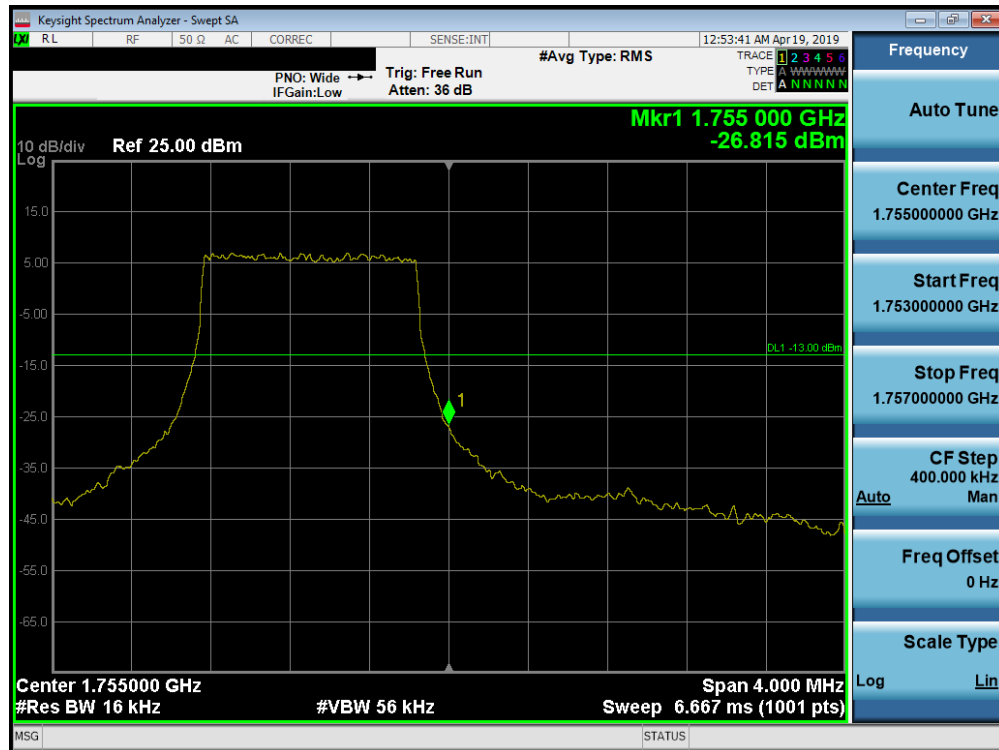
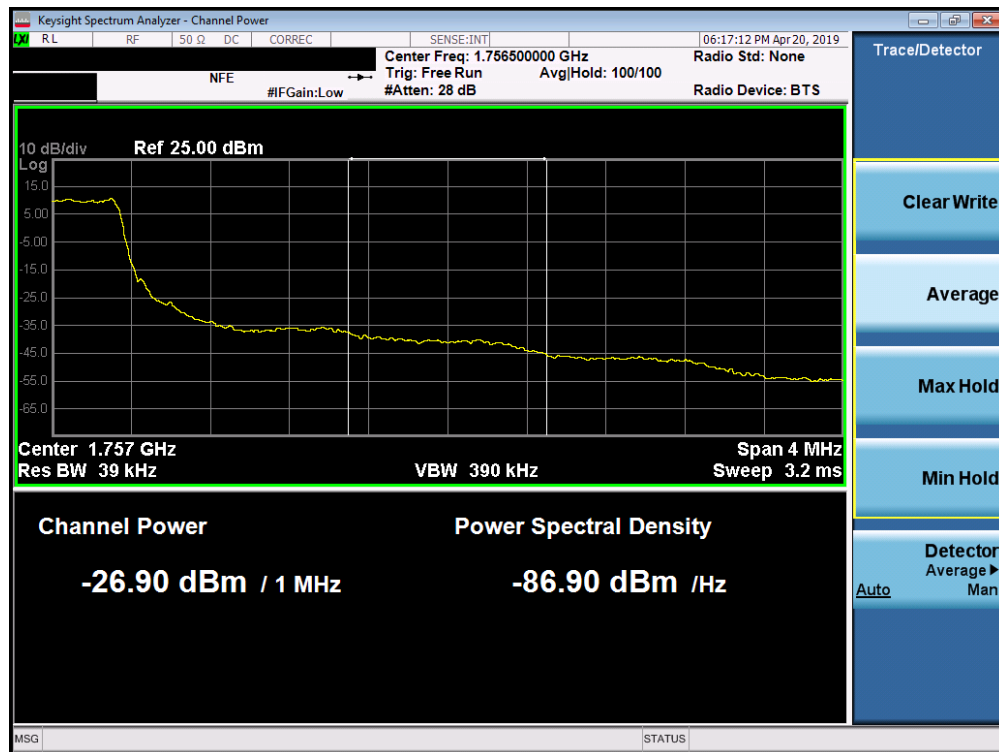


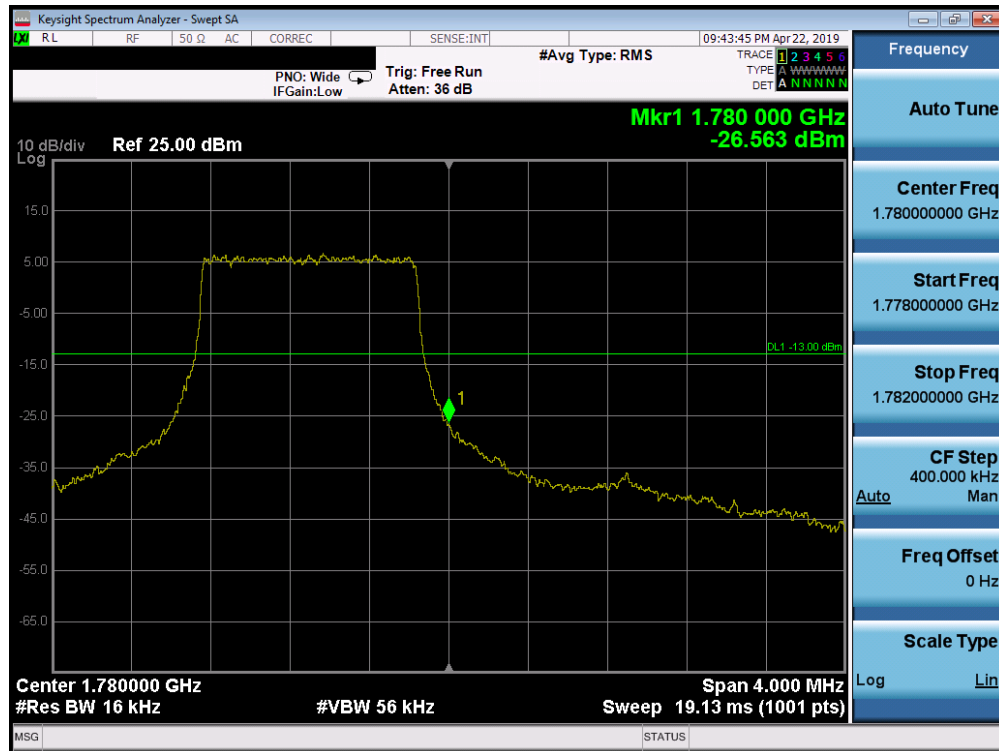


Plot 7-193. Upper Band Edge Plot (Band 4 - 1.4MHz QPSK - Full RB Configuration)

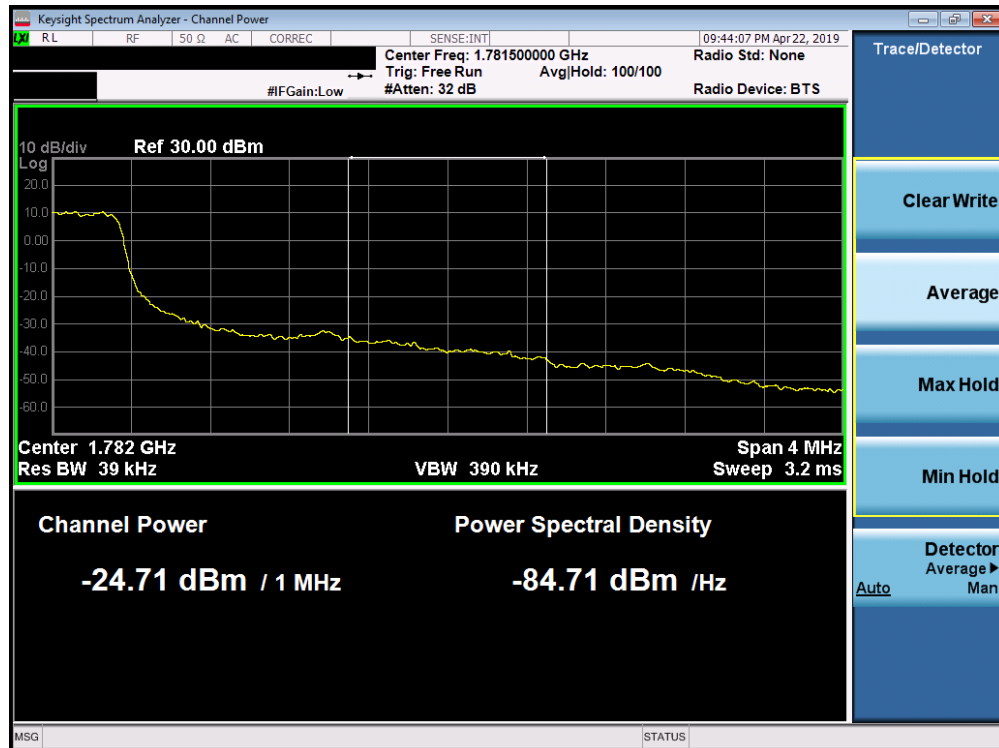


Plot 7-194. Upper Extended Band Edge Plot (Band 4 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 121 of 225

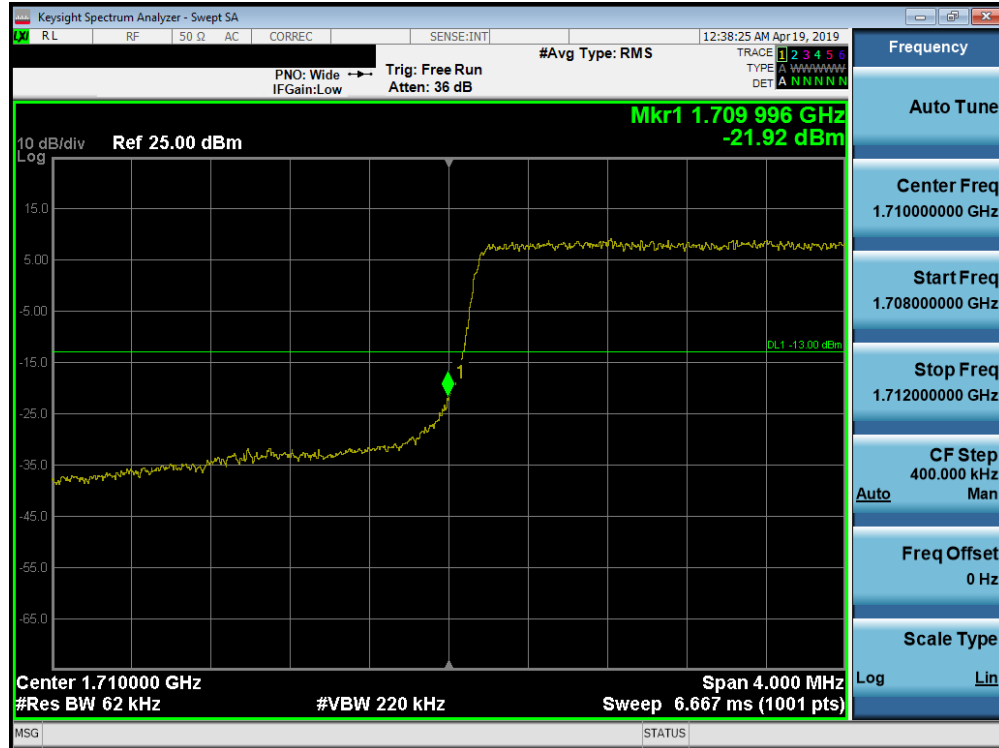


Plot 7-195. Upper Band Edge Plot (Band 66 - 1.4MHz QPSK - Full RB Configuration)

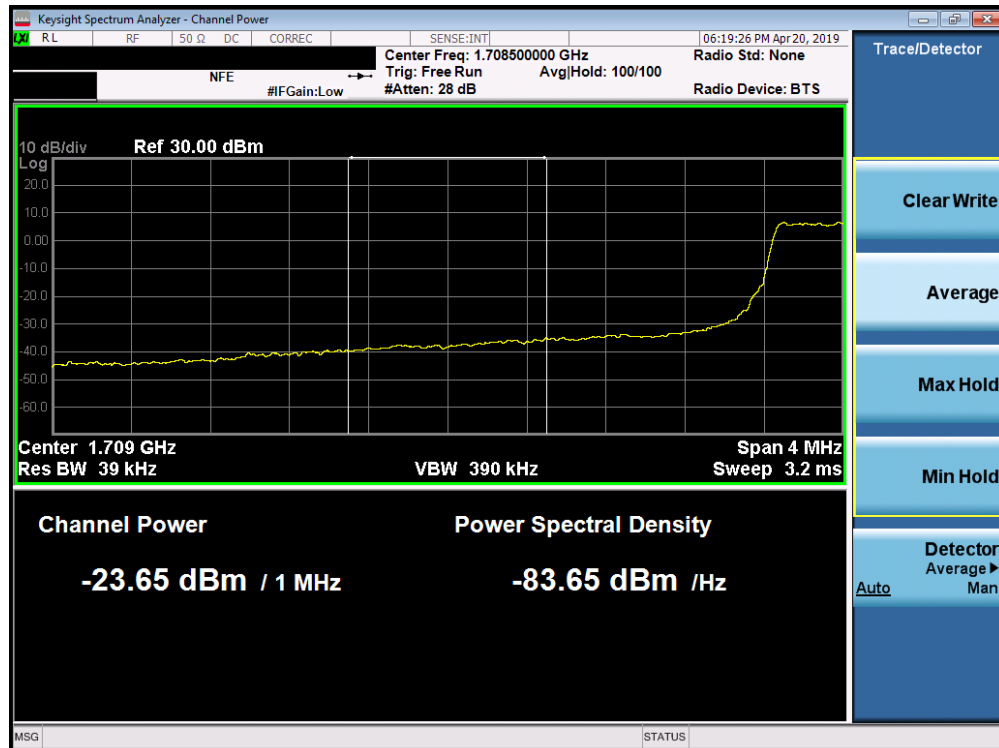


Plot 7-196. Upper Extended Band Edge Plot (Band 66 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 122 of 225

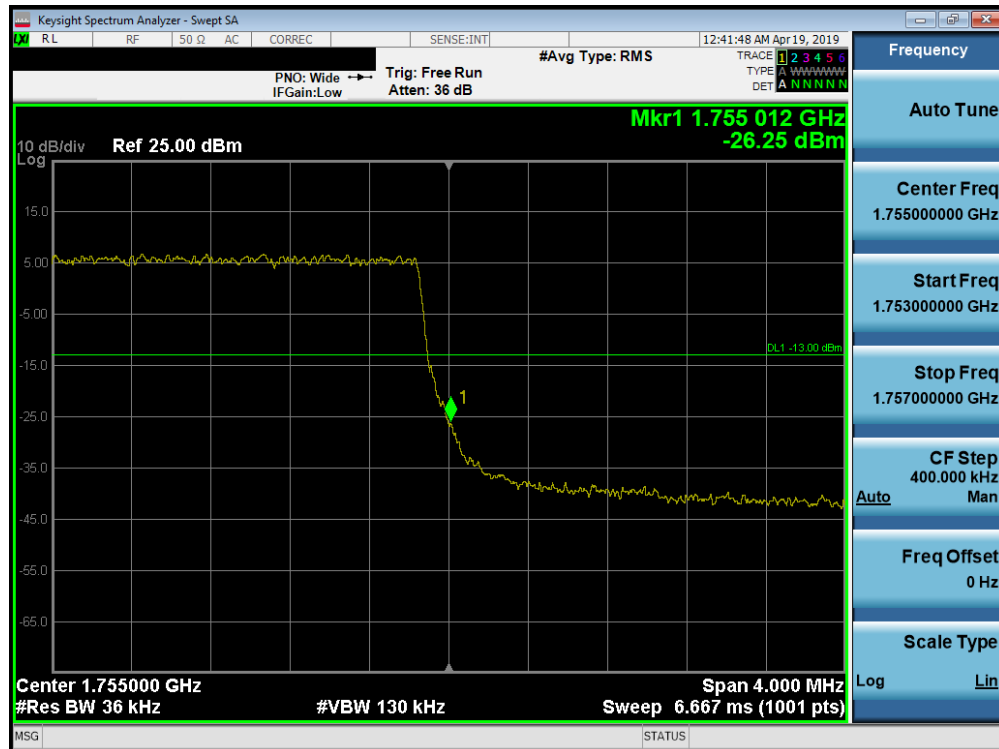


Plot 7-197. Lower Band Edge Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)

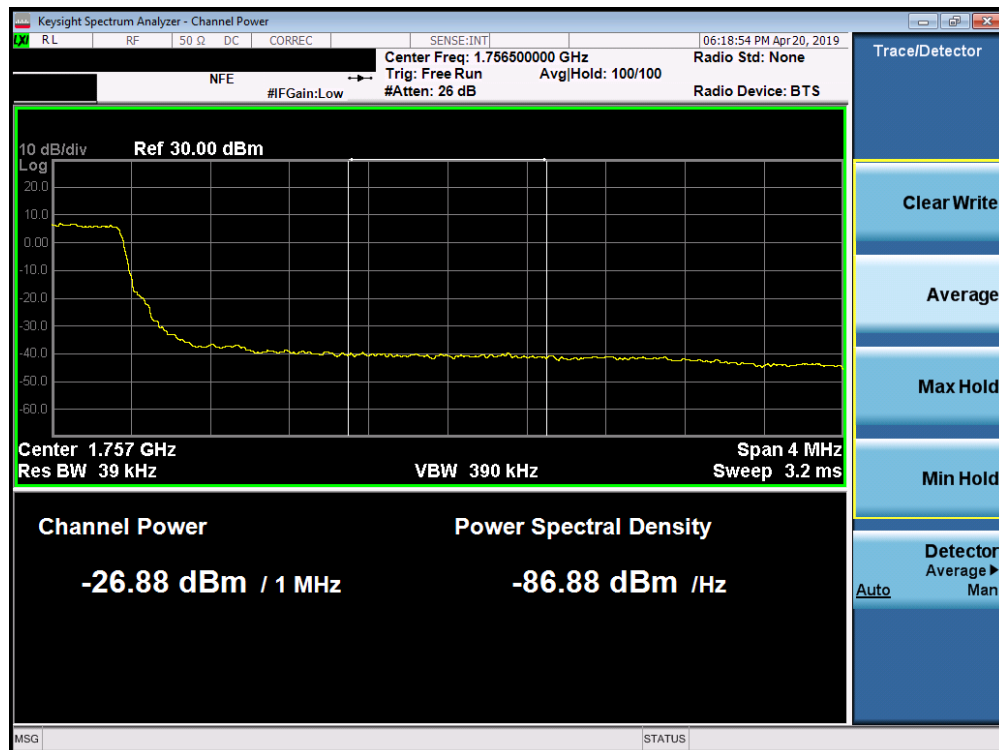


Plot 7-198. Lower Extended Band Edge Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 123 of 225



Plot 7-199. Upper Band Edge Plot (Band 4 – 3.0MHz QPSK - Full RB Configuration)

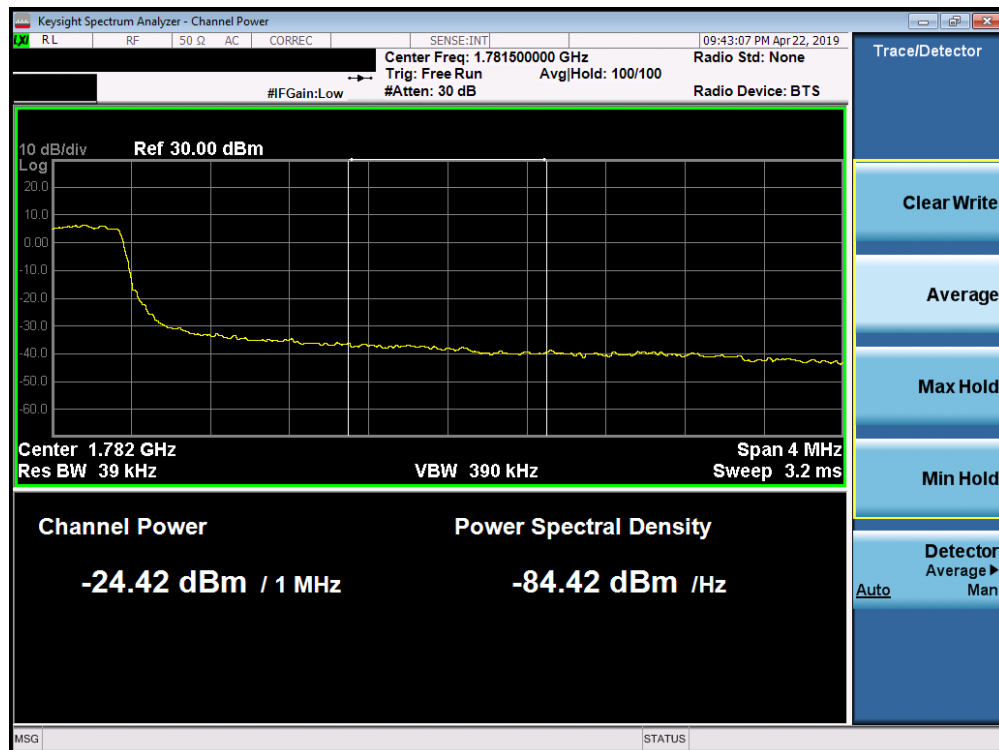


Plot 7-200. Upper Extended Band Edge Plot (Band 4 – 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 124 of 225

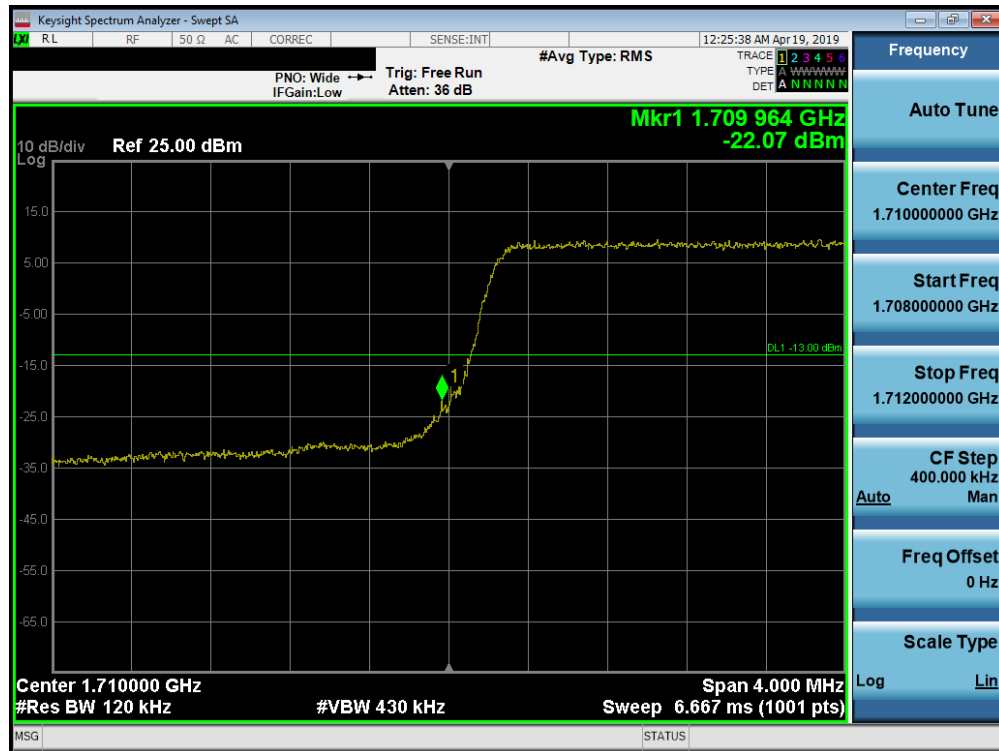


Plot 7-201. Upper Band Edge Plot (Band 66 - 3.0MHz QPSK - Full RB Configuration)

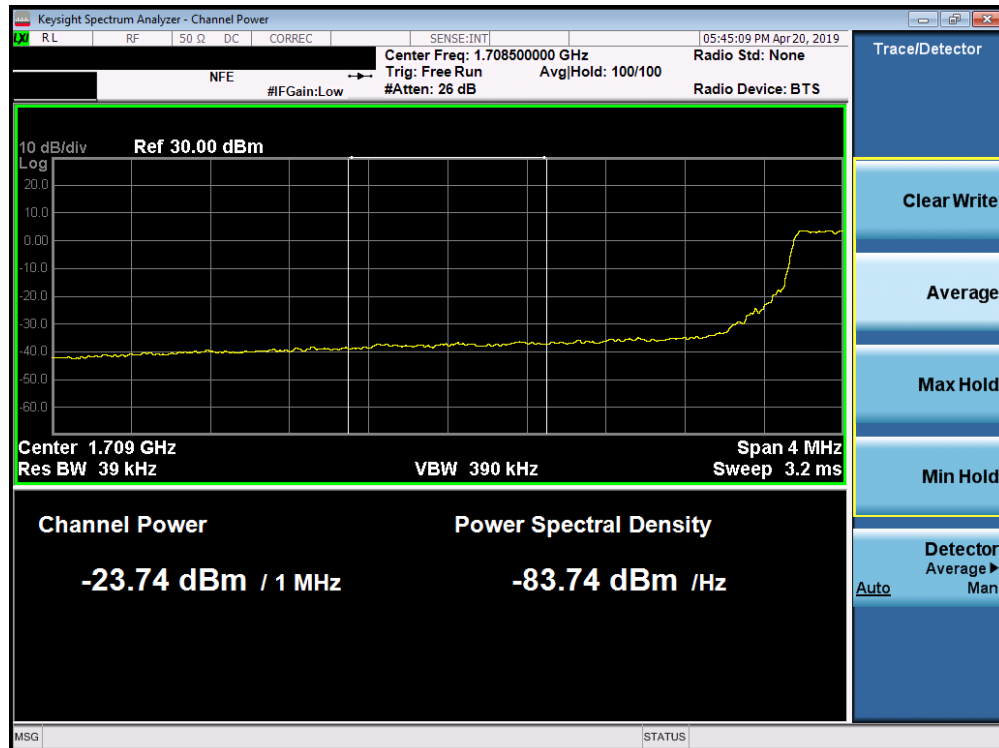


Plot 7-202. Upper Extended Band Edge Plot (Band 66 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 125 of 225

