

10+10MHz Channel Bandwidth

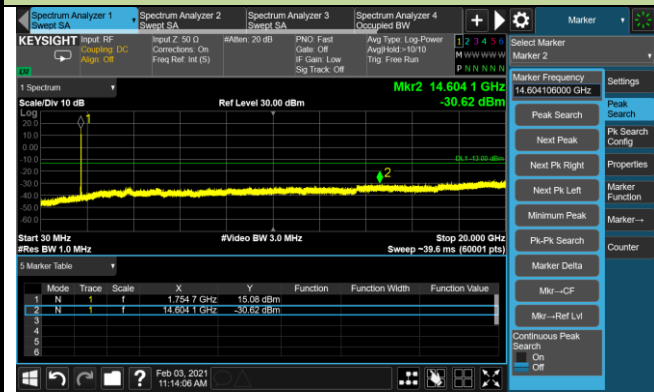
Lowest Channel



Middle Channel/1RB@0 and 1RB@0



Middle Channel/1RB@49 and 1RB@49

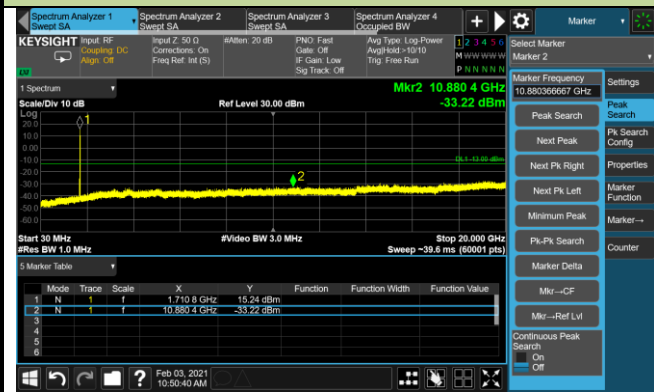


Highest Channel



15+5MHz Channel Bandwidth

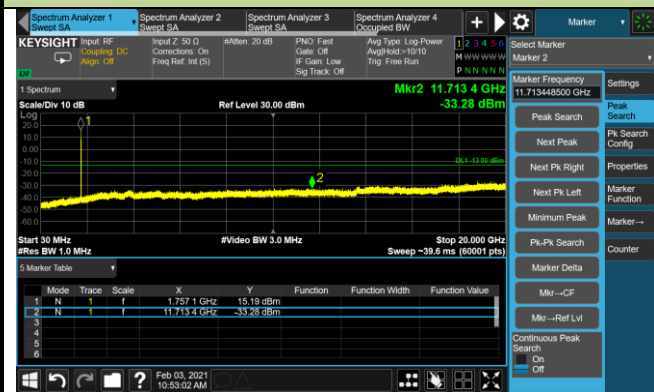
Lowest Channel



Middle Channel/1RB@0 and 1RB@0



Middle Channel/1RB@74 and 1RB@24



Highest Channel



5.8. Radiated Spurious Emissions Measurements

5.8.1. Test Limit

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 -13dBm.

For Band 7, 38/41, 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 $55 + 10 \log(P)$ dB. The emission limit equal to -25dBm.

For LTE Band 13, For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz (-40dBm/MHz) equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW (-50dBm) EIRP for discrete emissions of less than 700 Hz bandwidth.

E (dB μ V/m) = EIRP (dBm) - 20 log D + 104.8; where D is the measurement distance in meters. The emission limit equal to 82.3dB μ V/m or 70.3dB μ V/m.

