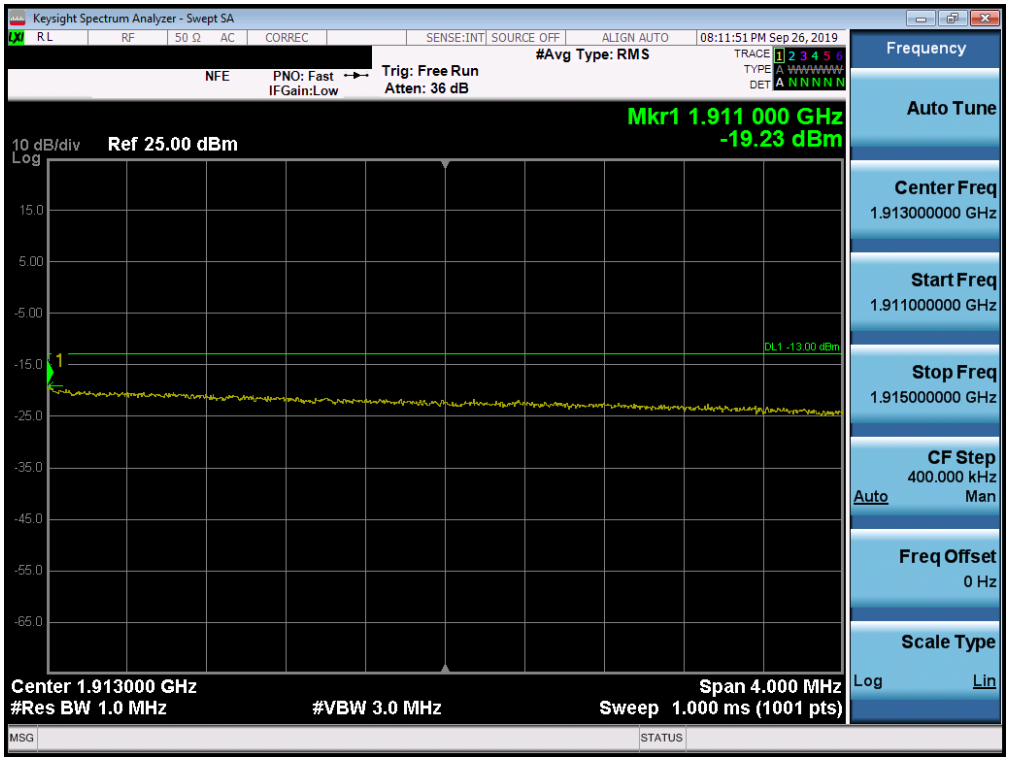
Plot 7-264. Upper Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-265. Upper Extended Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

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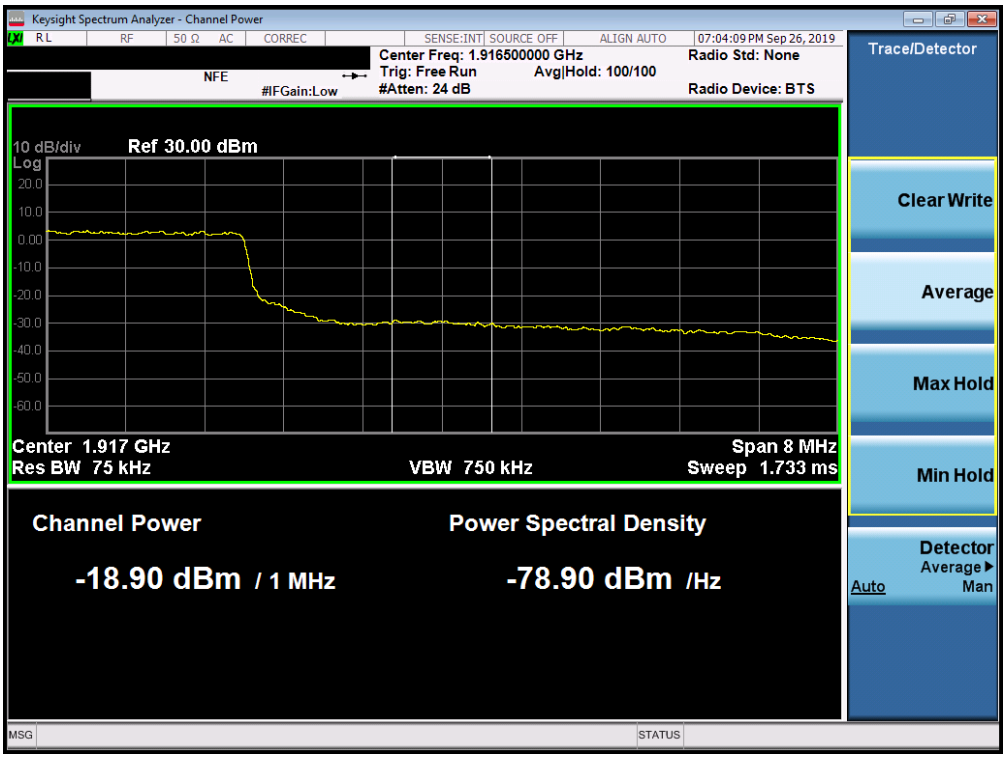
Plot 7-266. Upper Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)



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

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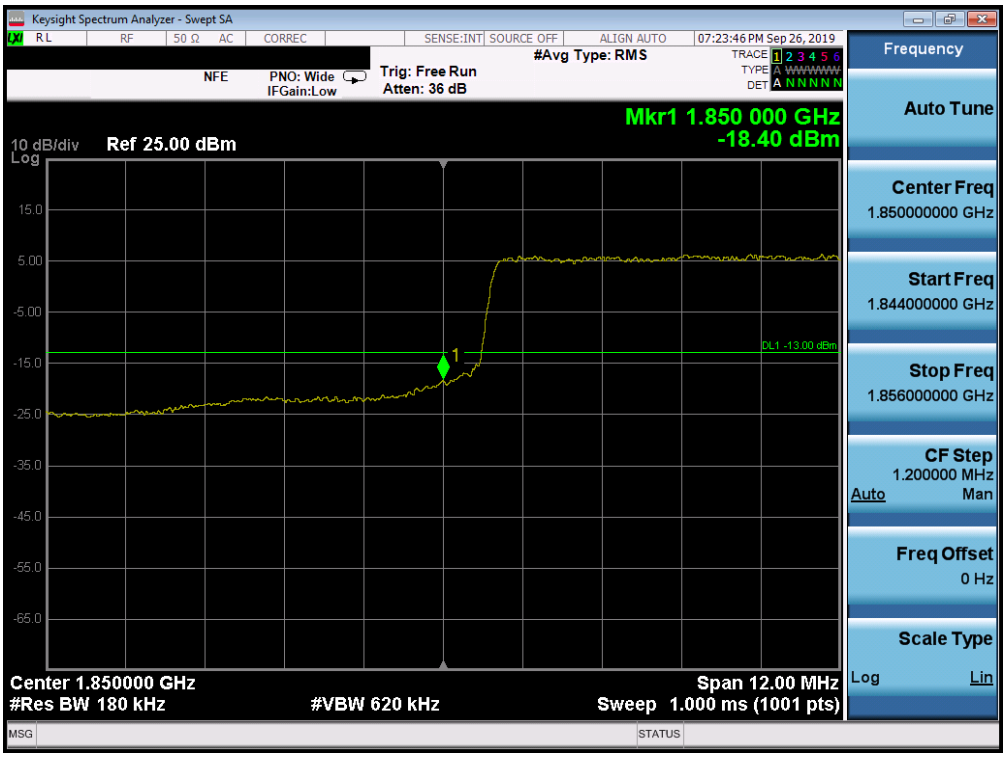
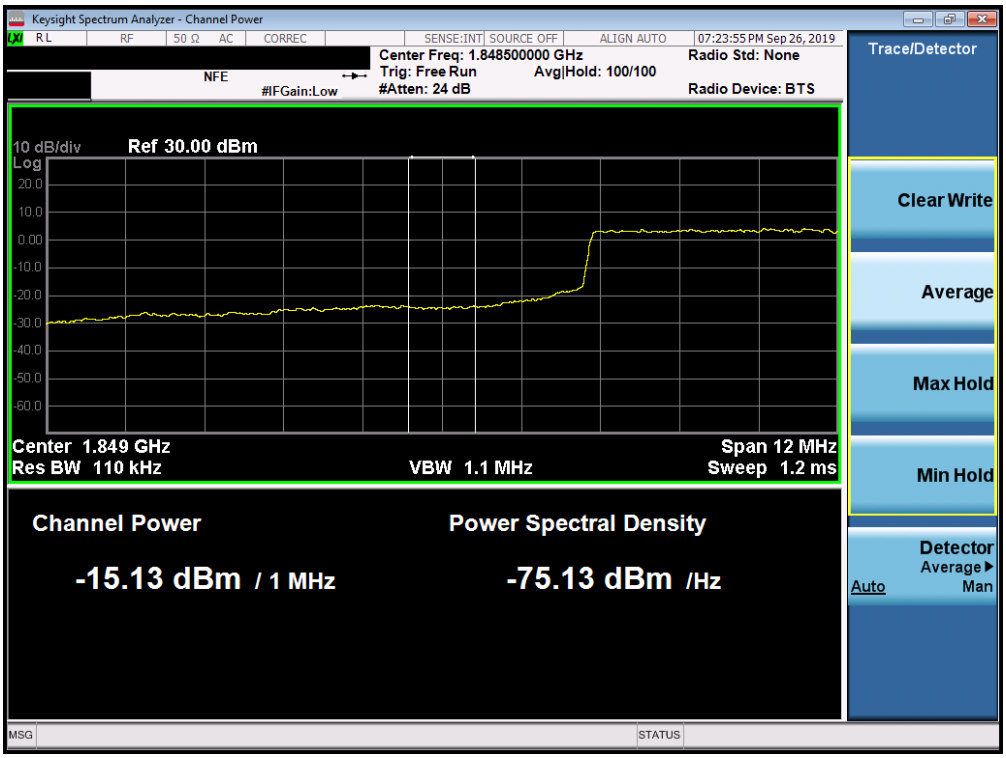


Plot 7-268. Lower Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-269. Lower Extended Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

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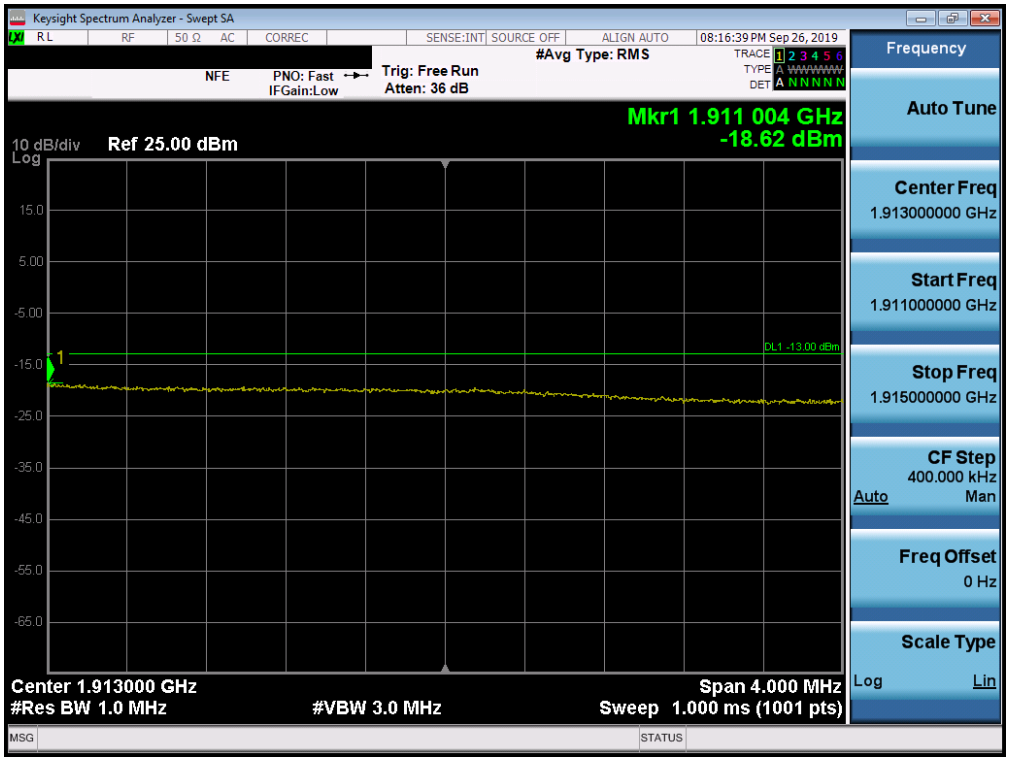
Plot 7-270. Upper Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-271. Upper Extended Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

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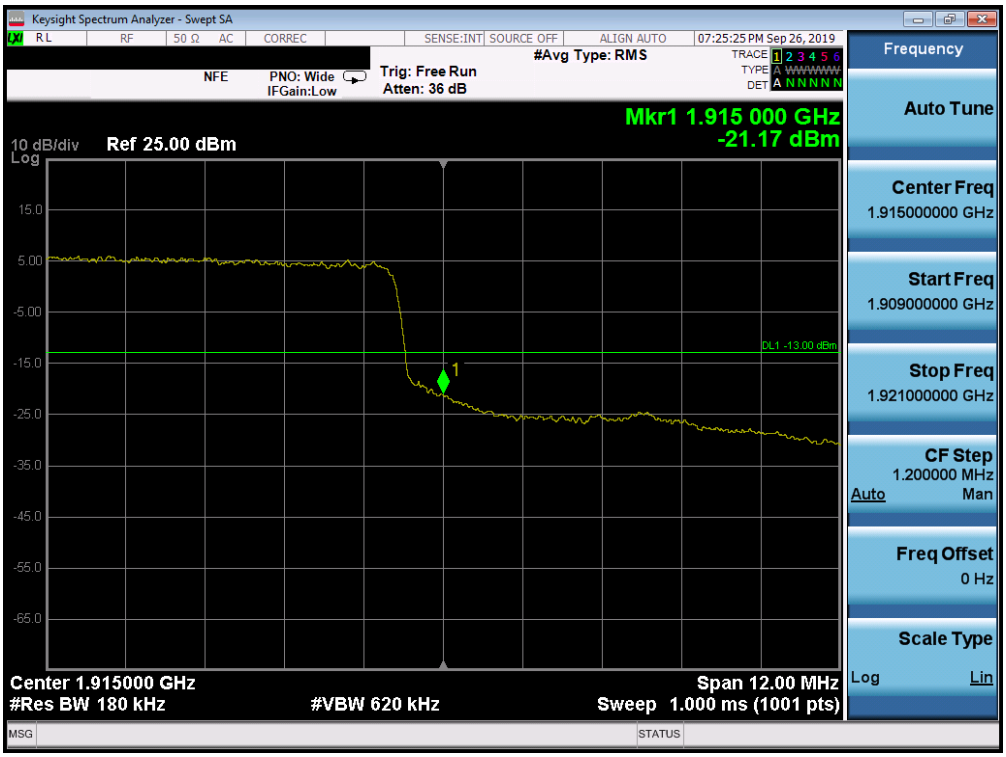
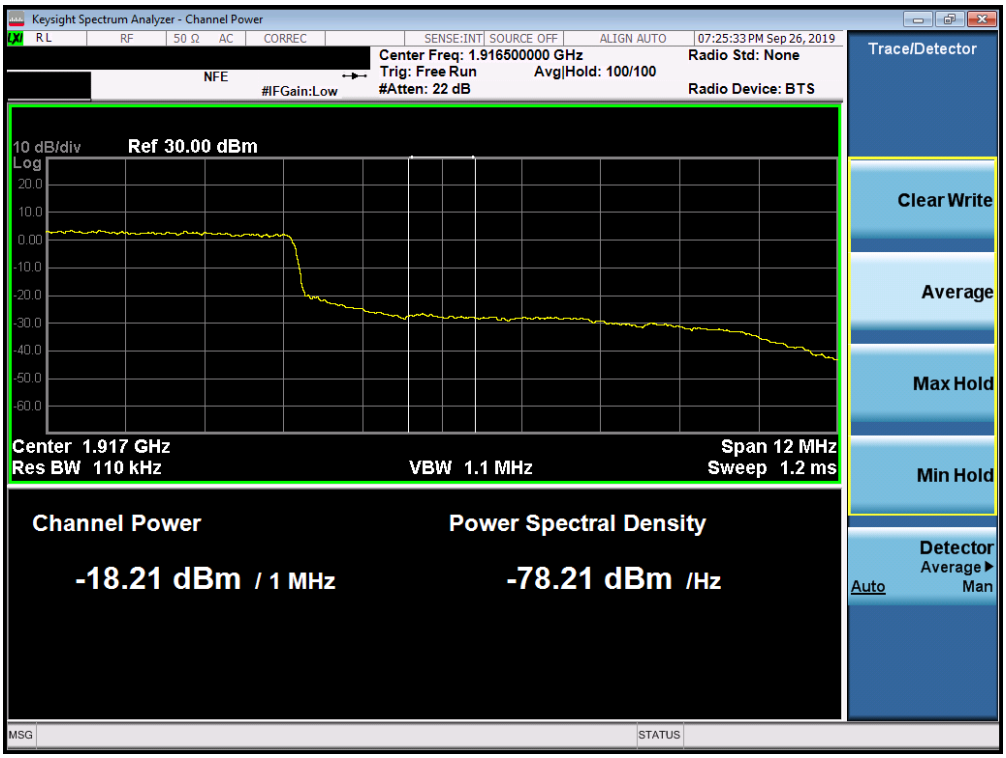


Plot 7-272. Upper Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)



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

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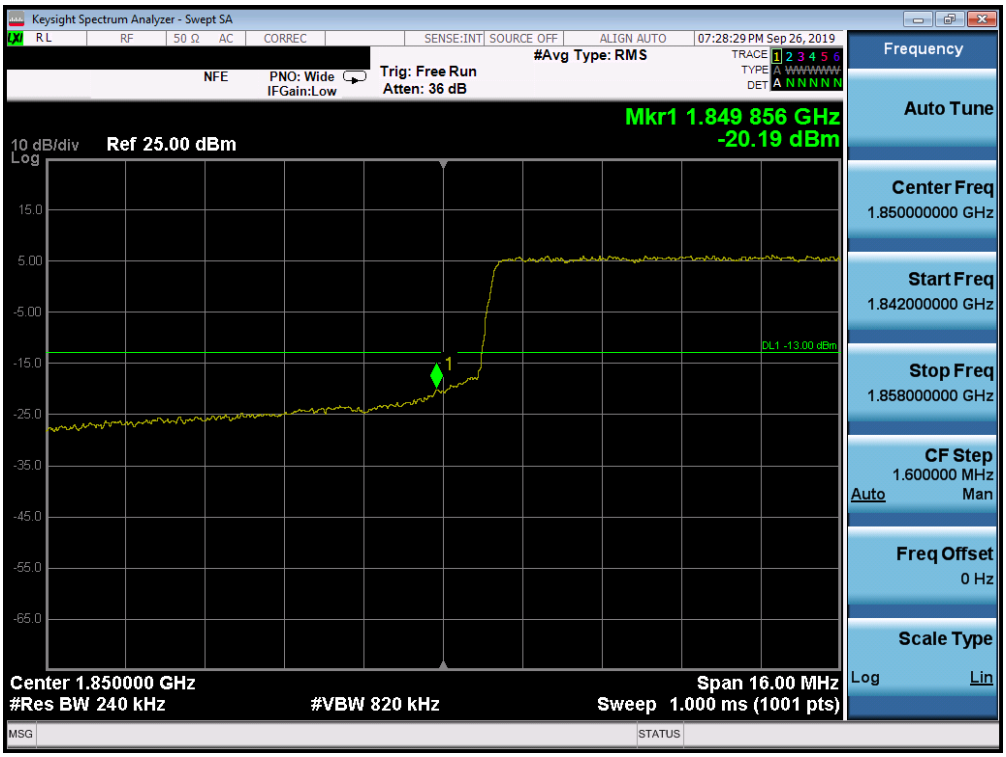
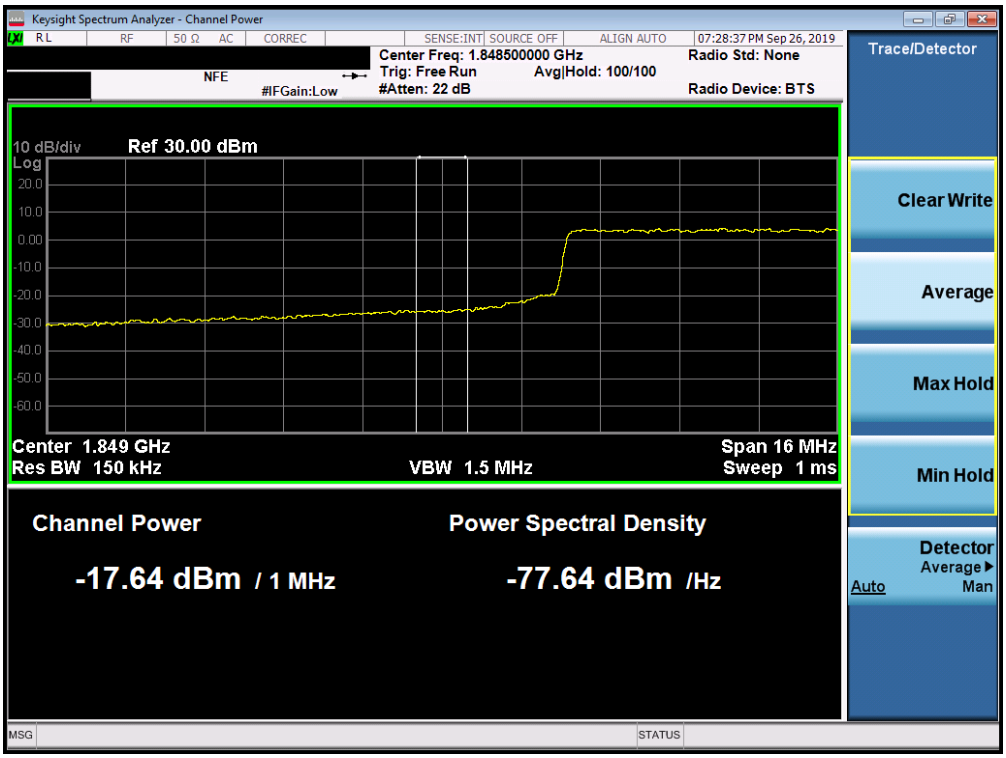


Plot 7-274. Lower Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-275. Lower Extended Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

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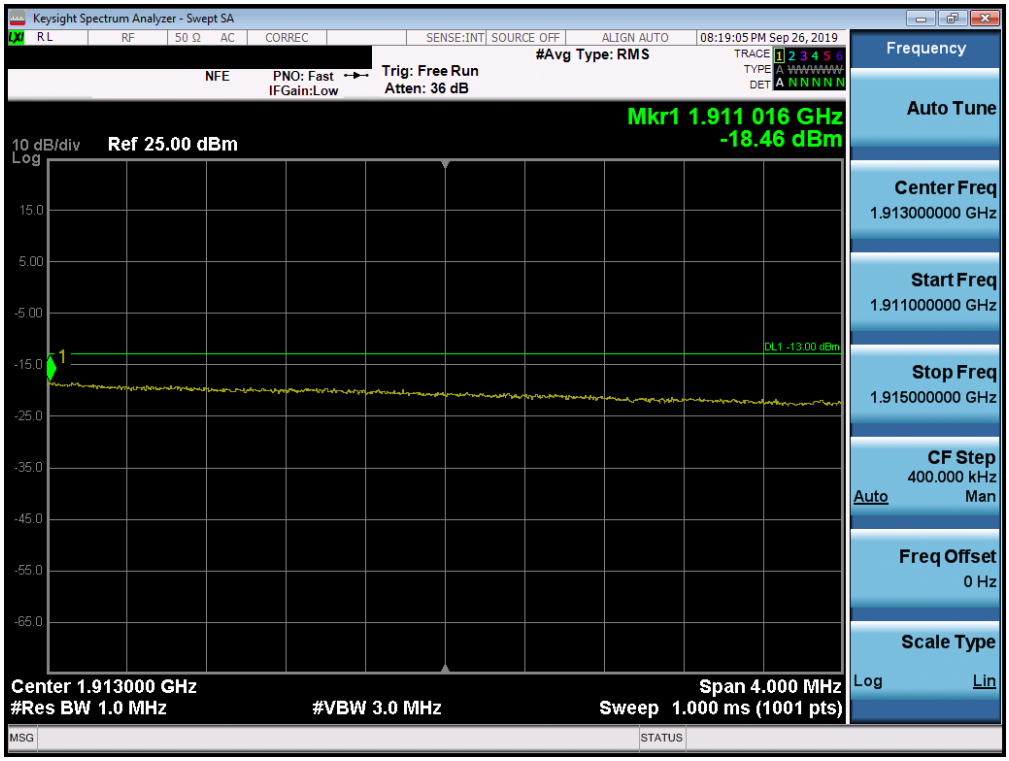
Plot 7-276. Upper Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-277. Upper Extended Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

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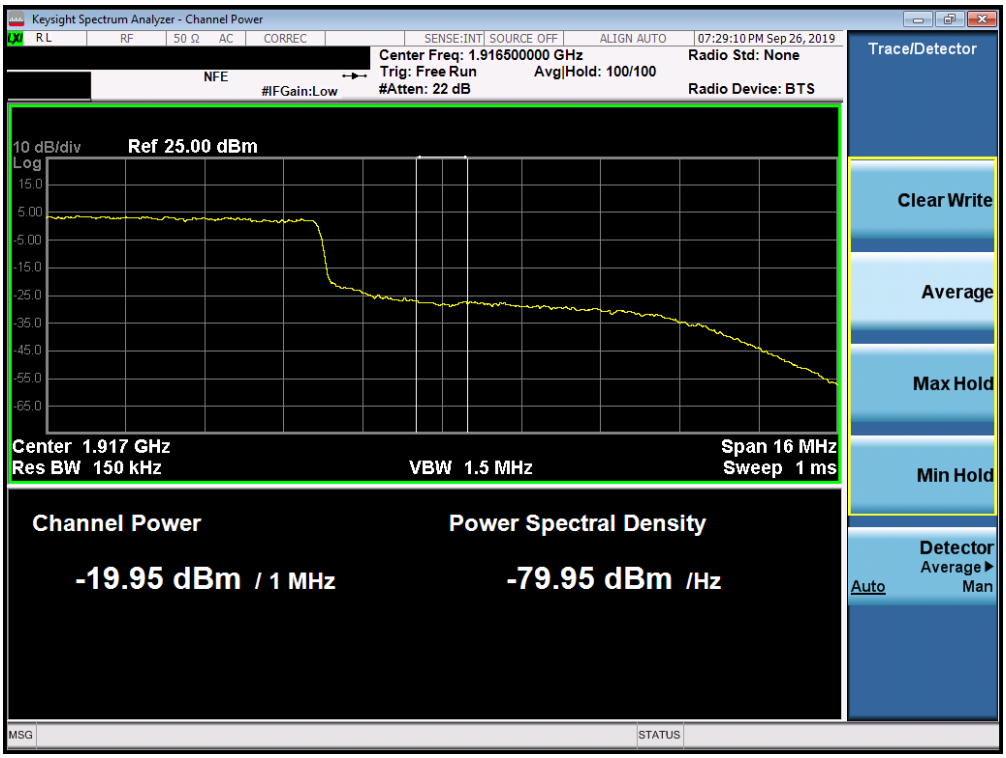
Plot 7-278. Upper Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)



