

LTE Band 66 (Channel Bandwidth 15MHz)

Test Condition	Channel	Frequency (MHz)	Occupied bandwidth (MHz)	26dB Bandwidth (MHz)
QPSK	132047	1717.5	13.478	14.29
QPSK	132322	1745	13.462	14.27
QPSK	132597	1772.5	13.462	14.26
16QAM	132047	1717.5	13.467	14.31
16QAM	132322	1745	13.461	14.26
16QAM	132597	1772.5	13.450	14.26
64QAM	132047	1717.5	13.462	14.29
64QAM	132322	1745	13.455	14.29
64QAM	132597	1772.5	13.450	14.26

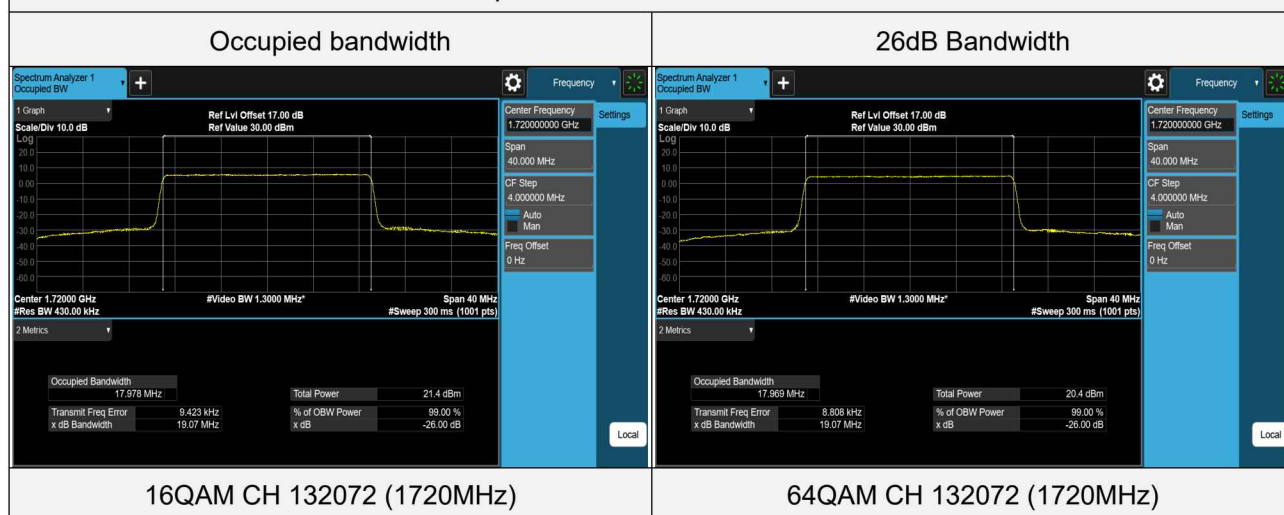
Spectrum Plot of Worst Value



LTE Band 66 (Channel Bandwidth 20MHz)

Test Condition	Channel	Frequency (MHz)	Occupied bandwidth (MHz)	26dB Bandwidth (MHz)
QPSK	132072	1720	17.976	19.07
QPSK	132322	1745	17.946	19.05
QPSK	132572	1770	17.945	19.03
16QAM	132072	1720	17.978	19.07
16QAM	132322	1745	17.960	19.03
16QAM	132572	1770	17.951	19.04
64QAM	132072	1720	17.969	19.07
64QAM	132322	1745	17.948	19.03
64QAM	132572	1770	17.954	19.05

Spectrum Plot of Worst Value



4.5 Channel Edge / Out-of-Band Emissions Measurement

4.5.1 Limits of Band Edge / Out-of-Band Emissions Measurement

For LTE Band 4, LTE Band 66:

According to FCC 27.53(h), for operations in the 1695-1710MHz, 1710-1755MHz, 1755-1780 MHz, 1915-1920MHz, 1995-2000 MHz, 2000-2020MHz, 2110-2155MHz, 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 $43 + 10 \log (P)$ dB. 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.

