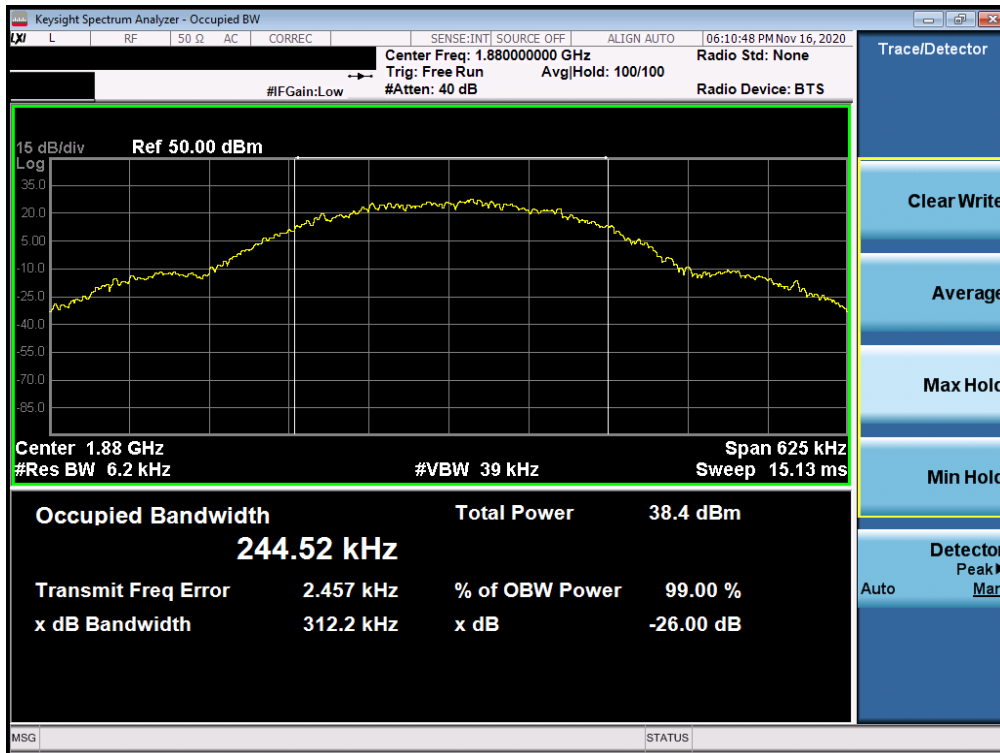
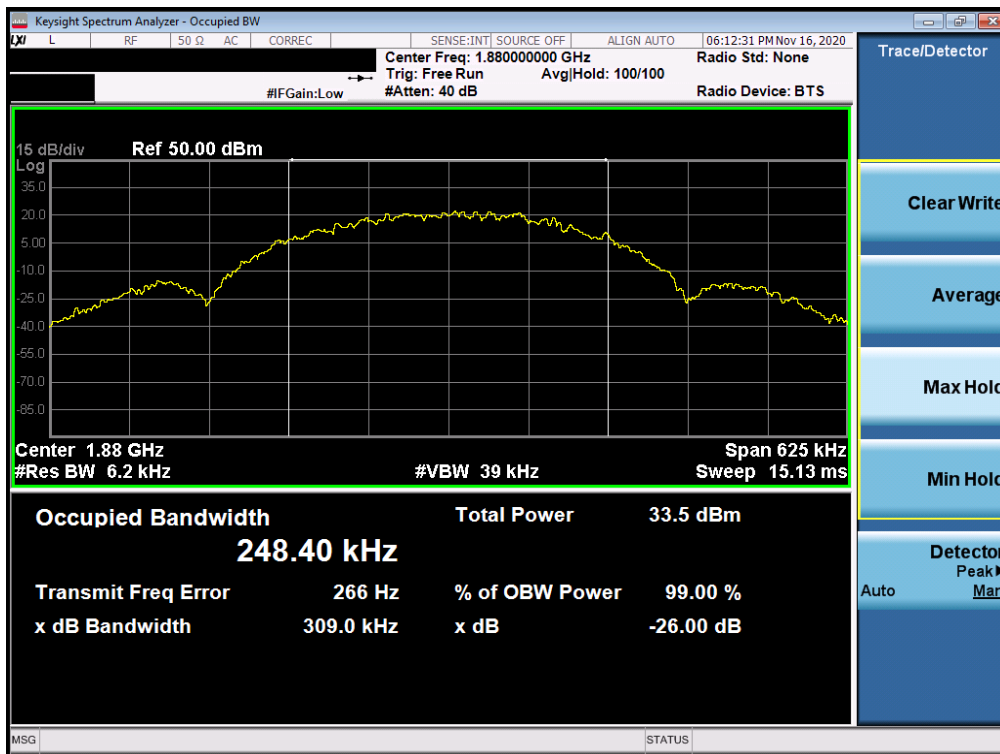


GSM/GPRS PCS



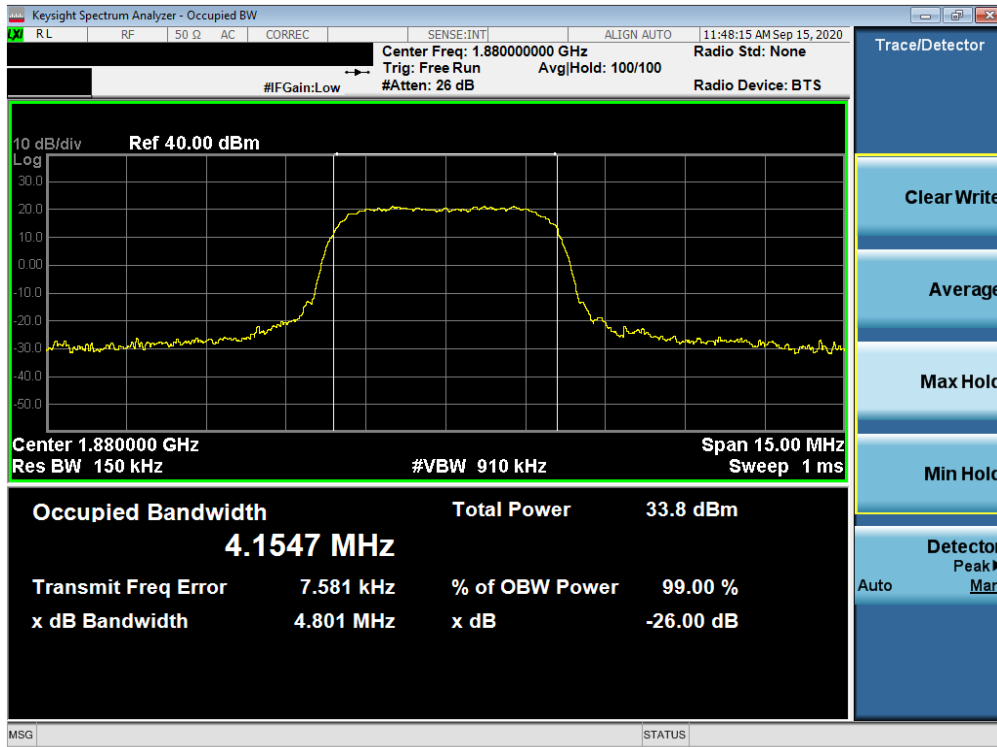
Plot 7-95. Occupied Bandwidth Plot (PCS GSM Mode)



Plot 7-96. Occupied Bandwidth Plot (EDGE1900 Mode)

FCC ID: A3LSMG996U	PCTEST Product to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 63 of 234

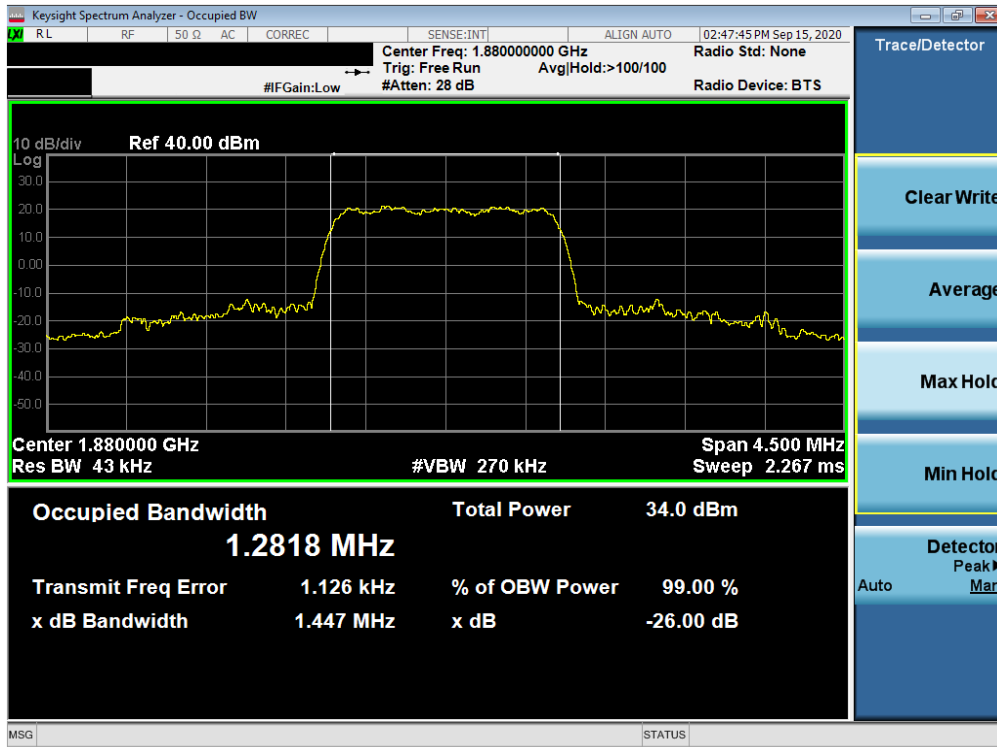
WCDMA PCS



Plot 7-97. Occupied Bandwidth Plot (WCDMA, Ch. 9400)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 64 of 234

CDMA PCS



Plot 7-98. Occupied Bandwidth Plot (CDMA, Ch. 600)

FCC ID: A3LSMG996U	PCTEST Product to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 65 of 234

7.3 Spurious and Harmonic Emissions at Antenna Terminal

Test Overview

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. 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 $43 + 10 \log_{10}(P_{[Watts]})$, where P is the transmitter power in Watts.

Test Procedure Used

KDB 971168 D01 v03r01 – Section 6.0

Test Settings

1. Start frequency was set to 30MHz and stop frequency was set to 20GHz (separated into at least two plots per channel)
2. Detector = RMS
3. Trace mode = trace average for continuous emissions, max hold for pulse emissions
4. Sweep time = auto couple
5. The trace was allowed to stabilize
6. Please see test notes below for RBW and VBW settings

Test Setup

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

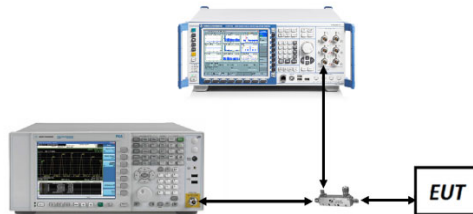




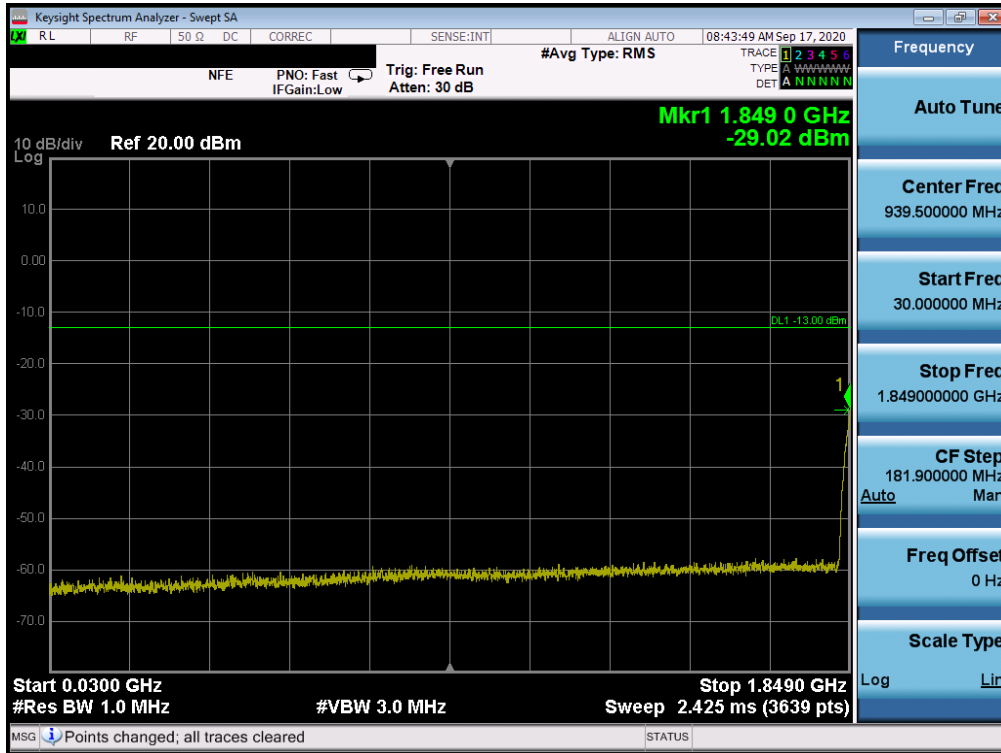
Figure 7-2. Test Instrument & Measurement Setup

Test Notes

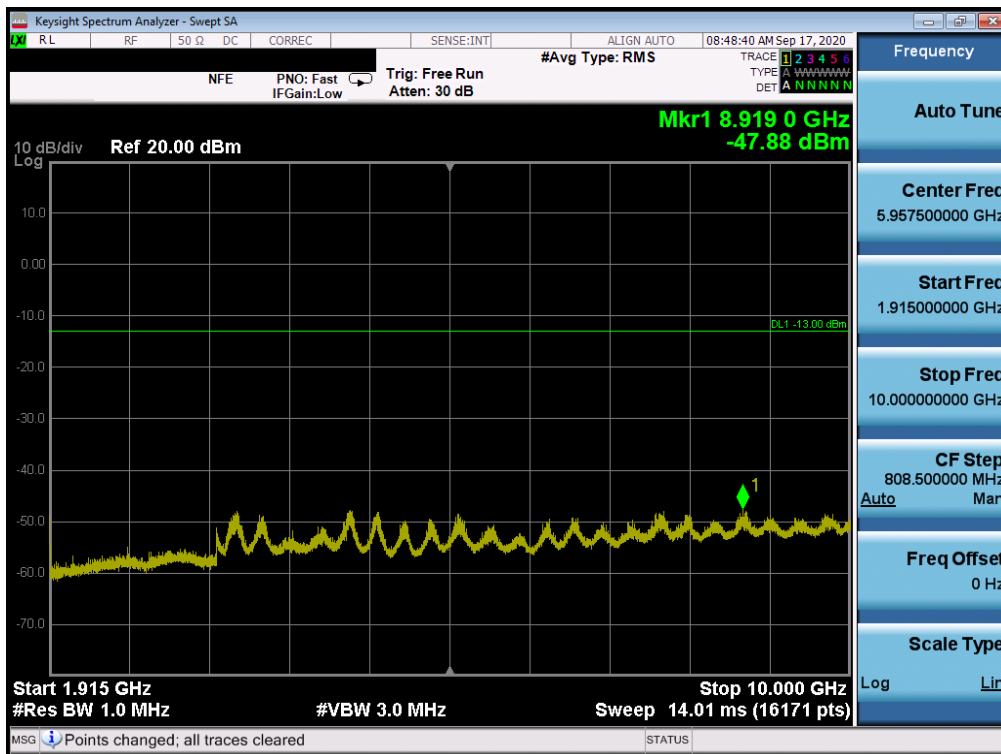
1. Per Part 24 and RSS-133, compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth 100 kHz or greater for measurements below 1GHz. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. 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: A3LSMG996U	 PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset	Page 66 of 234

LTE Band 25/2

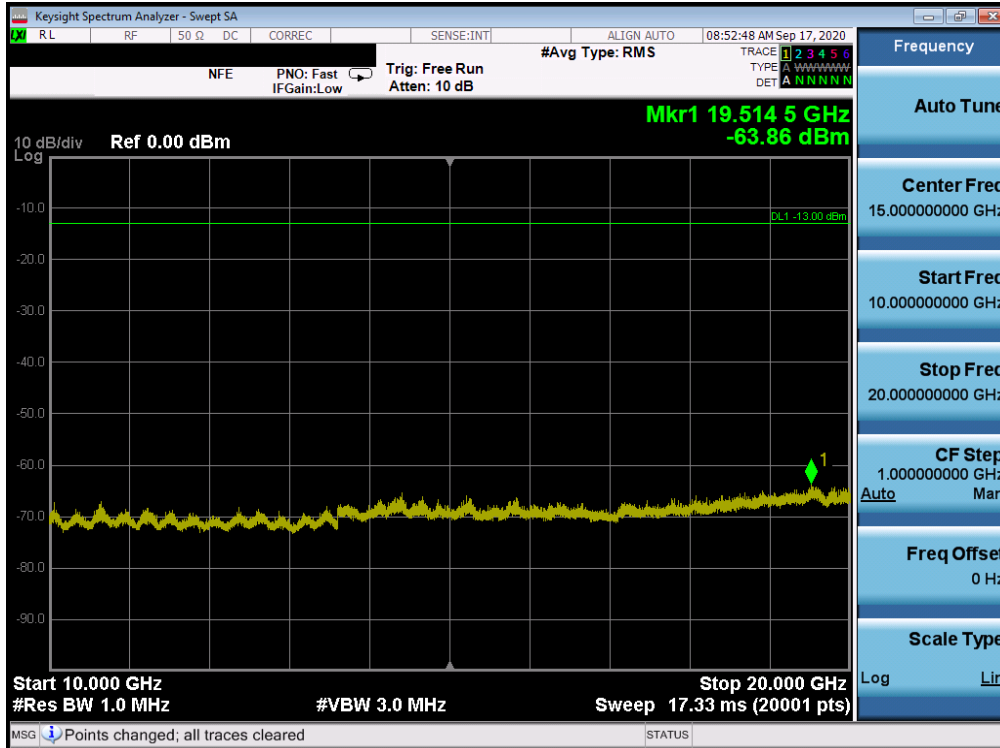


Plot 7-99. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

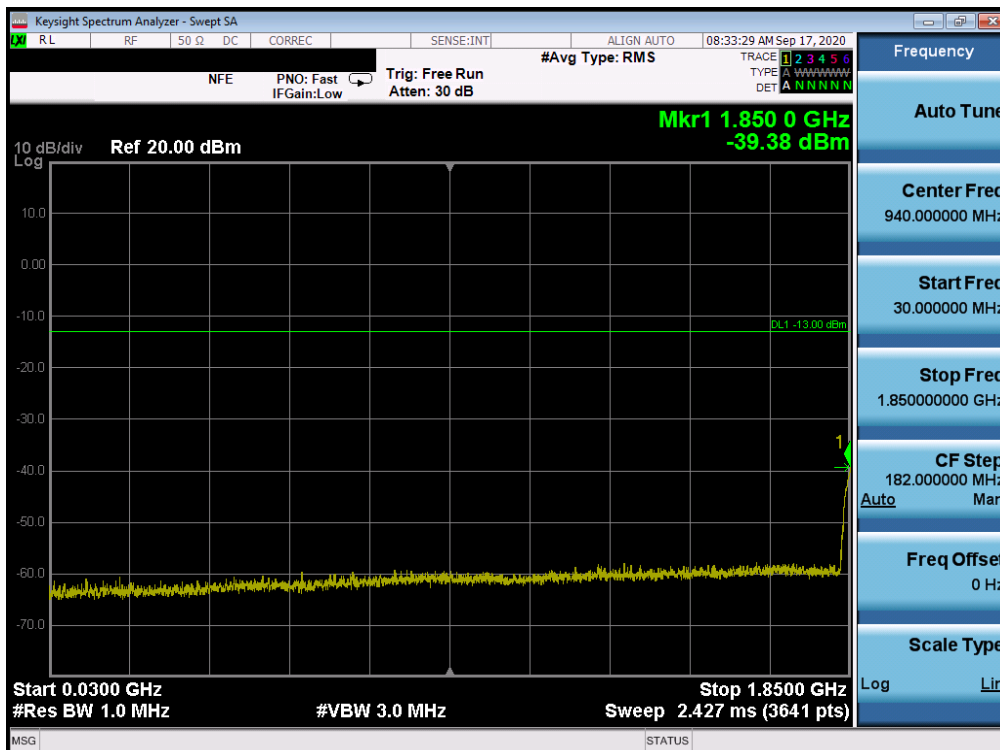


Plot 7-100. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)




FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 67 of 234

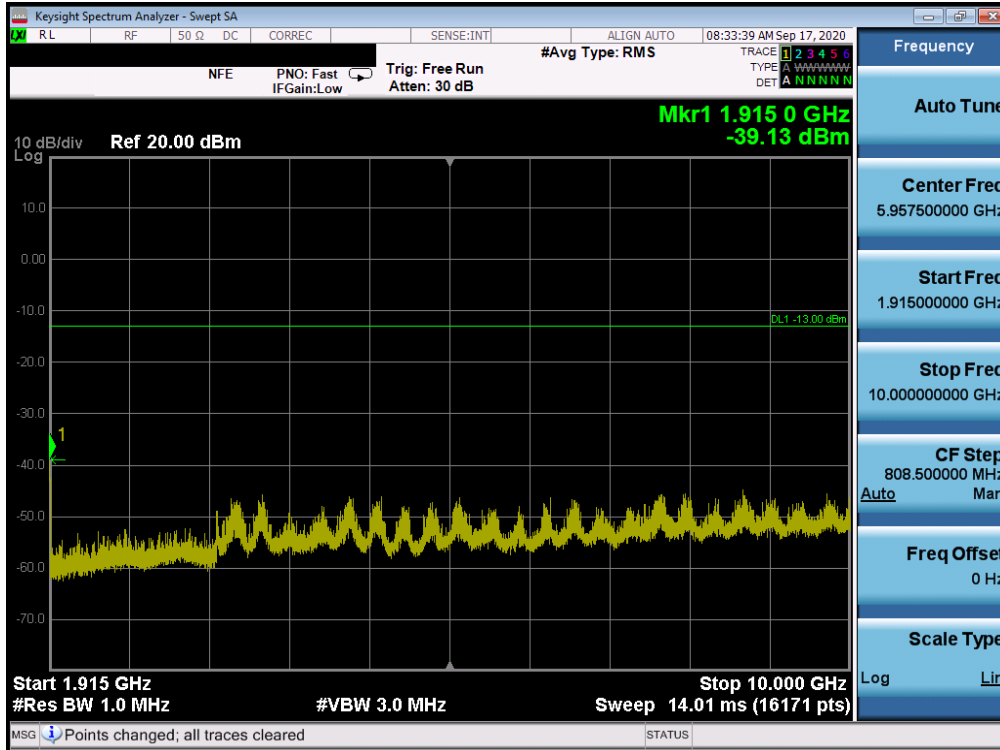


Plot 7-101. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

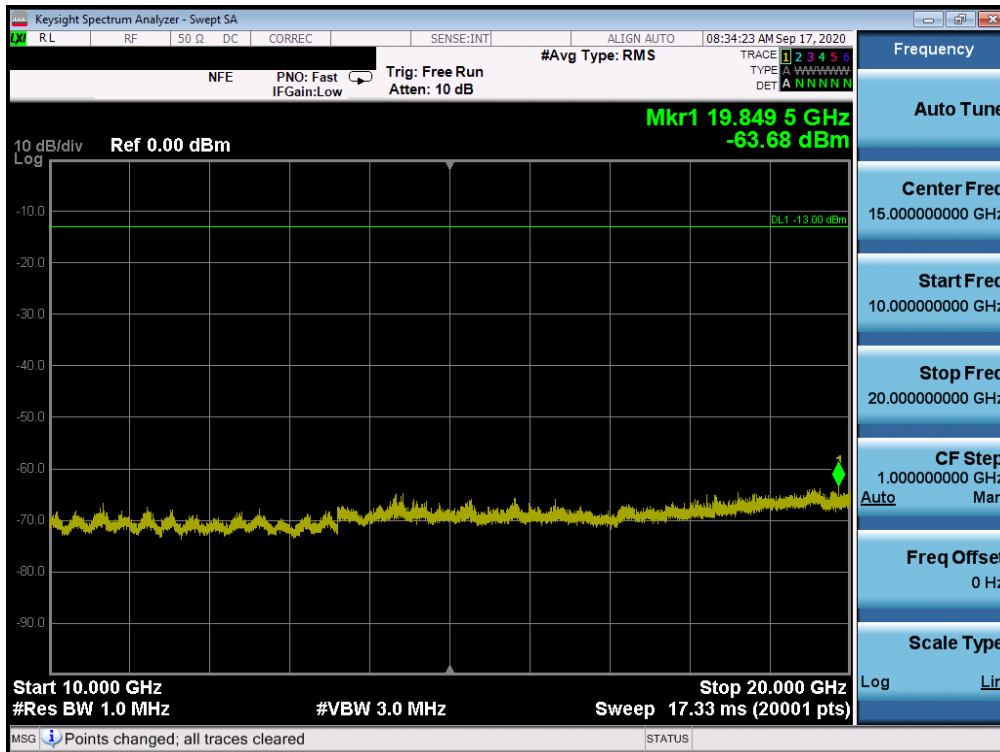


Plot 7-102. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMG996U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 68 of 234

