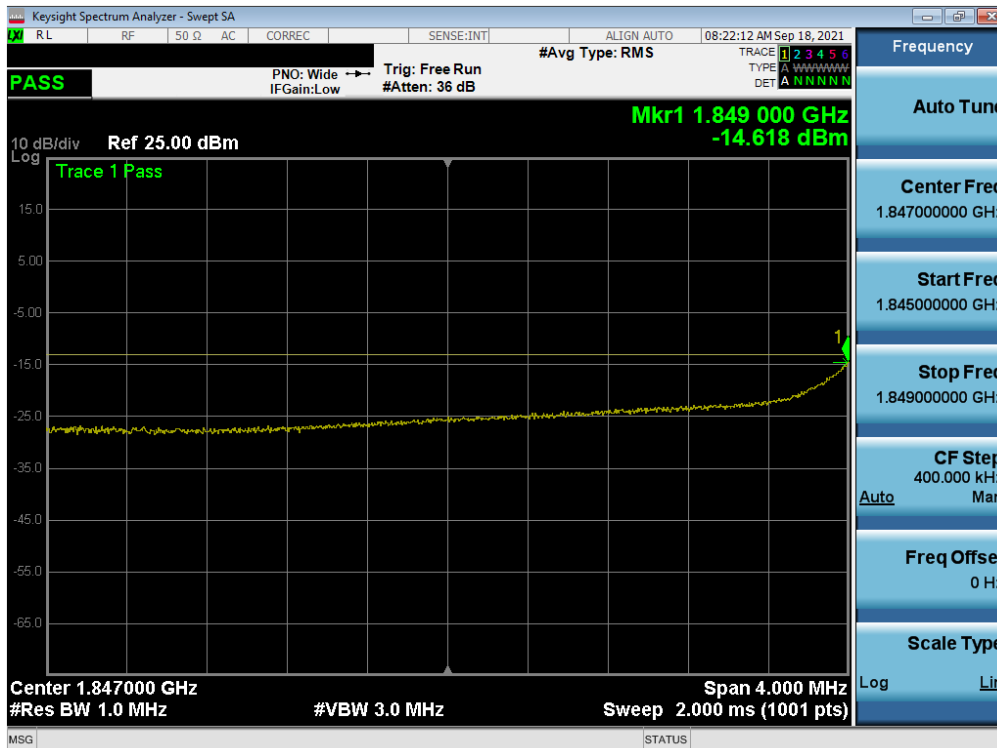


Plot 7-176. Upper Band Edge Plot (GPRS PCS – Ch. 810)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset	Page 111 of 164



Plot 7-177. Lower Band Edge Plot (WCDMA PCS – Ch. 9262)

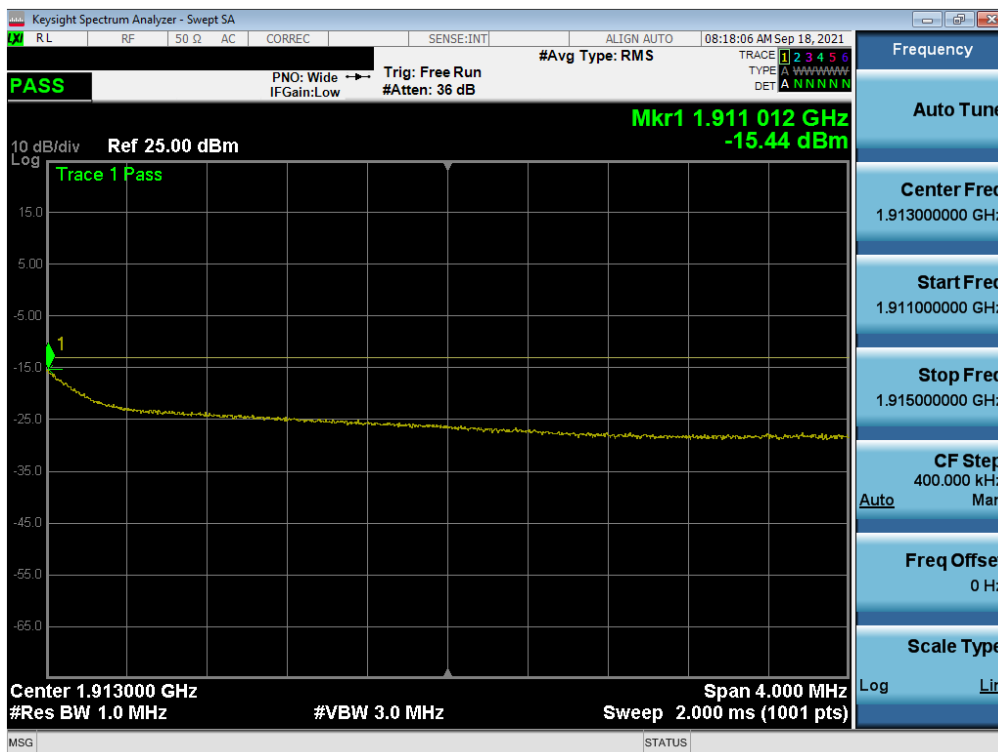


Plot 7-178. Extended Lower Band Edge Plot (WCDMA PCS – Ch. 9262)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 112 of 164



Plot 7-179. Upper Band Edge Plot (WCDMA PCS – Ch. 9538)



Plot 7-180. Extended Upper Band Edge Plot (WCDMA PCS – Ch. 9538)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 113 of 164

7.6 Peak-Average Ratio

Test Overview

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

Test Procedure Used

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.

