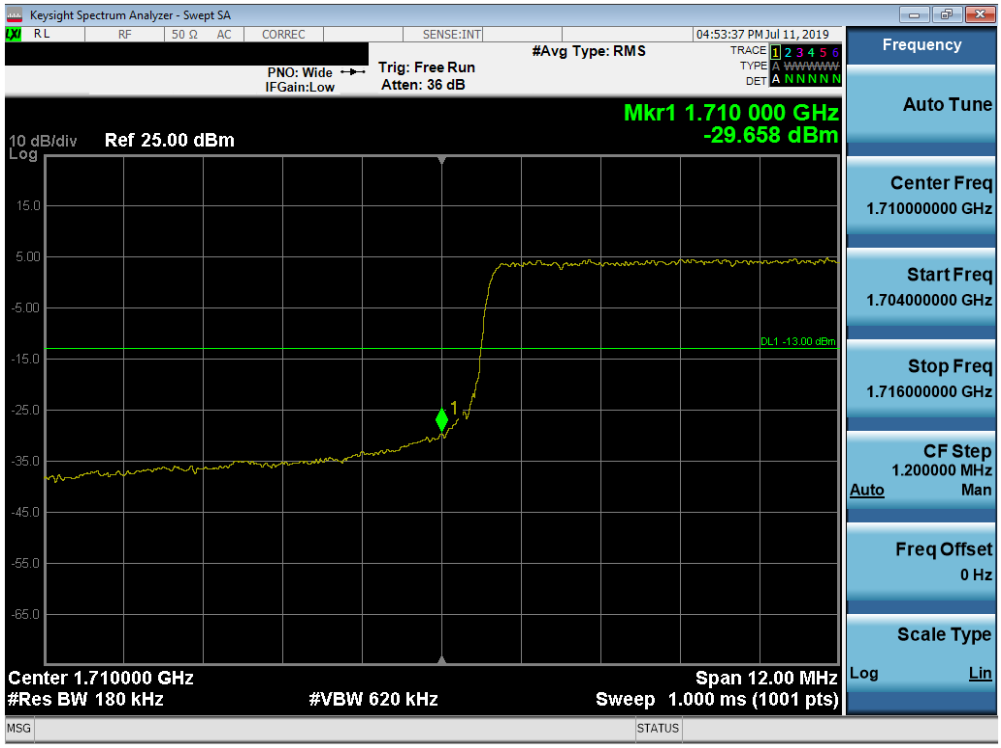
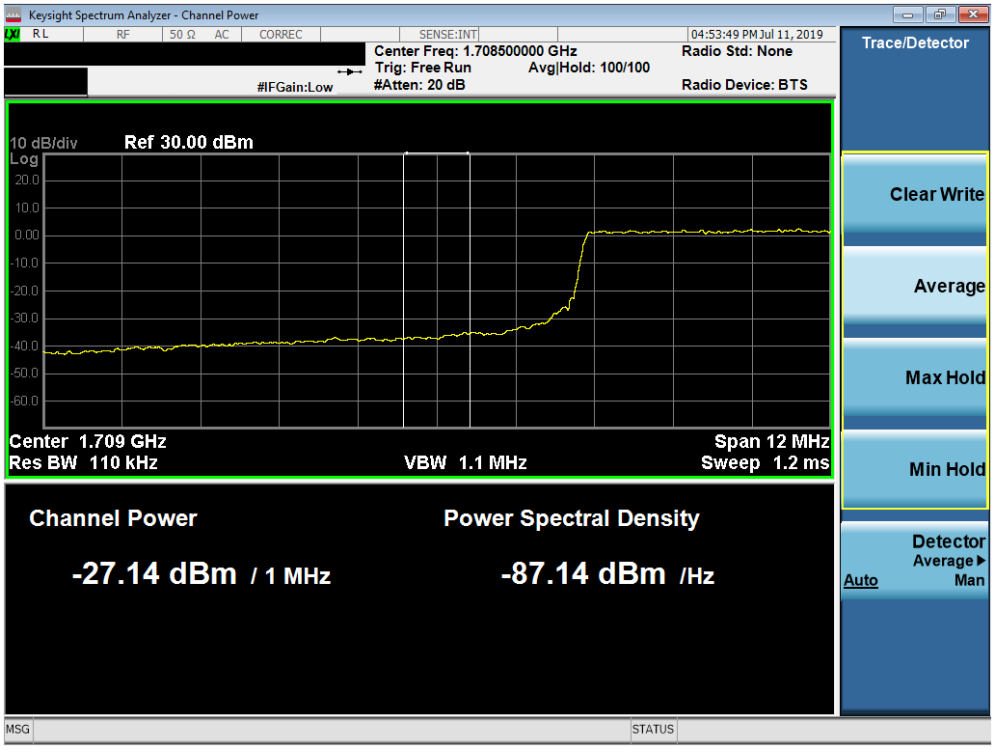


Plot 7-236. Lower Band Edge Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-237. Lower Extended Band Edge Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)

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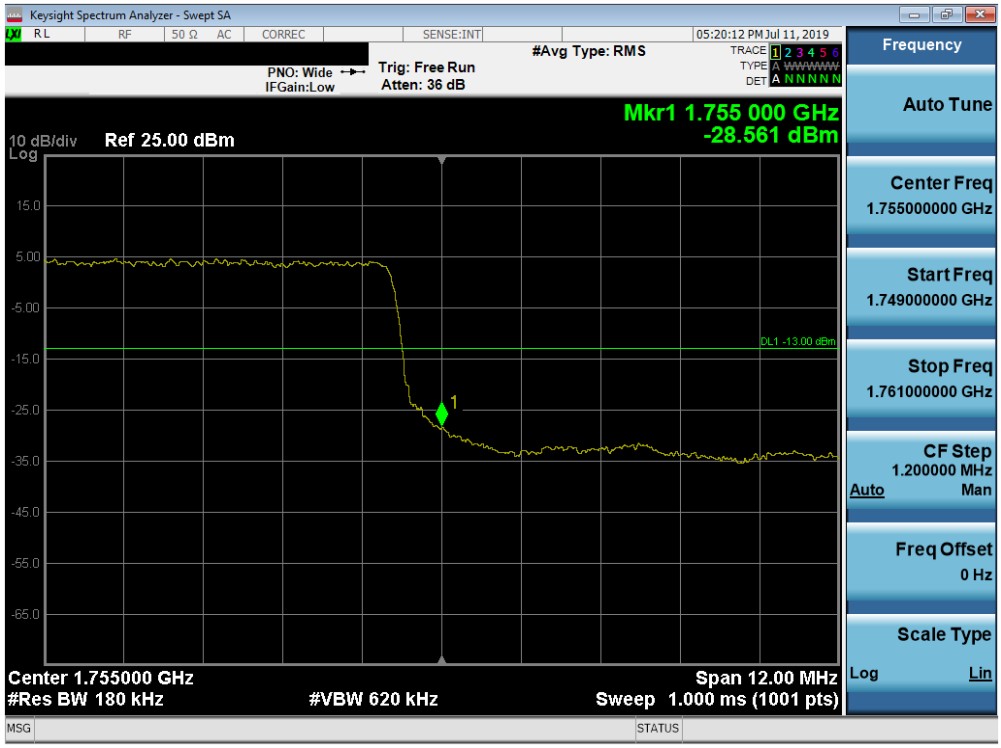
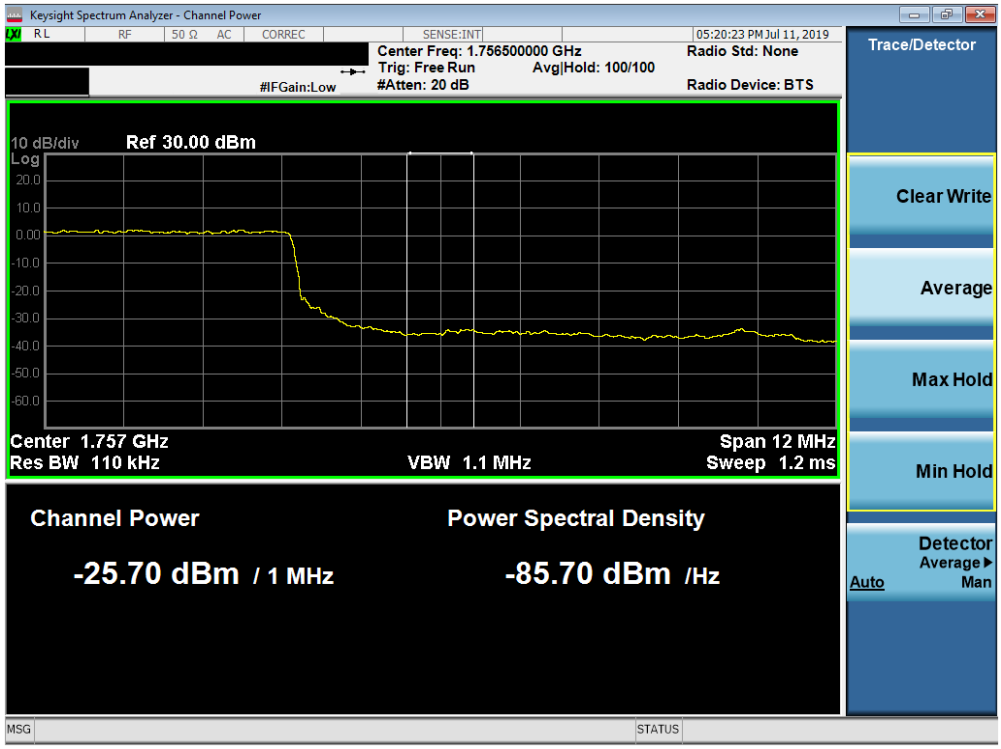


Plot 7-238. Upper Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-239. Upper Extended Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)

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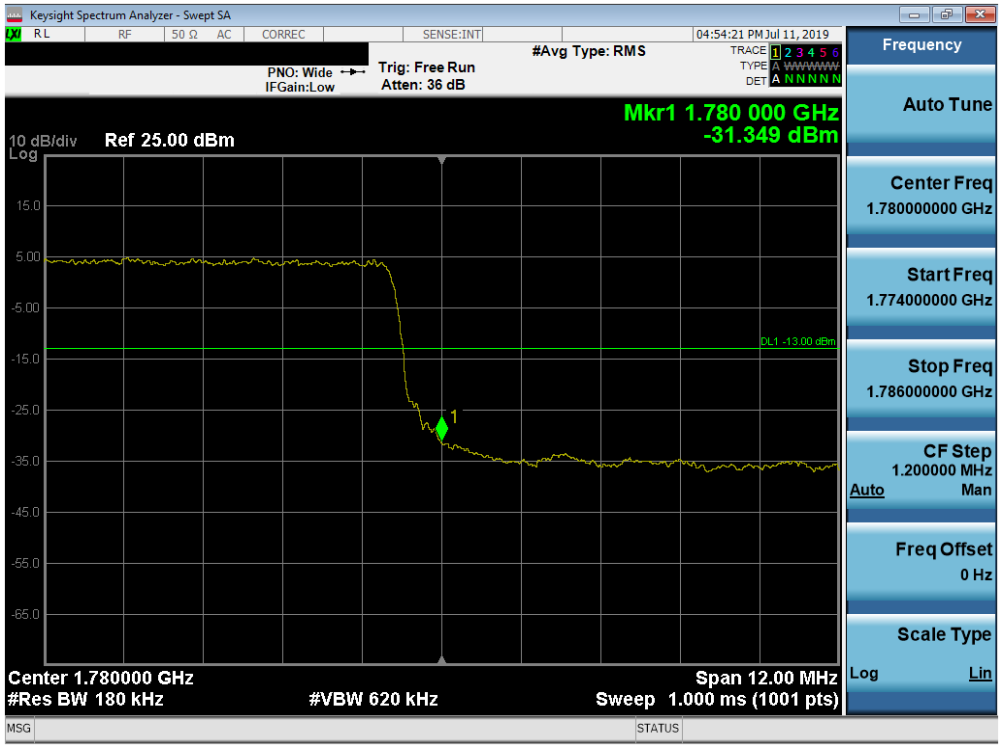
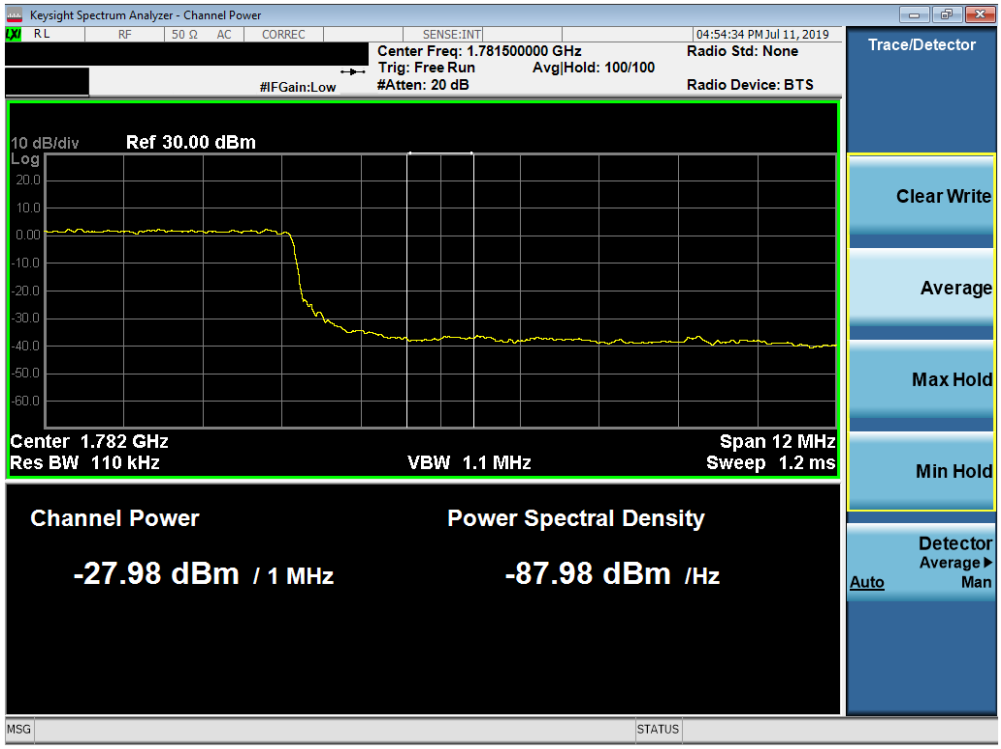


Plot 7-240. Upper Band Edge Plot (Band 66 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-241. Upper Extended Band Edge Plot (Band 66 - 15.0MHz QPSK - Full RB Configuration)

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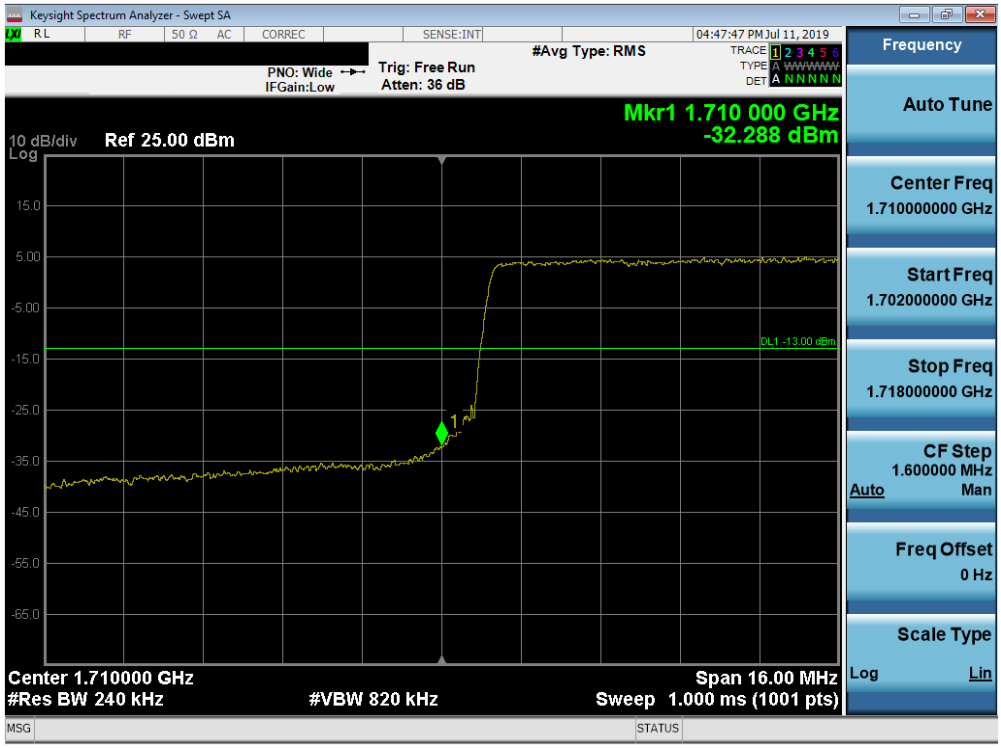
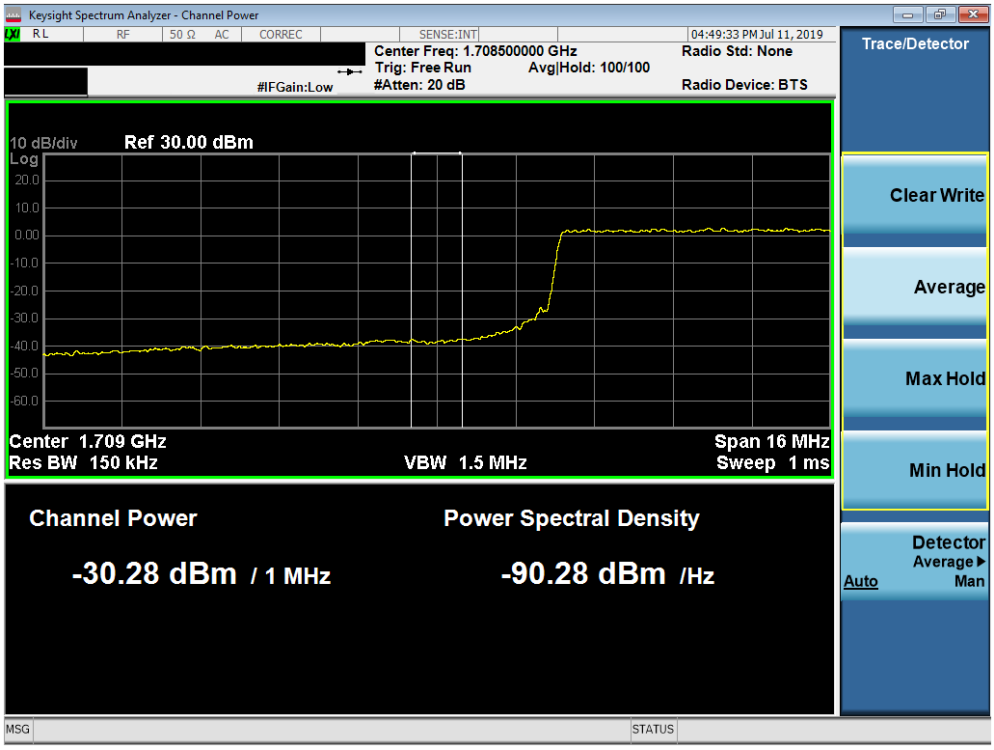


Plot 7-242. Lower Band Edge Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-243. Lower Extended Band Edge Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)

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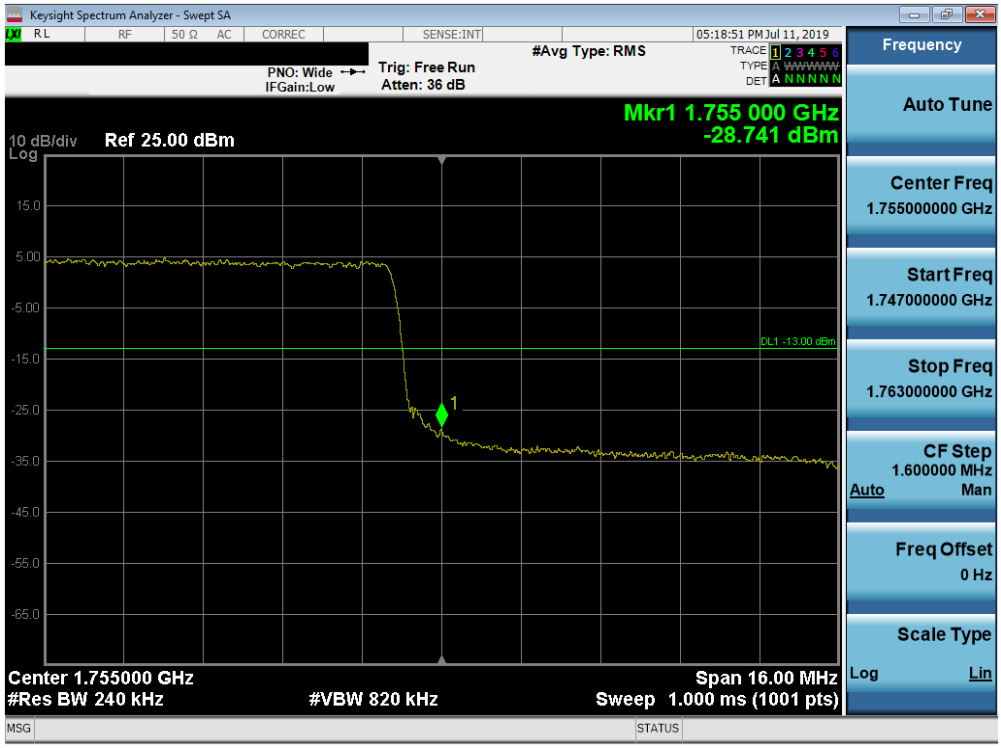
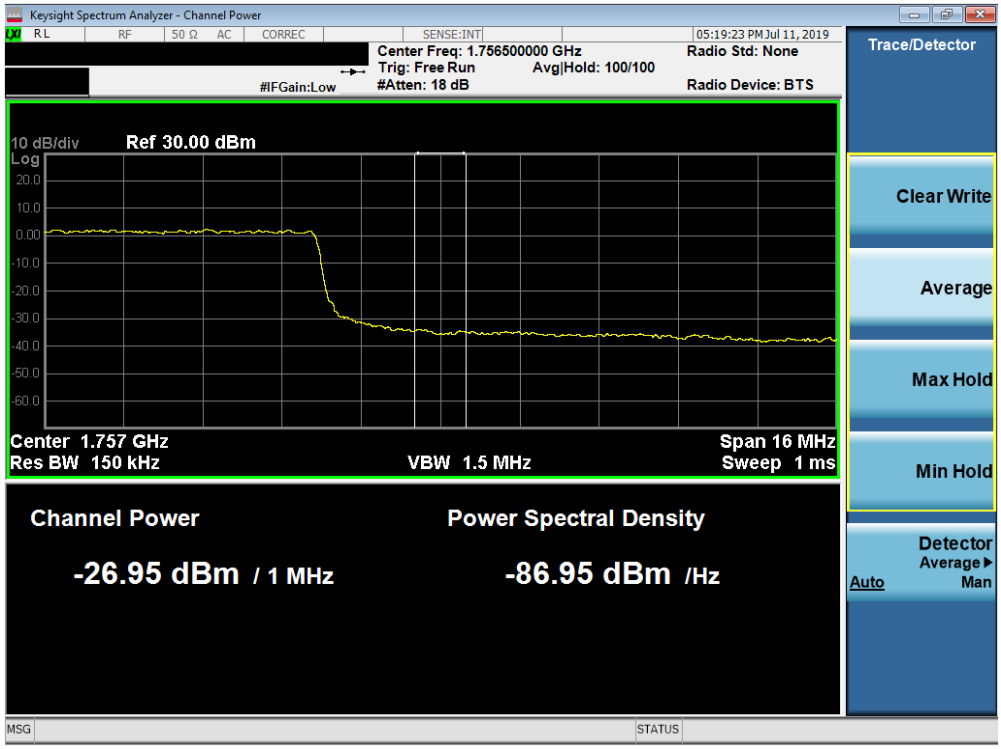


Plot 7-244. Upper Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-245. Upper Extended Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)

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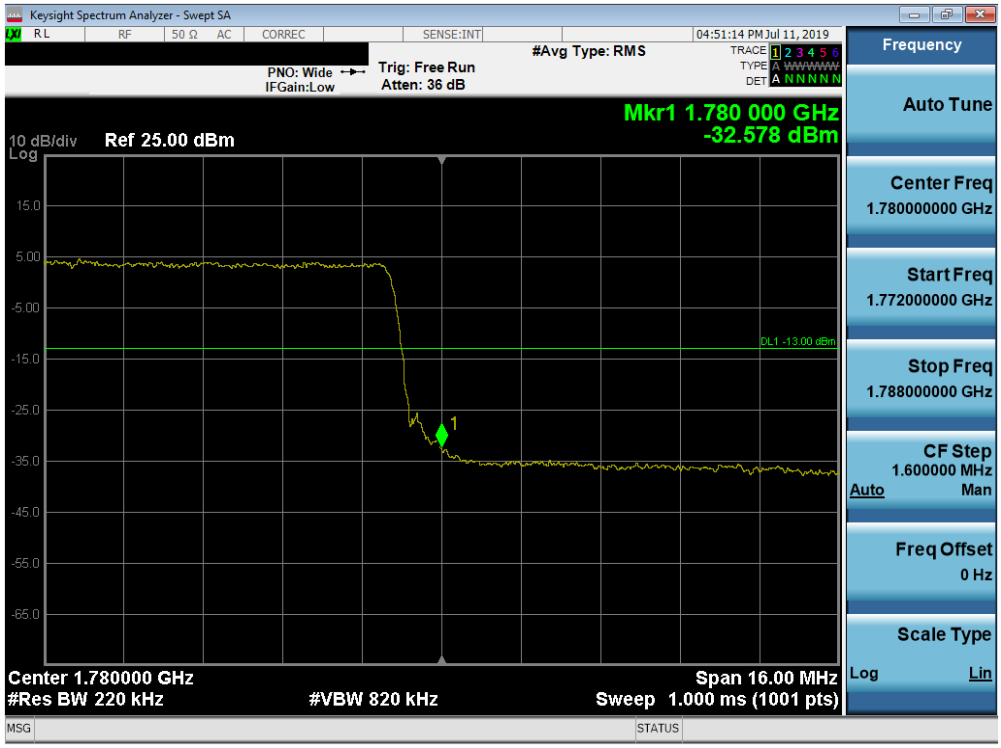
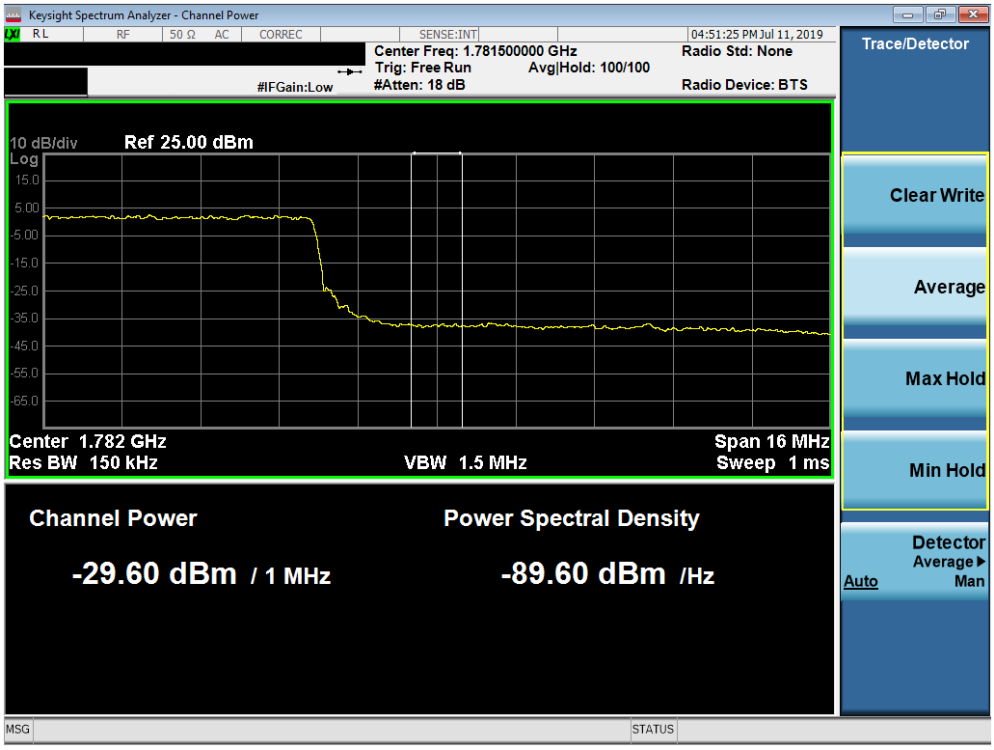


Plot 7-246. Upper Band Edge Plot (Band 66 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-247. Upper Extended Band Edge Plot (Band 66 - 20.0MHz QPSK - Full RB Configuration)

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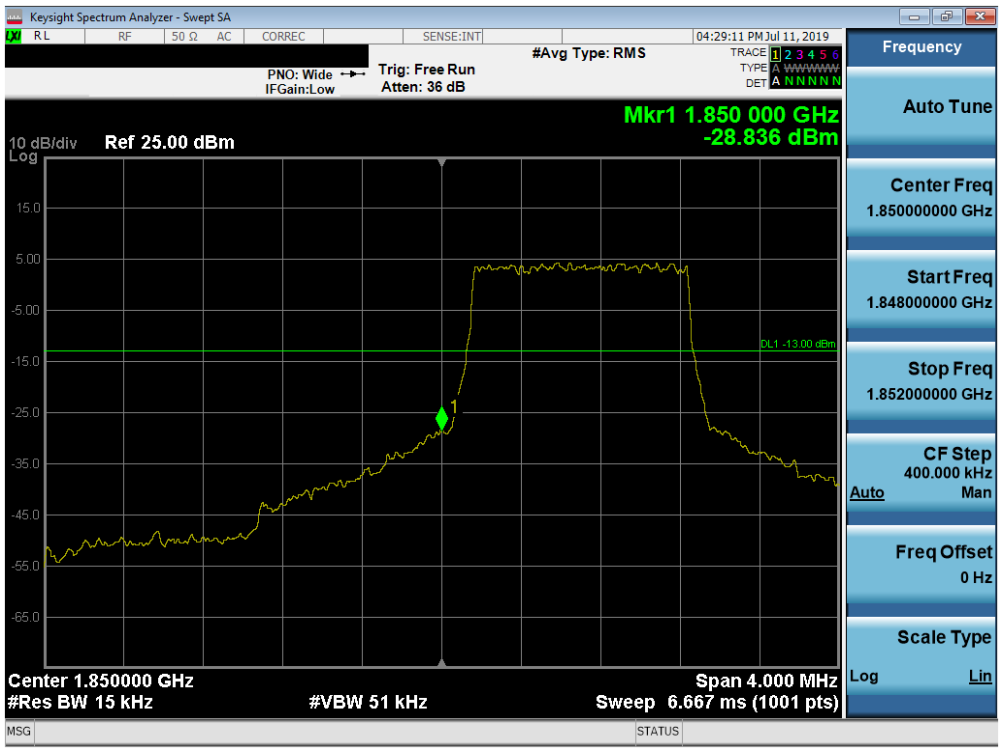
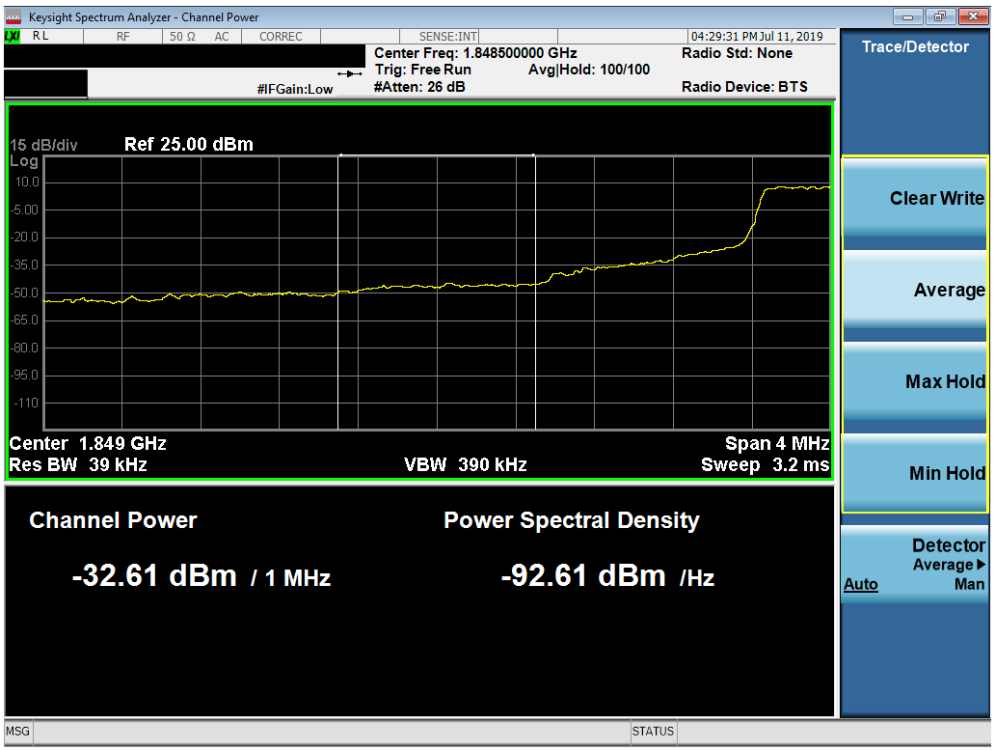
Band 25/2



Plot 7-248. Lower Band Edge Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)



Plot 7-249. Lower Extended Band Edge Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)

