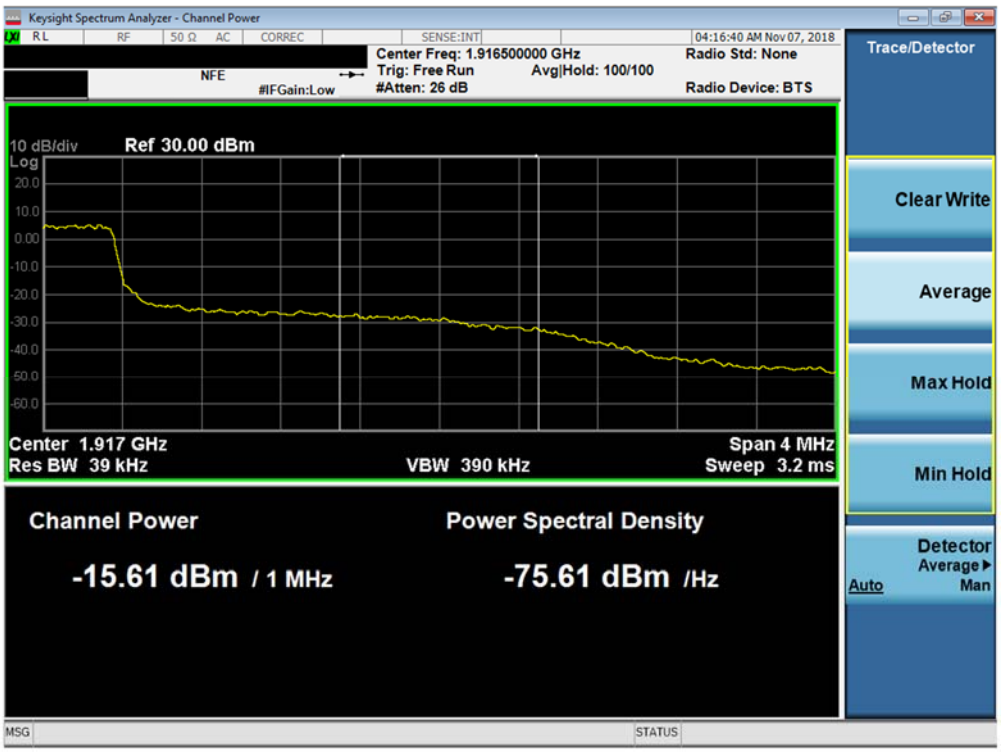
Plot 7-61. Upper Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)



Plot 7-62. Upper Extended Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)

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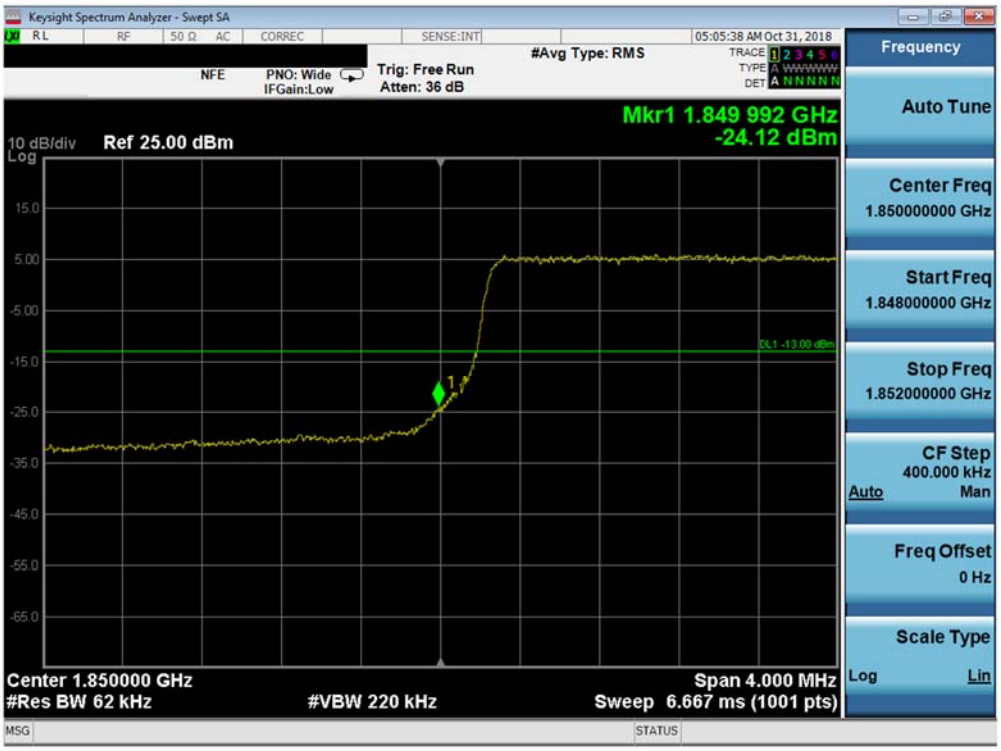
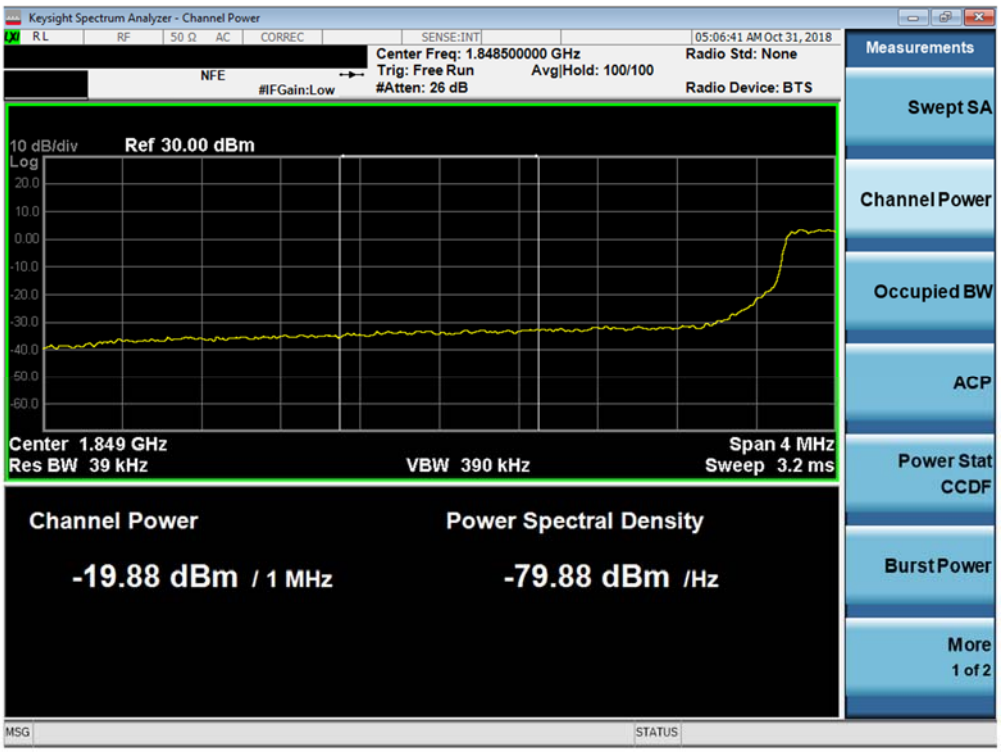


Plot 7-63. Lower Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-64. Lower Extended Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)

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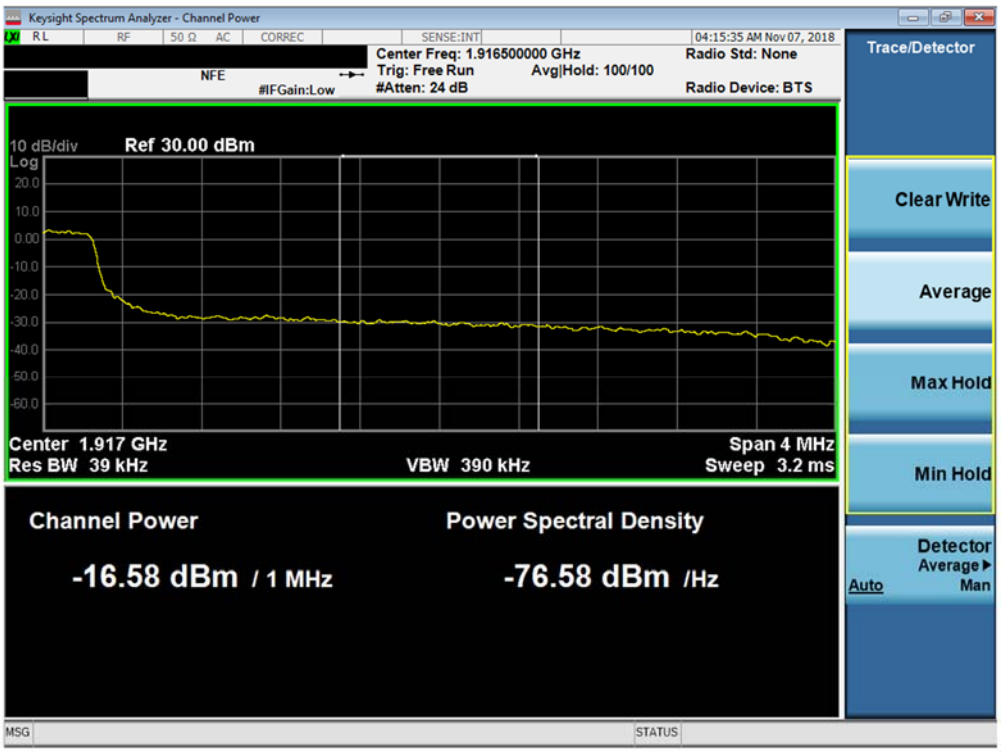
Plot 7-65. Upper Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-66. Upper Extended Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)

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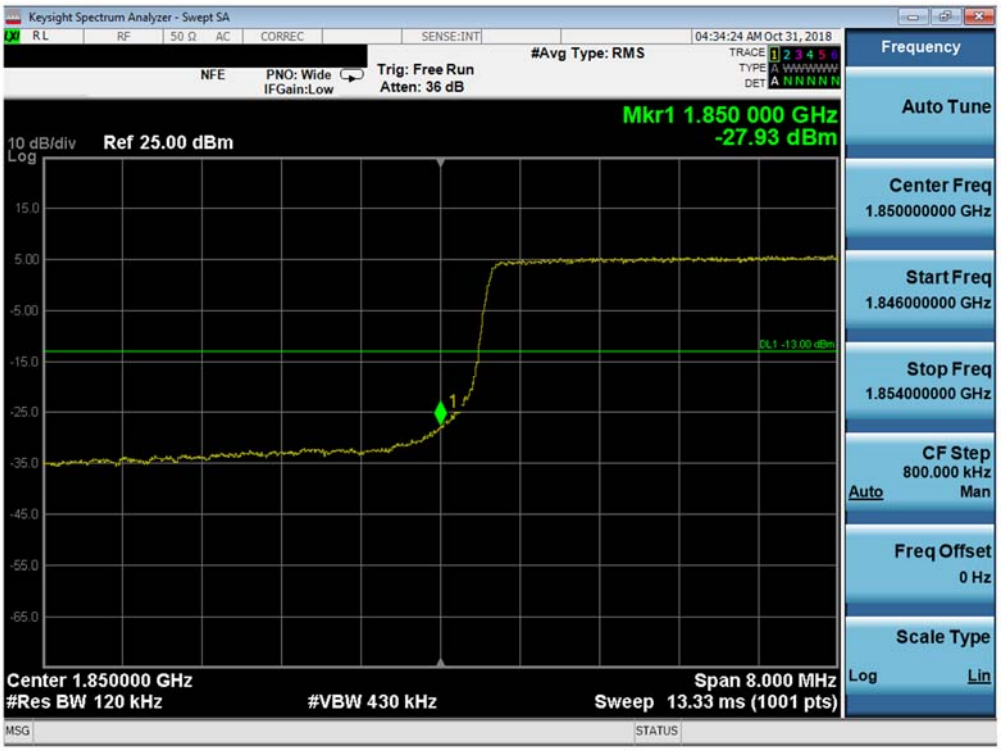
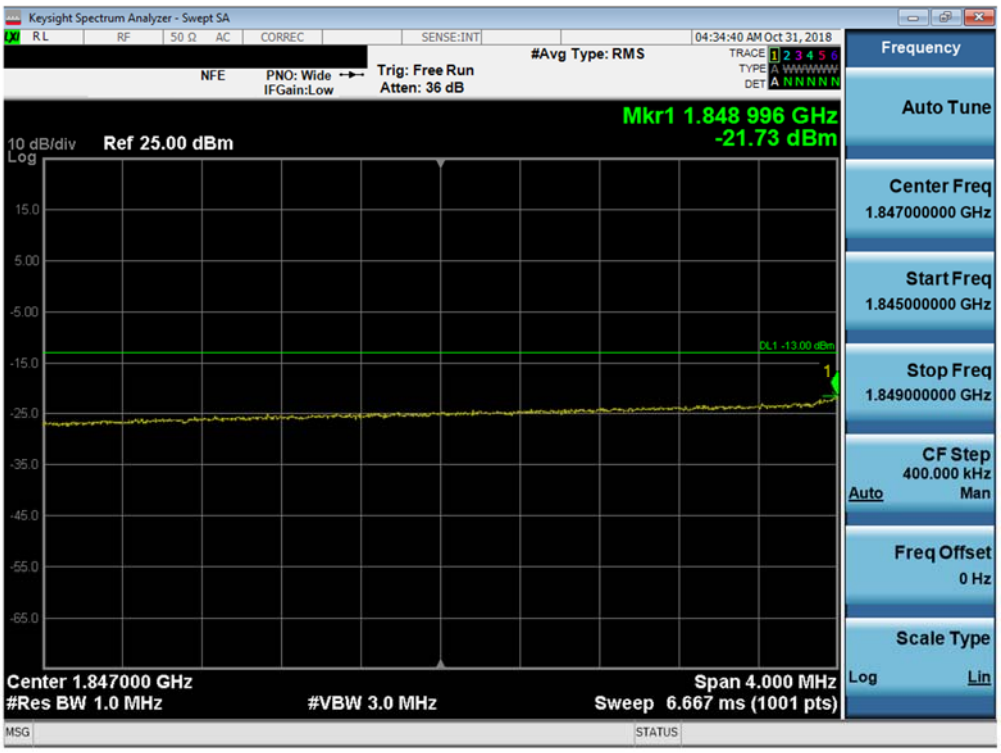


