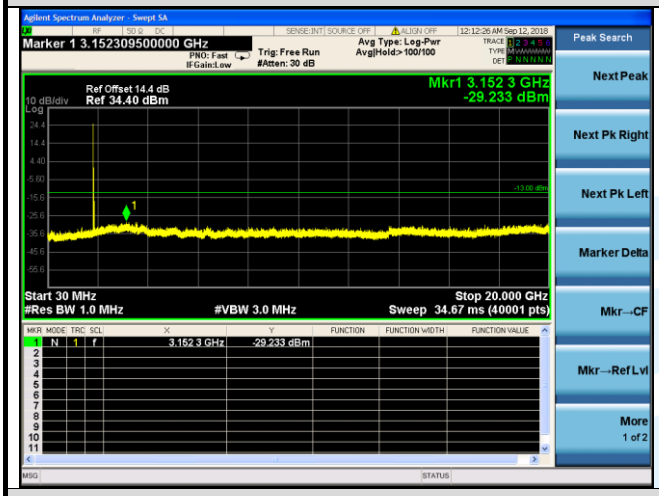
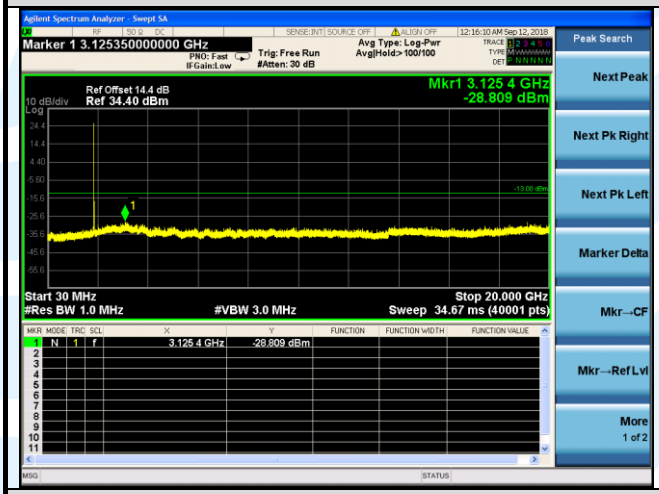
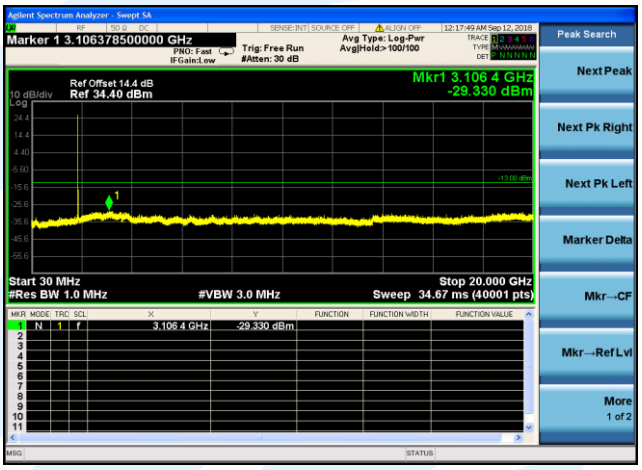
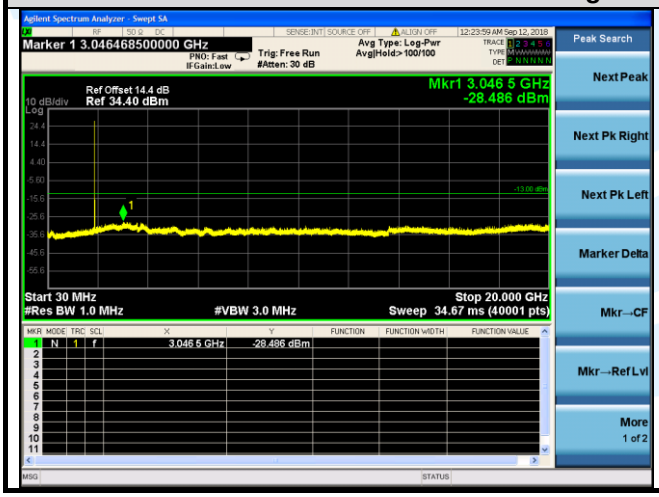
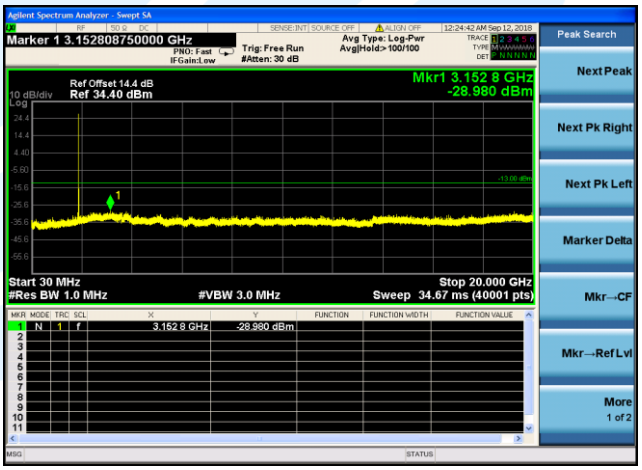
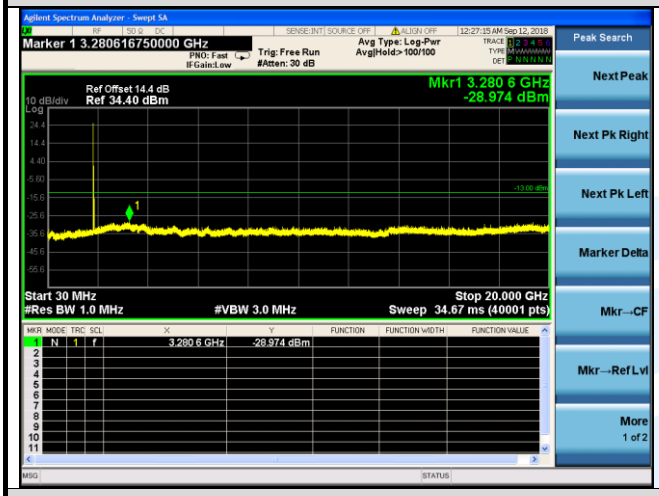
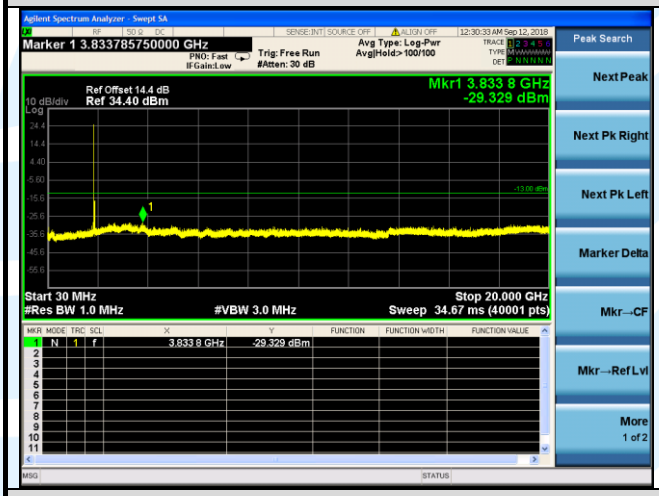
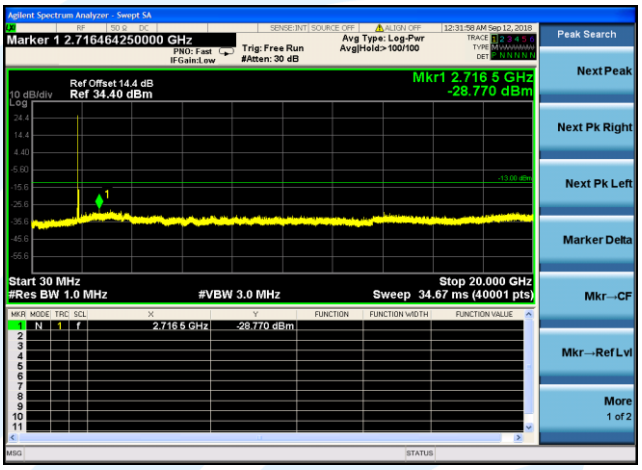
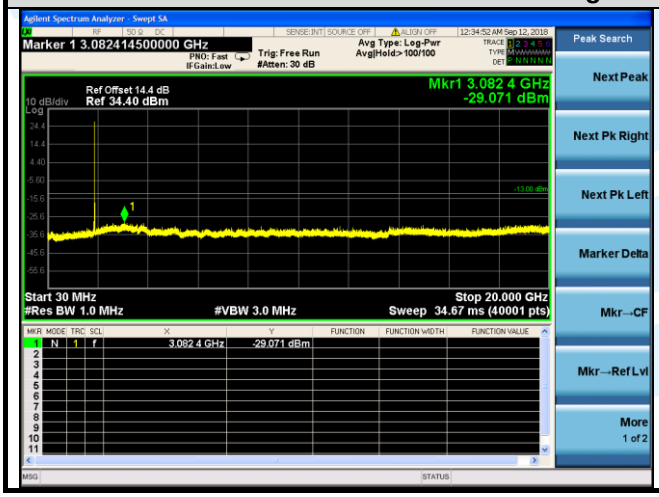
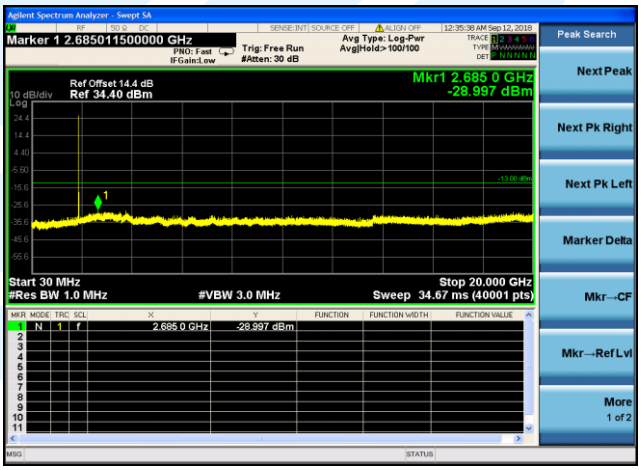
LTE Band 2_ Channel Bandwidth: 15 MHz	
QPSK	16QAM
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

LTE Band 2_ Channel Bandwidth: 20 MHz	
QPSK	16QAM
Lowest Channel	
	
Middle Channel	
	
Highest Channel	
	

5.8 FIELD STRENGTH OF SPURIOUS RADIATION

Test Requirement: FCC 47 CFR Part 2.1053 & FCC 47 CFR Part 24.238(a)(b)

Test Method: ANSI/TIA-603-E-2016 & KDB 971168 D01v03r01

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
0.009 MHz-30 MHz	Peak	10 kHz	30 KHz	Peak
30 MHz-1 GHz	Quasi-peak	100 kHz	300 KHz	Peak
Above 1 GHz	Peak	1 MHz	3 MHz	Peak

Limits:

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to -13 dBm

Test Setup: Refer to section 4.2.1 for details.

Test Procedures:

1. Scan up to 10th harmonic, find the maximum radiation frequency to measure.
2. The technique used to find the Spurious Emissions of the transmitter was the antenna substitution method. Substitution method was performed to determine the actual ERP/EIRP emission levels of the EUT.

Test procedure as below:

1) The EUT was powered ON and placed on a 0.8/1.5m high table at a 3 meter semi/fully Anechoic Chamber. The antenna of the transmitter was extended to its maximum length. Modulation mode and the measuring receiver shall be tuned to the frequency of the transmitter under test.
2) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3) The disturbance of the transmitter was maximized on the test receiver display by raising and lowering from 1m to 4m the receive antenna and by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made.
4) Steps 1) to 3) were performed with the EUT and the receive antenna in both vertical and horizontal polarization.
5) The transmitter was then removed and replaced with another antenna. The center of the antenna was approximately at the same location as the center of the transmitter.
6) A signal at the disturbance was fed to the substitution antenna by means of a non-radiating cable. With both the substitution and the receive antennas horizontally polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver. The level of the signal generator was adjusted until the measured field strength level in step 3) is obtained for this set of conditions.
7) The output power into the substitution antenna was then measured.
8) Steps 6) and 7) were repeated with both antennas polarized.
9) Calculate power in dBm by the following formula:

ERP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBd)

EIRP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBi)

EIRP=ERP+2.15dB

where:

Pg is the generator output power into the substitution antenna.

10) Test the EUT in the lowest channel, the middle channel the Highest channel
11) The radiation measurements are performed in X, Y, Z axis positioning for EUT operation mode, and found the Y axis positioning which it is worse case.
12) Repeat above procedures until all frequencies measured was complete.

Equipment Used: Refer to section 3 for details.

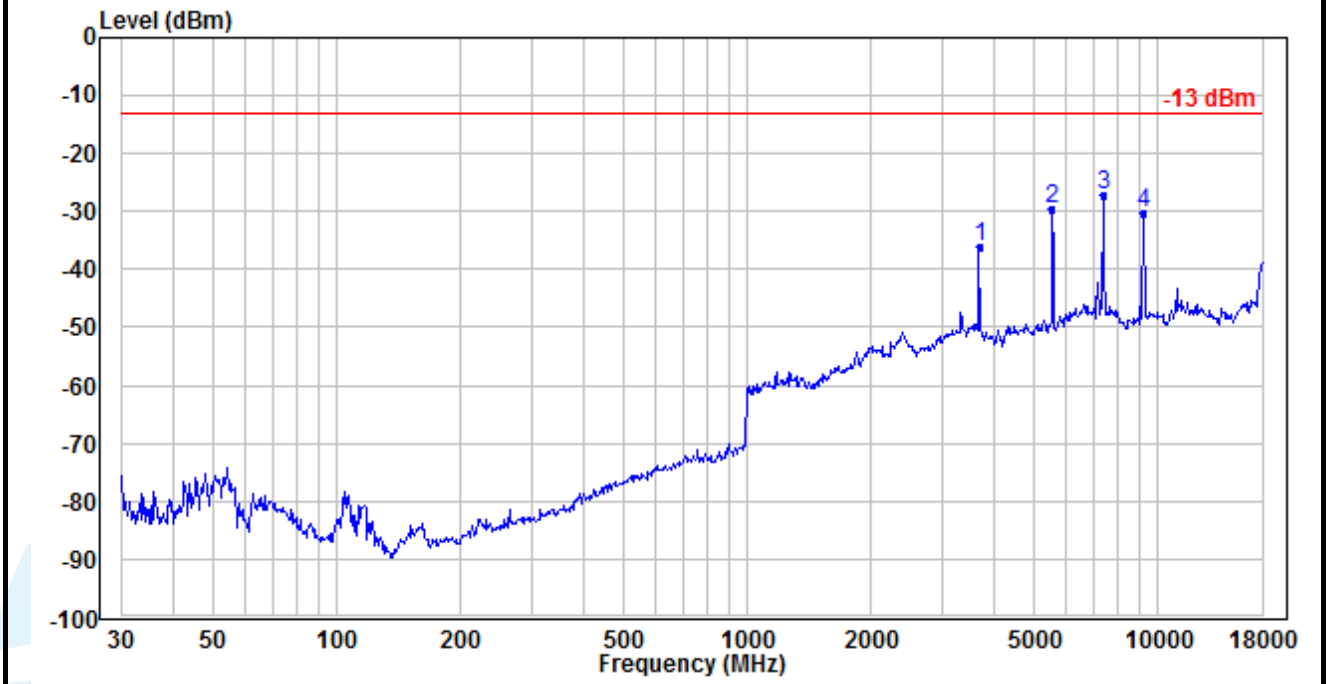
Test Result: Pass

The measurement data as follows:

Radiated Emission Test Data

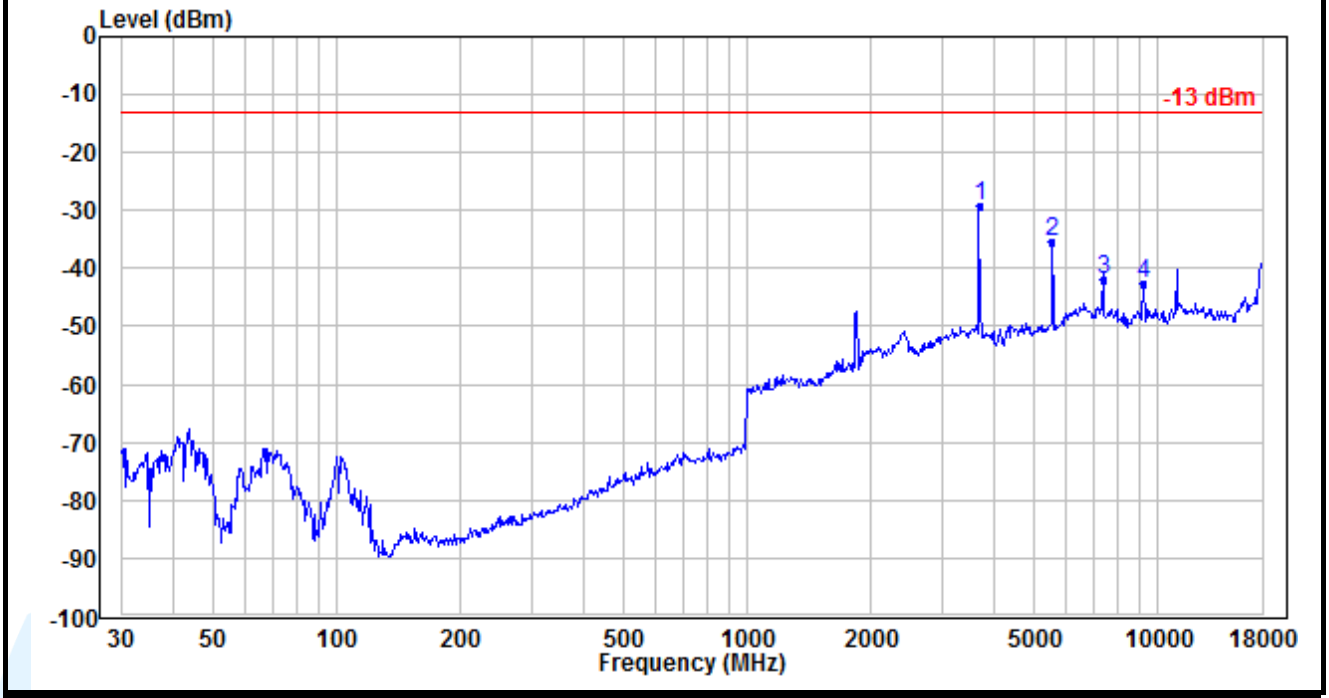
GSM 1Tx-slot_Lowest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3700.400	-49.84	13.73	-36.11	-13.00	-23.11	Peak
2	5550.600	-45.53	16.08	-29.45	-13.00	-16.45	Peak
3	7400.800	-45.52	18.32	-27.20	-13.00	-14.20	Peak
4	9251.000	-49.73	19.37	-30.36	-13.00	-17.36	Peak

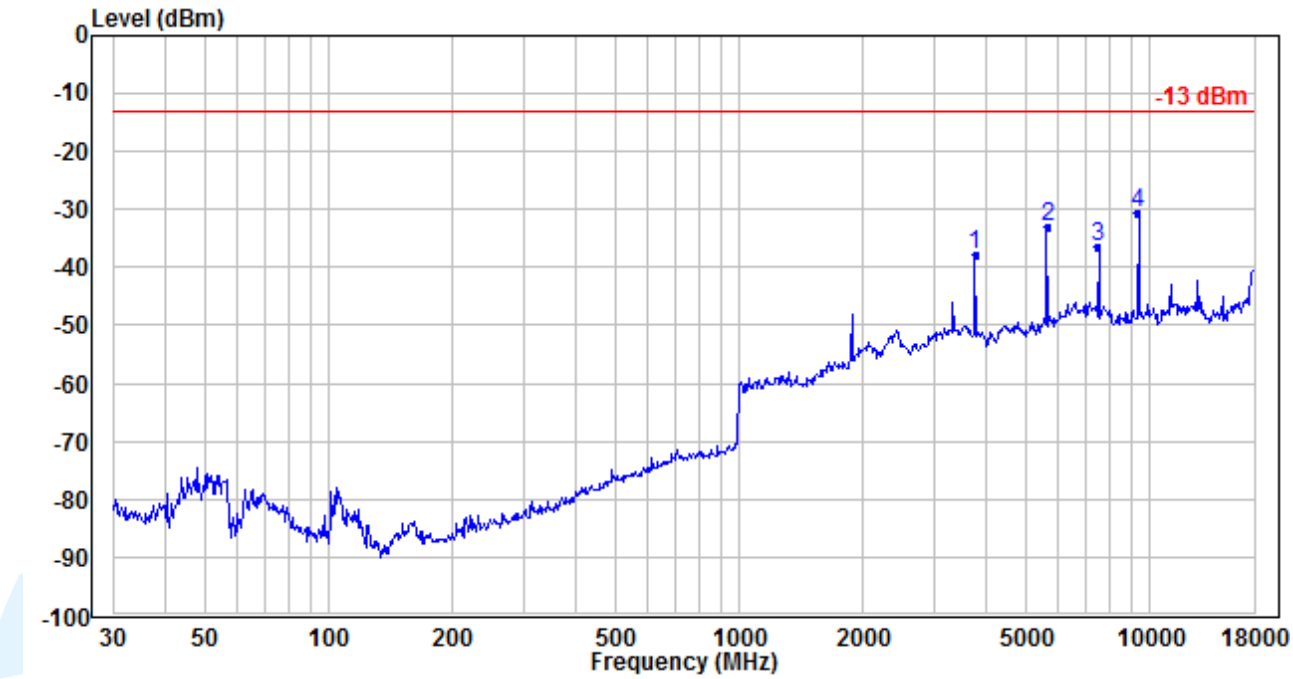
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3700.400	-42.90	13.73	-29.17	-13.00	-16.17	Peak
2	5550.600	-51.31	16.08	-35.23	-13.00	-22.23	Peak
3	7400.800	-60.14	18.32	-41.82	-13.00	-28.82	Peak
4	9251.000	-61.89	19.37	-42.52	-13.00	-29.52	Peak