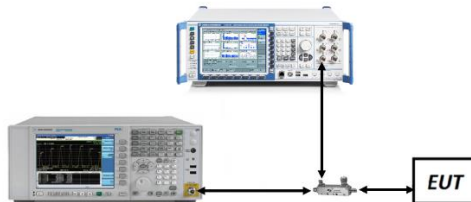


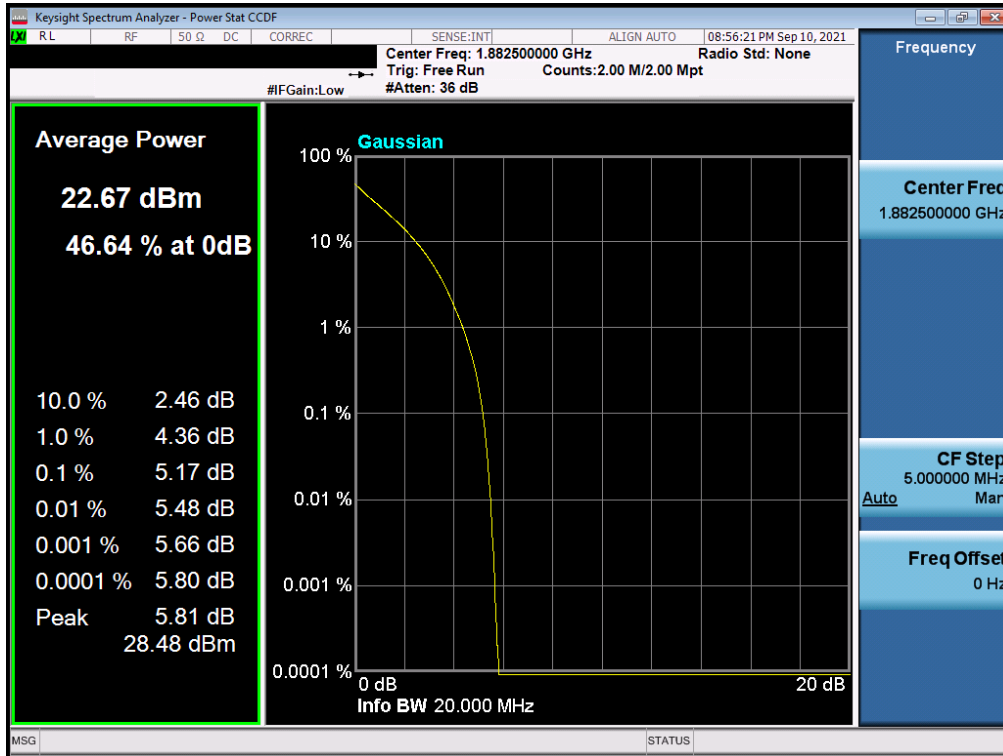


Figure 7-5. Test Instrument & Measurement Setup

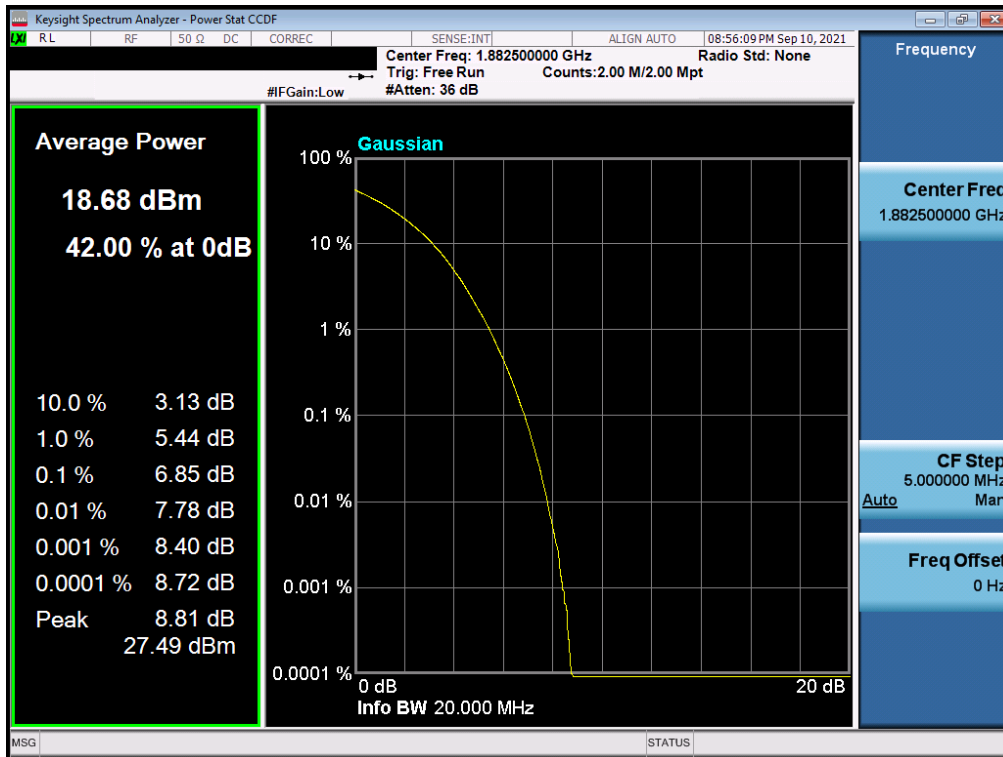
Test Notes

None.

FCC ID: A3LSMS901U	 PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset	Page 114 of 164

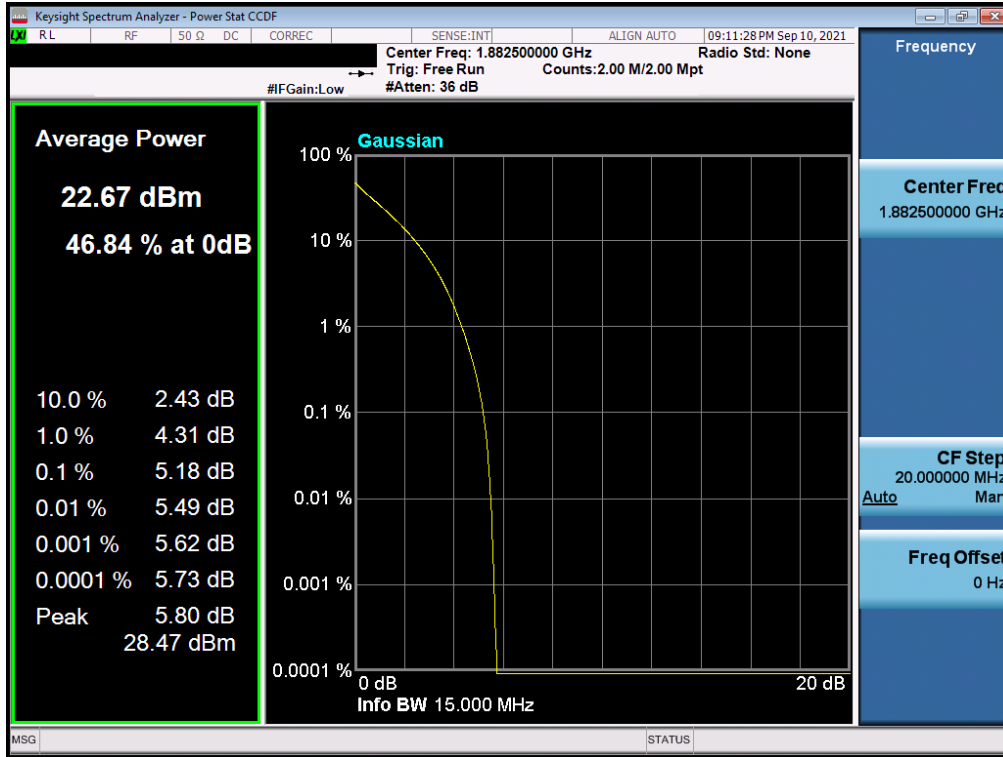


Plot 7-181. PAR Plot (LTE Band 25/2 - 20MHz QPSK - Full RB)