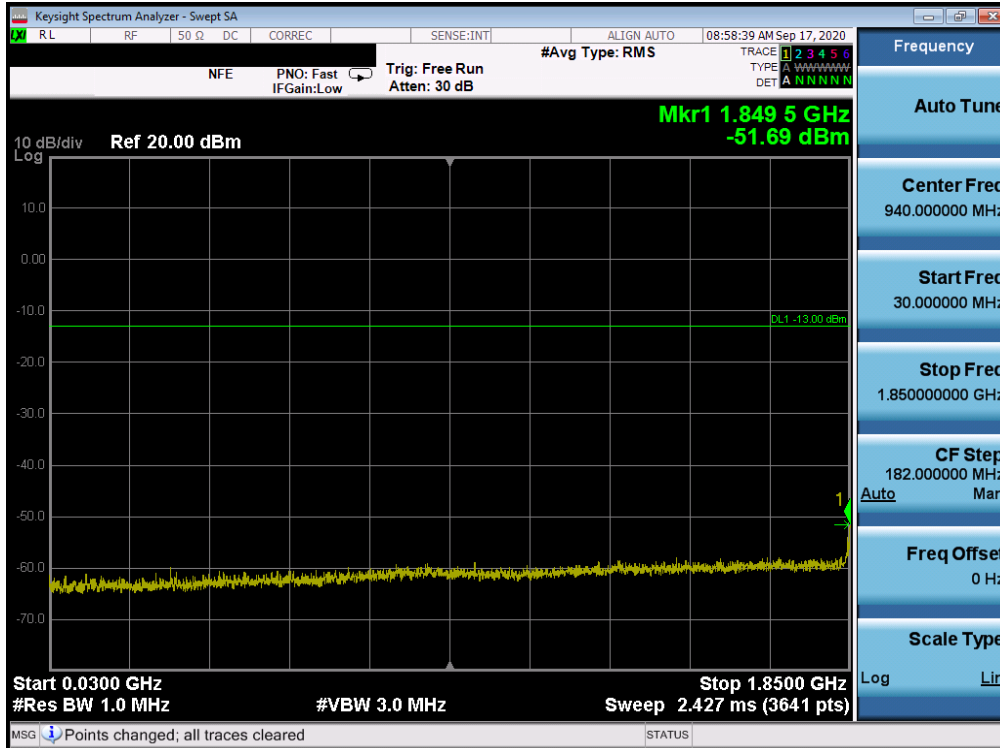


Plot 7-103. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

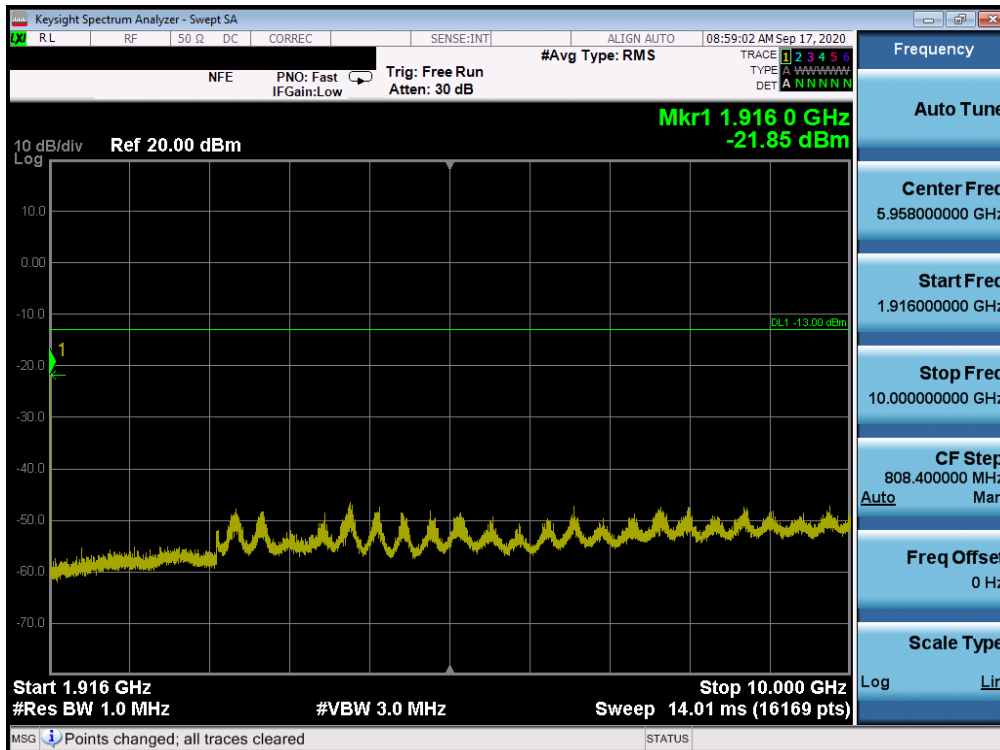


Plot 7-104. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)




FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 69 of 234

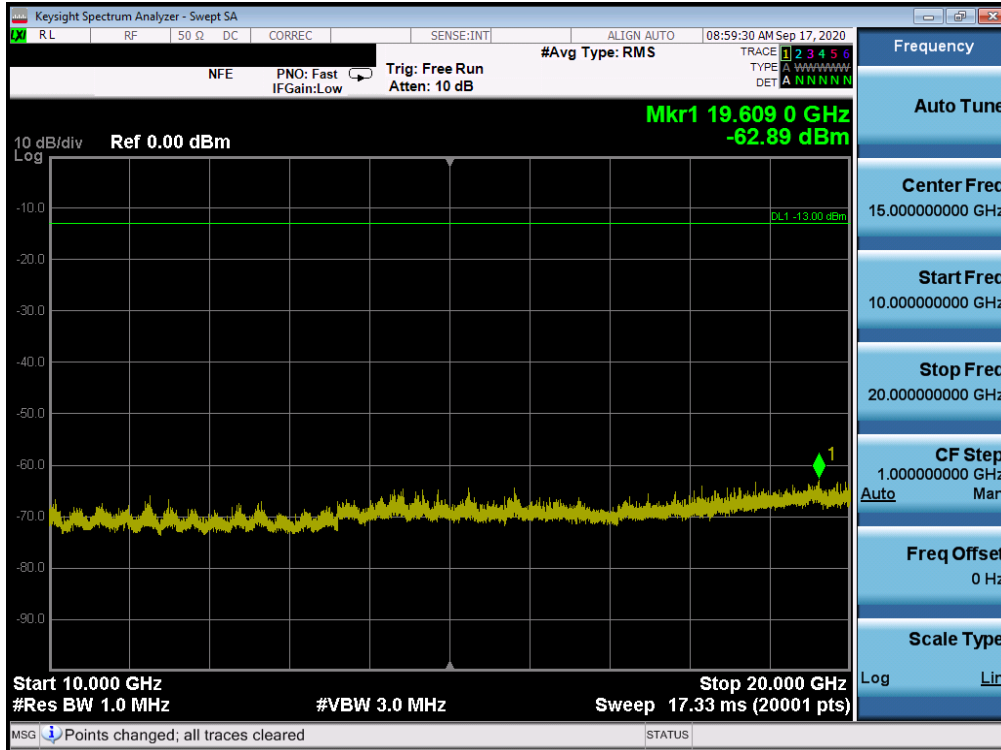


Plot 7-105. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



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

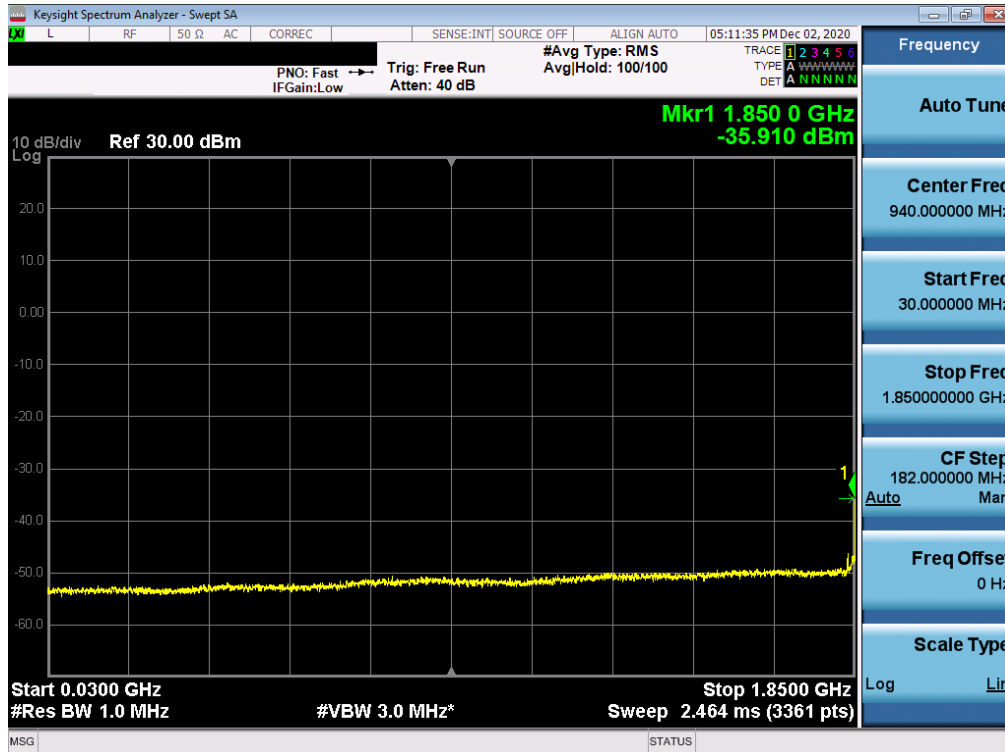
FCC ID: A3LSMG996U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 70 of 234



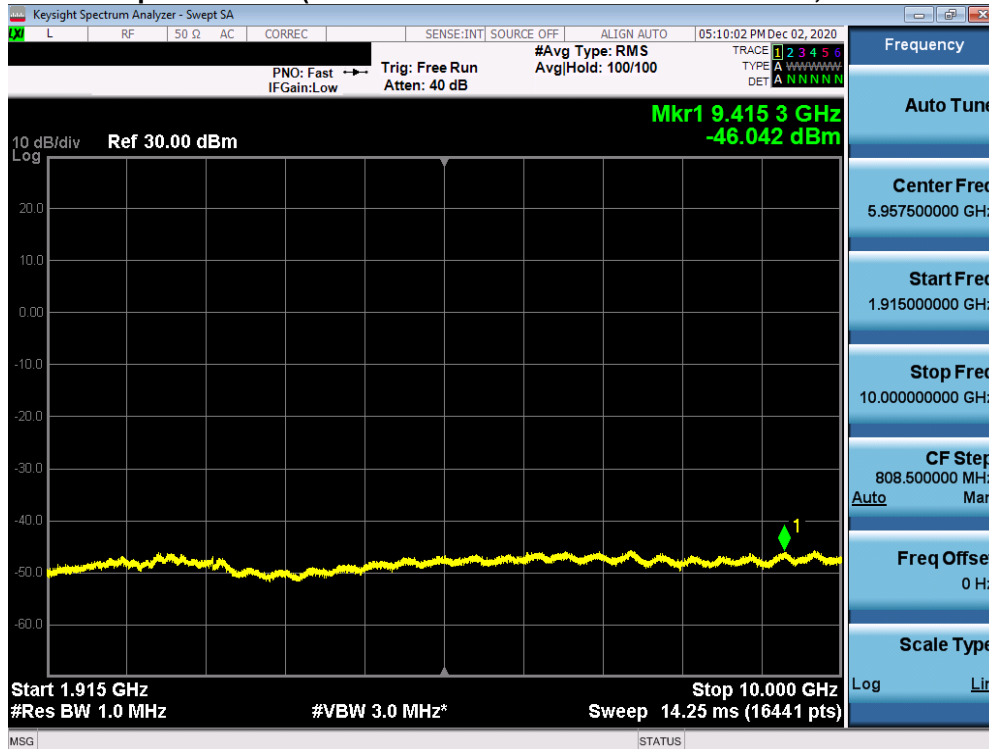
Plot 7-107. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 71 of 234

NR Band n25 Ant A



Plot 7-108. Conducted Spurious Plot (NR Band n25 Ant A-40.0MHz - RB Size 1, RB Offset 0 - Low Channel)

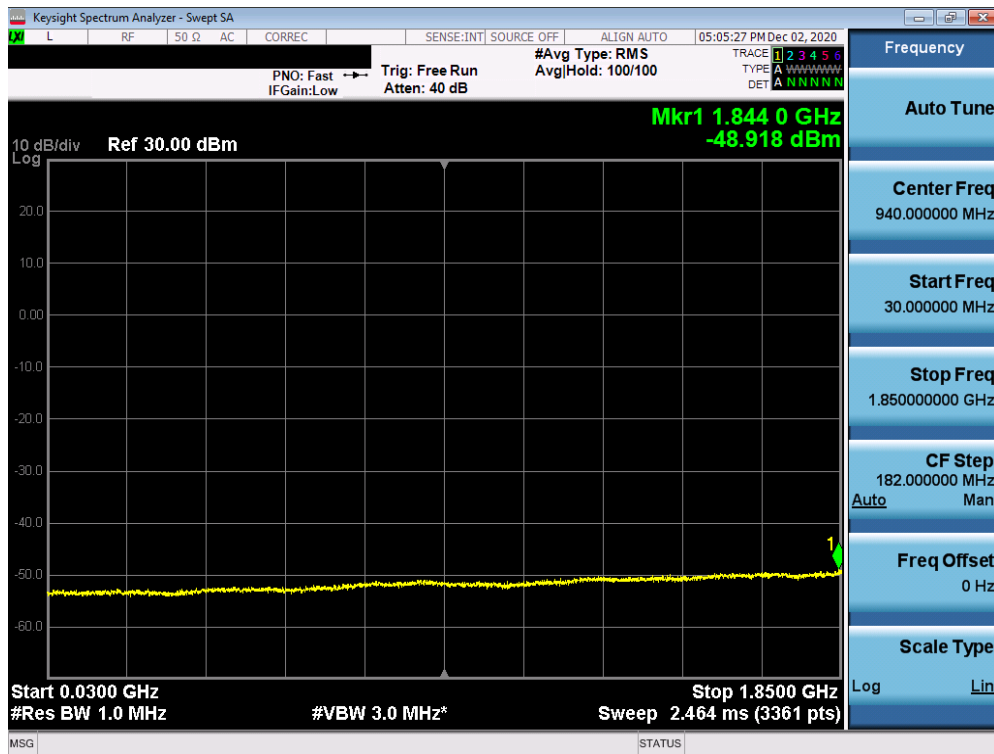


Plot 7-109. Conducted Spurious Plot (NR Band n25 Ant A- 40.0MHz - RB Size 1, RB Offset 0 - Low Channel)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 72 of 234

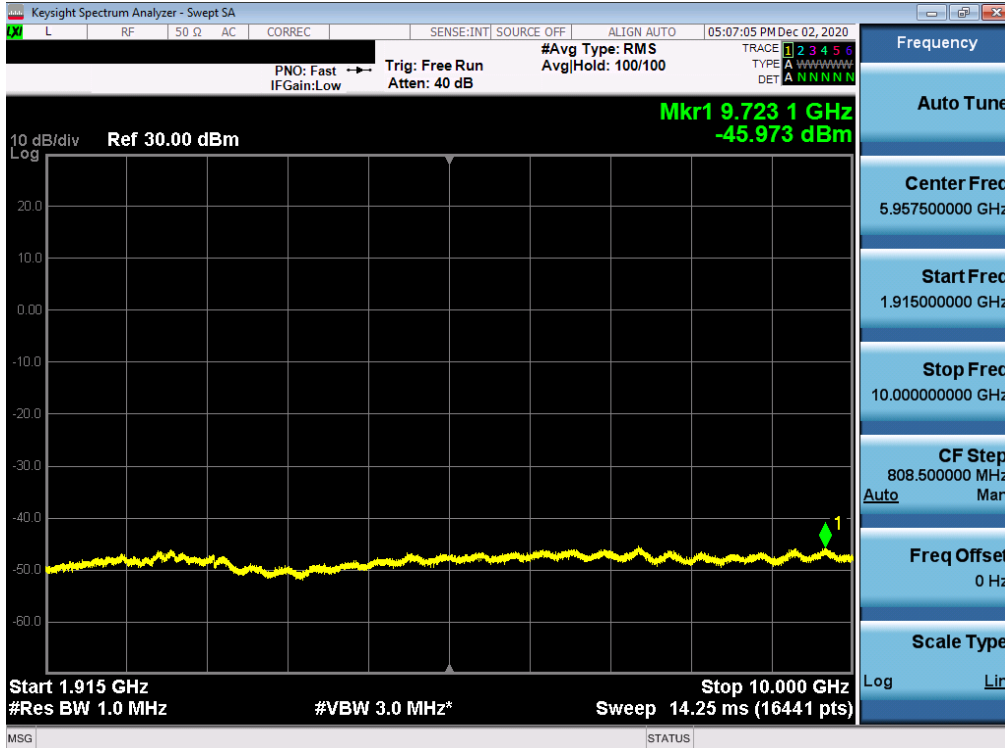


Plot 7-110. Conducted Spurious Plot (NR Band n25 Ant A- 40.0MHz - RB Size 1, RB Offset 0 - Low Channel)

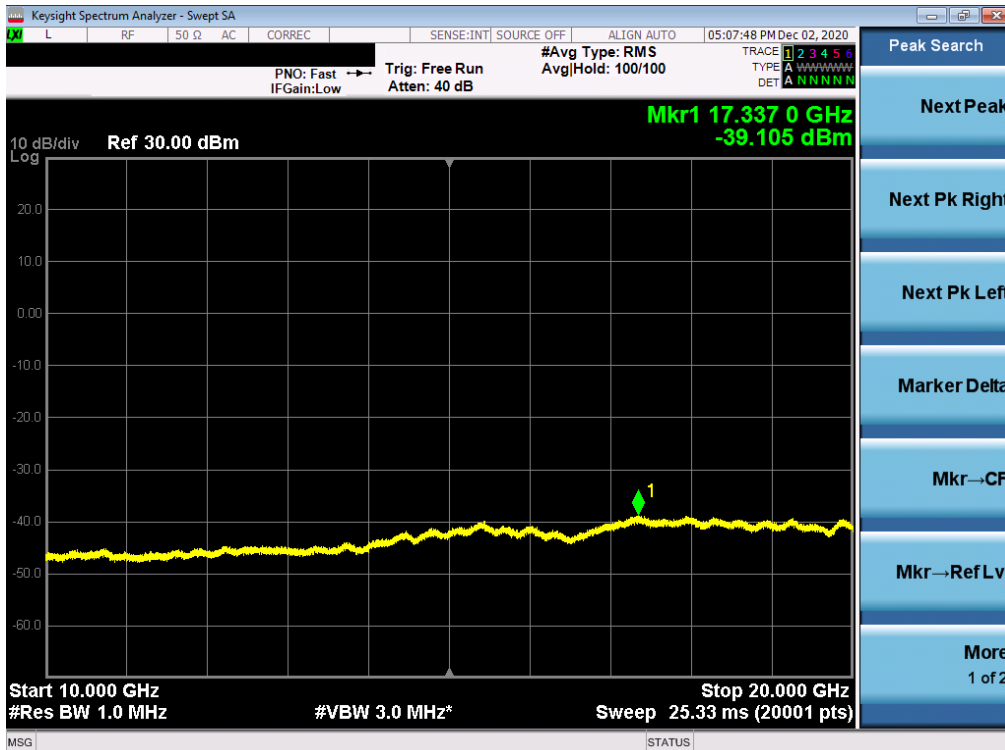


Plot 7-111. Conducted Spurious Plot (NR Band n25 Ant A- 40.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMG996U	PCTEST Product to be part of @element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 73 of 234

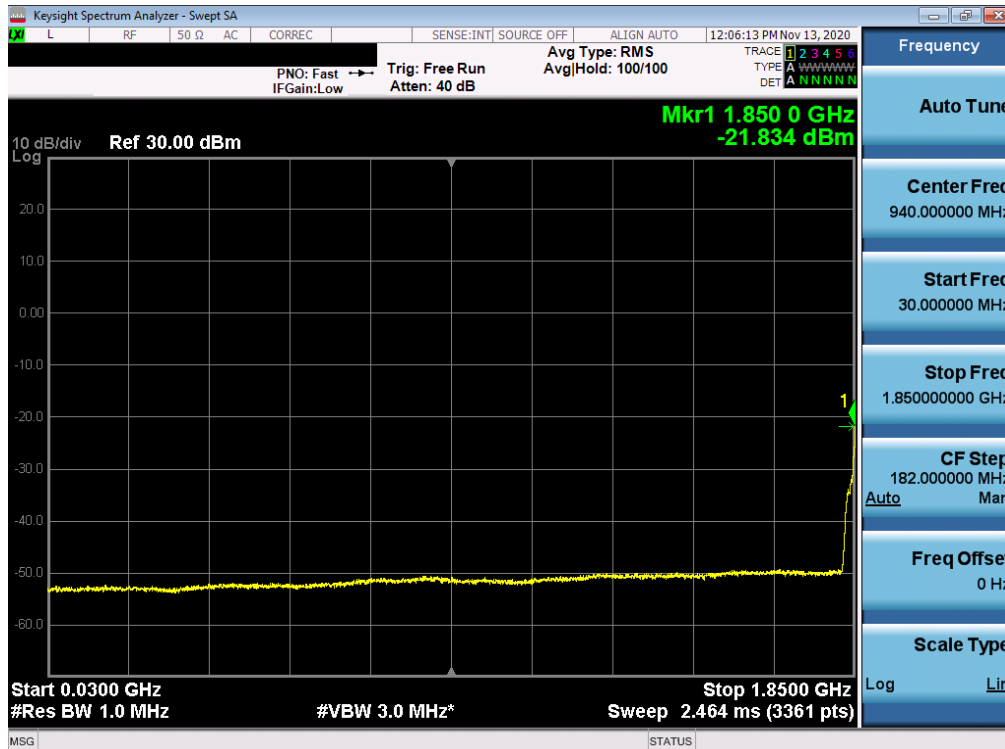


Plot 7-112. Conducted Spurious Plot (NR Band n25 Ant A- 40.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

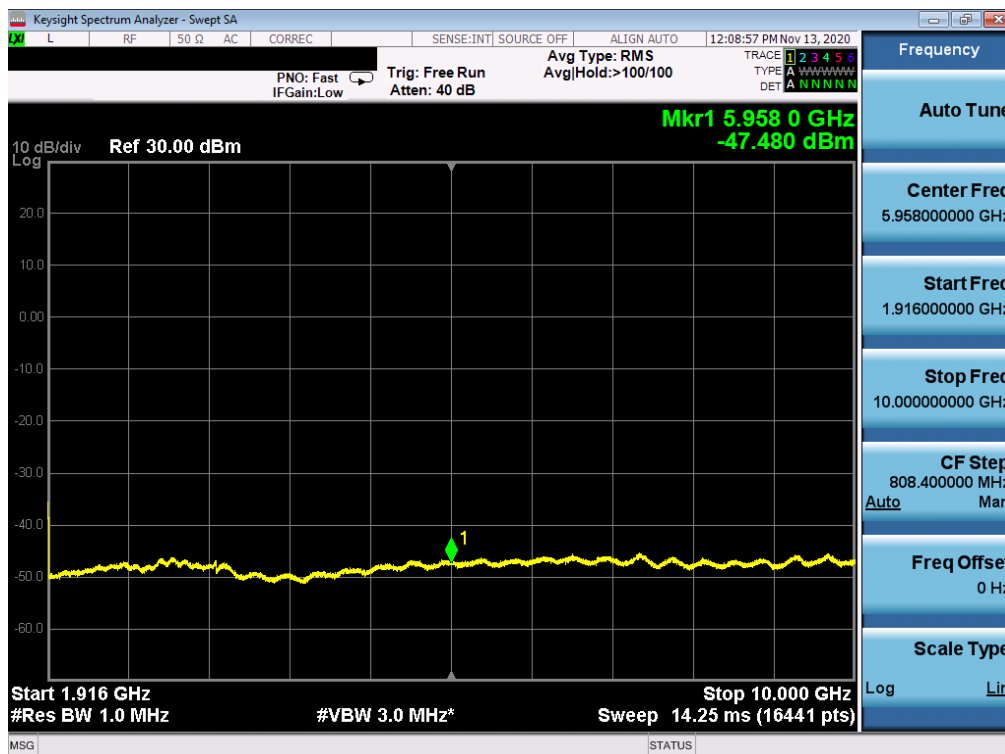


Plot 7-113. Conducted Spurious Plot (NR Band n25 Ant A- 40.0MHz - RB Size 1, RB Offset 0 - Mid Channel)




FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 74 of 234

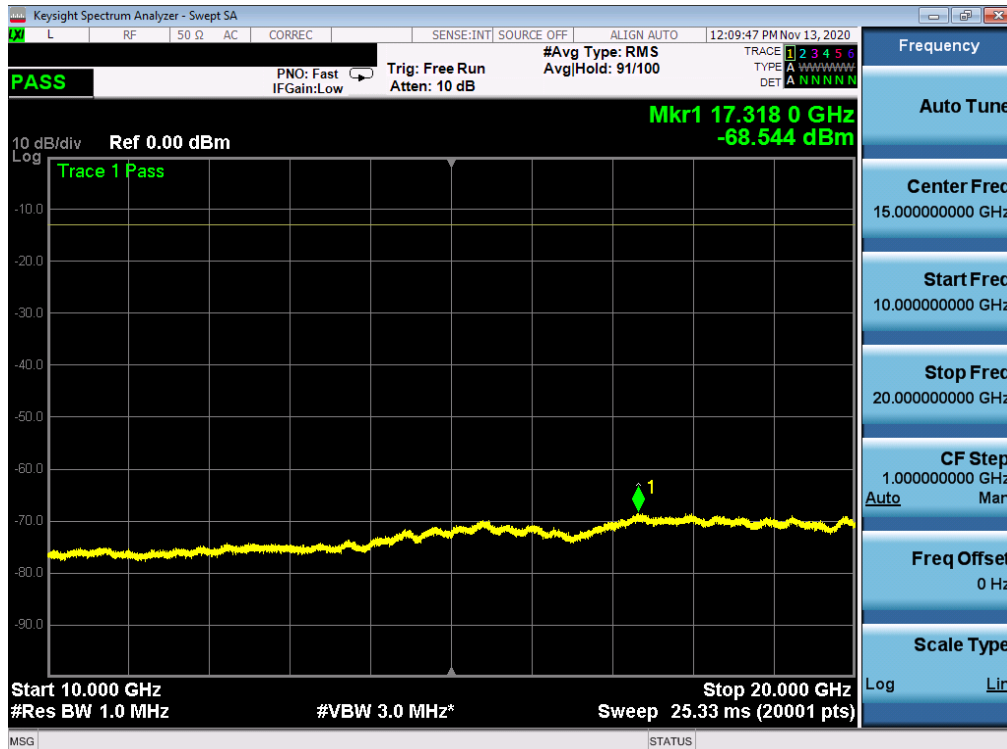


Plot 7-114. Conducted Spurious Plot (NR Band n25 Ant A- 40.0MHz - RB Size 1, RB Offset 0 - High Channel)



Plot 7-115. Conducted Spurious Plot (NR Band n25 Ant A- 40.0MHz - RB Size 1, RB Offset 0 - High Channel)