Plot 7-67. Lower Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-68. Lower Extended Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)

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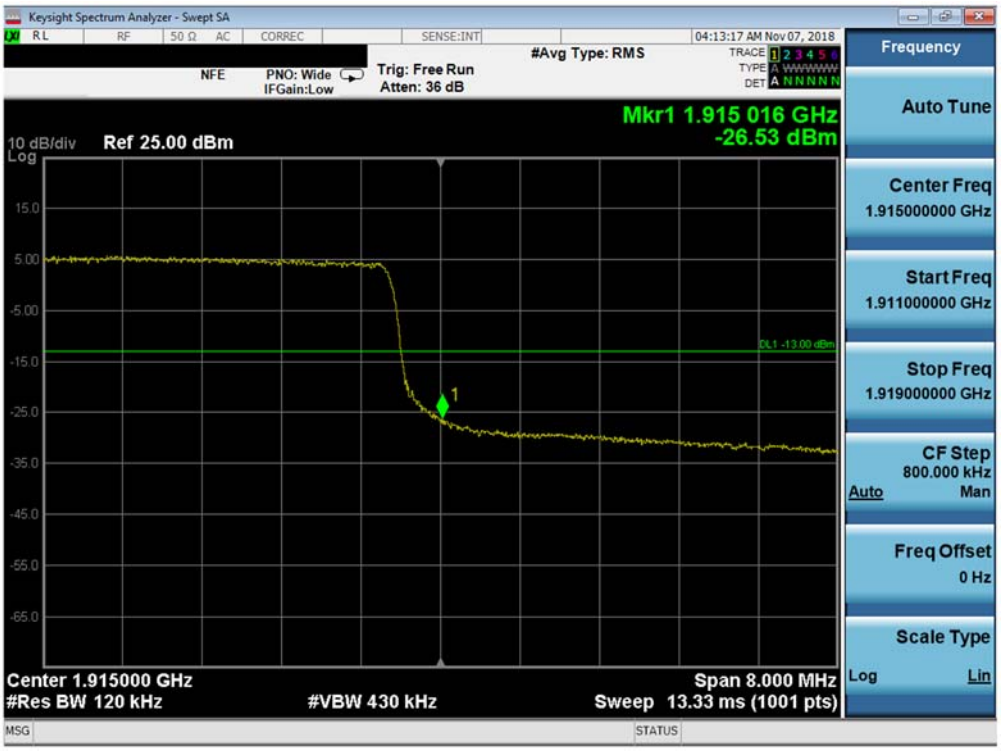
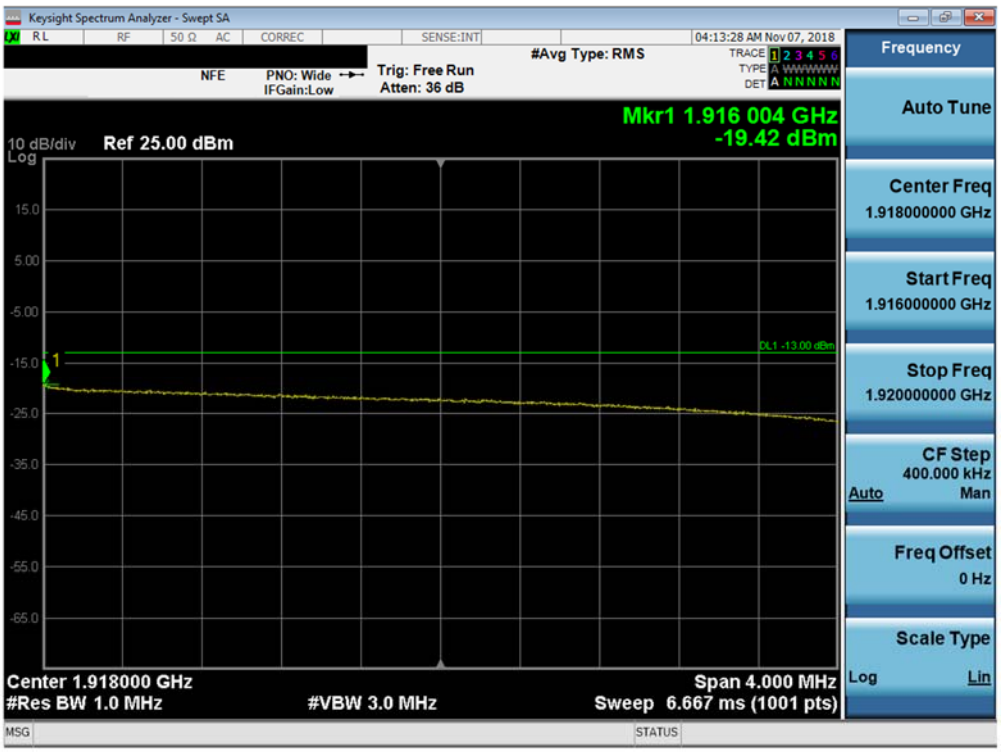


Plot 7-69. Upper Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-70. Upper Extended Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)

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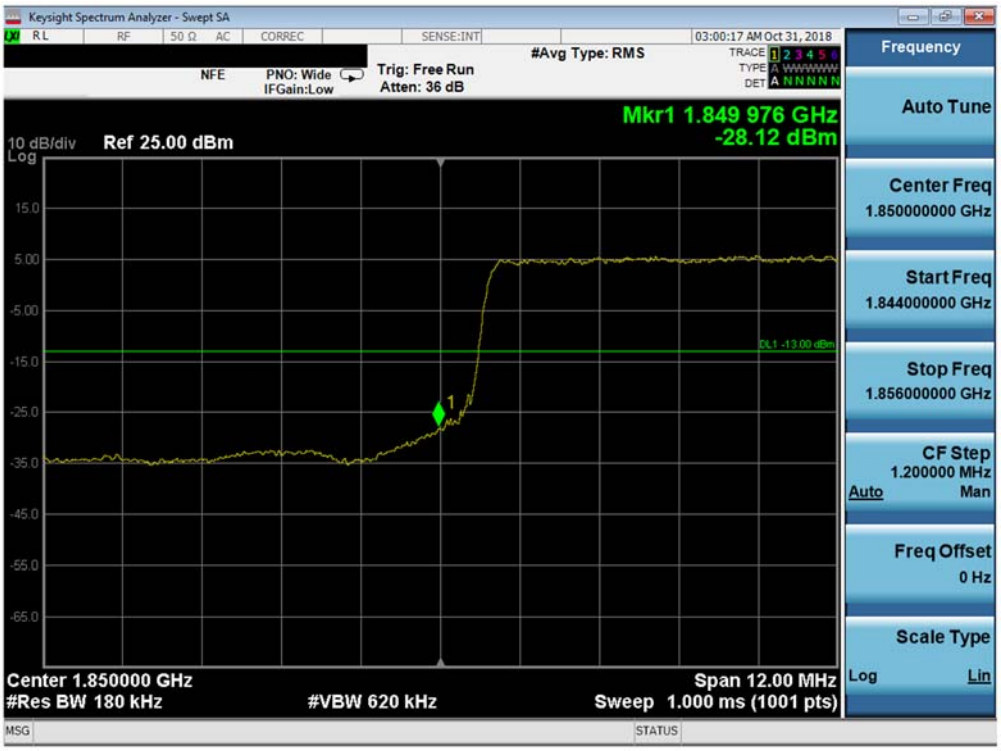
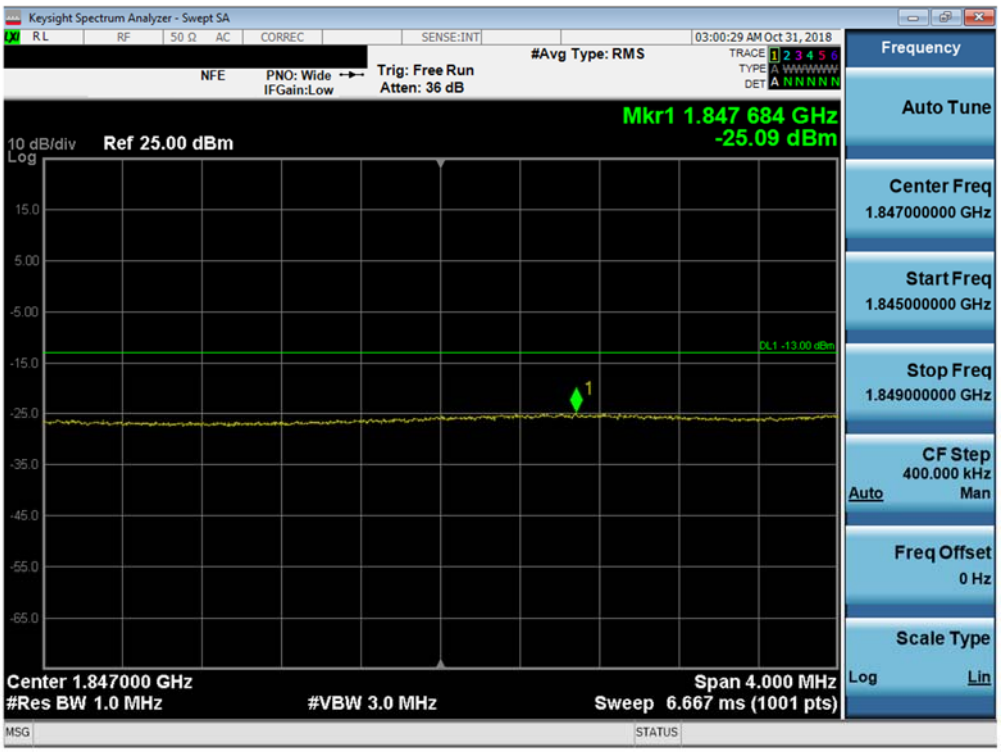


Plot 7-71. Lower Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-72. Lower Extended Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)

