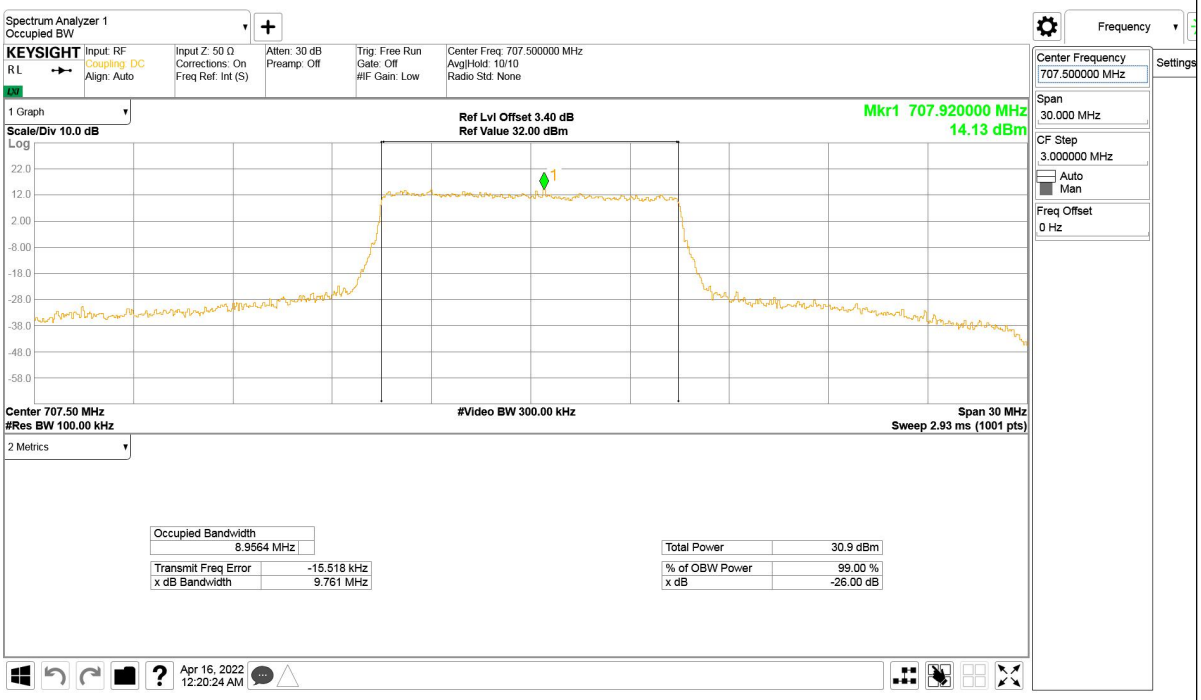
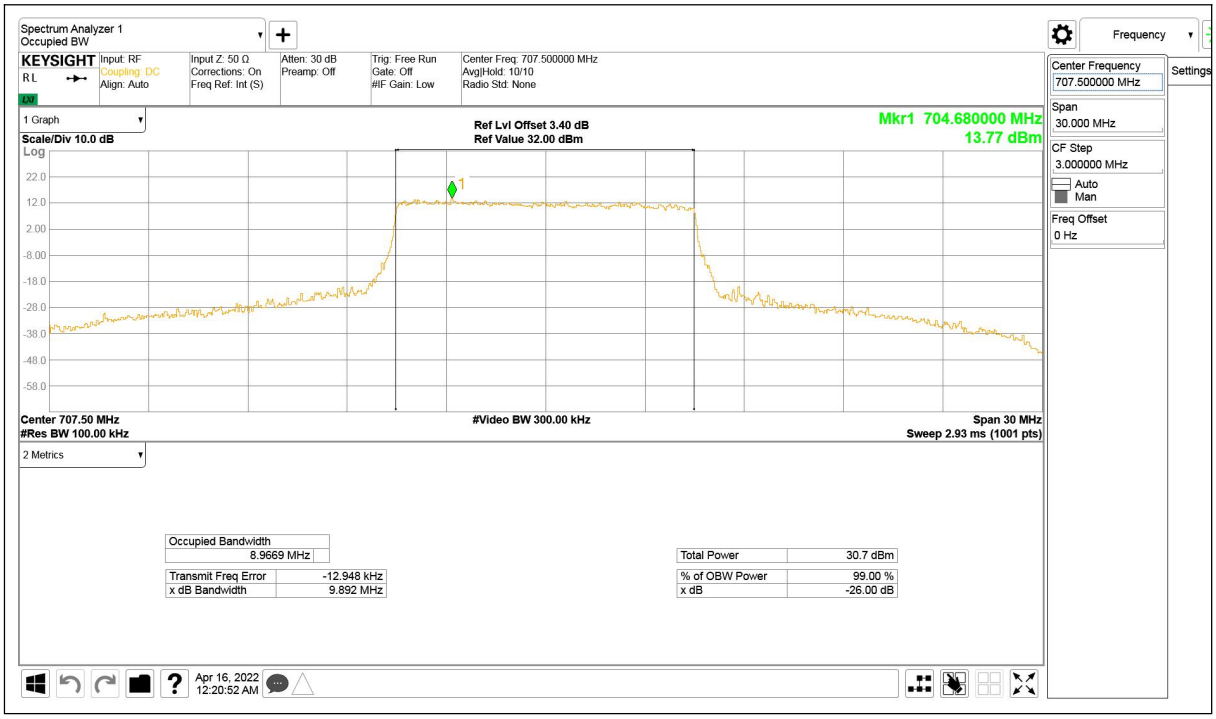
LTE band 12@CA_12+66, 10MHz(-26dBc)

Frequency (MHz)	Occupied Bandwidth (-26dBc) (MHz)	
	QPSK	16QAM
707.5	9.761	9.892

LTE band 12@CA_12+66, 10MHz Bandwidth, QPSK (-26dBc BW)



LTE band 12@CA_12+66, 10MHz Bandwidth, 16QAM (-26dBc BW)

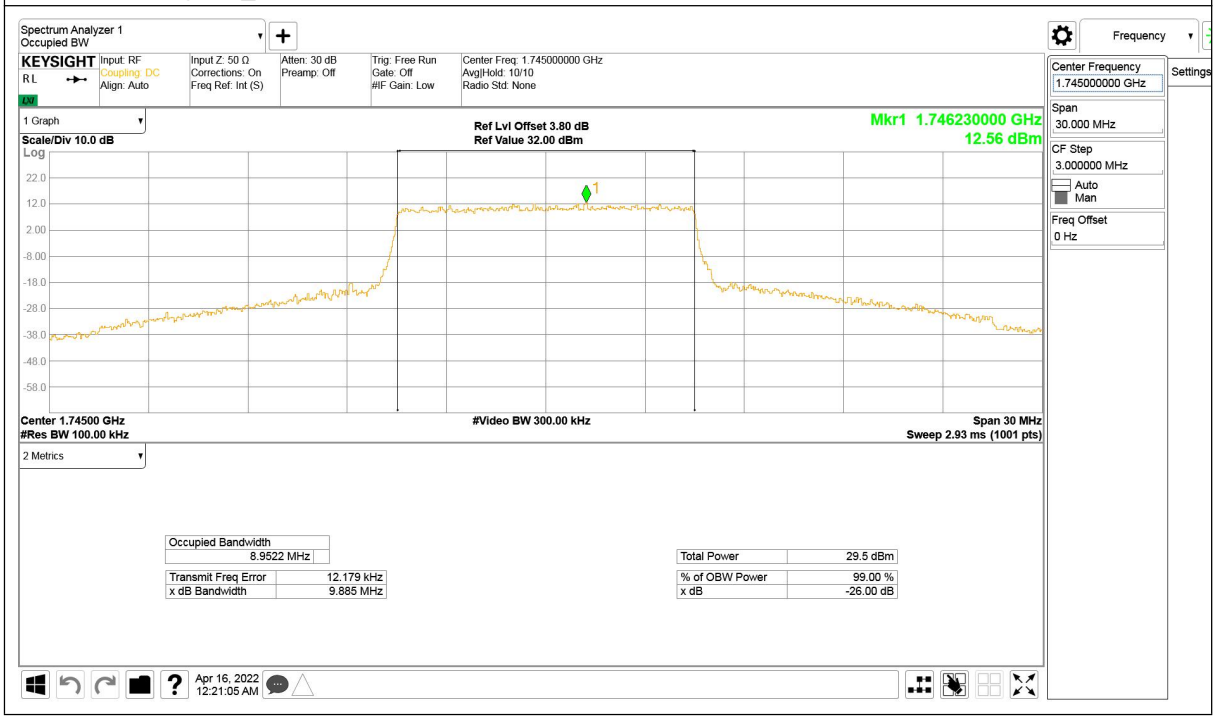


LTE band 66@CA_12+66, 10MHz(-26dBc)

Frequency (MHz)	Occupied Bandwidth (-26dBc) (MHz)	
	QPSK	16QAM
1745	9.761	9.885

LTE band 66@CA_12+66, 10MHz Bandwidth, QPSK (-26dBc BW)

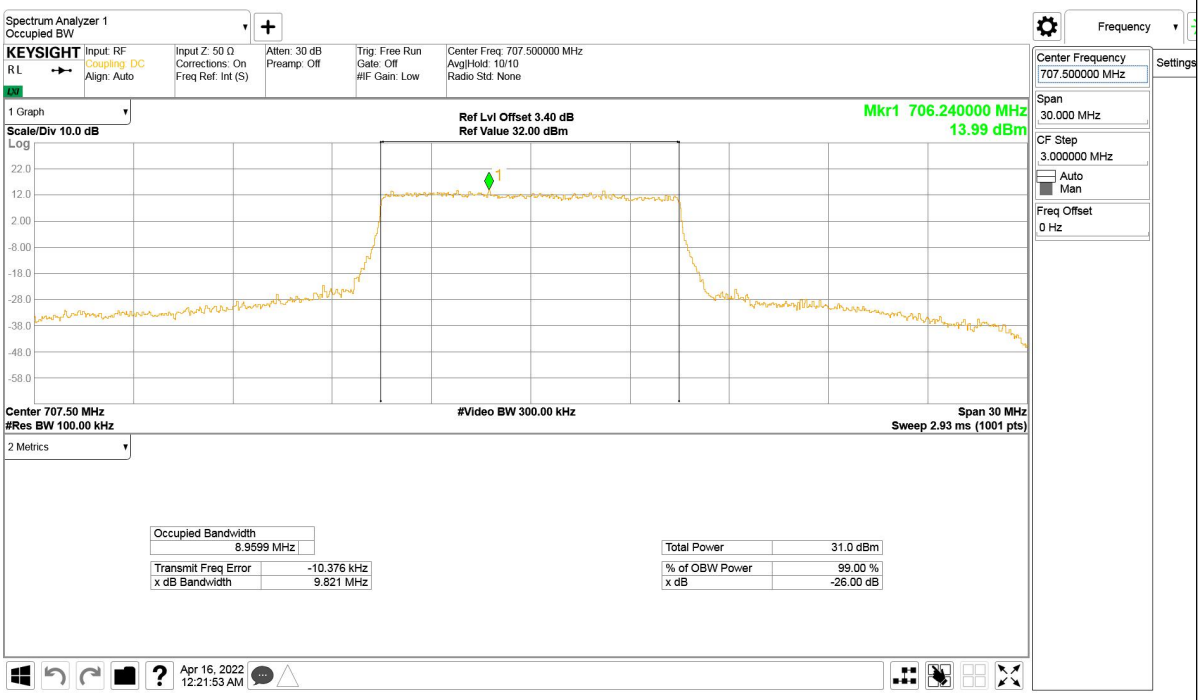
LTE band 66@CA_12+66, 10MHz Bandwidth, 16QAM (-26dBc BW)



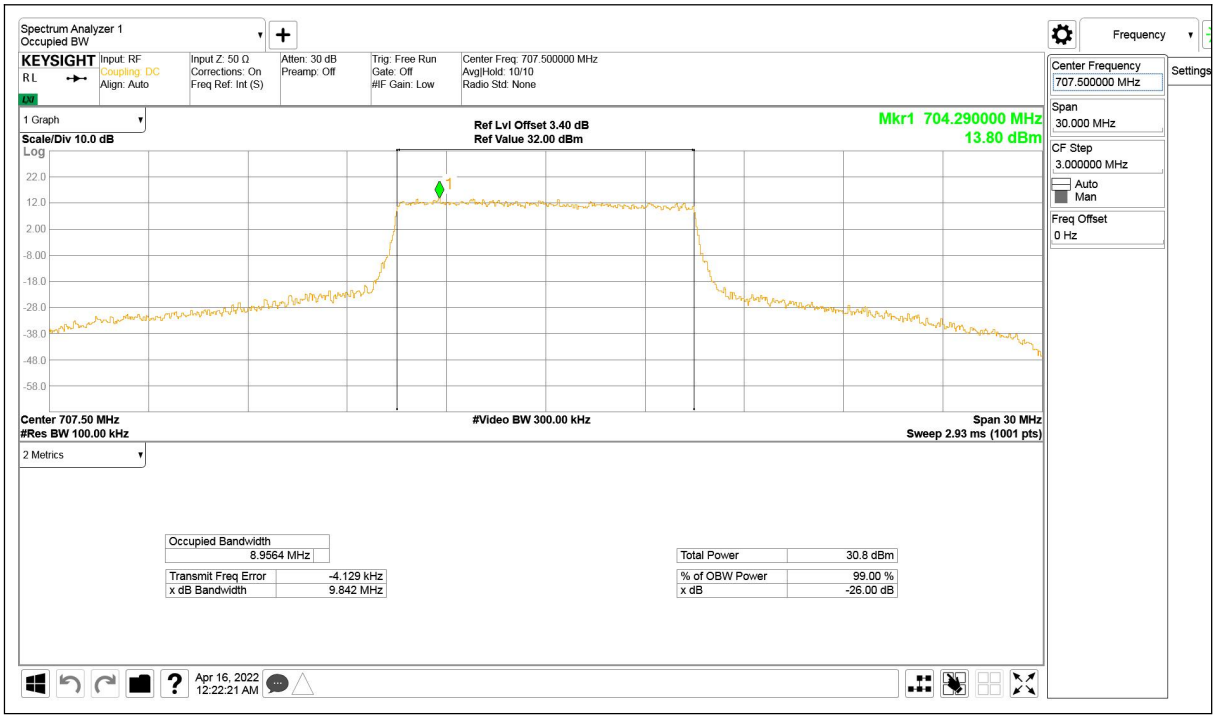
LTE band 12@CA_12+66, 10MHz(-26dBc)

