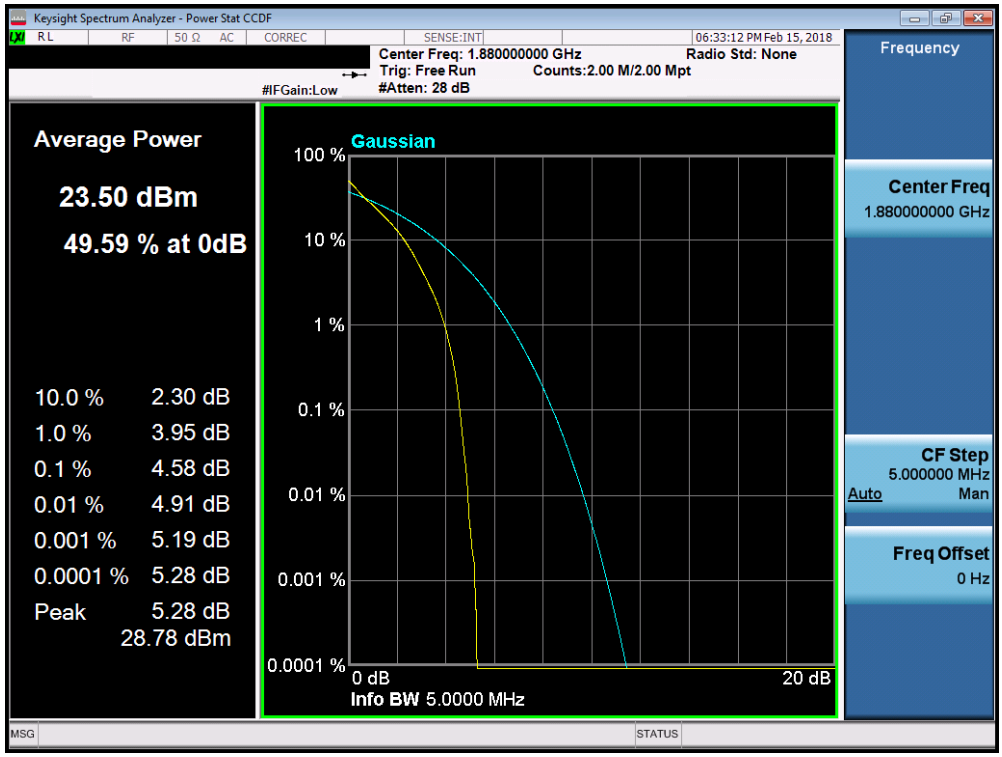
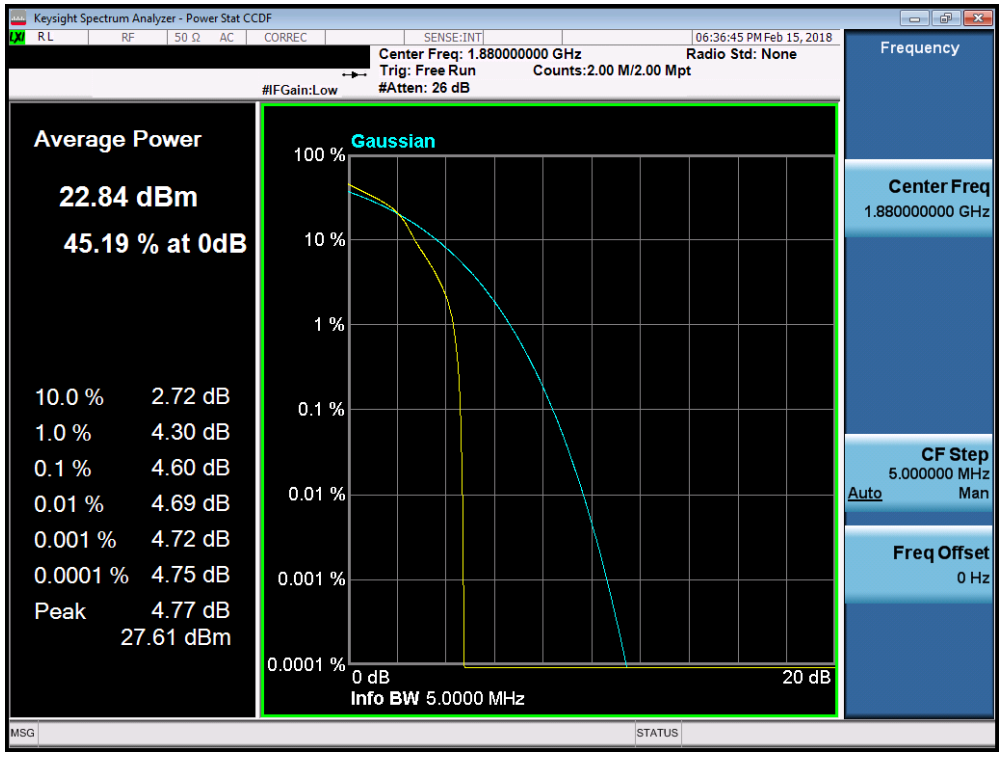
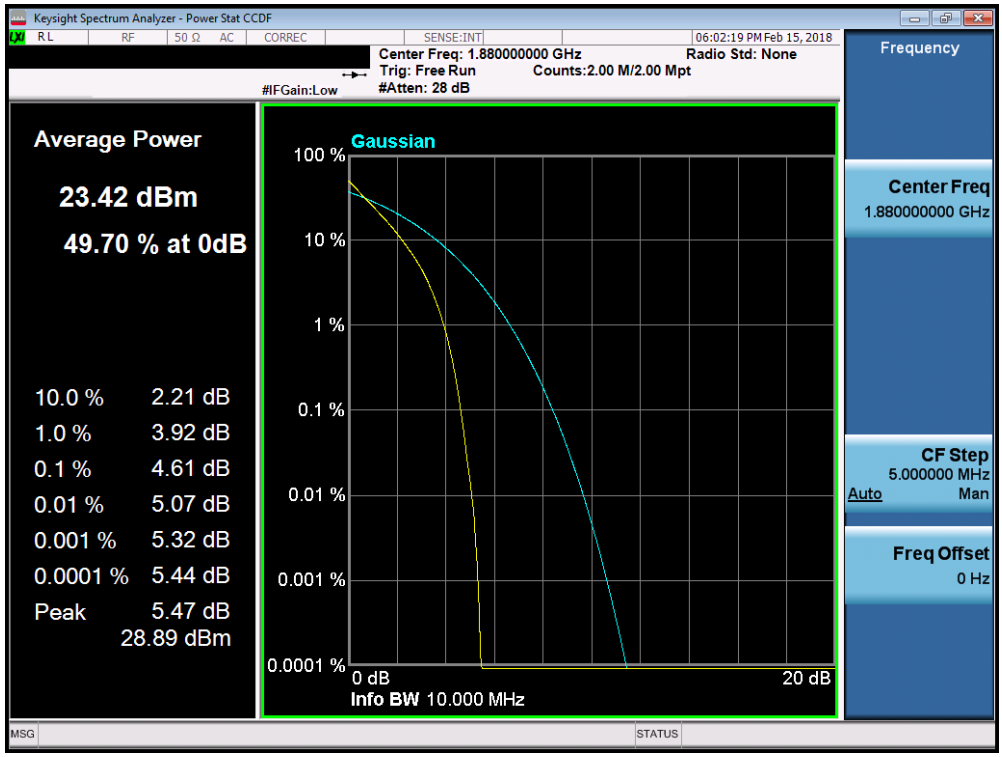


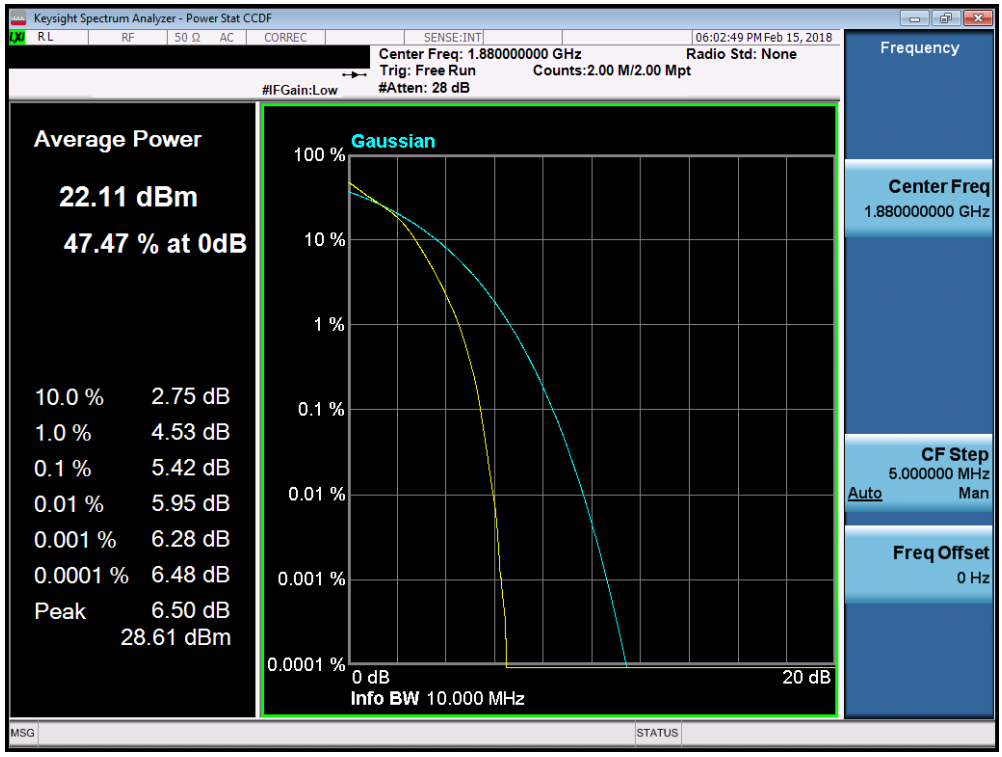
Plot 7-234. PAR Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)



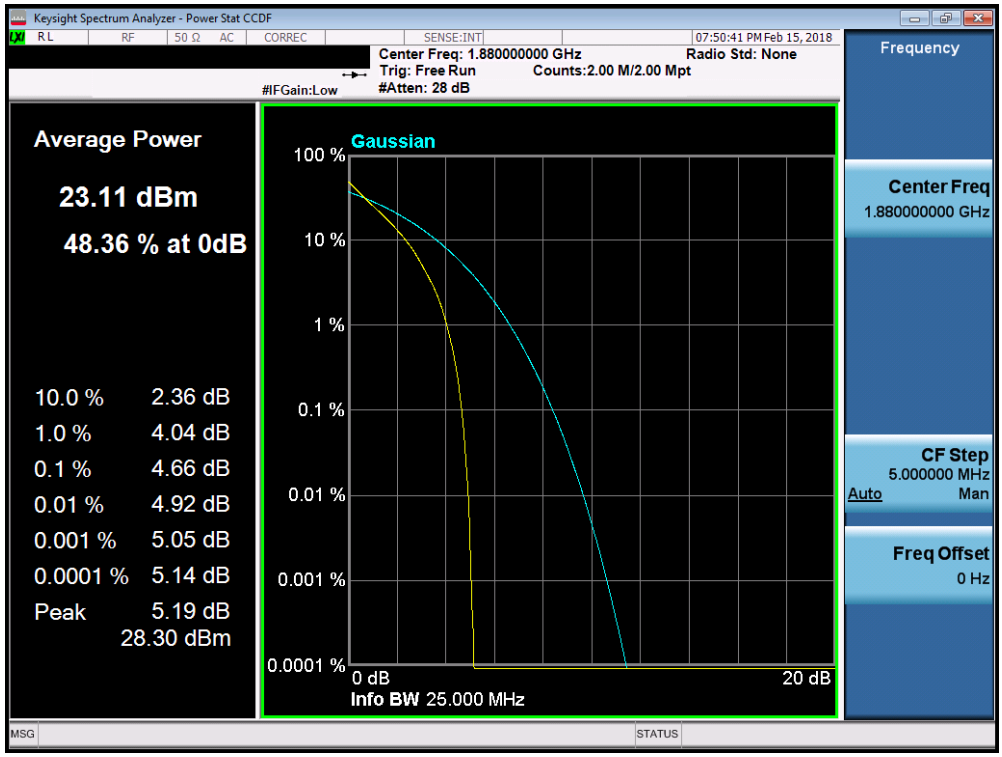
Plot 7-235. PAR Plot (Band 2 - 5.0MHz 16-QAM - Full RB Configuration)