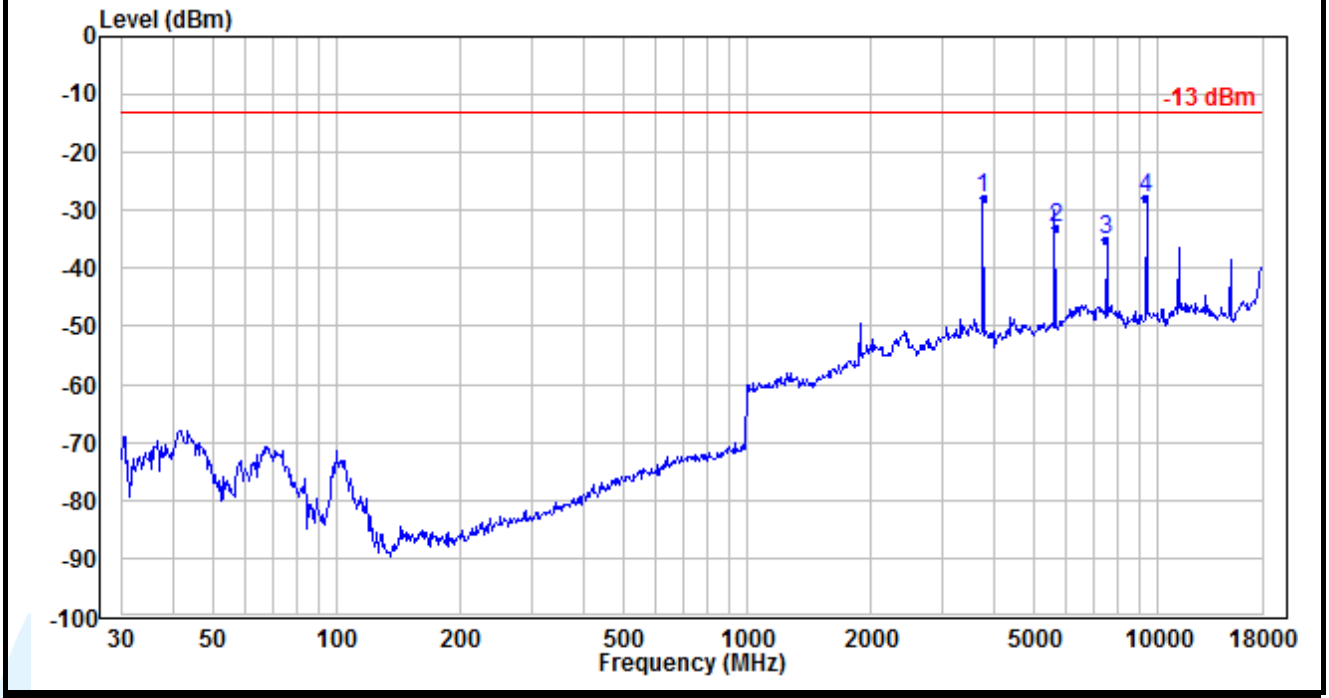
GSM 1Tx-slot_Middle Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3760.000	-51.50	13.58	-37.92	-13.00	-24.92	Peak
2	5640.000	-49.40	16.27	-33.13	-13.00	-20.13	Peak
3	7520.000	-54.77	18.30	-36.47	-13.00	-23.47	Peak
4	9400.000	-50.18	19.49	-30.69	-13.00	-17.69	Peak

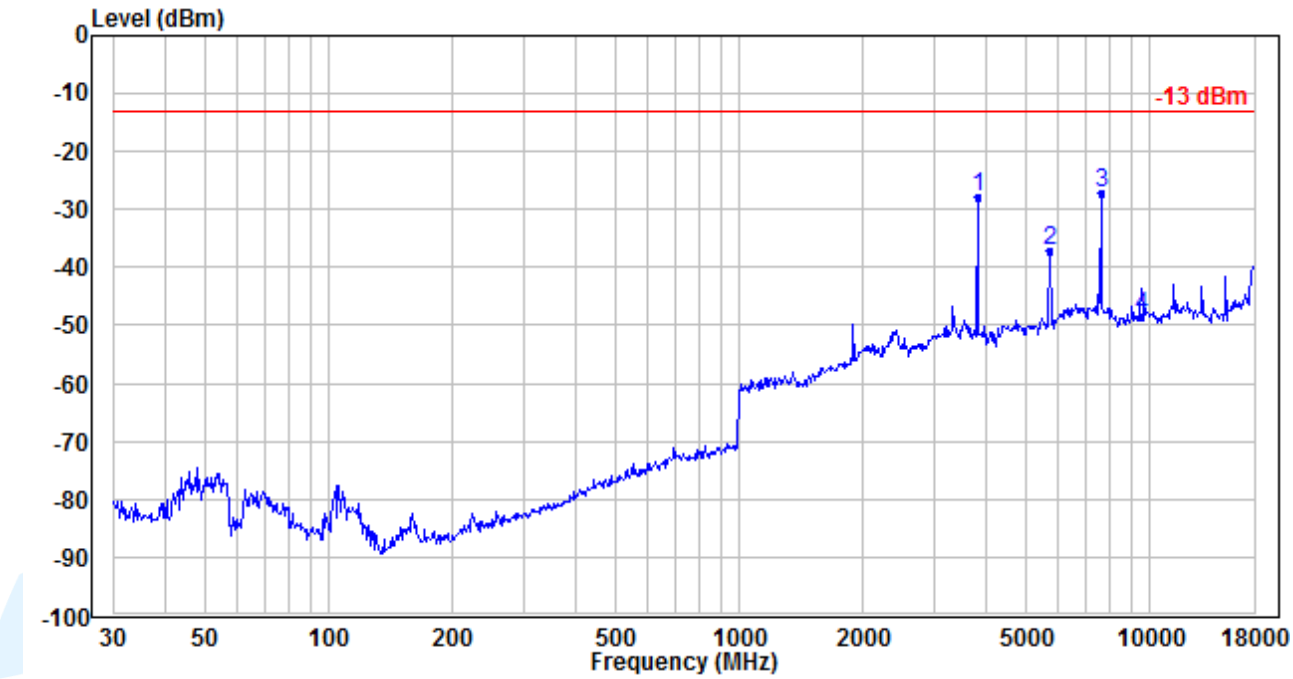
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3760.000	-41.25	13.58	-27.67	-13.00	-14.67	Peak
2	5640.000	-49.39	16.27	-33.12	-13.00	-20.12	Peak
3	7520.000	-53.29	18.30	-34.99	-13.00	-21.99	Peak
4	9400.000	-47.49	19.49	-28.00	-13.00	-15.00	Peak

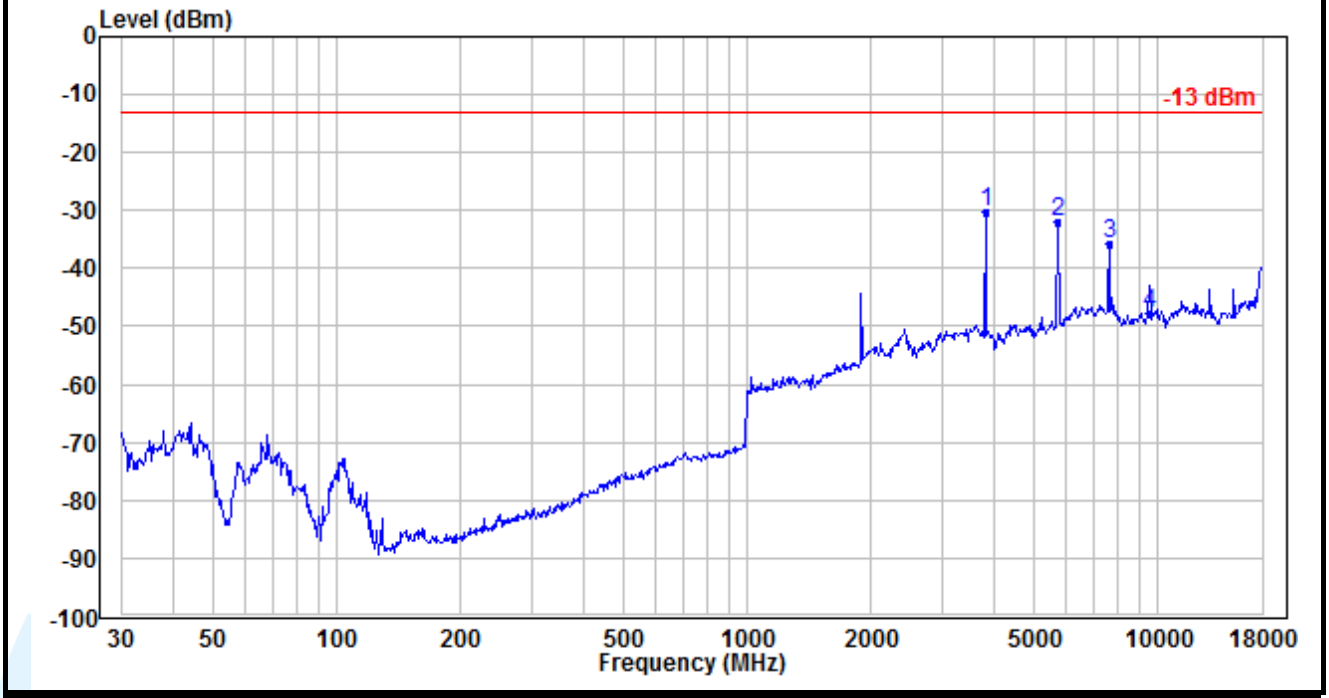
GSM 1Tx-slot_Highest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3819.400	-41.17	13.44	-27.73	-13.00	-14.73	Peak
2	5729.400	-53.88	16.66	-37.22	-13.00	-24.22	Peak
3	7639.200	-45.63	18.42	-27.21	-13.00	-14.21	Peak
4	9549.000	-67.97	19.40	-48.57	-13.00	-35.57	Peak

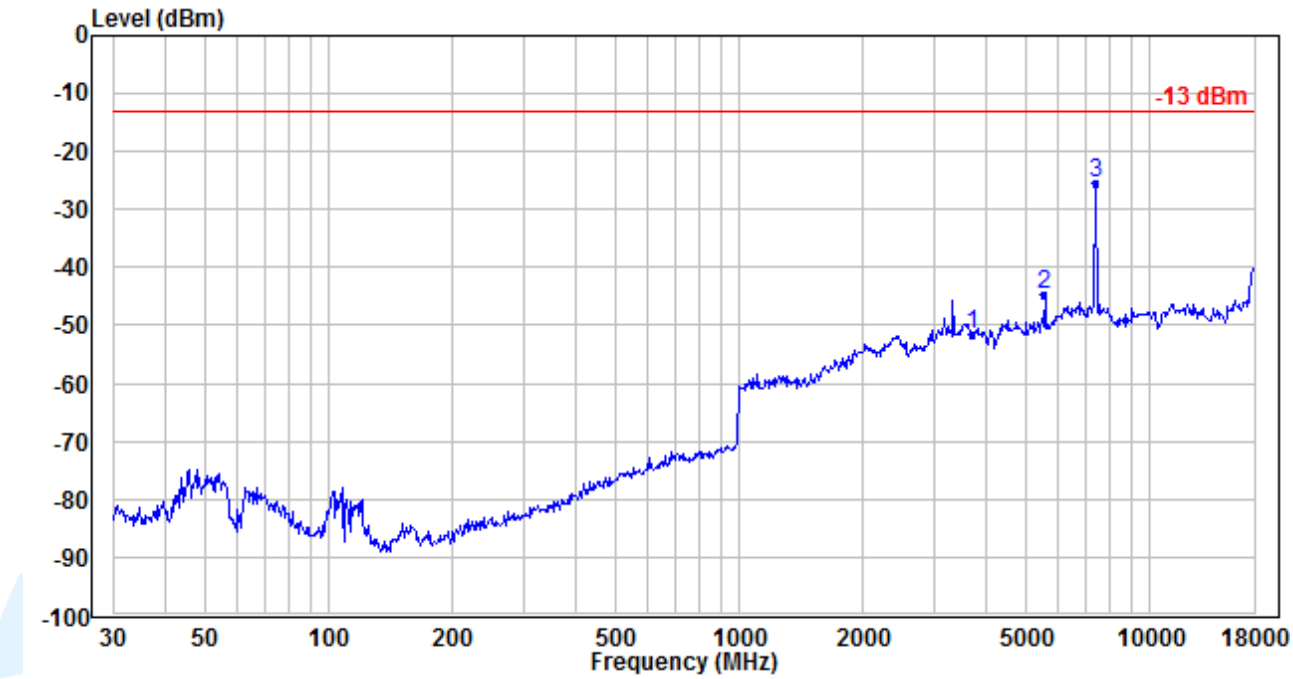
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3819.600	-43.82	13.44	-30.38	-13.00	-17.38	Peak
2	5729.400	-48.68	16.66	-32.02	-13.00	-19.02	Peak
3	7639.200	-54.09	18.42	-35.67	-13.00	-22.67	Peak
4	9549.000	-67.34	19.40	-47.94	-13.00	-34.94	Peak

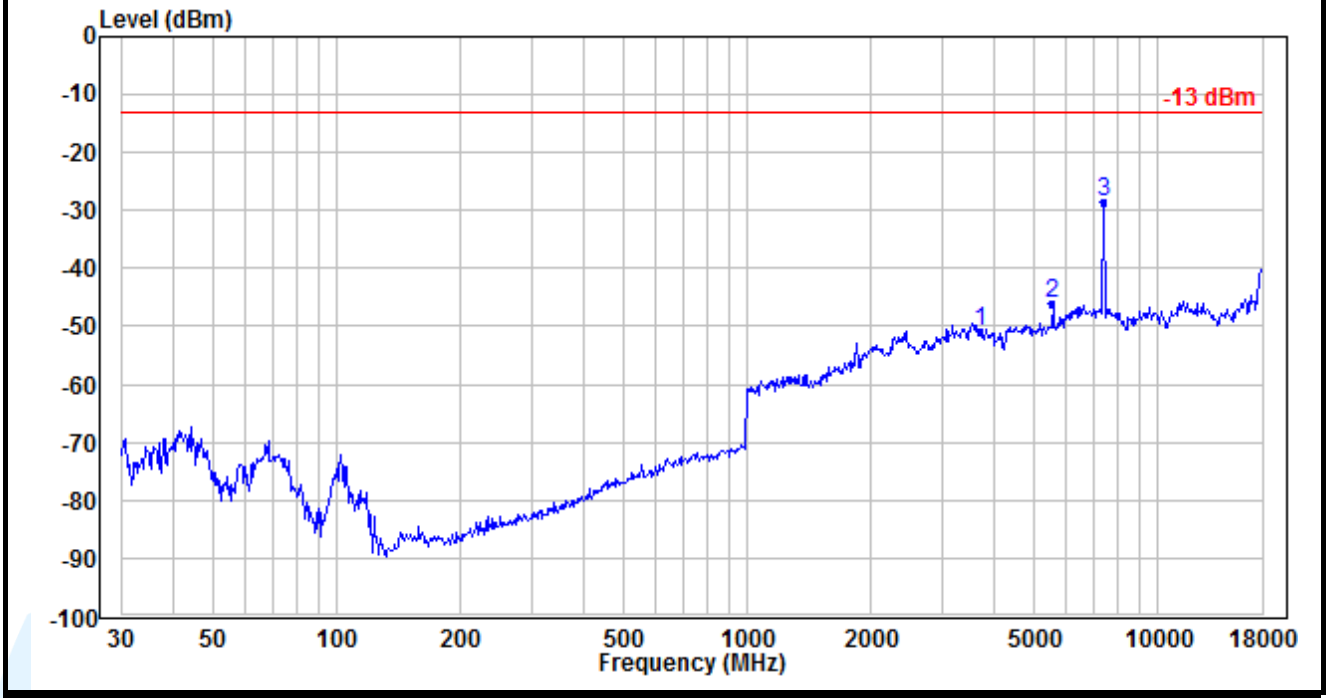
WCDMA RMC 12.2Kbps_Lowest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3704.800	-65.10	13.71	-51.39	-13.00	-38.39	Peak
2	5557.200	-60.59	16.08	-44.51	-13.00	-31.51	Peak
3	7409.600	-43.68	18.31	-25.37	-13.00	-12.37	Peak

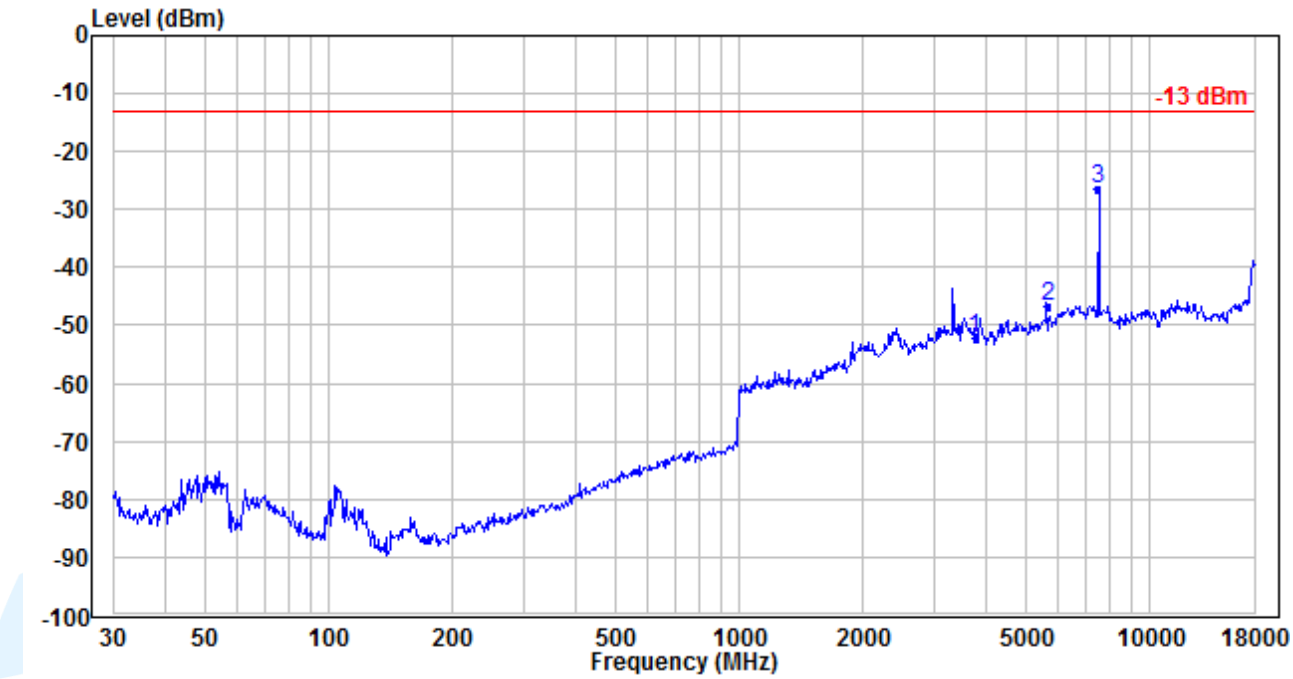
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3704.800	-64.63	13.71	-50.92	-13.00	-37.92	Peak
2	5557.200	-62.03	16.08	-45.95	-13.00	-32.95	Peak
3	7409.600	-46.96	18.31	-28.65	-13.00	-15.65	Peak