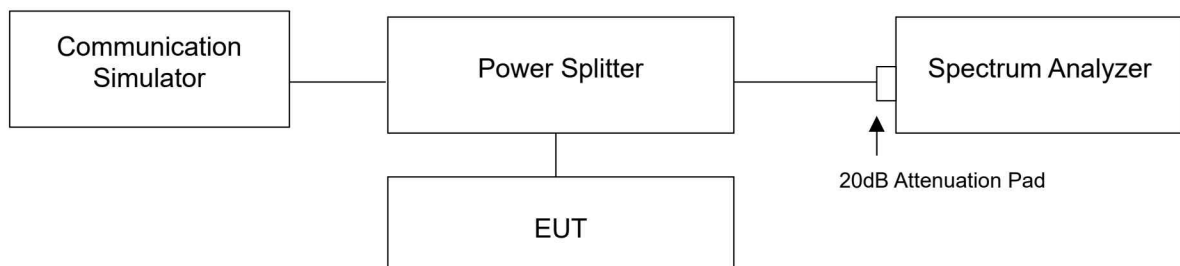
For LTE Band 7:

According to FCC 27.53(m)(4) regulations, any transmit power of any emission outside of the channel edge must be attenuated below the transmitting power (P) by a 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. In addition, the attenuation factor shall not be less that $43 + 10 \log (P)$ dB on all frequencies between 2490.5MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5MHz. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed.

For LTE Band 12, LTE Band 17:

According to FCC 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.

