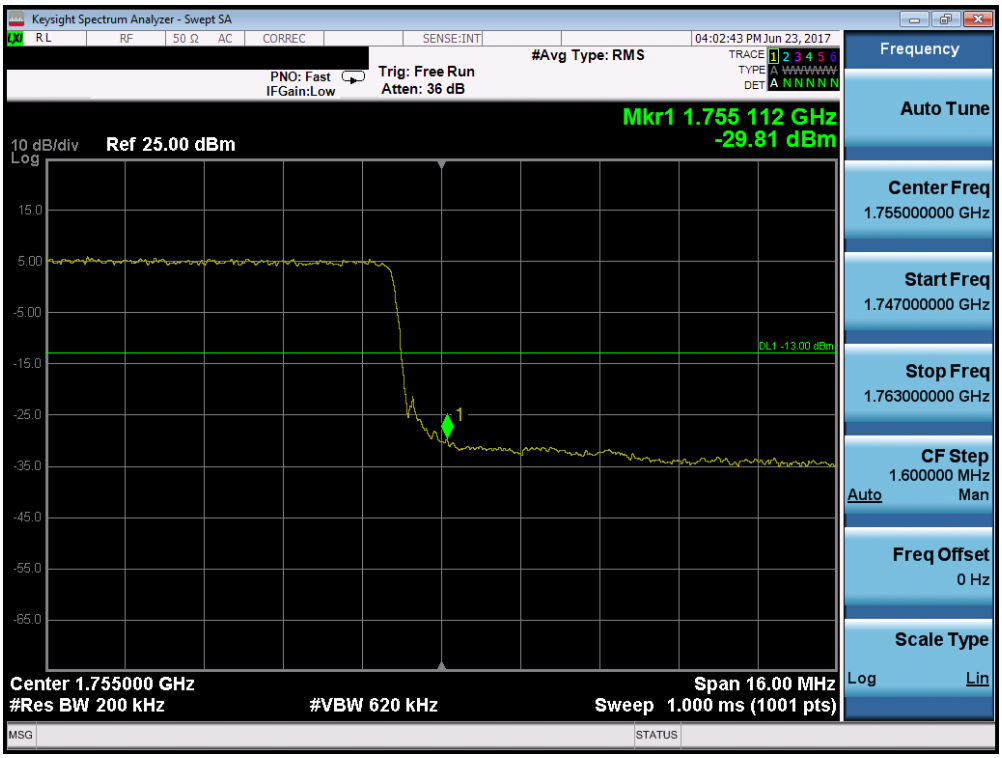
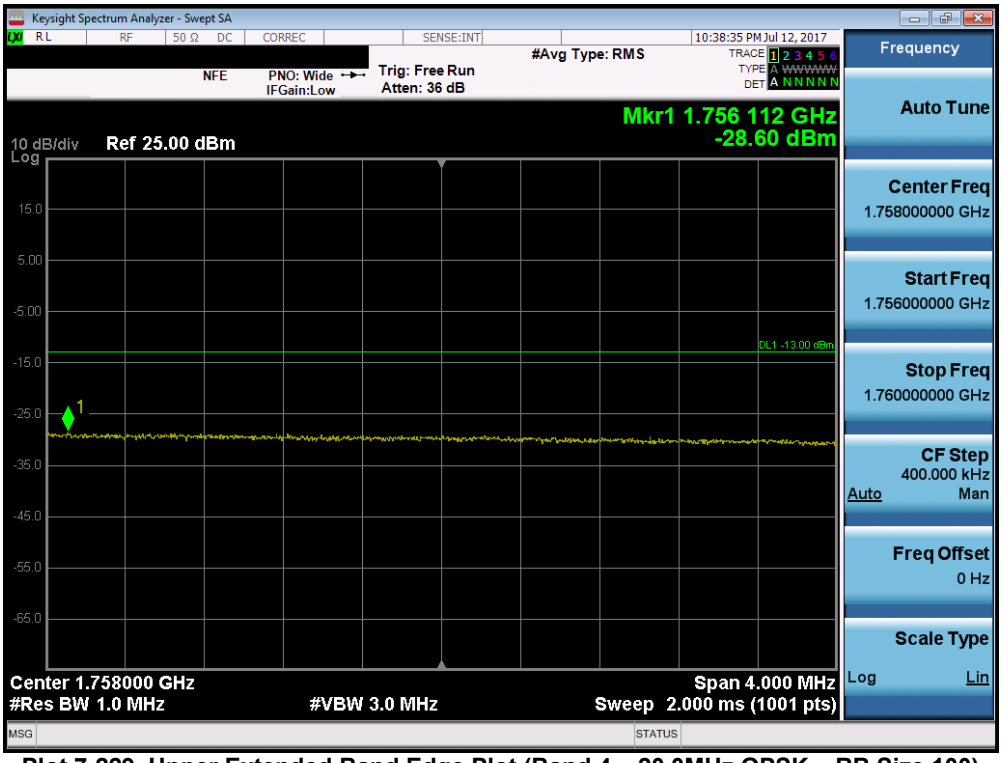
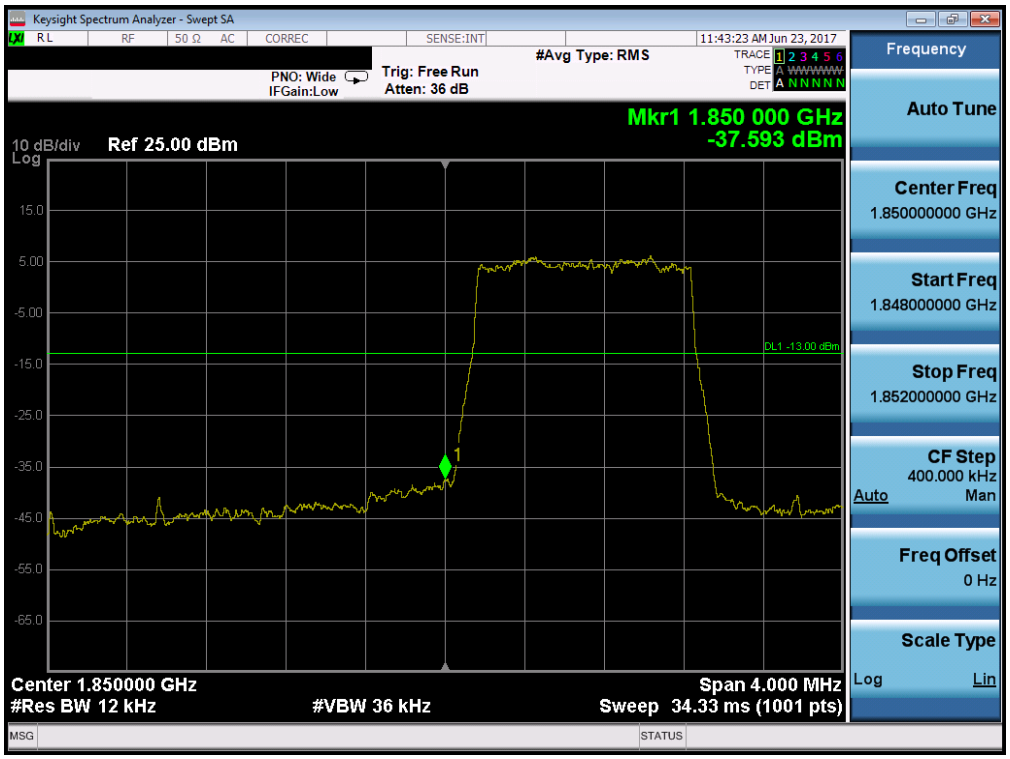


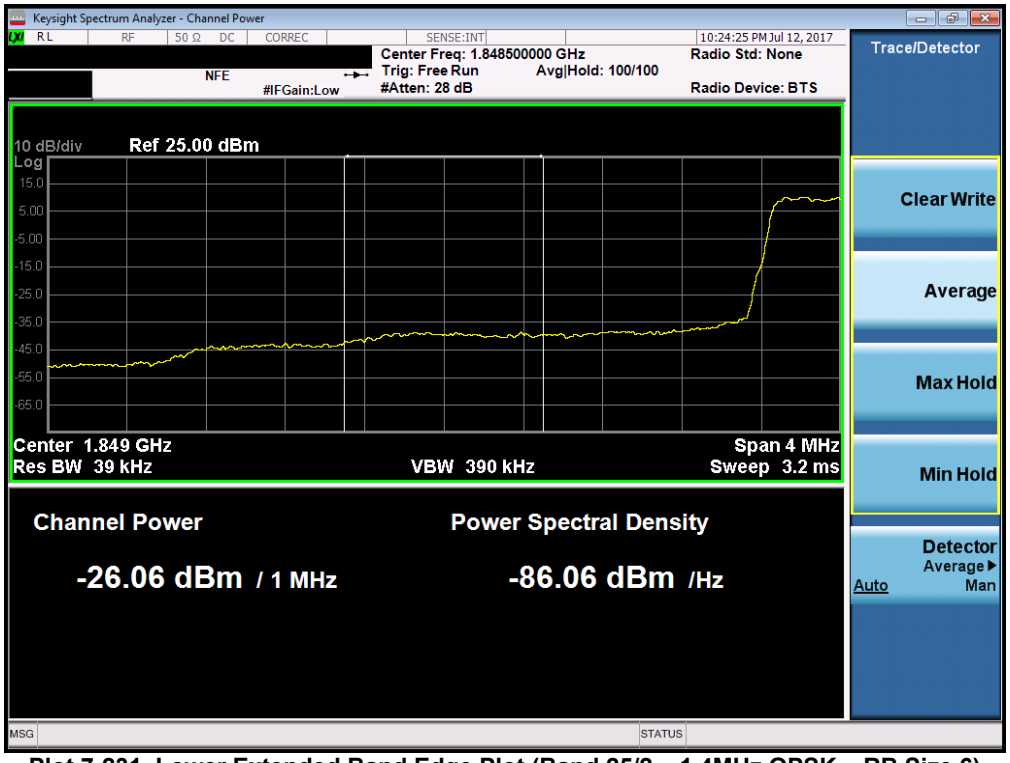
Plot 7-228. Upper Band Edge Plot (Band 4 – 20.0MHz QPSK – RB Size 100)



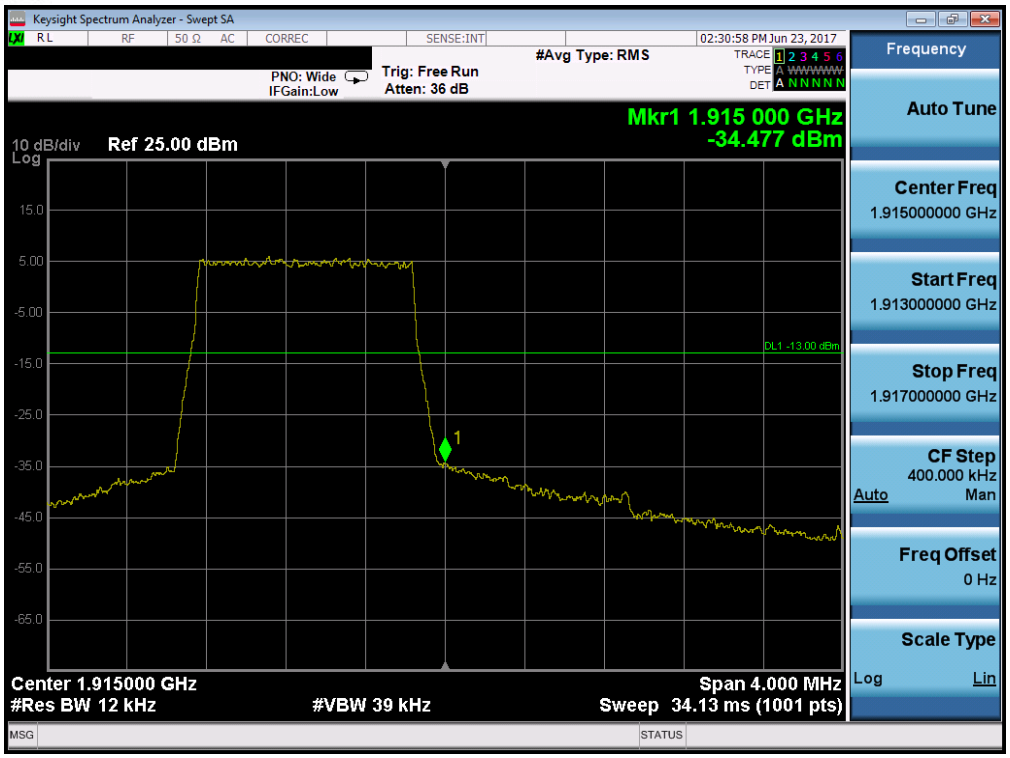
Plot 7-229. Upper Extended Band Edge Plot (Band 4 – 20.0MHz QPSK – RB Size 100)



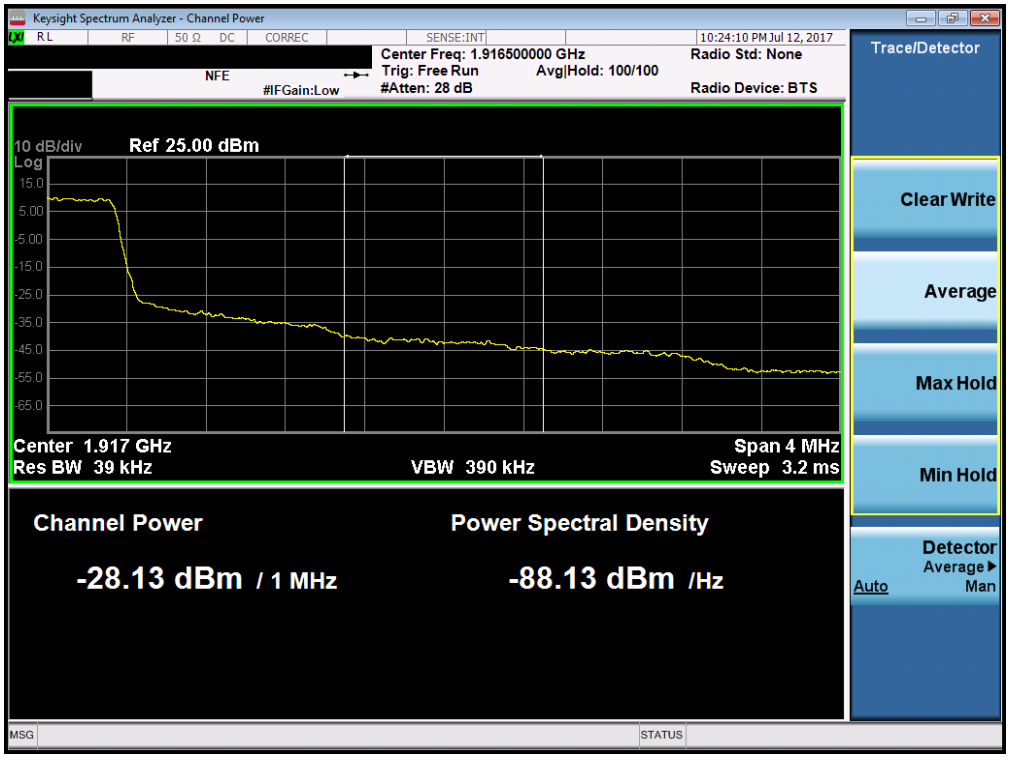
Plot 7-230. Lower Band Edge Plot (Band 25/2 – 1.4MHz QPSK – RB Size 6)



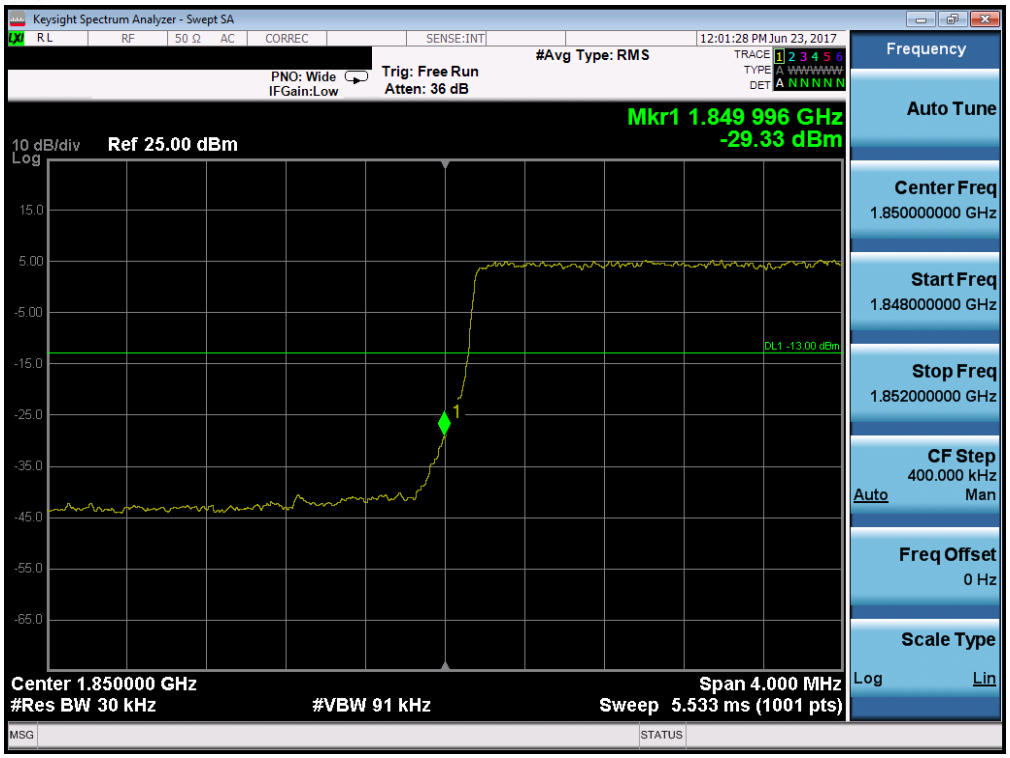
Plot 7-231. Lower Extended Band Edge Plot (Band 25/2 – 1.4MHz QPSK – RB Size 6)



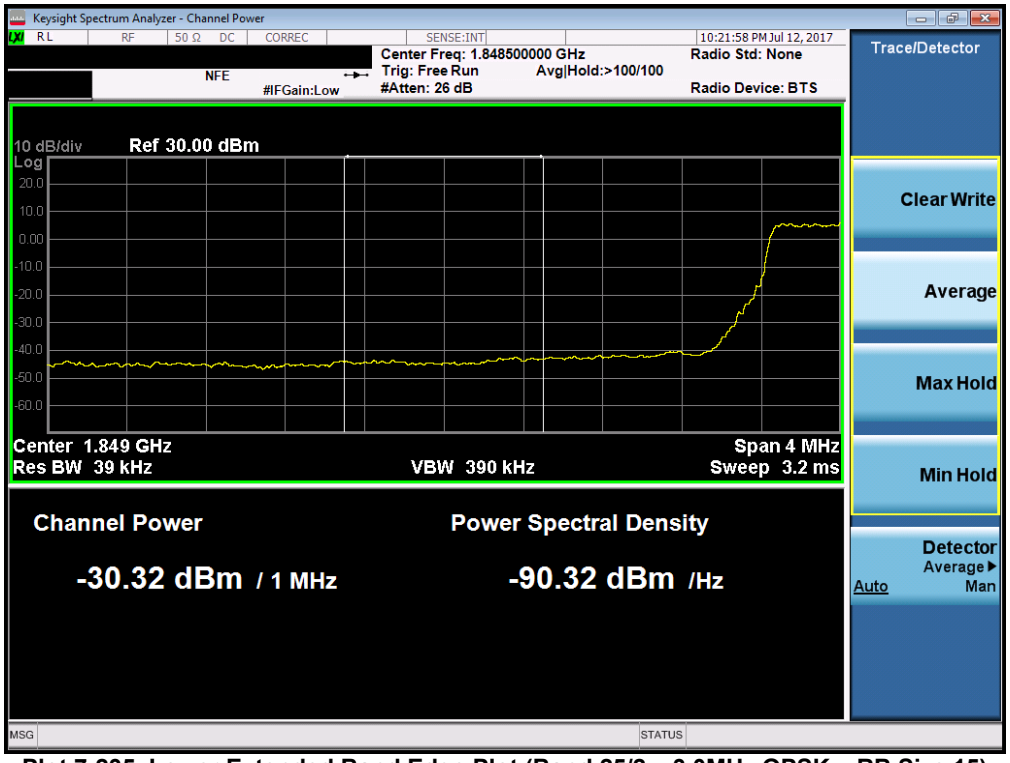
Plot 7-232. Upper Band Edge Plot (Band 25 – 1.4MHz QPSK – RB Size 6)



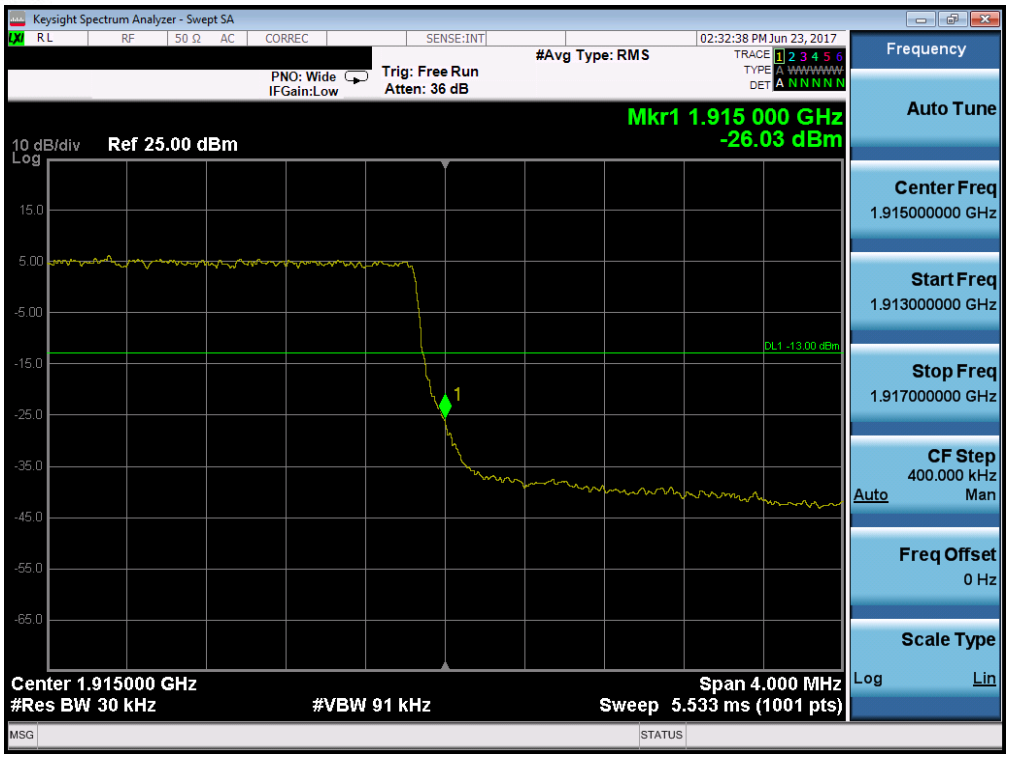
Plot 7-233. Upper Extended Band Edge Plot (Band 25 – 1.4MHz QPSK – RB Size 6)



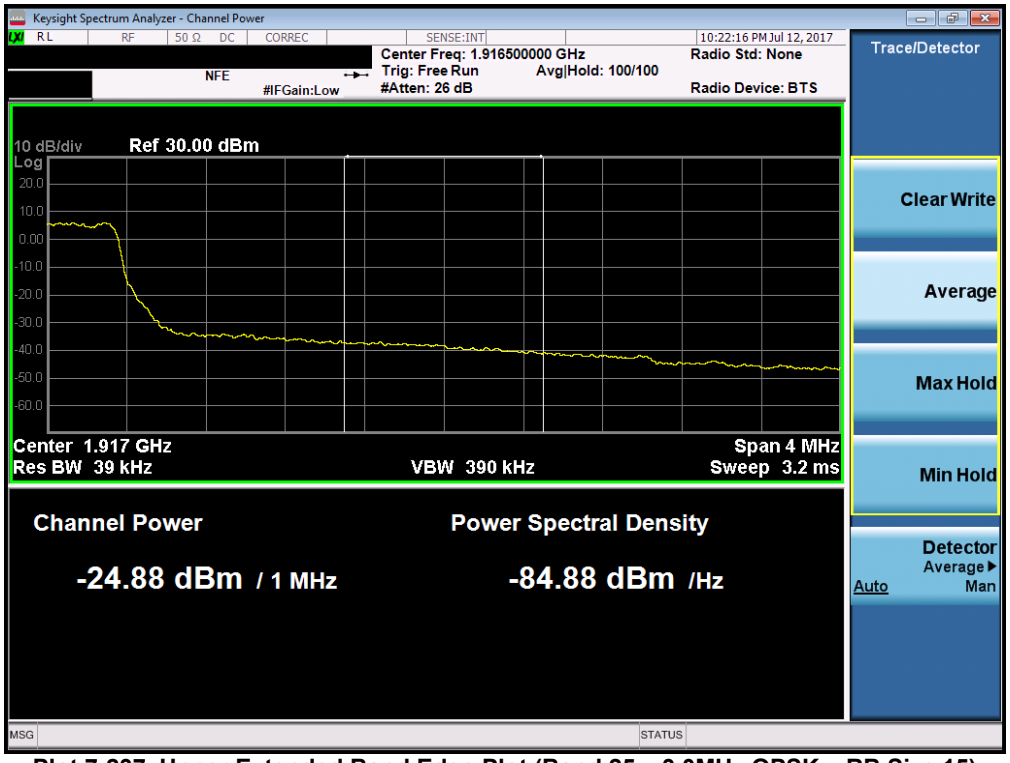
Plot 7-234. Lower Band Edge Plot (Band 25/2 – 3.0MHz QPSK – RB Size 15)



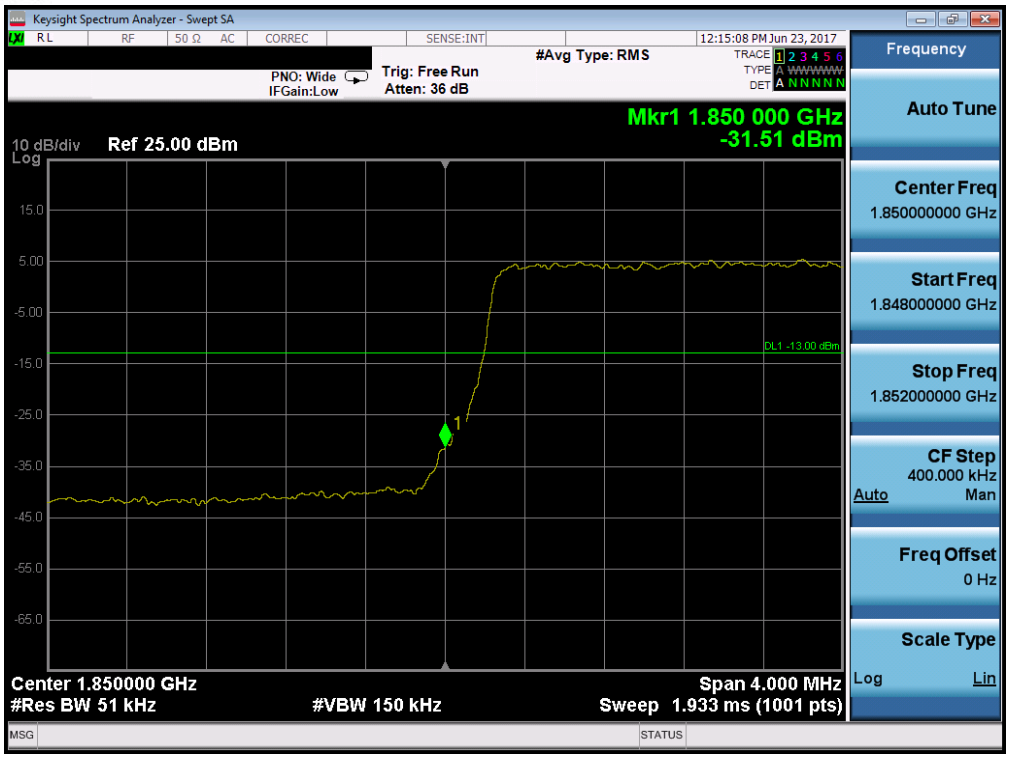
Plot 7-235. Lower Extended Band Edge Plot (Band 25/2 – 3.0MHz QPSK – RB Size 15)



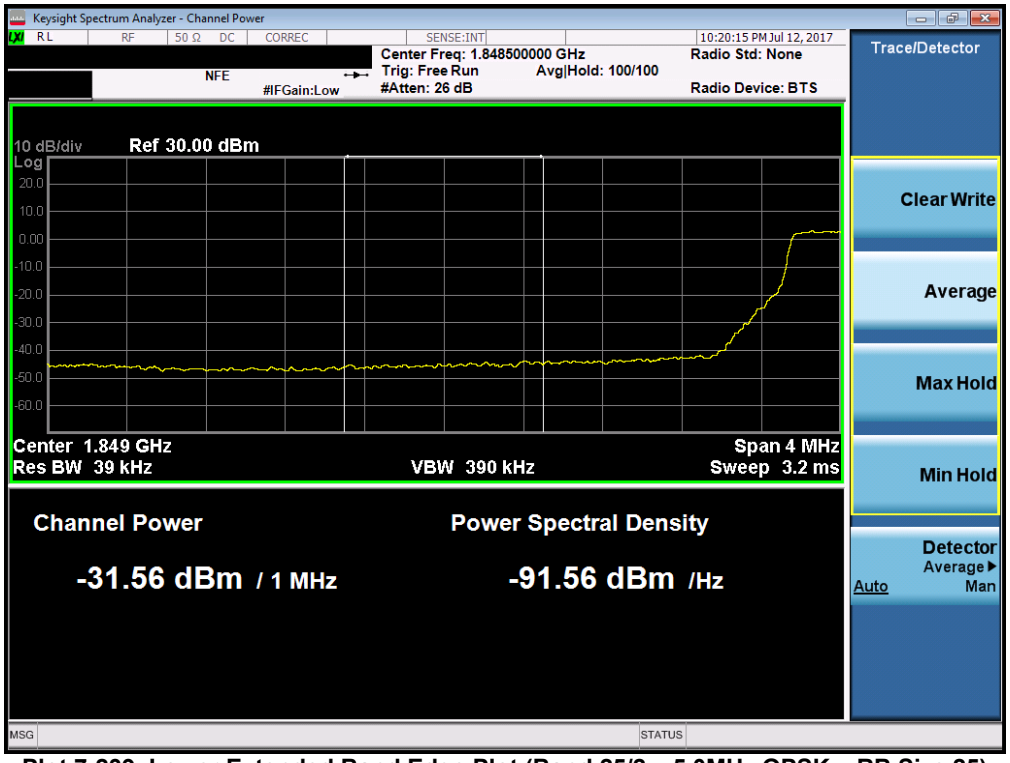
Plot 7-236. Upper Band Edge Plot (Band 25 – 3.0MHz QPSK – RB Size 15)



Plot 7-237. Upper Extended Band Edge Plot (Band 25 – 3.0MHz QPSK – RB Size 15)

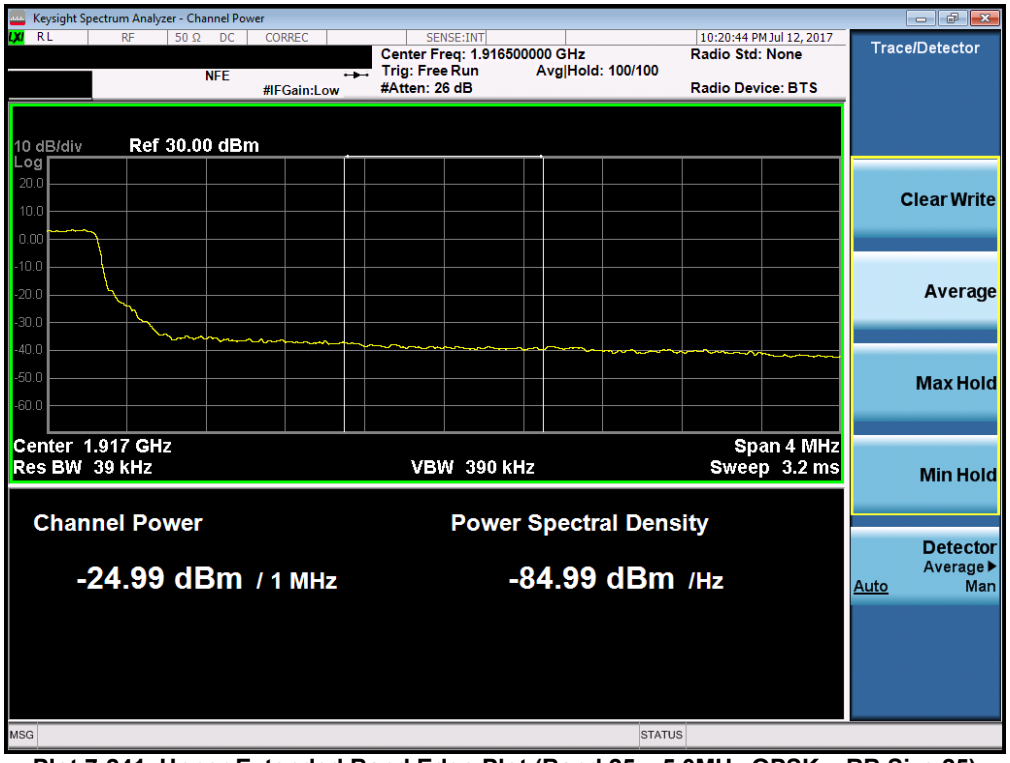


Plot 7-238. Lower Band Edge Plot (Band 25/2 – 5.0MHz QPSK – RB Size 25)