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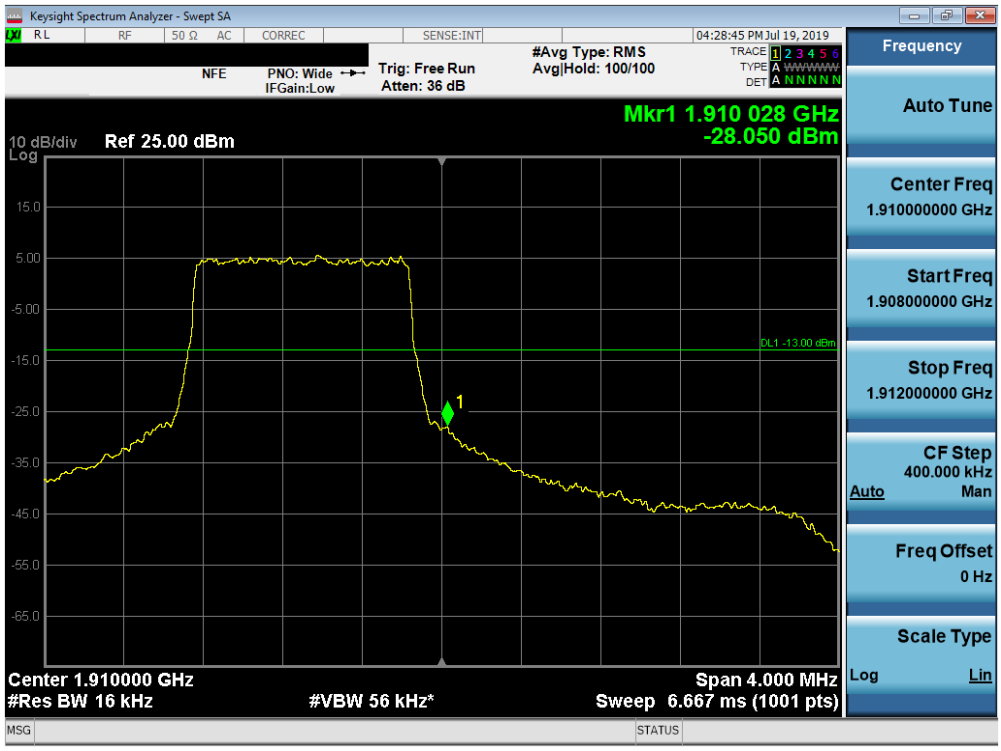
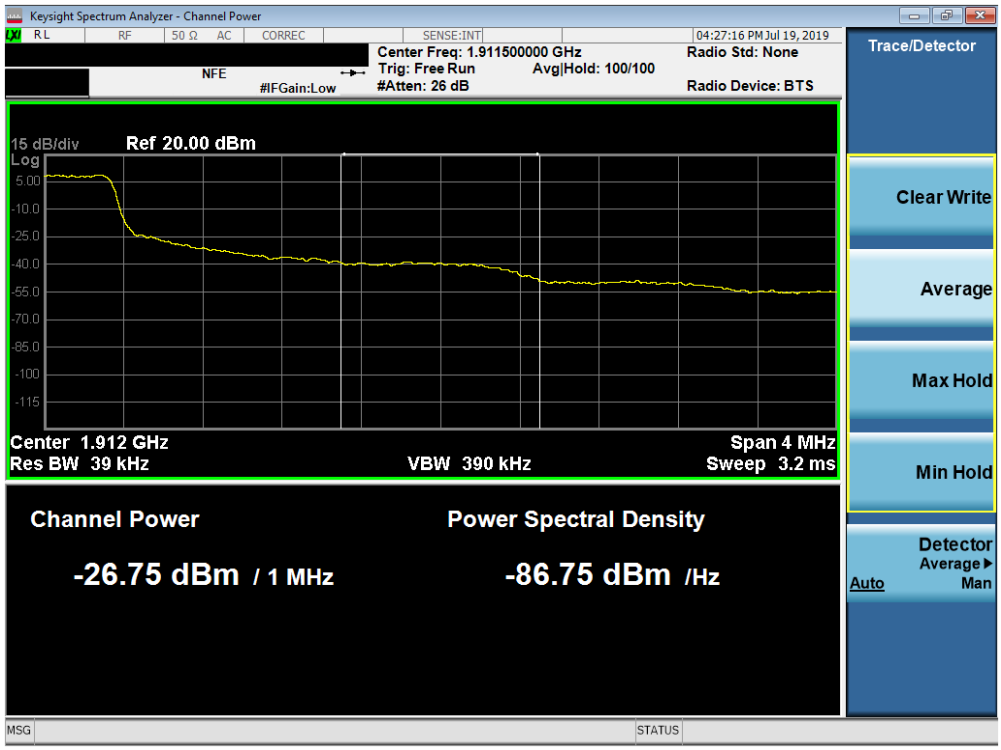


Plot 7-250. Upper Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)



Plot 7-251. Upper Extended Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

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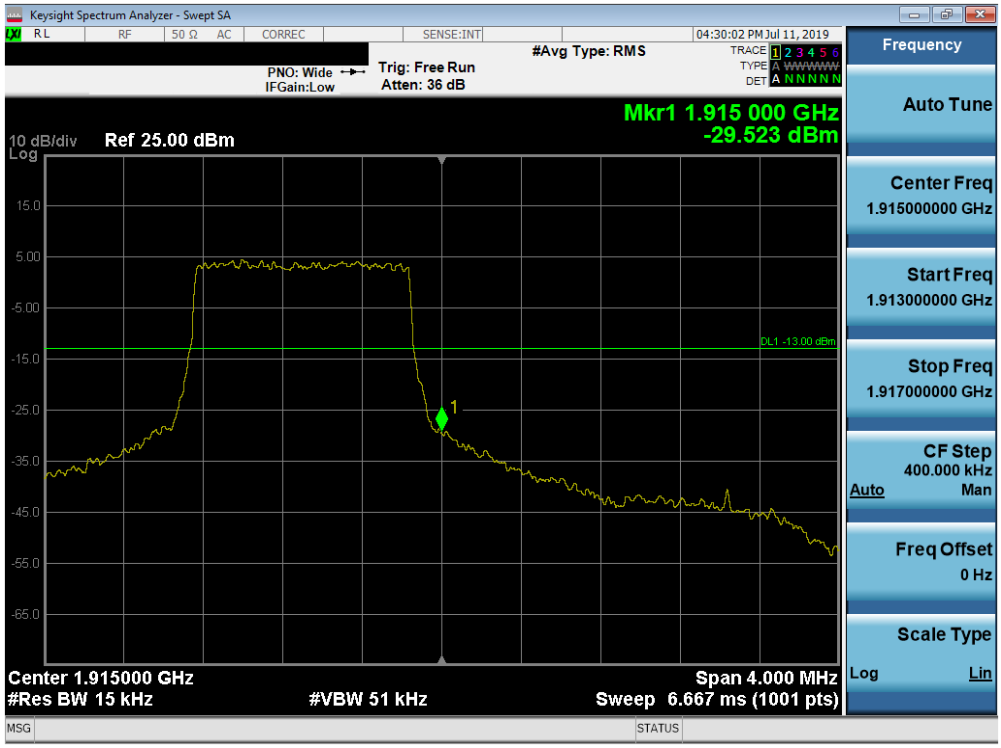
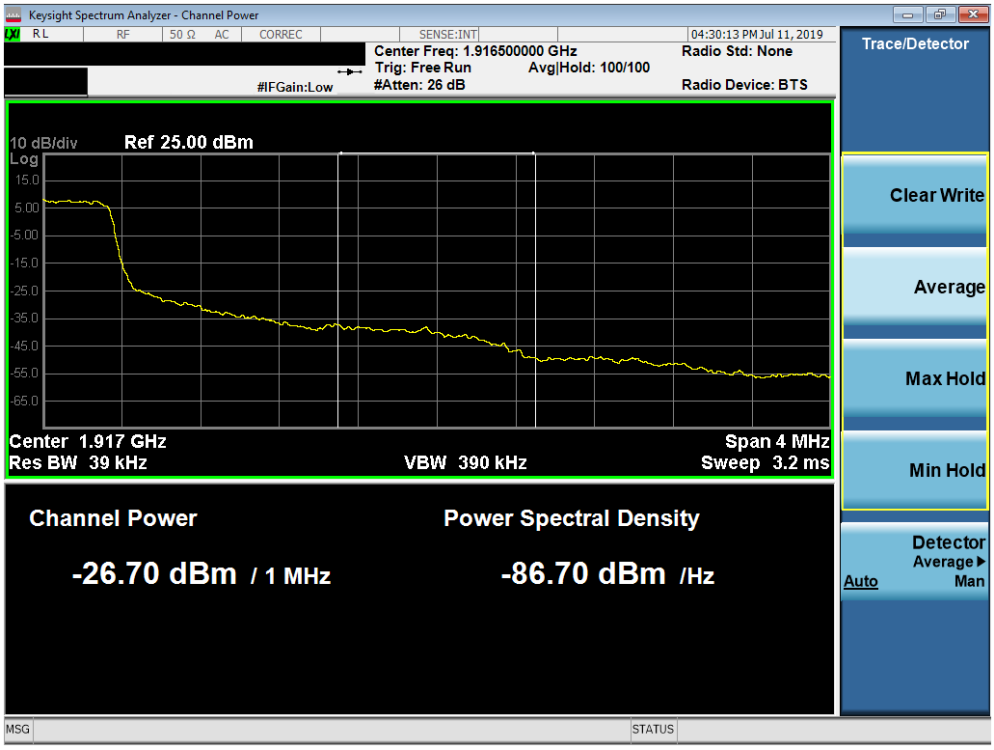


Plot 7-252. Upper Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)



Plot 7-253. Upper Extended Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)

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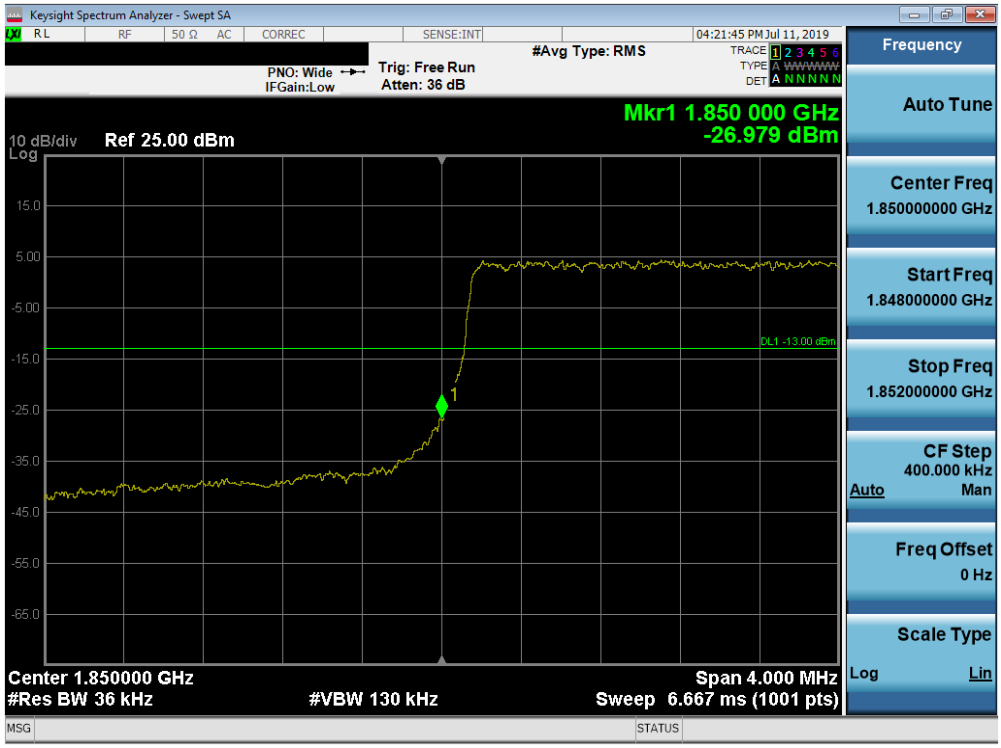
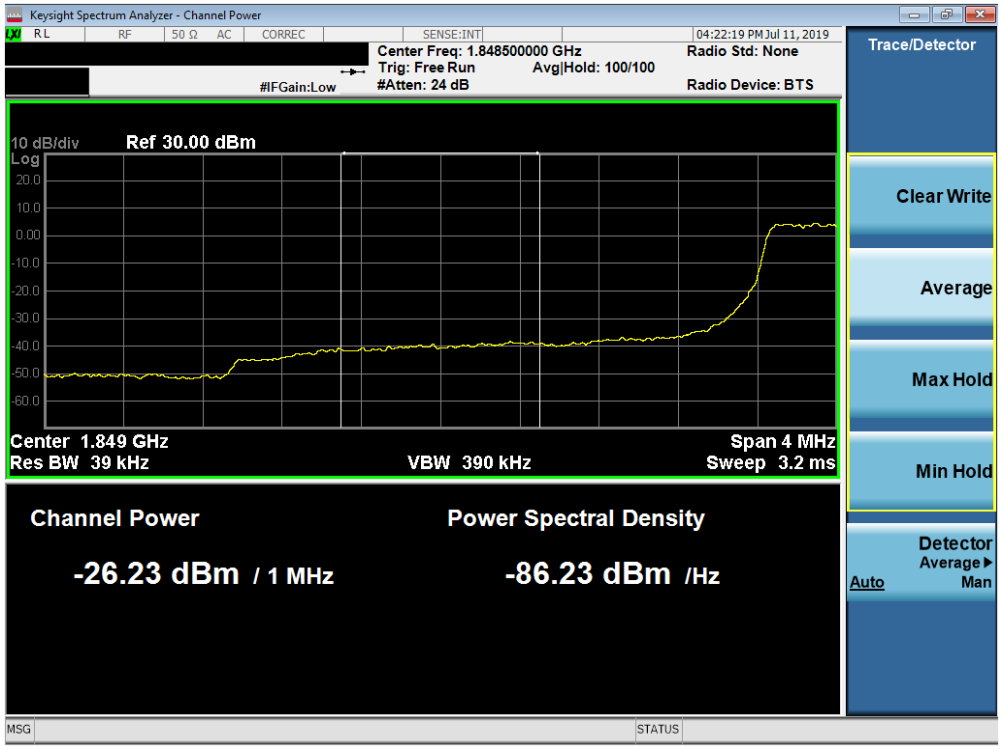


Plot 7-254. Lower Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)



Plot 7-255. Lower Extended Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

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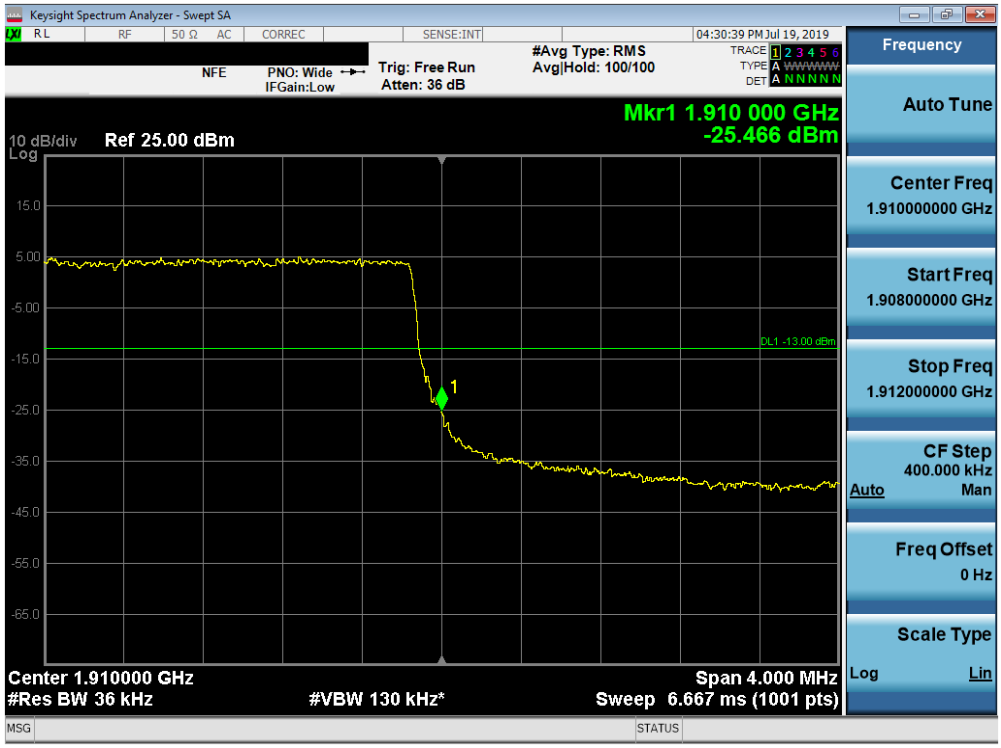
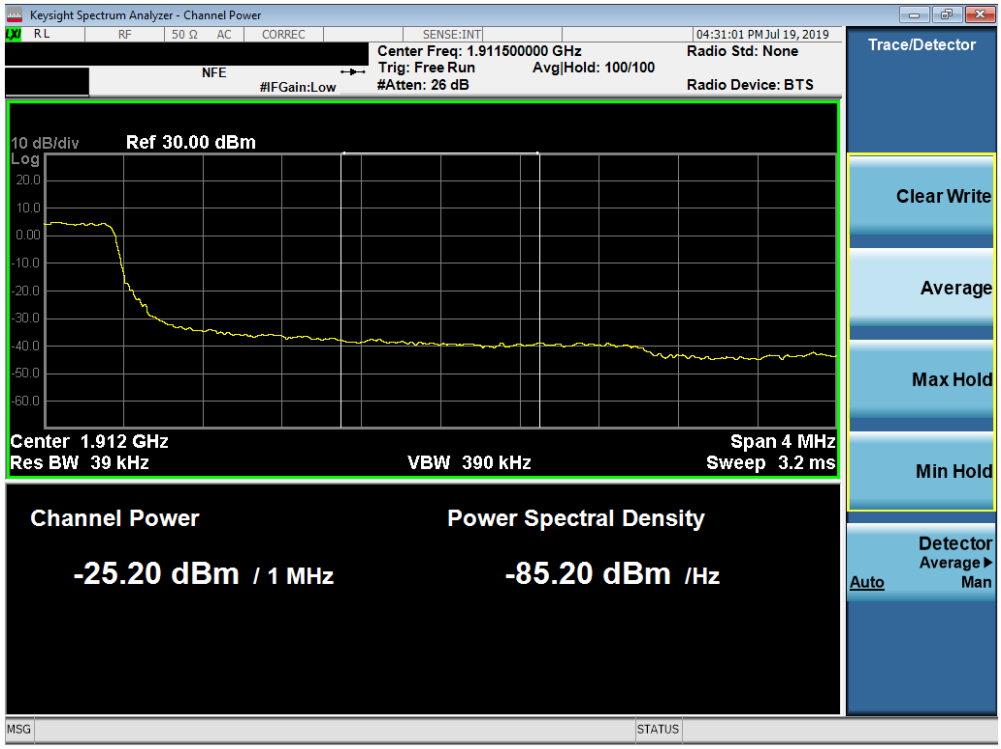


Plot 7-256. Upper Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)



Plot 7-257. Upper Extended Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

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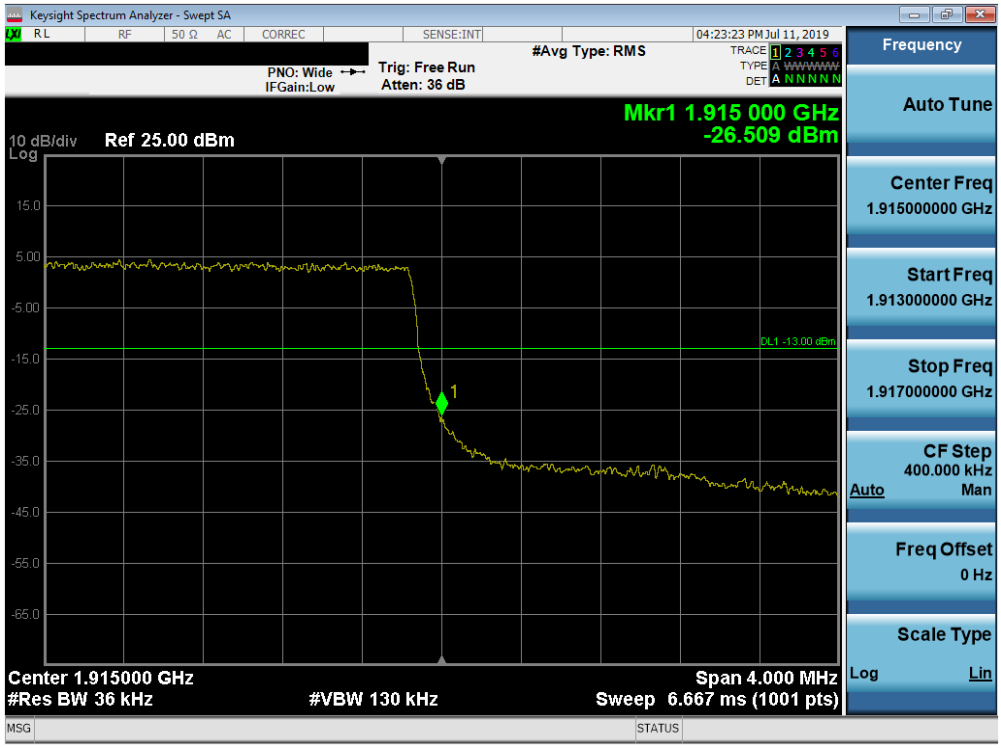
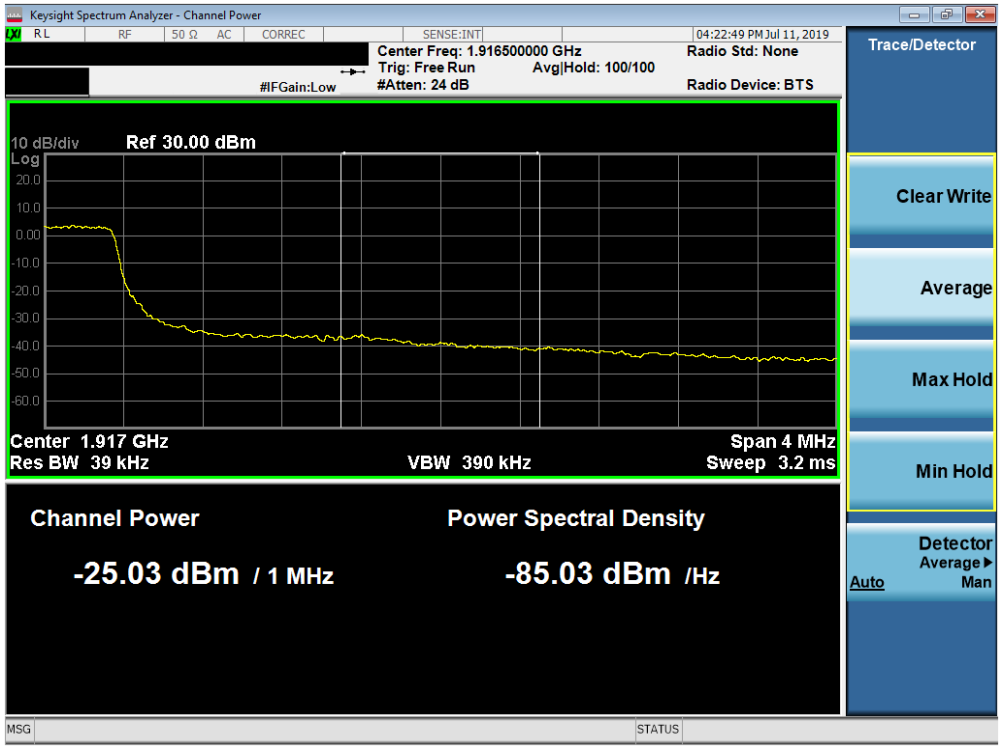


Plot 7-258. Upper Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)



Plot 7-259. Upper Extended Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)

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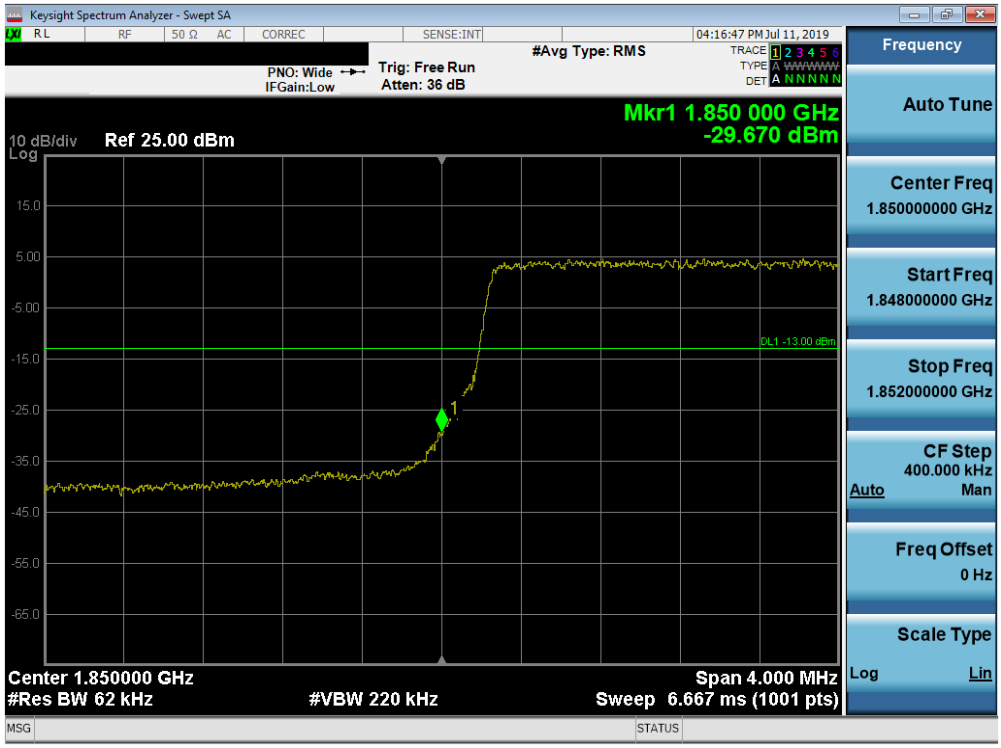
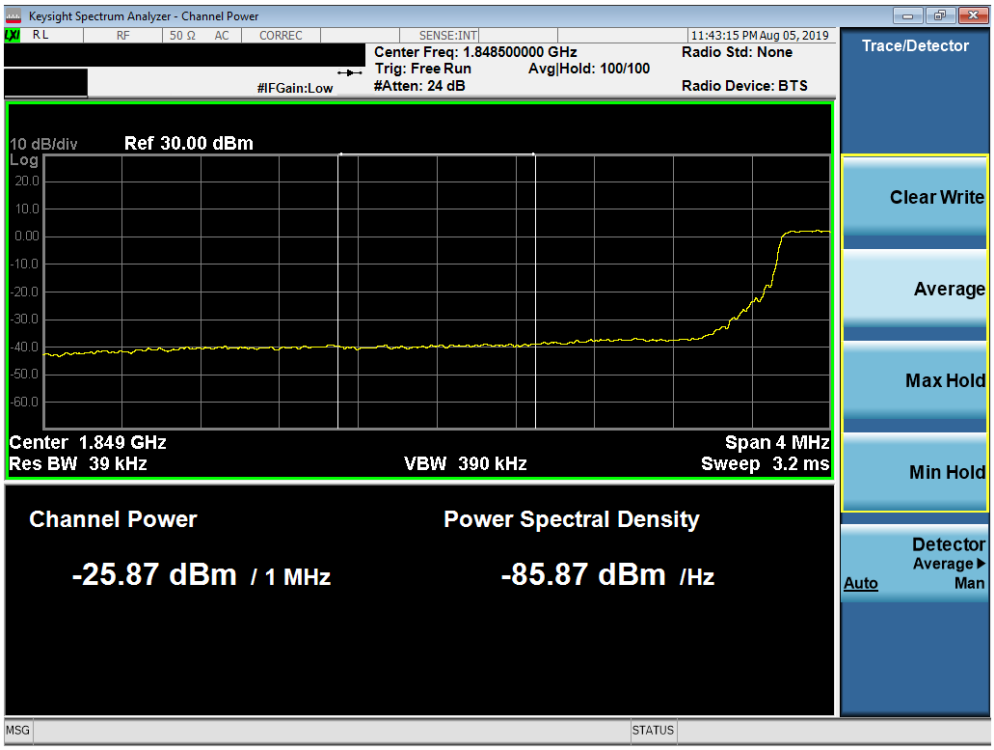


Plot 7-260. Lower Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-261. Lower Extended Band Edge Plot (Band 25/2- 5.0MHz QPSK - Full RB Configuration)

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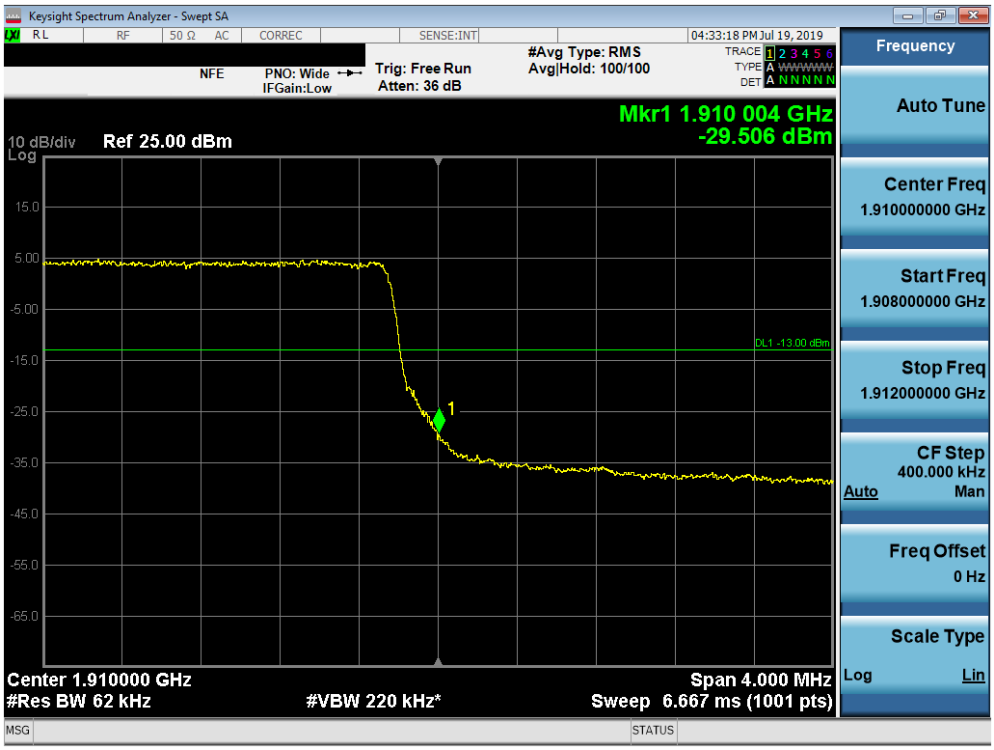
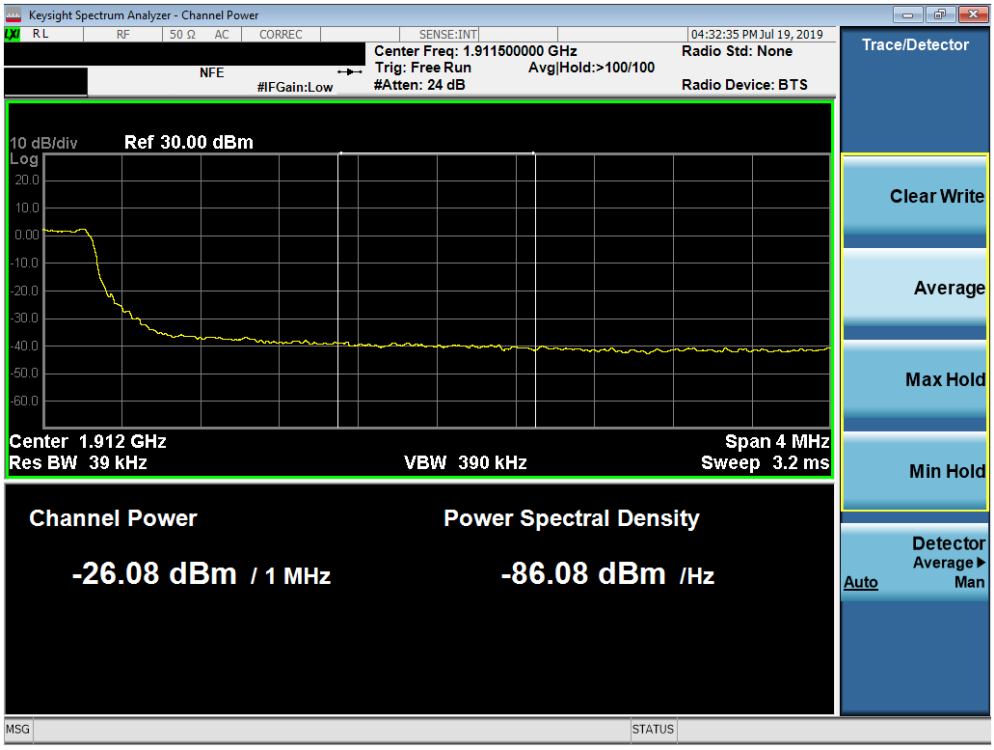


Plot 7-262. Upper Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-263. Upper Extended Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

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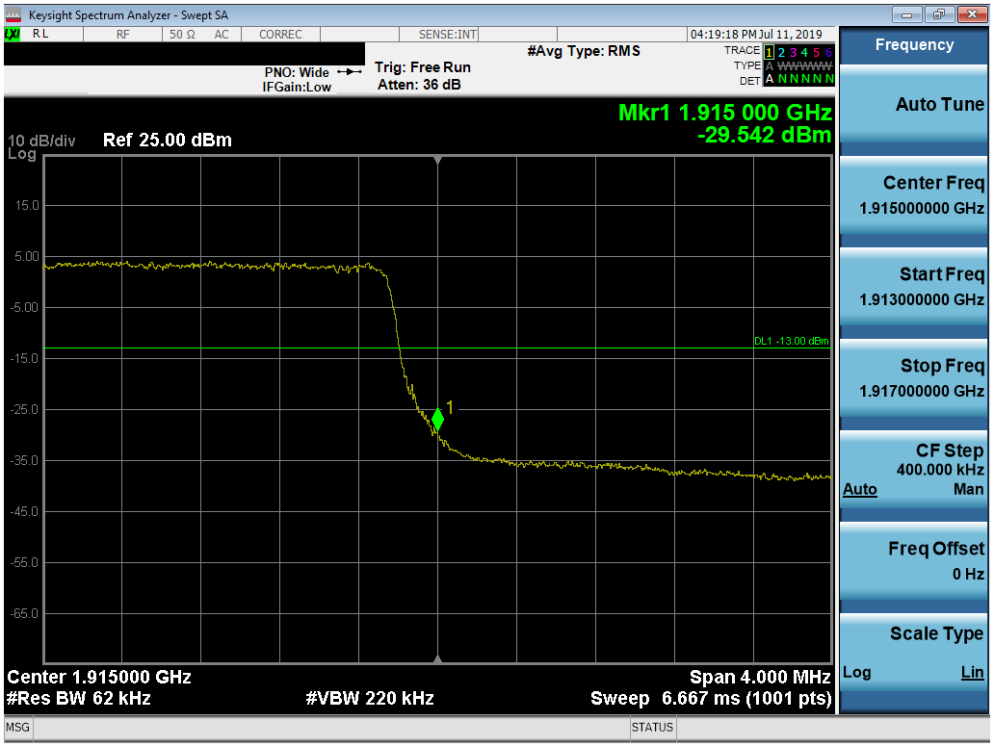
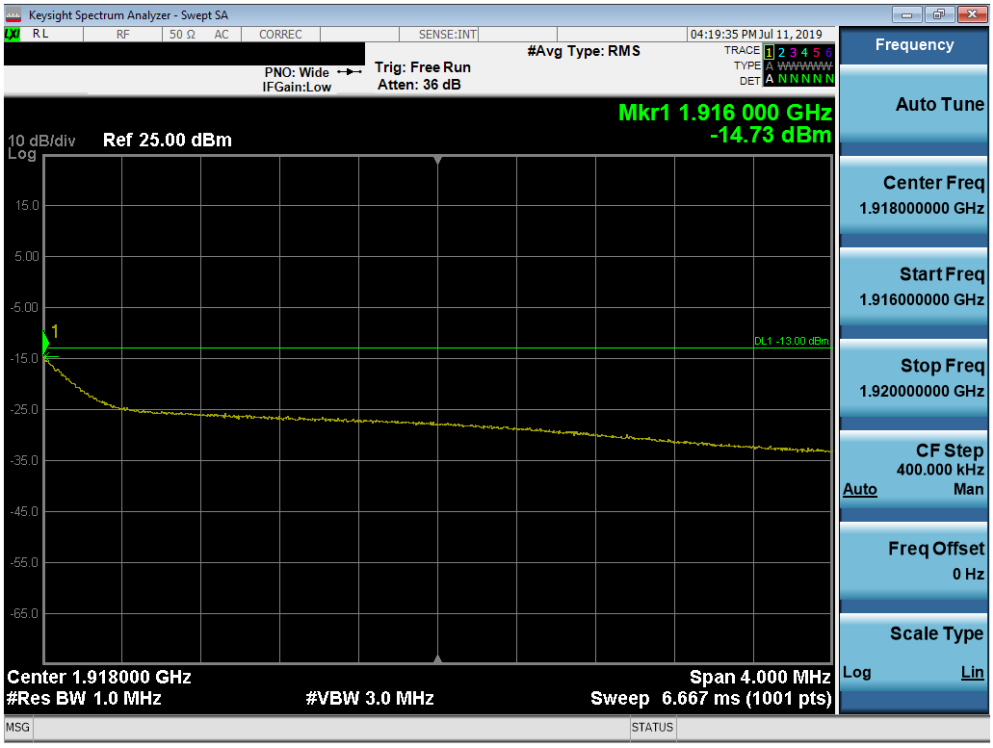


