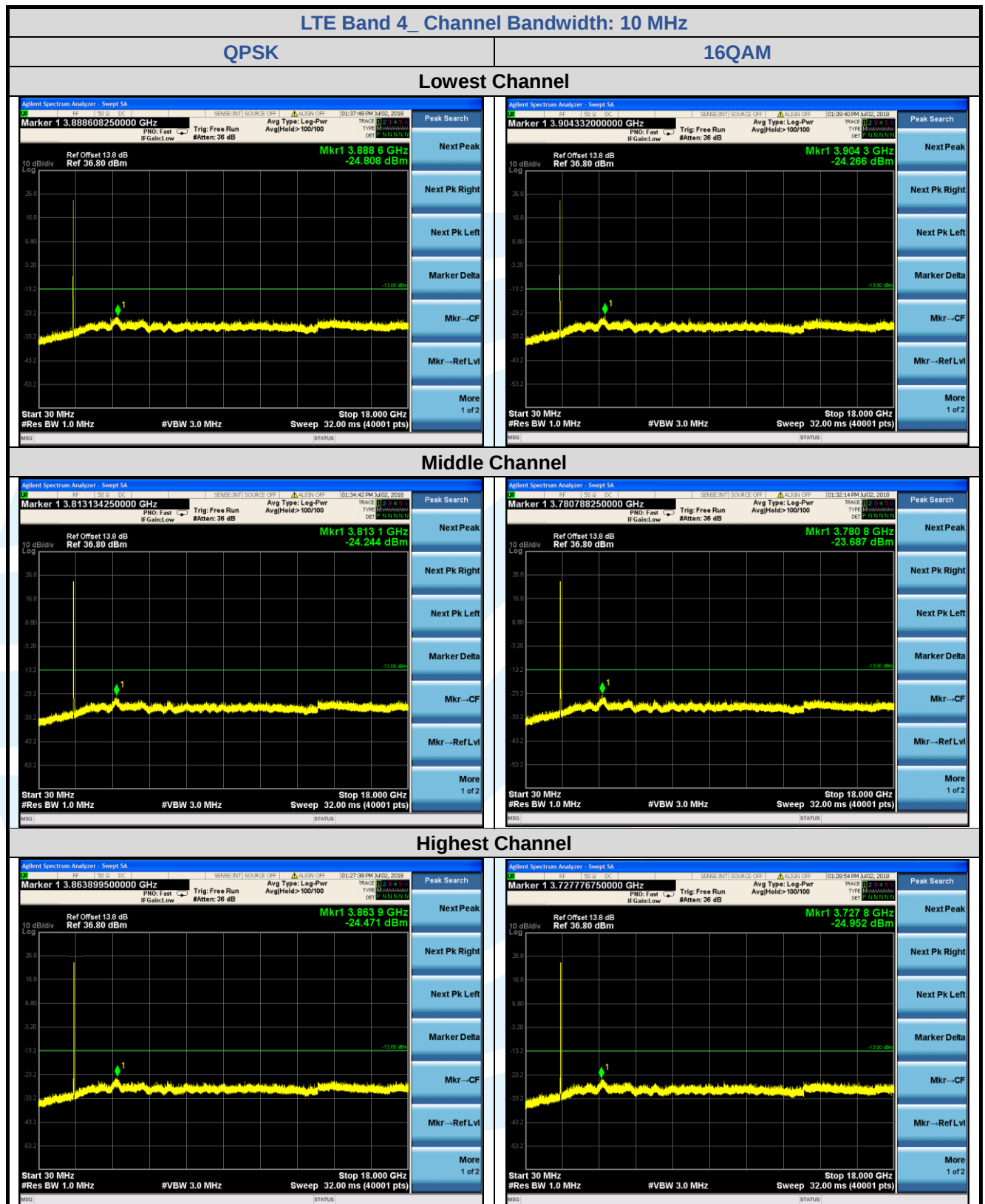
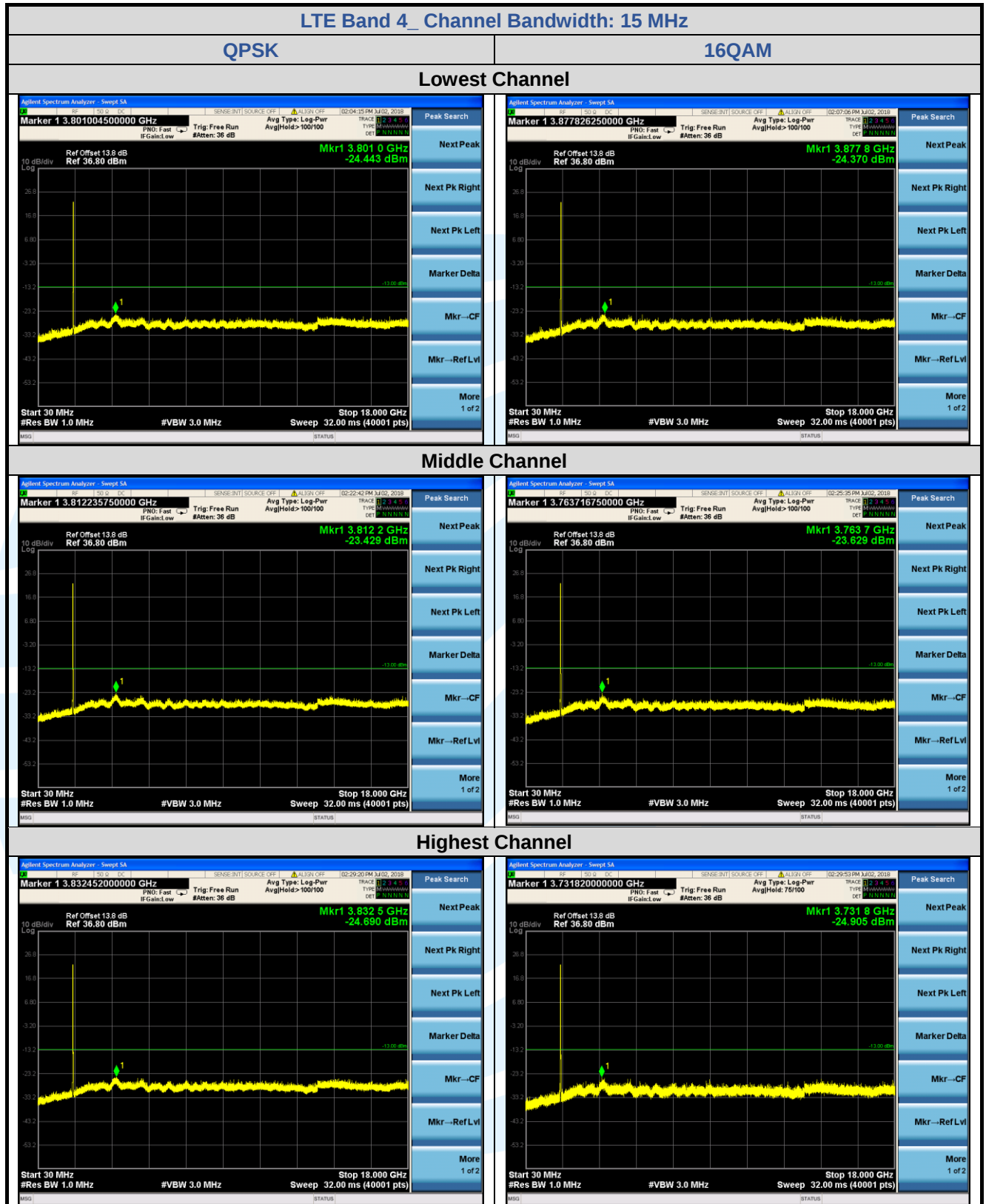
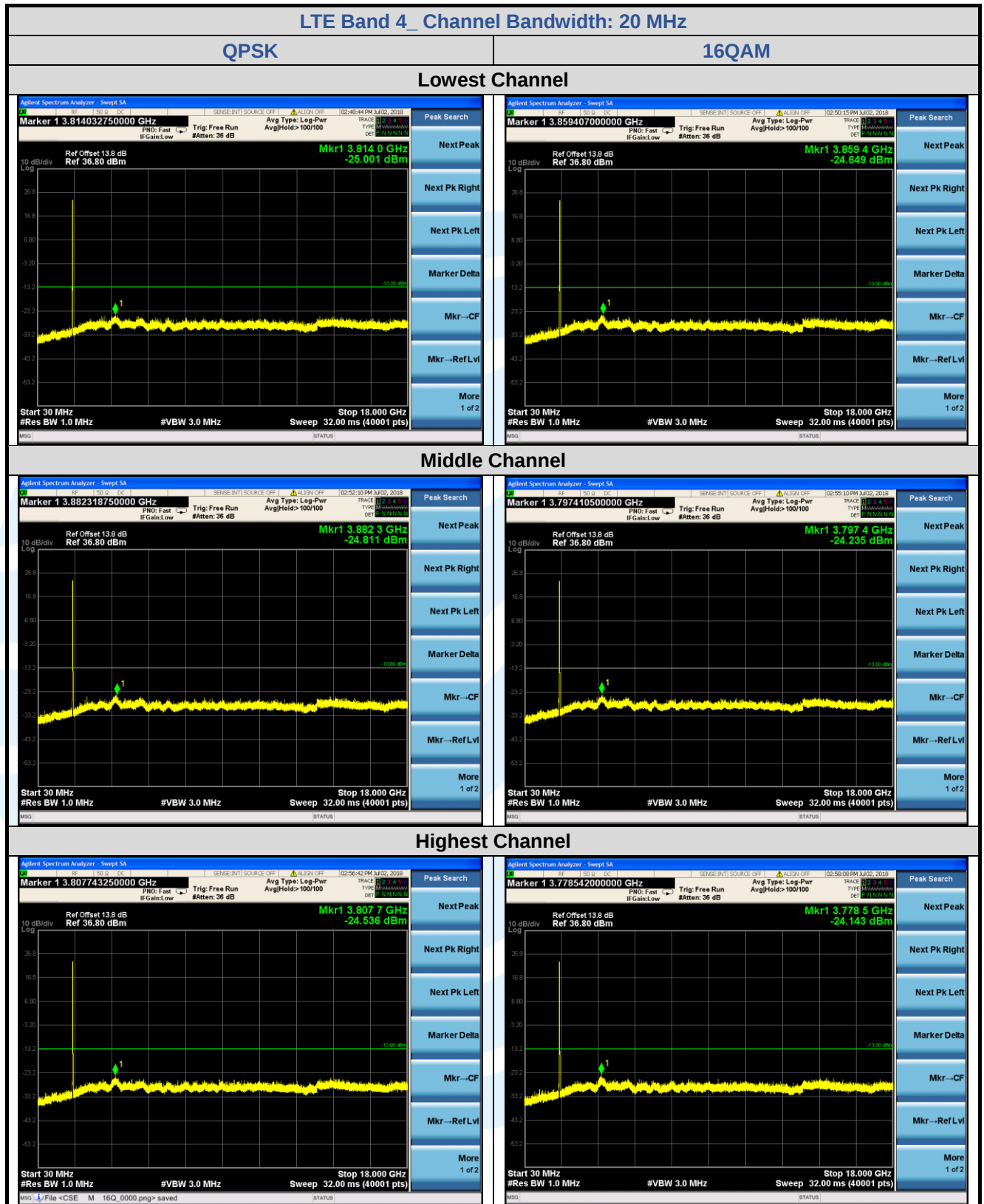
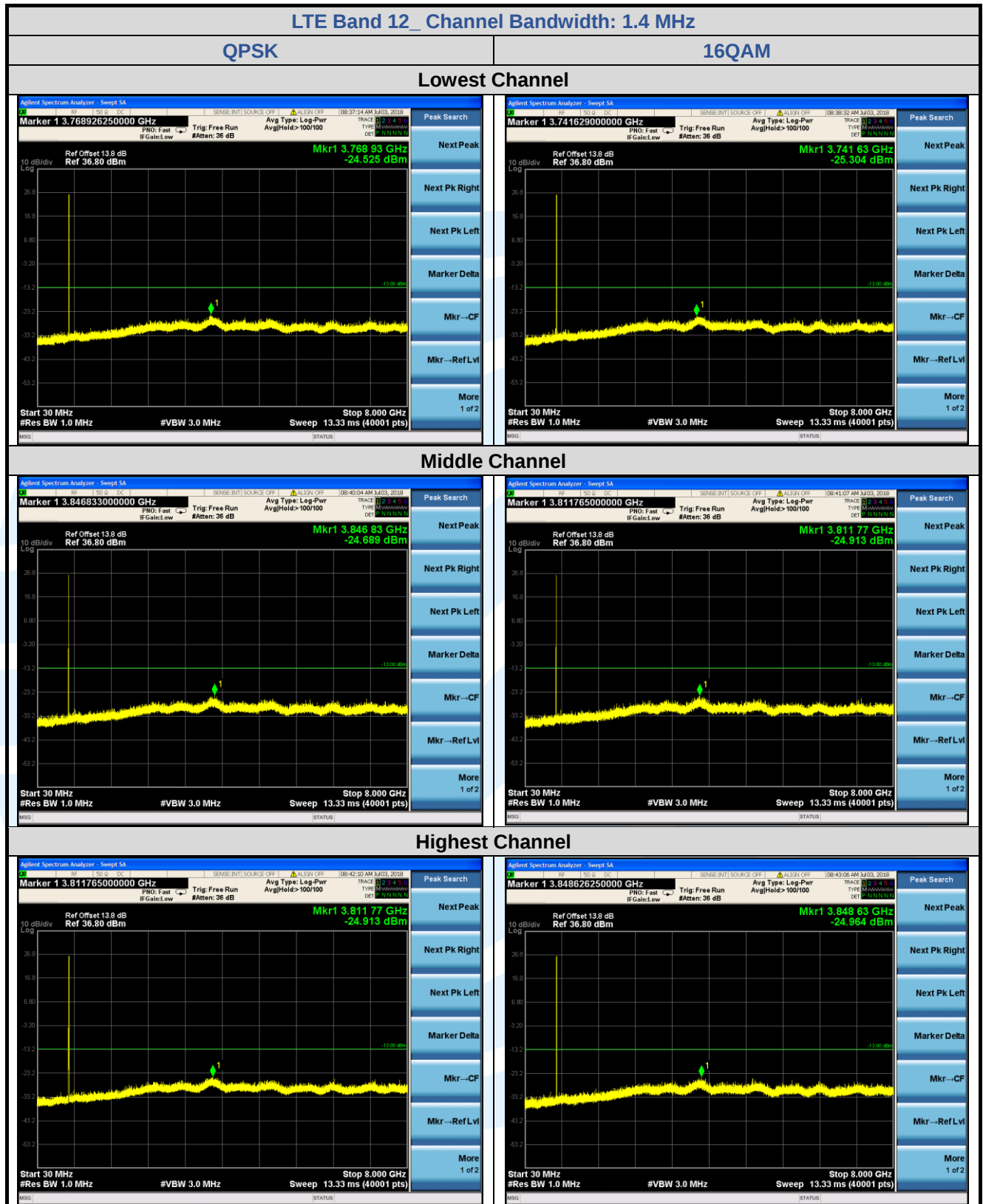
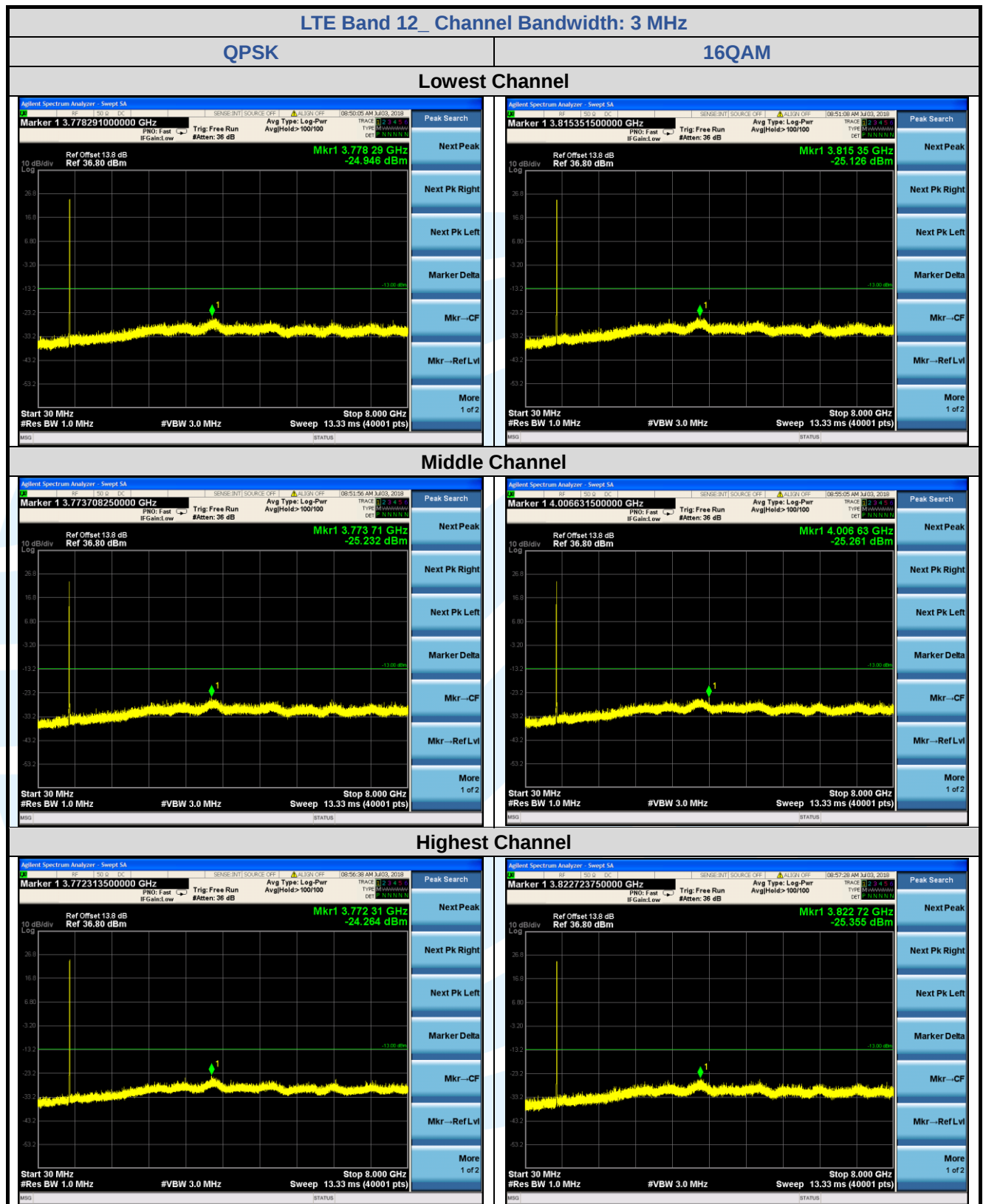


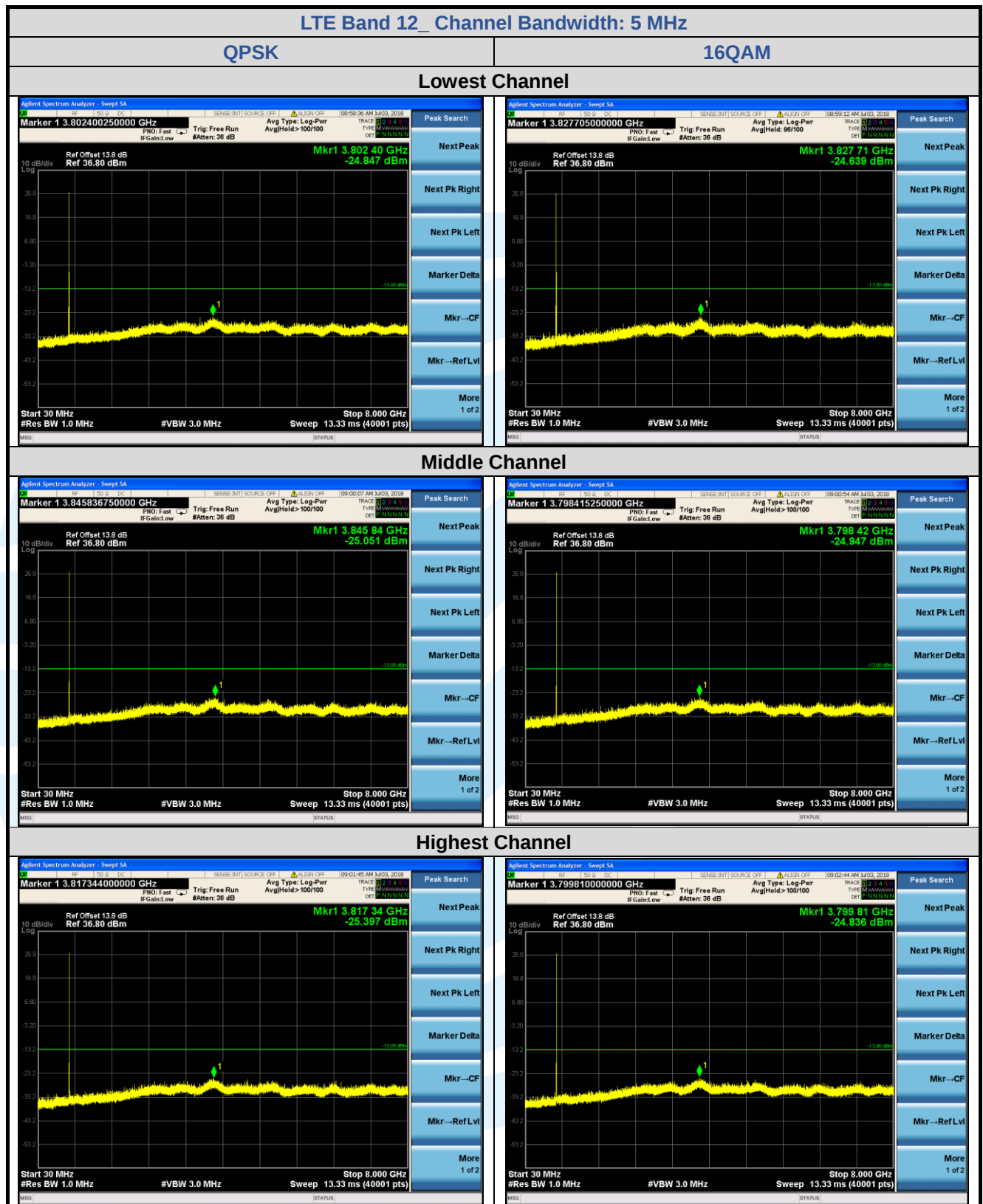


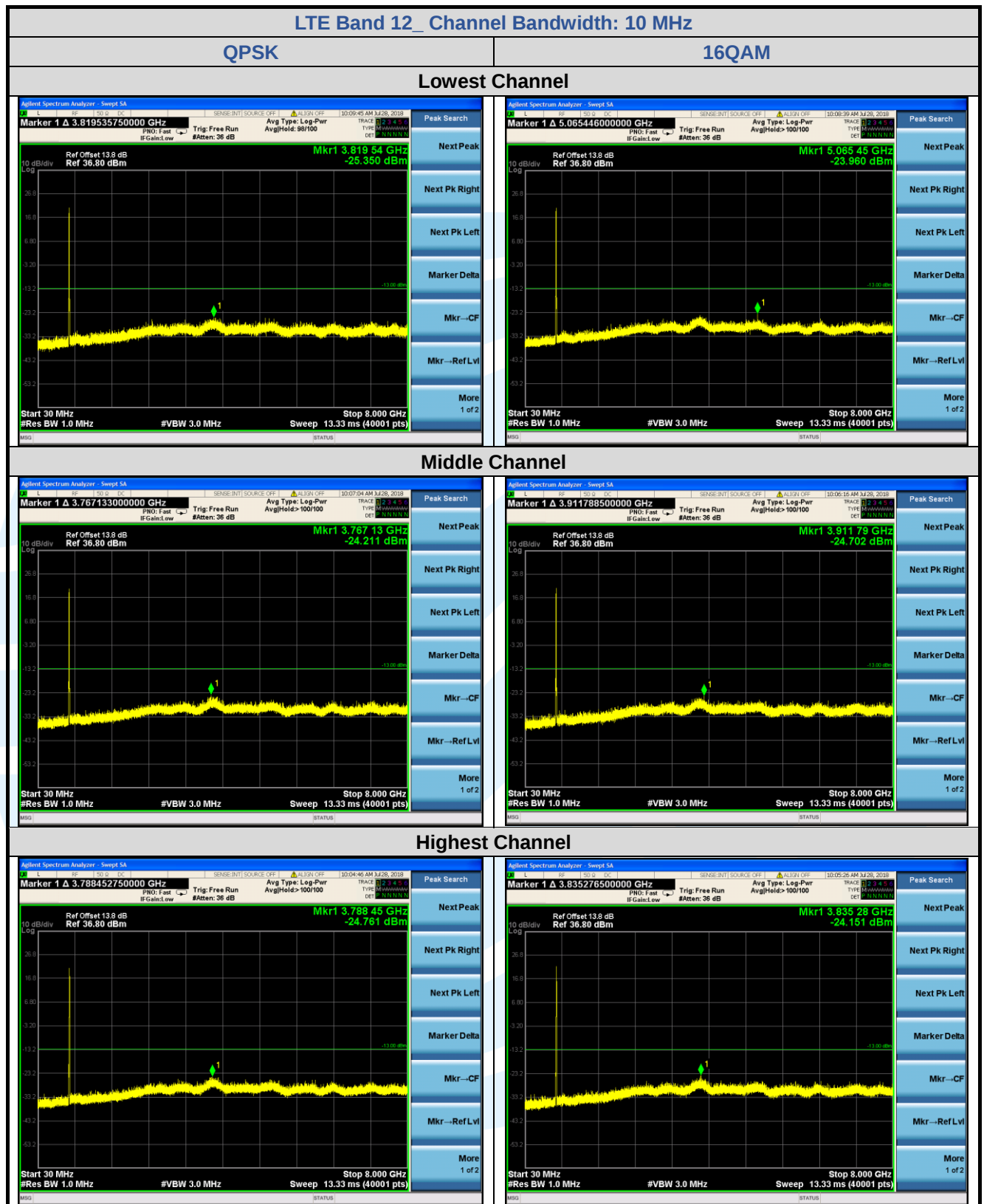












5.8 FIELD STRENGTH OF SPURIOUS RADIATION

Test Requirement: LTE Band 4: FCC 47 CFR Part 27.53(h)(1)

LTE Band 12: FCC 47 CFR Part 27.53(g)

Test Method: ANSI/TIA-603-E-2016 & KDB 971168 D01v03

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:

FCC 47 CFR Part 27.53(g): For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC 47 CFR Part 27.53(h)(1): Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB. The emission limit equal to -13 dBm.

FCC 47 CFR Part 27.53(h)(3): Measurement procedure. (i) Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

(ii) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges, both upper and lower, as the design permits.

(iii) The measurements of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

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.

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9) Calculate power in dBm by the following formula:

$$\text{ERP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBi)}$$

$$\text{EIRP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBi)}$$

$$\text{EIRP} = \text{ERP} + 2.15\text{dB}$$

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 错误!未找到引用源。 positioning which it is worse case.

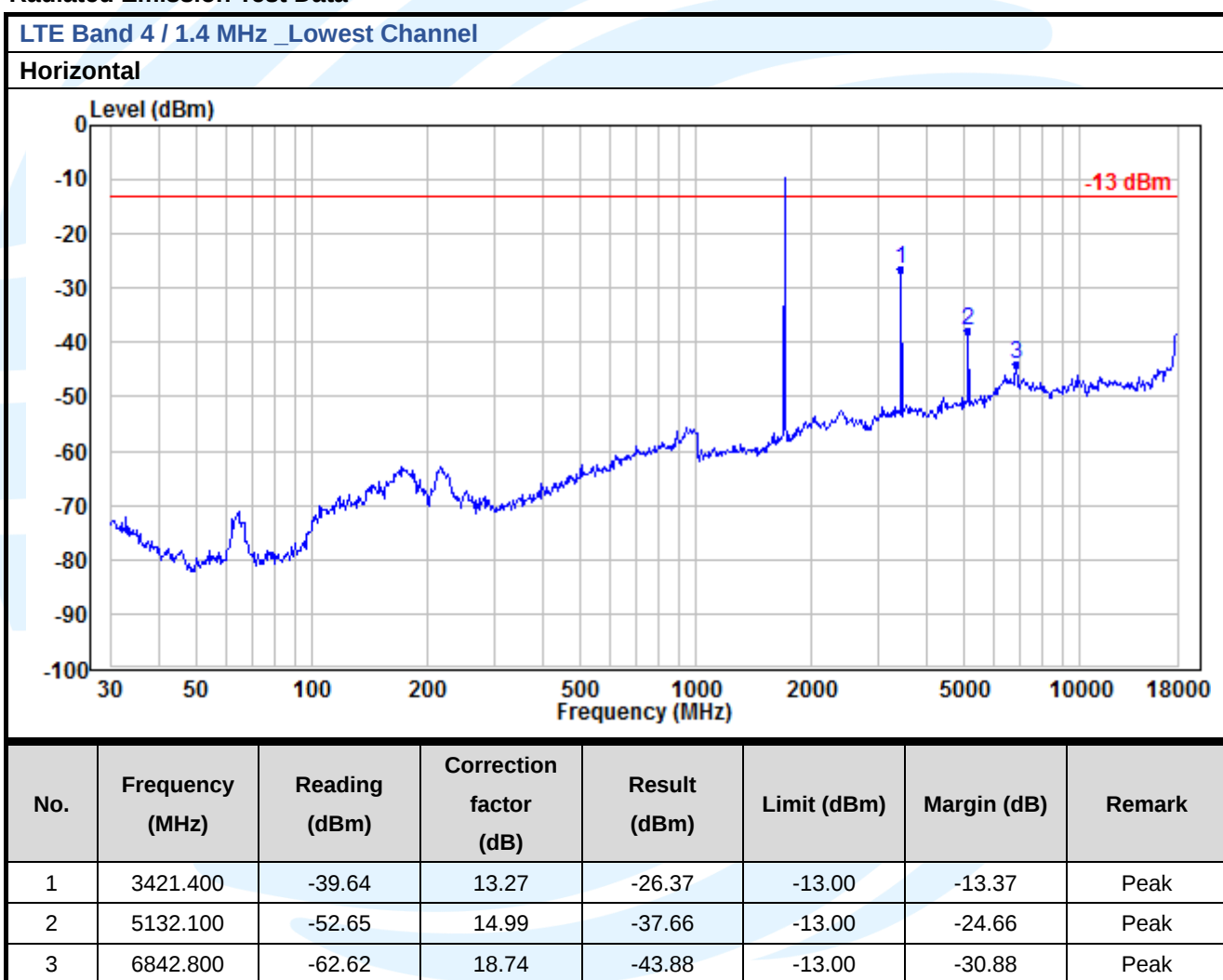
12) Repeat above procedures until all frequencies measured was complete.

