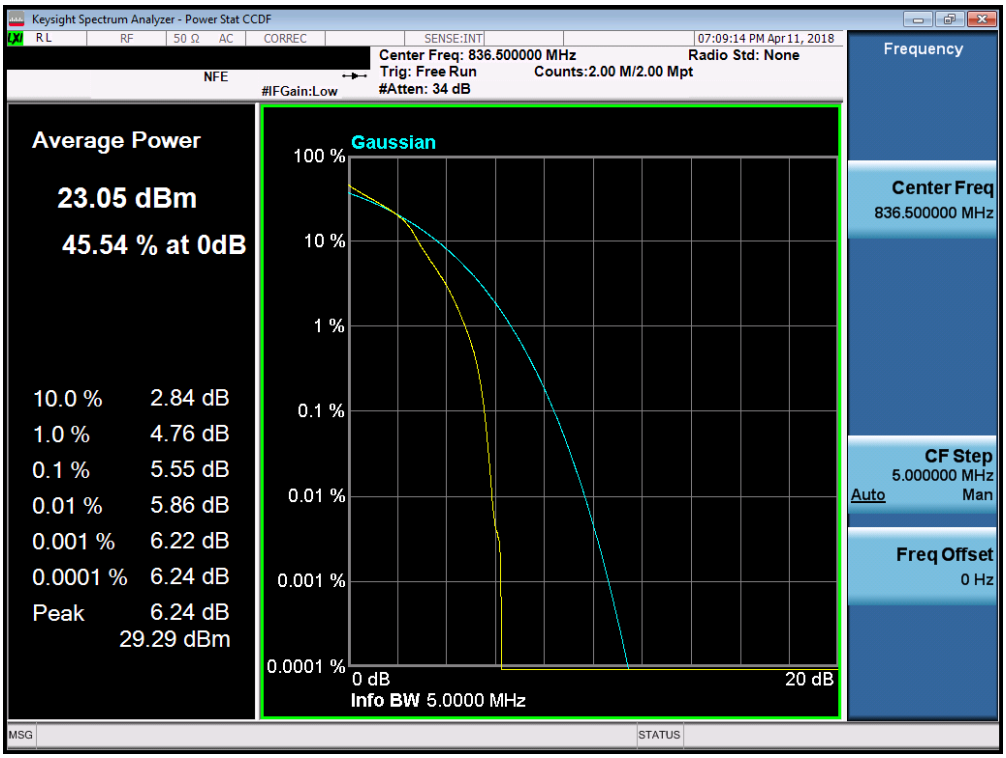
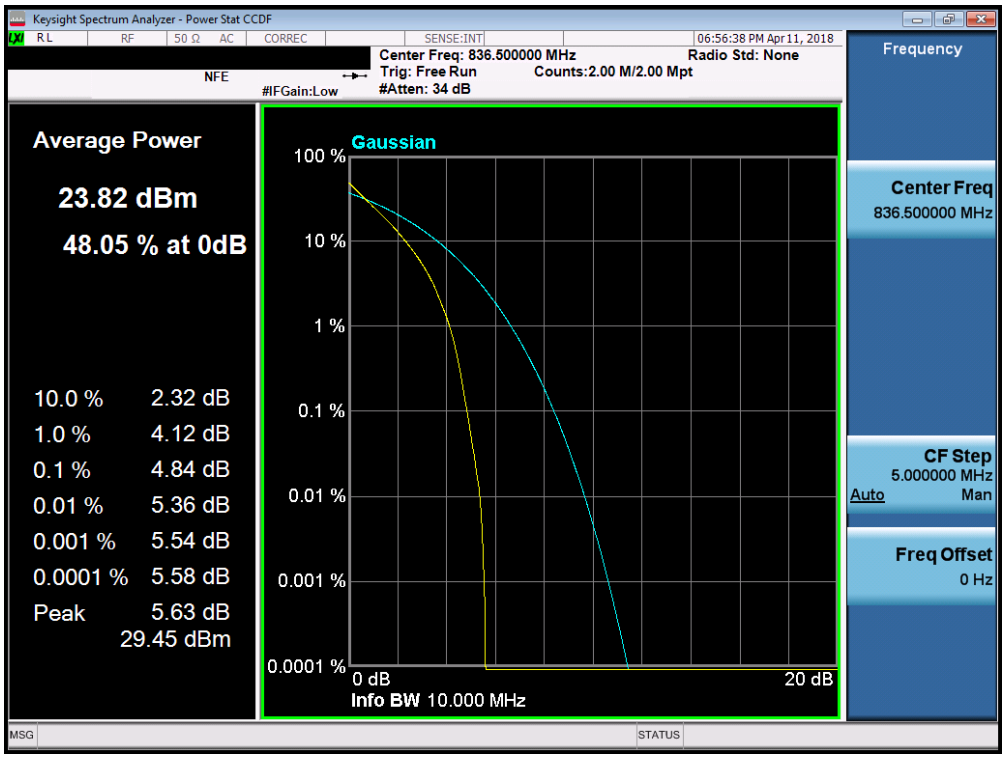
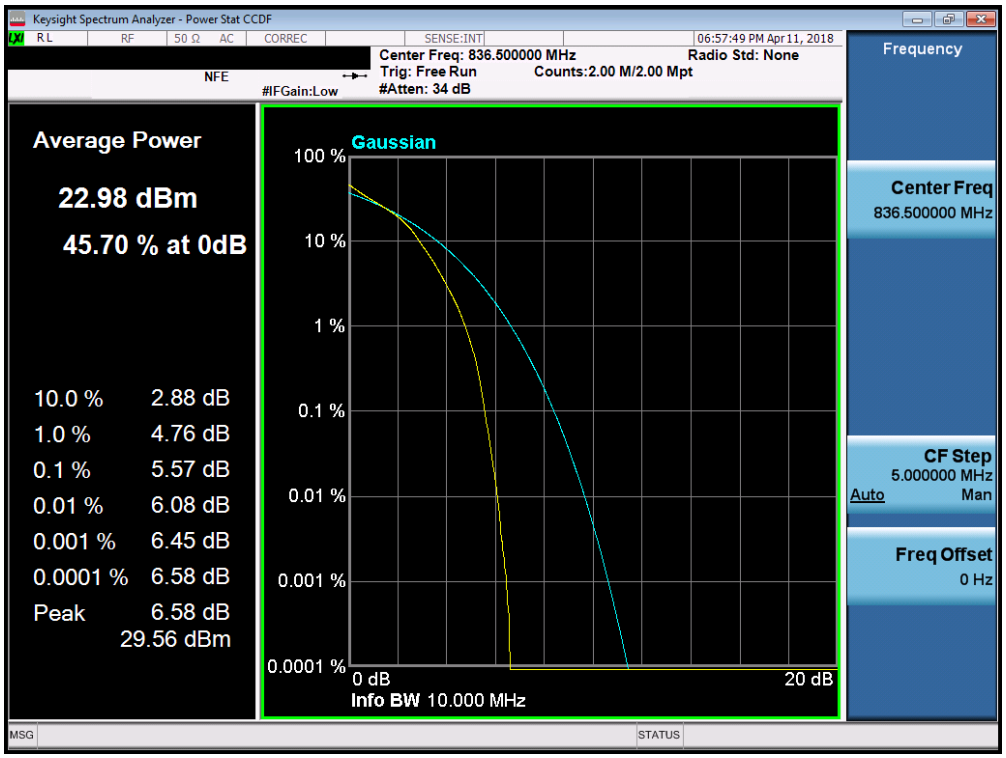


Plot 7-218. PAR Plot (Band 5 - 5.0MHz 16-QAM - Full RB Configuration)

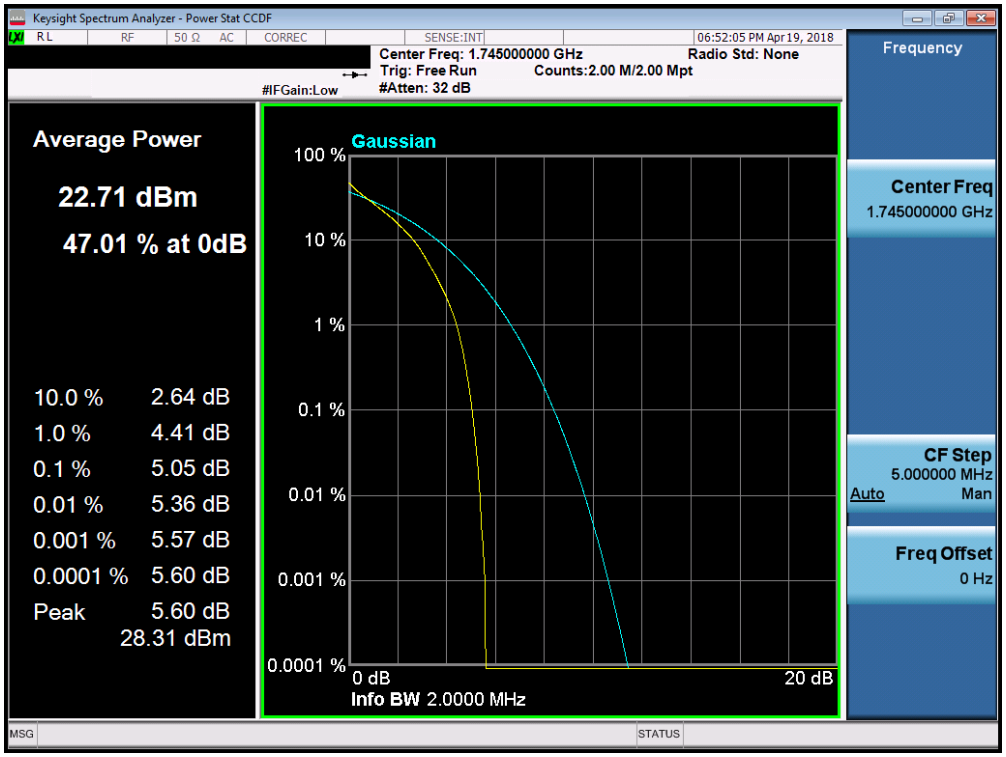


Plot 7-219. PAR Plot (Band 5 - 10.0MHz QPSK - Full RB Configuration)

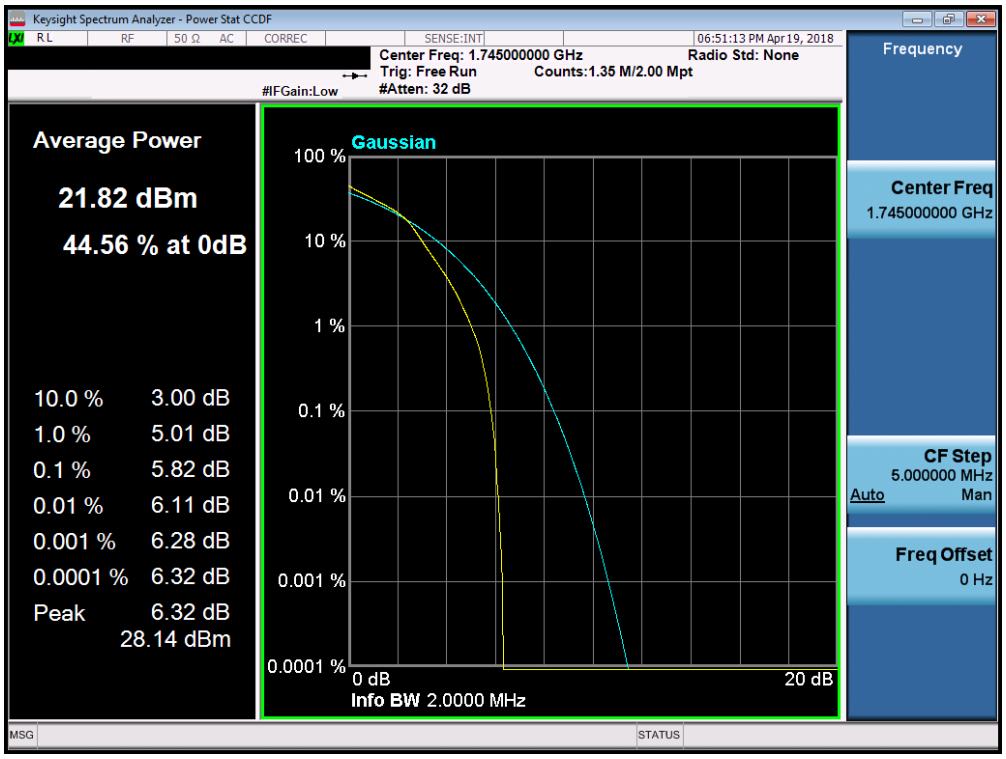


Plot 7-220. PAR Plot (Band 5 - 10.0MHz 16-QAM - Full RB Configuration)

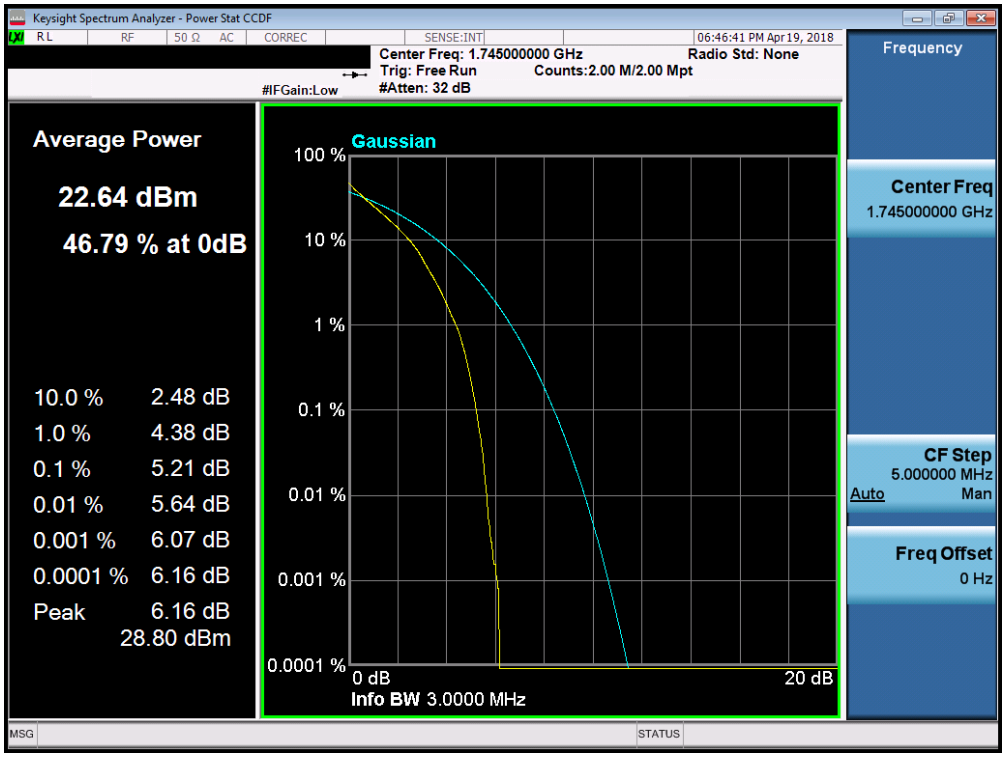
Band 66/4



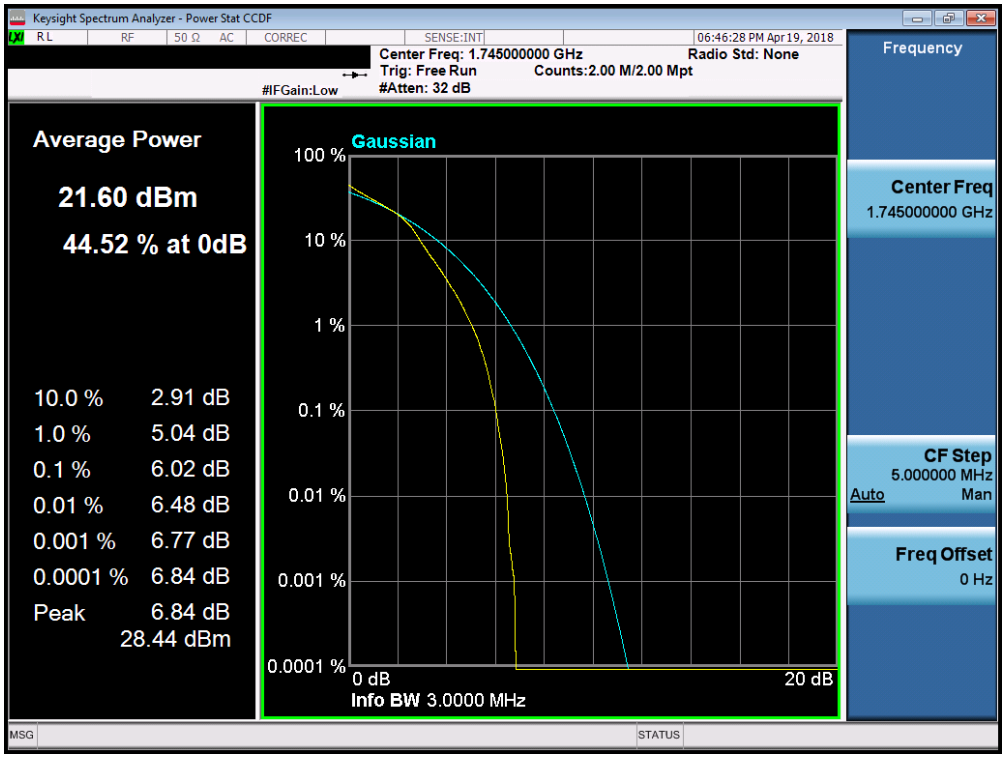
Plot 7-221. PAR Plot (Band 66/4 - 1.4MHz QPSK - Full RB Configuration)



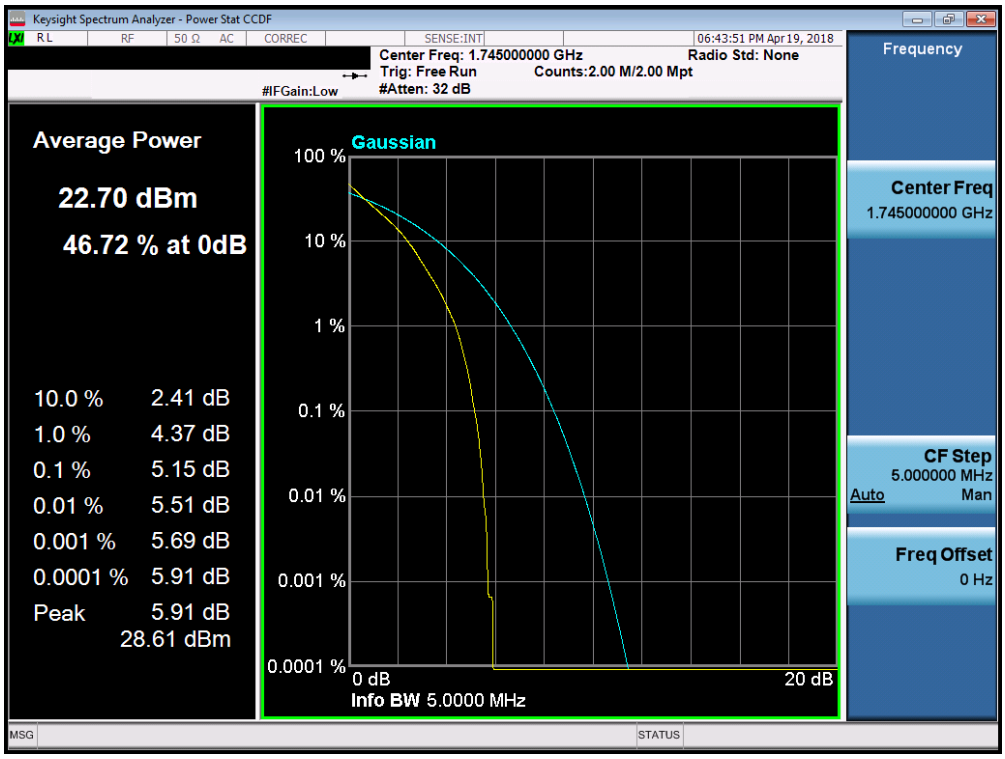
Plot 7-222. PAR Plot (Band 66/4 - 1.4MHz 16-QAM - Full RB Configuration)



