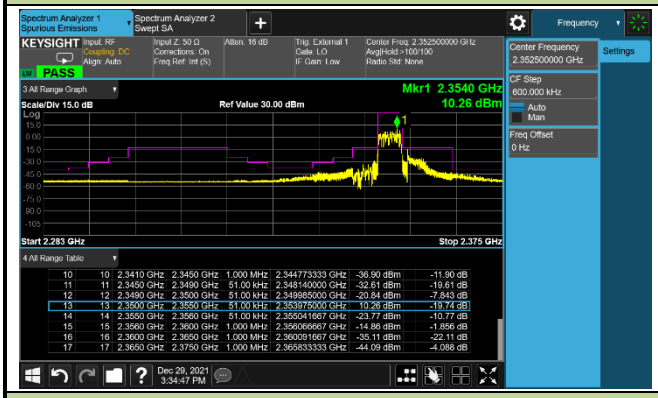
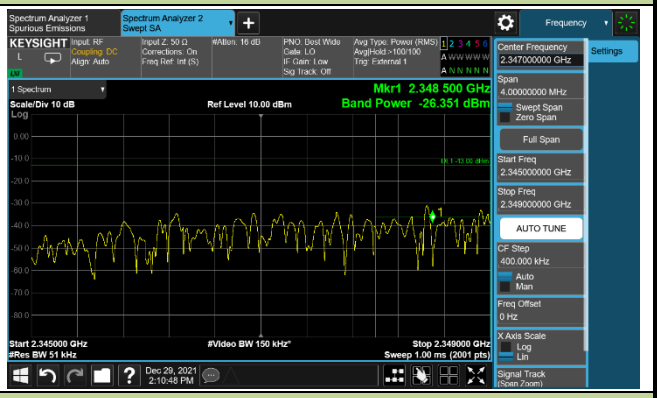
5MHz Channel Bandwidth Full RB

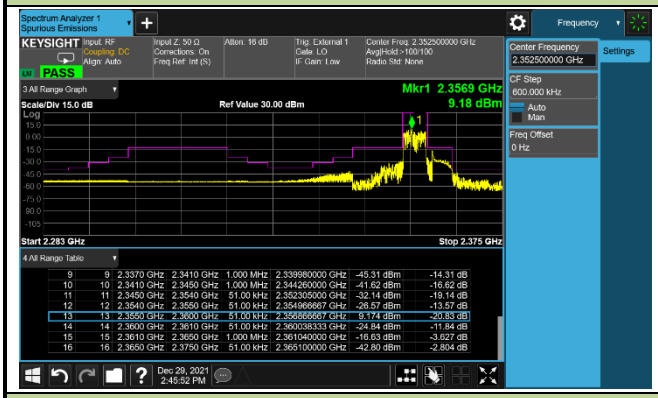
Lower ACP



Lower Extended Band Edge



Upper ACP

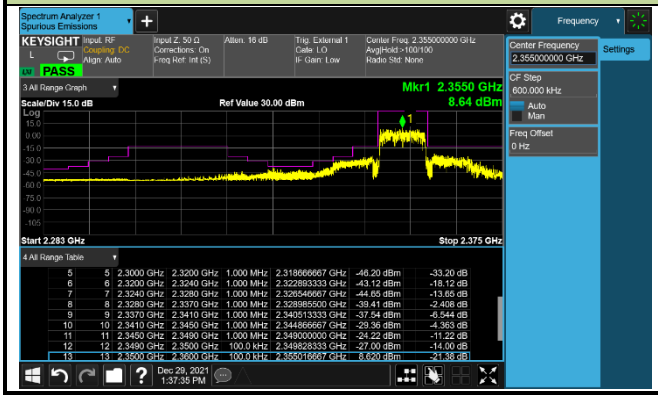


Upper Extended Band Edge (2345 ~ 2354MHz)

Upper Extended Band Edge (2365 ~ 2375MHz)

10MHz Channel Bandwidth Full RB

Middle ACP



5.6. Conducted Spurious Emission Measurement

5.6.1.Test Limit

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10thharmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst-case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) bya factor of at least 70 + 10 log (P) dB.

