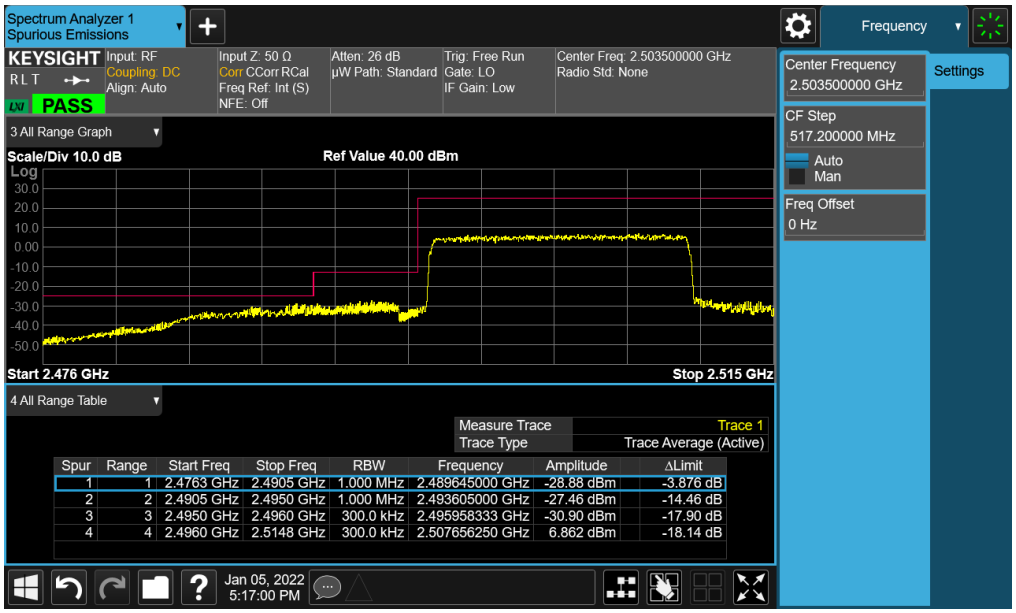
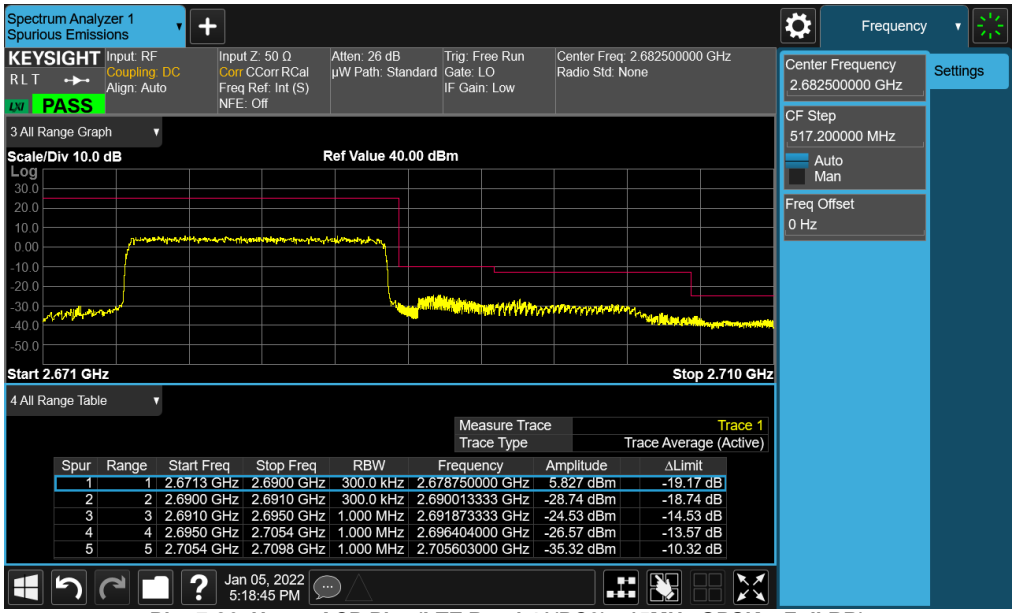
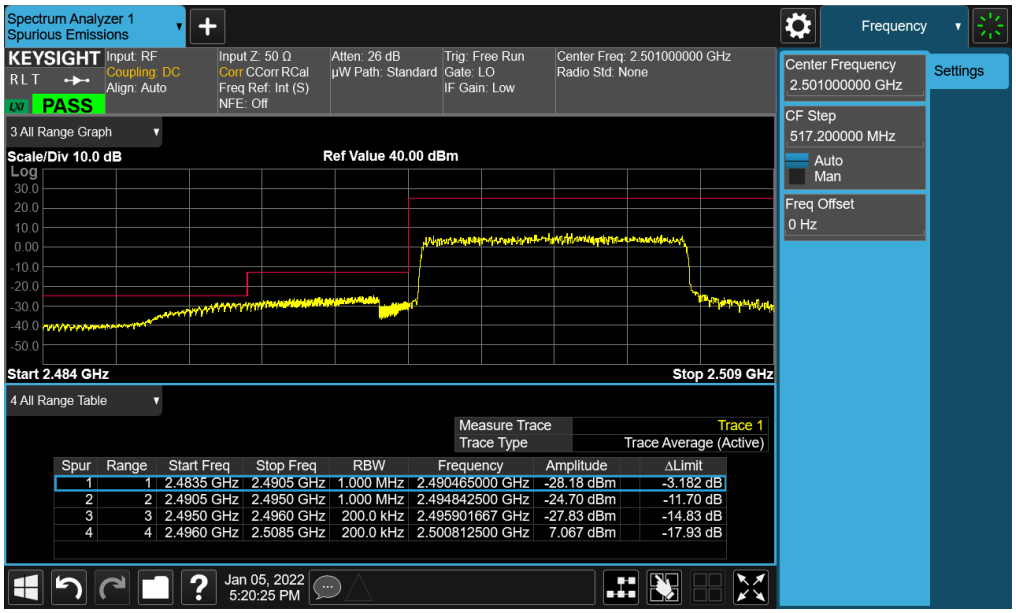


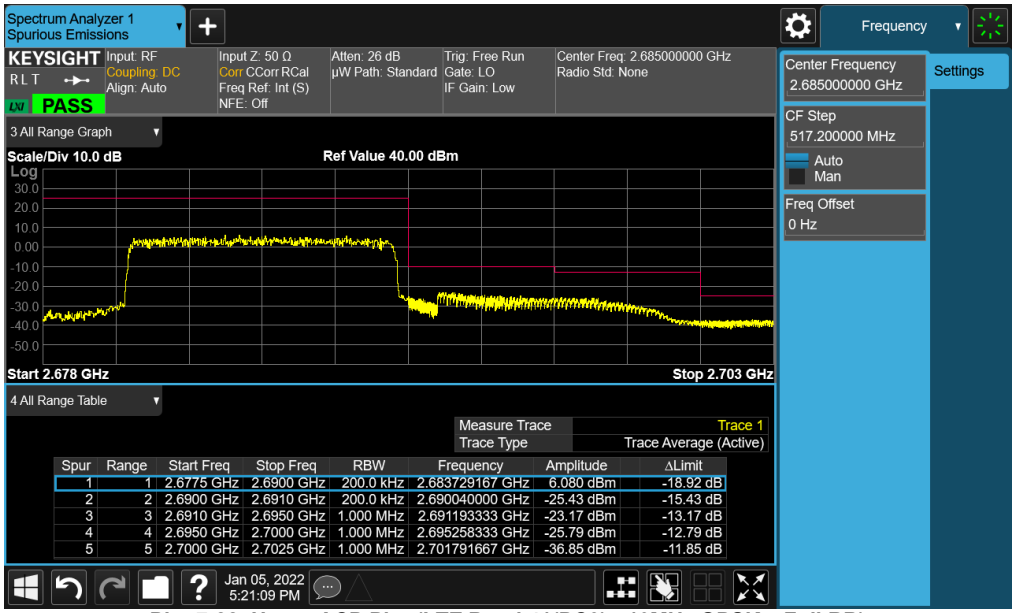
Plot 7-85. Lower ACP Plot (LTE Band 41(PC3) - 15MHz QPSK – Full RB)



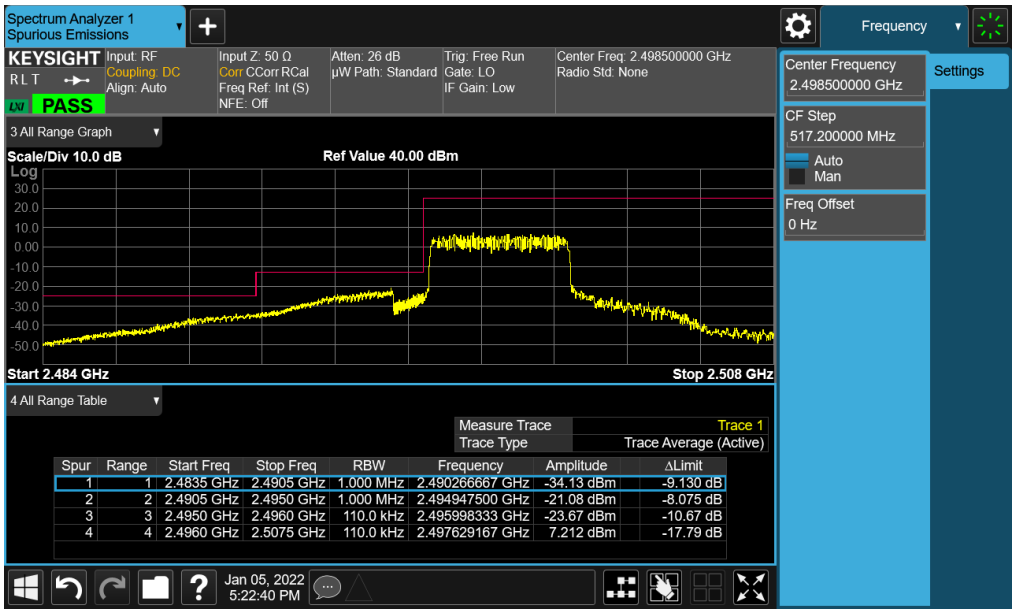
Plot 7-86. Upper ACP Plot (LTE Band 41(PC3) - 15MHz QPSK – Full RB)



