

5.5. Band Edge Measurement

5.5.1. Test Limit

22.917(a), 24.238 (a), 27.53 (g) (h) (i) (n)

For operations in the 824 ~ 849 MHz, 1850 ~ 1910 MHz, 1930 ~ 1990 MHz, 600MHz & 698 ~ 746 MHz, 3700 ~ 3980MHz and 1710 ~ 1755 MHz, the FCC limit is $43 + 10\log_{10}(P_{[Watts]})$ dB below the transmitter power P(Watts) in a 1 MHz bandwidth. However, in the 1MHz 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.

27.53 (c)

For operations in the 776-788 MHz band, the FCC limit is $43 + 10\log_{10}(P_{[Watts]})$ dB below the transmitter power P(Watts) in a 100 kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed. In addition, the power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least $65 + 10 \log_{10} (P_{[Watts]})$, dB, for mobile and portable equipment.

27.53(m)(4)

For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

27.53(l)(2)

For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

27.53(n)(2)

For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside

the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

5.5.2. Test Procedure

ANSI C63.26-2015 - Section 5.7

5.5.3. Test Setting

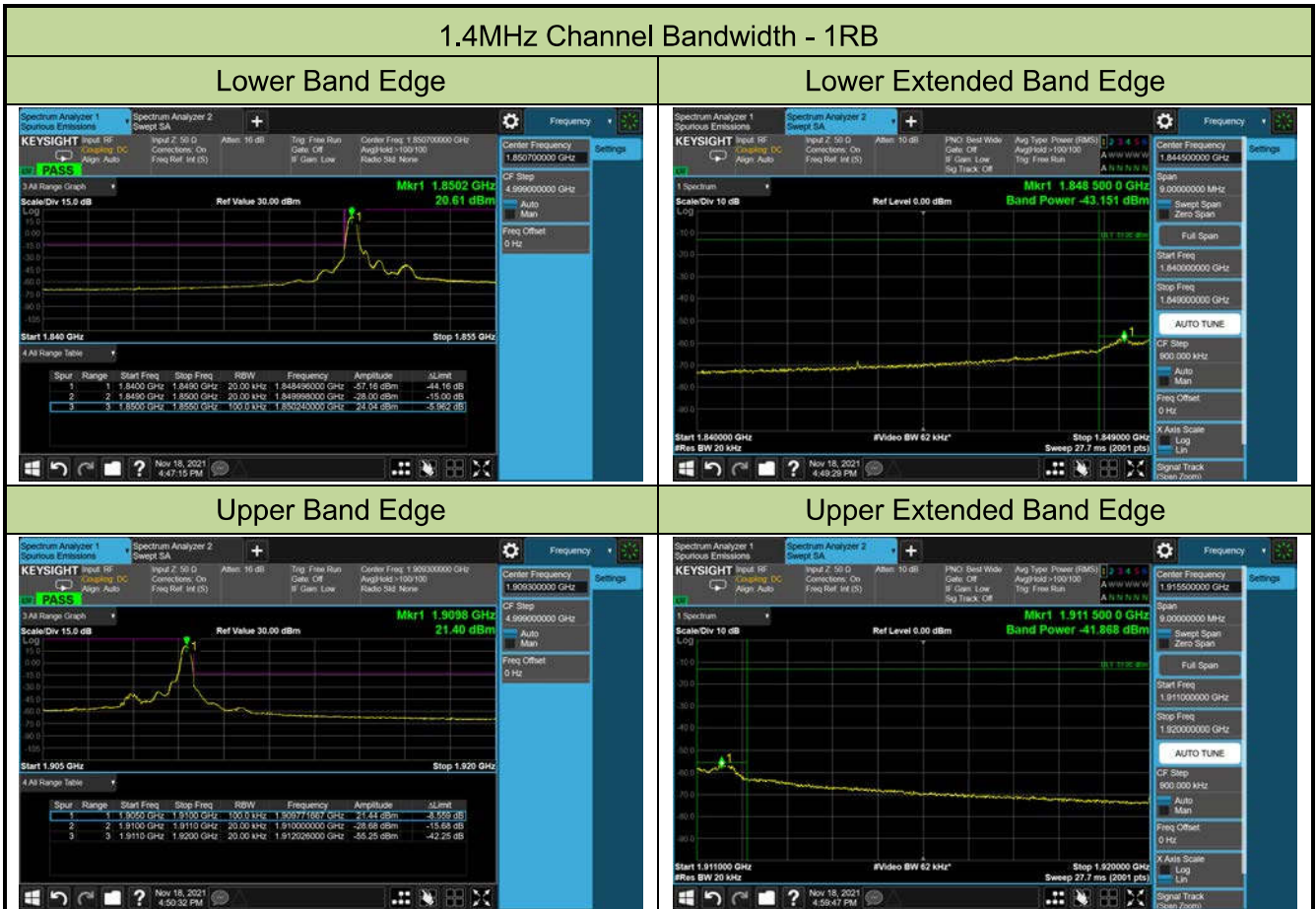
1. Set the analyzer frequency to low or high channel
2. $RBW \geq$ The nominal RBW shall be in the range of 1% of the anticipated OBW (in the 1MHz band immediately outside and adjacent to the band edge). For improvement of the accuracy in the measurement of the average power of a noise-like emission, a RBW narrower than the specified reference bandwidth can be used (generally limited to no less than 1% of the OBW), provided that a subsequent integration is performed over the full required measurement bandwidth. This integration should be performed using the spectrum analyzer's band power functions.
3. $VBW \geq 3 * RBW$
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.