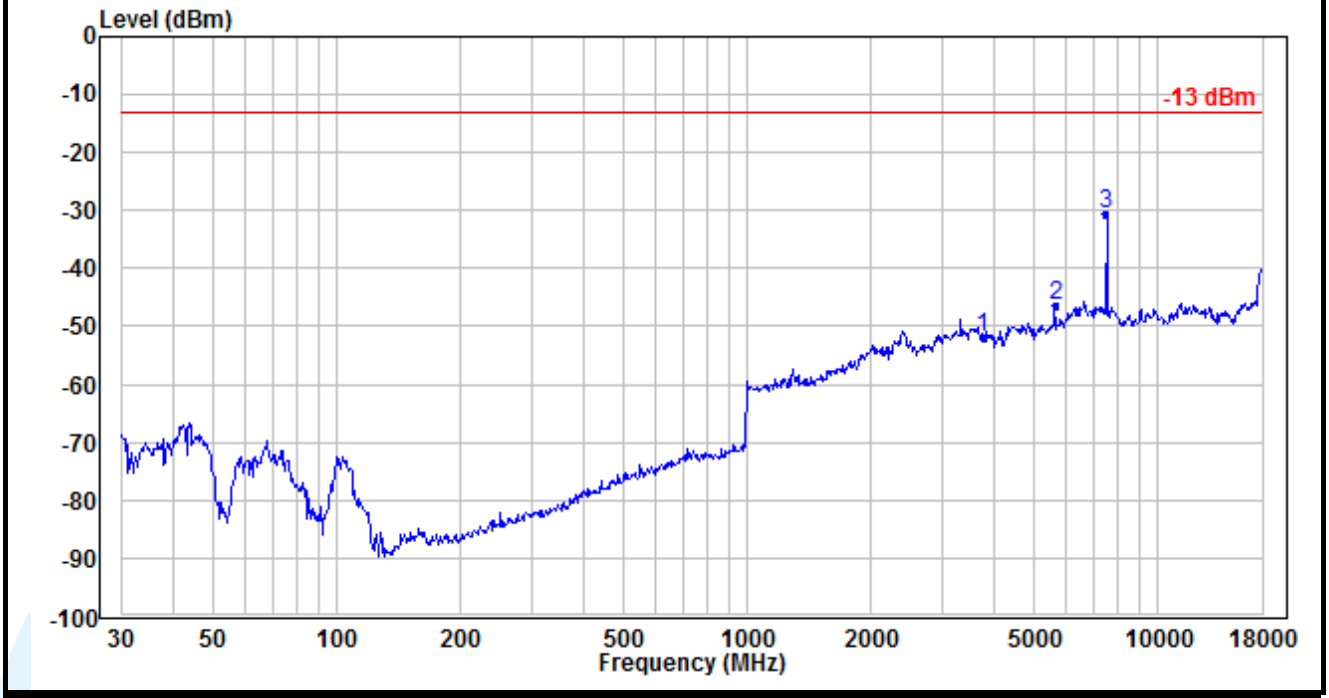
WCDMA RMC 12.2Kbps_Middle Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3760.000	-65.82	13.58	-52.24	-13.00	-39.24	Peak
2	5640.000	-63.08	16.27	-46.81	-13.00	-33.81	Peak
3	7520.000	-44.88	18.30	-26.58	-13.00	-13.58	Peak

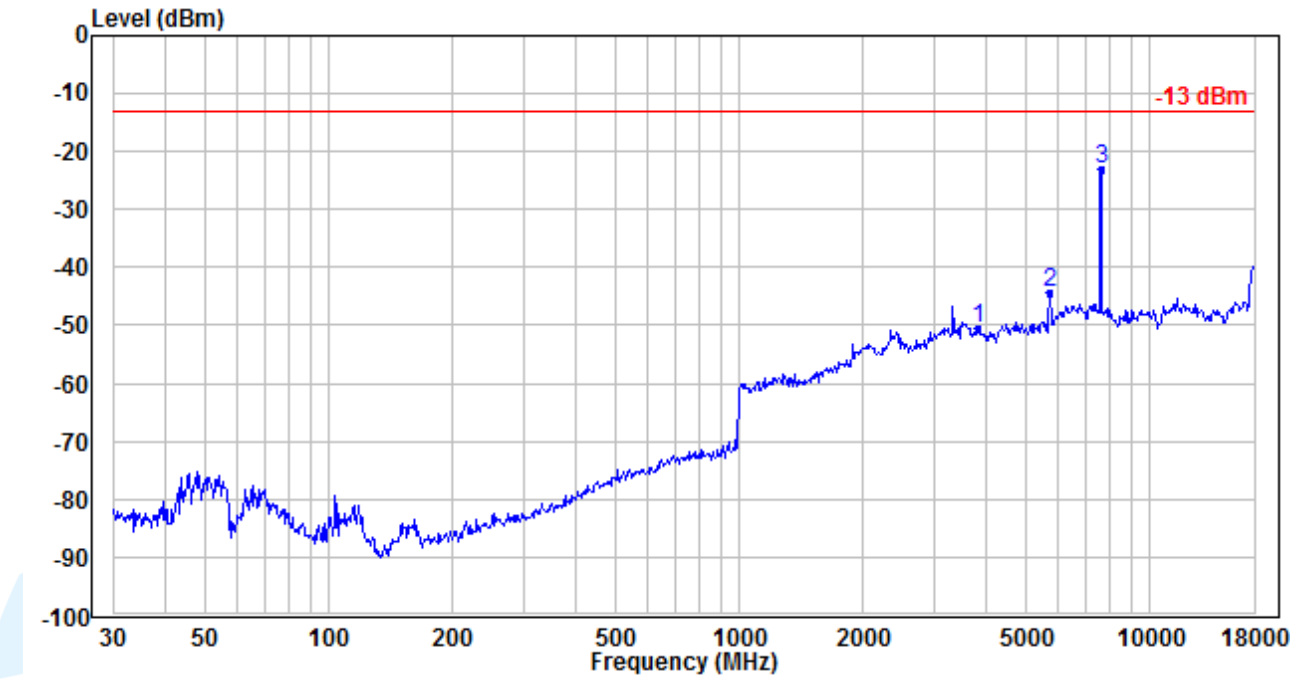
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3760.000	-65.56	13.58	-51.98	-13.00	-38.98	Peak
2	5640.000	-62.70	16.27	-46.43	-13.00	-33.43	Peak
3	7520.000	-48.77	18.30	-30.47	-13.00	-17.47	Peak

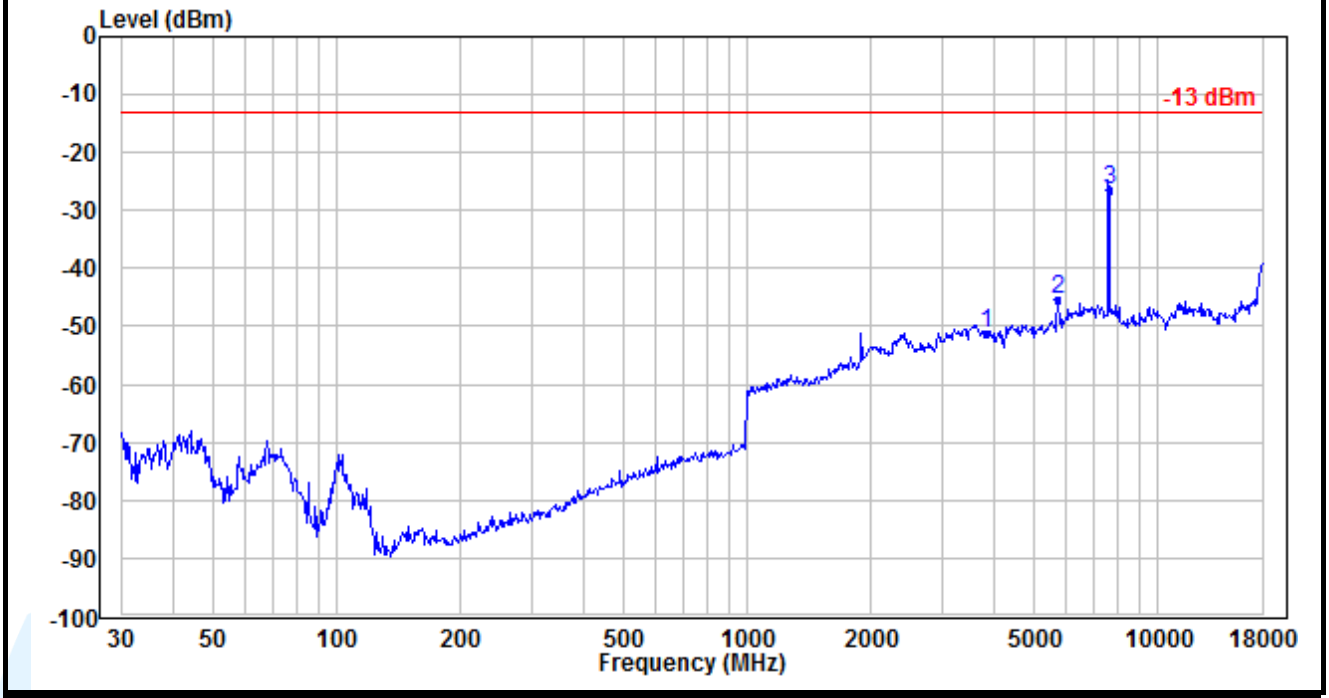
WCDMA RMC 12.2Kbps_Highest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3815.200	-63.95	13.46	-50.49	-13.00	-37.49	Peak
2	5722.800	-60.82	16.62	-44.20	-13.00	-31.20	Peak
3	7630.400	-41.48	18.40	-23.08	-13.00	-10.08	Peak

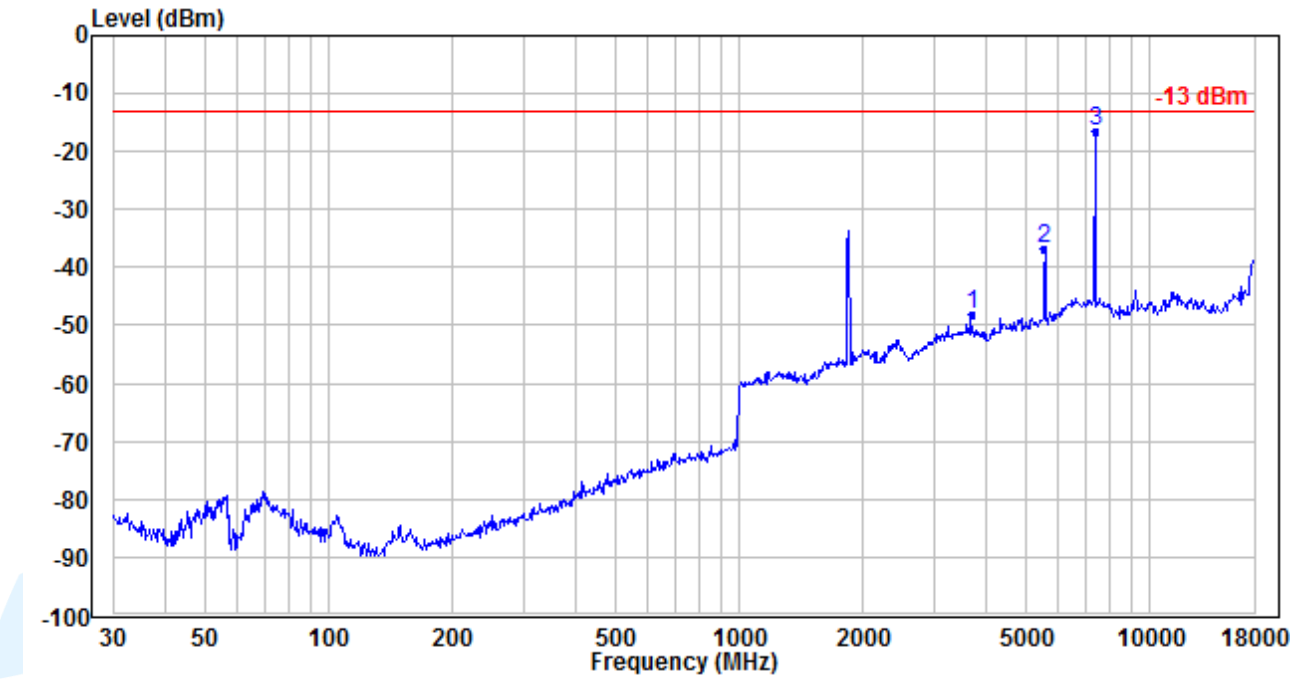
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3815.200	-64.78	13.46	-51.32	-13.00	-38.32	Peak
2	5722.800	-62.12	16.62	-45.50	-13.00	-32.50	Peak
3	7630.400	-44.75	18.40	-26.35	-13.00	-13.35	Peak

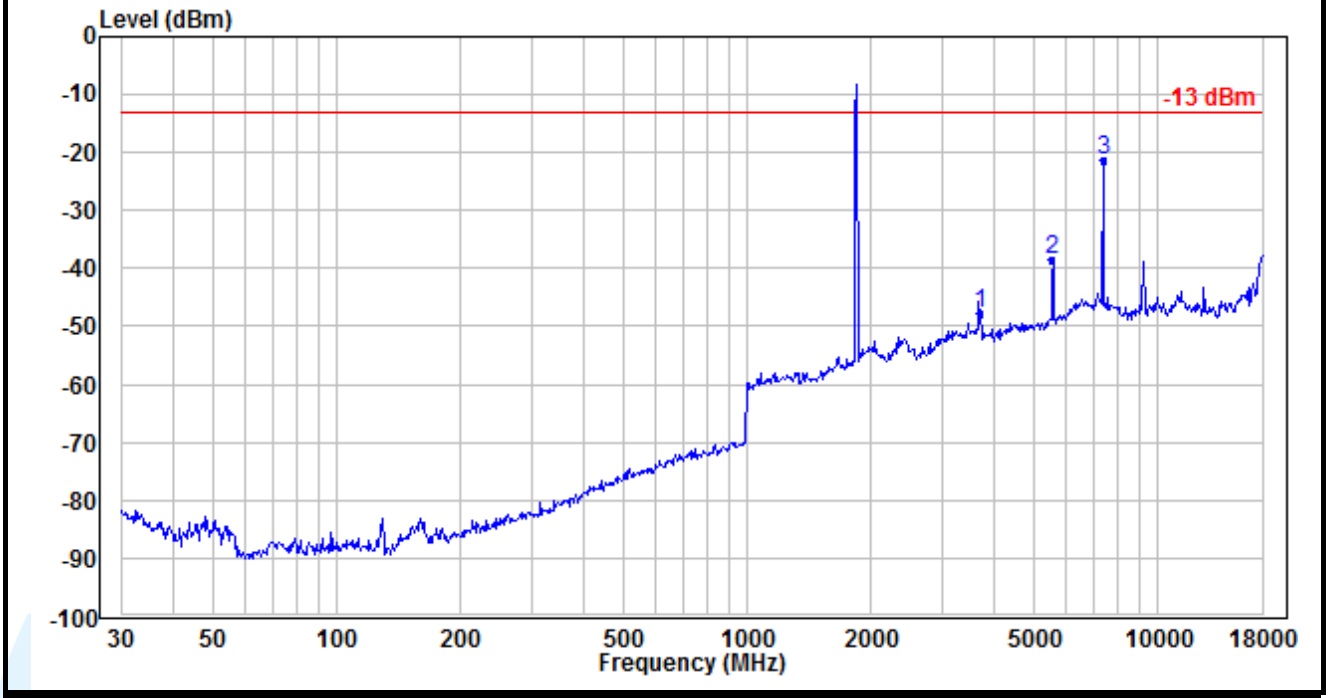
LTE Band 2/ 1.4 MHz _Lowest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3701.400	-61.96	13.72	-48.24	-13.00	-35.24	Peak
2	5552.100	-52.90	16.08	-36.82	-13.00	-23.82	Peak
3	7402.800	-34.91	18.31	-16.60	-13.00	-3.60	Peak

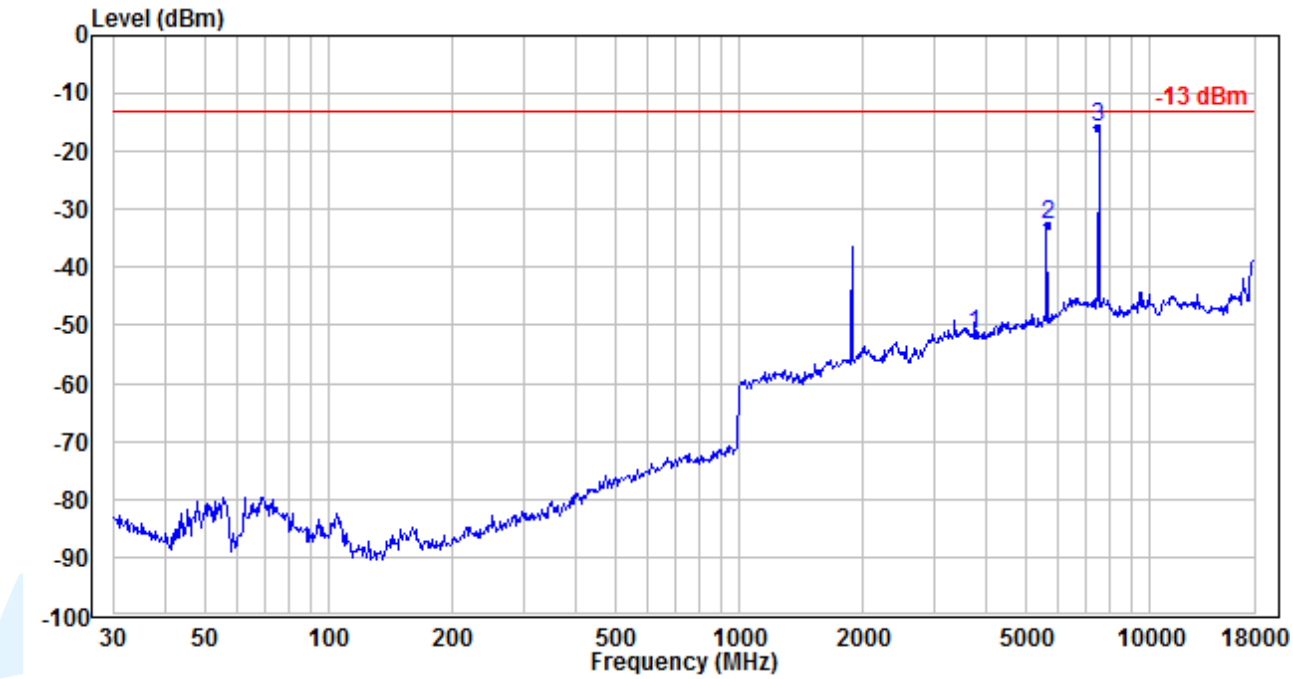
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3701.400	-61.36	13.72	-47.64	-13.00	-34.64	Peak
2	5552.100	-54.67	16.08	-38.59	-13.00	-25.59	Peak
3	7402.800	-39.46	18.31	-21.15	-13.00	-8.15	Peak

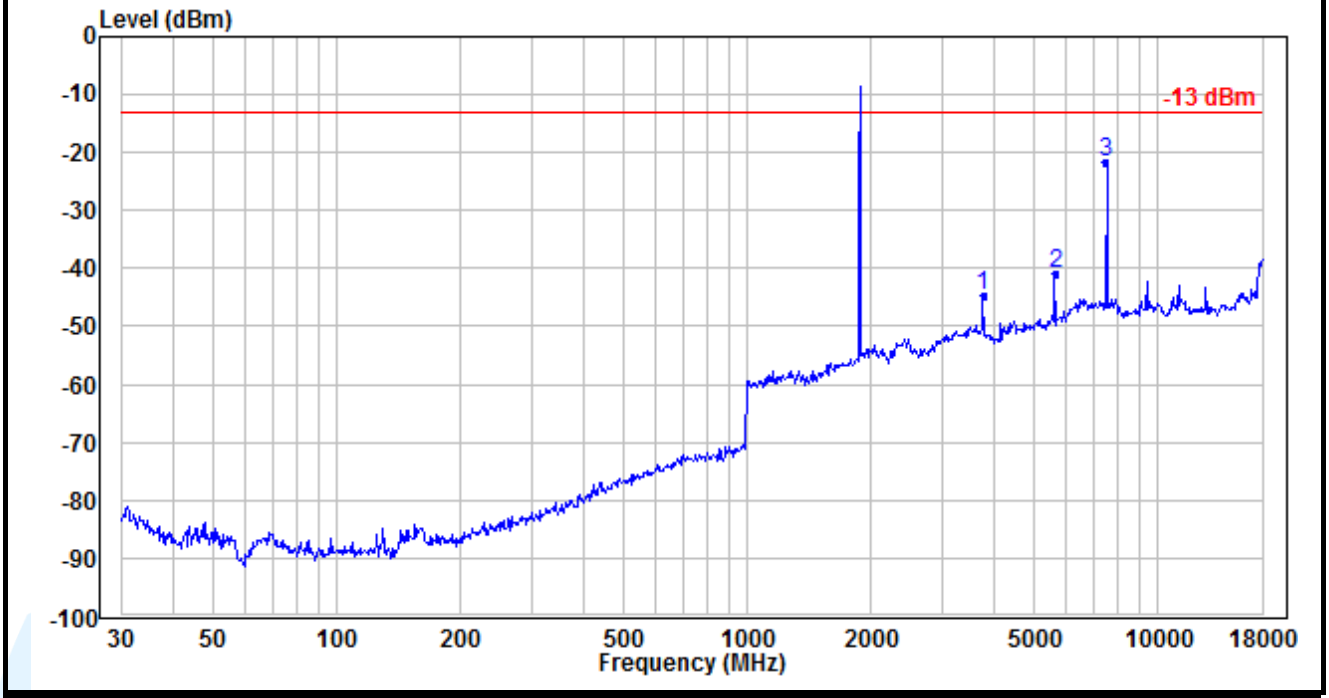
LTE Band 2/ 1.4 MHz _Middle Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3760.000	-65.12	13.58	-51.54	-13.00	-38.54	Peak
2	5640.000	-49.00	16.27	-32.73	-13.00	-19.73	Peak
3	7520.000	-34.24	18.30	-15.94	-13.00	-2.94	Peak