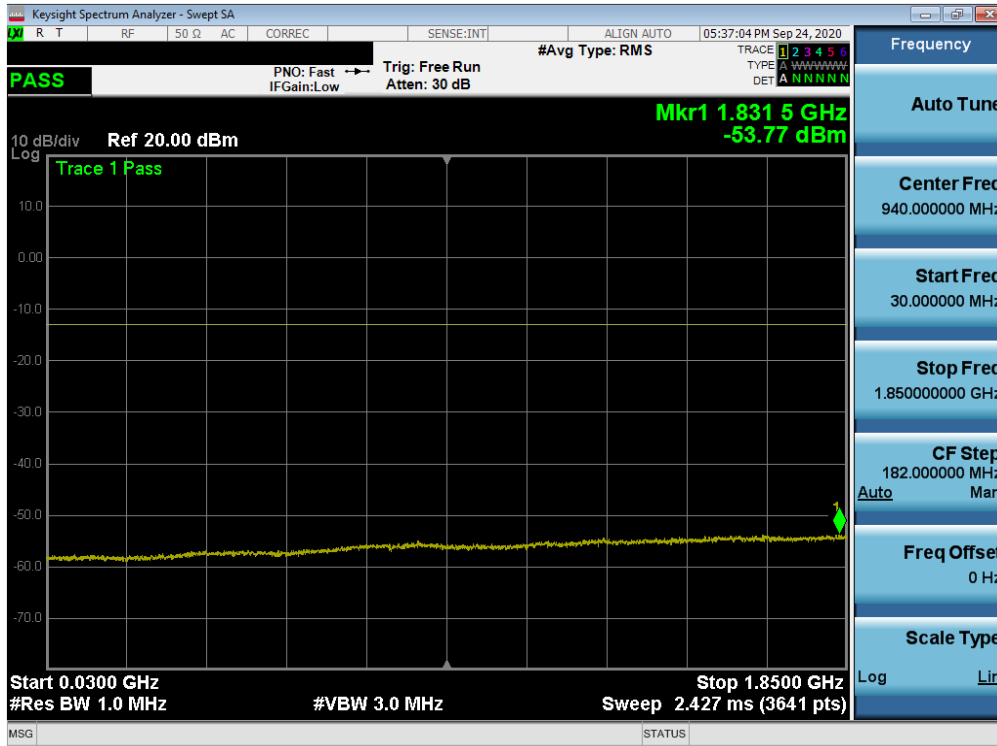
FCC ID: A3LSMG996U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 75 of 234



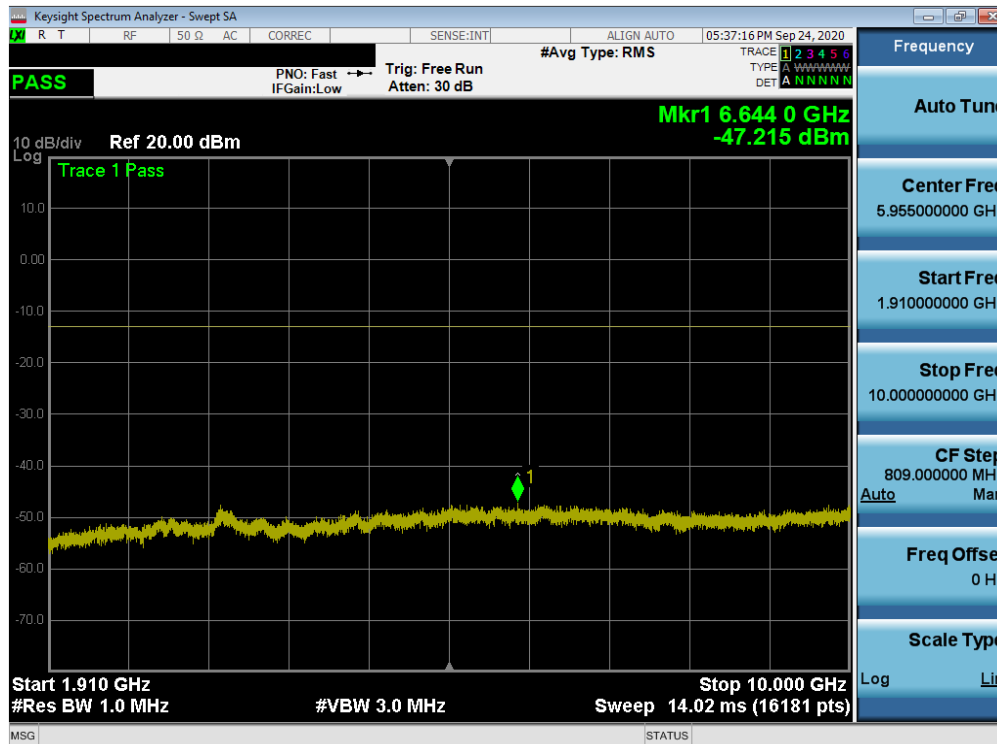
Plot 7-116. Conducted Spurious Plot (NR Band n25 Ant A- 40.0MHz - RB Size 1, RB Offset 0 - High Channel)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 76 of 234

NR Band n2 Ant A

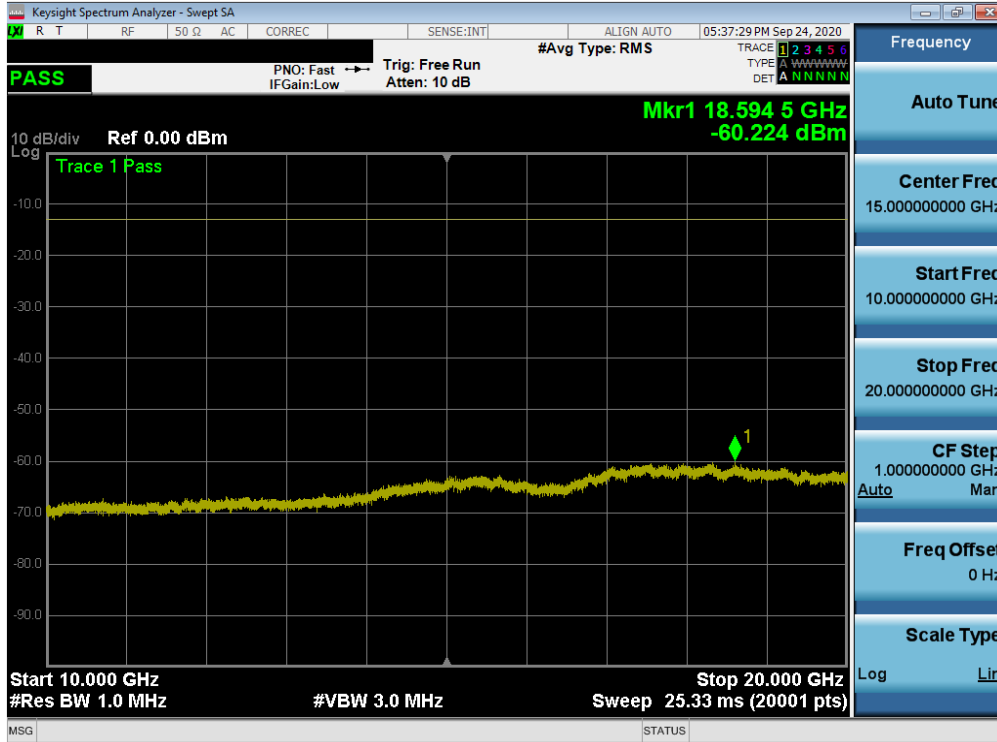


Plot 7-117. Conducted Spurious Plot (NR Band n2 Ant A -20.0MHz - RB Size 1, RB Offset 0 - Low Channel)



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

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 77 of 234

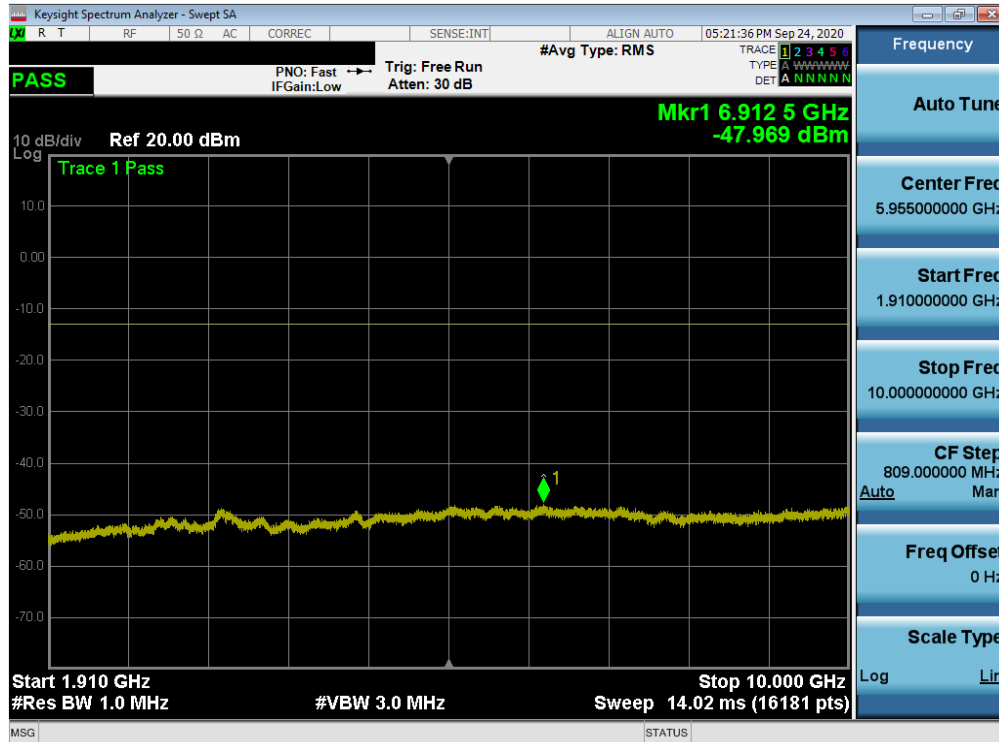


Plot 7-119. Conducted Spurious Plot (NR Band n2 Ant A - 20.0MHz - RB Size 1, RB Offset 0 - Low Channel)

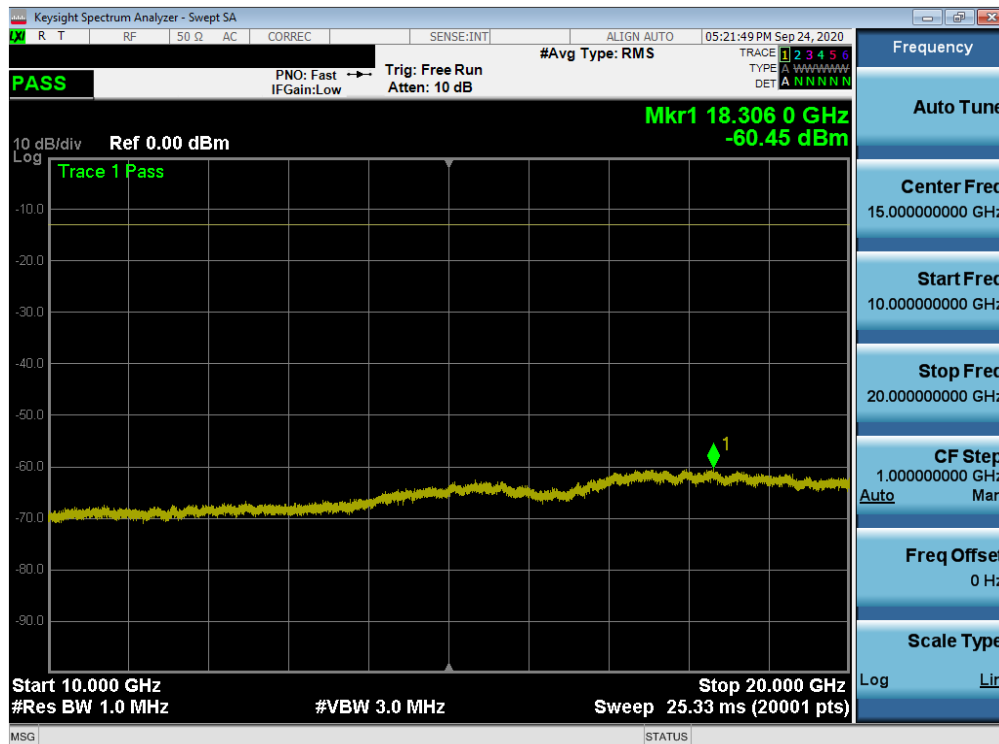


Plot 7-120. Conducted Spurious Plot (NR Band n2 Ant A - 20.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 78 of 234



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

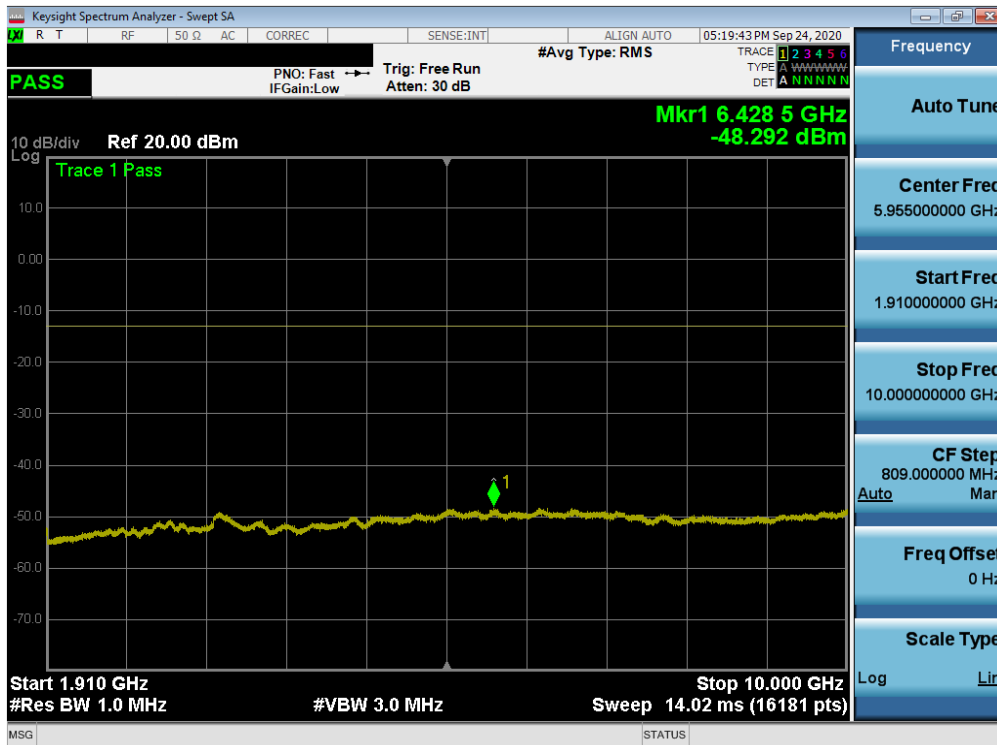


Plot 7-122. Conducted Spurious Plot (NR Band n2 Ant A - 20.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 79 of 234

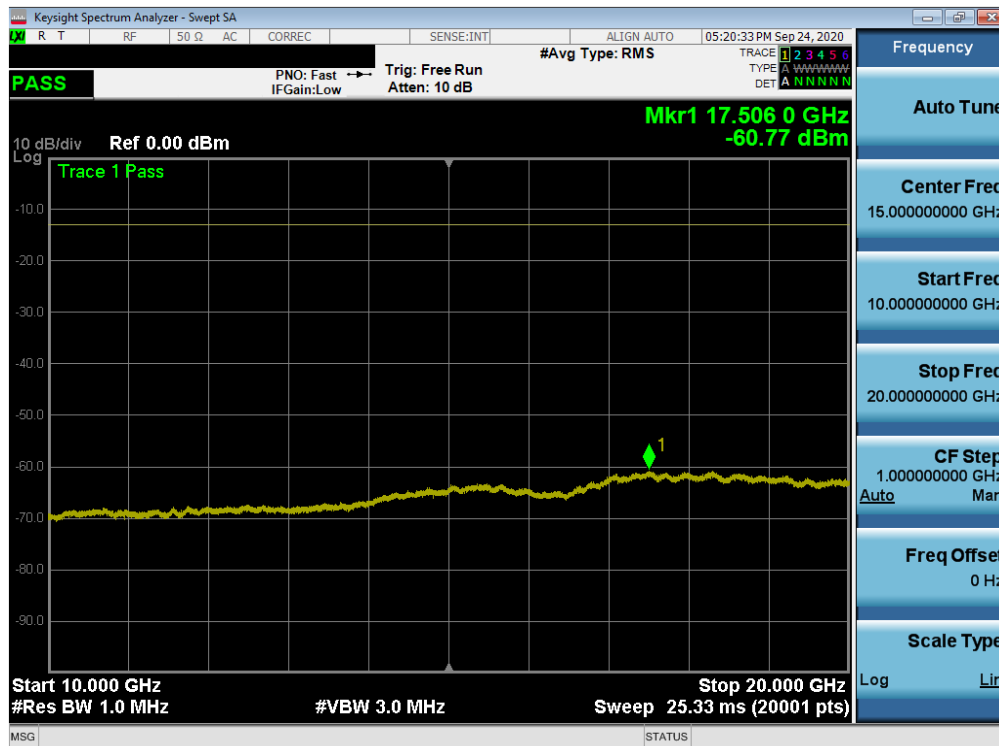


Plot 7-123. Conducted Spurious Plot (NR Band n2 Ant A - 20.0MHz - RB Size 1, RB Offset 0 - High Channel)



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

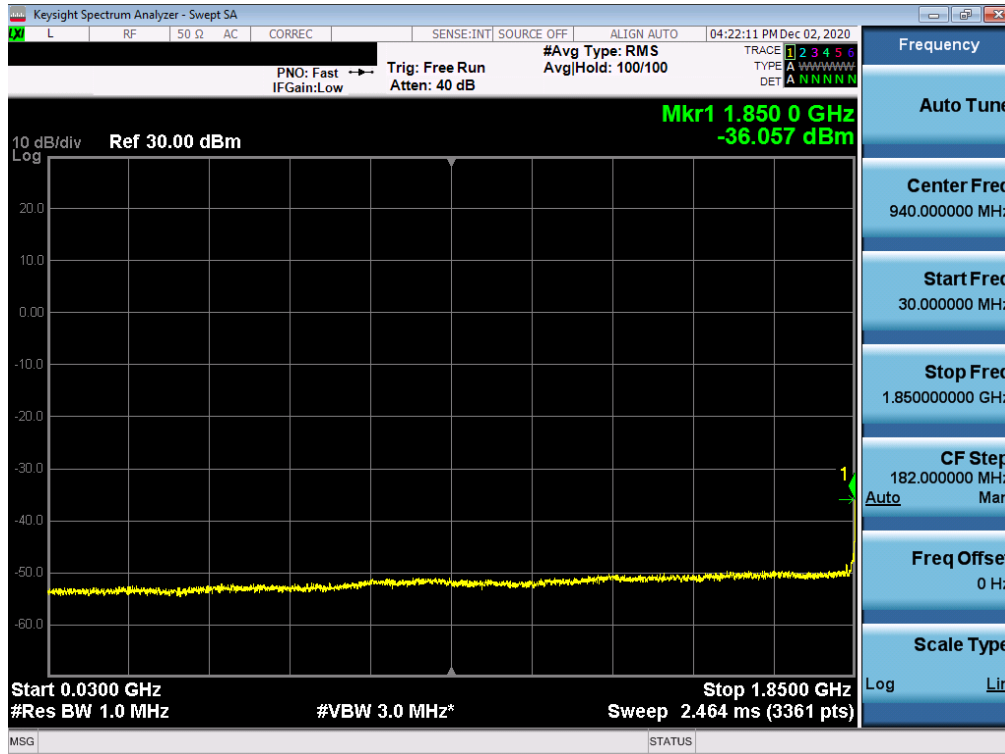
FCC ID: A3LSMG996U	PCTEST Product to be part of Samsung	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 80 of 234



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

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 81 of 234

NR Band n25 Ant I



Plot 7-126. Conducted Spurious Plot (NR Band n25 Ant I-40.0MHz - RB Size 1, RB Offset 0 - Low Channel)

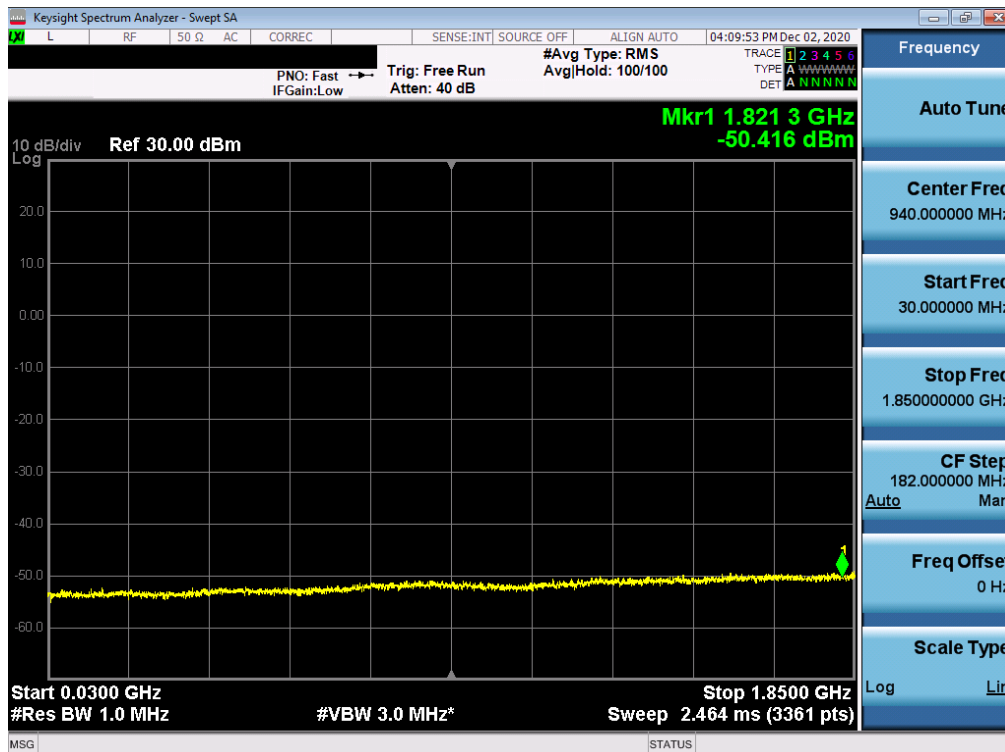


Plot 7-127. Conducted Spurious Plot (NR Band n25 Ant I- 40.0MHz - RB Size 1, RB Offset 0 - Low Channel)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 82 of 234

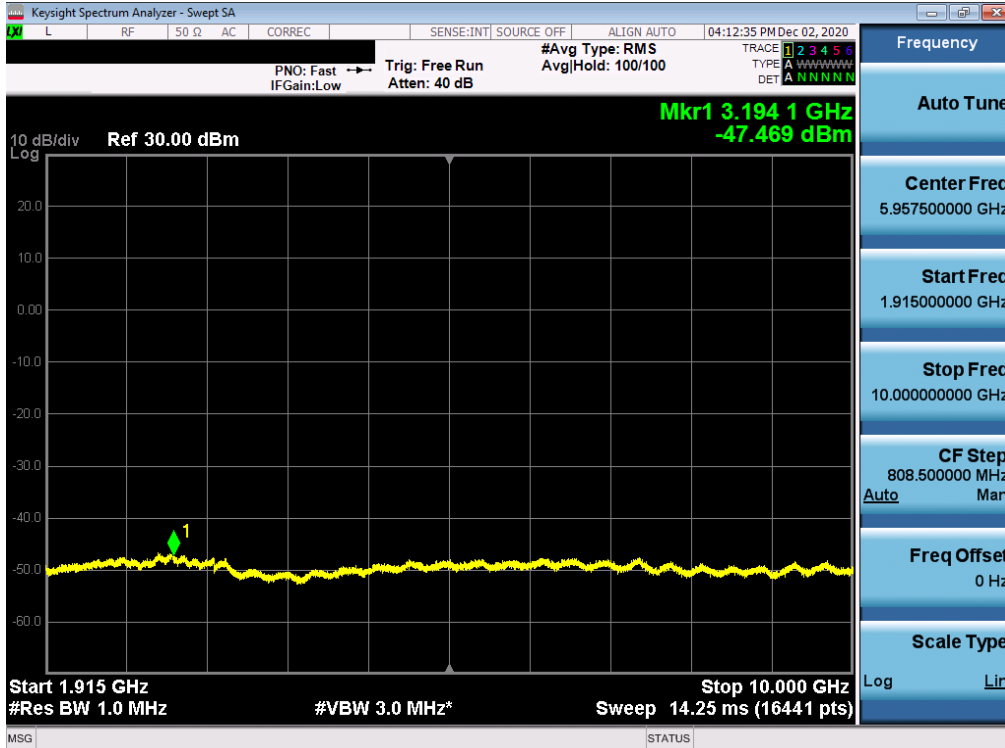


Plot 7-128. Conducted Spurious Plot (NR Band n25 Ant I- 40.0MHz - RB Size 1, RB Offset 0 - Low Channel)



Plot 7-129. Conducted Spurious Plot (NR Band n25 Ant I- 40.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMG996U	PCTEST Product to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 83 of 234

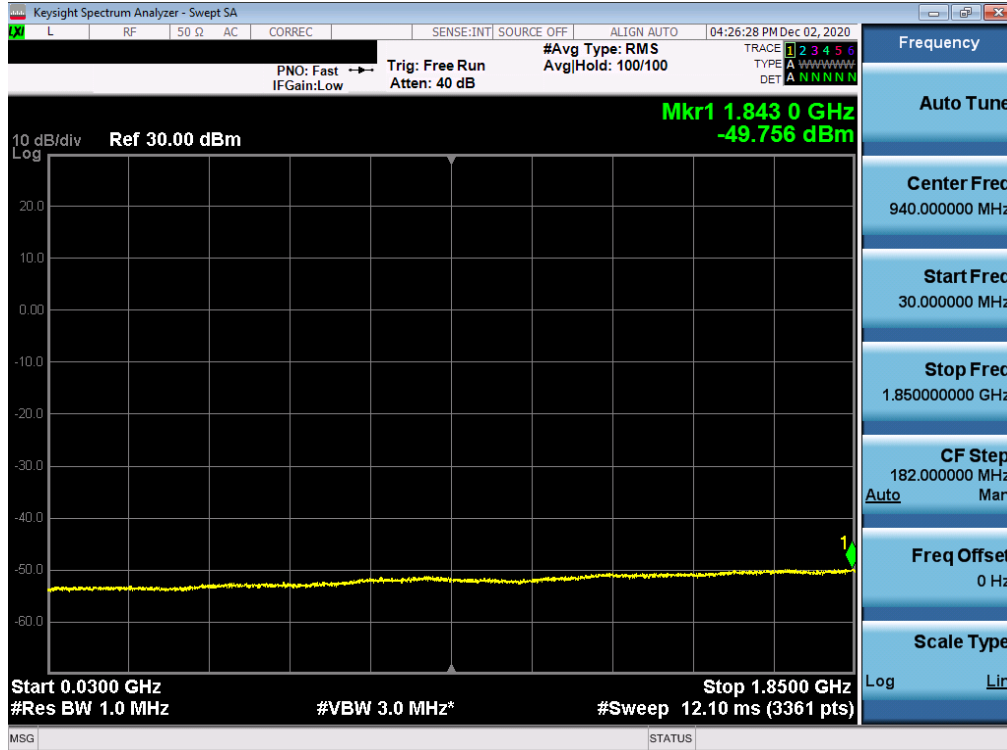


Plot 7-130. Conducted Spurious Plot (NR Band n25 Ant I- 40.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

