

## 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  $43 + 10 \log_{10}(P_{\text{Watts}})$ , where  $P$  is the transmitter power in Watts.**

**For LTE B7 the minimum permissible attenuation levels are  $40 + 10 \log(P_{\text{Watts}})$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log(P_{\text{Watts}})$  dB on all frequencies between 5 megahertz and  $X$  megahertz from the channel edge, and  $55 + 10 \log(P_{\text{Watts}})$  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.**

### Test Procedure Used

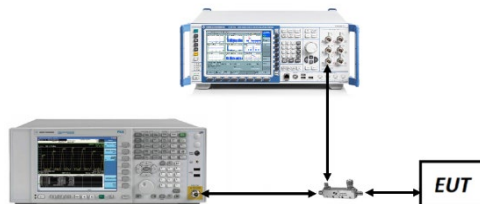
KDB 971168 D01 v03r01 – Section 6.0

### Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW  $\geq$  1% of the emission bandwidth
4. VBW  $\geq$  3 x RBW
5. Detector = RMS
6. Number of sweep points  $\geq$  2 x Span/RBW
7. Trace mode = trace average
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**

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### 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.

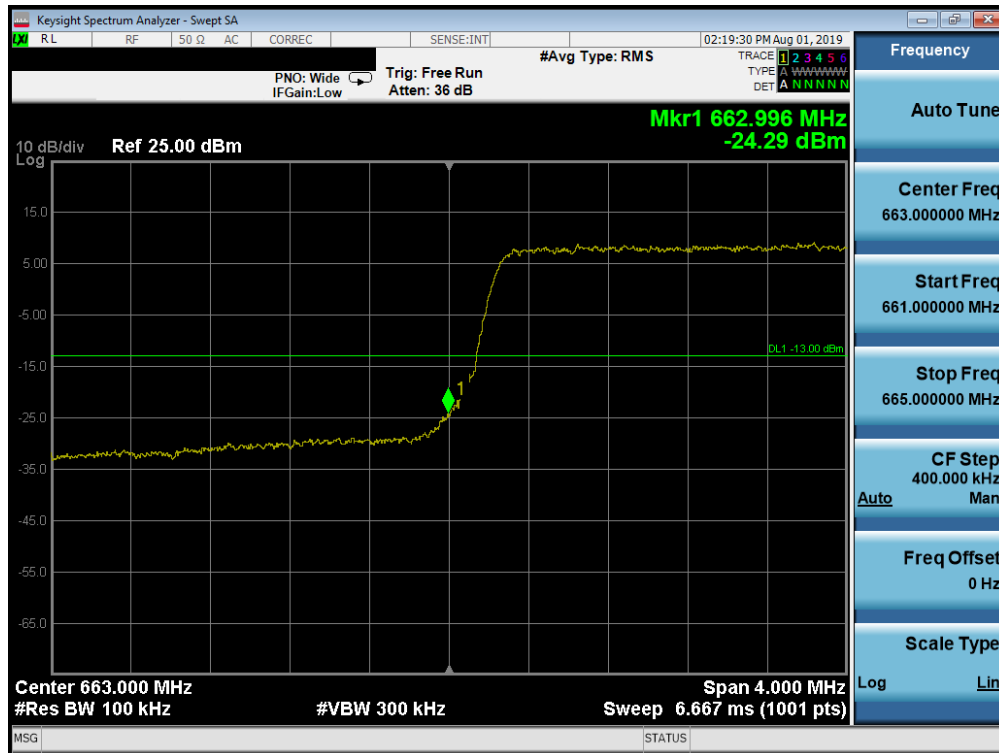
Per 27.53(g) for operations in the 698-746 MHz band, in the 100 kHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 30 kHz may be employed to demonstrate compliance with the out-of-band emissions limit.

Per 27.53(c)(5) for operations in the 776-788 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.

For all plots showing emissions in the 763 – 775MHz and 793 – 805MHz band, the FCC limit per 27.53(c)(4) is  $65 + 10 \log_{10}(P) = -35\text{dBm}$  in a 6.25kHz bandwidth.

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## Band 71

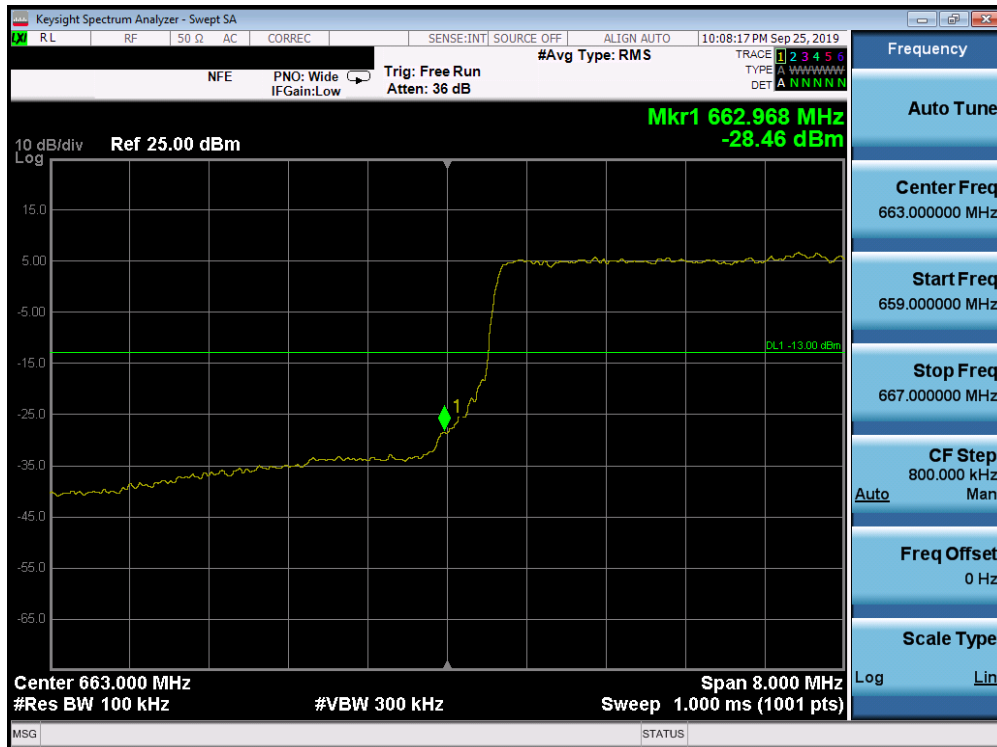


Plot 7-172. Lower Band Edge Plot (Band 71 - 5.0MHz QPSK - Full RB Configuration)

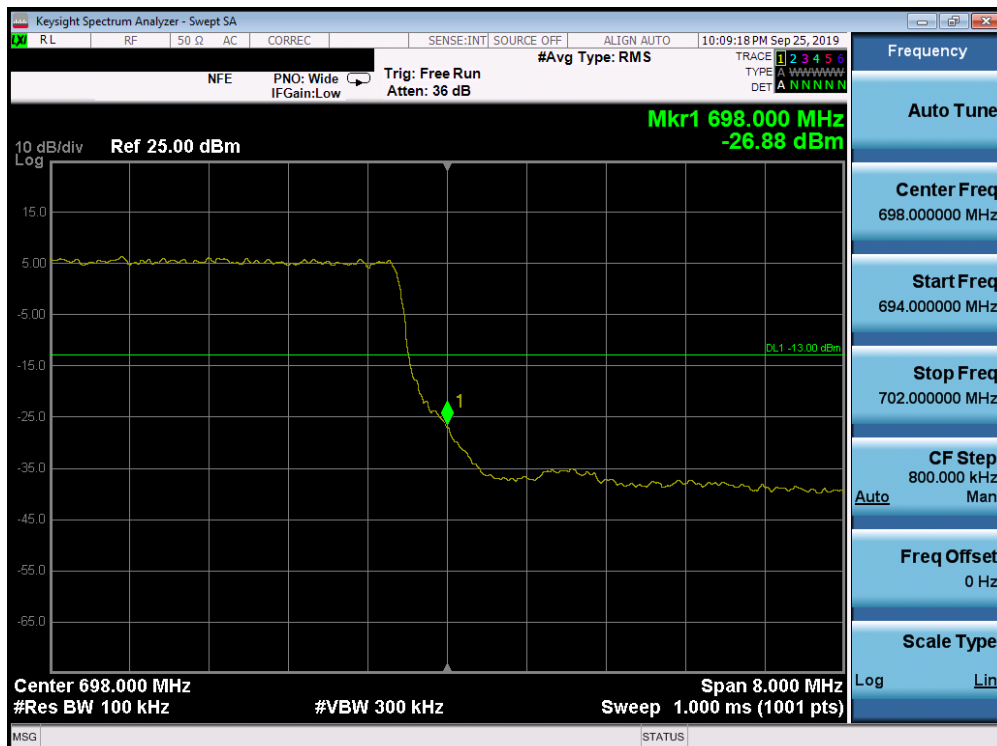


Plot 7-173. Upper Band Edge Plot (Band 71 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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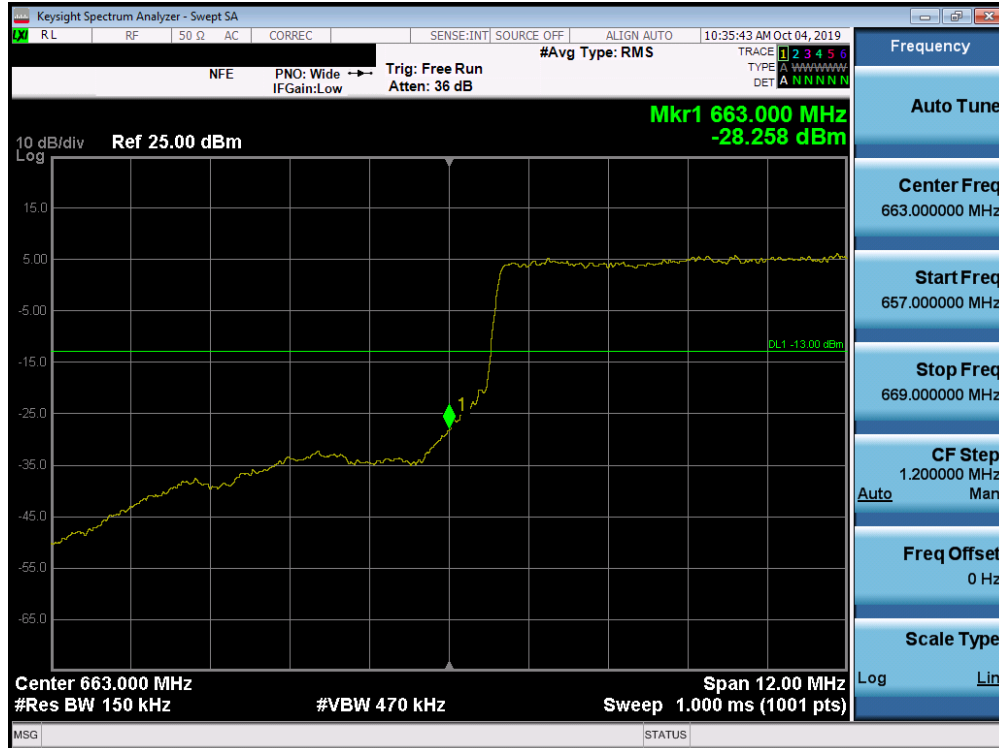


Plot 7-174. Lower Band Edge Plot (Band 71 - 10.0MHz QPSK - Full RB Configuration)

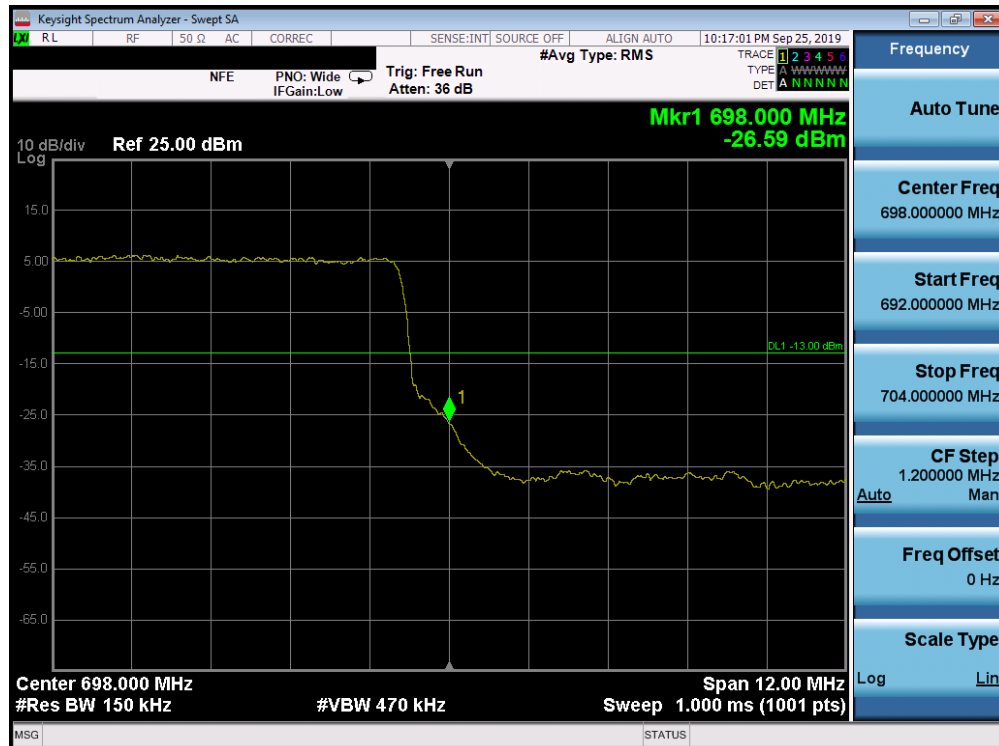


Plot 7-175. Upper Band Edge Plot (Band 71 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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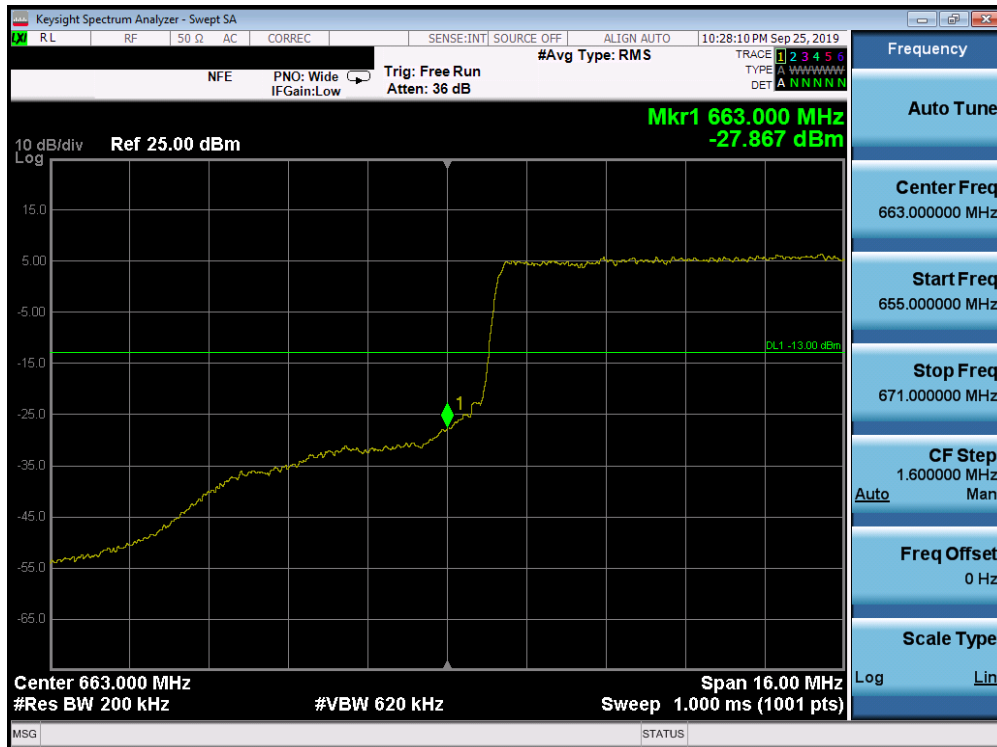


Plot 7-176. Lower Band Edge Plot (Band 71 - 15.0MHz QPSK - Full RB Configuration)

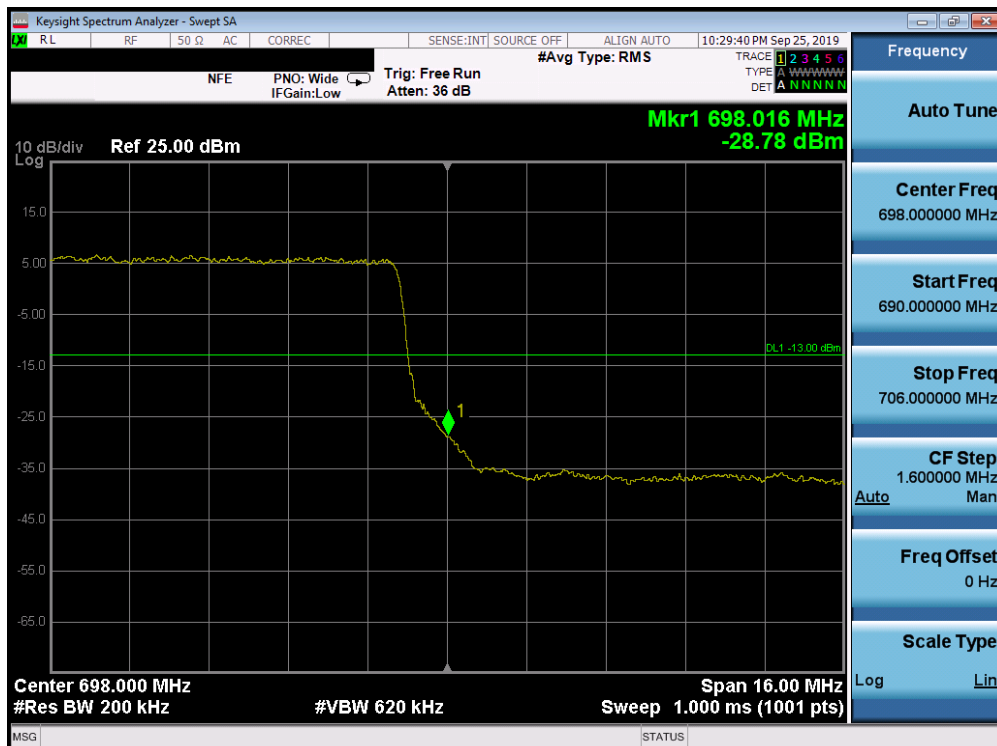


Plot 7-177. Upper Band Edge Plot (Band 71 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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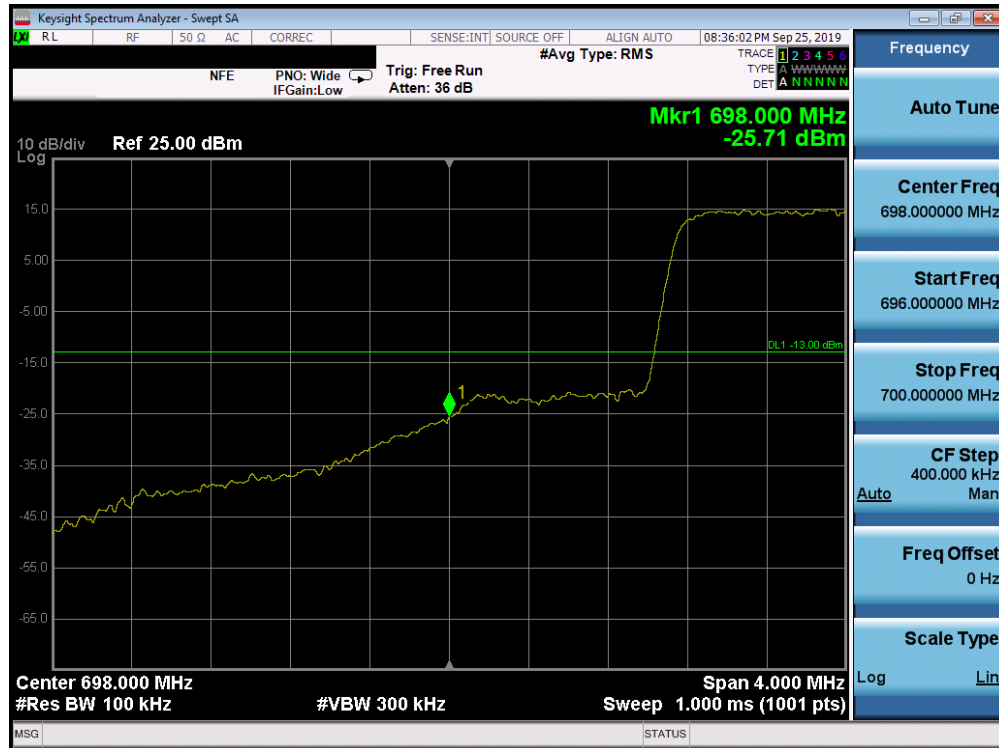
Plot 7-178. Lower Band Edge Plot (Band 71 - 20.0MHz QPSK - Full RB Configuration)



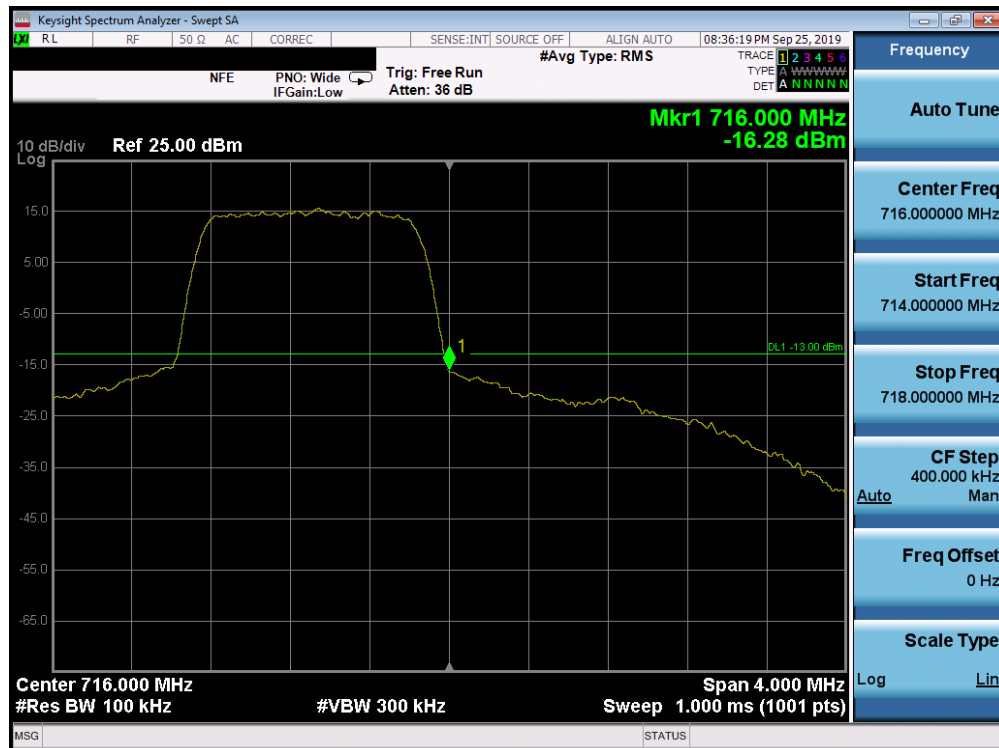
Plot 7-179. Upper Band Edge Plot (Band 71 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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## Band 12/17