Plot 7-264. Upper Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-265. Upper Extended Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)

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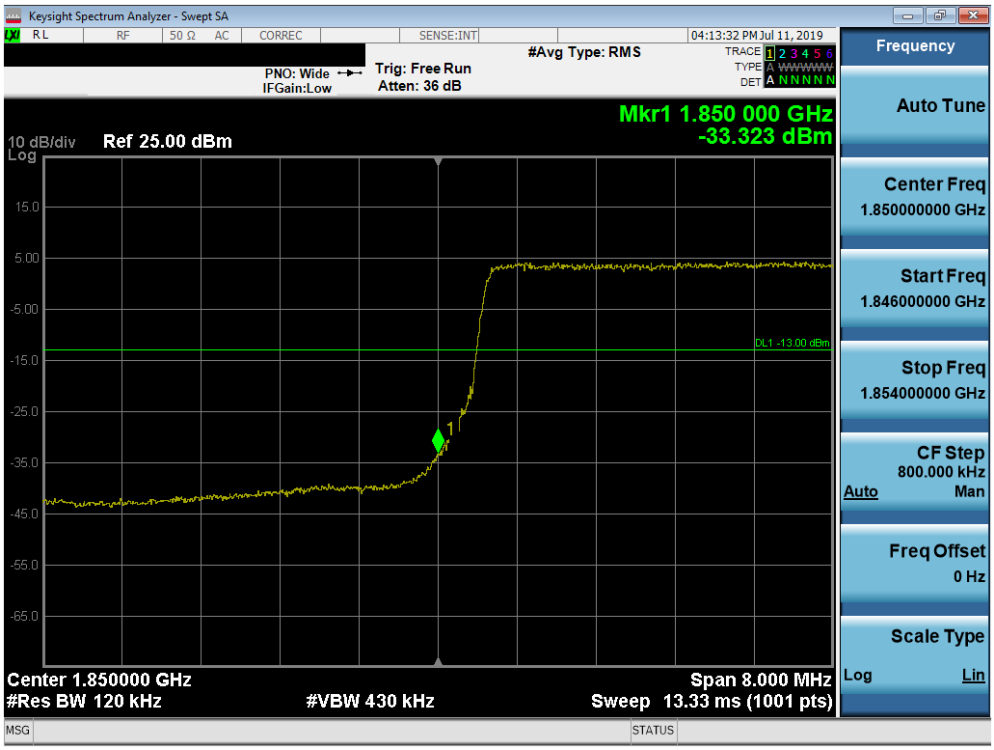
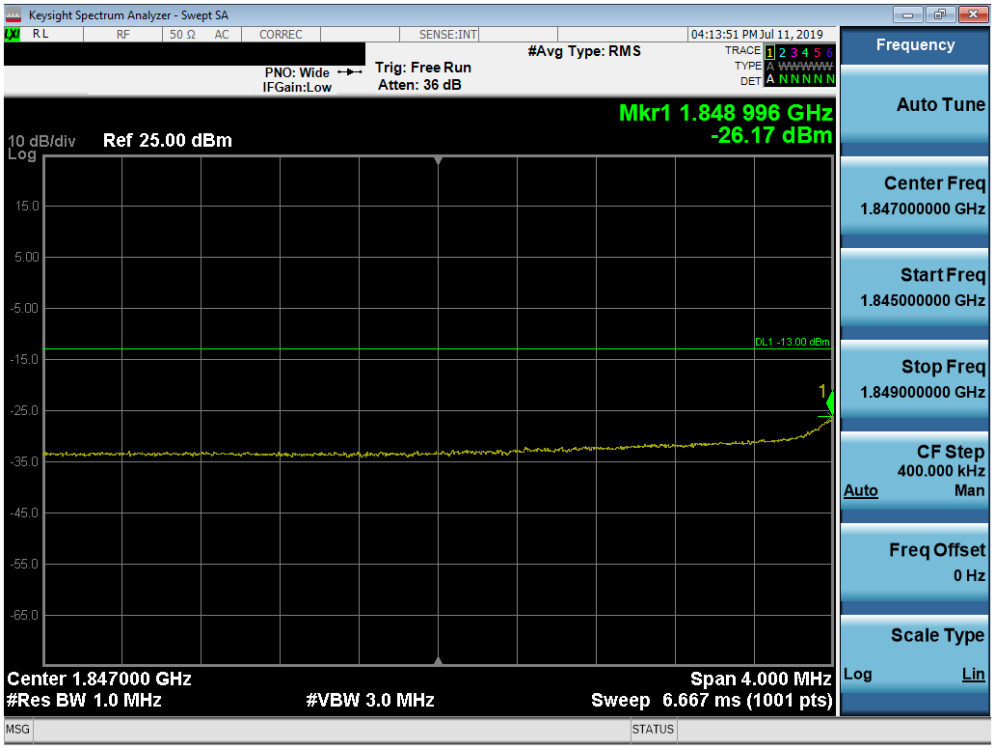


Plot 7-266. Lower Band Edge Plot (Band 25/2- 10.0MHz QPSK - Full RB Configuration)



Plot 7-267. Lower Extended Band Edge Plot (Band 25/2- 10.0MHz QPSK - Full RB Configuration)

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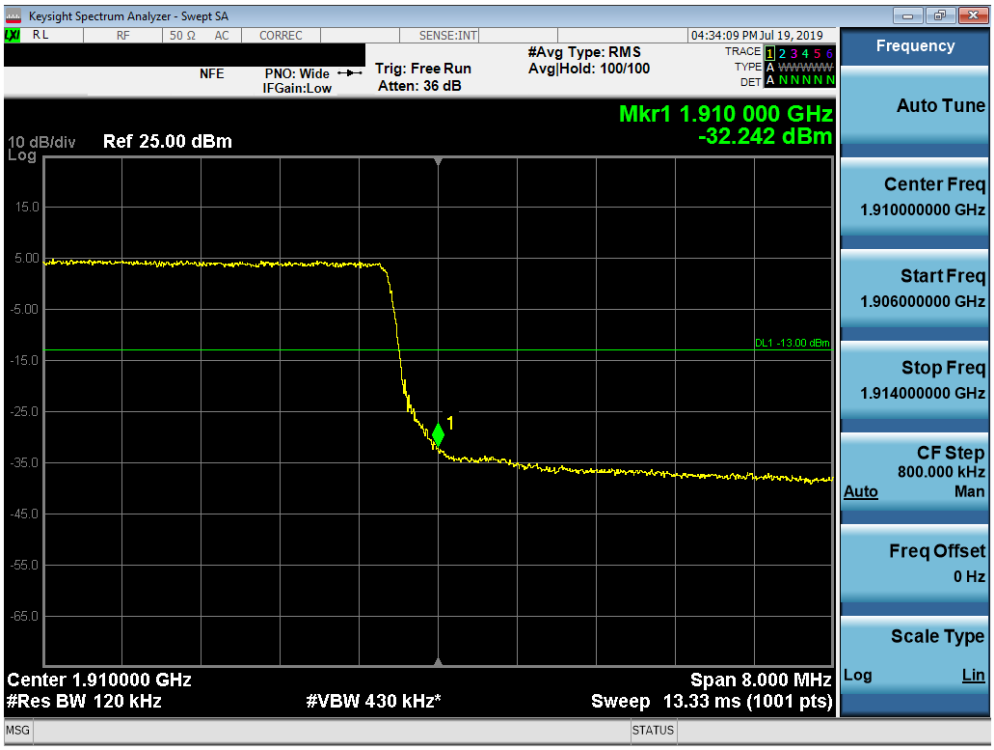
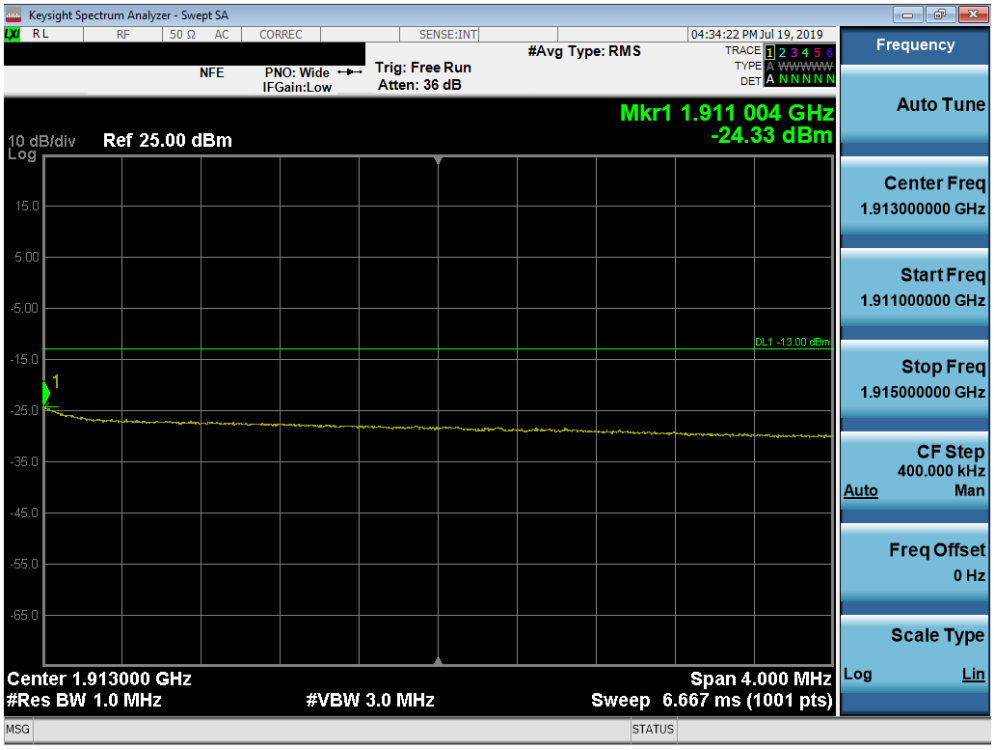


Plot 7-268. Upper Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-269. Upper Extended Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

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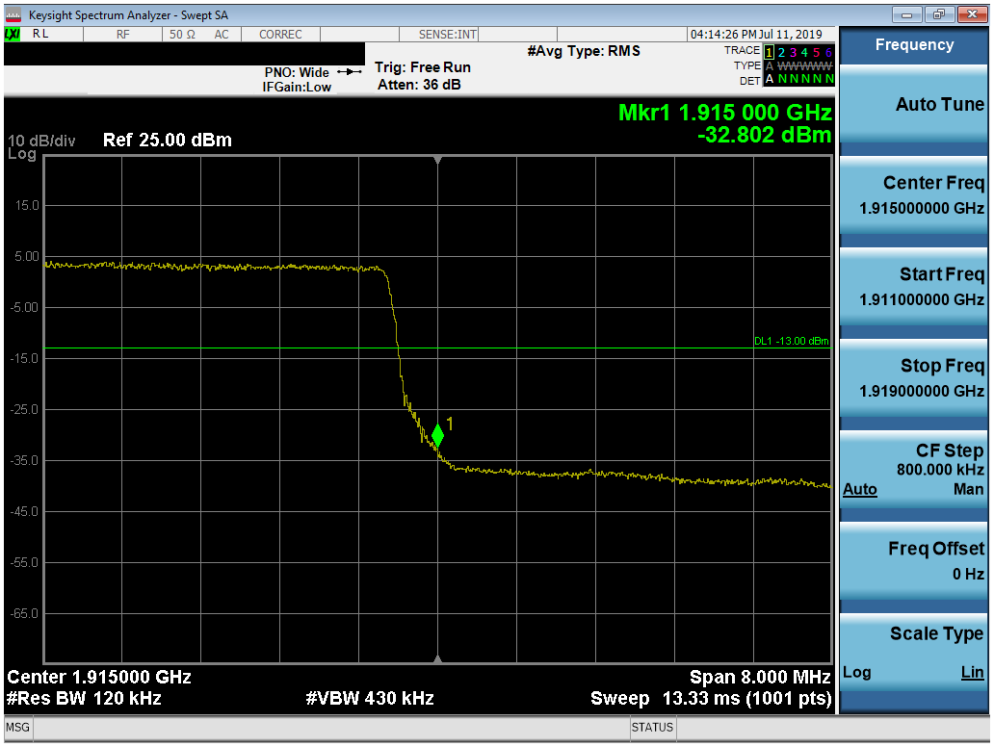
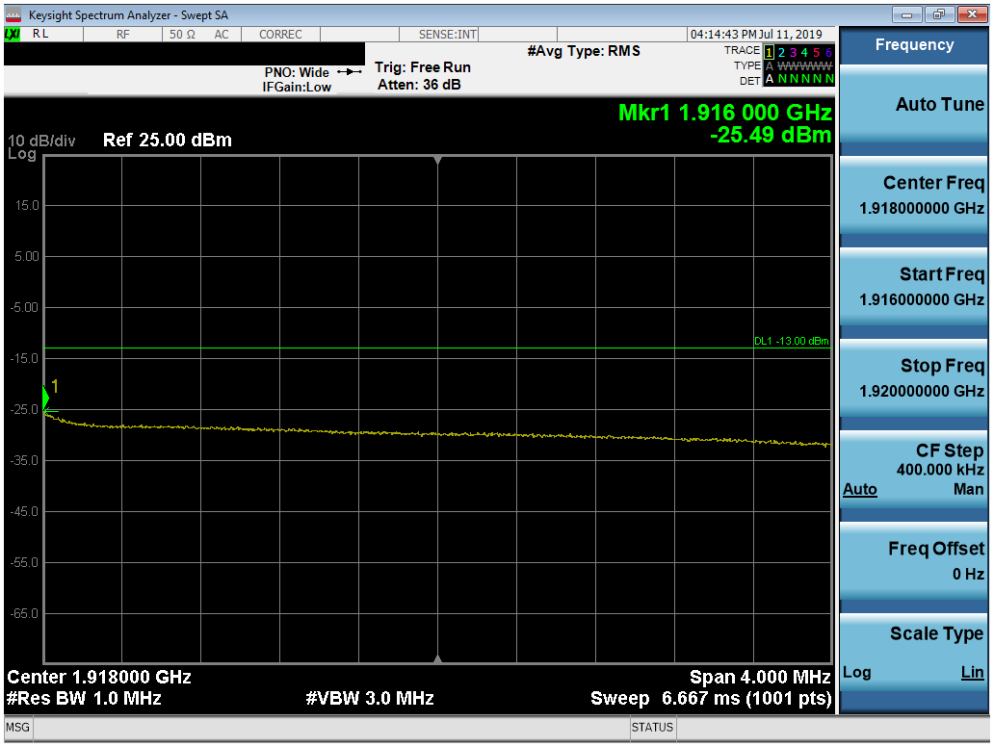


Plot 7-270. Upper Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-271. Upper Extended Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)

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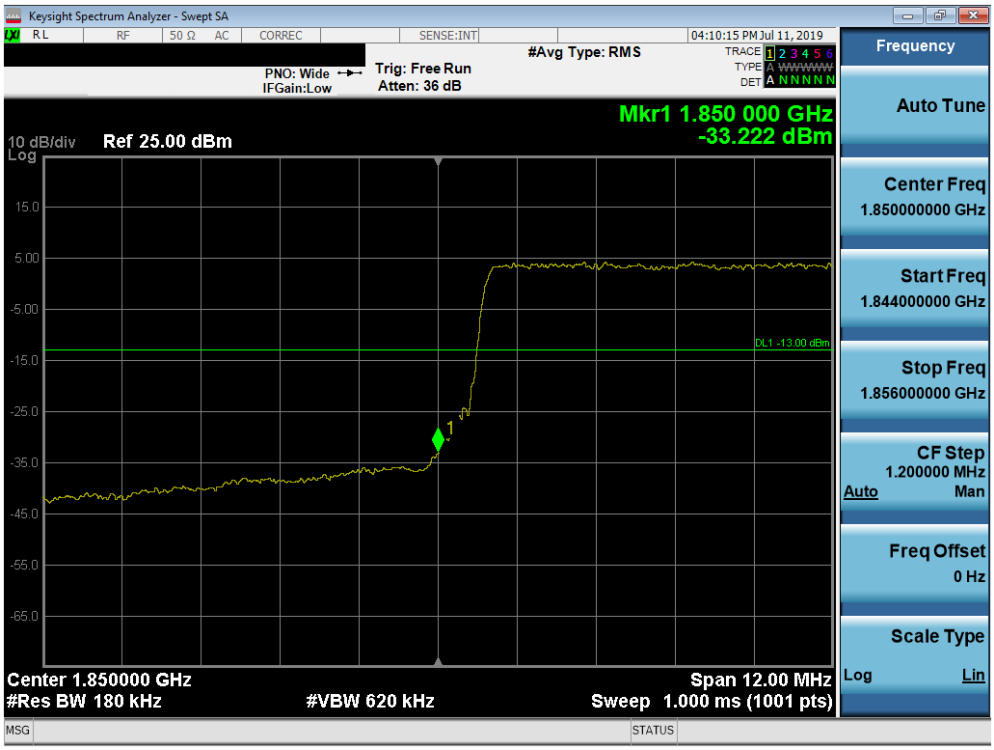
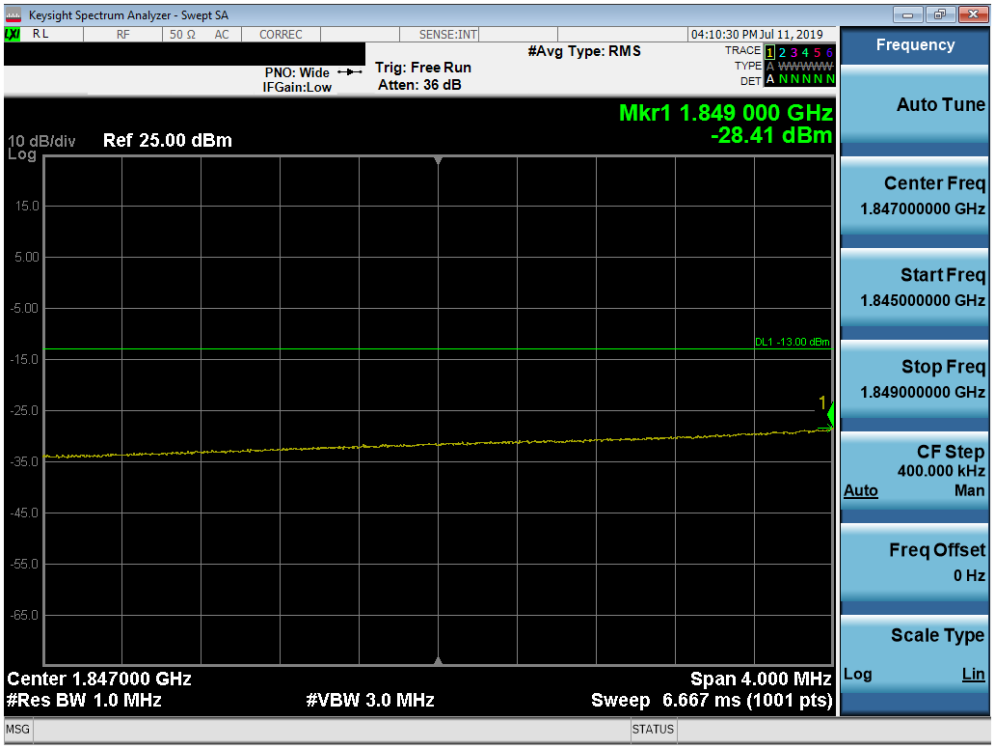


Plot 7-272. Lower Band Edge Plot (Band 25/2- 15.0MHz QPSK - Full RB Configuration)



Plot 7-273. Lower Extended Band Edge Plot (Band 25/2- 15.0MHz QPSK - Full RB Configuration)

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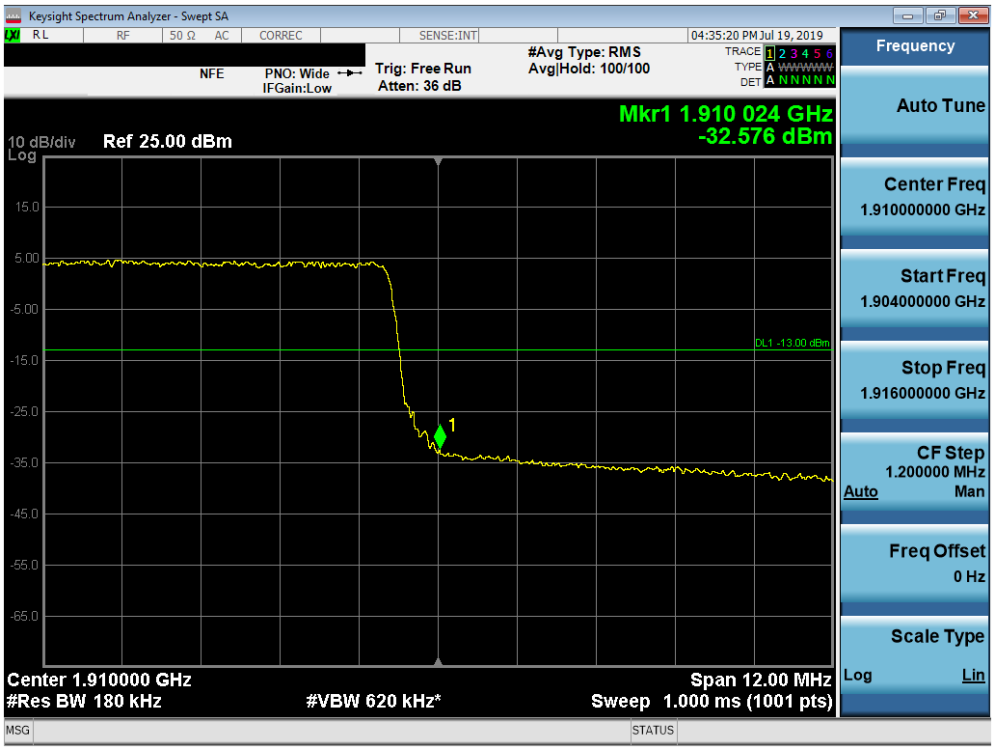
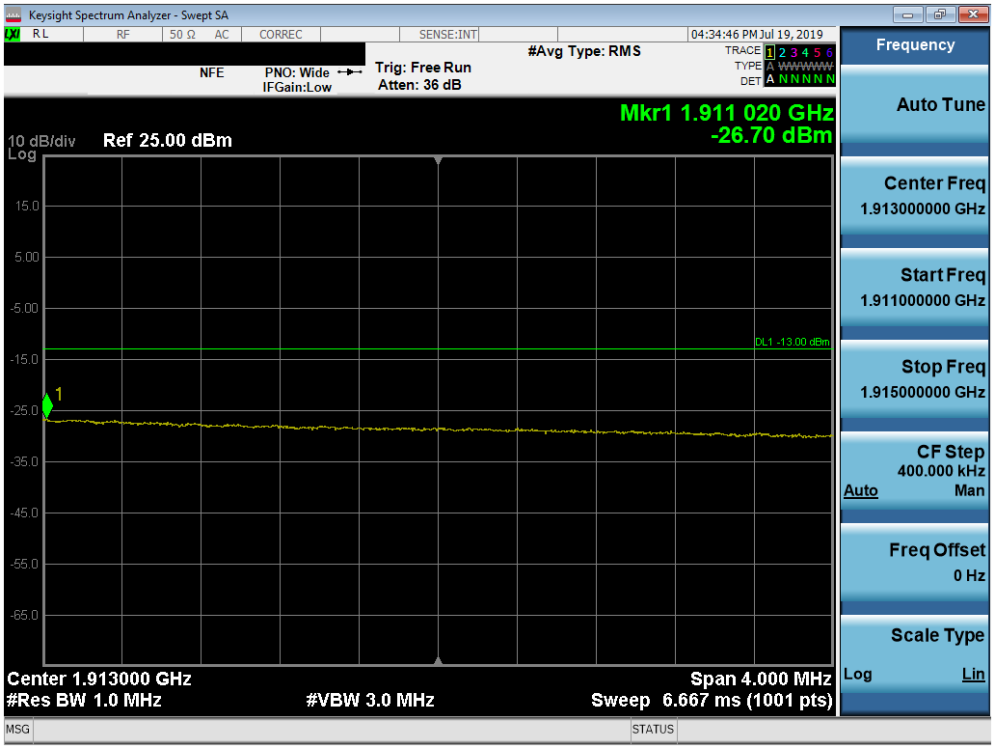


Plot 7-274. Upper Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-275. Upper Extended Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

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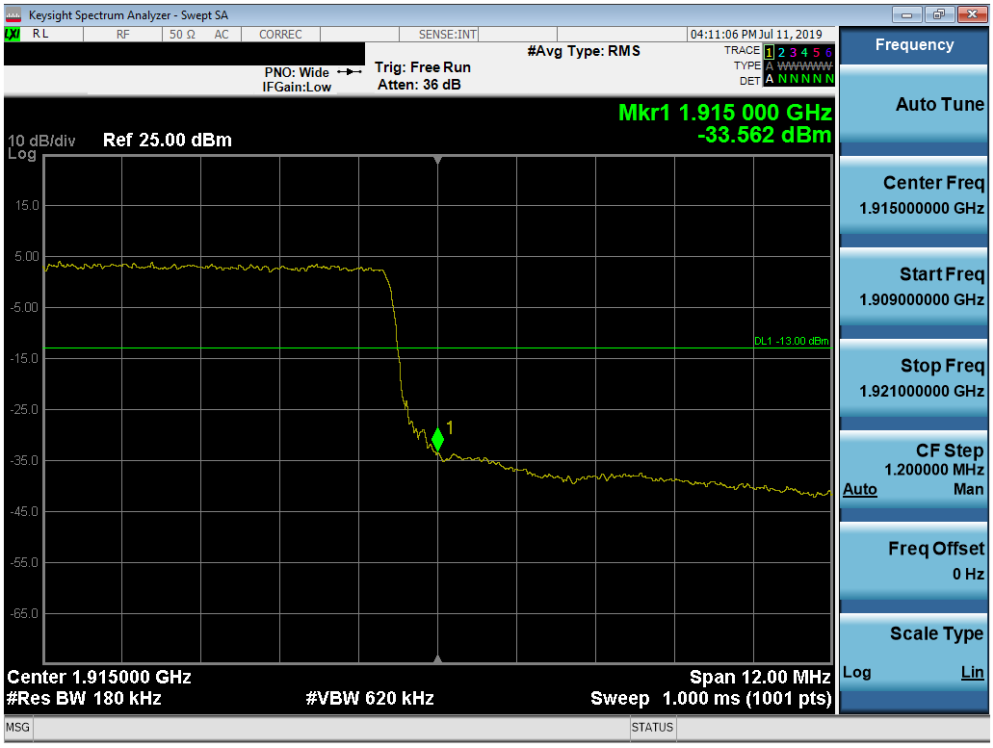
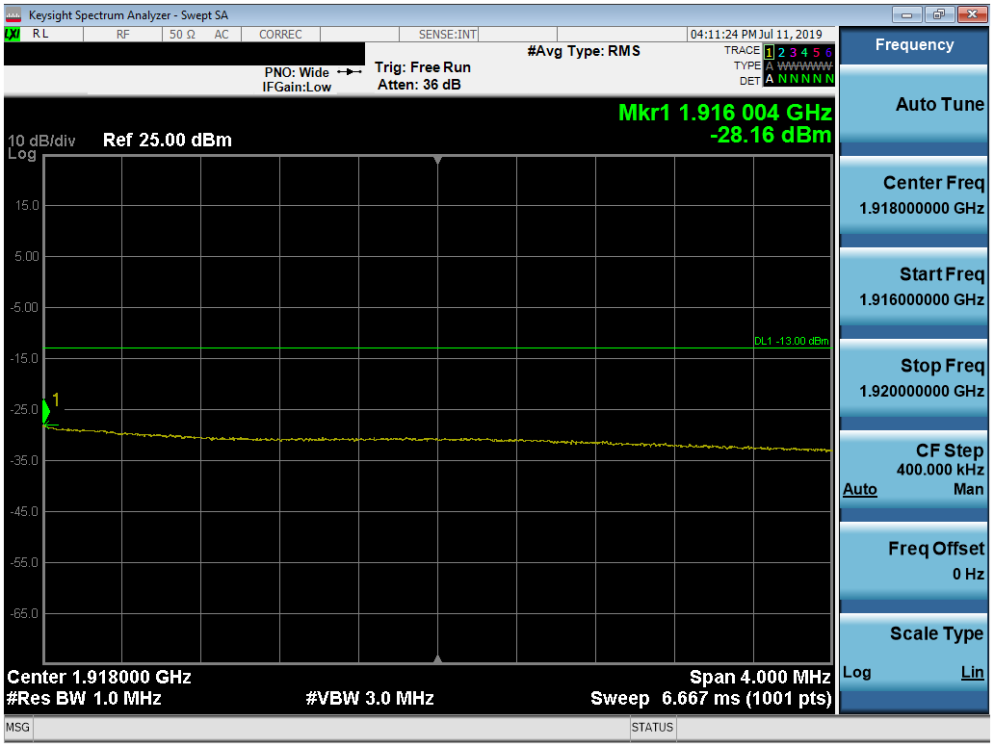


Plot 7-276. Upper Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-277. Upper Extended Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)

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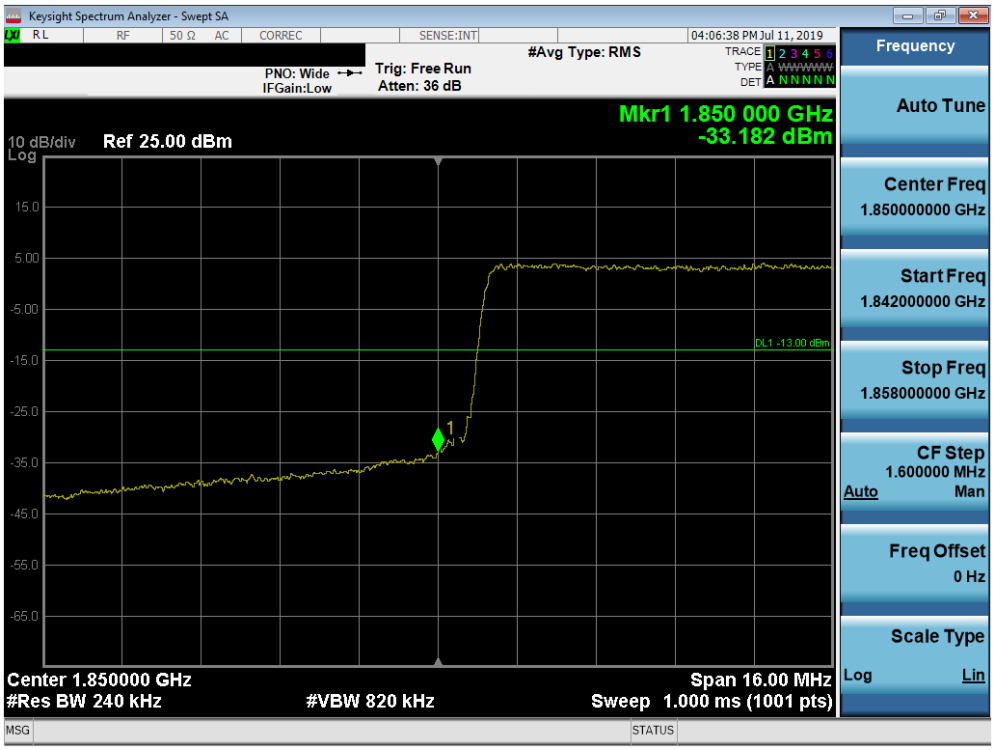
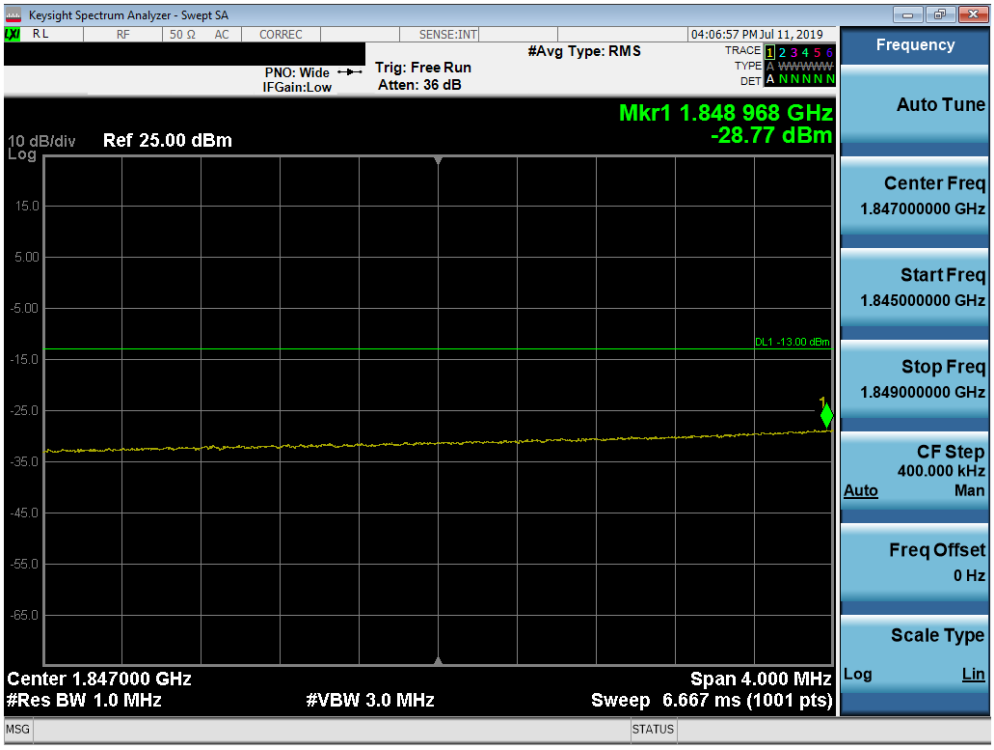


Plot 7-278. Lower Band Edge Plot (Band 25/2- 20.0MHz QPSK - Full RB Configuration)



Plot 7-279. Lower Extended Band Edge Plot (Band 25/2- 20.0MHz QPSK - Full RB Configuration)