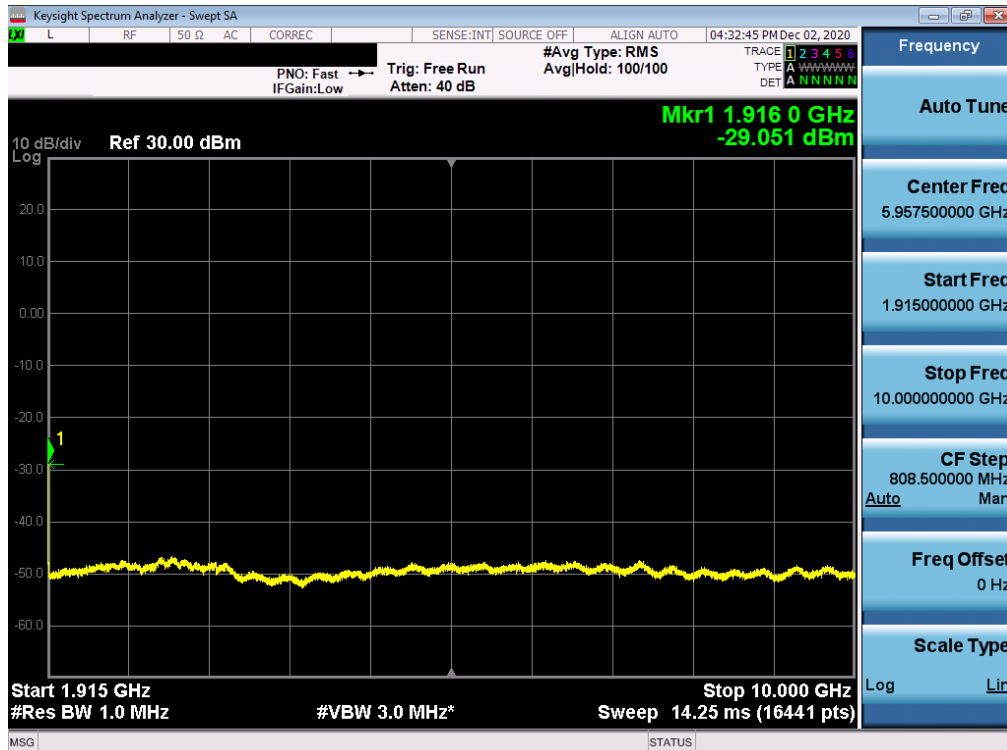


Plot 7-131. Conducted Spurious Plot (NR Band n25 Ant I- 40.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 84 of 234



Plot 7-132. Conducted Spurious Plot (NR Band n25 Ant I- 40.0MHz - RB Size 1, RB Offset 0 - High Channel)



Plot 7-133. Conducted Spurious Plot (NR Band n25 Ant I- 40.0MHz - RB Size 1, RB Offset 0 - High Channel)

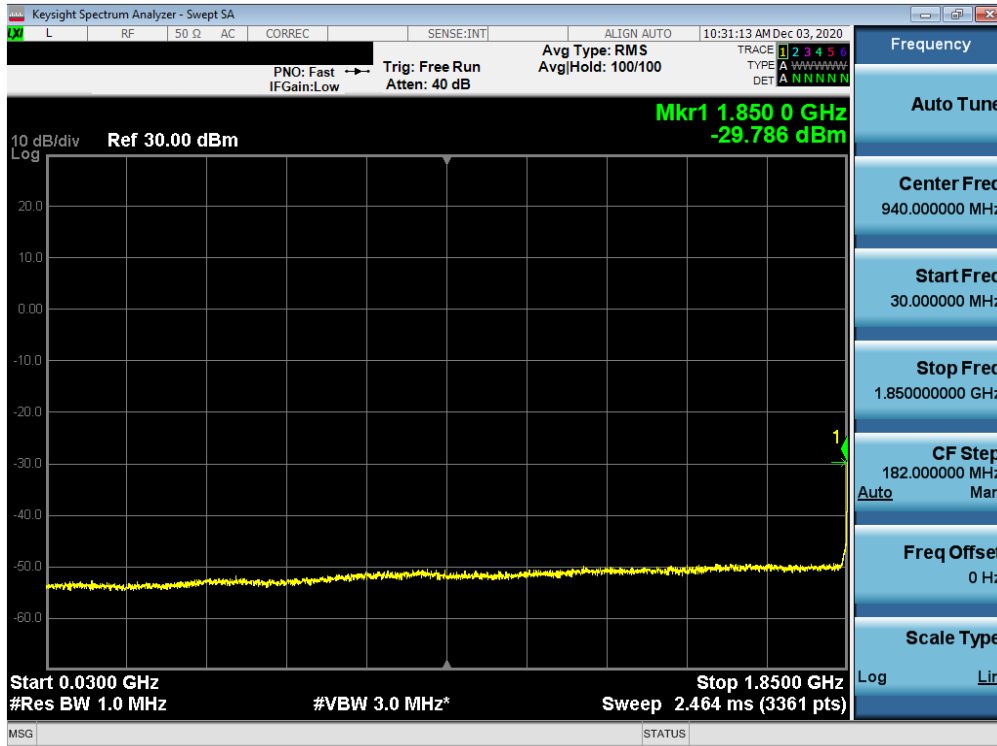
FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 85 of 234



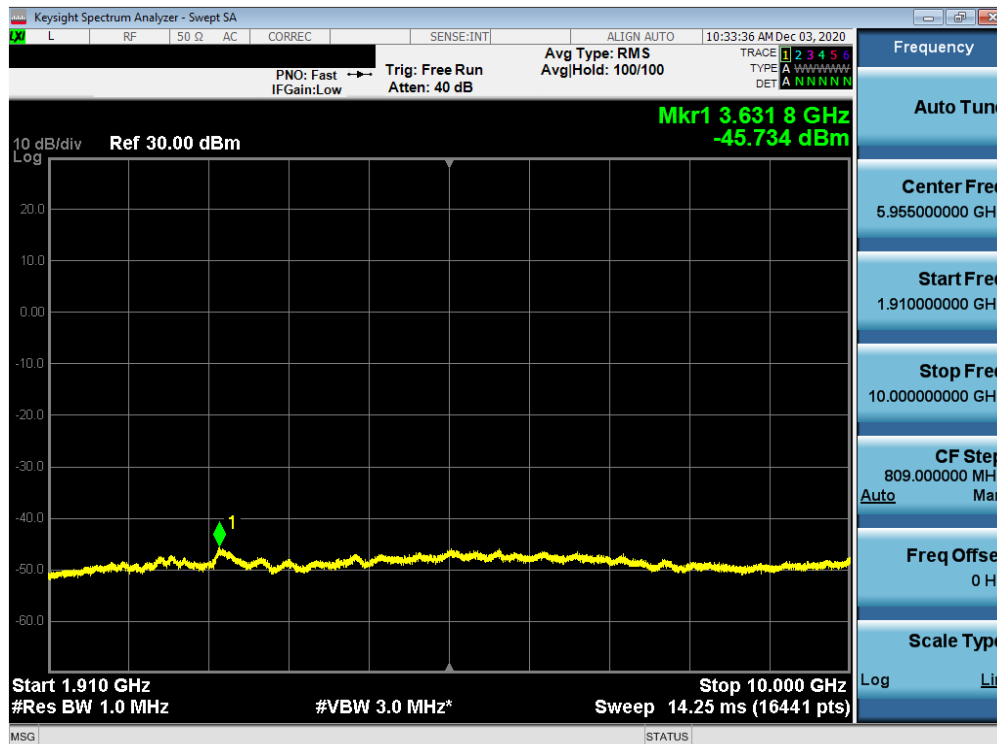
Plot 7-134. Conducted Spurious Plot (NR Band n25 Ant I- 40.0MHz - RB Size 1, RB Offset 0 - High Channel)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset	Page 86 of 234	

NR Band n2 Ant I



Plot 7-135. Conducted Spurious Plot (NR Band n2 Ant I-20.0MHz - RB Size 1, RB Offset 0 - Low Channel)

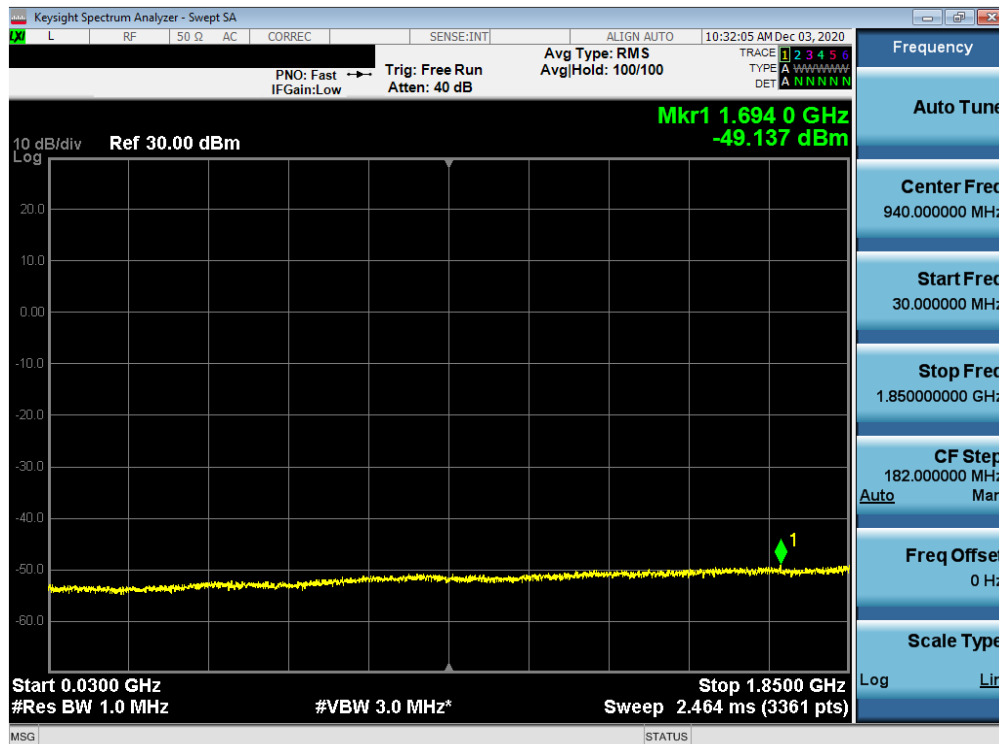


Plot 7-136. Conducted Spurious Plot (NR Band n2 Ant I- 20.0MHz - RB Size 1, RB Offset 0 - Low Channel)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 87 of 234



Plot 7-137. Conducted Spurious Plot (NR Band n2 Ant I- 20.0MHz - RB Size 1, RB Offset 0 - Low Channel)



Plot 7-138. Conducted Spurious Plot (NR Band n2 Ant I- 20.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 88 of 234

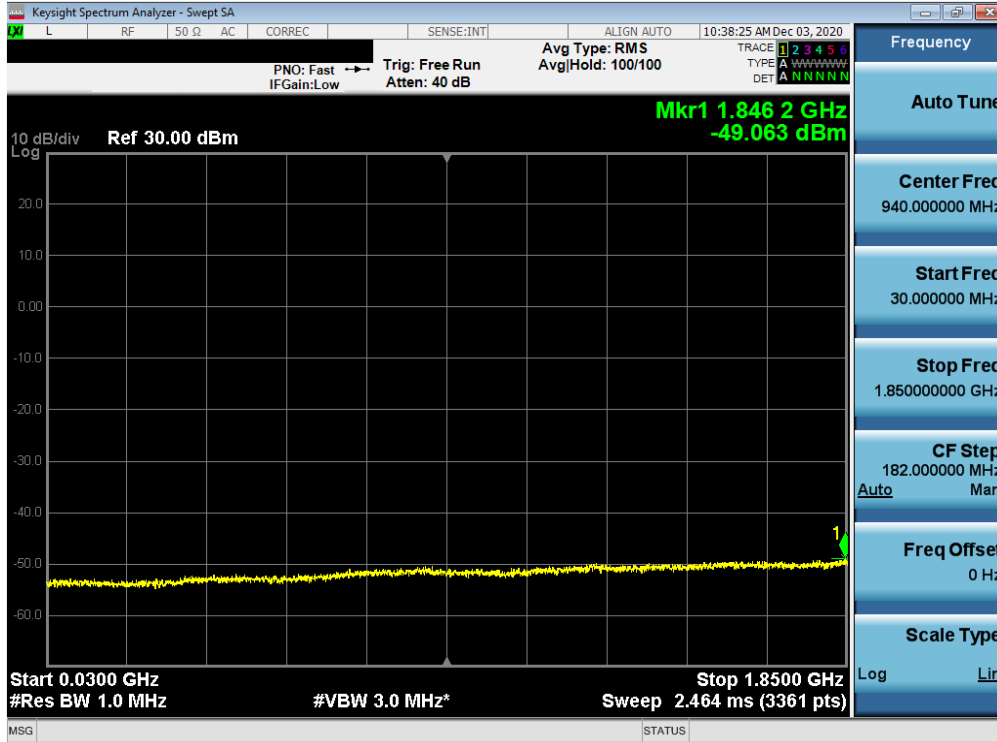


Plot 7-139. Conducted Spurious Plot (NR Band n2 Ant I- 20.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

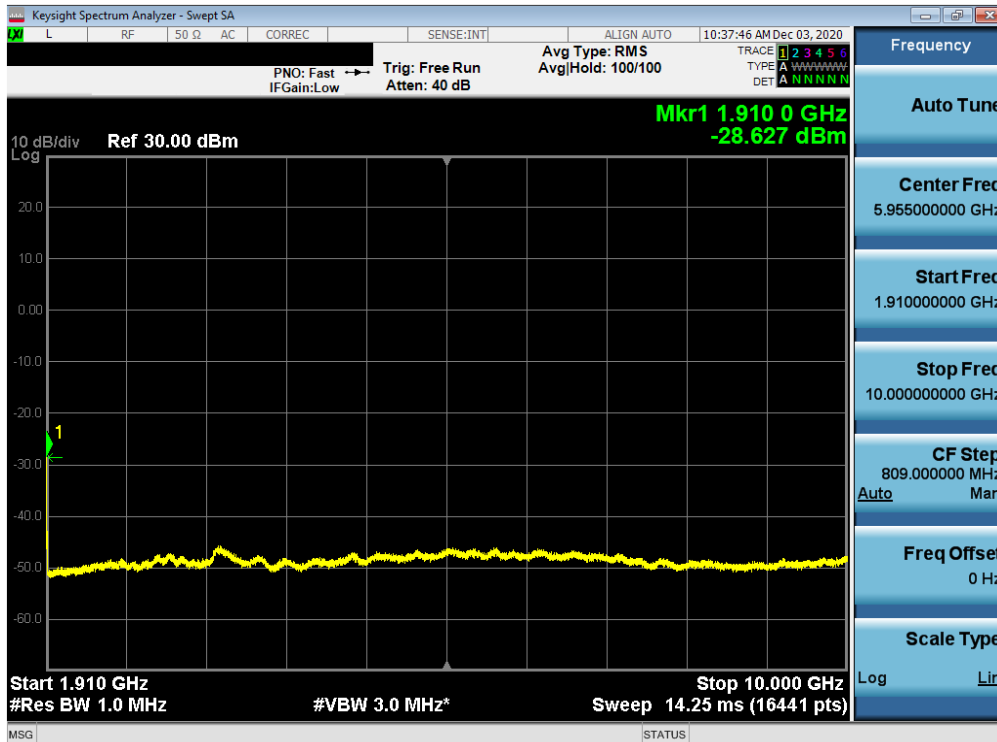


Plot 7-140. Conducted Spurious Plot (NR Band n2 Ant I- 20.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 89 of 234



Plot 7-141. Conducted Spurious Plot (NR Band n2 Ant I- 20.0MHz - RB Size 1, RB Offset 0 - High Channel)



Plot 7-142. Conducted Spurious Plot (NR Band n2 Ant I- 20.0MHz - RB Size 1, RB Offset 0 - High Channel)

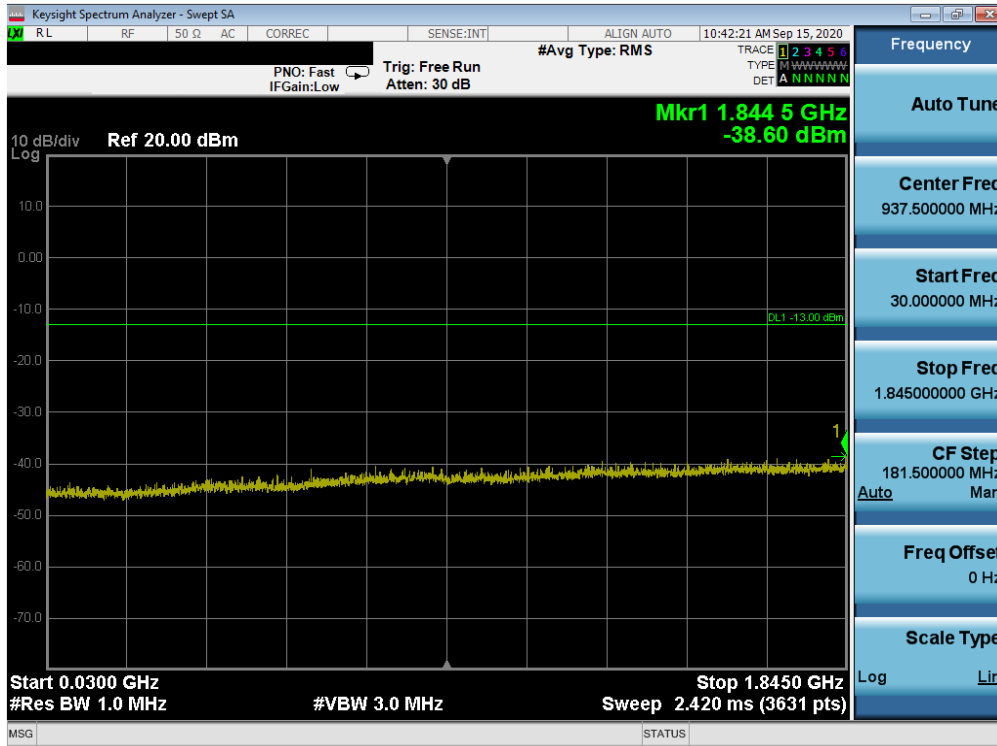
FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 90 of 234



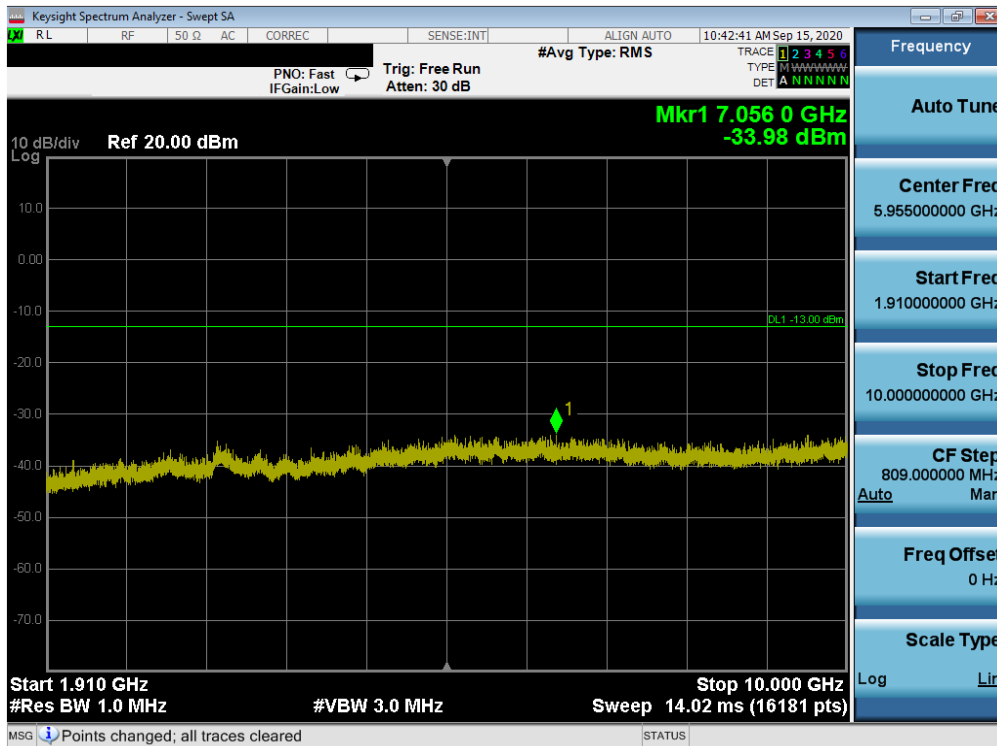
Plot 7-143. Conducted Spurious Plot (NR Band n2 Ant I- 20.0MHz - RB Size 1, RB Offset 0 - High Channel)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 91 of 234

GSM/GPRS PCS

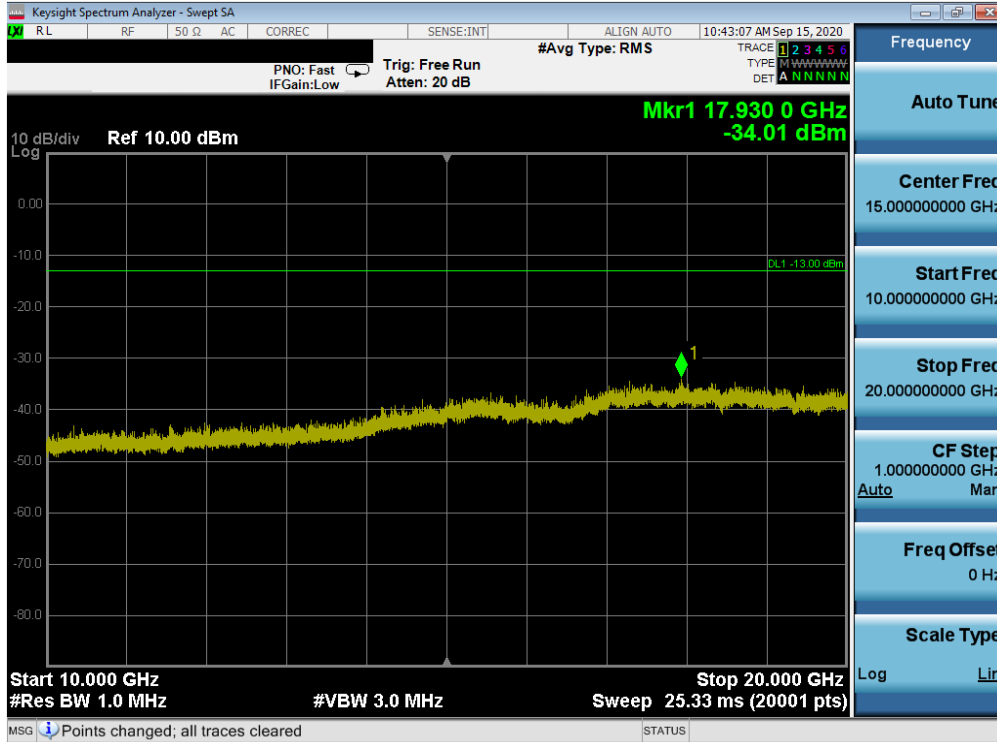


Plot 7-144. Conducted Spurious Plot (GPRS Ch. 512)

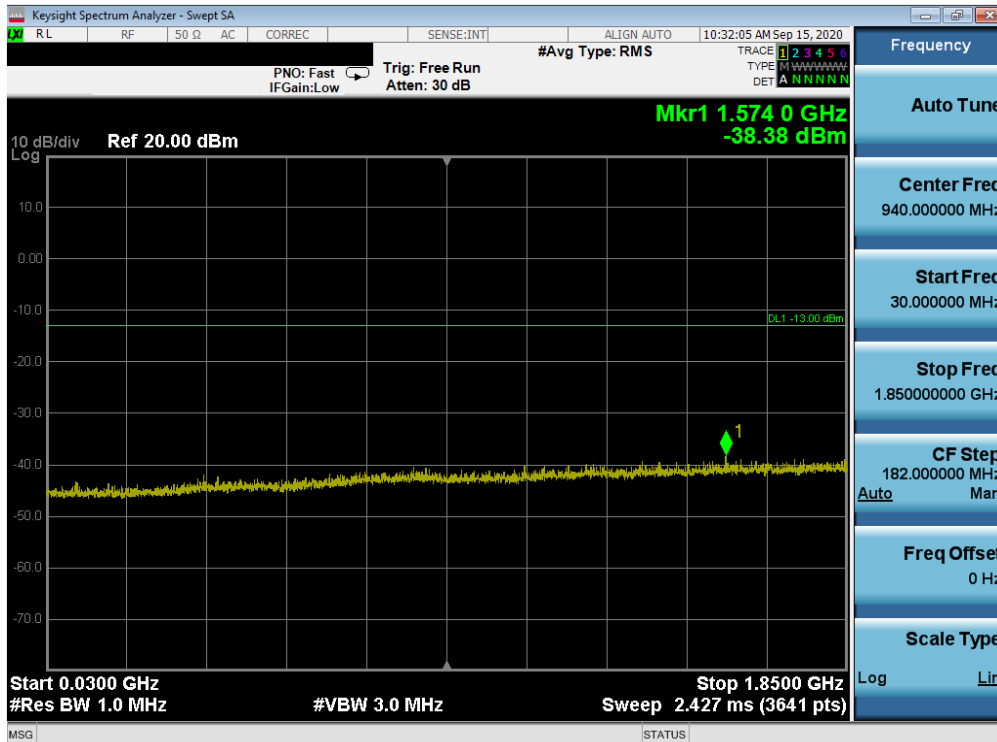


Plot 7-145. Conducted Spurious Plot (GPRS Ch. 512)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 92 of 234