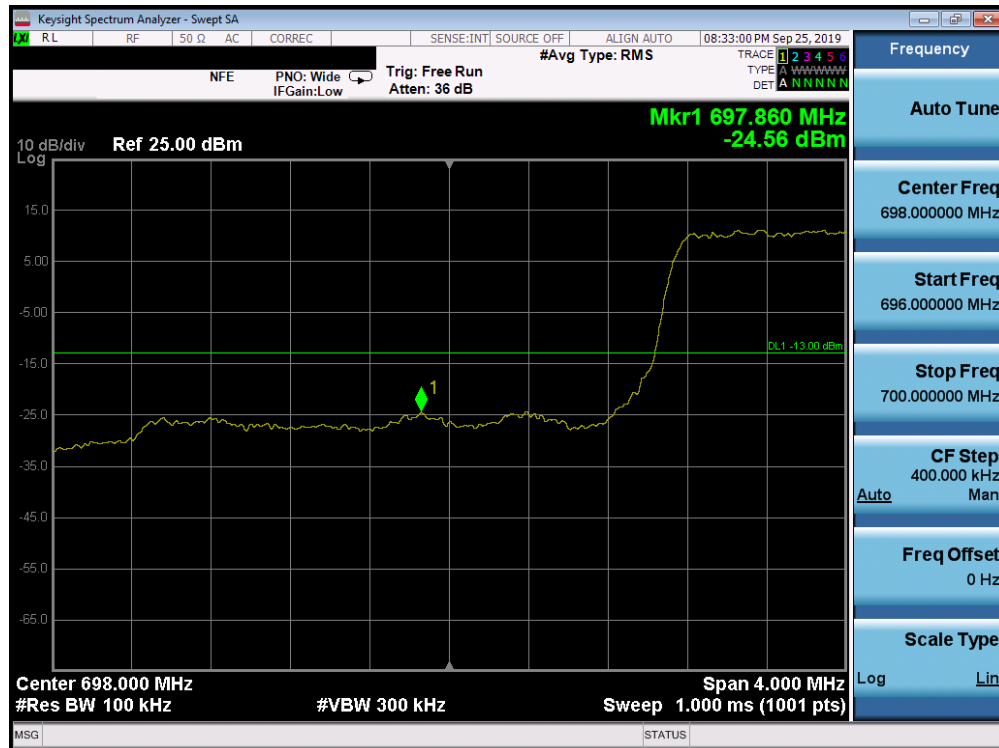


Plot 7-180. Lower Band Edge Plot (Band 12 - 1.4MHz QPSK - Full RB Configuration)

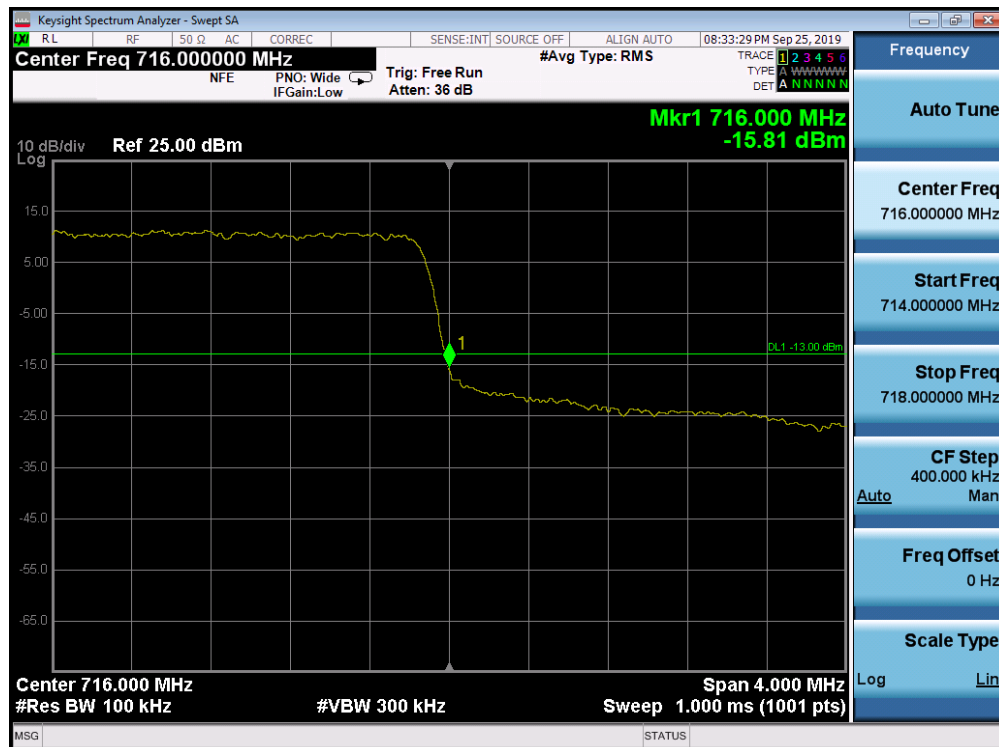


Plot 7-181. Upper Band Edge Plot (Band 12 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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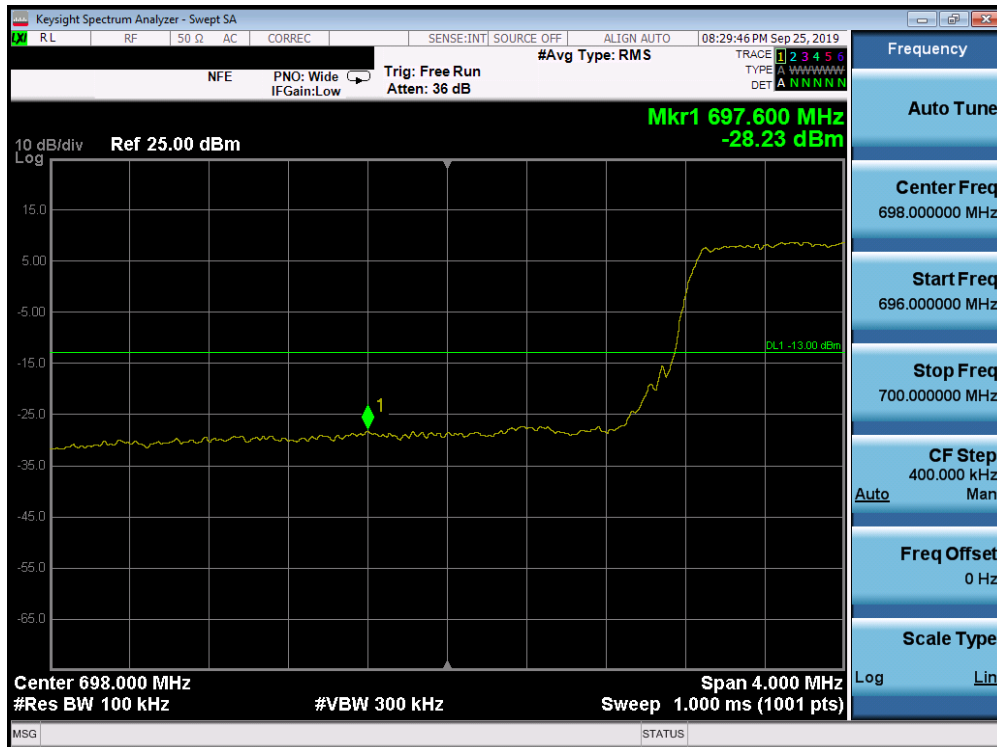
Plot 7-182. Lower Band Edge Plot (Band 12 - 3.0MHz QPSK - Full RB Configuration)



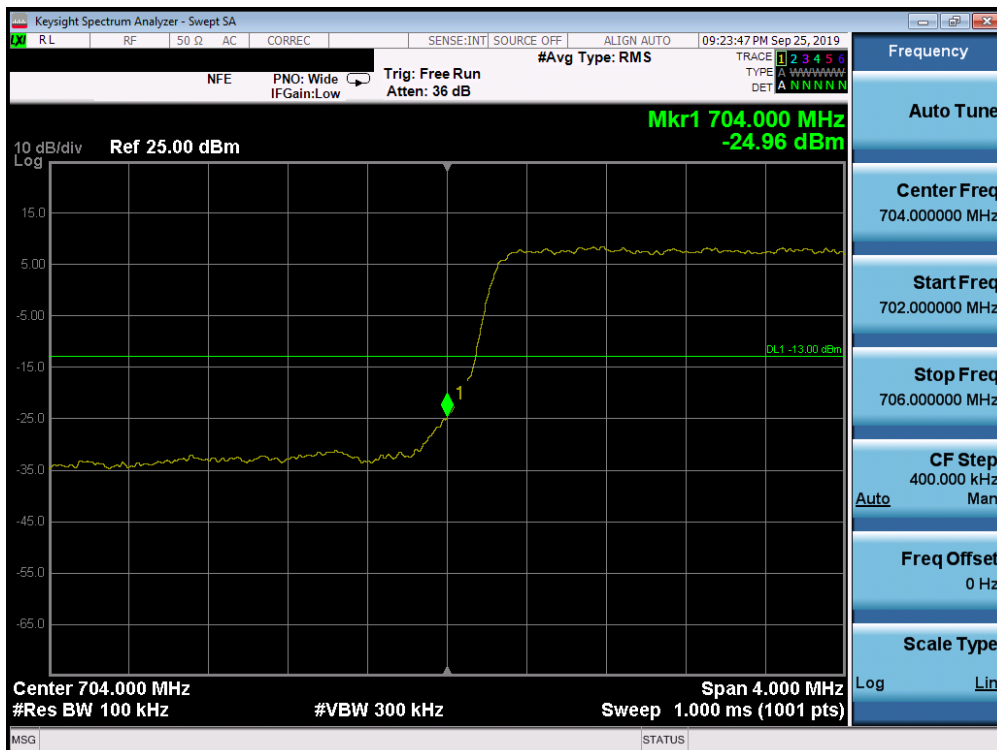
Plot 7-183. Upper Band Edge Plot (Band 12 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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Plot 7-184. Lower Band Edge Plot (Band 12 - 5.0MHz QPSK - Full RB Configuration)

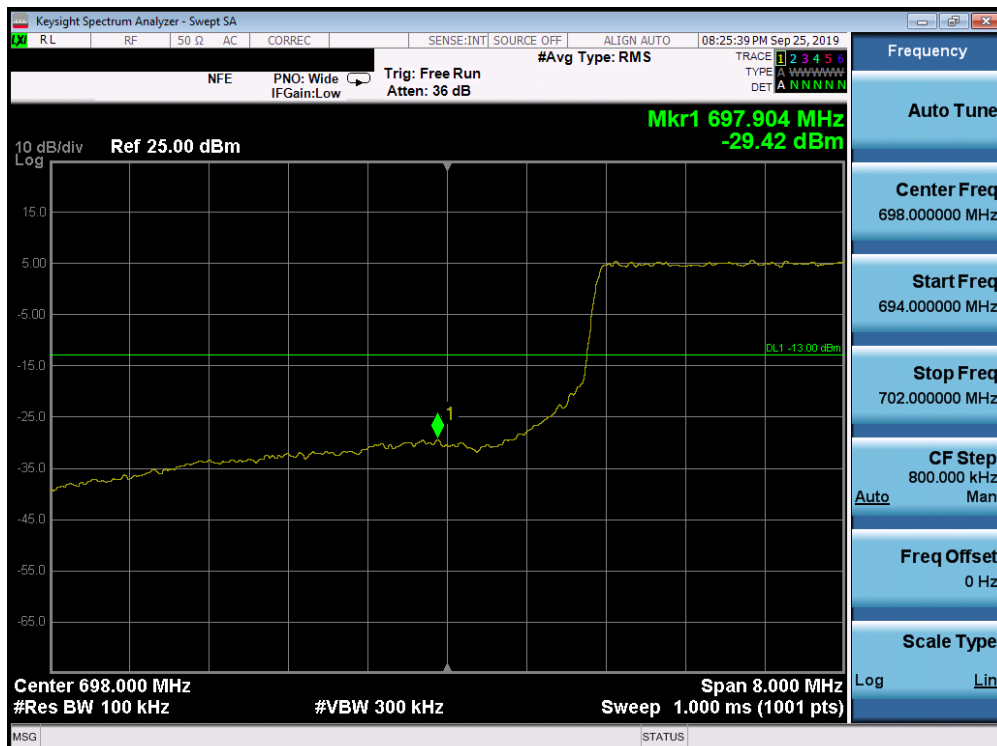


Plot 7-185. Lower Band Edge Plot (Band 17 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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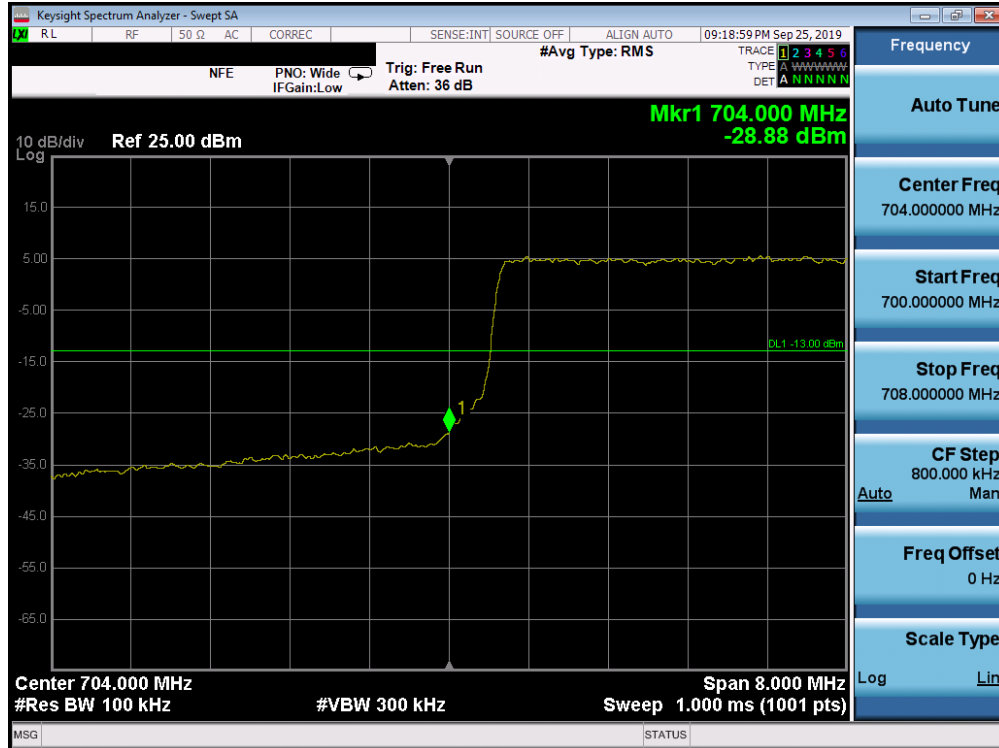


Plot 7-186. Upper Band Edge Plot (Band 12/17 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-187. Lower Band Edge Plot (Band 12 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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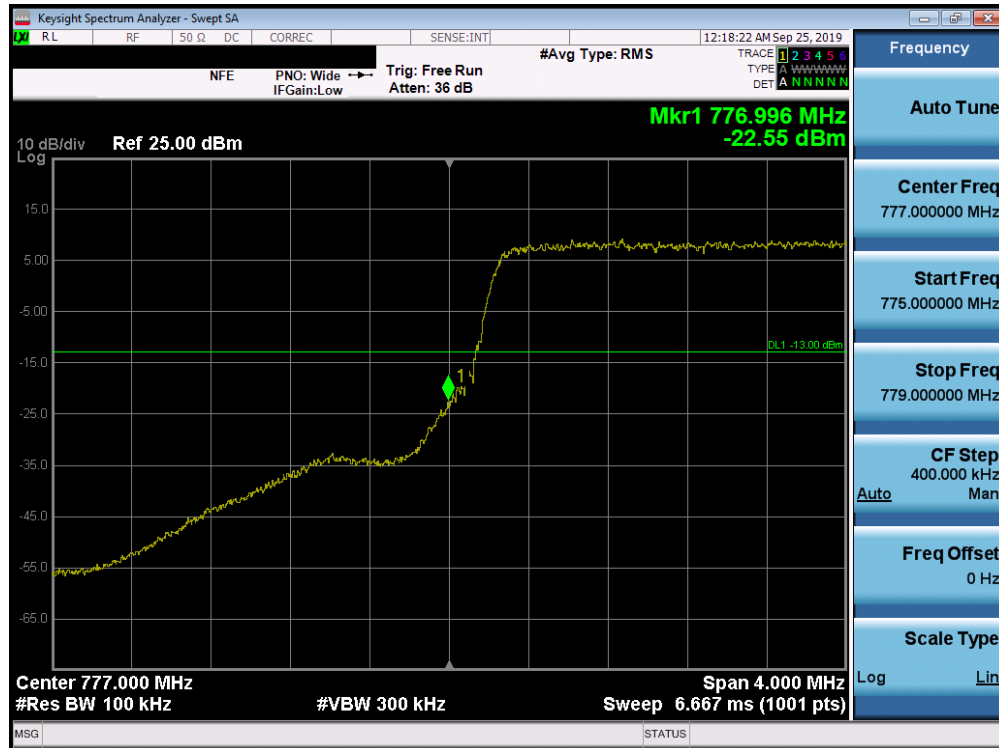
Plot 7-188. Lower Band Edge Plot (Band 17 - 10.0MHz QPSK - Full RB Configuration)



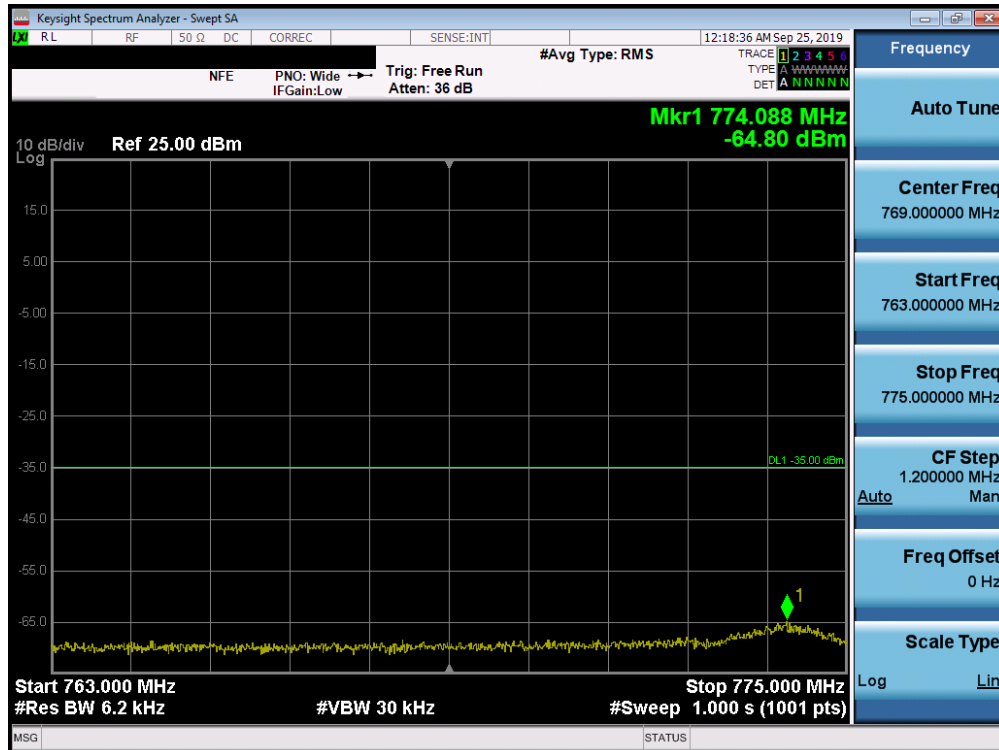
Plot 7-189. Upper Band Edge Plot (Band 12/17 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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## Band 13

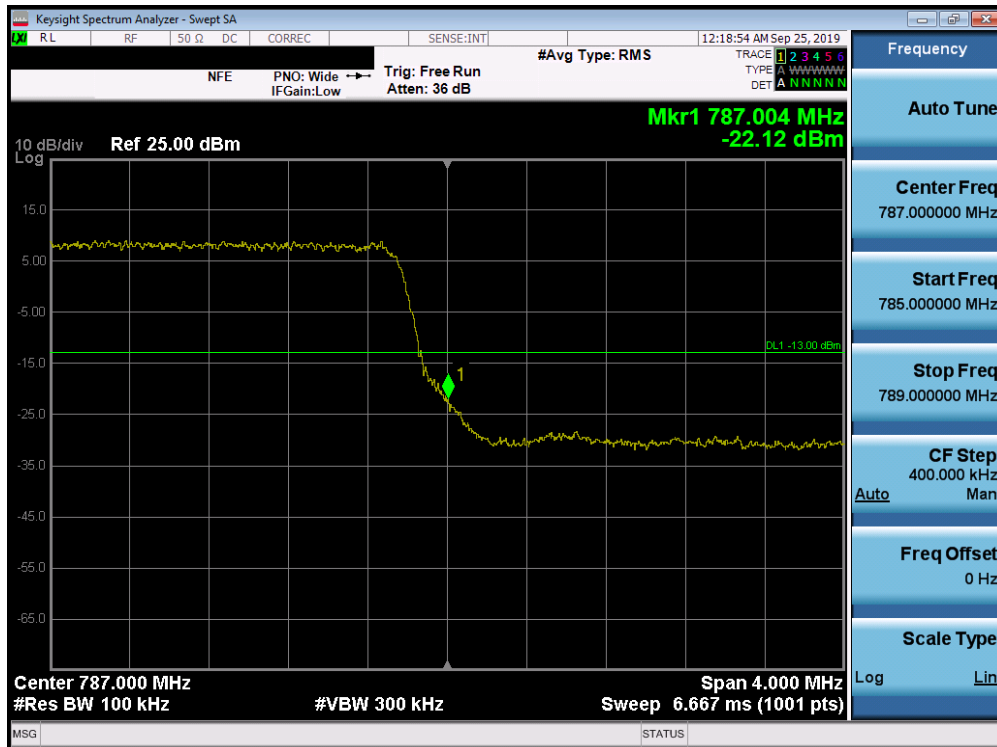


Plot 7-190. Lower Band Edge Plot (Band 13 - 5.0MHz QPSK - Full RB Configuration)

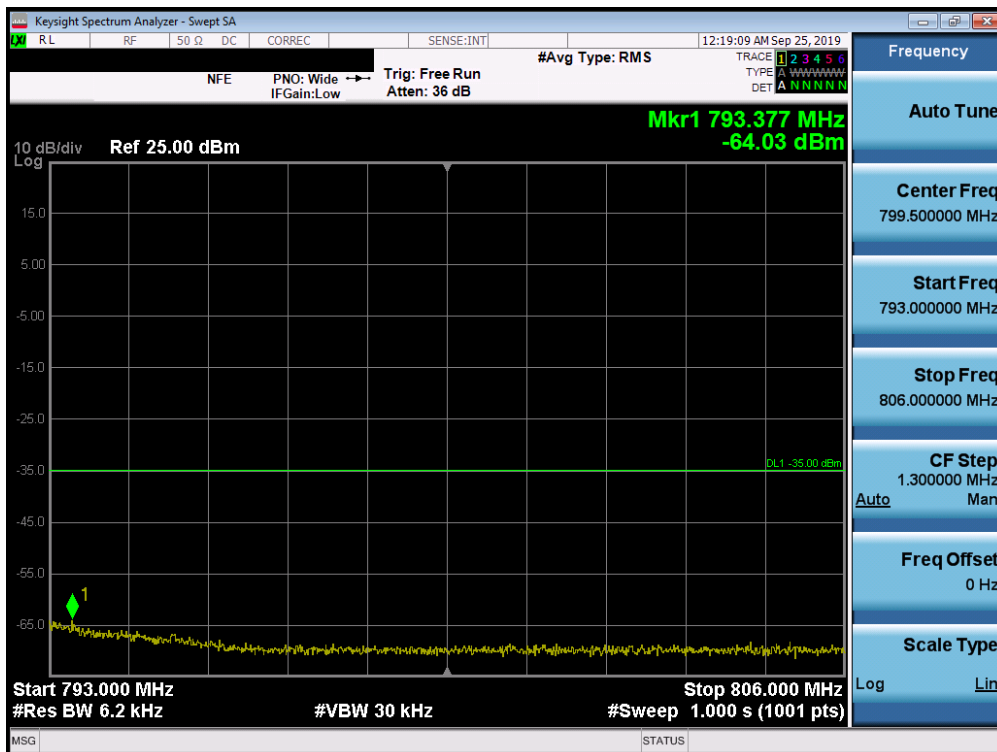


Plot 7-191. Lower Emission Mask Plot (Band 13 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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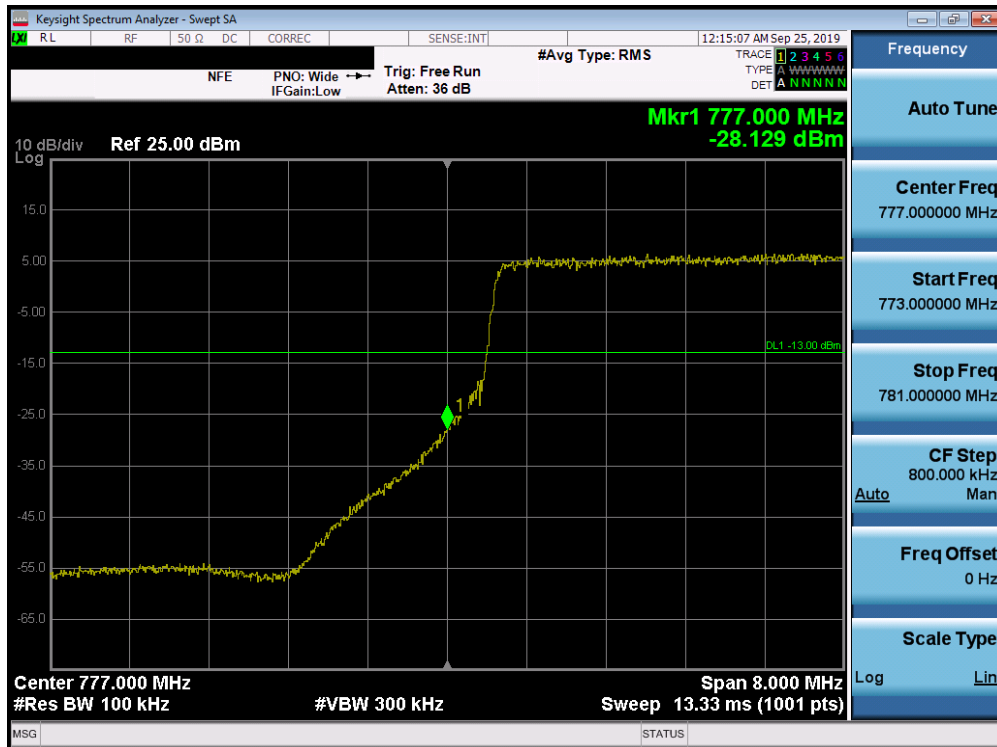


