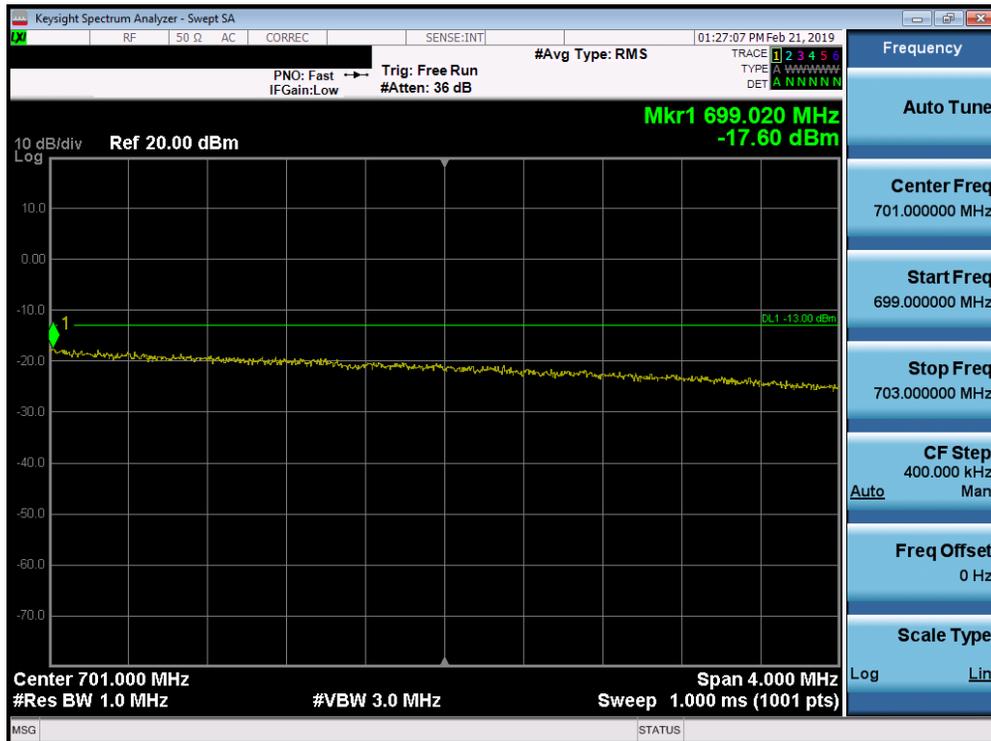
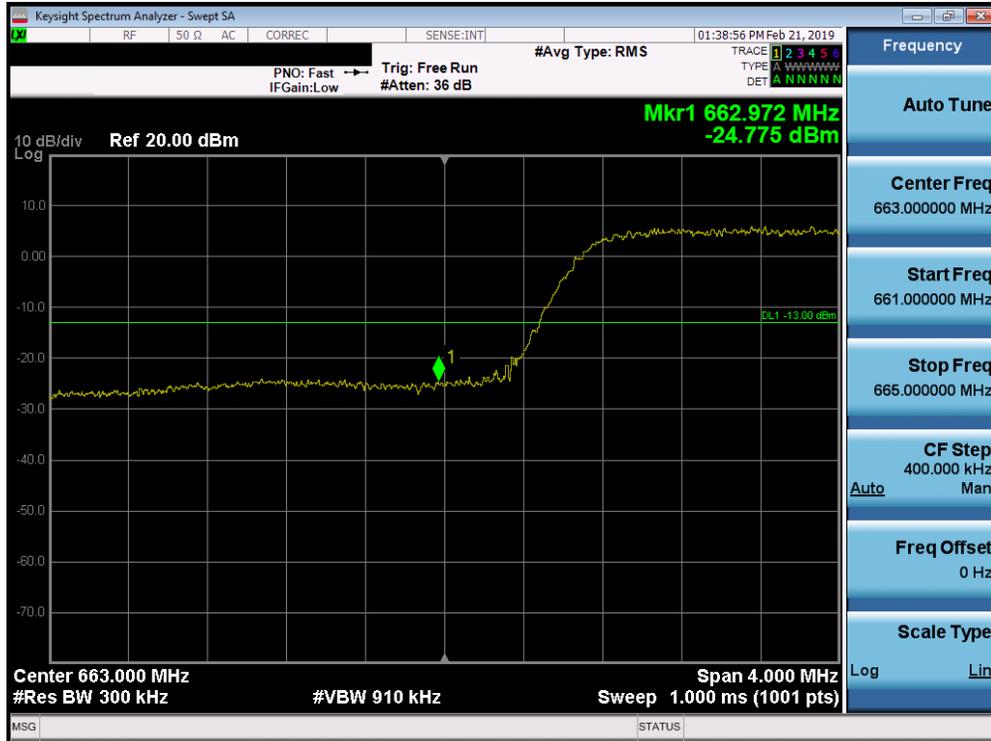


Plot 7-104. Upper Band Edge Plot (Band 71 - 10.0MHz QPSK - Full RB Configuration)

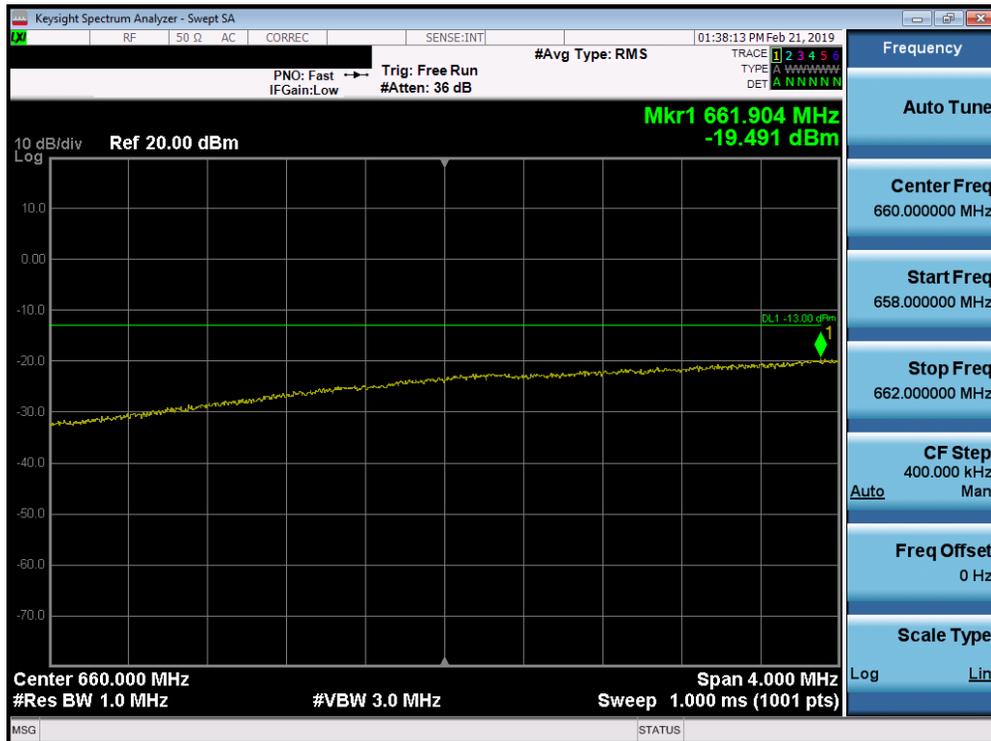


Plot 7-105. Upper Extended Band Edge Plot (Band 71 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 72 of 162



Plot 7-106. Lower Band Edge Plot (Band 71 - 15.0MHz QPSK - Full RB Configuration)

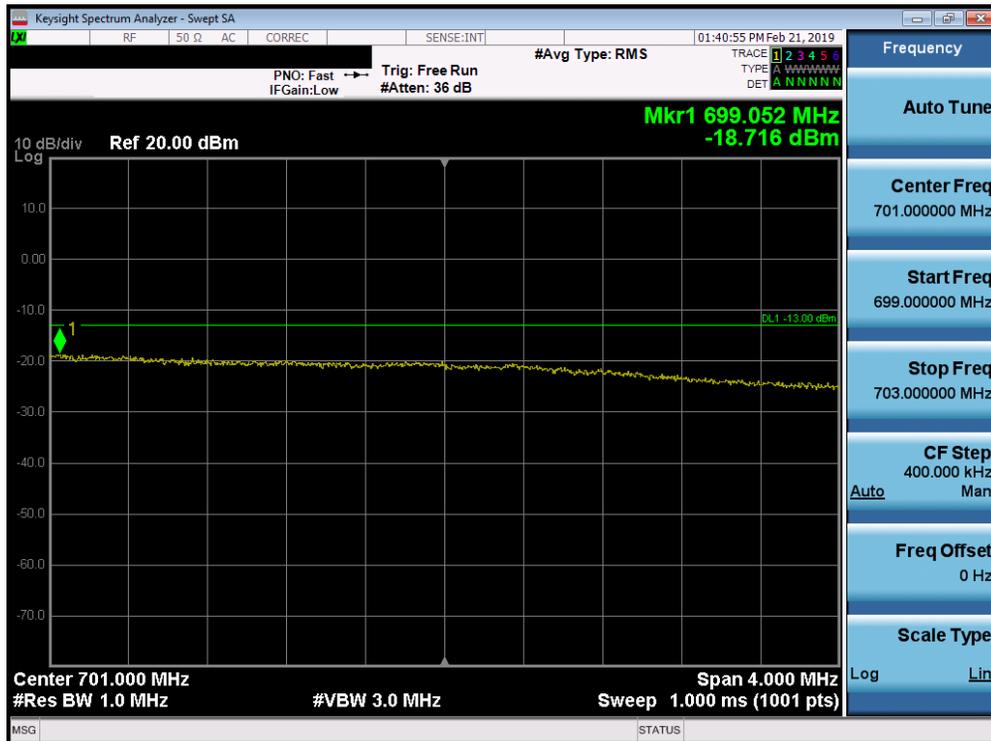


Plot 7-107. Lower Extended Band Edge Plot (Band 71 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 73 of 162

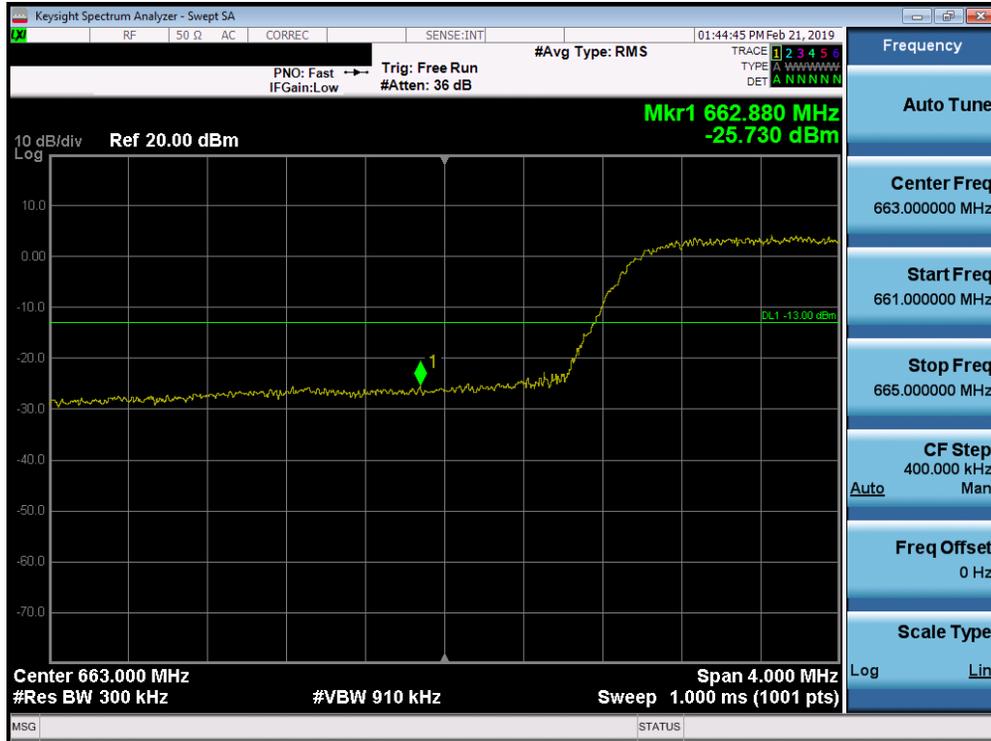


Plot 7-108. Upper Band Edge Plot (Band 71 - 15.0MHz QPSK - Full RB Configuration)

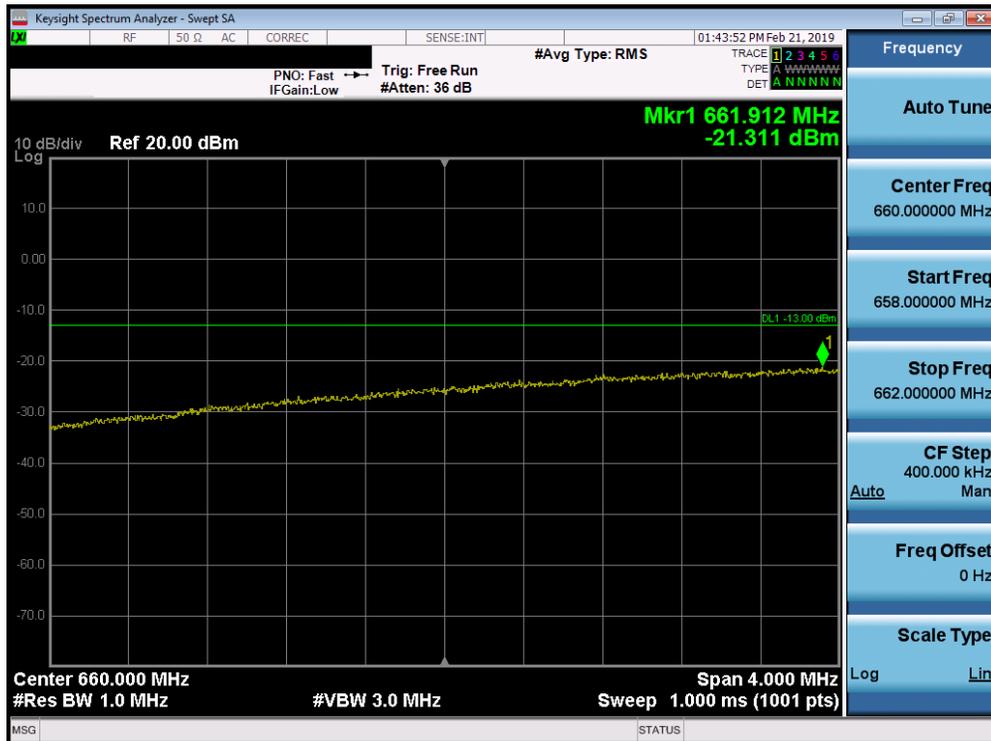


Plot 7-109. Upper Extended Band Edge Plot (Band 71 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 74 of 162



Plot 7-110. Lower Band Edge Plot (Band 71 - 20.0MHz QPSK - Full RB Configuration)

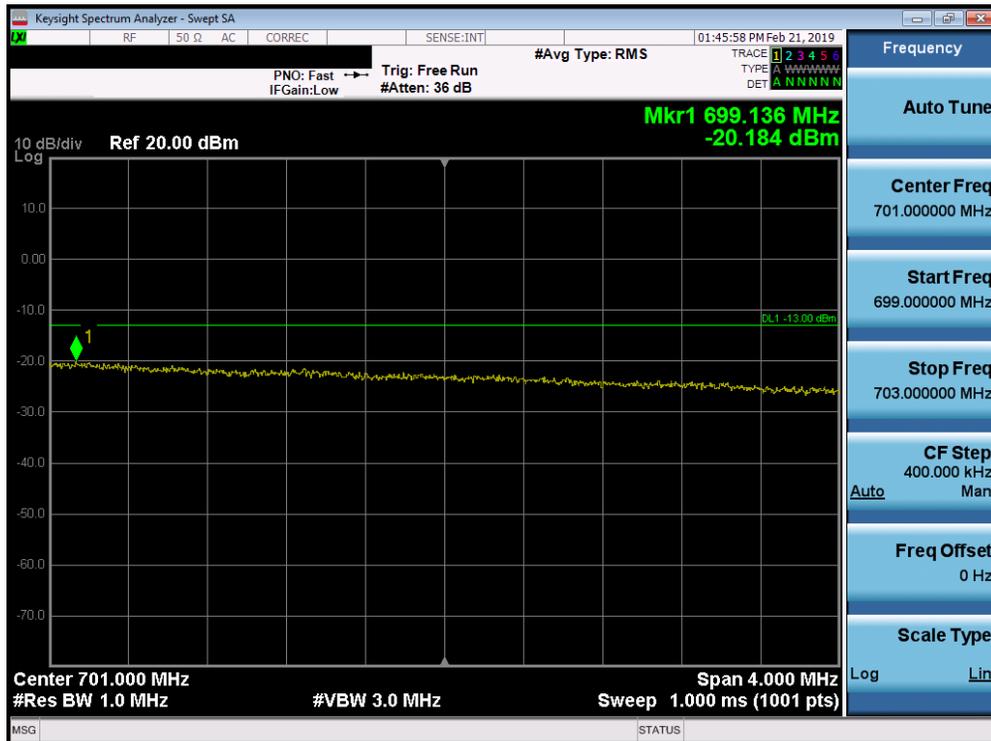


Plot 7-111. Lower Extended Band Edge Plot (Band 71 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 75 of 162



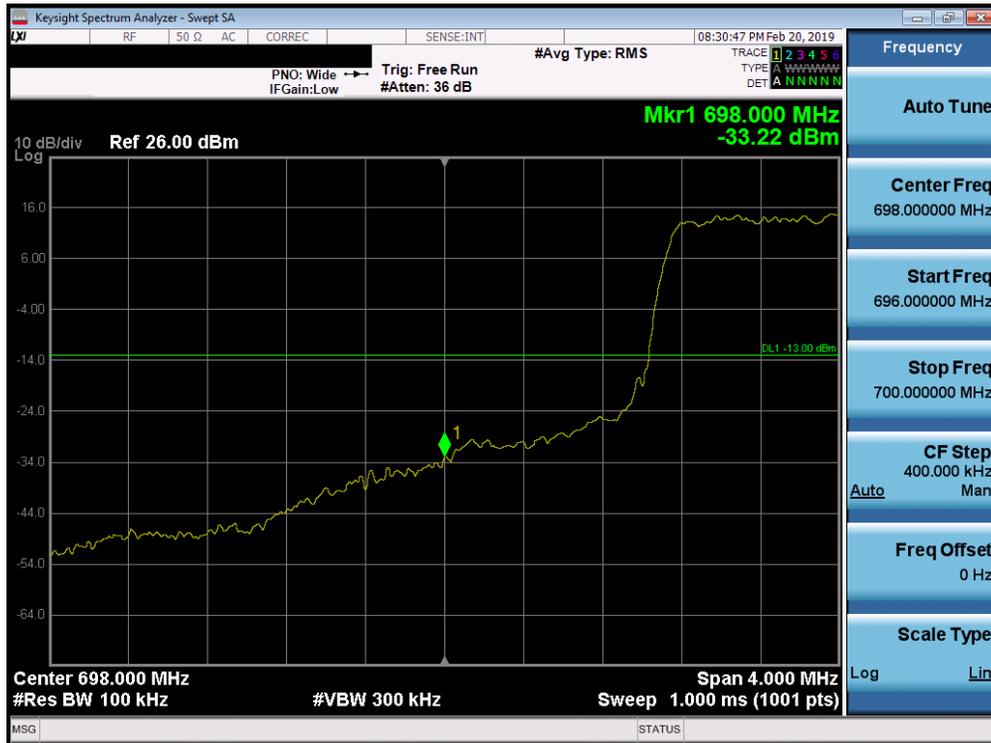
Plot 7-112. Upper Band Edge Plot (Band 71 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-113. Upper Extended Band Edge Plot (Band 71 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 76 of 162

**Band 12**

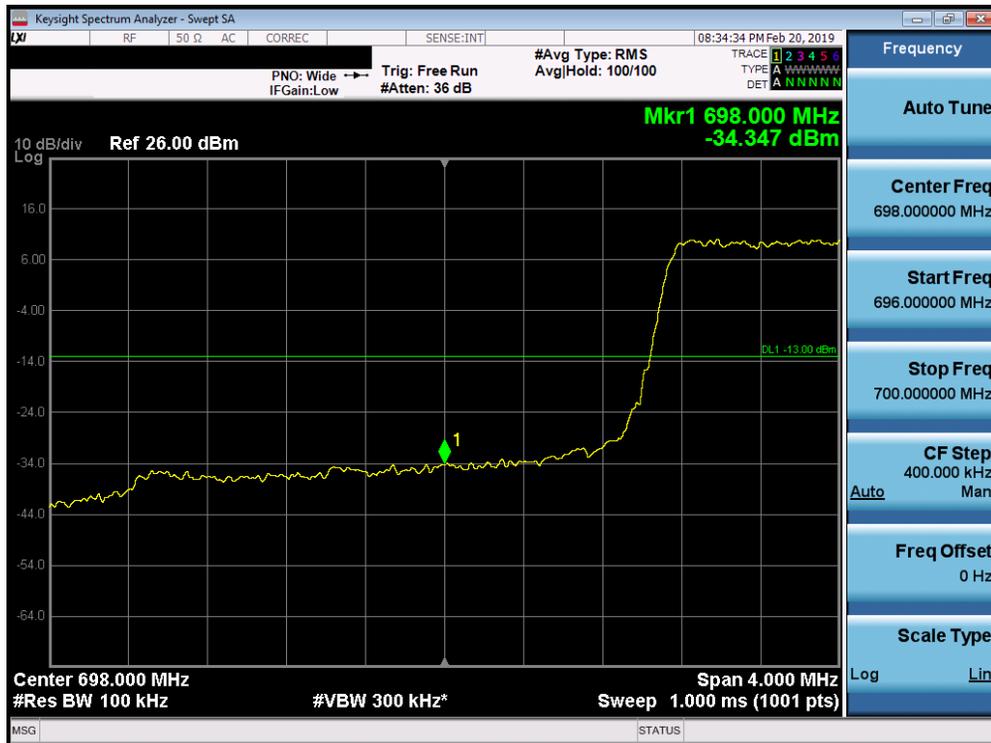


**Plot 7-114. Lower Band Edge Plot (Band 12 - 1.4MHz QPSK - Full RB Configuration)**



**Plot 7-115. Upper Band Edge Plot (Band 12 - 1.4MHz QPSK - Full RB Configuration)**

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 77 of 162

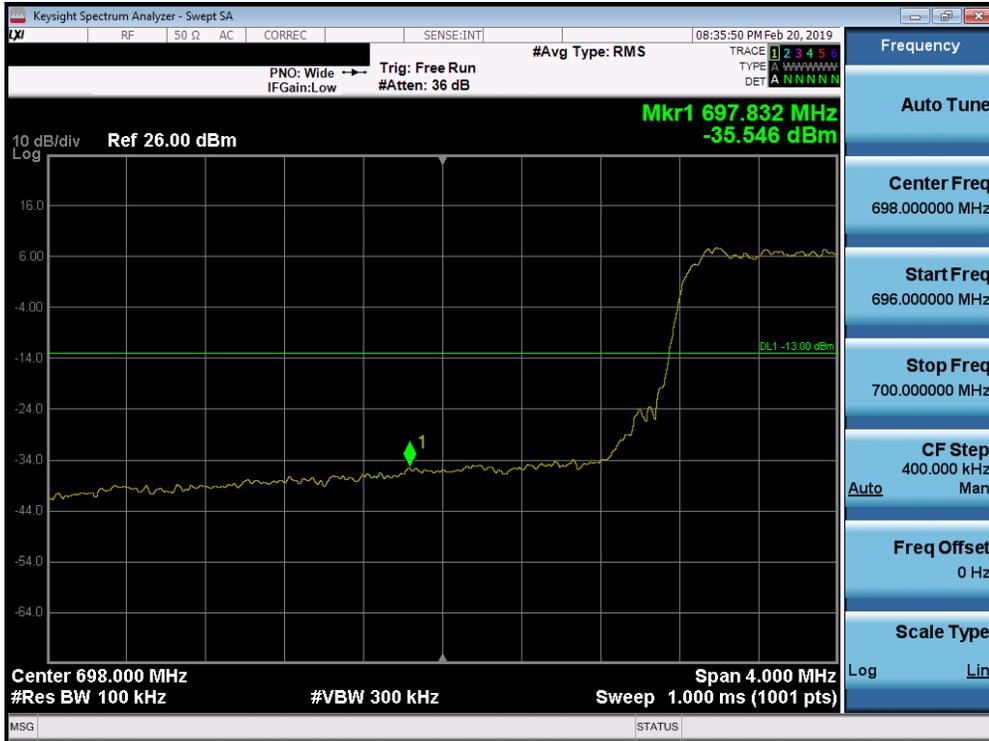


Plot 7-116. Lower Band Edge Plot (Band 12 - 3.0MHz QPSK - Full RB Configuration)



Plot 7-117. Upper Band Edge Plot (Band 12 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 78 of 162

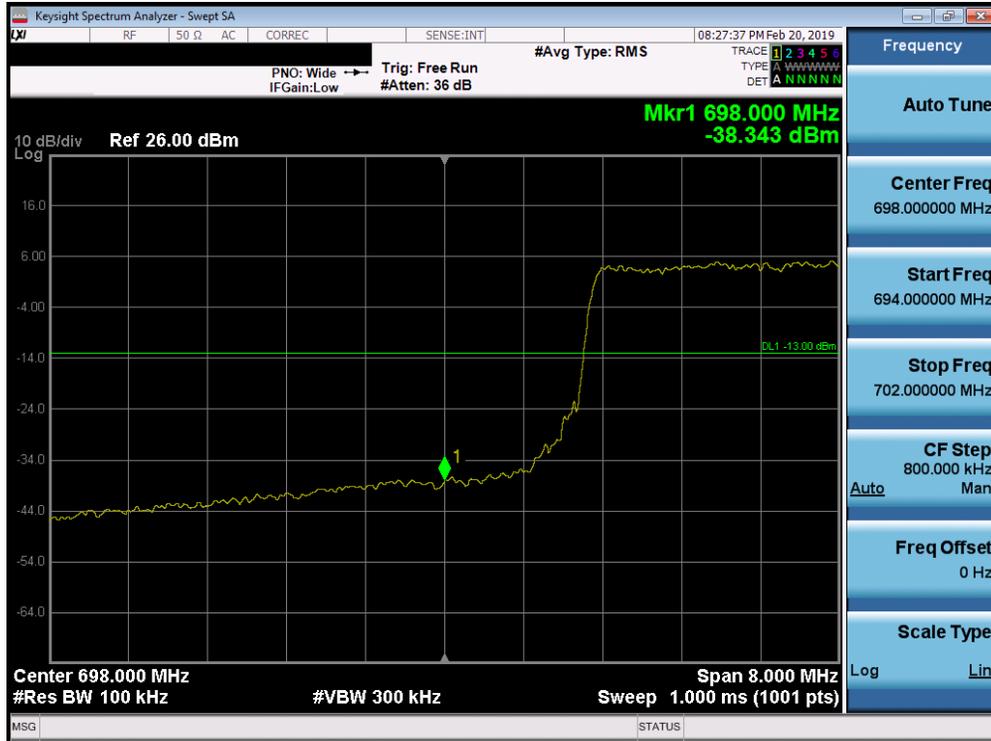


Plot 7-118. Lower Band Edge Plot (Band 12 - 5.0MHz QPSK - Full RB Configuration)