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

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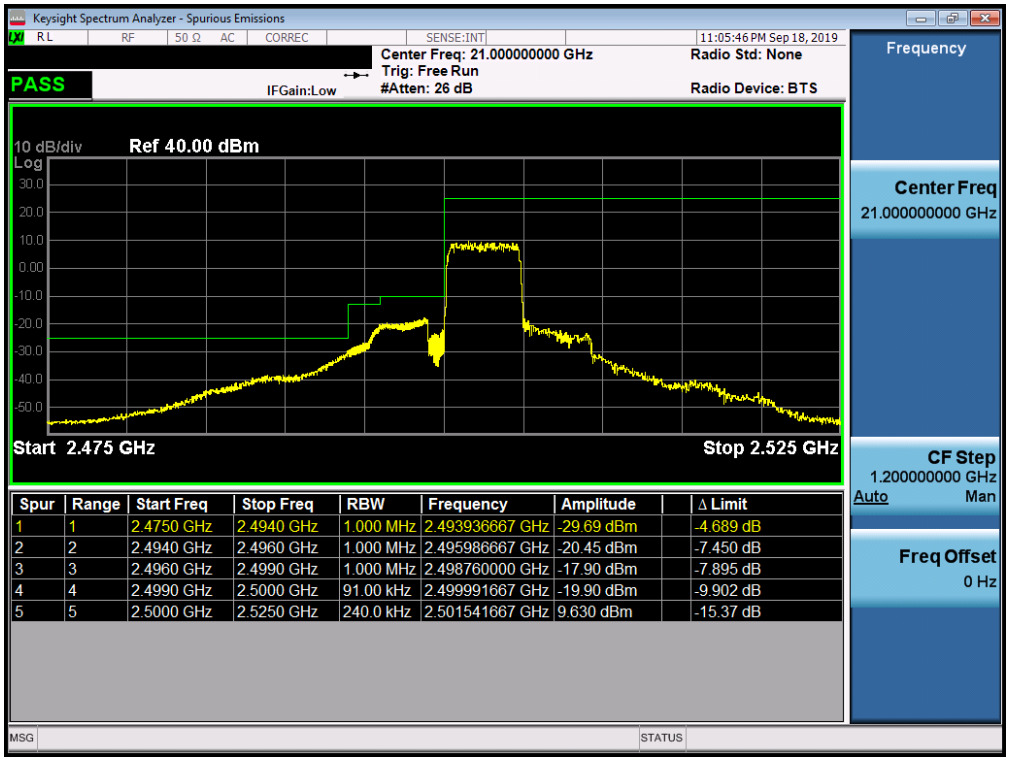
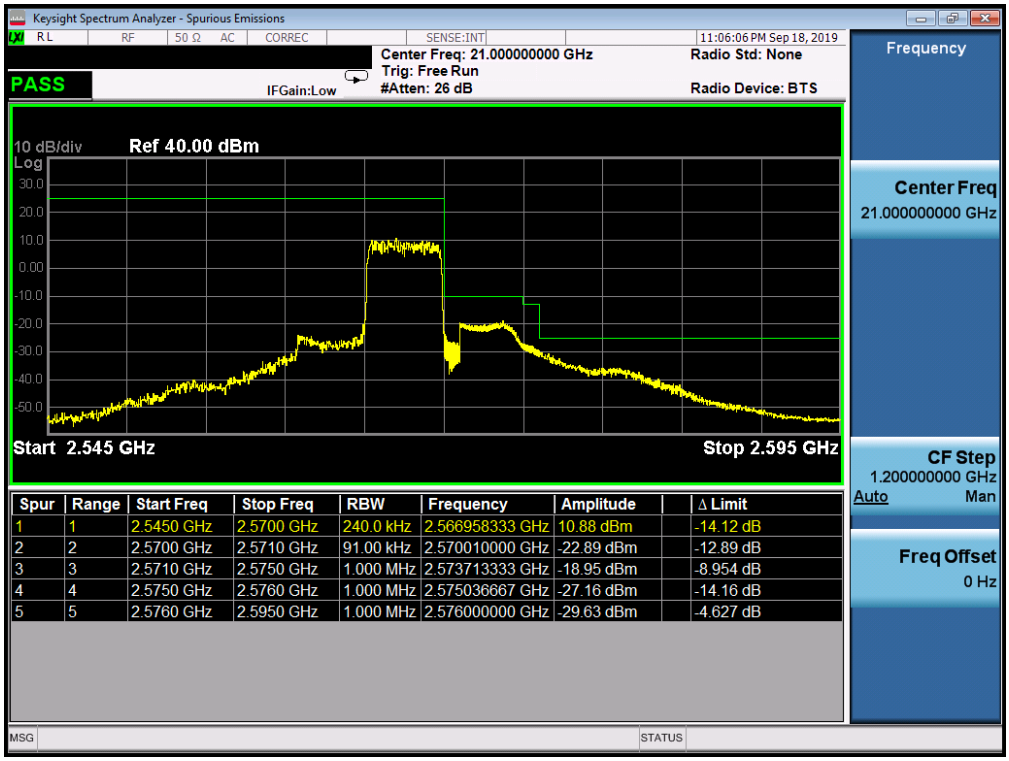
Band 7



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4940 GHz	1.000 MHz	2.493936667 GHz	-29.69 dBm	-4.689 dB
2	2	2.4940 GHz	2.4960 GHz	1.000 MHz	2.495986667 GHz	-20.45 dBm	-7.450 dB
3	3	2.4960 GHz	2.4990 GHz	1.000 MHz	2.498760000 GHz	-17.90 dBm	-7.895 dB
4	4	2.4990 GHz	2.5000 GHz	91.00 kHz	2.499991667 GHz	-19.90 dBm	-9.902 dB
5	5	2.5000 GHz	2.5250 GHz	240.0 kHz	2.501541667 GHz	9.630 dBm	-15.37 dB

Plot 7-280. 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	2.566958333 GHz	10.88 dBm	-14.12 dB
2	2	2.5700 GHz	2.5710 GHz	91.00 kHz	2.570010000 GHz	-22.89 dBm	-12.89 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.573713333 GHz	-18.95 dBm	-8.954 dB
4	4	2.5750 GHz	2.5760 GHz	1.000 MHz	2.575036667 GHz	-27.16 dBm	-14.16 dB
5	5	2.5760 GHz	2.5950 GHz	1.000 MHz	2.576000000 GHz	-29.63 dBm	-4.627 dB

Plot 7-281. Upper ACP Plot (Band 7 - 5.0MHz QPSK - Full RB Configuration)

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Plot 7-282. Lower ACP Plot (Band 7 - 10.0MHz QPSK - Full RB Configuration)

Plot 7-283. Upper ACP Plot (Band 7 - 10.0MHz QPSK - Full RB Configuration)

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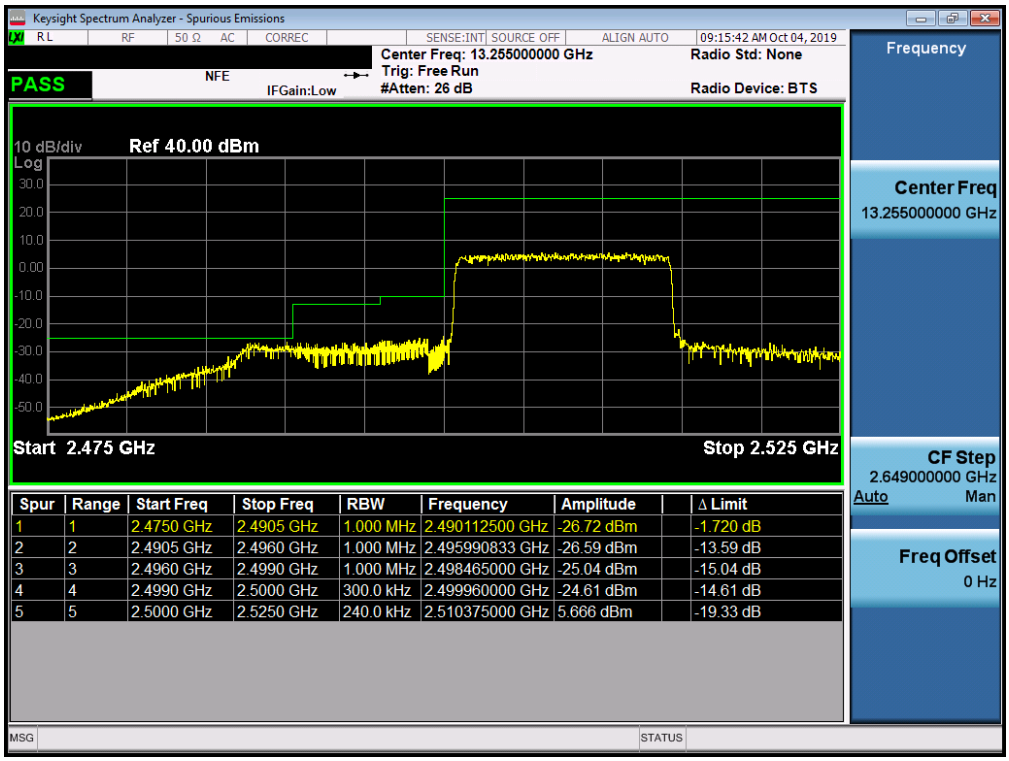

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490112500 GHz	-26.72 dBm	-1.720 dB
2	2	2.4905 GHz	2.4960 GHz	1.000 MHz	2.495990833 GHz	-26.59 dBm	-13.59 dB
3	3	2.4960 GHz	2.4990 GHz	1.000 MHz	2.498465000 GHz	-25.04 dBm	-15.04 dB
4	4	2.4990 GHz	2.5000 GHz	300.0 kHz	2.499960000 GHz	-24.61 dBm	-14.61 dB
5	5	2.5000 GHz	2.5250 GHz	240.0 kHz	2.510375000 GHz	5.666 dBm	-19.33 dB

Plot 7-284. 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	2.561750000 GHz	5.936 dBm	-19.06 dB
2	2	2.5700 GHz	2.5710 GHz	270.0 kHz	2.570053333 GHz	-22.82 dBm	-12.82 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571133333 GHz	-23.45 dBm	-13.45 dB
4	4	2.5750 GHz	2.5835 GHz	1.000 MHz	2.581880867 GHz	-24.48 dBm	-11.48 dB
5	5	2.5835 GHz	2.5950 GHz	1.000 MHz	2.583682933 GHz	-30.75 dBm	-5.753 dB

Plot 7-285. Upper ACP Plot (Band 7 - 15.0MHz QPSK - Full RB Configuration)

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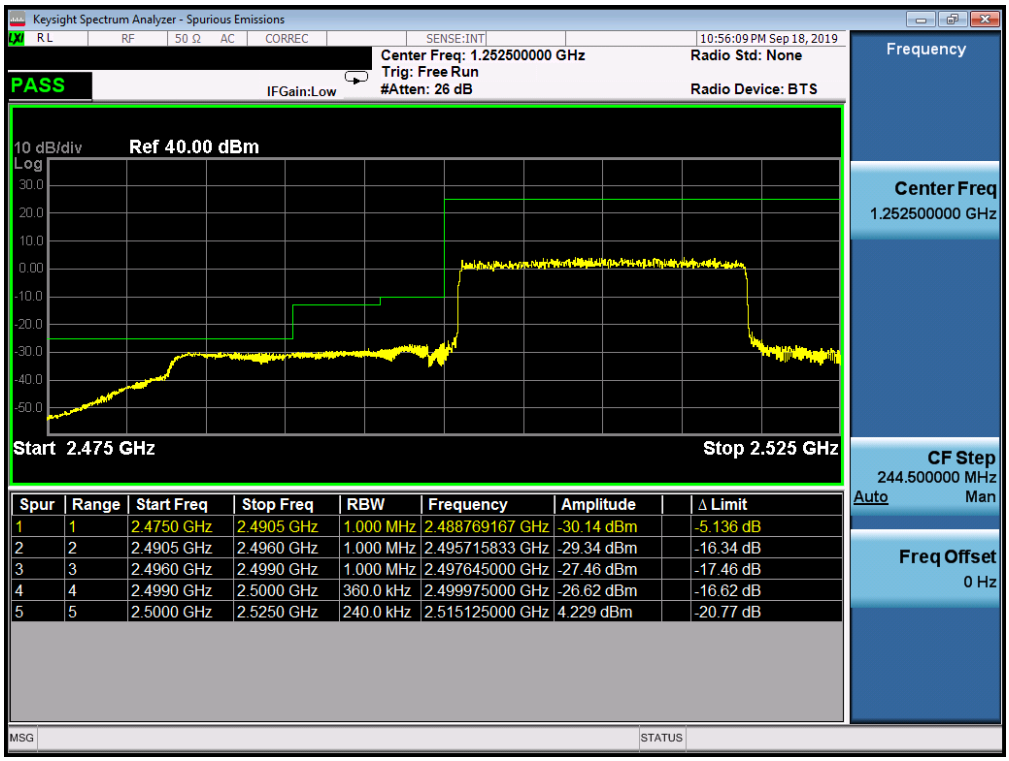

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.488769167 GHz	-30.14 dBm	-5.136 dB
2	2	2.4905 GHz	2.4960 GHz	1.000 MHz	2.495715833 GHz	-29.34 dBm	-16.34 dB
3	3	2.4960 GHz	2.4990 GHz	1.000 MHz	2.497645000 GHz	-27.46 dBm	-17.46 dB
4	4	2.4990 GHz	2.5000 GHz	360.0 kHz	2.499975000 GHz	-26.62 dBm	-16.62 dB
5	5	2.5000 GHz	2.5250 GHz	240.0 kHz	2.515125000 GHz	4.229 dBm	-20.77 dB

Plot 7-286. 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	2.560541667 GHz	3.962 dBm	-21.04 dB
2	2	2.5700 GHz	2.5710 GHz	360.0 kHz	2.570023333 GHz	-25.44 dBm	-15.44 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571313333 GHz	-26.10 dBm	-16.10 dB
4	4	2.5750 GHz	2.5880 GHz	1.000 MHz	2.581347593 GHz	-27.11 dBm	-14.11 dB
5	5	2.5880 GHz	2.5950 GHz	1.000 MHz	2.588043000 GHz	-35.63 dBm	-10.63 dB

Plot 7-287. Upper ACP Plot (Band 7 - 20.0MHz QPSK - Full RB Configuration)

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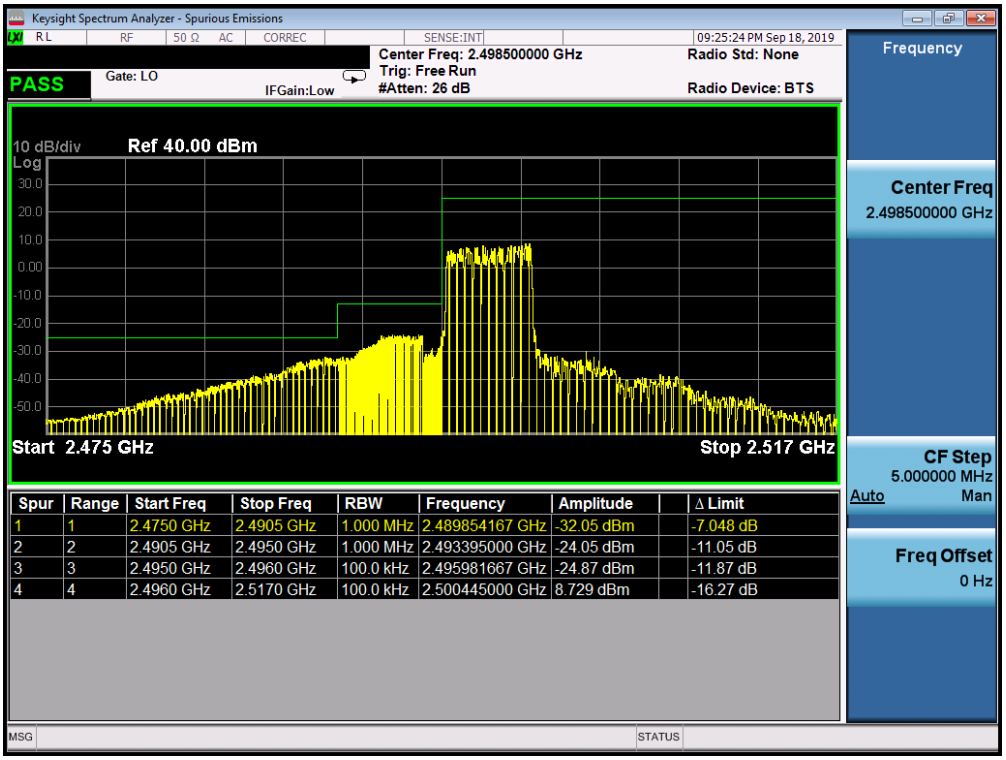
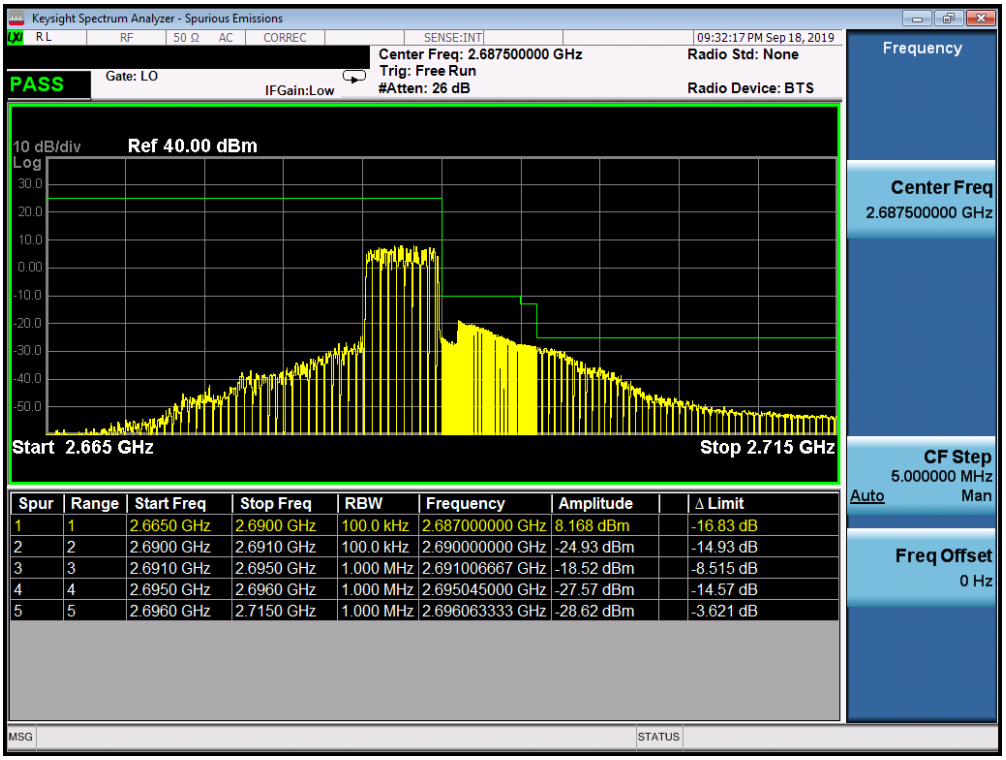
Band 41 PC2



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.489854167 GHz	-32.05 dBm	-7.048 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.493395000 GHz	-24.05 dBm	-11.05 dB
3	3	2.4950 GHz	2.4960 GHz	100.0 kHz	2.495981667 GHz	-24.87 dBm	-11.87 dB
4	4	2.4960 GHz	2.5170 GHz	100.0 kHz	2.500445000 GHz	8.729 dBm	-16.27 dB

Plot 7-288. Lower ACP Plot (Band 41 (PC2) - 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	2.687000000 GHz	8.168 dBm	-16.83 dB
2	2	2.6900 GHz	2.6910 GHz	100.0 kHz	2.690000000 GHz	-24.93 dBm	-14.93 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691006667 GHz	-18.52 dBm	-8.515 dB
4	4	2.6950 GHz	2.6960 GHz	1.000 MHz	2.695045000 GHz	-27.57 dBm	-14.57 dB
5	5	2.6960 GHz	2.7150 GHz	1.000 MHz	2.696063333 GHz	-28.62 dBm	-3.621 dB

Plot 7-289. Upper ACP Plot (Band 41 (PC2) - 5.0MHz QPSK - Full RB Configuration)

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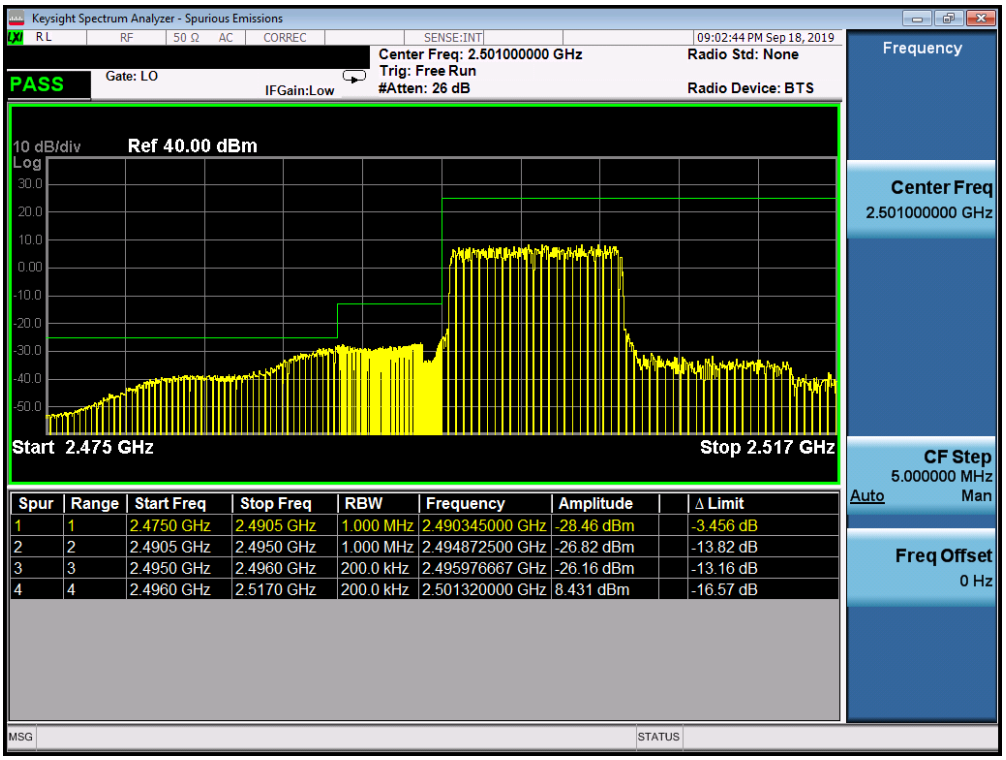
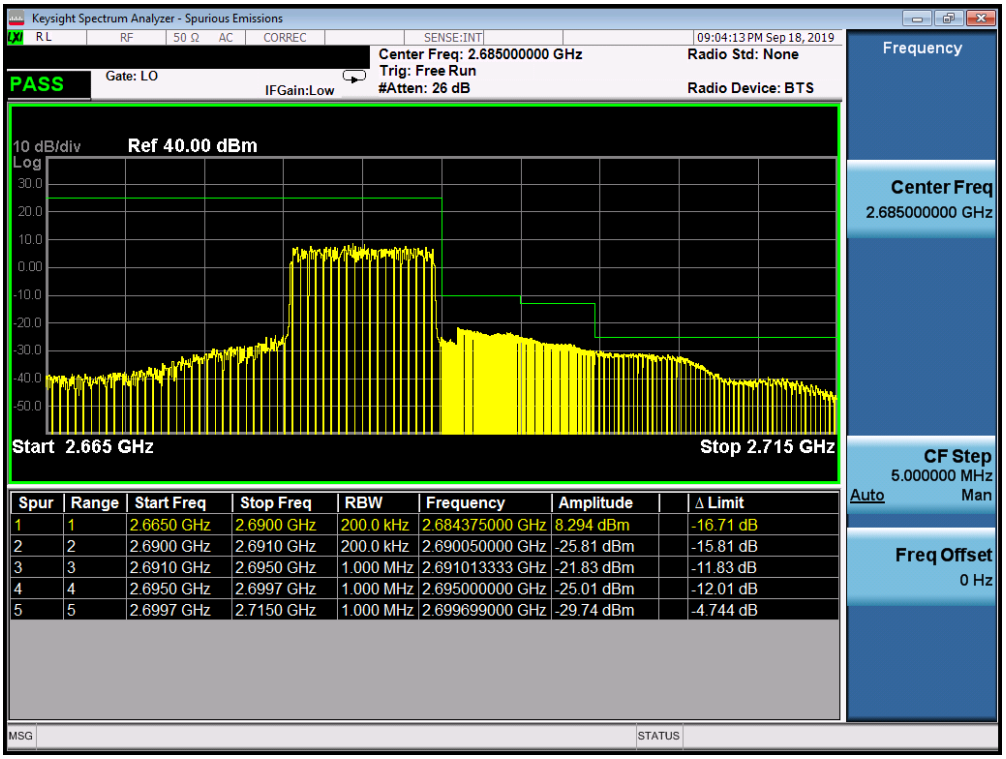


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490345000 GHz	-28.46 dBm	-3.456 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494872500 GHz	-26.82 dBm	-13.82 dB
3	3	2.4950 GHz	2.4960 GHz	200.0 kHz	2.495976667 GHz	-26.16 dBm	-13.16 dB
4	4	2.4960 GHz	2.5170 GHz	200.0 kHz	2.501320000 GHz	8.431 dBm	-16.57 dB

Plot 7-290. Lower ACP Plot (Band 41 (PC2) - 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	2.684375000 GHz	8.294 dBm	-16.71 dB
2	2	2.6900 GHz	2.6910 GHz	200.0 kHz	2.690050000 GHz	-25.81 dBm	-15.81 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691013333 GHz	-21.83 dBm	-11.83 dB
4	4	2.6950 GHz	2.6997 GHz	1.000 MHz	2.695000000 GHz	-25.01 dBm	-12.01 dB
5	5	2.6997 GHz	2.7150 GHz	1.000 MHz	2.699699000 GHz	-29.74 dBm	-4.744 dB

Plot 7-291. Upper ACP Plot (Band 41 (PC2) - 10.0MHz QPSK - Full RB Configuration)

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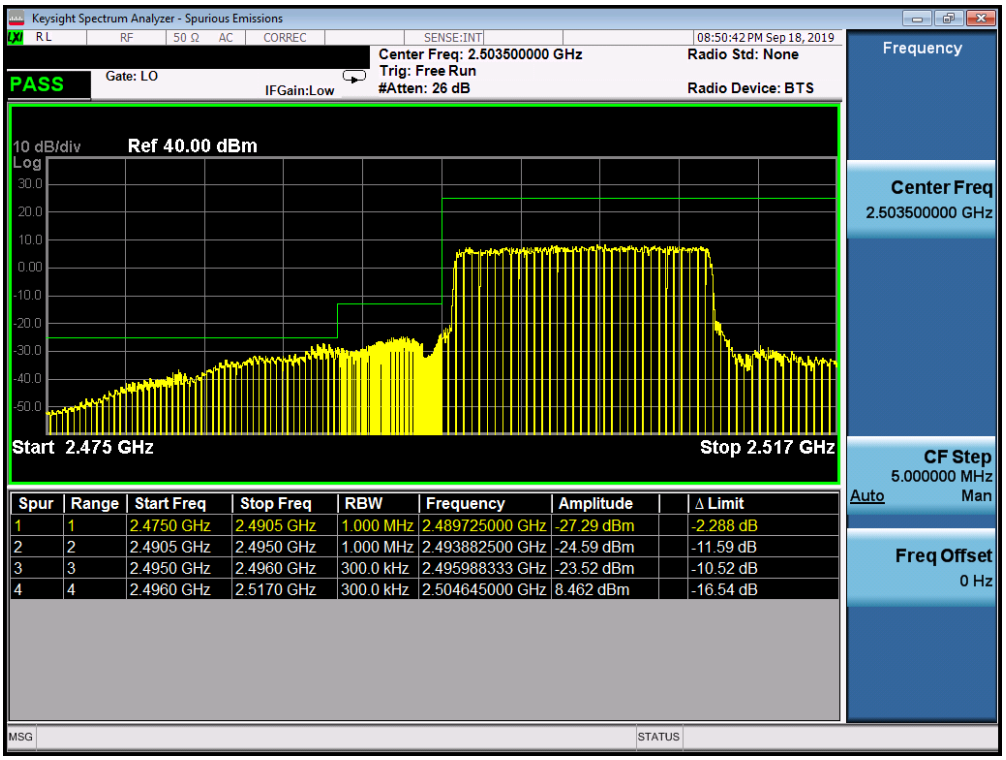
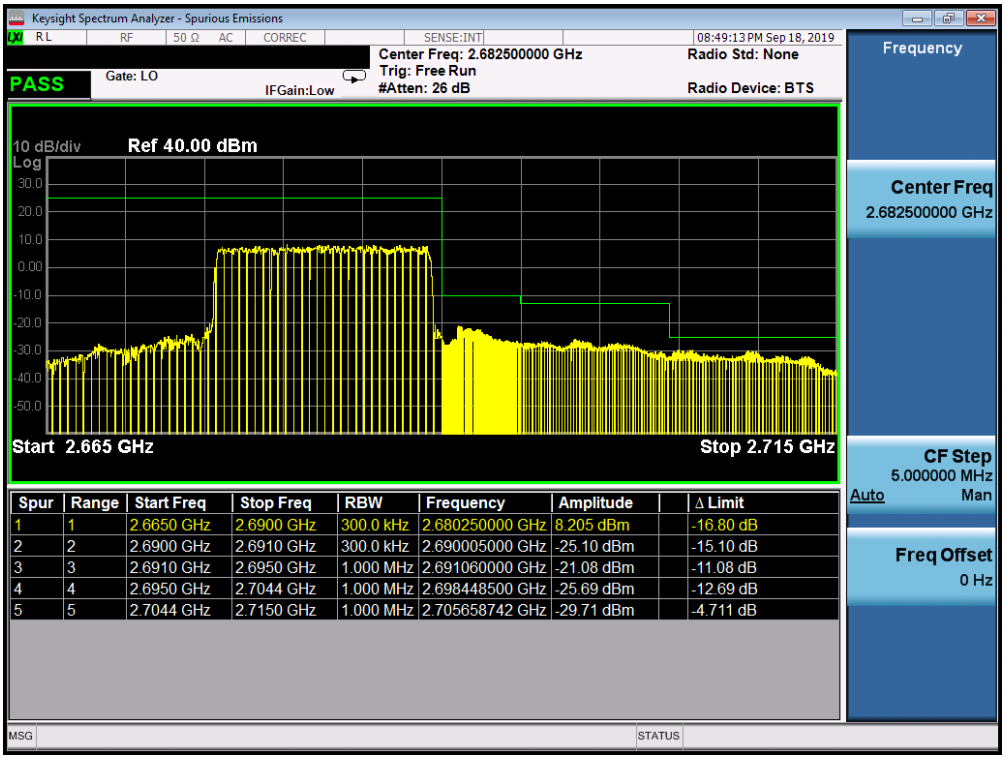