5.6.2.Test Procedure

ANSI C63.26-2015 - Section 5.7

5.6.3.Test Setting

1. Set the analyzer frequency to low, mid, high channel.
2. RBW = 1MHz
3. VBW ≥ 3*RBW
4. Sweep time = auto
5. Detector = power averaging (rms)
6. Set sweep trigger to “free run.”
7. User gate triggered such that the analyzer only sweeps when the device is transmitting at full power.
8. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. To accurately determine the average power over the on and off time of the transmitter, it can be necessary to increase the number of traces to be averaged above 100, or if using a manually configured sweep time, increase the sweep time.

5.6.4.Test Setup

5.6.5.Test Result

Product	Mobile Computer	Test Site	SIP-SR1
Test Engineer	Candy Luo	Test Date	2021/12/25
Test Band	LTE Band 30_QPSK		

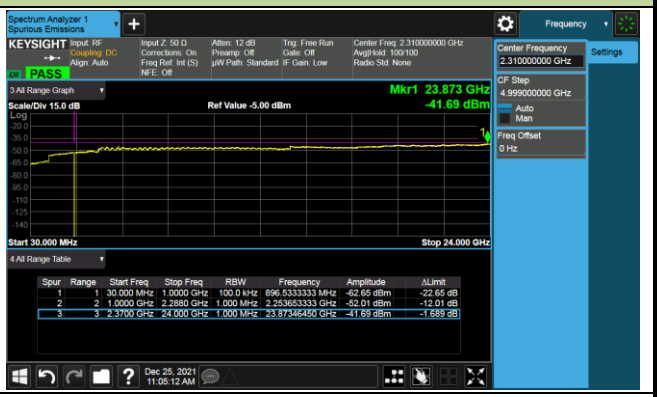
Channel	Frequency (MHz)	Channel Bandwidth (MHz)	Frequency Range (MHz)	Max Spurious Emissions (dBm)	Limit (dBm)	Result
27685	2307.5	5	30 ~ 24000	-41.67	≤ -40.00	Pass
27710	2310.0	5	30 ~ 24000	-41.69	≤ -40.00	Pass
27735	2312.5	5	30 ~ 24000	-41.76	≤ -40.00	Pass
27710	2310.0	10	30 ~ 24000	-41.72	≤ -40.00	Pass

Note: Spurious emissions within 9kHz – 30MHz were found more than 20dB below limit line.

5MHz Channel Bandwidth

Low Channel

Middle Channel



High Channel

10MHz Channel Bandwidth

Middle Channel

Product	Mobile Computer	Test Site	SIP-SR1
Test Engineer	Candy Luo	Test Date	2021/12/25
Test Band	LTE Band 40(lower)_QPSK		

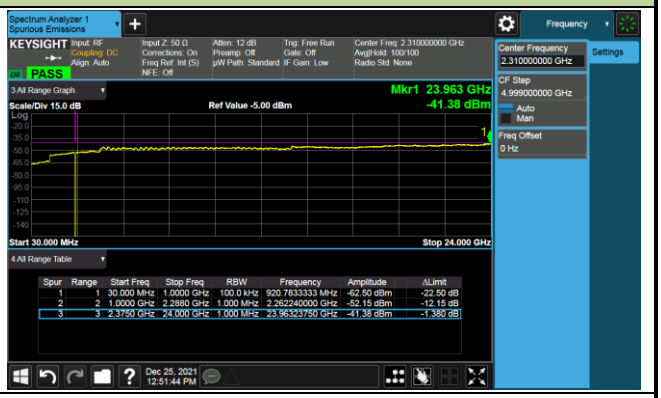
Channel	Frequency (MHz)	Channel Bandwidth (MHz)	Frequency Range (MHz)	Max Spurious Emissions (dBm)	Limit (dBm)	Result
38725	2307.5	5	30 ~ 24000	-41.65	≤ -40.00	Pass
38750	2310.0	5	30 ~ 24000	-41.38	≤ -40.00	Pass
38775	2312.5	5	30 ~ 24000	-41.68	≤ -40.00	Pass
38750	2310.0	10	30 ~ 24000	-41.60	≤ -40.00	Pass