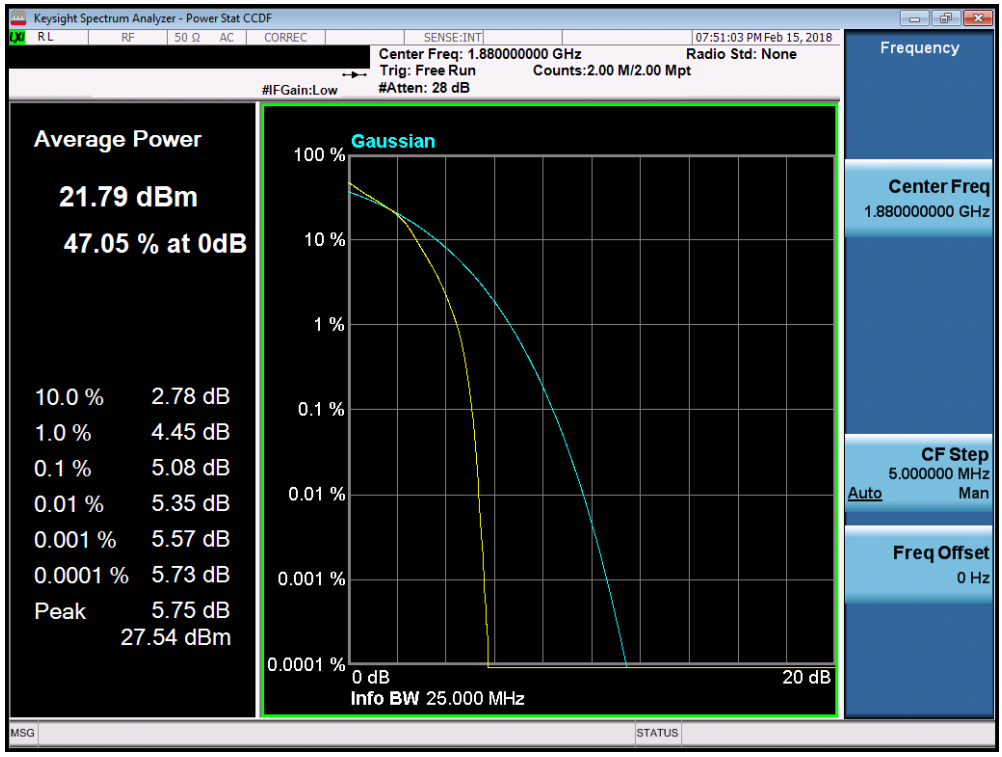
Plot 7-236. PAR Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)



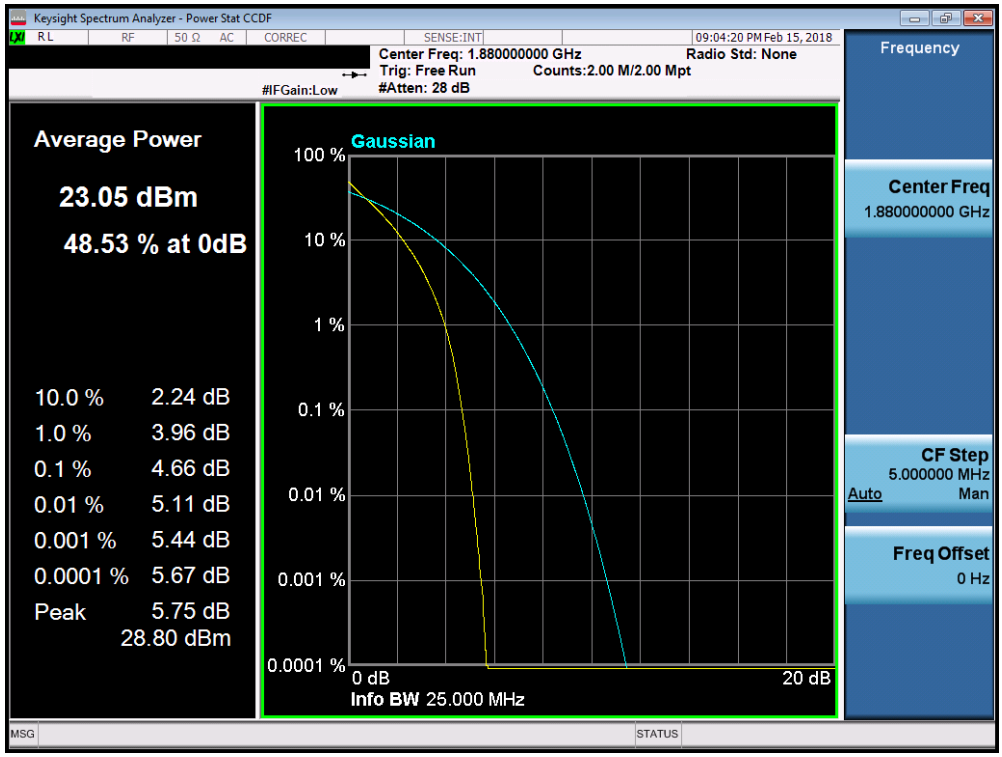
Plot 7-237. PAR Plot (Band 2 - 10.0MHz 16-QAM - Full RB Configuration)



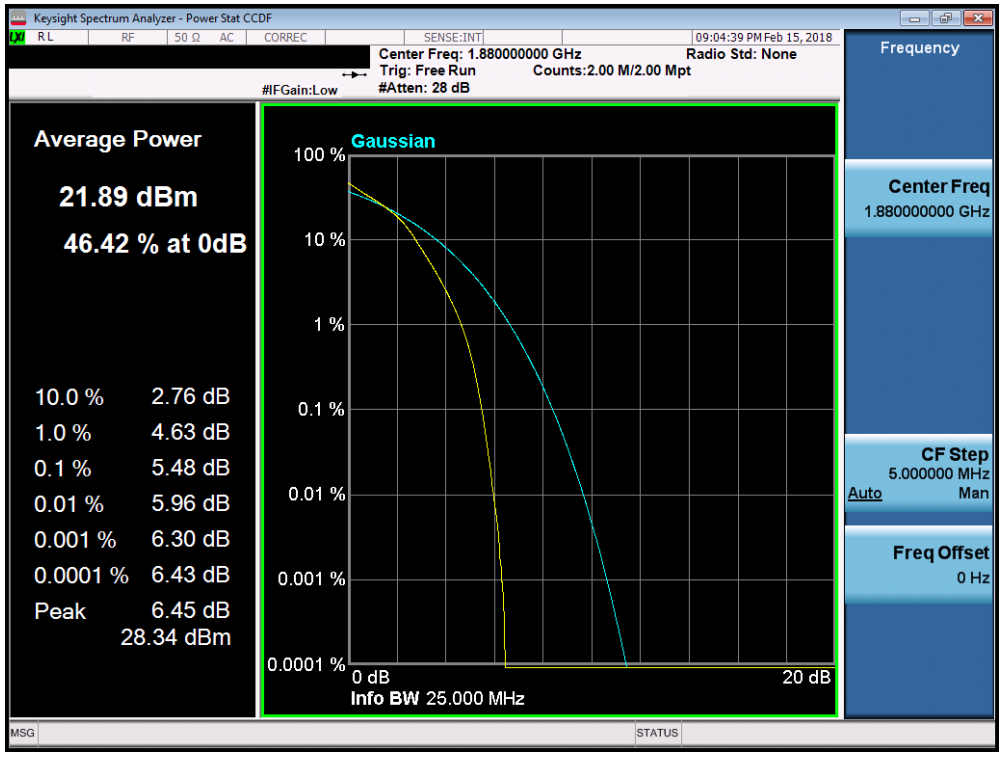
Plot 7-238. PAR Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)



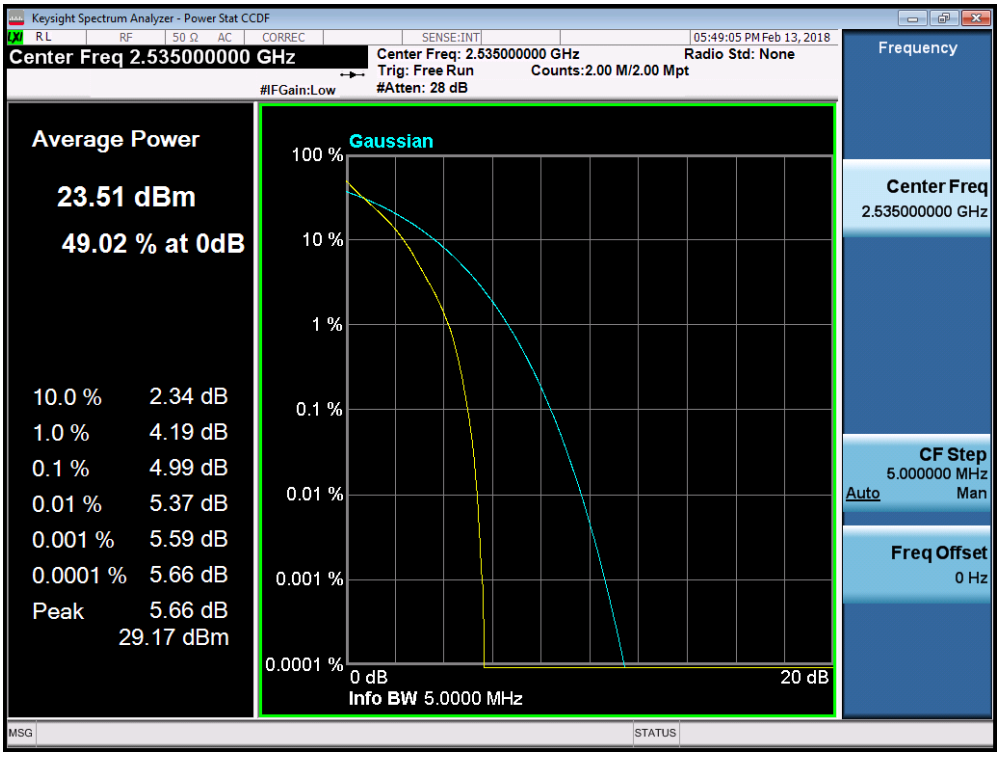
Plot 7-239. PAR Plot (Band 2 - 15.0MHz 16-QAM - Full RB Configuration)



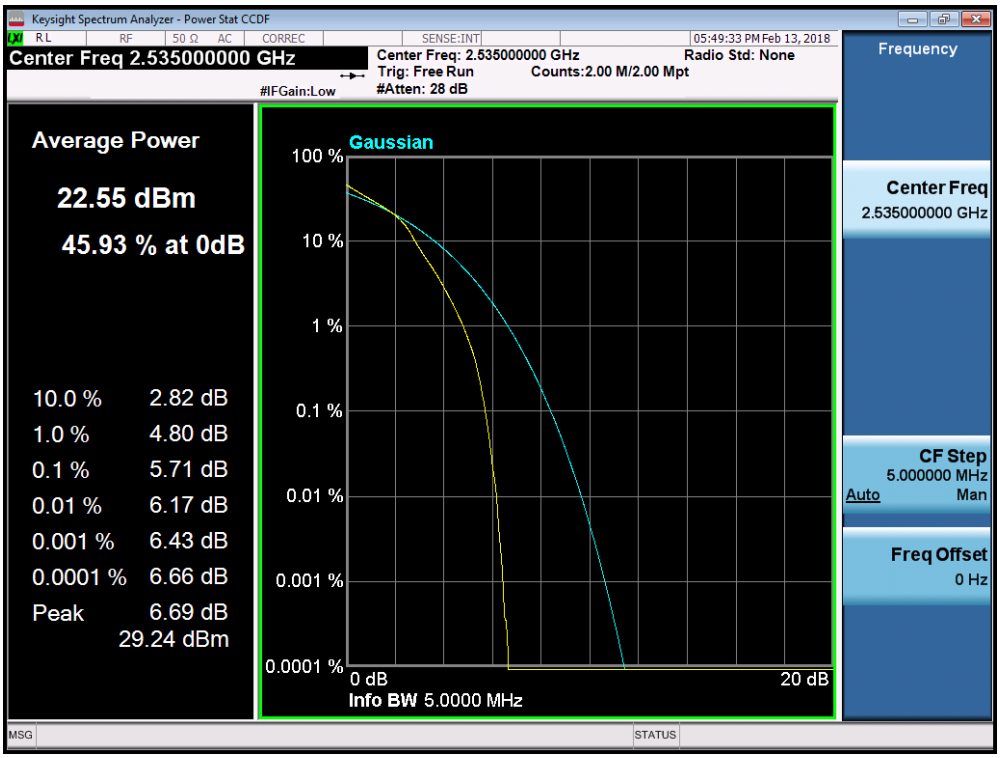
Plot 7-240. PAR Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)



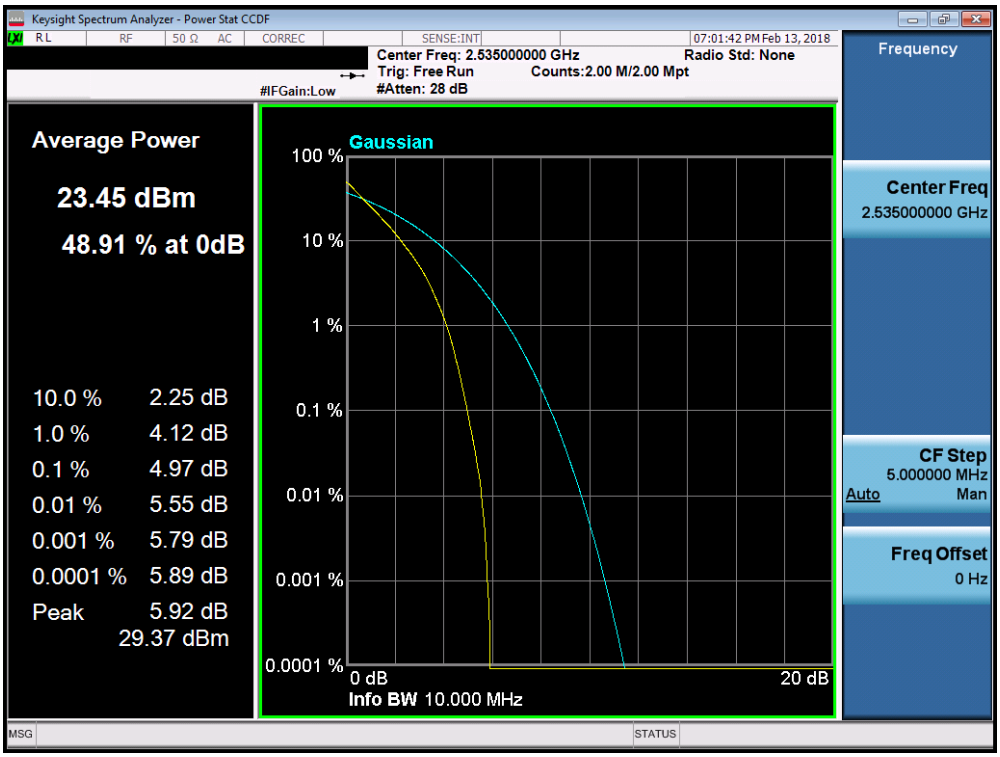
Plot 7-241. PAR Plot (Band 2 - 20.0MHz 16-QAM - Full RB Configuration)