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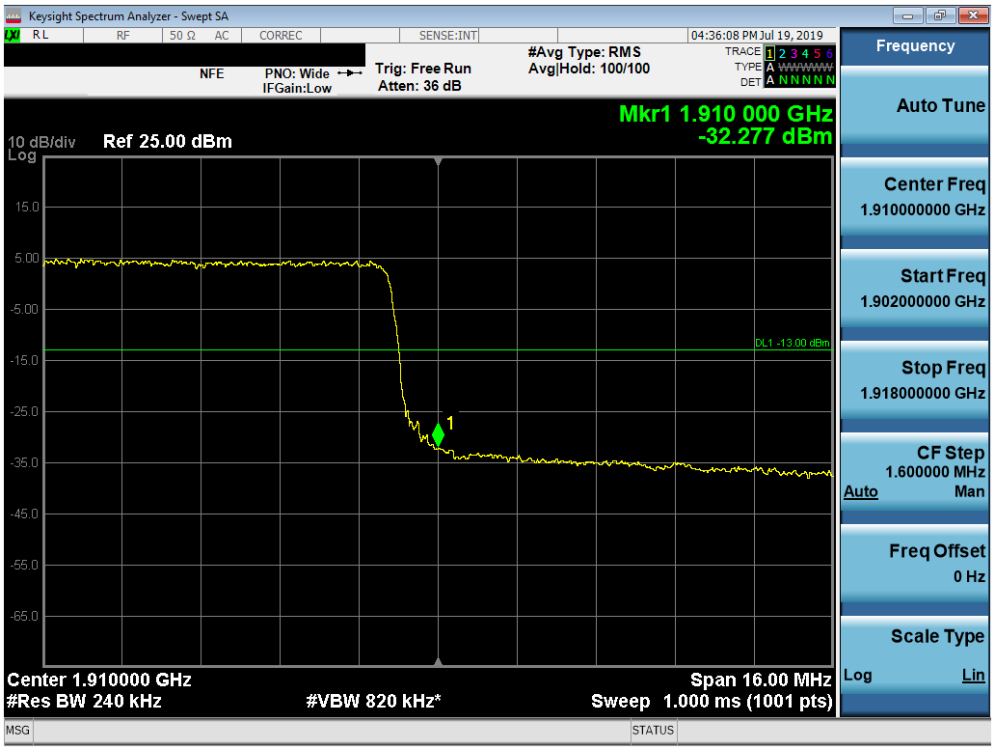
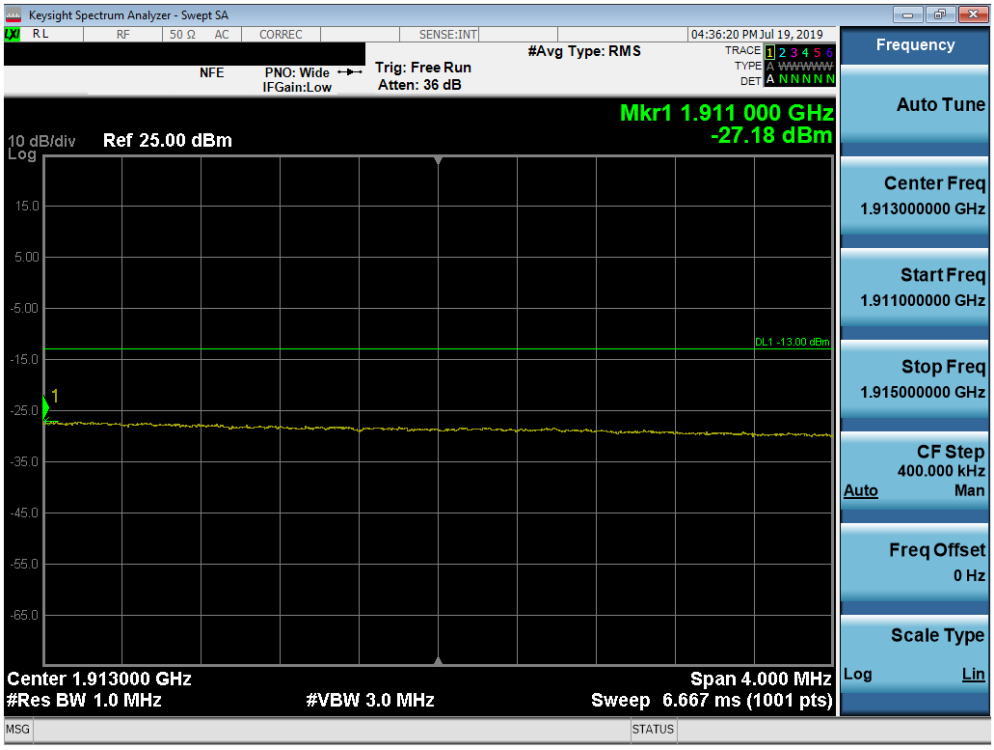


Plot 7-280. Upper Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-281. Upper Extended Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

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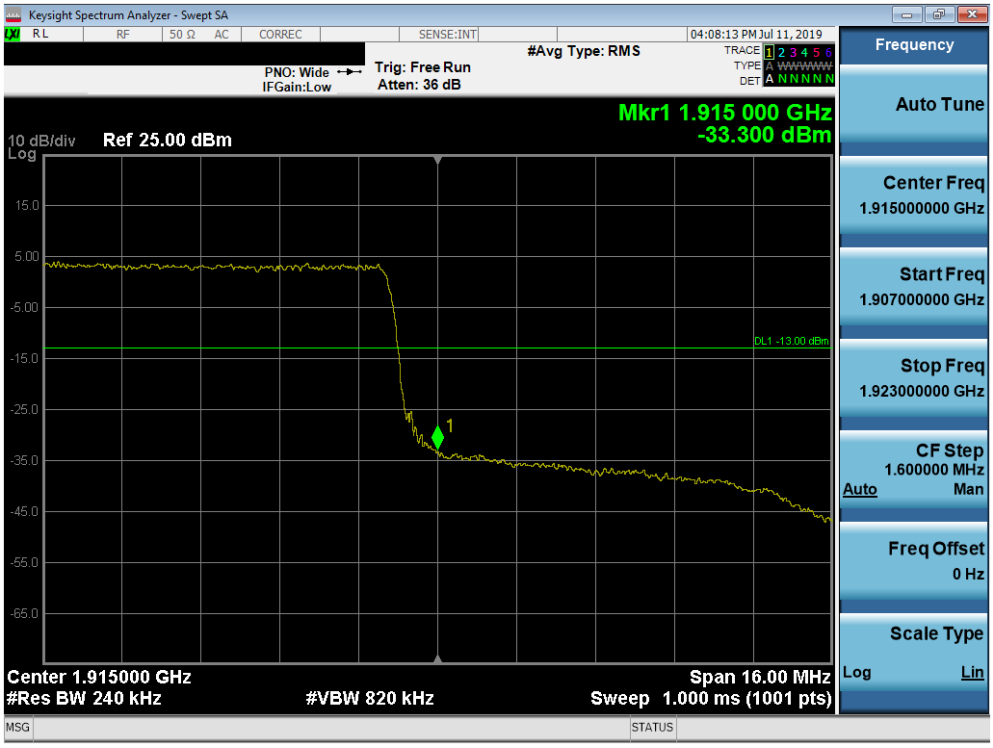
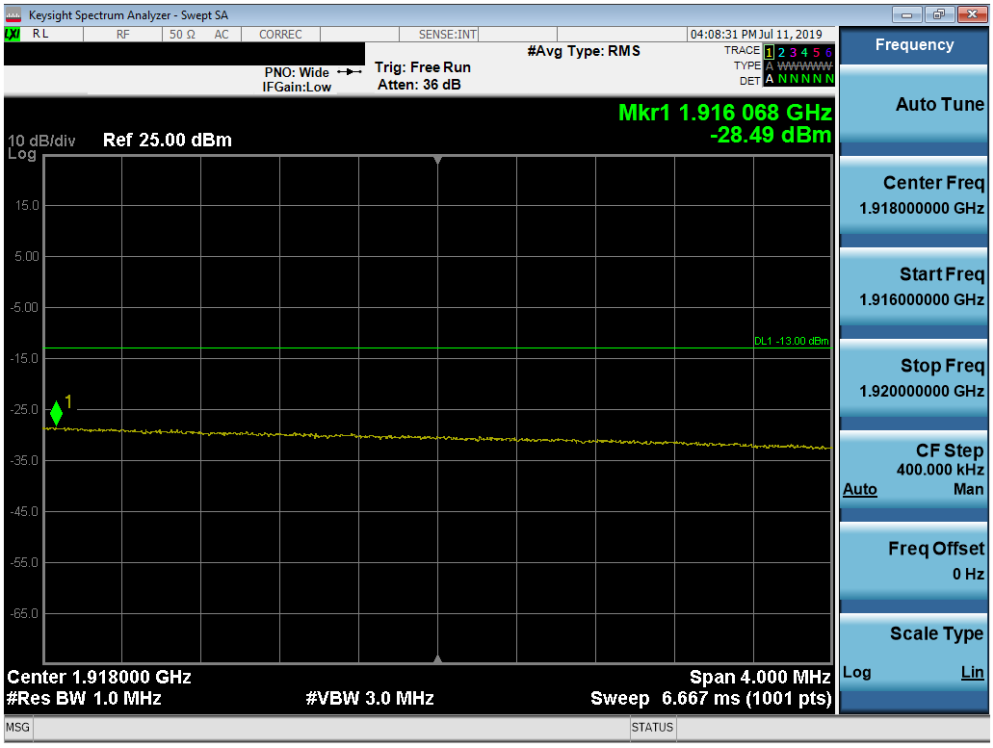


Plot 7-282. Upper Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-283. Upper Extended Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)

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Band 7

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4940 GHz	1.000 MHz	2.494000000 GHz	-36.30 dBm	-11.30 dB
2	2	2.4940 GHz	2.4960 GHz	1.000 MHz	2.495980000 GHz	-30.84 dBm	-17.84 dB
3	3	2.4960 GHz	2.4990 GHz	1.000 MHz	2.499000000 GHz	-23.24 dBm	-13.24 dB
4	4	2.4990 GHz	2.5000 GHz	91.00 kHz	2.500000000 GHz	-27.24 dBm	-17.24 dB
5	5	2.5000 GHz	2.5250 GHz	240.0 kHz	2.504041667 GHz	6.986 dBm	-18.01 dB

Plot 7-284. Lower ACP Plot (Band 7 - 5.0MHz QPSK - Full RB Configuration)

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5450 GHz	2.5700 GHz	240.0 kHz	2.567791667 GHz	6.900 dBm	-18.10 dB
2	2	2.5700 GHz	2.5710 GHz	91.00 kHz	2.570000000 GHz	-32.59 dBm	-22.59 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.573660000 GHz	-26.93 dBm	-16.93 dB
4	4	2.5750 GHz	2.5760 GHz	1.000 MHz	2.575018333 GHz	-33.91 dBm	-20.91 dB
5	5	2.5760 GHz	2.5950 GHz	1.000 MHz	2.576000000 GHz	-35.33 dBm	-10.33 dB

Plot 7-285. Upper ACP Plot (Band 7 - 5.0MHz QPSK - Full RB Configuration)

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Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490500000 GHz	-40.14 dBm	-15.14 dB
2	2	2.4905 GHz	2.4960 GHz	1.000 MHz	2.495770833 GHz	-32.03 dBm	-19.03 dB
3	3	2.4960 GHz	2.4990 GHz	1.000 MHz	2.499000000 GHz	-27.94 dBm	-17.94 dB
4	4	2.4990 GHz	2.5000 GHz	180.0 kHz	2.500000000 GHz	-32.54 dBm	-22.54 dB
5	5	2.5000 GHz	2.5250 GHz	240.0 kHz	2.508333333 GHz	4.157 dBm	-20.84 dB

Plot 7-286. Lower ACP Plot (Band 7 - 10.0MHz QPSK - Full RB Configuration)

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5450 GHz	2.5700 GHz	240.0 kHz	2.563500000 GHz	4.172 dBm	-20.83 dB
2	2	2.5700 GHz	2.5710 GHz	180.0 kHz	2.570006667 GHz	-34.35 dBm	-24.35 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571086667 GHz	-29.23 dBm	-19.23 dB
4	4	2.5750 GHz	2.5790 GHz	1.000 MHz	2.575727380 GHz	-29.29 dBm	-16.29 dB
5	5	2.5790 GHz	2.5950 GHz	1.000 MHz	2.579041000 GHz	-35.95 dBm	-10.95 dB

Plot 7-287. Upper ACP Plot (Band 7 - 10.0MHz QPSK - Full RB Configuration)

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Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490500000 GHz	-35.76 dBm	-10.76 dB
2	2	2.4905 GHz	2.4960 GHz	1.000 MHz	2.495972500 GHz	-34.33 dBm	-21.33 dB
3	3	2.4960 GHz	2.4990 GHz	1.000 MHz	2.499000000 GHz	-30.15 dBm	-20.15 dB
4	4	2.4990 GHz	2.5000 GHz	270.0 kHz	2.500000000 GHz	-33.90 dBm	-23.90 dB
5	5	2.5000 GHz	2.5250 GHz	240.0 kHz	2.514041667 GHz	2.291 dBm	-22.71 dB

Plot 7-288. Lower ACP Plot (Band 7 - 15.0MHz QPSK - Full RB Configuration)

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5450 GHz	2.5700 GHz	240.0 kHz	2.556208333 GHz	2.076 dBm	-22.92 dB
2	2	2.5700 GHz	2.5710 GHz	270.0 kHz	2.570028333 GHz	-33.26 dBm	-23.26 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571400000 GHz	-29.34 dBm	-19.34 dB
4	4	2.5750 GHz	2.5835 GHz	1.000 MHz	2.575967300 GHz	-31.15 dBm	-18.15 dB
5	5	2.5835 GHz	2.5950 GHz	1.000 MHz	2.583573217 GHz	-39.56 dBm	-14.56 dB

Plot 7-289. Upper ACP Plot (Band 7 - 15.0MHz QPSK - Full RB Configuration)

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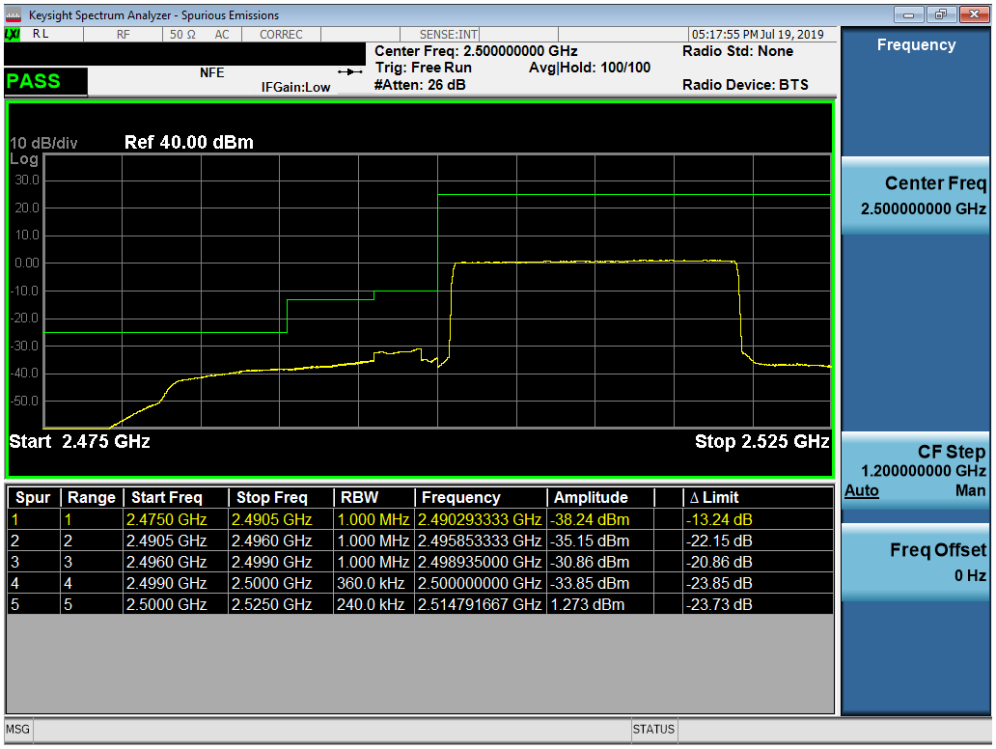

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490293333 GHz	-38.24 dBm	-13.24 dB
2	2	2.4905 GHz	2.4960 GHz	1.000 MHz	2.495853333 GHz	-35.15 dBm	-22.15 dB
3	3	2.4960 GHz	2.4990 GHz	1.000 MHz	2.498935000 GHz	-30.86 dBm	-20.86 dB
4	4	2.4990 GHz	2.5000 GHz	360.0 kHz	2.500000000 GHz	-33.85 dBm	-23.85 dB
5	5	2.5000 GHz	2.5250 GHz	240.0 kHz	2.514791667 GHz	1.273 dBm	-23.73 dB

Plot 7-290. Lower ACP Plot (Band 7 - 20.0MHz QPSK - Full RB Configuration)

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5450 GHz	2.5700 GHz	240.0 kHz	2.557000000 GHz	0.912 dBm	-24.09 dB
2	2	2.5700 GHz	2.5710 GHz	360.0 kHz	2.570001667 GHz	-33.30 dBm	-23.30 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571066667 GHz	-29.56 dBm	-19.56 dB
4	4	2.5750 GHz	2.5880 GHz	1.000 MHz	2.575000000 GHz	-31.12 dBm	-18.12 dB
5	5	2.5880 GHz	2.5950 GHz	1.000 MHz	2.588033300 GHz	-41.46 dBm	-16.46 dB

Plot 7-291. Upper ACP Plot (Band 7 - 20.0MHz QPSK - Full RB Configuration)

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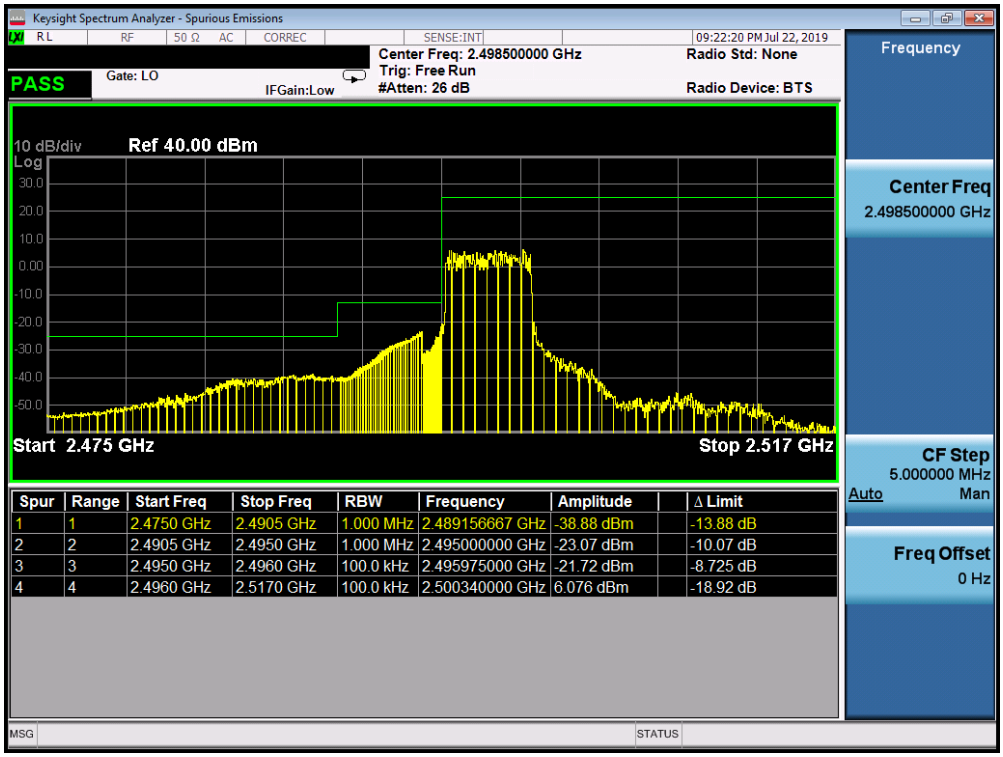
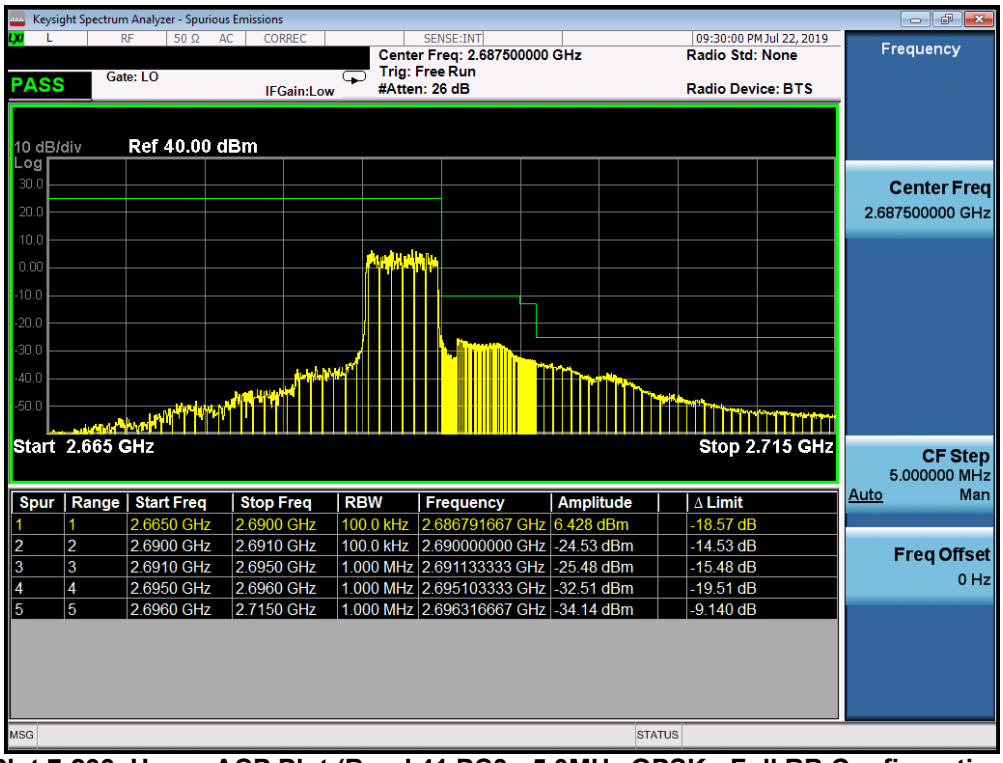
Band 41 PC3



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.489156667 GHz	-38.88 dBm	-13.88 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.495000000 GHz	-23.07 dBm	-10.07 dB
3	3	2.4950 GHz	2.4960 GHz	100.0 kHz	2.495975000 GHz	-21.72 dBm	-8.725 dB
4	4	2.4960 GHz	2.5170 GHz	100.0 kHz	2.500340000 GHz	6.076 dBm	-18.92 dB

Plot 7-292. Lower ACP Plot (Band 41 PC3 - 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	2.686791667 GHz	6.428 dBm	-18.57 dB
2	2	2.6900 GHz	2.6910 GHz	100.0 kHz	2.690000000 GHz	-24.53 dBm	-14.53 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691133333 GHz	-25.48 dBm	-15.48 dB
4	4	2.6950 GHz	2.6960 GHz	1.000 MHz	2.695103333 GHz	-32.51 dBm	-19.51 dB
5	5	2.6960 GHz	2.7150 GHz	1.000 MHz	2.696316667 GHz	-34.14 dBm	-9.140 dB

Plot 7-293. Upper ACP Plot (Band 41 PC3 - 5.0MHz QPSK - Full RB Configuration)

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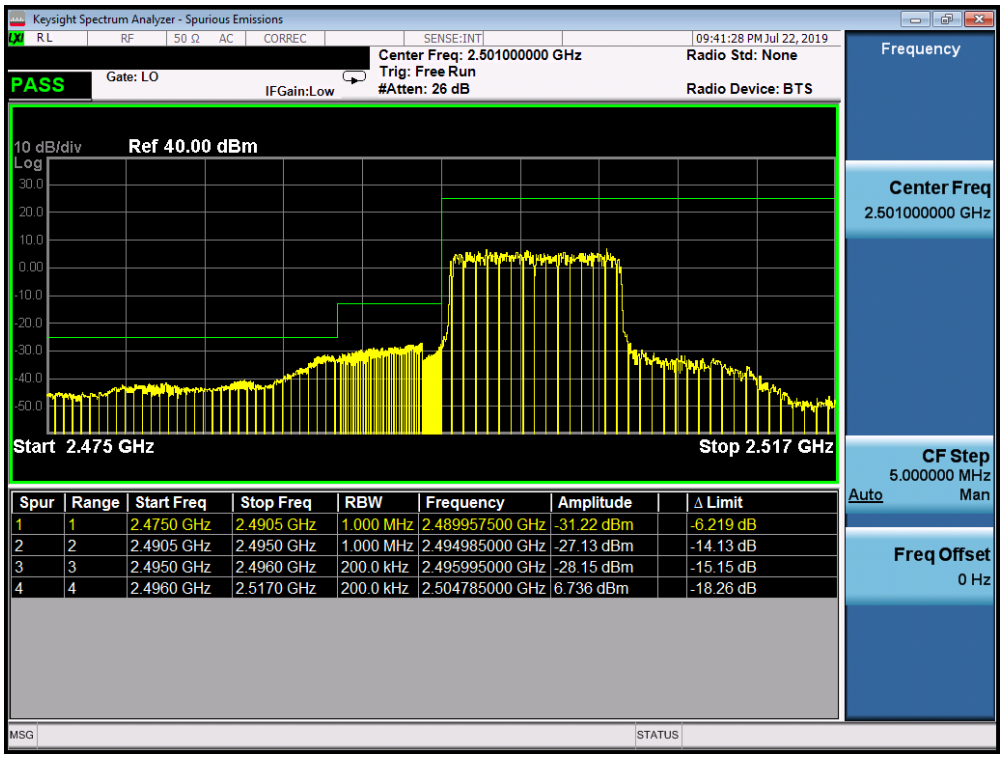
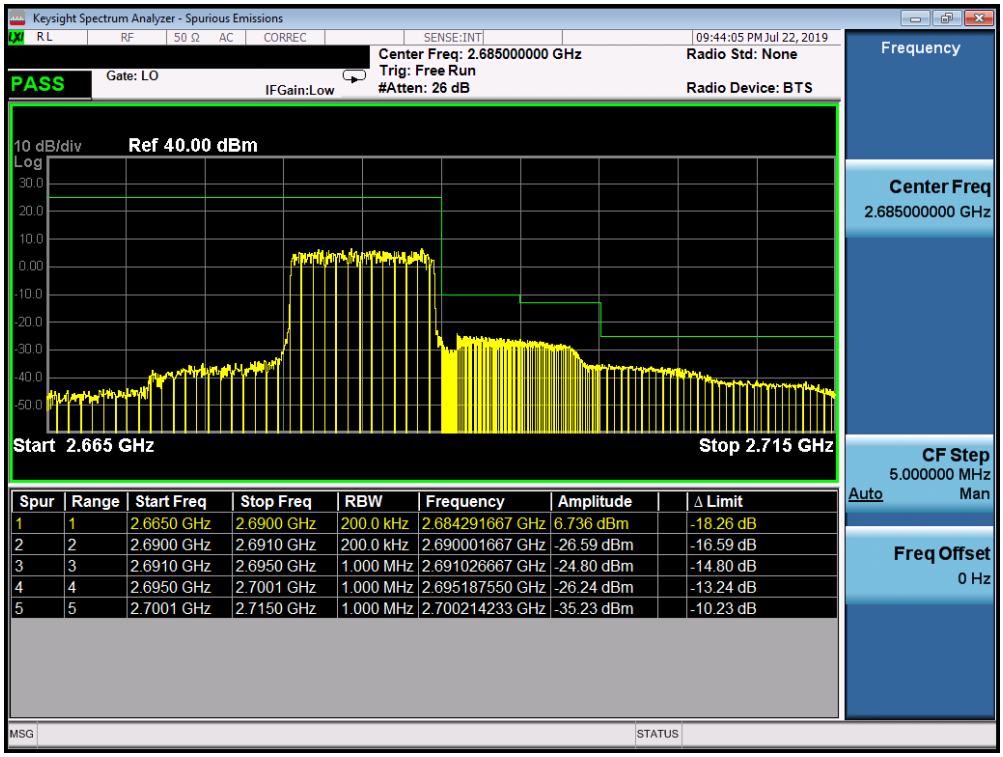


Plot 7-294. Lower ACP Plot (Band 41 PC3 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-295. Upper ACP Plot (Band 41 PC3 - 10.0MHz QPSK - Full RB Configuration)

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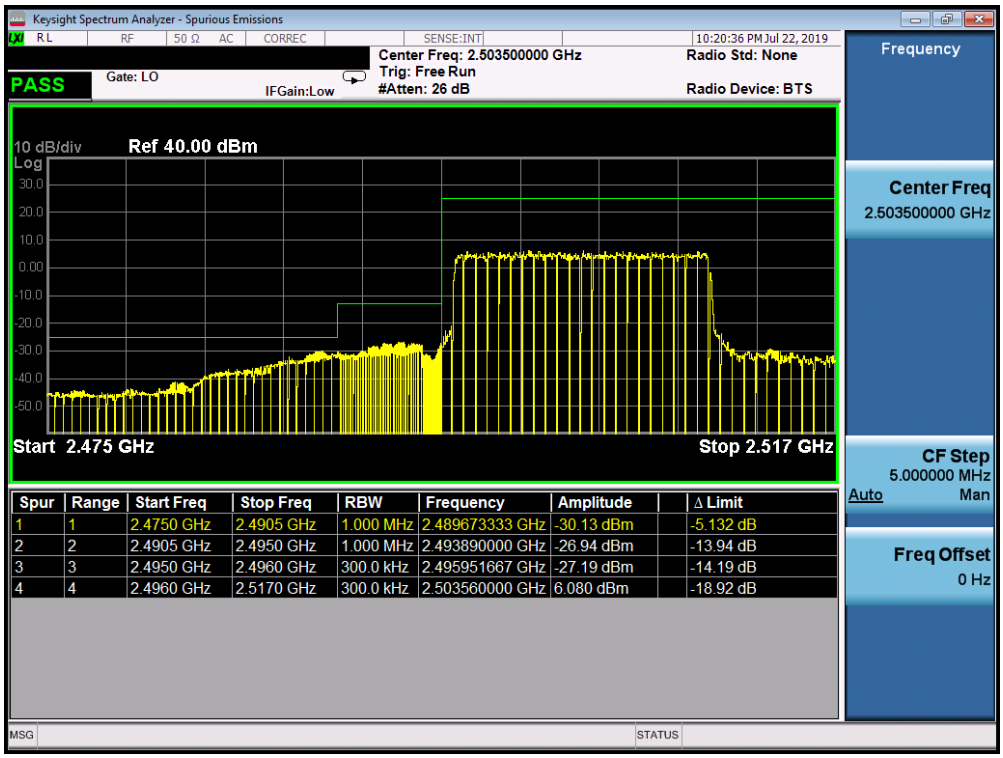
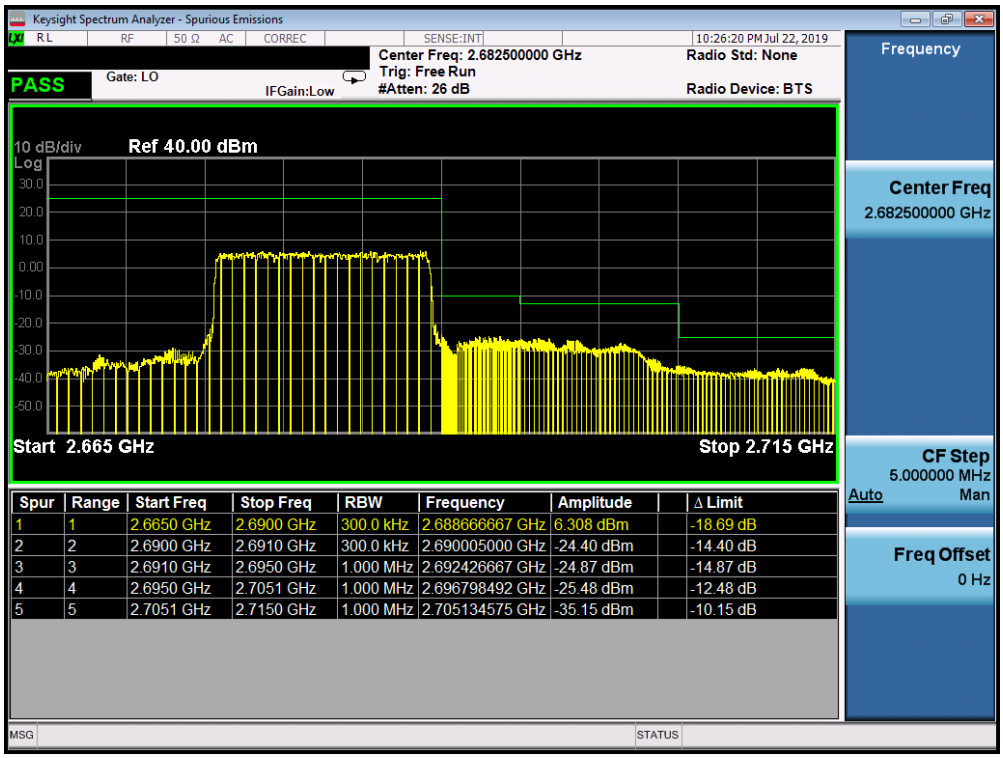


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.489673333 GHz	-30.13 dBm	-5.132 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.493890000 GHz	-26.94 dBm	-13.94 dB
3	3	2.4950 GHz	2.4960 GHz	300.0 kHz	2.495951667 GHz	-27.19 dBm	-14.19 dB
4	4	2.4960 GHz	2.5170 GHz	300.0 kHz	2.503560000 GHz	6.080 dBm	-18.92 dB

Plot 7-296. Lower ACP Plot (Band 41 PC3 - 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	2.688666667 GHz	6.308 dBm	-18.69 dB
2	2	2.6900 GHz	2.6910 GHz	300.0 kHz	2.690005000 GHz	-24.40 dBm	-14.40 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.692426667 GHz	-24.87 dBm	-14.87 dB
4	4	2.6950 GHz	2.7051 GHz	1.000 MHz	2.696798492 GHz	-25.48 dBm	-12.48 dB
5	5	2.7051 GHz	2.7150 GHz	1.000 MHz	2.705134575 GHz	-35.15 dBm	-10.15 dB

Plot 7-297. Upper ACP Plot (Band 41 PC3 - 15.0MHz QPSK - Full RB Configuration)

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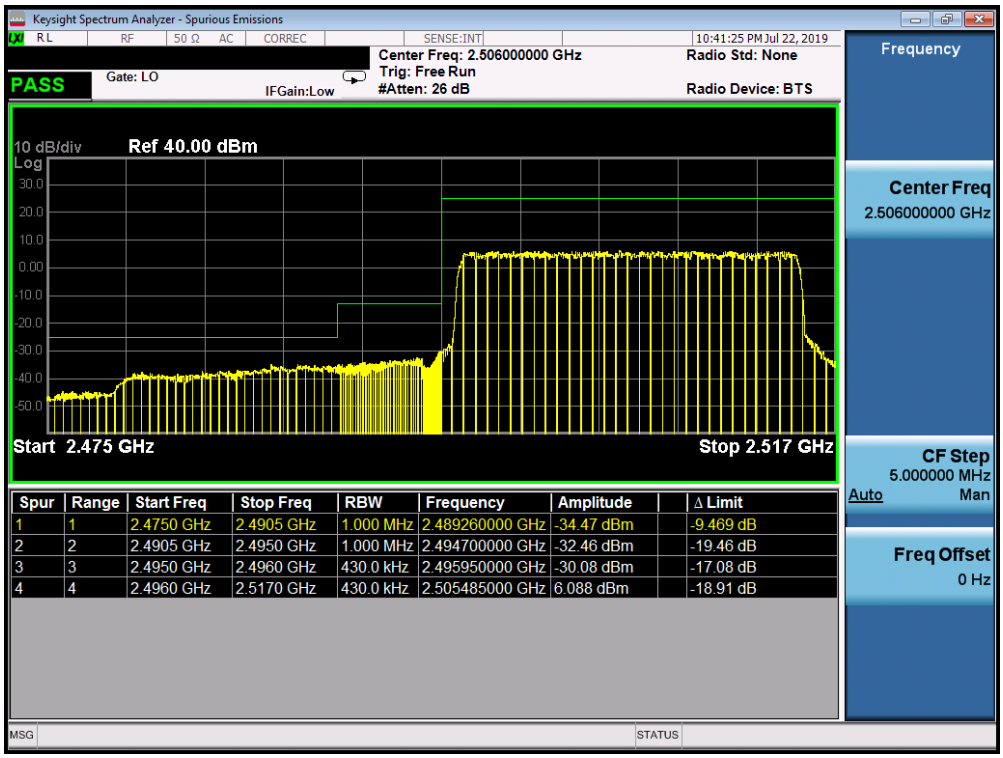
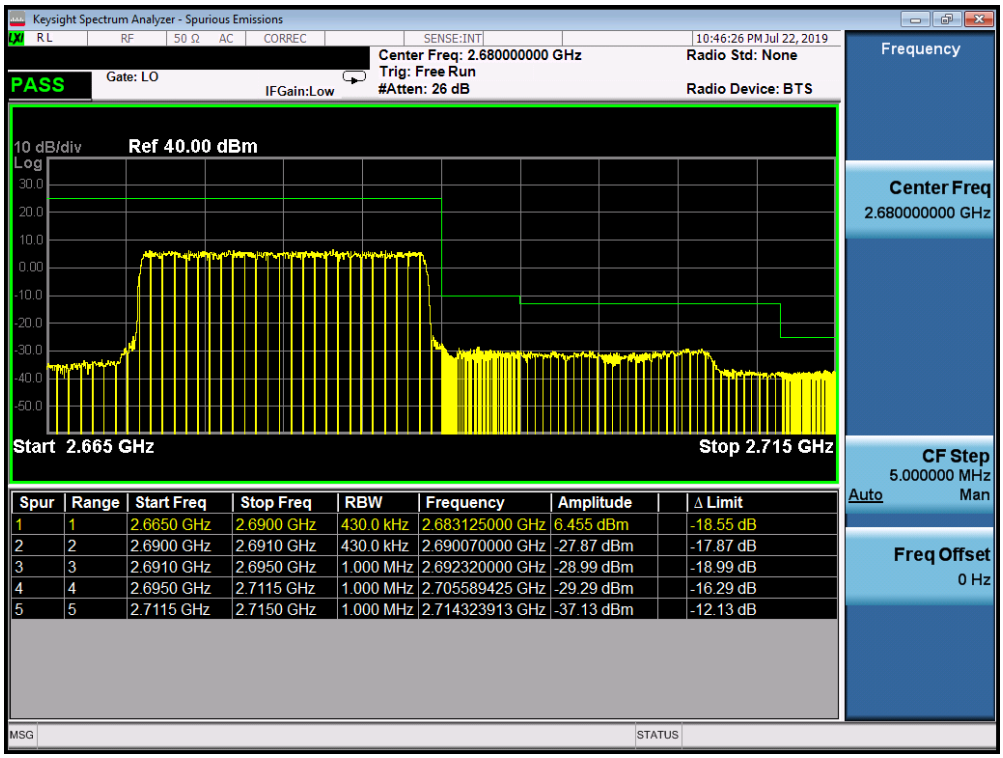


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.489260000 GHz	-34.47 dBm	-9.469 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494700000 GHz	-32.46 dBm	-19.46 dB
3	3	2.4950 GHz	2.4960 GHz	430.0 kHz	2.495950000 GHz	-30.08 dBm	-17.08 dB
4	4	2.4960 GHz	2.5170 GHz	430.0 kHz	2.505485000 GHz	6.088 dBm	-18.91 dB

Plot 7-298. Lower ACP Plot (Band 41 PC3 - 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	430.0 kHz	2.683125000 GHz	6.455 dBm	-18.55 dB
2	2	2.6900 GHz	2.6910 GHz	430.0 kHz	2.690070000 GHz	-27.87 dBm	-17.87 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.692320000 GHz	-28.99 dBm	-18.99 dB
4	4	2.6950 GHz	2.7115 GHz	1.000 MHz	2.705589425 GHz	-29.29 dBm	-16.29 dB
5	5	2.7115 GHz	2.7150 GHz	1.000 MHz	2.714323913 GHz	-37.13 dBm	-12.13 dB

Plot 7-299. Upper ACP Plot (Band 41 PC3 - 20.0MHz QPSK - Full RB Configuration)

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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.