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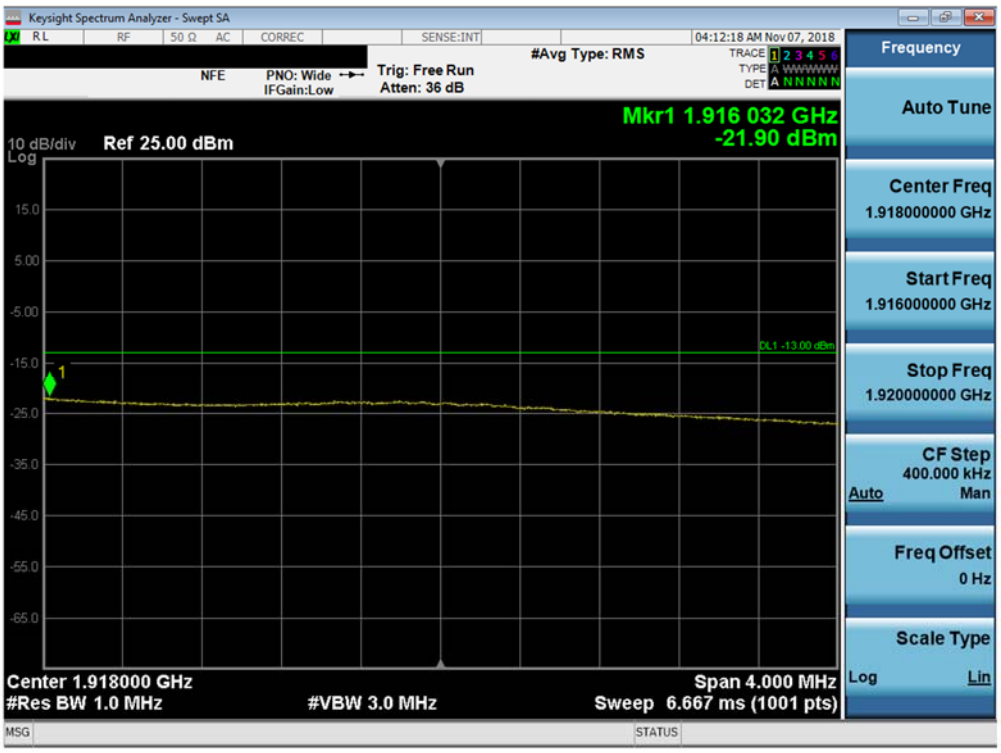
Plot 7-73. Upper Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-74. Upper Extended Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)

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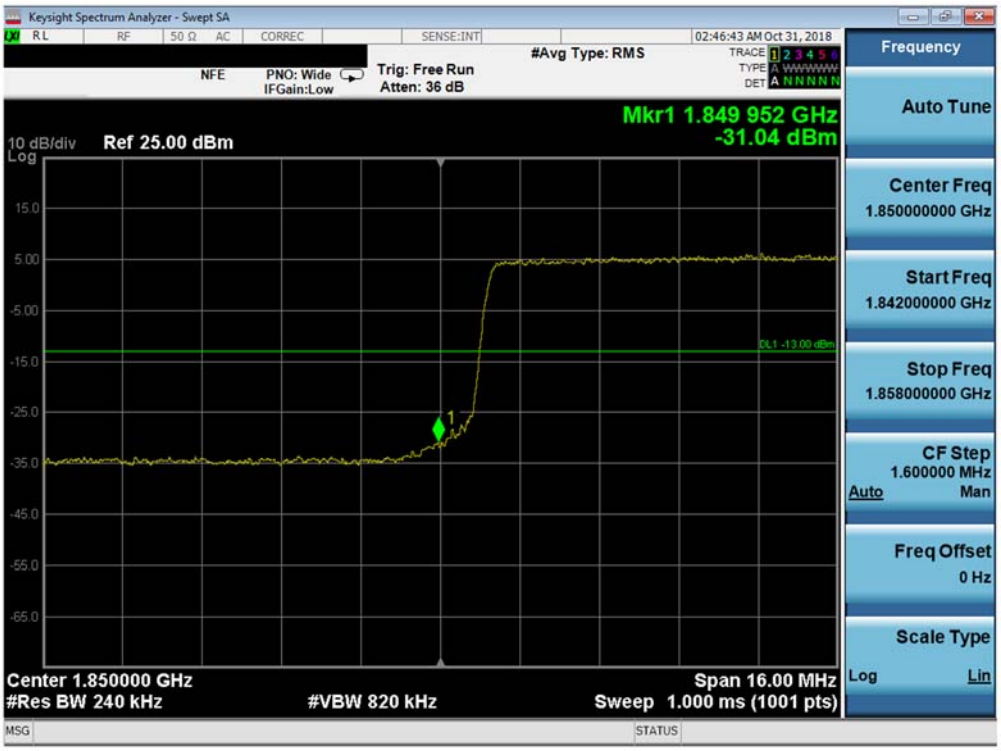
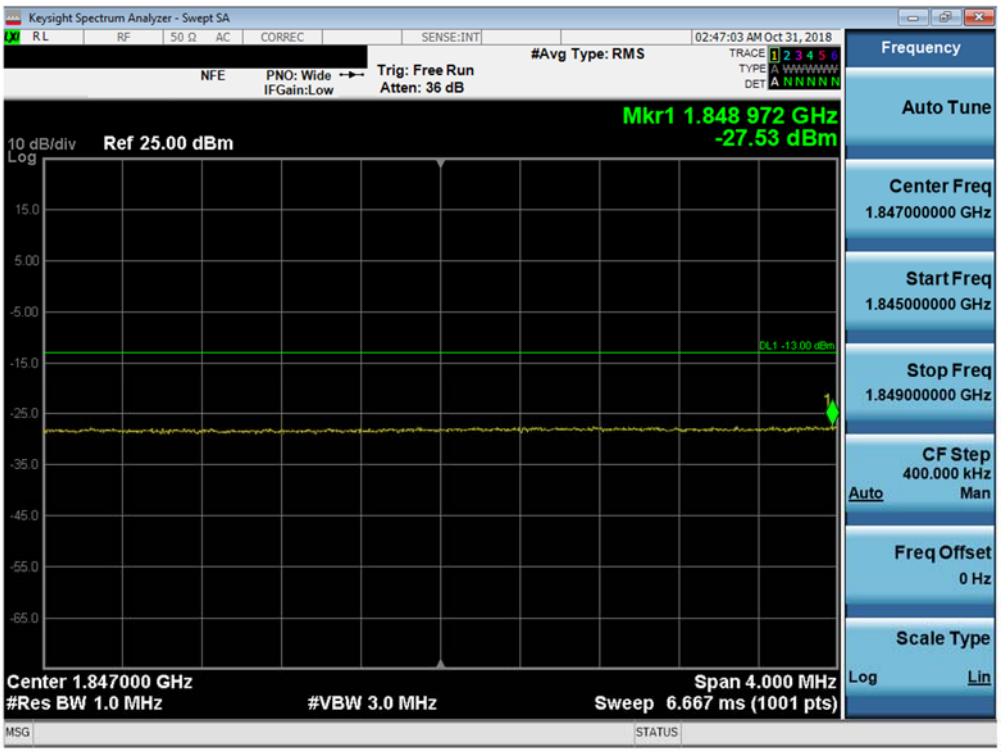


Plot 7-75. Lower Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-76. Lower Extended Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)

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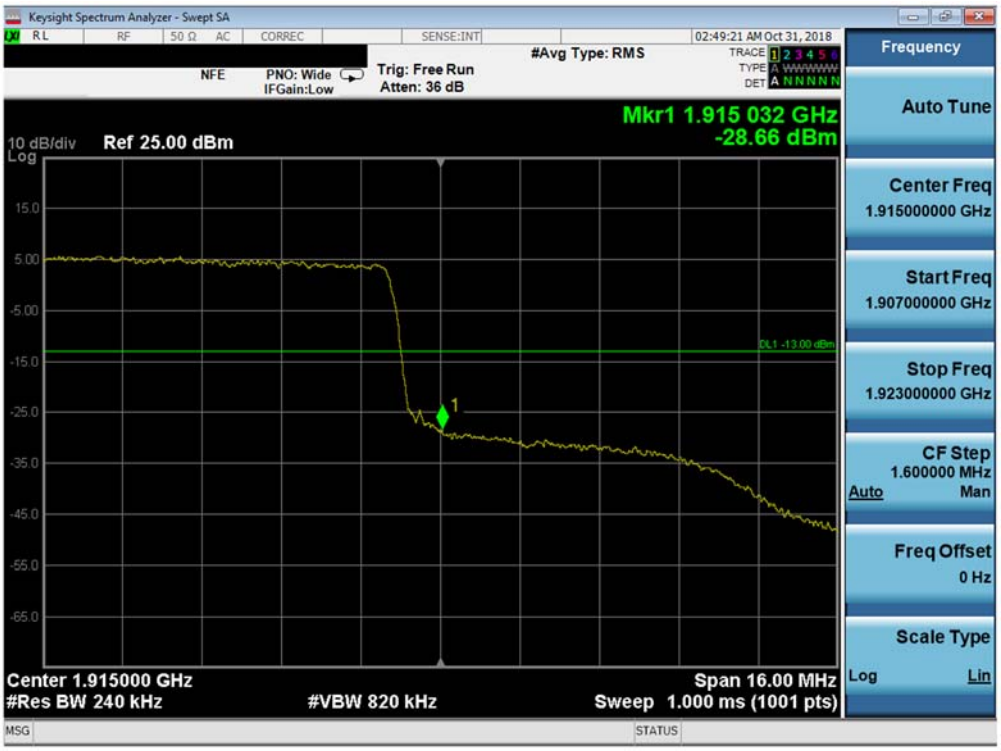
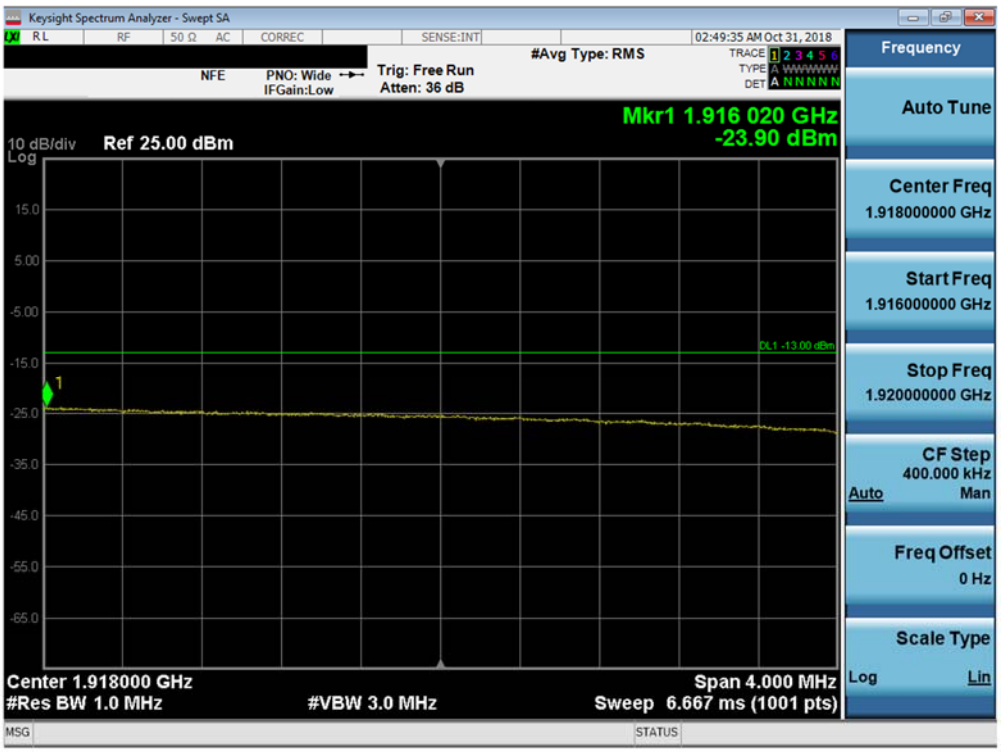


Plot 7-77. Upper Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-78. Upper Extended Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)