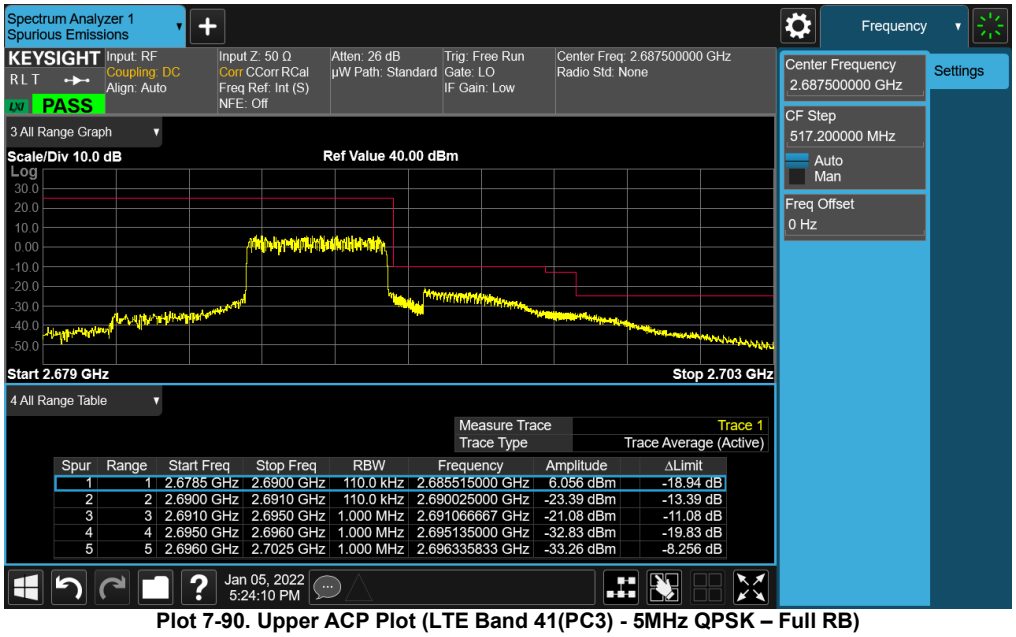
Plot 7-87. Lower ACP Plot (LTE Band 41(PC3) - 10MHz QPSK – Full RB)



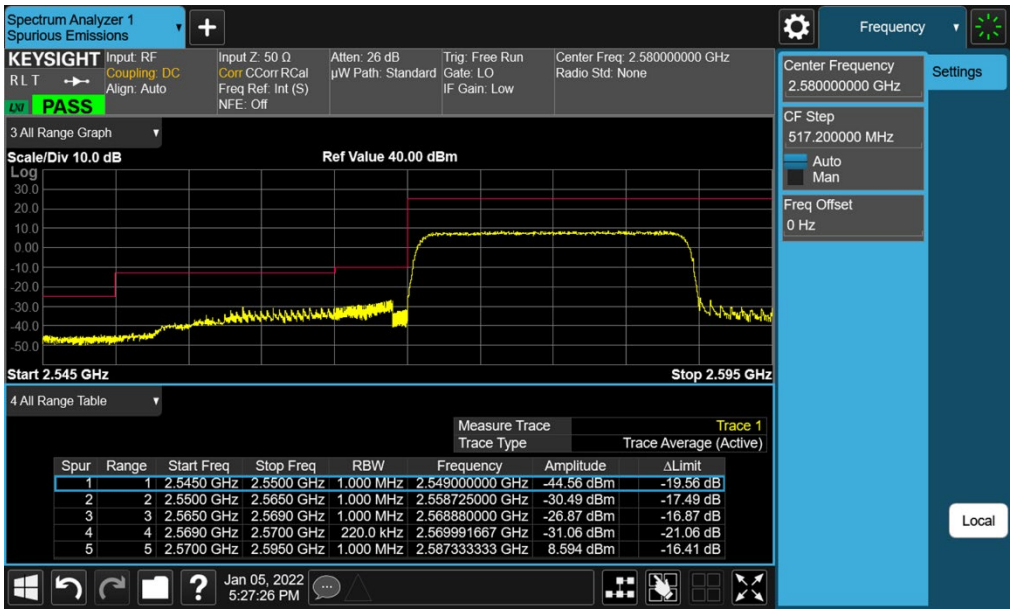
Plot 7-88. Upper ACP Plot (LTE Band 41(PC3) - 10MHz QPSK – Full RB)



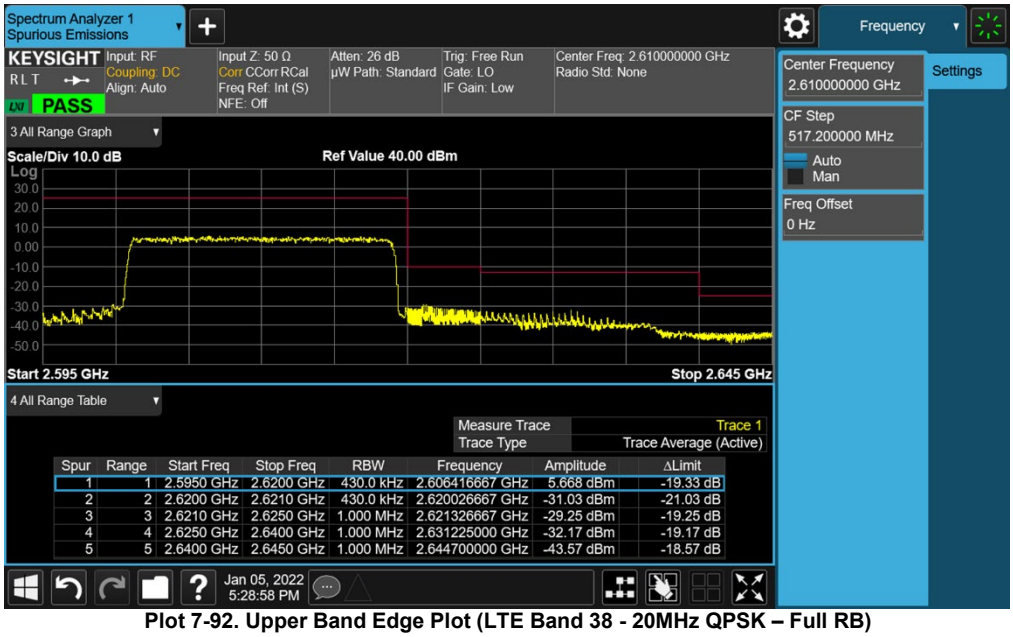
Plot 7-89. Lower ACP Plot (LTE Band 41(PC3) - 5MHz QPSK – Full RB)



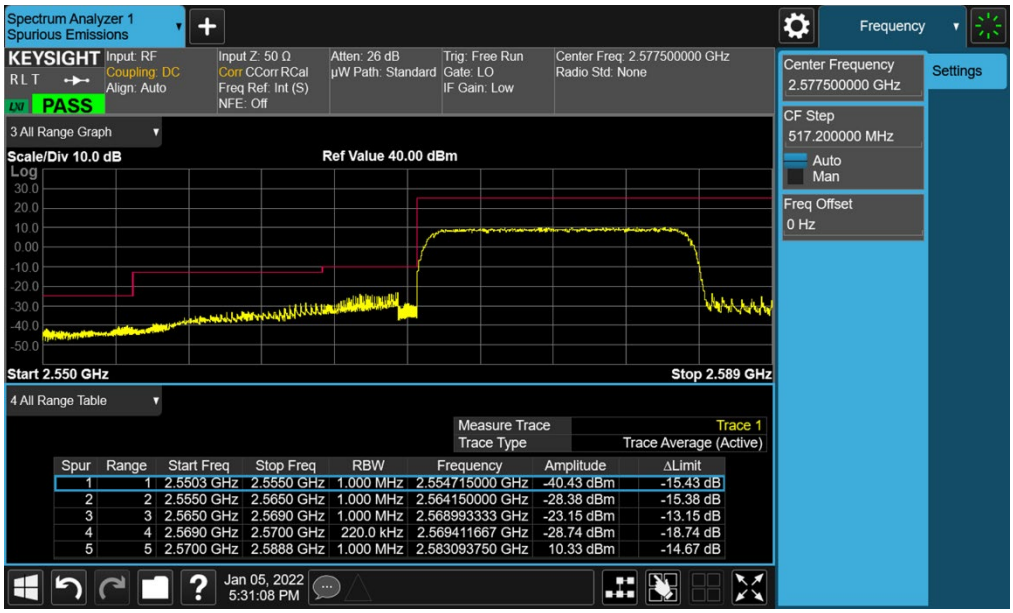
Plot 7-90. Upper ACP Plot (LTE Band 41(PC3) - 5MHz QPSK – Full RB)



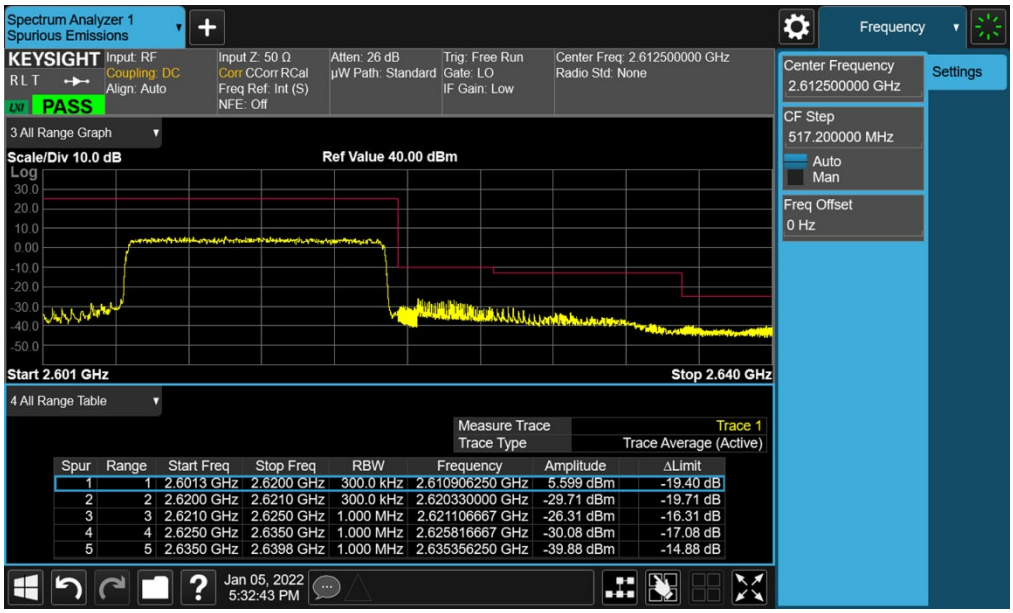
Plot 7-91. Lower Band Edge Plot (LTE Band 38 - 20MHz QPSK – Full RB)



