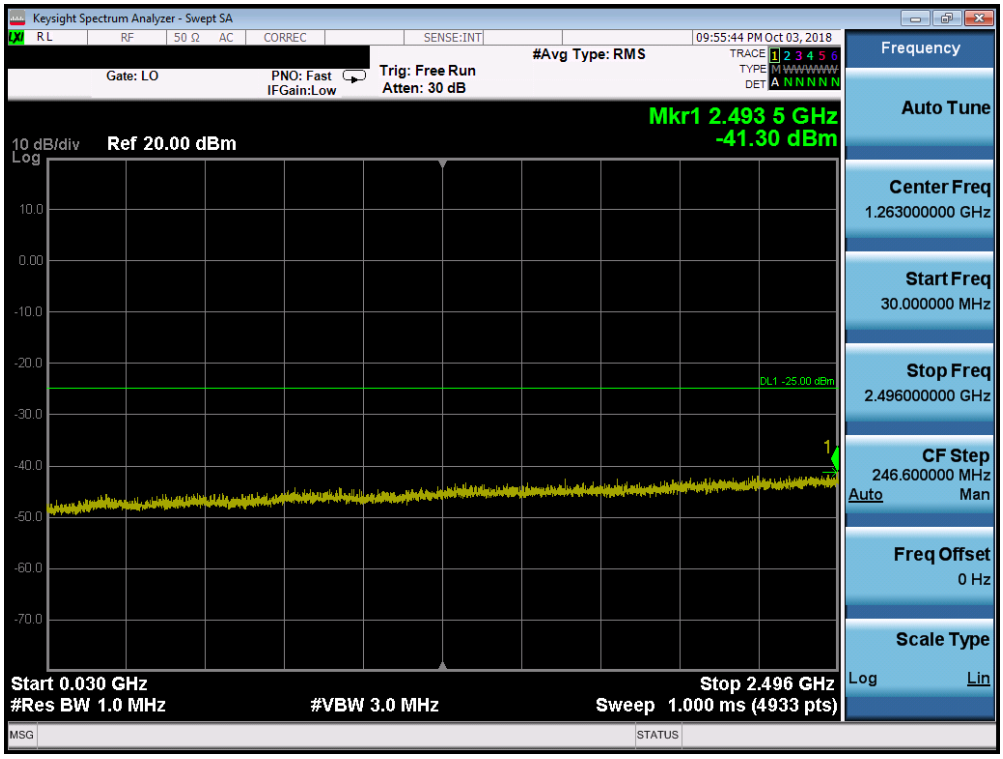
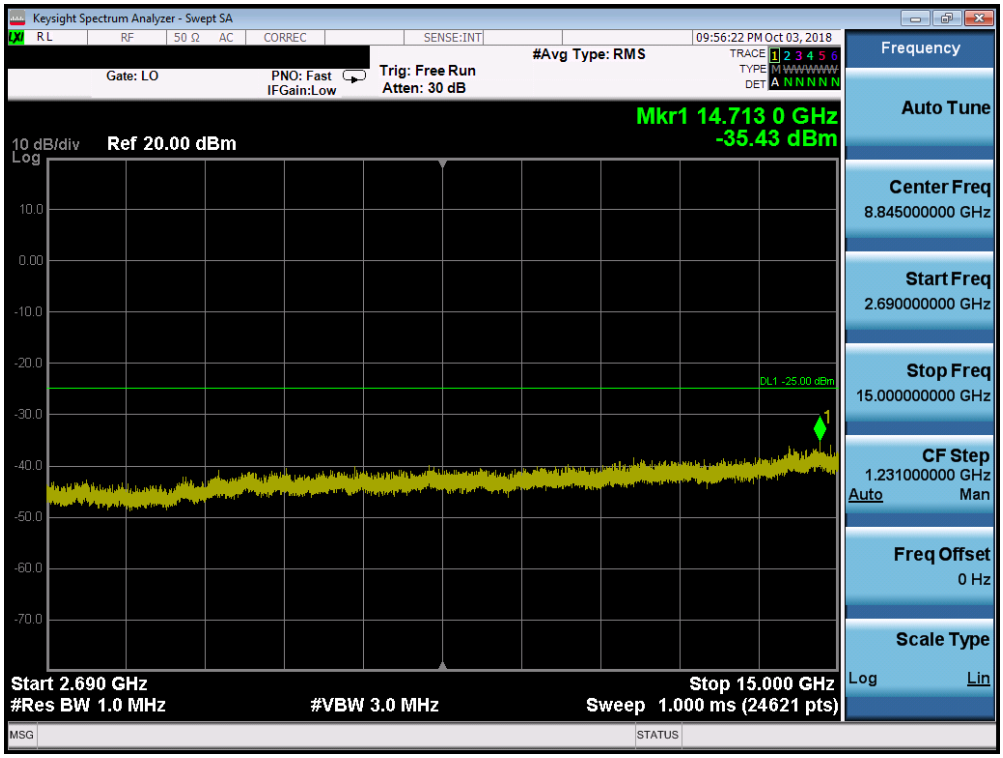
Plot 7-103. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

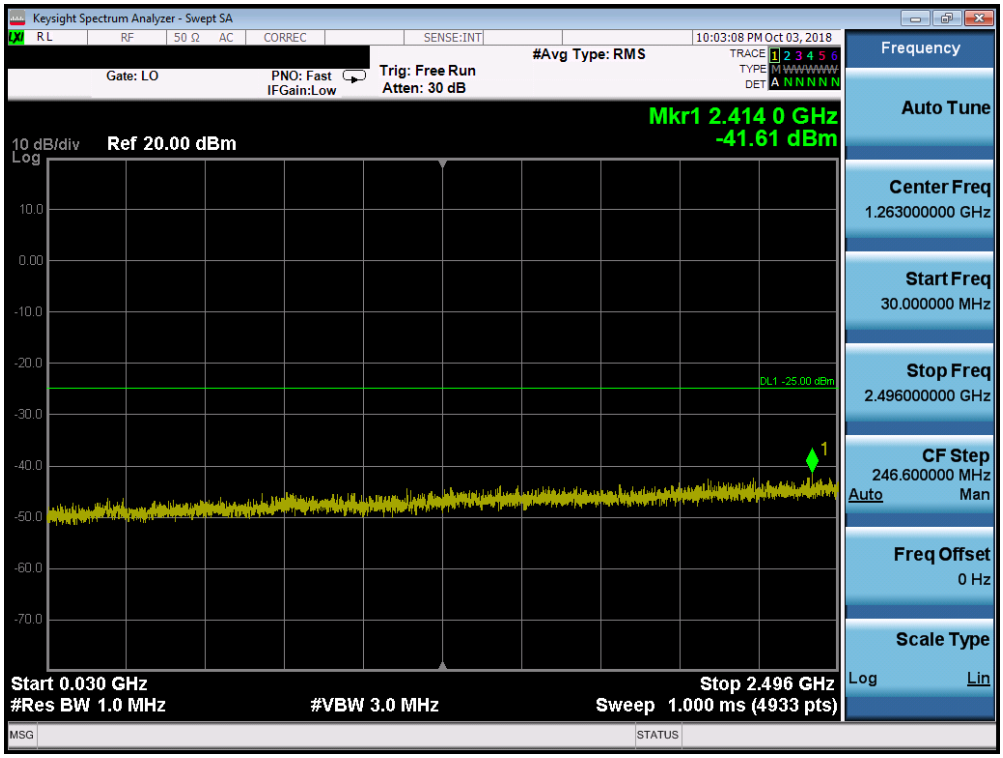


Plot 7-104. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

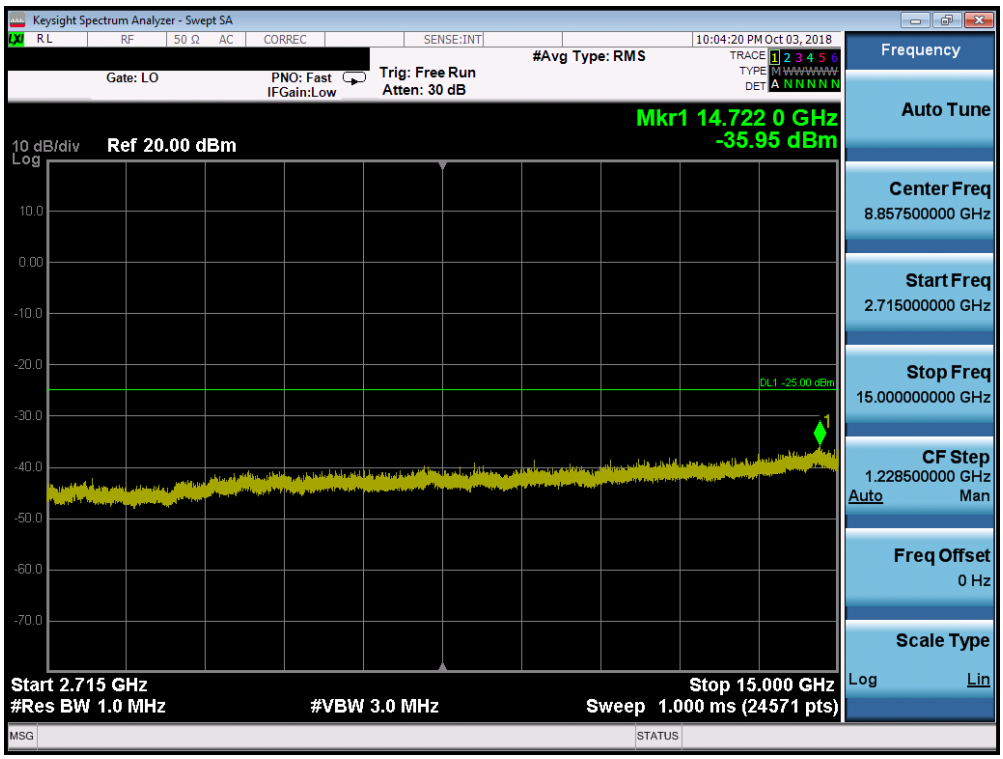


Plot 7-105. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

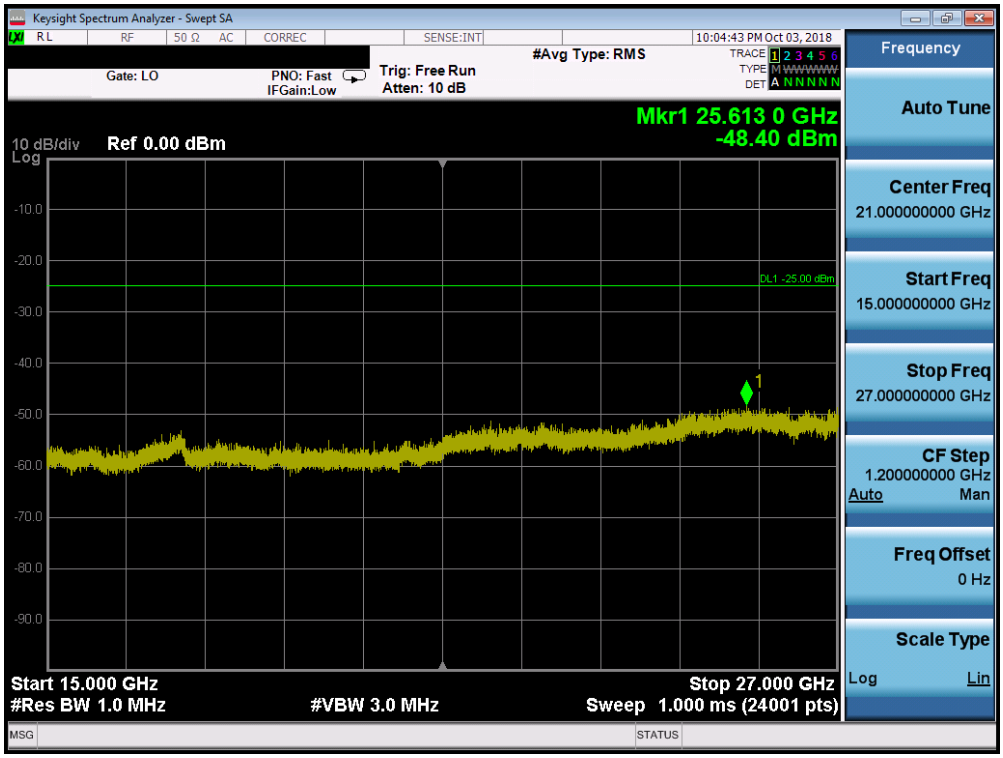
Plot 7-106. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



Plot 7-107. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

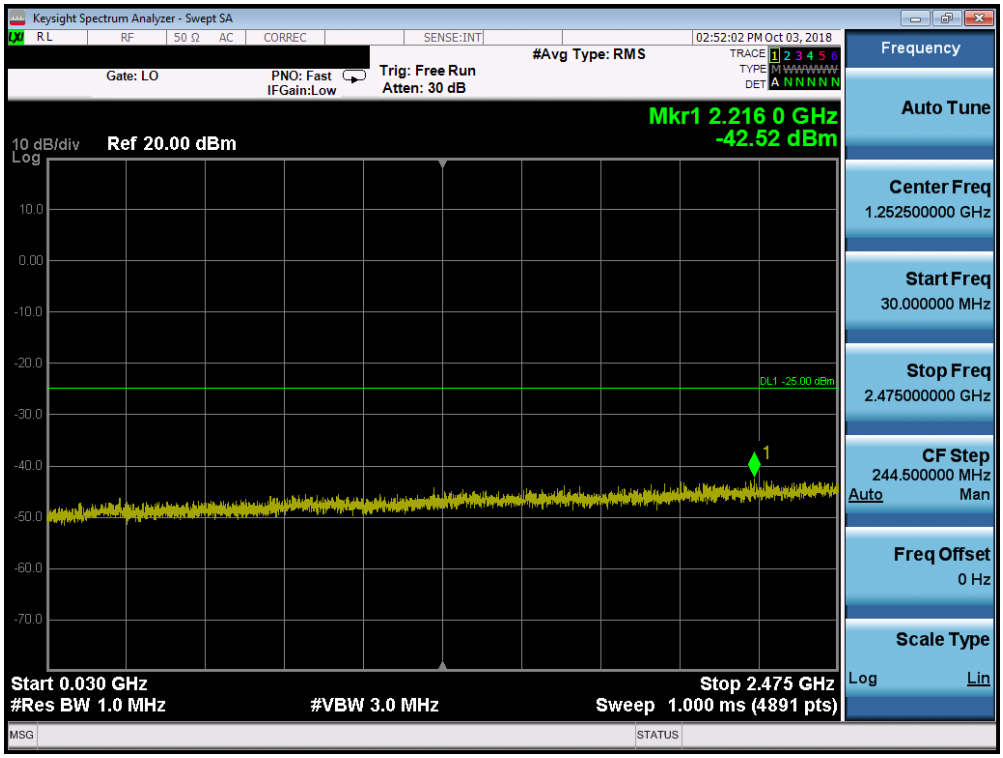


Plot 7-108. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

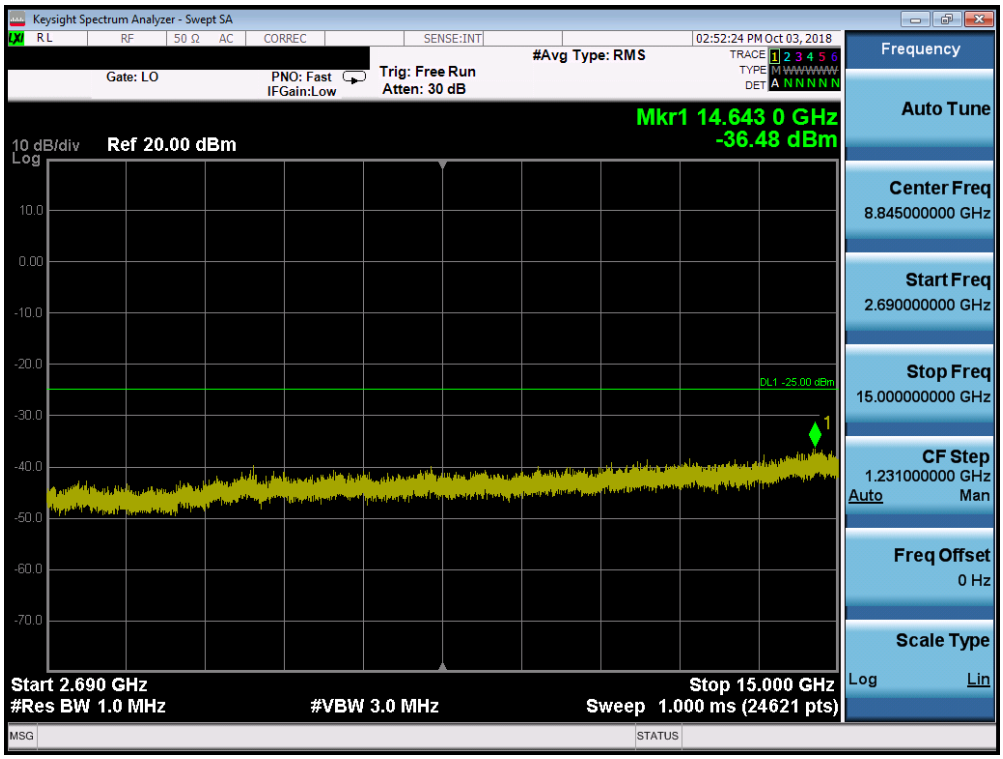


Plot 7-109. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

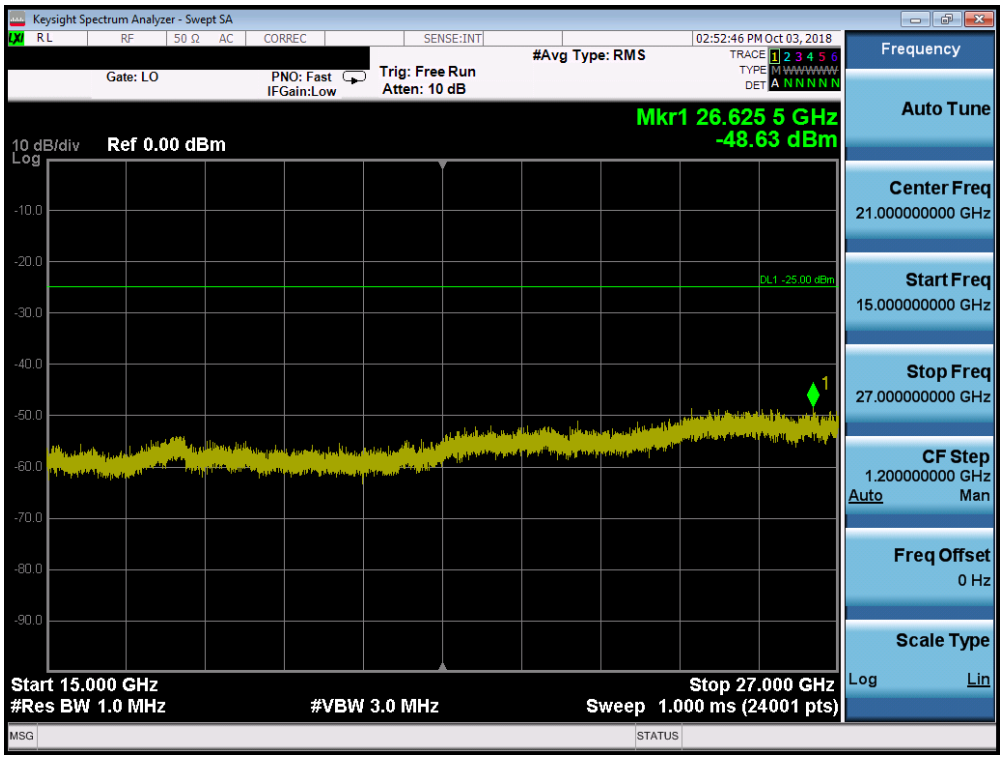
Band 41 (PC3)



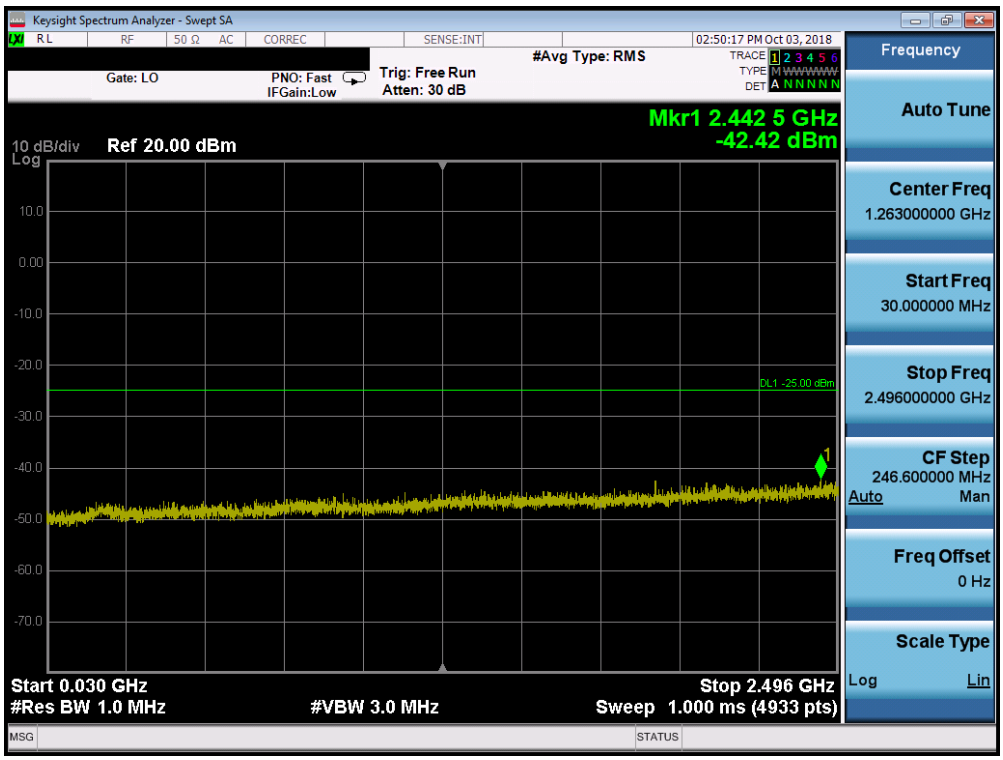
Plot 7-110. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)



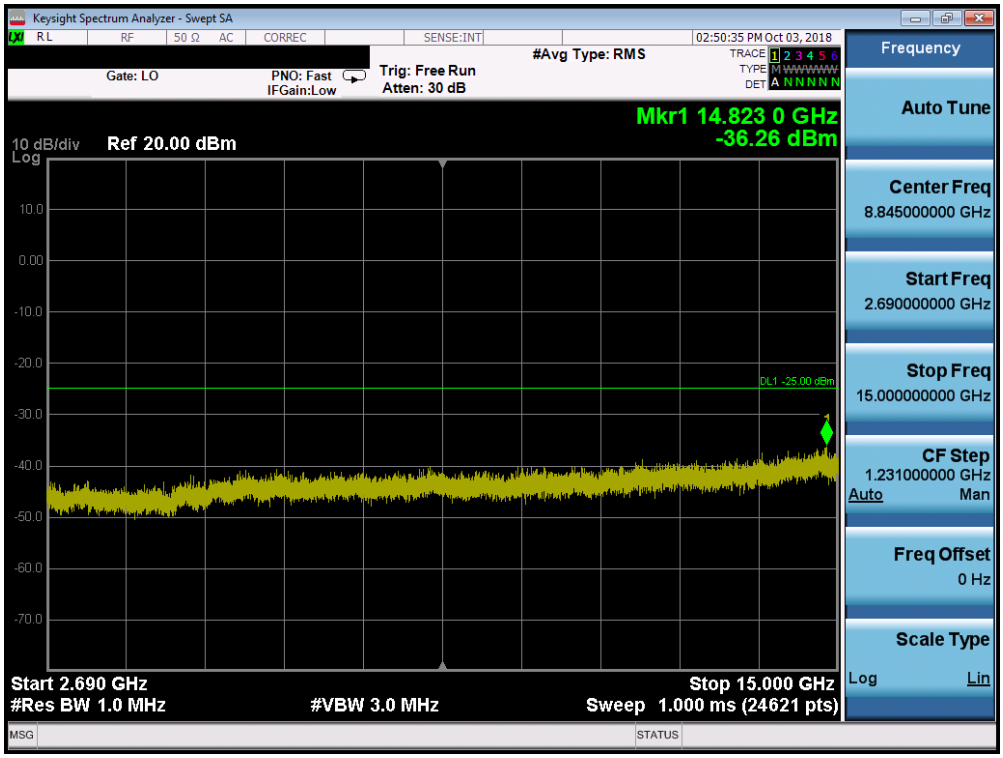
Plot 7-111. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)



Plot 7-112. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

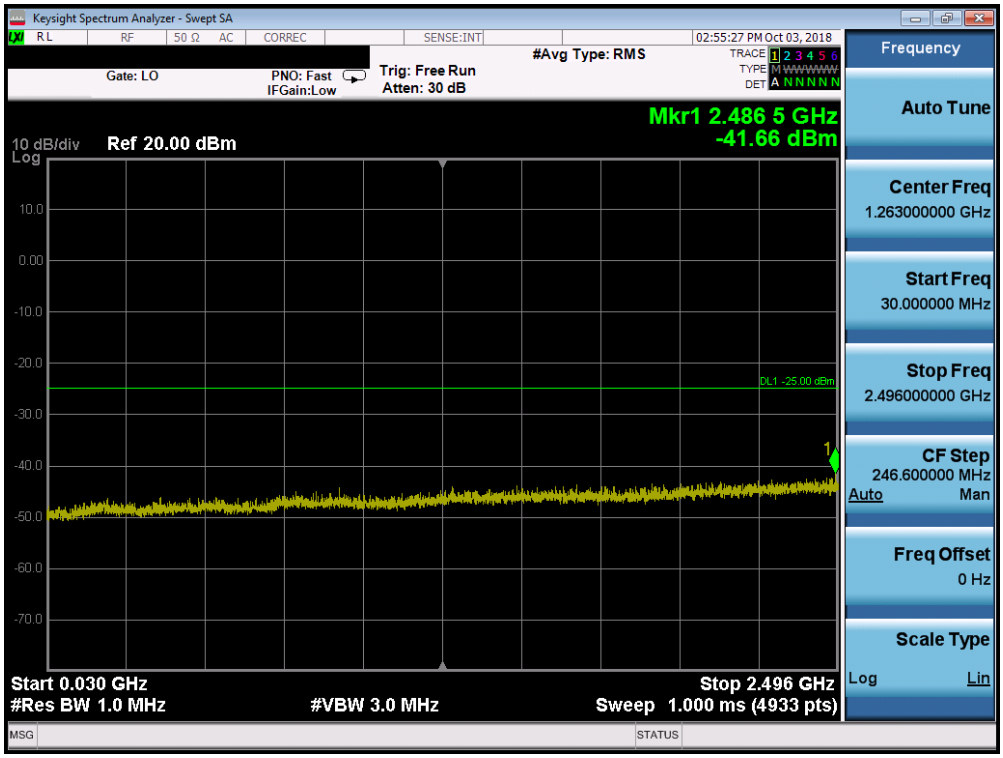


Plot 7-113. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

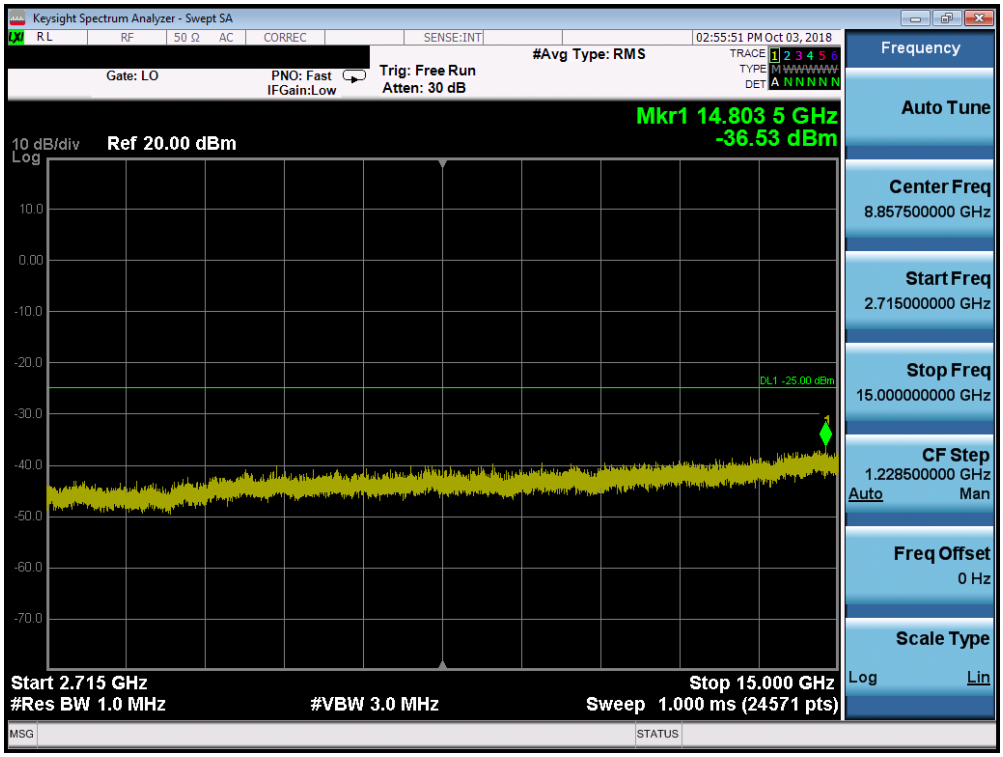


Plot 7-114. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

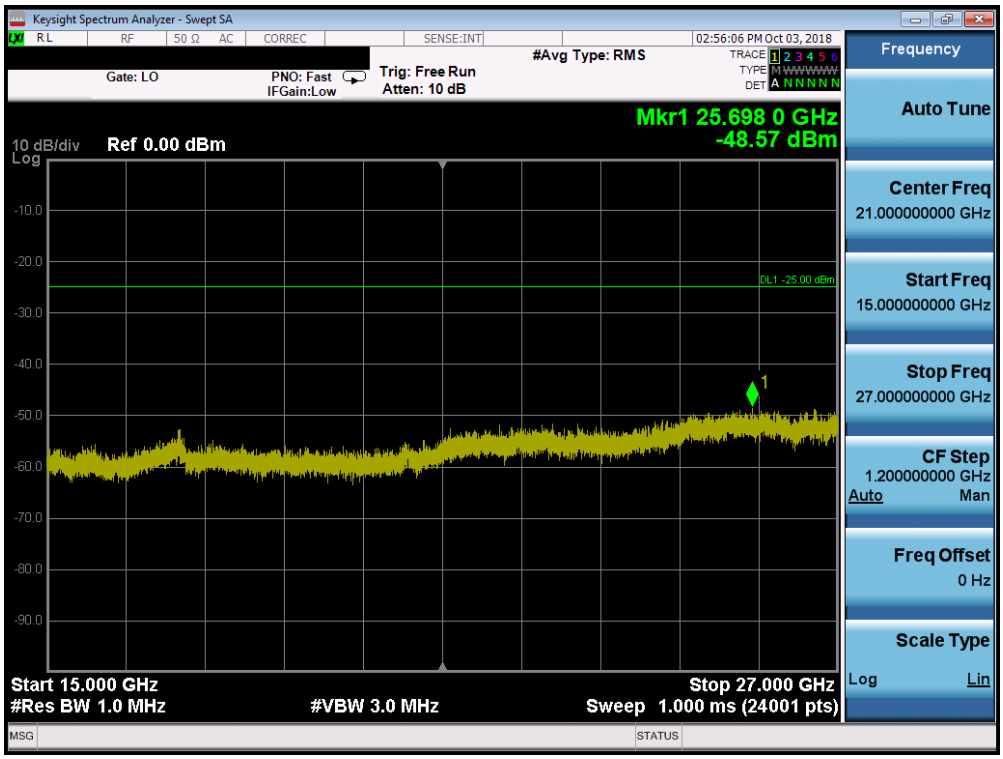
Plot 7-115. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