Plot 7-192. Upper Band Edge Plot (Band 13 - 5.0MHz QPSK - Full RB Configuration)

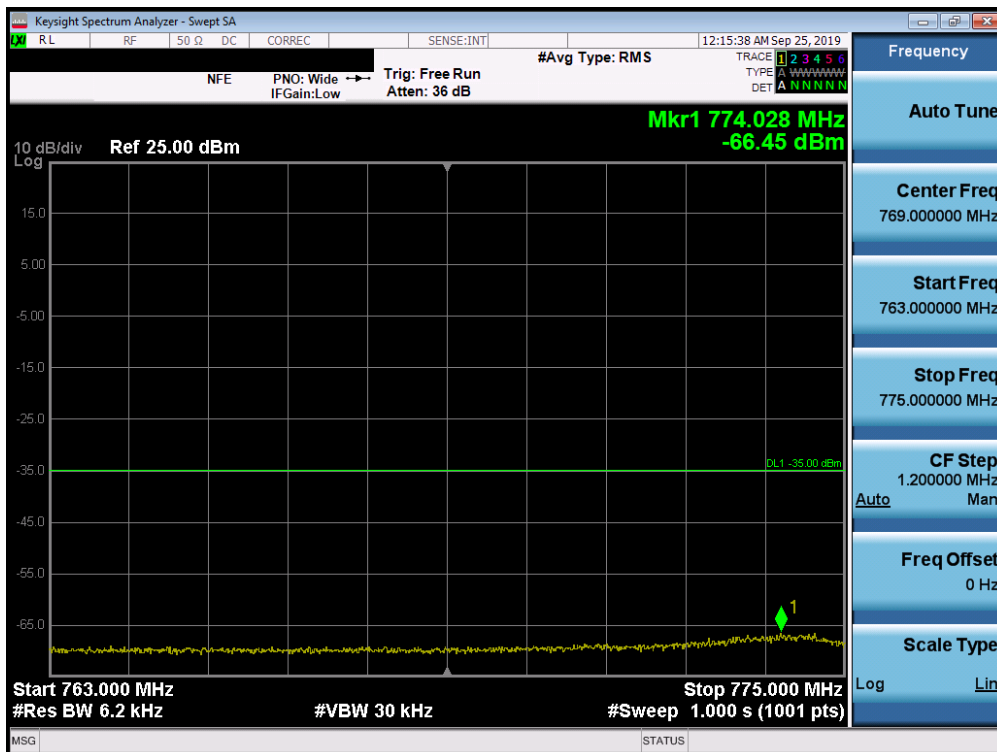


Plot 7-193. Upper Emission Mask Plot (Band 13 - 5.0MHz QPSK - Full RB Configuratio

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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Plot 7-194. Lower Band Edge Plot (Band 13 - 10.0MHz QPSK - Full RB Configuration)

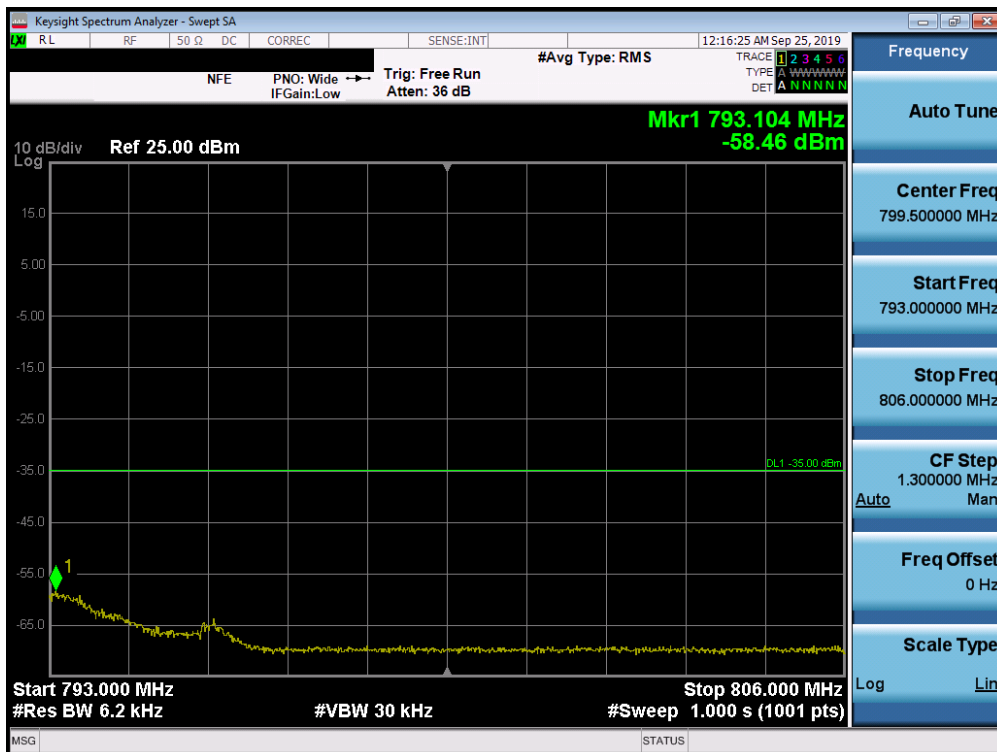


Plot 7-195. Lower Emission Mask Plot (Band 13 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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Plot 7-196. Upper Band Edge Plot (Band 13 - 10.0MHz QPSK - Full RB Configuration)

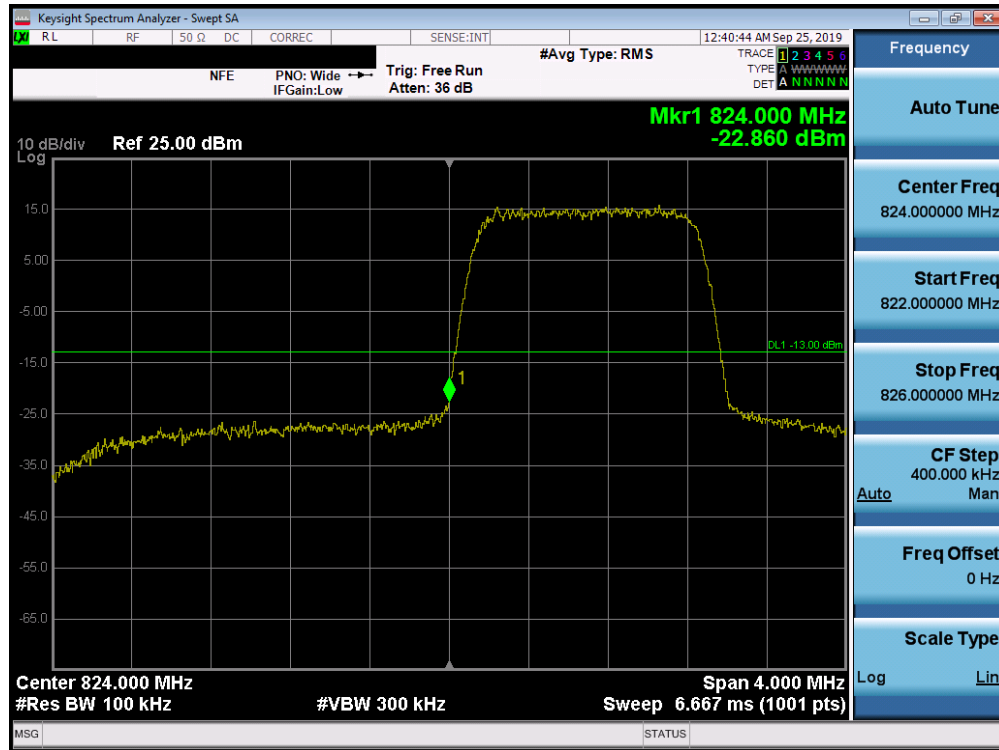


Plot 7-197. Upper Emission Mask Plot (Band 13 - 10.0MHz QPSK - Full RB Configuration)

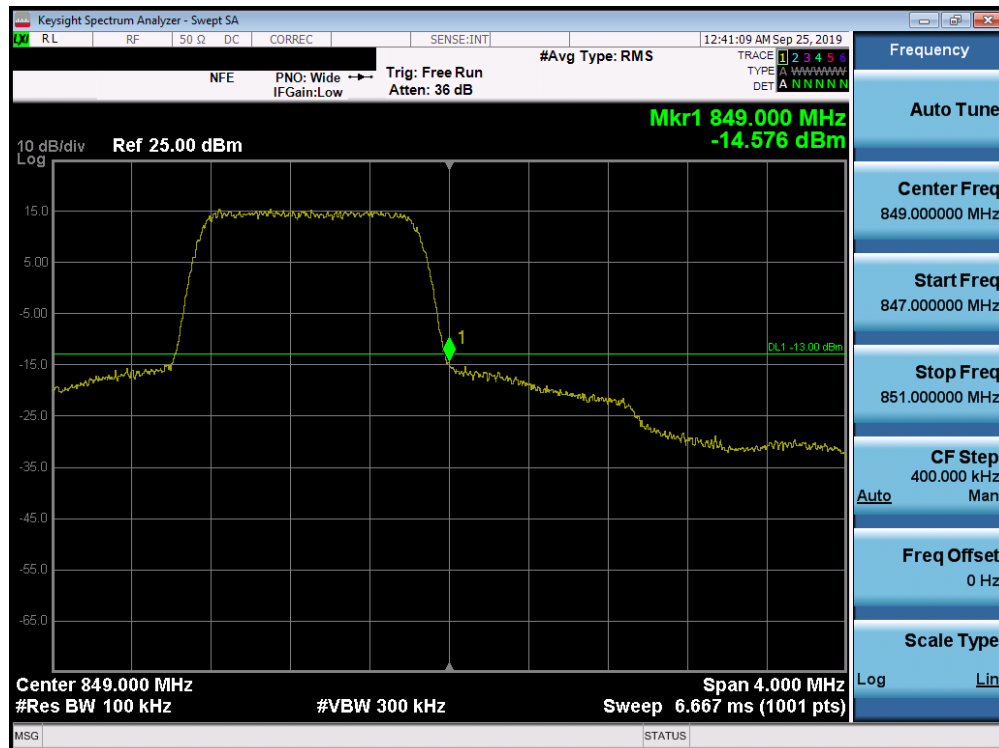
FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	<b>LG</b>	Approved by: Quality Manager
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## Band 26/5



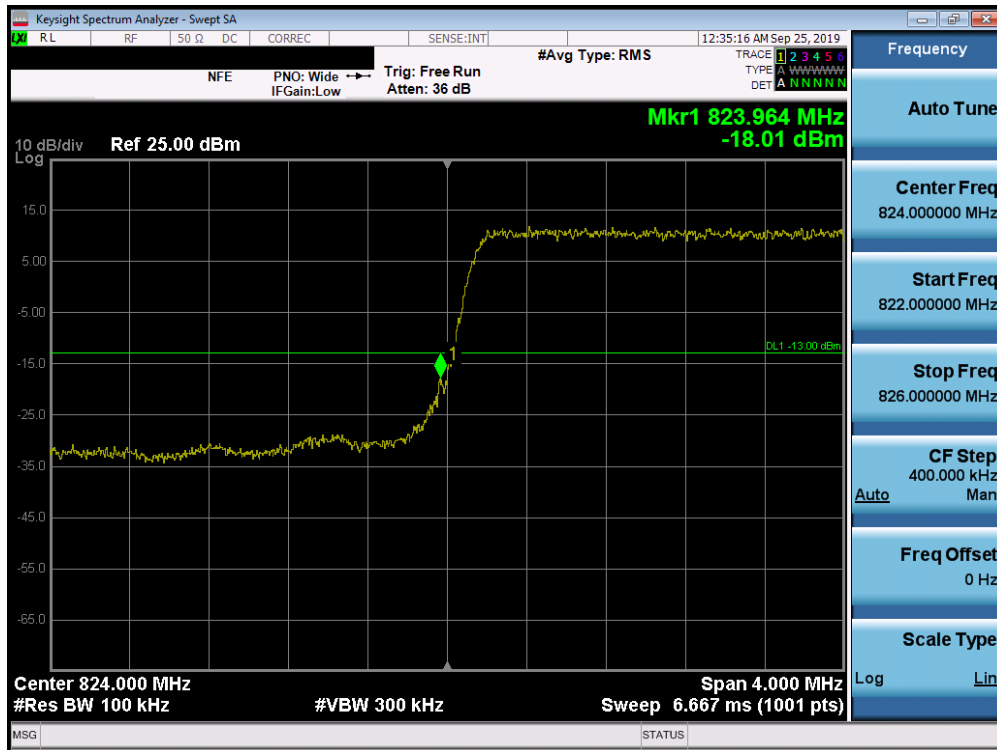
Plot 7-198. Lower Band Edge Plot (Band 26/5 - 1.4MHz QPSK - Full RB Configuration)



Plot 7-199. Upper Band Edge Plot (Band 26/5 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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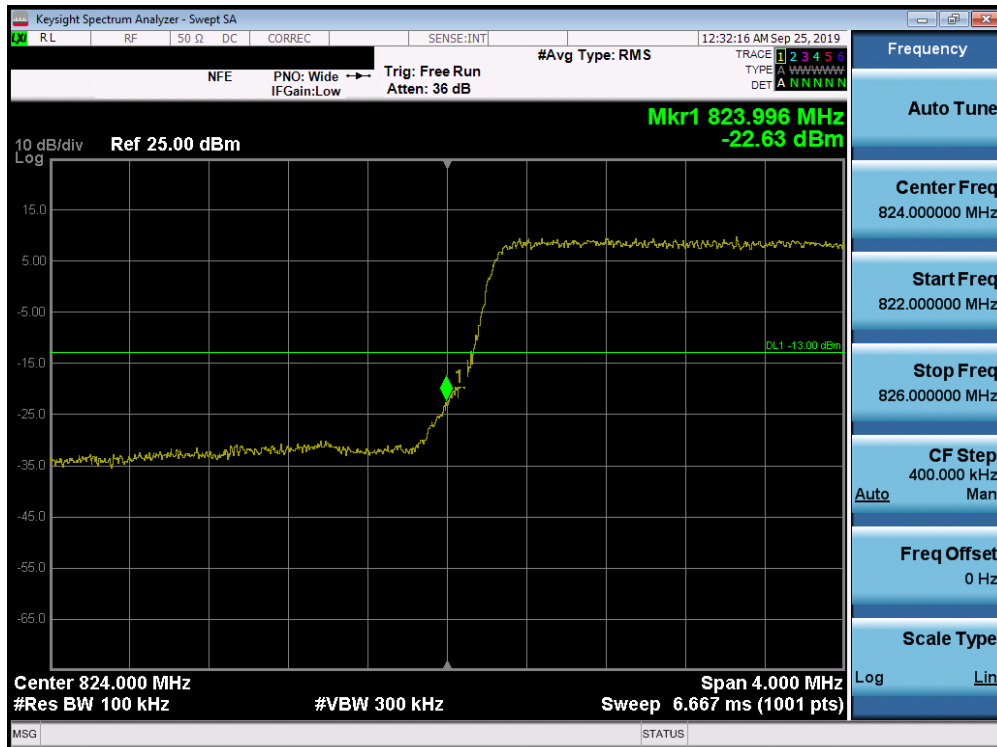


Plot 7-200. Lower Band Edge Plot (Band 26/5 - 3.0MHz QPSK - Full RB Configuration)



Plot 7-201. Upper Band Edge Plot (Band 26/5 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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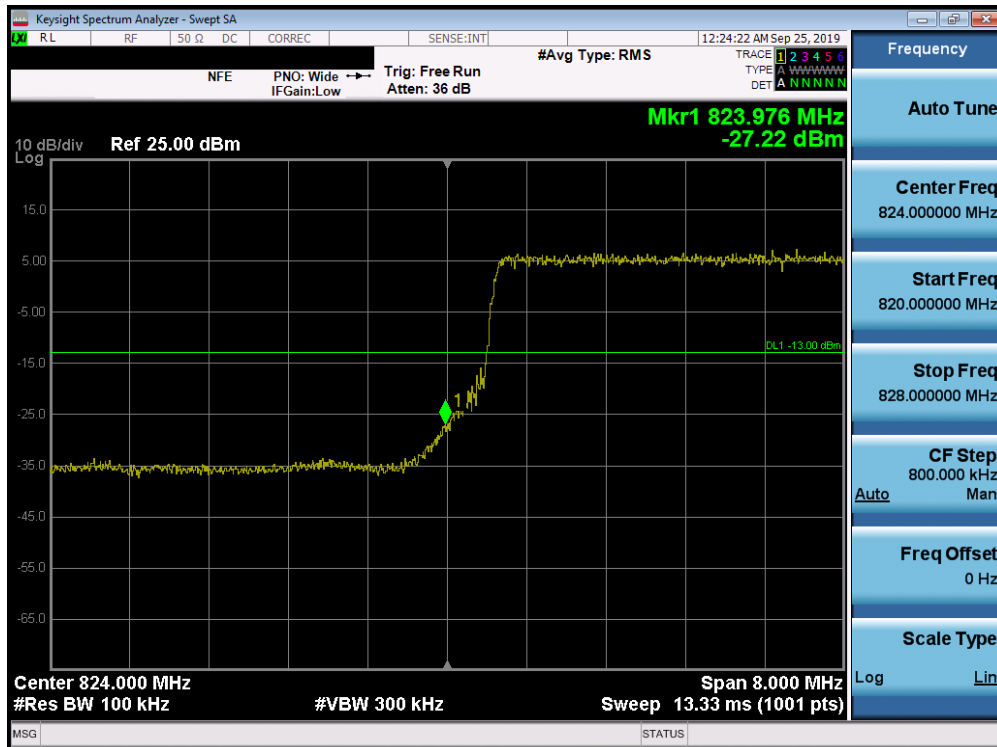


Plot 7-202. Lower Band Edge Plot (Band 26/5 - 5.0MHz QPSK - Full RB Configuration)

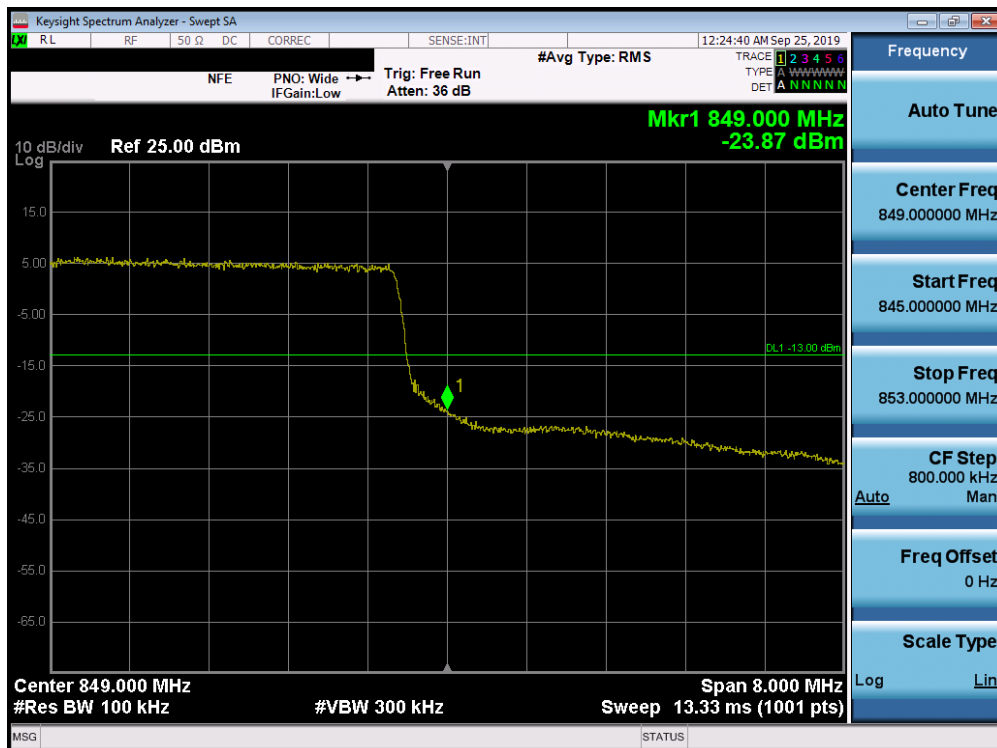


Plot 7-203. Upper Band Edge Plot (Band 26/5 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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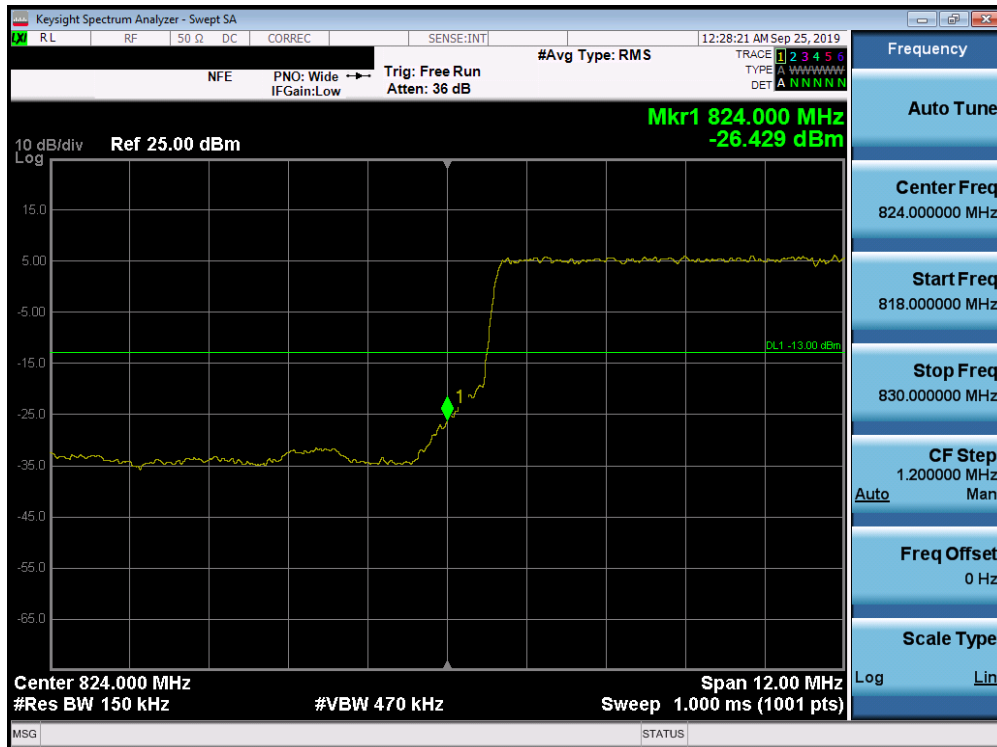