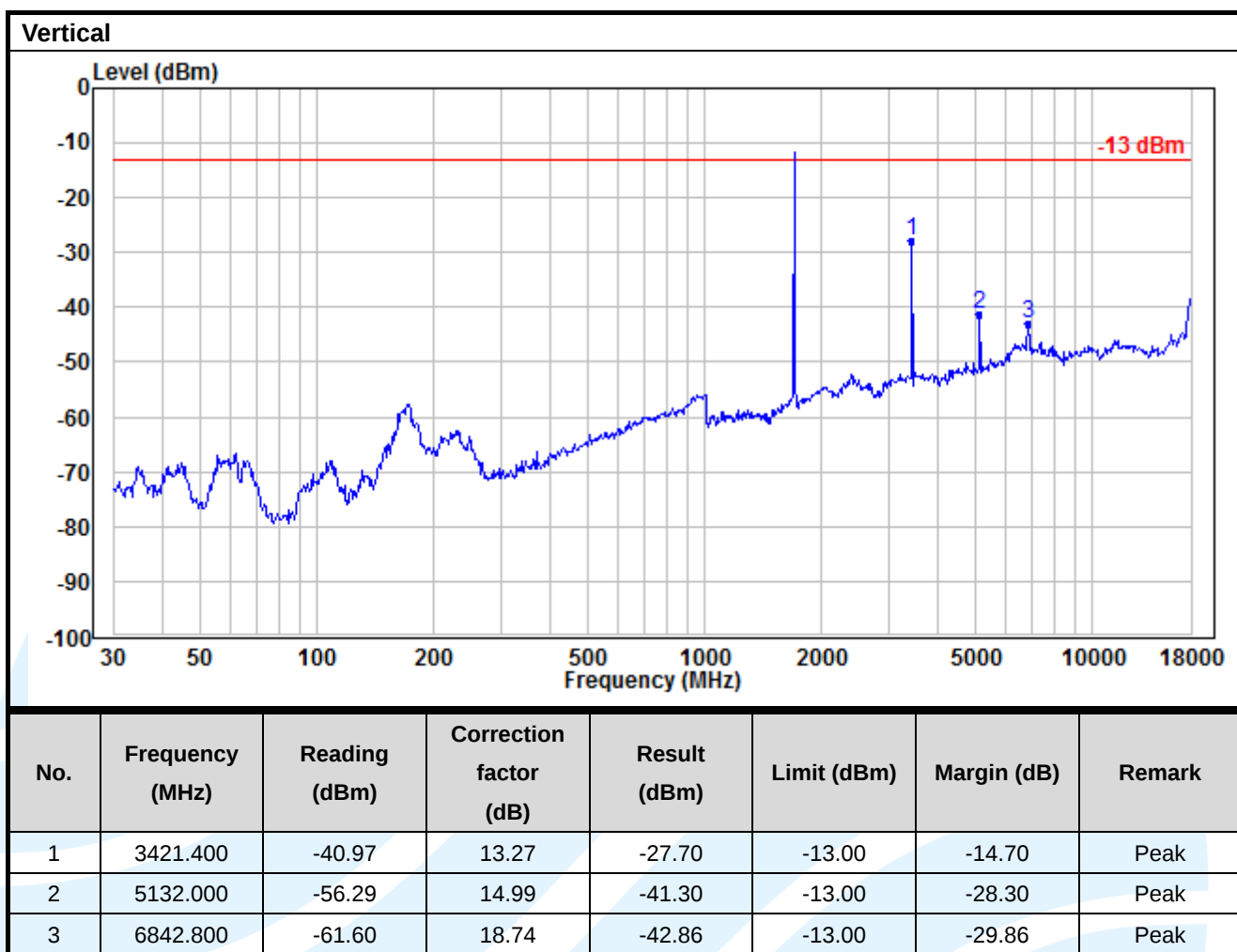
Equipment Used: Refer to section 3 for details.

Test Result: Pass

The measurement data as follows:

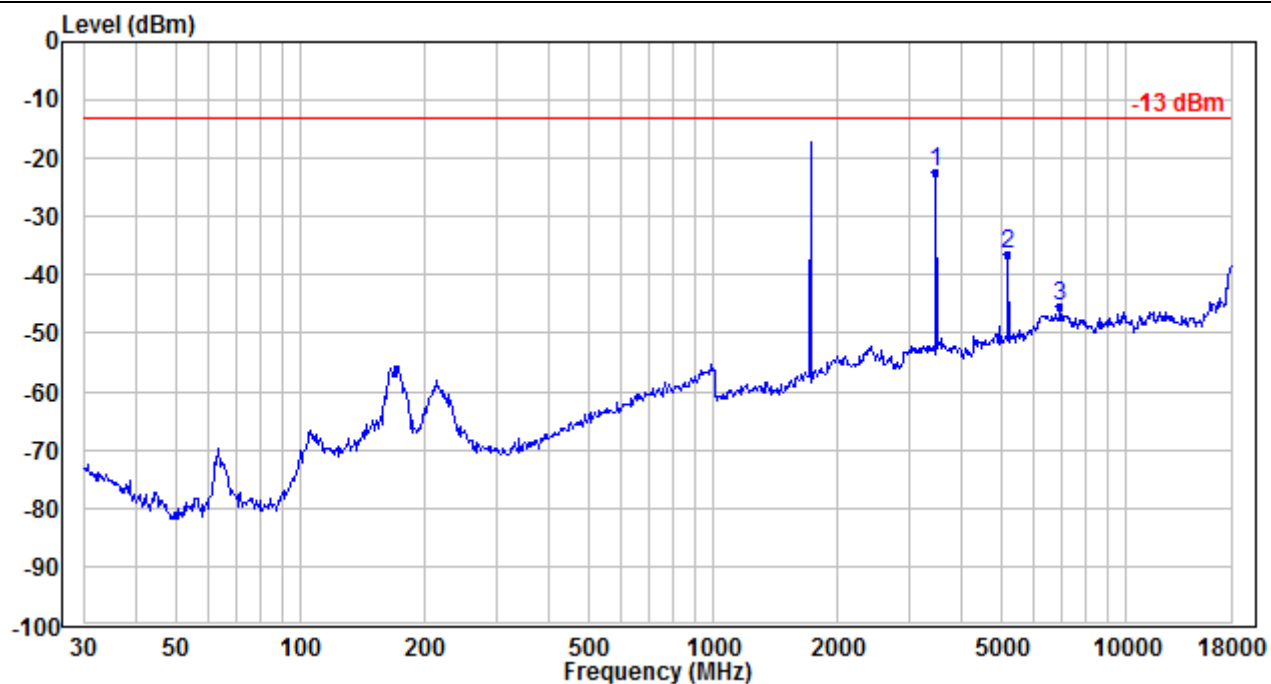
Radiated Emission Test Data



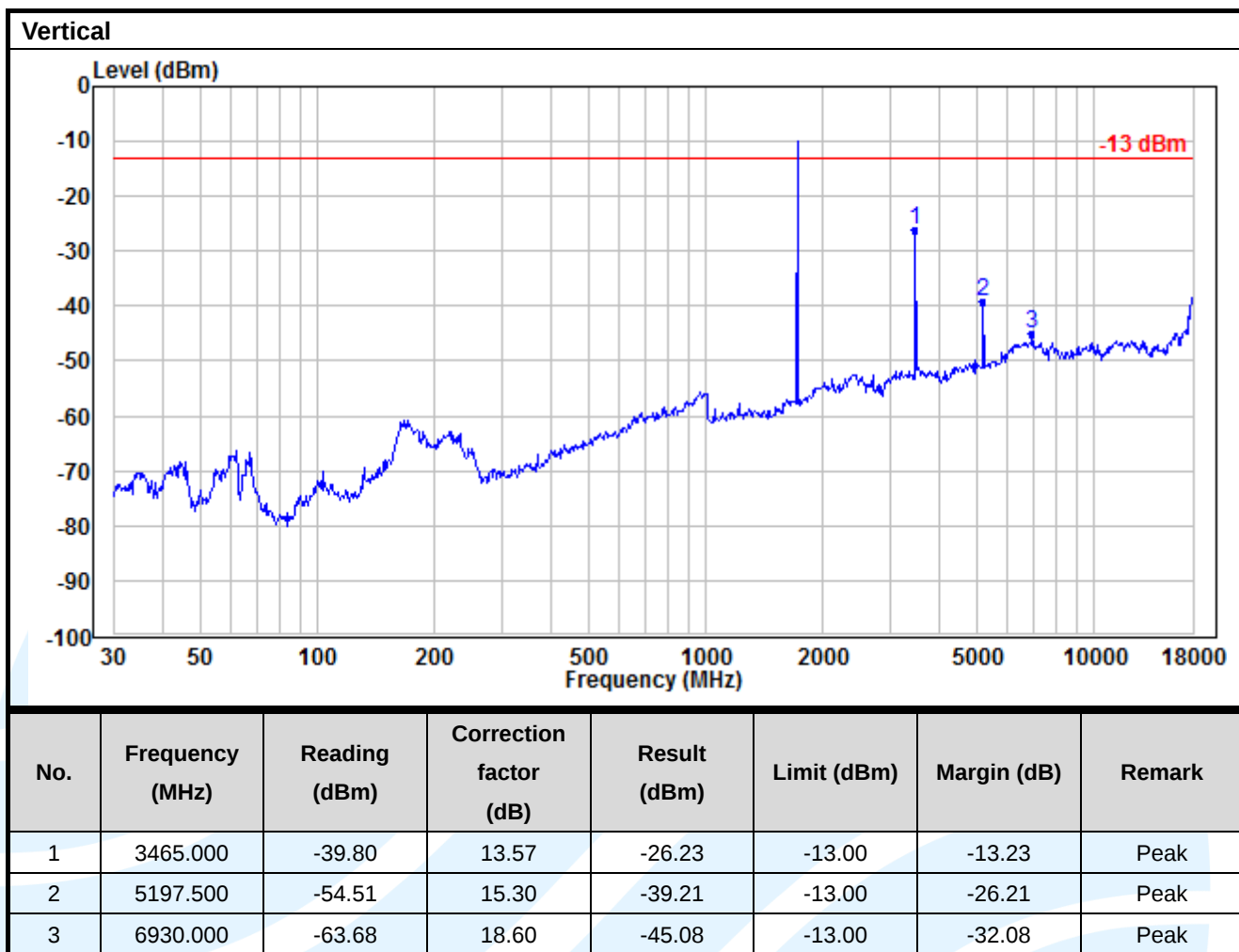


LTE Band 4 / 1.4 MHz _Middle Channel

Horizontal

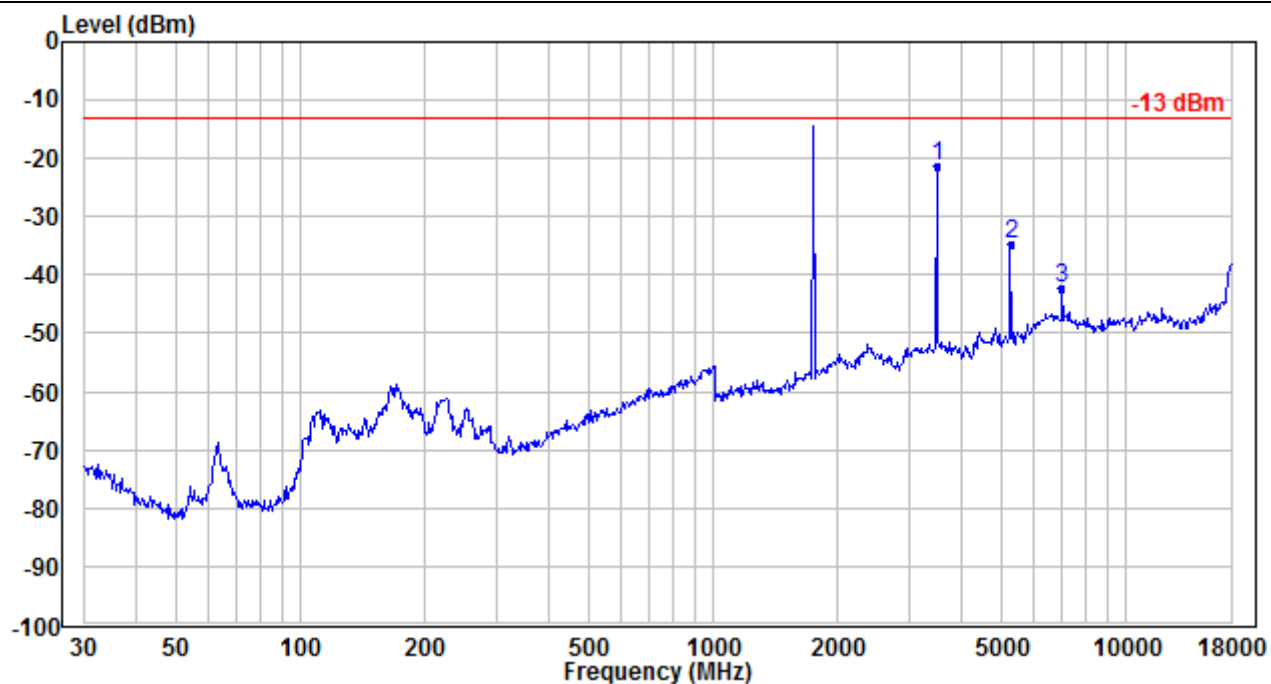


No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3465.000	-35.88	13.57	-22.31	-13.00	-9.31	Peak
2	5197.500	-51.88	15.30	-36.58	-13.00	-23.58	Peak
3	6930.000	-63.86	18.60	-45.26	-13.00	-32.26	Peak



LTE Band 4 / 1.4 MHz _Highest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3508.600	-35.11	13.82	-21.29	-13.00	-8.29	Peak
2	5262.900	-50.17	15.48	-34.69	-13.00	-21.69	Peak
3	7017.200	-60.87	18.46	-42.41	-13.00	-29.41	Peak

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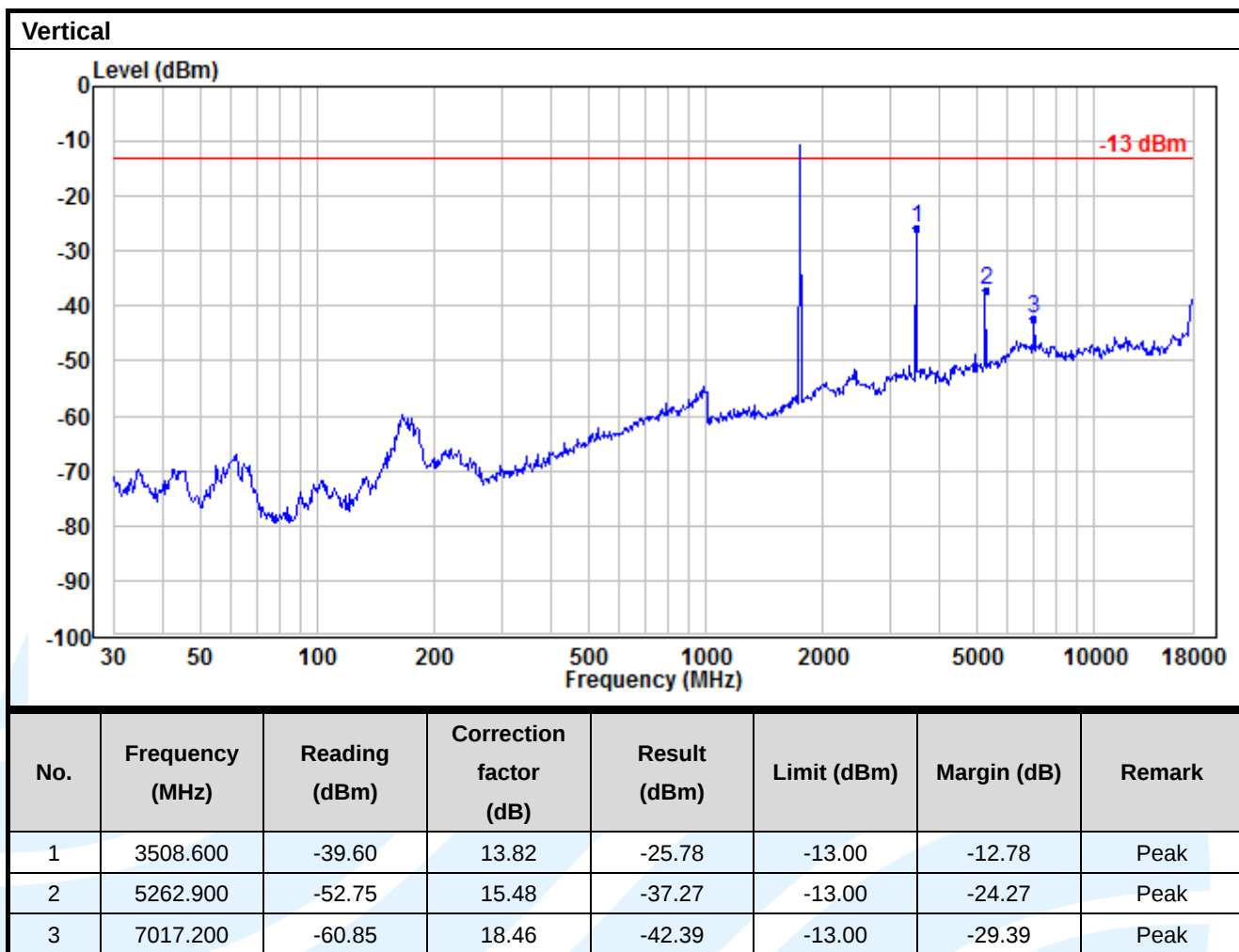
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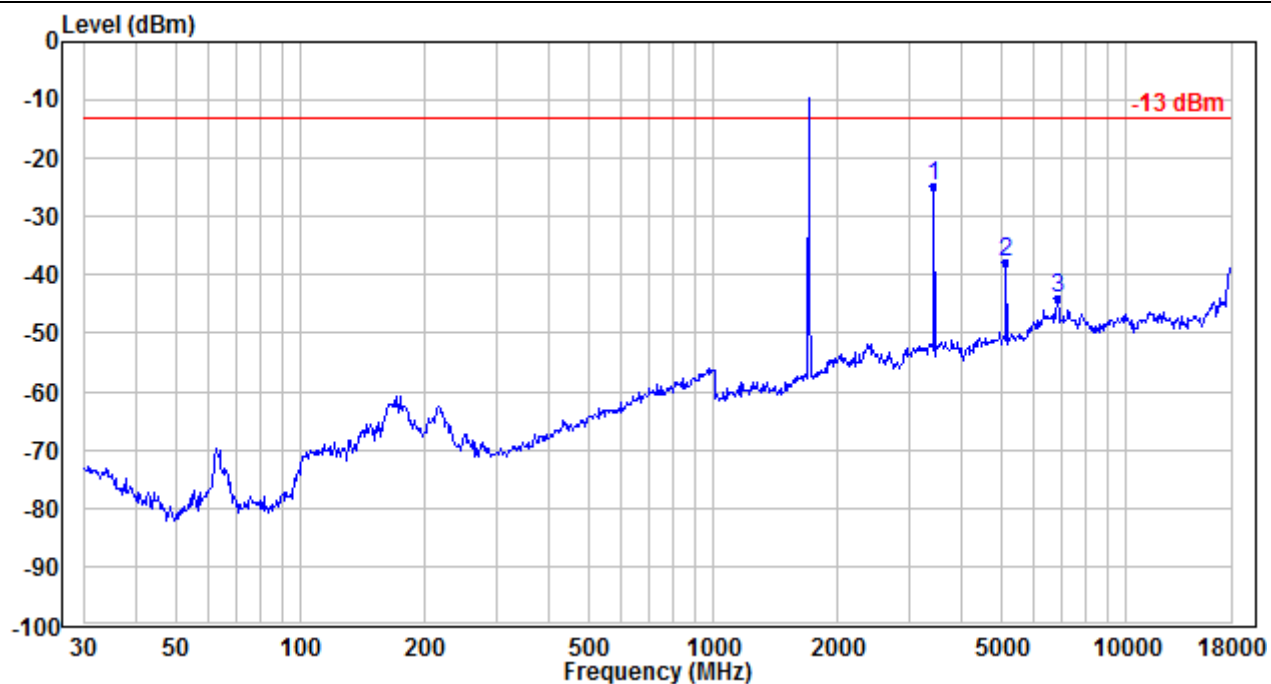
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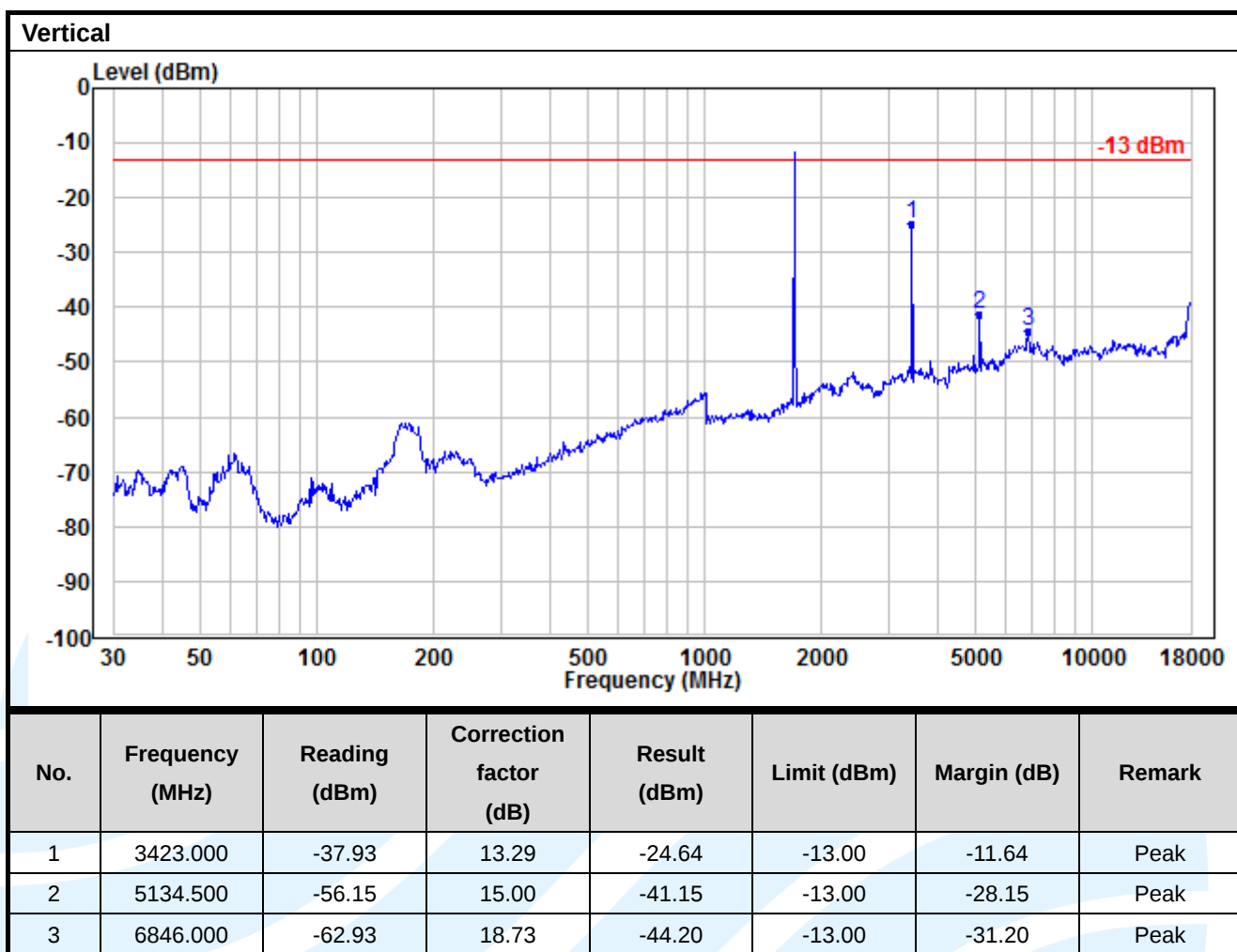


LTE Band 4 / 3 MHz _Lowest Channel

Horizontal

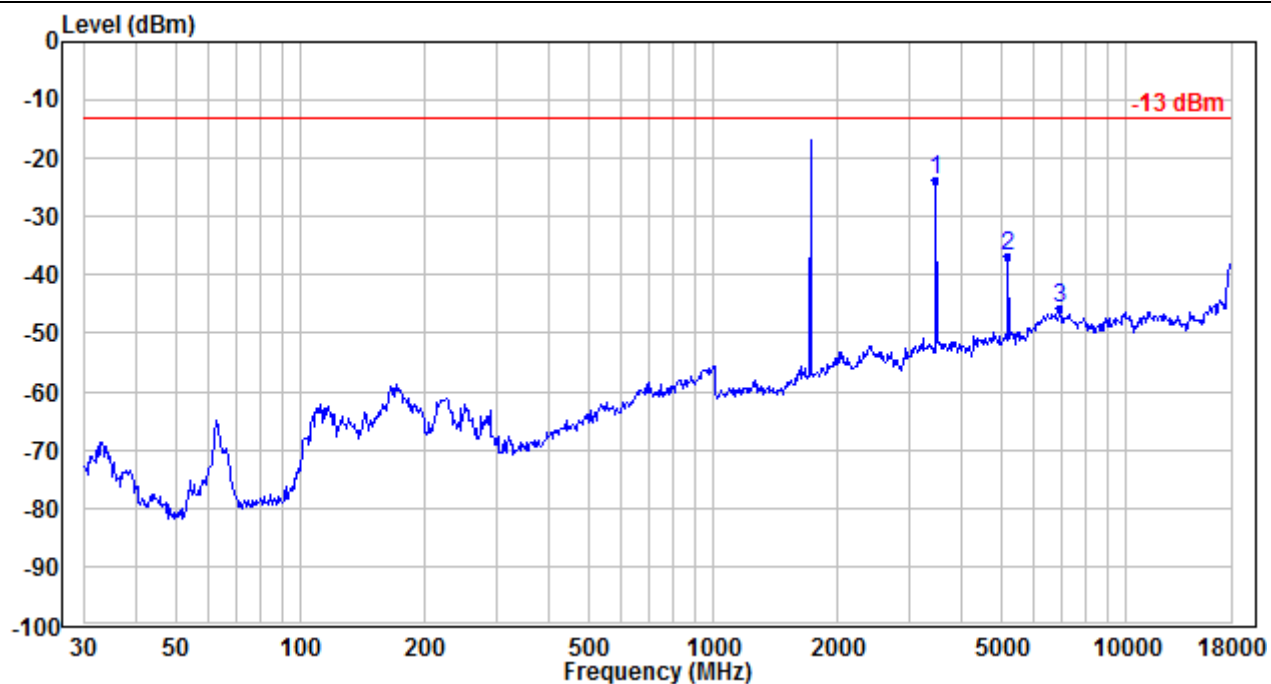


No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3423.000	-38.15	13.29	-24.86	-13.00	-11.86	Peak
2	5134.500	-52.77	15.00	-37.77	-13.00	-24.77	Peak
3	6846.000	-62.79	18.73	-44.06	-13.00	-31.06	Peak



LTE Band 4 / 3 MHz _Middle Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3465.000	-37.39	13.57	-23.82	-13.00	-10.82	Peak
2	5197.500	-52.13	15.30	-36.83	-13.00	-23.83	Peak
3	6930.000	-64.26	18.60	-45.66	-13.00	-32.66	Peak

