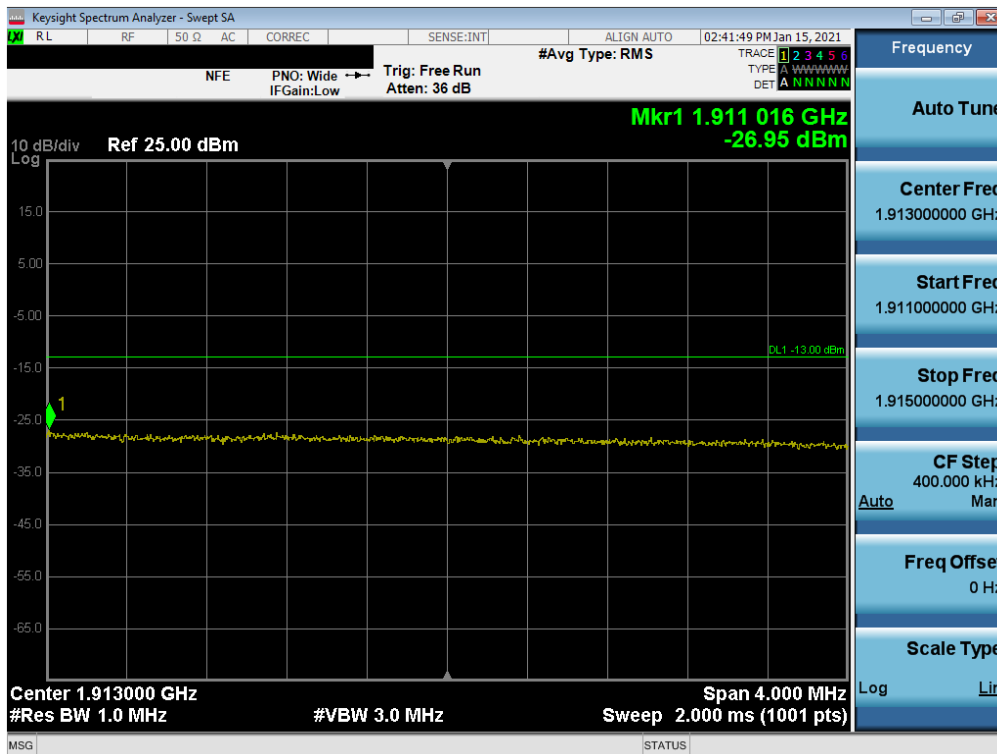


Plot 7-100. Upper Band Edge Plot (LTE Band 2 - 20MHz QPSK – Full RB Configuration)

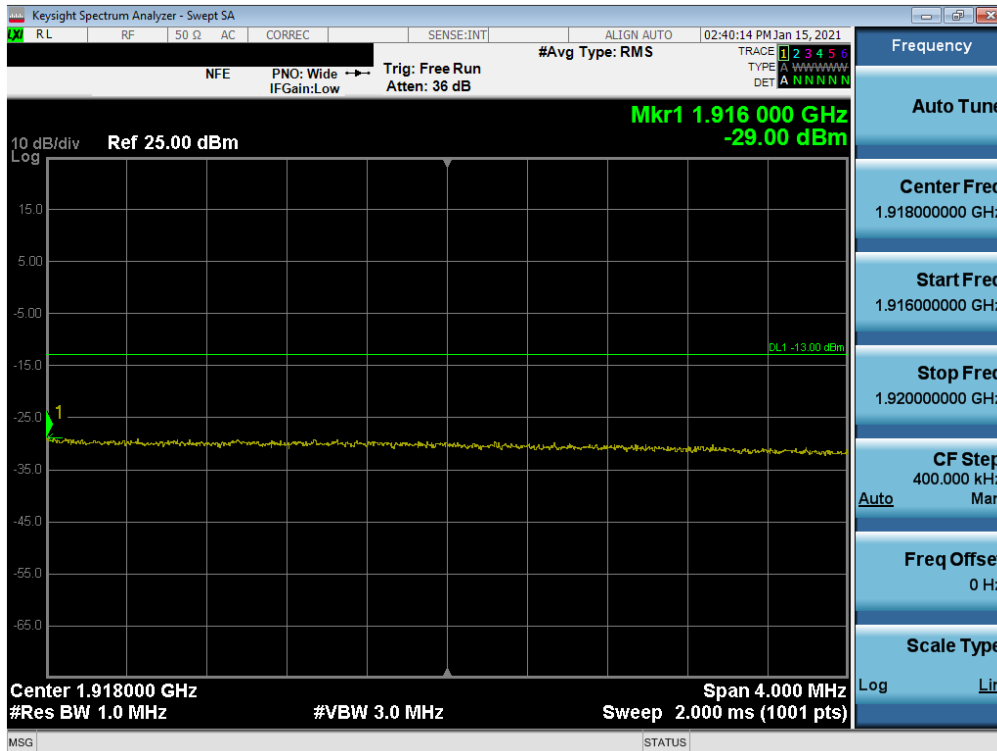


Plot 7-101. Extended Upper Band Edge Plot (LTE Band 2 - 20MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 70 of 148

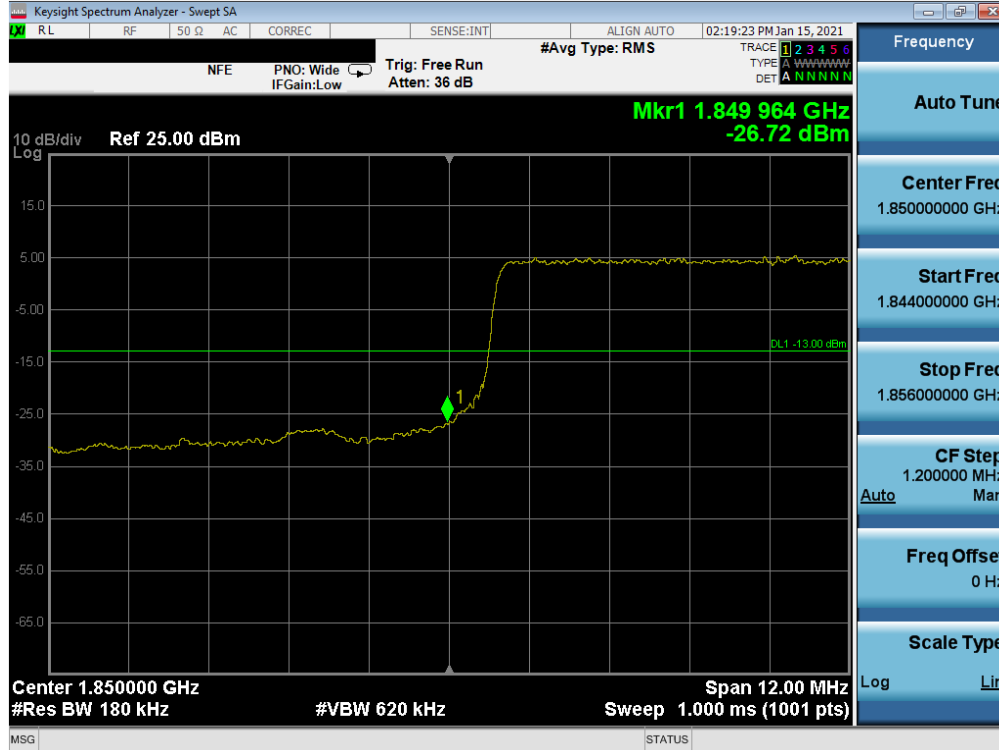


Plot 7-102. Upper Band Edge Plot (LTE Band 25 - 20MHz QPSK – Full RB Configuration)

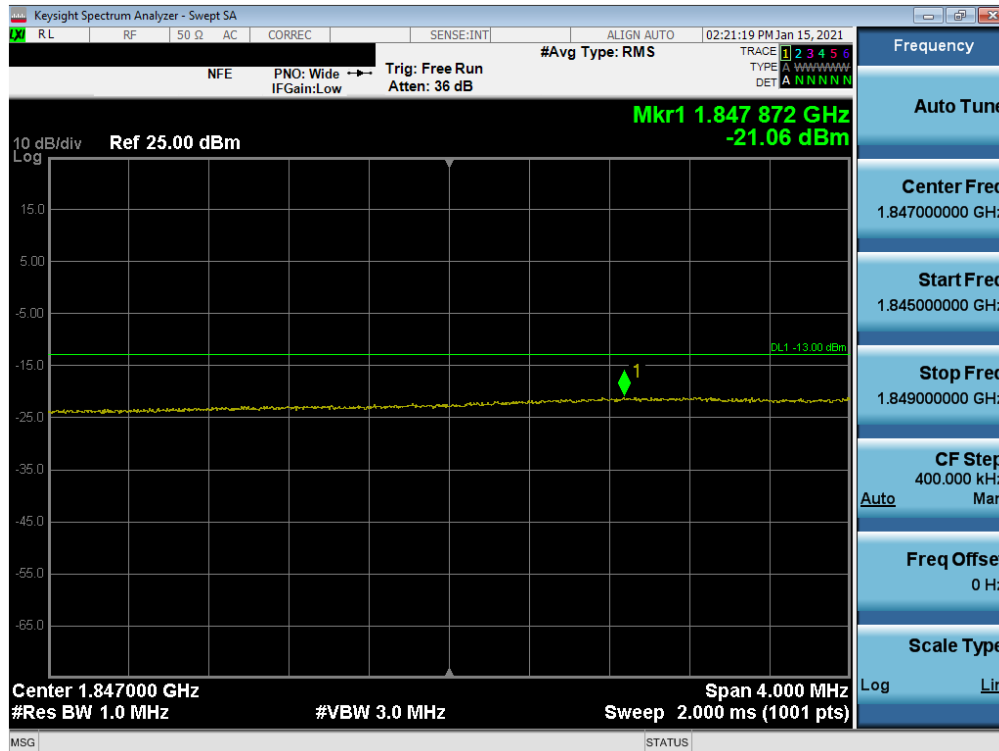


Plot 7-103. Extended Upper Band Edge Plot (LTE Band 25 - 20MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 71 of 148

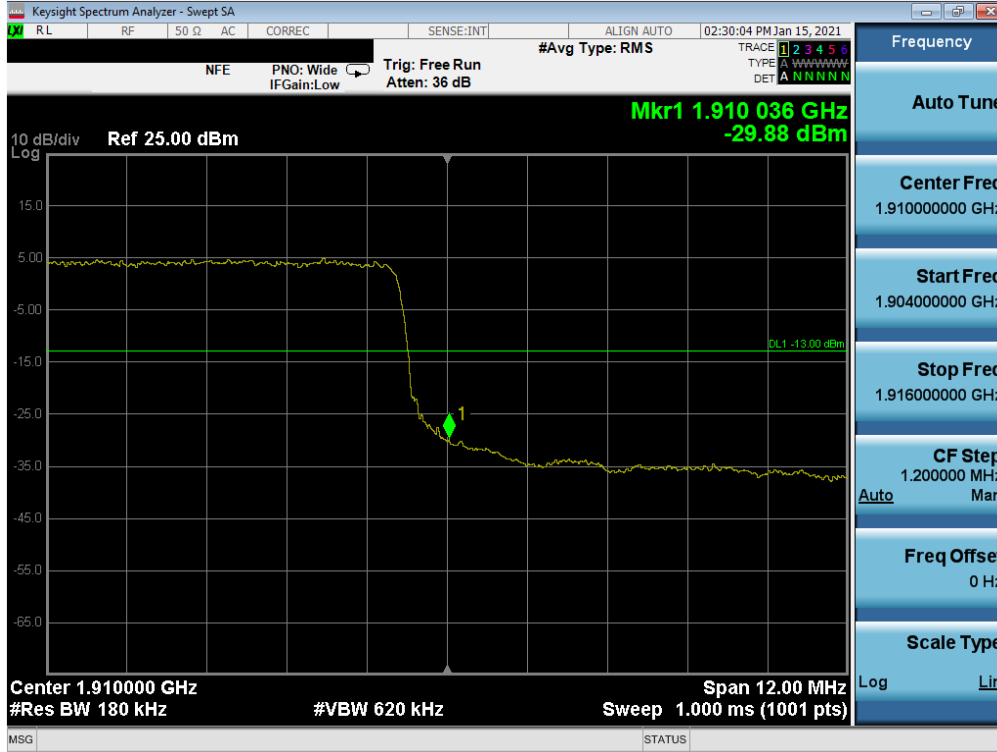


Plot 7-104. Lower Band Edge Plot (LTE Band 25/2 - 15MHz QPSK – Full RB Configuration)

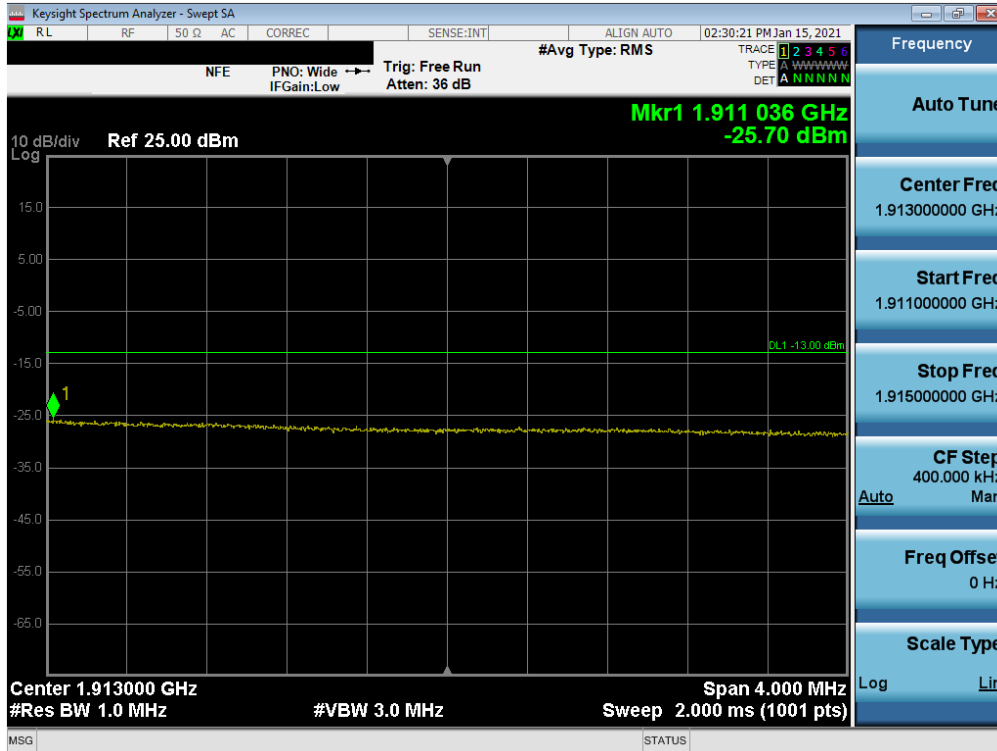


Plot 7-105. Extended Lower Band Edge Plot (LTE Band 25/2 - 15MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 72 of 148

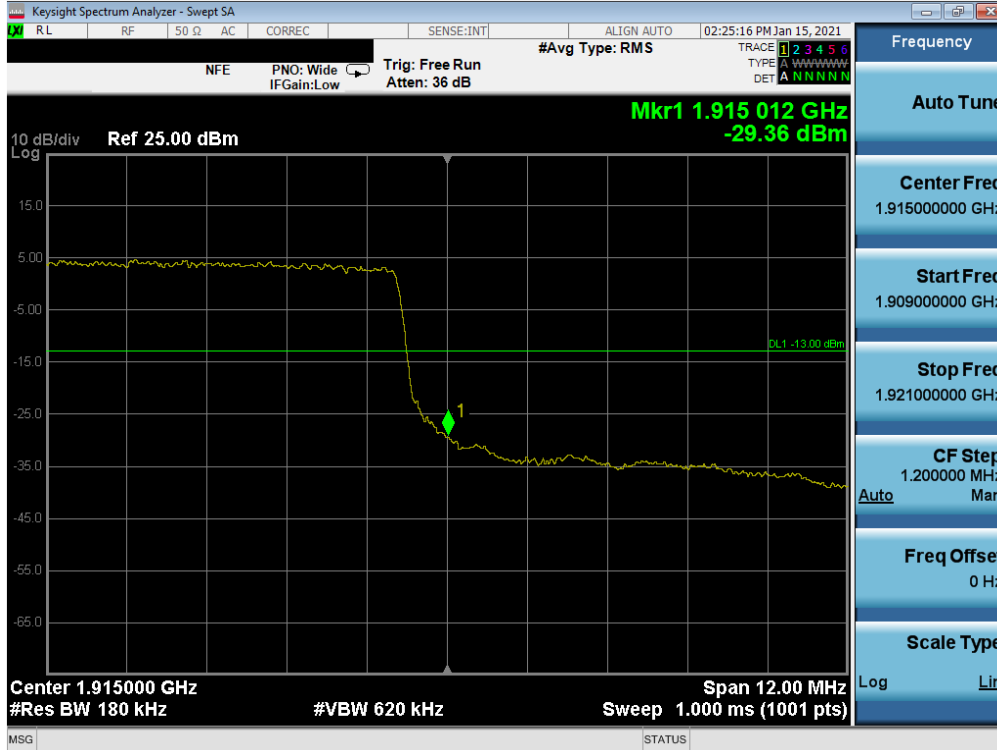


Plot 7-106. Upper Band Edge Plot (LTE Band 2 - 15MHz QPSK – Full RB Configuration)

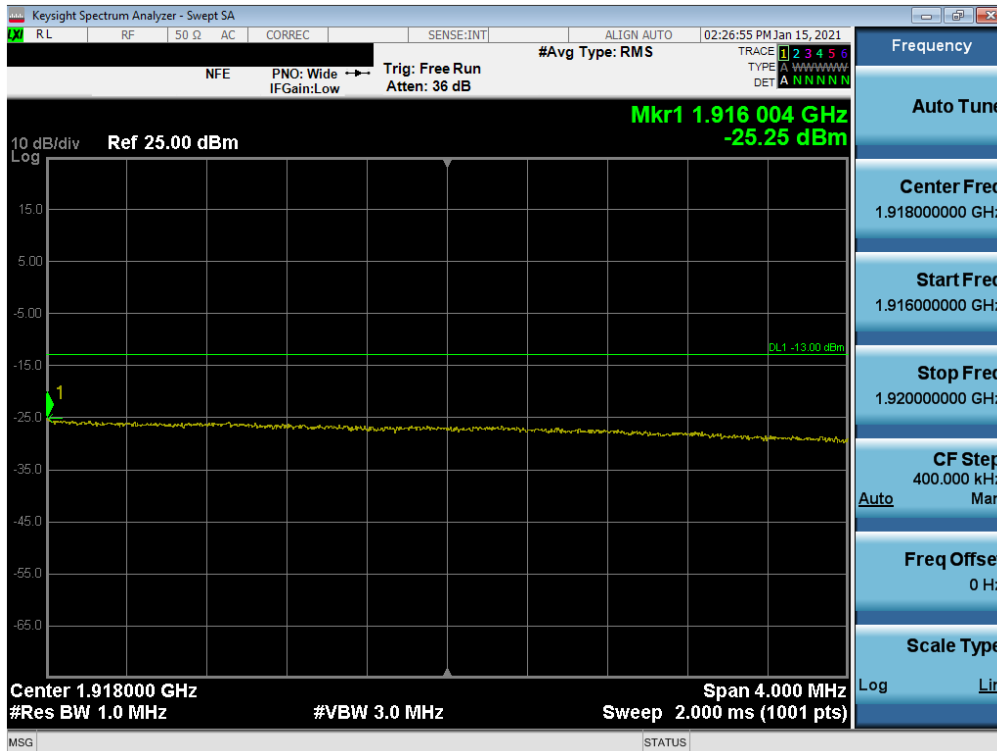


Plot 7-107. Extended Upper Band Edge Plot (LTE Band 2 - 15MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 73 of 148

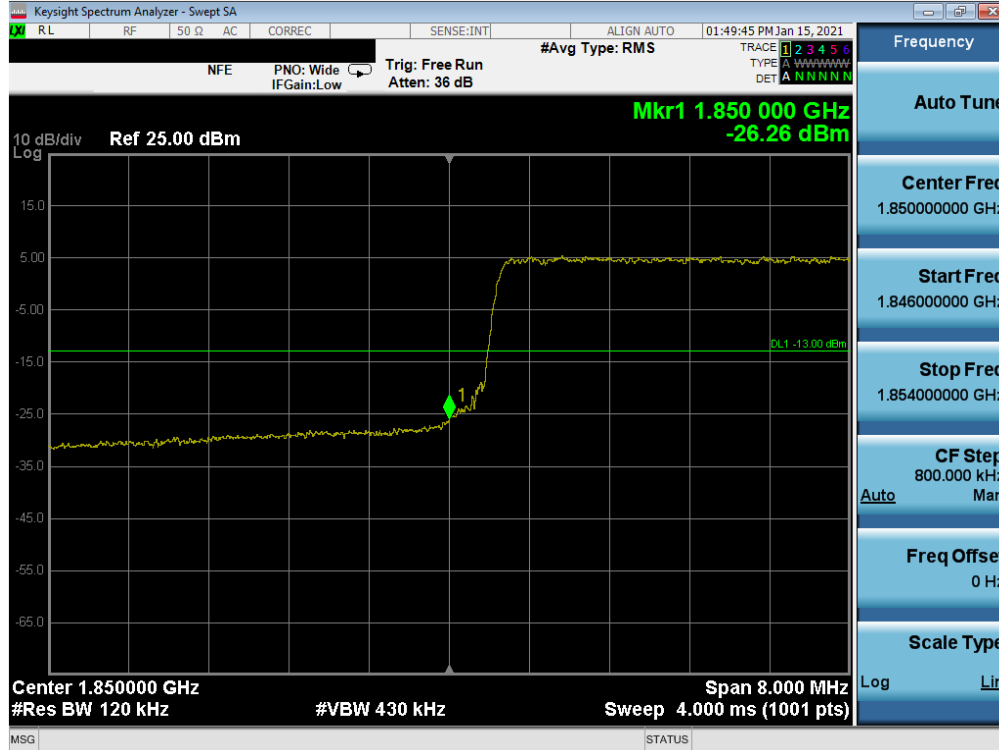


Plot 7-108. Upper Band Edge Plot (LTE Band 25 - 15MHz QPSK – Full RB Configuration)

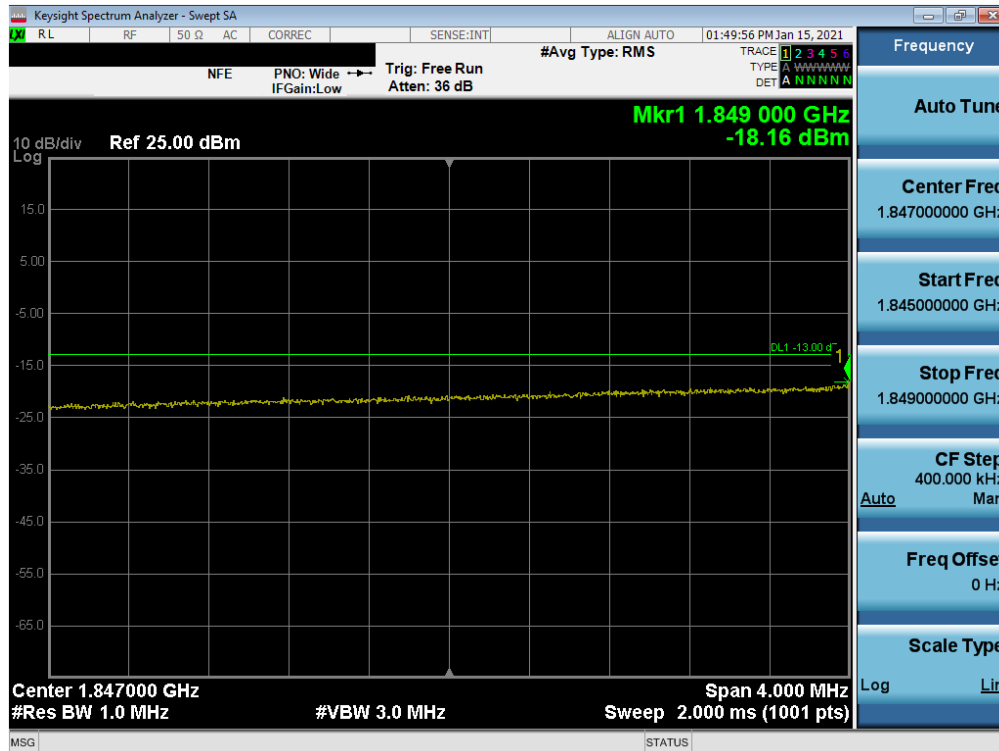


Plot 7-109. Extended Upper Band Edge Plot (LTE Band 25 - 15MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 74 of 148

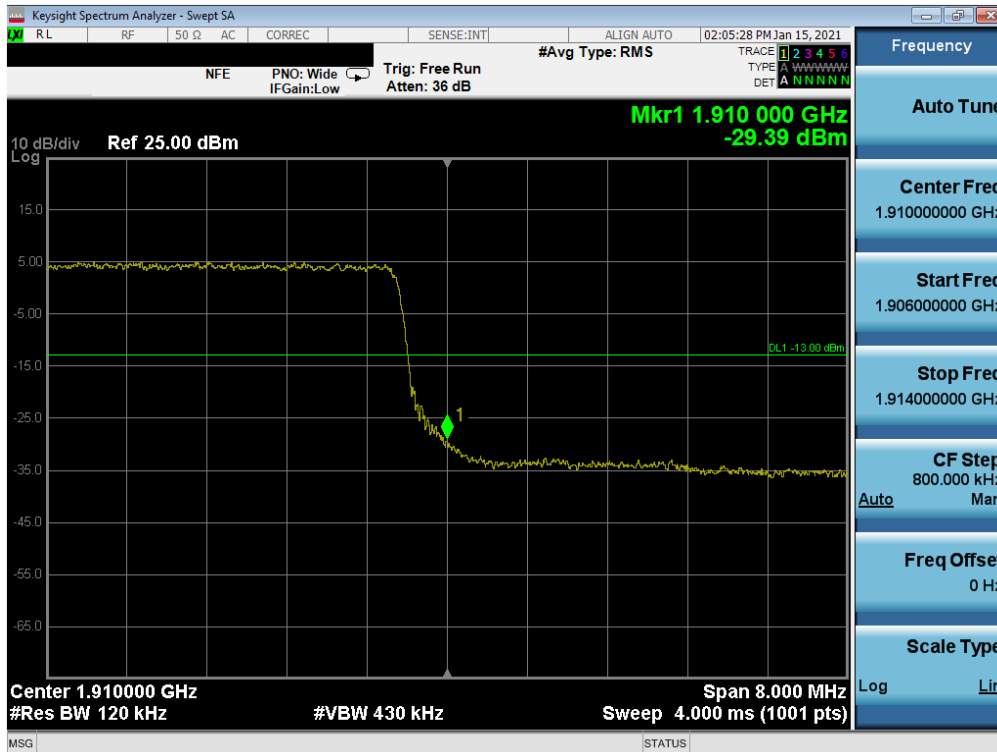


Plot 7-110. Lower Band Edge Plot (LTE Band 25/2 - 10MHz QPSK – Full RB Configuration)

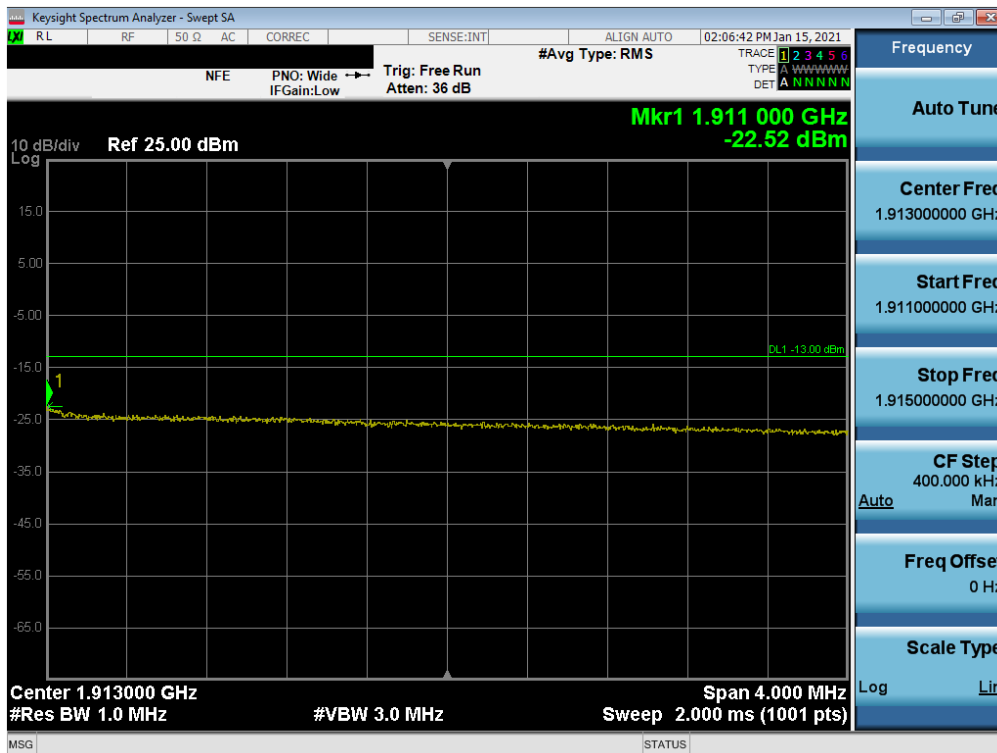


Plot 7-111. Extended Lower Band Edge Plot (LTE Band 25/2 - 10MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 75 of 148

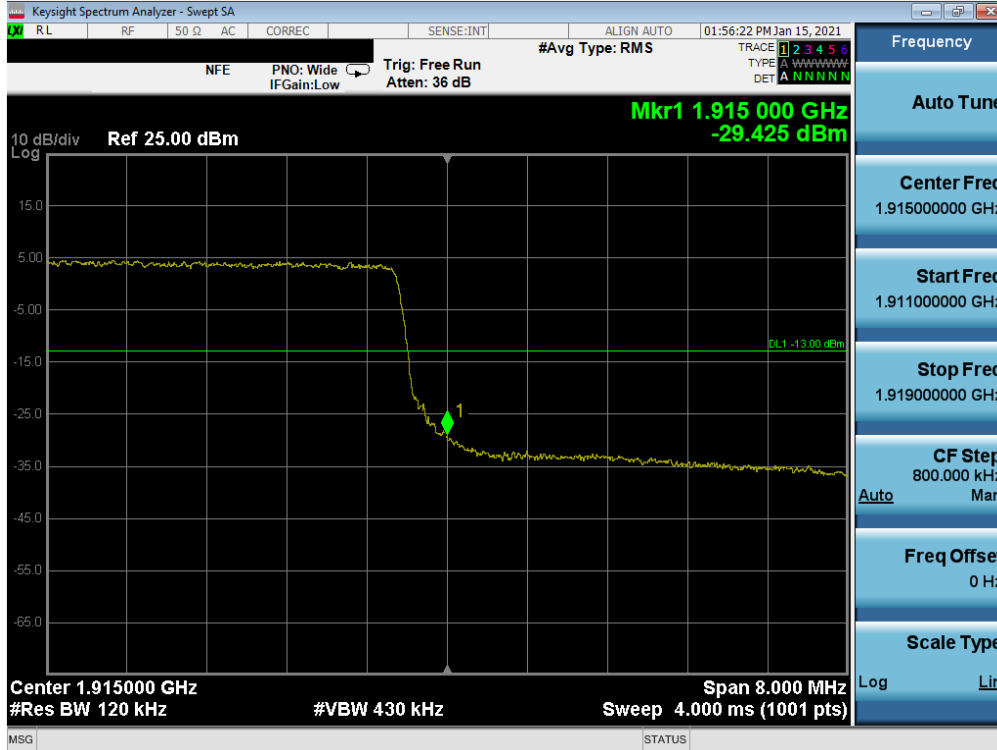


Plot 7-112. Upper Band Edge Plot (LTE Band 2 - 10MHz QPSK – Full RB Configuration)