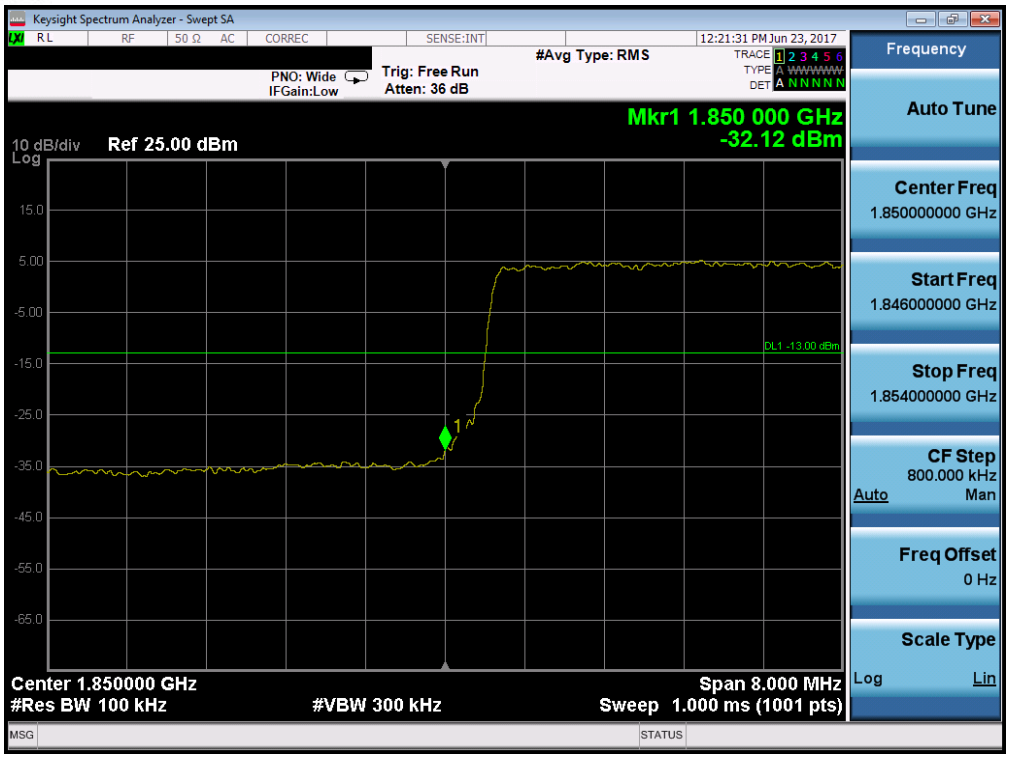


Plot 7-239. Lower Extended Band Edge Plot (Band 25/2 – 5.0MHz QPSK – RB Size 25)

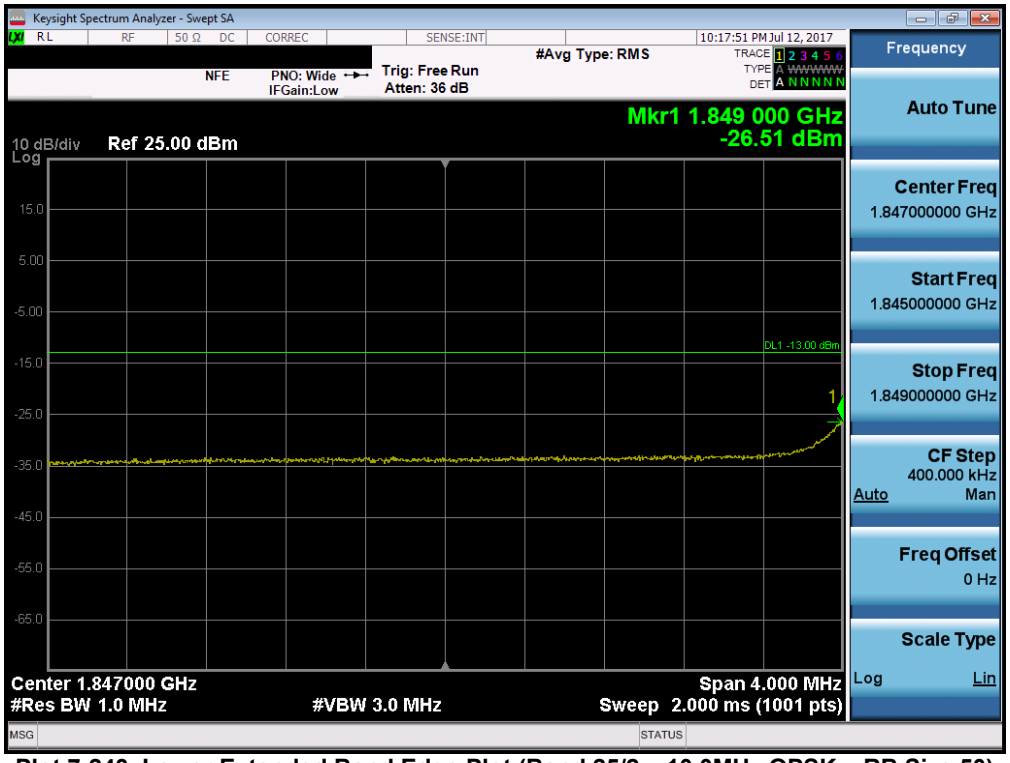
Plot 7-240. Upper Band Edge Plot (Band 25 – 5.0MHz QPSK – RB Size 25)



Plot 7-241. Upper Extended Band Edge Plot (Band 25 – 5.0MHz QPSK – RB Size 25)



Plot 7-242. Lower Band Edge Plot (Band 25/2 – 10.0MHz QPSK – RB Size 50)



Plot 7-243. Lower Extended Band Edge Plot (Band 25/2 – 10.0MHz QPSK – RB Size 50)

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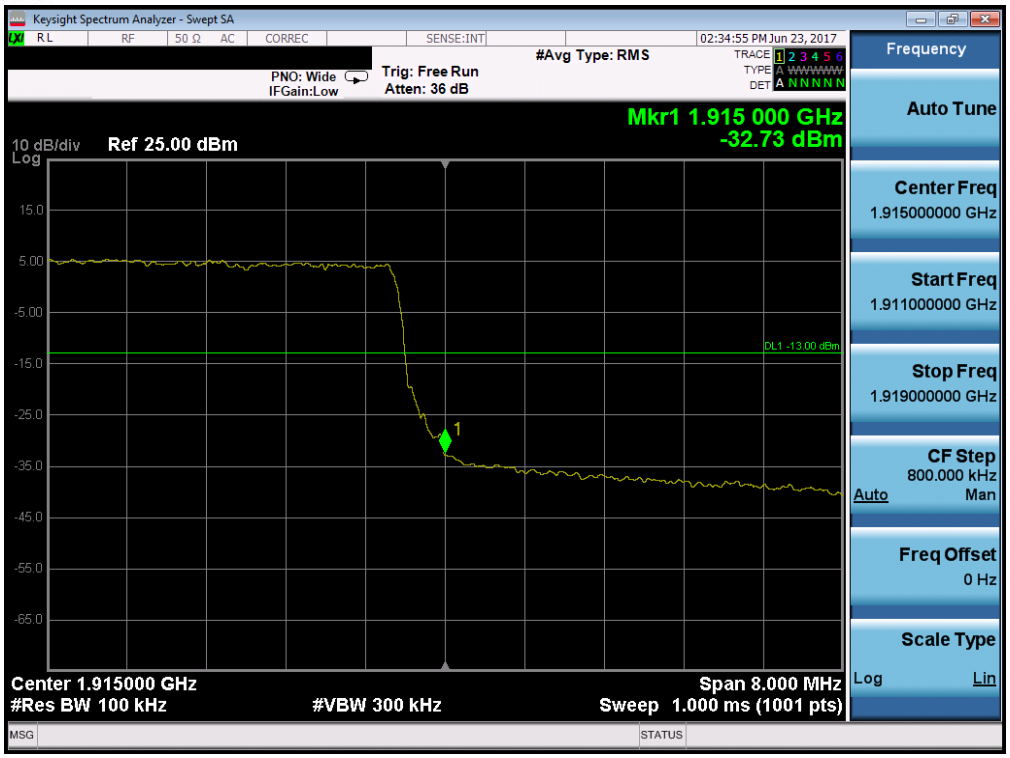
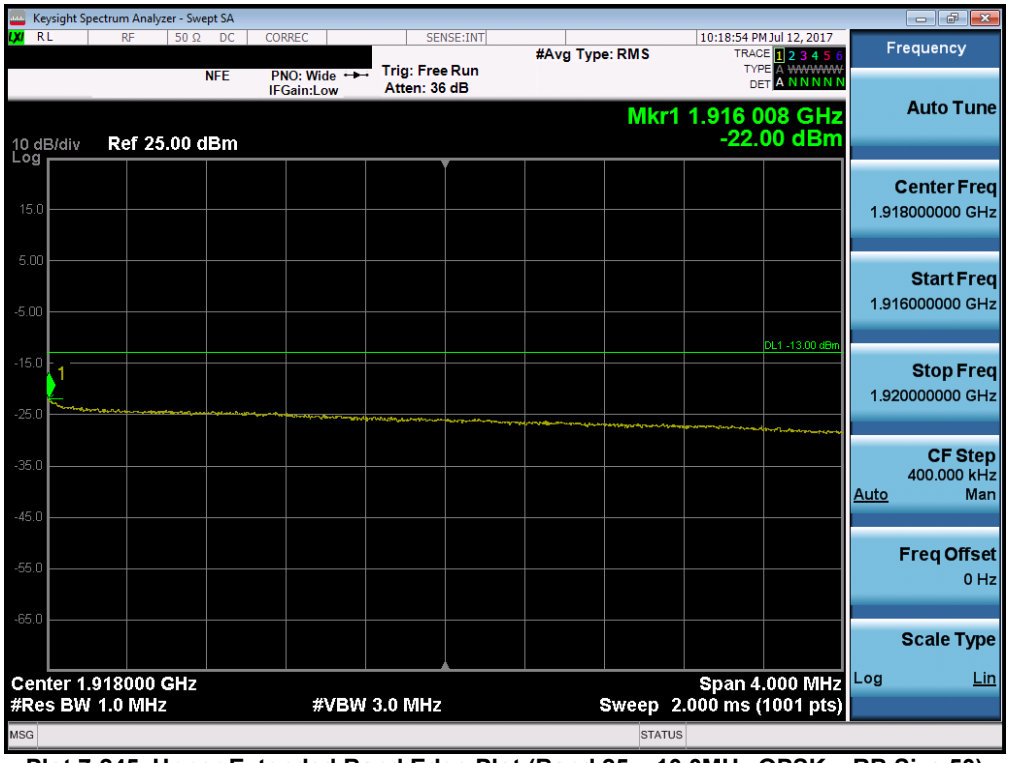


Plot 7-244. Upper Band Edge Plot (Band 25 – 10.0MHz QPSK – RB Size 50)



Plot 7-245. Upper Extended Band Edge Plot (Band 25 – 10.0MHz QPSK – RB Size 50)

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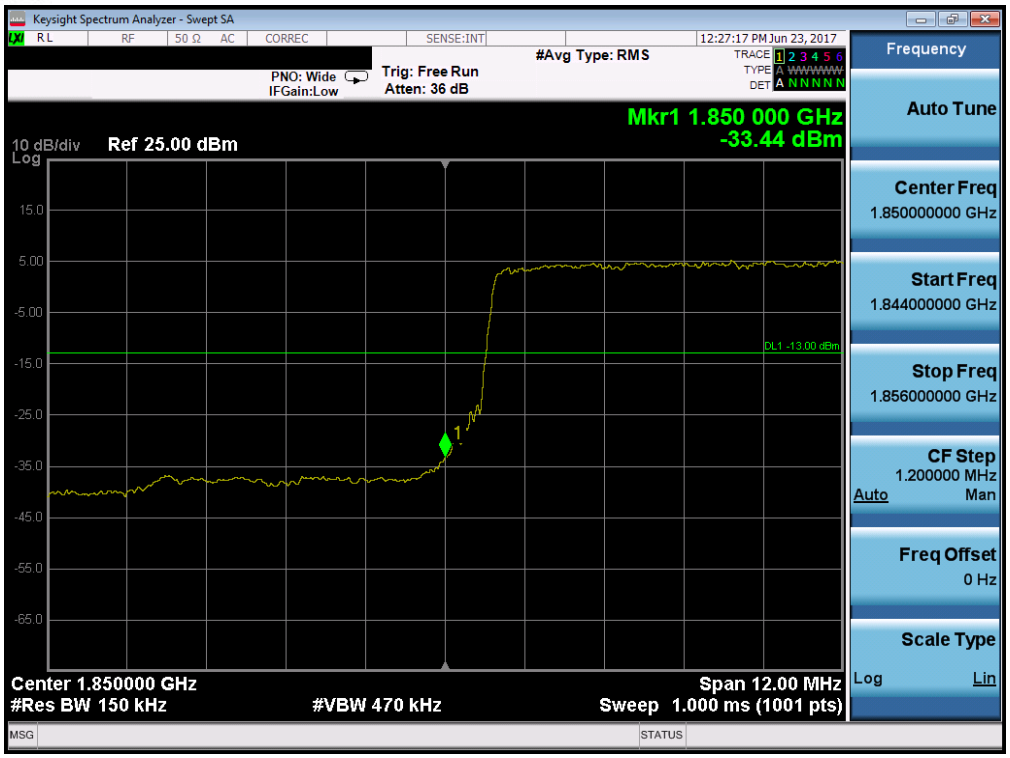
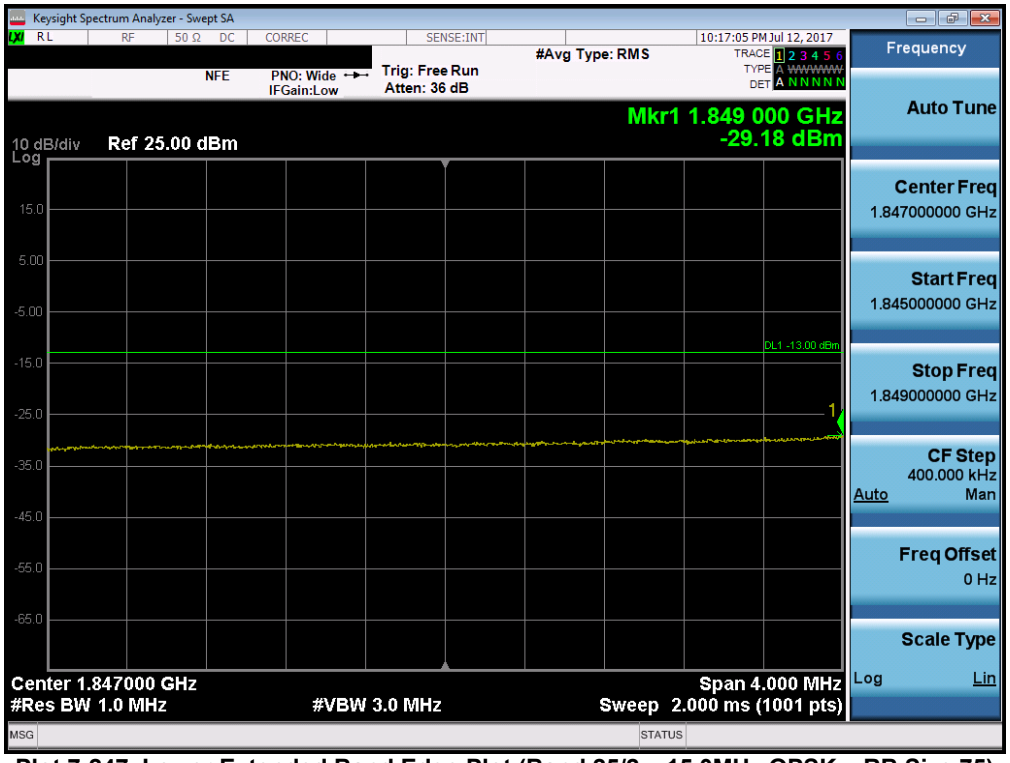
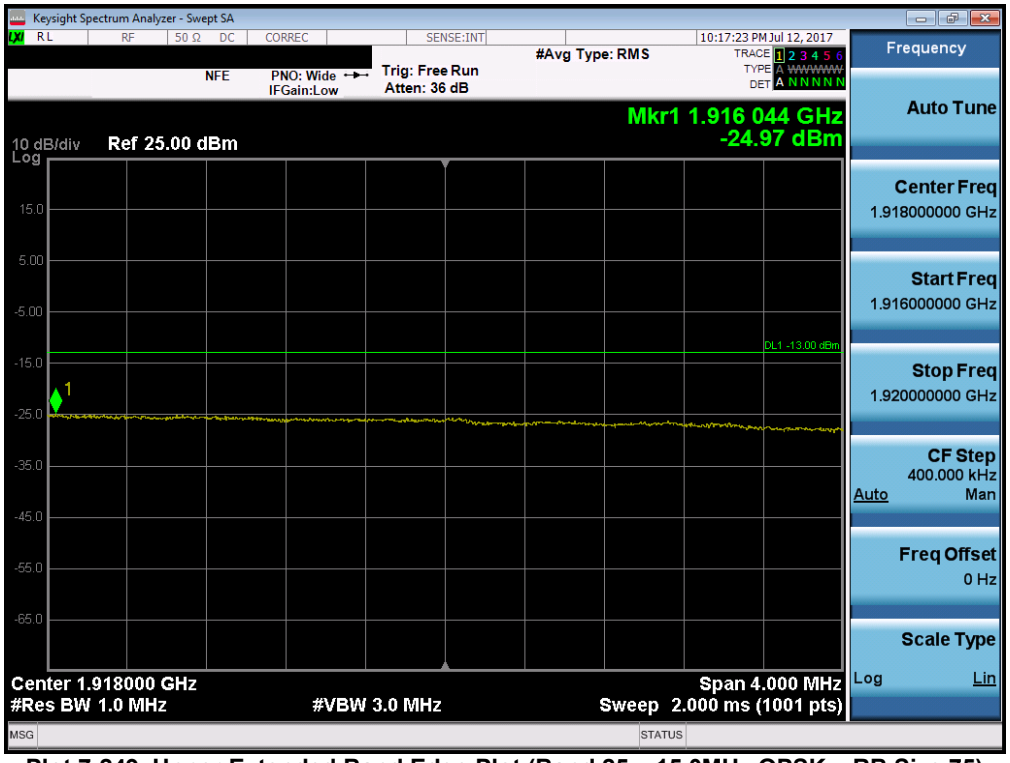


Plot 7-246. Lower Band Edge Plot (Band 25/2 – 15.0MHz QPSK – RB Size 75)

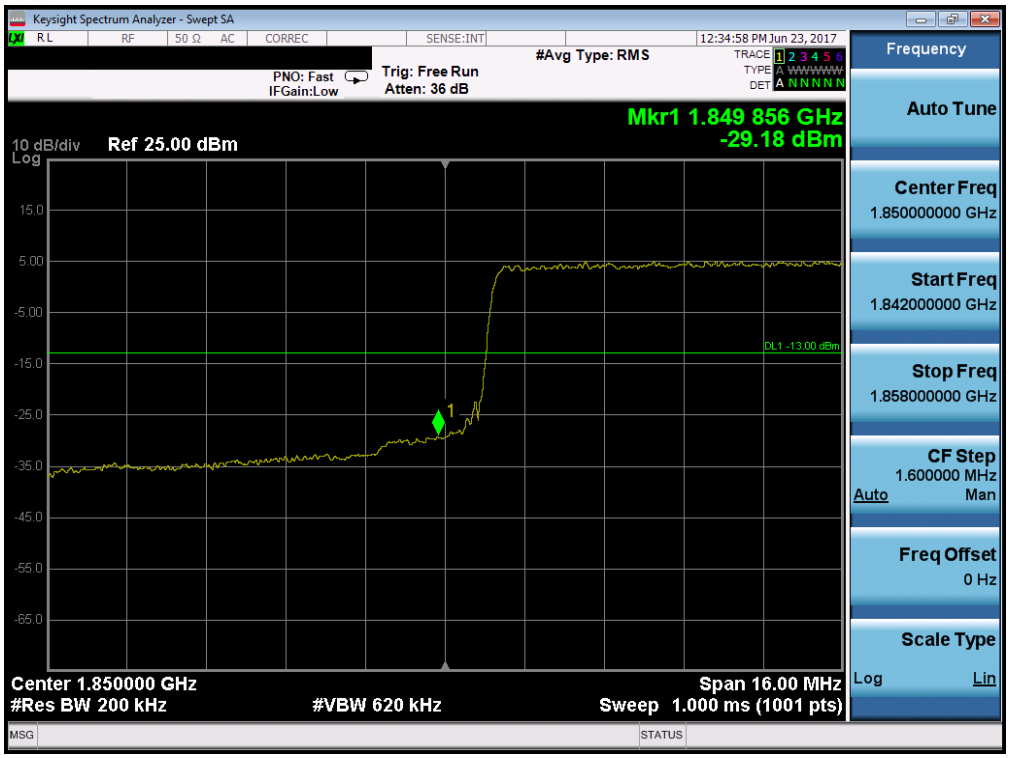


Plot 7-247. Lower Extended Band Edge Plot (Band 25/2 – 15.0MHz QPSK – RB Size 75)

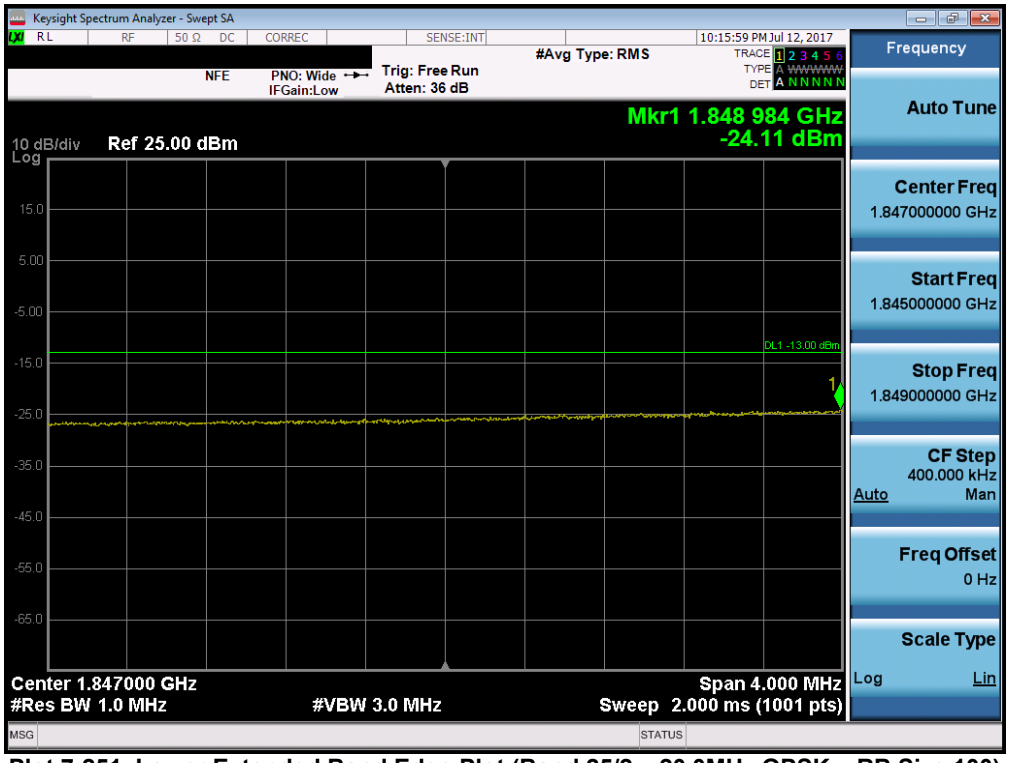
Plot 7-248. Upper Band Edge Plot (Band 25 – 15.0MHz QPSK – RB Size 75)



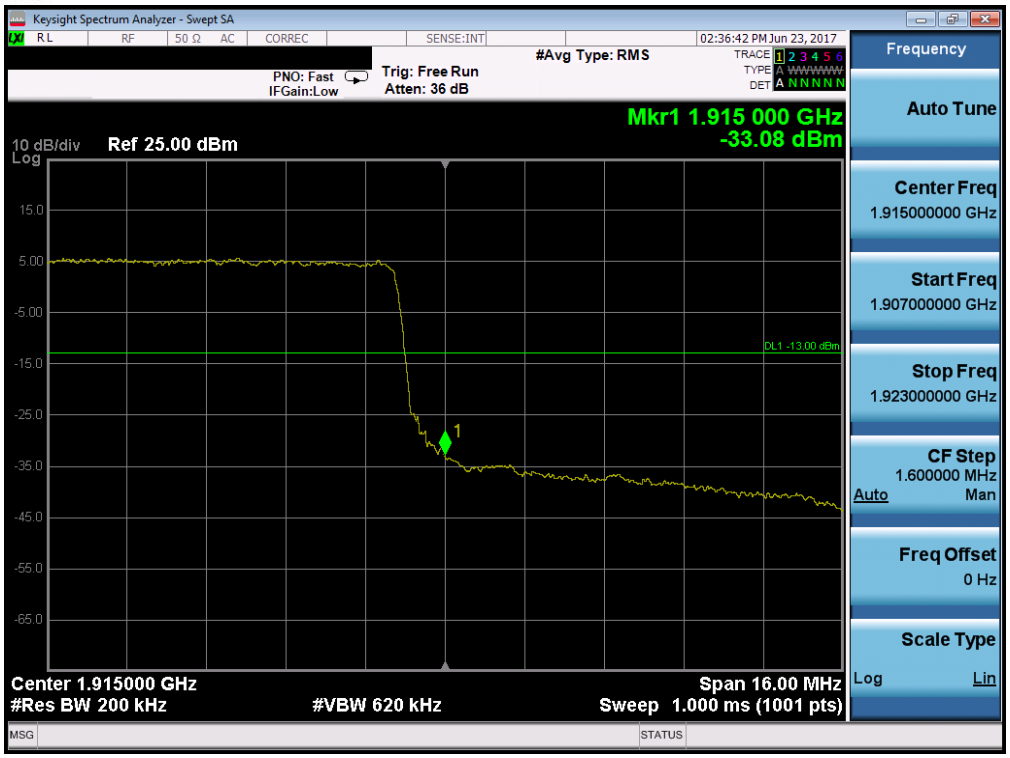
Plot 7-249. Upper Extended Band Edge Plot (Band 25 – 15.0MHz QPSK – RB Size 75)



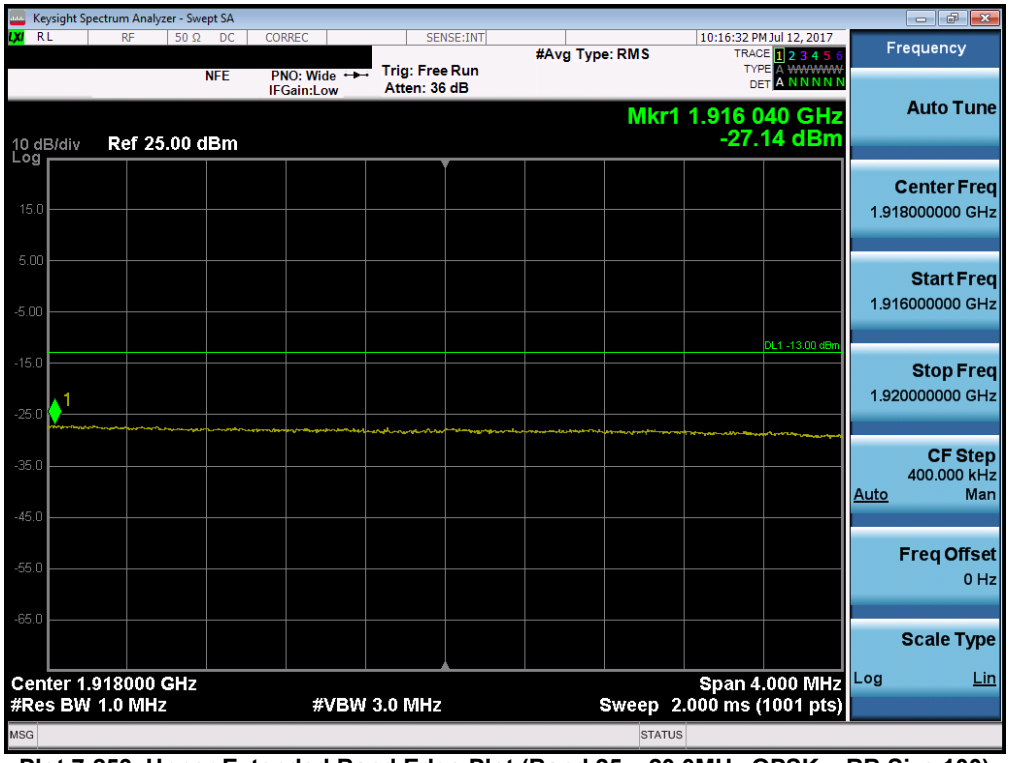
Plot 7-250. Lower Band Edge Plot (Band 25/2 – 20.0MHz QPSK – RB Size 100)



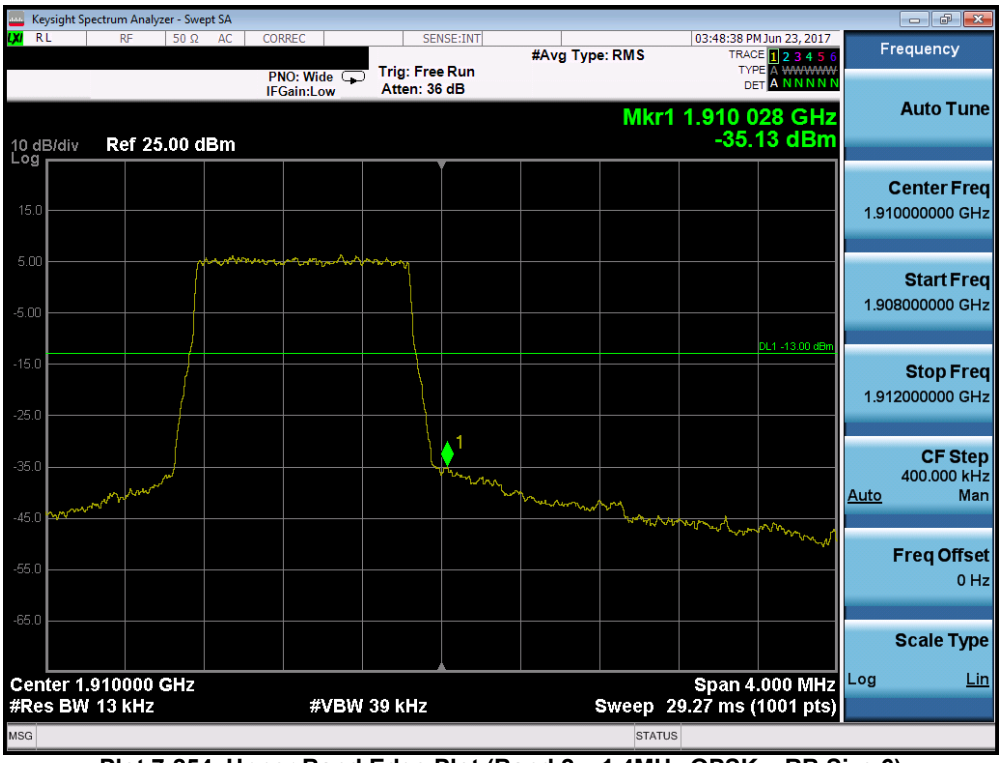
Plot 7-251. Lower Extended Band Edge Plot (Band 25/2 – 20.0MHz QPSK – RB Size 100)