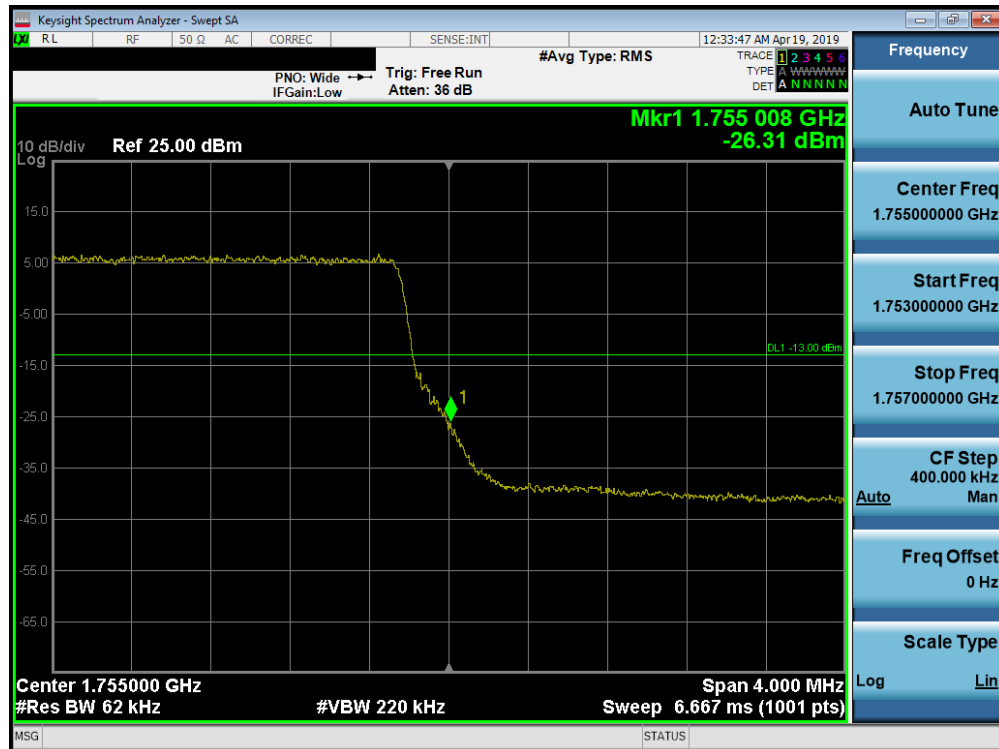


Plot 7-203. Lower Band Edge Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)

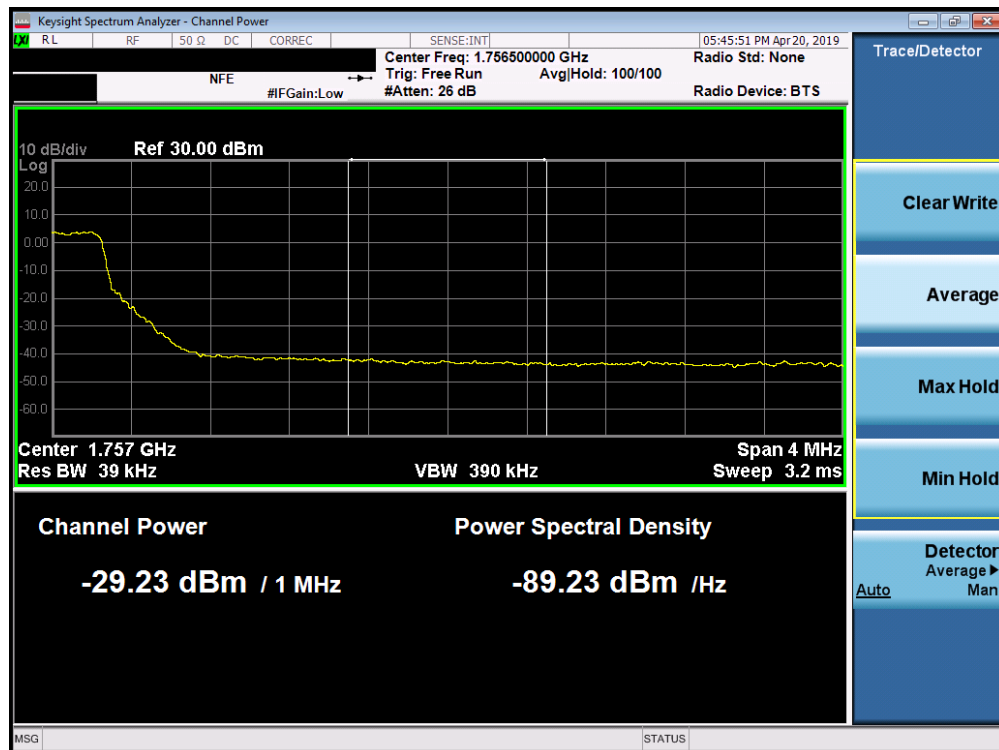


Plot 7-204. Lower Extended Band Edge Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 126 of 225

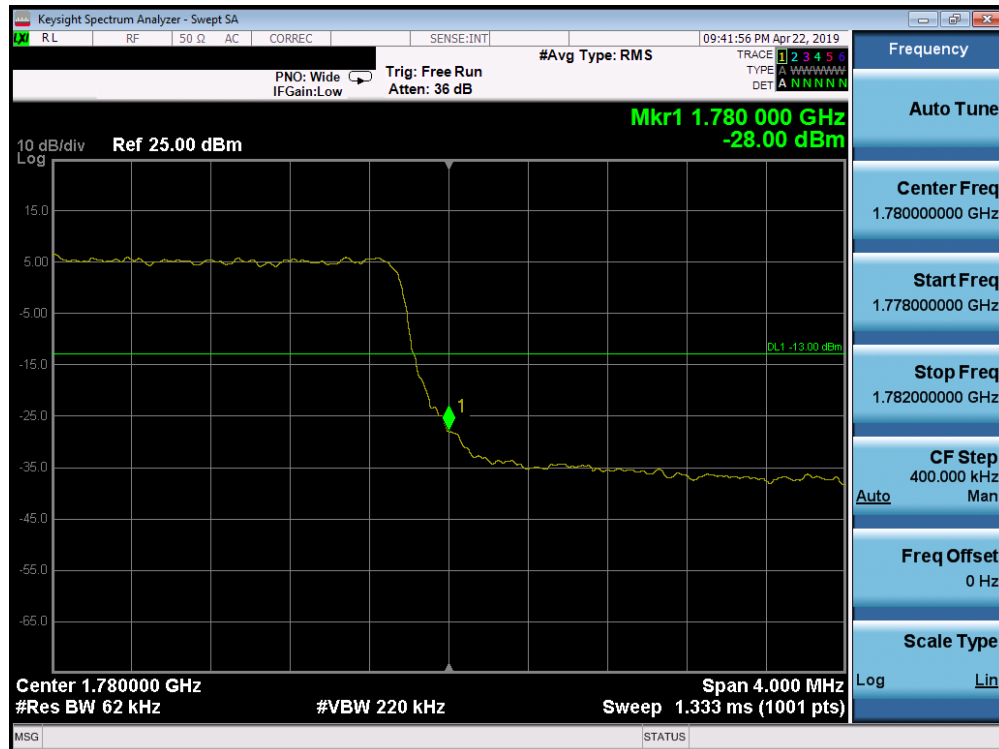


Plot 7-205. Upper Band Edge Plot (Band 4 – 5.0MHz QPSK - Full RB Configuration)

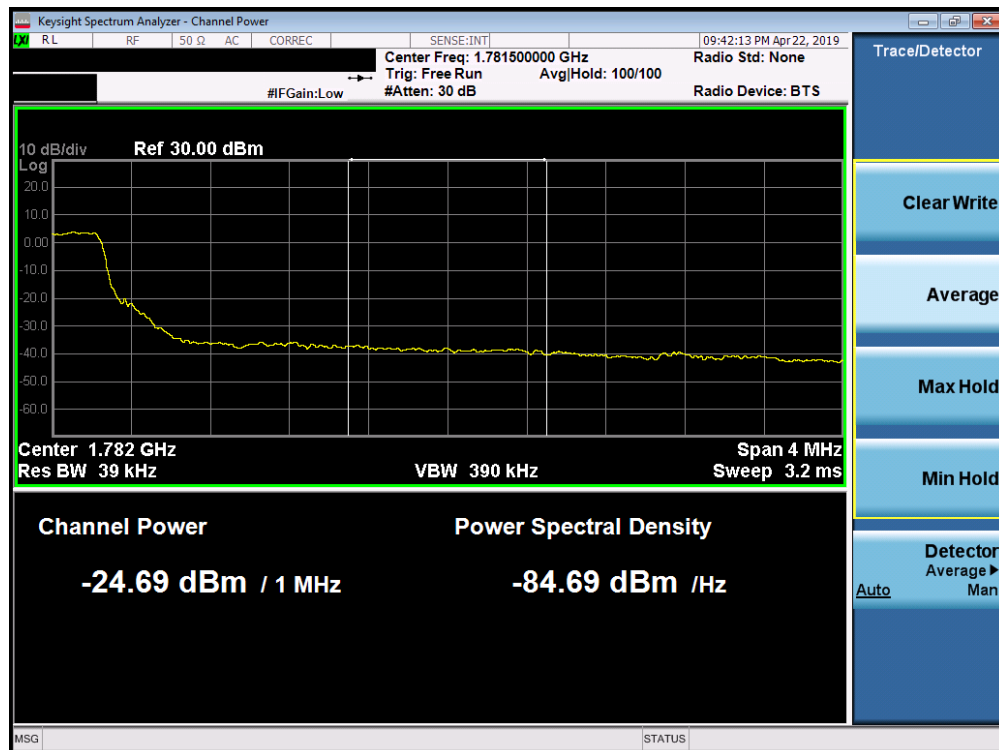


Plot 7-206. Upper Extended Band Edge Plot (Band 4 – 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 127 of 225

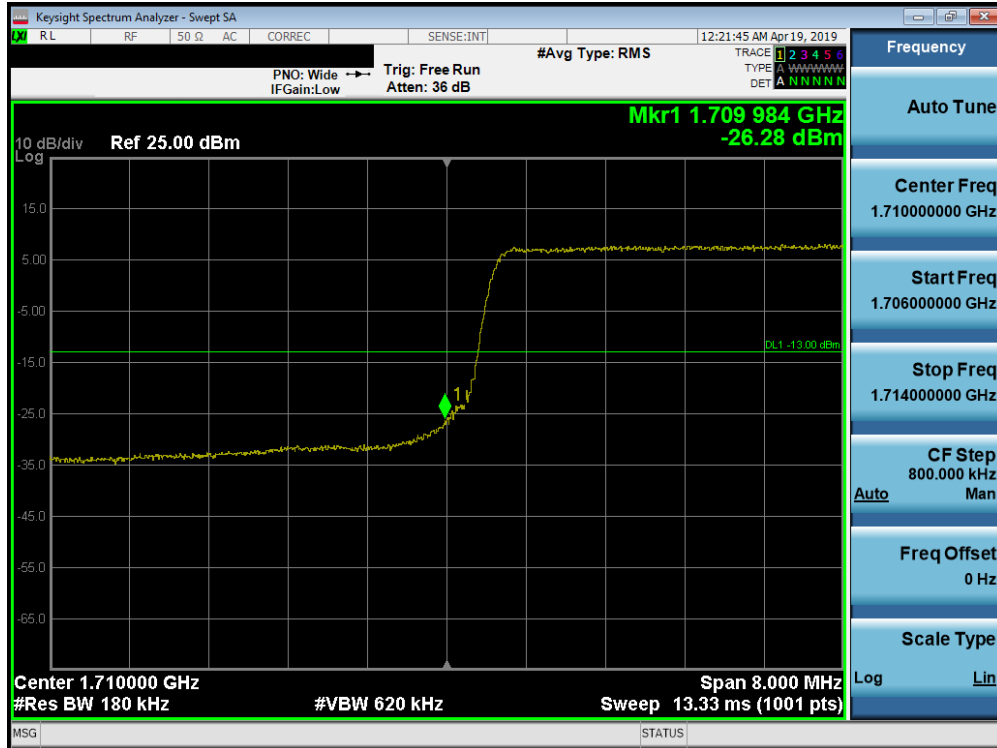


Plot 7-207. Upper Band Edge Plot (Band 66 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-208. Upper Extended Band Edge Plot (Band 66 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 128 of 225



Plot 7-209. Lower Band Edge Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)

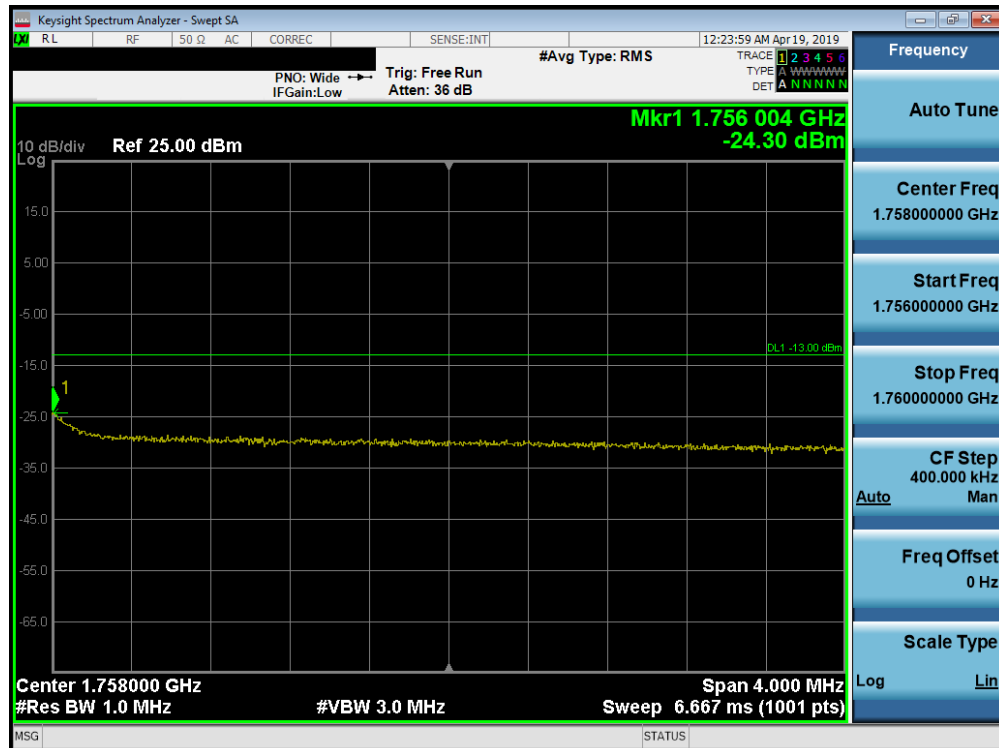


Plot 7-210. Lower Extended Band Edge Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 129 of 225



Plot 7-211. Upper Band Edge Plot (Band 4 – 10.0MHz QPSK - Full RB Configuration)

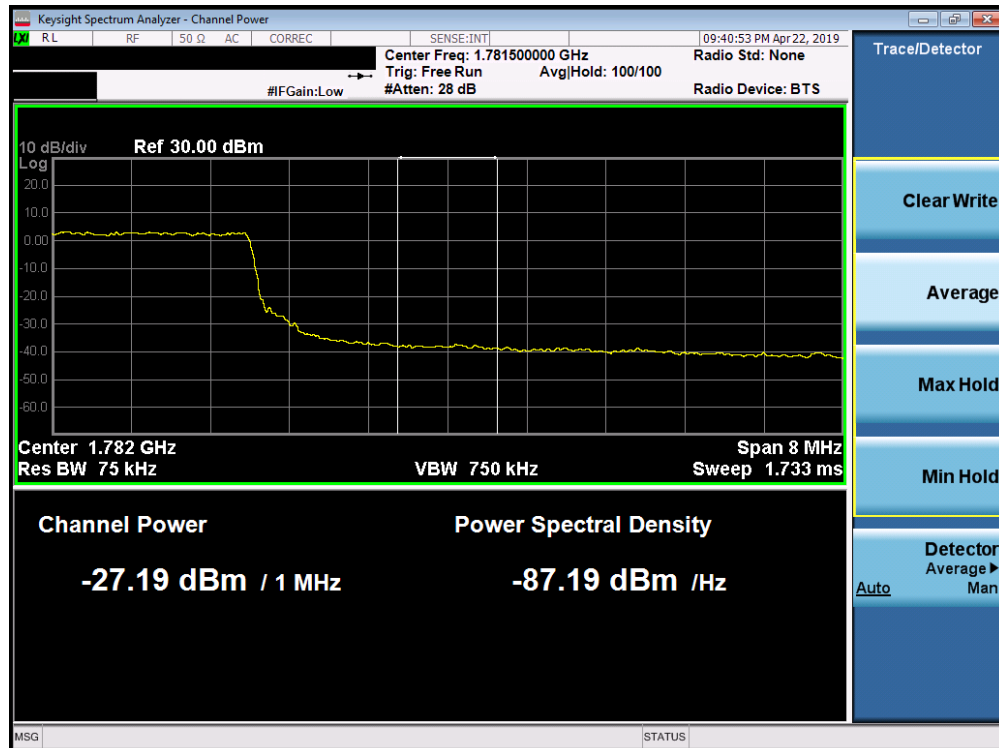


Plot 7-212. Upper Extended Band Edge Plot (Band 4 – 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 130 of 225

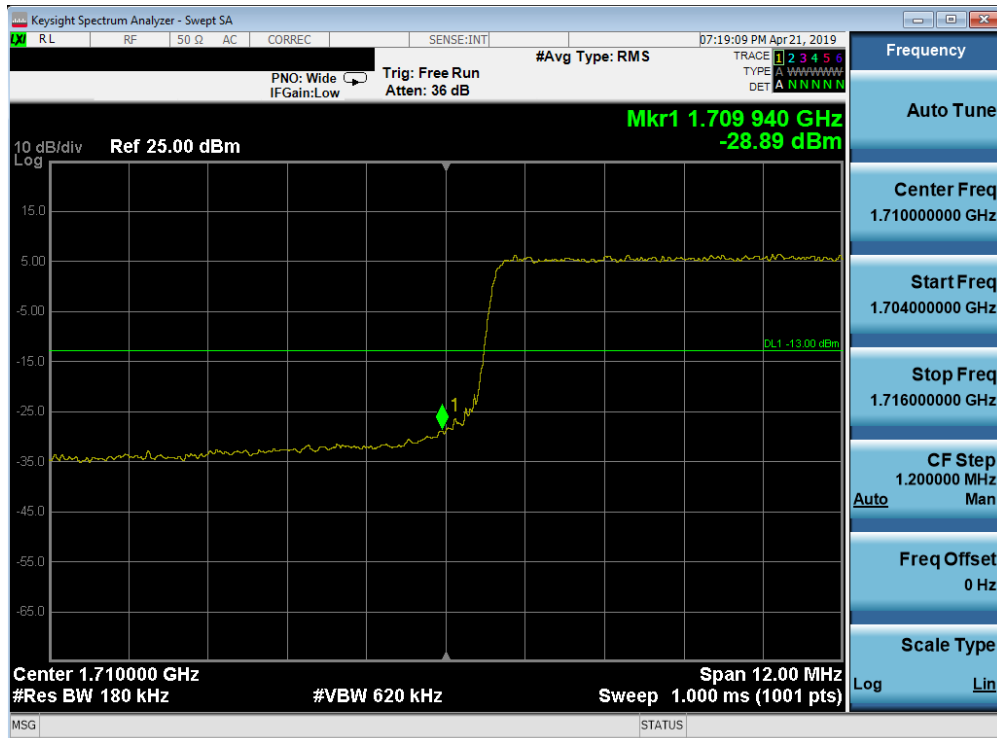


Plot 7-213. Upper Band Edge Plot (Band 66 - 10.0MHz QPSK - Full RB Configuration)

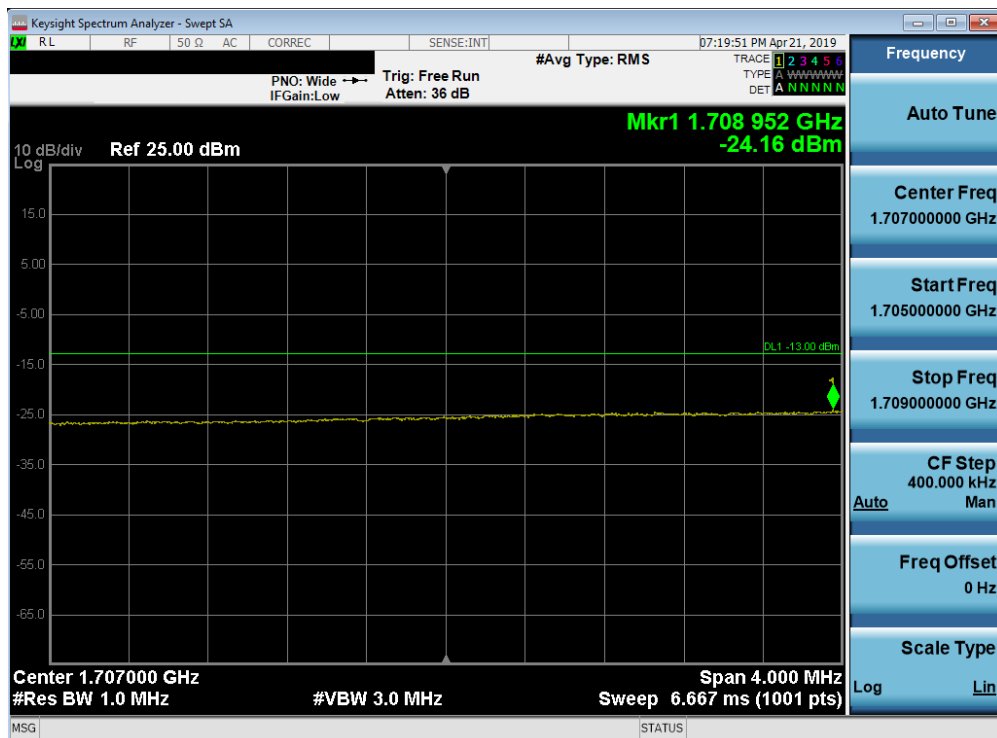


Plot 7-214. Upper Extended Band Edge Plot (Band 66 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 131 of 225

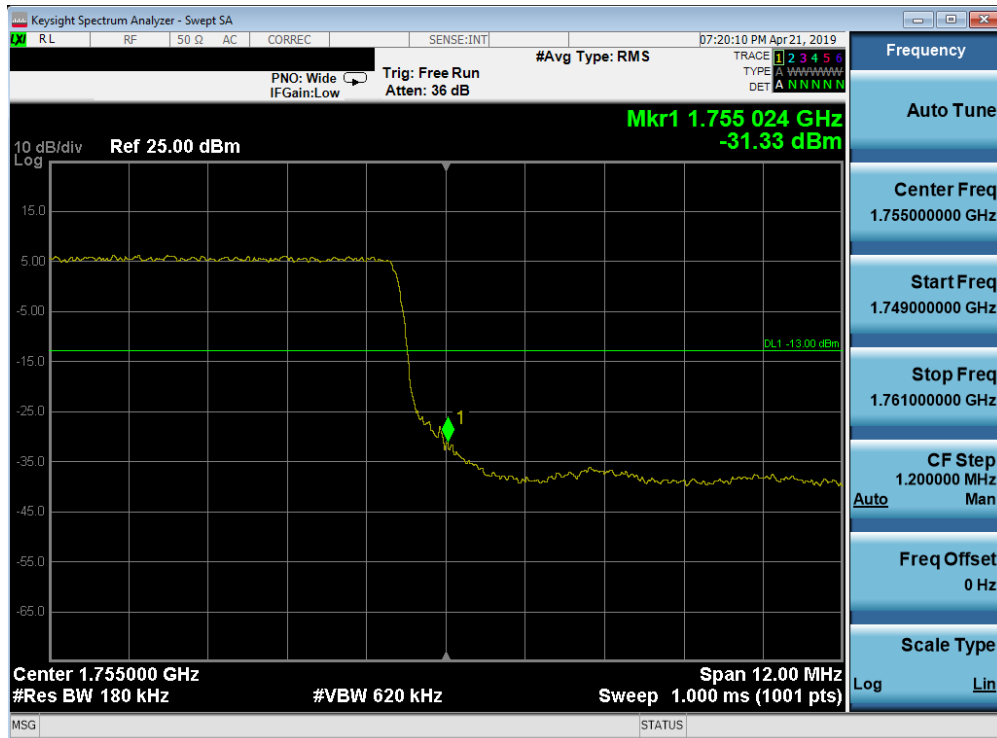


Plot 7-215. Lower Band Edge Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)

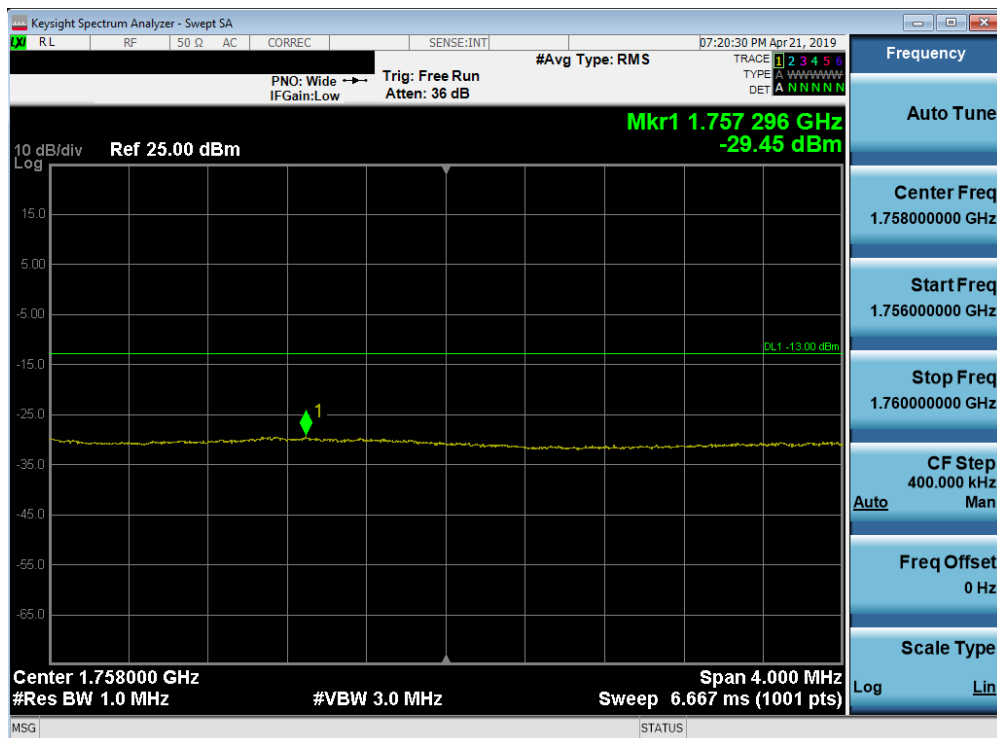


Plot 7-216. Lower Extended Band Edge Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 132 of 225

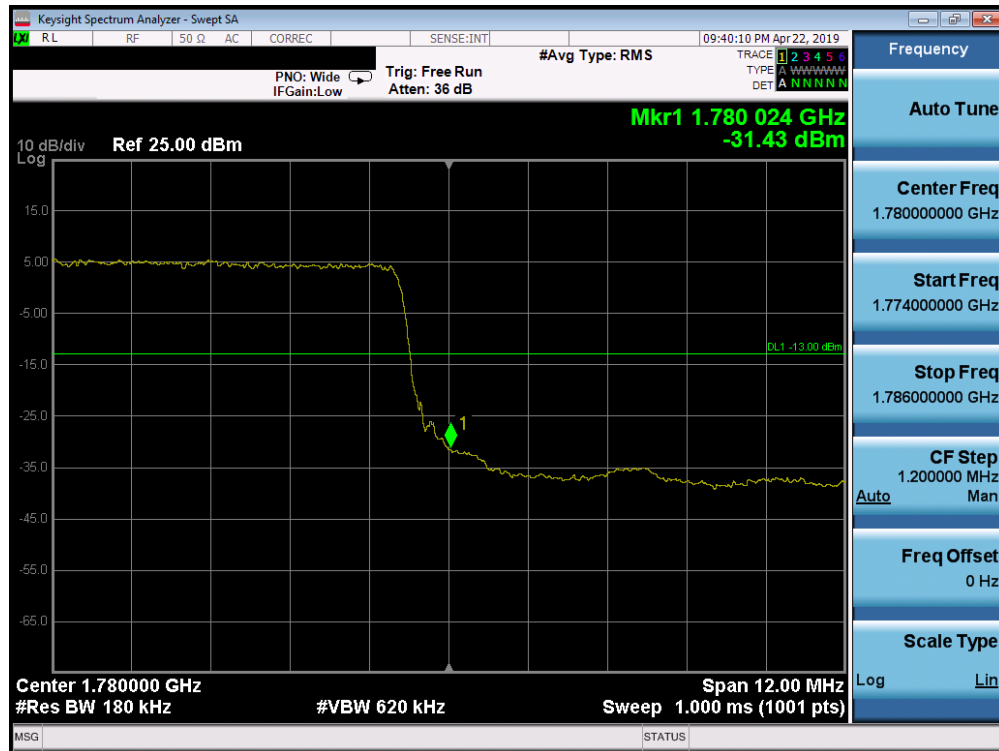


Plot 7-217. Upper Band Edge Plot (Band 4 – 15.0MHz QPSK - Full RB Configuration)