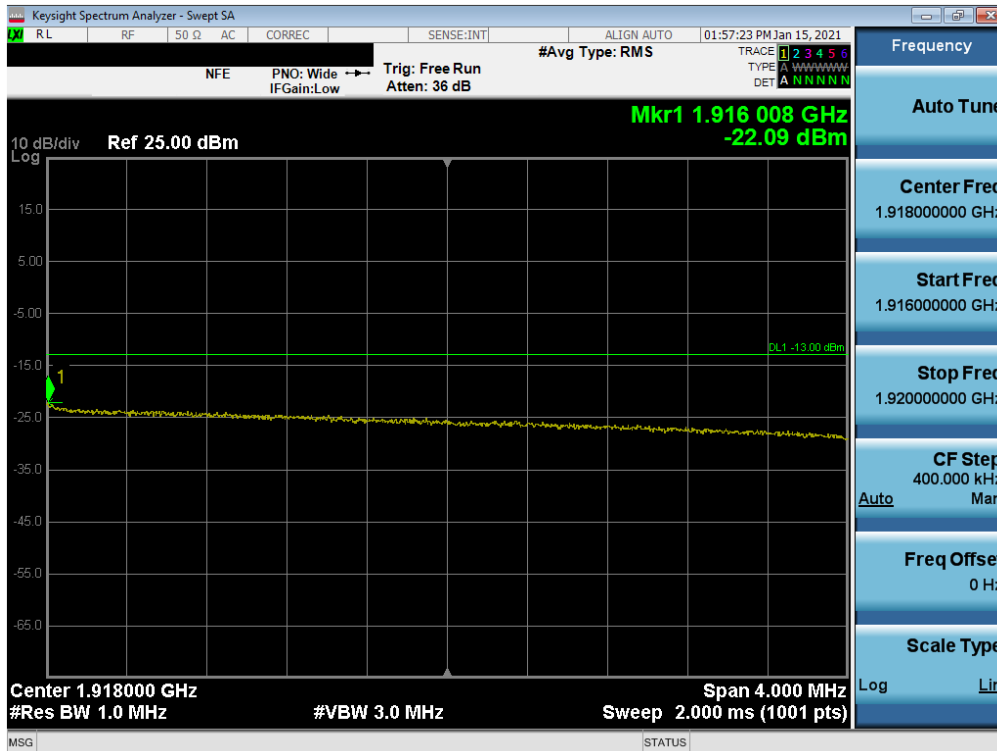


Plot 7-113. Extended Upper Band Edge Plot (LTE Band 2 - 10MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 76 of 148

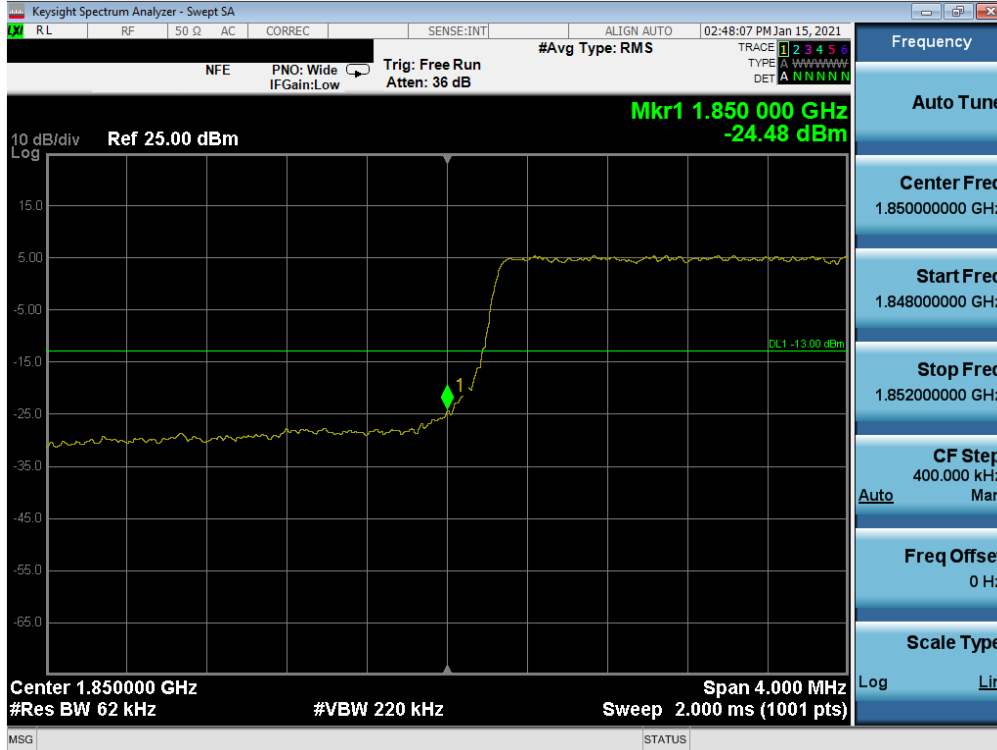


Plot 7-114. Upper Band Edge Plot (LTE Band 25 - 10MHz QPSK – Full RB Configuration)

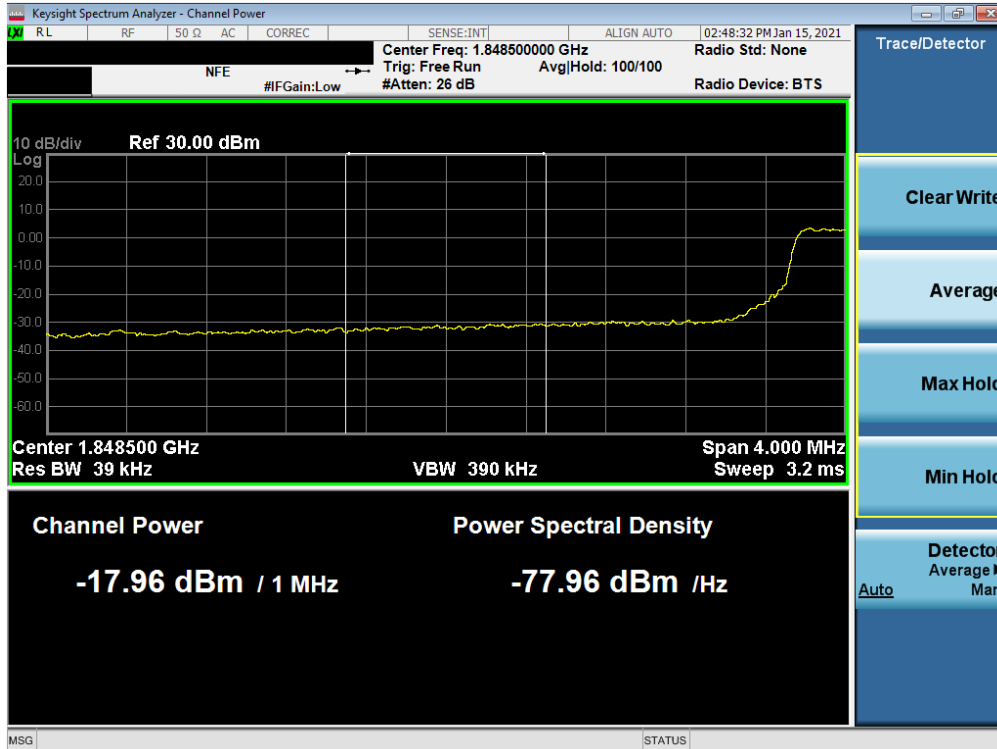


Plot 7-115. Extended Upper Band Edge Plot (LTE Band 25 - 10MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 77 of 148

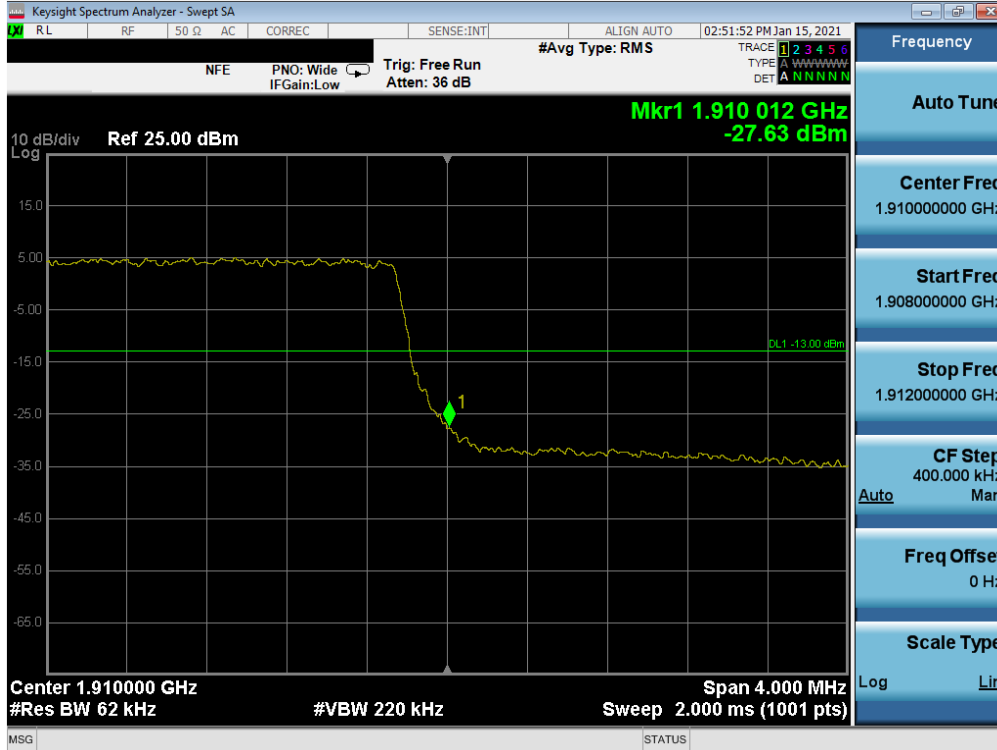


Plot 7-116. Lower Band Edge Plot (LTE Band 25/2 - 5MHz QPSK – Full RB Configuration)

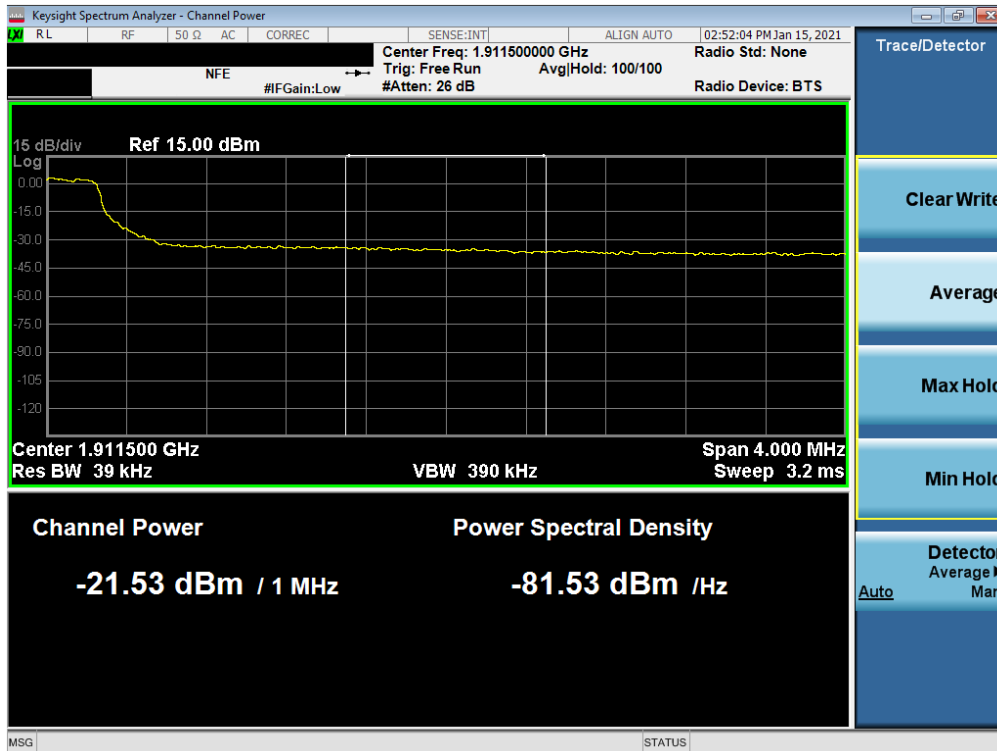


Plot 7-117. Extended Lower Band Edge Plot (LTE Band 25/2 - 5MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 78 of 148

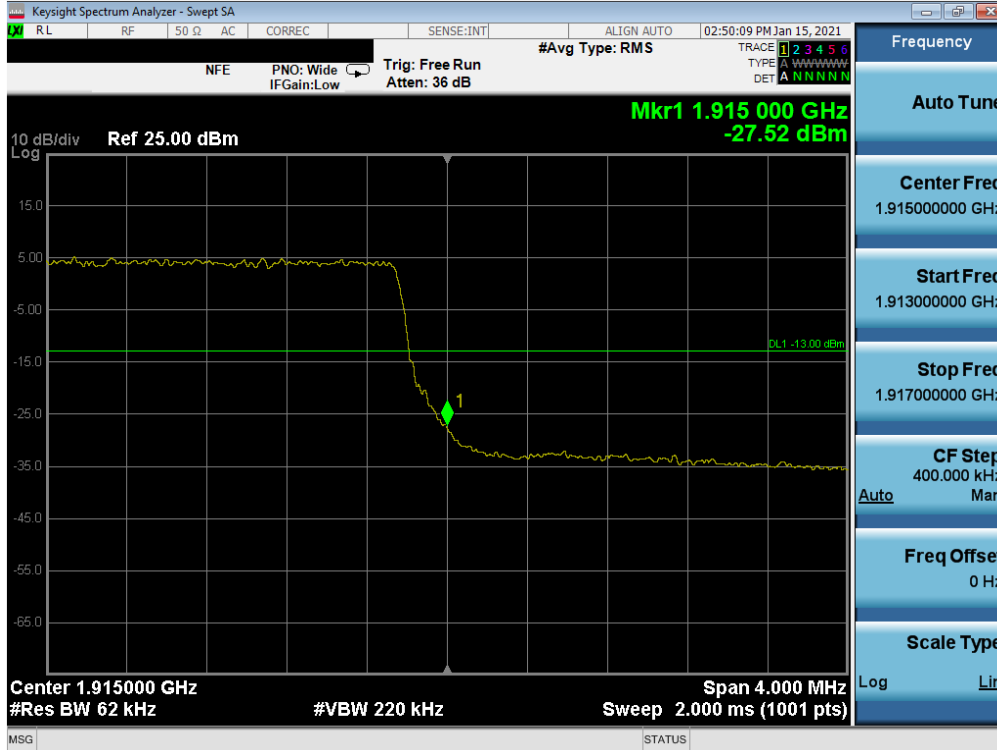


Plot 7-118. Upper Band Edge Plot (LTE Band 2 - 5MHz QPSK – Full RB Configuration)

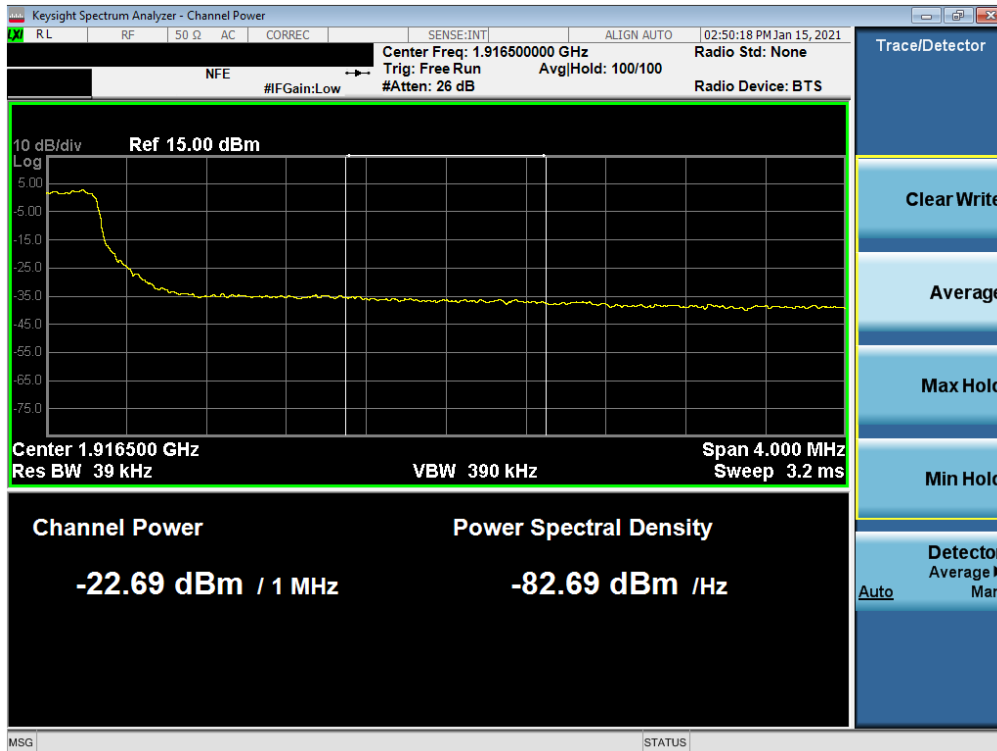


Plot 7-119. Extended Upper Band Edge Plot (LTE Band 2 - 5MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 79 of 148

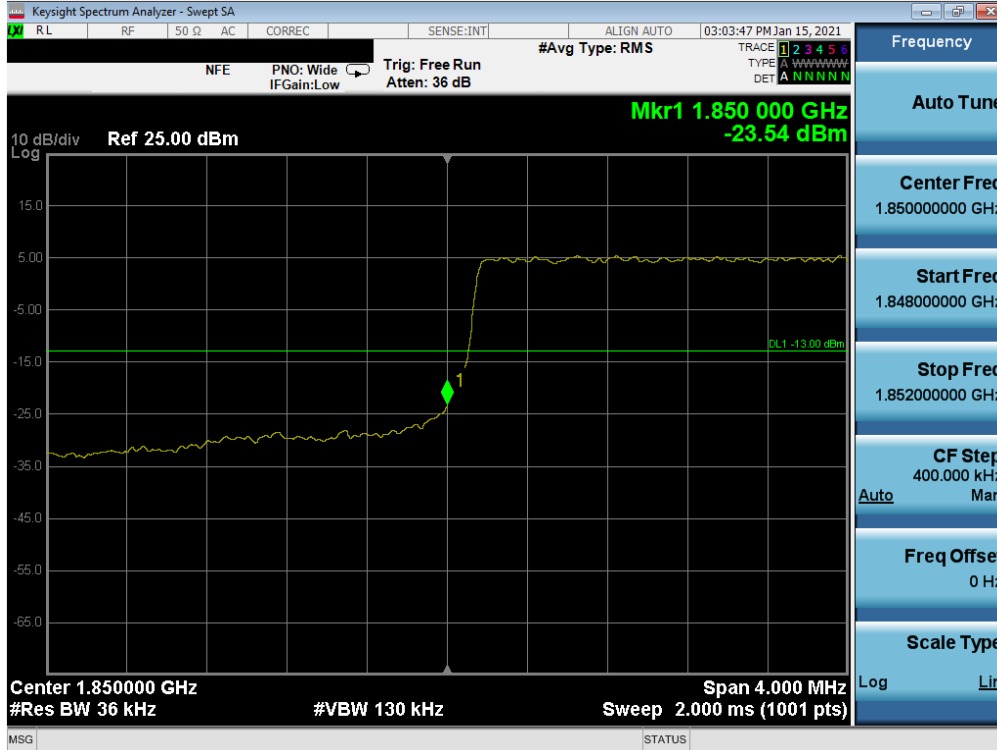


Plot 7-120. Upper Band Edge Plot (LTE Band 25 - 5MHz QPSK – Full RB Configuration)

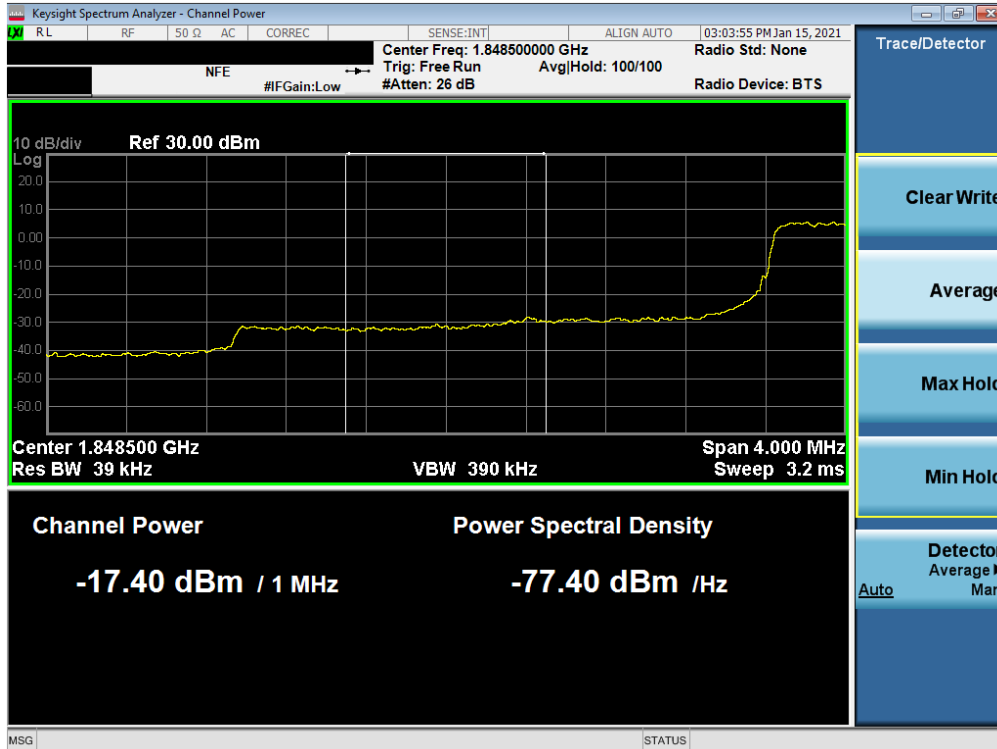


Plot 7-121. Extended Upper Band Edge Plot (LTE Band 25 - 5MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 80 of 148

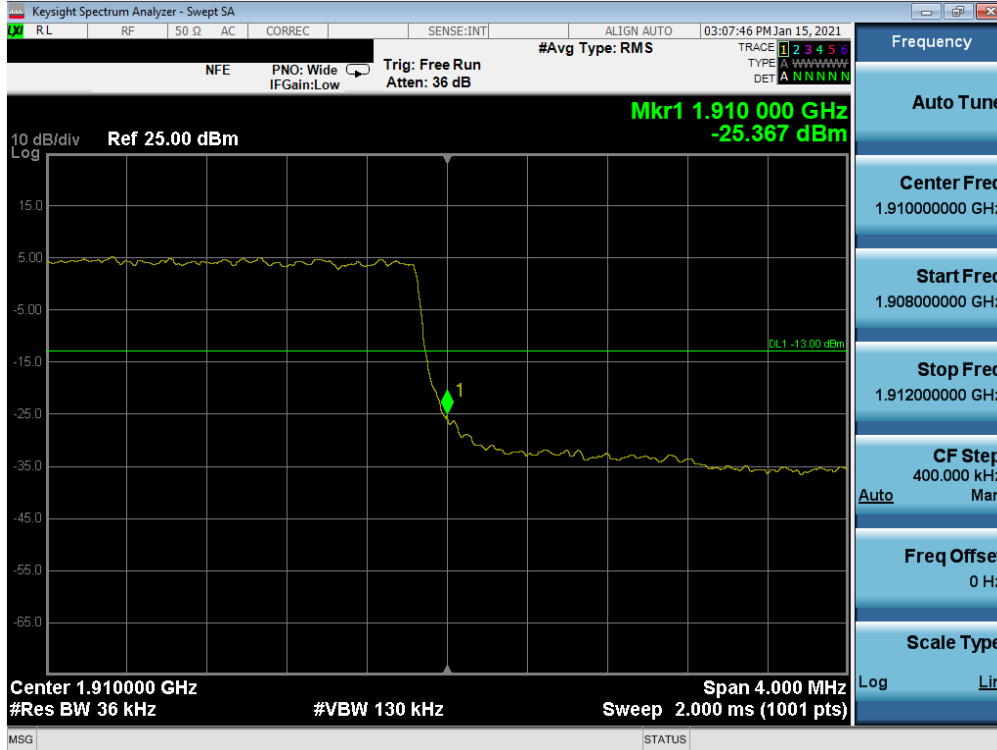


Plot 7-122. Lower Band Edge Plot (LTE Band 25/2 - 3MHz QPSK – Full RB Configuration)

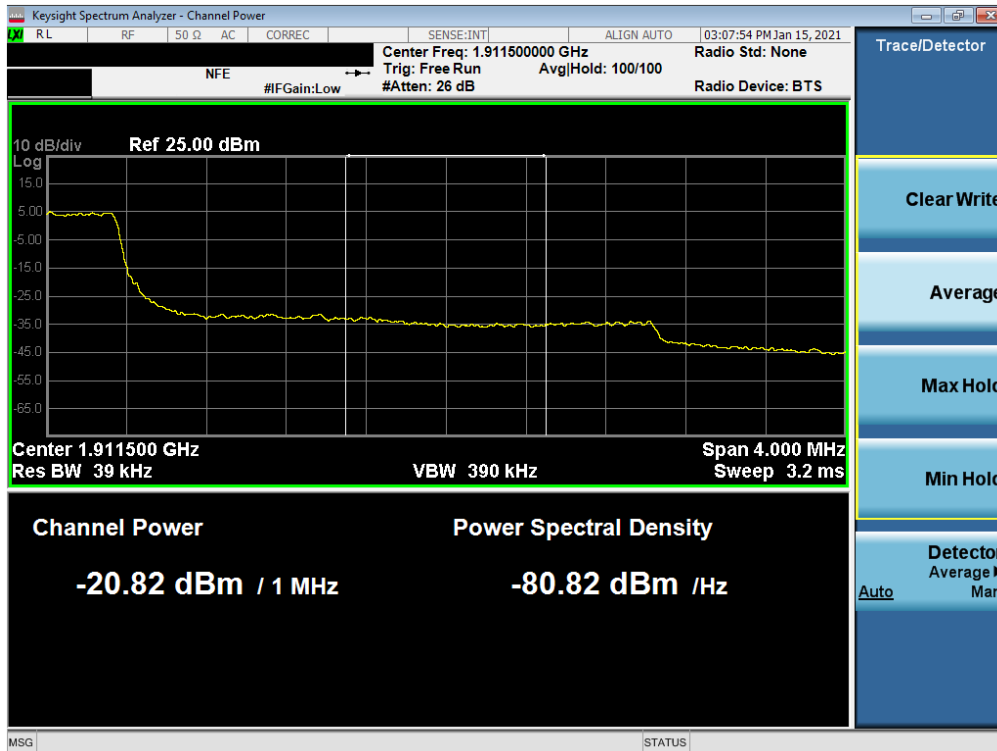


Plot 7-123. Extended Lower Band Edge Plot (LTE Band 25/2 - 3MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 81 of 148



Plot 7-124. Upper Band Edge Plot (LTE Band 2 - 3MHz QPSK – Full RB Configuration)

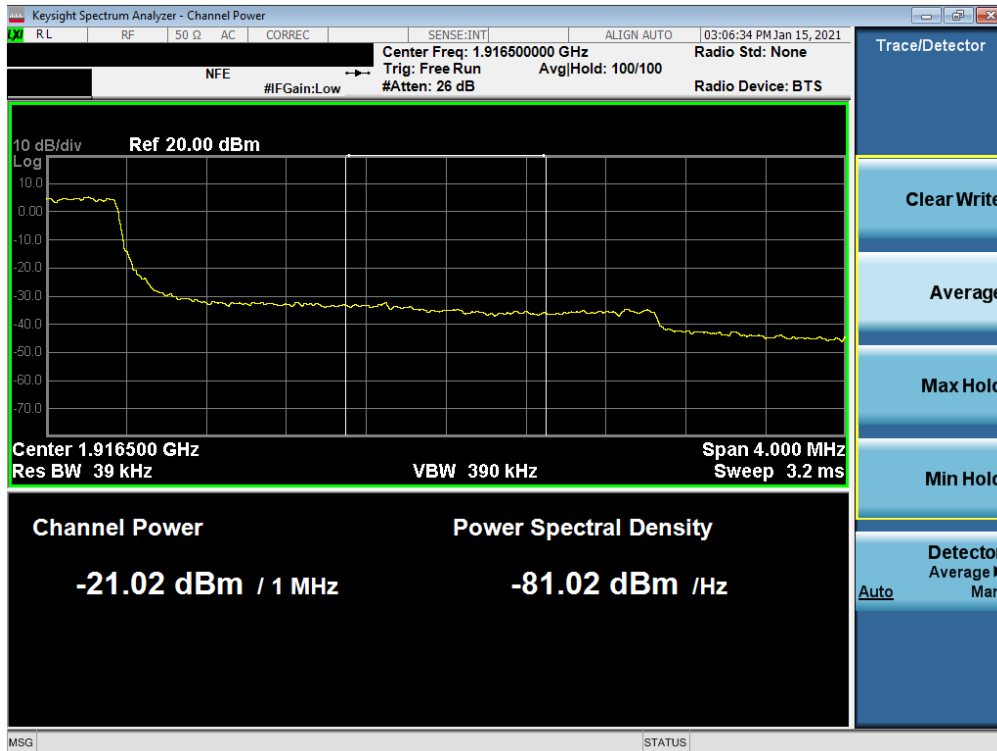


Plot 7-125. Extended Upper Band Edge Plot (LTE Band 2 - 3MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 82 of 148

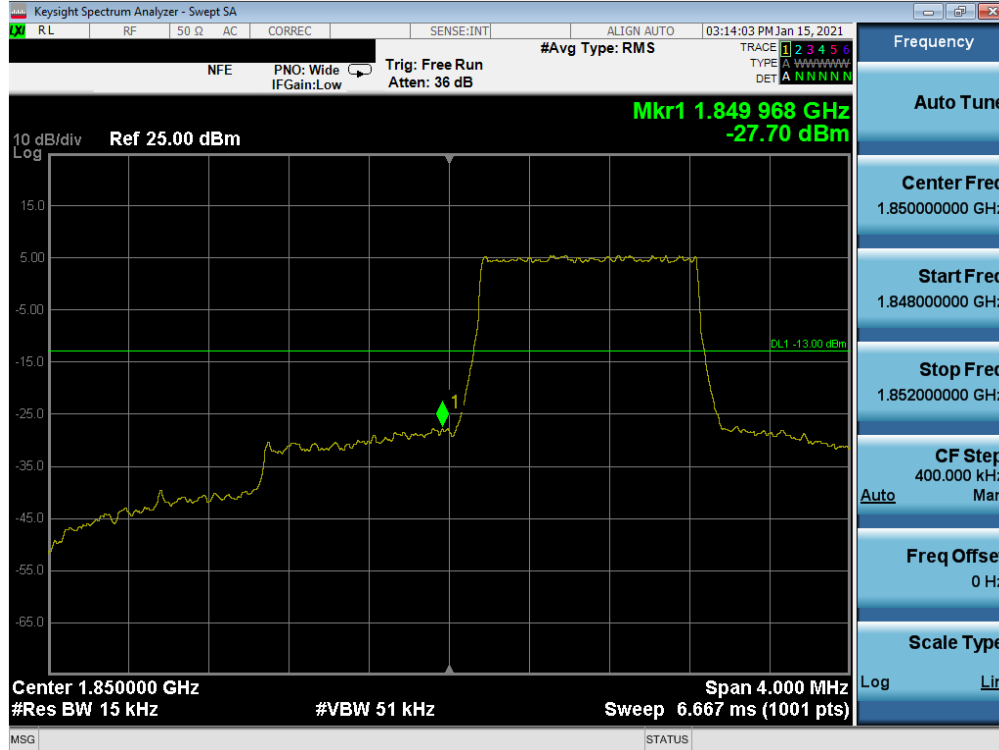


Plot 7-126. Upper Band Edge Plot (LTE Band 25 - 3MHz QPSK – Full RB Configuration)