Plot 7-204. Lower Band Edge Plot (Band 26/5 - 10.0MHz QPSK - Full RB Configuration)

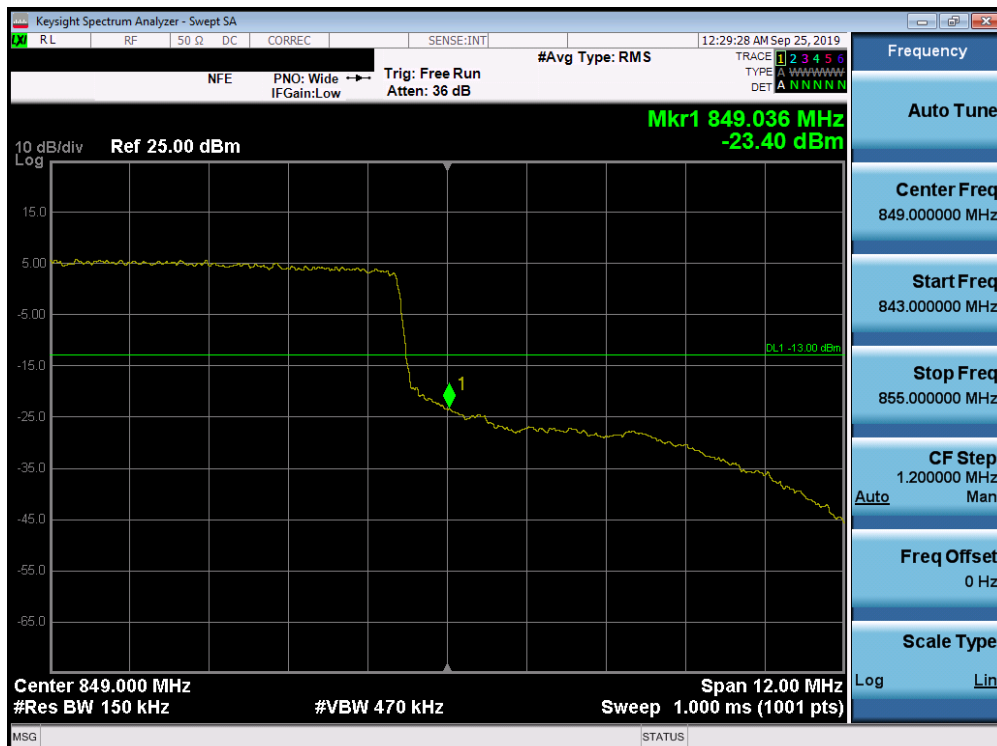


Plot 7-205. Upper Band Edge Plot (Band 26/5 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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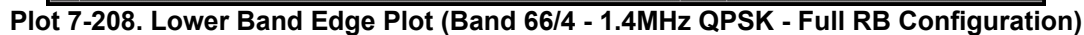


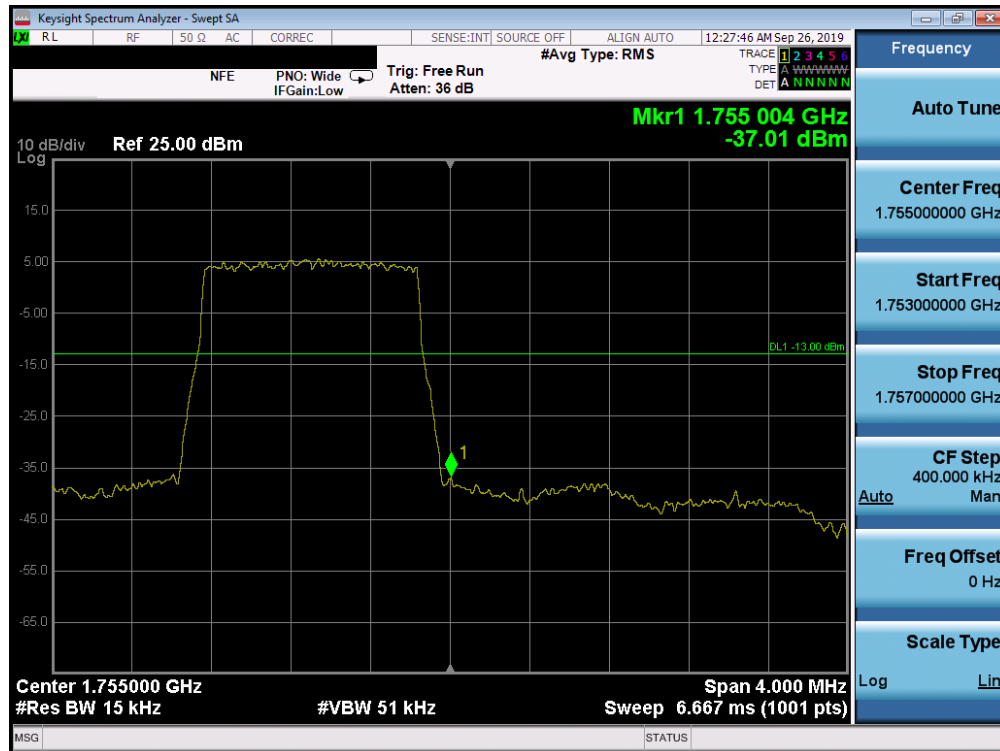
Plot 7-206. Lower Band Edge Plot (Band 26 - 15.0MHz QPSK - Full RB Configuration)



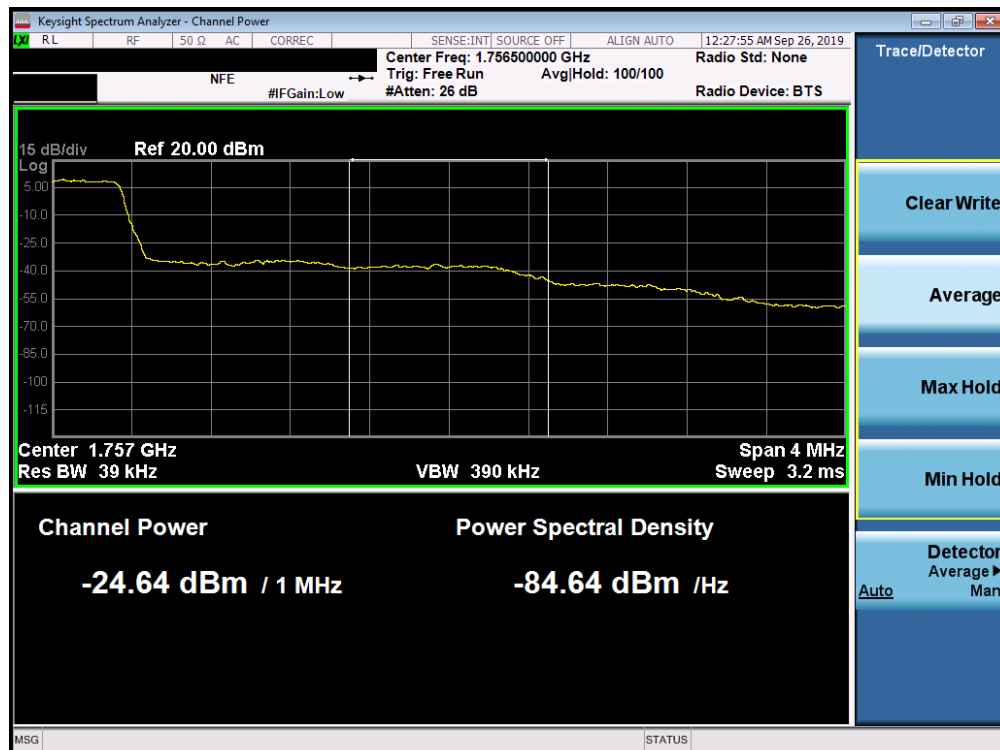
Plot 7-207. Upper Band Edge Plot (Band 26 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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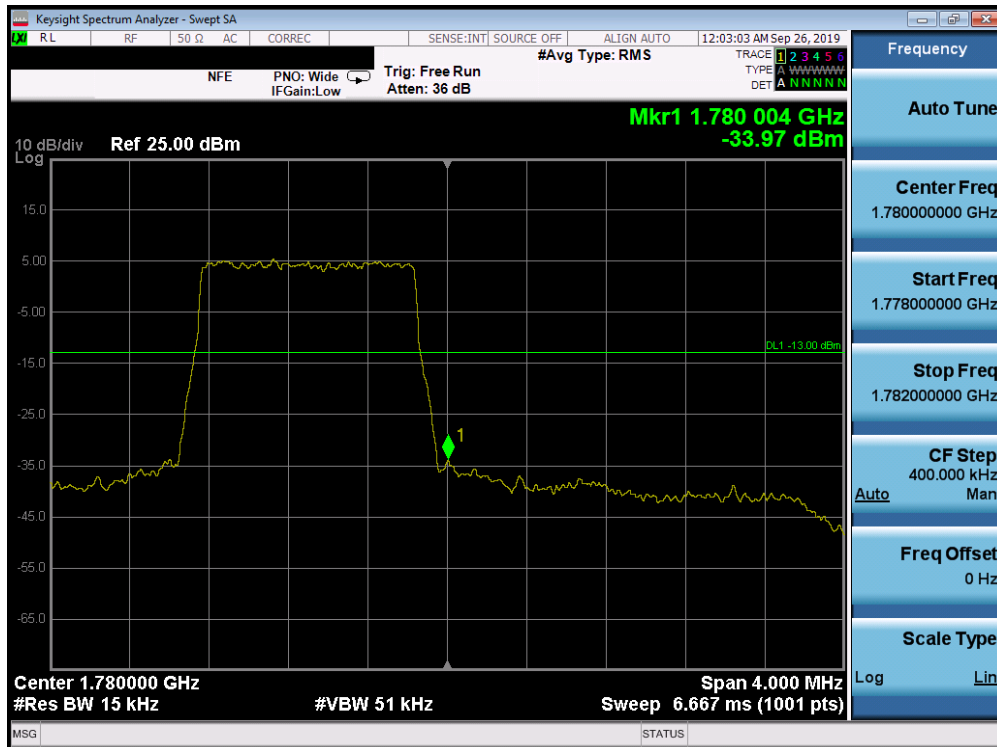


Plot 7-210. Upper Band Edge Plot (Band 4 - 1.4MHz QPSK - Full RB Configuration)

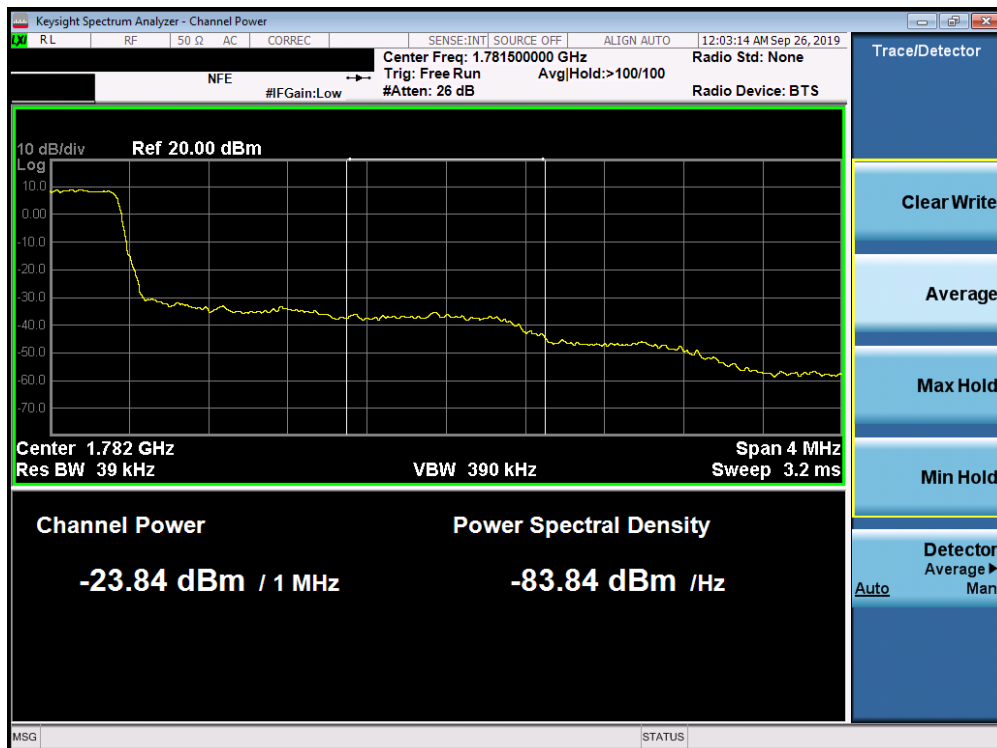


Plot 7-211. Upper Extended Band Edge Plot (Band 4 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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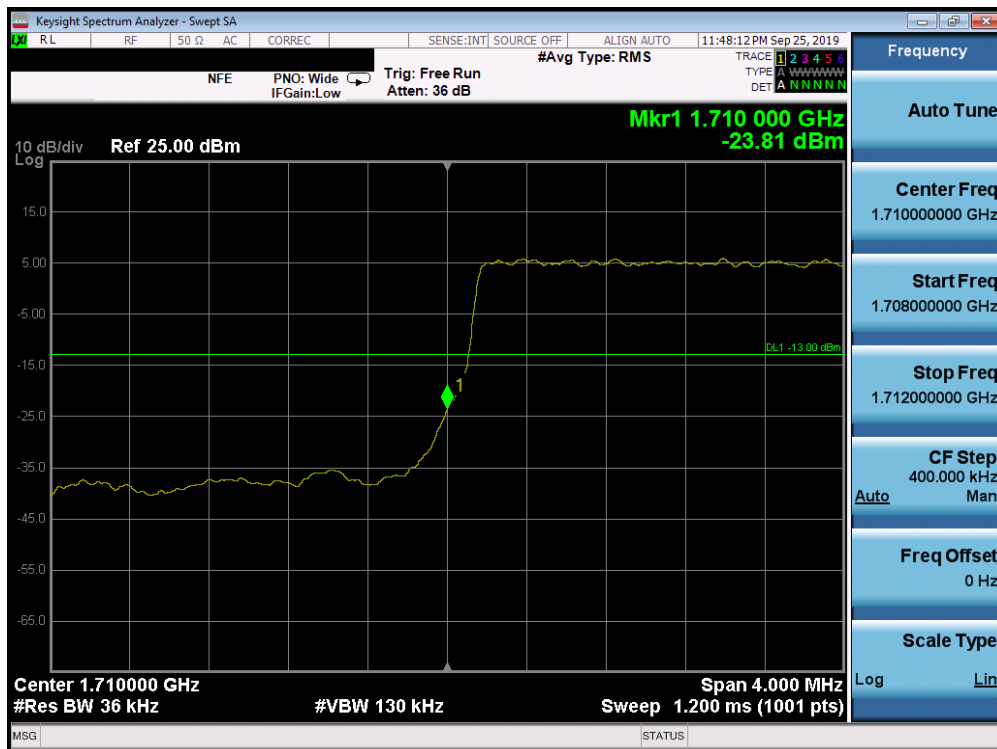


Plot 7-212. Upper Band Edge Plot (Band 66 - 1.4MHz QPSK - Full RB Configuration)

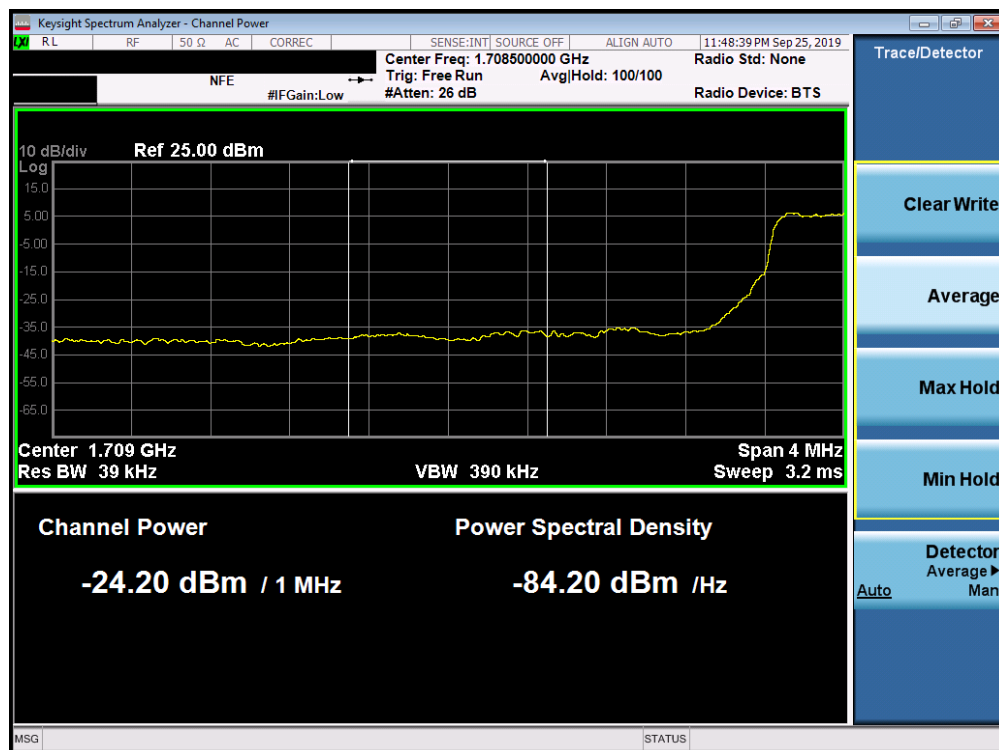


Plot 7-213. Upper Extended Band Edge Plot (Band 66 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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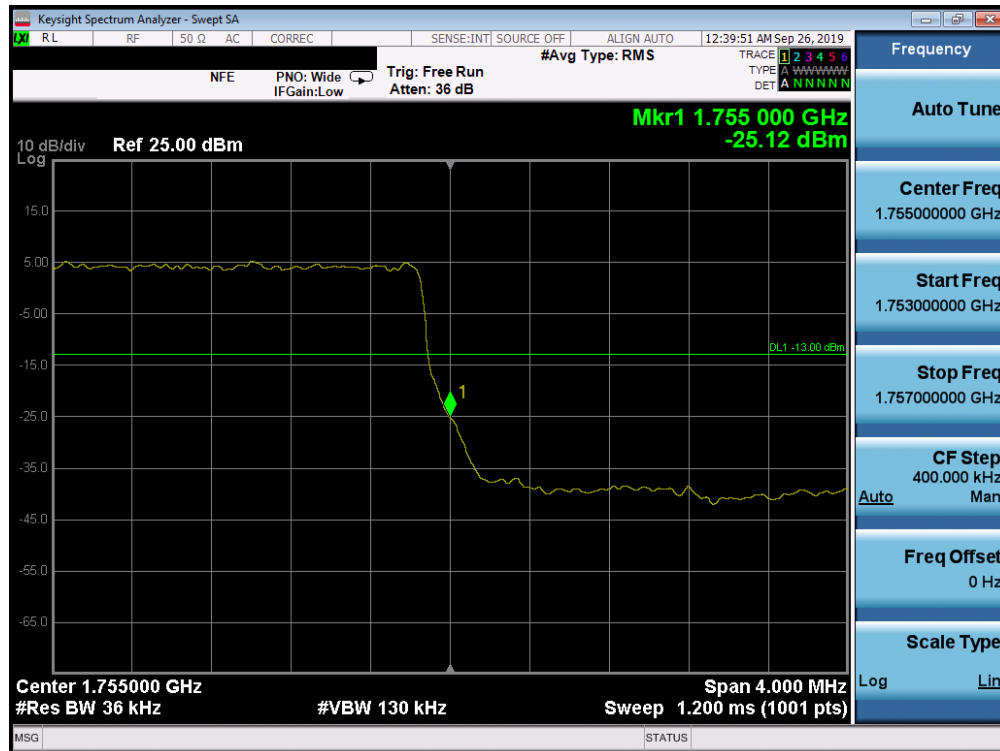
**Plot 7-214. Lower Band Edge Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)**



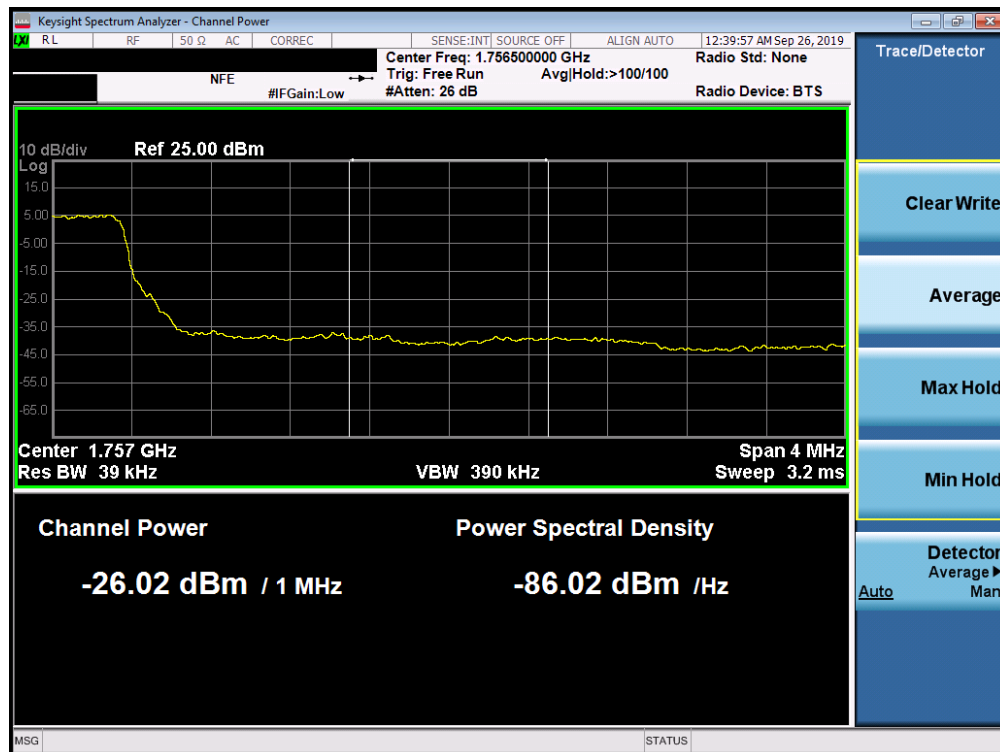
**Plot 7-215. Lower Extended Band Edge Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)**

FCC ID: ZNFQ620WA	 <b>MEASUREMENT REPORT (CERTIFICATION)</b> 		<b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1909120153-03-R1.ZNF	<b>Test Dates:</b> 9/12 – 10/14/2019	<b>EUT Type:</b> Portable Handset	Page 132 of 244



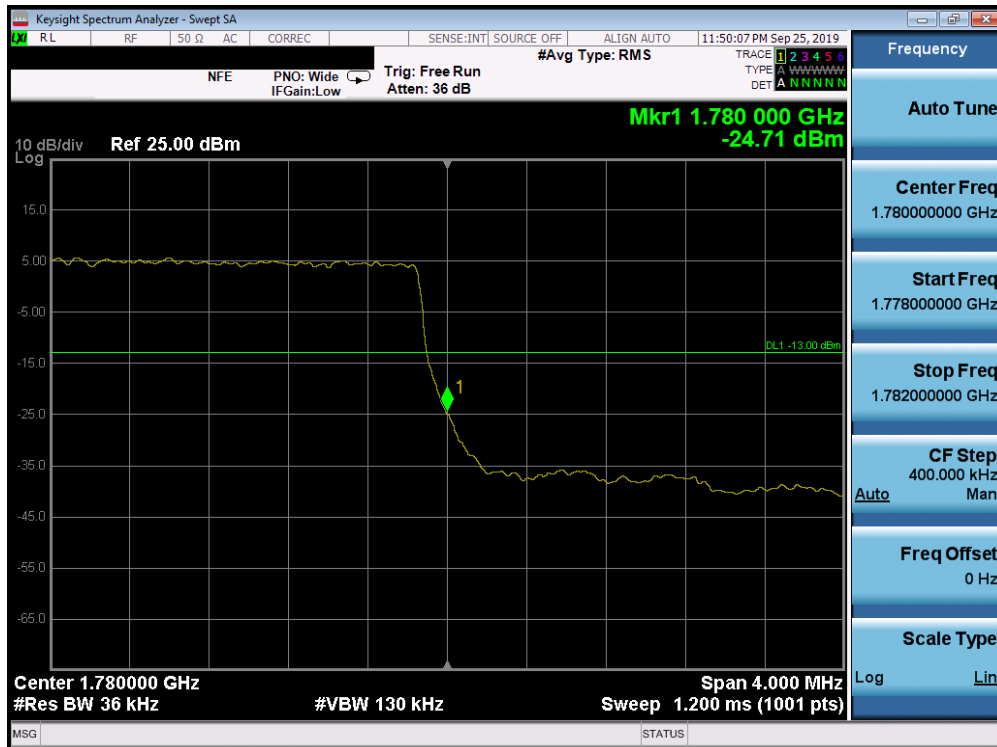


Plot 7-216. Upper Band Edge Plot (Band 4 - 3.0MHz QPSK - Full RB Configuration)