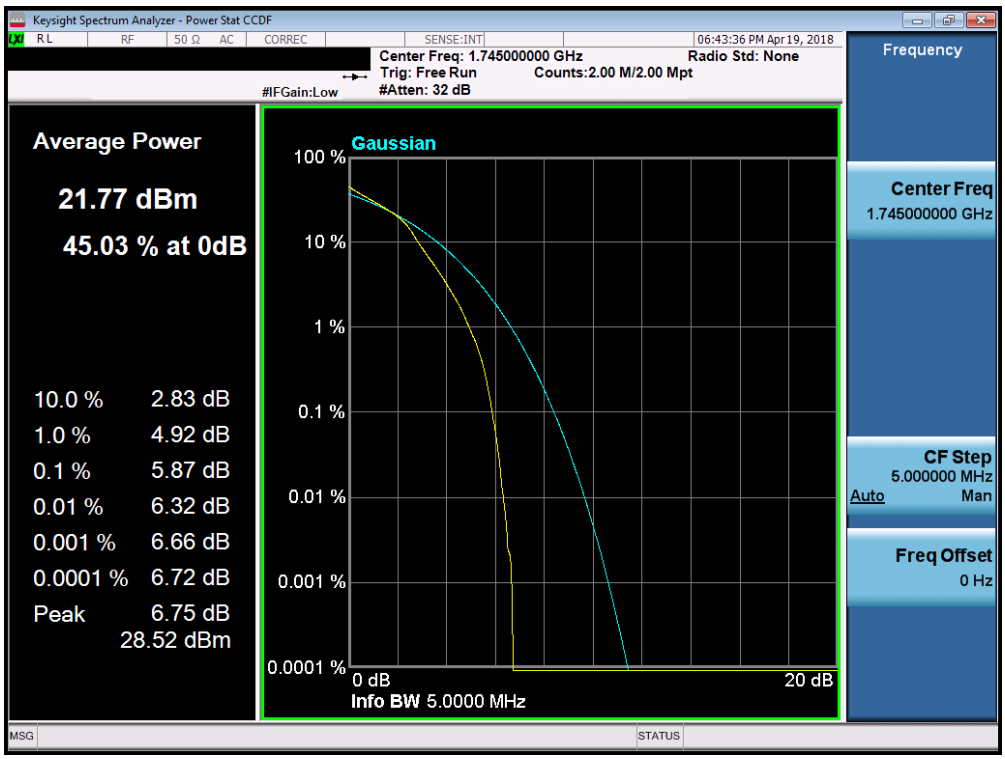
Plot 7-223. PAR Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)



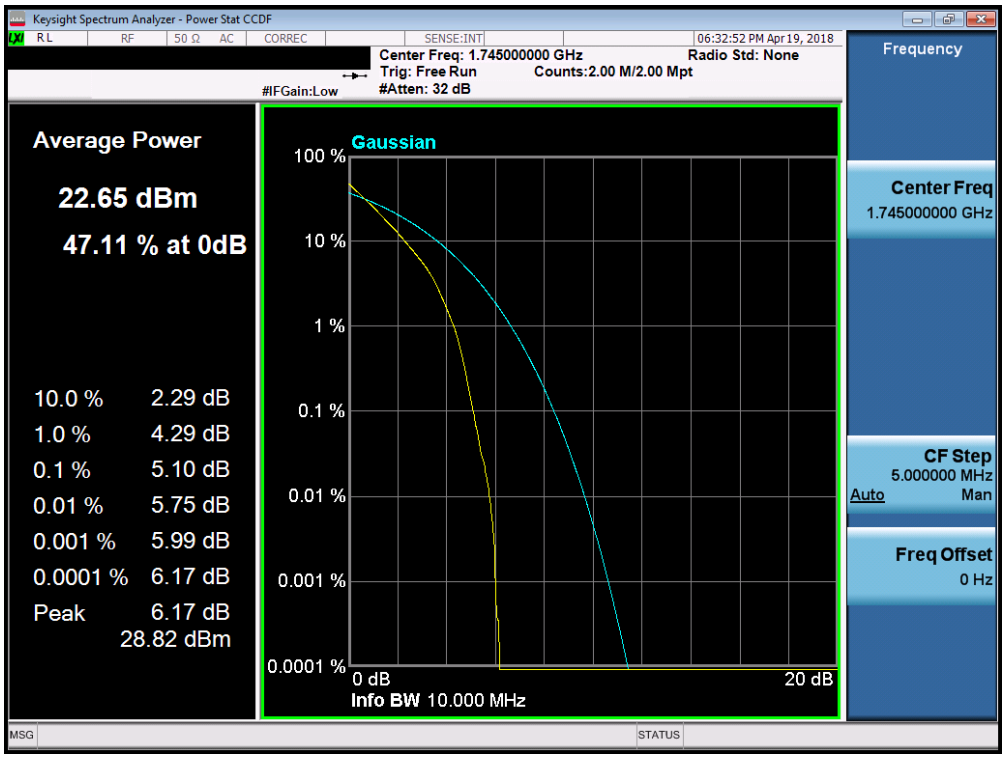
Plot 7-224. PAR Plot (Band 66/4 - 3.0MHz 16-QAM - Full RB Configuration)



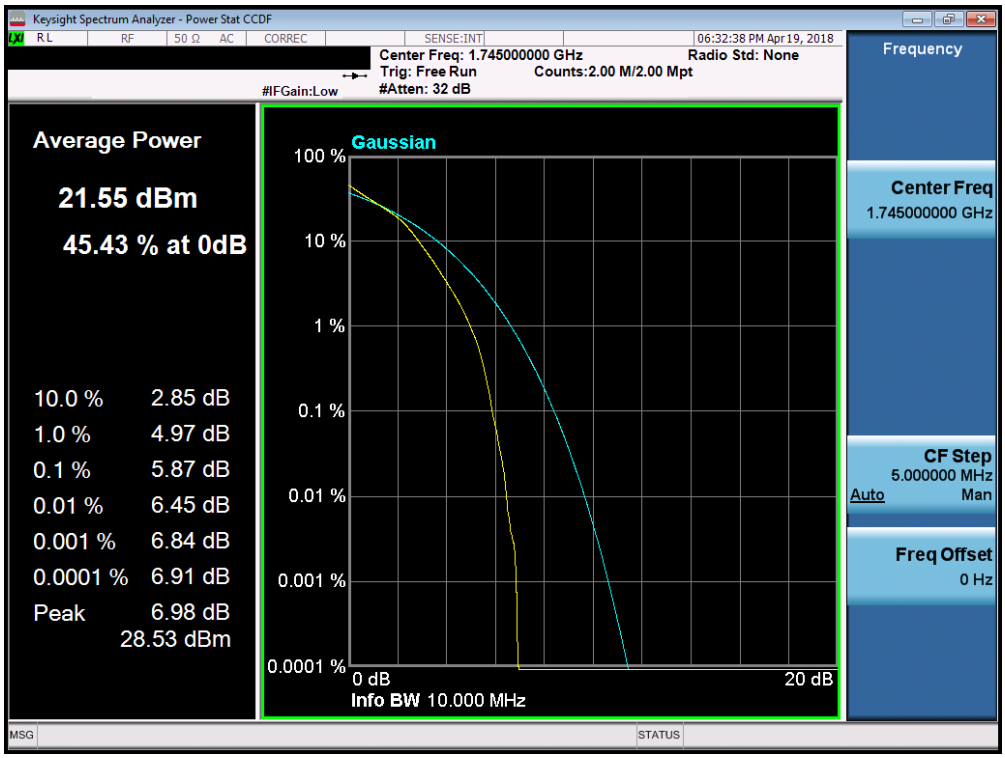
Plot 7-225. PAR Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)



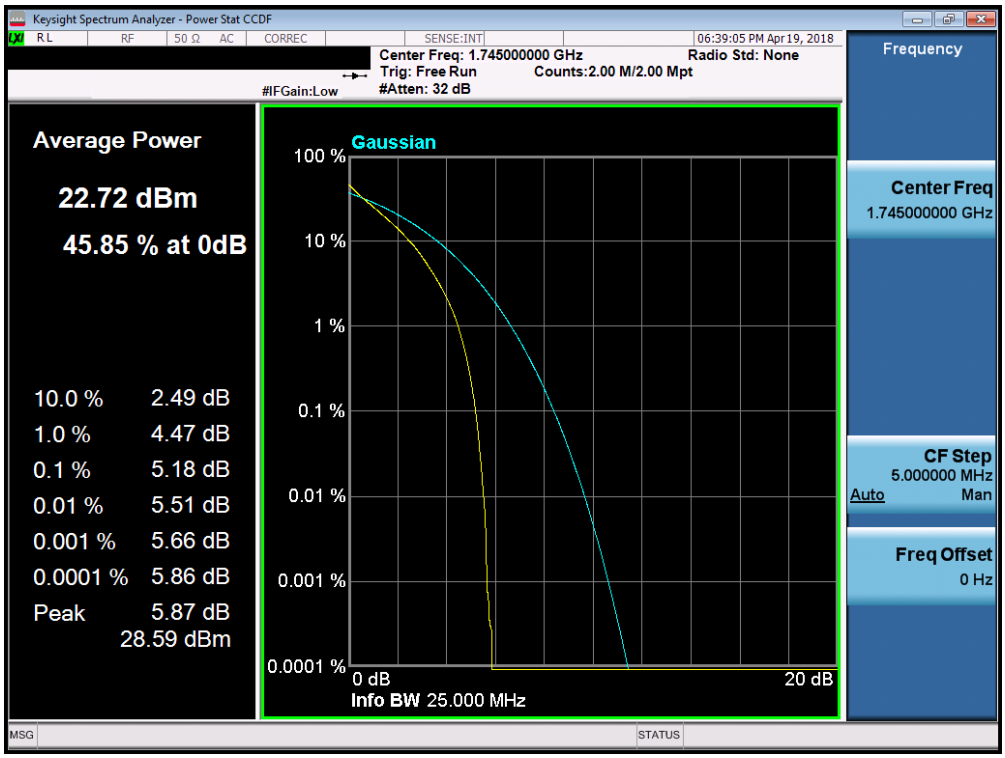
Plot 7-226. PAR Plot (Band 66/4 - 5.0MHz 16-QAM - Full RB Configuration)



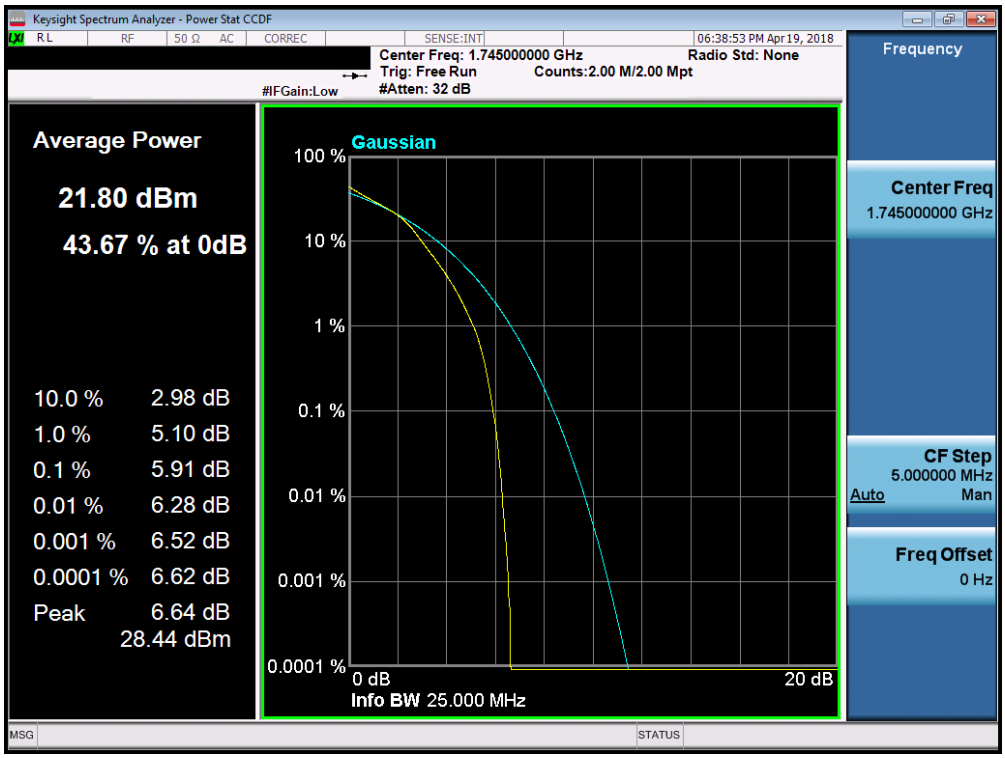
Plot 7-227. PAR Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)



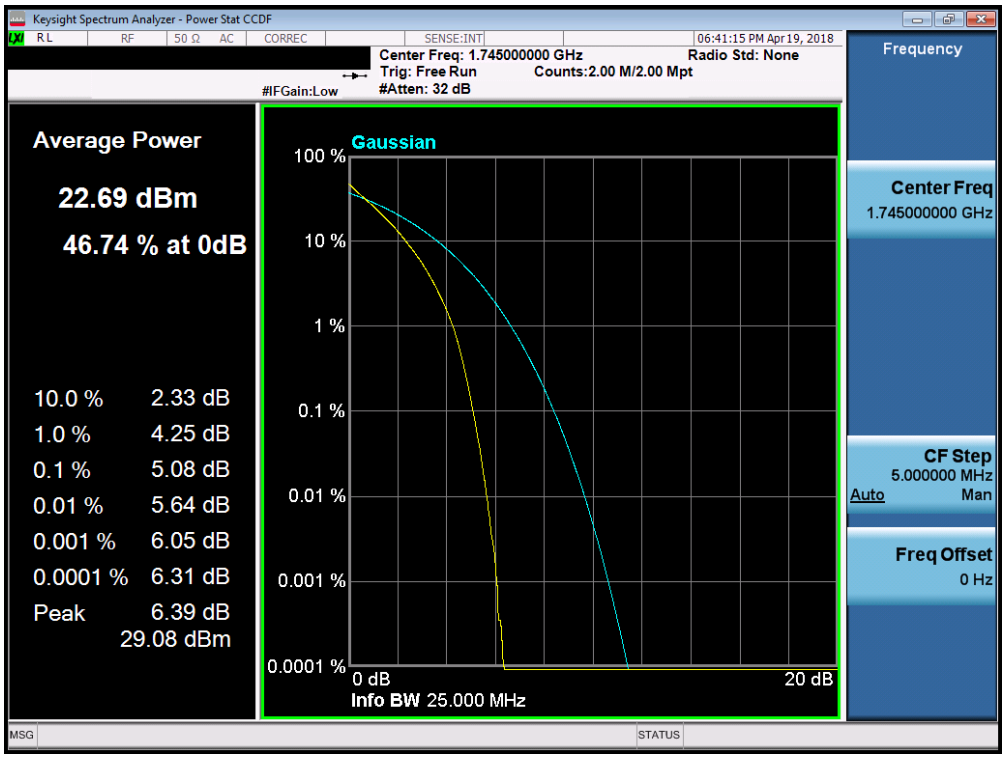
Plot 7-228. PAR Plot (Band 66/4 - 10.0MHz 16-QAM - Full RB Configuration)



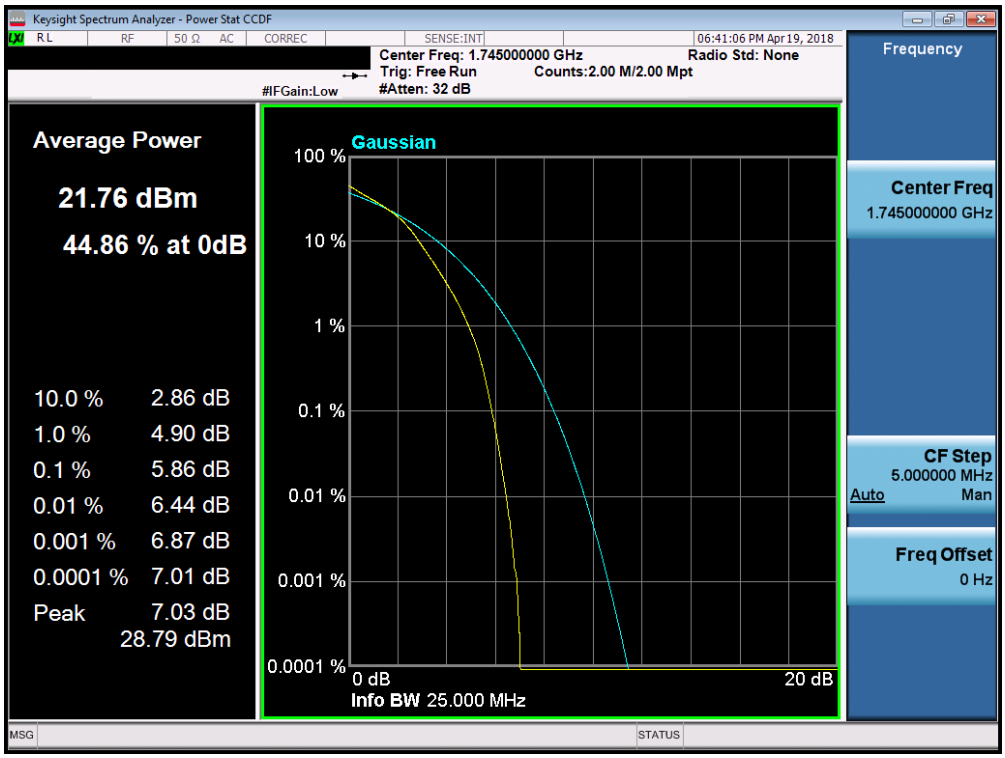
Plot 7-229. PAR Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-230. PAR Plot (Band 66/4 - 15.0MHz 16-QAM - Full RB Configuration)