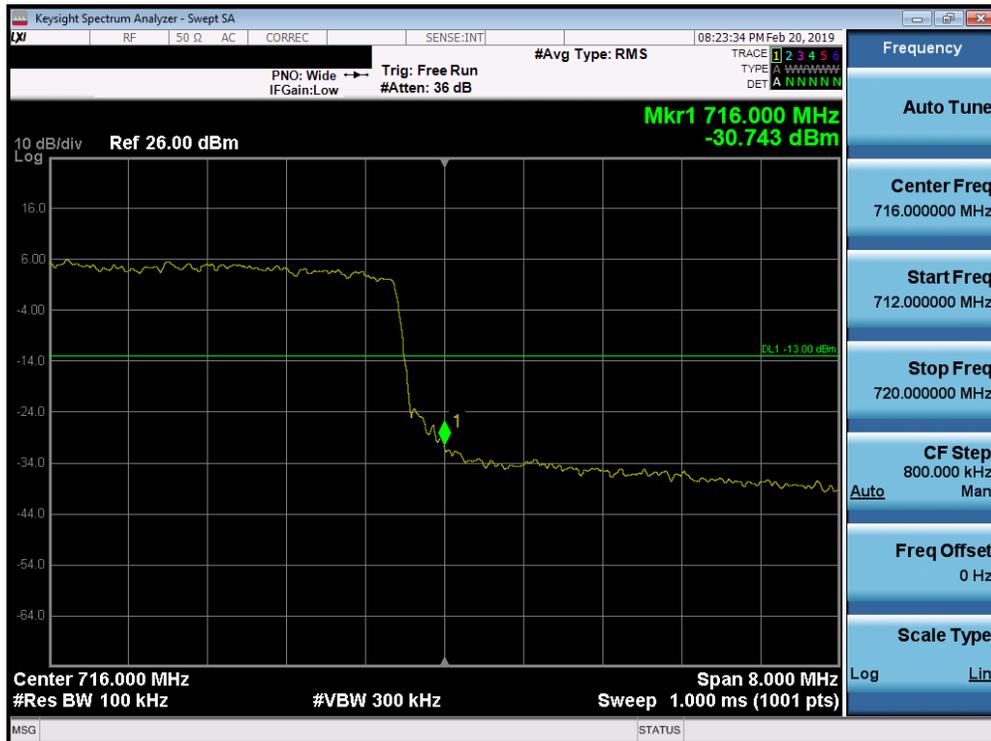


Plot 7-119. Upper Band Edge Plot (Band 12 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 79 of 162



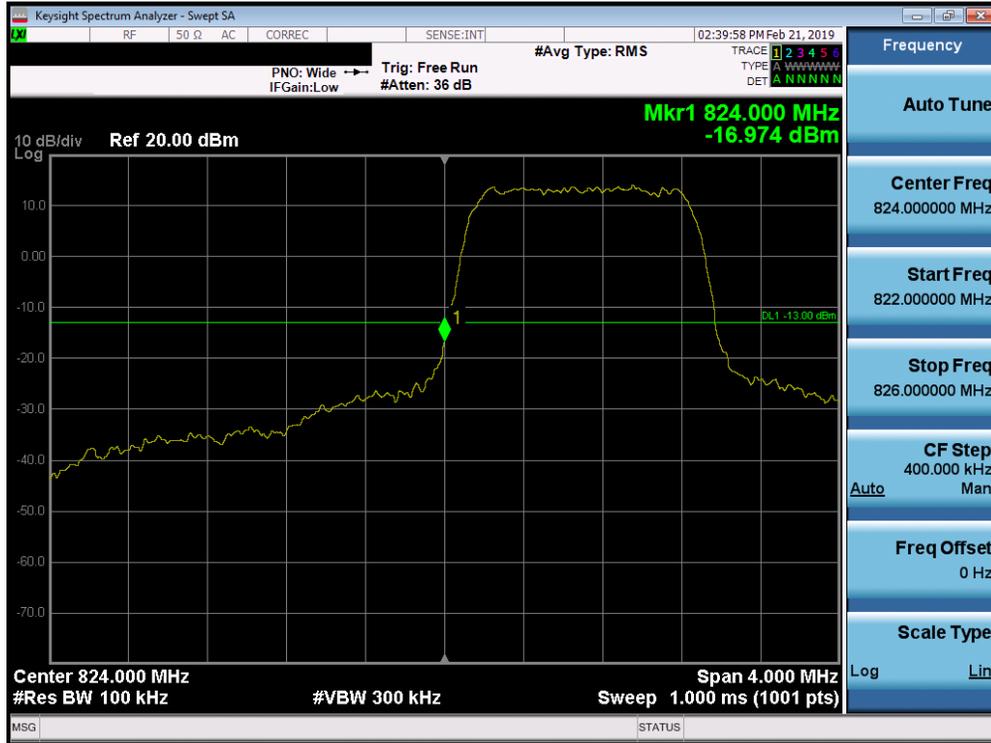
Plot 7-120. Lower Band Edge Plot (Band 12 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-121. Upper Band Edge Plot (Band 12 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 80 of 162

**Band 26/5**

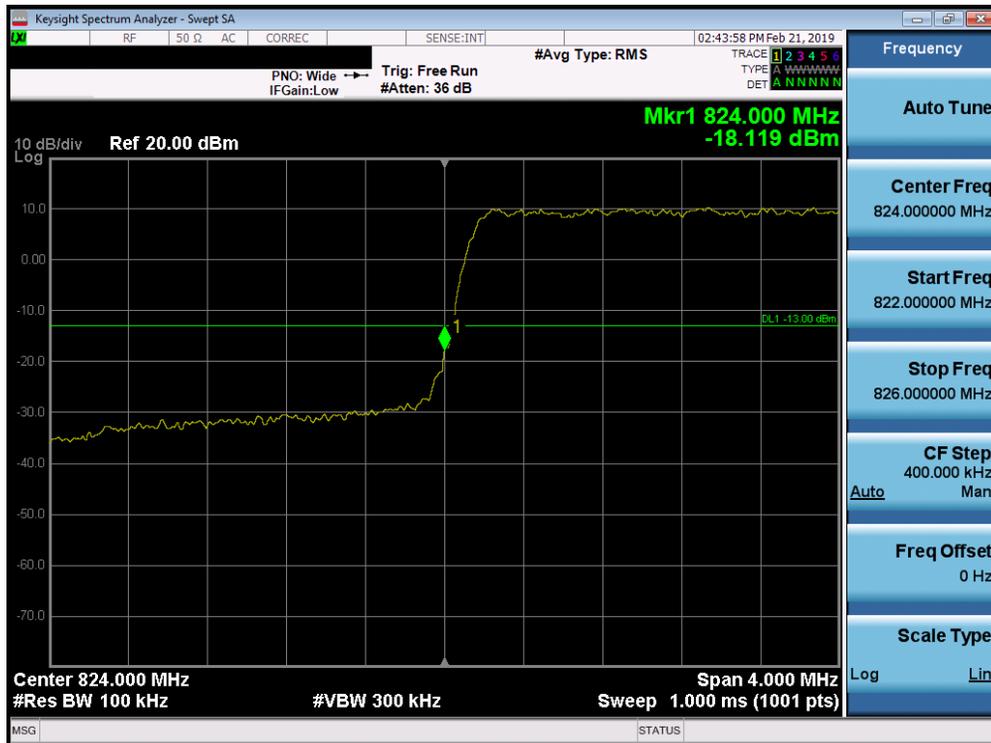


**Plot 7-122. Lower Band Edge Plot (Band 26/5 - 1.4MHz QPSK - Full RB Configuration)**

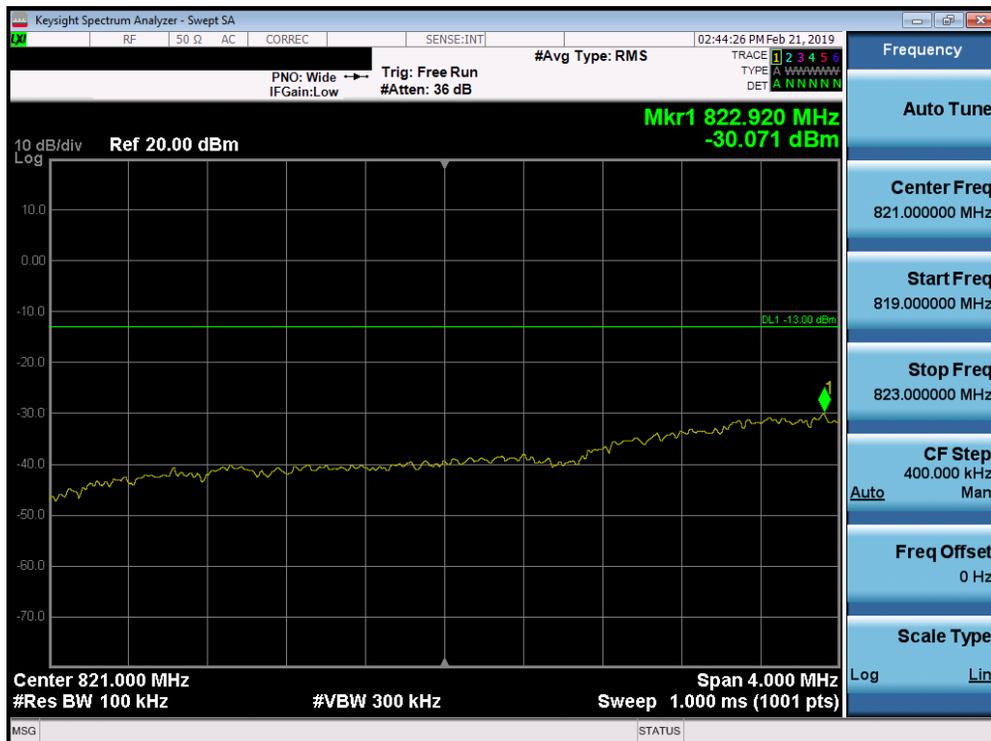


**Plot 7-123. Upper Band Edge Plot (Band 26/5 - 1.4MHz QPSK - Full RB Configuration)**

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 81 of 162



Plot 7-124. Lower Band Edge Plot (Band 26/5 - 3.0MHz QPSK - Full RB Configuration)



Plot 7-125. Lower Extended Band Edge Plot (Band 26/5 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 82 of 162

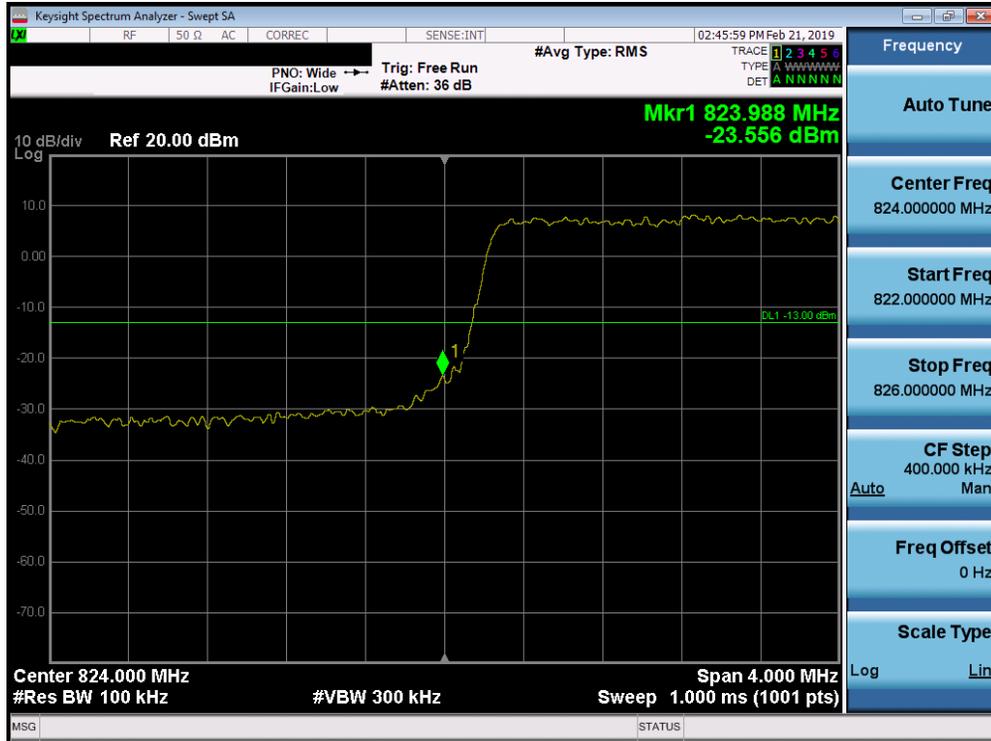


Plot 7-126. Upper Band Edge Plot (Band 26/5 - 3.0MHz QPSK - Full RB Configuration)

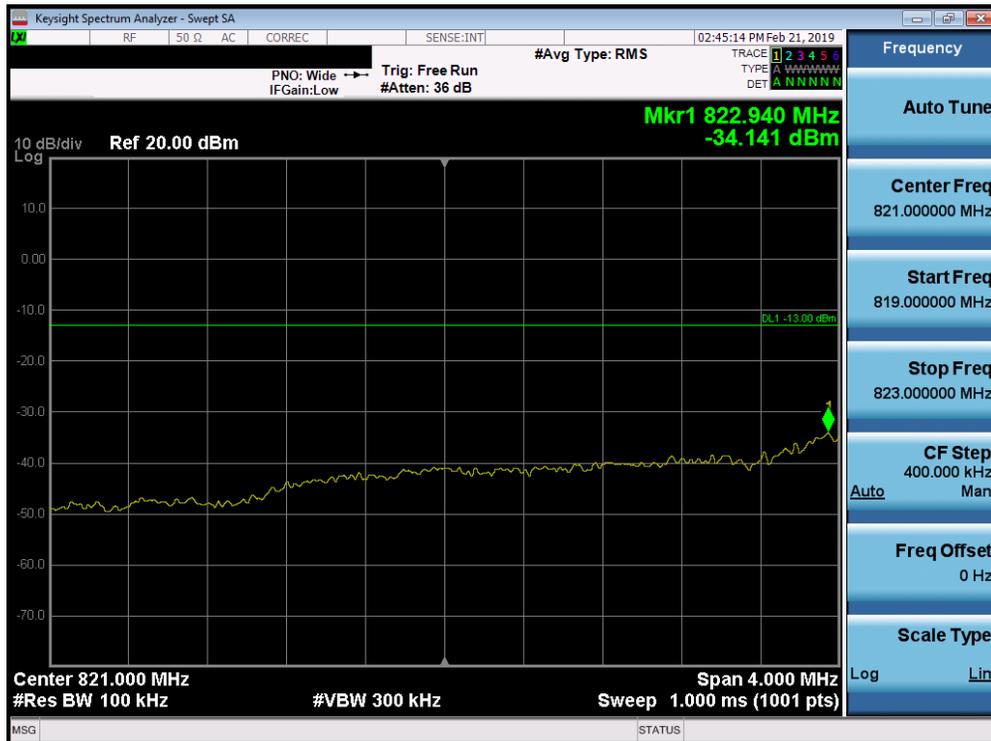


Plot 7-127. Upper Extended Band Edge Plot (Band 26/5 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 83 of 162



Plot 7-128. Lower Band Edge Plot (Band 26/5 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-129. Lower Extended Band Edge Plot (Band 26/5 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 84 of 162

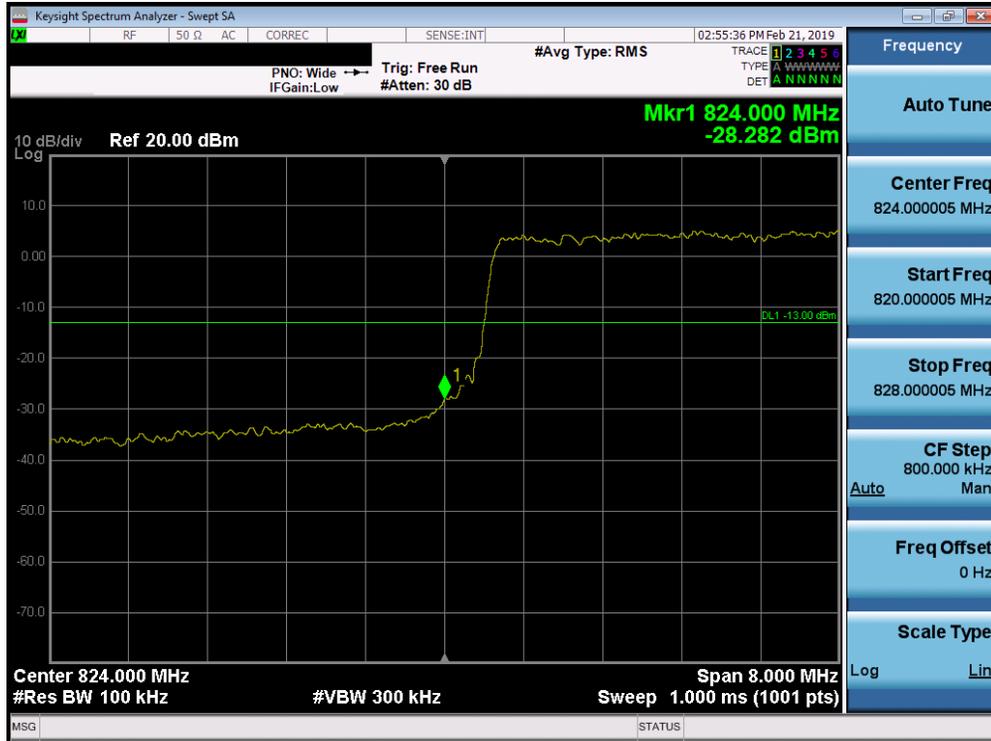


Plot 7-130. Upper Band Edge Plot (Band 26/5 - 5.0MHz QPSK - Full RB Configuration)

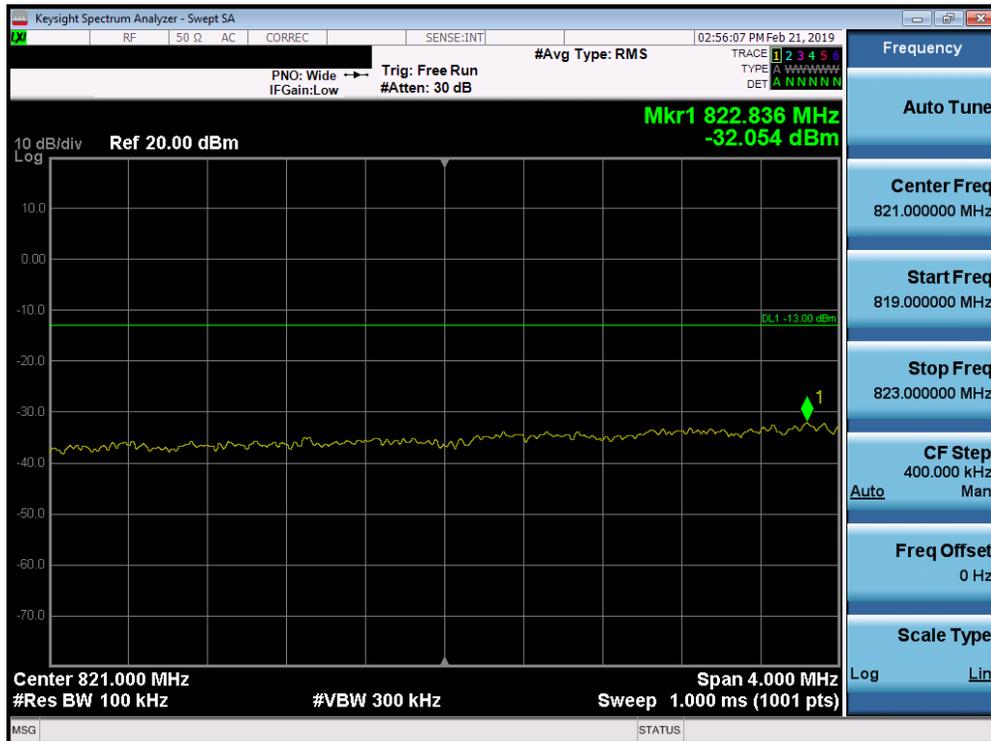


Plot 7-131. Upper Extended Band Edge Plot (Band 26/5 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 85 of 162



Plot 7-132. Lower Band Edge Plot (Band 26/5 - 10.0MHz QPSK - Full RB Configuration)

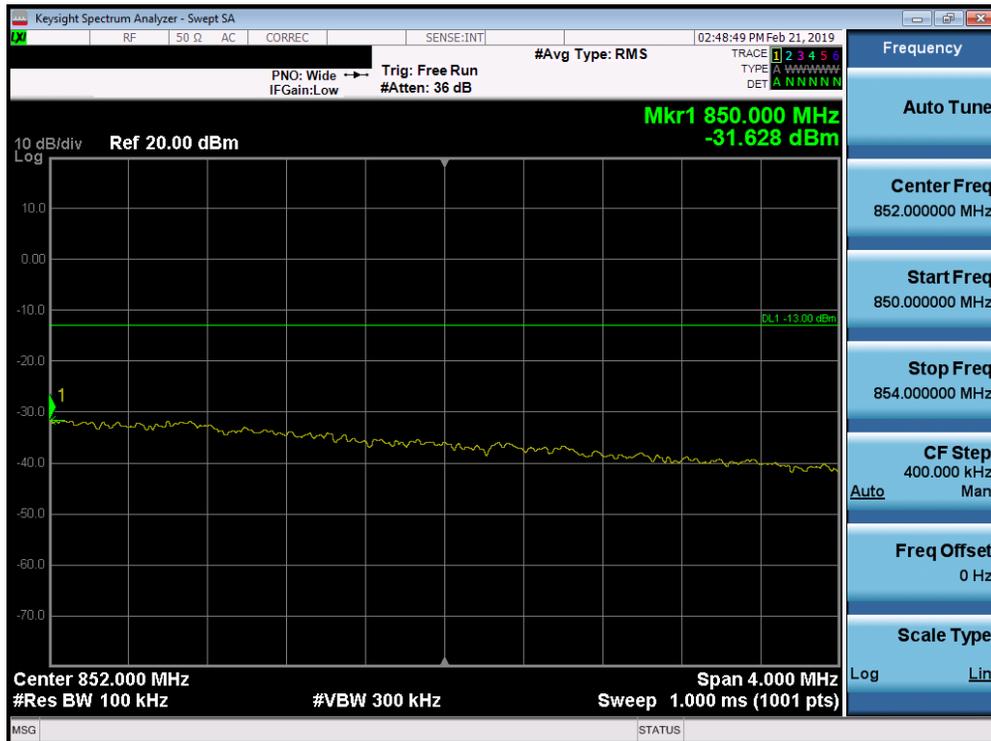


Plot 7-133. Lower Extended Band Edge Plot (Band 26/5 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 86 of 162

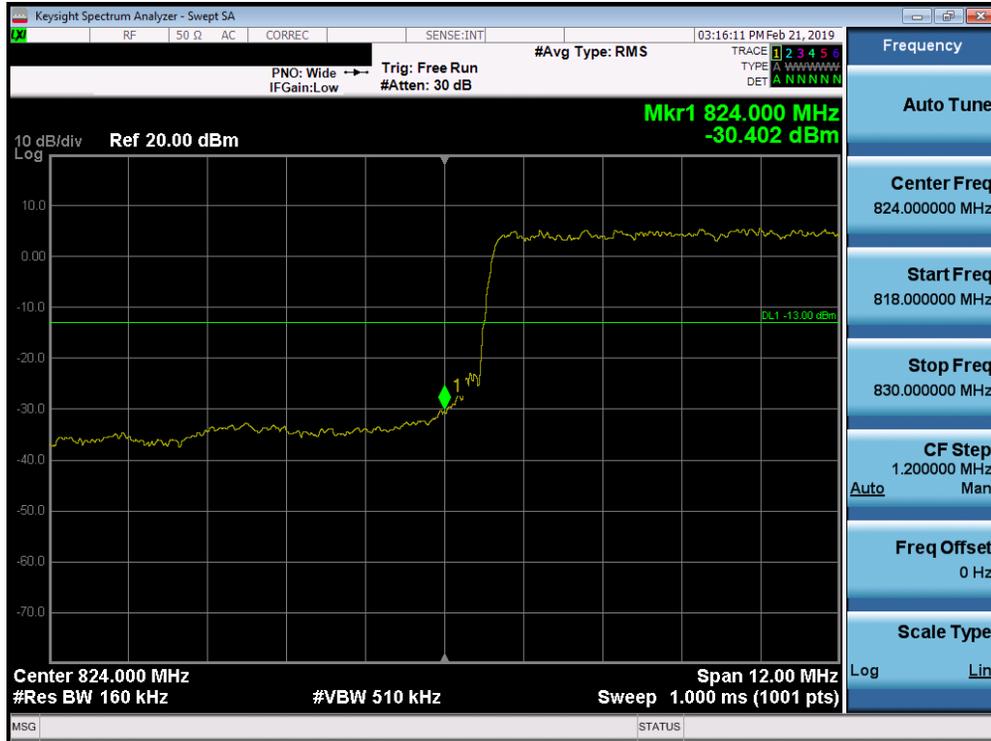


Plot 7-134. Upper Band Edge Plot (Band 26/5 - 10.0MHz QPSK - Full RB Configuration)