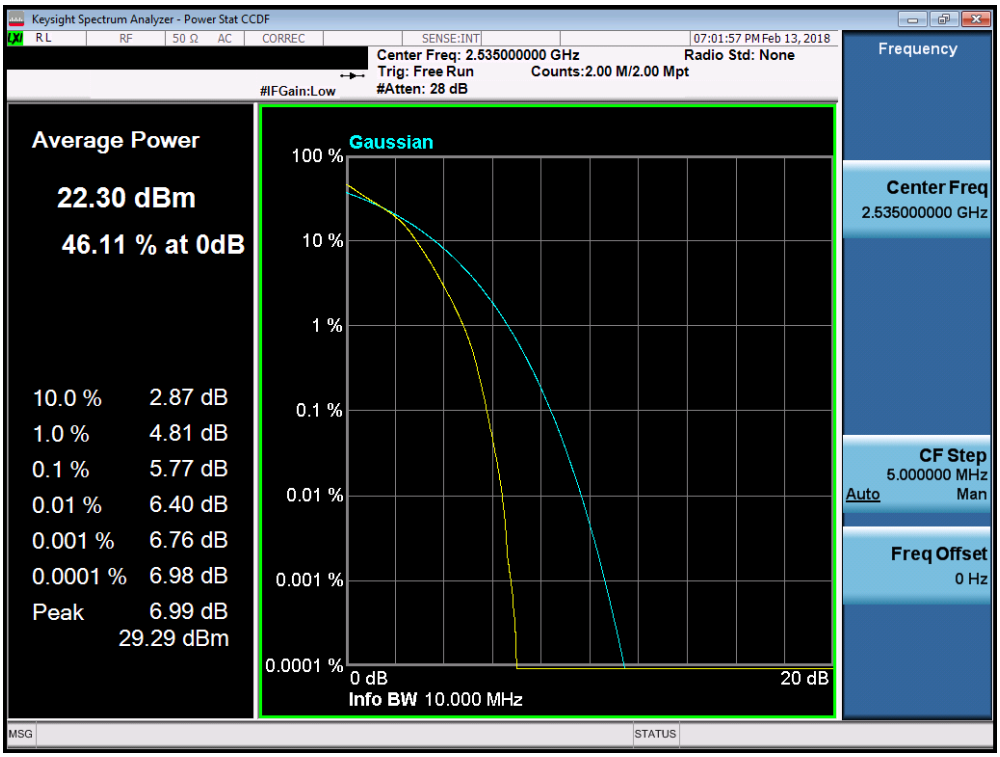
Plot 7-242. PAR Plot (Band 7 - 5.0MHz QPSK - Full RB Configuration)



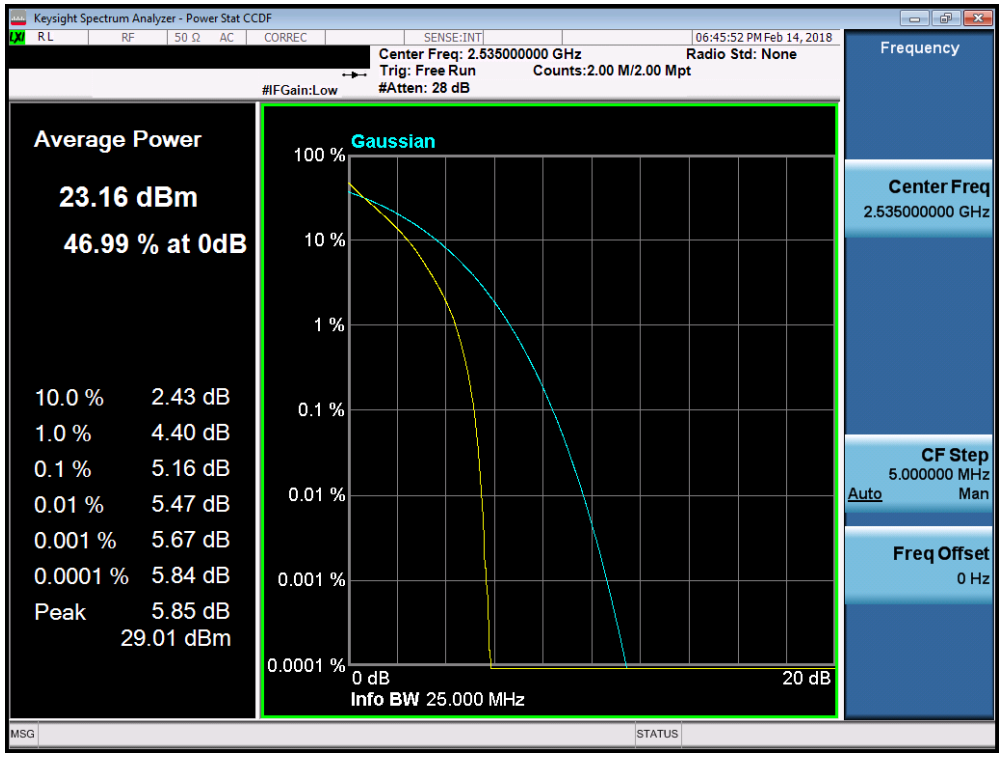
Plot 7-243. PAR Plot (Band 7 - 5.0MHz 16-QAM - Full RB Configuration)



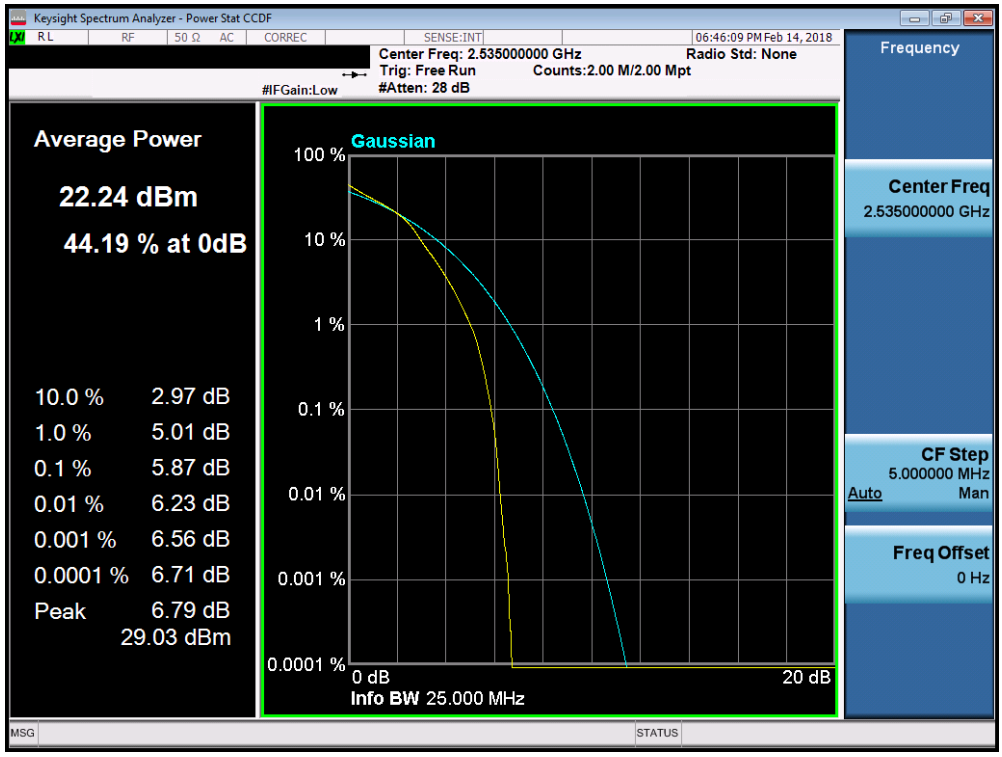
Plot 7-244. PAR Plot (Band 7 - 10.0MHz QPSK - Full RB Configuration)



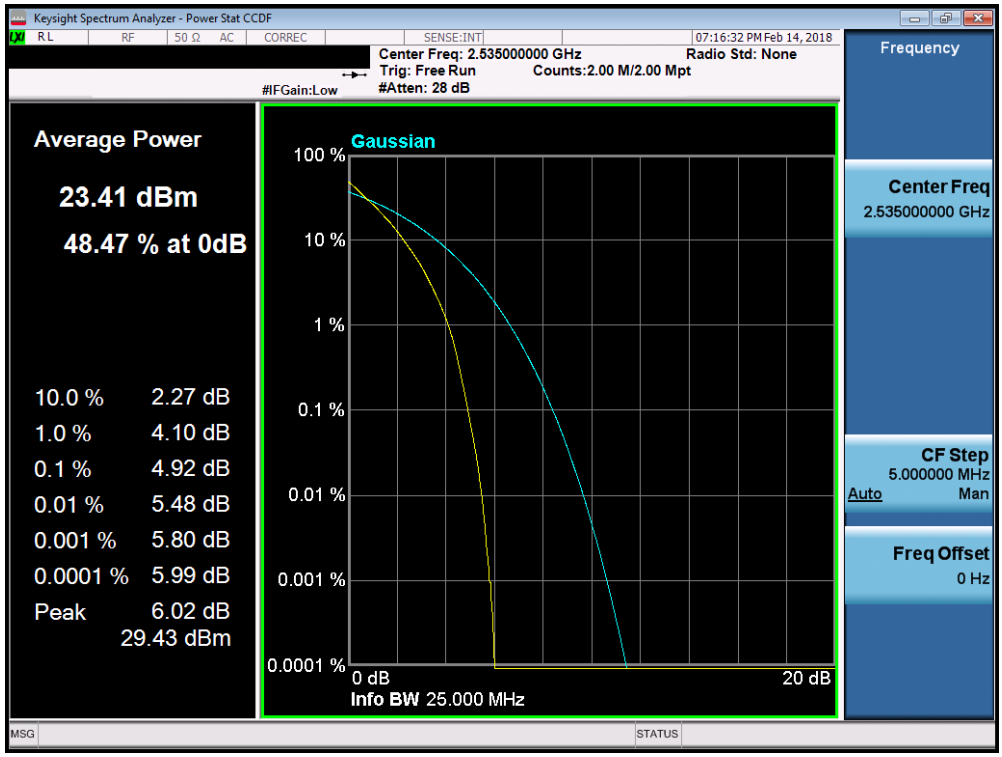
Plot 7-245. PAR Plot (Band 7 - 10.0MHz 16-QAM - Full RB Configuration)



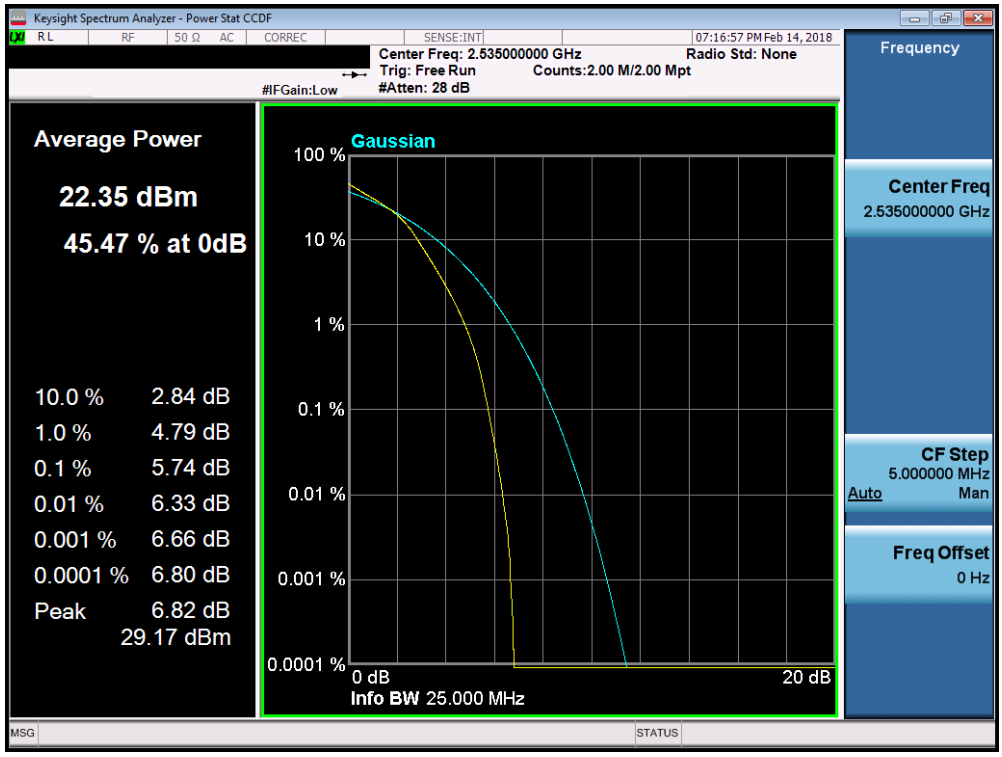
Plot 7-246. PAR Plot (Band 7 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-247. PAR Plot (Band 7 - 15.0MHz 16-QAM - Full RB Configuration)



Plot 7-248. PAR Plot (Band 7 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-249. 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 v03 – 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.