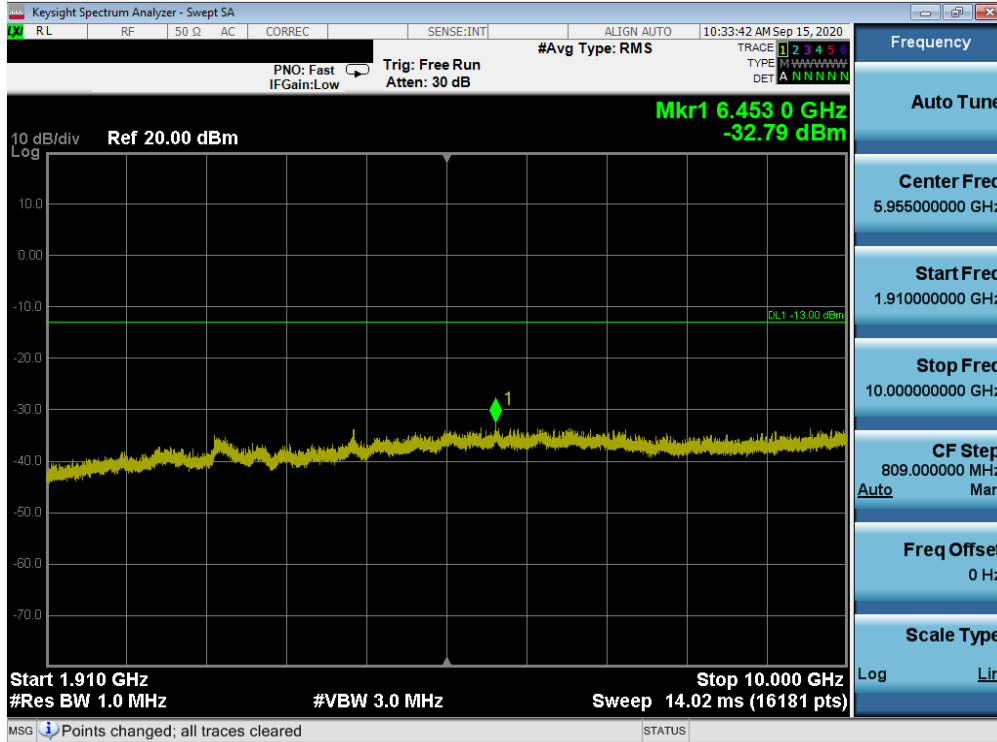


Plot 7-146. Conducted Spurious Plot (GPRS Ch. 512)

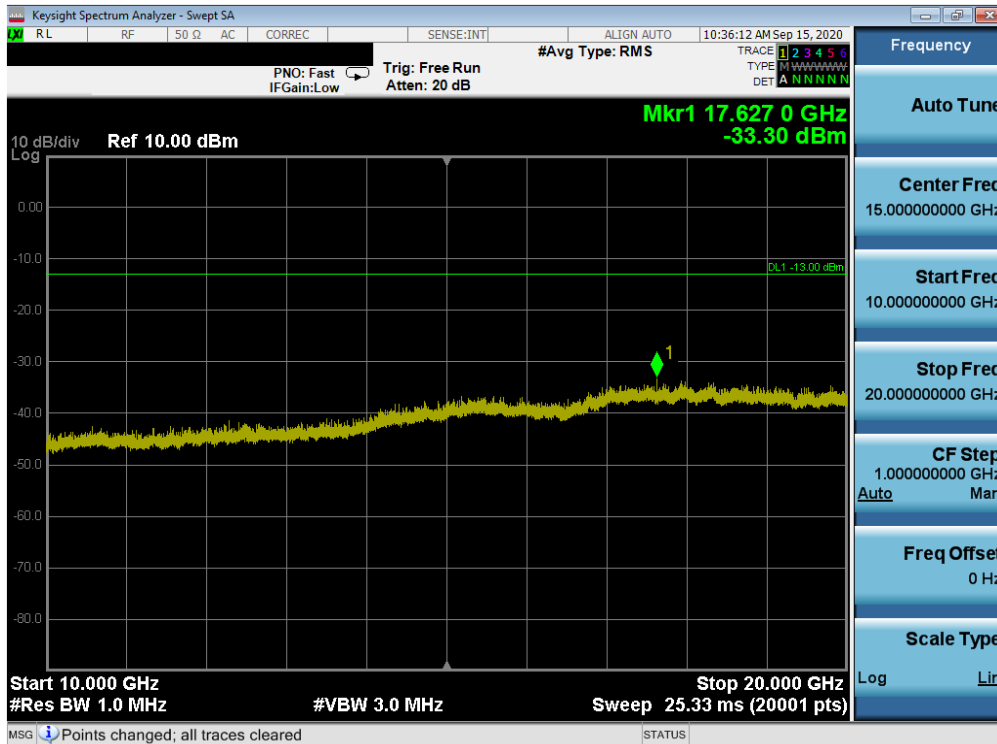


Plot 7-147. Conducted Spurious Plot (GPRS Ch. 661)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 93 of 234

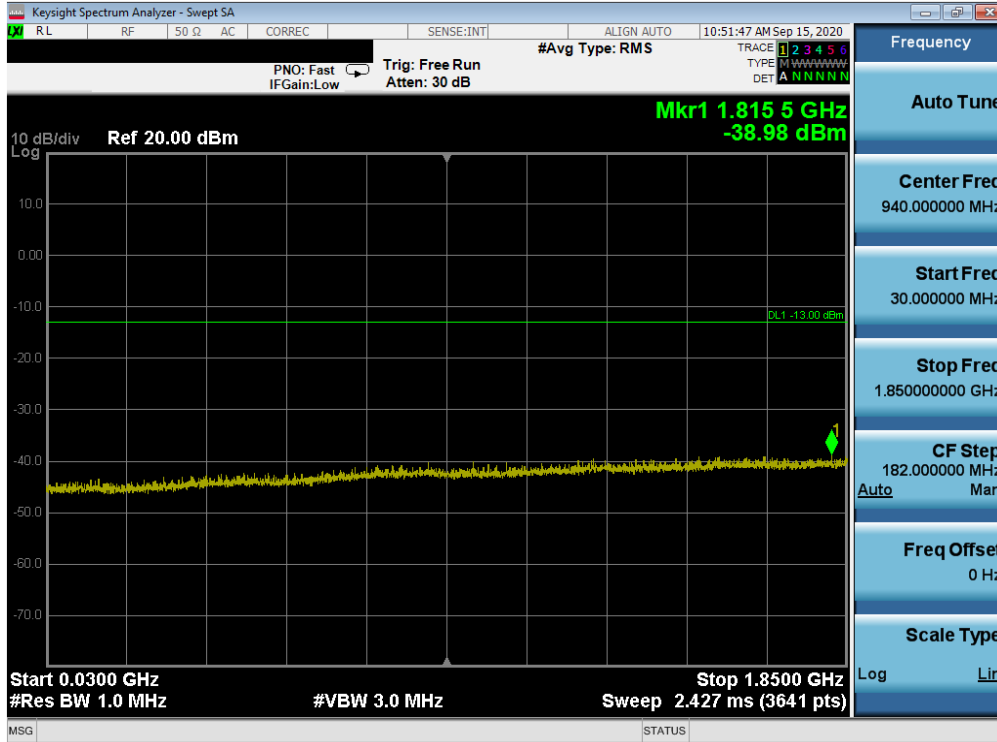


Plot 7-148. Conducted Spurious Plot (GPRS Ch. 661)

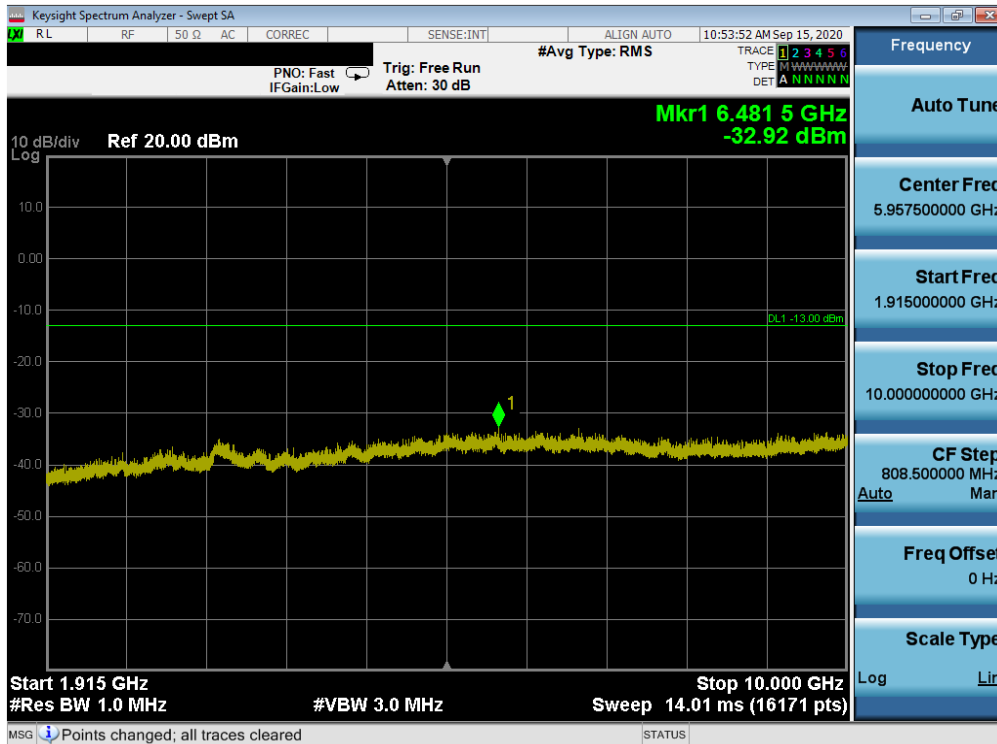


Plot 7-149. Conducted Spurious Plot (GPRS Ch. 661)



FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 94 of 234

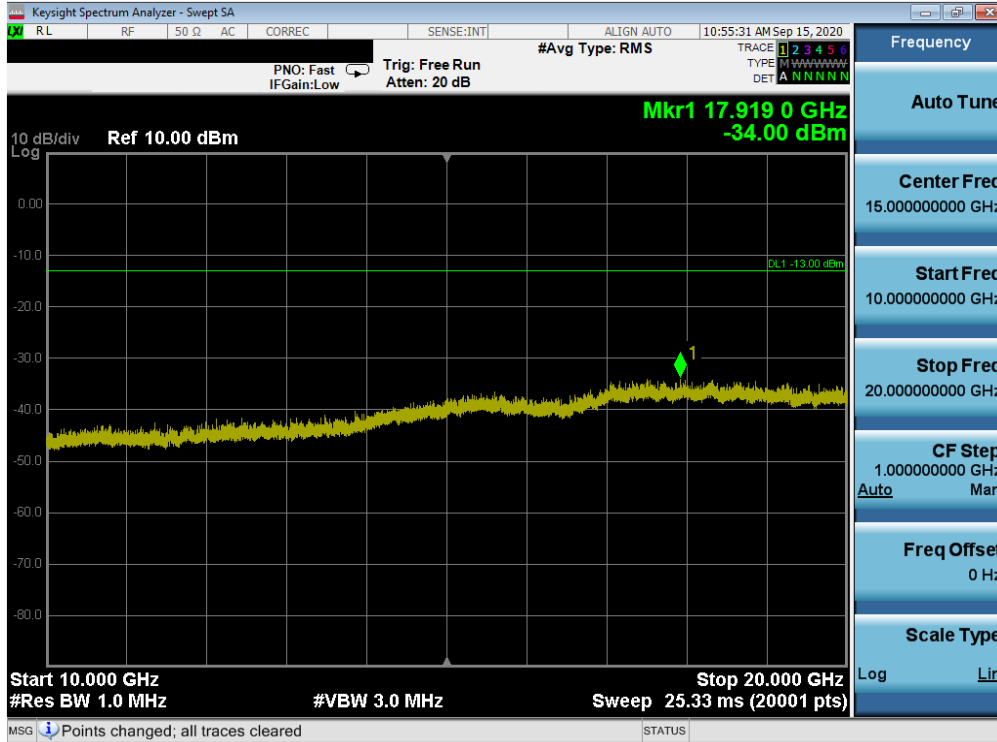


Plot 7-150. Conducted Spurious Plot (GPRS Ch. 810)



Plot 7-151. Conducted Spurious Plot (GPRS Ch. 810)

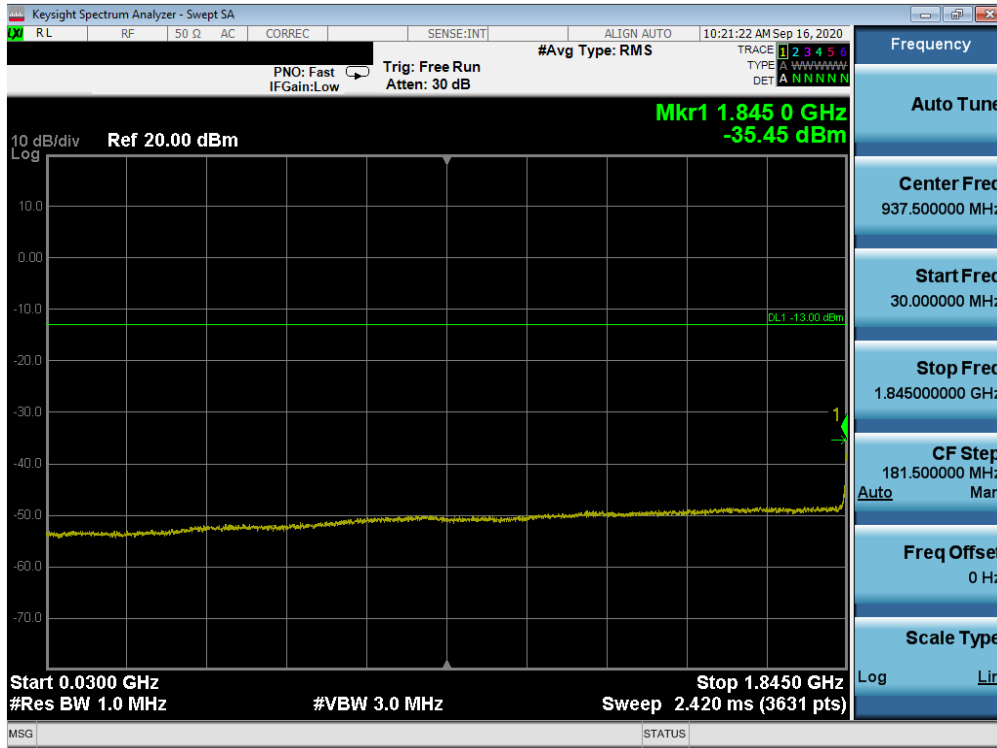
FCC ID: A3LSMG996U	 PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset	Page 95 of 234



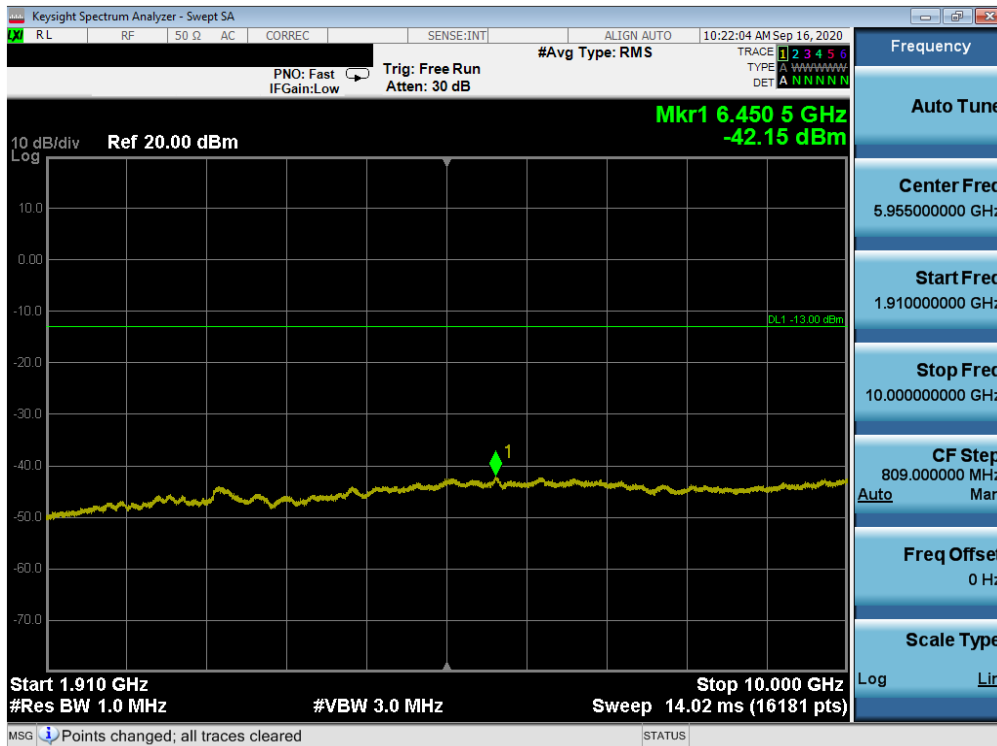
Plot 7-152. Conducted Spurious Plot (GPRS Ch. 810)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 96 of 234

WCDMA PCS



Plot 7-153. Conducted Spurious Plot (WCDMA Ch. 9262)



Plot 7-154. Conducted Spurious Plot (WCDMA Ch. 9262)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 97 of 234

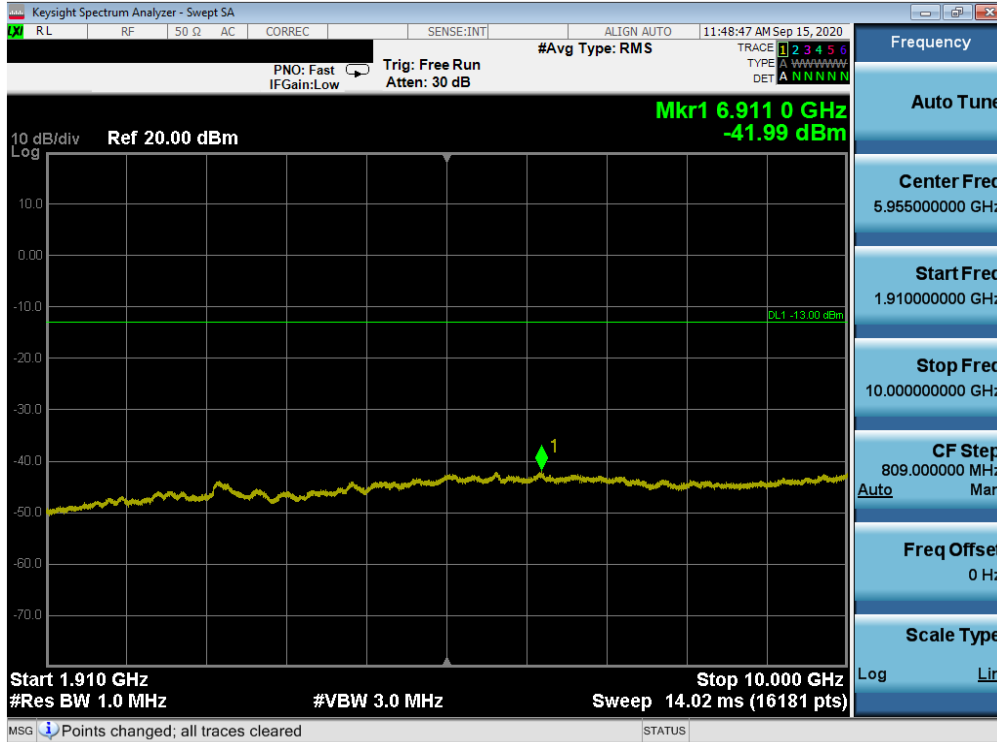


Plot 7-155. Conducted Spurious Plot (WCDMA Ch. 9262)



Plot 7-156. Conducted Spurious Plot (WCDMA Ch. 9400)

FCC ID: A3LSMG996U	PCTEST Product to be part of @element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 98 of 234

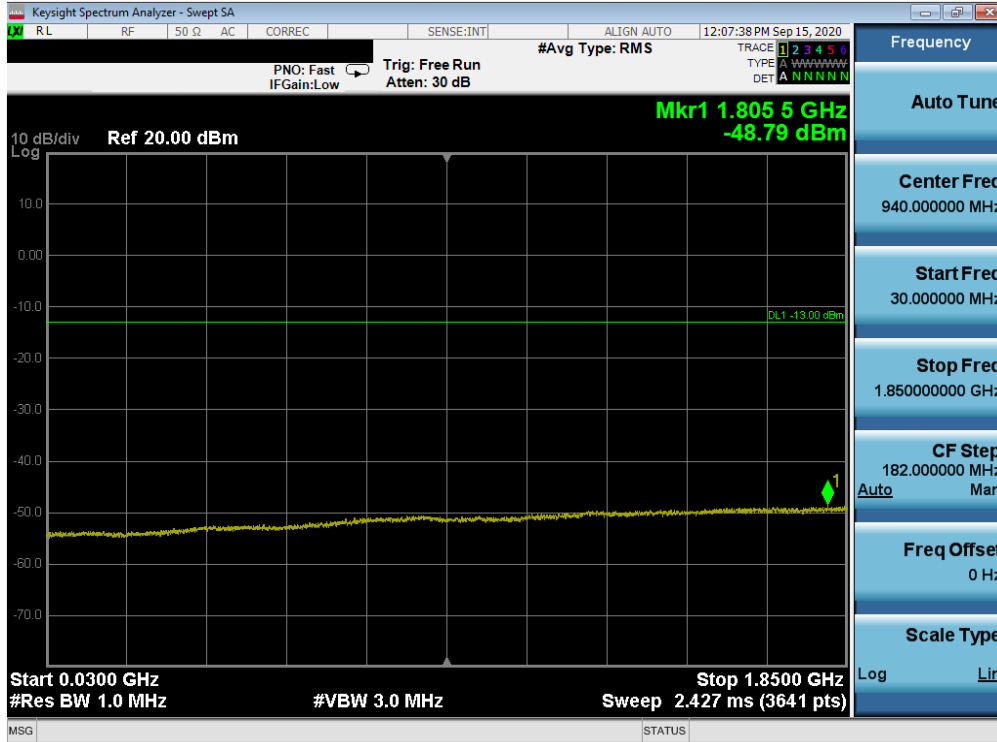


Plot 7-157. Conducted Spurious Plot (WCDMA Ch. 9400)

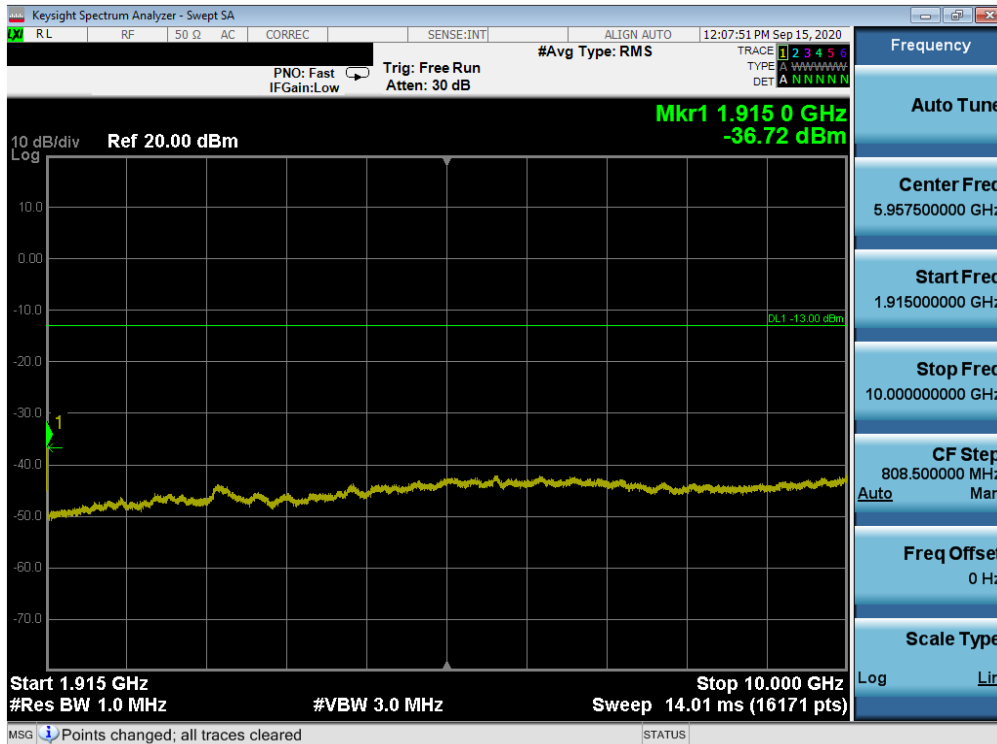


Plot 7-158. Conducted Spurious Plot (WCDMA Ch. 9400)

FCC ID: A3LSMG996U	PCTEST Product to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 99 of 234



Plot 7-159. Conducted Spurious Plot (WCDMA Ch. 9538)



Plot 7-160. Conducted Spurious Plot (WCDMA Ch. 9538)

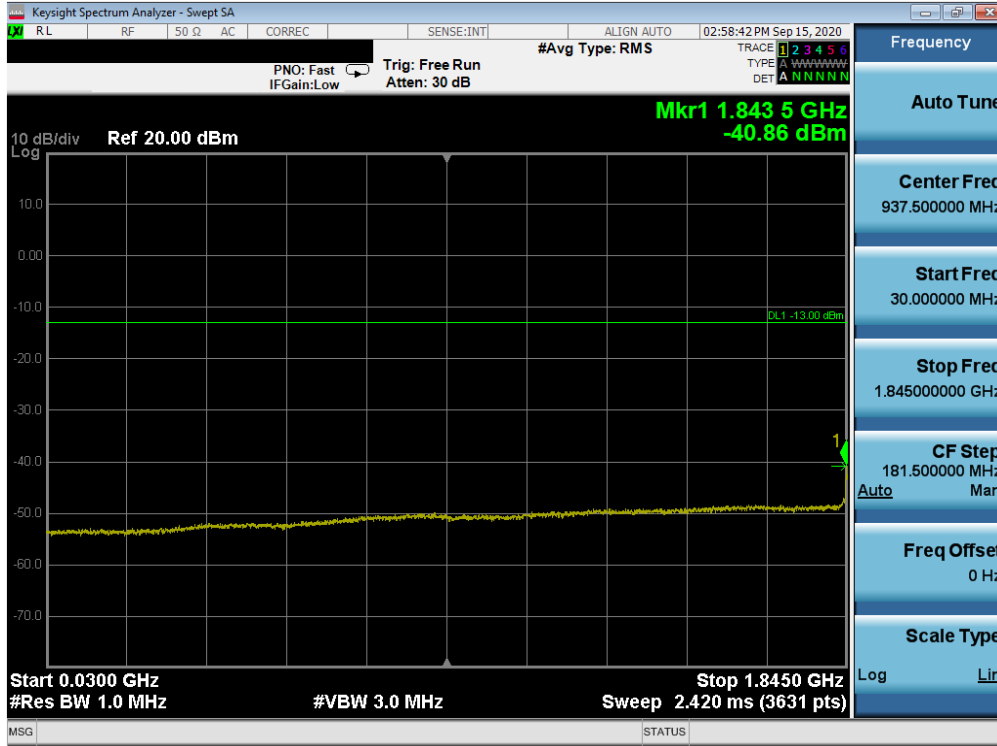
FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 100 of 234