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.489725000 GHz	-27.29 dBm	-2.288 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.493882500 GHz	-24.59 dBm	-11.59 dB
3	3	2.4950 GHz	2.4960 GHz	300.0 kHz	2.495988333 GHz	-23.52 dBm	-10.52 dB
4	4	2.4960 GHz	2.5170 GHz	300.0 kHz	2.504645000 GHz	8.462 dBm	-16.54 dB

Plot 7-292. Lower ACP Plot (Band 41 (PC2) - 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	2.680250000 GHz	8.205 dBm	-16.80 dB
2	2	2.6900 GHz	2.6910 GHz	300.0 kHz	2.690005000 GHz	-25.10 dBm	-15.10 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691060000 GHz	-21.08 dBm	-11.08 dB
4	4	2.6950 GHz	2.7044 GHz	1.000 MHz	2.698448500 GHz	-25.69 dBm	-12.69 dB
5	5	2.7044 GHz	2.7150 GHz	1.000 MHz	2.705658742 GHz	-29.71 dBm	-4.711 dB

Plot 7-293. Upper ACP Plot (Band 41 (PC2) - 15.0MHz QPSK - Full RB Configuration)

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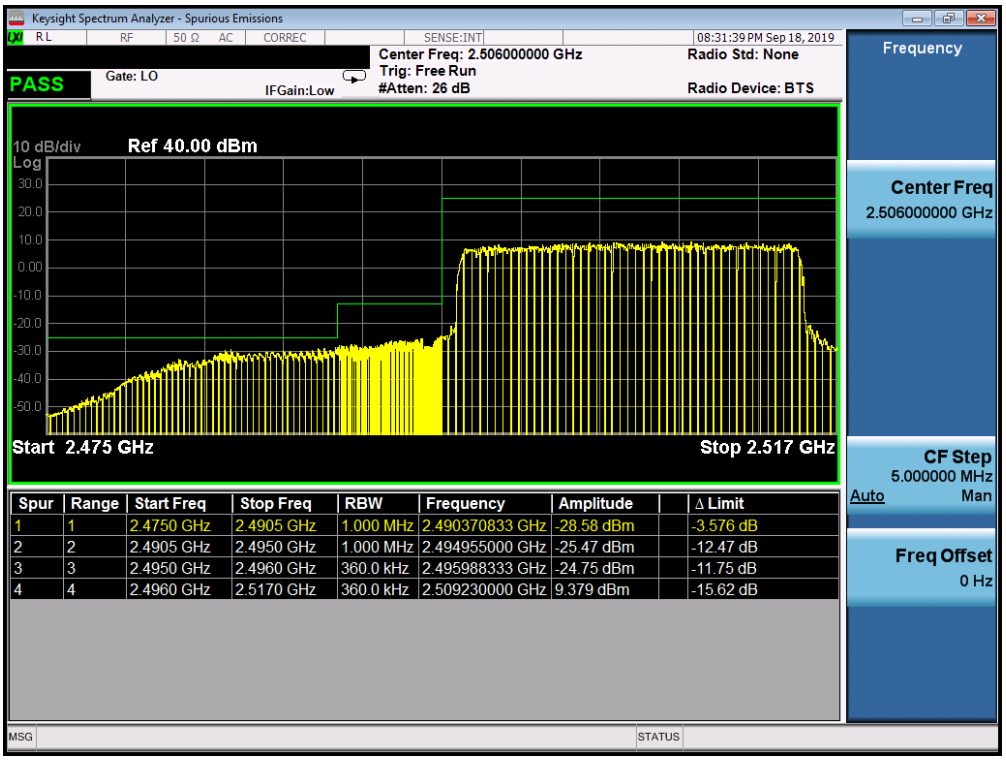
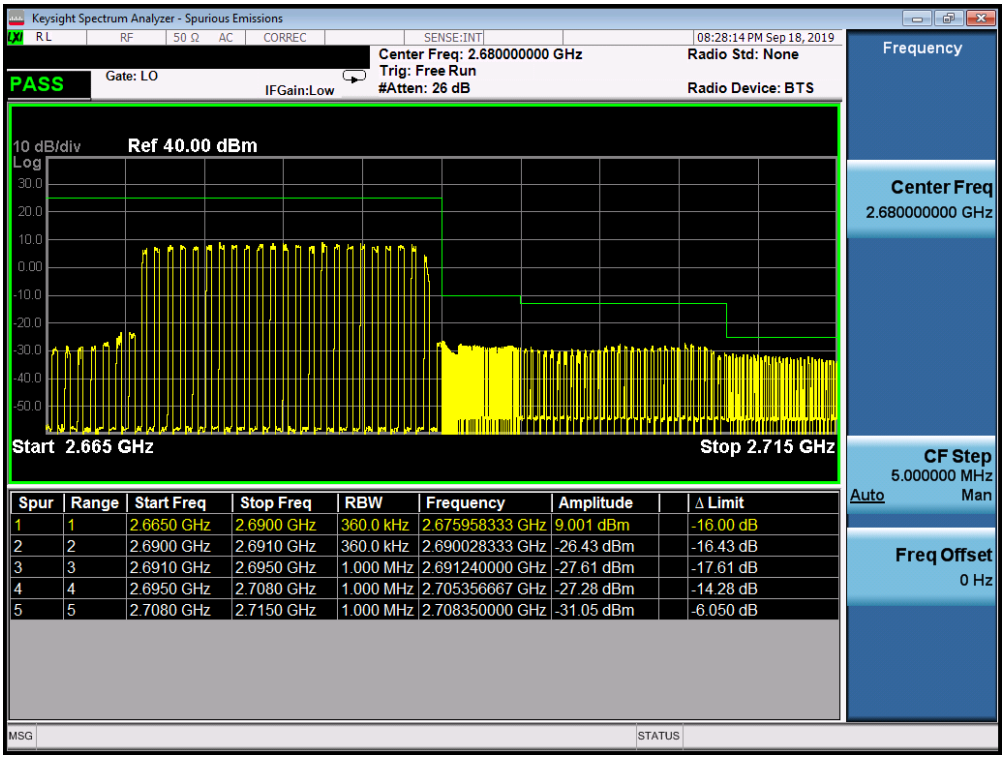


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490370833 GHz	-28.58 dBm	-3.576 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494955000 GHz	-25.47 dBm	-12.47 dB
3	3	2.4950 GHz	2.4960 GHz	360.0 kHz	2.495988333 GHz	-24.75 dBm	-11.75 dB
4	4	2.4960 GHz	2.5170 GHz	360.0 kHz	2.509230000 GHz	9.379 dBm	-15.62 dB

Plot 7-294. Lower ACP Plot (Band 41 (PC2) - 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	360.0 kHz	2.675958333 GHz	9.001 dBm	-16.00 dB
2	2	2.6900 GHz	2.6910 GHz	360.0 kHz	2.690028333 GHz	-26.43 dBm	-16.43 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691240000 GHz	-27.61 dBm	-17.61 dB
4	4	2.6950 GHz	2.7080 GHz	1.000 MHz	2.705356667 GHz	-27.28 dBm	-14.28 dB
5	5	2.7080 GHz	2.7150 GHz	1.000 MHz	2.708350000 GHz	-31.05 dBm	-6.050 dB

Plot 7-295. Upper ACP Plot (Band 41 (PC2) - 20.0MHz QPSK - Full RB Configuration)

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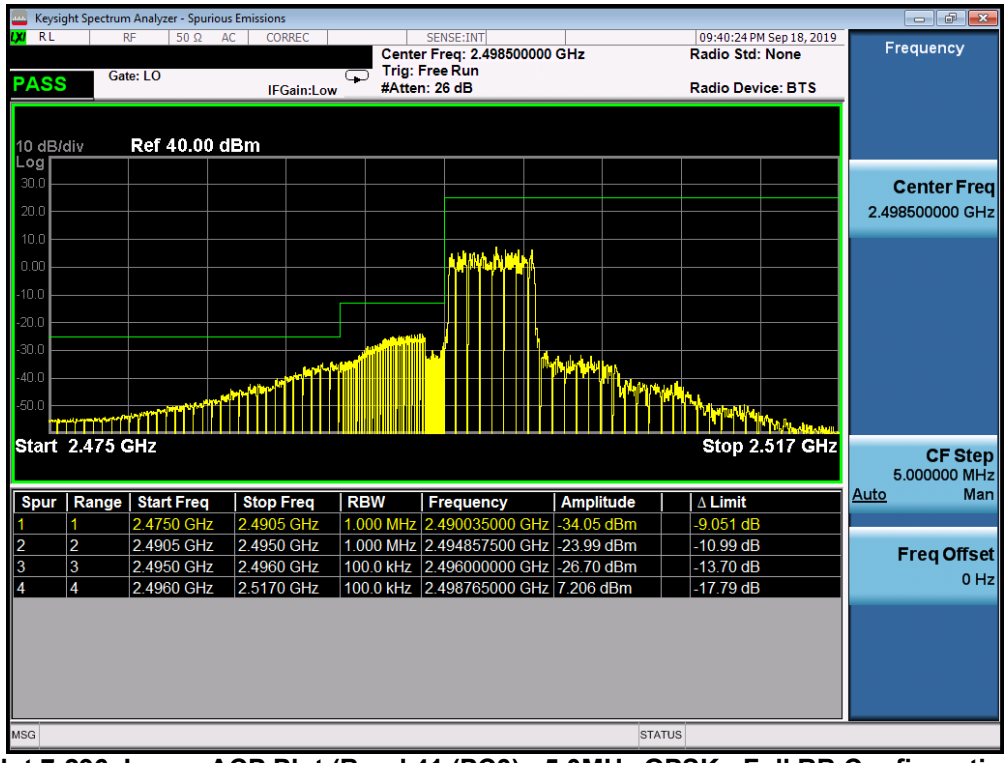
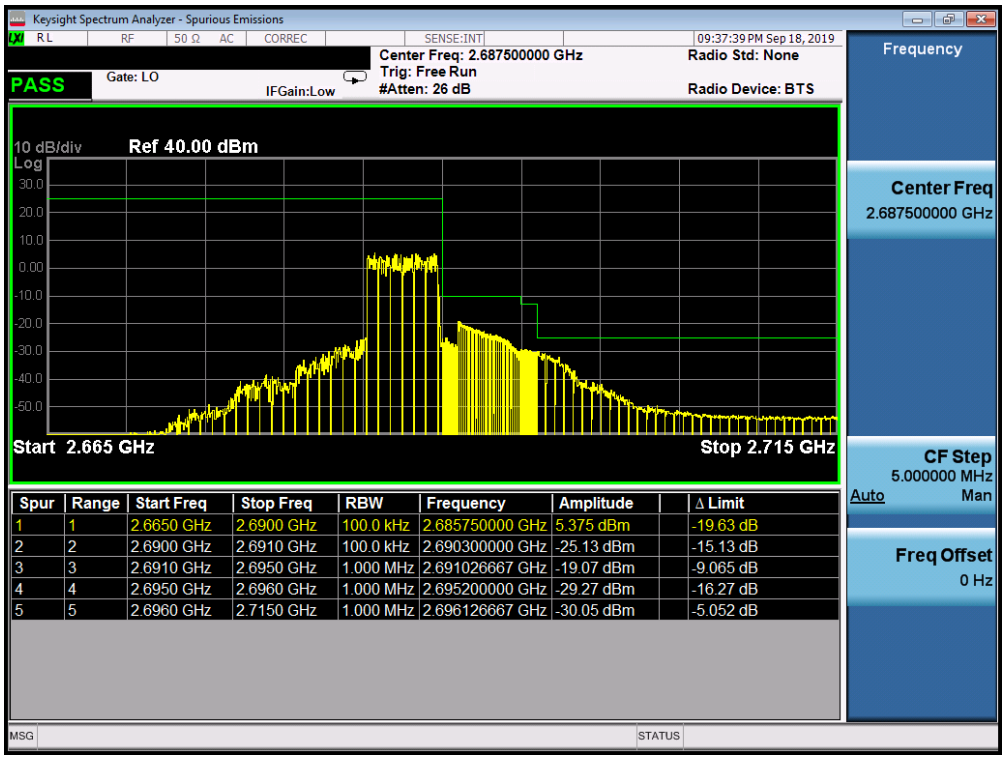
Band 41 PC3



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490035000 GHz	-34.05 dBm	-9.051 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494857500 GHz	-23.99 dBm	-10.99 dB
3	3	2.4950 GHz	2.4960 GHz	100.0 kHz	2.496000000 GHz	-26.70 dBm	-13.70 dB
4	4	2.4960 GHz	2.5170 GHz	100.0 kHz	2.498765000 GHz	7.206 dBm	-17.79 dB

Plot 7-296. 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	2.685750000 GHz	5.375 dBm	-19.63 dB
2	2	2.6900 GHz	2.6910 GHz	100.0 kHz	2.690300000 GHz	-25.13 dBm	-15.13 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691026667 GHz	-19.07 dBm	-9.065 dB
4	4	2.6950 GHz	2.6960 GHz	1.000 MHz	2.695200000 GHz	-29.27 dBm	-16.27 dB
5	5	2.6960 GHz	2.7150 GHz	1.000 MHz	2.696126667 GHz	-30.05 dBm	-5.052 dB

Plot 7-297. Upper ACP Plot (Band 41 (PC3) - 5.0MHz QPSK - Full RB Configuration)

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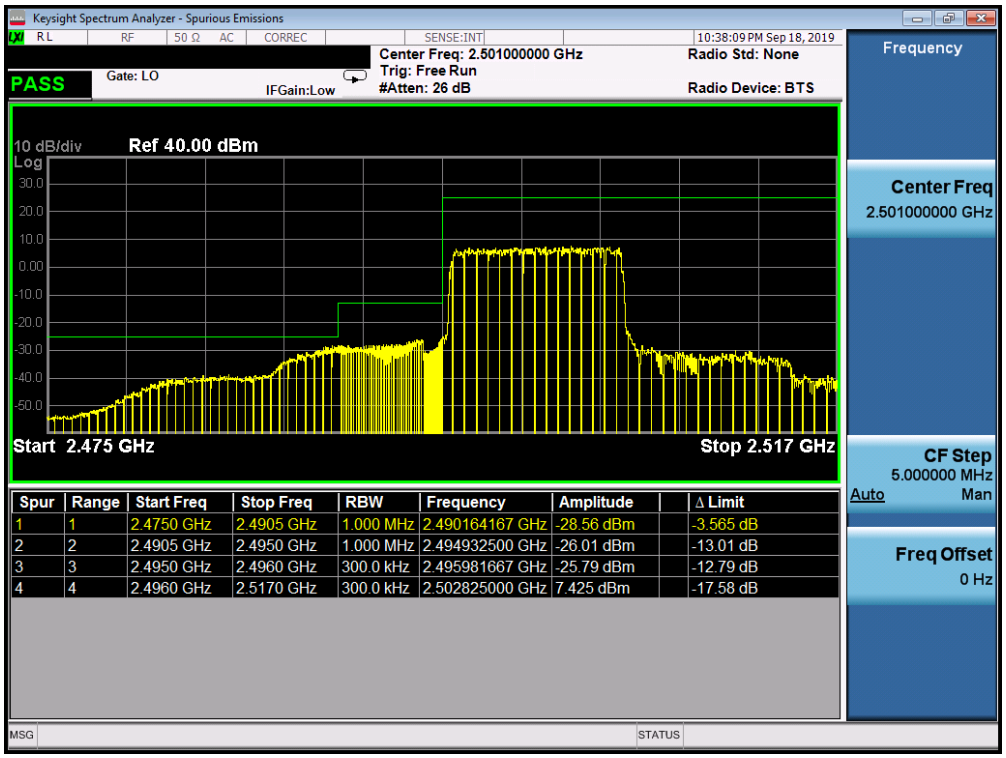
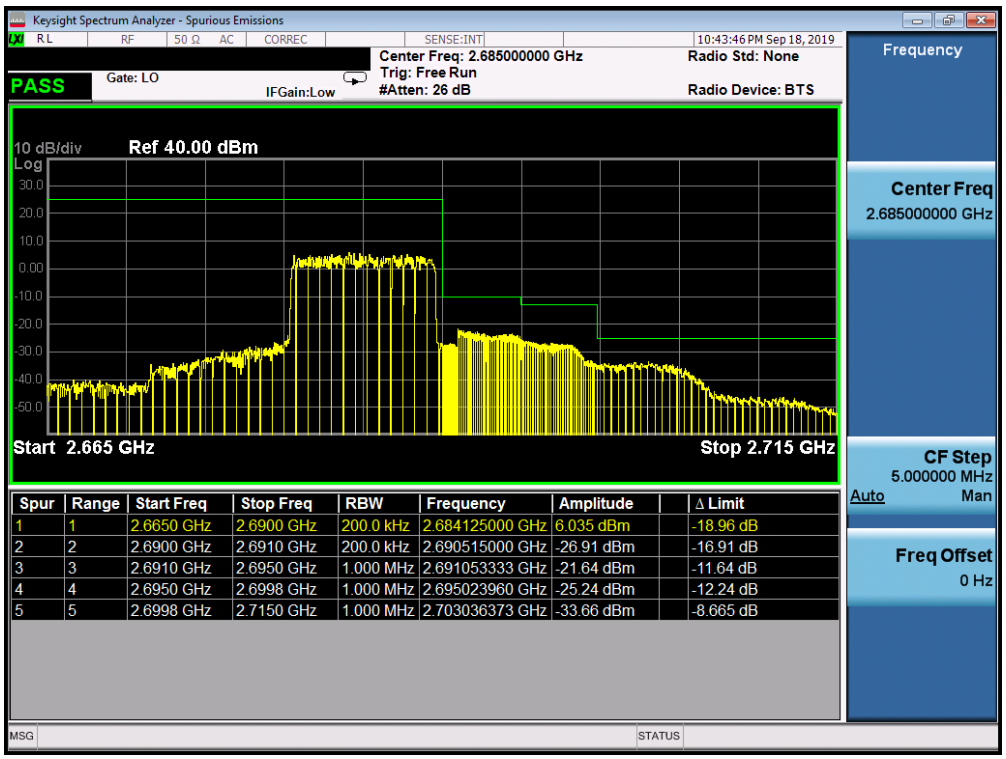


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490164167 GHz	-28.56 dBm	-3.565 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494932500 GHz	-26.01 dBm	-13.01 dB
3	3	2.4950 GHz	2.4960 GHz	300.0 kHz	2.495981667 GHz	-25.79 dBm	-12.79 dB
4	4	2.4960 GHz	2.5170 GHz	300.0 kHz	2.502825000 GHz	7.425 dBm	-17.58 dB

Plot 7-298. Lower ACP Plot (Band 41 (PC3) - 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	2.684125000 GHz	6.035 dBm	-18.96 dB
2	2	2.6900 GHz	2.6910 GHz	200.0 kHz	2.690515000 GHz	-26.91 dBm	-16.91 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691053333 GHz	-21.64 dBm	-11.64 dB
4	4	2.6950 GHz	2.6998 GHz	1.000 MHz	2.695023960 GHz	-25.24 dBm	-12.24 dB
5	5	2.6998 GHz	2.7150 GHz	1.000 MHz	2.703036373 GHz	-33.66 dBm	-8.665 dB

Plot 7-299. Upper ACP Plot (Band 41 (PC3) - 10.0MHz QPSK - Full RB Configuration)

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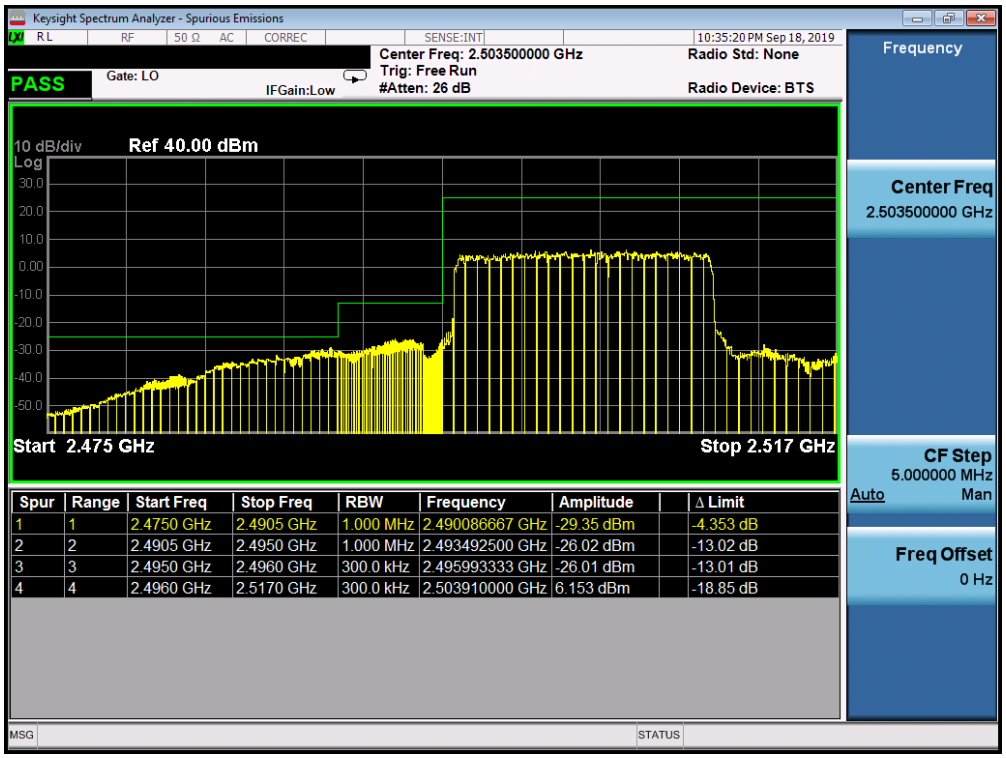
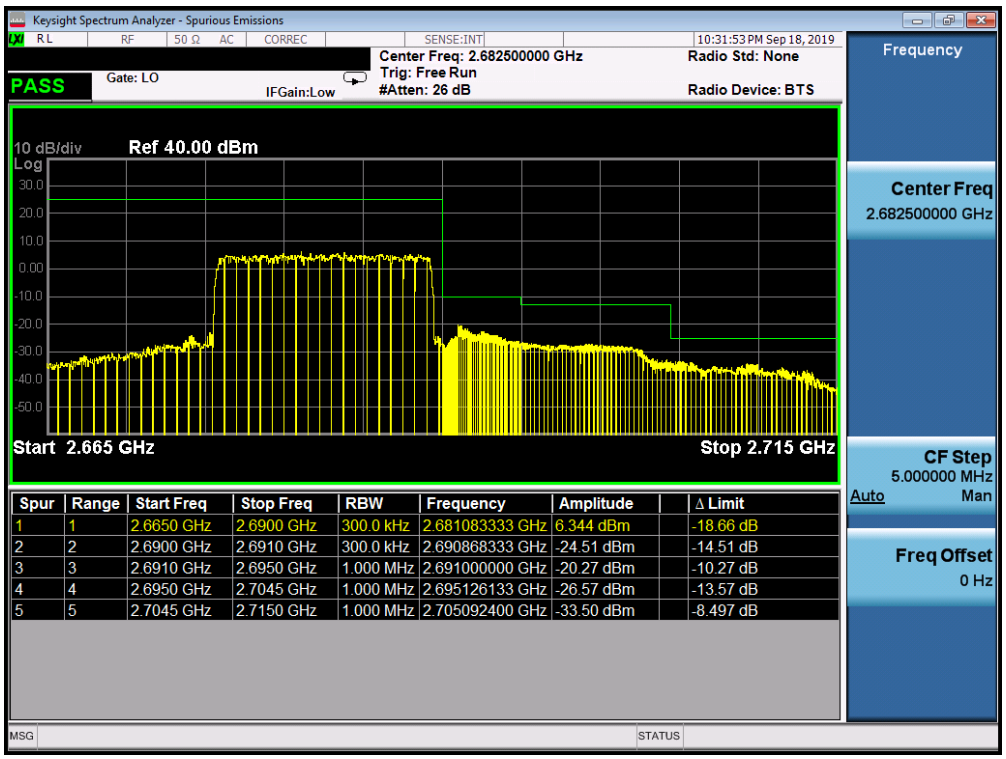


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490086667 GHz	-29.35 dBm	-4.353 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.493492500 GHz	-26.02 dBm	-13.02 dB
3	3	2.4950 GHz	2.4960 GHz	300.0 kHz	2.495993333 GHz	-26.01 dBm	-13.01 dB
4	4	2.4960 GHz	2.5170 GHz	300.0 kHz	2.503910000 GHz	6.153 dBm	-18.85 dB

Plot 7-300. 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	2.681083333 GHz	6.344 dBm	-18.66 dB
2	2	2.6900 GHz	2.6910 GHz	300.0 kHz	2.690868333 GHz	-24.51 dBm	-14.51 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691000000 GHz	-20.27 dBm	-10.27 dB
4	4	2.6950 GHz	2.7045 GHz	1.000 MHz	2.695126133 GHz	-26.57 dBm	-13.57 dB
5	5	2.7045 GHz	2.7150 GHz	1.000 MHz	2.705092400 GHz	-33.50 dBm	-8.497 dB

Plot 7-301. Upper ACP Plot (Band 41 (PC3) - 15.0MHz QPSK - Full RB Configuration)