Plot 7-116. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-117. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-118. Conducted Spurious Plot (Band 41 - 10.0MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

7.4 Band Edge Emissions at Antenna Terminal

Test Overview

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

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

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

Test Procedure Used

KDB 971168 D01 v03r01 – Section 6.0

Test Settings

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

Test Setup

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

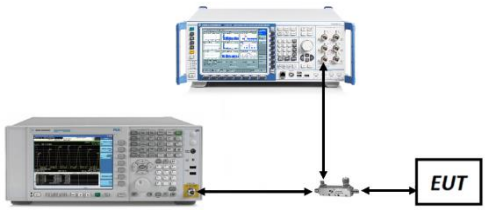


Figure 7-3. Test Instrument & Measurement Setup

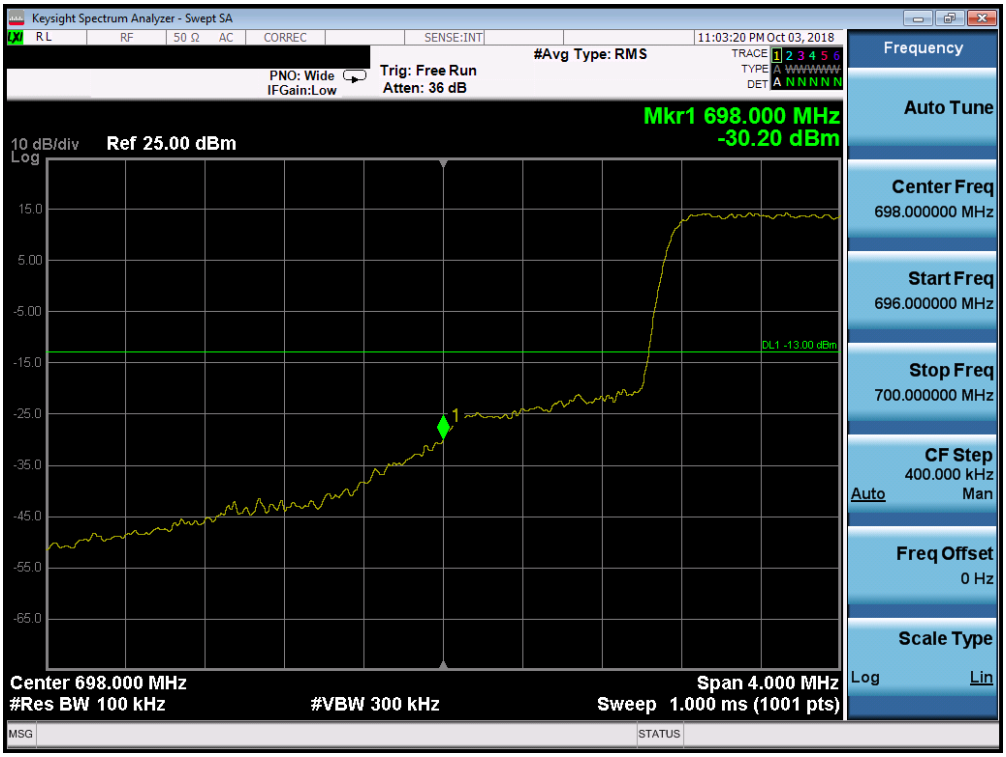
Test Notes

Per 22.917(b) 24.238(a) 27.53(h) in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to demonstrate compliance with the out-of-band emissions limit. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

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

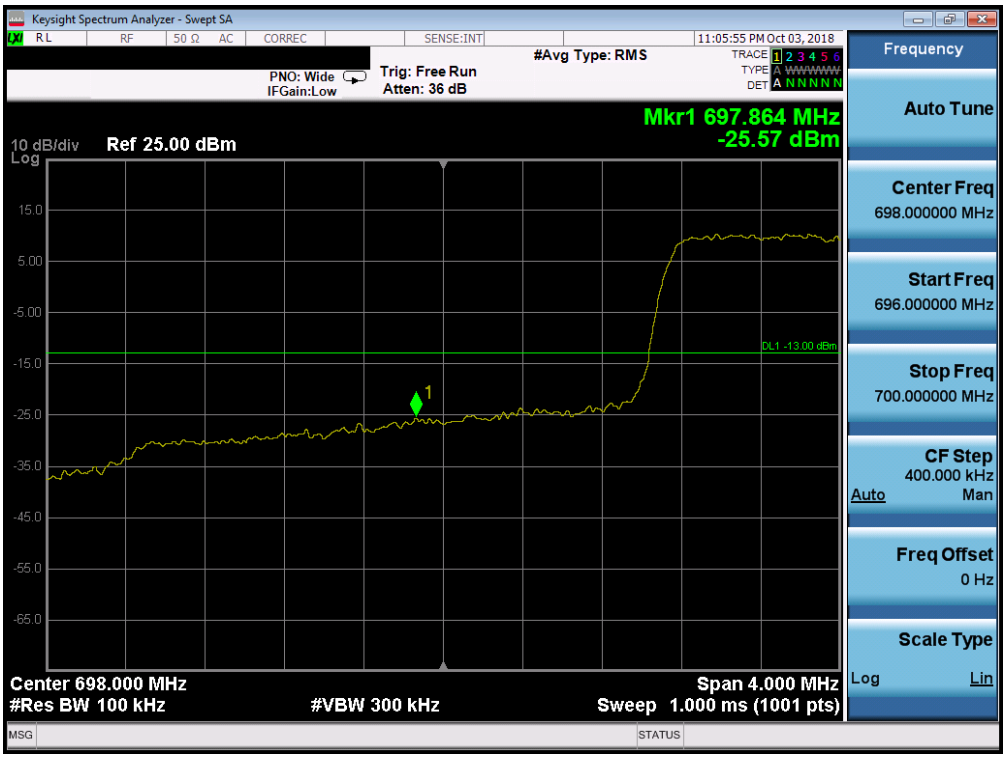
Per 27.53(m) for operations in the BRS/EBS bands, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55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

Band 12



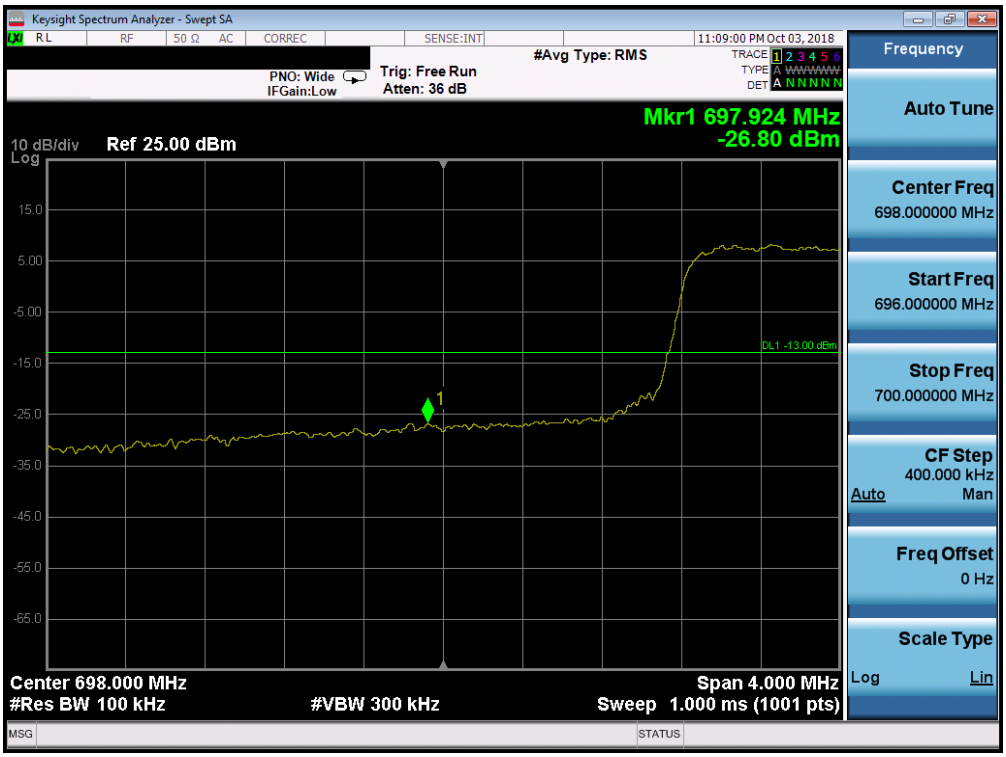
Plot 7-119. Lower Band Edge Plot (Band 12 - 1.4MHz QPSK - Full RB Configuration)

Plot 7-120. Upper Band Edge Plot (Band 12 - 1.4MHz QPSK - Full RB Configuration)



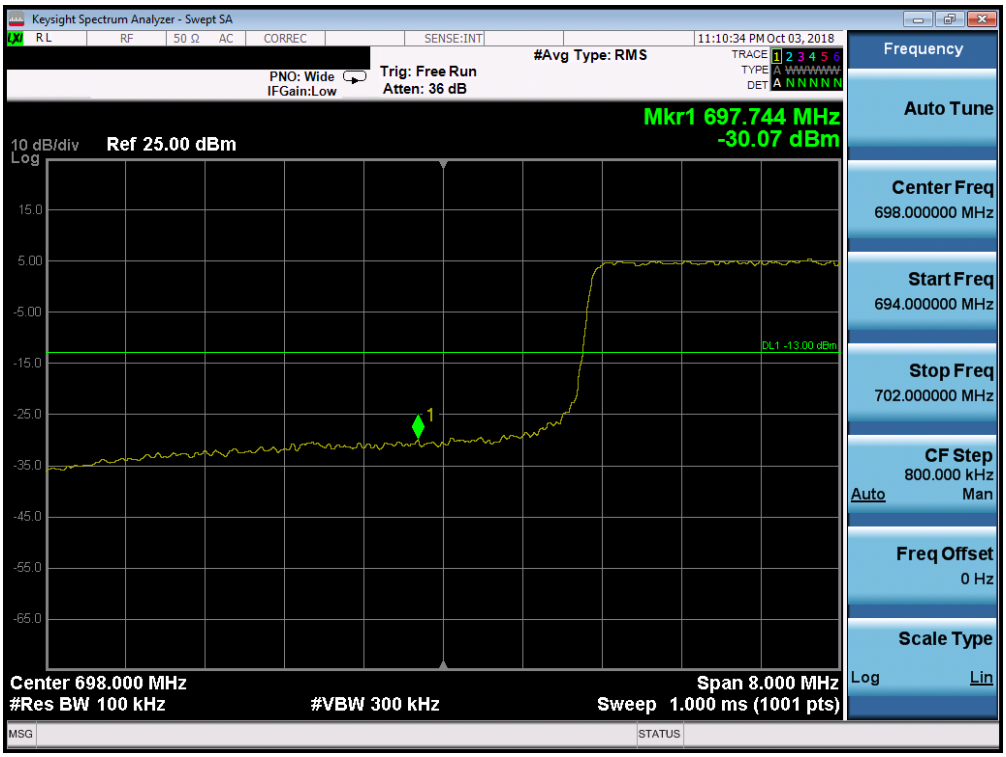
Plot 7-121. Lower Band Edge Plot (Band 12 - 3.0MHz QPSK - Full RB Configuration)

Plot 7-122. Upper Band Edge Plot (Band 12 - 3.0MHz QPSK - Full RB Configuration)



Plot 7-123. Lower Band Edge Plot (Band 12 - 5.0MHz QPSK - Full RB Configuration)

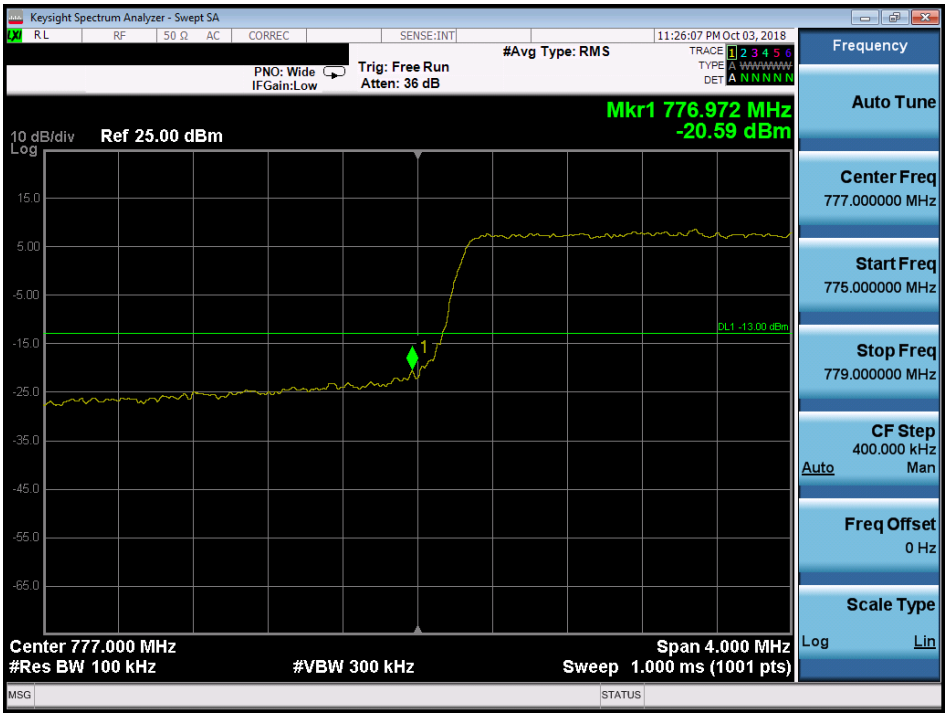
Plot 7-124. Upper Band Edge Plot (Band 12 - 5.0MHz QPSK - Full RB Configuration)



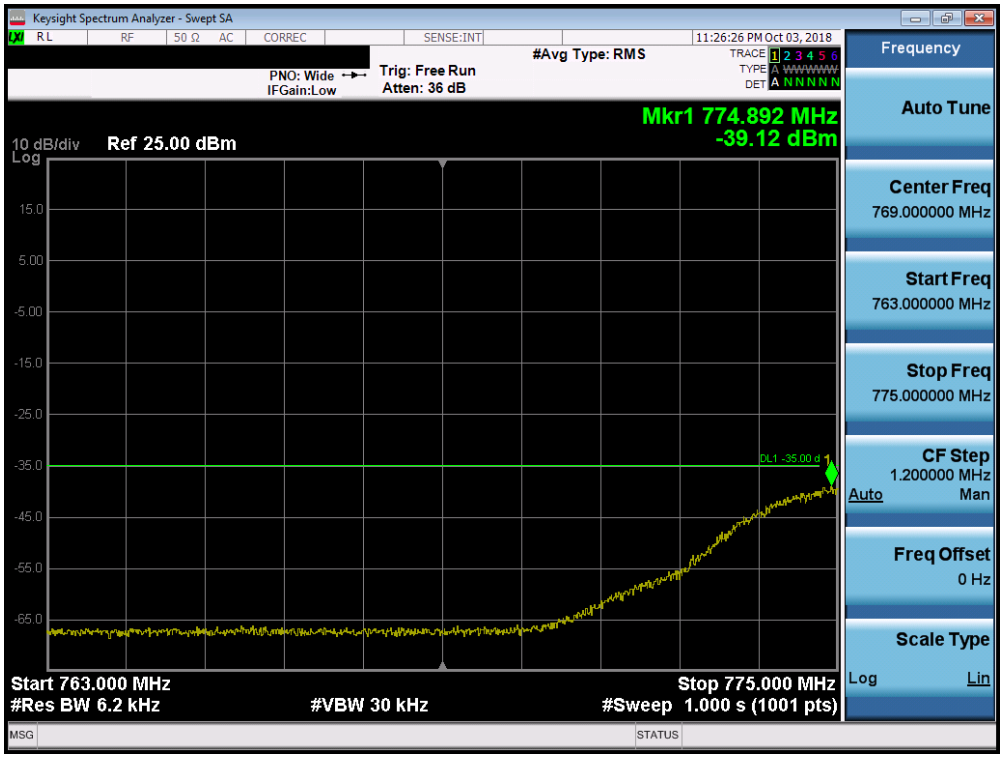
Plot 7-125. Lower Band Edge Plot (Band 12 - 10.0MHz QPSK - Full RB Configuration)

Plot 7-126. Upper Band Edge Plot (Band 12 - 10.0MHz QPSK - Full RB Configuration)

Band 13

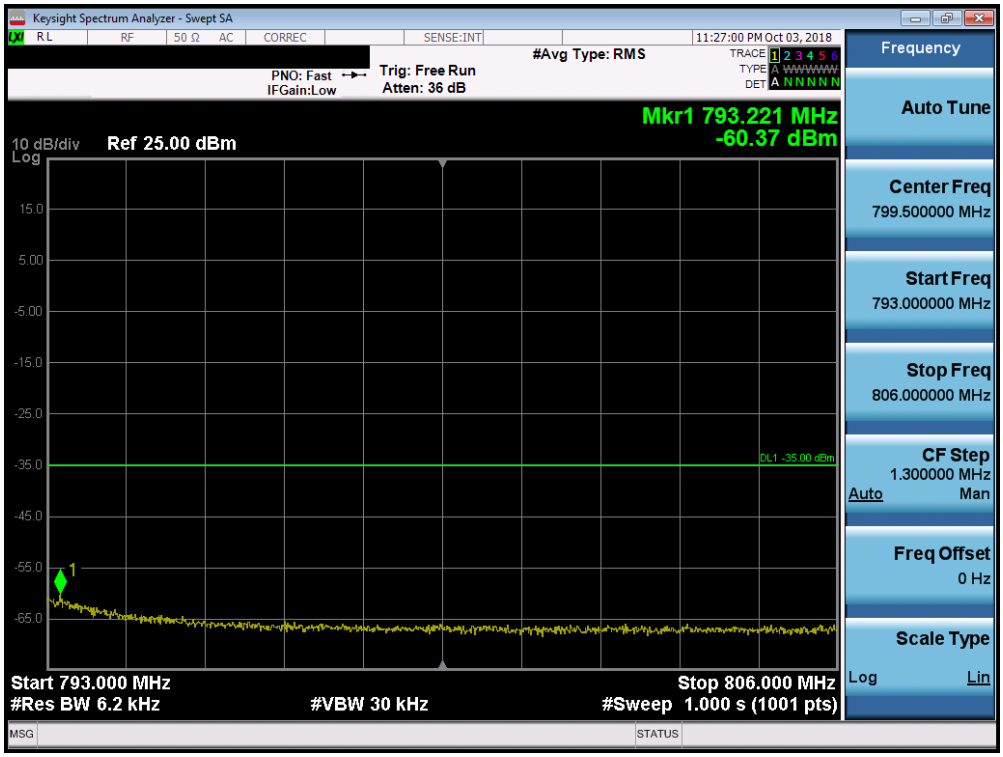


Plot 7-127. Lower Band Edge Plot (Band 13 - 5.0MHz QPSK - Full RB Configuration)

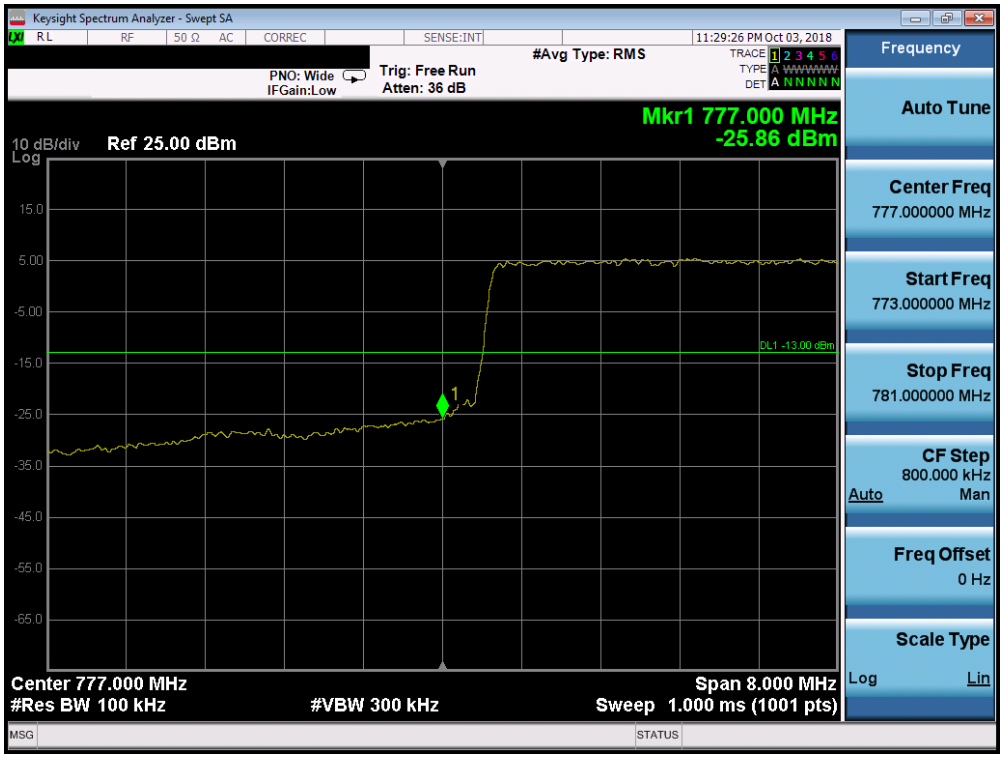


Plot 7-128. Lower Emission Mask Plot (Band 13 - 5.0MHz QPSK - Full RB Configuration)

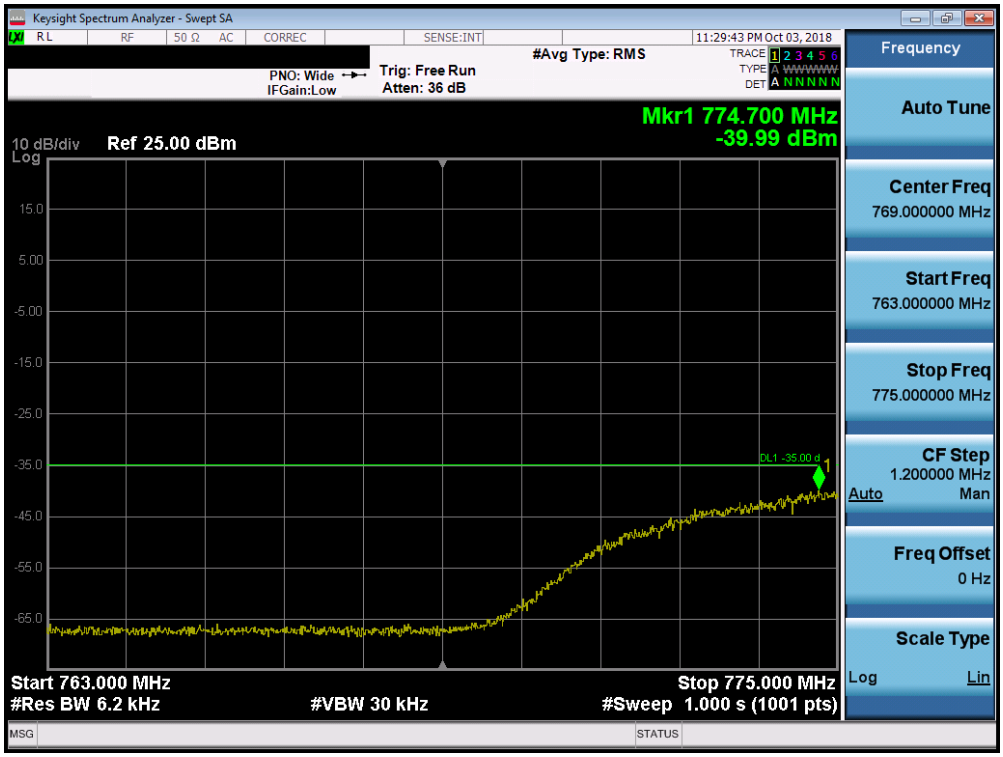
Plot 7-129. Upper Band Edge Plot (Band 13 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-130. Upper Emission Mask Plot (Band 13 - 5.0MHz QPSK - Full RB Configuration)

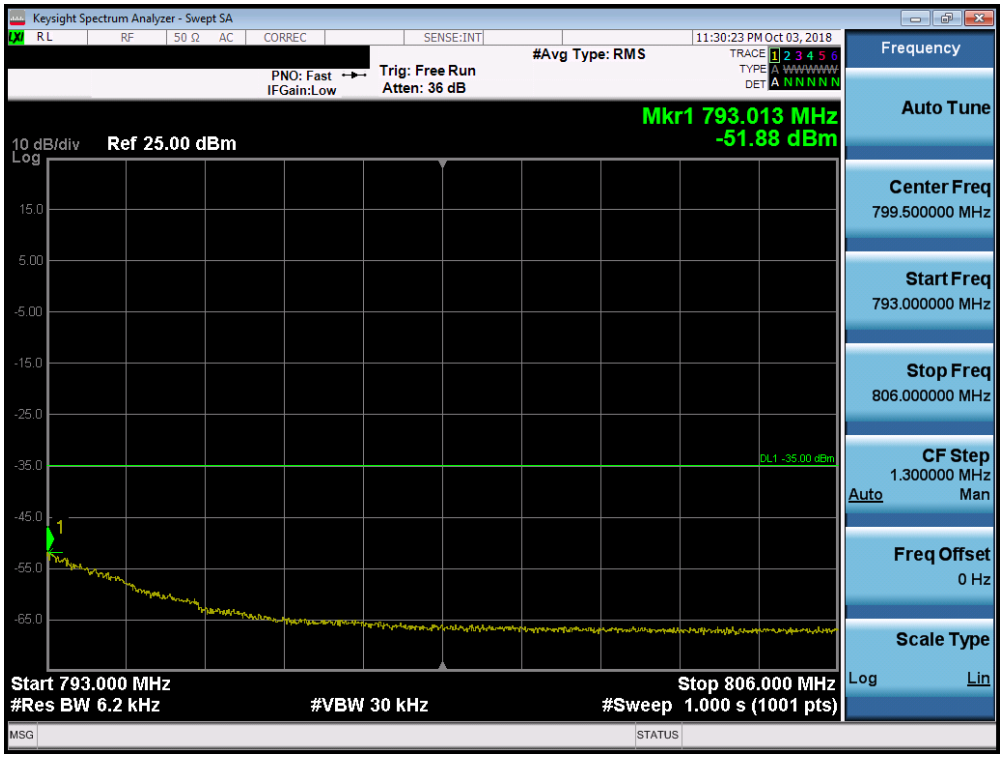


Plot 7-131. Lower Band Edge Plot (Band 13 - 10.0MHz QPSK - Full RB Configuration)