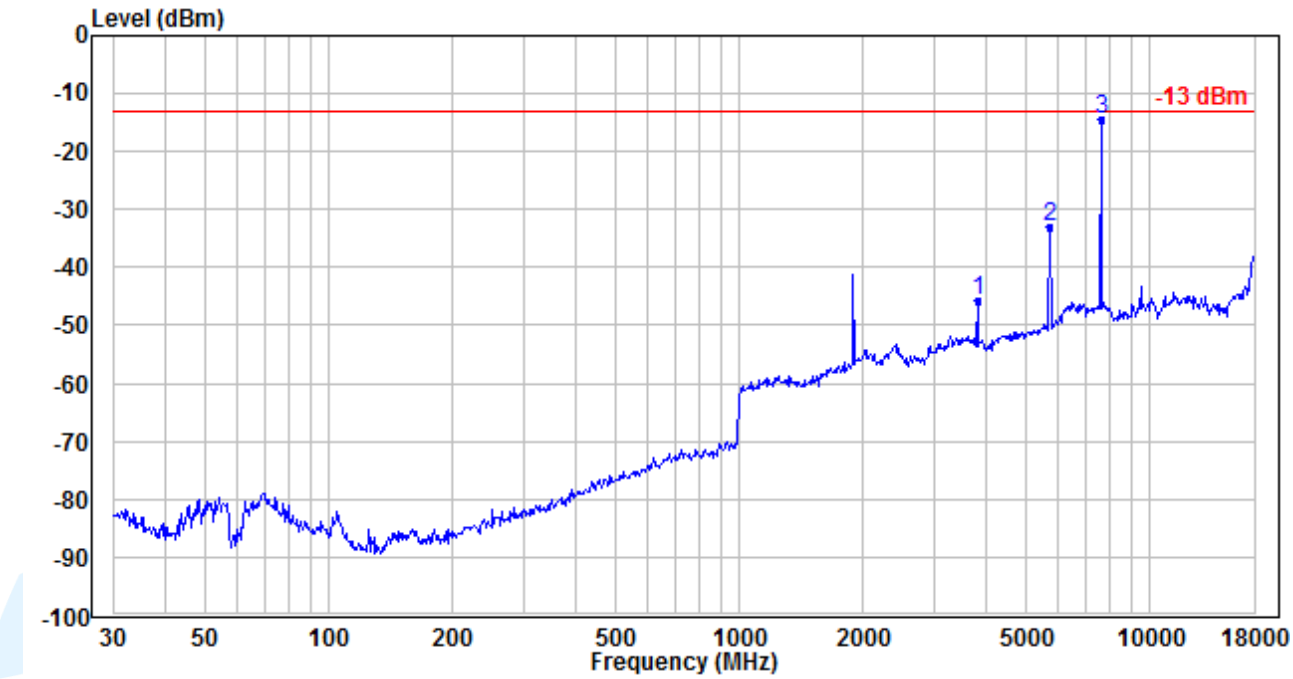
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3760.000	-58.36	13.58	-44.78	-13.00	-31.78	Peak
2	5640.000	-57.19	16.27	-40.92	-13.00	-27.92	Peak
3	7520.000	-39.97	18.30	-21.67	-13.00	-8.67	Peak

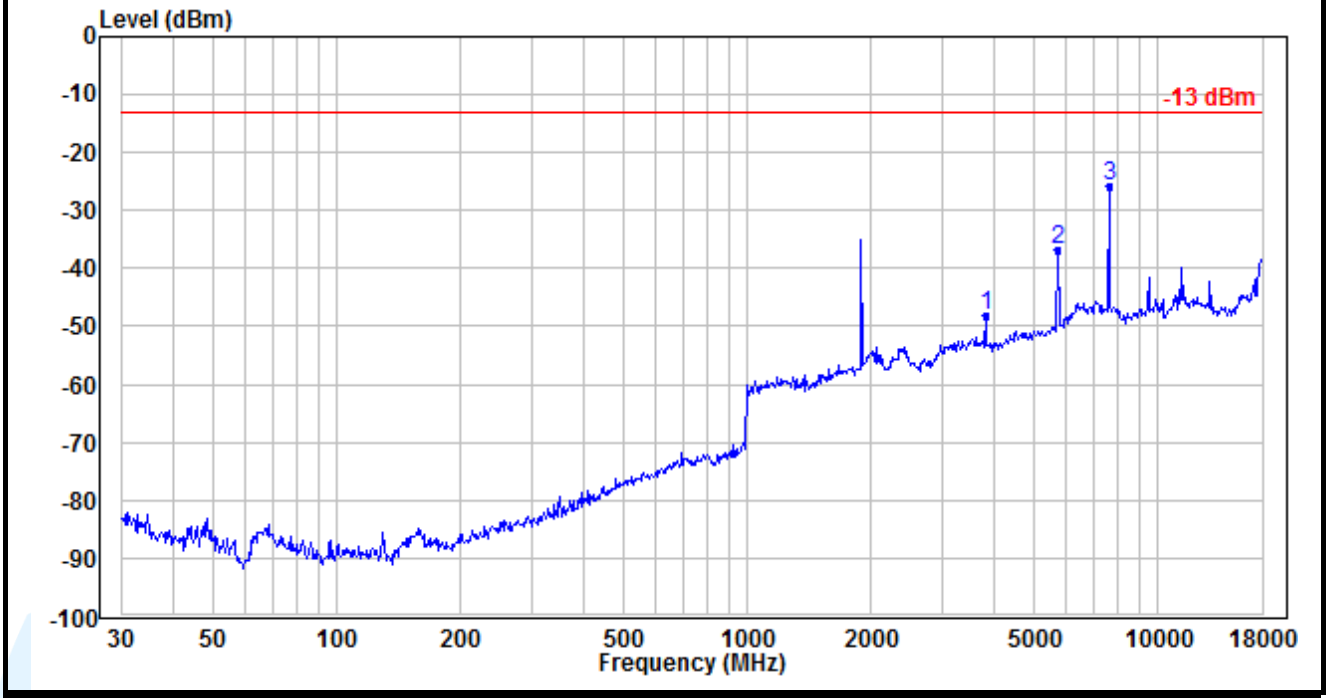
LTE Band 2/ 1.4 MHz _Highest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3818.600	-59.17	13.44	-45.73	-13.00	-32.73	Peak
2	5727.900	-49.52	16.63	-32.89	-13.00	-19.89	Peak
3	7637.200	-32.91	18.41	-14.50	-13.00	-1.50	Peak

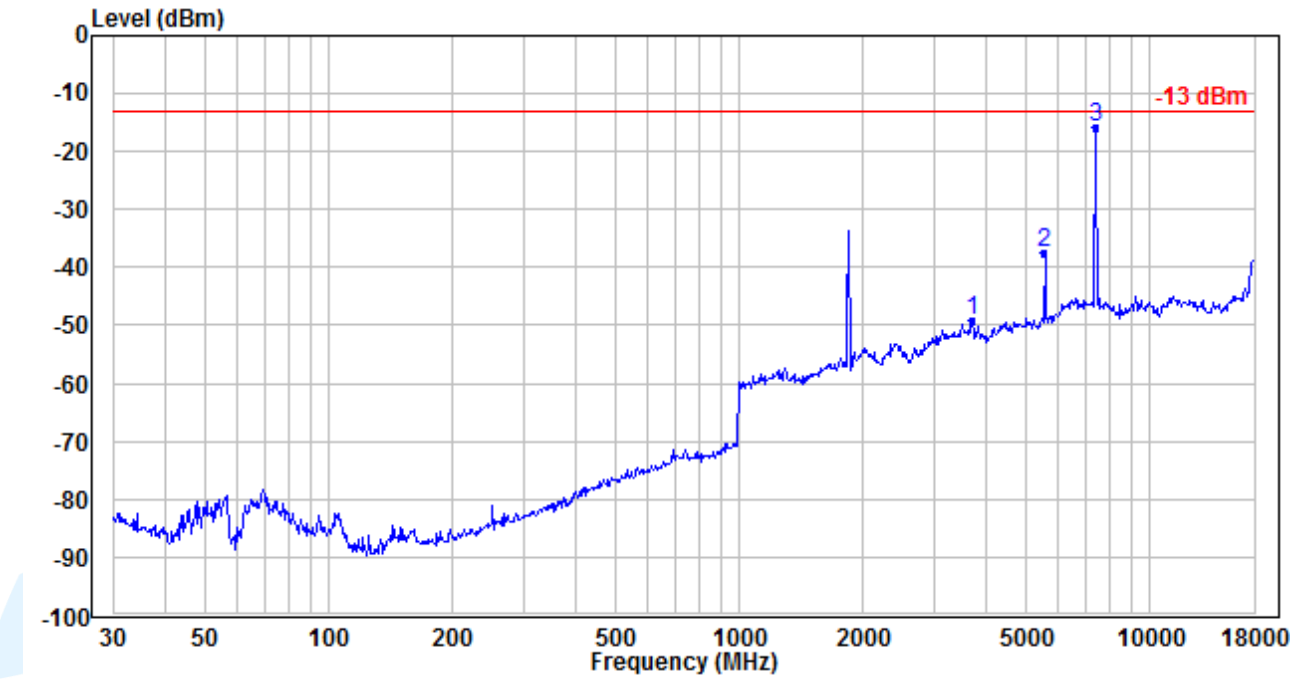
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3818.600	-61.48	13.44	-48.04	-13.00	-35.04	Peak
2	5727.900	-53.28	16.63	-36.65	-13.00	-23.65	Peak
3	7637.200	-44.06	18.41	-25.65	-13.00	-12.65	Peak

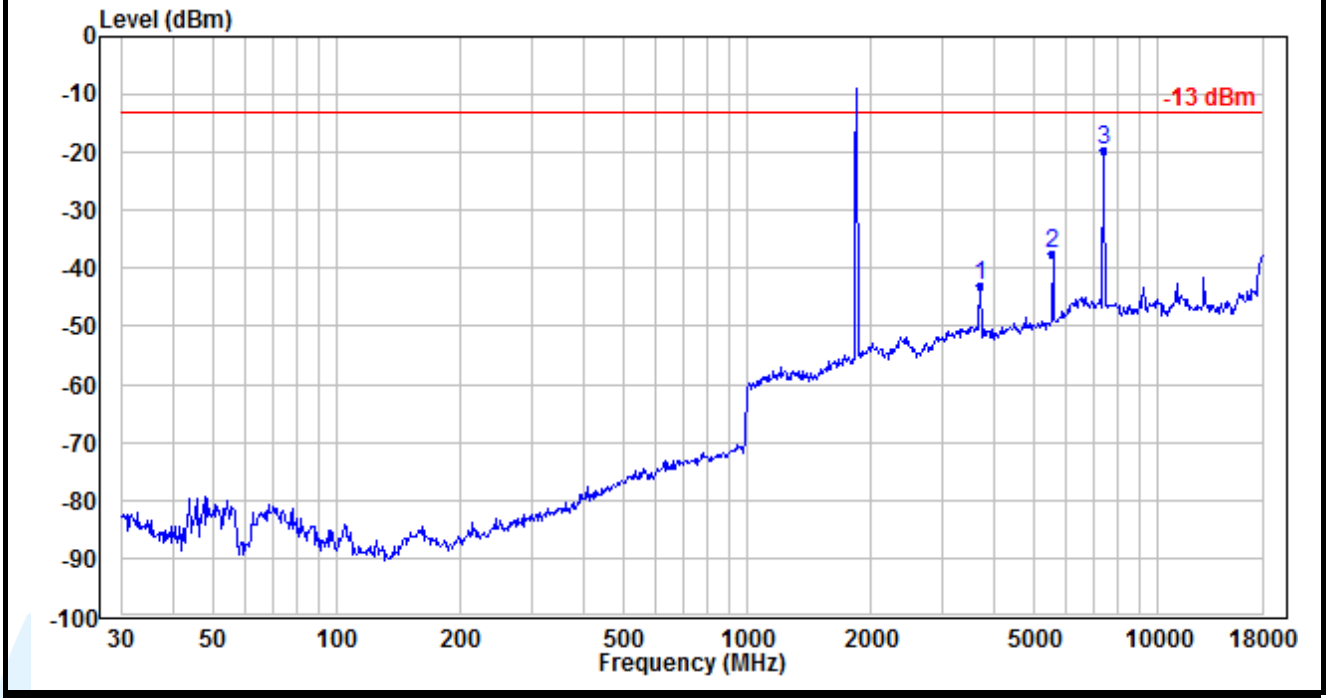
LTE Band 2/ 3 MHz _Lowest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3703.000	-62.99	13.72	-49.27	-13.00	-36.27	Peak
2	5554.500	-53.63	16.09	-37.54	-13.00	-24.54	Peak
3	7406.000	-34.05	18.31	-15.74	-13.00	-2.74	Peak

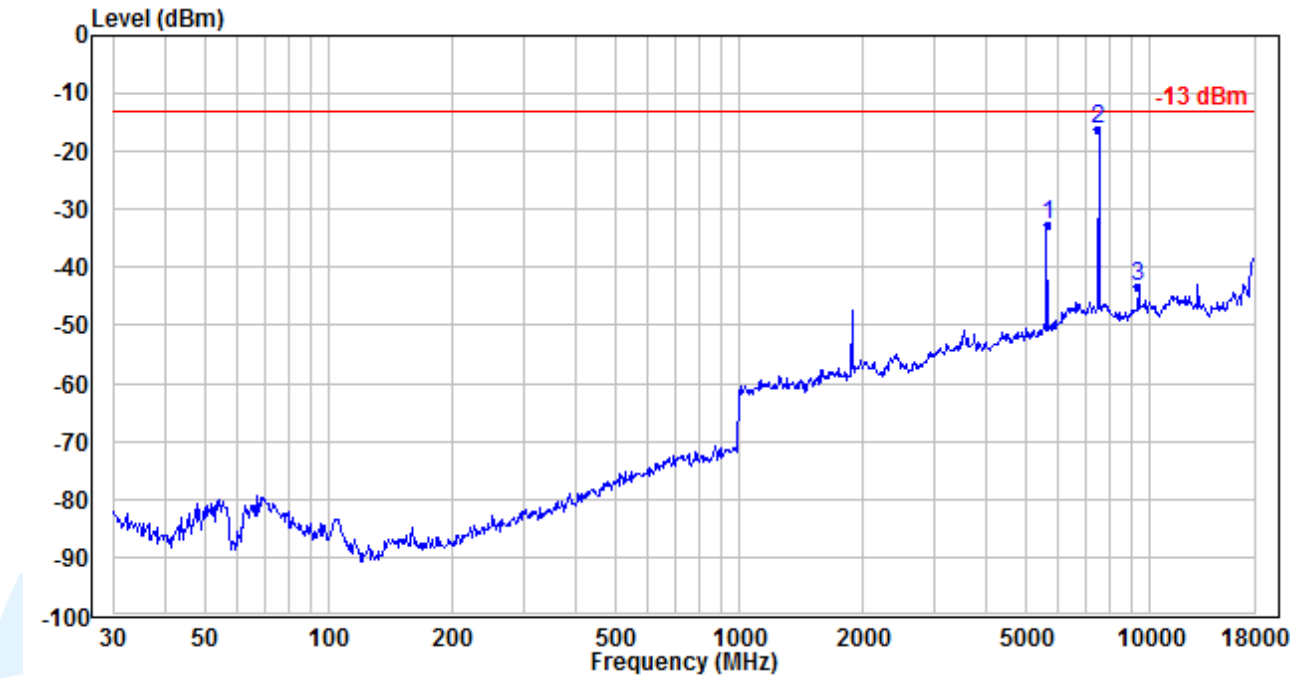
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3703.000	-56.58	13.72	-42.86	-13.00	-29.86	Peak
2	5554.500	-53.70	16.09	-37.61	-13.00	-24.61	Peak
3	7406.000	-37.75	18.31	-19.44	-13.00	-6.44	Peak

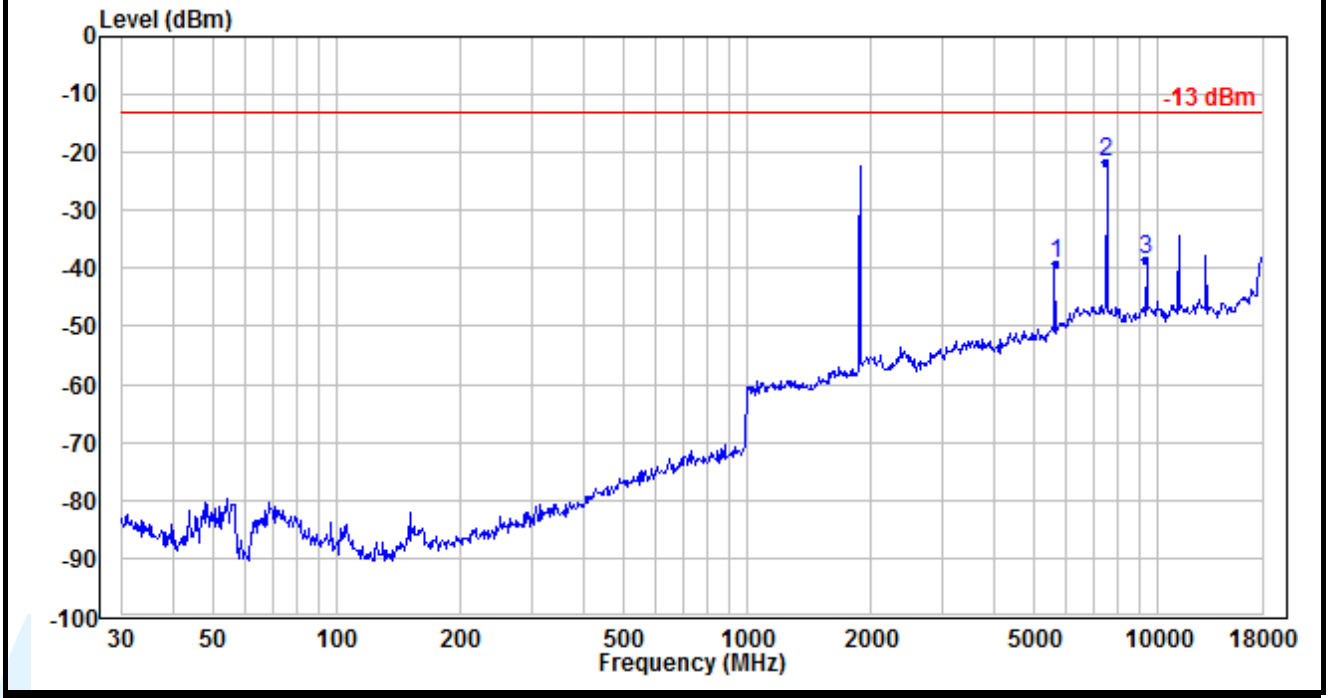
LTE Band 2/ 3 MHz _Middle Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	5640.000	-49.06	16.27	-32.79	-13.00	-19.79	Peak
2	7520.000	-34.37	18.30	-16.07	-13.00	-3.07	Peak
3	9400.000	-62.85	19.49	-43.36	-13.00	-30.36	Peak

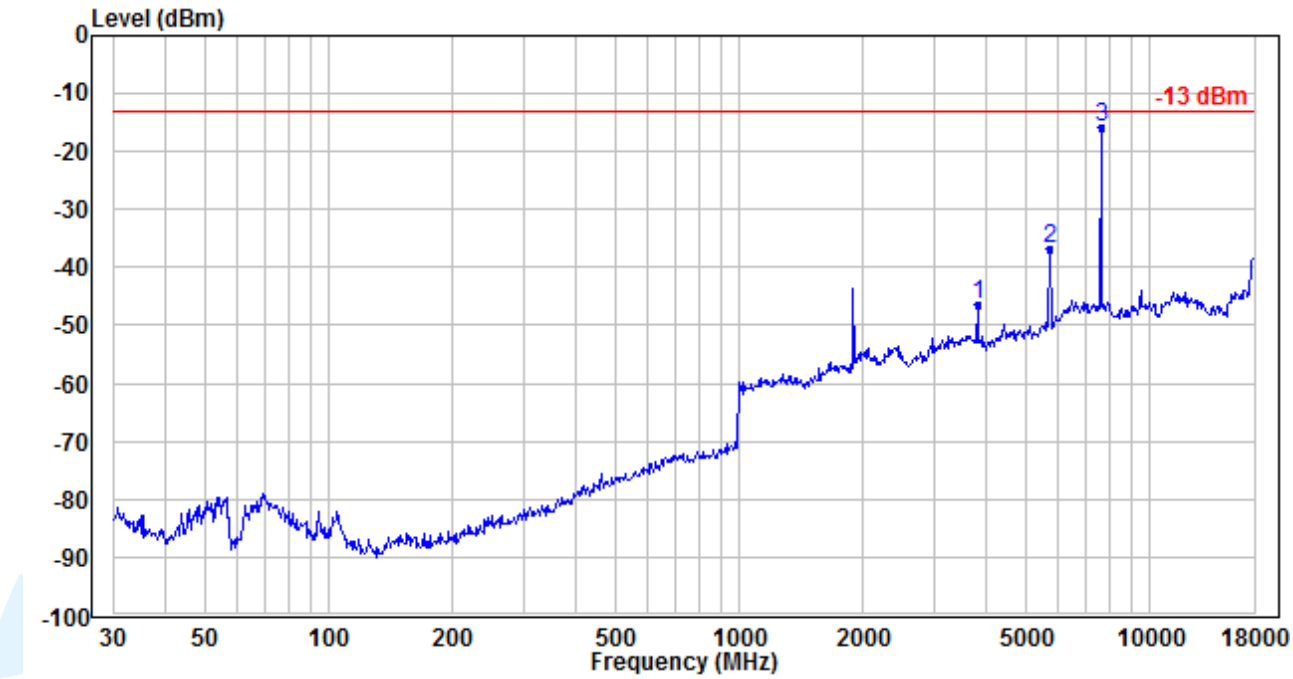
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	5640.000	-55.40	16.27	-39.13	-13.00	-26.13	Peak
2	7520.000	-39.97	18.30	-21.67	-13.00	-8.67	Peak
3	9400.000	-57.83	19.49	-38.34	-13.00	-25.34	Peak