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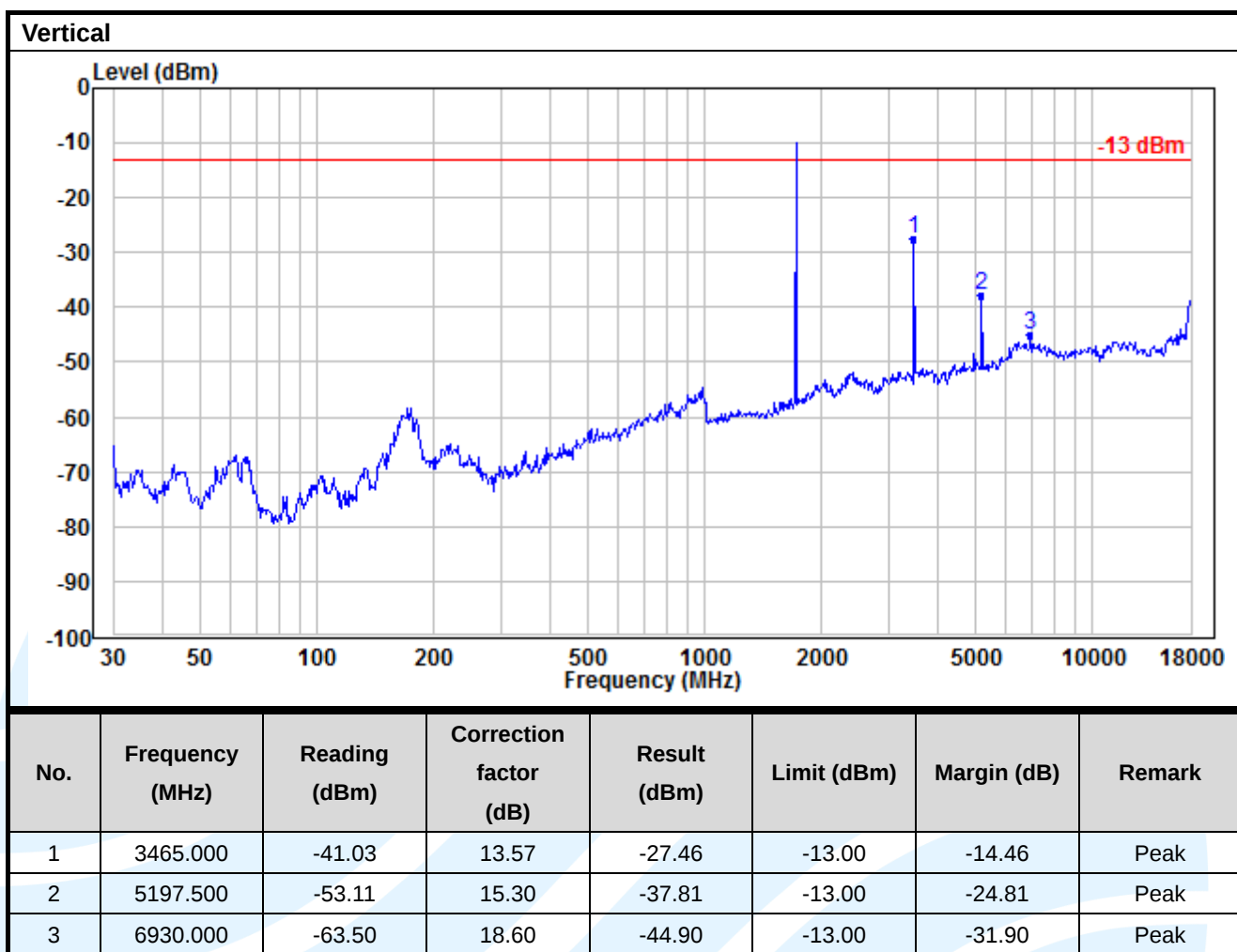
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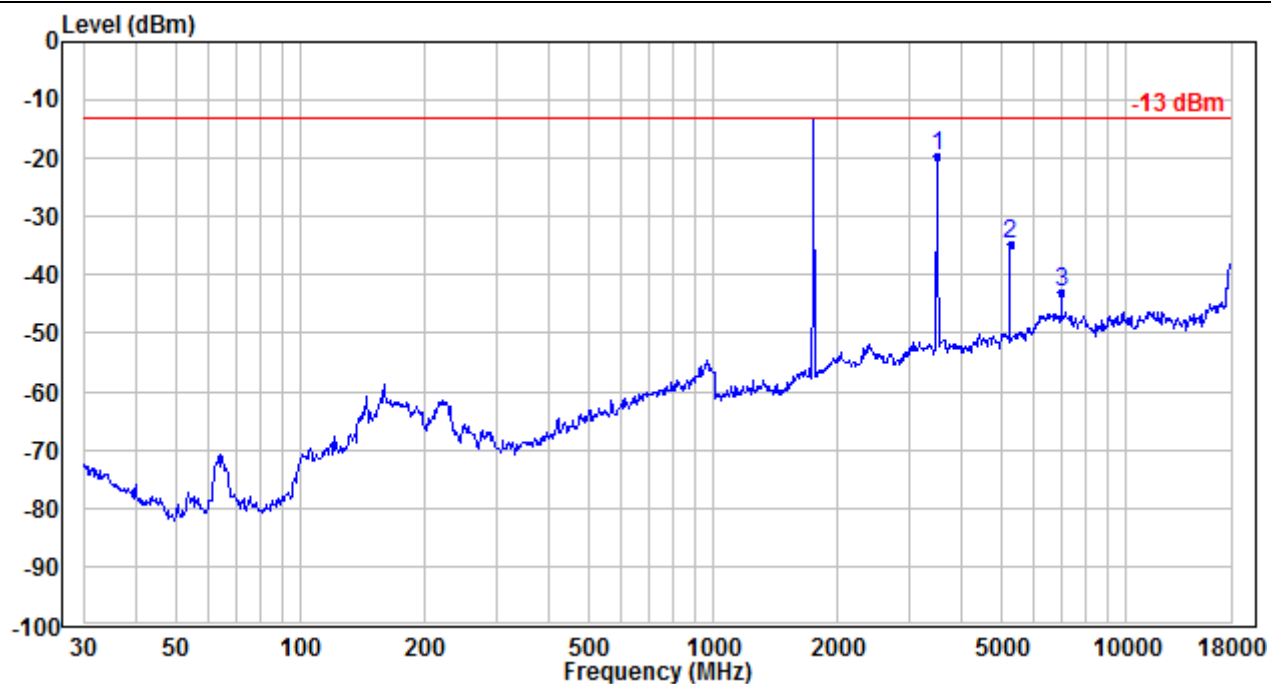
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LTE Band 4 / 3 MHz _Highest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3507.000	-33.49	13.81	-19.68	-13.00	-6.68	Peak
2	5260.500	-50.06	15.49	-34.57	-13.00	-21.57	Peak
3	7014.000	-61.36	18.46	-42.90	-13.00	-29.90	Peak

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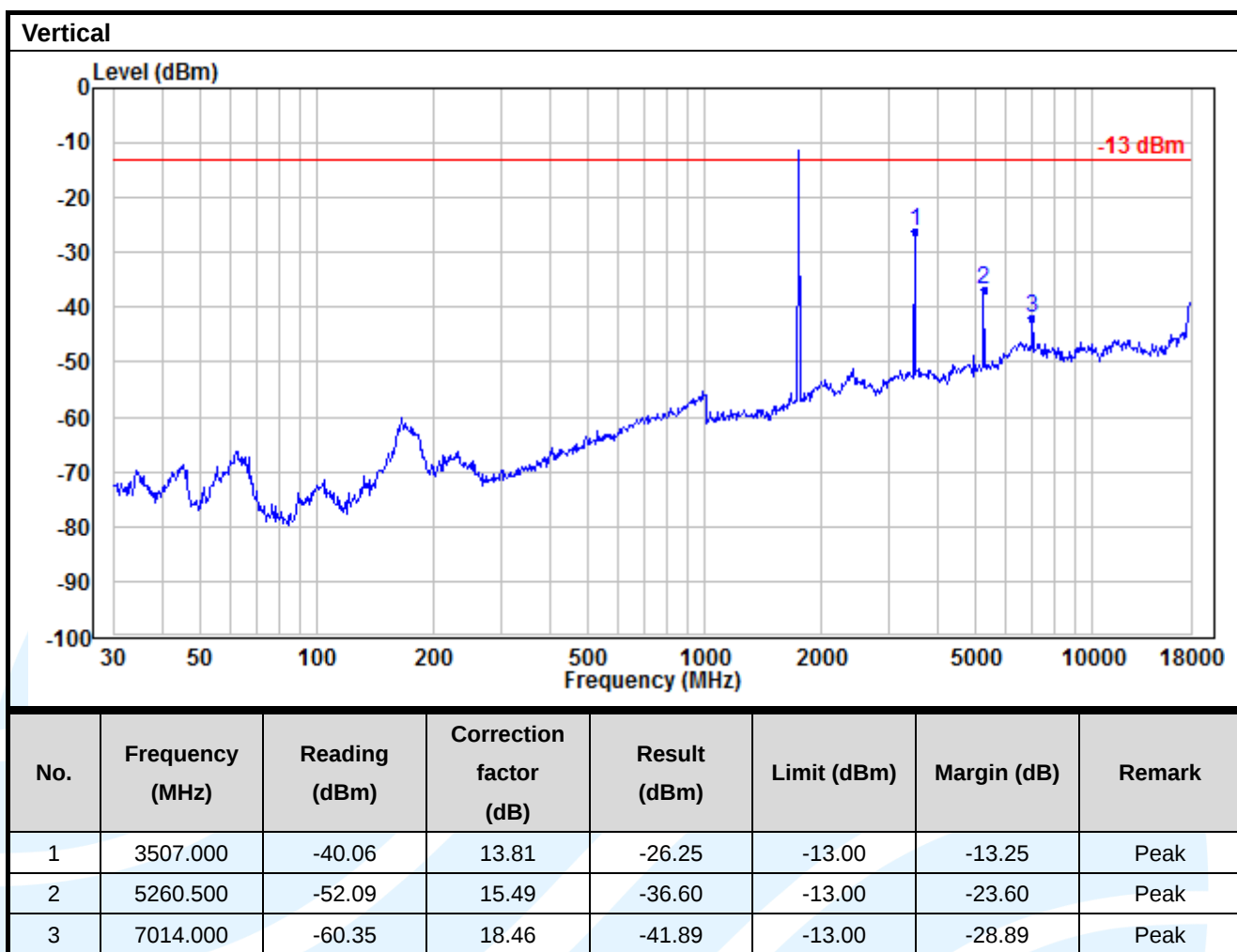
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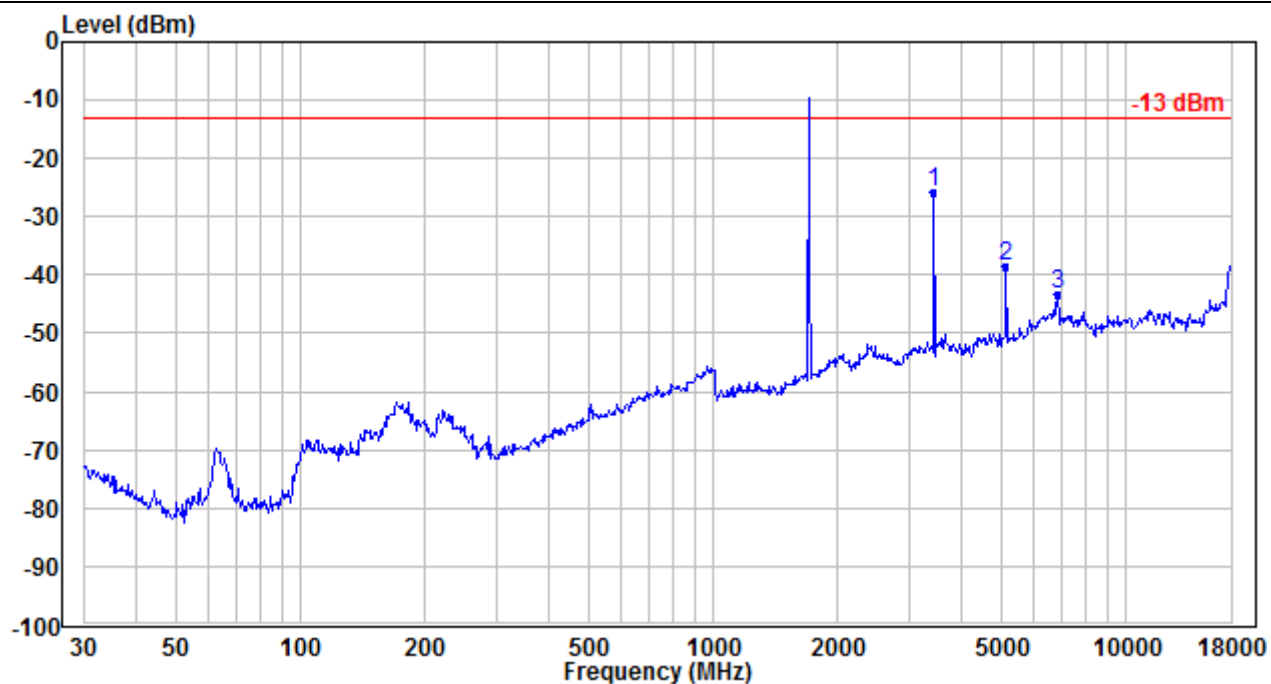
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LTE Band 4 / 5 MHz _Lowest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3425.000	-39.20	13.30	-25.90	-13.00	-12.90	Peak
2	5137.500	-53.45	15.02	-38.43	-13.00	-25.43	Peak
3	6850.000	-62.03	18.72	-43.31	-13.00	-30.31	Peak

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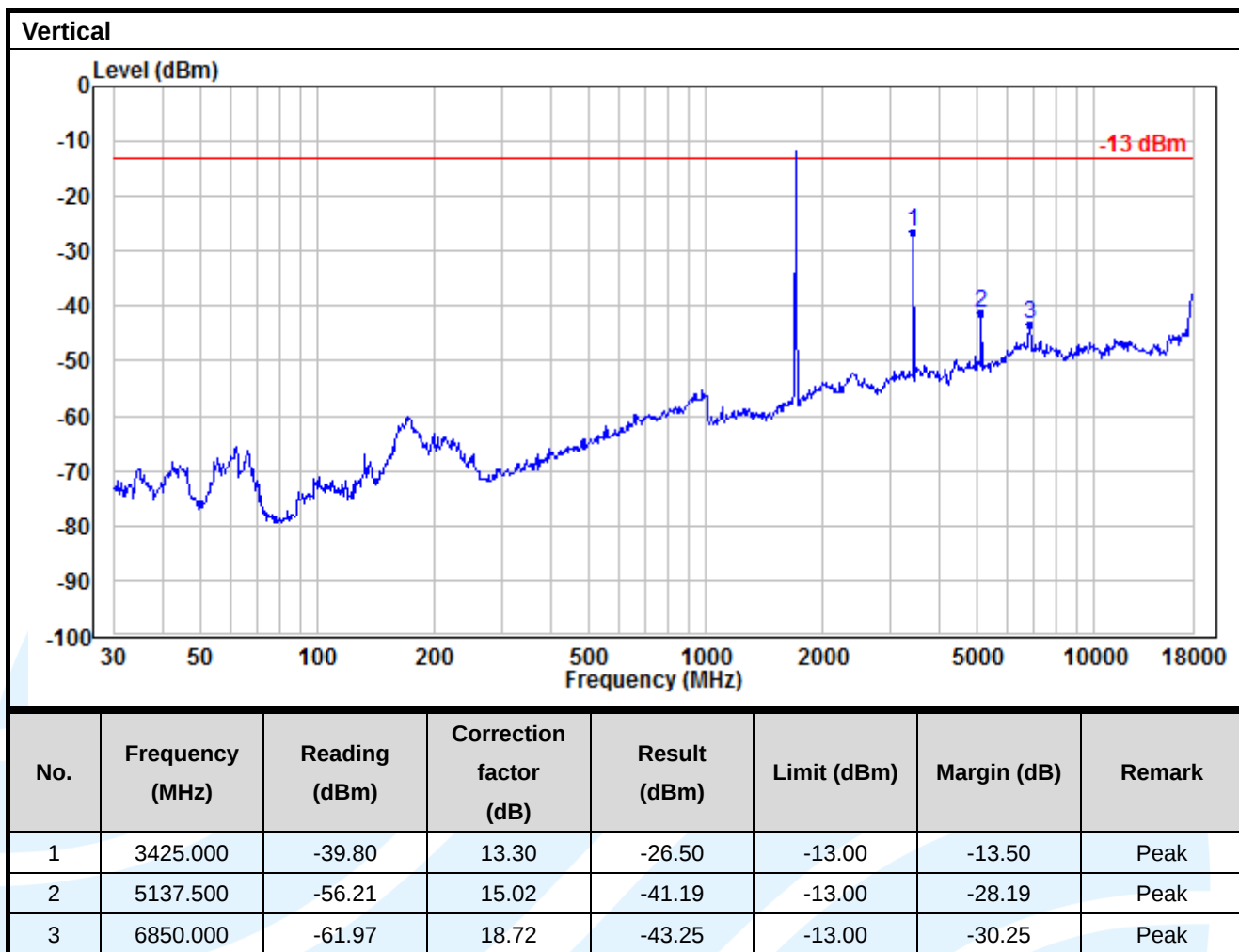
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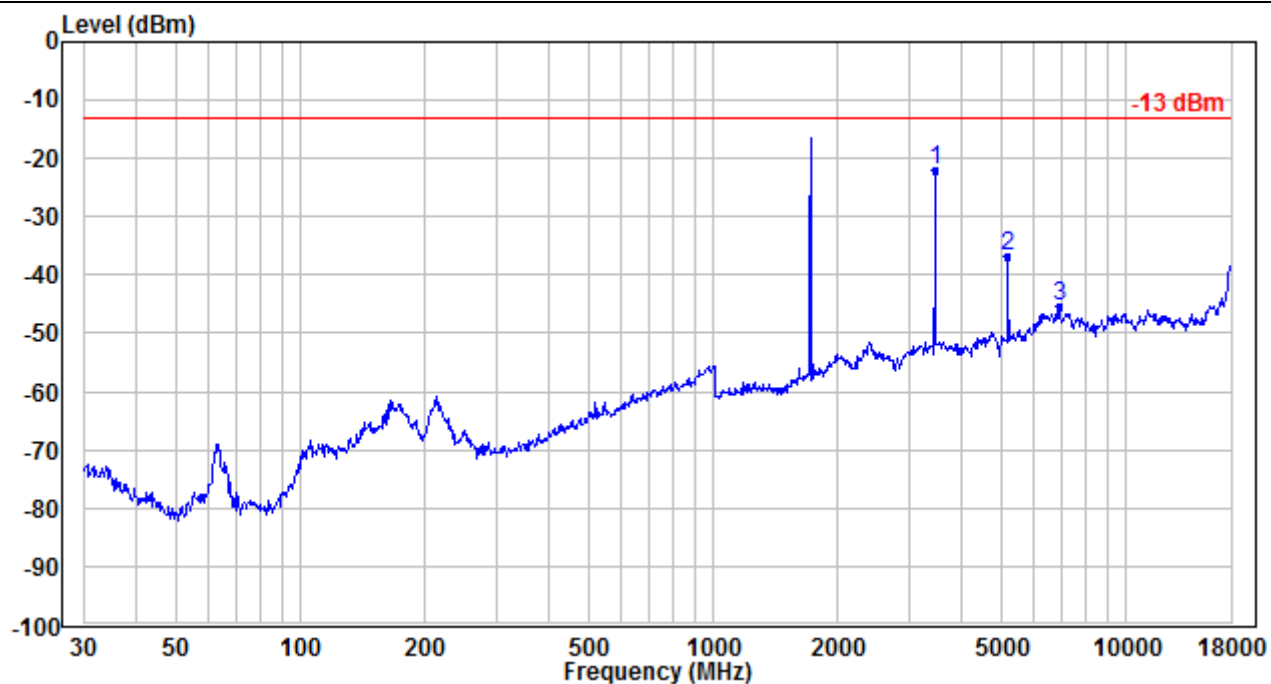
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LTE Band 4 / 5 MHz _Middle Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3465.000	-35.59	13.57	-22.02	-13.00	-9.02	Peak
2	5197.500	-52.18	15.30	-36.88	-13.00	-23.88	Peak
3	6930.000	-64.01	18.60	-45.41	-13.00	-32.41	Peak

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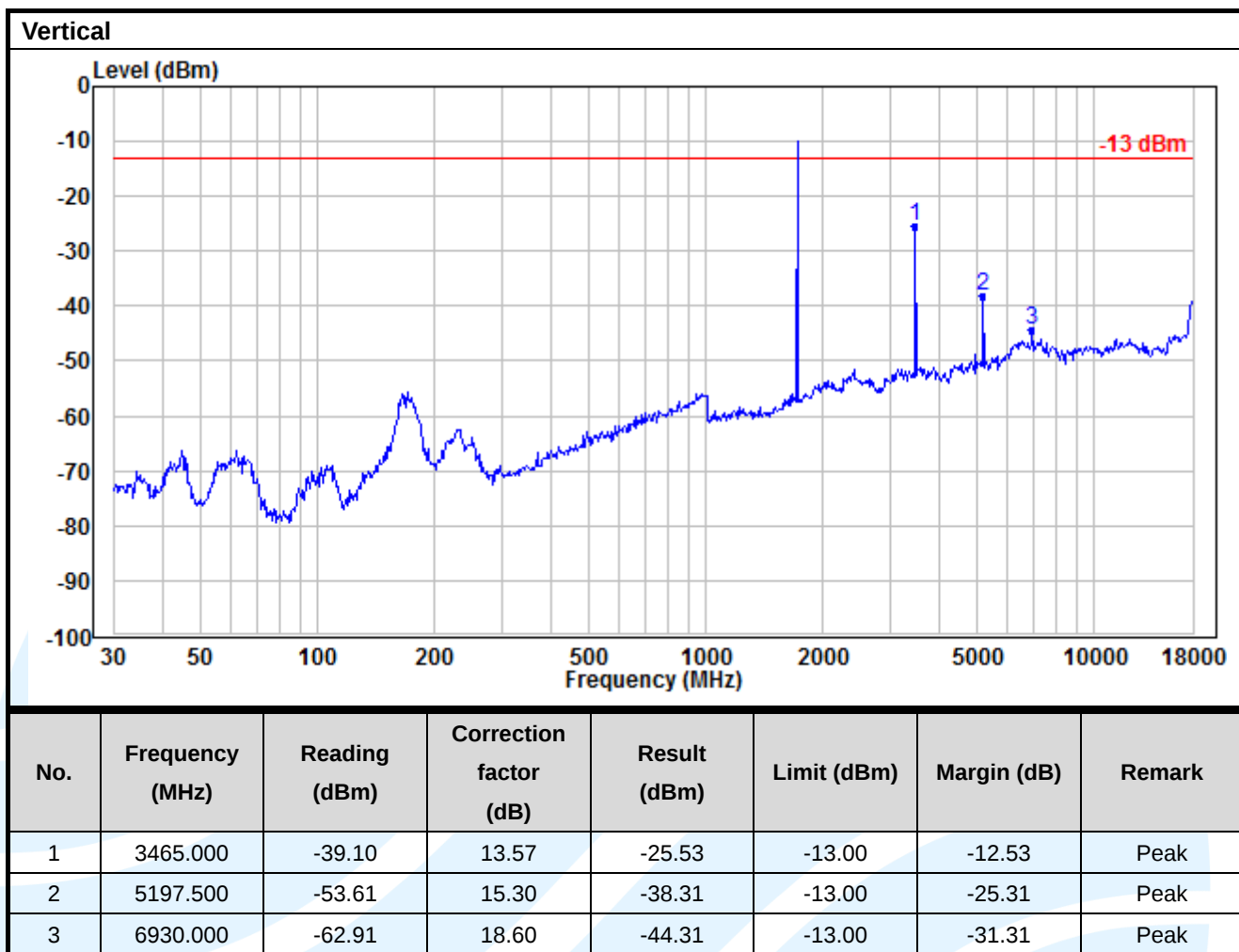
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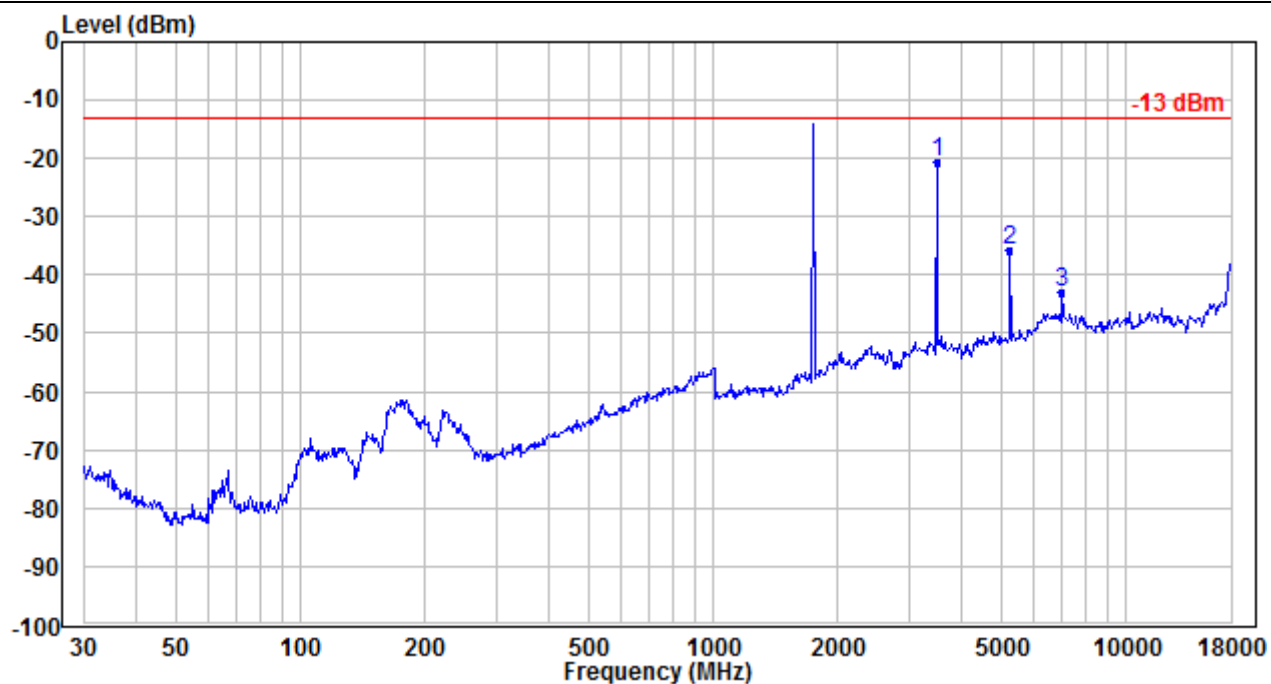
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LTE Band 4 / 5 MHz _Highest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3505.000	-34.55	13.80	-20.75	-13.00	-7.75	Peak
2	5257.500	-51.11	15.48	-35.63	-13.00	-22.63	Peak
3	7010.000	-61.33	18.46	-42.87	-13.00	-29.87	Peak

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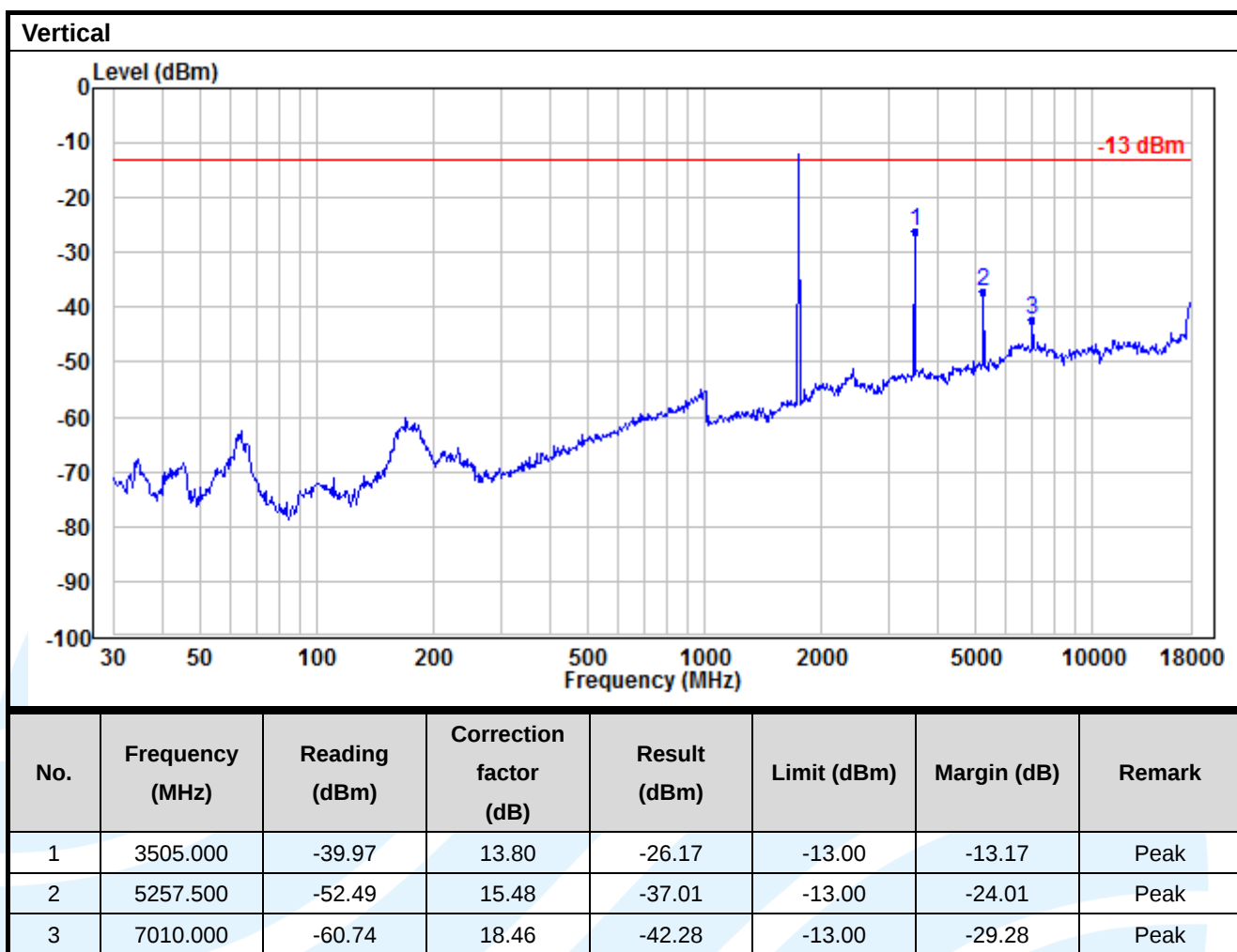
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Fax: +86-755-28230886