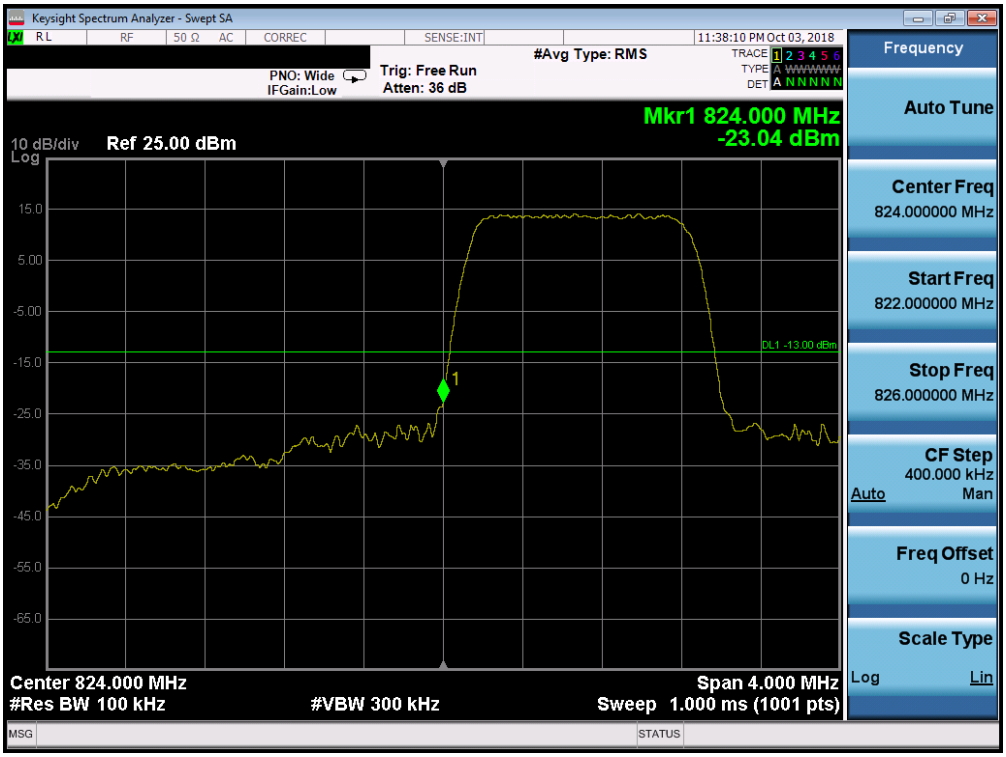
Plot 7-132. Lower Emission Mask Plot (Band 13 - 10.0MHz QPSK - Full RB Configuration)

Plot 7-133. Upper Band Edge Plot (Band 13 - 10.0MHz QPSK - Full RB Configuration)



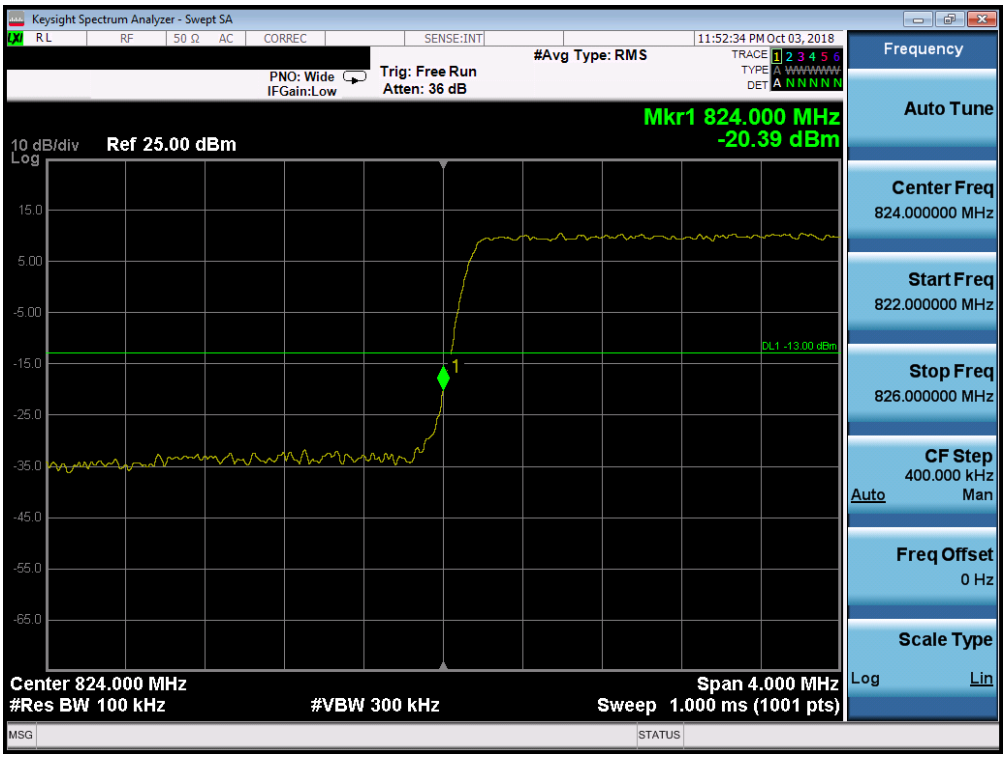
Plot 7-134. Lower Emission Mask Plot (Band 13 - 10.0MHz QPSK - Full RB Configuration)

Band 26/5



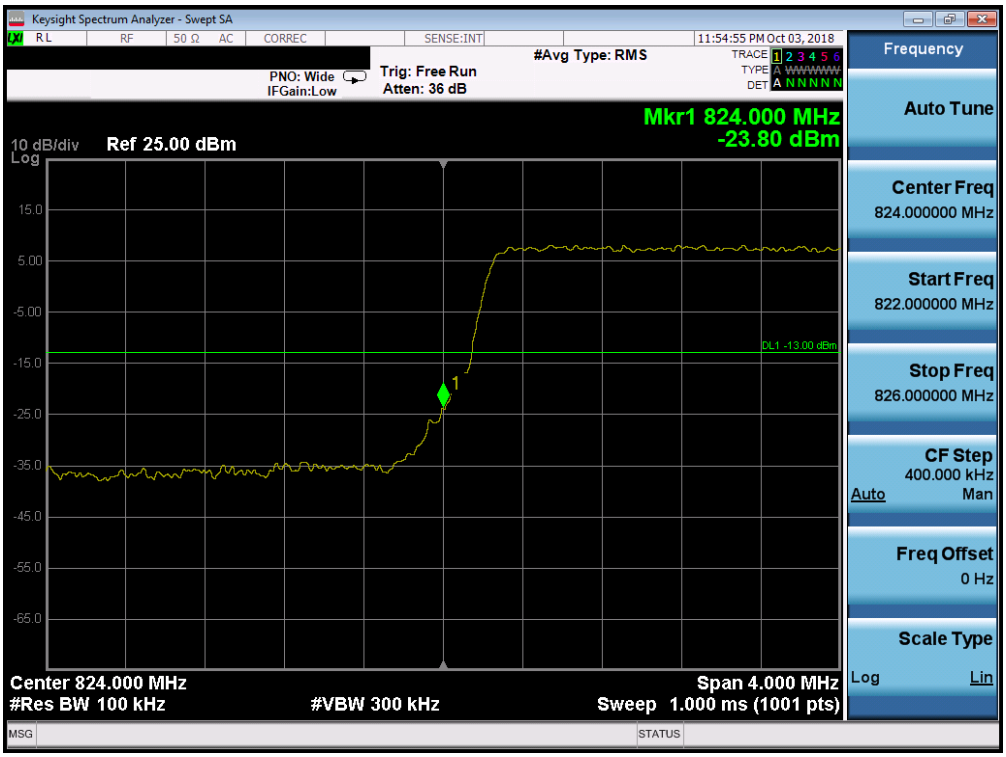
Plot 7-135. Lower Band Edge Plot (Band 26/5 - 1.4MHz QPSK - Full RB Configuration)

Plot 7-136. Upper Band Edge Plot (Band 26/5 - 1.4MHz QPSK - Full RB Configuration)



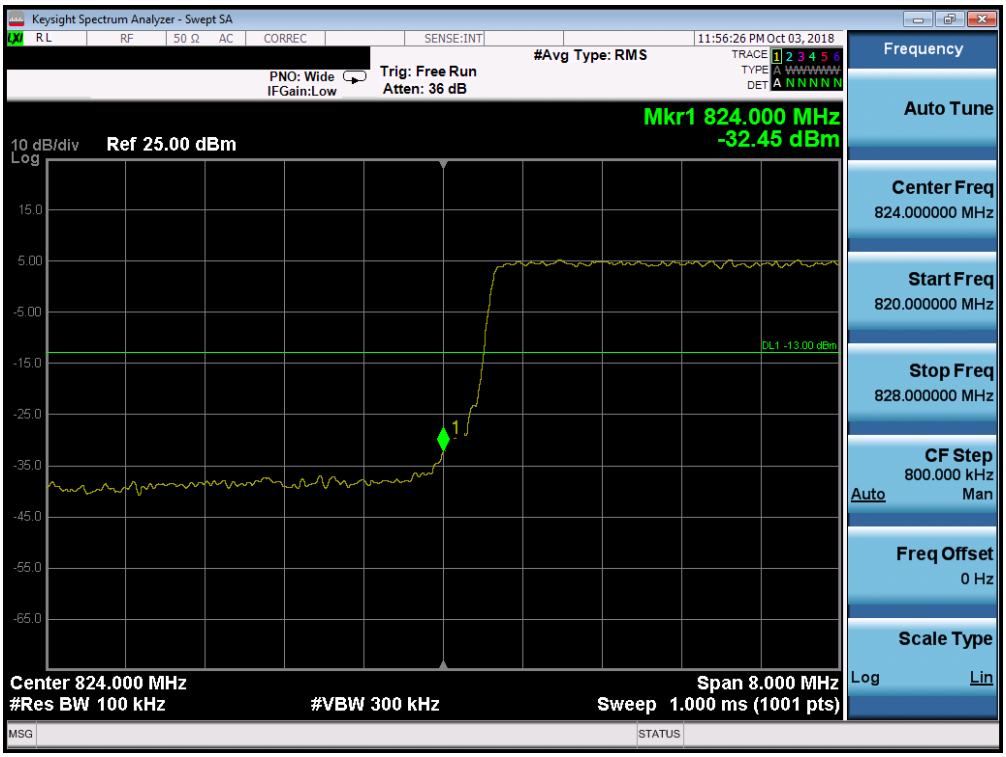
Plot 7-137. Lower Band Edge Plot (Band 26/5 - 3.0MHz QPSK - Full RB Configuration)

Plot 7-138. Upper Band Edge Plot (Band 26/5 - 3.0MHz QPSK - Full RB Configuration)



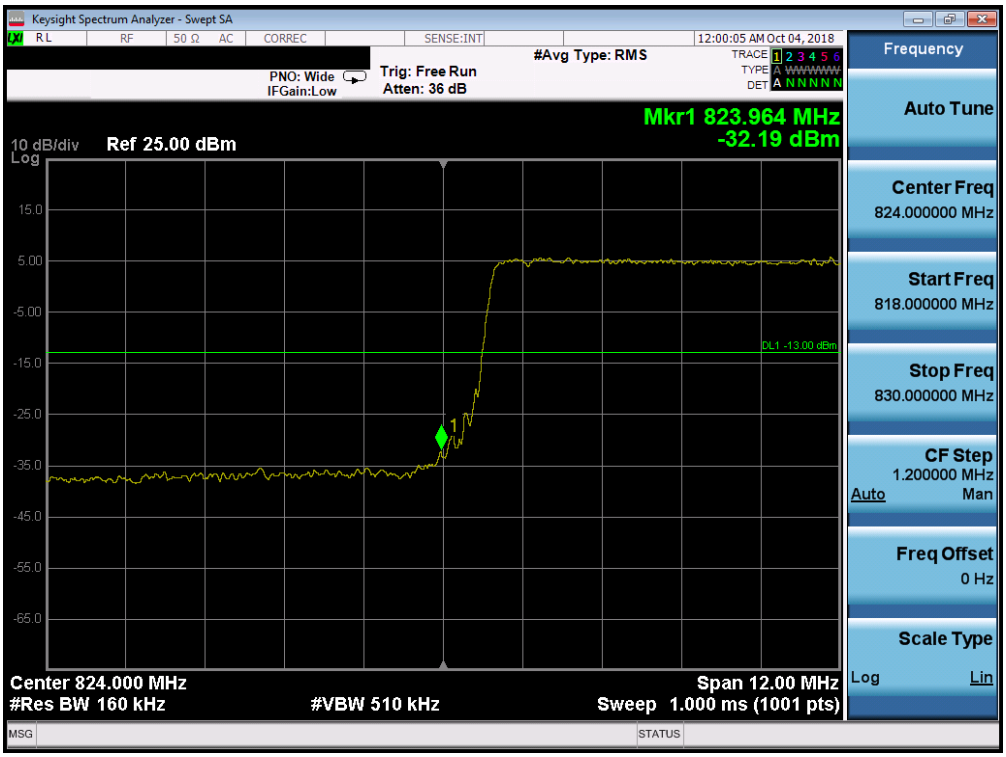
Plot 7-139. Lower Band Edge Plot (Band 26/5 - 5.0MHz QPSK - Full RB Configuration)

Plot 7-140. Upper Band Edge Plot (Band 26/5 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-141. Lower Band Edge Plot (Band 26/5 - 10.0MHz QPSK - Full RB Configuration)

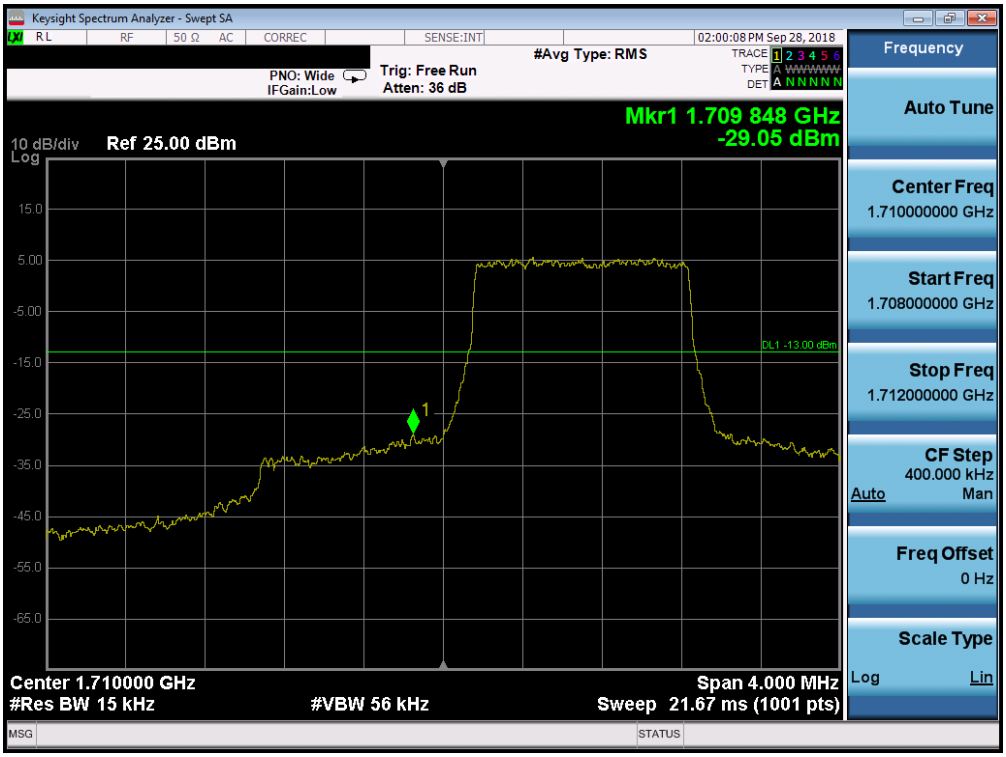
Plot 7-142. Upper Band Edge Plot (Band 26/5 - 10.0MHz QPSK - Full RB Configuration)



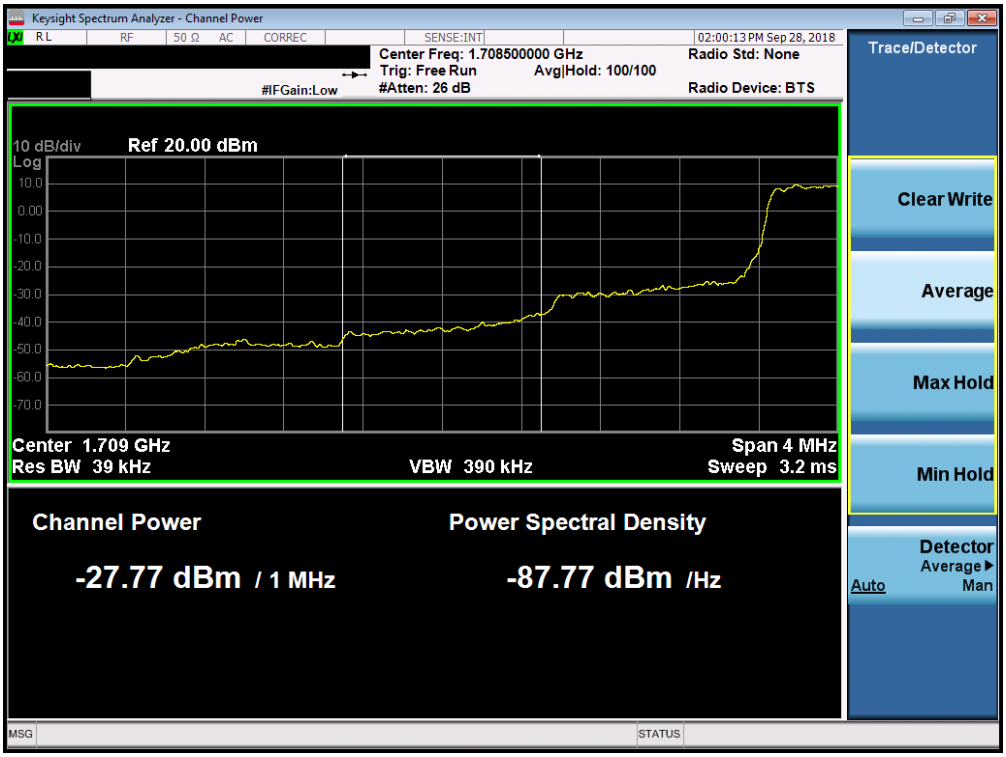
Plot 7-143. Lower Band Edge Plot (Band 26 - 15.0MHz QPSK - Full RB Configuration)

Plot 7-144. Upper Band Edge Plot (Band 26 - 15.0MHz QPSK - Full RB Configuration)

Band 4

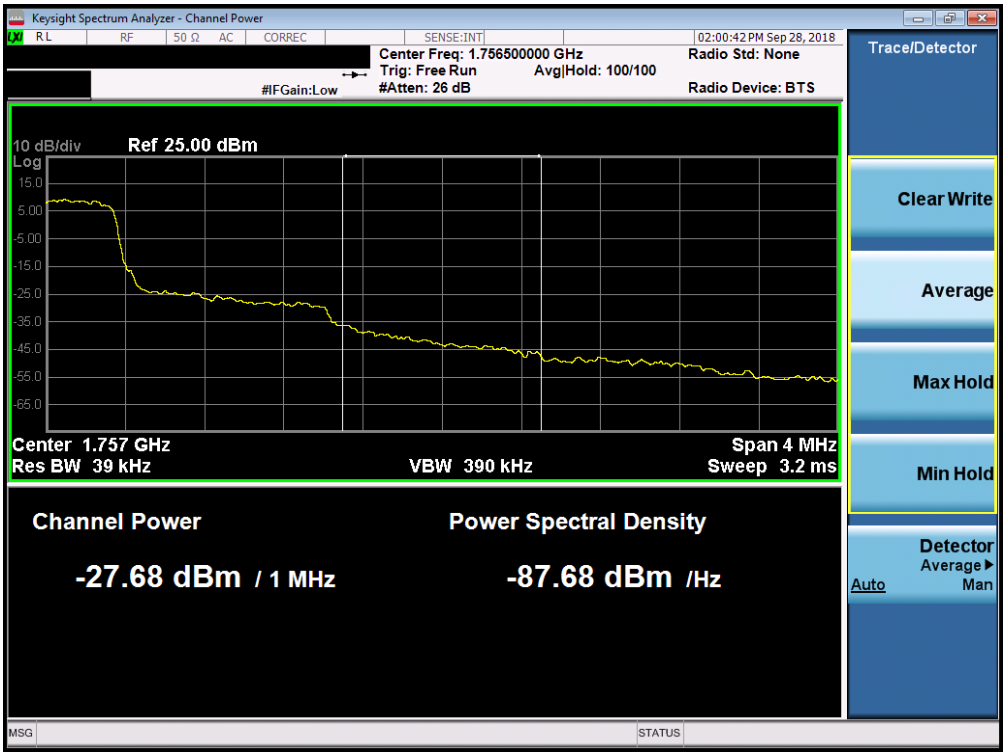


Plot 7-145. Lower Band Edge Plot (Band 4 - 1.4MHz QPSK - Full RB Configuration)

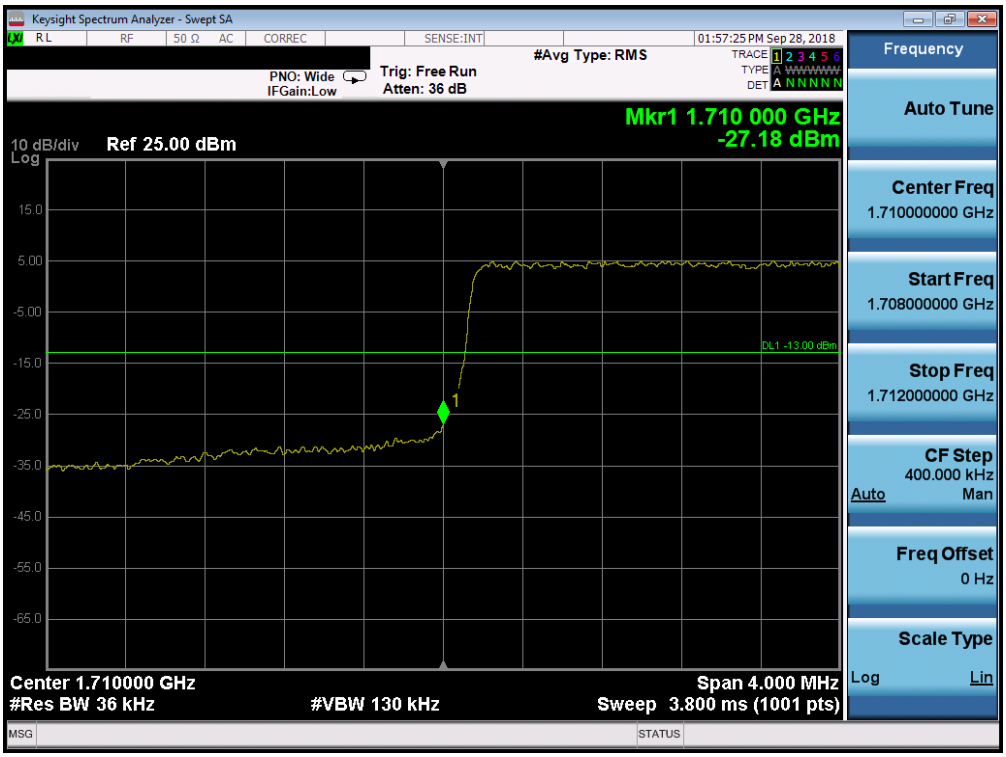


Plot 7-146. Lower Extended Band Edge Plot (Band 4 - 1.4MHz QPSK - Full RB Configuration)

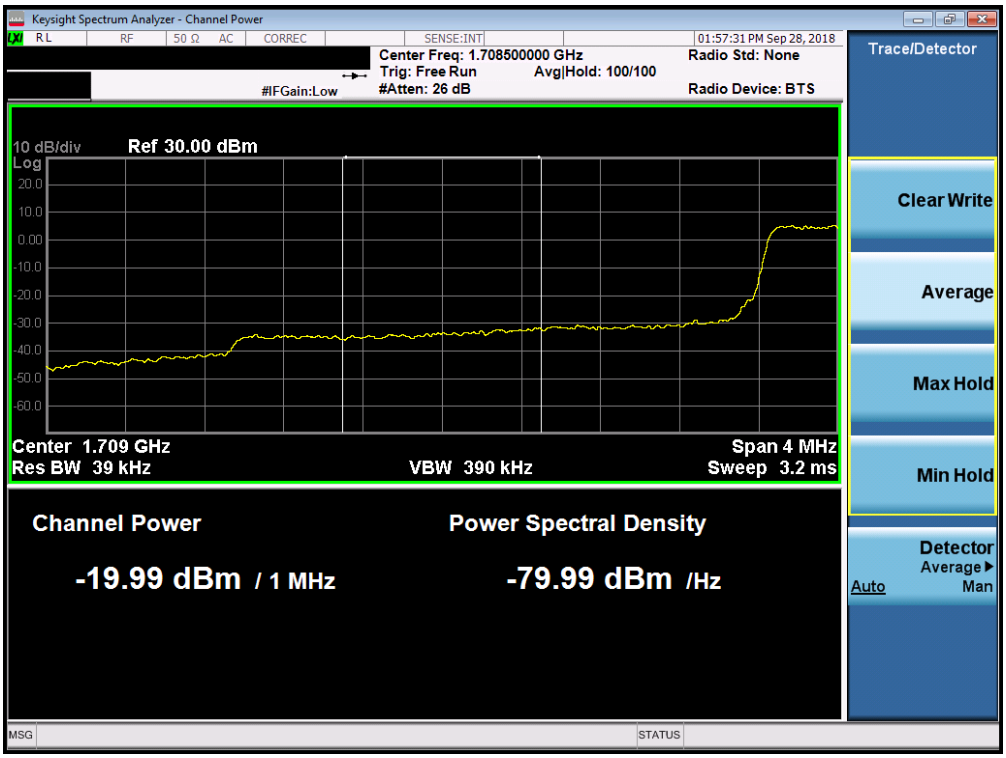
Plot 7-147. Upper Band Edge Plot (Band 4 - 1.4MHz QPSK - Full RB Configuration)



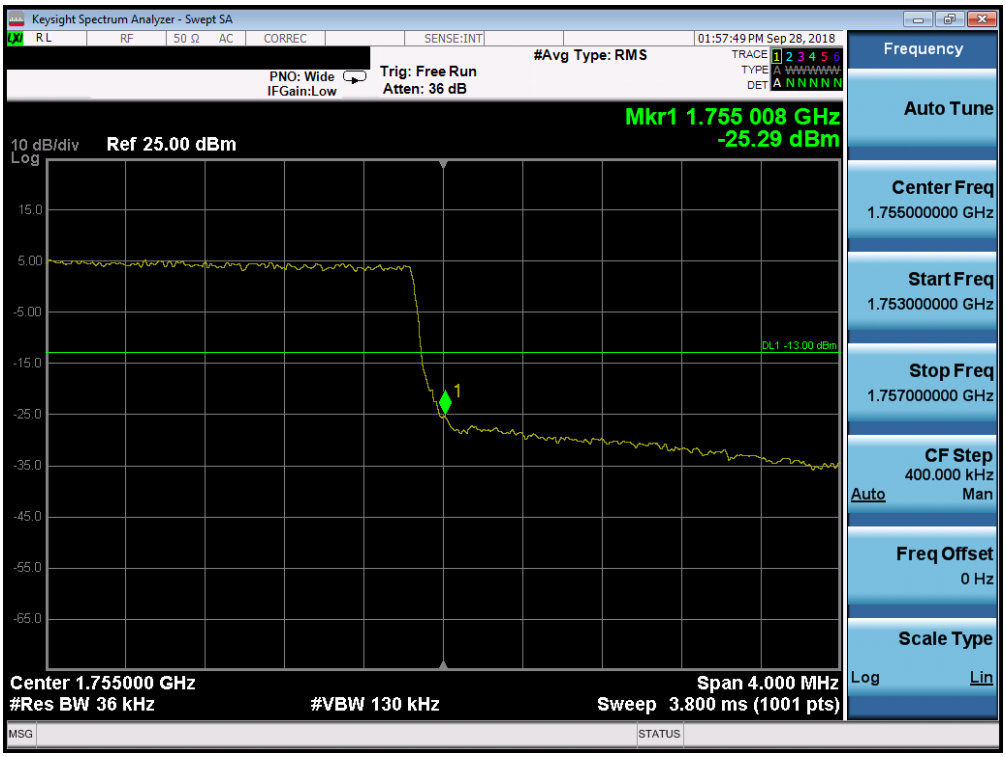
Plot 7-148. Upper Extended Band Edge Plot (Band 4 - 1.4MHz QPSK - Full RB Configuration)



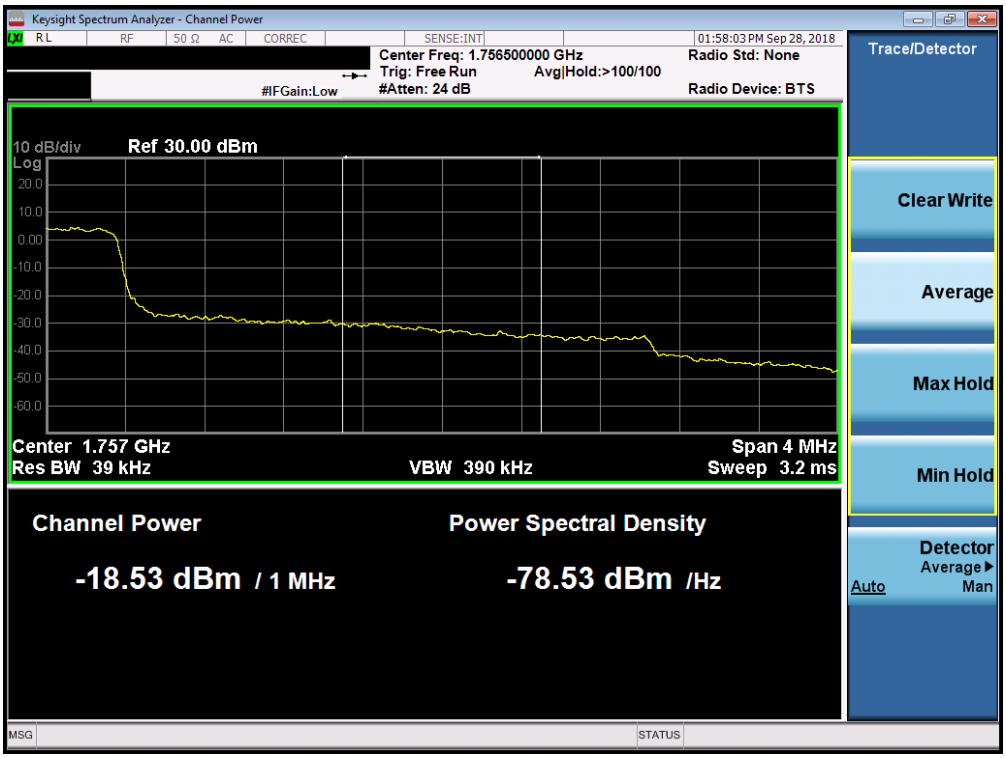
Plot 7-149. Lower Band Edge Plot (Band 4 - 3.0MHz QPSK - Full RB Configuration)