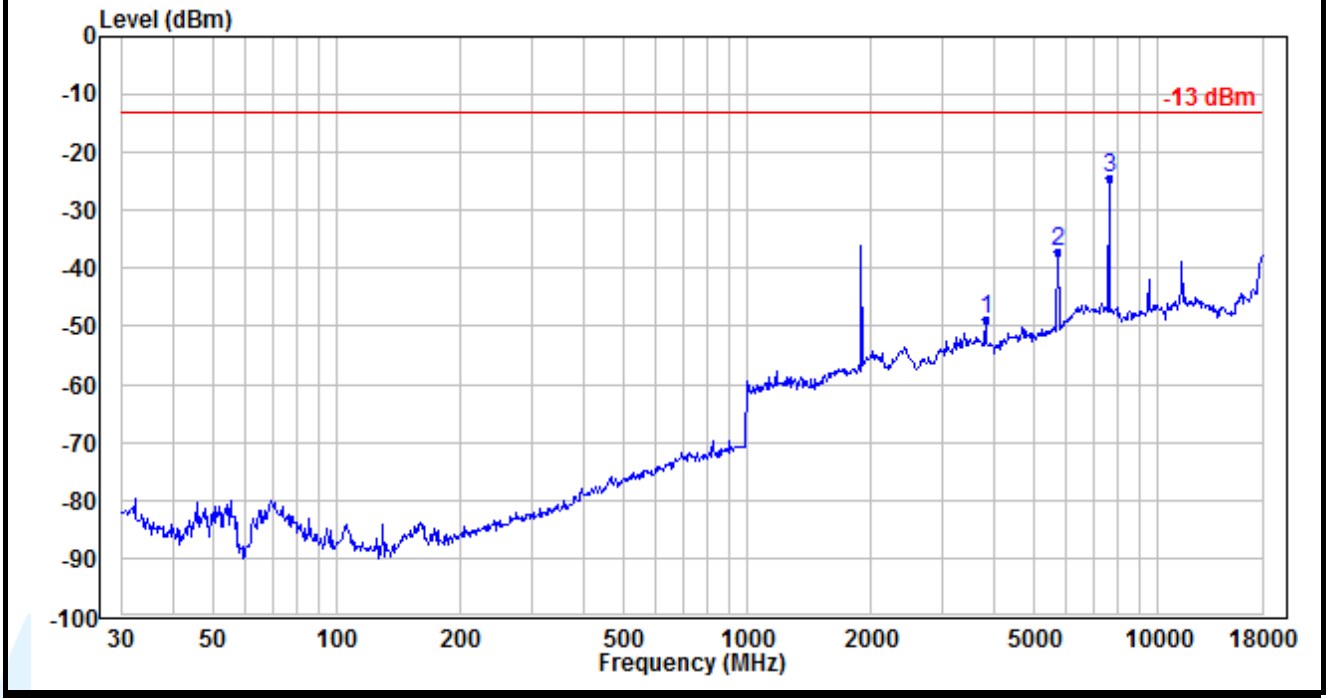
LTE Band 2/ 3 MHz _Highest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3817.000	-59.85	13.45	-46.40	-13.00	-33.40	Peak
2	5725.500	-53.54	16.63	-36.91	-13.00	-23.91	Peak
3	7634.000	-34.32	18.40	-15.92	-13.00	-2.92	Peak

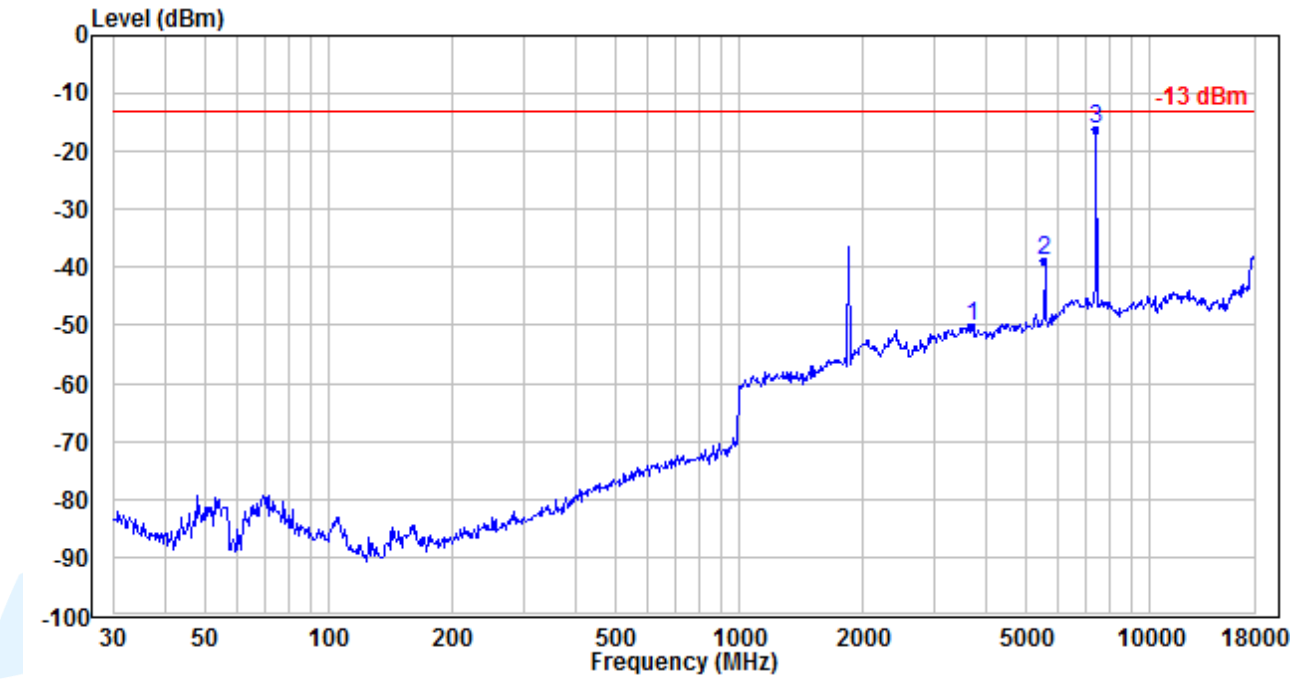
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3817.000	-62.21	13.45	-48.76	-13.00	-35.76	Peak
2	5725.500	-53.59	16.63	-36.96	-13.00	-23.96	Peak
3	7634.000	-42.80	18.40	-24.40	-13.00	-11.40	Peak

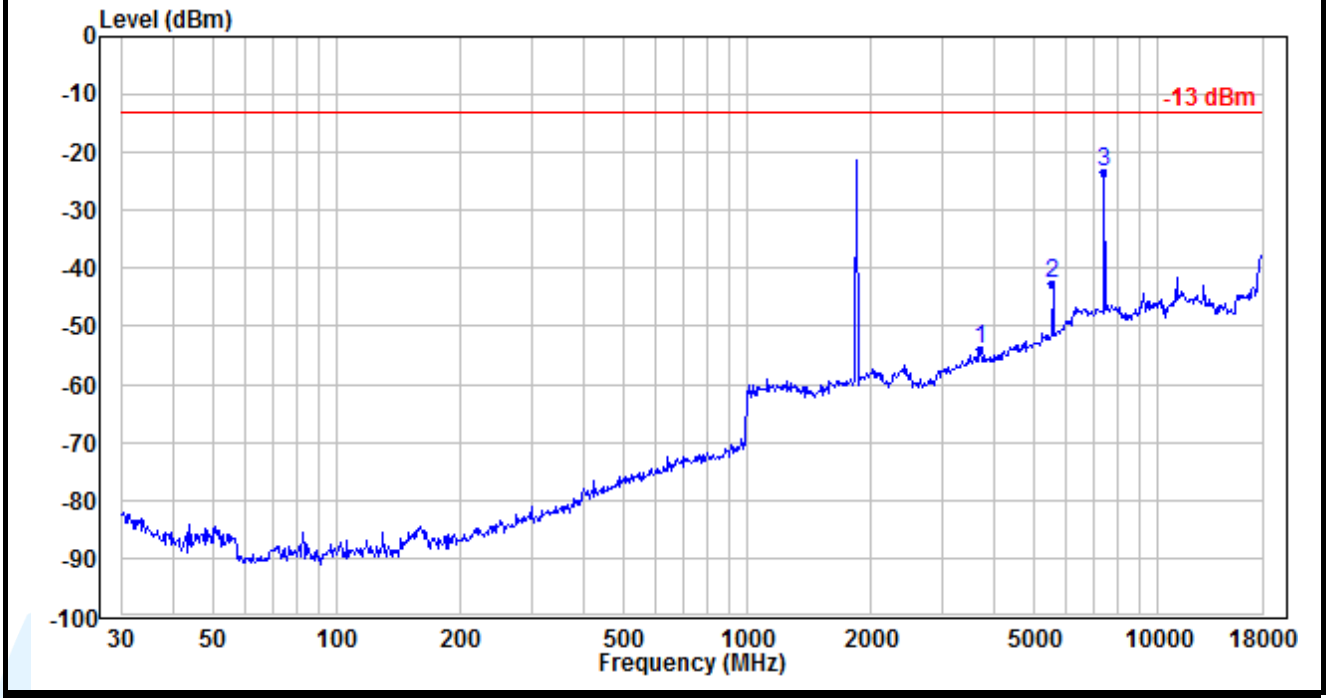
LTE Band 2/ 5 MHz _Lowest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3705.000	-63.93	13.72	-50.21	-13.00	-37.21	Peak
2	5557.500	-55.06	16.08	-38.98	-13.00	-25.98	Peak
3	7410.000	-34.39	18.31	-16.08	-13.00	-3.08	Peak

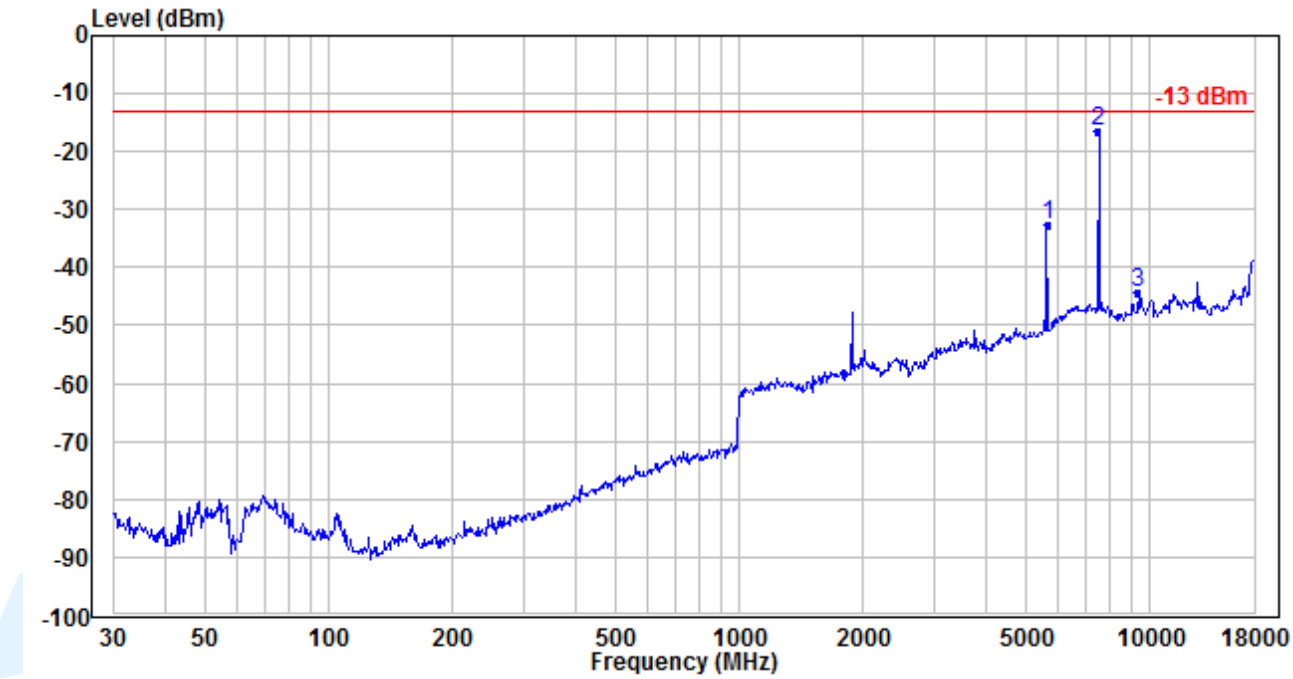
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3705.000	-67.70	13.72	-53.98	-13.00	-40.98	Peak
2	5554.500	-58.54	16.09	-42.45	-13.00	-29.45	Peak
3	7406.000	-41.63	18.31	-23.32	-13.00	-10.32	Peak

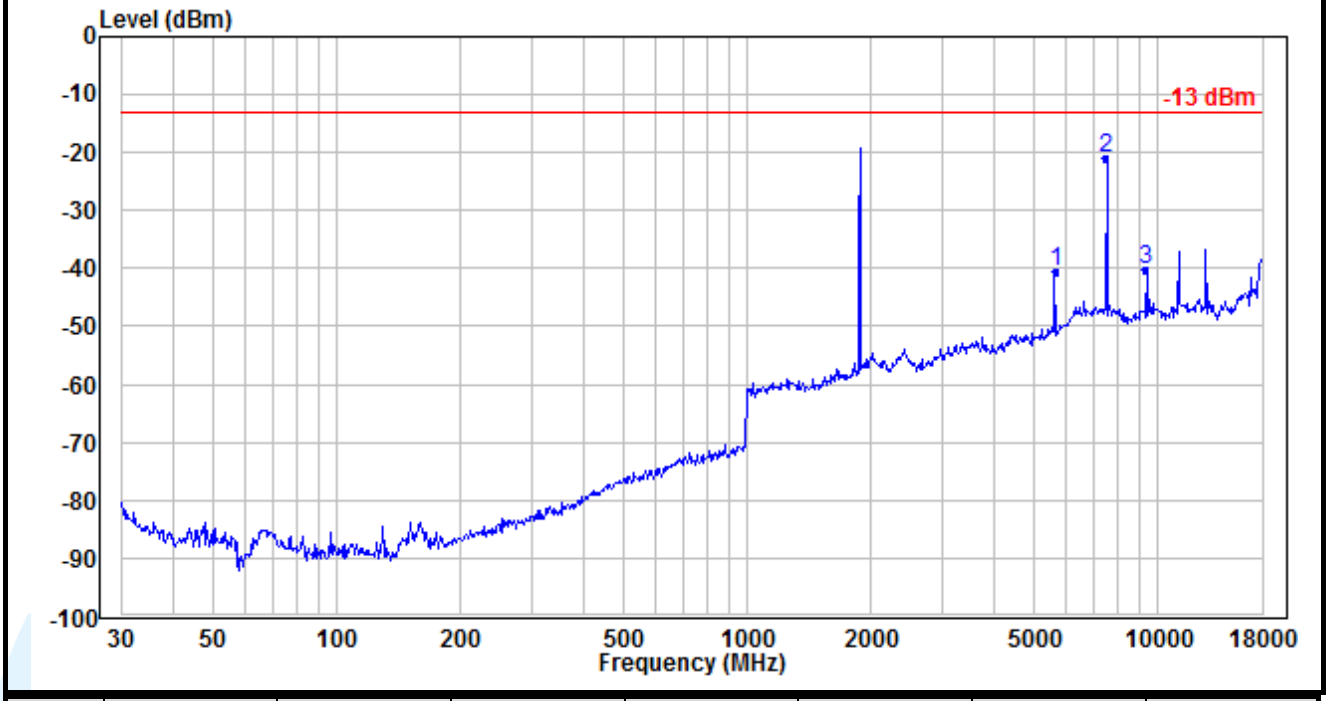
LTE Band 2/ 5 MHz _Middle Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	5640.000	-48.84	16.27	-32.57	-13.00	-19.57	Peak
2	7520.000	-34.81	18.30	-16.51	-13.00	-3.51	Peak
3	9400.000	-63.93	19.49	-44.44	-13.00	-31.44	Peak

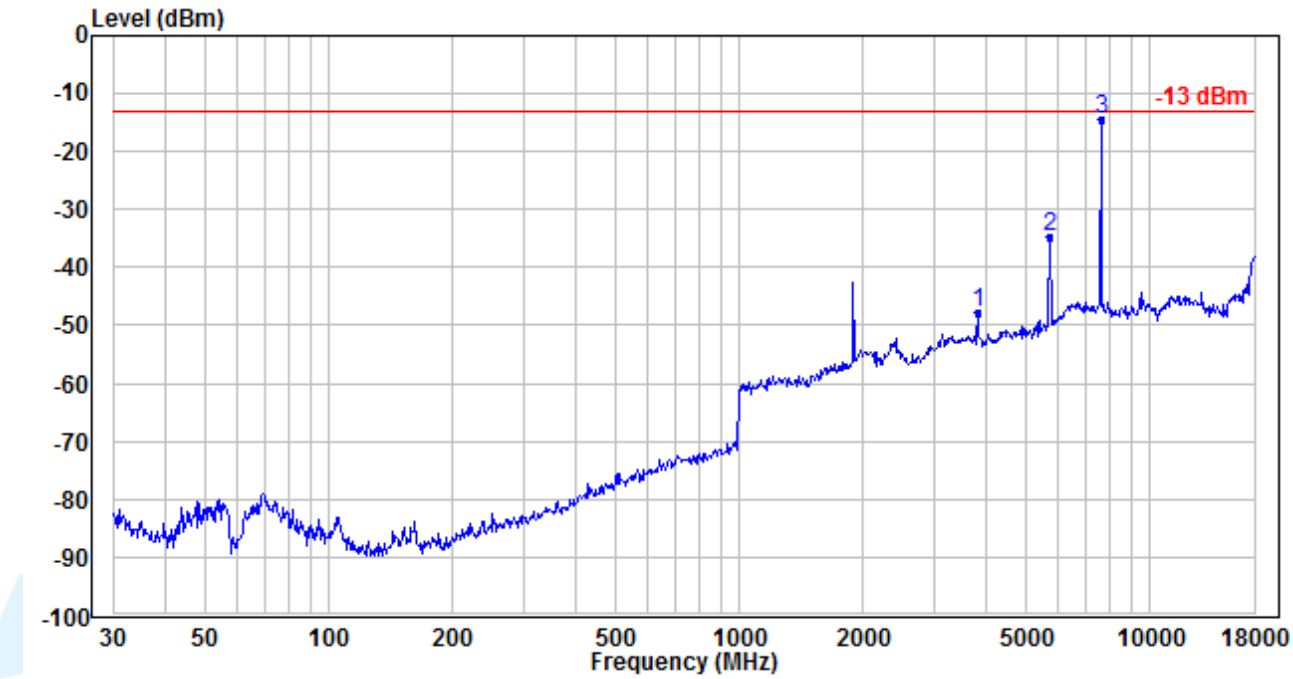
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	5640.000	-56.88	16.27	-40.61	-13.00	-27.61	Peak
2	7520.000	-39.12	18.30	-20.82	-13.00	-7.82	Peak
3	9400.000	-59.85	19.49	-40.36	-13.00	-27.36	Peak