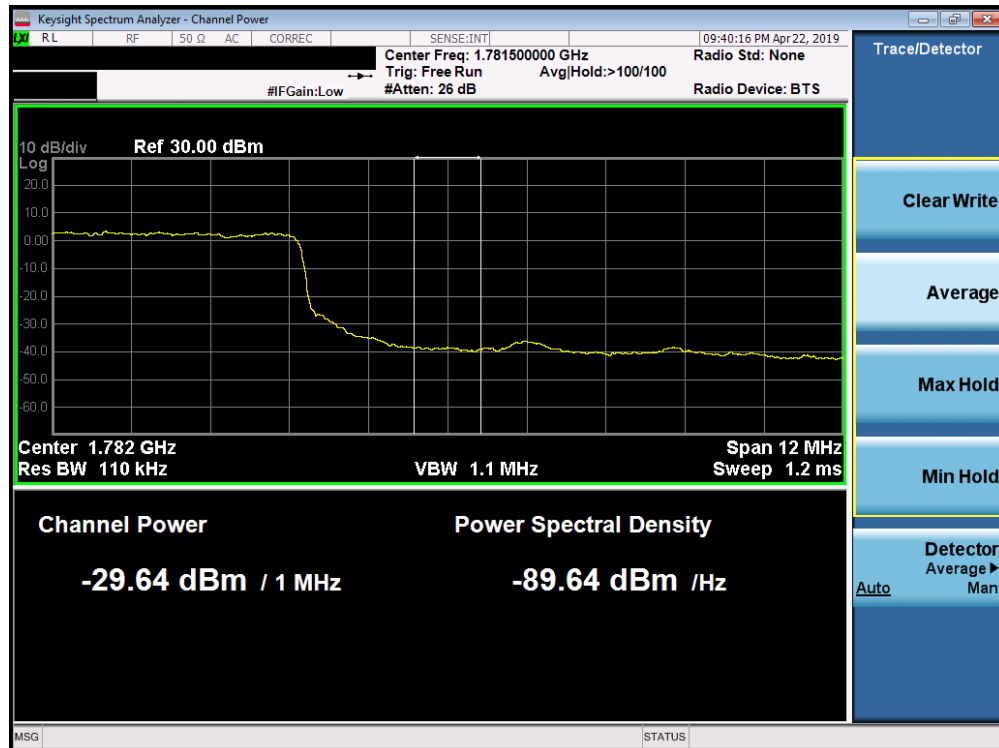


Plot 7-218. Upper Extended Band Edge Plot (Band 4 – 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 133 of 225

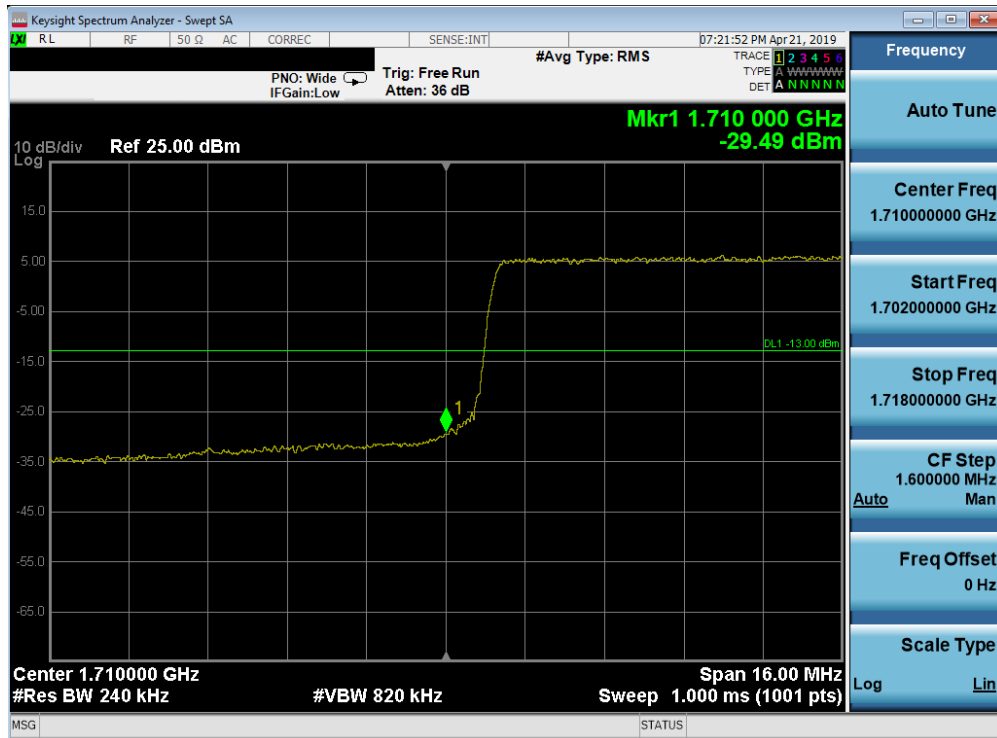


Plot 7-219. Upper Band Edge Plot (Band 66 - 15.0MHz QPSK - Full RB Configuration)

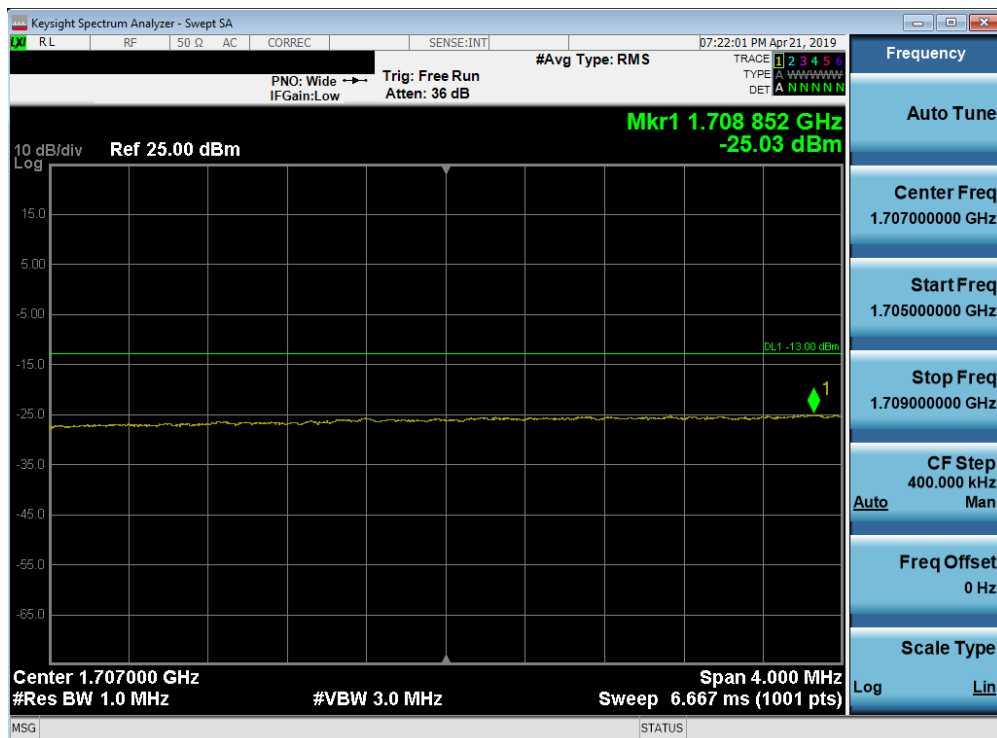


Plot 7-220. Upper Extended Band Edge Plot (Band 66 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 134 of 225

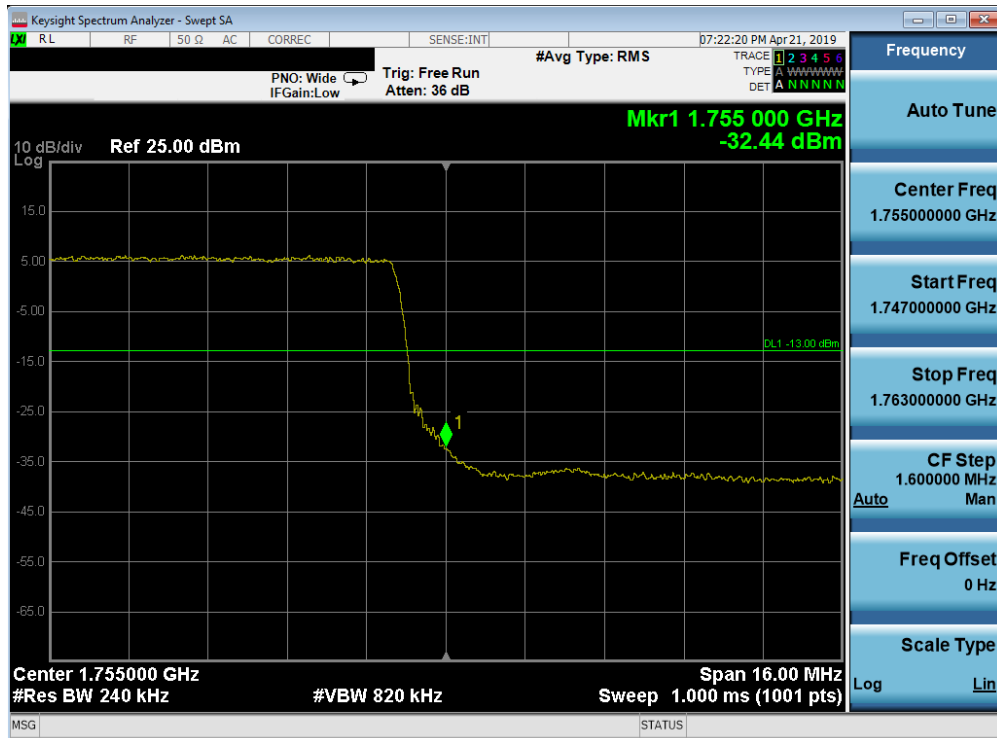


Plot 7-221. Lower Band Edge Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)

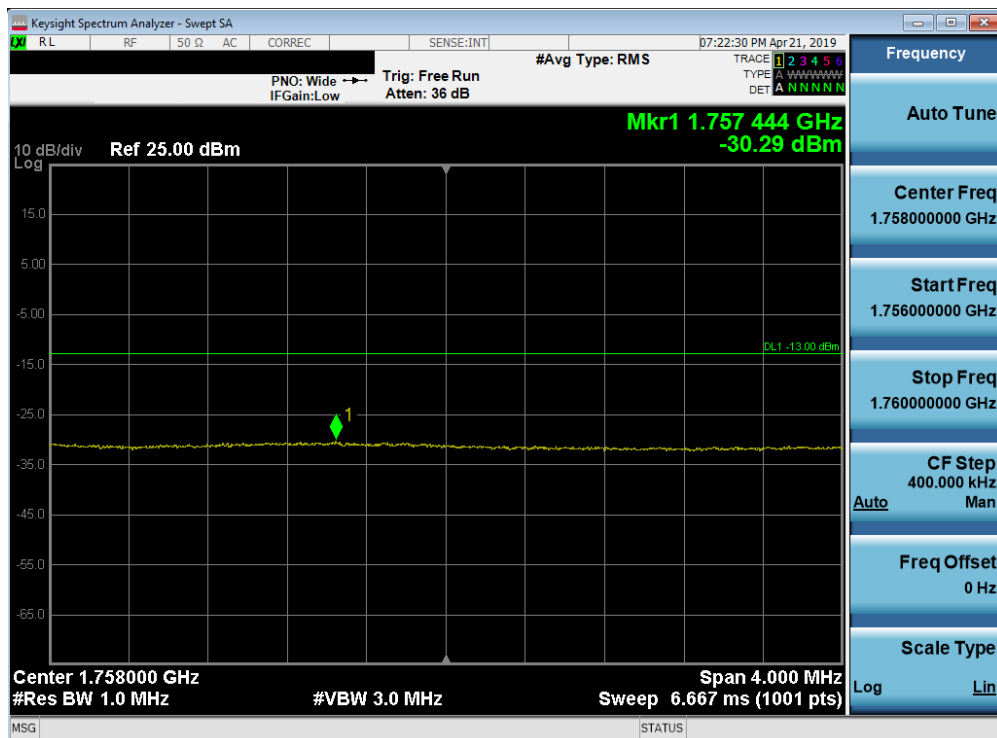


Plot 7-222. Lower Extended Band Edge Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 135 of 225

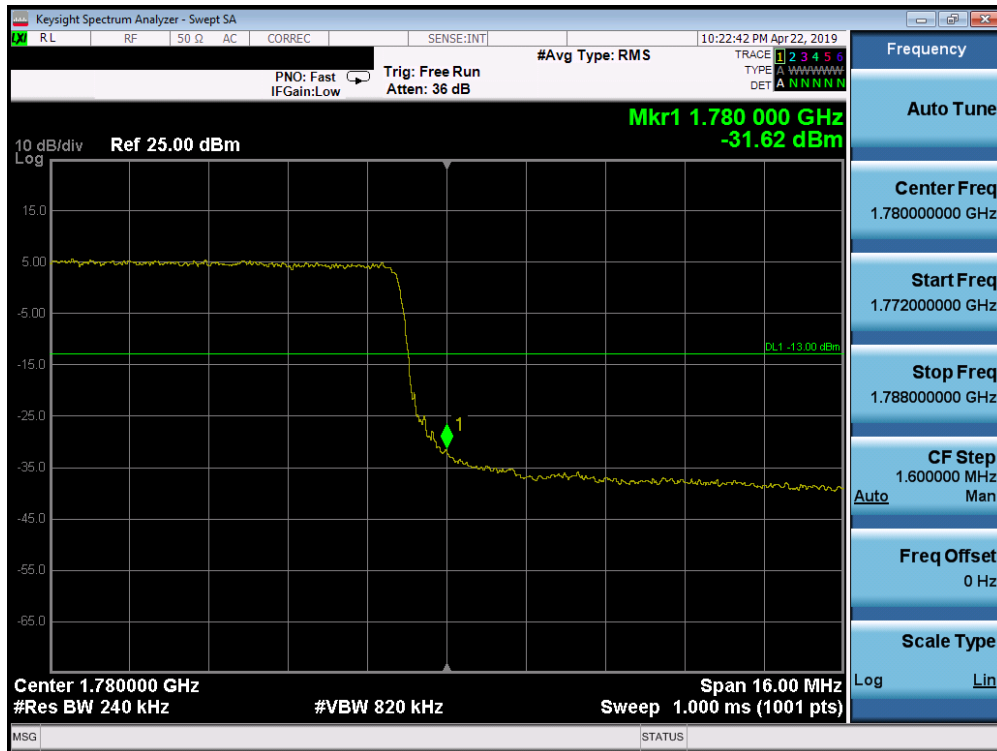


Plot 7-223. Upper Band Edge Plot (Band 4 – 20.0MHz QPSK - Full RB Configuration)

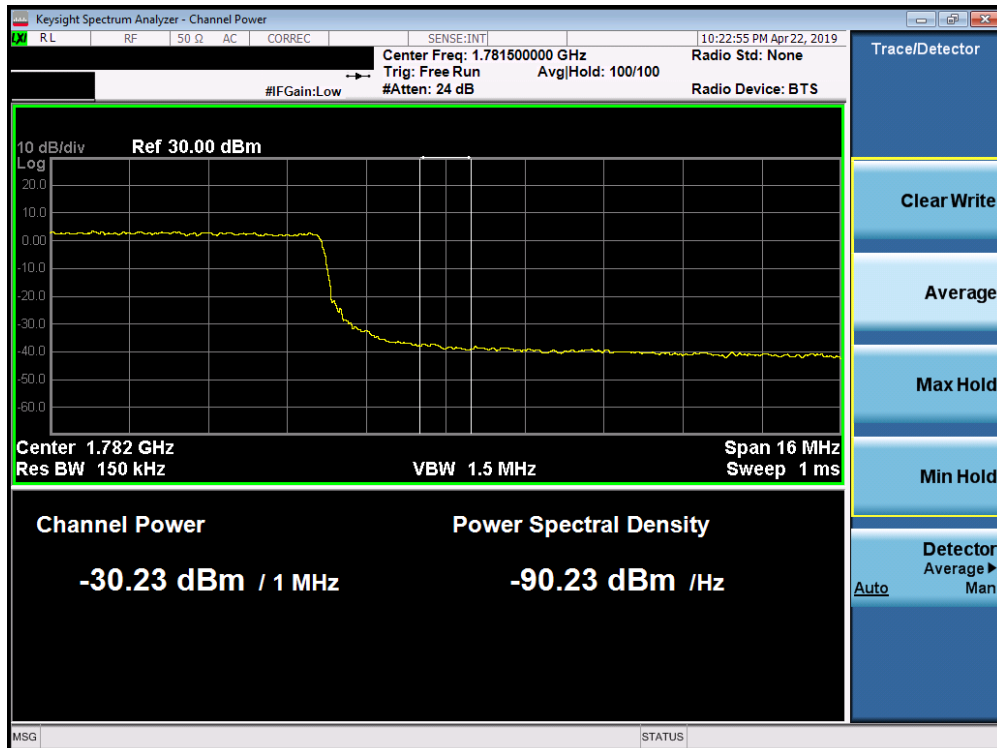


Plot 7-224. Upper Extended Band Edge Plot (Band 4 – 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 136 of 225



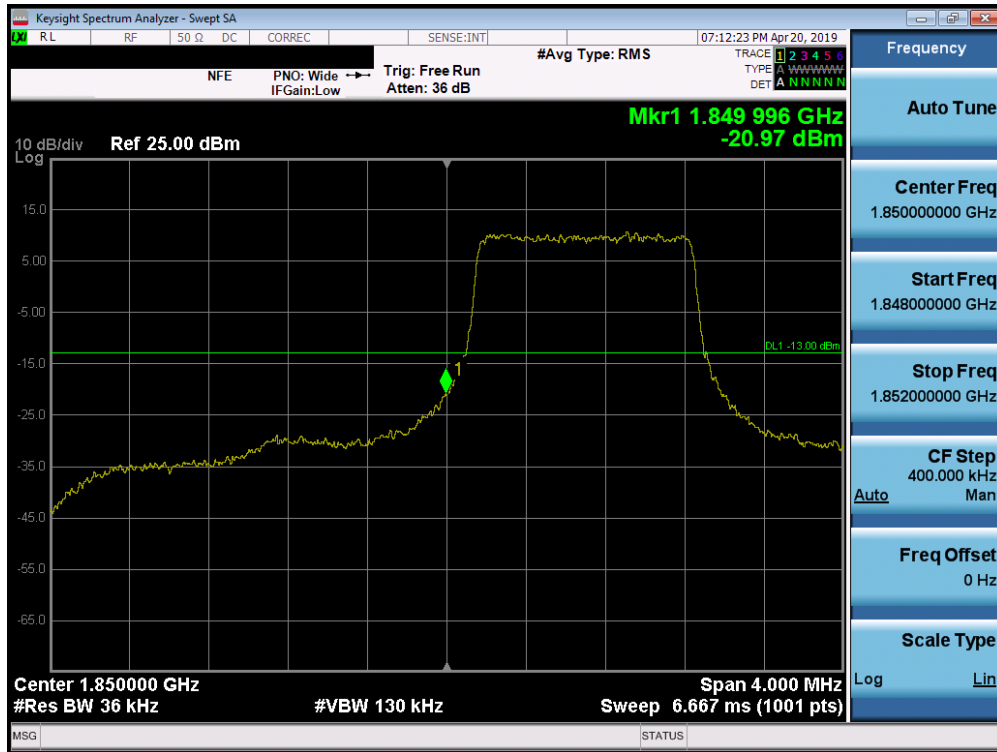
Plot 7-225. Upper Band Edge Plot (Band 66 - 20.0MHz QPSK - Full RB Configuration)



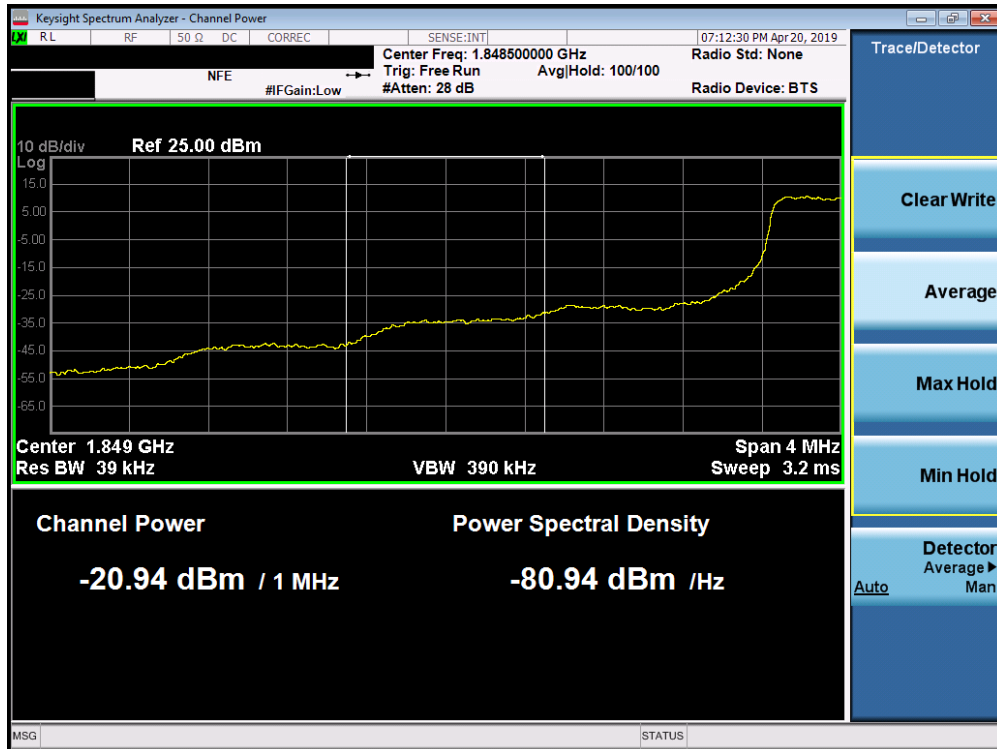
Plot 7-226. Upper Extended Band Edge Plot (Band 66 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 137 of 225

Band 25/2



Plot 7-227. Lower Band Edge Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)

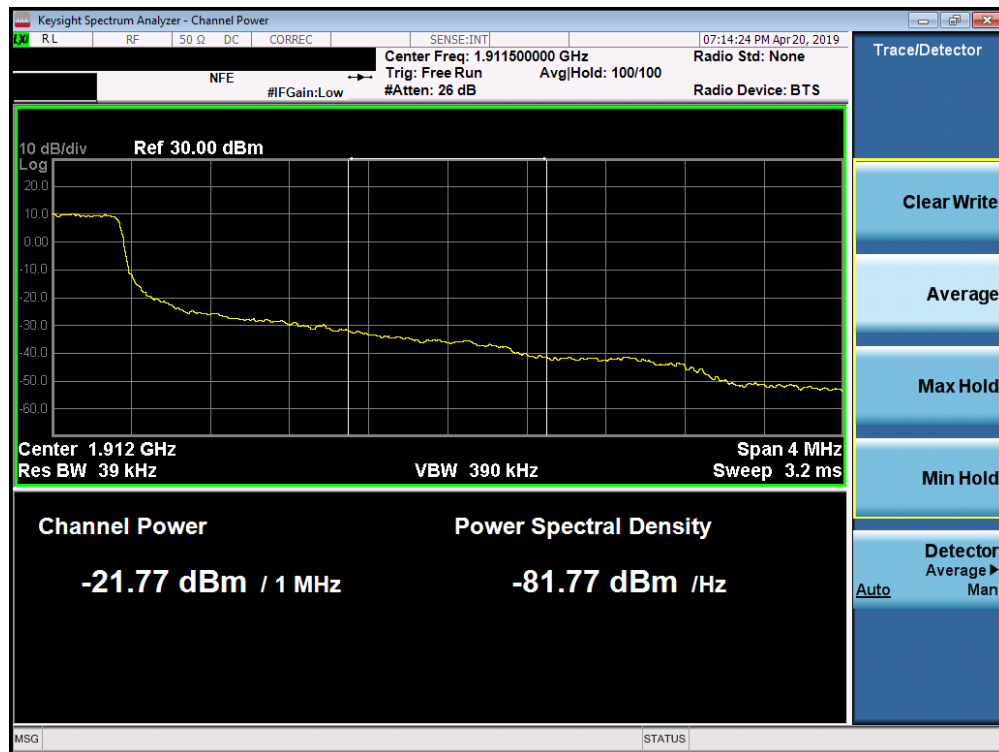


Plot 7-228. Lower Extended Band Edge Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 138 of 225



Plot 7-229. Upper Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

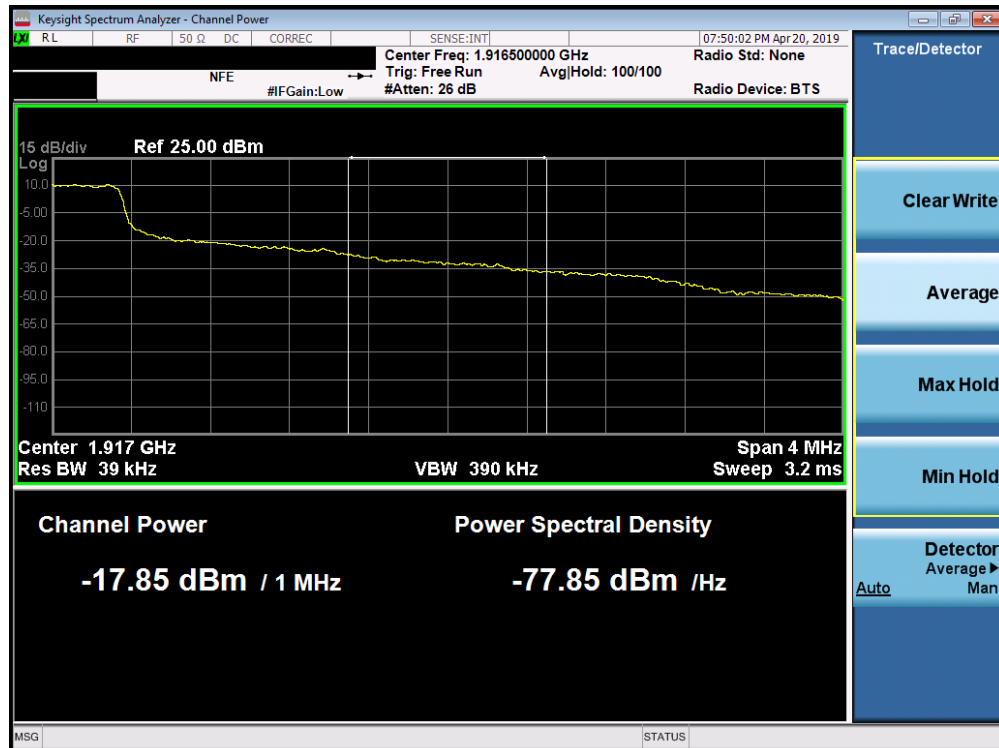


Plot 7-230. Upper Extended Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 139 of 225