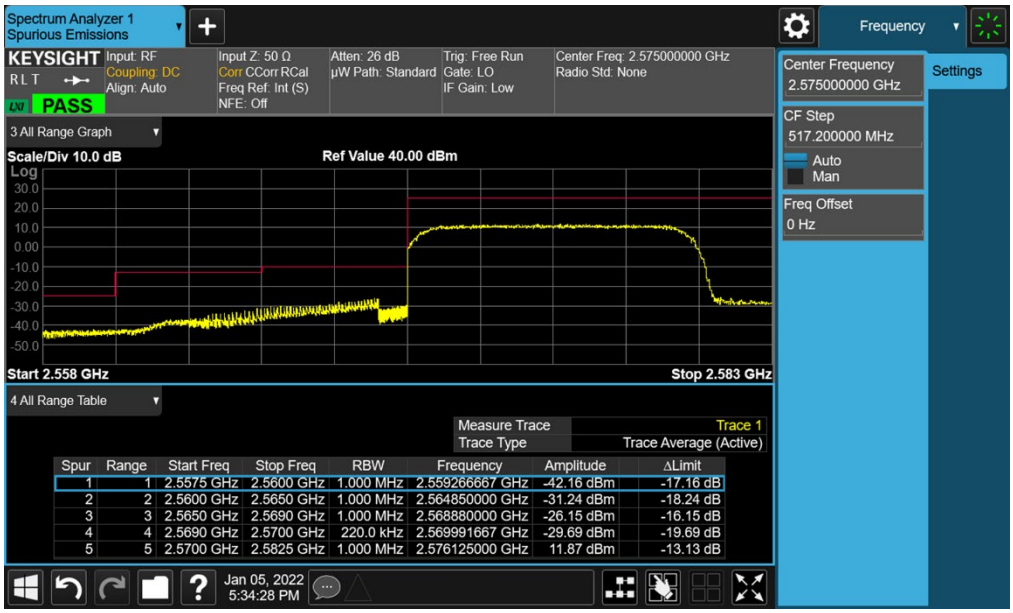
Plot 7-92. Upper Band Edge Plot (LTE Band 38 - 20MHz QPSK – Full RB)



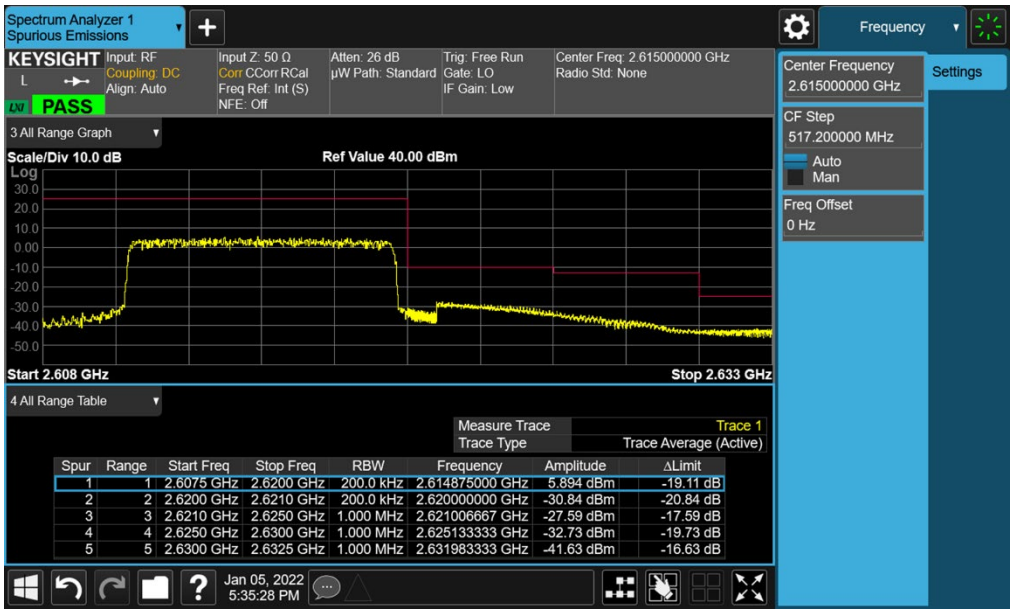
Plot 7-93. Lower Band Edge Plot (LTE Band 38 - 15MHz QPSK – Full RB)



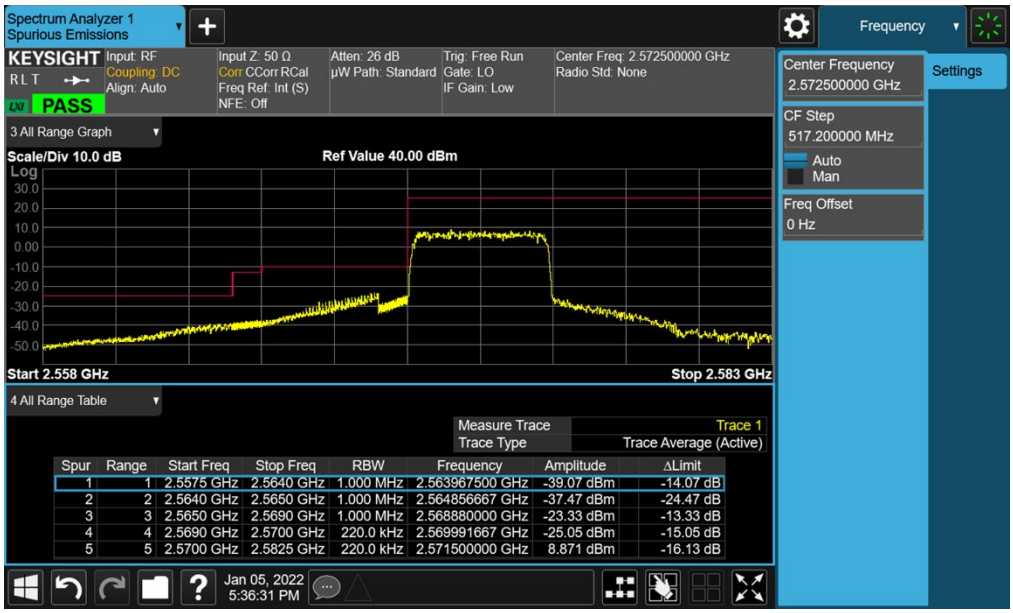
Plot 7-94. Upper Band Edge Plot (LTE Band 38 - 15MHz QPSK – Full RB)



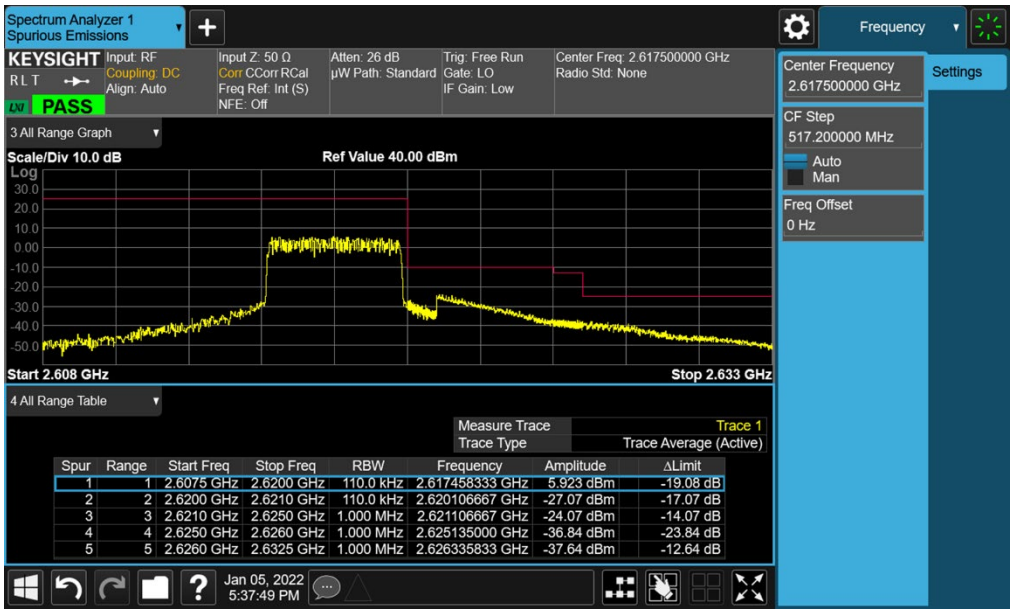
Plot 7-95. Lower Band Edge Plot (LTE Band 38 - 10MHz QPSK – Full RB)



Plot 7-96. Upper Band Edge Plot (LTE Band 38 - 10MHz QPSK – Full RB)



Plot 7-97. Lower Band Edge Plot (LTE Band 38 - 5MHz QPSK – Full RB)



Plot 7-98. Upper Band Edge Plot (LTE Band 38 - 5MHz QPSK – Full RB)

7.5 Radiated Power (EIRP)

Test Overview

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

Test Setup

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

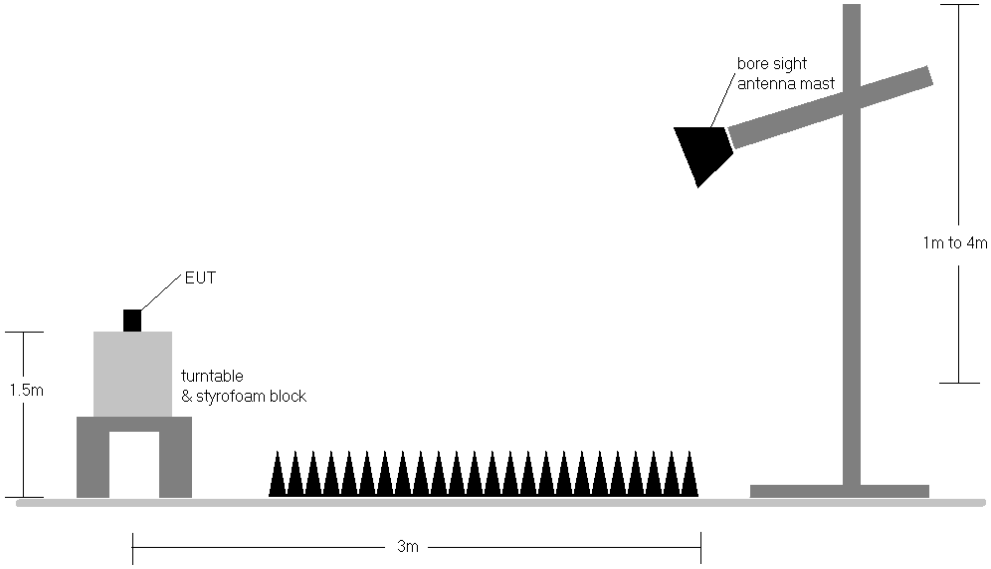


Figure 7-4. Radiated Test Setup >1GHz

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.