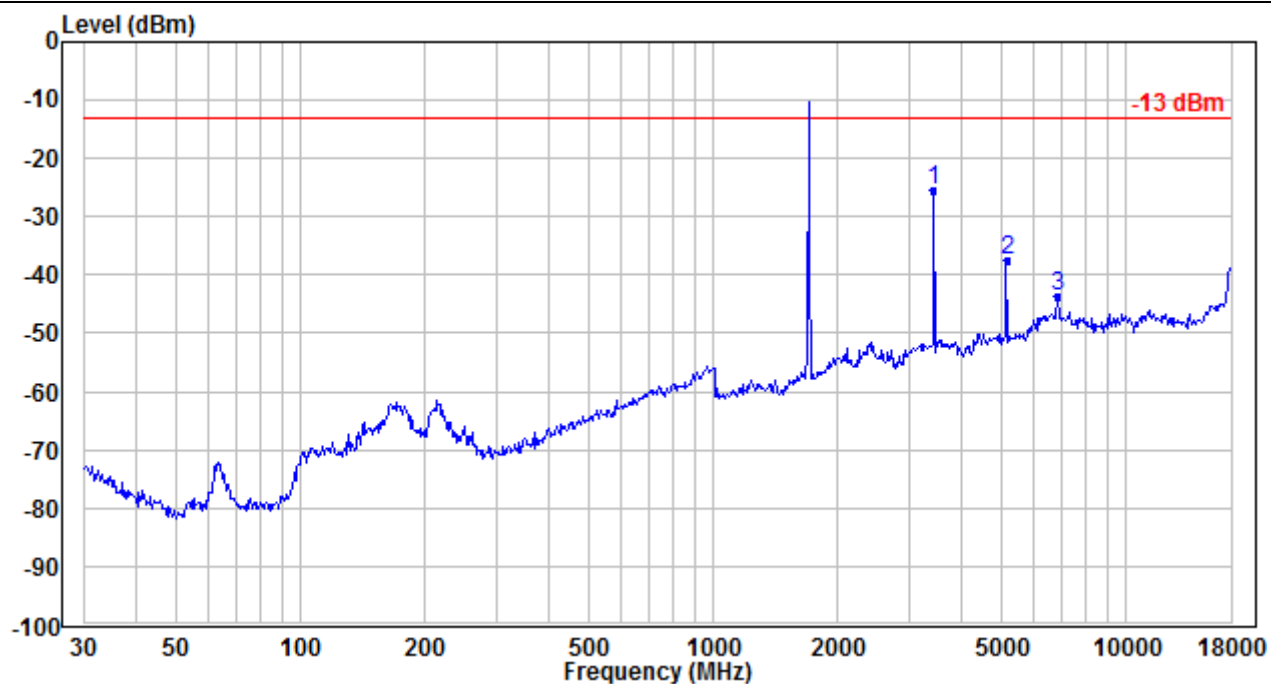
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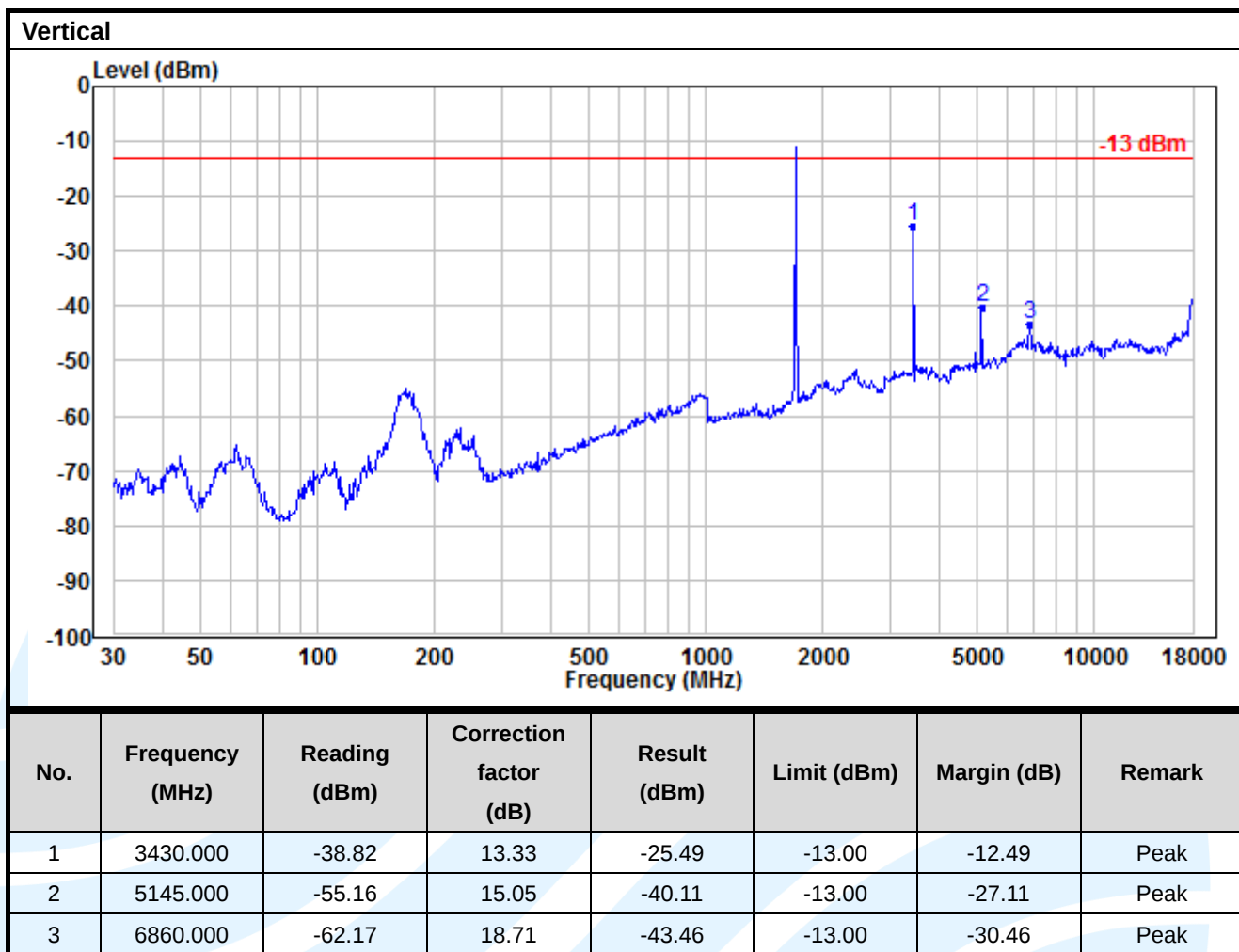


LTE Band 4 / 10 MHz _Lowest Channel

Horizontal

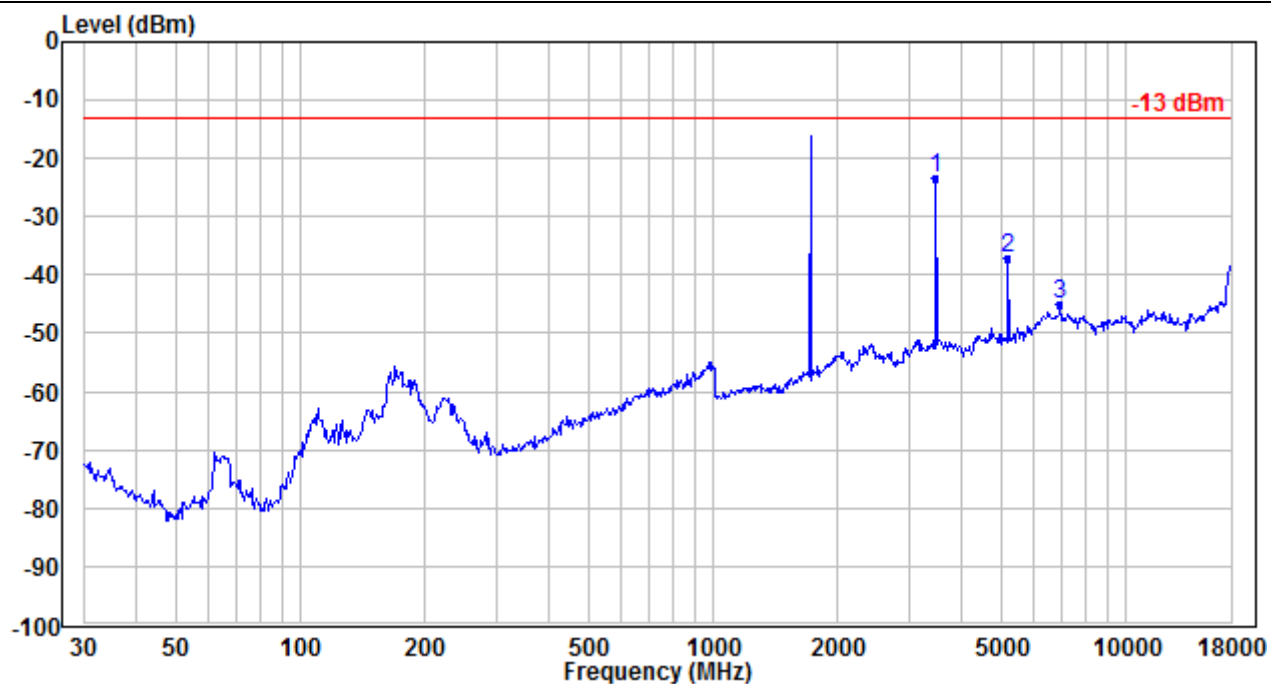


No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3430.000	-38.75	13.33	-25.42	-13.00	-12.42	Peak
2	5145.000	-52.51	15.05	-37.46	-13.00	-24.46	Peak
3	6860.000	-62.50	18.71	-43.79	-13.00	-30.79	Peak

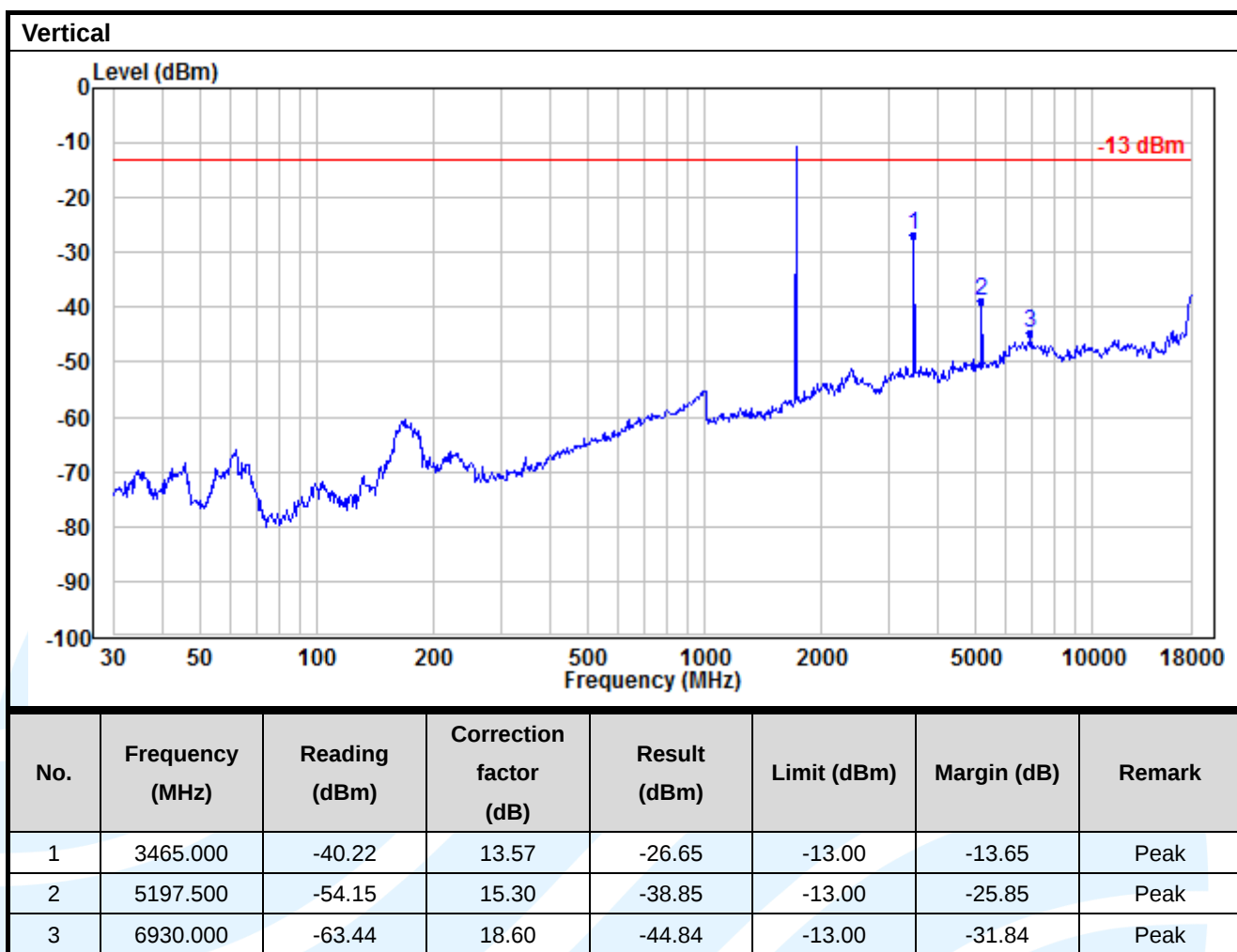


LTE Band 2 / 10 MHz _Middle Channel

Horizontal

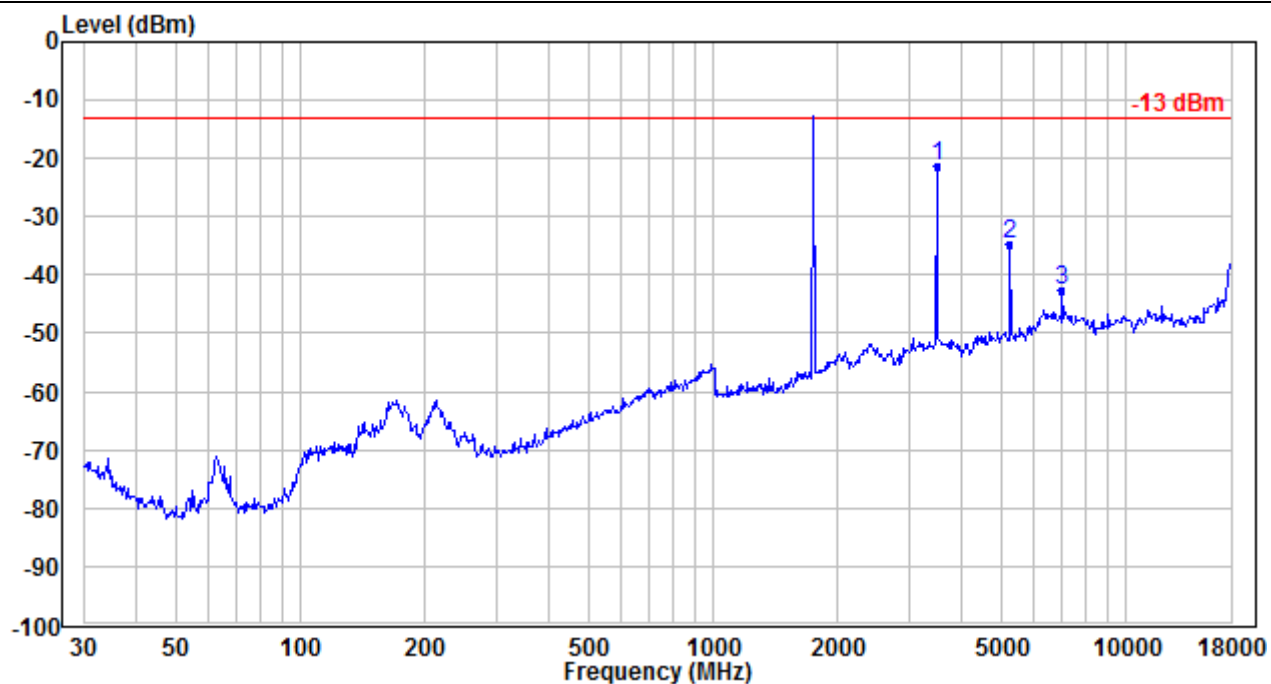


No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3465.000	-37.11	13.57	-23.54	-13.00	-10.54	Peak
2	5197.500	-52.44	15.30	-37.14	-13.00	-24.14	Peak
3	6930.000	-63.78	18.60	-45.18	-13.00	-32.18	Peak



LTE Band 4 / 10 MHz _Highest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3500.000	-35.27	13.80	-21.47	-13.00	-8.47	Peak
2	5250.000	-50.02	15.45	-34.57	-13.00	-21.57	Peak
3	7000.000	-61.05	18.47	-42.58	-13.00	-29.58	Peak

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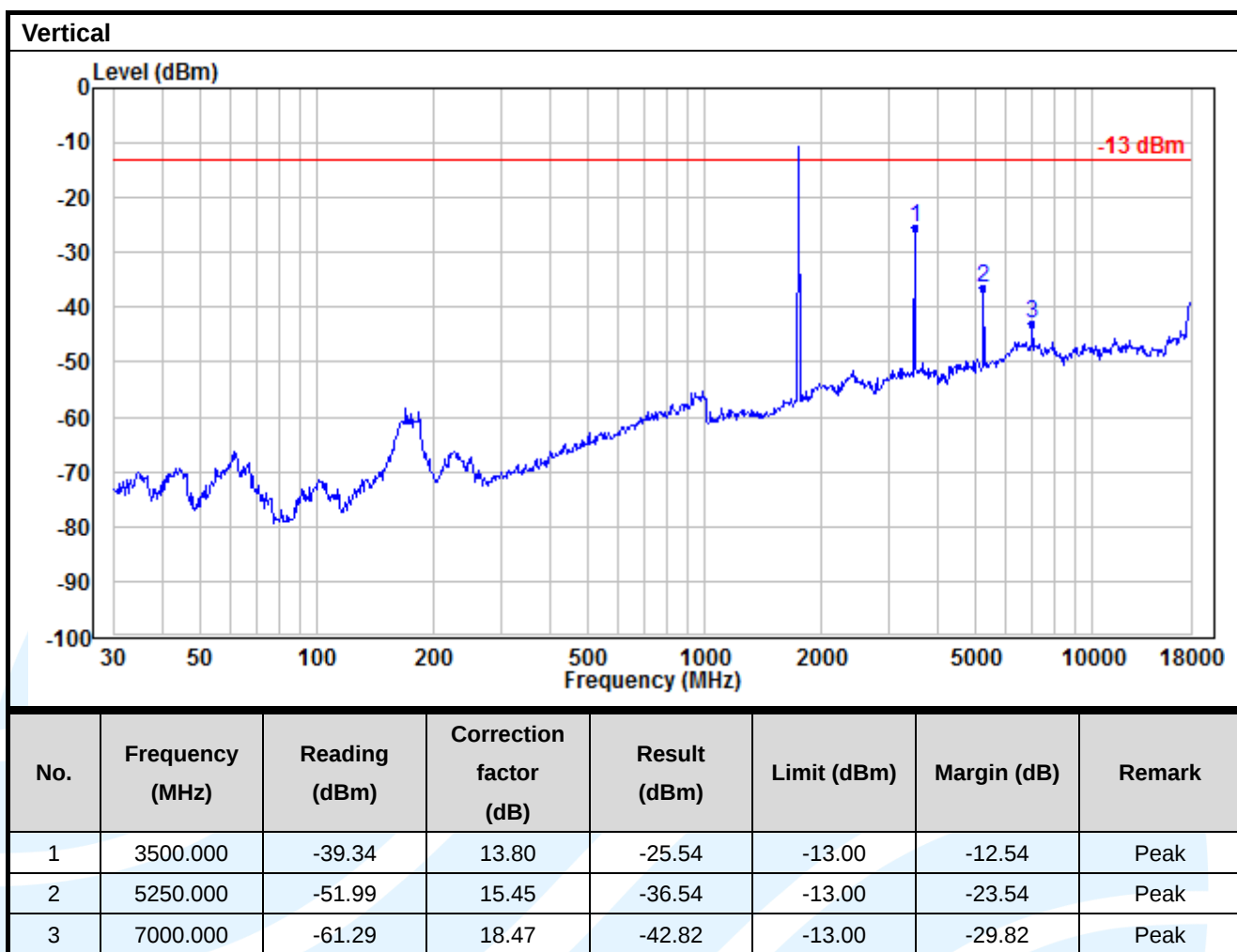
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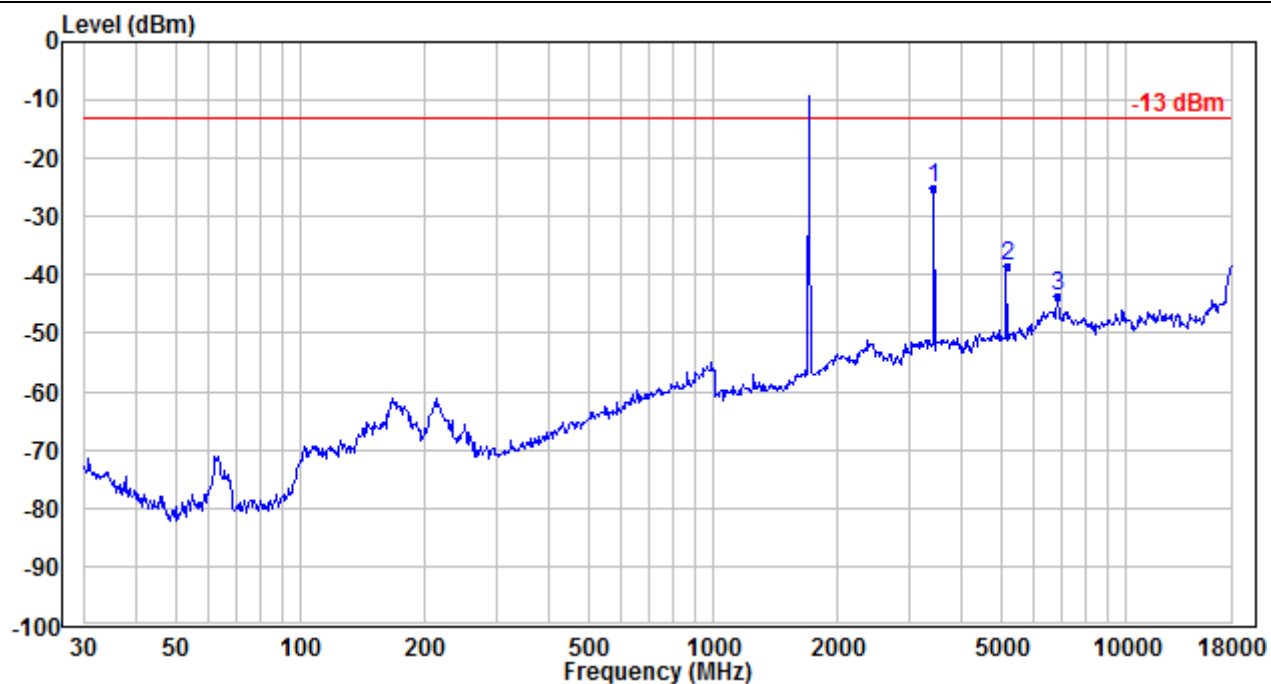
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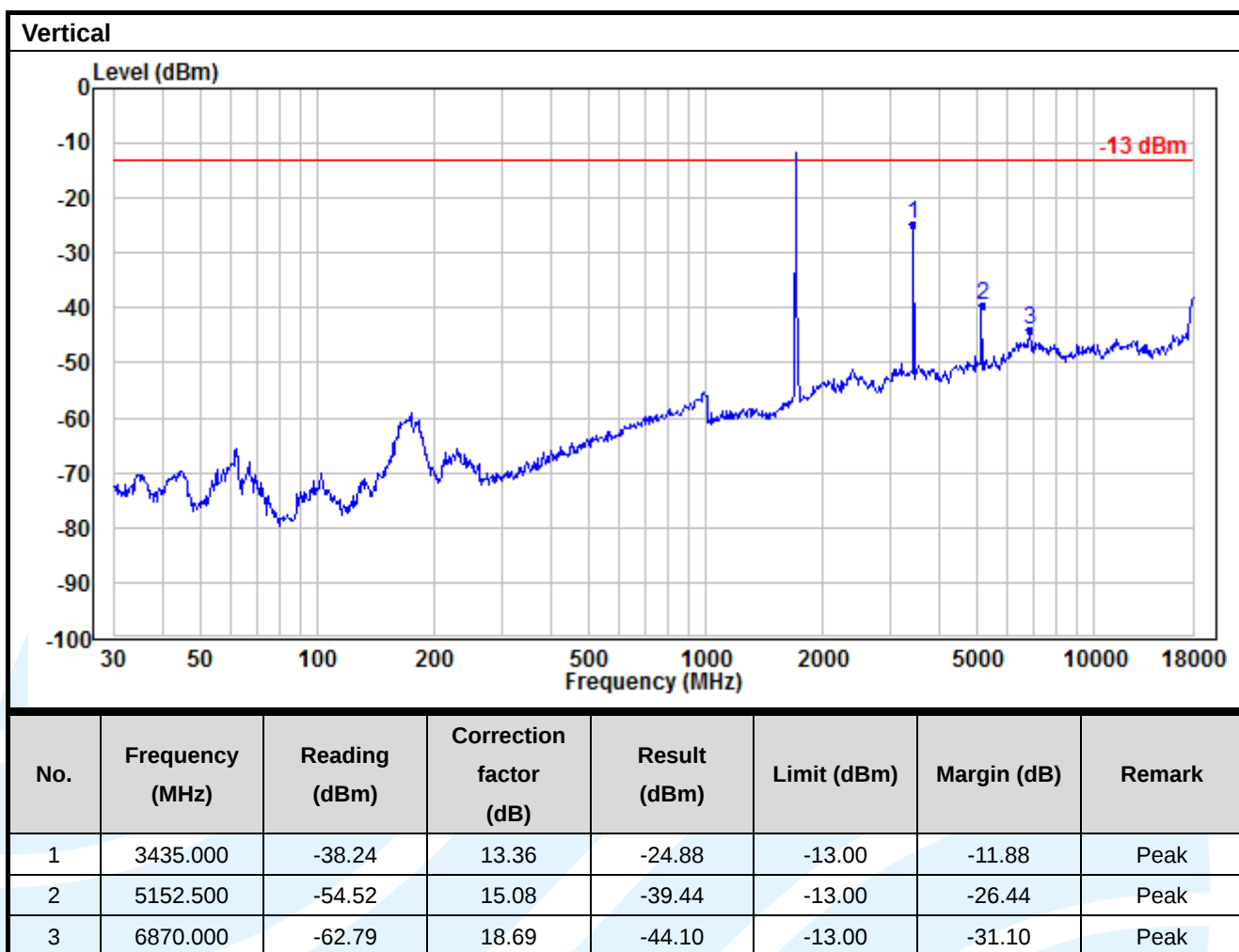


LTE Band 4 / 15 MHz _Lowest Channel

Horizontal

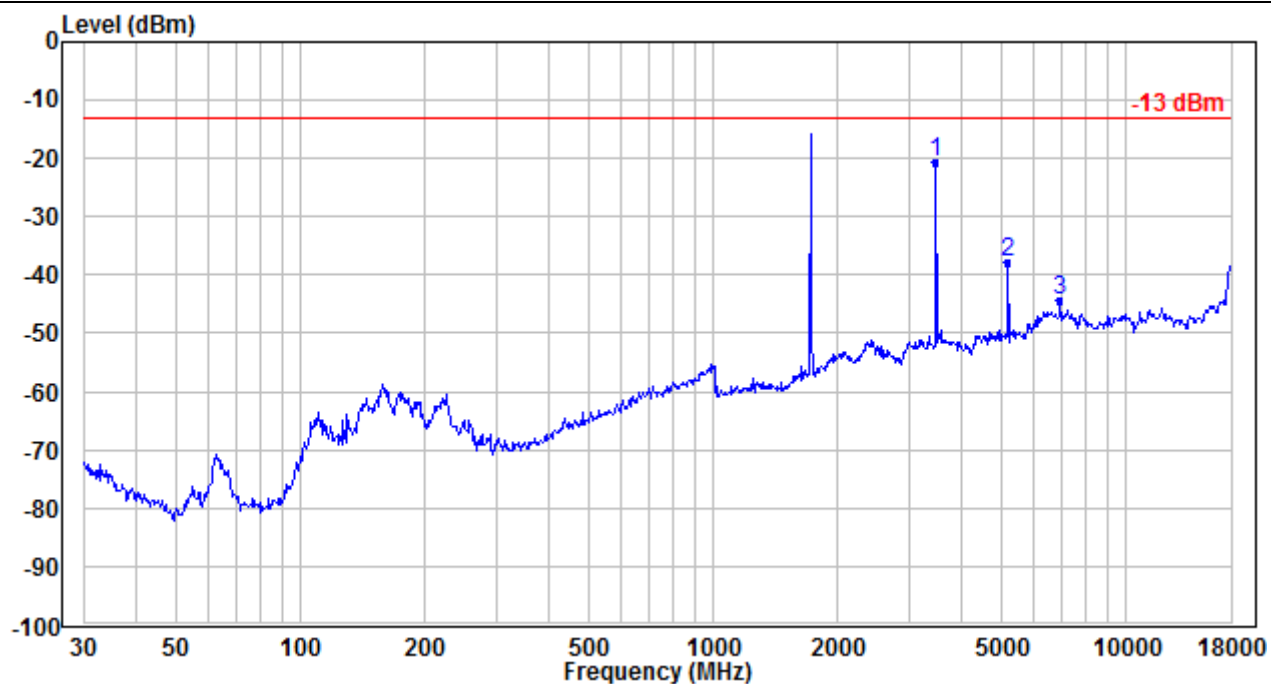


No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3435.000	-38.28	13.36	-24.92	-13.00	-11.92	Peak
2	5152.500	-53.64	15.08	-38.56	-13.00	-25.56	Peak
3	6870.000	-62.19	18.69	-43.50	-13.00	-30.50	Peak