Frequency (MHz)	Occupied Bandwidth (-26dBc) (MHz)	
	QPSK	16QAM
707.5	9.821	9.842

LTE band 12@CA_12+66, 10MHz Bandwidth, QPSK (-26dBc BW)



LTE band 12@CA_12+66, 10MHz Bandwidth, 16QAM (-26dBc BW)



LTE band 66@CA_12+66, 15MHz(-26dBc)

Frequency (MHz)	Occupied Bandwidth (-26dBc) (MHz)	
	QPSK	16QAM
1745	14.790	14.717

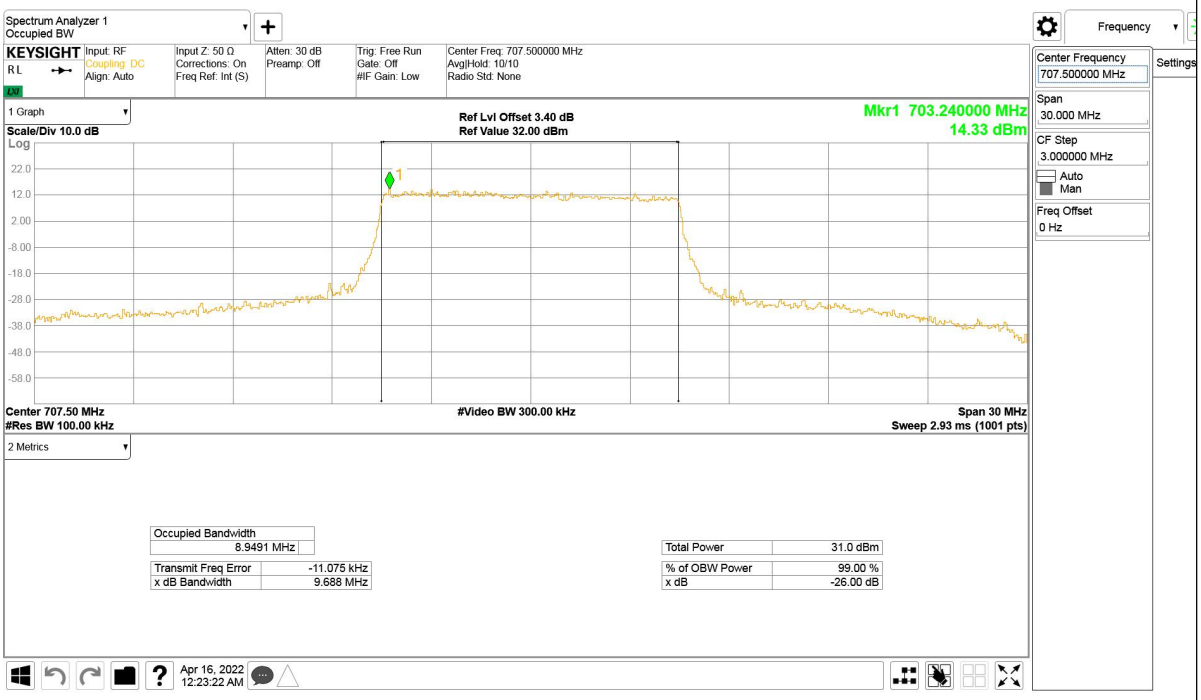
LTE band 66@CA_12+66, 15MHz Bandwidth, QPSK (-26dBc BW)

LTE band 66@CA_12+66, 15MHz Bandwidth, 16QAM (-26dBc BW)

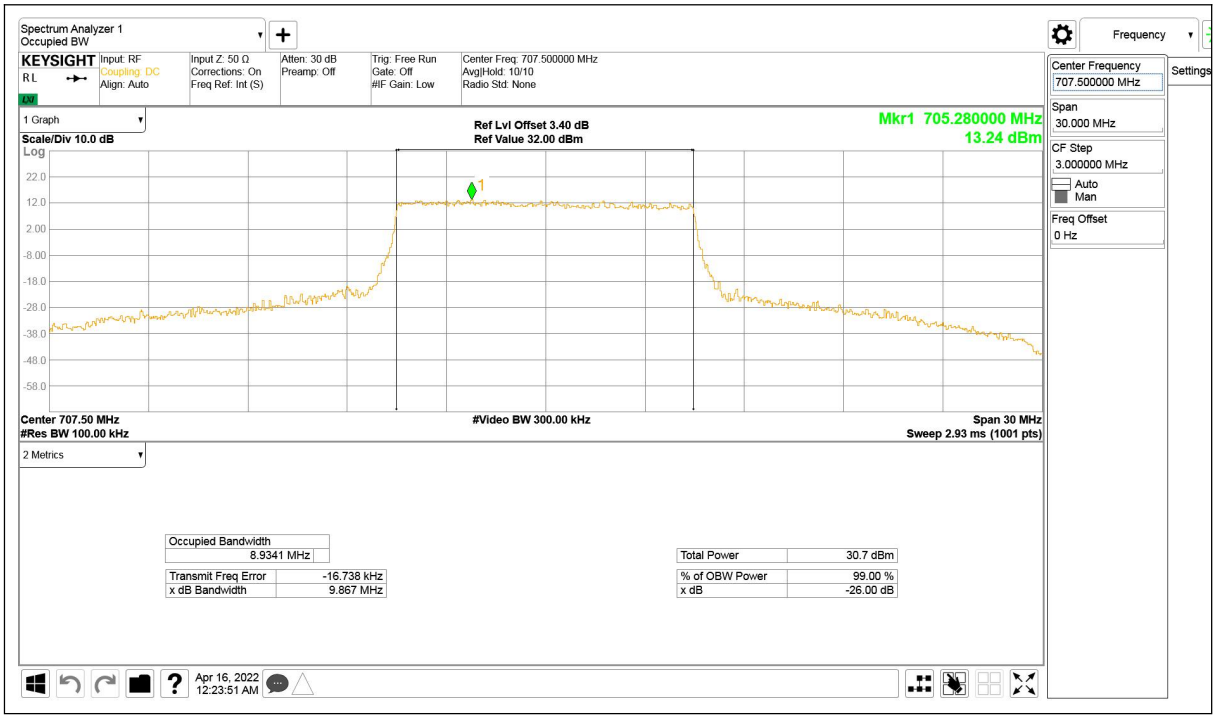
LTE band 12@CA_12+66, 10MHz(-26dBc)

Frequency (MHz)	Occupied Bandwidth (-26dBc) (MHz)	
	QPSK	16QAM
707.5	9.688	9.867

LTE band 12@CA_12+66, 10MHz Bandwidth, QPSK (-26dBc BW)



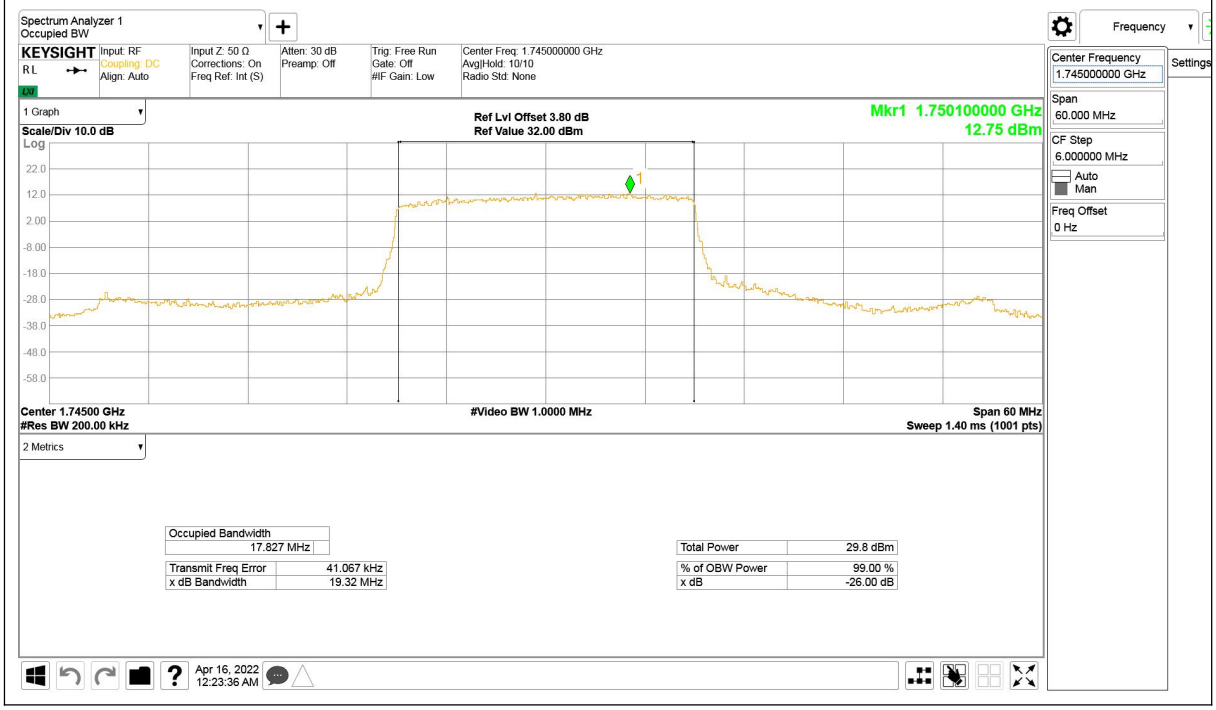
LTE band 12@CA_12+66, 10MHz Bandwidth, 16QAM (-26dBc BW)



LTE band 66@CA_12+66, 20MHz(-26dBc)

Frequency (MHz)	Occupied Bandwidth (-26dBc) (MHz)	
	QPSK	16QAM
1745	19.320	19.121

LTE band 66@CA_12+66, 20MHz Bandwidth, QPSK (-26dBc BW)



LTE band 66@CA_12+66, 20MHz Bandwidth, 16QAM (-26dBc BW)

6.5.Conducted spurious emissions

Specifications:	FCC Part 2.1051,24.238,2.1053,22.917, 27.53,90.691
DUT Serial Number:	864284040456399/864284040456696
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

According to Part 22.917 (a), i.e., Out of Band emissions. 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.

According to Part 24.238 (a), i.e., Out of Band emissions. 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, so the limit level is: P(dBm)– (43 + 10 log(P)) dB= -13dBm.

According to Part 27.53(h):

Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 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 log10(P) dB.

According to Part 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.

According to Part 90.691:

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the

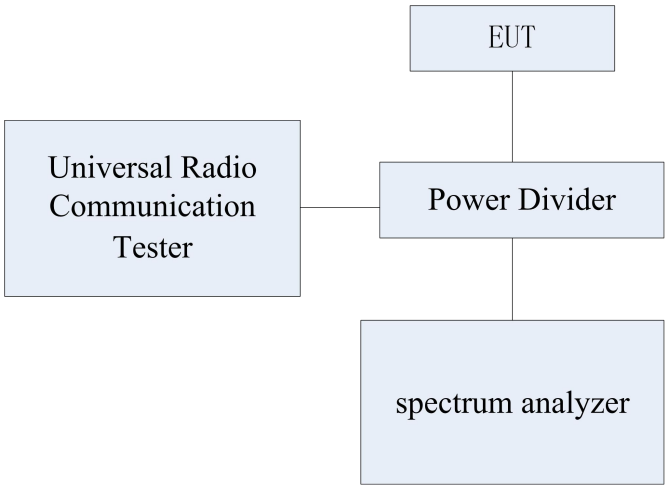
center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.
(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

Measurement Uncertainty:

Item	Uncertainty
Expanded Uncertainty	1.74 dB (k=2)

Test Setup:

During the test, the EUT was controlled via the Wireless Communications Test Set to ensure max power transmission and proper modulation and measured by spectrum analyzer.