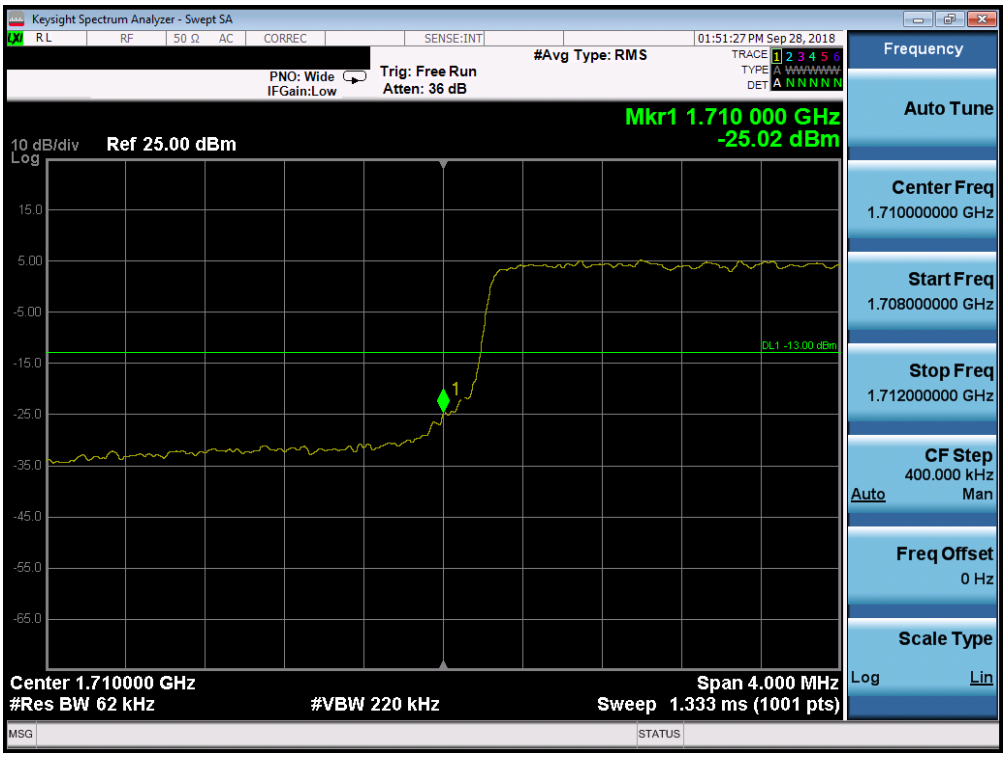
Plot 7-150. Lower Extended Band Edge Plot (Band 4 - 3.0MHz QPSK - Full RB Configuration)



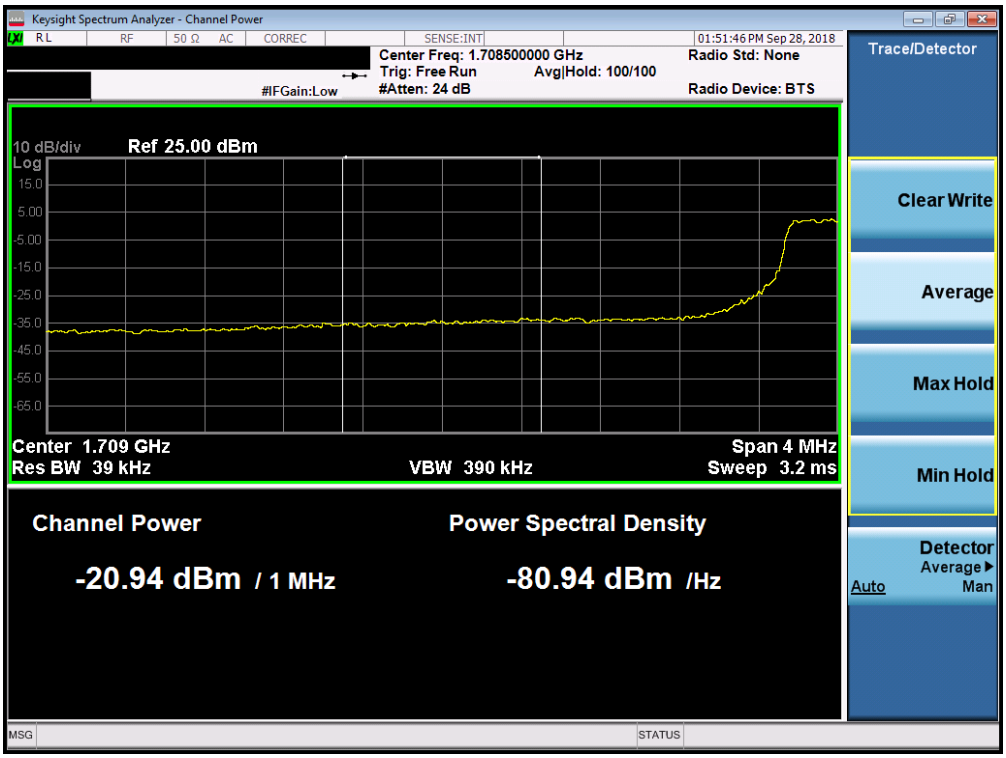
Plot 7-151. Upper Band Edge Plot (Band 4 - 3.0MHz QPSK - Full RB Configuration)



Plot 7-152. Upper Extended Band Edge Plot (Band 4 - 3.0MHz QPSK - Full RB Configuration)

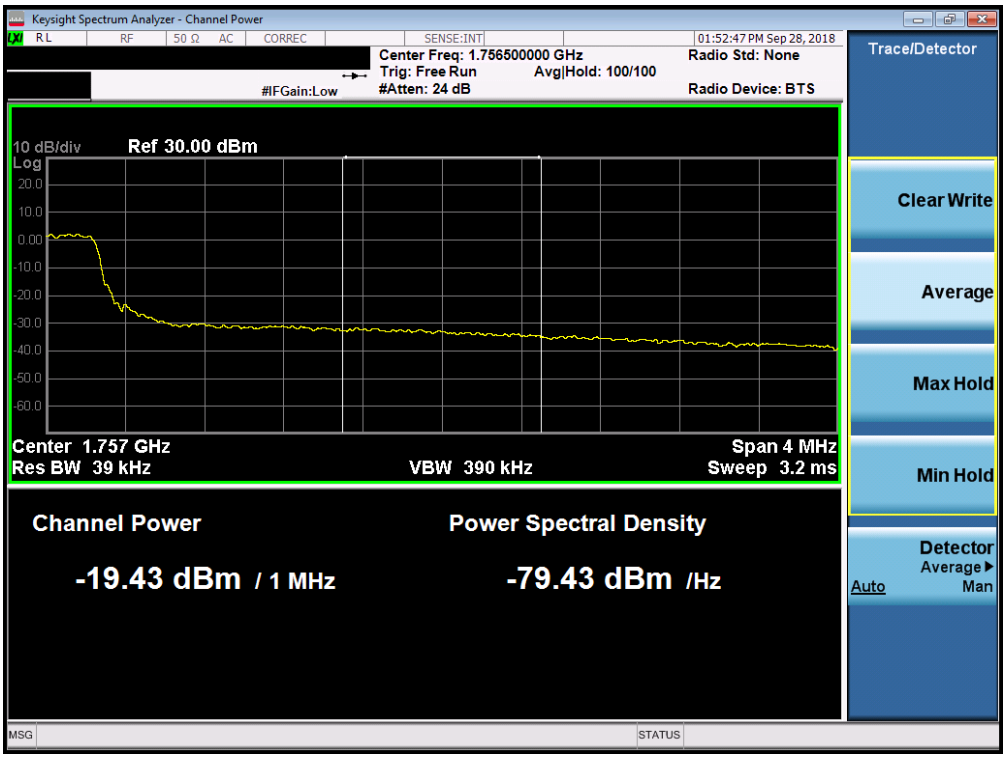


Plot 7-153. Lower Band Edge Plot (Band 4 - 5.0MHz QPSK - Full RB Configuration)

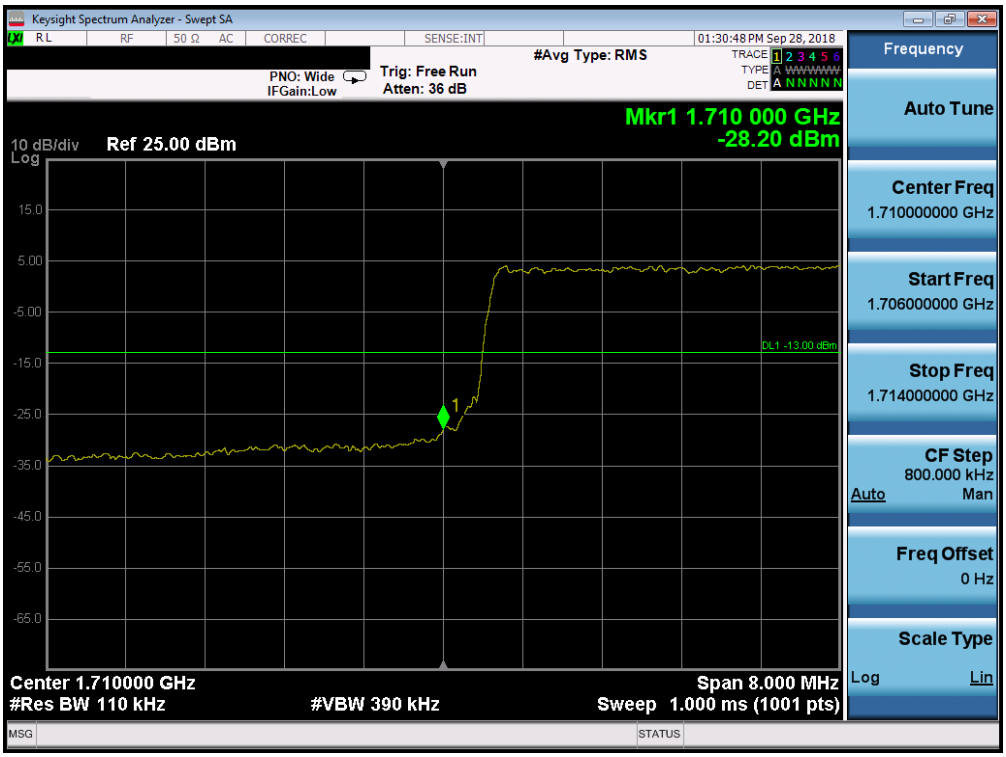


Plot 7-154. Lower Extended Band Edge Plot (Band 4 - 5.0MHz QPSK - Full RB Configuration)

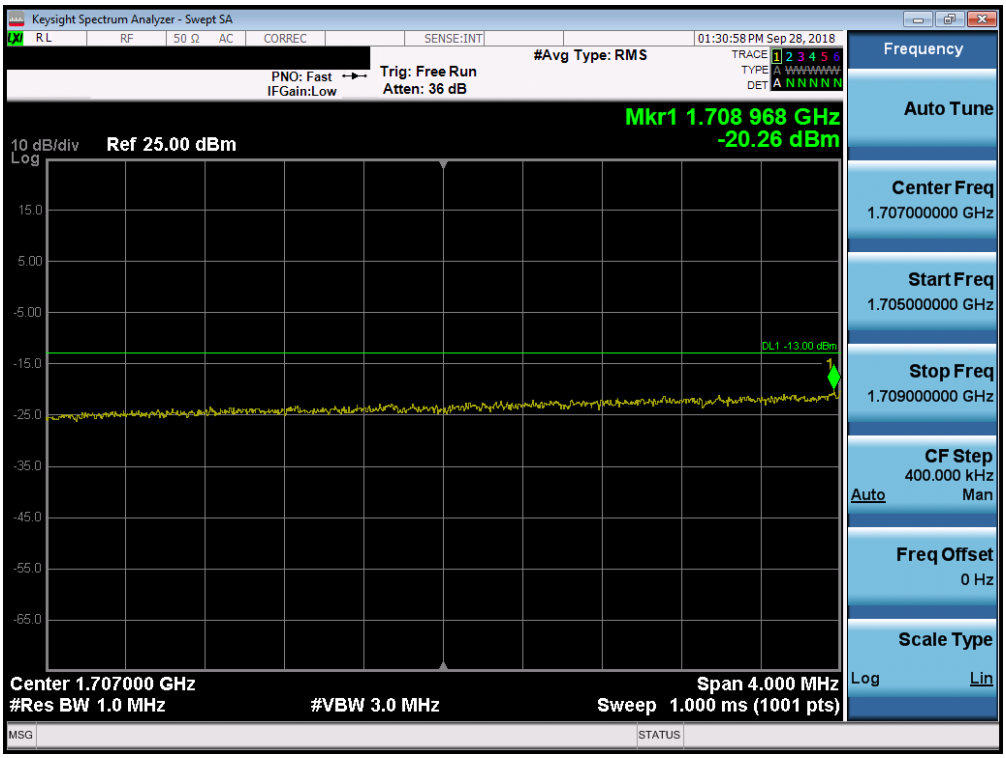
Plot 7-155. Upper Band Edge Plot (Band 4 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-156. Upper Extended Band Edge Plot (Band 4 - 5.0MHz QPSK - Full RB Configuration)

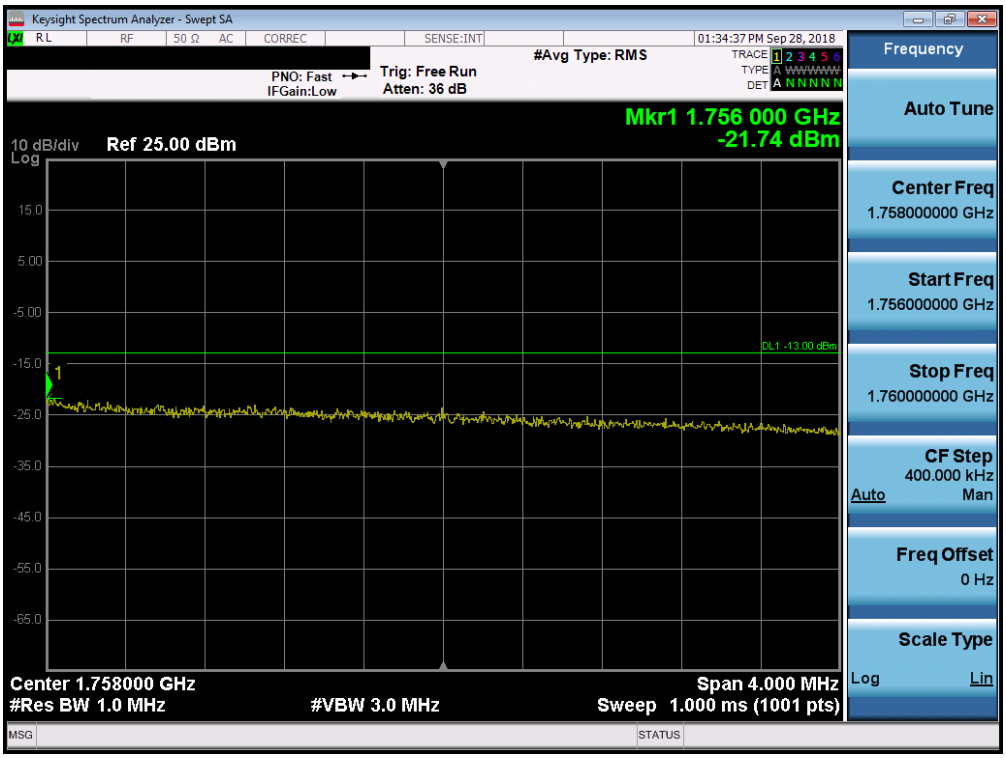


Plot 7-157. Lower Band Edge Plot (Band 4 - 10.0MHz QPSK - Full RB Configuration)

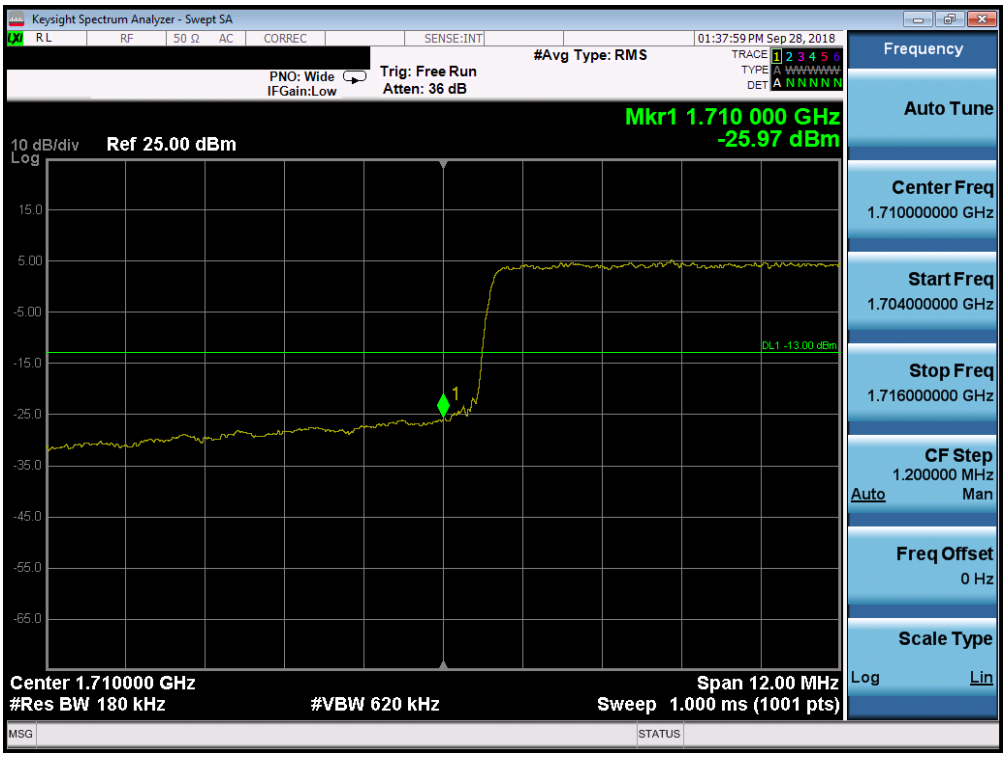


Plot 7-158. Lower Extended Band Edge Plot (Band 4 - 10.0MHz QPSK - Full RB Configuration)

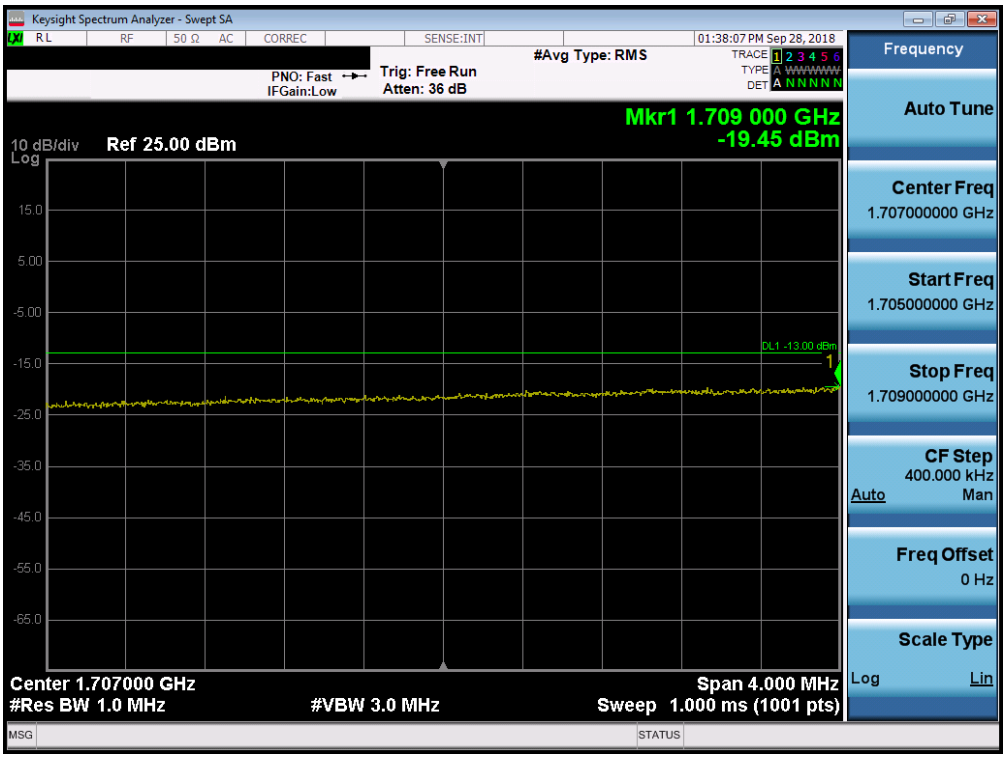
Plot 7-159. Upper Band Edge Plot (Band 4 - 10.0MHz QPSK - Full RB Configuration)



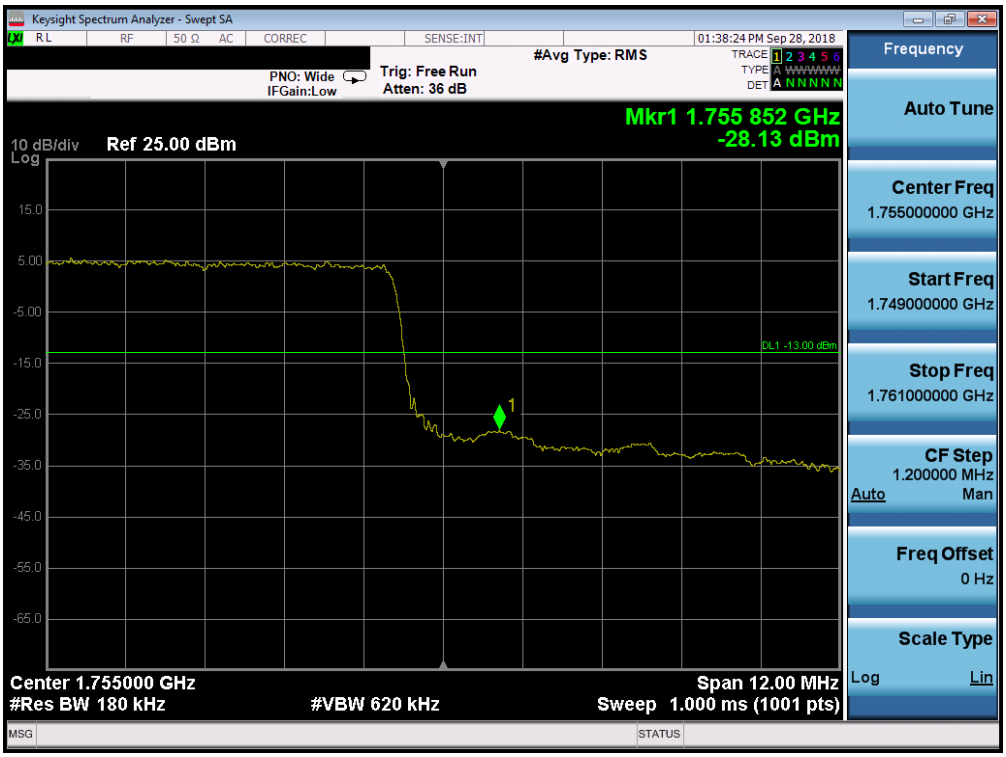
Plot 7-160. Upper Extended Band Edge Plot (Band 4 - 10.0MHz QPSK - Full RB Configuration)



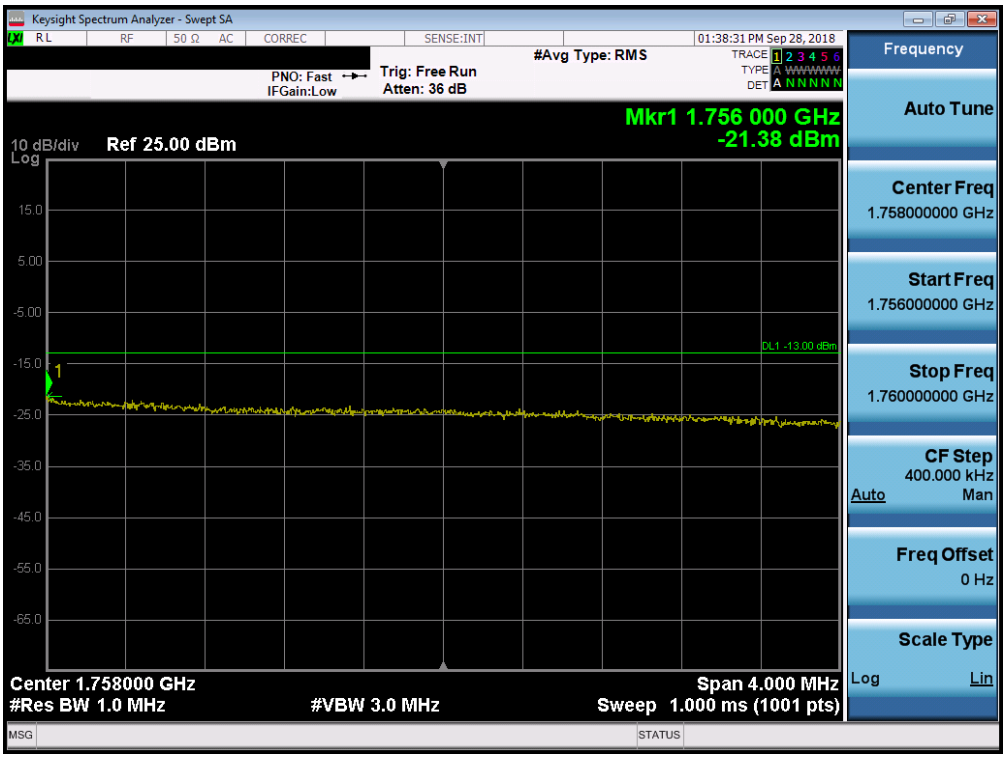
Plot 7-161. Lower Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)



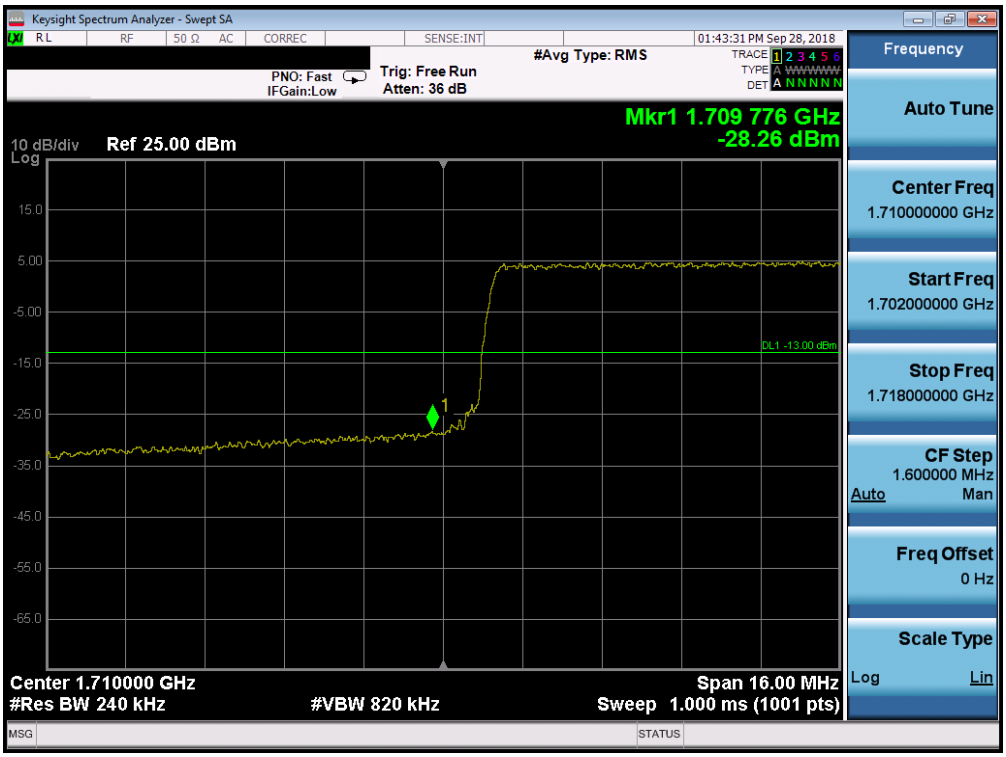
Plot 7-162. Lower Extended Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)



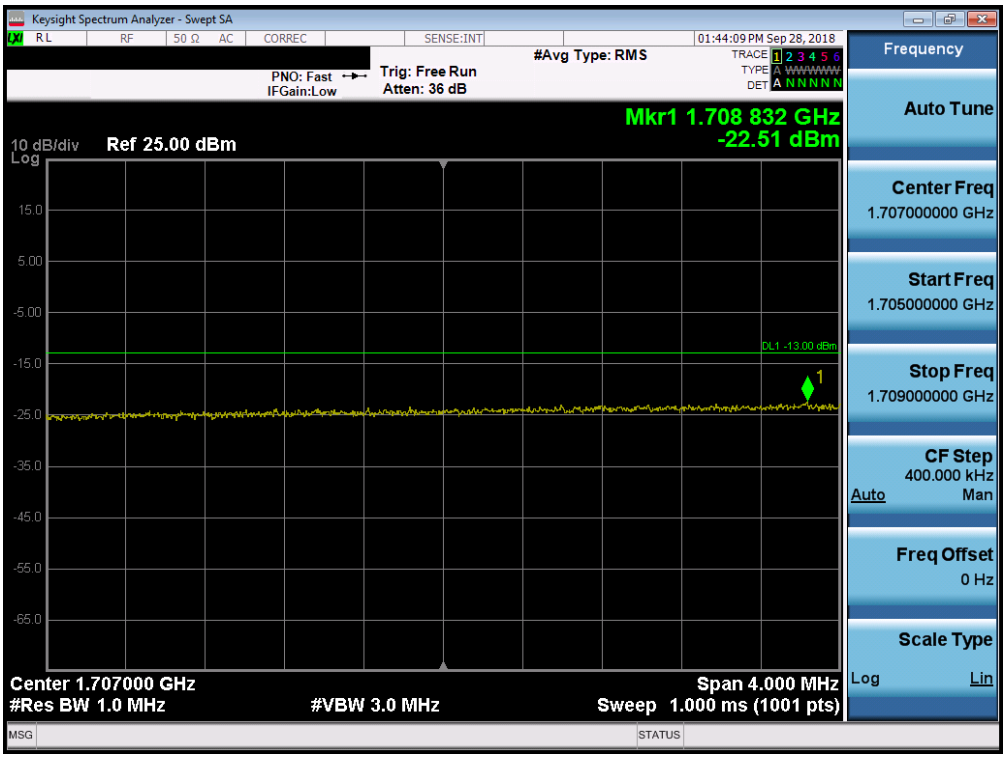
Plot 7-163. Upper Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)