5.8.2. Test Procedure Used

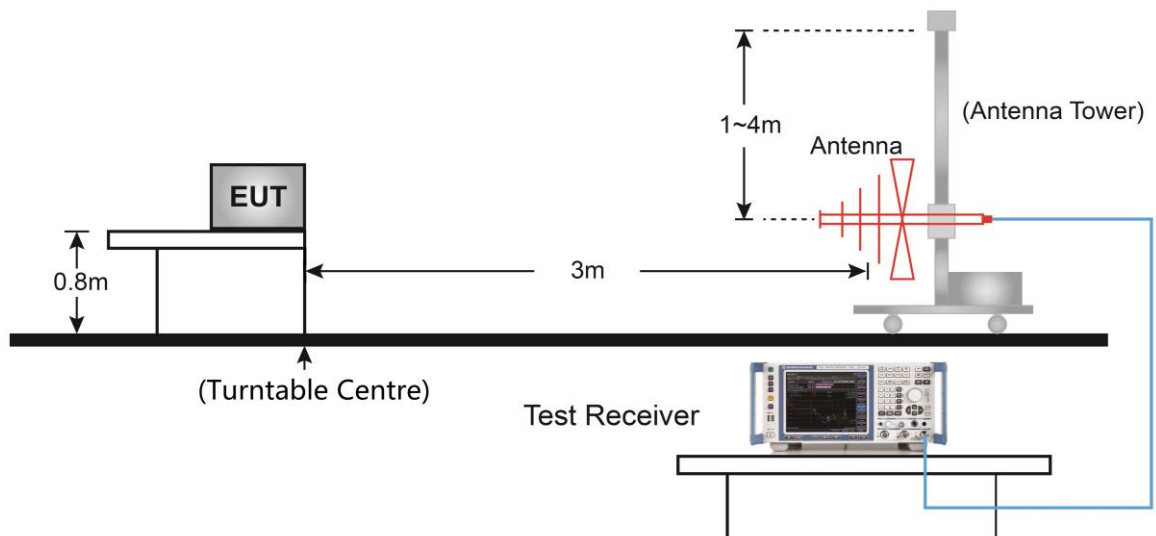
ANSI C63.26-2015 - Section 5.2.7 & 5.5

5.8.3. Test Setting

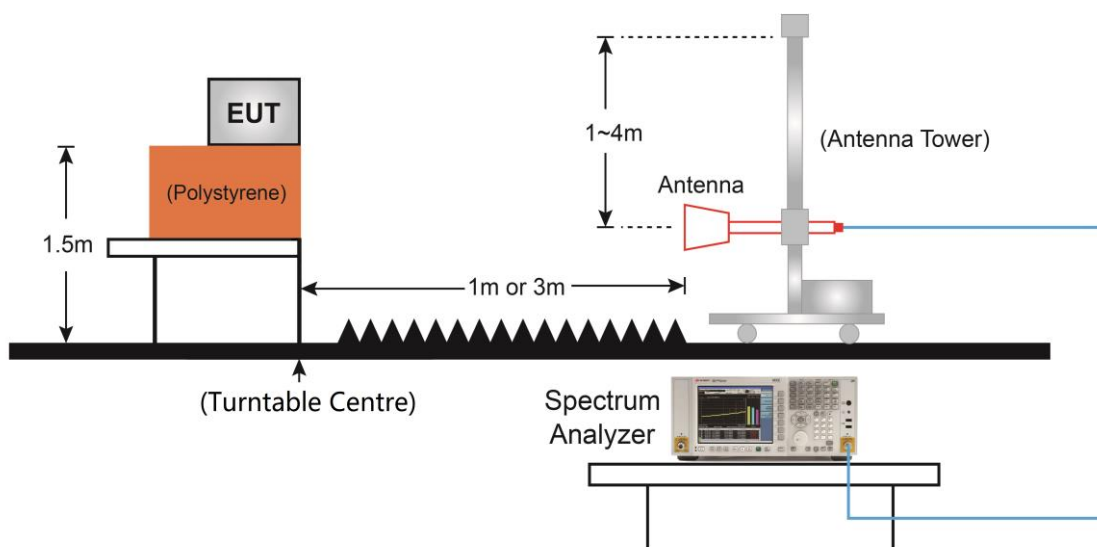
1. RBW = 1MHz
2. VBW \geq 3*RBW
3. Sweep time \geq 10 \times (number of points in sweep) \times (transmission symbol period)
4. Detector = Peak
5. Trace mode = max hold
6. The trace was allowed to stabilize