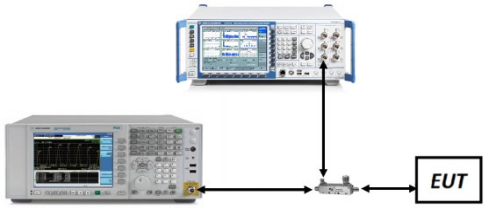

Figure 7-4. Test Instrument & Measurement Setup

Test Notes

None.

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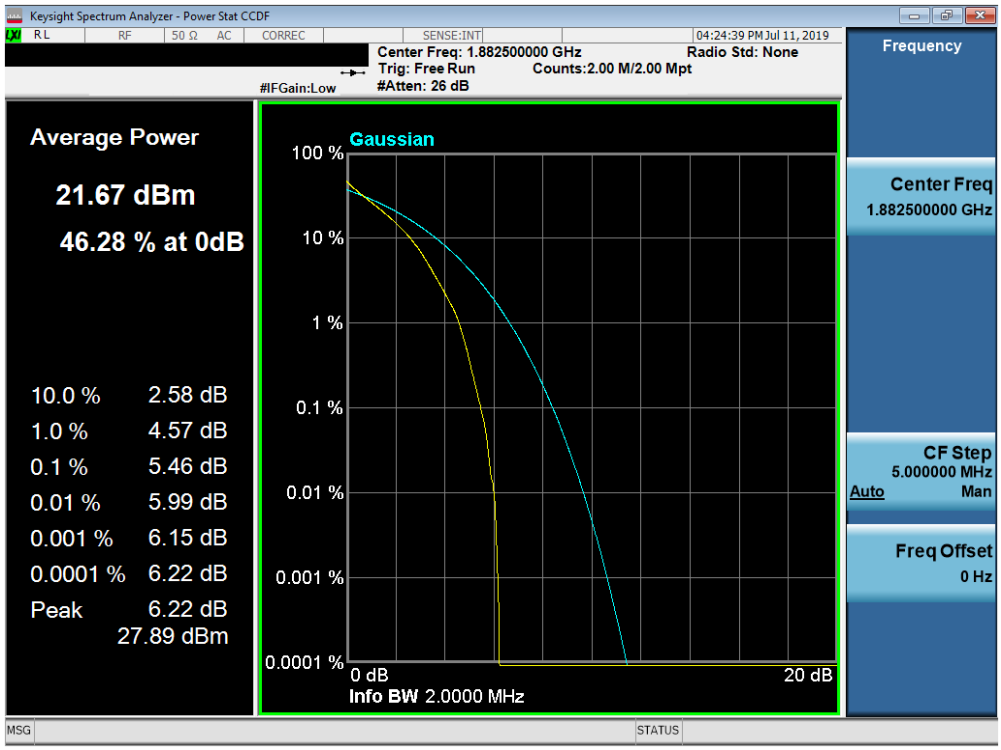
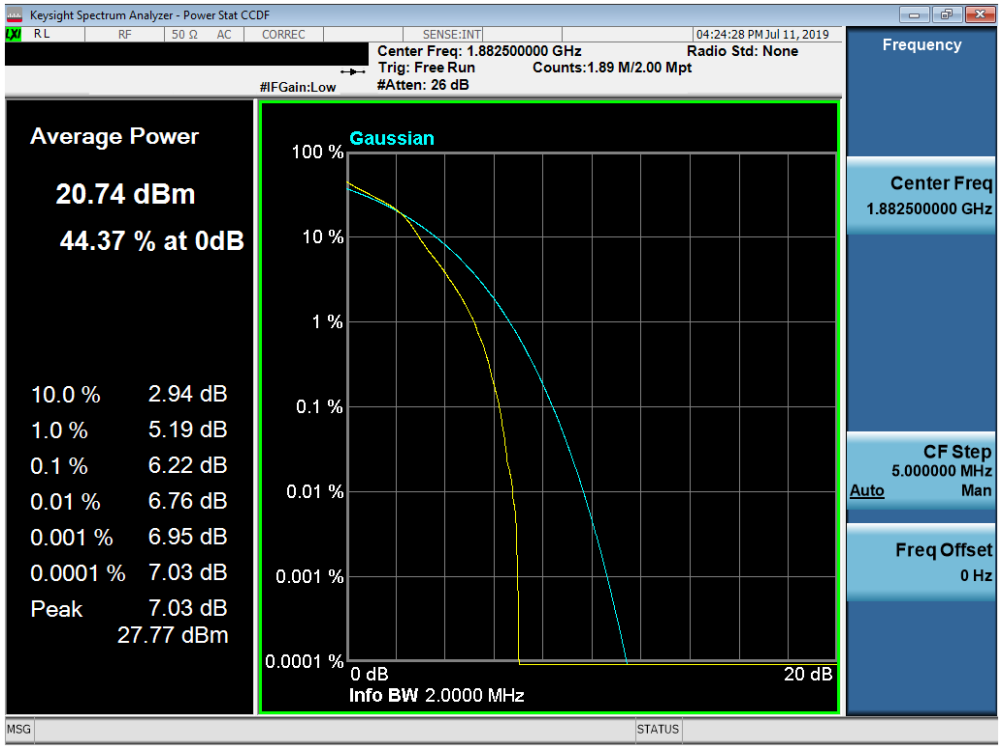
Band 25/2



Plot 7-300. PAR Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)



Plot 7-301. PAR Plot (Band 25/2 - 1.4MHz 16-QAM - Full RB Configuration)

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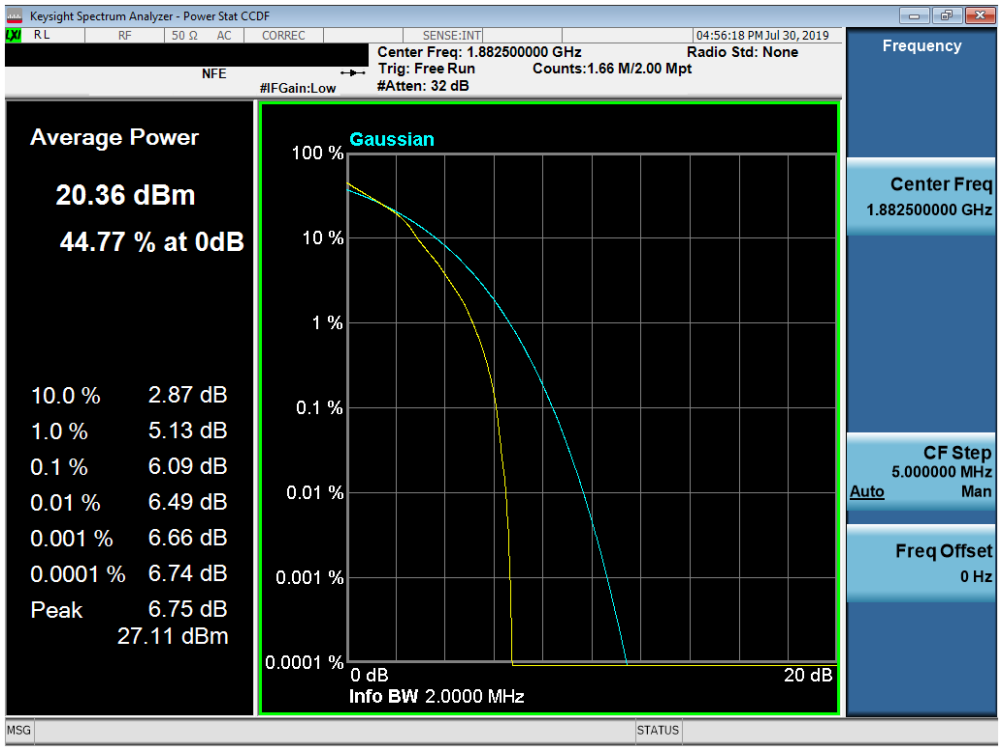
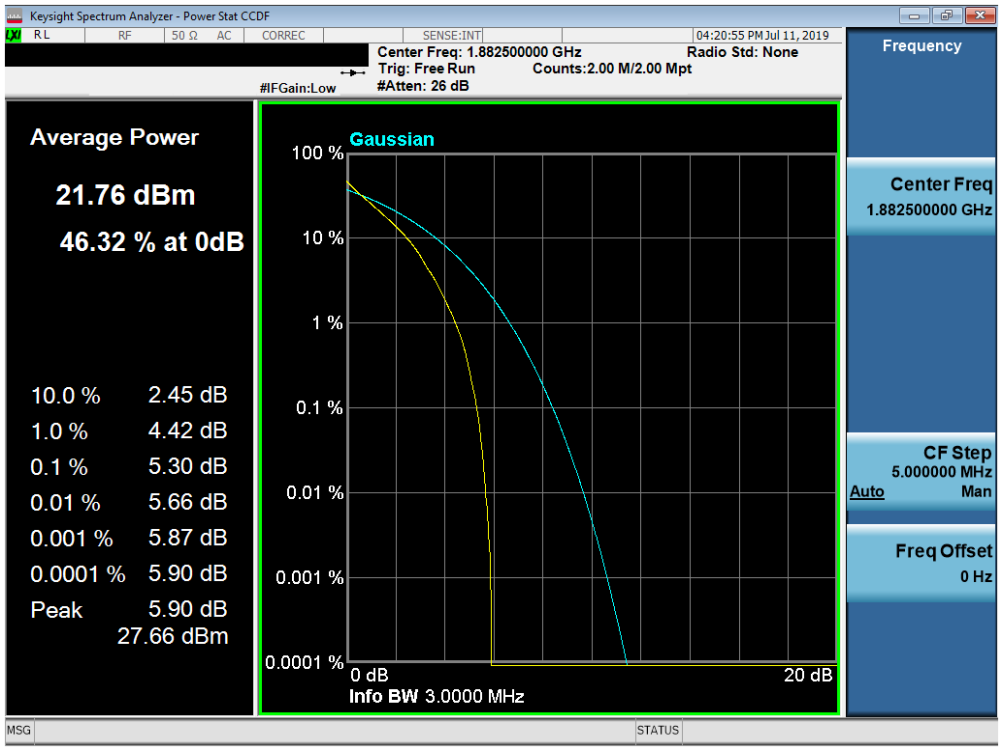


Plot 7-302. PAR Plot (Band 25/2 - 1.4MHz 64-QAM - Full RB Configuration)



Plot 7-303. PAR Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

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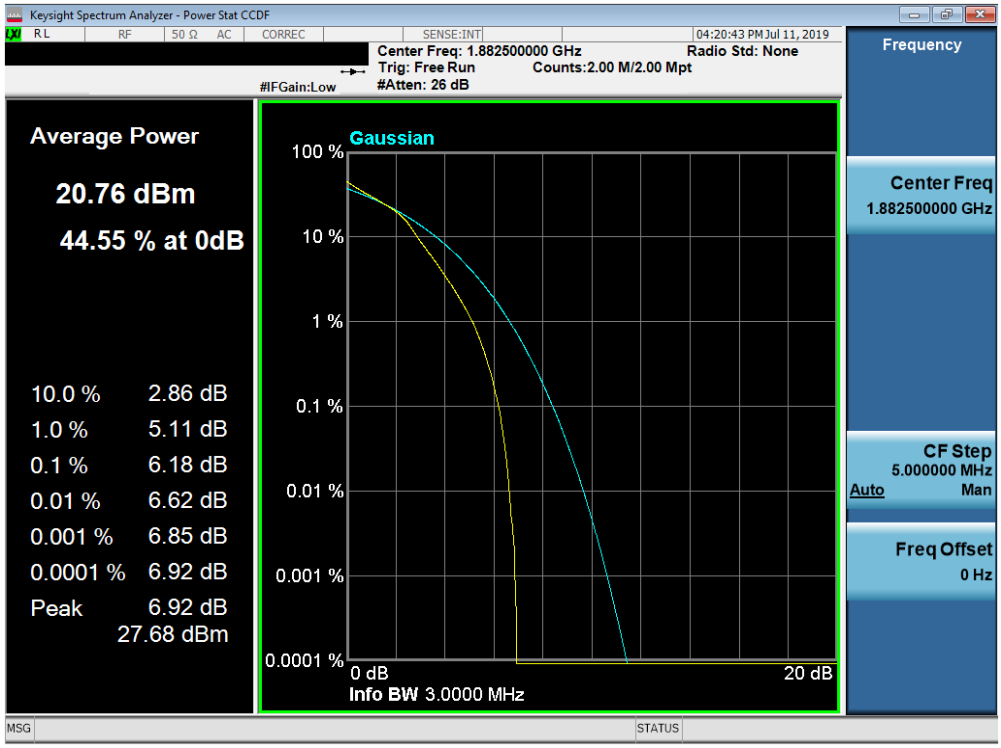
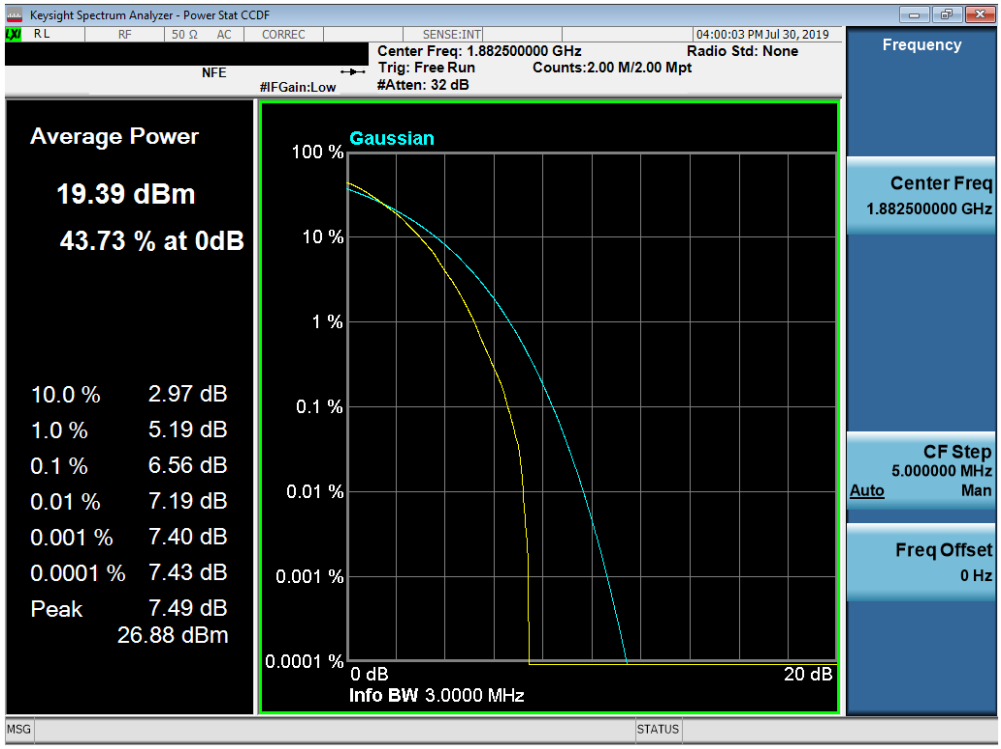


Plot 7-304. PAR Plot (Band 25/2 - 3.0MHz 16-QAM - Full RB Configuration)



Plot 7-305. PAR Plot (Band 25/2 - 3.0MHz 64-QAM - Full RB Configuration)

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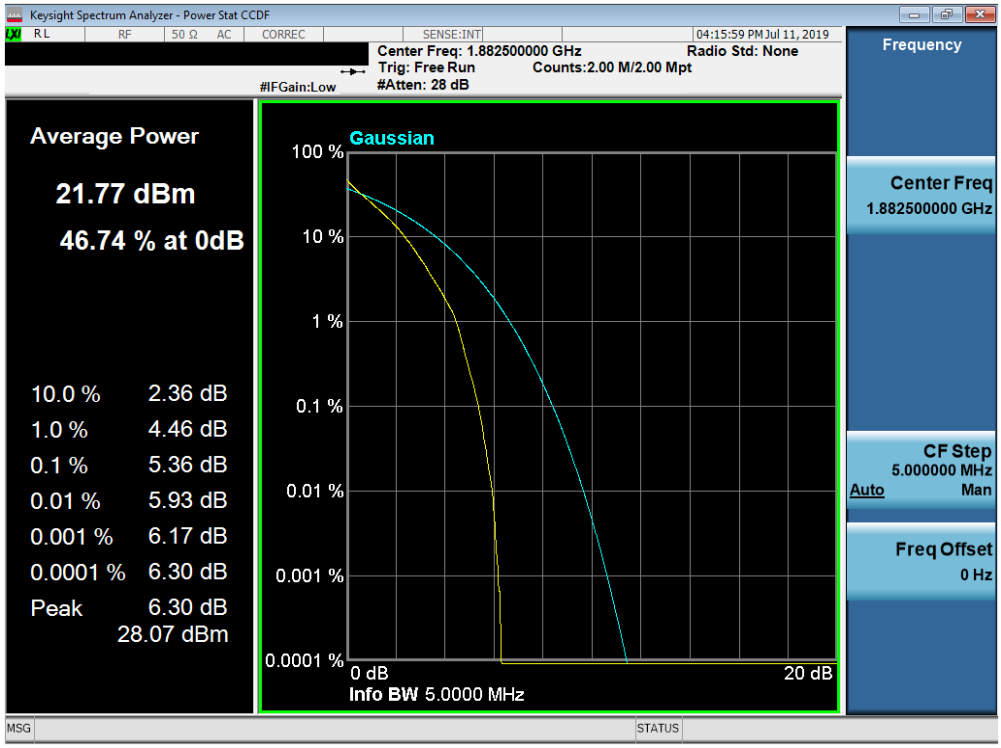
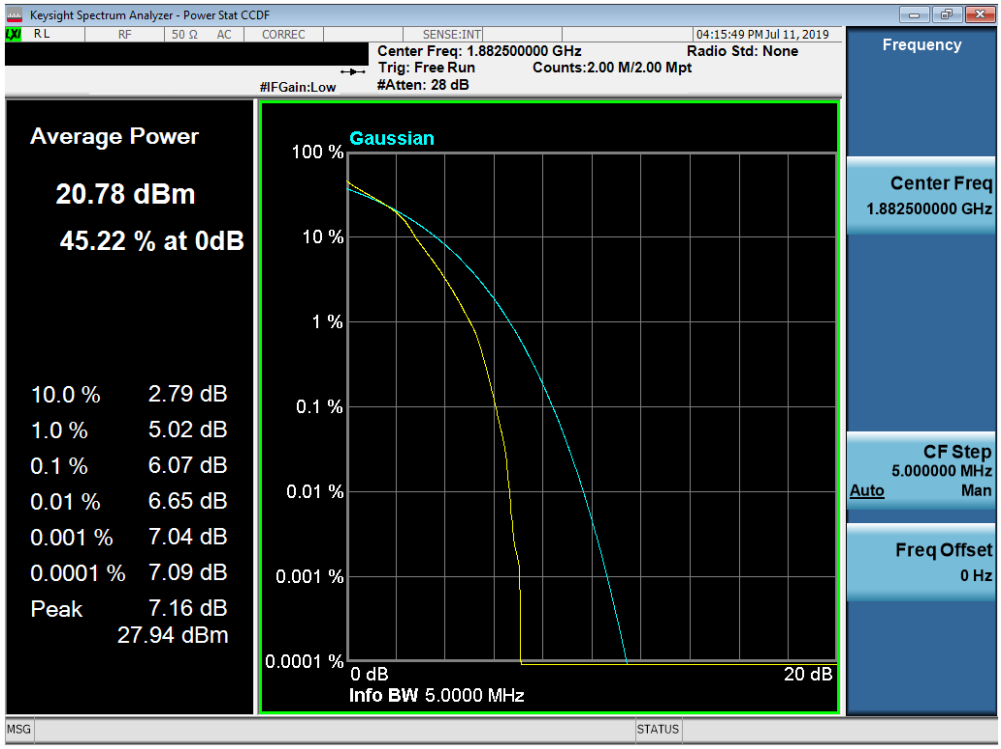


Plot 7-306. PAR Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-307. PAR Plot (Band 25/2 - 5.0MHz 16-QAM - Full RB Configuration)

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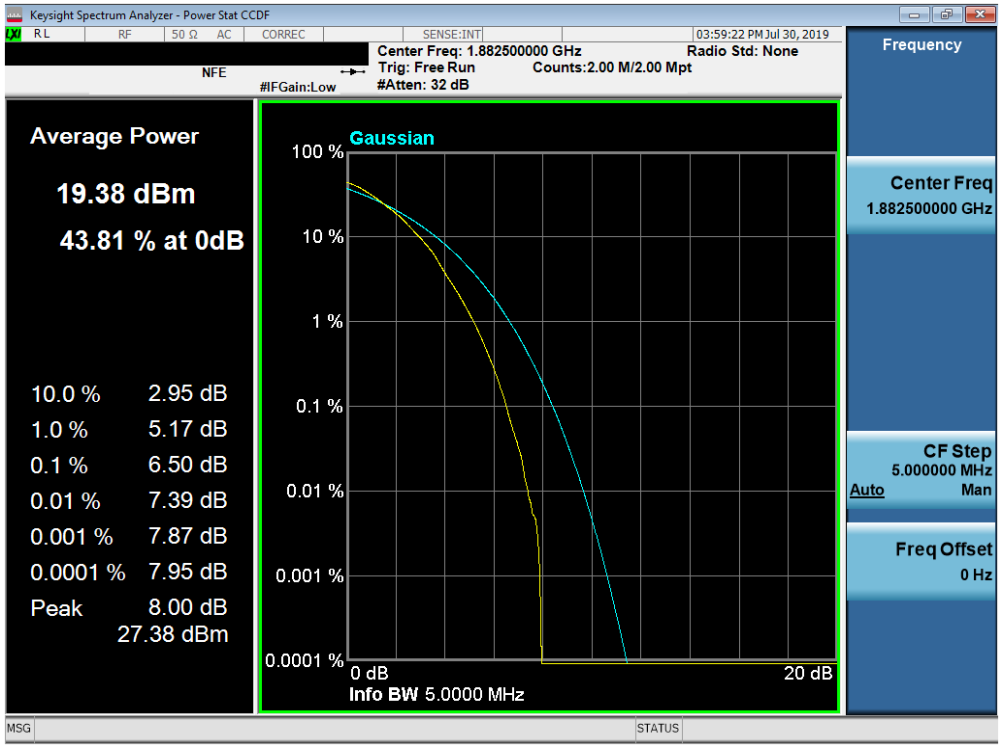
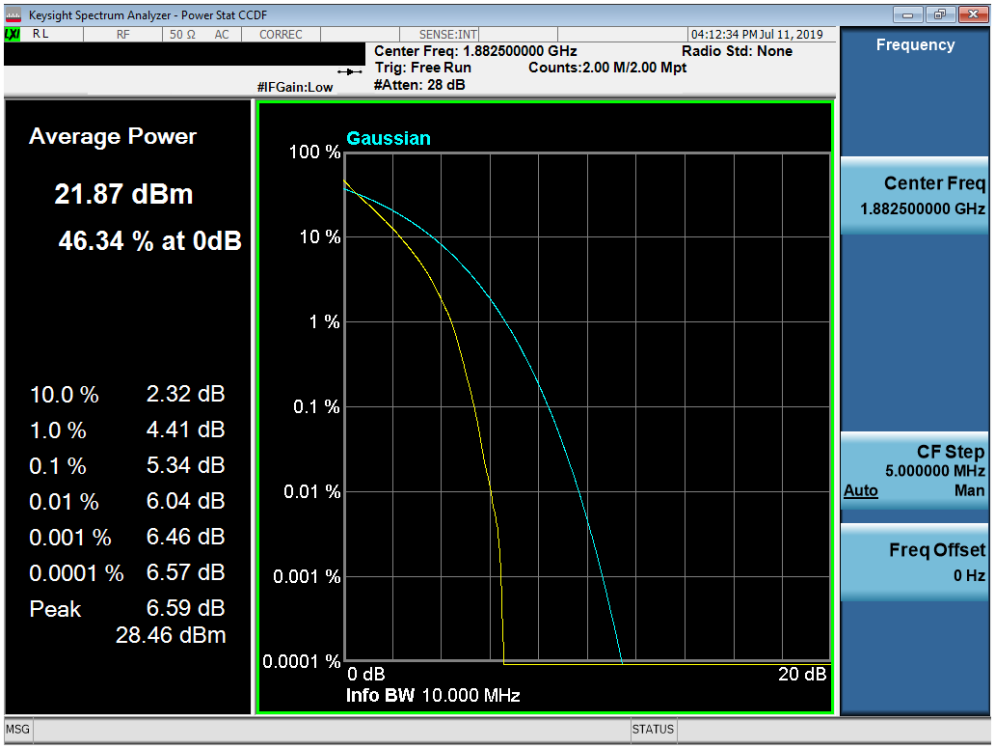


Plot 7-308. PAR Plot (Band 25/2 - 5.0MHz 64-QAM - Full RB Configuration)



Plot 7-309. PAR Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

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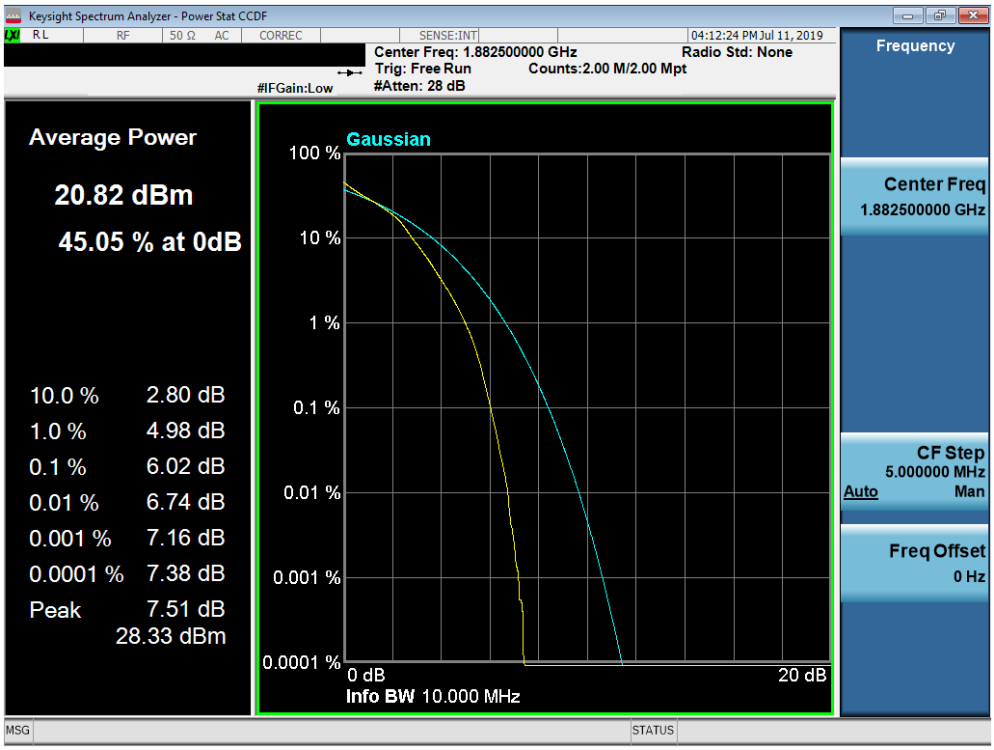
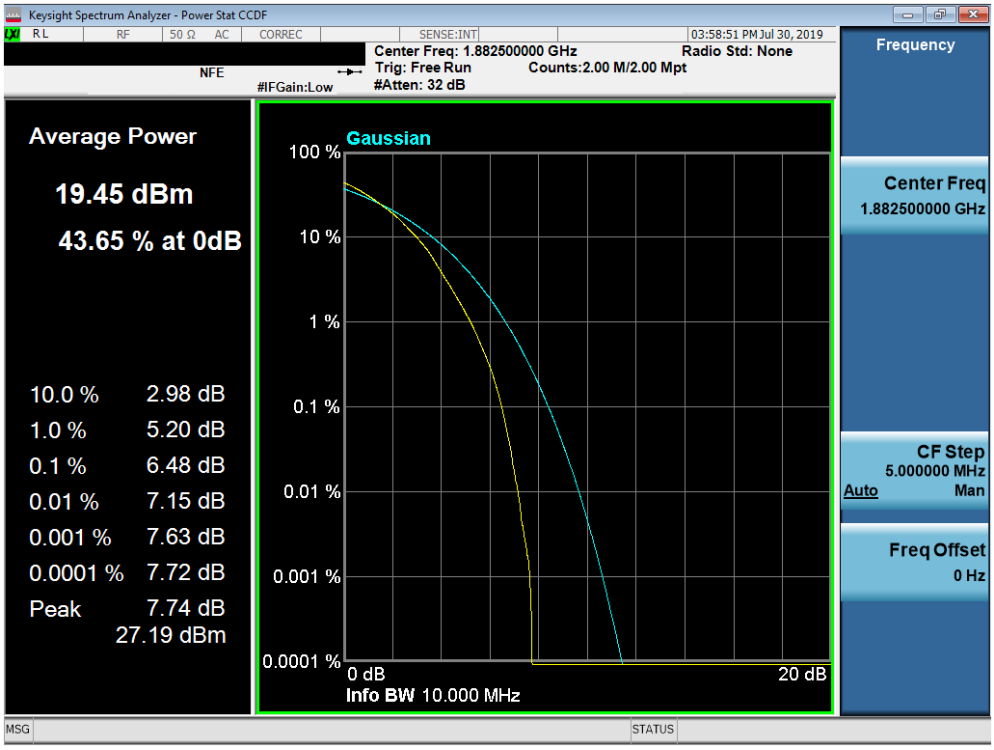


Plot 7-310. PAR Plot (Band 25/2 - 10.0MHz 16-QAM - Full RB Configuration)



Plot 7-311. PAR Plot (Band 25/2 - 10.0MHz 64-QAM - Full RB Configuration)

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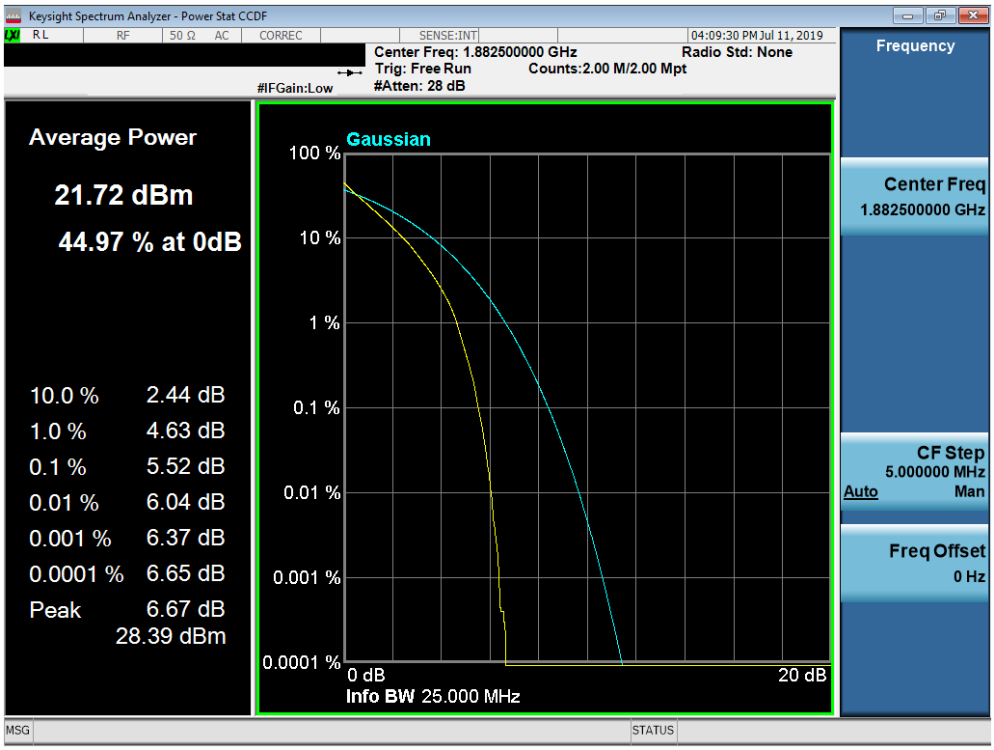
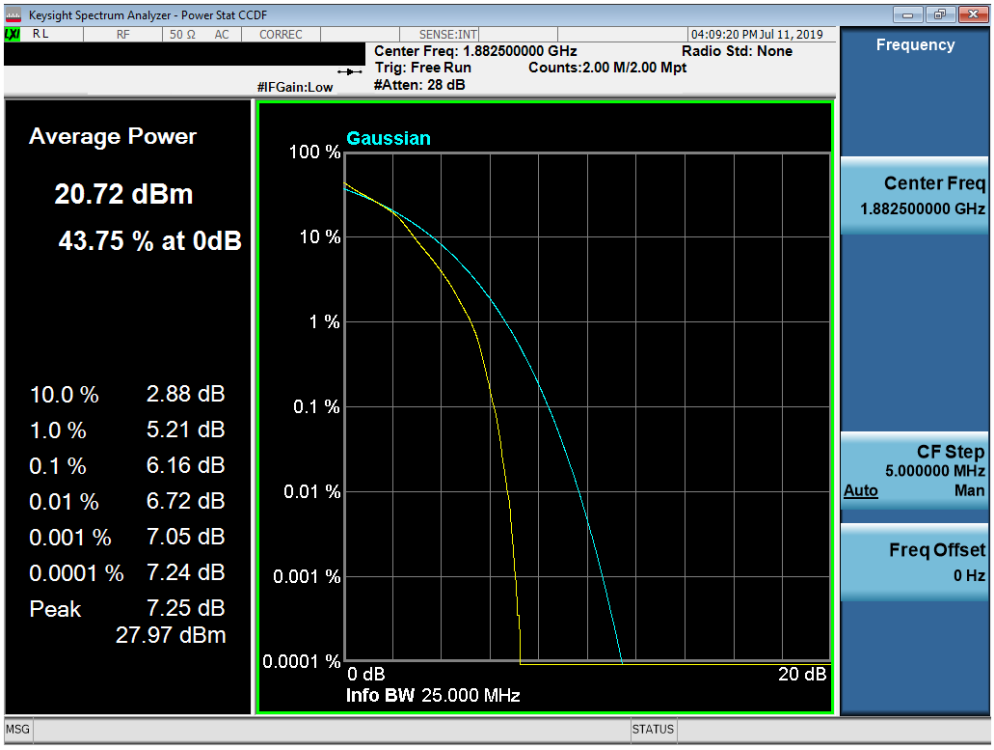