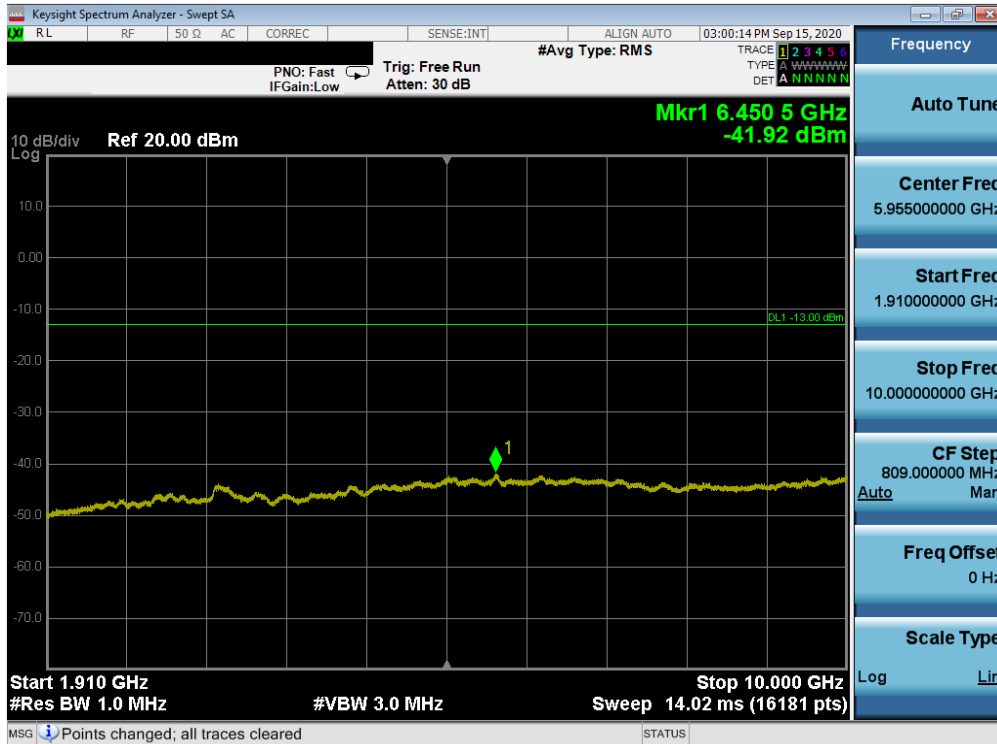
Plot 7-161. Conducted Spurious Plot (WCDMA Ch. 9538)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 101 of 234

CDMA PCS



Plot 7-162. Conducted Spurious Plot (CDMA Ch. 25)

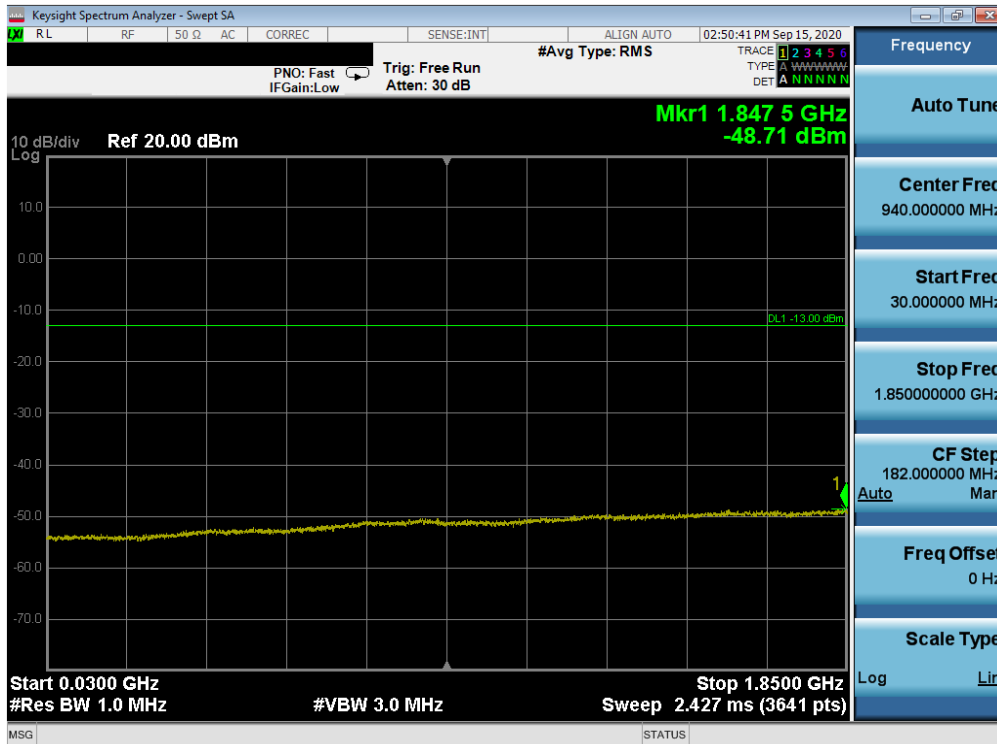


Plot 7-163. Conducted Spurious Plot (CDMA Ch. 25)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 102 of 234

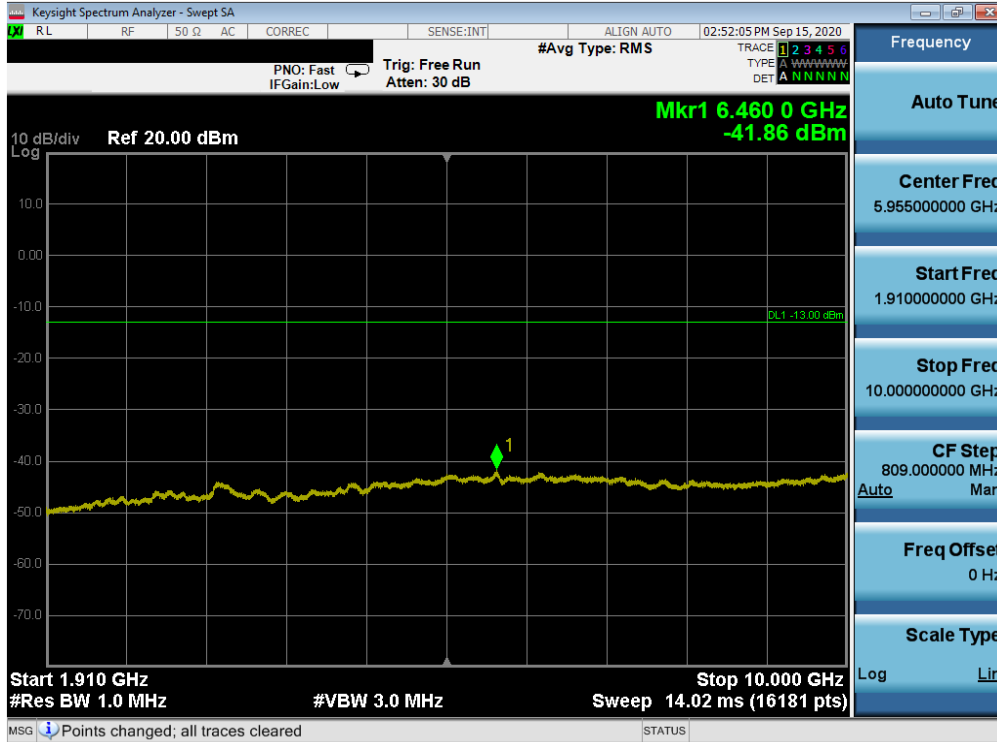


Plot 7-164. Conducted Spurious Plot (CDMA Ch. 25)



Plot 7-165. Conducted Spurious Plot (CDMA Ch. 600)

FCC ID: A3LSMG996U	PCTEST Product to be part of @element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 103 of 234

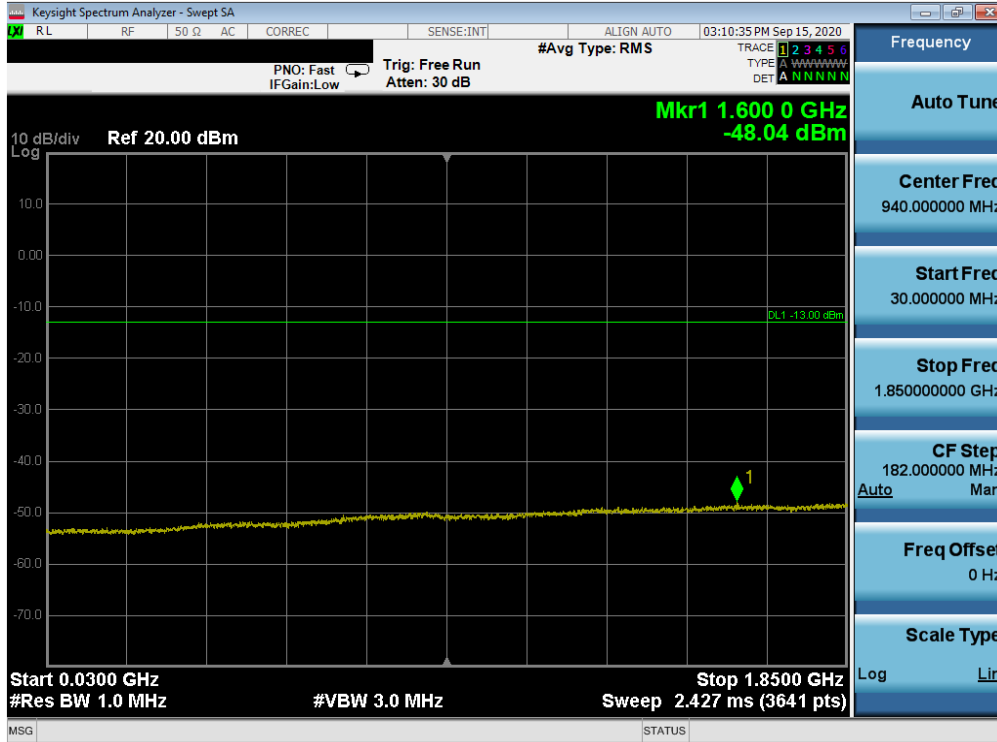


Plot 7-166. Conducted Spurious Plot (CDMA Ch. 600)

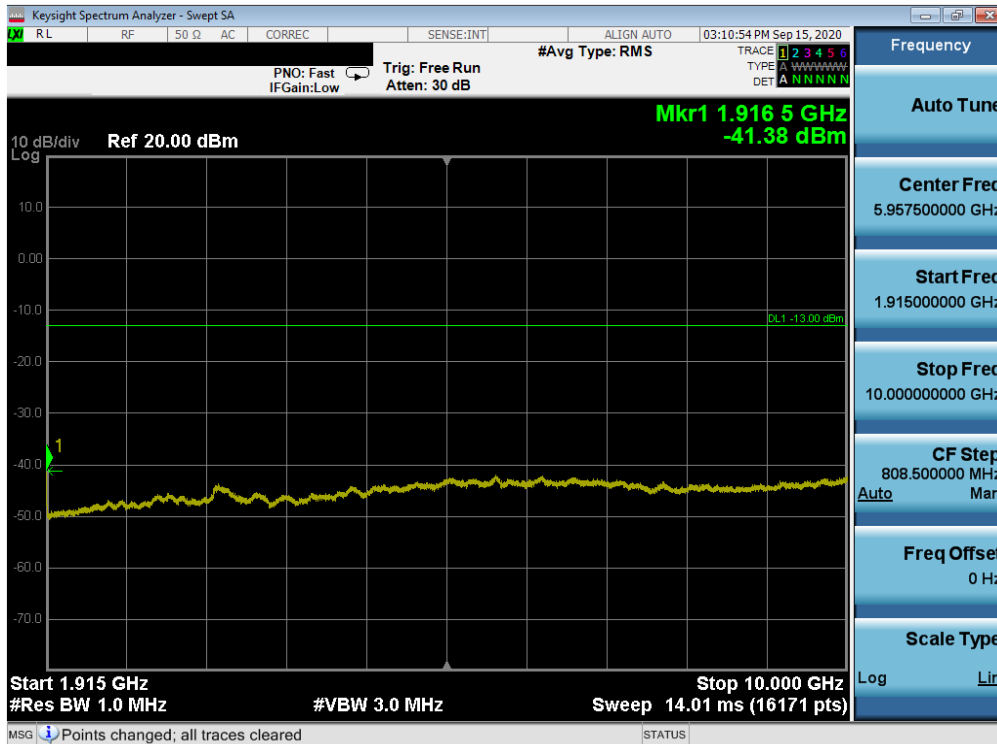


Plot 7-167. Conducted Spurious Plot (CDMA Ch. 600)




FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 104 of 234



Plot 7-168. Conducted Spurious Plot (CDMA Ch. 1175)



Plot 7-169. Conducted Spurious Plot (CDMA Ch. 1175)

FCC ID: A3LSMG996U	 PCTEST Proud to be part of 	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 105 of 234



Plot 7-170. Conducted Spurious Plot (CDMA Ch. 1175)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 106 of 234

7.4 Band Edge Emissions at Antenna Terminal

Test Overview

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

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

Test Procedure Used

KDB 971168 D01 v03r01 – Section 6.0

Test Settings

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

Test Setup

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

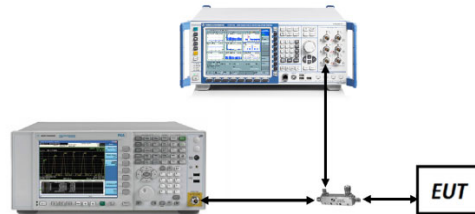






Figure 7-3. Test Instrument & Measurement Setup

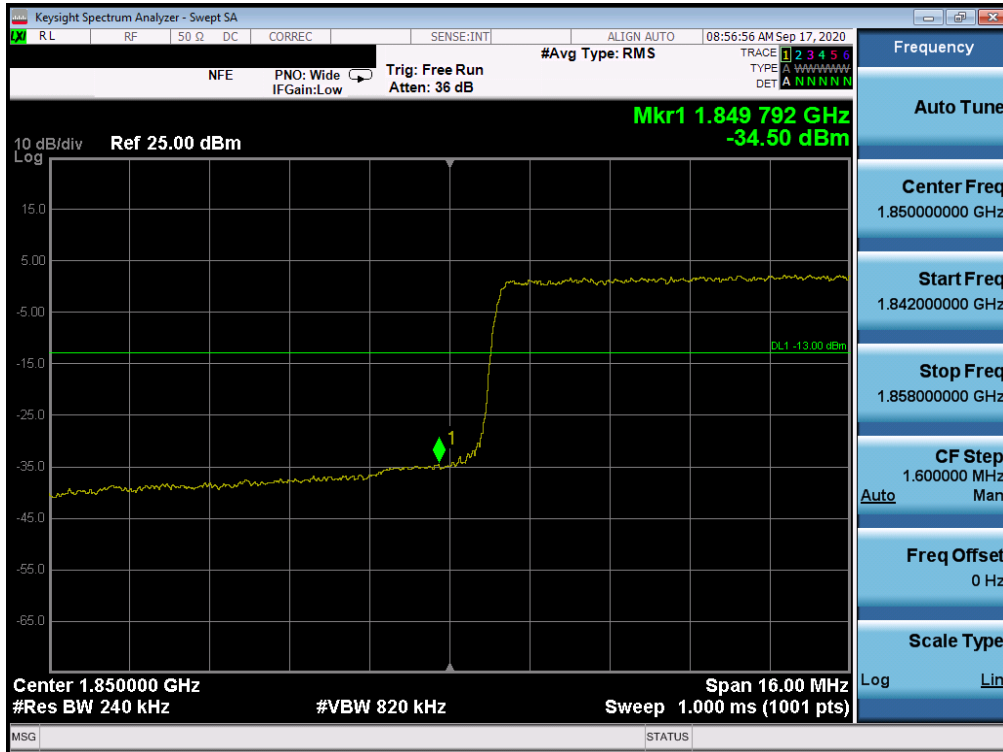
FCC ID: A3LSMG996U	 PCTEST Product to be part of @element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset	Page 107 of 234	

Test Notes

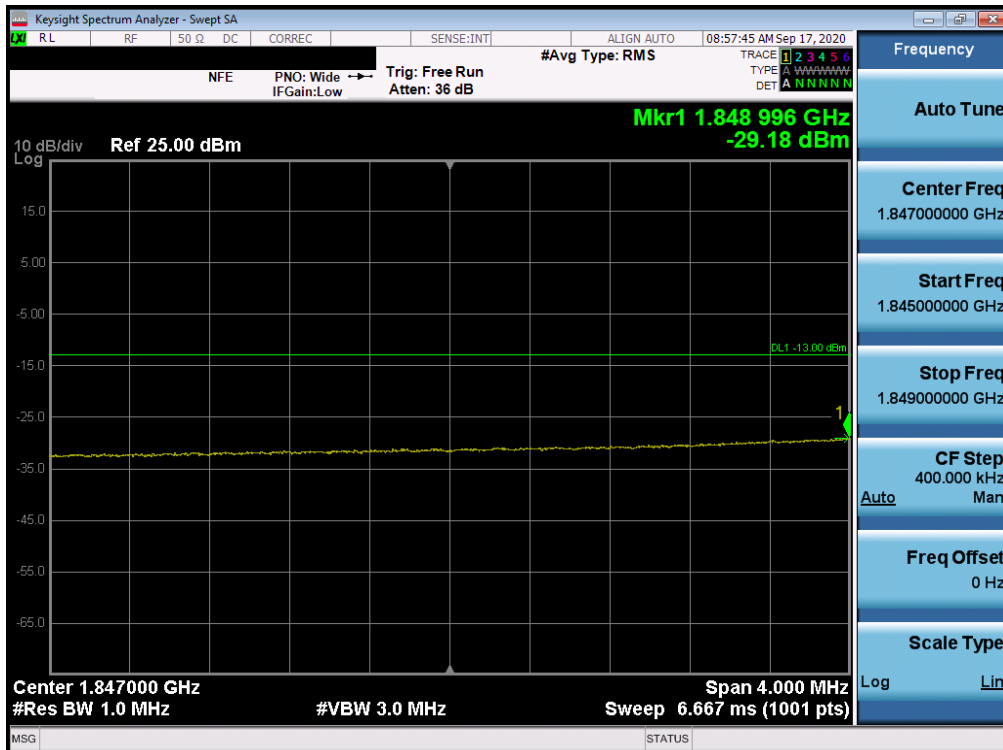
1. Per 22.917(b) and RSS-132(5.5), in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to demonstrate compliance with the out-of-band emissions 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: A3LSMG996U	 PART 24 MEASUREMENT REPORT 		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset	Page 108 of 234

LTE Band 25/2

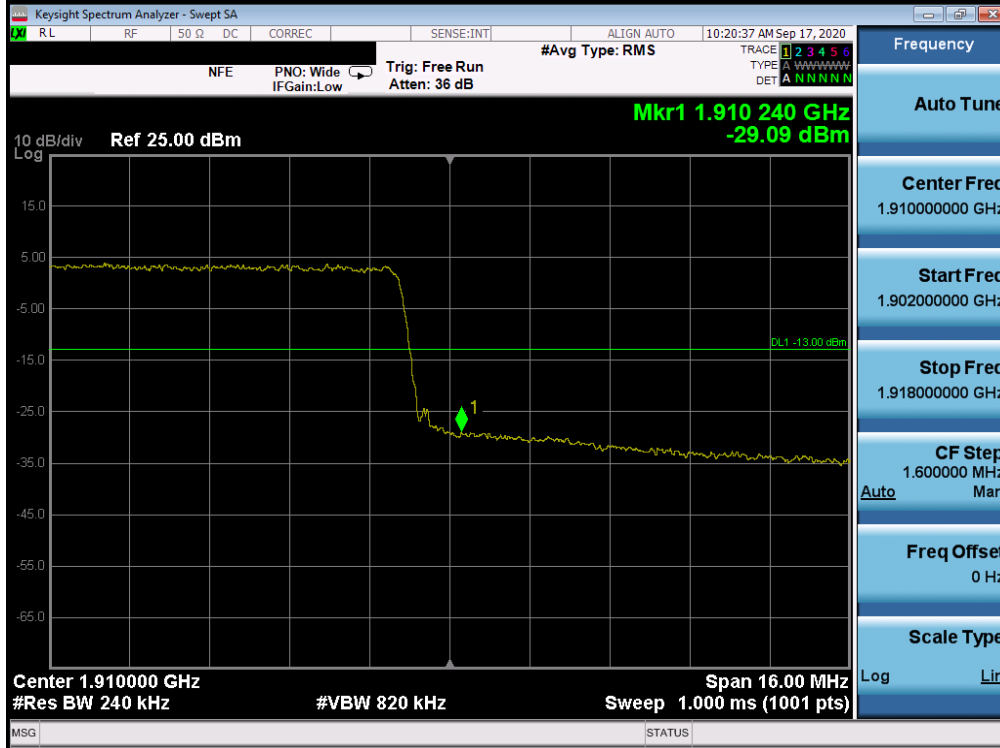


Plot 7-171. Lower Band Edge Plot (LTE Band 25/2 - 20MHz QPSK – Full RB Configuration)

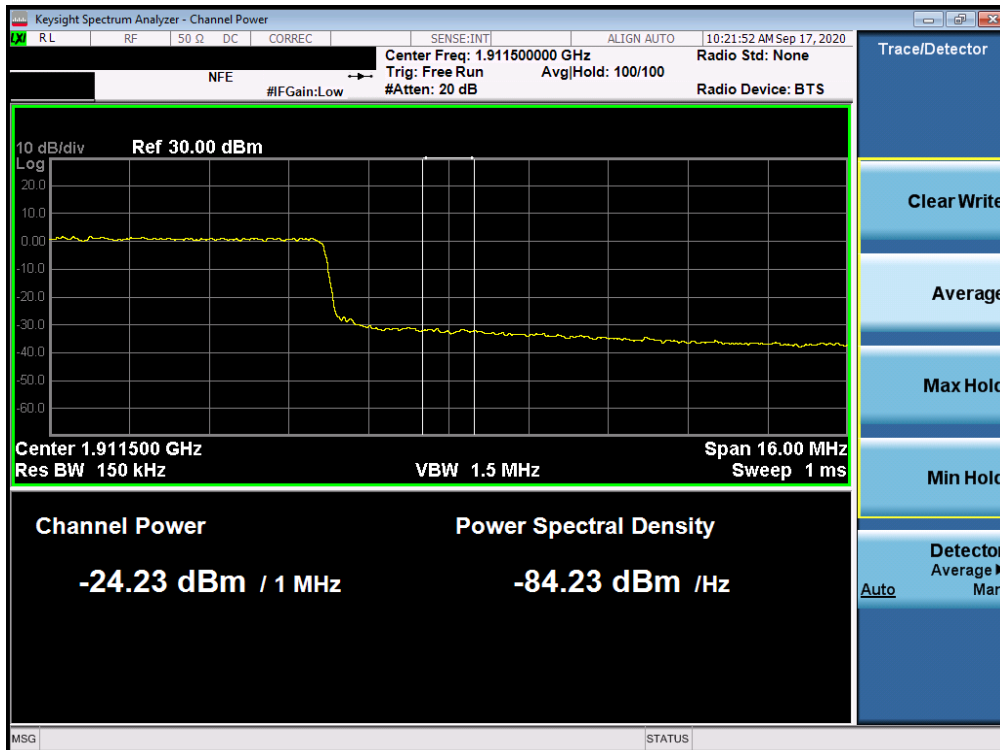


Plot 7-172. Extended Lower Band Edge Plot (LTE Band 25/2 - 20MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 109 of 234



Plot 7-173. Upper Band Edge Plot (LTE Band 2 - 20MHz QPSK – Full RB Configuration)

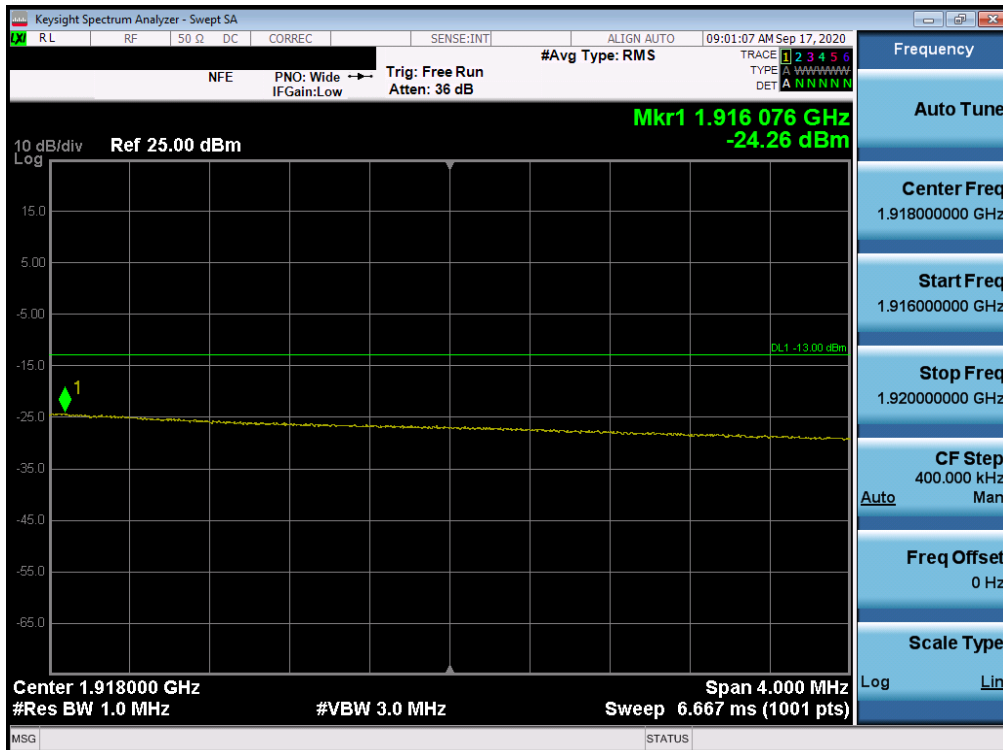


Plot 7-174. Extended Upper Band Edge Plot (LTE Band 2 - 20MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 110 of 234

