

Product	LTE Module	Test Site	SIP-SR1
Test Engineer	Candy Luo	Test Date	2021/07/22
Test Band	Band 5		

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	Peak to Average Ratio (dB)	Limit (dB)	Result
QPSK					
20525	836.5	10	5.07	≤ 13.00	Pass
16QAM					
20525	836.5	10	5.51	≤ 13.00	Pass



Product	LTE Module	Test Site	SIP-SR1
Test Engineer	Candy Luo	Test Date	2021/07/22
Test Band	LTE Band 7		

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	Peak to Average Ratio (dB)	Limit (dB)	Result
QPSK					
21100	2535.0	20	4.70	≤ 13.00	Pass
16QAM					
21100	2535.0	20	5.60	≤ 13.00	Pass



5.7. Conducted Spurious Emission Measurement

5.7.1. 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 10th harmonic. 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 attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

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.

5.7.2. Test Procedure

ANSI C63.26-2015 - Section 5.7

5.7.3. Test Setting

1. Set the analyzer frequency to low, mid, high channel.
2. RBW = 1MHz
3. VBW $\geq 3 \times$ 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.

5.7.4. Test Setup



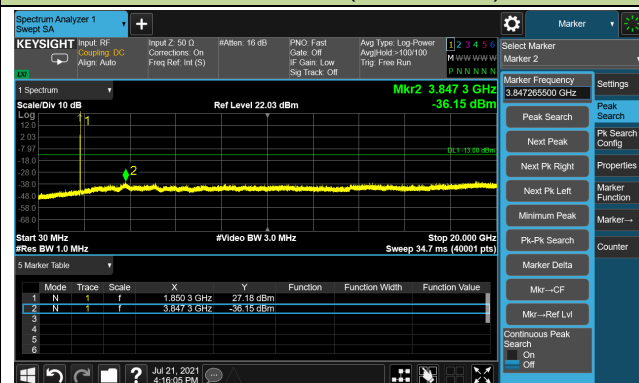
5.7.5. Test Result

Product	LTE Module	Test Site	SIP-SR1
Test Engineer	Candy Luo	Test Date	2021/07/21
Test Band	LTE Band 2_1RB_QPSK		

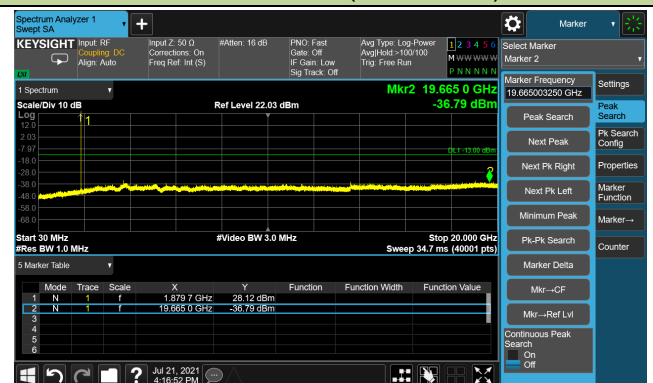
Channel	Frequency (MHz)	Channel Bandwidth (MHz)	Frequency Range (MHz)	Max Spurious Emissions (dBm)	Limit (dBm)	Result
18607	1850.7	1.4	30 ~ 20000	-36.15	≤ -13.00	Pass
18900	1880.0	1.4	30 ~ 20000	-36.79	≤ -13.00	Pass
19193	1909.3	1.4	30 ~ 20000	-36.15	≤ -13.00	Pass
18615	1851.5	3	30 ~ 20000	-37.11	≤ -13.00	Pass
18900	1880.0	3	30 ~ 20000	-37.03	≤ -13.00	Pass
19185	1908.5	3	30 ~ 20000	-37.11	≤ -13.00	Pass
18625	1852.5	5	30 ~ 20000	-36.35	≤ -13.00	Pass
18900	1880.0	5	30 ~ 20000	-35.85	≤ -13.00	Pass
19175	1907.5	5	30 ~ 20000	-36.24	≤ -13.00	Pass
18650	1855.0	10	30 ~ 20000	-36.87	≤ -13.00	Pass
18900	1880.0	10	30 ~ 20000	-36.22	≤ -13.00	Pass
19150	1905.0	10	30 ~ 20000	-37.07	≤ -13.00	Pass
18675	1857.5	15	30 ~ 20000	-36.33	≤ -13.00	Pass
18900	1880.0	15	30 ~ 20000	-35.82	≤ -13.00	Pass
19125	1902.5	15	30 ~ 20000	-36.49	≤ -13.00	Pass
18700	1860.0	20	30 ~ 20000	-36.25	≤ -13.00	Pass
18900	1880.0	20	30 ~ 20000	-36.11	≤ -13.00	Pass
19100	1900.0	20	30 ~ 20000	-35.89	≤ -13.00	Pass