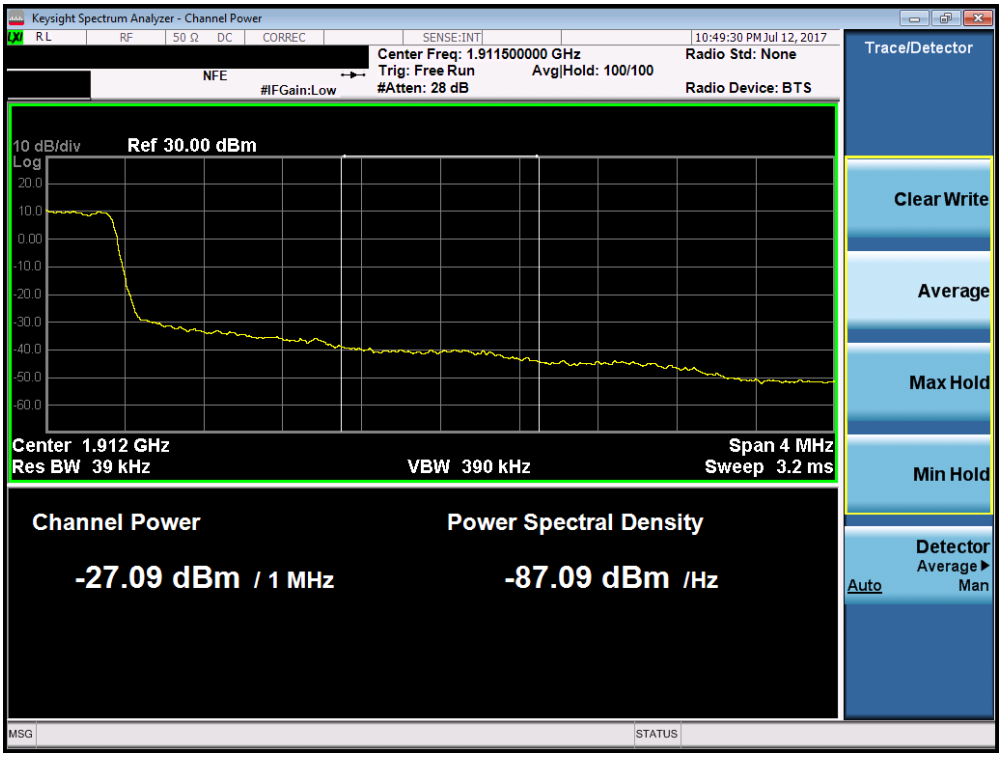
Plot 7-252. Upper Band Edge Plot (Band 25 – 20.0MHz QPSK – RB Size 100)



Plot 7-253. Upper Extended Band Edge Plot (Band 25 – 20.0MHz QPSK – RB Size 100)



Plot 7-254. Upper Band Edge Plot (Band 2 – 1.4MHz QPSK – RB Size 6)



Plot 7-255. Upper Extended Band Edge Plot (Band 2 – 1.4MHz QPSK – RB Size 6)

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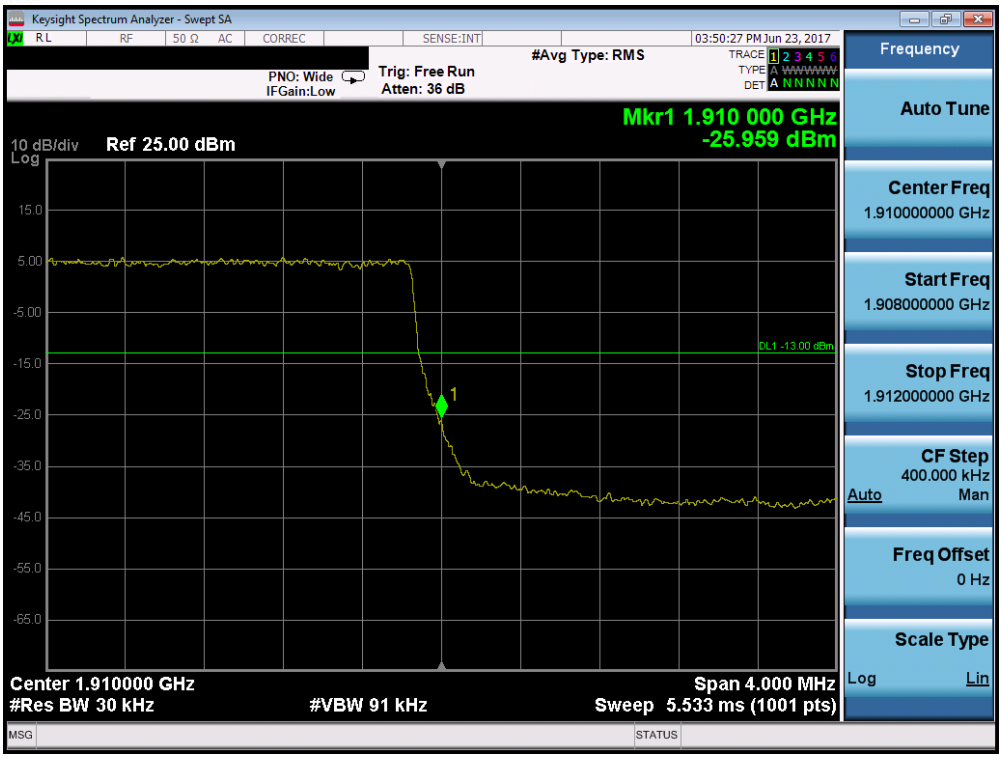
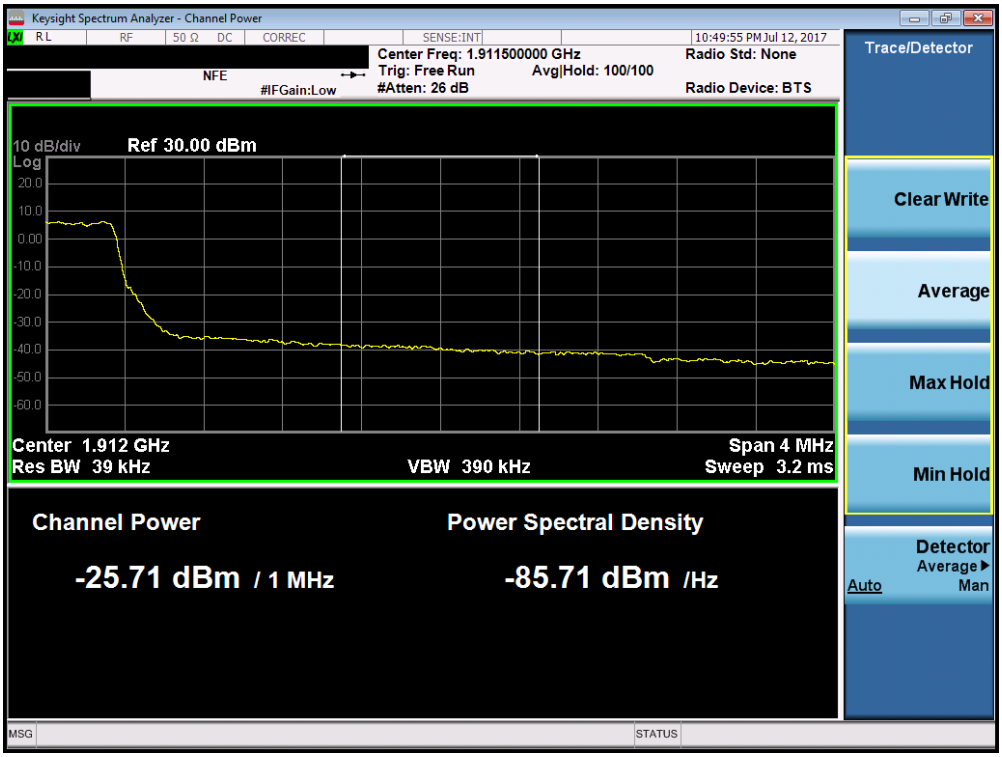
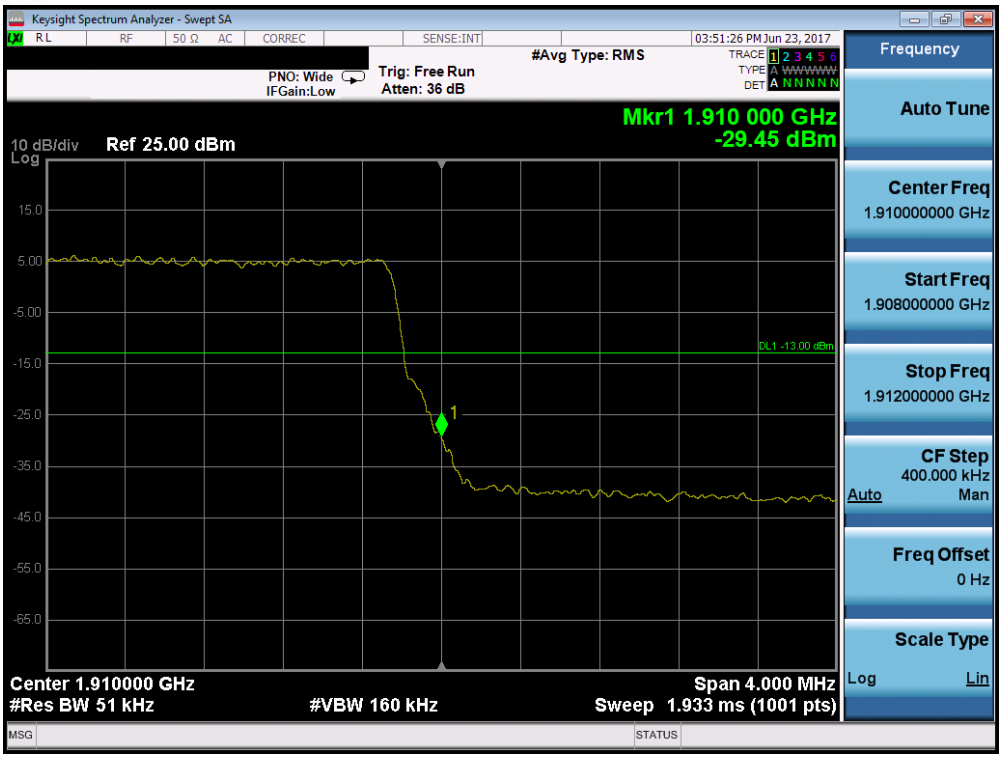


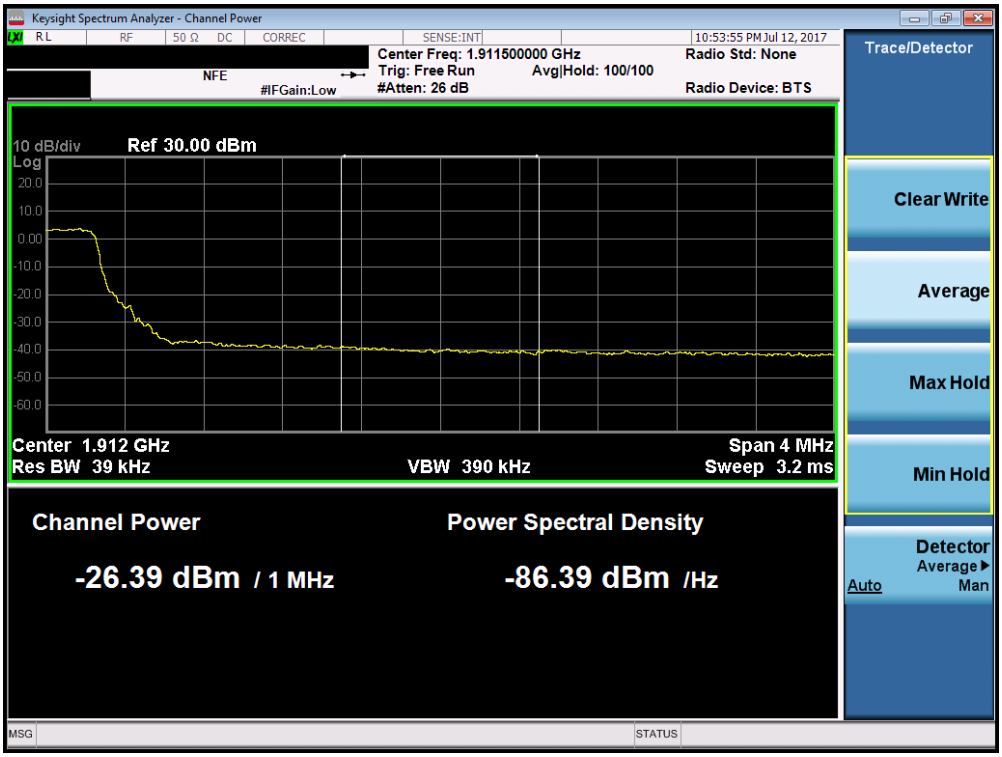
Plot 7-256. Upper Band Edge Plot (Band 2 – 3.0MHz QPSK – RB Size 15)



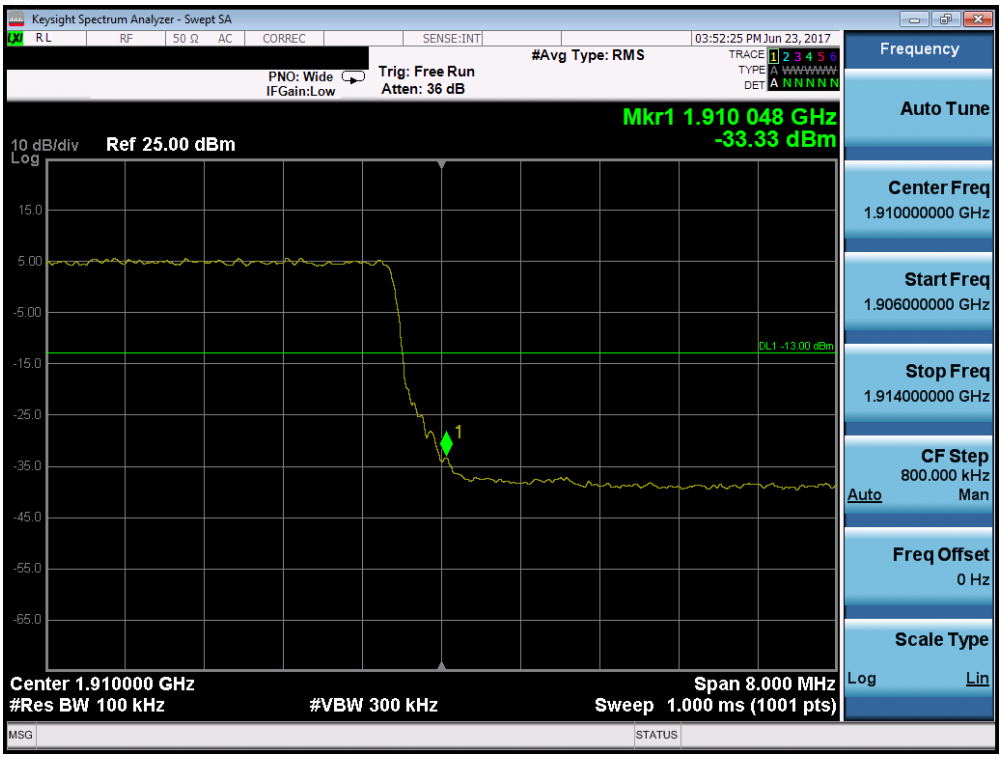
Plot 7-257. Upper Extended Band Edge Plot (Band 2 – 3.0MHz QPSK – RB Size 15)



Plot 7-258. Upper Band Edge Plot (Band 2 – 5.0MHz QPSK – RB Size 25)

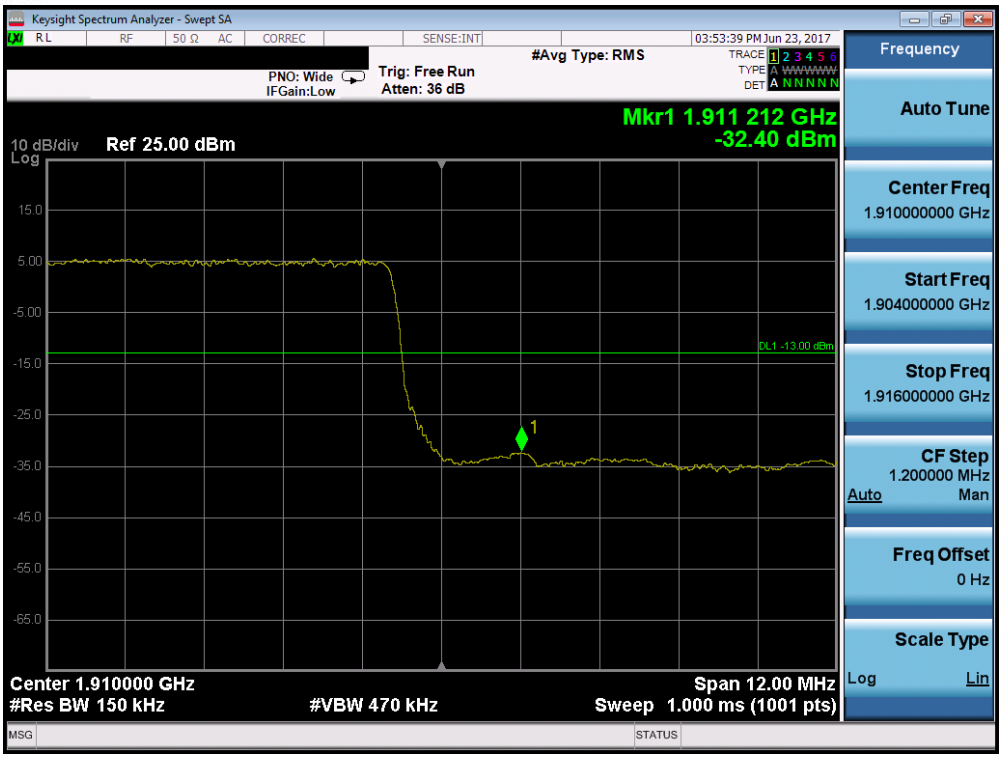


Plot 7-259. Upper Extended Band Edge Plot (Band 2 – 5.0MHz QPSK – RB Size 25)

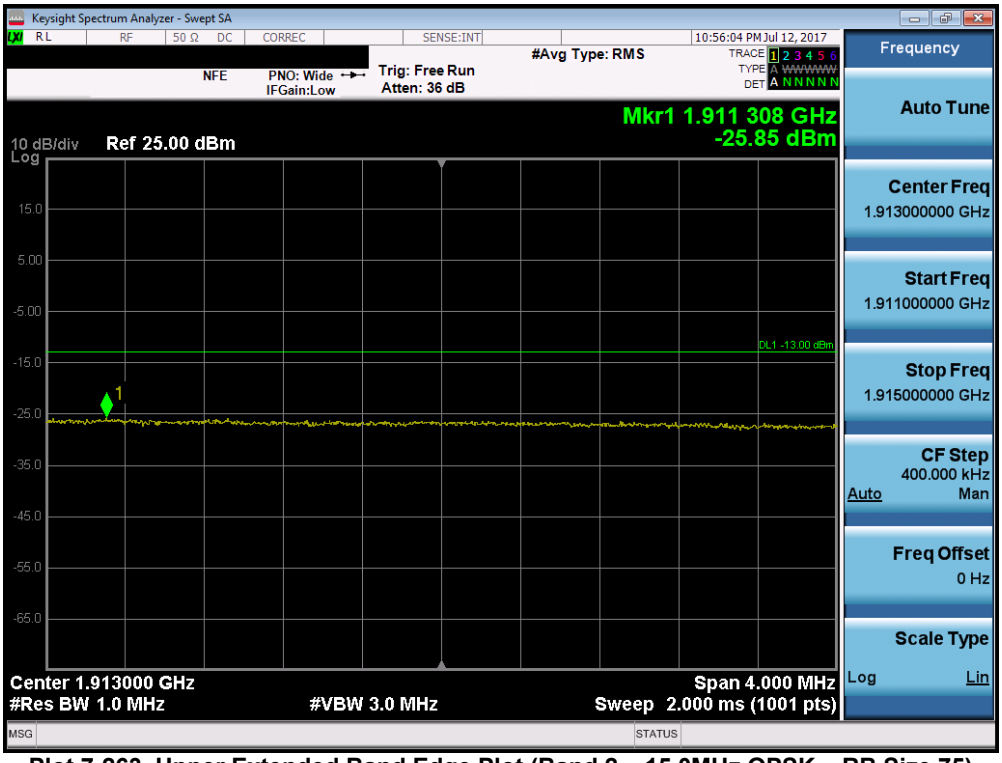


Plot 7-260. Upper Band Edge Plot (Band 2 – 10.0MHz QPSK – RB Size 50)

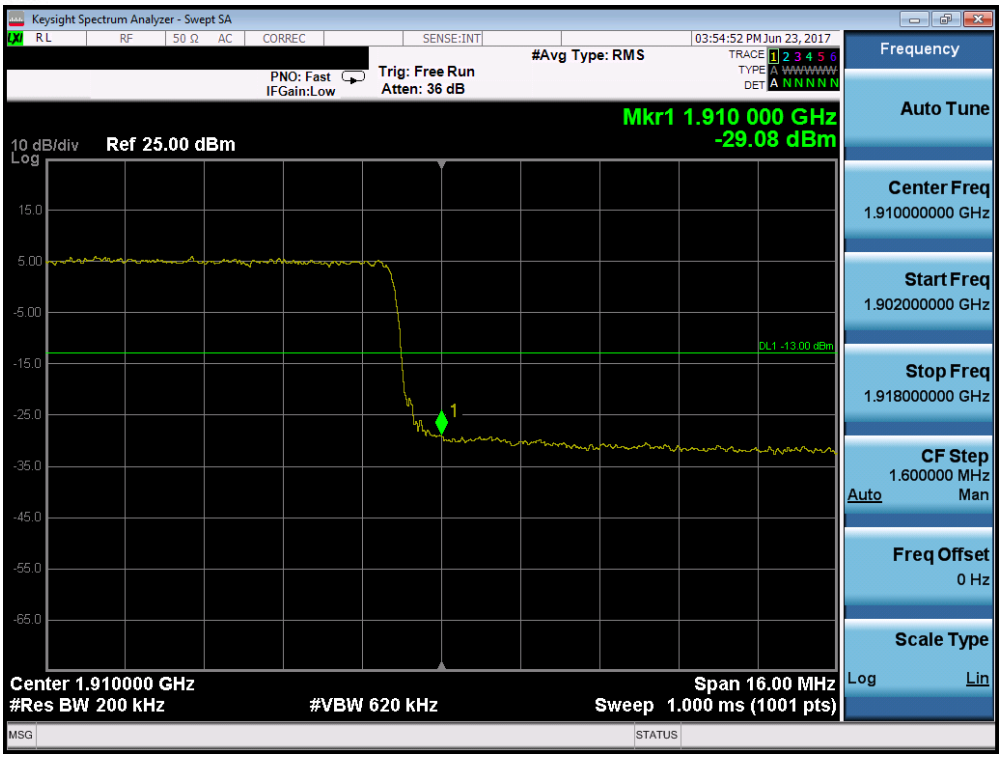
Plot 7-261. Upper Extended Band Edge Plot (Band 2 – 10.0MHz QPSK – RB Size 50)



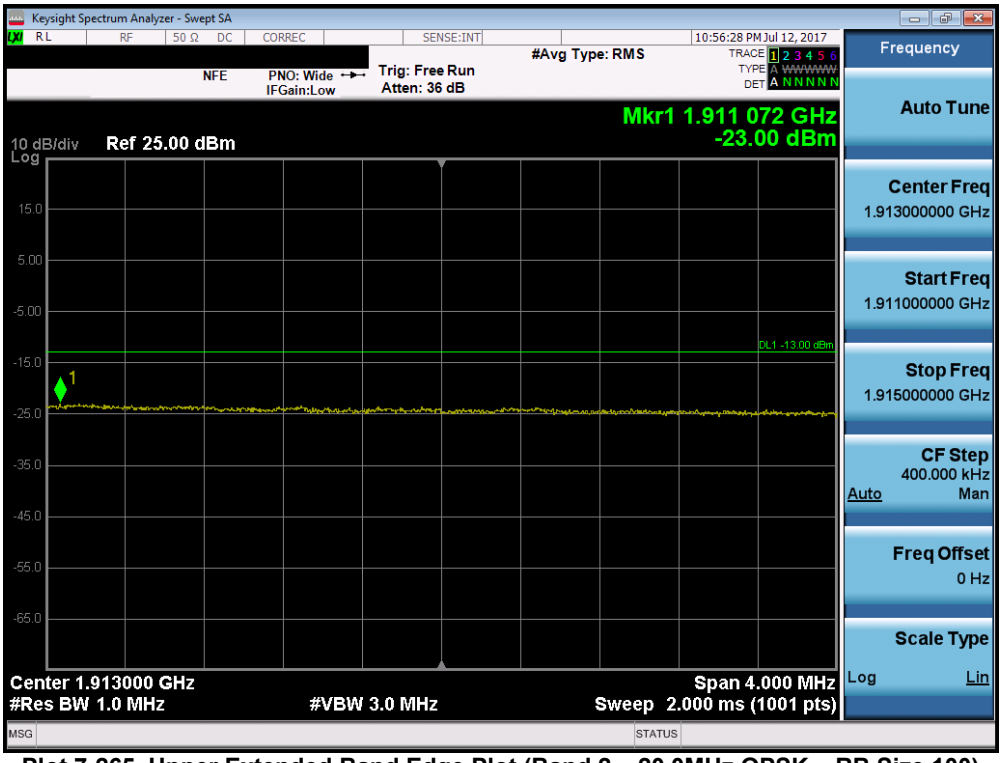
Plot 7-262. Upper Band Edge Plot (Band 2 – 15.0MHz QPSK – RB Size 75)



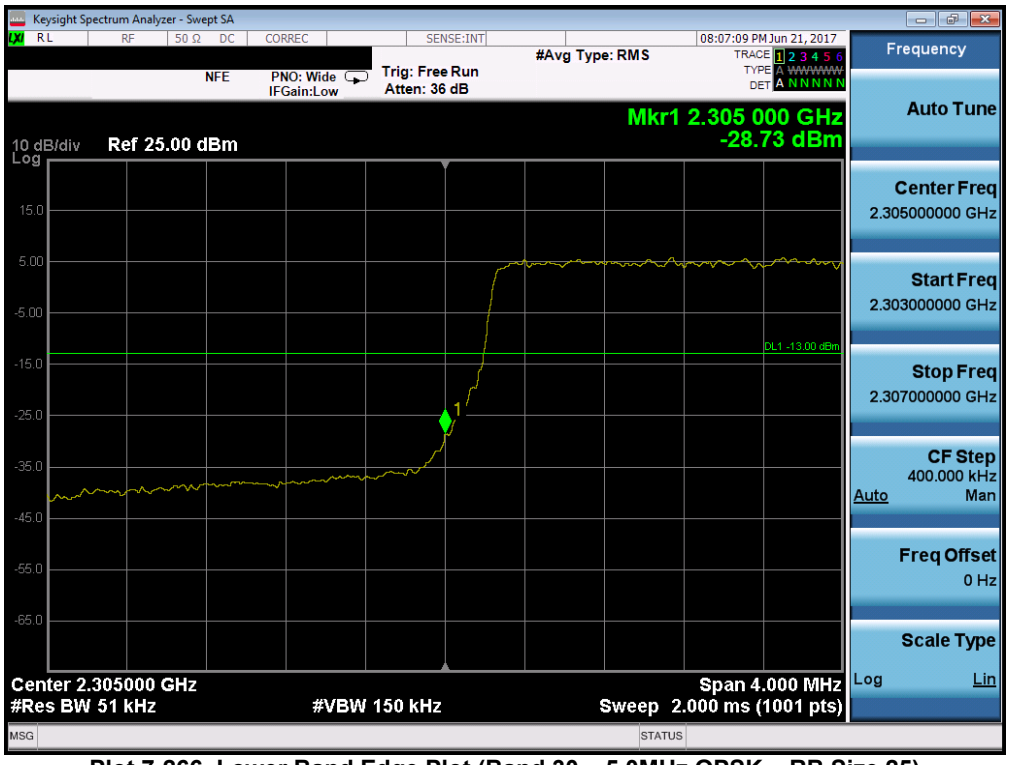
Plot 7-263. Upper Extended Band Edge Plot (Band 2 – 15.0MHz QPSK – RB Size 75)



Plot 7-264. Upper Band Edge Plot (Band 2 – 20.0MHz QPSK – RB Size 100)

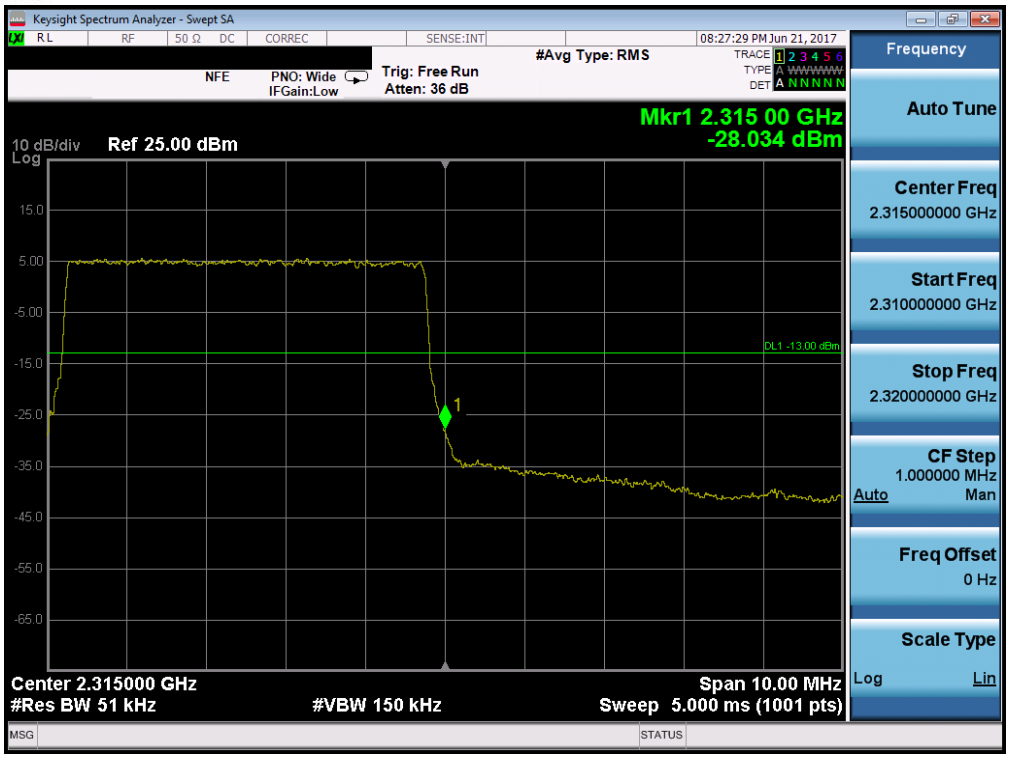


Plot 7-265. Upper Extended Band Edge Plot (Band 2 – 20.0MHz QPSK – RB Size 100)



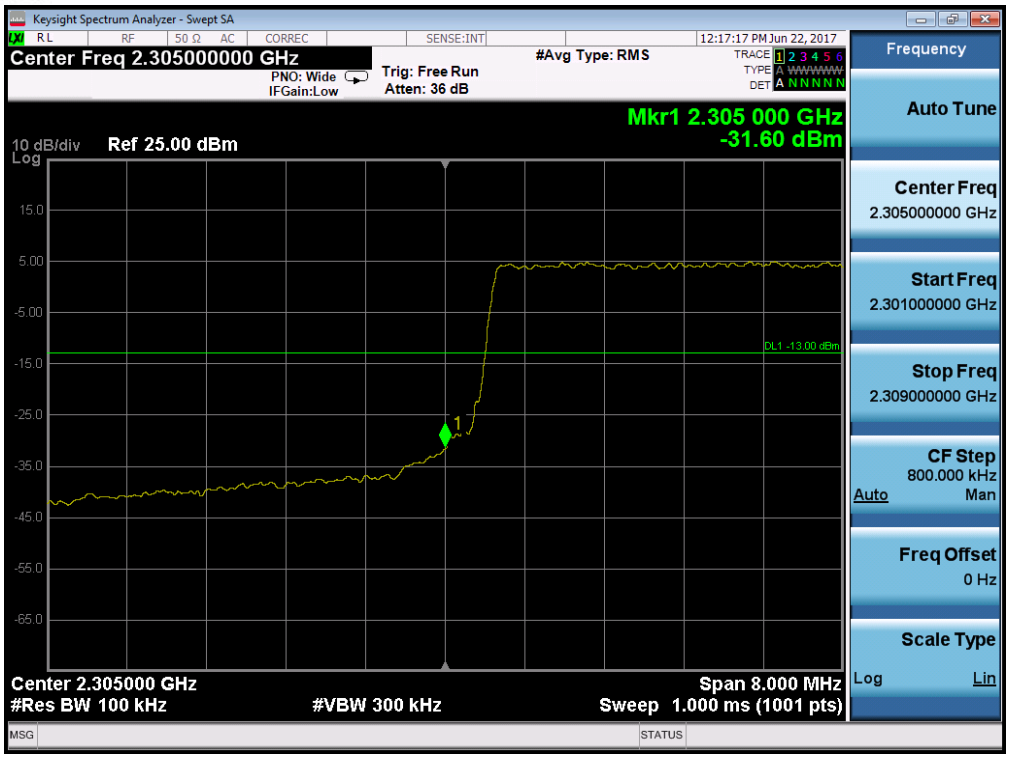
Plot 7-266. Lower Band Edge Plot (Band 30 – 5.0MHz QPSK – RB Size 25)

Plot 7-267. Lower Extended Band Edge Plot (Band 30 – 5.0MHz QPSK – RB Size 25)



Plot 7-268. Upper Band Edge Plot (Band 30 – 5.0MHz QPSK – RB Size 25)

Plot 7-269. Upper Extended Band Edge Plot (Band 30 – 5.0MHz QPSK – RB Size 25)