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
10 MHz	QPSK	2310.0	H	115	214	9.30	1 / 49	11.61	**20.91**	0.123	23.98	-3.07
	16-QAM	2310.0	H	115	214	9.30	1 / 49	10.56	19.86	0.097	23.98	-4.12
5 MHz	QPSK	2307.5	H	115	214	9.29	1 / 0	10.49	**19.78**	0.095	23.98	-4.20
	QPSK	2310.0	H	115	214	9.30	1 / 0	10.24	19.55	0.090	23.98	-4.43
	QPSK	2312.5	H	115	214	9.31	1 / 0	10.32	19.63	0.092	23.98	-4.35
	16-QAM	2310.0	H	115	214	9.30	1 / 24	9.17	18.47	0.070	23.98	-5.51
10 MHz	Opposite Pol.	2310.0	V	107	119	9.30	1 / 49	10.48	19.78	0.095	23.98	-4.20

Table 7-2. EIRP Data (LTE Band 30)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
20 MHz	QPSK	2510.0	V	122	80	9.20	1 / 0	15.20	**24.40**	0.276	33.01	-8.61
	QPSK	2535.0	V	129	80	9.24	1 / 50	14.45	23.69	0.234	33.01	-9.32
	QPSK	2560.0	V	136	110	9.25	1 / 0	14.28	23.53	0.226	33.01	-9.48
	16-QAM	2510.0	V	122	80	9.20	1 / 0	13.92	23.12	0.205	33.01	-9.89
15 MHz	QPSK	2507.5	V	122	80	9.20	1 / 0	14.87	**24.07**	0.255	33.01	-8.94
	QPSK	2535.0	V	129	80	9.24	1 / 74	13.95	23.19	0.208	33.01	-9.82
	QPSK	2562.5	V	136	110	9.25	1 / 37	14.40	23.65	0.232	33.01	-9.36
	16-QAM	2507.5	V	122	80	9.20	1 / 37	13.88	23.08	0.203	33.01	-9.93
10 MHz	QPSK	2505.0	V	122	80	9.20	1 / 0	14.81	**24.00**	0.251	33.01	-9.01
	QPSK	2535.0	V	129	80	9.24	1 / 49	13.82	23.06	0.202	33.01	-9.95
	QPSK	2565.0	V	136	110	9.25	1 / 0	14.24	23.49	0.224	33.01	-9.52
	16-QAM	2505.0	V	122	80	9.20	1 / 0	13.82	23.01	0.200	33.01	-10.00
5 MHz	QPSK	2502.5	V	122	80	9.19	1 / 0	14.65	**23.84**	0.242	33.01	-9.17
	QPSK	2535.0	V	129	80	9.24	1 / 0	13.71	22.95	0.197	33.01	-10.06
	QPSK	2567.5	V	136	110	9.25	1 / 12	14.28	23.53	0.226	33.01	-9.48
	16-QAM	2502.5	V	122	80	9.19	1 / 12	13.55	22.74	0.188	33.01	-10.27
20 MHz	Opposite Pol.	2510.0	H	135	351	9.20	1 / 0	11.93	21.13	0.130	33.01	-11.88

Table 7-3. EIRP Data (LTE Band 7)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
20 MHz	QPSK	2506.0	H	100	1	9.20	1 / 50	17.75	**26.95**	0.495	33.01	-6.06
	QPSK	2593.0	H	130	357	9.23	1 / 0	16.90	26.13	0.410	33.01	-6.88
	QPSK	2680.0	H	130	351	9.49	1 / 0	14.44	23.93	0.247	33.01	-9.08
	16-QAM	2506.0	H	100	1	9.20	1 / 50	16.62	25.82	0.382	33.01	-7.19
15 MHz	QPSK	2503.5	H	100	1	9.19	1 / 37	17.82	**27.02**	0.503	33.01	-5.99
	QPSK	2593.0	H	130	357	9.23	1 / 37	17.03	26.26	0.423	33.01	-6.75
	QPSK	2682.5	H	130	351	9.50	1 / 37	14.24	23.74	0.237	33.01	-9.27
	16-QAM	2503.5	H	100	1	9.19	1 / 37	16.55	25.75	0.376	33.01	-7.26
10 MHz	QPSK	2501.0	H	100	1	9.19	1 / 25	17.85	**27.04**	0.505	33.01	-5.97
	QPSK	2593.0	H	130	357	9.23	1 / 25	16.99	26.22	0.419	33.01	-6.79
	QPSK	2685.0	H	130	351	9.51	1 / 25	14.25	23.76	0.238	33.01	-9.25
	16-QAM	2501.0	H	100	1	9.19	1 / 25	16.63	25.82	0.382	33.01	-7.19
5 MHz	QPSK	2498.5	H	100	1	9.18	1 / 12	17.63	**26.82**	0.480	33.01	-6.19
	QPSK	2593.0	H	130	357	9.23	1 / 12	17.01	26.24	0.421	33.01	-6.77
	QPSK	2687.5	H	130	351	9.52	1 / 12	14.17	23.68	0.233	33.01	-9.33
	16-QAM	2498.5	H	100	1	9.18	1 / 12	16.54	25.73	0.374	33.01	-7.28
20 MHz	Opposite Pol.	2506.0	V	138	100	9.20	1 / 99	17.29	26.49	0.446	33.01	-6.52

Table 7-4. EIRP Data (LTE Band 41(PC2))

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
20 MHz	QPSK	2506.0	H	132	9	9.20	1 / 50	16.04	**25.24**	0.334	33.01	-7.77
	QPSK	2593.0	H	108	1	9.23	1 / 50	15.49	24.72	0.297	33.01	-8.29
	QPSK	2680.0	H	141	1	9.49	1 / 0	11.70	21.19	0.132	33.01	-11.82
	16-QAM	2506.0	H	132	9	9.20	1 / 50	15.23	24.43	0.277	33.01	-8.58
15 MHz	QPSK	2503.5	H	132	9	9.19	1 / 37	16.04	**25.24**	0.334	33.01	-7.77
	QPSK	2593.0	H	108	1	9.23	1 / 37	15.53	24.76	0.299	33.01	-8.25
	QPSK	2682.5	H	141	1	9.50	1 / 37	11.58	21.08	0.128	33.01	-11.93
	16-QAM	2503.5	H	132	9	9.19	1 / 37	15.14	24.34	0.271	33.01	-8.67
10 MHz	QPSK	2501.0	H	132	9	9.19	1 / 25	16.00	**25.19**	0.330	33.01	-7.82
	QPSK	2593.0	H	108	1	9.23	1 / 25	15.53	24.76	0.299	33.01	-8.25
	QPSK	2685.0	H	141	1	9.51	1 / 25	11.59	21.10	0.129	33.01	-11.91
	16-QAM	2501.0	H	132	9	9.19	1 / 25	15.17	24.36	0.273	33.01	-8.65
5 MHz	QPSK	2498.5	H	132	9	9.18	1 / 0	15.92	**25.11**	0.324	33.01	-7.90
	QPSK	2593.0	H	108	1	9.23	1 / 12	15.58	24.81	0.303	33.01	-8.20
	QPSK	2687.5	H	141	1	9.52	1 / 12	11.62	21.13	0.130	33.01	-11.88
	16-QAM	2498.5	H	132	9	9.18	1 / 12	15.18	24.37	0.273	33.01	-8.64
20 MHz	Opposite Pol.	2506.0	V	110	109	9.20	1 / 99	15.82	25.02	0.318	33.01	-7.99

Table 7-5. EIRP Data (LTE Band 41(PC3)/38)

7.6 Radiated Spurious Emissions Measurements

Test Overview

Radiated spurious emissions measurements are performed using the field strength conversion method described in KDB 971168 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using horizontally and vertically 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 measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.8

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.