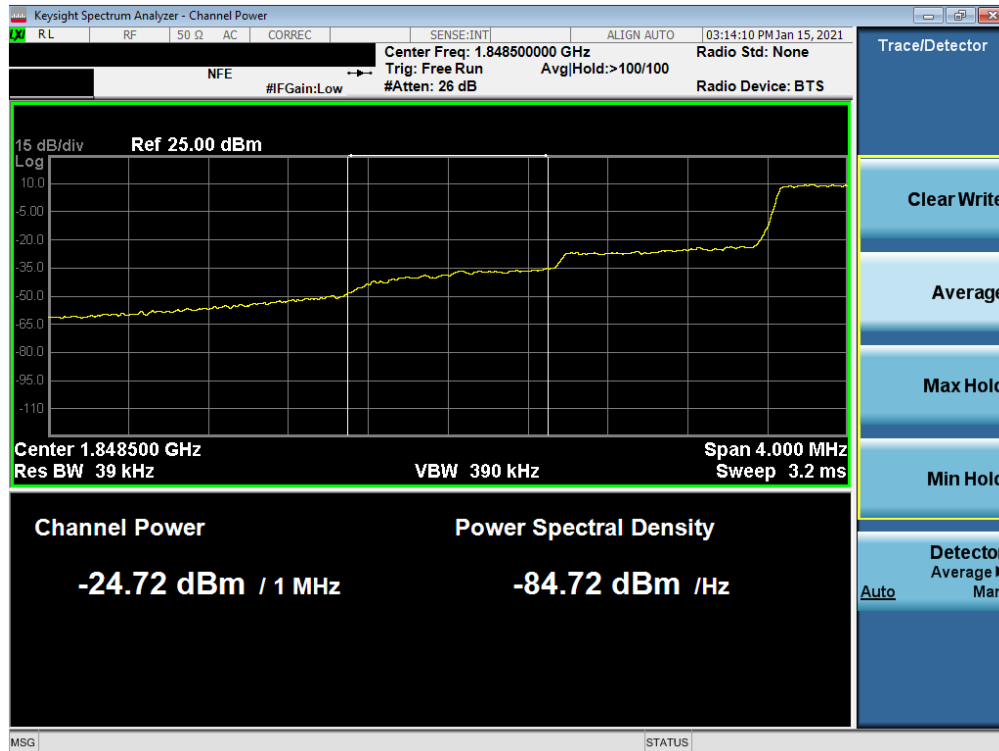


Plot 7-127. Extended Upper Band Edge Plot (LTE Band 25 - 3MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 83 of 148

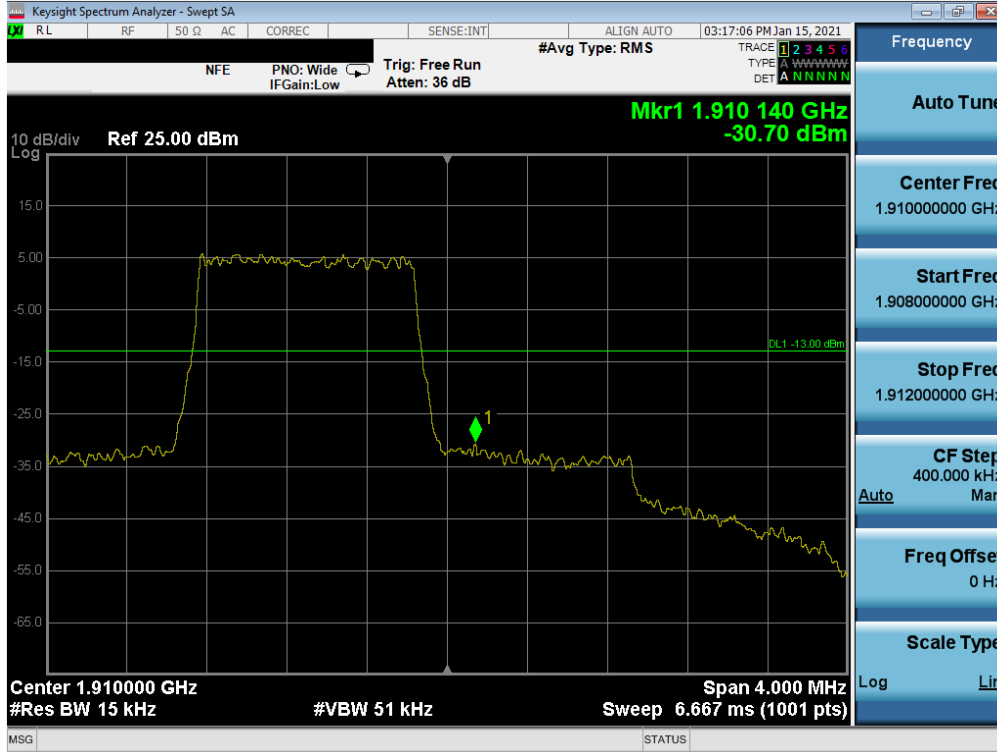


Plot 7-128. Lower Band Edge Plot (LTE Band 25/2 – 1.4MHz QPSK – Full RB Configuration)

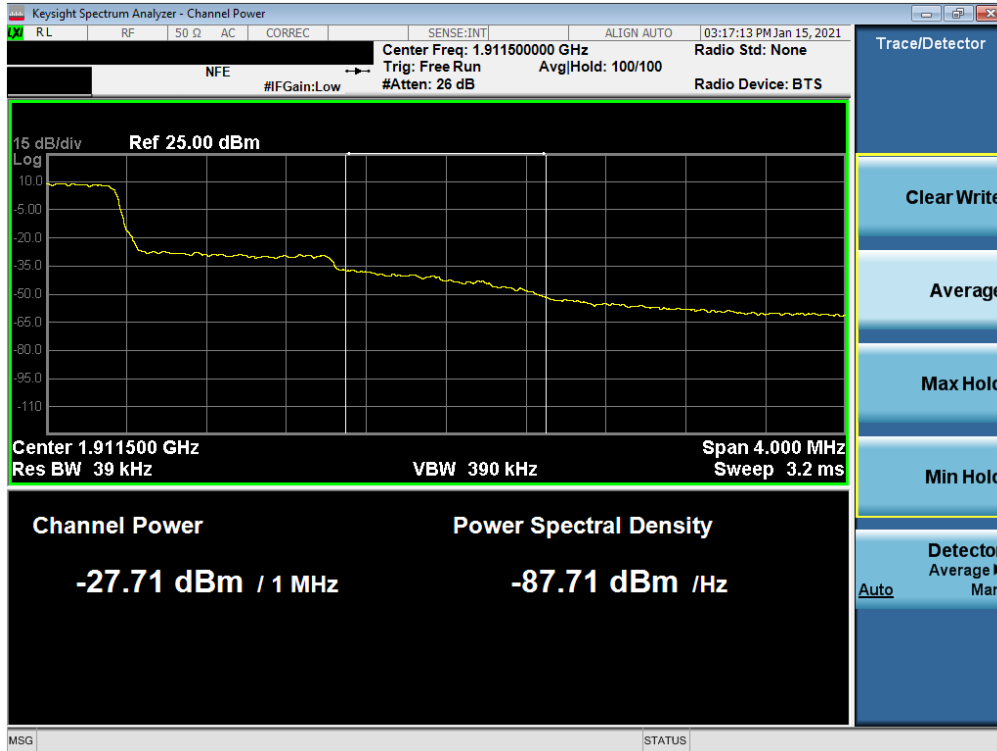


Plot 7-129. Extended Lower Band Edge Plot (LTE Band 25/2 – 1.4MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 84 of 148

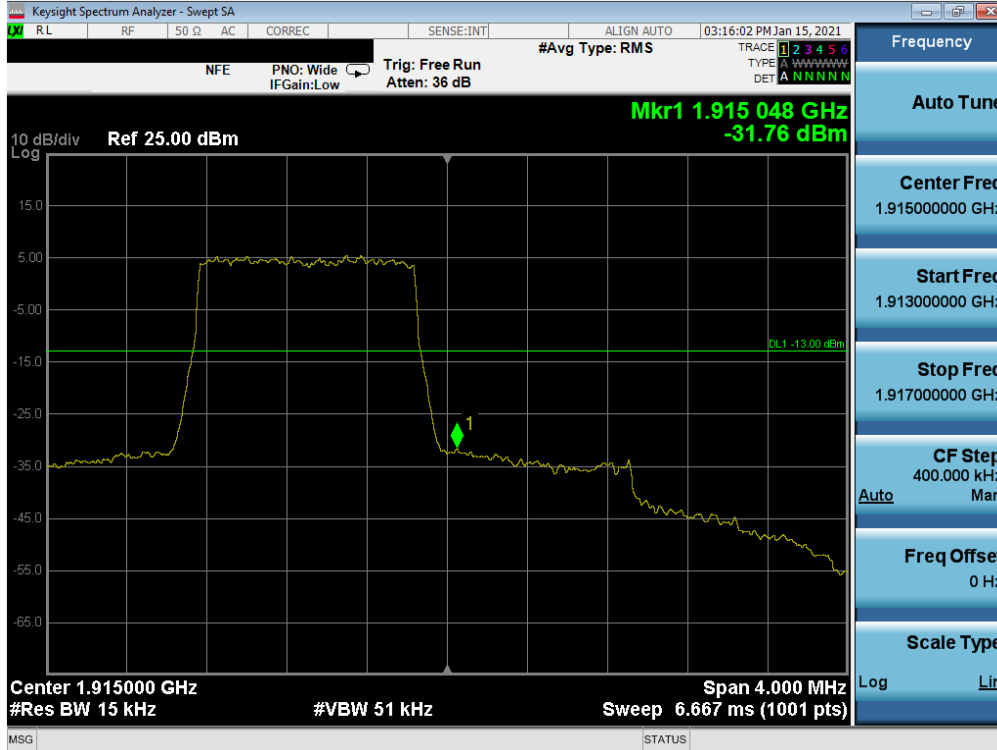


Plot 7-130. Upper Band Edge Plot (LTE Band 2 – 1.4MHz QPSK – Full RB Configuration)

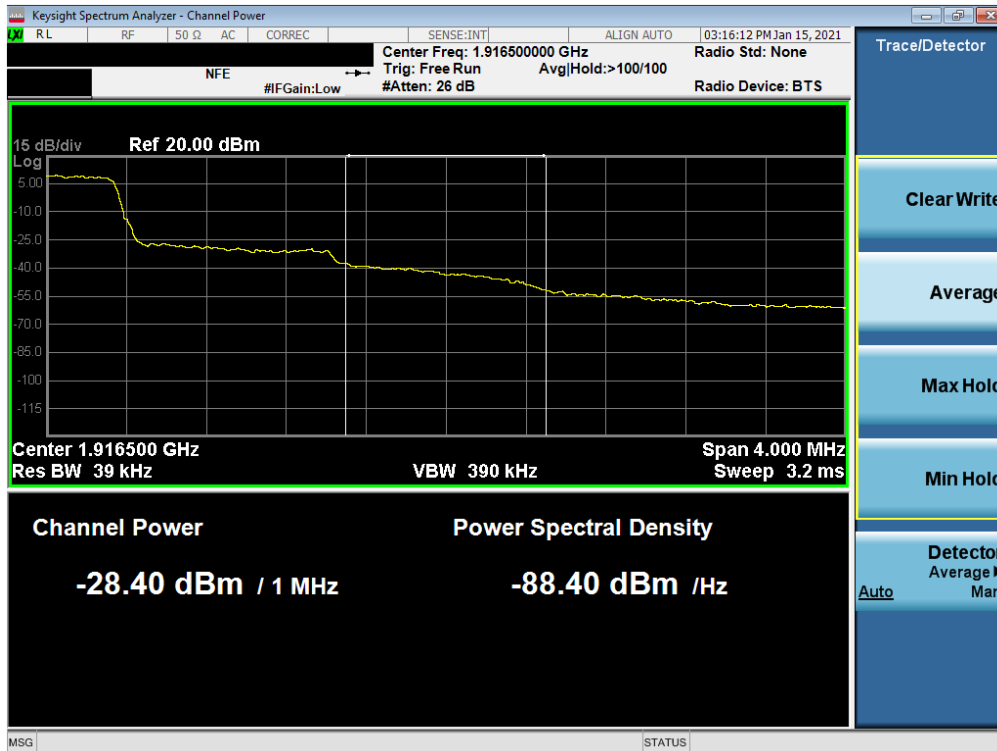


Plot 7-131. Extended Upper Band Edge Plot (LTE Band 2 – 1.4MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 85 of 148



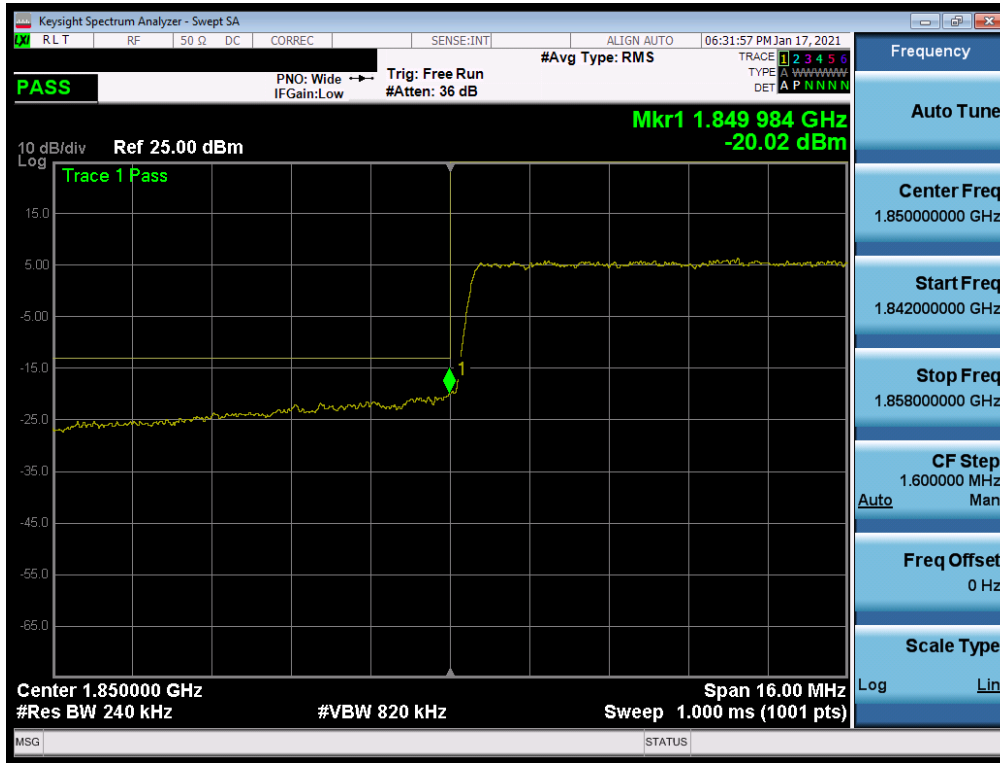
Plot 7-132. Upper Band Edge Plot (LTE Band 25 – 1.4MHz QPSK – Full RB Configuration)



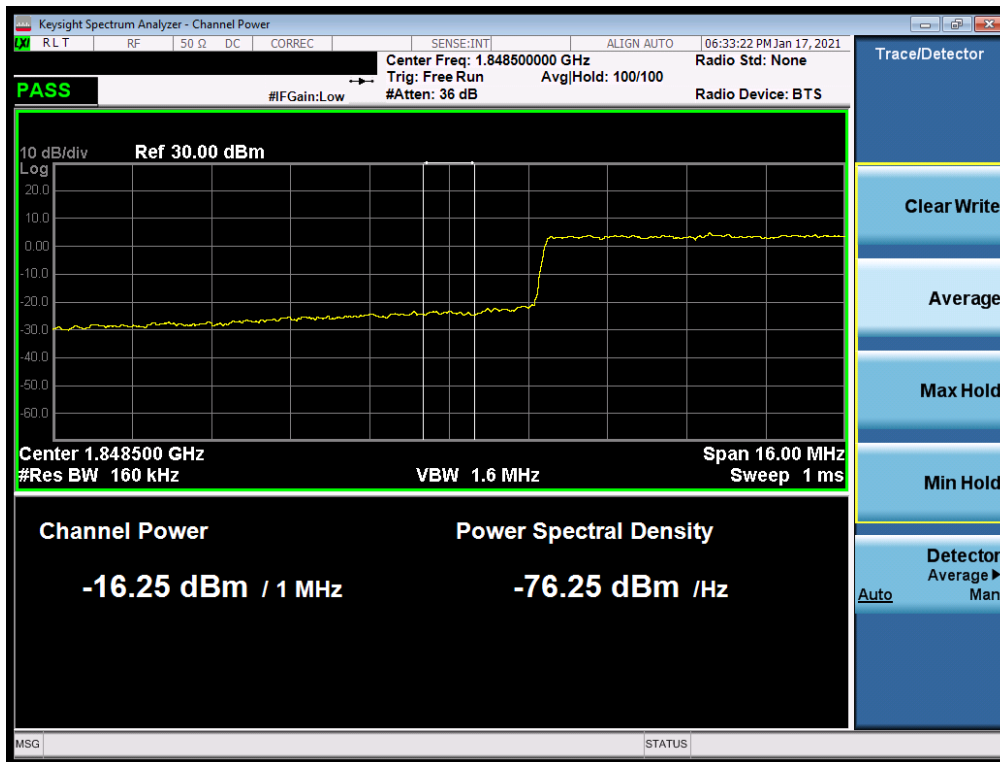
Plot 7-133. Extended Upper Band Edge Plot (LTE Band 25 – 1.4MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 86 of 148

NR Band n25/2



Plot 7-134. Lower Band Edge Plot (NR Band n25/2 - 20MHz QPSK – Full RB Configuration)

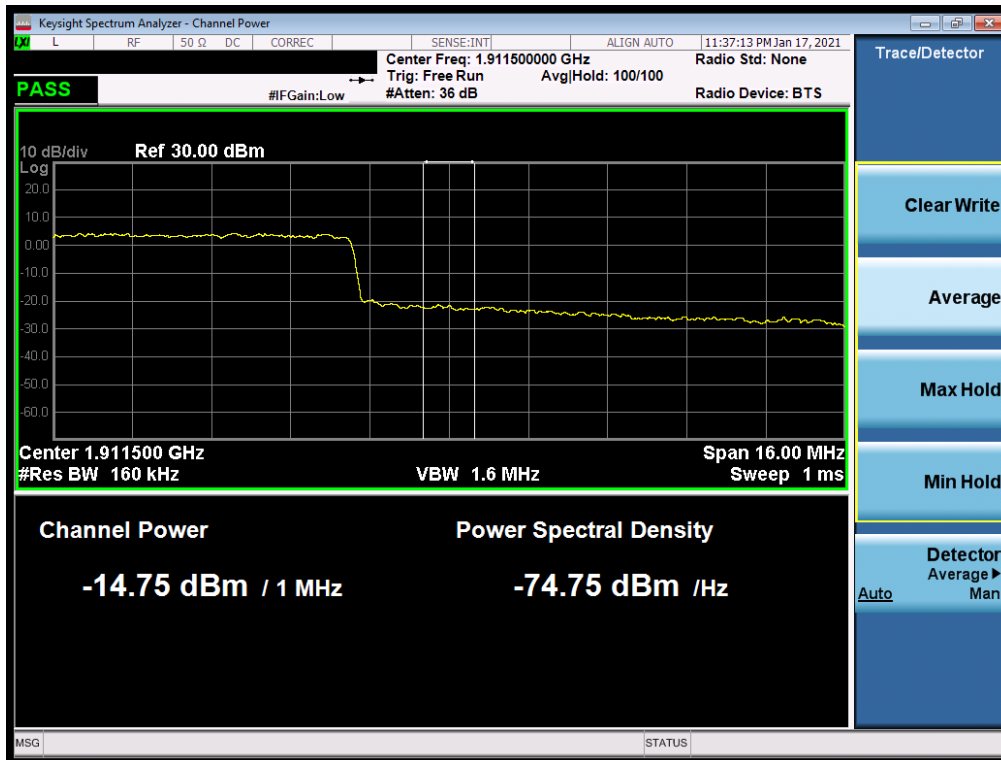


Plot 7-135. Extended Lower Band Edge Plot (NR Band n25/2 - 20MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 87 of 148



Plot 7-136. Upper Band Edge Plot (NR Band n2 - 20MHz QPSK – Full RB Configuration)

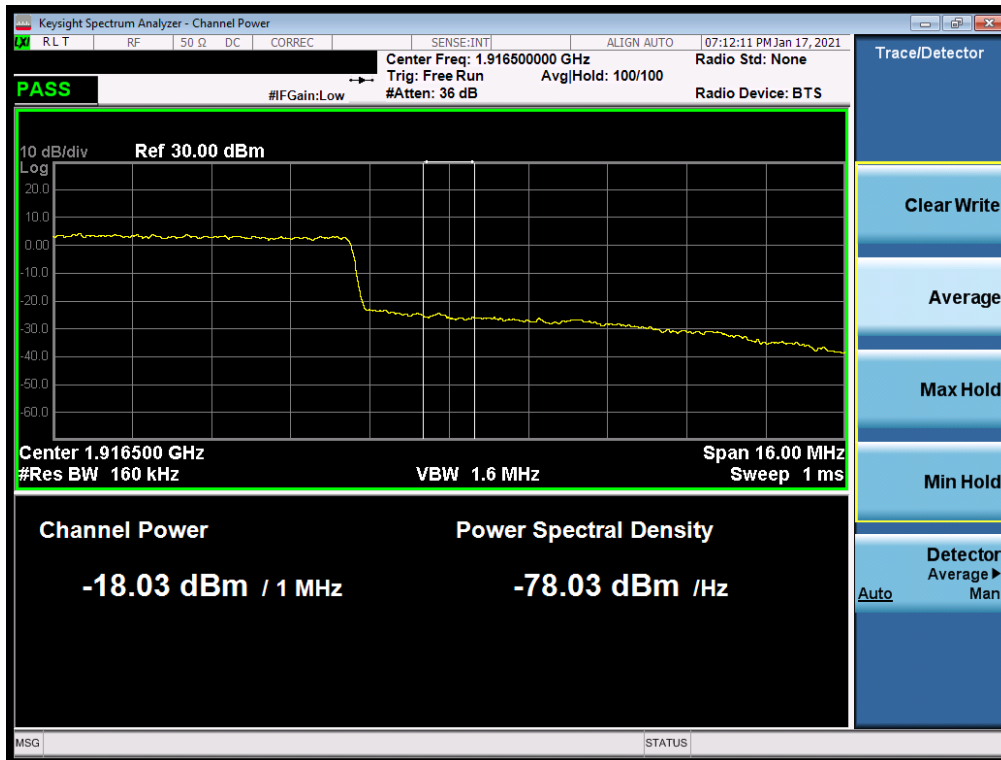


Plot 7-137. Extended Upper Band Edge Plot (NR Band n2 - 20MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 88 of 148

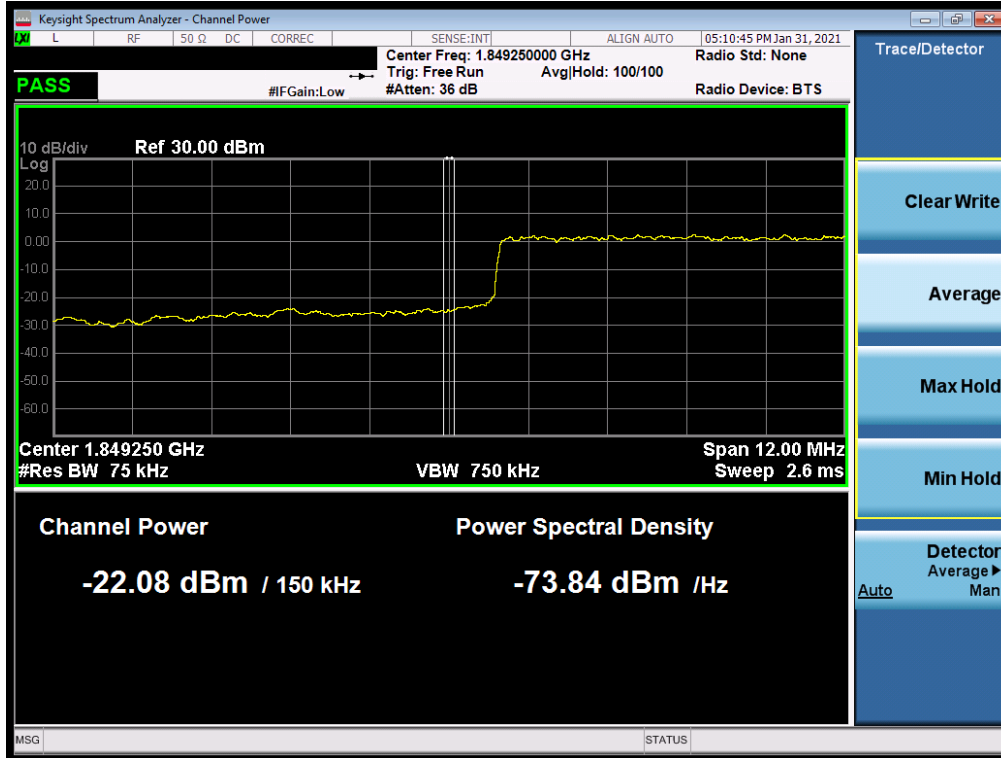


Plot 7-138. Upper Band Edge Plot (NR Band n25 - 20MHz QPSK – Full RB Configuration)

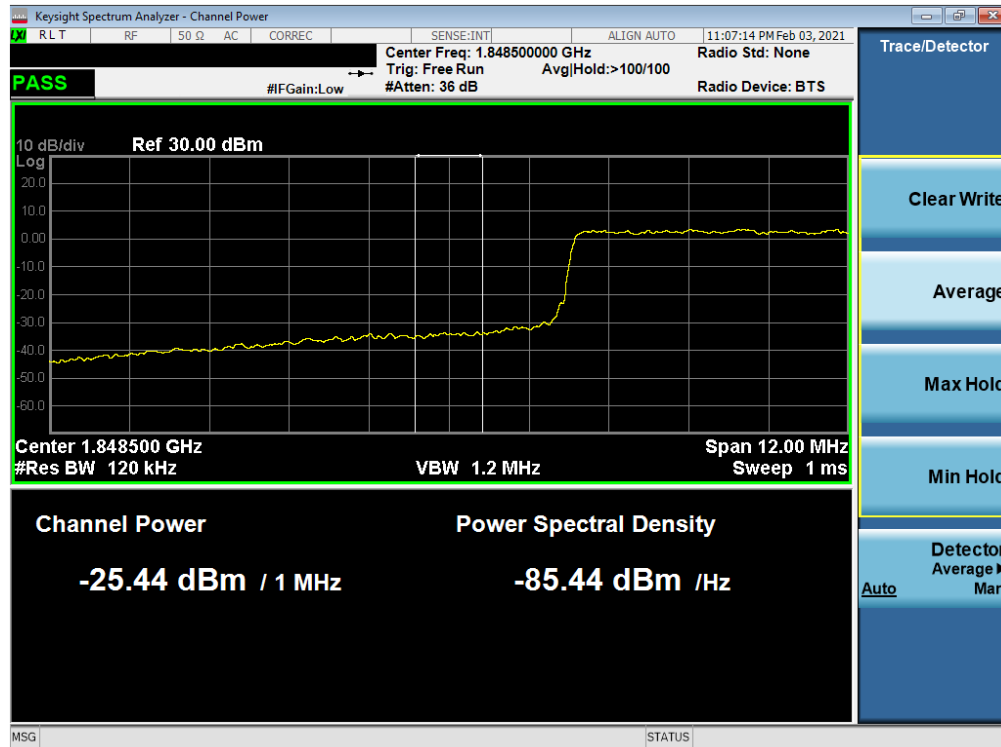


Plot 7-139. Extended Upper Band Edge Plot (NR Band n25 - 20MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 89 of 148



Plot 7-140. Lower Band Edge Plot (NR Band n25/2 - 15MHz QPSK – Full RB Configuration)

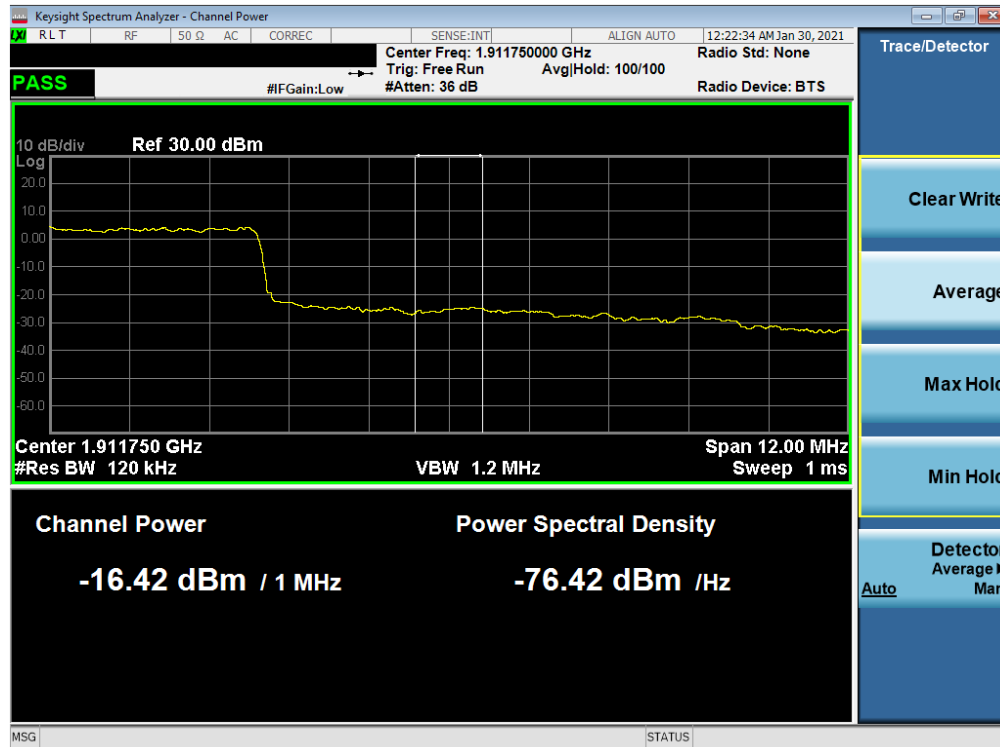


Plot 7-141. Extended Lower Band Edge Plot (NR Band n25/2 - 15MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 90 of 148



Plot 7-142. Upper Band Edge Plot (NR Band n2 - 15MHz QPSK – Full RB Configuration)

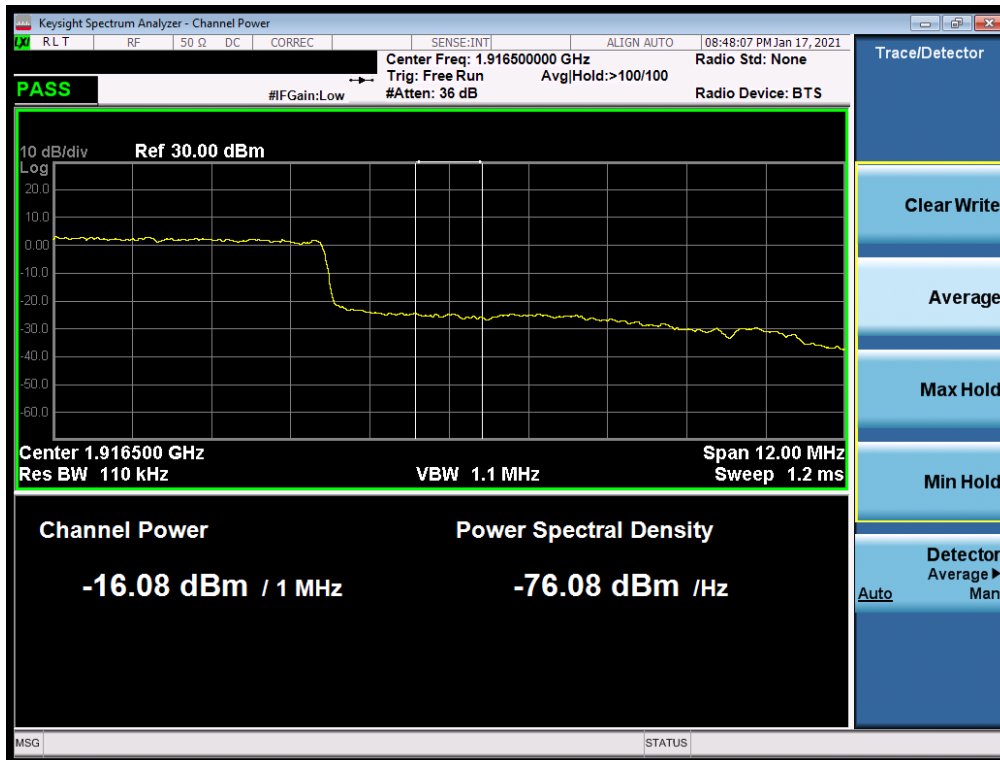


Plot 7-143. Extended Upper Band Edge Plot (NR Band n2 - 15MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 91 of 148