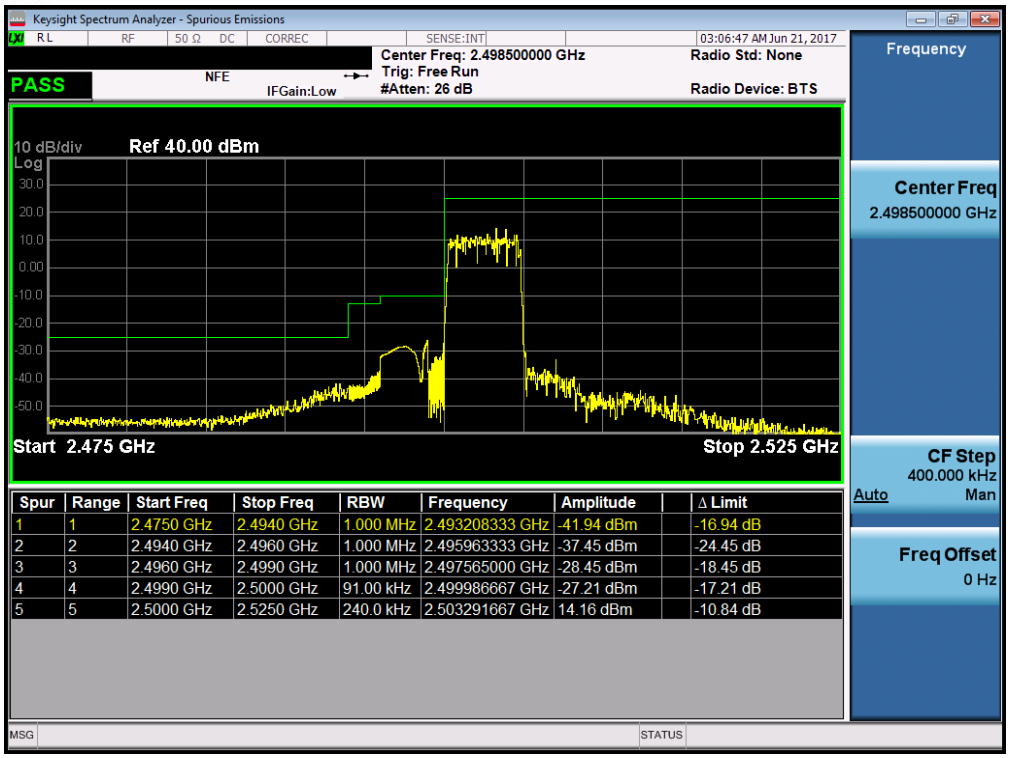


Plot 7-270. Lower Band Edge Plot (Band 30 – 10.0MHz QPSK – RB Size 50)

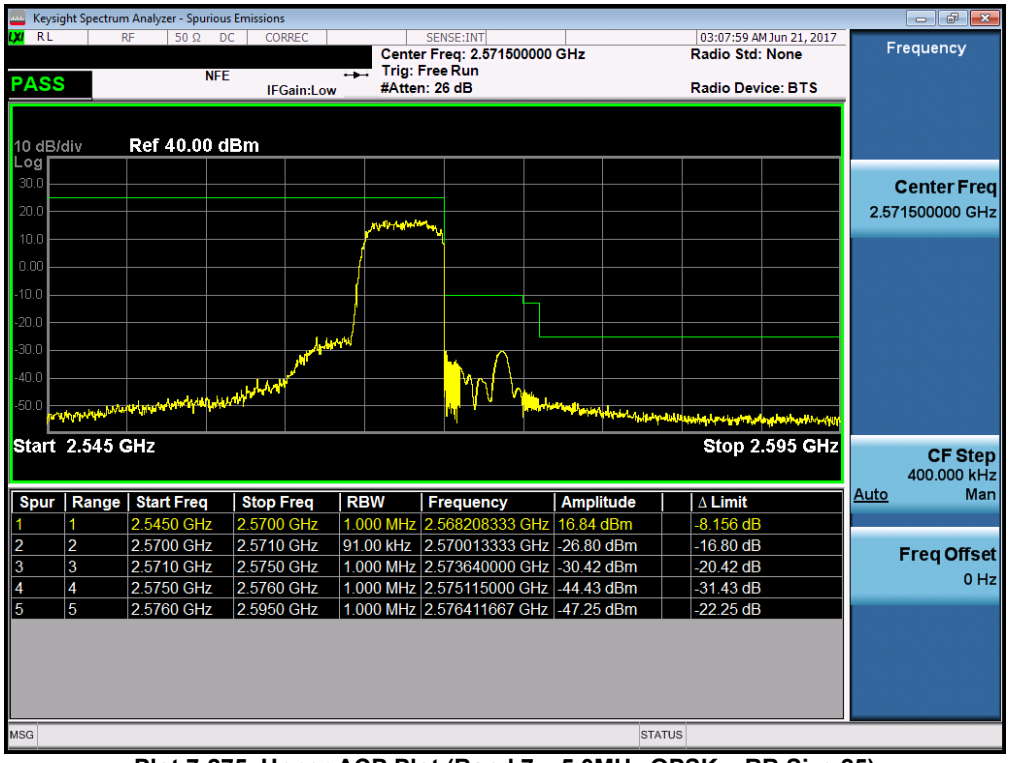
Plot 7-271. Lower Extended Band Edge Plot (Band 30 – 10.0MHz QPSK – RB Size 50)

Plot 7-272. Upper Band Edge Plot (Band 30 – 10.0MHz QPSK – RB Size 50)

Plot 7-273. Upper Extended Band Edge Plot (Band 30 – 10.0MHz QPSK – RB Size 50)



Plot 7-274. Lower ACP Plot (Band 7 – 5.0MHz QPSK – RB Size 25)



Plot 7-275. Upper ACP Plot (Band 7 – 5.0MHz QPSK – RB Size 25)

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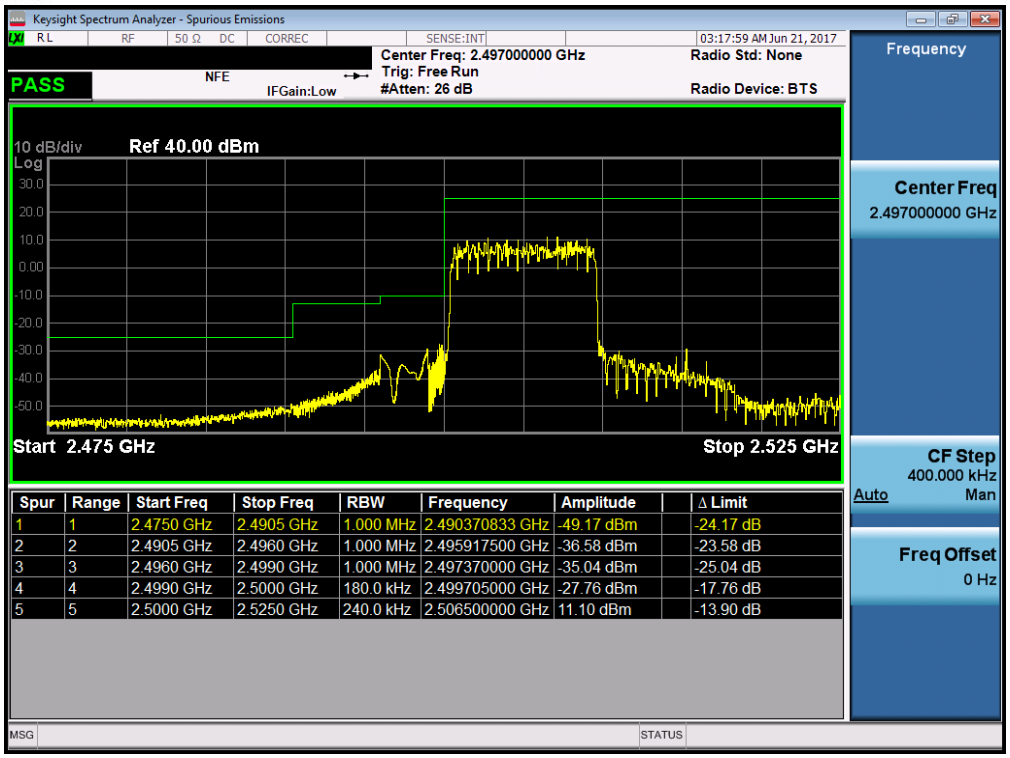
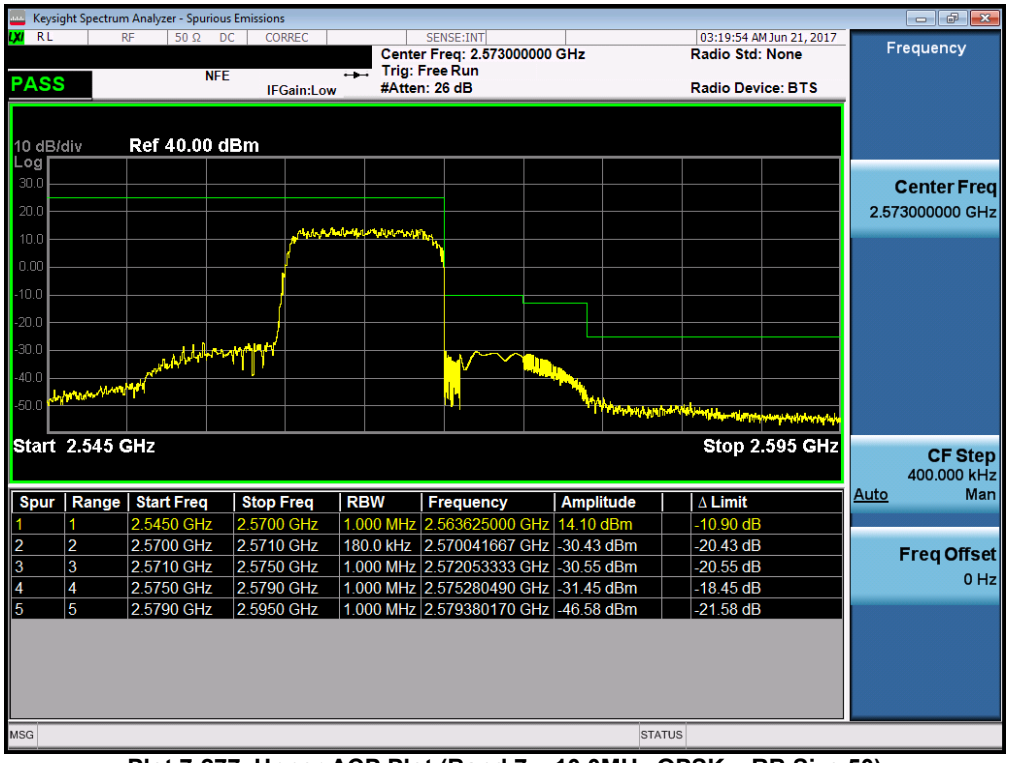


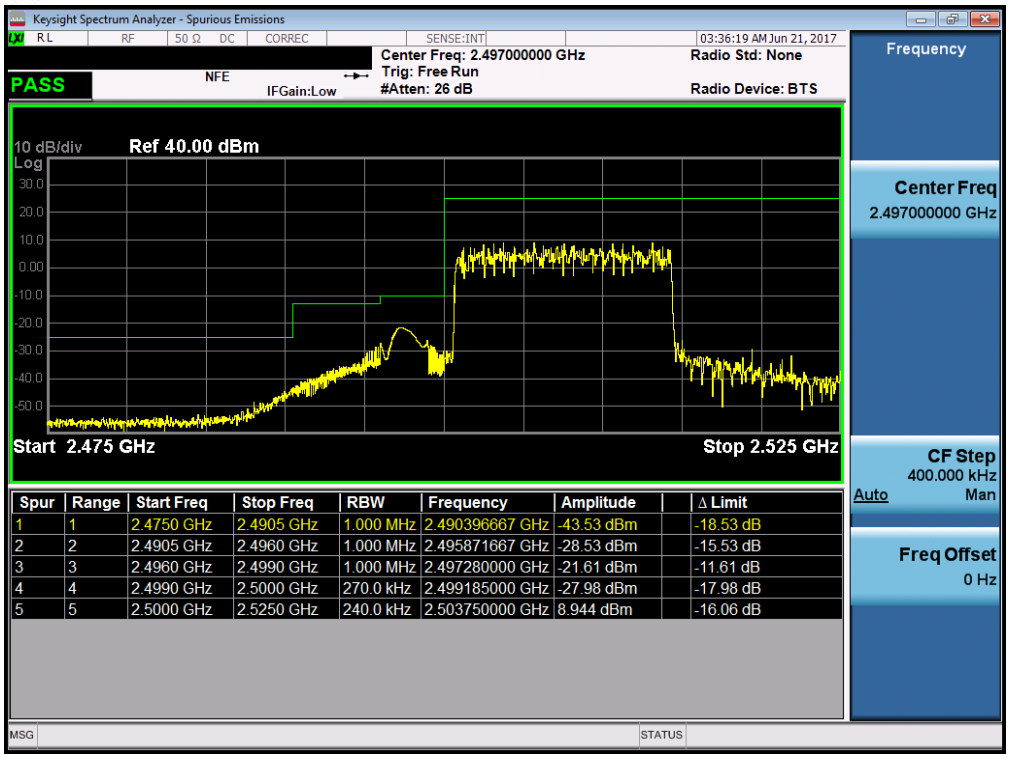
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.490370833 GHz	-49.17 dBm	-24.17 dB
2	2	2.4905 GHz	2.4960 GHz	1.000 MHz	2.495917500 GHz	-36.58 dBm	-23.58 dB
3	3	2.4960 GHz	2.4990 GHz	1.000 MHz	2.497370000 GHz	-35.04 dBm	-25.04 dB
4	4	2.4990 GHz	2.5000 GHz	180.0 kHz	2.499705000 GHz	-27.76 dBm	-17.76 dB
5	5	2.5000 GHz	2.5250 GHz	240.0 kHz	2.506500000 GHz	11.10 dBm	-13.90 dB

Plot 7-276. Lower ACP Plot (Band 7 – 10.0MHz QPSK – RB Size 50)

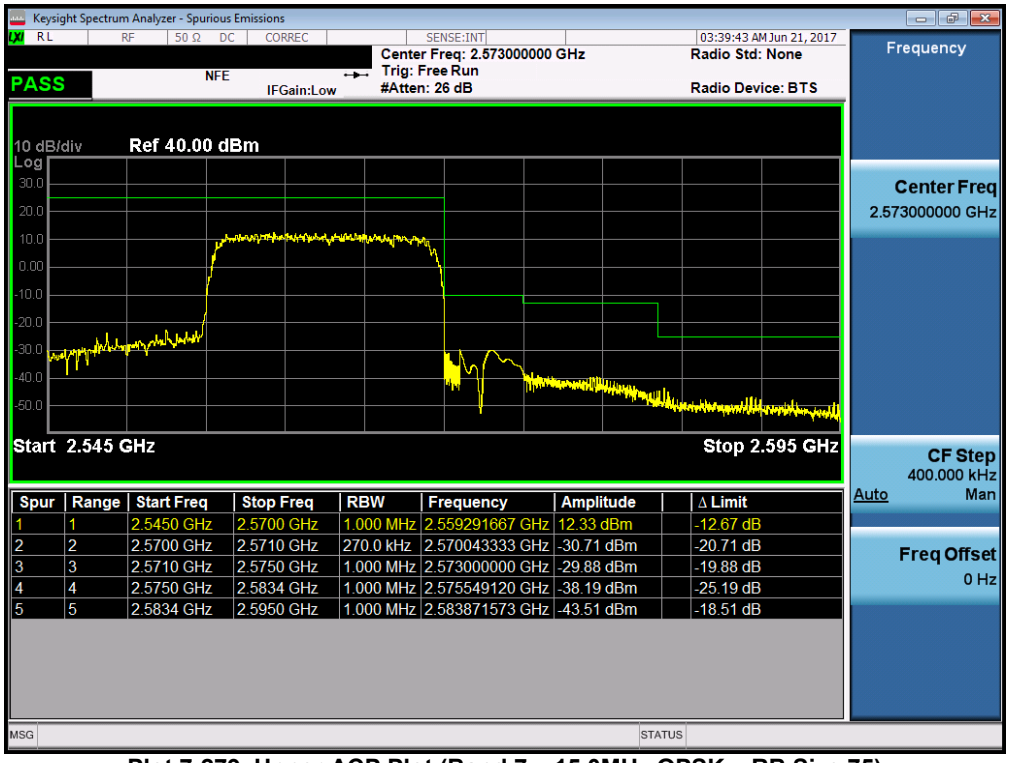


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5450 GHz	2.5700 GHz	1.000 MHz	2.563625000 GHz	14.10 dBm	-10.90 dB
2	2	2.5700 GHz	2.5710 GHz	180.0 kHz	2.570041667 GHz	-30.43 dBm	-20.43 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.572053333 GHz	-30.55 dBm	-20.55 dB
4	4	2.5750 GHz	2.5790 GHz	1.000 MHz	2.575280490 GHz	-31.45 dBm	-18.45 dB
5	5	2.5790 GHz	2.5950 GHz	1.000 MHz	2.579380170 GHz	-46.58 dBm	-21.58 dB

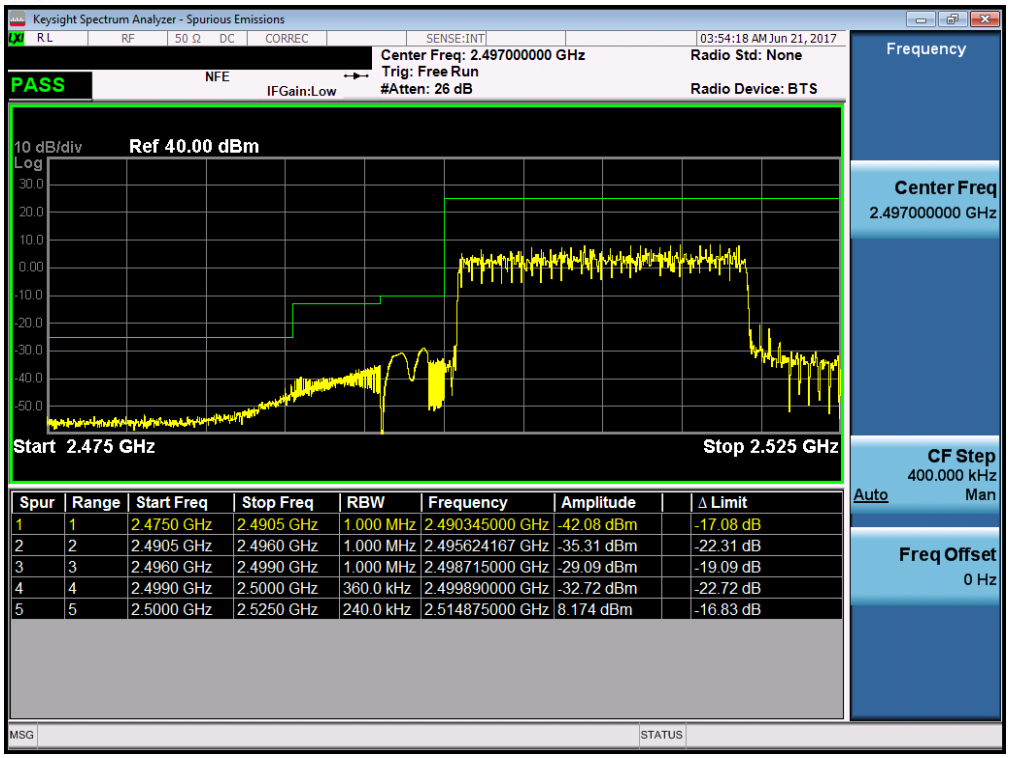
Plot 7-277. Upper ACP Plot (Band 7 – 10.0MHz QPSK – RB Size 50)



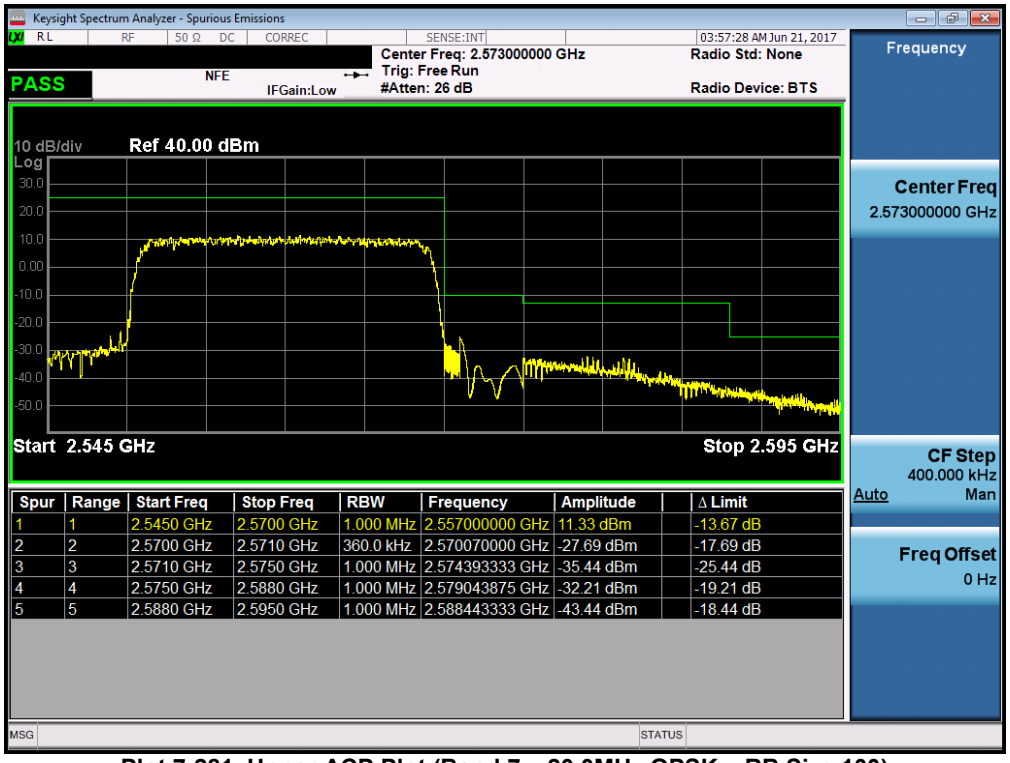
Plot 7-278. Lower ACP Plot (Band 7 – 15.0MHz QPSK – RB Size 75)



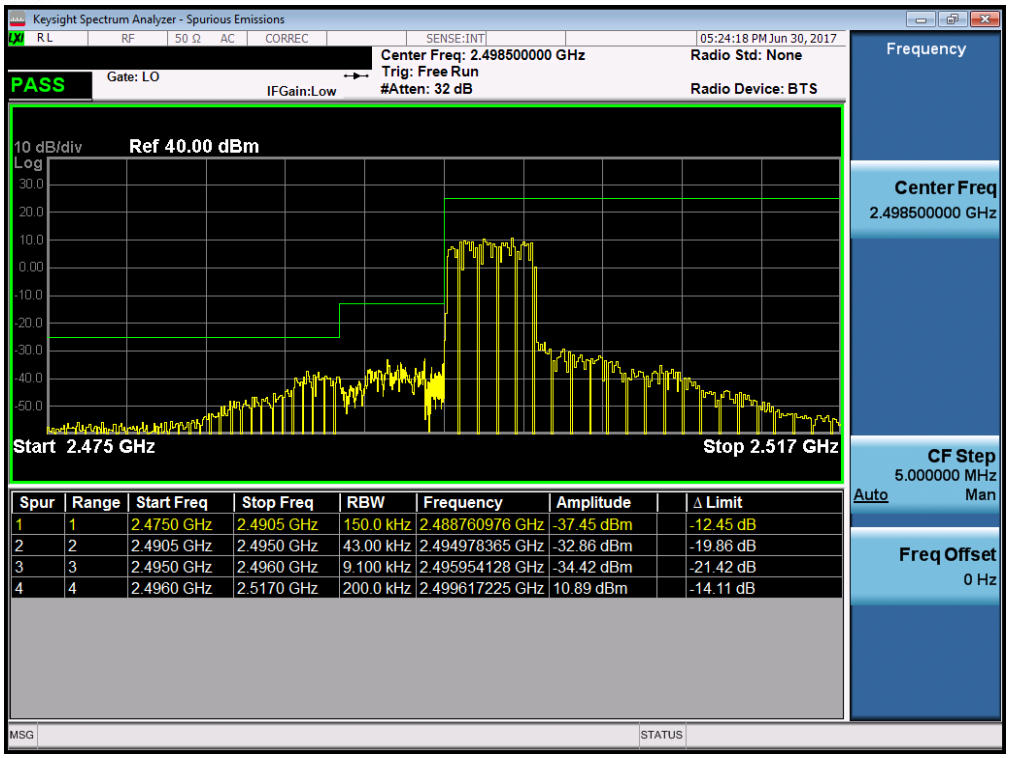
Plot 7-279. Upper ACP Plot (Band 7 – 15.0MHz QPSK – RB Size 75)



Plot 7-280. Lower ACP Plot (Band 7 – 20.0MHz QPSK – RB Size 100)

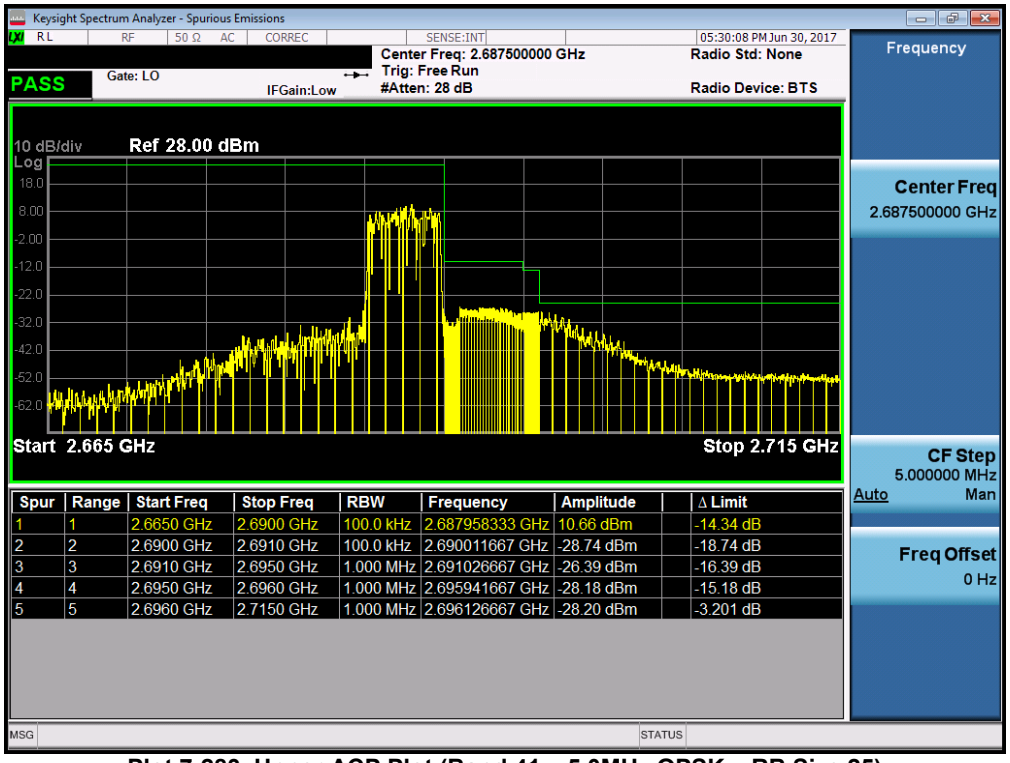


Plot 7-281. Upper ACP Plot (Band 7 – 20.0MHz QPSK – RB Size 100)



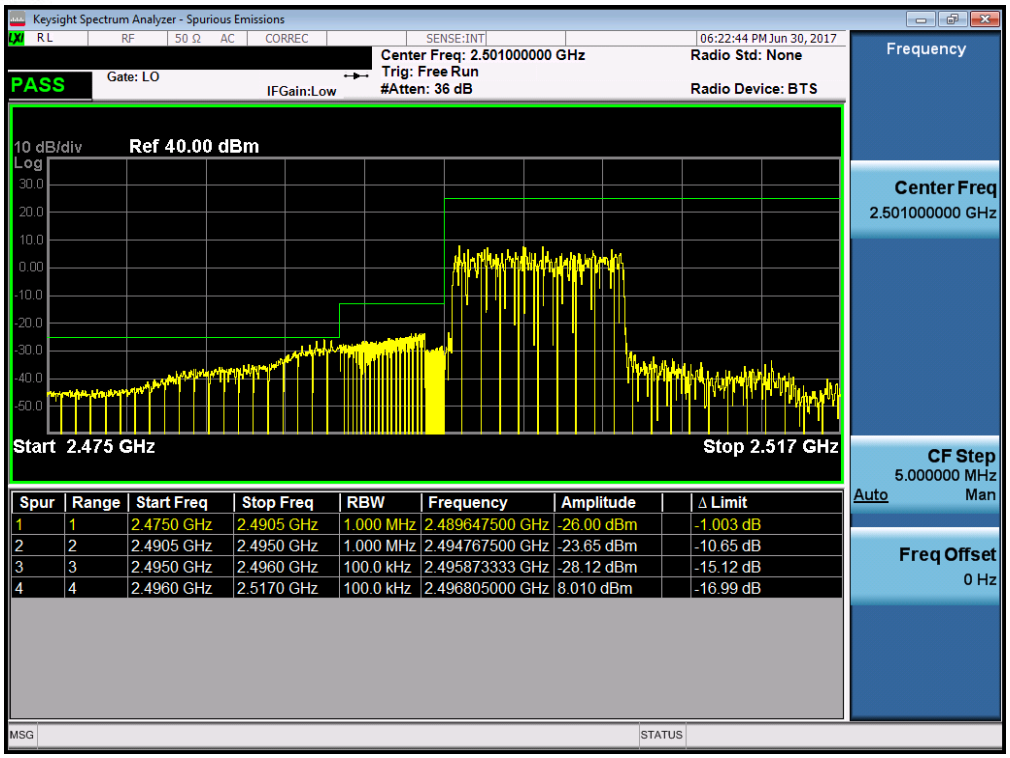
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	150.0 kHz	2.488760976 GHz	-37.45 dBm	-12.45 dB
2	2	2.4905 GHz	2.4950 GHz	43.00 kHz	2.494978365 GHz	-32.86 dBm	-19.86 dB
3	3	2.4950 GHz	2.4960 GHz	9.100 kHz	2.495954128 GHz	-34.42 dBm	-21.42 dB
4	4	2.4960 GHz	2.5170 GHz	200.0 kHz	2.499617225 GHz	10.89 dBm	-14.11 dB

Plot 7-282. Lower ACP Plot (Band 41 – 5.0MHz QPSK – RB Size 25)



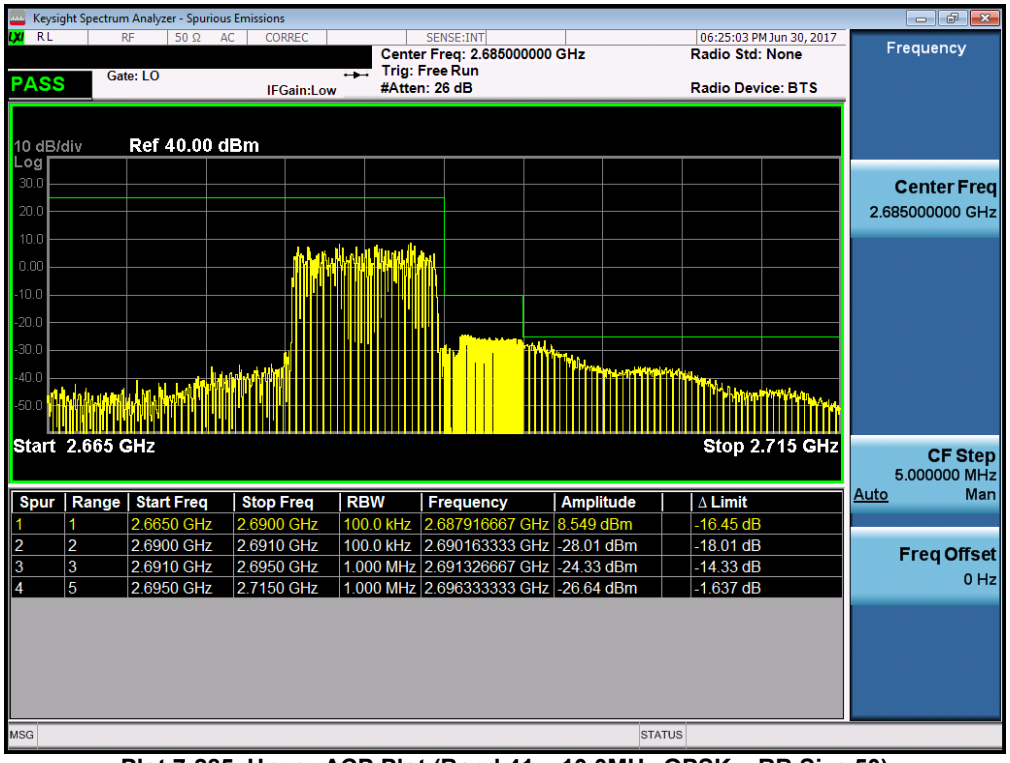
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6650 GHz	2.6900 GHz	100.0 kHz	2.687958333 GHz	10.66 dBm	-14.34 dB
2	2	2.6900 GHz	2.6910 GHz	100.0 kHz	2.690011667 GHz	-28.74 dBm	-18.74 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691026667 GHz	-26.39 dBm	-16.39 dB
4	4	2.6950 GHz	2.6960 GHz	1.000 MHz	2.695941667 GHz	-28.18 dBm	-15.18 dB
5	5	2.6960 GHz	2.7150 GHz	1.000 MHz	2.696126667 GHz	-28.20 dBm	-3.201 dB