Test Method:

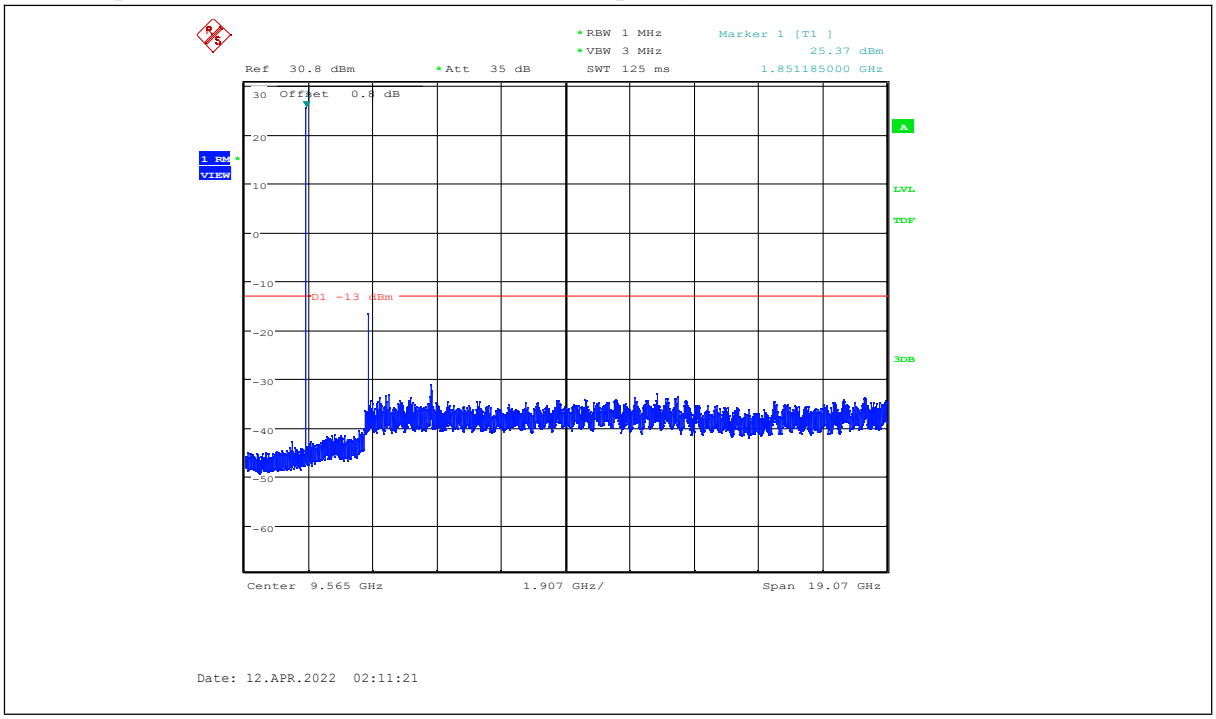
The measurement was performed accordance with section 2.2.13 of ANSI/TIA-603-E: Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.
The measurement was performed accordance with section 2.2.13 of ANSI/TIA-603-E: Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.
The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-Band emissions, if any, up to 10th harmonic. The EUT was scanned for spurious emissions from 30MHz to 20GHz with sufficient Bandwidth and video resolution. The spectrum analyzer was set to Maximum hold mode to ensure that the worst-case emissions were captured.

Note: --

6.5.1 Conducted Spurious Emission Results

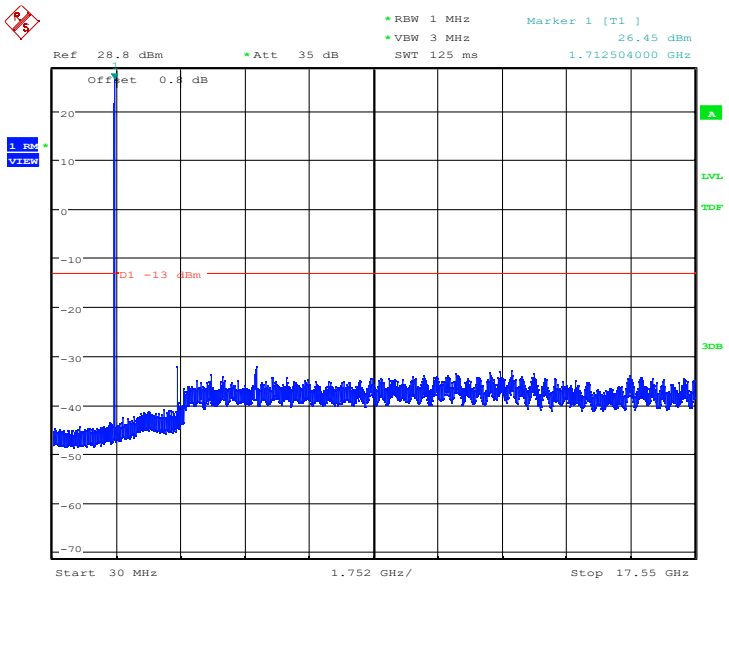
LTE band 2

NOTE: peak above the limit line is the carrier frequency.



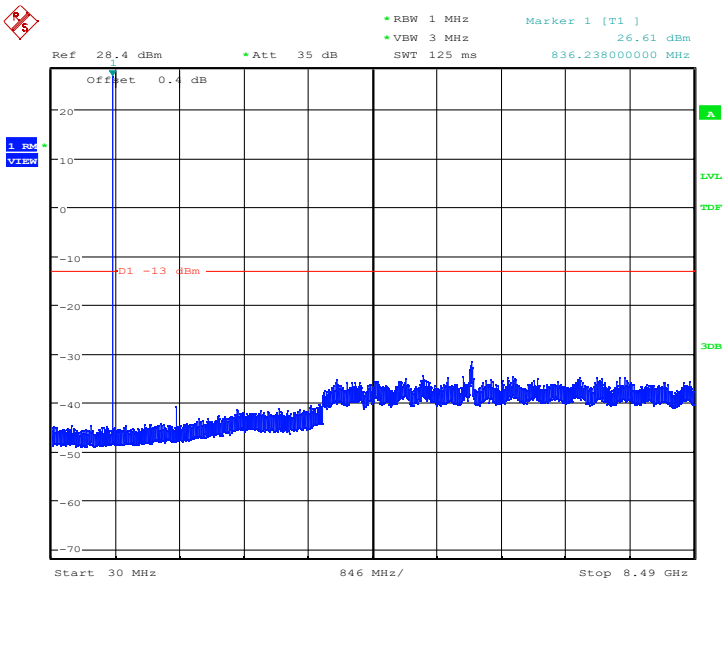
LTE band 4

NOTE: peak above the limit line is the carrier frequency.



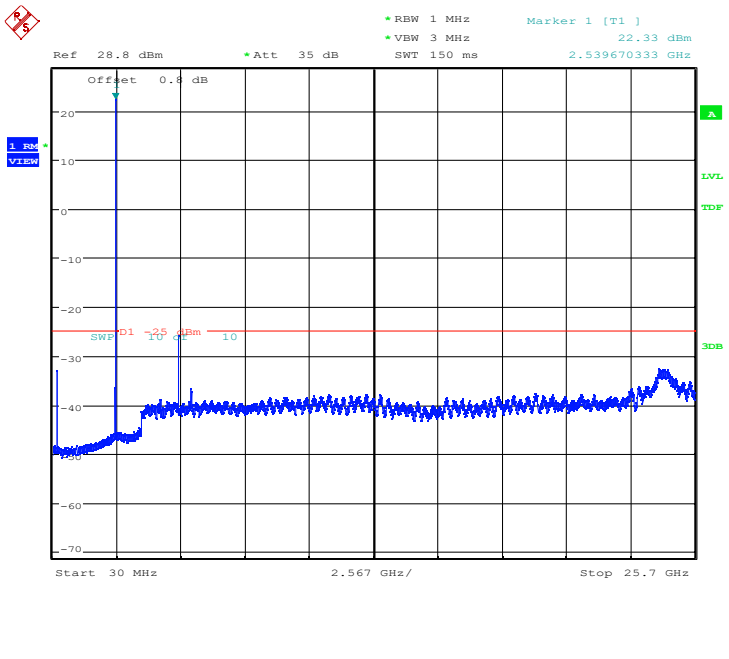
LTE band 5

NOTE: peak above the limit line is the carrier frequency.



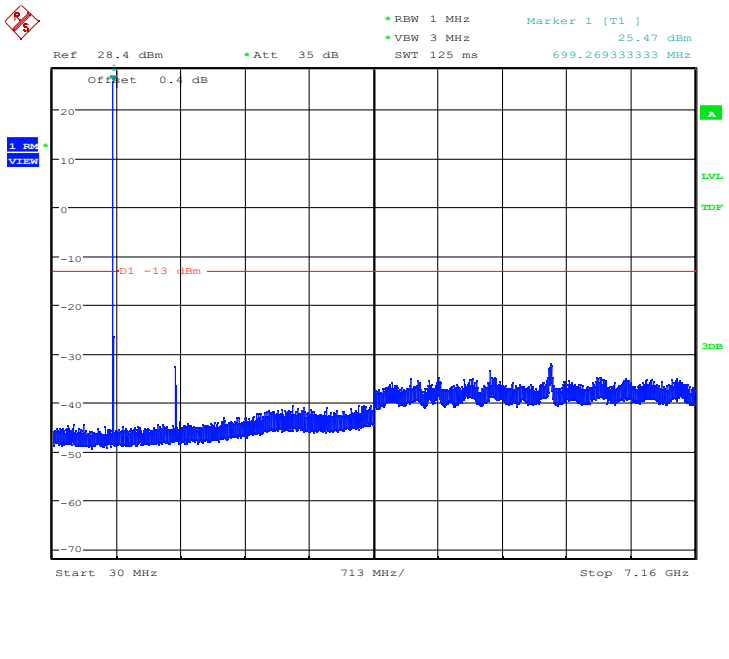
LTE band 7

NOTE: peak above the limit line is the carrier frequency.



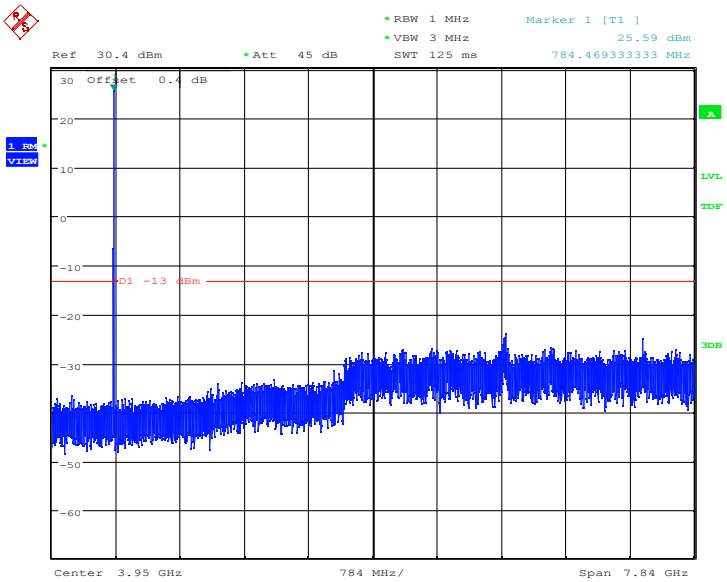
LTE band 12

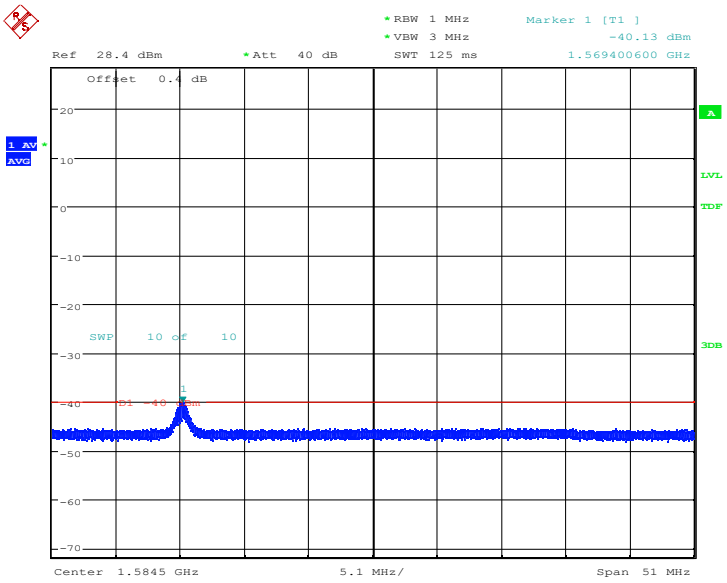
NOTE: peak above the limit line is the carrier frequency.



LTE band 13

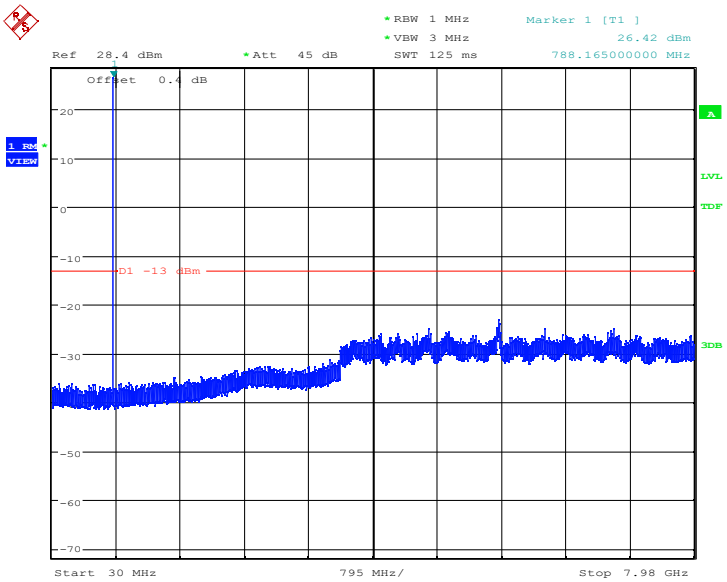
NOTE: peak above the limit line is the carrier frequency.