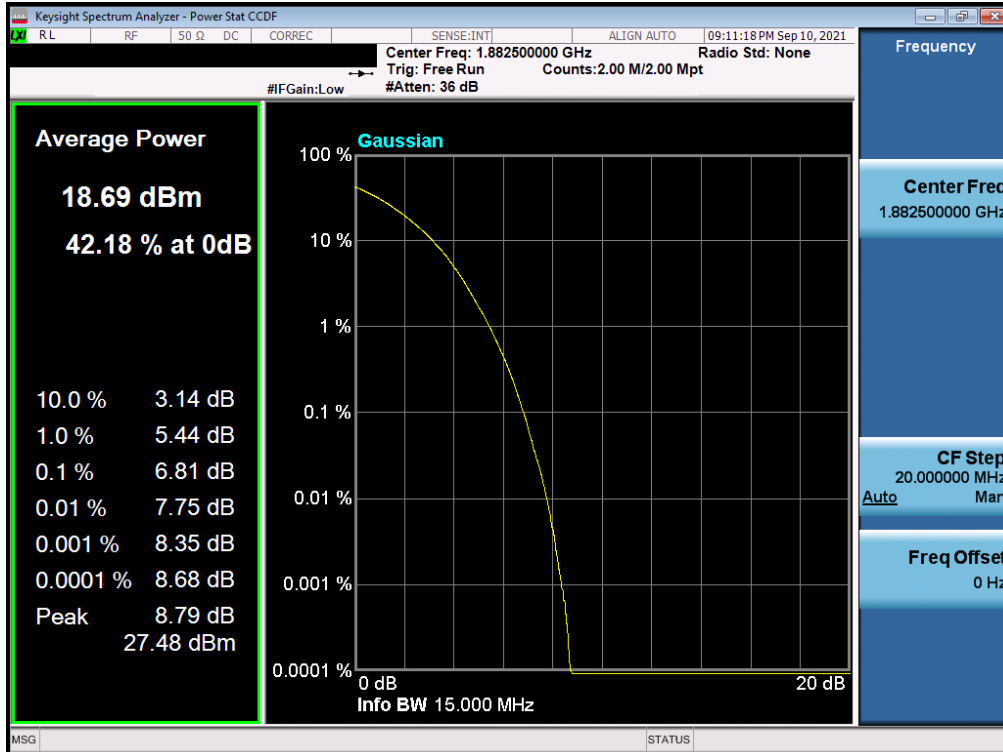


Plot 7-182. PAR Plot (LTE Band 25/2 - 20MHz 256-QAM - Full RB)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 115 of 164

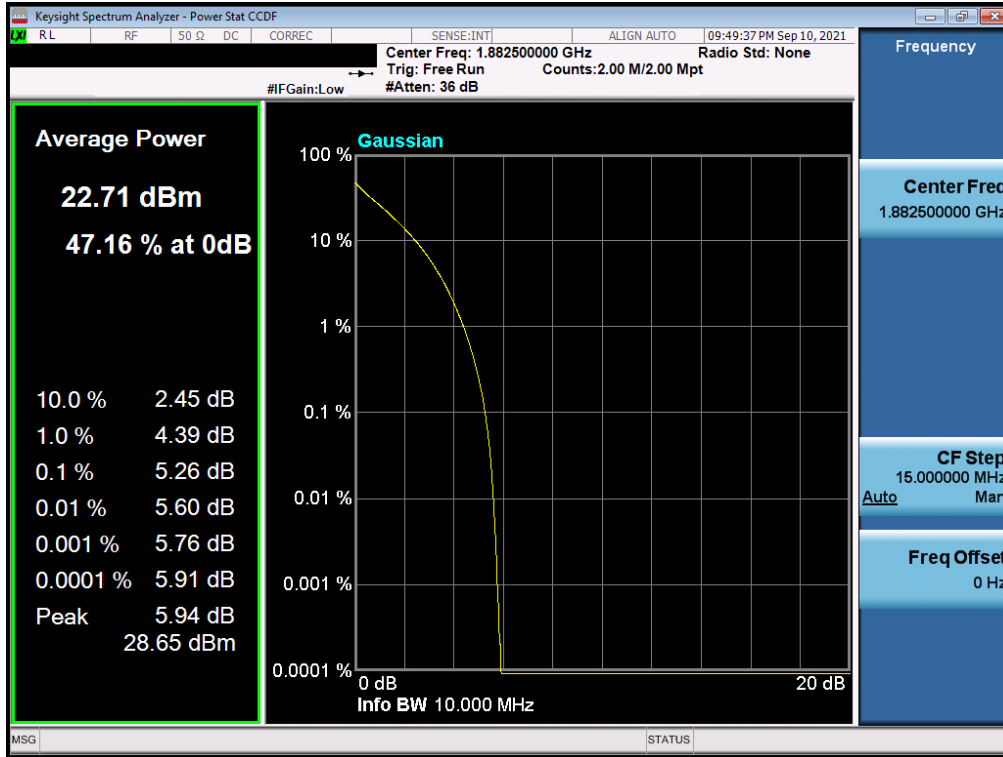


Plot 7-183. PAR Plot (LTE Band 25/2 - 15MHz QPSK - Full RB)