Plot 7-283. Upper ACP Plot (Band 41 – 5.0MHz QPSK – RB Size 25)



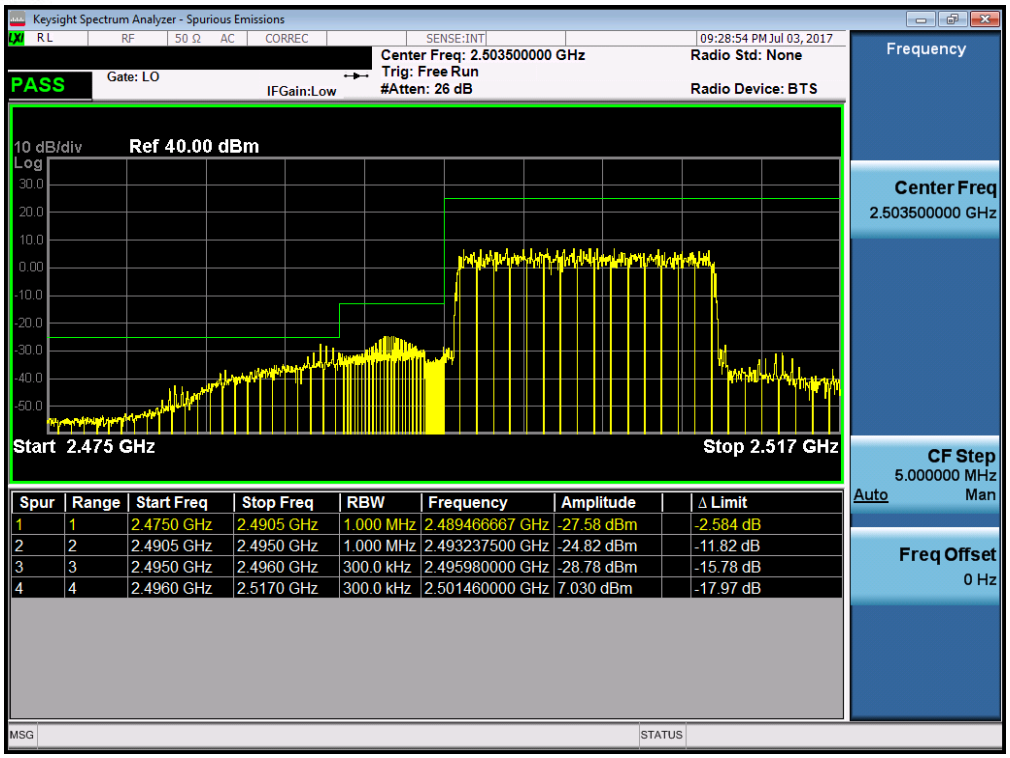
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.489647500 GHz	-26.00 dBm	-1.003 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494767500 GHz	-23.65 dBm	-10.65 dB
3	3	2.4950 GHz	2.4960 GHz	100.0 kHz	2.495873333 GHz	-28.12 dBm	-15.12 dB
4	4	2.4960 GHz	2.5170 GHz	100.0 kHz	2.496805000 GHz	8.010 dBm	-16.99 dB

Plot 7-284. Lower ACP Plot (Band 41 – 10.0MHz QPSK – RB Size 50)



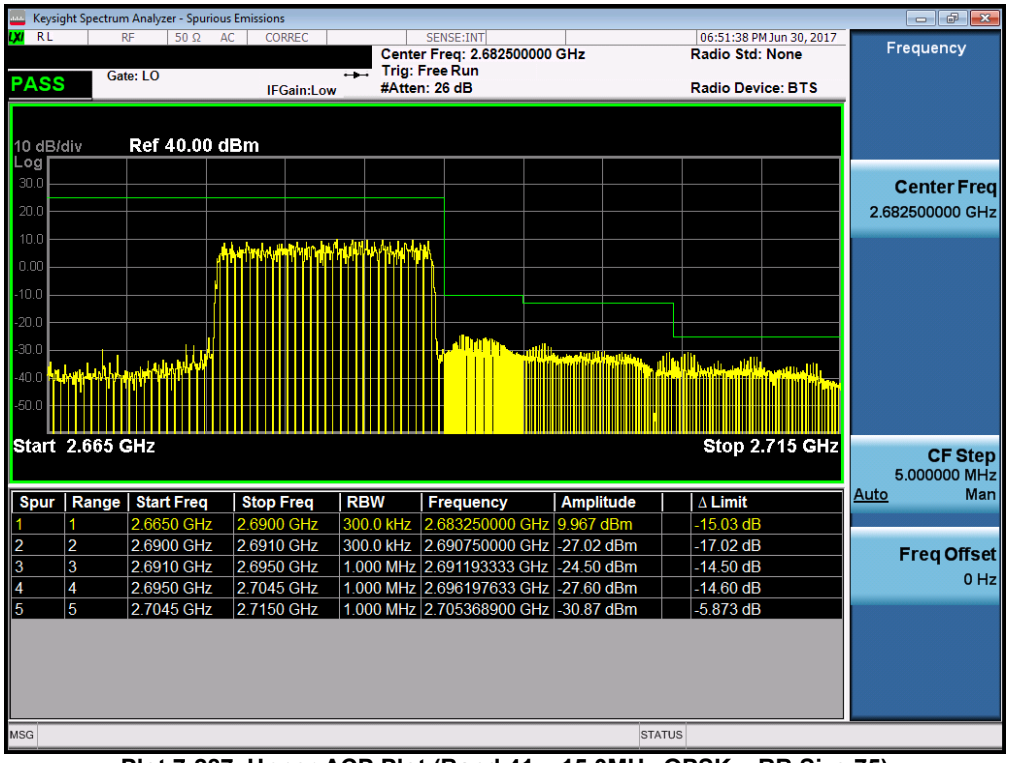
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6650 GHz	2.6900 GHz	100.0 kHz	2.687916667 GHz	8.549 dBm	-16.45 dB
2	2	2.6900 GHz	2.6910 GHz	100.0 kHz	2.690163333 GHz	-28.01 dBm	-18.01 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691326667 GHz	-24.33 dBm	-14.33 dB
4	5	2.6950 GHz	2.7150 GHz	1.000 MHz	2.696333333 GHz	-26.64 dBm	-1.637 dB

Plot 7-285. Upper ACP Plot (Band 41 – 10.0MHz QPSK – RB Size 50)



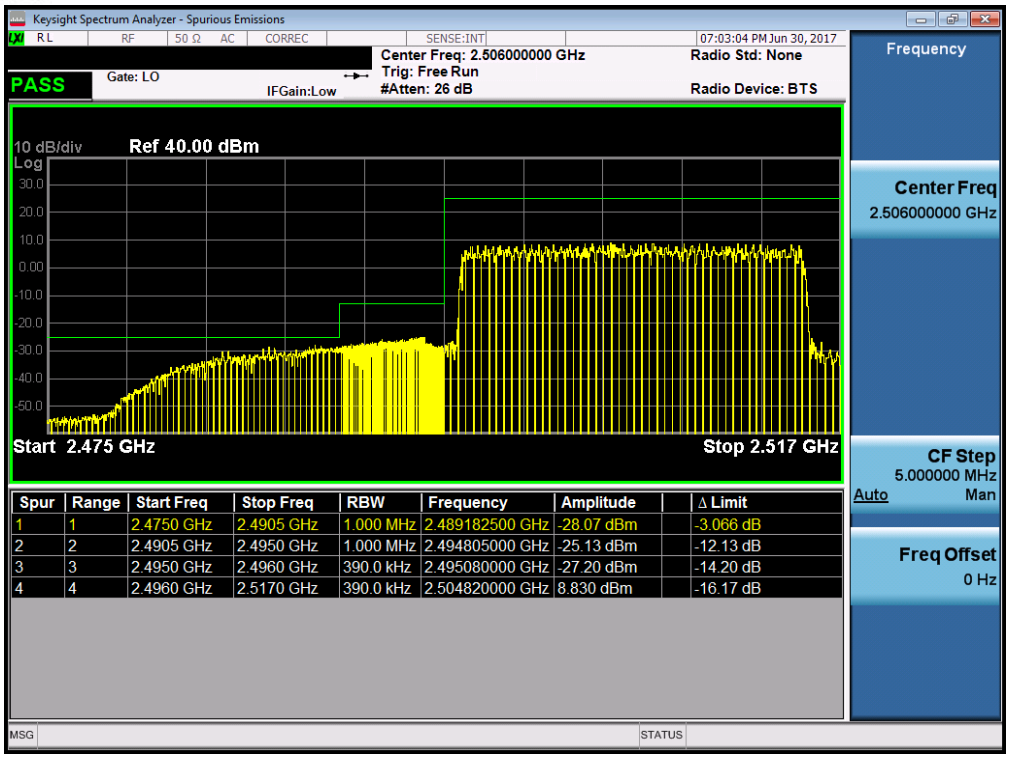
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.489466667 GHz	-27.58 dBm	-2.584 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.493237500 GHz	-24.82 dBm	-11.82 dB
3	3	2.4950 GHz	2.4960 GHz	300.0 kHz	2.495980000 GHz	-28.78 dBm	-15.78 dB
4	4	2.4960 GHz	2.5170 GHz	300.0 kHz	2.501460000 GHz	7.030 dBm	-17.97 dB

Plot 7-286. Lower ACP Plot (Band 41 – 15.0MHz QPSK – RB Size 75)



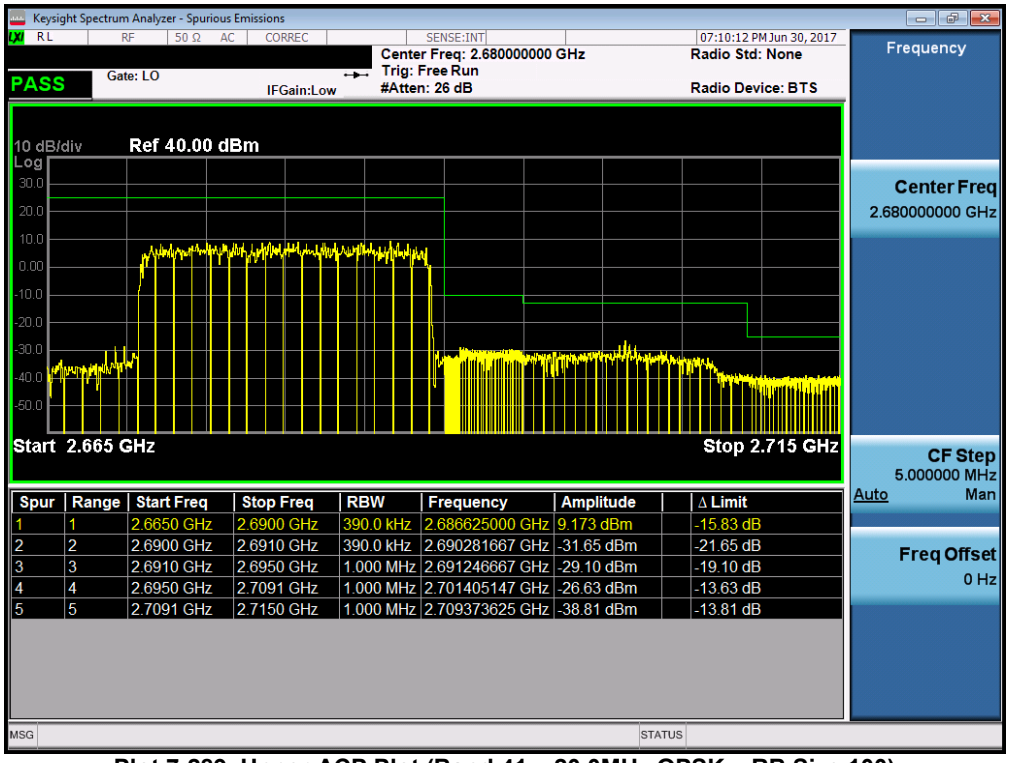
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6650 GHz	2.6900 GHz	300.0 kHz	2.683250000 GHz	9.967 dBm	-15.03 dB
2	2	2.6900 GHz	2.6910 GHz	300.0 kHz	2.690750000 GHz	-27.02 dBm	-17.02 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691193333 GHz	-24.50 dBm	-14.50 dB
4	4	2.6950 GHz	2.7045 GHz	1.000 MHz	2.696197633 GHz	-27.60 dBm	-14.60 dB
5	5	2.7045 GHz	2.7150 GHz	1.000 MHz	2.705368900 GHz	-30.87 dBm	-5.873 dB

Plot 7-287. Upper ACP Plot (Band 41 – 15.0MHz QPSK – RB Size 75)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.489182500 GHz	-28.07 dBm	-3.066 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494805000 GHz	-25.13 dBm	-12.13 dB
3	3	2.4950 GHz	2.4960 GHz	390.0 kHz	2.495080000 GHz	-27.20 dBm	-14.20 dB
4	4	2.4960 GHz	2.5170 GHz	390.0 kHz	2.504820000 GHz	8.830 dBm	-16.17 dB

Plot 7-288. Lower ACP Plot (Band 41 – 20.0MHz QPSK – RB Size 100)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6650 GHz	2.6900 GHz	390.0 kHz	2.686625000 GHz	9.173 dBm	-15.83 dB
2	2	2.6900 GHz	2.6910 GHz	390.0 kHz	2.690281667 GHz	-31.65 dBm	-21.65 dB
3	3	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691246667 GHz	-29.10 dBm	-19.10 dB
4	4	2.6950 GHz	2.7091 GHz	1.000 MHz	2.701405147 GHz	-26.63 dBm	-13.63 dB
5	5	2.7091 GHz	2.7150 GHz	1.000 MHz	2.709373625 GHz	-38.81 dBm	-13.81 dB

Plot 7-289. Upper ACP Plot (Band 41 – 20.0MHz QPSK – RB Size 100)

7.5 Peak-Average Ratio

§24.232(d)

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 v02r02 – Section 5.7.1

Test Settings

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW > Emission bandwidth of signal
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.

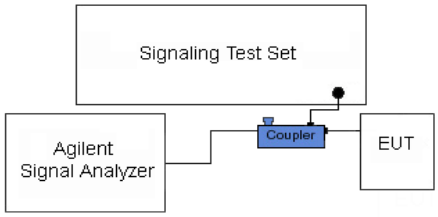
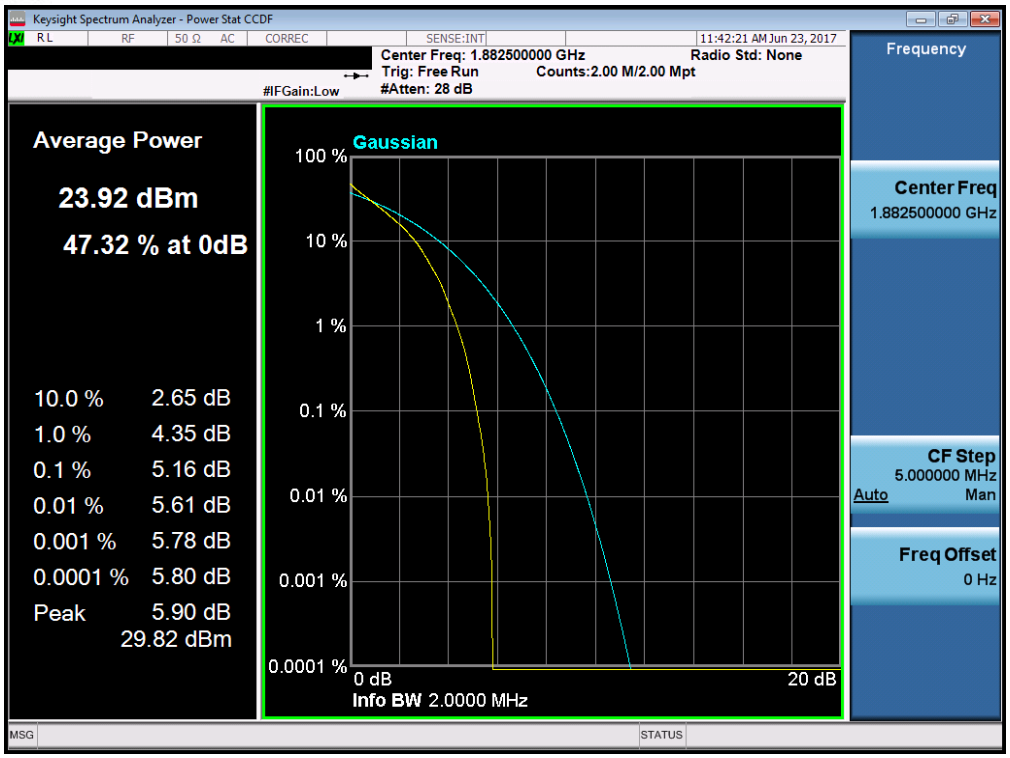


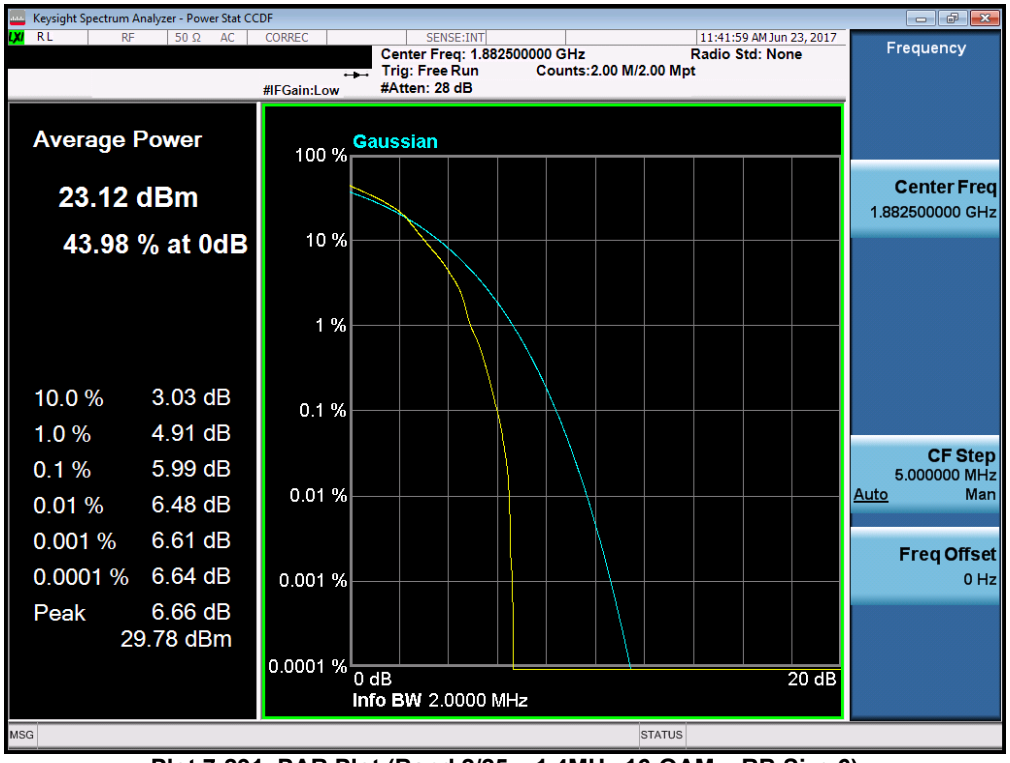
Figure 7-4. Test Instrument & Measurement Setup

Test Notes

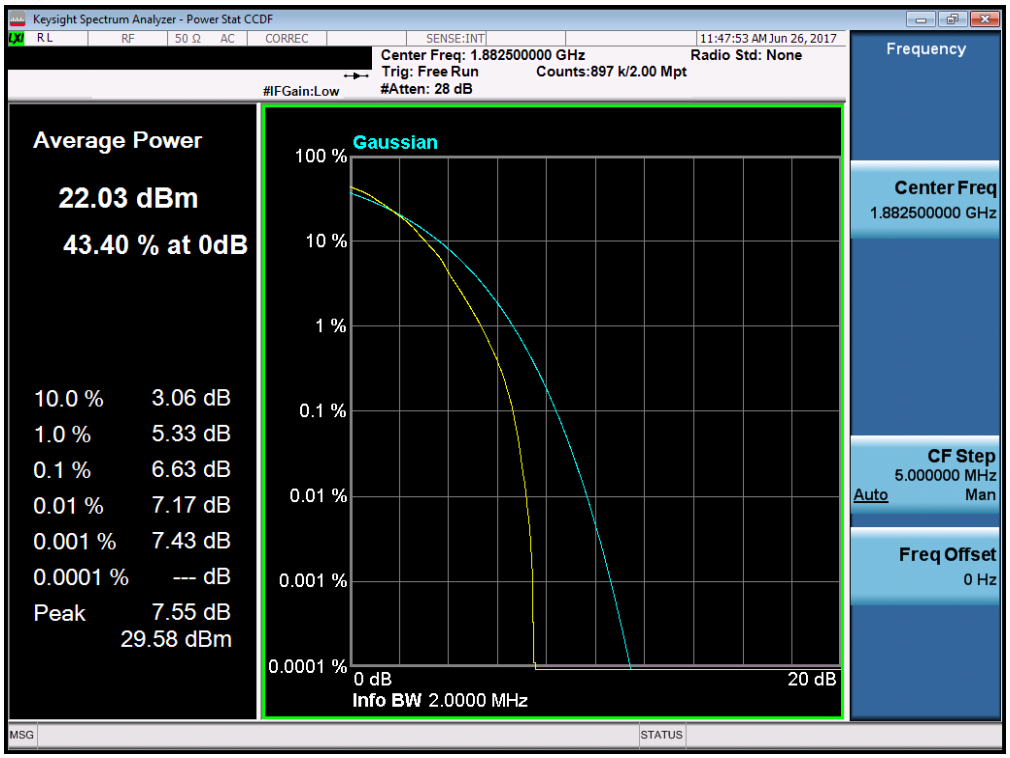
None.



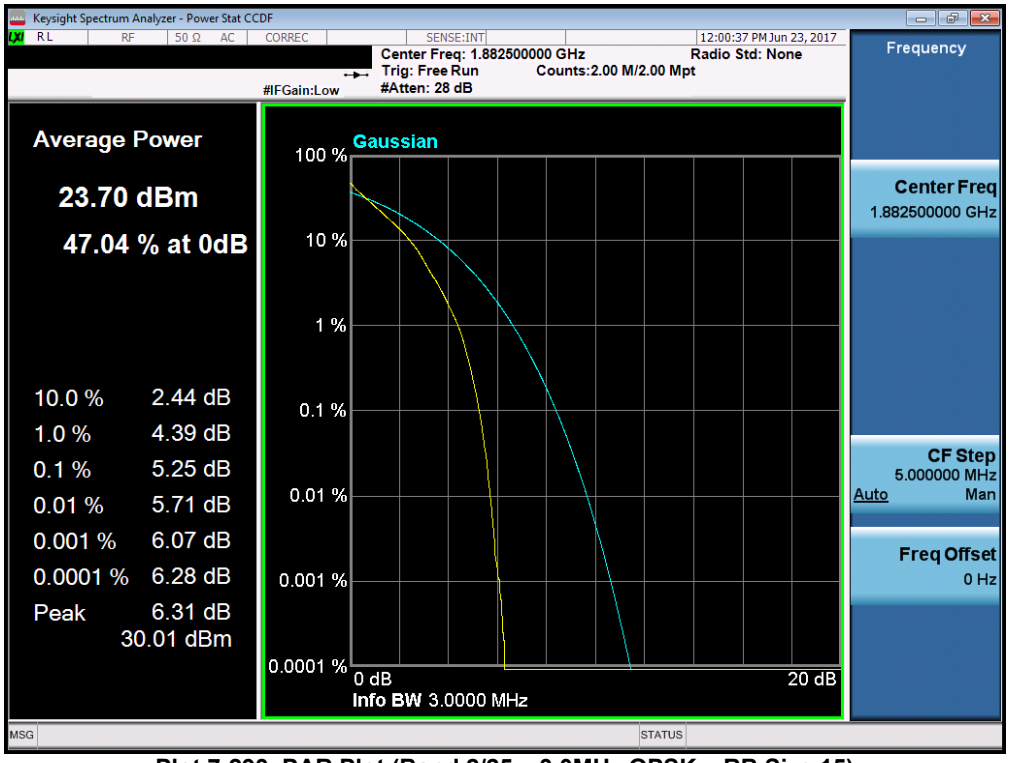
Plot 7-290. PAR Plot (Band 2/25 – 1.4MHz QPSK – RB Size 6)



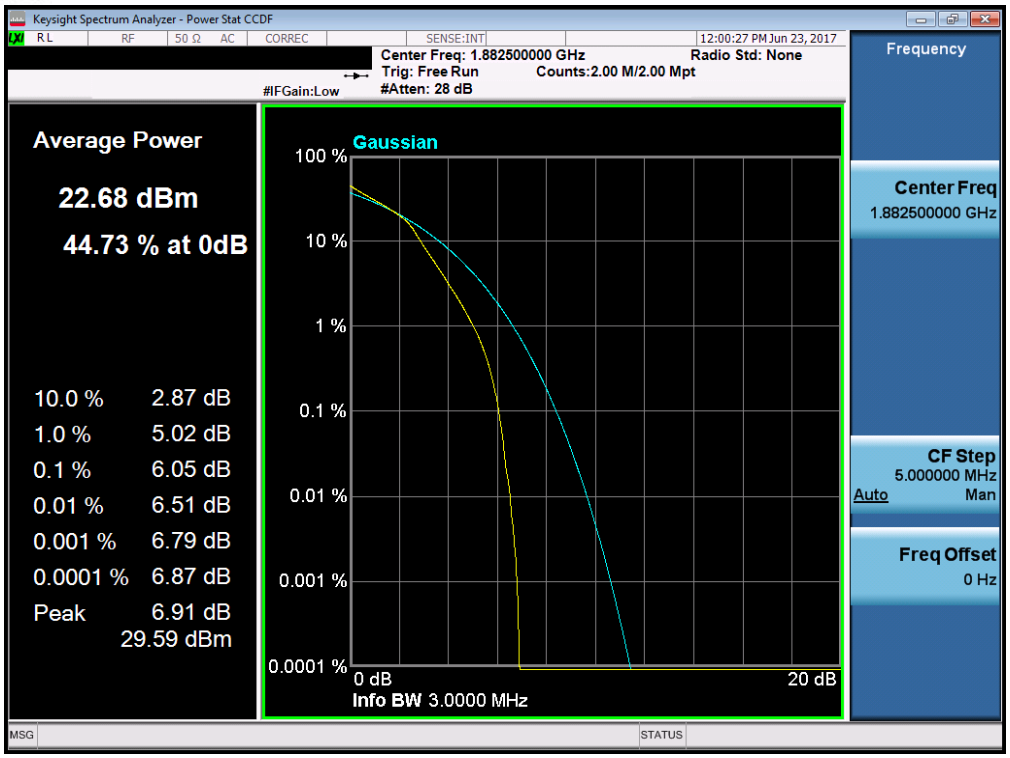
Plot 7-291. PAR Plot (Band 2/25 – 1.4MHz 16-QAM – RB Size 6)



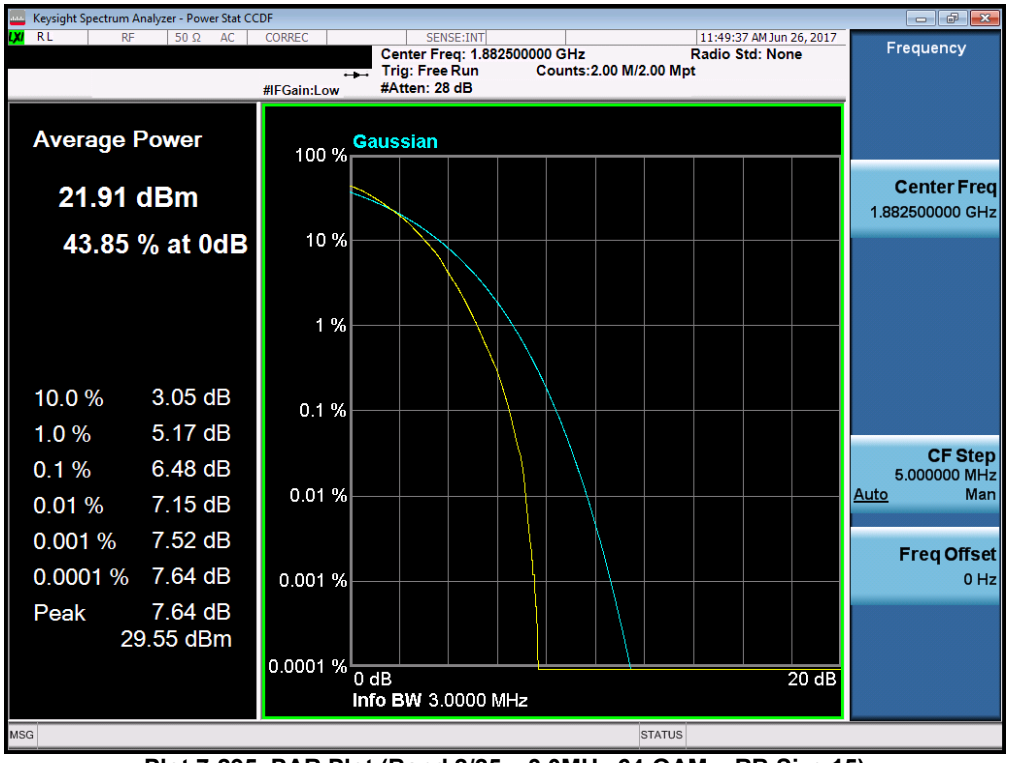
Plot 7-292. PAR Plot (Band 2/25 – 1.4MHz 64-QAM – RB Size 6)



Plot 7-293. PAR Plot (Band 2/25 – 3.0MHz QPSK – RB Size 15)



Plot 7-294. PAR Plot (Band 2/25 – 3.0MHz 16-QAM – RB Size 15)



Plot 7-295. PAR Plot (Band 2/25 – 3.0MHz 64-QAM – RB Size 15)