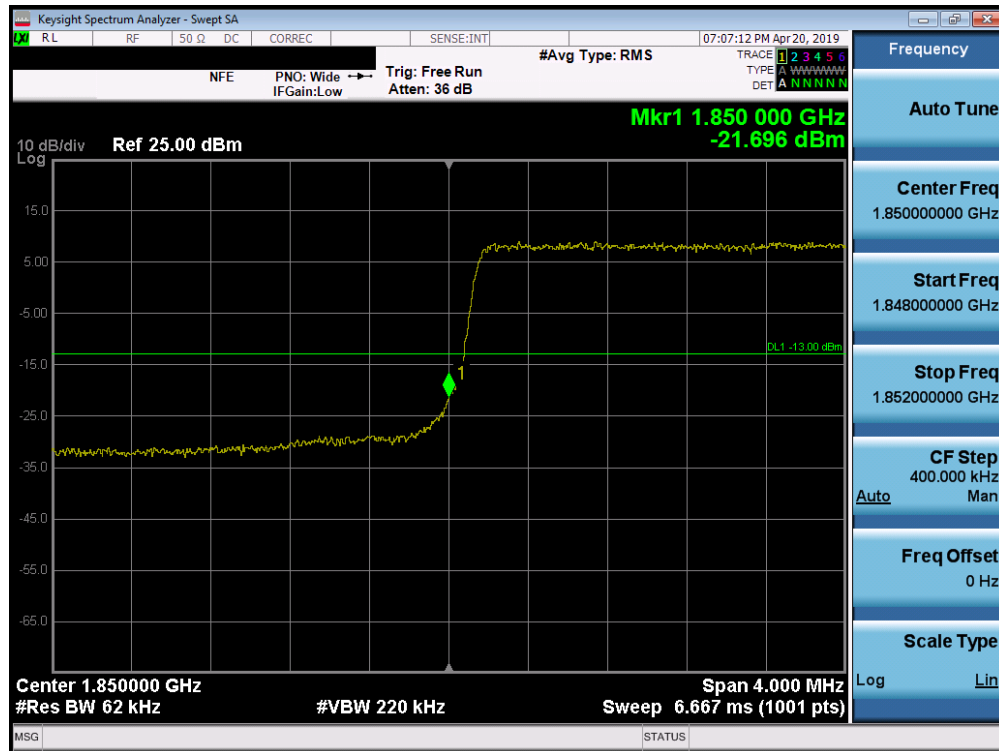


Plot 7-231. Upper Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)

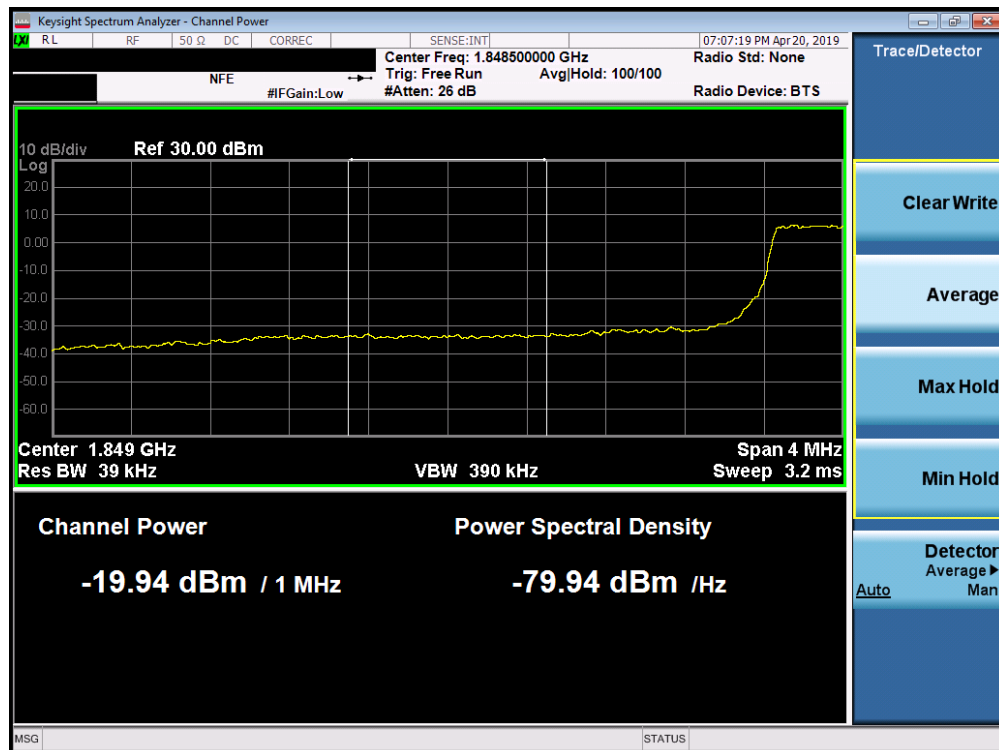


Plot 7-232. Upper Extended Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 140 of 225

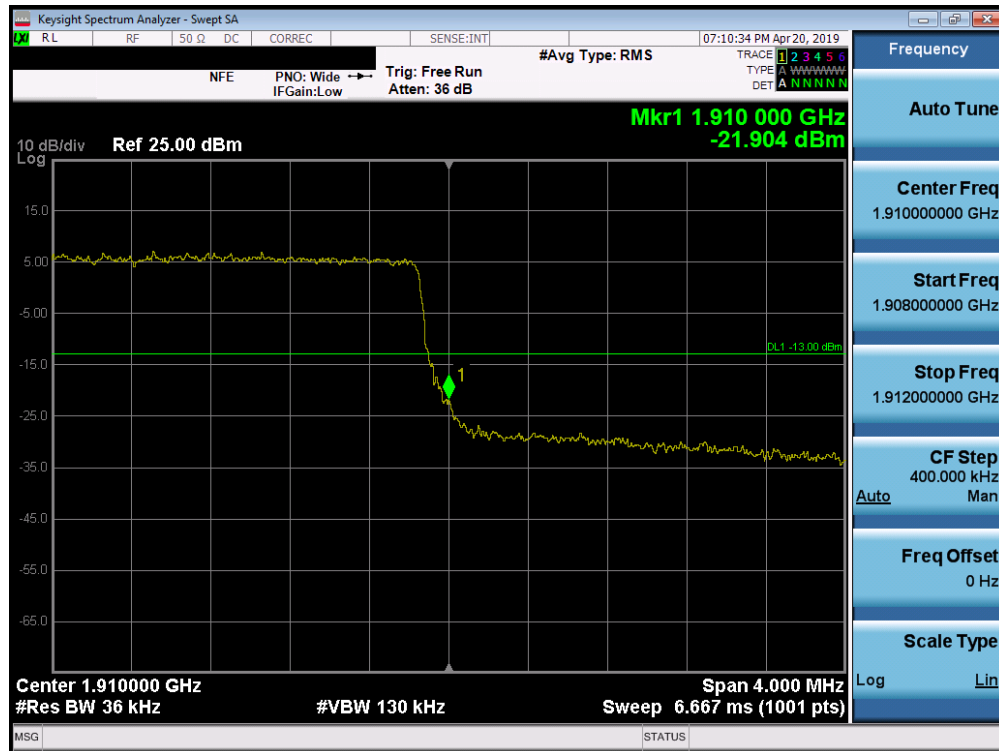


Plot 7-233. Lower Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

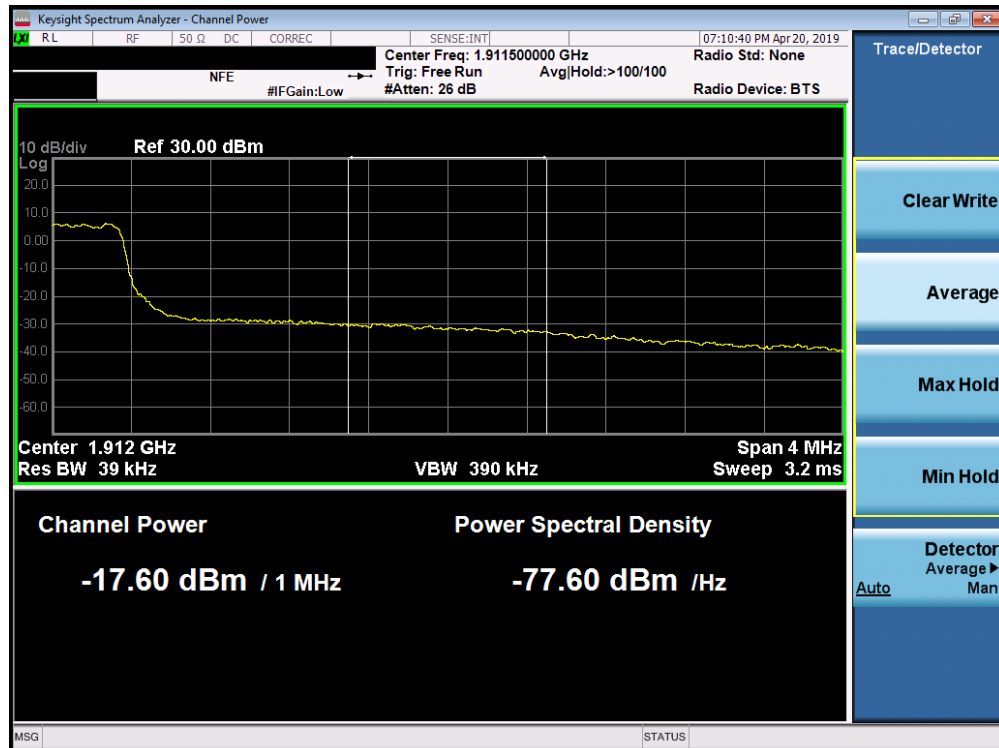


Plot 7-234. Lower Extended Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 141 of 225



Plot 7-235. Upper Band Edge Plot (Band 2 – 3.0MHz QPSK - Full RB Configuration)

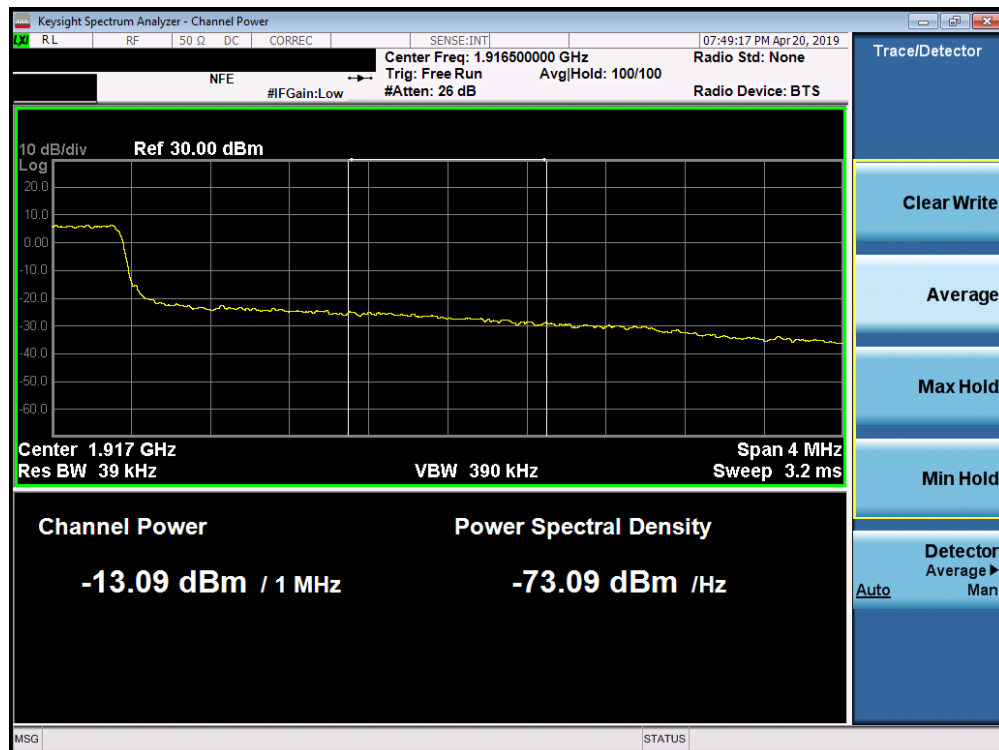


Plot 7-236. Upper Extended Band Edge Plot (Band 2 – 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 142 of 225

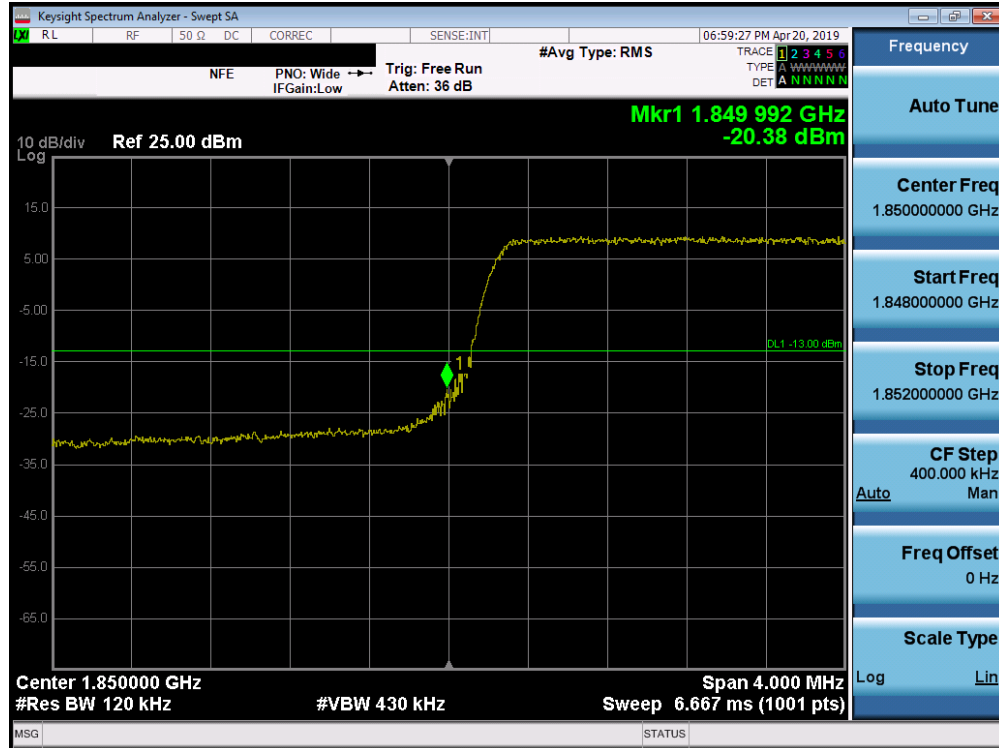


Plot 7-237. Upper Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)

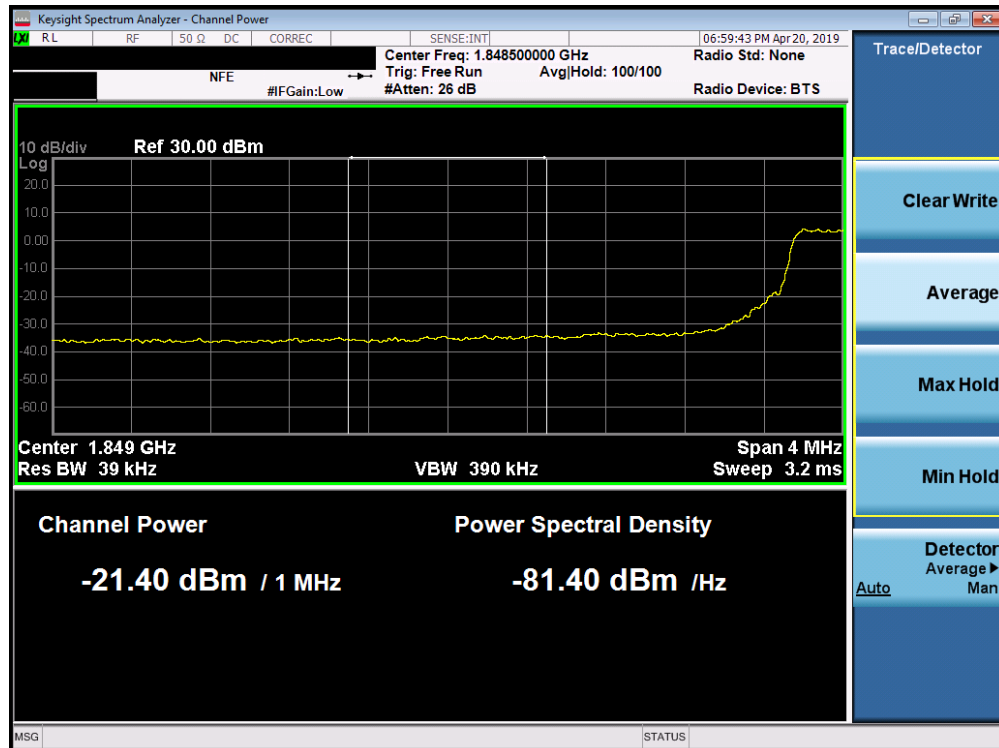


Plot 7-238. Upper Extended Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 143 of 225



Plot 7-239. Lower Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

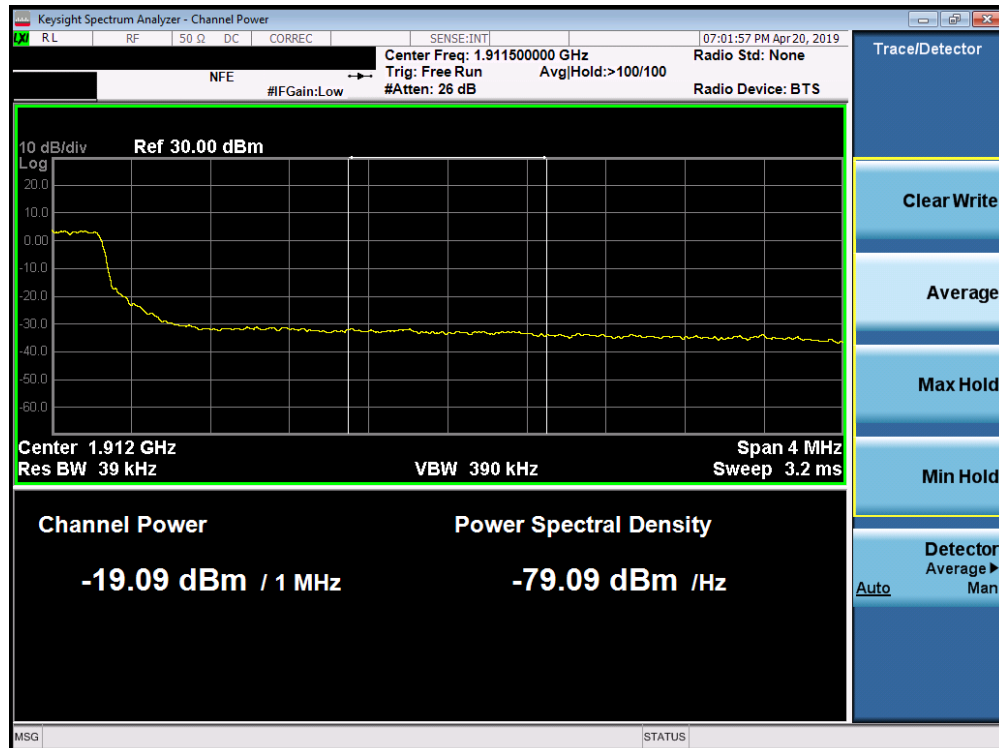


Plot 7-240. Lower Extended Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 144 of 225

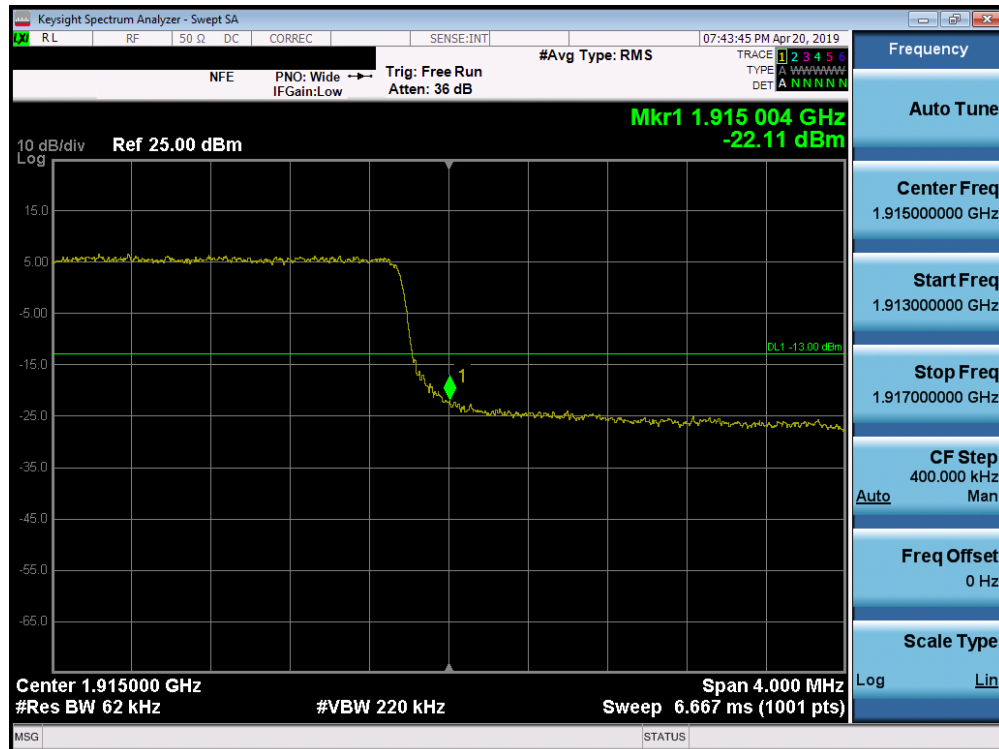


Plot 7-241. Upper Band Edge Plot (Band 2 – 5.0MHz QPSK - Full RB Configuration)

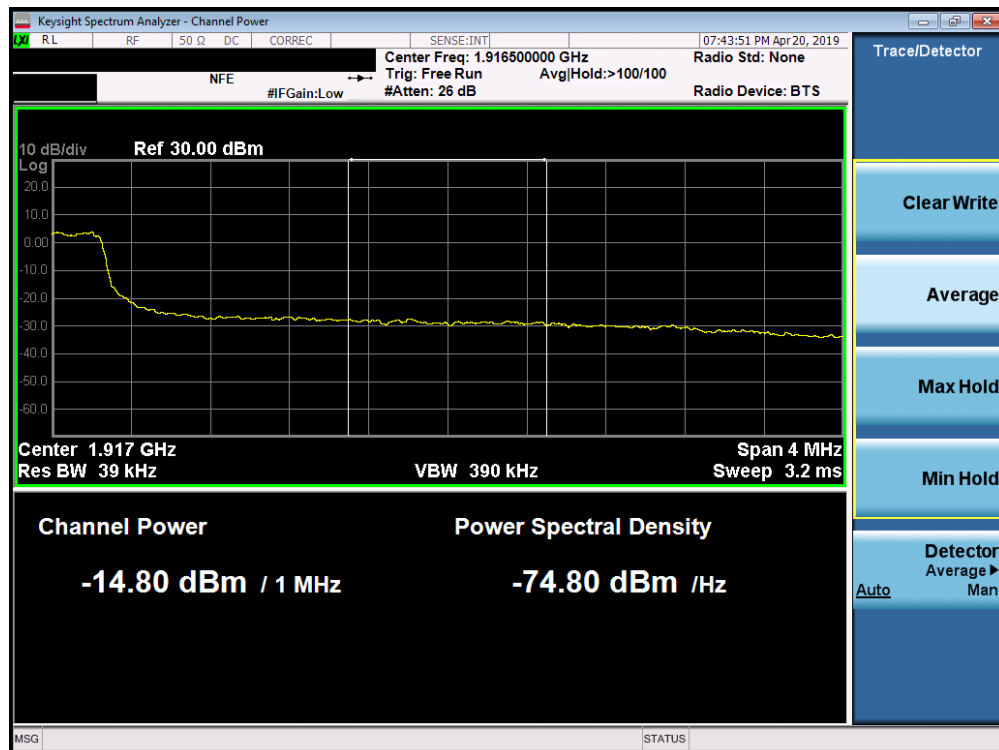


Plot 7-242. Upper Extended Band Edge Plot (Band 2 – 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 145 of 225

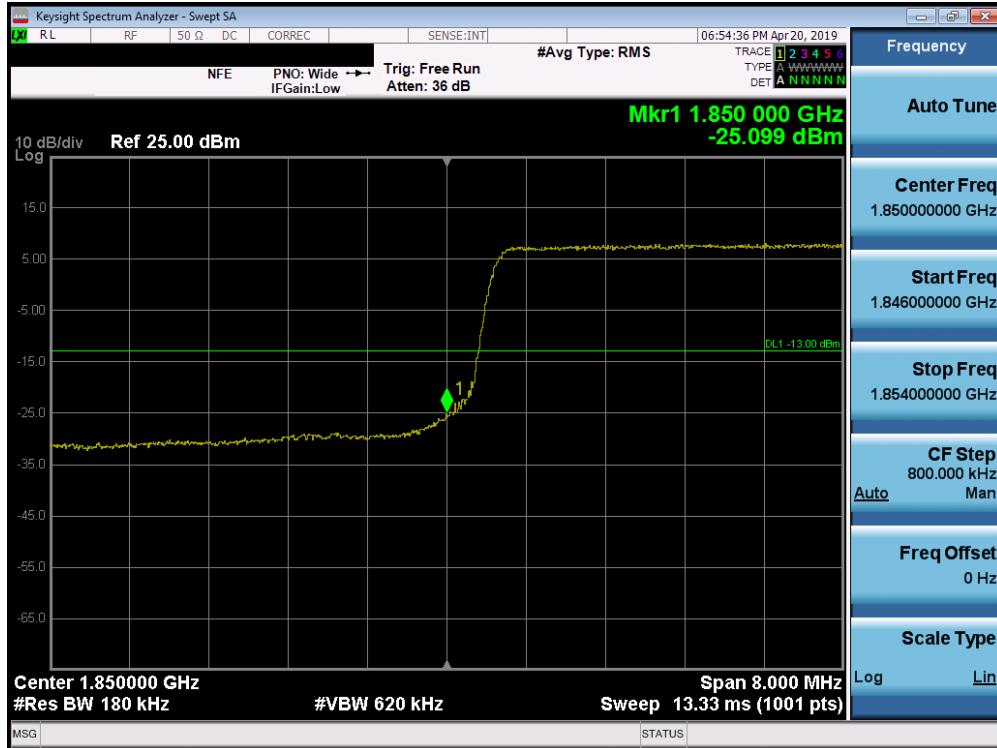


Plot 7-243. Upper Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)

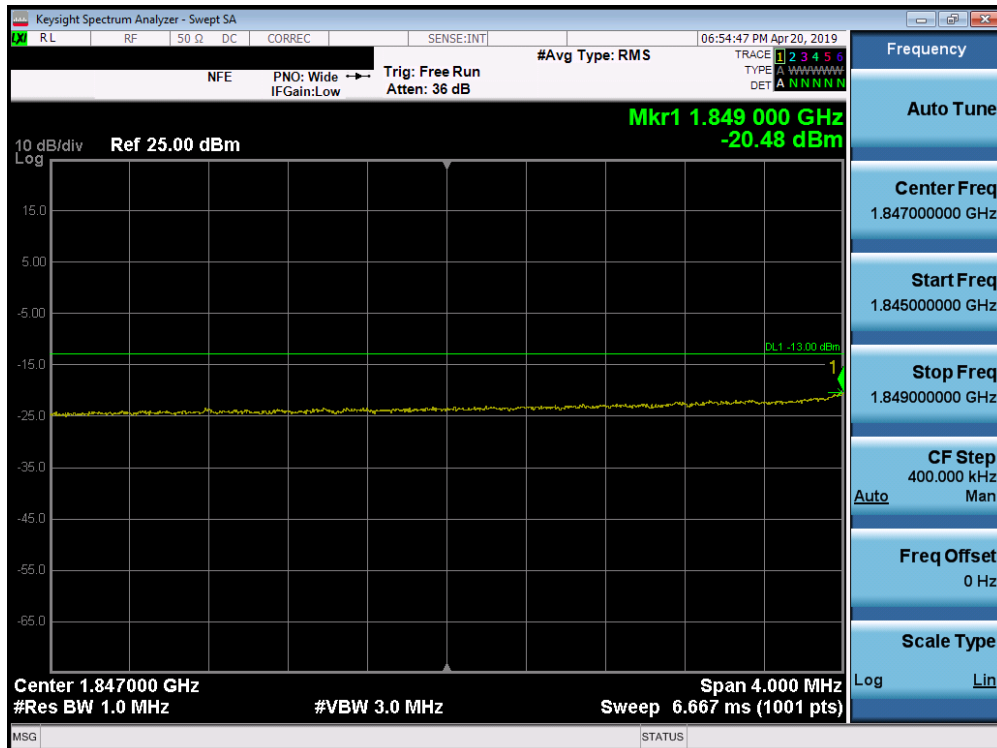


Plot 7-244. Upper Extended Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 146 of 225