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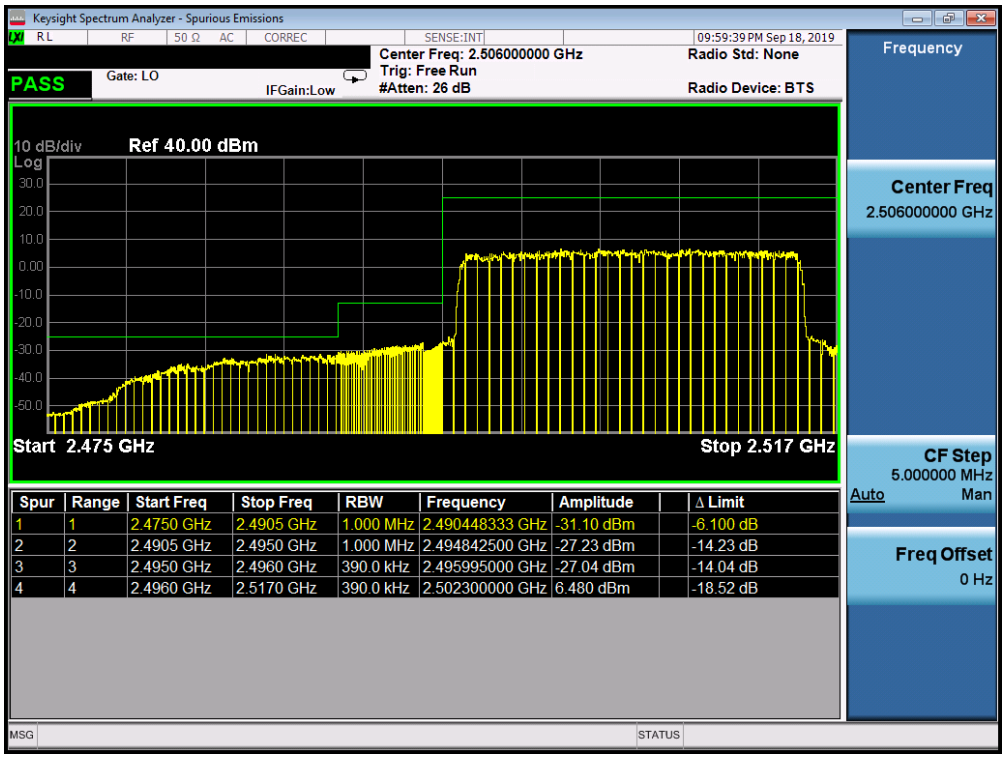
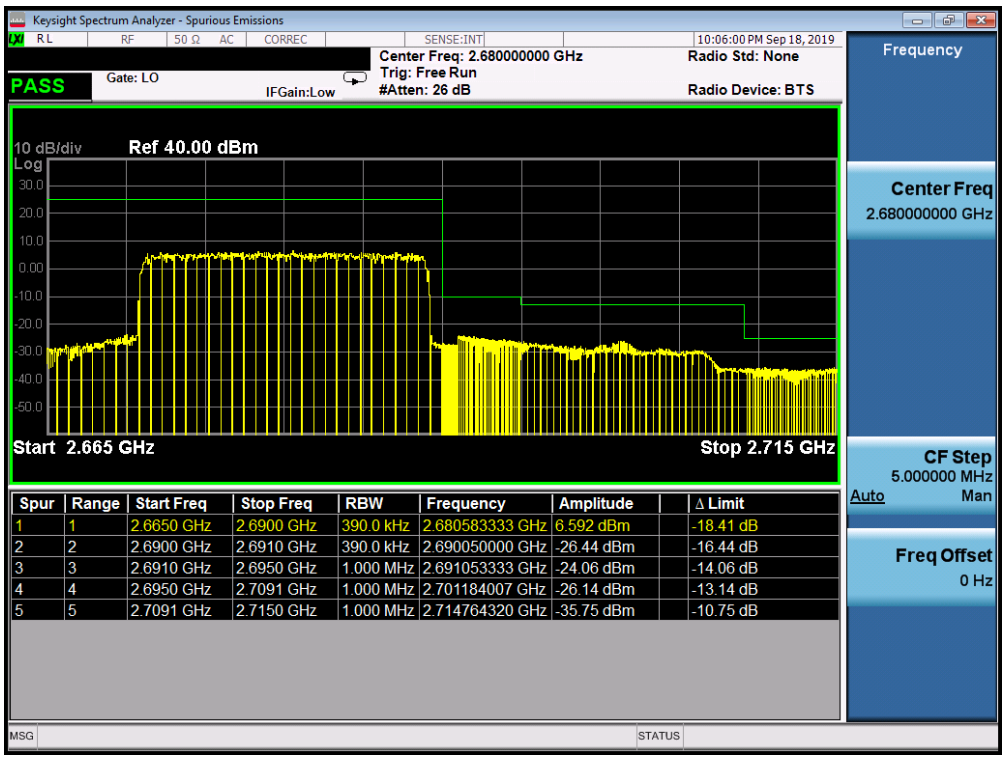


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490448333 GHz	-31.10 dBm	-6.100 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494842500 GHz	-27.23 dBm	-14.23 dB
3	3	2.4950 GHz	2.4960 GHz	390.0 kHz	2.495995000 GHz	-27.04 dBm	-14.04 dB
4	4	2.4960 GHz	2.5170 GHz	390.0 kHz	2.502300000 GHz	6.480 dBm	-18.52 dB

Plot 7-302. 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	390.0 kHz	2.680583333 GHz	6.592 dBm	-18.41 dB
2	2	2.6900 GHz	2.6910 GHz	390.0 kHz	2.690050000 GHz	-26.44 dBm	-16.44 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691053333 GHz	-24.06 dBm	-14.06 dB
4	4	2.6950 GHz	2.7091 GHz	1.000 MHz	2.701184007 GHz	-26.14 dBm	-13.14 dB
5	5	2.7091 GHz	2.7150 GHz	1.000 MHz	2.714764320 GHz	-35.75 dBm	-10.75 dB

Plot 7-303. 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.

Test Setup

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

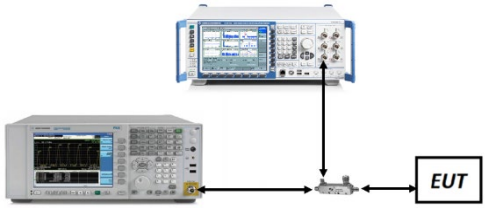

Figure 7-4. Test Instrument & Measurement Setup

Test Notes

None.

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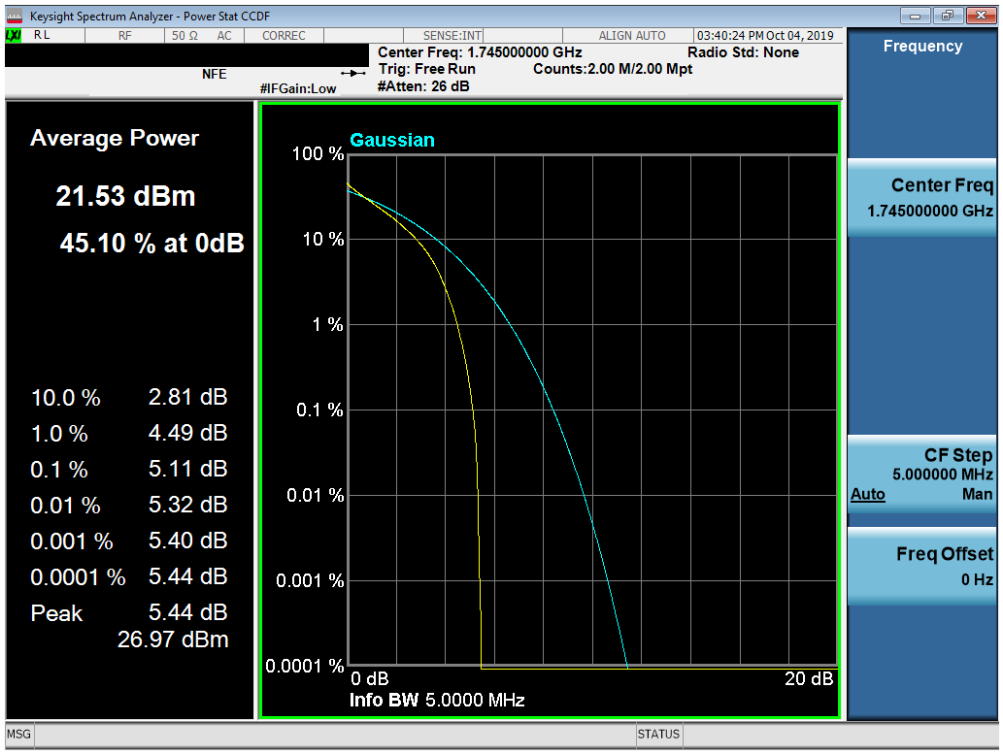
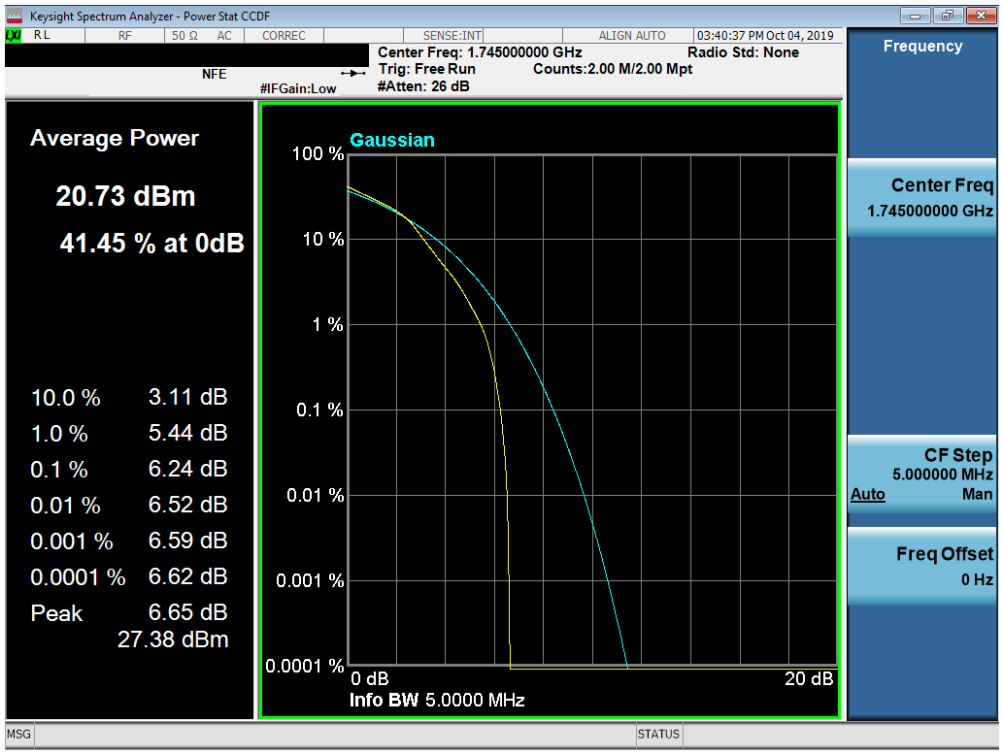
Band 66/4



Plot 7-304. PAR Plot (Band 66/4 - 1.4MHz QPSK - Full RB Configuration)



Plot 7-305. PAR Plot (Band 66/4 - 1.4MHz 16-QAM - Full RB Configuration)

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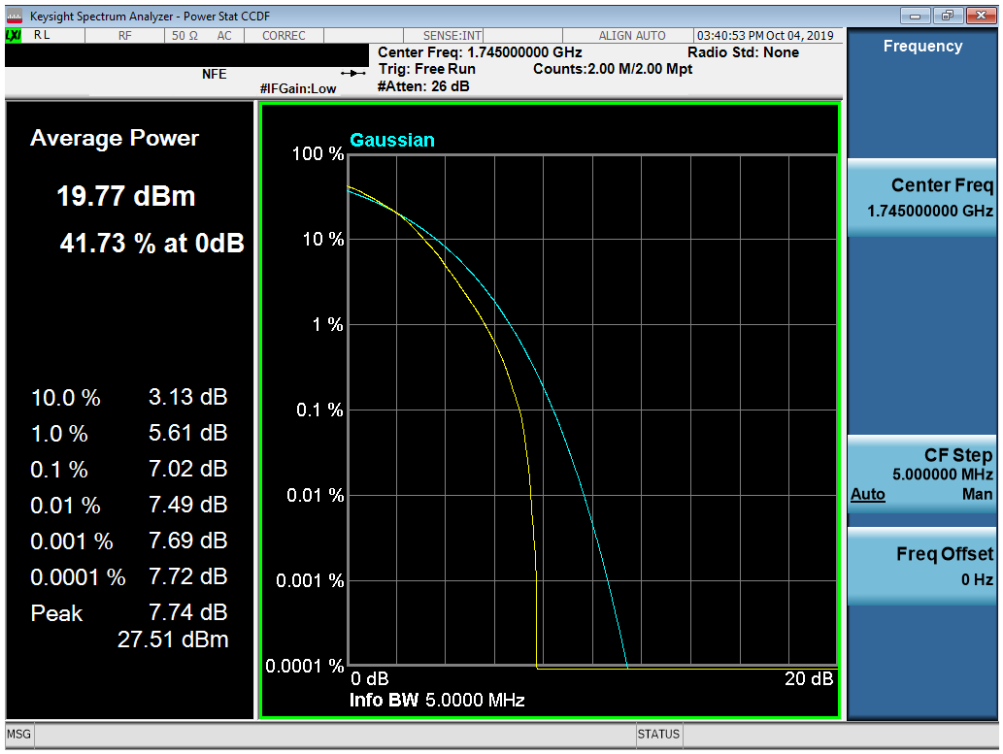
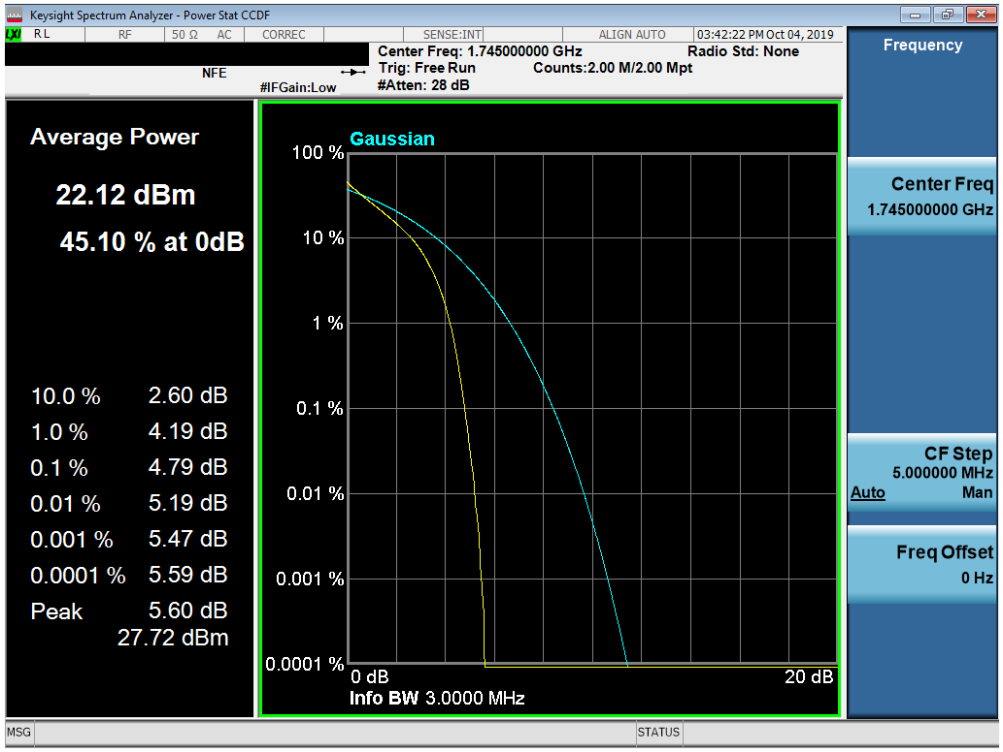


Plot 7-306. PAR Plot (Band 66/4 - 1.4MHz 64-QAM - Full RB Configuration)



Plot 7-307. PAR Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)

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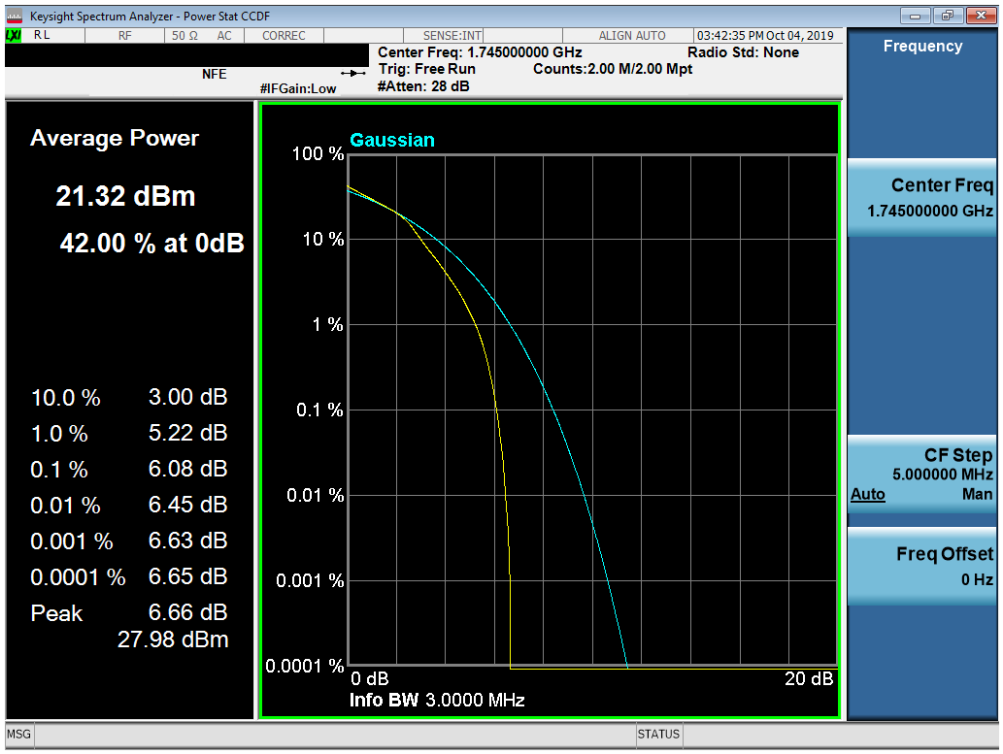
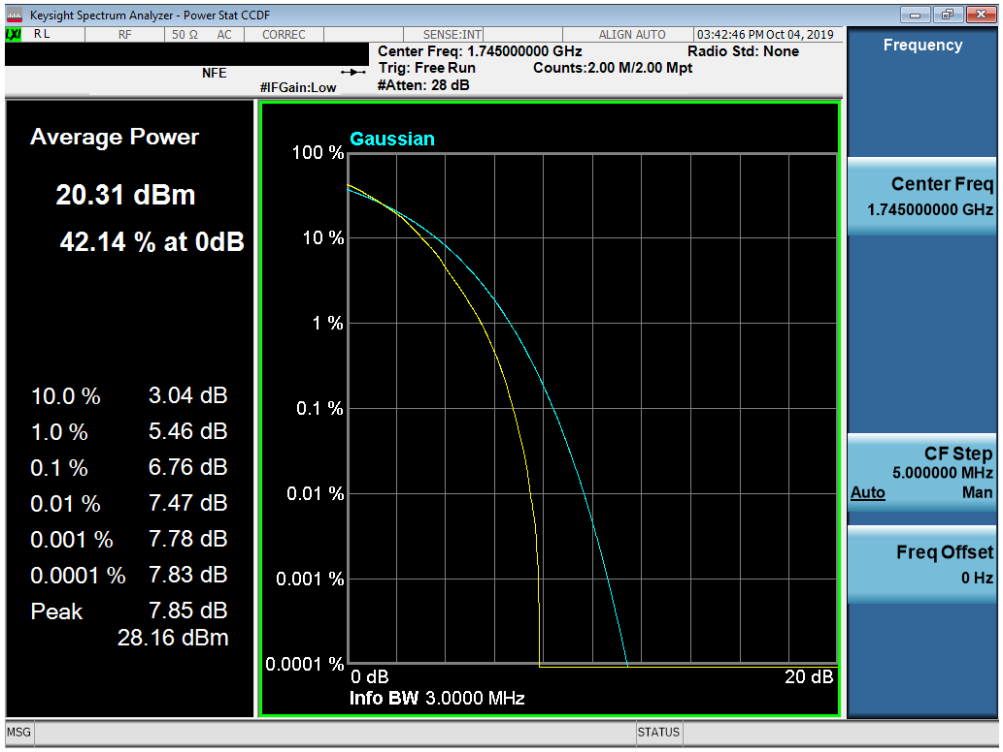


Plot 7-308. PAR Plot (Band 66/4 - 3.0MHz 16-QAM - Full RB Configuration)



Plot 7-309. PAR Plot (Band 66/4 - 3.0MHz 64-QAM - Full RB Configuration)

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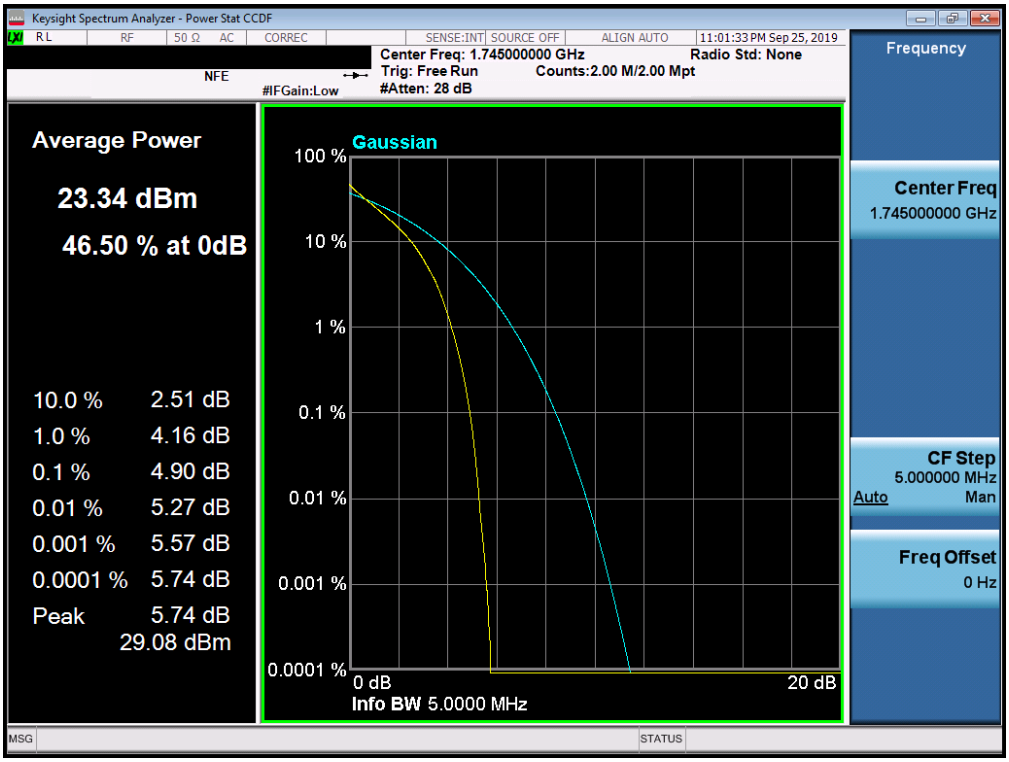
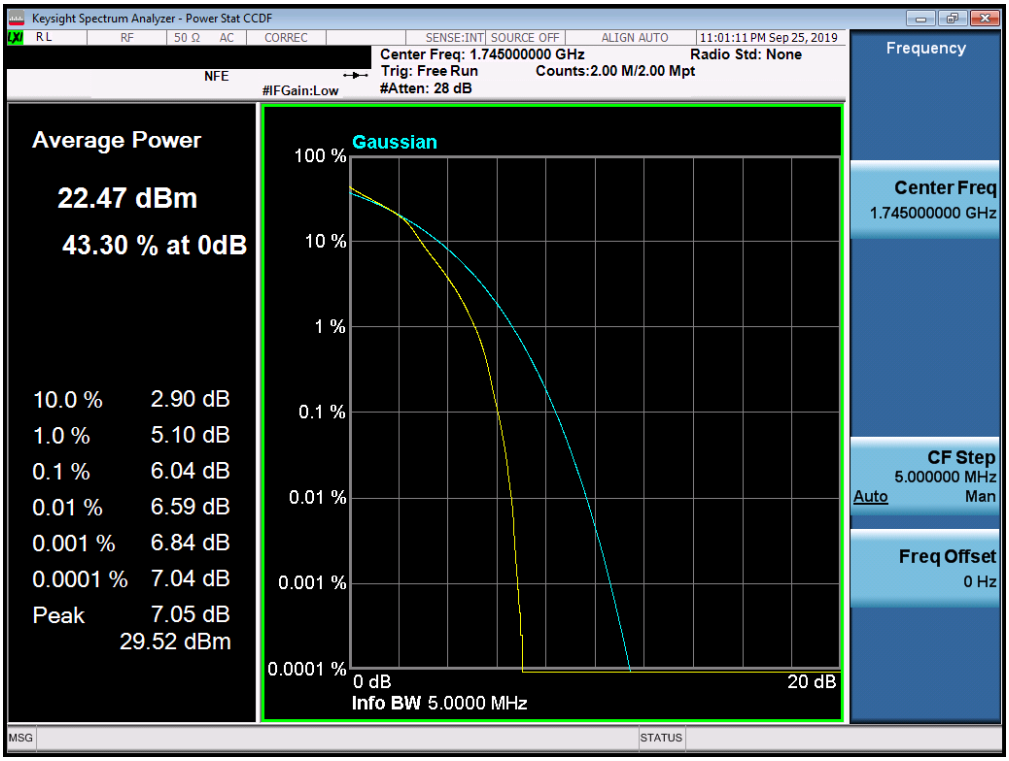


Plot 7-310. PAR Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-311. PAR Plot (Band 66/4 - 5.0MHz 16-QAM - Full RB Configuration)

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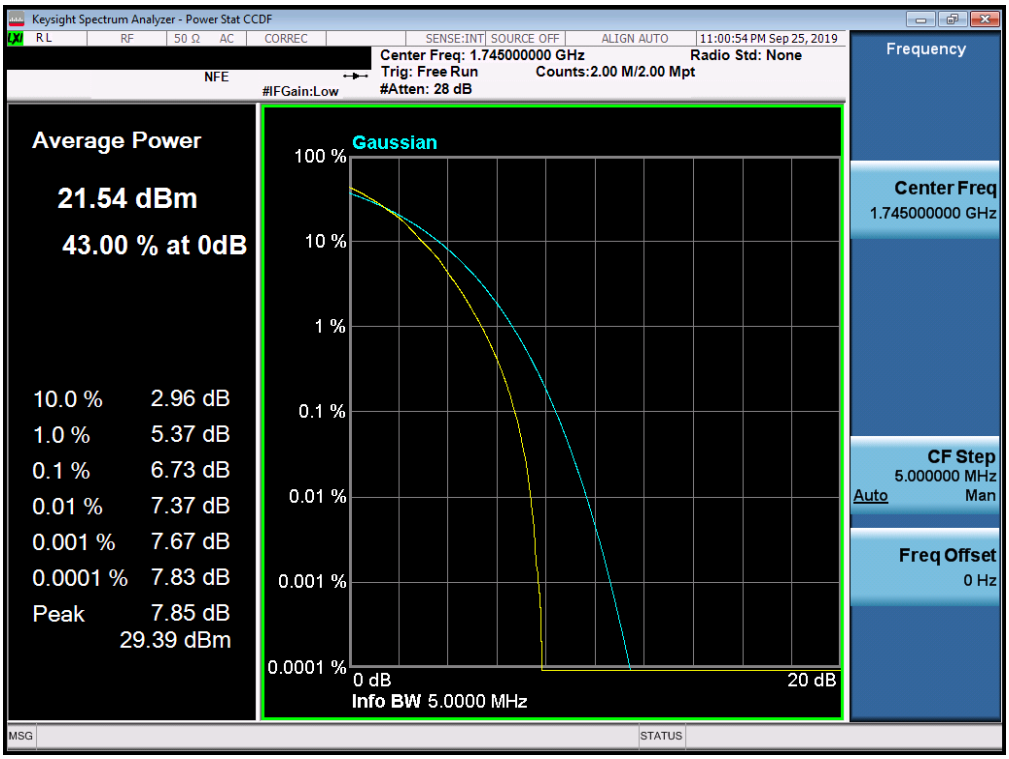
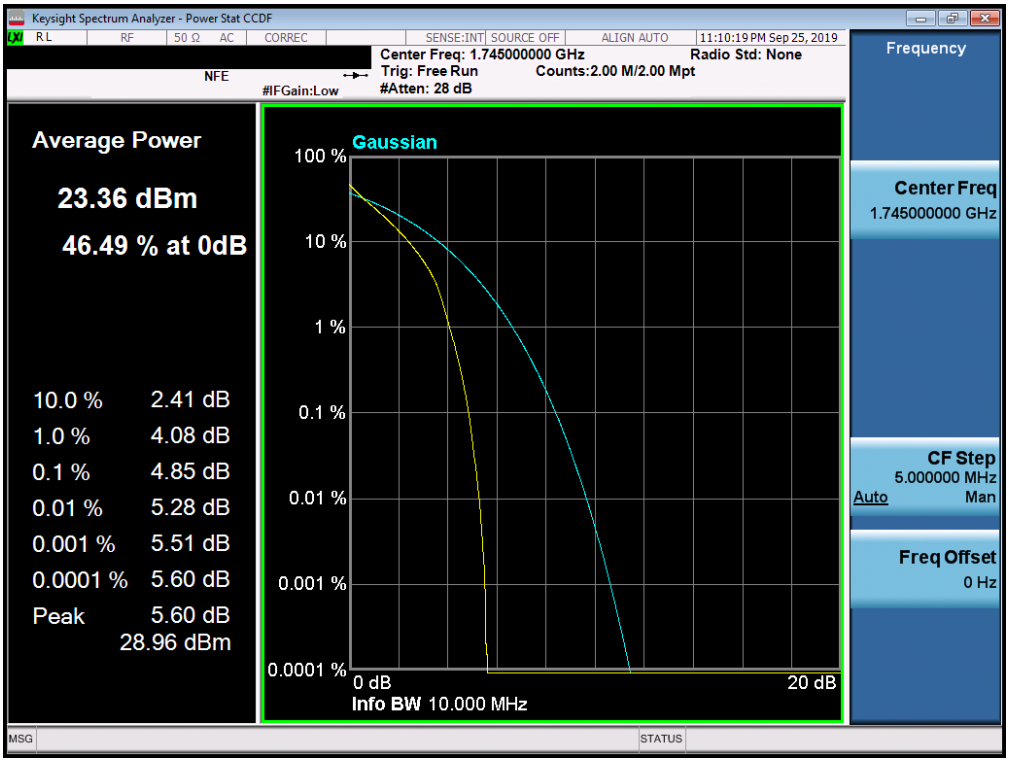