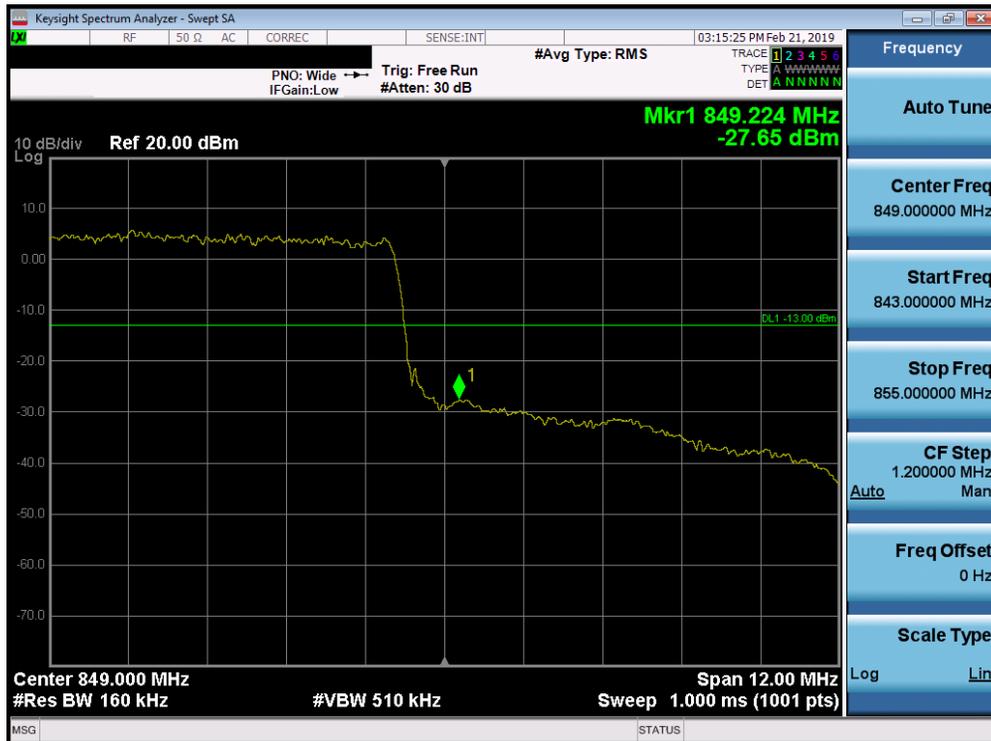


Plot 7-135. Upper Extended Band Edge Plot (Band 26/5 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 87 of 162



Plot 7-136. Lower Band Edge Plot (Band 26 - 15.0MHz QPSK - Full RB Configuration)



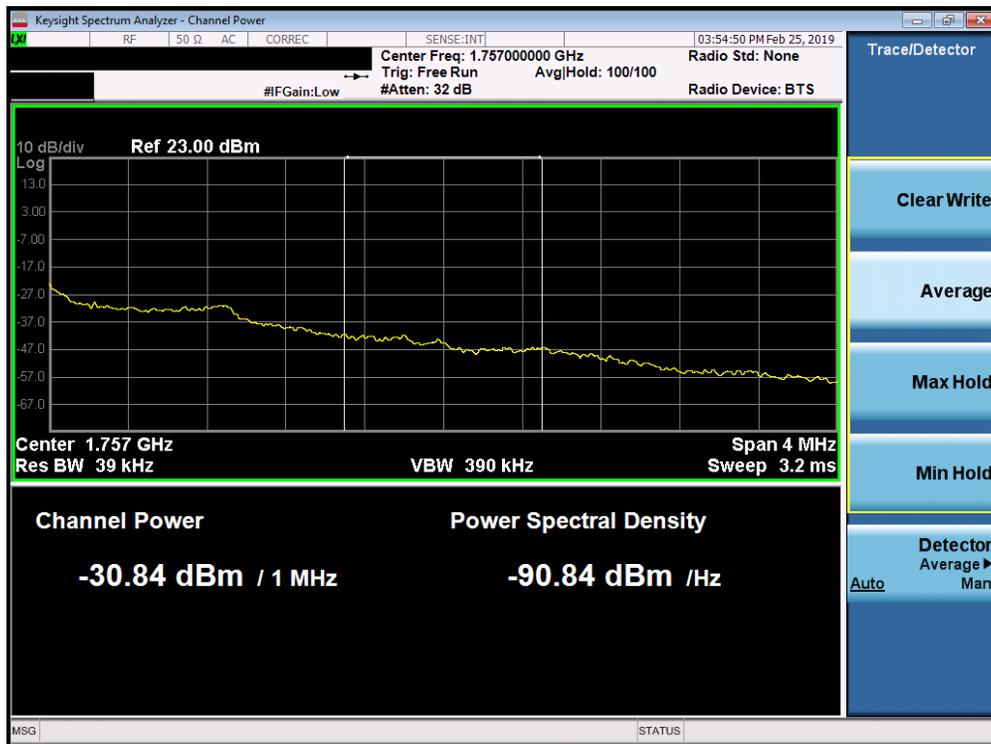
Plot 7-137. Upper Band Edge Plot (Band 26 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 88 of 162





Plot 7-140. Upper Band Edge Plot (Band 4 - 1.4MHz QPSK - Full RB Configuration)

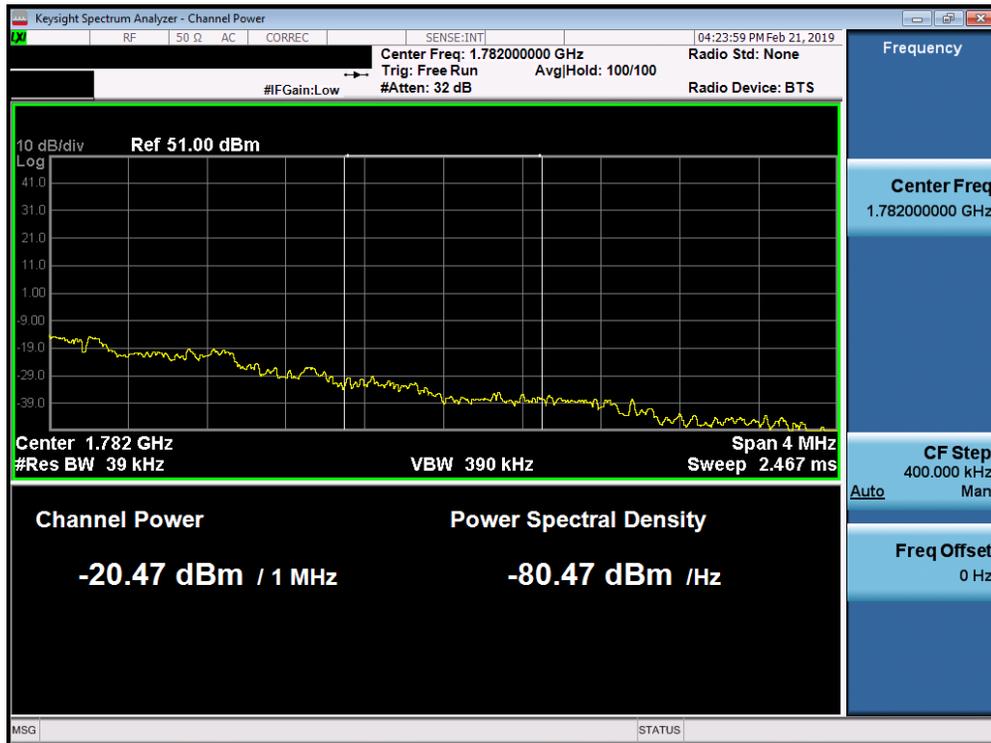


Plot 7-141. Upper Extended Band Edge Plot (Band 4 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 90 of 162

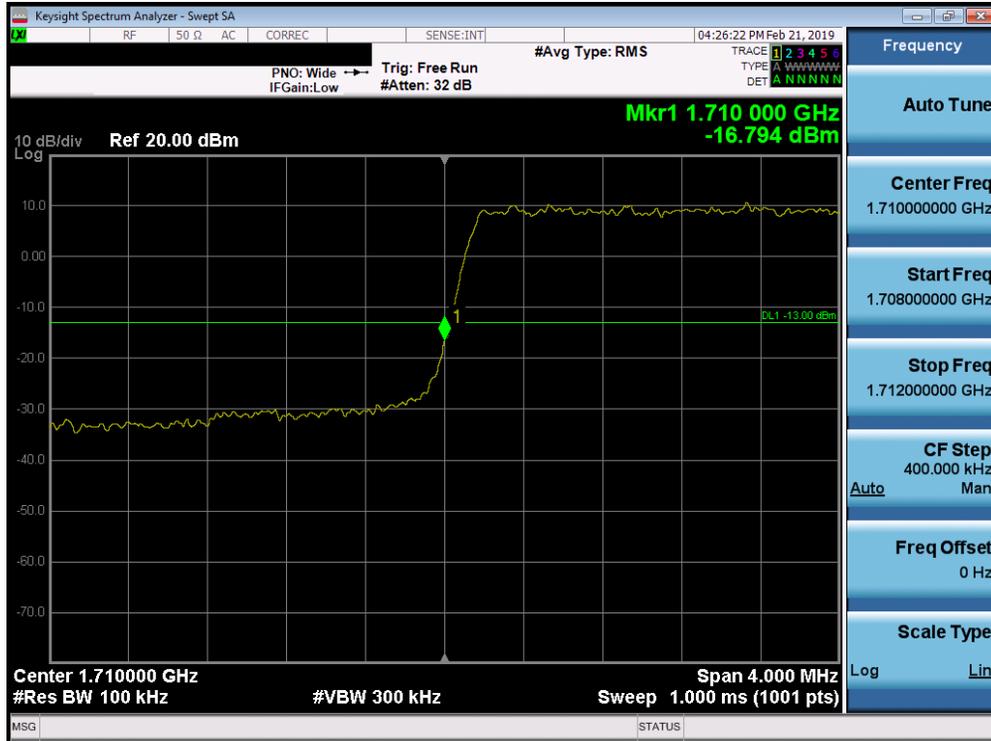


Plot 7-142. Upper Band Edge Plot (Band 66 - 1.4MHz QPSK - Full RB Configuration)

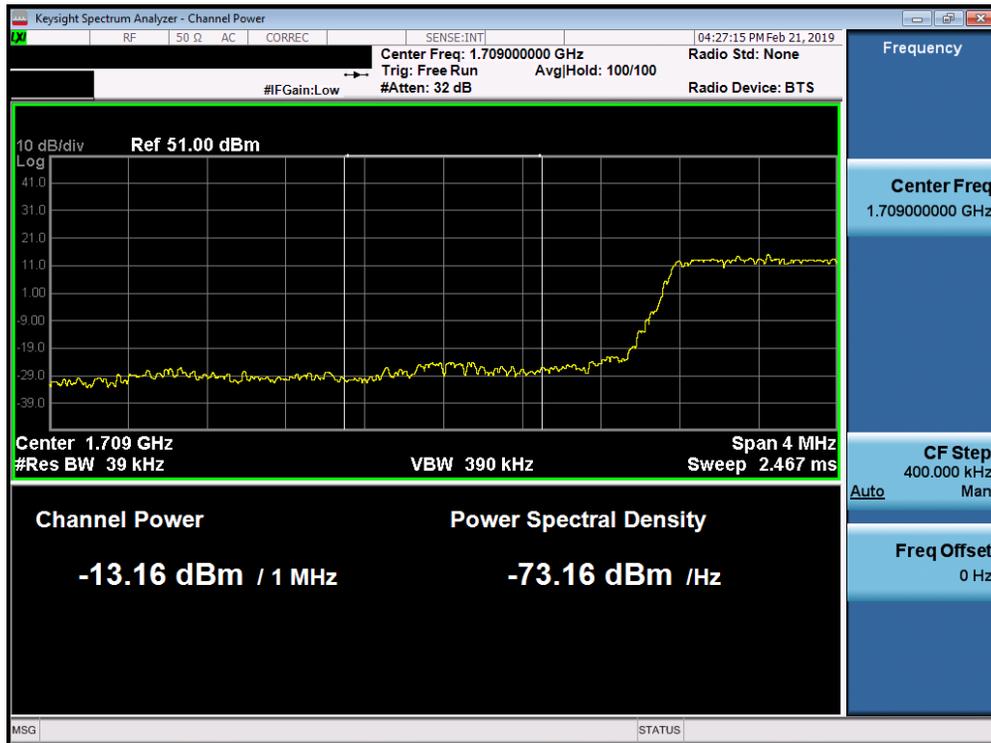


Plot 7-143. Upper Extended Band Edge Plot (Band 66 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 91 of 162

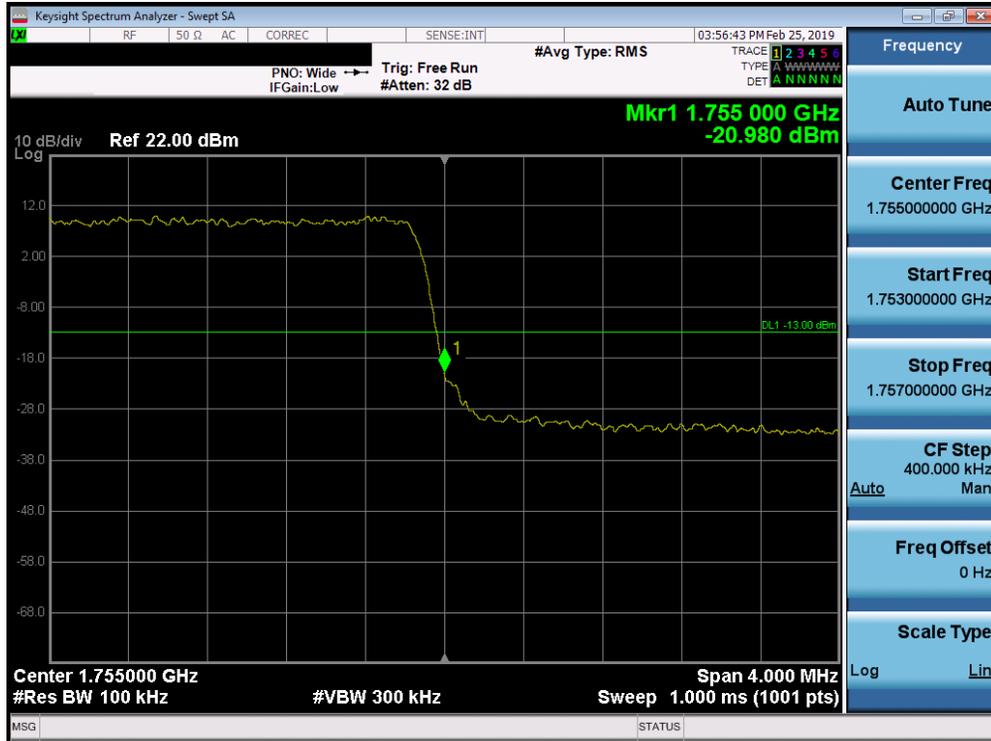


Plot 7-144. Lower Band Edge Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)

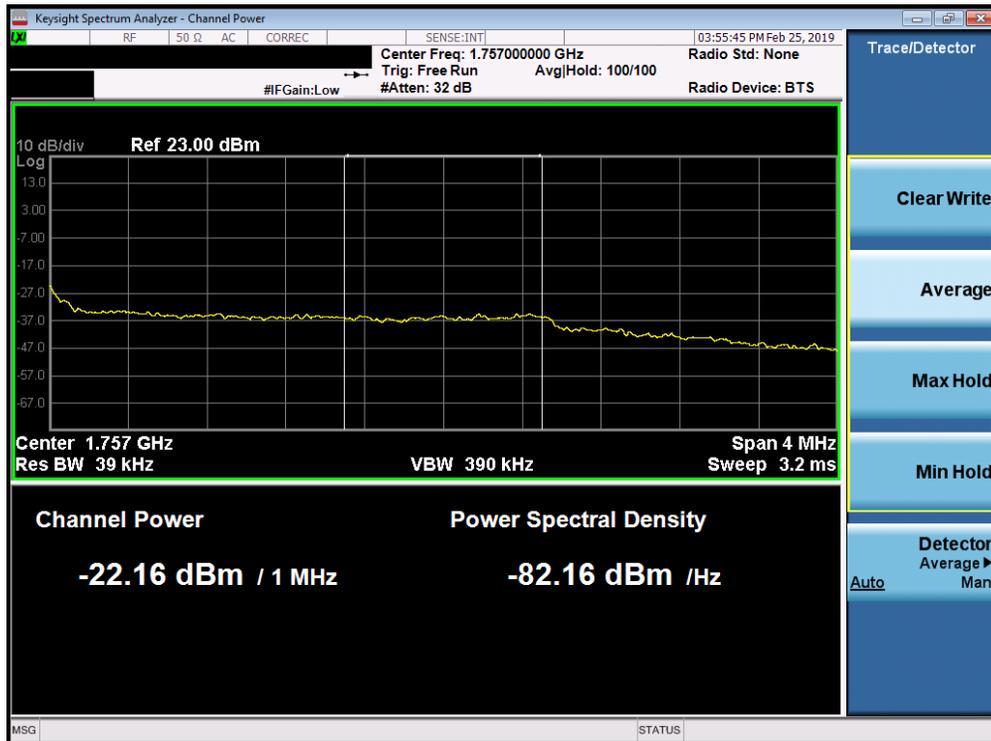


Plot 7-145. Lower Extended Band Edge Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 92 of 162

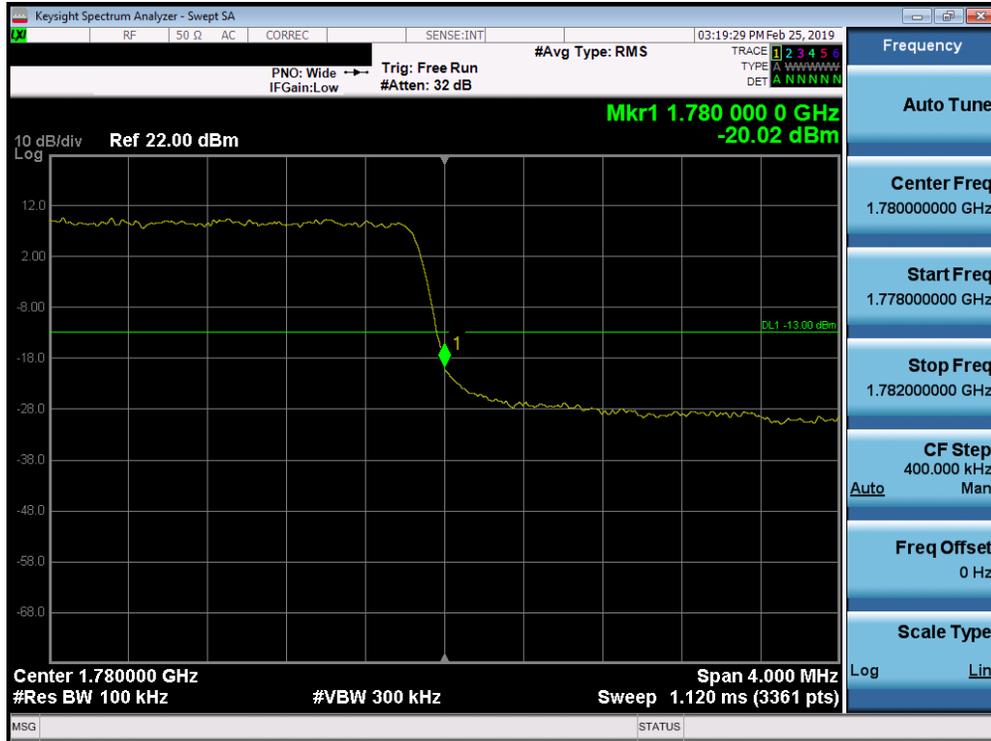


Plot 7-146. Upper Band Edge Plot (Band 4 - 3.0MHz QPSK - Full RB Configuration)

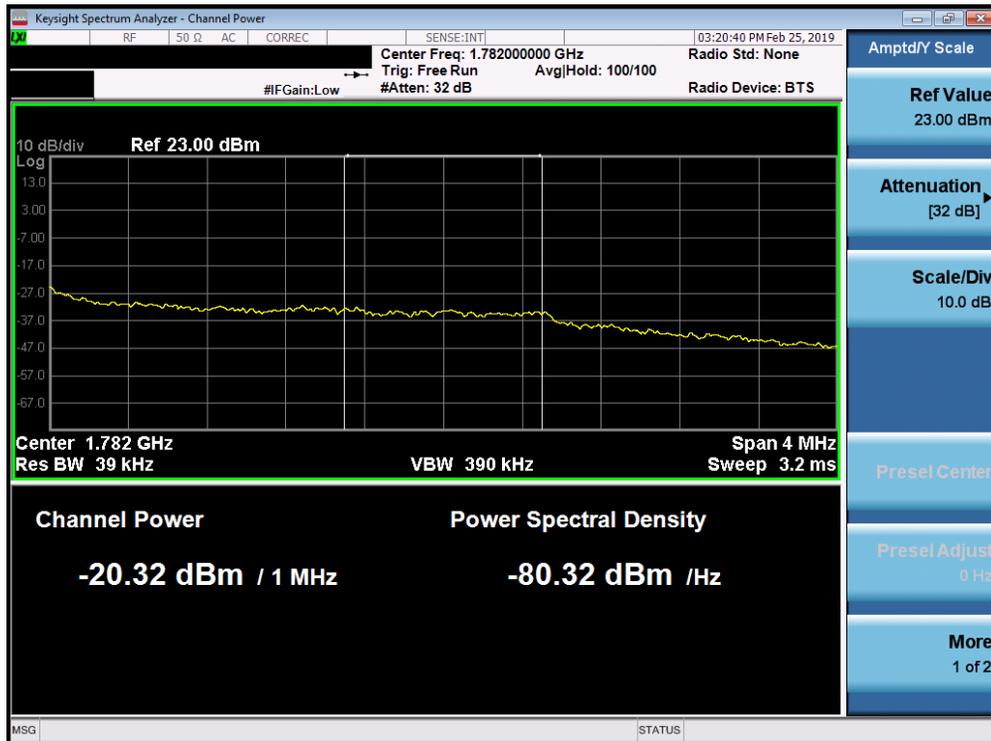


Plot 7-147. Upper Extended Band Edge Plot (Band 4 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 93 of 162

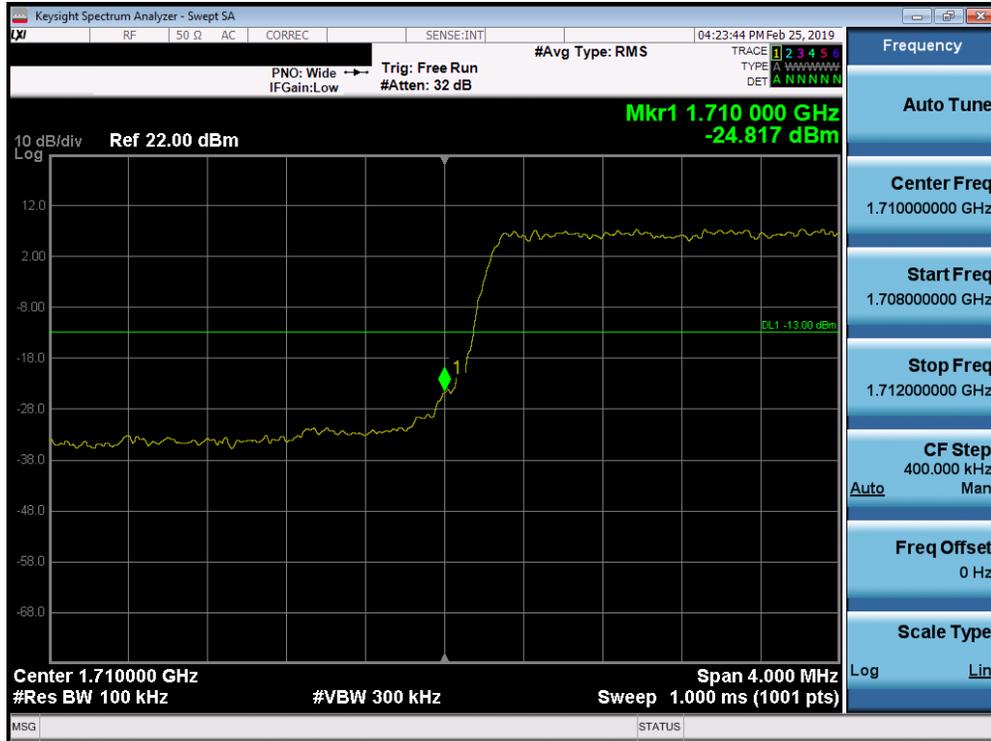


Plot 7-148. Upper Band Edge Plot (Band 66 - 3.0MHz QPSK - Full RB Configuration)

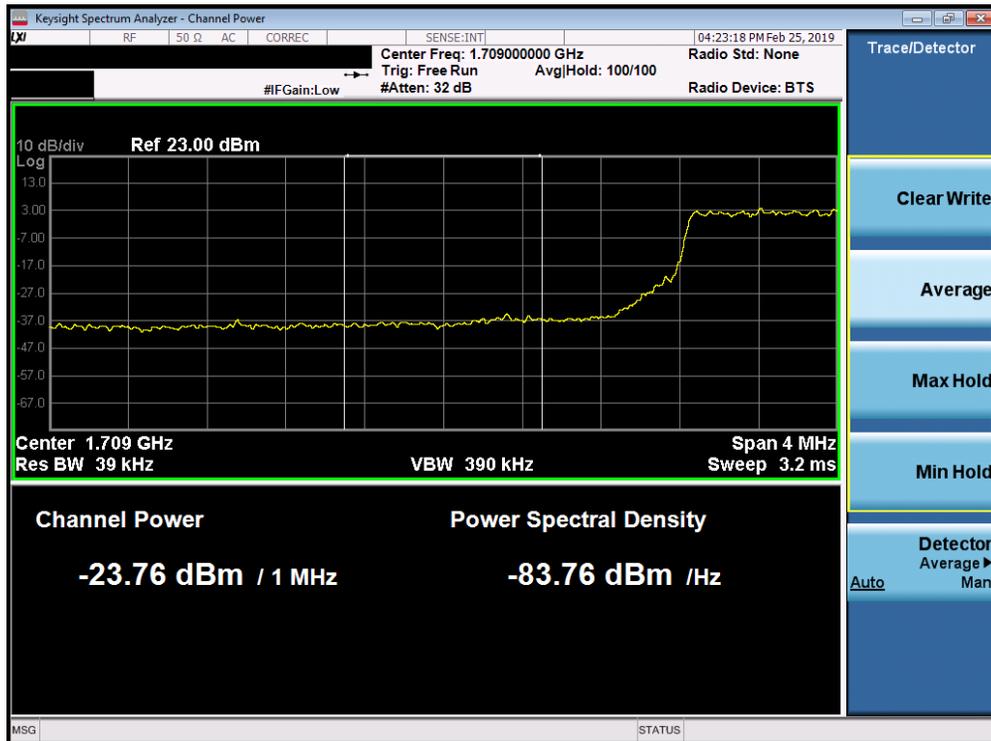


Plot 7-149. Upper Extended Band Edge Plot (Band 66 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 94 of 162