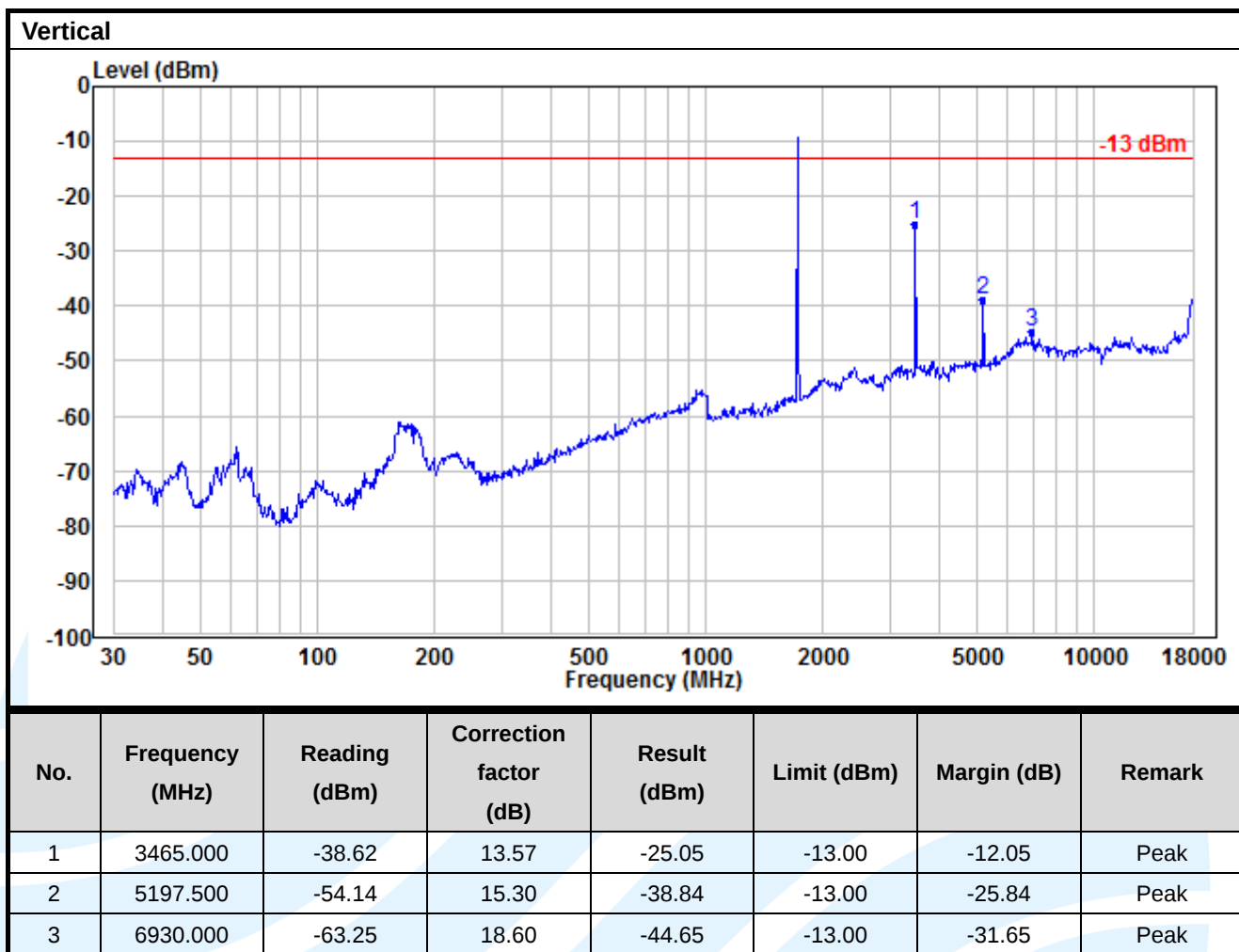


LTE Band 4 / 15 MHz _Middle Channel

Horizontal

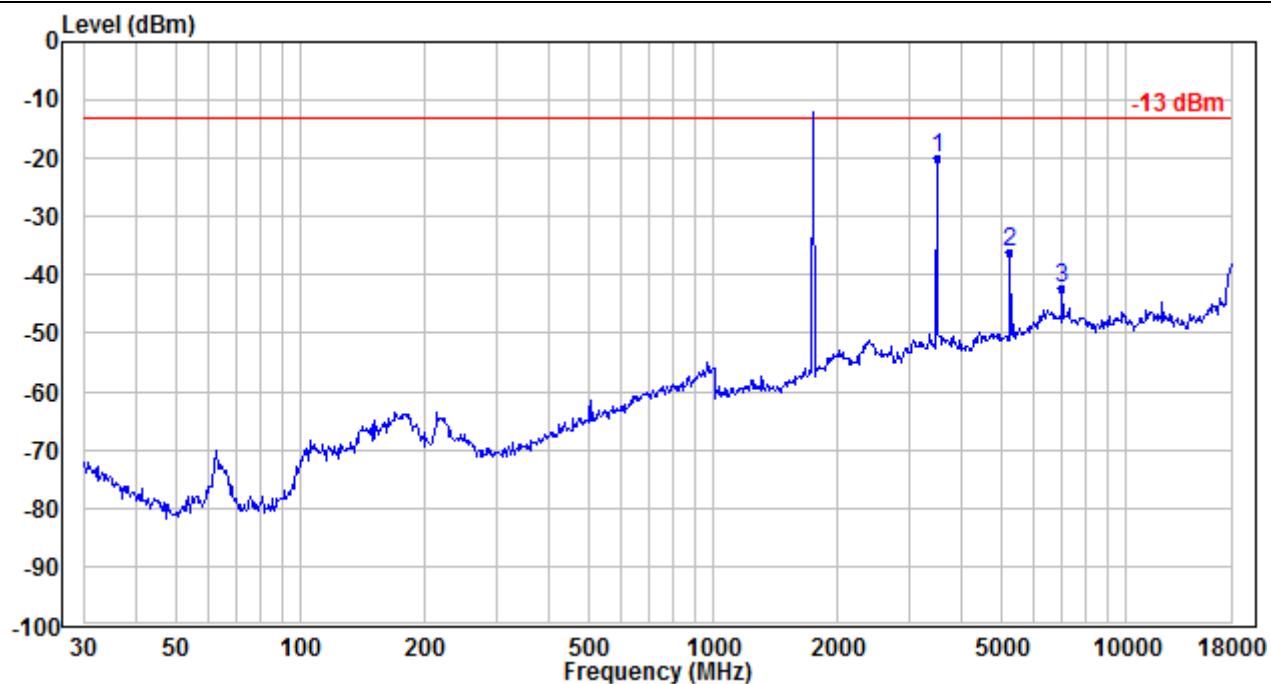


No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3465.000	-34.31	13.57	-20.74	-13.00	-7.74	Peak
2	5197.500	-52.93	15.30	-37.63	-13.00	-24.63	Peak
3	6930.000	-62.93	18.60	-44.33	-13.00	-31.33	Peak

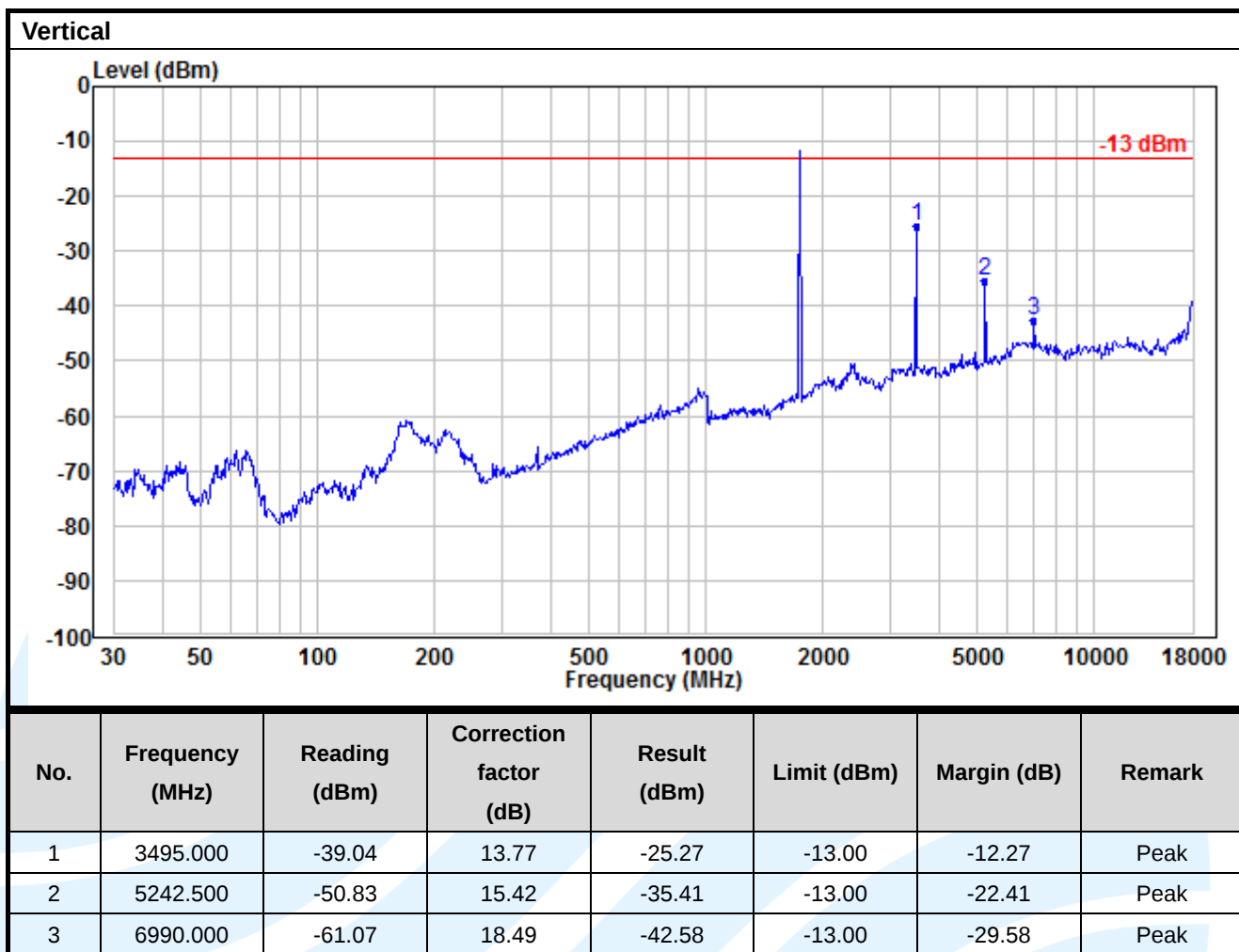


LTE Band 4 / 15 MHz _Highest Channel

Horizontal

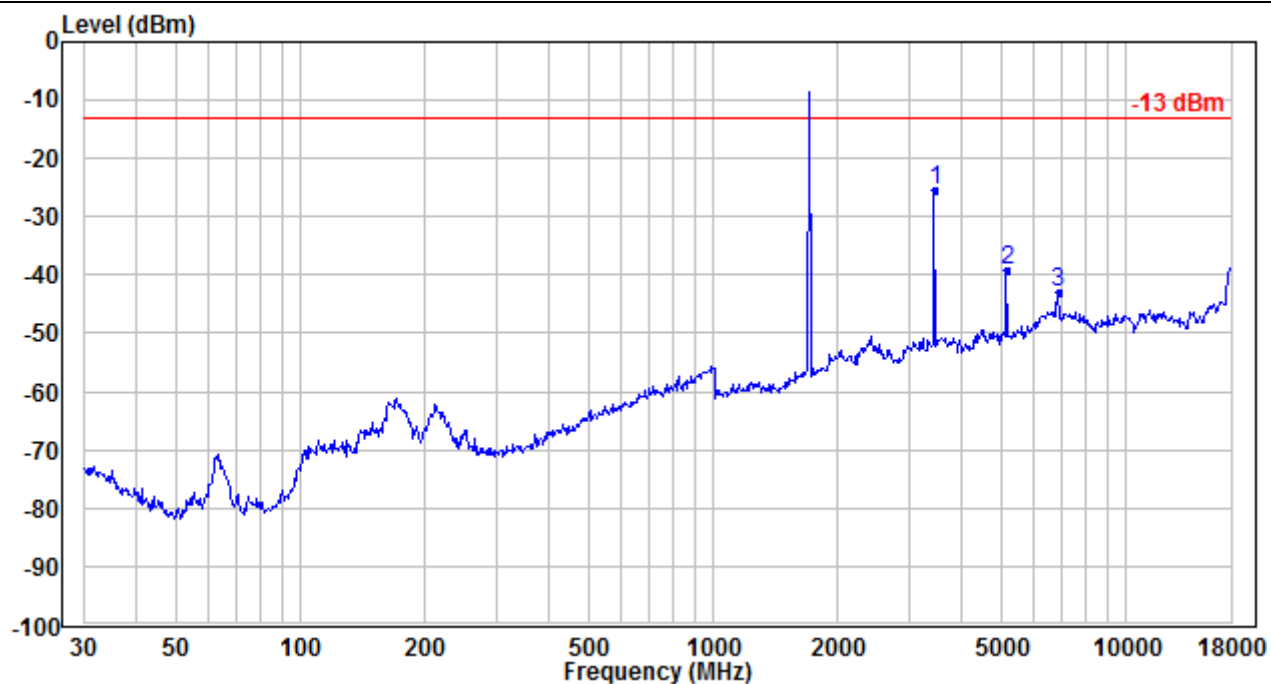


No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3495.000	-33.60	13.77	-19.83	-13.00	-6.83	Peak
2	5242.500	-51.48	15.42	-36.06	-13.00	-23.06	Peak
3	6990.000	-60.71	18.49	-42.22	-13.00	-29.22	Peak

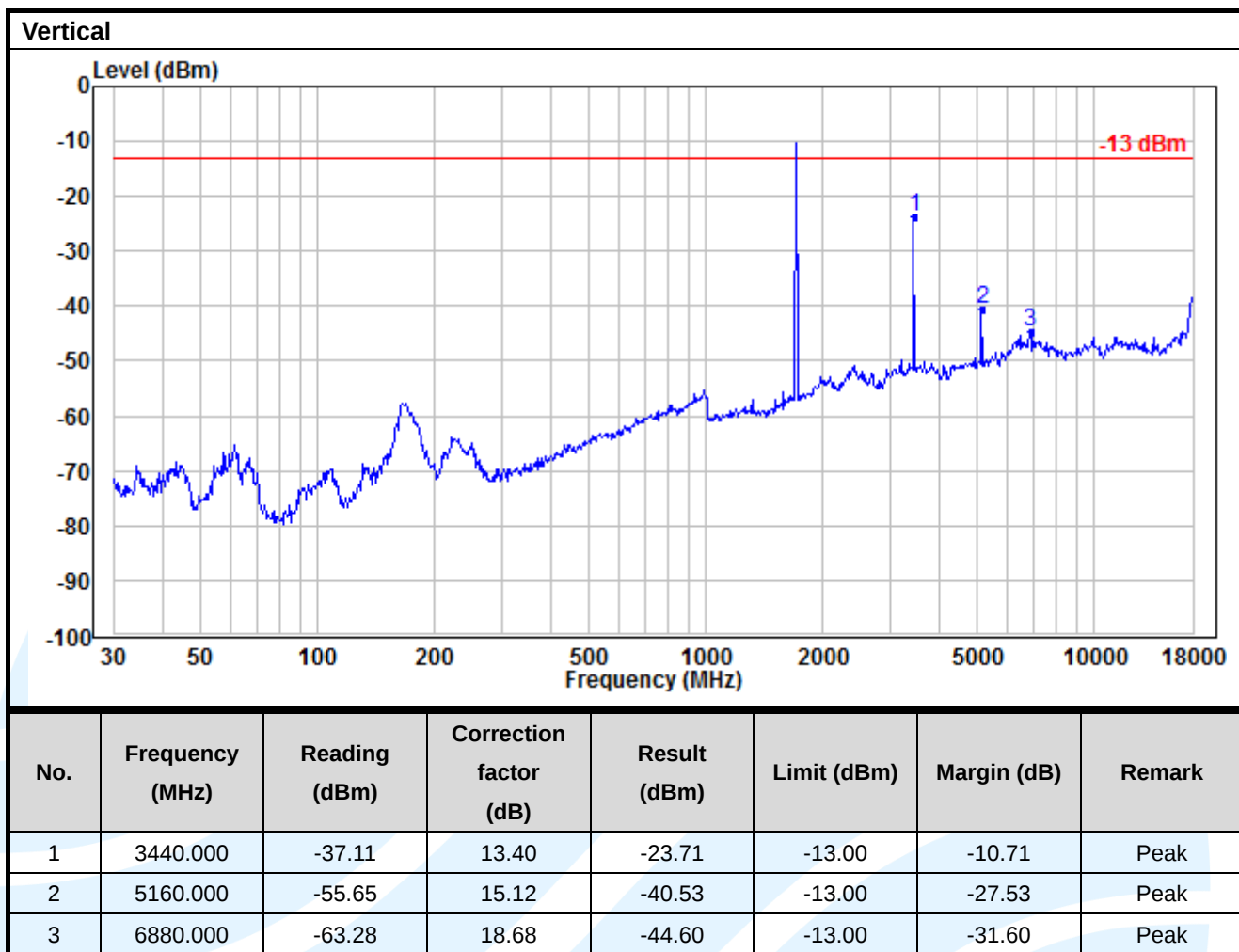


LTE Band 4 / 20 MHz _Lowest Channel

Horizontal

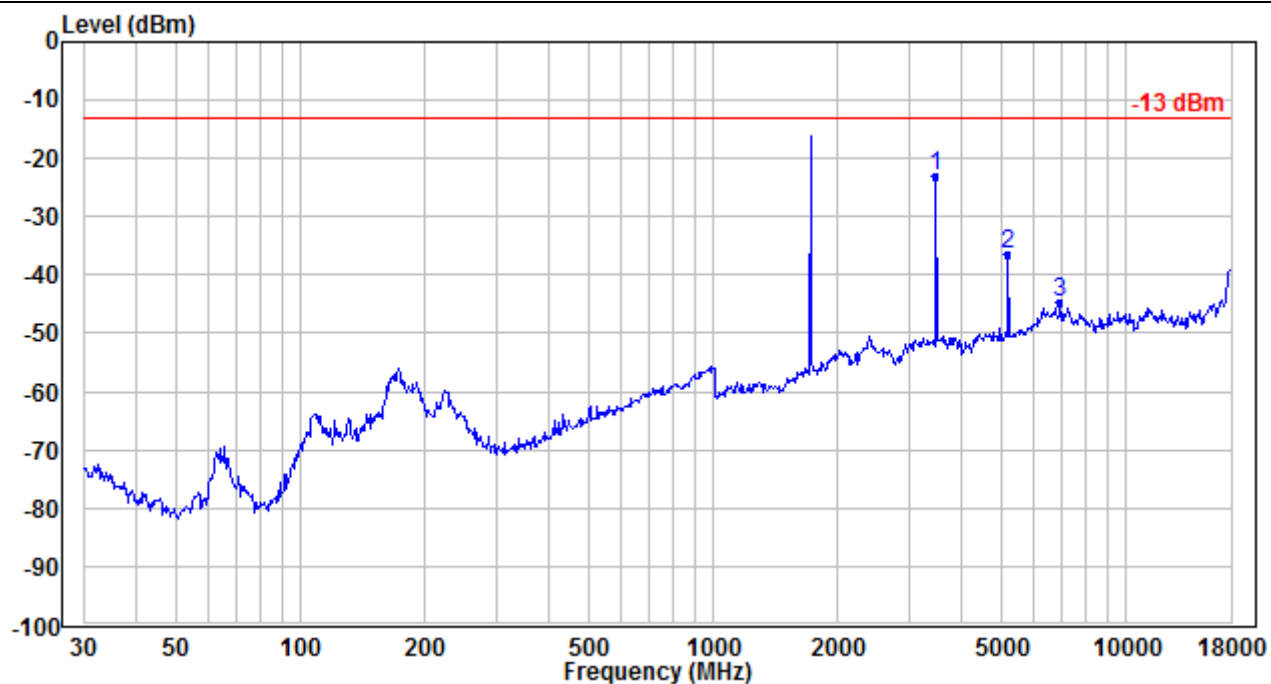


No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3440.000	-38.72	13.40	-25.32	-13.00	-12.32	Peak
2	5160.000	-54.44	15.12	-39.32	-13.00	-26.32	Peak
3	6880.000	-61.59	18.68	-42.91	-13.00	-29.91	Peak



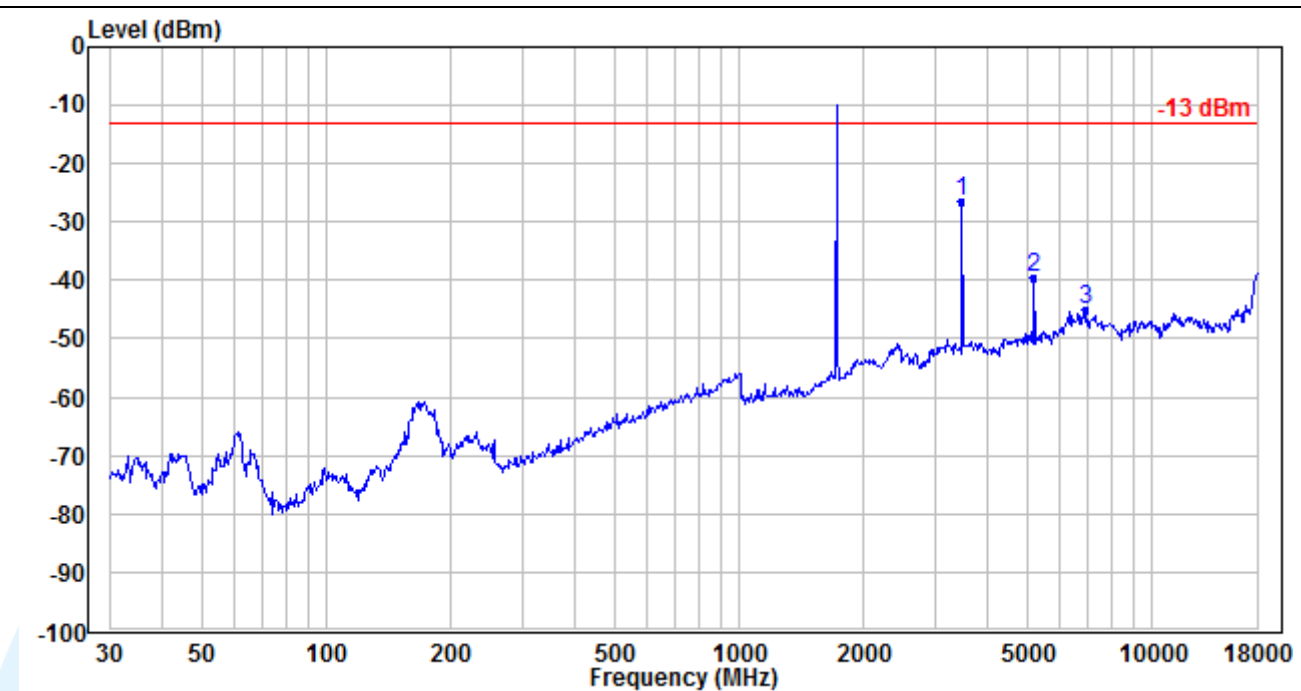
LTE Band 4 / 20 MHz _Middle Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3465.000	-36.73	13.57	-23.16	-13.00	-10.16	Peak
2	5197.500	-51.86	15.30	-36.56	-13.00	-23.56	Peak
3	6930.000	-63.30	18.60	-44.70	-13.00	-31.70	Peak

Vertical



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3465.000	-40.00	13.57	-26.43	-13.00	-13.43	Peak
2	5197.500	-54.80	15.30	-39.50	-13.00	-26.50	Peak
3	6930.000	-63.59	18.60	-44.99	-13.00	-31.99	Peak

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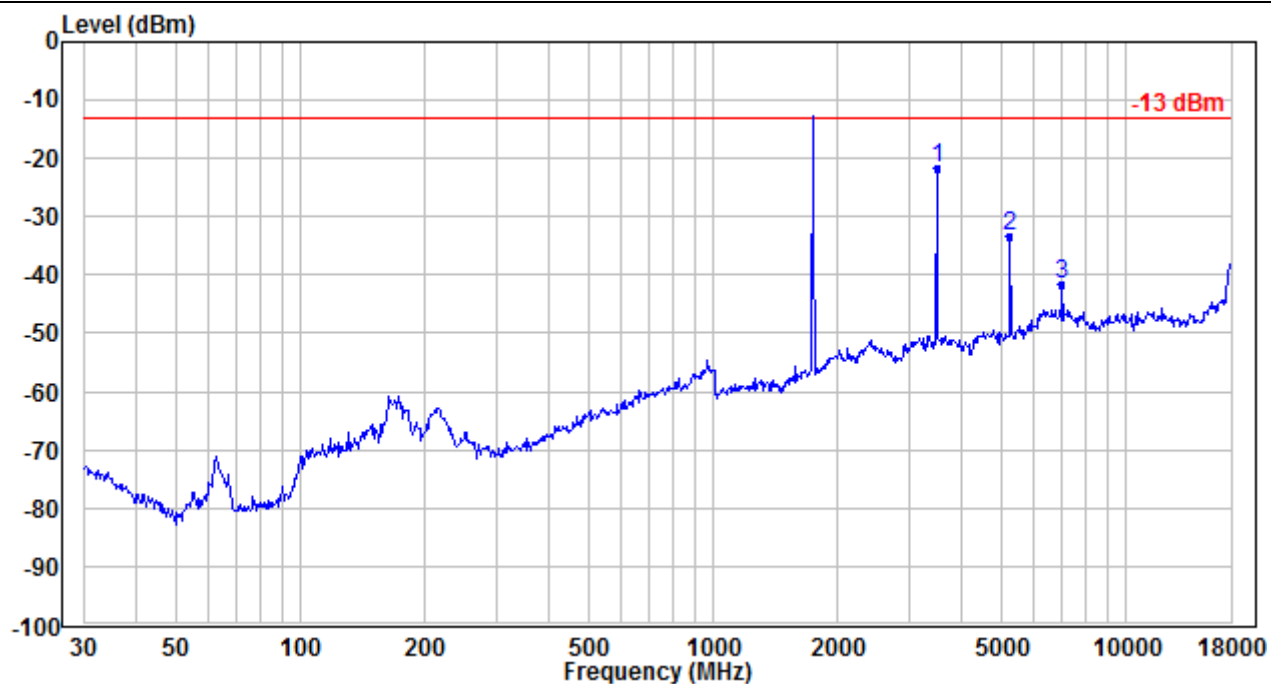
Fax: +86-755-28230886

E-mail: info@uttlab.com

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LTE Band 4 / 20 MHz _Highest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	3490.000	-35.47	13.74	-21.73	-13.00	-8.73	Peak
2	5235.000	-48.64	15.41	-33.23	-13.00	-20.23	Peak
3	6980.000	-60.13	18.51	-41.62	-13.00	-28.62	Peak

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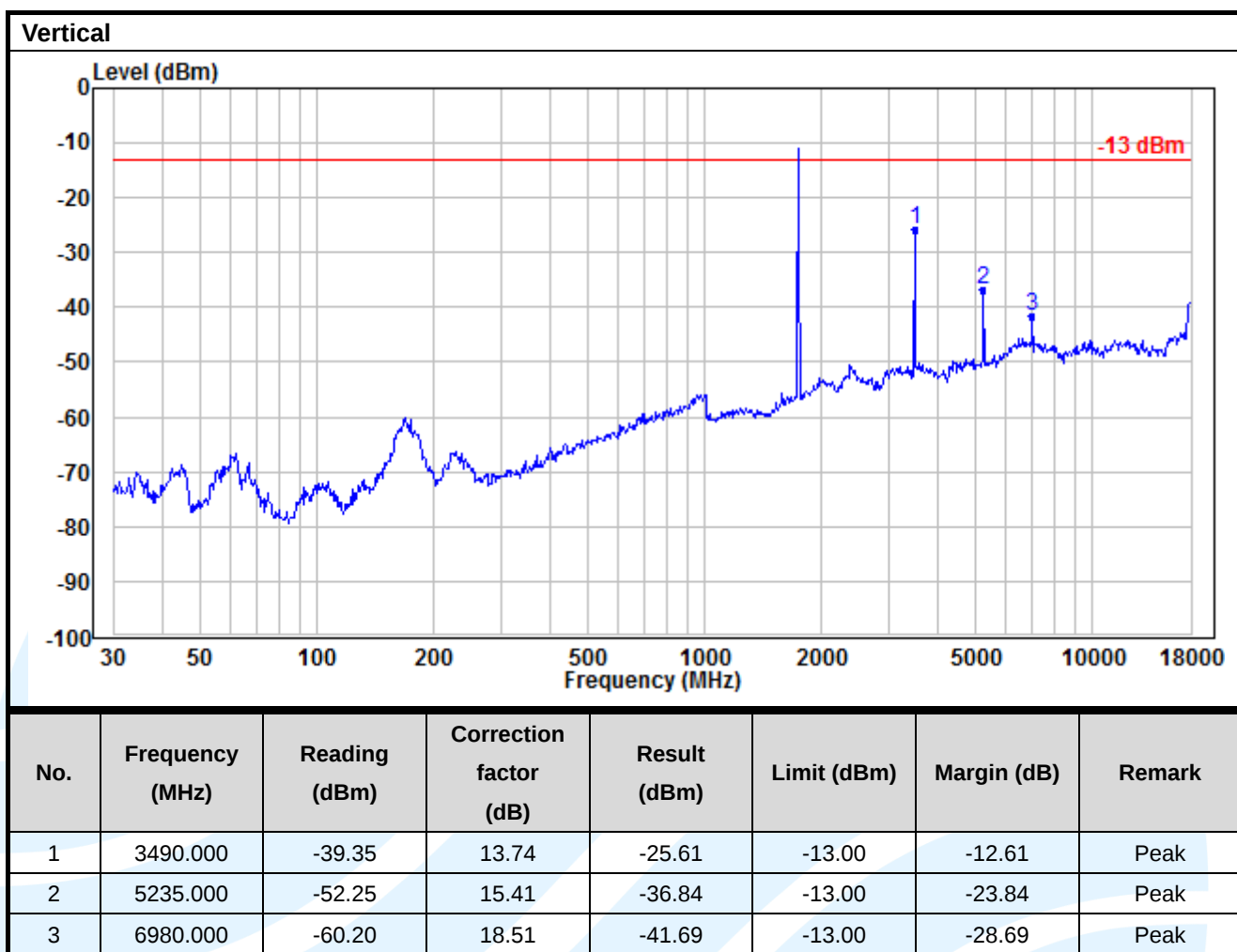
Address: 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China