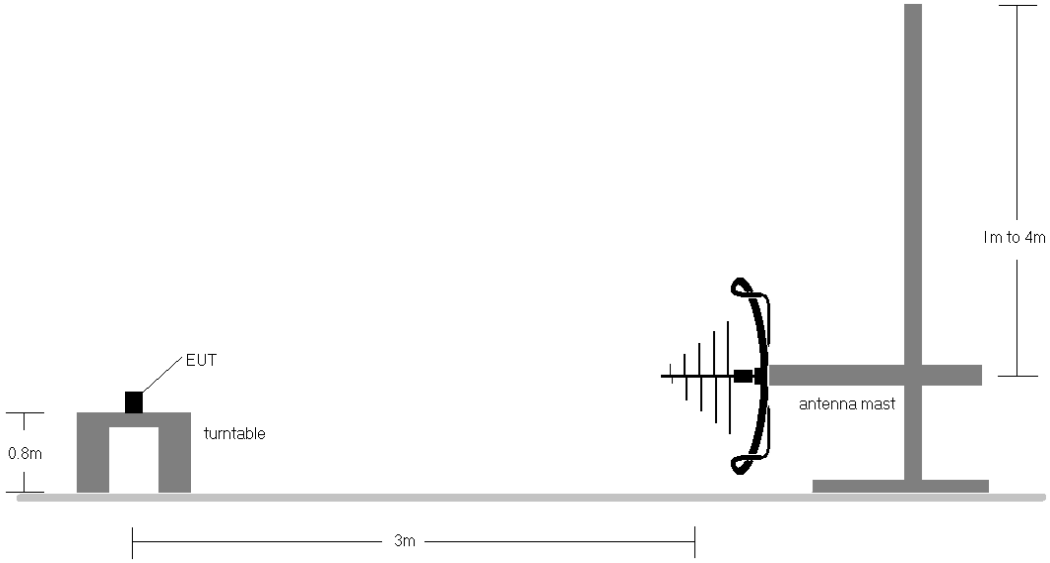


Figure 7-5. Test Instrument & Measurement Setup < 1GHz

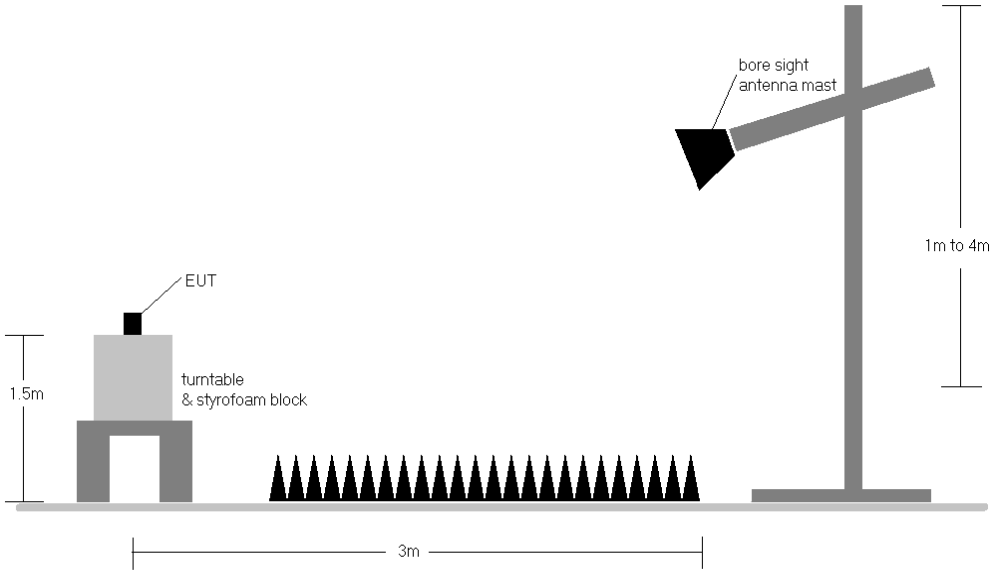


Figure 7-6. Test Instrument & Measurement Setup >1 GHz

Test Notes

1) Field strengths are calculated using the Measurement quantity conversions in KDB 971168 Section 5.8.4.
   a) E(dBµV/m) = Measured amplitude level (dBm) + 107 + Cable Loss (dB) + Antenna Factor (dB/m)
   b) EIRP (dBm) = E(dBµV/m) + 20logD – 104.8; where D is the measurement distance in meters.

2) 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.

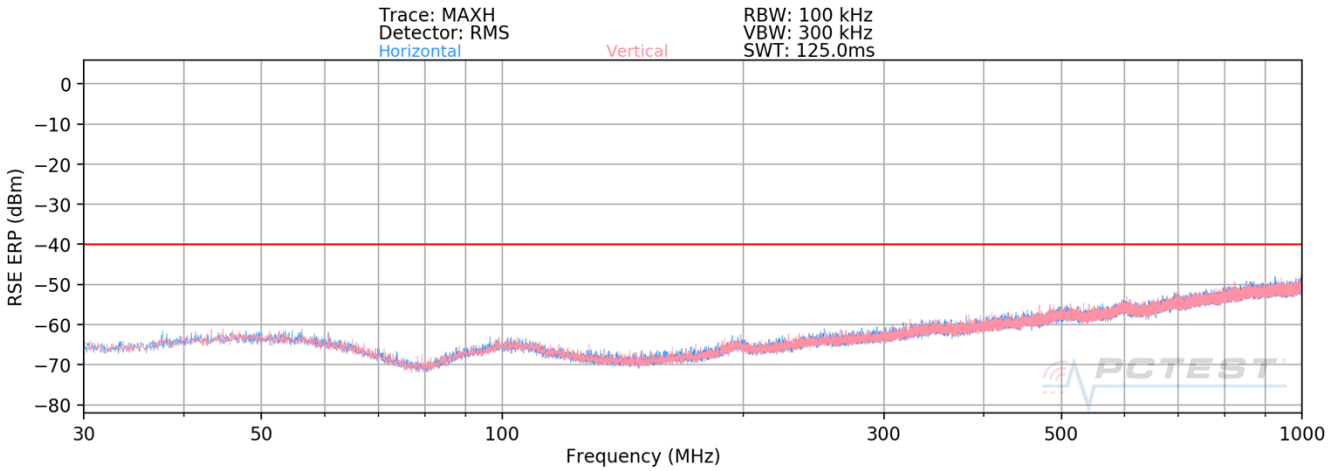
3) This unit was tested with its standard battery.

4) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.

5) 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.

6) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

LTE Band 30

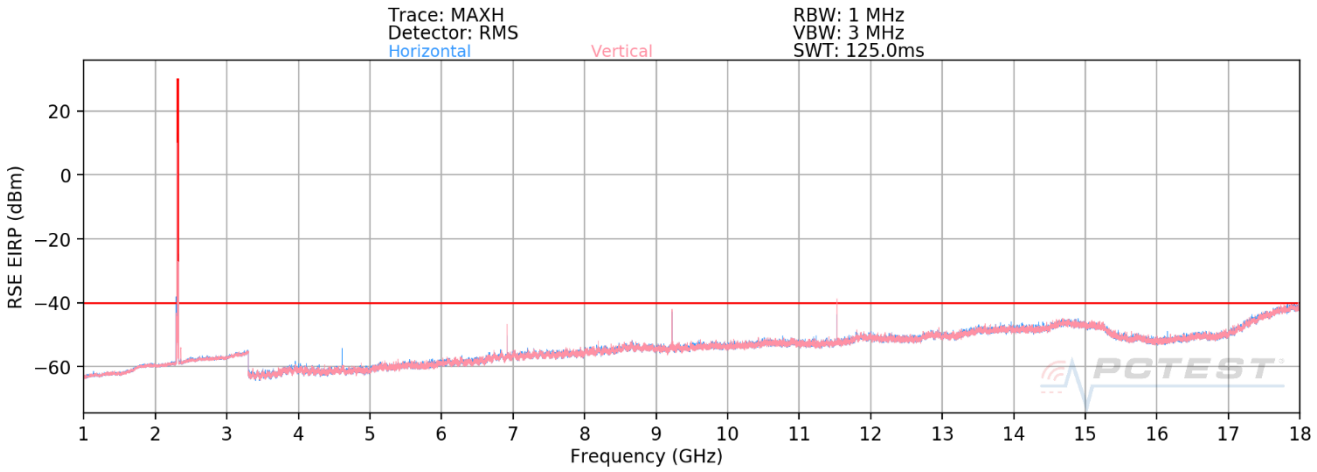


Plot 7-99. Radiated Spurious Plot Below 1GHz (LTE Band 30)

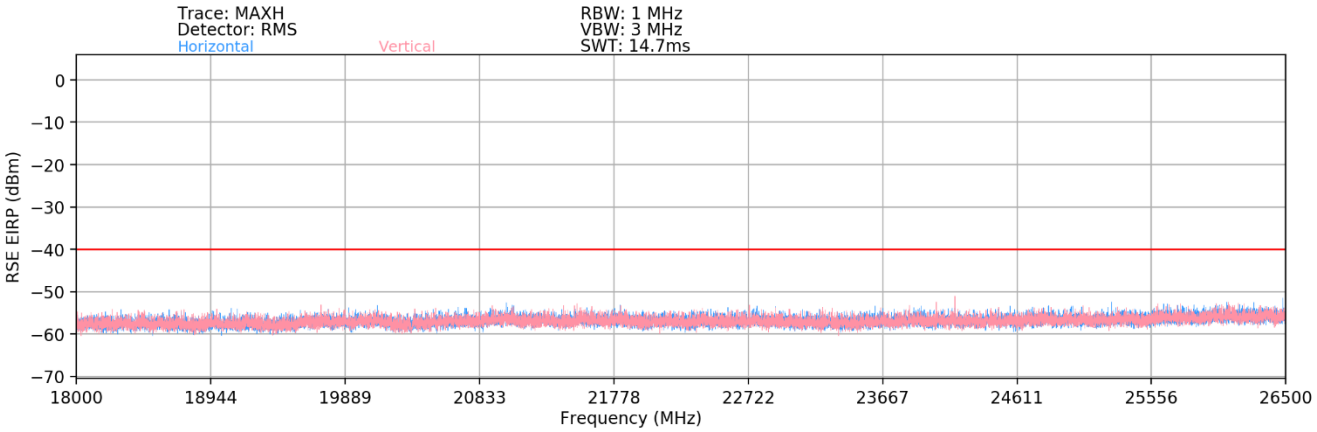
Bandwidth (MHz):	10
Frequency (MHz):	2310.0
RB / Offset:	1/25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
939.21	V	-	-	-89.21	25.42	43.21	-52.04	-40.00	-12.04

Table 7-6. Radiated Spurious Data (LTE Band 30 – Mid Channel)



Plot 7-100. Radiated Spurious Plot Above 1GHz (LTE Band 30)



