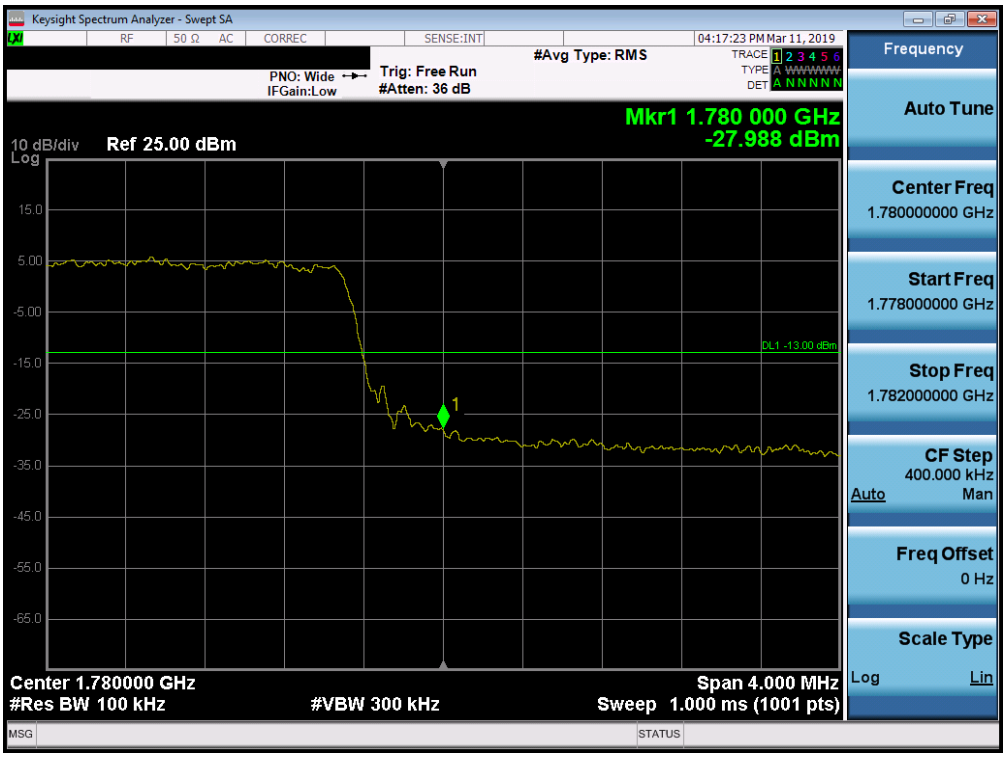
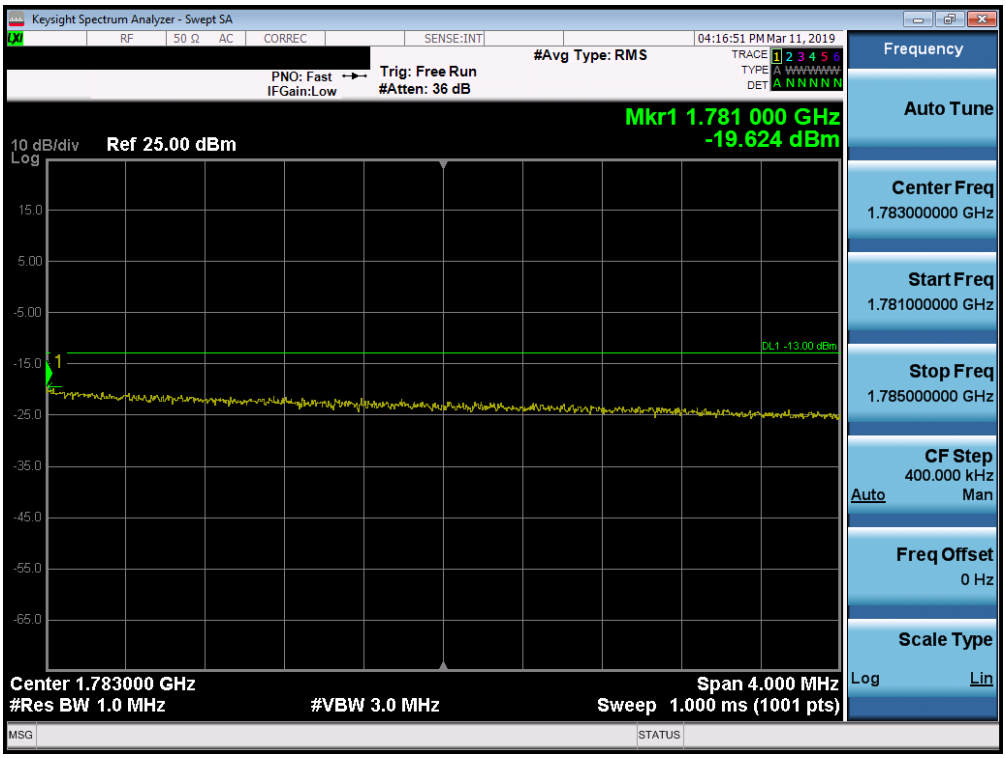
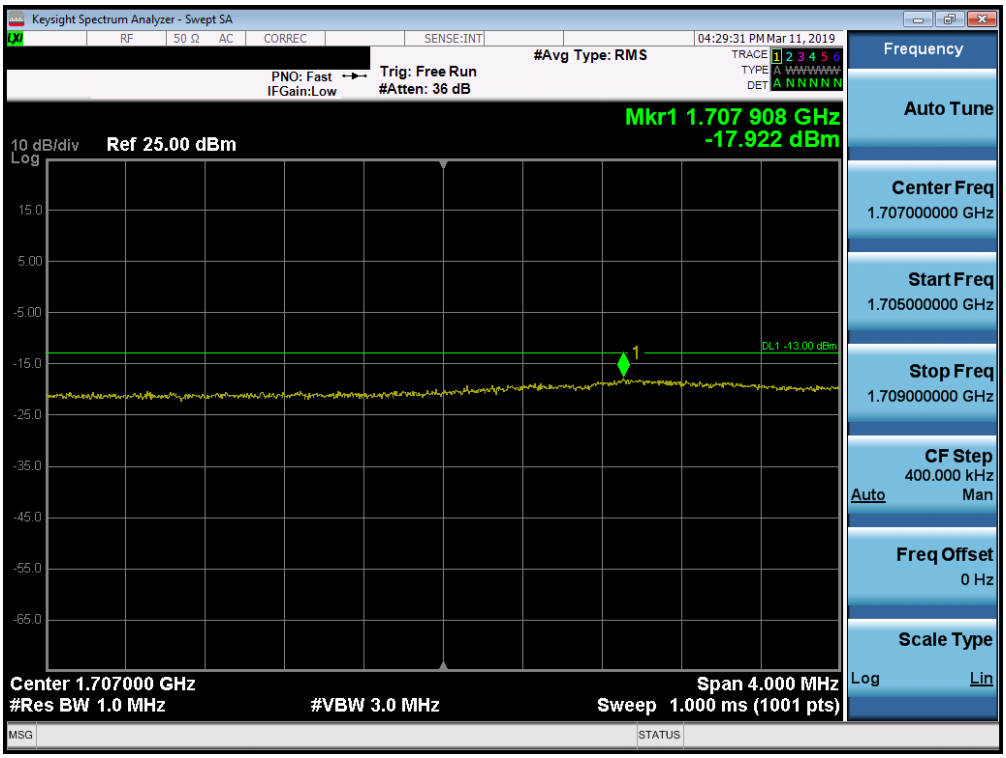


Plot 7-215. Upper Band Edge Plot (Band 66 - 10.0MHz QPSK - Full RB Configuration)



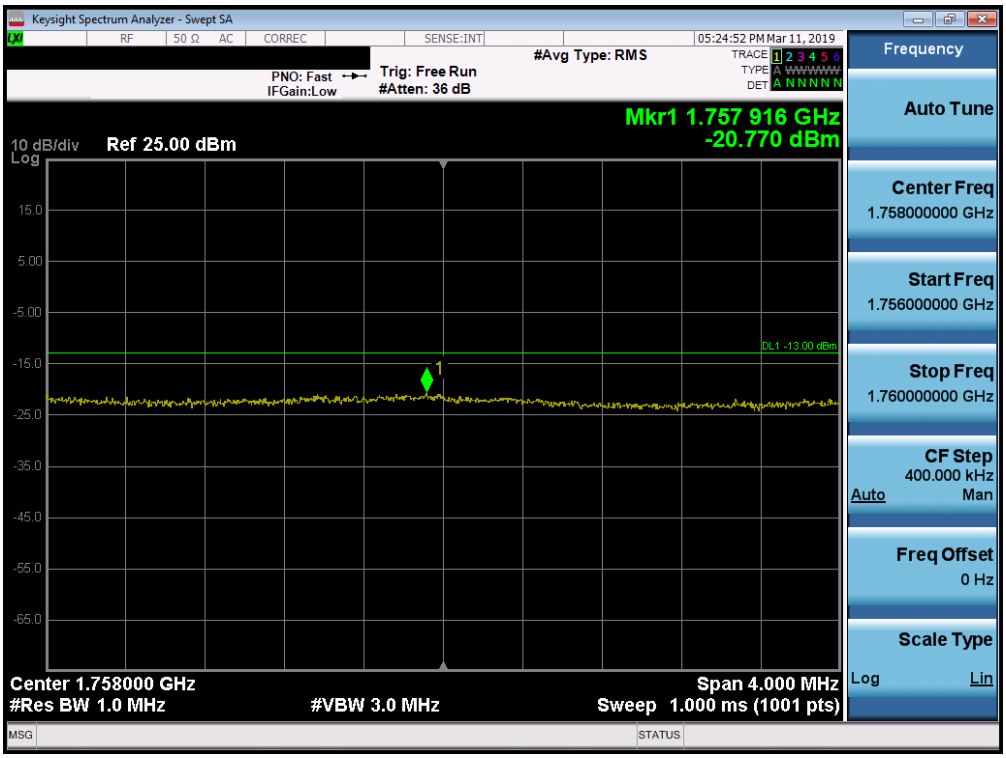
Plot 7-216. Upper Extended Band Edge Plot (Band 66 - 10.0MHz QPSK - Full RB Configuration)

Plot 7-217. Lower Band Edge Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)



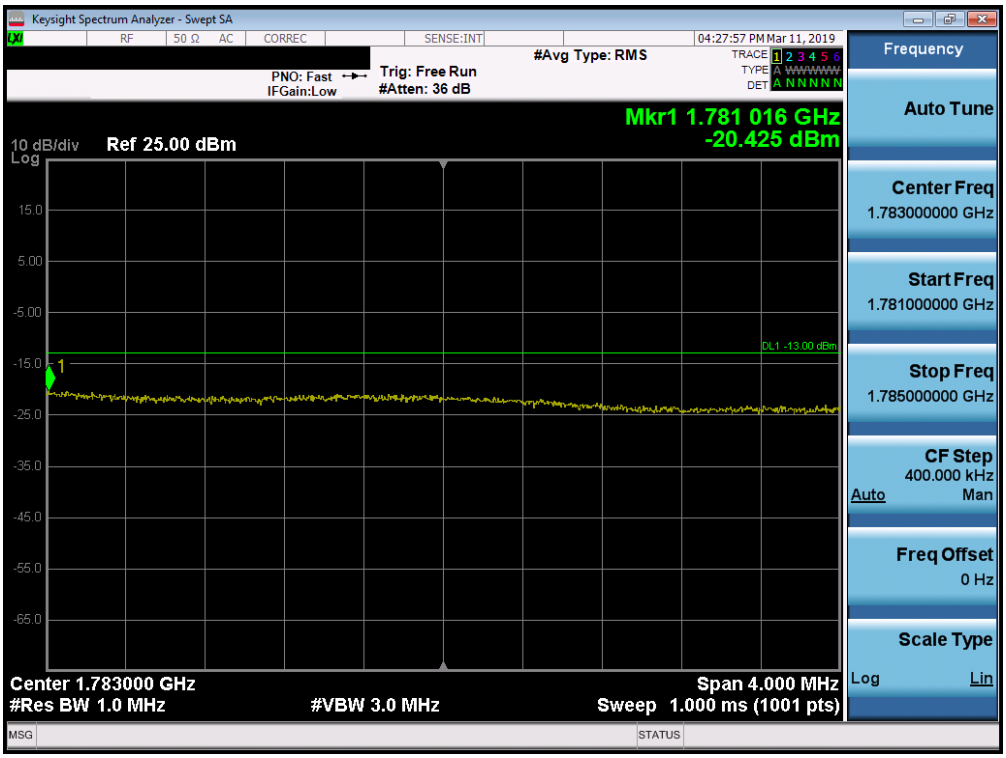
Plot 7-218. Lower Extended Band Edge Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)

Plot 7-219. Upper Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)

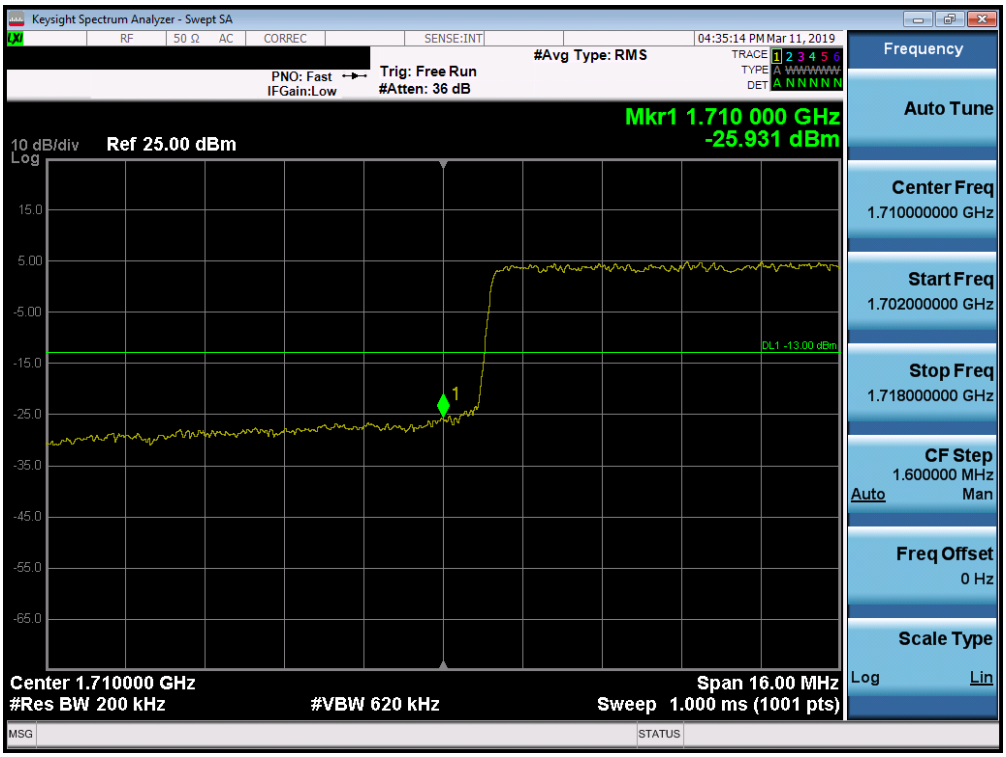


Plot 7-220. Upper Extended Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)

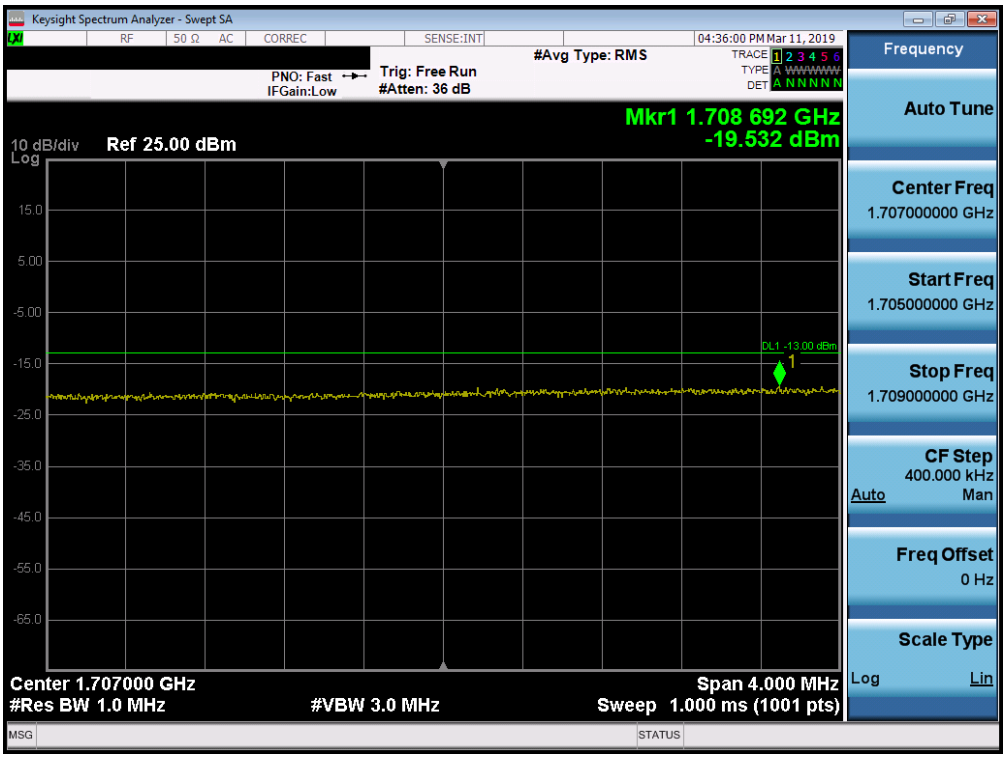
Plot 7-221. Upper Band Edge Plot (Band 66 - 15.0MHz QPSK - Full RB Configuration)



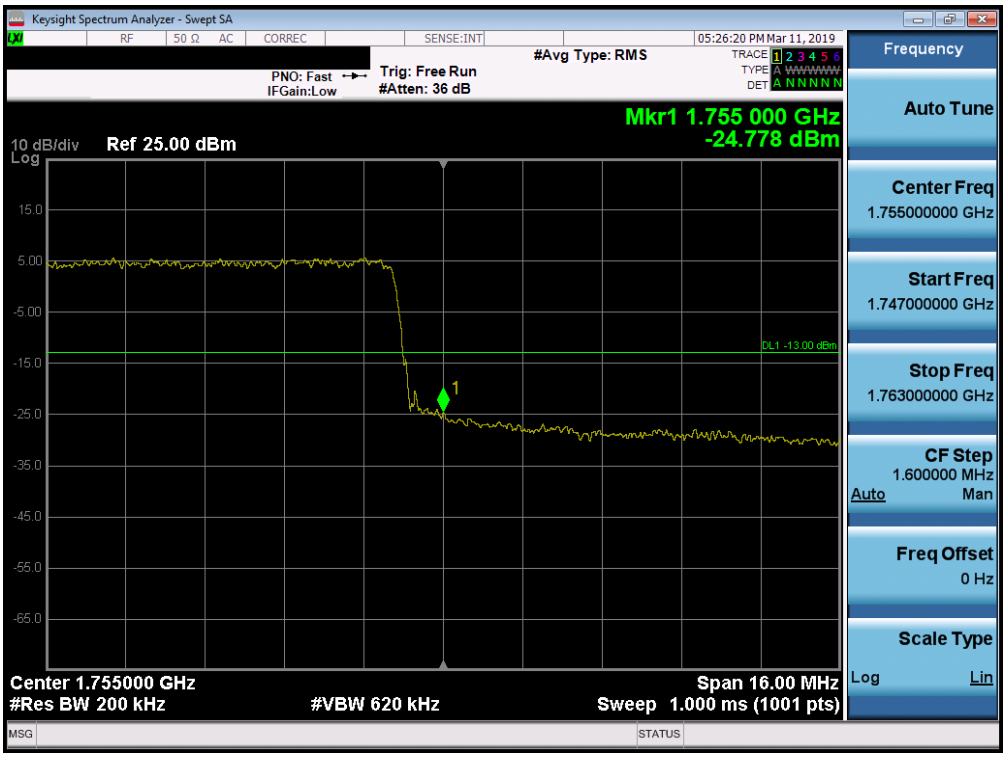
Plot 7-222. Upper Extended Band Edge Plot (Band 66 - 15.0MHz QPSK - Full RB Configuration)



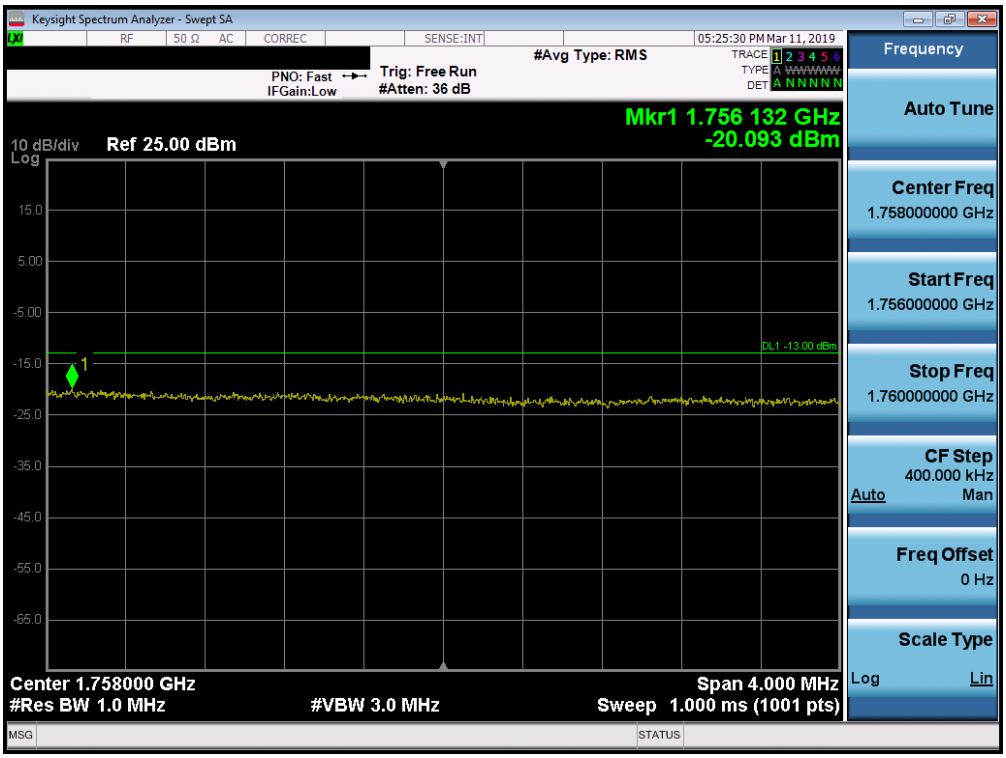
Plot 7-223. Lower Band Edge Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)



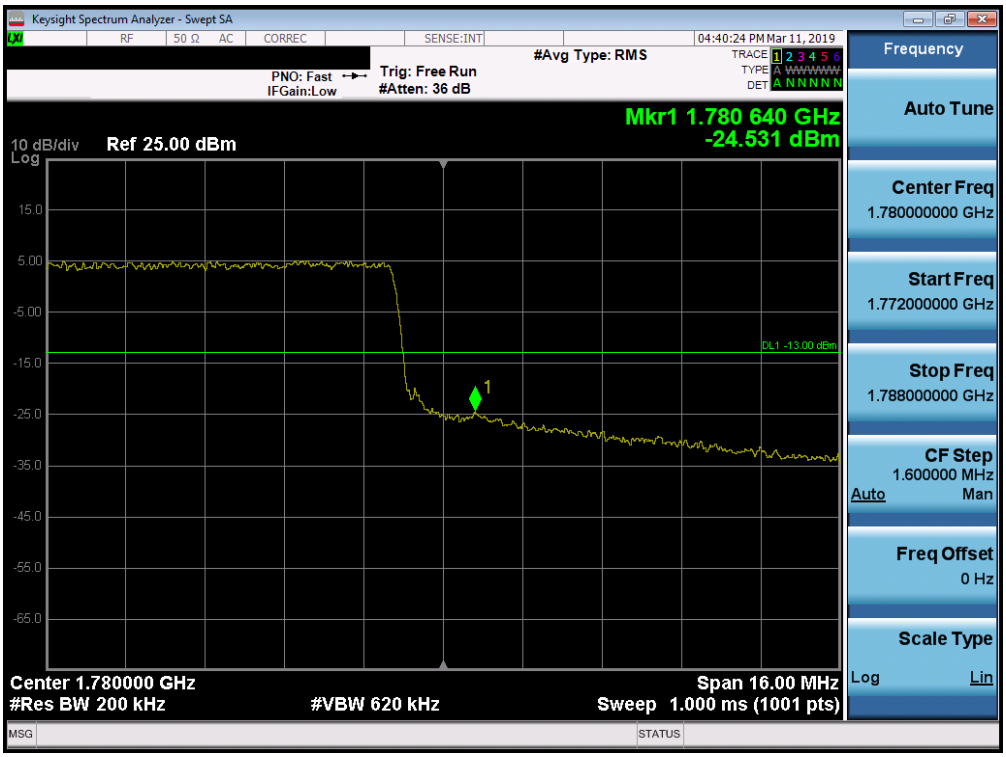
Plot 7-224. Lower Extended Band Edge Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)



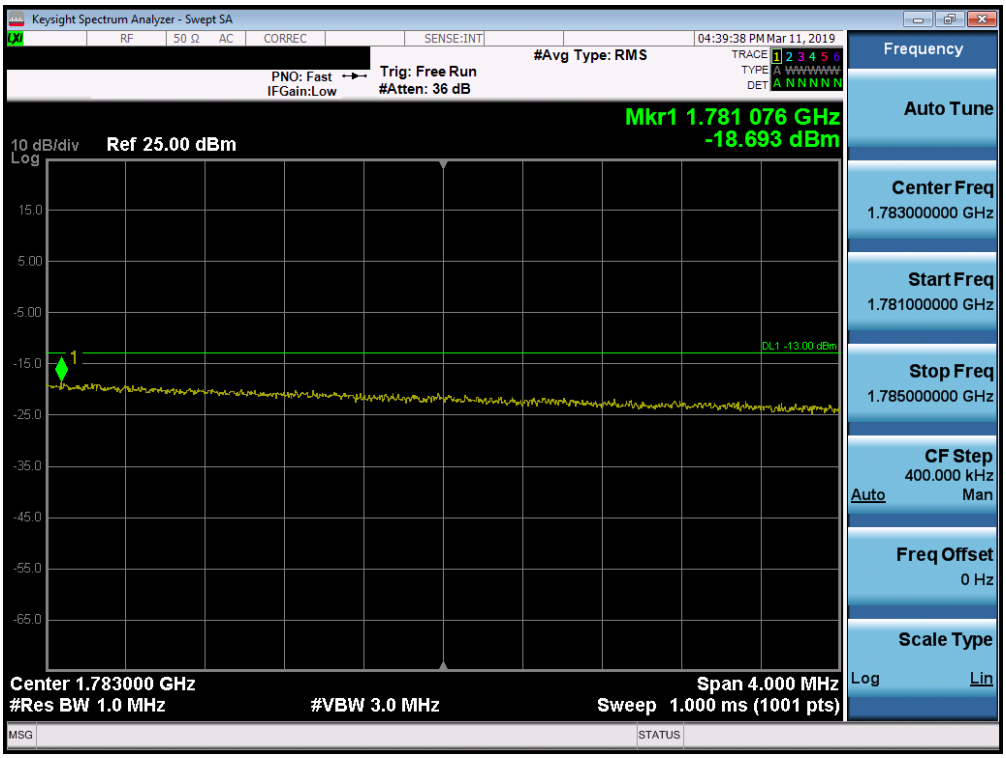
Plot 7-225. Upper Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-226. Upper Extended Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)

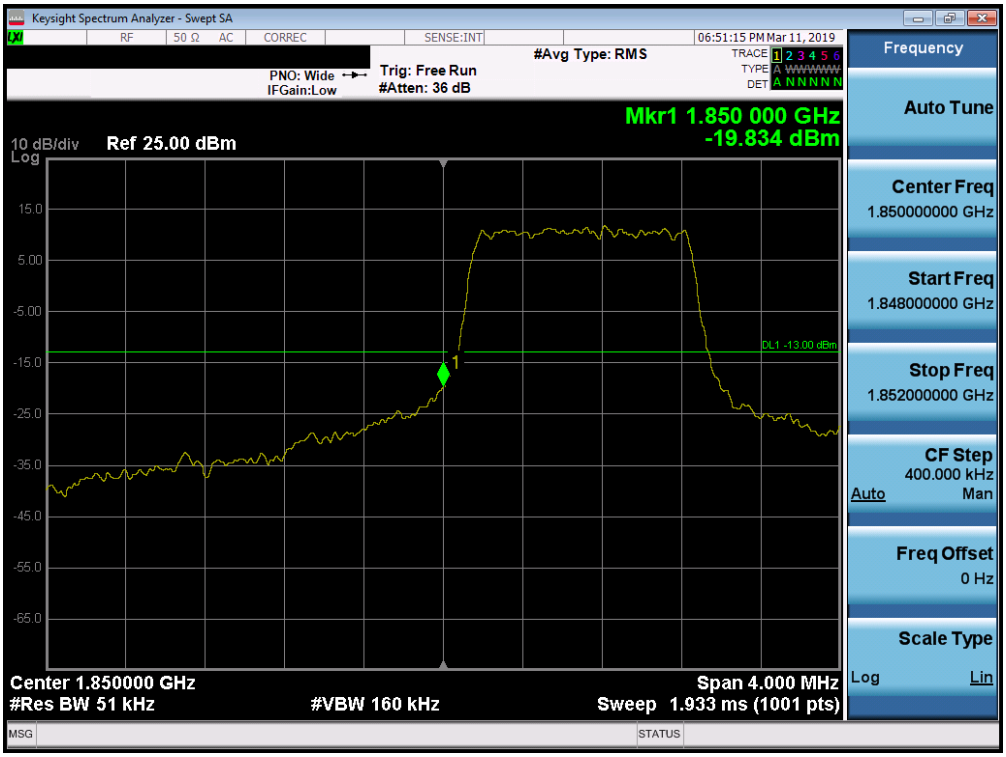


Plot 7-227. Upper Band Edge Plot (Band 66 - 20.0MHz QPSK - Full RB Configuration)

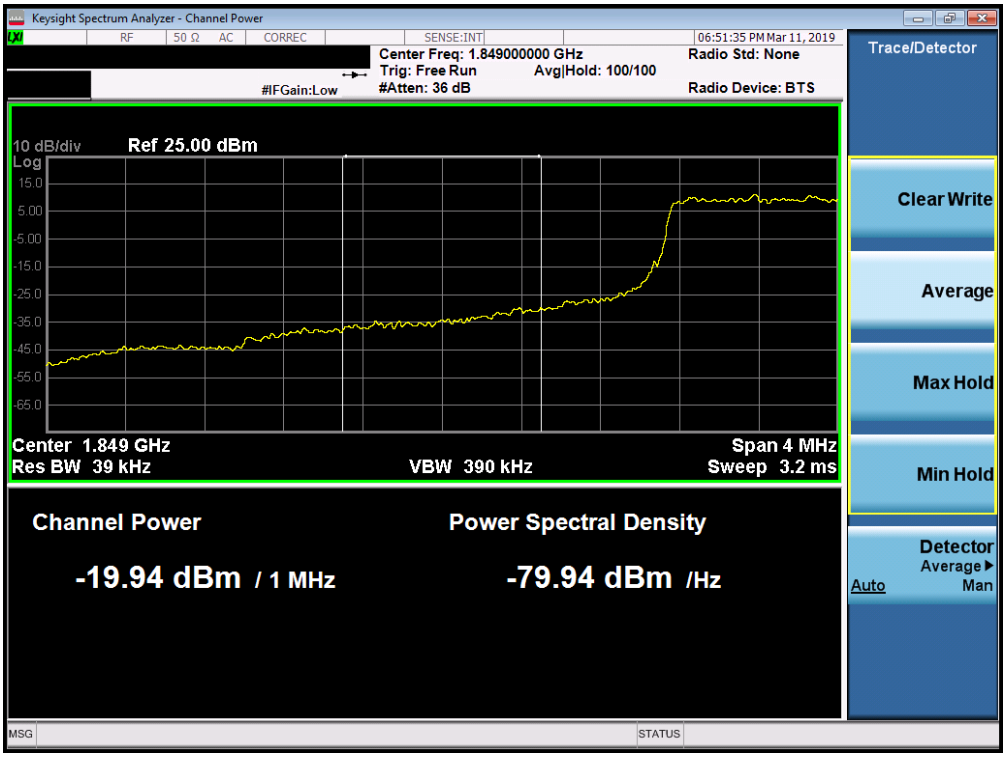


Plot 7-228. Upper Extended Band Edge Plot (Band 66 - 20.0MHz QPSK - Full RB Configuration)