Plot 7-312. PAR Plot (Band 66/4 - 5.0MHz 64-QAM - Full RB Configuration)



Plot 7-313. PAR Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)

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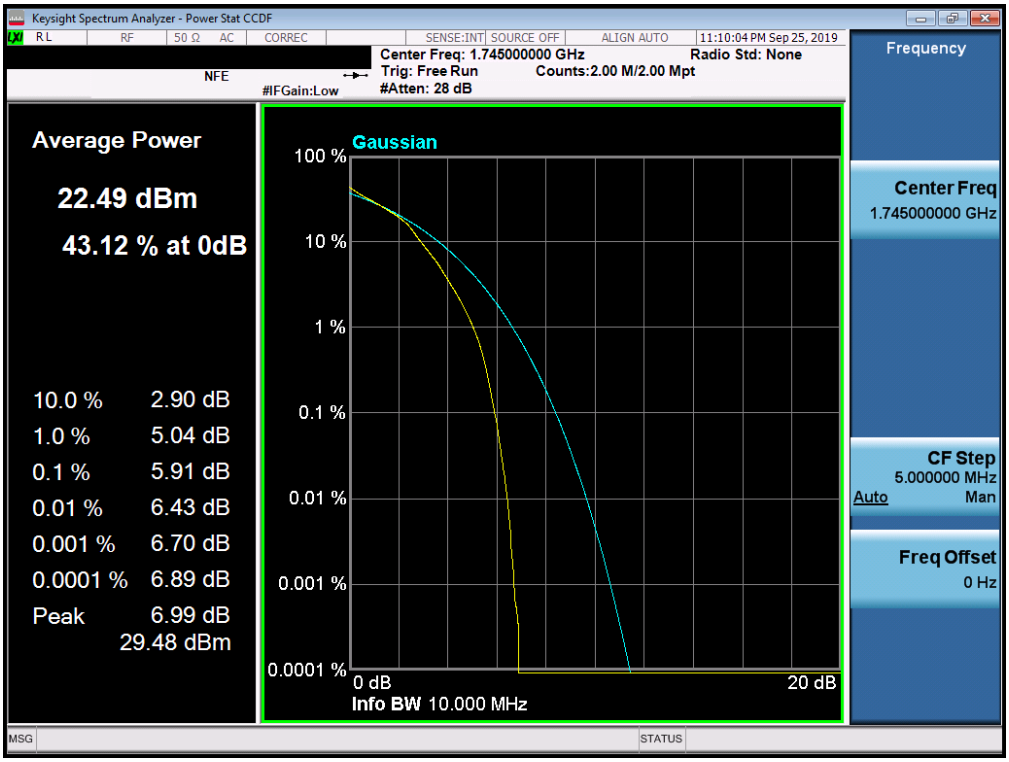
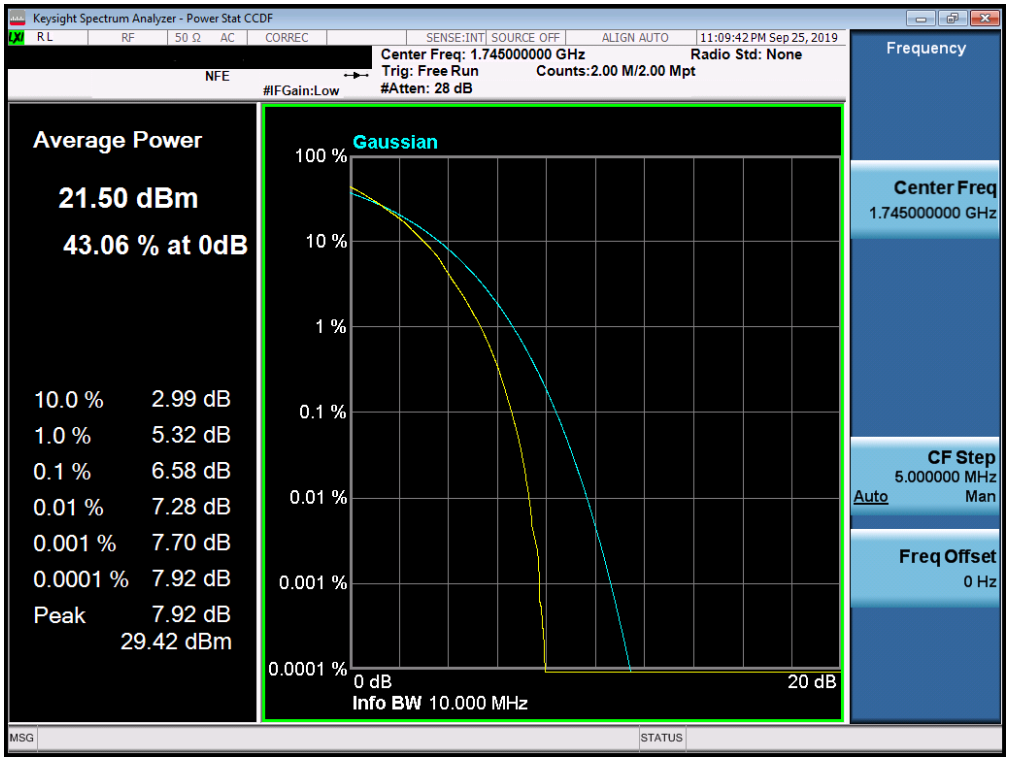


Plot 7-314. PAR Plot (Band 66/4 - 10.0MHz 16-QAM - Full RB Configuration)



Plot 7-315. PAR Plot (Band 66/4 - 10.0MHz 64-QAM - Full RB Configuration)

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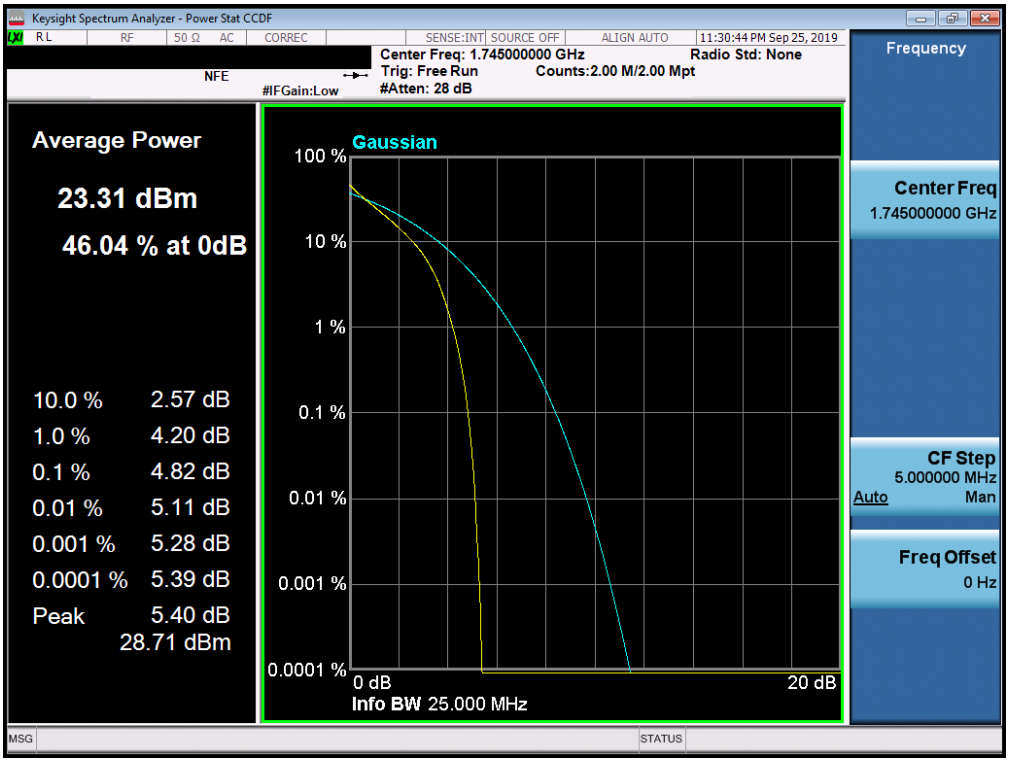
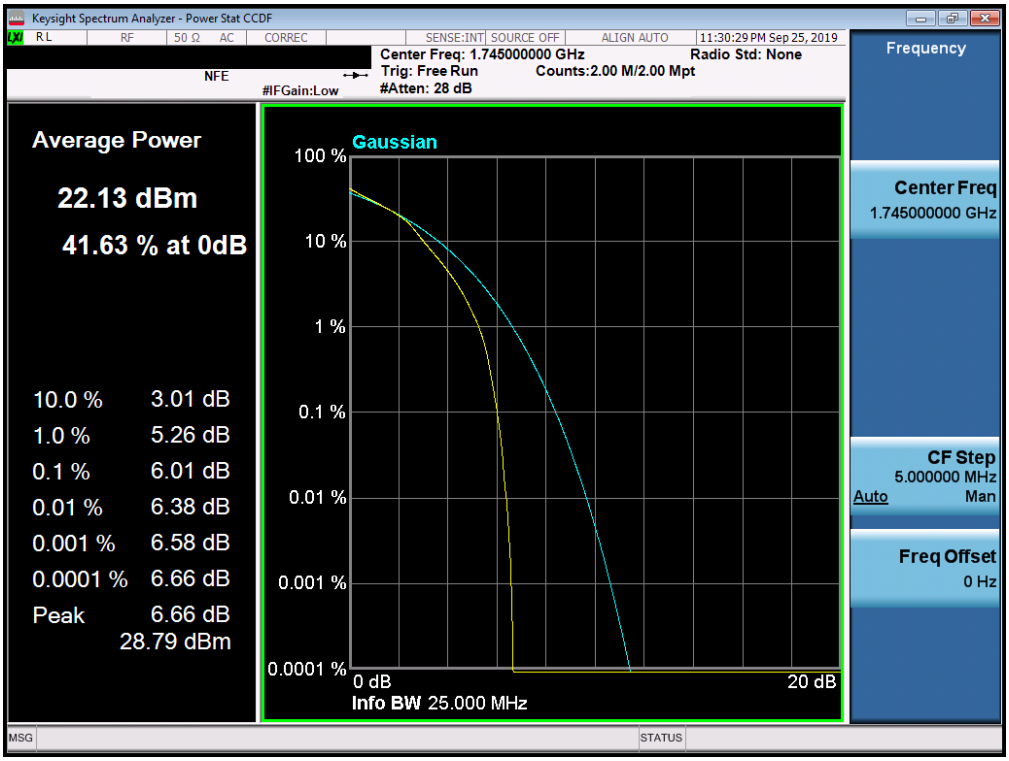


Plot 7-316. PAR Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-317. PAR Plot (Band 66/4 - 15.0MHz 16-QAM - Full RB Configuration)

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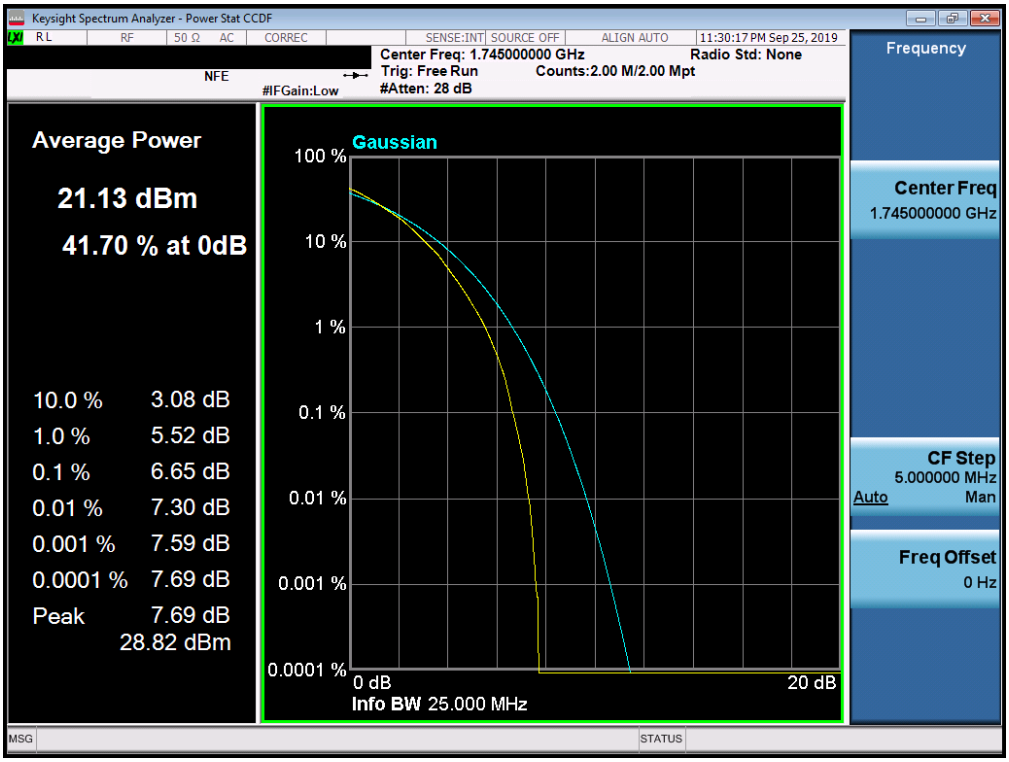
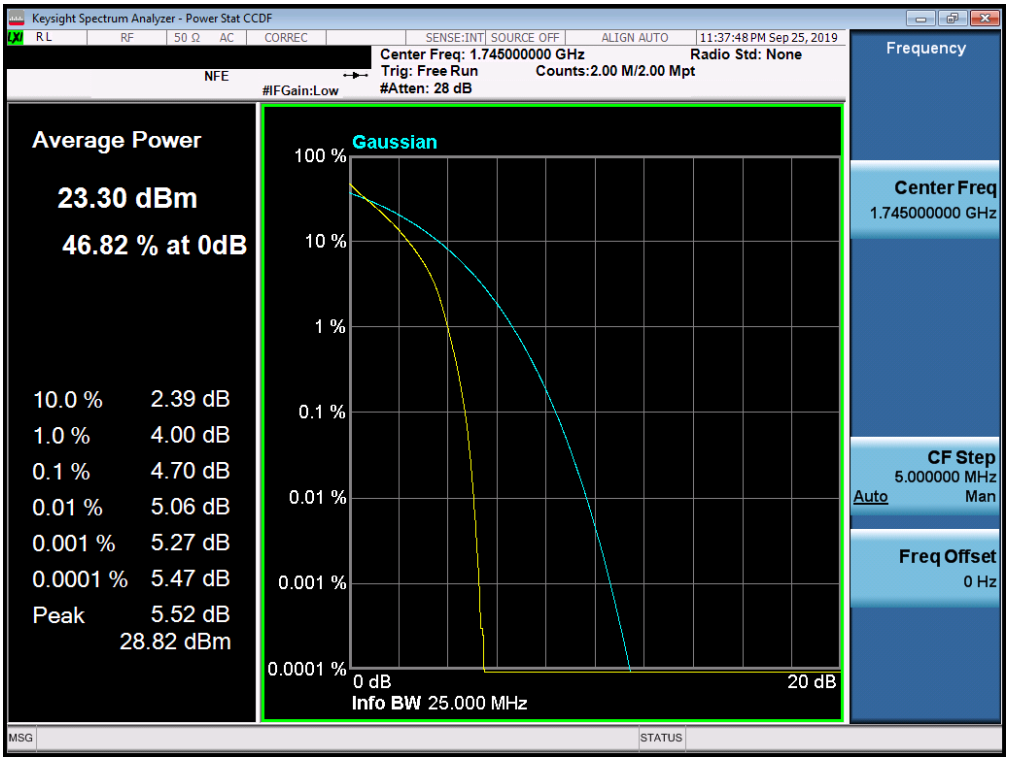


Plot 7-318. PAR Plot (Band 66/4 - 15.0MHz 64-QAM - Full RB Configuration)



Plot 7-319. PAR Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)

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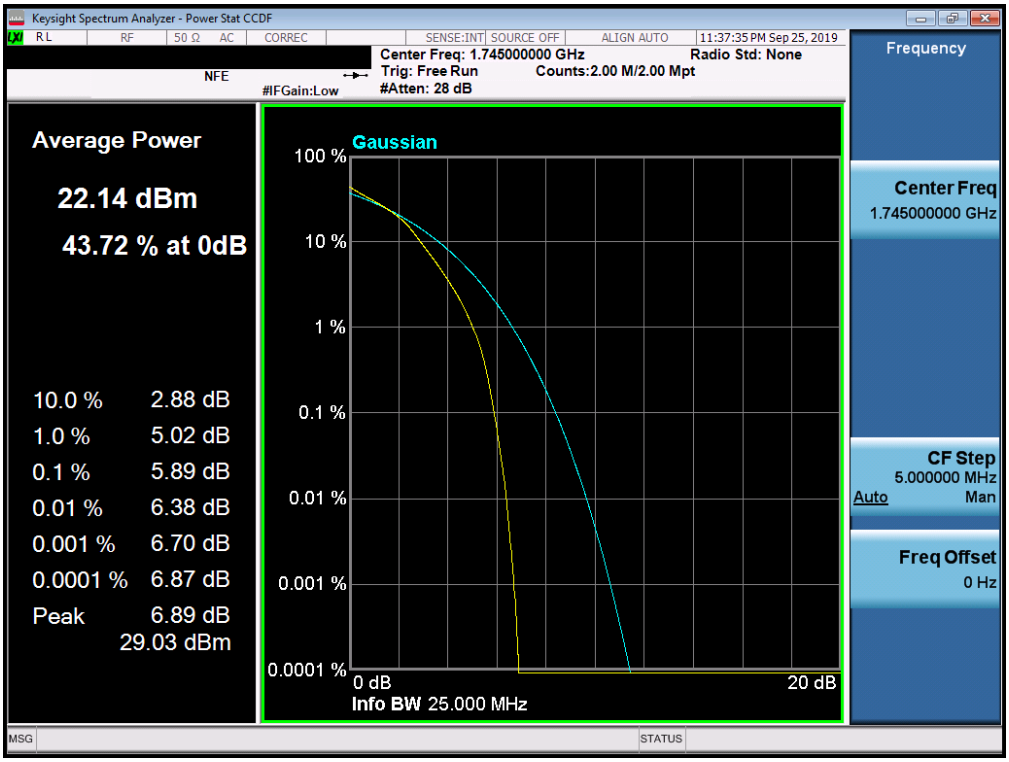
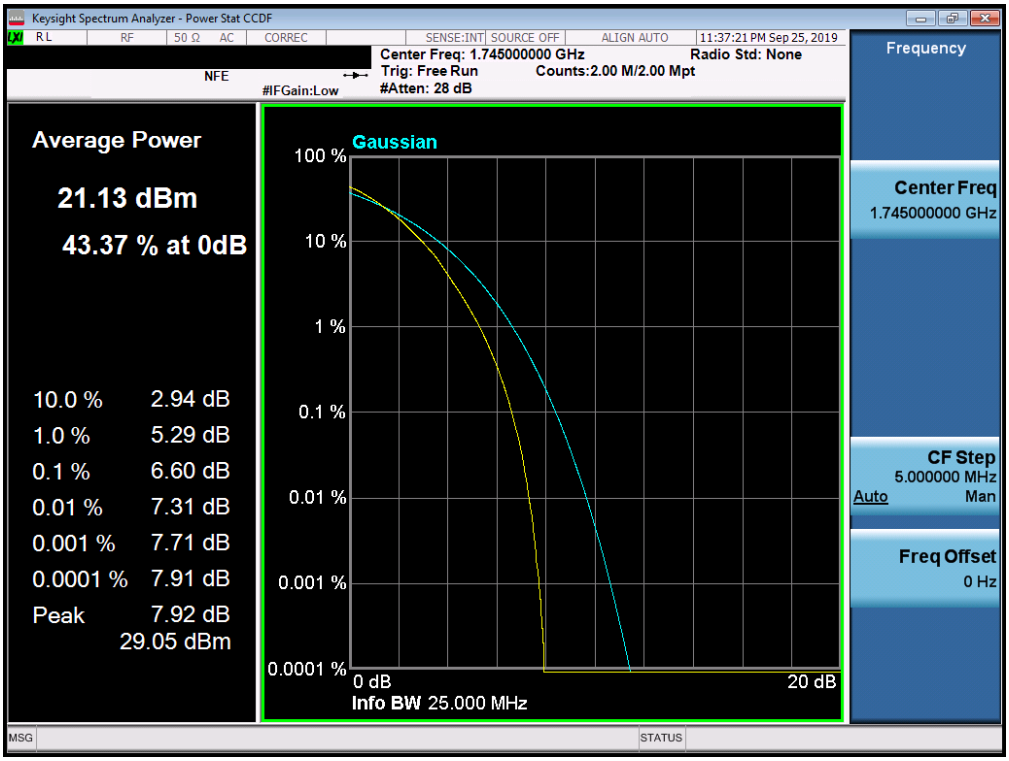


Plot 7-320. PAR Plot (Band 66/4 - 20.0MHz 16-QAM - Full RB Configuration)



Plot 7-321. PAR Plot (Band 66/4 - 20.0MHz 64-QAM - Full RB Configuration)

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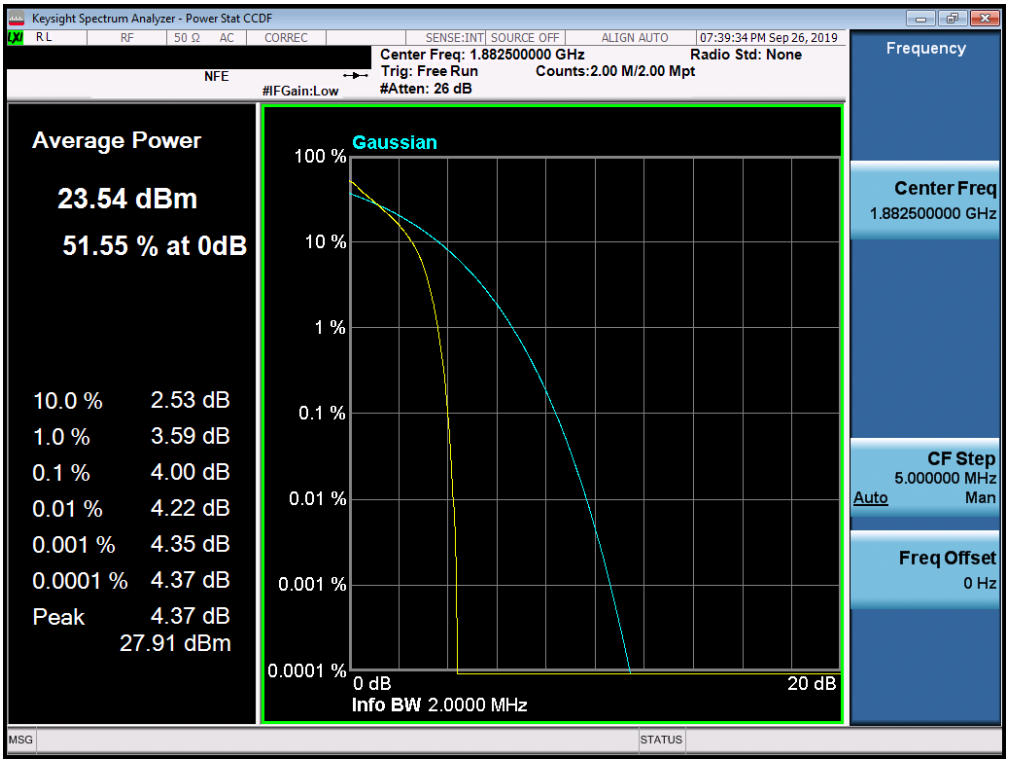
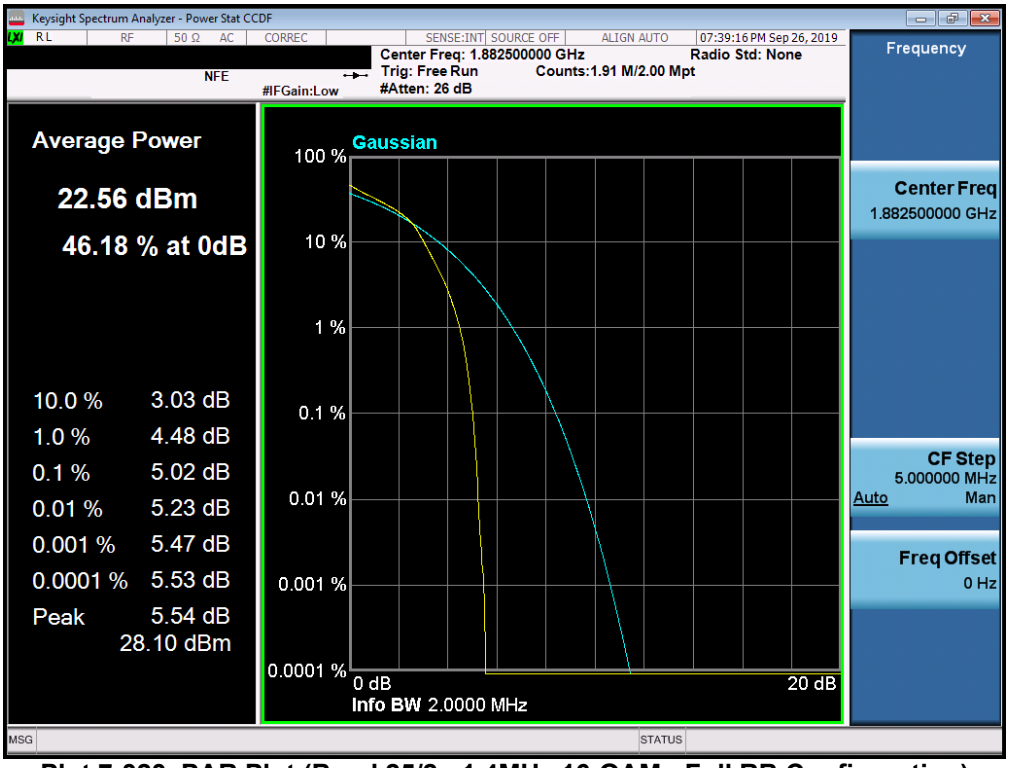
Band 25/2



Plot 7-322. PAR Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)