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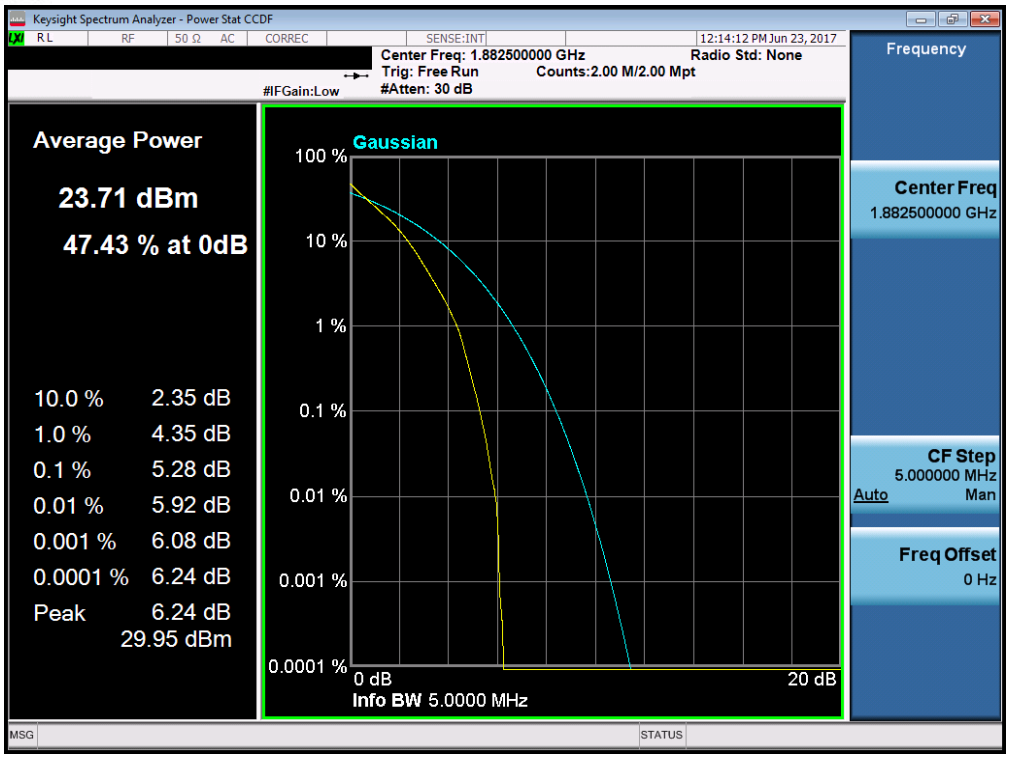
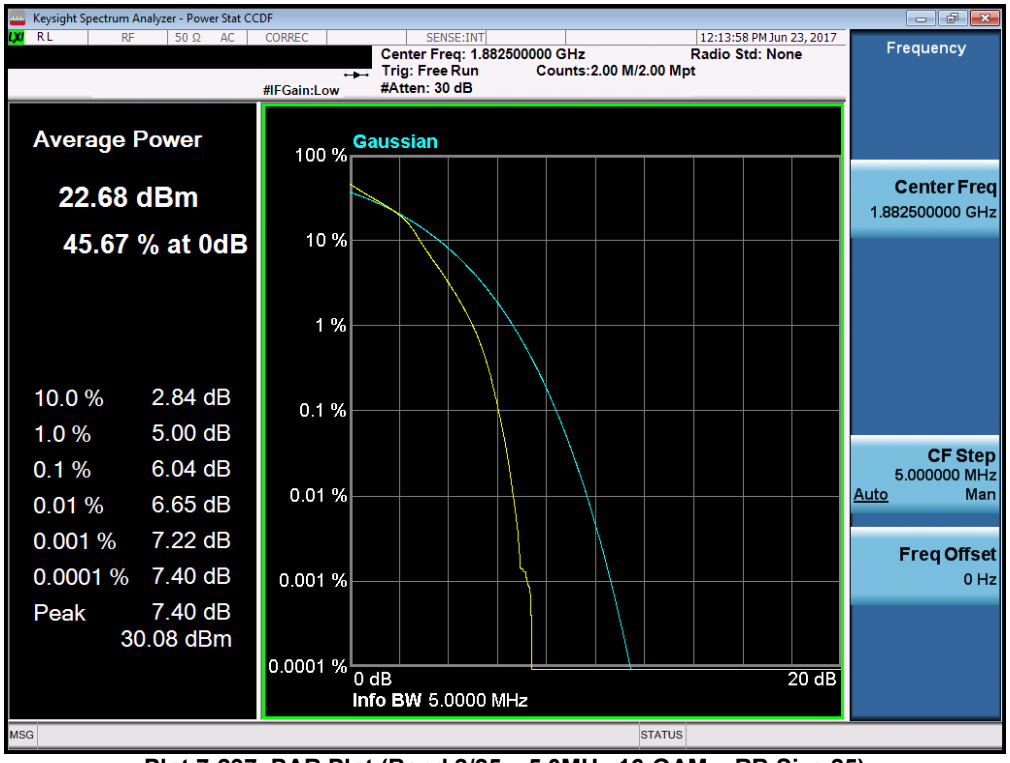
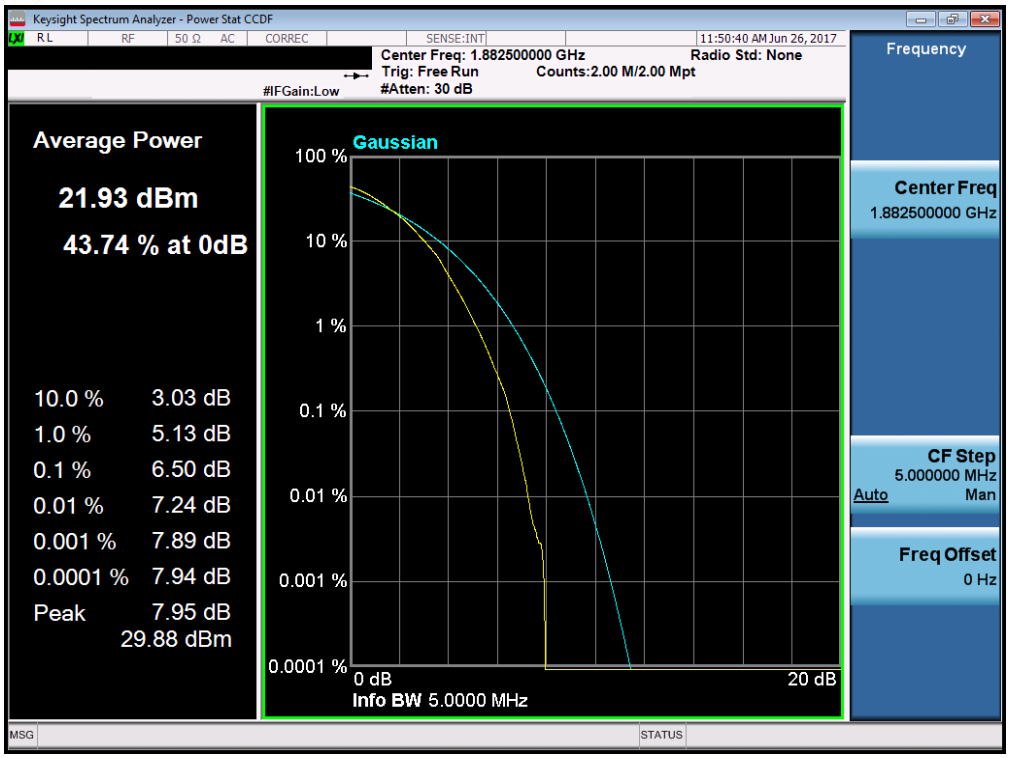


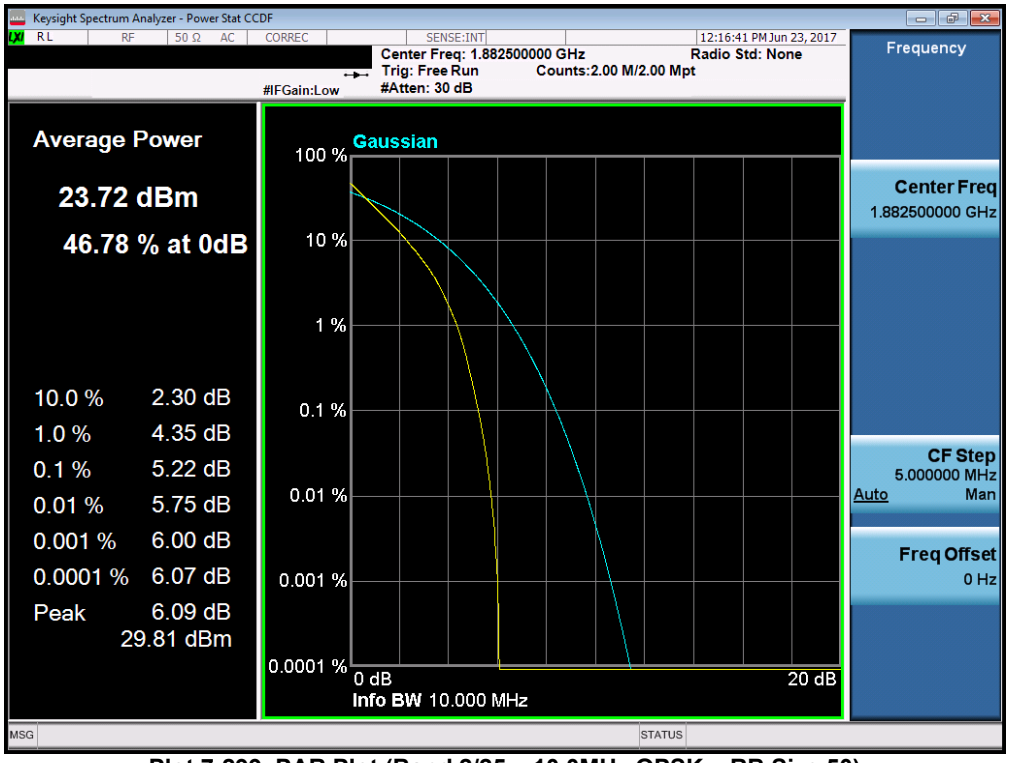
Plot 7-296. PAR Plot (Band 2/25 – 5.0MHz QPSK – RB Size 25)



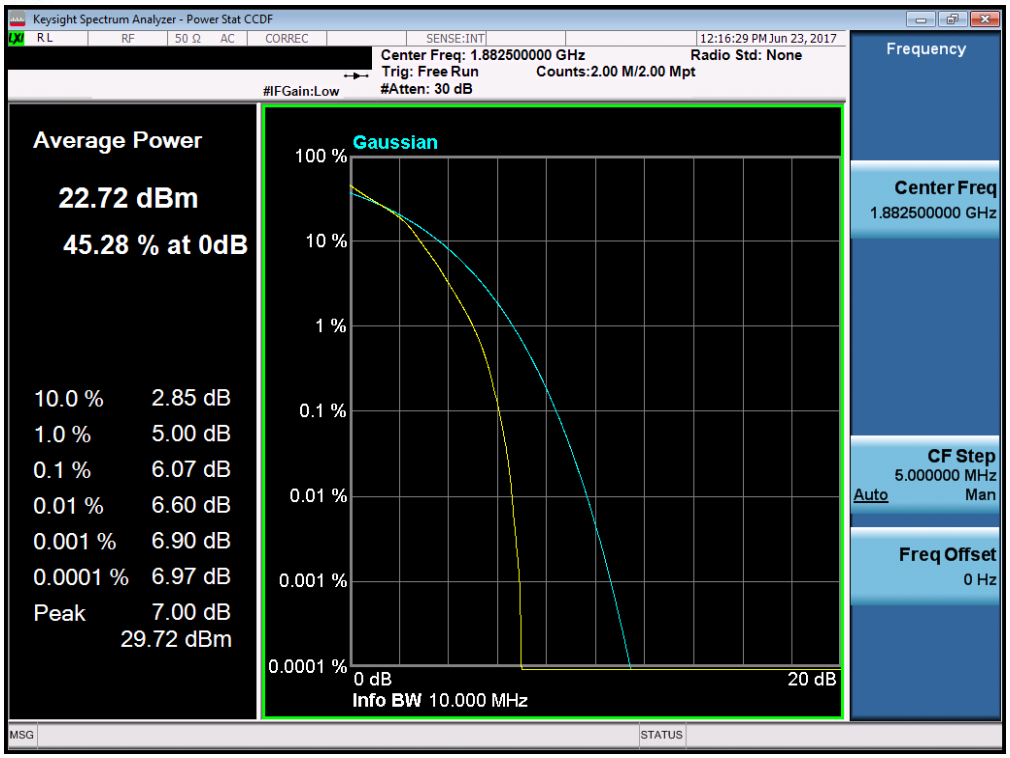
Plot 7-297. PAR Plot (Band 2/25 – 5.0MHz 16-QAM – RB Size 25)



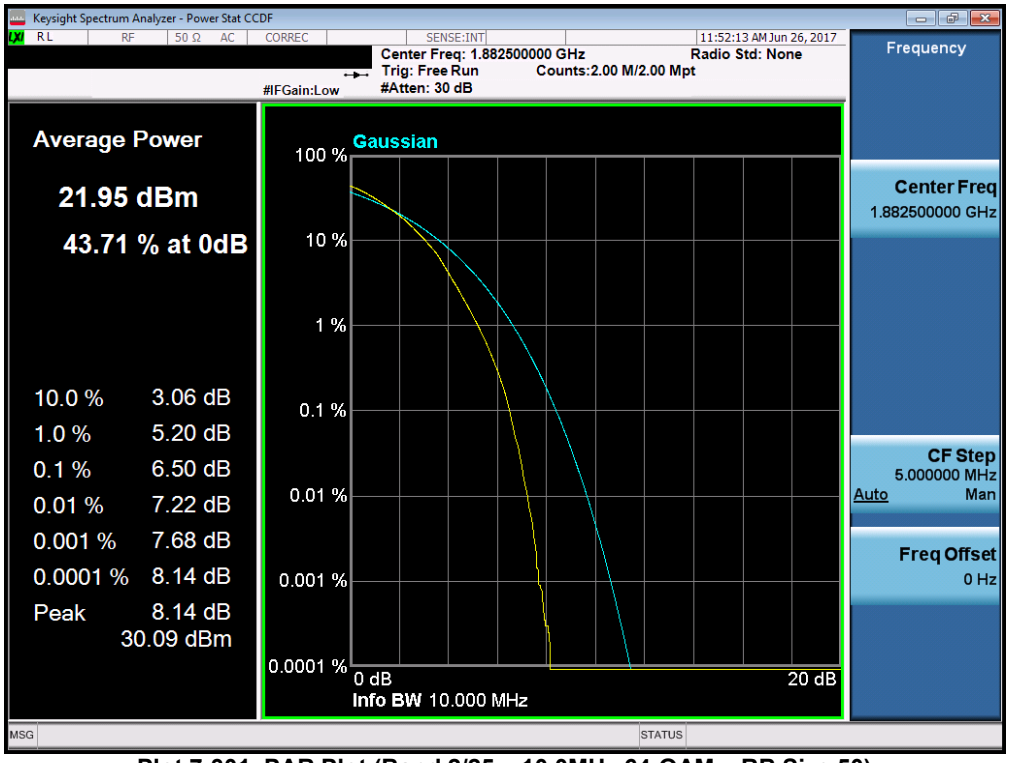
Plot 7-298. PAR Plot (Band 2/25 – 5.0MHz 64-QAM – RB Size 25)



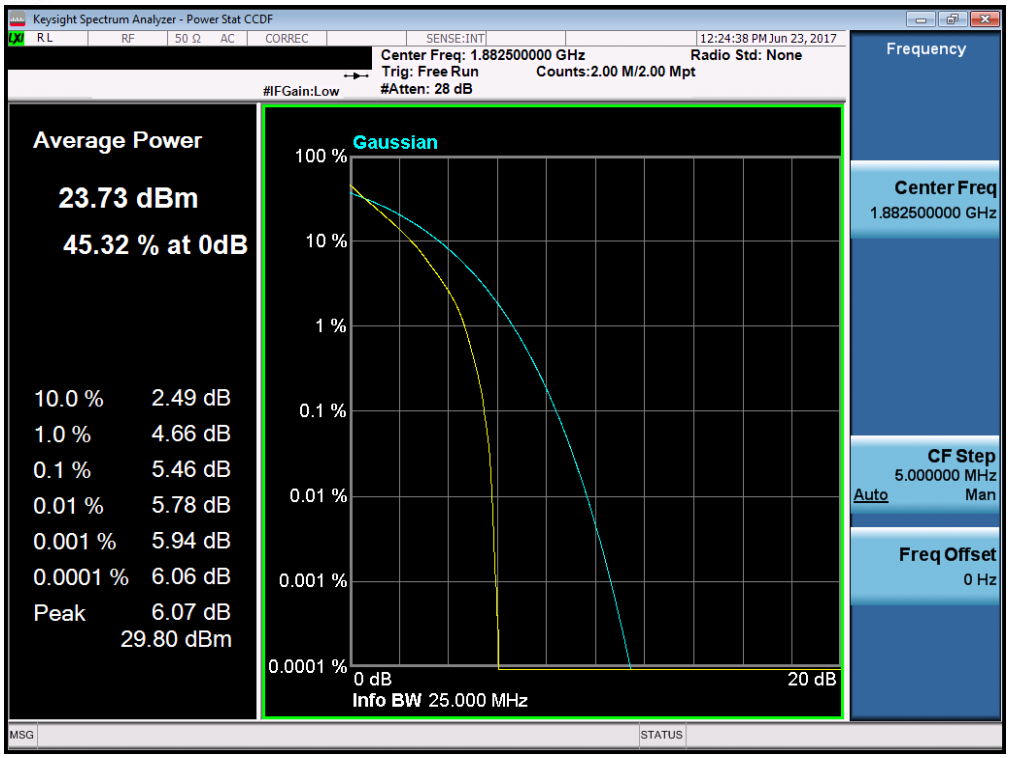
Plot 7-299. PAR Plot (Band 2/25 – 10.0MHz QPSK – RB Size 50)



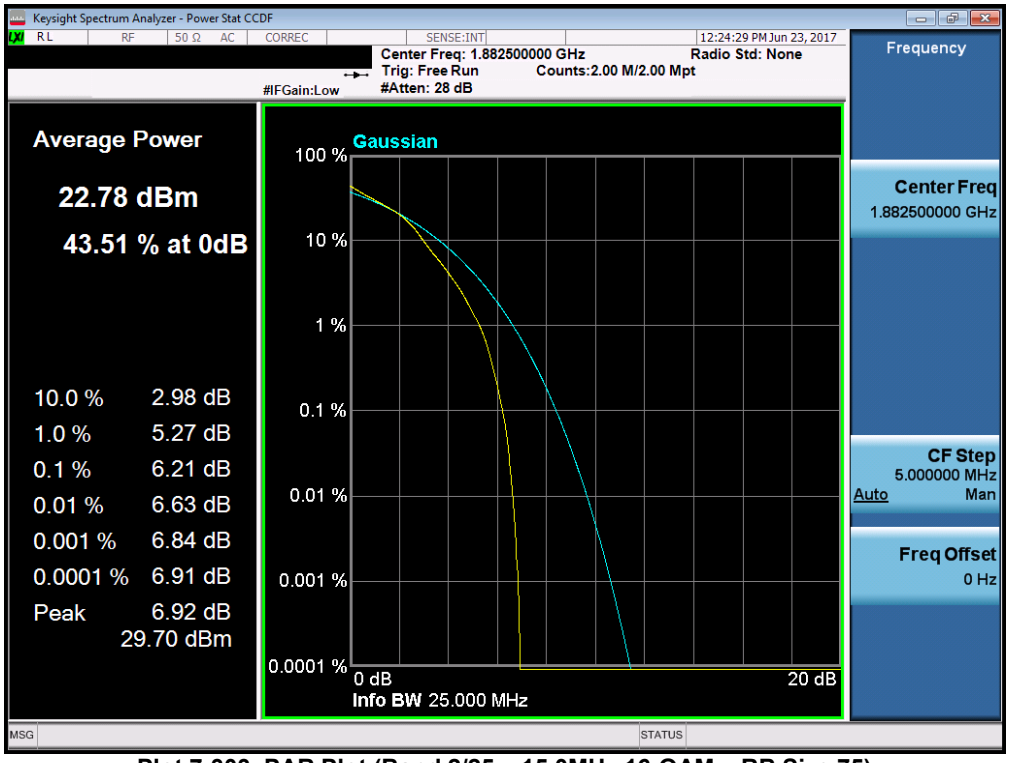
Plot 7-300. PAR Plot (Band 2/25 – 10.0MHz 16-QAM – RB Size 50)



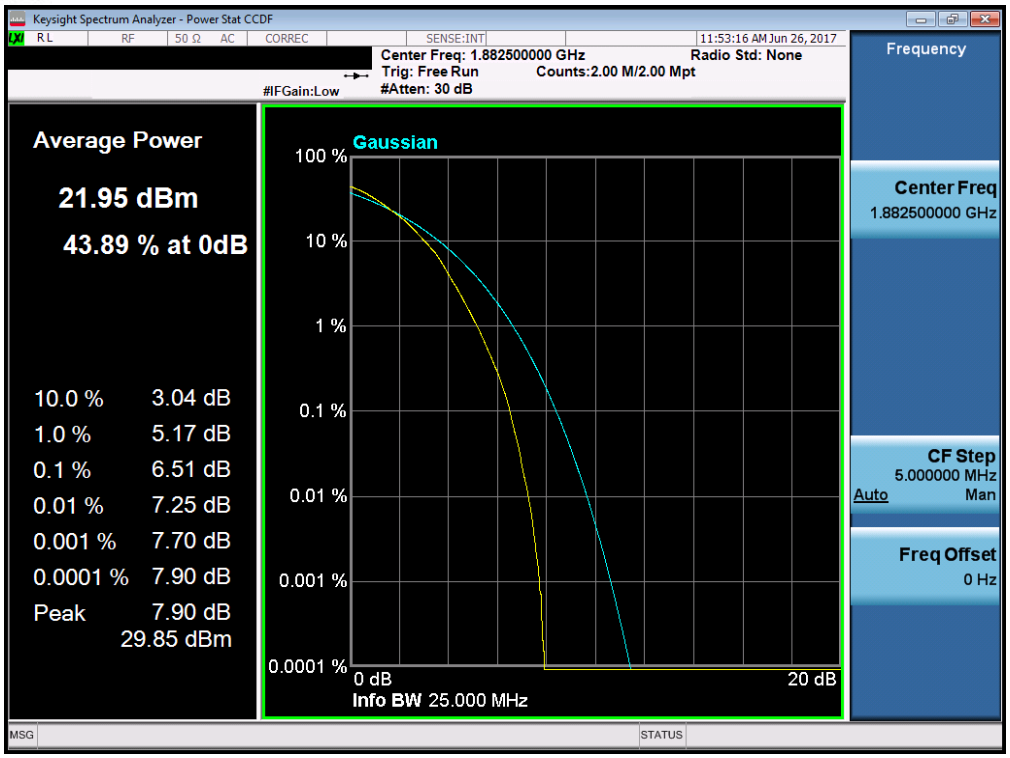
Plot 7-301. PAR Plot (Band 2/25 – 10.0MHz 64-QAM – RB Size 50)



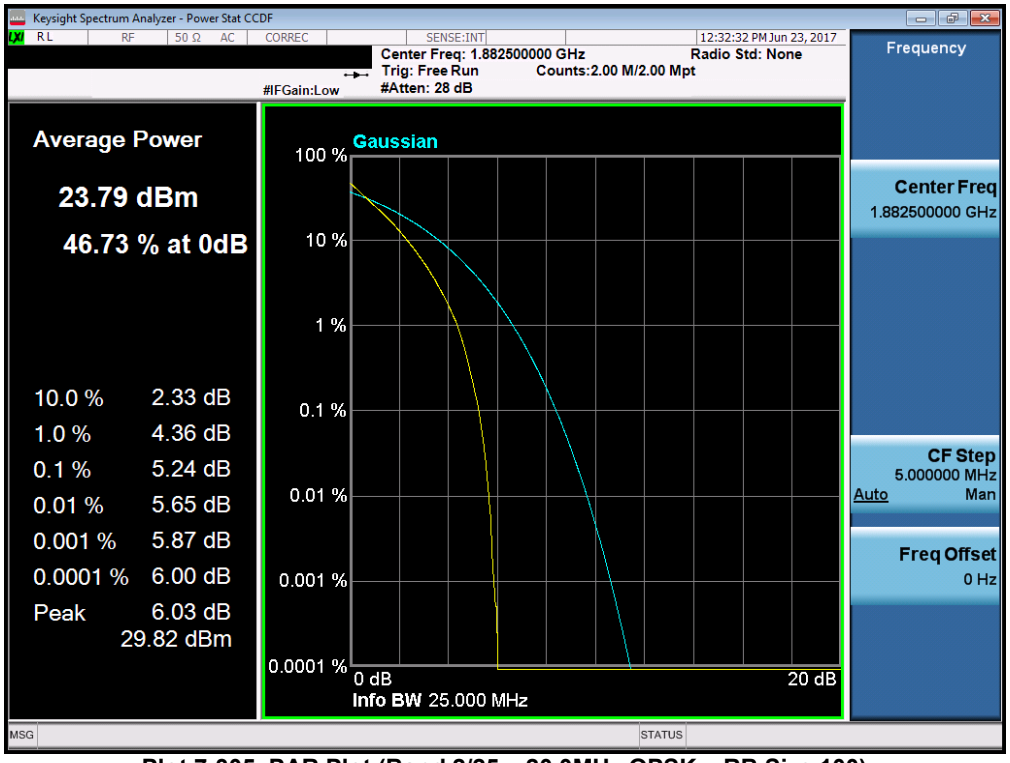
Plot 7-302. PAR Plot (Band 2/25 – 15.0MHz QPSK – RB Size 75)



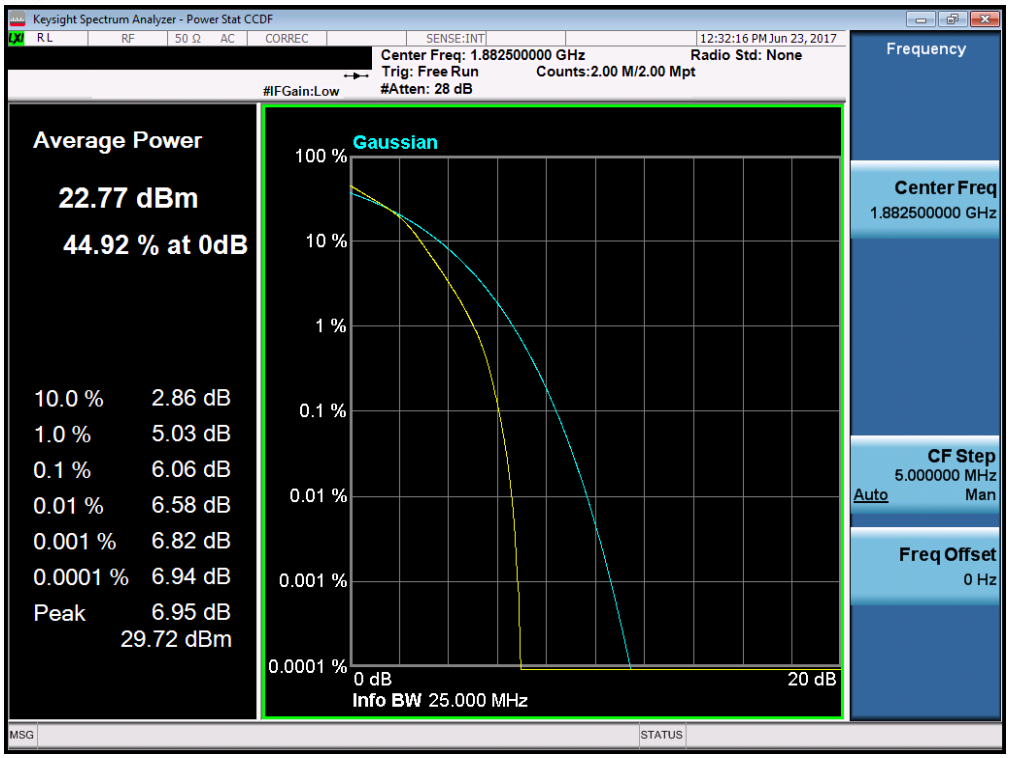
Plot 7-303. PAR Plot (Band 2/25 – 15.0MHz 16-QAM – RB Size 75)



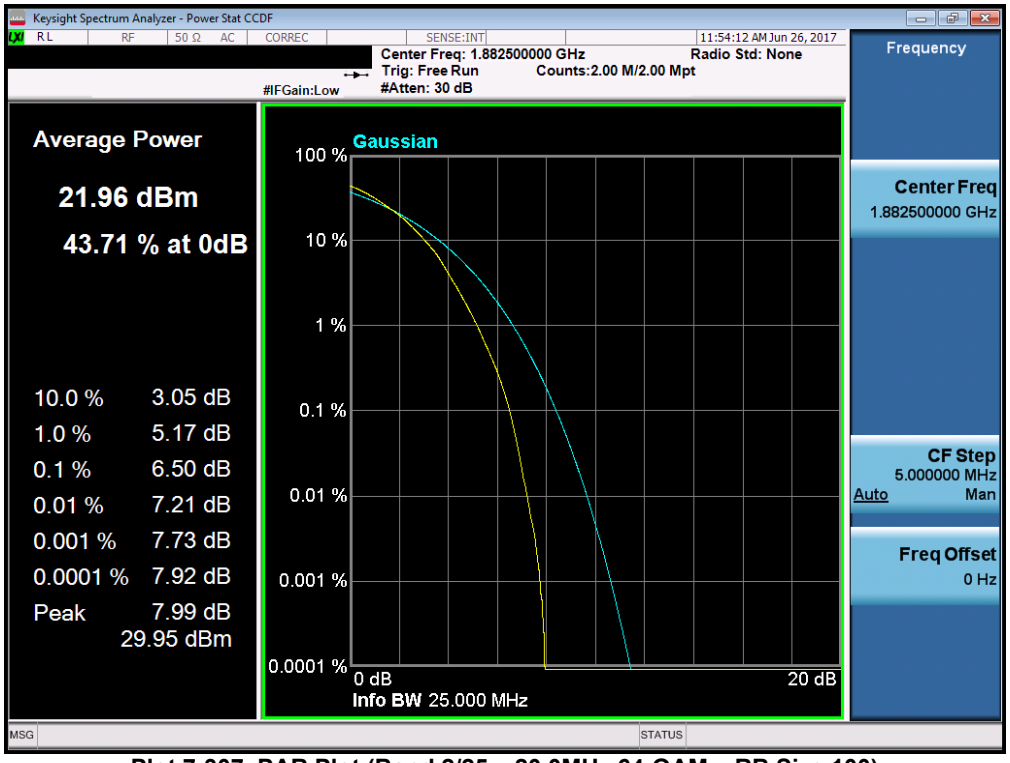
Plot 7-304. PAR Plot (Band 2/25 – 15.0MHz 64-QAM – RB Size 75)



Plot 7-305. PAR Plot (Band 2/25 – 20.0MHz QPSK – RB Size 100)



Plot 7-306. PAR Plot (Band 2/25 – 20.0MHz 16-QAM – RB Size 100)



Plot 7-307. PAR Plot (Band 2/25 – 20.0MHz 64-QAM – RB Size 100)

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7.6 Radiated Power (ERP/EIRP)

§22.913(a.2) §24.232(c.2) §27.50(h.2) §27.50(b.10) §27.50(c.10) §27.50(d.4) §27.50(a.3)

Test Overview

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI/TIA-603-D-2010 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 v02r02 – Section 5.2.1

ANSI/TIA-603-D-2010 – Section 2.2.17

Test Settings

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

Test Setup

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

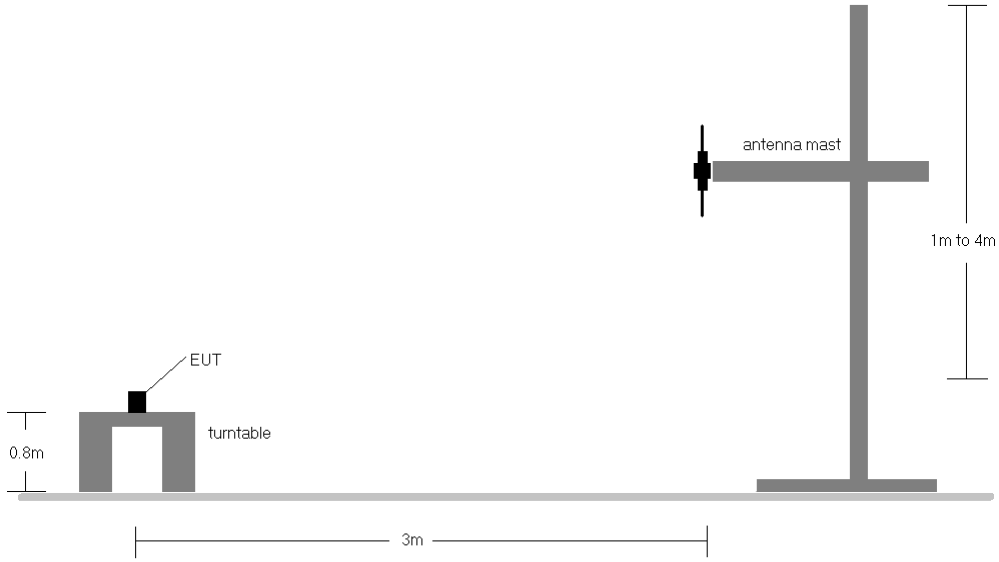

Figure 7-5. Radiated Test Setup <1GHz

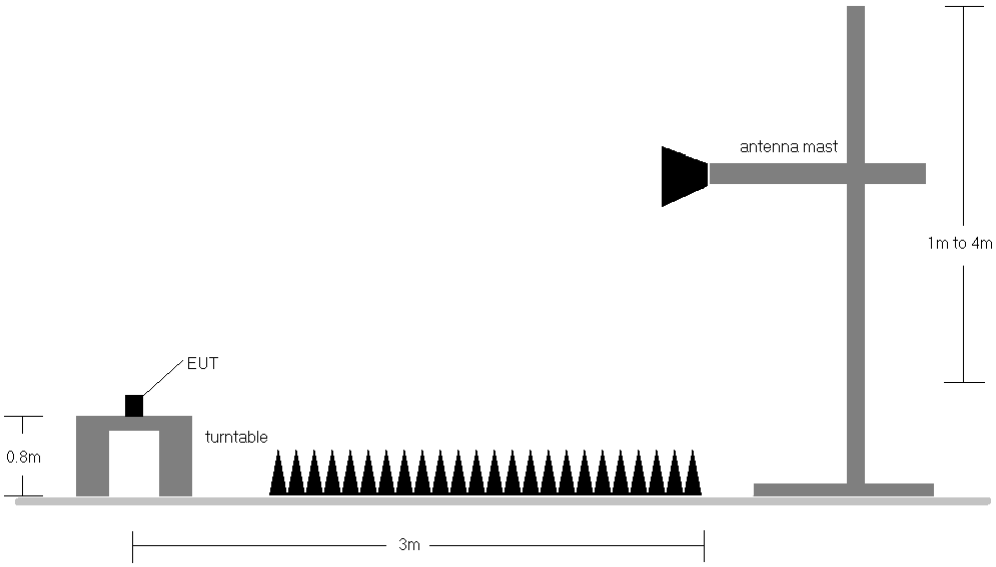

Figure 7-6. Radiated Test Setup >1GHz

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.