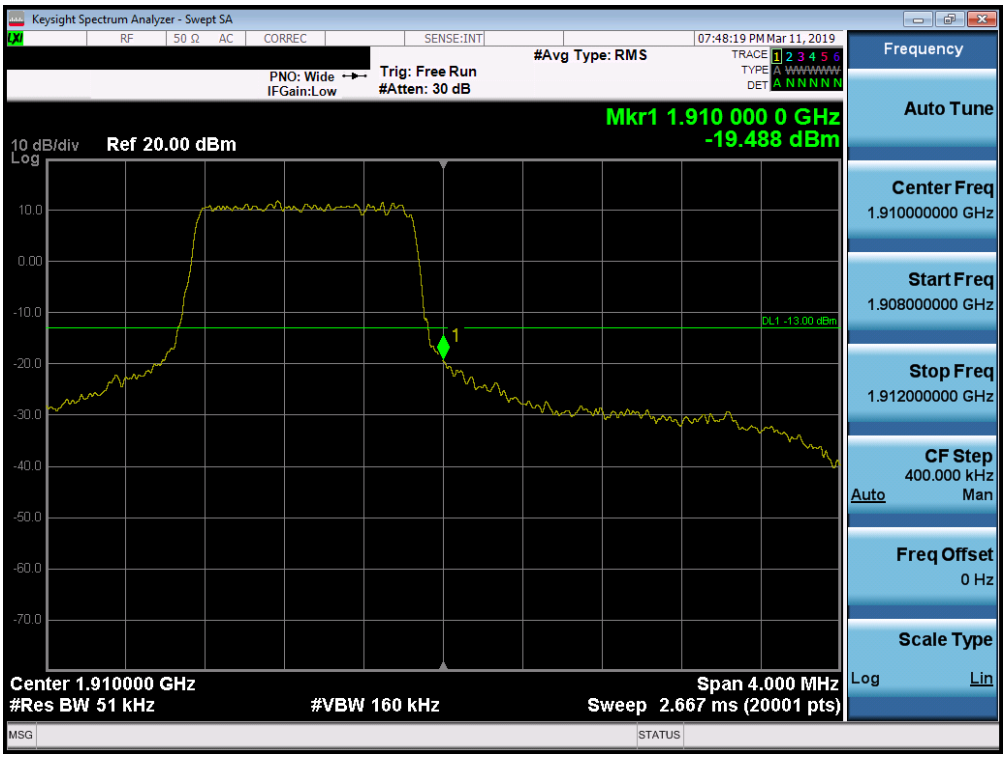
Band 25/2



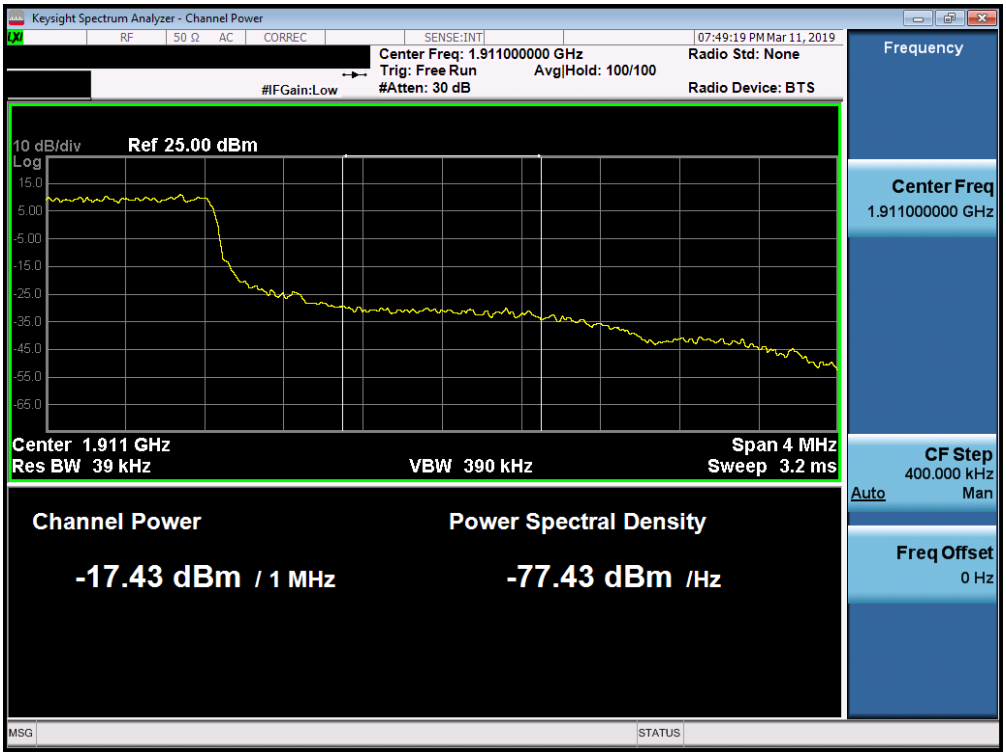
Plot 7-229. Lower Band Edge Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)



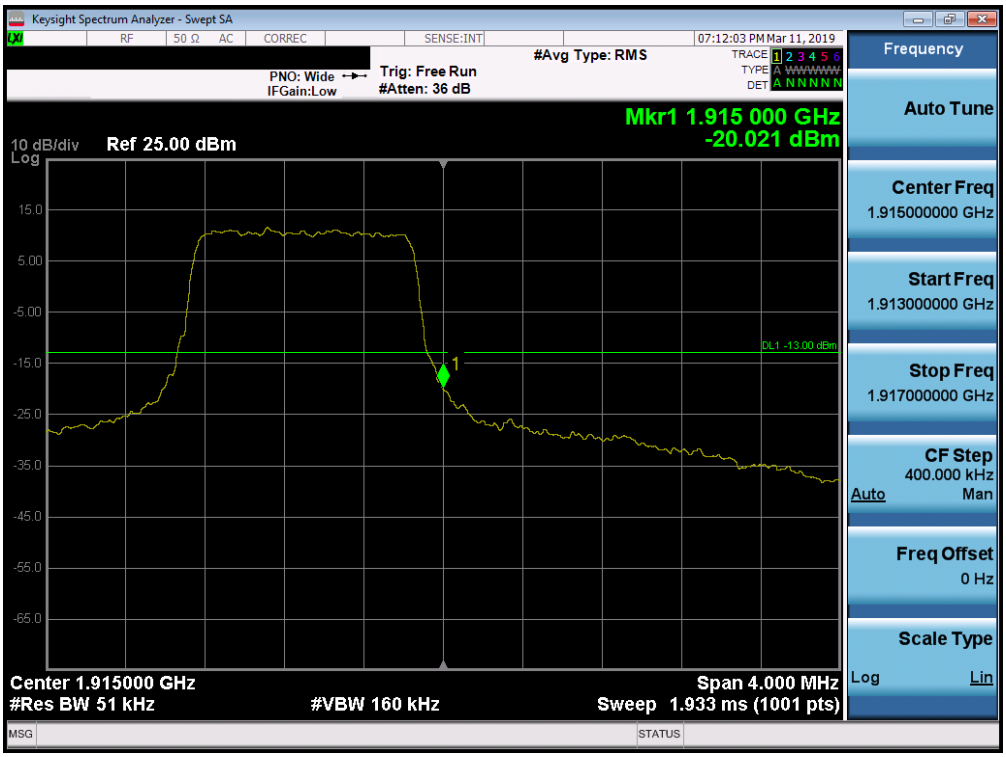
Plot 7-230. Lower Extended Band Edge Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)



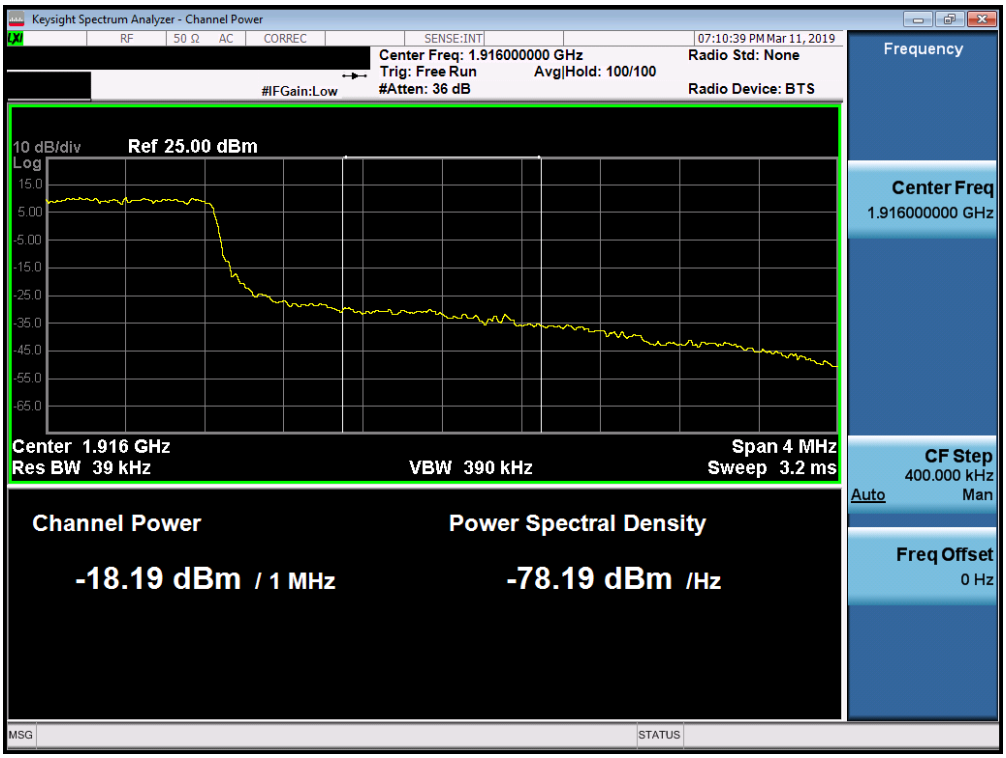
Plot 7-231. Upper Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)



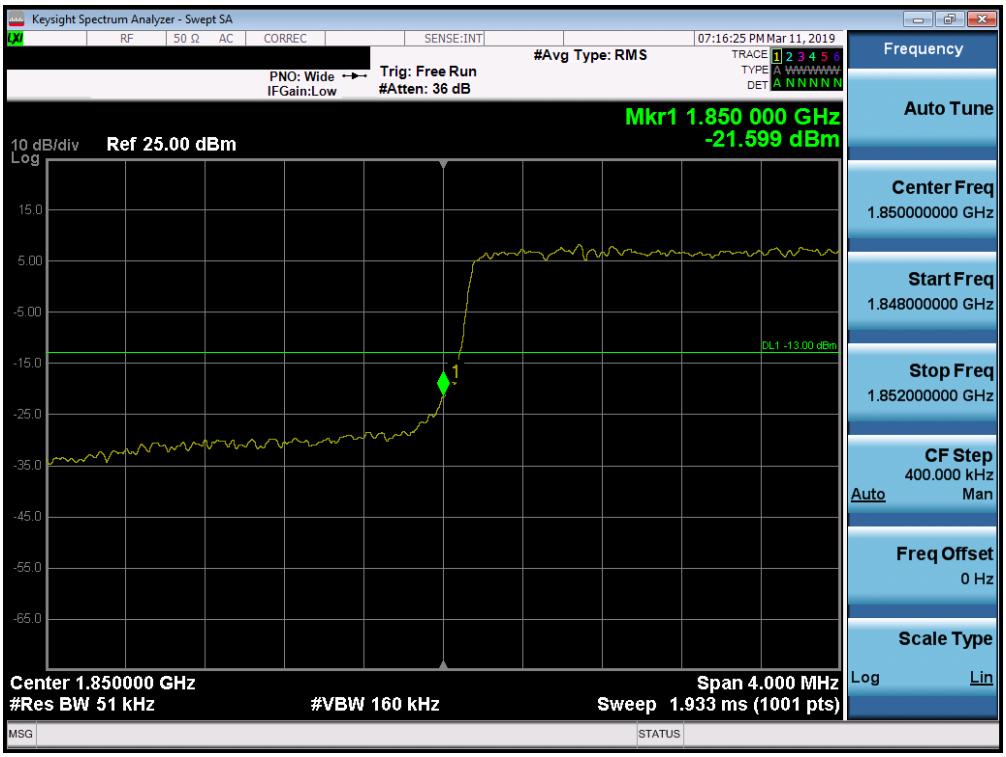
Plot 7-232. Upper Extended Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)



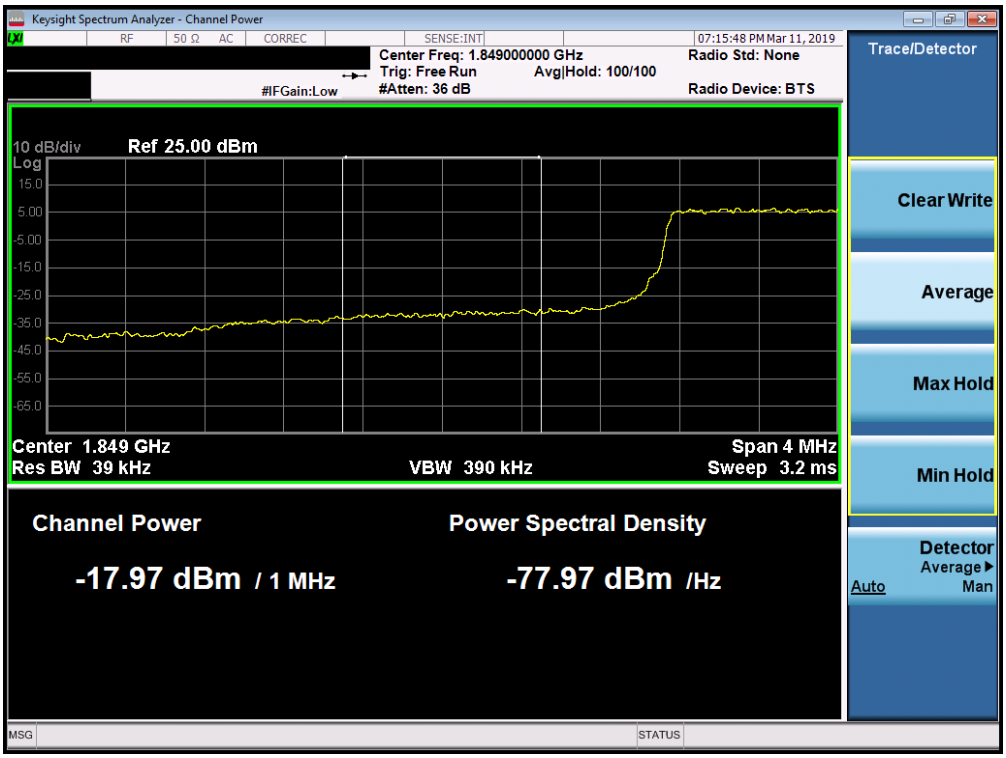
Plot 7-233. Upper Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)



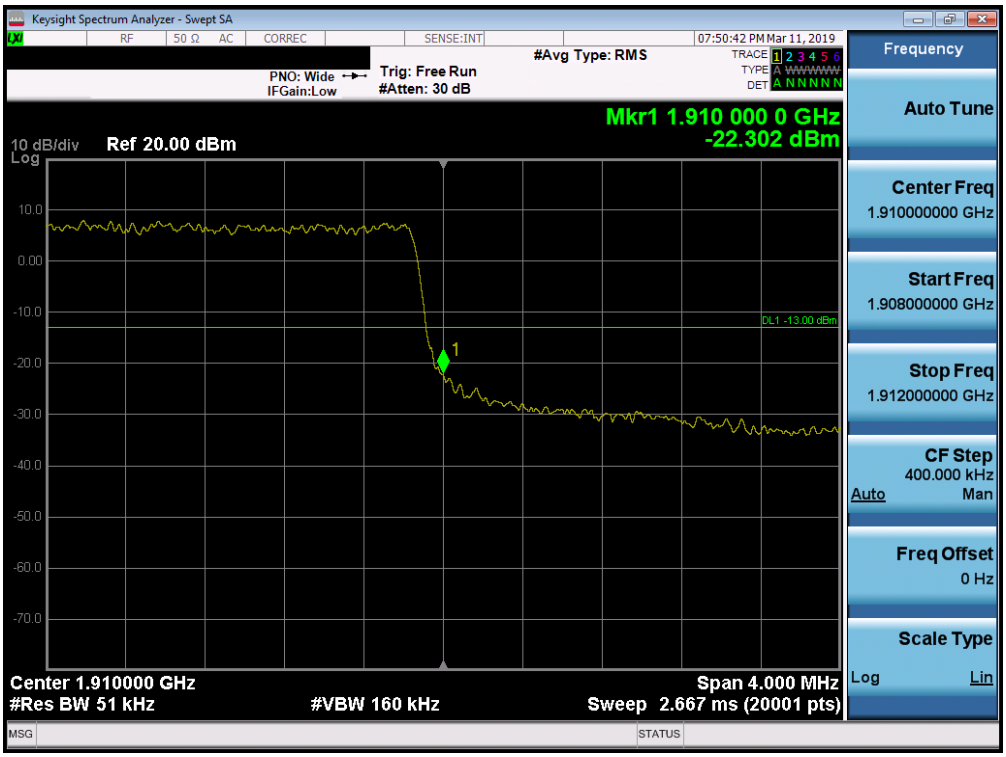
Plot 7-234. Upper Extended Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)



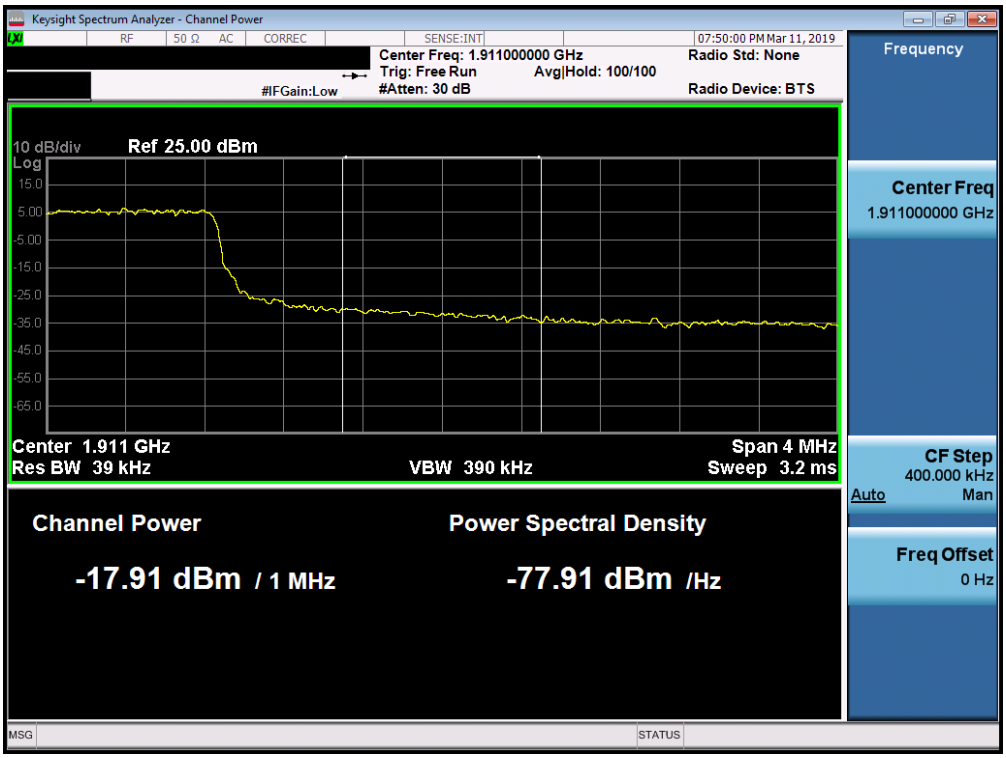
Plot 7-235. Lower Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)



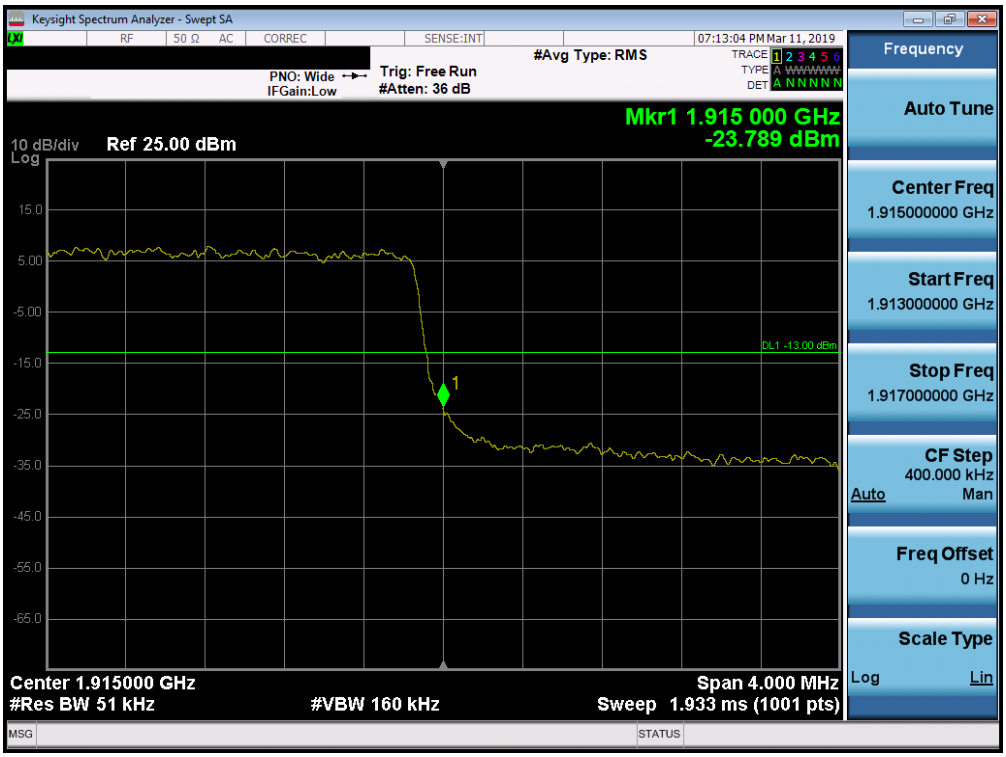
Plot 7-236. Lower Extended Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)



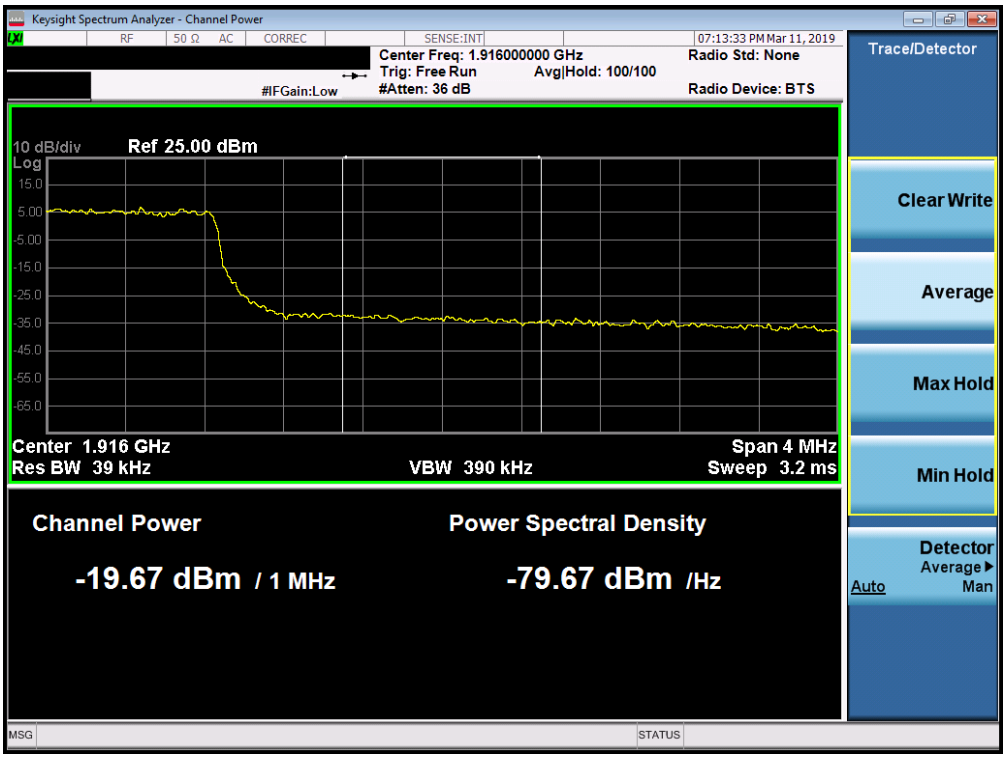
Plot 7-237. Upper Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)



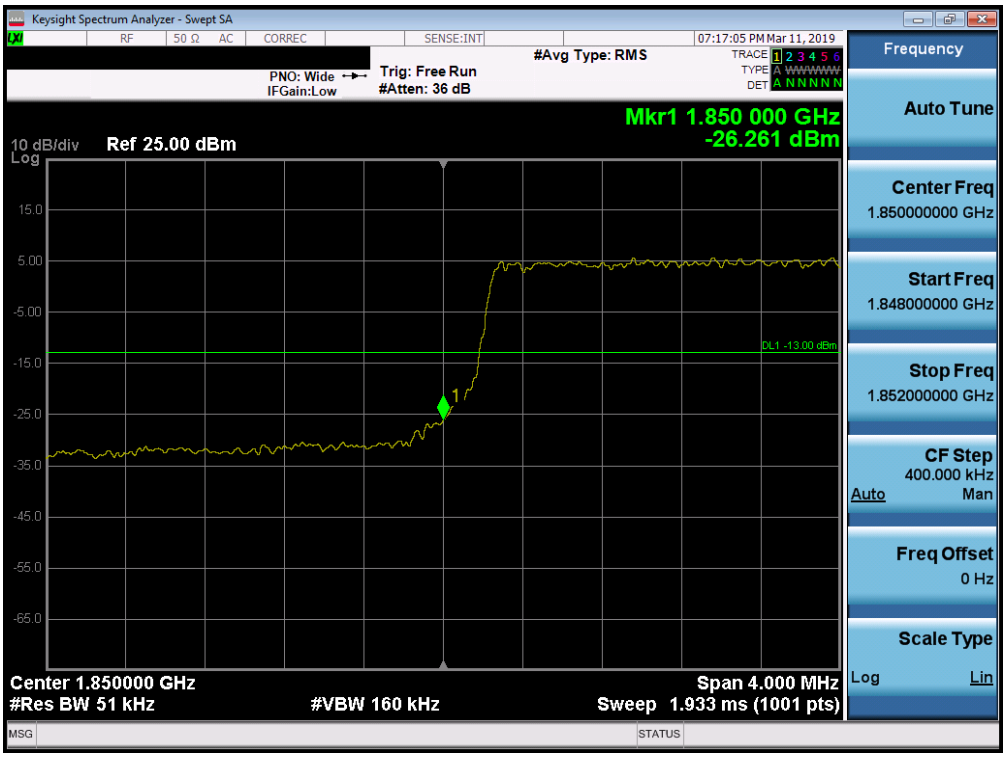
Plot 7-238. Upper Extended Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)



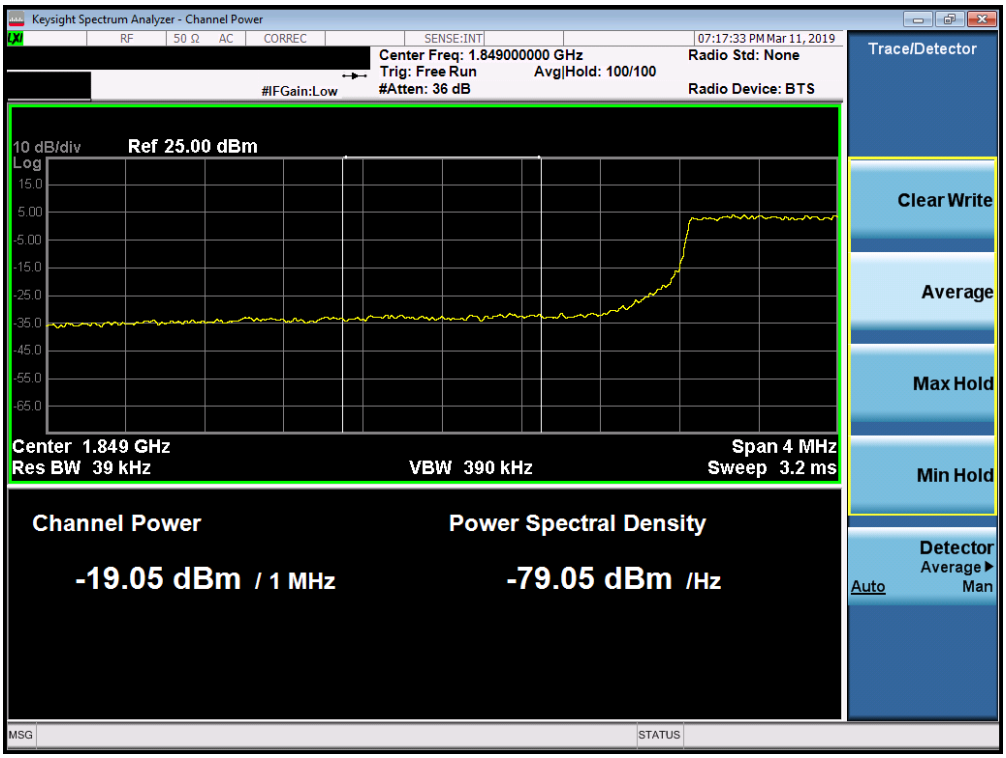
Plot 7-239. Upper Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)



Plot 7-240. Upper Extended Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)

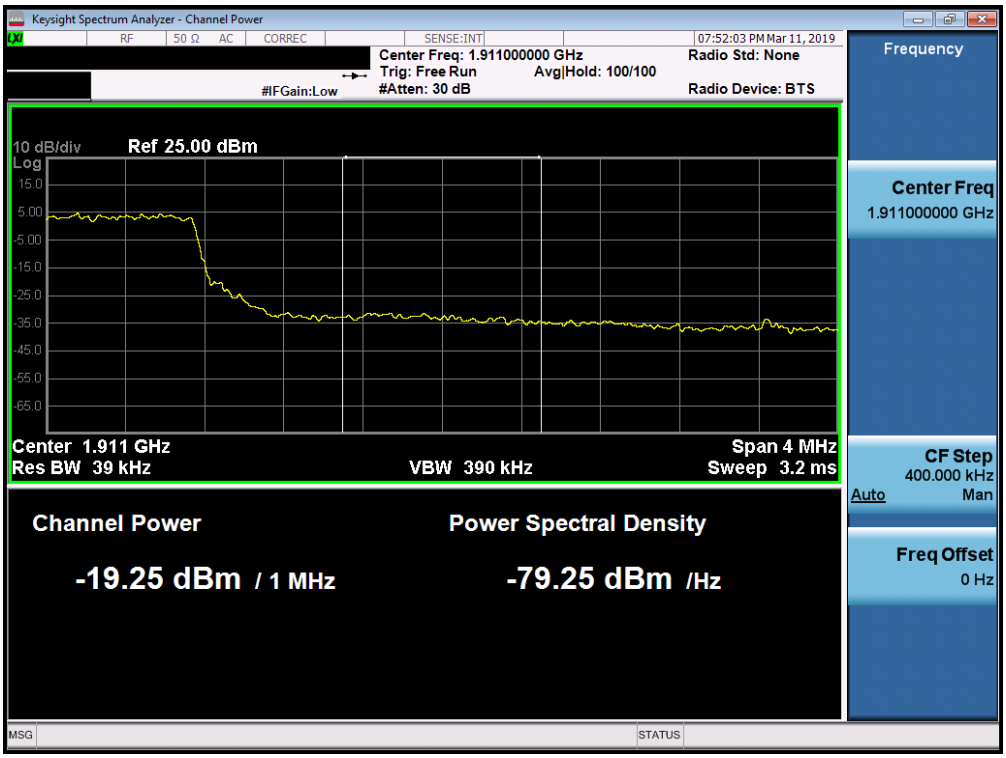


Plot 7-241. Lower Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

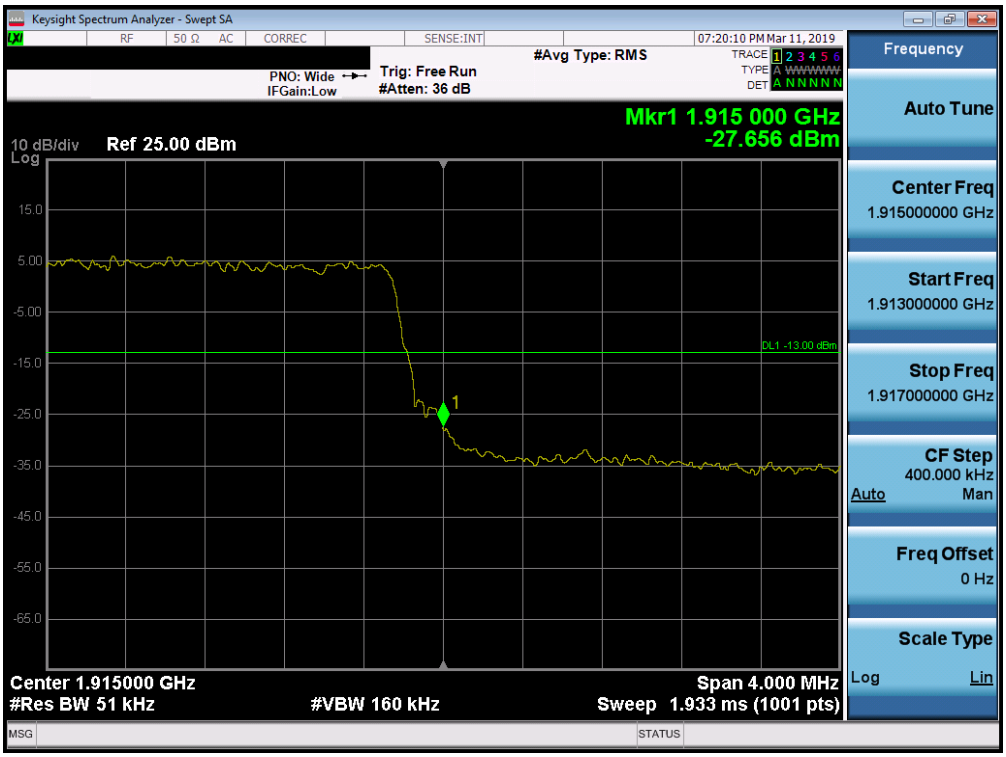


Plot 7-242. Lower Extended Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

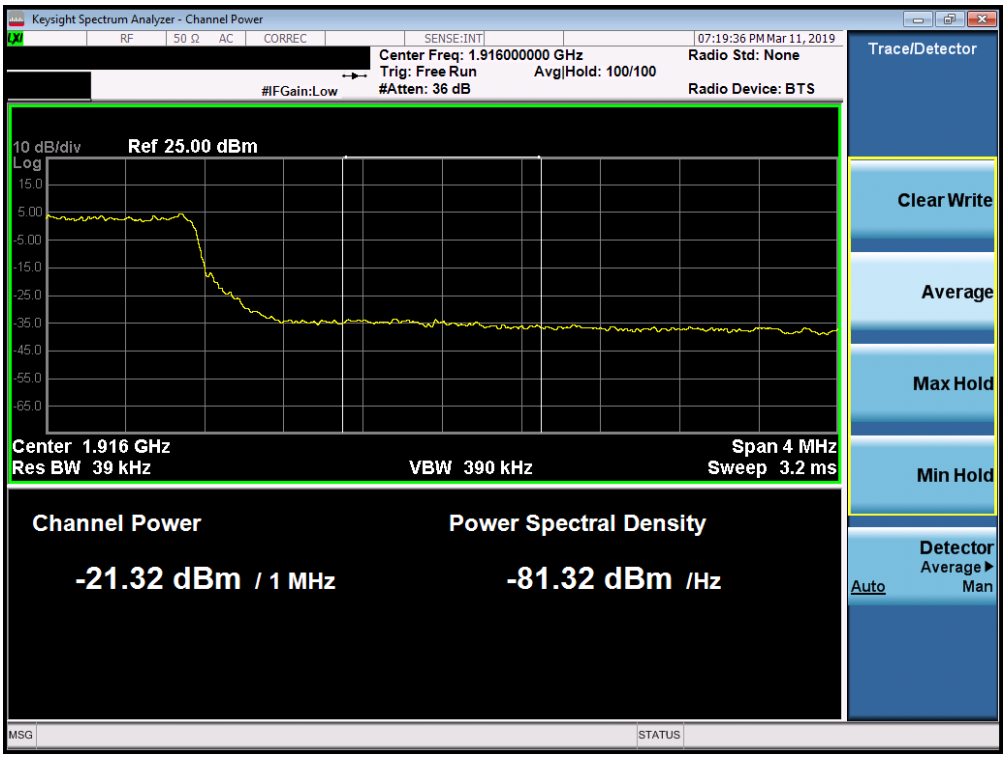
Plot 7-243. Upper Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)