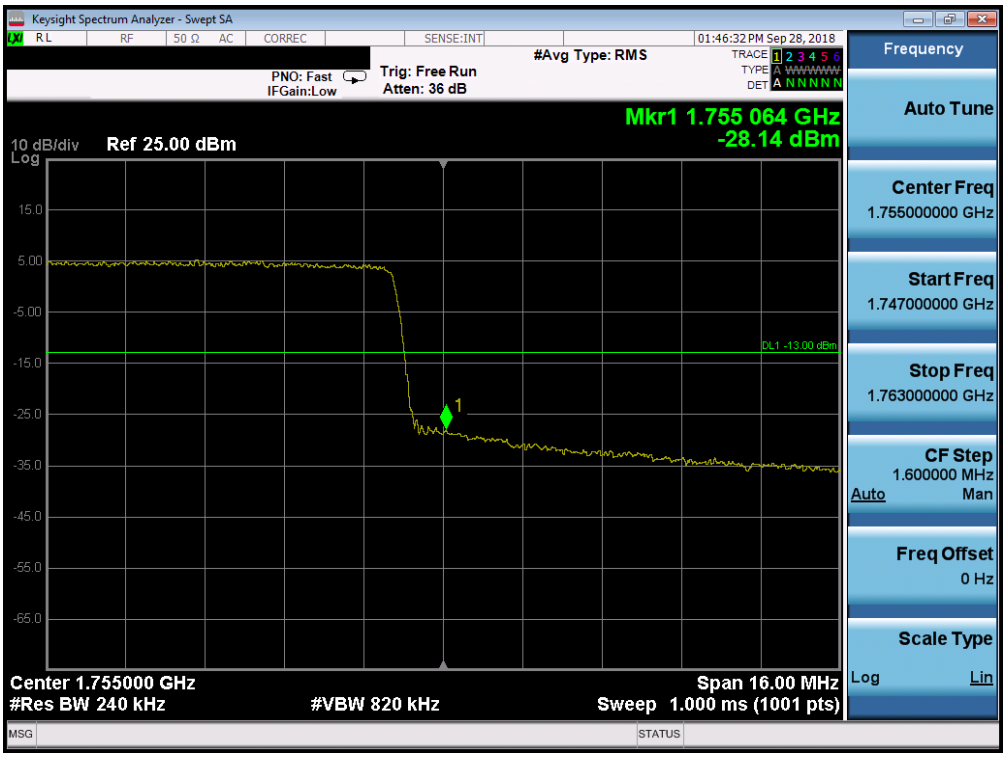
Plot 7-164. Upper Extended Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)



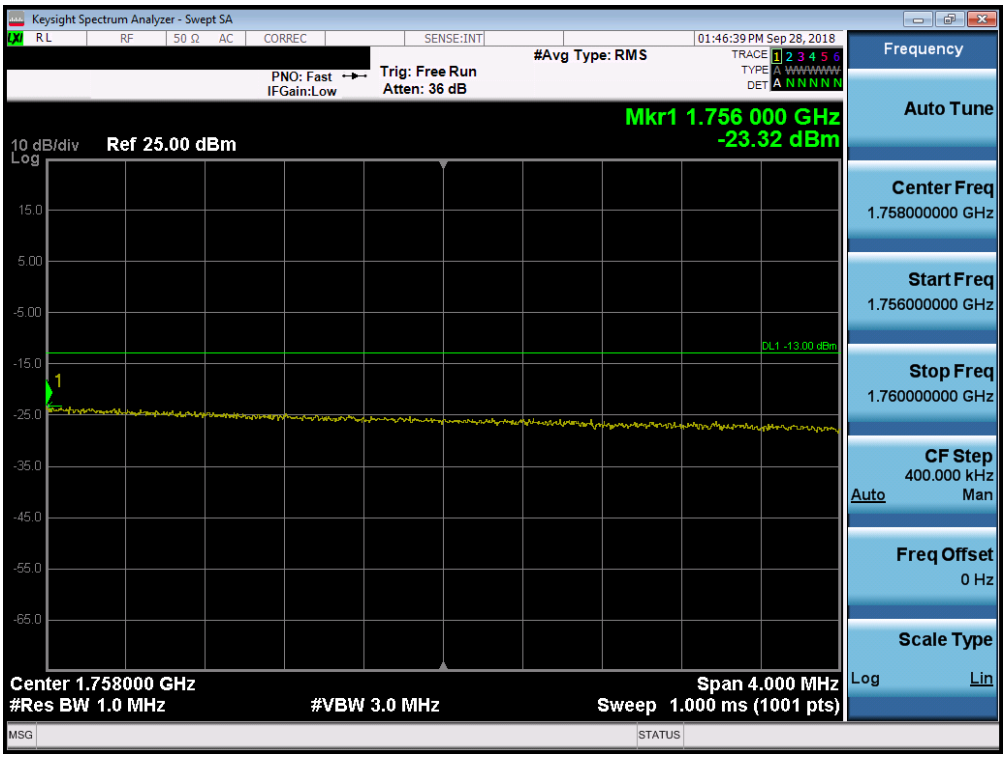
Plot 7-165. Lower Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-166. Lower Extended Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)

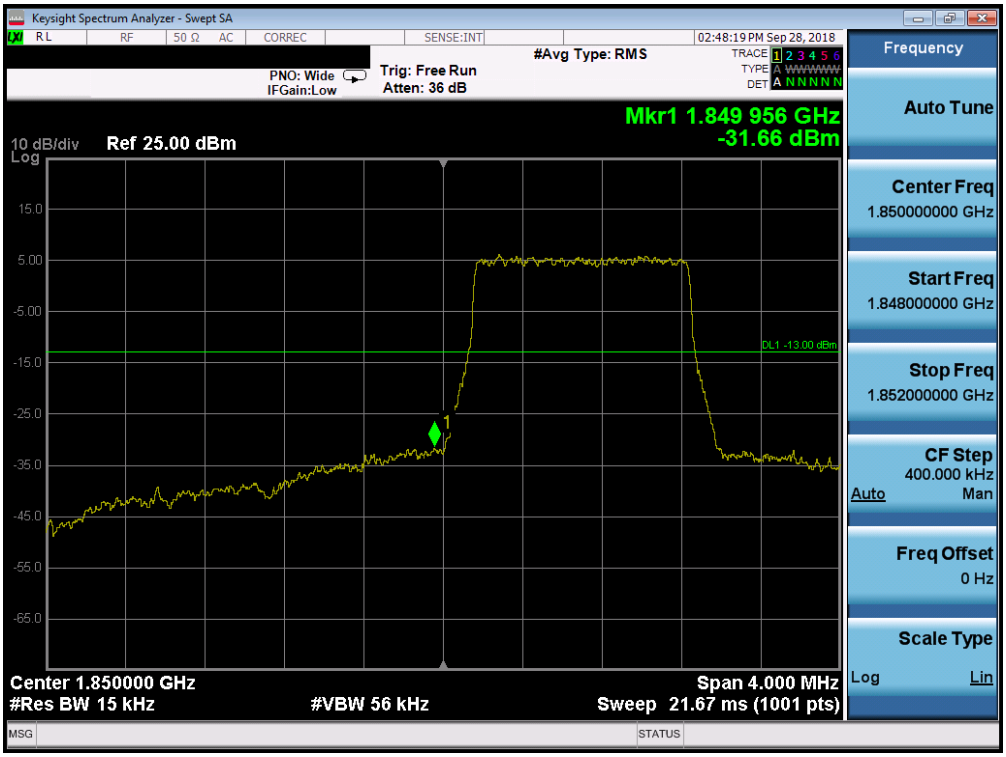


Plot 7-167. Upper Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)

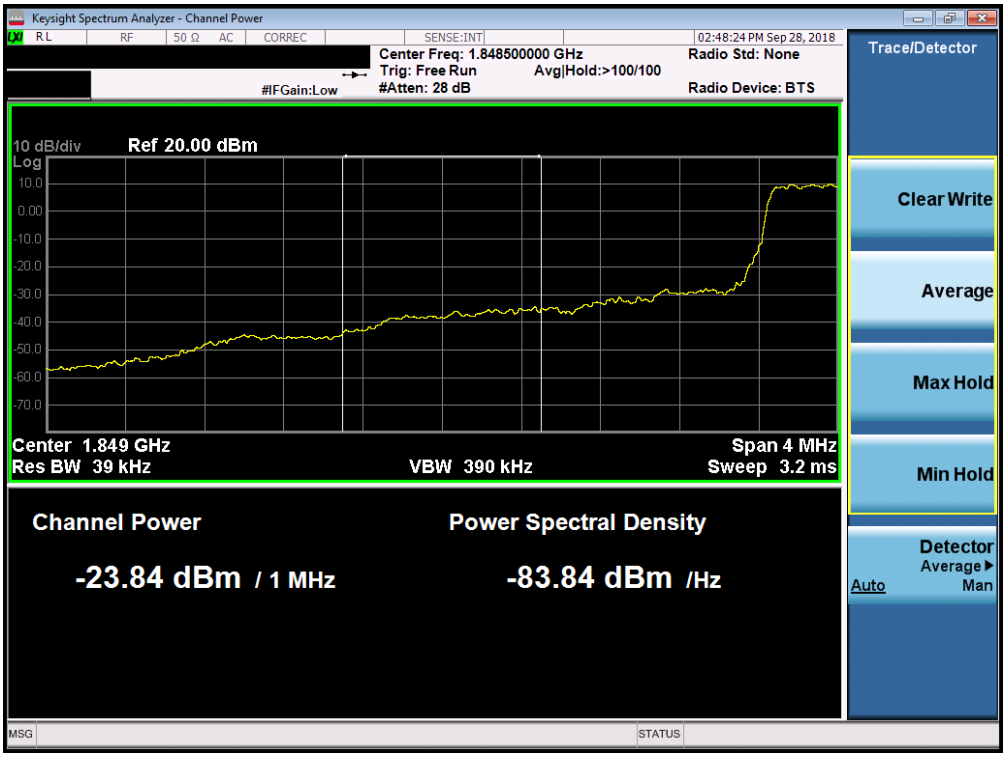


Plot 7-168. Upper Extended Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)

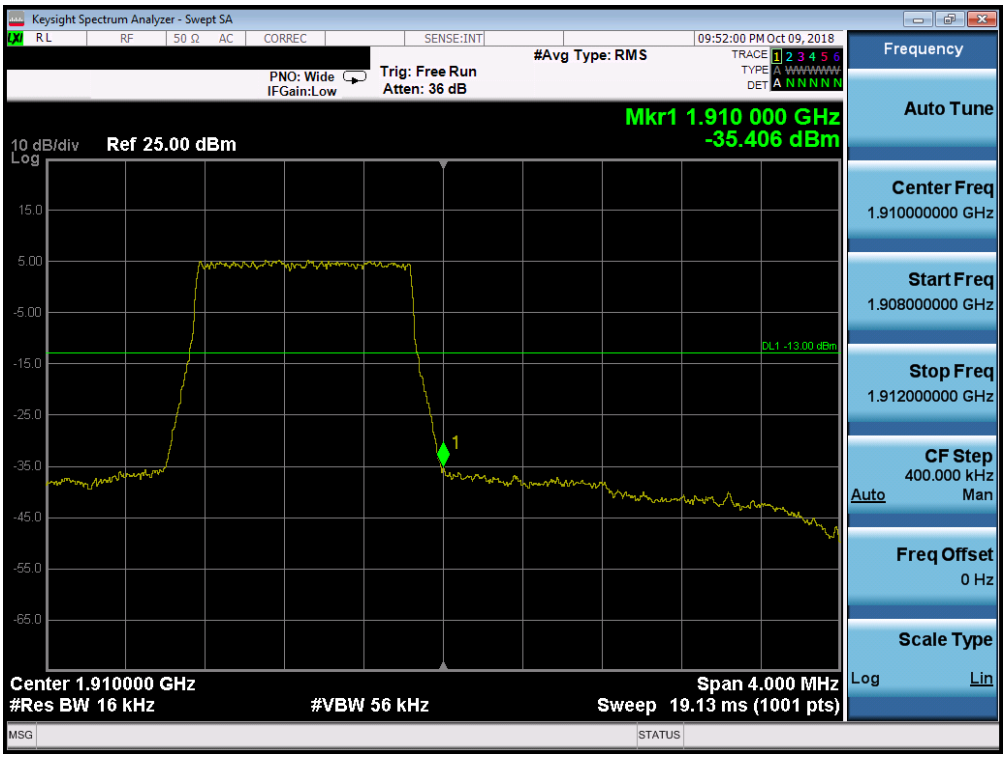
Band 25/2



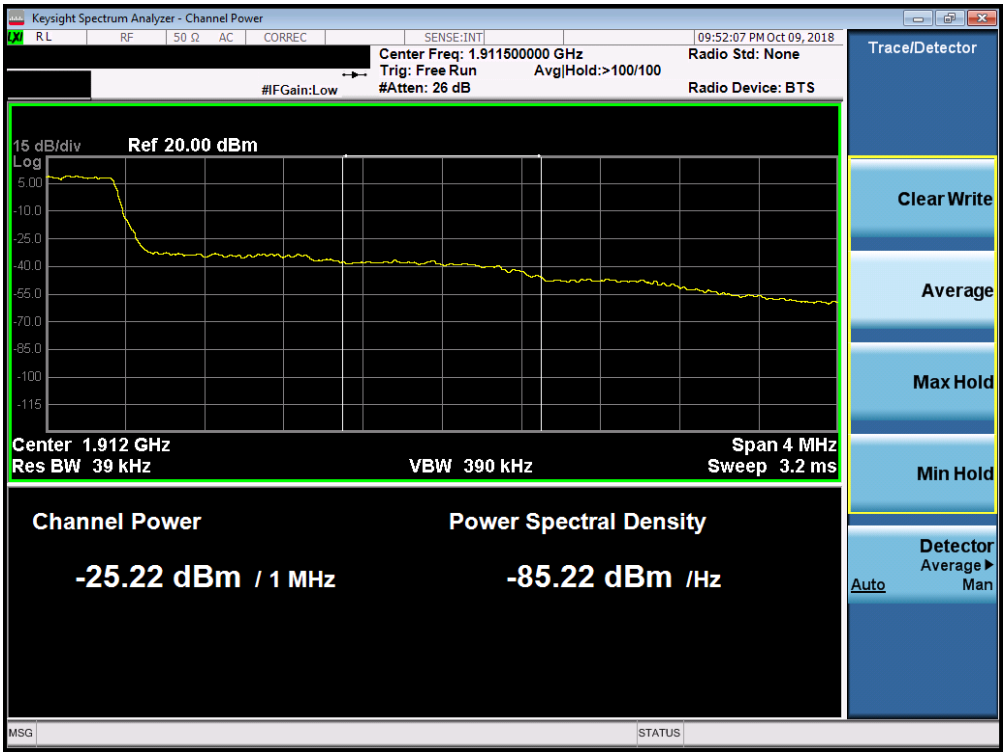
Plot 7-169. Lower Band Edge Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)



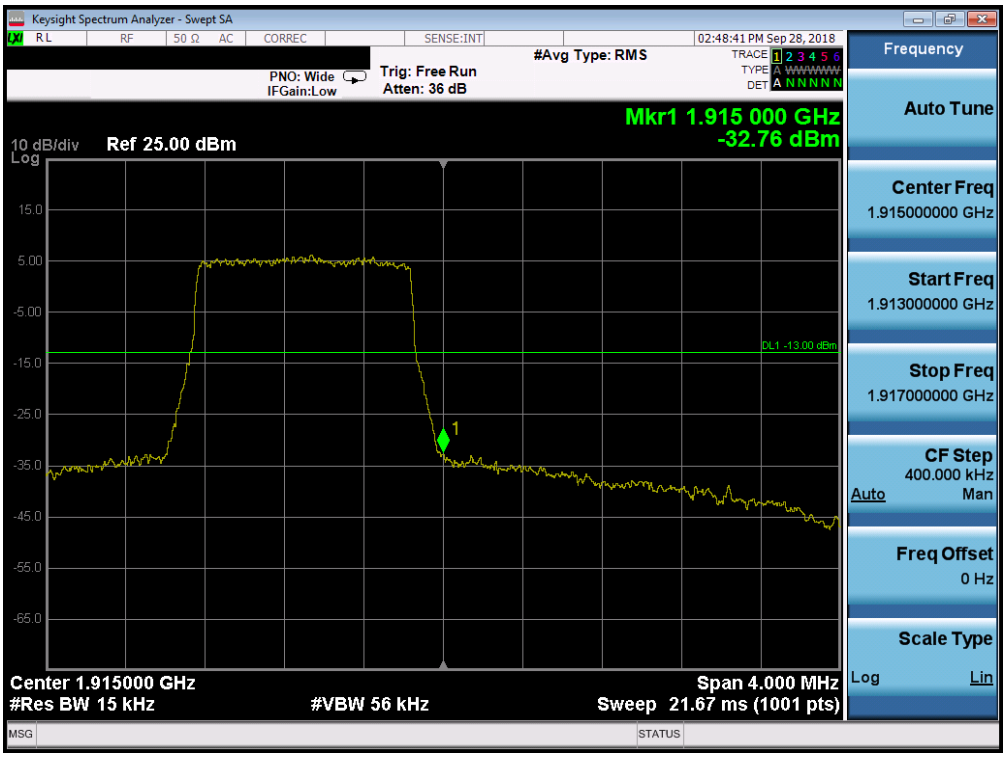
Plot 7-170. Lower Extended Band Edge Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)



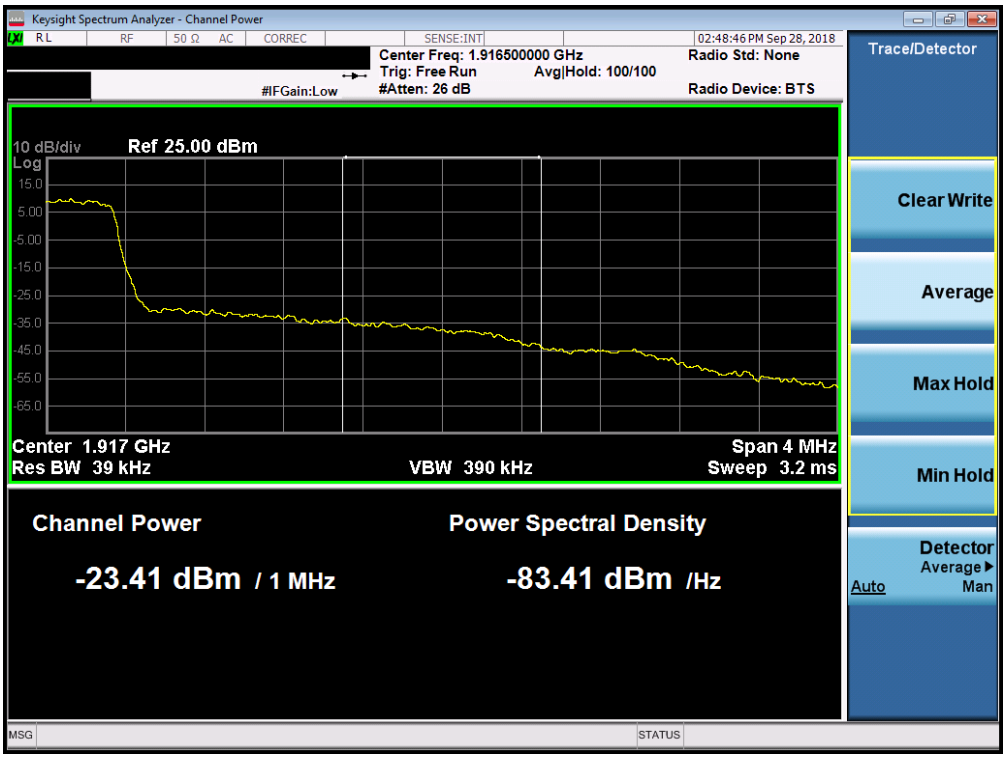
Plot 7-171. Upper Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)



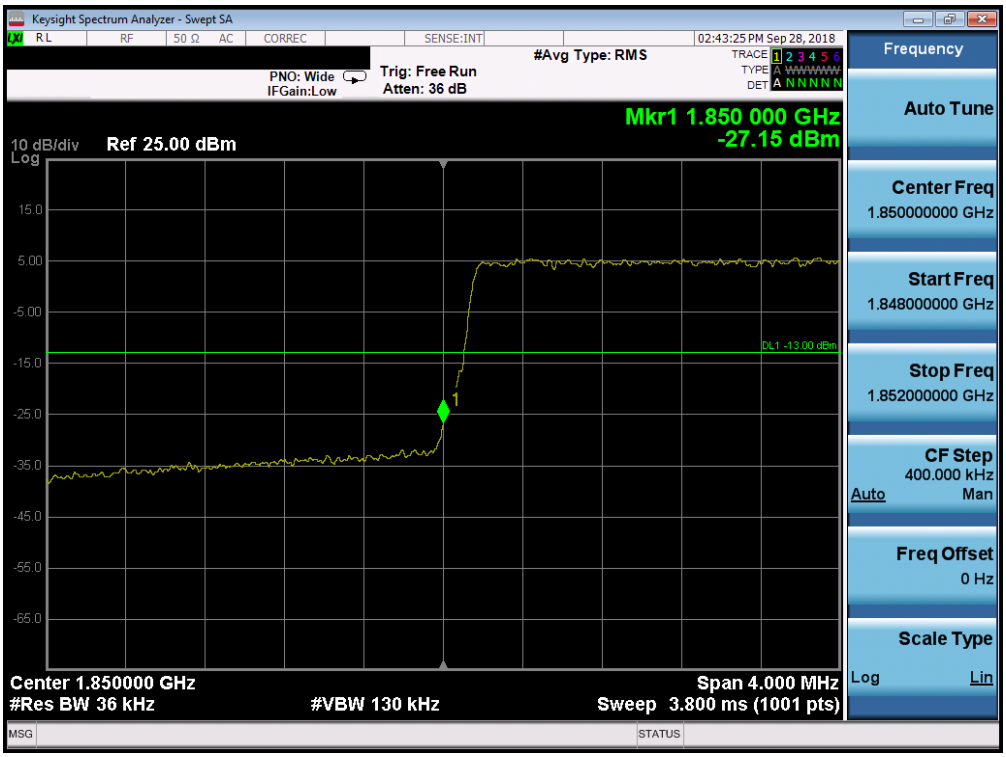
Plot 7-172. Upper Extended Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)



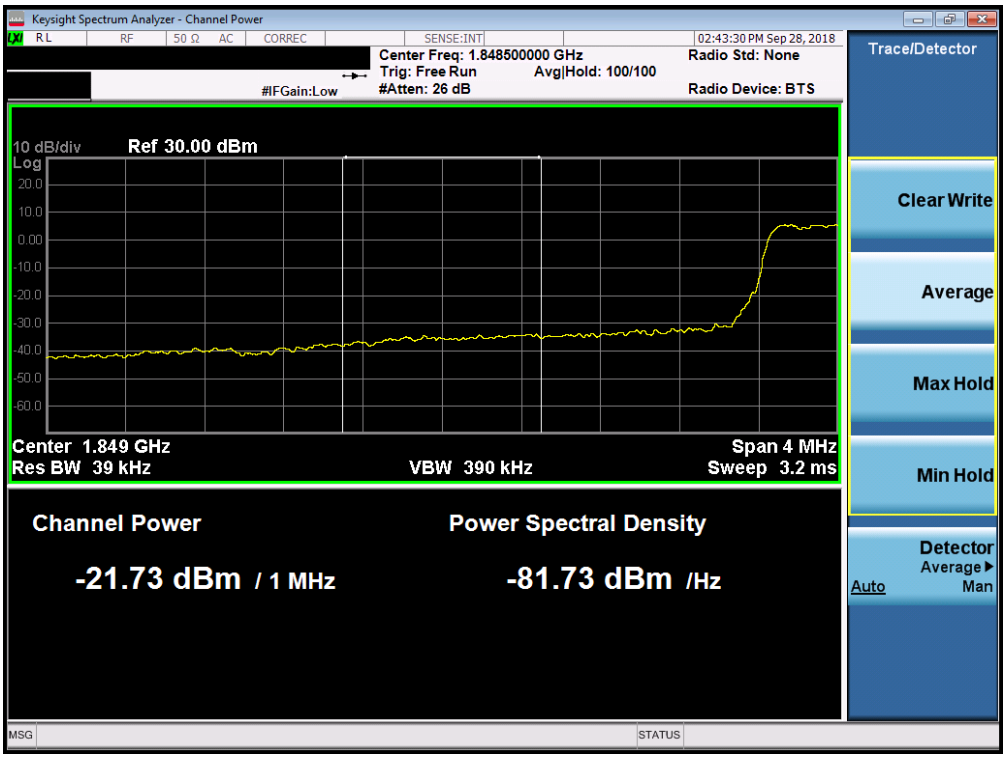
Plot 7-173. Upper Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)



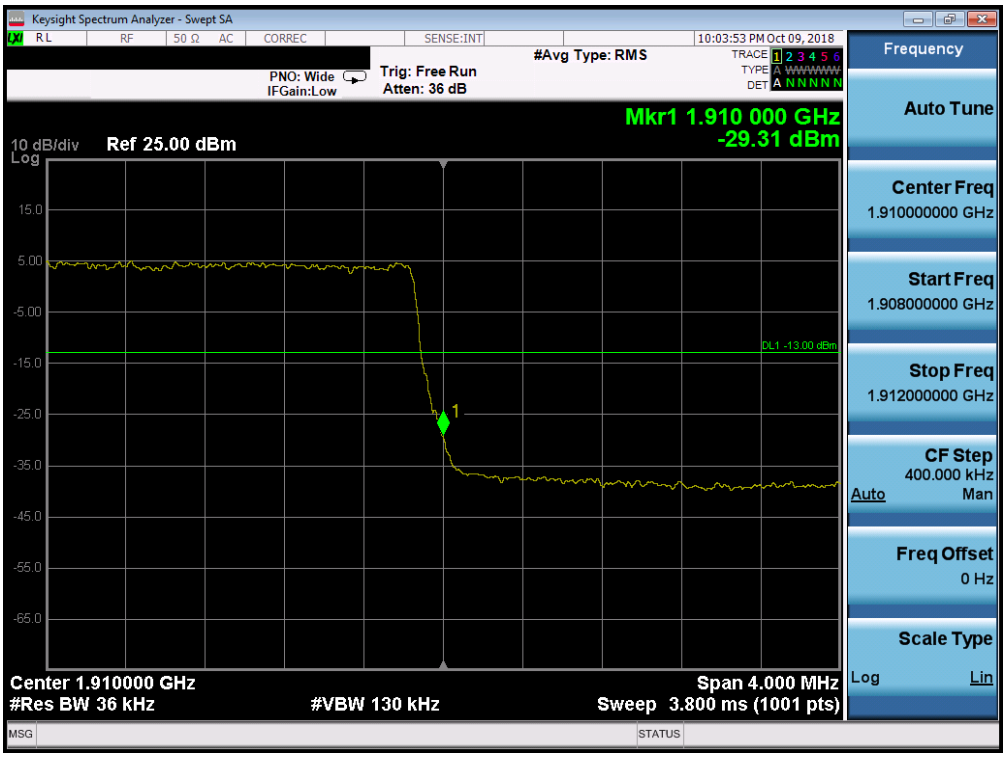
Plot 7-174. Upper Extended Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)



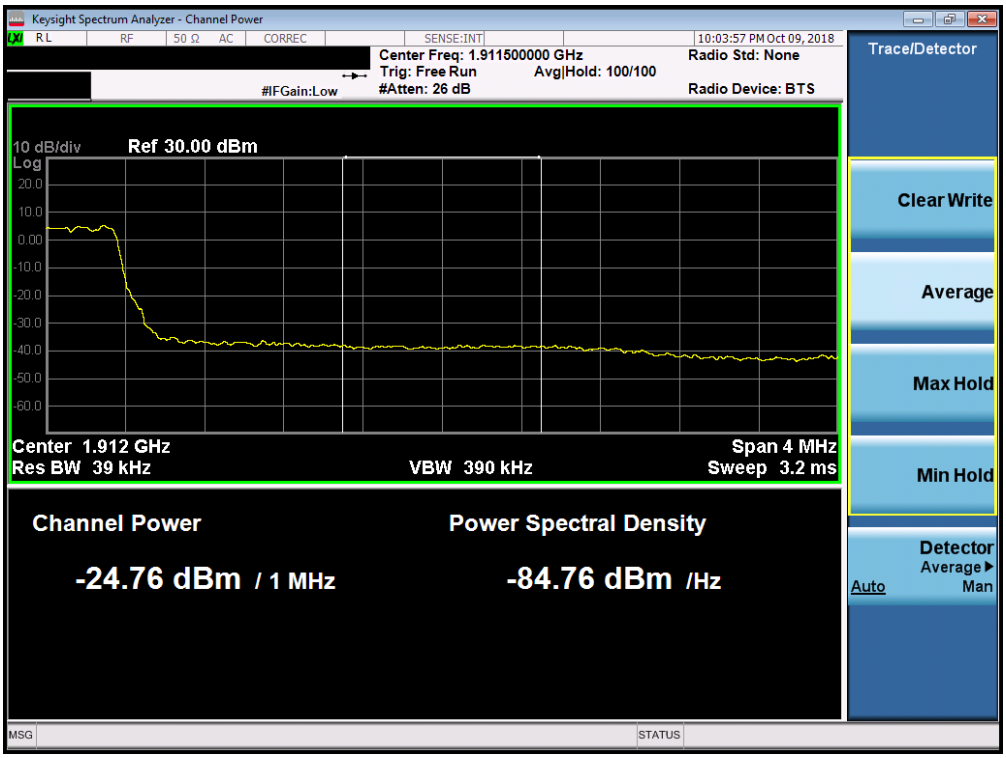
Plot 7-175. Lower Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)