4.5.2 Test Setup

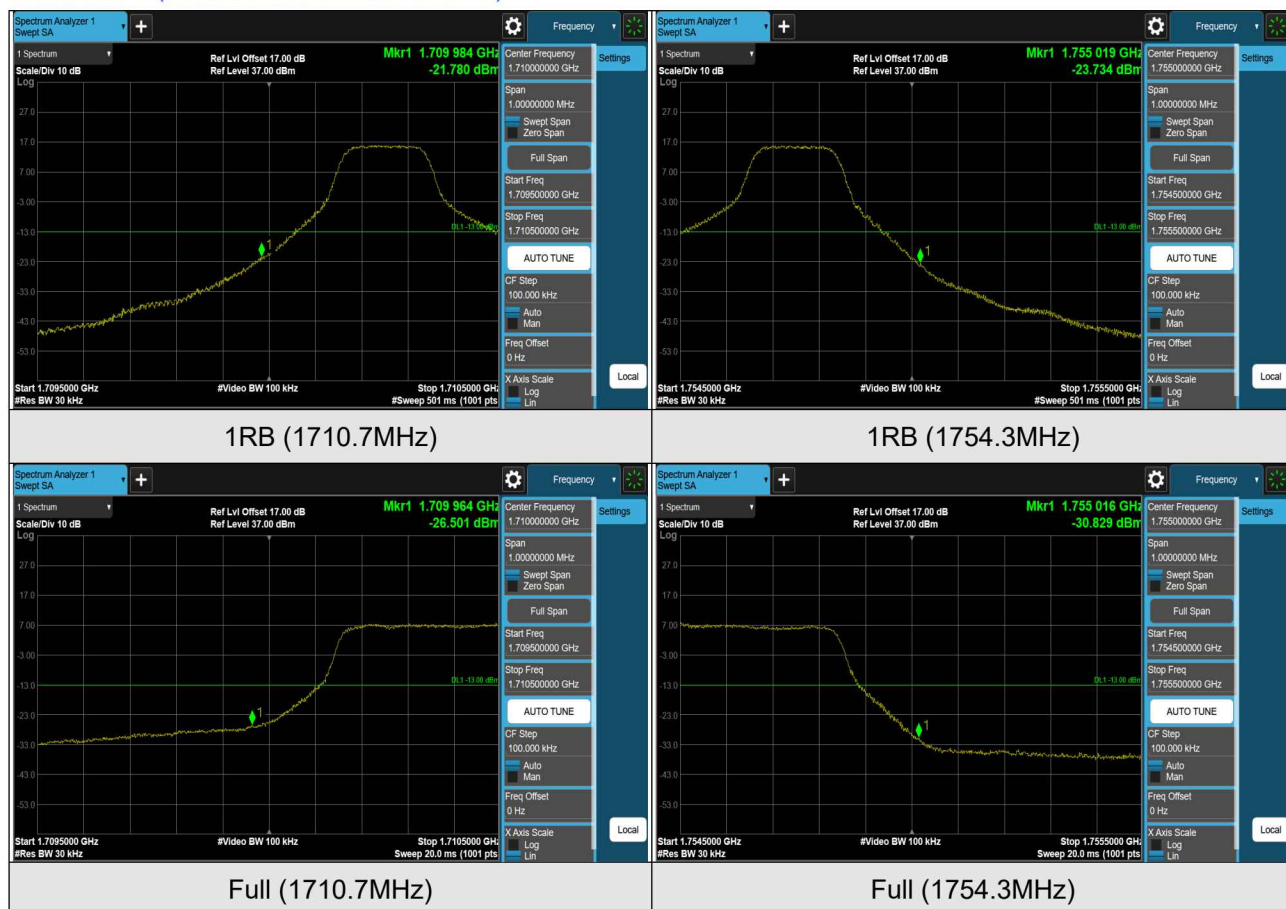


4.5.3 Test Procedures

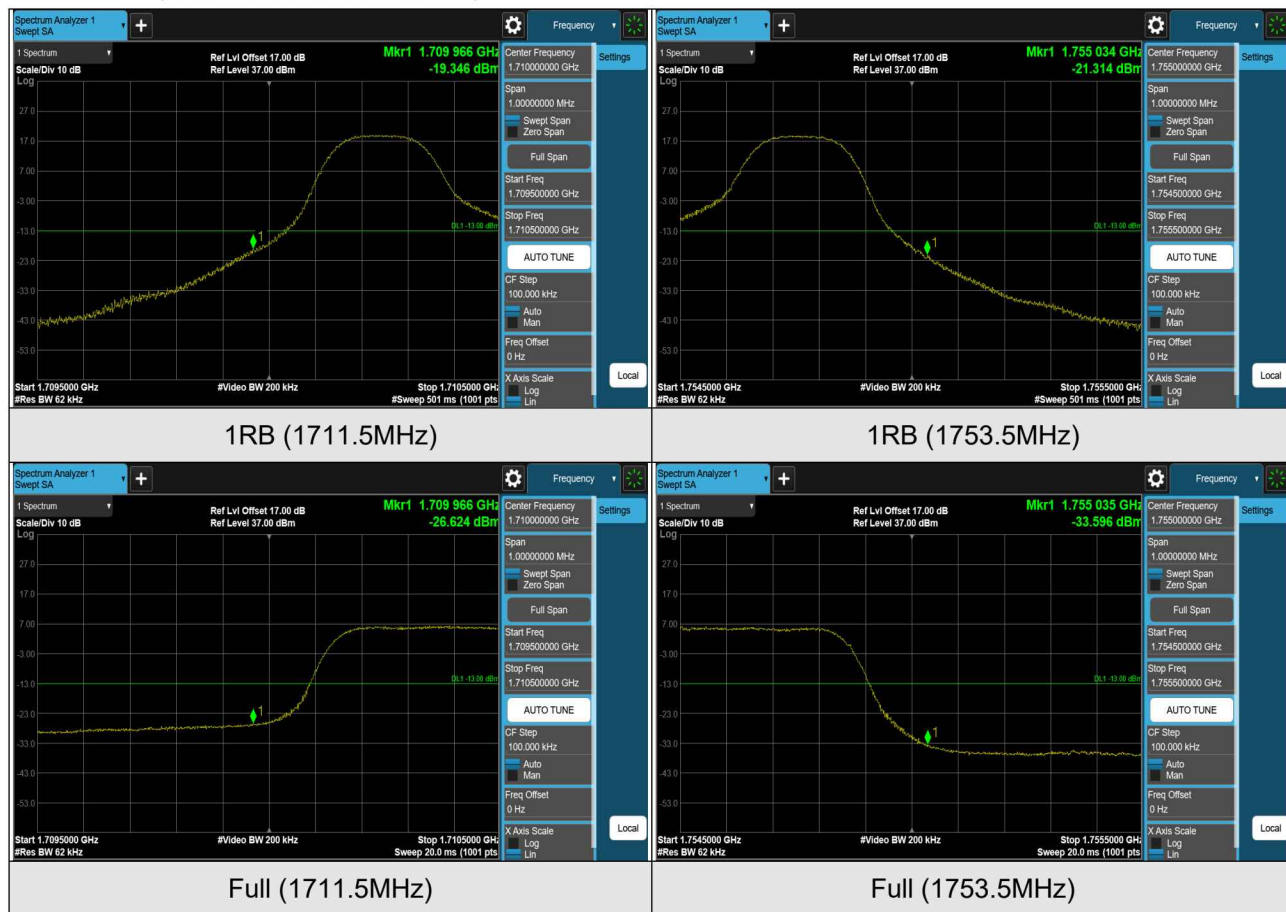
- The EUT was set up for the rated peak power. The power was measured with Spectrum Analyzer. Band edge measurements were done at 2 channels: low and high operational frequency range.
- Measurement refer to ANSI C63.26 section 5.7.2 & 5.7.3 and FCC Part 27 section 27.53.
- Measure 5 MHz and 10 MHz channel bandwidth modes for LTE Band 7, extend the 1% range from 1M to 2M above and below the channel edge, then lower the limit further by $10 \log (1000/100) = 10\text{dB}$ (i.e. $-10 + -10 = -20\text{dB}$) to compensate for the integration from 100k to 1M, measure referring to ANSI C63.26 Section 5.7.2 (a)(1).
- Record the max trace plot into the test report.