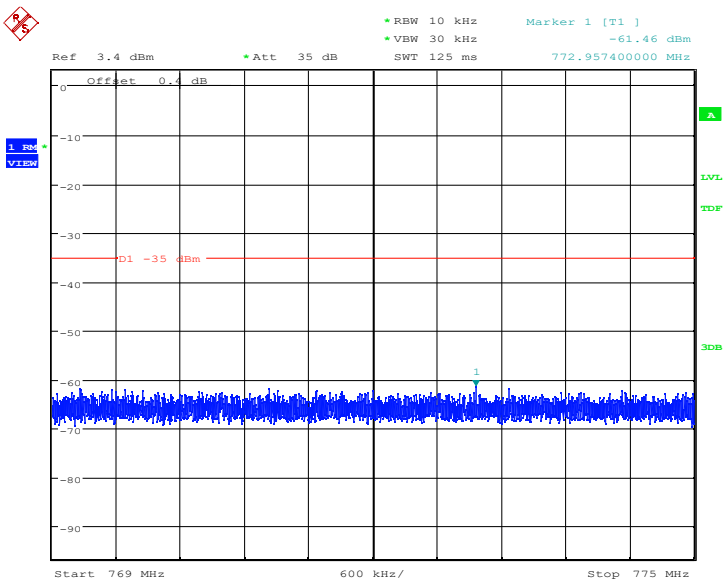


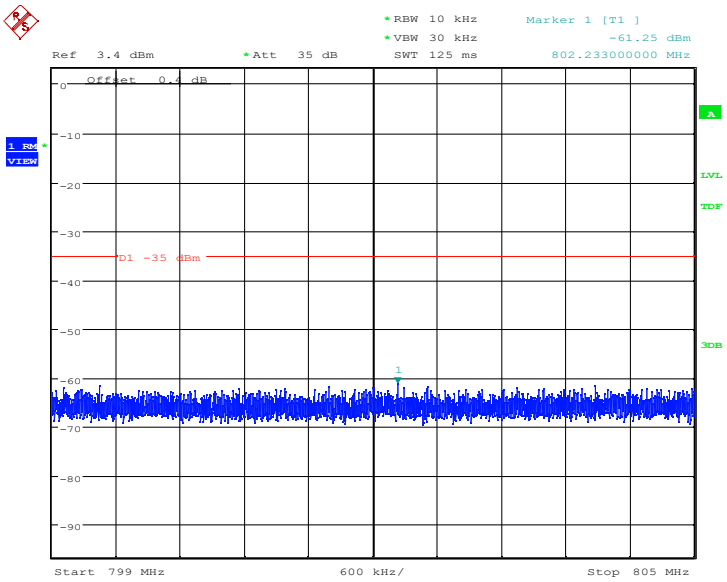


LTE band 14

NOTE: peak above the limit line is the carrier frequency.



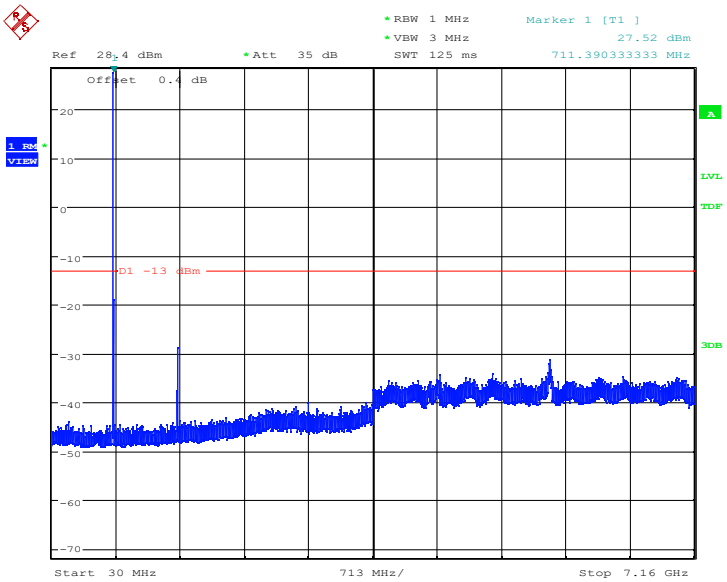


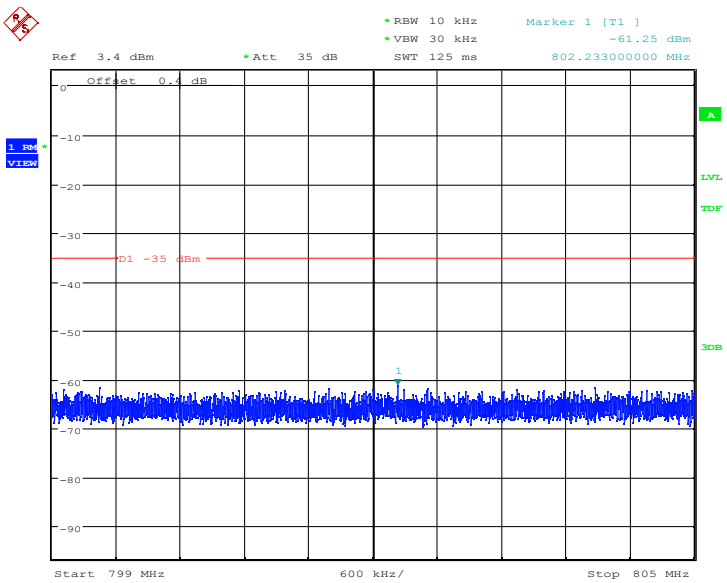


Date: 3.APR.2022 23:07:26

LTE band 17

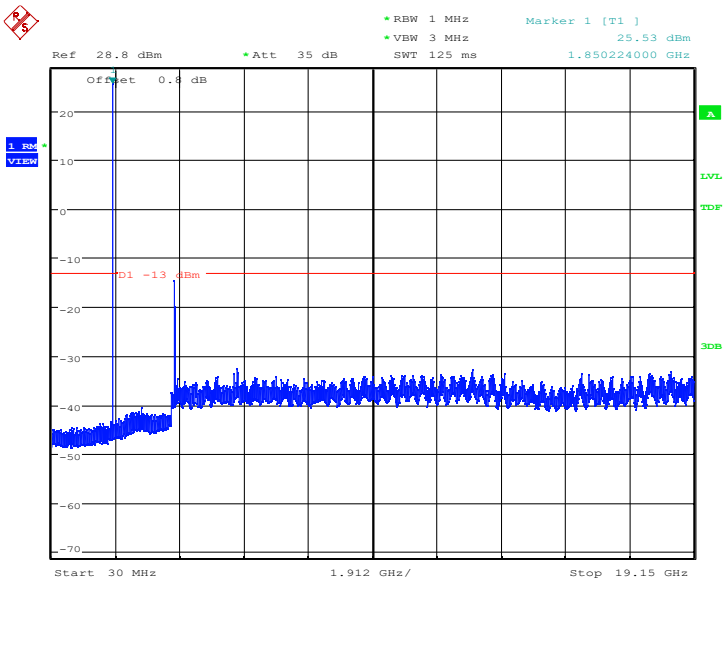
NOTE: peak above the limit line is the carrier frequency.





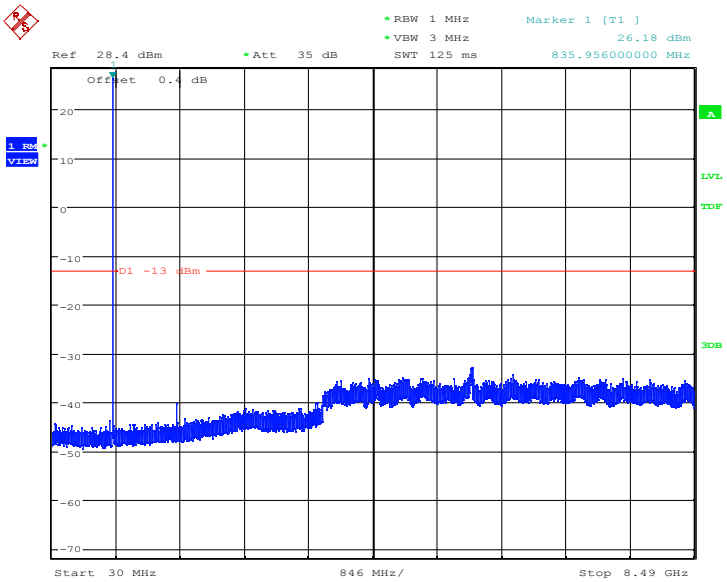
LTE band 25

NOTE: peak above the limit line is the carrier frequency.

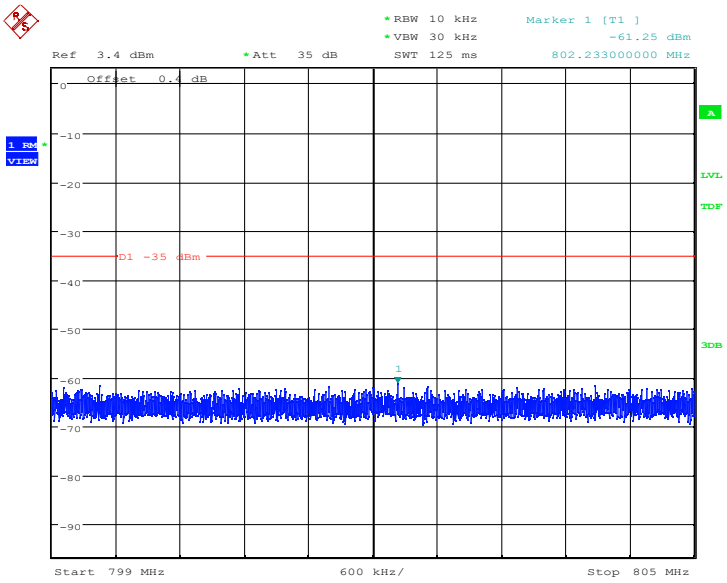


LTE band 26PART22

NOTE: peak above the limit line is the carrier frequency.



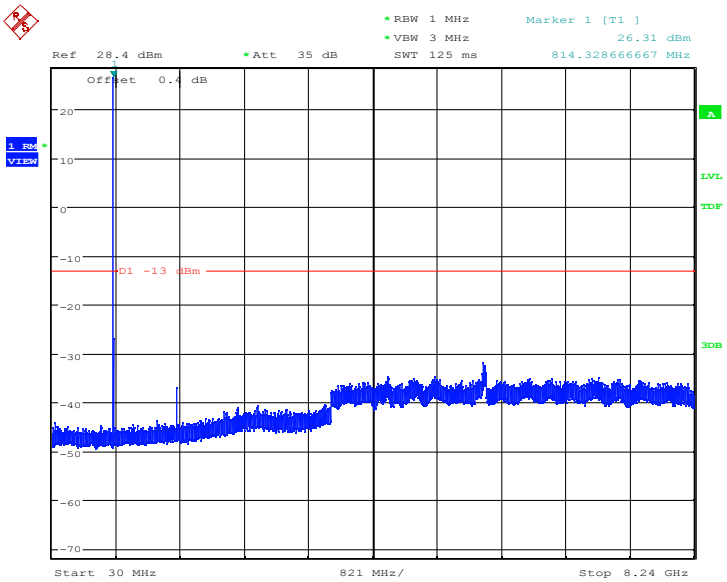
Date: 3.APR.2022 23:09:03



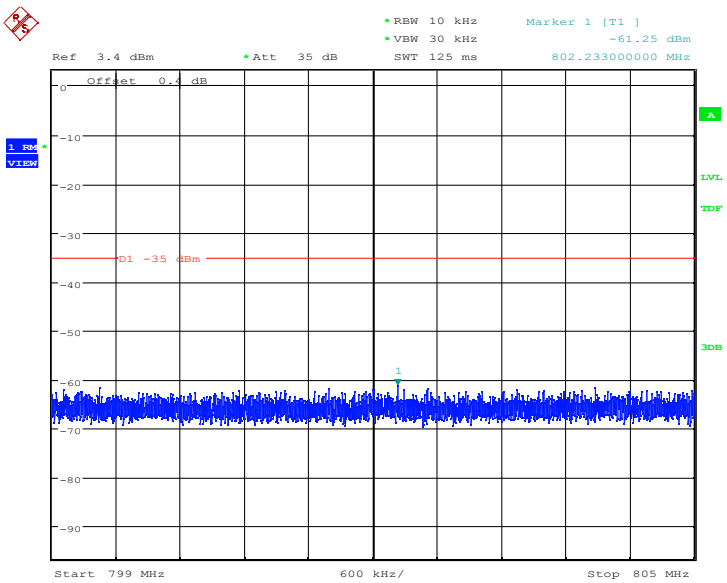
Date: 3.APR.2022 23:07:26

LTE band 26PART90

NOTE: peak above the limit line is the carrier frequency.