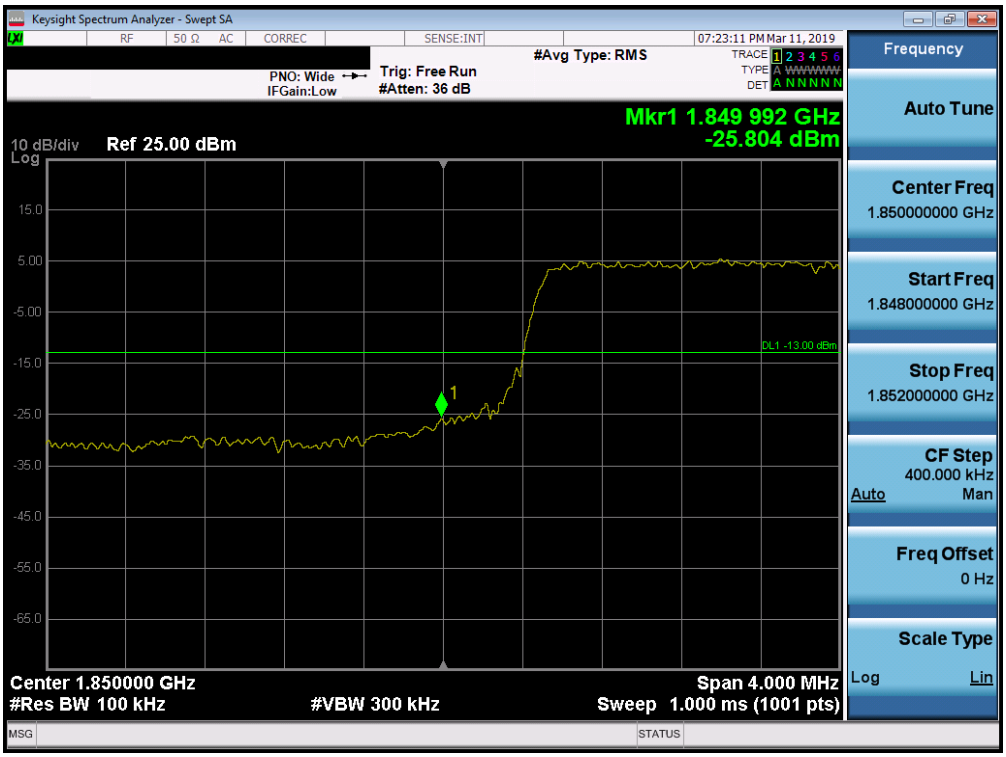
Plot 7-244. Upper Extended Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)



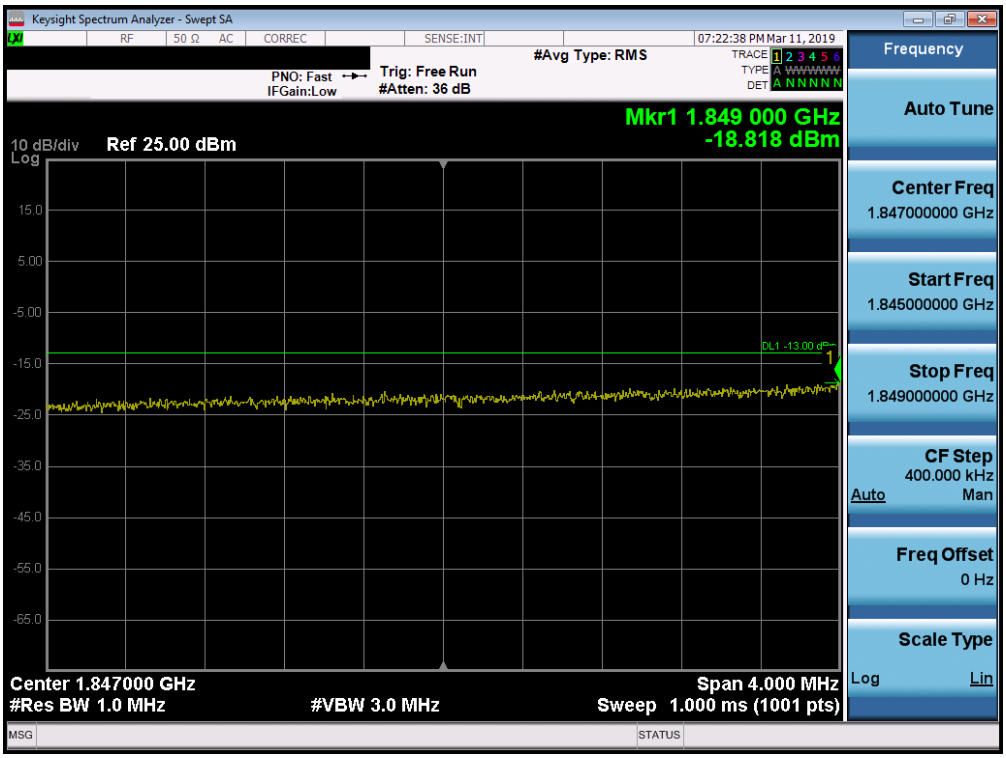
Plot 7-245. Upper Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-246. Upper Extended Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)

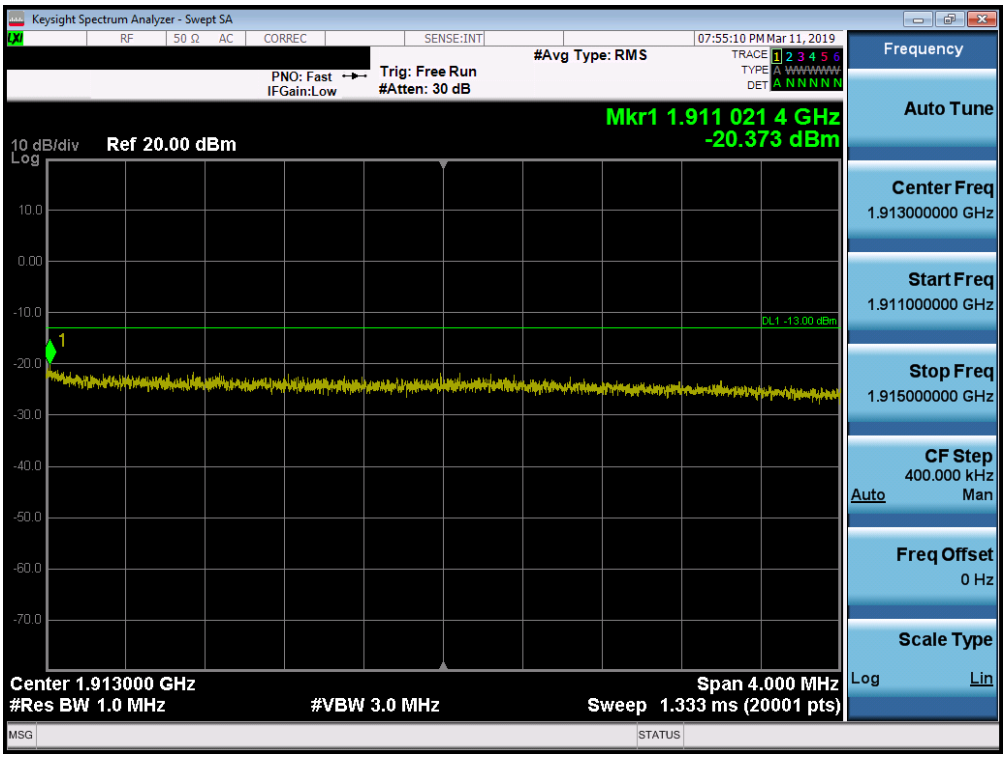


Plot 7-247. Lower Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

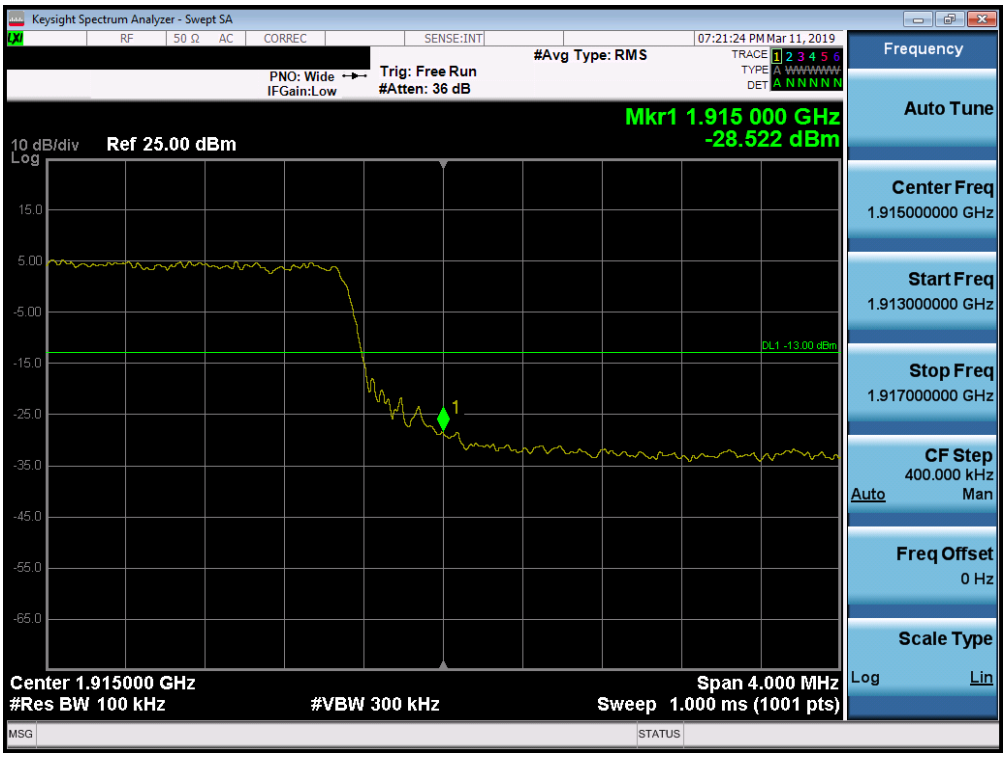


Plot 7-248. Lower Extended Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

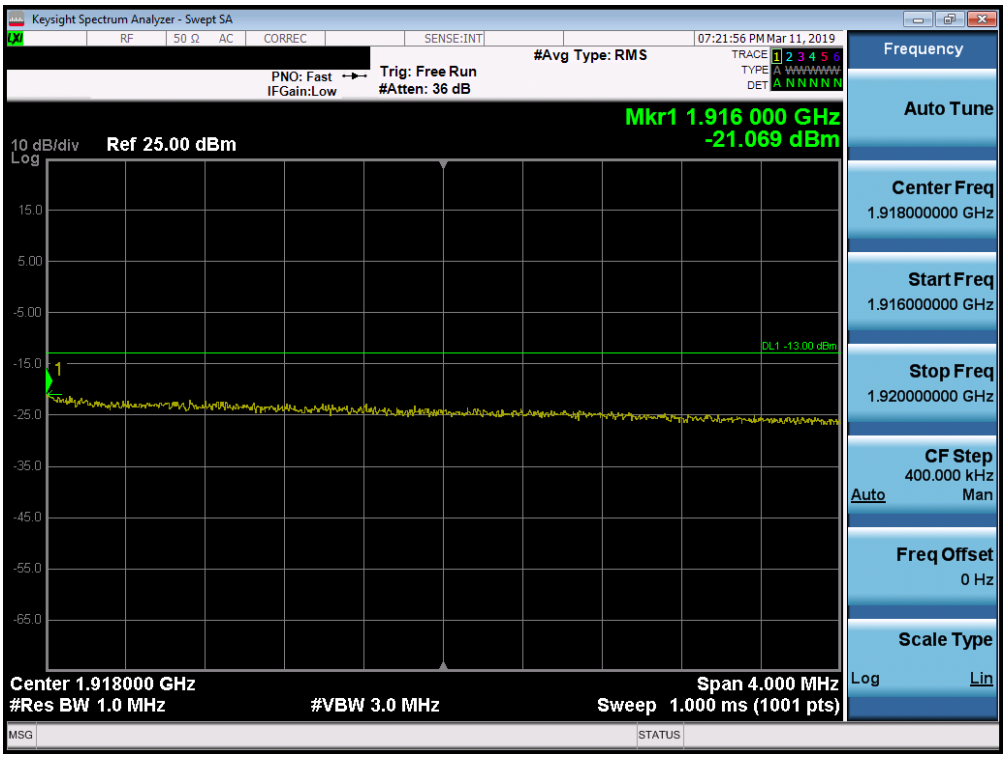
Plot 7-249. Upper Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)



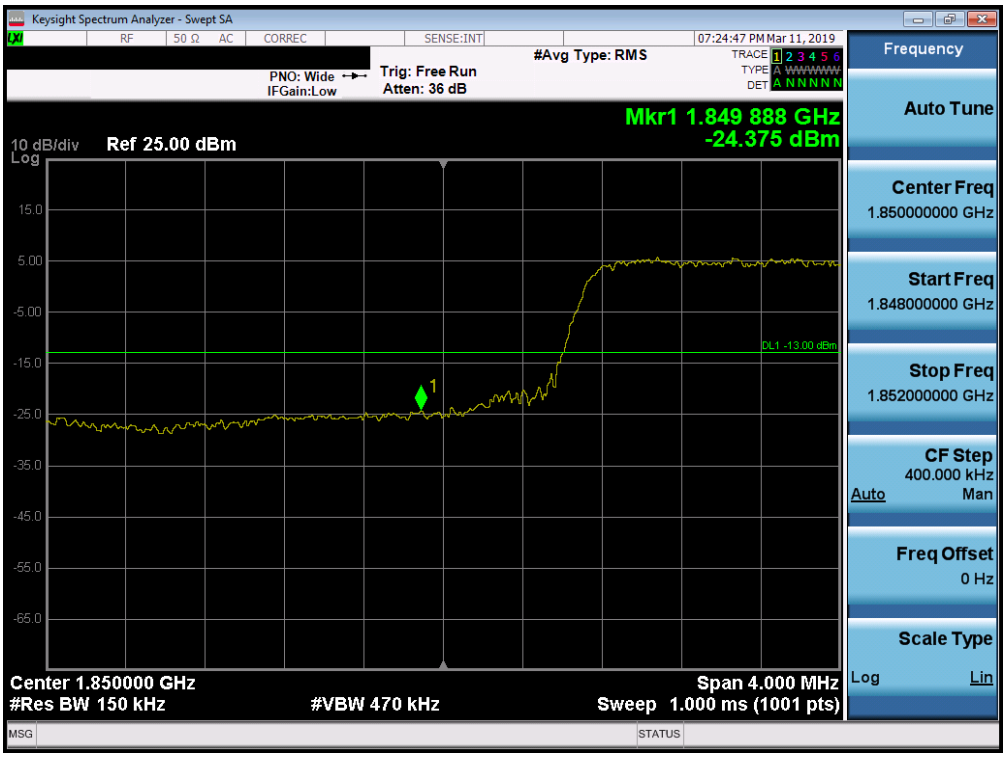
Plot 7-250. Upper Extended Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)



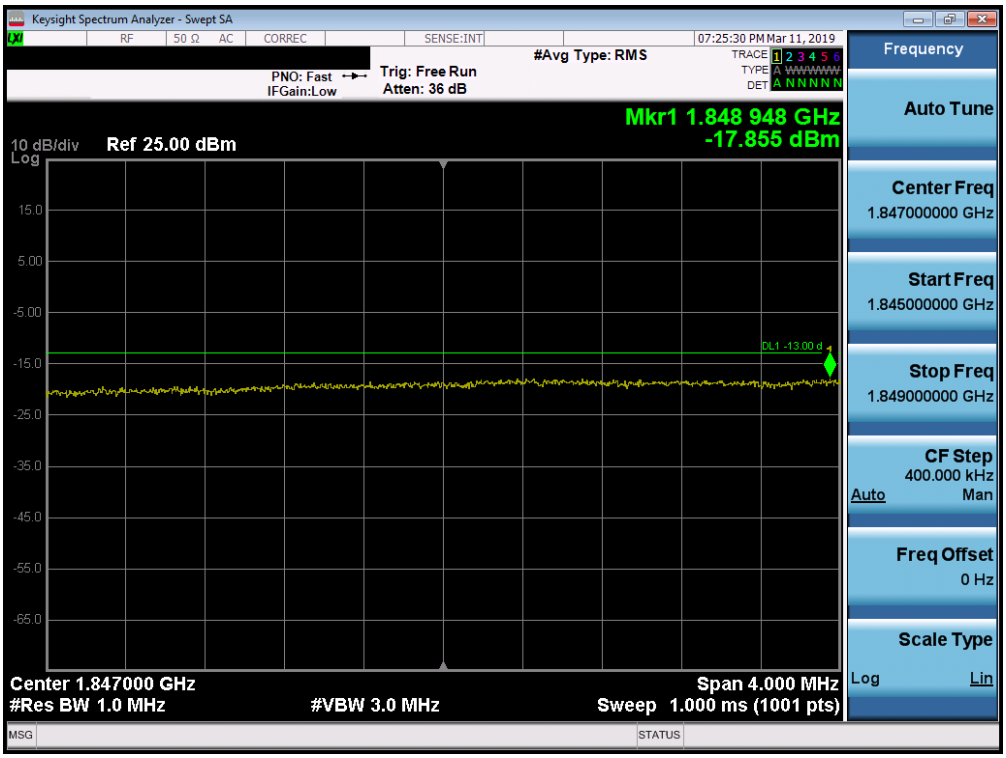
Plot 7-251. Upper Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-252. Upper Extended Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)

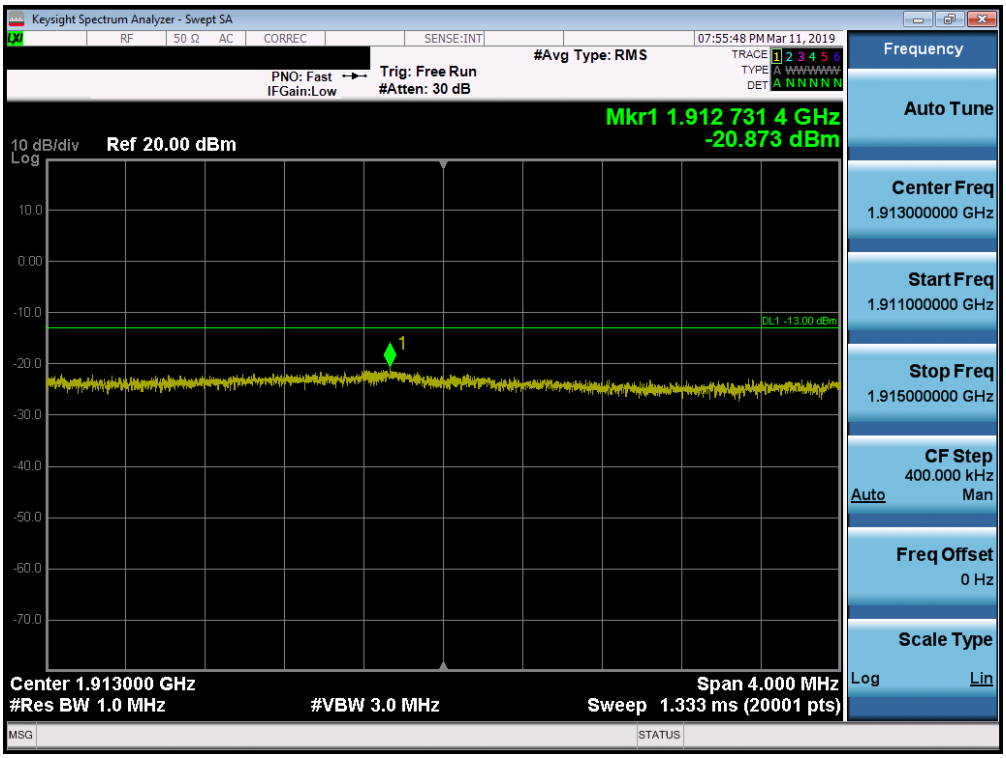


Plot 7-253. Lower Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)



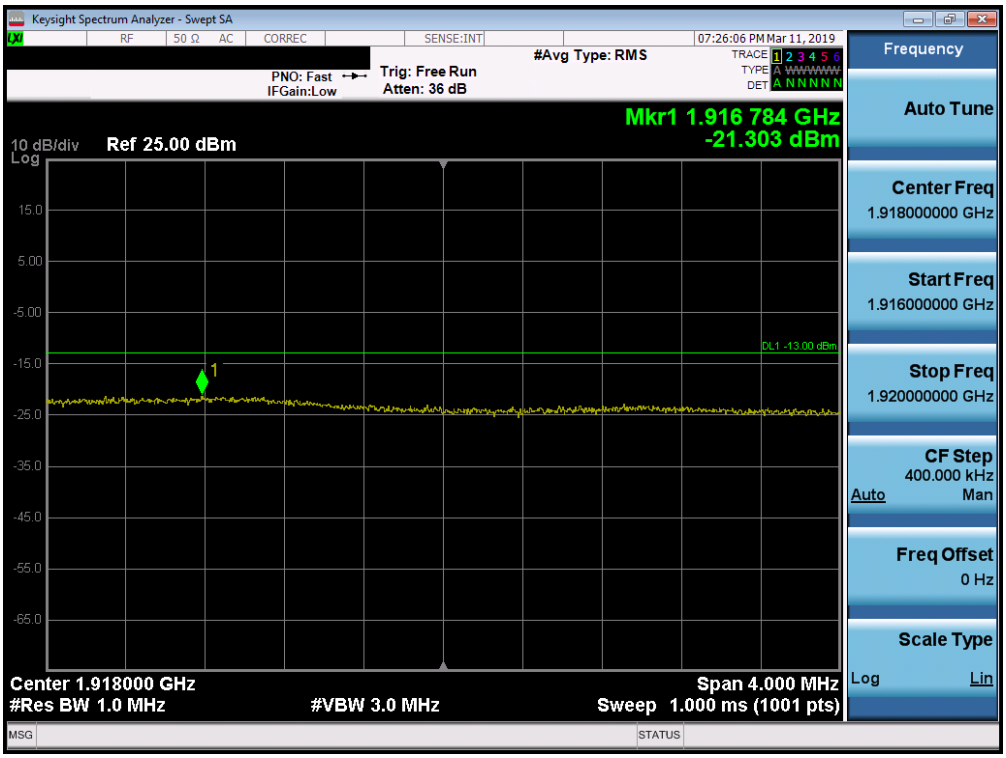
Plot 7-254. Lower Extended Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

Plot 7-255. Upper Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

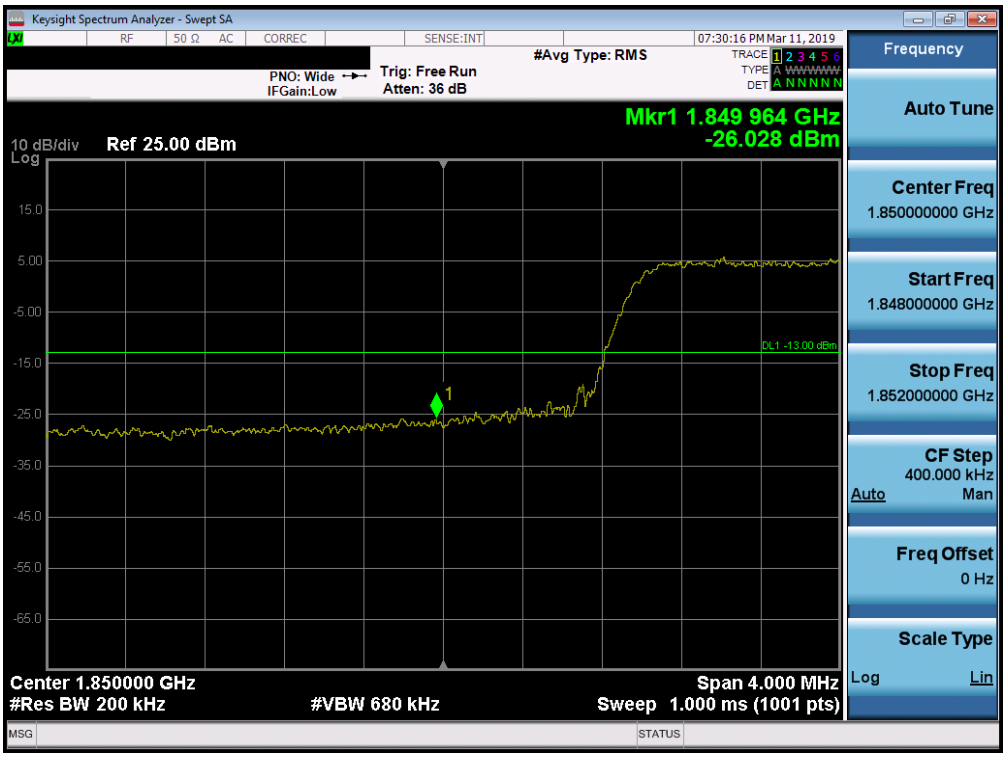


Plot 7-256. Upper Extended Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

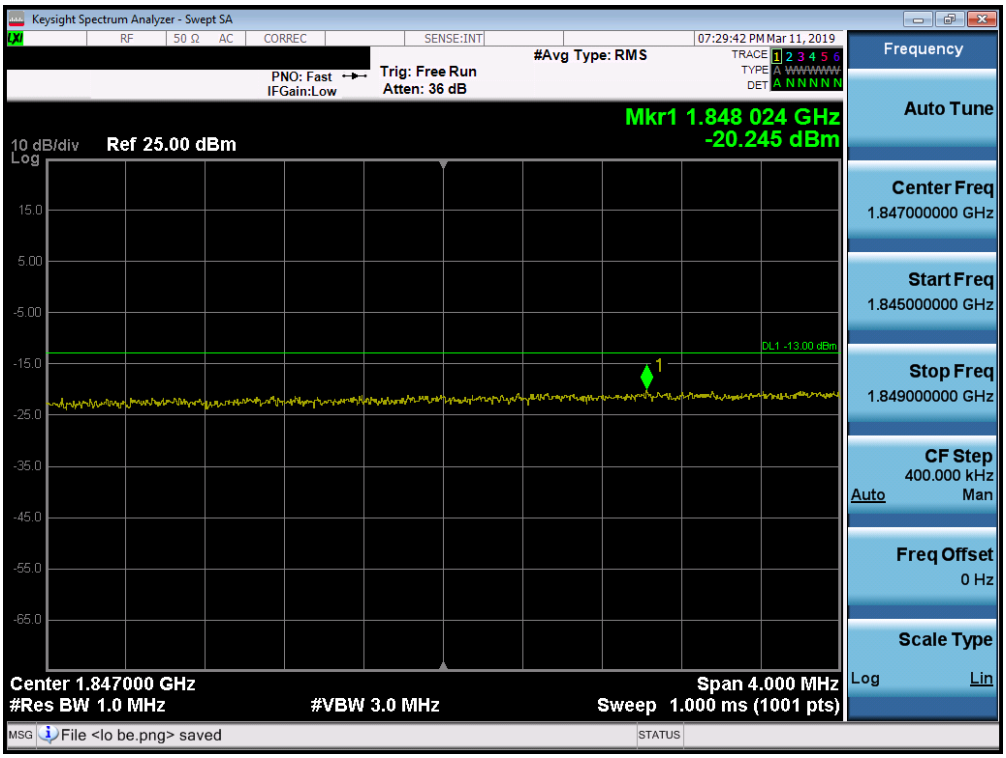
Plot 7-257. Upper Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-258. Upper Extended Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)

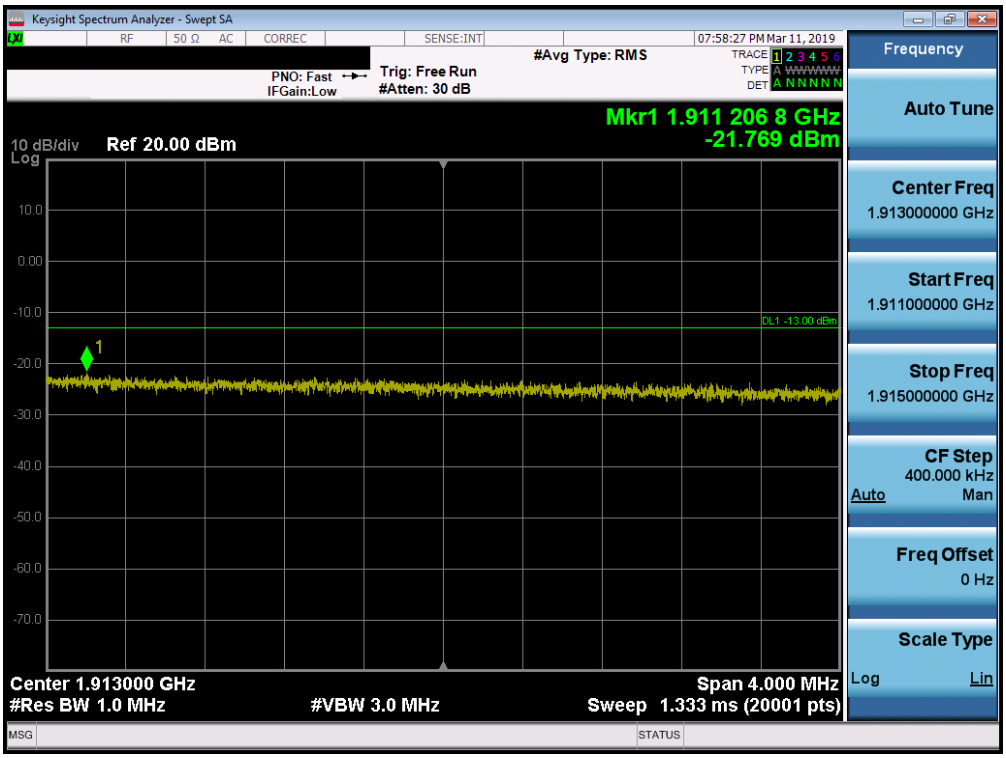


Plot 7-259. Lower Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)



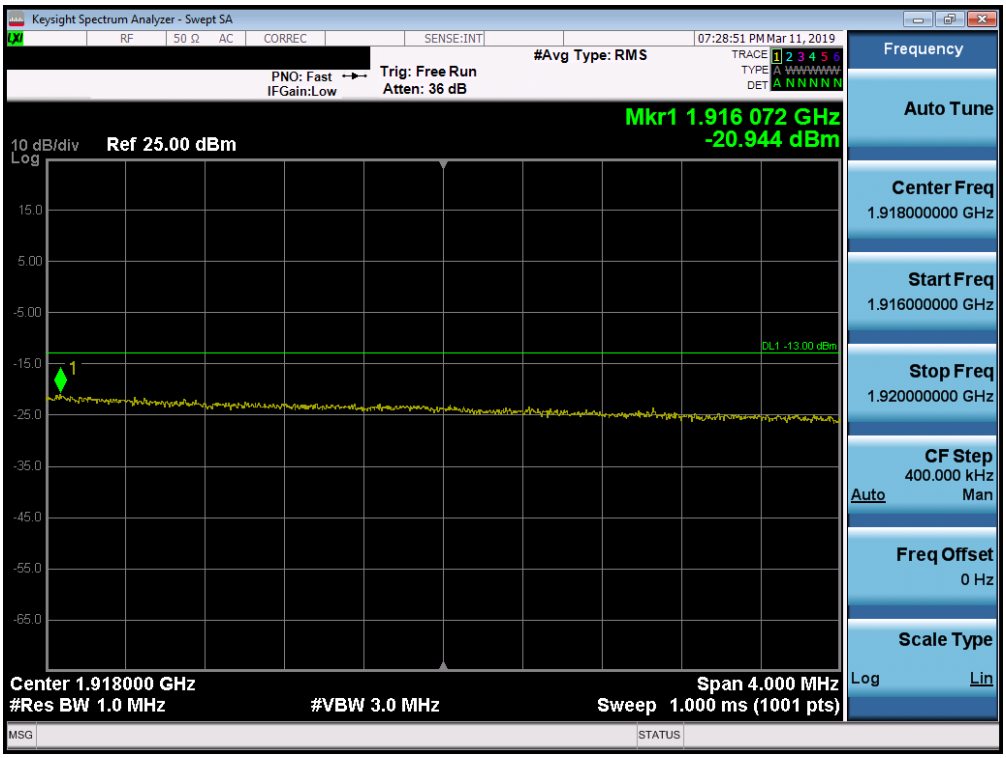
Plot 7-260. Lower Extended Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

Plot 7-261. Upper Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)



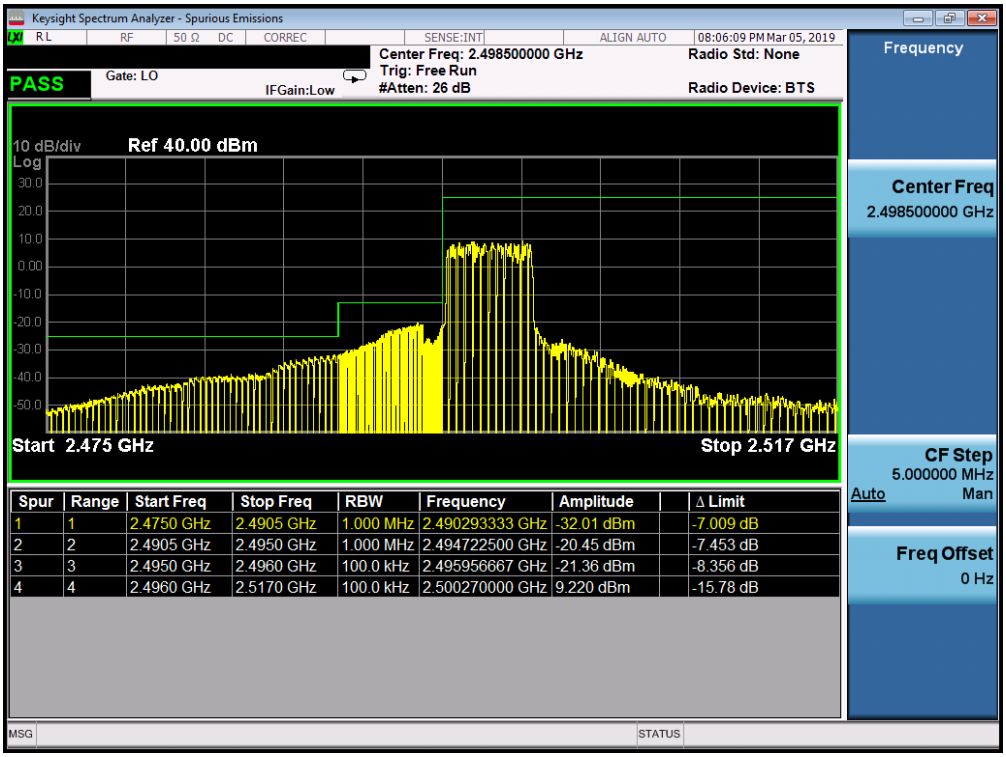
Plot 7-262. Upper Extended Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

Plot 7-263. Upper Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)