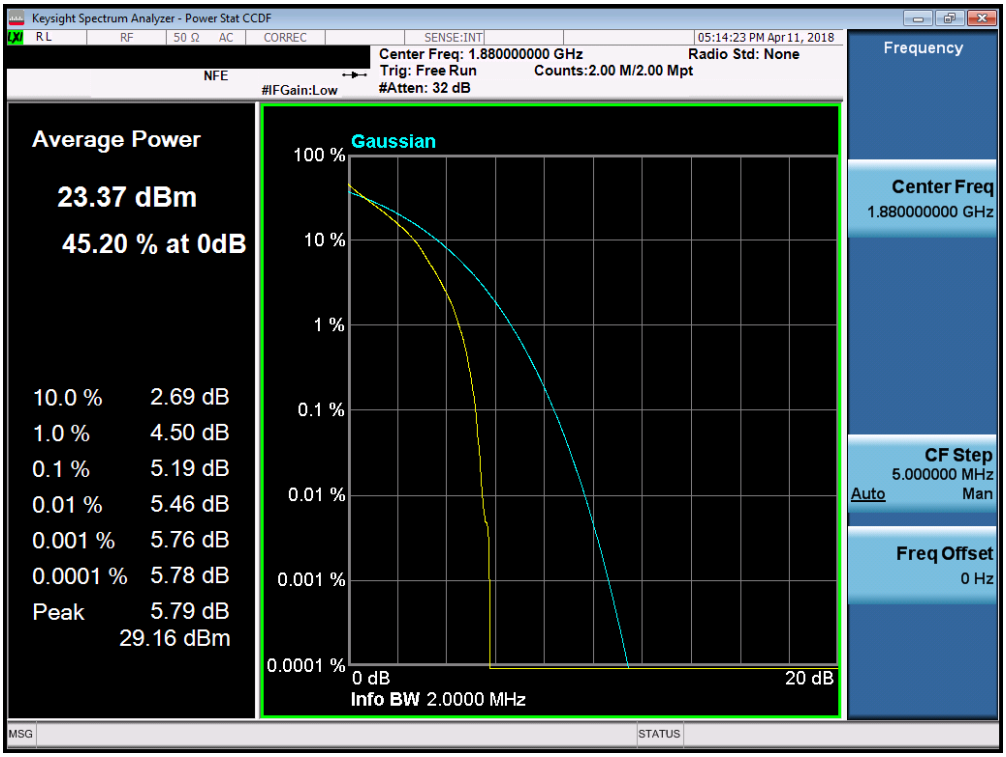


Plot 7-231. PAR Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)

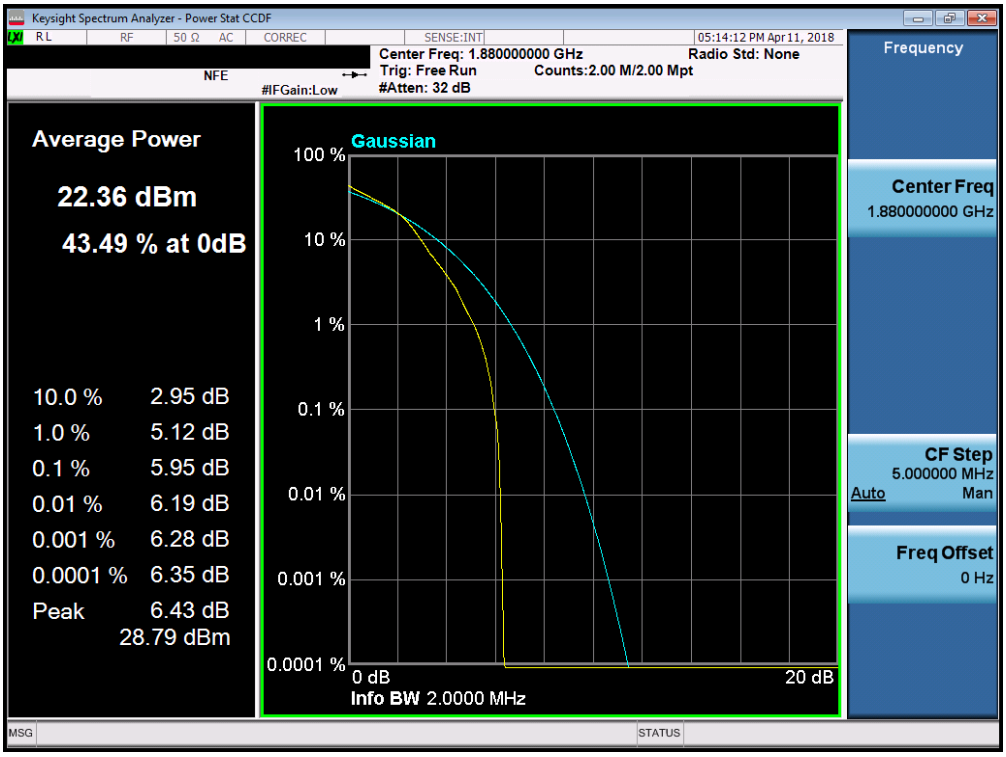


Plot 7-232. PAR Plot (Band 66/4 - 20.0MHz 16-QAM - Full RB Configuration)

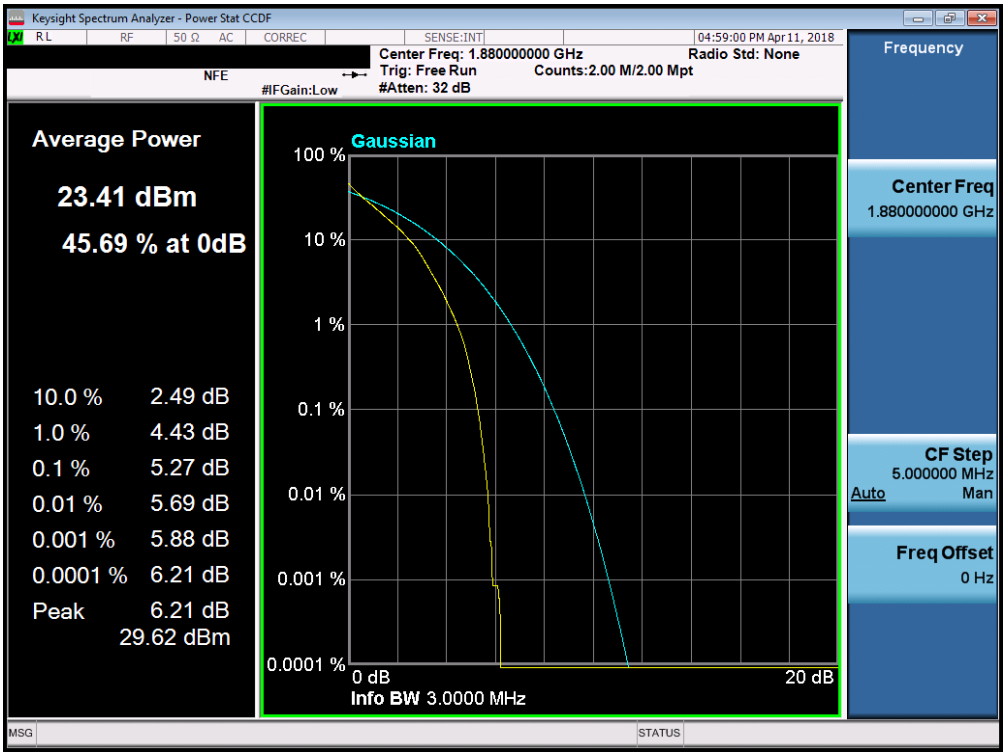
Band 2



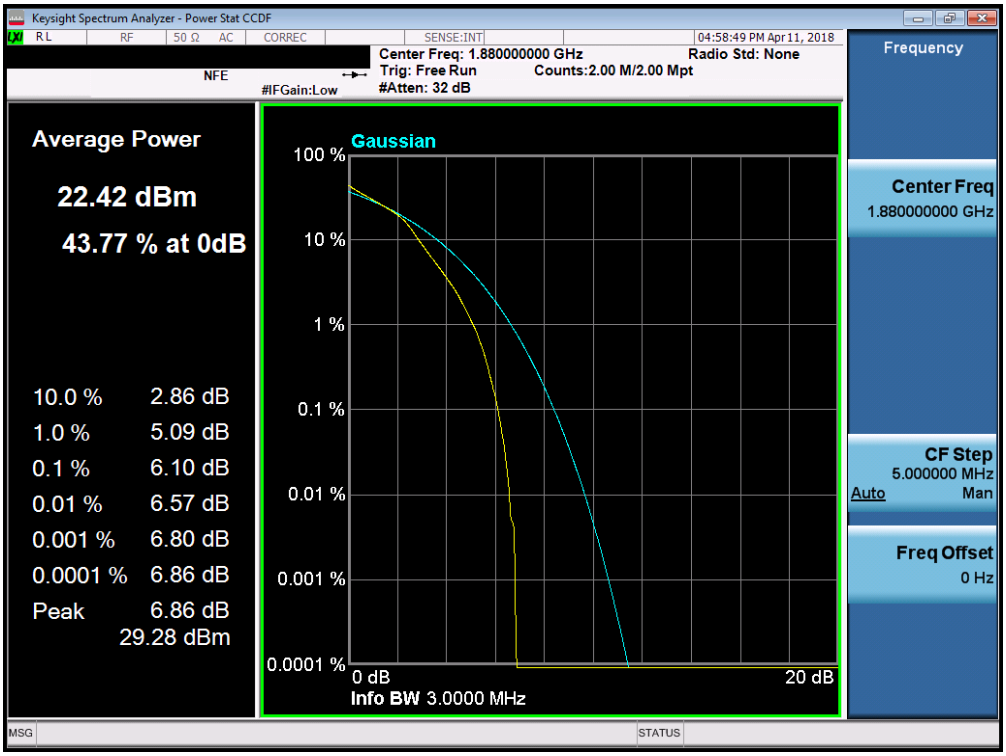
Plot 7-233. PAR Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)



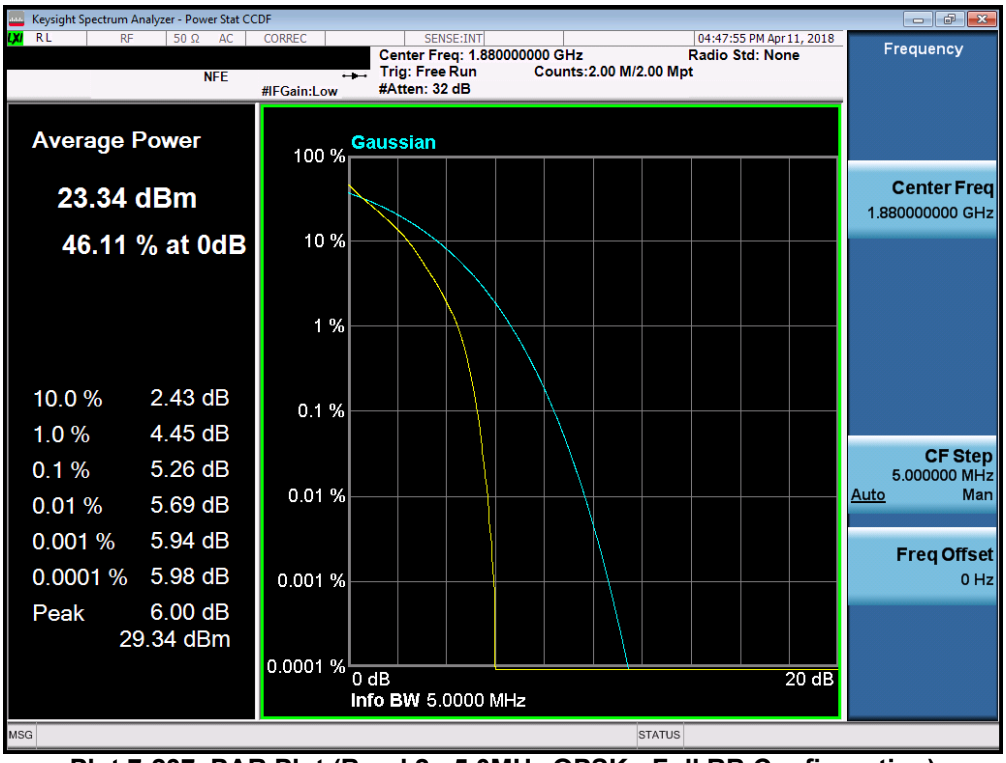
Plot 7-234. PAR Plot (Band 2 - 1.4MHz 16-QAM - Full RB Configuration)



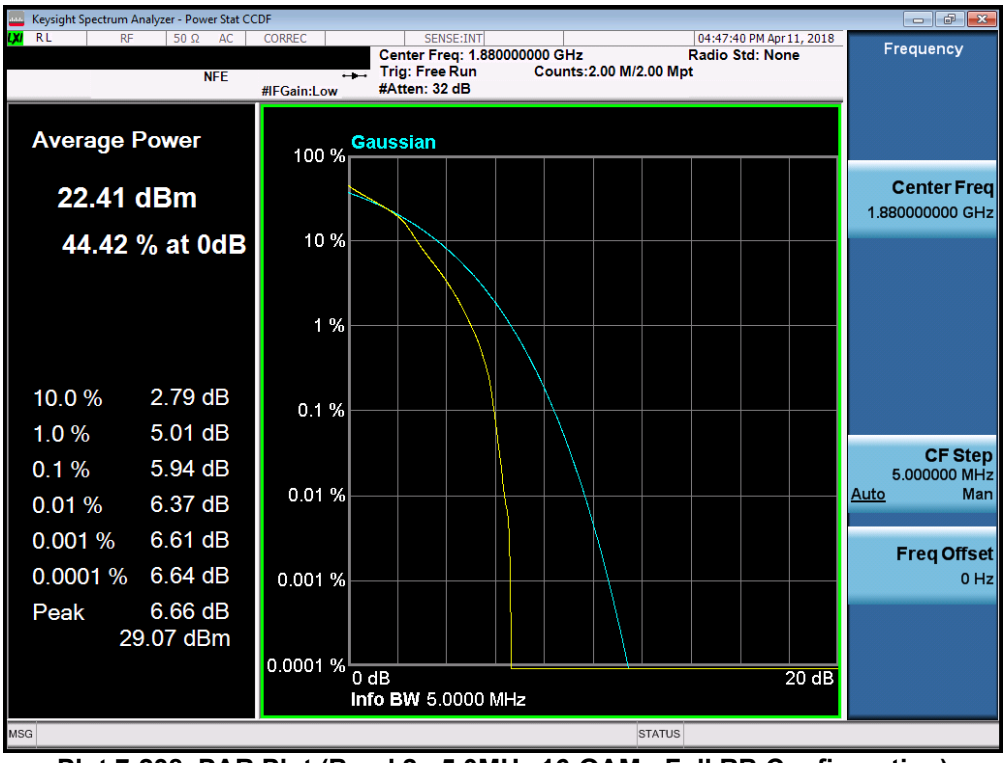
Plot 7-235. PAR Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)



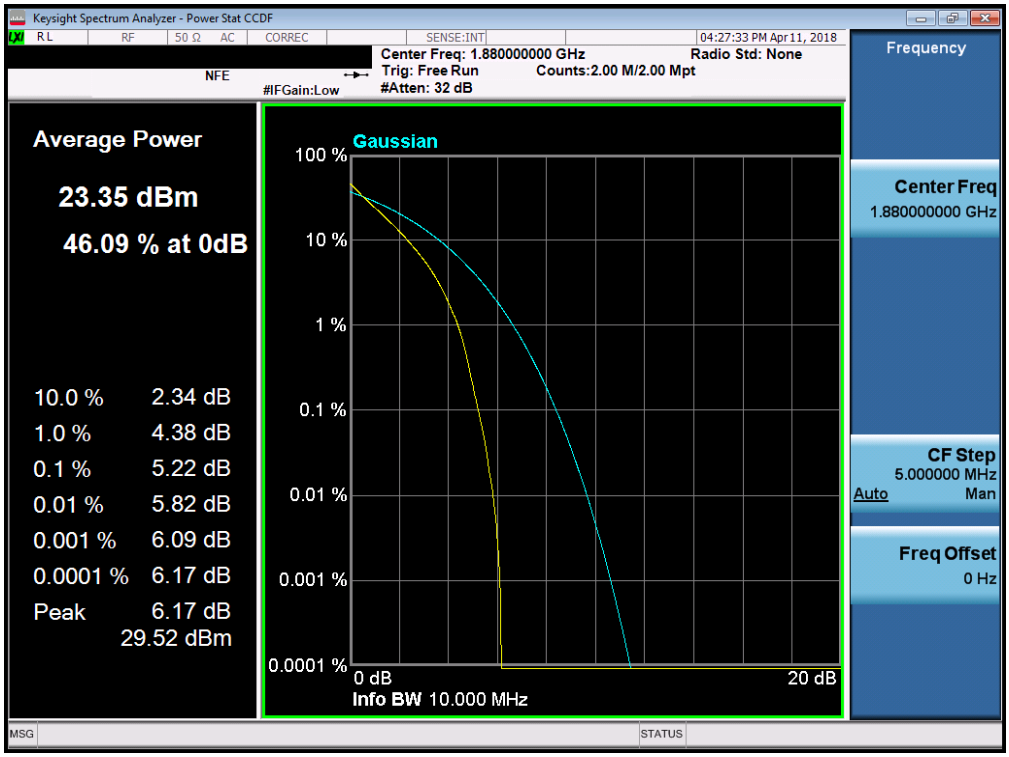
Plot 7-236. PAR Plot (Band 2 - 3.0MHz 16-QAM - Full RB Configuration)



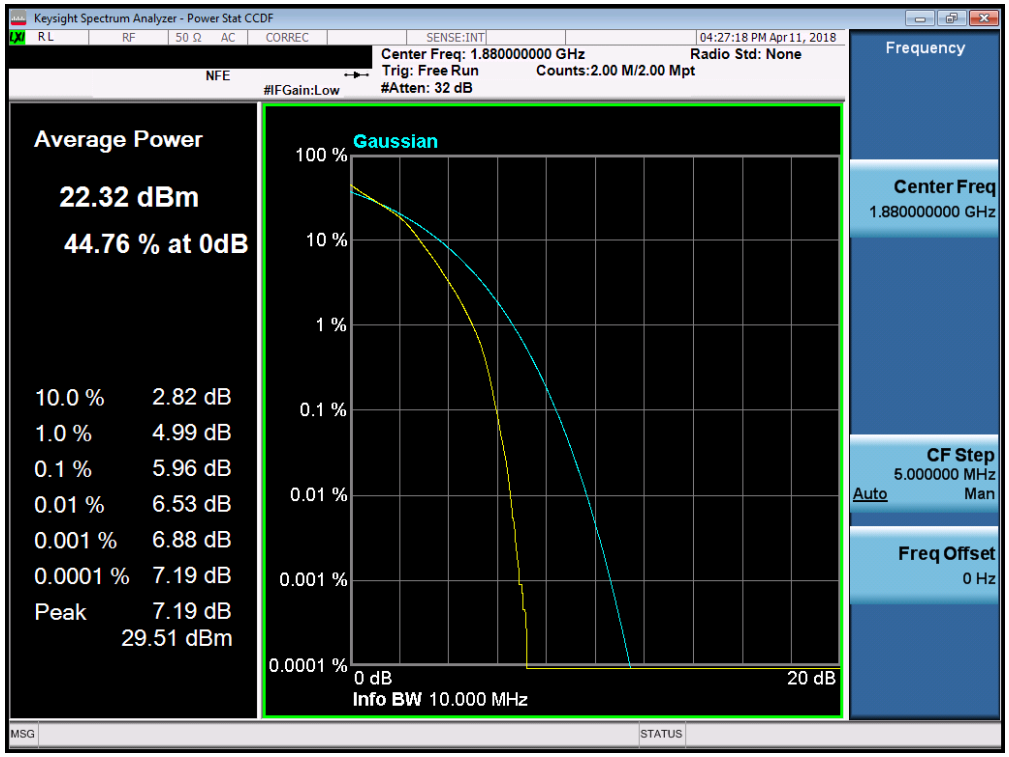
Plot 7-237. PAR Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)