5.8.4. Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



5.8.5. Test Result

Product	LTE Module	Test Site	WZ-AC2
Test Engineer	Jason Gao	Test Date	2021/02/08
Test Band	LTE Band 2/25, 1RB, QPSK		

Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
Low Channel							
5139.5	42.1	5.1	47.2	82.3	-35.1	Peak	Horizontal
7307.0	41.4	12.5	53.9	82.3	-28.4	Peak	Horizontal
7400.5	42.3	12.9	55.2	82.3	-27.1	Peak	Vertical
11106.5	43.6	17.8	61.4	82.3	-20.9	Peak	Vertical
Middle Channel							
5649.5	42.6	6.0	48.6	82.3	-33.7	Peak	Horizontal
15603.0	42.6	22.4	65.0	82.3	-17.3	Peak	Horizontal
5649.5	49.2	6.0	55.2	82.3	-27.1	Peak	Vertical
10664.5	41.4	16.8	58.2	82.3	-24.1	Peak	Vertical
High Channel							
5743.0	42.8	6.2	49.0	82.3	-33.3	Peak	Horizontal
9806.0	42.3	14.9	57.2	82.3	-25.1	Peak	Horizontal
5743.0	46.6	6.2	52.8	82.3	-29.5	Peak	Vertical
7655.5	42.6	12.5	55.1	82.3	-27.2	Peak	Vertical
Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB).							

Product	LTE Module	Test Site	WZ-AC2
Test Engineer	Jason Gao	Test Date	2021/02/08
Test Band	LTE Band 4/66, 1RB, QPSK		

Frequency (MHz)	Reading Level (dB μ V)	Factor (dB)	Measure Level(dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector	Polarization
Low Channel							
5131	43.7	5.2	48.9	82.3	-33.4	Peak	Horizontal
7621.5	41.4	12.8	54.2	82.3	-28.1	Peak	Horizontal
5131	49.7	5.2	54.9	82.3	-27.4	Peak	Vertical
11064	41	17.6	58.6	82.3	-23.7	Peak	Vertical
Middle Channel							
5233.0	46.9	4.6	51.5	82.3	-30.8	Peak	Horizontal
9355.5	40.8	15.2	56.0	82.3	-26.3	Peak	Horizontal
5233.0	52.1	4.6	56.7	82.3	-25.6	Peak	Vertical
9432.0	41.7	15	56.7	82.3	-25.6	Peak	Vertical
High Channel							
5335.0	42.3	4.8	47.1	82.3	-35.2	Peak	Horizontal
11540.0	40.9	18.6	59.5	82.3	-22.8	Peak	Horizontal
5335.0	48.6	4.8	53.4	82.3	-28.9	Peak	Vertical
10673.0	42.6	16.8	59.4	82.3	-22.9	Peak	Vertical

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB).

Product	LTE Module	Test Site	WZ-AC2
Test Engineer	Jason Gao	Test Date	2021/02/08
Test Band	LTE Band 5/26, 1RB, QPSK		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level(dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
47.5	2.6	18.0	20.6	82.3	-61.7	Peak	Horizontal
137.7	5.9	17.4	23.3	82.3	-59.0	Peak	Horizontal
47.9	13.0	18.0	31.0	82.3	-51.3	Peak	Vertical
138.2	14.0	17.4	31.4	82.3	-50.9	Peak	Vertical
4833.5	42.1	4.6	46.7	82.3	-35.6	Peak	Horizontal
9721.0	41.1	15.0	56.1	82.3	-26.2	Peak	Horizontal
5003.5	42.1	4.6	46.7	82.3	-35.6	Peak	Vertical
7120.0	40.8	12.5	53.3	82.3	-29.0	Peak	Vertical
Middle Channel							
139.1	5.2	17.5	22.7	82.3	-59.6	Peak	Horizontal
196.4	9.6	15.3	24.9	82.3	-57.4	Peak	Horizontal
38.2	10.9	17.3	28.2	82.3	-54.1	Peak	Vertical
47.9	13.1	18.0	31.1	82.3	-51.2	Peak	Vertical
4808.0	42.4	4.6	47.0	82.3	-35.3	Peak	Horizontal
9219.5	40.5	15.2	55.7	82.3	-26.6	Peak	Horizontal
5496.5	41.8	5.3	47.1	82.3	-35.2	Peak	Vertical
11072.5	42.2	17.6	59.8	82.3	-22.5	Peak	Vertical
High Channel							
137.2	4.8	17.4	22.2	82.3	-60.1	Peak	Horizontal
195.4	8.9	15.3	24.2	82.3	-58.1	Peak	Horizontal
47.9	11.8	18.0	29.8	82.3	-52.5	Peak	Vertical
139.1	13.7	17.5	31.2	82.3	-51.1	Peak	Vertical
5131.0	41.8	5.2	47.0	82.3	-35.3	Peak	Horizontal
9279.0	41.4	15.3	56.7	82.3	-25.6	Peak	Horizontal
4842.0	42.1	4.6	46.7	82.3	-35.6	Peak	Vertical
11557.0	40.6	18.5	59.1	82.3	-23.2	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB).