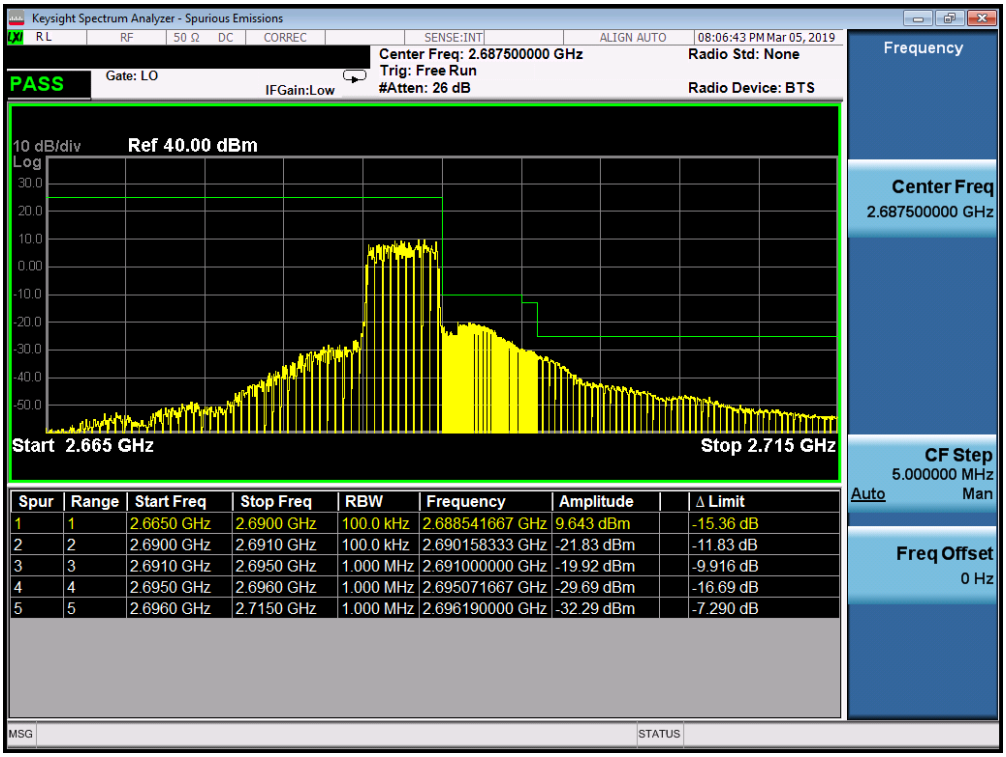
Plot 7-264. Upper Extended Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)

Band 41 (PC2)



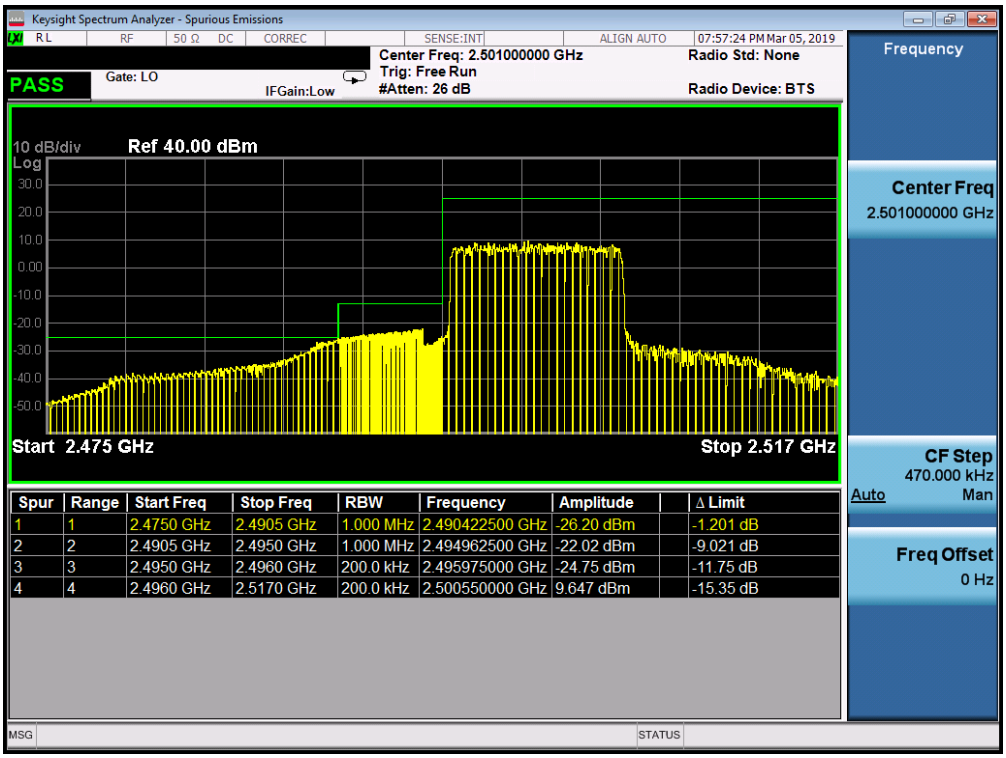
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490293333 GHz	-32.01 dBm	-7.009 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494722500 GHz	-20.45 dBm	-7.453 dB
3	3	2.4950 GHz	2.4960 GHz	100.0 kHz	2.495956667 GHz	-21.36 dBm	-8.356 dB
4	4	2.4960 GHz	2.5170 GHz	100.0 kHz	2.500270000 GHz	9.220 dBm	-15.78 dB

Plot 7-265. Lower ACP Plot at 2496 MHz (Band 41 - 5.0MHz QPSK - Full RB Configuration)



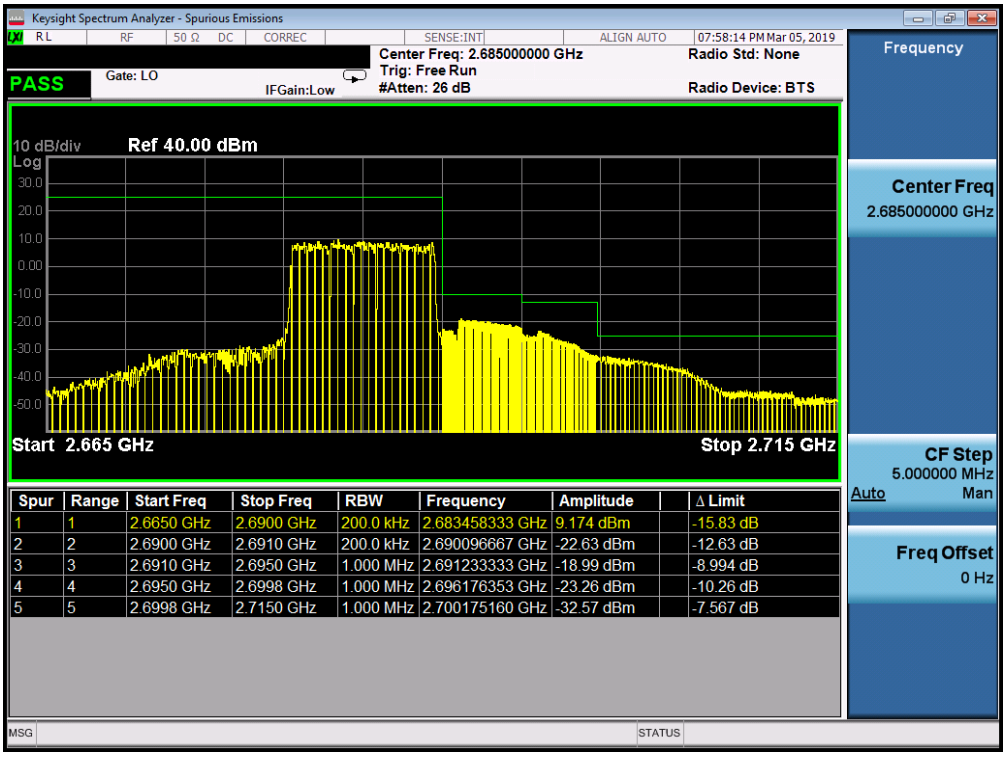
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6650 GHz	2.6900 GHz	100.0 kHz	2.688541667 GHz	9.643 dBm	-15.36 dB
2	2	2.6900 GHz	2.6910 GHz	100.0 kHz	2.690158333 GHz	-21.83 dBm	-11.83 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691000000 GHz	-19.92 dBm	-9.916 dB
4	4	2.6950 GHz	2.6960 GHz	1.000 MHz	2.695071667 GHz	-29.69 dBm	-16.69 dB
5	5	2.6960 GHz	2.7150 GHz	1.000 MHz	2.696190000 GHz	-32.29 dBm	-7.290 dB

Plot 7-266. Upper ACP Plot (Band 41 - 5.0MHz QPSK - Full RB Configuration)



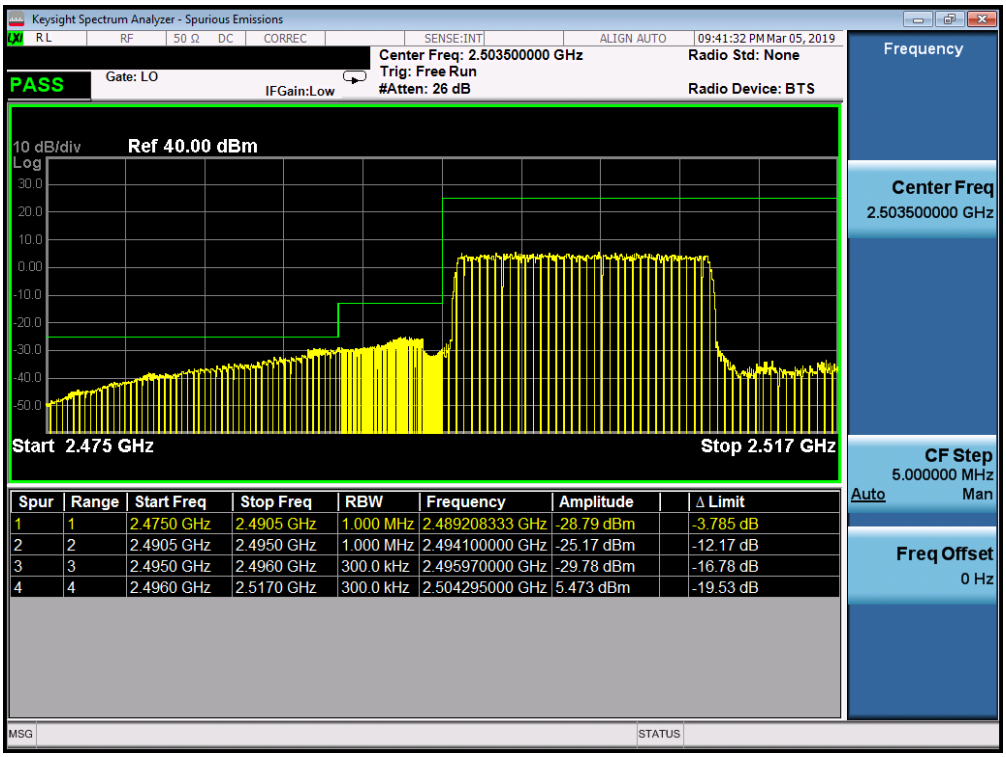
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490422500 GHz	-26.20 dBm	-1.201 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494962500 GHz	-22.02 dBm	-9.021 dB
3	3	2.4950 GHz	2.4960 GHz	200.0 kHz	2.495975000 GHz	-24.75 dBm	-11.75 dB
4	4	2.4960 GHz	2.5170 GHz	200.0 kHz	2.500550000 GHz	9.647 dBm	-15.35 dB

Plot 7-267. Lower ACP Plot at 2496 MHz (Band 41 - 10.0MHz QPSK - Full RB Configuration)



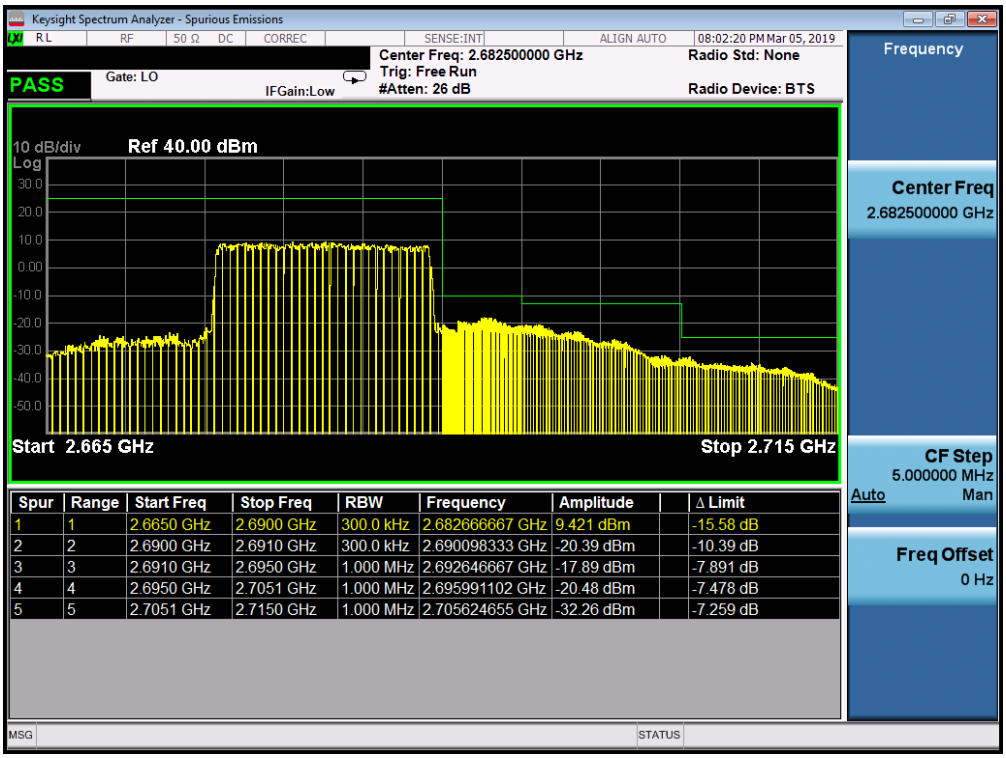
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6650 GHz	2.6900 GHz	200.0 kHz	2.683458333 GHz	9.174 dBm	-15.83 dB
2	2	2.6900 GHz	2.6910 GHz	200.0 kHz	2.690096667 GHz	-22.63 dBm	-12.63 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691233333 GHz	-18.99 dBm	-8.994 dB
4	4	2.6950 GHz	2.6998 GHz	1.000 MHz	2.696176353 GHz	-23.26 dBm	-10.26 dB
5	5	2.6998 GHz	2.7150 GHz	1.000 MHz	2.700175160 GHz	-32.57 dBm	-7.567 dB

Plot 7-268. Upper ACP Plot (Band 41 - 10.0MHz QPSK - Full RB Configuration)



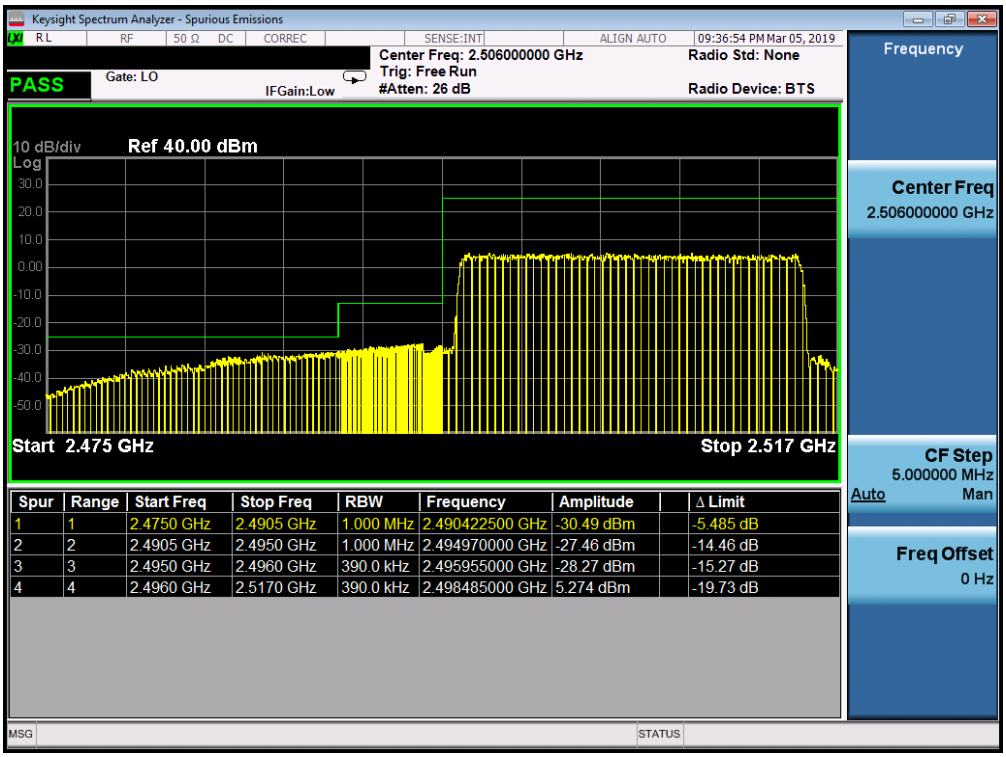
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.489208333 GHz	-28.79 dBm	-3.785 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494100000 GHz	-25.17 dBm	-12.17 dB
3	3	2.4950 GHz	2.4960 GHz	300.0 kHz	2.495970000 GHz	-29.78 dBm	-16.78 dB
4	4	2.4960 GHz	2.5170 GHz	300.0 kHz	2.504295000 GHz	5.473 dBm	-19.53 dB

Plot 7-269. Lower ACP Plot at 2496 MHz (Band 41 - 15.0MHz QPSK - Full RB Configuration)



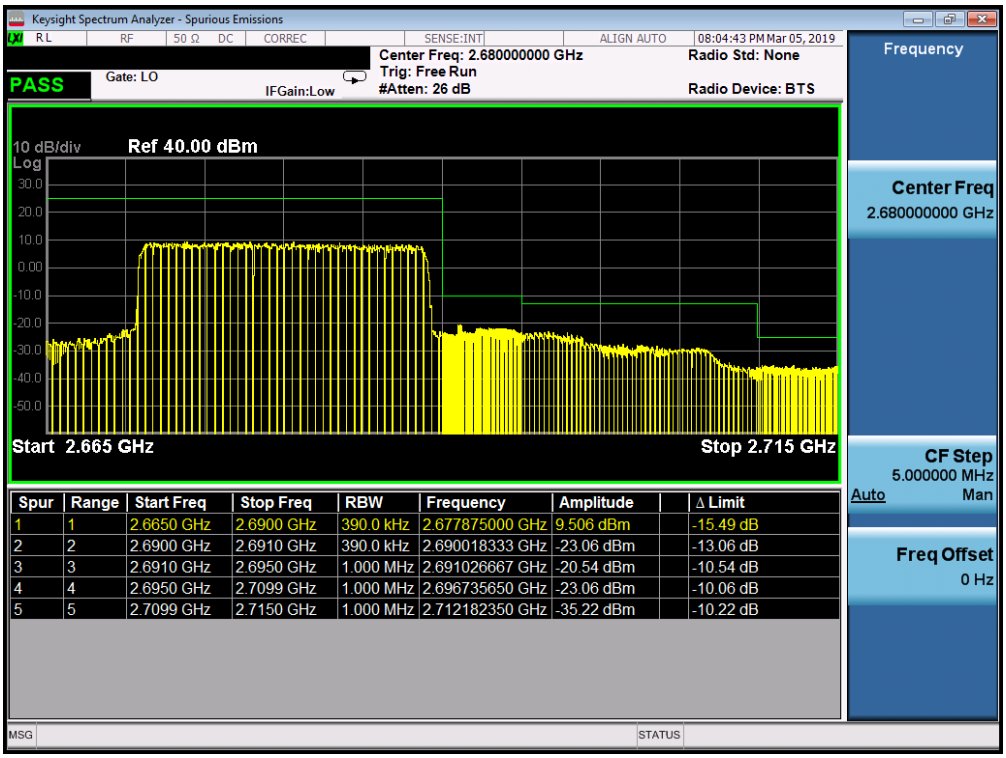
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6650 GHz	2.6900 GHz	300.0 kHz	2.682666667 GHz	9.421 dBm	-15.58 dB
2	2	2.6900 GHz	2.6910 GHz	300.0 kHz	2.690098333 GHz	-20.39 dBm	-10.39 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.692646667 GHz	-17.89 dBm	-7.891 dB
4	4	2.6950 GHz	2.7051 GHz	1.000 MHz	2.695991102 GHz	-20.48 dBm	-7.478 dB
5	5	2.7051 GHz	2.7150 GHz	1.000 MHz	2.705624655 GHz	-32.26 dBm	-7.259 dB

Plot 7-270. Upper ACP Plot (Band 41 - 15.0MHz QPSK - Full RB Configuration)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490422500 GHz	-30.49 dBm	-5.485 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494970000 GHz	-27.46 dBm	-14.46 dB
3	3	2.4950 GHz	2.4960 GHz	390.0 kHz	2.495955000 GHz	-28.27 dBm	-15.27 dB
4	4	2.4960 GHz	2.5170 GHz	390.0 kHz	2.498485000 GHz	5.274 dBm	-19.73 dB

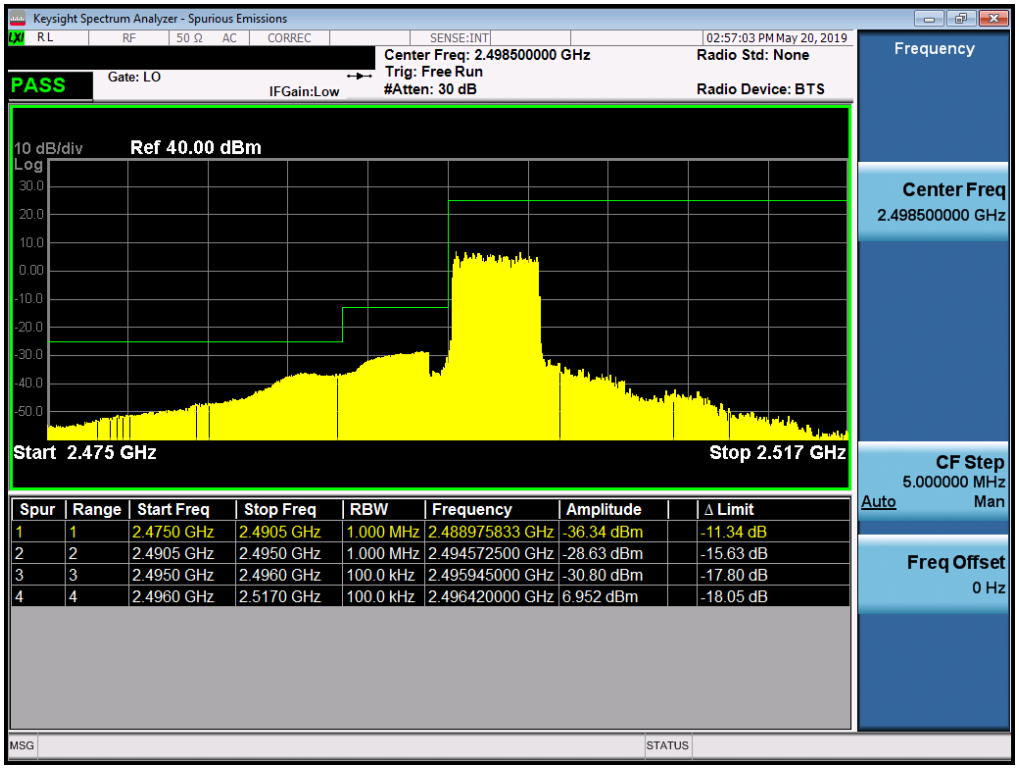
Plot 7-271. Lower ACP Plot at 2496 MHz (Band 41 - 20.0MHz QPSK - Full RB Configuration)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6650 GHz	2.6900 GHz	390.0 kHz	2.677875000 GHz	9.506 dBm	-15.49 dB
2	2	2.6900 GHz	2.6910 GHz	390.0 kHz	2.690018333 GHz	-23.06 dBm	-13.06 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691026667 GHz	-20.54 dBm	-10.54 dB
4	4	2.6950 GHz	2.7099 GHz	1.000 MHz	2.696735650 GHz	-23.06 dBm	-10.06 dB
5	5	2.7099 GHz	2.7150 GHz	1.000 MHz	2.712182350 GHz	-35.22 dBm	-10.22 dB

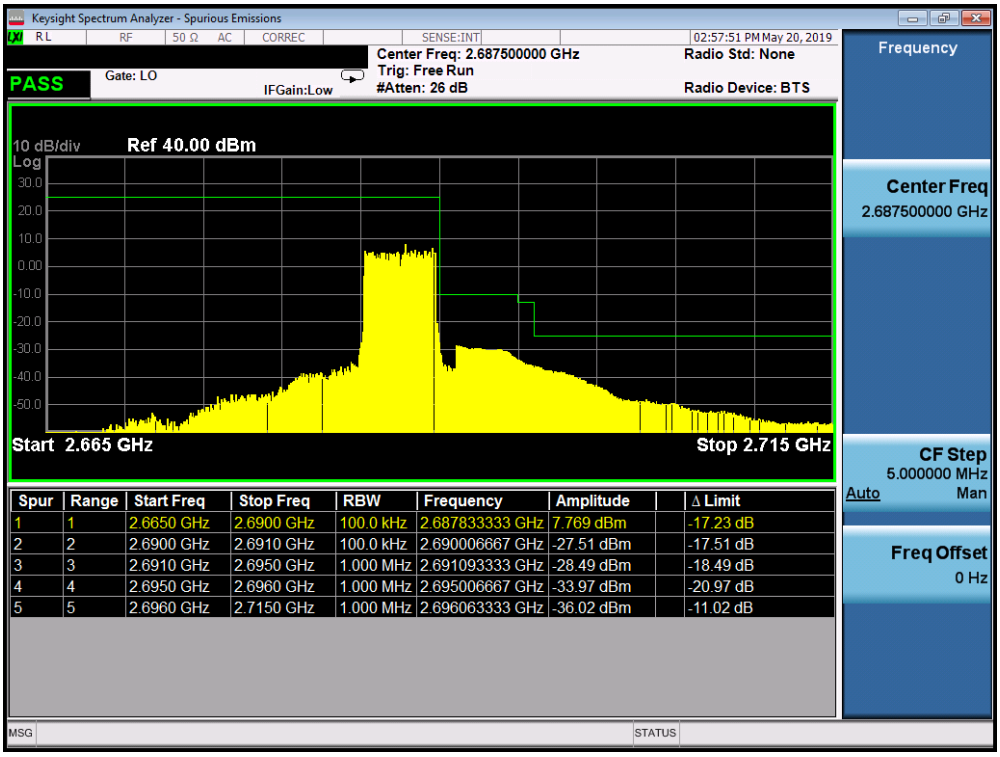
Plot 7-272. Upper ACP Plot (Band 41 - 20.0MHz QPSK - Full RB Configuration)

Band 41 (PC3)



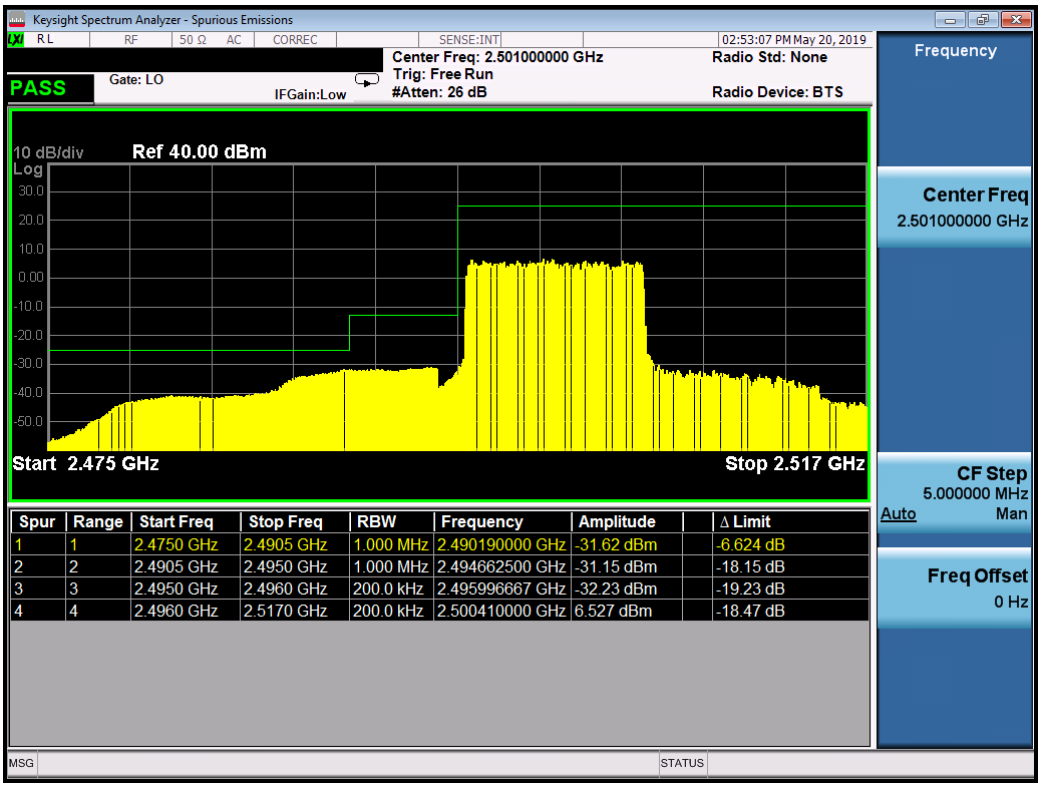
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.488975833 GHz	-36.34 dBm	-11.34 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494572500 GHz	-28.63 dBm	-15.63 dB
3	3	2.4950 GHz	2.4960 GHz	100.0 kHz	2.495945000 GHz	-30.80 dBm	-17.80 dB
4	4	2.4960 GHz	2.5170 GHz	100.0 kHz	2.496420000 GHz	6.952 dBm	-18.05 dB

Plot 7-273. Lower ACP Plot at 2496 MHz (Band 41 - 5.0MHz QPSK - Full RB Configuration)



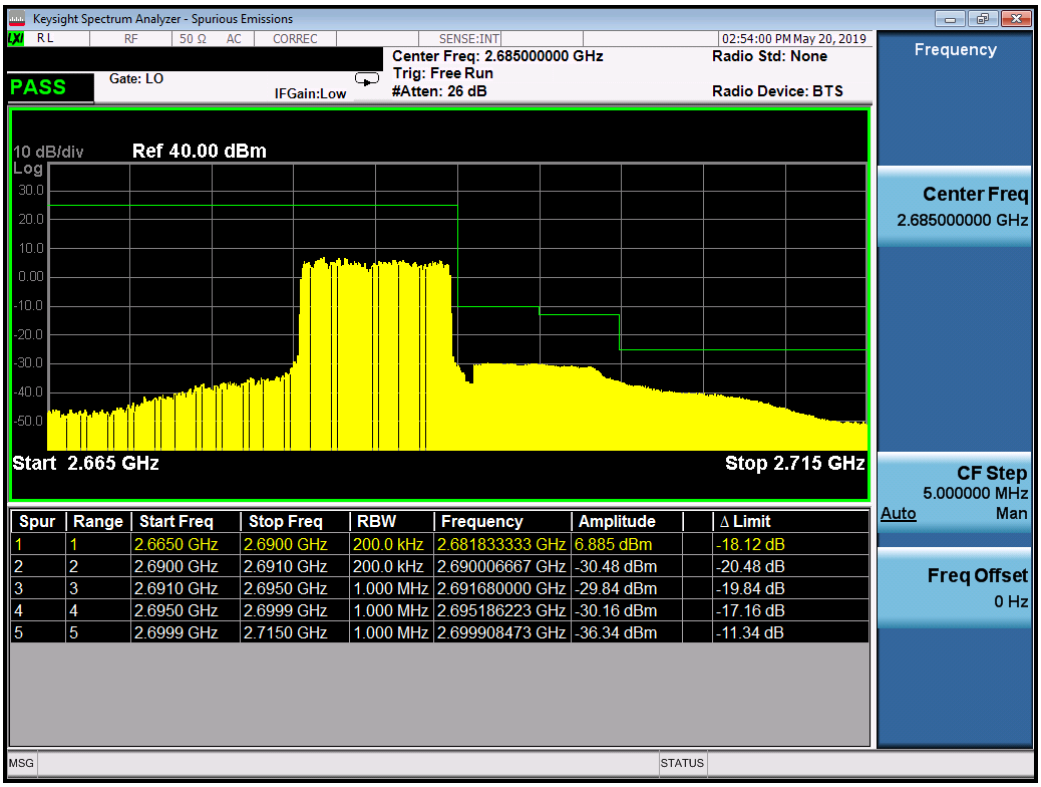
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6650 GHz	2.6900 GHz	100.0 kHz	2.687833333 GHz	7.769 dBm	-17.23 dB
2	2	2.6900 GHz	2.6910 GHz	100.0 kHz	2.690006667 GHz	-27.51 dBm	-17.51 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691093333 GHz	-28.49 dBm	-18.49 dB
4	4	2.6950 GHz	2.6960 GHz	1.000 MHz	2.695006667 GHz	-33.97 dBm	-20.97 dB
5	5	2.6960 GHz	2.7150 GHz	1.000 MHz	2.696063333 GHz	-36.02 dBm	-11.02 dB

Plot 7-274. Upper ACP Plot (Band 41 - 5.0MHz QPSK - Full RB Configuration)



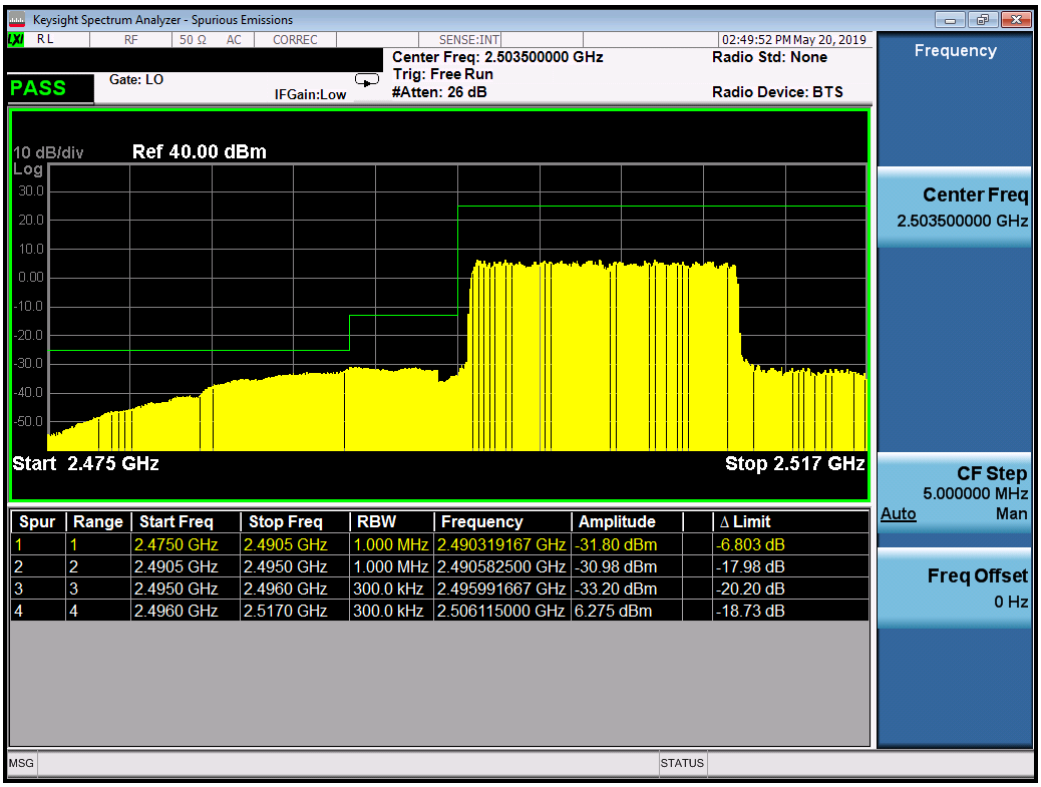
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490190000 GHz	-31.62 dBm	-6.624 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494662500 GHz	-31.15 dBm	-18.15 dB
3	3	2.4950 GHz	2.4960 GHz	200.0 kHz	2.495996667 GHz	-32.23 dBm	-19.23 dB
4	4	2.4960 GHz	2.5170 GHz	200.0 kHz	2.500410000 GHz	6.527 dBm	-18.47 dB