5.5.4. Test Setup



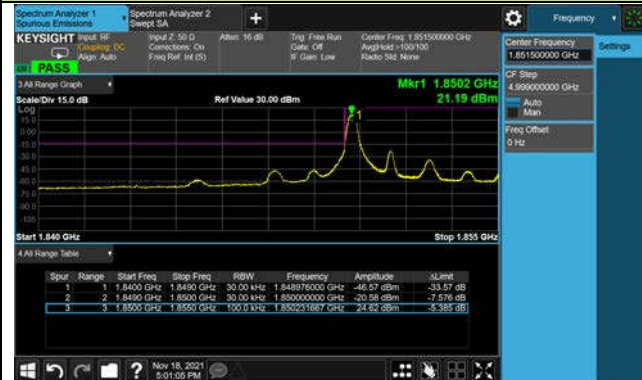
5.5.5. Test Result

Product	LTE Module	Test Site	SIP-SR1
Test Engineer	Candy Luo	Test Date	2021/11/18
Test Band	LTE Band 2/25_QPSK		

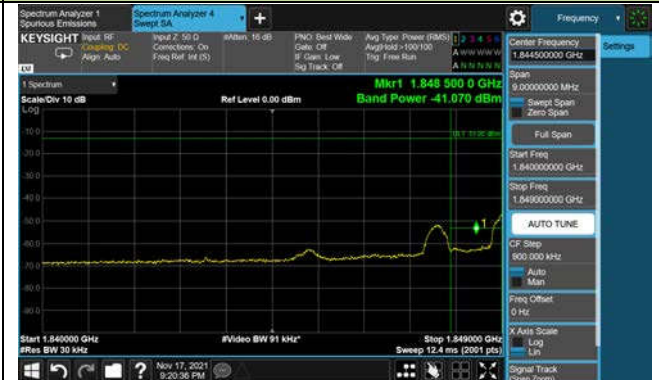


3MHz Channel Bandwidth - 1RB

Lower Band Edge



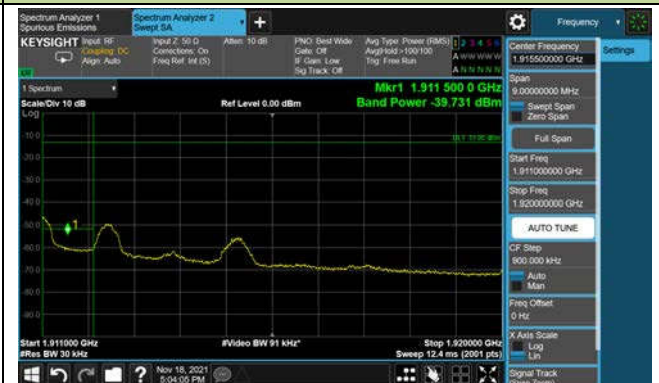
Lower Extended Band Edge



Upper Band Edge



Upper Extended Band Edge

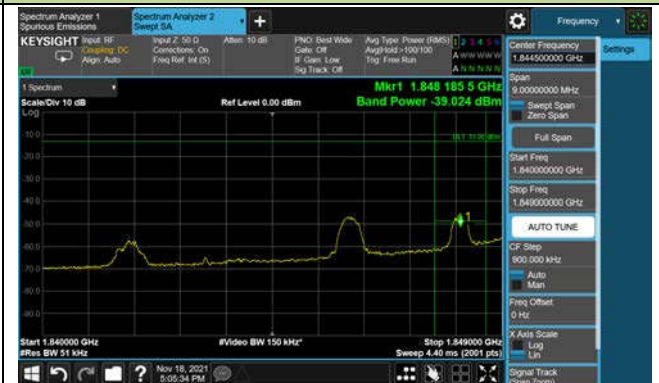


5MHz Channel Bandwidth - 1RB