Product	LTE Module	Test Site	WZ-AC2
Test Engineer	Jason Gao	Test Date	2021/02/08
Test Band	LTE Band 7, 1RB, QPSK		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level(dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
4825.0	42.7	4.7	47.4	82.3	-34.9	Peak	Horizontal
7604.5	41.2	12.7	53.9	82.3	-28.4	Peak	Horizontal
4697.5	41.8	4.7	46.5	82.3	-35.8	Peak	Vertical
9211.0	40.2	15.3	55.5	82.3	-26.8	Peak	Vertical
Middle Channel							
7179.5	41.3	12.6	53.9	82.3	-28.4	Peak	Horizontal
11259.5	40.6	18.3	58.9	82.3	-23.4	Peak	Horizontal
4536.0	44.0	4.1	48.1	82.3	-34.2	Peak	Vertical
10137.5	42.4	15.5	57.9	82.3	-24.4	Peak	Vertical
High Channel							
5131.0	41.8	5.2	47.0	82.3	-35.3	Peak	Horizontal
11395.5	40.6	18.7	59.3	82.3	-23.0	Peak	Horizontal
4808.0	42.1	4.6	46.7	82.3	-35.6	Peak	Vertical
10273.5	42.1	16.1	58.2	82.3	-24.1	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB).

Product	LTE Module	Test Site	WZ-AC2
Test Engineer	Jason Gao	Test Date	2021/02/08
Test Band	LTE Band 12, 1RB, QPSK		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level(dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
48.9	2.7	18.1	20.8	82.3	-61.5	Peak	Horizontal
140.1	4.7	17.6	22.3	82.3	-60.0	Peak	Horizontal
47.9	12.8	18.0	30.8	82.3	-51.5	Peak	Vertical
138.6	13.4	17.5	30.9	82.3	-51.4	Peak	Vertical
5003.5	36.9	4.6	41.5	82.3	-40.8	Peak	Horizontal
8046.5	34.4	13.0	47.4	82.3	-34.9	Peak	Horizontal
5003.5	38.1	4.6	42.7	82.3	-39.6	Peak	Vertical
8021.0	34.7	13.0	47.7	82.3	-34.6	Peak	Vertical
Middle Channel							
45.5	2.0	17.9	19.9	82.3	-62.4	Peak	Horizontal
137.7	4.3	17.4	21.7	82.3	-60.6	Peak	Horizontal
48.4	12.8	18.0	30.8	82.3	-51.5	Peak	Vertical
139.1	12.9	17.5	30.4	82.3	-51.9	Peak	Vertical
5088.5	36.4	4.8	41.2	82.3	-41.1	Peak	Horizontal
7111.5	33.5	12.4	45.9	82.3	-36.4	Peak	Horizontal
4043.0	37.3	2.1	39.4	82.3	-42.9	Peak	Vertical
7120.0	33.9	12.5	46.4	82.3	-35.9	Peak	Vertical
High Channel							
48.4	3.1	18.0	21.1	82.3	-61.2	Peak	Horizontal
139.6	5.2	17.6	22.8	82.3	-59.5	Peak	Horizontal
47.5	13.0	18.0	31.0	82.3	-51.3	Peak	Vertical
90.6	14.8	12.3	27.1	82.3	-55.2	Peak	Vertical
5437.0	37.0	5.2	42.2	82.3	-40.1	Peak	Horizontal
7162.5	33.2	12.5	45.7	82.3	-36.6	Peak	Horizontal
5003.5	37.5	4.6	42.1	82.3	-40.2	Peak	Vertical
7137.0	34.4	12.4	46.8	82.3	-35.5	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB).