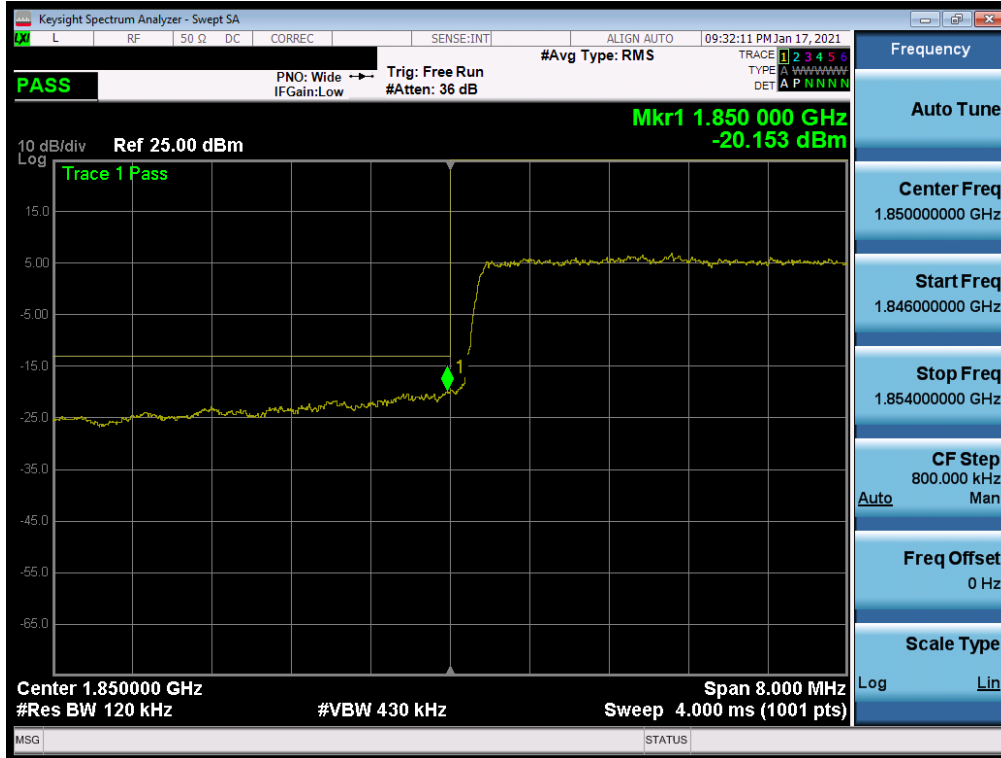


Plot 7-144. Upper Band Edge Plot (NR Band n25 - 15MHz QPSK – Full RB Configuration)

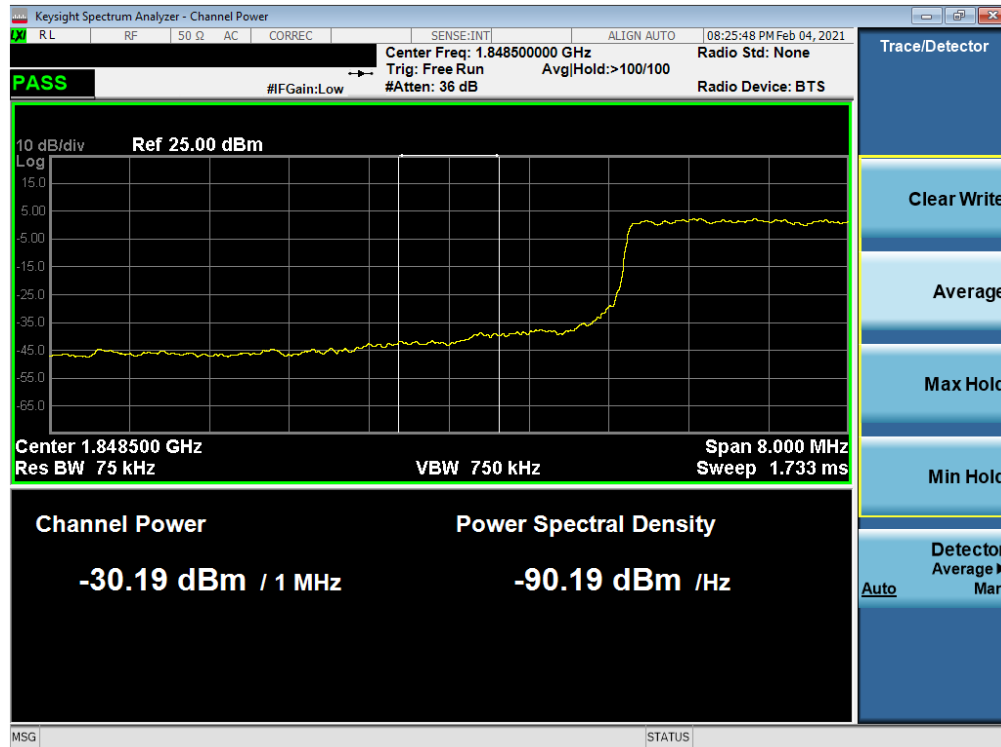


Plot 7-145. Extended Upper Band Edge Plot (NR Band n25 - 15MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 92 of 148



Plot 7-146. Lower Band Edge Plot (NR Band n25/2 - 10MHz QPSK – Full RB Configuration)

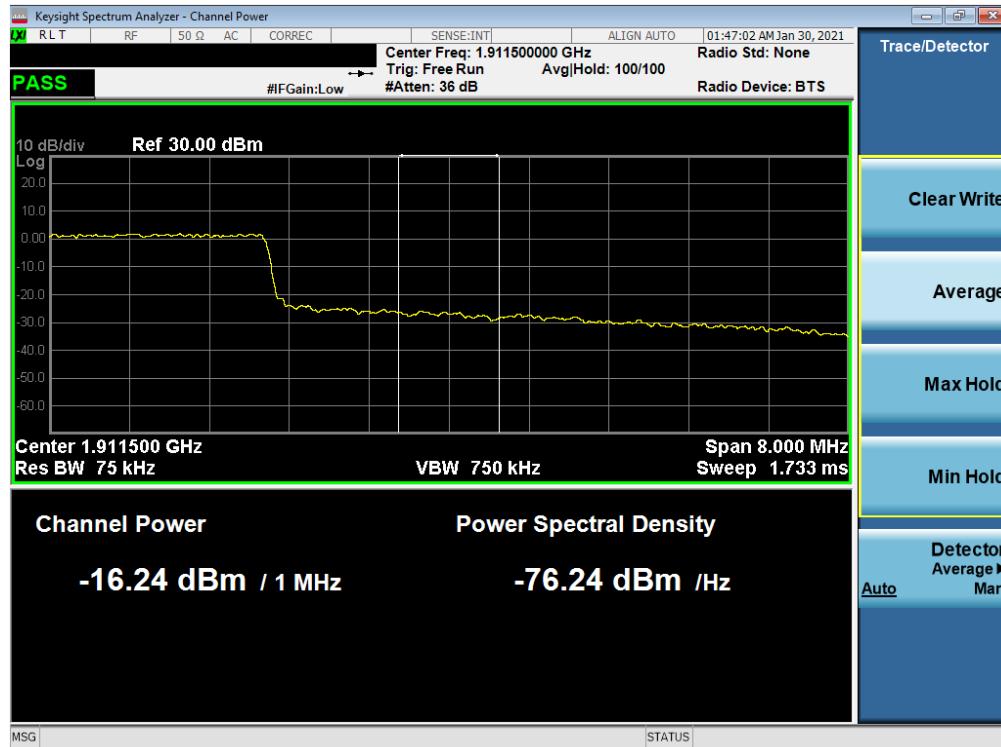


Plot 7-147. Extended Lower Band Edge Plot (NR Band n25/2 - 10MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 93 of 148



Plot 7-148. Upper Band Edge Plot (NR Band n2 - 10MHz QPSK – Full RB Configuration)

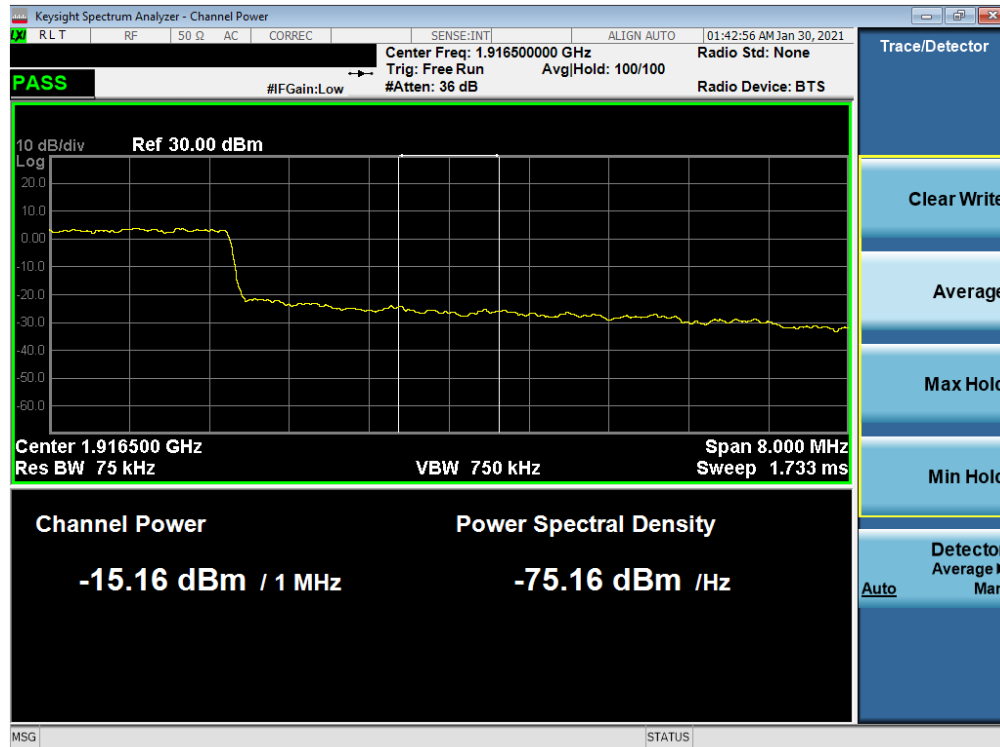


Plot 7-149. Extended Upper Band Edge Plot (NR Band n2 - 10MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 94 of 148

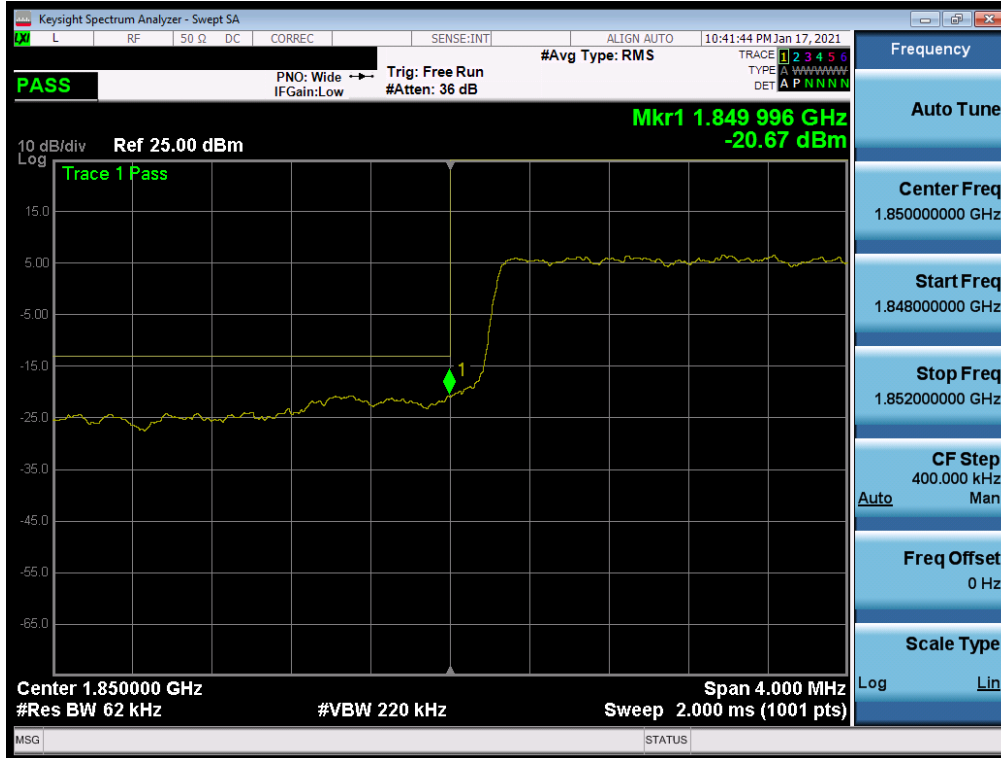


Plot 7-150. Upper Band Edge Plot (NR Band n25 - 10MHz QPSK – Full RB Configuration)

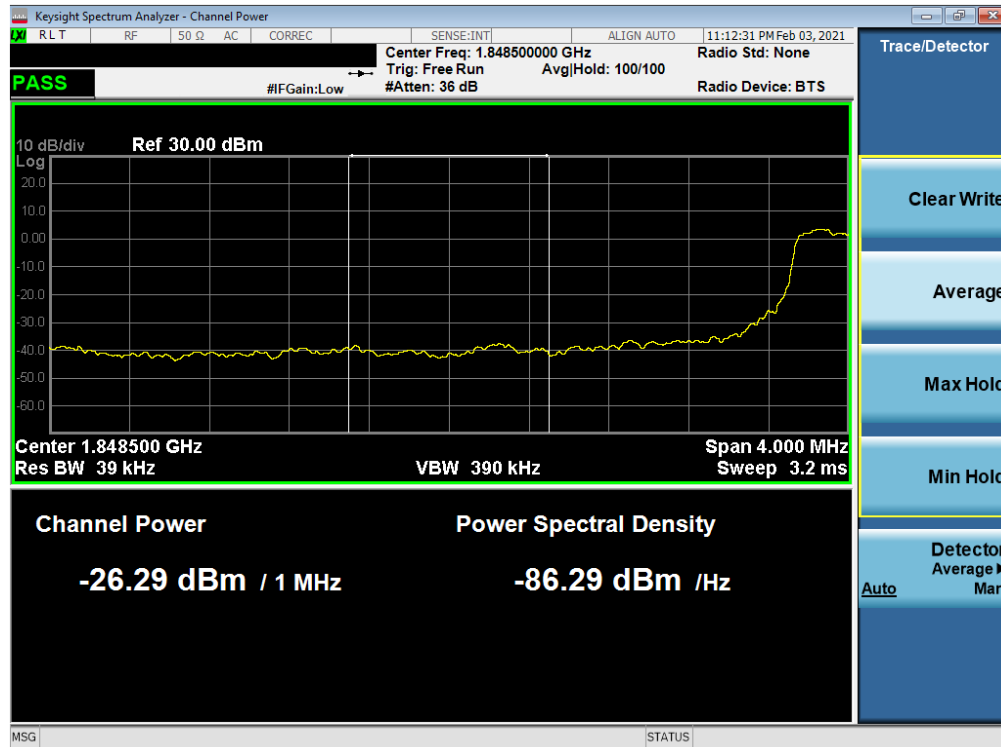


Plot 7-151. Extended Upper Band Edge Plot (NR Band n25 - 10MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 95 of 148



Plot 7-152. Lower Band Edge Plot (NR Band n25/2 – 5MHz QPSK – Full RB Configuration)

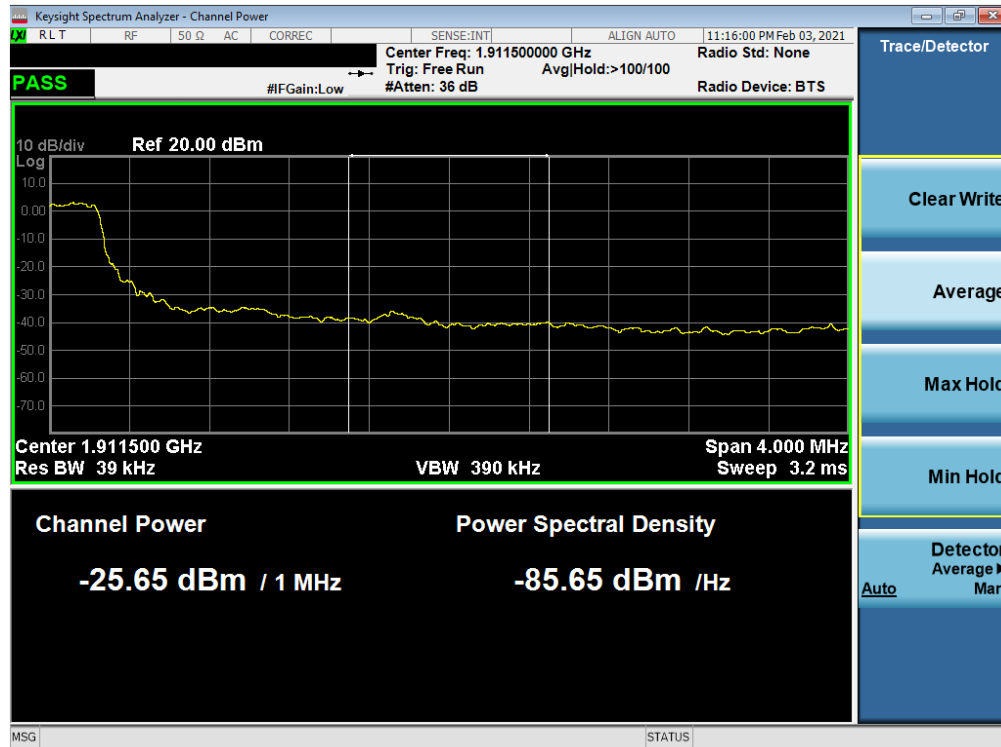


Plot 7-153. Extended Lower Band Edge Plot (NR Band n25/2 – 5MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 96 of 148



Plot 7-154. Upper Band Edge Plot (NR Band n2 – 5MHz QPSK – Full RB Configuration)

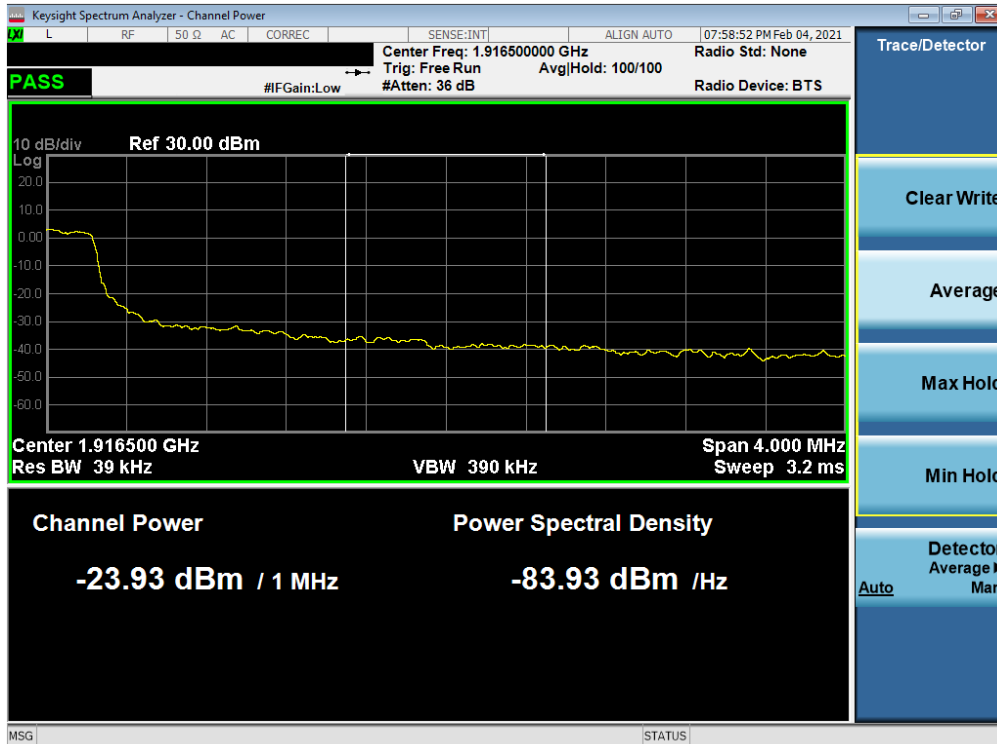


Plot 7-155. Extended Upper Band Edge Plot (NR Band n2 – 5MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 97 of 148



Plot 7-156. Upper Band Edge Plot (NR Band n25 – 5MHz QPSK – Full RB Configuration)



Plot 7-157. Extended Upper Band Edge Plot (NR Band n25 – 5MHz QPSK – Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 98 of 148

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.

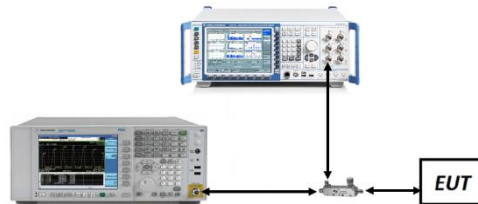




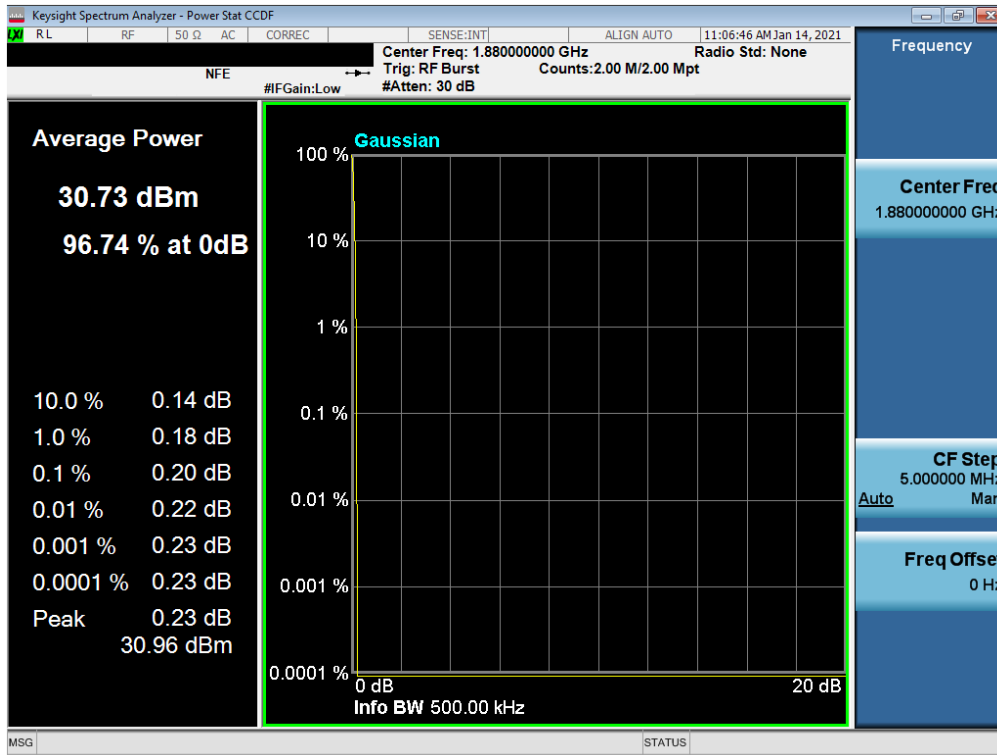
Figure 7-4. Test Instrument & Measurement Setup

Test Notes

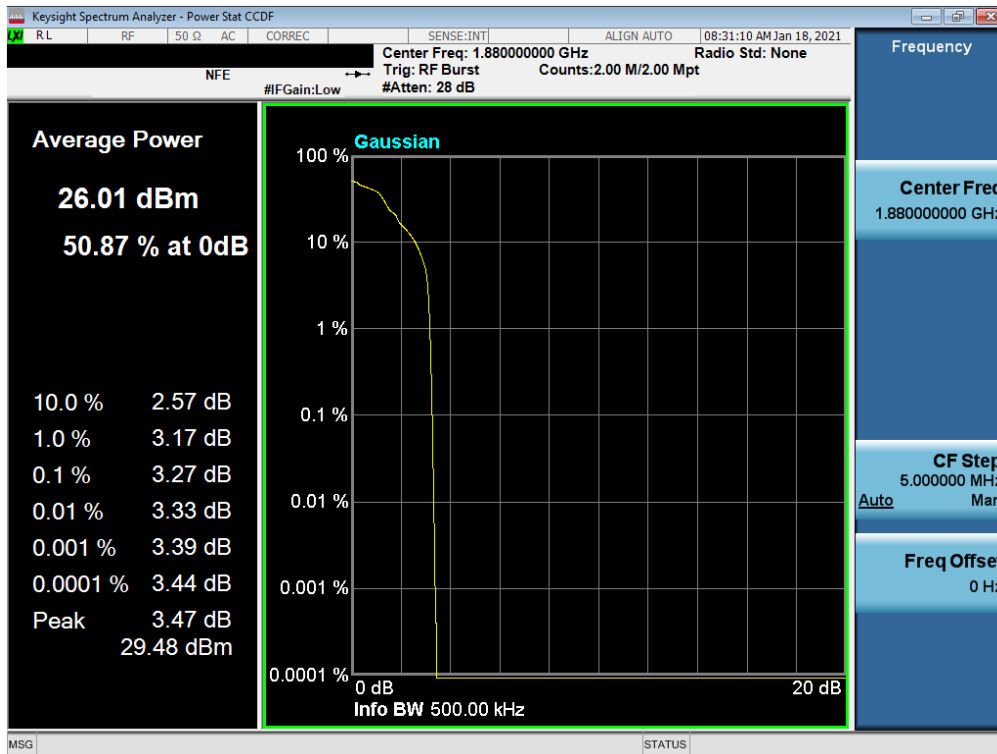
None.

FCC ID: A3LSMA426U	 PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset	Page 99 of 148

GSM/GPRS PCS



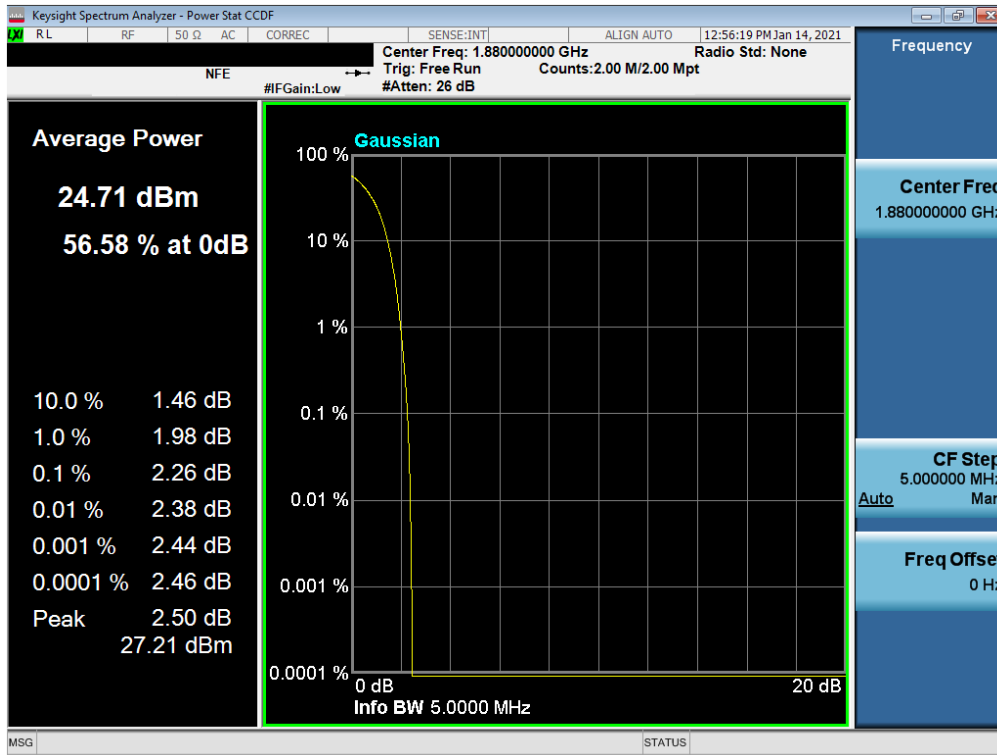
Plot 7-158. PAR Plot (GPRS, Ch. 661)



Plot 7-159. PAR Plot (EDGE, Ch. 661)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 100 of 148

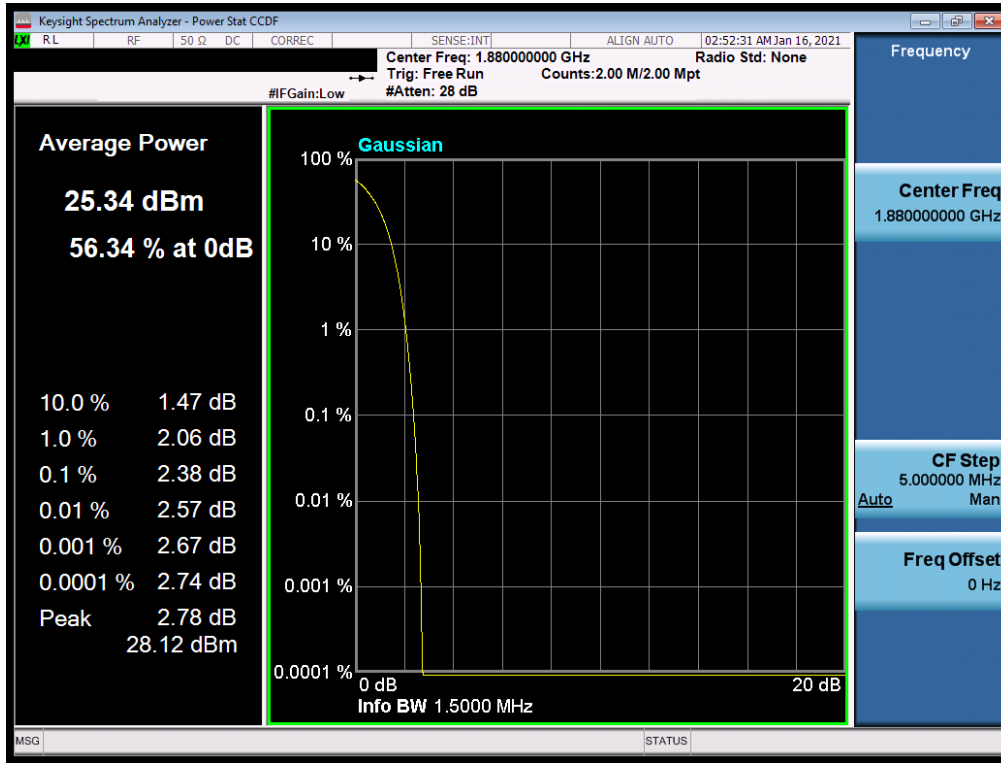
WCDMA PCS



Plot 7-160. PAR Plot (WCDMA, Ch. 9400)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 101 of 148