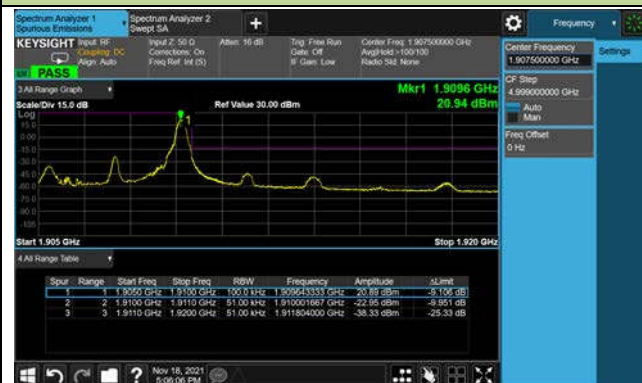
Lower Band Edge



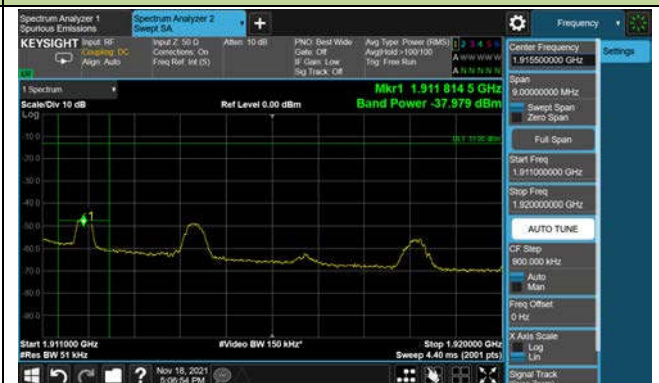
Lower Extended Band Edge



Upper Band Edge

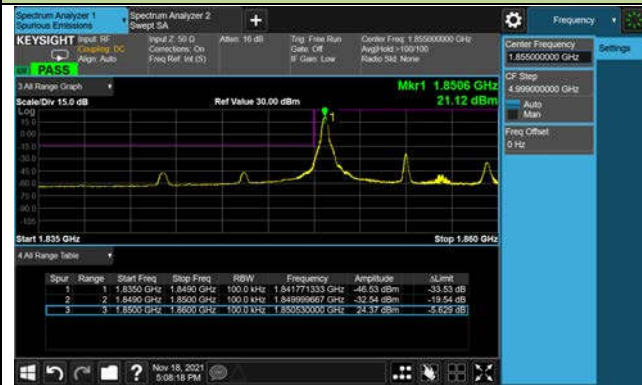


Upper Extended Band Edge

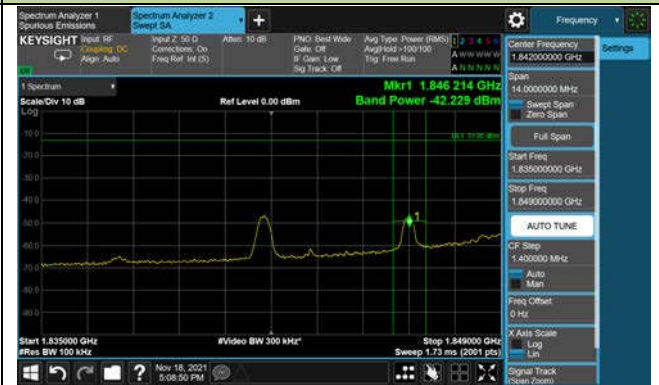


10MHz Channel Bandwidth - 1RB

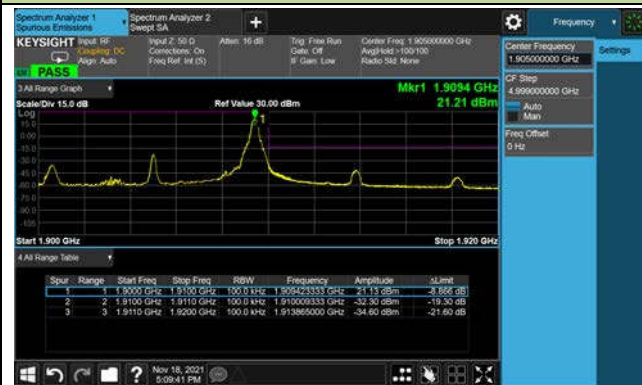
Lower Band Edge



Lower Extended Band Edge



Upper Band Edge

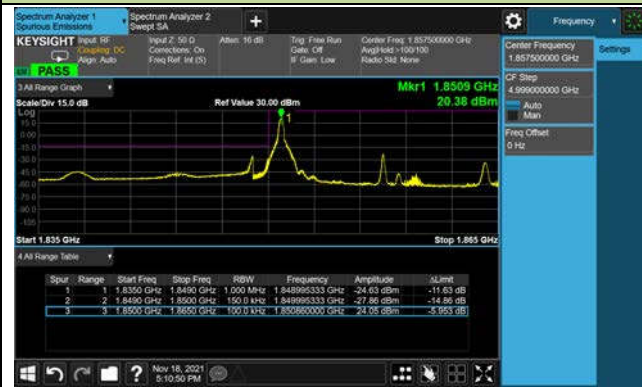


Upper Extended Band Edge



15MHz Channel Bandwidth - 1RB