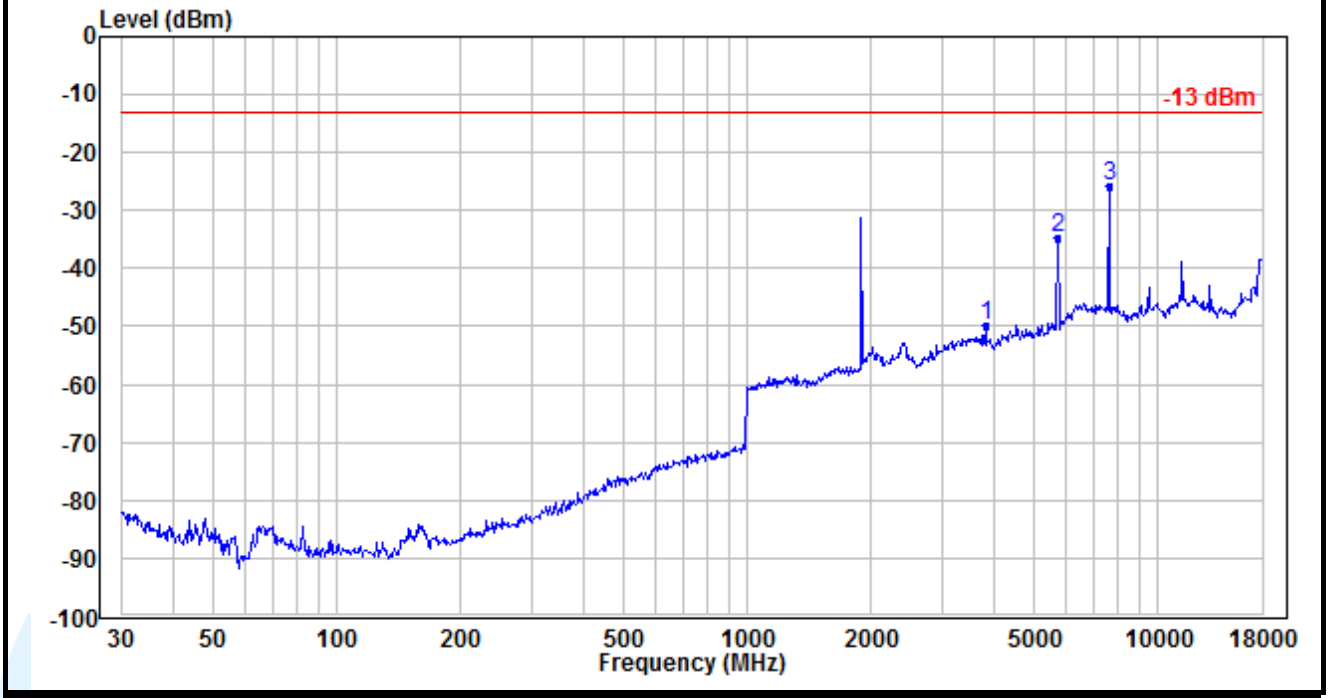
LTE Band 2/ 5 MHz _Highest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3815.000	-61.33	13.45	-47.88	-13.00	-34.88	Peak
2	5722.500	-51.16	16.62	-34.54	-13.00	-21.54	Peak
3	7630.000	-32.95	18.40	-14.55	-13.00	-1.55	Peak

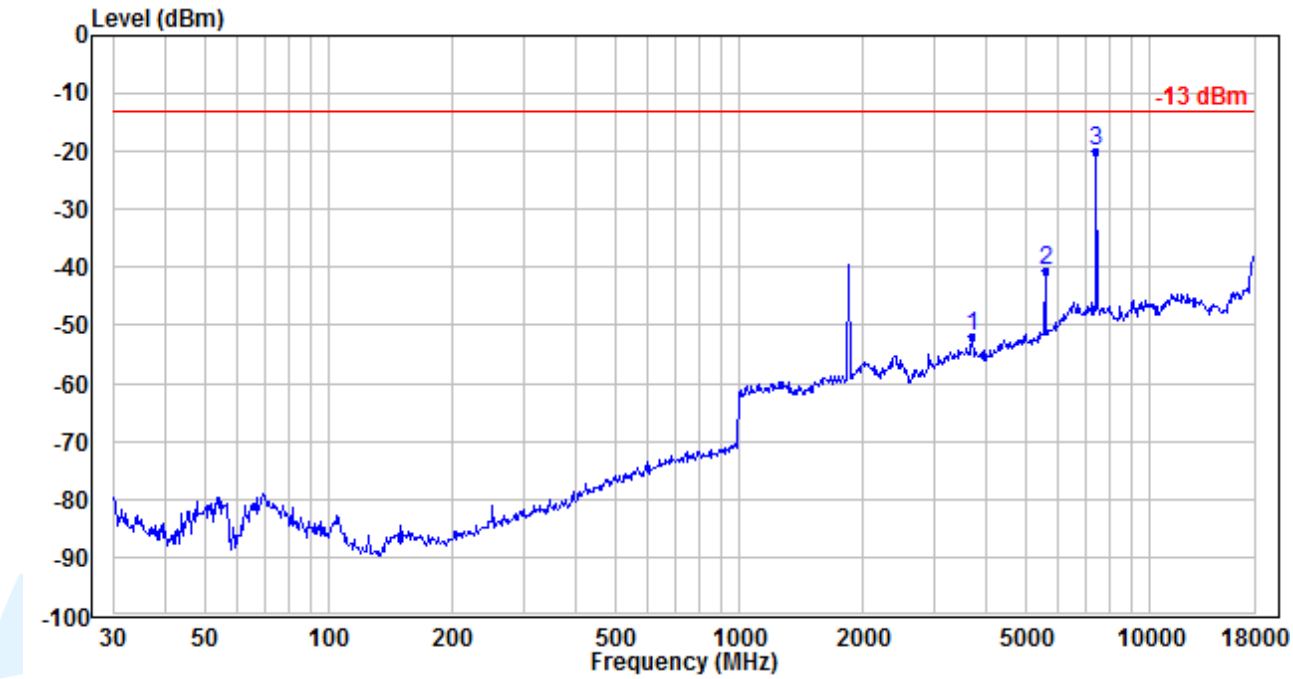
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3815.000	-63.42	13.45	-49.97	-13.00	-36.97	Peak
2	5722.500	-51.31	16.62	-34.69	-13.00	-21.69	Peak
3	7630.000	-44.18	18.40	-25.78	-13.00	-12.78	Peak

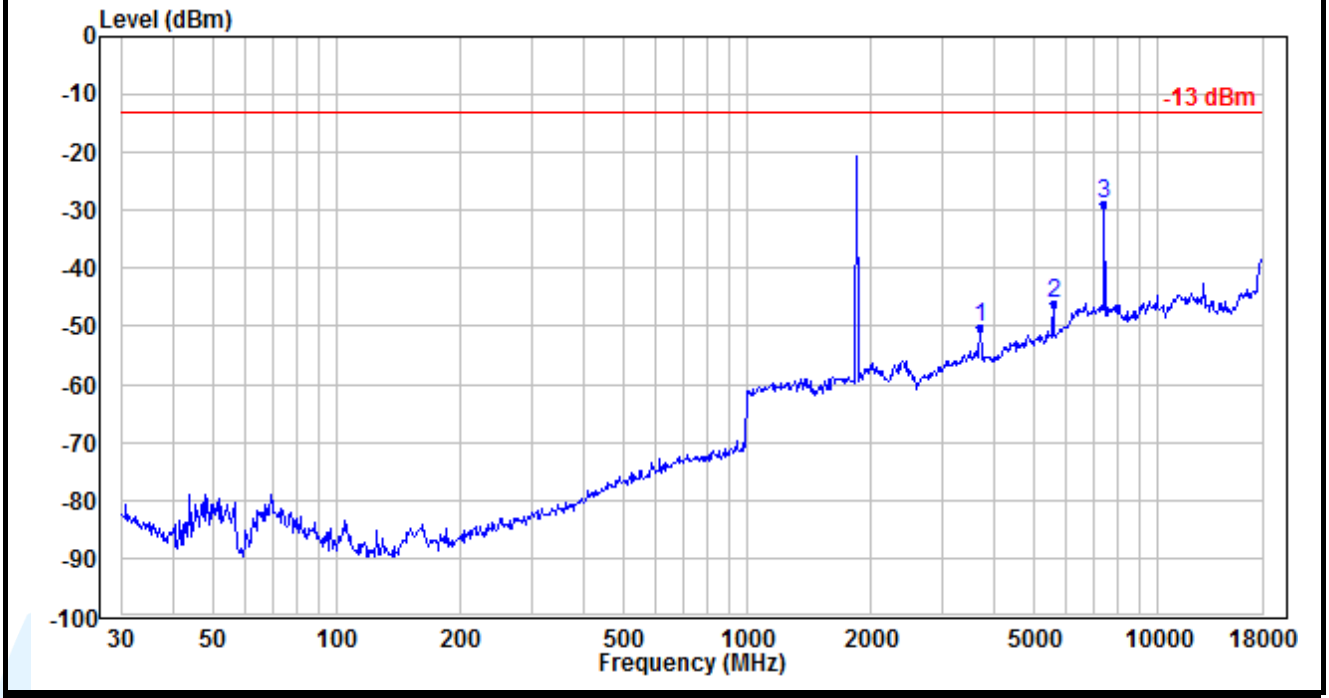
LTE Band 2/ 10 MHz _Lowest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3710.000	-65.66	13.70	-51.96	-13.00	-38.96	Peak
2	5565.000	-56.75	16.09	-40.66	-13.00	-27.66	Peak
3	7420.000	-38.38	18.30	-20.08	-13.00	-7.08	Peak

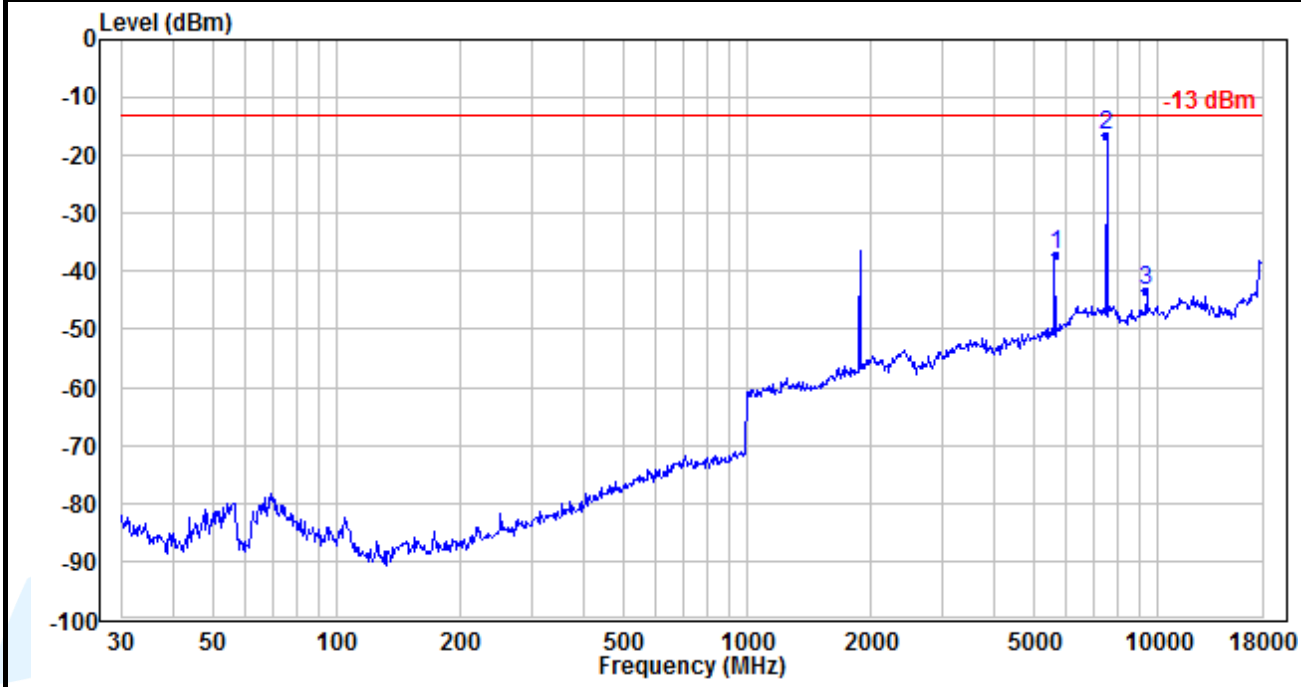
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3710.000	-63.75	13.70	-50.05	-13.00	-37.05	Peak
2	5565.000	-62.30	16.09	-46.21	-13.00	-33.21	Peak
3	7420.000	-47.14	18.30	-28.84	-13.00	-15.84	Peak

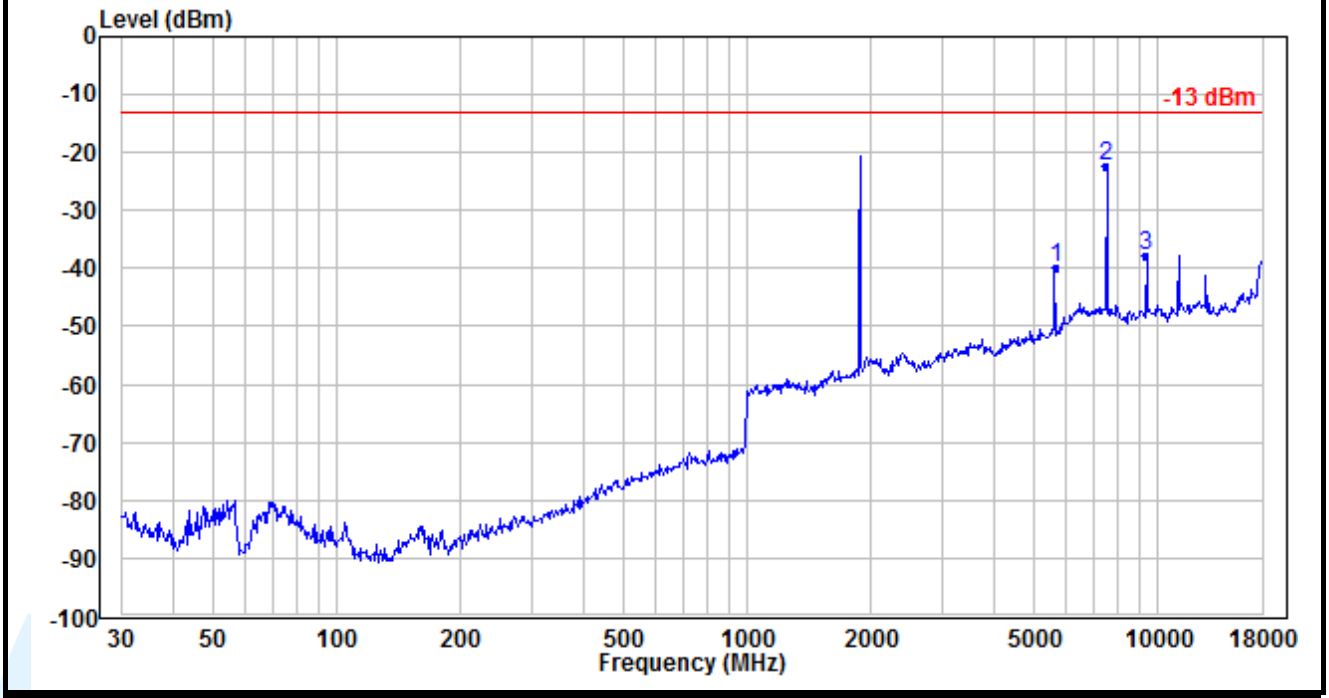
LTE Band 2/ 10 MHz _Middle Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	5640.000	-53.54	16.27	-37.27	-13.00	-24.27	Peak
2	7520.000	-34.64	18.30	-16.34	-13.00	-3.34	Peak
3	9400.000	-62.85	19.49	-43.36	-13.00	-30.36	Peak

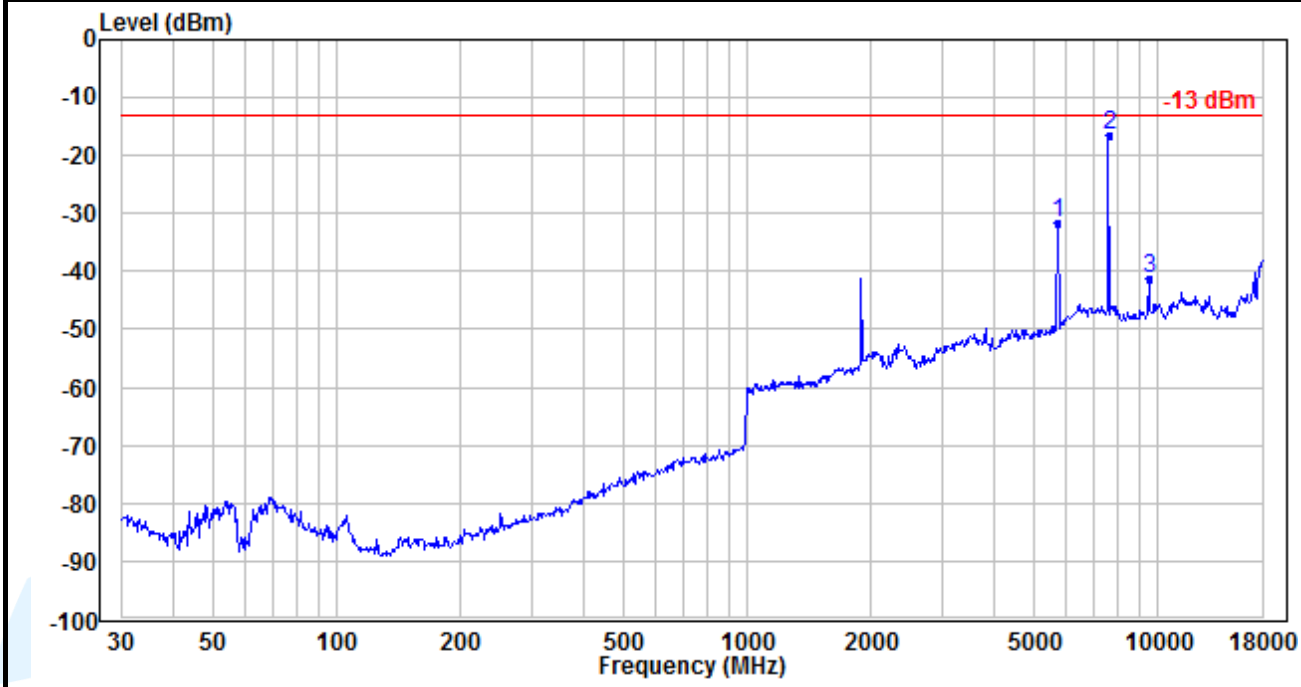
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	5640.000	-56.15	16.27	-39.88	-13.00	-26.88	Peak
2	7520.000	-40.56	18.30	-22.26	-13.00	-9.26	Peak
3	9400.000	-57.45	19.49	-37.96	-13.00	-24.96	Peak

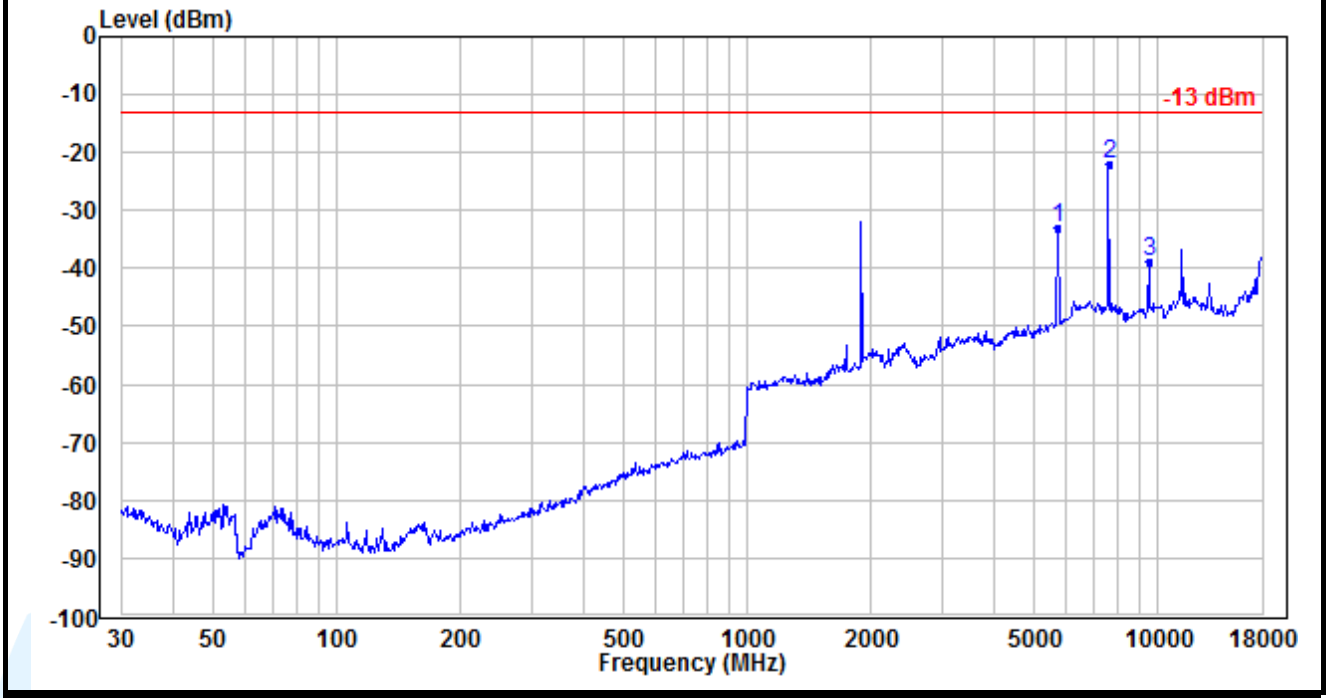
LTE Band 2/ 10 MHz _Highest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	5715.000	-48.35	16.59	-31.76	-13.00	-18.76	Peak
2	7620.000	-34.84	18.39	-16.45	-13.00	-3.45	Peak
3	9525.000	-60.76	19.41	-41.35	-13.00	-28.35	Peak