Tel: +86-755-28230888

Fax: +86-755-28230886

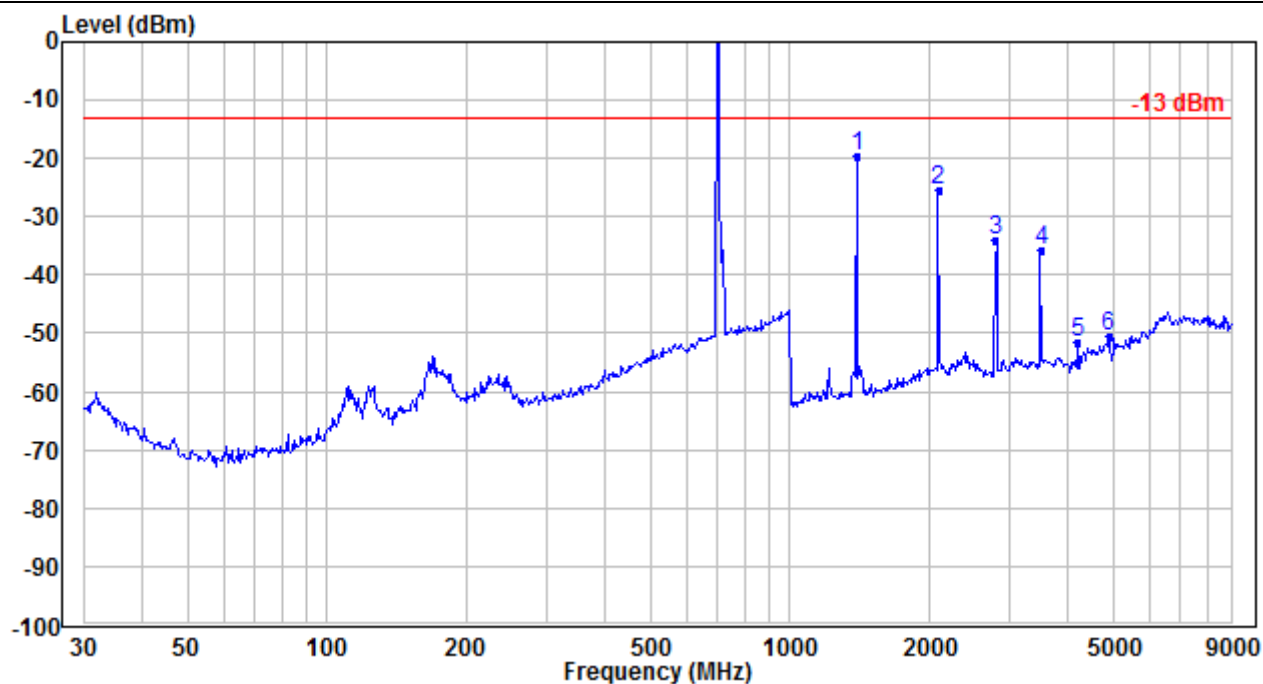
E-mail: info@uttlab.com

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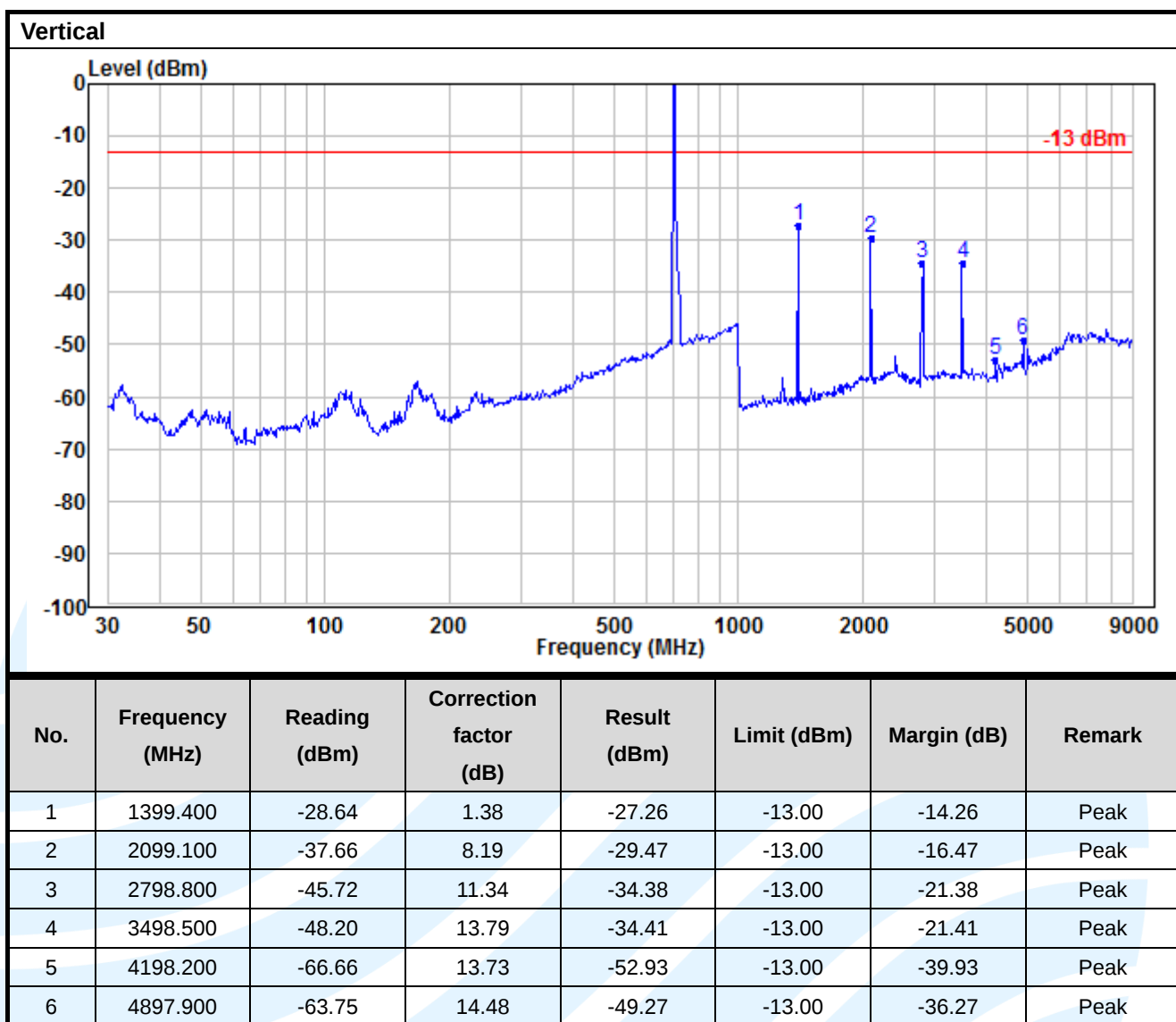


LTE Band 12 / 1.4 MHz _Lowest Channel

Horizontal

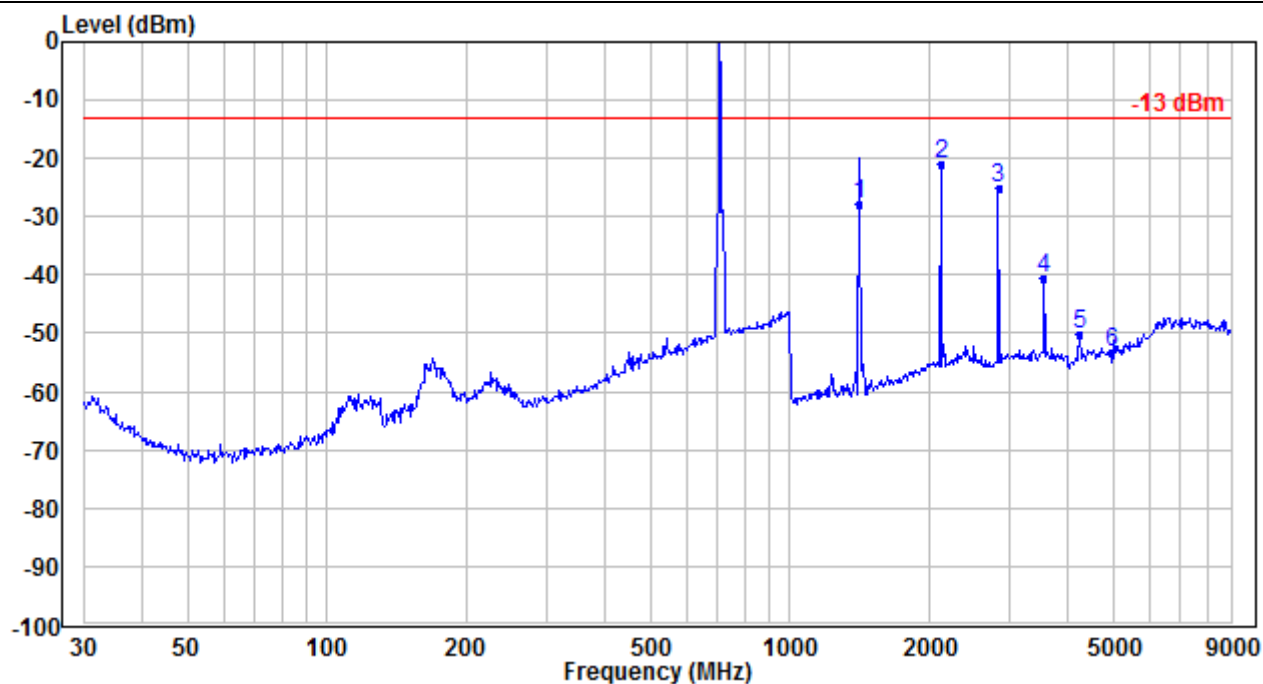


No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	1399.400	-21.00	1.38	-19.62	-13.00	-6.62	Peak
2	2099.100	-33.53	8.19	-25.34	-13.00	-12.34	Peak
3	2798.800	-45.46	11.34	-34.12	-13.00	-21.12	Peak
4	3498.500	-49.59	13.79	-35.80	-13.00	-22.80	Peak
5	4198.200	-65.36	13.73	-51.63	-13.00	-38.63	Peak
6	4897.900	-64.85	14.48	-50.37	-13.00	-37.37	Peak



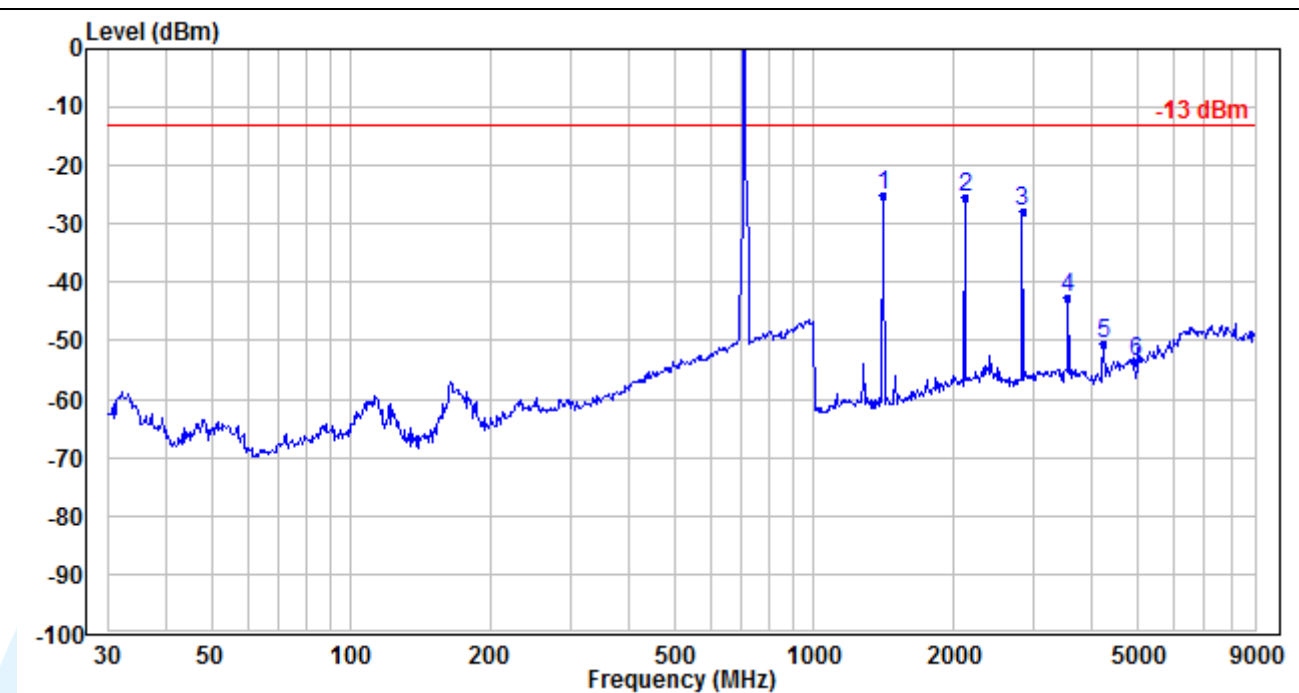
LTE Band 12 / 1.4 MHz _Middle Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	1415.000	-29.19	1.44	-27.75	-13.00	-14.75	Peak
2	2122.500	-29.27	8.28	-20.99	-13.00	-7.99	Peak
3	2830.000	-36.60	11.38	-25.22	-13.00	-12.22	Peak
4	3537.500	-54.35	13.87	-40.48	-13.00	-27.48	Peak
5	4245.000	-63.95	13.88	-50.07	-13.00	-37.07	Peak
6	4952.500	-67.83	14.42	-53.41	-13.00	-40.41	Peak

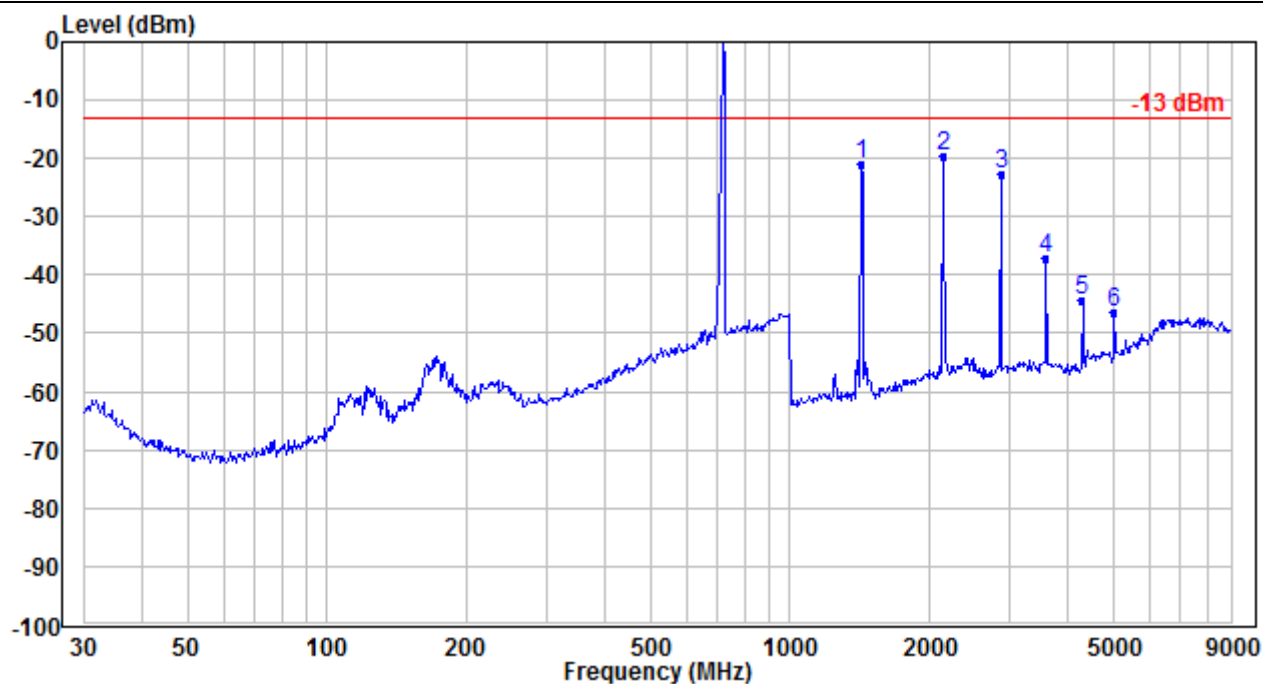
Vertical



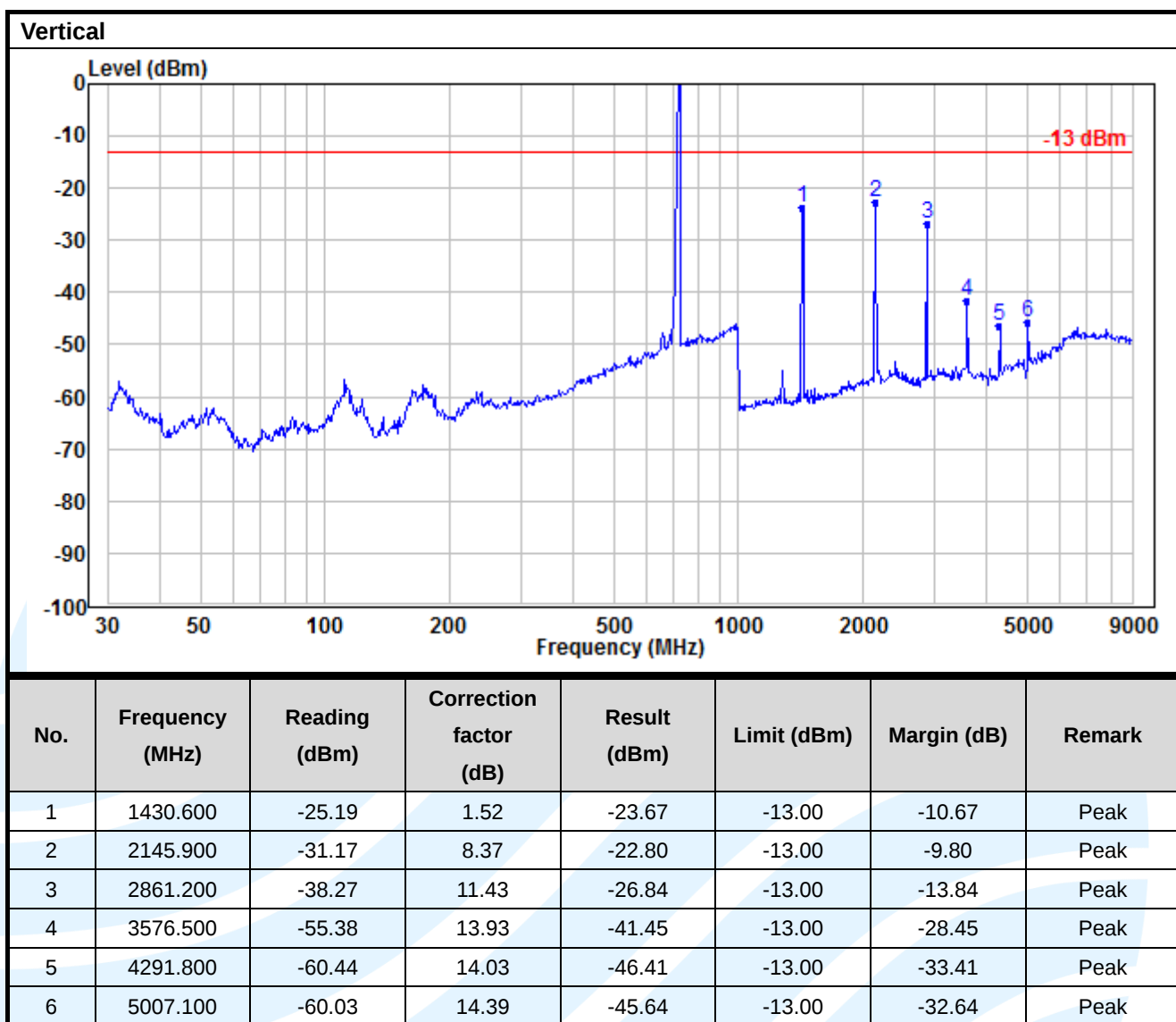
No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	1415.000	-26.54	1.44	-25.10	-13.00	-12.10	Peak
2	2122.500	-33.65	8.28	-25.37	-13.00	-12.37	Peak
3	2830.000	-39.16	11.38	-27.78	-13.00	-14.78	Peak
4	3537.500	-56.36	13.87	-42.49	-13.00	-29.49	Peak
5	4245.000	-64.36	13.88	-50.48	-13.00	-37.48	Peak
6	4952.500	-67.94	14.42	-53.52	-13.00	-40.52	Peak

LTE Band 12 / 1.4 MHz _Highest Channel

Horizontal

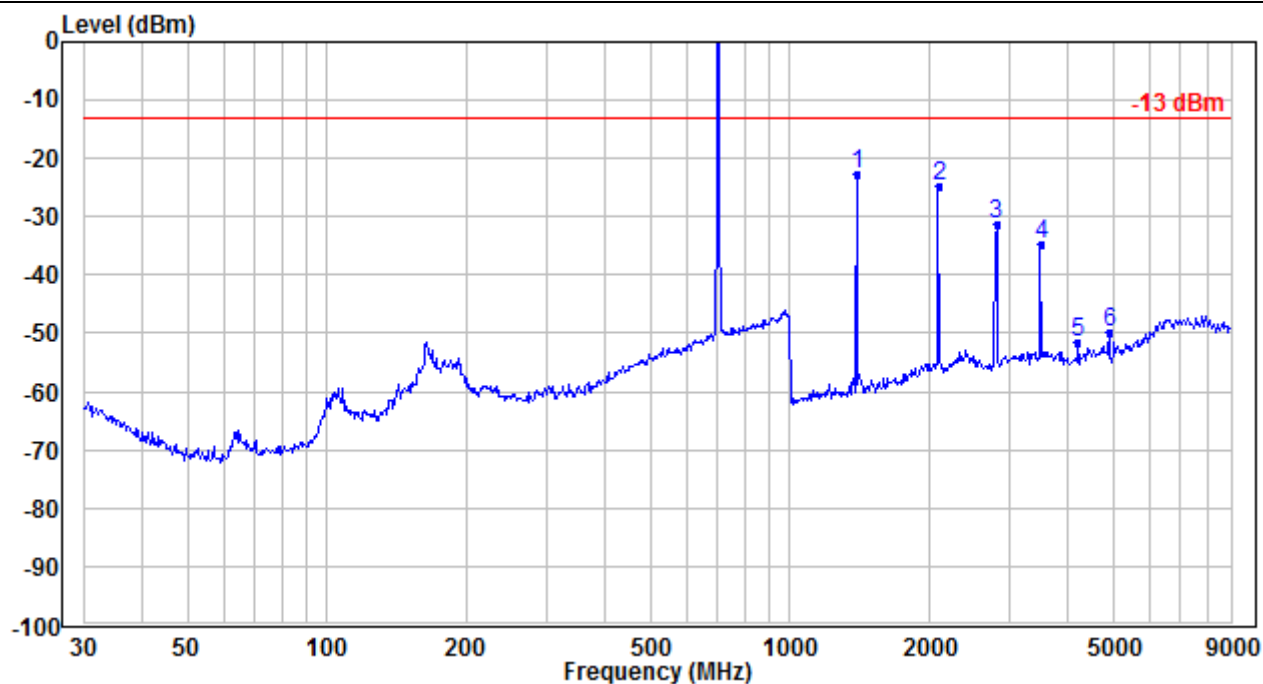


No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	1430.600	-22.54	1.52	-21.02	-13.00	-8.02	Peak
2	2145.900	-28.04	8.37	-19.67	-13.00	-6.67	Peak
3	2861.200	-34.04	11.43	-22.61	-13.00	-9.61	Peak
4	3576.500	-50.89	13.93	-36.96	-13.00	-23.96	Peak
5	4291.800	-58.28	14.03	-44.25	-13.00	-31.25	Peak
6	5007.100	-60.78	14.39	-46.39	-13.00	-33.39	Peak

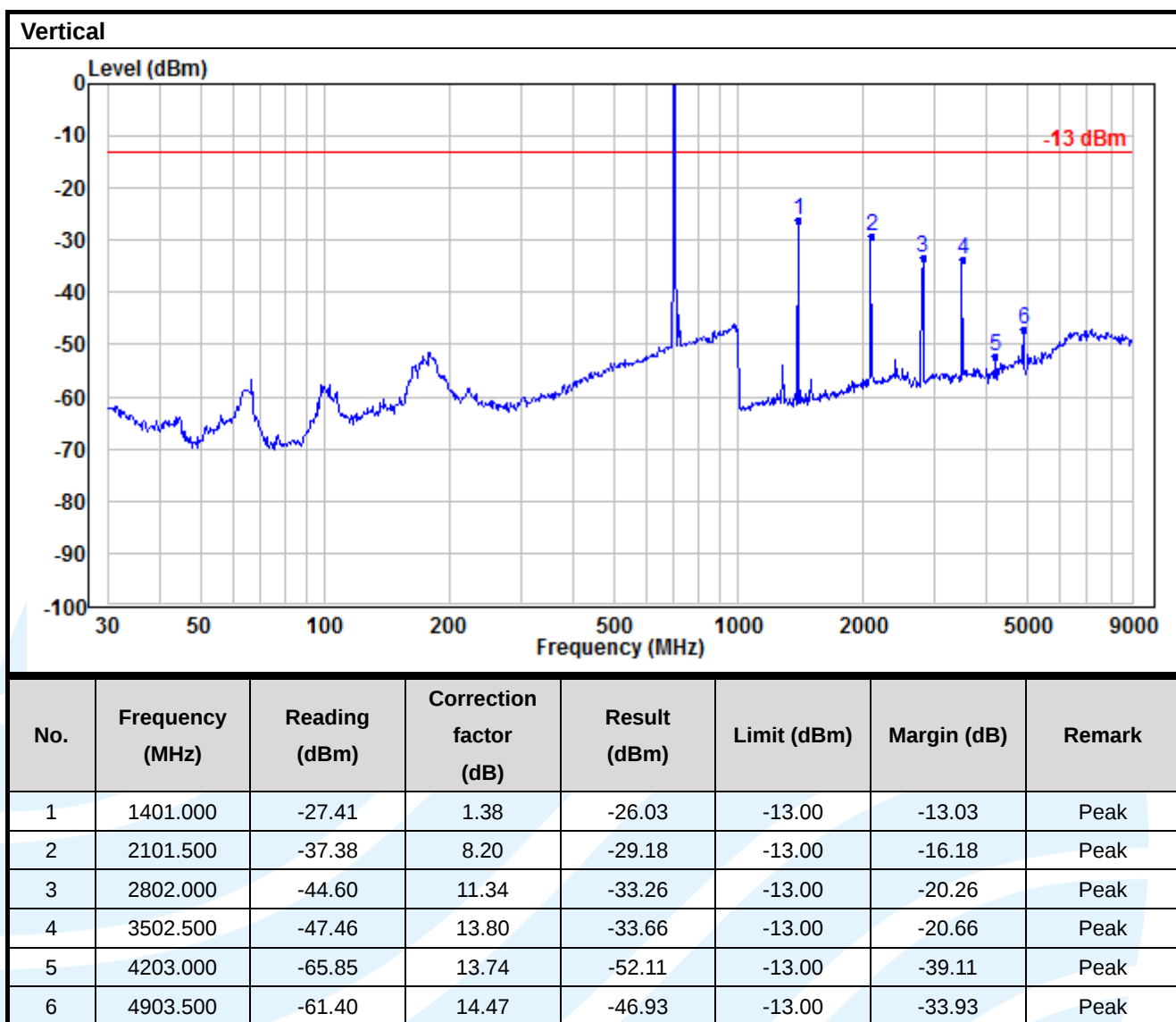


LTE Band 12 / 3 MHz _Lowest Channel

Horizontal

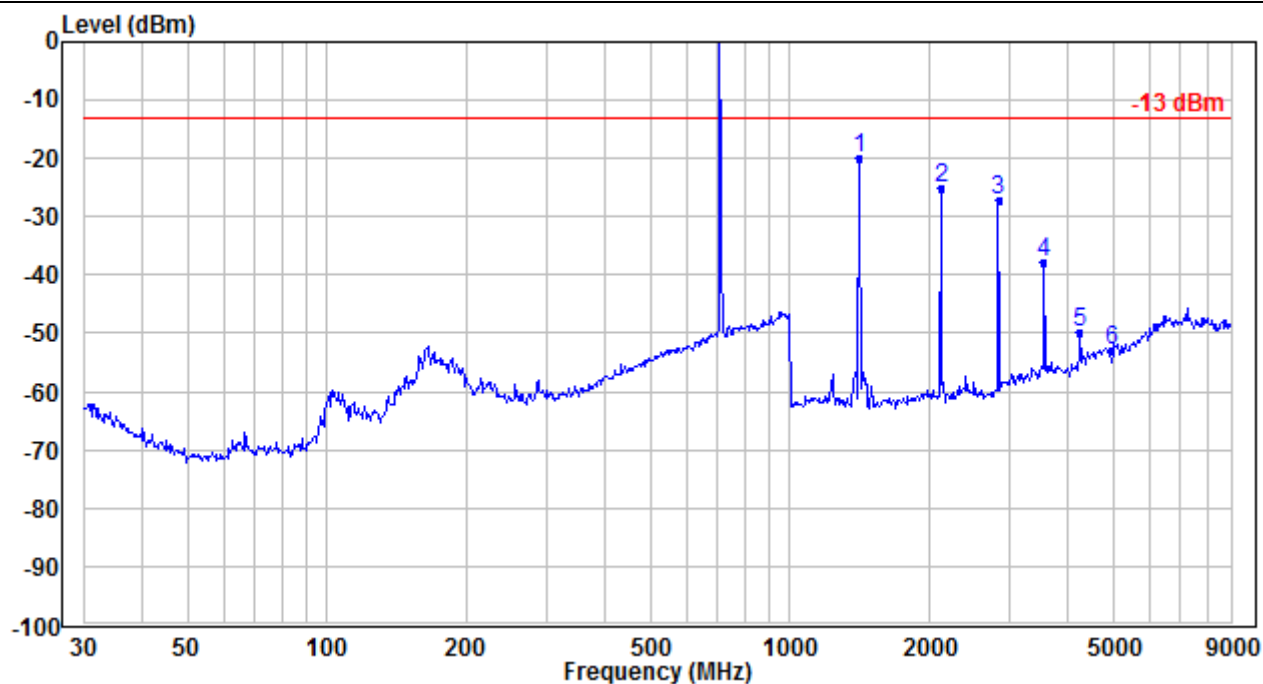


No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	1401.000	-24.12	1.38	-22.74	-13.00	-9.74	Peak
2	2101.500	-33.06	8.20	-24.86	-13.00	-11.86	Peak
3	2802.000	-42.65	11.34	-31.31	-13.00	-18.31	Peak
4	3502.500	-48.60	13.80	-34.80	-13.00	-21.80	Peak
5	4203.000	-65.15	13.74	-51.41	-13.00	-38.41	Peak
6	4903.500	-64.26	14.47	-49.79	-13.00	-36.79	Peak