4.5.4 Test Results

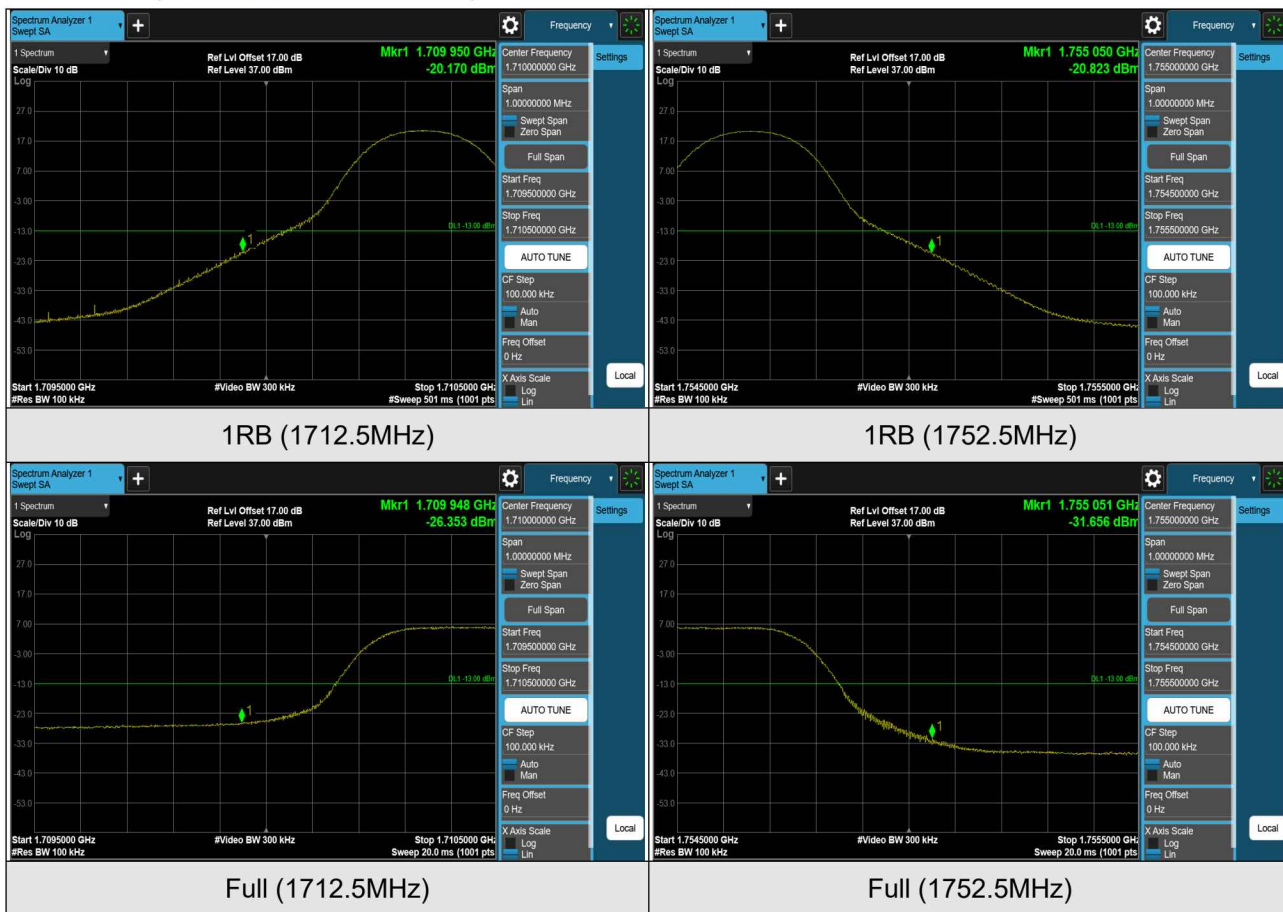
LTE Band 4 (Channel Bandwidth 1.4MHz)