Note: Spurious emissions within 9kHz – 30MHz were found more than 20dB below limit line.

5MHz Channel Bandwidth

Low Channel

Middle Channel



High Channel

10MHz Channel Bandwidth	
Middle Channel	

Product	Mobile Computer	Test Site	SIP-SR1
Test Engineer	Candy Luo	Test Date	2021/12/25
Test Band	LTE Band 40(upper)_QPSK		

Channel	Frequency (MHz)	Channel Bandwidth (MHz)	Frequency Range (MHz)	Max Spurious Emissions (dBm)	Limit (dBm)	Result
39175	2352.5	5	30 ~ 24000	-41.68	≤ -40.00	Pass
39200	2355.0	5	30 ~ 24000	-41.54	≤ -40.00	Pass
39225	2357.5	5	30 ~ 24000	-41.67	≤ -40.00	Pass
39200	2355.0	10	30 ~ 24000	-41.39	≤ -40.00	Pass

Note: Spurious emissions within 9kHz – 30MHz were found more than 20dB below limit line.

5MHz Channel Bandwidth	
Low Channel	Middle Channel
High Channel	

10MHz Channel Bandwidth	
Middle Channel	

5.7. Radiated Spurious Emission Measurement

5.7.1.Test Limit

Out of band emissions: The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 70 + 10 log (P) dB.

E (dBμV/m) = EIRP (dBm) - 20 log D + 104.8; where D is the measurement distance in meters. The emission limit equal to 55.3dBμV/m.