Lower Band Edge

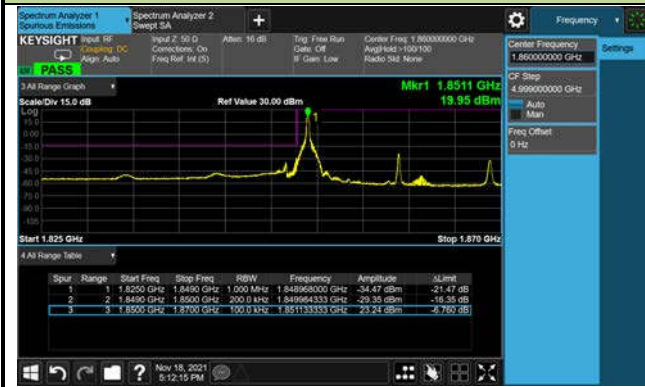


Upper Band Edge



20MHz Channel Bandwidth - 1RB

Lower Band Edge



Upper Band Edge



1.4MHz Channel Bandwidth - Full RB

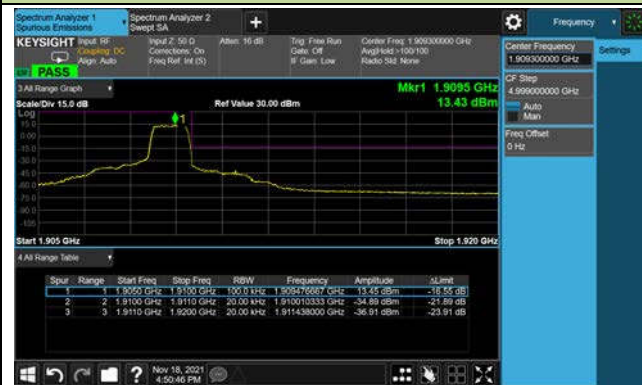
Lower Band Edge



Lower Extended Band Edge



Upper Band Edge



Upper Extended Band Edge



3MHz Channel Bandwidth - Full RB

Lower Band Edge



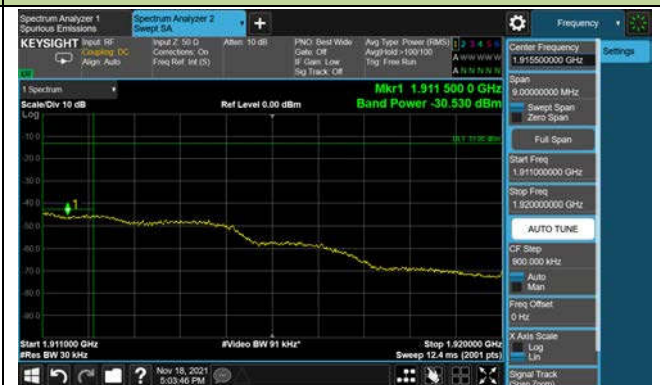
Lower Extended Band Edge



Upper Band Edge



Upper Extended Band Edge