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBd]	ERP [dBm]	ERP Limit [dBm]	Margin [dB]
699.70	1.4	QPSK	H	310	180	1 / 0	16.04	2.48	18.52	34.77	-16.25
707.50	1.4	QPSK	H	282	180	1 / 0	15.29	2.56	17.85	34.77	-16.92
715.30	1.4	QPSK	H	289	185	1 / 0	15.16	2.60	17.76	34.77	-17.02
699.70	1.4	16-QAM	H	310	180	1 / 0	15.29	2.48	17.77	34.77	-17.00
699.70	1.4	64-QAM	H	310	180	1 / 0	14.26	2.48	16.74	34.77	-18.03
700.50	3	QPSK	H	309	177	1 / 0	16.25	2.48	18.73	34.77	-16.04
707.50	3	QPSK	H	284	190	1 / 0	15.64	2.56	18.20	34.77	-16.57
714.50	3	QPSK	H	290	179	1 / 0	15.33	2.60	17.93	34.77	-16.84
700.50	3	16-QAM	H	309	177	1 / 0	15.40	2.48	17.88	34.77	-16.89
700.50	3	64-QAM	H	309	177	1 / 0	14.46	2.48	16.94	34.77	-17.83

Table 7-2. 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 [dBd]	ERP [dBm]	ERP Limit [dBm]	Margin [dB]
701.50	5	QPSK	H	311	187	1 / 0	16.26	2.49	18.75	34.77	-16.02
707.50	5	QPSK	H	283	178	1 / 0	15.76	2.56	18.32	34.77	-16.45
713.50	5	QPSK	H	292	192	1 / 0	15.06	2.60	17.66	34.77	-17.11
701.50	5	16-QAM	H	311	187	1 / 0	15.54	2.49	18.03	34.77	-16.74
701.50	5	64-QAM	H	311	187	1 / 0	14.42	2.49	16.91	34.77	-17.86
704.00	10	QPSK	H	312	177	1 / 0	15.80	2.51	18.31	34.77	-16.46
707.50	10	QPSK	H	286	183	1 / 0	15.33	2.56	17.89	34.77	-16.88
711.00	10	QPSK	H	283	192	1 / 0	15.37	2.60	17.97	34.77	-16.81
704.00	10	16-QAM	H	312	177	1 / 0	15.04	2.51	17.55	34.77	-17.22
704.00	10	64-QAM	H	312	177	1 / 0	13.99	2.51	16.50	34.77	-18.27
701.50	5	QPSK	V	105	270	1 / 0	14.70	2.99	17.69	34.77	-17.08

Table 7-3. 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 [dBd]	ERP [dBm]	ERP Limit [dBm]	Margin [dB]
779.50	5	QPSK	H	257	205	1 / 0	15.06	3.85	18.91	34.77	-15.86
782.00	5	QPSK	H	237	205	1 / 0	14.68	3.92	18.60	34.77	-16.17
784.50	5	QPSK	H	240	208	1 / 0	14.47	4.02	18.49	34.77	-16.28
779.50	5	16-QAM	H	257	205	1 / 0	14.24	3.85	18.09	34.77	-16.68
779.50	5	64-QAM	H	257	205	1 / 0	13.24	3.85	17.09	34.77	-17.68
782.00	10	QPSK	H	263	207	1 / 0	14.43	3.92	18.35	34.77	-16.42
782.00	10	16-QAM	H	263	207	1 / 0	13.67	3.92	17.59	34.77	-17.18
782.00	10	64-QAM	H	263	207	1 / 0	12.64	3.92	16.56	34.77	-18.21
779.50	5	QPSK	V	149	47	1 / 0	15.77	2.47	18.24	34.77	-16.53

Table 7-4. ERP Data (Band 13)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBd]	ERP [dBm]	ERP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	V	150	345	1 / 0	17.55	-0.65	16.90	38.45	-21.55
836.50	1.4	QPSK	V	150	345	1 / 0	17.95	-0.65	17.30	38.45	-21.15
848.30	1.4	QPSK	V	150	345	1 / 0	18.12	-0.65	17.47	38.45	-20.98
848.30	1.4	16-QAM	V	150	345	1 / 0	17.50	-0.65	16.85	38.45	-21.60
848.30	1.4	64-QAM	V	150	345	1 / 0	16.33	-0.65	15.68	38.45	-22.77
825.50	3	QPSK	V	150	340	1 / 14	17.58	-0.65	16.93	38.45	-21.52
836.50	3	QPSK	V	150	340	1 / 0	18.04	-0.65	17.39	38.45	-21.06
847.50	3	QPSK	V	150	340	1 / 0	18.35	-0.65	17.70	38.45	-20.75
847.50	3	16-QAM	V	150	340	1 / 0	17.77	-0.65	17.12	38.45	-21.33
847.50	3	64-QAM	V	150	340	1 / 0	16.27	-0.65	15.62	38.45	-22.83
826.50	5	QPSK	V	150	341	1 / 24	17.63	-0.65	16.98	38.45	-21.47
836.50	5	QPSK	V	150	341	1 / 0	18.07	-0.65	17.42	38.45	-21.03
846.50	5	QPSK	V	150	341	1 / 24	18.43	-0.65	17.78	38.45	-20.67
846.50	5	16-QAM	V	150	341	1 / 24	17.66	-0.65	17.01	38.45	-21.44
846.50	5	64-QAM	V	150	341	1 / 24	16.46	-0.65	15.81	38.45	-22.64
829.00	10	QPSK	V	150	352	1 / 49	17.79	-0.65	17.14	38.45	-21.31
836.50	10	QPSK	V	150	352	1 / 49	17.93	-0.65	17.28	38.45	-21.17
844.00	10	QPSK	V	150	352	1 / 49	18.25	-0.65	17.60	38.45	-20.85
844.00	10	16-QAM	V	150	352	1 / 49	17.44	-0.65	16.79	38.45	-21.66
844.00	10	64-QAM	V	150	352	1 / 49	16.39	-0.65	15.74	38.45	-22.71
846.50	5	QPSK	H	150	157	1 / 24	17.97	-0.65	17.32	38.45	-21.13

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

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBd]	ERP [dBm]	ERP Limit [dBm]	Margin [dB]
831.50	15	QPSK	V	150	353	1 / 74	17.74	-0.65	17.09	38.45	-21.36
836.50	15	QPSK	V	150	353	1 / 74	18.01	-0.65	17.36	38.45	-21.09
841.50	15	QPSK	V	150	353	1 / 74	18.03	-0.65	17.38	38.45	-21.07
836.50	15	16-QAM	V	150	353	1 / 74	17.19	-0.65	16.54	38.45	-21.91
836.50	15	64-QAM	V	150	353	1 / 74	16.09	-0.65	15.44	38.45	-23.01

Table 7-6. ERP Data (Band 26)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Margin [dB]
1710.70	1.4	QPSK	H	103	312	1 / 0	12.87	9.51	22.38	30.00	-7.62
1745.00	1.4	QPSK	H	101	306	3 / 2	12.11	9.51	21.62	30.00	-8.38
1779.30	1.4	QPSK	H	100	315	3 / 2	11.13	9.51	20.64	30.00	-9.36
1710.70	1.4	16-QAM	H	103	312	1 / 0	12.09	9.51	21.60	30.00	-8.40
1710.70	1.4	64-QAM	H	103	312	1 / 0	11.13	9.51	20.64	30.00	-9.36
1711.50	3	QPSK	H	101	311	1 / 0	12.95	9.51	22.46	30.00	-7.54
1745.00	3	QPSK	H	100	307	1 / 0	12.19	9.51	21.70	30.00	-8.30
1778.50	3	QPSK	H	101	318	1 / 0	10.89	9.51	20.40	30.00	-9.60
1711.50	3	16-QAM	H	101	311	1 / 0	12.17	9.51	21.68	30.00	-8.32
1711.50	3	64-QAM	H	101	311	1 / 0	11.12	9.51	20.63	30.00	-9.37
1712.50	5	QPSK	H	107	316	1 / 0	12.91	9.51	22.42	30.00	-7.58
1745.00	5	QPSK	H	100	309	1 / 0	12.25	9.51	21.76	30.00	-8.24
1777.50	5	QPSK	H	100	307	1 / 0	11.15	9.51	20.66	30.00	-9.34
1712.50	5	16-QAM	H	107	316	1 / 0	12.19	9.51	21.70	30.00	-8.30
1712.50	5	64-QAM	H	107	316	1 / 0	11.14	9.51	20.65	30.00	-9.35
1715.00	10	QPSK	H	100	307	1 / 0	12.69	9.51	22.20	30.00	-7.80
1745.00	10	QPSK	H	102	310	1 / 0	11.79	9.51	21.30	30.00	-8.70
1775.00	10	QPSK	H	100	315	1 / 0	11.12	9.51	20.63	30.00	-9.37
1715.00	10	16-QAM	H	100	307	1 / 0	11.93	9.51	21.44	30.00	-8.56
1715.00	10	64-QAM	H	100	307	1 / 0	10.85	9.51	20.36	30.00	-9.64
1717.50	15	QPSK	H	100	308	1 / 0	12.60	9.51	22.11	30.00	-7.89
1745.00	15	QPSK	H	101	310	1 / 0	11.81	9.51	21.32	30.00	-8.68
1772.50	15	QPSK	H	101	315	1 / 0	10.79	9.51	20.30	30.00	-9.70
1717.50	15	16-QAM	H	100	308	1 / 0	11.89	9.51	21.40	30.00	-8.60
1717.50	15	64-QAM	H	100	308	1 / 0	10.80	9.51	20.31	30.00	-9.69
1720.00	20	QPSK	H	106	314	1 / 0	12.89	9.51	22.40	30.00	-7.60
1745.00	20	QPSK	H	102	313	1 / 0	11.86	9.51	21.37	30.00	-8.63
1770.00	20	QPSK	H	100	316	1 / 0	11.54	9.51	21.05	30.00	-8.95
1720.00	20	16-QAM	H	106	314	1 / 0	12.18	9.51	21.69	30.00	-8.31
1720.00	20	64-QAM	H	106	314	1 / 0	11.07	9.51	20.58	30.00	-9.42
1711.50	3	QPSK	V	101	222	1 / 0	11.38	9.67	21.05	30.00	-8.95

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

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 Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	H	150	339	1 / 0	18.35	4.82	23.17	33.01	-9.84
1882.50	1.4	QPSK	H	150	339	1 / 5	17.90	4.73	22.63	33.01	-10.38
1914.30	1.4	QPSK	H	150	339	1 / 5	17.47	4.68	22.15	33.01	-10.86
1850.70	1.4	16-QAM	H	150	339	1 / 0	17.42	4.82	22.24	33.01	-10.77
1850.70	1.4	64-QAM	H	150	339	1 / 0	15.70	4.82	20.52	33.01	-12.49
1851.50	3	QPSK	H	150	339	1 / 14	18.50	4.82	23.32	33.01	-9.69
1882.50	3	QPSK	H	150	339	1 / 14	17.74	4.73	22.47	33.01	-10.54
1913.50	3	QPSK	H	150	339	1 / 0	17.78	4.68	22.46	33.01	-10.55
1851.50	3	16-QAM	H	150	339	1 / 14	17.57	4.82	22.39	33.01	-10.62
1851.50	3	64-QAM	H	150	339	1 / 14	14.91	4.82	19.73	33.01	-13.28
1852.50	5	QPSK	H	150	339	1 / 0	18.70	4.81	23.51	33.01	-9.50
1882.50	5	QPSK	H	150	339	1 / 24	17.99	4.73	22.72	33.01	-10.29
1912.50	5	QPSK	H	150	339	1 / 0	17.79	4.68	22.47	33.01	-10.54
1852.50	5	16-QAM	H	150	339	1 / 24	17.89	4.81	22.70	33.01	-10.31
1852.50	5	64-QAM	H	150	339	1 / 24	15.64	4.81	20.45	33.01	-12.56
1855.00	10	QPSK	H	150	339	1 / 49	18.68	4.81	23.49	33.01	-9.52
1882.50	10	QPSK	H	150	339	1 / 0	18.08	4.73	22.81	33.01	-10.20
1910.00	10	QPSK	H	150	339	1 / 0	18.05	4.68	22.73	33.01	-10.28
1855.00	10	16-QAM	H	150	339	1 / 49	17.67	4.81	22.48	33.01	-10.53
1855.00	10	64-QAM	H	150	339	1 / 49	16.13	4.81	20.94	33.01	-12.07
1857.50	15	QPSK	H	150	339	1 / 0	18.55	4.80	23.35	33.01	-9.66
1882.50	15	QPSK	H	150	339	1 / 0	18.16	4.73	22.89	33.01	-10.12
1907.50	15	QPSK	H	150	339	1 / 0	17.85	4.68	22.53	33.01	-10.48
1857.50	15	16-QAM	H	150	339	1 / 0	17.79	4.80	22.59	33.01	-10.42
1857.50	15	64-QAM	H	150	339	1 / 0	15.96	4.80	20.76	33.01	-12.25
1860.00	20	QPSK	H	150	339	1 / 0	18.66	4.79	23.45	33.01	-9.56
1882.50	20	QPSK	H	150	339	1 / 0	18.44	4.73	23.17	33.01	-9.84
1905.00	20	QPSK	H	150	339	1 / 0	18.18	4.68	22.86	33.01	-10.15
1860.00	20	16-QAM	H	150	339	1 / 0	18.02	4.79	22.81	33.01	-10.20
1860.00	20	64-QAM	H	150	339	1 / 0	16.05	4.79	20.84	33.01	-12.17
1852.50	5	QPSK	V	150	151	1 / 0	15.22	4.85	20.07	33.01	-12.94

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

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 Limit [dBm]	Margin [dB]
2307.50	5	QPSK	H	150	10	1 / 24	16.38	5.74	22.12	23.98	-1.86
2312.50	5	QPSK	H	150	10	1 / 0	16.44	5.74	22.18	23.98	-1.80
2312.50	5	16-QAM	H	150	10	1 / 0	15.51	5.74	21.25	23.98	-2.73
2312.50	5	64-QAM	H	150	10	1 / 0	14.67	5.74	20.41	23.98	-3.57
2310.00	10	QPSK	H	150	10	1 / 0	16.56	5.74	22.30	23.98	-1.68
2310.00	10	16-QAM	H	150	10	1 / 0	15.77	5.74	21.51	23.98	-2.47
2310.00	10	64-QAM	H	150	10	1 / 0	14.69	5.74	20.43	23.98	-3.55
1852.50	5	QPSK	V	150	278	1 / 0	10.99	5.57	16.56	23.98	-7.42

Table 7-9. EIRP Data (Band 30)

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 Limit [dBm]	Margin [dB]
2502.50	5	QPSK	H	122	353	1 / 0	10.70	8.39	19.09	33.01	-13.92
2535.00	5	QPSK	H	122	353	1 / 24	10.67	8.52	19.19	33.01	-13.82
2567.50	5	QPSK	H	122	353	1 / 24	10.53	8.64	19.17	33.01	-13.84
2535.00	5	16-QAM	H	122	353	1 / 24	10.17	8.52	18.69	33.01	-14.32
2535.00	5	64-QAM	H	122	353	1 / 24	9.63	8.52	18.15	33.01	-14.86
2505.00	10	QPSK	H	122	353	1 / 49	10.80	8.40	19.20	33.01	-13.81
2535.00	10	QPSK	H	122	353	1 / 0	10.99	8.52	19.51	33.01	-13.50
2565.00	10	QPSK	H	122	353	1 / 0	10.81	8.63	19.44	33.01	-13.57
2535.00	10	16-QAM	H	122	353	1 / 0	10.29	8.52	18.81	33.01	-14.20
2535.00	10	64-QAM	H	122	353	1 / 0	9.24	8.52	17.76	33.01	-15.25
2507.50	15	QPSK	H	122	353	1 / 0	10.94	8.41	19.35	33.01	-13.66
2535.00	15	QPSK	H	122	353	1 / 0	11.08	8.52	19.60	33.01	-13.41
2562.50	15	QPSK	H	122	353	1 / 0	10.76	8.62	19.38	33.01	-13.63
2535.00	15	16-QAM	H	122	353	1 / 0	10.36	8.52	18.88	33.01	-14.13
2535.00	15	64-QAM	H	122	353	1 / 0	9.56	8.52	18.08	33.01	-14.93
2510.00	20	QPSK	H	122	353	1 / 99	10.78	8.42	19.20	33.01	-13.81
2535.00	20	QPSK	H	122	353	1 / 0	10.78	8.52	19.30	33.01	-13.71
2560.00	20	QPSK	H	122	353	1 / 0	10.88	8.61	19.49	33.01	-13.52
2535.00	20	16-QAM	H	122	353	1 / 0	9.98	8.52	18.50	33.01	-14.51
2535.00	20	64-QAM	H	122	353	1 / 0	9.33	8.52	17.85	33.01	-15.16
2535.00	15	QPSK	V	254	12	1 / 0	9.45	8.52	17.97	33.01	-15.04

Table 7-10. EIRP Data (Band 7)

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 Limit [dBm]	Margin [dB]
2502.50	5	QPSK	H	110	352	1 / 24	10.82	8.42	19.24	33.01	-13.77
2593.00	5	QPSK	H	110	352	1 / 0	12.58	8.65	21.23	33.01	-11.78
2687.50	5	QPSK	H	110	352	1 / 24	12.54	8.44	20.98	33.01	-12.03
2593.00	5	16-QAM	H	110	352	1 / 0	12.52	8.65	21.17	33.01	-11.84
2593.00	5	64-QAM	H	110	352	1 / 0	11.77	8.65	20.42	33.01	-12.59
2505.00	10	QPSK	H	110	352	1 / 0	12.07	8.41	20.48	33.01	-12.53
2593.00	10	QPSK	H	110	352	1 / 0	11.67	8.65	20.32	33.01	-12.69
2685.00	10	QPSK	H	110	352	1 / 0	12.63	8.45	21.08	33.01	-11.93
2505.00	10	16-QAM	H	110	352	1 / 0	11.38	8.41	19.79	33.01	-13.22
2505.00	10	64-QAM	H	110	352	1 / 0	10.61	8.41	19.02	33.01	-13.99
2507.50	15	QPSK	H	110	352	1 / 0	13.15	8.42	21.57	33.01	-11.44
2593.00	15	QPSK	H	110	352	1 / 0	11.59	8.65	20.24	33.01	-12.77
2682.50	15	QPSK	H	110	352	1 / 0	12.77	8.46	21.23	33.01	-11.78
2507.50	15	16-QAM	H	110	352	1 / 0	12.70	8.42	21.12	33.01	-11.89
2507.50	15	64-QAM	H	110	352	1 / 0	12.11	8.42	20.53	33.01	-12.48
2510.00	20	QPSK	H	110	352	1 / 99	12.31	8.42	20.73	33.01	-12.28
2593.00	20	QPSK	H	110	352	1 / 0	11.46	8.65	20.11	33.01	-12.90
2680.00	20	QPSK	H	110	352	1 / 0	11.51	8.46	19.97	33.01	-13.04
2510.00	20	16-QAM	H	110	352	1 / 99	11.89	8.42	20.31	33.01	-12.70
2510.00	20	64-QAM	H	110	352	1 / 0	10.84	8.42	19.26	33.01	-13.75
2507.50	15	QPSK	V	110	352	1 / 0	9.76	8.40	18.16	33.01	-14.85
2503.50	15	QPSK (PC3)	H	110	352	1 / 0	11.81	8.42	20.23	33.01	-12.78

Table 7-11. EIRP Data (Band 41) (PC2)

7.7 Radiated Spurious Emissions Measurements

§2.1053 §22.917(a) §24.238(a) §27.53(c) §27.53(f) §27.53(g) §27.53(h) §27.53(m) §27.53(a.4)

Test Overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-D-2010 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 v02r02 – Section 5.8

ANSI/TIA-603-D-2010 – Section 2.2.12

Test Settings

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

Test Setup

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

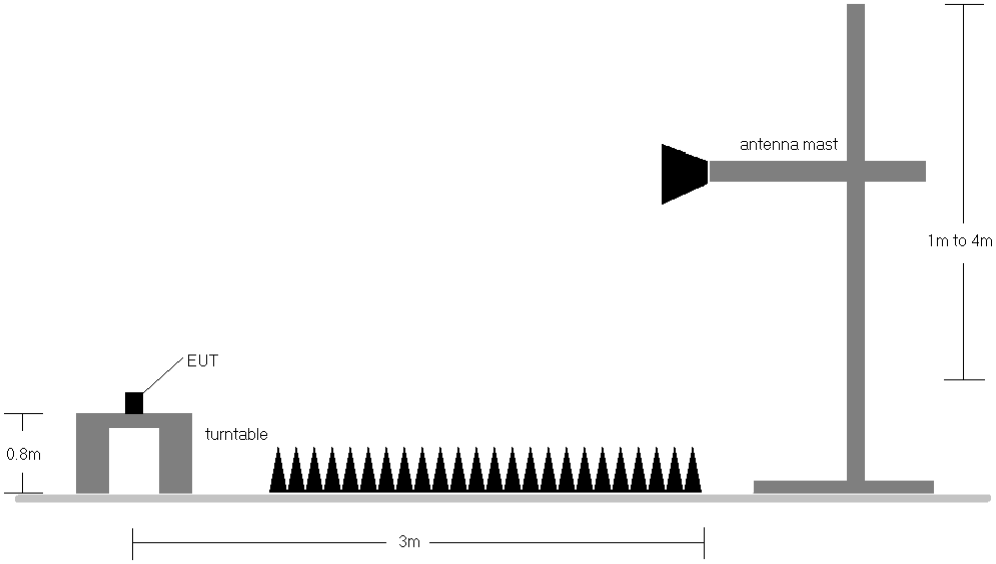

Figure 7-7. Test Instrument & Measurement Setup

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.

OPERATING FREQUENCY:	701.50	MHz			
CHANNEL:	23035				
MEASURED OUTPUT POWER:	18.75	dBm	=	0.075	W
MODULATION SIGNAL:	QPSK				
BANDWIDTH:	5.0	MHz			
DISTANCE:	3	meters			
LIMIT:	43 + 10 $\log_{10}$ (W) =	31.75	dBc		

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
1403.00	H	107	162	-74.29	5.92	-68.37	87.1
2104.50	H	100	164	-64.54	6.80	-57.74	76.5
2806.00	H	-	-	-72.58	8.12	-64.46	83.2

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

OPERATING FREQUENCY:	707.50	MHz			
CHANNEL:	23095				
MEASURED OUTPUT POWER:	18.32	dBm	=	0.068	W
MODULATION SIGNAL:	QPSK				
BANDWIDTH:	5.0	MHz			
DISTANCE:	3	meters			
LIMIT:	43 + 10 $\log_{10}$ (W) =	31.32	dBc		

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
1415.00	H	100	331	-74.93	5.96	-68.96	87.3
2122.50	H	218	284	-62.74	6.84	-55.89	74.2
2830.00	H	-	-	-72.47	8.13	-64.34	82.7

Table 7-13. Radiated Spurious Data (Band 12/17 – Mid Channel)

OPERATING FREQUENCY:	713.50	MHz		
CHANNEL:	23155			
MEASURED OUTPUT POWER:	17.66	dBm	=	0.058 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	5.0	MHz		
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	30.66	dBc	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
1427.00	H	101	228	-74.15	6.01	-68.14	85.8
2140.50	H	174	98	-67.31	6.89	-60.42	78.1
2854.00	H	-	-	-72.07	8.15	-63.92	81.6

Table 7-14. Radiated Spurious Data (Band 12/17 – High Channel)

OPERATING FREQUENCY:	779.50	MHz		
CHANNEL:	23205			
MEASURED OUTPUT POWER:	18.91	dBm	=	0.078 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	5.0	MHz		
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	31.91	dBc	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
2338.50	H	150	21	-61.77	7.32	-54.45	73.4
3118.00	H	-	-	-78.68	7.95	-70.73	89.6
3897.50	H	-	-	-74.99	7.27	-67.72	86.6

Table 7-15. Radiated Spurious Data (Band 13 – Low Channel)

OPERATING FREQUENCY:	782.00	MHz			
CHANNEL:	23230				
MEASURED OUTPUT POWER:	18.60	dBm	=	0.072	W
MODULATION SIGNAL:	QPSK				
BANDWIDTH:	5.0	MHz			
DISTANCE:	3	meters			
LIMIT:	43 + 10 log$_{10}$ (W) =	31.60	dBc		

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
2346.00	H	150	24	-55.94	7.35	-48.60	67.2
3128.00	H	-	-	-76.26	7.95	-68.31	86.9
3910.00	H	-	-	-72.71	7.26	-65.46	84.1

Table 7-16. Radiated Spurious Data (Band 13 – Mid Channel)

OPERATING FREQUENCY:	784.50	MHz			
CHANNEL:	23255				
MEASURED OUTPUT POWER:	18.49	dBm	=	0.071	W
MODULATION SIGNAL:	QPSK				
BANDWIDTH:	5.0	MHz			
DISTANCE:	3	meters			
LIMIT:	43 + 10 log$_{10}$ (W) =	31.49	dBc		

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
2353.50	H	150	25	-59.97	7.38	-52.59	71.1
3138.00	H	-	-	-76.57	7.94	-68.63	87.1
3922.50	H	-	-	-72.77	7.24	-65.53	84.0

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

MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.00	MHz
DISTANCE:	3	meters
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 [dBd]	Spurious Emission Level [dBm]	Margin [dB]
1559.00	H	150	31	-75.27	6.35	-68.92	-28.9
1564.00	H	150	29	-75.78	6.38	-69.41	-29.4
1569.00	H	150	30	-74.25	6.40	-67.85	-27.9

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

OPERATING FREQUENCY:	826.50	MHz		
CHANNEL:	26815			
MEASURED OUTPUT POWER:	16.98	dBm	=	0.050 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	5.0	MHz		
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	29.98	dBc	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
1653.00	V	-	-	-76.97	6.28	-70.69	87.7
2479.50	V	-	-	-73.06	6.84	-66.21	83.2
3306.00	V	-	-	-70.35	7.14	-63.20	80.2

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

OPERATING FREQUENCY:	836.50	MHz		
CHANNEL:	26915			
MEASURED OUTPUT POWER:	17.42	dBm	=	0.055 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	5.0	MHz		
DISTANCE:	3	meters		
LIMIT:	$43 + 10 \log_{10}(W)$ =	30.42	dBc	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
1673.00	V	-	-	-76.42	6.21	-70.21	87.6
2509.50	V	-	-	-73.03	6.86	-66.17	83.6
3346.00	V	-	-	-70.45	7.26	-63.18	80.6

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

OPERATING FREQUENCY:	846.50	MHz		
CHANNEL:	27015			
MEASURED OUTPUT POWER:	17.78	dBm	=	0.060 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	5.0	MHz		
DISTANCE:	3	meters		
LIMIT:	$43 + 10 \log_{10}(W)$ =	30.78	dBc	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
1693.00	V	142	216	-75.85	6.14	-69.71	87.5
2539.50	V	103	272	-71.79	6.95	-64.84	82.6
3386.00	V	-	-	-70.63	7.38	-63.25	81.0

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

OPERATING FREQUENCY:	1711.50	MHz		
CHANNEL:	131987			
MEASURED OUTPUT POWER:	22.46	dBm	=	0.176 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	3.0	MHz		
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	35.46	dBc	

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]	[dBc]
3423.00	H	164	305	-69.56	9.65	-59.92	82.4
5134.50	H	139	294	-65.92	10.92	-55.00	77.5
6846.00	H	-	-	-60.93	10.78	-50.15	72.6

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

OPERATING FREQUENCY:	1745.00	MHz		
CHANNEL:	132322			
MEASURED OUTPUT POWER:	21.70	dBm	=	0.148 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	3.0	MHz		
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	34.70	dBc	

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]	[dBc]
3490.00	H	105	110	-68.09	9.85	-58.24	79.9
5235.00	H	282	90	-65.78	10.88	-54.90	76.6
6980.00	H	-	-	-59.65	11.00	-48.65	70.3

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

OPERATING FREQUENCY:	1778.50	MHz		
CHANNEL:	132657			
MEASURED OUTPUT POWER:	20.40	dBm	=	0.110 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	3.0	MHz		
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	33.40	dBc	

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]	[dBc]
3557.00	H	210	117	-68.16	9.97	-58.18	78.6
5335.50	H	196	225	-66.15	11.05	-55.10	75.5
7114.00	H	-	-	-59.94	11.11	-48.83	69.2

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

OPERATING FREQUENCY:	1852.50	MHz		
CHANNEL:	26065			
MEASURED OUTPUT POWER:	23.51	dBm	=	0.225 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	5.0	MHz		
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	36.51	dBc	

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]	[dBc]
3705.00	H	-	-	-68.65	10.01	-58.64	82.2
5557.50	H	-	-	-66.98	11.20	-55.79	79.3
7410.00	H	-	-	-59.63	10.88	-48.75	72.3

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

OPERATING FREQUENCY:	1882.50	MHz		
CHANNEL:	26365			
MEASURED OUTPUT POWER:	22.72	dBm	=	0.187 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	5.0	MHz		
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	35.72	dBc	

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]	[dBc]
3765.00	H	100	167	-67.41	9.76	-57.64	80.4
5647.50	H	-	-	-67.06	11.36	-55.70	78.4
7530.00	H	-	-	-59.89	11.25	-48.64	71.4

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

OPERATING FREQUENCY:	1912.50	MHz		
CHANNEL:	26665			
MEASURED OUTPUT POWER:	22.47	dBm	=	0.177 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	5.0	MHz		
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	35.47	dBc	

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]	[dBc]
3825.00	H	231	192	-66.43	9.54	-56.89	79.4
5737.50	H	-	-	-66.96	11.44	-55.52	78.0
7650.00	H	-	-	-60.22	11.51	-48.71	71.2

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

OPERATING FREQUENCY:	2310.00	MHz		
CHANNEL:	27710			
MEASURED OUTPUT POWER:	22.30	dBm	=	0.170 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	10.0	MHz		
DISTANCE:	3	meters		
LIMIT:	70 + 10 $\log_{10}$ (W) =	62.30	dBc	

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]	[dBc]
4620.00	H	150	358	-68.76	10.25	-58.51	80.8
6930.00	H	150	341	-59.65	9.60	-50.05	72.3
9240.00	H	-	-	-64.27	10.70	-53.57	75.9

Table 7-28. Radiated Spurious Data (Band 30 – Mid Channel)

OPERATING FREQUENCY:	2507.50	MHz		
CHANNEL:	20825			
MEASURED OUTPUT POWER:	19.35	dBm	=	0.086 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	15.0	MHz		
DISTANCE:	3	meters		
LIMIT:	55 + 10 log10 (W)	44.35	dBc	

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]	[dBc]
5015.00	H	-	-	-67.98	11.16	-56.82	76.2
7522.50	H	-	-	-61.02	11.22	-49.79	69.1
10030.00	H	-	-	-60.05	12.58	-47.47	66.8

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

OPERATING FREQUENCY:	2535.00	MHz		
CHANNEL:	21100			
MEASURED OUTPUT POWER:	19.60	dBm	=	0.091 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	15.0	MHz		
DISTANCE:	3	meters		
LIMIT:	55 + 10 log10 (W)	44.60	dBc	

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]	[dBc]
5070.00	H	112	347	-66.96	11.04	-55.92	75.5
7605.00	H	-	-	-60.60	11.47	-49.13	68.7
10140.00	H	-	-	-60.05	12.67	-47.38	67.0

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

OPERATING FREQUENCY:	2562.50	MHz		
CHANNEL:	21375			
MEASURED OUTPUT POWER:	19.38	dBm	=	0.087 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	15.0	MHz		
DISTANCE:	3	meters		
LIMIT:	55 + 10 log10 (W)	44.38	dBc	

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]	[dBc]
5125.00	H	-	-	-66.82	10.93	-55.89	75.3
7687.50	H	-	-	-60.64	11.55	-49.10	68.5
10250.00	H	-	-	-60.08	12.74	-47.34	66.7

Table 7-31. Radiated Spurious Data (Band 7 – High Channel)

OPERATING FREQUENCY:	2503.50	MHz		
CHANNEL:	39725			
MEASURED OUTPUT POWER:	21.57	dBm	=	0.143 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	15.0	MHz		
DISTANCE:	3	meters		
LIMIT:	55 + 10 log10 (W)	46.57	dBc	

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]	[dBc]
5007.00	H	-	-	-65.72	11.16	-54.55	76.1
7513.00	H	-	-	-58.46	11.21	-47.25	68.8
10019.00	H	-	-	-57.39	12.57	-44.82	66.4
12525.00	H	100	270	-52.81	13.04	-39.77	61.3
15031.00	H	114	48	-47.51	11.91	-35.60	57.2
17537.00	H	-	-	-47.31	11.11	-36.20	57.8

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

OPERATING FREQUENCY:	2593.00	MHz		
CHANNEL:	40620			
MEASURED OUTPUT POWER:	20.24	dBm	=	0.106 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	15.0	MHz		
DISTANCE:	3	meters		
LIMIT:	55 + 10 log10 (W)	45.24	dBc	

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]	[dBc]
5186.00	H	110	345	-56.41	10.83	-45.58	65.8
7779.00	H	-	-	-57.63	11.60	-46.03	66.3
10372.00	H	-	-	-58.10	12.74	-45.36	65.6
12965.00	H	-	-	-54.55	12.83	-41.72	62.0
15558.00	H	260	154	-52.10	14.91	-37.19	57.4