Plot 7-323. PAR Plot (Band 25/2 - 1.4MHz 16-QAM - Full RB Configuration)

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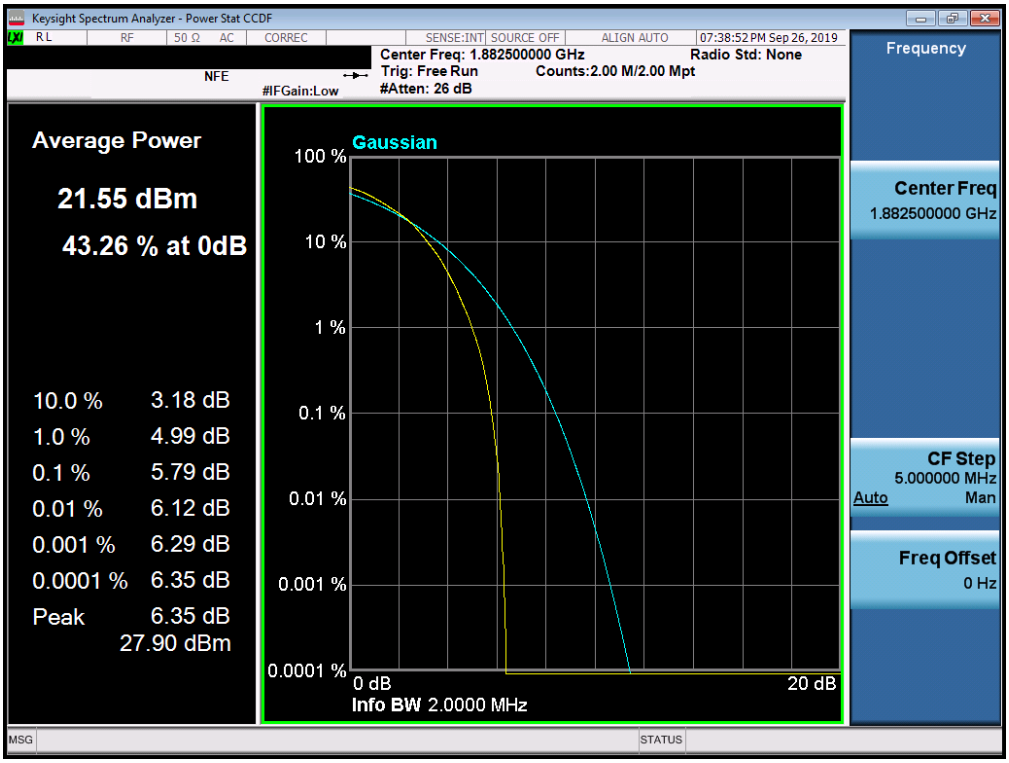
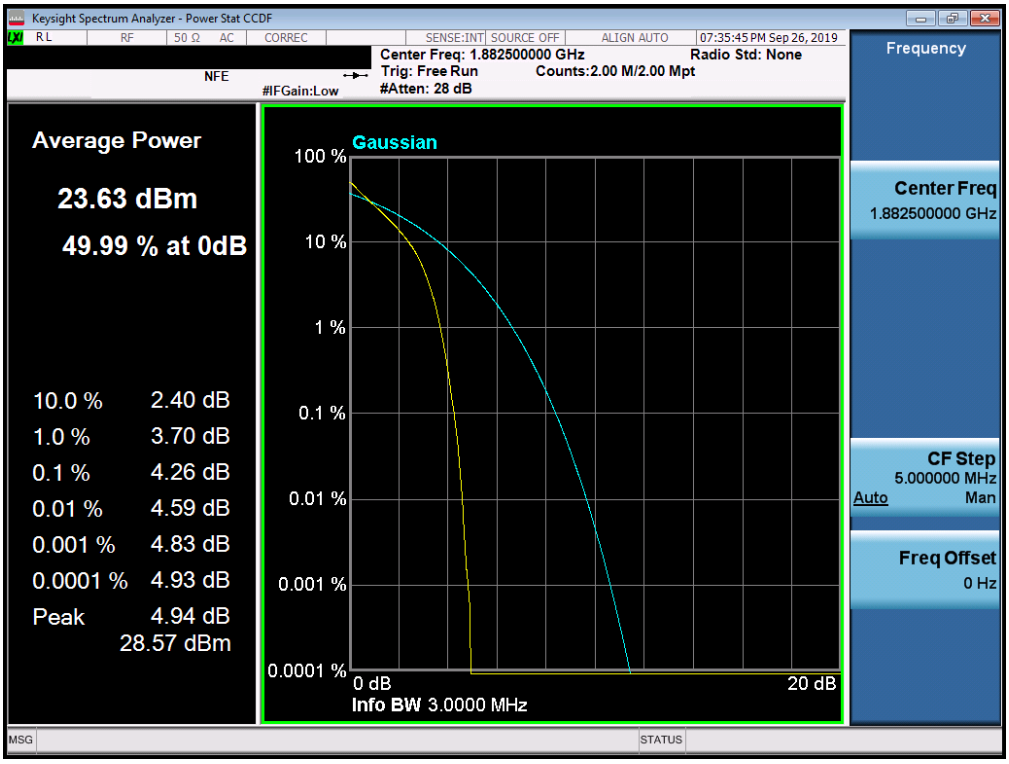


Plot 7-324. PAR Plot (Band 25/2 - 1.4MHz 64-QAM - Full RB Configuration)



Plot 7-325. PAR Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

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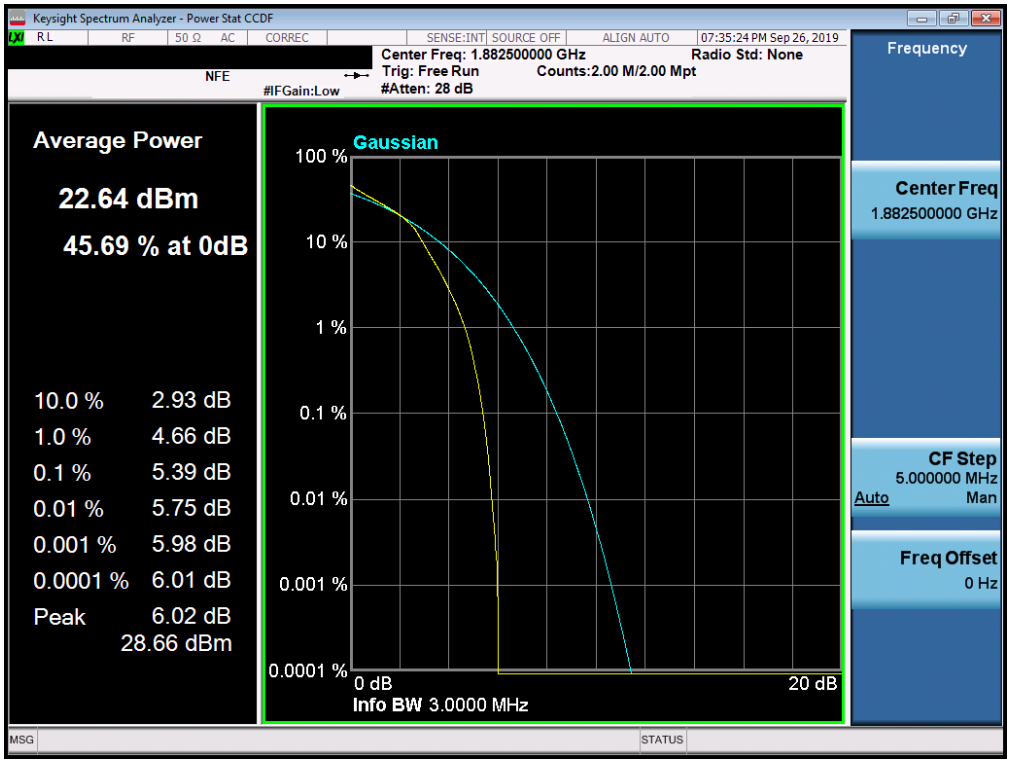
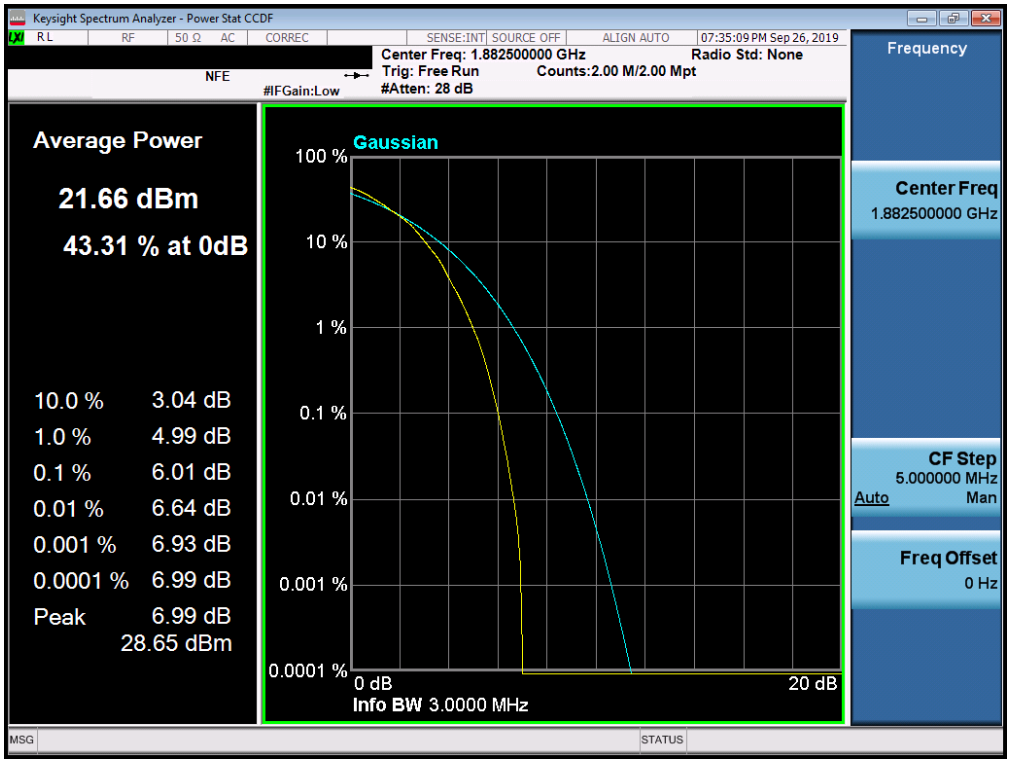


Plot 7-326. PAR Plot (Band 25/2 - 3.0MHz 16-QAM - Full RB Configuration)



Plot 7-327. PAR Plot (Band 25/2 - 3.0MHz 64-QAM - Full RB Configuration)

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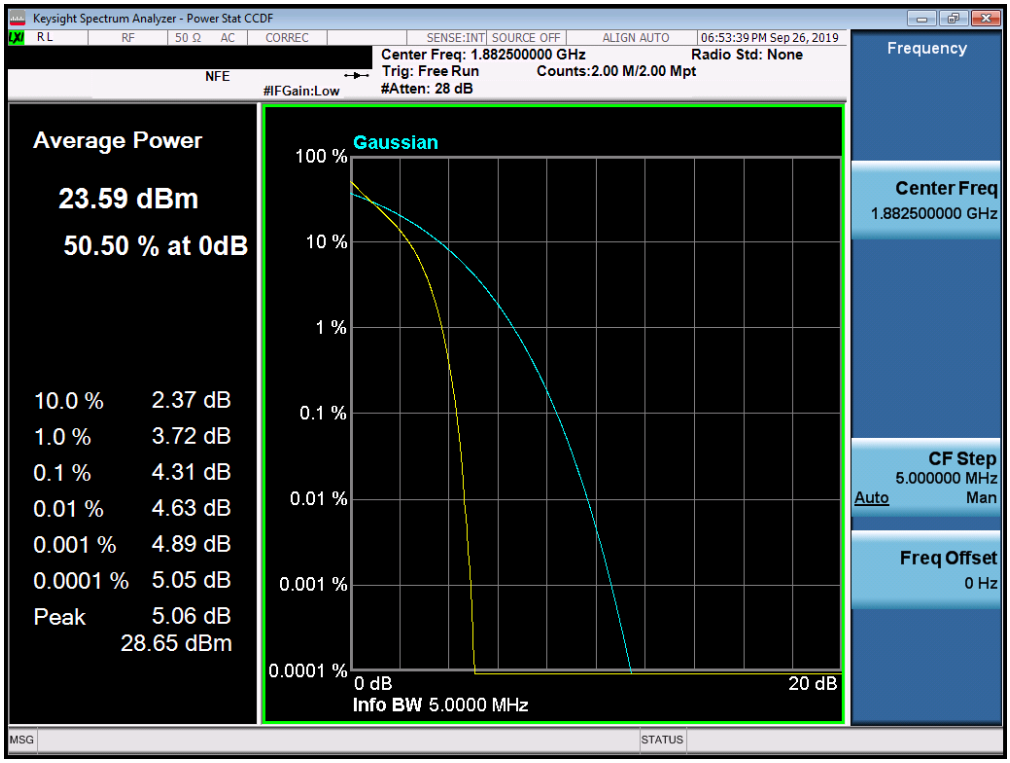
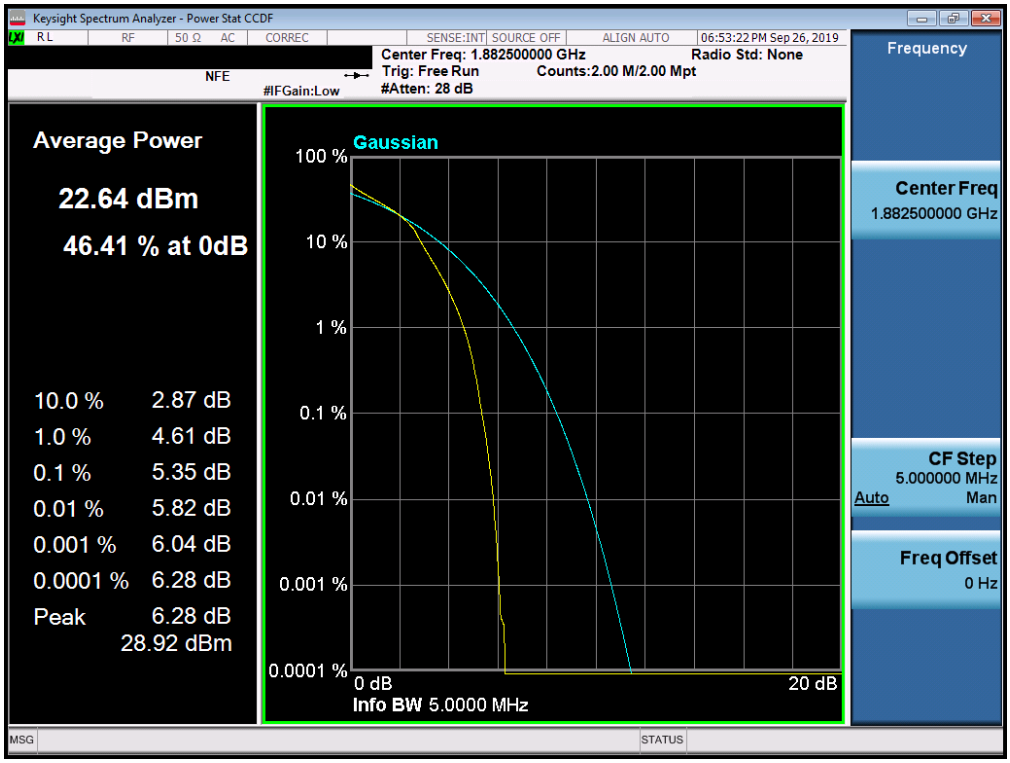


Plot 7-328. PAR Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-329. PAR Plot (Band 25/2 - 5.0MHz 16-QAM - Full RB Configuration)

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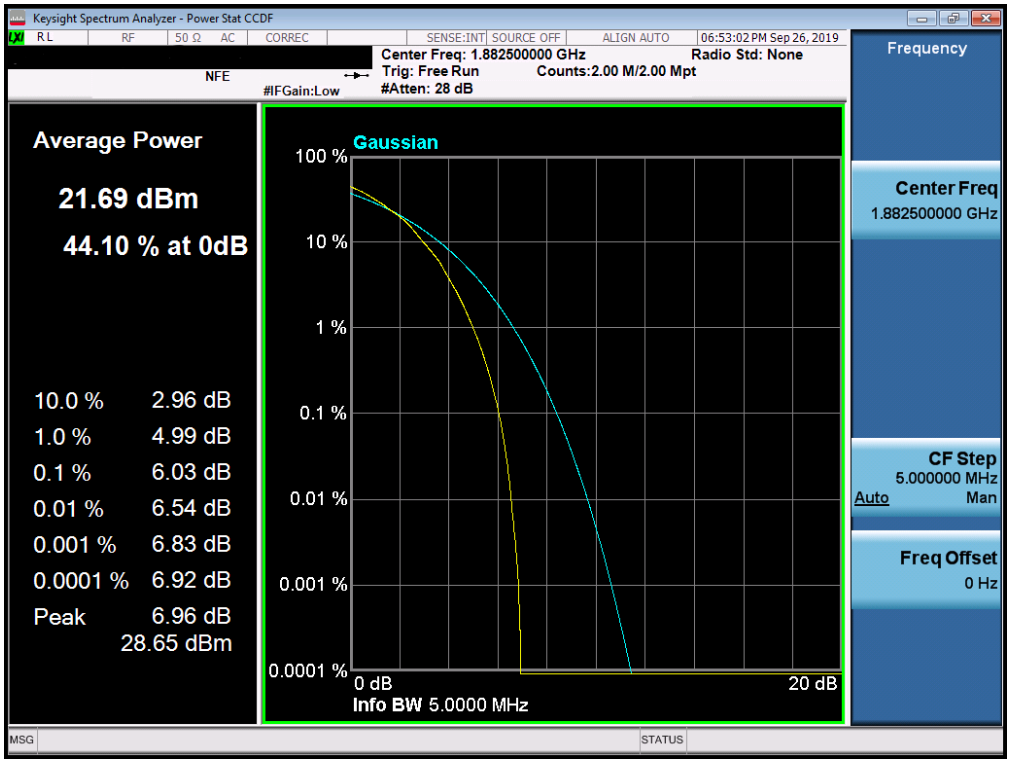
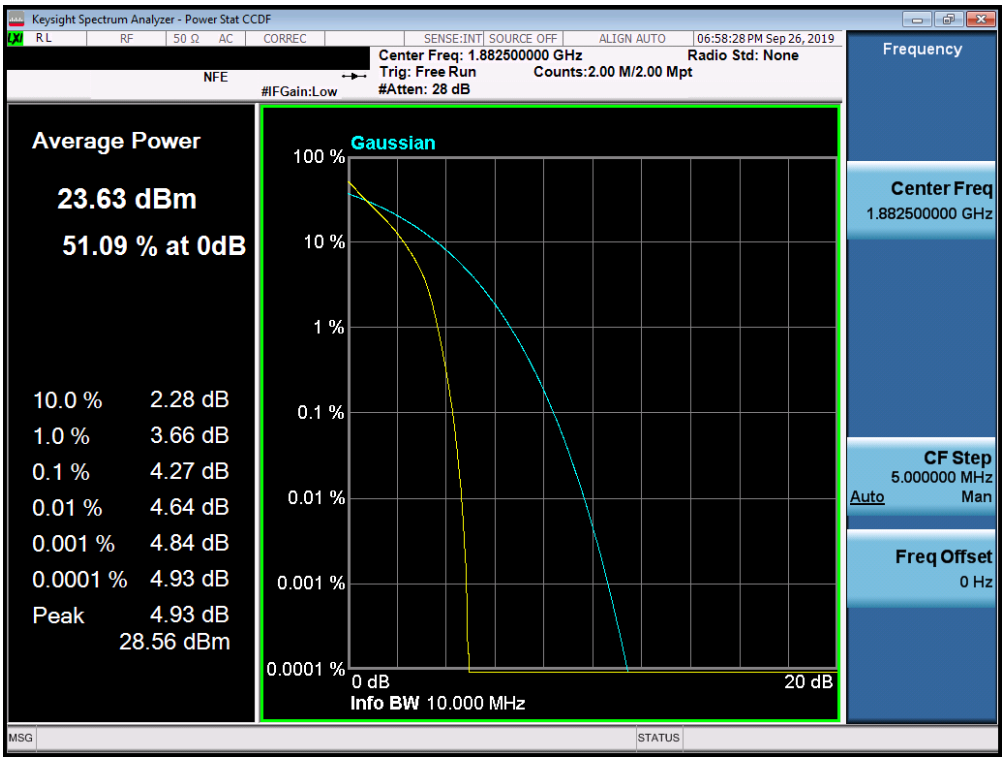


Plot 7-330. PAR Plot (Band 25/2 - 5.0MHz 64-QAM - Full RB Configuration)



Plot 7-331. PAR Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

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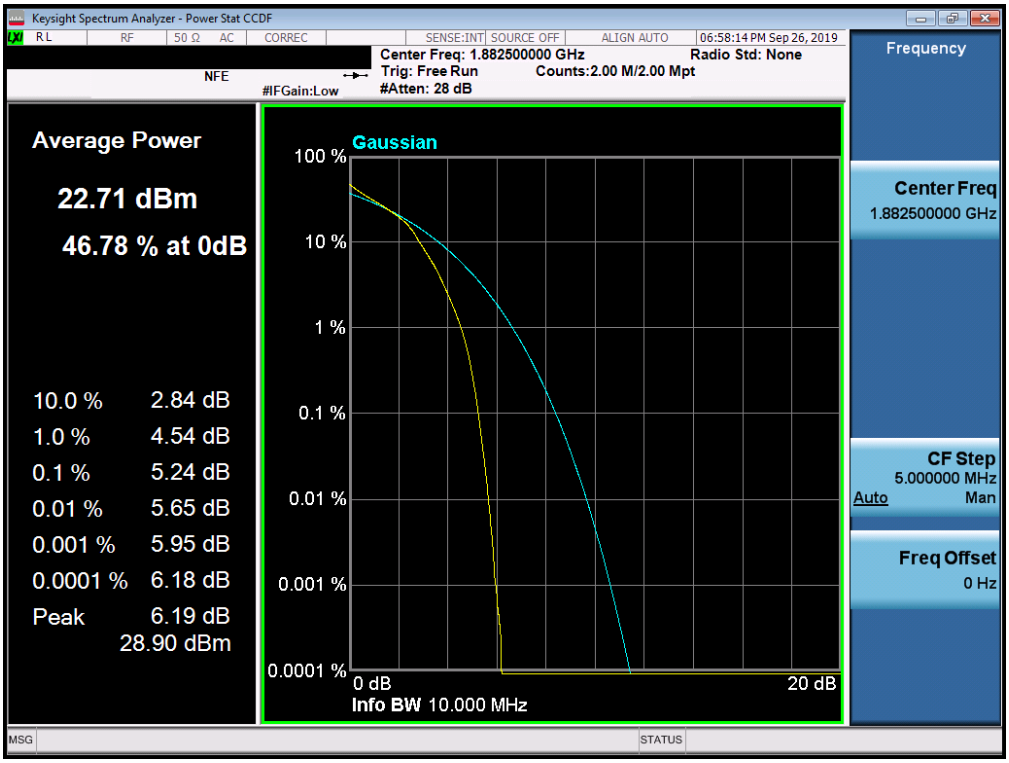
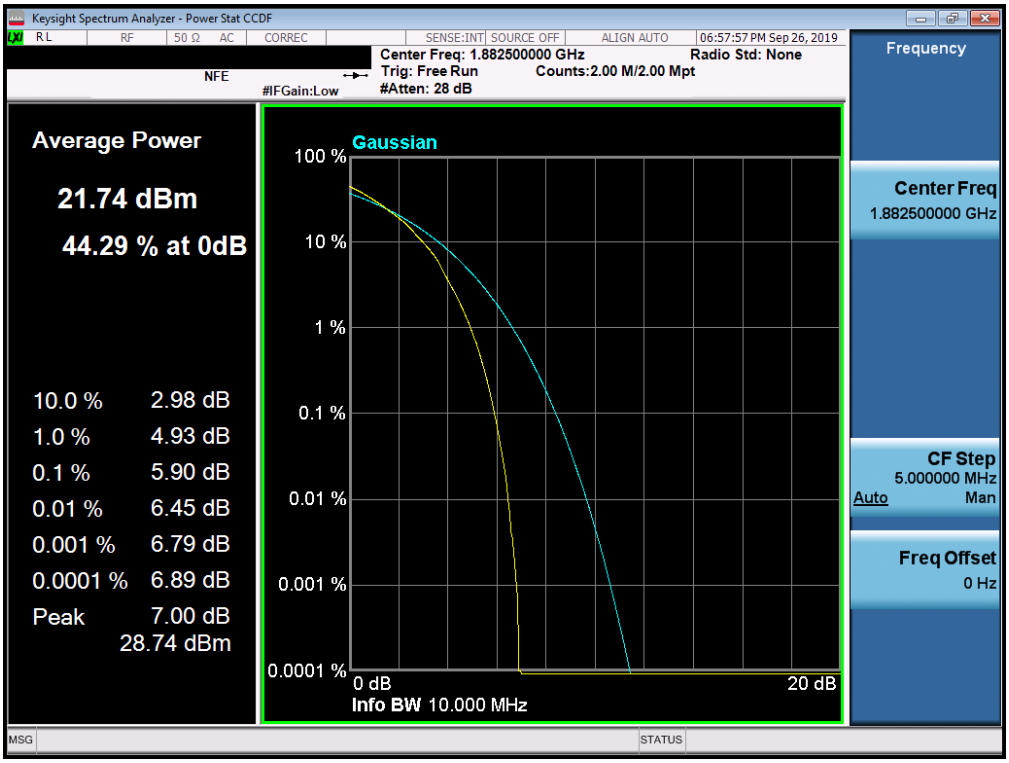


Plot 7-332. PAR Plot (Band 25/2 - 10.0MHz 16-QAM - Full RB Configuration)



Plot 7-333. PAR Plot (Band 25/2 - 10.0MHz 64-QAM - Full RB Configuration)