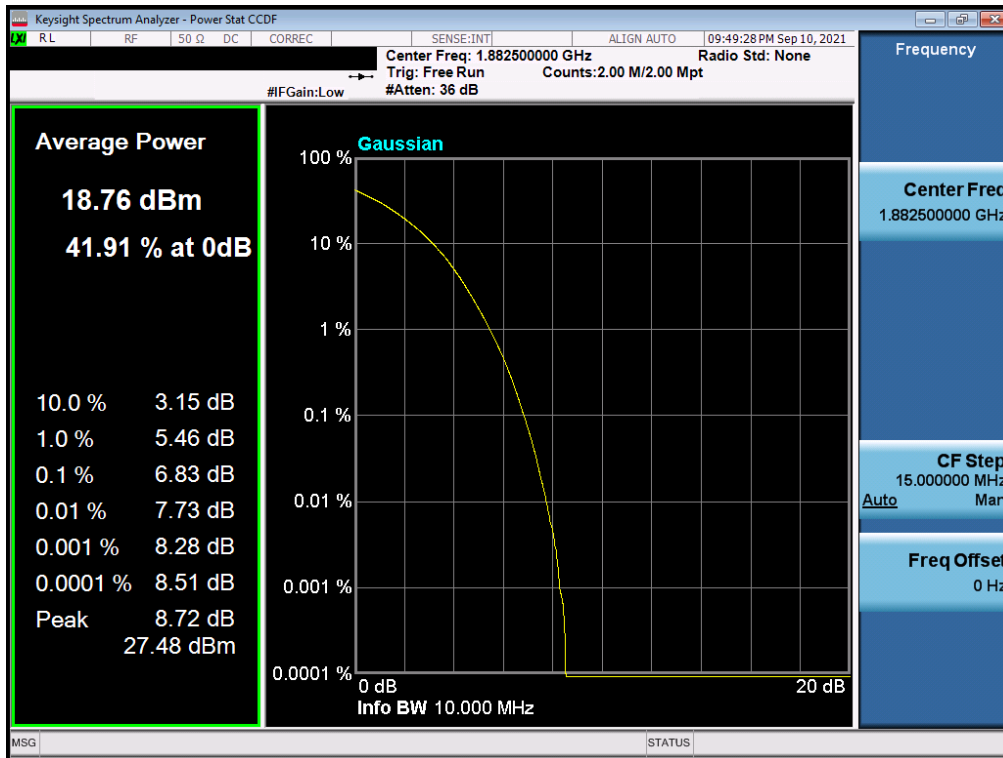


Plot 7-184. PAR Plot (LTE Band 25/2 - 15MHz 256-QAM - Full RB)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 116 of 164

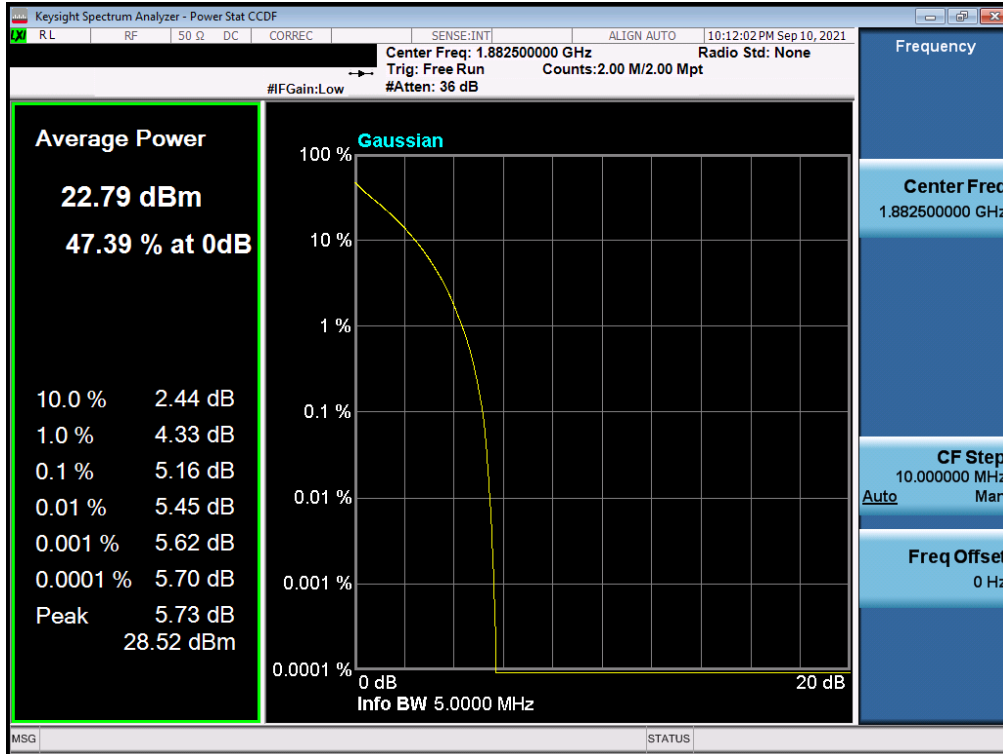


Plot 7-185. PAR Plot (LTE Band 25/2 - 10MHz QPSK - Full RB)

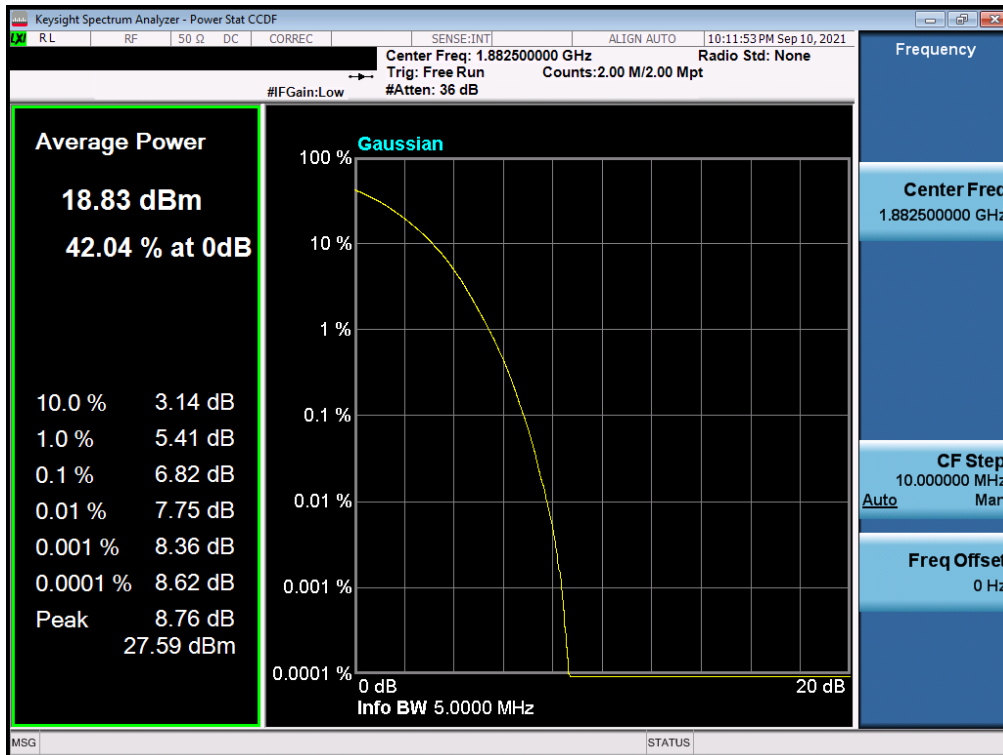


Plot 7-186. PAR Plot (LTE Band 25/2 - 10MHz 256-QAM - Full RB)




FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 117 of 164

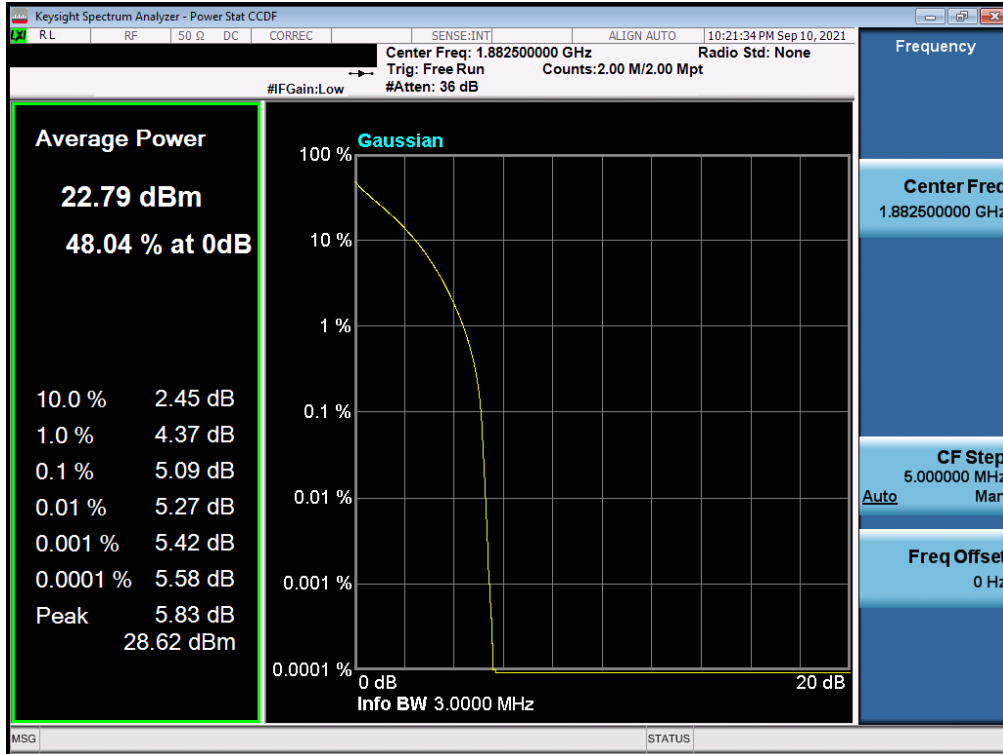


Plot 7-187. PAR Plot (LTE Band 25/2 - 5MHz QPSK - Full RB)

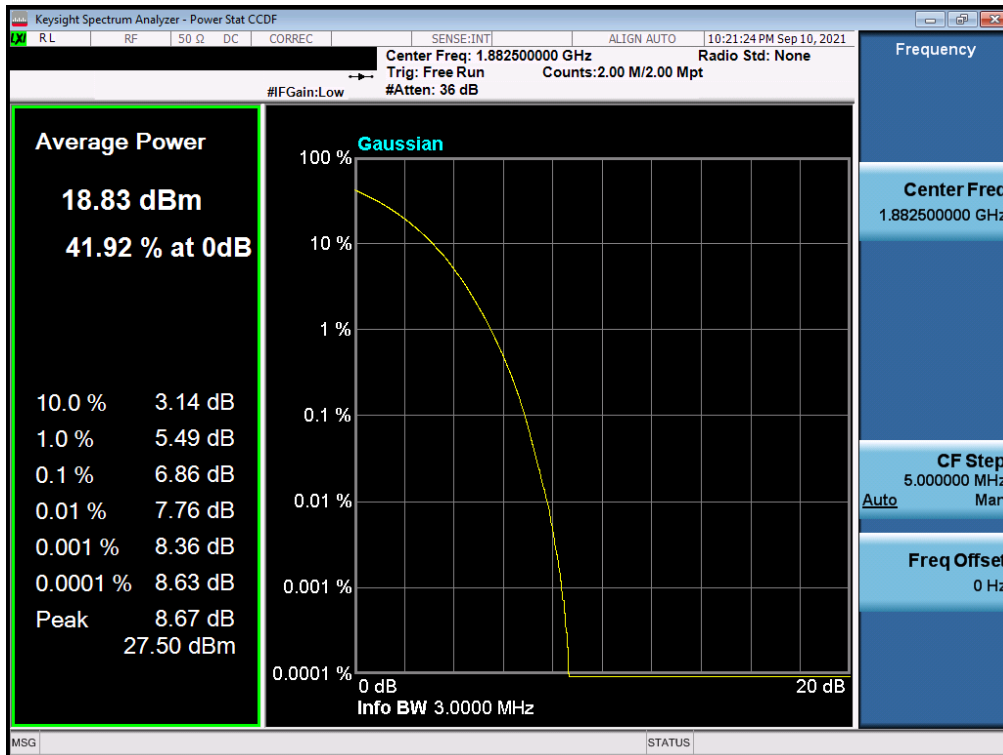


Plot 7-188. PAR Plot (LTE Band 25/2 - 5MHz 256-QAM - Full RB)

FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 118 of 164

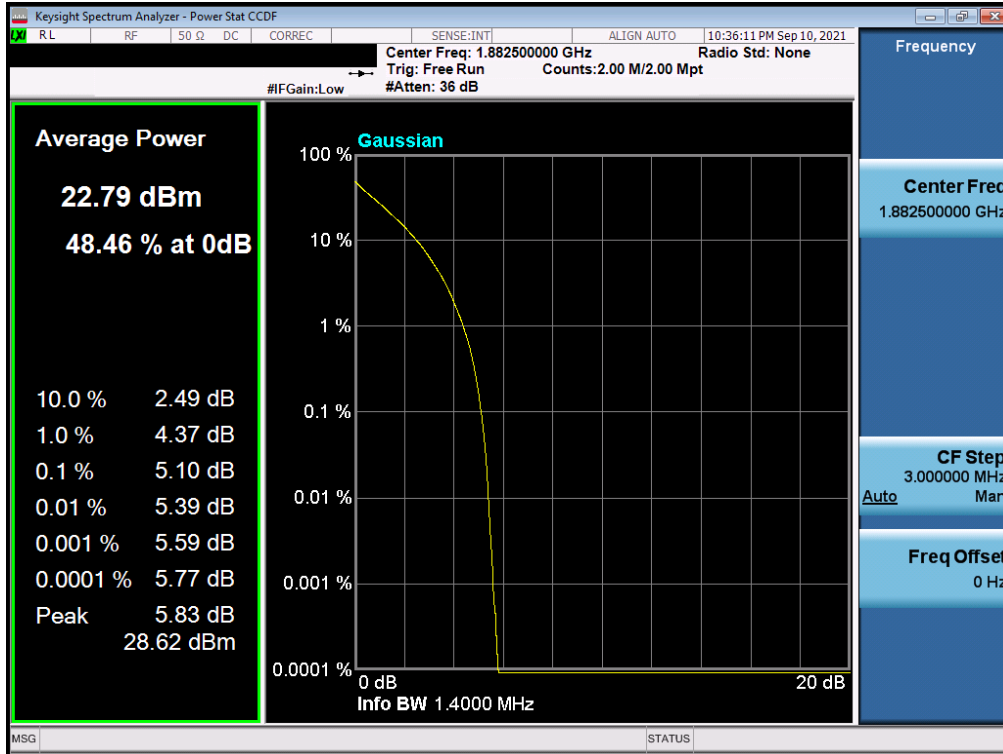


Plot 7-189. PAR Plot (LTE Band 25/2 - 3MHz QPSK - Full RB)

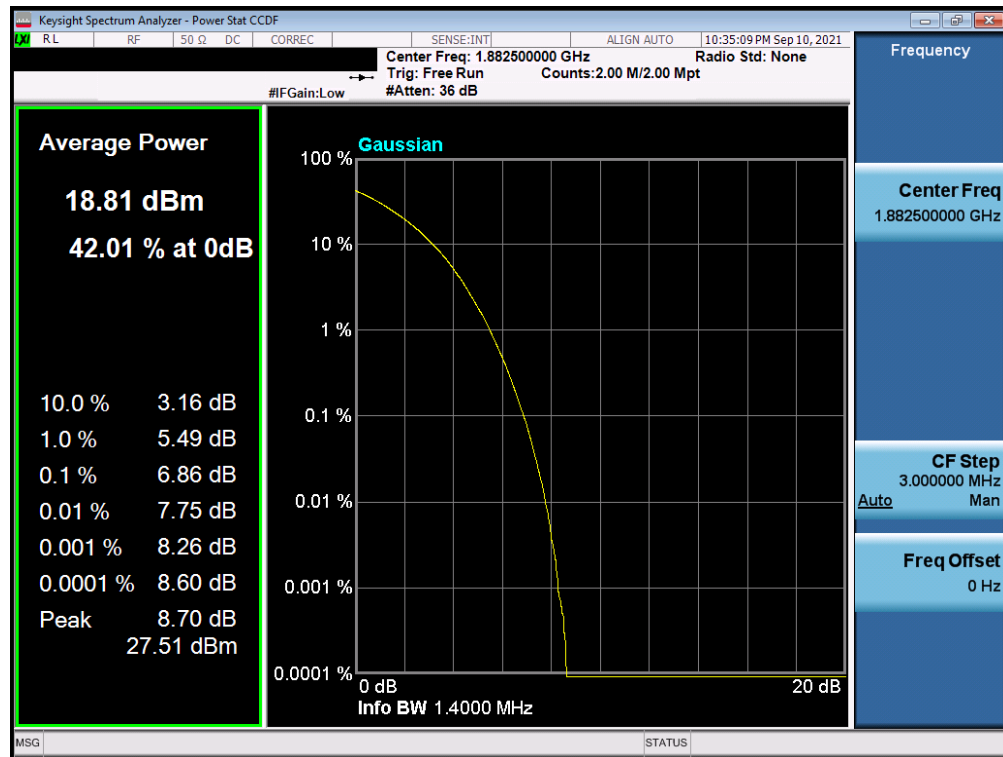


Plot 7-190. PAR Plot (LTE Band 25/2 - 3MHz 256-QAM - Full RB)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 119 of 164



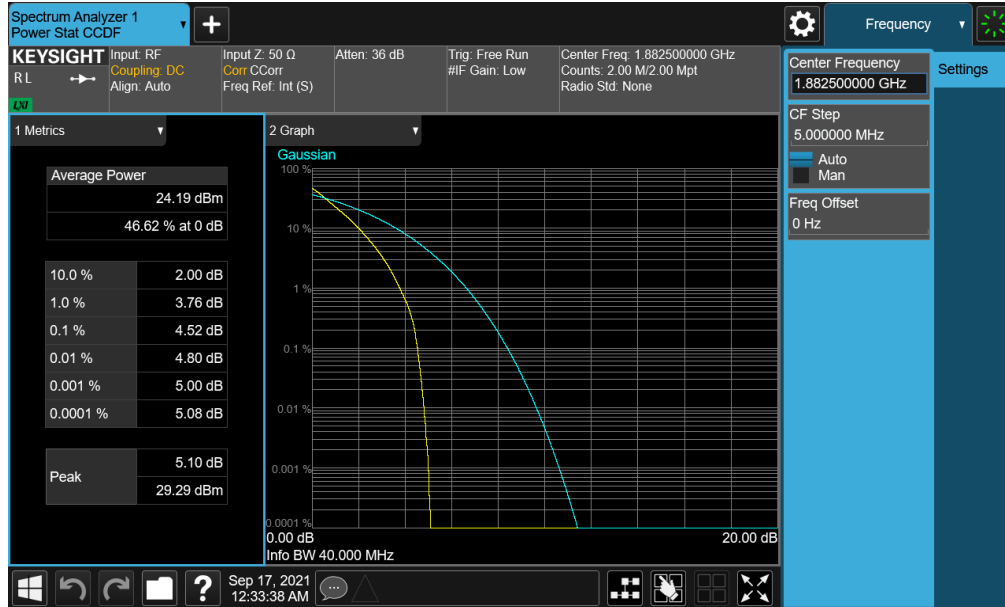
Plot 7-191. PAR Plot (LTE Band 25/2 - 1.4MHz QPSK - Full RB)



Plot 7-192. PAR Plot (LTE Band 25/2 - 1.4MHz 256-QAM - Full RB)

FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 120 of 164



NR Band n25/2 – Ant A

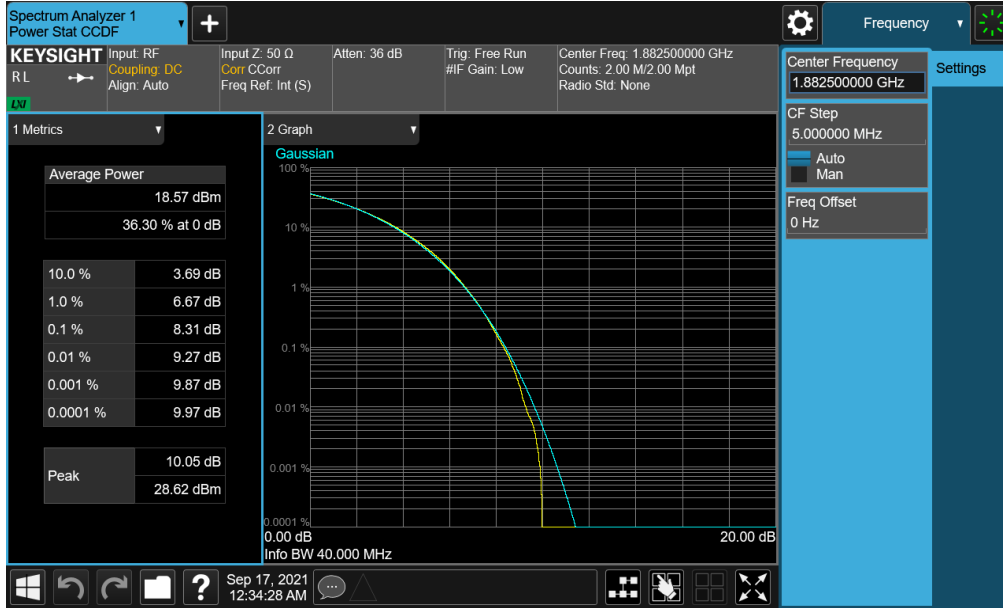


Plot 7-193. PAR Plot (NR Band n25 - 40.0MHz DFT-s-OFDM BPSK - Full RB - ANT A)

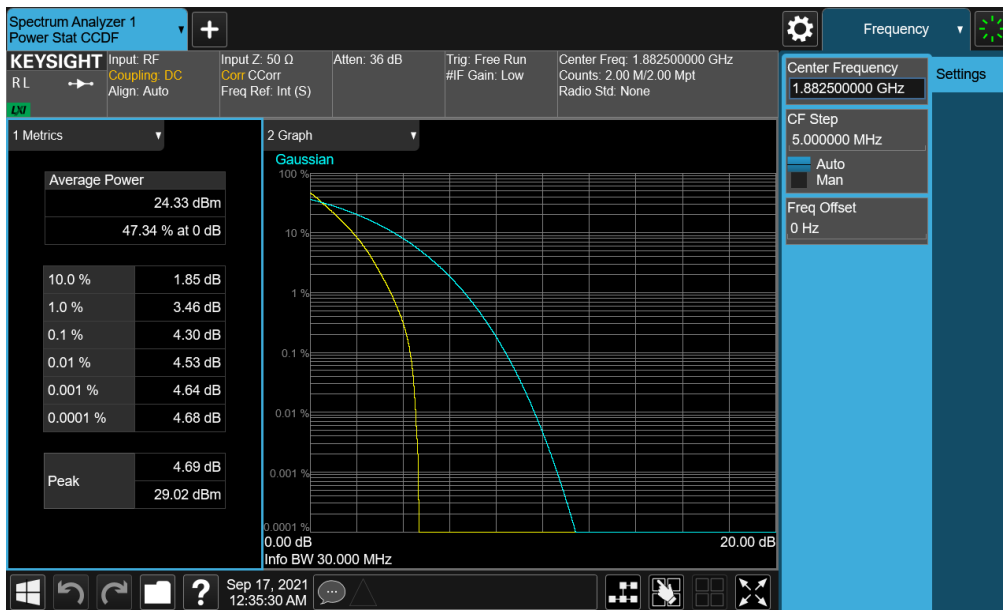


Plot 7-194. PAR Plot (NR Band n25 - 40.0MHz CP-OFDM QPSK - Full RB - ANT A)




FCC ID: A3LSMS901U	 PART 24 MEASUREMENT REPORT 	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset
		Page 121 of 164

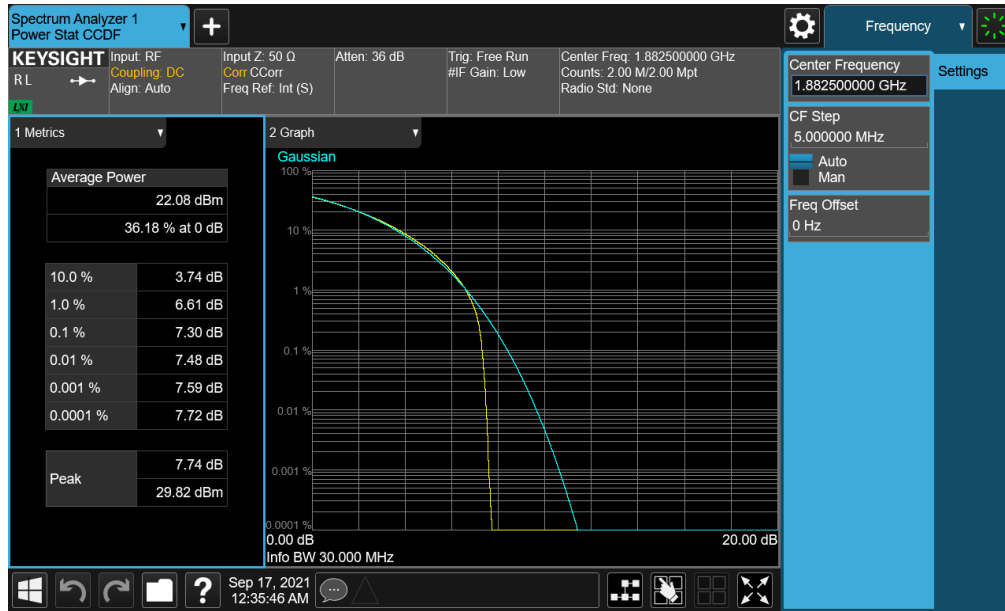


Plot 7-195. PAR Plot (NR Band n25 - 40.0MHz CP-OFDM 256-QAM - Full RB - ANT A)