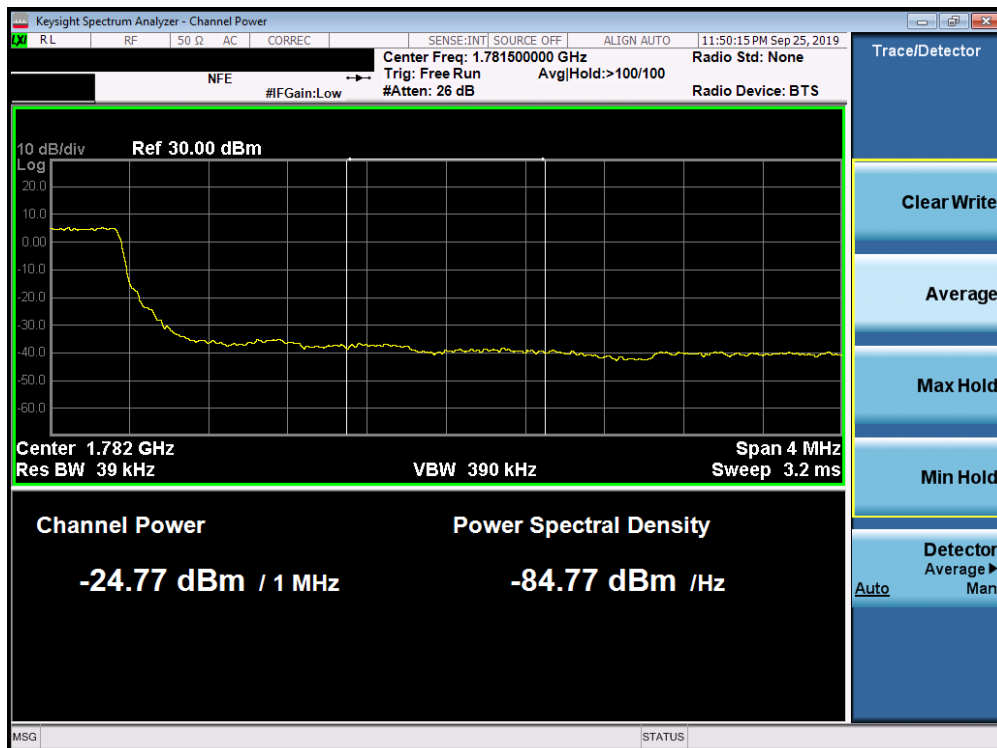


Plot 7-217. Upper Extended Band Edge Plot (Band 4 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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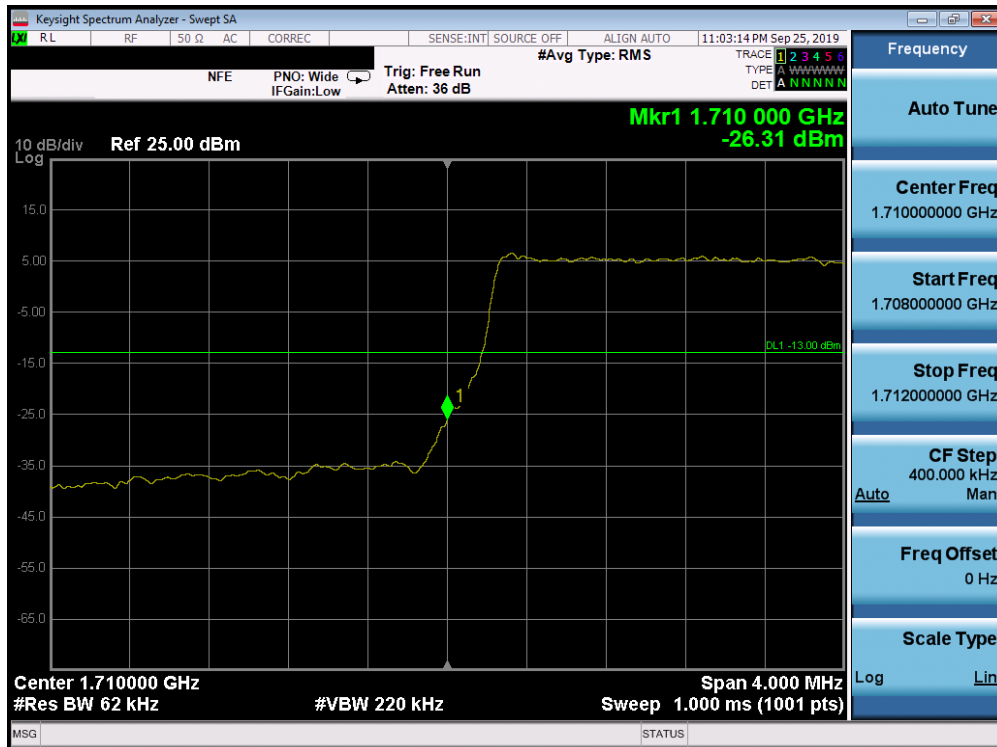


Plot 7-218. Upper Band Edge Plot (Band 66 - 3.0MHz QPSK - Full RB Configuration)

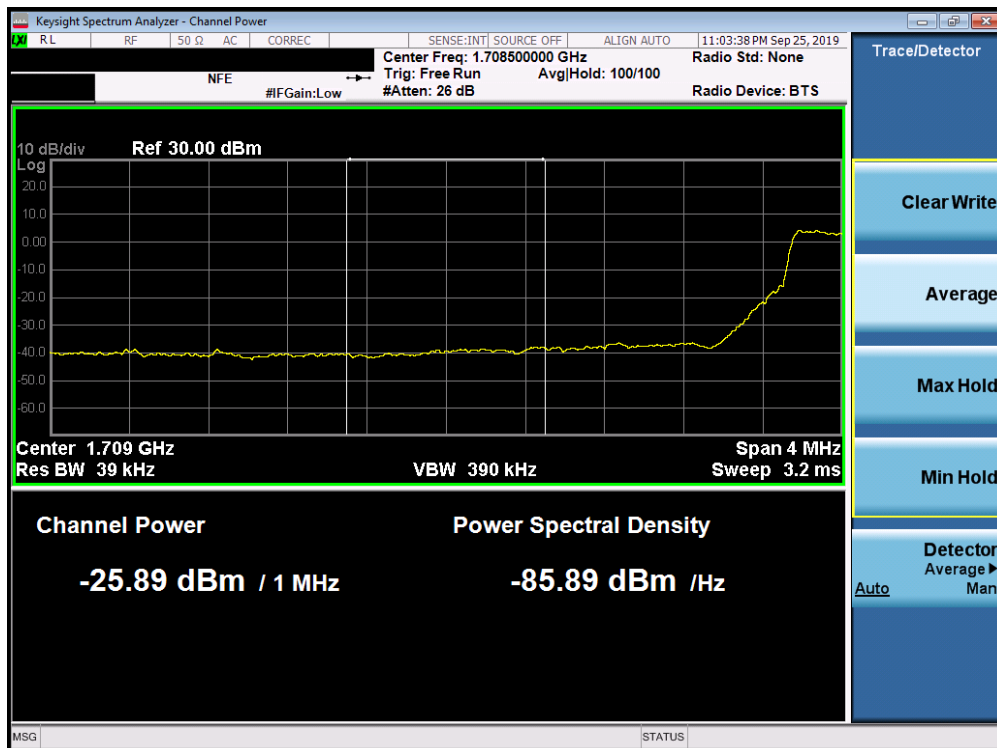


Plot 7-219. Upper Extended Band Edge Plot (Band 66 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
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Plot 7-220. Lower Band Edge Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)

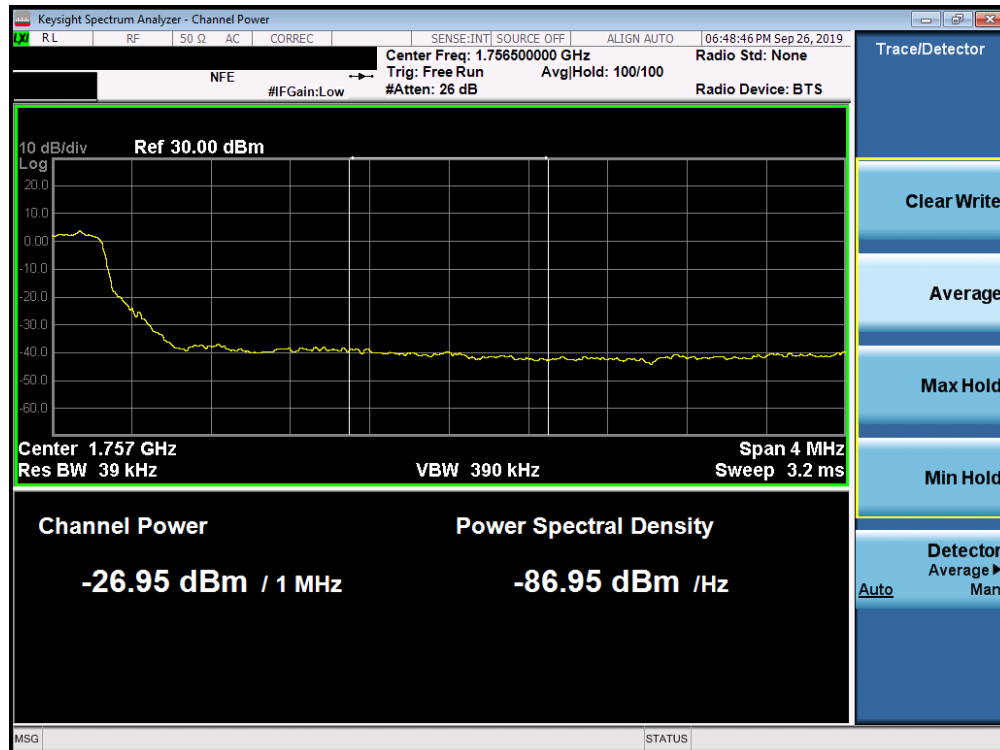


Plot 7-221. Lower Extended Band Edge Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 - 10/14/2019	EUT Type: Portable Handset		Page 135 of 244

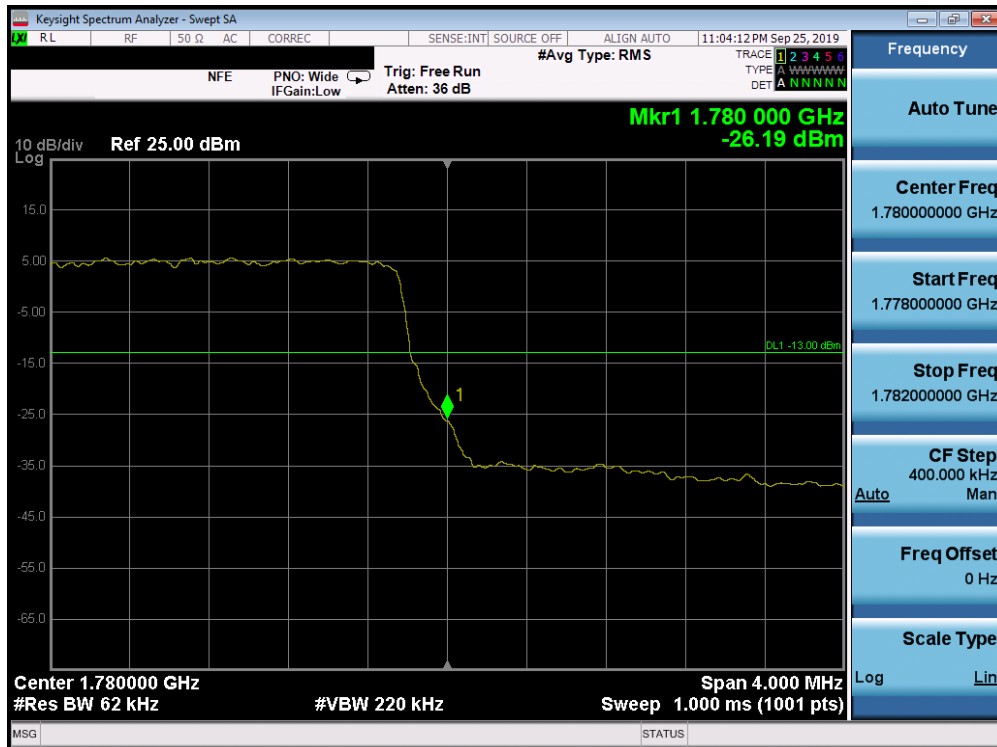


Plot 7-222. Upper Band Edge Plot (Band 4 - 5.0MHz QPSK - Full RB Configuration)

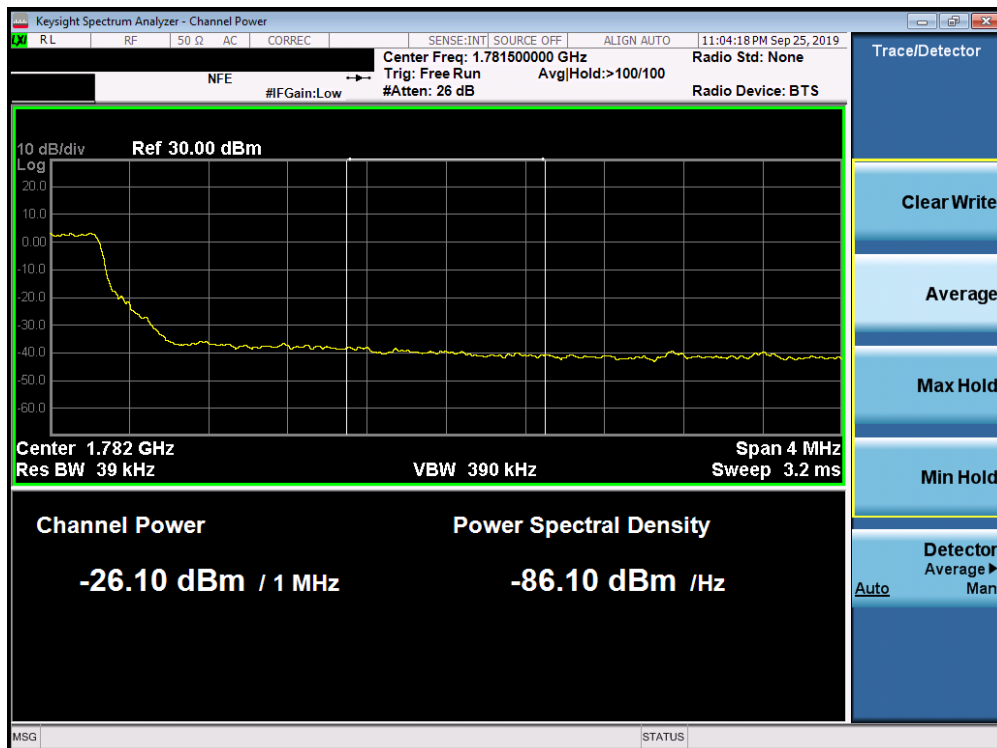


Plot 7-223. Upper Extended Band Edge Plot (Band 4 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1-ZNF	Test Dates: 9/12 - 10/14/2019	EUT Type: Portable Handset		Page 136 of 244

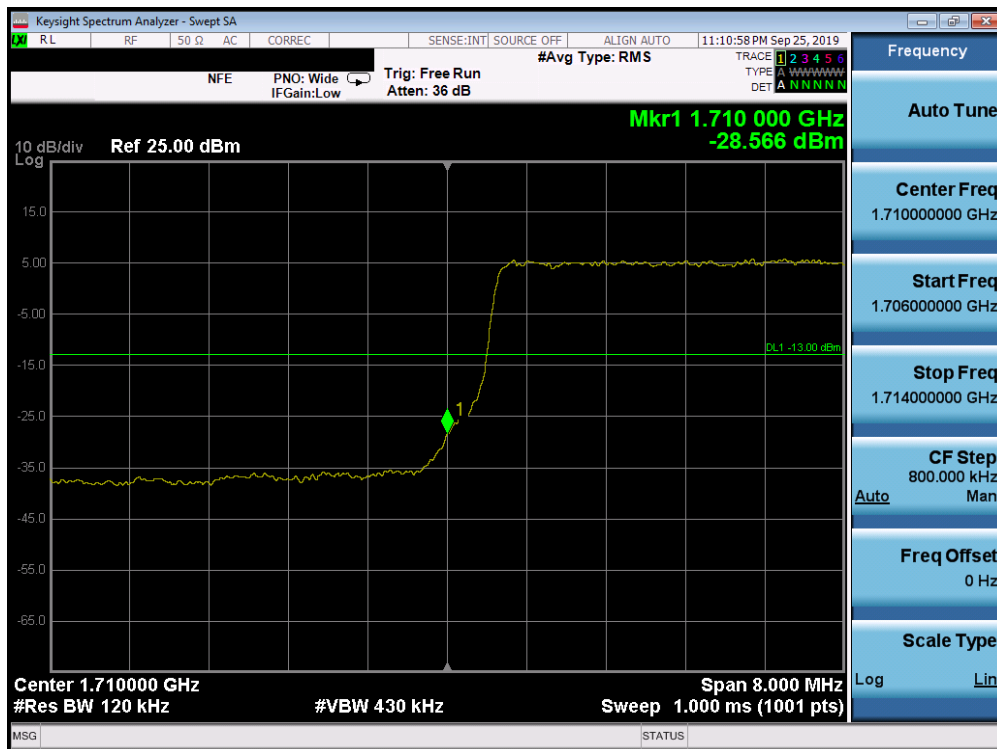


Plot 7-224. Upper Band Edge Plot (Band 66 - 5.0MHz QPSK - Full RB Configuration)

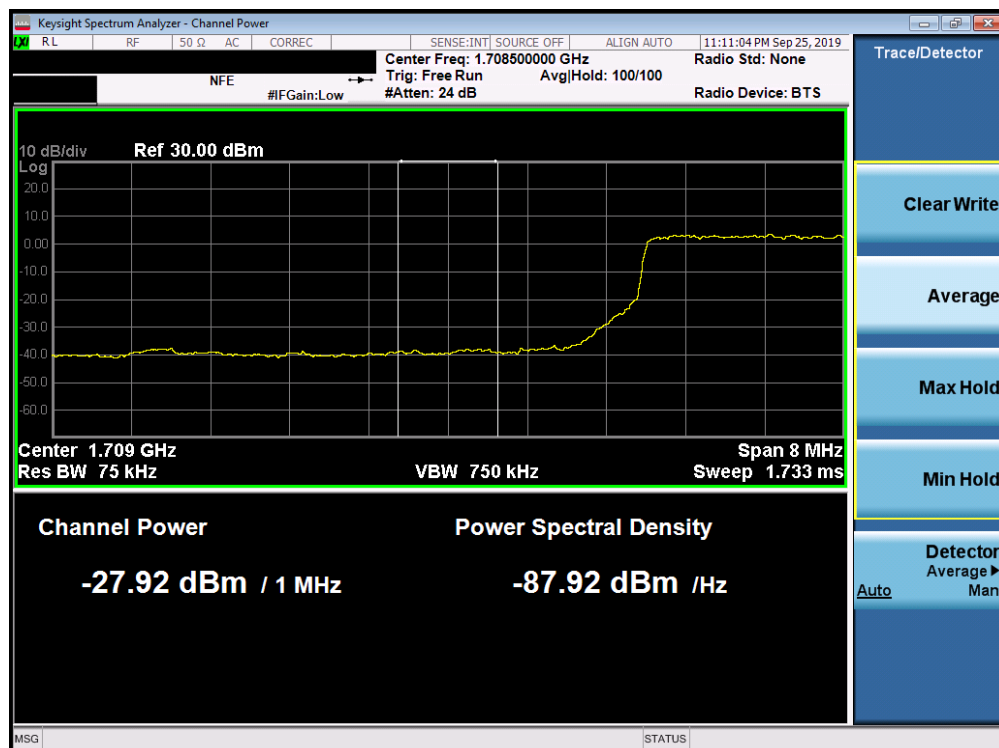


Plot 7-225. Upper Extended Band Edge Plot (Band 66 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 - 10/14/2019	EUT Type: Portable Handset		Page 137 of 244

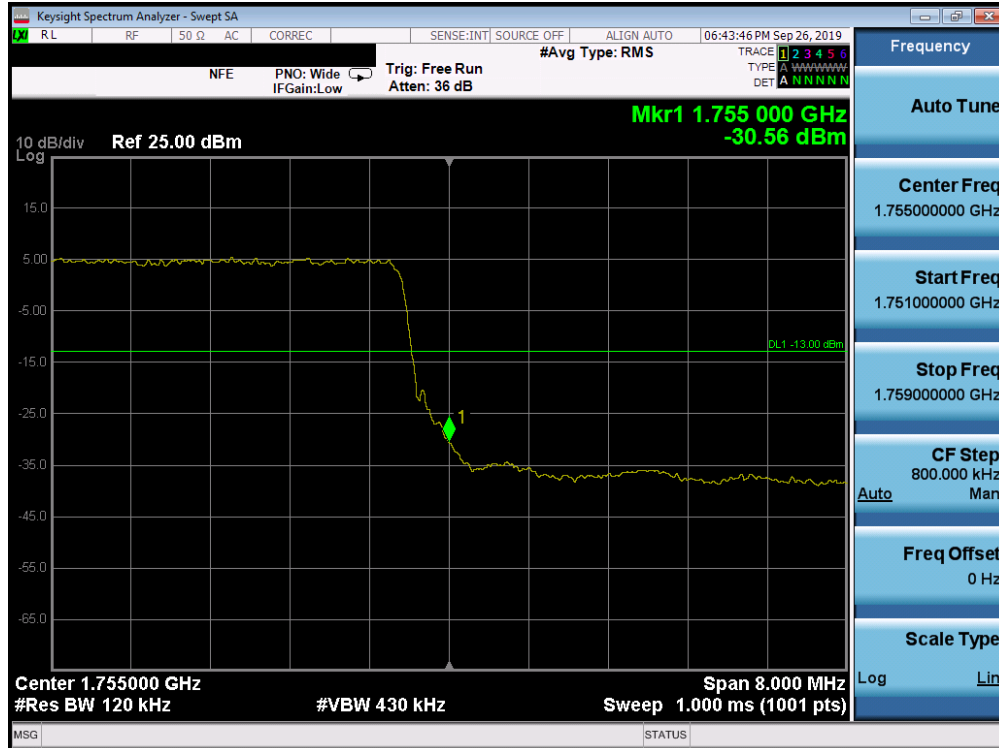


**Plot 7-226. Lower Band Edge Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)**

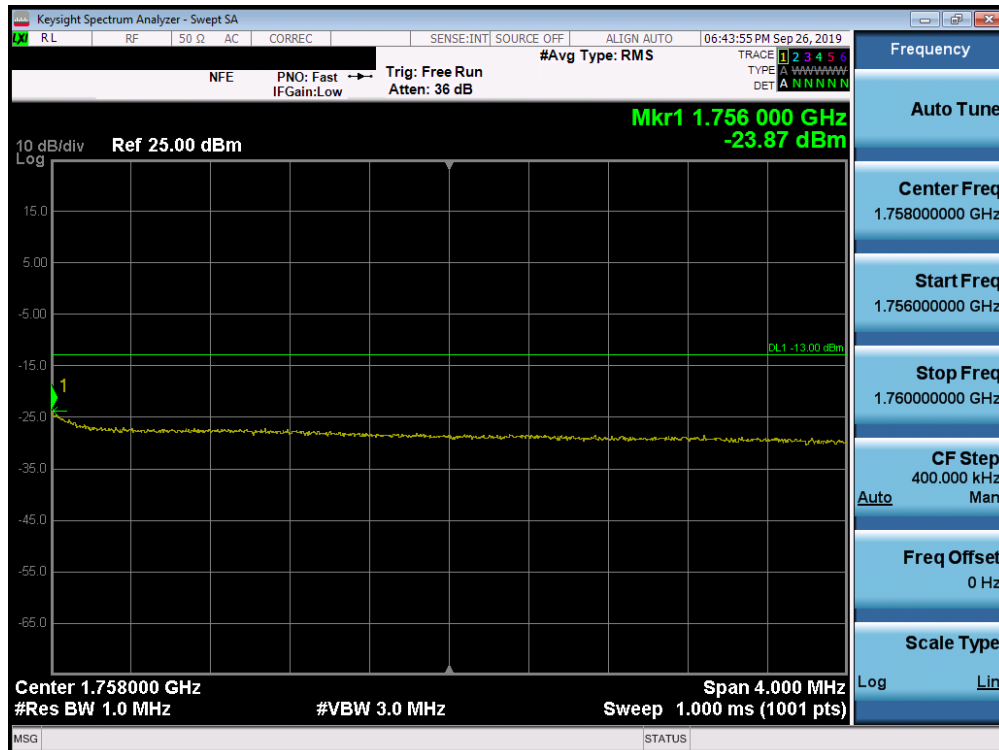


**Plot 7-227. Lower Extended Band Edge Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)**

FCC ID: ZNFQ620WA	 <b>MEASUREMENT REPORT (CERTIFICATION)</b> 		<b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1909120153-03-R1.ZNF	<b>Test Dates:</b> 9/12 – 10/14/2019	<b>EUT Type:</b> Portable Handset	Page 138 of 244