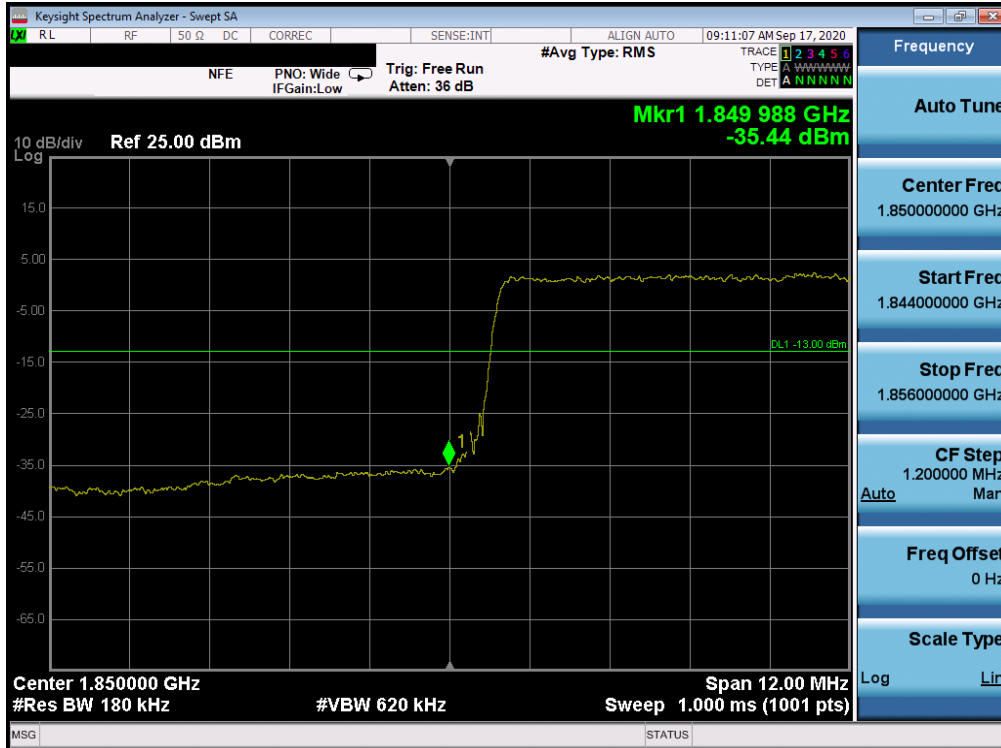


Plot 7-175. Upper Band Edge Plot (LTE Band 25 - 20MHz QPSK – Full RB Configuration)



Plot 7-176. Extended Upper Band Edge Plot (LTE Band 25 - 20MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 111 of 234

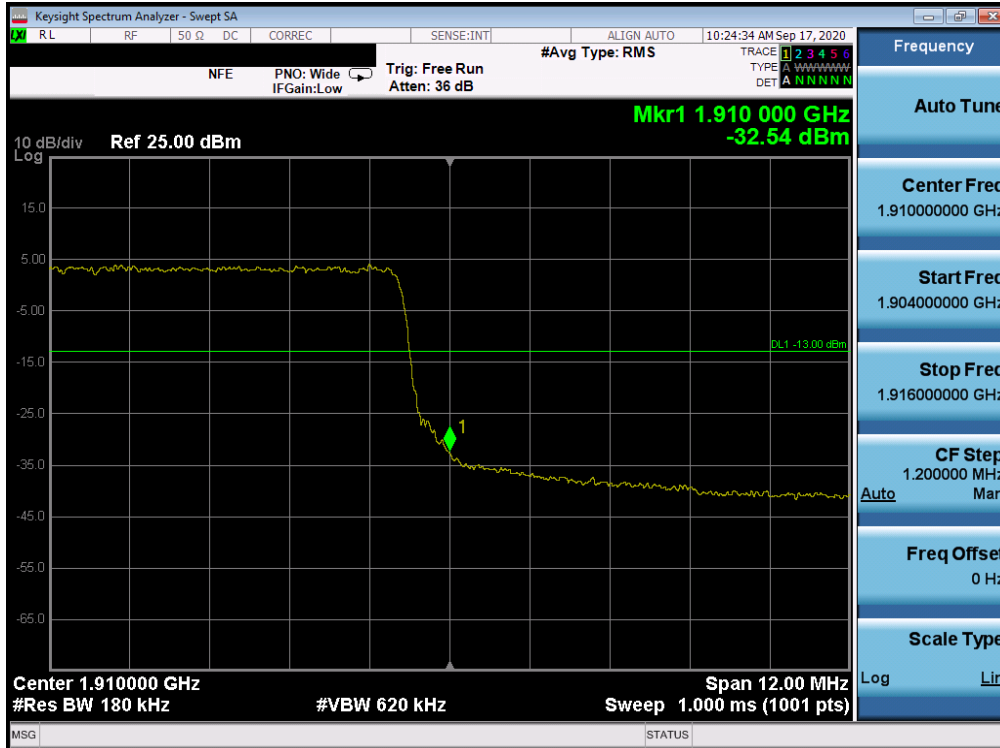


Plot 7-177. Lower Band Edge Plot (LTE Band 25/2 - 15MHz QPSK – Full RB Configuration)

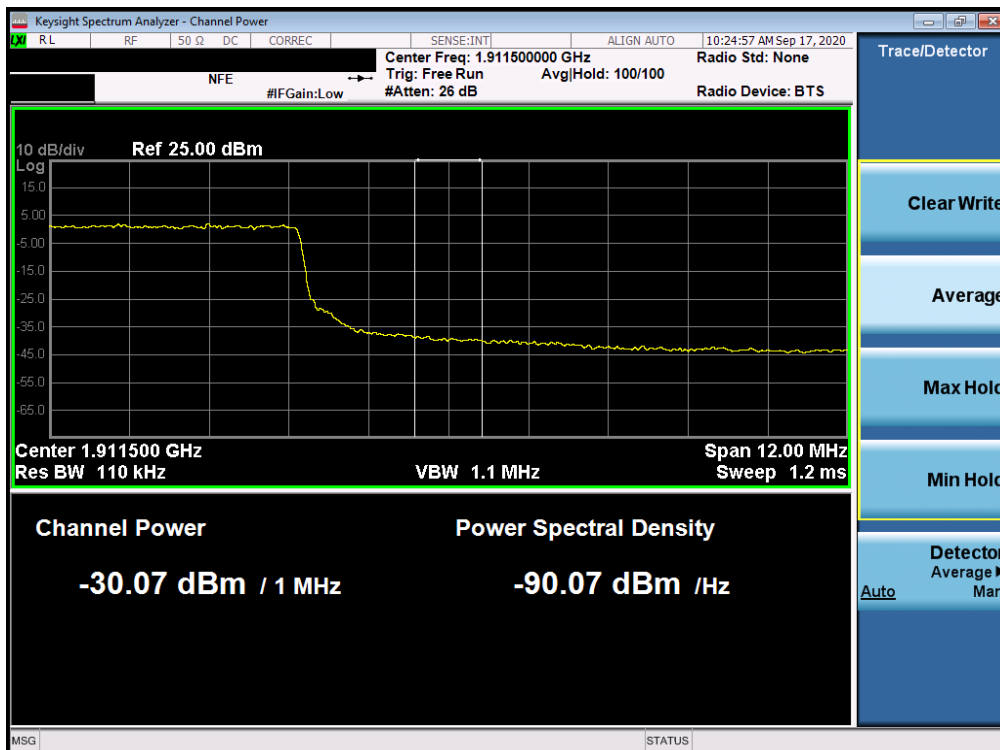


Plot 7-178. Extended Lower Band Edge Plot (LTE Band 25/2 - 15MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 112 of 234

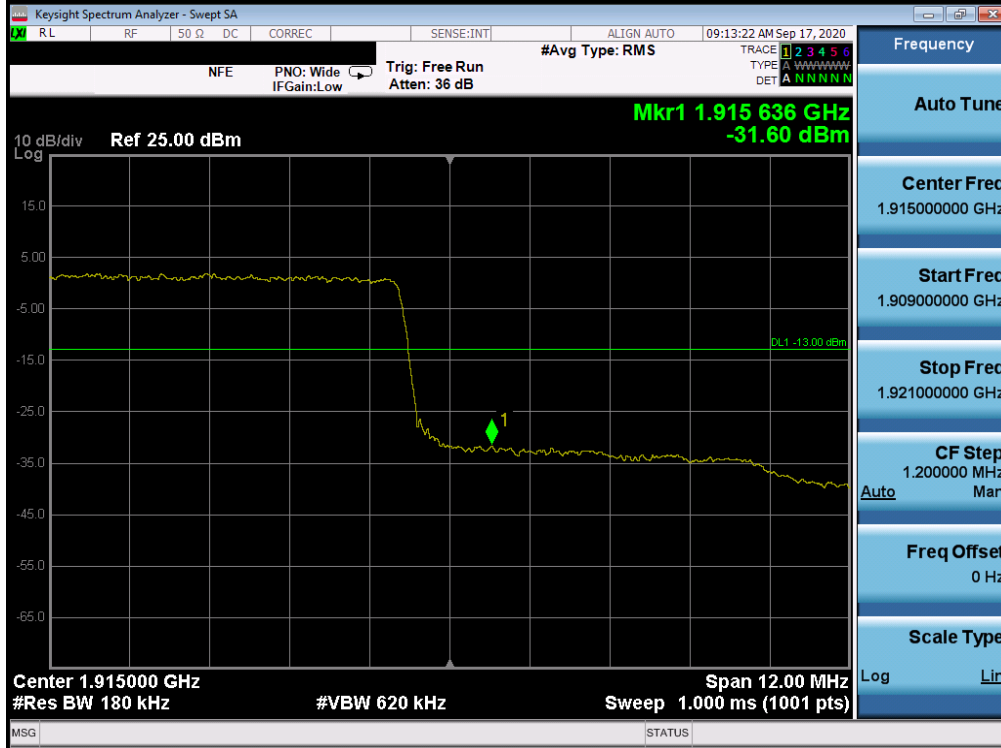


Plot 7-179. Upper Band Edge Plot (LTE Band 2 - 15MHz QPSK – Full RB Configuration)



Plot 7-180. Extended Upper Band Edge Plot (LTE Band 2 - 15MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 113 of 234

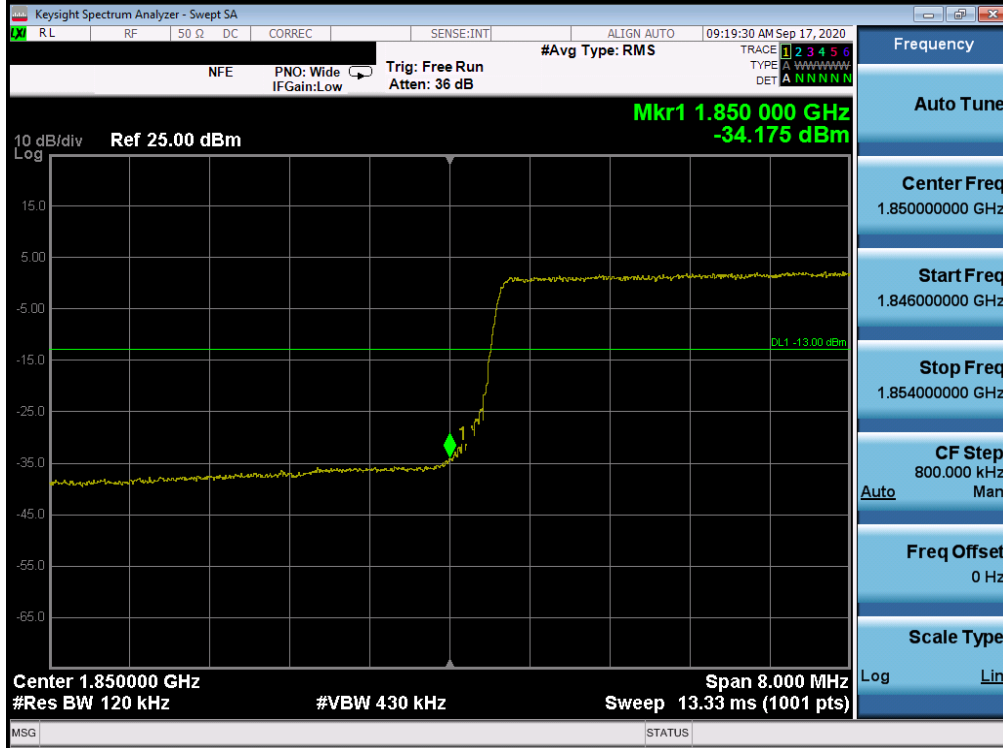


Plot 7-181. Upper Band Edge Plot (LTE Band 25 - 15MHz QPSK – Full RB Configuration)

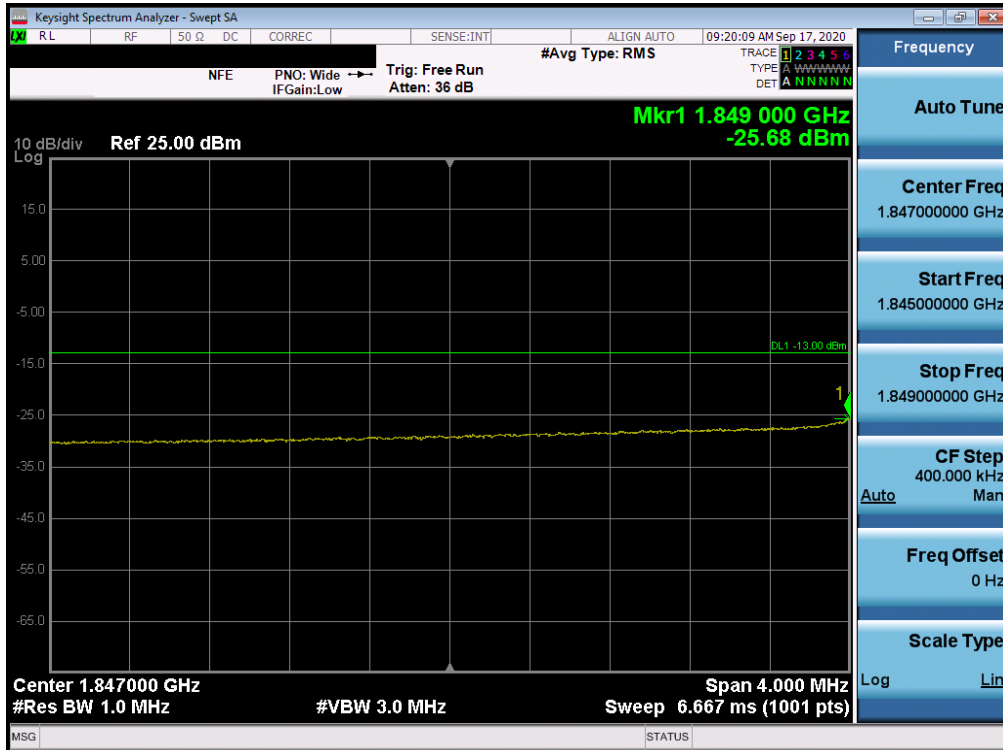


Plot 7-182. Extended Upper Band Edge Plot (LTE Band 25 - 15MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 114 of 234



Plot 7-183. Lower Band Edge Plot (LTE Band 25/2 - 10MHz QPSK – Full RB Configuration)

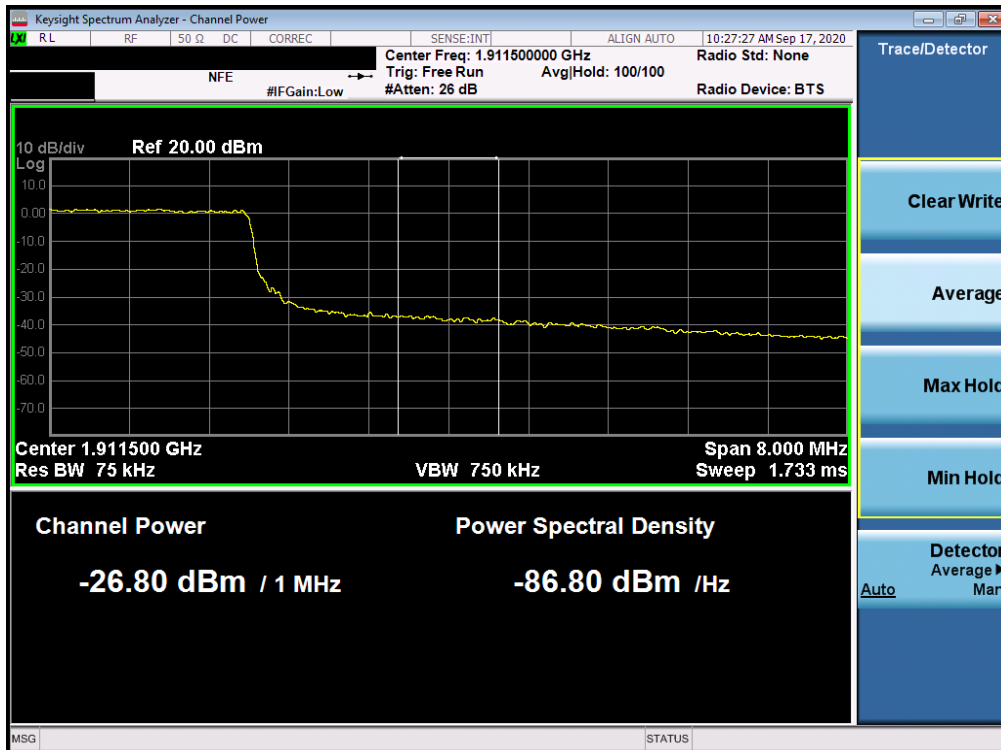


Plot 7-184. Extended Lower Band Edge Plot (LTE Band 25/2 - 10MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 115 of 234

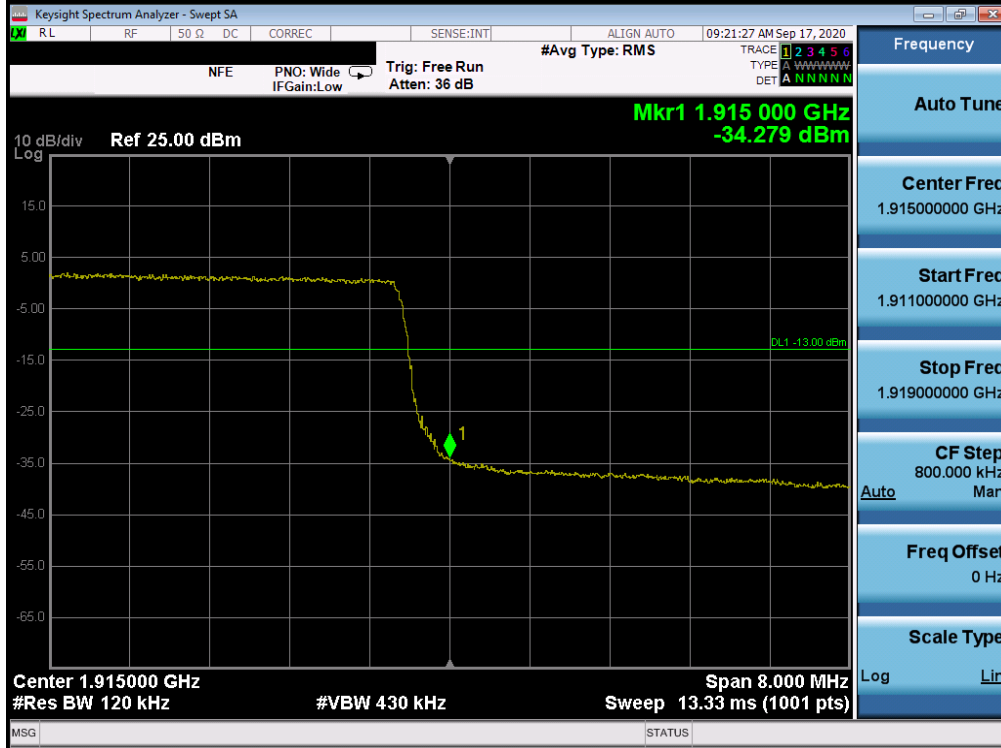


Plot 7-185. Upper Band Edge Plot (LTE Band 2 - 10MHz QPSK – Full RB Configuration)

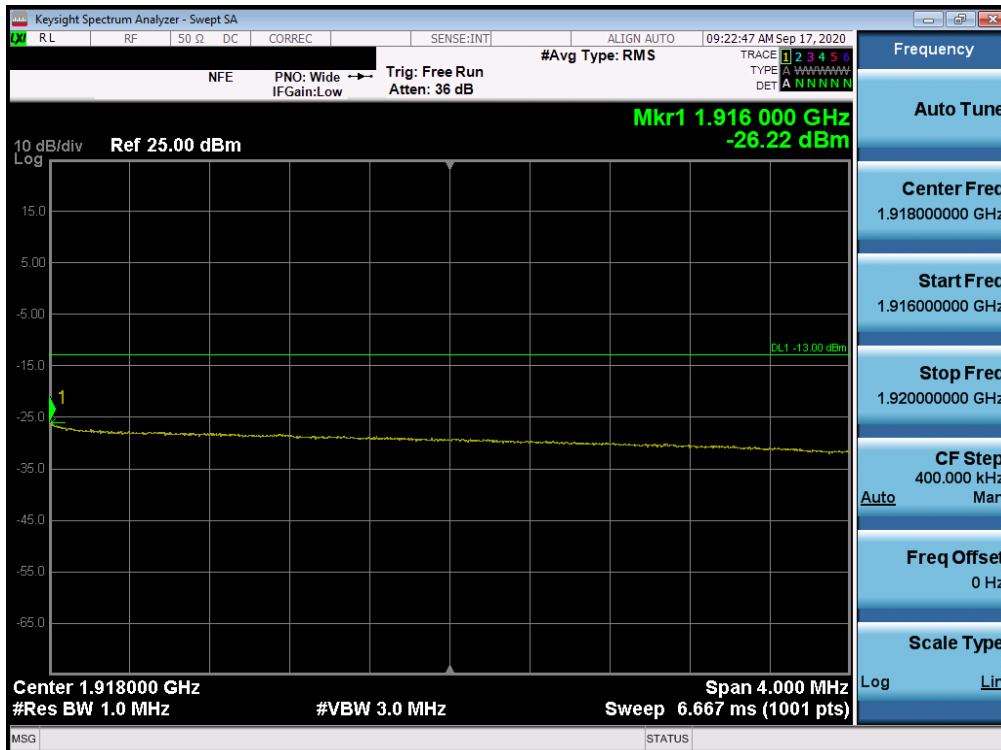


Plot 7-186. Extended Upper Band Edge Plot (LTE Band 2 - 10MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 116 of 234

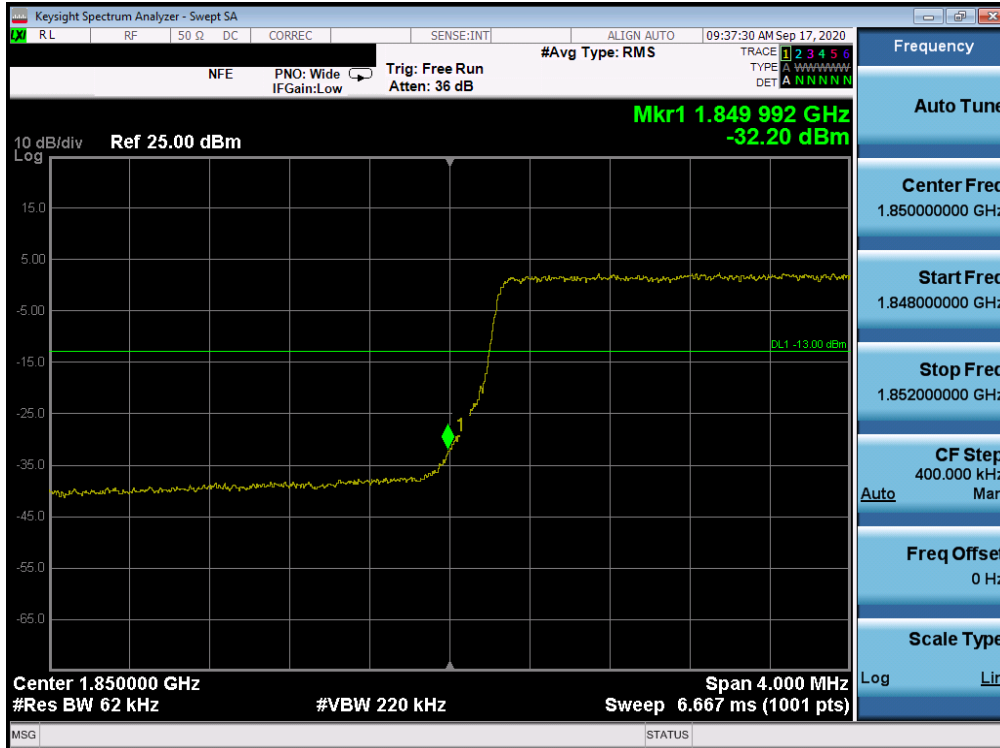


Plot 7-187. Upper Band Edge Plot (LTE Band 25 - 10MHz QPSK – Full RB Configuration)

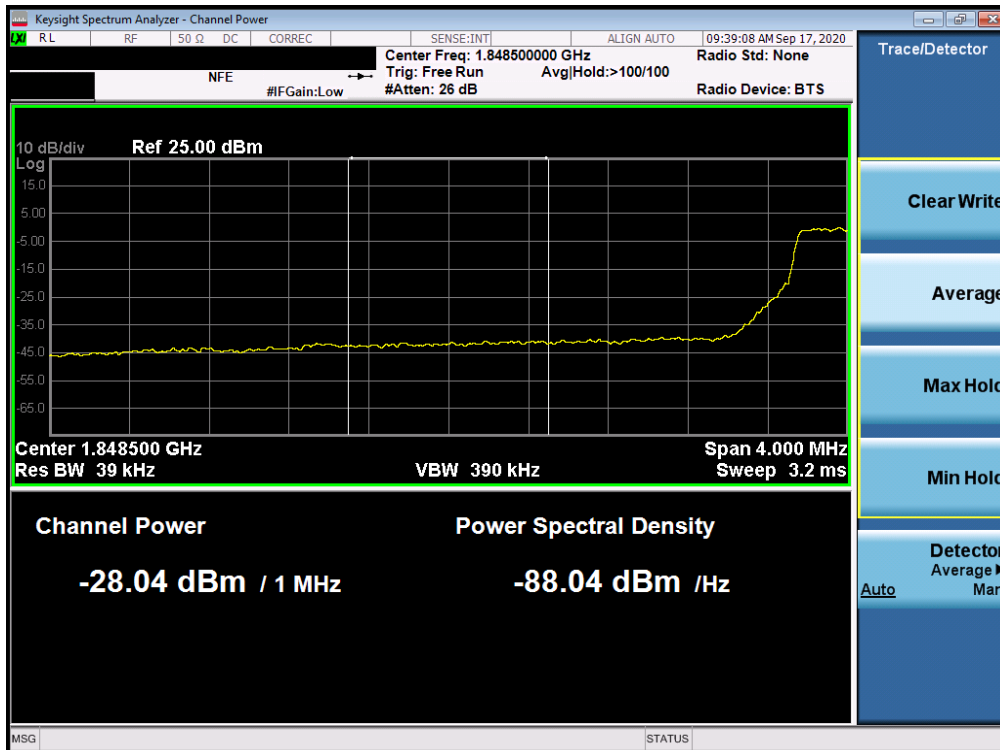


Plot 7-188. Extended Upper Band Edge Plot (LTE Band 25 - 10MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 117 of 234