5.7.2.Test Procedure

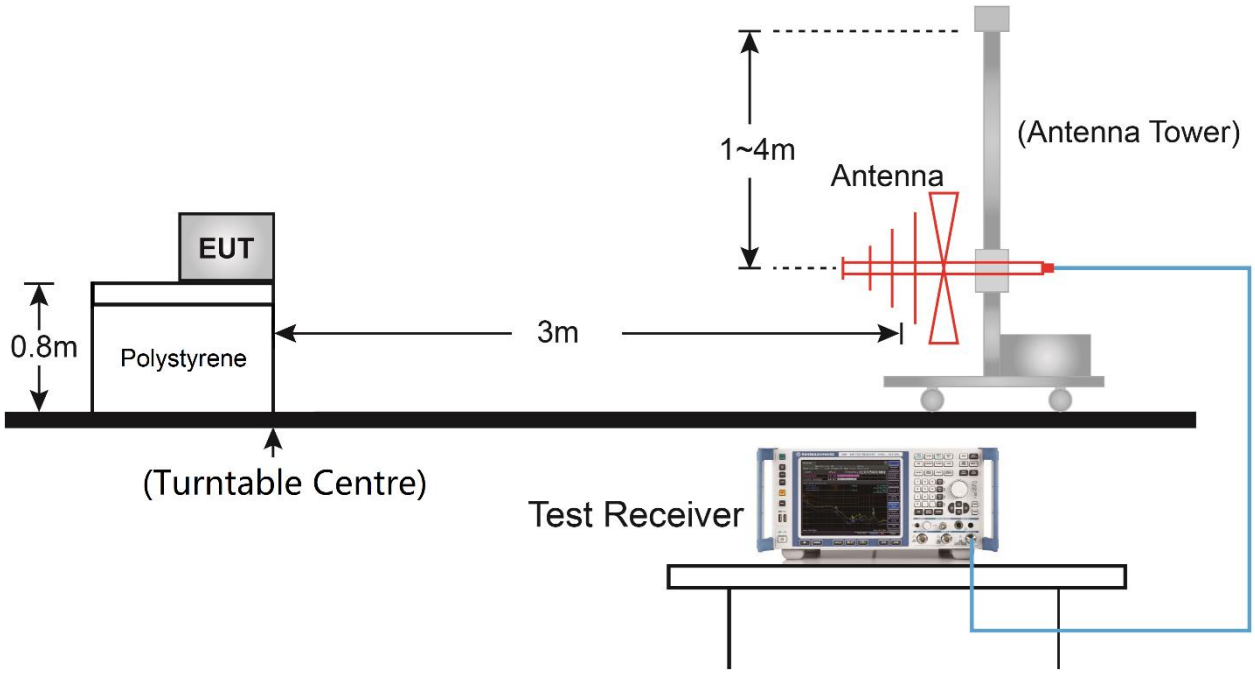
ANSI C63.26-2015 - Section 5.2.7 & 5.5

5.7.3.Test Setting

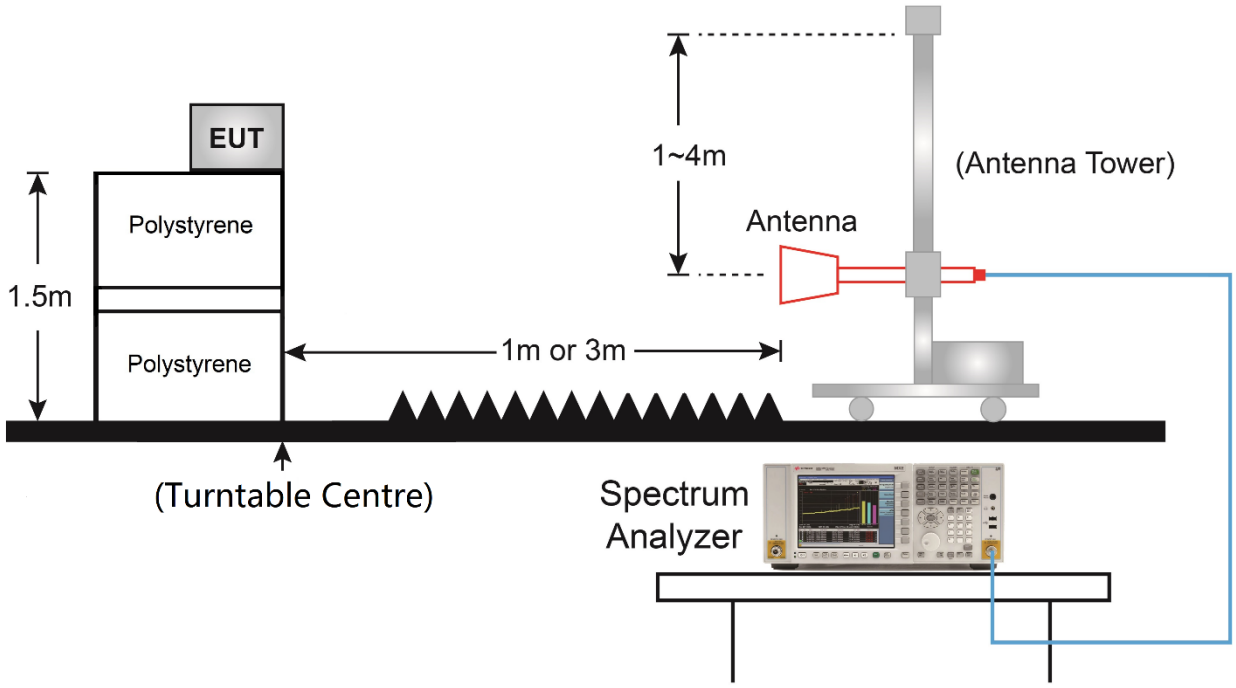
1. RBW = 1MHz
2. VBW ≥ 3*RBW
3. Sweep time ≥ 10 × (number of points in sweep) × (transmission symbol period)
4. Detector = Peak
5. Trace mode = max hold
6. The trace was allowed to stabilize