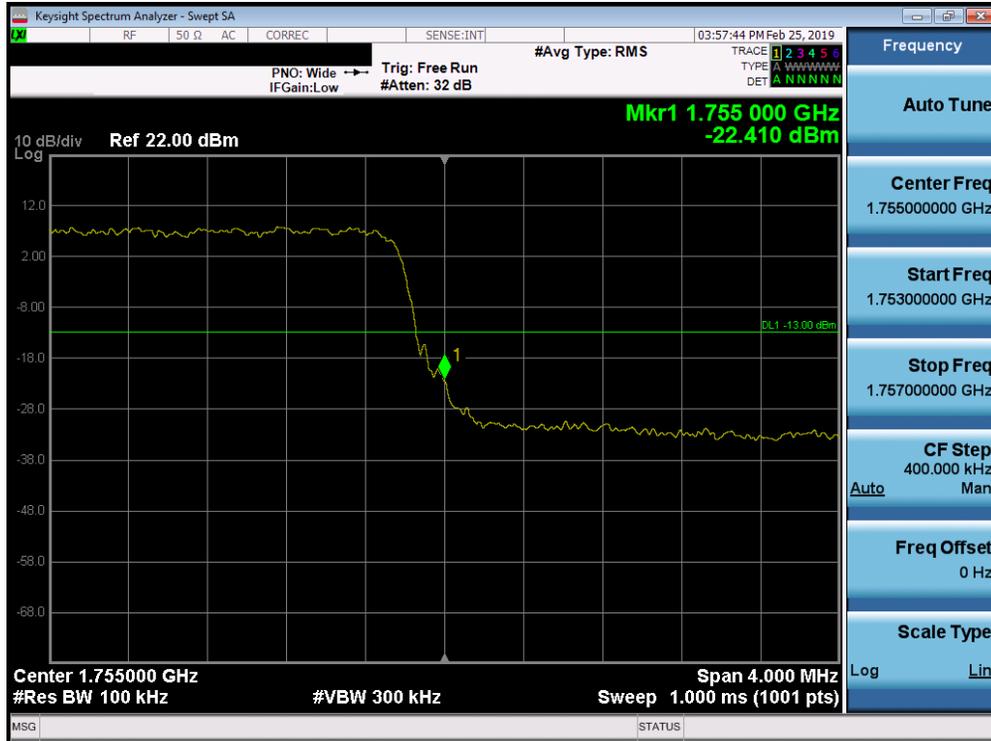


Plot 7-150. Lower Band Edge Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)

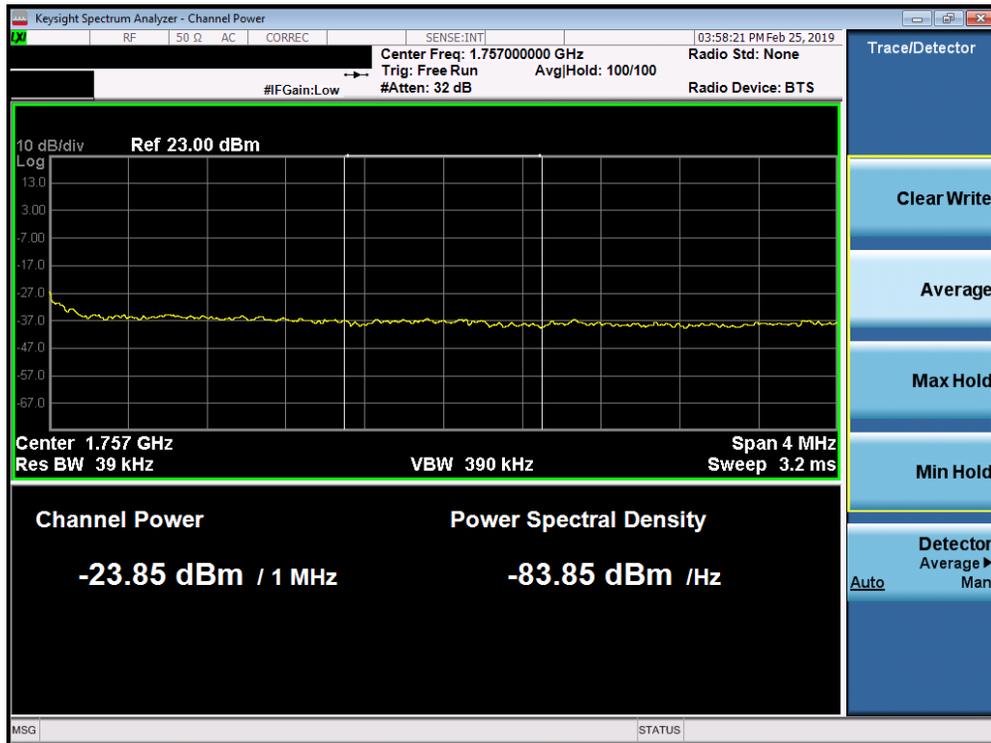


Plot 7-151. Lower Extended Band Edge Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 95 of 162



Plot 7-152. Upper Band Edge Plot (Band 4 - 5.0MHz QPSK - Full RB Configuration)

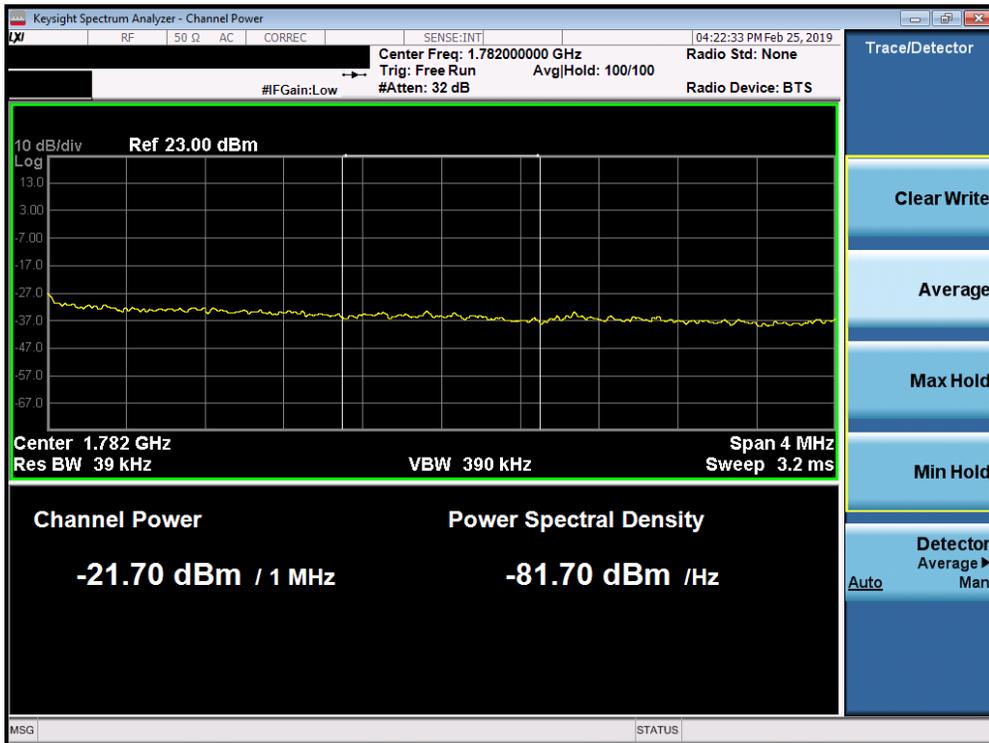


Plot 7-153. Upper Extended Band Edge Plot (Band 4 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 96 of 162

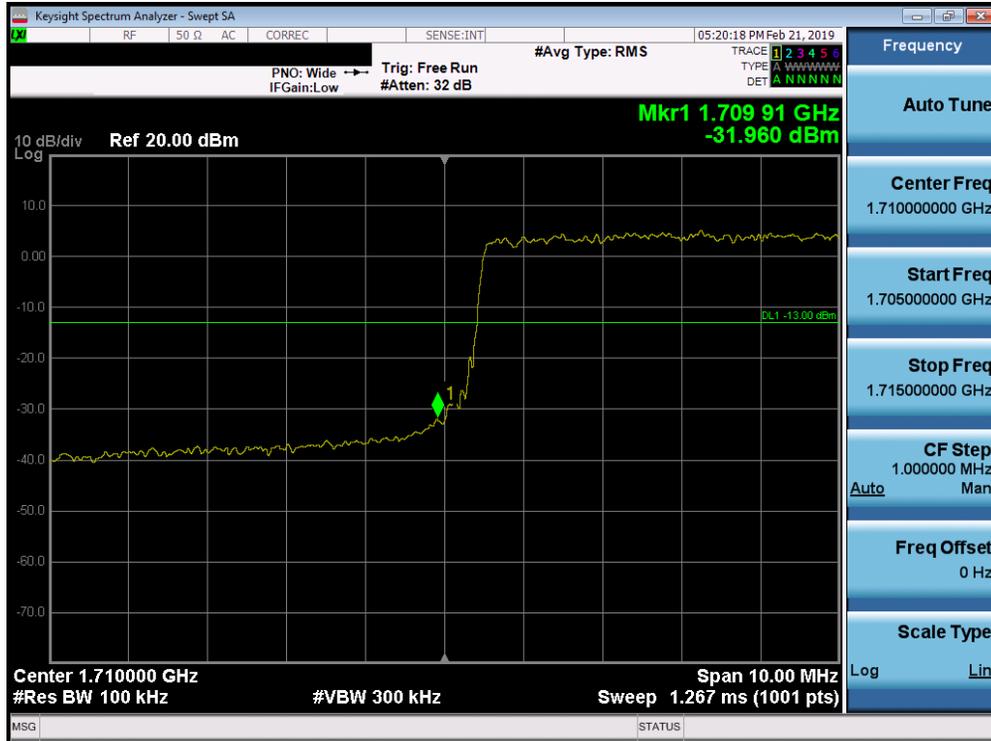


Plot 7-154. Upper Band Edge Plot (Band 66 - 5.0MHz QPSK - Full RB Configuration)

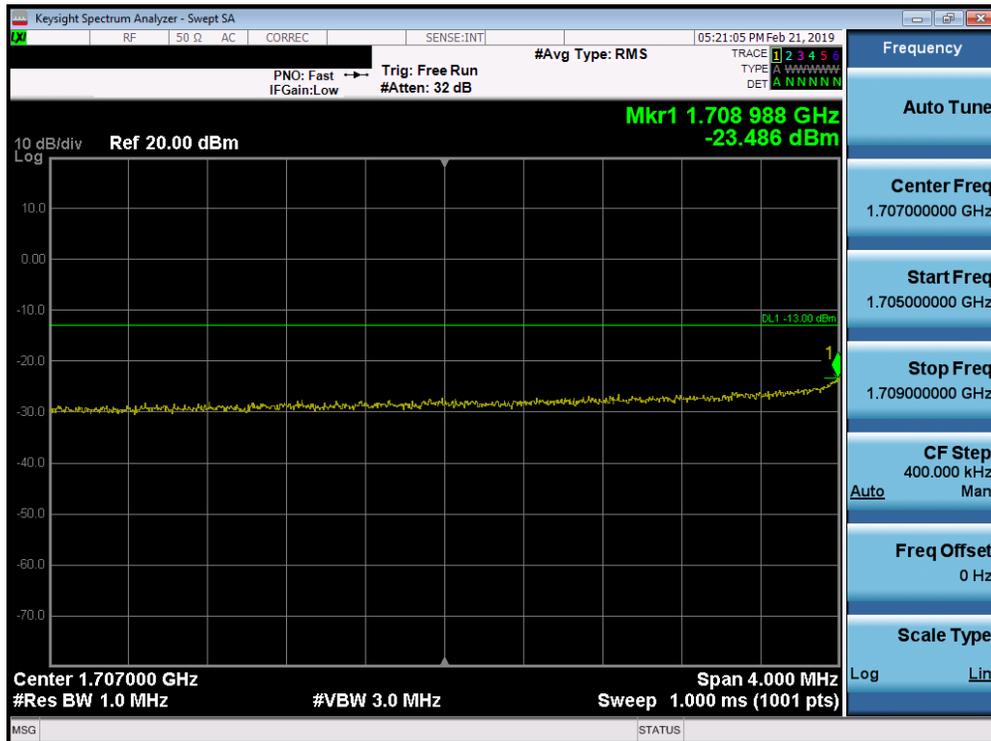


Plot 7-155. Upper Extended Band Edge Plot (Band 66 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 97 of 162

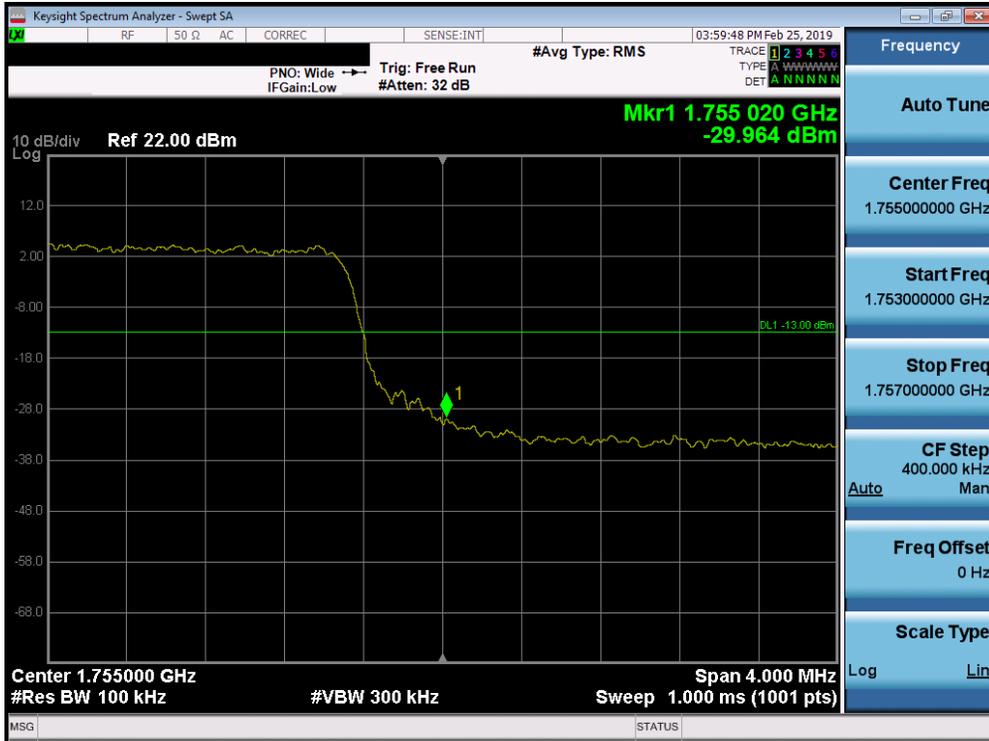


Plot 7-156. Lower Band Edge Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)

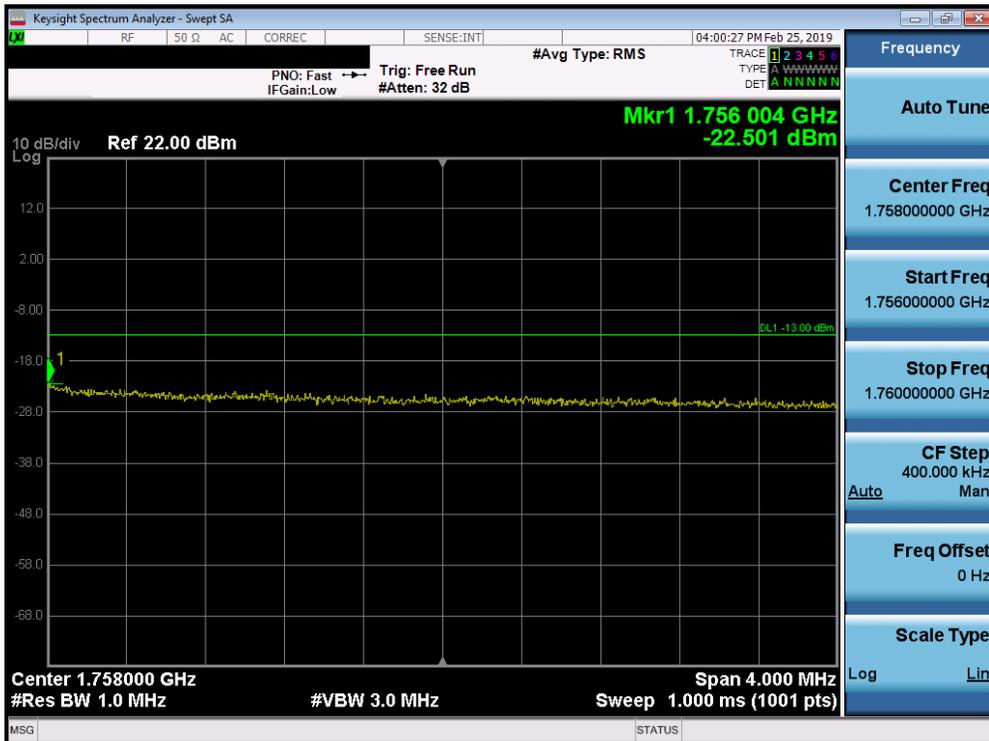


Plot 7-157. Lower Extended Band Edge Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 98 of 162

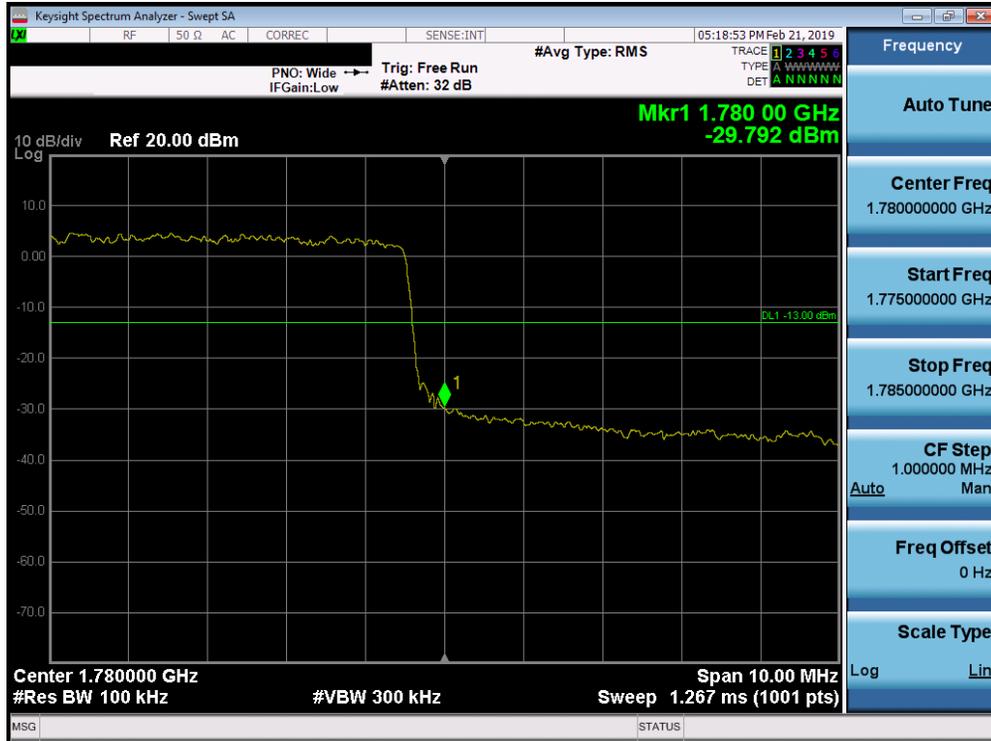


Plot 7-158. Upper Band Edge Plot (Band 4 - 10.0MHz QPSK - Full RB Configuration)

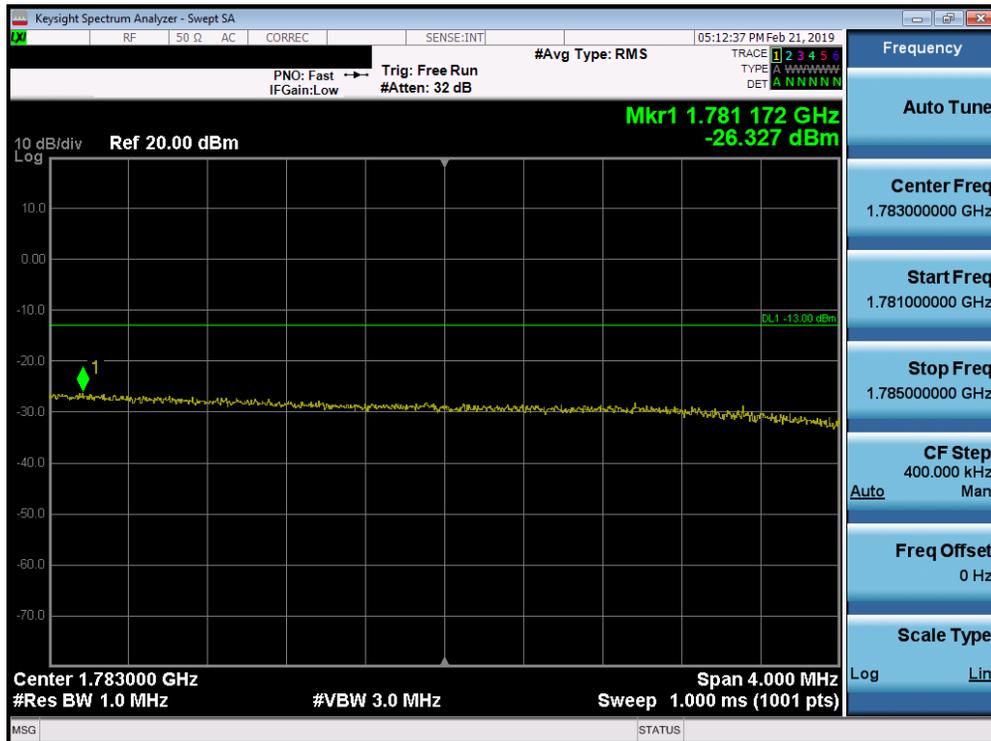


Plot 7-159. Upper Extended Band Edge Plot (Band 4 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 99 of 162



Plot 7-160. Upper Band Edge Plot (Band 66 - 10.0MHz QPSK - Full RB Configuration)

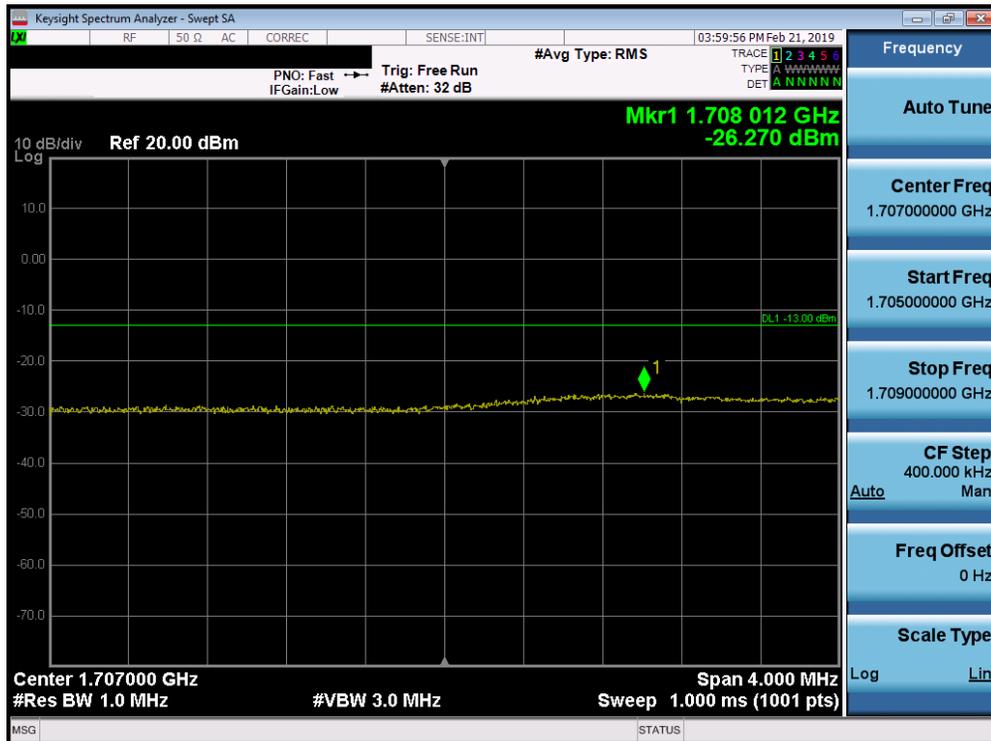


Plot 7-161. Upper Extended Band Edge Plot (Band 66 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 100 of 162



Plot 7-162. Lower Band Edge Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)

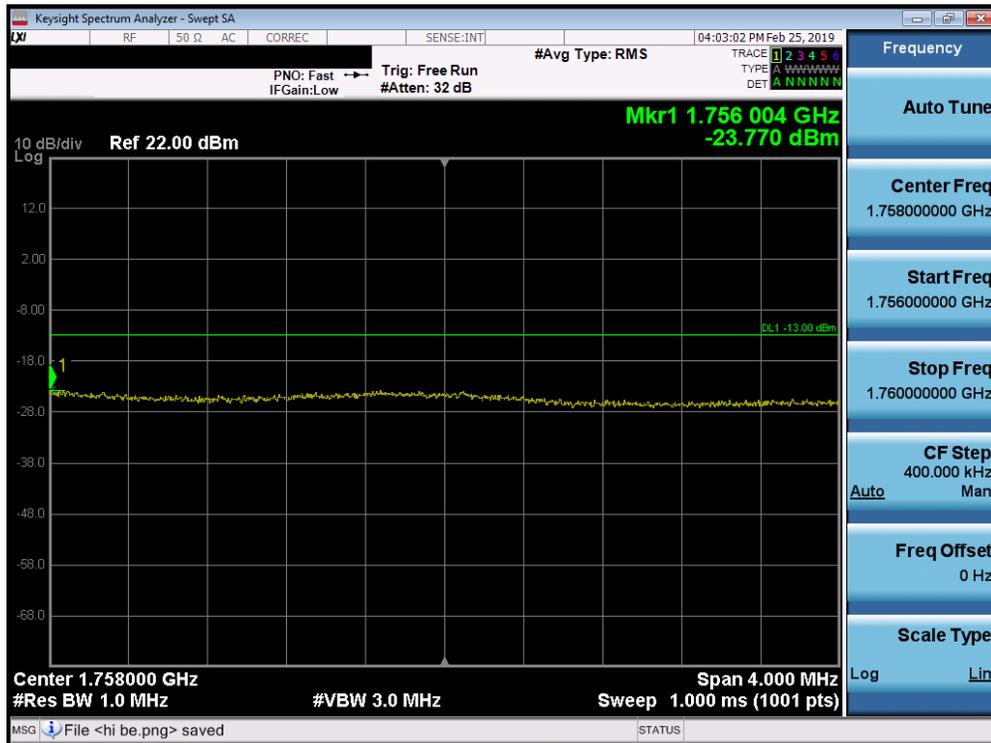


Plot 7-163. Lower Extended Band Edge Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 101 of 162