Product	LTE Module	Test Site	WZ-AC2
Test Engineer	Jason Gao	Test Date	2021/02/08
Test Band	LTE Band 13, 1RB, QPSK		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level(dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
138.2	5.4	17.4	22.8	82.3	-59.5	Peak	Horizontal
199.8	9.1	15.1	24.2	82.3	-58.1	Peak	Horizontal
47.9	11.9	18.0	29.9	82.3	-52.4	Peak	Vertical
139.1	13.0	17.5	30.5	82.3	-51.8	Peak	Vertical
1561.0	38.8	-4.6	34.2	82.3	-48.1	Peak	Horizontal
5122.5	36.1	5.1	41.2	82.3	-41.1	Peak	Horizontal
1569.5	37.9	-4.6	33.3	82.3	-49.0	Peak	Vertical
7171.0	33.5	12.6	46.1	82.3	-36.2	Peak	Vertical
Middle Channel							
48.4	2.8	18.0	20.8	82.3	-61.5	Peak	Horizontal
140.6	4.9	17.7	22.6	82.3	-59.7	Peak	Horizontal
48.9	10.6	18.1	28.7	82.3	-53.6	Peak	Vertical
138.6	10.5	17.5	28.0	82.3	-54.3	Peak	Vertical
1603.5	38.5	-4.7	33.8	82.3	-48.5	Peak	Horizontal
9432.0	34.6	15.0	49.6	82.3	-32.7	Peak	Horizontal
1578.0	37.2	-4.5	32.7	82.3	-49.6	Peak	Vertical
9704.0	34.5	15.0	49.5	82.3	-32.8	Peak	Vertical
High Channel							
51.8	2.2	18.1	20.3	82.3	-62.0	Peak	Horizontal
138.6	4.6	17.5	22.1	82.3	-60.2	Peak	Horizontal
47.5	11.9	18.0	29.9	82.3	-52.4	Peak	Vertical
138.6	12.1	17.5	29.6	82.3	-52.7	Peak	Vertical
1561.0	39.0	-4.6	34.4	82.3	-47.9	Peak	Horizontal
5046.0	36.6	5.1	41.7	82.3	-40.6	Peak	Horizontal
1569.5	38.3	-4.6	33.7	82.3	-48.6	Peak	Vertical
7987.0	34.8	12.9	47.7	82.3	-34.6	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB).