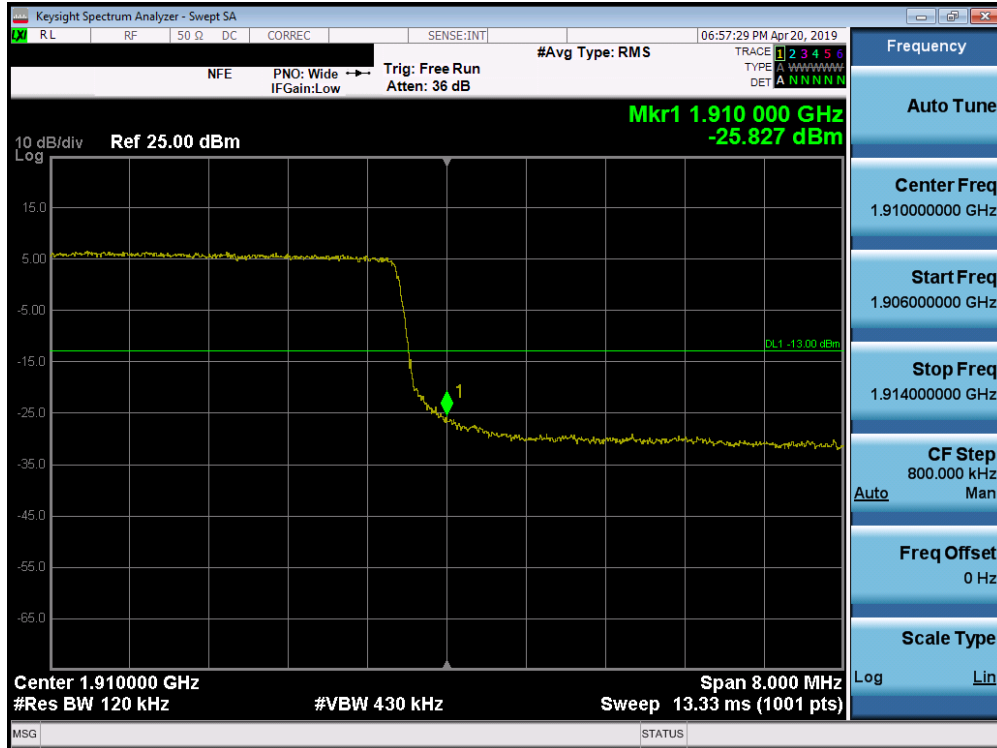


Plot 7-245. Lower Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

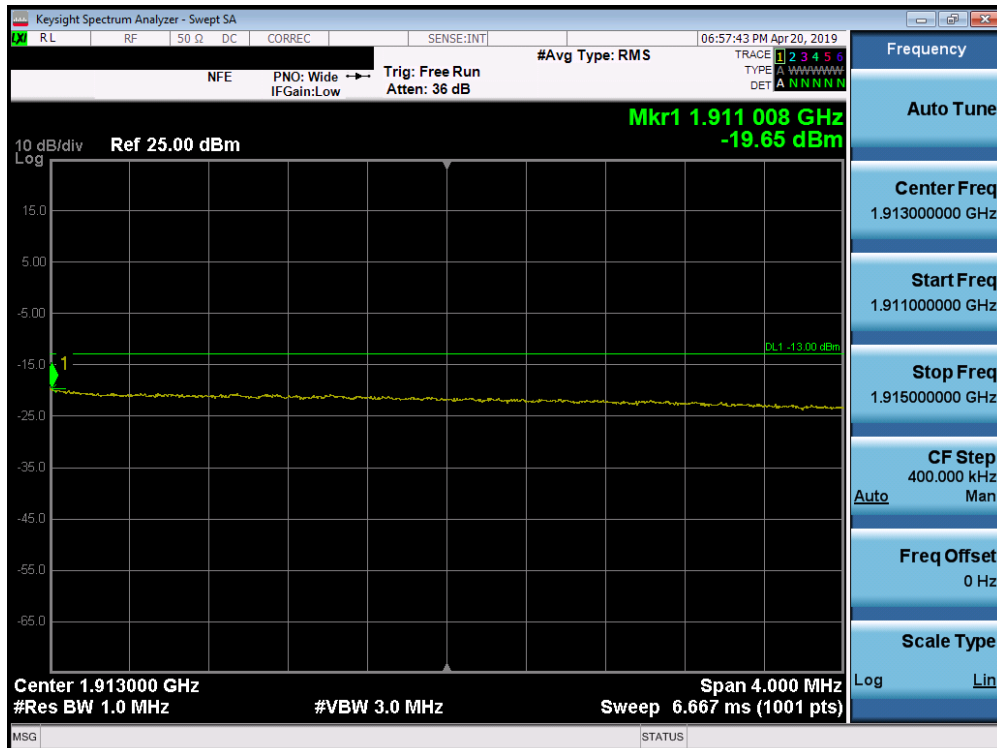


Plot 7-246. Lower Extended Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 147 of 225



Plot 7-247. Upper Band Edge Plot (Band 2 – 10.0MHz QPSK - Full RB Configuration)

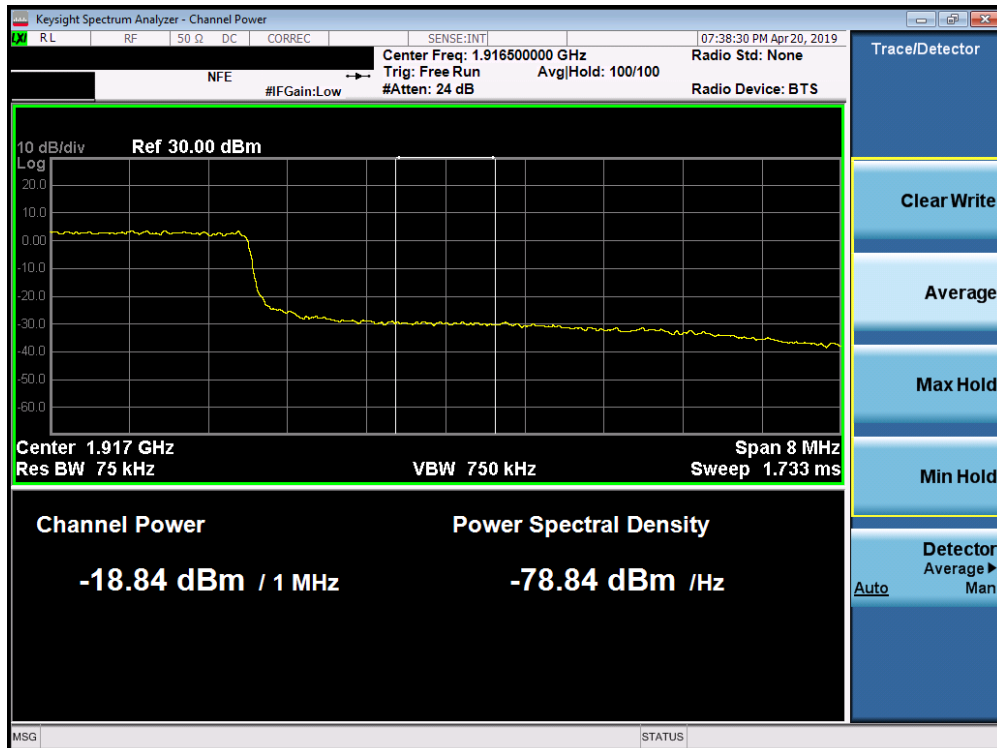


Plot 7-248. Upper Extended Band Edge Plot (Band 2 – 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 148 of 225

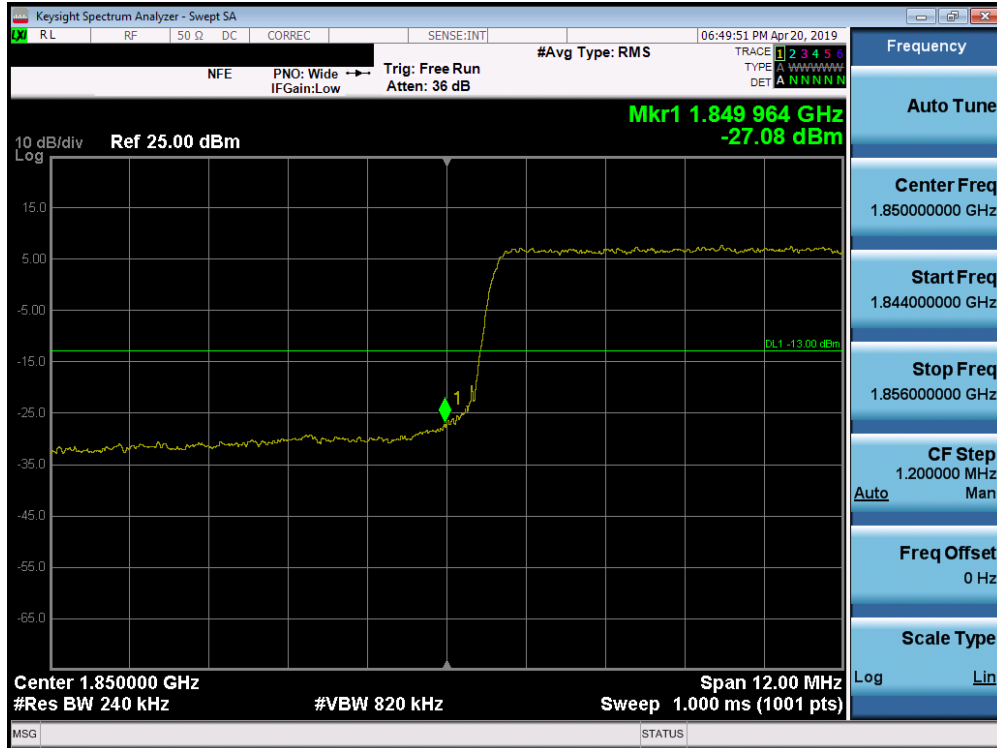


Plot 7-249. Upper Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)

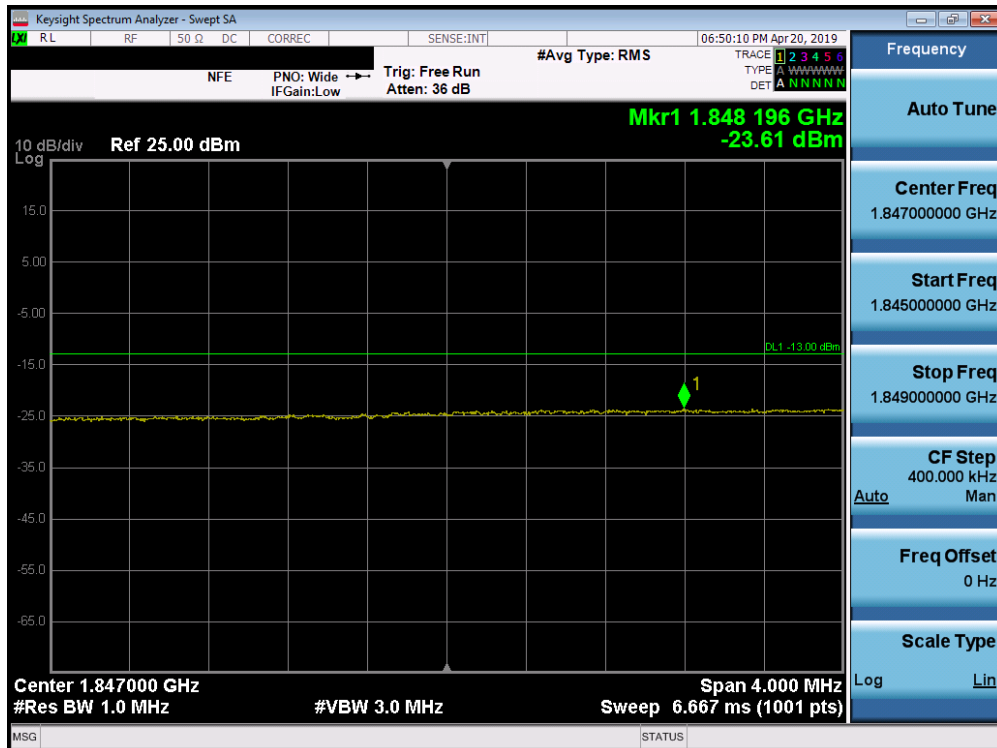


Plot 7-250. Upper Extended Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 149 of 225

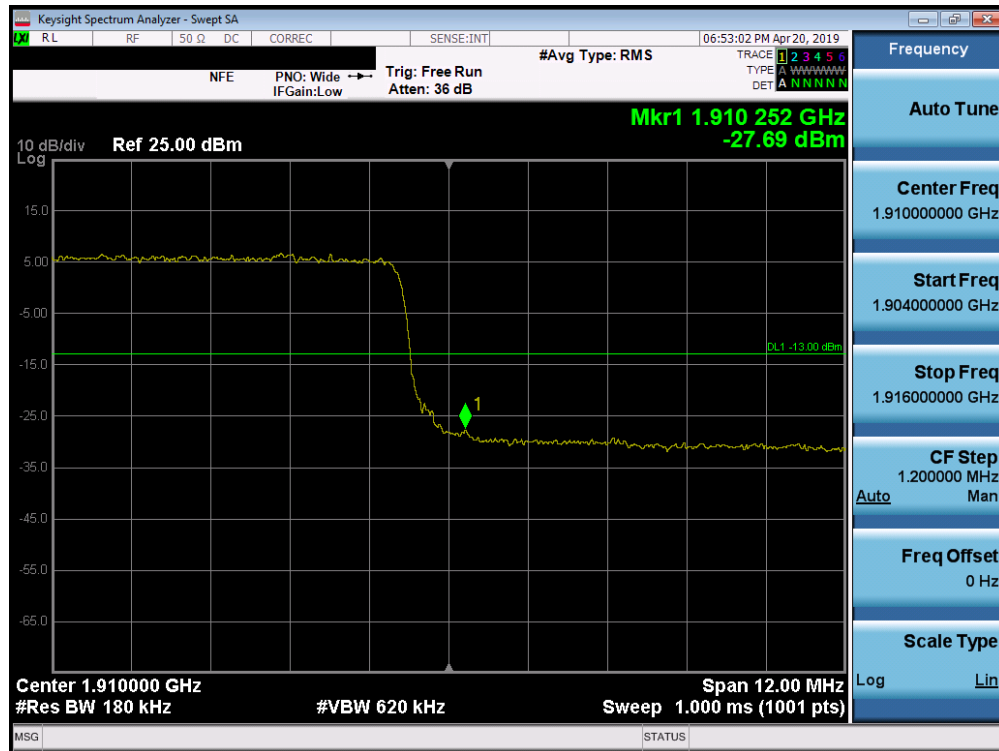


Plot 7-251. Lower Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

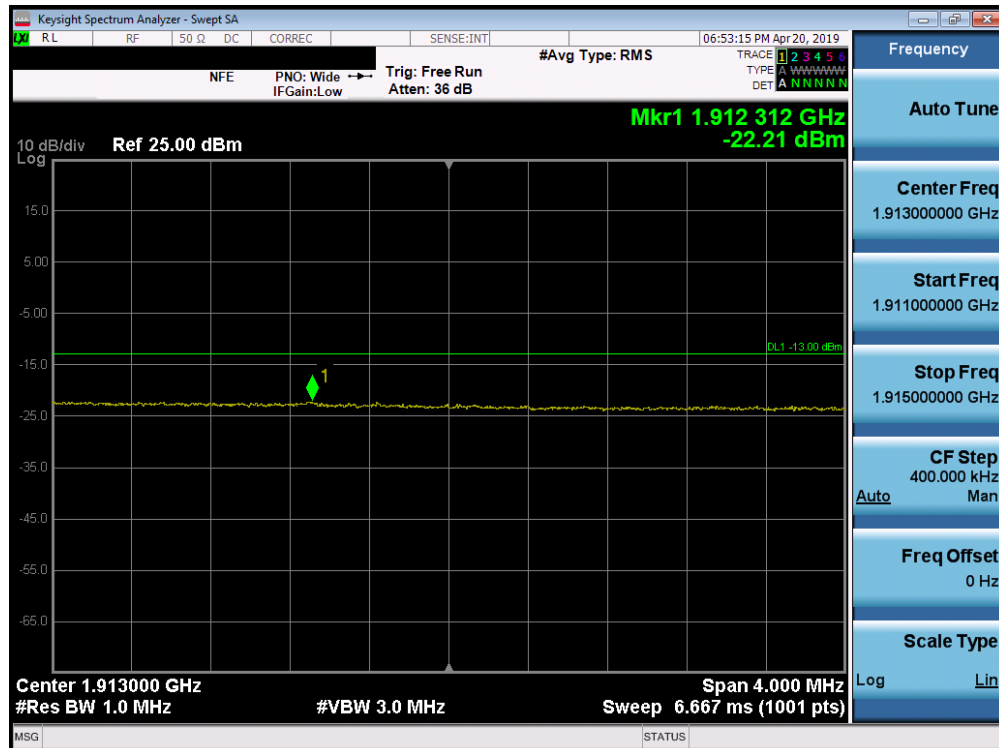


Plot 7-252. Lower Extended Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 150 of 225



Plot 7-253. Upper Band Edge Plot (Band 2 – 15.0MHz QPSK - Full RB Configuration)



Plot 7-254. Upper Extended Band Edge Plot (Band 2 – 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 151 of 225

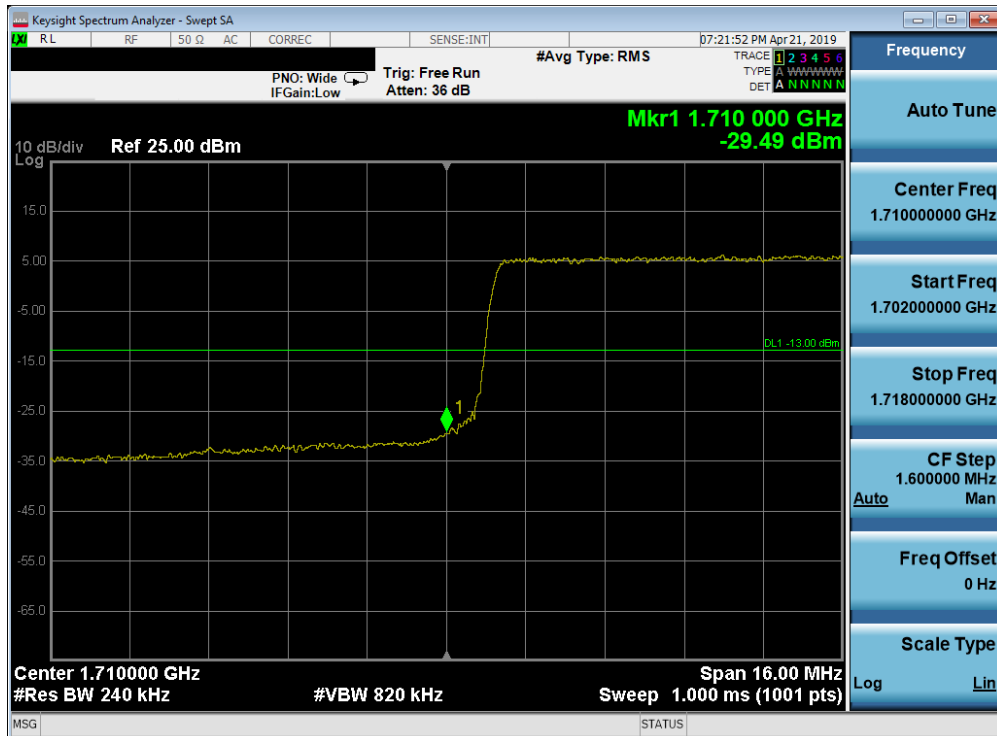


Plot 7-255. Upper Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)

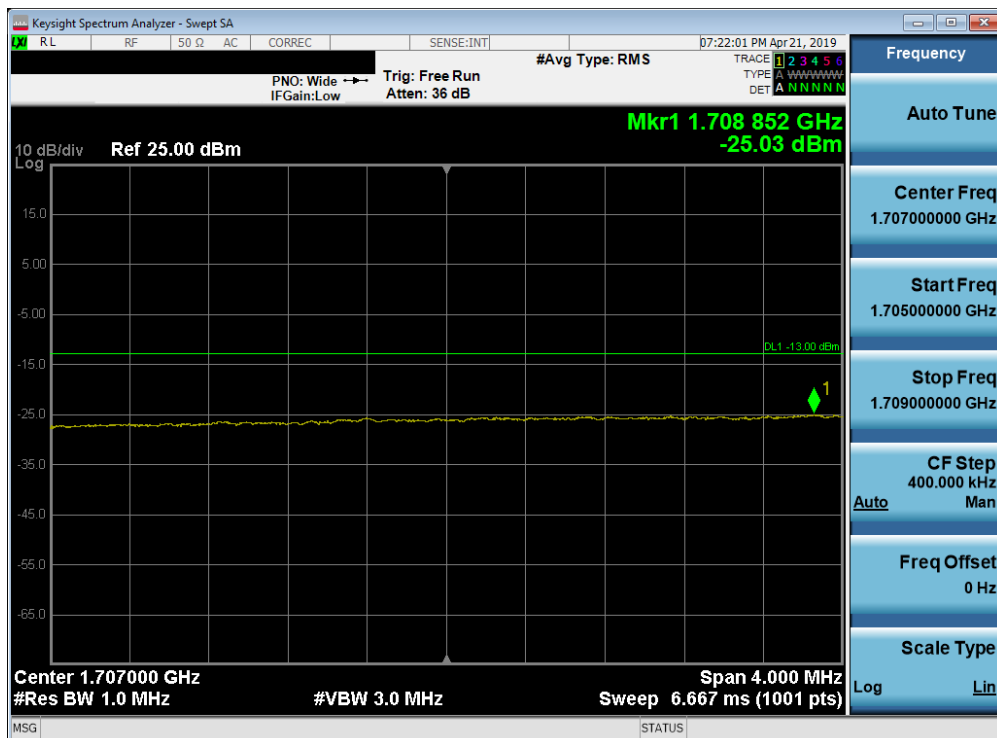


Plot 7-256. Upper Extended Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 152 of 225



Plot 7-257. Lower Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

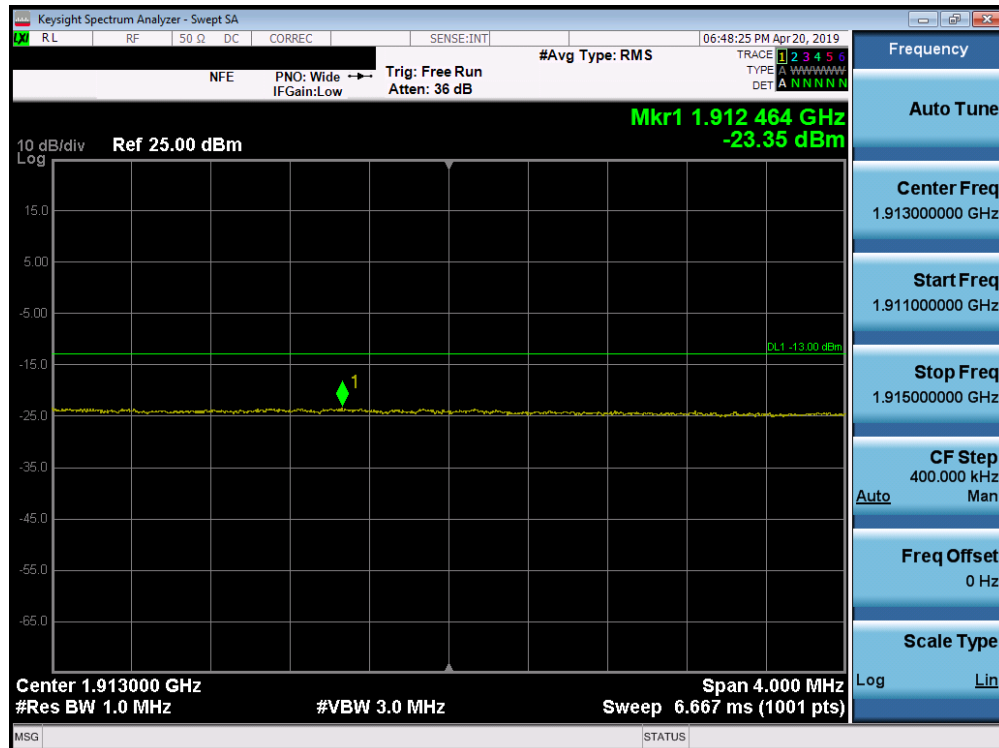


Plot 7-258. Lower Extended Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 153 of 225



Plot 7-259. Upper Band Edge Plot (Band 2 – 20.0MHz QPSK - Full RB Configuration)

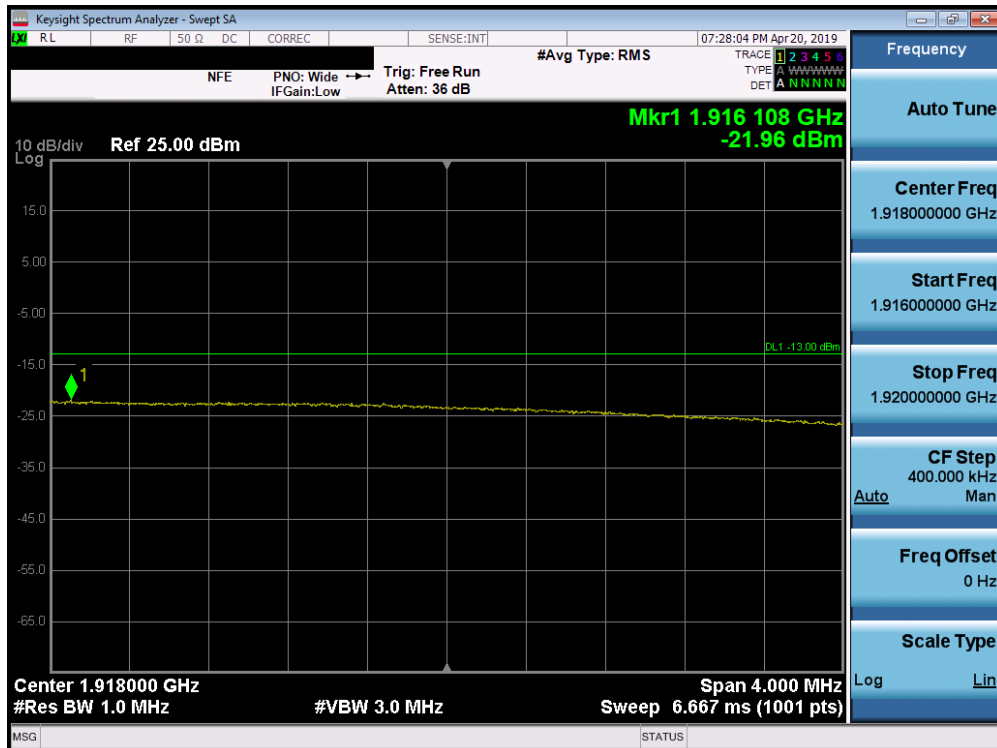


Plot 7-260. Upper Extended Band Edge Plot (Band 2 – 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 154 of 225