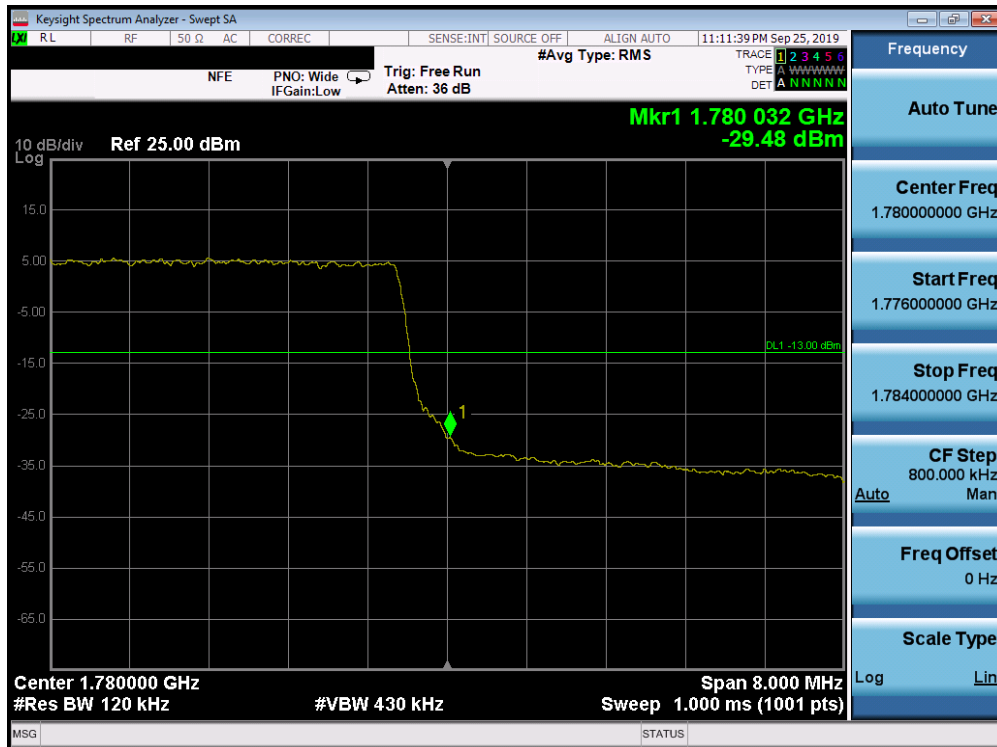
Plot 7-228. Upper Band Edge Plot (Band 4 - 10.0MHz QPSK - Full RB Configuration)



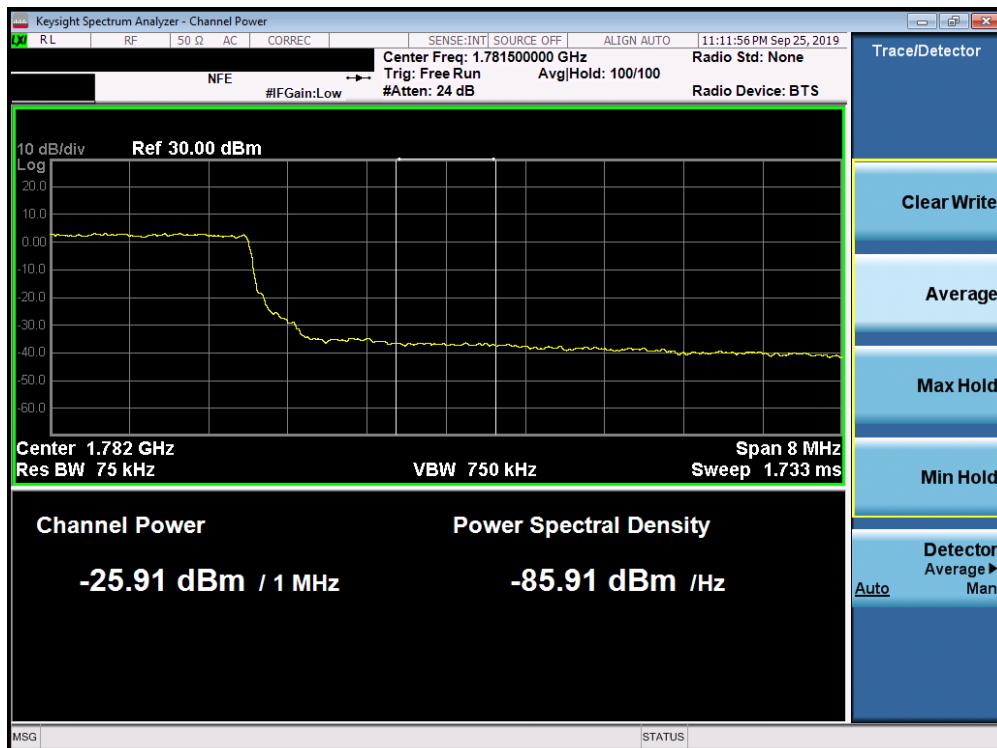
Plot 7-229. Upper Extended Band Edge Plot (Band 4 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 – 10/14/2019	EUT Type: Portable Handset		Page 139 of 244





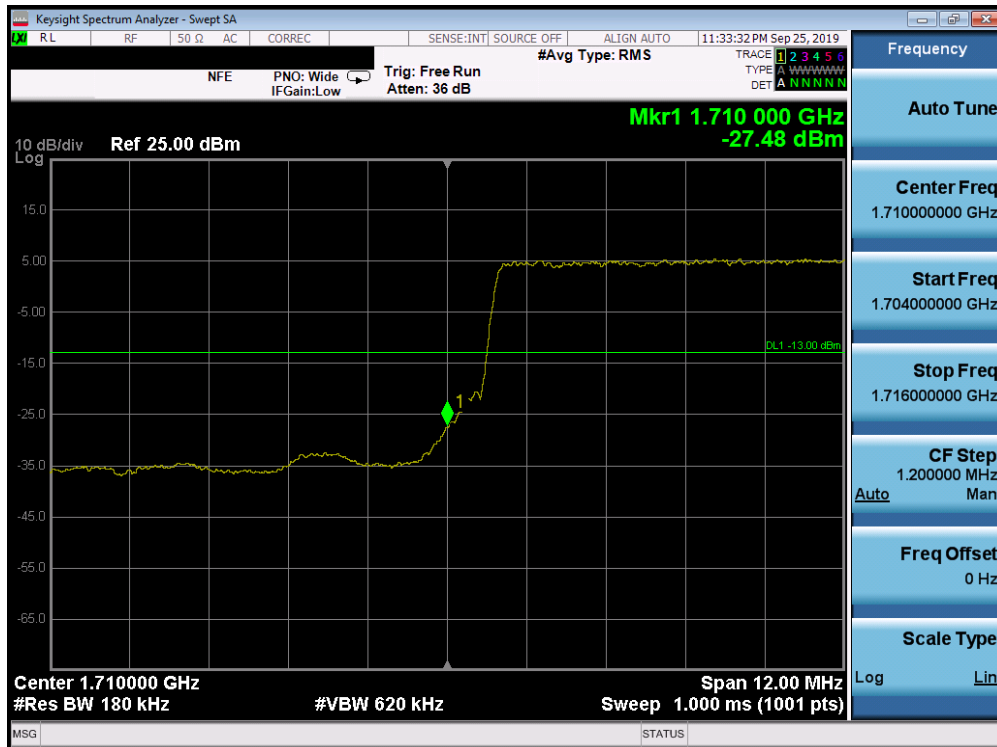
Plot 7-230. Upper Band Edge Plot (Band 66 - 10.0MHz QPSK - Full RB Configuration)



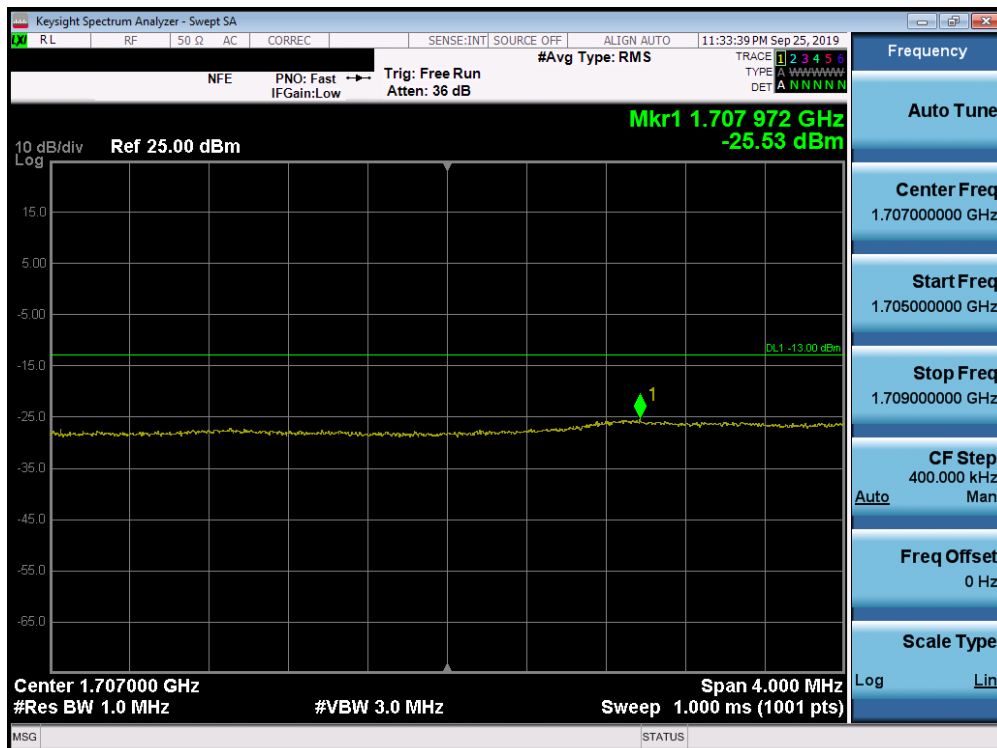
Plot 7-231. Upper Extended Band Edge Plot (Band 66 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 - 10/14/2019	EUT Type: Portable Handset		Page 140 of 244





Plot 7-232. Lower Band Edge Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)

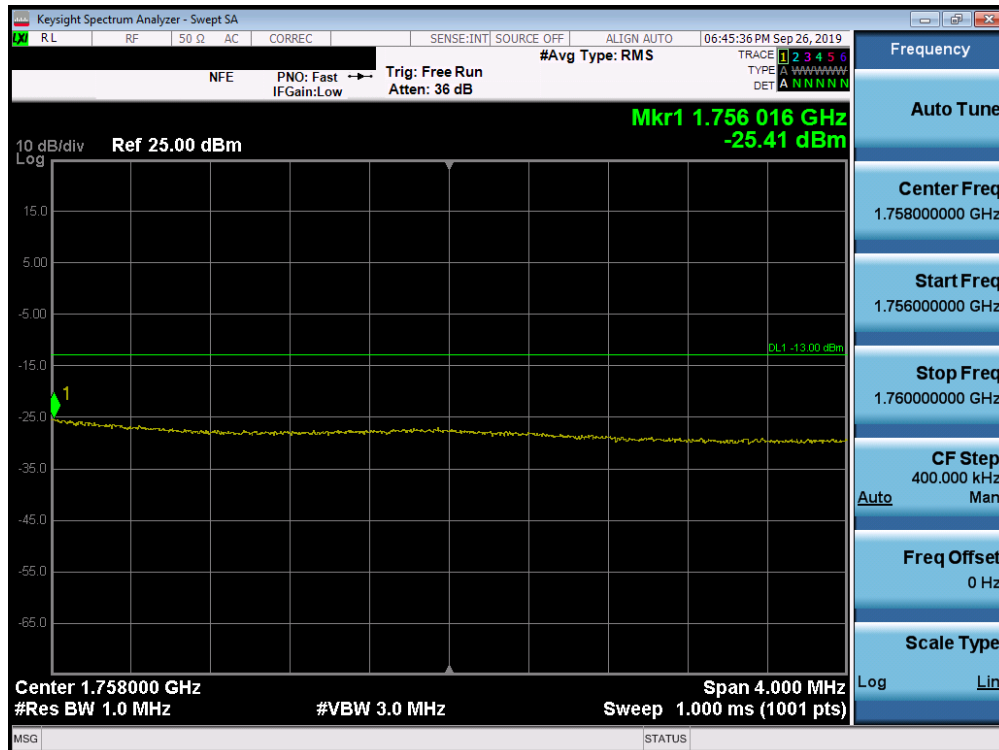


Plot 7-233. Lower Extended Band Edge Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 – 10/14/2019	EUT Type: Portable Handset		Page 141 of 244

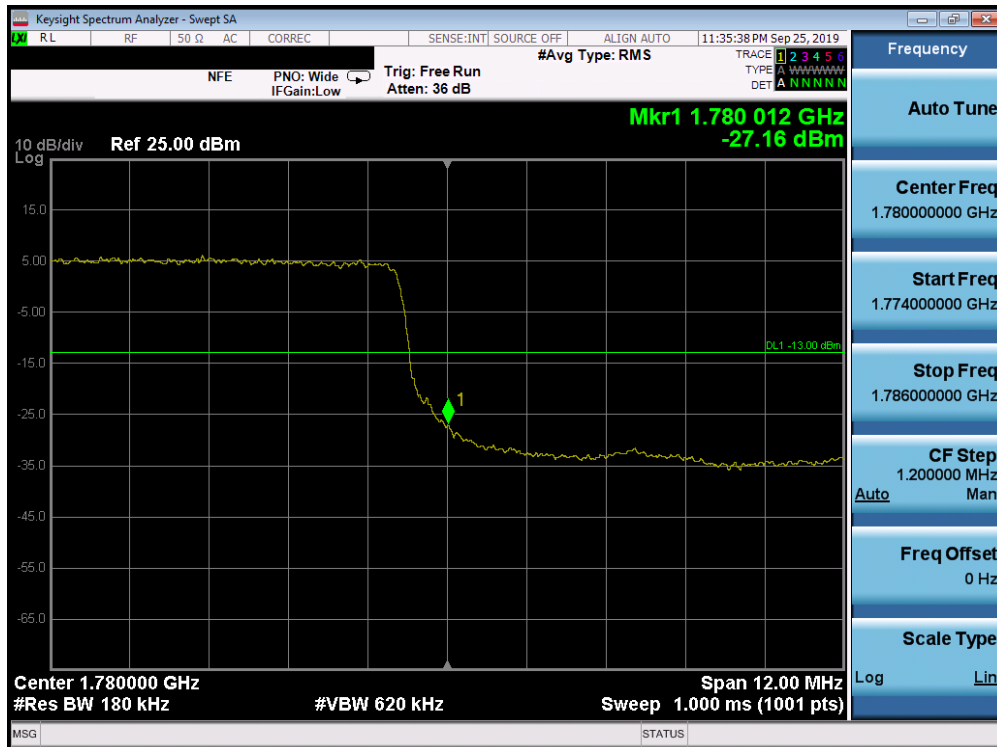


Plot 7-234. Upper Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)

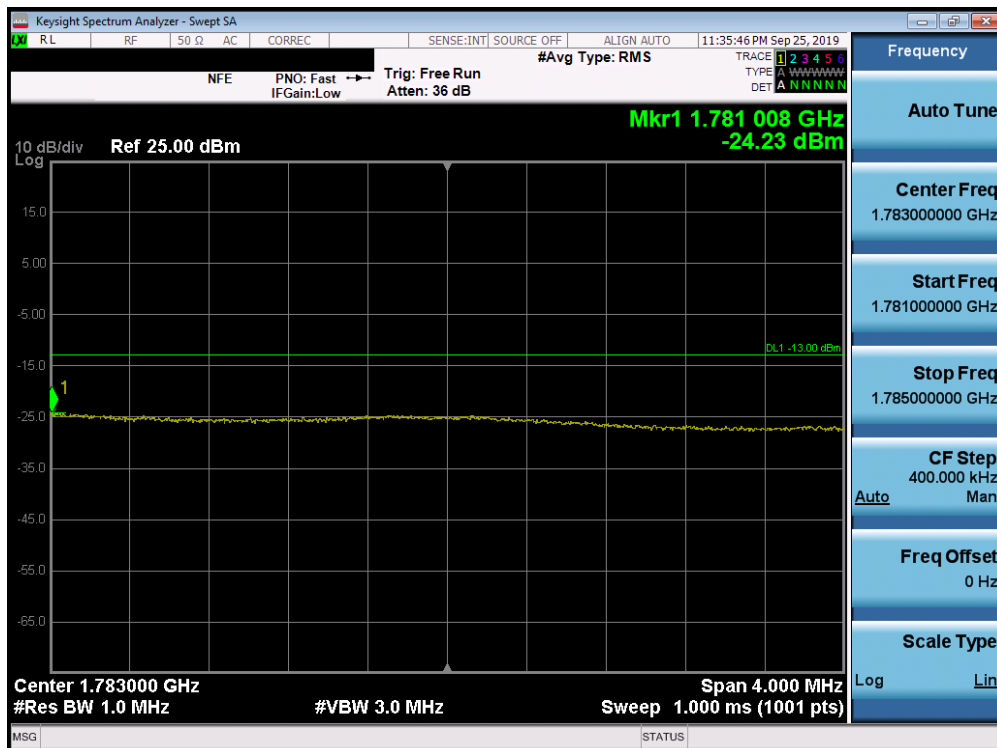


Plot 7-235. Upper Extended Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	<b>LG</b>	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 - 10/14/2019	EUT Type: Portable Handset		Page 142 of 244

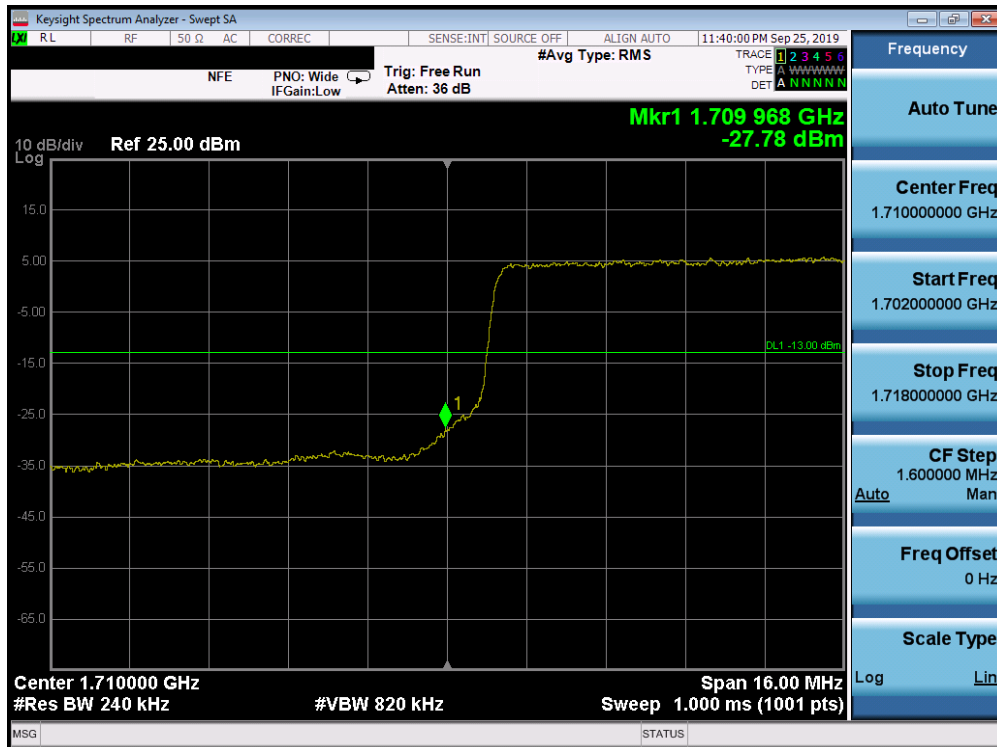


Plot 7-236. Upper Band Edge Plot (Band 66 - 15.0MHz QPSK - Full RB Configuration)

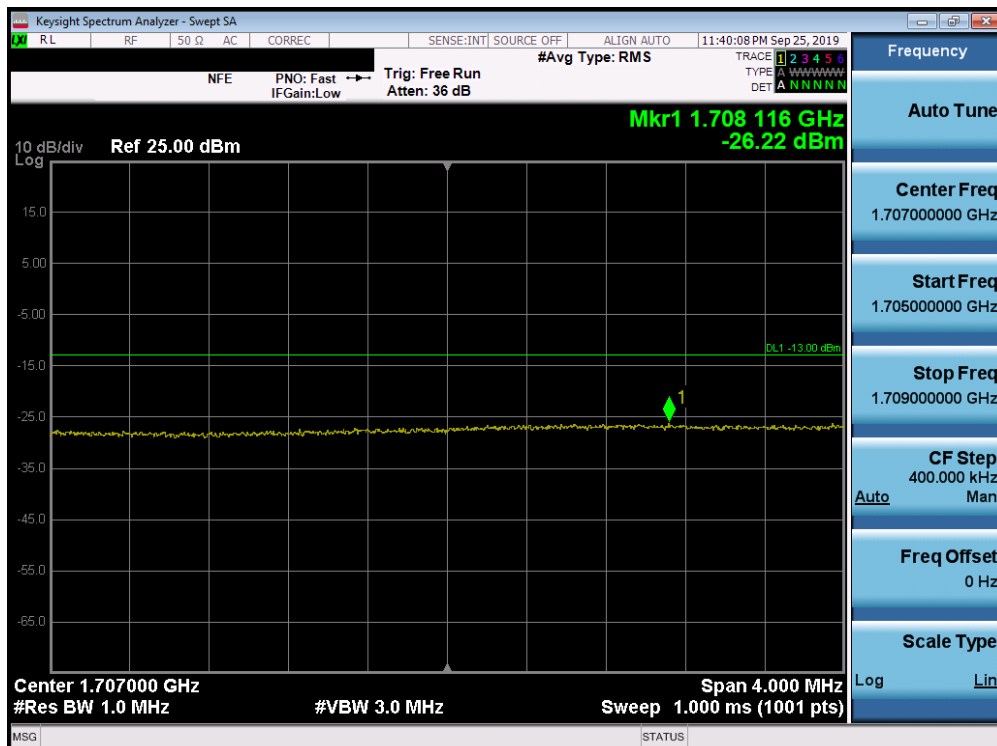


Plot 7-237. Upper Extended Band Edge Plot (Band 66 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 - 10/14/2019	EUT Type: Portable Handset		Page 143 of 244



Plot 7-238. Lower Band Edge Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)