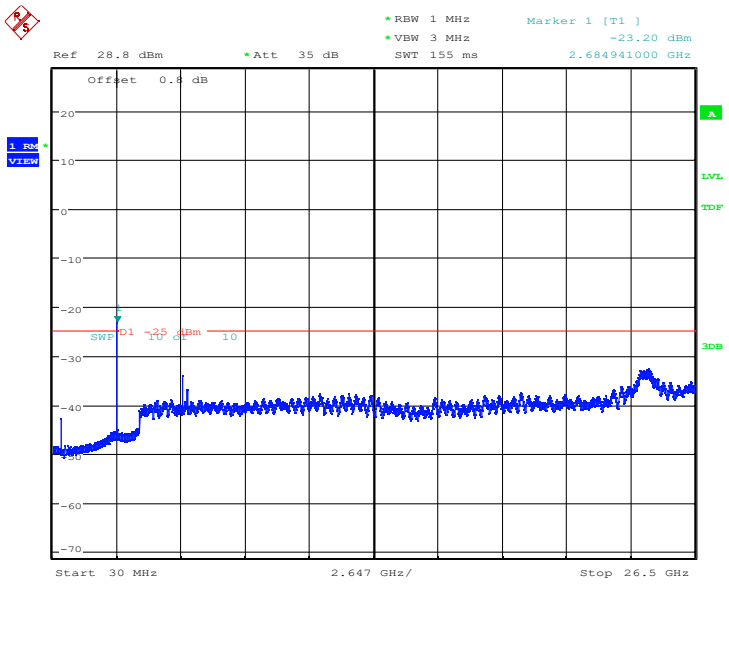
Date: 3.APR.2022 23:09:46



Date: 3.APR.2022 23:07:26

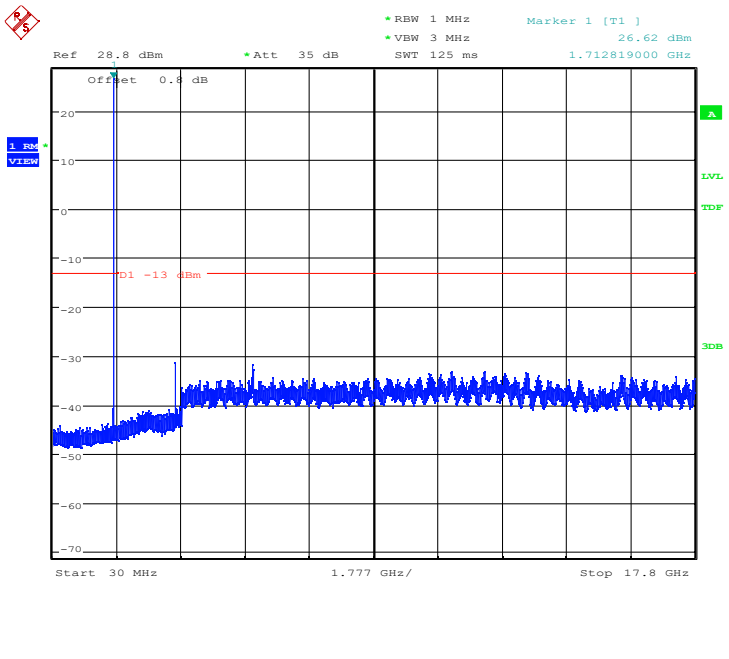
LTE band 41

NOTE: peak above the limit line is the carrier frequency.



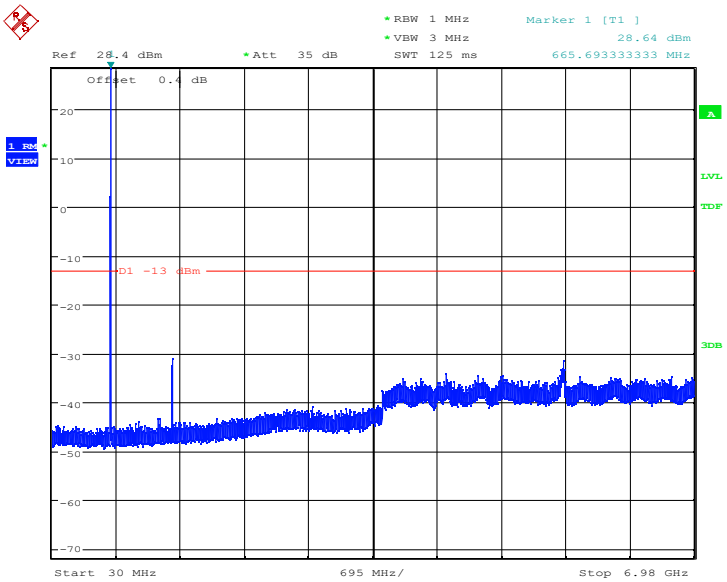
LTE band 66

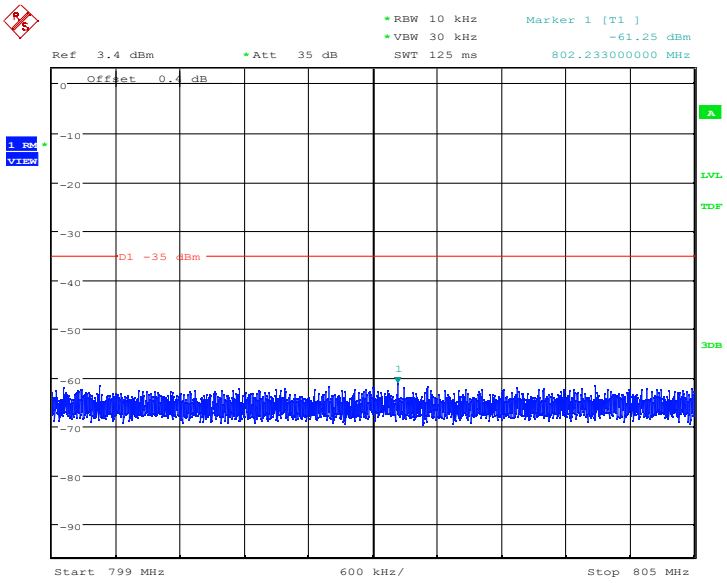
NOTE: peak above the limit line is the carrier frequency.



LTE band 71

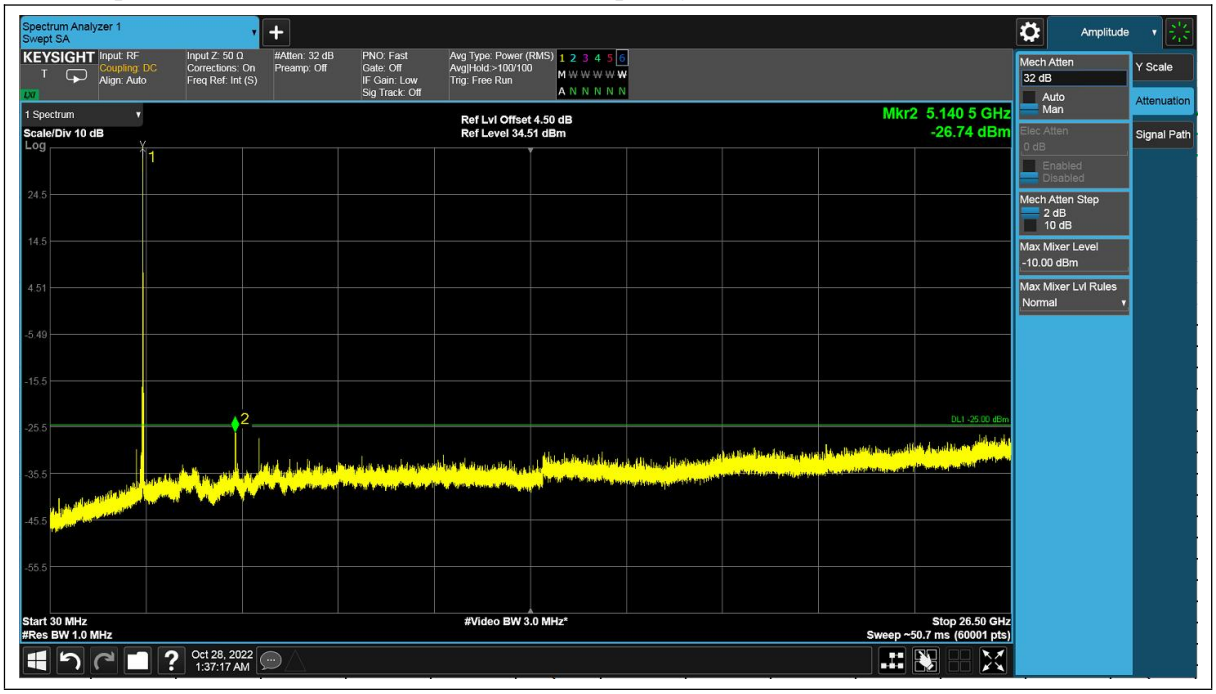
NOTE: peak above the limit line is the carrier frequency.





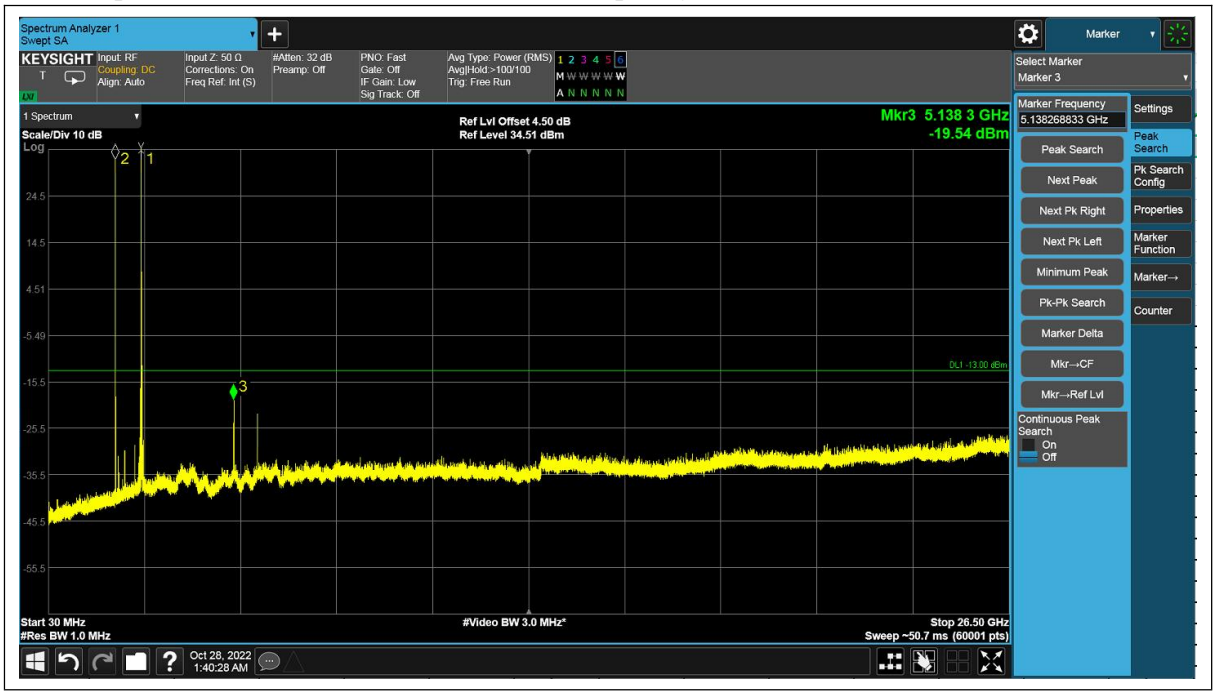
LTE band 41_CA

NOTE: peak above the limit line is the carrier frequency.



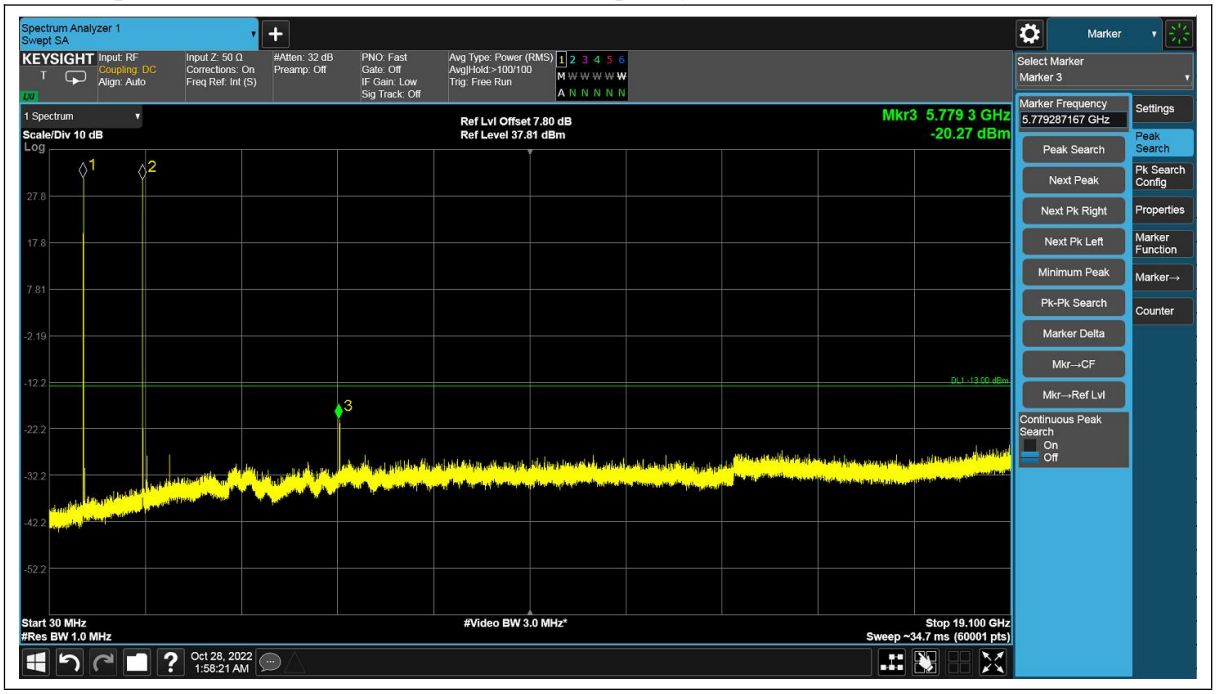
LTE band 2@CA_2+4

NOTE: peak above the limit line is the carrier frequency.