Plot 7-312. PAR Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-313. PAR Plot (Band 25/2 - 15.0MHz 16-QAM - Full RB Configuration)

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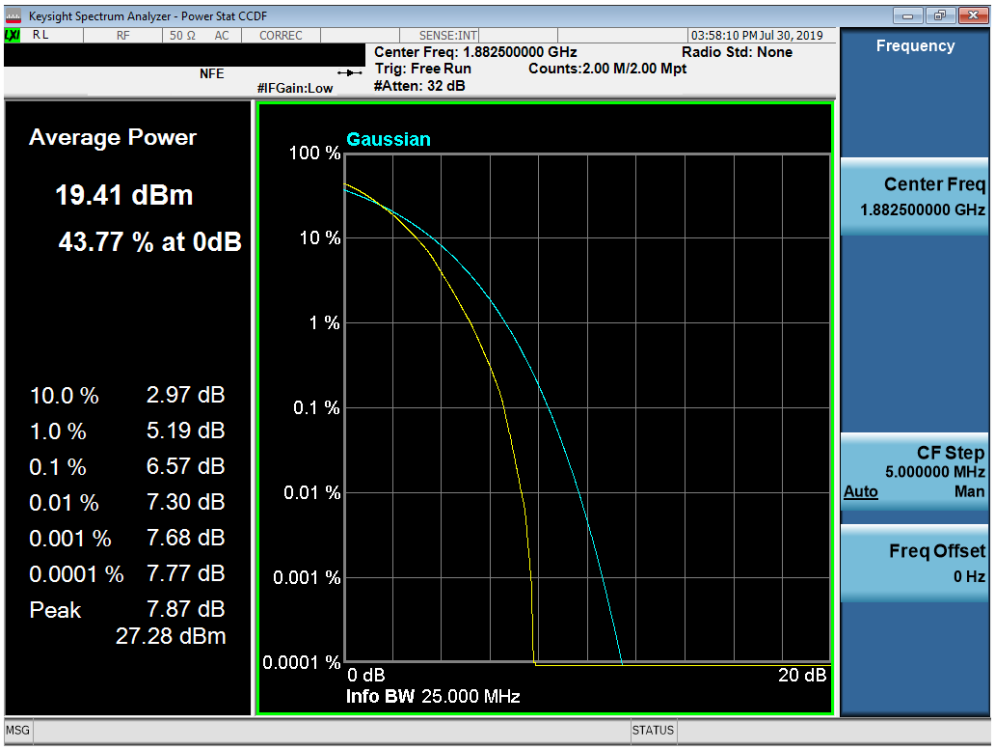
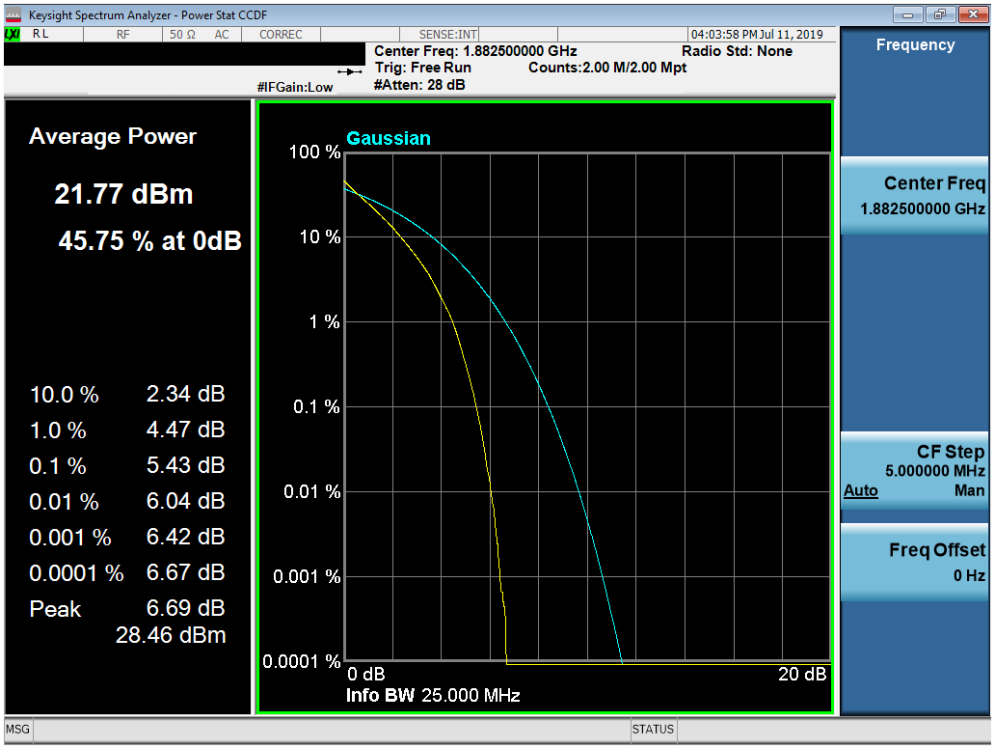


Plot 7-314. PAR Plot (Band 25/2 - 15.0MHz 64-QAM - Full RB Configuration)



Plot 7-315. PAR Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

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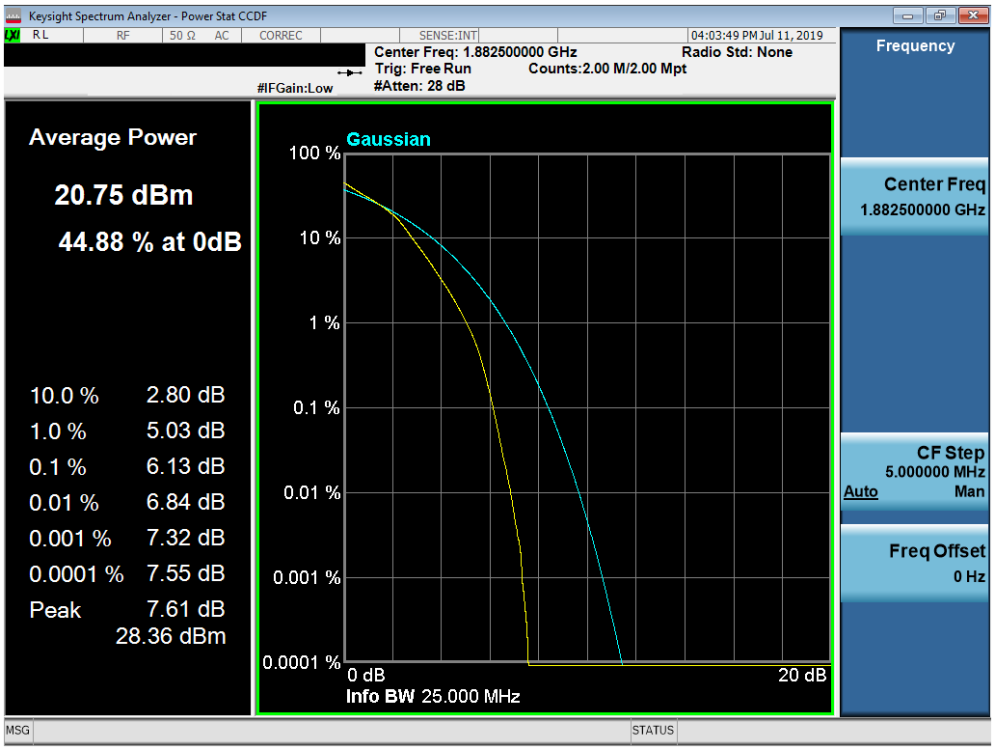
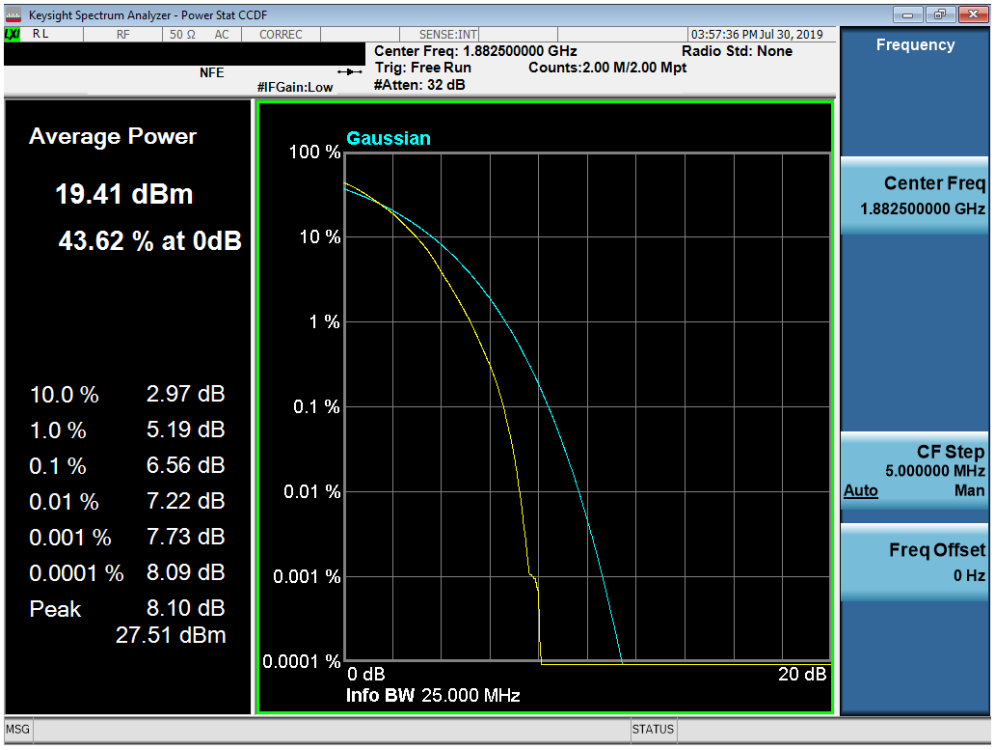


Plot 7-316. PAR Plot (Band 25/2 - 20.0MHz 16-QAM - Full RB Configuration)



Plot 7-317. PAR Plot (Band 25/2 - 20.0MHz 64-QAM - Full RB Configuration)

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7.6 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

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Test Setup

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

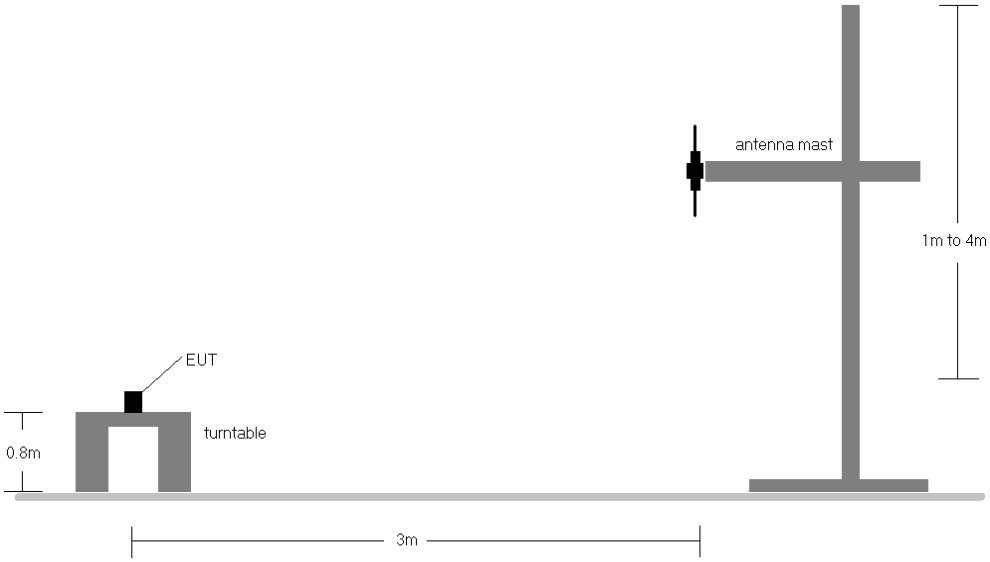

Figure 7-5. Radiated Test Setup <1GHz

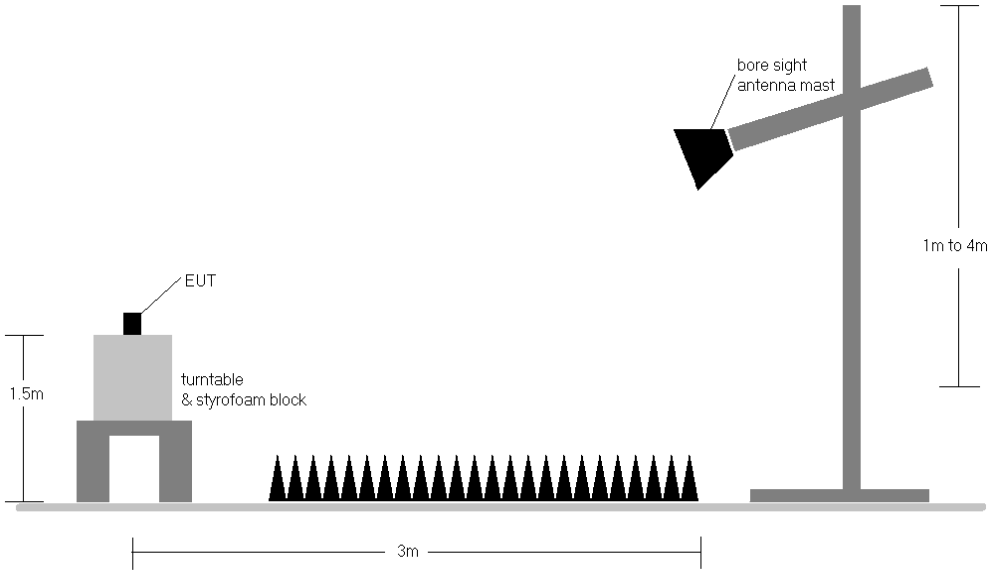

Figure 7-6. Radiated Test Setup >1GHz

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.

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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	V	146	267	1 / 24	11.37	3.75	15.12	0.033	34.77	-19.65
680.50	5	QPSK	V	151	284	1 / 0	12.11	4.20	16.31	0.043	34.77	-18.46
695.50	5	QPSK	V	162	270	1 / 0	11.89	4.50	**16.39**	**0.044**	34.77	-18.38
695.50	5	16-QAM	V	162	270	1 / 0	9.91	4.50	**14.41**	0.028	34.77	-20.36
695.50	5	64-QAM	V	162	270	1 / 0	9.91	4.50	**14.41**	0.028	34.77	-20.36
668.00	10	QPSK	V	151	257	1 / 49	11.74	3.80	15.54	0.036	34.77	-19.23
680.50	10	QPSK	V	164	264	1 / 0	11.60	4.20	15.80	0.038	34.77	-18.97
693.00	10	QPSK	V	170	277	1 / 0	11.48	4.40	**15.88**	0.039	34.77	-18.89
693.00	10	16-QAM	V	170	277	1 / 0	10.45	4.40	**14.85**	0.031	34.77	-19.92
693.00	10	64-QAM	V	170	277	1 / 0	9.50	4.40	**13.90**	0.025	34.77	-20.87
670.50	15	QPSK	V	144	267	1 / 74	11.15	3.90	15.05	0.032	34.77	-19.72
680.50	15	QPSK	V	169	277	1 / 0	12.05	4.20	16.25	0.042	34.77	-18.52
690.50	15	QPSK	V	149	272	1 / 0	11.93	4.40	**16.33**	0.043	34.77	-18.44
690.50	15	16-QAM	V	149	272	1 / 0	10.73	4.40	**15.13**	0.033	34.77	-19.64
690.50	15	64-QAM	V	149	272	1 / 0	10.09	4.40	**14.49**	0.028	34.77	-20.28
673.00	20	QPSK	V	155	274	1 / 99	13.37	4.00	15.22	0.033	34.77	-19.55
680.50	20	QPSK	V	155	286	1 / 0	13.83	4.20	15.88	0.039	34.77	-18.89
688.00	20	QPSK	V	149	272	1 / 0	13.71	4.40	**15.96**	0.039	34.77	-18.81
688.00	20	16-QAM	V	149	272	1 / 0	12.33	4.40	**14.58**	0.029	34.77	-20.19
688.00	20	64-QAM	V	149	272	1 / 0	12.01	4.40	**14.26**	0.027	34.77	-20.51
695.50	5	QPSK	H	256	14	1 / 0	12.53	4.40	14.78	0.030	34.77	-19.99

Table 7-3. ERP Data (Band 71)

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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	V	145	102	1 / 5	15.46	4.50	17.81	0.060	34.77	-16.96	19.96	0.099	36.99	-17.03
707.50	1.4	QPSK	V	143	84	1 / 5	15.56	4.60	18.01	0.063	34.77	-16.76	20.16	0.104	36.99	-16.83
715.30	1.4	QPSK	V	156	111	1 / 0	15.97	4.63	**18.45**	0.070	34.77	-16.32	**20.60**	0.115	36.99	-16.39
715.30	1.4	16-QAM	V	156	111	1 / 0	14.37	4.63	**16.85**	0.048	34.77	-17.92	**19.00**	0.079	36.99	-17.99
715.30	1.4	64-QAM	V	156	111	1 / 0	13.69	4.63	**16.17**	0.041	34.77	-18.60	**18.32**	0.068	36.99	-18.67
700.50	3	QPSK	V	154	102	1 / 14	15.54	4.55	17.94	0.062	34.77	-16.83	20.09	0.102	36.99	-16.90
707.50	3	QPSK	V	147	84	1 / 14	15.66	4.60	18.11	0.065	34.77	-16.66	20.26	0.106	36.99	-16.73
714.50	3	QPSK	V	142	67	1 / 0	15.84	4.60	**18.29**	0.067	34.77	-16.48	**20.44**	0.111	36.99	-16.55
714.50	3	16-QAM	V	142	67	1 / 0	14.24	4.60	**16.69**	0.047	34.77	-18.08	**18.84**	0.077	36.99	-18.15
714.50	3	64-QAM	V	142	67	1 / 0	13.56	4.60	**16.01**	0.040	34.77	-18.76	**18.16**	0.065	36.99	-18.83
701.50	5	QPSK	V	146	97	1 / 24	15.47	4.60	17.92	0.062	34.77	-16.85	20.07	0.102	36.99	-16.92
707.50	5	QPSK	V	154	88	1 / 24	15.64	4.60	18.09	0.064	34.77	-16.68	20.24	0.106	36.99	-16.75
713.50	5	QPSK	V	139	105	1 / 0	15.93	4.60	**18.38**	0.069	34.77	-16.39	**20.53**	0.113	36.99	-16.46
713.50	5	16-QAM	V	139	105	1 / 0	14.58	4.60	**17.03**	0.050	34.77	-17.74	**19.18**	0.083	36.99	-17.81
713.50	5	64-QAM	V	139	105	1 / 0	14.18	4.60	**16.63**	0.046	34.77	-18.14	**18.78**	0.076	36.99	-18.21
704.00	10	QPSK	V	146	97	1 / 49	15.79	4.50	18.14	0.065	34.77	-16.63	20.29	0.107	36.99	-16.70
707.50	10	QPSK	V	143	84	1 / 49	15.86	4.60	18.31	0.068	34.77	-16.46	20.46	0.111	36.99	-16.53
711.00	10	QPSK	V	144	96	1 / 0	16.15	4.60	**18.60**	**0.072**	34.77	-16.17	**20.75**	**0.119**	36.99	-16.24
711.00	10	16-QAM	V	144	96	1 / 0	15.24	4.60	**17.69**	0.059	34.77	-17.08	**19.84**	0.096	36.99	-17.15
711.00	10	64-QAM	V	144	96	1 / 0	14.34	4.60	**16.79**	0.048	34.77	-17.98	**18.94**	0.078	36.99	-18.05
711.00	10	QPSK	H	251	144	1 / 0	14.06	4.60	16.51	0.045	34.77	-18.26	18.66	0.073	36.99	-18.33

Table 7-4. 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]
779.50	5	QPSK	V	126	102	1 / 24	2.15	5.70	19.25	0.084	34.77	-15.52	21.40	0.138	36.99	-15.59
782.00	5	QPSK	V	141	82	1 / 24	15.67	5.80	**19.32**	0.086	34.77	-15.45	**21.47**	0.140	36.99	-15.52
784.50	5	QPSK	V	139	89	1 / 24	2.15	5.80	18.93	0.078	34.77	-15.84	21.08	0.128	36.99	-15.91
782.00	5	16-QAM	V	141	82	1 / 24	2.15	5.80	**18.27**	0.067	34.77	-16.50	**20.42**	0.110	36.99	-16.57
782.00	5	64-QAM	V	141	82	1 / 24	2.15	5.80	**17.58**	0.057	34.77	-17.19	**19.73**	0.094	36.99	-17.26
782.00	10	QPSK	V	135	75	1 / 49	15.82	5.80	**19.47**	**0.089**	34.77	-15.30	**21.62**	**0.145**	36.99	-15.37
782.00	10	16-QAM	V	135	75	1 / 49	14.29	5.80	**17.94**	0.062	34.77	-16.83	**20.09**	0.102	36.99	-16.90
782.00	10	64-QAM	V	135	75	1 / 49	13.90	5.80	**17.55**	0.057	34.77	-17.22	**19.70**	0.093	36.99	-17.29
782.00	10	QPSK	H	133	147	1 / 49	14.50	5.80	18.15	0.065	34.77	-16.62	20.30	0.107	36.99	-16.69

Table 7-5. ERP Data (Band 13)

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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	122	30	1 / 0	14.41	6.70	18.96	0.079	38.45	-19.49	21.11	0.129	40.61	-19.50
836.50	1.4	QPSK	H	136	26	1 / 0	15.19	6.70	**19.74**	0.094	38.45	-18.71	**21.89**	0.155	40.61	-18.72
848.30	1.4	QPSK	H	140	33	1 / 0	14.85	6.70	19.40	0.087	38.45	-19.05	21.55	0.143	40.61	-19.06
836.50	1.4	16-QAM	H	136	26	1 / 0	14.72	6.70	**19.27**	0.085	38.45	-19.18	**21.42**	0.139	40.61	-19.19
836.50	1.4	64-QAM	H	136	26	1 / 0	14.06	6.70	**18.61**	0.073	38.45	-19.84	**20.76**	0.119	40.61	-19.85
825.50	3	QPSK	H	127	35	1 / 0	15.41	6.70	19.96	0.099	38.45	-18.49	22.11	0.163	40.61	-18.50
836.50	3	QPSK	H	134	25	1 / 0	15.75	6.70	**20.30**	0.107	38.45	-18.15	**22.45**	0.176	40.61	-18.16
847.50	3	QPSK	H	123	41	1 / 0	15.63	6.65	20.13	0.103	38.45	-18.32	22.28	0.169	40.61	-18.33
825.50	3	16-QAM	H	127	35	1 / 0	13.65	6.70	18.20	0.066	38.45	-20.25	20.35	0.108	40.61	-20.26
836.50	3	16-QAM	H	134	25	1 / 0	13.87	6.70	**18.42**	0.070	38.45	-20.03	**20.57**	0.114	40.61	-20.04
847.50	3	16-QAM	H	123	41	1 / 0	13.71	6.65	18.21	0.066	38.45	-20.24	20.36	0.109	40.61	-20.25
836.50	3	64-QAM	H	134	25	1 / 0	13.41	6.70	**17.96**	0.063	38.45	-20.49	**20.11**	0.103	40.61	-20.50
826.50	5	QPSK	H	133	22	1 / 0	15.33	6.70	19.88	0.097	38.45	-18.57	22.03	0.160	40.61	-18.58
836.50	5	QPSK	H	135	17	1 / 0	15.93	6.70	**20.48**	0.112	38.45	-17.97	**22.63**	0.183	40.61	-17.98
846.50	5	QPSK	H	120	18	1 / 0	14.97	6.60	19.42	0.087	38.45	-19.03	21.57	0.144	40.61	-19.04
836.50	5	16-QAM	H	135	17	1 / 0	14.64	6.70	**19.19**	0.083	38.45	-19.26	**21.34**	0.136	40.61	-19.27
836.50	5	64-QAM	H	135	17	1 / 0	14.15	6.70	**18.70**	0.074	38.45	-19.75	**20.85**	0.122	40.61	-19.76
829.00	10	QPSK	H	132	10	1 / 49	16.19	6.70	**20.74**	**0.119**	38.45	-17.71	**22.89**	**0.195**	40.61	-17.72
836.50	10	QPSK	H	128	19	1 / 49	15.99	6.70	20.54	0.113	38.45	-17.91	22.69	0.186	40.61	-17.92
844.00	10	QPSK	H	120	23	1 / 0	15.42	6.60	19.87	0.097	38.45	-18.58	22.02	0.159	40.61	-18.59
829.00	10	16-QAM	H	132	10	1 / 49	14.40	6.70	**18.95**	0.079	38.45	-19.50	**21.10**	0.129	40.61	-19.51
829.00	10	64-QAM	H	132	10	1 / 49	14.06	6.70	**18.61**	0.073	38.45	-19.84	**20.76**	0.119	40.61	-19.85
831.50	15	QPSK	H	131	2	1 / 0	14.99	6.70	**19.54**	0.090	38.45	-18.91	**21.69**	0.148	40.61	-18.92
836.50	15	QPSK	H	116	9	1 / 0	14.88	6.70	19.43	0.088	38.45	-19.02	21.58	0.144	40.61	-19.03
841.50	15	QPSK	H	122	9	1 / 0	15.05	6.60	19.50	0.089	38.45	-18.95	21.65	0.146	40.61	-18.96
831.50	15	16-QAM	H	131	2	1 / 0	13.55	6.70	**18.10**	0.065	38.45	-20.35	**20.25**	0.106	40.61	-20.36
831.50	15	64-QAM	H	131	2	1 / 0	12.61	6.70	**17.16**	0.052	38.45	-21.29	**19.31**	0.085	40.61	-21.30
829.00	10	QPSK	V	119	52	1 / 49	13.58	6.70	18.13	0.065	38.45	-20.32	20.28	0.107	40.61	-20.33

Table 7-6. ERP Data (Band 26/5)

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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	100	331	1 / 0	13.38	9.44	22.82	0.192	30.00	-7.18
1745.00	1.4	QPSK	H	102	329	1 / 5	13.34	9.23	22.57	0.181	30.00	-7.43
1779.30	1.4	QPSK	H	100	327	1 / 5	14.02	9.26	**23.28**	0.213	30.00	-6.72
1779.30	1.4	16-QAM	H	100	327	1 / 5	12.95	9.26	**22.21**	0.166	30.00	-7.79
1779.30	1.4	64-QAM	H	100	327	1 / 5	12.51	9.26	**21.77**	0.150	30.00	-8.23
1711.50	3	QPSK	H	100	331	1 / 0	13.22	9.44	22.65	0.184	30.00	-7.35
1745.00	3	QPSK	H	102	329	1 / 14	13.11	9.23	22.34	0.171	30.00	-7.66
1778.50	3	QPSK	H	100	327	1 / 14	13.86	9.26	**23.12**	0.205	30.00	-6.88
1778.50	3	16-QAM	H	100	327	1 / 14	13.11	9.26	**22.37**	0.173	30.00	-7.63
1778.50	3	64-QAM	H	100	327	1 / 14	12.17	9.26	**21.43**	0.139	30.00	-8.57
1712.50	5	QPSK	H	100	331	1 / 0	13.22	9.43	22.65	0.184	30.00	-7.35
1745.00	5	QPSK	H	102	329	1 / 24	13.14	9.23	22.37	0.173	30.00	-7.63
1777.50	5	QPSK	H	100	327	1 / 24	14.06	9.26	**23.32**	**0.215**	30.00	-6.68
1777.50	5	16-QAM	H	100	327	1 / 24	13.19	9.26	**22.45**	0.176	30.00	-7.55
1777.50	5	64-QAM	H	100	327	1 / 24	12.09	9.26	**21.35**	0.136	30.00	-8.65
1715.00	10	QPSK	H	100	331	1 / 0	13.24	9.42	22.65	0.184	30.00	-7.35
1745.00	10	QPSK	H	102	329	1 / 49	12.69	9.23	21.92	0.156	30.00	-8.08
1775.00	10	QPSK	H	100	327	1 / 49	13.78	9.25	**23.03**	0.201	30.00	-6.97
1775.00	10	16-QAM	H	100	327	1 / 49	13.51	9.25	**22.76**	0.189	30.00	-7.24
1775.00	10	64-QAM	H	100	327	1 / 49	12.02	9.25	**21.27**	0.134	30.00	-8.73
1717.50	15	QPSK	H	100	331	1 / 0	13.17	9.40	22.57	0.181	30.00	-7.43
1745.00	15	QPSK	H	102	329	1 / 74	12.97	9.23	22.20	0.166	30.00	-7.80
1772.50	15	QPSK	H	100	327	1 / 74	13.95	9.25	**23.20**	0.209	30.00	-6.80
1772.50	15	16-QAM	H	100	327	1 / 74	13.49	9.25	**22.74**	0.188	30.00	-7.26
1772.50	15	64-QAM	H	100	327	1 / 74	12.10	9.25	**21.35**	0.136	30.00	-8.65
1720.00	20	QPSK	H	100	331	1 / 0	13.02	9.38	22.40	0.174	30.00	-7.60
1745.00	20	QPSK	H	102	329	1 / 99	13.25	9.23	22.48	0.177	30.00	-7.52
1770.00	20	QPSK	H	100	327	1 / 99	13.90	9.24	**23.14**	0.206	30.00	-6.86
1770.00	20	16-QAM	H	100	327	1 / 99	13.01	9.24	**22.25**	0.168	30.00	-7.75
1770.00	20	64-QAM	H	100	327	1 / 99	12.91	9.24	**22.15**	0.164	30.00	-7.85
1777.50	5	QPSK	V	392	67	1 / 24	12.65	9.26	21.91	0.155	30.00	-8.09

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

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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	135	10	1 / 5	13.41	9.48	22.90	0.195	33.01	-10.11
1882.50	1.4	QPSK	H	126	8	1 / 5	13.71	9.94	23.65	0.231	33.01	-9.37
1914.30	1.4	QPSK	H	129	12	1 / 0	13.64	10.29	**23.93**	0.247	33.01	-9.08
1914.30	1.4	16-QAM	H	129	12	1 / 0	7.12	10.29	**17.41**	0.055	33.01	-15.60
1914.30	1.4	64-QAM	H	129	12	1 / 0	1.88	10.29	**12.17**	0.016	33.01	-20.84
1851.50	3	QPSK	H	135	10	1 / 14	13.37	9.50	22.87	0.193	33.01	-10.14
1882.50	3	QPSK	H	126	8	1 / 14	13.73	9.94	23.67	0.233	33.01	-9.35
1913.50	3	QPSK	H	129	12	1 / 0	13.45	10.29	**23.74**	0.237	33.01	-9.27
1913.50	3	16-QAM	H	129	12	1 / 0	8.42	10.29	**18.71**	0.074	33.01	-14.30
1913.50	3	64-QAM	H	129	12	1 / 0	4.17	10.29	**14.46**	0.028	33.01	-18.55
1852.50	5	QPSK	H	135	10	1 / 24	13.60	9.51	23.11	0.204	33.01	-9.90
1882.50	5	QPSK	H	126	8	1 / 24	13.82	9.94	23.76	0.237	33.01	-9.26
1912.50	5	QPSK	H	129	12	1 / 0	13.49	10.28	**23.77**	0.238	33.01	-9.24
1912.50	5	16-QAM	H	129	12	1 / 0	9.46	10.28	**19.74**	0.094	33.01	-13.27
1912.50	5	64-QAM	H	129	12	1 / 0	6.23	10.28	**16.51**	0.045	33.01	-16.50
1855.00	10	QPSK	H	135	10	1 / 49	13.78	9.55	23.33	0.215	33.01	-9.68
1882.50	10	QPSK	H	126	8	1 / 49	13.90	9.94	23.84	0.242	33.01	-9.18
1910.00	10	QPSK	H	129	12	1 / 0	13.65	10.26	**23.91**	0.246	33.01	-9.10
1910.00	10	16-QAM	H	129	12	1 / 0	10.64	10.26	**20.90**	0.123	33.01	-12.11
1910.00	10	64-QAM	H	129	12	1 / 0	8.42	10.26	**18.68**	0.074	33.01	-14.33
1857.50	15	QPSK	H	135	10	1 / 74	13.70	9.58	23.28	0.213	33.01	-9.73
1882.50	15	QPSK	H	126	8	1 / 74	13.71	9.94	23.65	0.231	33.01	-9.37
1907.50	15	QPSK	H	129	12	1 / 0	13.46	10.24	**23.70**	0.234	33.01	-9.31
1907.50	15	16-QAM	H	129	12	1 / 0	12.13	10.24	**22.37**	0.173	33.01	-10.64
1907.50	15	64-QAM	H	129	12	1 / 0	10.92	10.24	**21.16**	0.131	33.01	-11.85
1860.00	20	QPSK	H	135	10	1 / 99	13.38	9.62	23.00	0.199	33.01	-10.01
1882.50	20	QPSK	H	126	8	1 / 99	13.85	9.94	23.79	0.239	33.01	-9.23
1905.00	20	QPSK	H	129	12	1 / 0	13.99	10.22	**24.21**	**0.264**	33.01	-8.80
1905.00	20	16-QAM	H	129	12	1 / 0	13.10	10.22	**23.32**	0.215	33.01	-9.69
1905.00	20	64-QAM	H	129	12	1 / 0	12.88	10.22	**23.10**	0.204	33.01	-9.91
1905.00	20	QPSK	V	400	227	1 / 0	11.37	10.22	21.59	0.144	33.01	-11.42

Table 7-8. EIRP Data (Band 25/2)