5.7.4.Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



5.7.5.Test Result

Product	Mobile Computer	Test Site	SIP-AC2
Test Engineer	Allen Zou	Test Date	2021/12/24 ~ 2021/12/28
Test Band	LTE Band 30_5MHz_1RB_QPSK		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level(dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
105.7	17.6	14.5	32.1	55.3	-23.2	Peak	Horizontal
920.9	3.5	29.8	33.3	55.3	-22.0	Peak	Horizontal
57.2	17.1	17.5	34.6	55.3	-20.7	Peak	Vertical
742.5	13.8	27.7	41.5	55.3	-13.8	Peak	Vertical
4612.5	61.7	-9.4	52.3	55.3	-3.0	Peak	Horizontal
6916.0	57.0	-7.0	50.0	55.3	-5.3	Peak	Horizontal
6916.0	56.0	-7.0	49.0	55.3	-6.3	Peak	Vertical
16776.0	47.4	4.8	52.2	55.3	-3.1	Peak	Vertical
Middle Channel							
119.7	14.5	15.8	30.3	55.3	-25.0	Peak	Horizontal
919.0	3.1	29.7	32.8	55.3	-22.5	Peak	Horizontal
36.8	13.8	17.4	31.2	55.3	-24.1	Peak	Vertical
934.0	2.2	30.0	32.2	55.3	-23.1	Peak	Vertical
4612.5	60.4	-9.4	51.0	55.3	-4.3	Peak	Horizontal
17847.0	46.3	5.4	51.7	55.3	-3.6	Peak	Horizontal
4612.5	54.0	-9.4	44.6	55.3	-10.7	Peak	Vertical
9228.0	52.4	-3.8	48.6	55.3	-6.7	Peak	Vertical
High Channel							
105.7	16.0	14.5	30.5	55.3	-24.8	Peak	Horizontal
973.3	4.4	29.9	34.3	55.3	-21.0	Peak	Horizontal
53.8	15.5	17.9	33.4	55.3	-21.9	Peak	Vertical
945.7	17.3	30.1	47.4	55.3	-7.9	Peak	Vertical
4621.0	57.8	-9.4	48.4	55.3	-6.9	Peak	Horizontal
6933.0	56.5	-7.0	49.5	55.3	-5.8	Peak	Horizontal
6933.0	56.9	-7.0	49.9	55.3	-5.4	Peak	Vertical
9245.0	54.9	-3.8	51.1	55.3	-4.2	Peak	Vertical