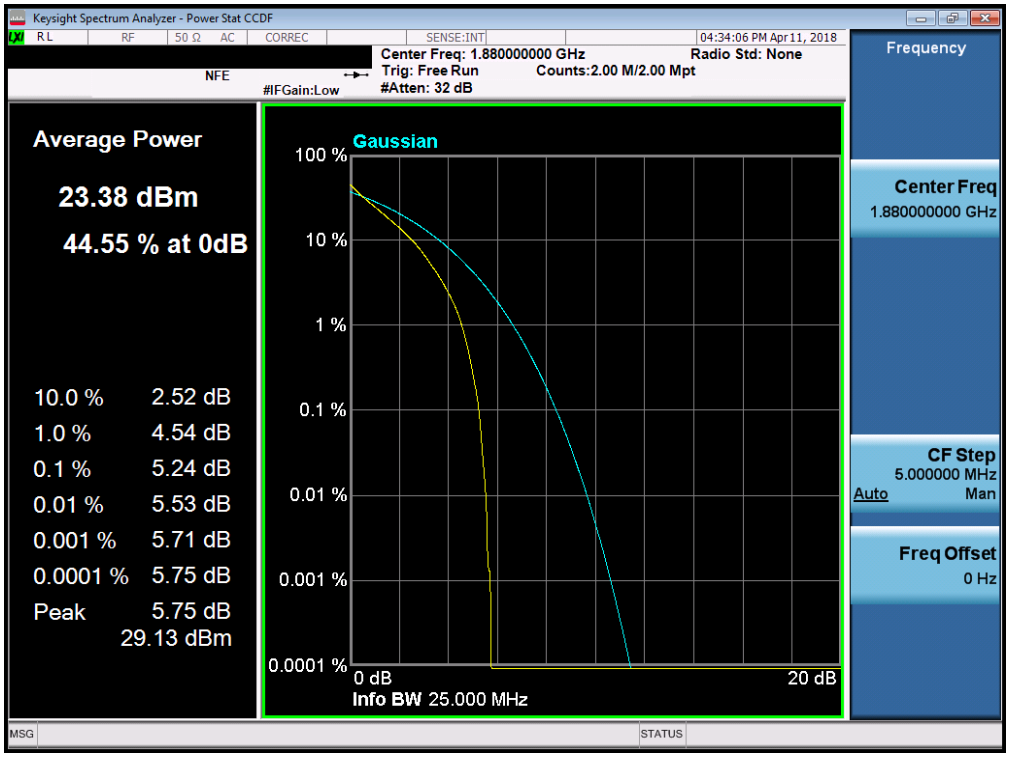
Plot 7-238. PAR Plot (Band 2 - 5.0MHz 16-QAM - Full RB Configuration)



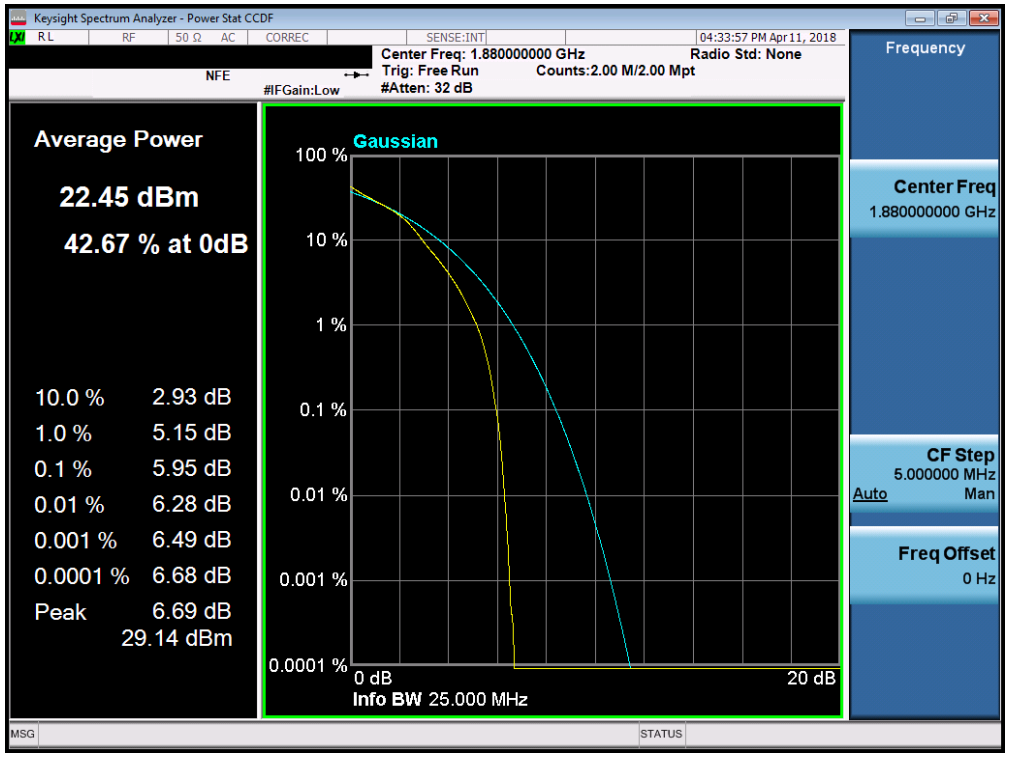
Plot 7-239. PAR Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)



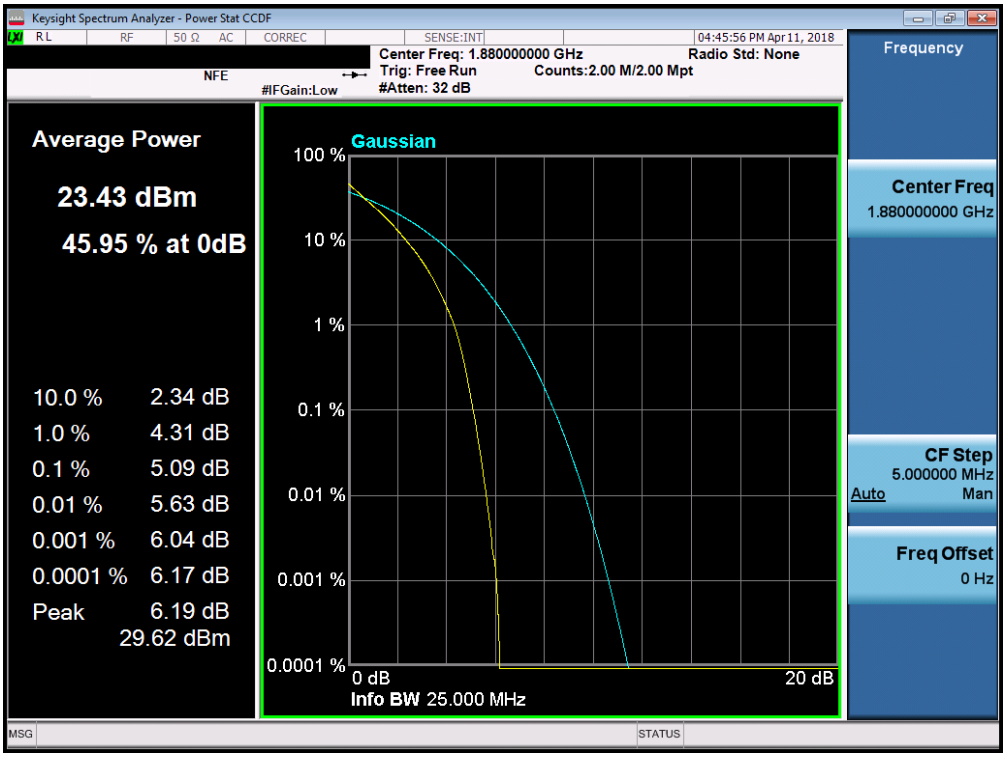
Plot 7-240. PAR Plot (Band 2 - 10.0MHz 16-QAM - Full RB Configuration)



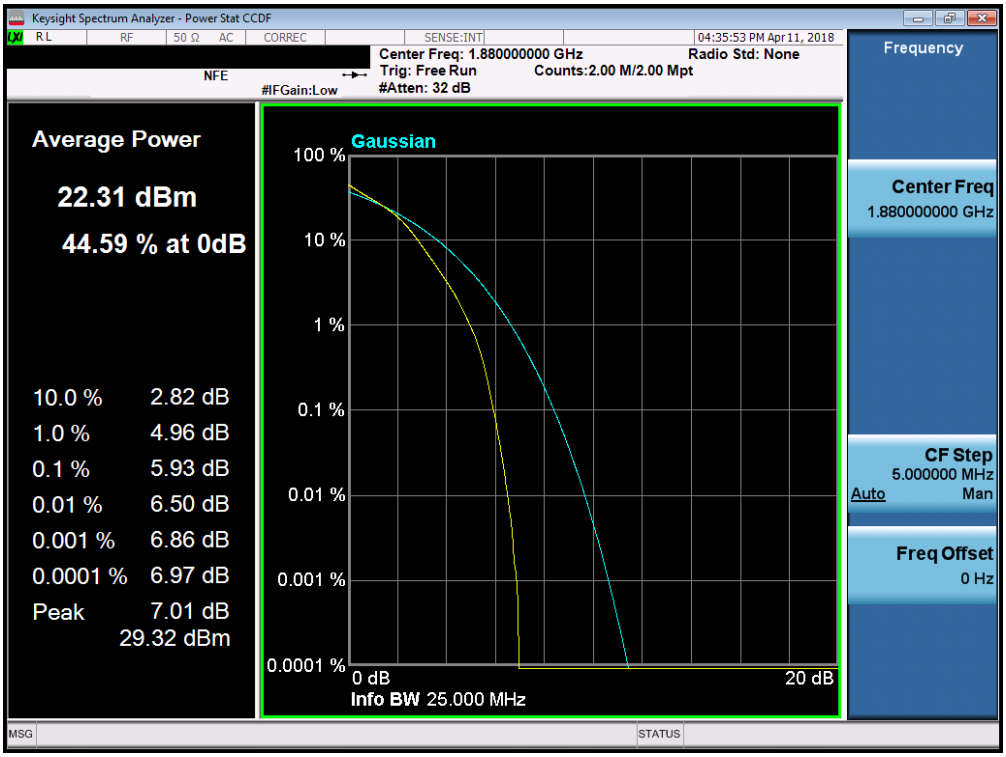
Plot 7-241. PAR Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-242. PAR Plot (Band 2 - 15.0MHz 16-QAM - Full RB Configuration)

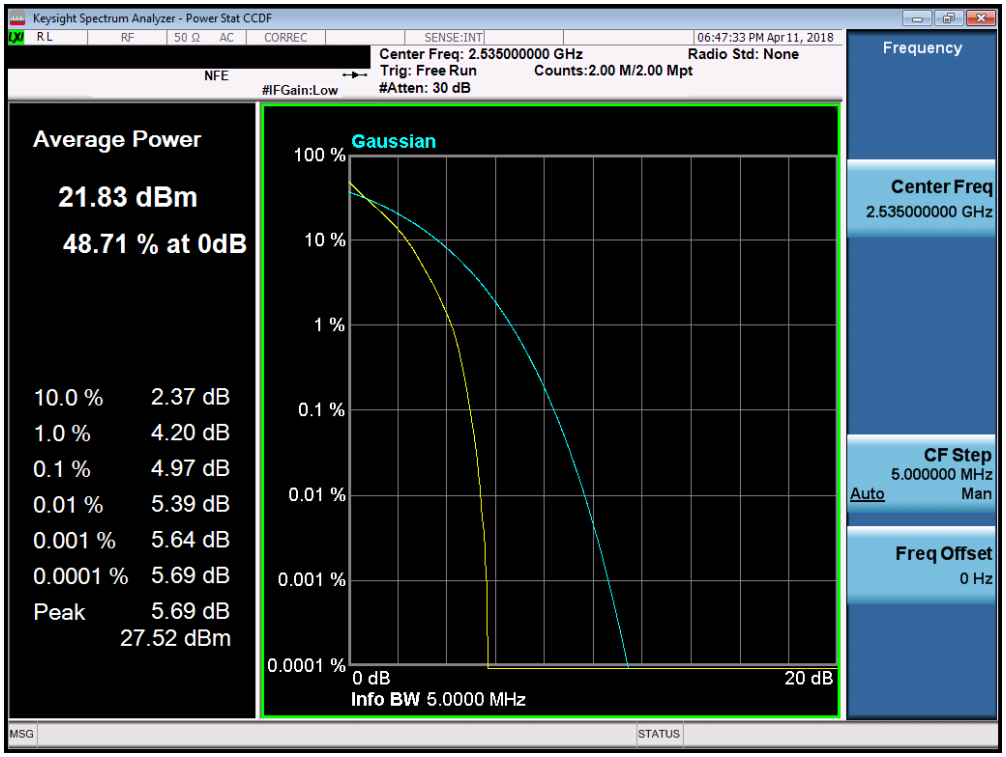


Plot 7-243. PAR Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

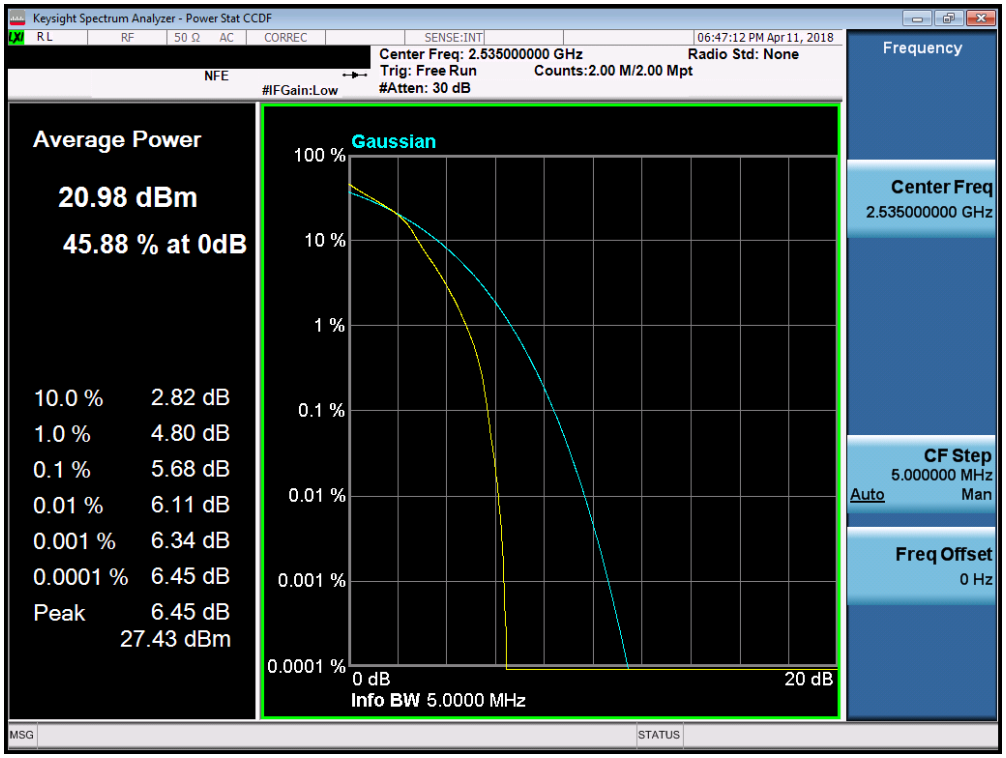


Plot 7-244. PAR Plot (Band 2 - 20.0MHz 16-QAM - Full RB Configuration)

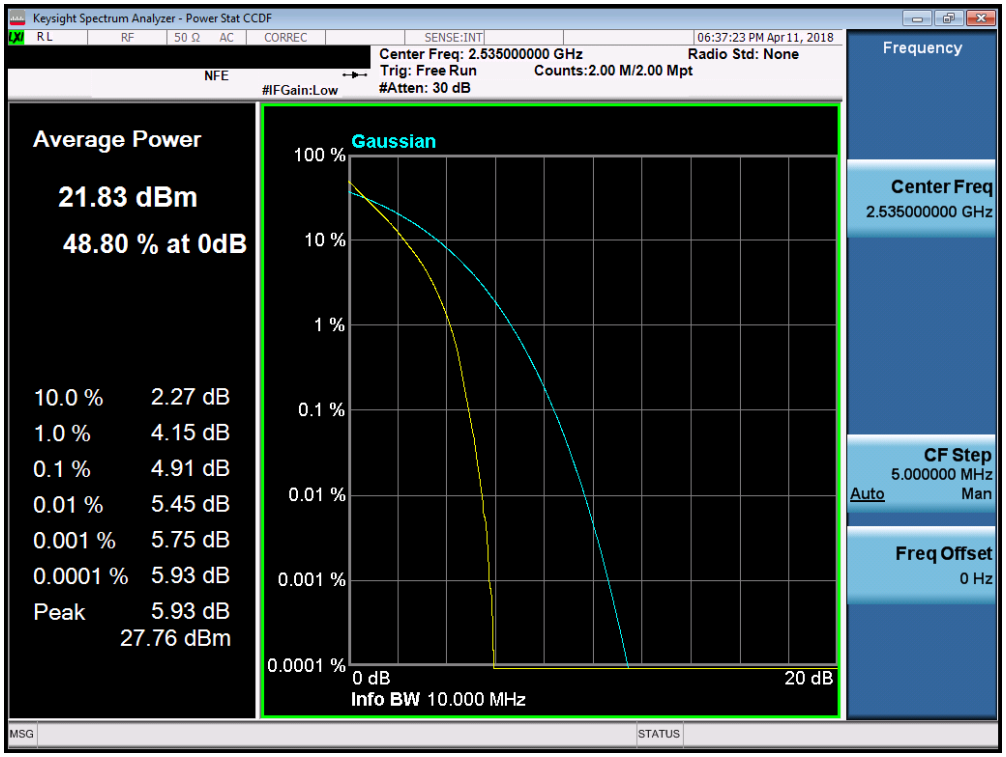
Band 7



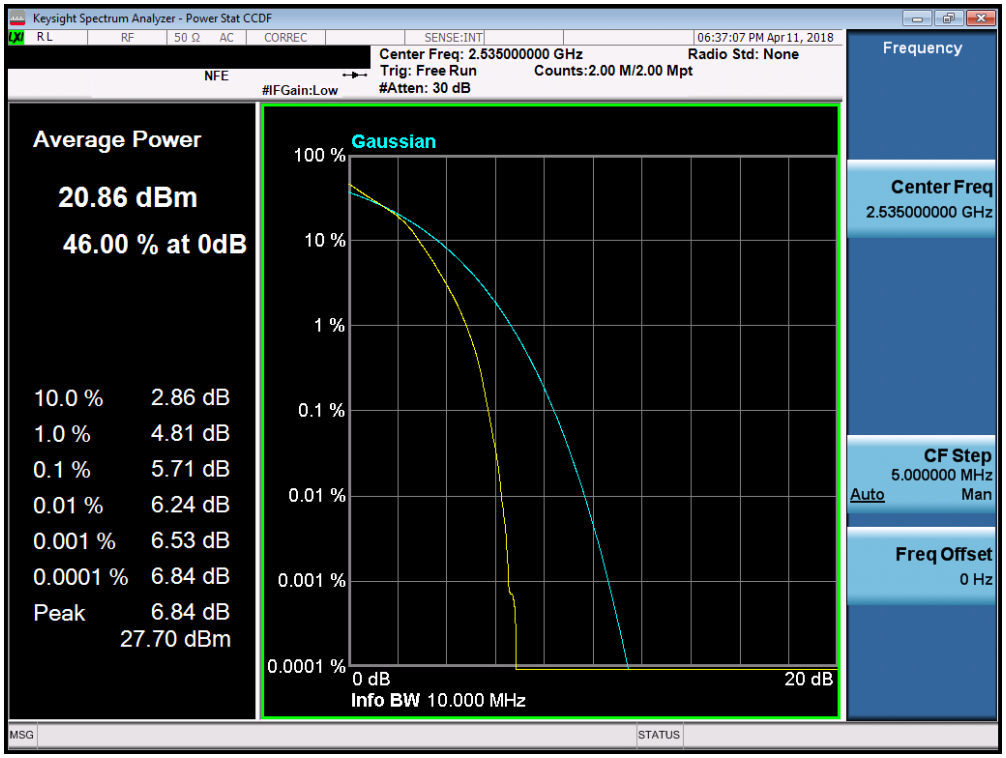
Plot 7-245. PAR Plot (Band 7 - 5.0MHz QPSK - Full RB Configuration)