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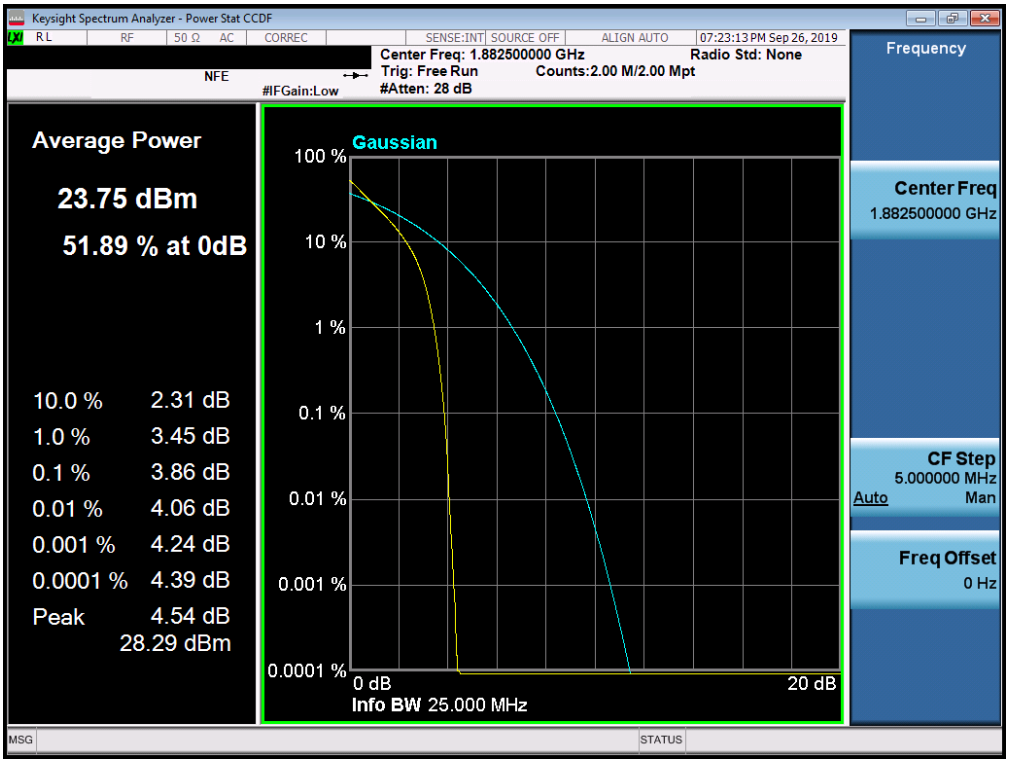
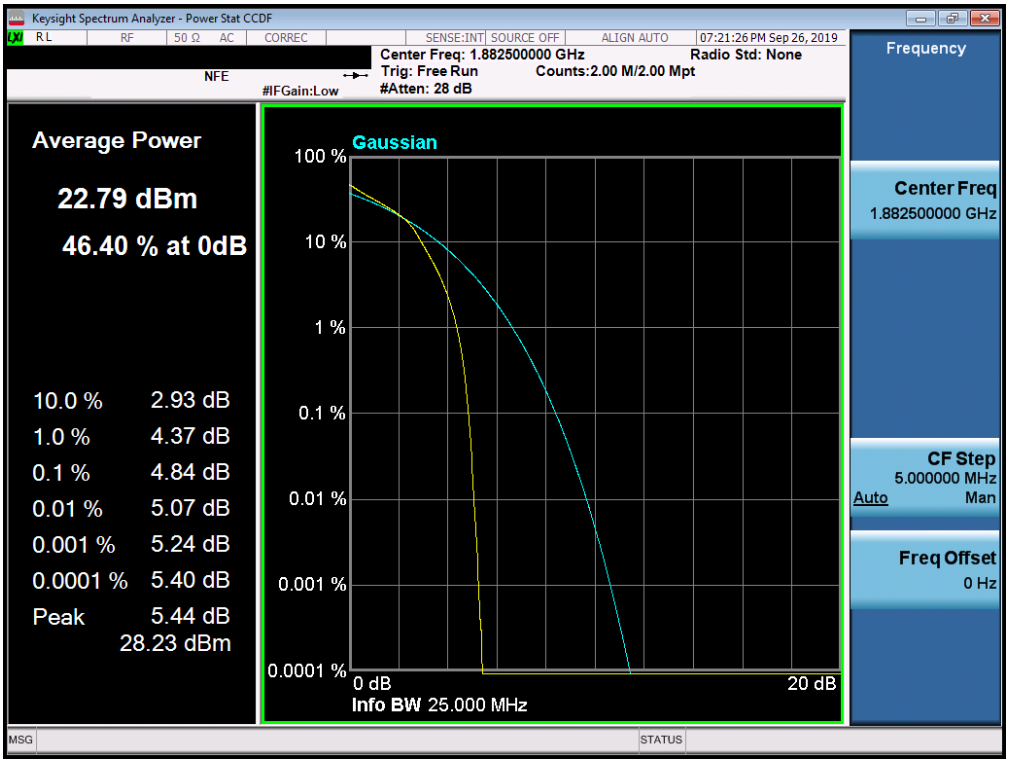


Plot 7-334. PAR Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-335. PAR Plot (Band 25/2 - 15.0MHz 16-QAM - Full RB Configuration)

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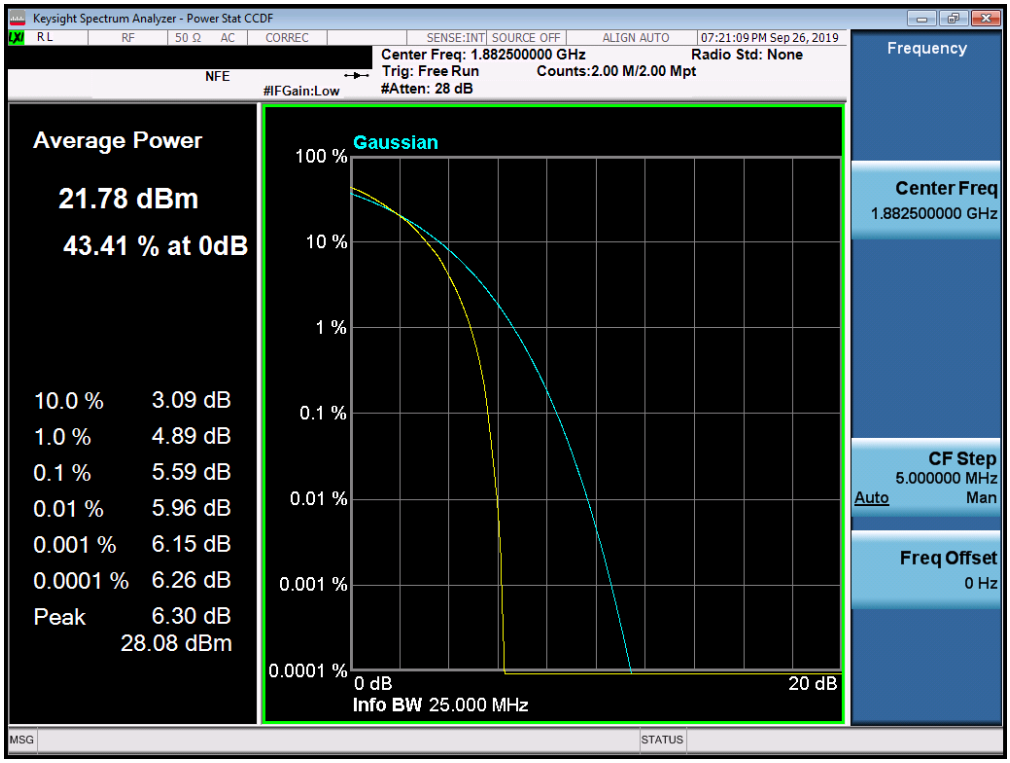
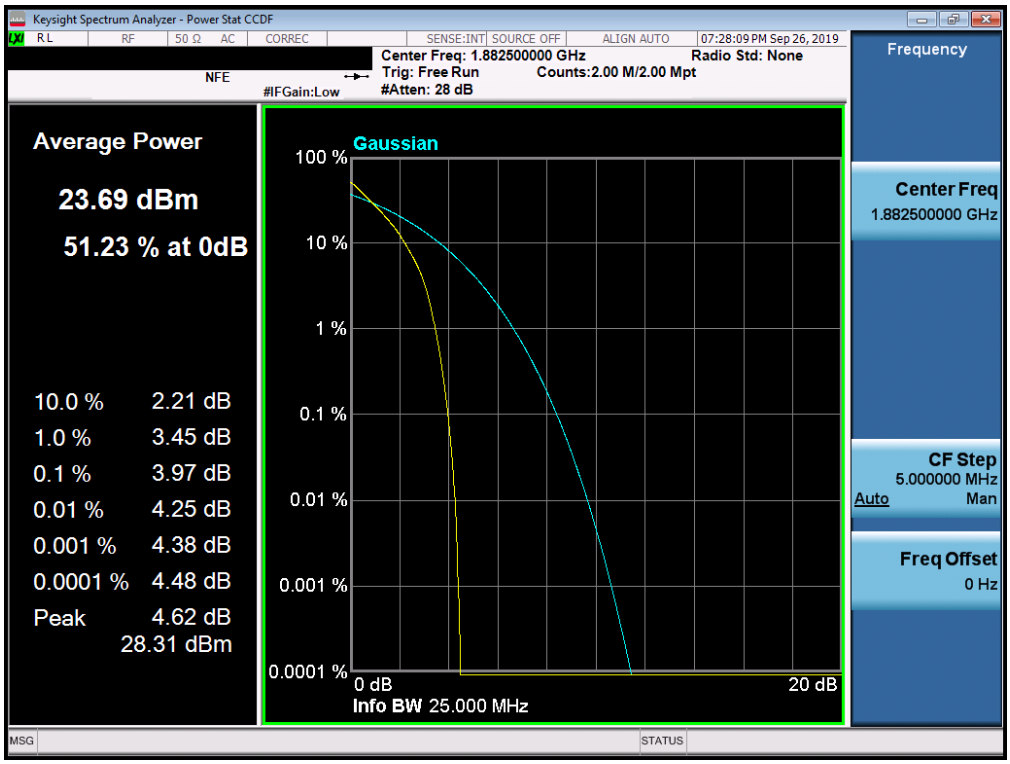


Plot 7-336. PAR Plot (Band 25/2 - 15.0MHz 64-QAM - Full RB Configuration)



Plot 7-337. PAR Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

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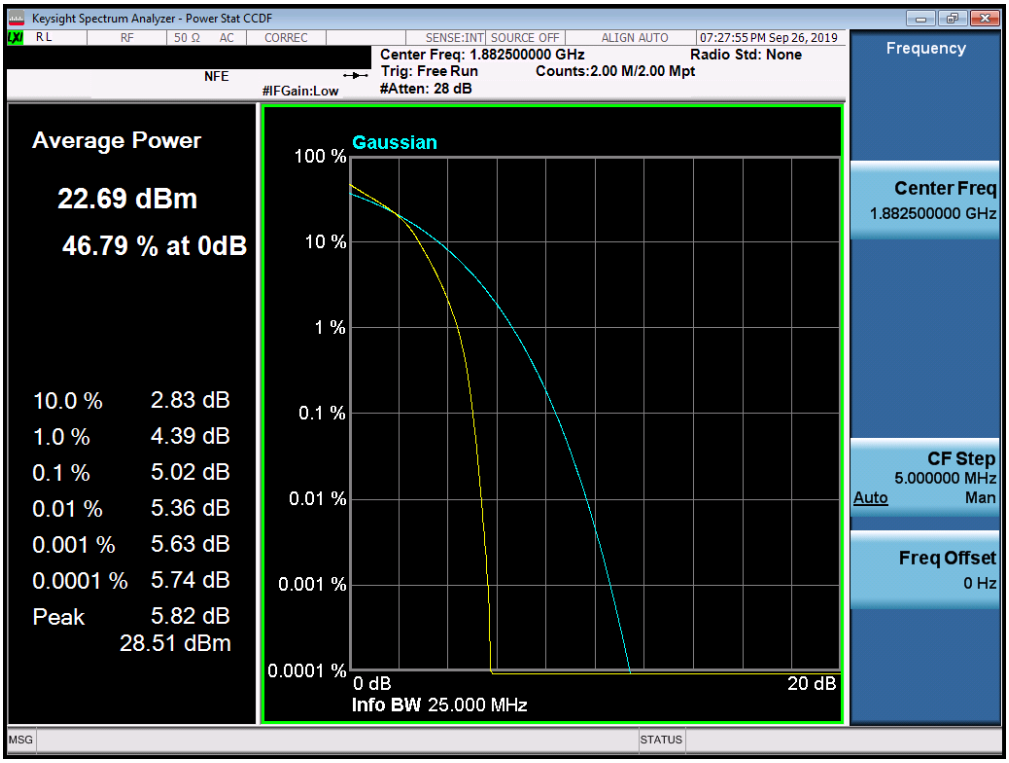
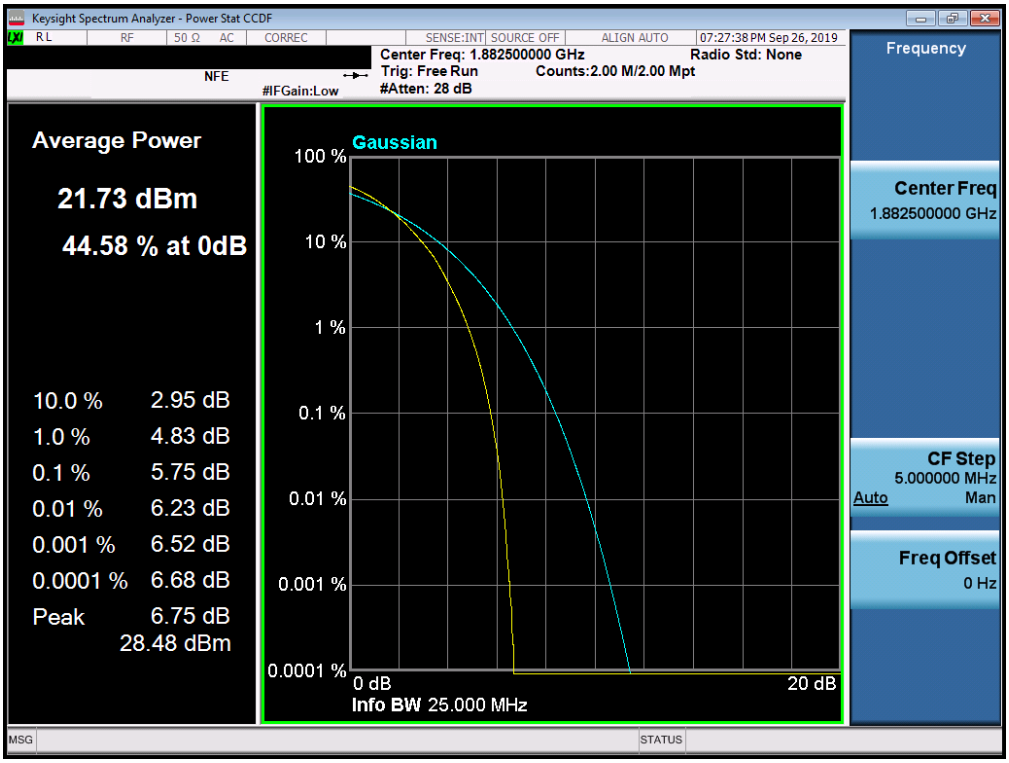


Plot 7-338. PAR Plot (Band 25/2 - 20.0MHz 16-QAM - Full RB Configuration)



Plot 7-339. 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.
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".
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
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.

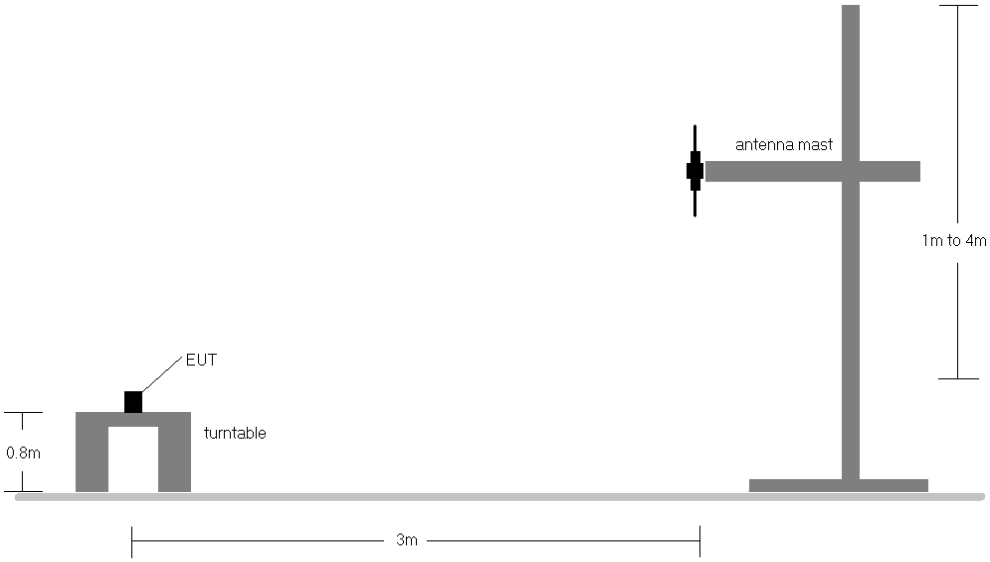

Figure 7-5. Radiated Test Setup <1GHz

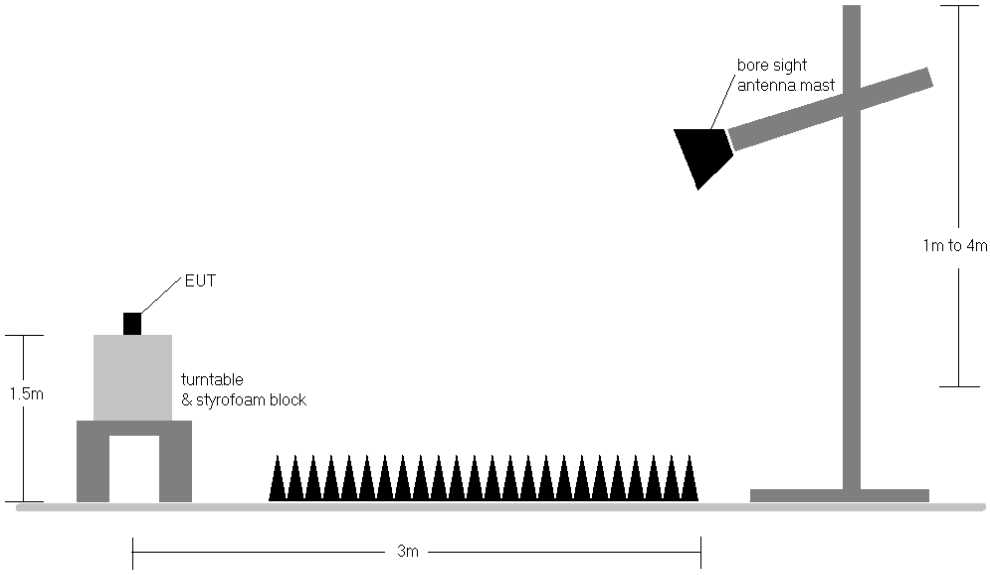

Figure 7-6. Radiated Test Setup >1GHz

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	H	150	312	1 / 24	14.23	2.90	14.98	0.031	34.77	-19.79
680.50	5	QPSK	H	141	310	1 / 24	14.29	3.20	15.34	0.034	34.77	-19.43
695.50	5	QPSK	H	140	308	1 / 24	14.84	3.30	**15.99**	**0.040**	34.77	-18.78
695.50	5	16-QAM	H	140	308	1 / 24	13.60	3.30	**14.75**	0.030	34.77	-20.02
695.50	5	64-QAM	H	140	308	1 / 24	12.65	3.30	**13.80**	0.024	34.77	-20.97
668.00	10	QPSK	H	311	112	1 / 49	13.79	2.90	14.54	0.028	34.77	-20.23
680.50	10	QPSK	H	296	123	1 / 49	14.12	3.20	15.17	0.033	34.77	-19.60
693.00	10	QPSK	H	304	126	1 / 49	14.61	3.30	**15.76**	0.038	34.77	-19.01
693.00	10	16-QAM	H	304	126	1 / 49	13.40	3.30	**14.55**	0.029	34.77	-20.22
693.00	10	64-QAM	H	304	126	1 / 49	12.54	3.30	**13.69**	0.023	34.77	-21.08
670.50	15	QPSK	H	148	116	1 / 0	14.19	3.00	15.04	0.032	34.77	-19.73
680.50	15	QPSK	H	147	116	1 / 0	14.75	3.20	**15.80**	0.038	34.77	-18.97
690.50	15	QPSK	H	143	117	1 / 0	14.17	3.30	15.32	0.034	34.77	-19.45
680.50	15	16-QAM	H	147	116	1 / 0	13.28	3.20	14.33	0.027	34.77	-20.44
680.50	15	64-QAM	H	147	116	1 / 0	12.25	3.20	13.30	0.021	34.77	-21.47
673.00	20	QPSK	H	100	112	1 / 99	13.99	3.10	14.94	0.031	34.77	-19.83
680.50	20	QPSK	H	100	107	1 / 99	14.47	3.20	**15.52**	0.036	34.77	-19.25
688.00	20	QPSK	H	100	113	1 / 99	13.99	3.30	15.14	0.033	34.77	-19.63
680.50	20	16-QAM	H	100	107	1 / 99	13.96	3.20	**15.01**	0.032	34.77	-19.76
680.50	20	64-QAM	H	100	107	1 / 99	12.08	3.20	**13.13**	0.021	34.77	-21.64
695.50	5	QPSK	V	111	74	1 / 24	13.01	4.20	15.06	0.032	34.77	-19.71

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	171	22	1 / 5	14.23	4.50	16.58	0.045	34.77	-18.19	18.73	0.075	36.99	-18.26
707.50	1.4	QPSK	V	171	48	1 / 5	15.08	4.60	17.53	0.057	34.77	-17.24	19.68	0.093	36.99	-17.31
715.30	1.4	QPSK	V	166	50	1 / 5	15.07	4.63	**17.55**	0.057	34.77	-17.22	**19.70**	0.093	36.99	-17.29
715.30	1.4	16-QAM	V	166	50	1 / 5	13.89	4.63	**16.37**	0.043	34.77	-18.40	**18.52**	0.071	36.99	-18.47
715.30	1.4	64-QAM	V	166	50	1 / 5	13.04	4.63	**15.52**	0.036	34.77	-19.25	**17.67**	0.058	36.99	-19.32
700.50	3	QPSK	V	172	52	1 / 14	14.42	4.55	16.82	0.048	34.77	-17.95	18.97	0.079	36.99	-18.02
707.50	3	QPSK	V	174	51	1 / 14	15.22	4.60	**17.67**	0.058	34.77	-17.10	**19.82**	0.096	36.99	-17.17
714.50	3	QPSK	V	171	104	1 / 14	15.15	4.60	17.60	0.058	34.77	-17.17	19.75	0.094	36.99	-17.24
707.50	3	16-QAM	V	174	51	1 / 14	13.61	4.60	16.06	0.040	34.77	-18.71	18.21	0.066	36.99	-18.78
707.50	3	64-QAM	V	174	51	1 / 14	12.73	4.60	**15.18**	0.033	34.77	-19.59	**17.33**	0.054	36.99	-19.66

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]
701.50	5	QPSK	V	172	53	1 / 24	14.71	4.60	17.16	0.052	34.77	-17.61	19.31	0.085	36.99	-17.68
707.50	5	QPSK	V	174	56	1 / 24	15.22	4.60	17.67	0.058	34.77	-17.10	19.82	0.096	36.99	-17.17
713.50	5	QPSK	V	176	98	1 / 24	15.58	4.60	**18.03**	**0.064**	34.77	-16.74	**20.18**	**0.104**	36.99	-16.81
713.50	5	16-QAM	V	176	98	1 / 24	14.32	4.60	**16.77**	0.048	34.77	-18.00	**18.92**	0.078	36.99	-18.07
713.50	5	64-QAM	V	176	98	1 / 24	13.63	4.60	**16.08**	0.041	34.77	-18.69	**18.23**	0.067	36.99	-18.76
704.00	10	QPSK	V	102	91	1 / 49	15.02	4.50	17.37	0.055	34.77	-17.40	19.52	0.090	36.99	-17.47
707.50	10	QPSK	V	102	100	1 / 49	15.06	4.60	17.51	0.056	34.77	-17.26	19.66	0.092	36.99	-17.33
711.00	10	QPSK	V	100	77	1 / 49	15.27	4.60	**17.72**	0.059	34.77	-17.05	**19.87**	0.097	36.99	-17.12
711.00	10	16-QAM	V	100	77	1 / 49	13.94	4.60	**16.39**	0.044	34.77	-18.38	**18.54**	0.071	36.99	-18.45
711.00	10	64-QAM	V	100	77	1 / 49	13.03	4.60	**15.48**	0.035	34.77	-19.29	**17.63**	0.058	36.99	-19.36
713.50	5	QPSK	H	198	102	1 / 24	15.71	3.20	16.76	0.047	34.77	-18.01	18.91	0.078	36.99	-18.08

Table 7-5. 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	V	167	107	1 / 24	13.88	5.70	17.43	0.055	34.77	-17.34	19.58	0.091	36.99	-17.41
782.00	5	QPSK	V	169	110	1 / 24	13.88	5.80	**17.53**	0.057	34.77	-17.24	**19.68**	0.093	36.99	-17.31
784.50	5	QPSK	V	168	117	1 / 24	13.76	5.80	17.41	0.055	34.77	-17.36	19.56	0.090	36.99	-17.43
782.00	5	16-QAM	V	169	110	1 / 24	12.48	5.80	**16.13**	0.041	34.77	-18.64	**18.28**	0.067	36.99	-18.71
782.00	5	64-QAM	V	169	110	1 / 24	11.44	5.80	**15.09**	0.032	34.77	-19.68	**17.24**	0.053	36.99	-19.75
782.00	10	QPSK	V	154	11	1 / 49	14.43	5.80	**18.08**	**0.064**	34.77	-16.69	**20.23**	**0.105**	36.99	-16.76
782.00	10	16-QAM	V	154	11	1 / 49	12.97	5.80	**16.62**	0.046	34.77	-18.15	**18.77**	0.075	36.99	-18.22
782.00	10	64-QAM	V	154	11	1 / 49	11.96	5.80	**15.61**	0.036	34.77	-19.16	**17.76**	0.060	36.99	-19.23
782.00	10	QPSK	H	239	90	1 / 49	11.94	5.80	15.59	0.036	34.77	-19.18	17.74	0.059	36.99	-19.25

Table 7-6. 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	V	138	94	1 / 5	13.35	6.30	17.50	0.056	38.45	-20.95	19.65	0.092	40.61	-20.96
836.50	1.4	QPSK	V	150	99	1 / 5	13.87	6.40	**18.12**	0.065	38.45	-20.33	**20.27**	0.106	40.61	-20.34
848.30	1.4	QPSK	V	141	97	1 / 5	12.68	6.50	17.03	0.050	38.45	-21.42	19.18	0.083	40.61	-21.43
836.50	1.4	16-QAM	V	150	99	1 / 5	12.47	6.40	**16.72**	0.047	38.45	-21.73	**18.87**	0.077	40.61	-21.74
836.50	1.4	64-QAM	V	150	99	1 / 5	11.50	6.40	**15.75**	0.038	38.45	-22.70	**17.90**	0.062	40.61	-22.71
825.50	3	QPSK	V	136	93	1 / 14	13.13	6.30	17.28	0.053	38.45	-21.17	19.43	0.088	40.61	-21.18
836.50	3	QPSK	V	149	104	1 / 14	13.61	6.40	**17.86**	0.061	38.45	-20.59	**20.01**	0.100	40.61	-20.60
847.50	3	QPSK	V	142	94	1 / 14	12.52	6.50	16.87	0.049	38.45	-21.58	19.02	0.080	40.61	-21.59
836.50	3	16-QAM	V	149	104	1 / 14	12.13	6.40	**16.38**	0.043	38.45	-22.07	**18.53**	0.071	40.61	-22.08
836.50	3	64-QAM	V	149	104	1 / 14	11.30	6.40	**15.55**	0.036	38.45	-22.90	**17.70**	0.059	40.61	-22.91
826.50	5	QPSK	V	134	106	1 / 24	13.59	6.30	17.74	0.059	38.45	-20.71	19.89	0.097	40.61	-20.72
836.50	5	QPSK	V	147	94	1 / 24	13.91	6.40	**18.16**	0.065	38.45	-20.29	**20.31**	0.107	40.61	-20.30
846.50	5	QPSK	V	143	116	1 / 24	12.74	6.50	17.09	0.051	38.45	-21.36	19.24	0.084	40.61	-21.37
836.50	5	16-QAM	V	147	94	1 / 24	12.49	6.40	**16.74**	0.047	38.45	-21.71	**18.89**	0.077	40.61	-21.72
836.50	5	64-QAM	V	147	94	1 / 24	11.54	6.40	**15.79**	0.038	38.45	-22.66	**17.94**	0.062	40.61	-22.67
829.00	10	QPSK	V	143	107	1 / 0	12.97	6.30	17.12	0.052	38.45	-21.33	19.27	0.085	40.61	-21.34
836.50	10	QPSK	V	139	106	1 / 0	13.80	6.40	**18.05**	0.064	38.45	-20.40	**20.20**	0.105	40.61	-20.41
844.00	10	QPSK	V	147	109	1 / 0	13.70	6.40	17.95	0.062	38.45	-20.50	20.10	0.102	40.61	-20.51
836.50	10	16-QAM	V	139	106	1 / 0	12.27	6.40	**16.52**	0.045	38.45	-21.93	**18.67**	0.074	40.61	-21.94
836.50	10	64-QAM	V	139	106	1 / 0	11.26	6.40	**15.51**	0.036	38.45	-22.94	**17.66**	0.058	40.61	-22.95