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

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

Product	Mobile Computer	Test Site	SIP-AC2
Test Engineer	Allen Zou	Test Date	2021/12/24 ~ 2021/12/28
Test Band	LTE Band 40(lower)_5MHz_1RB_QPSK		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level(dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
105.7	19.4	14.5	33.9	55.3	-21.4	Peak	Horizontal
957.8	2.4	30.1	32.5	55.3	-22.8	Peak	Horizontal
31.5	15.0	16.6	31.6	55.3	-23.7	Peak	Vertical
952.5	3.1	30.2	33.3	55.3	-22.0	Peak	Vertical
4612.5	60.0	-9.4	50.6	55.3	-4.7	Peak	Horizontal
6916.0	53.4	-7.0	46.4	55.3	-8.9	Peak	Horizontal
9219.5	52.4	-3.7	48.7	55.3	-6.6	Peak	Vertical
17762.0	46.3	5.6	51.9	55.3	-3.4	Peak	Vertical
Middle Channel							
106.1	19.8	14.6	34.4	55.3	-20.9	Peak	Horizontal
900.6	3.3	29.3	32.6	55.3	-22.7	Peak	Horizontal
31.0	13.6	16.5	30.1	55.3	-25.2	Peak	Vertical
932.1	3.9	30.0	33.9	55.3	-21.4	Peak	Vertical
4612.5	59.3	-9.4	49.9	55.3	-5.4	Peak	Horizontal
17685.5	46.6	5.4	52.0	55.3	-3.3	Peak	Horizontal
9228.0	53.8	-3.8	50.0	55.3	-5.3	Peak	Vertical
17779.0	46.1	5.6	51.7	55.3	-3.6	Peak	Vertical
High Channel							
105.7	19.0	14.5	33.5	55.3	-21.8	Peak	Horizontal
941.3	3.5	30.1	33.6	55.3	-21.7	Peak	Horizontal
57.6	13.6	17.5	31.1	55.3	-24.2	Peak	Vertical
981.6	3.6	29.8	33.4	55.3	-21.9	Peak	Vertical
4621.0	60.5	-9.4	51.1	55.3	-4.2	Peak	Horizontal
6933.0	56.8	-7.0	49.8	55.3	-5.5	Peak	Horizontal
9245.0	52.2	-3.8	48.4	55.3	-6.9	Peak	Vertical
17855.5	45.8	5.3	51.1	55.3	-4.2	Peak	Vertical

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

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

Product	Mobile Computer	Test Site	SIP-AC2
Test Engineer	Allen Zou	Test Date	2021/12/24 ~ 2021/12/28
Test Band	LTE Band 40(upper)_5MHz_1RB_QPSK		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
105.7	16.6	14.5	31.1	55.3	-24.2	Peak	Horizontal
945.7	2.2	30.1	32.3	55.3	-23.0	Peak	Horizontal
56.7	18.0	17.6	35.6	55.3	-19.7	Peak	Vertical
956.4	2.9	30.1	33.0	55.3	-22.3	Peak	Vertical
4697.5	61.5	-9.3	52.2	55.3	-3.1	Peak	Horizontal
17974.5	46.1	5.5	51.6	55.3	-3.7	Peak	Horizontal
9398.0	54.3	-3.8	50.5	55.3	-4.8	Peak	Vertical
16759.0	46.5	4.7	51.2	55.3	-4.1	Peak	Vertical
Middle Channel							
106.1	18.2	14.6	32.8	55.3	-22.5	Peak	Horizontal
922.4	2.7	29.8	32.5	55.3	-22.8	Peak	Horizontal
30.5	13.8	16.4	30.2	55.3	-25.1	Peak	Vertical
939.9	4.4	30.1	34.5	55.3	-20.8	Peak	Vertical
4706.0	57.1	-9.4	47.7	55.3	-7.6	Peak	Horizontal
7060.5	55.9	-6.8	49.1	55.3	-6.2	Peak	Horizontal
9415.0	55.0	-4.1	50.9	55.3	-4.4	Peak	Vertical
17923.5	46.6	5.4	52.0	55.3	-3.3	Peak	Vertical
High Channel							
105.7	18.9	14.5	33.4	55.3	-21.9	Peak	Horizontal
931.6	2.5	30.0	32.5	55.3	-22.8	Peak	Horizontal
30.5	14.4	16.4	30.8	55.3	-24.5	Peak	Vertical
982.5	4.0	29.8	33.8	55.3	-21.5	Peak	Vertical
4714.5	59.4	-9.3	50.1	55.3	-5.2	Peak	Horizontal
17490.0	46.4	5.1	51.5	55.3	-3.8	Peak	Horizontal
9423.5	53.3	-4.1	49.2	55.3	-6.1	Peak	Vertical
17983.0	46.0	5.5	51.5	55.3	-3.8	Peak	Vertical

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

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

Appendix A - Test Setup Photograph

Refer to “2111RSU064-UT” file.

Appendix B - EUT Photograph

Refer to “2111RSU064-UE” file.

The End