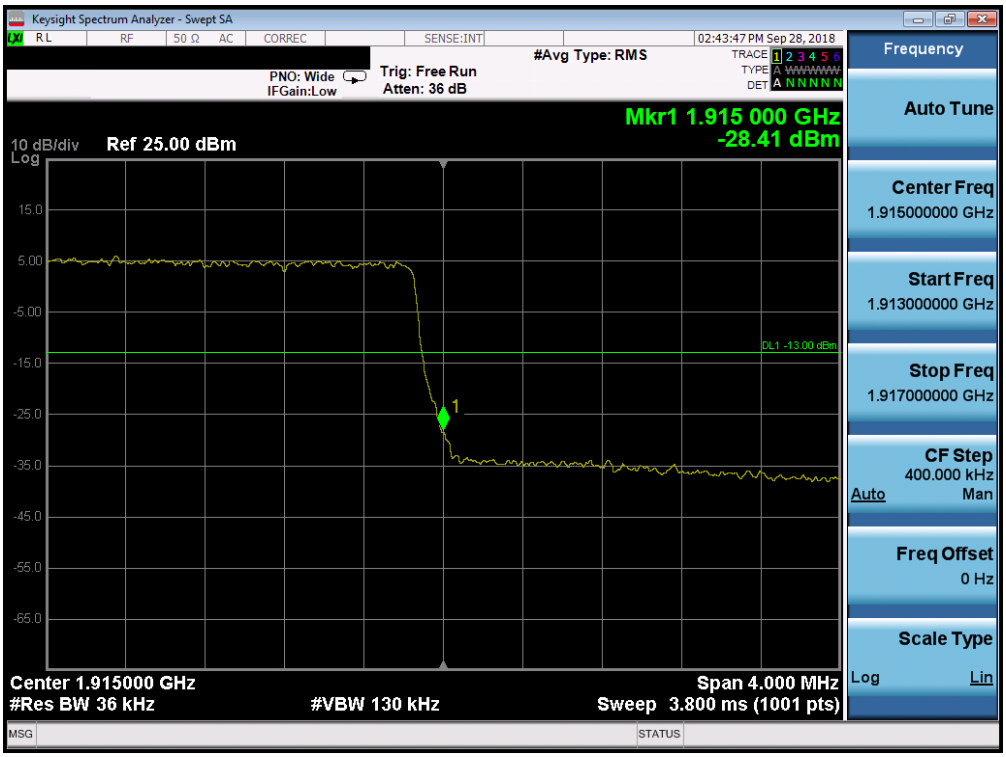
Plot 7-176. Lower Extended Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)



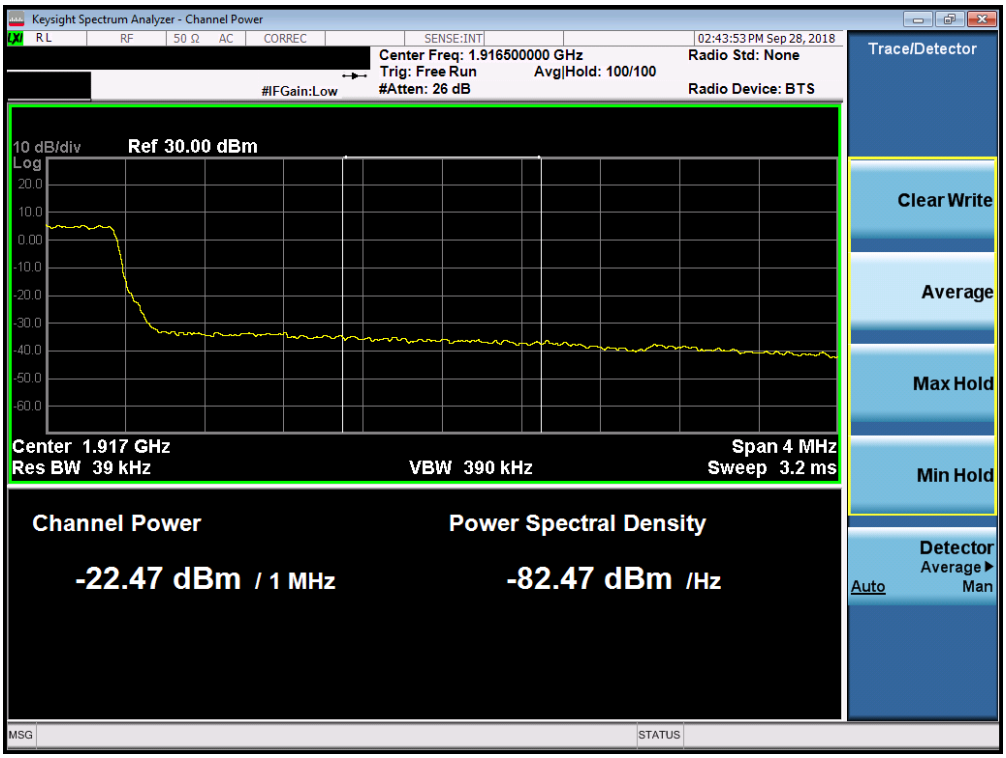
Plot 7-177. Upper Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)



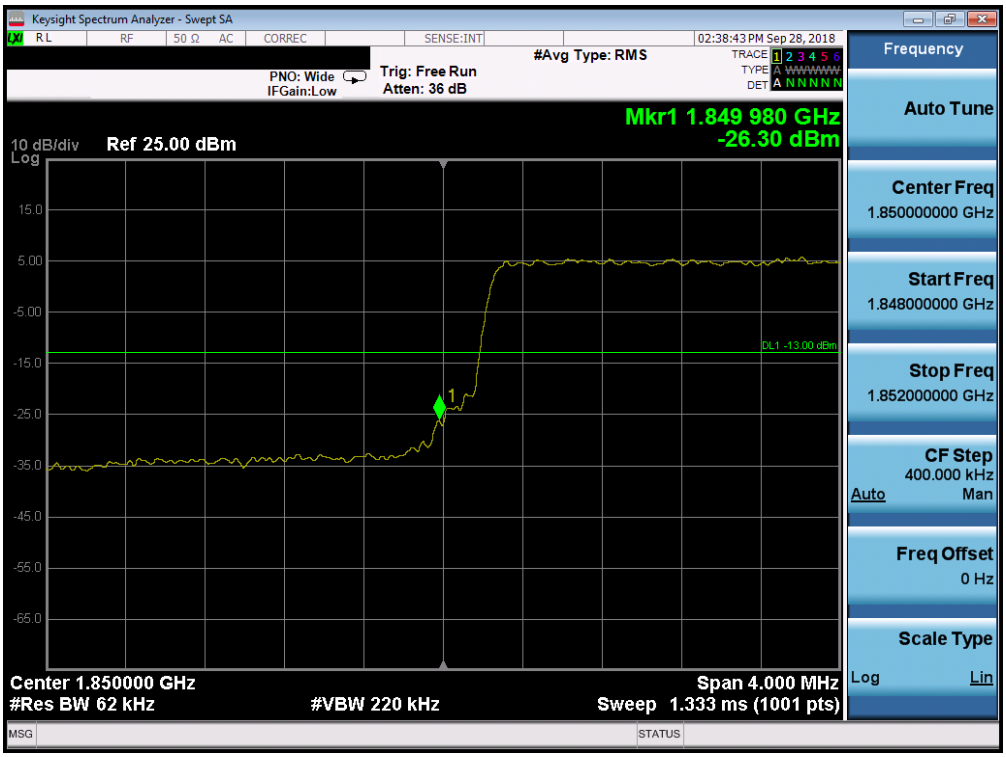
Plot 7-178. Upper Extended Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)



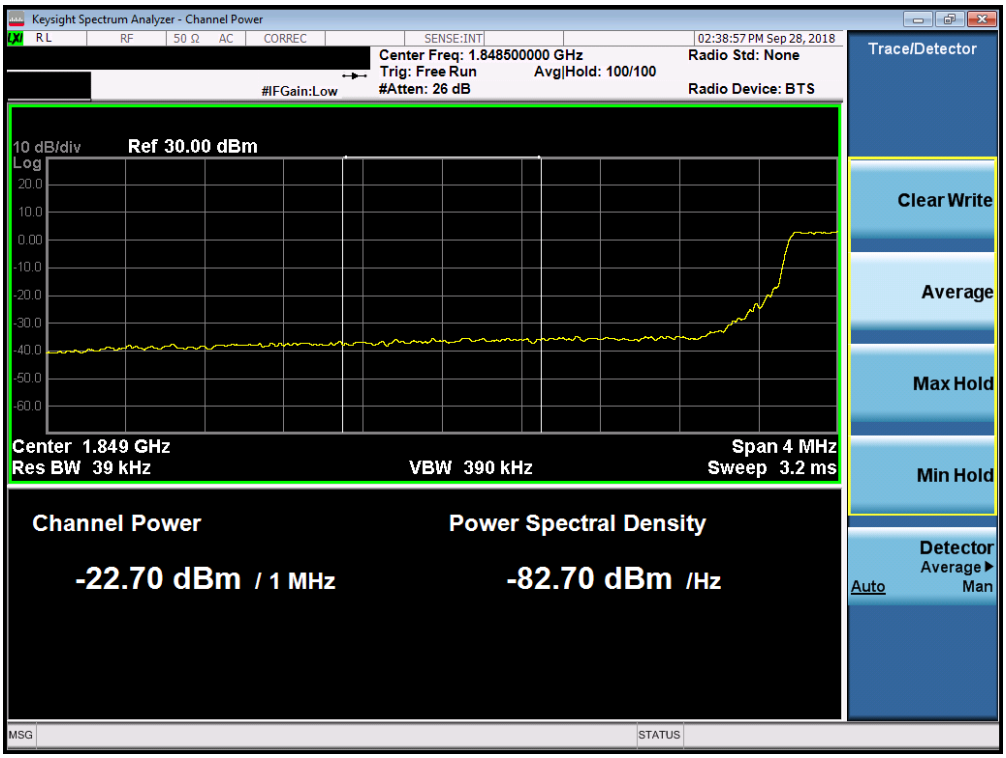
Plot 7-179. Upper Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)



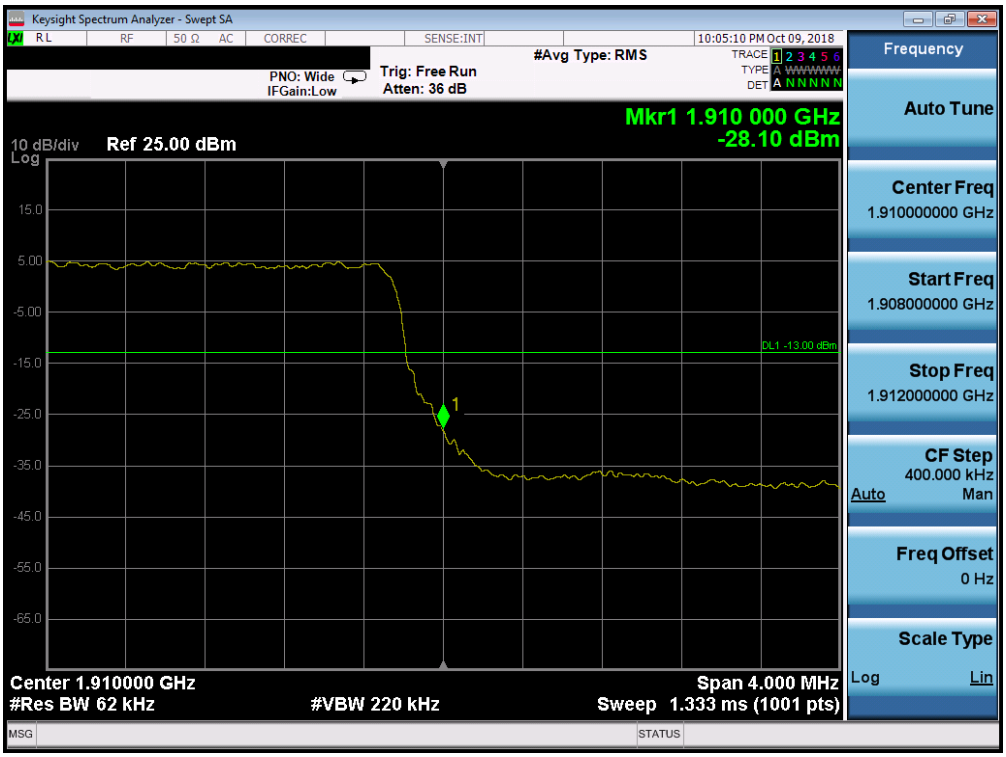
Plot 7-180. Upper Extended Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)



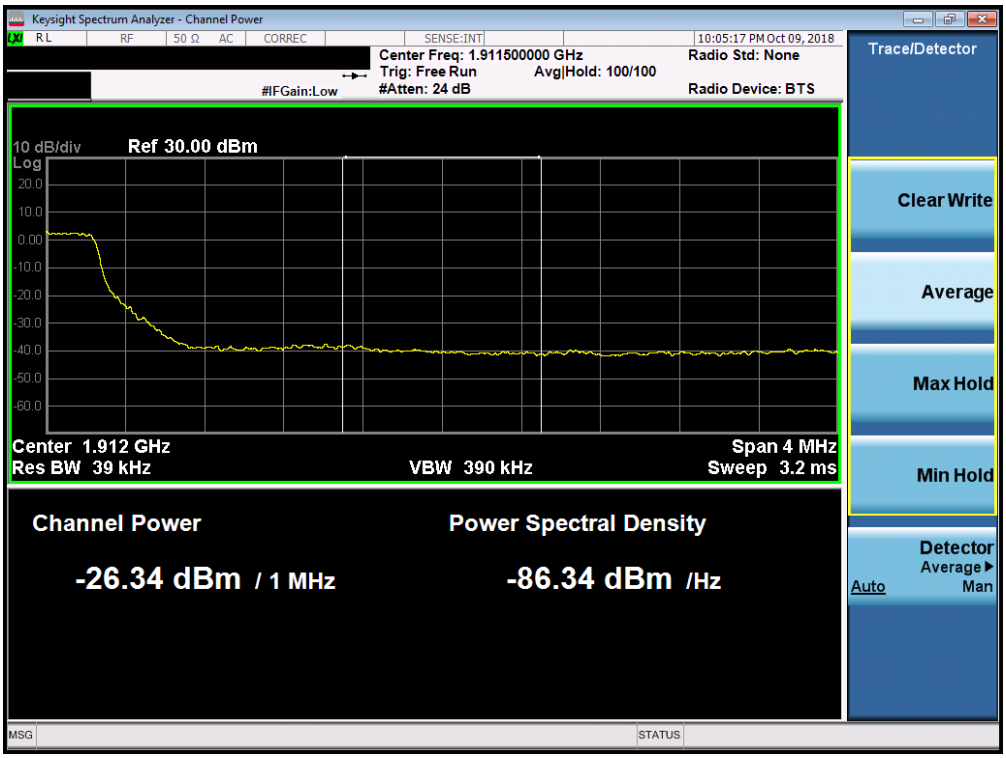
Plot 7-181. Lower Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)



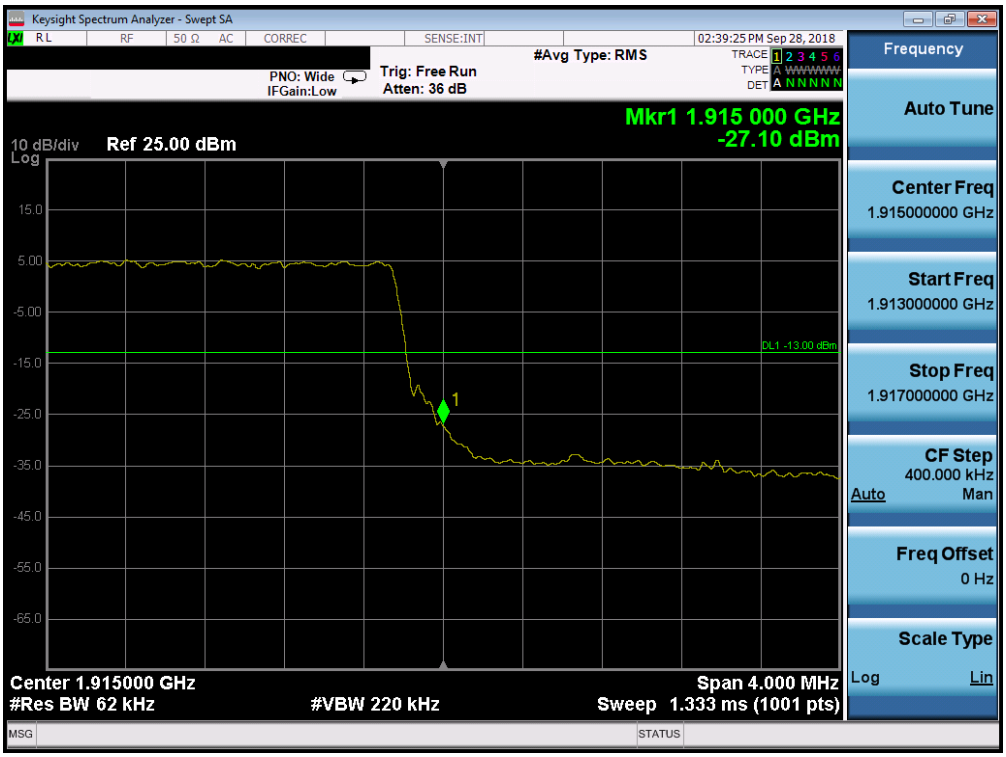
Plot 7-182. Lower Extended Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)



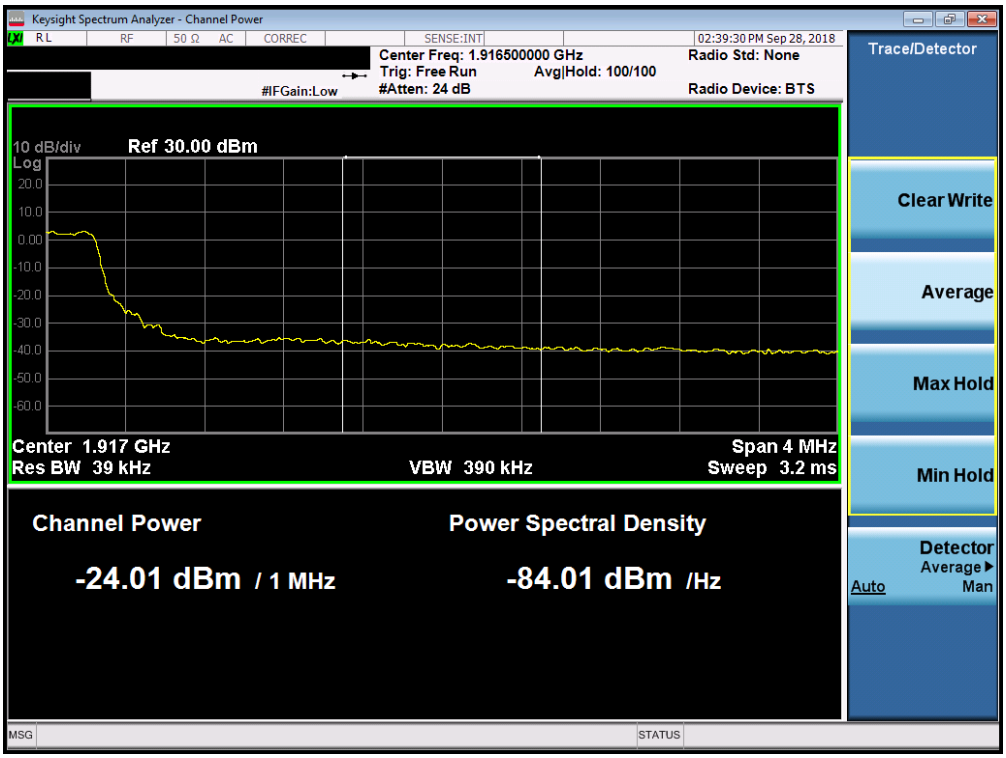
Plot 7-183. Upper Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)



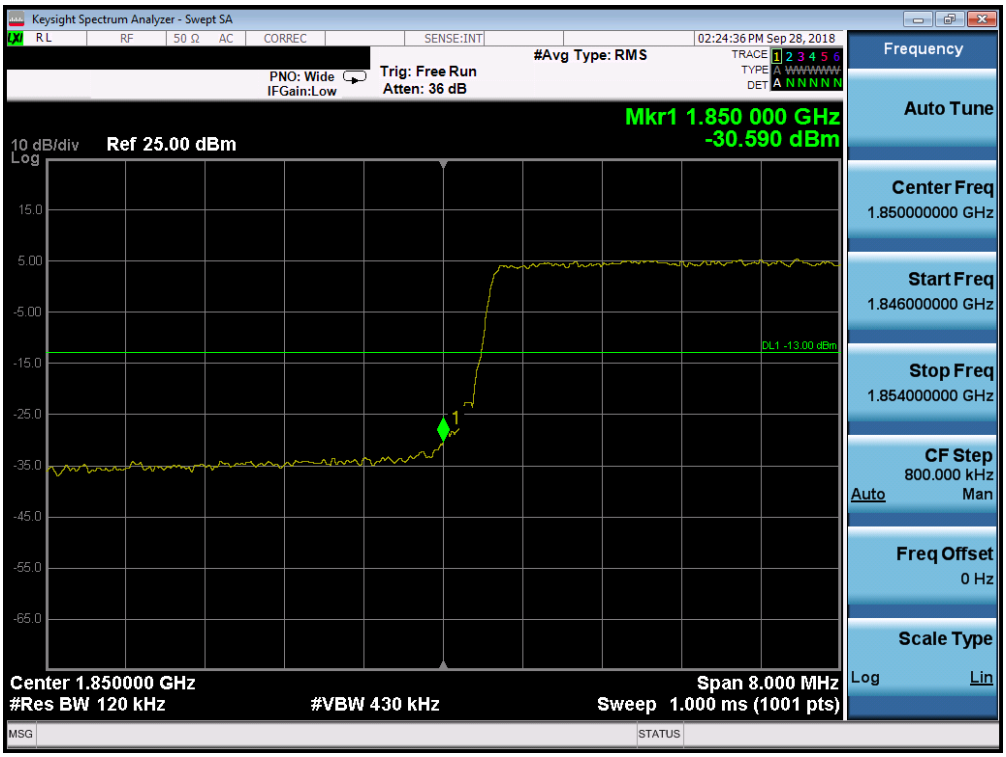
Plot 7-184. Upper Extended Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)



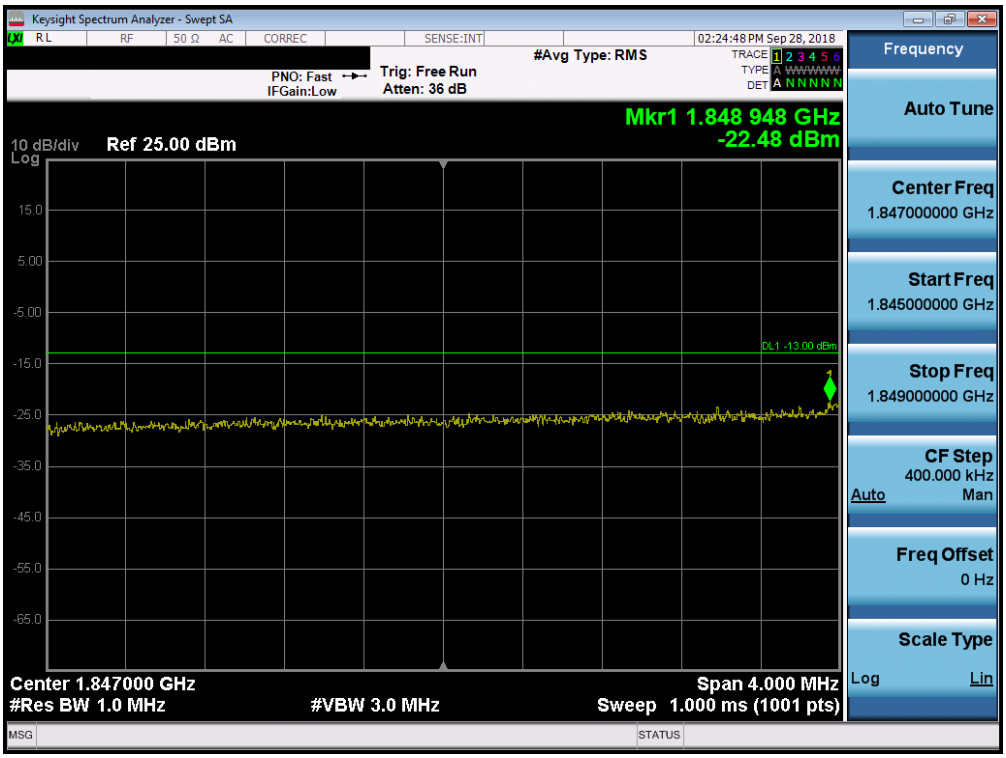
Plot 7-185. Upper Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)



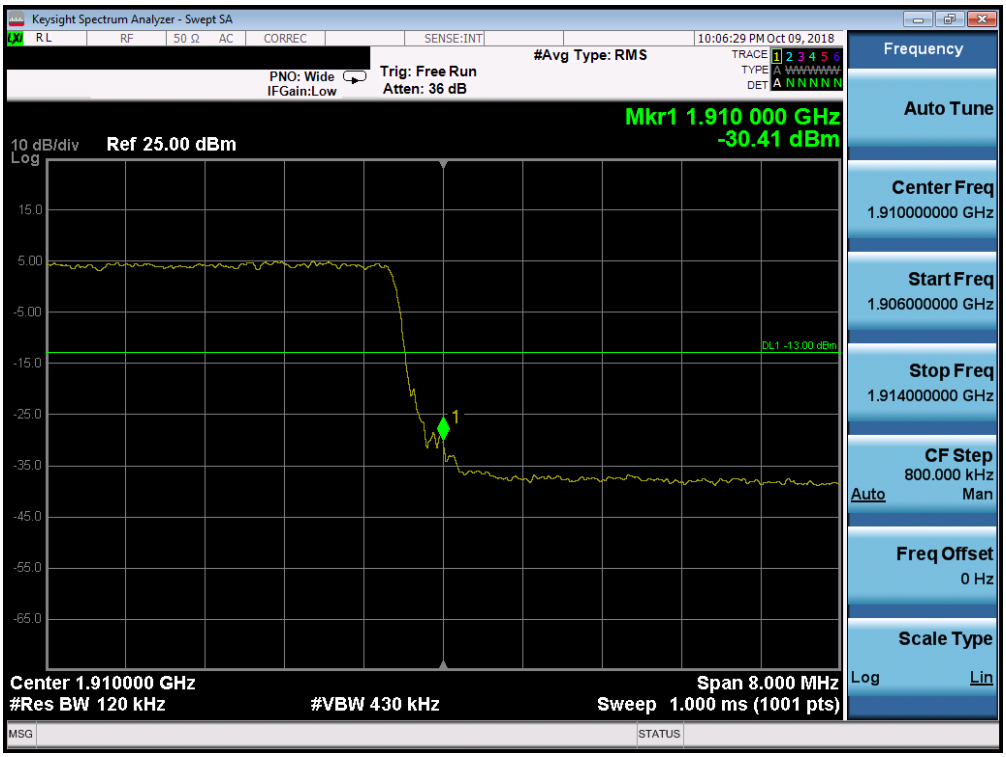
Plot 7-186. Upper Extended Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)



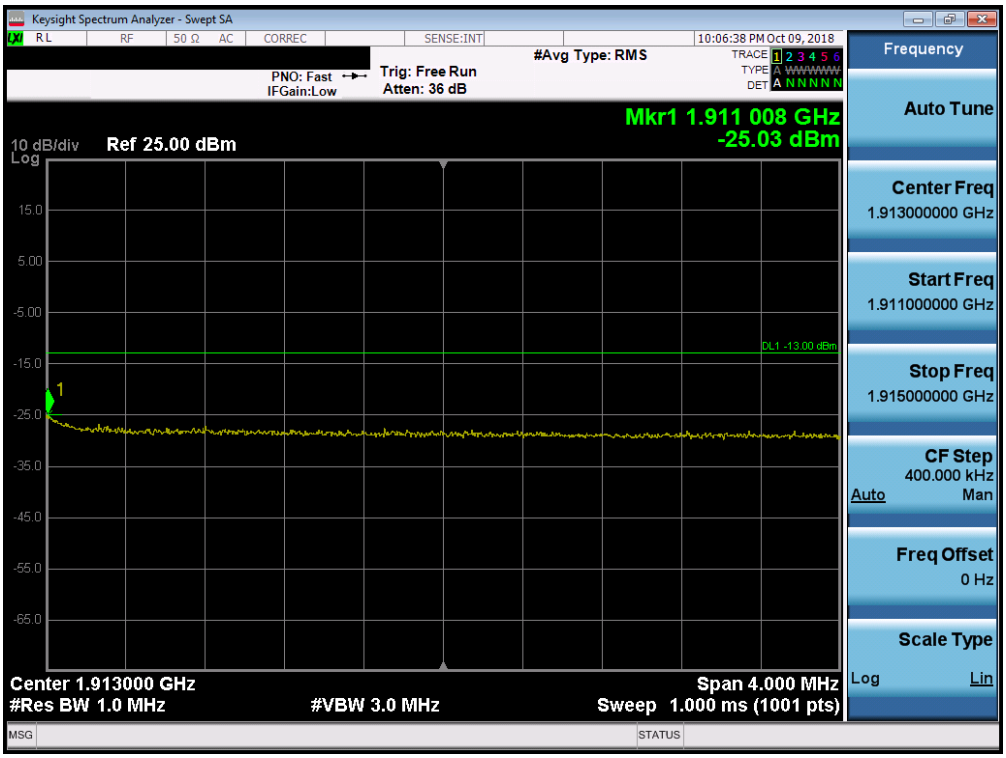
Plot 7-187. Lower Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)