5MHz Channel Bandwidth - Full RB

Lower Band Edge



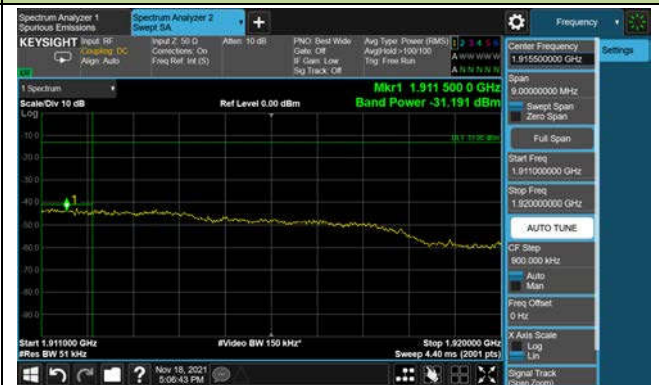
Lower Extended Band Edge



Upper Band Edge



Upper Extended Band Edge



10MHz Channel Bandwidth - Full RB

Lower Band Edge



Upper Band Edge



15MHz Channel Bandwidth - Full RB



20MHz Channel Bandwidth - Full RB



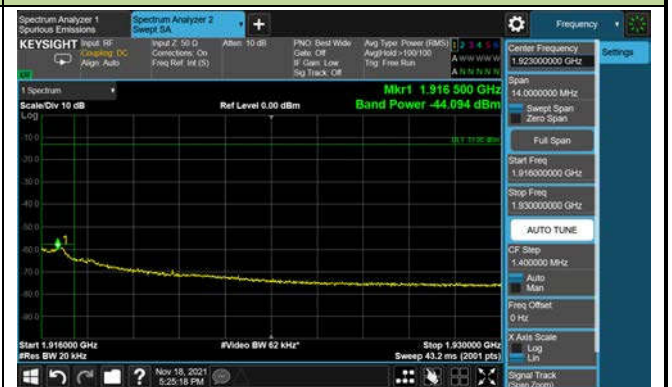
Product	LTE Module	Test Site	SIP-SR1
Test Engineer	Candy Luo	Test Date	2021/11/18
Test Band	LTE Band 25_QPSK		