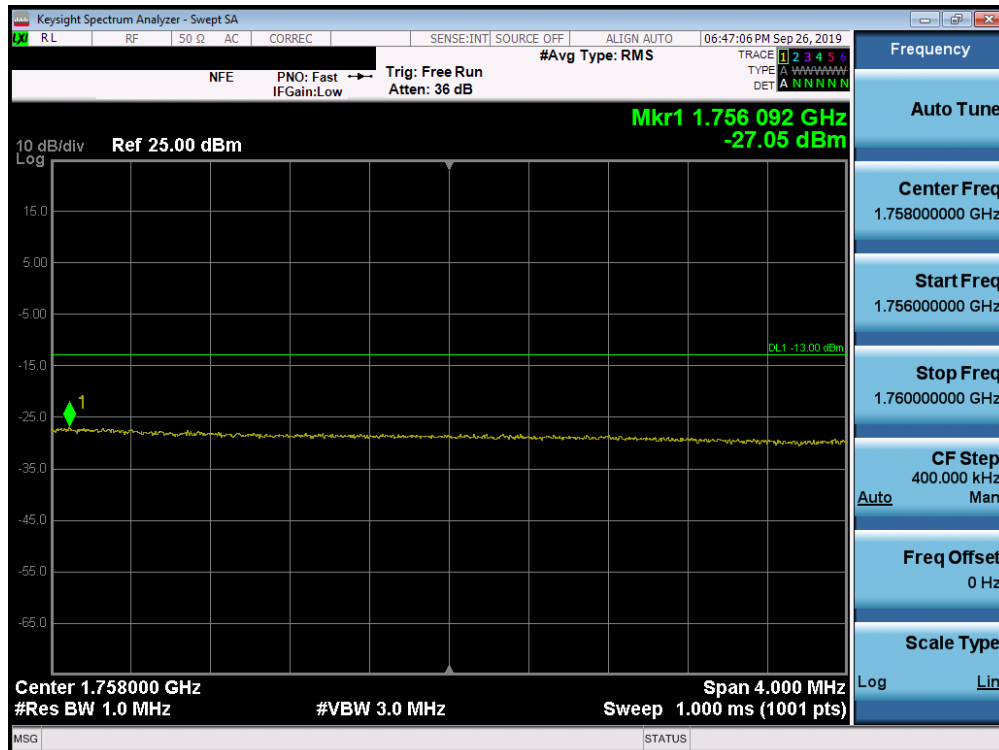


Plot 7-239. Lower Extended Band Edge Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 – 10/14/2019	EUT Type: Portable Handset		Page 144 of 244



Plot 7-240. Upper Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)

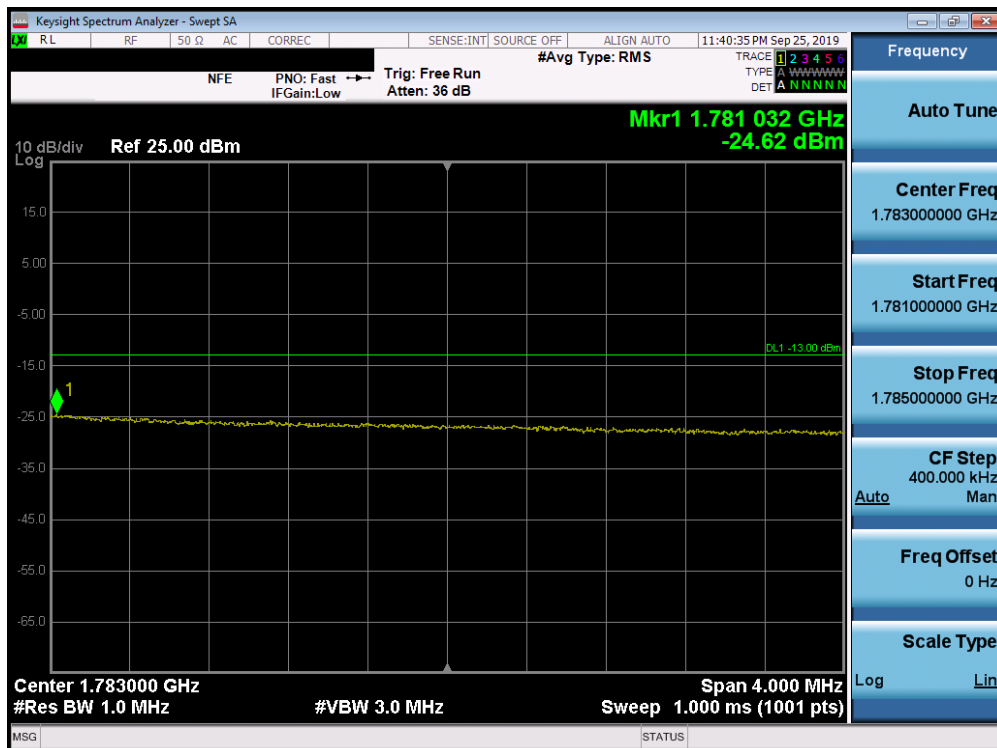


Plot 7-241. Upper Extended Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 - 10/14/2019	EUT Type: Portable Handset		Page 145 of 244



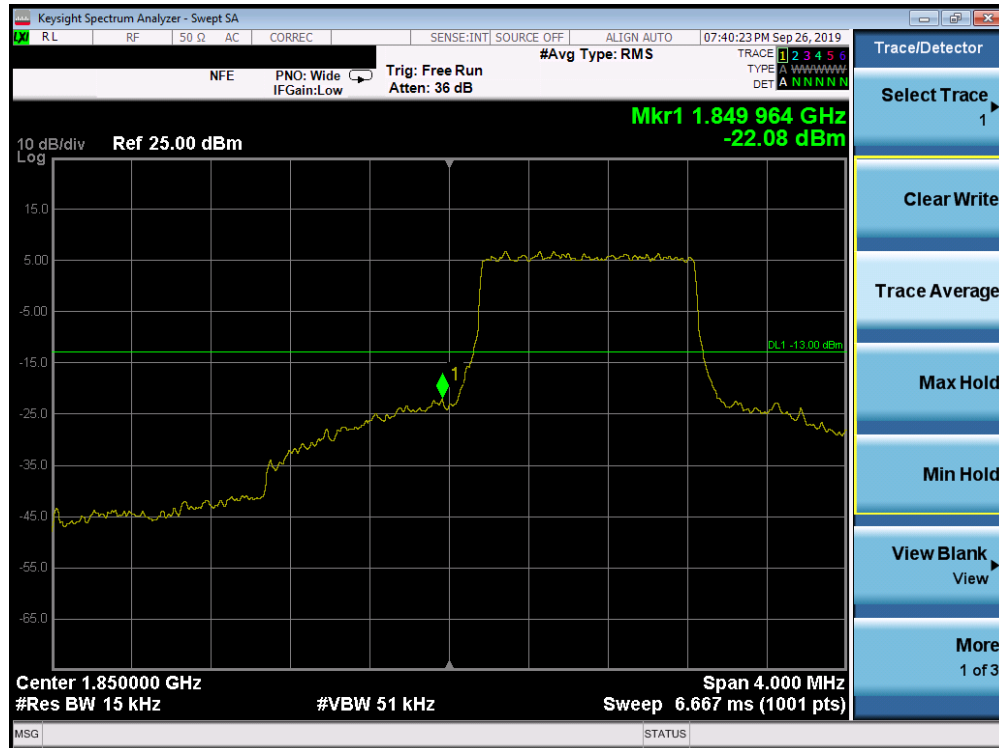
Plot 7-242. Upper Band Edge Plot (Band 66 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-243. Upper Extended Band Edge Plot (Band 66 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 - 10/14/2019	EUT Type: Portable Handset		Page 146 of 244

## Band 25/2



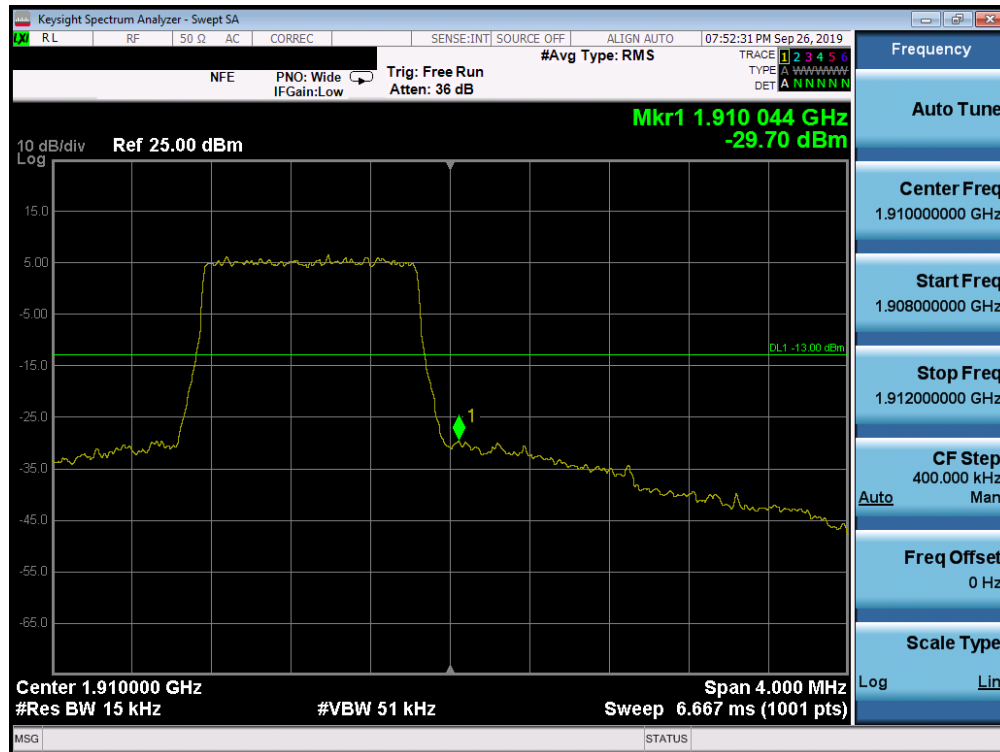
Plot 7-244. Lower Band Edge Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)



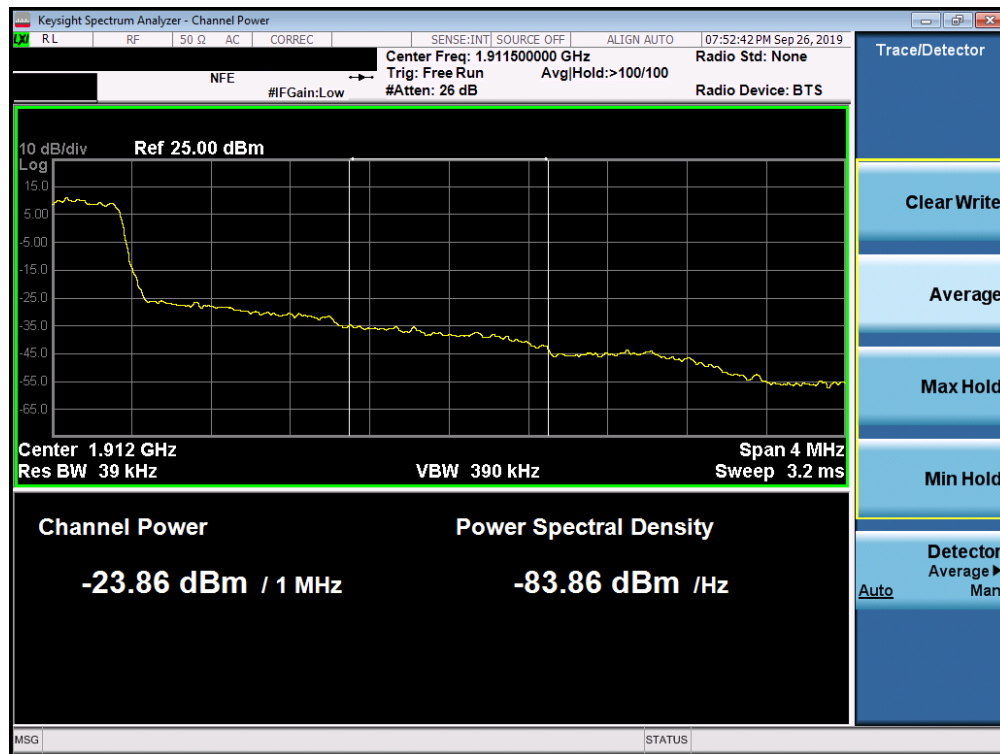
Plot 7-245. Lower Extended Band Edge Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 - 10/14/2019	EUT Type: Portable Handset		Page 147 of 244





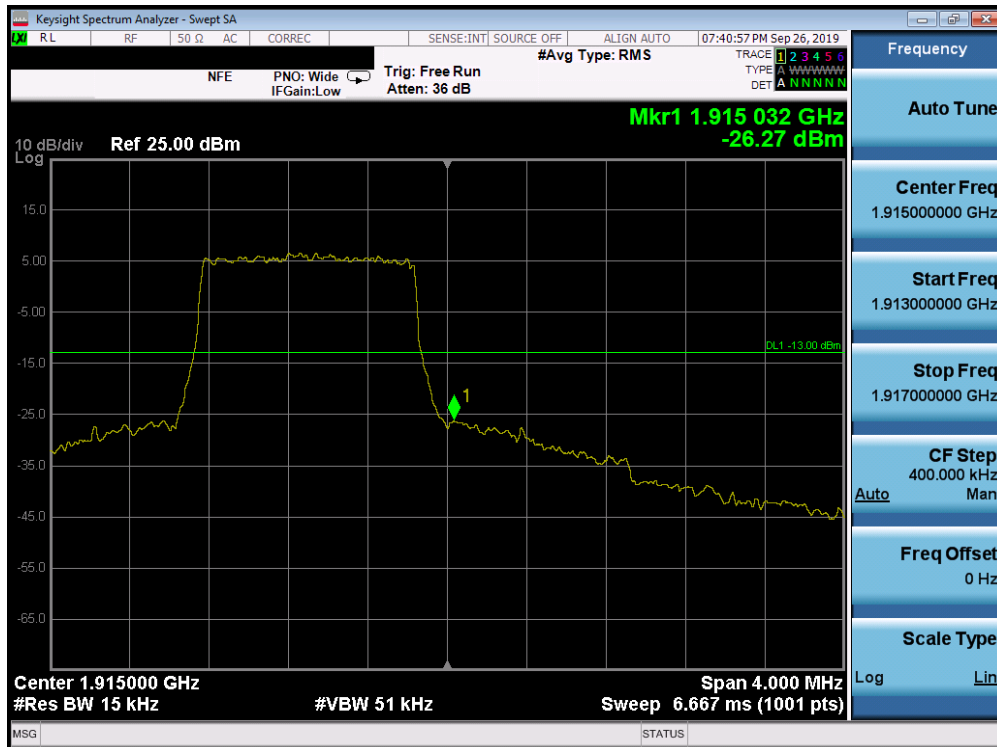
Plot 7-246. Upper Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)



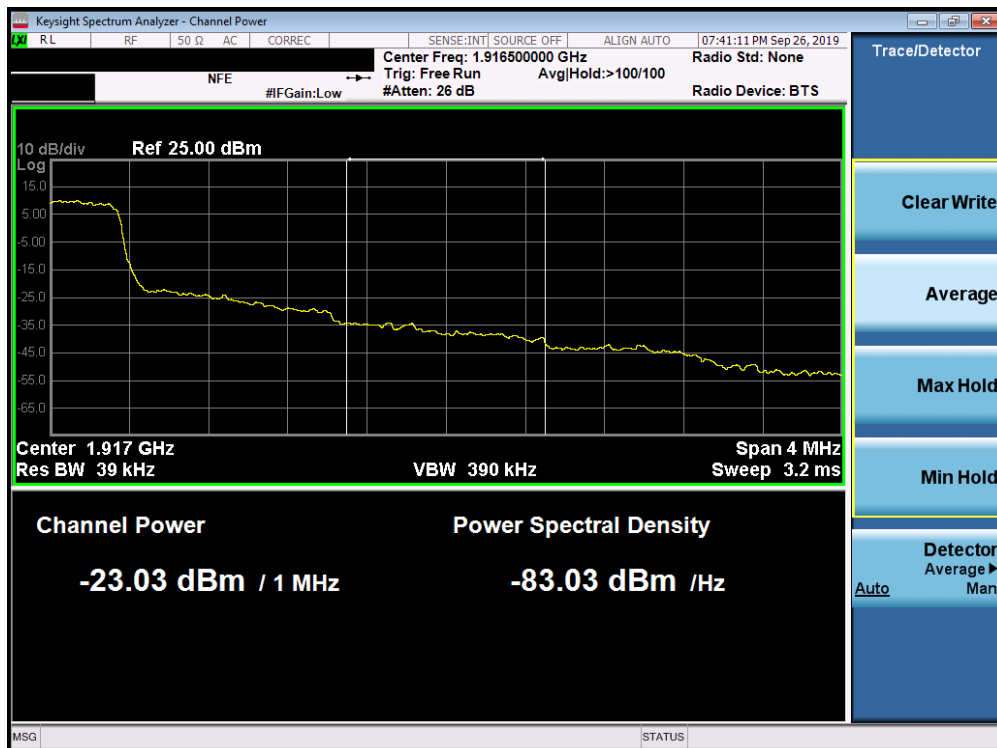
Plot 7-247. Upper Extended Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 - 10/14/2019	EUT Type: Portable Handset		Page 148 of 244



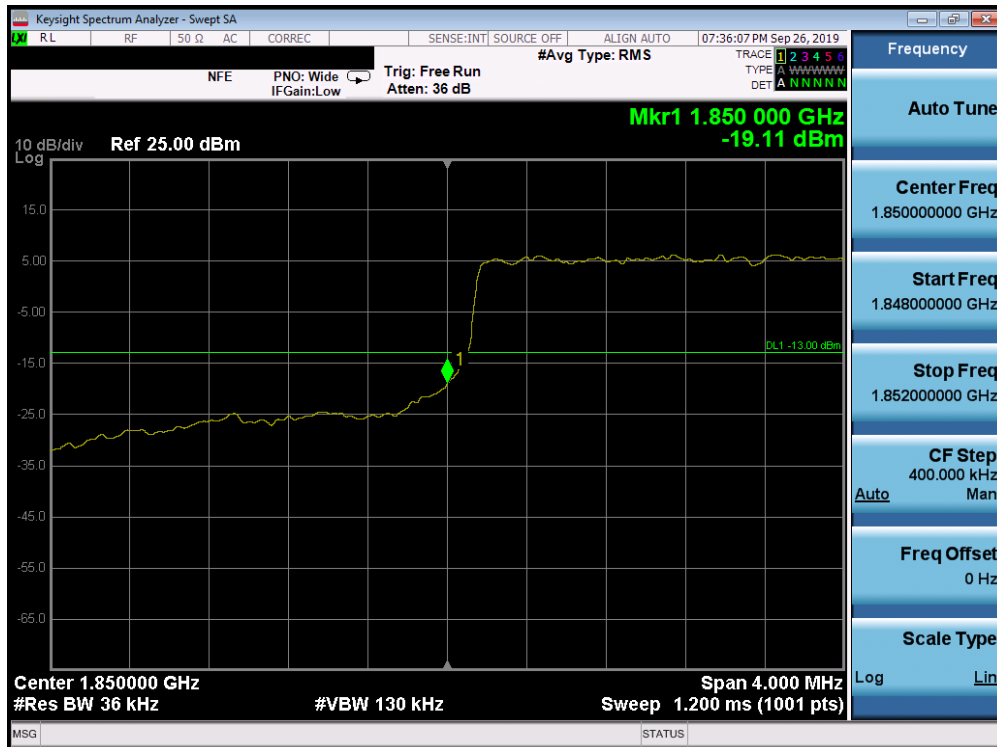


Plot 7-248. Upper Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)

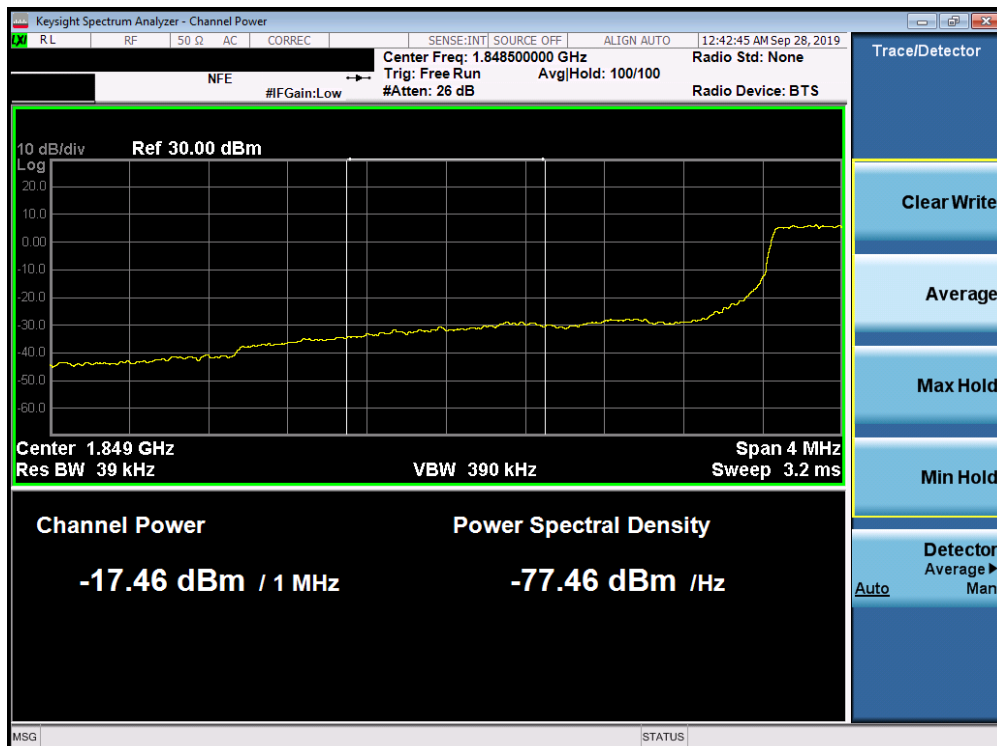


Plot 7-249. Upper Extended Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	<b>LG</b>	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 - 10/14/2019	EUT Type: Portable Handset		Page 149 of 244

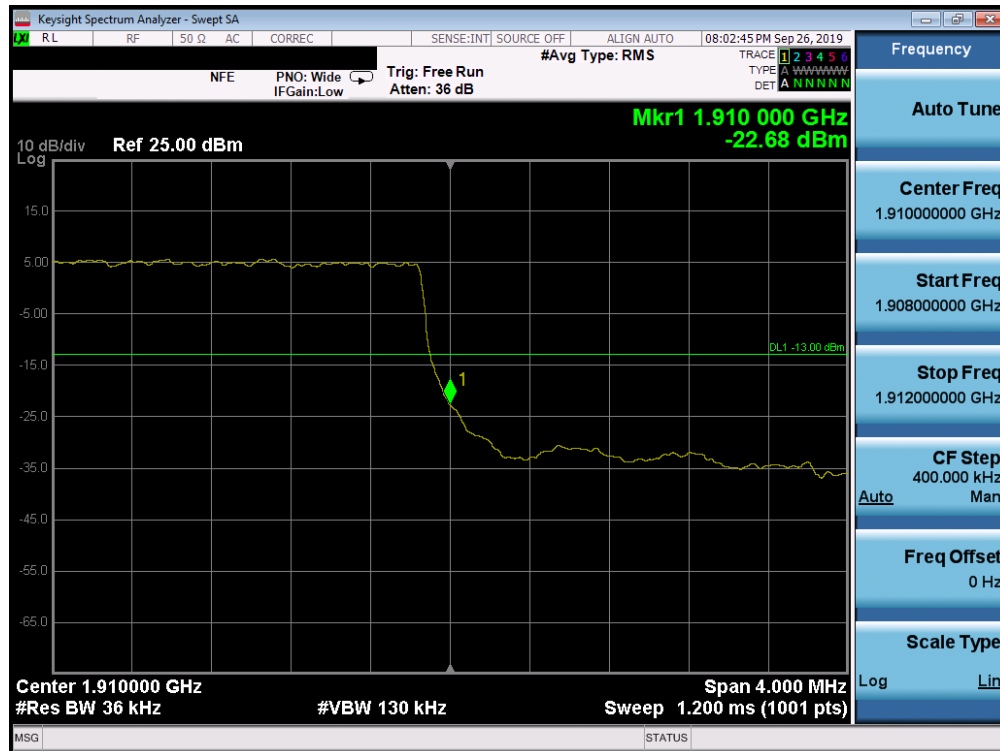


Plot 7-250. Lower Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

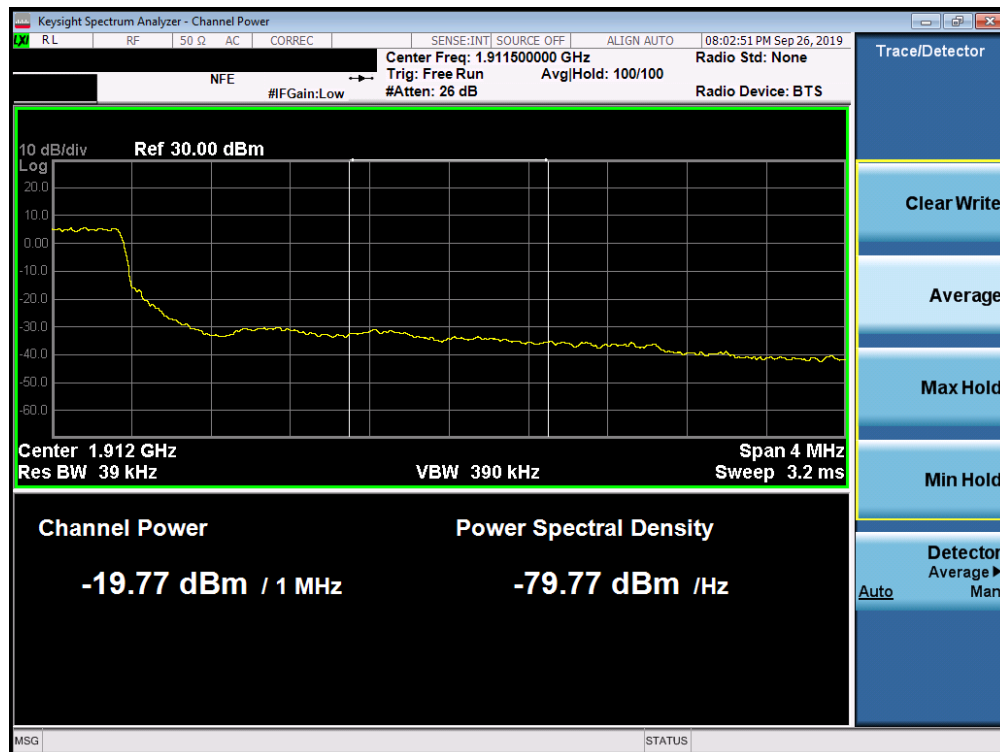


Plot 7-251. Lower Extended Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 - 10/14/2019	EUT Type: Portable Handset		Page 150 of 244