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

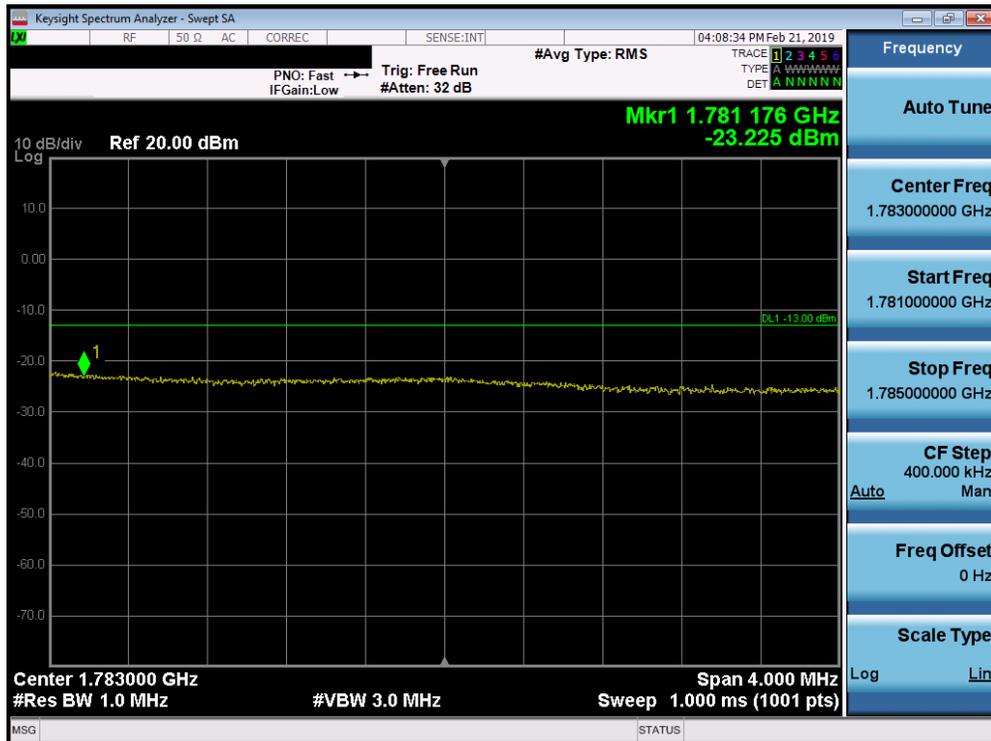


Plot 7-165. Upper Extended Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 102 of 162

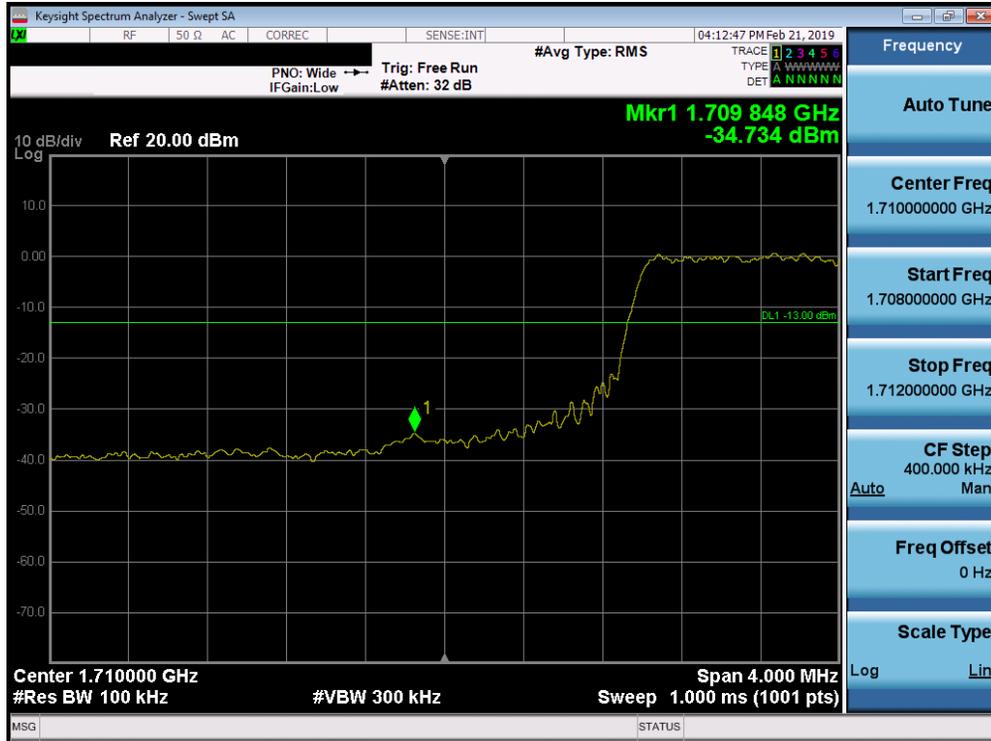


Plot 7-166. Upper Band Edge Plot (Band 66 - 15.0MHz QPSK - Full RB Configuration)

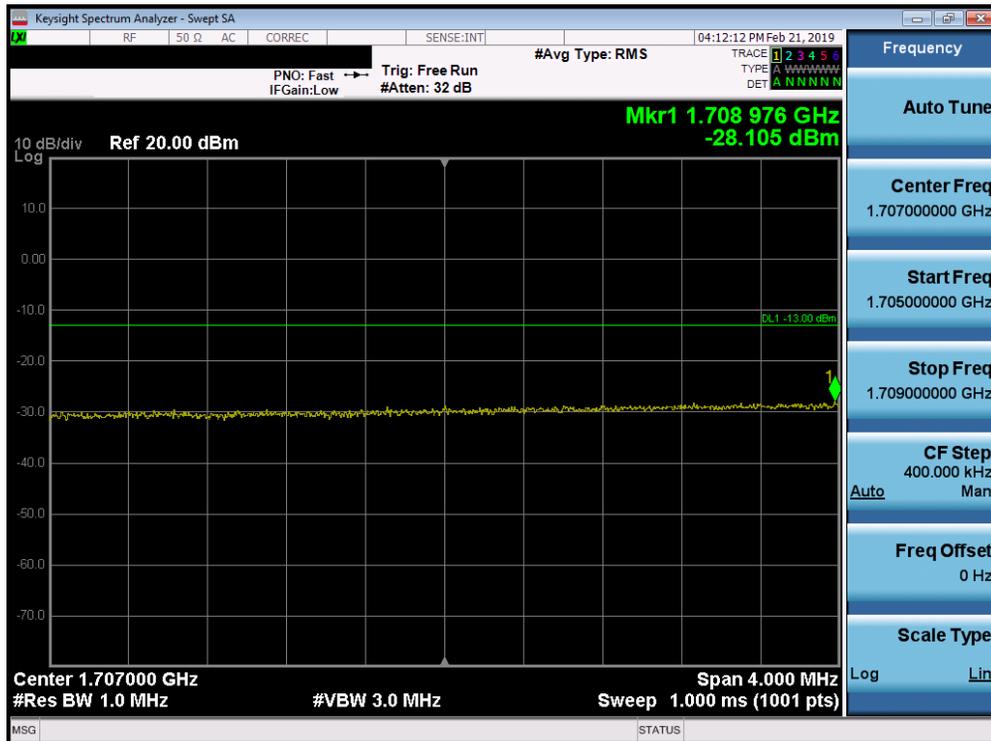


Plot 7-167. Upper Extended Band Edge Plot (Band 66 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 103 of 162

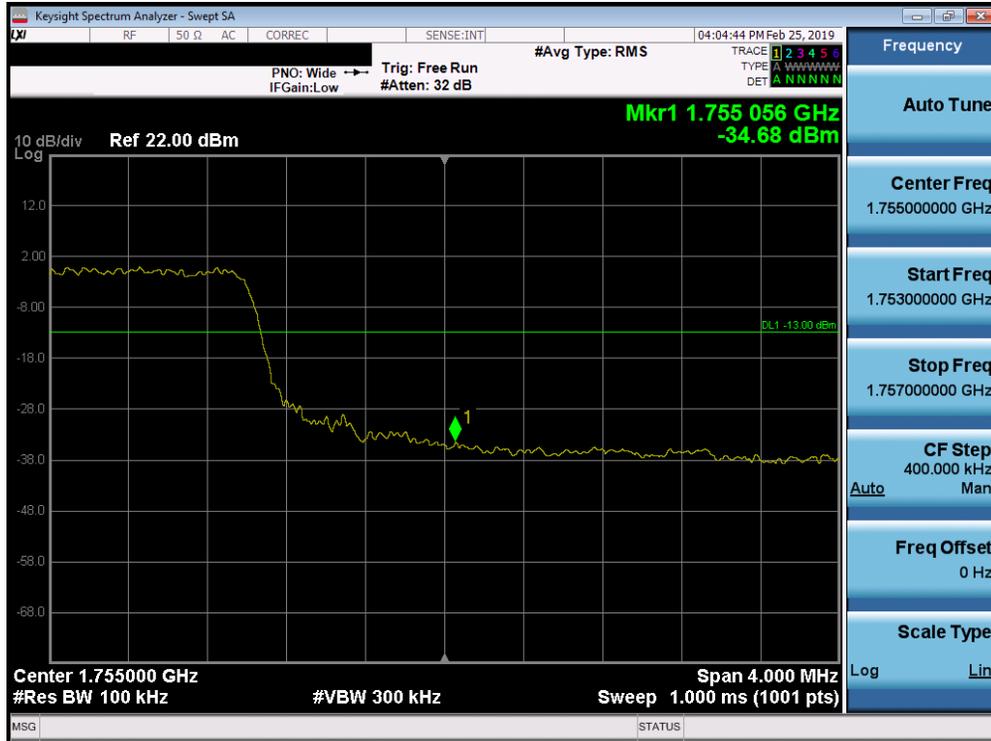


Plot 7-168. Lower Band Edge Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)

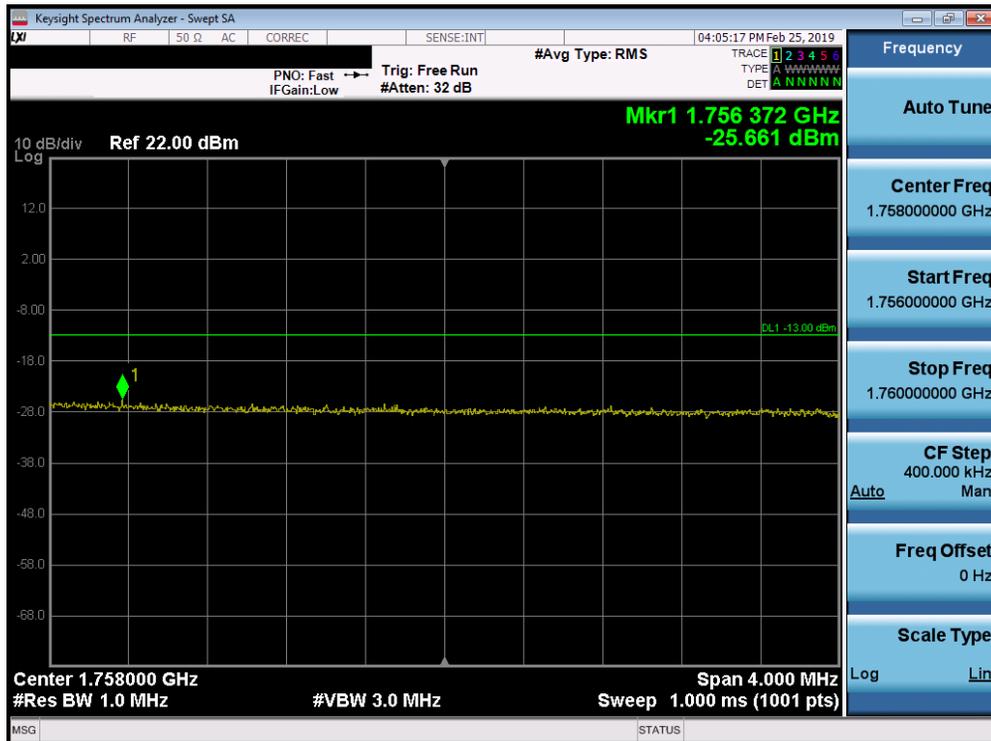


Plot 7-169. Lower Extended Band Edge Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 104 of 162

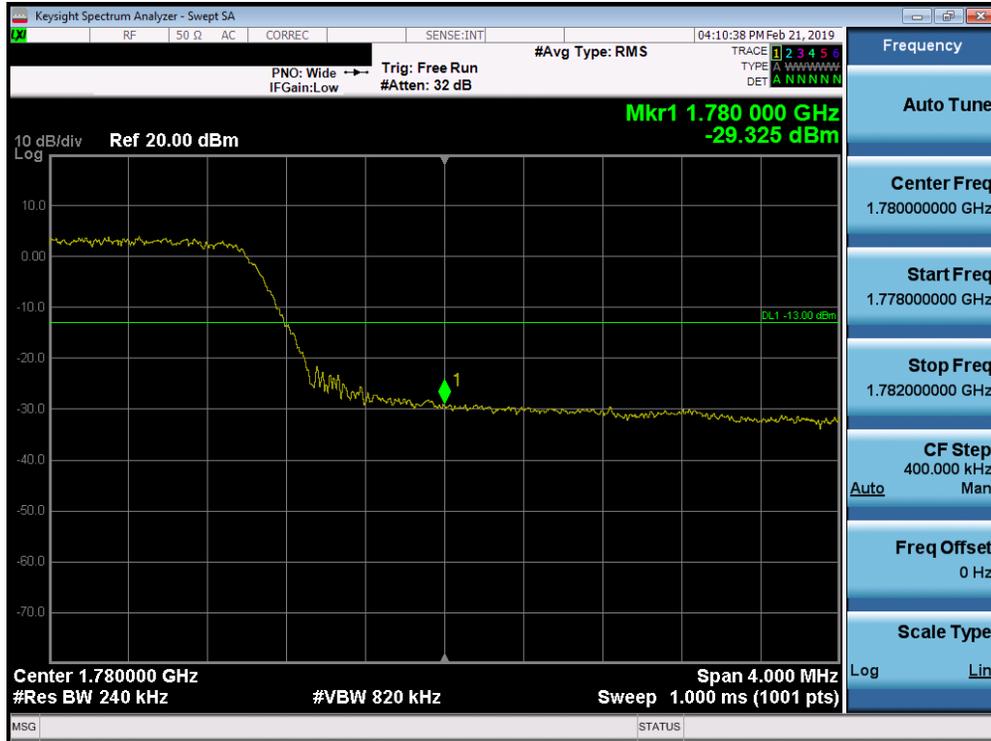


Plot 7-170. Upper Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)

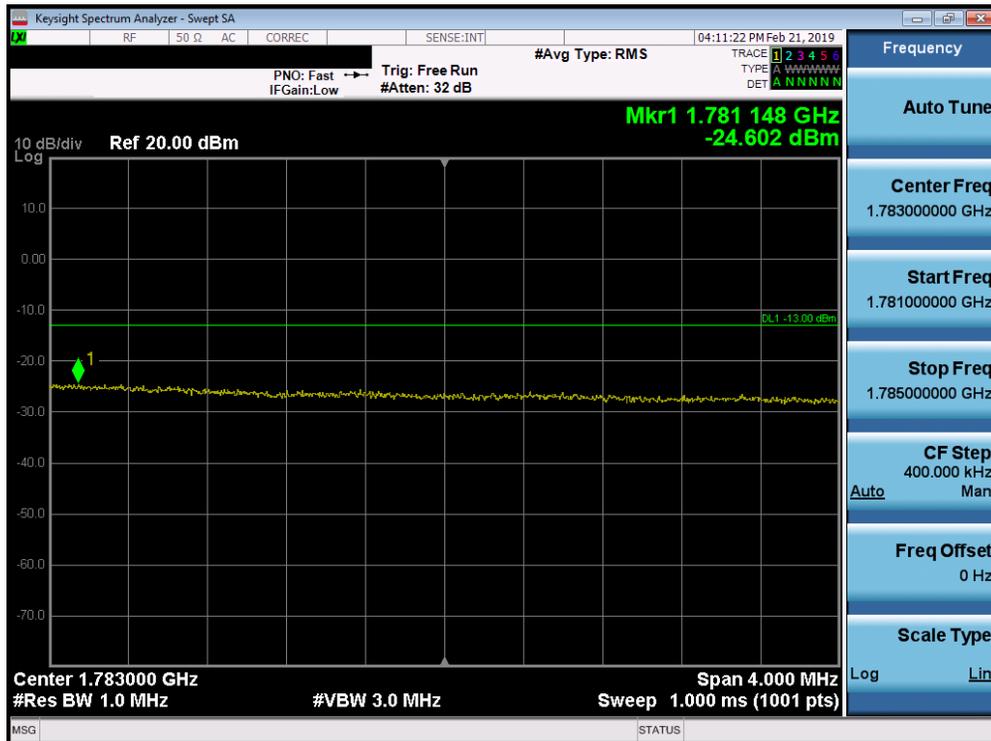


Plot 7-171. Upper Extended Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 105 of 162



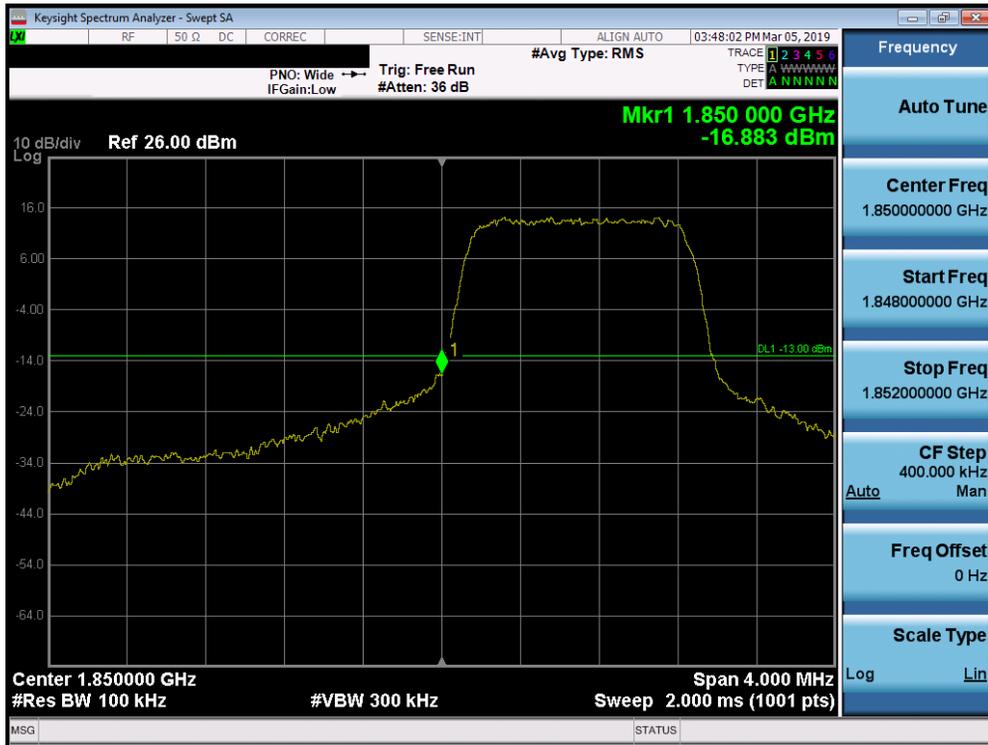
Plot 7-172. Upper Band Edge Plot (Band 66 - 20.0MHz QPSK - Full RB Configuration)



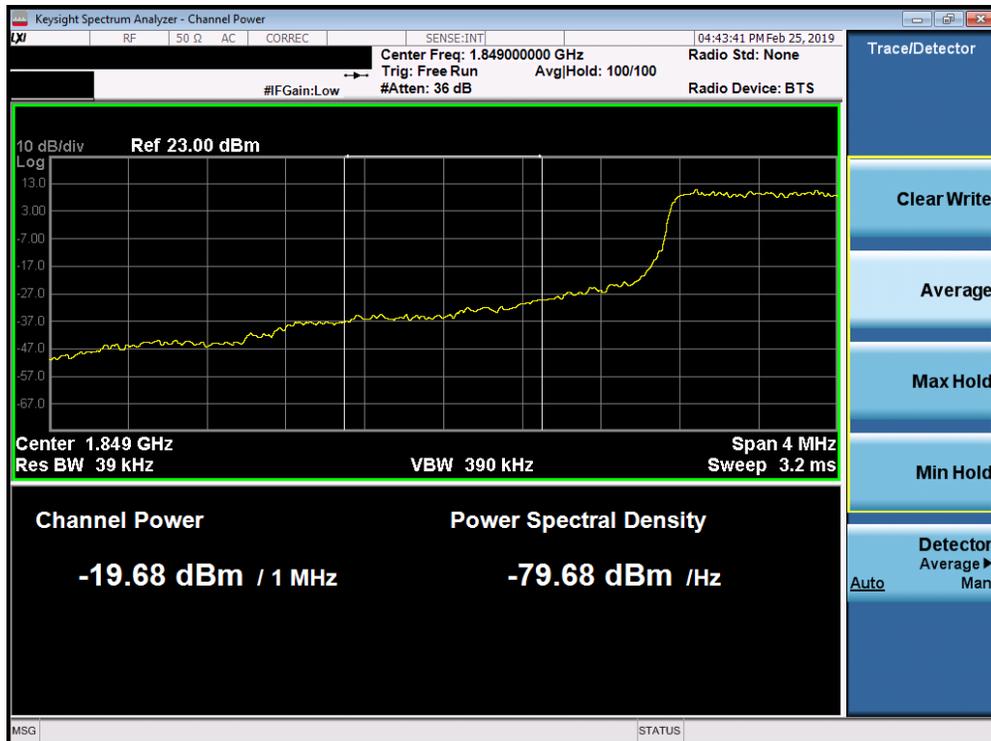
Plot 7-173. Upper Extended Band Edge Plot (Band 66 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 106 of 162

**Band 25/2**



**Plot 7-174. Lower Band Edge Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)**

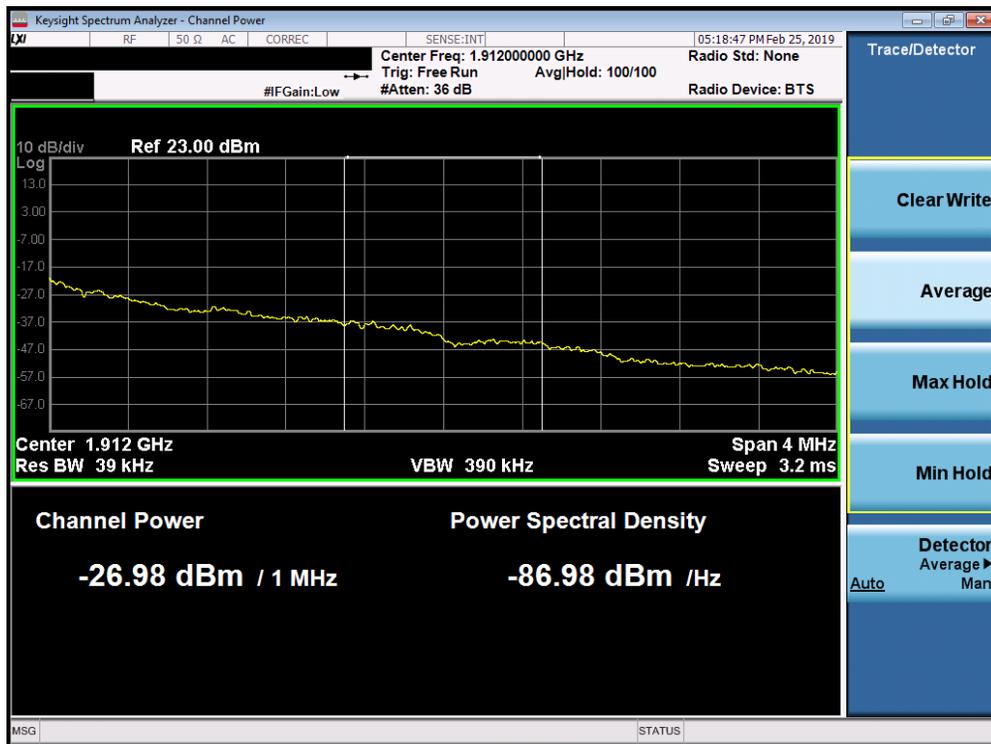


**Plot 7-175. Lower Extended Band Edge Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)**

FCC ID: ZNFX220TB	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 107 of 162