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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 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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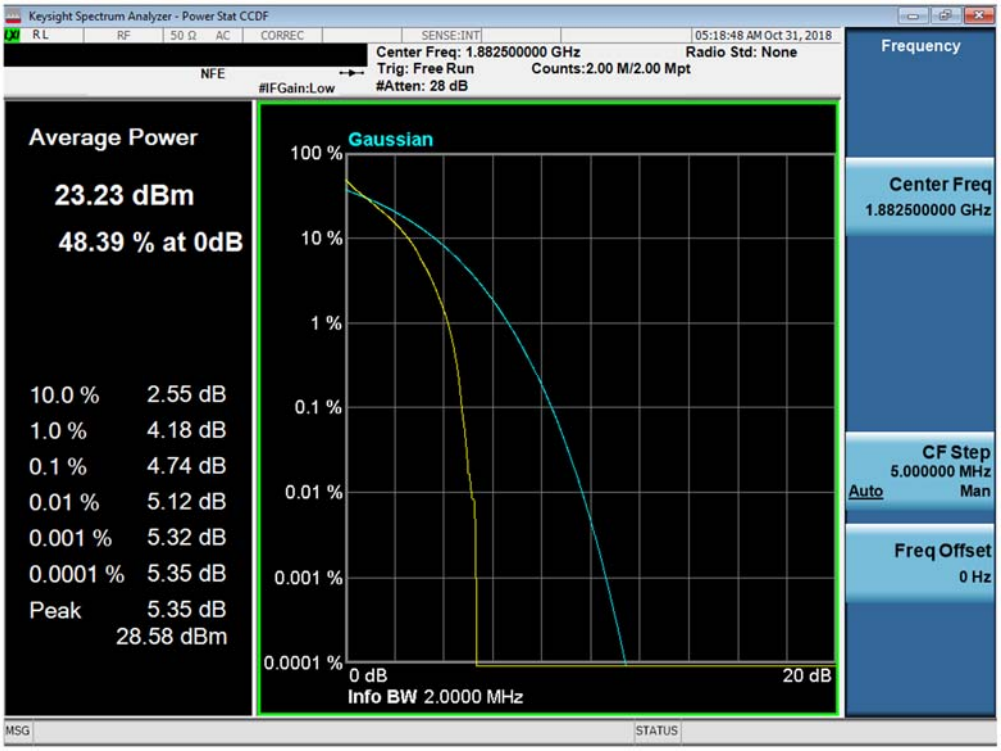
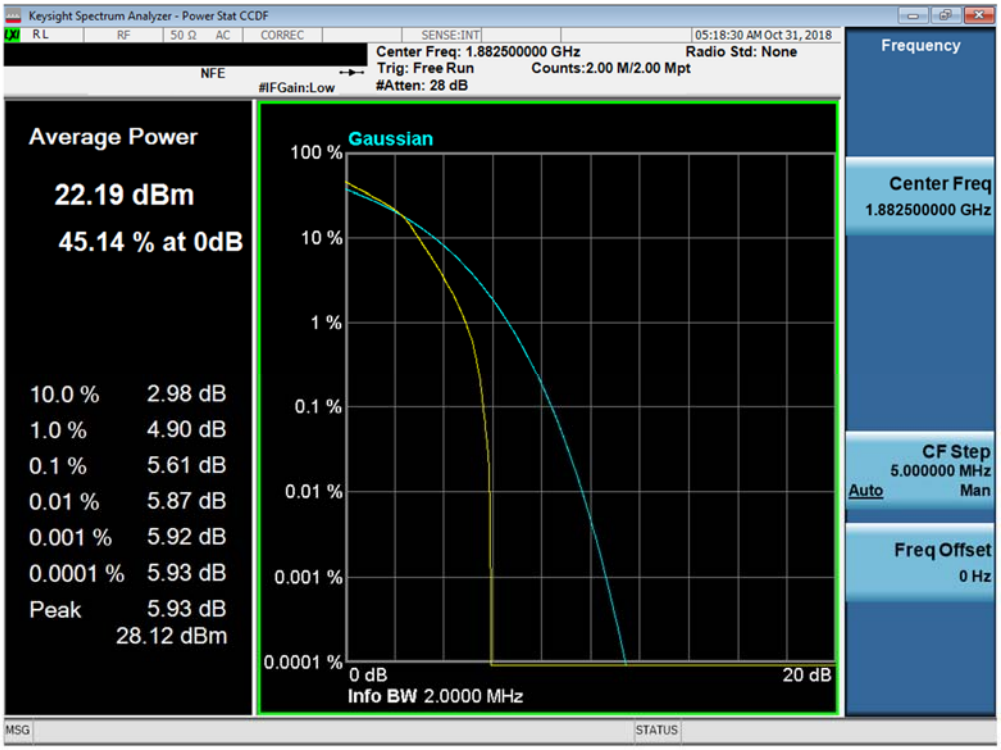
Band 25



Plot 7-79. PAR Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)



Plot 7-80. PAR Plot (Band 25 - 1.4MHz 16-QAM - Full RB Configuration)

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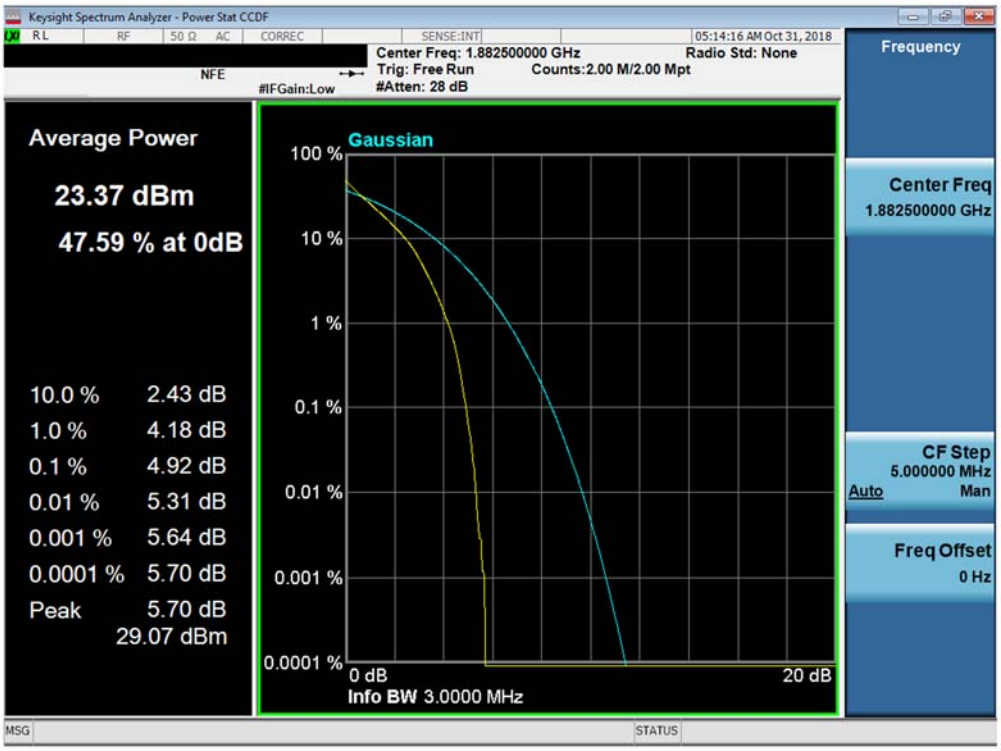
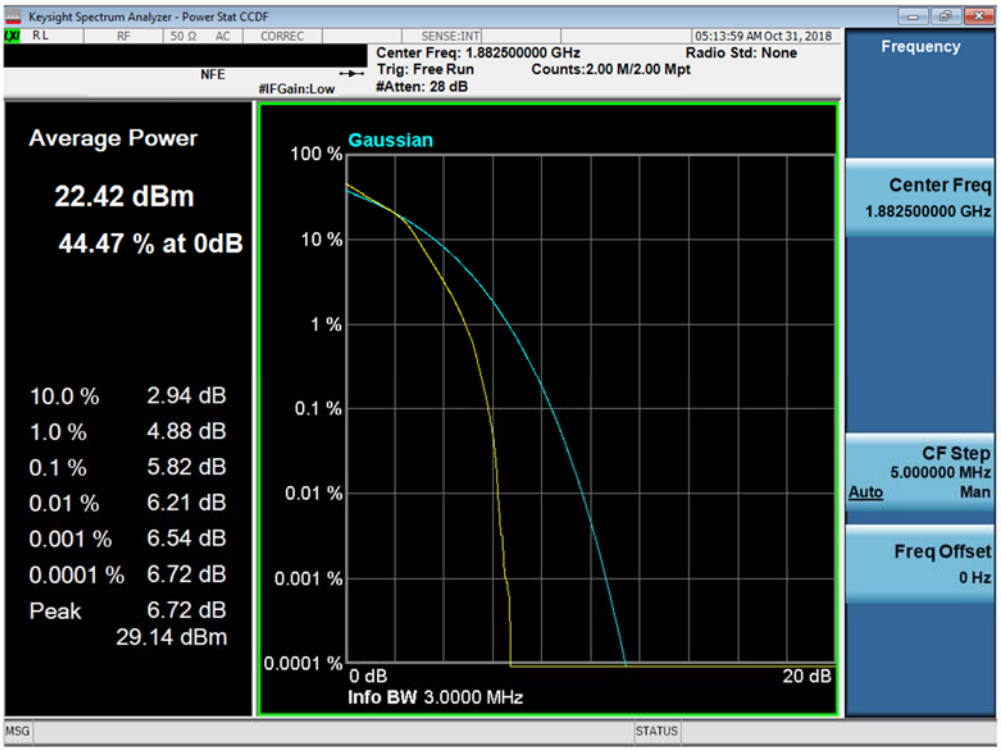


Plot 7-81. PAR Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)



Plot 7-82. PAR Plot (Band 25 - 3.0MHz 16-QAM - Full RB Configuration)

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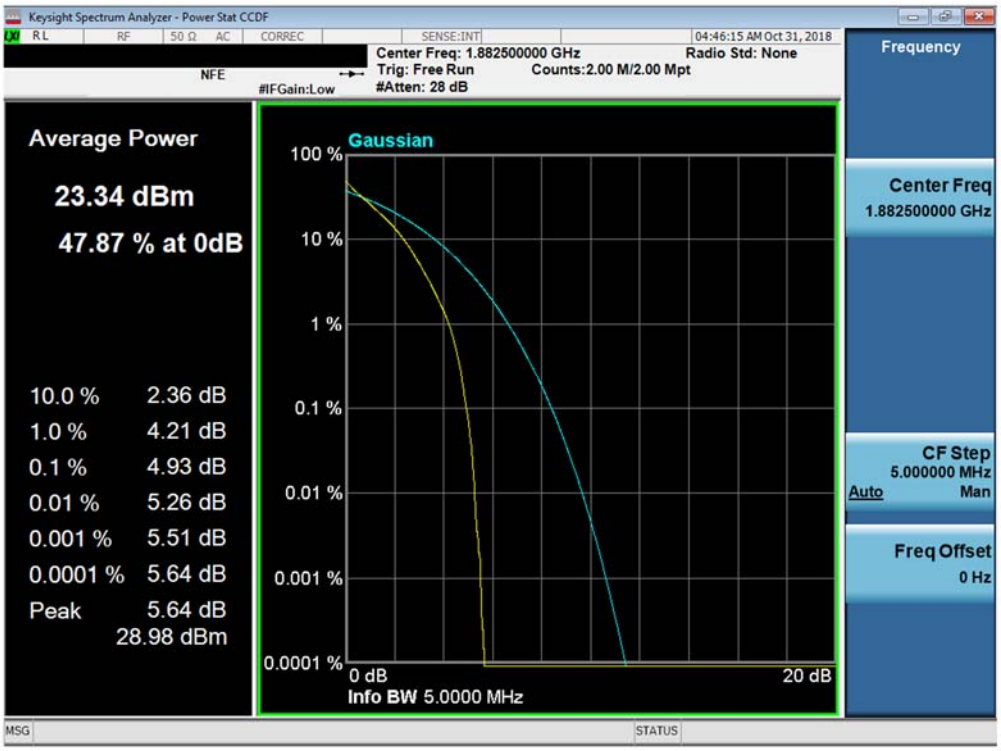
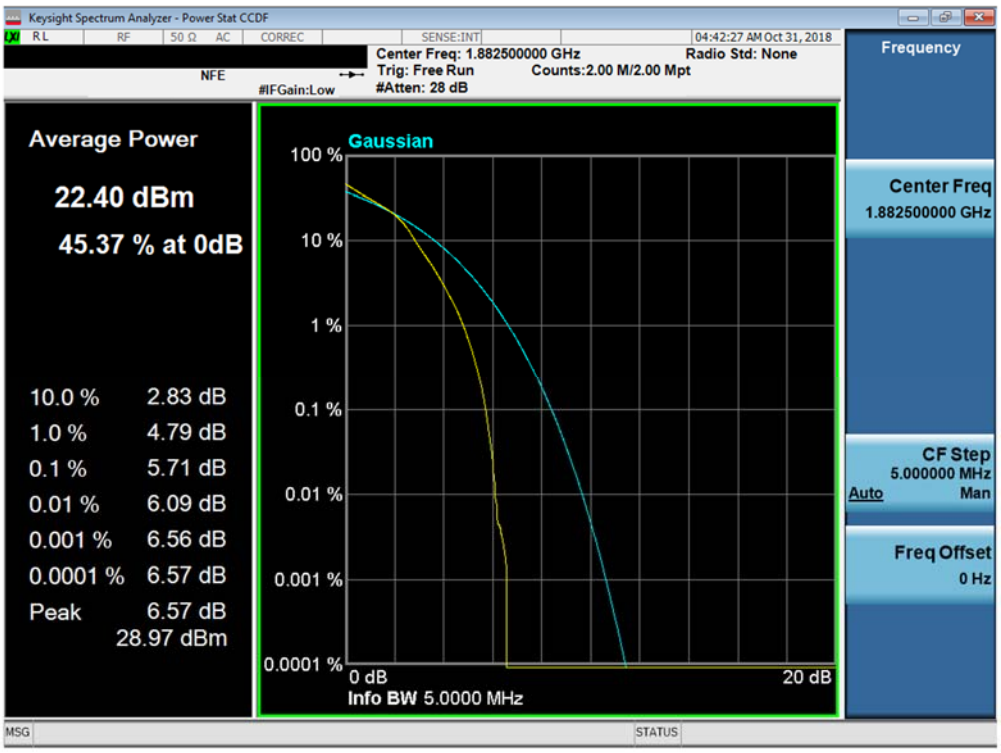