LTE Band 12 / 3 MHz _Middle Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	1415.000	-21.28	1.44	-19.84	-13.00	-6.84	Peak
2	2122.500	-33.27	8.28	-24.99	-13.00	-11.99	Peak
3	2830.000	-38.48	11.38	-27.10	-13.00	-14.10	Peak
4	3537.500	-51.80	13.87	-37.93	-13.00	-24.93	Peak
5	4245.000	-63.57	13.88	-49.69	-13.00	-36.69	Peak
6	4952.500	-67.33	14.42	-52.91	-13.00	-39.91	Peak

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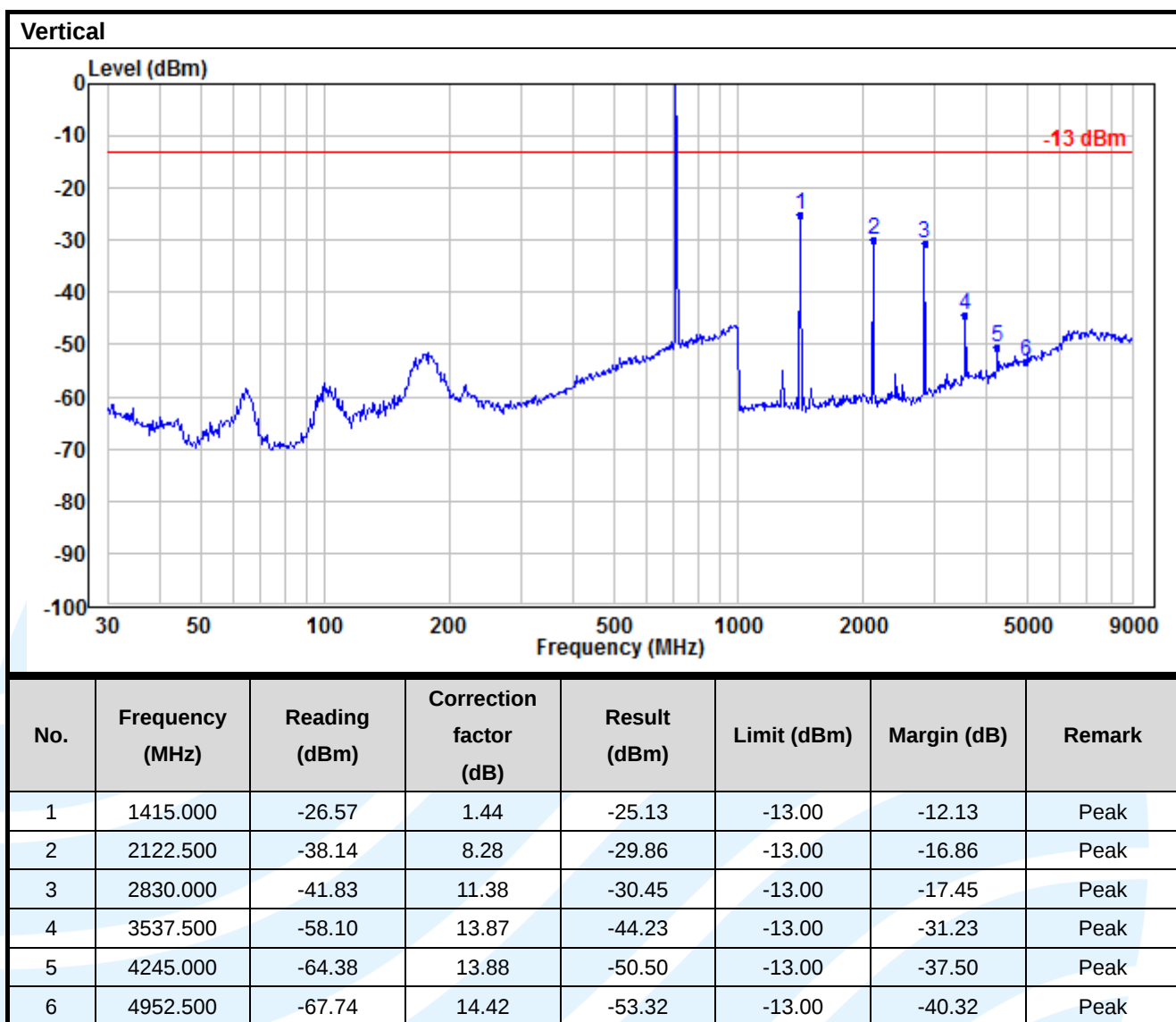
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Fax: +86-755-28230886

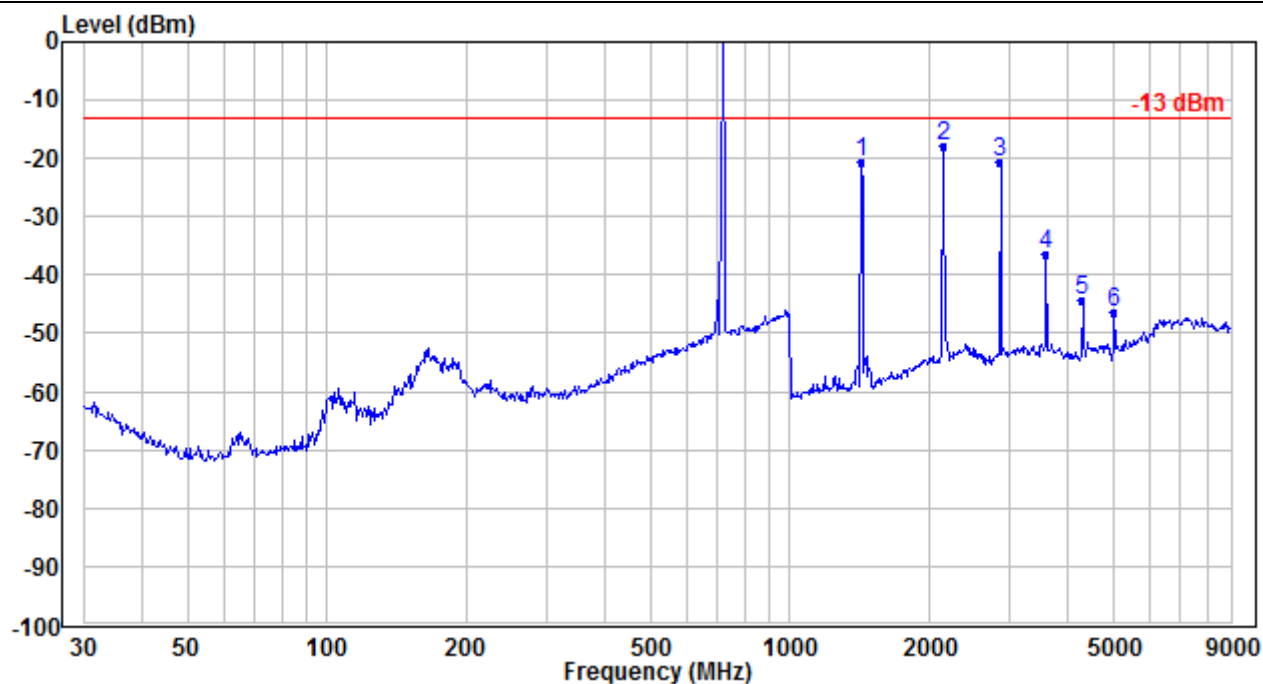
E-mail: info@uttlab.com

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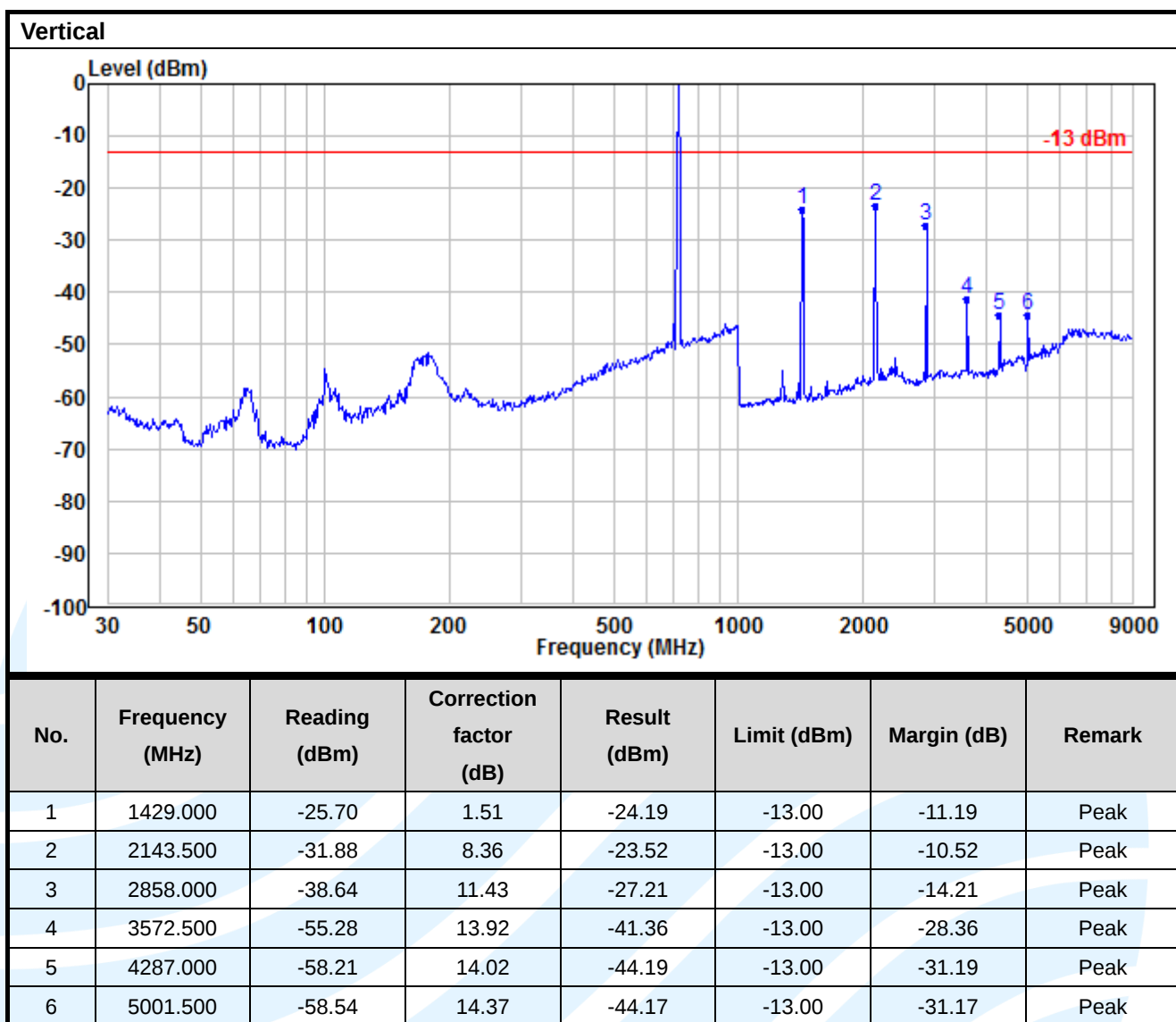


LTE Band 12 / 3 MHz _Highest Channel

Horizontal

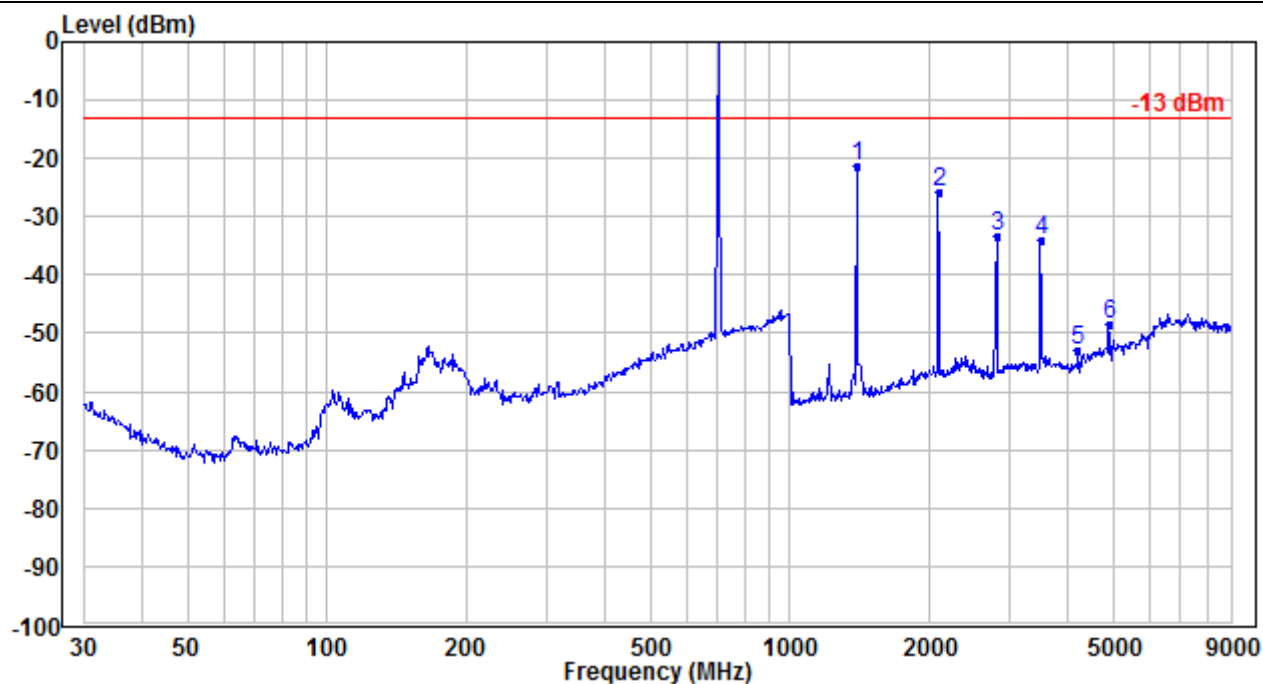


No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	1429.000	-22.25	1.51	-20.74	-13.00	-7.74	Peak
2	2143.500	-26.29	8.36	-17.93	-13.00	-4.93	Peak
3	2858.000	-32.02	11.43	-20.59	-13.00	-7.59	Peak
4	3572.500	-50.23	13.92	-36.31	-13.00	-23.31	Peak
5	4287.000	-58.46	14.02	-44.44	-13.00	-31.44	Peak
6	5001.500	-60.73	14.37	-46.36	-13.00	-33.36	Peak

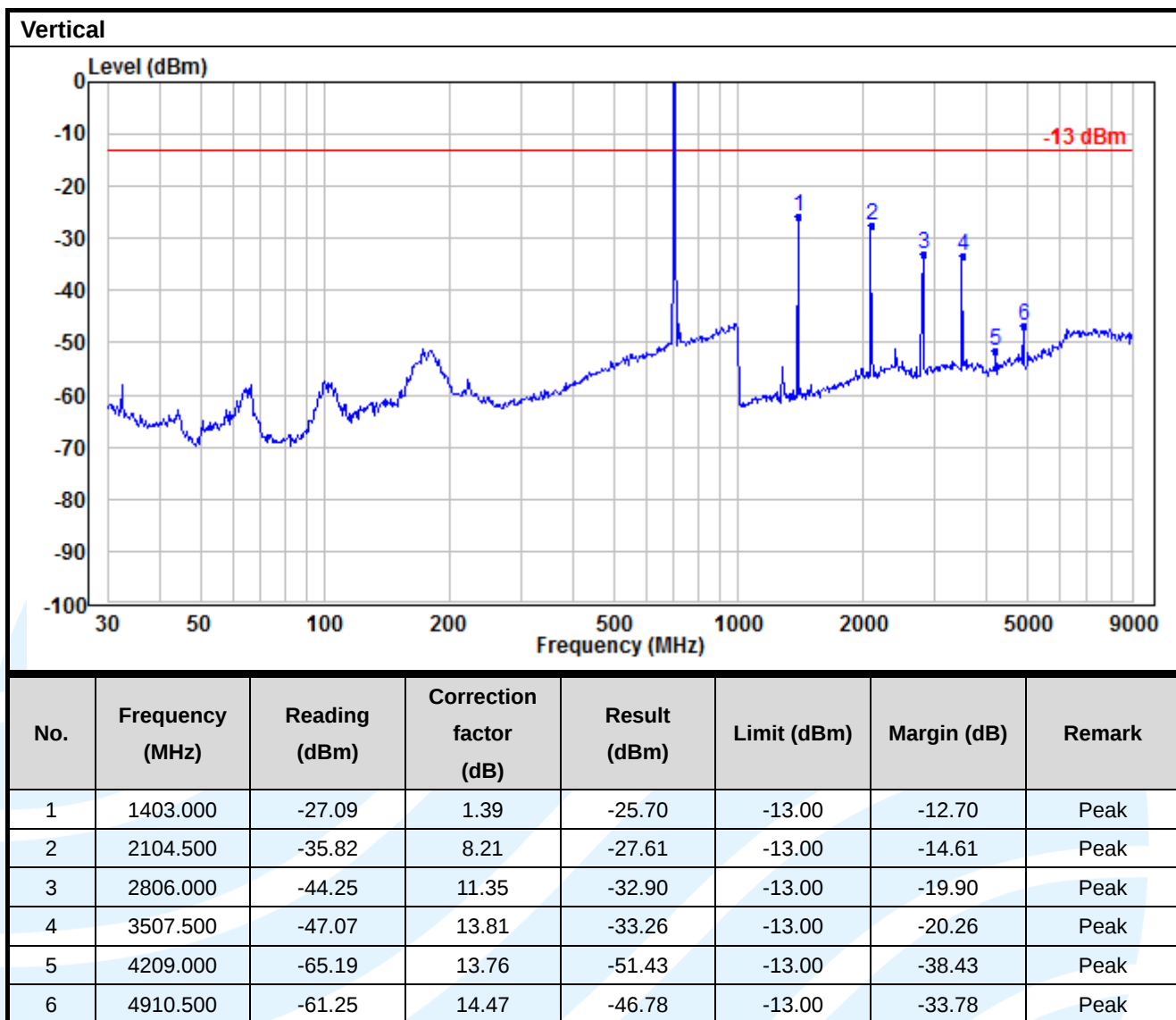


LTE Band 12 / 5 MHz _Lowest Channel

Horizontal

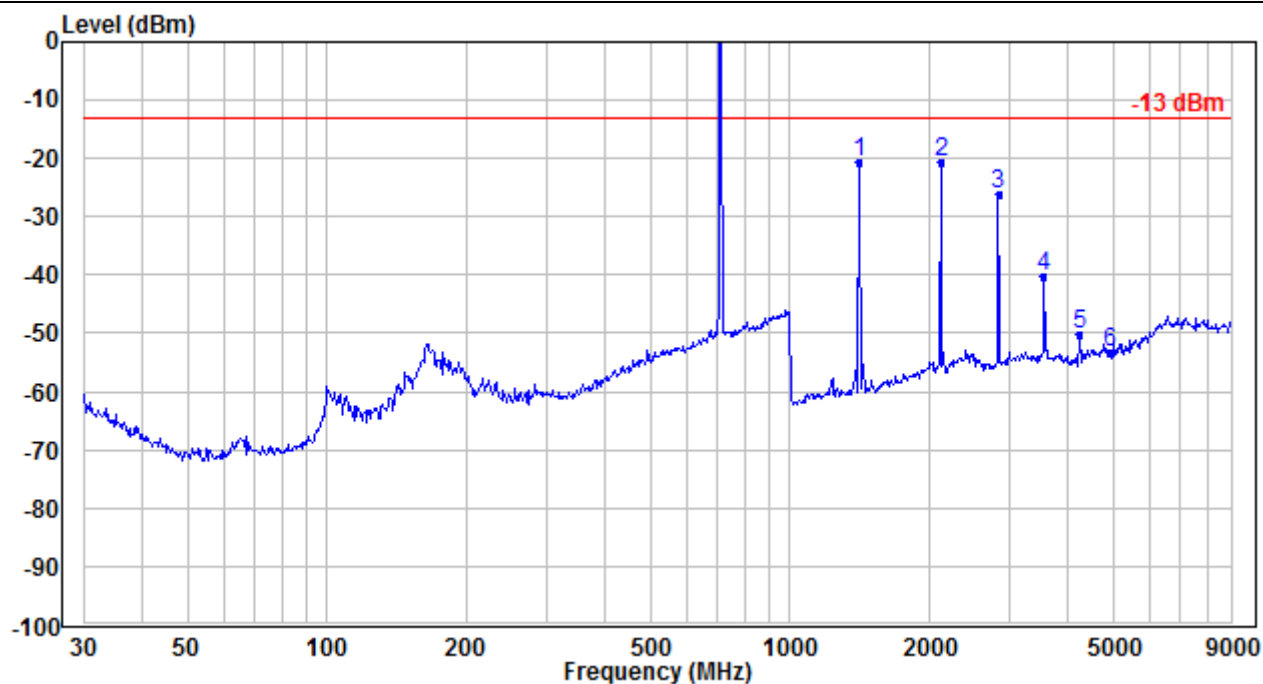


No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	1403.000	-22.81	1.39	-21.42	-13.00	-8.42	Peak
2	2104.500	-34.14	8.21	-25.93	-13.00	-12.93	Peak
3	2806.000	-44.84	11.35	-33.49	-13.00	-20.49	Peak
4	3507.500	-47.98	13.81	-34.17	-13.00	-21.17	Peak
5	4209.000	-66.77	13.76	-53.01	-13.00	-40.01	Peak
6	4910.500	-63.00	14.47	-48.53	-13.00	-35.53	Peak

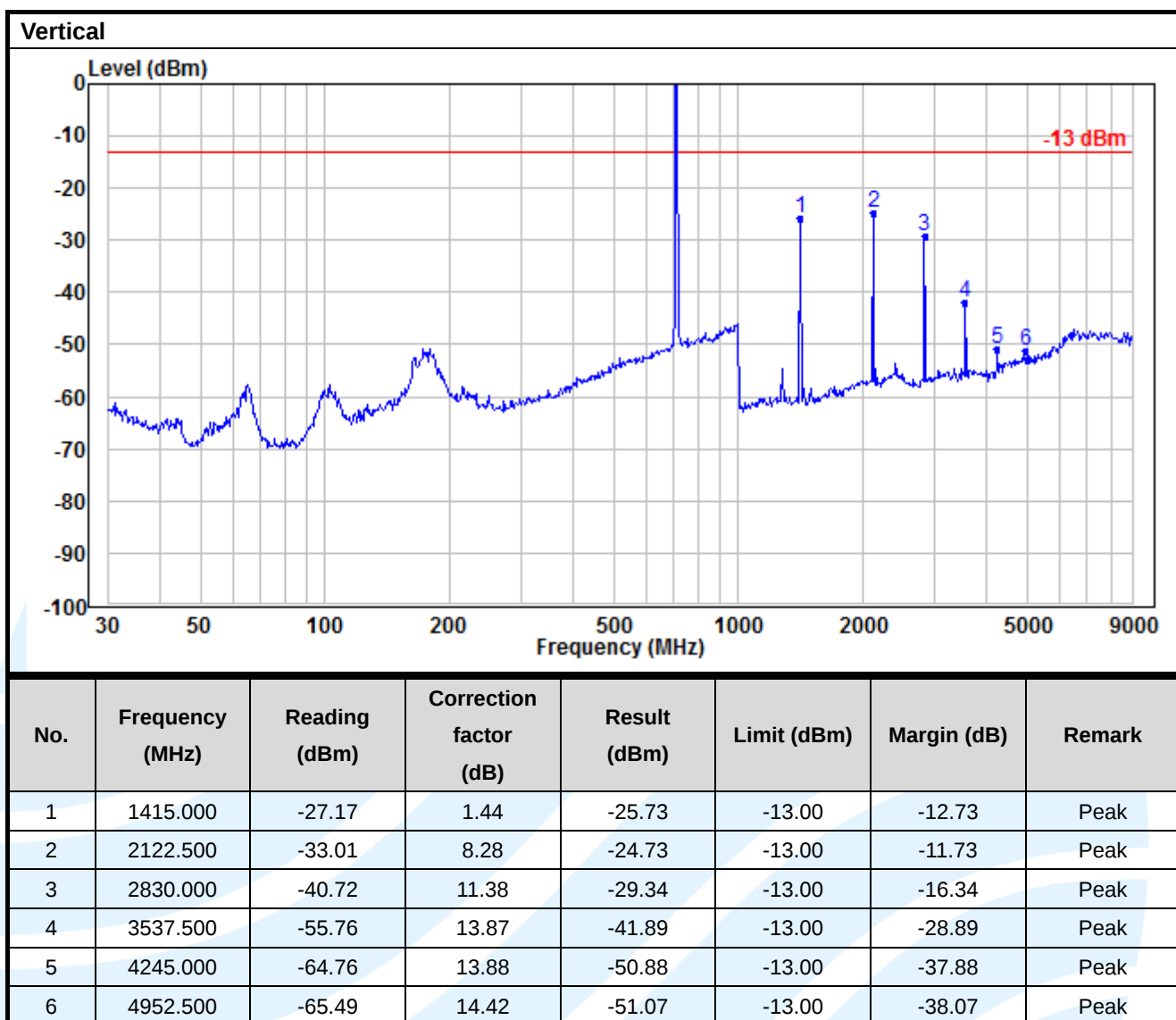


LTE Band 12 / 5 MHz _Middle Channel

Horizontal

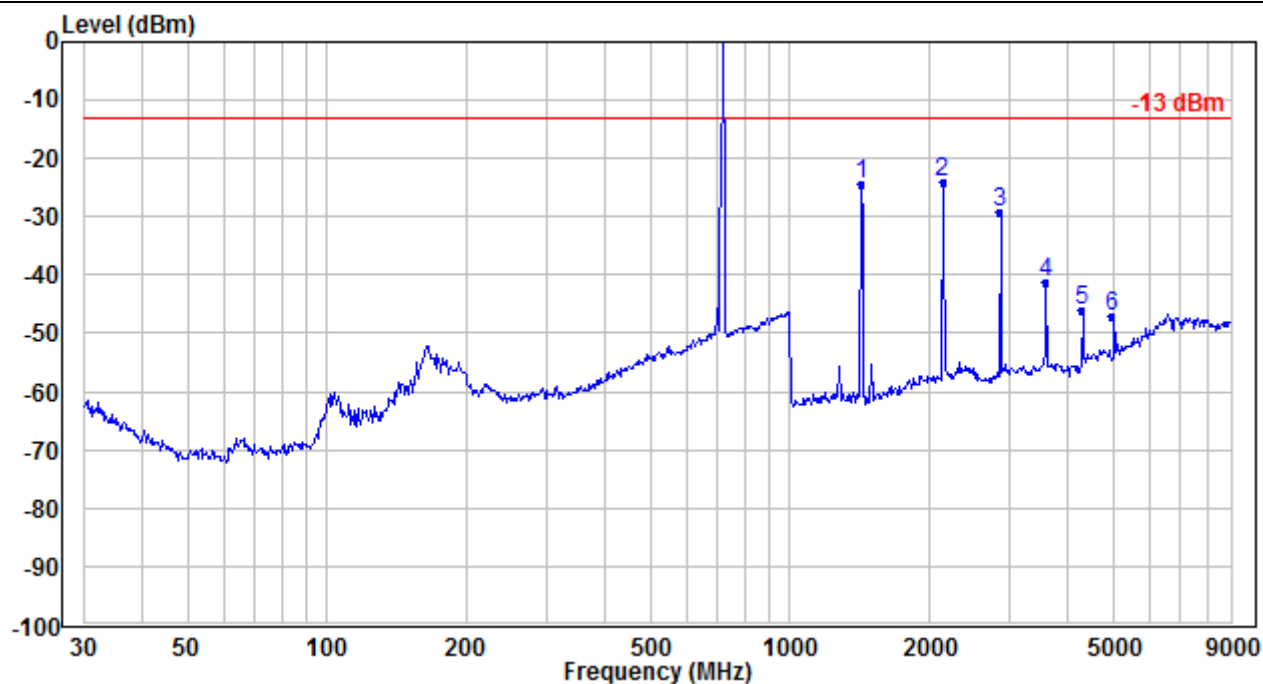


No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	1415.000	-21.94	1.44	-20.50	-13.00	-7.50	Peak
2	2122.500	-28.99	8.28	-20.71	-13.00	-7.71	Peak
3	2830.000	-37.64	11.38	-26.26	-13.00	-13.26	Peak
4	3537.500	-54.15	13.87	-40.28	-13.00	-27.28	Peak
5	4245.000	-64.10	13.88	-50.22	-13.00	-37.22	Peak
6	4928.000	-67.79	14.45	-53.34	-13.00	-40.34	Peak