1.4MHz Channel Bandwidth

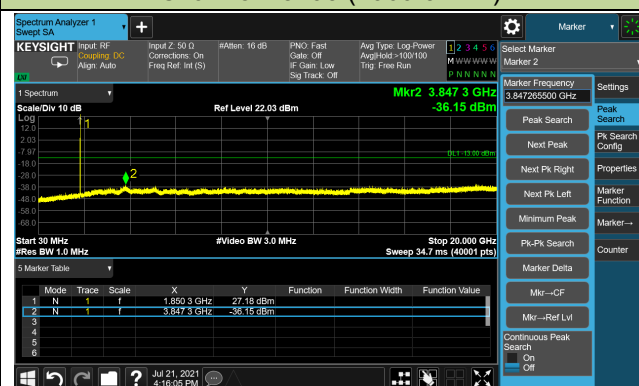
Channel 18607 (1850.7MHz)



Channel 18900 (1880.0MHz)

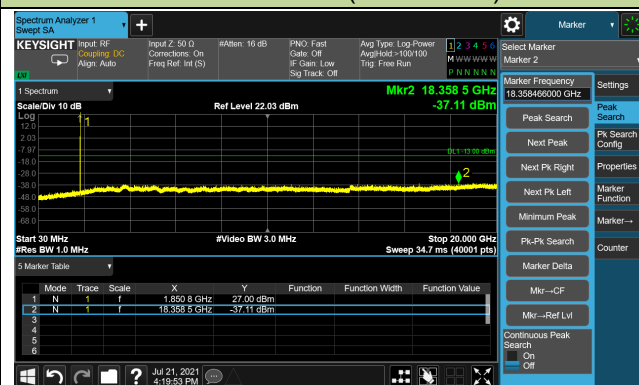


Channel 18193 (1909.3MHz)

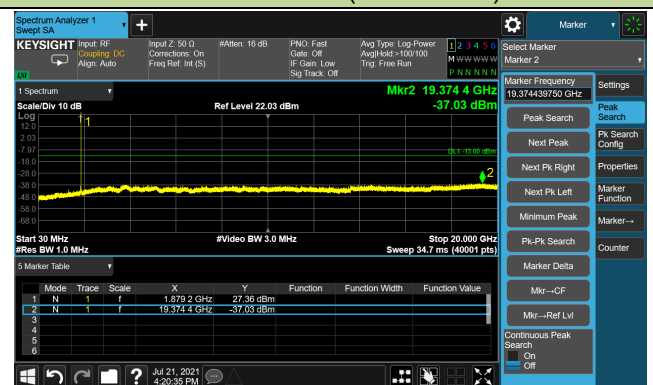


3MHz Channel Bandwidth

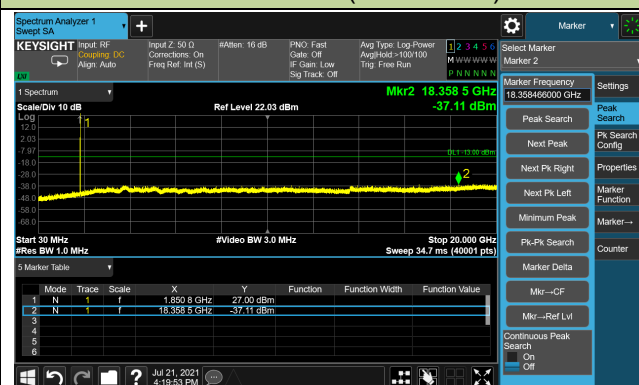
Channel 18615 (1851.5MHz)