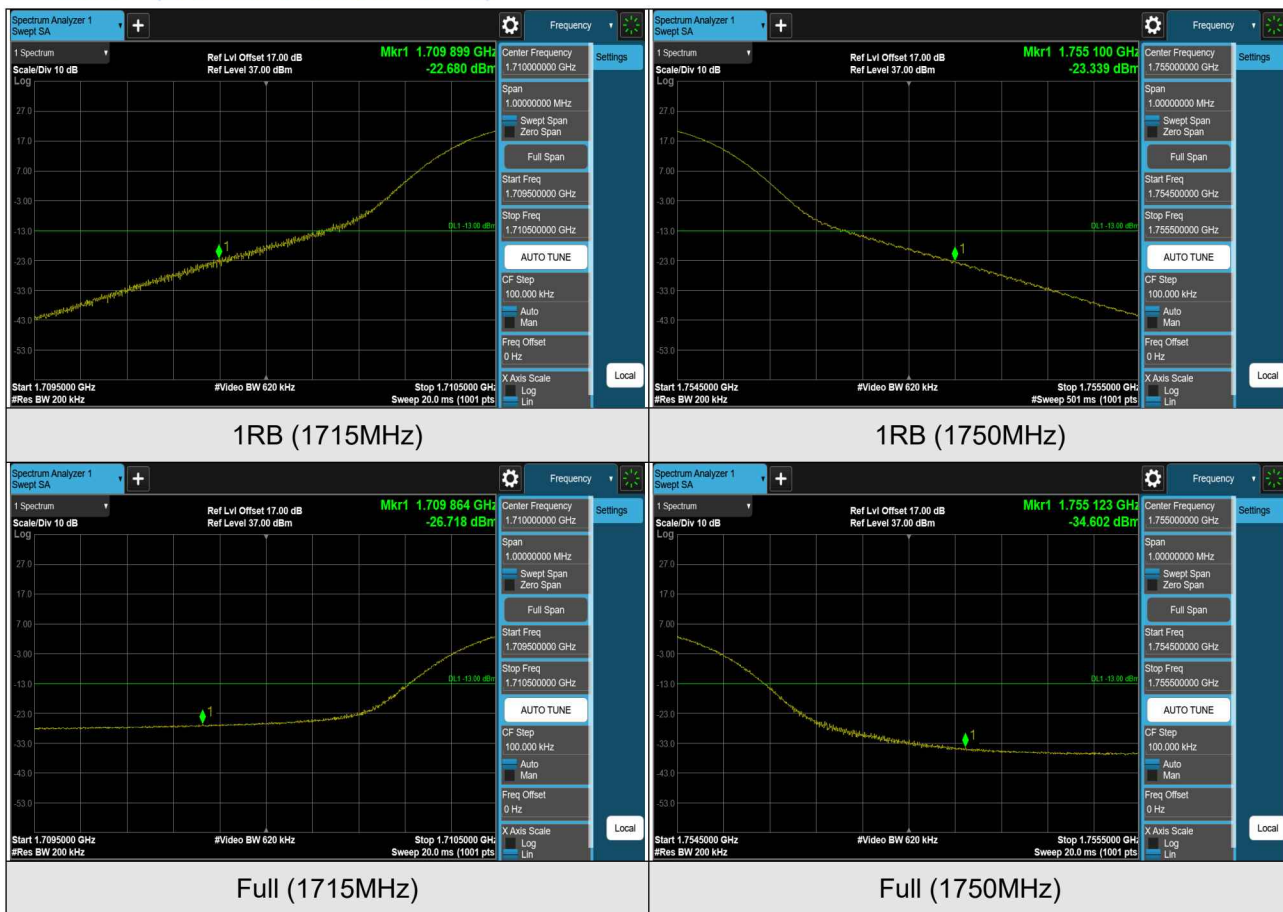
LTE Band 4 (Channel Bandwidth 3MHz)