1.4MHz Channel Bandwidth - 1RB

Upper Band Edge

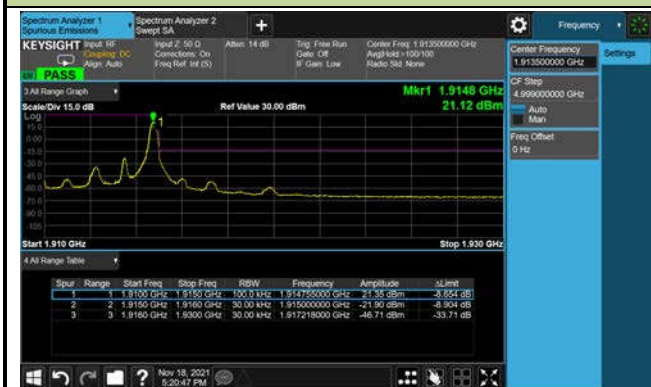


Upper Extended Band Edge

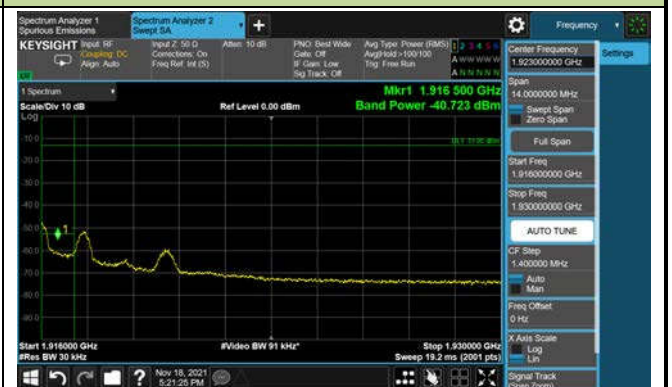


3MHz Channel Bandwidth - 1RB

Upper Band Edge

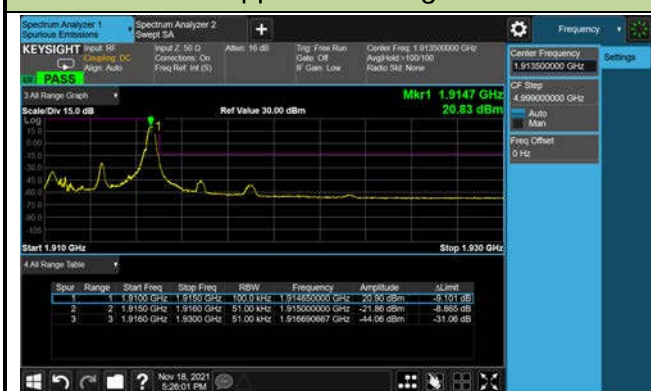


Upper Extended Band Edge



5MHz Channel Bandwidth - 1RB

Upper Band Edge

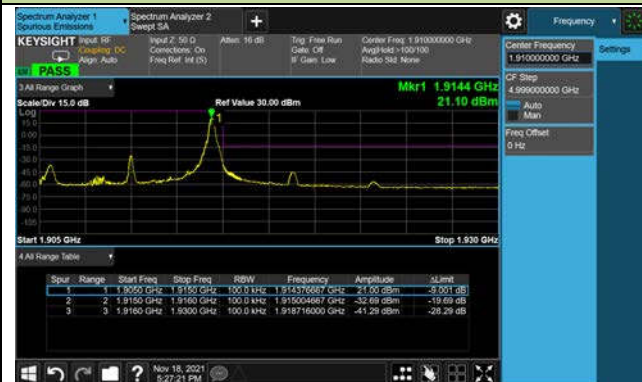


Upper Extended Band Edge



10MHz Channel Bandwidth - 1RB

Upper Band Edge



Upper Extended Band Edge



15MHz Channel Bandwidth - 1RB

Upper Band Edge



20MHz Channel Bandwidth - 1RB

Upper Band Edge