Channel 18900 (1880.0MHz)

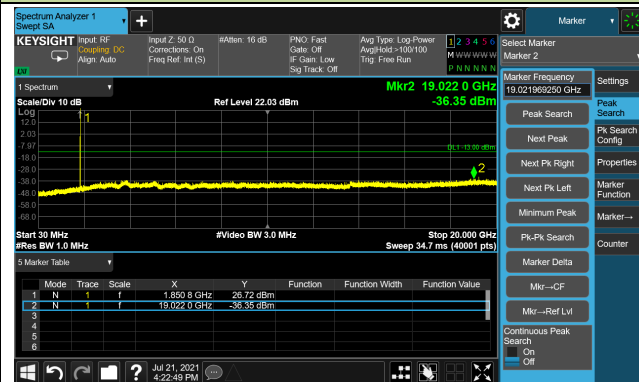


Channel 19185 (1908.5MHz)

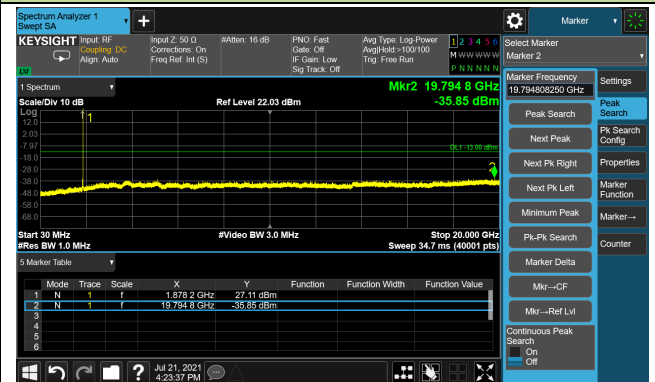


5MHz Channel Bandwidth

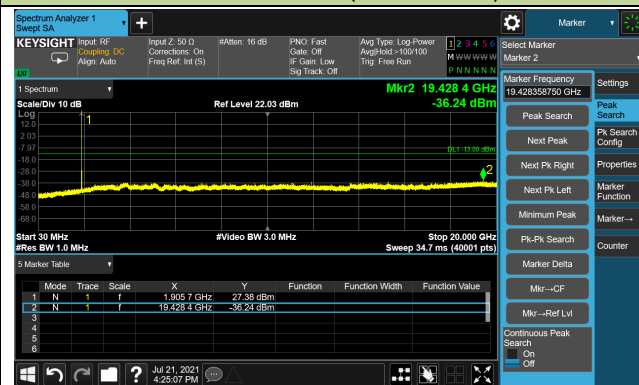
Channel 18625 (1852.5MHz)



Channel 18900 (1880.0MHz)

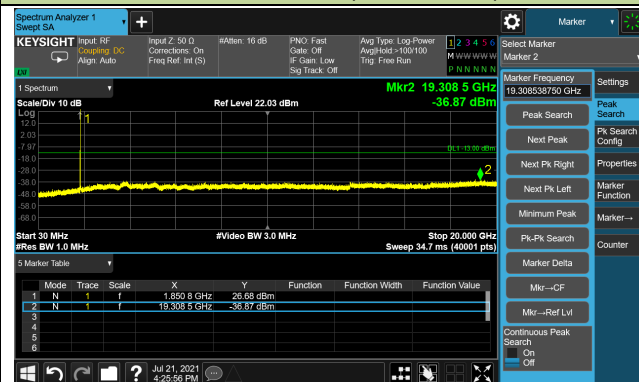


Channel 19175 (1907.5MHz)