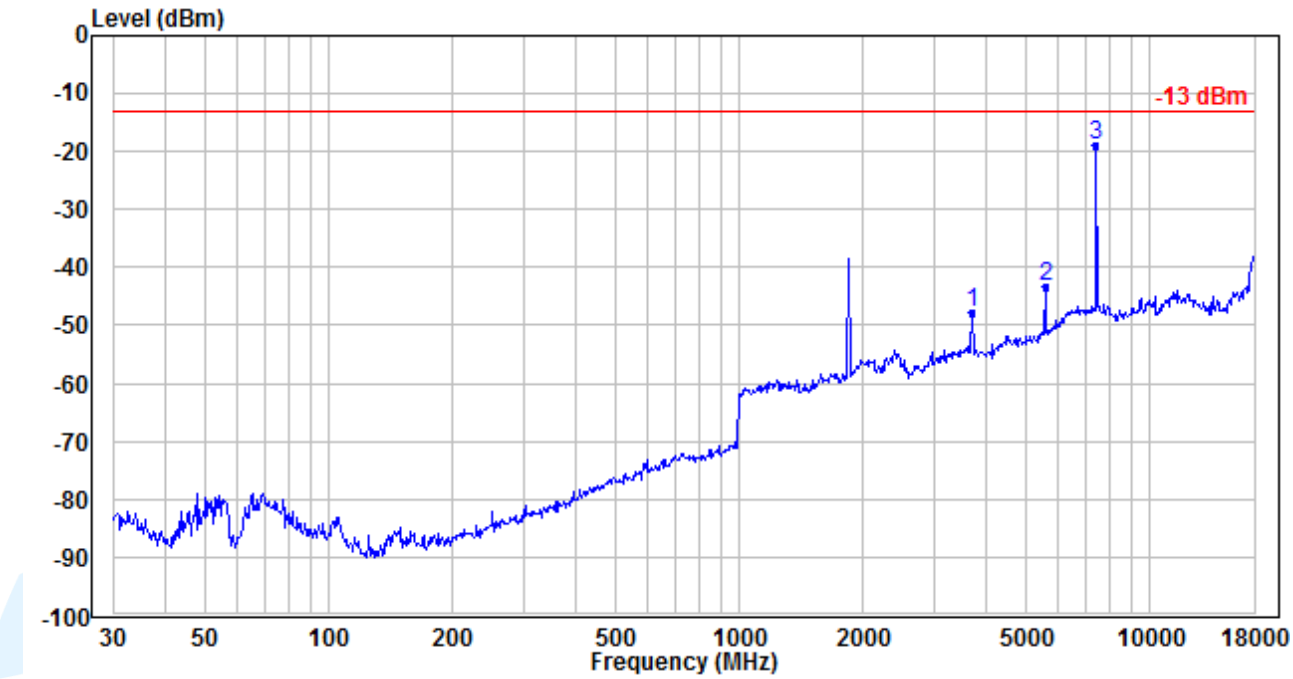
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	5715.000	-49.68	16.59	-33.09	-13.00	-20.09	Peak
2	7620.000	-40.36	18.39	-21.97	-13.00	-8.97	Peak
3	9525.000	-58.27	19.41	-38.86	-13.00	-25.86	Peak

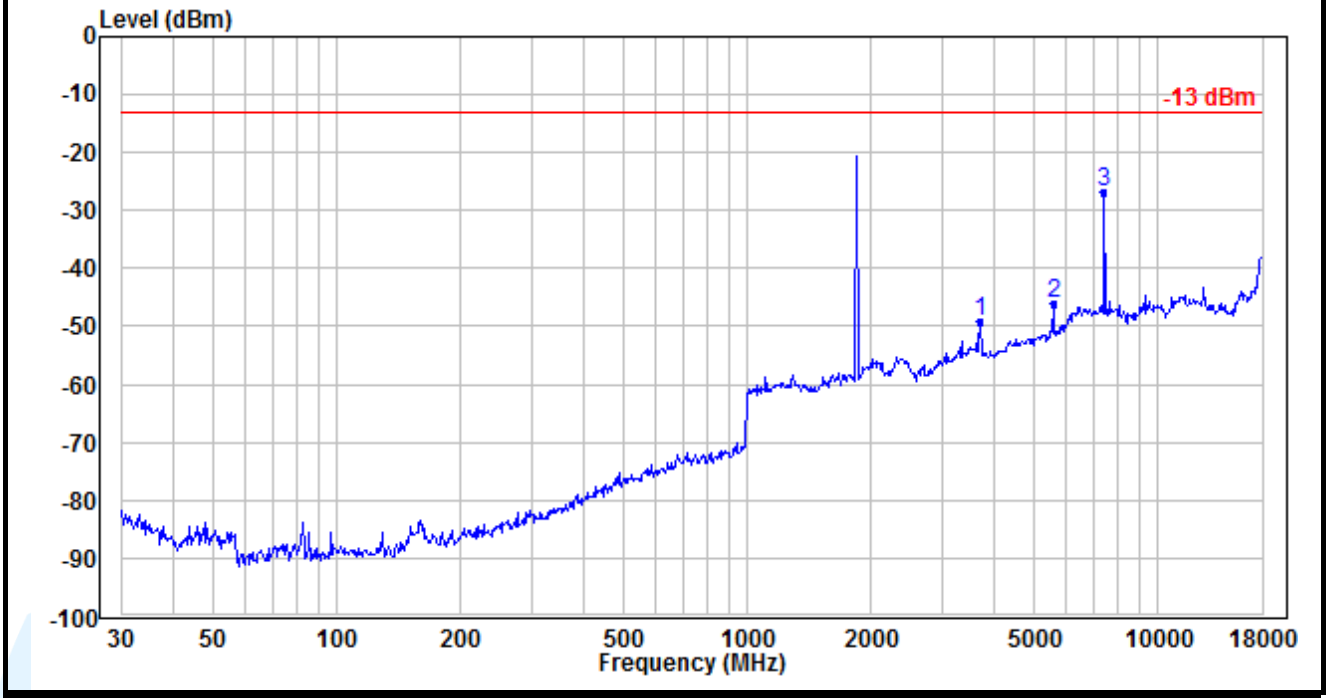
LTE Band 2/ 15 MHz _Lowest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3715.000	-61.44	13.69	-47.75	-13.00	-34.75	Peak
2	5572.500	-59.37	16.09	-43.28	-13.00	-30.28	Peak
3	7430.000	-37.22	18.31	-18.91	-13.00	-5.91	Peak

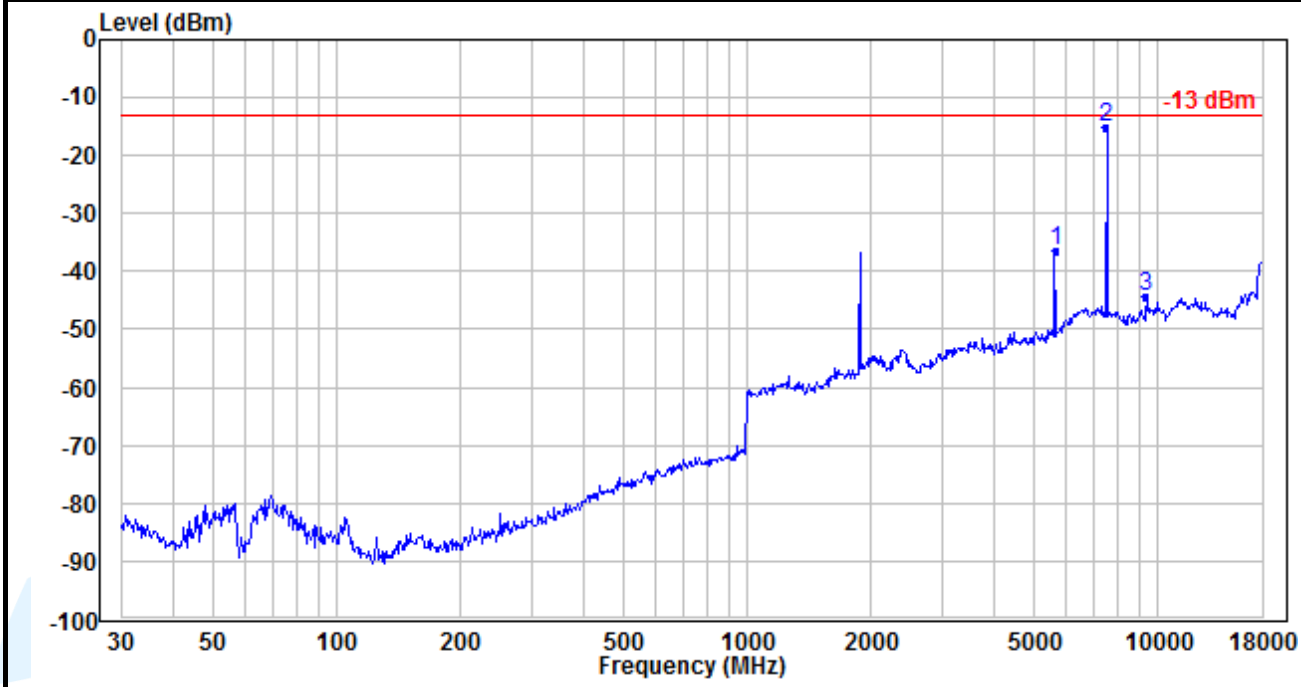
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3715.000	-62.68	13.69	-48.99	-13.00	-35.99	Peak
2	5572.500	-62.12	16.09	-46.03	-13.00	-33.03	Peak
3	7430.000	-45.08	18.31	-26.77	-13.00	-13.77	Peak

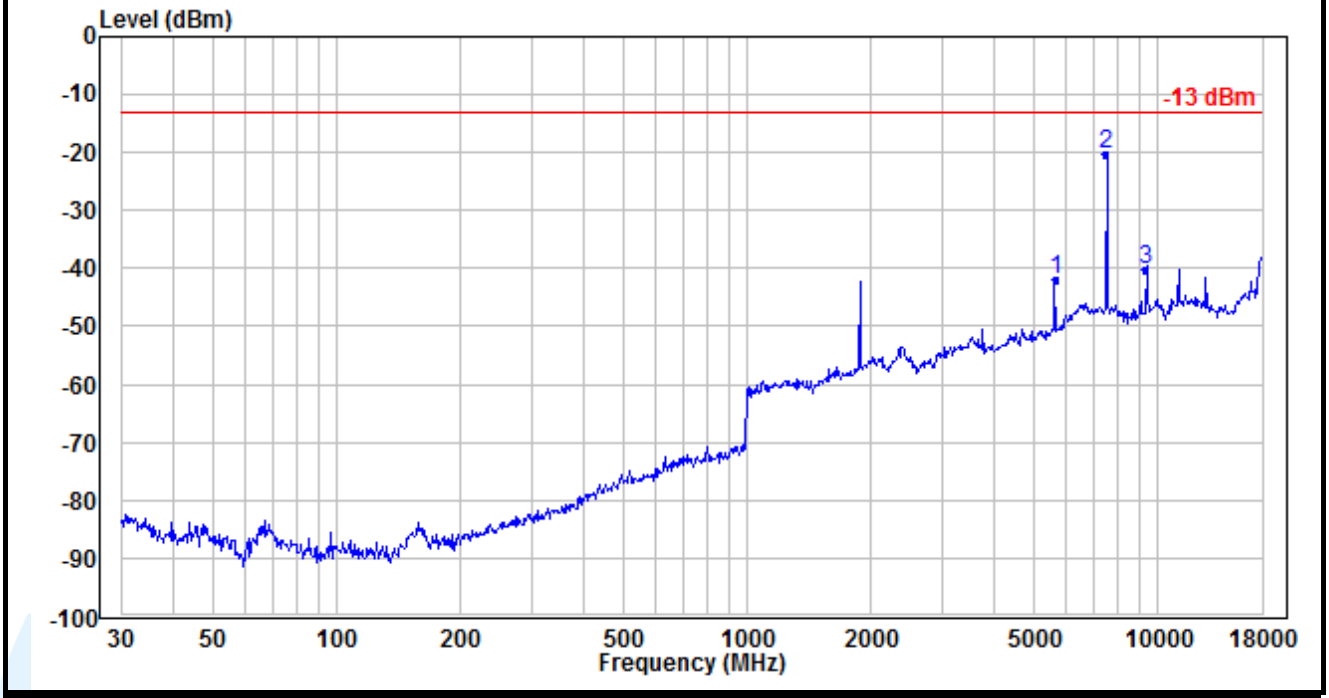
LTE Band 2/ 15 MHz _Middle Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	5640.000	-52.62	16.27	-36.35	-13.00	-23.35	Peak
2	7520.000	-33.36	18.30	-15.06	-13.00	-2.06	Peak
3	9400.000	-63.72	19.49	-44.23	-13.00	-31.23	Peak

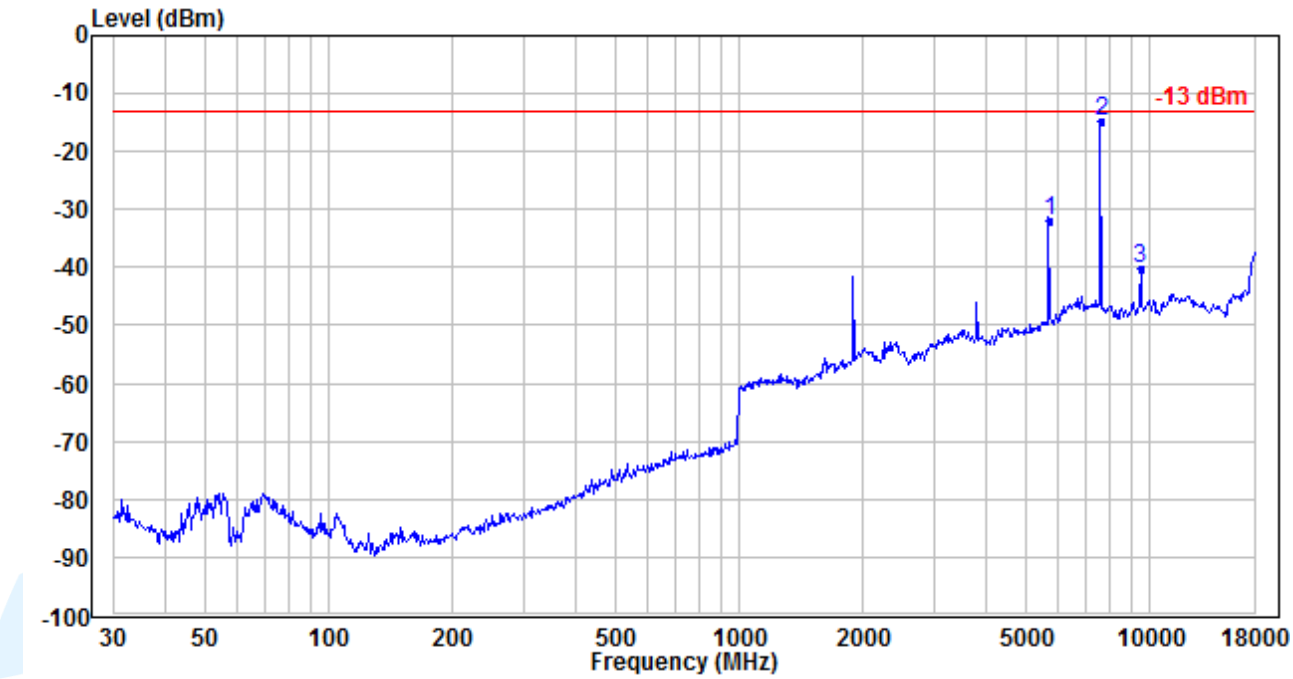
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	5640.000	-58.14	16.27	-41.87	-13.00	-28.87	Peak
2	7520.000	-38.51	18.30	-20.21	-13.00	-7.21	Peak
3	9400.000	-59.69	19.49	-40.20	-13.00	-27.20	Peak

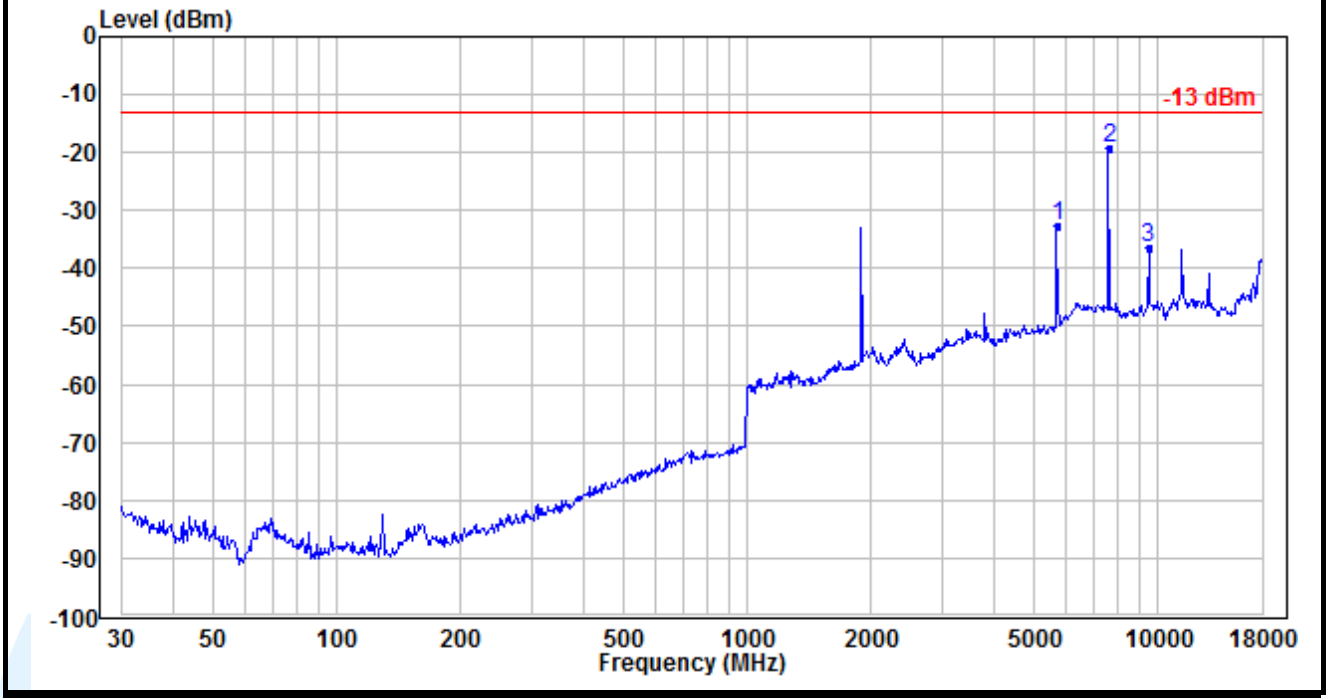
LTE Band 2/ 15 MHz _Highest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	5707.500	-48.38	16.55	-31.83	-13.00	-18.83	Peak
2	7610.000	-33.22	18.38	-14.84	-13.00	-1.84	Peak
3	9512.500	-59.64	19.42	-40.22	-13.00	-27.22	Peak

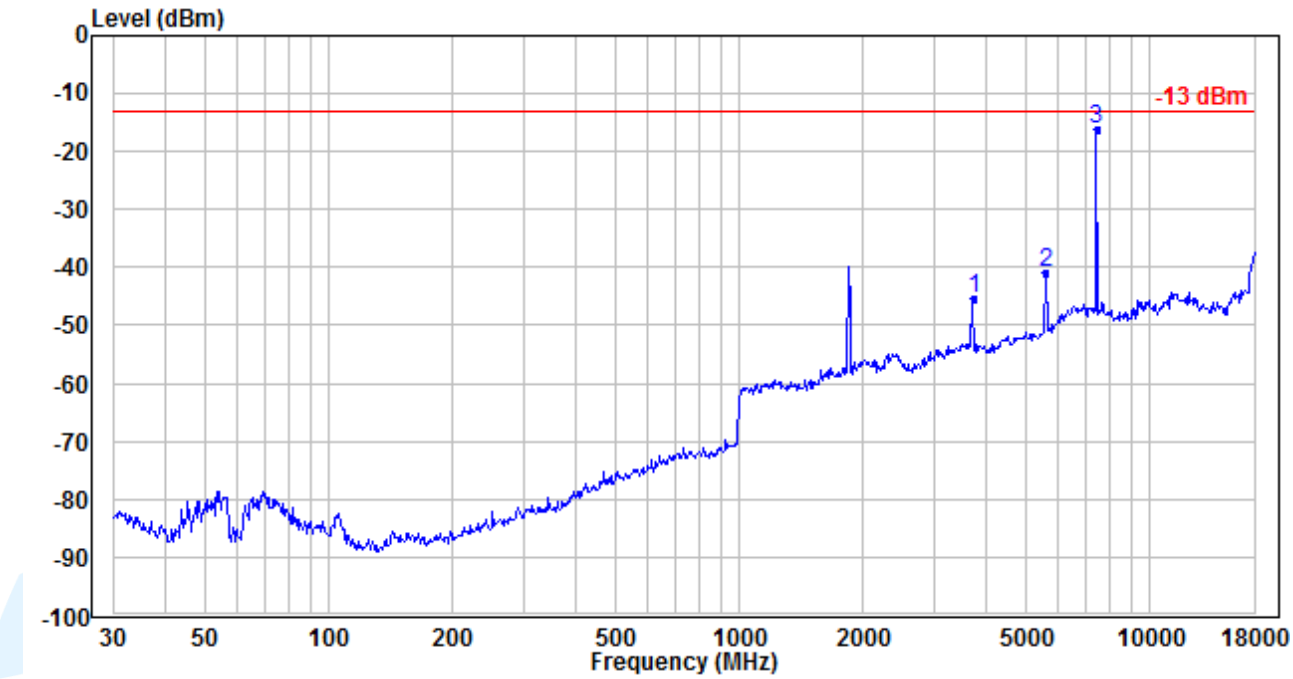
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	5707.500	-49.32	16.55	-32.77	-13.00	-19.77	Peak
2	7610.000	-37.70	18.38	-19.32	-13.00	-6.32	Peak
3	9512.500	-56.00	19.42	-36.58	-13.00	-23.58	Peak