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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]
2502.50	5	QPSK	H	121	297	1 / 0	11.53	9.43	20.96	0.125	33.01	-12.05
2535.00	5	QPSK	H	116	190	1 / 24	11.68	9.39	21.07	0.128	33.01	-11.94
2567.50	5	QPSK	H	117	283	1 / 24	11.98	9.45	**21.43**	0.139	33.01	-11.58
2567.50	5	16-QAM	H	117	283	1 / 24	8.02	9.45	**17.47**	0.056	33.01	-15.54
2567.50	5	64-QAM	H	117	283	1 / 24	4.73	9.45	**14.18**	0.026	33.01	-18.83
2505.00	10	QPSK	H	115	304	1 / 0	11.48	9.43	20.91	0.123	33.01	-12.10
2535.00	10	QPSK	H	111	292	1 / 49	11.69	9.39	21.08	0.128	33.01	-11.93
2565.00	10	QPSK	H	117	297	1 / 49	12.12	9.44	**21.56**	0.143	33.01	-11.45
2565.00	10	16-QAM	H	117	297	1 / 49	9.21	9.44	**18.65**	0.073	33.01	-14.36
2565.00	10	64-QAM	H	117	297	1 / 49	6.92	9.44	**16.36**	0.043	33.01	-16.65
2507.50	15	QPSK	H	145	311	1 / 0	11.68	9.42	21.10	0.129	33.01	-11.91
2535.00	15	QPSK	H	121	281	1 / 74	11.68	9.39	21.07	0.128	33.01	-11.94
2562.50	15	QPSK	H	136	270	1 / 74	12.18	9.43	**21.61**	**0.145**	33.01	-11.40
2562.50	15	16-QAM	H	136	270	1 / 74	10.20	9.43	**19.63**	0.092	33.01	-13.38
2562.50	15	64-QAM	H	136	270	1 / 74	9.12	9.43	**18.55**	0.072	33.01	-14.46
2510.00	20	QPSK	H	115	304	1 / 0	11.84	9.42	21.26	0.134	33.01	-11.75
2535.00	20	QPSK	H	111	292	1 / 99	11.91	9.39	21.30	0.135	33.01	-11.71
2560.00	20	QPSK	H	117	297	1 / 99	12.17	9.42	**21.59**	0.144	33.01	-11.42
2560.00	20	16-QAM	H	117	297	1 / 99	11.43	9.42	**20.85**	0.122	33.01	-12.16
2560.00	20	64-QAM	H	117	297	1 / 99	11.14	9.42	**20.56**	0.114	33.01	-12.45
2562.50	15	QPSK	V	374	237	1 / 74	10.48	9.43	19.91	0.098	33.01	-13.10

Table 7-9. EIRP Data (Band 7)

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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	302	1 / 0	12.71	9.43	22.14	0.164	33.01	-10.87
2502.50	5	QPSK	H	122	301	1 / 0	12.21	9.43	21.64	0.146	33.01	-11.37
2593.00	5	QPSK	H	109	313	1 / 24	13.25	9.55	22.80	0.191	33.01	-10.21
2687.50	5	QPSK	H	121	300	1 / 24	13.84	9.82	**23.66**	0.232	33.01	-9.35
2687.50	5	16-QAM	H	121	300	1 / 24	13.68	9.82	**23.50**	0.224	33.01	-9.51
2687.50	5	64-QAM	H	121	300	1 / 24	13.27	9.82	**23.09**	0.204	33.01	-9.92
2501.00	10	QPSK	H	149	307	1 / 0	12.41	9.43	21.84	0.153	33.01	-11.17
2505.00	10	QPSK	H	143	309	1 / 0	11.92	9.43	21.35	0.136	33.01	-11.66
2593.00	10	QPSK	H	139	316	1 / 49	13.18	9.55	22.73	0.188	33.01	-10.28
2685.00	10	QPSK	H	140	300	1 / 49	13.77	9.82	**23.59**	0.229	33.01	-9.42
2685.00	10	16-QAM	H	140	300	1 / 49	13.12	9.82	**22.94**	0.197	33.01	-10.07
2685.00	10	64-QAM	H	140	300	1 / 49	12.55	9.82	**22.37**	0.173	33.01	-10.64
2503.50	15	QPSK	H	150	304	1 / 74	12.44	9.43	21.87	0.154	33.01	-11.14
2507.50	15	QPSK	H	154	306	1 / 0	11.57	9.42	20.99	0.126	33.01	-12.02
2593.00	15	QPSK	H	141	312	1 / 74	13.50	9.55	23.05	0.202	33.01	-9.96
2682.50	15	QPSK	H	138	277	1 / 74	14.09	9.83	**23.92**	0.247	33.01	-9.09
2682.50	15	16-QAM	H	138	277	1 / 74	12.94	9.83	**22.77**	0.189	33.01	-10.24
2682.50	15	64-QAM	H	138	277	1 / 74	11.84	9.83	**21.67**	0.147	33.01	-11.34
2506.00	20	QPSK	H	113	296	1 / 99	14.51	9.42	23.93	0.247	33.01	-9.08
2510.00	20	QPSK	H	117	292	1 / 99	14.11	9.42	23.53	0.225	33.01	-9.48
2593.00	20	QPSK	H	109	310	1 / 99	14.24	9.55	23.79	0.240	33.01	-9.22
2680.00	20	QPSK	H	143	306	1 / 99	14.55	9.83	**24.38**	**0.274**	33.01	-8.63
2680.00	20	16-QAM	H	143	306	1 / 99	13.78	9.83	**23.61**	0.230	33.01	-9.40
2680.00	20	64-QAM	H	143	306	1 / 99	13.51	9.83	**23.34**	0.216	33.01	-9.67
2680.00	20	QPSK	V	396	232	1 / 99	12.82	9.83	22.65	0.184	33.01	-10.36

Table 7-10. EIRP Data (Band 41 – PC3)

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7.7 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

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Test Setup

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

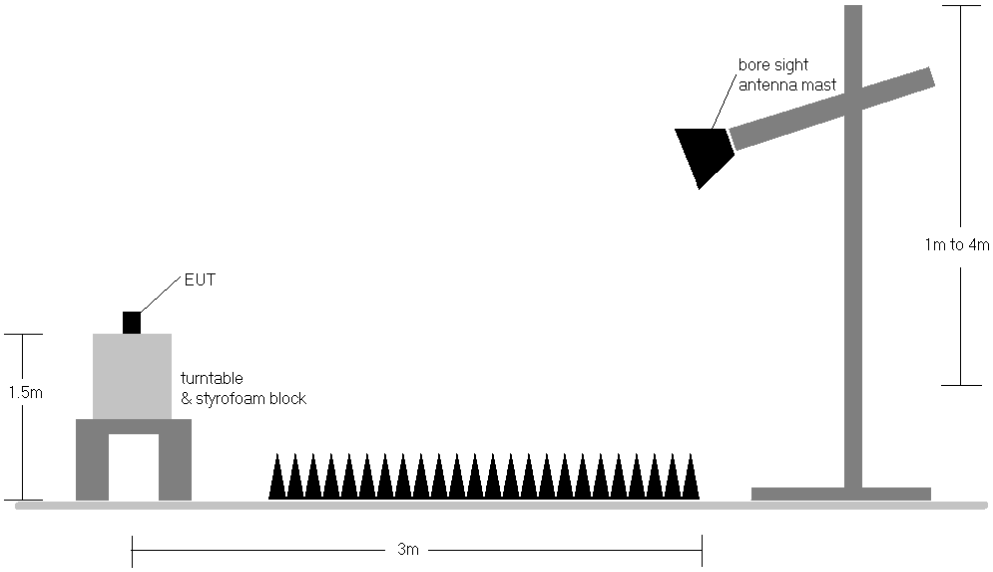

Figure 7-7. Test Instrument & Measurement Setup

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.

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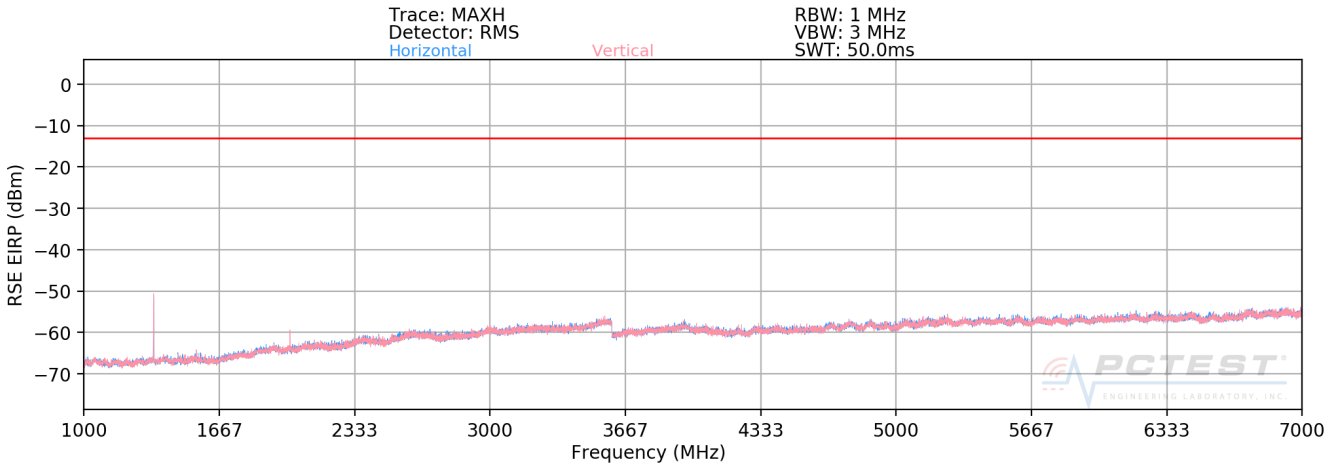
Band 71



Plot 7-318. Radiated Spurious Plot above 1GHz (Band 71)

OPERATING FREQUENCY:	673.00	MHz
MODULATION SIGNAL:	20.00	
BANDWIDTH:	QPSK	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1346.00	V	121	91	-29.47	7.47	-22.00	-9.0
2019.00	V	111	90	-37.83	8.68	-29.15	-16.2
2692.00	V	-	-	-37.90	9.99	-27.92	-14.9
3365.00	V	-	-	-36.39	9.66	-26.72	-13.7

Table 7-11. Radiated Spurious Data (Band 71 – Low Channel)

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OPERATING FREQUENCY:	680.50	MHz
MODULATION SIGNAL:	20.00	
BANDWIDTH:	QPSK	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1361.00	V	174	84	-25.19	7.48	-17.71	-4.7
2041.50	V	171	75	-37.45	8.76	-28.68	-15.7
2722.00	V	-	-	-39.71	10.08	-29.63	-16.6
3402.50	V	-	-	-36.11	9.80	-26.30	-13.3

Table 7-12. Radiated Spurious Data (Band 71 – Mid Channel)

OPERATING FREQUENCY:	688.00	MHz
MODULATION SIGNAL:	20.00	
BANDWIDTH:	QPSL	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1376.00	V	121	60	-30.25	7.46	-22.78	-9.8
2064.00	V	127	60	-38.79	8.80	-29.99	-17.0
2752.00	V	-	-	-38.23	10.17	-28.06	-15.1
3440.00	V	-	-	-36.19	9.84	-26.34	-13.3

Table 7-13. Radiated Spurious Data (Band 71 – High Channel)

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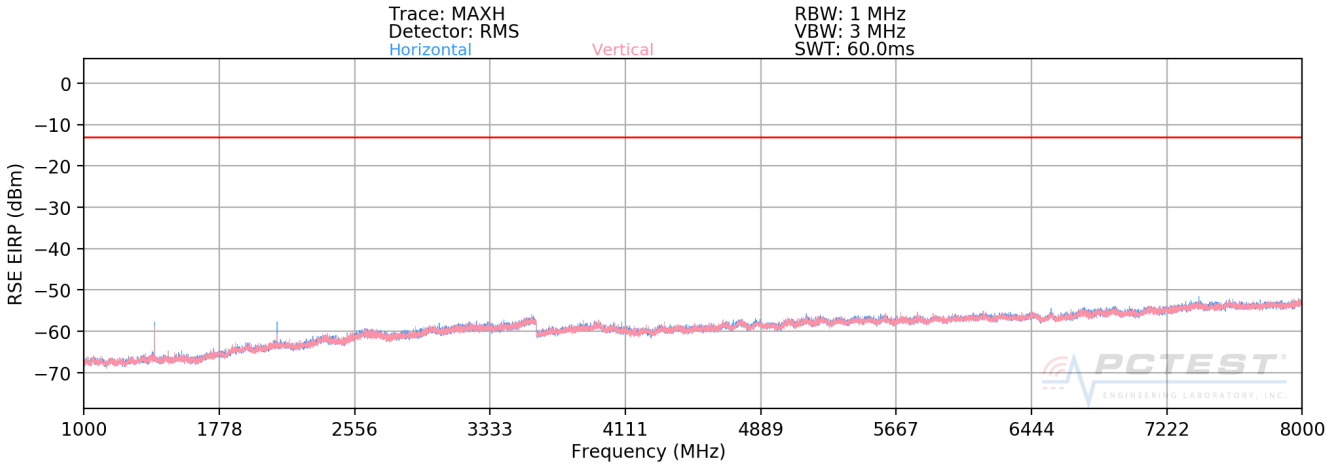
Band 12



Plot 7-319. Radiated Spurious Plot above 1GHz (Band 12)

OPERATING FREQUENCY:	704.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1408.00	V	145	67	-61.97	7.54	-54.43	-41.4
2112.00	V	144	54	-69.13	8.85	-60.28	-47.3
2816.00	V	-	-	-68.81	10.12	-58.69	-45.7
3520.00	V	-	-	-65.85	9.91	-55.94	-42.9

Table 7-14. Radiated Spurious Data (Band 12 – Low Channel)

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OPERATING FREQUENCY: 707.50 MHz
MODULATION SIGNAL: QPSK
BANDWIDTH: 10.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1415.00	V	155	60	-61.96	7.63	-54.33	-41.3
2122.50	V	156	75	-67.99	8.86	-59.13	-46.1
2830.00	V	-	-	-69.29	10.10	-59.20	-46.2
3537.50	V	-	-	-64.78	9.90	-54.89	-41.9

Table 7-15. Radiated Spurious Data (Band 12 – Mid Channel)

OPERATING FREQUENCY: 711.00 MHz
MODULATION SIGNAL: QPSK
BANDWIDTH: 10.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1422.00	V	140	64	-62.50	7.72	-54.78	-41.8
2133.00	V	137	79	-69.49	8.87	-60.62	-47.6
2844.00	V	-	-	-68.86	10.07	-58.79	-45.8
3555.00	V	-	-	-64.90	9.89	-55.01	-42.0

Table 7-16. Radiated Spurious Data (Band 12 – High Channel)

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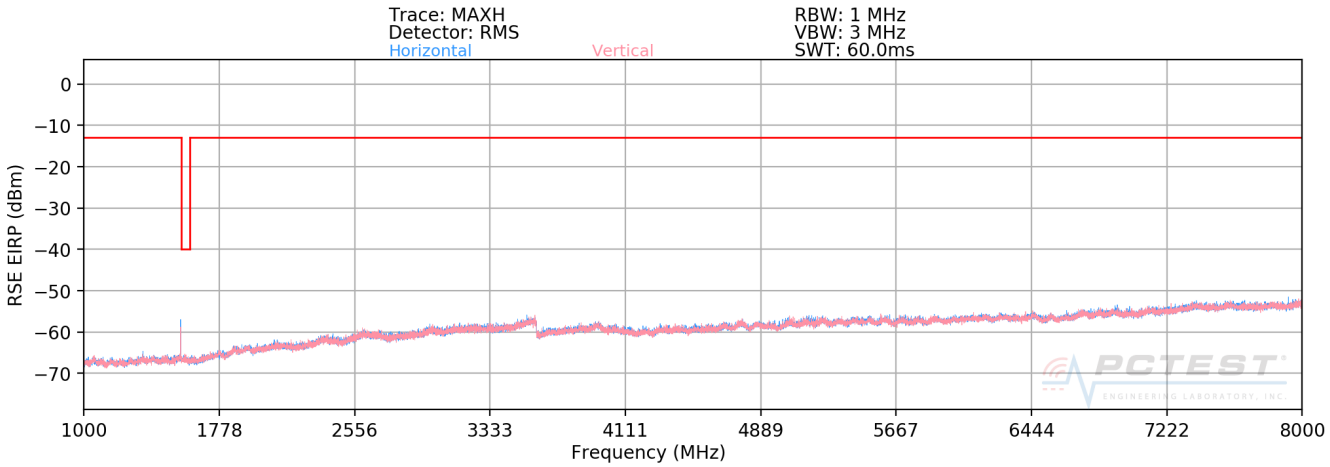
Band 13



Plot 7-320. Radiated Spurious Plot above 1GHz (Band 13)

OPERATING FREQUENCY:	782.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
2346.00	H	176	220	-59.66	9.43	-50.23	-37.2
3128.00	H	188	220	-66.27	9.34	-56.92	-43.9
3910.00	H	-	-	-64.07	9.37	-54.70	-41.7
4692.00	H	-	-	-69.91	10.93	-58.98	-46.0

Table 7-17. Radiated Spurious Data (Band 13 – Mid Channel)

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MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.00	MHz
DISTANCE:	3	meters
NARROWBAND EMISSION LIMIT:	-50	dBm
WIDEBAND EMISSION LIMIT:	-40	dBm/MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1564.00	H	163	251	-63.21	8.53	-54.68	-14.7

Table 7-18. Radiated Spurious Data (Band 13 – 1559-1610MHz Band)

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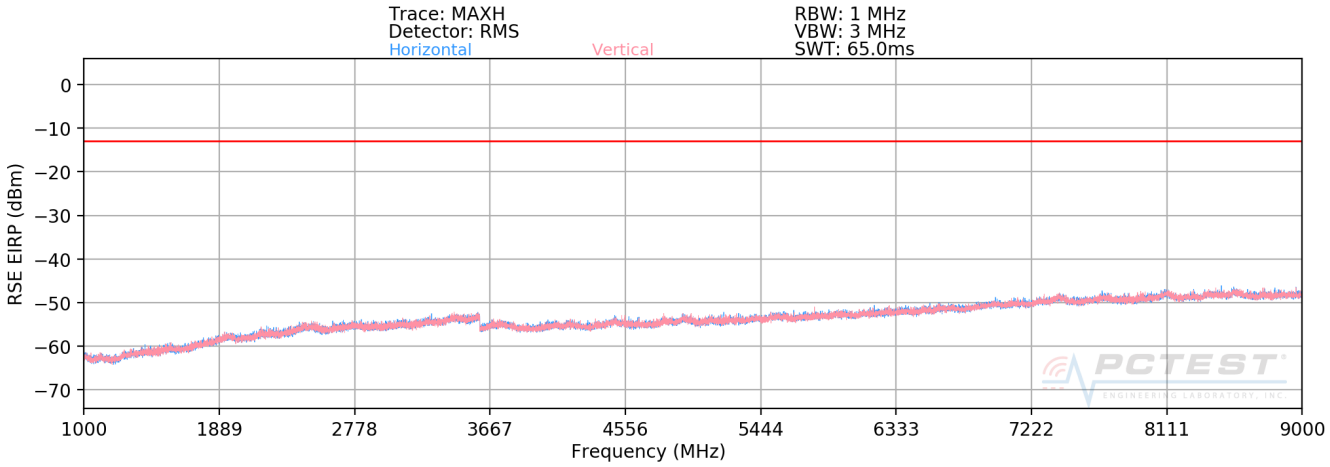
Band 26/5



Plot 7-321. Radiated Spurious Plot above 1GHz (Band 26/5)

OPERATING FREQUENCY:	829.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1658.00	H	250	45	-60.07	8.95	-51.12	-38.1
2487.00	H	234	32	-56.31	9.73	-46.58	-33.6
3316.00	H	245	112	-55.53	9.59	-45.94	-32.9
4145.00	H	243	246	-56.93	10.25	-46.68	-33.7
4974.00	H	249	211	-55.87	10.93	-44.94	-31.9
5803.00	H	223	64	-55.95	11.51	-44.44	-31.4
6632.00	H	214	321	-54.69	11.96	-42.73	-29.7
7461.00	H	235	267	-52.79	11.04	-41.75	-28.7
8290.00	H	229	112	-52.03	11.21	-40.83	-27.8

Table 7-19. Radiated Spurious Data (Band 26/5 – Low Channel)

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OPERATING FREQUENCY:	836.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.00	H	119	346	-61.60	8.95	-52.65	-39.7
2509.50	H	234	213	-57.38	9.75	-47.63	-34.6
3346.00	H	216	228	-54.67	9.60	-45.07	-32.1
4182.50	H	241	248	-56.48	10.34	-46.14	-33.1
5019.00	H	228	232	-56.20	10.88	-45.32	-32.3
5855.50	H	239	233	-55.80	11.52	-44.28	-31.3
6692.00	H	241	246	-53.65	11.77	-41.88	-28.9
7528.50	H	218	221	-52.05	11.13	-40.92	-27.9
8365.00	H	237	250	-50.69	11.17	-39.52	-26.5

Table 7-20. Radiated Spurious Data (Band 26/5 – Mid Channel)

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OPERATING FREQUENCY:	844.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1688.00	H	243	112	-60.31	8.95	-51.36	-38.4
2532.00	H	224	214	-56.59	9.75	-46.84	-33.8
3376.00	H	237	187	-54.51	9.67	-44.84	-31.8
4220.00	H	243	24	-56.52	10.44	-46.08	-33.1
5064.00	H	220	112	-56.20	10.80	-45.39	-32.4
5908.00	H	225	304	-55.11	11.47	-43.64	-30.6
6752.00	H	214	247	-54.50	11.70	-42.80	-29.8
7596.00	H	247	108	-52.03	11.20	-40.83	-27.8
8440.00	H	233	154	-50.43	11.10	-39.33	-26.3

Table 7-21. Radiated Spurious Data (Band 26/5 – High Channel)

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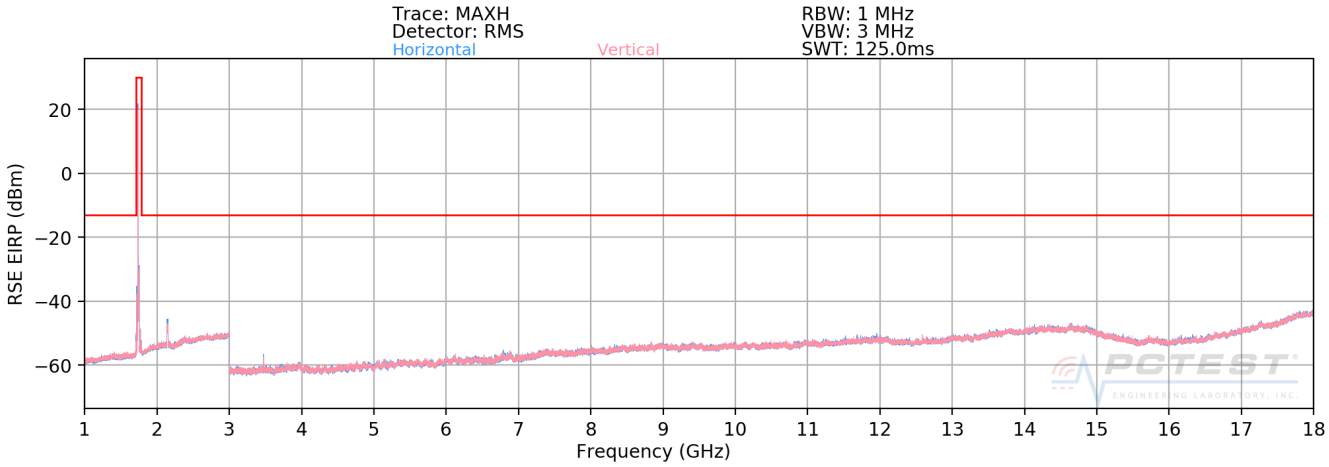
Band 66/4



Plot 7-322. Radiated Spurious Plot above 1GHz (Band 66)

OPERATING FREQUENCY:	1720.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3440.00	H	122	344	-65.45	9.84	-55.60	-42.6
5160.00	H	394	77	-70.47	10.71	-59.76	-46.8
6880.00	H	-	-	-69.01	11.68	-57.33	-44.3

Table 7-22. Radiated Spurious Data (Band 66/4 – Low Channel)

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OPERATING FREQUENCY:	1745.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3490.00	H	112	341	-62.06	9.91	-52.15	-39.2
5235.00	H	-	-	-70.30	10.73	-59.56	-46.6
6980.00	H	-	-	-69.86	11.82	-58.04	-45.0

Table 7-23. Radiated Spurious Data (Band 66/4 – Mid Channel)

OPERATING FREQUENCY:	1770.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3540.00	H	122	360	-56.89	9.89	-47.00	-34.0
5310.00	H	-	-	-70.84	10.69	-60.15	-47.2
7080.00	H	-	-	-69.49	11.79	-57.71	-44.7

Table 7-24. Radiated Spurious Data (Band 66/4 – High Channel)

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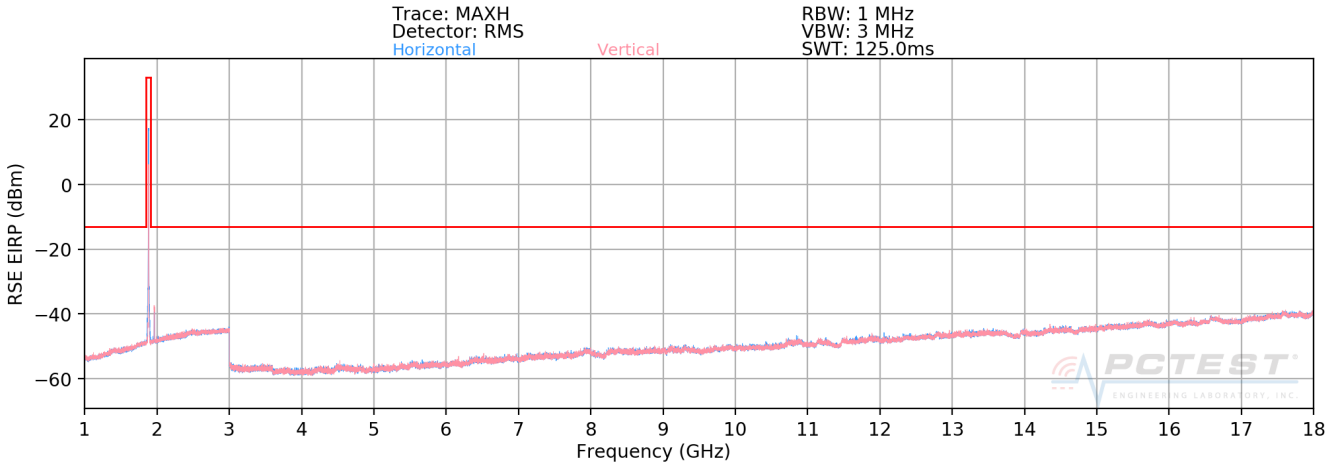
Band 25/2



Plot 7-323. Radiated Spurious Plot above 1GHz (Band 25/2)

OPERATING FREQUENCY:	1852.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3705.00	H	238	112	-56.68	9.57	-47.12	-34.1
5557.50	H	250	32	-54.23	10.95	-43.28	-30.3
7410.00	H	229	284	-51.90	10.96	-40.94	-27.9
9262.50	H	243	223	-51.08	11.63	-39.45	-26.5
11115.00	H	250	112	-49.25	12.74	-36.51	-23.5
12967.50	H	245	47	-47.99	13.29	-34.69	-21.7
14820.00	H	227	348	-44.36	12.49	-31.88	-18.9
16672.50	H	239	221	-43.94	15.42	-28.52	-15.5

Table 7-25. Radiated Spurious Data (Band 25/2 – Low Channel)

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OPERATING FREQUENCY: 1882.50 MHz
MODULATION SIGNAL: QPSK
BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3765.00	H	248	125	-55.47	9.36	-46.11	-33.1
5647.50	H	212	247	-55.65	11.19	-44.45	-31.5
7530.00	H	247	225	-51.95	11.13	-40.82	-27.8
9412.50	H	245	215	-49.80	11.57	-38.23	-25.2
11295.00	H	236	233	-48.90	12.71	-36.18	-23.2
13177.50	H	213	231	-45.80	13.13	-32.67	-19.7

Table 7-26. Radiated Spurious Data (Band 25/2 – Mid Channel)

OPERATING FREQUENCY: 1912.50 MHz
MODULATION SIGNAL: QPSK
BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3825.00	H	249	195	-56.34	9.31	-47.03	-34.0
5737.50	H	250	24	-56.43	11.41	-45.02	-32.0
7650.00	H	248	346	-51.14	11.36	-39.78	-26.8
9562.50	H	250	191	-50.42	11.81	-38.61	-25.6

Table 7-27. Radiated Spurious Data (Band 25/2 – High Channel)

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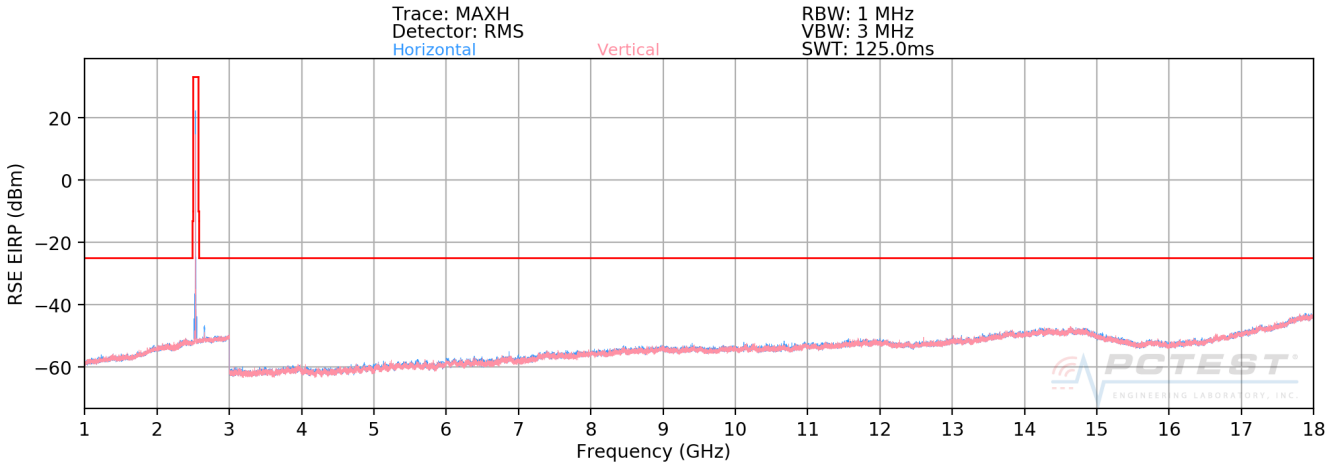
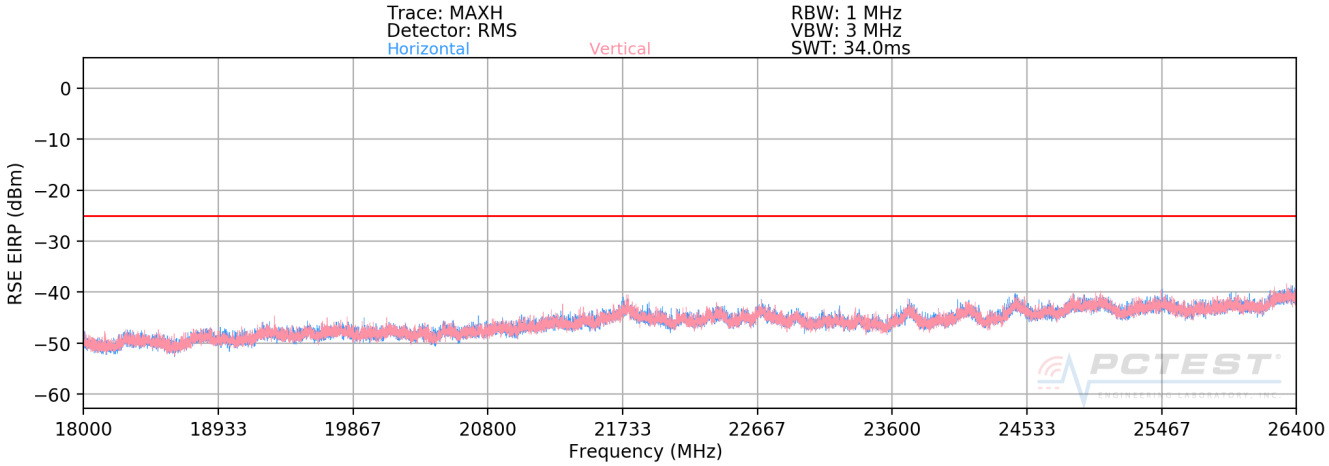
Band 7



Plot 7-324. Radiated Spurious Plot 1GHz - 18GHz (Band 7)



Plot 7-325. Radiated Spurious Plot 18GHz – 26.5GHz (Band 7)

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OPERATING FREQUENCY:	2505.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5010.00	V	397	322	-66.93	10.91	-56.02	-31.0
7515.00	V	112	321	-64.05	11.10	-52.95	-28.0
10020.00	V	-	-	-66.18	11.99	-54.18	-29.2

Table 7-28. Radiated Spurious Data (Band 7 – Low Channel)

OPERATING FREQUENCY:	2535.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5070.00	V	128	318	-65.26	10.75	-54.51	-29.5
7605.00	V	-	-	-63.96	11.25	-52.71	-27.7
10140.00	V	-	-	-62.61	12.07	-50.54	-25.5

Table 7-29. Radiated Spurious Data (Band 7 – Mid Channel)

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OPERATING FREQUENCY:	2565.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5130.00	V	128	294	-67.03	10.69	-56.35	-31.3
7695.00	V	-	-	-64.48	11.41	-53.07	-28.1
10260.00	V	-	-	-62.92	12.20	-50.72	-25.7

Table 7-30. Radiated Spurious Data (Band 7 – High Channel)

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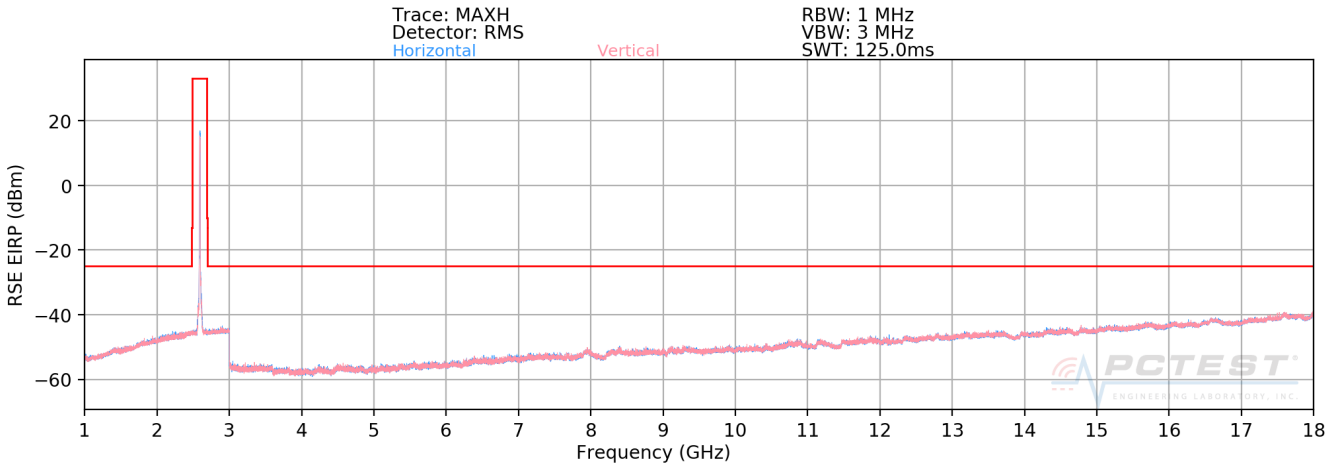
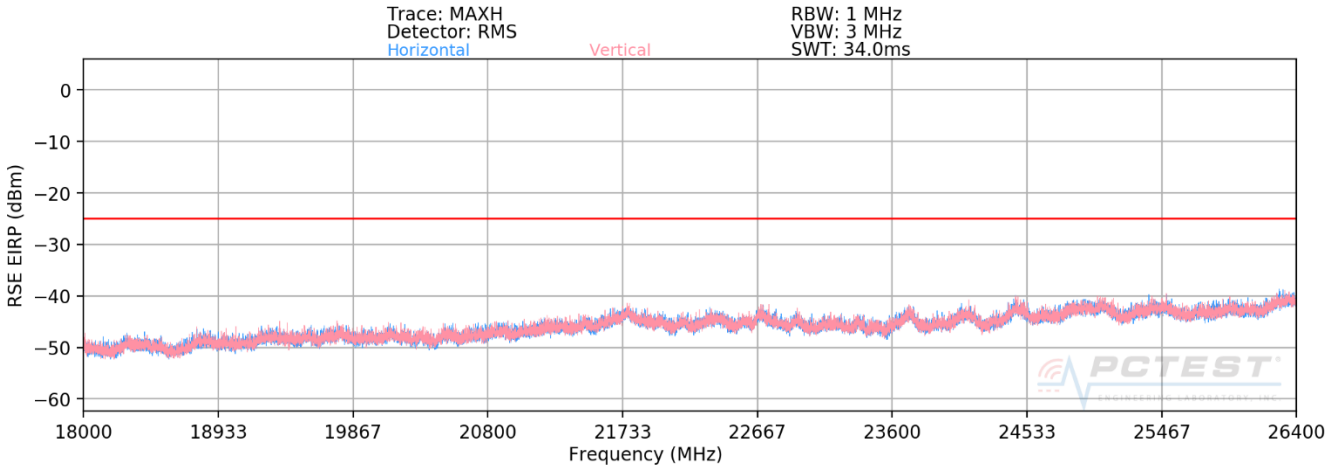
Band 41 PC3