Table 7-7. 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	V	139	116	1 / 74	13.80	6.35	18.00	0.063	38.45	-20.45	20.15	0.104	40.61	-20.46
836.50	15	QPSK	V	146	107	1 / 0	13.93	6.40	18.18	0.066	38.45	-20.27	20.33	0.108	40.61	-20.28
841.50	15	QPSK	V	140	102	1 / 0	13.94	6.40	**18.19**	**0.066**	38.45	-20.26	**20.34**	**0.108**	40.61	-20.27
841.50	15	16-QAM	V	140	102	1 / 0	12.51	6.40	**16.76**	0.047	38.45	-21.69	**18.91**	0.078	40.61	-21.70
841.50	15	64-QAM	V	140	102	1 / 0	11.50	6.40	**15.75**	0.038	38.45	-22.70	**17.90**	0.062	40.61	-22.71
841.50	15	QPSK	H	221	86	1 / 0	12.79	6.40	17.04	0.051	38.45	-21.41	19.19	0.083	40.61	-21.42

Table 7-8. ERP Data (Band 26)

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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	182	177	1 / 5	12.02	9.44	**21.46**	**0.140**	30.00	-8.54
1745.00	1.4	QPSK	H	105	173	1 / 0	12.13	9.23	21.36	0.137	30.00	-8.64
1779.30	1.4	QPSK	H	227	176	1 / 0	11.47	9.26	20.73	0.118	30.00	-9.27
1710.70	1.4	16-QAM	H	182	177	1 / 5	11.74	9.44	**21.18**	0.131	30.00	-8.82
1710.70	1.4	64-QAM	H	182	177	1 / 5	10.80	9.44	**20.24**	0.106	30.00	-9.76
1711.50	3	QPSK	H	188	179	1 / 14	12.02	9.44	**21.46**	0.140	30.00	-8.54
1745.00	3	QPSK	H	101	172	1 / 0	12.13	9.23	21.36	0.137	30.00	-8.64
1778.50	3	QPSK	H	220	180	1 / 0	11.47	9.26	20.73	0.118	30.00	-9.27
1711.50	3	16-QAM	H	188	179	1 / 14	11.74	9.44	**21.18**	0.131	30.00	-8.82
1711.50	3	64-QAM	H	188	179	1 / 14	10.80	9.44	**20.24**	0.106	30.00	-9.76
1712.50	5	QPSK	H	186	177	1 / 24	12.02	9.43	**21.45**	0.140	30.00	-8.55
1745.00	5	QPSK	H	100	169	1 / 0	12.13	9.23	21.36	0.137	30.00	-8.64
1777.50	5	QPSK	H	225	175	1 / 0	11.47	9.26	20.73	0.118	30.00	-9.27
1712.50	5	16-QAM	H	186	177	1 / 24	11.74	9.43	**21.17**	0.131	30.00	-8.83
1712.50	5	64-QAM	H	186	177	1 / 24	10.80	9.43	**20.23**	0.105	30.00	-9.77
1715.00	10	QPSK	H	188	172	1 / 49	12.03	9.42	**21.45**	0.140	30.00	-8.55
1745.00	10	QPSK	H	102	168	1 / 0	12.13	9.23	21.36	0.137	30.00	-8.64
1775.00	10	QPSK	H	227	170	1 / 0	11.47	9.25	20.72	0.118	30.00	-9.28
1715.00	10	16-QAM	H	188	172	1 / 49	11.74	9.42	**21.16**	0.130	30.00	-8.84
1715.00	10	64-QAM	H	188	172	1 / 49	10.80	9.42	**20.22**	0.105	30.00	-9.78
1717.50	15	QPSK	H	190	175	1 / 74	12.02	9.40	**21.42**	0.139	30.00	-8.58
1745.00	15	QPSK	H	100	177	1 / 0	12.13	9.23	21.36	0.137	30.00	-8.64
1772.50	15	QPSK	H	225	176	1 / 0	11.47	9.25	20.72	0.118	30.00	-9.28
1717.50	15	16-QAM	H	190	175	1 / 74	11.74	9.40	**21.14**	0.130	30.00	-8.86
1717.50	15	64-QAM	H	190	175	1 / 74	10.80	9.40	**20.20**	0.105	30.00	-9.80
1720.00	20	QPSK	H	182	177	1 / 99	12.02	9.38	**21.40**	0.138	30.00	-8.60
1745.00	20	QPSK	H	100	175	1 / 0	12.02	9.23	21.25	0.133	30.00	-8.75
1770.00	20	QPSK	H	228	174	1 / 0	11.36	9.24	20.60	0.115	30.00	-9.40
1720.00	20	16-QAM	H	182	177	1 / 99	11.63	9.38	**21.01**	0.126	30.00	-8.99
1720.00	20	64-QAM	H	182	177	1 / 99	10.69	9.38	**20.07**	0.102	30.00	-9.93
1710.70	1.4	QPSK	V	116	149	1 / 5	11.54	9.28	20.82	0.121	30.00	-9.18

Table 7-9. 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	112	350	1 / 0	11.84	9.48	21.32	0.136	33.01	-11.69
1882.50	1.4	QPSK	H	110	352	1 / 5	12.18	9.94	22.12	0.163	33.01	-10.90
1914.30	1.4	QPSK	H	111	351	1 / 5	12.55	10.29	**22.84**	0.192	33.01	-10.17
1914.30	1.4	16-QAM	H	111	351	1 / 5	11.97	10.29	**22.26**	0.168	33.01	-10.75
1914.30	1.4	64-QAM	H	111	351	1 / 5	11.61	10.29	**21.90**	0.155	33.01	-11.11
1851.50	3	QPSK	H	115	351	1 / 0	11.72	9.50	21.22	0.132	33.01	-11.79
1882.50	3	QPSK	H	112	355	1 / 14	12.35	9.94	22.29	0.169	33.01	-10.73
1913.50	3	QPSK	H	114	350	1 / 14	12.43	10.29	**22.72**	0.187	33.01	-10.30
1913.50	3	16-QAM	H	114	350	1 / 14	11.96	10.29	**22.25**	0.168	33.01	-10.77
1913.50	3	64-QAM	H	114	350	1 / 14	11.43	10.29	**21.72**	0.148	33.01	-11.30
1852.50	5	QPSK	H	110	355	1 / 0	11.95	9.51	21.46	0.140	33.01	-11.55
1882.50	5	QPSK	H	111	350	1 / 24	12.50	9.94	22.44	0.175	33.01	-10.58
1912.50	5	QPSK	H	115	352	1 / 24	12.47	10.28	**22.75**	0.188	33.01	-10.26
1912.50	5	16-QAM	H	115	352	1 / 24	11.96	10.28	**22.24**	0.167	33.01	-10.77
1912.50	5	64-QAM	H	115	352	1 / 24	11.41	10.28	**21.69**	0.147	33.01	-11.32
1855.00	10	QPSK	H	114	352	1 / 0	11.83	9.55	21.38	0.137	33.01	-11.63
1882.50	10	QPSK	H	113	355	1 / 49	12.57	9.94	22.51	0.178	33.01	-10.51
1910.00	10	QPSK	H	110	350	1 / 49	12.62	10.26	**22.88**	**0.194**	33.01	-10.13
1910.00	10	16-QAM	H	110	350	1 / 49	12.12	10.26	**22.38**	0.173	33.01	-10.63
1910.00	10	64-QAM	H	110	350	1 / 49	11.45	10.26	**21.71**	0.148	33.01	-11.30
1857.50	15	QPSK	H	112	355	1 / 0	11.94	9.58	21.52	0.142	33.01	-11.49
1882.50	15	QPSK	H	115	352	1 / 74	12.52	9.94	22.46	0.176	33.01	-10.56
1907.50	15	QPSK	H	109	354	1 / 74	12.59	10.24	**22.83**	0.192	33.01	-10.18
1907.50	15	16-QAM	H	109	354	1 / 74	12.18	10.24	**22.42**	0.175	33.01	-10.59
1907.50	15	64-QAM	H	109	354	1 / 74	11.55	10.24	**21.79**	0.151	33.01	-11.22
1860.00	20	QPSK	H	113	355	1 / 0	11.93	9.62	21.55	0.143	33.01	-11.46
1882.50	20	QPSK	H	117	356	1 / 99	12.37	9.94	22.31	0.170	33.01	-10.71
1905.00	20	QPSK	H	110	352	1 / 99	12.53	10.22	**22.75**	0.188	33.01	-10.26
1905.00	20	16-QAM	H	110	352	1 / 99	12.16	10.22	**22.38**	0.173	33.01	-10.63
1905.00	20	64-QAM	H	110	352	1 / 99	11.29	10.22	**21.51**	0.142	33.01	-11.50
1910.00	10	QPSK	V	123	364	1 / 49	10.44	9.94	20.38	0.109	33.01	-12.64

Table 7-10. 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	V	120	322	1 / 0	8.85	9.40	18.25	0.067	33.01	-14.77
2535.00	5	QPSK	V	127	315	1 / 0	11.11	9.38	**20.49**	**0.112**	33.01	-12.52
2567.50	5	QPSK	V	114	338	1 / 24	8.93	9.45	18.38	0.069	33.01	-14.63
2535.00	5	16-QAM	V	127	315	1 / 0	10.42	9.38	**19.80**	0.096	33.01	-13.21
2535.00	5	64-QAM	V	127	315	1 / 0	9.18	9.38	**18.56**	0.072	33.01	-14.45
2505.00	10	QPSK	V	117	320	1 / 0	8.98	9.39	18.37	0.069	33.01	-14.64
2535.00	10	QPSK	V	123	318	1 / 0	11.03	9.38	**20.41**	0.110	33.01	-12.60
2565.00	10	QPSK	V	109	342	1 / 49	9.00	9.44	18.44	0.070	33.01	-14.57
2535.00	10	16-QAM	V	123	318	1 / 0	10.33	9.38	**19.71**	0.094	33.01	-13.30
2535.00	10	64-QAM	V	123	318	1 / 0	9.32	9.38	**18.70**	0.074	33.01	-14.31
2507.50	15	QPSK	V	115	322	1 / 0	9.21	9.39	18.60	0.072	33.01	-14.41
2535.00	15	QPSK	V	125	315	1 / 0	11.00	9.38	**20.38**	0.109	33.01	-12.63
2562.50	15	QPSK	V	107	340	1 / 74	9.02	9.43	18.45	0.070	33.01	-14.56
2535.00	15	16-QAM	V	125	315	1 / 0	10.55	9.38	**19.93**	0.098	33.01	-13.08
2535.00	15	64-QAM	V	125	315	1 / 0	9.27	9.38	**18.65**	0.073	33.01	-14.36
2510.00	20	QPSK	V	112	319	1 / 0	9.29	9.39	18.68	0.074	33.01	-14.33
2535.00	20	QPSK	V	127	317	1 / 0	10.94	9.38	**20.32**	0.108	33.01	-12.69
2560.00	20	QPSK	V	105	341	1 / 99	9.14	9.42	18.56	0.072	33.01	-14.45
2535.00	20	16-QAM	V	127	317	1 / 0	10.59	9.38	**19.97**	0.099	33.01	-13.04
2535.00	20	64-QAM	V	127	317	1 / 0	9.54	9.38	**18.92**	0.078	33.01	-14.09
2535.00	5	QPSK	H	121	143	1 / 0	9.70	9.39	19.09	0.081	33.01	-13.92

Table 7-11. 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	V	155	322	1 / 24	14.45	9.40	23.85	0.243	33.01	-9.16
2593.00	5	QPSK	V	130	330	1 / 24	14.48	9.56	**24.04**	0.253	33.01	-8.97
2687.50	5	QPSK	V	141	333	1 / 24	13.70	9.69	23.39	0.218	33.01	-9.62
2498.50	5	16-QAM	V	155	322	1 / 24	12.84	9.40	**22.24**	0.168	33.01	-10.77
2498.50	5	64-QAM	V	155	322	1 / 24	12.09	9.40	**21.49**	0.141	33.01	-11.52
2501.00	10	QPSK	V	161	300	1 / 49	14.49	9.40	**23.89**	0.245	33.01	-9.12
2593.00	10	QPSK	V	134	321	1 / 49	14.28	9.56	23.84	0.242	33.01	-9.17
2685.00	10	QPSK	V	141	333	1 / 49	13.67	9.68	23.35	0.216	33.01	-9.66
2501.00	10	16-QAM	V	161	300	1 / 49	12.94	9.40	**22.34**	0.171	33.01	-10.67
2501.00	10	64-QAM	V	161	300	1 / 49	12.42	9.40	**21.82**	0.152	33.01	-11.19
2503.50	15	QPSK	V	164	330	1 / 74	14.66	9.39	24.05	0.254	33.01	-8.96
2593.00	15	QPSK	V	134	321	1 / 74	14.58	9.56	**24.14**	**0.259**	33.01	-8.87
2682.50	15	QPSK	V	141	333	1 / 74	13.90	9.68	23.58	0.228	33.01	-9.43
2503.50	15	16-QAM	V	164	330	1 / 74	13.13	9.39	**22.52**	0.179	33.01	-10.49
2503.50	15	64-QAM	V	164	330	1 / 74	12.13	9.39	**21.52**	0.142	33.01	-11.49
2506.00	20	QPSK	V	157	319	1 / 99	14.00	9.39	**23.39**	0.218	33.01	-9.62
2593.00	20	QPSK	V	122	334	1 / 99	13.50	9.56	23.06	0.202	33.01	-9.95
2680.00	20	QPSK	V	141	333	1 / 99	10.40	9.68	20.08	0.102	33.01	-12.93
2593.00	20	16-QAM	V	122	334	1 / 99	12.74	9.56	22.30	0.170	33.01	-10.71
2593.00	20	64-QAM	V	122	334	1 / 99	10.57	9.56	20.13	0.103	33.01	-12.88
2593.00	15	QPSK	H	150	160	1 / 74	12.79	9.39	22.18	0.165	33.01	-10.83

Table 7-12. EIRP Data (Band 41 – PC2)

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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.

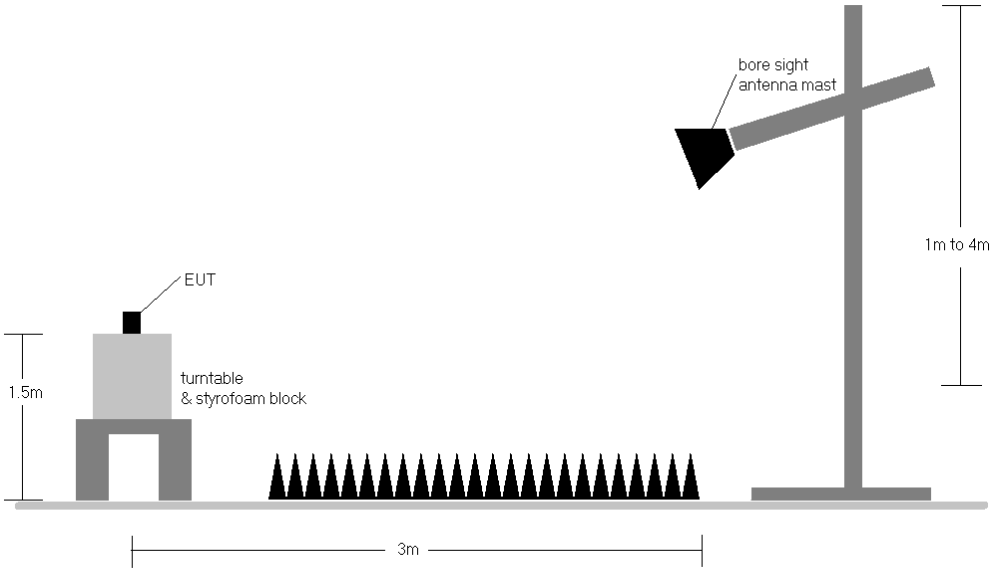

Figure 7-7. Test Instrument & Measurement Setup

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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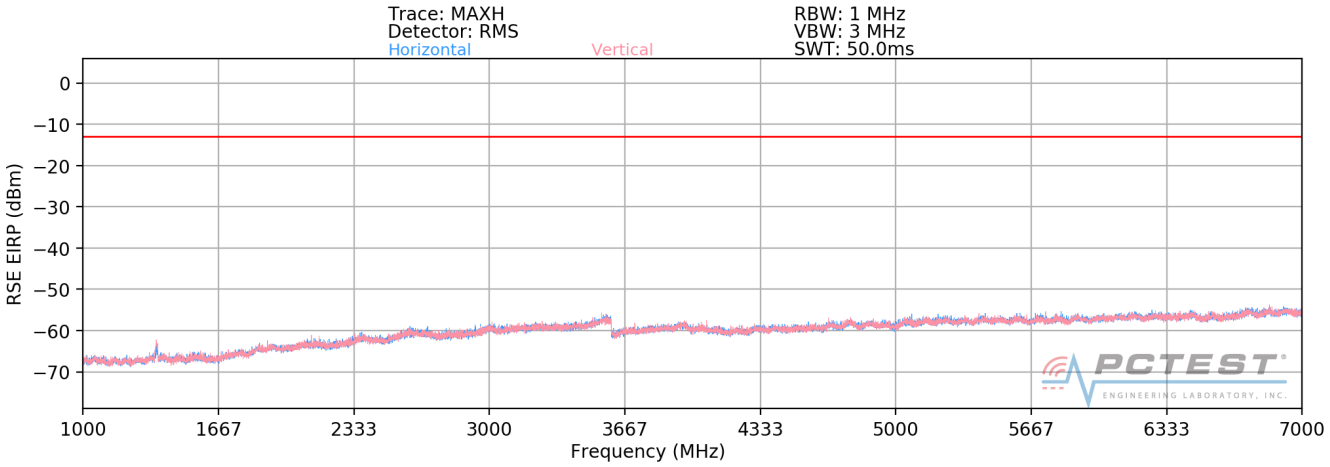
Band 71



Plot 7-340. Radiated Spurious Plot above 1GHz (Band 71)

OPERATING FREQUENCY:	673.00	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]
1346.00	H	264	287	-59.41	3.15	-56.25	-43.3
2019.00	H	-	-	-66.15	3.52	-62.63	-49.6
2692.00	H	-	-	-65.90	4.77	-61.13	-48.1

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

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OPERATING FREQUENCY: 680.50 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]
1361.00	H	117	294	-60.01	3.04	-56.96	-44.0
2041.50	H	-	-	-65.80	3.49	-62.32	-49.3
2722.00	H	-	-	-65.25	4.83	-60.42	-47.4

Table 7-14. Radiated Spurious Data (Band 71 – Mid Channel)

OPERATING FREQUENCY: 688.00 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]
1376.00	H	113	292	-62.03	2.88	-59.15	-46.1
2064.00	H	-	-	-65.10	3.50	-61.60	-48.6
2752.00	H	-	-	-65.16	4.88	-60.28	-47.3

Table 7-15. Radiated Spurious Data (Band 71 – High Channel)

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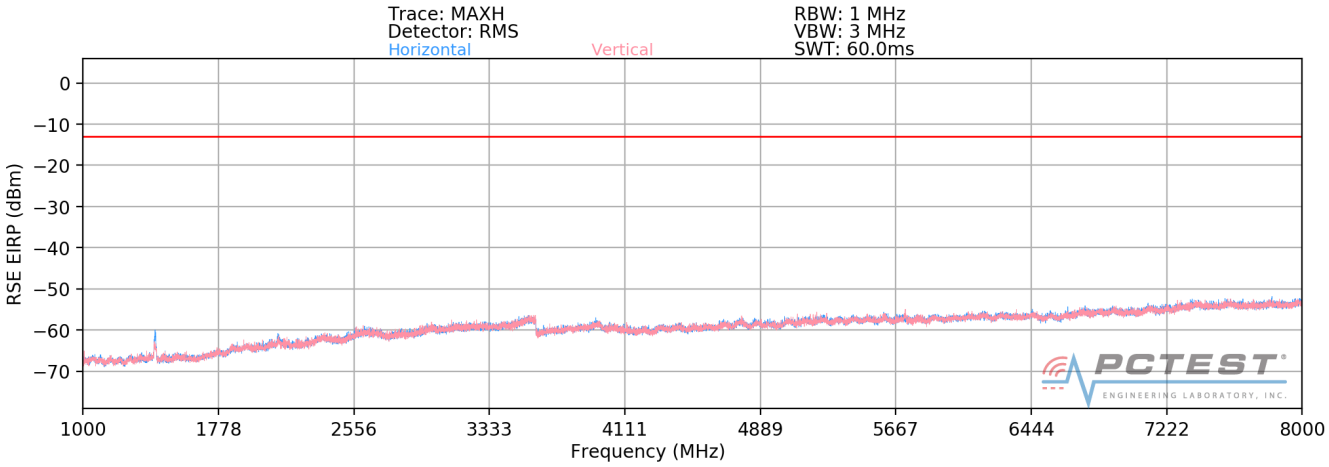
Band 12/17



Plot 7-341. Radiated Spurious Plot above 1GHz (Band 12/17)

OPERATING FREQUENCY:	701.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	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]
1403.00	H	102	209	-54.27	2.71	-51.55	-38.6
2104.50	H	-	-	-66.10	3.57	-62.54	-49.5
2806.00	H	-	-	-67.04	4.98	-62.06	-49.1

Table 7-16. Radiated Spurious Data (Band 12/17 – Low Channel)

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OPERATING FREQUENCY:	707.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	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	H	160	207	-53.45	2.80	-50.65	-37.7
2122.50	H	-	-	-65.67	3.57	-62.10	-49.1
2830.00	H	-	-	-66.47	5.02	-61.45	-48.4

Table 7-17. Radiated Spurious Data (Band 12/17 – Mid Channel)

OPERATING FREQUENCY:	713.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	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]
1427.00	H	160	204	-51.70	2.88	-48.82	-35.8
2140.50	H	-	-	-65.86	3.58	-62.28	-49.3
2854.00	H	-	-	-66.82	5.07	-61.75	-48.8

Table 7-18. Radiated Spurious Data (Band 12/17 – High Channel)

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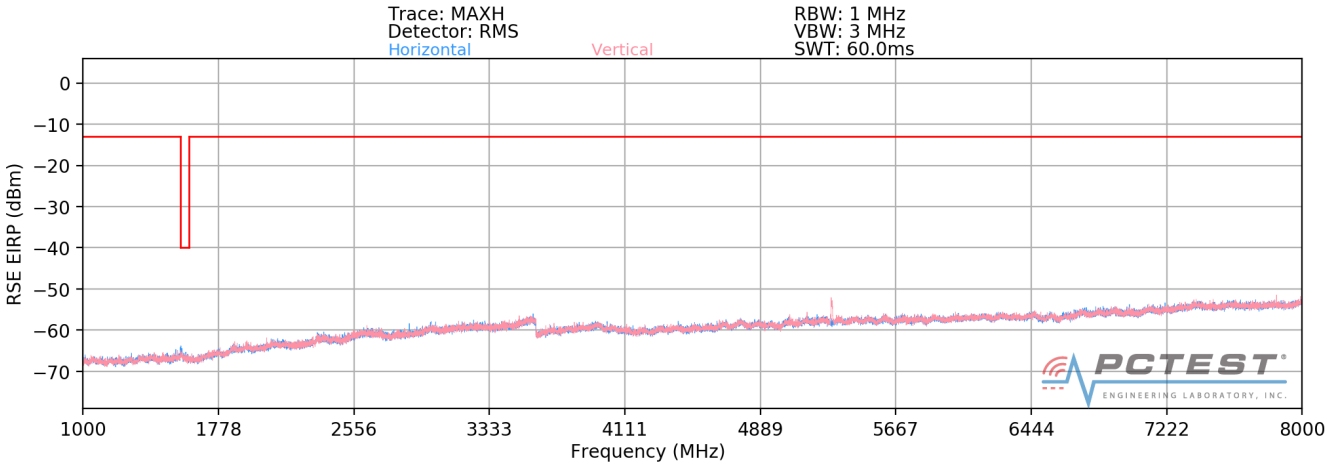
Band 13



Plot 7-342. 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	V	109	334	-66.76	4.00	-62.76	-49.8
3128.00	V	-	-	-68.40	5.38	-63.01	-50.0

Table 7-19. 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	V	228	78	-69.61	3.53	-66.08	-26.1

Table 7-20. Radiated Spurious Data (Band 13 – 1559-1610MHz Band)

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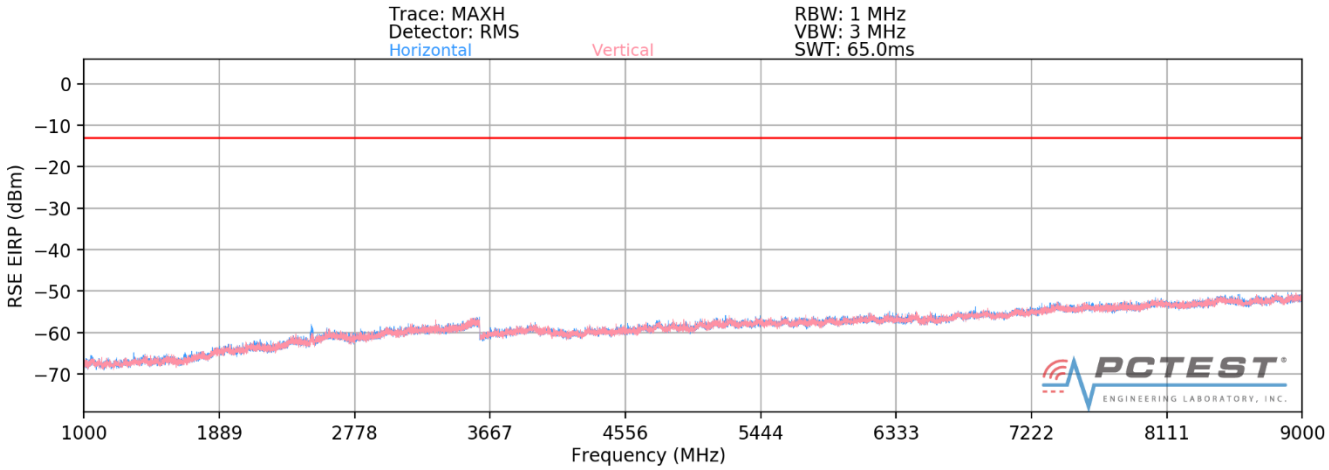
Band 26/5



Plot 7-343. Radiated Spurious Plot above 1GHz (Band 26/5)

OPERATING FREQUENCY:	831.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	15.0	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]
1663.00	V	261	290	-65.21	3.12	-62.10	-49.1
2494.50	V	-	-	-56.85	3.87	-52.98	-40.0
3326.00	V	-	-	-57.96	6.02	-51.94	-38.9

Table 7-21. Radiated Spurious Data (Band 26 – Low Channel)

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OPERATING FREQUENCY: 836.50 MHz
MODULATION SIGNAL: QPSK
BANDWIDTH: 15.0 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	V	141	275	-63.49	3.10	-60.39	-47.4
2509.50	V	-	-	-65.61	4.02	-61.59	-48.6
3346.00	V	-	-	-66.66	6.03	-60.63	-47.6

Table 7-22. Radiated Spurious Data (Band 26 – Mid Channel)

OPERATING FREQUENCY: 841.50 MHz
MODULATION SIGNAL: QPSK
BANDWIDTH: 15.0 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]
1683.00	V	247	291	-65.47	3.15	-62.32	-49.3
2524.50	V	-	-	-65.62	4.07	-61.55	-48.5
3366.00	V	-	-	-66.33	6.10	-60.23	-47.2

Table 7-23. Radiated Spurious Data (Band 26 – High Channel)

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OPERATING FREQUENCY: 826.50 MHz
MODULATION SIGNAL: QPSK
BANDWIDTH: 5.0 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]
1653.00	V	168	58	-66.16	3.61	-62.55	-49.6
2479.50	V	-	-	-66.10	4.23	-61.87	-48.9
3306.00	V	-	-	-67.41	5.80	-61.61	-48.6

Table 7-24. Radiated Spurious Data (Band 5 – Low Channel)

OPERATING FREQUENCY: 836.50 MHz
MODULATION SIGNAL: QPSK
BANDWIDTH: 5.0 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	V	110	277	-67.67	3.62	-64.05	-51.1
2509.50	V	-	-	-67.16	4.33	-62.83	-49.8
3346.00	V	-	-	-67.62	5.92	-61.70	-48.7

Table 7-25. Radiated Spurious Data (Band 5 – Mid Channel)

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OPERATING FREQUENCY:	846.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	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]
1693.00	V	108	304	-69.16	3.63	-65.53	-52.5
2539.50	V	-	-	-68.39	4.52	-63.87	-50.9
3386.00	V	-	-	-67.69	6.09	-61.59	-48.6

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

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