Plot 7-83. PAR Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-84. PAR Plot (Band 25 - 5.0MHz 16-QAM - Full RB Configuration)

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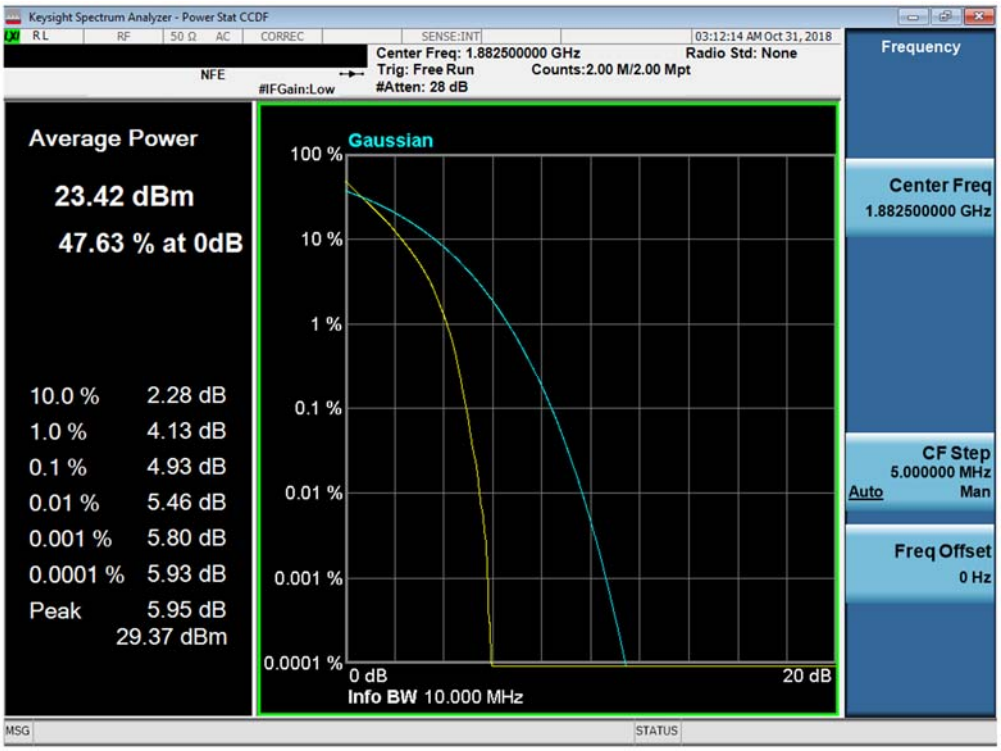
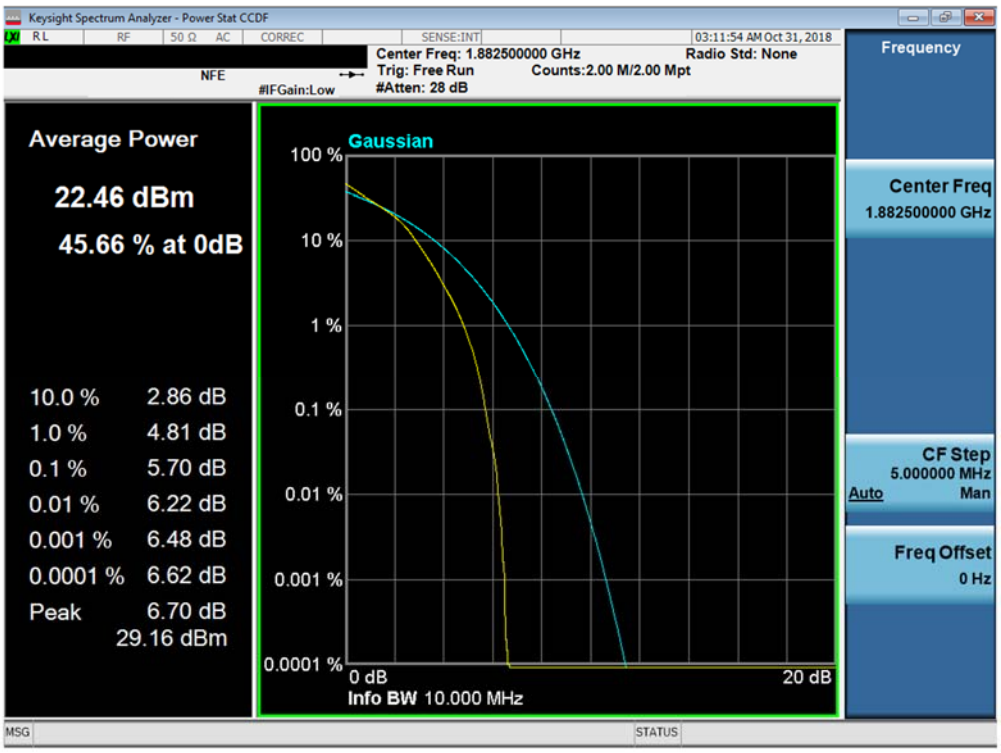


Plot 7-85. PAR Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-86. PAR Plot (Band 25 - 10.0MHz 16-QAM - Full RB Configuration)

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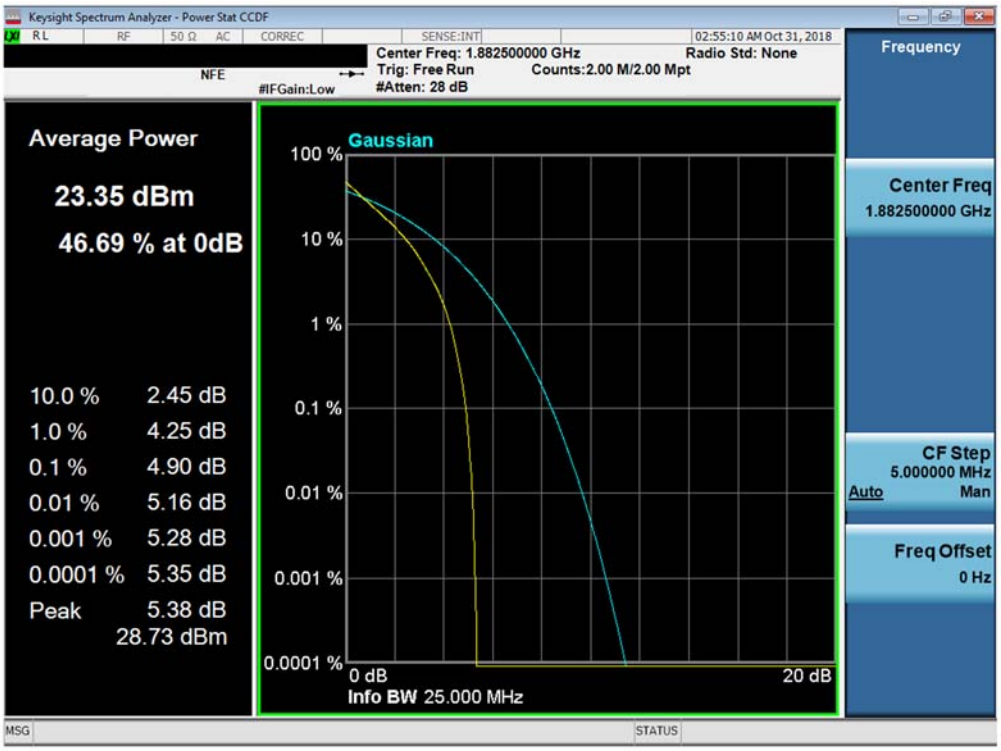
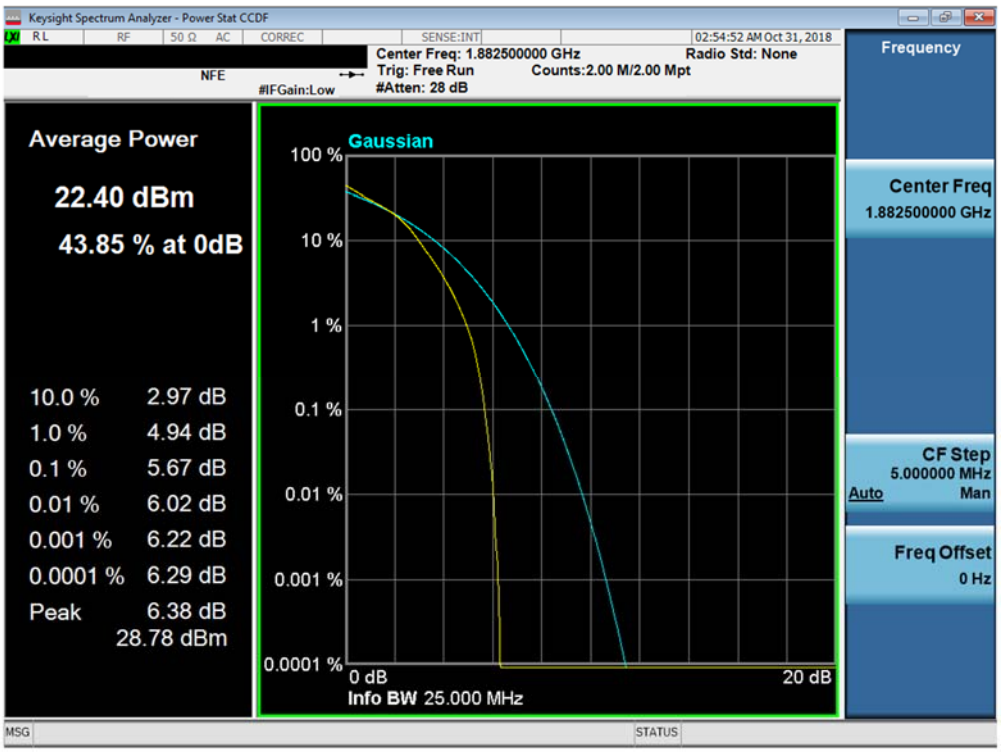