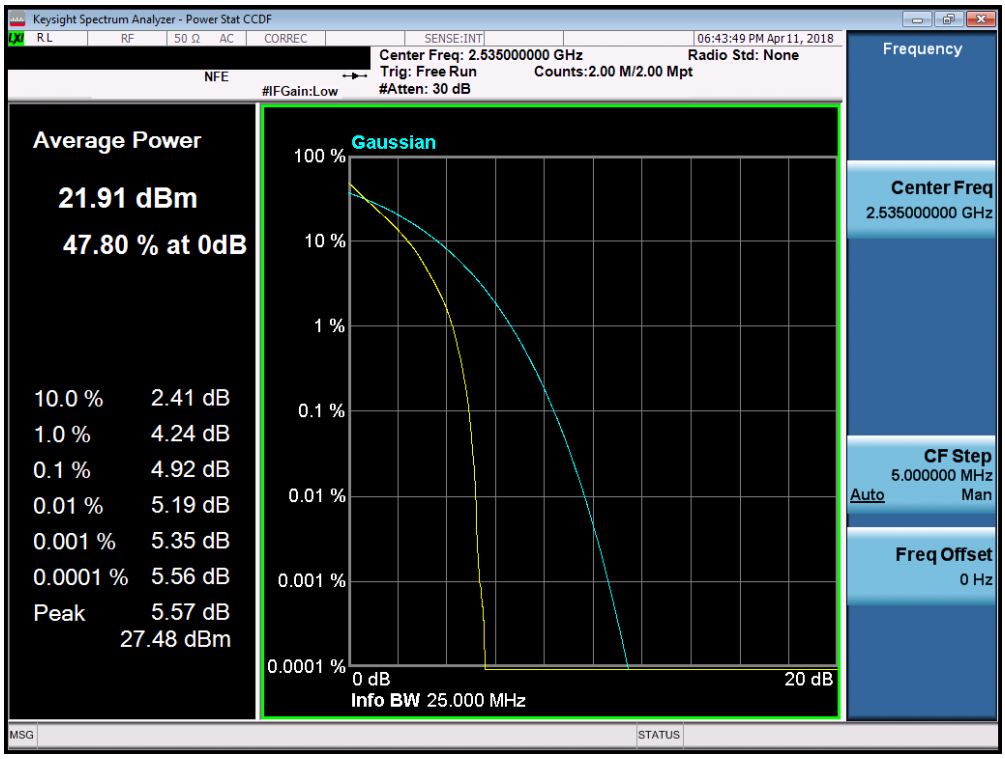
Plot 7-246. PAR Plot (Band 7 - 5.0MHz 16-QAM - Full RB Configuration)



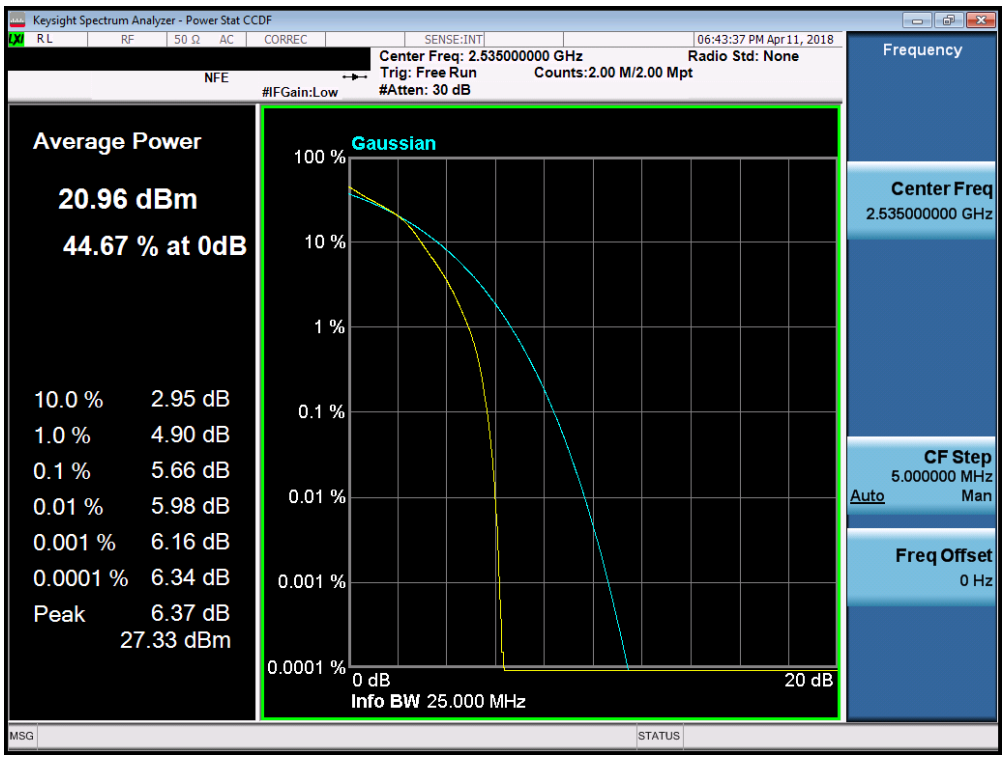
Plot 7-247. PAR Plot (Band 7 - 10.0MHz QPSK - Full RB Configuration)



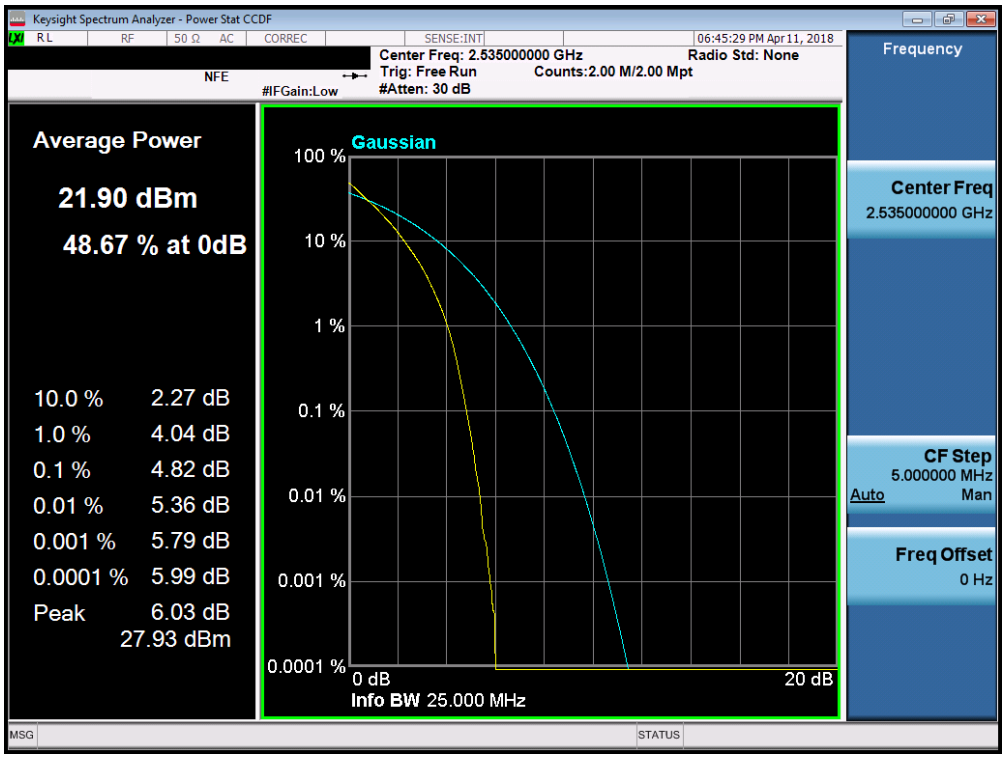
Plot 7-248. PAR Plot (Band 7 - 10.0MHz 16-QAM - Full RB Configuration)



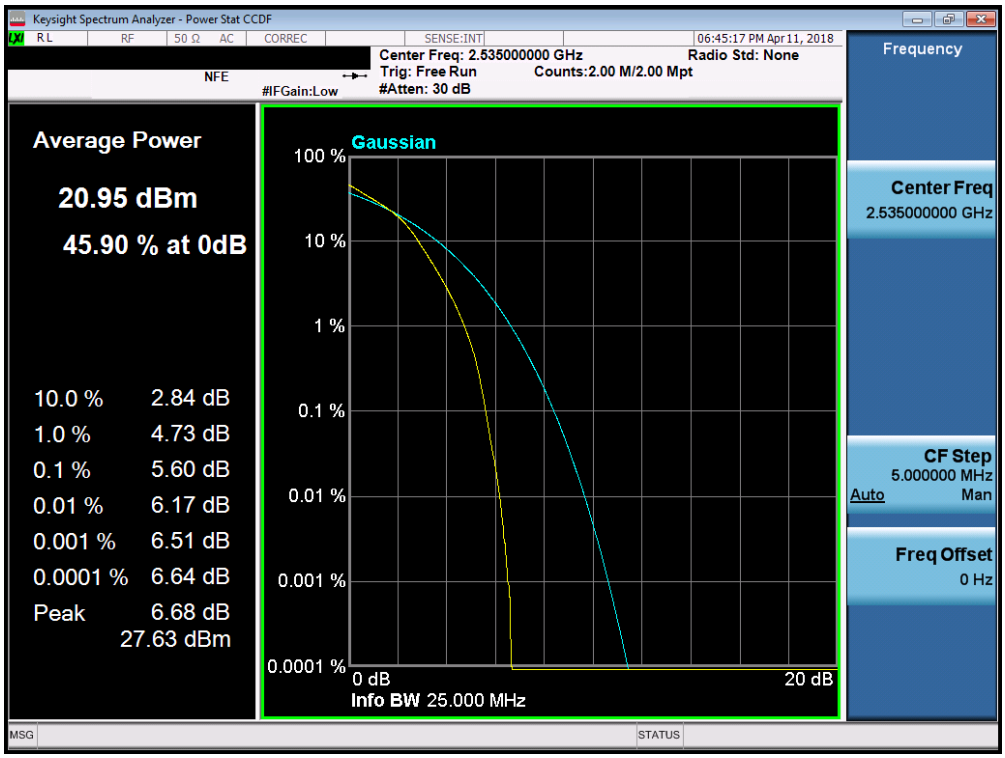
Plot 7-249. PAR Plot (Band 7 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-250. PAR Plot (Band 7 - 15.0MHz 16-QAM - Full RB Configuration)



Plot 7-251. PAR Plot (Band 7 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-252. PAR Plot (Band 7 - 20.0MHz 16-QAM - Full RB Configuration)

7.6 Radiated Power (ERP/EIRP)

Test Overview

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

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.2.1

ANSI/TIA-603-E-2016 – Section 2.2.17

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW ≥ 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points ≥ 2 x span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto".
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

Test Setup

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

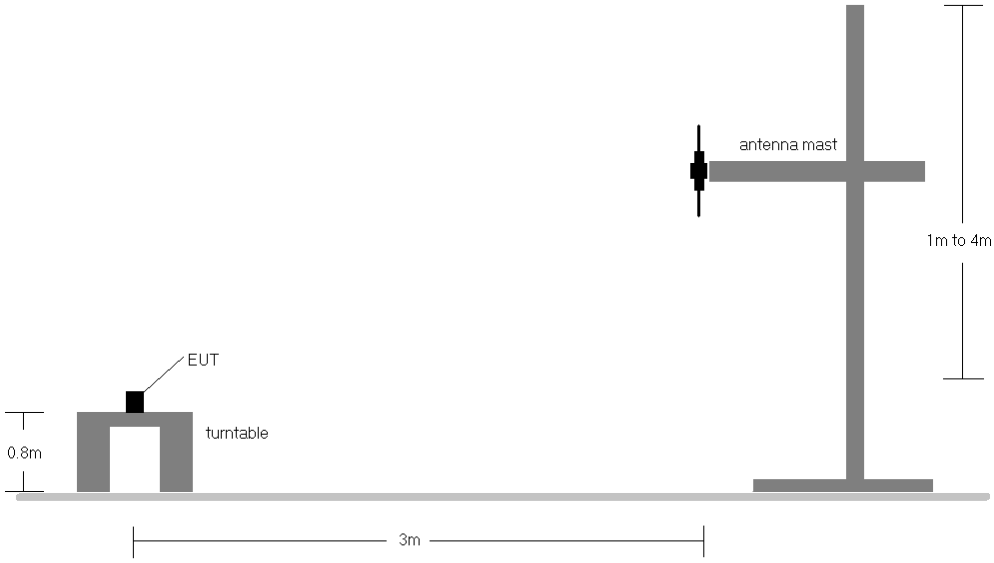


Figure 7-5. Radiated Test Setup <1GHz

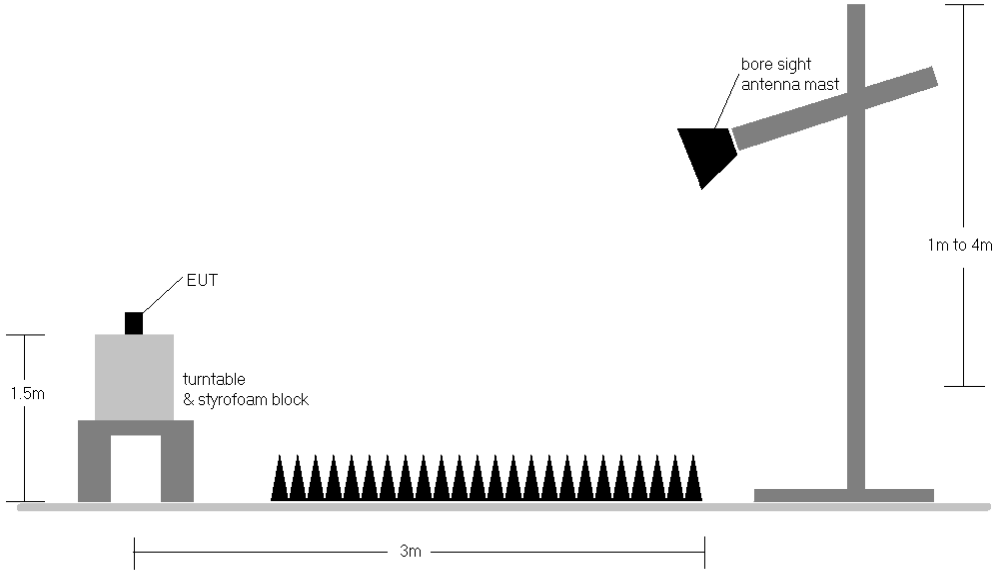


Figure 7-6. Radiated Test Setup >1GHz

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 [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
699.70	1.4	QPSK	H	150	16	1 / 5	20.70	1.10	19.65	0.092	34.77	-15.12	21.80	0.151	36.99	-15.19
707.50	1.4	QPSK	H	150	14	1 / 5	20.82	1.13	19.80	0.096	34.77	-14.97	21.95	0.157	36.99	-15.04
715.30	1.4	QPSK	H	150	21	1 / 5	21.20	1.16	**20.21**	0.105	34.77	-14.56	**22.36**	0.172	36.99	-14.63
707.50	1.4	16-QAM	H	150	14	1 / 5	20.21	1.13	**19.19**	0.083	34.77	-15.58	**21.34**	0.136	36.99	-15.65
700.50	3	QPSK	H	150	10	1 / 14	20.51	1.10	19.46	0.088	34.77	-15.31	21.61	0.145	36.99	-15.38
707.50	3	QPSK	H	150	12	1 / 14	21.23	1.13	20.21	0.105	34.77	-14.56	22.36	0.172	36.99	-14.63
714.50	3	QPSK	H	150	23	1 / 14	21.91	1.16	**20.92**	**0.124**	34.77	-13.85	**23.07**	**0.203**	36.99	-13.92
714.50	3	16-QAM	H	150	23	1 / 14	20.24	1.16	**19.25**	0.084	34.77	-15.52	**21.40**	0.138	36.99	-15.59
714.50	3	QPSK	V	150	353	1 / 14	21.86	1.16	20.87	0.122	34.77	-13.90	23.02	0.200	36.99	-13.97

Table 7-3. ERP/EIRP Data (Band 12)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
701.50	5	QPSK	H	150	22	1 / 24	20.31	1.11	19.27	0.084	34.77	-15.51	21.42	0.139	36.99	-15.57
707.50	5	QPSK	H	150	30	1 / 24	20.51	1.13	19.49	0.089	34.77	-15.28	21.64	0.146	36.99	-15.35
713.50	5	QPSK	H	150	15	1 / 24	21.71	1.15	**20.71**	0.118	34.77	-14.06	**22.86**	0.193	36.99	-14.13
707.50	5	16-QAM	H	150	30	1 / 24	20.36	1.13	**19.34**	0.086	34.77	-15.43	**21.49**	0.141	36.99	-15.50
704.00	10	QPSK	H	150	32	1 / 49	19.21	1.12	18.18	0.066	34.77	-16.59	20.33	0.108	36.99	-16.66
707.50	10	QPSK	H	150	20	1 / 49	19.91	1.13	18.89	0.077	34.77	-15.88	21.04	0.127	36.99	-15.95
711.00	10	QPSK	H	150	14	1 / 49	20.31	1.14	**19.30**	0.085	34.77	-15.47	**21.45**	0.140	36.99	-15.54
711.00	10	16-QAM	H	150	14	1 / 49	19.21	1.14	**18.20**	0.066	34.77	-16.57	**20.35**	0.109	36.99	-16.64