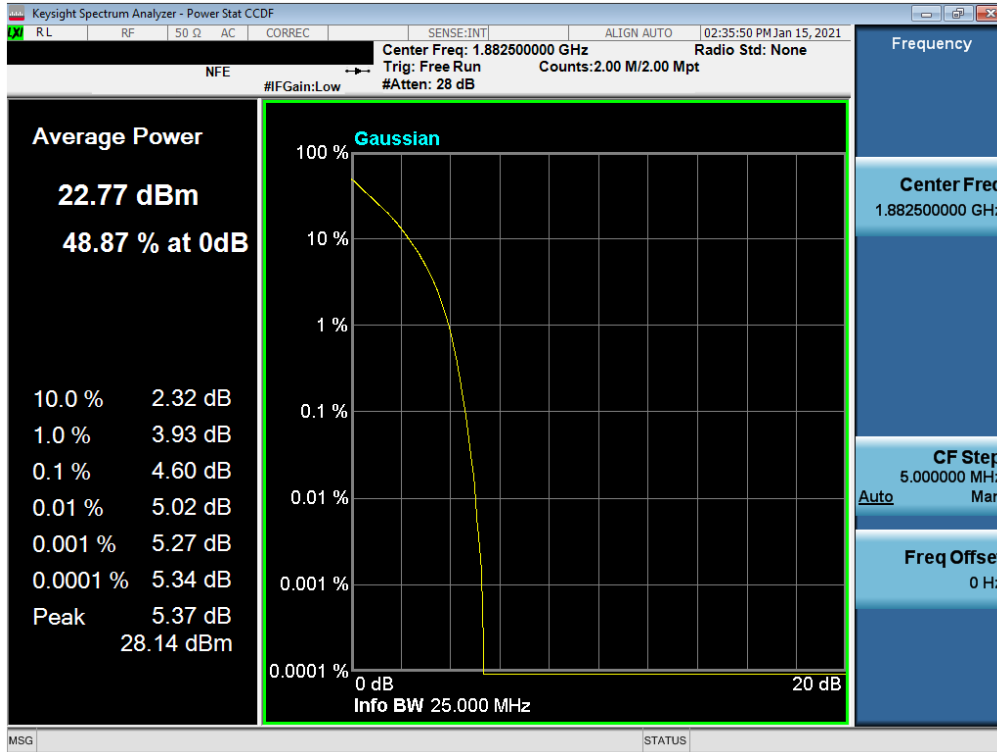
CDMA PCS



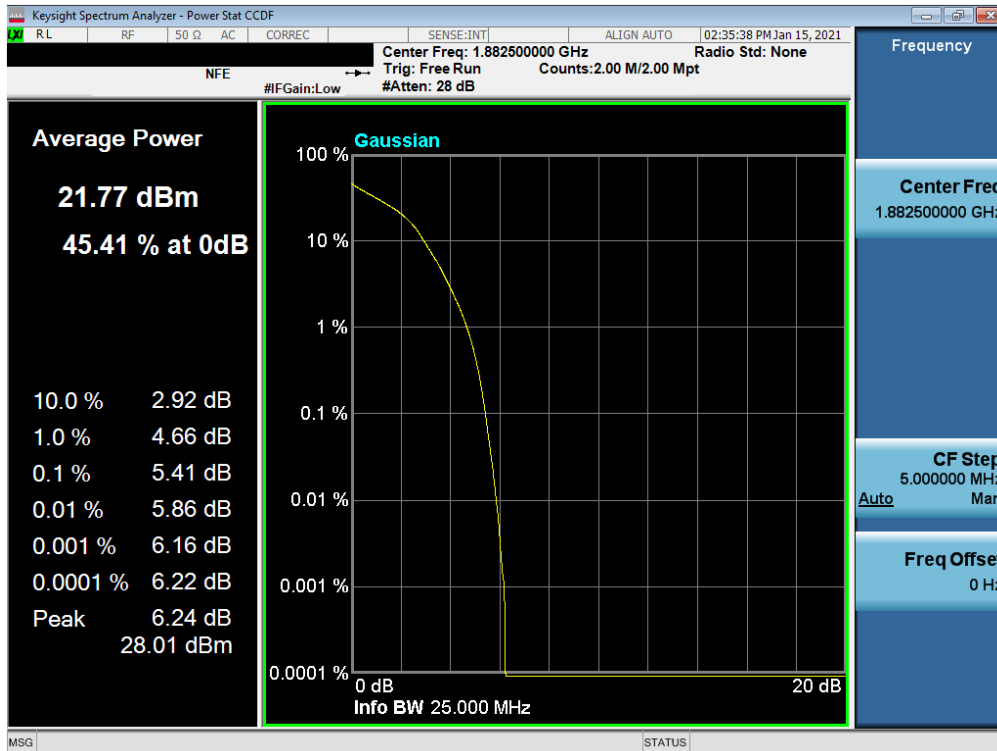
Plot 7-161. PAR Plot (CDMA, Ch. 600)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 102 of 148

LTE Band 25/2

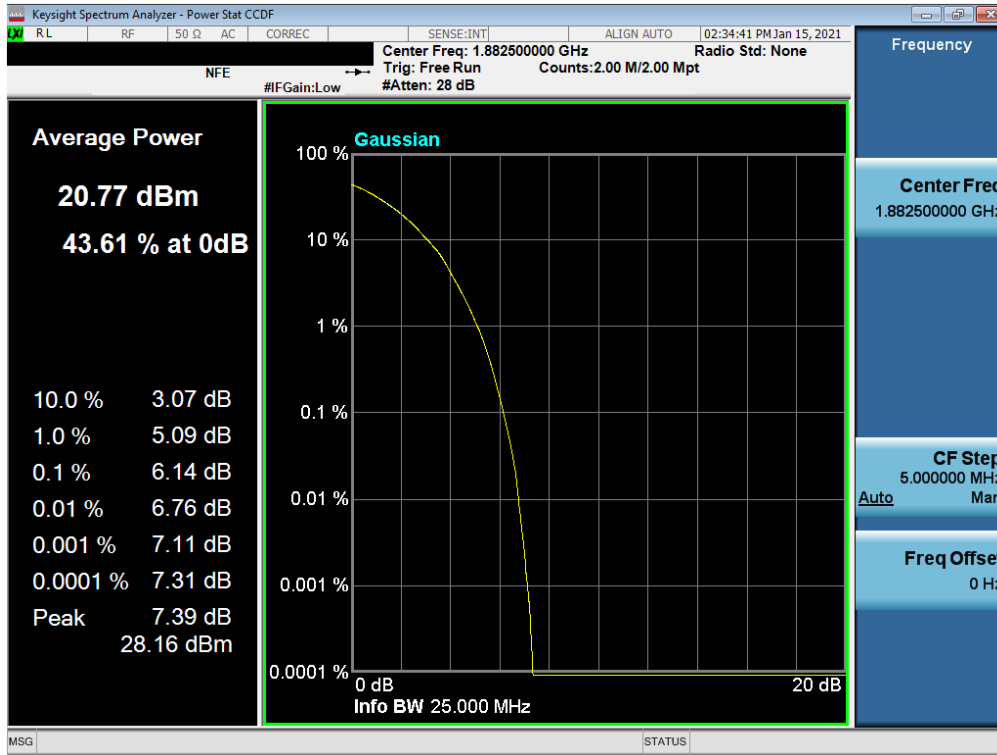


Plot 7-162. PAR Plot (LTE Band 25/2 - 20MHz QPSK - Full RB Configuration)

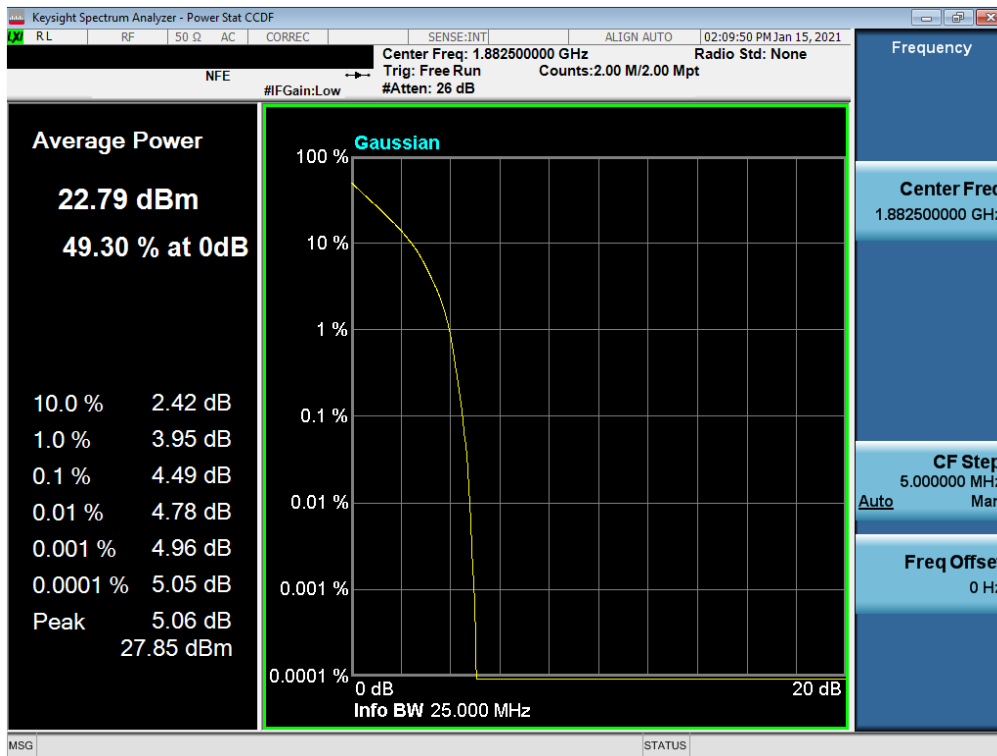


Plot 7-163. PAR Plot (LTE Band 25/2 - 20MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 103 of 148

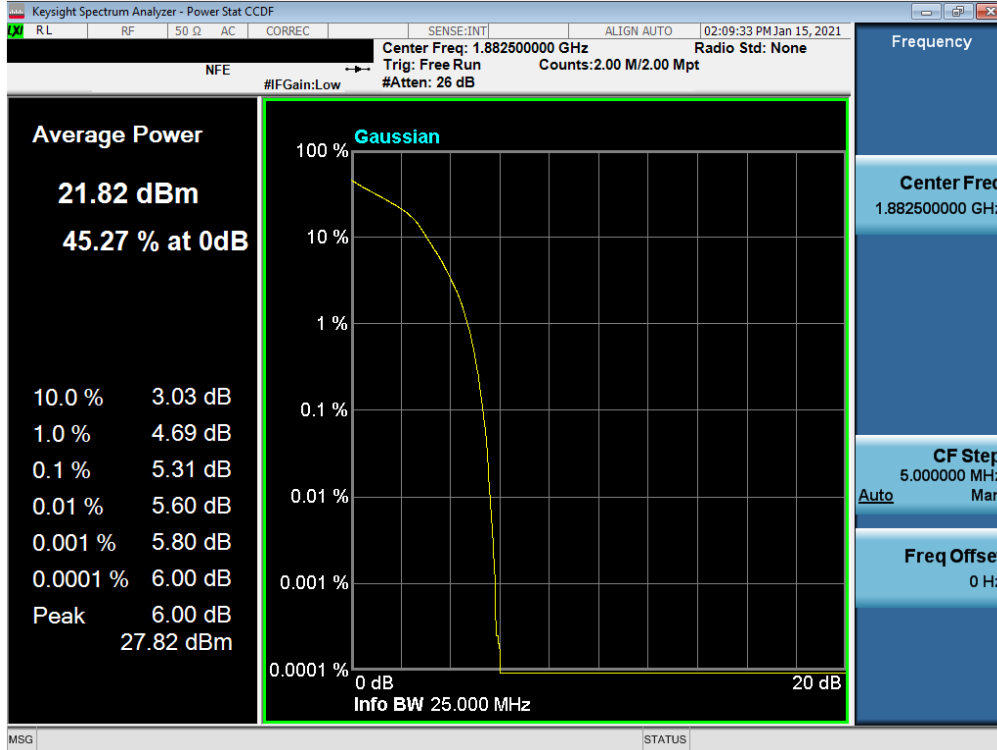


Plot 7-164. PAR Plot (LTE Band 25/2 - 20MHz 64-QAM - Full RB Configuration)

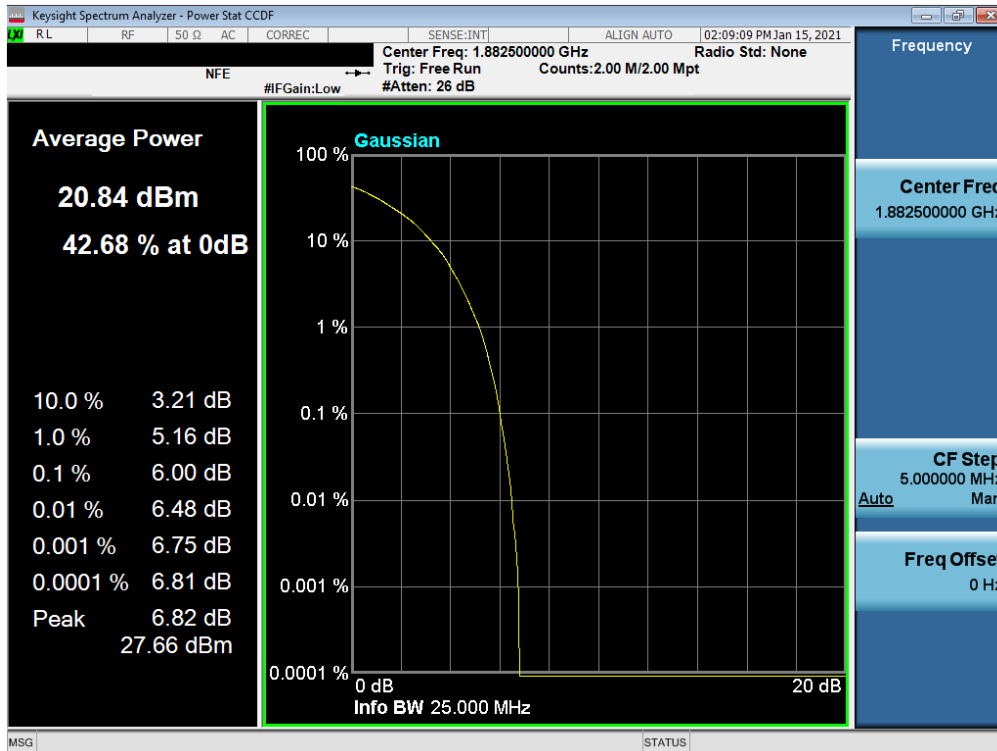


Plot 7-165. PAR Plot (LTE Band 25/2 - 15MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 104 of 148

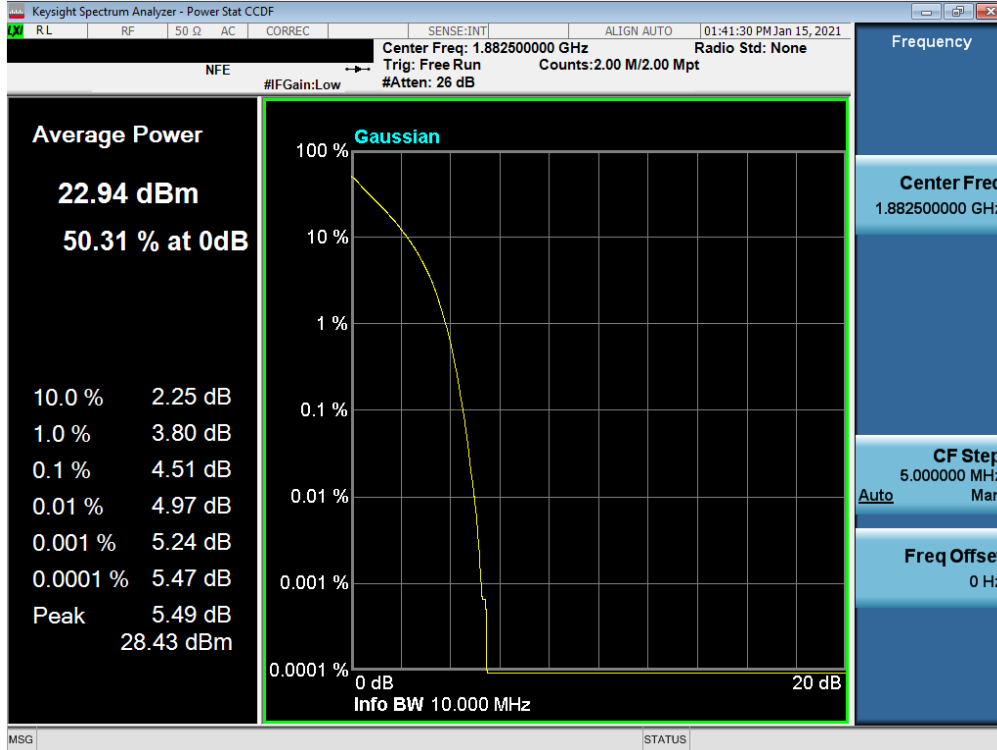


Plot 7-166. PAR Plot (LTE Band 25/2 - 15MHz 16-QAM - Full RB Configuration)

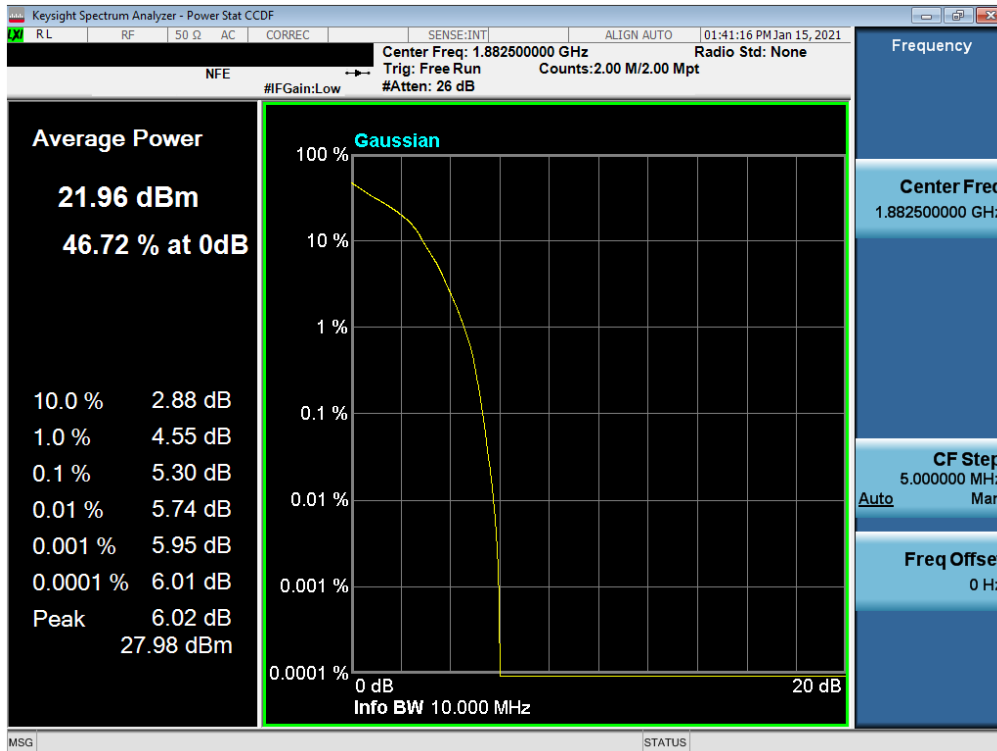


Plot 7-167. PAR Plot (LTE Band 25/2 - 15MHz 64-QAM - Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 105 of 148

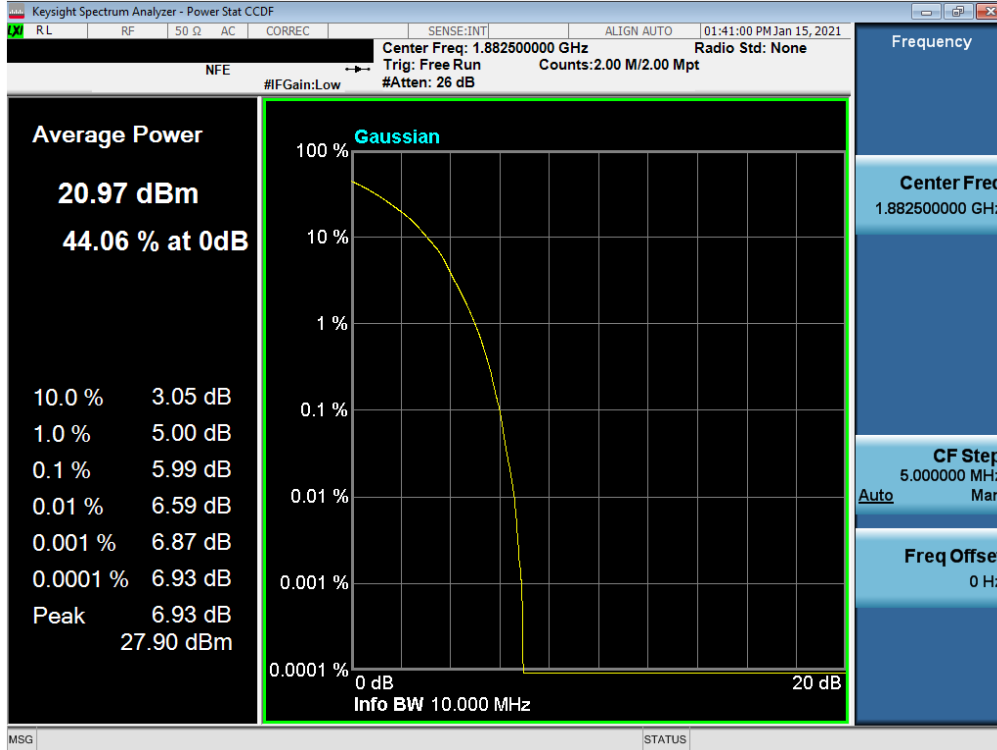


Plot 7-168. PAR Plot (LTE Band 25/2 - 10MHz QPSK - Full RB Configuration)

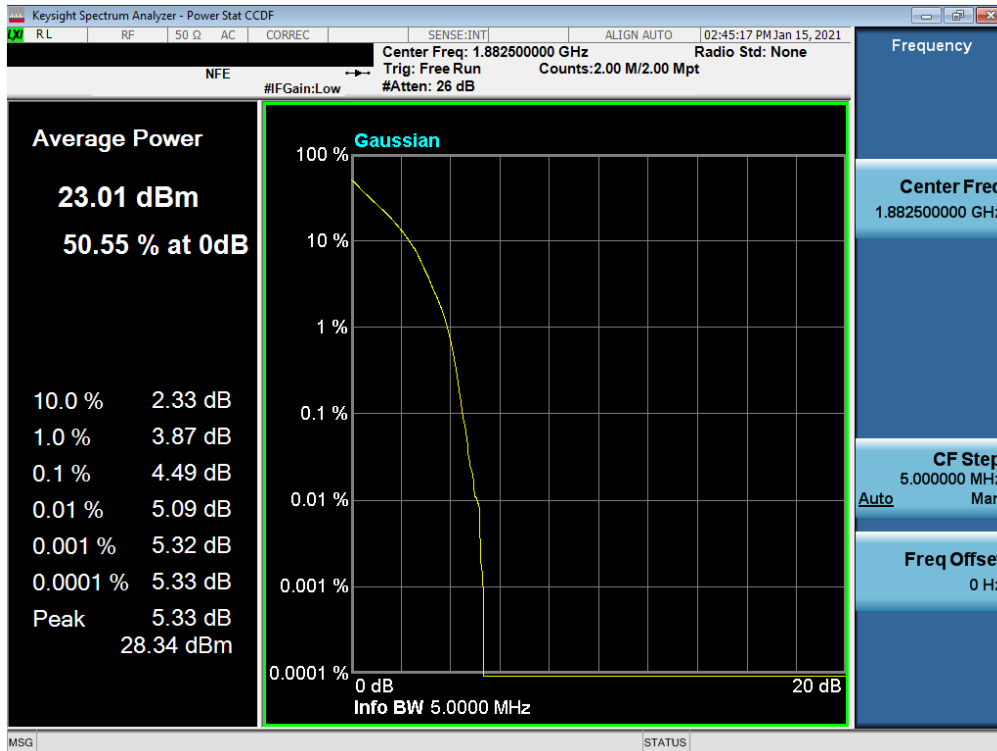


Plot 7-169. PAR Plot (LTE Band 25/2 - 10MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 106 of 148

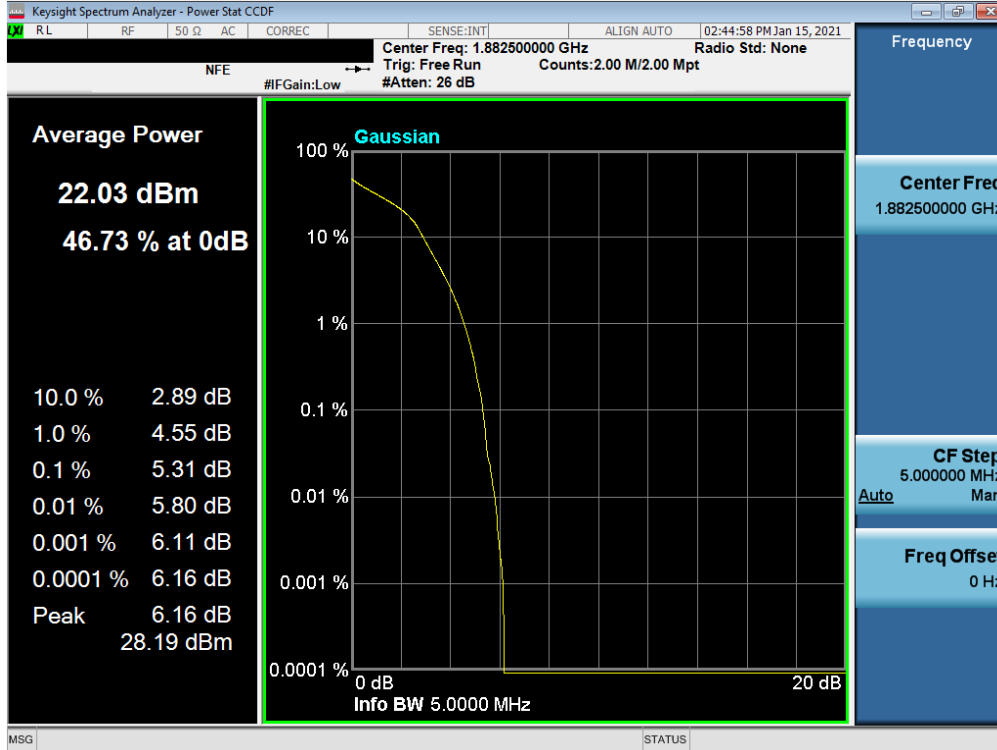


Plot 7-170. PAR Plot (LTE Band 25/2 - 10MHz 64-QAM - Full RB Configuration)

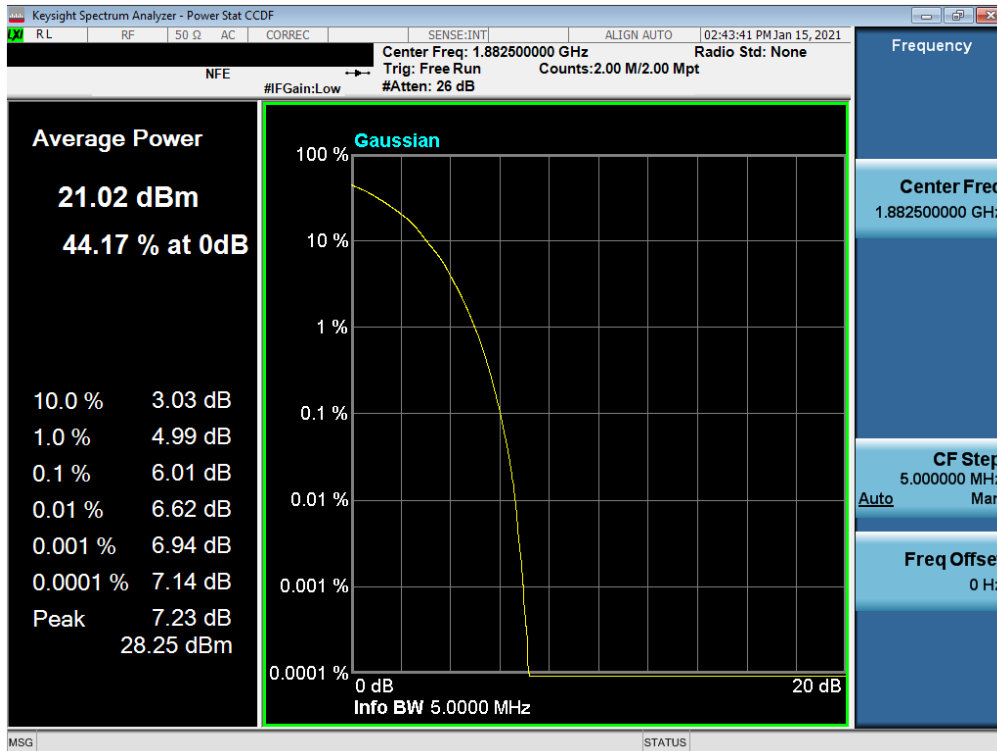


Plot 7-171. PAR Plot (LTE Band 25/2 - 5MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 107 of 148

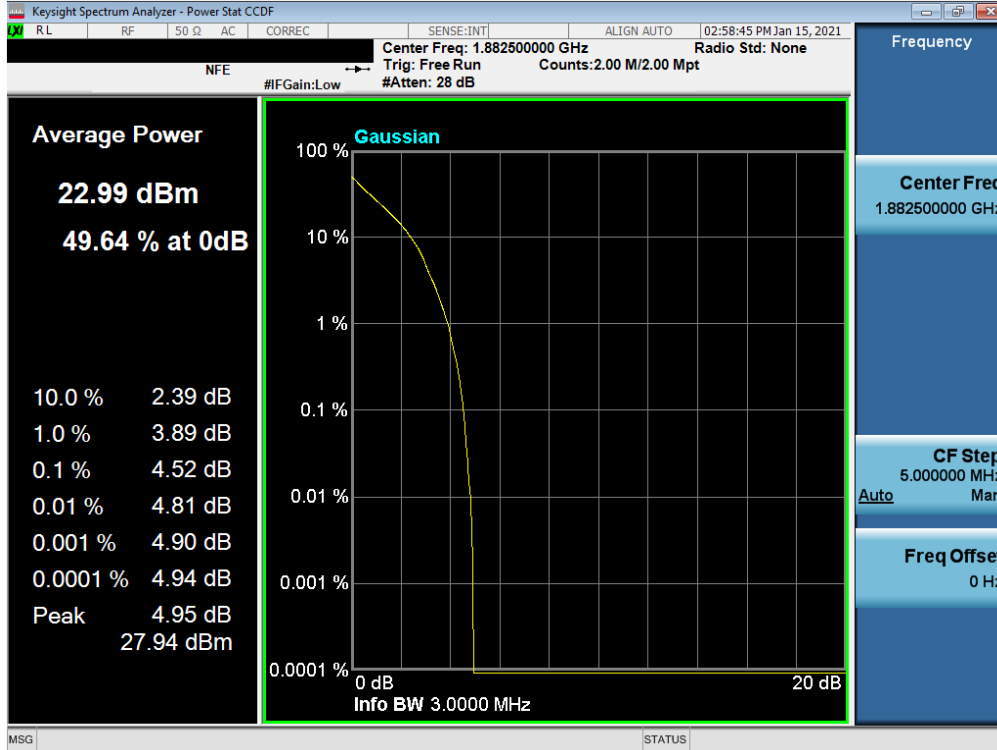


Plot 7-172. PAR Plot (LTE Band 25/2 - 5MHz 16-QAM - Full RB Configuration)