Plot 7-87. PAR Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-88. PAR Plot (Band 25 - 15.0MHz 16-QAM - Full RB Configuration)

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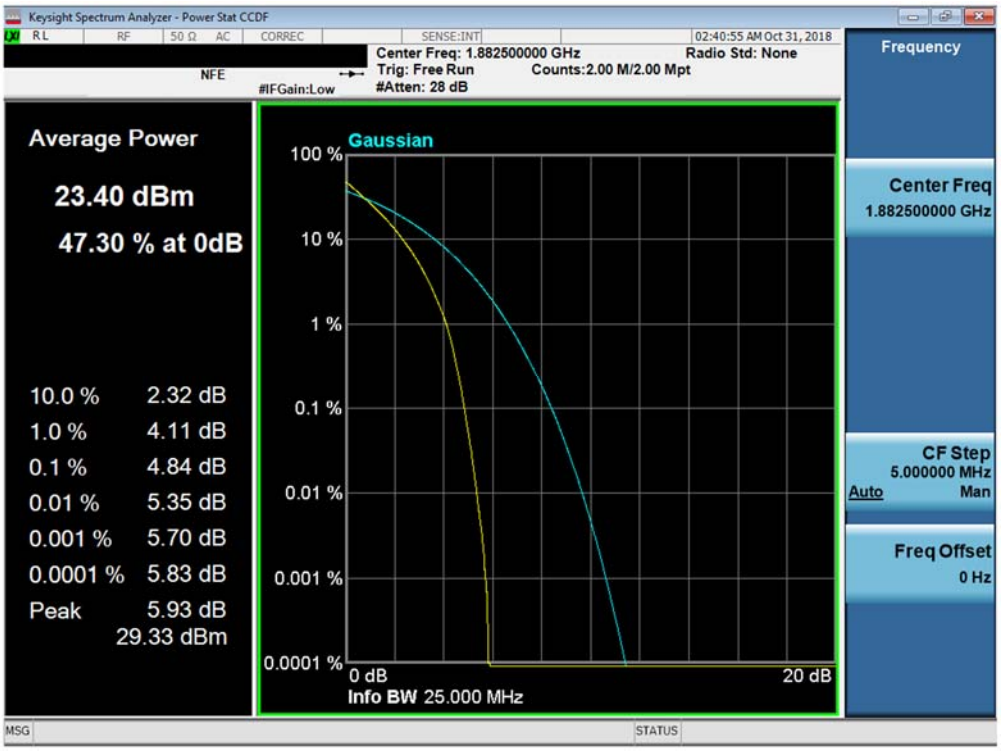
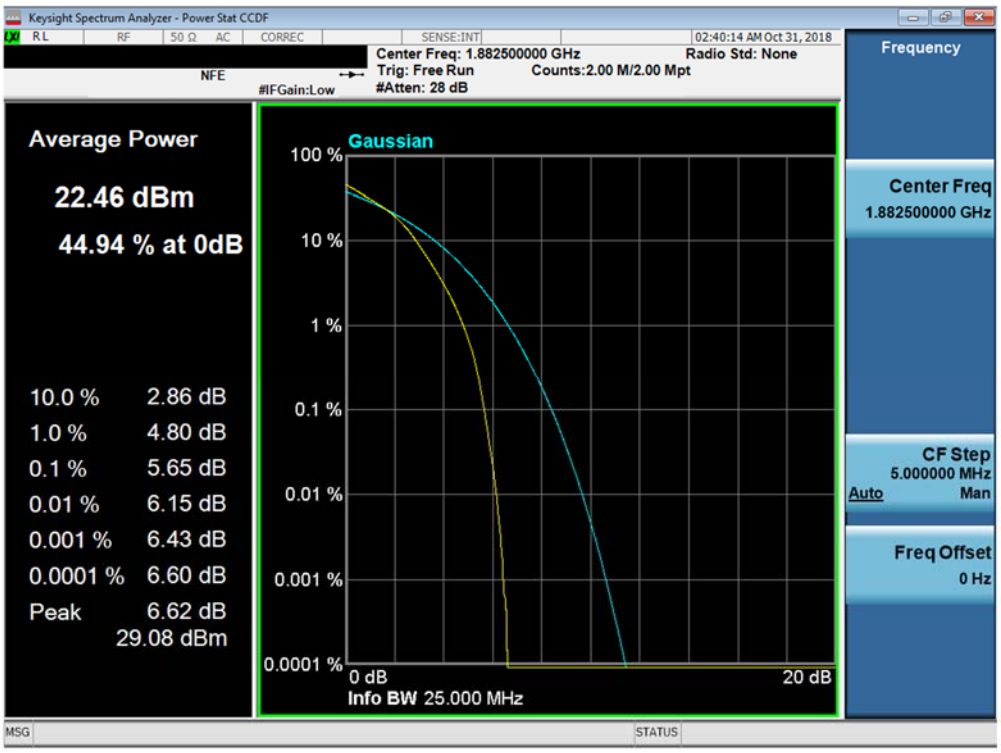


Plot 7-89. PAR Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-90. PAR Plot (Band 25 - 20.0MHz 16-QAM - Full RB Configuration)

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7.6 Radiated Power (ERP/EIRP)

§22.913(a)(5), §24.232(c)

22.913(a)(5) 24.232(c)

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.

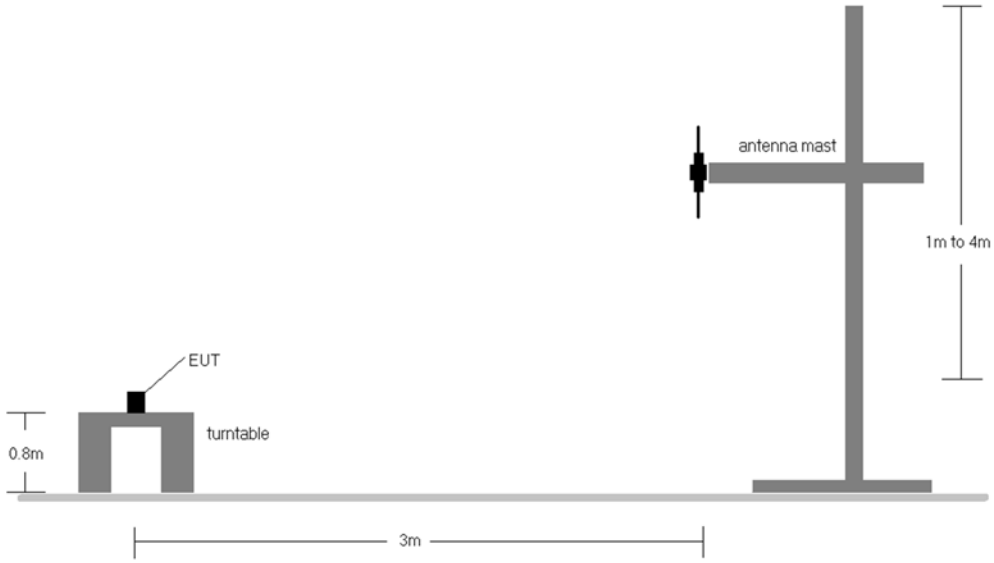

Figure 7-5. Radiated Test Setup <1GHz

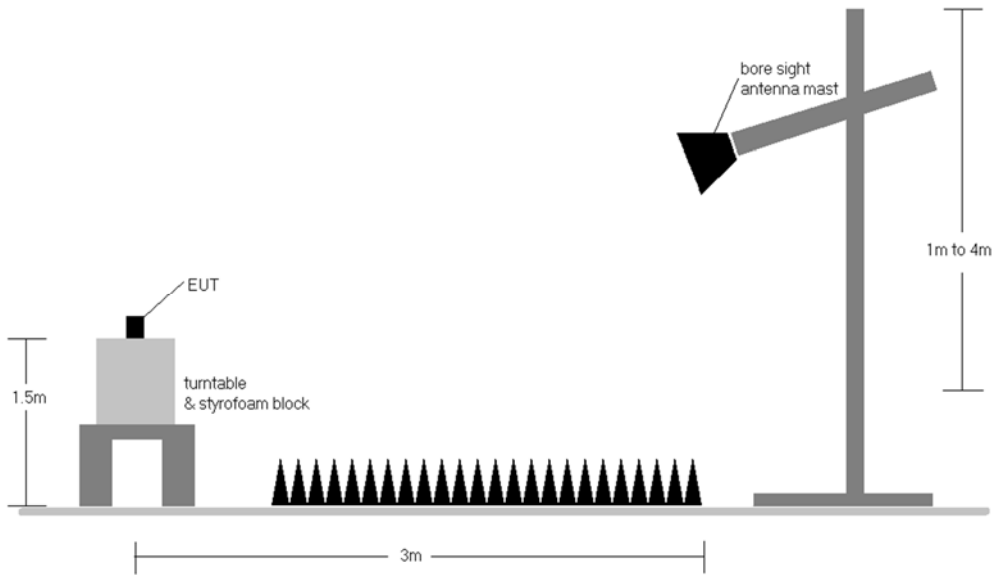

Figure 7-6. Radiated Test Setup >1GHz

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]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	H	179	304	1 / 0	22.99	1.65	**22.49**	0.177	38.45	-15.97	**24.64**	0.291	40.61	-15.97
836.50	1.4	QPSK	H	112	297	1 / 0	22.95	1.57	22.37	0.173	38.45	-16.08	24.52	0.283	40.61	-16.08
848.30	1.4	QPSK	H	105	312	1 / 0	22.16	1.50	21.51	0.142	38.45	-16.94	23.66	0.232	40.61	-16.95
824.70	1.4	16-QAM	H	179	304	1 / 0	22.00	1.65	21.50	0.141	38.45	-16.96	23.65	0.231	40.61	-16.96
836.50	1.4	16-QAM	H	112	297	1 / 0	22.18	1.57	**21.60**	0.145	38.45	-16.85	**23.75**	0.237	40.61	-16.85
848.30	1.4	16-QAM	H	105	312	1 / 0	21.53	1.50	20.88	0.123	38.45	-17.57	23.03	0.201	40.61	-17.58
825.50	3	QPSK	H	183	300	1 / 0	23.24	1.64	**22.73**	**0.188**	38.45	-15.72	**24.88**	**0.308**	40.61	-15.73
836.50	3	QPSK	H	106	300	1 / 0	22.72	1.57	22.14	0.164	38.45	-16.31	24.29	0.269	40.61	-16.31
847.50	3	QPSK	H	102	114	1 / 0	21.75	1.51	21.11	0.129	38.45	-17.34	23.26	0.212	40.61	-17.35
825.50	3	16-QAM	H	183	300	1 / 0	21.82	1.64	**21.31**	0.135	38.45	-17.14	**23.46**	0.222	40.61	-17.15
836.50	3	16-QAM	H	106	300	1 / 0	21.76	1.57	21.18	0.131	38.45	-17.27	23.33	0.215	40.61	-17.27
847.50	3	16-QAM	H	102	114	1 / 0	20.89	1.51	20.25	0.106	38.45	-18.20	22.40	0.174	40.61	-18.21
826.50	5	QPSK	H	178	301	1 / 0	22.82	1.63	**22.30**	0.170	38.45	-16.15	**24.45**	0.279	40.61	-16.15
836.50	5	QPSK	H	114	311	1 / 0	22.59	1.57	22.01	0.159	38.45	-16.44	24.16	0.261	40.61	-16.44
846.50	5	QPSK	H	103	307	1 / 0	22.64	1.51	22.00	0.159	38.45	-16.45	24.15	0.260	40.61	-16.45
826.50	5	16-QAM	H	178	301	1 / 0	21.95	1.63	**21.43**	0.139	38.45	-17.02	**23.58**	0.228	40.61	-17.02
836.50	5	16-QAM	H	114	311	1 / 0	21.38	1.57	20.80	0.120	38.45	-17.65	22.95	0.197	40.61	-17.65
846.50	5	16-QAM	H	103	307	1 / 0	20.78	1.51	20.14	0.103	38.45	-18.31	22.29	0.170	40.61	-18.31
829.00	10	QPSK	H	178	292	1 / 0	23.10	1.62	**22.57**	0.181	38.45	-15.88	**24.72**	0.296	40.61	-15.89
836.50	10	QPSK	H	114	298	1 / 0	22.59	1.57	22.01	0.159	38.45	-16.44	24.16	0.261	40.61	-16.44
844.00	10	QPSK	H	109	307	1 / 0	22.98	1.53	22.36	0.172	38.45	-16.09	24.51	0.282	40.61	-16.10
829.00	10	16-QAM	H	178	292	1 / 0	22.40	1.62	**21.87**	0.154	38.45	-16.58	**24.02**	0.252	40.61	-16.59
836.50	10	16-QAM	H	114	298	1 / 0	21.49	1.57	20.91	0.123	38.45	-17.54	23.06	0.202	40.61	-17.54
844.00	10	16-QAM	H	109	307	1 / 0	21.90	1.53	21.28	0.134	38.45	-17.17	23.43	0.220	40.61	-17.18
831.50	15	QPSK	H	171	322	1 / 0	22.38	1.60	21.83	0.153	38.45	-16.62	23.98	0.250	40.61	-16.62
836.50	15	QPSK	H	169	307	1 / 0	22.89	1.57	**22.31**	0.170	38.45	-16.14	**24.46**	0.279	40.61	-16.14
841.50	15	QPSK	H	114	305	1 / 0	22.88	1.54	22.27	0.169	38.45	-16.18	24.42	0.277	40.61	-16.18
831.50	15	16-QAM	H	171	322	1 / 0	21.93	1.60	21.38	0.138	38.45	-17.07	23.53	0.226	40.61	-17.07
836.50	15	16-QAM	H	169	307	1 / 0	22.04	1.57	21.46	0.140	38.45	-16.99	23.61	0.230	40.61	-16.99
841.50	15	16-QAM	H	114	305	1 / 0	22.51	1.54	**21.90**	0.155	38.45	-16.55	**24.05**	0.254	40.61	-16.55
825.50	3	QPSK	V	120	247	1 / 0	22.13	1.64	21.62	0.145	38.45	-16.83	23.77	0.238	40.61	-16.84