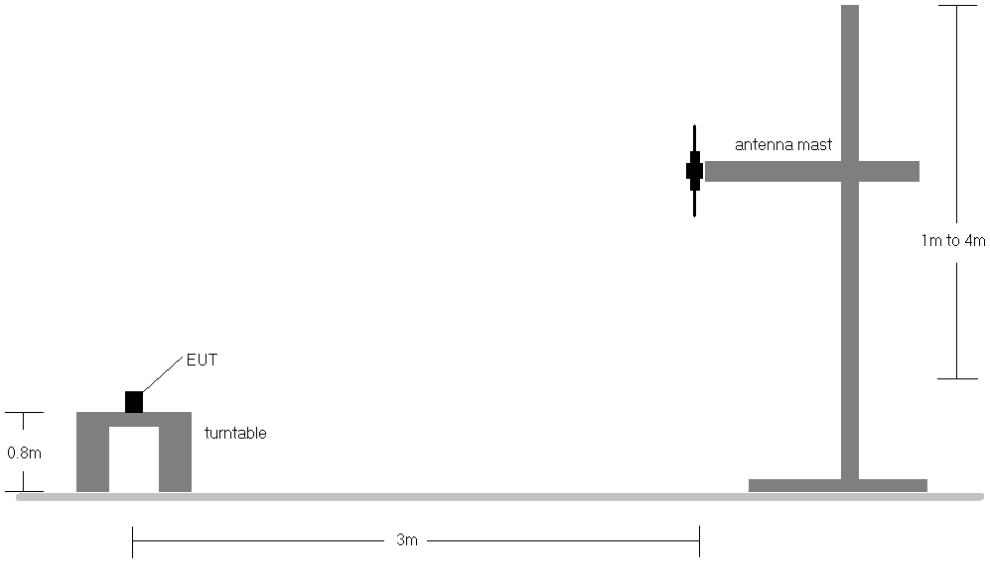


Figure 7-5. Radiated Test Setup <1GHz

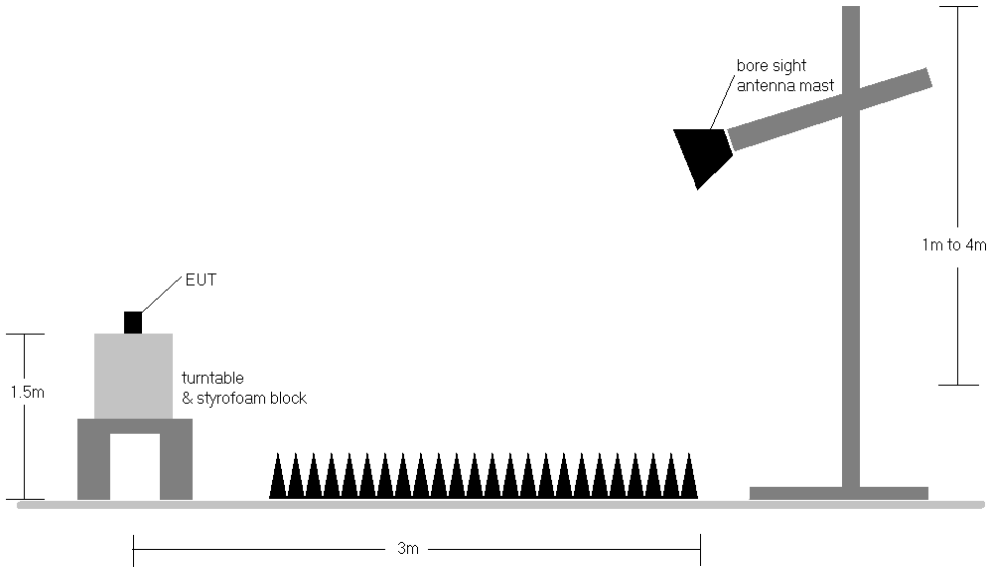


Figure 7-6. Radiated Test Setup >1GHz

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 Limit [dBm]	Margin [dB]
665.50	5	QPSK	H	315	2	1 / 0	18.61	1.10	17.56	34.77	-17.21
680.50	5	QPSK	H	308	15	1 / 0	19.62	1.10	**18.57**	34.77	-16.20
695.50	5	QPSK	H	311	16	1 / 0	18.55	1.10	17.50	34.77	-17.27
680.50	5	16-QAM	H	308	15	1 / 0	18.80	1.10	**17.75**	34.77	-17.02
668.00	10	QPSK	H	305	189	1 / 49	17.74	1.10	16.69	34.77	-18.08
680.50	10	QPSK	H	300	196	1 / 49	19.25	1.10	**18.20**	34.77	-16.57
693.00	10	QPSK	H	301	13	1 / 49	18.86	1.10	17.81	34.77	-16.96
680.50	10	16-QAM	H	300	196	1 / 49	18.11	1.10	**17.06**	34.77	-17.71
670.50	15	QPSK	H	300	7	1 / 0	17.99	1.10	16.94	34.77	-17.83
680.50	15	QPSK	H	303	3	1 / 0	19.26	1.10	18.21	34.77	-16.56
690.50	15	QPSK	H	305	10	1 / 0	19.38	1.10	**18.33**	34.77	-16.44
690.50	15	16-QAM	H	305	10	1 / 0	18.39	1.10	17.34	34.77	-17.43
673.00	20	QPSK	H	289	15	1 / 99	19.85	1.10	**18.80**	34.77	-15.97
680.50	20	QPSK	H	287	11	1 / 99	19.40	1.10	18.35	34.77	-16.42
688.00	20	QPSK	H	285	8	1 / 0	19.49	1.10	18.44	34.77	-16.33
673.00	20	16-QAM	H	289	15	1 / 99	18.32	1.10	17.27	34.77	-17.50
673.00	20	QPSK	V	284	25	1 / 99	18.96	1.10	17.91	34.77	-16.86

Table 7-3. ERP/EIRP Data (Band 71)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
699.70	1.4	QPSK	V	150	178	1 / 5	19.76	1.10	18.71	0.074	34.77	-16.06	20.86	0.122	36.99	-16.13
707.50	1.4	QPSK	V	150	11	1 / 5	20.53	1.13	19.51	0.089	34.77	-15.26	21.66	0.147	36.99	-15.33
715.30	1.4	QPSK	V	150	184	1 / 5	20.93	1.16	**19.94**	0.099	34.77	-14.83	**22.09**	0.162	36.99	-14.90
715.30	1.4	16-QAM	V	150	184	1 / 5	19.87	1.16	**18.88**	0.077	34.77	-15.89	**21.03**	0.127	36.99	-15.96
700.50	3	QPSK	V	150	1	1 / 14	19.97	1.10	18.92	0.078	34.77	-15.85	21.07	0.128	36.99	-15.92
707.50	3	QPSK	V	150	10	1 / 14	20.46	1.13	19.44	0.088	34.77	-15.33	21.59	0.144	36.99	-15.40
714.50	3	QPSK	V	150	184	1 / 14	21.07	1.16	**20.08**	0.102	34.77	-14.69	**22.23**	0.167	36.99	-14.76
714.50	3	16-QAM	V	150	184	1 / 14	19.69	1.16	**18.70**	0.074	34.77	-16.07	**20.85**	0.122	36.99	-16.14
701.50	5	QPSK	V	150	3	1 / 24	20.10	1.11	19.06	0.080	34.77	-15.72	21.21	0.132	36.99	-15.78
707.50	5	QPSK	V	150	2	1 / 24	20.42	1.13	19.40	0.087	34.77	-15.37	21.55	0.143	36.99	-15.44
713.50	5	QPSK	V	150	10	1 / 24	20.53	1.15	**19.53**	0.090	34.77	-15.24	**21.68**	0.147	36.99	-15.31
713.50	5	16-QAM	V	150	10	1 / 24	19.38	1.15	**18.38**	0.069	34.77	-16.39	**20.53**	0.113	36.99	-16.46
704.00	10	QPSK	V	150	11	1 / 49	20.25	1.12	19.22	0.083	34.77	-15.55	21.37	0.137	36.99	-15.62
707.50	10	QPSK	V	150	10	1 / 49	20.88	1.13	19.86	0.097	34.77	-14.91	22.01	0.159	36.99	-14.98
711.00	10	QPSK	V	150	13	1 / 49	21.11	1.14	**20.10**	**0.102**	34.77	-14.67	**22.25**	**0.168**	36.99	-14.74
707.50	10	16-QAM	V	150	10	1 / 49	19.96	1.13	**18.94**	0.078	34.77	-15.83	**21.09**	0.129	36.99	-15.90
711.00	10	QPSK	H	150	363	1 / 49	20.05	1.13	19.03	0.080	34.77	-15.74	21.18	0.131	36.99	-15.81

Table 7-4. 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]
824.70	1.4	QPSK	H	150	14	1 / 5	22.11	1.50	21.46	0.140	38.45	-16.99	23.61	0.230	40.61	-17.00
836.50	1.4	QPSK	H	150	12	1 / 5	22.29	1.50	**21.64**	0.146	38.45	-16.81	**23.79**	0.239	40.61	-16.82
848.30	1.4	QPSK	H	150	9	1 / 5	22.26	1.50	21.61	0.145	38.45	-16.84	23.76	0.238	40.61	-16.85
848.30	1.4	16-QAM	H	150	9	1 / 5	21.47	1.50	**20.82**	0.121	38.45	-17.63	**22.97**	0.198	40.61	-17.64
825.50	3	QPSK	H	150	10	1 / 14	21.76	1.50	21.11	0.129	38.45	-17.34	23.26	0.212	40.61	-17.35
836.50	3	QPSK	H	150	278	1 / 14	22.33	1.50	**21.68**	0.147	38.45	-16.77	**23.83**	0.242	40.61	-16.78
847.50	3	QPSK	H	150	4	1 / 14	22.12	1.50	21.47	0.140	38.45	-16.98	23.62	0.230	40.61	-16.99
847.50	3	16-QAM	H	150	4	1 / 14	21.50	1.50	**20.85**	0.122	38.45	-17.60	**23.00**	0.200	40.61	-17.61
826.50	5	QPSK	H	150	6	1 / 24	21.94	1.50	21.29	0.135	38.45	-17.16	23.44	0.221	40.61	-17.17
836.50	5	QPSK	H	150	8	1 / 24	22.45	1.50	**21.80**	**0.151**	38.45	-16.65	**23.95**	**0.248**	40.61	-16.66
846.50	5	QPSK	H	150	14	1 / 24	22.36	1.50	21.71	0.148	38.45	-16.74	23.86	0.243	40.61	-16.75
846.50	5	16-QAM	H	150	14	1 / 24	21.48	1.50	**20.83**	0.121	38.45	-17.62	**22.98**	0.199	40.61	-17.63
829.00	10	QPSK	H	150	11	1 / 49	22.41	1.50	21.76	0.150	38.45	-16.69	23.91	0.246	40.61	-16.70
836.50	10	QPSK	H	150	10	1 / 49	22.42	1.50	**21.77**	0.150	38.45	-16.68	**23.92**	0.247	40.61	-16.69
844.00	10	QPSK	H	150	6	1 / 49	21.93	1.50	21.28	0.134	38.45	-17.17	23.43	0.220	40.61	-17.18
829.00	10	16-QAM	H	150	11	1 / 49	21.53	1.50	**20.88**	0.122	38.45	-17.57	**23.03**	0.201	40.61	-17.58
836.50	5	QPSK	V	150	0	1 / 24	22.26	1.50	21.61	0.145	38.45	-16.84	23.76	0.238	40.61	-16.85

Table 7-5. 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	V	150	260	1 / 0	19.42	5.65	**25.07**	0.321	30.00	-4.93
1745.00	1.4	QPSK	V	150	268	1 / 0	19.46	5.27	24.73	0.297	30.00	-5.27
1779.30	1.4	QPSK	V	150	265	1 / 0	18.70	4.90	23.60	0.229	30.00	-6.40
1710.70	1.4	16-QAM	V	150	272	1 / 0	18.02	5.65	**23.67**	0.233	30.00	-6.33
1711.50	3	QPSK	V	150	267	1 / 0	19.61	5.64	**25.25**	0.335	30.00	-4.75
1745.00	3	QPSK	V	150	81	1 / 0	19.48	5.27	24.75	0.299	30.00	-5.25
1778.50	3	QPSK	V	150	272	1 / 0	19.10	4.91	24.01	0.252	30.00	-5.99
1745.00	3	16-QAM	V	150	81	1 / 0	18.57	5.27	**23.84**	0.242	30.00	-6.16
1712.50	5	QPSK	V	150	266	1 / 0	19.89	5.63	**25.52**	**0.356**	30.00	-4.48
1745.00	5	QPSK	V	150	270	1 / 0	19.59	5.27	24.86	0.306	30.00	-5.14
1777.50	5	QPSK	V	150	266	1 / 0	19.06	4.92	23.98	0.250	30.00	-6.02
1745.00	5	16-QAM	V	150	270	1 / 0	18.30	5.27	**23.57**	0.228	30.00	-6.43
1715.00	10	QPSK	V	150	265	1 / 0	19.42	5.60	**25.02**	0.318	30.00	-4.98
1745.00	10	QPSK	V	150	267	1 / 0	19.71	5.27	24.98	0.315	30.00	-5.02
1775.00	10	QPSK	V	150	267	1 / 0	19.08	4.95	24.03	0.253	30.00	-5.97
1715.00	10	16-QAM	V	150	265	1 / 0	18.54	5.60	**24.14**	0.259	30.00	-5.86
1717.50	15	QPSK	V	150	288	1 / 0	19.44	5.57	25.01	0.317	30.00	-4.99
1745.00	15	QPSK	V	150	276	1 / 0	19.78	5.27	**25.05**	0.320	30.00	-4.95
1772.50	15	QPSK	V	150	300	1 / 0	18.71	4.97	23.68	0.234	30.00	-6.32
1717.50	15	16-QAM	V	150	288	1 / 0	18.35	5.57	**23.92**	0.247	30.00	-6.08
1720.00	20	QPSK	V	150	286	1 / 0	19.17	5.54	24.71	0.296	30.00	-5.29
1745.00	20	QPSK	V	150	291	1 / 0	19.85	5.27	**25.12**	0.325	30.00	-4.88
1770.00	20	QPSK	V	150	301	1 / 0	19.04	5.00	24.04	0.254	30.00	-5.96
1720.00	20	16-QAM	V	150	286	1 / 0	18.05	5.54	**23.59**	0.229	30.00	-6.41
1712.50	5	QPSK	H	150	359	1 / 0	19.79	5.55	25.34	0.342	30.00	-4.66