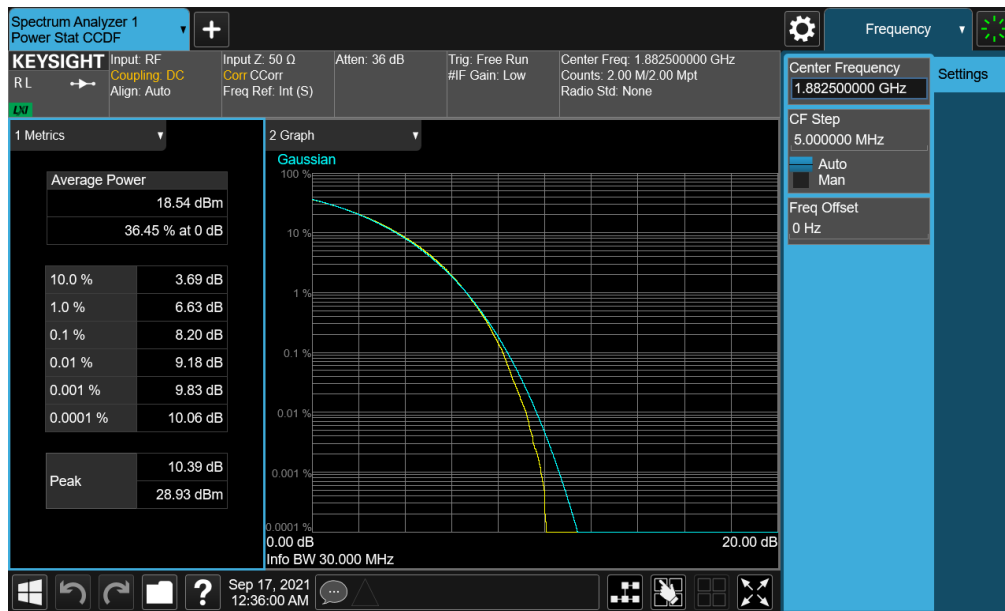


Plot 7-196. PAR Plot (NR Band n25 - 30.0MHz DFT-s-OFDM BPSK - Full RB - ANT A)

FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 122 of 164

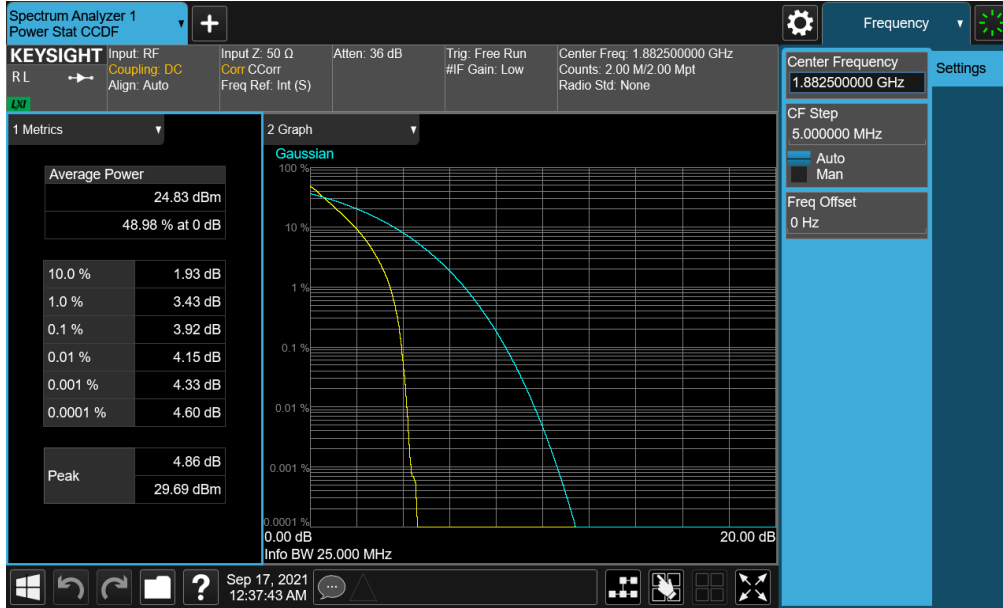


Plot 7-197. PAR Plot (NR Band n25 - 30.0MHz CP-OFDM QPSK - Full RB - ANT A)



Plot 7-198. PAR Plot (NR Band n25 - 30.0MHz CP-OFDM 256-QAM - Full RB - ANT A)



FCC ID: A3LSMS901U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset	Page 123 of 164



Plot 7-199. PAR Plot (NR Band n25 - 25.0MHz DFT-s-OFDM BPSK - Full RB - ANT A)

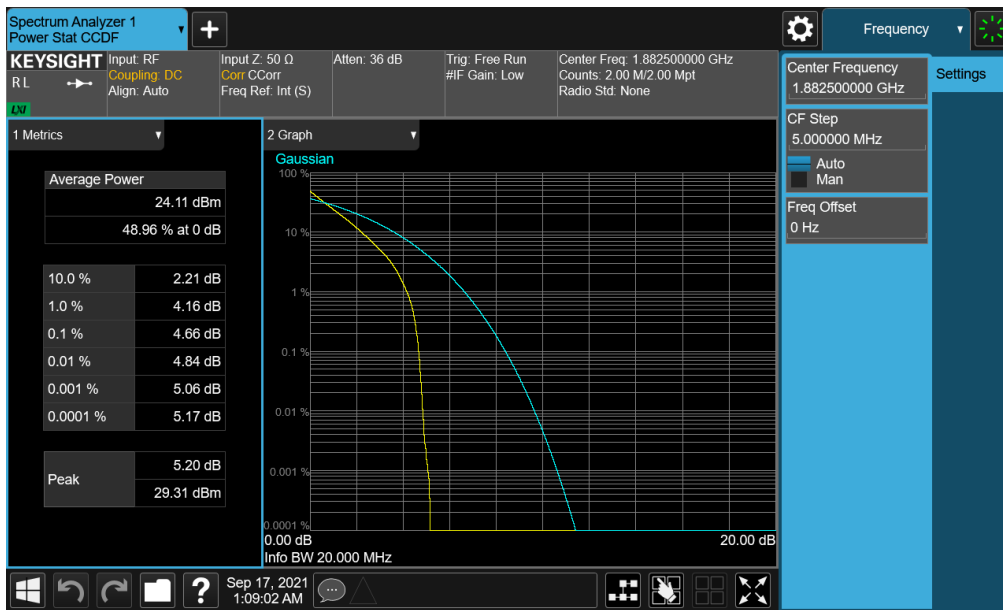


Plot 7-200. PAR Plot (NR Band n25 - 25.0MHz CP-OFDM QPSK - Full RB - ANT A)




FCC ID: A3LSMS901U	 PART 24 MEASUREMENT REPORT 	Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset
Page 124 of 164		



Plot 7-201. PAR Plot (NR Band n25 - 25.0MHz CP-OFDM 256-QAM - Full RB - ANT A)



Plot 7-202. PAR Plot (NR Band n25/2 - 20.0MHz DFT-s-OFDM BPSK - Full RB - ANT A)

FCC ID: A3LSMS901U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2109080099-03-R2.A3L	Test Dates: 9/8/2021 - 11/5/2021	EUT Type: Portable Handset		Page 125 of 164