Plot 7-176. Upper Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

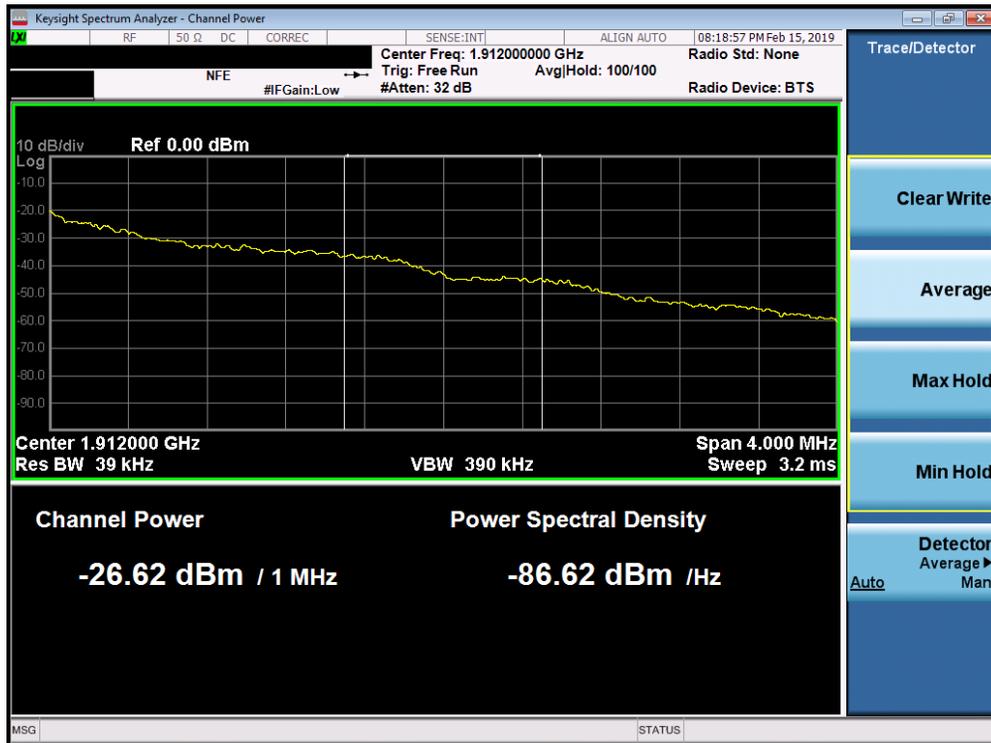


Plot 7-177. Upper Extended Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 108 of 162

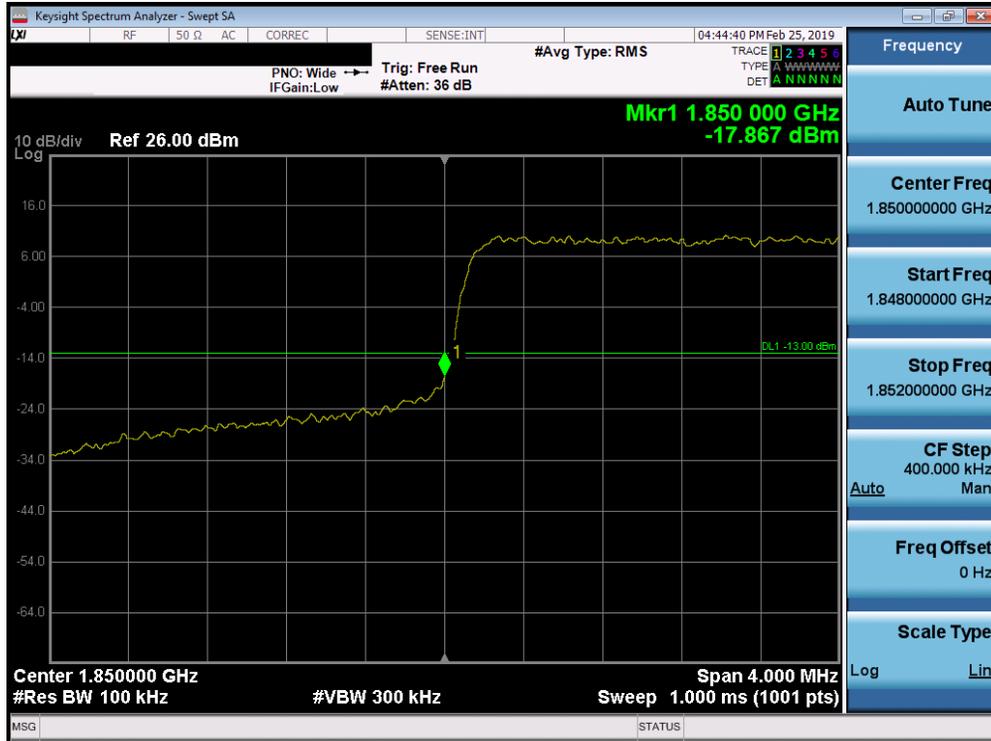


Plot 7-178. Upper Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)

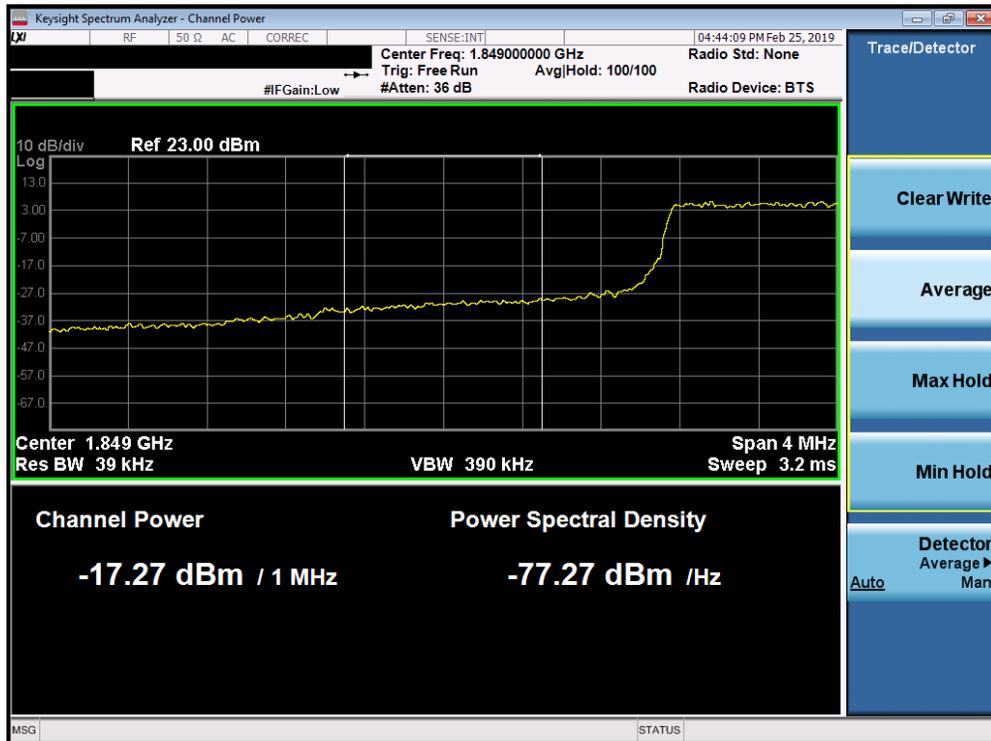


Plot 7-179. Upper Extended Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 109 of 162

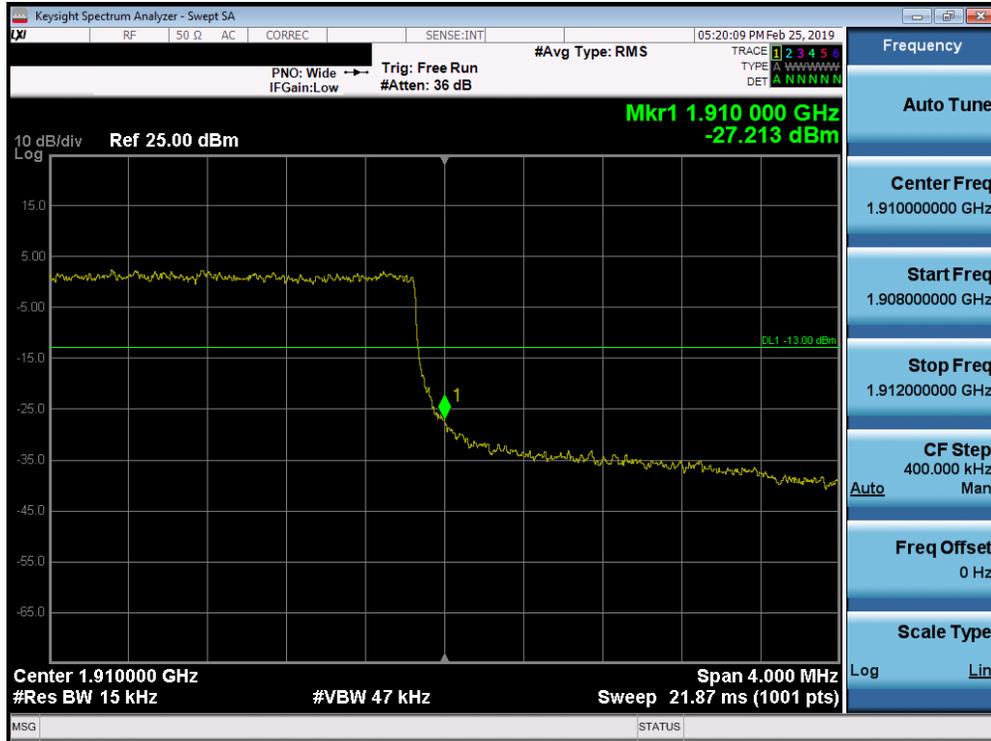


Plot 7-180. Lower Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

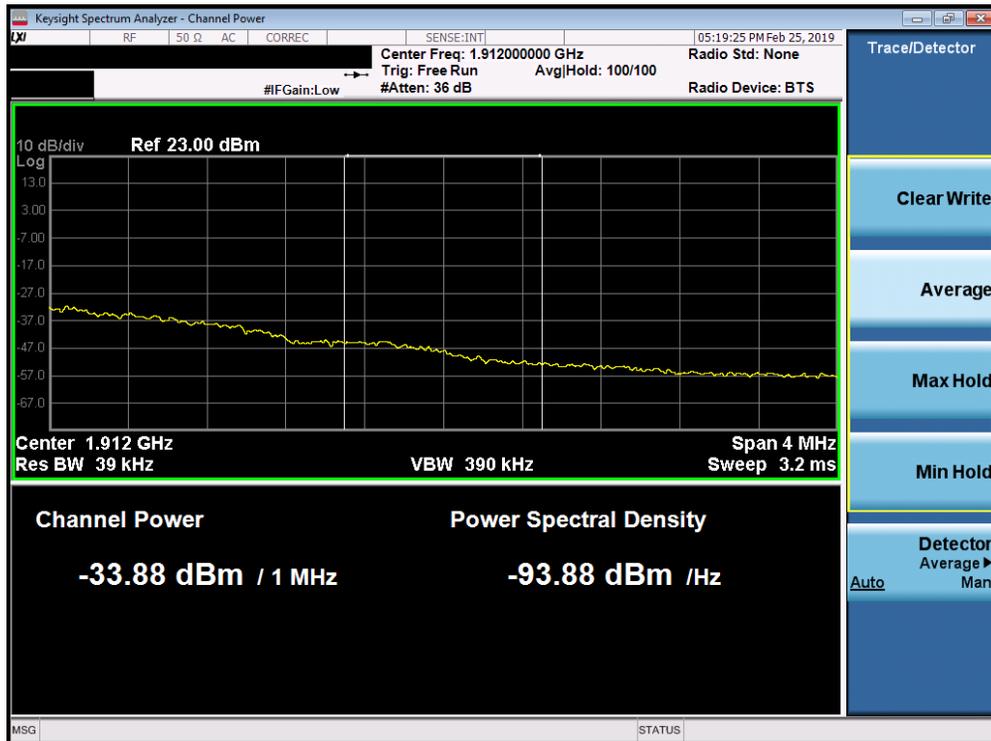


Plot 7-181. Lower Extended Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 110 of 162

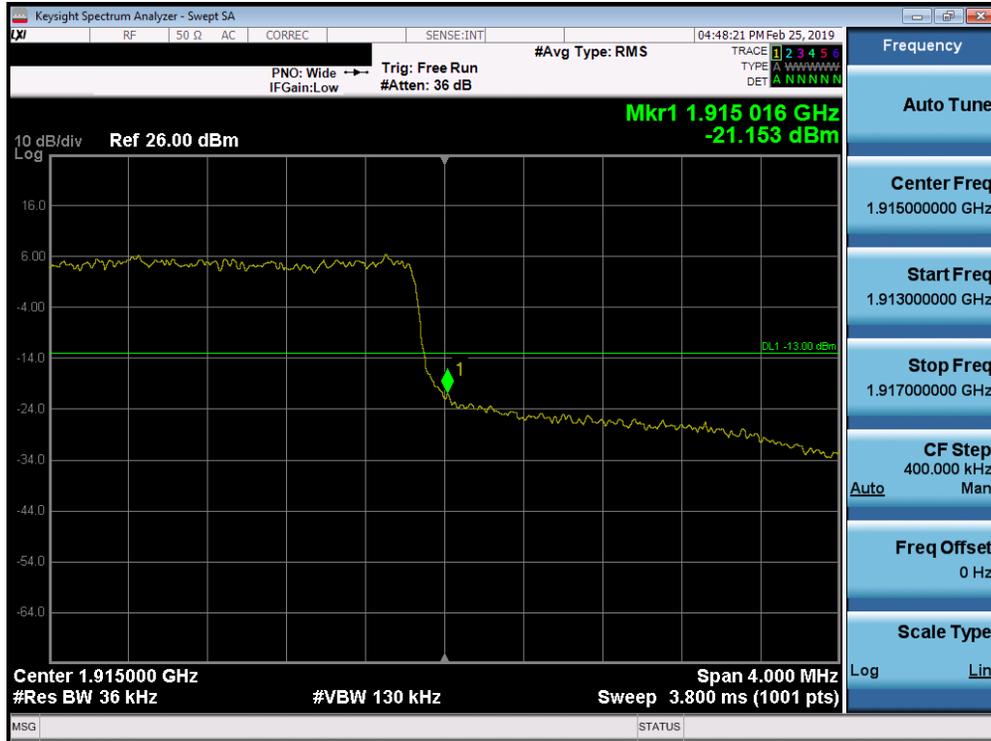


Plot 7-182. Upper Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

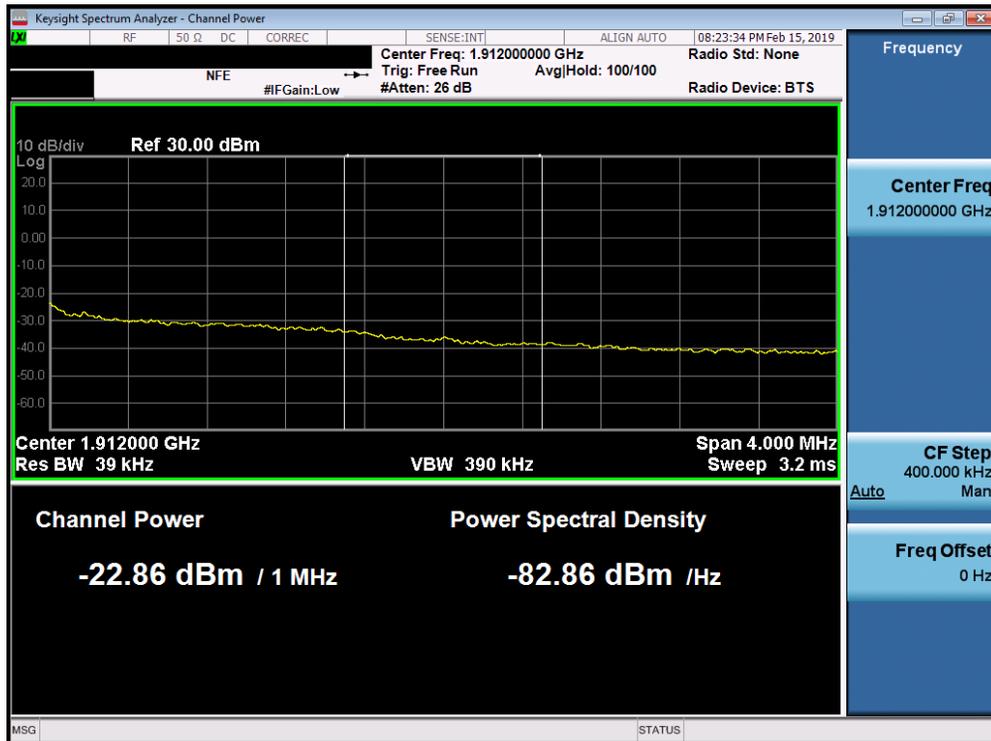


Plot 7-183. Upper Extended Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 111 of 162

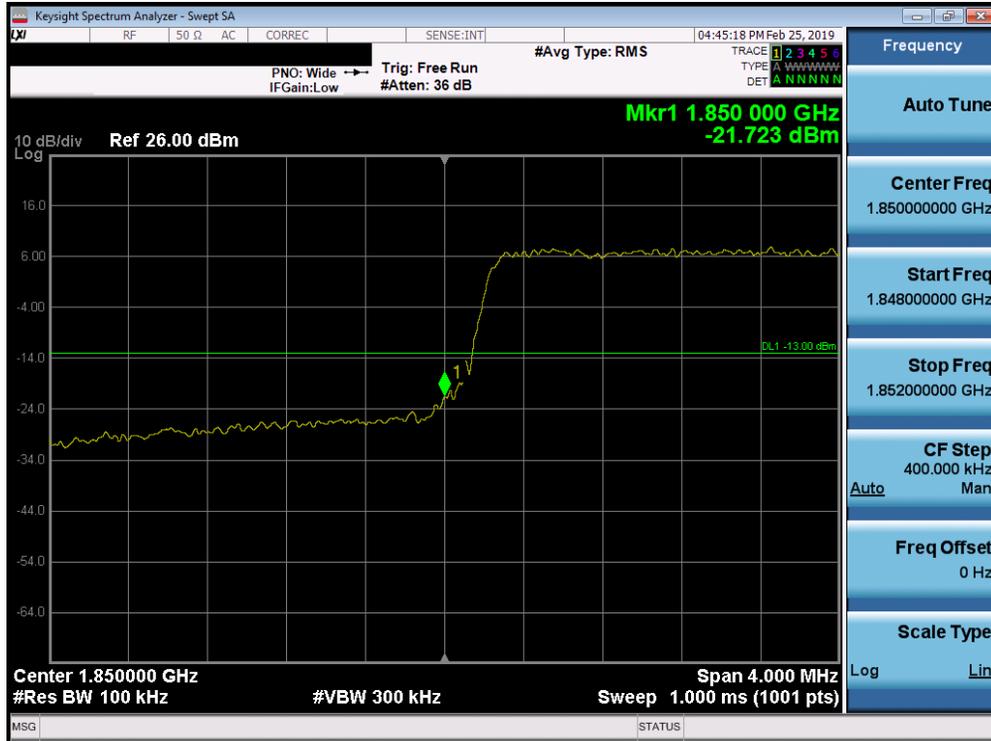


Plot 7-184. Upper Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)

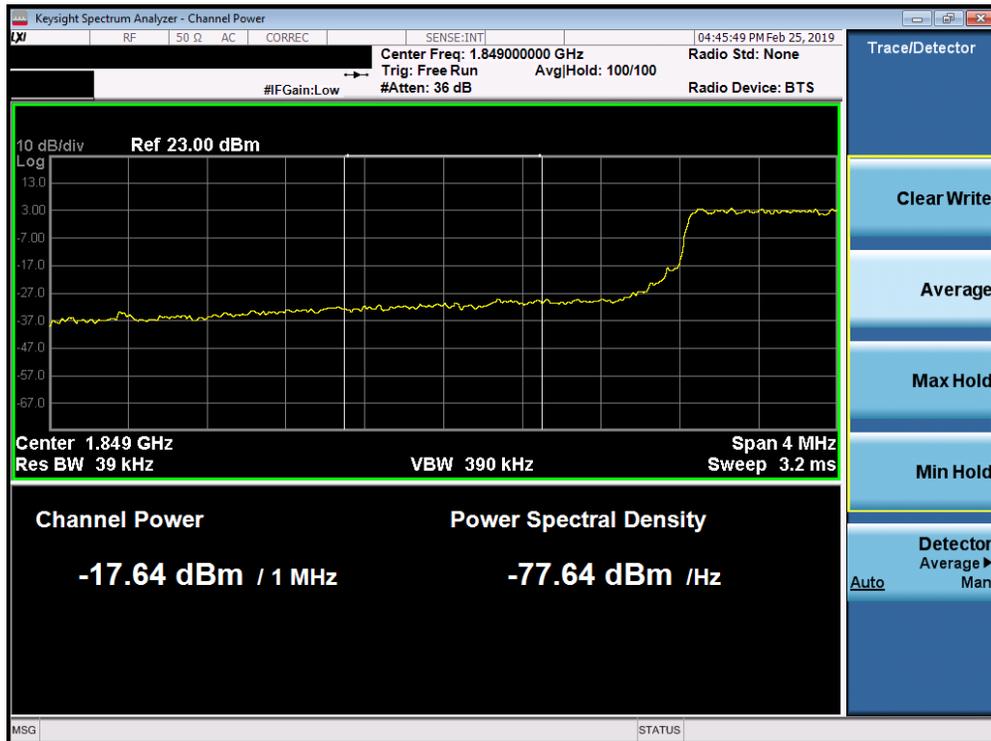


Plot 7-185. Upper Extended Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 112 of 162



Plot 7-186. Lower Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

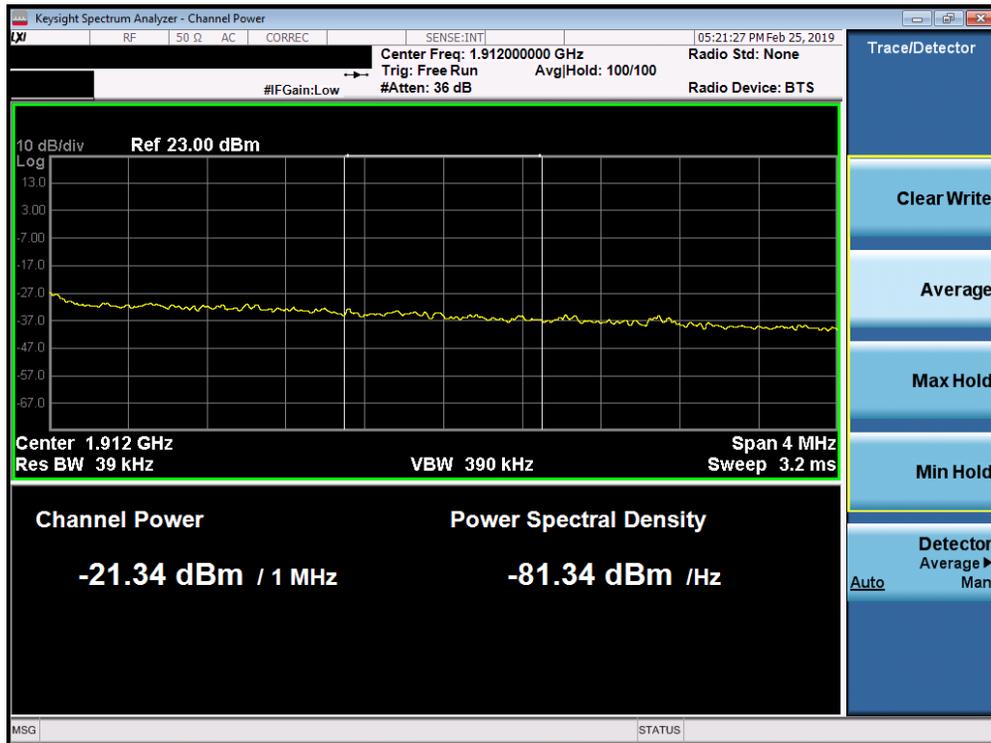


Plot 7-187. Lower Extended Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 113 of 162



Plot 7-188. Upper Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

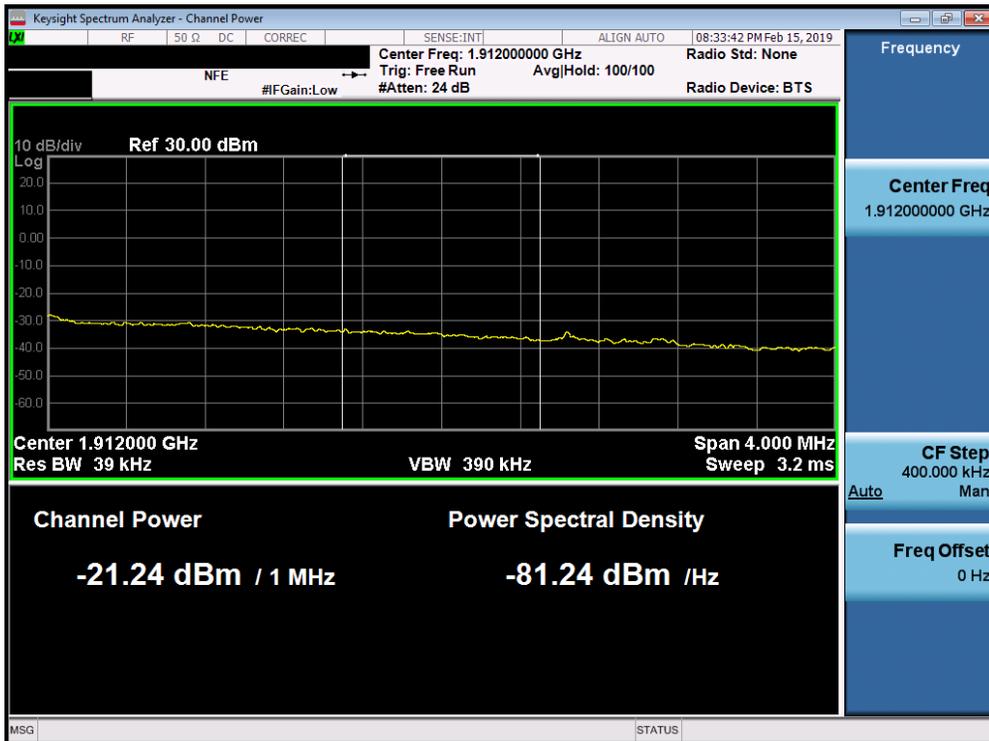


Plot 7-189. Upper Extended Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 114 of 162