Table 7-6. EIRP Data (Band 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 [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	H	150	5	1 / 0	22.30	4.82	**27.12**	0.515	33.01	-5.89
1880.00	1.4	QPSK	H	150	3	1 / 0	22.06	4.74	26.80	0.479	33.01	-6.21
1909.30	1.4	QPSK	H	150	3	1 / 0	21.63	4.68	26.31	0.428	33.01	-6.70
1850.70	1.4	16-QAM	H	150	5	1 / 0	20.97	4.82	**25.79**	0.379	33.01	-7.22
1851.50	3	QPSK	H	150	7	1 / 14	22.15	4.82	**26.97**	0.497	33.01	-6.04
1880.00	3	QPSK	H	150	0	1 / 0	21.75	4.74	26.49	0.446	33.01	-6.52
1908.50	3	QPSK	H	150	5	1 / 14	21.75	4.68	26.43	0.440	33.01	-6.58
1908.50	3	16-QAM	H	150	5	1 / 14	21.16	4.68	**25.84**	0.384	33.01	-7.17
1852.50	5	QPSK	H	150	359	1 / 24	22.36	4.81	**27.17**	**0.522**	33.01	-5.84
1880.00	5	QPSK	H	150	359	1 / 24	21.81	4.74	26.55	0.452	33.01	-6.46
1907.50	5	QPSK	H	150	3	1 / 24	21.63	4.68	26.31	0.428	33.01	-6.70
1852.50	5	16-QAM	H	150	359	1 / 24	21.47	4.81	**26.28**	0.425	33.01	-6.73
1855.00	10	QPSK	H	150	362	1 / 49	20.82	4.81	25.63	0.365	33.01	-7.38
1880.00	10	QPSK	H	150	337	1 / 49	20.98	4.74	25.72	0.373	33.01	-7.29
1905.00	10	QPSK	H	150	360	1 / 49	21.14	4.68	**25.82**	0.382	33.01	-7.19
1855.00	10	16-QAM	H	150	362	1 / 49	20.50	4.81	**25.31**	0.339	33.01	-7.70
1857.50	15	QPSK	H	150	0	1 / 74	21.20	4.80	26.00	0.398	33.01	-7.01
1880.00	15	QPSK	H	150	358	1 / 0	21.80	4.74	**26.54**	0.451	33.01	-6.47
1902.50	15	QPSK	H	150	7	1 / 74	20.99	4.69	25.68	0.370	33.01	-7.33
1880.00	15	16-QAM	H	150	358	1 / 74	20.40	4.74	**25.14**	0.327	33.01	-7.87
1860.00	20	QPSK	H	150	5	1 / 99	21.34	4.79	26.13	0.410	33.01	-6.88
1880.00	20	QPSK	H	150	2	1 / 99	21.91	4.74	**26.65**	0.462	33.01	-6.36
1900.00	20	QPSK	H	150	6	1 / 99	20.77	4.69	25.46	0.351	33.01	-7.55
1880.00	20	16-QAM	H	150	2	1 / 99	20.88	4.74	**25.62**	0.365	33.01	-7.39
1852.50	5	QPSK	V	150	102	1 / 24	17.55	4.79	22.34	0.171	33.01	-10.67

Table 7-7. 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	357	1 / 0	16.00	5.74	**21.74**	0.149	33.01	-11.27
2535.00	5	QPSK	H	150	353	1 / 0	14.89	5.86	20.75	0.119	33.01	-12.26
2567.50	5	QPSK	H	150	302	1 / 0	14.20	5.98	20.18	0.104	33.01	-12.83
2502.50	5	16-QAM	H	150	357	1 / 0	15.25	5.74	**20.99**	0.126	33.01	-12.02
2505.00	10	QPSK	H	150	355	1 / 0	15.86	5.75	**21.61**	0.145	33.01	-11.40
2535.00	10	QPSK	H	150	317	1 / 0	15.61	5.86	21.47	0.140	33.01	-11.54
2565.00	10	QPSK	H	150	351	1 / 49	13.61	5.97	19.58	0.091	33.01	-13.43
2505.00	10	16-QAM	H	150	355	1 / 0	14.74	5.75	**20.49**	0.112	33.01	-12.52
2507.50	15	QPSK	H	150	362	1 / 0	17.10	5.76	**22.86**	**0.193**	33.01	-10.15
2535.00	15	QPSK	H	150	351	1 / 0	14.95	5.86	20.81	0.121	33.01	-12.20
2562.50	15	QPSK	H	150	53	1 / 0	14.03	5.96	19.99	0.100	33.01	-13.02
2507.50	15	16-QAM	H	150	362	1 / 0	16.35	5.76	**22.11**	0.162	33.01	-10.90
2510.00	20	QPSK	H	150	354	1 / 0	15.81	5.77	**21.58**	0.144	33.01	-11.43
2535.00	20	QPSK	H	150	352	1 / 0	15.11	5.86	20.97	0.125	33.01	-12.04
2560.00	20	QPSK	H	150	302	1 / 0	13.31	5.95	19.26	0.084	33.01	-13.75
2510.00	20	16-QAM	H	150	354	1 / 0	15.05	5.77	**20.82**	0.121	33.01	-12.19
2507.50	15	QPSK	V	150	325	1 / 0	14.30	5.86	20.16	0.104	33.01	-12.85

Table 7-8. 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 v03 – 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.

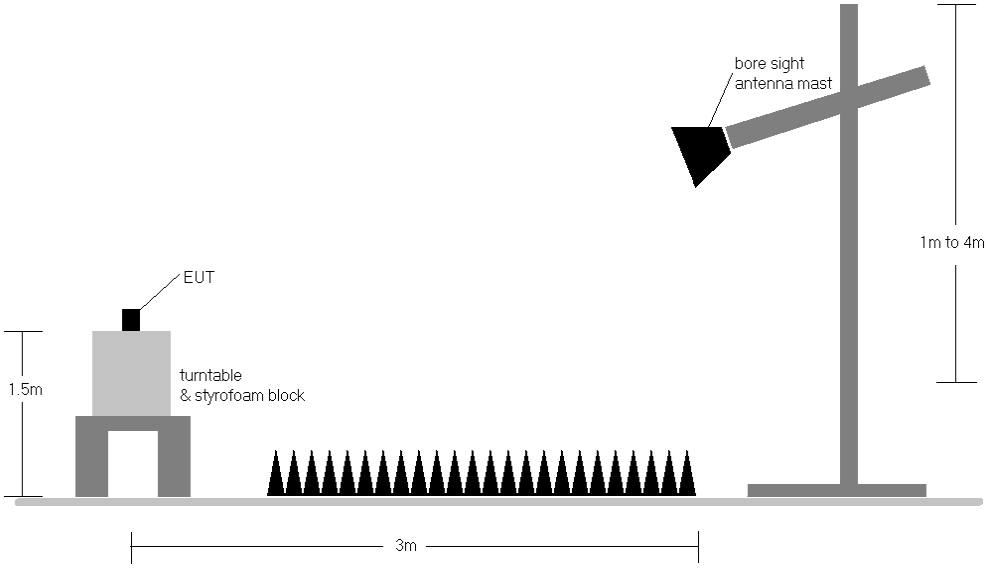


Figure 7-7. Test Instrument & Measurement Setup

Test Notes

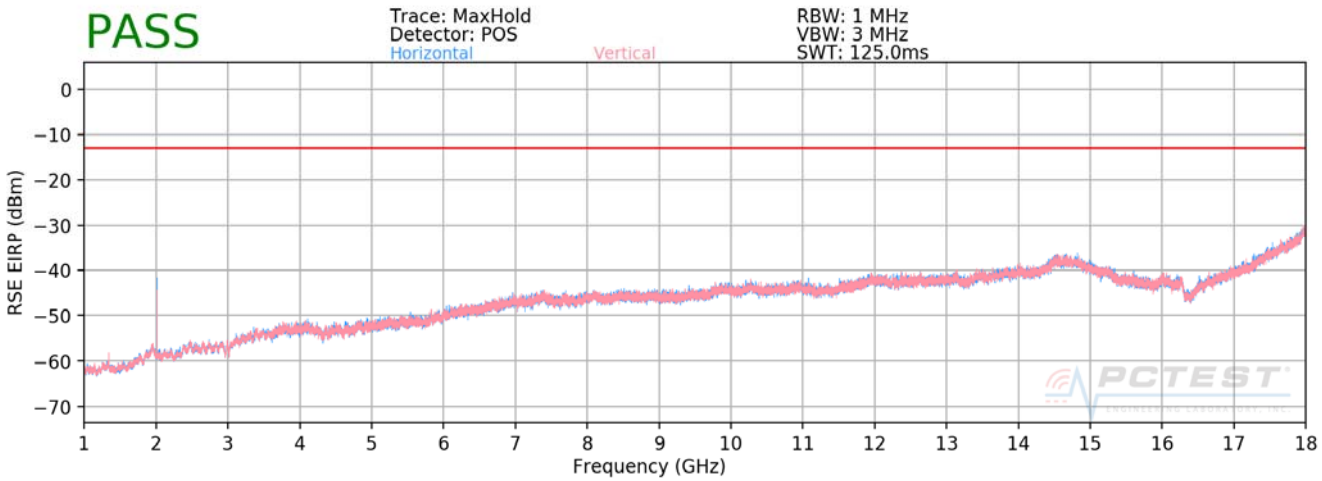
1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.

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.



Plot 7-250. Radiated Spurios Plot above 1GHz (Band 71)

OPERATING FREQUENCY:	673.00	MHz
CHANNEL:	133222	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1346.00	V	105	252	-74.55	7.90	-66.65	-53.7
2019.00	V	115	52	-47.90	8.65	-39.25	-26.3
2692.00	V	-	-	-75.19	9.55	-65.64	-52.6
3365.00	V	104	16	-70.94	9.37	-61.57	-48.6
4038.00	V	-	-	-70.09	9.34	-60.75	-47.8
4711.00	V	-	-	-72.47	11.35	-61.13	-48.1

Table 7-9. Radiated Spurious Data (Band 71 – Low Channel)

OPERATING FREQUENCY:	680.50	MHz
CHANNEL:	133297	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1361.00	V	144	168	-68.82	8.02	-60.80	-47.8
2041.50	V	269	39	-49.82	8.81	-41.01	-28.0
2722.00	V	-	-	-75.28	9.72	-65.56	-52.6
3402.50	V	-	-	-72.72	9.47	-63.26	-50.3

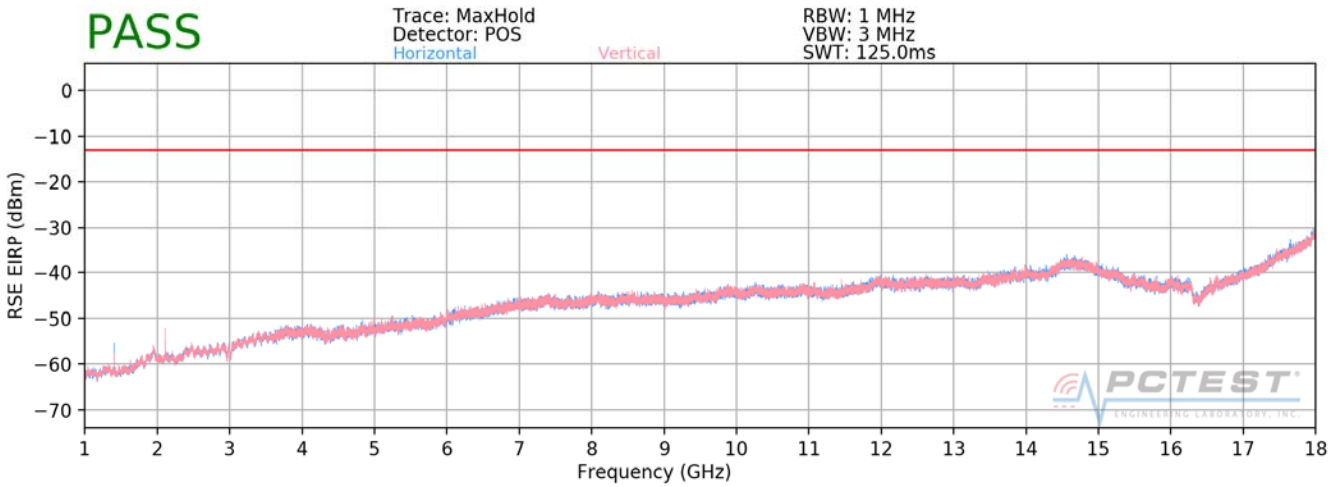
Table 7-10. Radiated Spurious Data (Band 71 – Mid Channel)