1.4MHz Channel Bandwidth - Full RB

Upper Band Edge



Upper Extended Band Edge



3MHz Channel Bandwidth - Full RB

Upper Band Edge

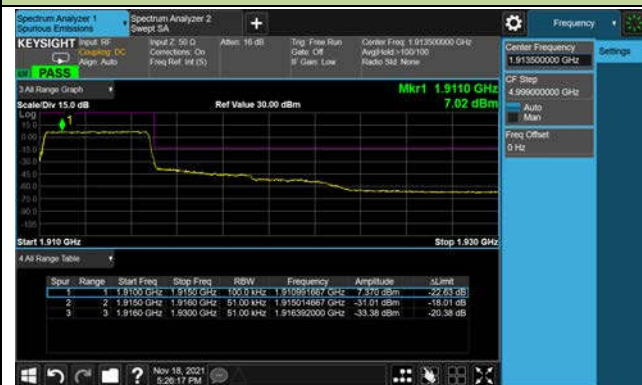


Upper Extended Band Edge



5MHz Channel Bandwidth - Full RB

Upper Band Edge



Upper Extended Band Edge



10MHz Channel Bandwidth - Full RB

Upper Band Edge



15MHz Channel Bandwidth - Full RB

Upper Band Edge



20MHz Channel Bandwidth - Full RB

Upper Band Edge



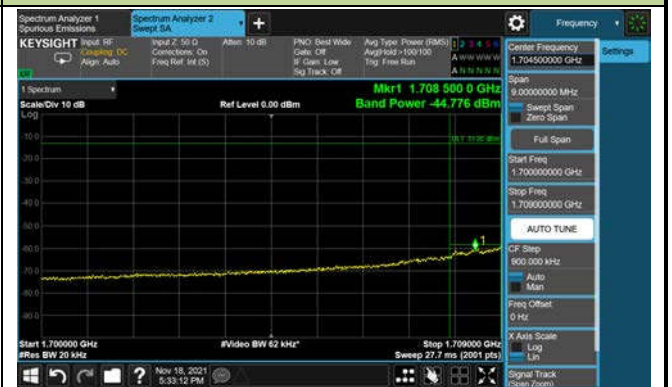
Product	LTE Module	Test Site	SIP-SR1
Test Engineer	Candy Luo	Test Date	2021/11/18
Test Band	LTE Band 4/66_QPSK		