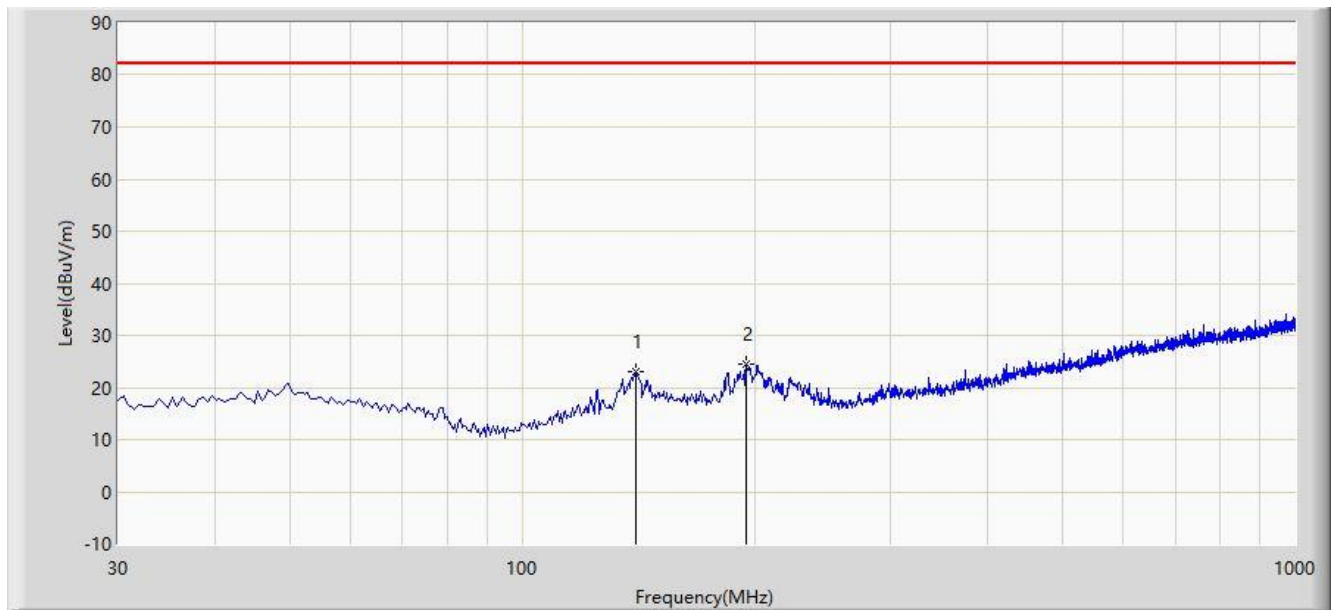
Product	LTE Module	Test Site	WZ-AC2
Test Engineer	Jason Gao	Test Date	2021/02/07
Test Band	LTE Band 71, 1RB, QPSK		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level(dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
48.4	2.2	18.0	20.2	82.3	-62.1	Peak	Horizontal
141.1	6.3	17.7	24.0	82.3	-58.3	Peak	Horizontal
48.9	11.6	18.1	29.7	82.3	-52.6	Peak	Vertical
141.1	13.4	17.7	31.1	82.3	-51.2	Peak	Vertical
1603.5	38.7	-4.7	34.0	82.3	-48.3	Peak	Horizontal
7060.5	34.1	11.9	46.0	82.3	-36.3	Peak	Horizontal
2547.0	38.6	-1.5	37.1	82.3	-45.2	Peak	Vertical
5649.5	35.1	6.0	41.1	82.3	-41.2	Peak	Vertical
Middle Channel							
48.4	2.9	18.0	20.9	82.3	-61.4	Peak	Horizontal
140.6	5.9	17.7	23.6	82.3	-58.7	Peak	Horizontal
48.9	11.3	18.1	29.4	82.3	-52.9	Peak	Vertical
124.6	10.5	16.2	26.7	82.3	-55.6	Peak	Vertical
5777.0	35.6	6.5	42.1	82.3	-40.2	Peak	Horizontal
6958.5	33.7	11.3	45.0	82.3	-37.3	Peak	Horizontal
4757.0	37.0	4.8	41.8	82.3	-40.5	Peak	Vertical
6814.0	33.8	10.2	44.0	82.3	-38.3	Peak	Vertical
Top CH 23825 (713.5MHz)							
49.4	2.9	18.1	21.0	82.3	-61.3	Peak	Horizontal
138.6	6.2	17.5	23.7	82.3	-58.6	Peak	Horizontal
49.4	11.8	18.1	29.9	82.3	-52.4	Peak	Vertical
141.1	12.2	17.7	29.9	82.3	-52.4	Peak	Vertical
5114.0	36.2	5.1	41.3	82.3	-41.0	Peak	Horizontal
13903.0	31.6	23.5	55.1	82.3	-27.2	Peak	Horizontal
5114.0	36.2	5.1	41.3	82.3	-41.0	Peak	Vertical
7111.5	33.2	12.4	45.6	82.3	-36.7	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB).