Plot 7-275. Lower ACP Plot at 2496 MHz (Band 41 - 10.0MHz QPSK - Full RB Configuration)



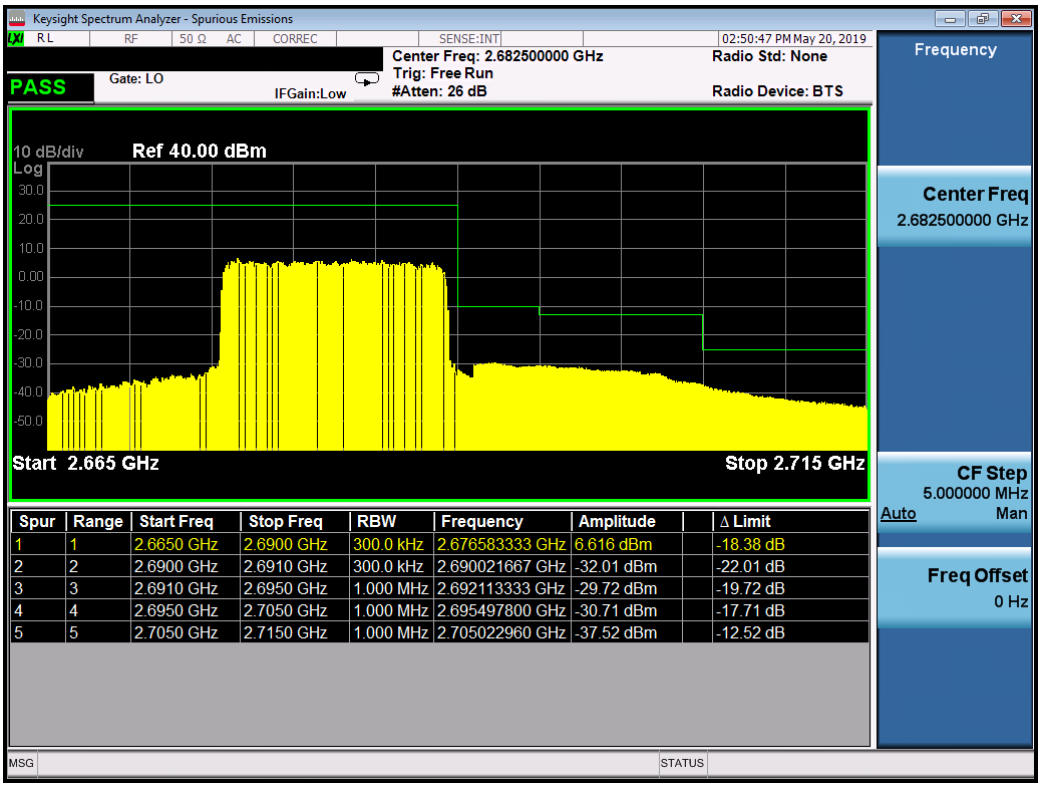
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6650 GHz	2.6900 GHz	200.0 kHz	2.681833333 GHz	6.885 dBm	-18.12 dB
2	2	2.6900 GHz	2.6910 GHz	200.0 kHz	2.690006667 GHz	-30.48 dBm	-20.48 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691680000 GHz	-29.84 dBm	-19.84 dB
4	4	2.6950 GHz	2.6999 GHz	1.000 MHz	2.695186223 GHz	-30.16 dBm	-17.16 dB
5	5	2.6999 GHz	2.7150 GHz	1.000 MHz	2.699908473 GHz	-36.34 dBm	-11.34 dB

Plot 7-276. Upper ACP Plot (Band 41 - 10.0MHz QPSK - Full RB Configuration)



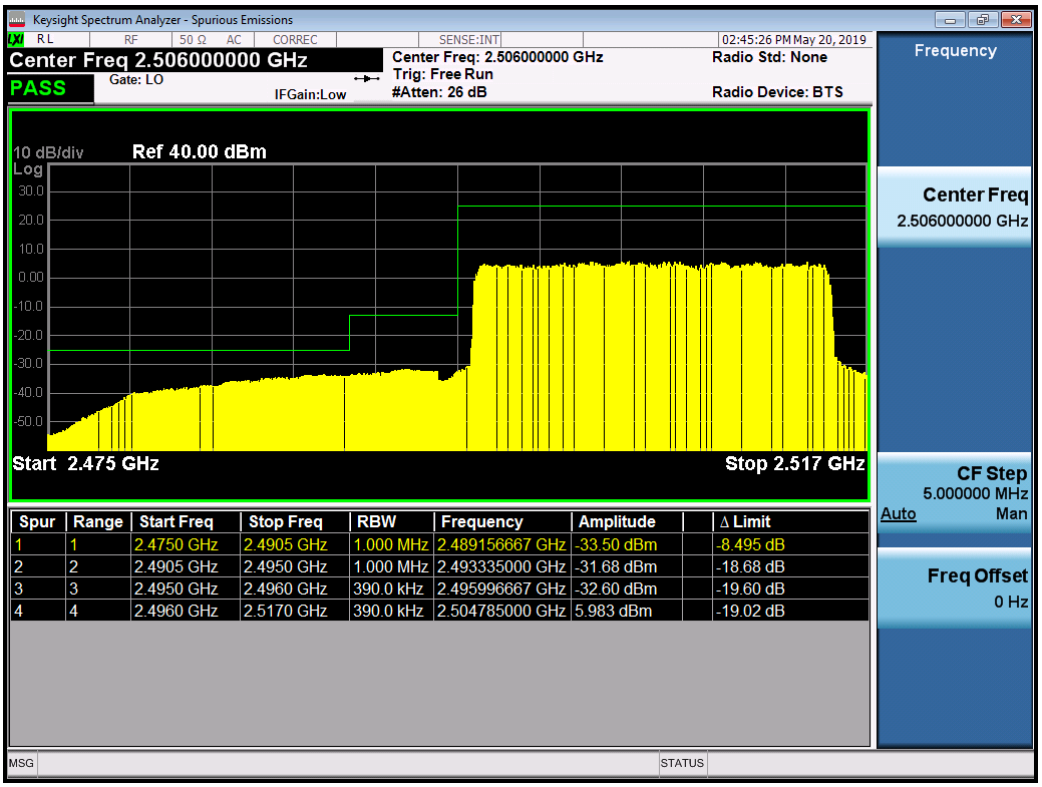
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490319167 GHz	-31.80 dBm	-6.803 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.490582500 GHz	-30.98 dBm	-17.98 dB
3	3	2.4950 GHz	2.4960 GHz	300.0 kHz	2.495991667 GHz	-33.20 dBm	-20.20 dB
4	4	2.4960 GHz	2.5170 GHz	300.0 kHz	2.506115000 GHz	6.275 dBm	-18.73 dB

Plot 7-277. Lower ACP Plot at 2496 MHz (Band 41 - 15.0MHz QPSK - Full RB Configuration)



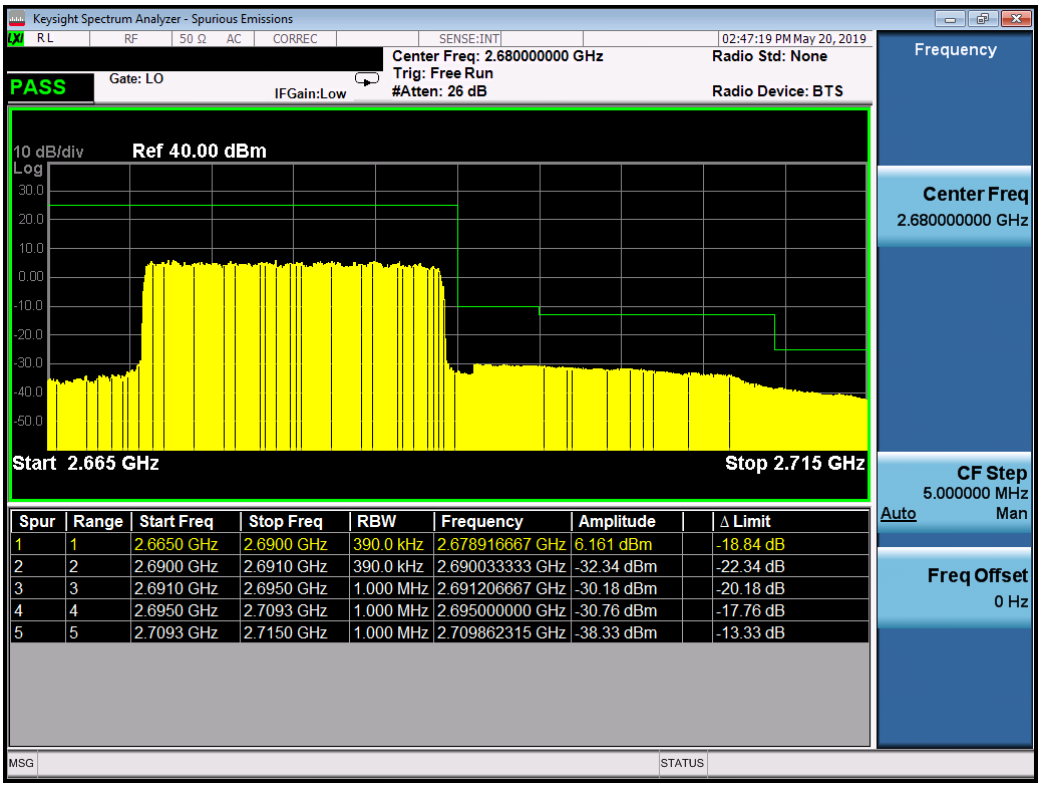
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6650 GHz	2.6900 GHz	300.0 kHz	2.676583333 GHz	6.616 dBm	-18.38 dB
2	2	2.6900 GHz	2.6910 GHz	300.0 kHz	2.690021667 GHz	-32.01 dBm	-22.01 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.692113333 GHz	-29.72 dBm	-19.72 dB
4	4	2.6950 GHz	2.7050 GHz	1.000 MHz	2.695497800 GHz	-30.71 dBm	-17.71 dB
5	5	2.7050 GHz	2.7150 GHz	1.000 MHz	2.705022960 GHz	-37.52 dBm	-12.52 dB

Plot 7-278. Upper ACP Plot (Band 41 - 15.0MHz QPSK - Full RB Configuration)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.489156667 GHz	-33.50 dBm	-8.495 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.493335000 GHz	-31.68 dBm	-18.68 dB
3	3	2.4950 GHz	2.4960 GHz	390.0 kHz	2.495996667 GHz	-32.60 dBm	-19.60 dB
4	4	2.4960 GHz	2.5170 GHz	390.0 kHz	2.504785000 GHz	5.983 dBm	-19.02 dB

Plot 7-279. Lower ACP Plot at 2496 MHz (Band 41 - 20.0MHz QPSK - Full RB Configuration)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6650 GHz	2.6900 GHz	390.0 kHz	2.678916667 GHz	6.161 dBm	-18.84 dB
2	2	2.6900 GHz	2.6910 GHz	390.0 kHz	2.690033333 GHz	-32.34 dBm	-22.34 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691206667 GHz	-30.18 dBm	-20.18 dB
4	4	2.6950 GHz	2.7093 GHz	1.000 MHz	2.695000000 GHz	-30.76 dBm	-17.76 dB
5	5	2.7093 GHz	2.7150 GHz	1.000 MHz	2.709862315 GHz	-38.33 dBm	-13.33 dB

Plot 7-280. Upper ACP Plot (Band 41 - 20.0MHz QPSK - Full RB Configuration)

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 ≥ 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.

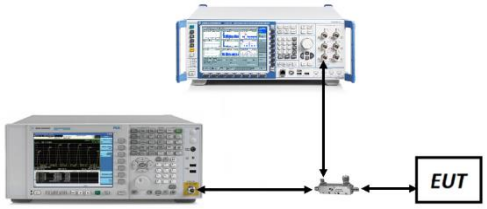
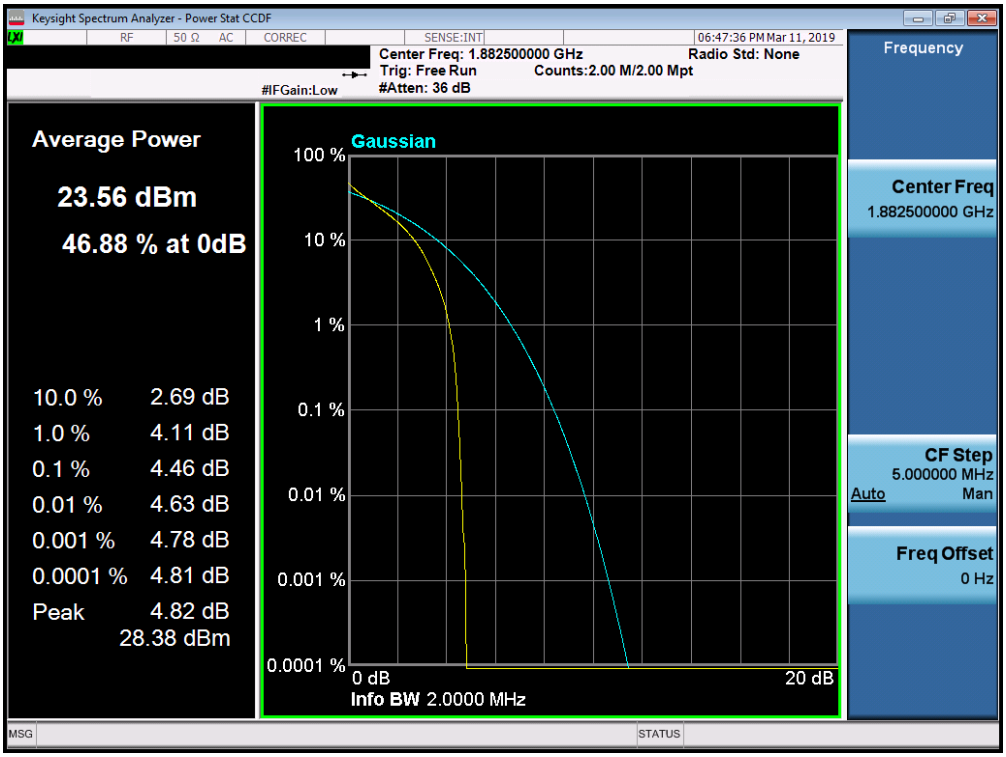


Figure 7-4. Test Instrument & Measurement Setup

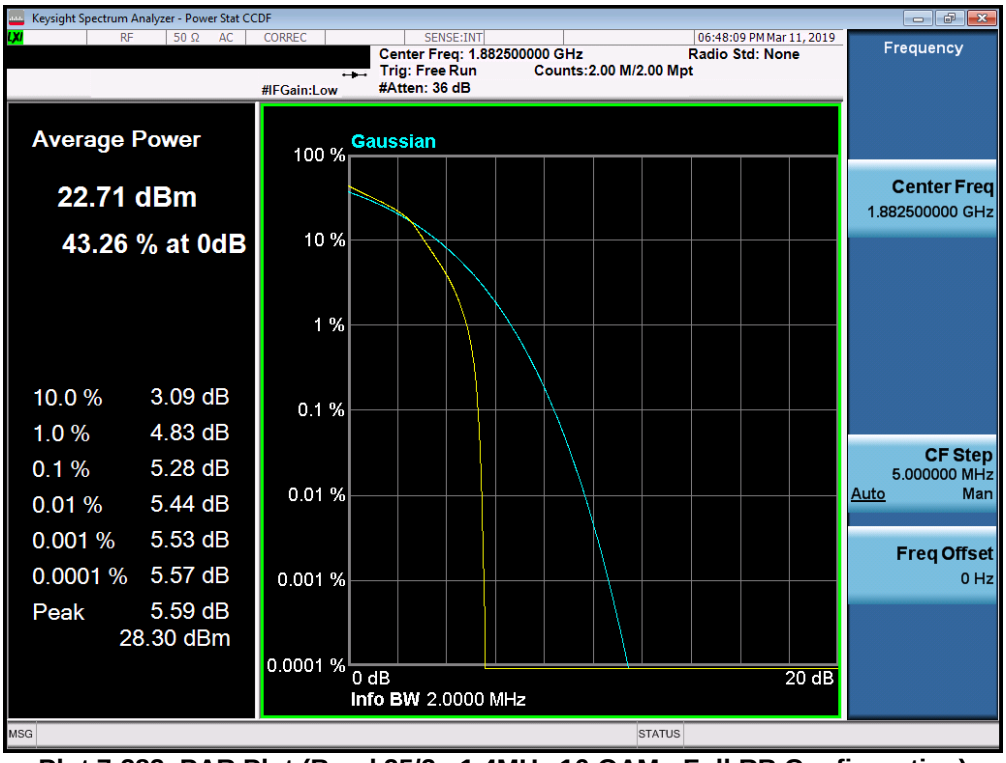
Test Notes

None.

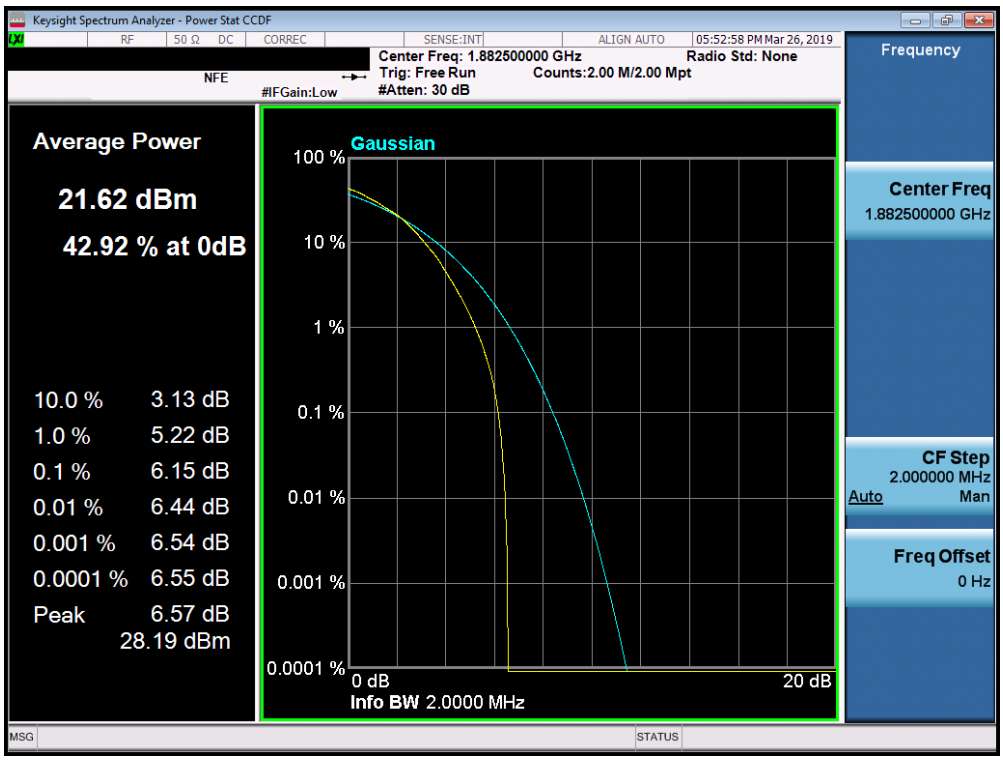
Band 25/2



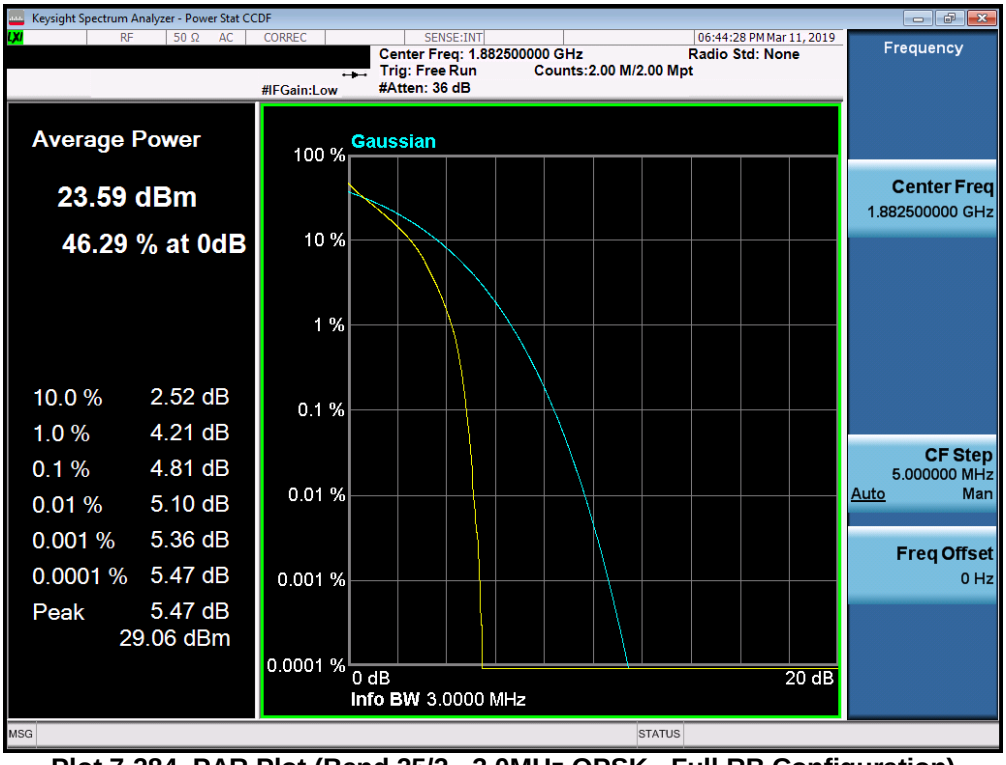
Plot 7-281. PAR Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)



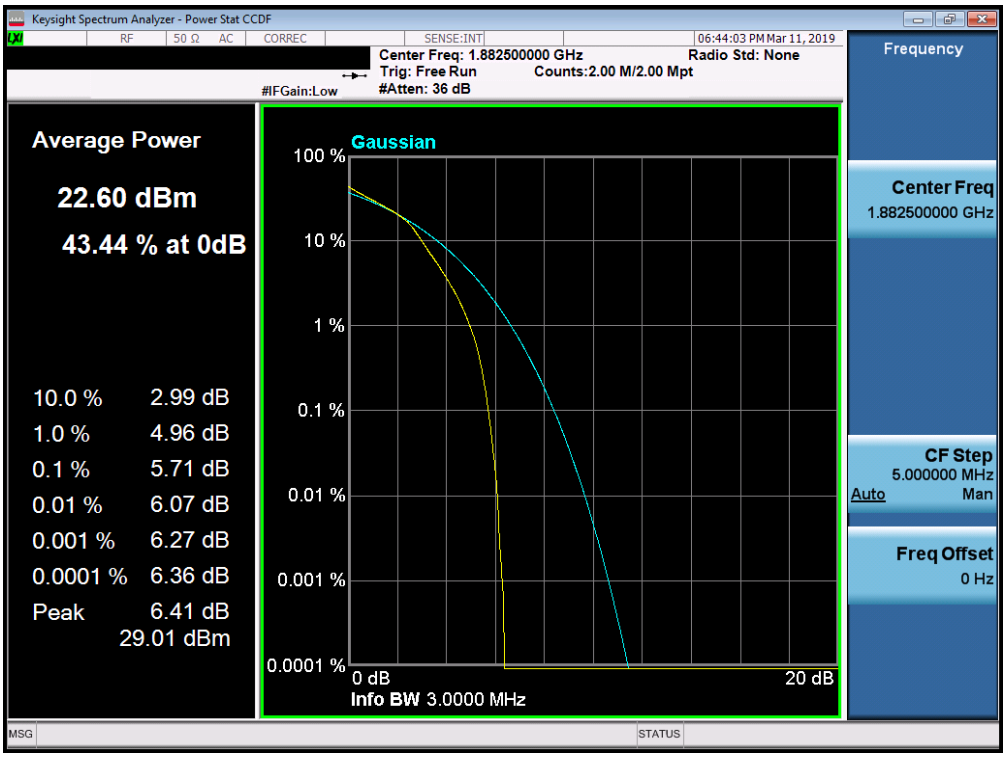
Plot 7-282. PAR Plot (Band 25/2 - 1.4MHz 16-QAM - Full RB Configuration)



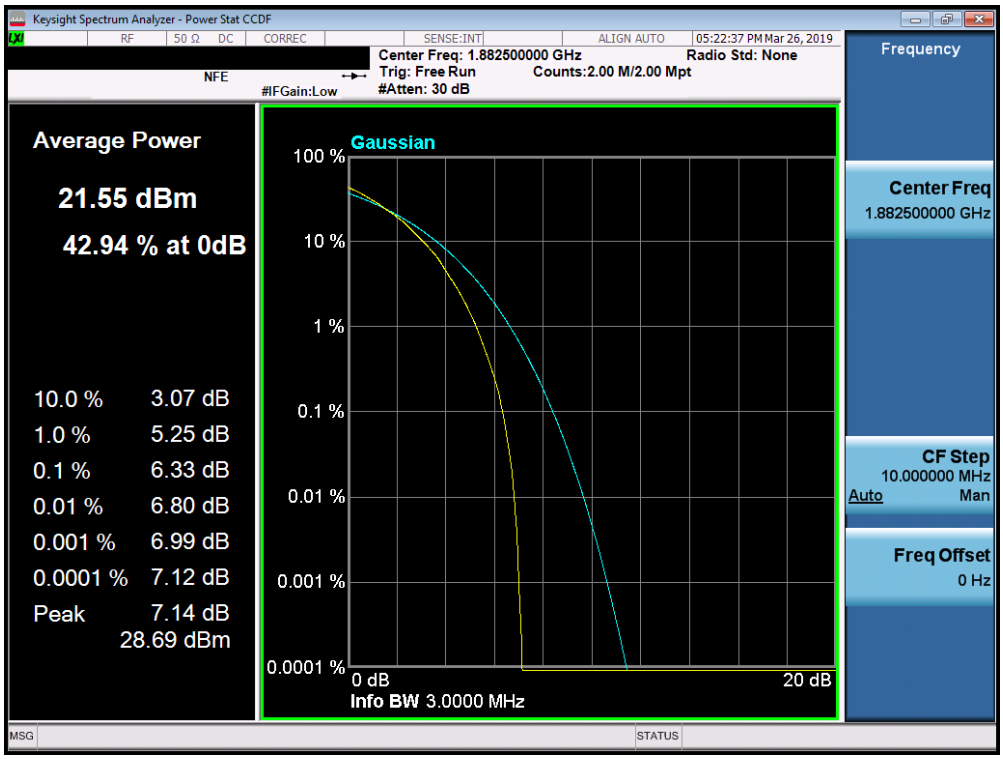
Plot 7-283. PAR Plot (Band 25/2 - 1.4MHz 64-QAM - Full RB Configuration)



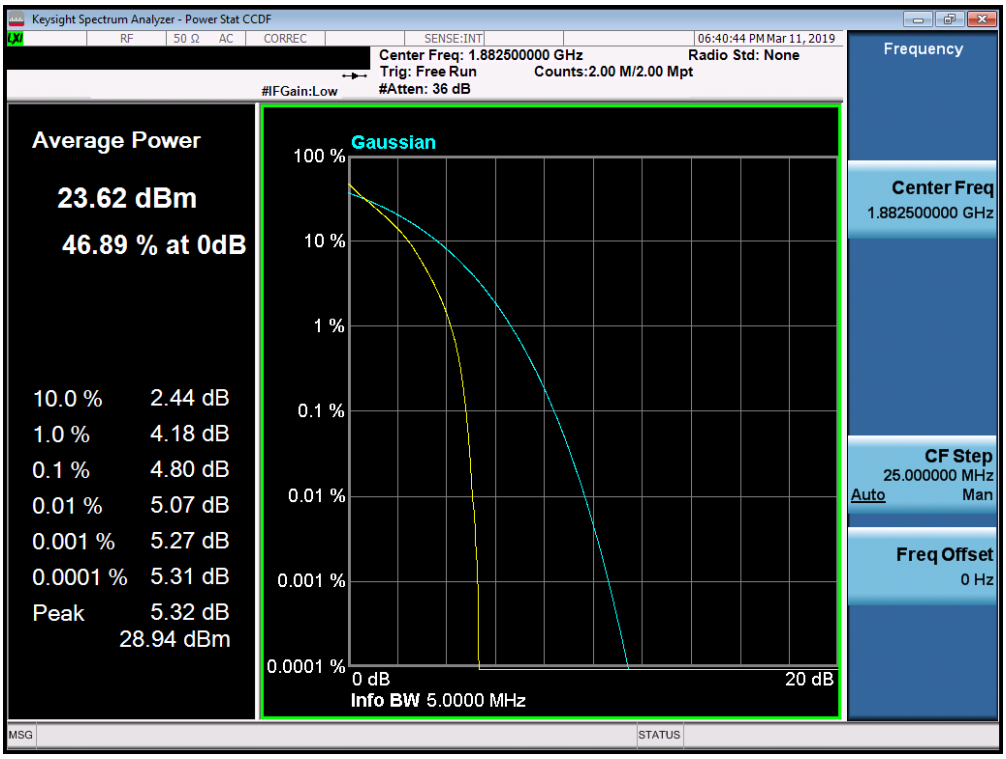
Plot 7-284. PAR Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)



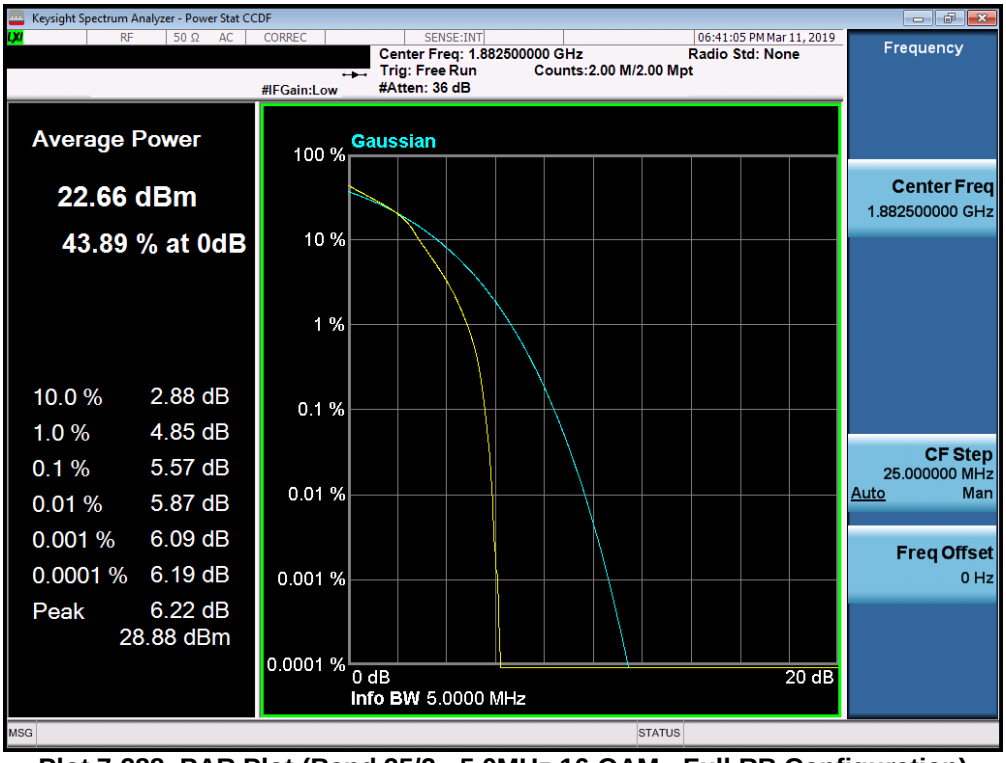
Plot 7-285. PAR Plot (Band 25/2 - 3.0MHz 16-QAM - Full RB Configuration)



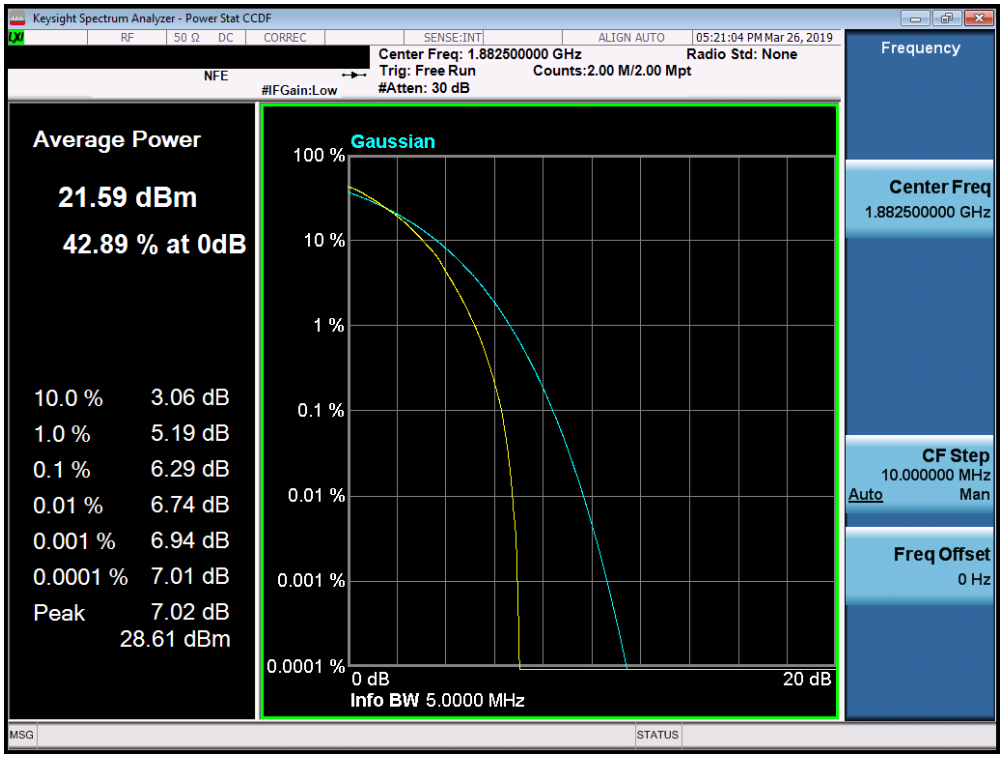
Plot 7-286. PAR Plot (Band 25/2 - 3.0MHz 64-QAM - Full RB Configuration)