1.4MHz Channel Bandwidth - 1RB

Lower Band Edge



Lower Extended Band Edge



Upper Band Edge

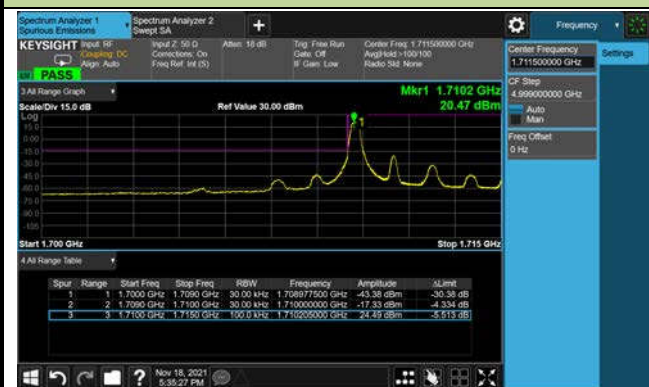


Upper Extended Band Edge



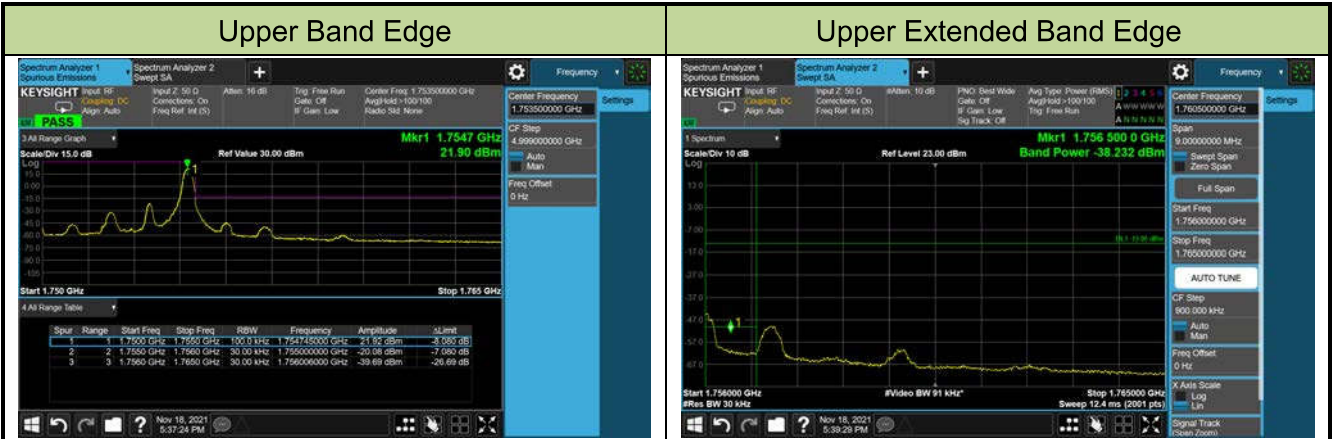
3MHz Channel Bandwidth - 1RB

Lower Band Edge

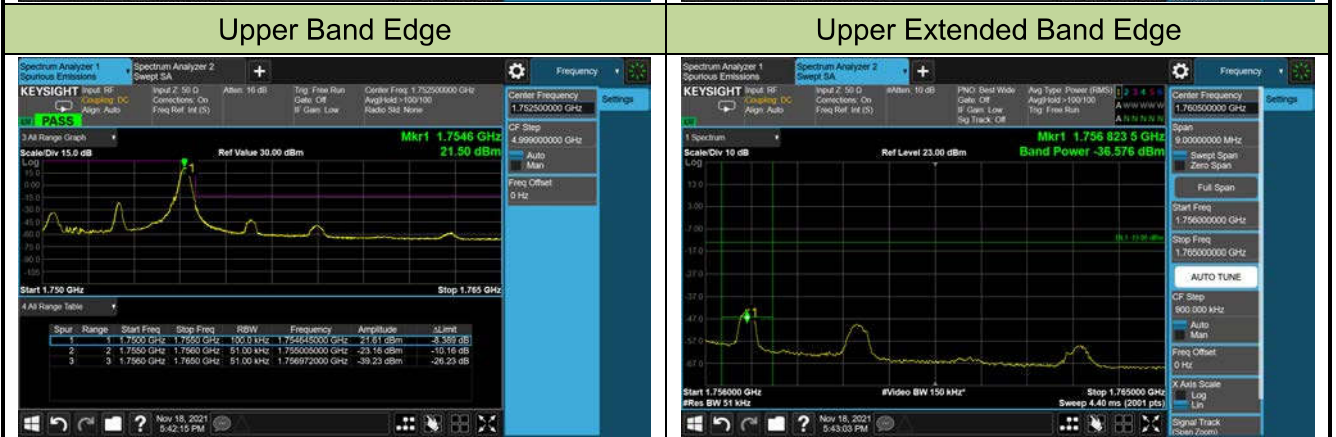


Lower Extended Band Edge





5MHz Channel Bandwidth - 1RB



10MHz Channel Bandwidth - 1RB