Table 7-4. ERP/EIRP Data (Band 12/17)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
779.50	5	QPSK	H	150	8	1 / 24	19.50	1.32	18.67	0.074	34.77	-16.10	20.82	0.121	36.99	-16.17
782.00	5	QPSK	H	150	3	1 / 24	19.47	1.33	18.65	0.073	34.77	-16.12	20.80	0.120	36.99	-16.19
784.50	5	QPSK	H	150	359	1 / 24	19.93	1.34	**19.12**	0.082	34.77	-15.65	**21.27**	0.134	36.99	-15.72
784.50	5	16-QAM	H	150	359	1 / 24	18.52	1.34	**17.71**	0.059	34.77	-17.06	**19.86**	0.097	36.99	-17.13
782.00	10	QPSK	H	150	5	1 / 49	19.74	1.33	**18.92**	0.078	34.77	-15.85	**21.07**	0.128	36.99	-15.92
782.00	10	16-QAM	H	150	5	1 / 49	19.11	1.33	**18.29**	0.067	34.77	-16.48	**20.44**	0.111	36.99	-16.55
784.50	5	QPSK	V	150	2	1 / 24	21.21	1.34	20.40	**0.110**	34.77	-14.37	**22.55**	**0.180**	36.99	-14.44

Table 7-5. ERP/EIRP Data (Band 13)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	H	150	4	1 / 5	21.12	1.50	20.47	0.111	38.45	-17.98	22.62	0.183	40.61	-17.99
836.50	1.4	QPSK	H	150	13	1 / 5	21.83	1.50	21.18	0.131	38.45	-17.27	23.33	0.215	40.61	-17.28
848.30	1.4	QPSK	H	150	13	1 / 5	22.23	1.50	**21.58**	0.144	38.45	-16.87	**23.73**	0.236	40.61	-16.88
848.30	1.4	16-QAM	H	150	13	1 / 5	21.18	1.50	**20.53**	0.113	38.45	-17.92	**22.68**	0.185	40.61	-17.93
825.50	3	QPSK	H	150	7	1 / 14	21.06	1.50	20.41	0.110	38.45	-18.04	22.56	0.180	40.61	-18.05
836.50	3	QPSK	H	150	9	1 / 14	21.67	1.50	21.02	0.126	38.45	-17.43	23.17	0.207	40.61	-17.44
847.50	3	QPSK	H	150	8	1 / 14	22.13	1.50	**21.48**	0.141	38.45	-16.97	**23.63**	0.231	40.61	-16.98
836.50	3	16-QAM	H	150	9	1 / 14	21.03	1.50	**20.38**	0.109	38.45	-18.07	**22.53**	0.179	40.61	-18.08
826.50	5	QPSK	H	150	10	1 / 24	21.39	1.50	20.74	0.119	38.45	-17.71	22.89	0.195	40.61	-17.72
836.50	5	QPSK	H	150	11	1 / 24	21.64	1.50	20.99	0.126	38.45	-17.46	23.14	0.206	40.61	-17.47
846.50	5	QPSK	H	150	15	1 / 24	22.25	1.50	**21.60**	0.145	38.45	-16.85	**23.75**	0.237	40.61	-16.86
846.50	5	16-QAM	H	150	15	1 / 24	20.92	1.50	**20.27**	0.106	38.45	-18.18	**22.42**	0.175	40.61	-18.19
829.00	10	QPSK	H	150	4	1 / 49	21.35	1.50	20.70	0.117	38.45	-17.75	22.85	0.193	40.61	-17.76
836.50	10	QPSK	H	150	6	1 / 49	22.20	1.50	21.55	0.143	38.45	-16.90	23.70	0.234	40.61	-16.91
844.00	10	QPSK	H	150	13	1 / 49	22.36	1.50	**21.71**	**0.148**	38.45	-16.74	**23.86**	**0.243**	40.61	-16.75
836.50	10	16-QAM	H	150	6	1 / 49	21.71	1.50	**21.06**	0.128	38.45	-17.39	**23.21**	0.209	40.61	-17.40
844.00	10	QPSK	V	150	5	1 / 49	21.46	1.50	20.81	0.121	38.45	-17.64	22.96	0.198	40.61	-17.65

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

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1710.70	1.4	QPSK	H	150	339	1 / 0	20.03	5.56	**25.59**	0.362	30.00	-4.41
1745.00	1.4	QPSK	H	150	344	1 / 0	18.81	5.32	24.13	0.259	30.00	-5.87
1779.30	1.4	QPSK	H	150	344	1 / 0	19.15	5.09	24.24	0.266	30.00	-5.76
1710.70	1.4	16-QAM	H	150	339	1 / 0	19.37	5.56	**24.93**	0.311	30.00	-5.07
1711.50	3	QPSK	H	150	341	1 / 0	20.07	5.55	**25.62**	0.365	30.00	-4.38
1745.00	3	QPSK	H	150	343	1 / 0	18.91	5.32	24.23	0.265	30.00	-5.77
1778.50	3	QPSK	H	150	349	1 / 0	19.29	5.10	24.39	0.275	30.00	-5.61
1711.50	3	16-QAM	H	150	341	1 / 0	18.84	5.55	**24.39**	0.275	30.00	-5.61
1712.50	5	QPSK	H	150	340	1 / 0	20.18	5.55	**25.73**	**0.374**	30.00	-4.27
1745.00	5	QPSK	H	150	339	1 / 0	18.99	5.32	24.31	0.270	30.00	-5.69
1777.50	5	QPSK	H	150	348	1 / 0	18.95	5.10	24.05	0.254	30.00	-5.95
1712.50	5	16-QAM	H	150	340	1 / 0	19.12	5.55	**24.67**	0.293	30.00	-5.33
1715.00	10	QPSK	H	150	343	1 / 0	19.82	5.53	**25.35**	0.343	30.00	-4.65
1745.00	10	QPSK	H	150	349	1 / 0	18.74	5.32	24.06	0.255	30.00	-5.94
1775.00	10	QPSK	H	150	348	1 / 0	18.63	5.12	23.75	0.237	30.00	-6.25
1715.00	10	16-QAM	H	150	343	1 / 0	18.81	5.53	**24.34**	0.272	30.00	-5.66
1717.50	15	QPSK	H	150	334	1 / 0	20.17	5.51	**25.68**	0.370	30.00	-4.32
1745.00	15	QPSK	H	150	339	1 / 0	19.23	5.32	24.55	0.285	30.00	-5.45
1772.50	15	QPSK	H	150	342	1 / 0	18.73	5.14	23.87	0.244	30.00	-6.13
1717.50	15	16-QAM	H	150	334	1 / 0	19.28	5.51	**24.79**	0.301	30.00	-5.21
1720.00	20	QPSK	H	150	340	1 / 0	19.99	5.49	**25.48**	0.353	30.00	-4.52
1745.00	20	QPSK	H	150	338	1 / 0	19.62	5.32	24.94	0.312	30.00	-5.06
1770.00	20	QPSK	H	150	341	1 / 0	18.72	5.15	23.87	0.244	30.00	-6.13
1720.00	20	16-QAM	H	150	340	1 / 0	19.74	5.49	**25.23**	0.334	30.00	-4.77
1712.50	5	QPSK	V	150	278	1 / 0	17.49	5.55	23.04	0.201	30.00	-6.96

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

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	H	150	2	1 / 5	17.12	4.82	**21.94**	0.156	33.01	-11.07
1880.00	1.4	QPSK	H	150	358	1 / 5	17.12	4.74	21.86	0.153	33.01	-11.15
1909.30	1.4	QPSK	H	150	347	1 / 5	13.81	4.68	18.49	0.071	33.01	-14.52
1850.70	1.4	16-QAM	H	150	2	1 / 5	16.17	4.82	**20.99**	0.126	33.01	-12.02
1909.30	1.4	16-QAM	H	150	347	1 / 5	13.03	4.68	17.71	0.059	33.01	-15.30
1851.50	3	QPSK	H	150	3	1 / 14	17.74	4.82	22.56	0.180	33.01	-10.45
1880.00	3	QPSK	H	150	359	1 / 14	17.97	4.74	**22.71**	0.187	33.01	-10.30
1908.50	3	QPSK	H	150	355	1 / 14	17.30	4.68	21.98	0.158	33.01	-11.03
1851.50	3	16-QAM	H	150	3	1 / 14	17.11	4.82	21.93	0.156	33.01	-11.08
1880.00	3	16-QAM	H	150	359	1 / 14	17.25	4.74	**21.99**	0.158	33.01	-11.02
1908.50	3	16-QAM	H	150	355	1 / 14	16.55	4.68	21.23	0.133	33.01	-11.78
1852.50	5	QPSK	H	150	335	1 / 24	20.77	4.81	**25.58**	**0.362**	33.01	-7.43
1880.00	5	QPSK	H	150	344	1 / 24	19.47	4.74	24.21	0.264	33.01	-8.80
1907.50	5	QPSK	H	150	336	1 / 24	19.99	4.68	24.67	0.293	33.01	-8.34
1852.50	5	16-QAM	H	150	335	1 / 24	19.26	4.81	**24.07**	0.255	33.01	-8.94
1880.00	5	16-QAM	H	150	344	1 / 24	17.98	4.74	22.72	0.187	33.01	-10.29
1907.50	5	16-QAM	H	150	336	1 / 24	18.60	4.68	23.28	0.213	33.01	-9.73
1855.00	10	QPSK	H	150	0	1 / 49	18.73	4.81	23.54	0.226	33.01	-9.47
1880.00	10	QPSK	H	150	0	1 / 49	19.53	4.74	24.27	0.267	33.01	-8.74
1905.00	10	QPSK	H	150	0	1 / 49	19.65	4.68	**24.33**	0.271	33.01	-8.68
1855.00	10	16-QAM	H	150	0	1 / 49	17.99	4.81	22.80	0.190	33.01	-10.21
1880.00	10	16-QAM	H	150	0	1 / 49	18.79	4.74	**23.53**	0.225	33.01	-9.48
1905.00	10	16-QAM	H	150	0	1 / 49	18.20	4.68	22.88	0.194	33.01	-10.13
1857.50	15	QPSK	H	150	7	1 / 74	18.39	4.80	23.19	0.208	33.01	-9.82
1880.00	15	QPSK	H	150	2	1 / 74	18.67	4.74	23.41	0.219	33.01	-9.60
1902.50	15	QPSK	H	150	0	1 / 74	19.34	4.69	**24.03**	0.253	33.01	-8.98
1857.50	15	16-QAM	H	150	7	1 / 74	17.52	4.80	22.32	0.171	33.01	-10.69
1880.00	15	16-QAM	H	150	2	1 / 74	16.89	4.74	21.63	0.146	33.01	-11.38
1902.50	15	16-QAM	H	150	0	1 / 74	17.92	4.69	**22.61**	0.182	33.01	-10.40
1860.00	20	QPSK	H	150	7	1 / 99	18.65	4.79	**23.44**	0.221	33.01	-9.57
1880.00	20	QPSK	H	150	2	1 / 99	18.58	4.74	23.32	0.215	33.01	-9.69
1900.00	20	QPSK	H	150	5	1 / 99	18.54	4.69	23.23	0.210	33.01	-9.78
1860.00	20	16-QAM	H	150	7	1 / 99	17.35	4.79	22.14	0.164	33.01	-10.87
1880.00	20	16-QAM	H	150	2	1 / 99	17.27	4.74	22.01	0.159	33.01	-11.00
1900.00	20	16-QAM	H	150	5	1 / 99	17.58	4.69	**22.27**	0.169	33.01	-10.74
1852.50	5	QPSK	V	150	92	1 / 24	18.42	4.81	23.23	0.211	33.01	-9.78

Table 7-8. EIRP Data (Band 2)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2502.50	5	QPSK	H	150	7	1 / 0	16.79	5.74	**22.53**	**0.179**	33.01	-10.48
2535.00	5	QPSK	H	150	189	1 / 0	15.34	5.86	21.20	0.132	33.01	-11.81
2567.50	5	QPSK	H	150	189	1 / 0	15.77	5.98	21.75	0.150	33.01	-11.26
2502.50	5	16-QAM	H	150	7	1 / 0	14.86	5.74	**20.60**	0.115	33.01	-12.41
2505.00	10	QPSK	H	150	189	1 / 0	13.19	5.75	18.94	0.078	33.01	-14.07
2535.00	10	QPSK	H	150	188	1 / 0	15.67	5.86	21.53	0.142	33.01	-11.48
2565.00	10	QPSK	H	150	187	1 / 0	15.78	5.97	**21.75**	0.150	33.01	-11.26
2565.00	10	16-QAM	H	150	187	1 / 0	14.96	5.97	**20.93**	0.124	33.01	-12.08
2507.50	15	QPSK	H	150	189	1 / 0	13.23	5.76	18.99	0.079	33.01	-14.02
2535.00	15	QPSK	H	150	188	1 / 0	15.25	5.86	21.11	0.129	33.01	-11.90
2562.50	15	QPSK	H	150	183	1 / 0	15.66	5.96	**21.62**	0.145	33.01	-11.39
2562.50	15	16-QAM	H	150	183	1 / 0	14.28	5.96	**20.24**	0.106	33.01	-12.77
2510.00	20	QPSK	H	150	189	1 / 0	12.98	5.77	18.75	0.075	33.01	-14.26
2535.00	20	QPSK	H	150	188	1 / 0	14.99	5.86	20.85	0.122	33.01	-12.16
2560.00	20	QPSK	H	150	187	1 / 0	15.78	5.95	**21.73**	0.149	33.01	-11.28
2560.00	20	16-QAM	H	150	187	1 / 0	15.26	5.95	**21.21**	0.132	33.01	-11.80
2502.50	5	QPSK	V	150	80	1 / 0	13.92	5.74	19.66	0.092	33.01	-13.35

Table 7-9. EIRP Data (Band 7)

7.7 Radiated Spurious Emissions Measurements

Test Overview

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

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.8

ANSI/TIA-603-E-2016 – Section 2.2.12

Test Settings

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

Test Setup

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

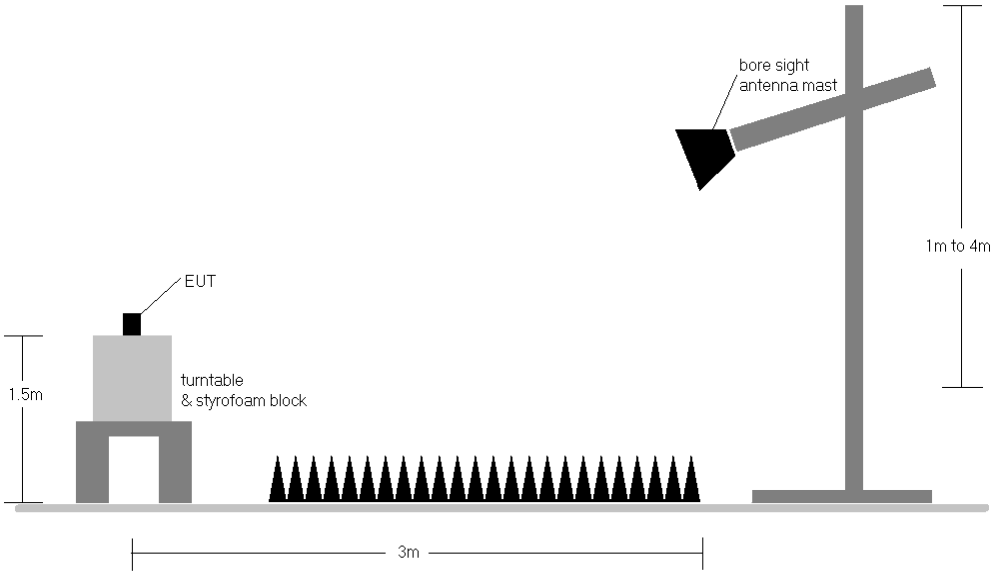


Figure 7-7. Test Instrument & Measurement Setup

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.

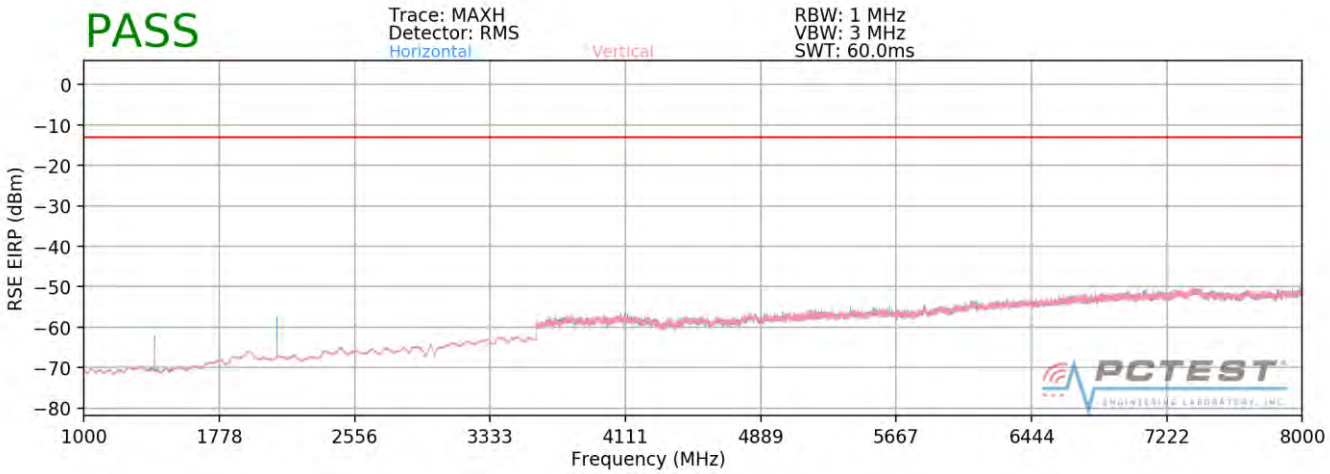
2) This unit was tested with its standard battery.

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.