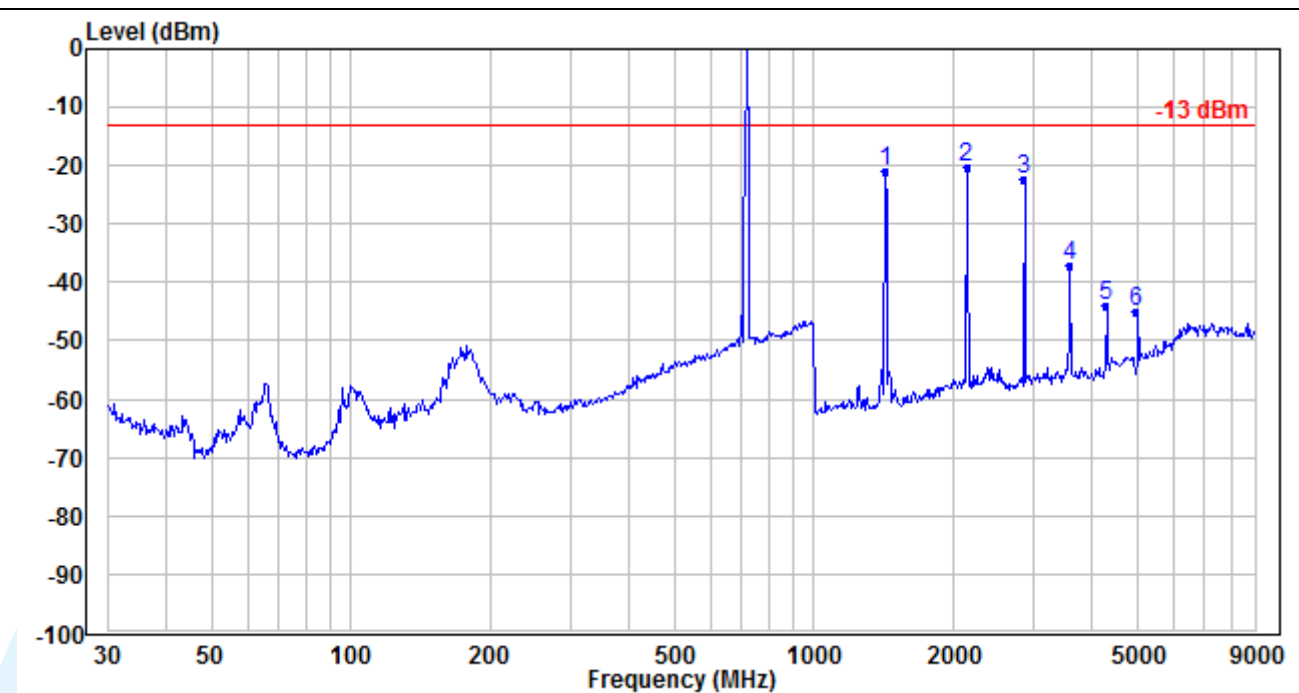
LTE Band 12 / 5 MHz _Highest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	1427.000	-25.88	1.50	-24.38	-13.00	-11.38	Peak
2	2140.500	-32.44	8.35	-24.09	-13.00	-11.09	Peak
3	2854.000	-40.73	11.42	-29.31	-13.00	-16.31	Peak
4	3567.500	-55.09	13.92	-41.17	-13.00	-28.17	Peak
5	4281.000	-60.01	13.99	-46.02	-13.00	-33.02	Peak
6	4994.500	-61.54	14.37	-47.17	-13.00	-34.17	Peak

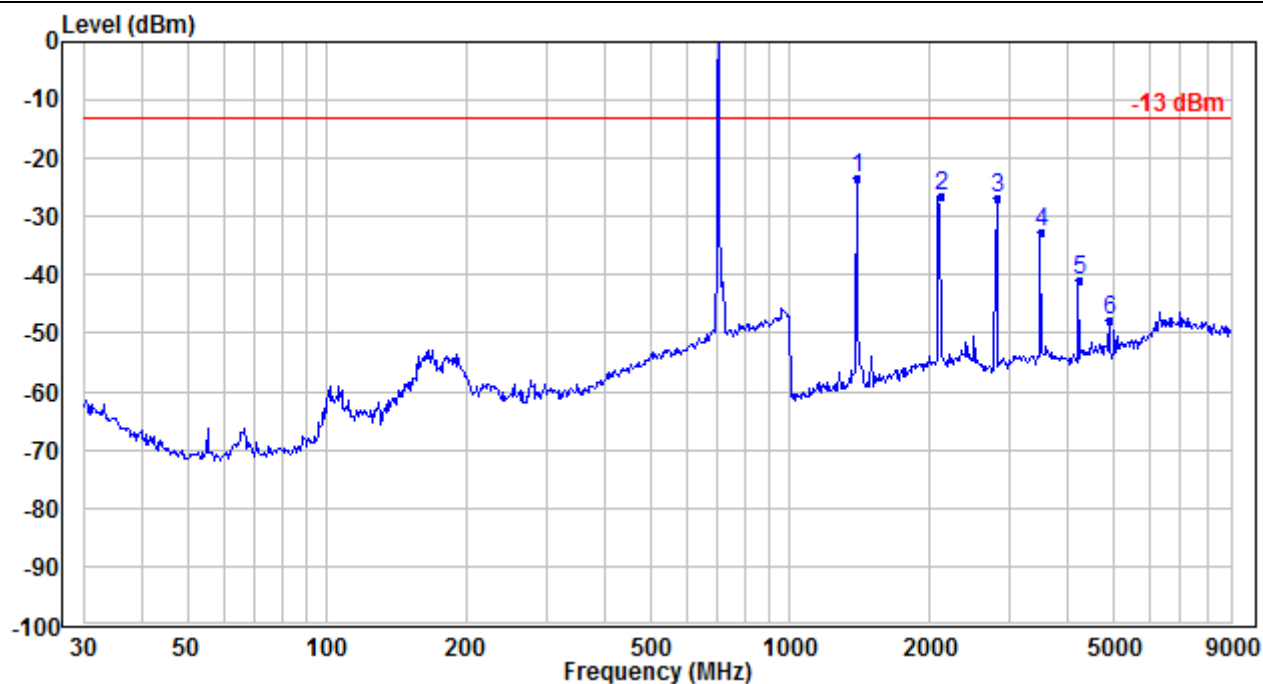
Vertical



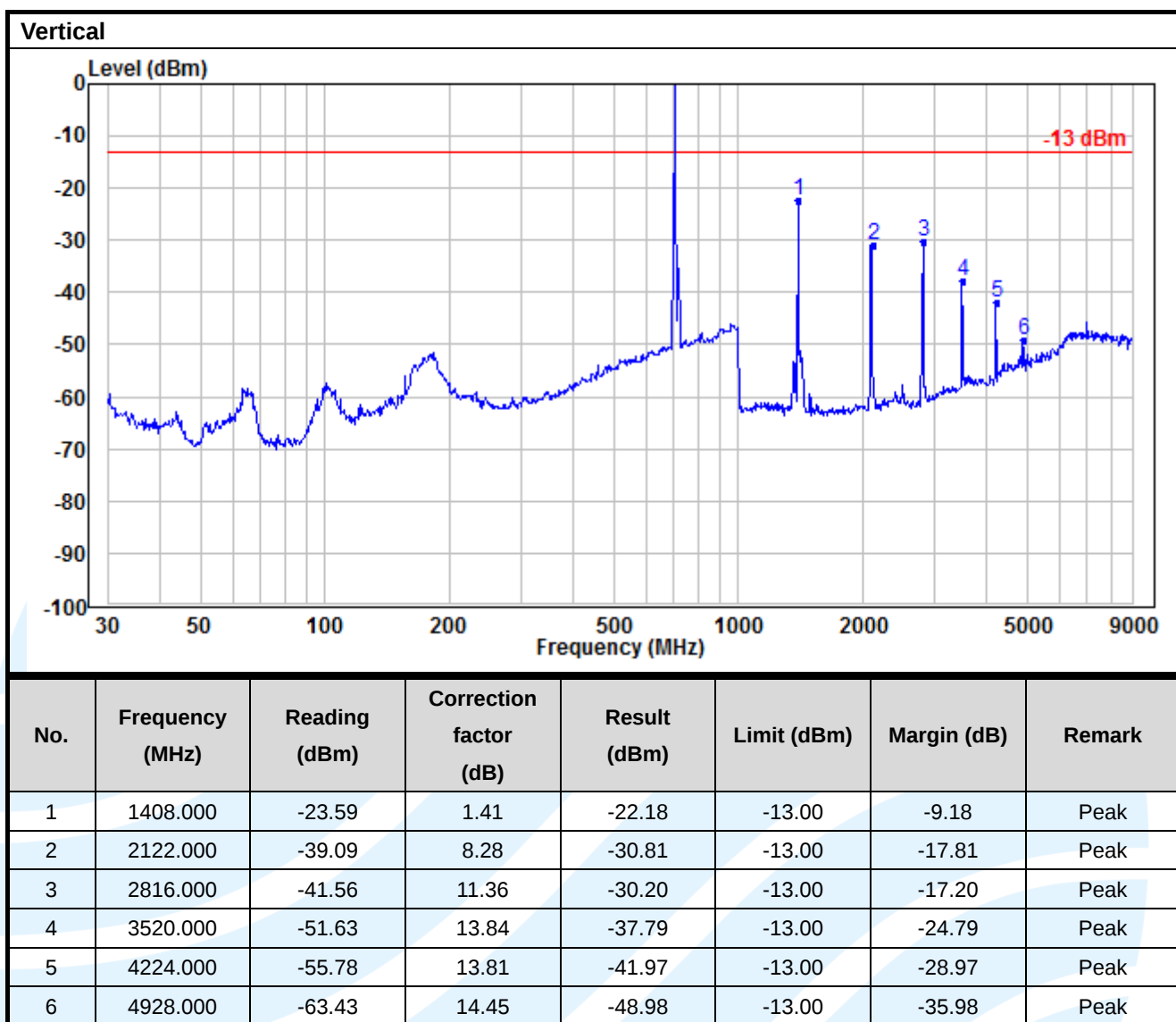
No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	1427.000	-22.40	1.50	-20.90	-13.00	-7.90	Peak
2	2140.500	-28.77	8.35	-20.42	-13.00	-7.42	Peak
3	2854.000	-33.62	11.42	-22.20	-13.00	-9.20	Peak
4	3567.500	-51.12	13.92	-37.20	-13.00	-24.20	Peak
5	4281.000	-58.15	13.99	-44.16	-13.00	-31.16	Peak
6	4994.500	-59.51	14.37	-45.14	-13.00	-32.14	Peak

LTE Band 12 / 10 MHz _Lowest Channel

Horizontal

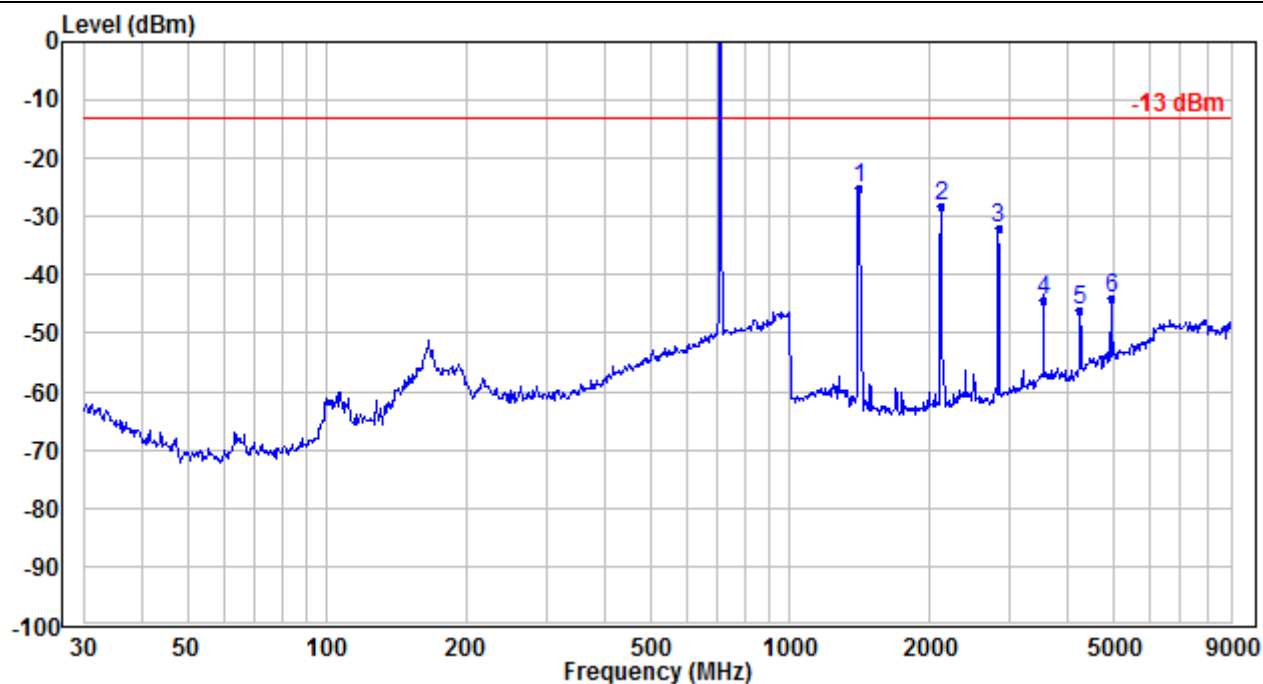


No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	1408.000	-24.83	1.41	-23.42	-13.00	-10.42	Peak
2	2122.000	-34.89	8.28	-26.61	-13.00	-13.61	Peak
3	2816.000	-38.20	11.36	-26.84	-13.00	-13.84	Peak
4	3520.000	-46.52	13.84	-32.68	-13.00	-19.68	Peak
5	4224.000	-54.72	13.81	-40.91	-13.00	-27.91	Peak
6	4928.000	-62.15	14.45	-47.70	-13.00	-34.70	Peak

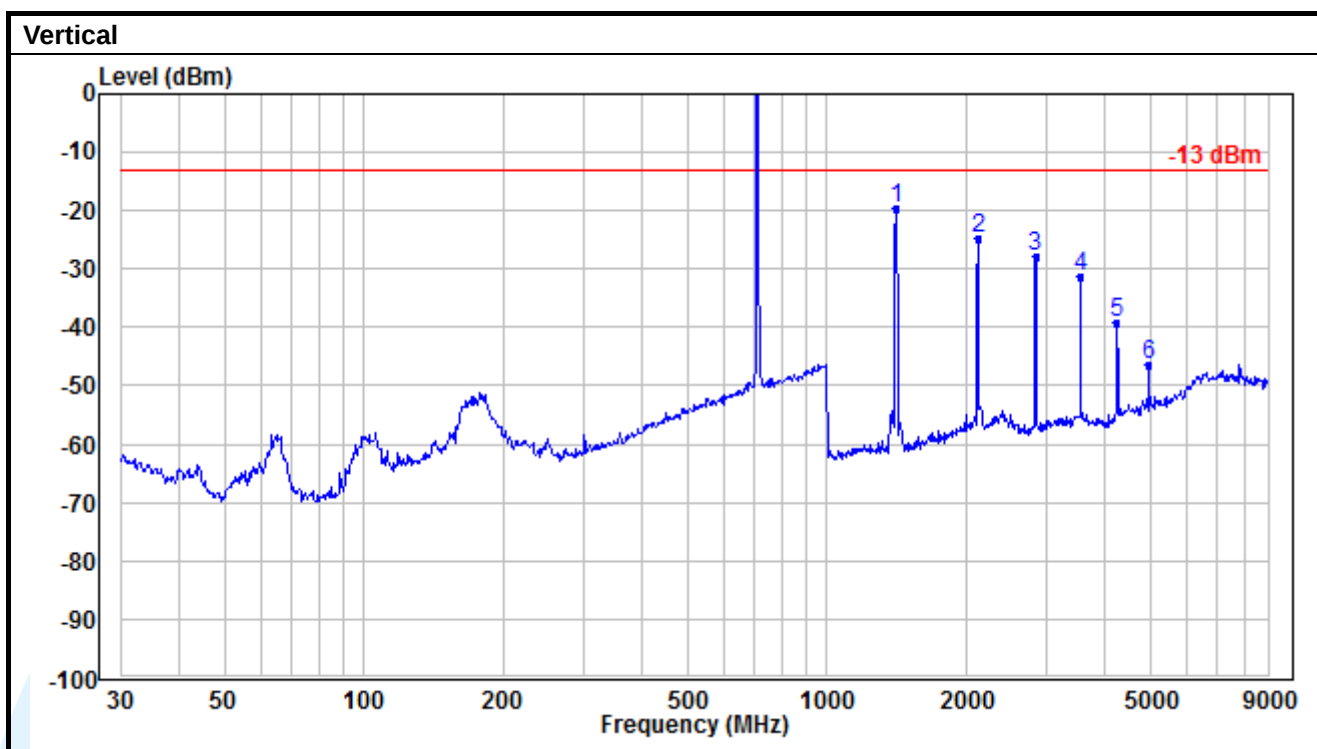


LTE Band 12 / 10 MHz _Middle Channel

Horizontal



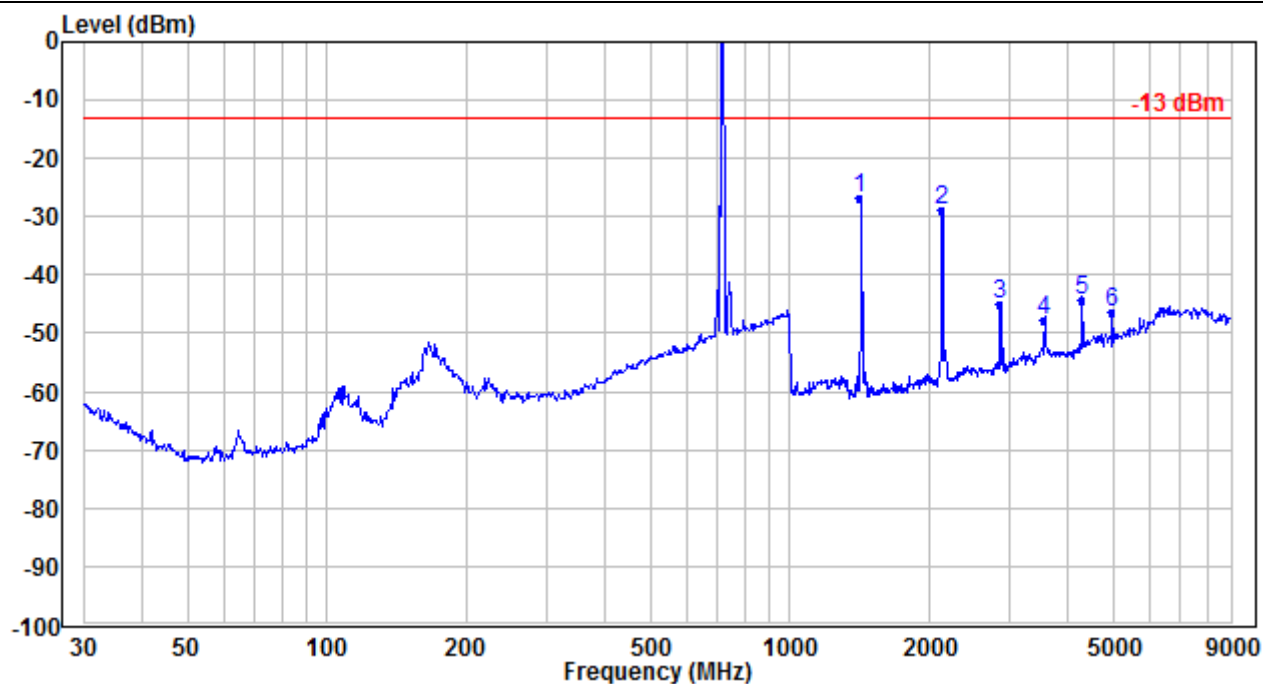
No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	1415.000	-26.61	1.44	-25.17	-13.00	-12.17	Peak
2	2122.500	-36.49	8.28	-28.21	-13.00	-15.21	Peak
3	2830.000	-43.34	11.38	-31.96	-13.00	-18.96	Peak
4	3537.500	-58.31	13.87	-44.44	-13.00	-31.44	Peak
5	4245.000	-59.78	13.88	-45.90	-13.00	-32.90	Peak
6	4952.500	-58.43	14.42	-44.01	-13.00	-31.01	Peak



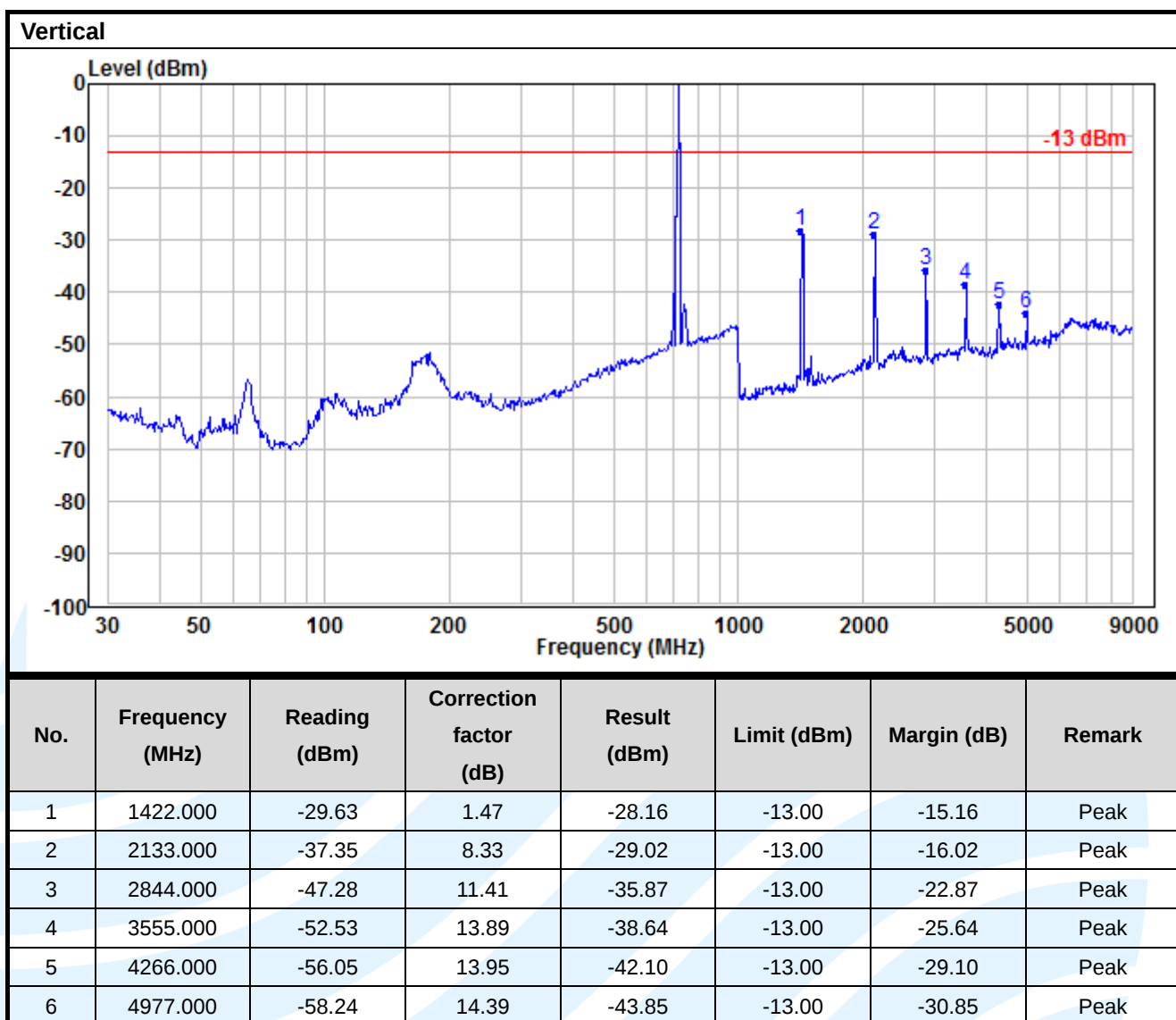
No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	1415.000	-21.00	1.44	-19.56	-13.00	-6.56	Peak
2	2122.500	-32.99	8.28	-24.71	-13.00	-11.71	Peak
3	2830.000	-39.07	11.38	-27.69	-13.00	-14.69	Peak
4	3537.500	-45.29	13.87	-31.42	-13.00	-18.42	Peak
5	4245.000	-53.00	13.88	-39.12	-13.00	-26.12	Peak
6	4952.500	-60.96	14.42	-46.54	-13.00	-33.54	Peak

LTE Band 12 / 10 MHz _Highest Channel

Horizontal



No.	Frequency (MHz)	Reading (dBm)	Correction factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	1422.000	-28.37	1.47	-26.90	-13.00	-13.90	Peak
2	2133.000	-37.24	8.33	-28.91	-13.00	-15.91	Peak
3	2844.000	-56.49	11.41	-45.08	-13.00	-32.08	Peak
4*	3555.000	-61.50	13.89	-47.61	-13.00	-34.61	Peak
5	4266.000	-58.11	13.95	-44.16	-13.00	-31.16	Peak
6	4977.000	-60.74	14.39	-46.35	-13.00	-33.35	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 D01v03

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, 3.3 Vdc, Normal, 3.6 Vdc and High voltage, 4.1 Vdc.
- 2) Frequency Stability vs Temperature:

The EUT is placed inside a temperature chamber. The temperature is set to 20°C 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 +50°C 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

AC mode

Modulation	Channel/ Frequency	Voltage	Temperature	Deviation	Deviation	Limit	Pass/ Fail
	(MHz)	(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	
LTE Band 4 / 20MHz / Full RB							
QPSK	20175 / 1732.5	VL	TN	23	0.0133	Note 1	Pass
		VN		28	0.0162		Pass
		VH		20	0.0115		Pass
		VN	50	15	0.0087		Pass
			40	20	0.0115		Pass
			30	20	0.0115		Pass
			20	22	0.0127		Pass
			10	19	0.0110		Pass
			0	22	0.0127		Pass
			-10	19	0.0110		Pass
			-20	25	0.0144		Pass
			-30	23	0.0133		Pass

Modulation	Channel/ Frequency	Voltage	Temperature	Deviation	Deviation	Limit	Pass/ Fail
	(MHz)	(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	
LTE Band 12 / 10MHz / Full RB							
QPSK	23095 / 707.5	VL	TN	-19	-0.0269	Note 1	Pass
		VN		-21	-0.0297		Pass
		VH		-20	-0.0283		Pass
		VN	50	-20	-0.0283		Pass
			40	-19	-0.0269		Pass
			30	-19	-0.0269		Pass
			20	-22	-0.0311		Pass
			10	-19	-0.0269		Pass
			0	-17	-0.0240		Pass
			-10	-20	-0.0283		Pass
			-20	-21	-0.0297		Pass
			-30	-21	-0.0297		Pass

Battery mode

Modulation	Channel/ Frequency	Voltage	Temperature	Deviation	Deviation	Limit	Pass/ Fail
	(MHz)	(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	
LTE Band 4 / 20MHz / Full RB							
QPSK	20175 / 1732.5	VL	TN	29	0.0167	Note 1	Pass
		VN		28	0.0162		Pass
		VH		24	0.0139		Pass
		VN	50	25	0.0144		Pass
			40	27	0.0156		Pass
			30	31	0.0179		Pass
			20	27	0.0156		Pass
			10	31	0.0179		Pass
			0	30	0.0173		Pass
			-10	27	0.0156		Pass
			-20	28	0.0162		Pass
			-30	30	0.0173		Pass

Modulation	Channel/ Frequency	Voltage	Temperature	Deviation	Deviation	Limit	Pass/ Fail
	(MHz)	(Vdc)	(°C)	(Hz)	(ppm)	(ppm)	
LTE Band 12 / 10MHz / Full RB							
QPSK	23095 / 707.5	VL	TN	-23	-0.0325	Note 1	Pass
		VN		-24	-0.0339		Pass
		VH		-27	-0.0382		Pass
		VN	50	-32	-0.0452		Pass
			40	-25	-0.0353		Pass
			30	-21	-0.0297		Pass
			20	-26	-0.0367		Pass
			10	-25	-0.0353		Pass
			0	-28	-0.0396		Pass
			-10	-25	-0.0353		Pass
			-20	-23	-0.0325		Pass
			-30	-27	-0.0382		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 ***

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