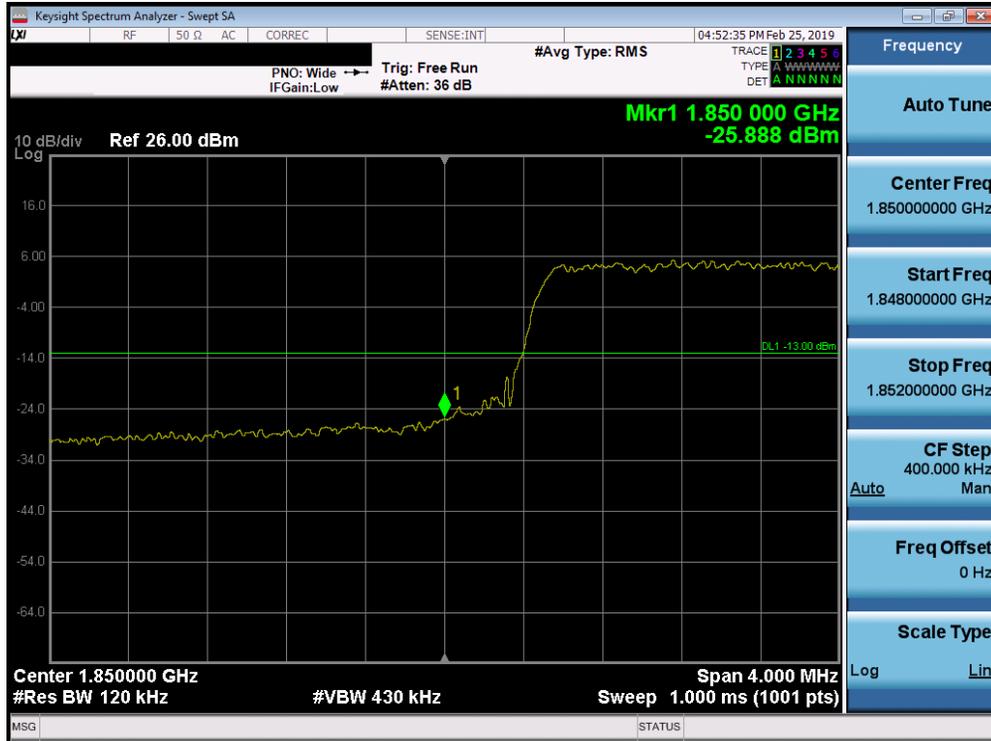


Plot 7-190. Upper Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-191. Upper Extended Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 115 of 162



Plot 7-192. Lower Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

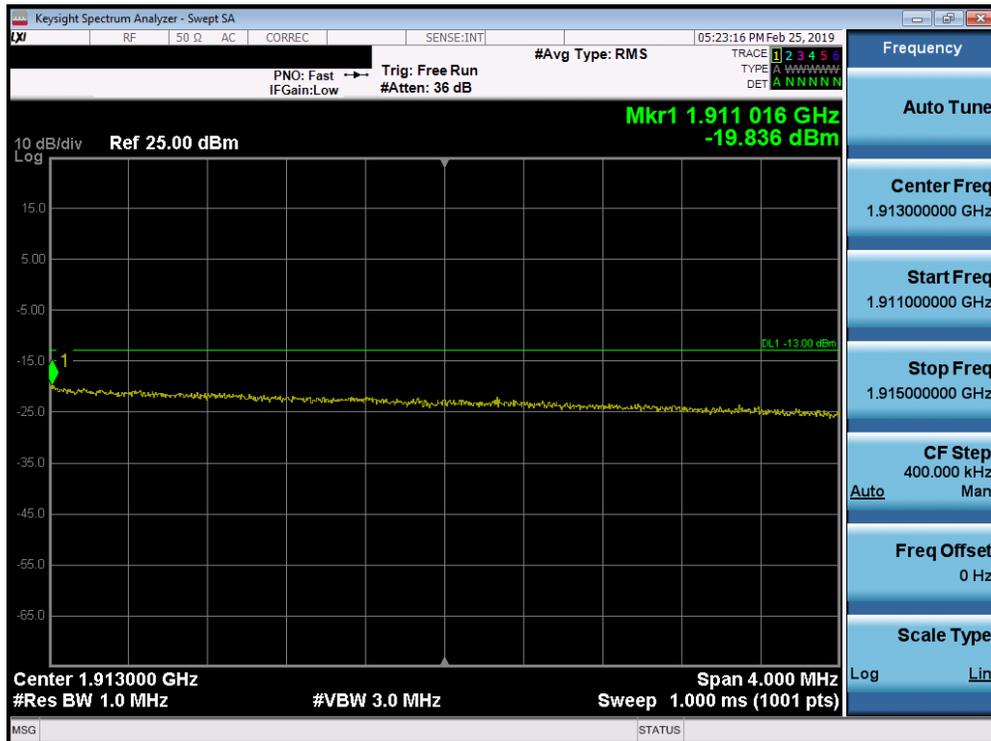


Plot 7-193. Lower Extended Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 116 of 162

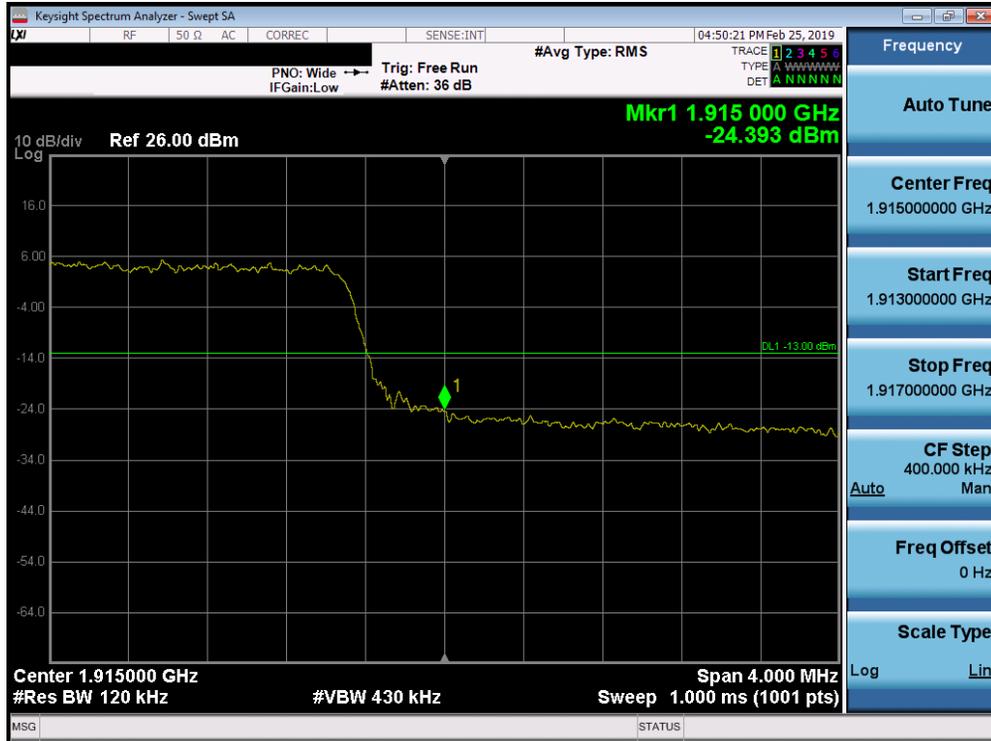


Plot 7-194. Upper Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

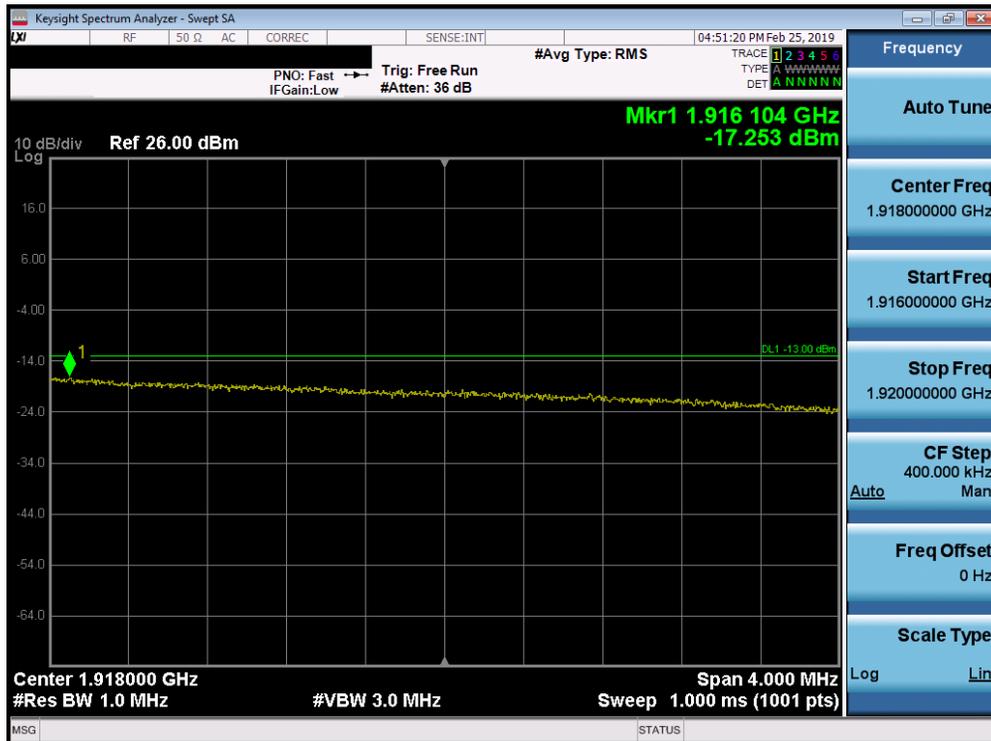


Plot 7-195. Upper Extended Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 117 of 162

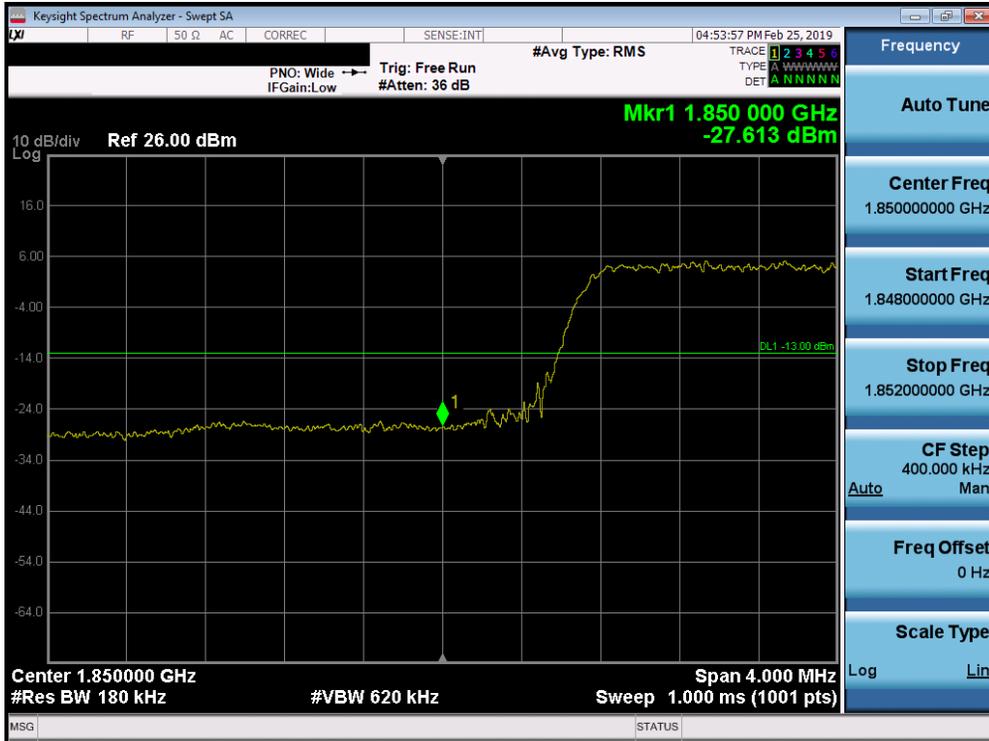


Plot 7-196. Upper Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)

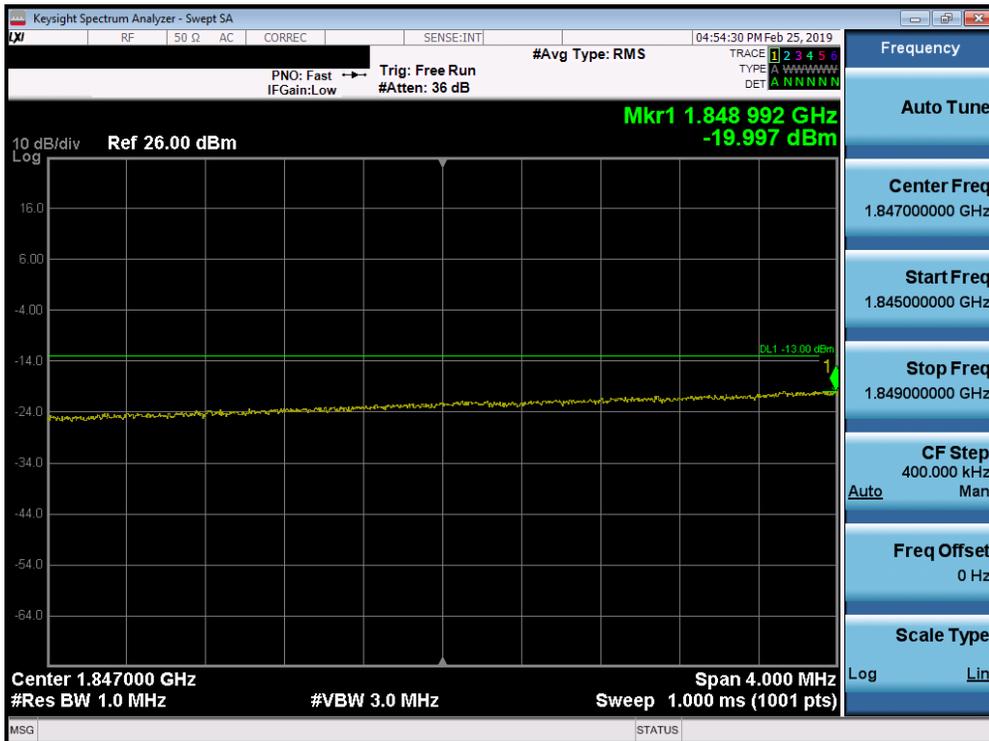


Plot 7-197. Upper Extended Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 118 of 162



Plot 7-198. Lower Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

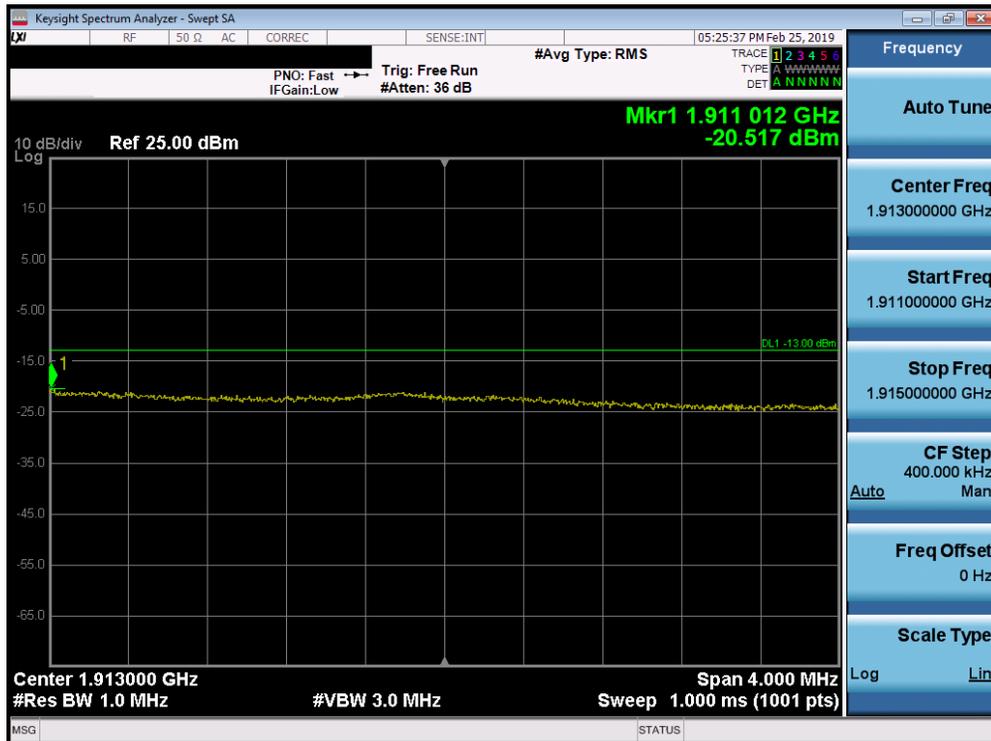


Plot 7-199. Lower Extended Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 119 of 162

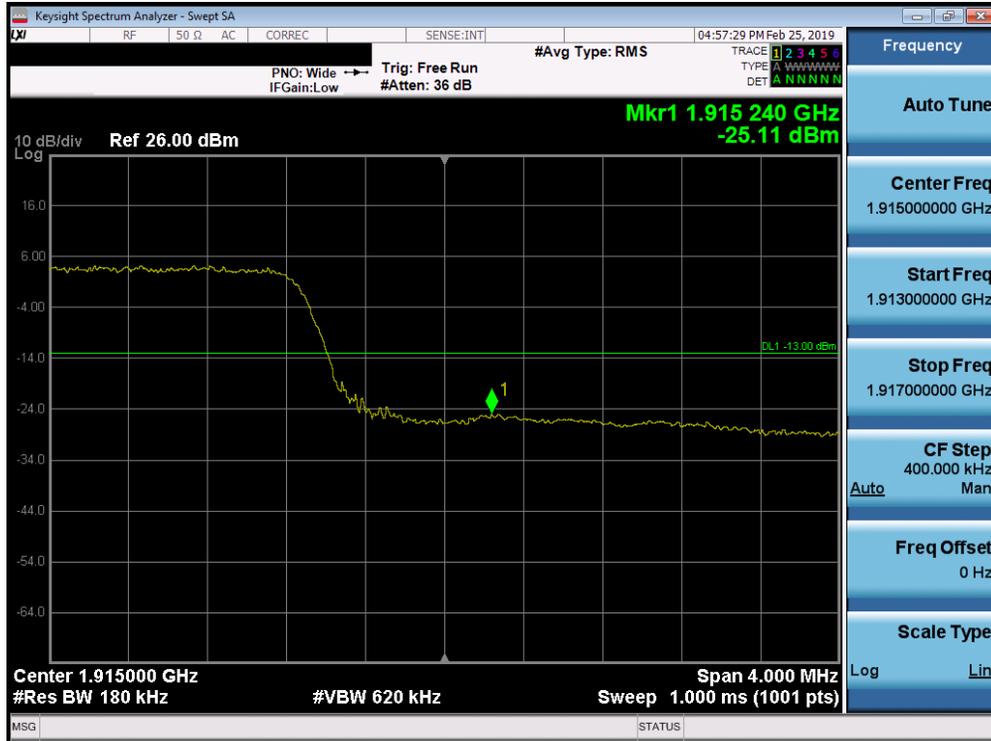


Plot 7-200. Upper Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

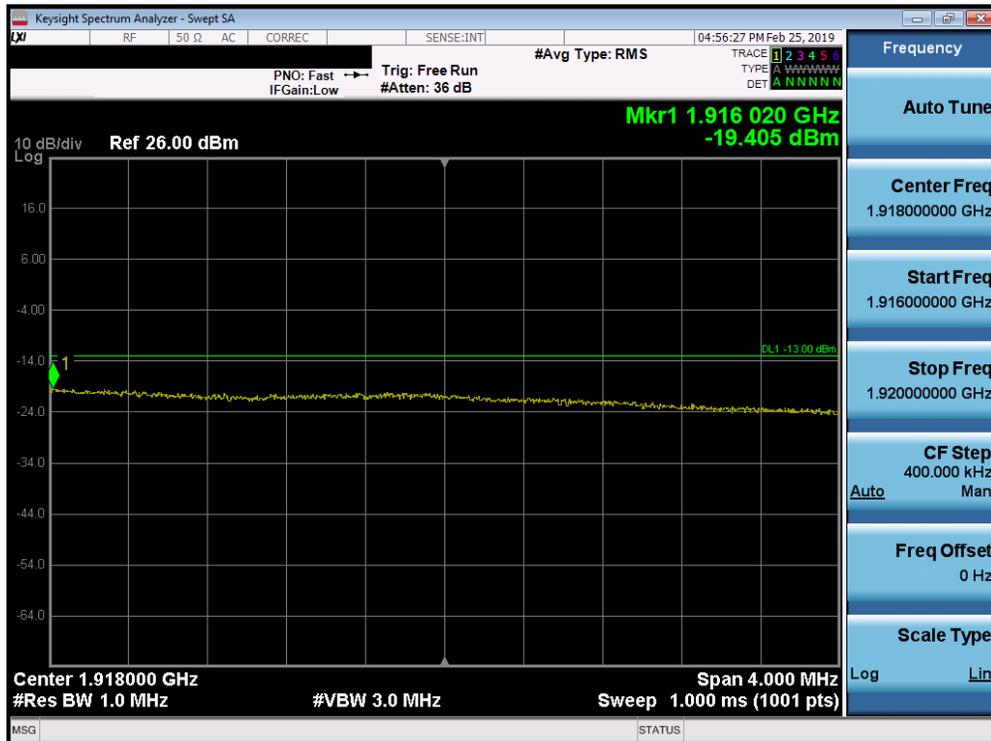


Plot 7-201. Upper Extended Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 120 of 162

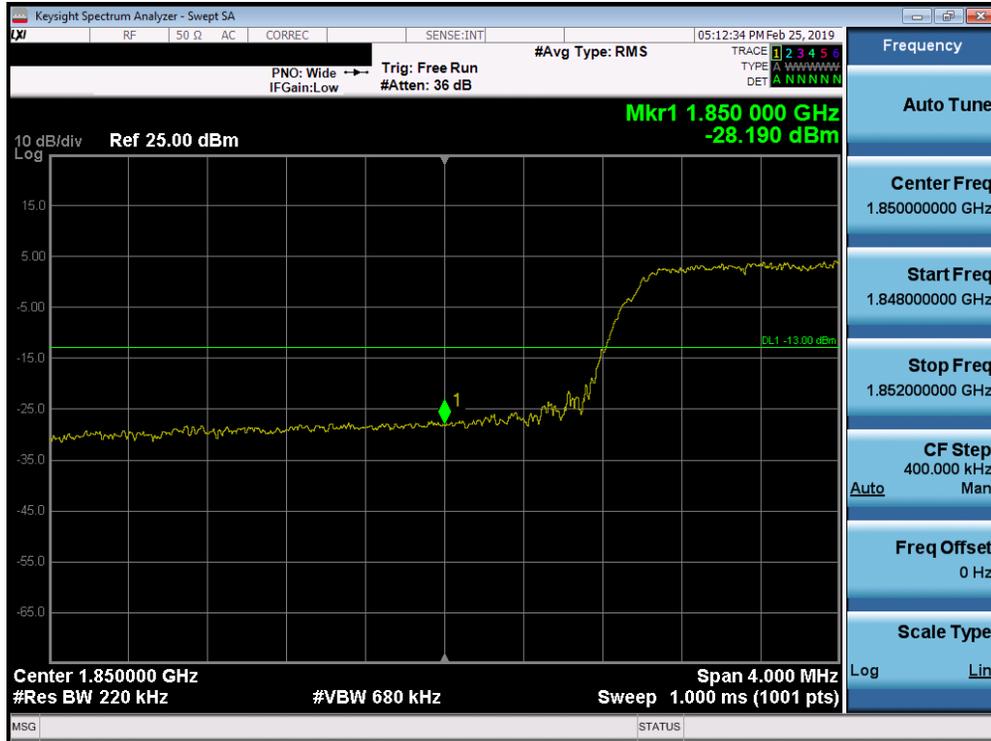


Plot 7-202. Upper Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)

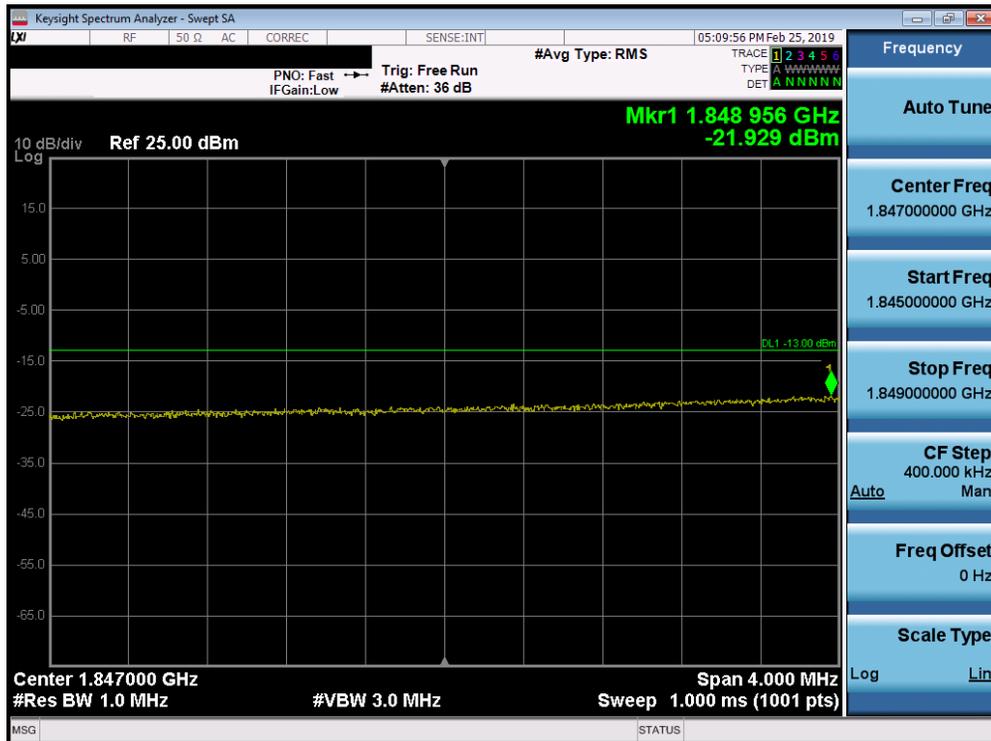


Plot 7-203. Upper Extended Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 121 of 162