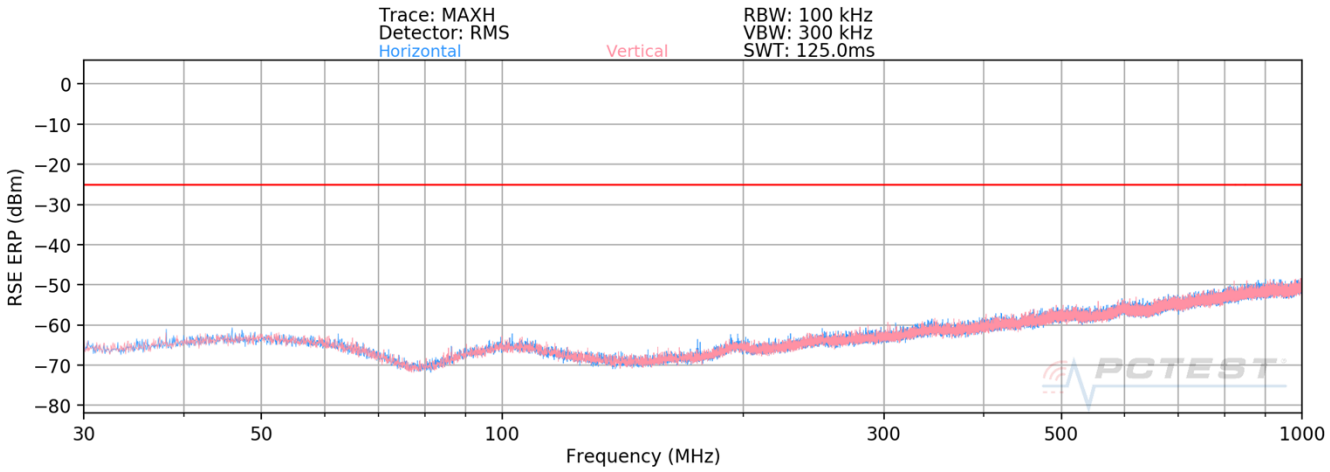
Plot 7-101. Radiated Spurious Plot Above 18GHz (LTE Band 30)

Bandwidth (MHz):	10
Frequency (MHz):	2310.0
RB / Offset:	1 / 0

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
4620.00	V	112	339	-70.56	1.79	38.23	-57.03	-40.00	-17.03
6930.00	V	110	356	-69.93	7.40	44.47	-50.79	-40.00	-10.79
9240.00	V	178	63	-73.06	11.88	45.82	-49.43	-40.00	-9.43
11550.00	V	100	317	-69.98	13.89	50.91	-44.34	-40.00	-4.34
13860.00	V	100	339	-80.64	17.78	44.14	-51.12	-40.00	-11.12
16170.00	V	100	331	-82.82	14.45	38.63	-56.63	-40.00	-16.63
18480.00	V	-	-	-59.89	1.13	48.24	-56.56	-40.00	-16.56
20790.00	V	-	-	-62.23	2.90	47.67	-57.13	-40.00	-17.13

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

LTE Band 7

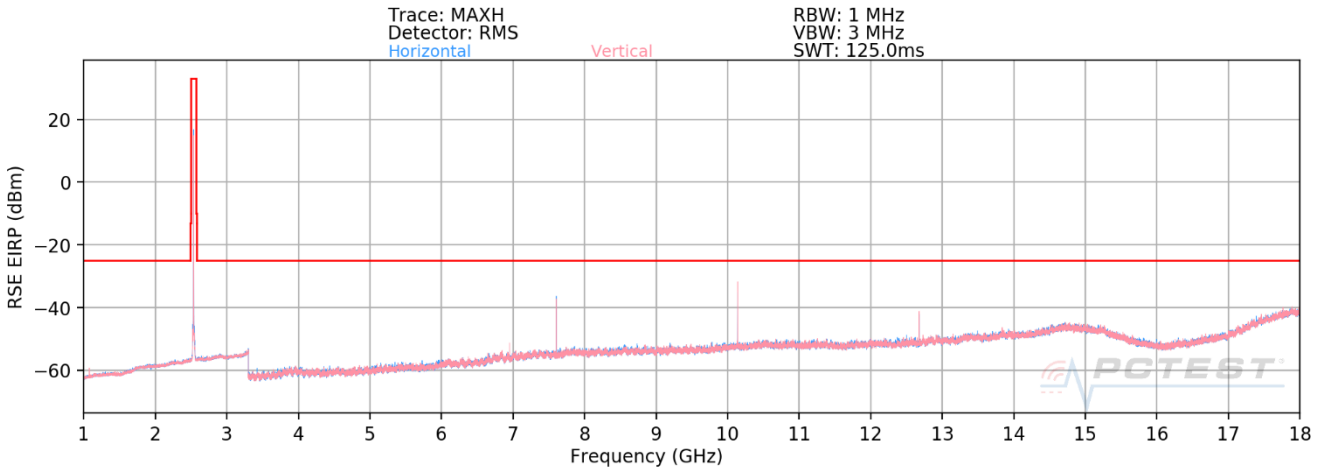


Plot 7-102. Radiated Spurious Plot Below 1GHz (LTE Band 7)

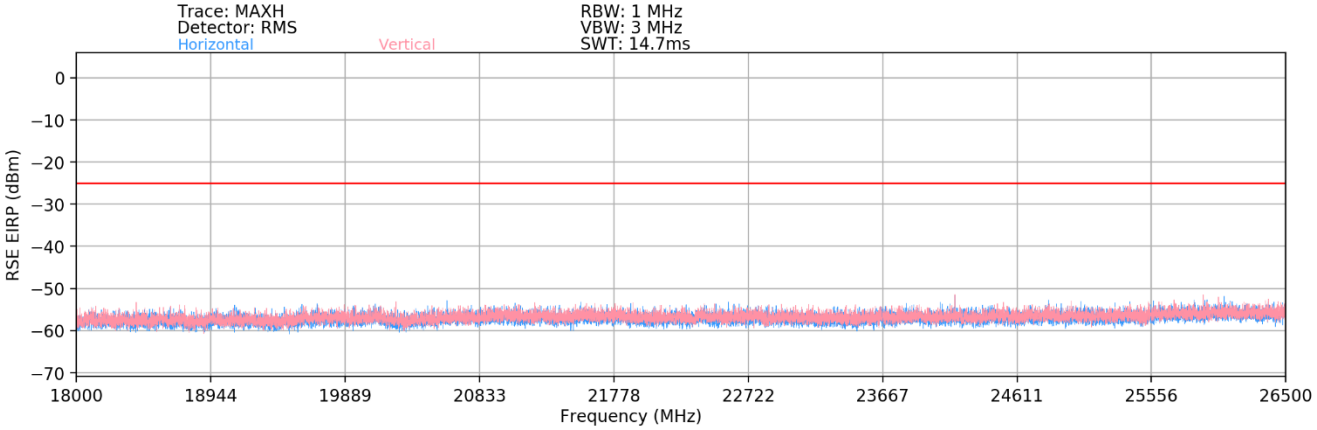
Bandwidth (MHz):	20
Frequency (MHz):	2510.0
RB / Offset:	1/0

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
938.51	V	-	-	-83.98	25.42	48.44	-46.81	-25.00	-21.81

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



Plot 7-103. Radiated Spurious Plot Above 1Ghz (LTE Band 7)



Plot 7-104. Radiated Spurious Plot Above 18Ghz (LTE Band 7)

Bandwidth (MHz):	20
Frequency (MHz):	2510.0
RB / Offset:	1 / 99

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5020.00	V	110	54	-76.30	2.05	32.75	-62.51	-25.00	-37.51
7530.00	V	107	77	-66.17	8.60	49.43	-45.83	-25.00	-20.83
10040.00	V	100	59	-67.26	12.00	51.74	-43.51	-25.00	-18.51
12550.00	V	100	45	-72.19	15.12	49.93	-45.33	-25.00	-20.33
15060.00	V	101	33	-79.45	19.42	46.97	-48.28	-25.00	-23.28
17570.00	V	-	-	-79.35	22.44	50.09	-45.17	-25.00	-20.17
20080.00	V	-	-	-59.69	2.31	49.62	-55.18	-25.00	-30.18
22590.00	V	-	-	-62.36	2.99	47.63	-57.17	-25.00	-32.17

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

Bandwidth (MHz):	20
Frequency (MHz):	2535.0
RB / Offset:	1 / 99

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5070.00	V	101	61	-75.16	2.47	34.31	-60.95	-25.00	-35.95
7605.00	V	101	65	-62.10	8.66	53.56	-41.70	-25.00	-16.70
10140.00	V	107	67	-62.51	12.80	57.29	-37.97	-25.00	-12.97
12675.00	V	101	45	-70.73	15.40	51.67	-43.58	-25.00	-18.58
15210.00	V	105	95	-79.43	18.98	46.55	-48.71	-25.00	-23.71
17745.00	V	-	-	-79.61	24.31	51.70	-43.56	-25.00	-18.56
20280.00	V	-	-	-60.01	2.02	49.01	-55.79	-25.00	-30.79
22815.00	V	-	-	-62.41	3.03	47.62	-57.18	-25.00	-32.18

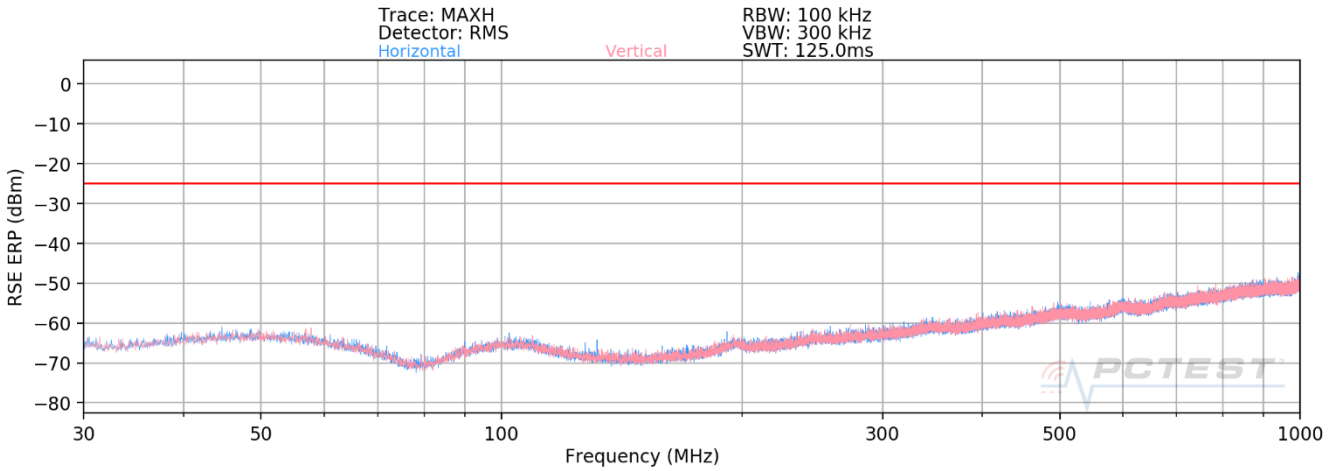
Table 7-10. Radiated Spurious Data (LTE Band 7 – Mid Channel)