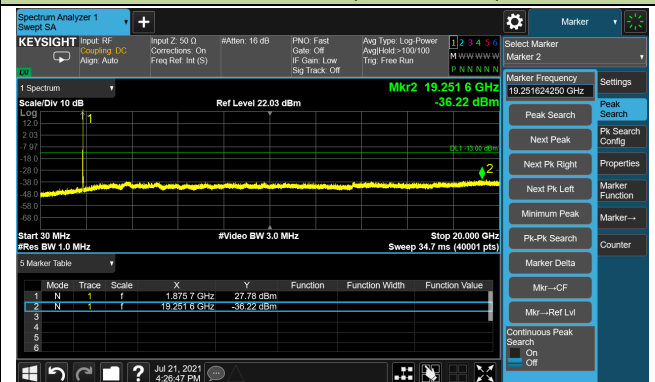


10MHz Channel Bandwidth

Channel 18650 (1855.0MHz)



Channel 18900 (1880.0MHz)

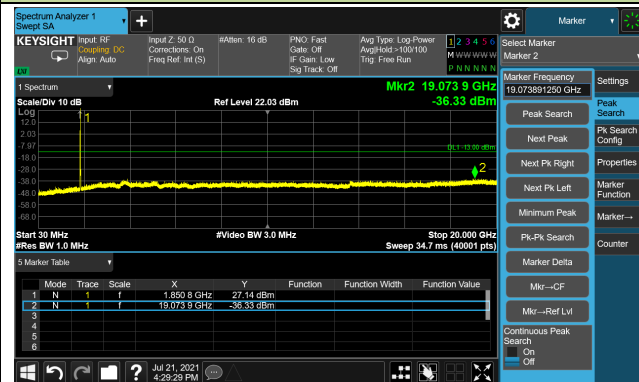


Channel 19150 (1905.0MHz)

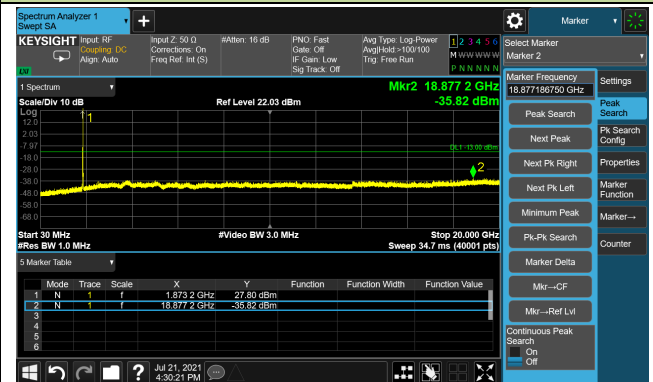


15MHz Channel Bandwidth

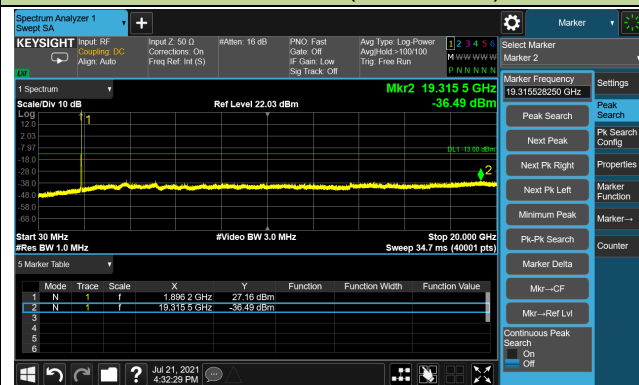
Channel 18675 (1857.5MHz)



Channel 18890(1880.0MHz)

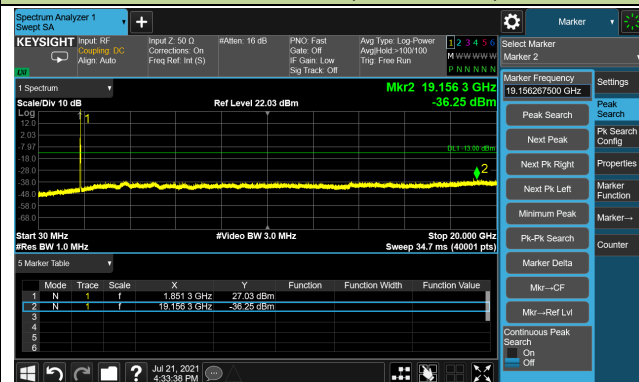


Channel 19125 (1902.5MHz)