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

OPERATING FREQUENCY:	2682.50	MHz			
CHANNEL:	41515				
MEASURED OUTPUT POWER:	21.23	dBm	=	0.133	W
MODULATION SIGNAL:	QPSK				
BANDWIDTH:	15.0	MHz			
DISTANCE:	3	meters			
LIMIT:	55 + 10 log10 (W)	46.23	dBc		

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]	[dBc]
5365.00	H	110	340	-40.29	11.08	-29.21	50.4
8047.50	H	102	332	-55.80	11.54	-44.26	65.5
10730.00	H	-	-	-58.22	12.97	-45.25	66.5
13412.50	H	-	-	-54.50	12.96	-41.54	62.8
16095.00	H	-	-	-57.67	16.38	-41.29	62.5

Table 7-34. Radiated Spurious Data (Band 41 – High Channel)

OPERATING FREQUENCY:	2503.50	MHz			
CHANNEL:	39725				
MEASURED OUTPUT POWER:	20.23	dBm	=	0.105	W
MODULATION SIGNAL:	QPSK				
BANDWIDTH:	15.0	MHz			
DISTANCE:	3	meters			
LIMIT:	55 + 10 log10 (W)	45.23	dBc		

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]	[dBc]
5007.00	H	112	344	-41.79	11.08	-30.71	50.9
7510.50	H	-	-	-55.80	11.54	-44.26	64.5

Table 7-35. Radiated Spurious Data (Band 41 – Low Channel) (PC3)

7.8 Frequency Stability / Temperature Variation

§2.1055 §22.355 §24.235 §27.54

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-D-2010. 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 and 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-D-2010

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

Band 12/17 Frequency Stability Measurements

§2.1055 §27.54

OPERATING FREQUENCY:	707,500,000	Hz
CHANNEL:	23790	
REFERENCE VOLTAGE:	3.80	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	707,500,010	10	0.0000014
100 %		- 30	707,499,944	-56	-0.0000079
100 %		- 20	707,499,948	-52	-0.0000073
100 %		- 10	707,500,235	235	0.0000332
100 %		0	707,500,019	19	0.0000027
100 %		+ 10	707,500,227	227	0.0000321
100 %		+ 20	707,500,003	3	0.0000004
100 %		+ 30	707,500,180	180	0.0000254
100 %		+ 40	707,499,960	-40	-0.0000057
100 %		+ 50	707,500,360	360	0.0000509
BATT. ENDPOINT	3.40	+ 20	707,500,158	158	0.0000223

Table 7-36. Frequency Stability Data (Band 12/17)

Band 12/17 Frequency Stability Measurements

§2.1055 §27.54

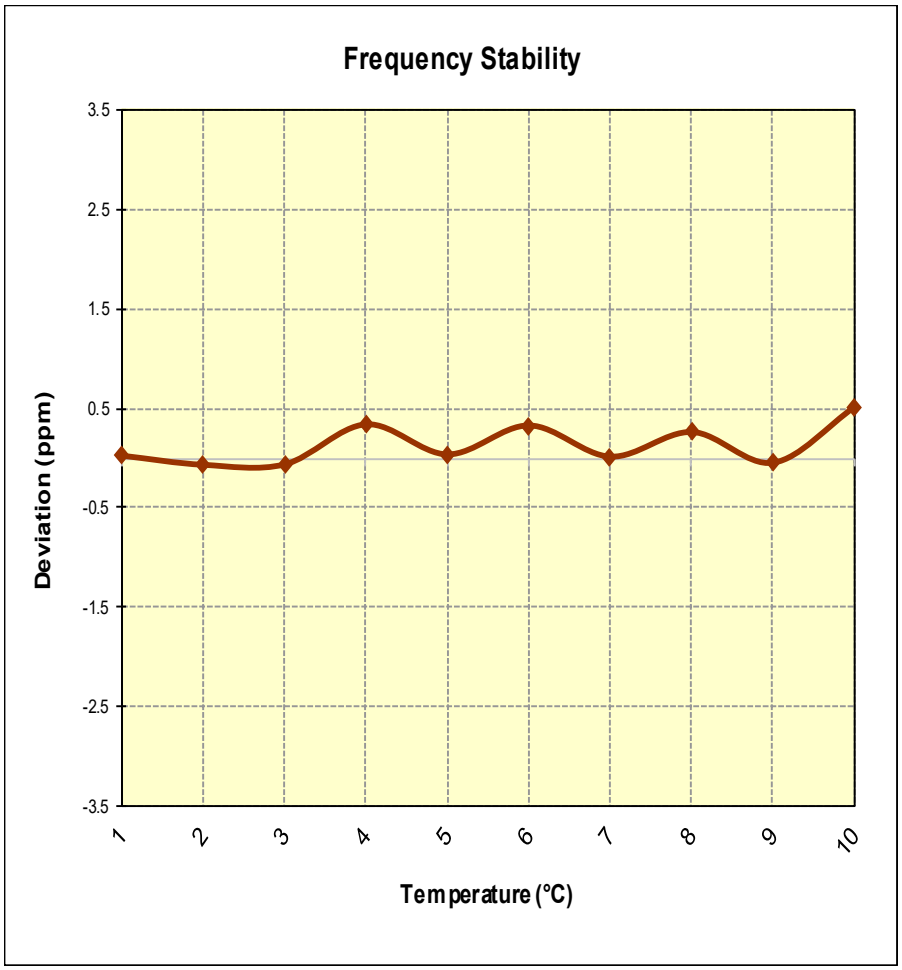

Figure 7-8. Frequency Stability Graph (Band 12/17)

Band 13 Frequency Stability Measurements

§2.1055 §27.54

OPERATING FREQUENCY:	782,000,000	Hz
CHANNEL:	23230	
REFERENCE VOLTAGE:	3.80	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	782,000,051	51	0.0000065
100 %		- 30	782,000,186	186	0.0000238
100 %		- 20	781,999,907	-93	-0.0000119
100 %		- 10	782,000,273	273	0.0000349
100 %		0	782,000,062	62	0.0000079
100 %		+ 10	781,999,982	-18	-0.0000023
100 %		+ 20	781,999,930	-70	-0.0000090
100 %		+ 30	782,000,295	295	0.0000377
100 %		+ 40	782,000,431	431	0.0000551
100 %		+ 50	782,000,302	302	0.0000386
BATT. ENDPOINT	3.40	+ 20	781,999,804	-196	-0.0000251

Table 7-37. Frequency Stability Data (Band 13)

Band 13 Frequency Stability Measurements

§2.1055 §27.54

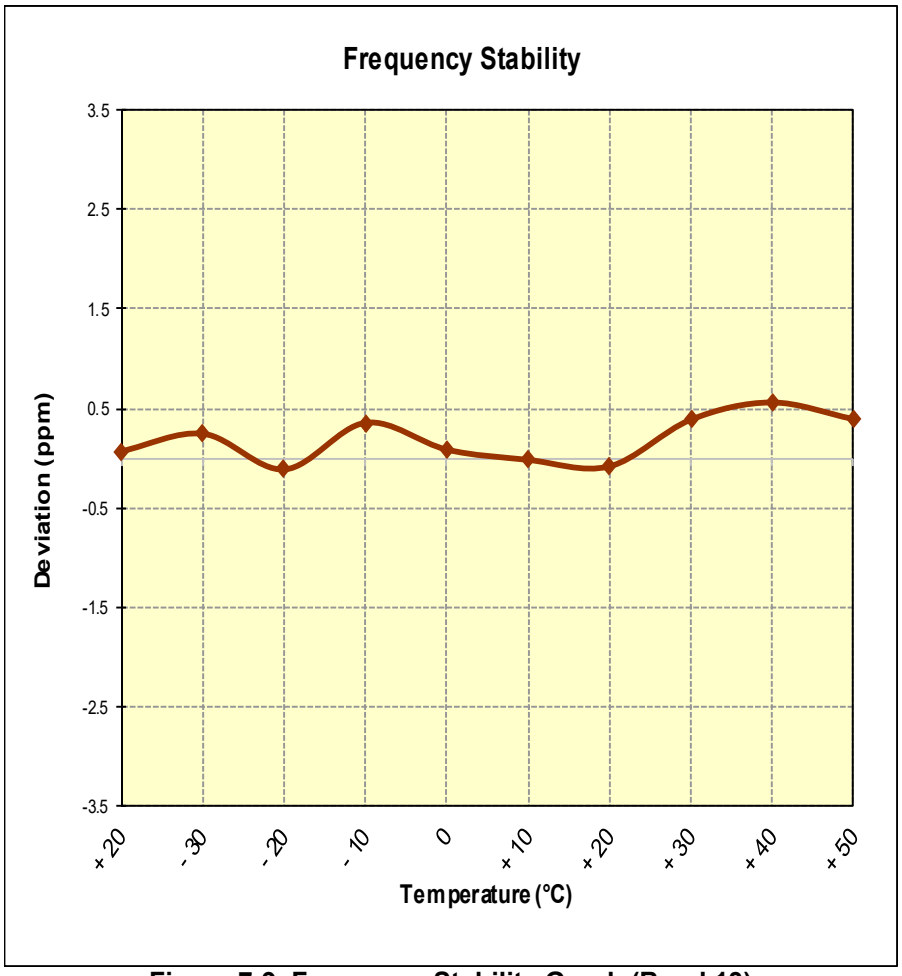

Figure 7-9. Frequency Stability Graph (Band 13)

Band 5/26 Frequency Stability Measurements

§2.1055 §22.355

OPERATING FREQUENCY:	831,500,000	Hz
CHANNEL:	26865	
REFERENCE VOLTAGE:	3.80	VDC
DEVIATION LIMIT:	± 0.00025 % or 2.5 ppm	

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	831,500,344	344	0.0000414
100 %		- 30	831,499,892	-108	-0.0000130
100 %		- 20	831,500,076	76	0.0000091
100 %		- 10	831,499,755	-245	-0.0000295
100 %		0	831,500,197	197	0.0000237
100 %		+ 10	831,500,264	264	0.0000317
100 %		+ 20	831,500,079	79	0.0000095
100 %		+ 30	831,500,060	60	0.0000072
100 %		+ 40	831,499,877	-123	-0.0000148
100 %		+ 50	831,500,045	45	0.0000054
BATT. ENDPOINT	3.40	+ 20	831,499,826	-174	-0.0000209

Table 7-38. Frequency Stability Data (Band 5/26)

Band 5/26 Frequency Stability Measurements

§2.1055 §22.355

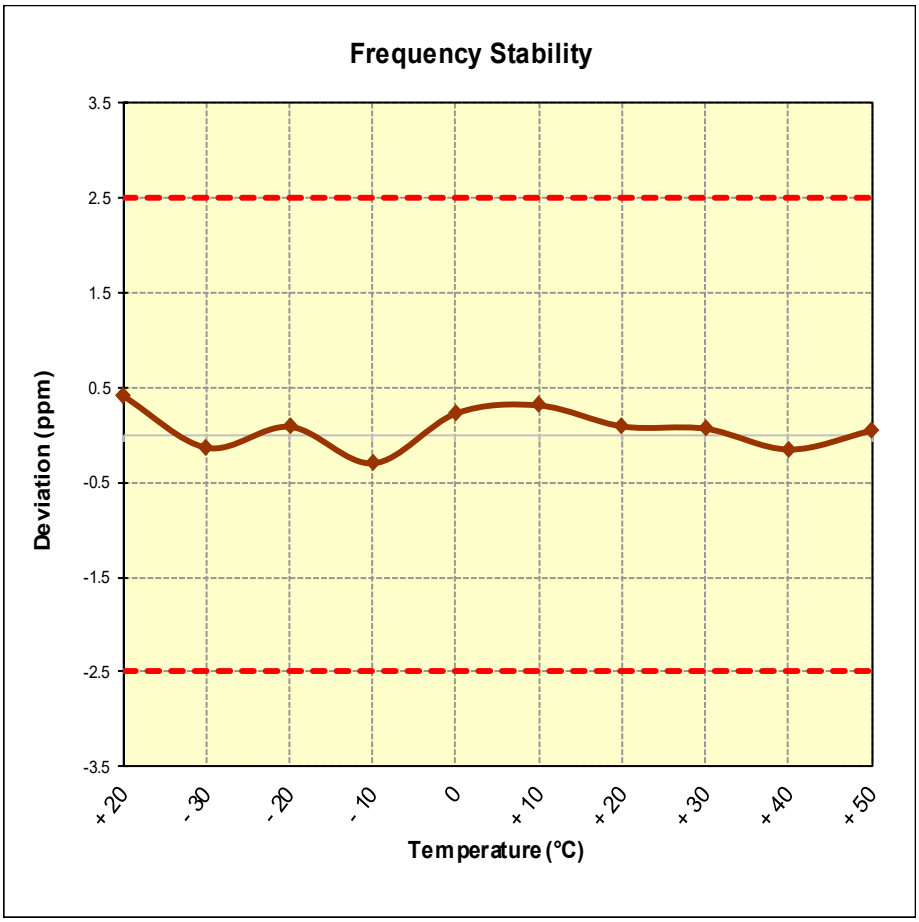

Figure 7-10. Frequency Stability Graph (Band 5/26)

Band 4/66 Frequency Stability Measurements

§2.1055 §§27.54

OPERATING FREQUENCY:	1,745,000,000	Hz
CHANNEL:	132322	
REFERENCE VOLTAGE:	3.80	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	1,745,000,122	122	0.0000070
100 %		- 30	1,745,000,140	140	0.0000080
100 %		- 20	1,745,000,006	6	0.0000003
100 %		- 10	1,745,000,060	60	0.0000034
100 %		0	1,744,999,789	-211	-0.0000121
100 %		+ 10	1,744,999,761	-239	-0.0000137
100 %		+ 20	1,745,000,101	101	0.0000058
100 %		+ 30	1,744,999,565	-435	-0.0000249
100 %		+ 40	1,745,000,028	28	0.0000016
100 %		+ 50	1,745,000,215	215	0.0000123
BATT. ENDPOINT	3.40	+ 20	1,744,999,798	-202	-0.0000116

Table 7-39. Frequency Stability Data (Band 4/66)

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.

Band 4/66 Frequency Stability Measurements

§2.1055 §§27.54

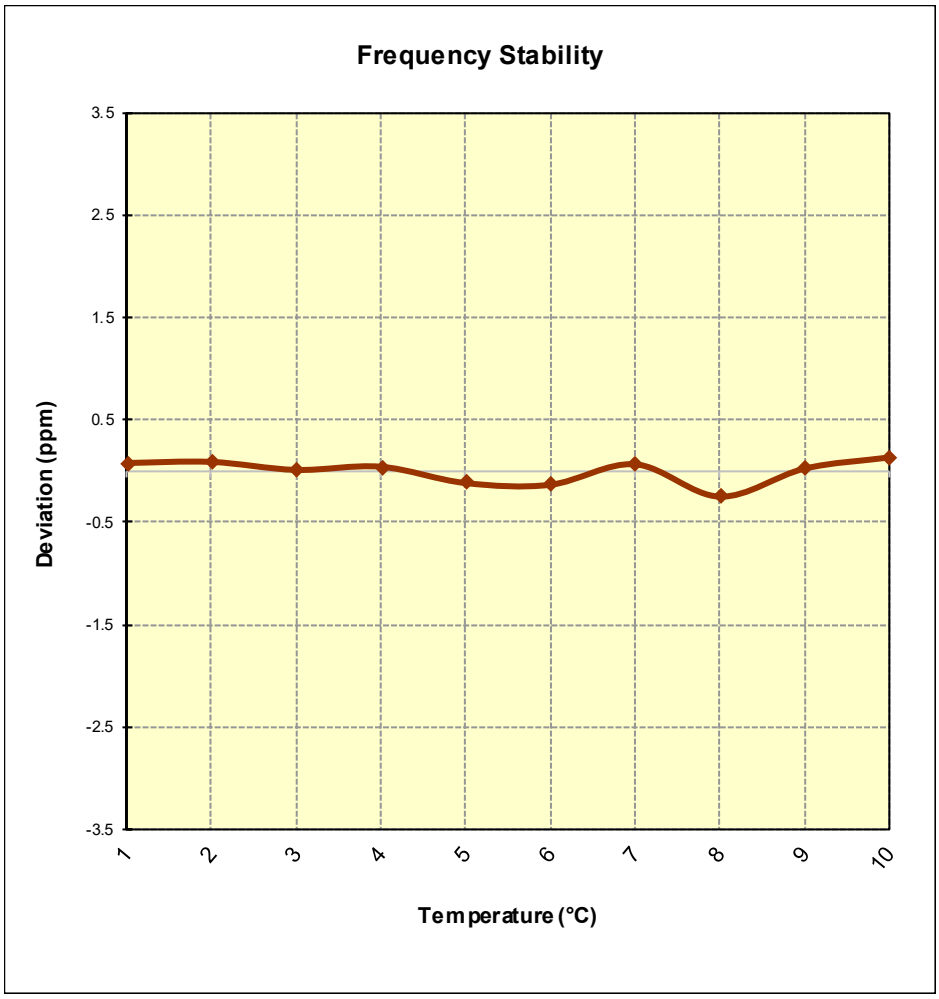

Figure 7-11. Frequency Stability Graph (Band 4/66)

Band 2/25 Frequency Stability Measurements

§2.1055 §24.235

OPERATING FREQUENCY:	1,882,500,000	Hz
CHANNEL:	26365	
REFERENCE VOLTAGE:	3.80	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	1,882,500,065	65	0.0000035
100 %		- 30	1,882,499,966	-34	-0.0000018
100 %		- 20	1,882,500,232	232	0.0000123
100 %		- 10	1,882,499,943	-57	-0.0000030
100 %		0	1,882,500,347	347	0.0000184
100 %		+ 10	1,882,500,041	41	0.0000022
100 %		+ 20	1,882,500,034	34	0.0000018
100 %		+ 30	1,882,500,027	27	0.0000014
100 %		+ 40	1,882,499,588	-412	-0.0000219
100 %		+ 50	1,882,500,000	0	0.0000000
BATT. ENDPOINT	3.40	+ 20	1,882,499,944	-56	-0.0000030

Table 7-40. Frequency Stability Data (Band 2/25)

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.

Band 25 Frequency Stability Measurements

§2.1055 §24.235

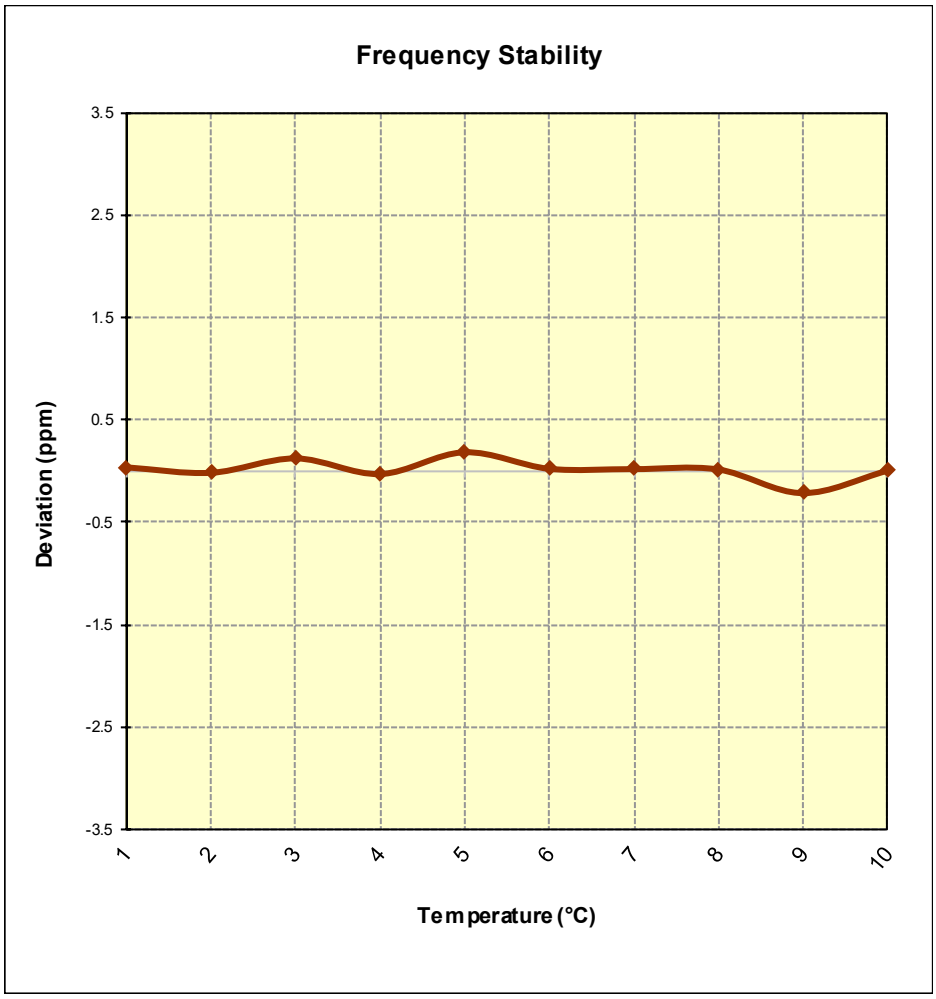

Figure 7-12. Frequency Stability Graph (Band 25)

Band 30 Frequency Stability Measurements

§2.1055 §24.235

OPERATING FREQUENCY:	2,310,000,000	Hz
CHANNEL:	27710	
REFERENCE VOLTAGE:	3.80	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	2,310,000,011	11	0.0000005
100 %		- 30	2,310,000,218	218	0.0000094
100 %		- 20	2,310,000,100	100	0.0000043
100 %		- 10	2,310,000,042	42	0.0000018
100 %		0	2,309,999,895	-105	-0.0000045
100 %		+ 10	2,310,000,122	122	0.0000053
100 %		+ 20	2,310,000,424	424	0.0000184
100 %		+ 30	2,309,999,889	-111	-0.0000048
100 %		+ 40	2,309,999,755	-245	-0.0000106
100 %		+ 50	2,309,999,693	-307	-0.0000133
BATT. ENDPOINT	3.40	+ 20	2,310,000,200	200	0.0000087

Table 7-41. Frequency Stability Data (Band 30)

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.

Band 30 Frequency Stability Measurements

§2.1055 §24.235

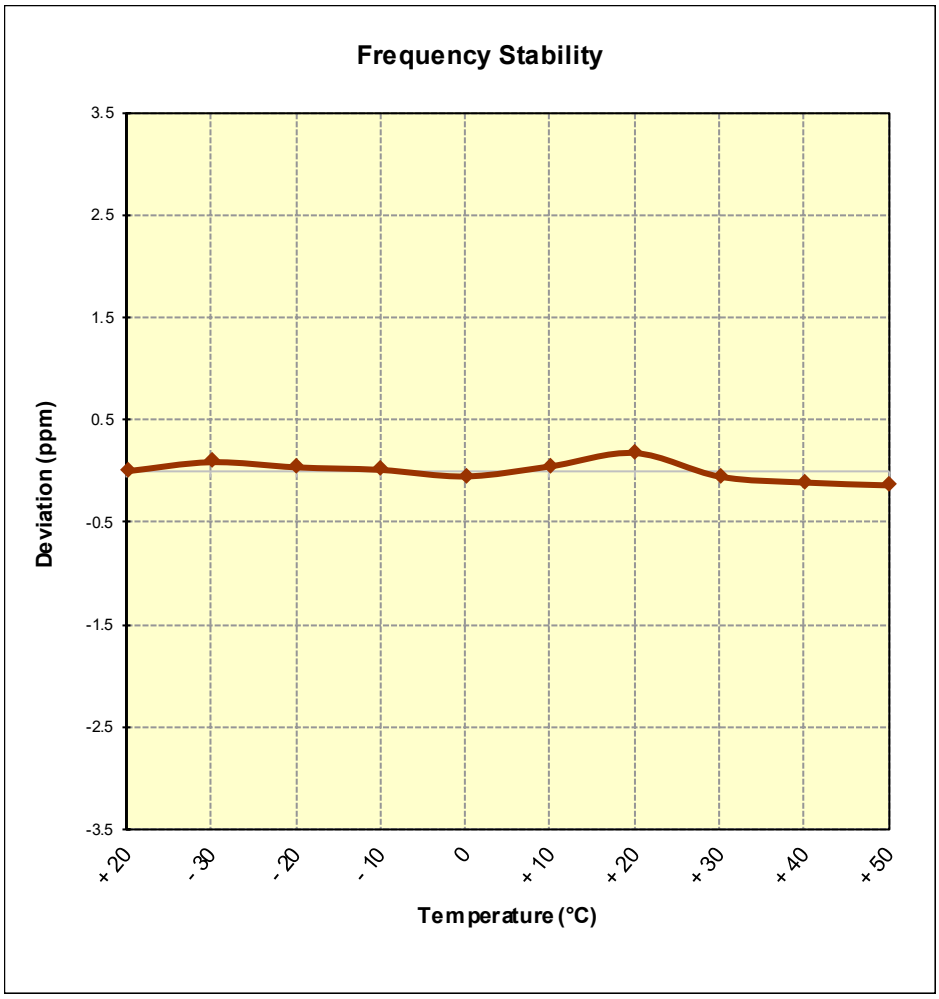

Figure 7-13. Frequency Stability Graph (Band 30)

Band 7 Frequency Stability Measurements

§2.1055 §27.54

OPERATING FREQUENCY:	2,535,000,000	Hz
CHANNEL:	21100	
REFERENCE VOLTAGE:	3.80	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	2,534,999,795	-205	-0.0000081
100 %		- 30	2,535,000,234	234	0.0000092
100 %		- 20	2,535,000,215	215	0.0000085
100 %		- 10	2,534,999,960	-40	-0.0000016
100 %		0	2,535,000,169	169	0.0000067
100 %		+ 10	2,535,000,220	220	0.0000087
100 %		+ 20	2,534,999,845	-155	-0.0000061
100 %		+ 30	2,534,999,898	-102	-0.0000040
100 %		+ 40	2,535,000,078	78	0.0000031
100 %		+ 50	2,534,999,651	-349	-0.0000138
BATT. ENDPOINT	3.40	+ 20	2,534,999,698	-302	-0.0000119

Table 7-42. 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.

Band 7 Frequency Stability Measurements

§2.1055 §27.54

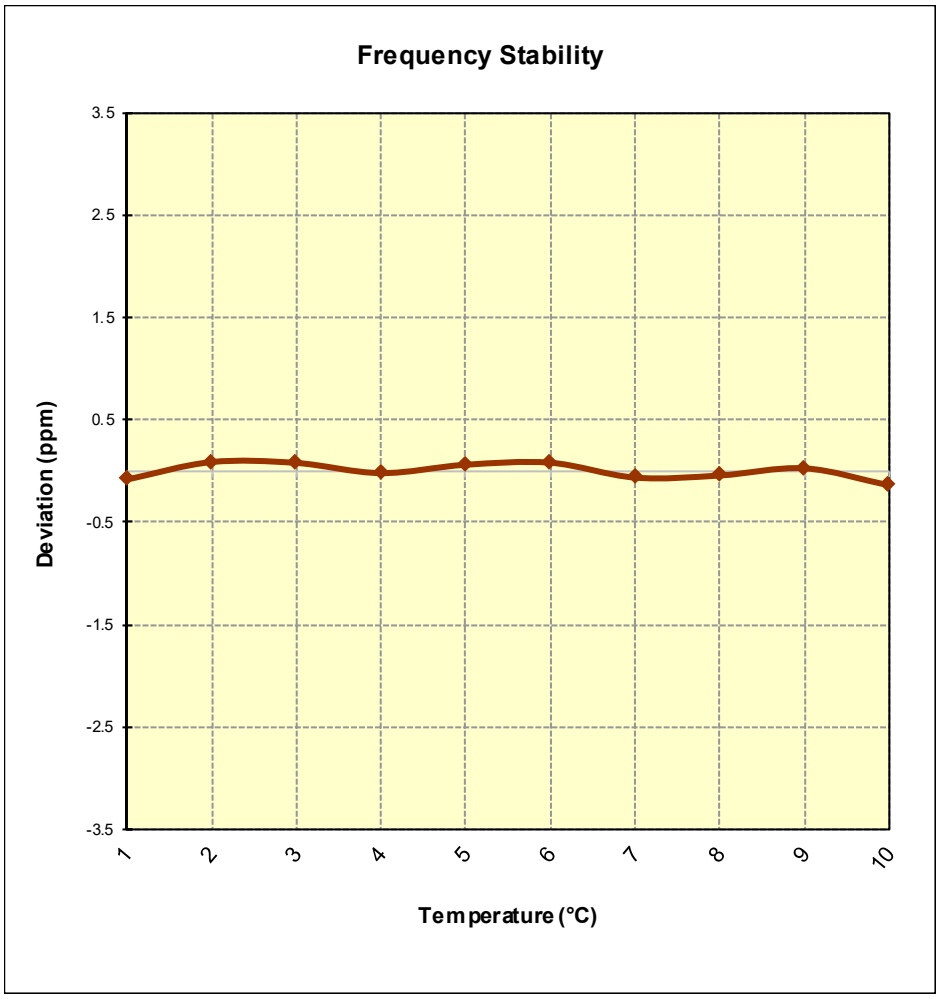

Figure 7-14. Frequency Stability Graph (Band 7)

Band 41 Frequency Stability Measurements

§2.1055 §27.54

OPERATING FREQUENCY:	2,593,000,000	Hz
CHANNEL:	40620	
REFERENCE VOLTAGE:	3.80	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	2,593,000,289	289	0.0000111
100 %		- 30	2,592,999,589	-411	-0.0000159
100 %		- 20	2,592,999,793	-207	-0.0000080
100 %		- 10	2,592,999,836	-164	-0.0000063
100 %		0	2,592,999,994	-6	-0.0000002
100 %		+ 10	2,593,000,095	95	0.0000037
100 %		+ 20	2,592,999,951	-49	-0.0000019
100 %		+ 30	2,592,999,852	-148	-0.0000057
100 %		+ 40	2,592,999,846	-154	-0.0000059
100 %		+ 50	2,592,999,939	-61	-0.0000024
BATT. ENDPOINT	3.40	+ 20	2,592,999,987	-13	-0.0000005

Table 7-43. Frequency Stability Data (Band 41)

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.

Band 41 Frequency Stability Measurements

§2.1055 §27.54

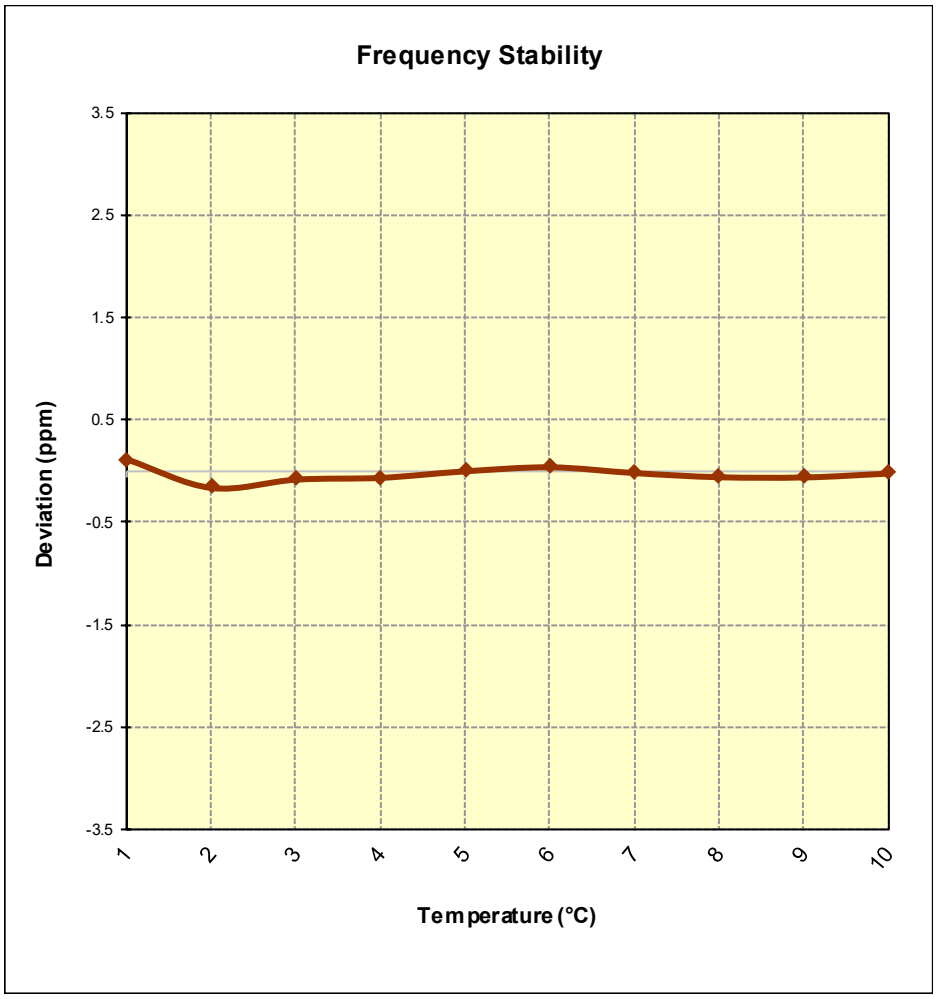

Figure 7-15. Frequency Stability Graph (Band 41)

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **LG Portable Handset FCC ID: ZNFG011C** complies with all the requirements of Parts 22, 24, & 27 of the FCC rules for LTE operation only.