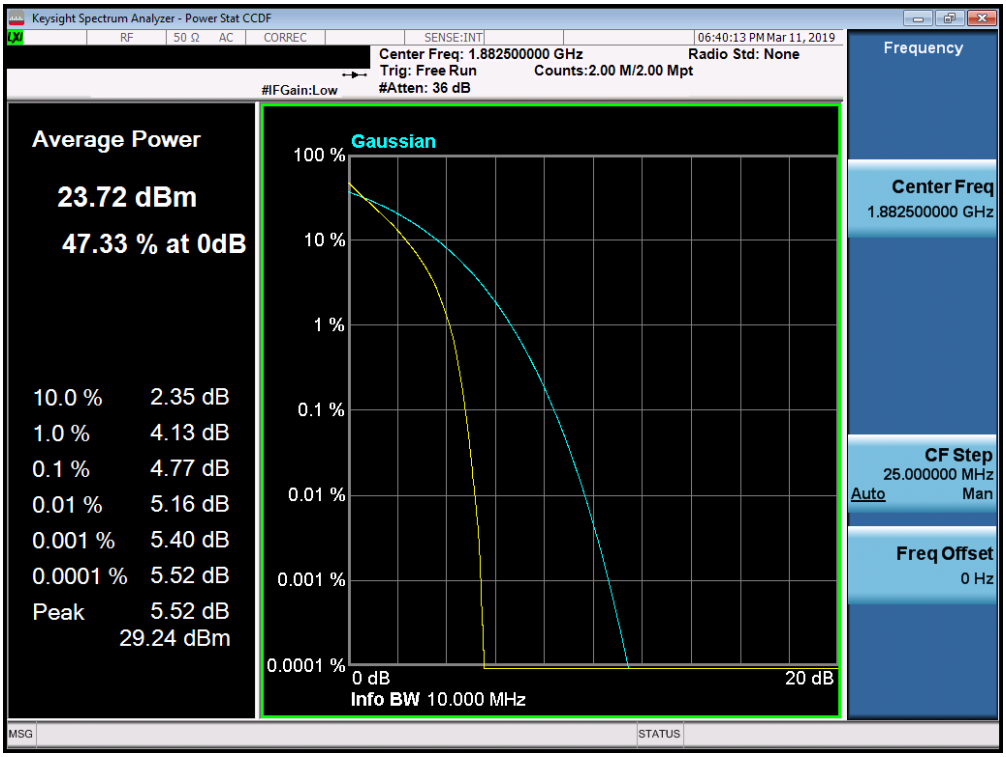
Plot 7-287. PAR Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)



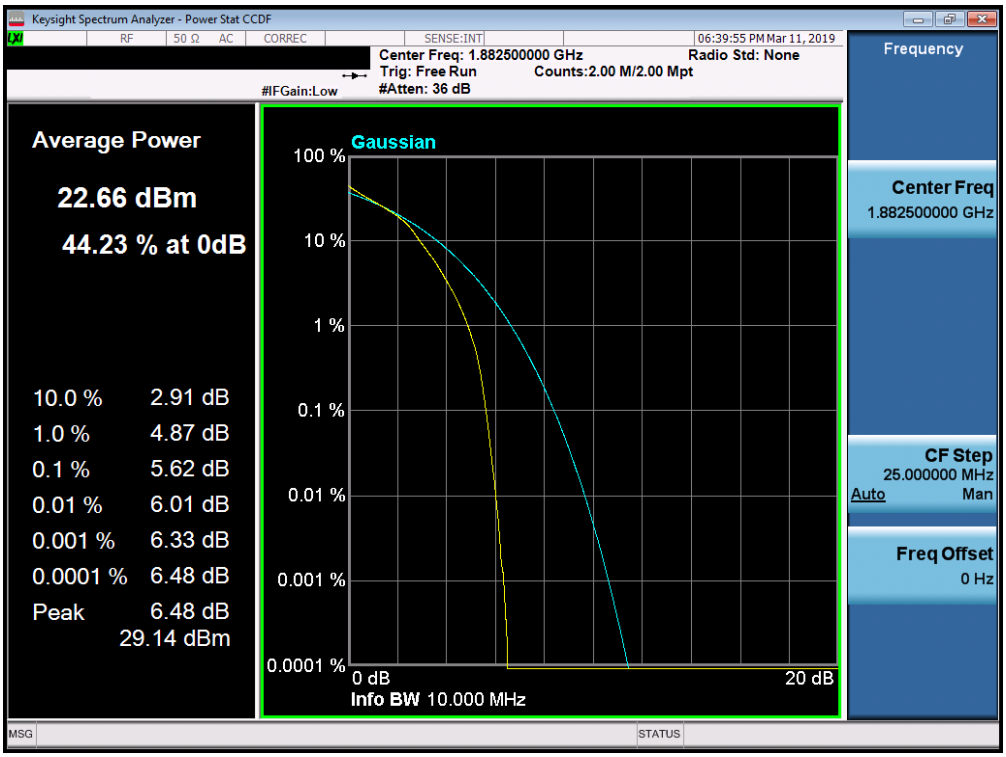
Plot 7-288. PAR Plot (Band 25/2 - 5.0MHz 16-QAM - Full RB Configuration)



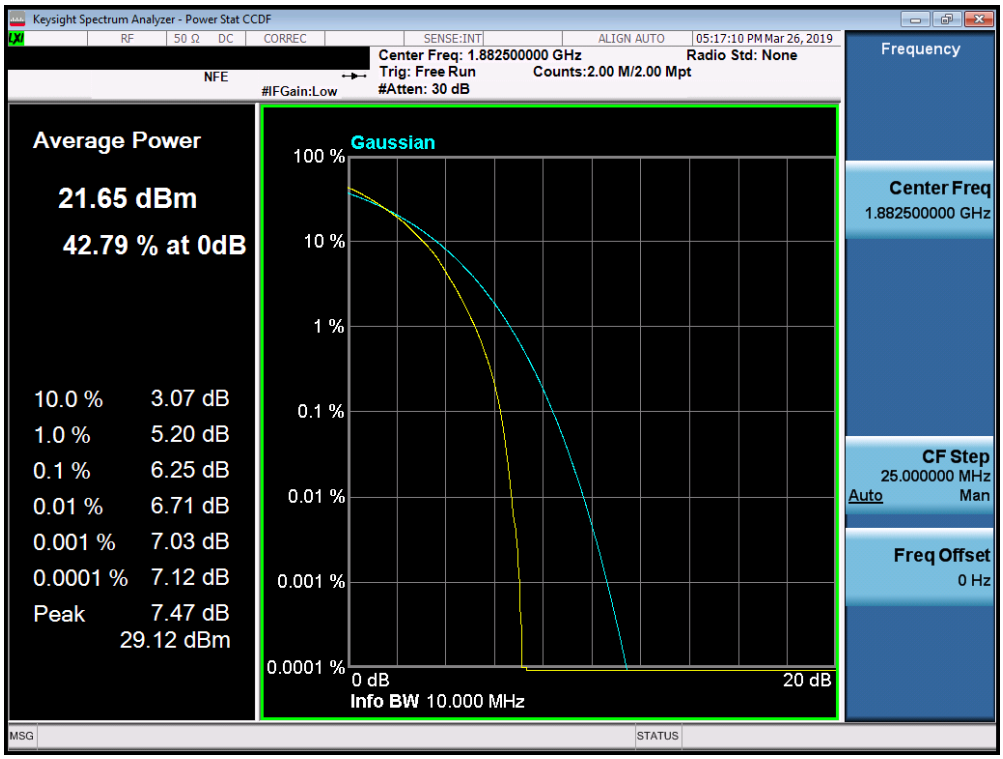
Plot 7-289. PAR Plot (Band 25/2 - 5.0MHz 64-QAM - Full RB Configuration)



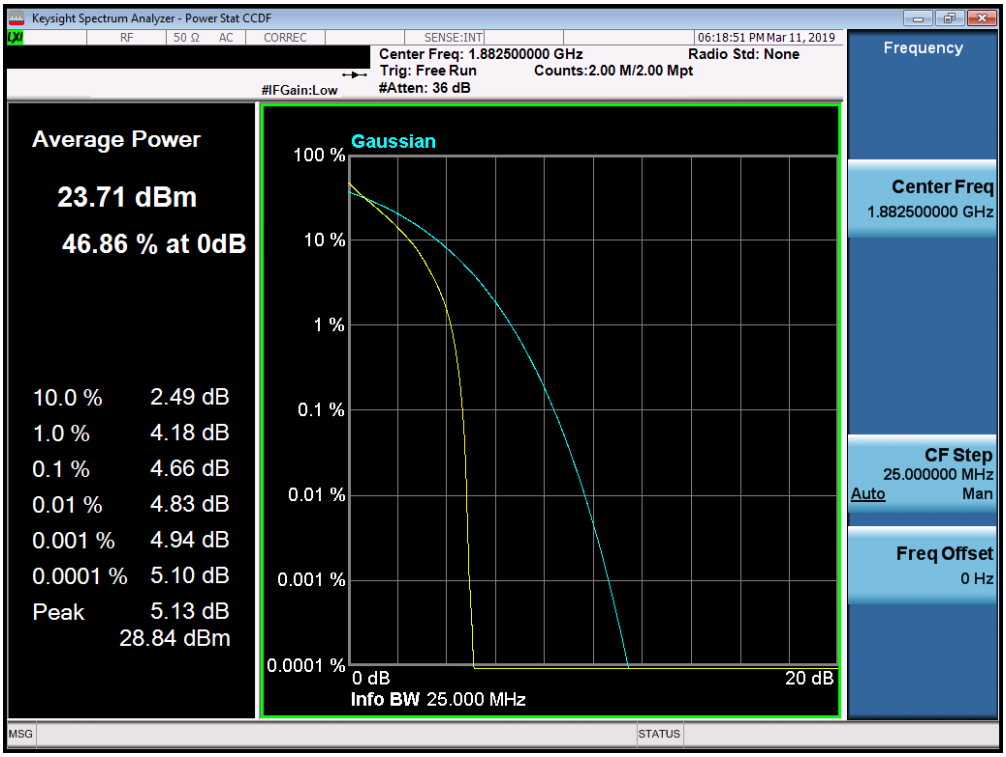
Plot 7-290. PAR Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)



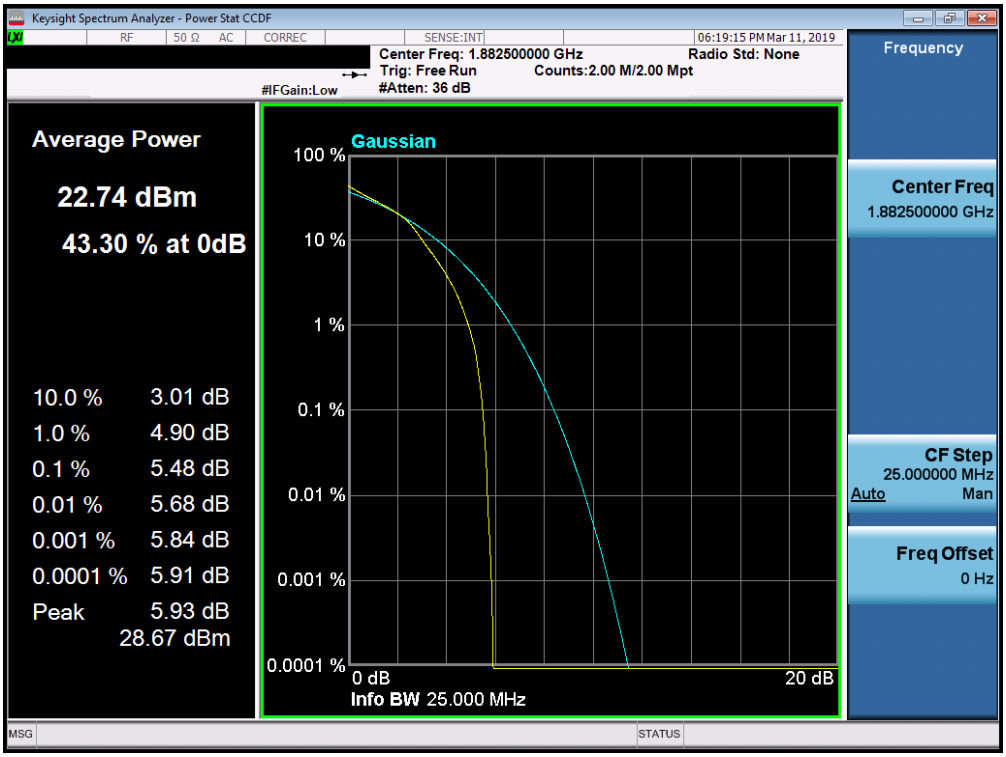
Plot 7-291. PAR Plot (Band 25/2 - 10.0MHz 16-QAM - Full RB Configuration)



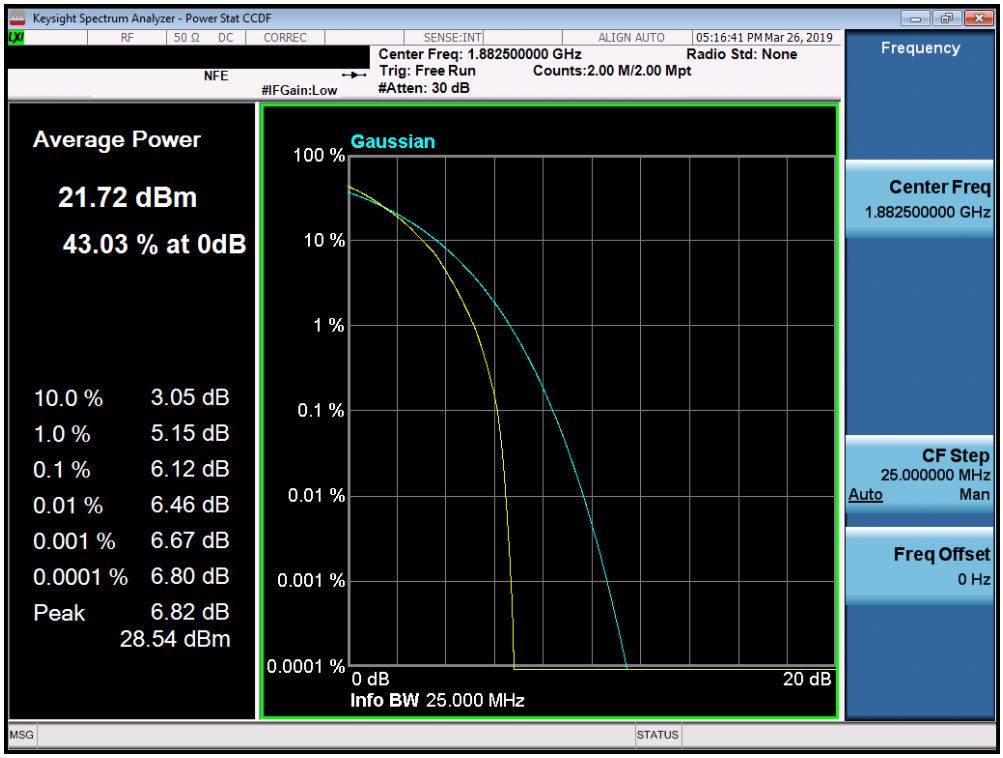
Plot 7-292. PAR Plot (Band 25/2 - 10.0MHz 64-QAM - Full RB Configuration)



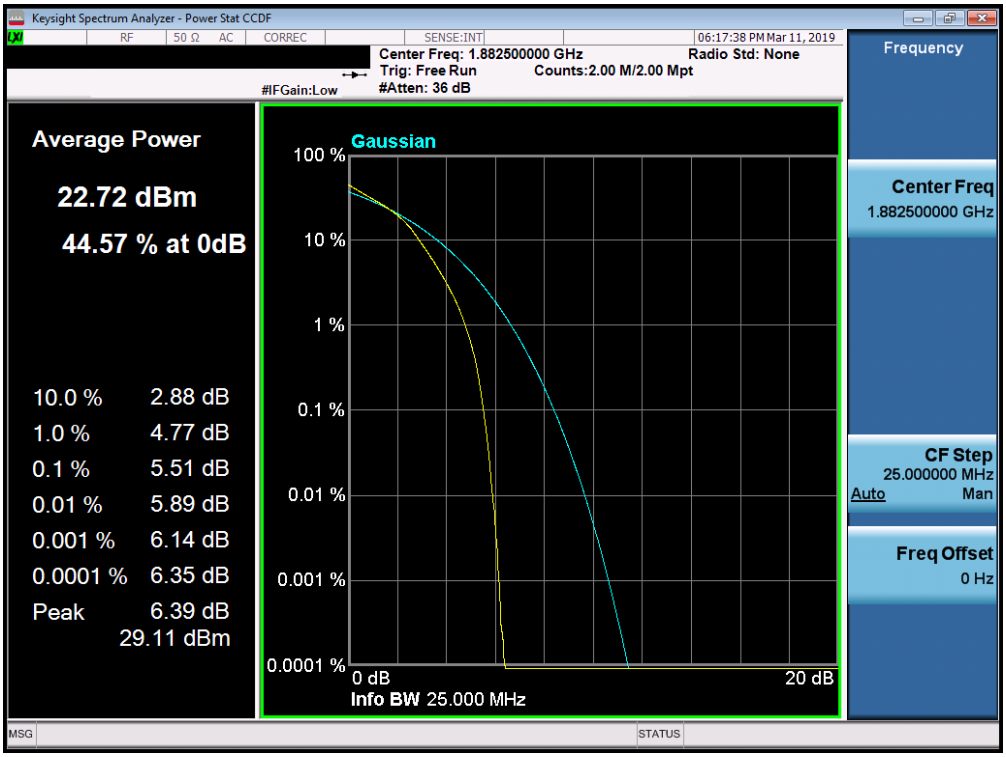
Plot 7-293. PAR Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)



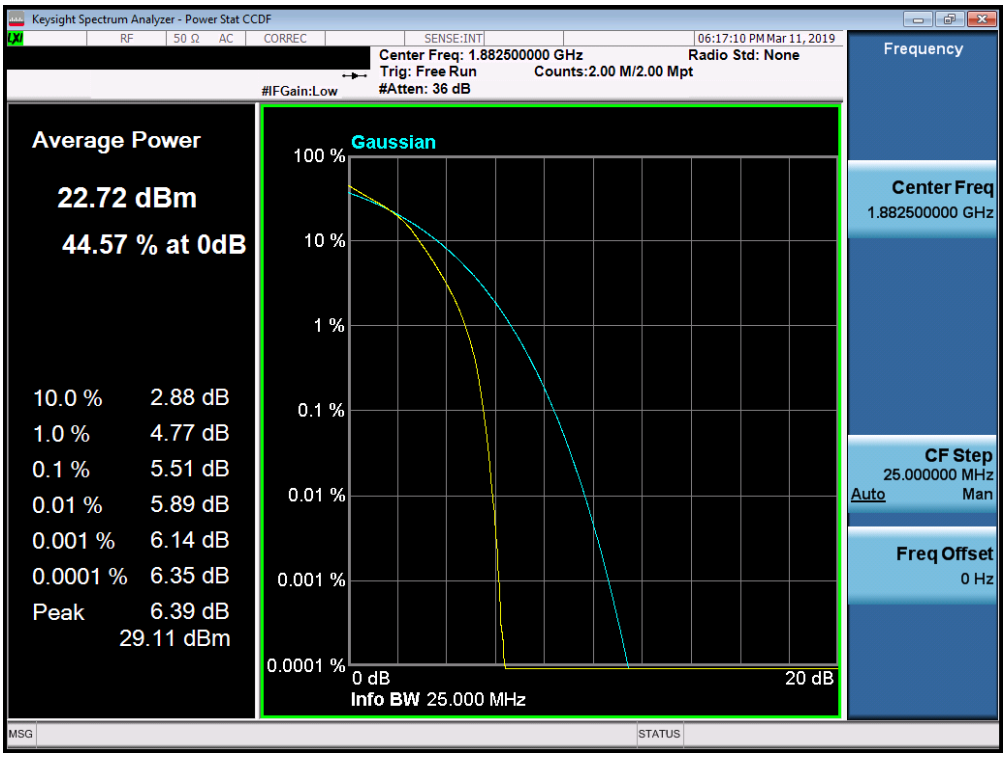
Plot 7-294. PAR Plot (Band 25/2 - 15.0MHz 16-QAM - Full RB Configuration)



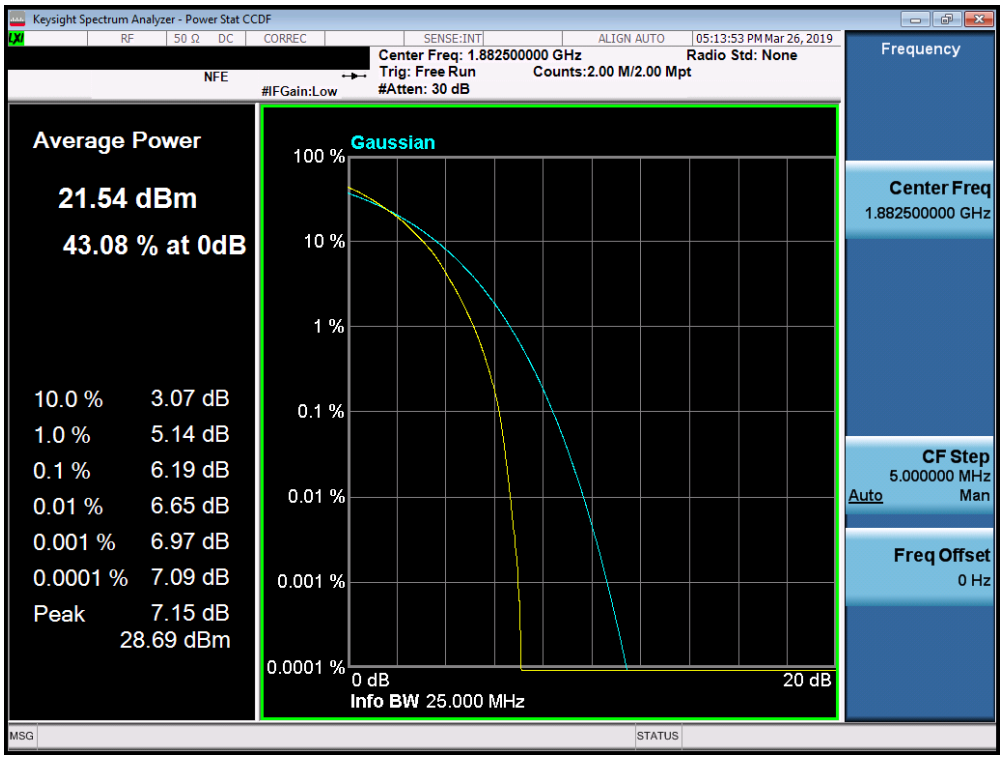
Plot 7-295. PAR Plot (Band 25/2 - 15.0MHz 64-QAM - Full RB Configuration)



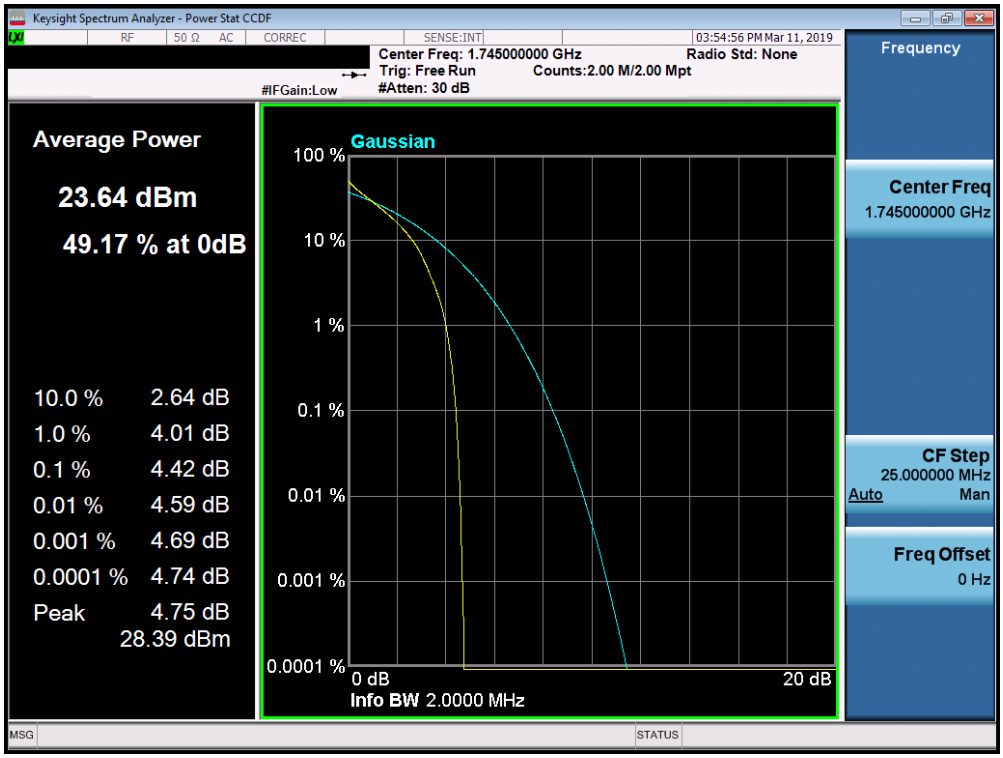
Plot 7-296. PAR Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)



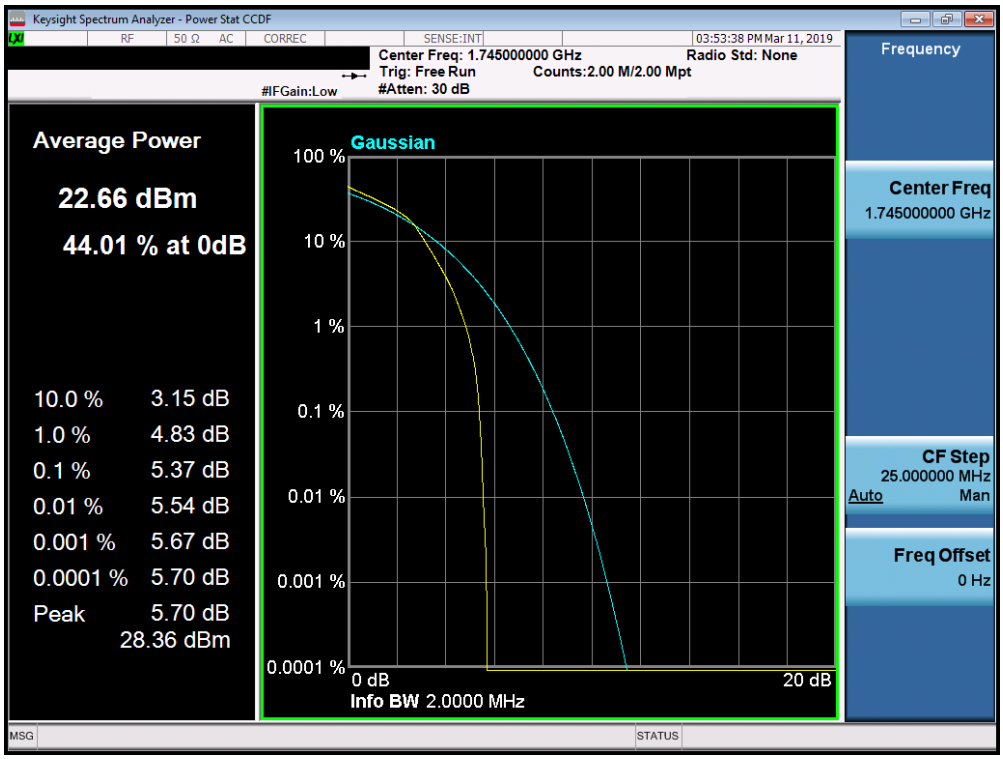
Plot 7-297. PAR Plot (Band 25/2 - 20.0MHz 16-QAM - Full RB Configuration)



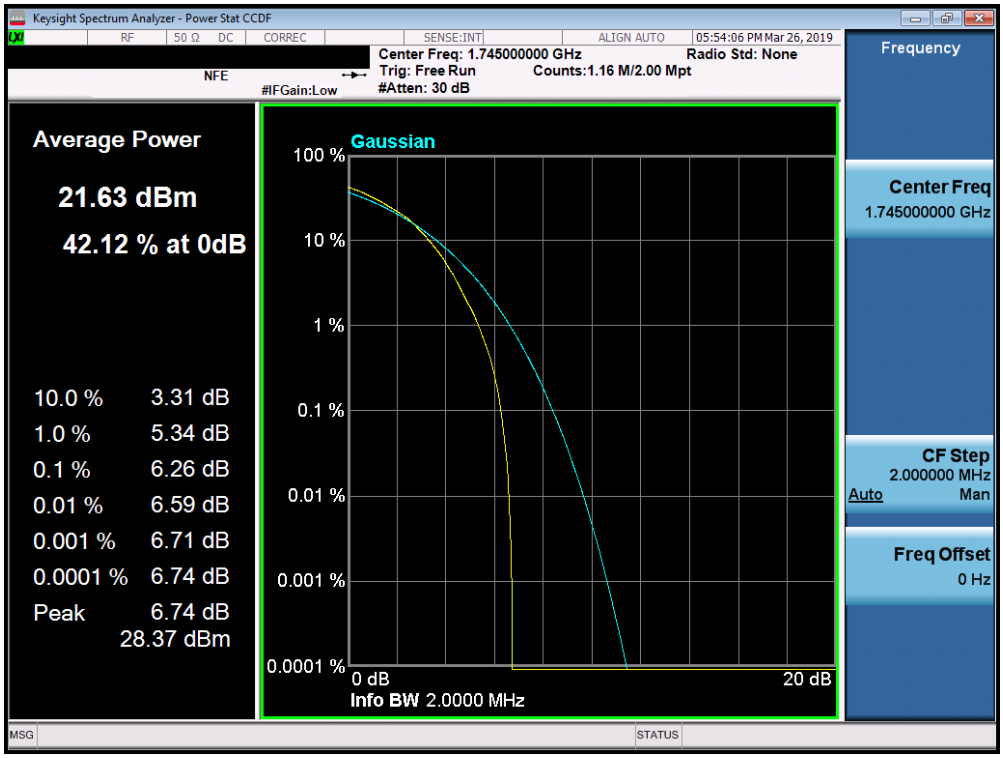
Plot 7-298. PAR Plot (Band 25/2 - 20.0MHz 64-QAM - Full RB Configuration)



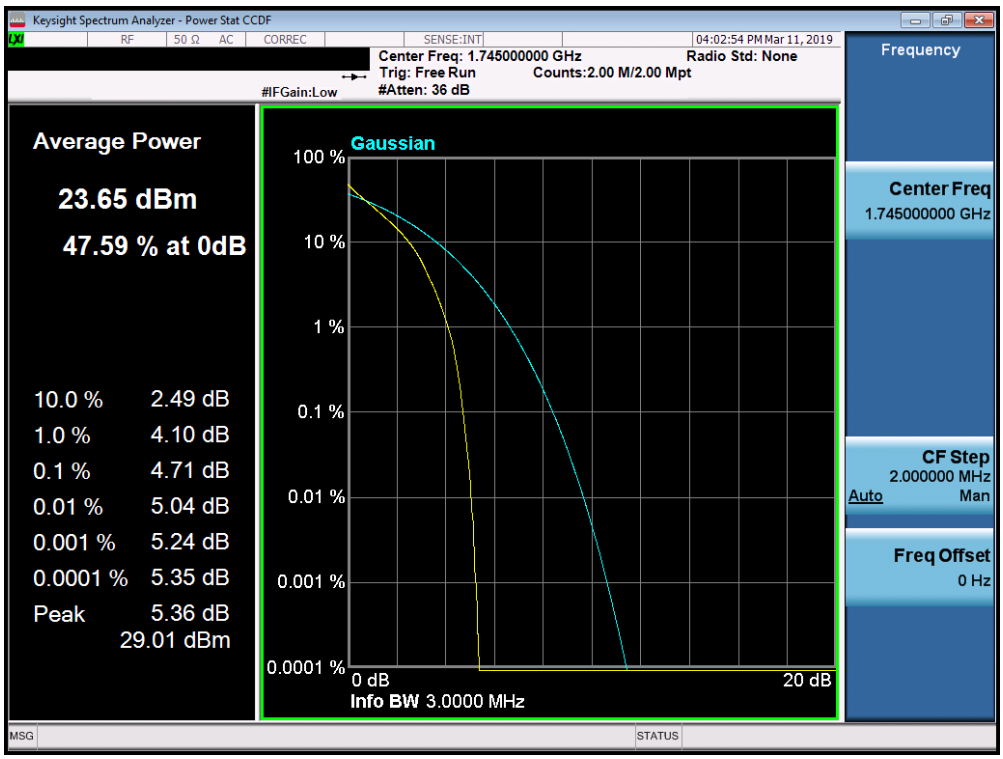
Plot 7-299. PAR Plot (Band 66/4 - 1.4MHz QPSK - Full RB Configuration)



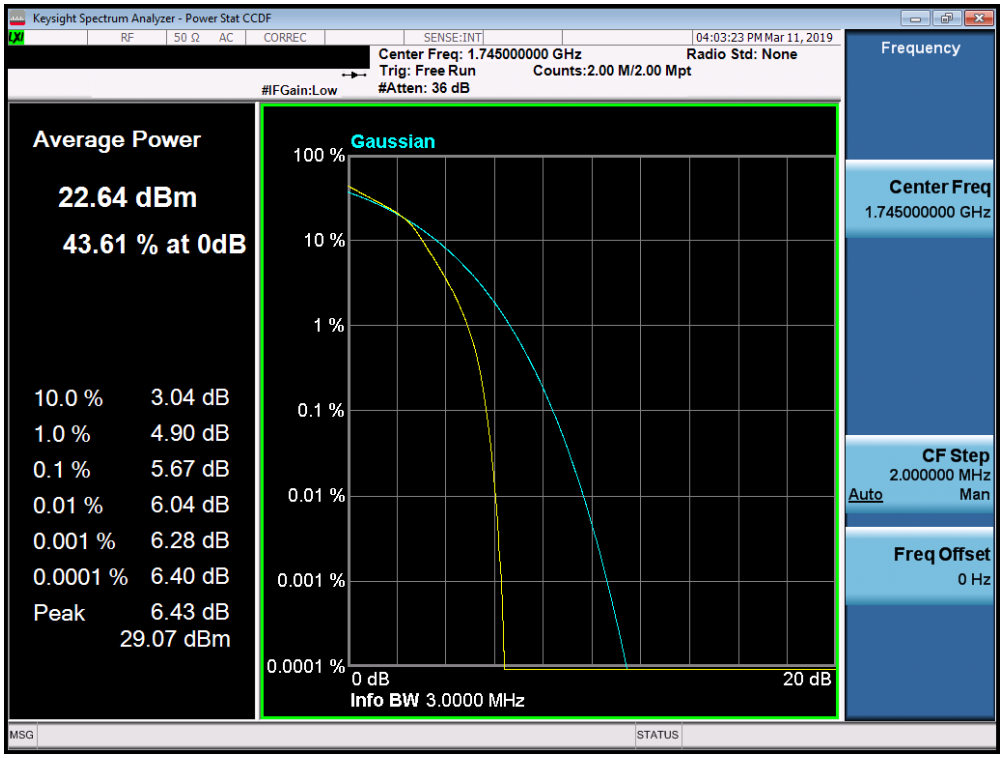
Plot 7-300. PAR Plot (Band 66/4 - 1.4MHz 16-QAM - Full RB Configuration)