OPERATING FREQUENCY:	688.00	MHz
CHANNEL:	133372	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1376.00	V	211	307	-69.84	8.14	-61.70	-48.7
2064.00	V	234	42	-49.24	8.90	-40.34	-27.3
2752.00	V	-	-	-75.03	9.93	-65.10	-52.1
3440.00	V	-	-	-72.70	9.53	-63.17	-50.2

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

Band 12



Plot 7-251. Radiated Spurios Plot above 1GHz (Band 12)

OPERATING FREQUENCY:	704.00	MHz
CHANNEL:	23060	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1408.00	V	265	96	-64.00	8.37	-55.63	-42.6
2112.00	V	399	13	-59.50	8.97	-50.53	-37.5
2816.00	V	-	-	-73.29	10.08	-63.21	-50.2
3520.00	V	-	-	-70.72	9.68	-61.04	-48.0

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

OPERATING FREQUENCY:	707.50	MHz
CHANNEL:	23095	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1415.00	V	167	105	-64.15	7.84	-56.31	-43.3
2122.50	V	322	283	-62.74	8.90	-53.84	-40.8
2830.00	V	144	120	-74.60	10.05	-64.56	-51.6
3537.50	V	137	107	-69.71	9.96	-59.76	-46.8
4245.00	V	126	186	-68.14	10.56	-57.58	-44.6
4952.50	V	-	-	-71.61	10.89	-60.72	-47.7
5660.00	V	-	-	-71.63	11.24	-60.38	-47.4

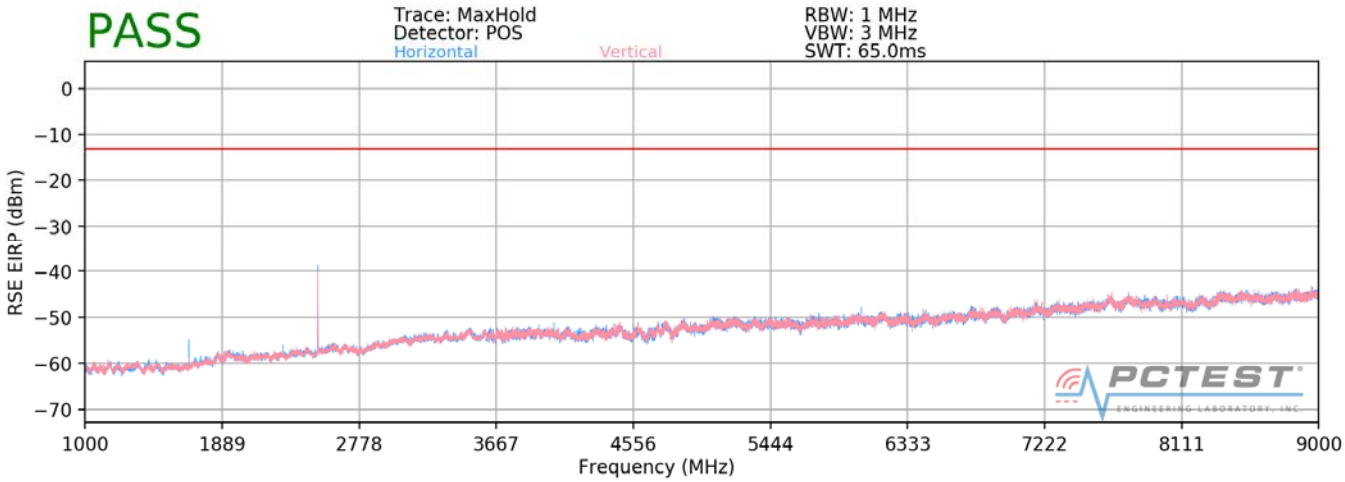
Table 7-13. Radiated Spurious Data (Band 12 – Mid Channel)

OPERATING FREQUENCY:	711.00	MHz
CHANNEL:	23130	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1422.00	V	191	60	-70.65	8.44	-62.21	-49.2
2133.00	V	330	6	-61.57	8.92	-52.65	-39.6
2844.00	V	-	-	-72.97	10.15	-62.83	-49.8
3555.00	V	-	-	-70.19	9.75	-60.44	-47.4

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

Band 5



Plot 7-252. Radiated Spurios Plot above 1GHz (Band 5)

OPERATING FREQUENCY:	826.50	MHz
CHANNEL:	20425	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1653.00	H	100	330	-76.42	8.99	-67.43	-54.4
2479.50	H	100	133	-70.79	9.12	-61.66	-48.7
3306.00	H	-	-	-75.04	9.37	-65.68	-52.7

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

OPERATING FREQUENCY:	836.50	MHz
CHANNEL:	20525	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.00	H	100	309	-75.38	8.85	-66.53	-53.5
2509.50	H	100	229	-72.65	9.17	-63.48	-50.5
3346.00	H	-	-	-76.08	9.36	-66.72	-53.7

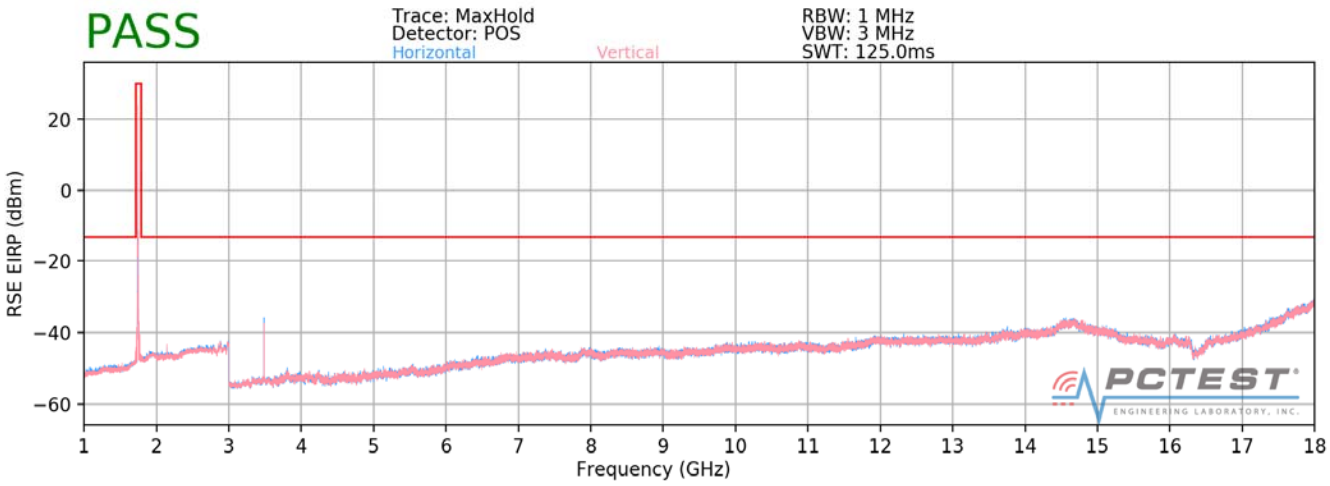
Table 7-16. Radiated Spurious Data (Band 5 – Mid Channel)

OPERATING FREQUENCY:	846.50	MHz
CHANNEL:	20625	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1693.00	H	100	323	-73.95	8.70	-65.24	-52.2
2539.50	H	100	297	-72.98	9.26	-63.72	-50.7
3386.00	H	-	-	-74.37	9.44	-64.93	-51.9

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

Band 66



Plot 7-253. Radiated Spurios Plot above 1GHz (Band 66)

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	120	130	-47.06	9.52	-37.55	-24.5
5137.50	H	310	307	-65.67	10.81	-54.86	-41.9
6850.00	H	133	228	-64.95	10.84	-54.11	-41.1
8562.50	H	-	-	-67.56	11.66	-55.89	-42.9
10275.00	H	-	-	-65.89	12.46	-53.44	-40.4

Table 7-18. Radiated Spurious Data (Band 66 – 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	146	134	-52.47	9.65	-42.82	-29.8
5235.00	H	357	44	-64.95	10.93	-54.02	-41.0
6980.00	H	113	233	-64.46	10.96	-53.50	-40.5
8725.00	H	-	-	-67.75	11.83	-55.92	-42.9
10470.00	H	-	-	-66.84	12.56	-54.28	-41.3

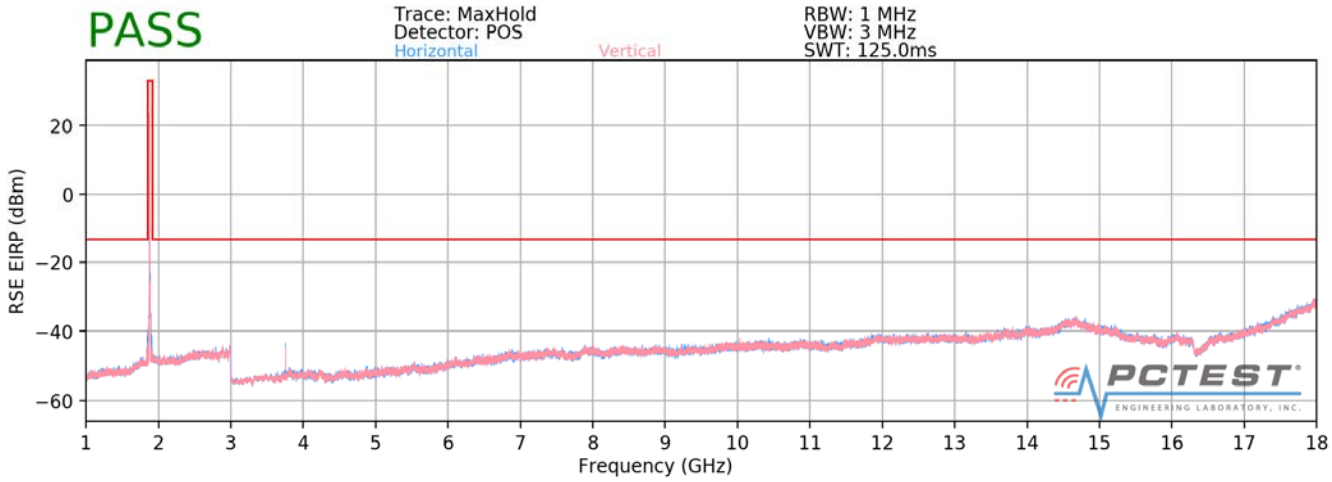
Table 7-19. Radiated Spurious Data (Band 66 – Mid Channel)

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	115	131	-56.45	9.71	-46.74	-33.7
5332.50	H	314	47	-61.92	10.99	-50.93	-37.9
7110.00	H	117	242	-66.30	10.99	-55.31	-42.3
8887.50	H	-	-	-67.14	12.00	-55.14	-42.1
10665.00	H	-	-	-66.92	12.74	-54.18	-41.2

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

Band 2



Plot 7-254. Radiated Spurios 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	135	34	-65.32	9.52	-55.80	-42.8
5557.50	H	137	184	-65.84	11.03	-54.81	-41.8
7410.00	H	-	-	-66.54	10.95	-55.59	-42.6
9262.50	H	-	-	-64.95	11.53	-53.42	-40.4
11115.00	H	-	-	-64.64	12.80	-51.84	-38.8

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	120	32	-65.66	9.39	-56.27	-43.3
5640.00	H	111	206	-69.64	11.22	-58.42	-45.4
7520.00	H	-	-	-67.87	11.10	-56.77	-43.8
9400.00	H	-	-	-66.70	11.54	-55.16	-42.2

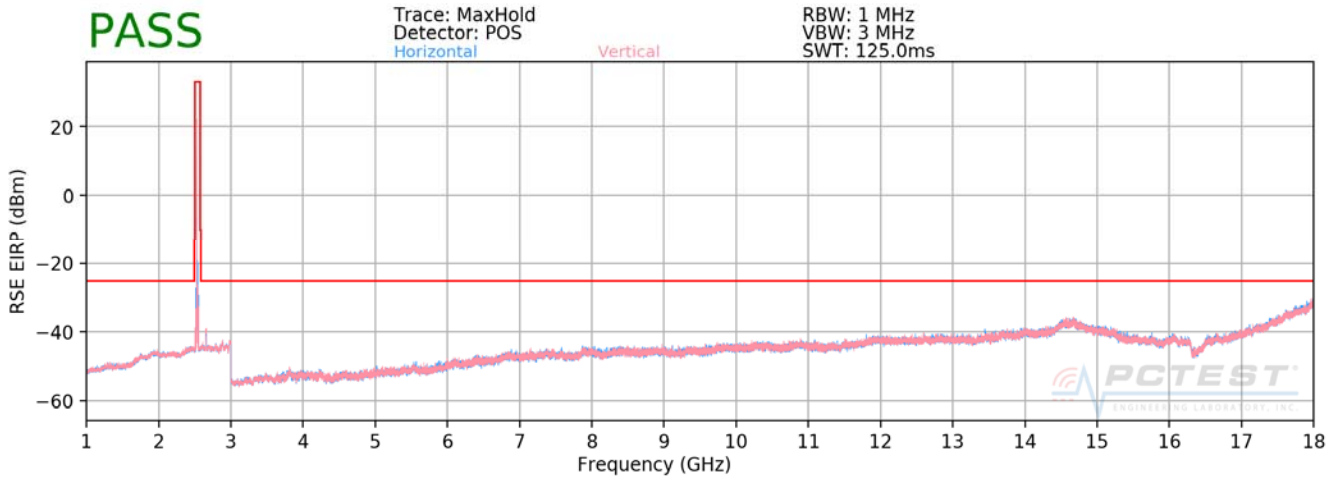
Table 7-22. Radiated Spurious Data (Band 2 – Mid Channel)