Plot 7-204. Lower Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

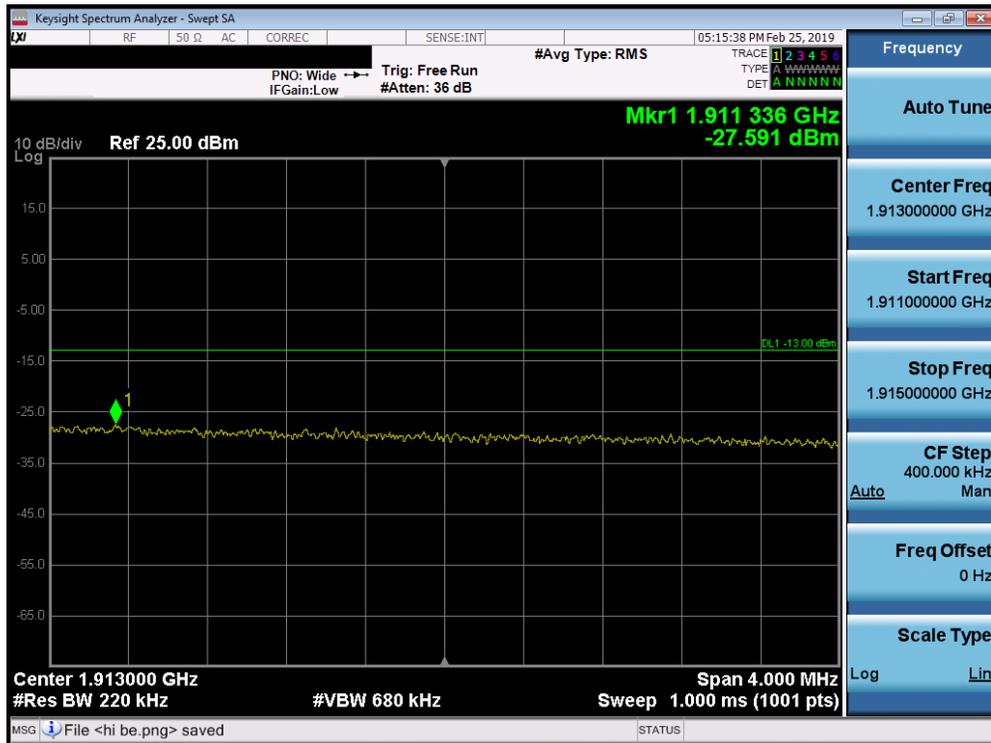


Plot 7-205. Lower Extended Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 122 of 162

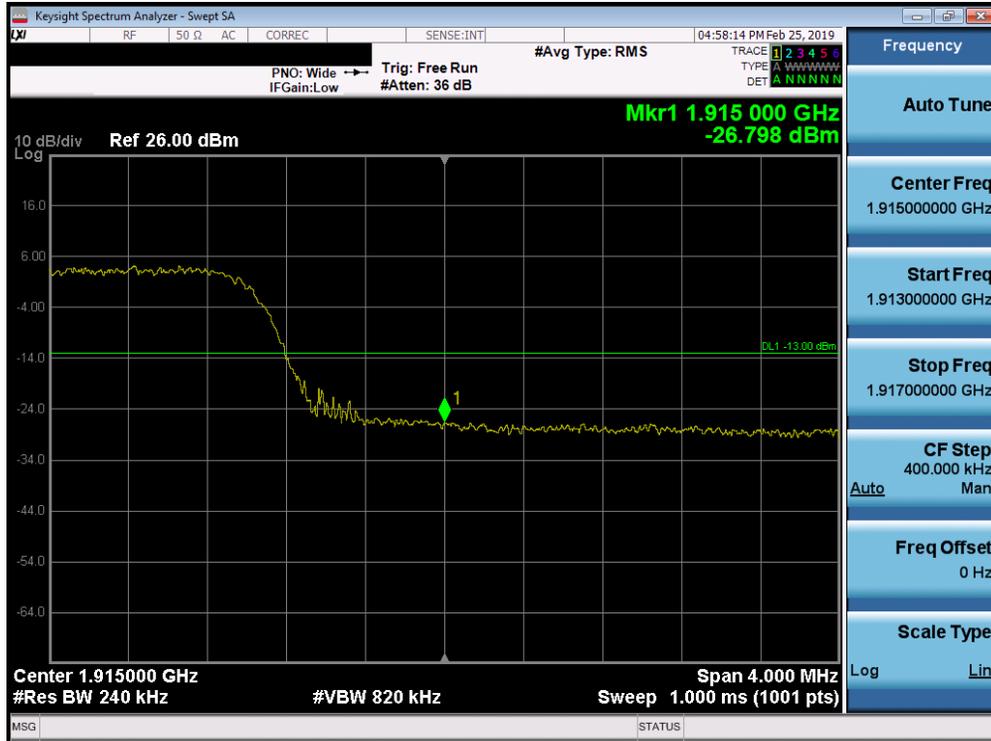


Plot 7-206. Upper Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

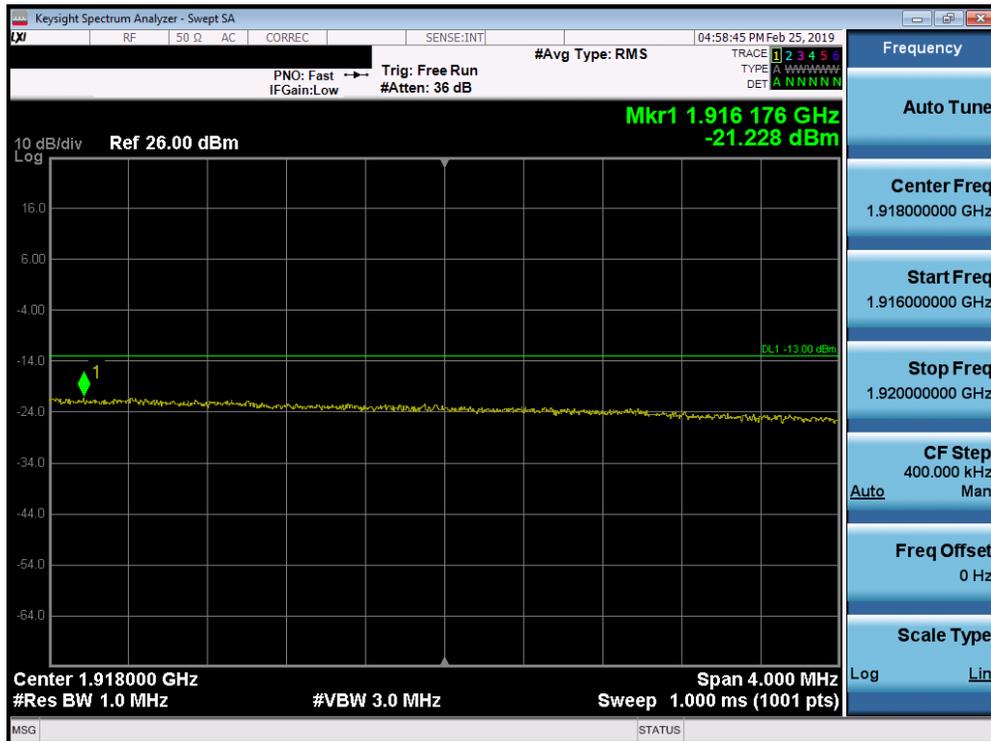


Plot 7-207. Upper Extended Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 123 of 162



Plot 7-208. Upper Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-209. Upper Extended Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 124 of 162

## 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.

### Test Setup

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

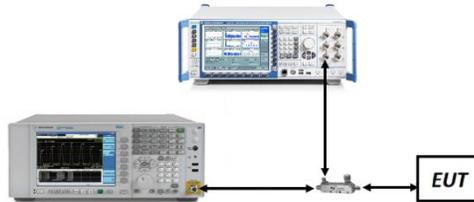


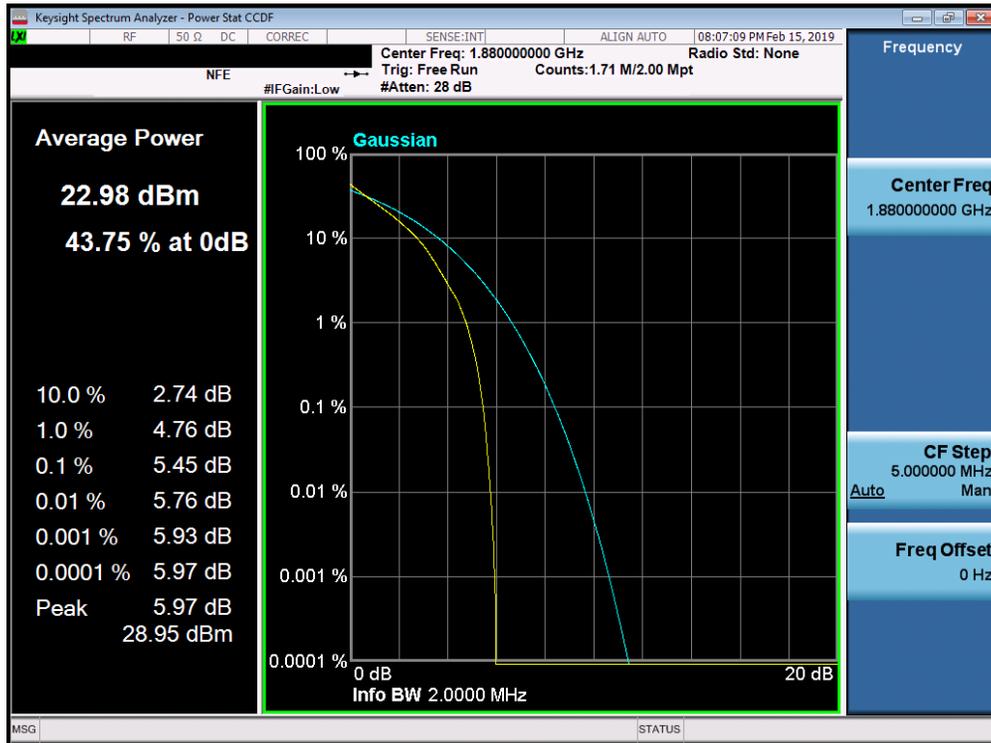
Figure 7-4. Test Instrument & Measurement Setup

### Test Notes

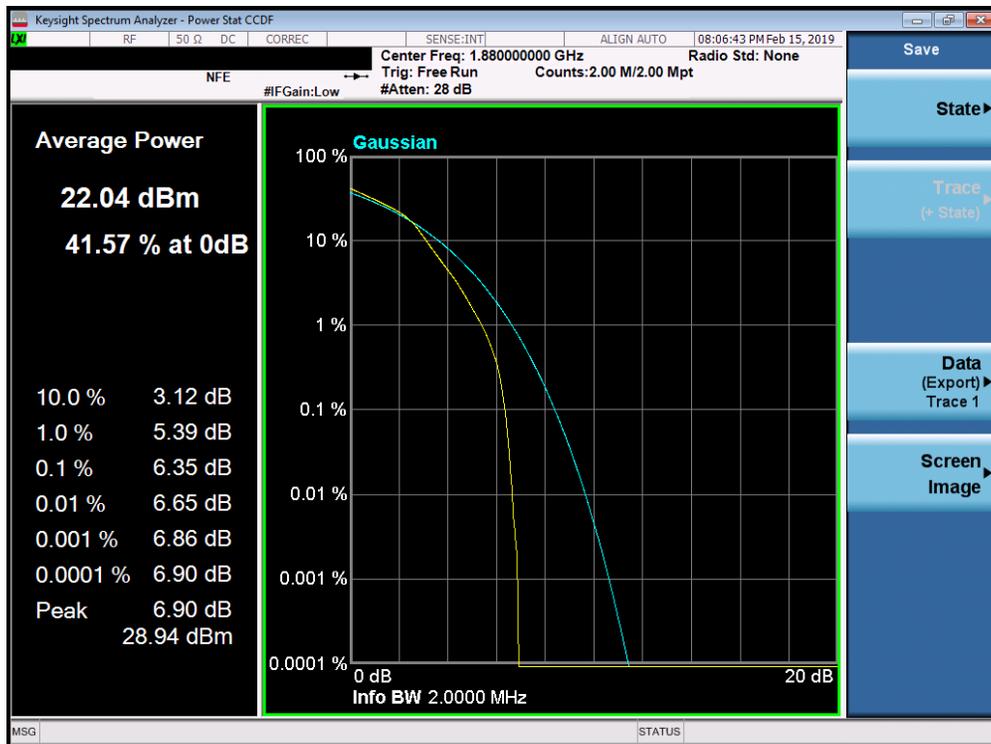
None.

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 – 3/5/2019	EUT Type: Portable Handset		Page 125 of 162

**Band 25/2**

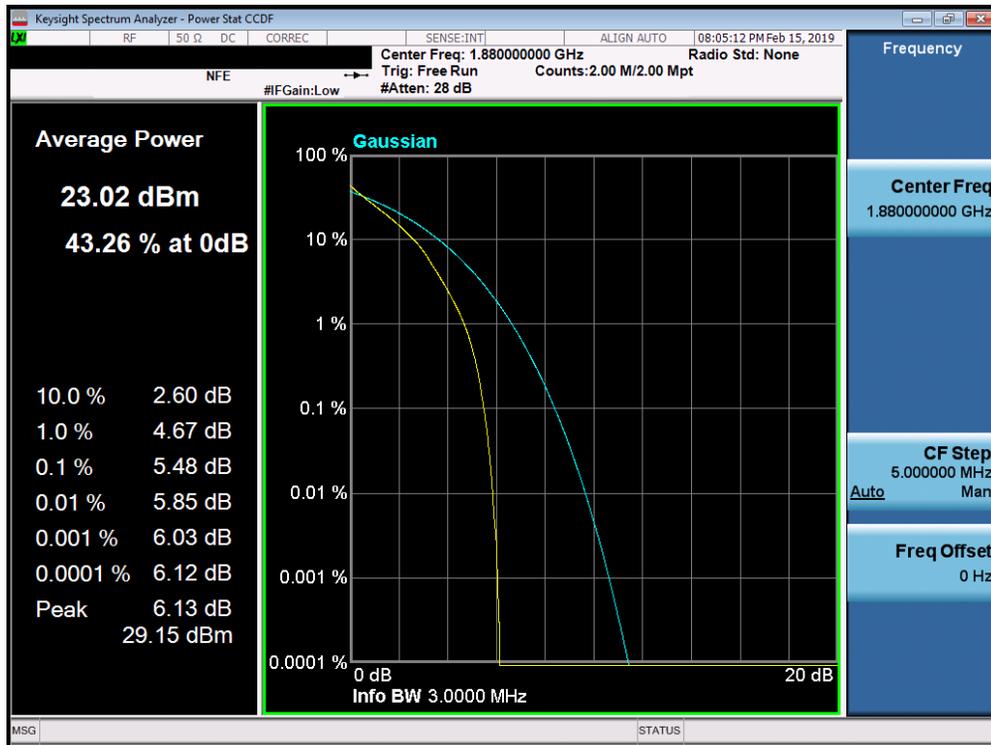


**Plot 7-210. PAR Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)**

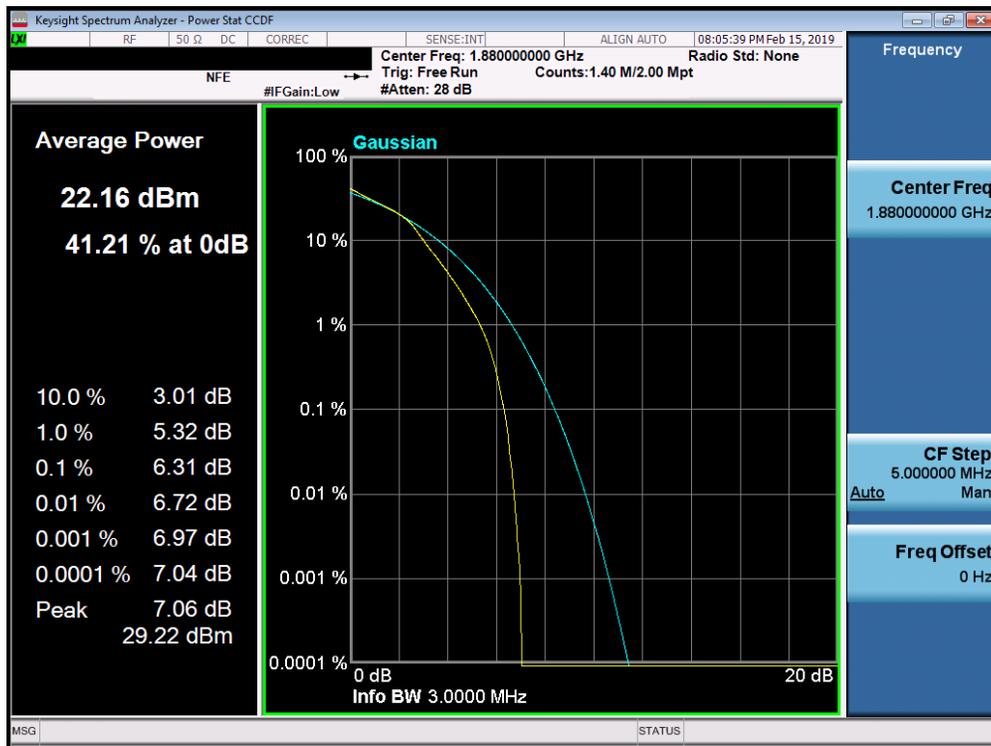


**Plot 7-211. PAR Plot (Band 25/2 - 1.4MHz 16-QAM - Full RB Configuration)**

FCC ID: ZNFX220TB	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 126 of 162

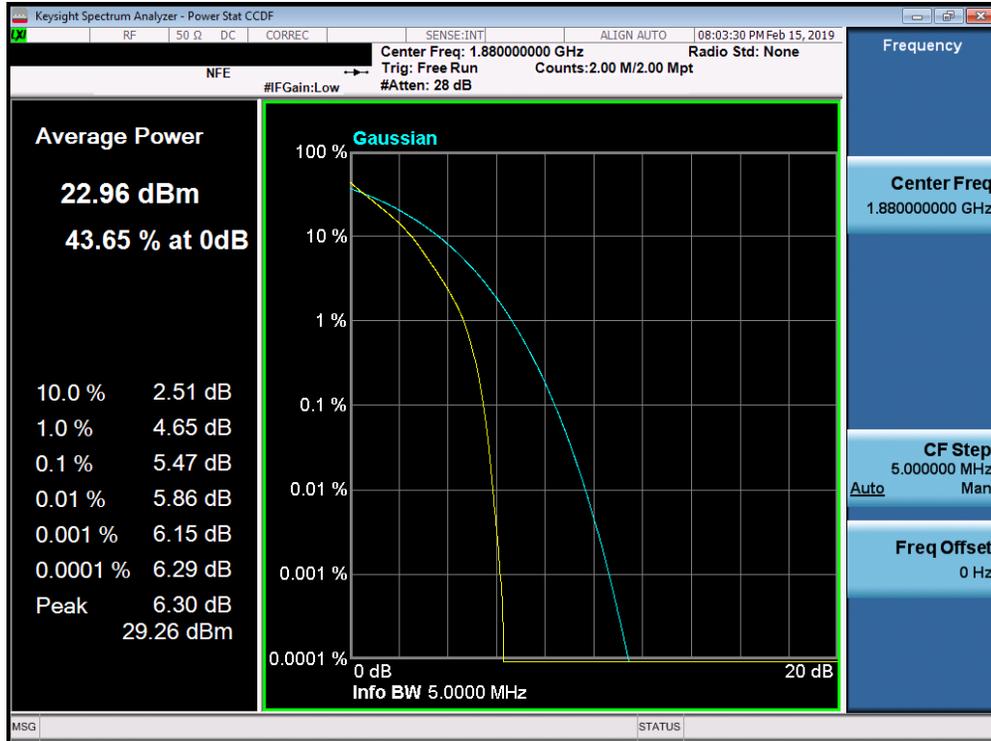


Plot 7-212. PAR Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

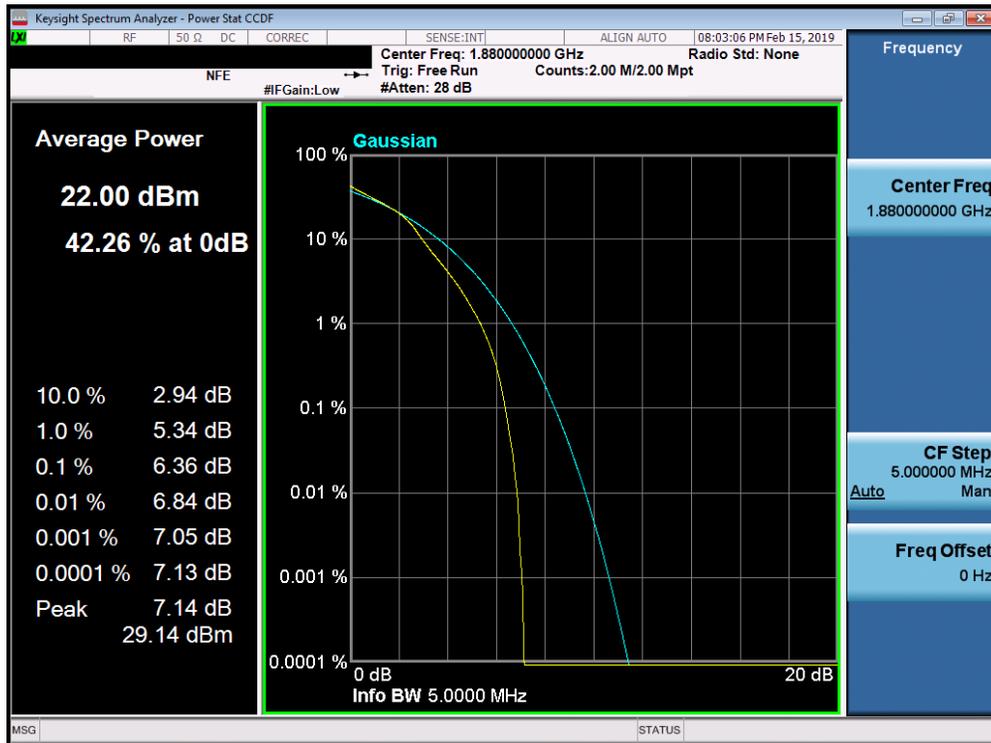


Plot 7-213. PAR Plot (Band 25/2 - 3.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX220TB	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 127 of 162

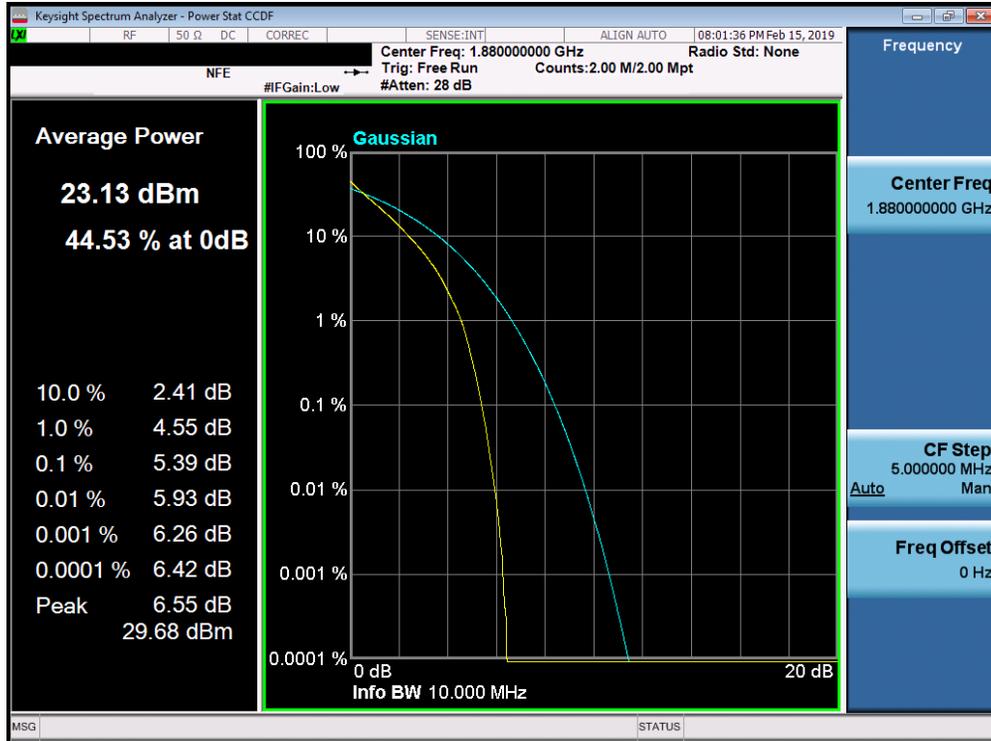


Plot 7-214. PAR Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

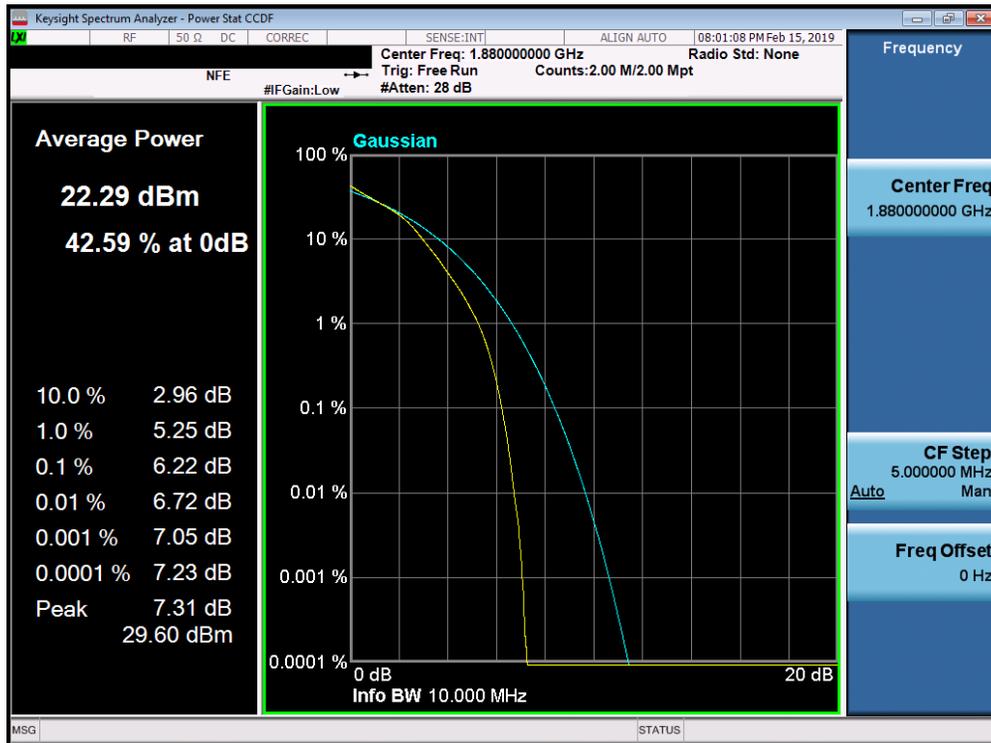


Plot 7-215. PAR Plot (Band 25/2 - 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902110024-03-R1.ZNF	Test Dates: 2/11 - 3/5/2019	EUT Type: Portable Handset		Page 128 of 162



Plot 7-216. PAR Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-217. PAR Plot (Band 25/2 - 10.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFX220TB		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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