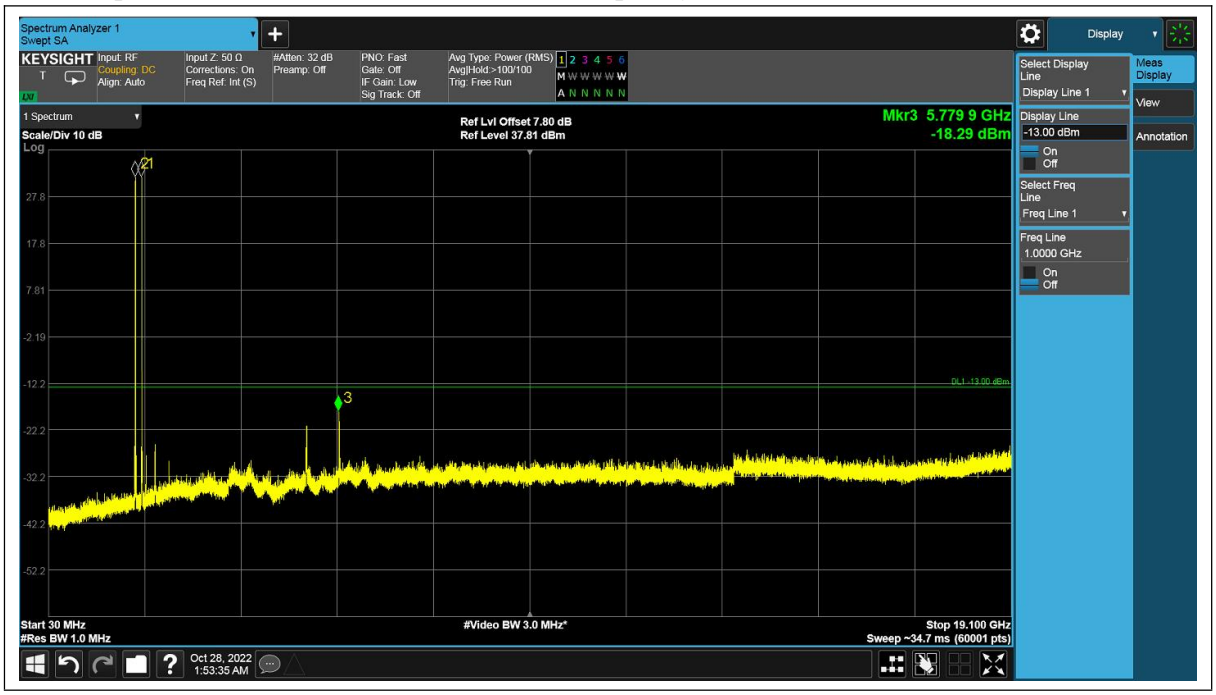
LTE band 2@CA_2+12

NOTE: peak above the limit line is the carrier frequency.



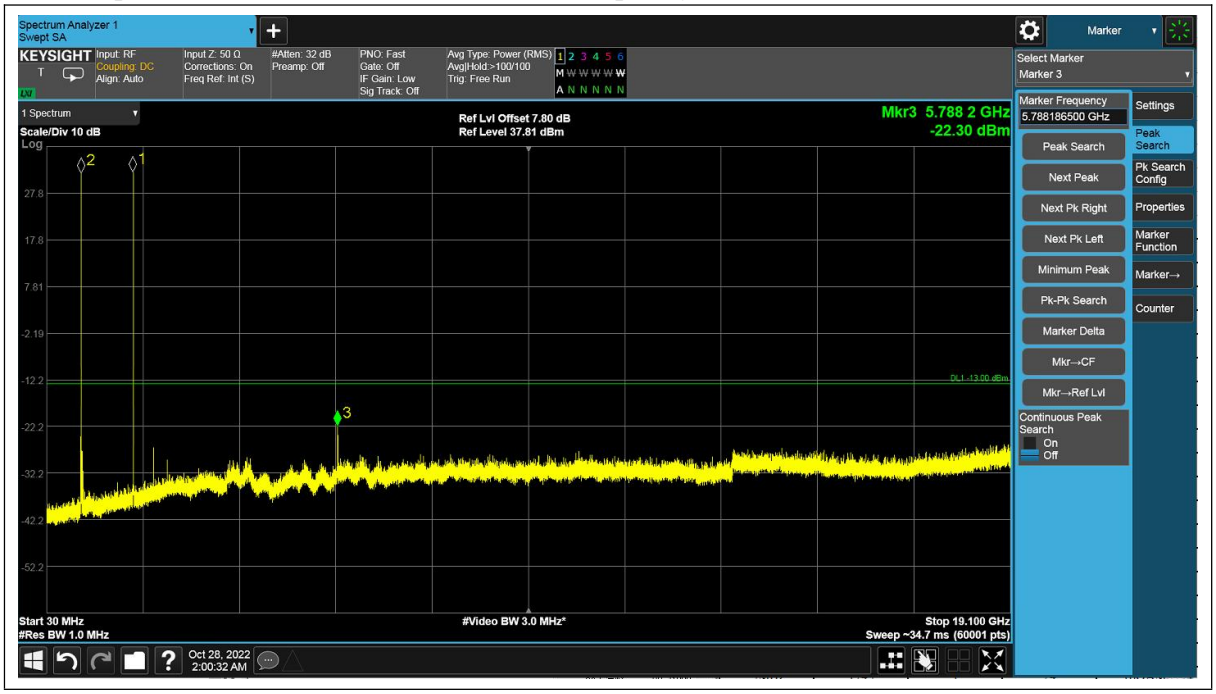
LTE band 2@CA_2+66

NOTE: peak above the limit line is the carrier frequency.



LTE band 12@CA_12+66

NOTE: peak above the limit line is the carrier frequency.



6.6.Radiated Spurious Emission

Specifications:	FCC Part 2.1051, 2.1053, 24.238, 22.917, 27.53
DUT Serial Number:	864284040438322
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

According to Part 22.917 (a), i.e., Out of Band emissions. 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.

According to Part 24.238 (a), i.e., Out of Band emissions. 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, so the limit level is: P(dBm)– (43 + 10 log(P)) dB= -13dBm.

According to Part 27.53(c):

On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

According to Part 27.53(h):

Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 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 log10(P) dB.

According to Part 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.

According to Part 90.691:

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f

is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

Limits for Radiated spurious emissions(UE)	
Frequency range	**Limit Level /Resolution Bandwidth**
30 MHz to 20000 MHz	-13dBm/1MHz

Measurement Uncertainty:

Item	Uncertainty
Expanded Uncertainty（30MHz-150MHz）	5.15 dB (k=2)
Expanded Uncertainty（150MHz-1GHz）	4.09dB (k=2)
Expanded Uncertainty（1GHz-3GHz）	2.92dB (k=2)
Expanded Uncertainty（3GHz-6GHz）	2.93dB (k=2)
Expanded Uncertainty（3GHz-12.75GHz）	2.69dB (k=2)

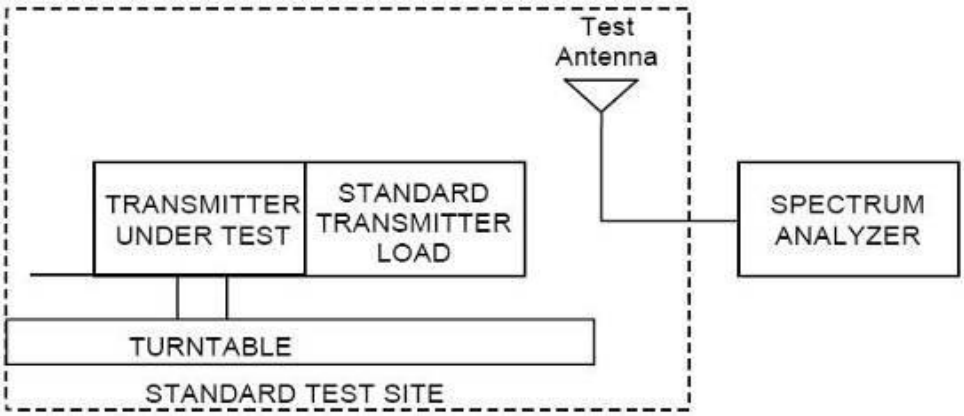
Test Setup:

The EUT was placed in an anechoic chamber. The Wireless Communications Test Set was used to set the TX channel and power level and modulate the TX signal with different bit patterns.

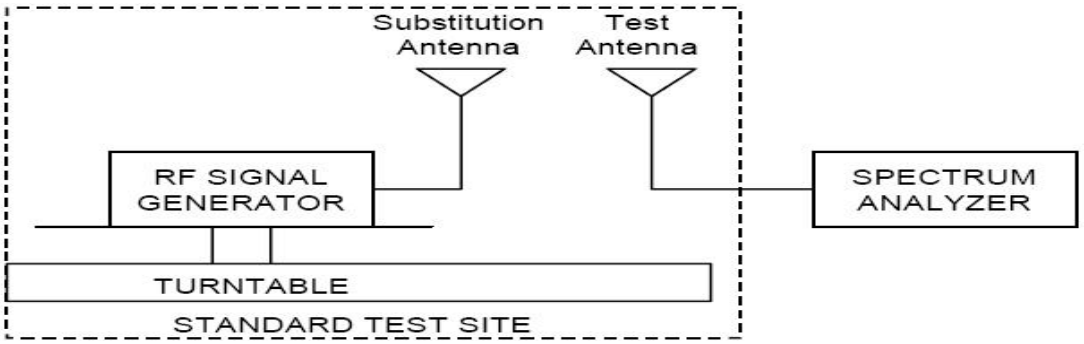
Test Method:

The measurement method is substitution method accordance with section 2.2.12 of ANSI/TIA-603-E: Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

(a) Connect the equipment as illustrated and measure the spurious emissions as the method as above. The distance from the device to the antenna is 3 m .



(b) Reconnect the equipment as illustrated.



(c) Remove the transmitter and replace it with a substitution antenna. The center of the substitution antenna should be approximately at the same location as the center of the transmitter.

(d) Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a non-radiating cable. With the antennas at both ends horizontally polarized, and with the signal generator tuned to a particular spurious frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output.

(e) Repeat step d) with both antennas vertically polarized for each spurious frequency.

(f) Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in steps d) and e) by the power loss in the cable between the generator and the antenna, and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna by the following formula:

P_d(dBm) = P_g(dBm) – cable loss (dB) + antenna gain (dB)

where:

Pd is the dipole equivalent power and Pg is the generator output power into the substitution antenna.

Note: The evaluation of radiated spurious emission under the simultaneous transmission of WWAN & WLAN.

Test frequency: 30MHz- 20GHz

All modes were tested,only the worst case was reported.

6.6.1 LTE Radiated Spurious Emission Results

LTE B2 Radiated Spurious Emission Results

Test Data （20MHz bandwidth 18900 QPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
166.4	-79.2	0.3	6.0	-66.6	H
249.3	-77.1	0.4	6.0	-72.9	H
1784.2	-74.9	1.1	9.9	-51.7	V
2456.0	-70.6	1.3	10.8	-53.5	V
5068.1	-70.7	2.0	12.4	-66.8	V
10880.5	-69.5	3.3	11.2	-58.5	H

LTE B4 Radiated Spurious Emission Results

Test Data （5MHz bandwidth 20175 QPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
126.5	-80.5	0.3	4.3	-75.6	H
166.4	-76.6	0.4	6.0	-66.7	H
1149.6	-75.2	0.8	6.0	-69.4	V
2132.1	-72.4	1.2	9.3	-51.2	V
2458.0	-69.2	1.3	10.8	-53.8	V
10450.0	-70.7	3.5	11.2	-58.5	V

6.6.3 LTE B5 Radiated Spurious Emission Results

Test Data （5MHz bandwidth 20624 16QAM Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
166.5	-73.0	0.3	6.0	-67.0	H
249.0	-65.8	0.4	6.0	-71.5	V
1784.2	-81.2	1.1	9.9	-55.4	H
2200.0	-79.0	1.2	9.0	-57.0	H
2442.4	-75.0	1.3	10.4	-56.2	H
10447.0	-77.2	3.5	11.2	-58.6	H

LTE B7 Radiated Spurious Emission Results

Test Data （15MHz bandwidth 20825 QPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
166.4	-75.3	0.3	6.0	-66.8	V
243.0	-75.0	0.4	6.0	-72.4	V
896.6	-71.8	0.7	7.3	-79.5	V
1783.5	-71.4	1.1	9.9	-51.6	H
5070.5	-67.1	2.0	12.4	-67.0	H
10879.5	-66.6	3.3	11.2	-58.6	H

LTE B12 Radiated Spurious Emission Results

Test Data （1.4MHz bandwidth 23017 QPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
166.4	-74.5	0.3	6.0	-66.9	H
242.6	55.4	0.4	6.0	-72.3	H
1779.3	-63.1	1.1	9.9	-62.4	H
2430.0	-80.1	1.3	10.8	-52.6	H
2889.0	-79.0	1.4	11.2	-55.0	H
8396.6	-76.4	2.6	12.2	-62.0	H

LTE B13 Radiated Spurious Emission Results

Test Data （5MHz bandwidth 23230 QPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
166.4	-73.1	0.3	6.0	-66.9	V
243.7	-65.6	0.4	6.0	-70.4	V
1775.1	-78.8	1.1	9.9	-56.2	H
2438.0	-79.0	1.3	10.8	-50.2	H
2807.0	-75.4	1.4	10.9	-55.3	V
10449.5	-77.2	3.5	11.2	-58.6	H

LTE B14 Radiated Spurious Emission Results

Test Data （5MHz bandwidth 23354 QPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
166.4	-73.4	0.3	6.0	-67.1	V
246.3	-66.1	0.4	6.0	-70.7	V
1783.5	-78.9	1.1	9.9	-54.1	H
2435.6	-78.9	1.3	10.8	-51.0	H
4592.4	-75.5	1.9	12.7	-67.7	V
10450.5	-75.7	3.5	11.2	-58.5	H

LTE B17 Radiated Spurious Emission Results

Test Data （5MHz bandwidth 23755 QPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
166.5	-74.4	0.3	6.0	-67.0	H
245.8	-68.2	0.4	6.0	-71.1	H
1776.5	-63.1	1.1	10.0	-60.6	V
2200.4	-79.4	1.2	9.0	-57.2	H
2434.8	-79.3	1.3	10.8	-52.4	H
10450.0	-76.4	3.5	11.2	-58.6	H