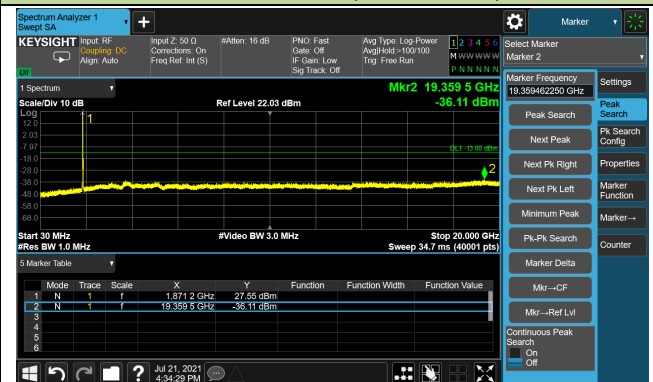


20MHz Channel Bandwidth

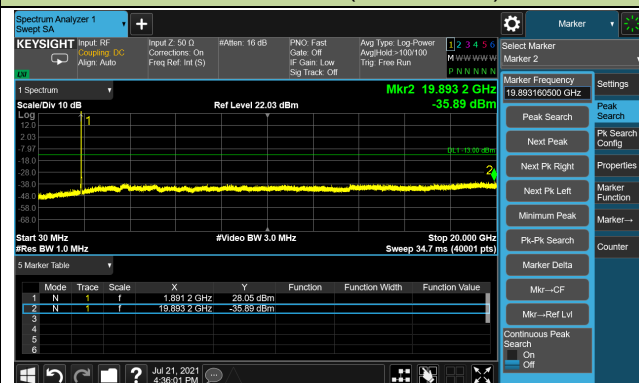
Channel 18700 (1860.0MHz)



Channel 18900 (1880.0MHz)



Channel 19100 (1900.0MHz)

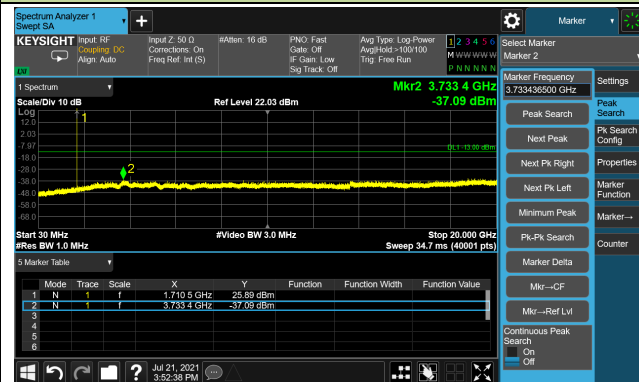


Product	LTE Module	Test Site	SIP-SR1
Test Engineer	Candy Luo	Test Date	2021/07/21
Test Band	LTE Band 4/66_1RB_QPSK		

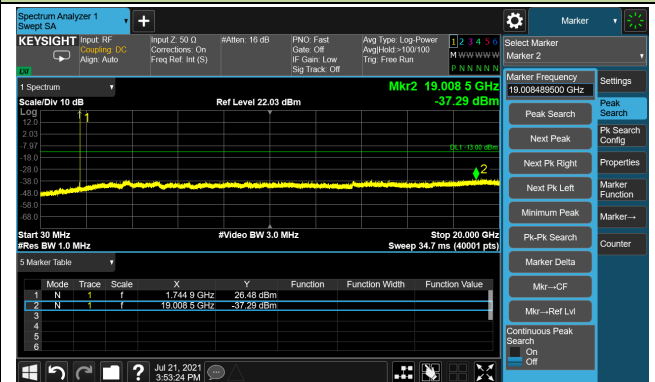
Channel	Frequency (MHz)	Channel Bandwidth (MHz)	Frequency Range (MHz)	Max Spurious Emissions (dBm)	Limit (dBm)	Result
131979	1710.7	1.4	30 ~ 20000	-37.09	≤ -13.00	Pass
132322	1745.0	1.4	30 ~ 20000	-37.29	≤ -13.00	Pass
132665	1779.3	1.4	30 ~ 20000	-37.18	≤ -13.00	Pass
131987	1711.5	3	30 ~ 20000	-37.15	≤ -13.00	Pass
132322	1745.0	3	30 ~ 20000	-37.14	≤ -13.00	Pass
132657	1778.5	3	30 ~ 20000	-35.89	≤ -13.00	Pass
131997	1712.5	5	30 ~ 20000	-35.59	≤ -13.00	Pass
132322	1745.0	5	30 ~ 20000	-36.89	≤ -13.00	Pass
132647	1777.5	5	30 ~ 20000	-36.08	≤ -13.00	Pass
132022	1715.0	10	30 ~ 20000	-36.44	≤ -13.00	Pass
132322	1745.0	10	30 ~ 20000	-37.04	≤ -13.00	Pass
132622	1775.0	10	30 ~ 20000	-36.64	≤ -13.00	Pass
132047	1717.5	15	30 ~ 20000	-32.67	≤ -13.00	Pass
132322	1745.0	15	30 ~ 20000	-36.85	≤ -13.00	Pass
132597	1772.5	15	30 ~ 20000	-36.32	≤ -13.00	Pass
132072	1720.0	20	30 ~ 20000	-36.26	≤ -13.00	Pass
132322	1745.0	20	30 ~ 20000	-36.23	≤ -13.00	Pass
132572	1770.0	20	30 ~ 20000	-35.56	≤ -13.00	Pass