The Worst Case of Radiated Emission below 1GHz (fundamental frequency below 1GHz):

Site: WZ-AC1	Time: 2021/02/08 - 14:41
Limit: FCC_Part 22 & 24_RSE (3m)	Margin: 0
Probe: WZ-AC1_VULB 9168 _30-1000MHz	Polarity: Horizontal
EUT: LTE Module	Power: AC 120V/60Hz

Worst Case Mode: There is the worst case within frequency range 30MHz~1GHz.


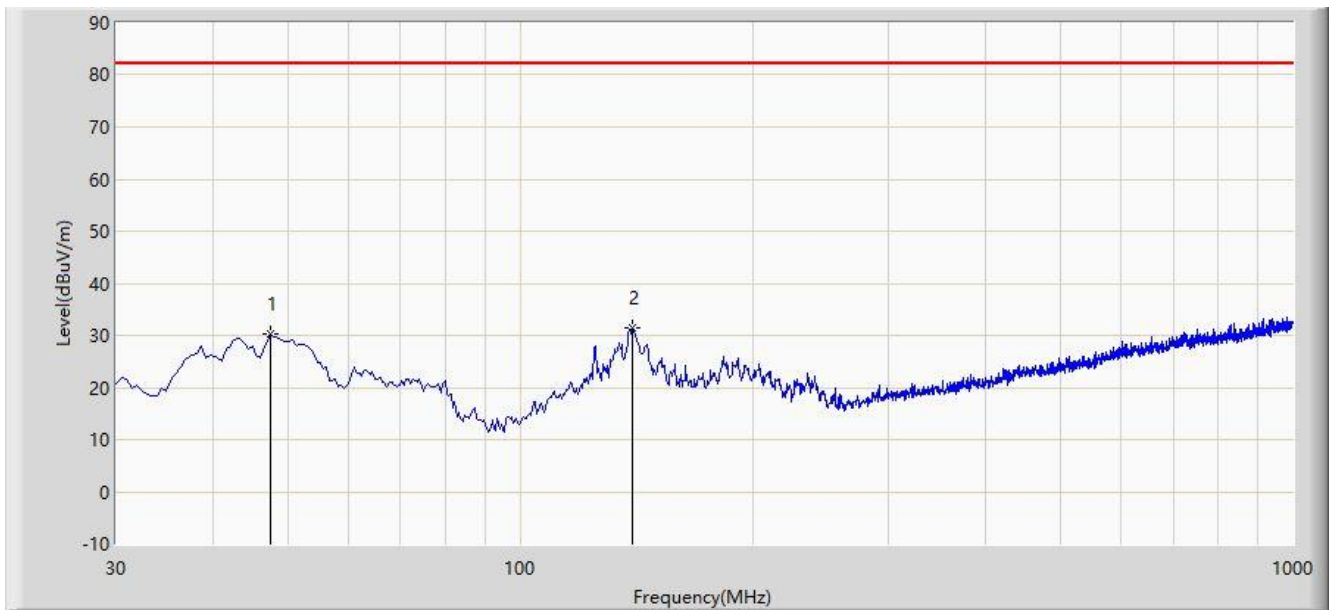
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor	Type
1			140.580	22.910	5.257	-59.290	82.200	17.653	PK
2		*	194.900	24.564	9.218	-57.636	82.200	15.346	PK

 Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

Site: WZ-AC1	Time: 2021/02/08 - 14:42
Limit: FCC_Part 22 & 24_RSE (3m)	Margin: 0
Probe: WZ-AC1_VULB 9168 _30-1000MHz	Polarity: Vertical
EUT: LTE Module	Power: AC 120V/60Hz

Worst Case Mode: There is the worst case within frequency range 30MHz~1GHz.



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor	Type
1			47.460	30.394	12.412	-51.806	82.200	17.982	PK
2		*	139.610	31.495	13.938	-50.705	82.200	17.557	PK

Note: Measure Level (dB μ V/m) = Reading Level (dB μ V) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)

6. CONCLUSION

The data collected relate only the item(s) tested and show that unit is compliance with FCC Rules.

Appendix A - Test Setup Photograph

Refer to "2101RSU050-UT" file.

Appendix B - EUT Photograph

Refer to "2101RSU050-UE" file.