Plot 7-252. Upper Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

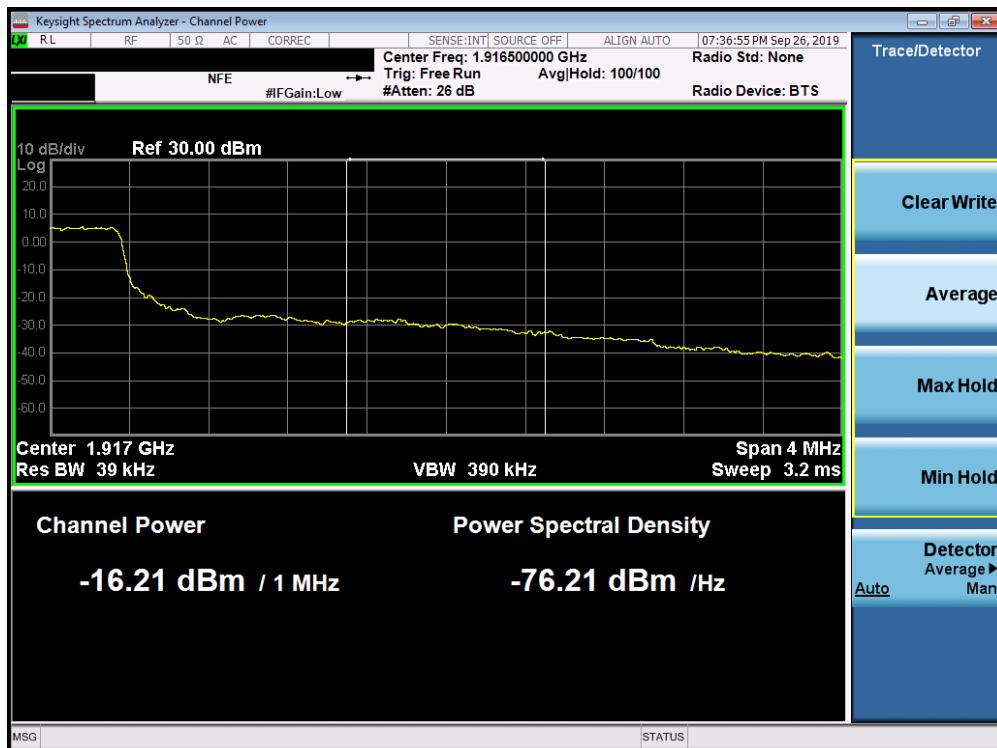


Plot 7-253. Upper Extended Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	<b>LG</b>	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 - 10/14/2019	EUT Type: Portable Handset		Page 151 of 244

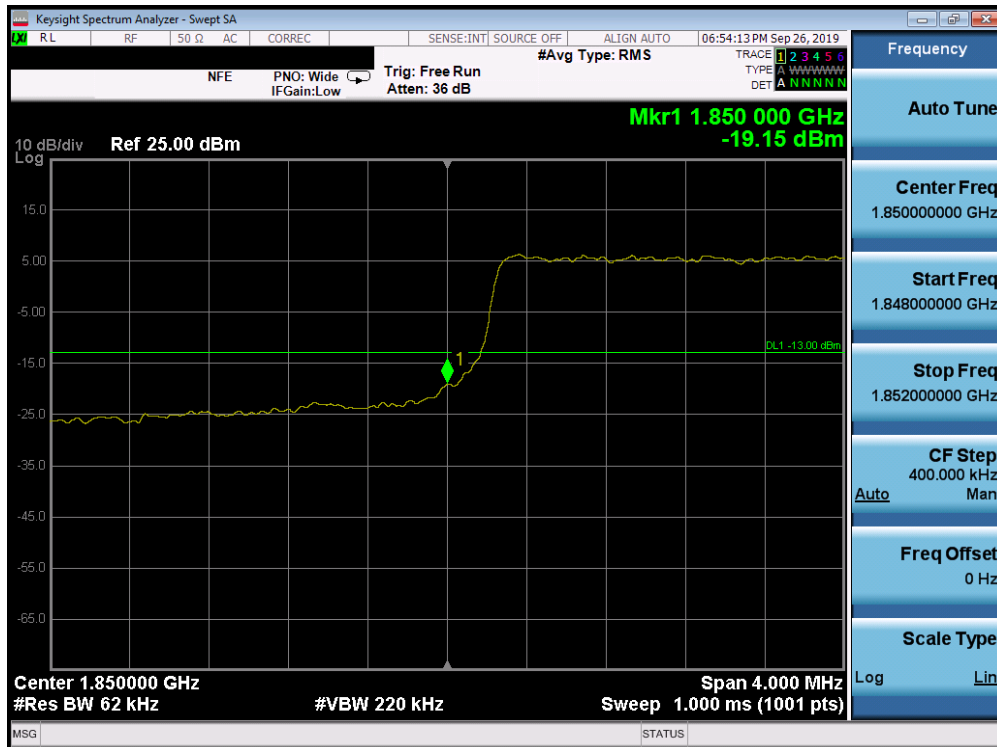


Plot 7-254. Upper Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)

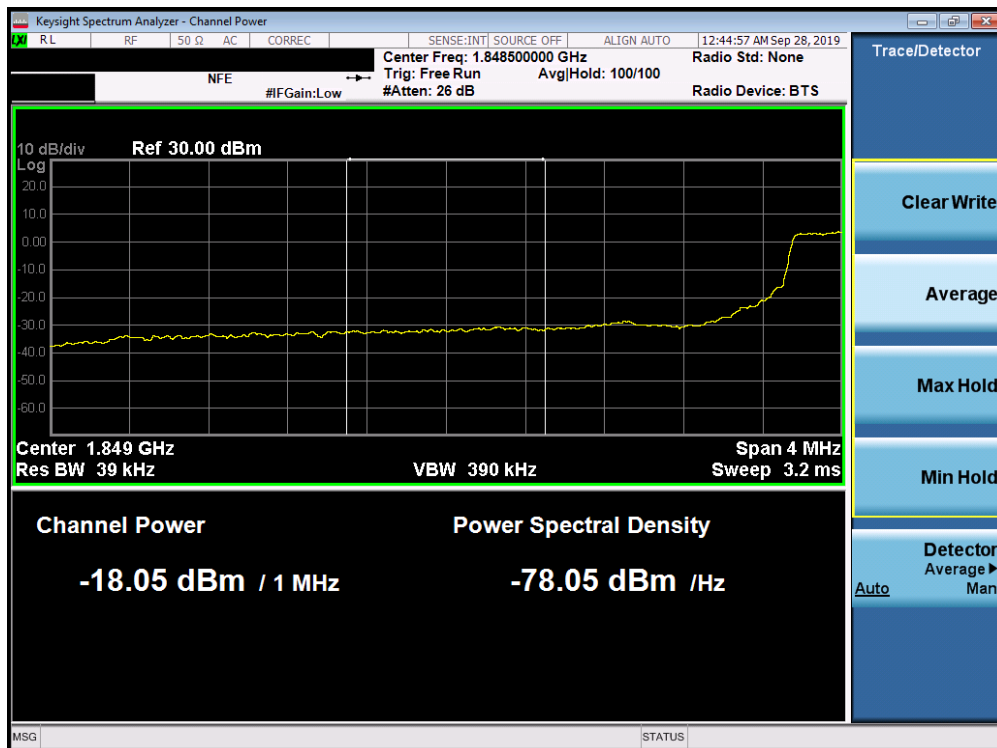


Plot 7-255. Upper Extended Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 - 10/14/2019	EUT Type: Portable Handset		Page 152 of 244

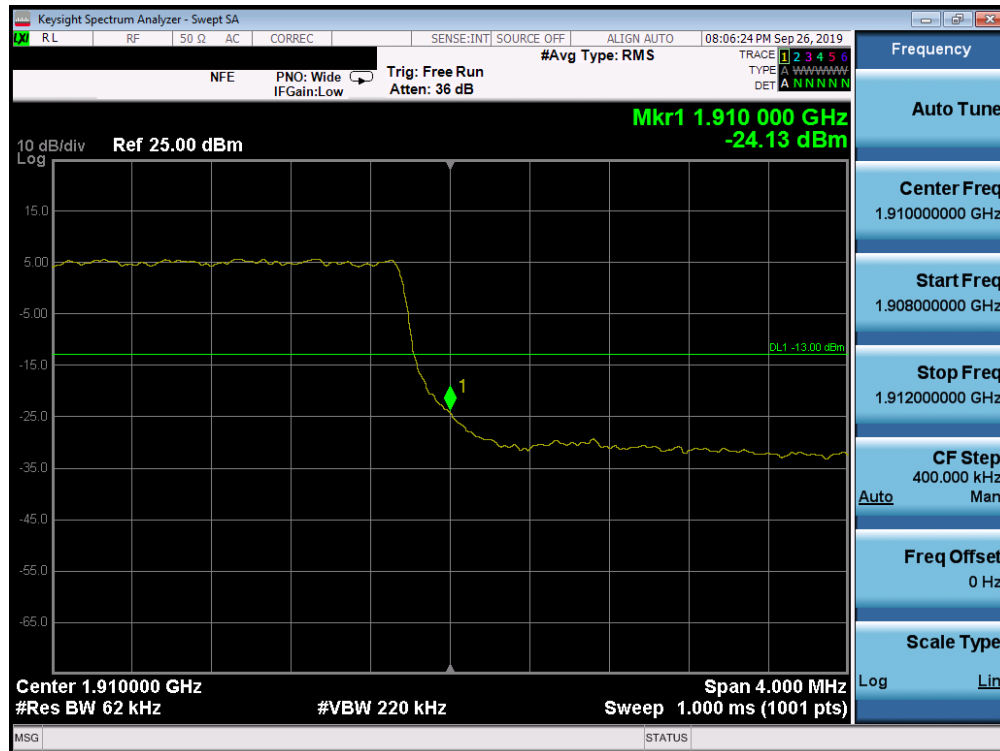


Plot 7-256. Lower Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

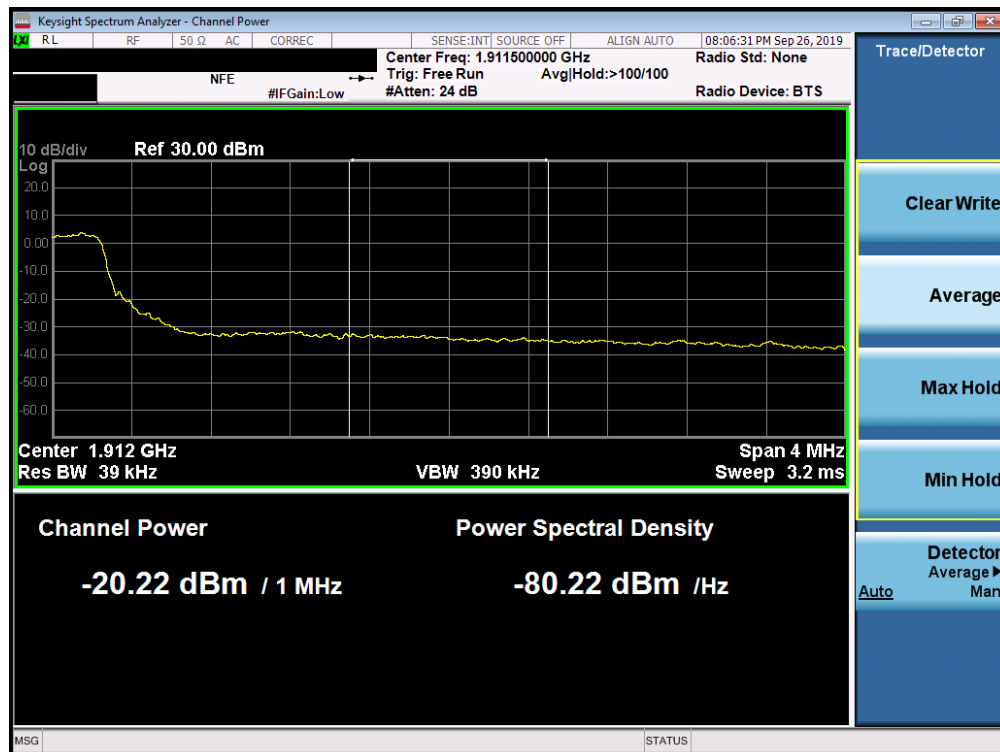


Plot 7-257. Lower Extended Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 - 10/14/2019	EUT Type: Portable Handset		Page 153 of 244

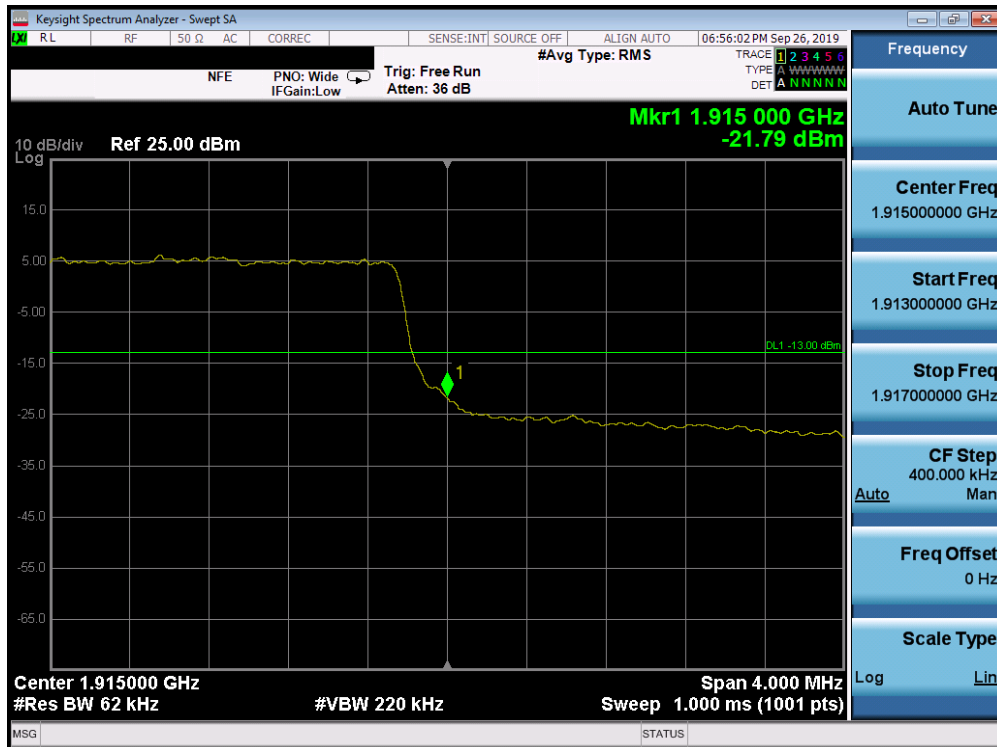


Plot 7-258. Upper Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

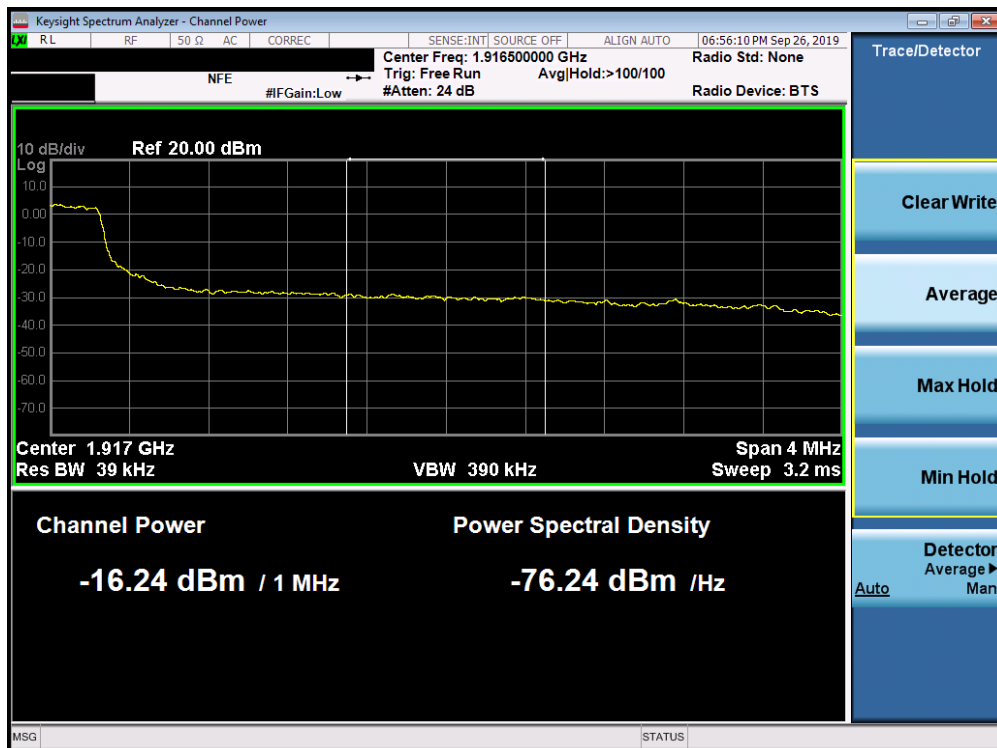


Plot 7-259. Upper Extended Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	LG	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 - 10/14/2019	EUT Type: Portable Handset		Page 154 of 244



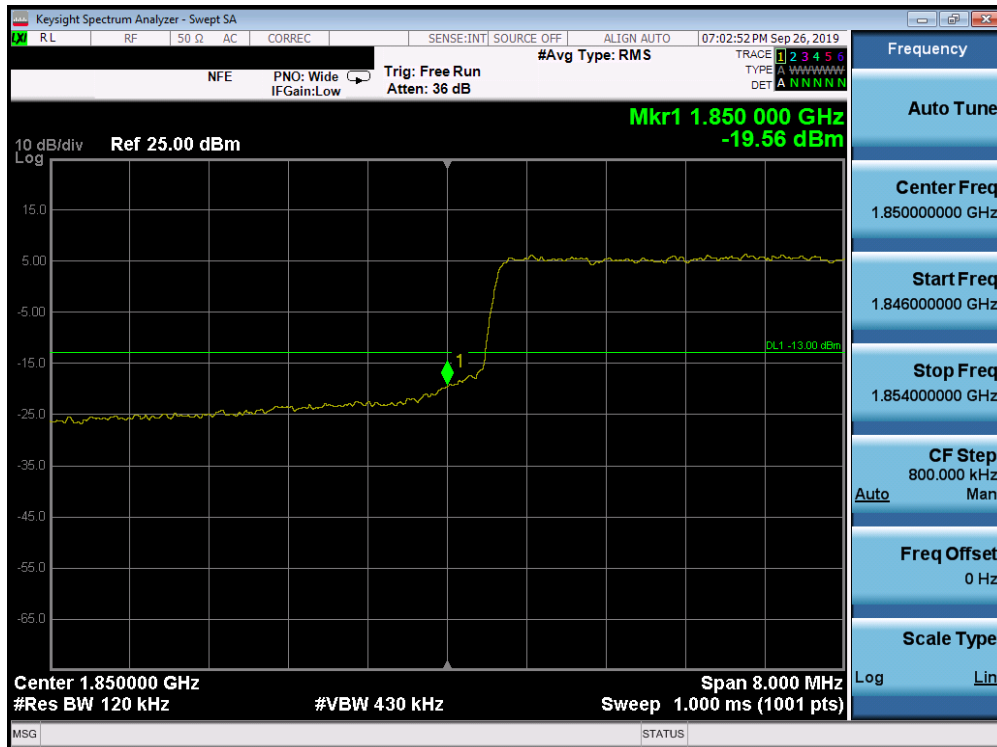
Plot 7-260. Upper Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)



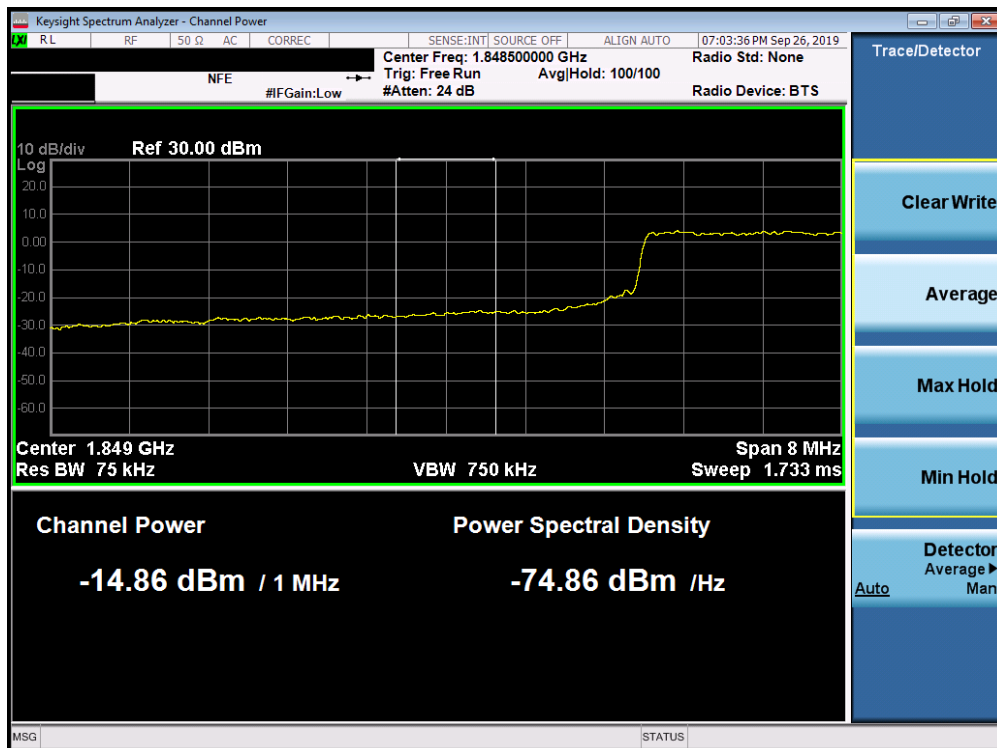
Plot 7-261. Upper Extended Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	<b>LG</b>	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 - 10/14/2019	EUT Type: Portable Handset		Page 155 of 244





Plot 7-262. Lower Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-263. Lower Extended Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: ZNFQ620WA	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	<b>LG</b>	Approved by: Quality Manager
Test Report S/N: 1M1909120153-03-R1.ZNF	Test Dates: 9/12 - 10/14/2019	EUT Type: Portable Handset		Page 156 of 244