Plot 7-326. Radiated Spurious Plot 1GHz - 18GHz (Band 41 PC3)



Plot 7-327. Radiated Spurious Plot 18GHz – 26.5GHz (Band 41 PC3)

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OPERATING FREQUENCY: 2510.00 MHz
MODULATION SIGNAL: QPSK
BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5020.00	H	150	322	-56.63	8.78	-47.85	-22.8
7530.00	H	-	-	-54.47	9.31	-45.17	-20.2
10040.00	H	-	-	-50.21	9.78	-40.43	-15.4

Table 7-31. Radiated Spurious Data (Band 41 PC3 – Low Channel)

OPERATING FREQUENCY: 2593.00 MHz
MODULATION SIGNAL: QPSK
BANDWIDTH: 20.0 MHz
DISTANCE: 3 meters
LIMIT: -25 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5186.00	H	-	-	-57.55	9.03	-48.52	-23.5
7779.00	H	-	-	-53.42	9.29	-44.13	-19.1
10372.00	H	-	-	-48.43	9.50	-38.93	-13.9

Table 7-32. Radiated Spurious Data (Band 41 PC3 – Mid Channel)

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OPERATING FREQUENCY:	2680.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5360.00	H	100	316	-56.96	8.99	-47.97	-23.0
8040.00	H	-	-	-52.04	9.35	-42.68	-17.7
10720.00	H	-	-	-47.98	9.39	-38.58	-13.6

Table 7-33. Radiated Spurious Data (Band 41 PC3 – High Channel)

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7.8 Frequency Stability / Temperature Variation

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-E-2016. The frequency stability of the transmitter is measured by:

a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.

b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 22, the frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency. For Part 24, Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Procedure Used

ANSI/TIA-603-E-2016

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Test Setup

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

Test Notes

None

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Band 71 Frequency Stability Measurements

OPERATING FREQUENCY: 680,500,000 Hz

CHANNEL: 133297

REFERENCE VOLTAGE: 3.98 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.98	- 30	680,499,793	-207	-0.0000304
100 %		- 20	680,499,712	-288	-0.0000423
100 %		- 10	680,499,998	-2	-0.0000003
100 %		0	680,500,005	5	0.0000007
100 %		+ 10	680,500,351	351	0.0000516
100 %		+ 20	680,500,092	92	0.0000135
100 %		+ 30	680,500,034	34	0.0000050
100 %		+ 40	680,499,950	-50	-0.0000073
100 %		+ 50	680,500,194	194	0.0000285
BATT. ENDPOINT	2.90	+ 20	680,500,344	344	0.0000506

Table 7-34. Frequency Stability Data (Band 71)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

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Band 71 Frequency Stability Measurements

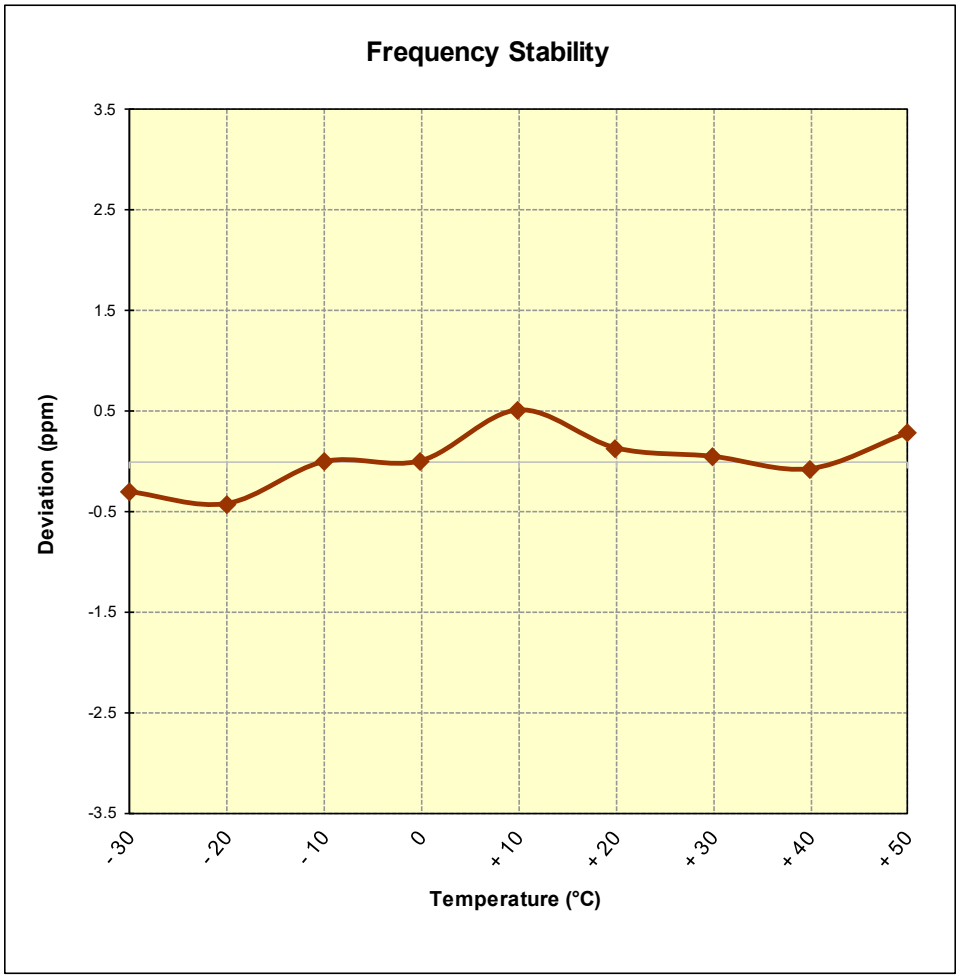

Figure 7-8. Frequency Stability Graph (Band 71)

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Band 12 Frequency Stability Measurements

OPERATING FREQUENCY: 707,500,000 Hz

CHANNEL: 23790

REFERENCE VOLTAGE: 3.98 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.98	- 30	707,499,957	-43	-0.0000061
100 %		- 20	707,500,094	94	0.0000133
100 %		- 10	707,500,156	156	0.0000220
100 %		0	707,499,997	-3	-0.0000004
100 %		+ 10	707,499,903	-97	-0.0000137
100 %		+ 20	707,499,643	-357	-0.0000505
100 %		+ 30	707,499,915	-85	-0.0000120
100 %		+ 40	707,500,099	99	0.0000140
100 %		+ 50	707,499,901	-99	-0.0000140
BATT. ENDPOINT	2.90	+ 20	707,499,786	-214	-0.0000302

Table 7-35. Frequency Stability Data (Band 12)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

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Band 12 Frequency Stability Measurements

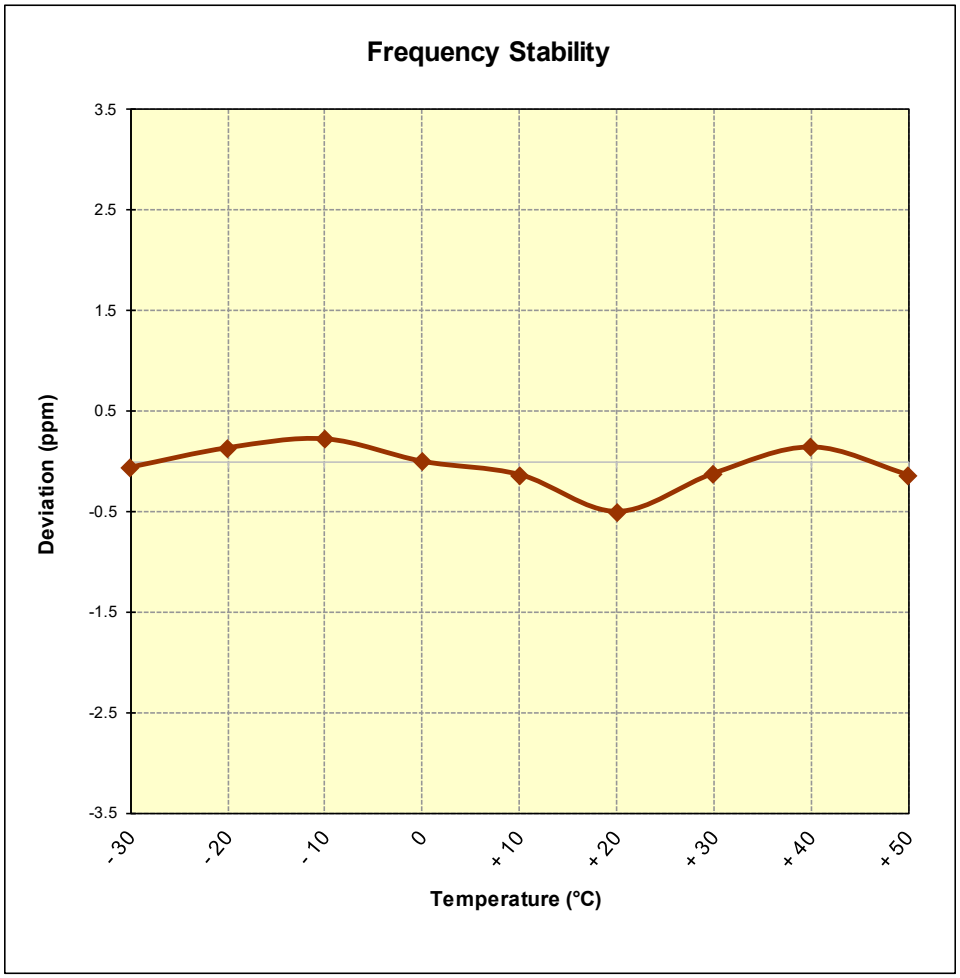

Figure 7-9. Frequency Stability Graph (Band 12)

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Band 13 Frequency Stability Measurements

OPERATING FREQUENCY: 782,000,000 Hz

CHANNEL: 23230

REFERENCE VOLTAGE: 3.98 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.98	- 30	781,999,931	-69	-0.0000088
100 %		- 20	781,999,968	-32	-0.0000041
100 %		- 10	782,000,308	308	0.0000394
100 %		0	781,999,894	-106	-0.0000136
100 %		+ 10	782,000,018	18	0.0000023
100 %		+ 20	781,999,805	-195	-0.0000249
100 %		+ 30	781,999,813	-187	-0.0000239
100 %		+ 40	782,000,052	52	0.0000066
100 %		+ 50	782,000,002	2	0.0000003
BATT. ENDPOINT	2.90	+ 20	782,000,068	68	0.0000087

Table 7-36. Frequency Stability Data (Band 13)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

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Band 13 Frequency Stability Measurements

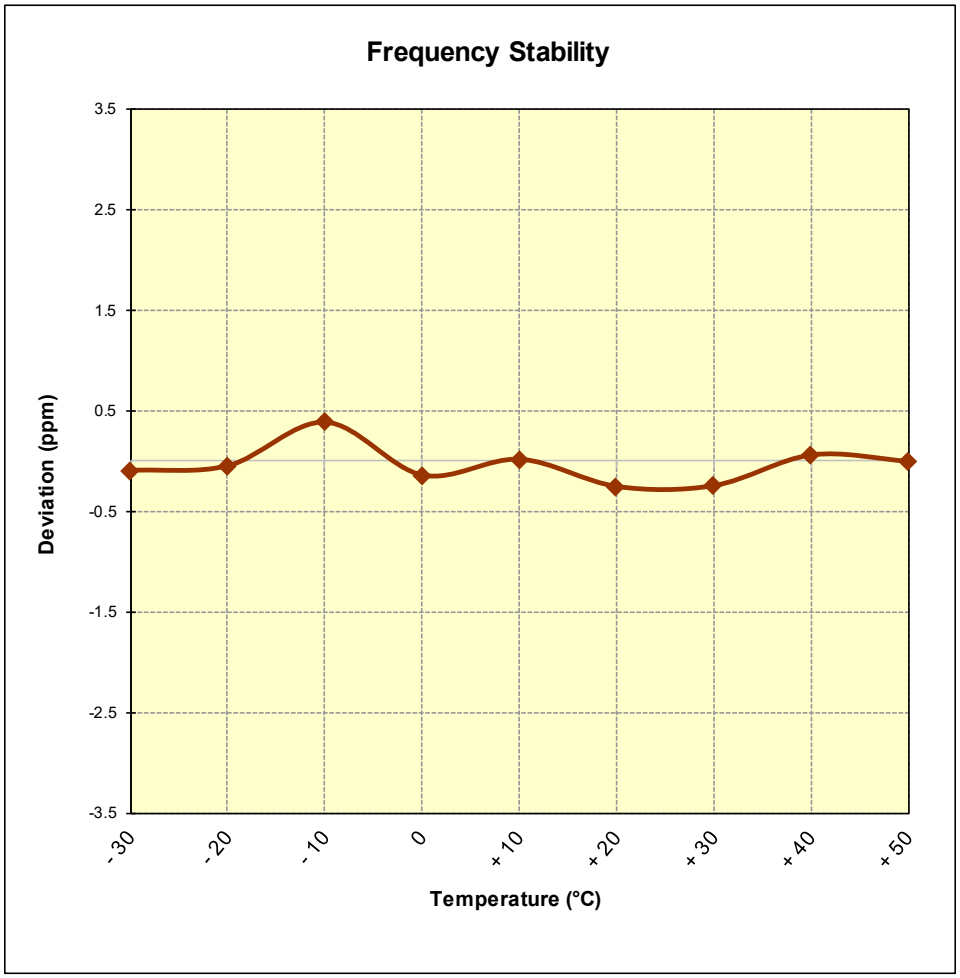

Figure 7-10. Frequency Stability Graph (Band 13)

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Band 26/5 Frequency Stability Measurements

OPERATING FREQUENCY: 836,500,000 Hz

CHANNEL: 20525

REFERENCE VOLTAGE: 3.98 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.98	- 30	836,500,131	131	0.0000157
100 %		- 20	836,499,977	-23	-0.0000027
100 %		- 10	836,499,784	-216	-0.0000258
100 %		0	836,500,346	346	0.0000414
100 %		+ 10	836,499,808	-192	-0.0000230
100 %		+ 20	836,500,261	261	0.0000312
100 %		+ 30	836,499,930	-70	-0.0000084
100 %		+ 40	836,499,636	-364	-0.0000435
100 %		+ 50	836,499,727	-273	-0.0000326
BATT. ENDPOINT	2.90	+ 20	836,499,663	-337	-0.0000403

Table 7-37. Frequency Stability Data (Band 26/5)

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Band 26/5 Frequency Stability Measurements

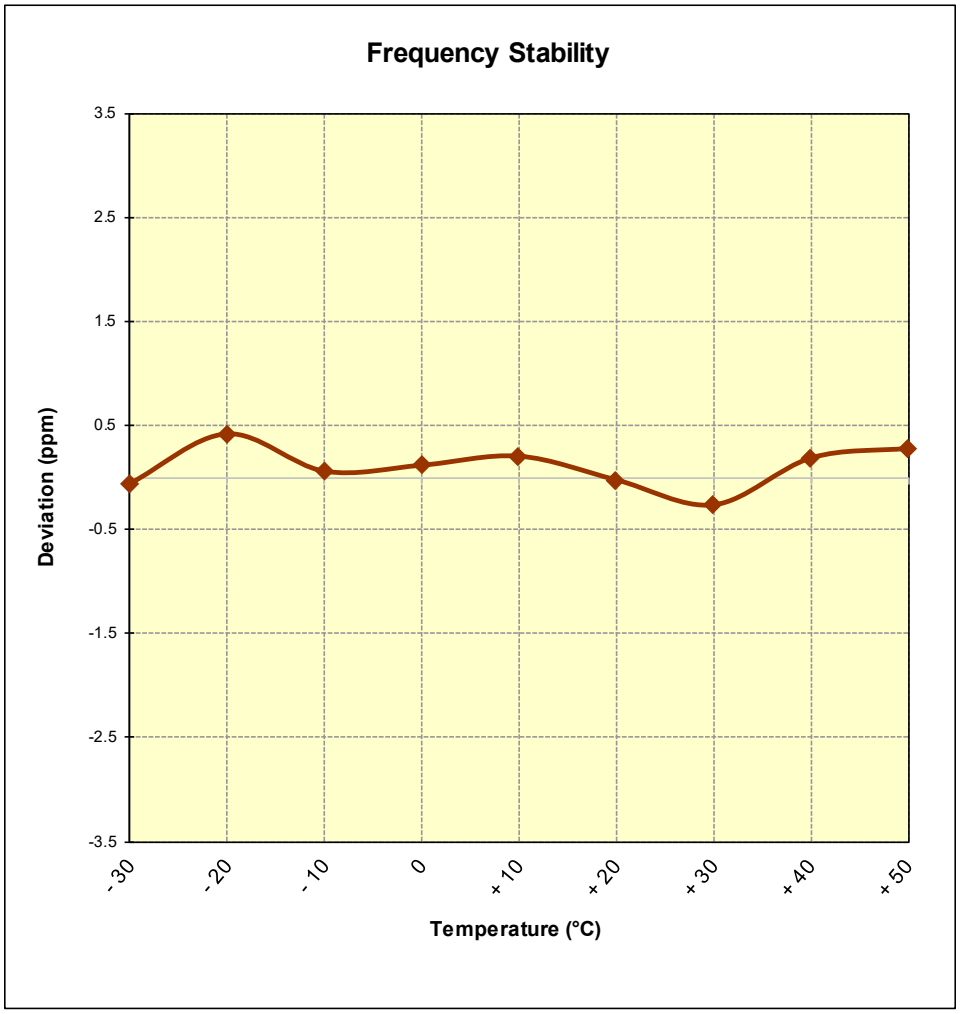

Figure 7-11. Frequency Stability Graph (Band 26/5)

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Band 66/4 Frequency Stability Measurements

OPERATING FREQUENCY: 1,745,000,000 Hz

CHANNEL: 132322

REFERENCE VOLTAGE: 3.98 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.98	- 30	1,744,999,996	-4	-0.0000002
100 %		- 20	1,745,000,081	81	0.0000046
100 %		- 10	1,744,999,720	-280	-0.0000160
100 %		0	1,745,000,074	74	0.0000042
100 %		+ 10	1,744,999,889	-111	-0.0000064
100 %		+ 20	1,745,000,331	331	0.0000190
100 %		+ 30	1,744,999,756	-244	-0.0000140
100 %		+ 40	1,745,000,269	269	0.0000154
100 %		+ 50	1,744,999,842	-158	-0.0000091
BATT. ENDPOINT	2.90	+ 20	1,744,999,931	-69	-0.0000040

Table 7-38. Frequency Stability Data (Band 66/4)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

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Band 66/4 Frequency Stability Measurements

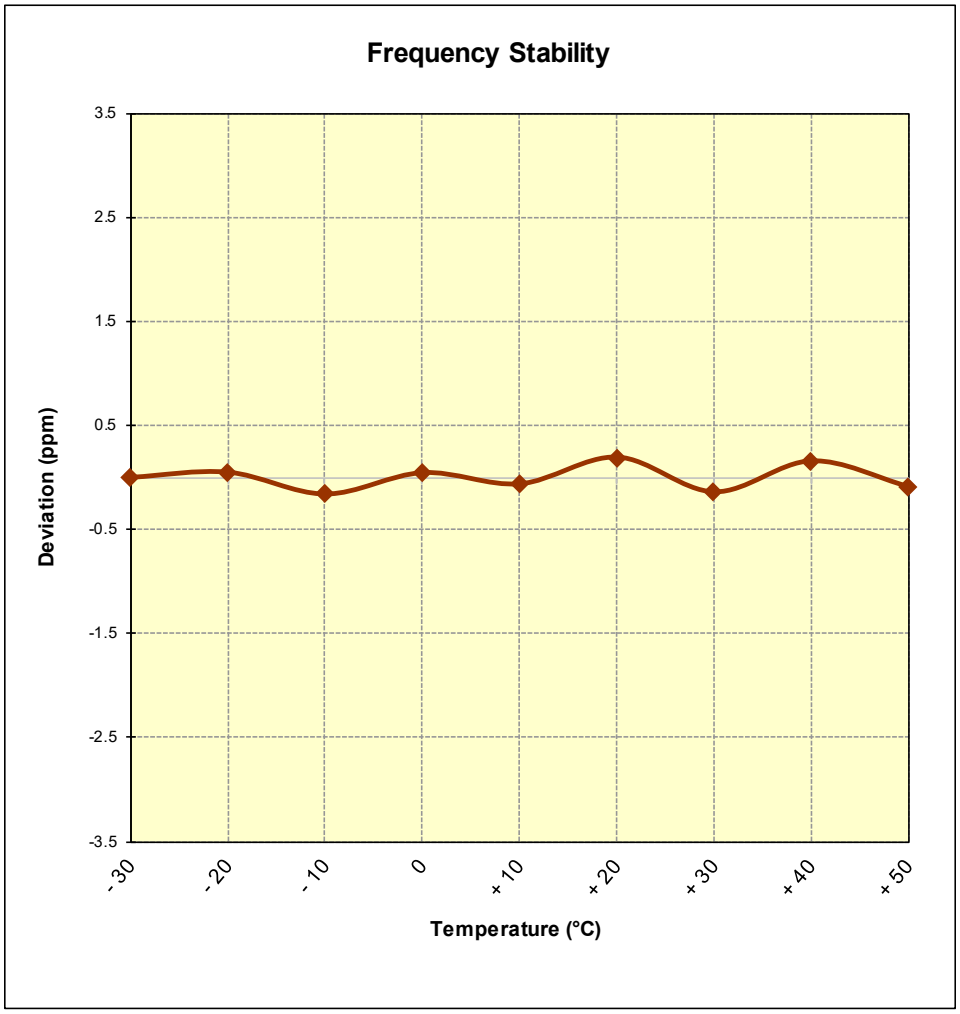

Figure 7-12. Frequency Stability Graph (Band 66/4)

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Band 25/2 Frequency Stability Measurements

OPERATING FREQUENCY: 1,882,500,000 Hz

CHANNEL: 26365

REFERENCE VOLTAGE: 3.98 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.98	- 30	1,882,500,299	299	0.0000159
100 %		- 20	1,882,499,980	-20	-0.0000011
100 %		- 10	1,882,499,792	-208	-0.0000110
100 %		0	1,882,499,940	-60	-0.0000032
100 %		+ 10	1,882,500,030	30	0.0000016
100 %		+ 20	1,882,499,891	-109	-0.0000058
100 %		+ 30	1,882,500,074	74	0.0000039
100 %		+ 40	1,882,500,090	90	0.0000048
100 %		+ 50	1,882,499,967	-33	-0.0000018
BATT. ENDPOINT	2.90	+ 20	1,882,499,951	-49	-0.0000026

Table 7-39. Frequency Stability Data (Band 25/2)

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Band 25/2 Frequency Stability Measurements

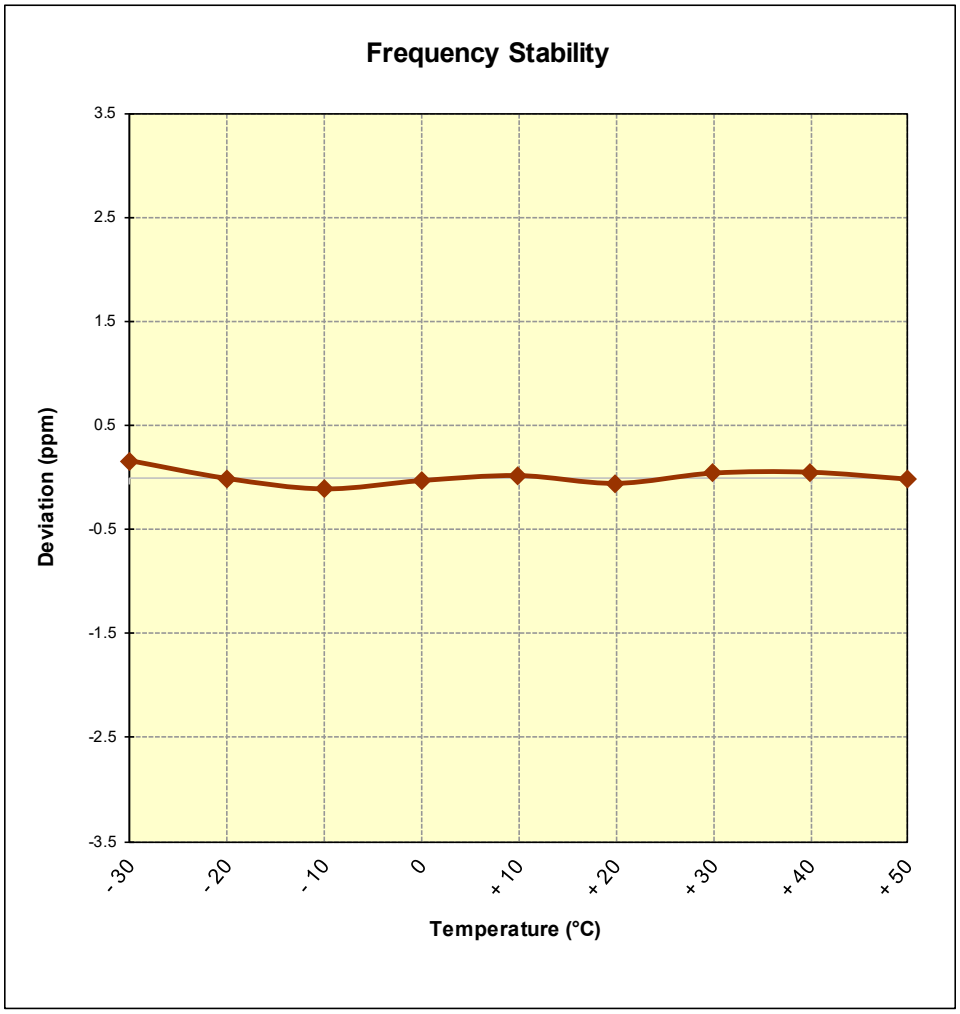

Figure 7-13. Frequency Stability Graph (Band 25/2)

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Band 7 Frequency Stability Measurements

OPERATING FREQUENCY: 2,535,000,000 Hz

CHANNEL: 21100

REFERENCE VOLTAGE: 3.98 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.98	- 30	2,535,000,097	97	0.0000038
100 %		- 20	2,534,999,909	-91	-0.0000036
100 %		- 10	2,534,999,933	-67	-0.0000026
100 %		0	2,534,999,896	-104	-0.0000041
100 %		+ 10	2,535,000,025	25	0.0000010
100 %		+ 20	2,535,000,131	131	0.0000052
100 %		+ 30	2,535,000,101	101	0.0000040
100 %		+ 40	2,534,999,984	-16	-0.0000006
100 %		+ 50	2,534,999,857	-143	-0.0000056
BATT. ENDPOINT	2.90	+ 20	2,535,000,208	208	0.0000082

Table 7-40. Frequency Stability Data (Band 7)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

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Band 7 Frequency Stability Measurements

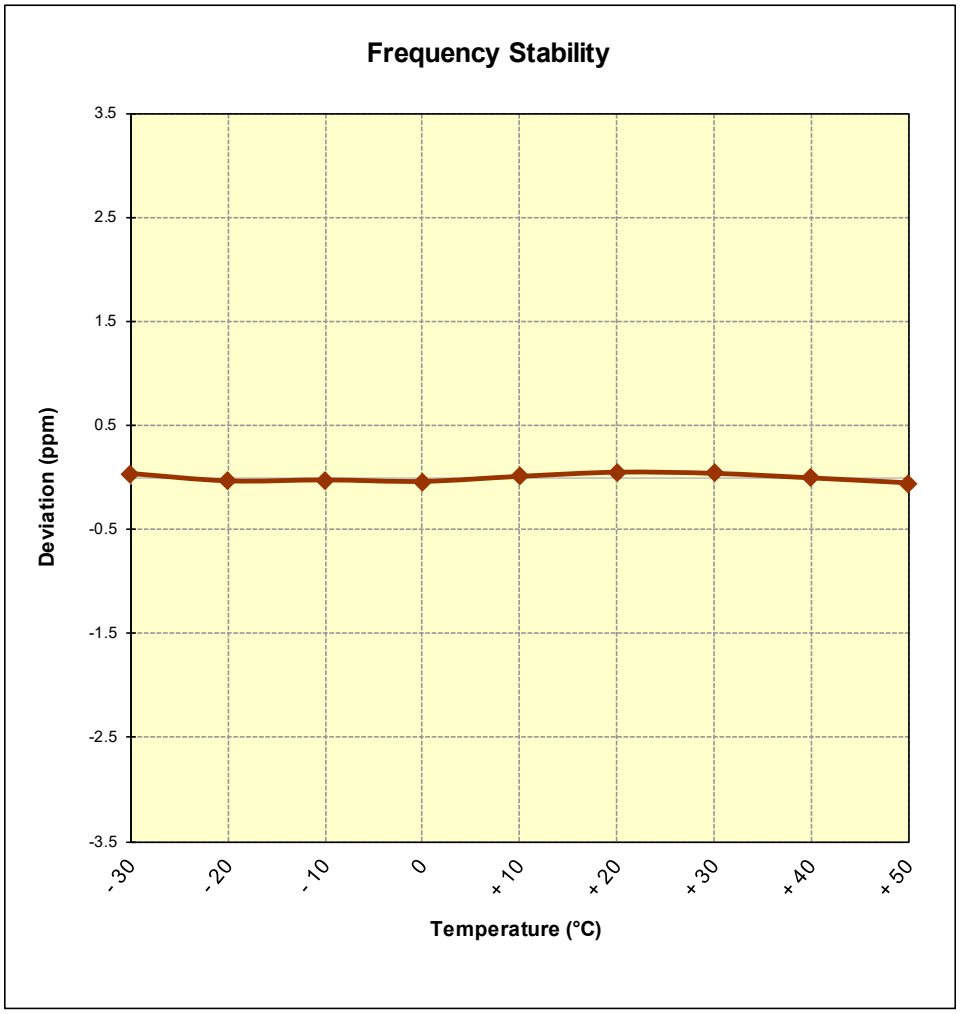

Figure 7-14. Frequency Stability Graph (Band 7)

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Band 41 PC3 Frequency Stability Measurements

OPERATING FREQUENCY: 2,593,000,000 Hz

CHANNEL: 40620

REFERENCE VOLTAGE: 3.98 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.98	- 30	2,592,999,877	-123	-0.0000047
100 %		- 20	2,593,000,150	150	0.0000058
100 %		- 10	2,593,000,132	132	0.0000051
100 %		0	2,592,999,916	-84	-0.0000032
100 %		+ 10	2,592,999,932	-68	-0.0000026
100 %		+ 20	2,592,999,752	-248	-0.0000096
100 %		+ 30	2,592,999,912	-88	-0.0000034
100 %		+ 40	2,593,000,270	270	0.0000104
100 %		+ 50	2,593,000,301	301	0.0000116
BATT. ENDPOINT	2.90	+ 20	2,592,999,961	-39	-0.0000015

Table 7-41. Frequency Stability Data (Band 41 PC3)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

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Band 41 PC3 Frequency Stability Measurements

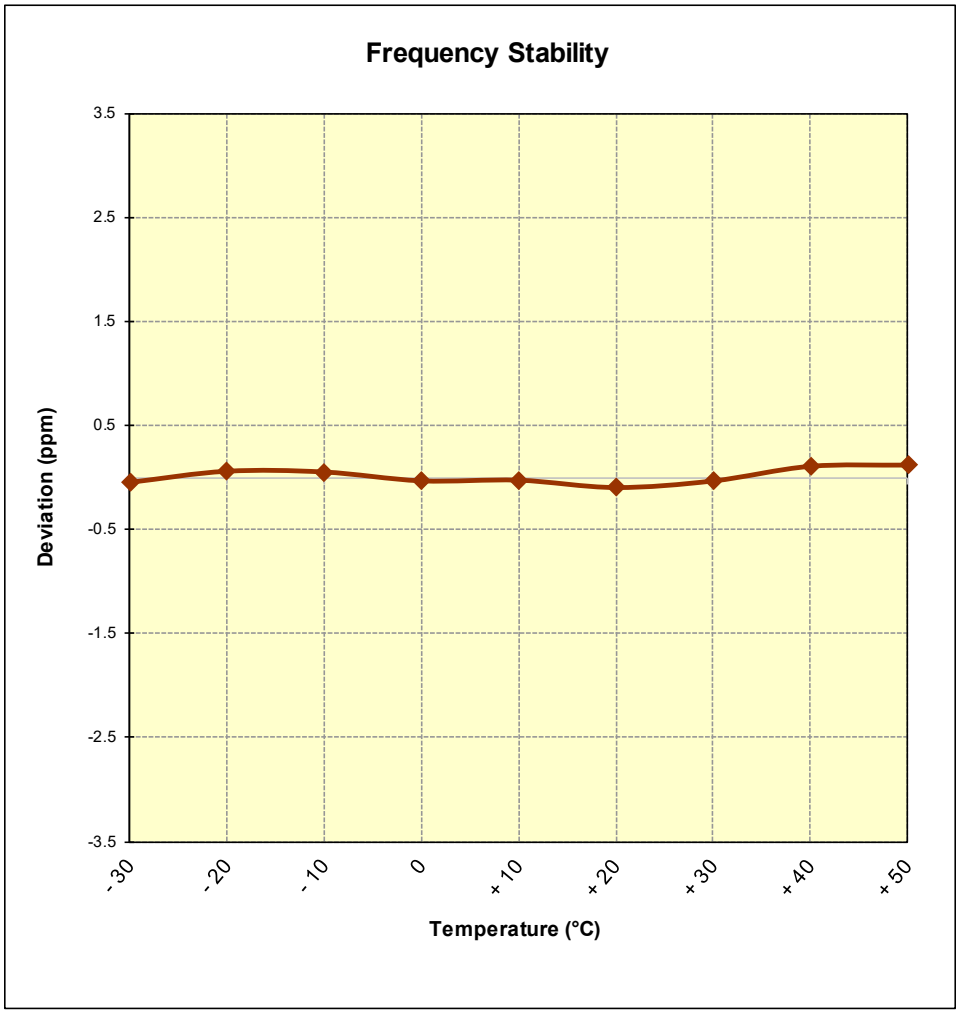

Figure 7-15. Frequency Stability Graph (Band 41 PC3)

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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **LGE Portable Tablet FCC ID: ZNFT600US** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.

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