Bandwidth (MHz):	20
Frequency (MHz):	2560.0
RB / Offset:	1 / 99

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5120.00	V	112	70	-75.75	2.67	33.92	-61.34	-25.00	-36.34
7680.00	V	102	57	-62.30	8.90	53.60	-41.66	-25.00	-16.66
10240.00	V	100	69	-62.58	12.54	56.96	-38.30	-25.00	-13.30
12800.00	V	100	40	-72.59	16.60	51.01	-44.24	-25.00	-19.24
15360.00	V	105	66	-78.89	17.15	45.26	-50.00	-25.00	-25.00
17920.00	V	-	-	-79.85	25.52	52.67	-42.59	-25.00	-17.59
20480.00	V	-	-	-59.82	2.14	49.32	-55.48	-25.00	-30.48
23040.00	V	-	-	-61.98	2.96	47.98	-56.82	-25.00	-31.82

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

LTE Band 41(PC2)

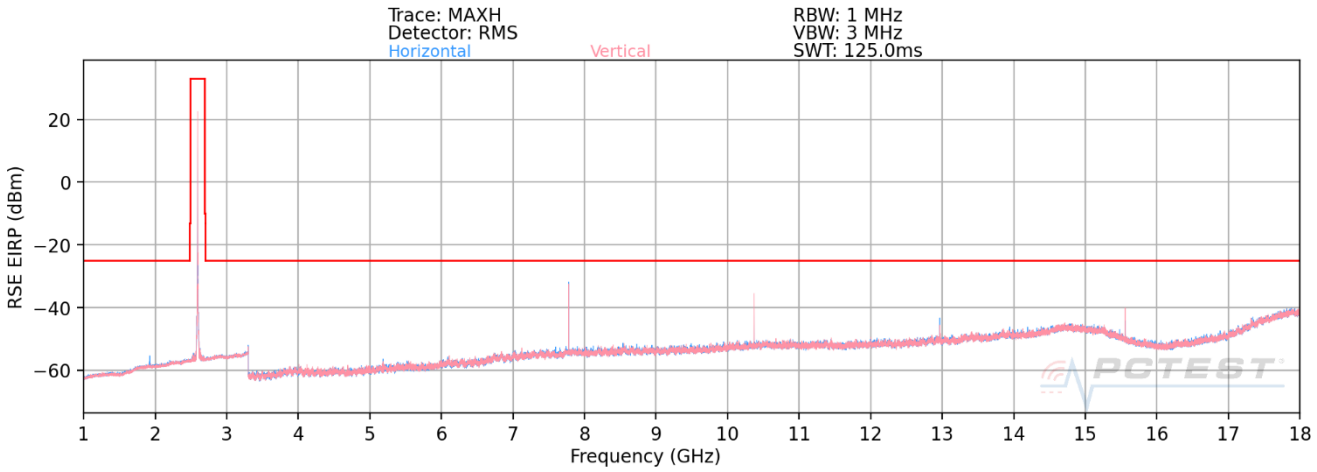


Plot 7-105. Radiated Spurious Plot Below 1GHz (LTE Band 41(PC2))

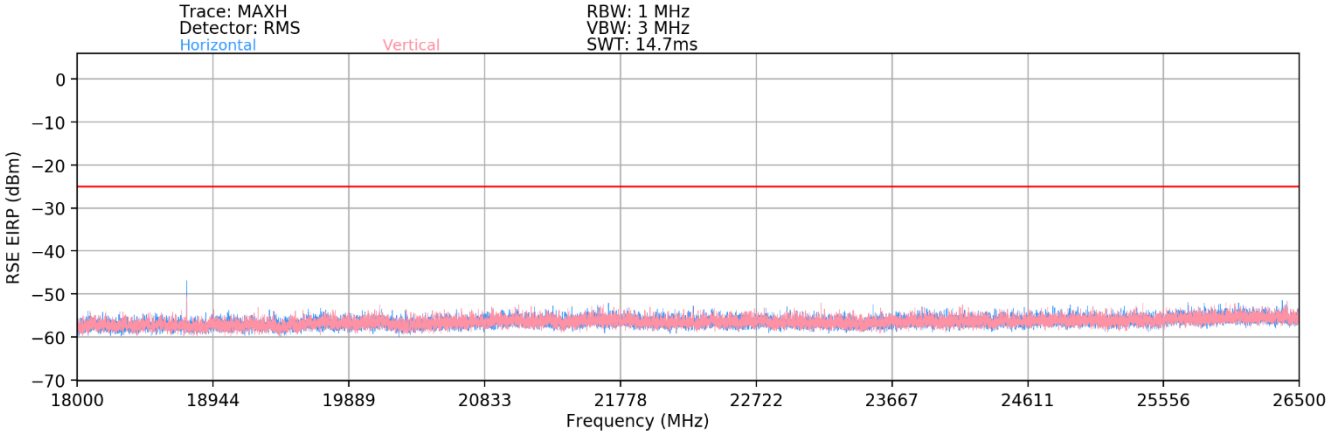
Bandwidth (MHz):	20
Frequency (MHz):	2506.0
RB / Offset:	1/50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
979.47	V	-	-	-88.88	25.66	43.78	-51.48	-25.00	-26.48

Table 7-12. Radiated Spurious Data (LTE Band 41(PC2) – Low Channel)



Plot 7-106. Radiated Spurious Plot Above 1GHz (LTE Band 41(PC2))



Plot 7-107. Radiated Spurious Plot Above 18GHz (LTE Band 41(PC2))

Bandwidth (MHz):	20
Frequency (MHz):	2506.0
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5012.00	V	100	127	-66.46	1.97	42.51	-52.75	-25.00	-27.75
7518.00	V	104	97	-60.31	8.69	55.38	-39.88	-25.00	-14.88
10024.00	V	100	151	-59.95	12.51	59.56	-35.70	-25.00	-10.70
12530.00	V	101	150	-69.15	14.94	52.79	-42.47	-25.00	-17.47
15036.00	V	104	103	-74.65	19.16	51.51	-43.74	-25.00	-18.74
17542.00	V	103	116	-76.28	23.07	53.79	-41.46	-25.00	-16.46
20048.00	V	150	176	-50.37	2.25	58.88	-45.92	-25.00	-20.92
22554.00	V	-	-	-56.03	3.01	53.98	-50.82	-25.00	-25.82

Table 7-13. Radiated Spurious Data (LTE Band 41(PC2) – Low Channel)

Bandwidth (MHz):	20
Frequency (MHz):	2593.0
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5186.00	V	108	120	-69.24	2.42	40.18	-55.07	-25.00	-30.07
7779.00	V	100	120	-55.11	9.92	61.81	-33.45	-25.00	-8.45
10372.00	V	100	100	-64.07	13.34	56.27	-38.99	-25.00	-13.99
12965.00	V	100	104	-73.85	16.73	49.88	-45.38	-25.00	-20.38
15558.00	V	100	81	-71.49	15.73	51.24	-44.02	-25.00	-19.02
18151.00	V	150	333	-52.68	1.18	55.50	-49.30	-25.00	-24.30
20744.00	V	150	205	-54.46	2.73	55.27	-49.53	-25.00	-24.53
23337.00	V	-	-	-56.41	2.88	53.47	-51.33	-25.00	-26.33

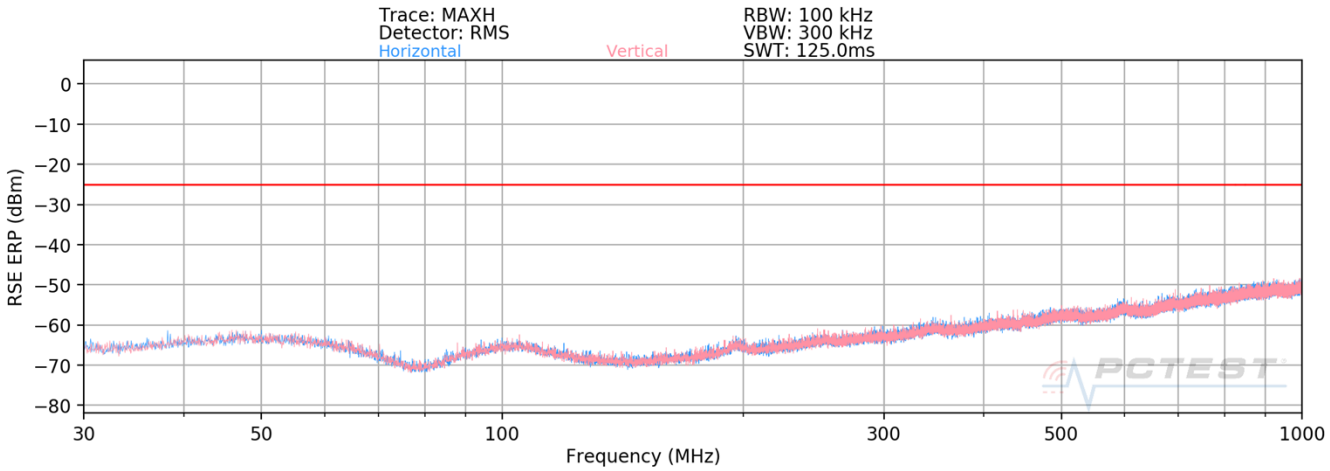
Table 7-14. Radiated Spurious Data (LTE Band 41(PC2) – Mid Channel)