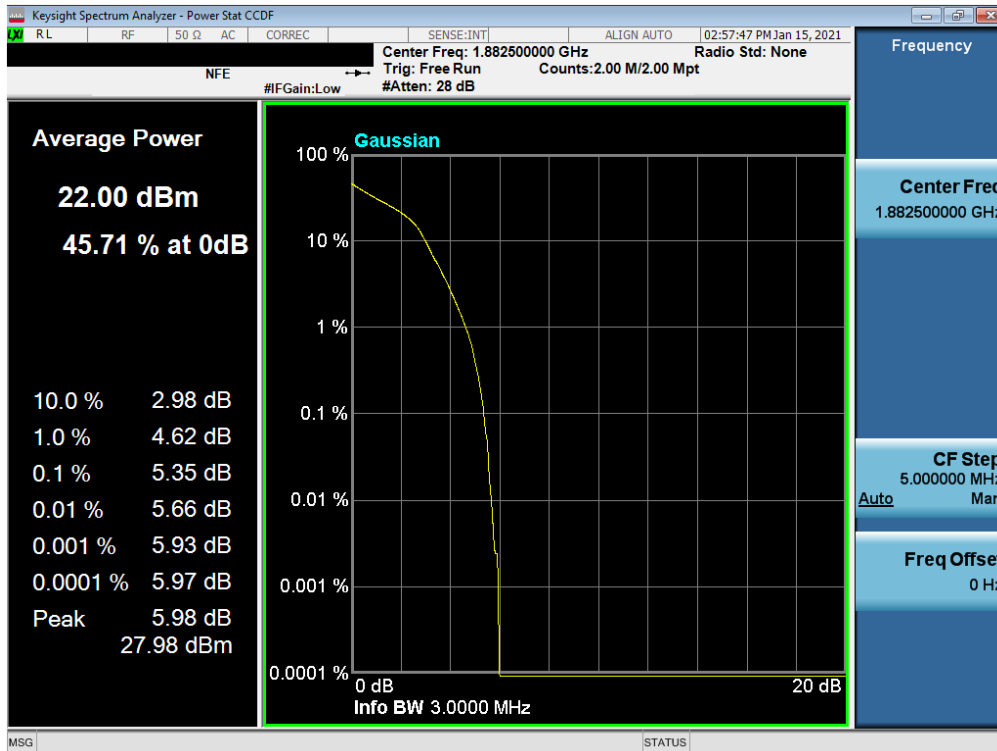


Plot 7-173. PAR Plot (LTE Band 25/2 - 5MHz 64-QAM - Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 108 of 148

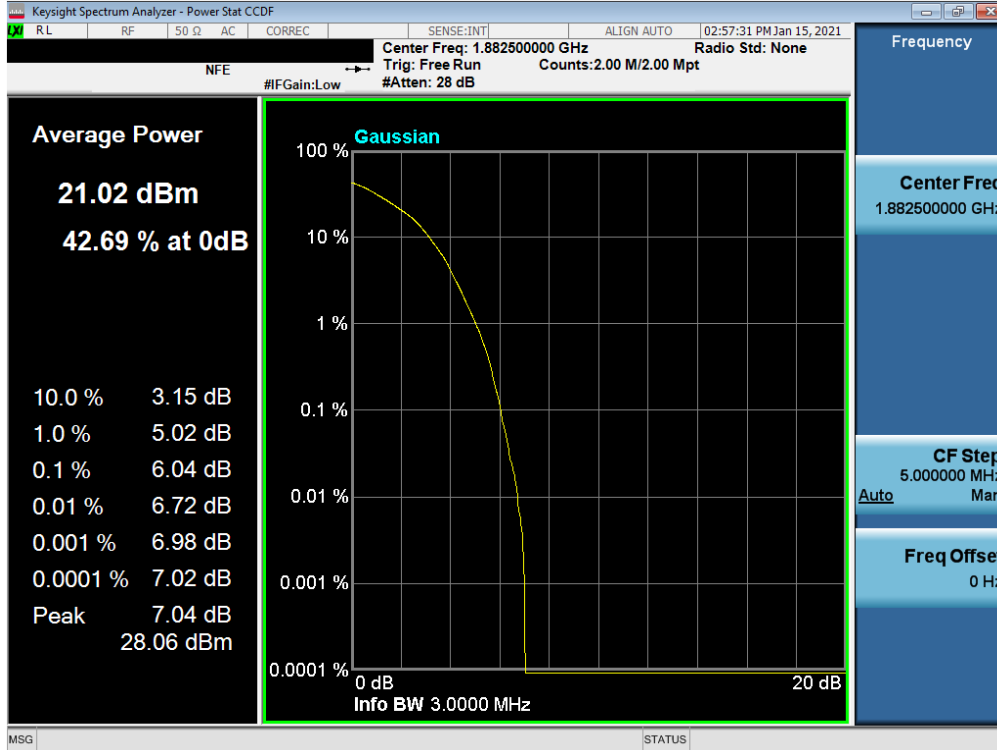


Plot 7-174. PAR Plot (LTE Band 25/2 - 3MHz QPSK - Full RB Configuration)

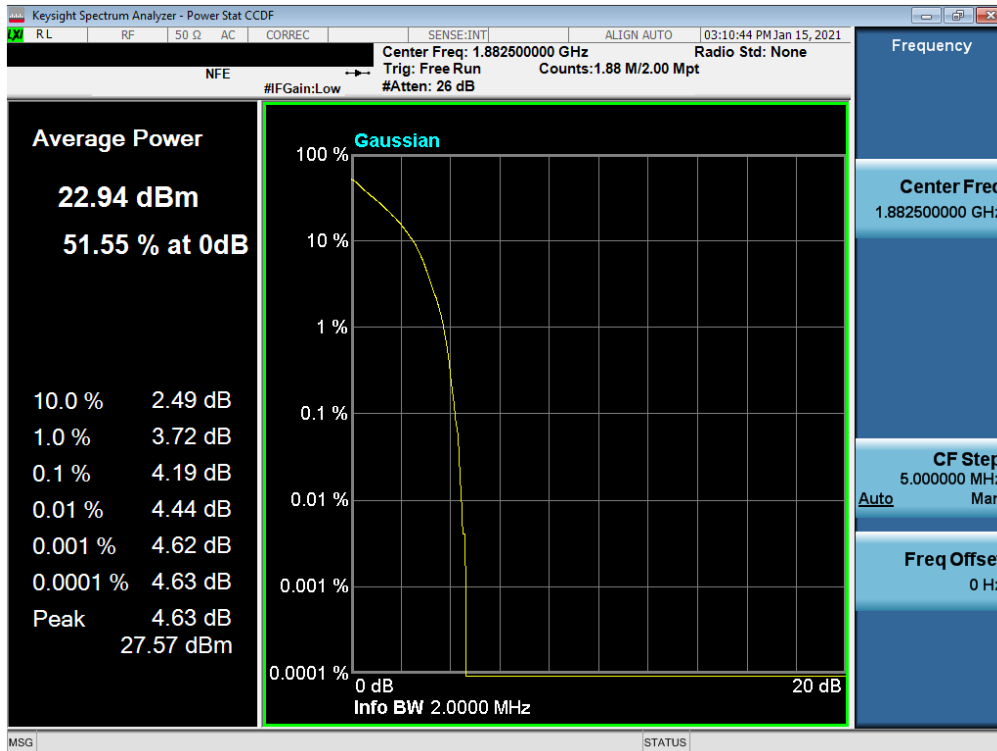


Plot 7-175. PAR Plot (LTE Band 25/2 - 3MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 109 of 148

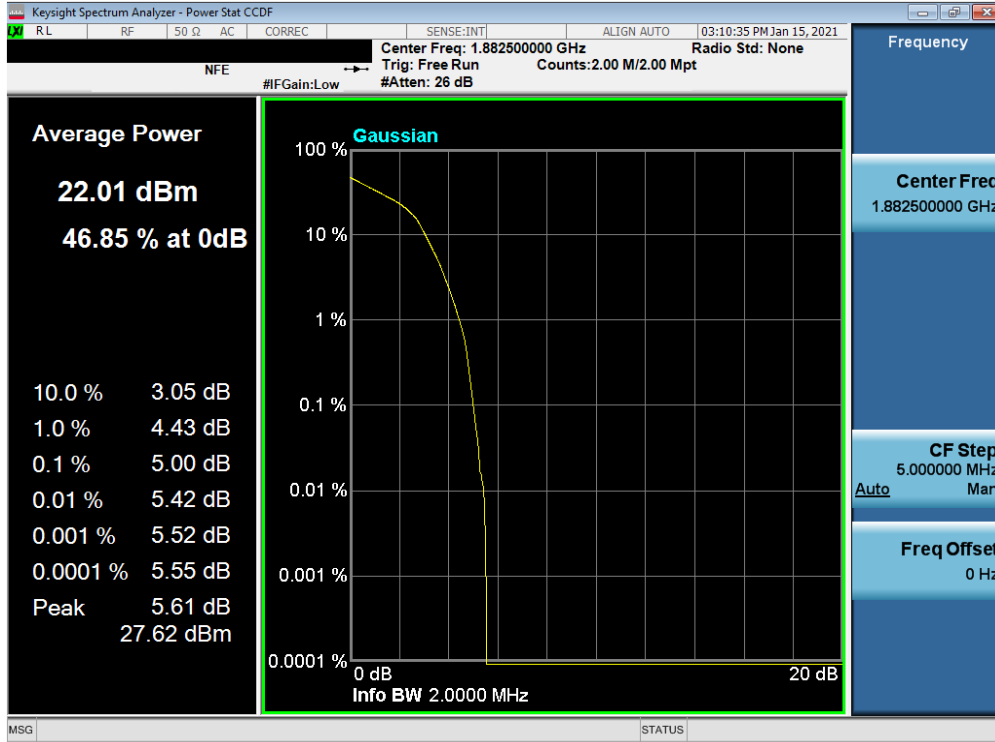


Plot 7-176. PAR Plot (LTE Band 25/2 - 3MHz 64-QAM - Full RB Configuration)

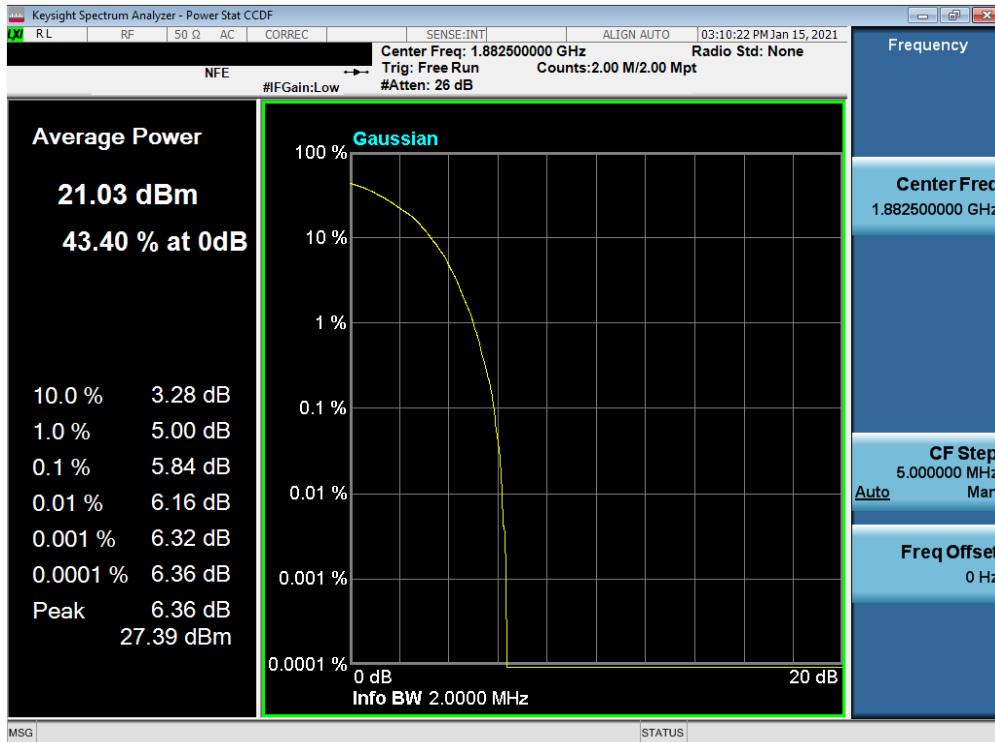


Plot 7-177. PAR Plot (LTE Band 25/2 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 110 of 148



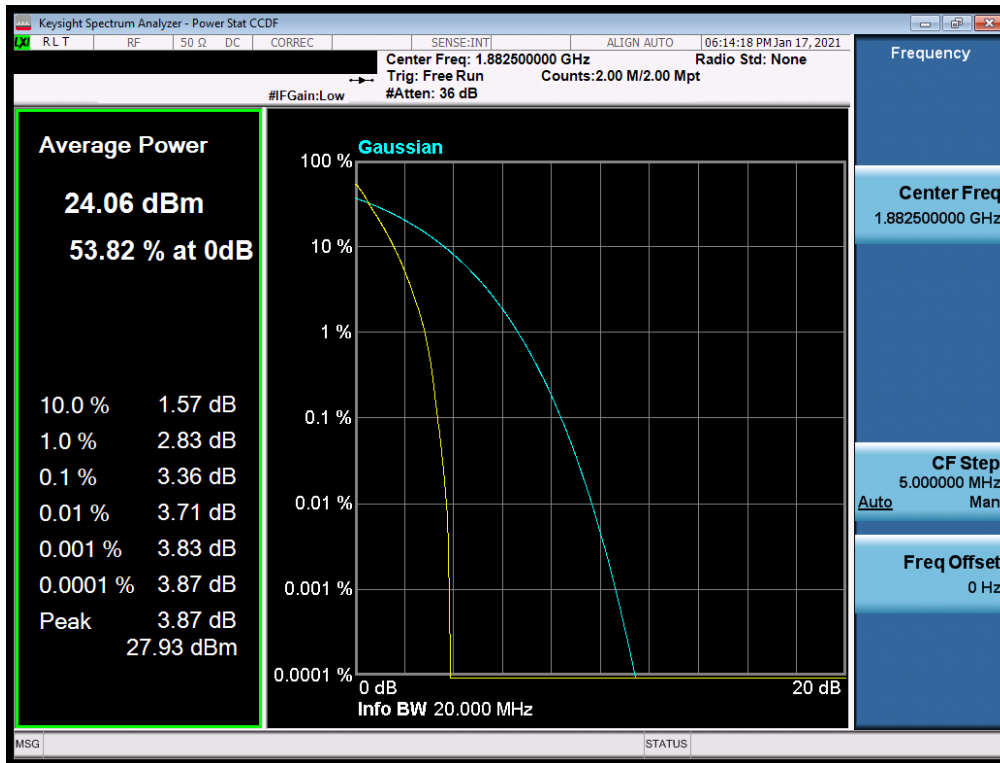
Plot 7-178. PAR Plot (LTE Band 25/2 - 1.4MHz 16-QAM - Full RB Configuration)



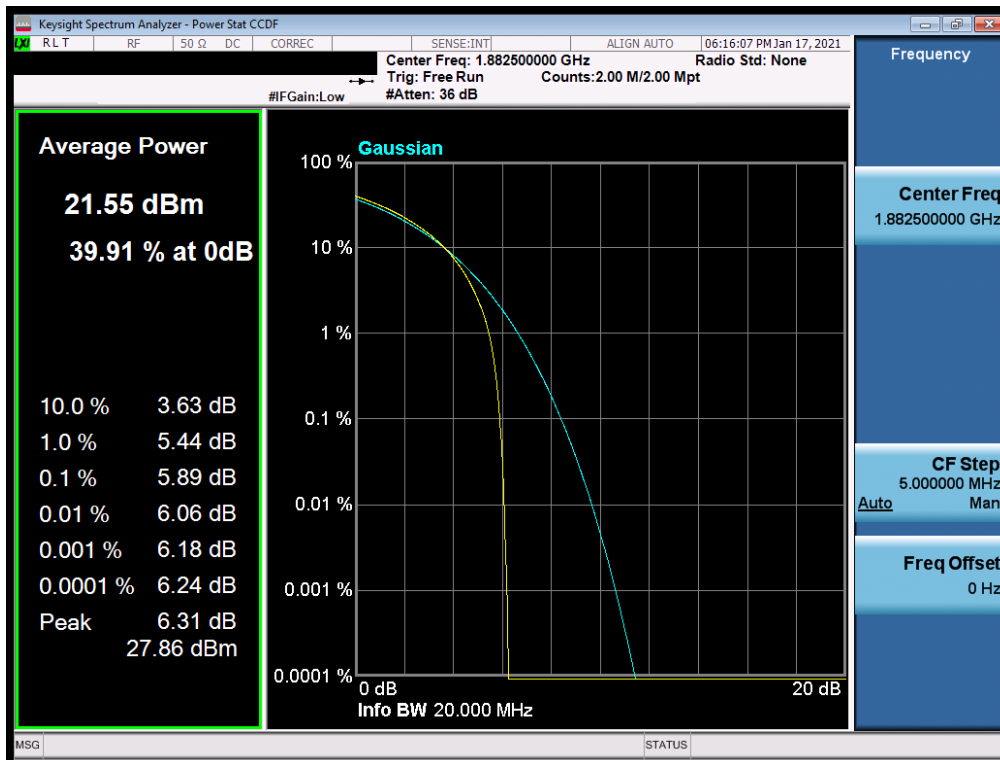
Plot 7-179. PAR Plot (LTE Band 25/2 - 1.4MHz 64-QAM - Full RB Configuration)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 111 of 148

NR Band n25/n2

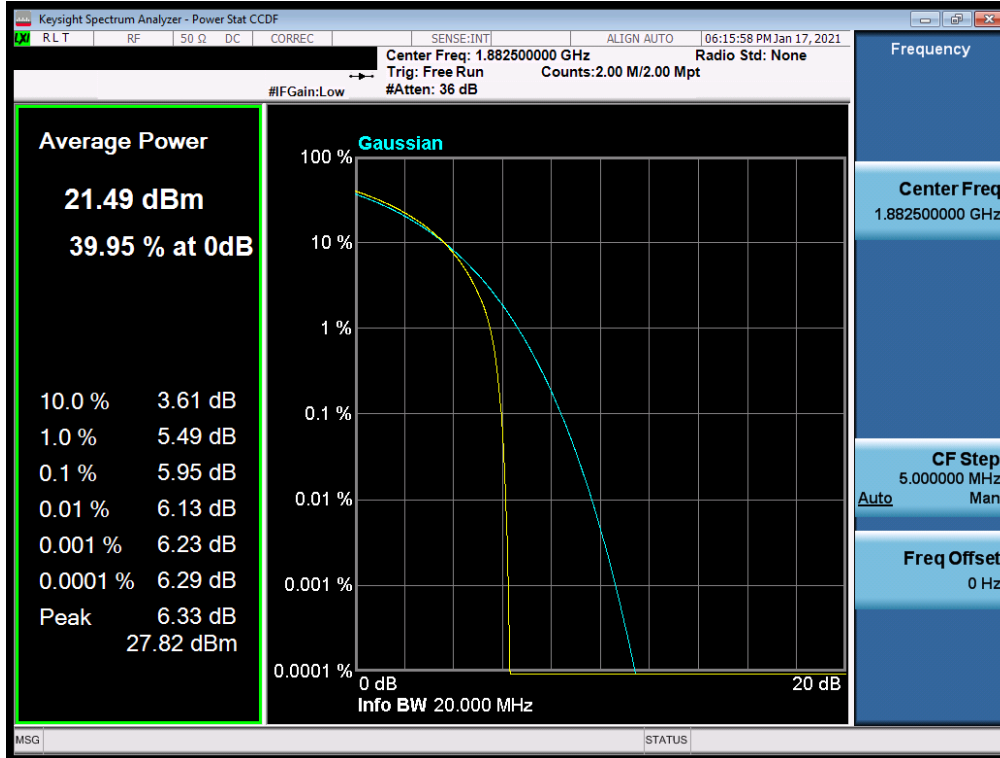


Plot 7-180. PAR Plot (NR Band n25/2- 20.0MHz DFT-s-OFDM BPSK - Full RB)

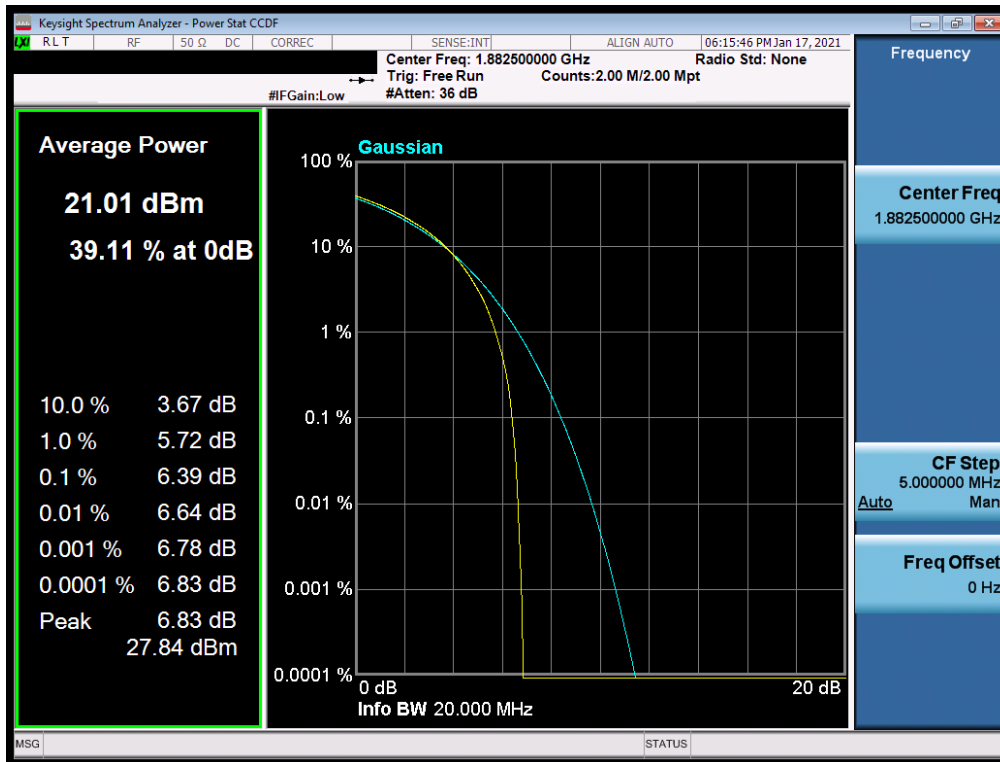


Plot 7-181. PAR Plot (NR Band n25/2- 20.0MHz CP-OFDM QPSK - Full RB)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 112 of 148

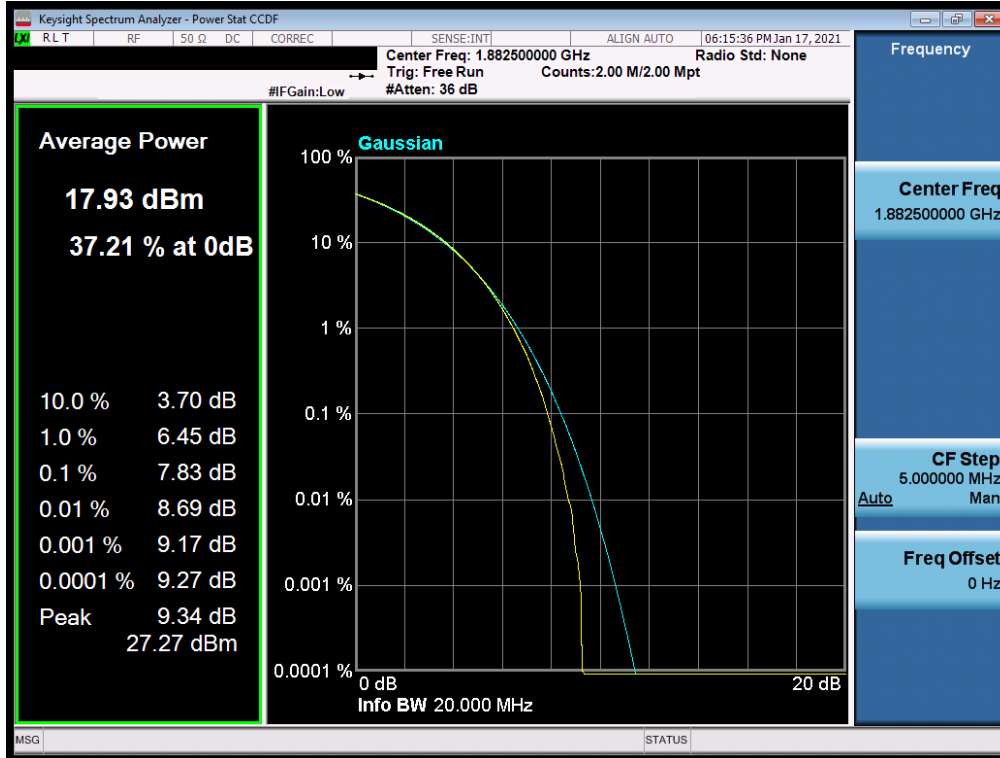


Plot 7-182. PAR Plot (NR Band n25/2- 20.0MHz CP-OFDM 16-QAM - Full RB)

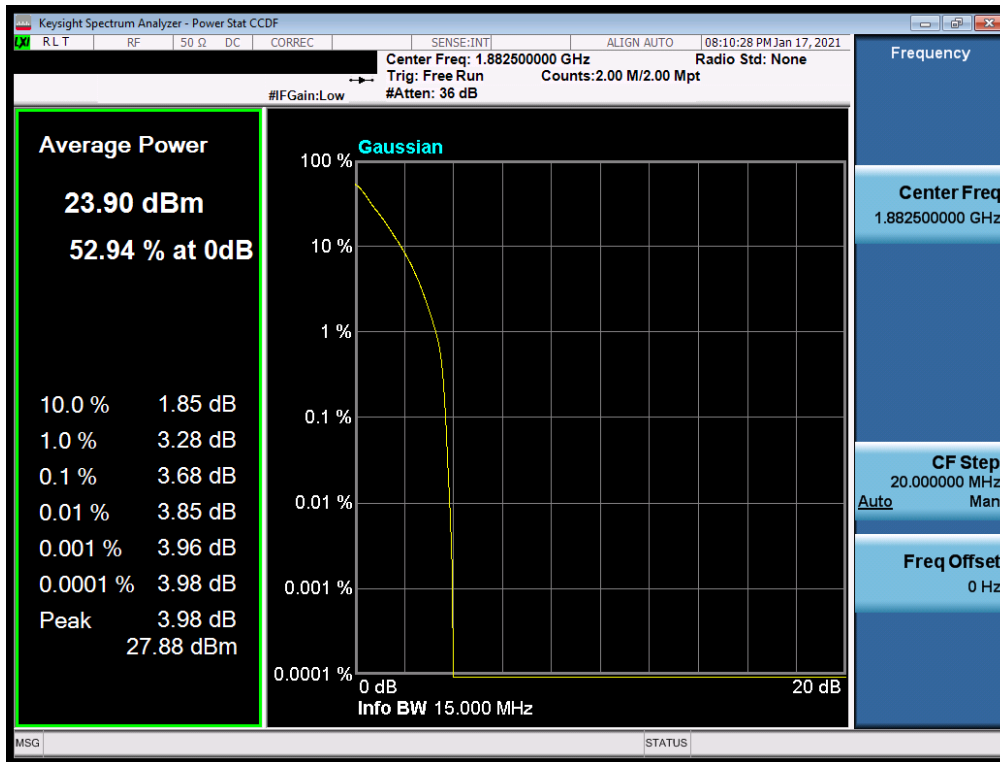


Plot 7-183. PAR Plot (NR Band n25/2- 20.0MHz CP-OFDM 64-QAM - Full RB)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 113 of 148

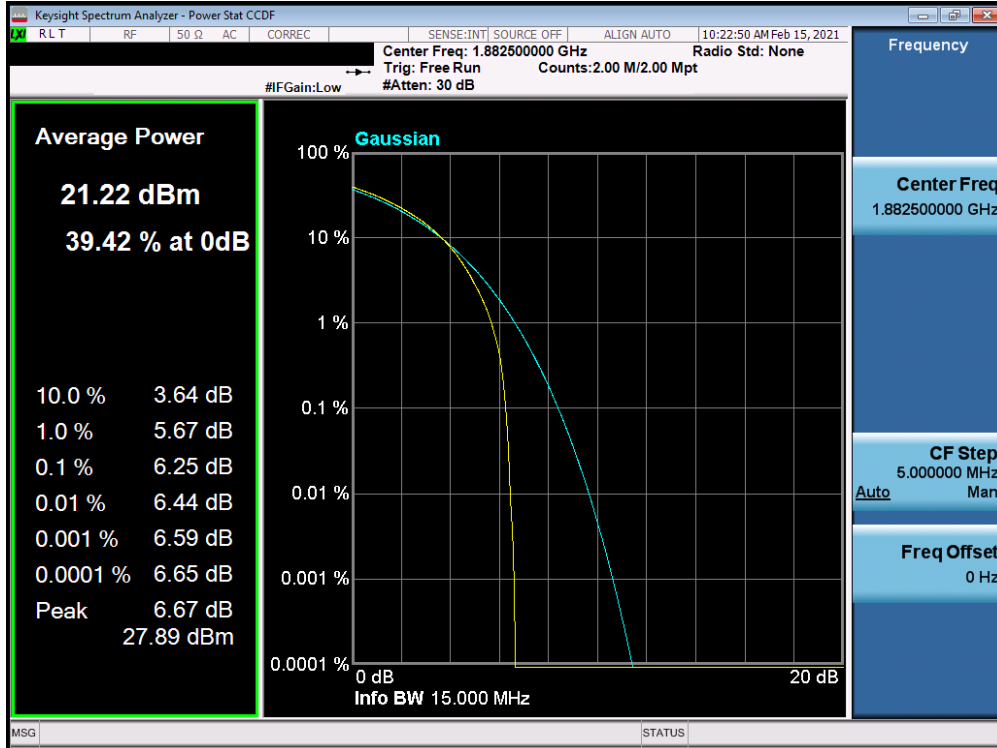


Plot 7-184. PAR Plot (NR Band n25/2- 20.0MHz CP-OFDM 256-QAM - Full RB)

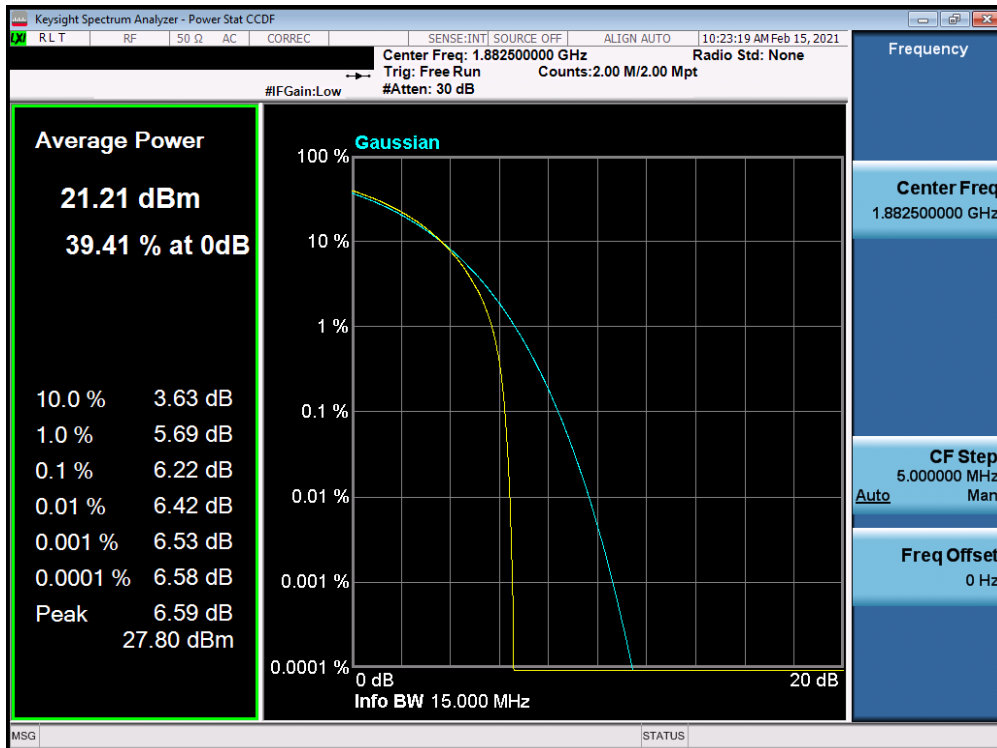


Plot 7-185. PAR Plot (NR Band n25/2- 15.0MHz DFT-s-OFDM BPSK - Full RB)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 114 of 148