Table 7-3. 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]
1850.70	1.4	QPSK	H	140	28	1 / 5	16.35	8.42	24.77	0.300	33.01	-8.24
1882.50	1.4	QPSK	H	141	38	1 / 5	18.05	8.19	**26.24**	**0.421**	33.01	-6.77
1914.30	1.4	QPSK	H	176	26	1 / 5	16.75	8.08	24.83	0.304	33.01	-8.18
1850.70	1.4	16-QAM	H	140	28	1 / 5	15.65	8.42	24.07	0.255	33.01	-8.94
1882.50	1.4	16-QAM	H	141	38	1 / 5	17.18	8.19	**25.37**	0.344	33.01	-7.64
1914.30	1.4	16-QAM	H	176	26	1 / 5	15.96	8.08	24.04	0.254	33.01	-8.97
1851.50	3	QPSK	H	140	32	1 / 14	16.09	8.41	24.50	0.282	33.01	-8.51
1882.50	3	QPSK	H	171	33	1 / 14	17.25	8.19	**25.44**	0.350	33.01	-7.57
1913.50	3	QPSK	H	177	24	1 / 14	16.46	8.08	24.54	0.284	33.01	-8.47
1851.50	3	16-QAM	H	140	32	1 / 14	15.39	8.41	23.80	0.240	33.01	-9.21
1882.50	3	16-QAM	H	171	33	1 / 14	16.54	8.19	**24.73**	0.297	33.01	-8.28
1913.50	3	16-QAM	H	177	24	1 / 14	15.66	8.08	23.74	0.237	33.01	-9.27
1852.50	5	QPSK	H	180	42	1 / 24	15.96	8.41	24.36	0.273	33.01	-8.65
1882.50	5	QPSK	H	175	33	1 / 24	16.67	8.19	24.86	0.306	33.01	-8.15
1912.50	5	QPSK	H	178	31	1 / 24	17.39	8.08	**25.47**	0.352	33.01	-7.54
1852.50	5	16-QAM	H	180	42	1 / 24	14.76	8.41	23.16	0.207	33.01	-9.85
1882.50	5	16-QAM	H	175	33	1 / 24	15.70	8.19	23.89	0.245	33.01	-9.12
1912.50	5	16-QAM	H	178	31	1 / 24	16.45	8.08	**24.53**	0.284	33.01	-8.48
1855.00	10	QPSK	H	144	33	1 / 49	16.90	8.39	**25.29**	0.338	33.01	-7.72
1882.50	10	QPSK	H	143	35	1 / 49	16.99	8.19	25.18	0.330	33.01	-7.83
1910.00	10	QPSK	H	175	25	1 / 49	16.69	8.08	24.77	0.300	33.01	-8.24
1855.00	10	16-QAM	H	144	33	1 / 49	15.82	8.39	24.21	0.263	33.01	-8.80
1882.50	10	16-QAM	H	143	35	1 / 49	16.20	8.19	**24.39**	0.275	33.01	-8.62
1910.00	10	16-QAM	H	175	25	1 / 49	15.69	8.08	23.77	0.238	33.01	-9.24
1857.50	15	QPSK	H	176	26	1 / 74	16.48	8.37	24.85	0.305	33.01	-8.16
1882.50	15	QPSK	H	140	36	1 / 74	17.12	8.19	25.31	0.340	33.01	-7.70
1907.50	15	QPSK	H	177	33	1 / 74	17.35	8.08	**25.43**	0.349	33.01	-7.58
1857.50	15	16-QAM	H	176	26	1 / 74	15.38	8.37	23.75	0.237	33.01	-9.26
1882.50	15	16-QAM	H	140	36	1 / 74	16.25	8.19	24.44	0.278	33.01	-8.57
1907.50	15	16-QAM	H	177	33	1 / 74	17.02	8.08	**25.10**	0.323	33.01	-7.91
1860.00	20	QPSK	H	179	247	1 / 99	16.20	8.35	24.55	0.285	33.01	-8.46
1882.50	20	QPSK	H	176	33	1 / 99	16.86	8.19	25.05	0.320	33.01	-7.96
1905.00	20	QPSK	H	178	38	1 / 99	17.36	8.07	**25.43**	0.349	33.01	-7.58
1860.00	20	16-QAM	H	179	247	1 / 99	15.42	8.35	23.77	0.238	33.01	-9.24
1882.50	20	16-QAM	H	176	33	1 / 99	15.73	8.19	23.92	0.247	33.01	-9.09
1905.00	20	16-QAM	H	178	38	1 / 99	16.50	8.07	**24.57**	0.287	33.01	-8.44
1882.50	1.4	QPSK	V	171	120	1 / 5	13.60	8.19	21.79	0.151	33.01	-11.22

Table 7-4. EIRP Data (Band 25)

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7.7 Radiated Spurious Emissions Measurements

§2.1053, §22.917(a), §24.238(a)

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.

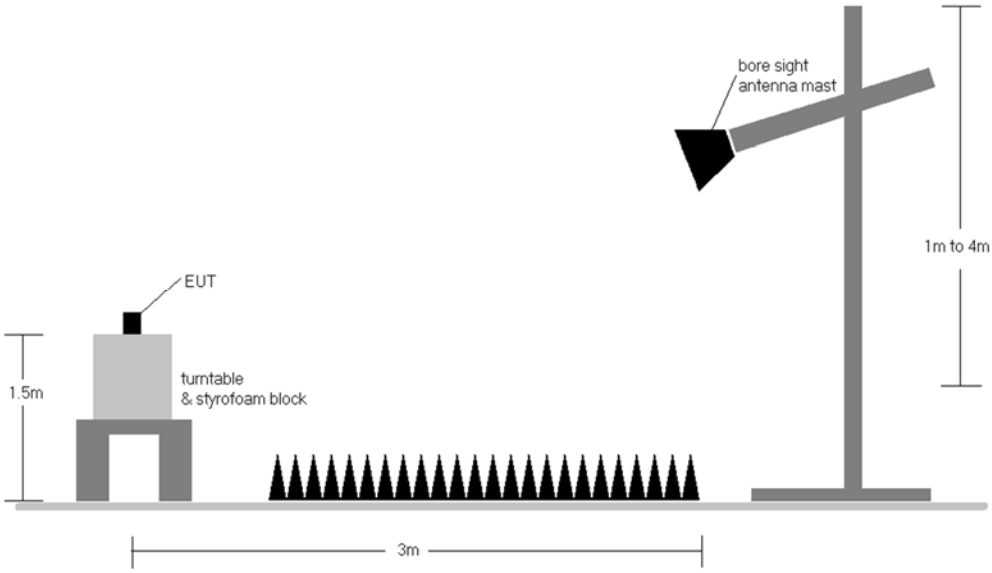

Figure 7-7. Test Instrument & Measurement Setup

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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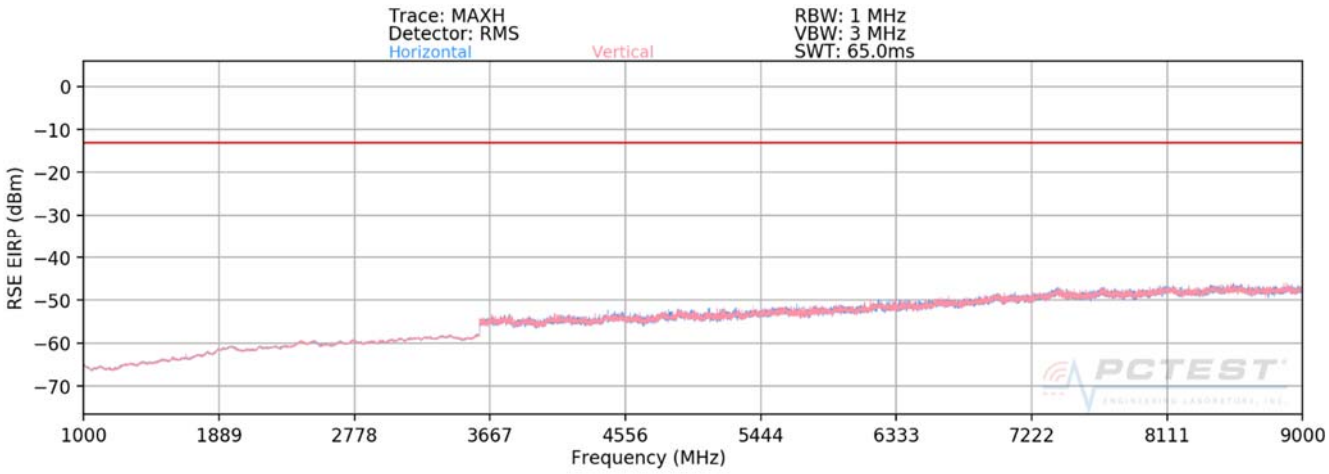
Band 26



Plot 7-91. Radiated Spurious Plot above 1GHz (Band 26)

OPERATING FREQUENCY:	825.50	MHz
CHANNEL:	26805	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	3.0	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]
1651.00	H	114	310	-62.74	9.04	-53.70	-40.7
2476.50	H	157	350	-52.57	8.97	-43.60	-30.6
3302.00	H	-	-	-56.29	9.29	-47.00	-34.0
4127.50	H	-	-	-54.23	9.96	-44.27	-31.3

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

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OPERATING FREQUENCY:	836.50	MHz
CHANNEL:	26915	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	3.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.00	H	161	308	-59.89	8.84	-51.05	-38.1
2509.50	H	174	59	-57.75	9.02	-48.73	-35.7
3346.00	H	-	-	-56.95	9.32	-47.64	-34.6
4182.50	H	-	-	-54.54	10.24	-44.30	-31.3

Table 7-6. Radiated Spurious Data (Band 26 – Mid Channel)

OPERATING FREQUENCY:	847.50	MHz
CHANNEL:	27025	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	3.0	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]
1695.00	H	166	311	-55.24	8.63	-46.60	-33.6
2542.50	H	101	37	-54.24	9.12	-45.12	-32.1
3390.00	H	-	-	-57.09	9.44	-47.66	-34.7
4237.50	H	-	-	-55.88	10.46	-45.42	-32.4