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

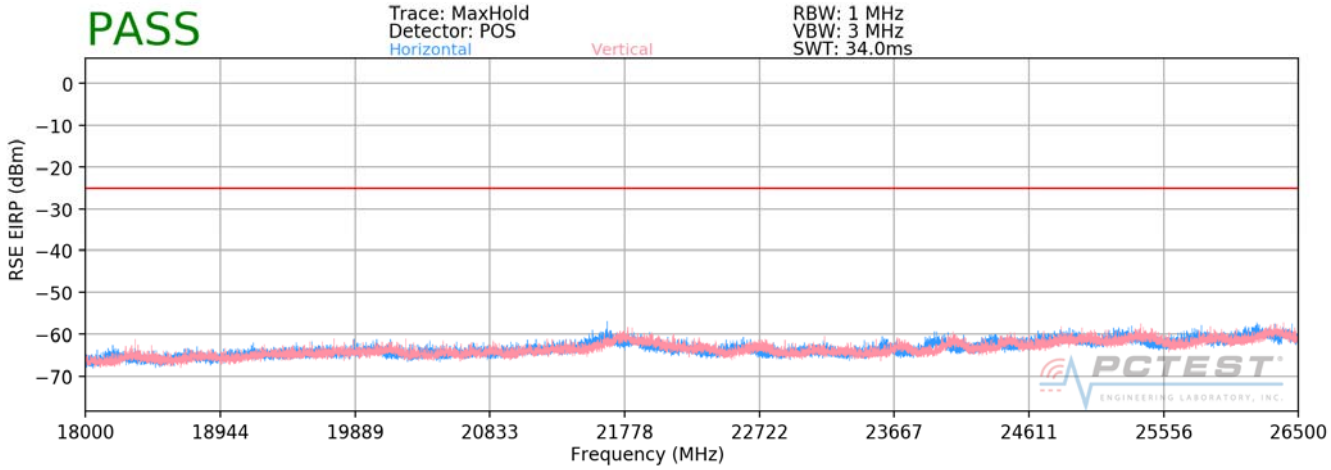
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3815.00	H	-	-	-70.54	9.32	-61.22	-48.2
5722.50	H	-	-	-70.79	11.35	-59.44	-46.4
7630.00	H	-	-	-66.12	11.32	-54.79	-41.8

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

Band 7



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



Plot 7-256. Radiated Spurios 18GHz -26.5GHz (Band 7)

OPERATING FREQUENCY:	2507.50	MHz
CHANNEL:	20825	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	15.0	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]
5015.00	V	392	343	-68.36	11.10	-57.26	-32.3
7522.50	V	-	-	-63.38	11.00	-52.38	-27.4
10030.00	V	-	-	-62.32	12.18	-50.14	-25.1

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

OPERATING FREQUENCY:	2535.00	MHz
CHANNEL:	21100	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	15.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5070.00	V	146	108	-68.27	10.93	-57.33	-32.3
7605.00	V	-	-	-63.73	11.22	-52.51	-27.5
10140.00	V	-	-	-62.47	12.31	-50.16	-25.2

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

OPERATING FREQUENCY:	2562.50	MHz
CHANNEL:	21375	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	15.0	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]
5125.00	V	-	-	-68.74	10.78	-57.96	-33.0
7687.50	V	-	-	-64.03	11.38	-52.66	-27.7

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, RSS-132, RSS-133, the frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency. For Part 24, Part 27, RSS-130, RSS-139, RSS-199, 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 71 Frequency Stability Measurements

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	680,500,157	157	0.0000231
100 %		- 30	680,500,058	58	0.0000085
100 %		- 20	680,499,895	-105	-0.0000154
100 %		- 10	680,499,827	-173	-0.0000254
100 %		0	680,499,729	-271	-0.0000398
100 %		+ 10	680,499,752	-248	-0.0000364
100 %		+ 20	680,499,998	-2	-0.0000003
100 %		+ 30	680,500,289	289	0.0000425
100 %		+ 40	680,499,958	-42	-0.0000062
100 %		+ 50	680,500,179	179	0.0000263
85 %	3.27	+ 20	680,500,203	203	0.0000298
BATT. ENDPOINT	3.45	+ 20	680,500,045	45	0.0000066

Table 7-27. Frequency Stability Data (Band 71)

Note:

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

Band 71 Frequency Stability Measurements

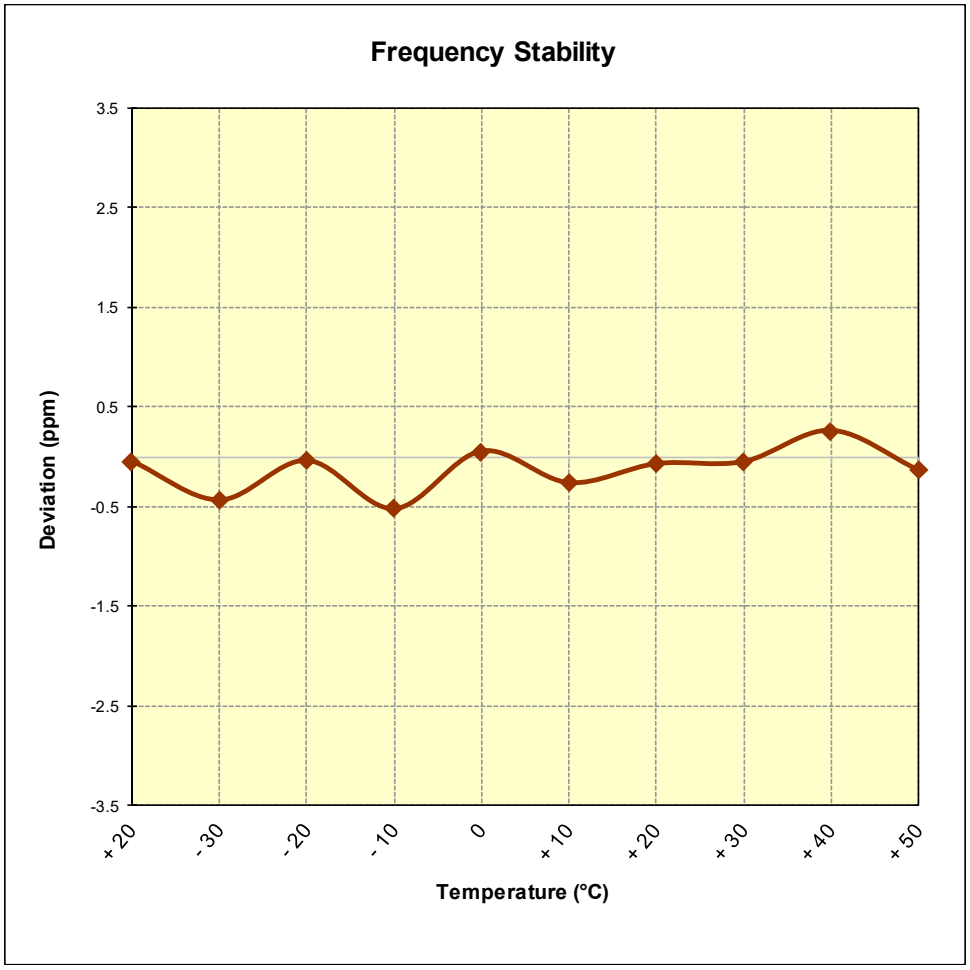


Figure 7-8. Frequency Stability Graph (Band 71)

Band 12 Frequency Stability Measurements

OPERATING FREQUENCY:	707,500,000	Hz
CHANNEL:	23790	
REFERENCE VOLTAGE:	3.85	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	707,499,969	-31	-0.0000044
100 %		- 30	707,499,698	-302	-0.0000427
100 %		- 20	707,499,975	-25	-0.0000035
100 %		- 10	707,499,637	-363	-0.0000513
100 %		0	707,500,041	41	0.0000058
100 %		+ 10	707,499,819	-181	-0.0000256
100 %		+ 20	707,499,953	-47	-0.0000066
100 %		+ 30	707,499,967	-33	-0.0000047
100 %		+ 40	707,500,186	186	0.0000263
100 %		+ 50	707,499,908	-92	-0.0000130
BATT. ENDPOINT	3.45	+ 20	707,500,151	151	0.0000213

Table 7-28. 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

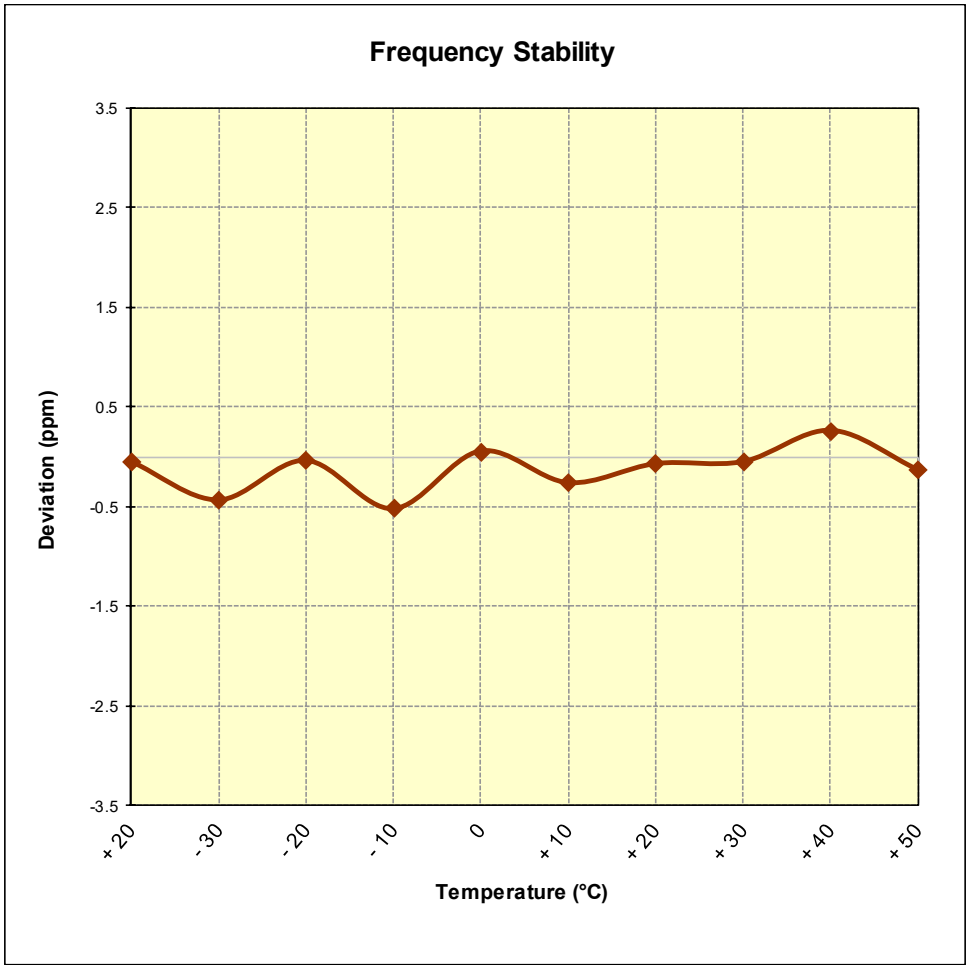


Figure 7-9. Frequency Stability Graph (Band 12)

Band 5 Frequency Stability Measurements

OPERATING FREQUENCY:	836,500,000	Hz
CHANNEL:	20525	
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)	836,500,114	114	0.0000136
100 %		- 30	836,499,960	-40	-0.0000048
100 %		- 20	836,500,230	230	0.0000275
100 %		- 10	836,499,995	-5	-0.0000006
100 %		0	836,499,975	-25	-0.0000030
100 %		+ 10	836,500,203	203	0.0000243
100 %		+ 20	836,500,195	195	0.0000233
100 %		+ 30	836,499,920	-80	-0.0000096
100 %		+ 40	836,500,171	171	0.0000204
100 %		+ 50	836,499,848	-152	-0.0000182
BATT. ENDPOINT	3.45	+ 20	836,499,905	-95	-0.0000114

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

Band 5 Frequency Stability Measurements

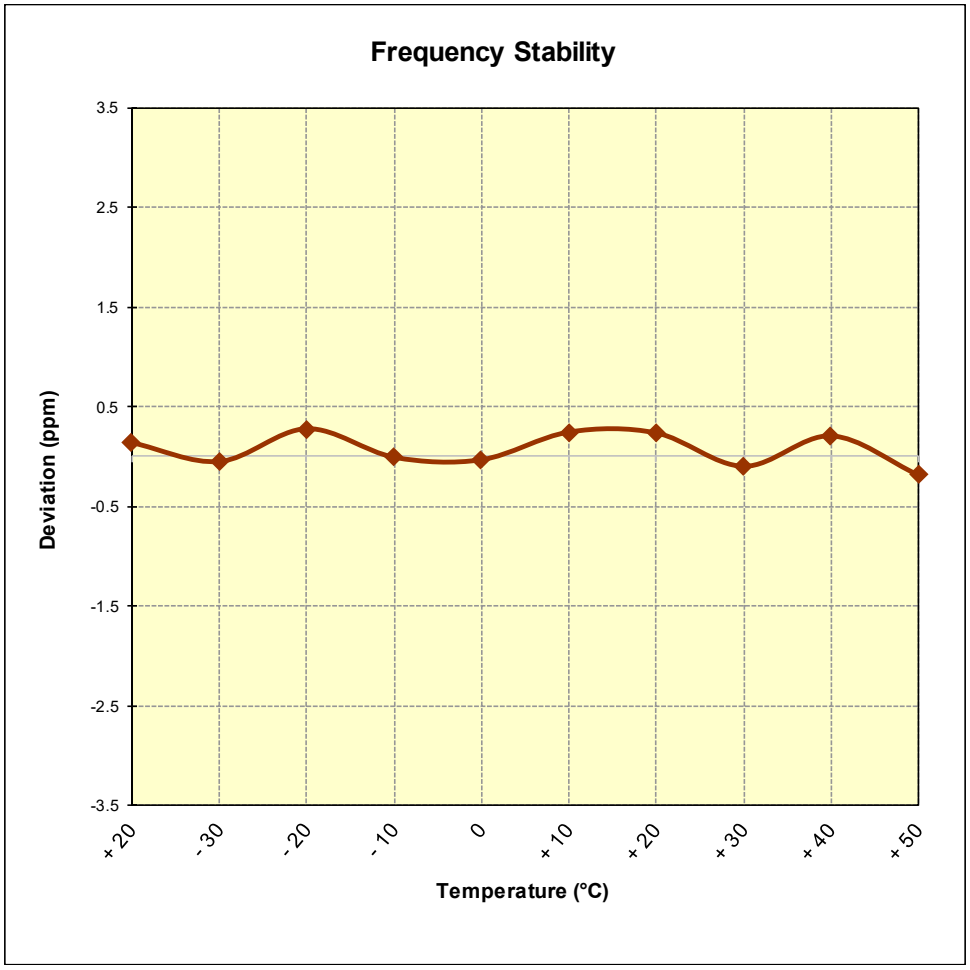


Figure 7-10. Frequency Stability Graph (Band 5)