Band 12/17



Plot 7-253. Radiated Spurious Plot above 1GHz (Band 12/17)

OPERATING FREQUENCY:	700.50	MHz
CHANNEL:	23025	
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]
1401.00	H	162	208	-69.99	7.45	-62.54	-49.5
2101.50	H	-	-	-78.09	8.84	-69.26	-56.3

Table 7-10. Radiated Spurious Data (Band 12/17 – Low Channel)

OPERATING FREQUENCY:	707.50	MHz
CHANNEL:	23095	
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]
1415.00	H	160	307	-69.22	7.63	-61.59	-48.6
2122.50	H	162	376	-77.81	8.86	-68.95	-56.0
2830.00	H	-	-	-77.73	10.10	-67.64	-54.6

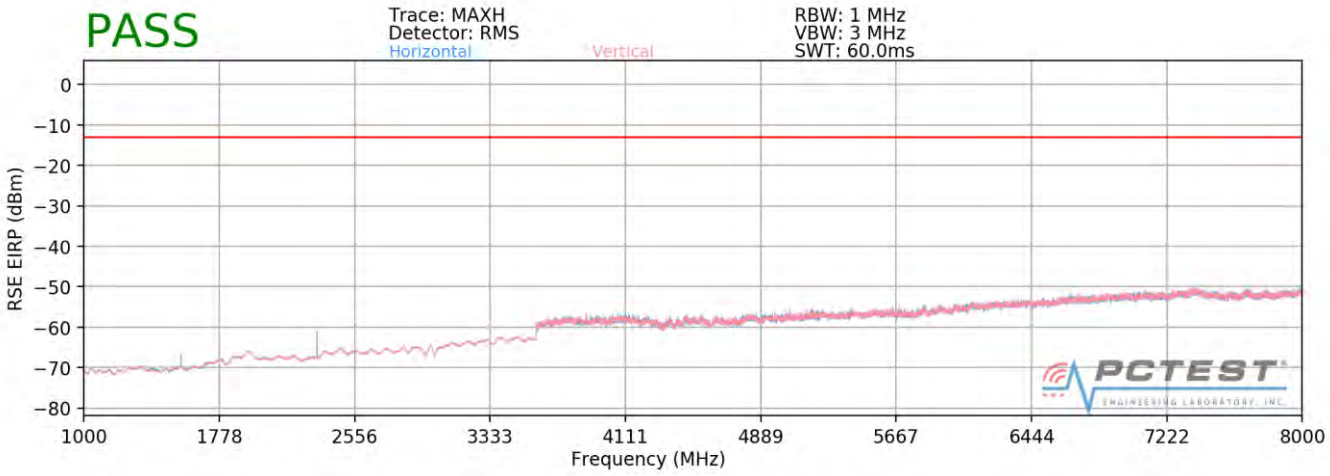
Table 7-11. Radiated Spurious Data (Band 12/17 – Mid Channel)

OPERATING FREQUENCY:	714.50	MHz
CHANNEL:	23165	
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]
1429.00	H	156	332	-65.30	7.81	-57.48	-44.5
2143.50	H	-	-	-77.63	8.88	-68.74	-55.7

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

Band 13



Plot 7-254. Radiated Spurious Plot above 1GHz (Band 13)

OPERATING FREQUENCY:	782.00	MHz
CHANNEL:	23230	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
2346.00	H	183	122	-76.44	9.49	-66.95	-54.0
3128.00	H	-	-	-75.76	9.53	-66.23	-53.2

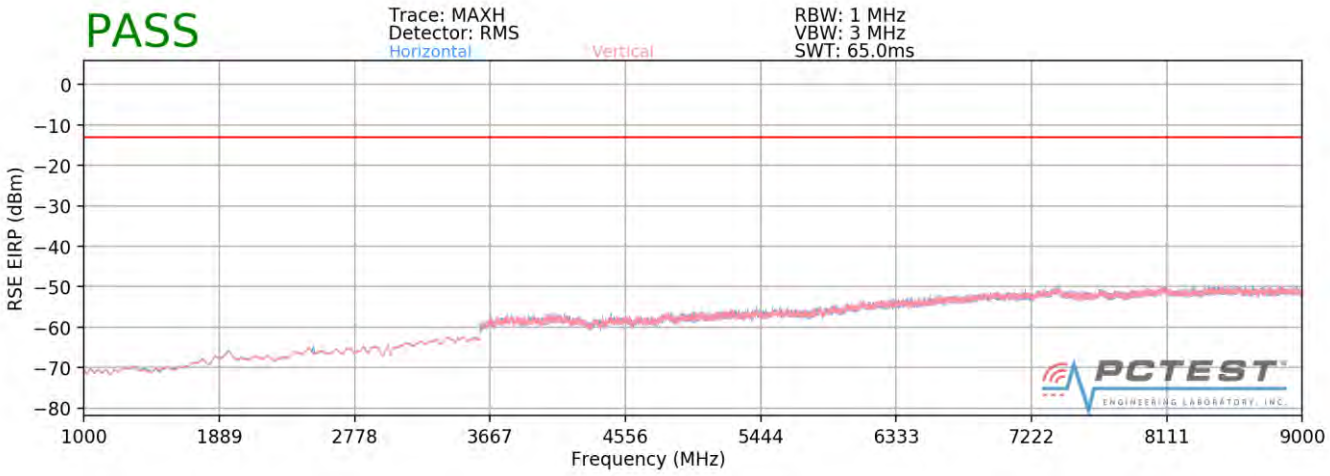
Table 7-13. Radiated Spurious Data (Band 13 – Mid Channel)

MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.00	MHz
DISTANCE:	3	meters
NARROWBAND EMISSION LIMIT:	-50	dBm
WIDEBAND EMISSION LIMIT:	-40	dBm/MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1559.00	H	146	321	-79.51	8.72	-70.78	-30.8

Table 7-14. Radiated Spurious Data (Band 13 – 1559-1610MHz Band)

Band 5



Plot 7-255. Radiated Spurious Plot above 1GHz (Band 5)

OPERATING FREQUENCY:	829.00	MHz
CHANNEL:	20450	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1658.00	H	150	276	-68.06	4.83	-63.23	-50.2
2487.00	H	150	187	-65.36	5.02	-60.33	-47.3
3316.00	H	-	-	-65.76	6.25	-59.51	-46.5

Table 7-15. Radiated Spurious Data (Band 5 – Low Channel)

OPERATING FREQUENCY:	836.50	MHz
CHANNEL:	20525	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.00	H	150	134	-68.69	4.86	-63.83	-50.8
2509.50	H	150	127	-63.00	5.10	-57.90	-44.9
3346.00	H	-	-	-65.51	6.25	-59.26	-46.3

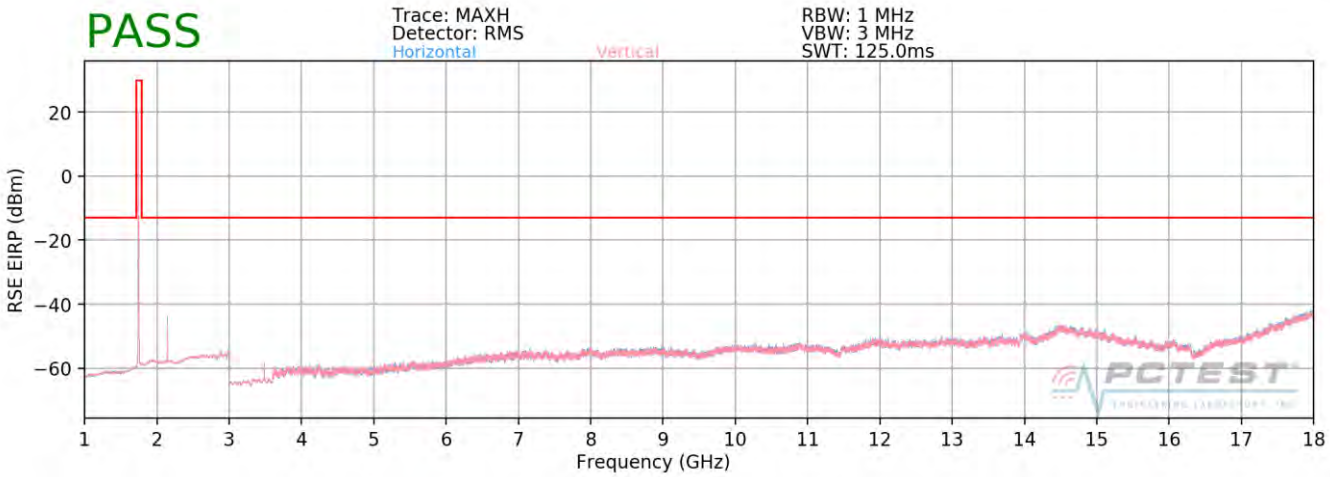
Table 7-16. Radiated Spurious Data (Band 5 – Mid Channel)

OPERATING FREQUENCY:	844.00	MHz
CHANNEL:	20600	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1688.00	H	150	272	-69.14	4.89	-64.25	-51.3
2532.00	H	150	135	-61.96	5.21	-56.75	-43.8
3376.00	H	-	-	-65.74	6.33	-59.40	-46.4

Table 7-17. Radiated Spurious Data (Band 5 – High Channel)

Band 66/4



Plot 7-256. Radiated Spurious Plot above 1GHz (Band 66/4)

OPERATING FREQUENCY:	1712.50	MHz
CHANNEL:	131997	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3425.00	H	126	38	-70.89	9.83	-61.07	-48.1
5137.50	H	116	330	-69.61	10.69	-58.92	-45.9
6850.00	H	198	35	-67.71	11.64	-56.07	-43.1
8562.50	H	-	-	-66.03	11.14	-54.88	-41.9

Table 7-18. Radiated Spurious Data (Band 66/4 – Low Channel)

OPERATING FREQUENCY:	1745.00	MHz
CHANNEL:	132322	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3490.00	H	115	43	-66.97	9.91	-57.06	-44.1
5235.00	H	352	233	-70.63	10.73	-59.90	-46.9
6980.00	H	-	-	-69.91	11.82	-58.09	-45.1

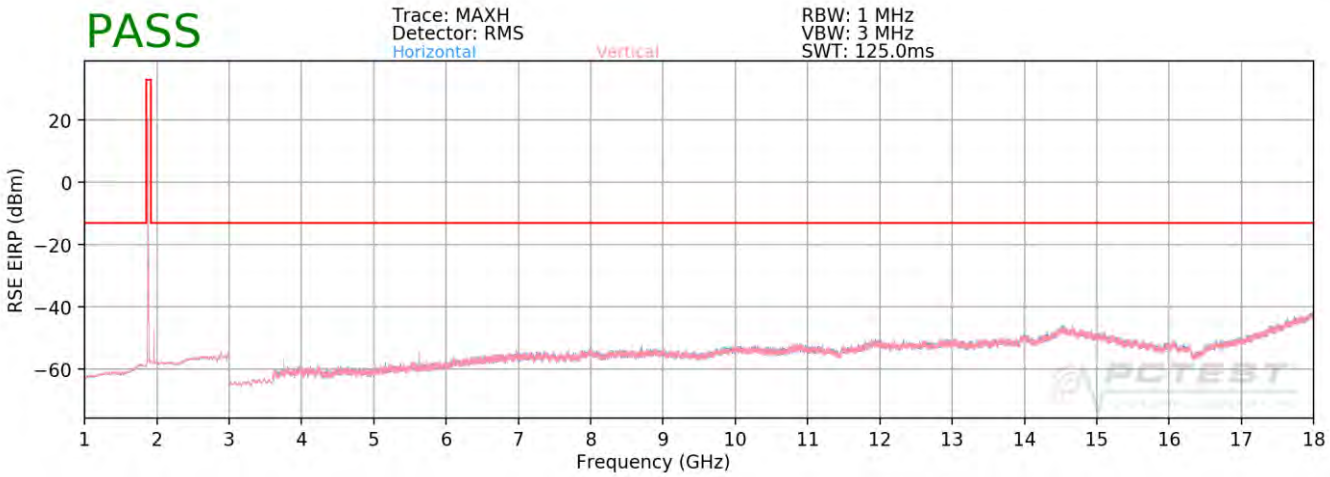
Table 7-19. Radiated Spurious Data (Band 66/4 – Mid Channel)

OPERATING FREQUENCY:	1777.50	MHz
CHANNEL:	132647	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3555.00	H	142	307	-66.73	9.89	-56.83	-43.8
5332.50	H	291	10	-67.02	10.70	-56.32	-43.3
7110.00	H	-	-	-68.50	11.73	-56.77	-43.8

Table 7-20. Radiated Spurious Data (Band 66/4 – High Channel)

Band 2



Plot 7-257. Radiated Spurious Plot above 1GHz (Band 2)

OPERATING FREQUENCY:	1852.50	MHz
CHANNEL:	18625	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3705.00	H	150	44	-66.82	9.57	-57.26	-44.3
5557.50	H	118	5	-65.37	10.95	-54.42	-41.4
7410.00	H	-	-	-67.52	10.96	-56.56	-43.6

Table 7-21. Radiated Spurious Data (Band 2 – Low Channel)

OPERATING FREQUENCY:	1880.00	MHz
CHANNEL:	18900	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3760.00	H	387	33	-65.35	9.37	-55.99	-43.0
5640.00	H	115	42	-64.86	11.17	-53.69	-40.7
7520.00	H	-	-	-67.86	11.11	-56.75	-43.7

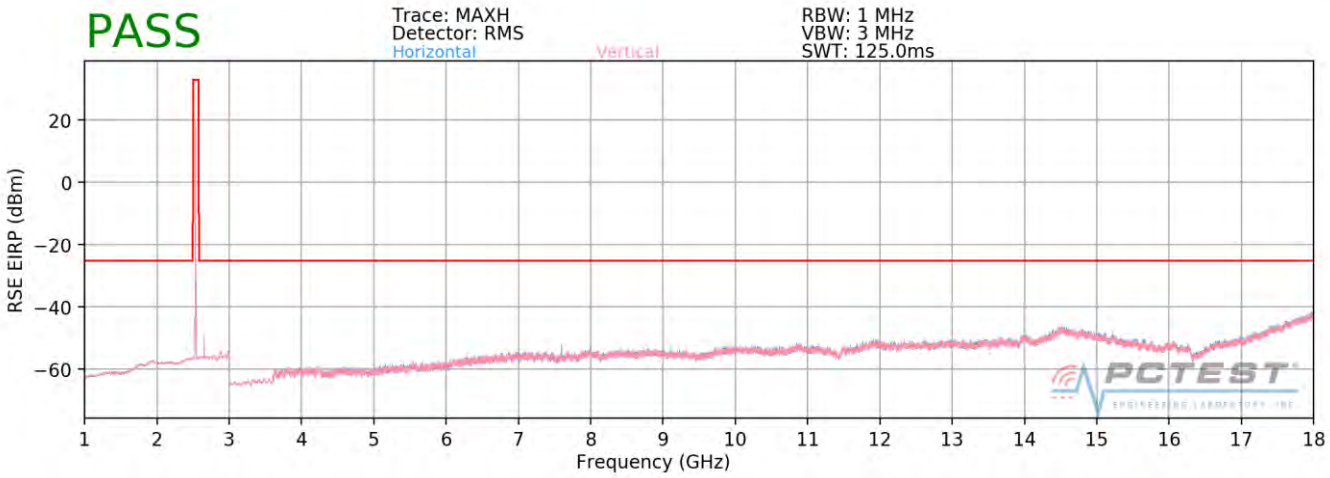
Table 7-22. Radiated Spurious Data (Band 2 – Mid Channel)

OPERATING FREQUENCY:	1907.50	MHz
CHANNEL:	19175	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3815.00	H	113	44	-64.73	9.30	-55.43	-42.4
5722.50	H	118	217	-63.64	11.37	-52.27	-39.3
7630.00	H	131	6	-66.74	11.31	-55.43	-42.4
9537.50	H	229	36	-62.18	11.76	-50.42	-37.4
11445.00	H	-	-	-65.51	12.82	-52.69	-39.7

Table 7-23. Radiated Spurious Data (Band 2 – High Channel)

Band 7



Plot 7-258. Radiated Spurious Plot 1GHz - 18GHz (Band 7)

OPERATING FREQUENCY:	2502.50	MHz
CHANNEL:	20775	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5005.00	H	150	317	-64.31	8.33	-55.98	-31.0
7507.50	H	150	56	-55.36	8.43	-46.93	-21.9
10010.00	H	-	-	-61.25	9.88	-51.38	-26.4

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

OPERATING FREQUENCY:	2535.00	MHz
CHANNEL:	21100	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5070.00	H	150	20	-62.67	8.39	-54.28	-29.3
7605.00	H	150	23	-57.89	8.51	-49.38	-24.4
10140.00	H	-	-	-60.41	9.70	-50.71	-25.7

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

OPERATING FREQUENCY:	2567.50	MHz
CHANNEL:	21425	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5135.00	H	150	321	-62.70	8.43	-54.27	-29.3
7702.50	H	150	355	-58.22	8.67	-49.55	-24.5
10270.00	H	-	-	-61.54	9.72	-51.82	-26.8

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

7.8 Frequency Stability / Temperature Variation

Test Overview and Limit

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

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

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

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

Test Procedure Used

ANSI/TIA-603-E-2016

Test Settings

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

Test Setup

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

Test Notes

None

Band 12 Frequency Stability Measurements

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)	707,499,829	-171	-0.0000241
100 %		- 30	707,499,806	-194	-0.0000275
100 %		- 20	707,499,827	-173	-0.0000244
100 %		- 10	707,499,945	-55	-0.0000077
100 %		0	707,499,801	-199	-0.0000282
100 %		+ 10	707,499,955	-45	-0.0000064
100 %		+ 20	707,499,906	-94	-0.0000133
100 %		+ 30	707,499,846	-154	-0.0000218
100 %		+ 40	707,499,994	-6	-0.0000009
100 %		+ 50	707,499,989	-11	-0.0000015
BATT. ENDPOINT	3.40	+ 20	707,499,803	-197	-0.0000278

Table 7-27. Frequency Stability Data (Band 12)

Note:

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

Band 12 Frequency Stability Measurements

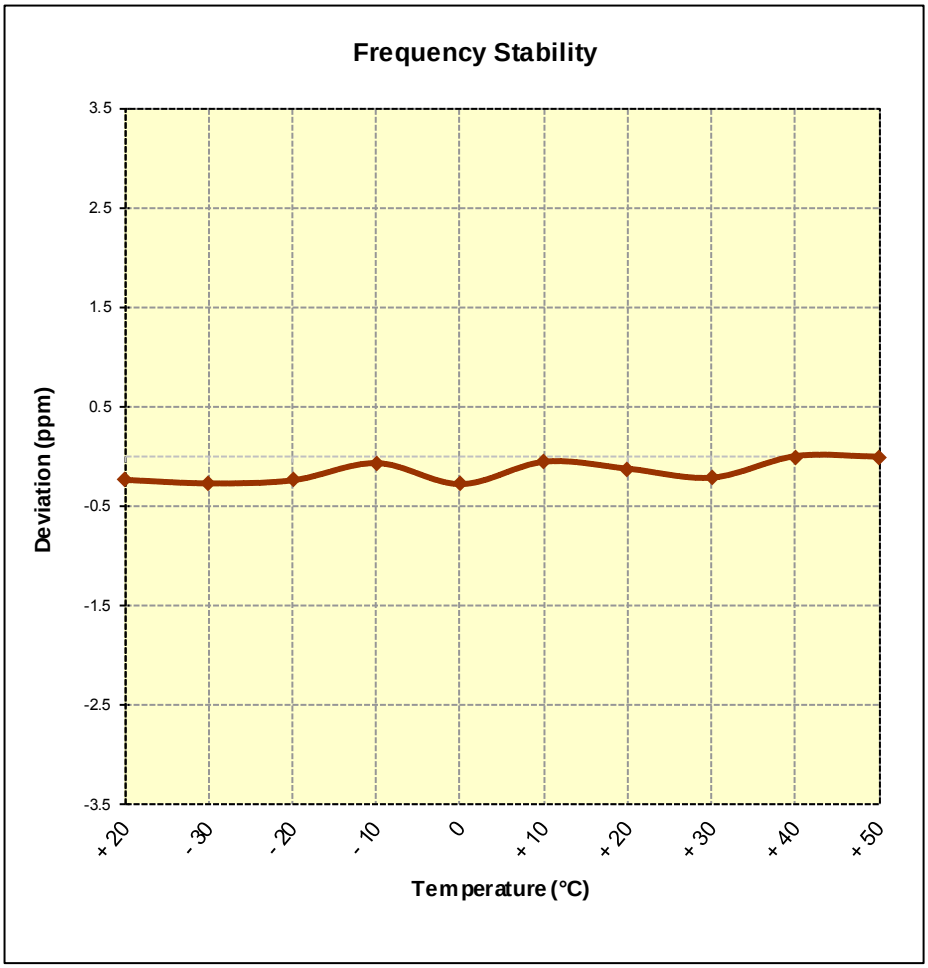


Figure 7-8. Frequency Stability Graph (Band 12)