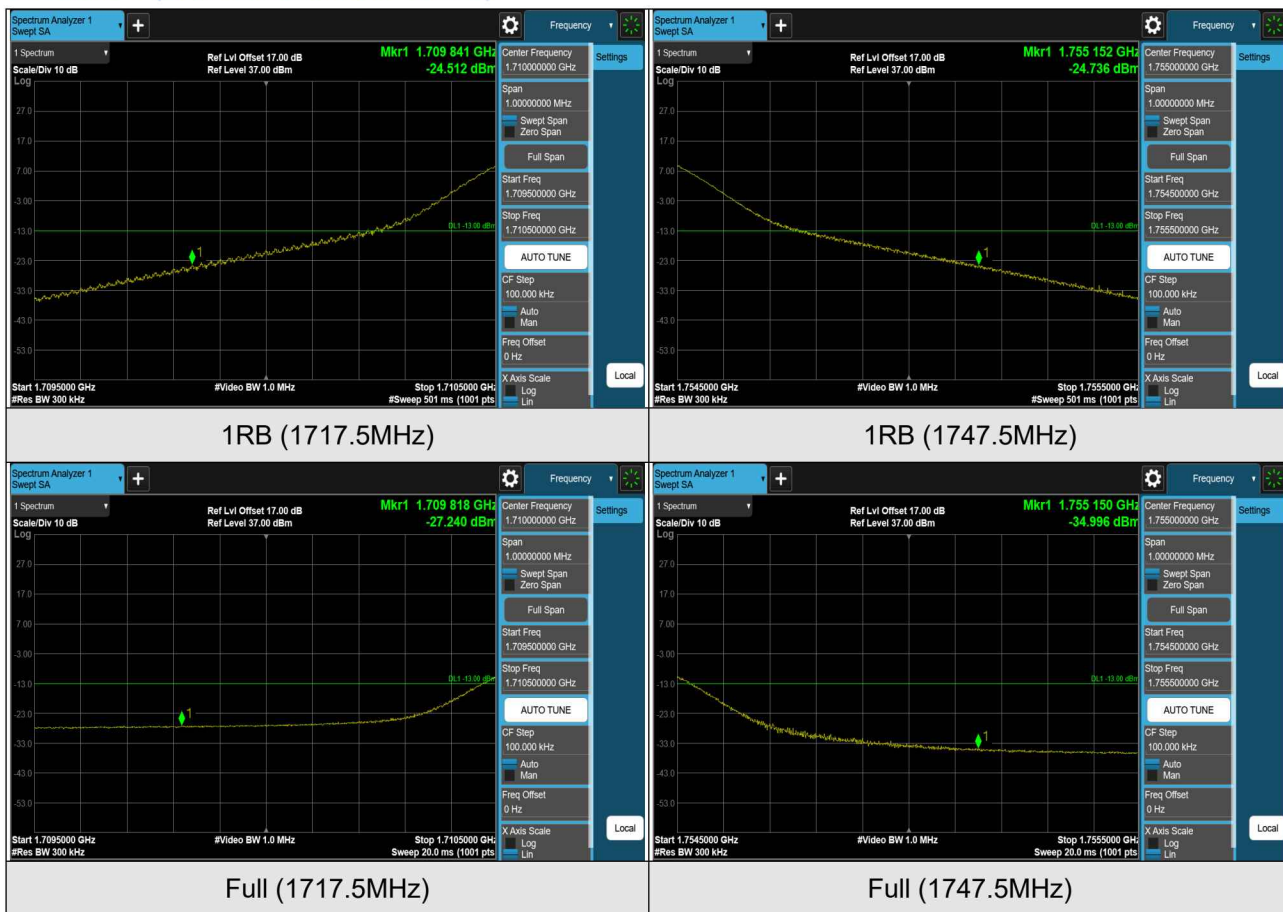
LTE Band 4 (Channel Bandwidth 5MHz)