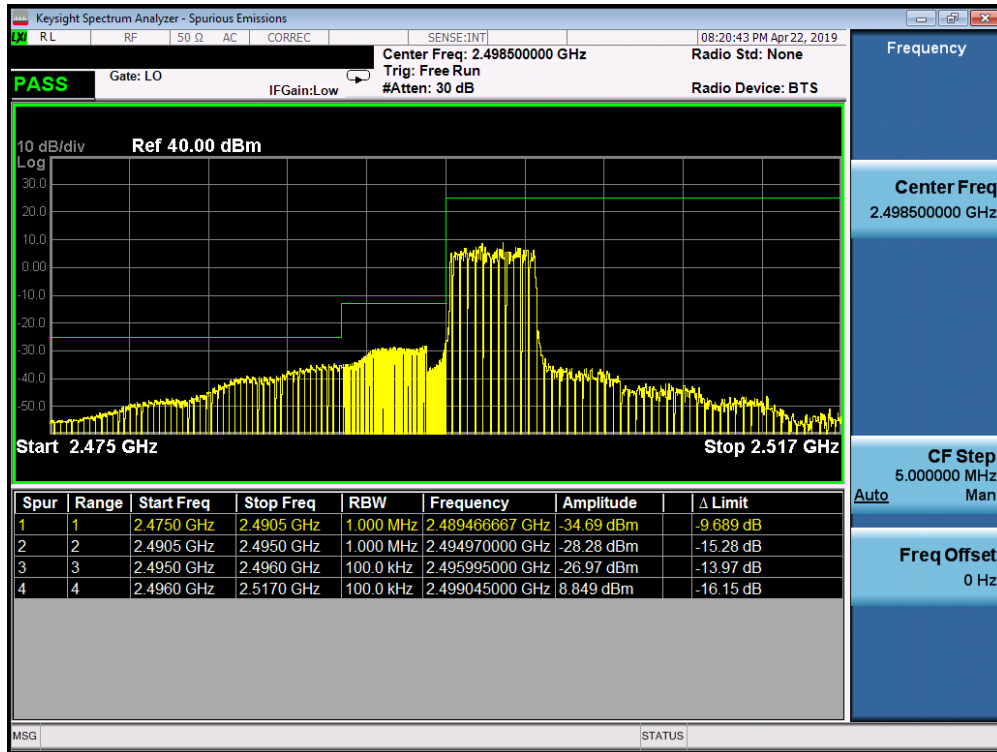
Plot 7-261. Upper Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)



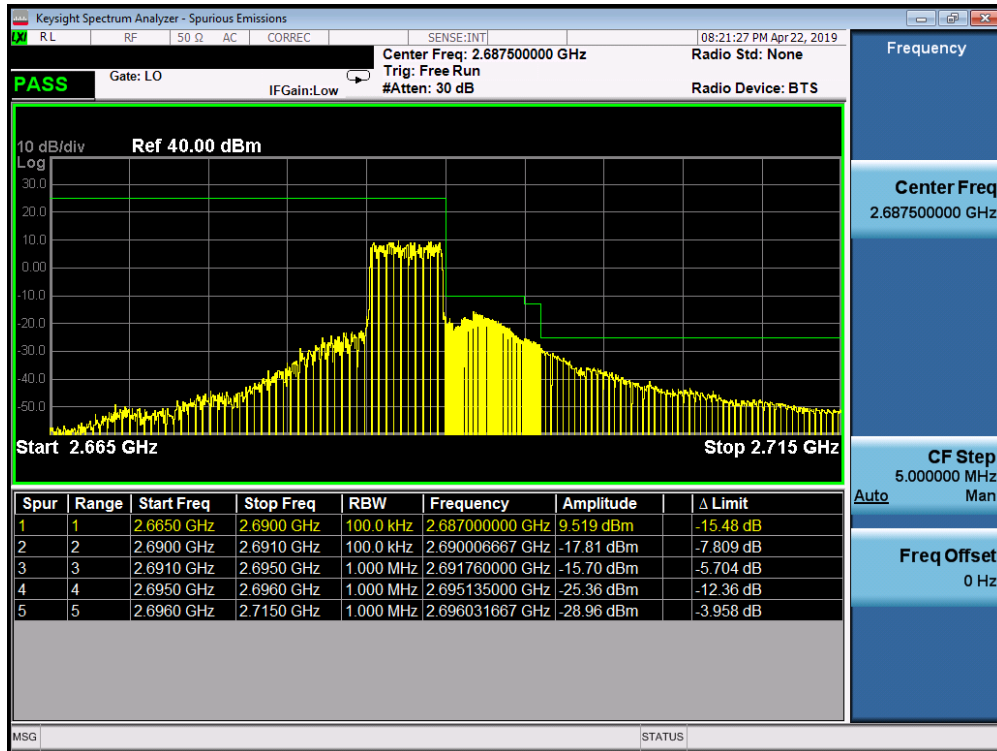
Plot 7-262. Upper Extended Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 155 of 225

Band 41 PC2

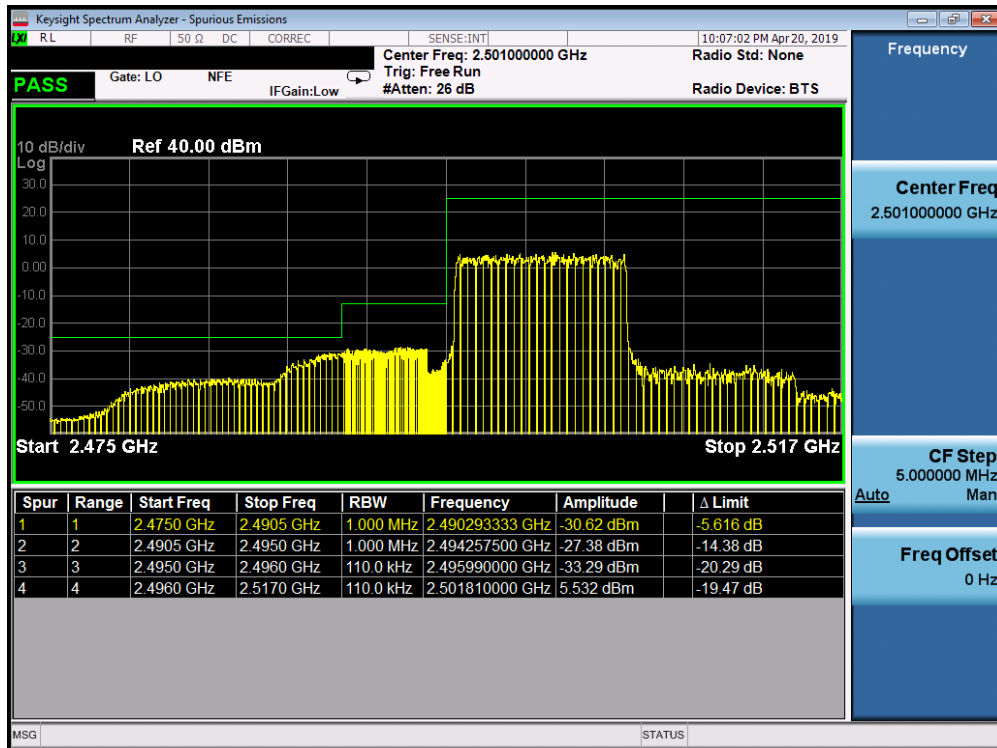


Plot 7-263. Lower ACP Plot at 2496 MHz (Band 41 - 5.0MHz QPSK - Full RB Configuration)

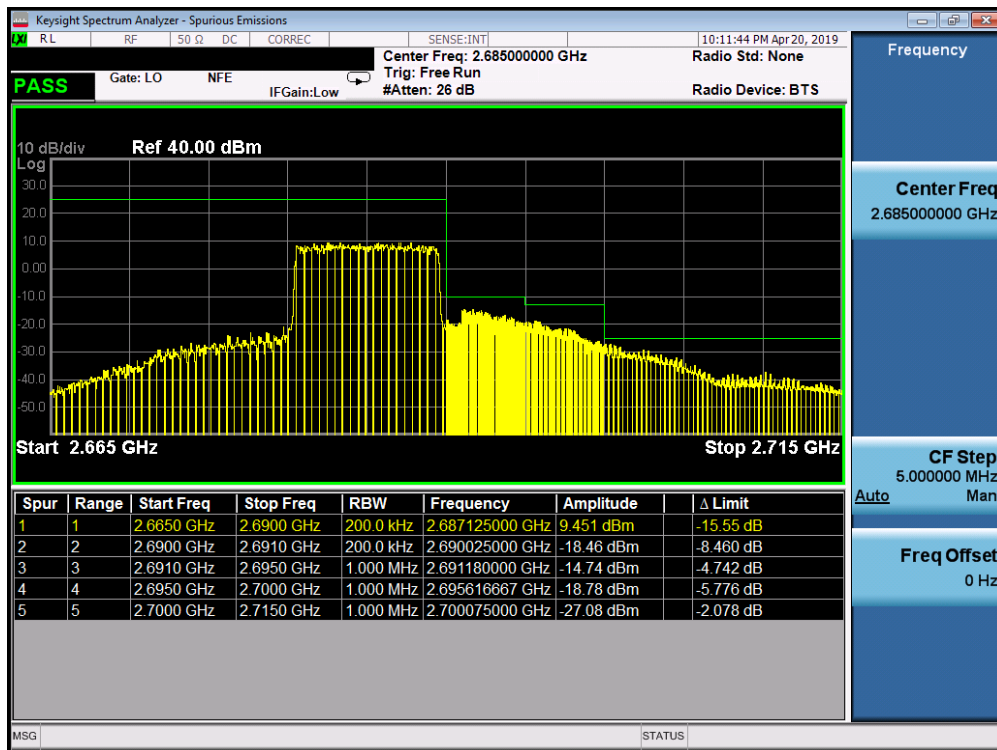


Plot 7-264. Upper ACP Plot (Band 41 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1.ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 156 of 225

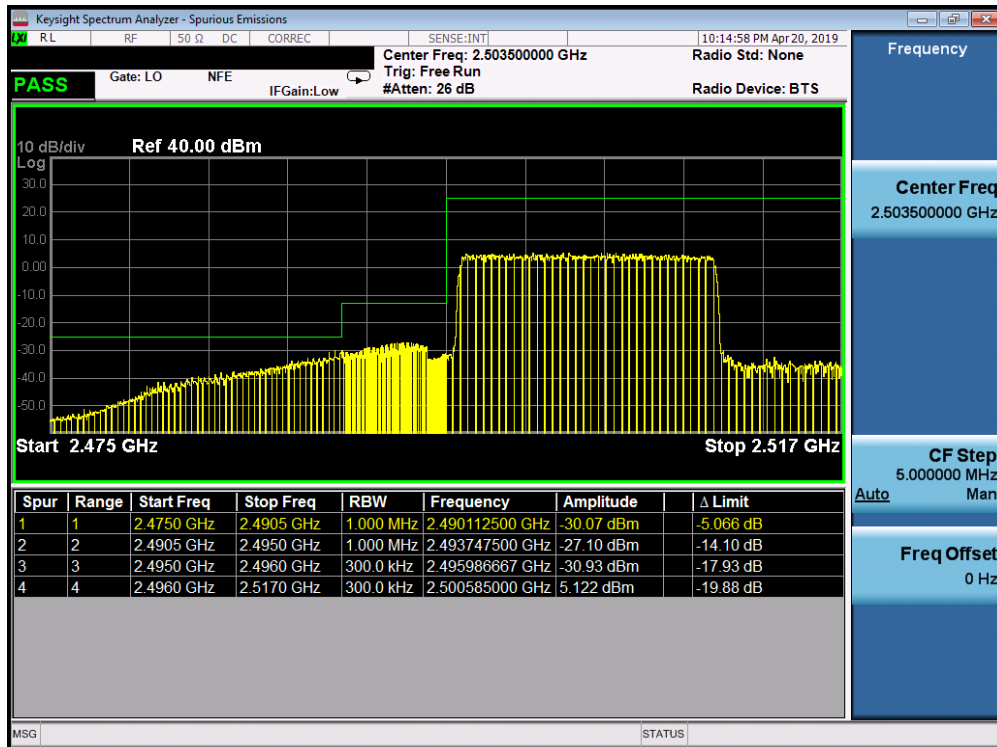


Plot 7-265. Lower ACP Plot at 2496 MHz (Band 41 - 10.0MHz QPSK - Full RB Configuration)

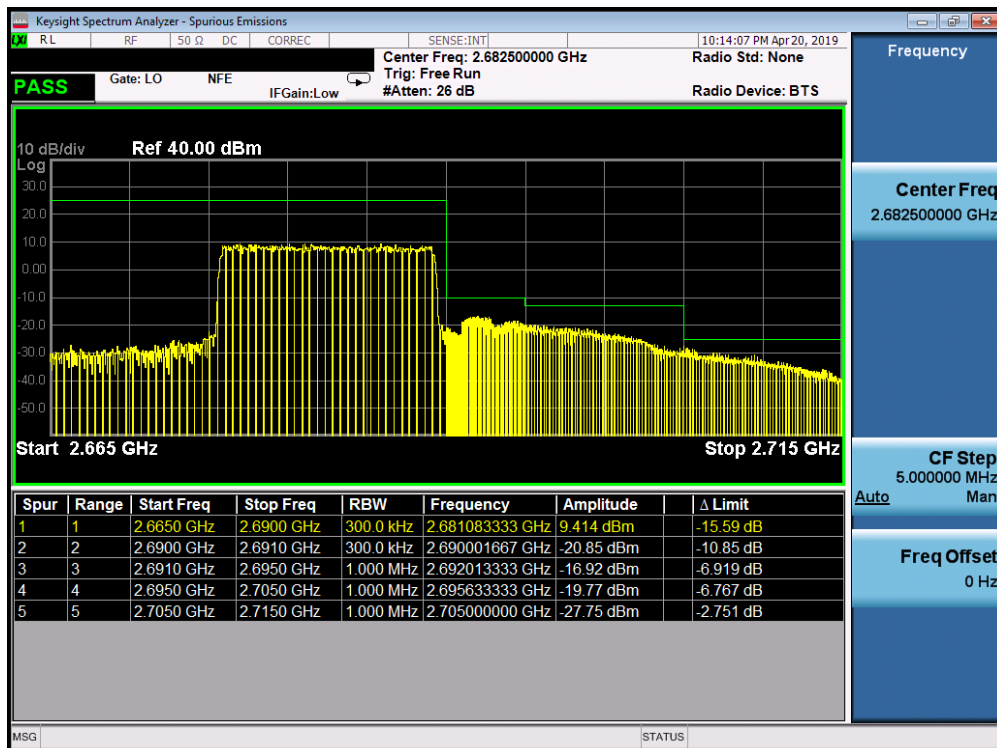


Plot 7-266. Upper ACP Plot (Band 41 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1.ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 157 of 225

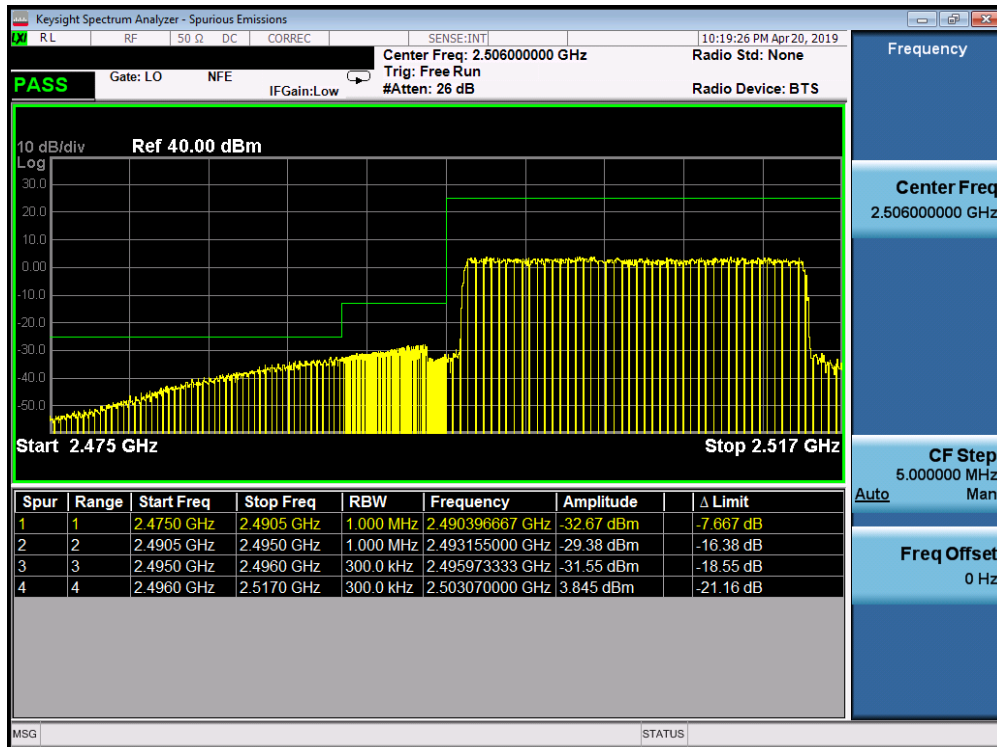


Plot 7-267. Lower ACP Plot at 2496 MHz (Band 41 - 15.0MHz QPSK - Full RB Configuration)

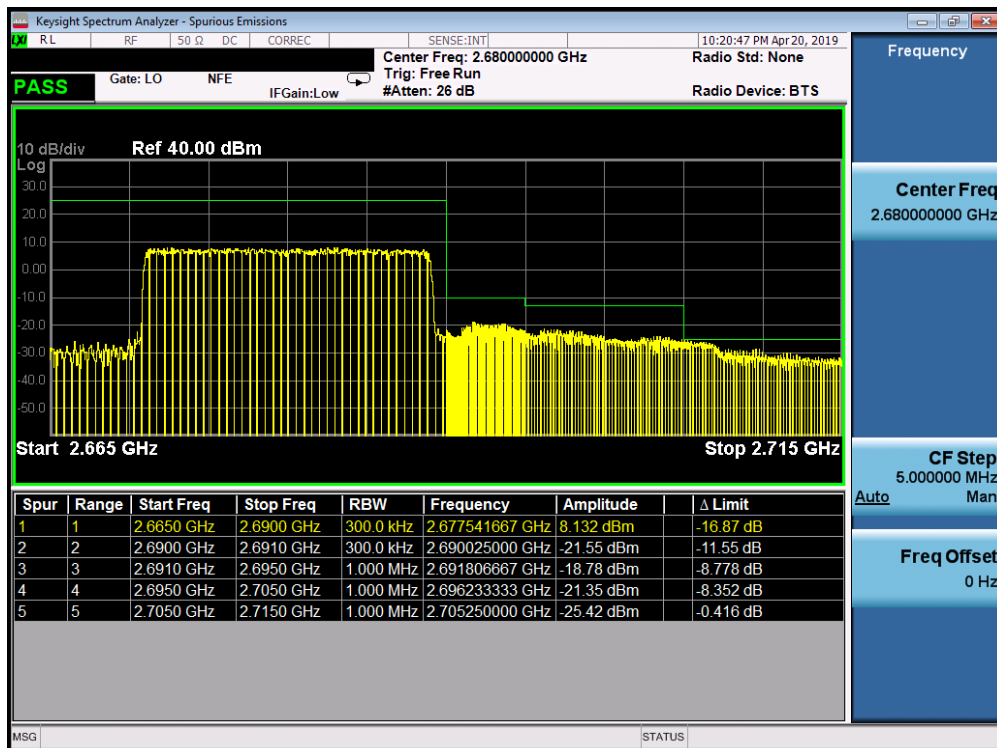


Plot 7-268. Upper ACP Plot (Band 41 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 158 of 225



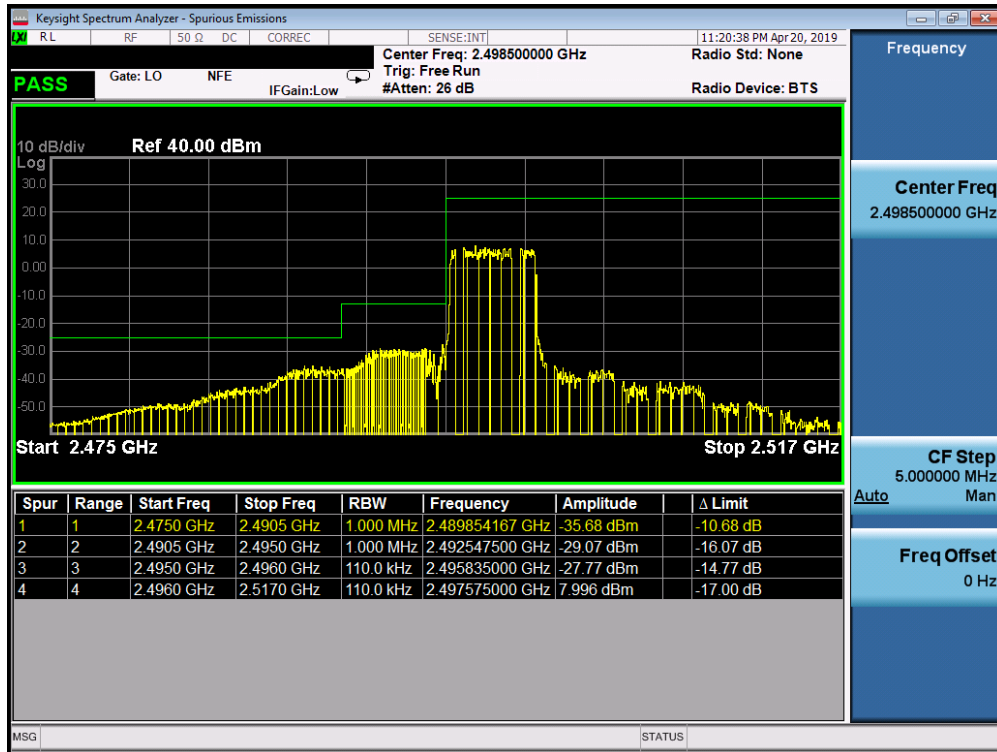
Plot 7-269. Lower ACP Plot at 2496 MHz (Band 41 - 20.0MHz QPSK - Full RB Configuration)



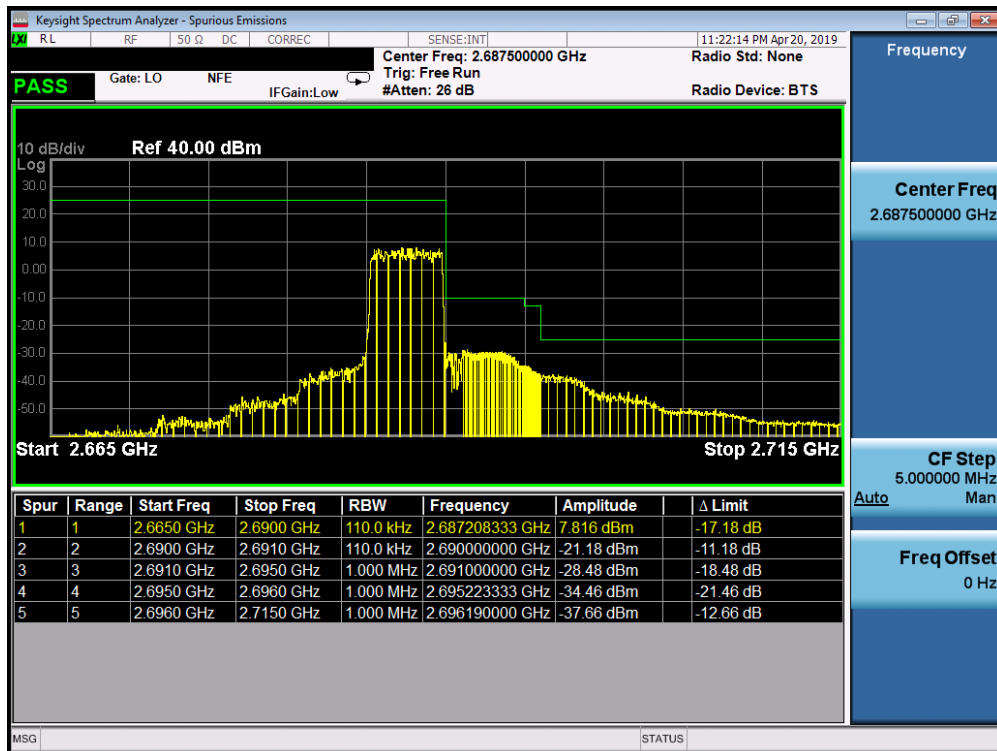
Plot 7-270. Upper ACP Plot (Band 41 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 159 of 225

Band 41 PC3

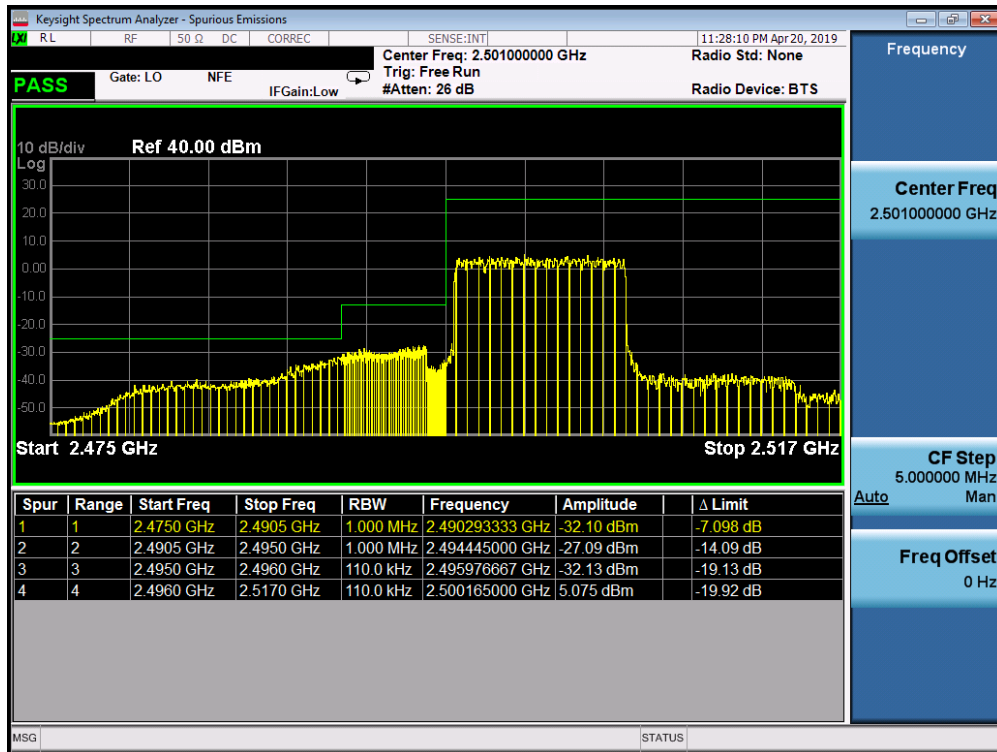


Plot 7-271. Lower ACP Plot at 2496 MHz (Band 41 - 5.0MHz QPSK - Full RB Configuration)