Band 13 Frequency Stability Measurements

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)	781,999,932	-68	-0.0000088
100 %		- 30	781,999,893	-107	-0.0000137
100 %		- 20	781,999,975	-25	-0.0000032
100 %		- 10	781,999,932	-68	-0.0000087
100 %		0	781,999,984	-16	-0.0000020
100 %		+ 10	781,999,915	-85	-0.0000109
100 %		+ 20	781,999,981	-19	-0.0000024
100 %		+ 30	781,999,969	-31	-0.0000040
100 %		+ 40	781,999,973	-27	-0.0000035
100 %		+ 50	781,999,977	-23	-0.0000029
BATT. ENDPOINT	3.40	+ 20	781,999,884	-116	-0.0000148

Table 7-28. Frequency Stability Data (Band 13)

Note:

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

Band 13 Frequency Stability Measurements

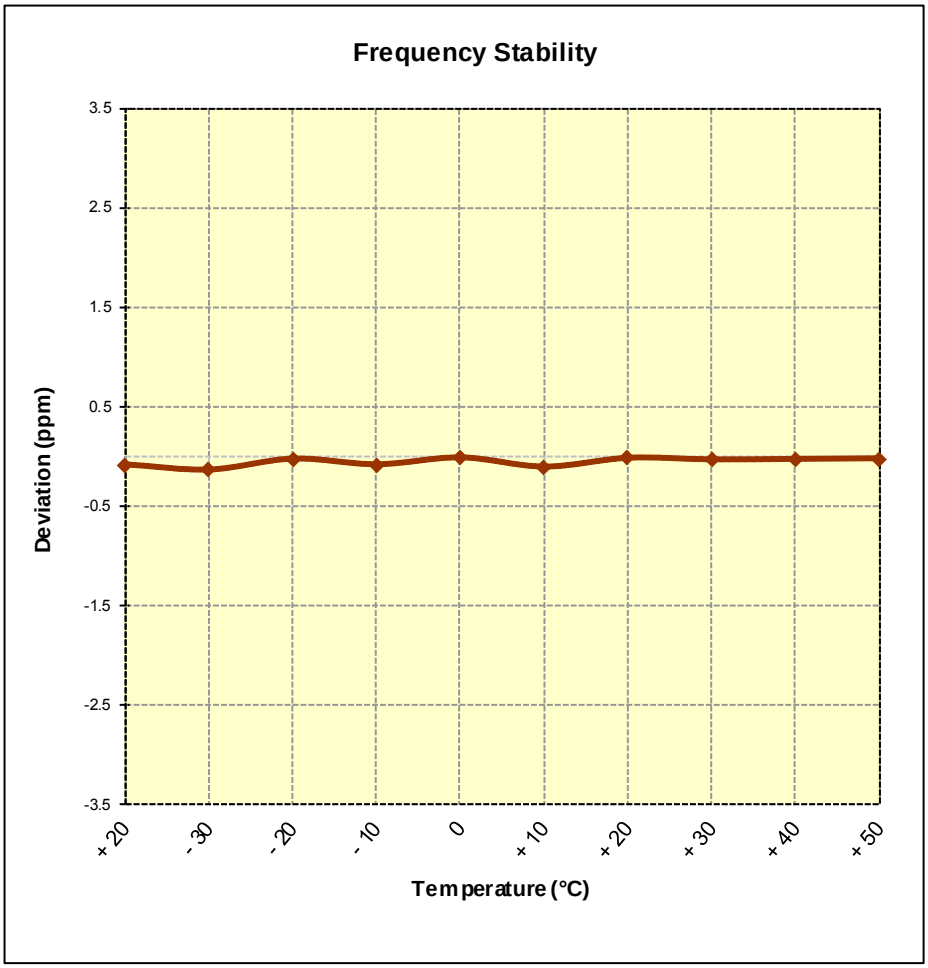


Figure 7-9. Frequency Stability Graph (Band 13)

Band 5 Frequency Stability Measurements

OPERATING FREQUENCY:	836,500,000	Hz
CHANNEL:	20525	
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)	836,499,842	-158	-0.0000188
100 %		- 30	836,499,995	-5	-0.0000006
100 %		- 20	836,499,899	-101	-0.0000120
100 %		- 10	836,499,930	-70	-0.0000084
100 %		0	836,499,963	-37	-0.0000044
100 %		+ 10	836,499,854	-146	-0.0000175
100 %		+ 20	836,499,897	-103	-0.0000123
100 %		+ 30	836,499,849	-151	-0.0000181
100 %		+ 40	836,499,839	-161	-0.0000192
100 %		+ 50	836,499,946	-54	-0.0000064
BATT. ENDPOINT	3.40	+ 20	836,499,875	-125	-0.0000149

Table 7-29. Frequency Stability Data (Band 5)

Band 5 Frequency Stability Measurements

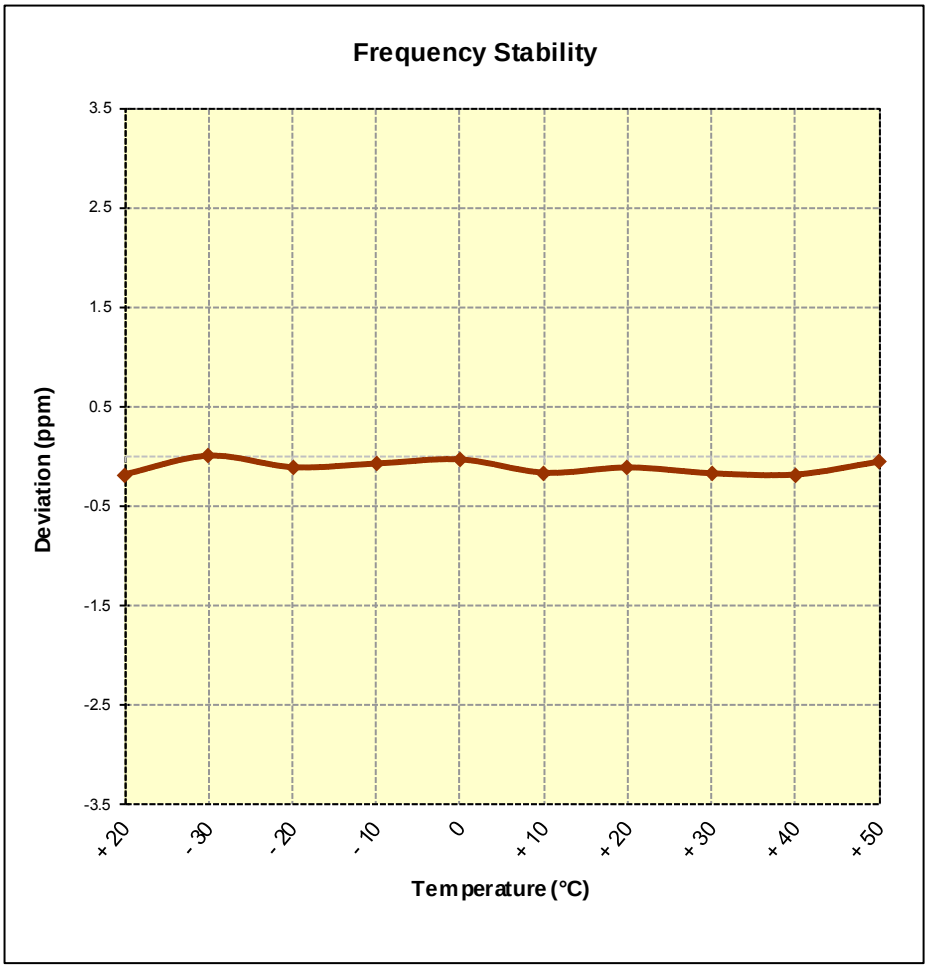


Figure 7-10. Frequency Stability Graph (Band 5)

Band 66 Frequency Stability Measurements

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)	1,744,999,849	-151	-0.0000086
100 %		- 30	1,744,999,972	-28	-0.0000016
100 %		- 20	1,744,999,840	-160	-0.0000092
100 %		- 10	1,744,999,984	-16	-0.0000009
100 %		0	1,744,999,941	-59	-0.0000034
100 %		+ 10	1,744,999,921	-79	-0.0000045
100 %		+ 20	1,744,999,846	-154	-0.0000088
100 %		+ 30	1,744,999,945	-55	-0.0000031
100 %		+ 40	1,744,999,909	-91	-0.0000052
100 %		+ 50	1,744,999,866	-134	-0.0000077
BATT. ENDPOINT	3.40	+ 20	1,744,999,852	-148	-0.0000085

Table 7-30. Frequency Stability Data (Band 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 66 Frequency Stability Measurements

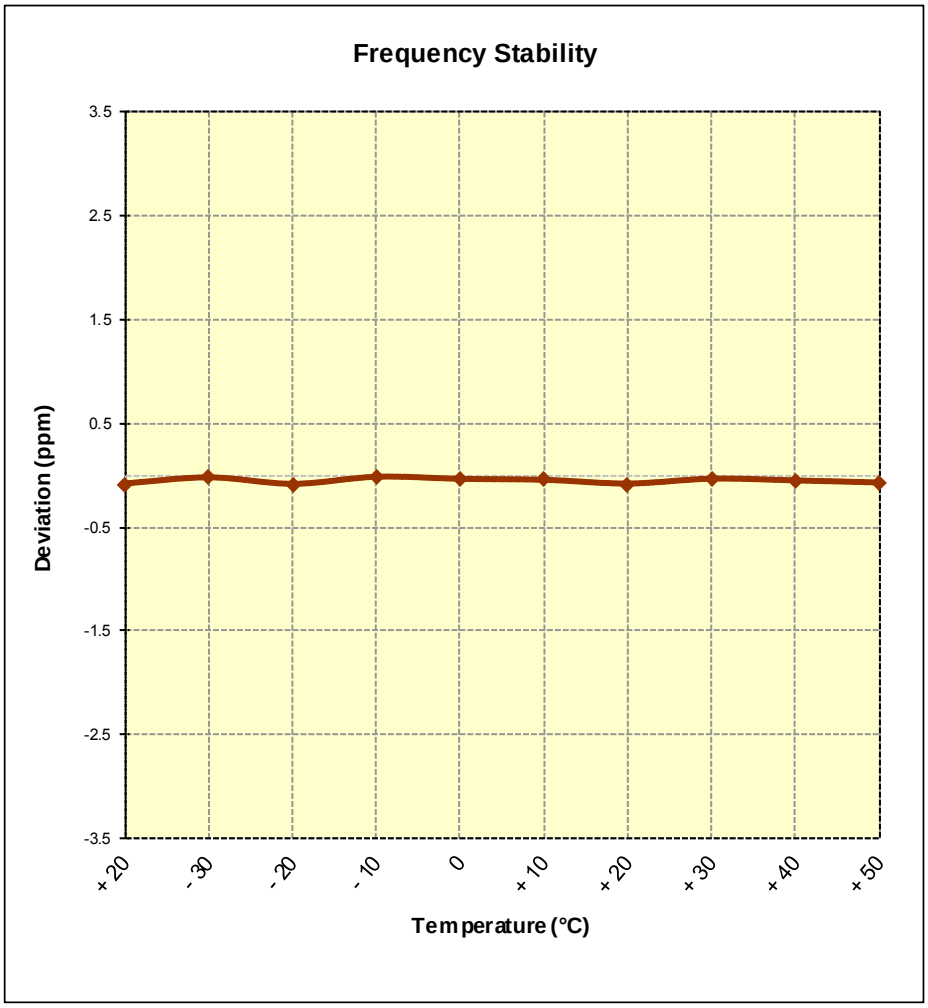


Figure 7-11. Frequency Stability Graph (Band 66)

Band 2 Frequency Stability Measurements

OPERATING FREQUENCY:	1,880,000,000	Hz
CHANNEL:	18900	
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)	1,879,999,968	-32	-0.0000017
100 %		- 30	1,879,999,858	-142	-0.0000075
100 %		- 20	1,879,999,826	-174	-0.0000093
100 %		- 10	1,879,999,839	-161	-0.0000085
100 %		0	1,879,999,886	-114	-0.0000061
100 %		+ 10	1,879,999,895	-105	-0.0000056
100 %		+ 20	1,879,999,915	-85	-0.0000045
100 %		+ 30	1,879,999,982	-18	-0.0000009
100 %		+ 40	1,879,999,869	-131	-0.0000070
100 %		+ 50	1,879,999,909	-91	-0.0000048
BATT. ENDPOINT	3.40	+ 20	1,879,999,946	-54	-0.0000029

Table 7-31. Frequency Stability Data (Band 2)

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 2 Frequency Stability Measurements

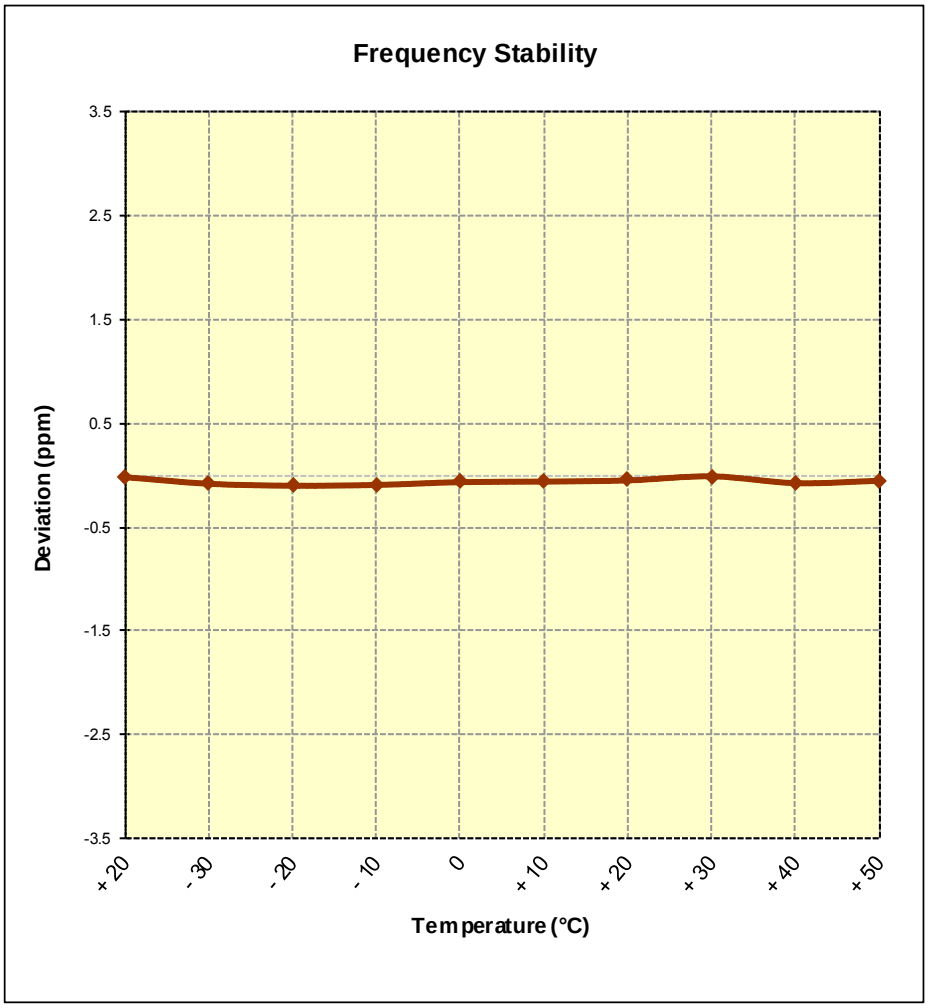


Figure 7-12. Frequency Stability Graph (Band 2)

Band 7 Frequency Stability Measurements

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)	2,534,999,822	-178	-0.0000070
100 %		- 30	2,534,999,947	-53	-0.0000021
100 %		- 20	2,534,999,849	-151	-0.0000060
100 %		- 10	2,534,999,880	-120	-0.0000047
100 %		0	2,534,999,846	-154	-0.0000061
100 %		+ 10	2,534,999,812	-188	-0.0000074
100 %		+ 20	2,534,999,969	-31	-0.0000012
100 %		+ 30	2,534,999,957	-43	-0.0000017
100 %		+ 40	2,534,999,950	-50	-0.0000020
100 %		+ 50	2,534,999,908	-92	-0.0000036
BATT. ENDPOINT	3.40	+ 20	2,534,999,852	-148	-0.0000058

Table 7-32. 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

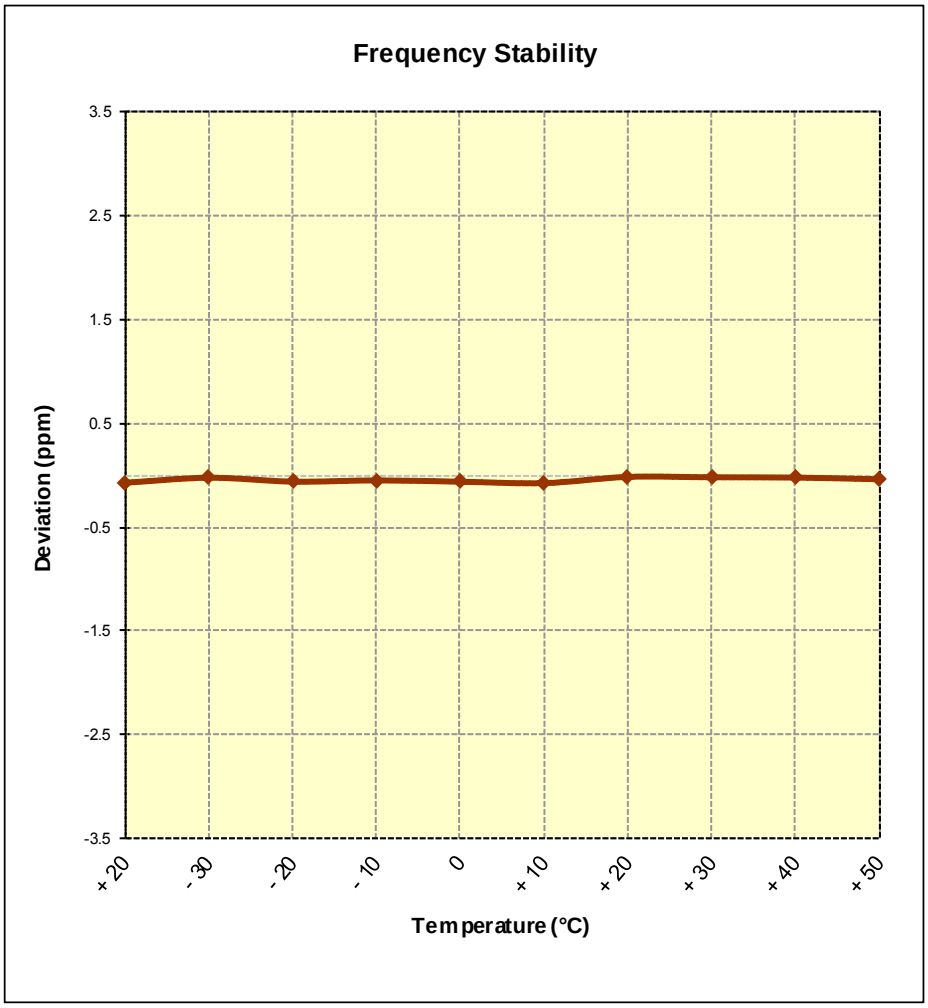


Figure 7-13. Frequency Stability Graph (Band 7)

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **LG Portable Handset FCC ID: ZNFX510WM** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.