LTE B25 Radiated Spurious Emission Results

Test Data （5MHz bandwidth 26365 QPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
166.4	-77.7	0.3	6.0	-67.0	V
242.6	-77.1	0.4	6.0	-71.9	H
1780.0	-75.0	1.1	9.9	-58.2	V
1962.0	-70.7	1.1	9.9	-53.2	V
2434.4	-70.5	1.3	10.8	-53.9	V
10446.5	-70.5	3.5	11.2	-58.5	H

LTE B26 Radiated Spurious Emission Results

Test Data （5MHz bandwidth 26715 16QAM Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
166.4	-73.0	0.3	6.0	-66.9	V
190.8	-65.3	0.3	5.6	-71.0	H
246.3	-80.0	0.4	6.0	-71.5	V
1783.5	-79.3	1.1	9.9	-51.0	H
2433.2	-76.6	1.3	10.8	-53.3	H
9183.0	-77.1	3.1	10.9	-60.0	H

LTE B41 Radiated Spurious Emission Results

Test Data （5MHz bandwidth 40620 QPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
166.4	-76.8	0.3	6.0	-66.7	H
246.3	-75.3	0.4	6.0	-70.5	V
1777.2	-70.2	1.1	9.9	-62.5	V
2454.8	-70.6	1.3	10.8	-52.6	V
9185.5	-67.1	3.1	10.9	-59.8	V
10882.0	-65.6	3.3	11.2	-58.5	V

LTE B66 Radiated Spurious Emission Results

Test Data （5MHz bandwidth 132322 QPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
166.4	-79.1	0.3	6.0	-67.0	V
246.3	-75.5	0.4	6.0	-71.3	V
1490.8	-74.7	1.0	8.0	-66.0	H
2144.7	-72.0	1.2	9.3	-50.8	V
2430.4	-69.0	1.3	10.8	-54.6	V
10885.5	-71.2	3.3	11.2	-58.5	V

LTE B71 Radiated Spurious Emission Results

Test Data （5MHz bandwidth 133297 QPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
166.4	-74.6	0.3	6.0	-66.7	V
245.8	-70.5	0.4	6.0	-71.8	H
1858.4	-64.3	1.1	9.7	-62.3	H
2258.8	-80.9	1.2	9.2	-57.4	H
9181.0	-79.3	3.1	10.9	-59.9	H
10450.0	-77.5	3.5	11.2	-58.6	H

6.6.2 LTE_CA Radiated Spurious Emission Results

CA B2+B12 Radiated Spurious Emission Results

Test Data （20+10MHz bandwidth18700 23060 16QAM Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
46.5	-57.8	0.2	-16.6	-74.6	H
230.5	-75.6	0.4	-0.6	-76.6	H
1620.0	-65.1	1.0	0.9	-65.2	V
2727.2	-54.9	1.3	-0.5	-56.7	H
5474.0	-70.9	2.1	10.4	-62.6	V
10830.8	-68.3	3.4	13.6	-58.1	V

CA B2+B12 Radiated Spurious Emission Results

Test Data （20+10MHz bandwidth18900 23095 16QAM Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
47.2	-57.5	0.2	-16.4	-74.1	H
283.4	-80.5	0.4	0.1	-80.8	H
1565.0	67.0	1.0	0.2	66.2	V
2722.8	-55.2	1.3	-0.5	-57.0	H
5144.8	-70.6	2.0	10.1	-62.5	V
10898.0	-68.3	3.3	13.5	-58.1	V

CA B2+B12 Radiated Spurious Emission Results

Test Data （20+10MHz bandwidth19099 23129 16QAM Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
46.5	-57.5	0.2	-16.6	-74.3	V
233.6	-75.7	0.4	-0.6	-76.7	H
1625.8	-65.4	1.0	1.6	-64.8	H
2867.2	-55.0	1.4	-0.7	-57.1	V
5001.6	-71.0	2.0	9.8	-63.2	V
10805.2	-69.3	3.3	13.6	-59.0	V

CA B2+B4 Radiated Spurious Emission Results

Test Data （10+10MHz bandwidth18650 20000 16QAM 64QAM Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
45.6	-57.9	0.1	-16.6	-74.6	H
251.3	-77.5	0.4	-0.5	-78.4	V
1470.8	-67.1	1.0	1.8	-66.3	V
2888.0	-54.7	1.4	-0.7	-56.8	H
5134.8	-70.2	2.0	10.1	-62.1	V
10212.0	-67.8	3.9	13.1	-58.6	V

CA B2+B4 Radiated Spurious Emission Results

Test Data （10+10MHz bandwidth18900 20175 16QAM 64QAM Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
47.1	-57.9	0.2	-16.4	-74.5	H
250.8	-78.2	0.4	-0.5	-79.1	V
1594.0	-66.0	1.0	0.9	-66.1	H
2702.2	-55.3	1.3	-0.5	-57.1	H
4932.4	-69.7	1.9	9.5	-62.1	V
10163.6	-67.9	3.5	13.1	-58.3	V

CA B2+B4 Radiated Spurious Emission Results

Test Data （10+10MHz bandwidth19149 20349 16QAM 64QAM Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
46.1	-57.6	0.1	-16.6	-74.3	H
286.1	-81.6	0.4	0.1	-81.9	V
1293.4	-67.5	0.9	1.0	-67.4	V
2827.2	-55.0	1.4	-0.7	-57.1	V
5162.0	-70.9	2.1	10.4	-62.6	V
9375.2	-67.7	3.2	12.3	-58.6	V

CA B2+B66 Radiated Spurious Emission Results

Test Data （10+10MHz bandwidth18650 132022 64QAM Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
90.4	-74.6	0.2	-6.6	-81.4	V
254.3	-78.9	0.4	-0.5	-79.8	V
1494.2	-67.3	1.0	1.5	-66.8	H
2918.4	-54.2	1.4	-0.7	-56.3	H
4938.0	-69.5	1.9	9.5	-61.9	V
9070.8	-68.7	3.2	12.3	-59.6	V

CA B2+B66 Radiated Spurious Emission Results

Test Data （10+10MHz bandwidth18900 132322 64QAM Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
90.4	-75.0	0.2	-6.6	-81.8	H
253.9	-77.1	0.4	-0.5	-78.0	V
1336.0	-67.8	0.9	1.3	-67.4	V
2772.4	-54.8	1.4	-1.1	-57.3	V
4708.0	-71.4	1.9	9.9	-63.4	V
8602.0	-68.3	3.1	12.2	-59.2	V

CA B2+B66 Radiated Spurious Emission Results

Test Data （10+10MHz bandwidth19149 132621 64QAM Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
41.5	-59.0	0.1	-16.4	-75.5	V
210.1	-79.0	0.3	-0.2	-79.5	H
1304.2	-67.6	0.9	1.0	-67.5	V
2545.0	-57.0	1.3	0.2	-58.1	H
4496.8	-71.0	1.8	9.7	-63.1	V
9383.6	-67.9	3.3	12.3	-58.9	V

CA B12+B66 Radiated Spurious Emission Results

Test Data （10+5MHz bandwidth23060 131997 16QAM Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
90.7	-74.8	0.2	-6.7	-81.7	H
877.5	-75.0	0.7	1.1	-74.6	V
1586.2	-66.0	1.0	0.9	-66.1	H
2710.8	-55.7	1.3	-0.5	-57.5	H
4572.4	-70.3	1.8	9.7	-62.4	V
8844.4	-67.9	3.3	11.9	-59.3	V

CA B12+B66 Radiated Spurious Emission Results

Test Data （10+5MHz bandwidth23095 131322 16QAM Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
1475.8	-67.1	1.0	1.5	-66.6	H
2693.4	-54.9	1.3	-0.5	-56.7	V
4748.0	-71.0	1.9	9.9	-63.0	V
9074.4	-68.6	3.2	12.3	-59.5	V

CA B12+B66 Radiated Spurious Emission Results

Test Data （10+5MHz bandwidth23129 131246 16QAM Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
134.0	-81.3	0.3	-1.5	-83.1	H
892.4	-76.8	0.7	1.1	-76.4	V
1629.6	-65.4	1.0	1.6	-64.8	V
2556.4	-57.4	1.3	0.2	-58.5	H
4653.6	-71.6	1.9	9.9	-63.6	V
9793.6	-68.8	3.3	12.8	-59.3	V

CA B41 Radiated Spurious Emission Results

Test Data （20+20MHz bandwidth2583.1 2602.9 QPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
90.7	-74.3	0.2	-6.7	-81.2	V
480.0	-83.2	0.5	1.1	-82.6	V
1449.2	-67.6	0.9	1.8	-66.7	H
2935.6	-55.2	1.4	-0.1	-56.7	H
4884.0	-69.7	2.0	9.5	-62.2	V
9776.4	-68.5	3.2	12.8	-58.9	V

CA B41 Radiated Spurious Emission Results

Test Data （20+20MHz bandwidth2583.8 2595.5 QPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
41.8	-61.4	0.1	-16.6	-78.1	H
480.0	-83.2	0.5	1.1	-82.6	V
1524.4	-66.5	1.0	1.5	-66.0	V
2923.0	-54.4	1.4	-0.7	-56.5	H
4575.2	-71.1	1.8	9.9	-63.0	V
10167.6	-67.5	3.6	13.0	-58.1	V

6.7.Band Edge

Specifications:	FCC Part 2.1051,24.238, 2.1053, 22.917, 27.53,90.691
DUT Serial Number:	864284040456399/864284040456696
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

According to Part 22.917 (a), i.e., Out of Band emissions. 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.

According to Part 24.238 (a), i.e., Out of Band emissions. 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, so the limit level is: P(dBm)– (43 + 10 log(P)) dB= -13dBm.

According to Part 27.53(h):

Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 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 log10(P) dB.

According to Part 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.

According to Part 90.691:

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the

center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

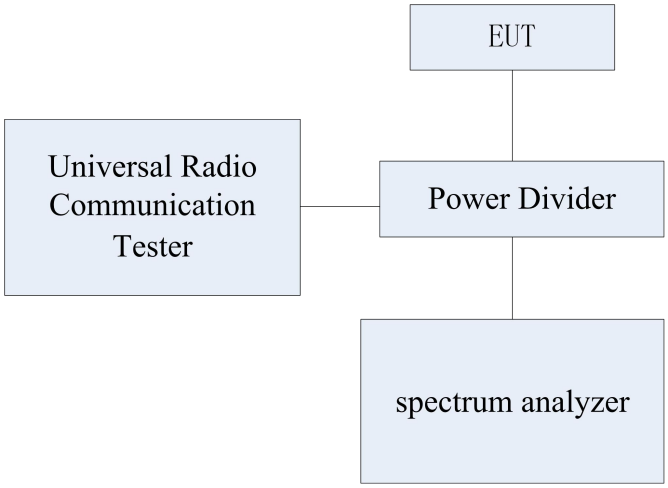
(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

Measurement Uncertainty:

Item	Uncertainty
Expanded Uncertainty	1.28 dB (k=2)

Test Setup:

During the test, the EUT was controlled via the Wireless Communications Test Set to ensure max power transmission and proper modulation and measured by spectrum analyzer.



Test Method:

1) The EUT was coupled to the EMI test receiver analyzer mode and the base station simulator through a power divider. The lost of the cables the test system is calibrated to correct the readings.

2) The spectrum analyzer was set to Average Detector function and Maximum hold mode.

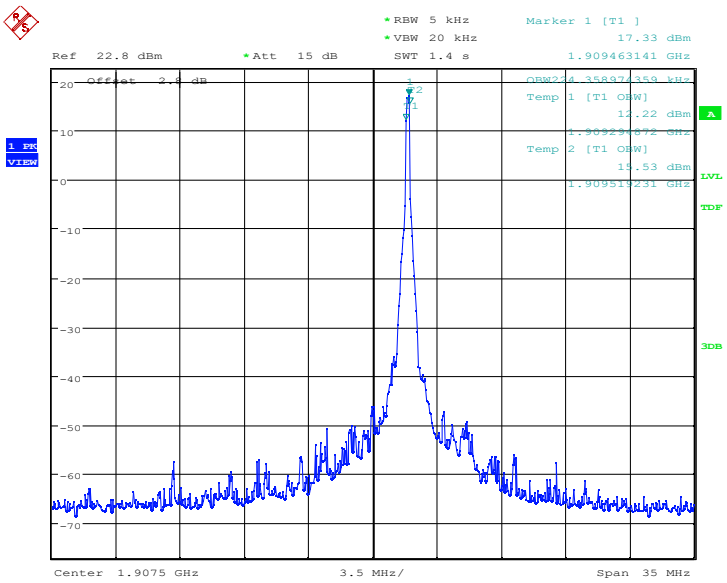
3) The resolution Bandwidth of the spectrum analyzer was a little greater than 1% of the 26dB emission Bandwidth.

Note: In the graphical result description (X, Y), X represents the number of RB, Y represents the RB offset.