Bandwidth (MHz):	20
Frequency (MHz):	2680.0
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5360.00	V	126	123	-72.99	3.28	37.29	-57.97	-25.00	-32.97
8040.00	V	107	124	-58.73	9.48	57.75	-37.51	-25.00	-12.51
10720.00	V	101	137	-68.95	13.52	51.57	-43.69	-25.00	-18.69
13400.00	V	101	112	-72.38	17.49	52.11	-43.14	-25.00	-18.14
16080.00	V	100	140	-76.81	14.12	44.31	-50.95	-25.00	-25.95
18760.00	V	150	253	-49.93	1.31	58.38	-46.42	-25.00	-21.42
21440.00	V	150	272	-55.99	2.95	53.96	-50.84	-25.00	-25.84
24120.00	V	-	-	-54.89	3.38	55.49	-49.31	-25.00	-24.31

Table 7-15. Radiated Spurious Data (LTE Band 41(PC2) – High Channel)

LTE Band 41(PC3)/38

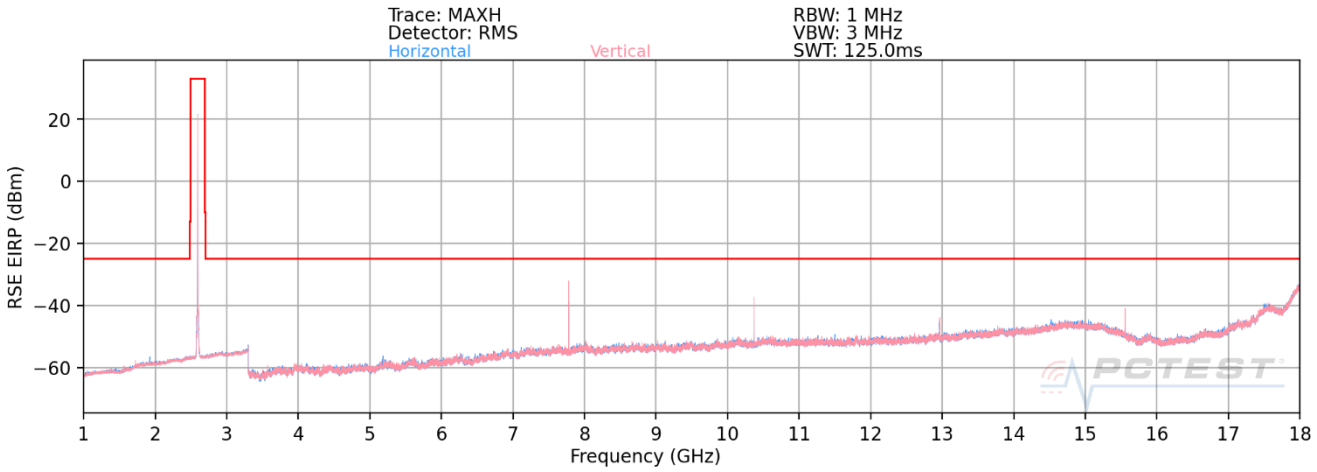


Plot 7-108. Radiated Spurious Plot Below 1GHz (LTE Band 41(PC3)/38)

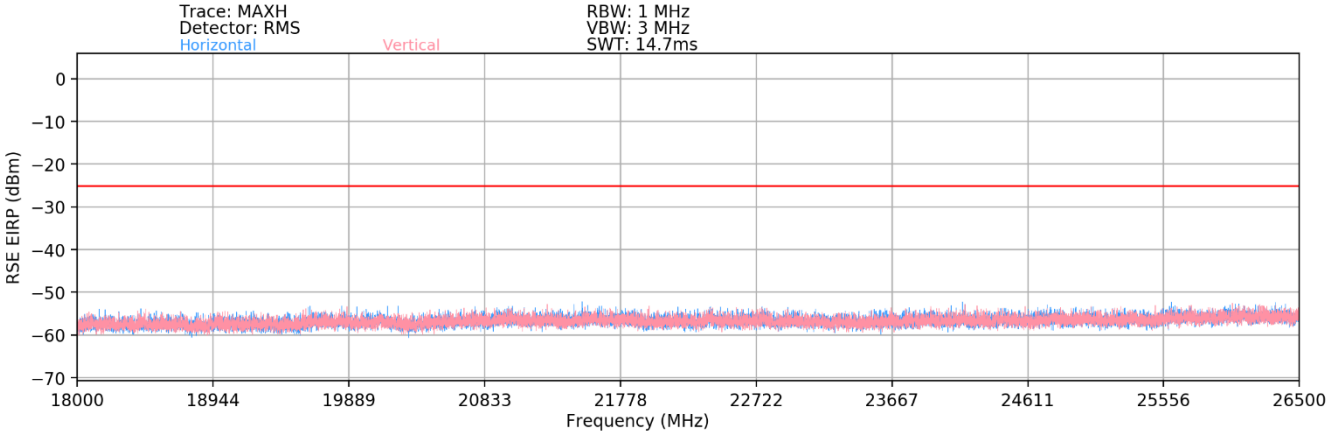
Bandwidth (MHz):	20
Frequency (MHz):	2506.0
RB / Offset:	1/50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
982.37	V	-	-	-88.80	25.73	43.93	-51.33	-25.00	-26.33

Table 7-16. Radiated Spurious Data (LTE Band 41(PC3)/38 – Low Channel)



Plot 7-109. Radiated Spurious Plot Above 1GHz (LTE Band 41(PC3)/38)



Plot 7-110. Radiated Spurious Plot Above 18GHz (LTE Band 41(PC3)/38)

Bandwidth (MHz):	20
Frequency (MHz):	2506.0
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5012.00	V	101	132	-65.19	1.97	43.78	-51.48	-25.00	-26.48
7518.00	V	101	102	-63.25	8.69	52.44	-42.82	-25.00	-17.82
10024.00	V	101	126	-63.08	12.51	56.43	-38.83	-25.00	-13.83
12530.00	V	101	153	-72.25	14.94	49.69	-45.57	-25.00	-20.57
15036.00	V	101	103	-76.37	19.16	49.79	-45.46	-25.00	-20.46
17542.00	V	101	116	-78.40	23.07	51.67	-43.58	-25.00	-18.58
20048.00	V	-	-	-61.27	2.25	47.98	-56.82	-25.00	-31.82
22554.00	V	-	-	-63.99	3.01	46.02	-58.78	-25.00	-33.78

Table 7-17. Radiated Spurious Data (LTE Band 41(PC3)/38 – Low Channel)

Bandwidth (MHz):	20
Frequency (MHz):	2593.0
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5186.00	V	100	120	-70.07	2.42	39.35	-55.90	-25.00	-30.90
7779.00	V	100	117	-57.05	9.92	59.87	-35.39	-25.00	-10.39
10372.00	V	101	102	-67.08	13.34	53.26	-42.00	-25.00	-17.00
12965.00	V	104	104	-76.53	16.73	47.20	-48.06	-25.00	-23.06
15558.00	V	101	80	-73.67	15.73	49.06	-46.20	-25.00	-21.20
18151.00	V	-	-	-60.91	1.18	47.27	-57.53	-25.00	-32.53
20744.00	V	-	-	-62.33	2.73	47.40	-57.40	-25.00	-32.40
23337.00	V	-	-	-62.89	2.88	46.99	-57.81	-25.00	-32.81

Table 7-18. Radiated Spurious Data (LTE Band 41(PC3)/38 – Mid Channel)

Bandwidth (MHz):	20
Frequency (MHz):	2680.0
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5360.00	V	107	119	-73.68	3.28	36.60	-58.66	-25.00	-33.66
8040.00	V	107	124	-59.71	9.48	56.77	-38.49	-25.00	-13.49
10720.00	V	100	134	-69.60	13.52	50.92	-44.34	-25.00	-19.34
13400.00	V	100	113	-72.29	17.49	52.20	-43.05	-25.00	-18.05
16080.00	V	102	141	-77.67	14.12	43.45	-51.81	-25.00	-26.81
18760.00	V	-	-	-61.89	1.31	46.42	-58.38	-25.00	-33.38
21440.00	V	-	-	-62.27	2.95	47.68	-57.12	-25.00	-32.12
24120.00	V	-	-	-63.77	3.38	46.61	-58.19	-25.00	-33.19

Table 7-19. Radiated Spurious Data (LTE Band 41(PC3)/38 – High Channel)

7.7 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.

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.

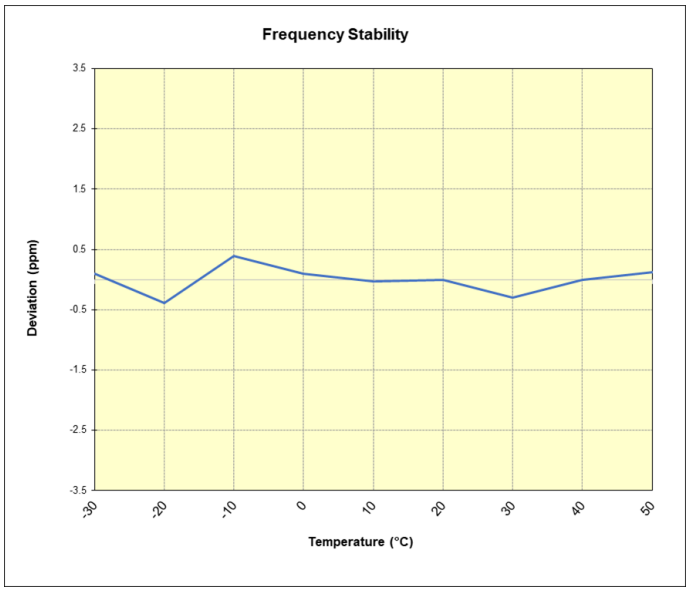
Test Notes

None

LTE Band 30	
Operating Frequency (Hz):	2,310,000,000
Ref. Voltage (VDC):	4.31

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.31	- 30	2,310,000,675	225	0.0000097
		- 20	2,309,999,550	-900	-0.0000390
		- 10	2,310,001,350	900	0.0000390
		0	2,310,000,675	225	0.0000097
		+ 10	2,310,000,375	-75	-0.0000032
		+ 20 (Ref)	2,310,000,450	0	0.0000000
		+ 30	2,309,999,775	-675	-0.0000292
		+ 40	2,310,000,450	0	0.0000000
		+ 50	2,310,000,750	300	0.0000130
Battery Endpoint	3.58	+ 20	2,310,000,450	0	0.0000000

Table 7-20. LTE Band 30 Frequency Stability Data



Plot 7-111. LTE Band 30 Frequency Stability Chart