Band 66 Frequency Stability Measurements

OPERATING FREQUENCY:	1,745,000,000	Hz
CHANNEL:	132322	
REFERENCE VOLTAGE:	3.85	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	1,745,000,105	105	0.0000060
100 %		- 30	1,745,000,086	86	0.0000049
100 %		- 20	1,745,000,171	171	0.0000098
100 %		- 10	1,745,000,197	197	0.0000113
100 %		0	1,745,000,208	208	0.0000119
100 %		+ 10	1,745,000,371	371	0.0000213
100 %		+ 20	1,745,000,108	108	0.0000062
100 %		+ 30	1,744,999,953	-47	-0.0000027
100 %		+ 40	1,745,000,134	134	0.0000077
100 %		+ 50	1,744,999,798	-202	-0.0000116
BATT. ENDPOINT	3.45	+ 20	1,744,999,837	-163	-0.0000093

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

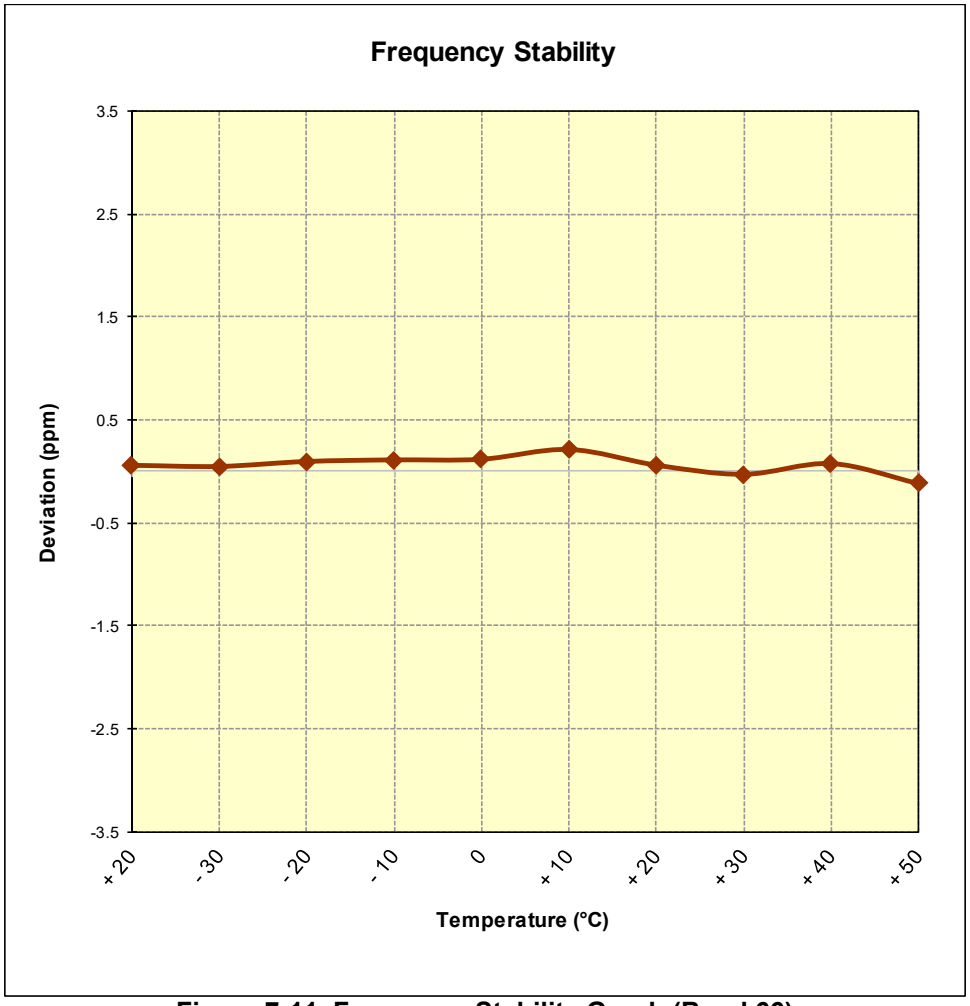


Figure 7-11. Frequency Stability Graph (Band 66)

Band 2 Frequency Stability Measurements

OPERATING FREQUENCY:	1,880,000,000	Hz
CHANNEL:	18900	
REFERENCE VOLTAGE:	3.85	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)	1,880,000,090	90	0.0000048
100 %		- 30	1,880,000,231	231	0.0000123
100 %		- 20	1,880,000,001	1	0.0000001
100 %		- 10	1,879,999,893	-107	-0.0000057
100 %		0	1,880,000,291	291	0.0000155
100 %		+ 10	1,879,999,855	-145	-0.0000077
100 %		+ 20	1,879,999,950	-50	-0.0000027
100 %		+ 30	1,880,000,067	67	0.0000036
100 %		+ 40	1,880,000,072	72	0.0000038
100 %		+ 50	1,879,999,958	-42	-0.0000022
BATT. ENDPOINT	3.45	+ 20	1,880,000,084	84	0.0000045

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

Band 2 Frequency Stability Measurements

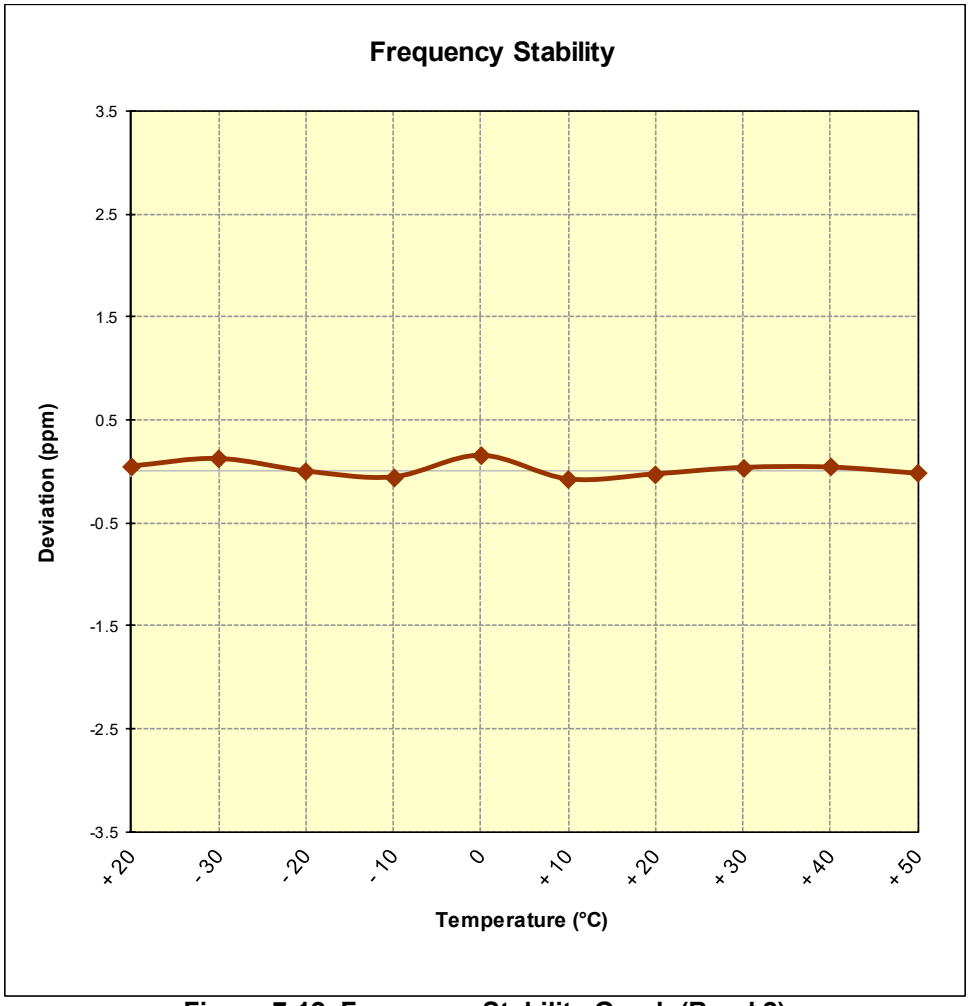


Figure 7-12. Frequency Stability Graph (Band 2)

Band 7 Frequency Stability Measurements

OPERATING FREQUENCY:	2,535,000,000	Hz
CHANNEL:	21100	
REFERENCE VOLTAGE:	3.85	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	2,535,000,190	190	0.0000075
100 %		- 30	2,535,000,114	114	0.0000045
100 %		- 20	2,535,000,442	442	0.0000174
100 %		- 10	2,534,999,765	-235	-0.0000093
100 %		0	2,534,999,804	-196	-0.0000077
100 %		+ 10	2,534,999,862	-138	-0.0000054
100 %		+ 20	2,534,999,938	-62	-0.0000024
100 %		+ 30	2,534,999,814	-186	-0.0000073
100 %		+ 40	2,535,000,021	21	0.0000008
100 %		+ 50	2,534,999,855	-145	-0.0000057
BATT. ENDPOINT	3.45	+ 20	2,535,000,288	288	0.0000114

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

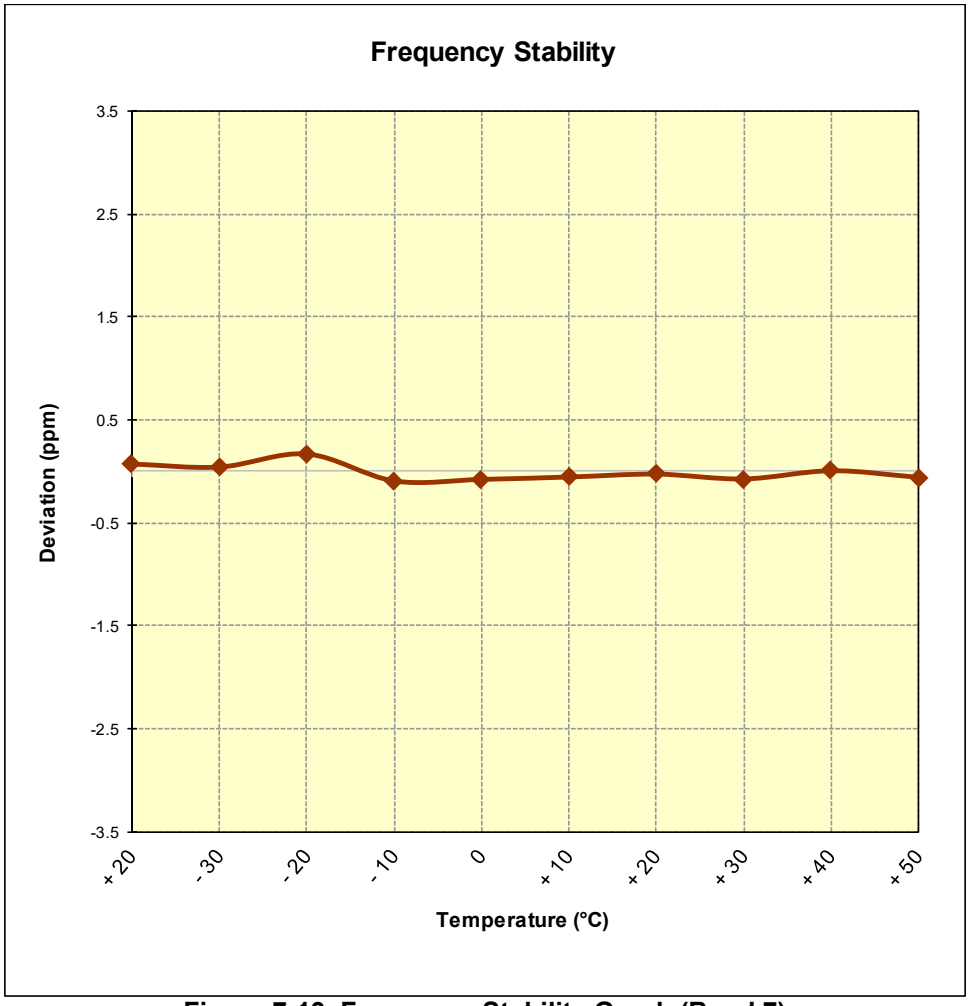


Figure 7-13. Frequency Stability Graph (Band 7)

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **LG Portable Handset FCC ID: ZNFX410TK** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules and RSS-130, RSS-132, RSS-133, RSS-139, RSS-199 of the Innovation, Science and Economic Development Canada Rules for LTE operation only.