LTE Band 4 (Channel Bandwidth 10MHz)

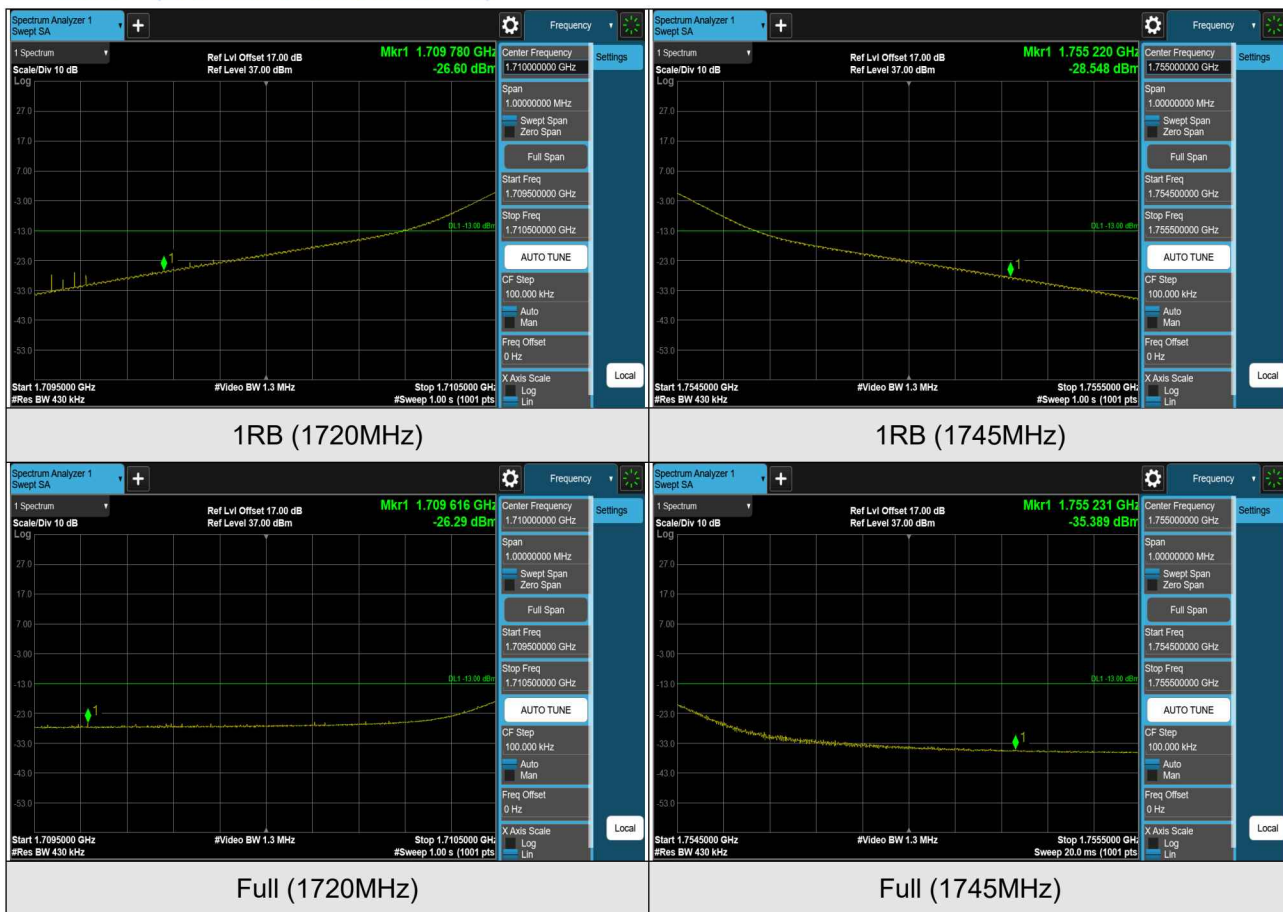


LTE Band 4 (Channel Bandwidth 15MHz)





LTE Band 4 (Channel Bandwidth 20MHz)



LTE Band 7 (Channel Bandwidth 5MHz)