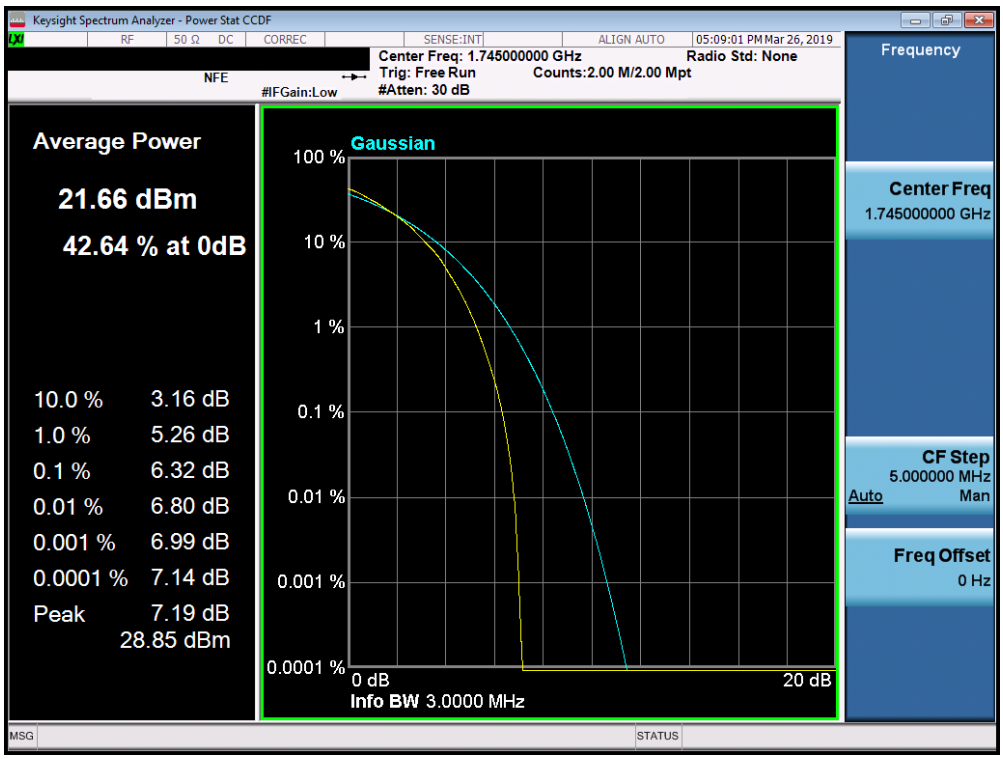
Plot 7-301. PAR Plot (Band 66/4 - 1.4MHz 64-QAM - Full RB Configuration)



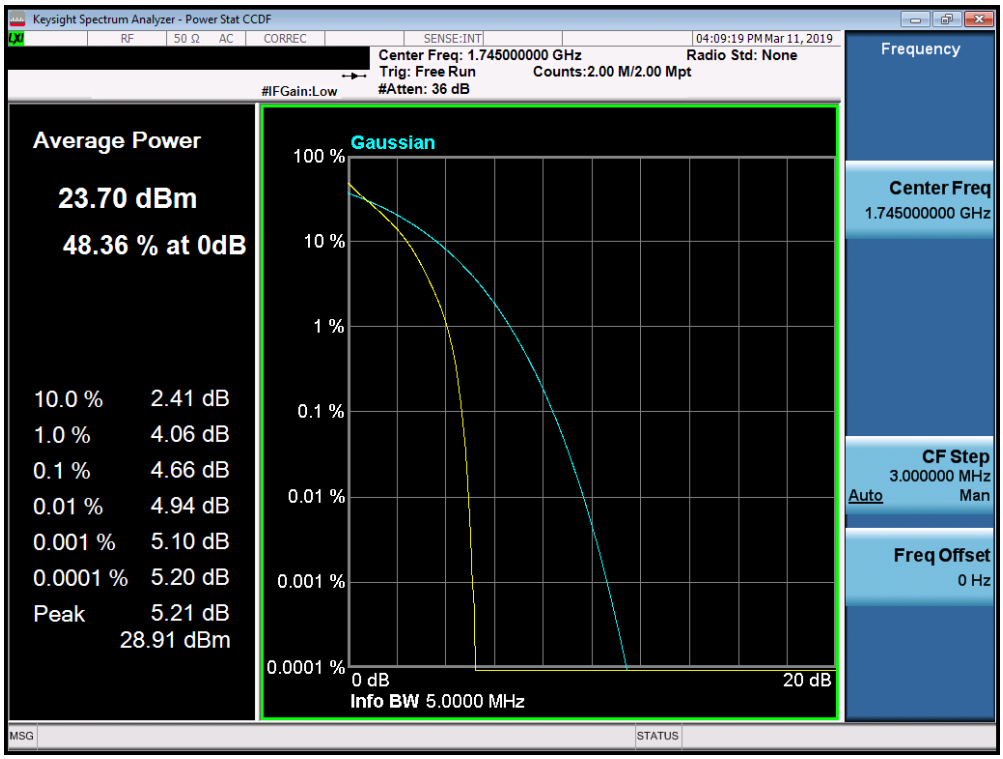
Plot 7-302. PAR Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)



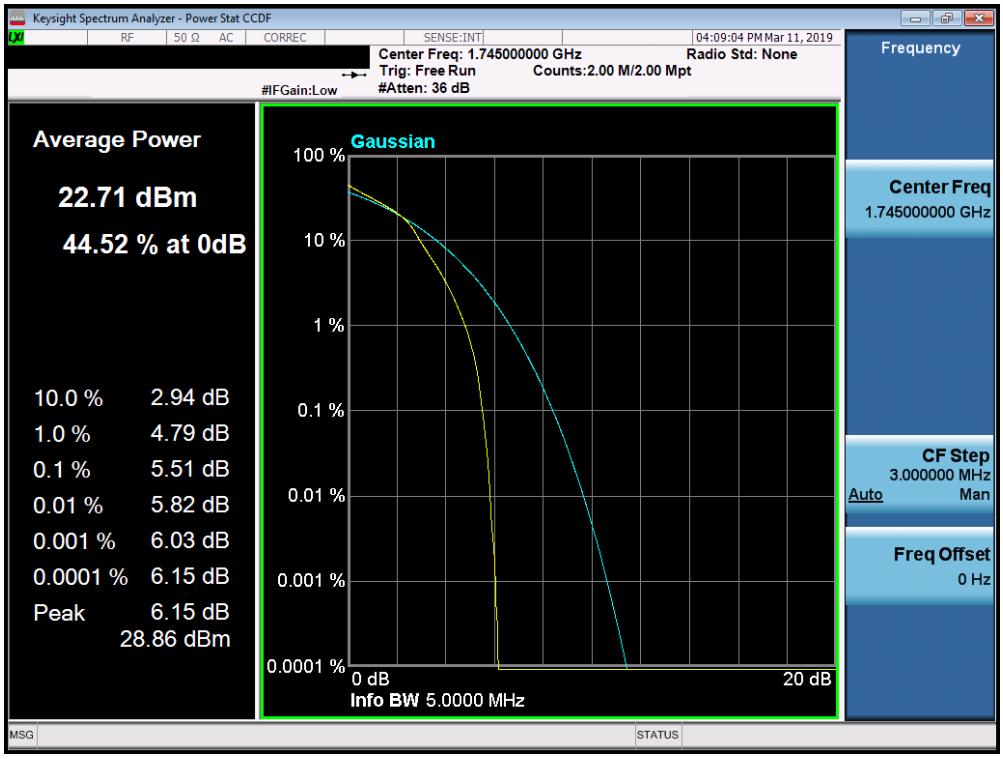
Plot 7-303. PAR Plot (Band 66/4 - 3.0MHz 16-QAM - Full RB Configuration)



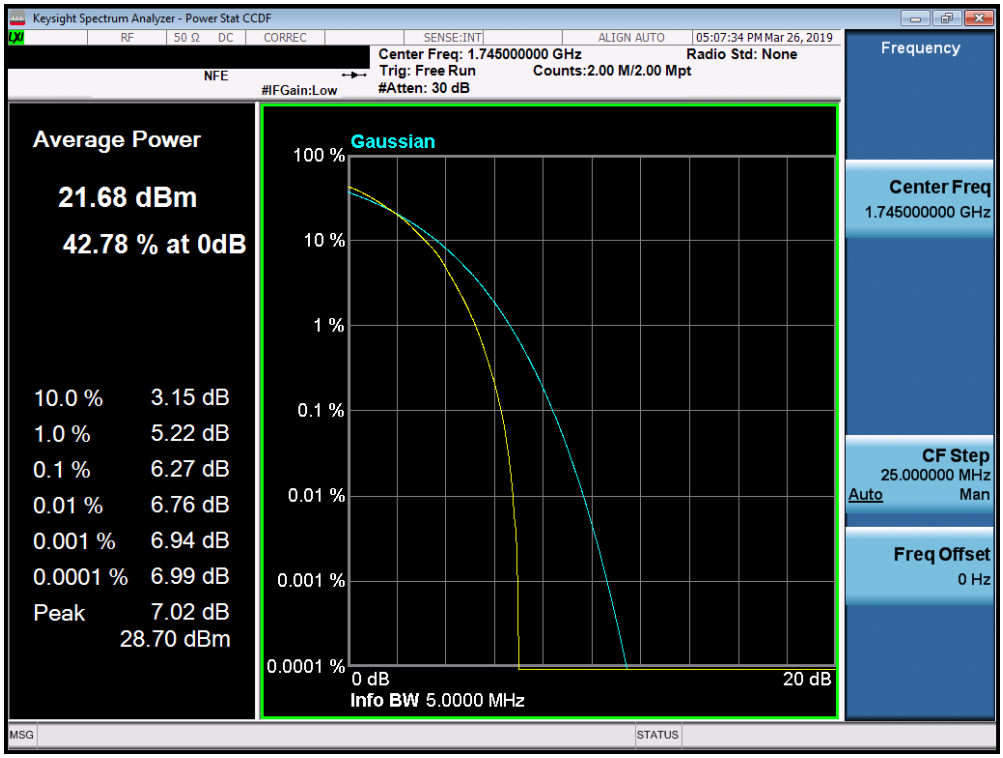
Plot 7-304. PAR Plot (Band 66/4 - 3.0MHz 64-QAM - Full RB Configuration)



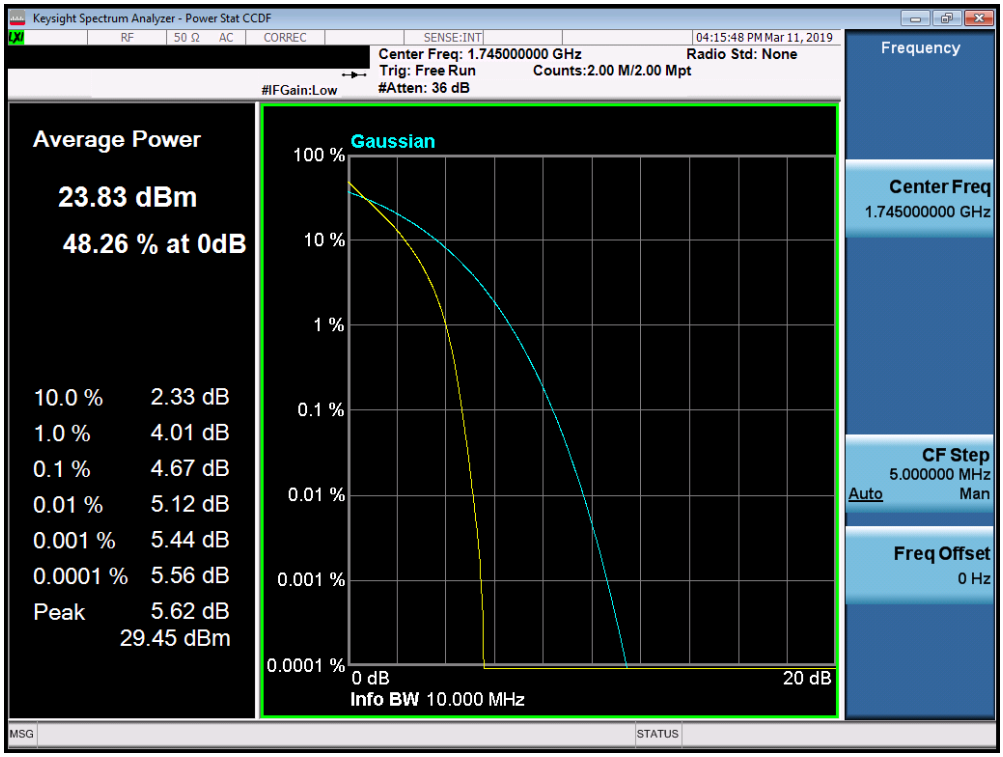
Plot 7-305. PAR Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)



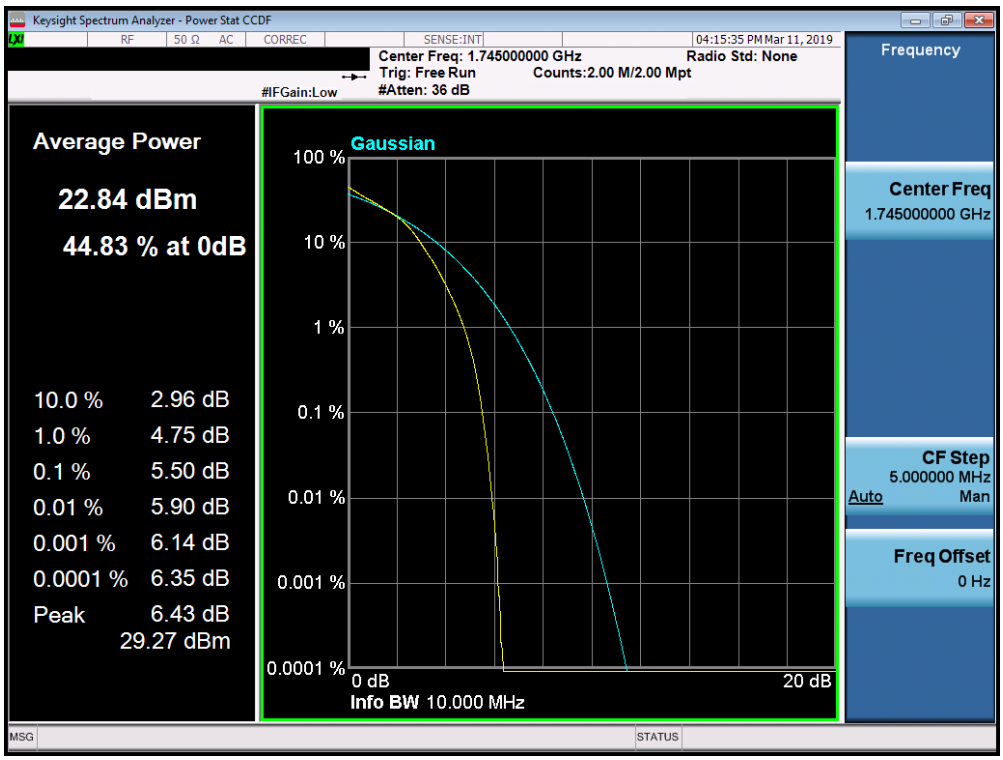
Plot 7-306. PAR Plot (Band 66/4 - 5.0MHz 16-QAM - Full RB Configuration)



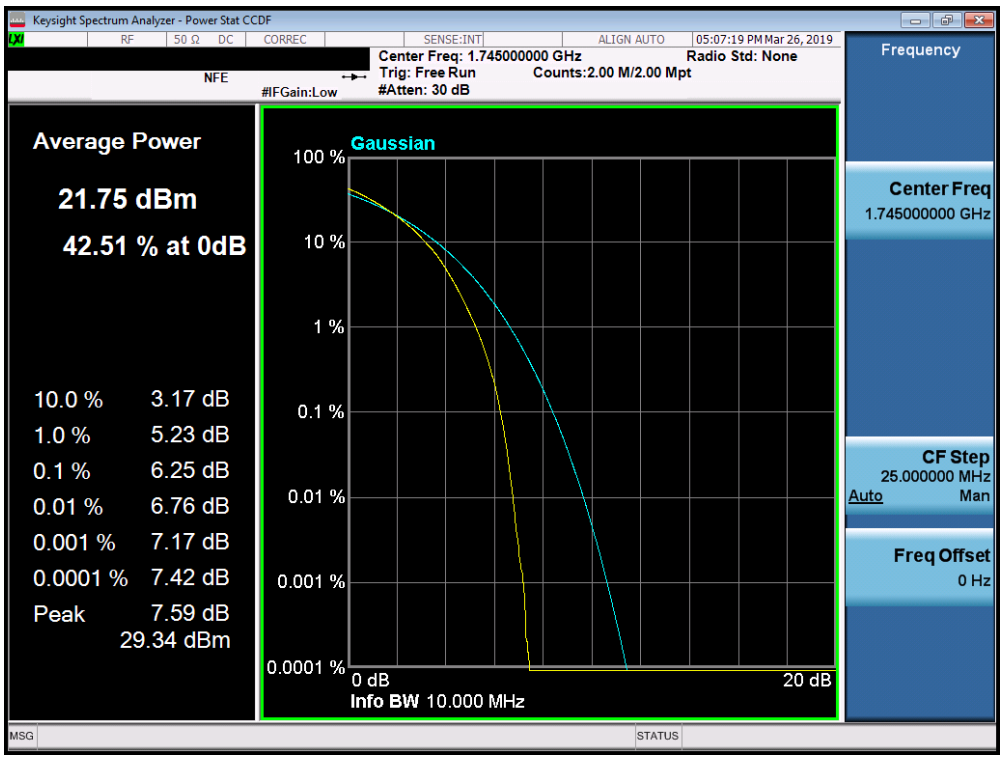
Plot 7-307. PAR Plot (Band 66/4 - 5.0MHz 64-QAM - Full RB Configuration)



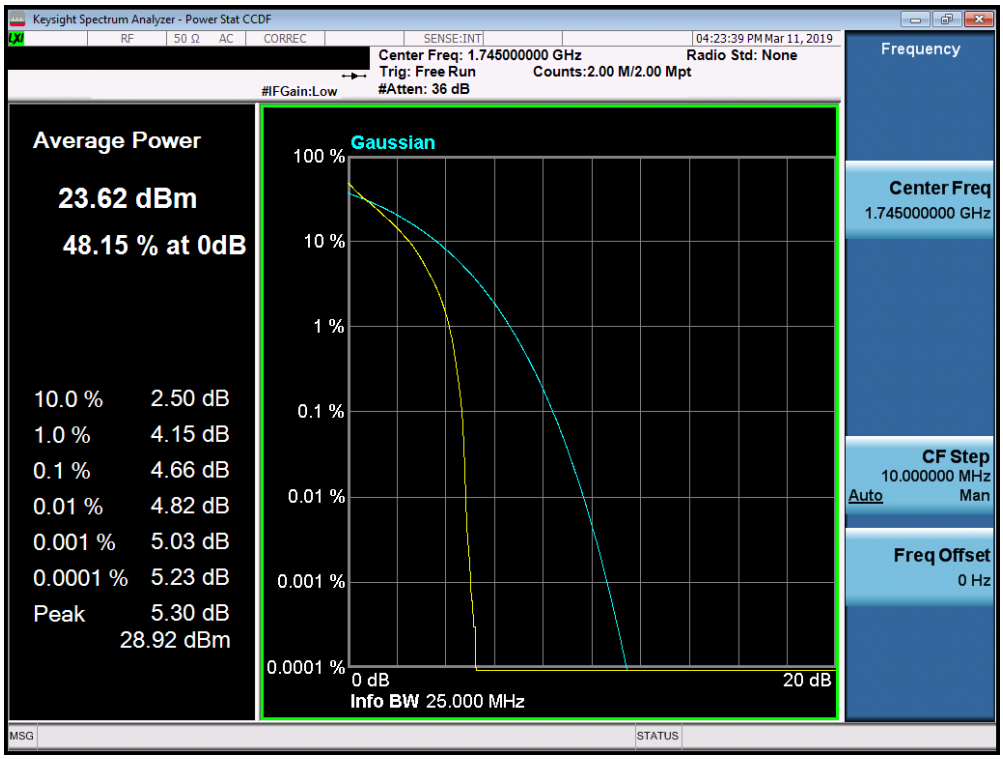
Plot 7-308. PAR Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)



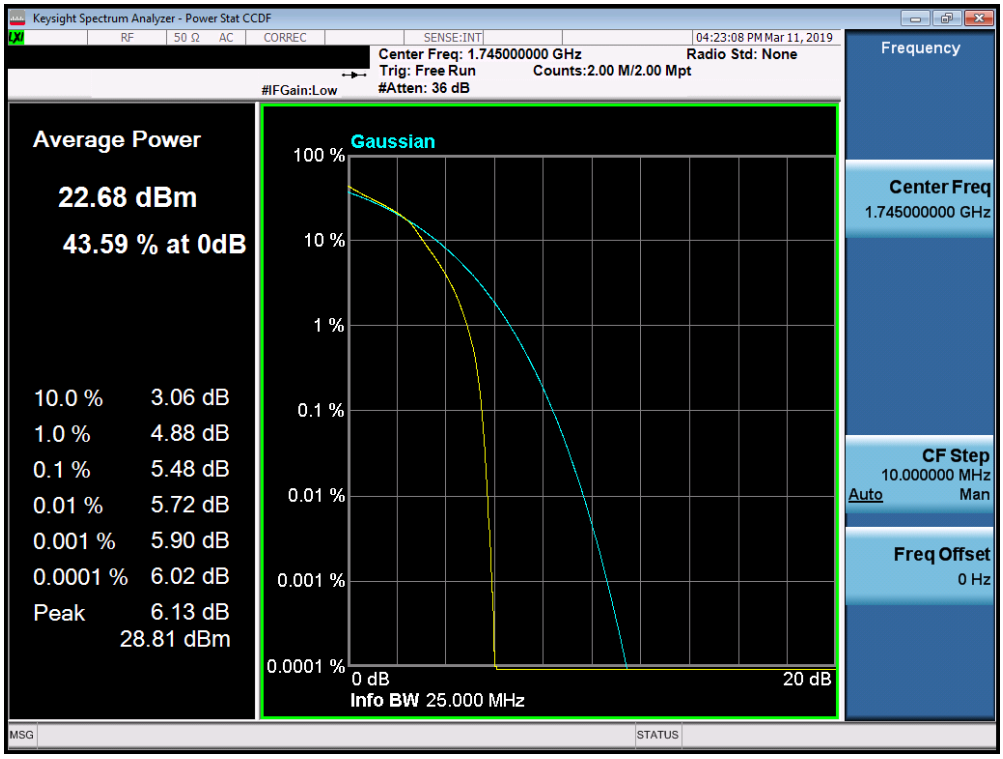
Plot 7-309. PAR Plot (Band 66/4 - 10.0MHz 16-QAM - Full RB Configuration)



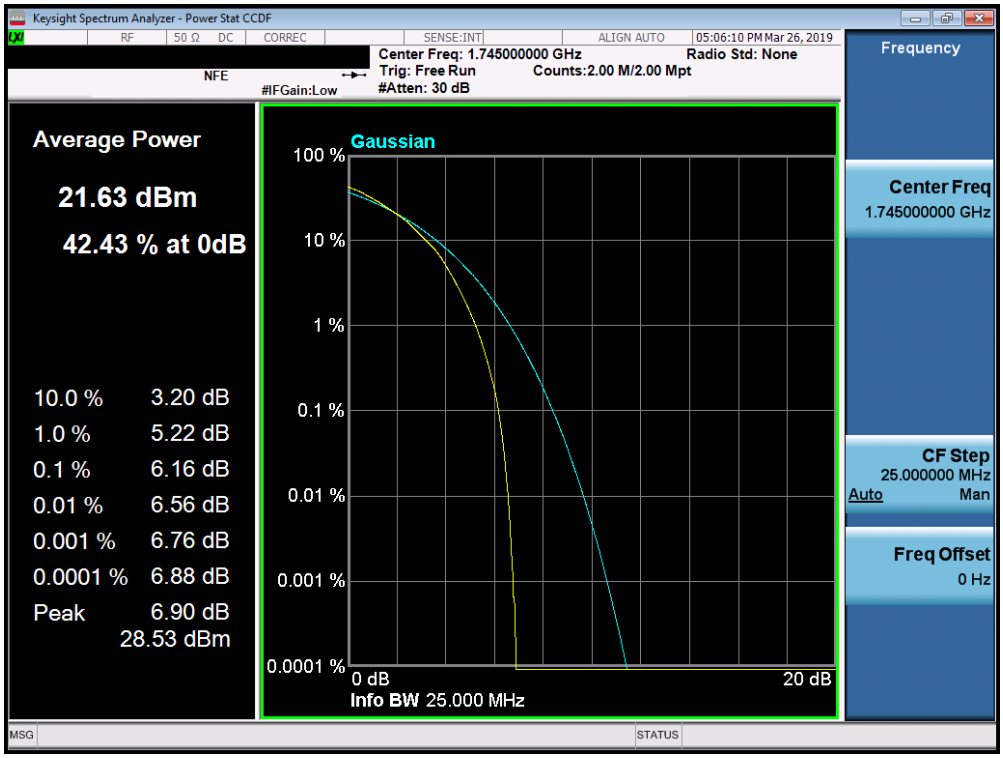
Plot 7-310. PAR Plot (Band 66/4 - 10.0MHz 64-QAM - Full RB Configuration)



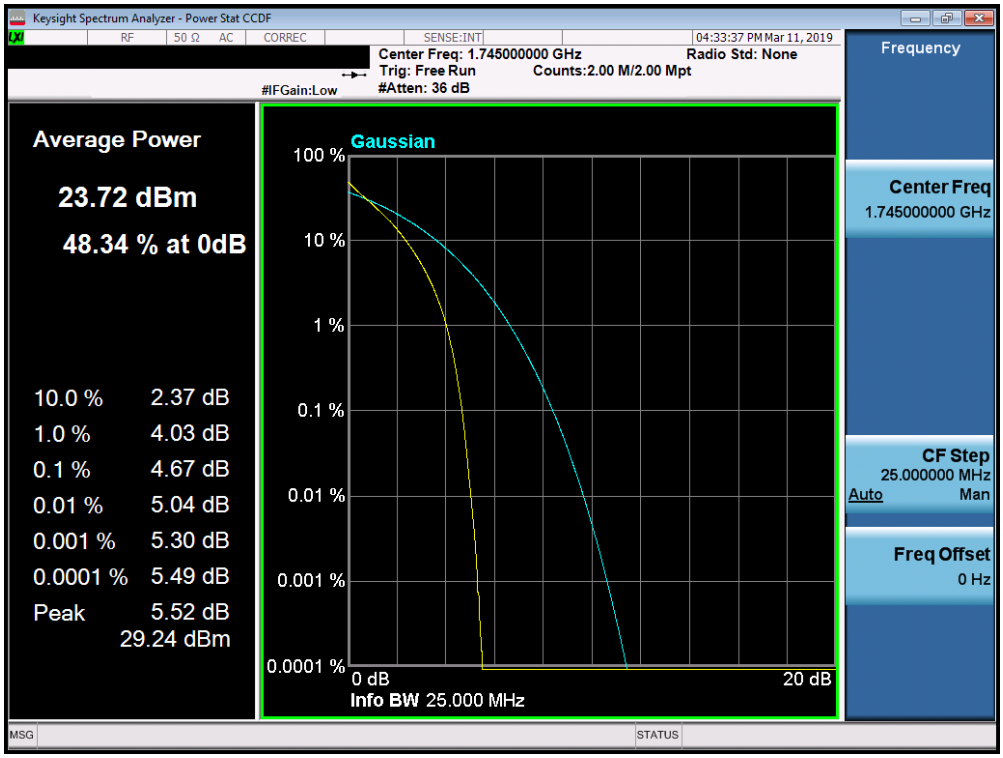
Plot 7-311. PAR Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)



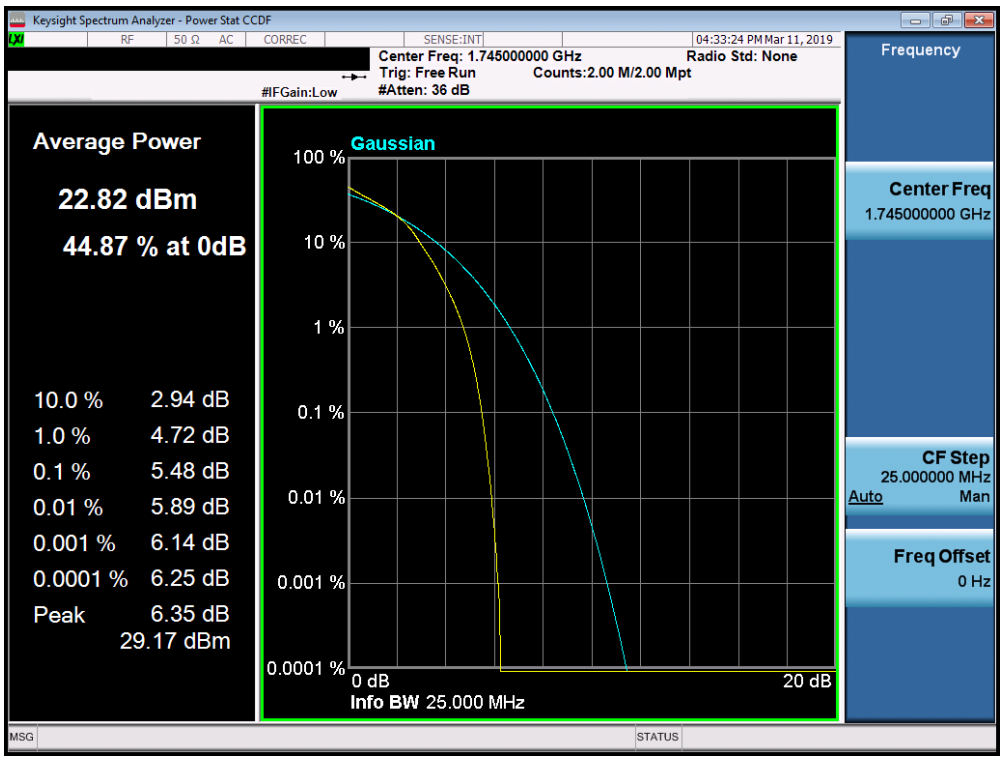
Plot 7-312. PAR Plot (Band 66/4 - 15.0MHz 16-QAM - Full RB Configuration)



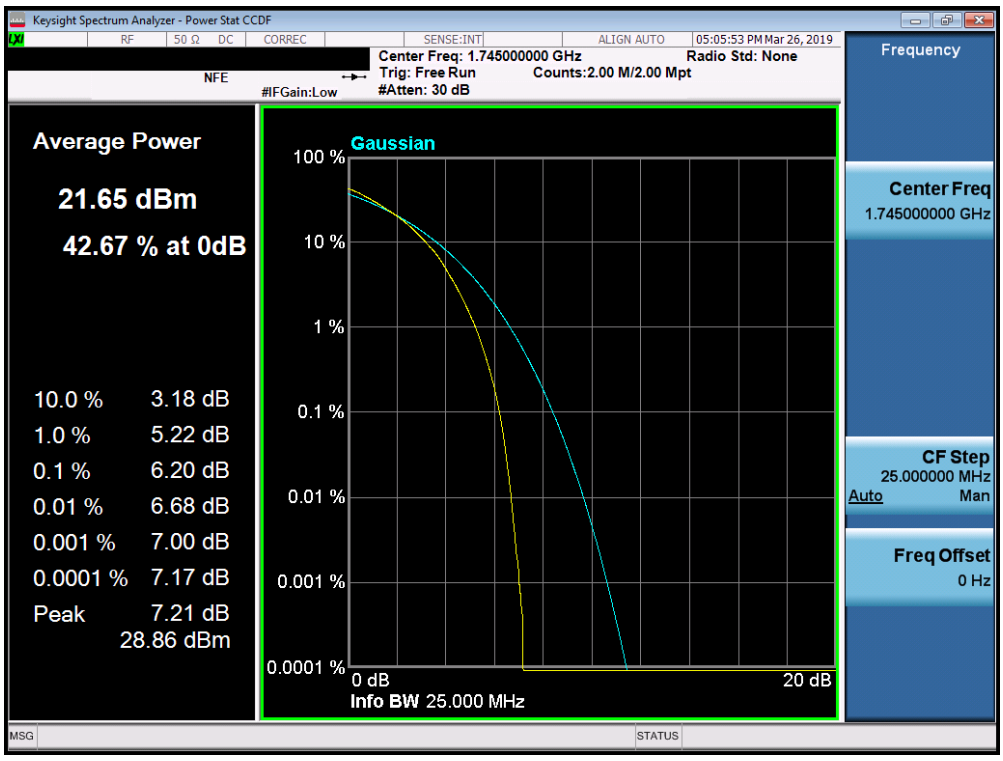
Plot 7-313. PAR Plot (Band 66/4 - 15.0MHz 64-QAM - Full RB Configuration)



Plot 7-314. PAR Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-315. PAR Plot (Band 66/4 - 20.0MHz 16-QAM - Full RB Configuration)



Plot 7-316. PAR Plot (Band 66/4 - 20.0MHz 64-QAM - Full RB Configuration)

7.6 Additional Maximum Power Reduction (A-MPR)

§2.1046

Test Overview

A-MPR is implemented in this device when operating at Power Class 2 in LTE Band 41 per the A-MPR specification in 3GPP TS 36.101. The conducted powers are shown herein to cover the different A-MPR levels specified in the standard. Measurement equipment was set up with triggering/gating on the spectrum analyzer such that powers were measured only during the on-time of the signal.