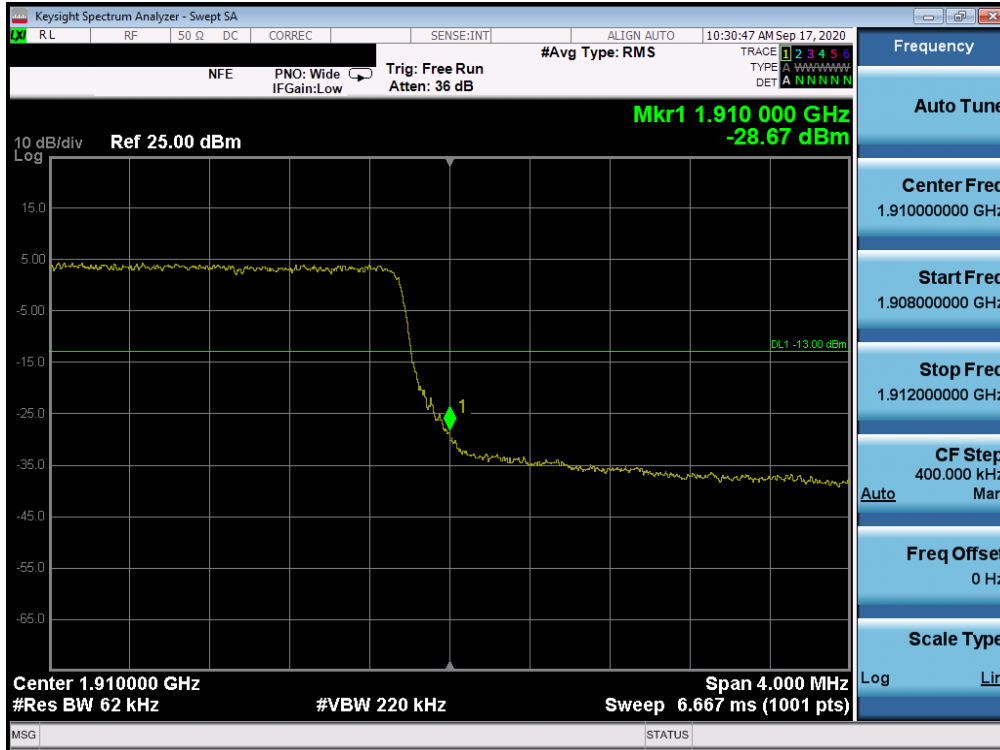


Plot 7-189. Lower Band Edge Plot (LTE Band 25/2 - 5MHz QPSK – Full RB Configuration)

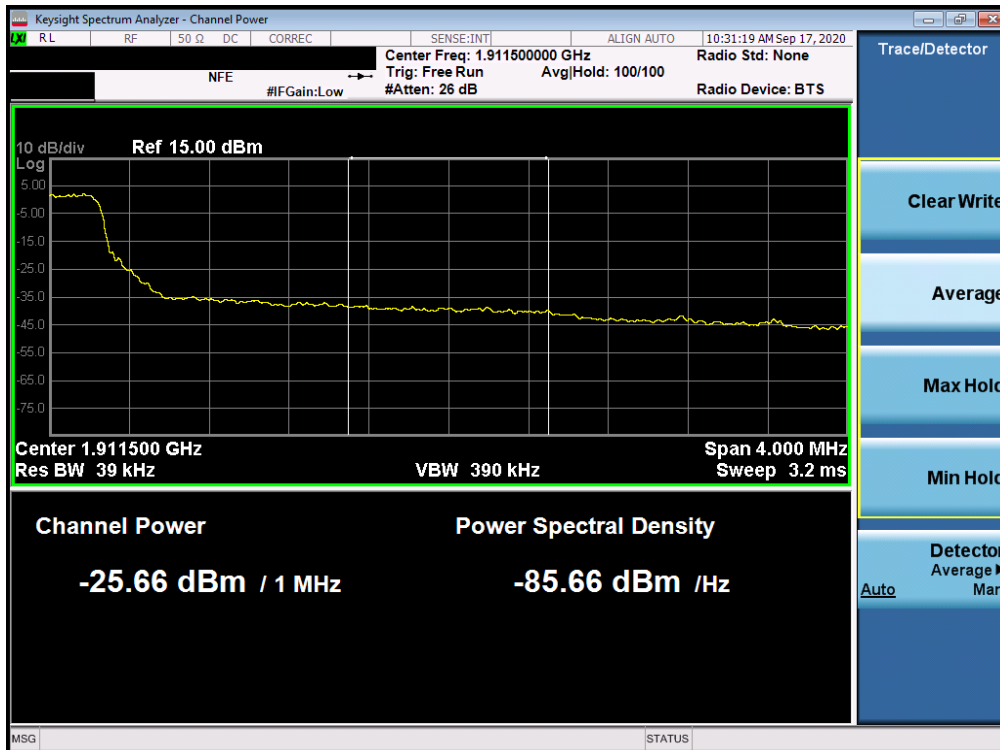


Plot 7-190. Extended Lower Band Edge Plot (LTE Band 25/2 - 5MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 118 of 234



Plot 7-191. Upper Band Edge Plot (LTE Band 2 - 5MHz QPSK – Full RB Configuration)

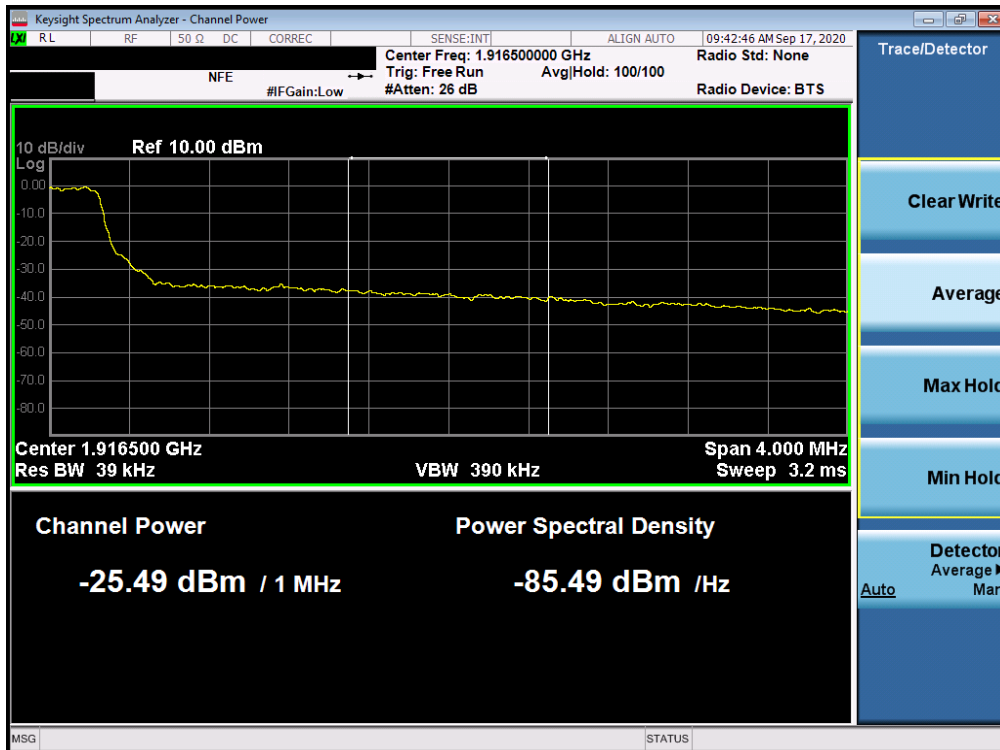


Plot 7-192. Extended Upper Band Edge Plot (LTE Band 2 - 5MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 119 of 234

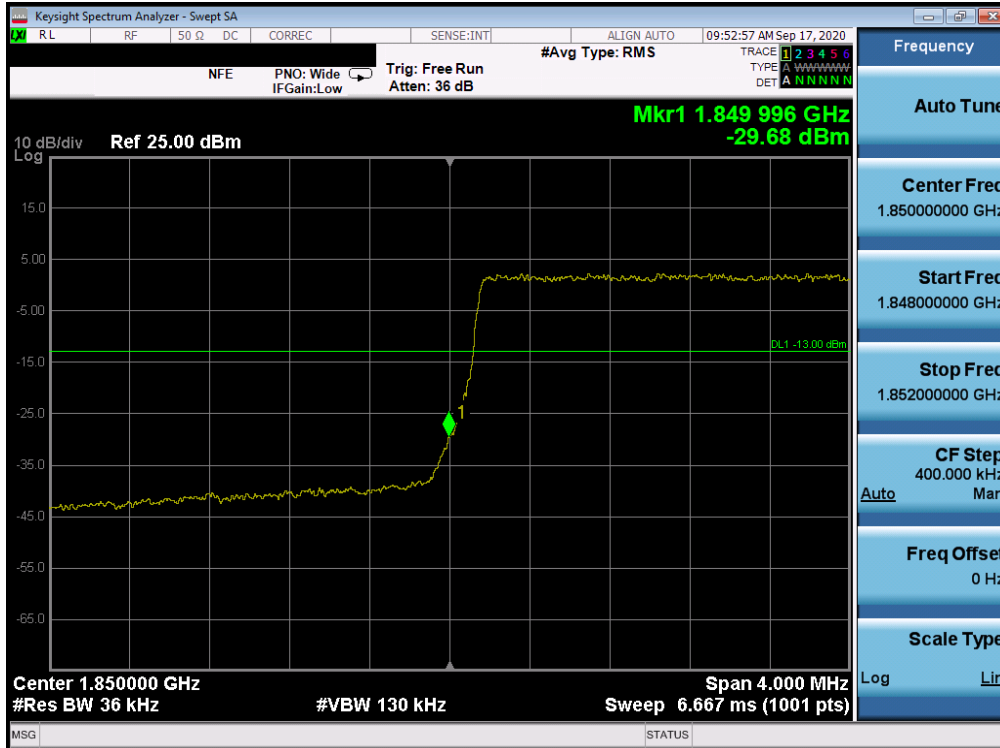


Plot 7-193. Upper Band Edge Plot (LTE Band 25 - 5MHz QPSK – Full RB Configuration)

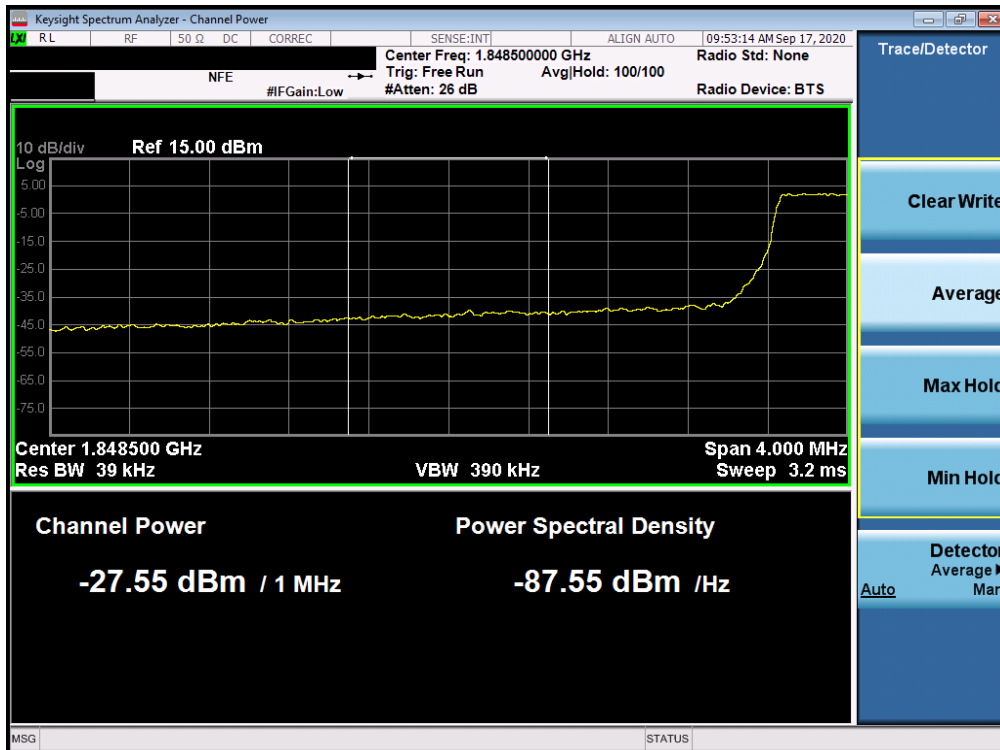


Plot 7-194. Extended Upper Band Edge Plot (LTE Band 25 - 5MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 120 of 234

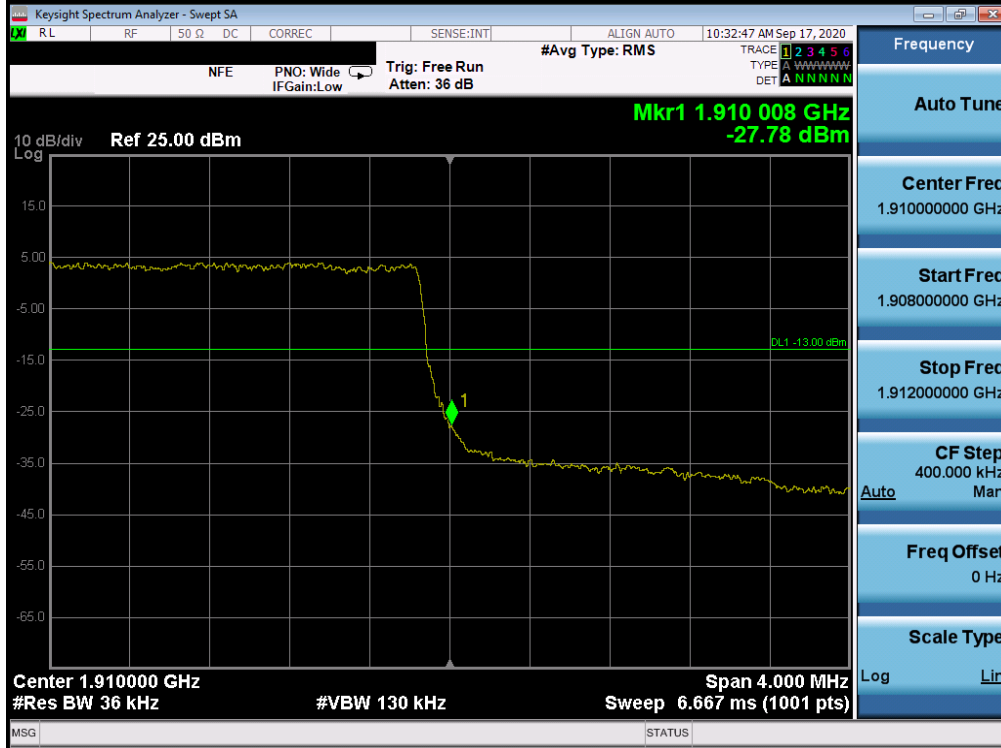


Plot 7-195. Lower Band Edge Plot (LTE Band 25/2 - 3MHz QPSK – Full RB Configuration)

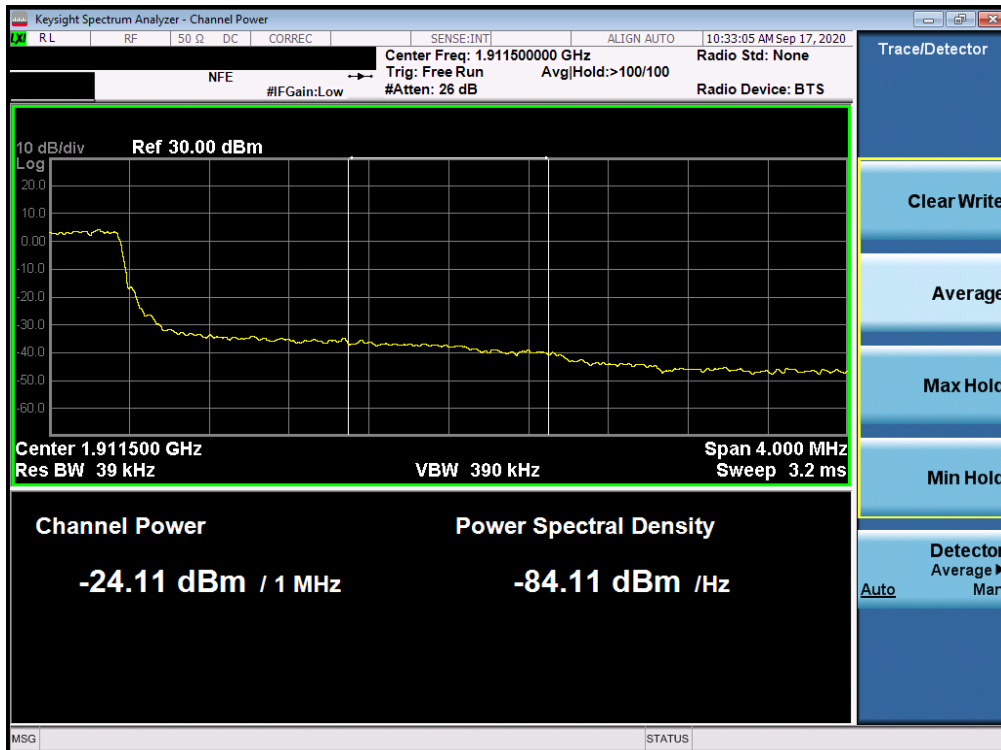


Plot 7-196. Extended Lower Band Edge Plot (LTE Band 25/2 - 3MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 121 of 234



Plot 7-197. Upper Band Edge Plot (LTE Band 2 - 3MHz QPSK – Full RB Configuration)

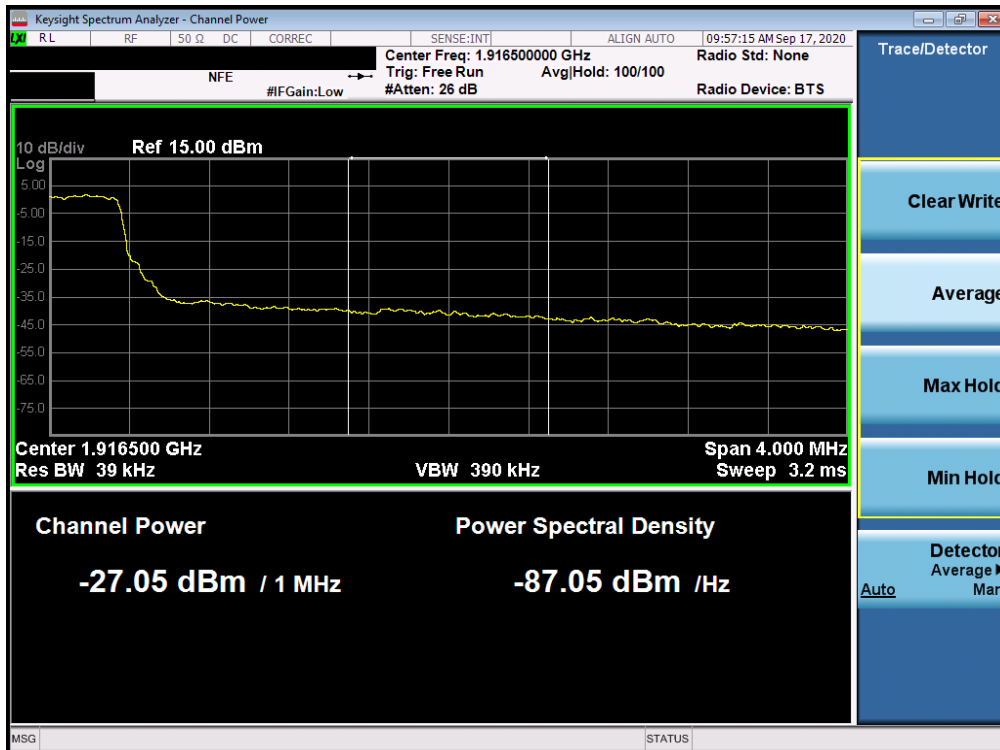


Plot 7-198. Extended Upper Band Edge Plot (LTE Band 2 - 3MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 122 of 234

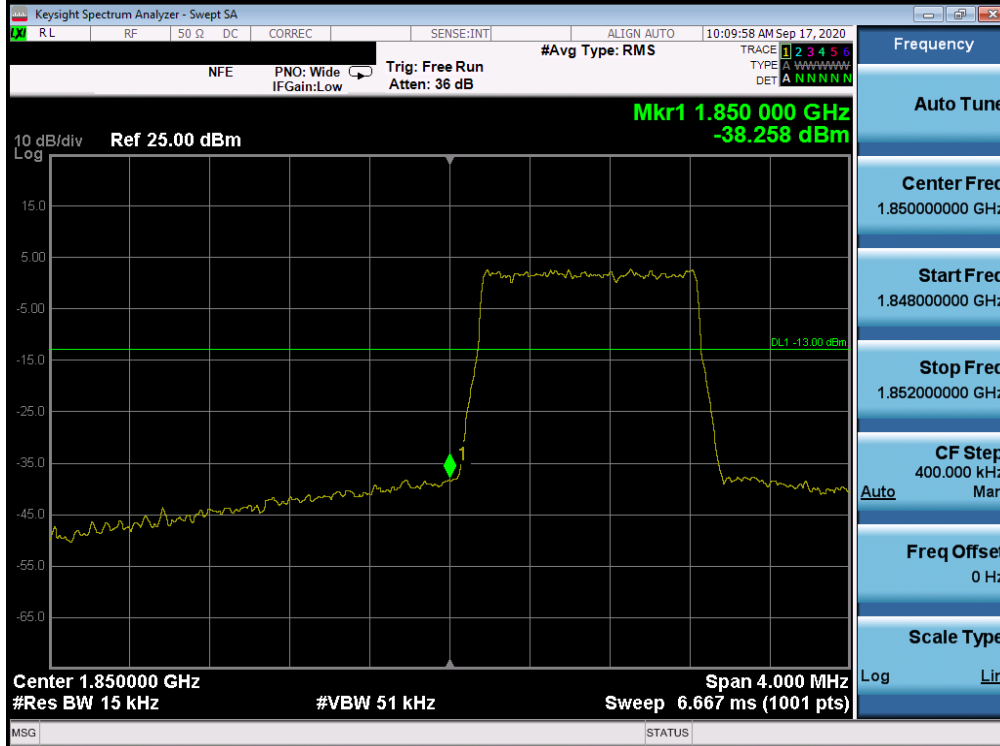


Plot 7-199. Upper Band Edge Plot (LTE Band 25 - 3MHz QPSK – Full RB Configuration)

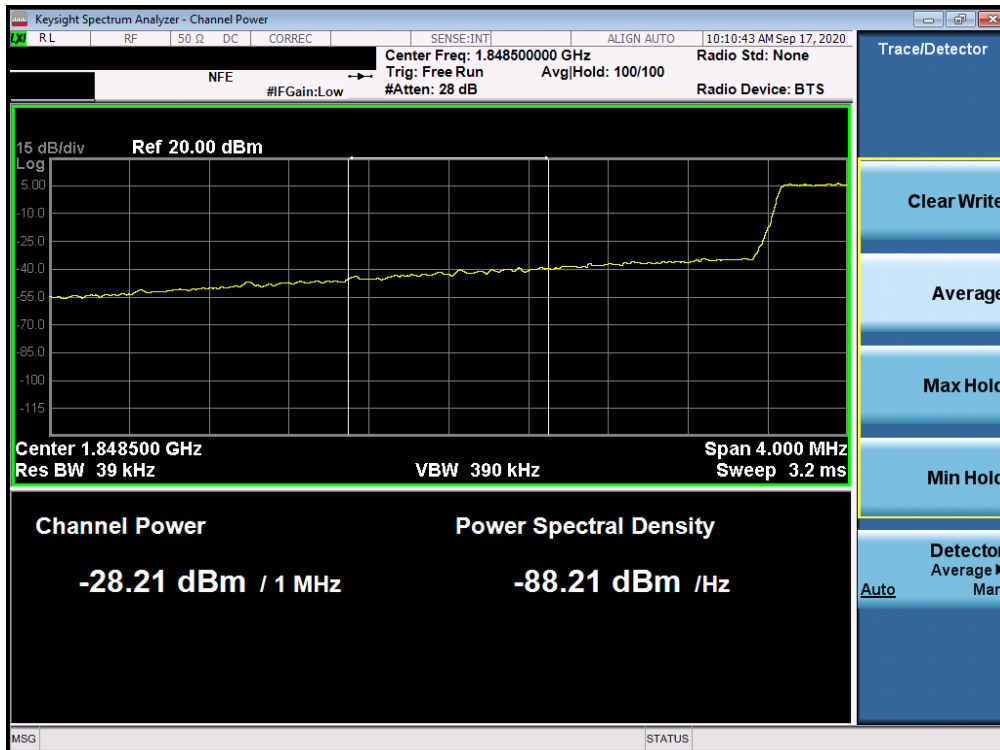


Plot 7-200. Extended Upper Band Edge Plot (LTE Band 25 - 3MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 123 of 234



Plot 7-201. Lower Band Edge Plot (LTE Band 25/2 – 1.4MHz QPSK – Full RB Configuration)



Plot 7-202. Extended Lower Band Edge Plot (LTE Band 25/2 – 1.4MHz QPSK – Full RB Configuration)

FCC ID: A3LSMG996U	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009140143-19.A3L	Test Dates: 09/15 - 11/10/2020	EUT Type: Portable Handset		Page 124 of 234