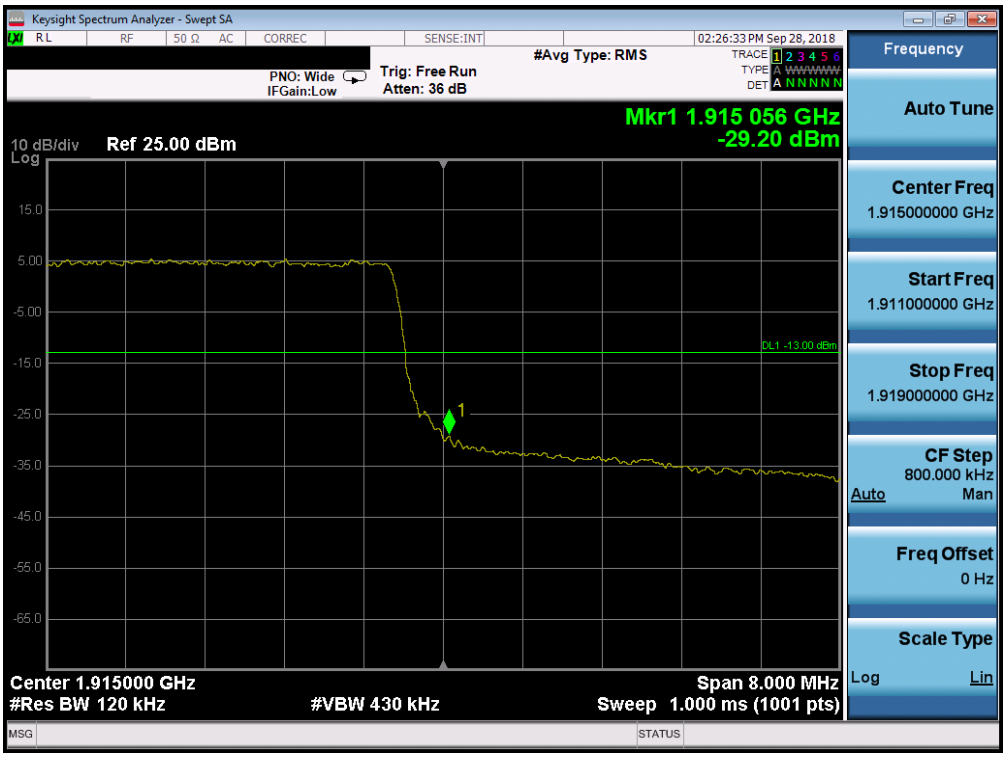
Plot 7-188. Lower Extended Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)



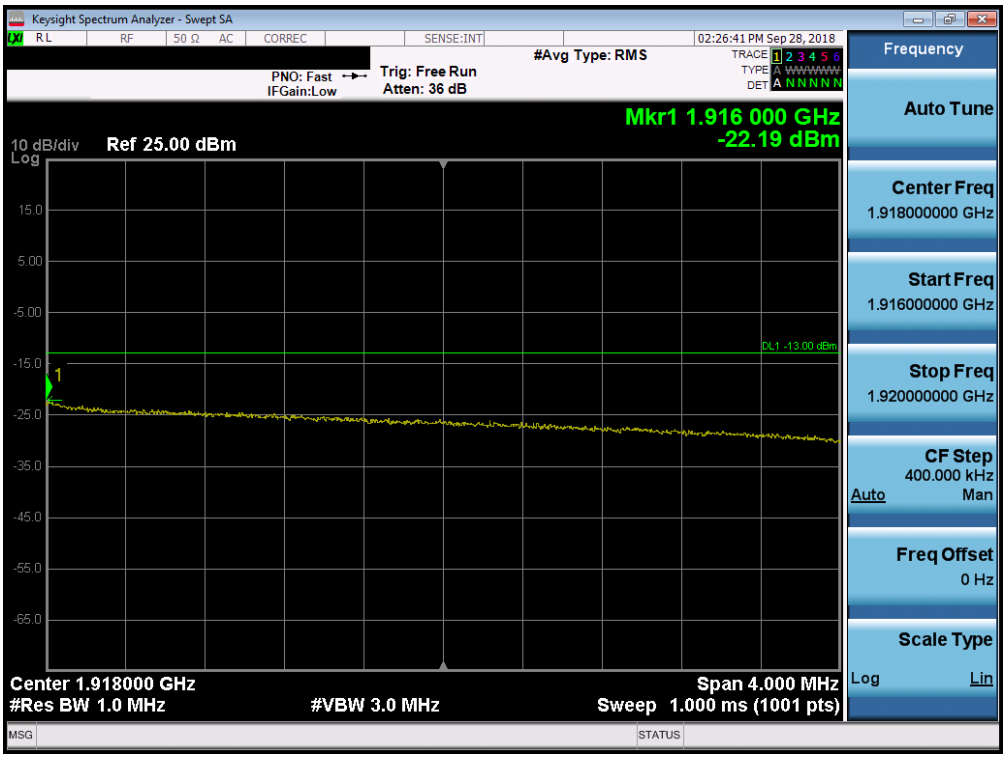
Plot 7-189. Upper Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)



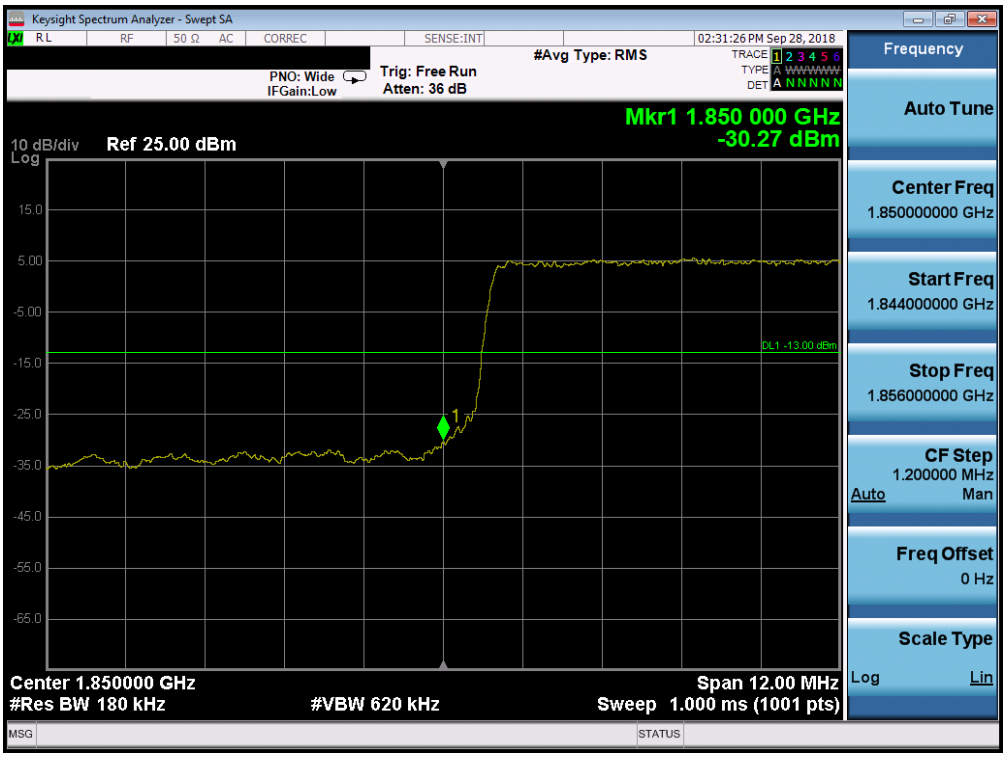
Plot 7-190. Upper Extended Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)



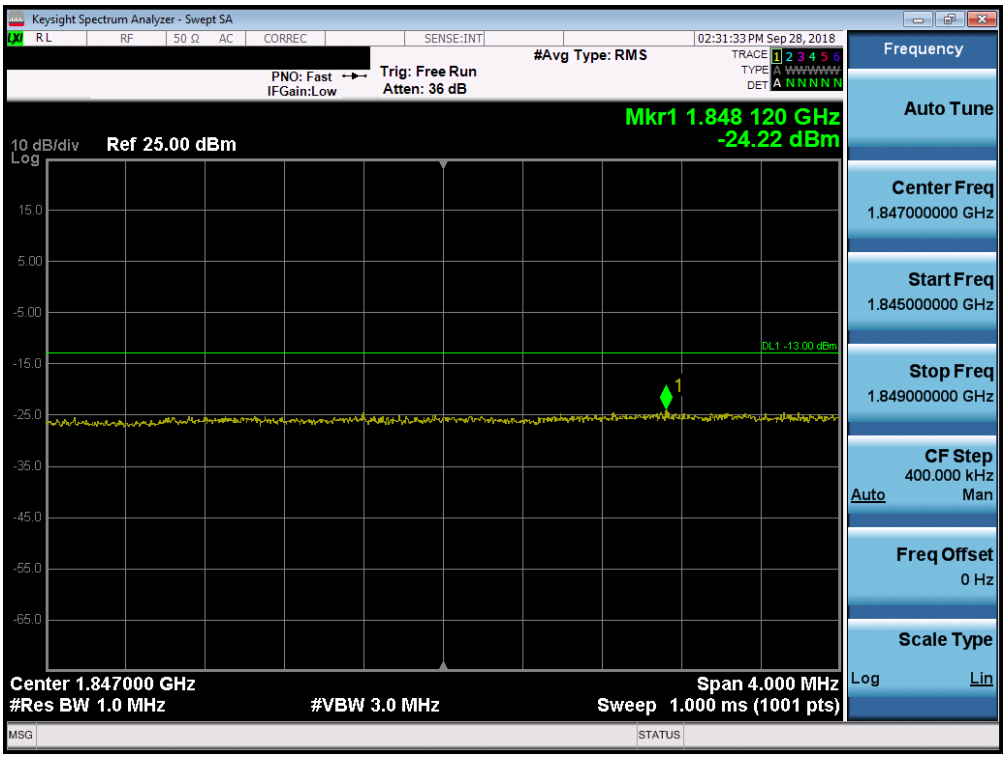
Plot 7-191. Upper Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)



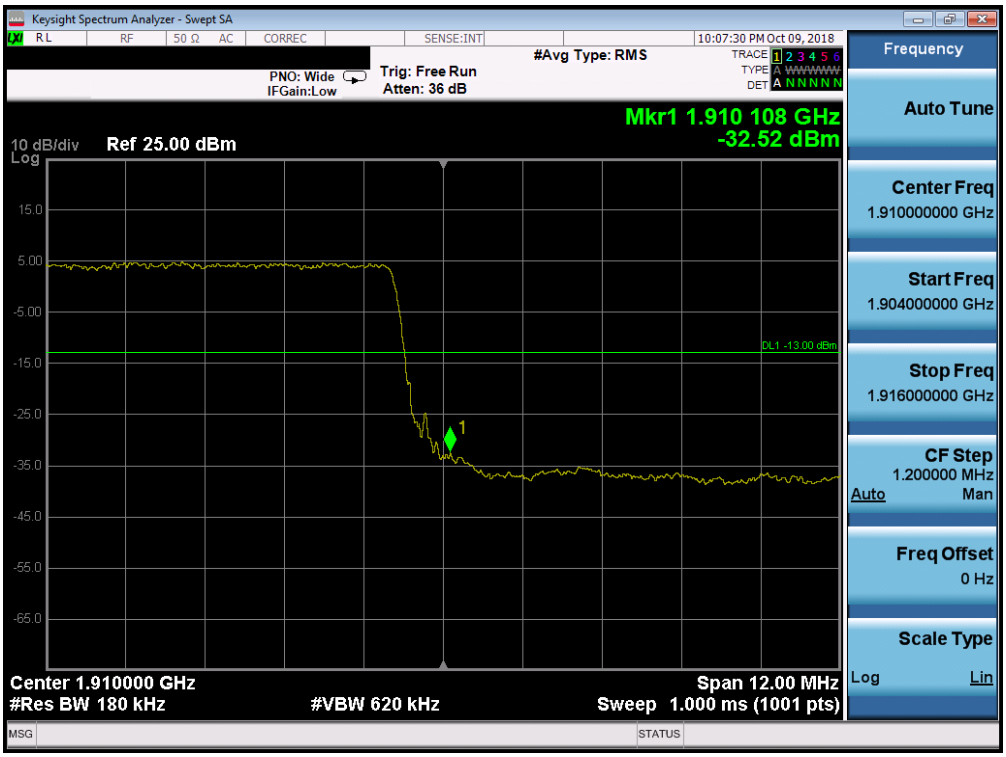
Plot 7-192. Upper Extended Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)



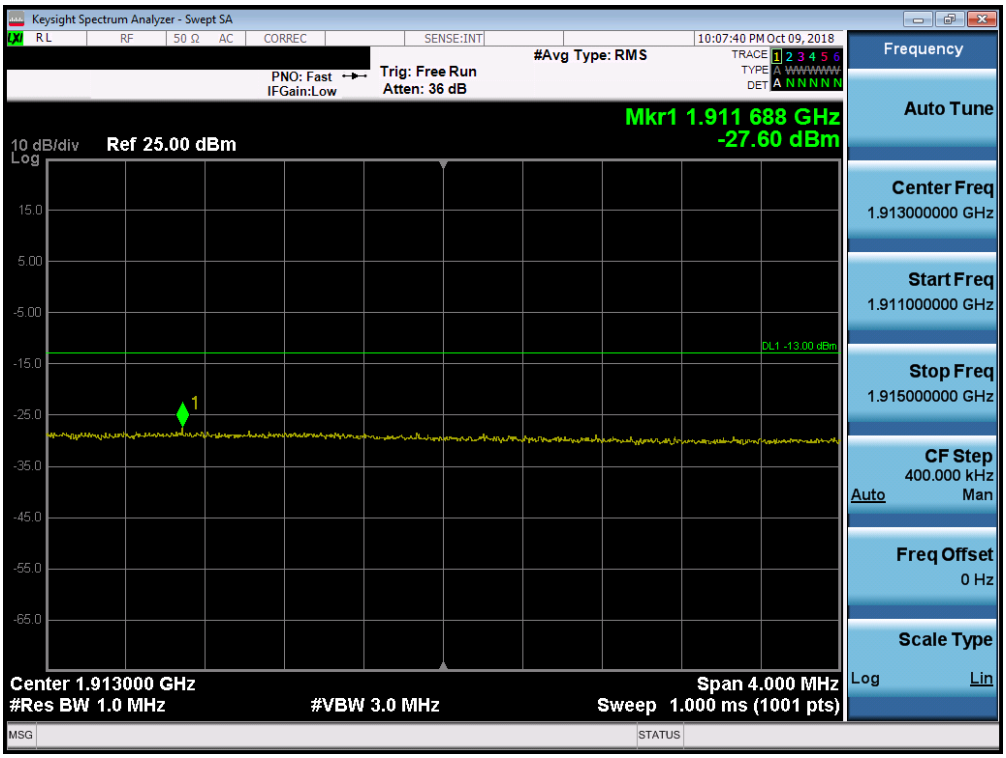
Plot 7-193. Lower Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)



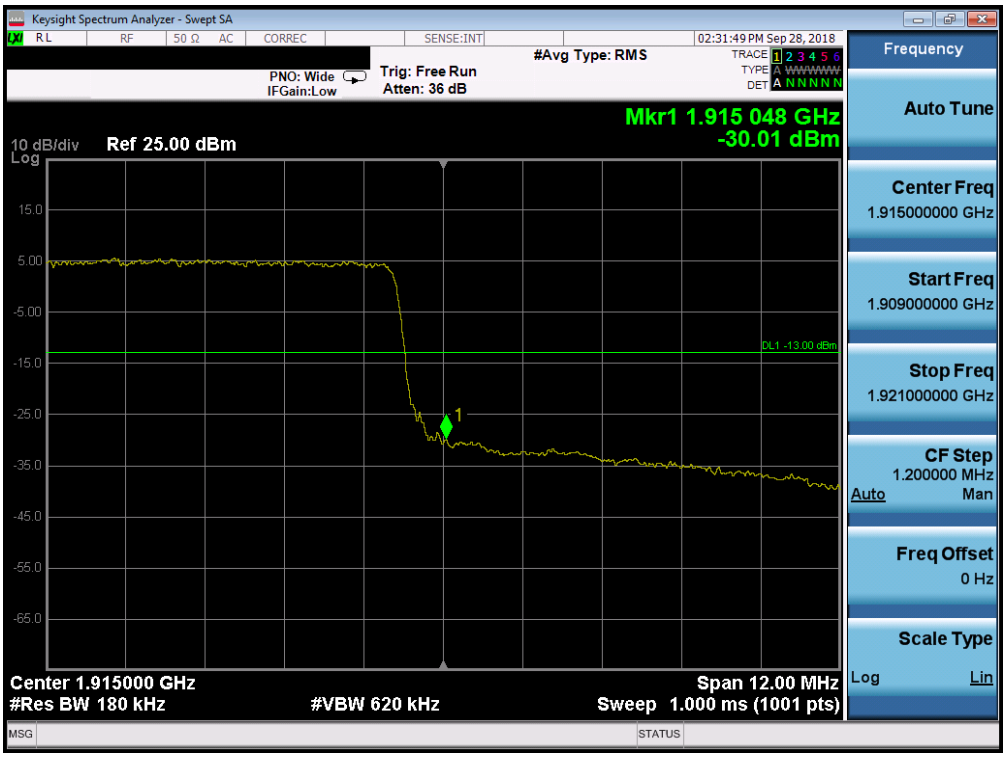
Plot 7-194. Lower Extended Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)



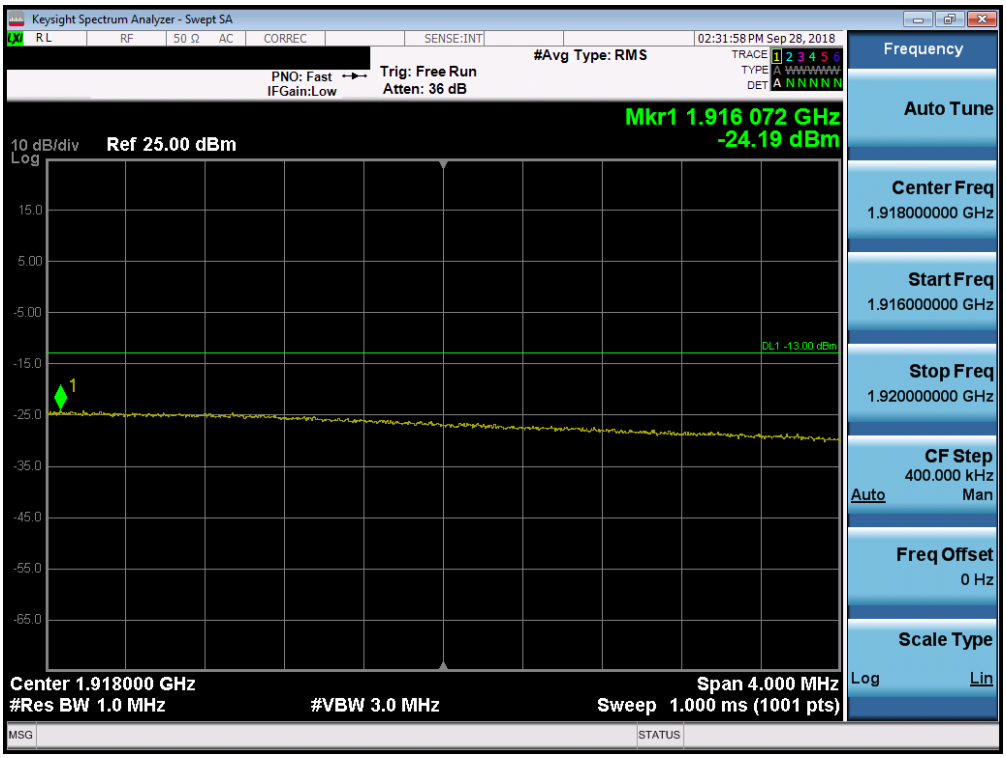
Plot 7-195. Upper Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)



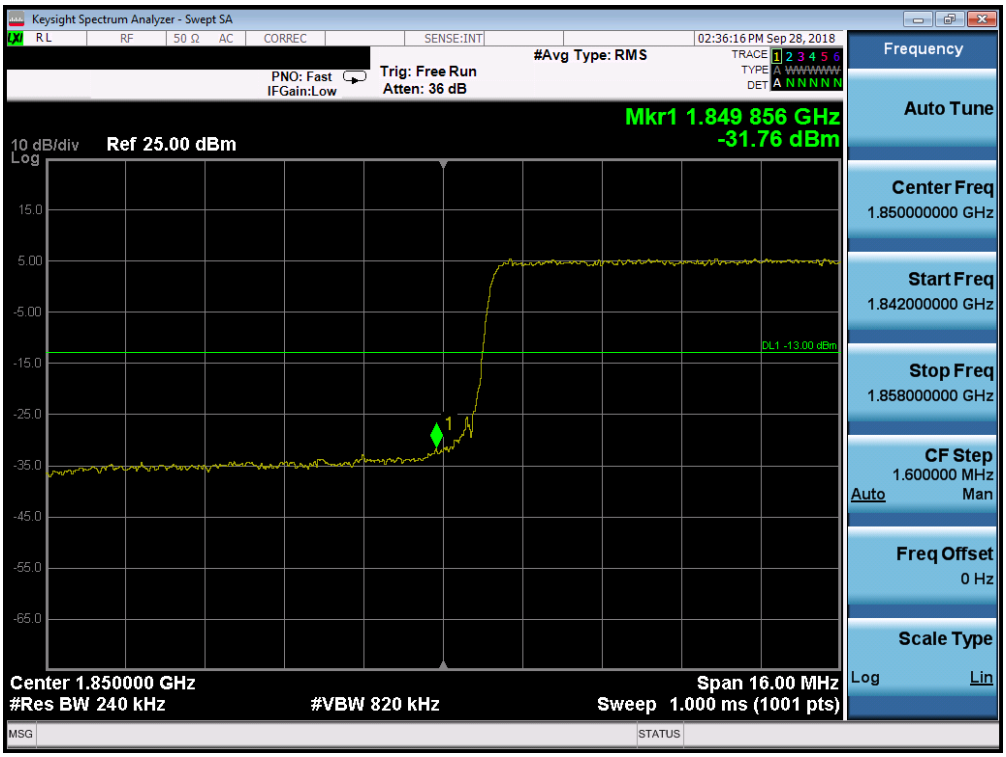
Plot 7-196. Upper Extended Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)



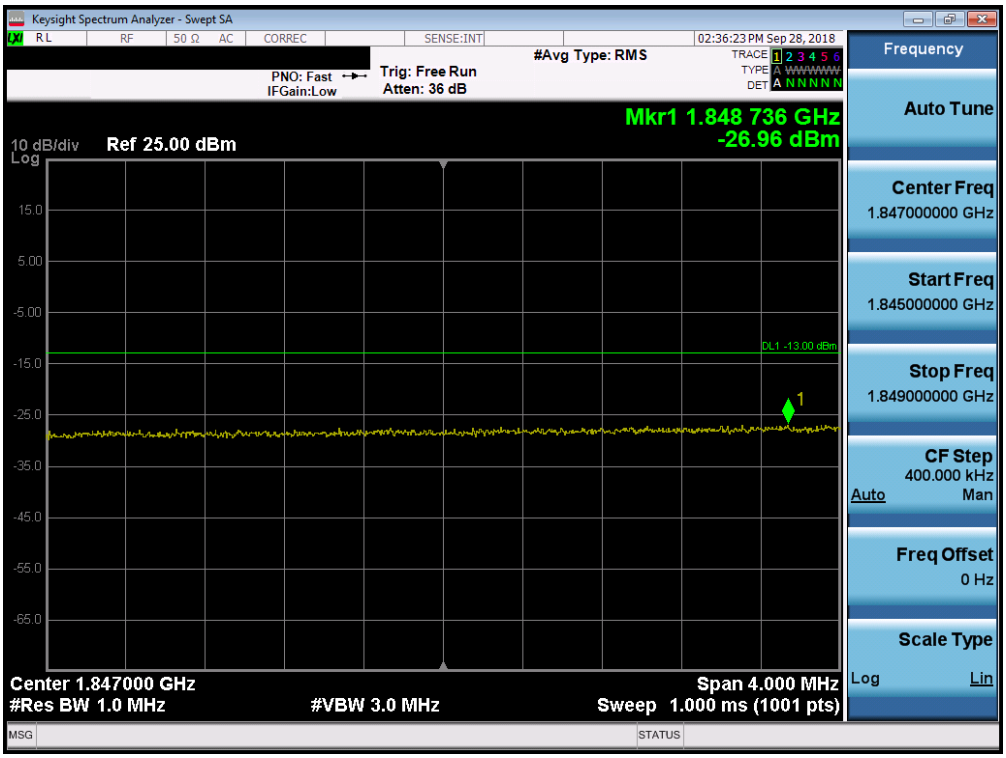
Plot 7-197. Upper Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)



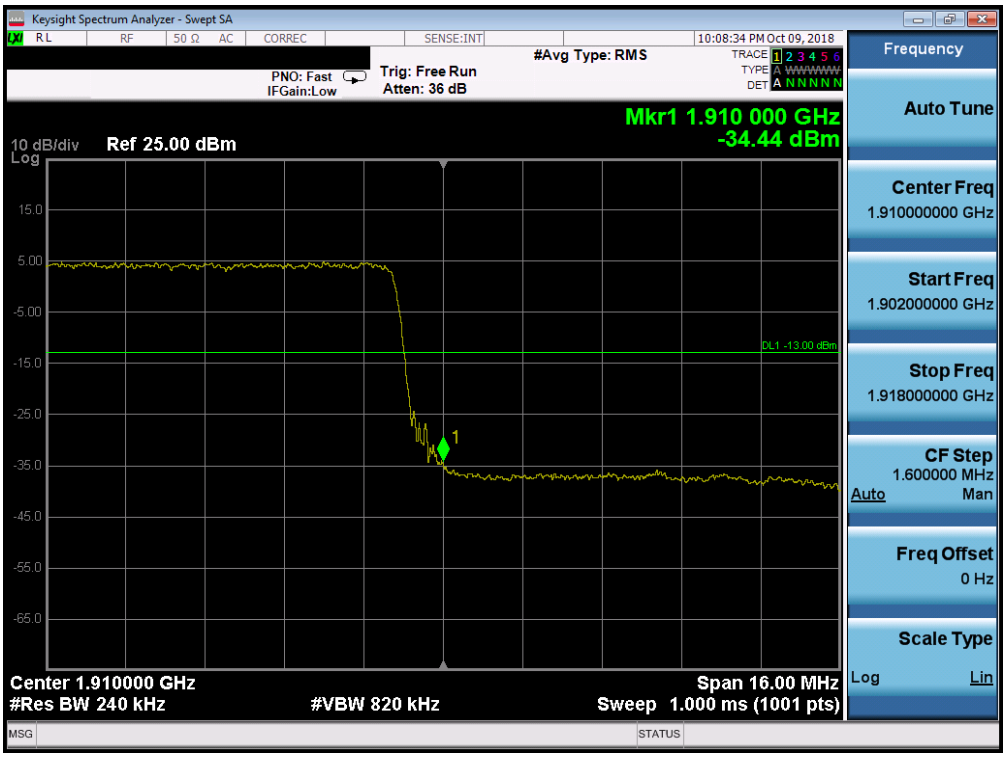
Plot 7-198. Upper Extended Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)



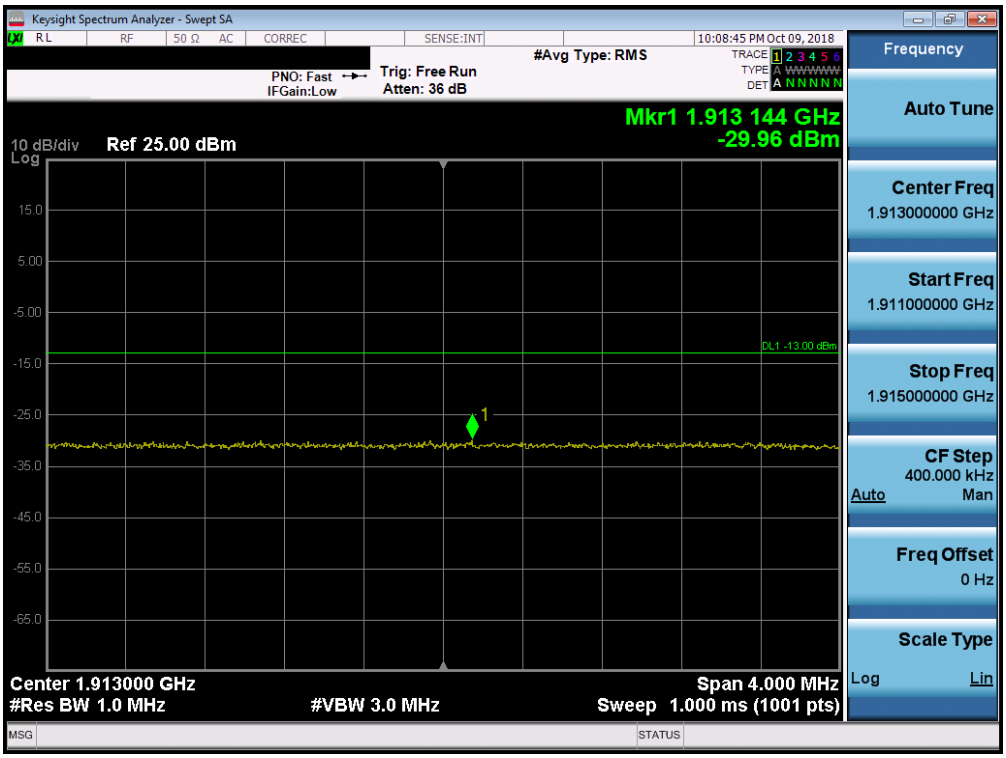
Plot 7-199. Lower Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-200. Lower Extended Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-201. Upper Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