Test Procedure Used

KDB 971168 D01 v03r01 – Section 5.2.2

Test Settings

1. Span = 2 x OBW to 3 x OBW
2. RBW = 1% to 5% of the OBW
3. Number of measurement points in sweep ≥ 2 x span / RBW
4. Sweep = auto-couple (less than transmission burst duration)
5. Detector = RMS (power)
6. Trigger was set to enable power measurements only on full power bursts
7. Trace was allowed to stabilize
8. Spectrum analyzer's "Channel Power" function was used to compute the power by integrating the spectrum across the OBW of the signal

Test Setup

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

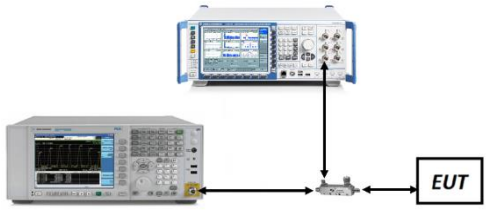


Figure 7-5. Test Instrument & Measurement Setup

Test Notes

None.

Test Case	NS	MCC	MNC	Channel BW [MHz]	Channel Number	Channel Frequency [MHz]	Modulation	RB Size	RB Offset	MPR [dB]	A-MPR [dB]	Measured Power [dBm]	Lowest Typical Power [dBm]	Delta [dB]
1	01	310	120	5	39675	2498.5	QPSK	1	0	0	≤ 3	25.50	24.2	**1.30**
							16-QAM			≤ 1		24.90	23.2	**1.70**
							64-QAM			≤ 2		23.50	22.2	**1.30**
2				5	39675	2498.5	QPSK	1	9	0	0	27.30	27.2	**0.10**
							16-QAM			≤ 1		27.00	26.2	**0.80**
							64-QAM			≤ 2		25.30	25.2	**0.10**
3				10	39700	2501	QPSK	1	0	0	≤ 5	24.22	22.2	**2.02**
							16-QAM	1	0	≤ 1		23.43	21.2	**2.23**
							64-QAM	1	0	≤ 2		23.20	20.2	**3.00**
4				10	39700	2501	QPSK	20	0	0	≤ 2	25.22	24.2	**1.02**
							16-QAM	20	0	≤ 1		24.30	23.2	**1.10**
							64-QAM	20	0	≤ 2		23.51	22.2	**1.31**
5				10	39700	2501	QPSK	50	0	0	≤ 3	24.29	23.2	**1.09**
							16-QAM	50	0	≤ 1		23.30	22.2	**1.10**
							64-QAM	50	0	≤ 2		22.40	21.2	**1.20**
6				10	39700	2501	QPSK	25	20	0	≤ 1	25.20	25.2	**0.00**
							16-QAM	25	20	≤ 1		24.29	24.2	**0.09**
							64-QAM	25	20	≤ 2		23.50	23.2	**0.30**
7				10	39700	2501	QPSK	1	36	0	0	27.22	27.2	**0.02**
							16-QAM	1	36	≤ 1		26.37	26.2	**0.17**
							64-QAM	1	36	≤ 2		25.50	25.2	**0.30**
8				15	39725	2503.5	QPSK	1	0	0	≤ 5	26.10	22.2	**3.90**
							16-QAM	1	0	≤ 1		25.92	21.2	**4.72**
							64-QAM	1	0	≤ 2		24.65	20.2	**4.45**
9				15	39725	2503.5	QPSK	20	0	0	≤ 2	25.77	24.2	**1.57**
							16-QAM	20	0	≤ 1		24.82	23.2	**1.62**
							64-QAM	20	0	≤ 2		23.87	22.2	**1.67**
10				15	39725	2503.5	QPSK	75	0	0	≤ 4	22.70	22.2	**0.50**
							16-QAM	75	0	≤ 1		21.70	21.2	**0.50**
							64-QAM	75	0	≤ 2		20.70	20.2	**0.50**
11				15	39725	2503.5	QPSK	50	15	0	≤ 3	23.50	23.2	**0.30**
							16-QAM	50	15	≤ 1		22.50	22.2	**0.30**
							64-QAM	50	15	≤ 2		21.75	21.2	**0.55**
12				15	39725	2503.5	QPSK	1	60	0	0	27.53	27.2	**0.33**
							16-QAM	1	60	≤ 1		26.60	26.2	**0.40**
							64-QAM	1	60	≤ 2		25.65	25.2	**0.45**
13				20	39750	2506	QPSK	1	0	0	≤ 5	22.55	22.2	**0.35**
							16-QAM	1	0	≤ 1		21.70	21.2	**0.50**
							64-QAM	1	0	≤ 2		20.72	20.2	**0.52**
14				20	39750	2506	QPSK	20	0	0	≤ 2	24.50	24.2	**0.30**
							16-QAM	20	0	≤ 1		23.50	23.2	**0.30**
							64-QAM	20	0	≤ 2		22.65	22.2	**0.45**
15				20	39750	2506	QPSK	100	0	0	≤ 4	22.45	22.2	**0.25**
							16-QAM	100	0	≤ 1		21.50	21.2	**0.30**
							64-QAM	100	0	≤ 2		20.65	20.2	**0.45**
16				20	39750	2506	QPSK	75	24	0	≤ 3	23.35	23.2	**0.15**
							16-QAM	75	24	≤ 1		22.52	22.2	**0.32**
							64-QAM	75	24	≤ 2		21.57	21.2	**0.37**
17				20	39750	2506	QPSK	1	77	0	0	27.30	27.2	**0.10**
							16-QAM	1	77	≤ 1		26.6	26.2	**0.40**
							64-QAM	1	77	≤ 2		25.85	25.2	**0.65**

Table 7-3. A-MPR Conducted Power Measurements

7.7 Radiated Power (ERP/EIRP)

Test Overview

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.2.1

ANSI/TIA-603-E-2016 – Section 2.2.17

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation. For signals with burst transmission, the signal analyzer's "time domain power" measurement capability is used
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW ≥ 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points ≥ 2 x span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto". Trigger is set to enable triggering only on full power bursts with the sweep time set less than or equal to the transmission burst duration
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation. For signals with burst transmission, the "gating" function was enabled to ensure that measurements are performed during times in which the transmitter is operating at its maximum power
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

Test Setup

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

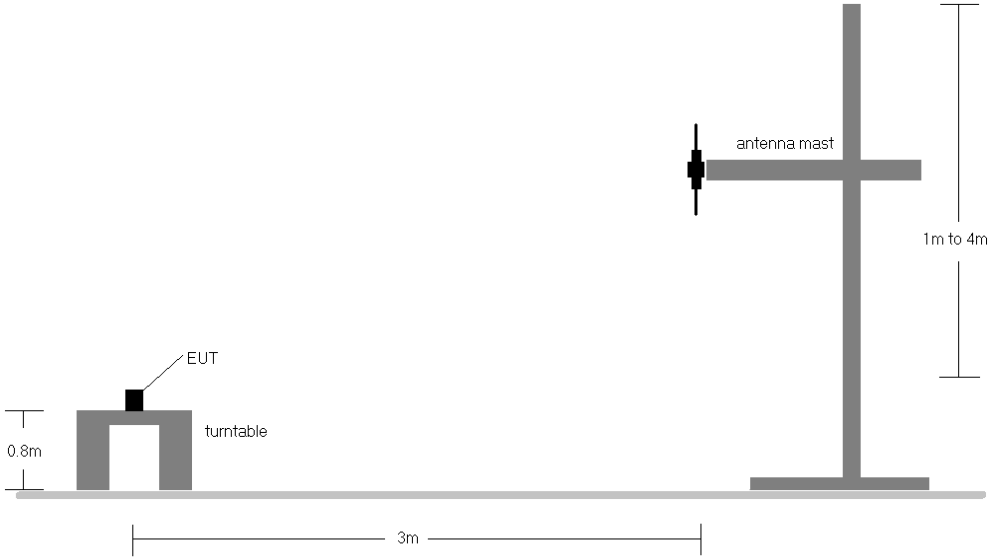


Figure 7-6. Radiated Test Setup <1GHz

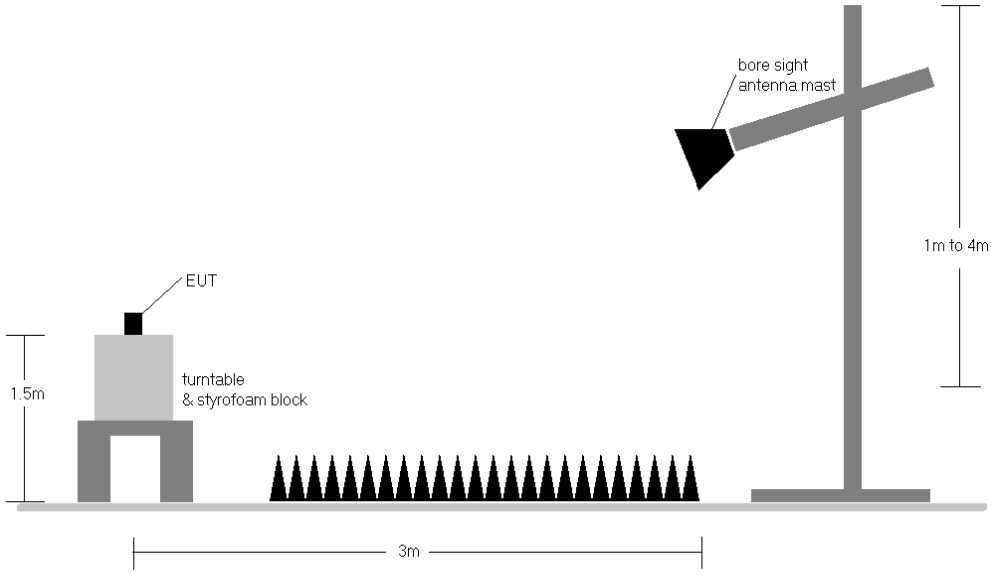


Figure 7-7. Radiated Test Setup >1GHz

Test Notes

1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.

2) This unit was tested with its standard battery.

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
665.50	5	QPSK	H	264	325	1 / 0	14.83	5.19	17.87	0.061	34.77	-16.90
680.50	5	QPSK	H	273	327	1 / 0	16.01	5.19	**19.05**	**0.080**	34.77	-15.72
695.50	5	QPSK	H	266	310	1 / 0	14.76	5.19	17.80	0.060	34.77	-16.97
680.50	5	16-QAM	H	273	327	1 / 0	15.19	5.19	**18.23**	0.067	34.77	-16.54
680.50	5	64-QAM	H	273	327	1 / 0	14.81	5.19	**17.85**	0.061	34.77	-16.92
668.00	10	QPSK	H	264	325	1 / 0	14.72	5.19	17.76	0.060	34.77	-17.01
680.50	10	QPSK	H	273	327	1 / 0	15.86	5.19	**18.90**	0.078	34.77	-15.87
693.00	10	QPSK	H	266	310	1 / 0	14.70	5.19	17.74	0.059	34.77	-17.03
680.50	10	16-QAM	H	273	327	1 / 0	15.49	5.19	**18.53**	0.071	34.77	-16.24
680.50	10	64-QAM	H	273	327	1 / 0	15.26	5.19	**18.30**	0.068	34.77	-16.47
670.50	15	QPSK	H	264	325	1 / 0	14.84	5.19	17.88	0.061	34.77	-16.89
680.50	15	QPSK	H	273	327	1 / 0	15.96	5.19	**19.00**	0.079	34.77	-15.77
690.50	15	QPSK	H	266	310	1 / 0	14.81	5.19	17.85	0.061	34.77	-16.92
680.50	15	16-QAM	H	273	327	1 / 0	15.59	5.19	**18.63**	0.073	34.77	-16.14
680.50	15	64-QAM	H	273	327	1 / 0	15.31	5.19	**18.35**	0.068	34.77	-16.42
673.00	20	QPSK	H	264	325	1 / 0	14.94	5.19	17.98	0.063	34.77	-16.79
680.50	20	QPSK	H	273	327	1 / 0	15.98	5.19	**19.02**	0.080	34.77	-15.75
688.00	20	QPSK	H	266	310	1 / 0	14.86	5.19	17.90	0.062	34.77	-16.87
680.50	20	16-QAM	H	273	327	1 / 0	15.83	5.19	**18.87**	0.077	34.77	-15.90
680.50	20	64-QAM	H	273	327	1 / 0	15.56	5.19	**18.60**	0.072	34.77	-16.17
680.50	20	QPSK	V	122	83	1 / 0	11.23	5.19	14.27	0.027	34.77	-20.50

Table 7-4. ERP Data (Band 71)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
699.70	1.4	QPSK	H	143	268	1 / 5	15.56	5.19	**18.60**	0.073	34.77	-16.17	**20.75**	0.119	36.99	-16.24
707.50	1.4	QPSK	H	144	263	1 / 5	14.81	5.19	17.85	0.061	34.77	-16.92	20.00	0.100	36.99	-16.99
715.30	1.4	QPSK	H	120	87	1 / 5	14.41	5.26	17.52	0.056	34.77	-17.26	19.67	0.093	36.99	-17.32
699.70	1.4	16-QAM	H	143	268	1 / 5	15.26	5.19	**18.30**	0.068	34.77	-16.47	**20.45**	0.111	36.99	-16.54
699.70	1.4	64-QAM	H	143	268	1 / 5	14.76	5.19	**17.80**	0.060	34.77	-16.97	**19.95**	0.099	36.99	-17.04
700.50	3	QPSK	H	143	273	1 / 14	15.71	5.14	**18.70**	0.074	34.77	-16.07	**20.85**	0.122	36.99	-16.14
707.50	3	QPSK	H	144	276	1 / 14	14.96	5.19	18.00	0.063	34.77	-16.77	20.15	0.104	36.99	-16.84
714.50	3	QPSK	H	122	89	1 / 14	14.56	5.25	17.66	0.058	34.77	-17.11	19.81	0.096	36.99	-17.18
700.50	3	16-QAM	H	143	273	1 / 14	15.31	5.14	**18.30**	0.068	34.77	-16.47	**20.45**	0.111	36.99	-16.54
700.50	3	64-QAM	H	143	273	1 / 14	14.81	5.14	**17.80**	0.060	34.77	-16.97	**19.95**	0.099	36.99	-17.04

Table 7-5. ERP Data (Band 12)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
701.50	5	QPSK	H	145	272	1 / 24	15.80	5.15	**18.80**	**0.076**	34.77	-15.97	**20.95**	**0.124**	36.99	-16.04
707.50	5	QPSK	H	142	268	1 / 24	15.10	5.19	18.14	0.065	34.77	-16.63	20.29	0.107	36.99	-16.70
713.50	5	QPSK	H	124	188	1 / 24	14.69	5.24	17.78	0.060	34.77	-16.99	19.93	0.098	36.99	-17.06
701.50	5	16-QAM	H	145	272	1 / 24	15.46	5.15	**18.46**	0.070	34.77	-16.31	**20.61**	0.115	36.99	-16.38
701.50	5	64-QAM	H	145	272	1 / 24	15.06	5.15	**18.06**	0.064	34.77	-16.71	**20.21**	0.105	36.99	-16.78
704.00	10	QPSK	H	284	268	1 / 49	15.50	5.17	**18.52**	0.071	34.77	-16.25	**20.67**	0.117	36.99	-16.32
707.50	10	QPSK	H	286	269	1 / 49	15.36	5.19	18.40	0.069	34.77	-16.37	20.55	0.114	36.99	-16.44
711.00	10	QPSK	H	285	269	1 / 49	14.99	5.22	18.06	0.064	34.77	-16.71	20.21	0.105	36.99	-16.78
704.00	10	16-QAM	H	284	268	1 / 49	15.09	5.17	**18.11**	0.065	34.77	-16.66	**20.26**	0.106	36.99	-16.73
704.00	10	64-QAM	H	284	268	1 / 49	13.89	5.17	**16.91**	0.049	34.77	-17.86	**19.06**	0.080	36.99	-17.93
704.00	10	QPSK	V	171	221	1 / 49	14.03	5.22	17.10	0.051	34.77	-17.67	19.25	0.084	36.99	-17.74

Table 7-6. ERP Data (Band 12/17)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
779.50	5	QPSK	H	235	290	1 / 0	14.85	6.09	18.79	0.076	34.77	-15.98	20.94	0.124	36.99	-16.05
782.00	5	QPSK	H	245	292	1 / 0	15.05	6.13	**19.03**	0.080	34.77	-15.74	**21.18**	0.131	36.99	-15.80
784.50	5	QPSK	H	255	300	1 / 0	14.95	6.18	18.98	0.079	34.77	-15.79	21.13	0.130	36.99	-15.86
782.00	5	16-QAM	H	245	292	1 / 0	14.70	6.13	**18.68**	0.074	34.77	-16.09	**20.83**	0.121	36.99	-16.15
782.00	5	64-QAM	H	245	292	1 / 0	13.20	6.13	**17.18**	0.052	34.77	-17.59	**19.33**	0.086	36.99	-17.65
782.00	10	QPSK	H	229	282	1 / 0	15.20	6.13	**19.18**	**0.083**	34.77	-15.59	**21.33**	**0.136**	36.99	-15.65
782.00	10	16-QAM	H	229	282	1 / 0	14.87	6.13	**18.85**	0.077	34.77	-15.92	**21.00**	0.126	36.99	-15.98
782.00	10	64-QAM	H	229	282	1 / 0	13.45	6.13	**17.43**	0.055	34.77	-17.34	**19.58**	0.091	36.99	-17.40
782.00	10	QPSK	V	160	328	1 / 0	12.25	6.13	16.23	0.042	34.77	-18.54	18.38	0.069	36.99	-18.60

Table 7-7. ERP Data (Band 13)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	H	105	274	1 / 0	11.72	6.89	16.46	0.044	38.45	-21.99	18.61	0.073	40.61	-22.00
836.50	1.4	QPSK	H	102	273	1 / 0	11.77	7.08	**16.70**	0.047	38.45	-21.75	**18.85**	0.077	40.61	-21.75
848.30	1.4	QPSK	H	102	265	1 / 0	11.12	7.28	16.25	0.042	38.45	-22.20	18.40	0.069	40.61	-22.21
836.50	1.4	16-QAM	H	102	273	1 / 0	11.32	7.08	**16.25**	0.042	38.45	-22.20	**18.40**	0.069	40.61	-22.20
836.50	1.4	64-QAM	H	102	273	1 / 0	9.57	7.08	**14.50**	0.028	38.45	-23.95	**16.65**	0.046	40.61	-23.95
825.50	3	QPSK	H	105	274	1 / 0	11.92	6.90	16.67	0.046	38.45	-21.78	18.82	0.076	40.61	-21.79
836.50	3	QPSK	H	102	273	1 / 0	11.82	7.08	**16.75**	0.047	38.45	-21.70	**18.90**	0.078	40.61	-21.70
847.50	3	QPSK	H	102	265	1 / 0	11.27	7.26	16.38	0.043	38.45	-22.07	18.53	0.071	40.61	-22.07
836.50	3	16-QAM	H	102	273	1 / 0	11.42	7.08	**16.35**	0.043	38.45	-22.10	**18.50**	0.071	40.61	-22.10
836.50	3	64-QAM	H	102	273	1 / 0	9.52	7.08	**14.45**	0.028	38.45	-24.00	**16.60**	0.046	40.61	-24.00
826.50	5	QPSK	H	105	274	1 / 0	11.87	6.92	16.64	0.046	38.45	-21.81	18.79	0.076	40.61	-21.82
836.50	5	QPSK	H	102	273	1 / 0	11.72	7.08	**16.65**	0.046	38.45	-21.80	**18.80**	0.076	40.61	-21.80
846.50	5	QPSK	H	102	265	1 / 0	11.37	7.25	16.47	0.044	38.45	-21.98	18.62	0.073	40.61	-21.99
836.50	5	16-QAM	H	102	273	1 / 0	11.57	7.08	**16.50**	0.045	38.45	-21.95	**18.65**	0.073	40.61	-21.95
836.50	5	64-QAM	H	102	273	1 / 0	10.05	7.08	**14.98**	0.032	38.45	-23.47	**17.13**	0.052	40.61	-23.47
829.00	10	QPSK	H	105	274	1 / 0	12.02	6.96	16.83	0.048	38.45	-21.62	18.98	0.079	40.61	-21.63
836.50	10	QPSK	H	102	273	1 / 0	12.01	7.08	**16.94**	0.049	38.45	-21.51	**19.09**	0.081	40.61	-21.51
844.00	10	QPSK	H	102	265	1 / 0	11.52	7.21	16.58	0.045	38.45	-21.87	18.73	0.075	40.61	-21.88
836.50	10	16-QAM	H	102	273	1 / 0	11.48	7.08	**16.41**	0.044	38.45	-22.04	**18.56**	0.072	40.61	-22.04
829.00	10	64-QAM	H	105	274	1 / 0	10.12	6.96	**14.93**	0.031	38.45	-23.52	**17.08**	0.051	40.61	-23.53

Table 7-8. ERP Data (Band 26/5)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
831.50	15	QPSK	H	105	274	1 / 0	11.97	7.00	16.82	0.048	38.45	-21.63	18.97	0.079	40.61	-21.64
836.50	15	QPSK	H	102	273	1 / 0	11.91	7.08	**16.84**	0.048	38.45	-21.61	**18.99**	0.079	40.61	-21.61
841.50	15	QPSK	H	102	265	1 / 0	11.43	7.17	16.45	0.044	38.45	-22.01	18.60	0.072	40.61	-22.01
831.50	15	16-QAM	H	105	274	1 / 0	11.53	7.00	16.38	0.043	38.45	-22.07	18.53	0.071	40.61	-22.08
836.50	15	16-QAM	H	102	273	1 / 0	11.52	7.08	**16.45**	0.044	38.45	-22.00	**18.60**	0.073	40.61	-22.00
841.50	15	16-QAM	H	102	265	1 / 0	10.94	7.17	15.96	0.039	38.45	-22.50	18.11	0.065	40.61	-22.50
831.50	15	64-QAM	H	105	274	1 / 0	10.60	7.00	15.45	0.035	38.45	-23.00	17.60	0.058	40.61	-23.01
836.50	15	64-QAM	H	102	273	1 / 0	10.52	7.08	**15.45**	0.035	38.45	-23.00	**17.60**	0.058	40.61	-23.00
841.50	15	64-QAM	H	102	265	1 / 0	10.32	7.17	15.34	0.034	38.45	-23.12	17.49	0.056	40.61	-23.12
836.50	15	QPSK	V	140	265	1 / 0	13.41	7.08	18.34	**0.068**	38.45	-20.11	20.49	**0.112**	40.61	-20.12

Table 7-9. ERP Data (Band 26)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1710.70	1.4	QPSK	H	110	359	1 / 0	10.84	9.44	20.28	0.107	30.00	-9.72
1745.00	1.4	QPSK	H	100	4	1 / 0	11.70	9.23	**20.93**	0.124	30.00	-9.07
1779.30	1.4	QPSK	H	280	2	1 / 0	10.10	9.26	19.36	0.086	30.00	-10.64
1745.00	1.4	16-QAM	H	100	4	1 / 0	11.10	9.23	**20.33**	0.108	30.00	-9.67
1745.00	1.4	64-QAM	H	100	4	1 / 0	10.40	9.23	**19.63**	0.092	30.00	-10.37
1711.50	3	QPSK	H	110	359	1 / 0	10.90	9.44	20.34	0.108	30.00	-9.66
1745.00	3	QPSK	H	100	4	1 / 0	11.78	9.23	**21.01**	0.126	30.00	-8.99
1778.50	3	QPSK	H	280	2	1 / 0	10.20	9.26	19.46	0.088	30.00	-10.54
1745.00	3	16-QAM	H	100	4	1 / 0	11.20	9.23	**20.43**	0.110	30.00	-9.57
1745.00	3	64-QAM	H	100	4	1 / 0	10.45	9.23	**19.68**	0.093	30.00	-10.32
1712.50	5	QPSK	H	110	359	1 / 0	10.95	9.43	20.38	0.109	30.00	-9.62
1745.00	5	QPSK	H	100	4	1 / 0	11.90	9.23	**21.13**	0.130	30.00	-8.87
1777.50	5	QPSK	H	280	2	1 / 0	10.25	9.26	19.51	0.089	30.00	-10.49
1745.00	5	16-QAM	H	100	4	1 / 0	11.40	9.23	**20.63**	0.116	30.00	-9.37
1745.00	5	64-QAM	H	100	4	1 / 0	10.10	9.23	**19.33**	0.086	30.00	-10.67
1715.00	10	QPSK	H	110	359	1 / 0	11.00	9.42	20.42	0.110	30.00	-9.58
1745.00	10	QPSK	H	100	4	1 / 0	11.95	9.23	**21.18**	0.131	30.00	-8.82
1775.00	10	QPSK	H	280	2	1 / 0	10.30	9.25	19.55	0.090	30.00	-10.45
1745.00	10	16-QAM	H	100	4	1 / 0	11.50	9.23	**20.73**	0.118	30.00	-9.27
1745.00	10	64-QAM	H	100	4	1 / 0	10.20	9.23	**19.43**	0.088	30.00	-10.57
1717.50	15	QPSK	H	110	359	1 / 0	10.84	9.40	20.24	0.106	30.00	-9.76
1745.00	15	QPSK	H	100	4	1 / 0	11.70	9.23	**20.93**	0.124	30.00	-9.07
1772.50	15	QPSK	H	280	2	1 / 0	10.40	9.25	19.65	0.092	30.00	-10.35
1745.00	15	16-QAM	H	100	4	1 / 0	11.20	9.23	**20.43**	0.110	30.00	-9.57
1745.00	15	64-QAM	H	100	4	1 / 0	10.00	9.23	**19.23**	0.084	30.00	-10.77
1720.00	20	QPSK	H	110	359	1 / 0	11.20	9.38	20.58	0.114	30.00	-9.42
1745.00	20	QPSK	H	100	4	1 / 0	12.20	9.23	**21.43**	**0.139**	30.00	-8.57
1770.00	20	QPSK	H	280	2	1 / 0	10.46	9.24	19.70	0.093	30.00	-10.30
1745.00	20	16-QAM	H	100	4	1 / 0	11.70	9.23	**20.93**	0.124	30.00	-9.07
1745.00	20	64-QAM	H	100	4	1 / 0	10.40	9.23	**19.63**	0.092	30.00	-10.37
1745.00	20	QPSK	V	133	90	1 / 0	9.93	9.23	19.16	0.082	30.00	-10.84

Table 7-10. EIRP Data (Band 66/4)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	H	166	1	1 / 0	11.79	8.37	20.16	0.104	33.01	-12.85
1882.50	1.4	QPSK	H	163	3	1 / 0	13.20	8.42	21.62	0.145	33.01	-11.39
1914.30	1.4	QPSK	H	105	357	1 / 0	15.63	8.47	**24.10**	0.257	33.01	-8.91
1914.30	1.4	16-QAM	H	105	357	1 / 0	14.25	8.47	**22.72**	0.187	33.01	-10.29
1914.30	1.4	64-QAM	H	105	357	1 / 0	13.80	8.47	**22.27**	0.169	33.01	-10.74
1851.50	3	QPSK	H	166	1	1 / 0	11.85	8.37	20.22	0.105	33.01	-12.79
1882.50	3	QPSK	H	163	3	1 / 0	13.23	8.42	21.65	0.146	33.01	-11.36
1913.50	3	QPSK	H	105	357	1 / 0	15.70	8.47	**24.17**	0.261	33.01	-8.84
1913.50	3	16-QAM	H	105	357	1 / 0	14.45	8.47	**22.92**	0.196	33.01	-10.09
1913.50	3	64-QAM	H	105	357	1 / 0	13.90	8.47	**22.37**	0.172	33.01	-10.64
1852.50	5	QPSK	H	166	1	1 / 0	11.95	8.37	20.32	0.108	33.01	-12.69
1882.50	5	QPSK	H	163	3	1 / 0	13.33	8.42	21.75	0.150	33.01	-11.26
1912.50	5	QPSK	H	105	357	1 / 0	15.65	8.47	**24.12**	0.258	33.01	-8.89
1912.50	5	16-QAM	H	105	357	1 / 0	14.55	8.47	**23.02**	0.200	33.01	-9.99
1912.50	5	64-QAM	H	105	357	1 / 0	14.00	8.47	**22.47**	0.176	33.01	-10.54
1855.00	10	QPSK	H	166	1	1 / 0	12.05	8.37	20.42	0.110	33.01	-12.59
1882.50	10	QPSK	H	163	3	1 / 0	13.45	8.42	21.87	0.154	33.01	-11.14
1910.00	10	QPSK	H	105	357	1 / 0	15.71	8.46	**24.17**	**0.261**	33.01	-8.84
1910.00	10	16-QAM	H	105	357	1 / 0	14.59	8.46	**23.05**	0.202	33.01	-9.96
1910.00	10	64-QAM	H	105	357	1 / 0	13.95	8.46	**22.41**	0.174	33.01	-10.60
1857.50	15	QPSK	H	166	1	1 / 0	11.90	8.38	20.28	0.107	33.01	-12.73
1882.50	15	QPSK	H	163	3	1 / 0	12.95	8.42	21.37	0.137	33.01	-11.64
1907.50	15	QPSK	H	105	357	1 / 0	15.30	8.46	**23.76**	0.238	33.01	-9.25
1907.50	15	16-QAM	H	105	357	1 / 0	14.65	8.46	**23.11**	0.205	33.01	-9.90
1907.50	15	64-QAM	H	105	357	1 / 0	13.95	8.46	**22.41**	0.174	33.01	-10.60
1860.00	20	QPSK	H	166	1	1 / 0	11.95	8.38	20.33	0.108	33.01	-12.68
1882.50	20	QPSK	H	163	3	1 / 0	13.45	8.42	21.87	0.154	33.01	-11.14
1905.00	20	QPSK	H	105	357	1 / 0	14.80	8.45	**23.25**	0.212	33.01	-9.76
1905.00	20	16-QAM	H	105	357	1 / 0	13.95	8.45	**22.40**	0.174	33.01	-10.61
1905.00	20	64-QAM	H	105	357	1 / 0	13.20	8.45	**21.65**	0.146	33.01	-11.36
1905.00	20	QPSK	V	100	24	1 / 0	13.02	7.37	20.39	0.109	33.01	-12.62

Table 7-11. EIRP Data (Band 25/2)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2498.50	5	QPSK	H	124	203	1 / 0	13.20	8.35	21.55	0.143	33.01	-11.46
2593.00	5	QPSK	H	116	338	1 / 0	14.30	8.04	**22.34**	0.171	33.01	-10.67
2687.50	5	QPSK	H	108	353	1 / 0	13.70	7.94	21.64	0.146	33.01	-11.37
2593.00	5	16-QAM	H	116	338	1 / 0	13.38	8.04	**21.42**	0.139	33.01	-11.59
2593.00	5	64-QAM	H	116	338	1 / 0	12.50	8.04	**20.54**	0.113	33.01	-12.47
2501.00	10	QPSK	H	124	203	1 / 0	13.05	8.34	21.39	0.138	33.01	-11.62
2593.00	10	QPSK	H	116	338	1 / 0	14.40	8.04	**22.44**	0.175	33.01	-10.57
2685.00	10	QPSK	H	108	353	1 / 0	13.80	7.93	21.73	0.149	33.01	-11.28
2593.00	10	16-QAM	H	116	338	1 / 0	13.30	8.04	**21.34**	0.136	33.01	-11.67
2593.00	10	64-QAM	H	116	338	1 / 0	12.50	8.04	**20.54**	0.113	33.01	-12.47
2503.50	15	QPSK	H	124	203	1 / 0	13.00	8.34	21.34	0.136	33.01	-11.67
2593.00	15	QPSK	H	116	338	1 / 0	14.35	8.04	**22.39**	0.173	33.01	-10.62
2682.50	15	QPSK	H	108	353	1 / 0	13.88	7.92	21.80	0.151	33.01	-11.21
2593.00	15	16-QAM	H	116	338	1 / 0	13.60	8.04	**21.64**	0.146	33.01	-11.37
2593.00	15	64-QAM	H	116	338	1 / 0	12.68	8.04	**20.72**	0.118	33.01	-12.29
2506.00	20	QPSK	H	124	203	1 / 0	12.97	8.33	21.30	0.135	33.01	-11.71
2593.00	20	QPSK	H	116	338	1 / 0	14.55	8.04	**22.59**	**0.181**	33.01	-10.42
2680.00	20	QPSK	H	108	353	1 / 0	13.68	7.91	21.59	0.144	33.01	-11.42
2593.00	20	16-QAM	H	116	338	1 / 0	13.80	8.04	**21.84**	0.153	33.01	-11.17
2593.00	20	64-QAM	H	116	338	1 / 0	13.30	8.04	**21.34**	0.136	33.01	-11.67
2593.00	20	QPSK	V	102	162	1 / 0	13.08	8.04	21.12	0.129	33.01	-11.89
2593.00	20	QPSK(PC3)	H	319	24	1 / 0	13.33	8.04	21.37	0.137	33.01	-11.64

Table 7-12. EIRP Data (Band 41, PC2)

7.8 Radiated Spurious Emissions Measurements

Test Overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas.

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.8

ANSI/TIA-603-E-2016 – Section 2.2.12

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW ≥ 3 x RBW
3. Span = 1.5 times the OBW
4. No. of sweep points ≥ 2 x span / RBW
5. Detector = RMS
6. Trace mode = Average (Max Hold for pulsed emissions)
7. The trace was allowed to stabilize

Test Setup

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

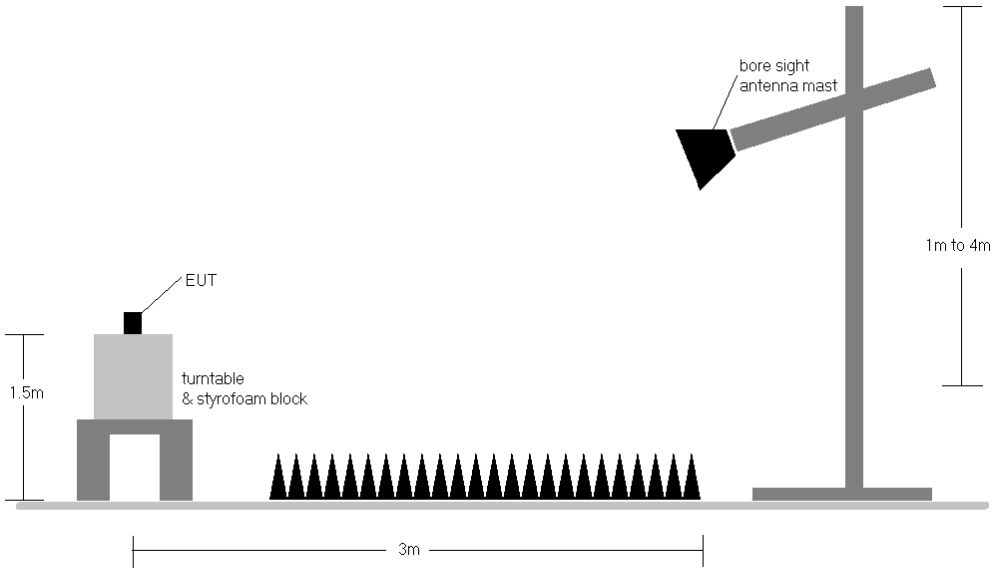


Figure 7-8. Test Instrument & Measurement Setup

Test Notes

1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.

2) This unit was tested with its standard battery.

3) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.

4) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.

5) The "-" shown in the following RSE tables are used to denote a noise floor measurement.