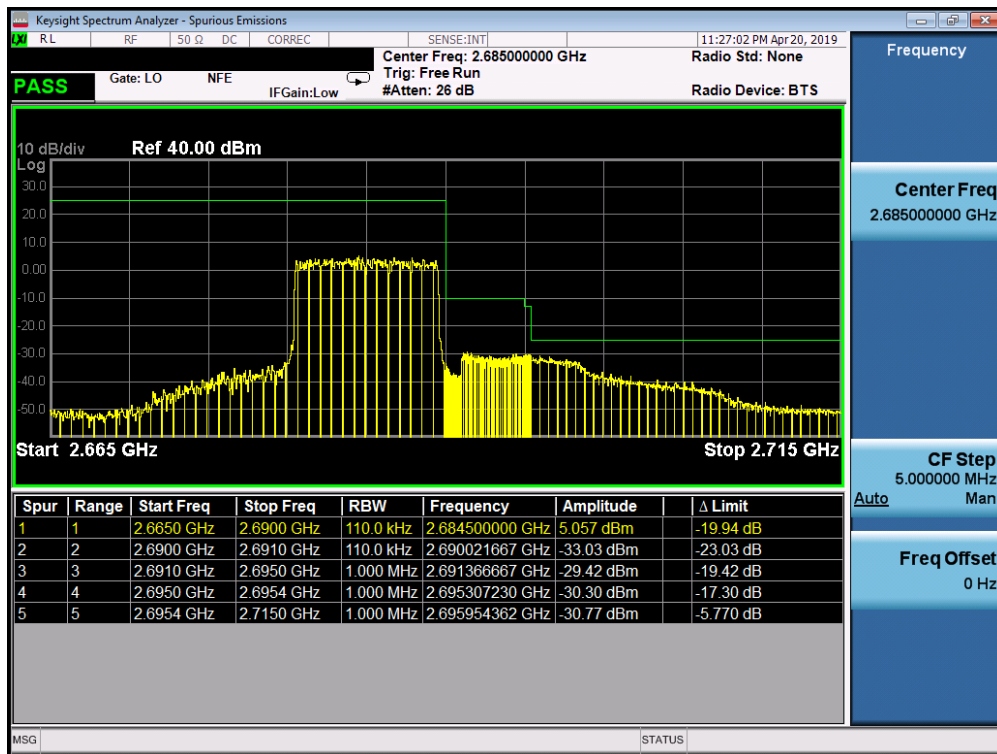


Plot 7-272. Upper ACP Plot (Band 41 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1.ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset	
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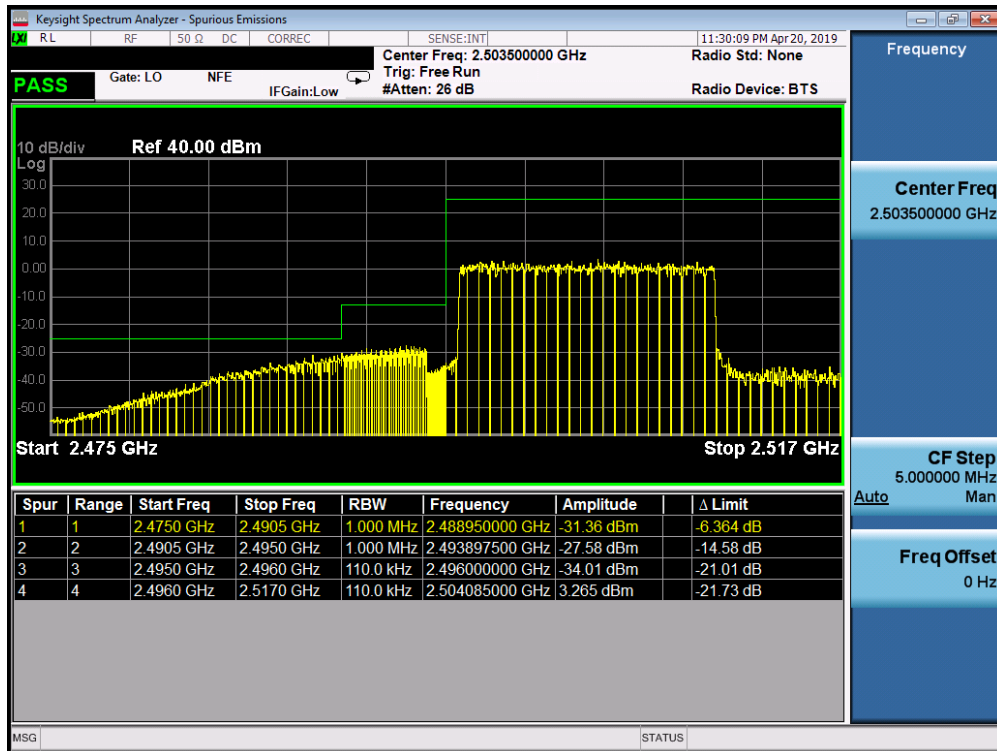


Plot 7-273. Lower ACP Plot at 2496 MHz (Band 41 - 10.0MHz QPSK - Full RB Configuration)

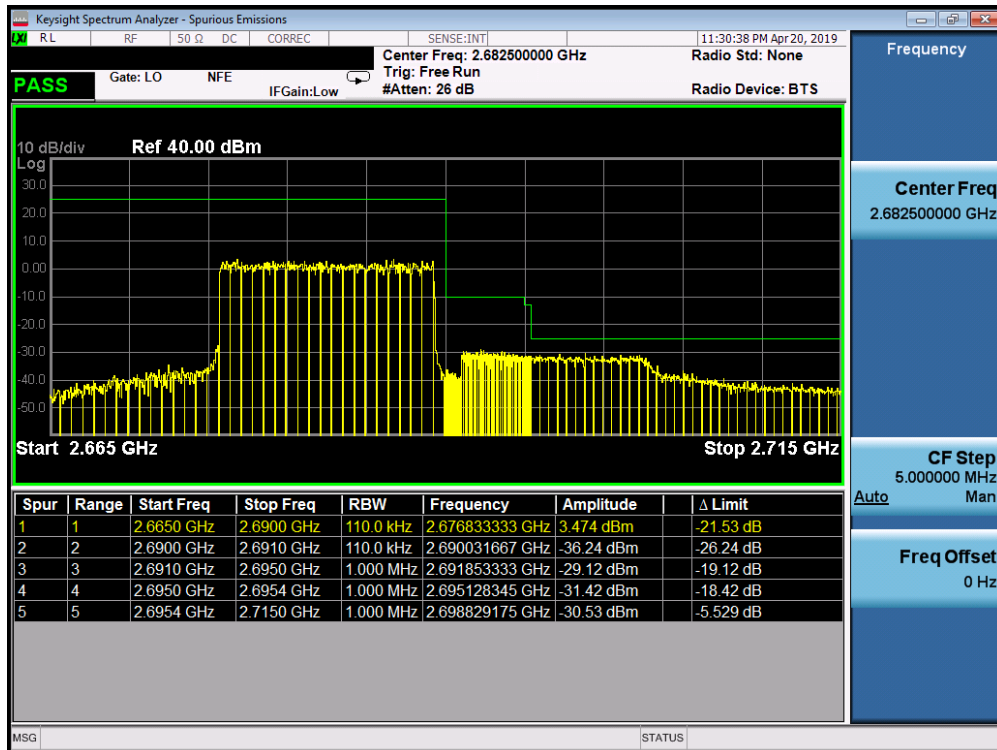


Plot 7-274. Upper ACP Plot (Band 41 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1.ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset	Page 161 of 225

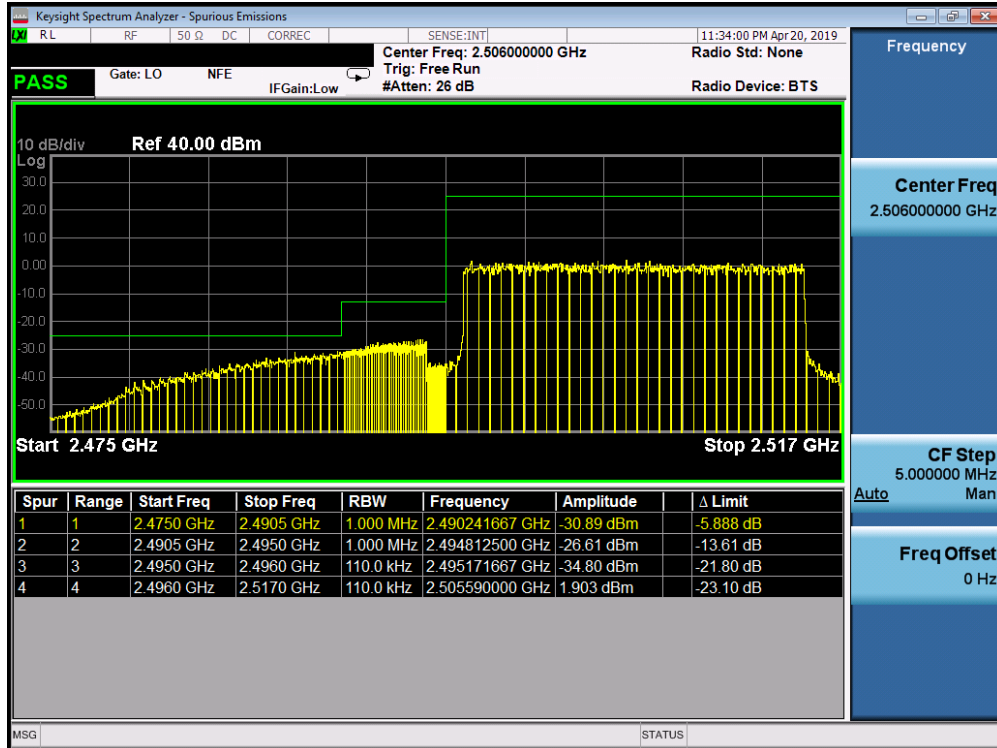


Plot 7-275. Lower ACP Plot at 2496 MHz (Band 41 - 15.0MHz QPSK - Full RB Configuration)

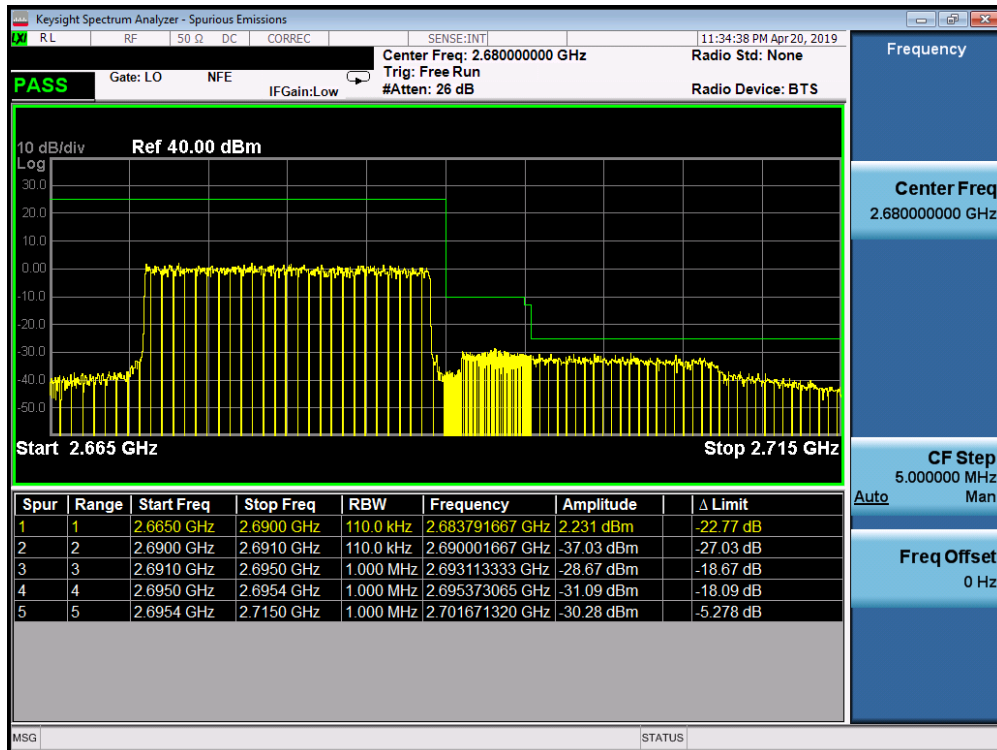


Plot 7-276. Upper ACP Plot (Band 41 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 162 of 225



Plot 7-277. Lower ACP Plot at 2496 MHz (Band 41 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-278. Upper ACP Plot (Band 41 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1.ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 163 of 225

7.5 Peak-Average Ratio

Test Overview

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

Test Procedure Used

KDB 971168 D01 v03r01 – Section 5.7.1

Test Settings

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW $\geq$ OBW or specified reference bandwidth
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

Test Setup

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

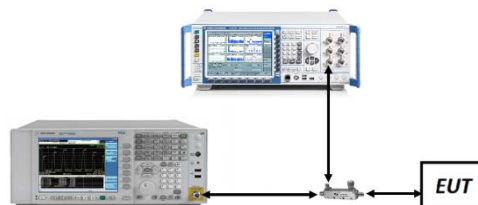


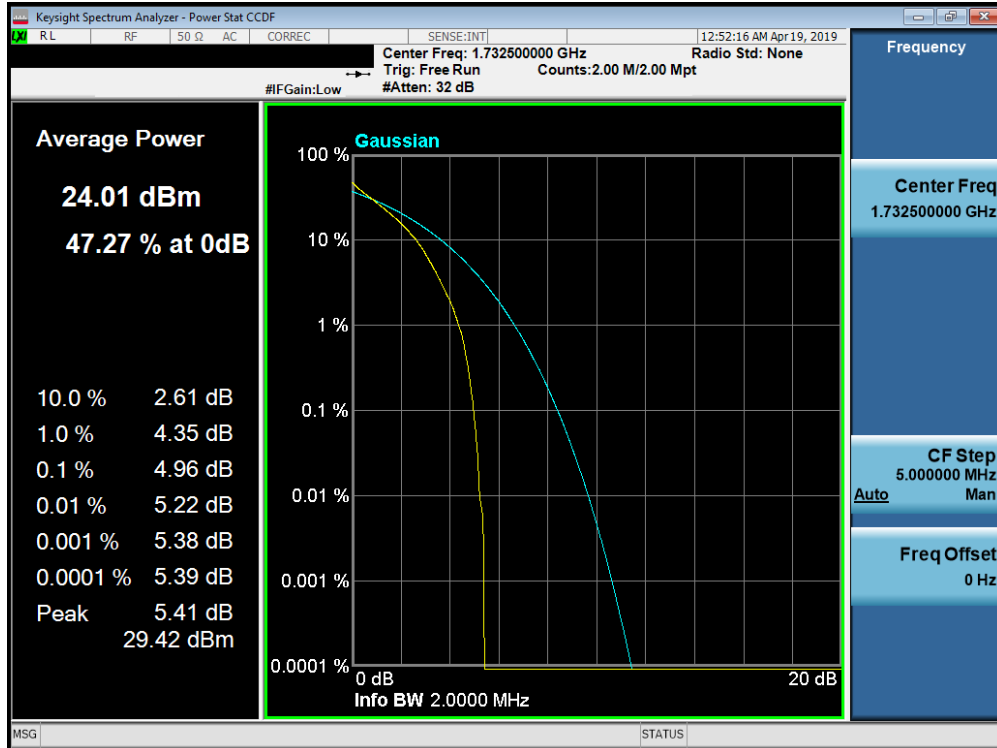
Figure 7-4. Test Instrument & Measurement Setup

Test Notes

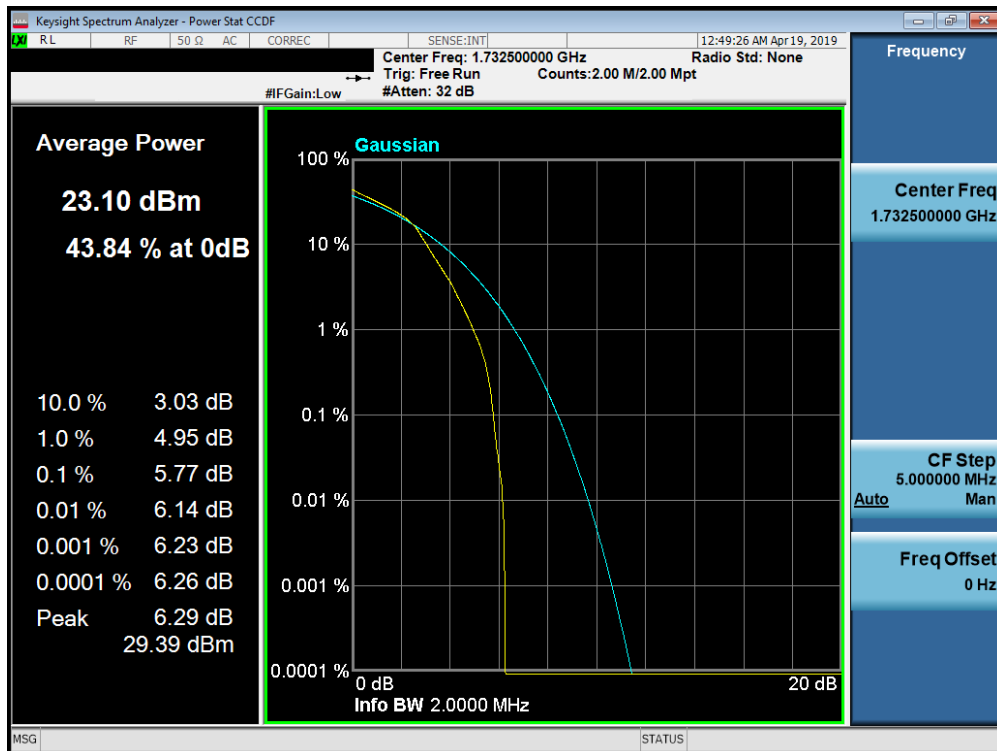
None.

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1.ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 164 of 225

Band 66/4

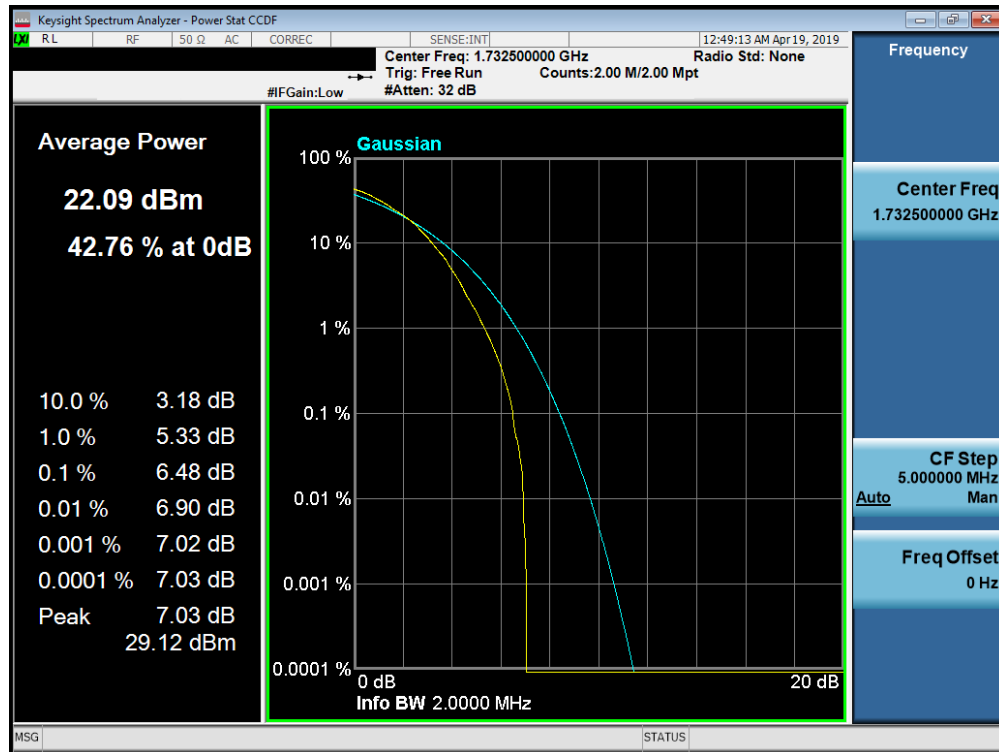


Plot 7-279. PAR Plot (Band 66/4 - 1.4MHz QPSK - Full RB Configuration)

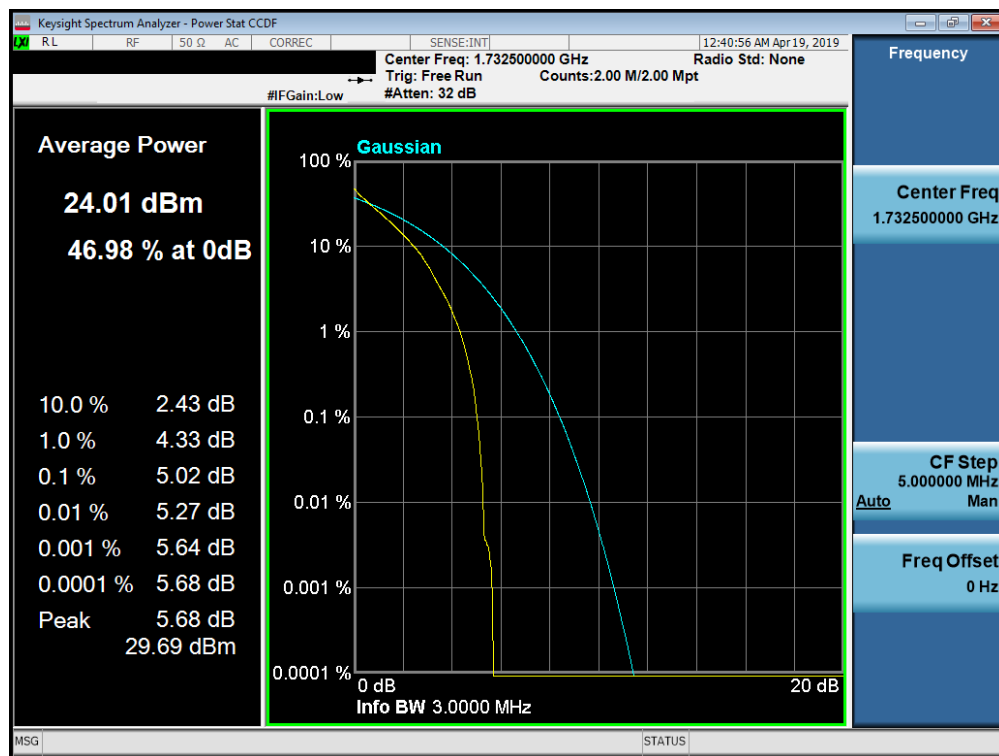


Plot 7-280. PAR Plot (Band 66/4 - 1.4MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 165 of 225

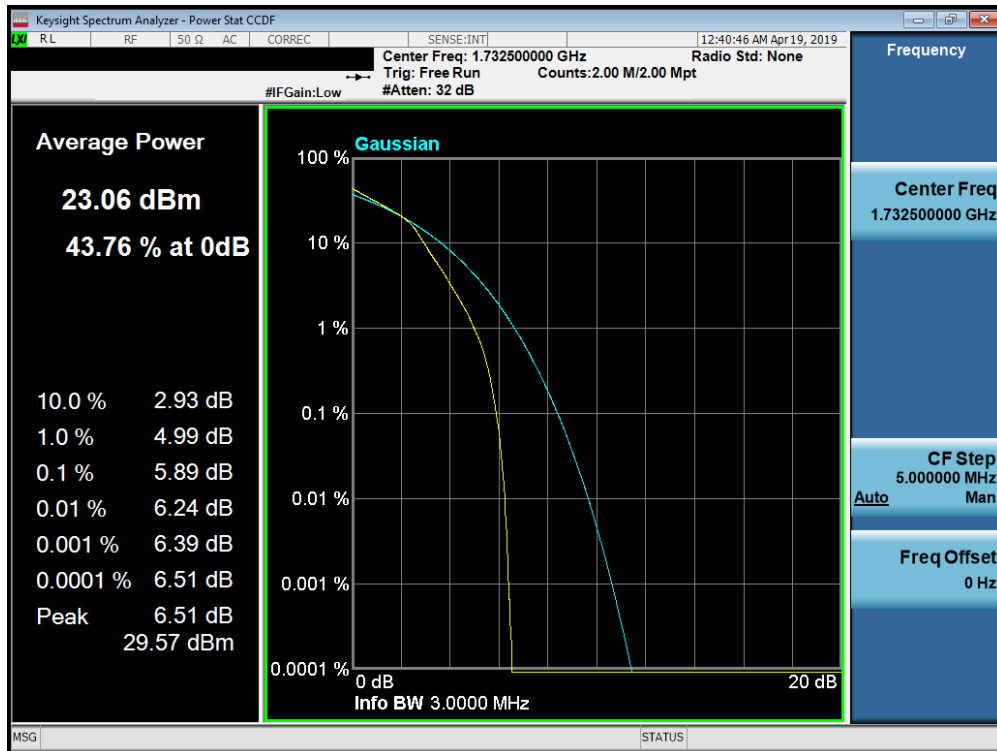


Plot 7-281. PAR Plot (Band 66/4 - 1.4MHz 64-QAM - Full RB Configuration)

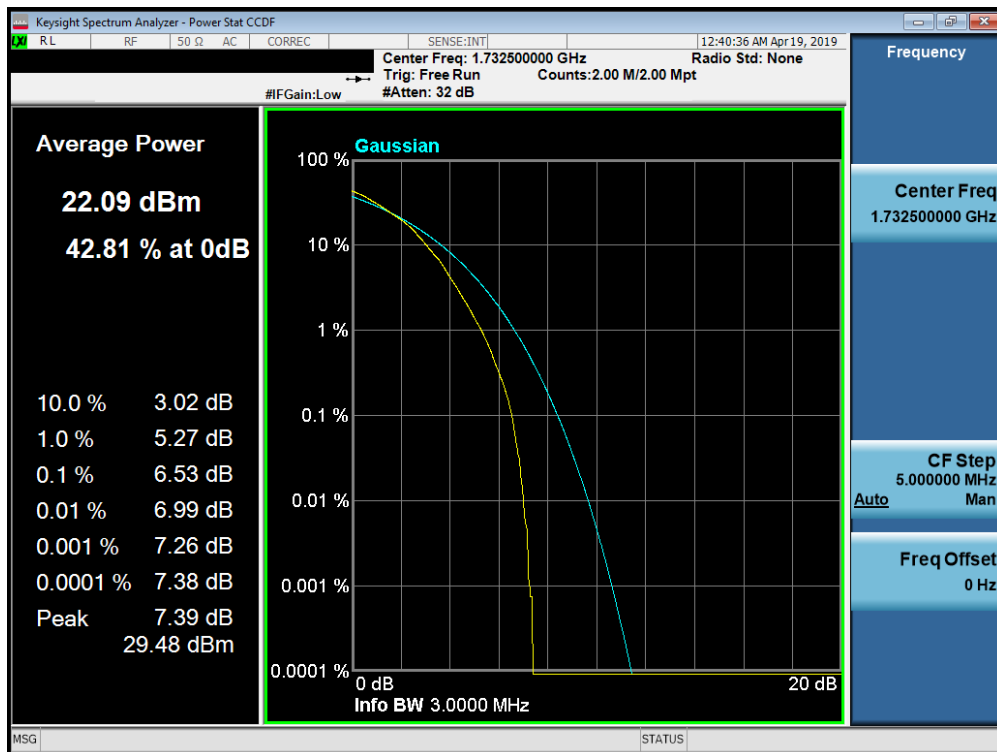


Plot 7-282. PAR Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset	Page 166 of 225

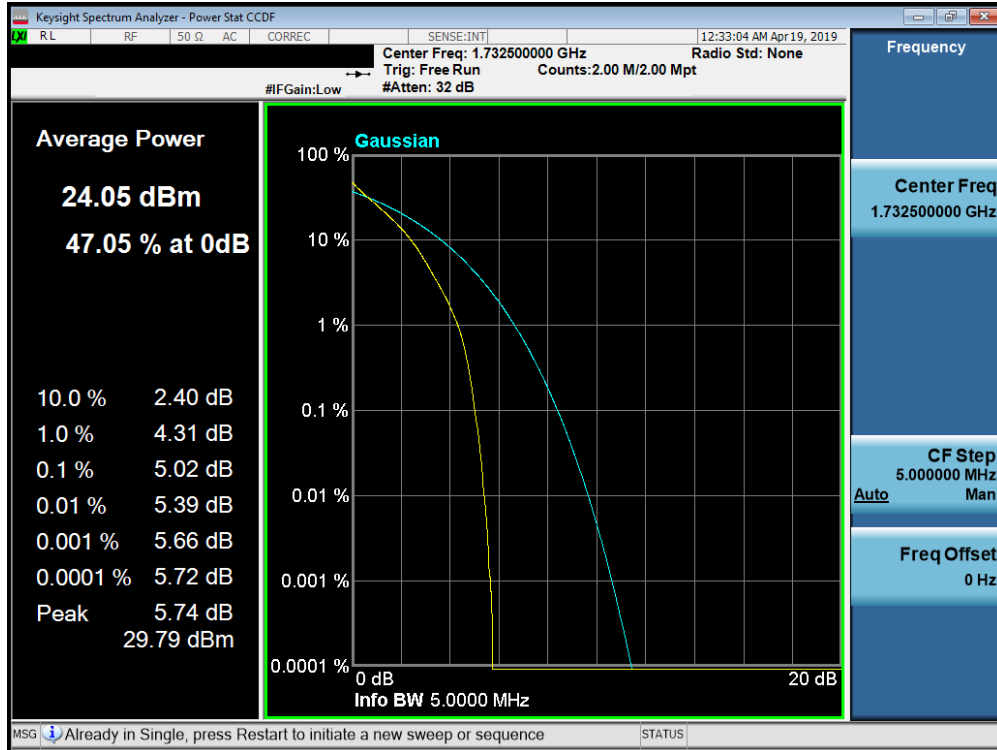


Plot 7-283. PAR Plot (Band 66/4 - 3.0MHz 16-QAM - Full RB Configuration)