1.4MHz Channel Bandwidth

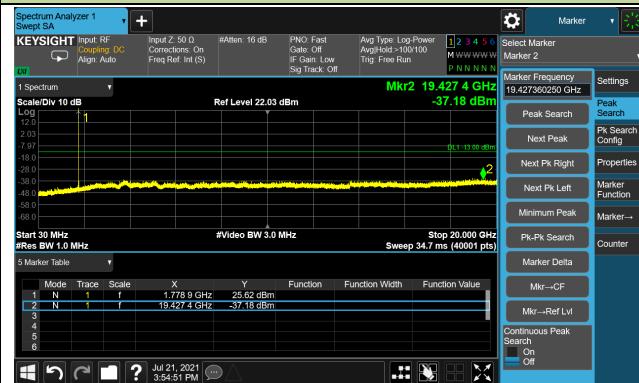
Channel 131979 (1710.7MHz)



Channel 132322 (1745MHz)

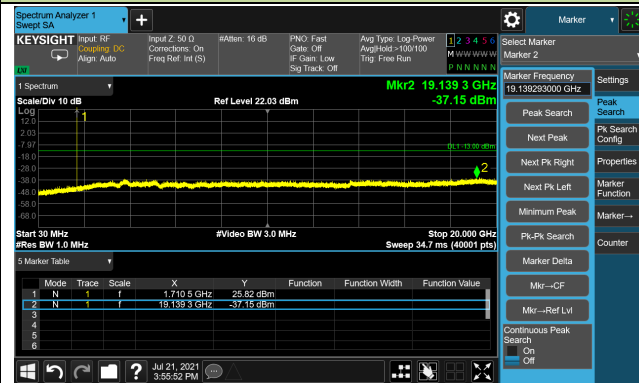


Channel 132665 (1779.3MHz)

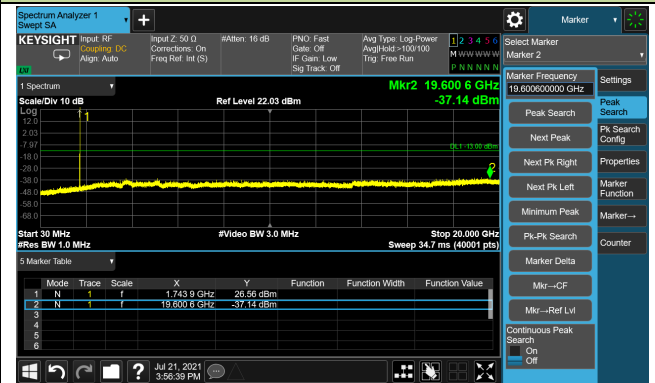


3MHz Channel Bandwidth

Channel 131987 (1711.5MHz)



Channel 132322 (1745MHz)



Channel 132657 (1778.5MHz)