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

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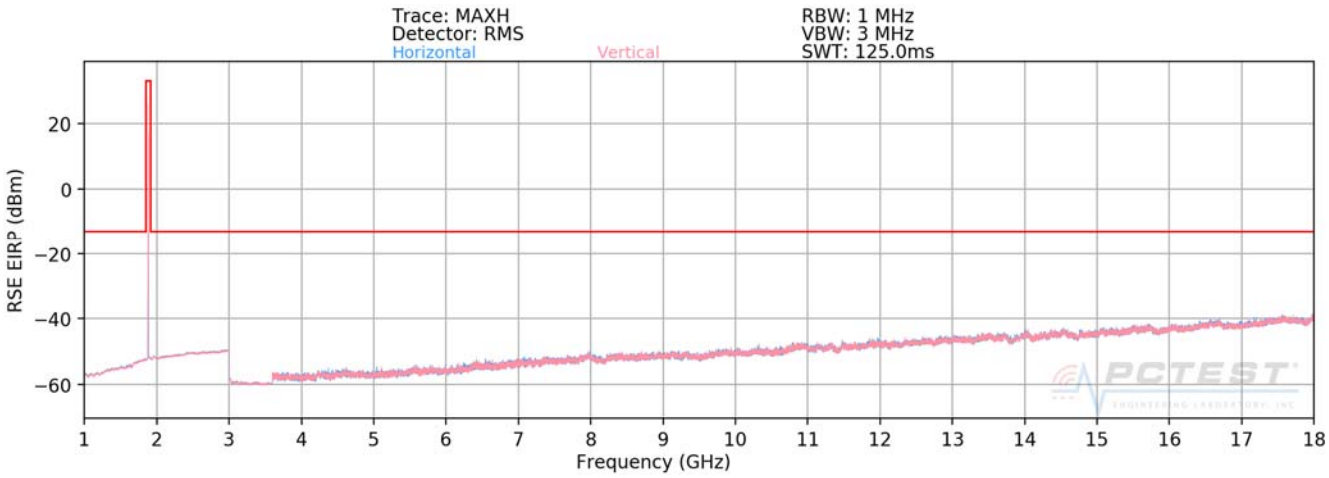
Band 25



Plot 7-92. Radiated Spurious Plot above 1GHz (Band 25)

OPERATING FREQUENCY:	1850.70	MHz
CHANNEL:	26047	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	1.4	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]
3701.40	H	100	350	-54.62	9.60	-45.02	-32.0
5552.10	H	-	-	-54.27	10.97	-43.30	-30.3
7402.80	H	-	-	-49.16	10.69	-38.46	-25.5

Table 7-8. Radiated Spurious Data (Band 25 – Low Channel)

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OPERATING FREQUENCY:	1882.50	MHz
CHANNEL:	26365	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	1.4	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3765.00	H	144	173	-52.82	9.25	-43.56	-30.6
5647.50	H	-	-	-52.99	11.15	-41.84	-28.8
7530.00	H	-	-	-49.44	10.90	-38.54	-25.5

Table 7-9. Radiated Spurious Data (Band 25 – Mid Channel)

OPERATING FREQUENCY:	1914.30	MHz
CHANNEL:	26683	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	1.4	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]
3828.60	H	100	5	-53.41	9.06	-44.35	-31.3
5742.90	H	-	-	-53.08	11.31	-41.77	-28.8
7657.20	H	-	-	-48.95	11.10	-37.85	-24.8

Table 7-10. Radiated Spurious Data (Band 25 – High Channel)

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7.8 Frequency Stability / Temperature Variation

§2.1055, §22.355, §24.235

Test Overview and Limit

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

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

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

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

Test Procedure Used

ANSI/TIA-603-E-2016

Test Settings

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

Test Setup

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

Test Notes

None

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Band 26 Frequency Stability Measurements

OPERATING FREQUENCY:	831,500,000	Hz
CHANNEL:	26865	
REFERENCE VOLTAGE:	3.85	VDC
DEVIATION LIMIT:	± 0.00025 % or 2.5 ppm	

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	831,500,161	161	0.0000194
100 %		- 30	831,500,308	308	0.0000370
100 %		- 20	831,500,120	120	0.0000144
100 %		- 10	831,499,966	-34	-0.0000041
100 %		0	831,500,071	71	0.0000085
100 %		+ 10	831,500,076	76	0.0000091
100 %		+ 20	831,500,087	87	0.0000105
100 %		+ 30	831,500,020	20	0.0000024
100 %		+ 40	831,500,097	97	0.0000117
100 %		+ 50	831,499,869	-131	-0.0000158
BATT. ENDPOINT	3.45	+ 20	831,500,002	2	0.0000002

Table 7-11. Frequency Stability Data (Band 26)

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Band 26 Frequency Stability Measurements

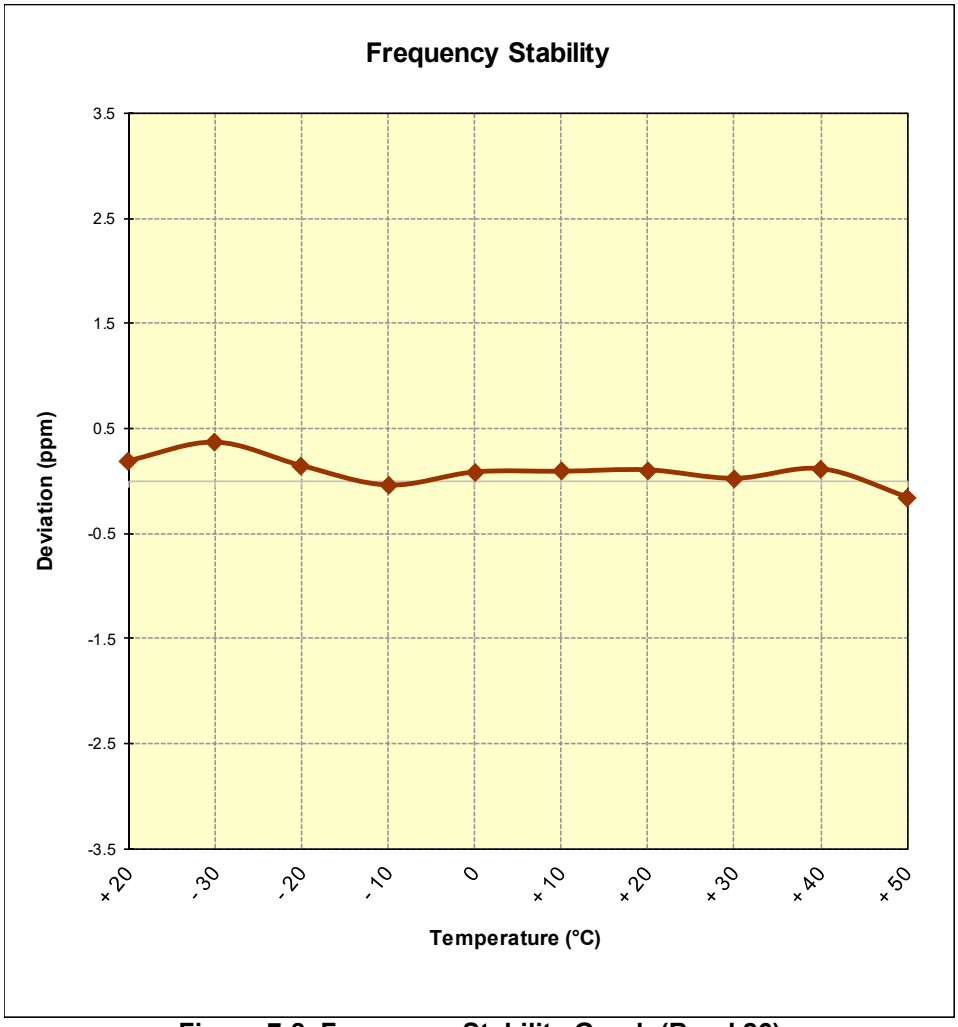

Figure 7-8. Frequency Stability Graph (Band 26)

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Band 25 Frequency Stability Measurements

OPERATING FREQUENCY: 1,882,500,000 Hz

CHANNEL: 26365

REFERENCE VOLTAGE: 3.85 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	1,882,499,969	-31	-0.0000016
100 %		- 30	1,882,499,853	-147	-0.0000078
100 %		- 20	1,882,500,116	116	0.0000062
100 %		- 10	1,882,499,739	-261	-0.0000139
100 %		0	1,882,500,150	150	0.0000080
100 %		+ 10	1,882,499,948	-52	-0.0000028
100 %		+ 20	1,882,499,632	-368	-0.0000195
100 %		+ 30	1,882,500,375	375	0.0000199
100 %		+ 40	1,882,499,983	-17	-0.0000009
100 %		+ 50	1,882,499,513	-487	-0.0000259
BATT. ENDPOINT	3.45	+ 20	1,882,500,017	17	0.0000009

Table 7-12. Frequency Stability Data (Band 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.

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Band 25 Frequency Stability Measurements

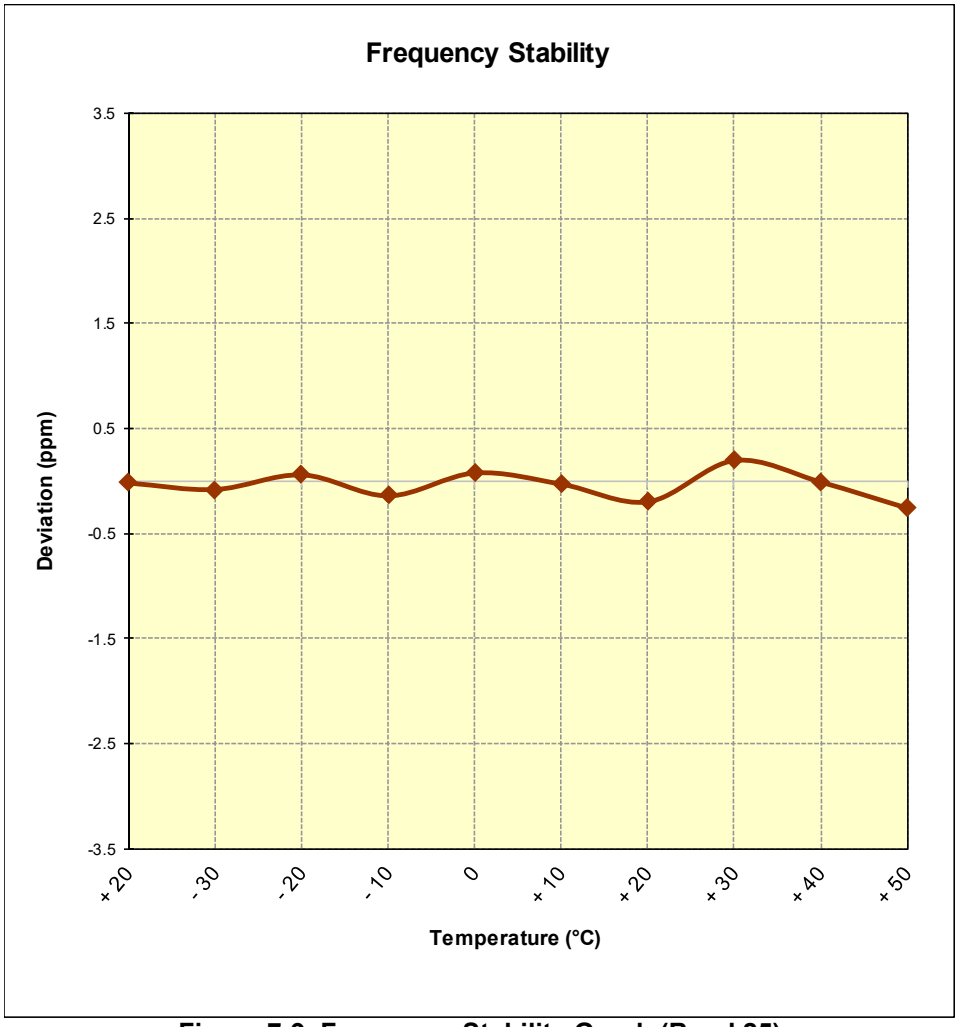

Figure 7-9. Frequency Stability Graph (Band 25)

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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **LG Portable Handset FCC ID: ZNFX212TA** complies with all the requirements of Part 22 & 24 of the FCC Rules for LTE operation only.

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