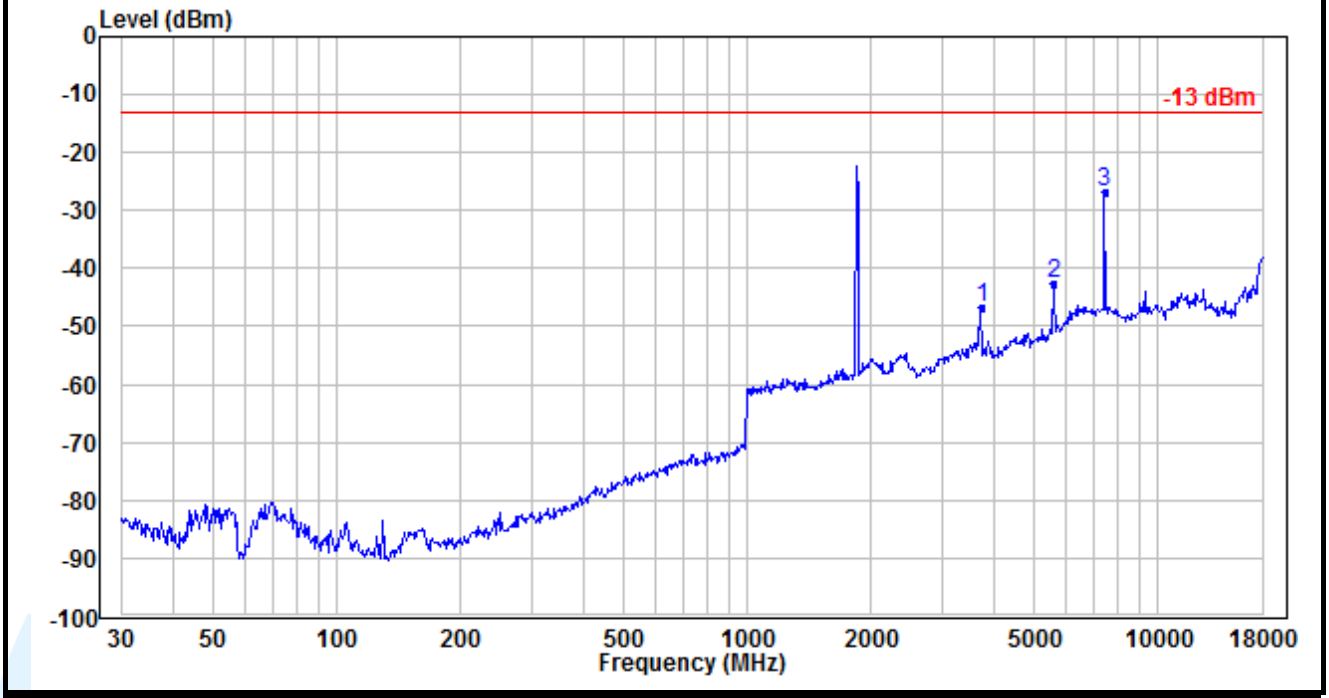
LTE Band 2/ 20 MHz _Lowest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3720.000	-58.91	13.68	-45.23	-13.00	-32.23	Peak
2	5580.000	-57.06	16.09	-40.97	-13.00	-27.97	Peak
3	7440.000	-34.54	18.31	-16.23	-13.00	-3.23	Peak

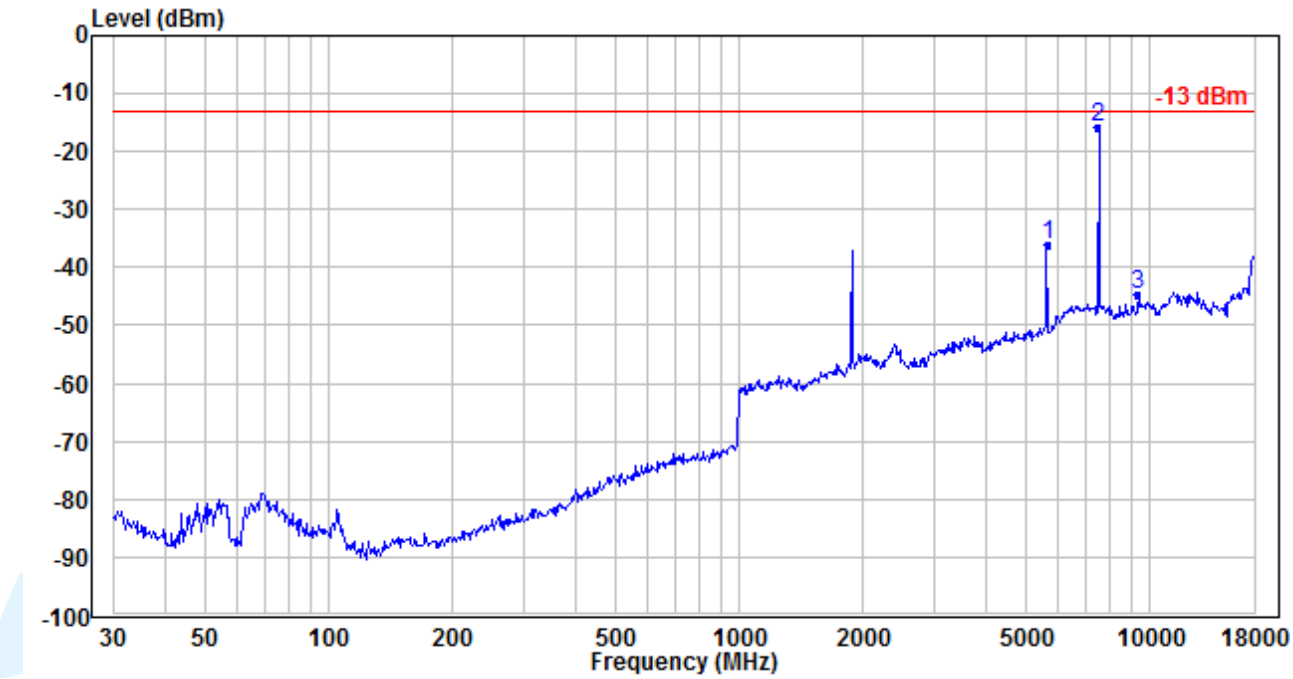
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3720.000	-60.58	13.68	-46.90	-13.00	-33.90	Peak
2	5580.000	-58.70	16.09	-42.61	-13.00	-29.61	Peak
3	7440.000	-45.20	18.31	-26.89	-13.00	-13.89	Peak

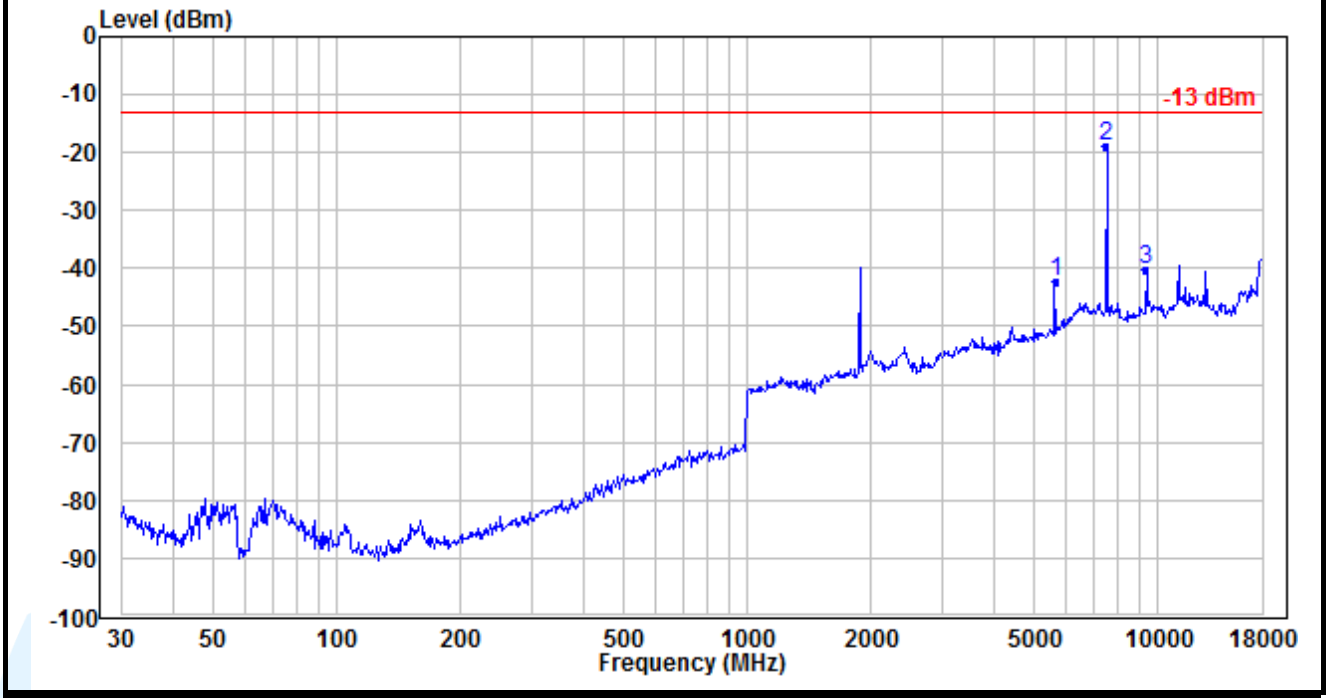
LTE Band 2/ 20 MHz _Middle Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	5640.000	-52.27	16.27	-36.00	-13.00	-23.00	Peak
2	7520.000	-34.26	18.30	-15.96	-13.00	-2.96	Peak
3	9400.000	-64.03	19.49	-44.54	-13.00	-31.54	Peak

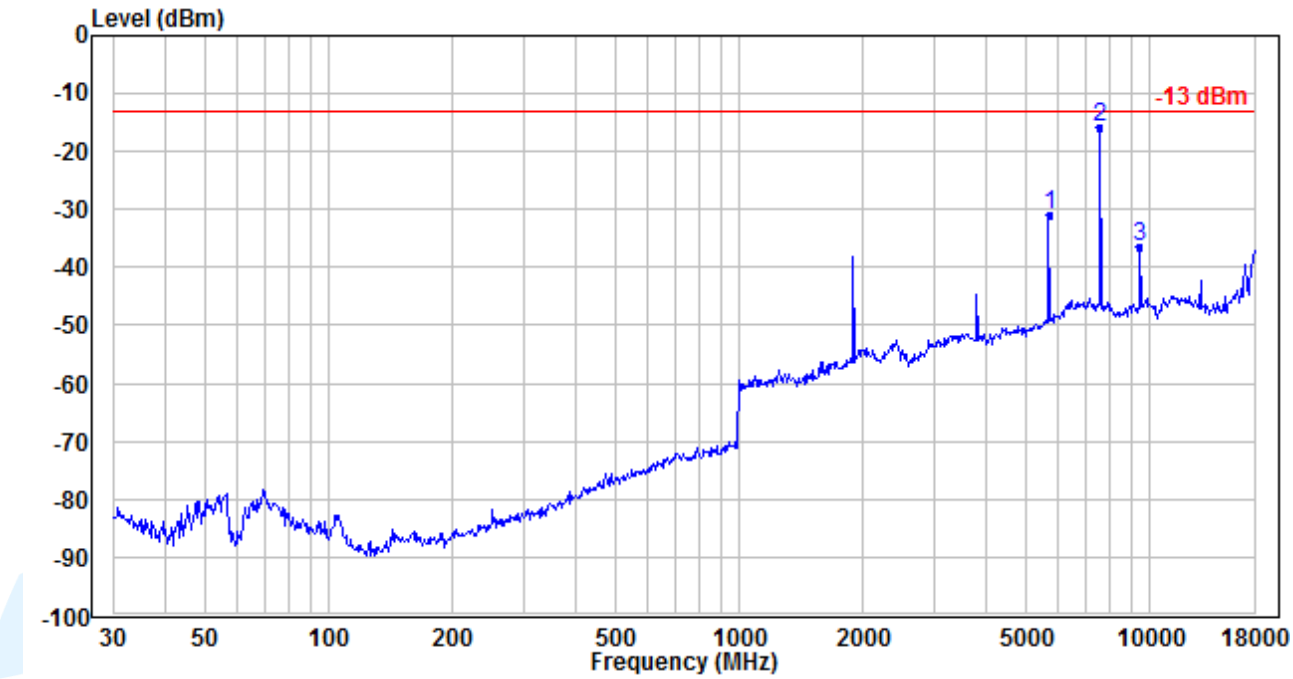
Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	5640.000	-58.43	16.27	-42.16	-13.00	-29.16	Peak
2	7520.000	-37.15	18.30	-18.85	-13.00	-5.85	Peak
3	9400.000	-59.61	19.49	-40.12	-13.00	-27.12	Peak

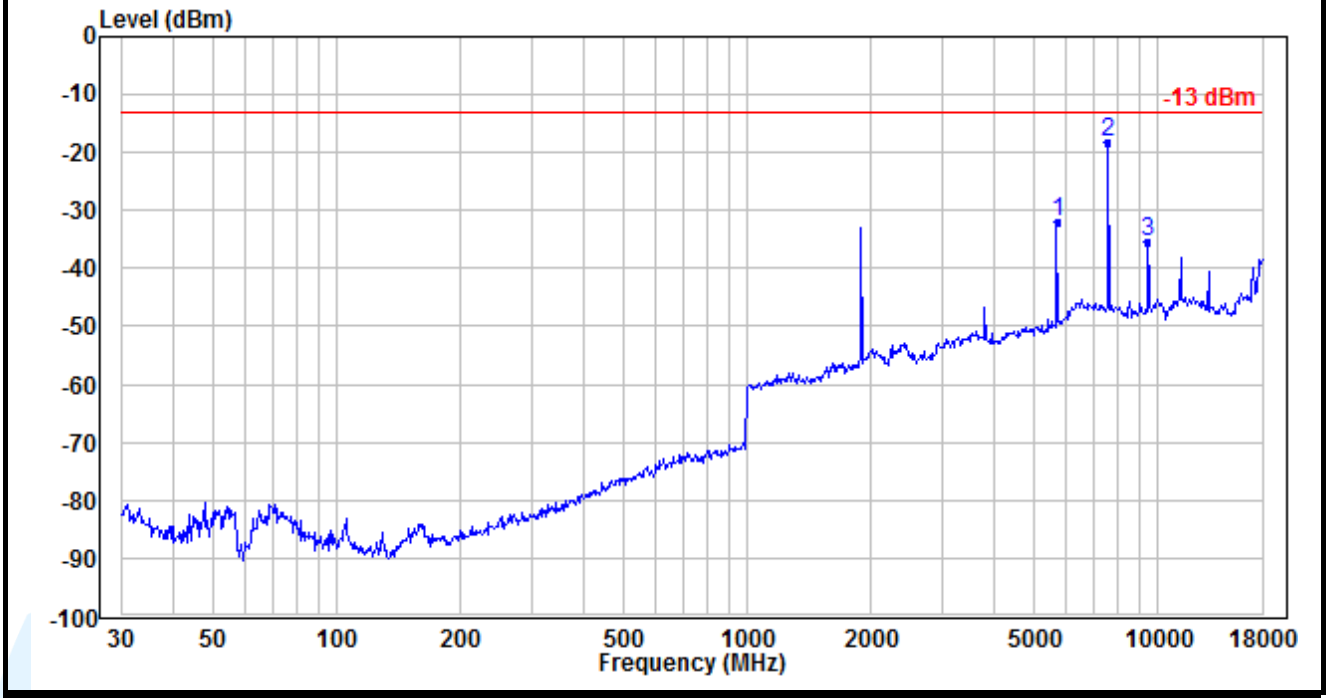
LTE Band 2/ 20 MHz _Highest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	5700.000	-47.48	16.52	-30.96	-13.00	-17.96	Peak
2	7600.000	-34.15	18.37	-15.78	-13.00	-2.78	Peak
3	9500.000	-55.85	19.43	-36.42	-13.00	-23.42	Peak

Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	5700.000	-48.55	16.52	-32.03	-13.00	-19.03	Peak
2	7600.000	-36.60	18.37	-18.23	-13.00	-5.23	Peak
3	9500.000	-54.68	19.43	-35.25	-13.00	-22.25	Peak

Remark:

1) The disturbance above 18GHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

2) All tested is under the condition of the main wave is filtered out.

3) All the above radiation data, the fundamental frequency is not marked, it may exceed the limit, please ignore it.

5.9 FREQUENCY STABILITY

Test Requirement: FCC 47 CFR Part 2.1055 & FCC 47 CFR Part 24.235

Test Method: ANSI/TIA-603-E-2016 & KDB 971168 D01v03r01

Limits: The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Setup: Refer to section 4.2.2 for details.

Test Procedures:

1) Use CMW 500 or CMU 200 with Frequency Error measurement capability.
   a) Temp. = −30° to + 50°C
   b) Voltage =low voltage, 3.5 Vdc, Normal, 3.8 Vdc and High voltage, 4.35 Vdc.
2) Frequency Stability vs Temperature:

The EUT is place inside a temperature chamber. The temperature is set to 20ºC and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50ºC is reached.

3) Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case).

Equipment Used: Refer to section 3 for details.

Test Result: Pass

Modulation	Channel/ Frequency (MHz)	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Pass/ Fail
GSM 1Tx-slot							
GMSK	661 / 1880.0	VL	TN	-24	-0.0128	Note 1	Pass
		VN		-28	-0.0149		Pass
		VH		-25	-0.0133		Pass
		VN	50	-29	-0.0154		Pass
			40	-29	-0.0154		Pass
			30	-29	-0.0154		Pass
			20	-27	-0.0144		Pass
			10	-25	-0.0133		Pass
			0	-23	-0.0122		Pass
			-10	-22	-0.0117		Pass
			-20	-25	-0.0133		Pass
			-30	-27	-0.0144		Pass

Modulation	Channel/ Frequency (MHz)	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Pass/ Fail
EDGE 1Tx-slot							
GMSK	661 / 1880.0	VL	TN	-28	-0.0149	Note 1	Pass
		VN		-29	-0.0154		Pass
		VH		-28	-0.0149		Pass
		VN	50	-30	-0.0160		Pass
			40	-29	-0.0154		Pass
			30	-29	-0.0154		Pass
			20	-29	-0.0154		Pass
			10	-31	-0.0165		Pass
			0	-31	-0.0165		Pass
			-10	-30	-0.0160		Pass
			-20	-27	-0.0144		Pass
			-30	-29	-0.0154		Pass

Modulation	Channel/ Frequency (MHz)	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Pass/ Fail
WCDMA RMC 12.2Kbps							
BPSK	9400 / 1880.0	VL	TN	-31	-0.0165	Note 1	Pass
		VN		-26	-0.0138		Pass
		VH		-32	-0.0170		Pass
		VN	50	-34	-0.0181		Pass
			40	-33	-0.0176		Pass
			30	-33	-0.0176		Pass
			20	-33	-0.0176		Pass
			10	-34	-0.0181		Pass
			0	-33	-0.0176		Pass
			-10	-33	-0.0176		Pass
			-20	-30	-0.0160		Pass
			-30	-34	-0.0181		Pass

Modulation	Channel/ Frequency (MHz)	Voltage (Vdc)	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Pass/ Fail
LTE Band 2 / 20MHz / Full RB							
QPSK	18900 / 1880.0	VL	TN	32	0.0170	Note 1	Pass
		VN		34	0.0181		Pass
		VH		30	0.0160		Pass
		VN	50	32	0.0170		Pass
			40	30	0.0160		Pass
			30	33	0.0176		Pass
			20	27	0.0144		Pass
			10	28	0.0149		Pass
			0	31	0.0165		Pass
			-10	33	0.0176		Pass
			-20	29	0.0154		Pass
			-30	28	0.0149		Pass

Note1: The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

APPENDIX 1 PHOTOS OF TEST SETUP

See test photos attached in Appendix 1 for the actual connections between Product and support equipment.

APPENDIX 2 PHOTOS OF EUT CONSTRUCTIONAL DETAILS

Refer to Appendix 2 for EUT external and internal photos.

*** End of Report ***