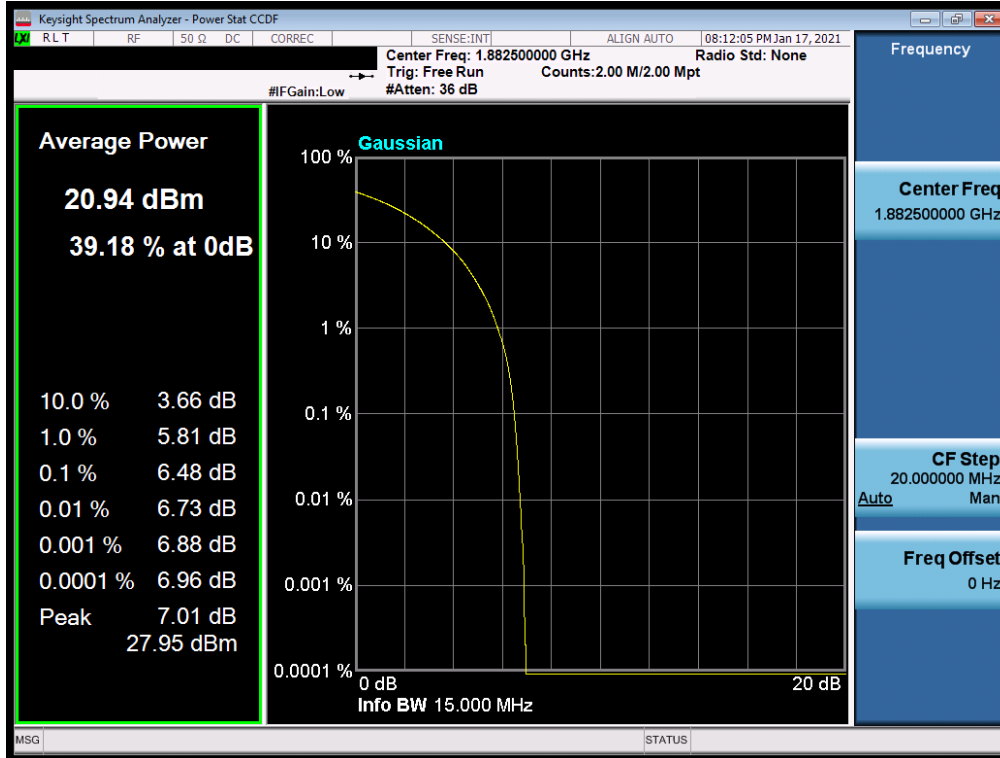


Plot 7-186. PAR Plot (NR Band n25/2- 15.0MHz CP-OFDM QPSK - Full RB)

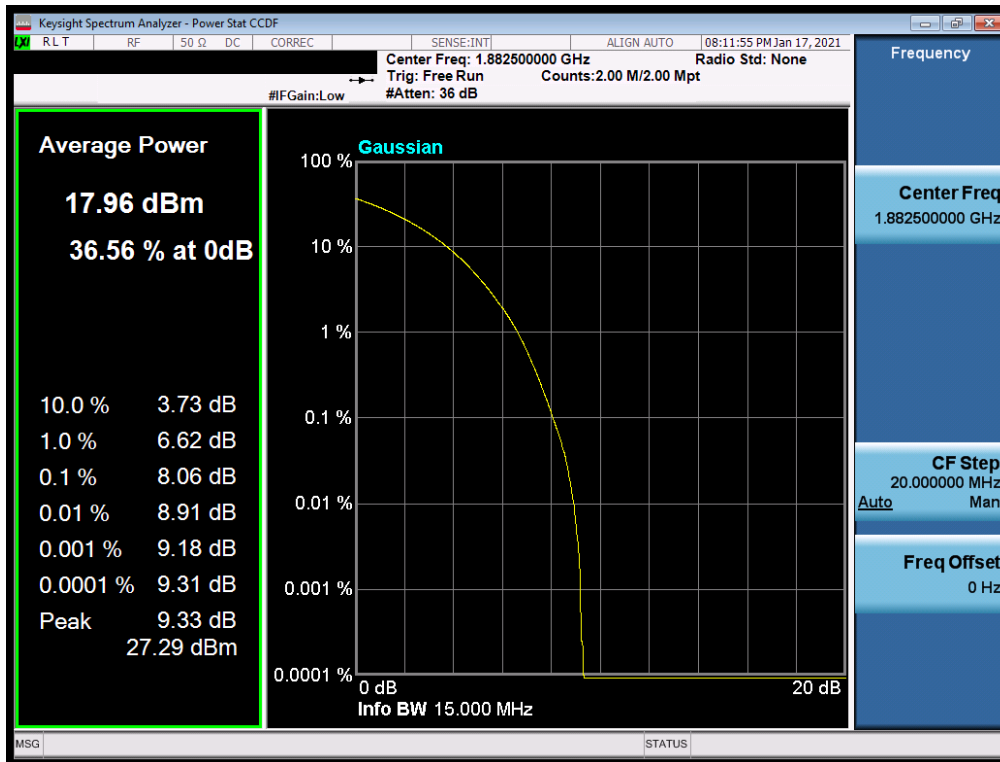


Plot 7-187. PAR Plot (NR Band n25/2- 15.0MHz CP-OFDM 16-QAM - Full RB)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 115 of 148

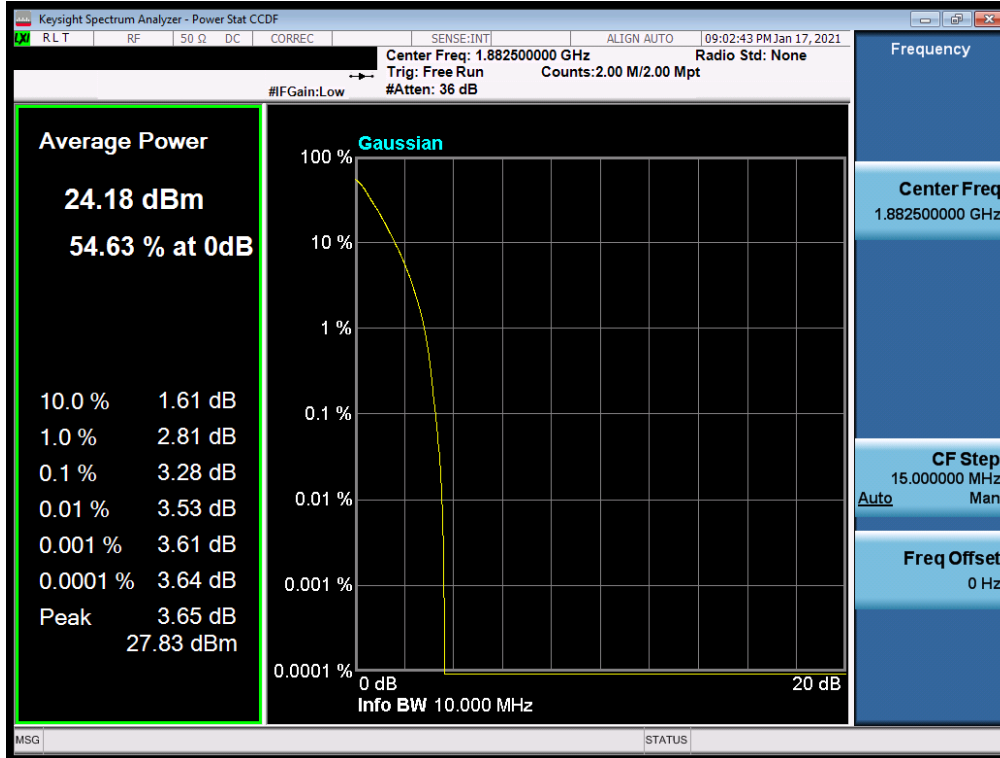


Plot 7-188. PAR Plot (NR Band n25/2- 15.0MHz CP-OFDM 64-QAM - Full RB)

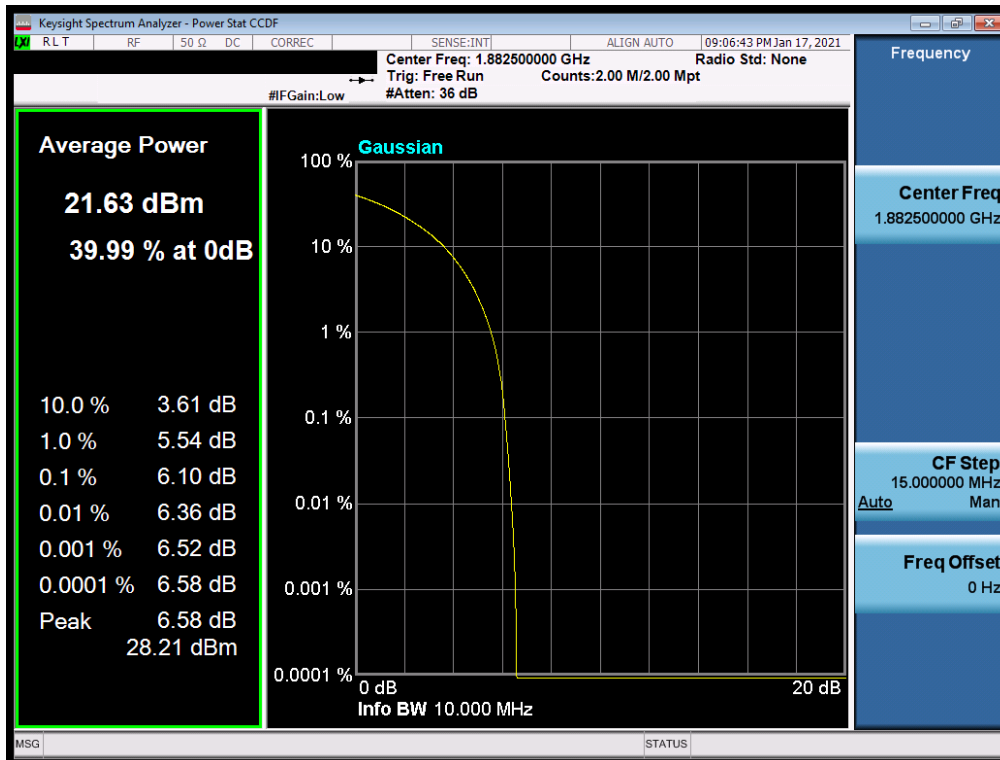


Plot 7-189. PAR Plot (NR Band n25/2- 15.0MHz CP-OFDM 256-QAM - Full RB)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 116 of 148

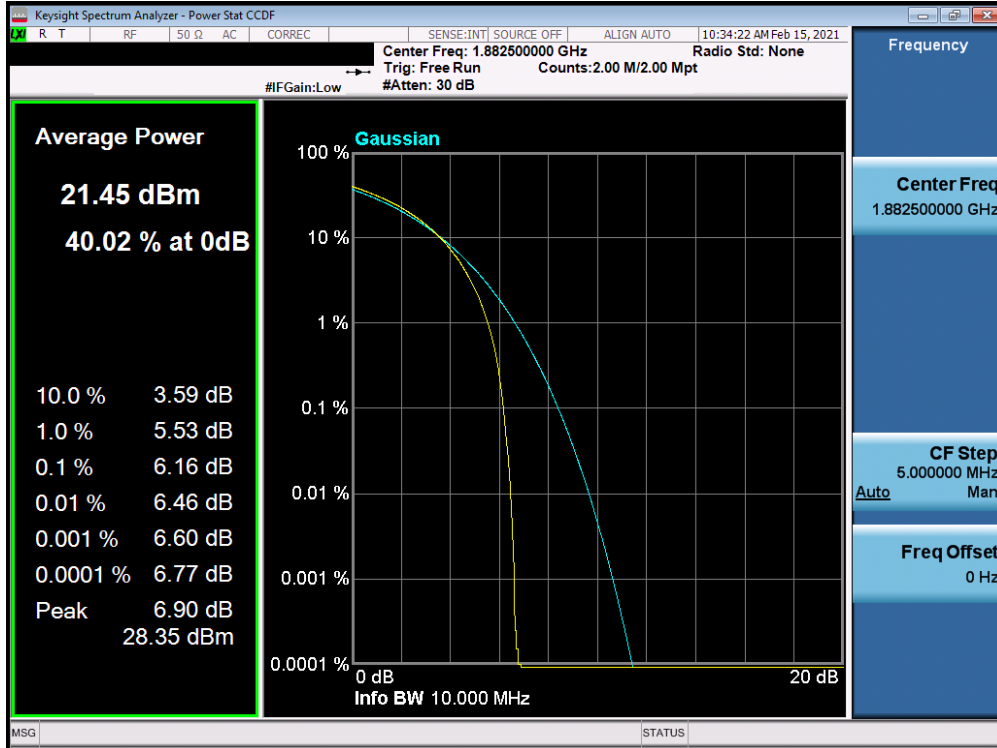


Plot 7-190. PAR Plot (NR Band n25/2- 10.0MHz DFT-s-OFDM BPSK - Full RB)

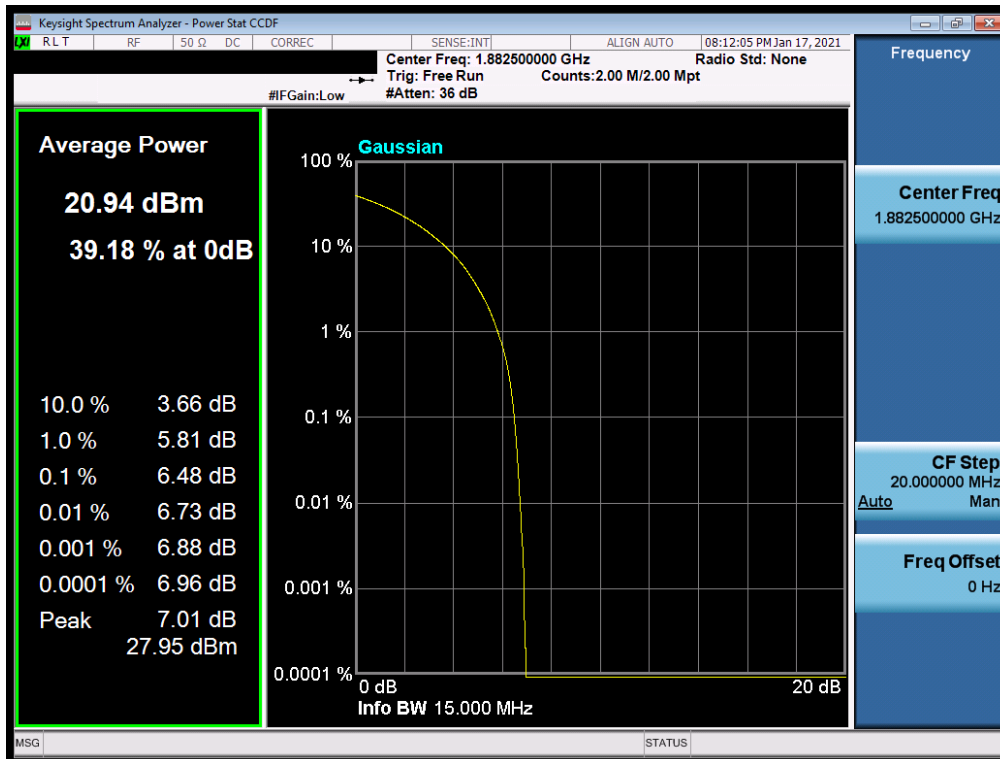


Plot 7-191. PAR Plot (NR Band n25/2- 10.0MHz CP-OFDM QPSK - Full RB)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 117 of 148

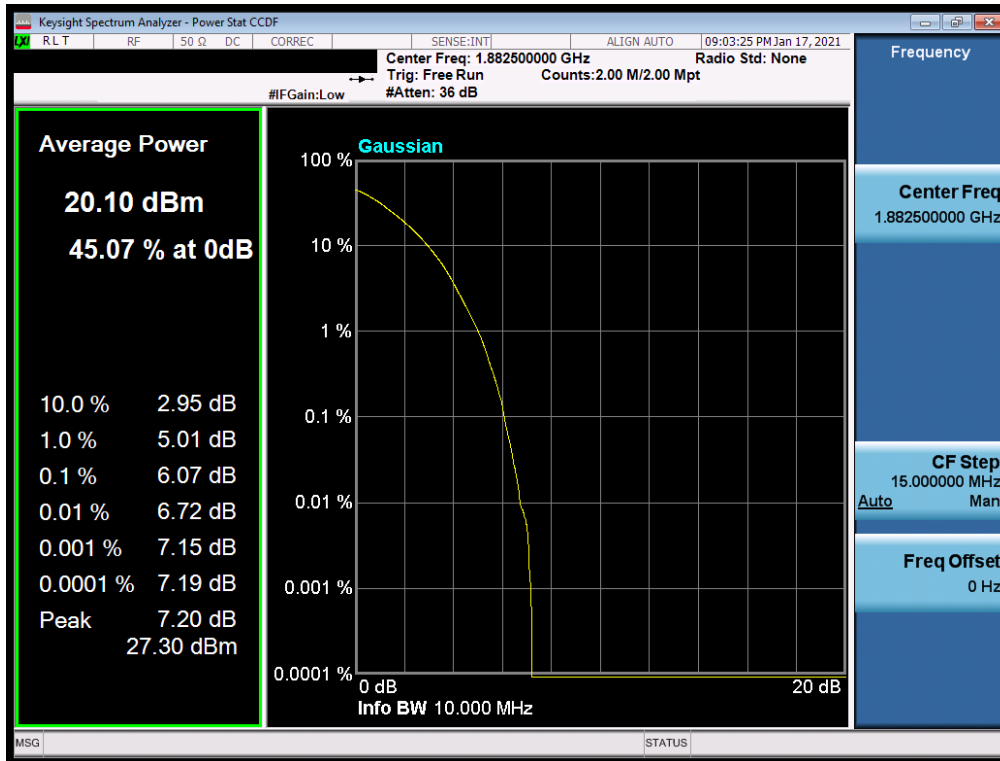


Plot 7-192. PAR Plot (NR Band n25/2- 10.0MHz CP-OFDM 16-QAM - Full RB)

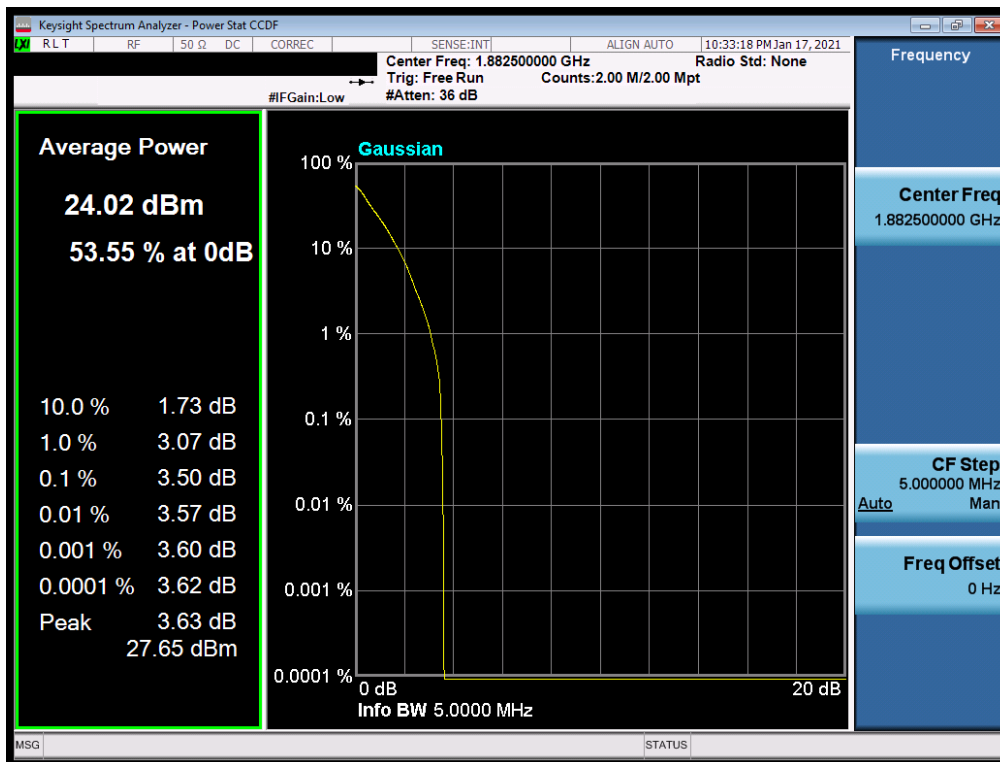


Plot 7-193. PAR Plot (NR Band n25/2- 10.0MHz CP-OFDM 64-QAM - Full RB)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 118 of 148

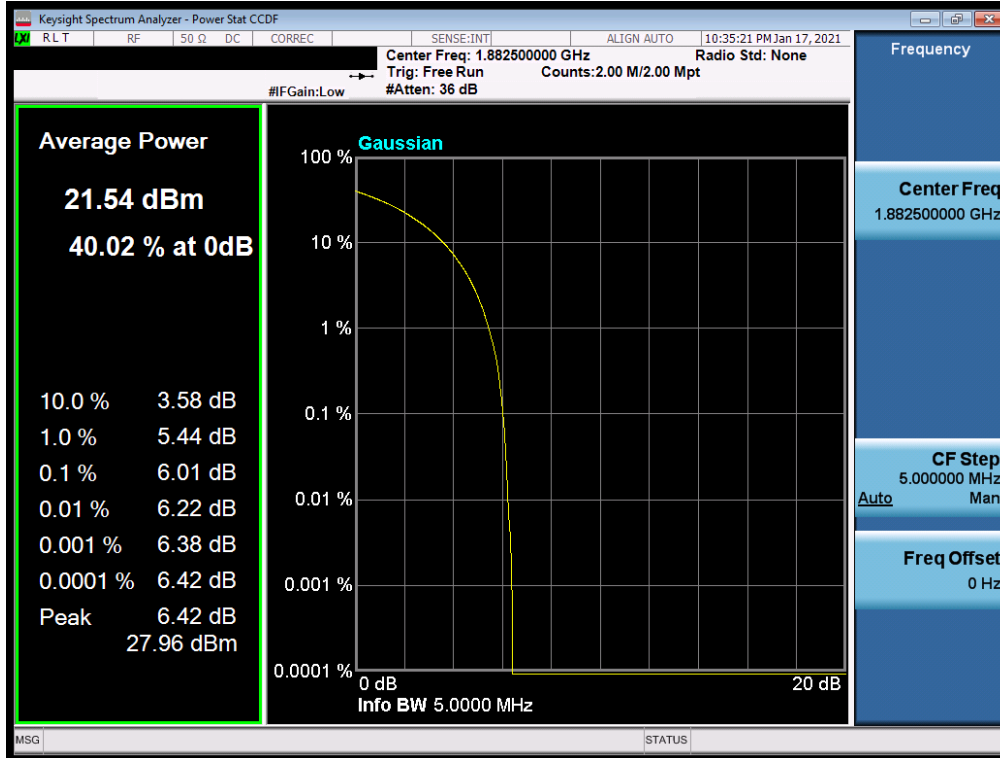


Plot 7-194. PAR Plot (NR Band n25/2- 10.0MHz CP-OFDM 256-QAM - Full RB)

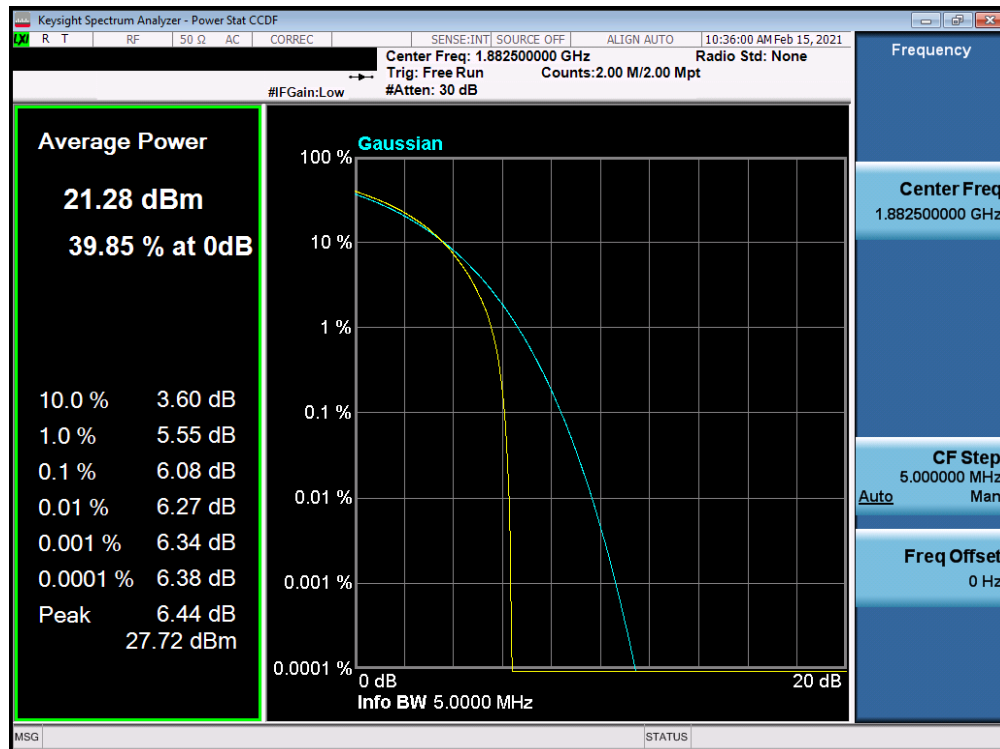


Plot 7-195. PAR Plot (NR Band n25/2- 5.0MHz DFT-s-OFDM BPSK - Full RB)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 119 of 148

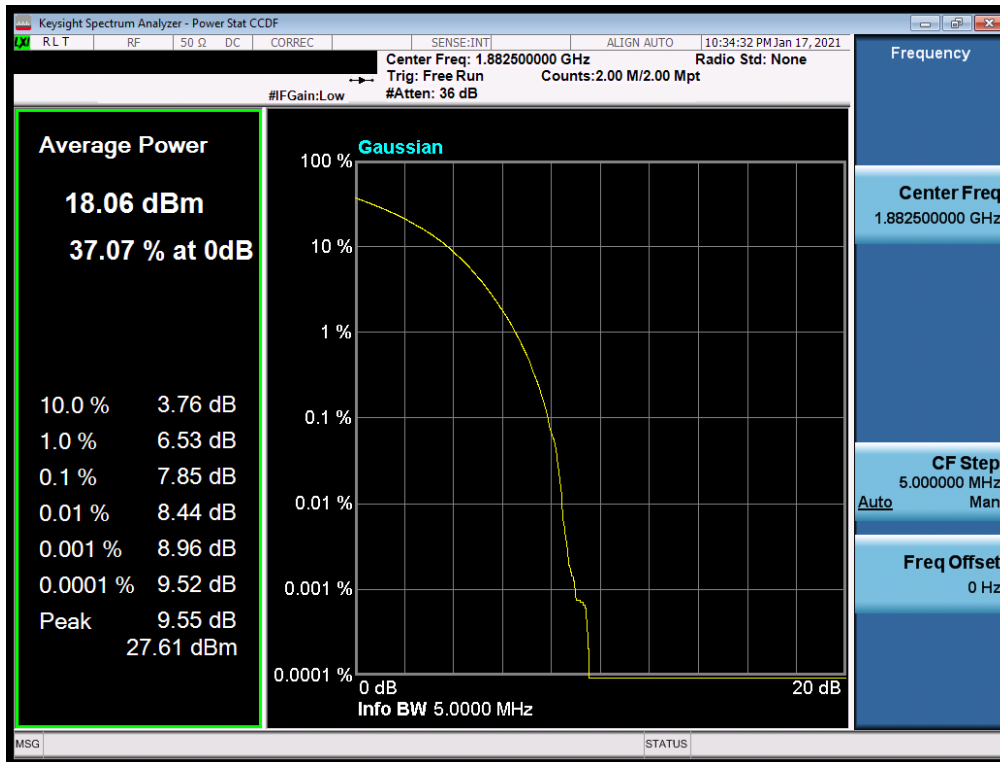
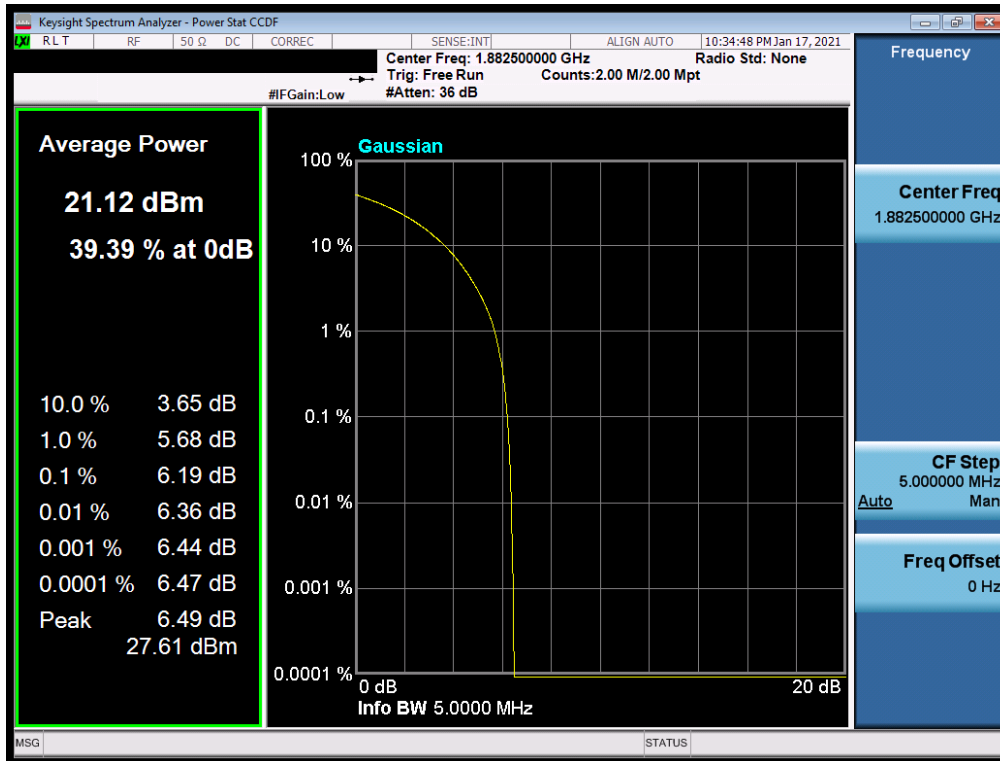


Plot 7-196. PAR Plot (NR Band n25/2- 5.0MHz CP-OFDM QPSK - Full RB)



Plot 7-197. PAR Plot (NR Band n25/2- 5.0MHz CP-OFDM 16-QAM - Full RB)

FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 120 of 148



FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
Test Report S/N: 1M2101040001-17-R1.A3L	Test Dates: 1/8 - 2/19/2021	EUT Type: Portable Handset		Page 121 of 148

7.6 Radiated Power (ERP/EIRP)

Test Overview

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at maximum power, and at the appropriate frequencies.



Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.2.1

ANSI/TIA-603-E-2016 – Section 2.2.17

Test Settings

1. Radiated power measurements are performed using the signal analyzer’s “channel power” measurement capability for signals with continuous operation. For signals with burst transmission, the signal analyzer’s “time domain power” measurement capability is used
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW \geq 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points \geq 2 x span / RBW
6. Detector = RMS
7. Trigger is set to “free run” for signals with continuous operation with the sweep times set to “auto”. Trigger is set to enable triggering only on full power bursts with the sweep time set less than or equal to the transmission burst duration
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation. For signals with burst transmission, the “gating” function was enabled to ensure that measurements are performed during times in which the transmitter is operating at its maximum power
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

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Test Setup

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

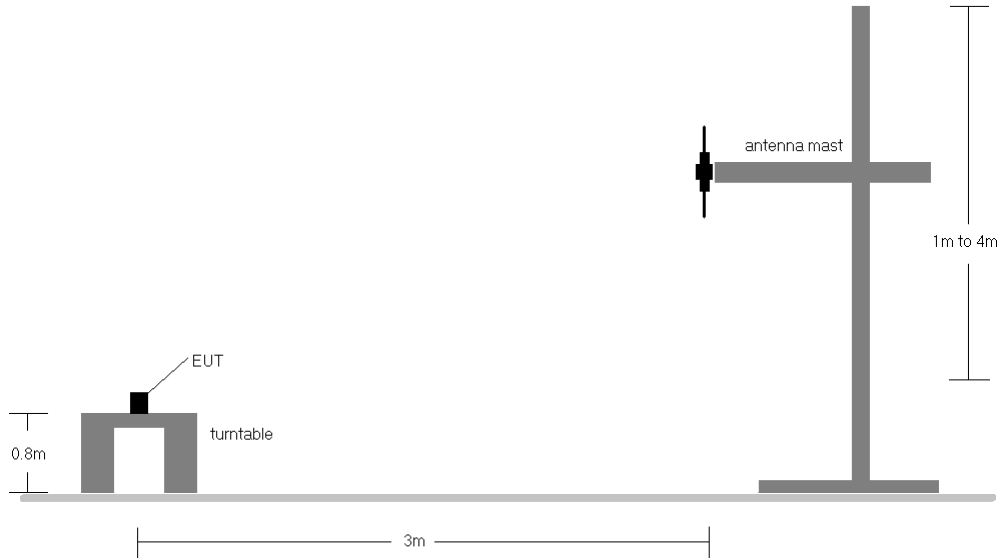


Figure 7-5. Radiated Test Setup <1GHz

Test Notes

- 1) This device employs GSM, GPRS, and EDGE capabilities. The EUT was tested under all configurations and the highest powers is reported in GPRS mode while transmitting with one slot active.
- 2) This device employs UMTS technology with WCDMA (AMR/RMC) and HSDPA capabilities. The EUT was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1".
- 3) This device was tested under all RC and SO combinations and the worst case is reported with RC3/SO55 with "All Up" power control bits.
- 4) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 5) This unit was tested with its standard battery.
- 6) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case setup is reported in the tables below.
- 7) 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.

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Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.20	GPRS1900	H	116	346	18.46	9.51	27.97	0.626	33.01	-5.04
1880.00	GPRS1900	H	112	351	18.54	9.93	28.47	0.702	33.01	-4.54
1909.80	GPRS1900	H	100	346	18.53	10.28	28.81	0.760	33.01	-4.20
1909.80	GPRS1900	V	226	102	17.70	10.34	28.04	0.637	33.01	-4.97
1909.80	EDGE1900	H	100	346	15.05	10.28	25.33	0.341	33.01	-7.68



Table 7-2. EIRP Data (GPRS PCS)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1852.40	WCDMA1900	H	153	358	12.86	9.54	22.40	0.174	33.01	-10.61
1880.00	WCDMA1900	H	148	338	13.15	9.93	23.08	0.203	33.01	-9.93
1907.60	WCDMA1900	H	148	11	11.39	10.26	21.65	0.146	33.01	-11.36
1880.00	WCDMA1900	V	204	337	12.88	10.13	23.01	0.200	33.01	-10.00

Table 7-3. EIRP Data (WCDMA PCS)



Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1851.25	CDMA1900	H	246	346	11.79	9.52	21.31	0.135	33.01	-11.70
1880.00	CDMA1900	H	100	358	11.67	9.93	21.60	0.144	33.01	-11.41
1908.75	CDMA1900	H	101	369	9.99	10.27	20.26	0.106	33.01	-12.75
1880.00	CDMA1900	V	115	364	10.06	9.93	19.99	0.100	33.01	-13.02

Table 7-4. EIRP Data (CDMA PCS)

FCC ID: A3LSMA426U	 PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	EUT Pol.	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
20 MHz	QPSK	1860.0	H	Z	115	11	9.64	1 / 50	12.61	22.25	0.168	33.01	-10.76
		1882.5	H	Z	154	5	9.96	1 / 0	12.43	22.39	0.173	33.01	-10.62
		1905.0	H	Z	117	362	10.24	1 / 0	11.00	21.24	0.133	33.01	-11.77
	16-QAM	1882.5	H	Z	154	5	9.96	1 / 0	12.05	22.01	0.159	33.01	-11.00
64-QAM	1860.0	H	Z	115	11	9.64	1 / 50	11.24	20.88	0.123	33.01	-12.13	
15 MHz	QPSK	1857.5	H	Z	115	11	9.61	1 / 36	12.55	22.15	0.164	33.01	-10.86
		1882.5	H	Z	154	5	9.96	1 / 74	12.10	22.06	0.161	33.01	-10.95
		1907.5	H	Z	117	362	10.26	1 / 0	10.51	20.77	0.119	33.01	-12.24
	16-QAM	1882.5	H	Z	154	5	9.96	1 / 74	12.10	22.06	0.161	33.01	-10.95
64-QAM	1857.5	H	Z	115	11	9.61	1 / 36	10.98	20.58	0.114	33.01	-12.43	
10 MHz	QPSK	1855.0	H	Z	115	11	9.57	1 / 25	12.62	22.19	0.166	33.01	-10.82
		1882.5	H	Z	154	5	9.96	1 / 25	12.12	22.08	0.161	33.01	-10.93
		1910.0	H	Z	117	362	10.28	1 / 49	10.53	20.81	0.121	33.01	-12.20
	16-QAM	1882.5	H	Z	154	5	9.96	1 / 25	11.91	21.87	0.154	33.01	-11.14
64-QAM	1855.0	H	Z	115	11	9.57	1 / 25	11.14	20.71	0.118	33.01	-12.30	
5 MHz	QPSK	1852.5	H	Z	115	11	9.54	1 / 24	12.76	22.29	0.170	33.01	-10.72
		1882.5	H	Z	154	5	9.96	1 / 0	11.98	21.94	0.156	33.01	-11.07
		1912.5	H	Z	117	362	10.30	1 / 12	10.54	20.84	0.121	33.01	-12.17
	16-QAM	1882.5	H	Z	154	5	9.96	1 / 0	11.68	21.64	0.146	33.01	-11.37
64-QAM	1852.5	H	Z	115	11	9.54	1 / 24	11.24	20.77	0.120	33.01	-12.24	
3 MHz	QPSK	1851.5	H	Z	115	11	9.52	1 / 0	12.77	22.29	0.170	33.01	-10.72
		1882.5	H	Z	154	5	9.96	1 / 7	12.01	21.97	0.157	33.01	-11.04
		1913.5	H	Z	117	362	10.31	1 / 14	10.52	20.83	0.121	33.01	-12.18
	16-QAM	1882.5	H	Z	154	5	9.96	1 / 0	11.66	21.62	0.145	33.01	-11.39
64-QAM	1851.5	H	Z	115	11	9.52	1 / 14	11.27	20.79	0.120	33.01	-12.22	
1.4 MHz	QPSK	1850.7	H	Z	115	11	9.51	1 / 2	12.72	22.23	0.167	33.01	-10.78
		1882.5	H	Z	154	5	9.96	1 / 0	12.08	22.04	0.160	33.01	-10.97
		1914.3	H	Z	117	362	10.32	1 / 0	10.60	20.91	0.123	33.01	-12.10
	16-QAM	1882.5	H	Z	154	5	9.96	1 / 2	11.75	21.71	0.148	33.01	-11.30
64-QAM	1850.7	H	Z	115	11	9.51	1 / 5	11.10	20.61	0.115	33.01	-12.40	
20 MHz	Opposite Pol.	1882.5	V	Y	100	61	10.15	1 / 0	11.76	21.91	0.155	33.01	-11.10

Table 7-5. EIRP Data (LTE Band 25/2)

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Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	EUT Pol.	Antenna Height [cm]	Turtable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
20 MHz	π/2 BPSK	1860.0	H	Z	100	348	9.64	1 / 53	11.46	21.10	0.129	33.01	-11.91
		1882.5	H	Z	107	352	9.96	1 / 104	11.55	21.51	0.142	33.01	-11.50
		1905.0	H	Z	152	354	10.24	1 / 1	11.45	21.69	0.148	33.01	-11.32
	QPSK	1860.0	H	Z	100	348	9.64	1 / 53	11.34	20.98	0.125	33.01	-12.03
		1882.5	H	Z	107	352	9.96	1 / 1	11.54	21.50	0.141	33.01	-11.51
		1905.0	H	Z	152	354	10.24	1 / 53	11.49	21.73	0.149	33.01	-11.28
		1905.0	H	Z	152	354	10.24	1 / 53	9.09	19.33	0.086	33.01	-13.68
16-QAM	1905.0	H	Z	152	354	10.24	1 / 53	10.13	20.37	0.109	33.01	-12.64	
64-QAM	1905.0	H	Z	152	354	10.24	1 / 1	7.07	17.31	0.054	33.01	-15.70	
15 MHz	π/2 BPSK	1857.5	H	Z	100	348	9.61	1 / 77	11.00	20.60	0.115	33.01	-12.41
		1882.5	H	Z	107	352	9.96	1 / 77	11.26	21.22	0.132	33.01	-11.79
		1907.5	H	Z	152	354	10.26	1 / 1	10.86	21.12	0.130	33.01	-11.89
	QPSK	1857.5	H	Z	100	348	9.61	1 / 77	10.91	20.51	0.113	33.01	-12.50
		1882.5	H	Z	107	352	9.96	1 / 77	11.52	21.48	0.141	33.01	-11.53
		1907.5	H	Z	152	354	10.26	1 / 1	11.30	21.56	0.143	33.01	-11.45
	16-QAM	1907.5	H	Z	152	354	10.26	1 / 1	9.89	20.15	0.104	33.01	-12.86
	64-QAM	1907.5	H	Z	152	354	10.26	1 / 1	9.09	19.35	0.086	33.01	-13.66
	256-QAM	1907.5	H	Z	152	354	10.26	1 / 1	6.78	17.04	0.051	33.01	-15.97
10 MHz	π/2 BPSK	1855.0	H	Z	100	348	9.57	1 / 26	11.06	20.63	0.116	33.01	-12.38
		1882.5	H	Z	107	352	9.96	1 / 26	11.22	21.18	0.131	33.01	-11.83
		1910.0	H	Z	152	354	10.28	1 / 1	10.98	21.26	0.134	33.01	-11.75
	QPSK	1855.0	H	Z	100	348	9.57	1 / 50	11.25	20.82	0.121	33.01	-12.19
		1882.5	H	Z	107	352	9.96	1 / 26	11.77	21.73	0.149	33.01	-11.28
		1910.0	H	Z	152	354	10.28	1 / 1	11.62	21.90	0.155	33.01	-11.11
	16-QAM	1910.0	H	Z	152	354	10.28	1 / 1	9.52	19.80	0.096	33.01	-13.21
64-QAM	1910.0	H	Z	152	354	10.28	1 / 26	9.23	19.51	0.089	33.01	-13.50	
256-QAM	1882.5	H	Z	107	352	9.96	1 / 51	7.19	17.15	0.052	33.01	-15.86	
5 MHz	π/2 BPSK	1852.5	H	Z	100	348	9.54	1 / 23	11.30	20.83	0.121	33.01	-12.18
		1882.5	H	Z	107	352	9.96	1 / 13	11.59	21.55	0.143	33.01	-11.46
		1912.5	H	Z	152	354	10.30	1 / 23	10.92	21.22	0.133	33.01	-11.79
	QPSK	1852.5	H	Z	100	348	9.54	1 / 13	11.19	20.72	0.118	33.01	-12.29
		1882.5	H	Z	107	352	9.96	1 / 1	11.71	21.67	0.147	33.01	-11.34
		1912.5	H	Z	152	354	10.30	1 / 1	11.34	21.64	0.146	33.01	-11.37
	16-QAM	1912.5	H	Z	152	354	10.30	1 / 1	9.68	19.98	0.100	33.01	-13.03
64-QAM	1912.5	H	Z	152	354	10.30	1 / 13	8.92	19.22	0.084	33.01	-13.79	
256-QAM	1912.5	H	Z	152	354	10.30	1 / 1	6.93	17.23	0.053	33.01	-15.78	
20 MHz	QPSK (CP-OFDM)	1905.0	H	Z	147	350	10.24	1 / 50	10.00	20.24	0.106	33.01	-12.77
	QPSK (Opposite Pol.)	1905.0	V	Y	126	29	10.24	1 / 50	11.07	21.31	0.135	33.01	-11.70

Table 7-6. EIRP Data (NR Band n25/2)

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7.7 Radiated Spurious Emissions Measurements

Test Overview



Radiated spurious emissions measurements are performed using the field strength conversion method described in KDB 971168 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using horizontally and vertically polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.8

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW $\geq 3 \times$ RBW
3. Span = 1.5 times the OBW
4. No. of sweep points $\geq 2 \times$ span / RBW
5. Detector = RMS
6. Trace mode = Average (Max Hold for pulsed emissions)
7. The trace was allowed to stabilize

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Test Setup

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

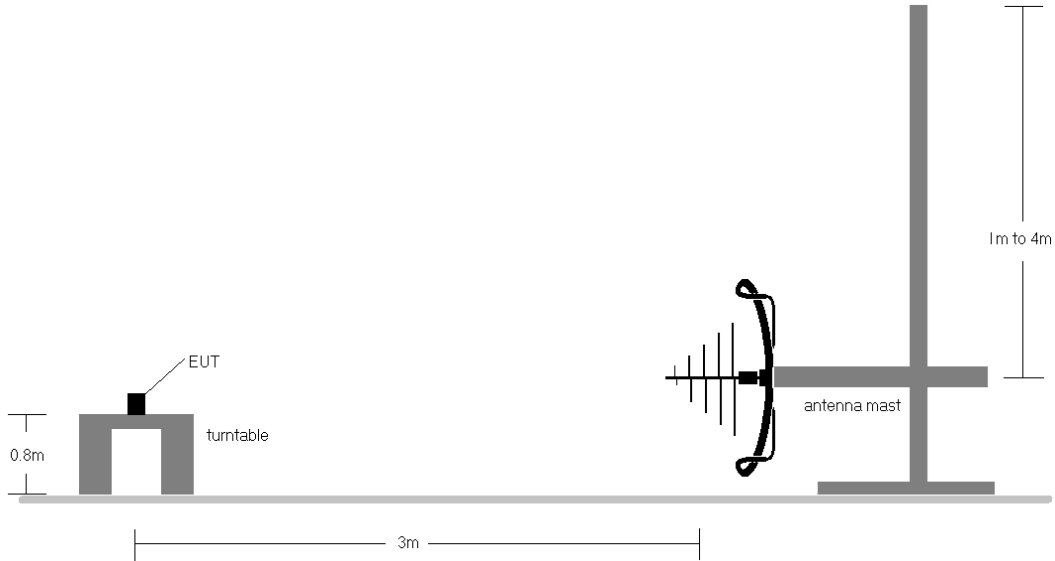


Figure 7-6. Test Instrument & Measurement Setup < 1GHz

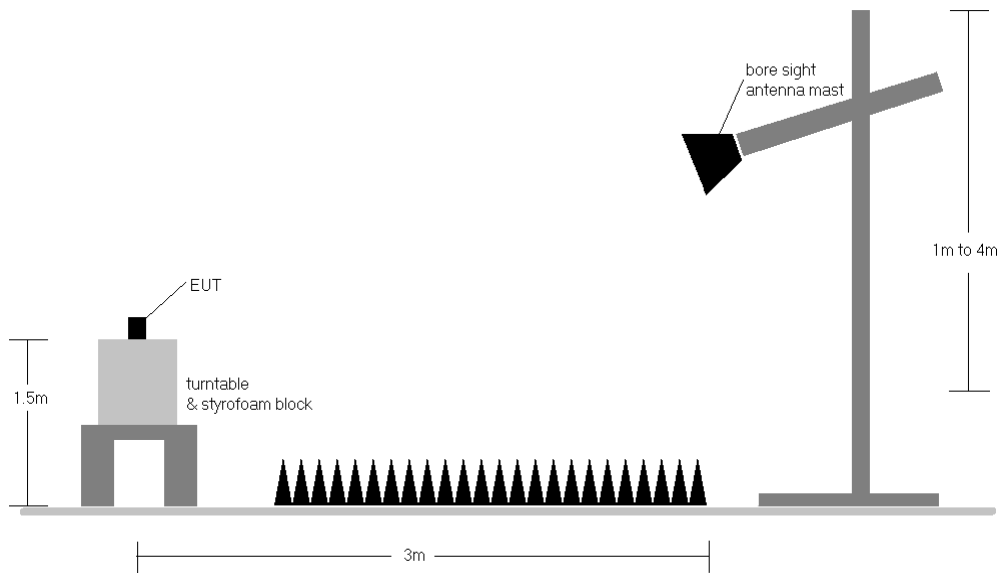




Figure 7-7. Test Instrument & Measurement Setup >1 GHz

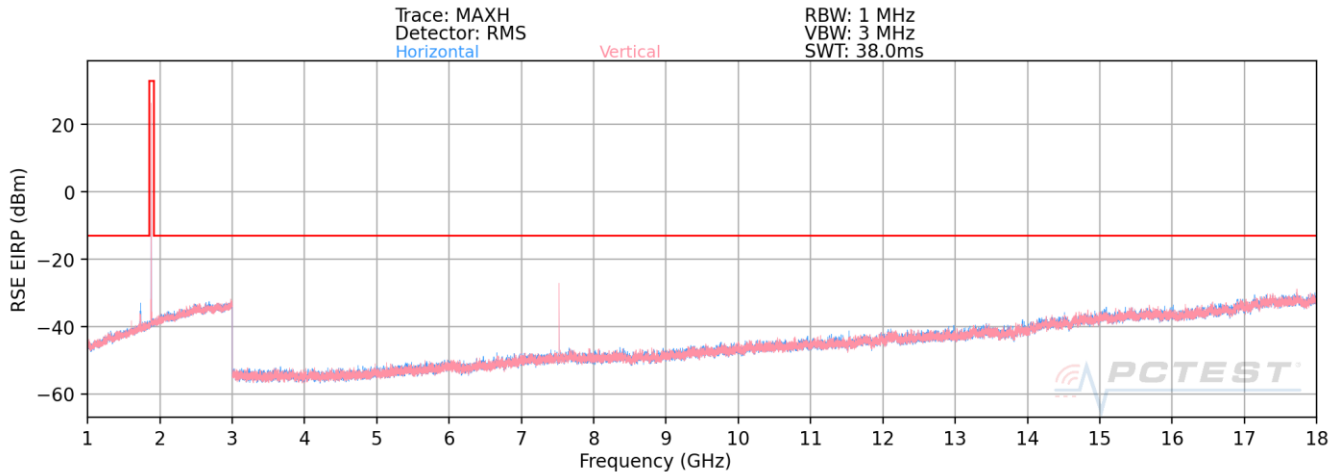
FCC ID: A3LSMA426U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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Test Notes

- 1) Field strengths are calculated using the Measurement quantity conversions in KDB 971168 Section 5.8.4.
 - a) $E(\text{dB}\mu\text{V}/\text{m}) = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$
 - b) $\text{EIRP (dBm)} = E(\text{dB}\mu\text{V}/\text{m}) + 20\log D - 104.8$; where D is the measurement distance in meters.
- 2) This device employs GSM, GPRS, and EDGE capabilities. The EUT was tested under all configurations and the highest powers is reported in GPRS mode while transmitting with one slot active.
- 3) This device employs UMTS technology with WCDMA (AMR/RMC) and HSDPA capabilities. The EUT was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1".
- 4) For CDMA, this device was tested under all RC and SO combinations and the worst case is reported with RC3/SO55 with "All Up" power control bits.
- 5) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 6) This unit was tested with its standard battery.
- 7) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case setup is reported in the tables below.
- 8) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 9) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 10) The "-" shown in the following RSE tables are used to denote a noise floor measurement.
- 11) 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.
- 12) Spurious emissions shown in this section are measured while operating in EN-DC mode with Sub 6GHz NR carrier as well as an LTE carrier (anchor). Spurious emissions from the NR carrier device, is subject to the rules under which the NR carrier operates. Spurious emission caused by the LTE carrier must meet the requirements of the rules under which the LTE carrier operates.

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GSM/GPRS PCS



Plot 7-200. Radiated Spurious Plot (GPRS PCS)

Mode:	GPRS 1 Tx Slot
Channel:	512
Frequency (MHz):	1850.2



Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3700.4	H	387	355	-72.09	2.47	37.38	-57.87	-13.00	-44.87
5550.6	H	276	326	-67.87	4.70	43.83	-51.42	-13.00	-38.42
7400.8	H	141	27	-49.47	9.53	67.06	-28.20	-13.00	-15.20
9251.0	H	237	330	-57.56	10.52	59.96	-35.30	-13.00	-22.30
11101.2	H	142	5	-76.95	13.06	43.11	-52.15	-13.00	-39.15
12951.4	H	170	335	-76.20	14.45	45.25	-50.01	-13.00	-37.01
14801.6	H	-	-	-78.84	17.23	45.39	-49.87	-13.00	-36.87
16651.8	H	140	61	-78.66	16.23	44.57	-50.69	-13.00	-37.69

Table 7-7. Radiated Spurious Data (GPRS PCS – Low Channel)

Mode:	GPRS 1 Tx Slot
Channel:	661
Frequency (MHz):	1880

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3760.0	H	366	322	-69.97	2.78	39.81	-55.45	-13.00	-42.45
5640.0	H	158	331	-69.58	5.01	42.43	-52.83	-13.00	-39.83
7520.0	H	112	21	-46.41	9.28	69.87	-25.39	-13.00	-12.39
9400.0	H	240	321	-62.62	11.92	56.30	-38.96	-13.00	-25.96
11280.0	H	113	357	-69.67	12.92	50.25	-45.01	-13.00	-32.01
13160.0	H	192	339	-74.74	14.64	46.90	-48.36	-13.00	-35.36
15040.0	H	168	345	-67.20	16.22	56.02	-39.24	-13.00	-26.24
16920.0	H	173	49	-75.20	16.53	48.33	-46.93	-13.00	-33.93



Table 7-8. Radiated Spurious Data (GPRS PCS – Mid Channel)

FCC ID: A3LSMA426U	 PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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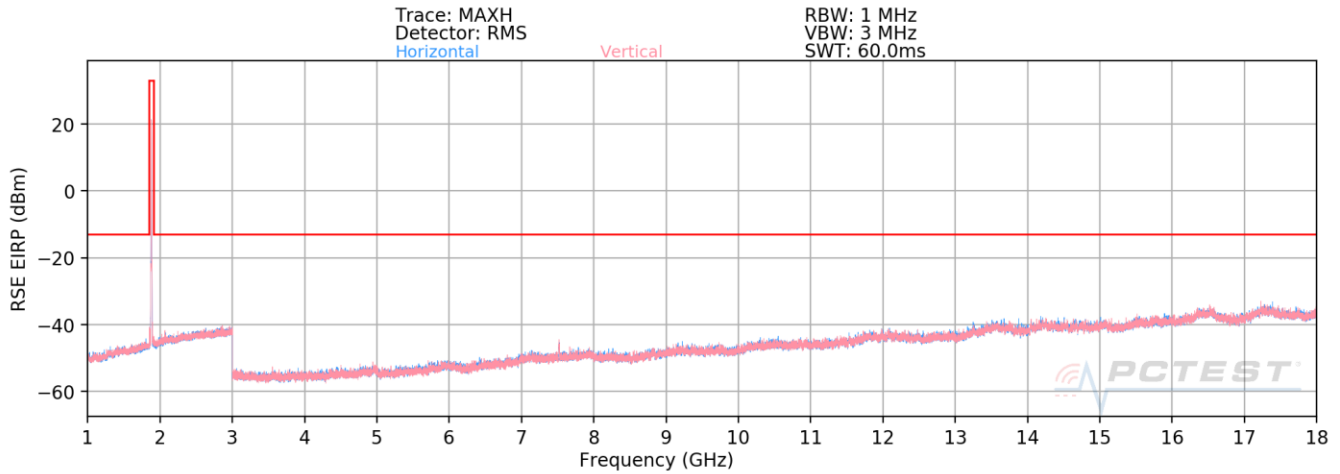
Mode:	GPRS 1 Tx Slot
Channel:	810
Frequency (MHz):	1909.8

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3819.6	H	257	315	-72.07	2.45	37.38	-57.87	-13.00	-44.87
5729.4	H	172	324	-68.70	4.65	42.95	-52.31	-13.00	-39.31
7639.2	H	115	24	-45.15	9.80	71.65	-23.60	-13.00	-10.60
9549.0	H	118	26	-63.99	11.27	54.28	-40.98	-13.00	-27.98
11458.8	H	126	352	-66.15	12.93	53.78	-41.48	-13.00	-28.48
13368.6	H	173	332	-75.34	14.99	46.65	-48.61	-13.00	-35.61
15278.4	H	117	344	-62.27	14.91	59.64	-35.62	-13.00	-22.62
17188.2	H	116	40	-75.81	18.16	49.35	-45.91	-13.00	-32.91

Table 7-9. Radiated Spurious Data (GPRS PCS – High Channel)

FCC ID: A3LSMA426U	 PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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WCDMA PCS



Plot 7-201. Radiated Spurious Plot (WCDMA PCS)

Mode:	WCDMA RMC
Channel:	9262
Frequency (MHz):	1852.4

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3704.8	H	-	-	-78.70	7.78	36.08	-59.18	-13.00	-46.18
5557.2	H	-	-	-79.68	11.86	39.18	-56.08	-13.00	-43.08
7409.6	H	183	54	-75.12	15.91	47.79	-47.47	-13.00	-34.47
9262.0	H	-	-	80.14	18.37	205.51	110.25	-13.00	123.25
11114.4	H	-	-	-79.69	21.44	48.75	-46.51	-13.00	-33.51

Table 7-10. Radiated Spurious Data (WCDMA PCS – Low Channel)

Mode:	WCDMA RMC
Channel:	9400
Frequency (MHz):	1880

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3760.0	H	-	-	-78.69	8.26	36.57	-58.69	-13.00	-45.69
5640.0	H	-	-	-79.38	11.02	38.64	-56.62	-13.00	-43.62
7520.0	H	155	57	-75.81	15.78	46.97	-48.29	-13.00	-35.29
9400.0	H	-	-	-80.56	19.12	45.56	-49.70	-13.00	-36.70
11280.0	H	-	-	-80.31	22.00	48.69	-46.57	-13.00	-33.57



Table 7-11. Radiated Spurious Data (WCDMA PCS – Mid Channel)

FCC ID: A3LSMA426U		PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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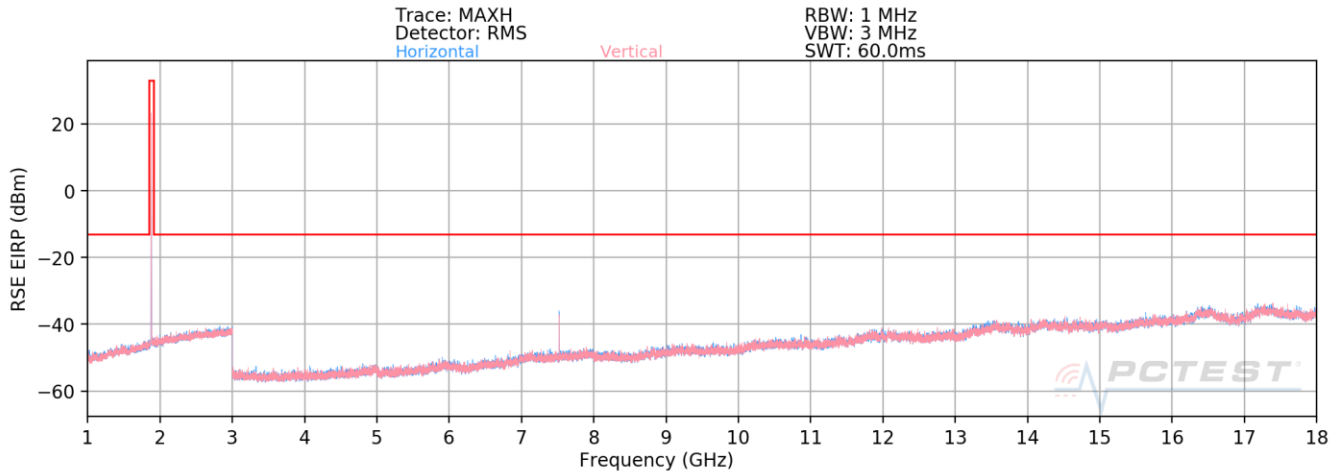
Mode:	WCDMA RMC
Channel:	9538
Frequency (MHz):	1907.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3815.2	H	-	-	-78.40	8.51	37.11	-58.14	-13.00	-45.14
5722.8	H	-	-	-79.43	12.05	39.62	-55.64	-13.00	-42.64
7630.4	H	174	51	-75.26	16.54	48.28	-46.97	-13.00	-33.97
9538.0	H	-	-	-80.55	18.31	44.76	-50.50	-13.00	-37.50
11445.6	H	-	-	-79.90	22.11	49.21	-46.05	-13.00	-33.05
13353.2	H	-	-	-79.76	25.16	52.40	-42.86	-13.00	-29.86

Table 7-12. Radiated Spurious Data (WCDMA PCS – High Channel)

FCC ID: A3LSMA426U	 PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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CDMA PCS



Plot 7-202. Radiated Spurious Plot (CDMA PCS)

Mode:	CDMA
Channel:	25
Frequency (MHz):	1851.25



Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3702.50	H	-	-	-80.79	7.82	34.03	-61.22	-13.00	-48.22
5553.75	H	-	-	-81.44	11.74	37.30	-57.96	-13.00	-44.96
7405.00	H	165	53	-67.93	15.93	55.00	-40.25	-13.00	-27.25
9256.25	H	-	-	-82.85	18.24	42.39	-52.87	-13.00	-39.87
11107.50	H	-	-	-84.22	21.49	44.27	-50.99	-13.00	-37.99
12958.75	H	-	-	-84.79	24.58	46.79	-48.47	-13.00	-35.47

Table 7-13. Radiated Spurious Data (CDMA PCS – Low Channel)

Mode:	CDMA
Channel:	600
Frequency (MHz):	1880

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3760.00	H	-	-	-80.53	8.26	34.73	-60.53	-13.00	-47.53
5640.00	H	-	-	-80.55	11.02	37.47	-57.79	-13.00	-44.79
7520.00	H	172	53	-68.33	15.78	54.45	-40.81	-13.00	-27.81
9400.00	H	-	-	-83.65	19.12	42.47	-52.79	-13.00	-39.79
11280.00	H	-	-	-84.62	22.00	44.38	-50.88	-13.00	-37.88
13160.00	H	-	-	-85.24	24.79	46.55	-48.71	-13.00	-35.71



Table 7-14. Radiated Spurious Data (CDMA PCS – Mid Channel)

FCC ID: A3LSMA426U	 PART 24 MEASUREMENT REPORT 	Approved by: Technical Manager
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Mode:	CDMA
Channel:	1175
Frequency (MHz):	1908.75

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
3817.50	H	-	-	-80.86	8.58	34.72	-60.54	-13.00	-47.54
5726.25	H	-	-	-81.61	12.26	37.65	-57.61	-13.00	-44.61
7635.00	H	252	48	-68.48	16.53	55.05	-40.21	-13.00	-27.21
9543.75	H	-	-	-84.13	18.63	41.50	-53.76	-13.00	-40.76
11452.50	H	-	-	-84.23	22.29	45.06	-50.20	-13.00	-37.20
13361.25	H	-	-	-84.79	25.39	47.60	-47.66	-13.00	-34.66

Table 7-15. Radiated Spurious Data (CDMA PCS – High Channel)

FCC ID: A3LSMA426U	 PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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