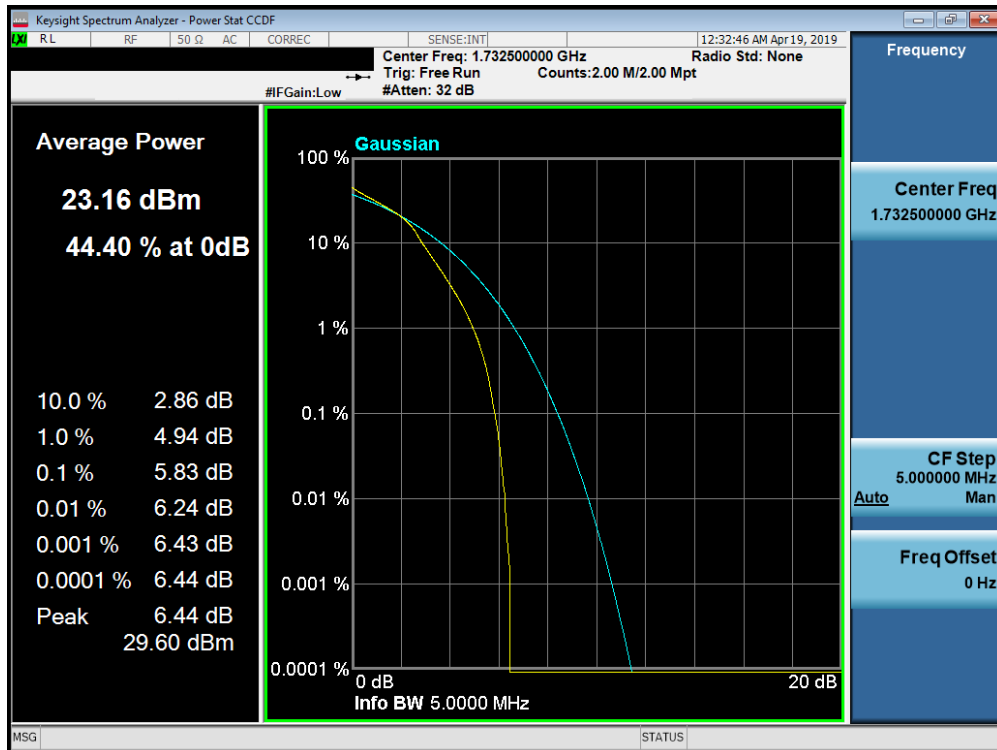


Plot 7-284. PAR Plot (Band 66/4 - 3.0MHz 64-QAM - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 167 of 225

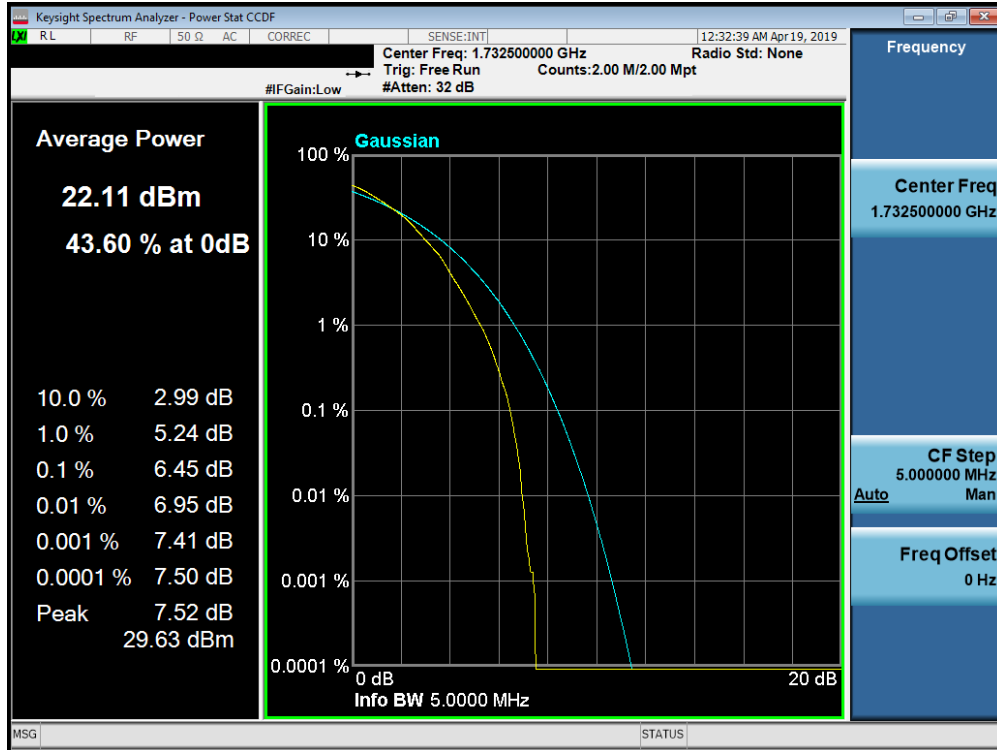


Plot 7-285. PAR Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)

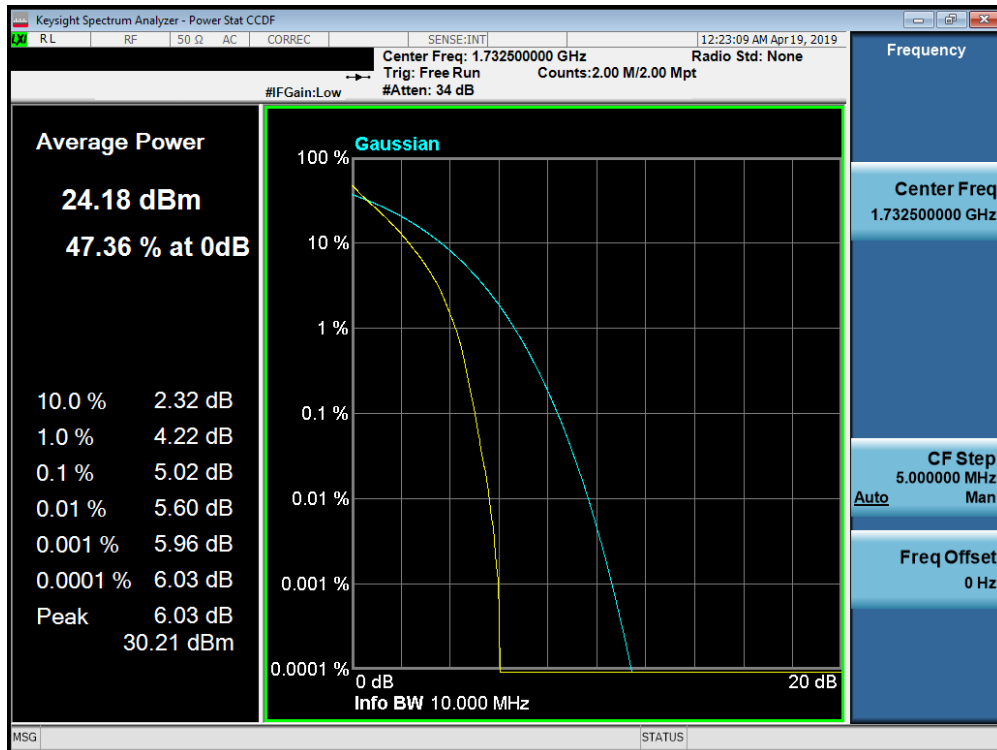


Plot 7-286. PAR Plot (Band 66/4 - 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFQ720PS	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset	Page 168 of 225

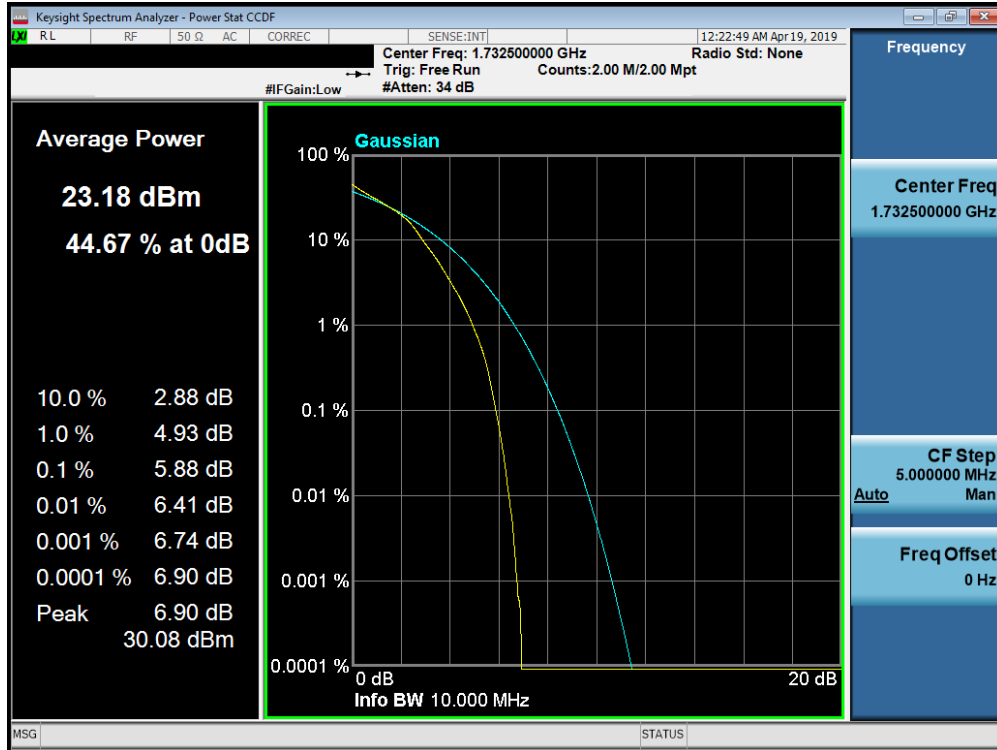


Plot 7-287. PAR Plot (Band 66/4 - 5.0MHz 64-QAM - Full RB Configuration)

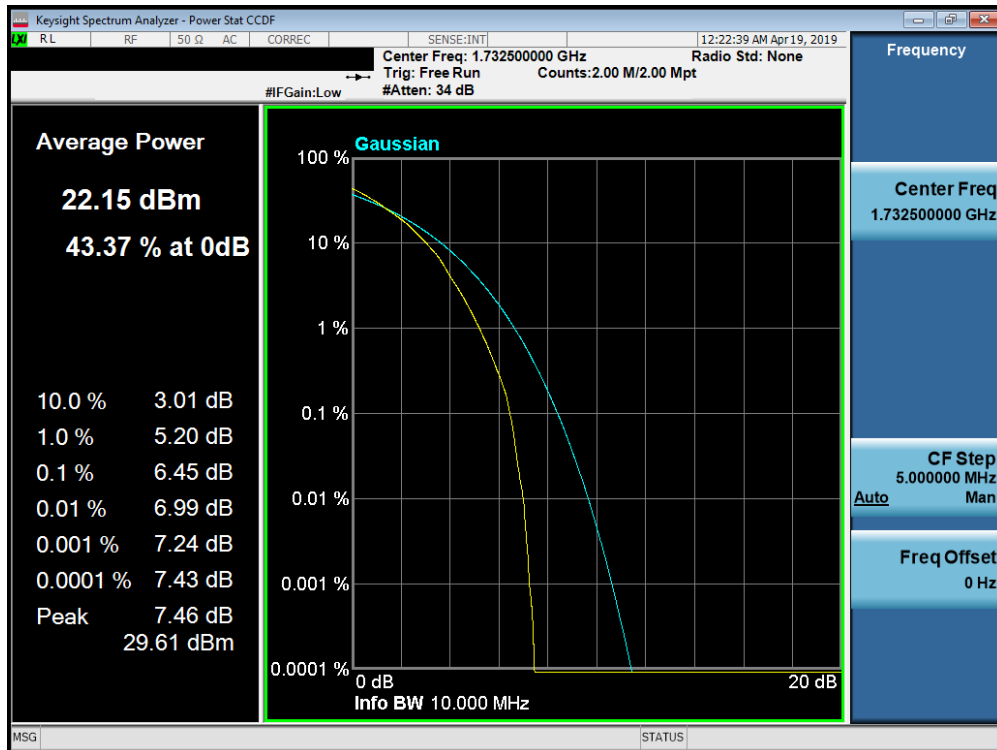


Plot 7-288. PAR Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 169 of 225

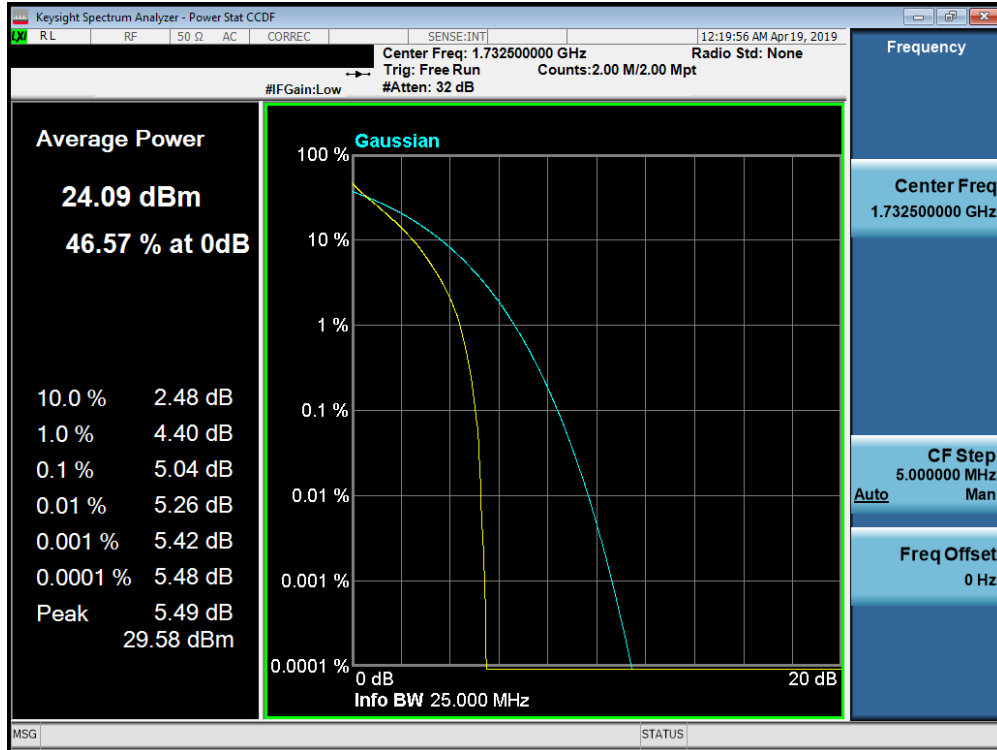


Plot 7-289. PAR Plot (Band 66/4 - 10.0MHz 16-QAM - Full RB Configuration)

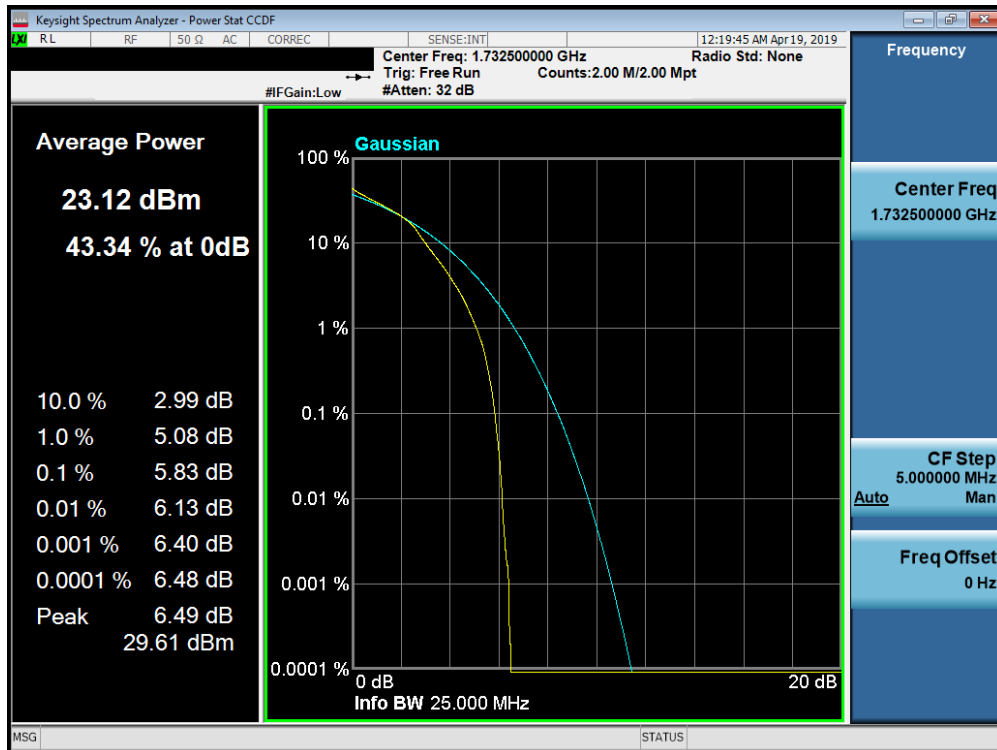


Plot 7-290. PAR Plot (Band 66/4 - 10.0MHz 64-QAM - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 170 of 225

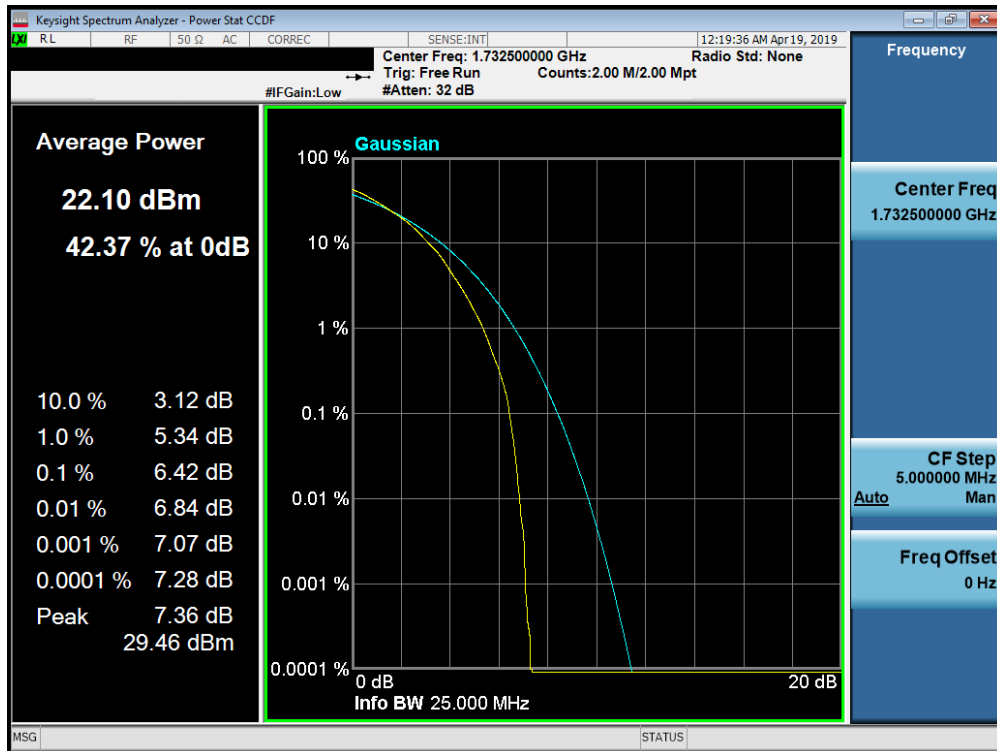


Plot 7-291. PAR Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)

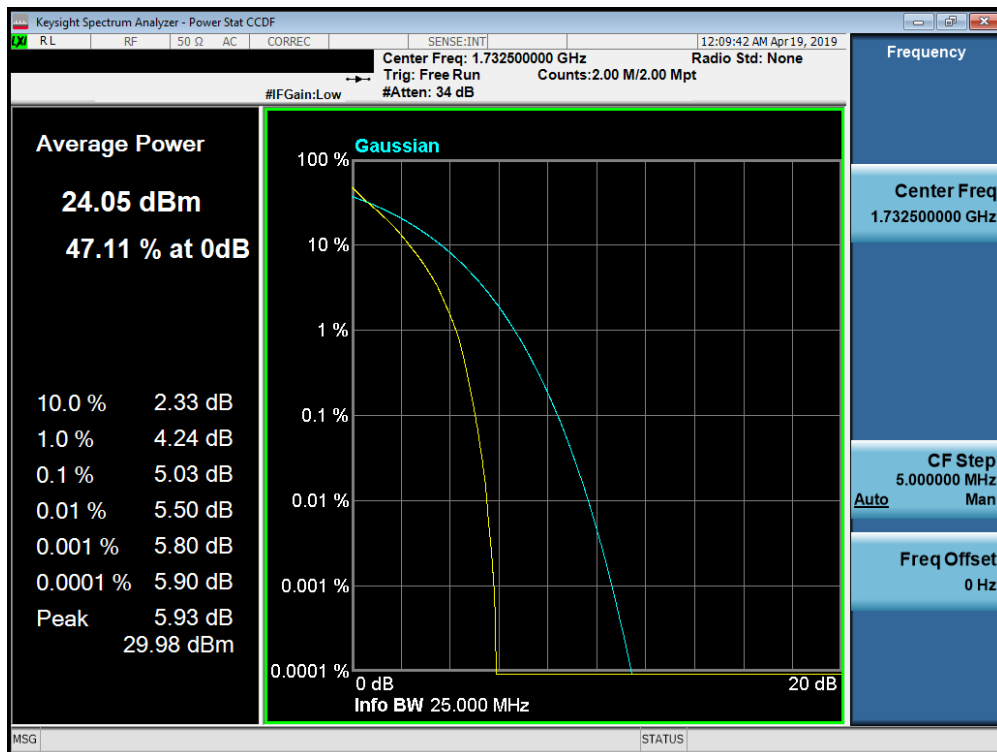


Plot 7-292. PAR Plot (Band 66/4 - 15.0MHz 16-QAM - Full RB Configuration)

FCC ID: ZNFQ720PS	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset		Page 171 of 225

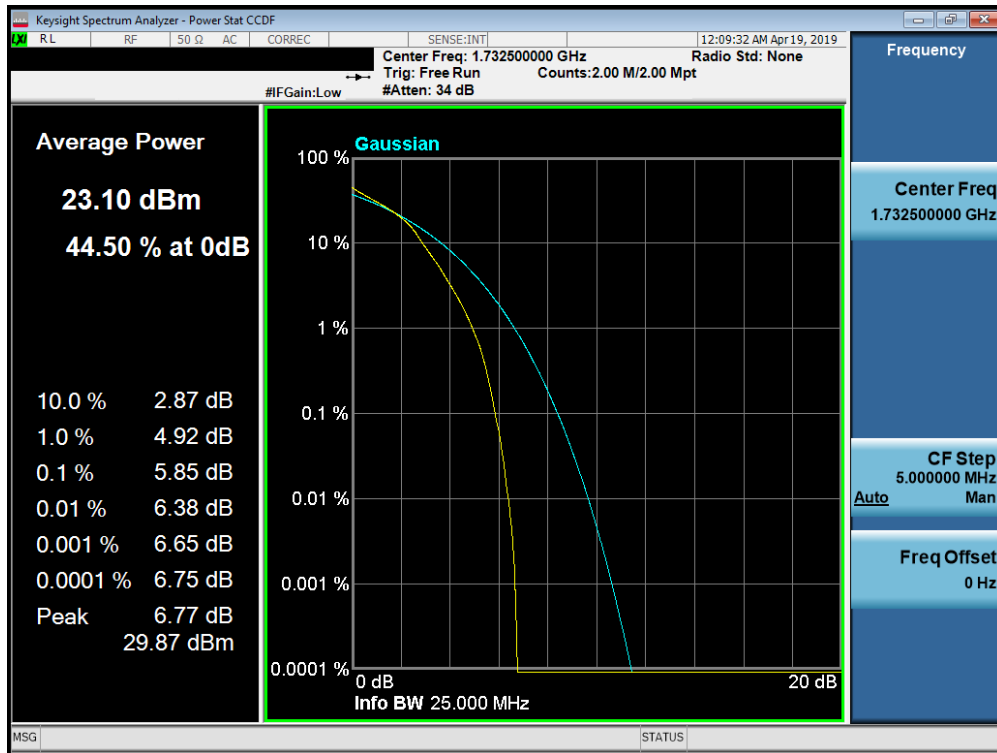


Plot 7-293. PAR Plot (Band 66/4 - 15.0MHz 64-QAM - Full RB Configuration)

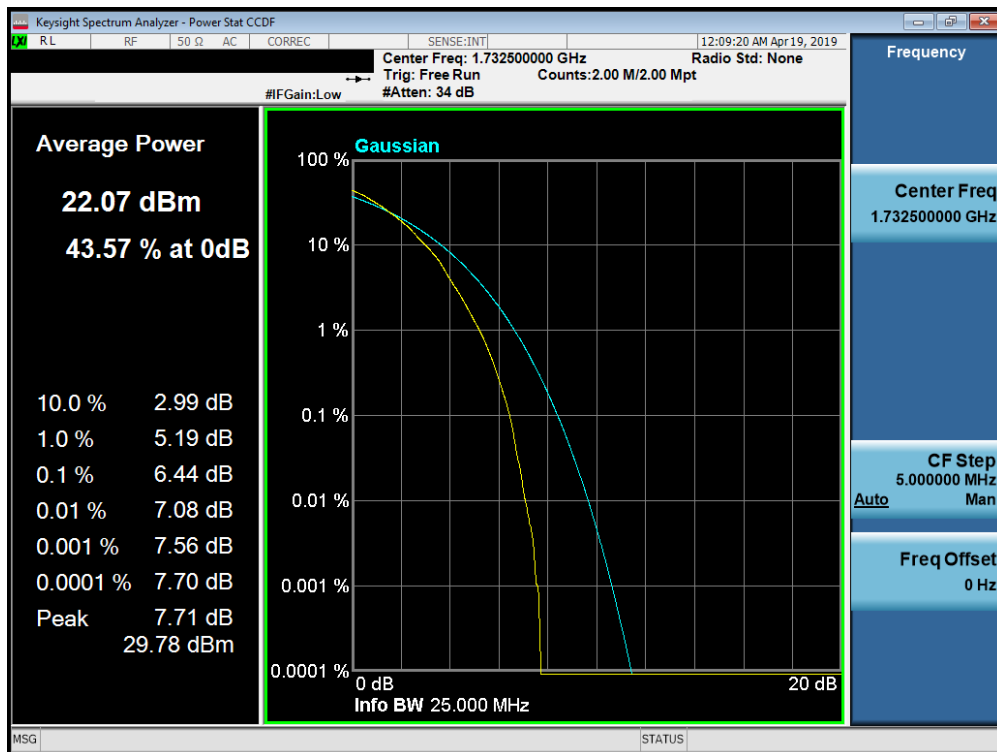


Plot 7-294. PAR Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ720PS	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset	Page 172 of 225



Plot 7-295. PAR Plot (Band 66/4 - 20.0MHz 16-QAM - Full RB Configuration)



Plot 7-296. PAR Plot (Band 66/4 - 20.0MHz 64-QAM - Full RB Configuration)

FCC ID: ZNFQ720PS	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1903140039-03-R1-ZNF	Test Dates: 3/21 - 4/22/2019	EUT Type: Portable Handset	Page 173 of 225