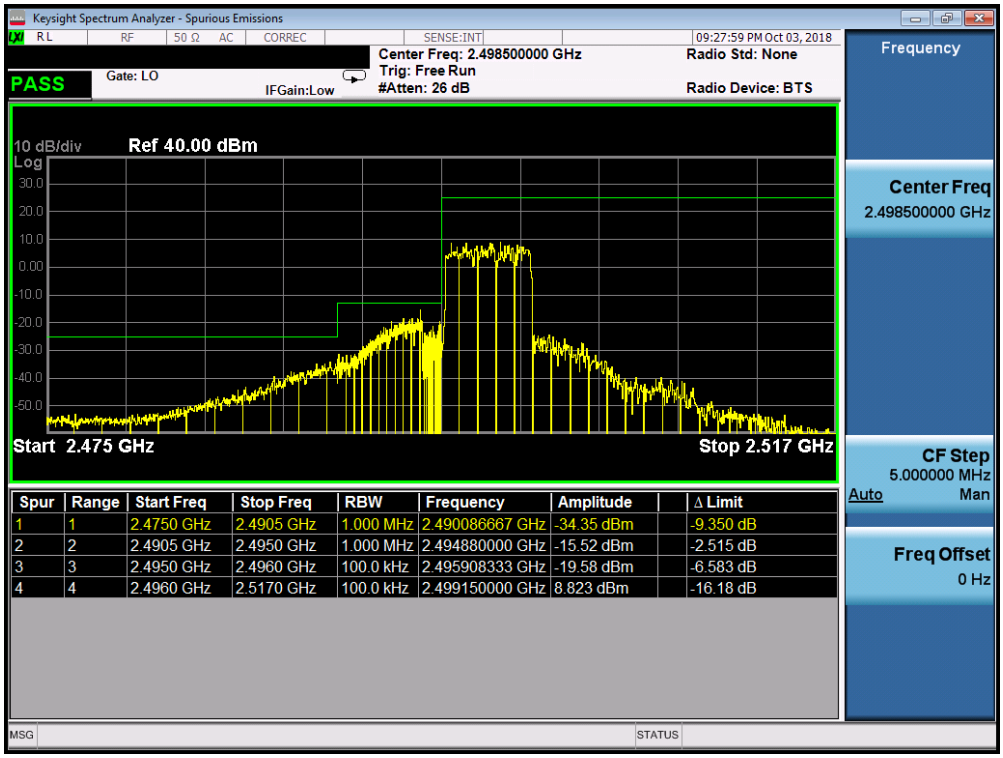


Plot 7-202. Upper Extended Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

Plot 7-203. Upper Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)

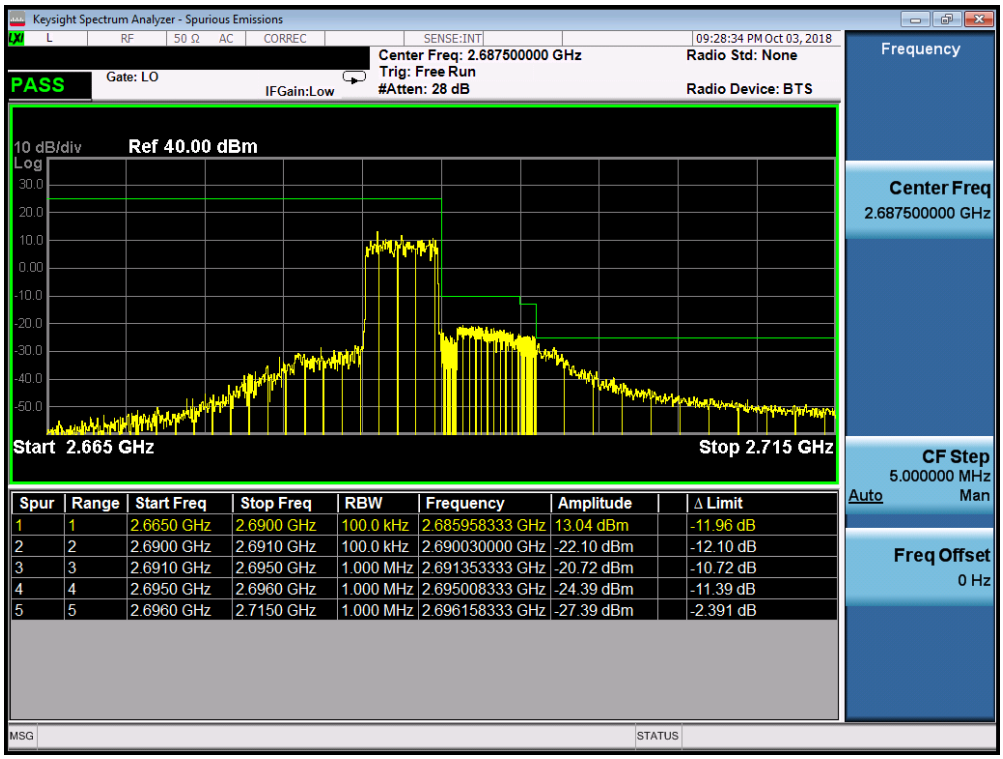
Plot 7-204. Upper Extended Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)

Band 41 (PC2)



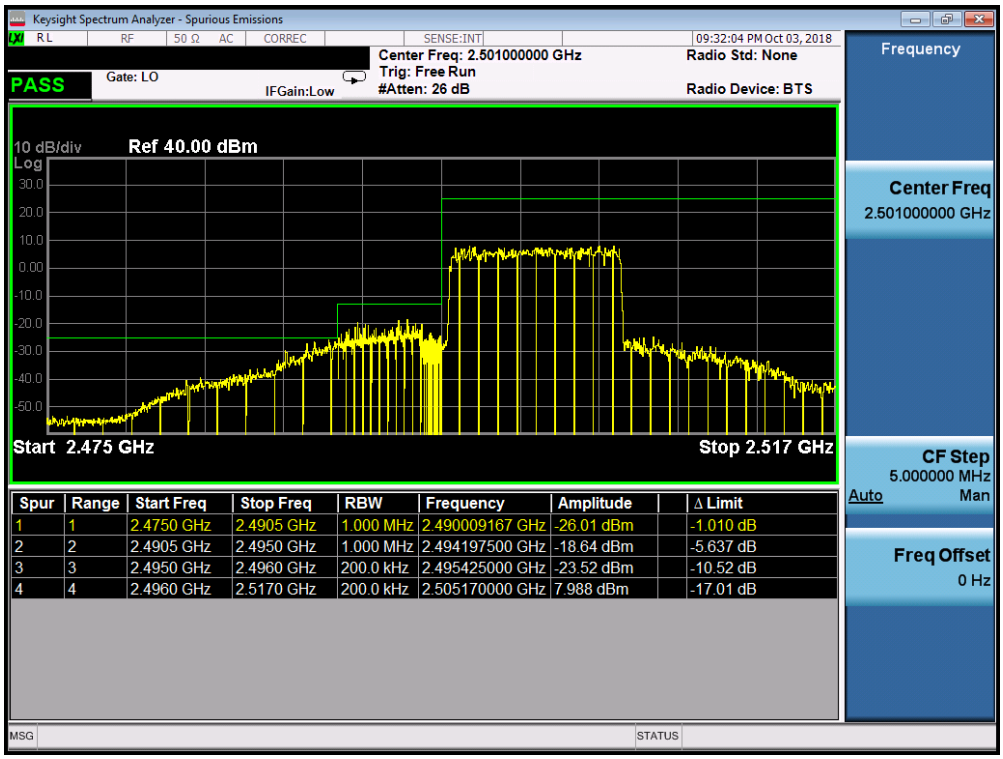
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490086667 GHz	-34.35 dBm	-9.350 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494880000 GHz	-15.52 dBm	-2.515 dB
3	3	2.4950 GHz	2.4960 GHz	100.0 kHz	2.495908333 GHz	-19.58 dBm	-6.583 dB
4	4	2.4960 GHz	2.5170 GHz	100.0 kHz	2.499150000 GHz	8.823 dBm	-16.18 dB

Plot 7-205. Lower ACP Plot at 2496 MHz (Band 41 - 5.0MHz QPSK - Full RB Configuration)



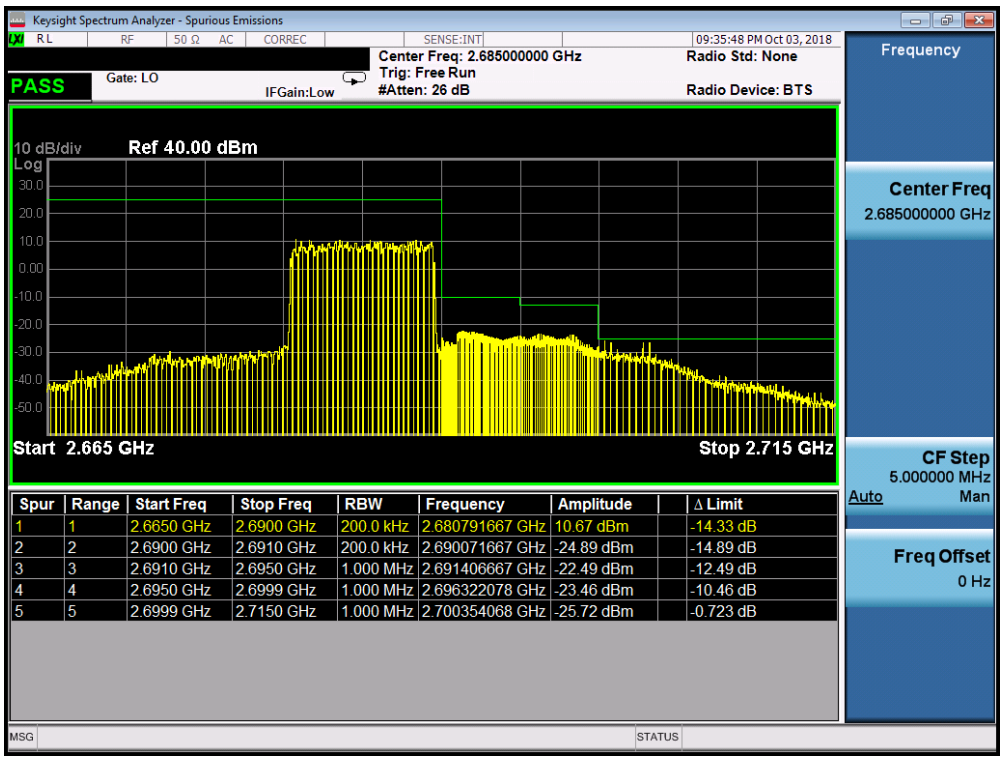
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6650 GHz	2.6900 GHz	100.0 kHz	2.685958333 GHz	13.04 dBm	-11.96 dB
2	2	2.6900 GHz	2.6910 GHz	100.0 kHz	2.690030000 GHz	-22.10 dBm	-12.10 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691353333 GHz	-20.72 dBm	-10.72 dB
4	4	2.6950 GHz	2.6960 GHz	1.000 MHz	2.695008333 GHz	-24.39 dBm	-11.39 dB
5	5	2.6960 GHz	2.7150 GHz	1.000 MHz	2.696158333 GHz	-27.39 dBm	-2.391 dB

Plot 7-206. Upper ACP Plot (Band 41 - 5.0MHz QPSK - Full RB Configuration)



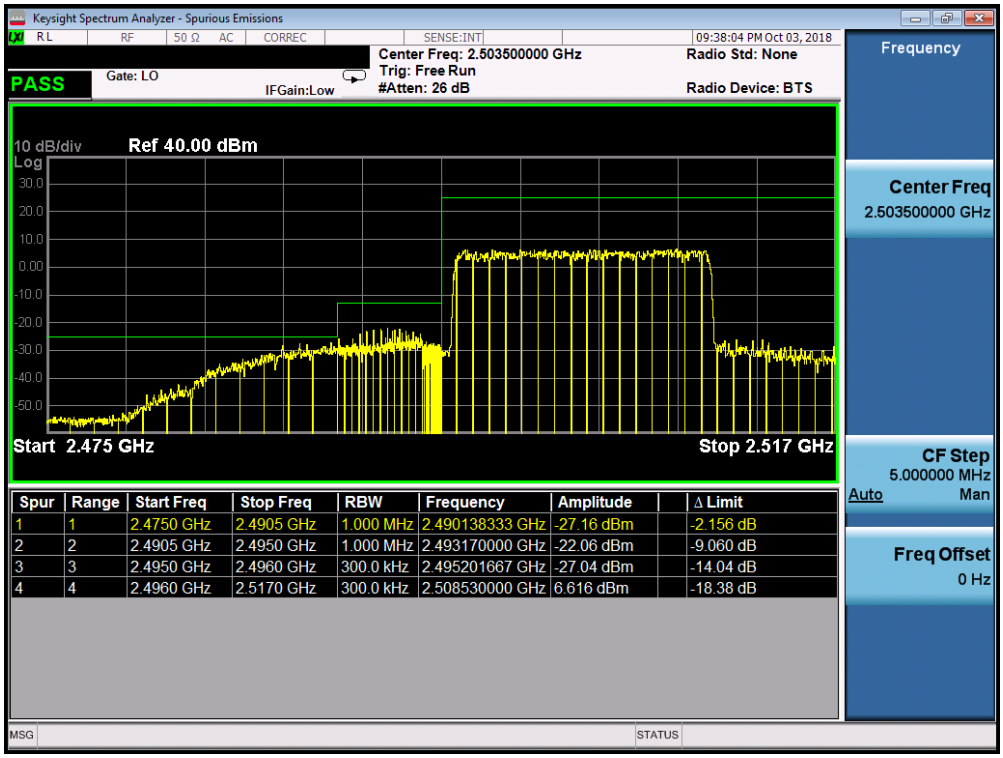
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490009167 GHz	-26.01 dBm	-1.010 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494197500 GHz	-18.64 dBm	-5.637 dB
3	3	2.4950 GHz	2.4960 GHz	200.0 kHz	2.495425000 GHz	-23.52 dBm	-10.52 dB
4	4	2.4960 GHz	2.5170 GHz	200.0 kHz	2.505170000 GHz	7.988 dBm	-17.01 dB

Plot 7-207. Lower ACP Plot at 2496 MHz (Band 41 - 10.0MHz QPSK - Full RB Configuration)

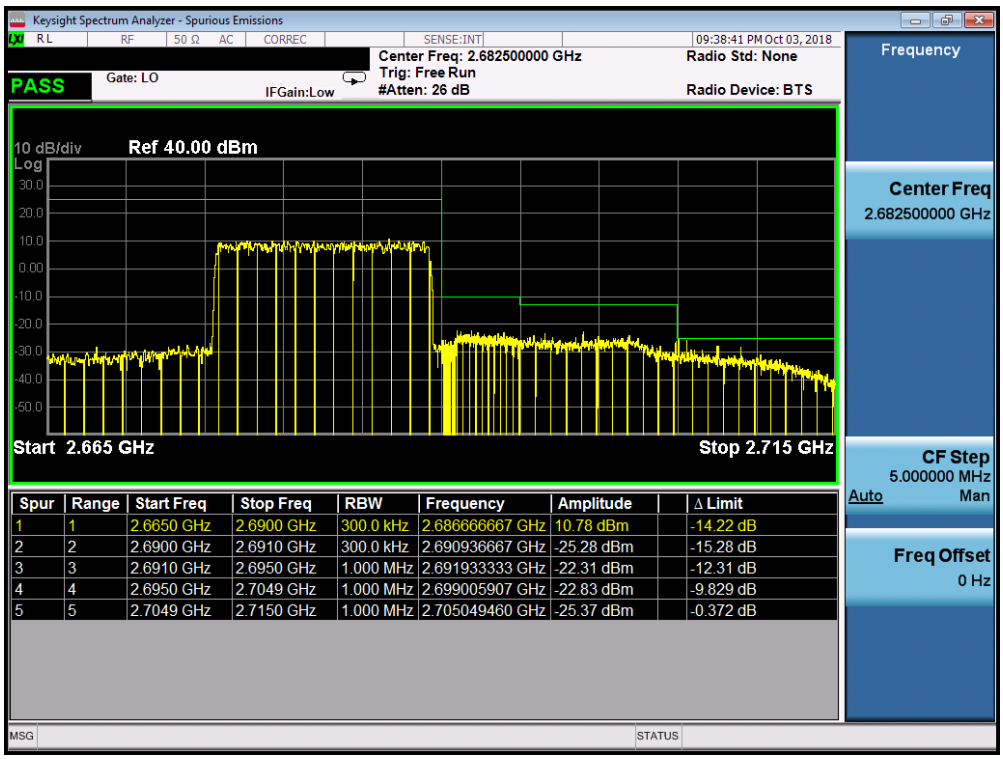


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6650 GHz	2.6900 GHz	200.0 kHz	2.680791667 GHz	10.67 dBm	-14.33 dB
2	2	2.6900 GHz	2.6910 GHz	200.0 kHz	2.690071667 GHz	-24.89 dBm	-14.89 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691406667 GHz	-22.49 dBm	-12.49 dB
4	4	2.6950 GHz	2.6999 GHz	1.000 MHz	2.696322078 GHz	-23.46 dBm	-10.46 dB
5	5	2.6999 GHz	2.7150 GHz	1.000 MHz	2.700354068 GHz	-25.72 dBm	-0.723 dB

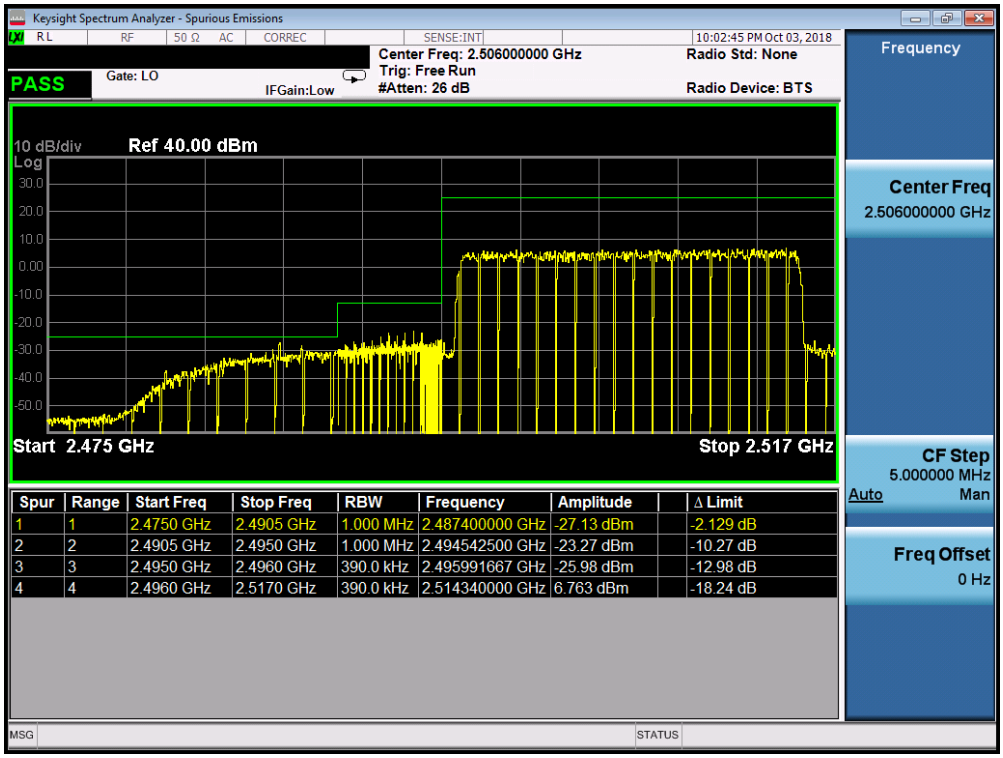
Plot 7-208. Upper ACP Plot (Band 41 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-209. Lower ACP Plot at 2496 MHz (Band 41 - 15.0MHz QPSK - Full RB Configuration)

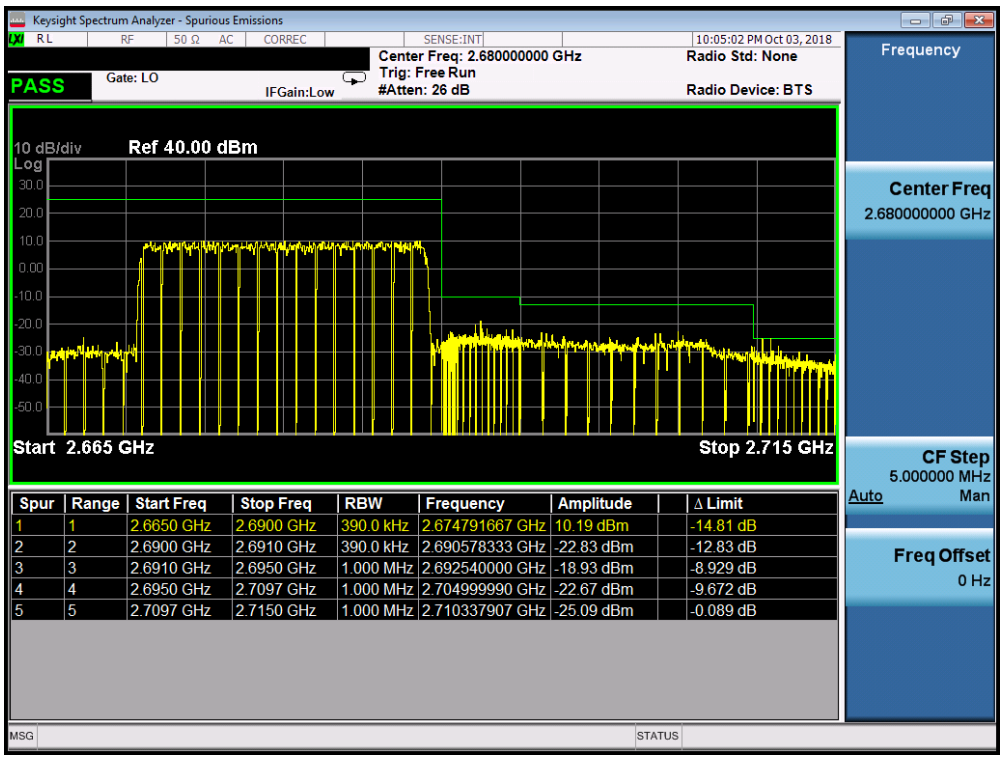


Plot 7-210. Upper ACP Plot (Band 41 - 15.0MHz QPSK - Full RB Configuration)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.487400000 GHz	-27.13 dBm	-2.129 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494542500 GHz	-23.27 dBm	-10.27 dB
3	3	2.4950 GHz	2.4960 GHz	390.0 kHz	2.495991667 GHz	-25.98 dBm	-12.98 dB
4	4	2.4960 GHz	2.5170 GHz	390.0 kHz	2.514340000 GHz	6.763 dBm	-18.24 dB

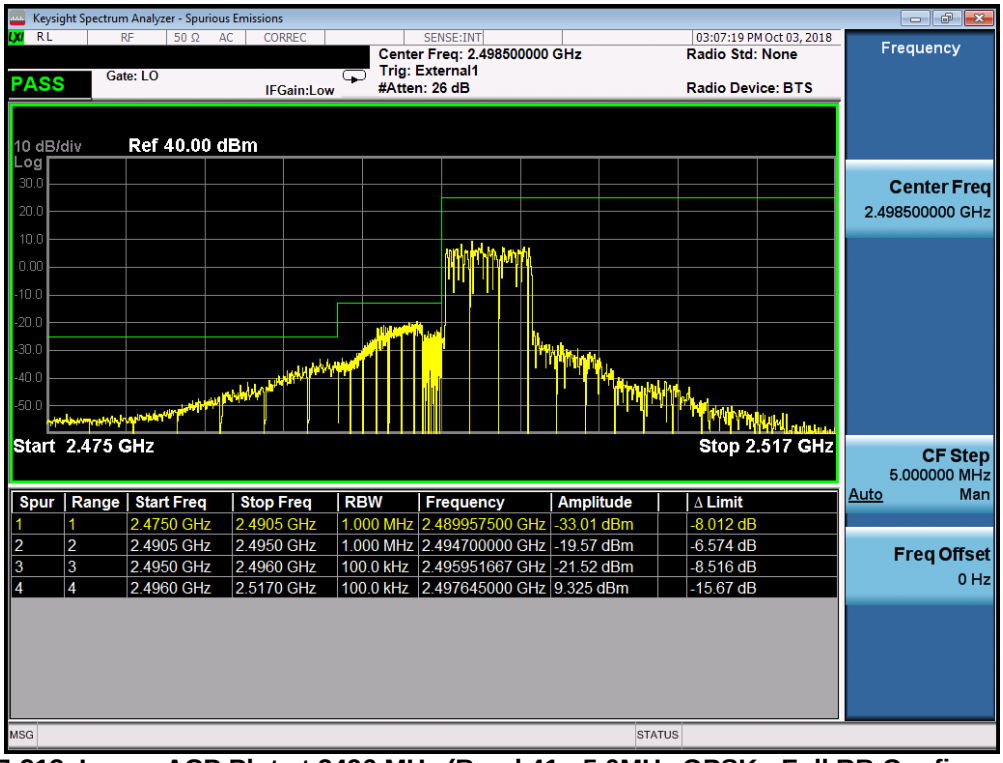
Plot 7-211. Lower ACP Plot at 2496 MHz (Band 41 - 20.0MHz QPSK - Full RB Configuration)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6650 GHz	2.6900 GHz	390.0 kHz	2.674791667 GHz	10.19 dBm	-14.81 dB
2	2	2.6900 GHz	2.6910 GHz	390.0 kHz	2.690578333 GHz	-22.83 dBm	-12.83 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.692540000 GHz	-18.93 dBm	-8.929 dB
4	4	2.6950 GHz	2.7097 GHz	1.000 MHz	2.704999990 GHz	-22.67 dBm	-9.672 dB
5	5	2.7097 GHz	2.7150 GHz	1.000 MHz	2.710337907 GHz	-25.09 dBm	-0.089 dB

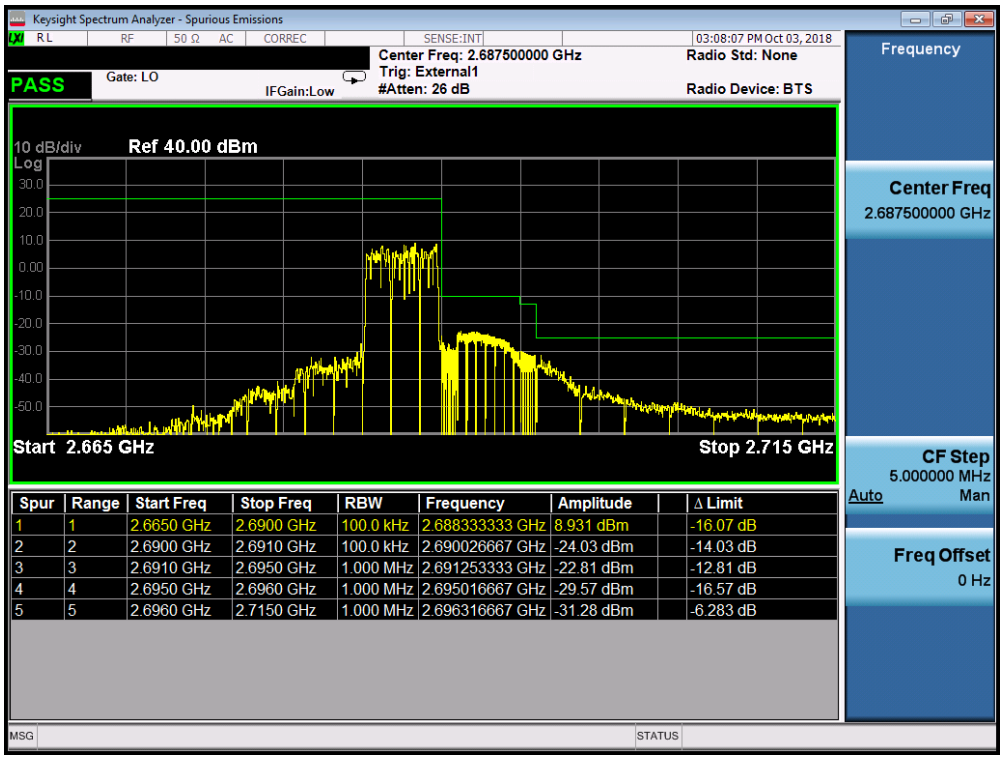
Plot 7-212. Upper ACP Plot (Band 41 - 20.0MHz QPSK - Full RB Configuration)

Band 41 (PC3)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.489957500 GHz	-33.01 dBm	-8.012 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494700000 GHz	-19.57 dBm	-6.574 dB
3	3	2.4950 GHz	2.4960 GHz	100.0 kHz	2.495951667 GHz	-21.52 dBm	-8.516 dB
4	4	2.4960 GHz	2.5170 GHz	100.0 kHz	2.497645000 GHz	9.325 dBm	-15.67 dB

Plot 7-213. Lower ACP Plot at 2496 MHz (Band 41 - 5.0MHz QPSK - Full RB Configuration)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6650 GHz	2.6900 GHz	100.0 kHz	2.688333333 GHz	8.931 dBm	-16.07 dB
2	2	2.6900 GHz	2.6910 GHz	100.0 kHz	2.690026667 GHz	-24.03 dBm	-14.03 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691253333 GHz	-22.81 dBm	-12.81 dB
4	4	2.6950 GHz	2.6960 GHz	1.000 MHz	2.695016667 GHz	-29.57 dBm	-16.57 dB
5	5	2.6960 GHz	2.7150 GHz	1.000 MHz	2.696316667 GHz	-31.28 dBm	-6.283 dB

Plot 7-214. Upper ACP Plot (Band 41 - 5.0MHz QPSK - Full RB Configuration)