6.7.1 Band Edge Results

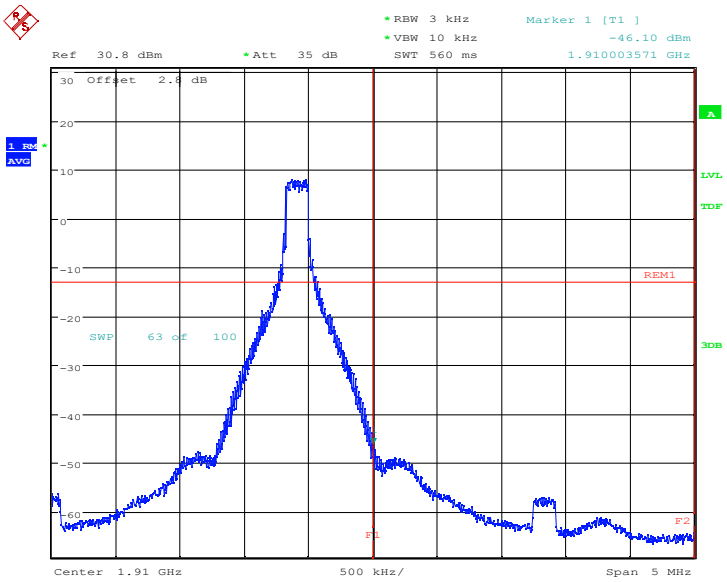
LTE band 2

OBW: 1RB-HIGH_offset



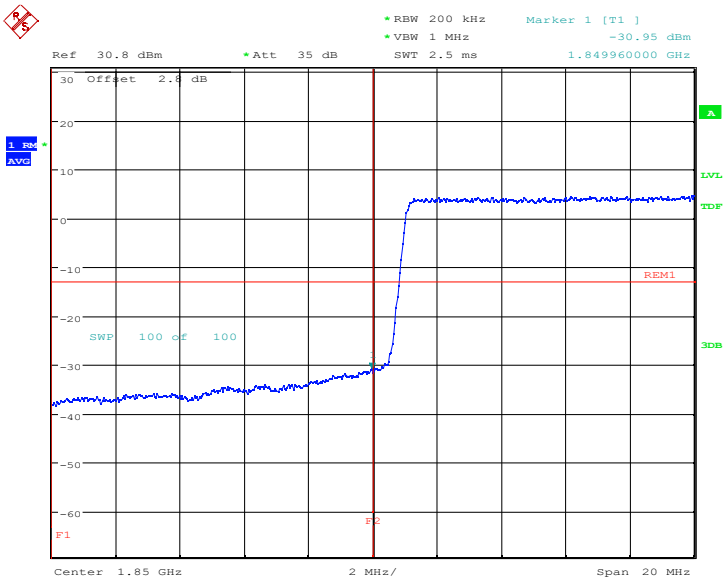
Date: 3.APR.2022 20:41:46

HIGH BAND EDGE BLOCK-1RB-10M_offset



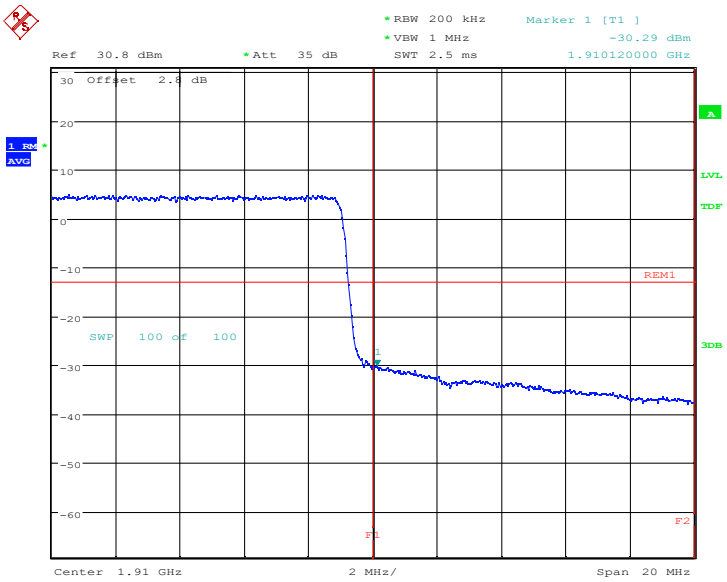
Date: 3.APR.2022 20:43:23

LOW BAND EDGE BLOCK-FULL RB-20M_offset



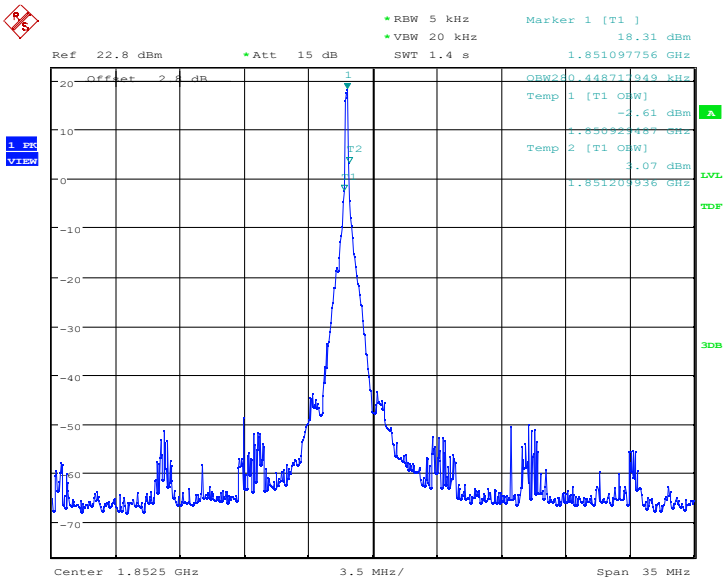
Date: 3.APR.2022 20:44:52

HIGH BAND EDGE BLOCK-FULL RB-20M_offset



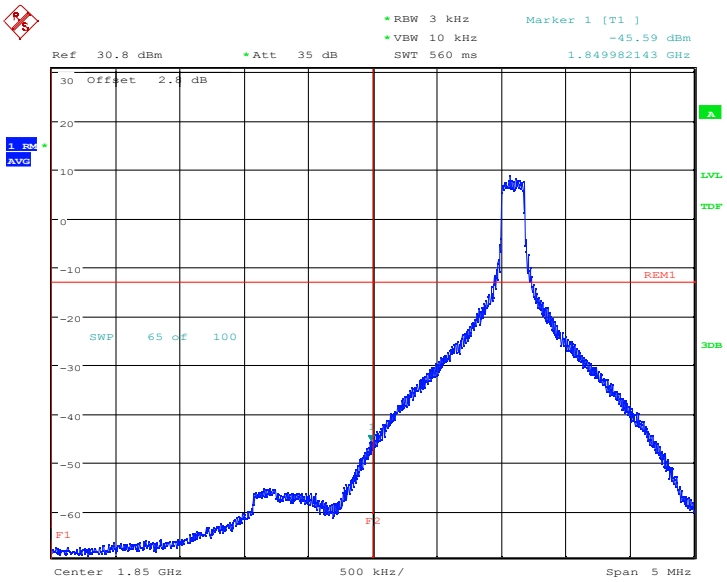
Date: 3.APR.2022 20:45:40

OBW: 1RB-LOW_offset



Date: 3.APR.2022 20:39:40

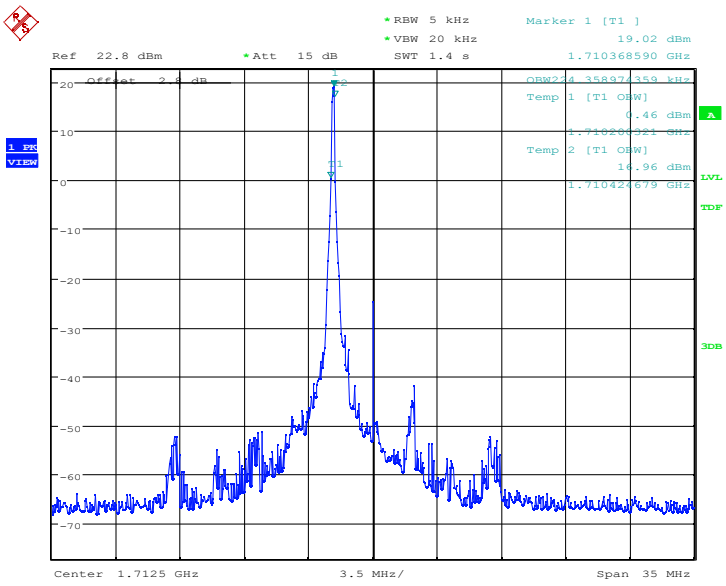
LOW BAND EDGE BLOCK-1RB-20M_offset



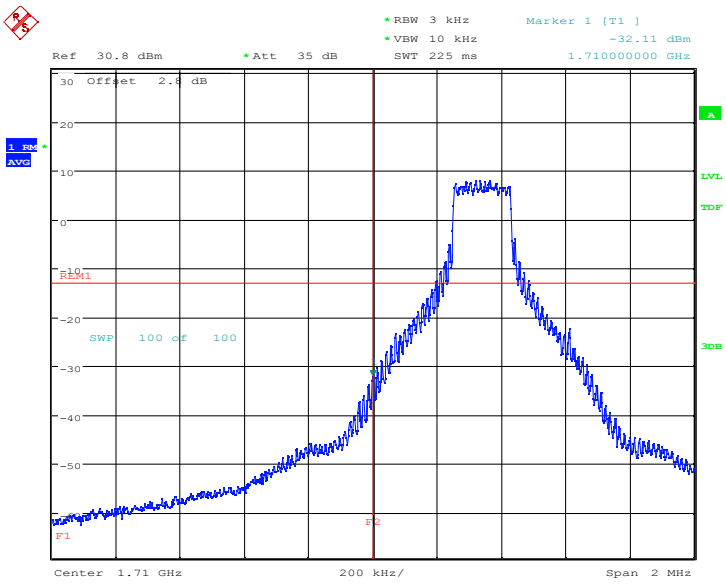
Date: 3.APR.2022 20:41:15

LTE band 4

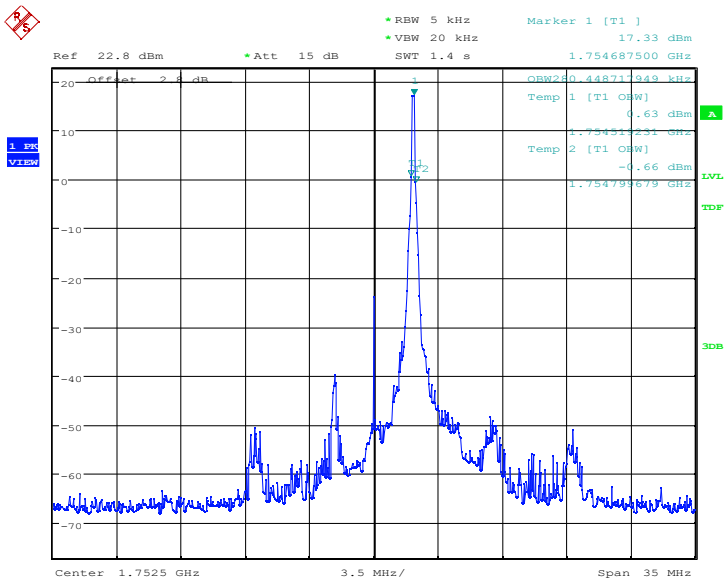
OBW: 1RB-LOW_offset



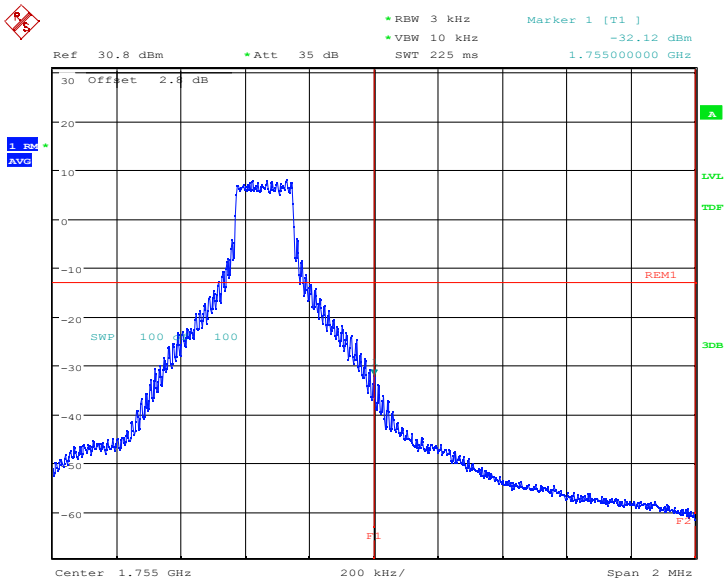
LOW BAND EDGE BLOCK-1RB-5M_offset



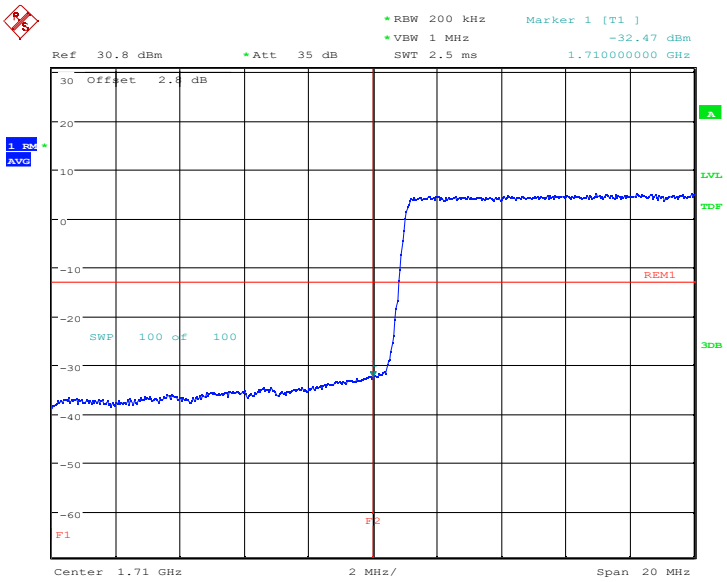
OBW: 1RB-HIGH_offset



HIGH BAND EDGE BLOCK-1RB-5M_offset

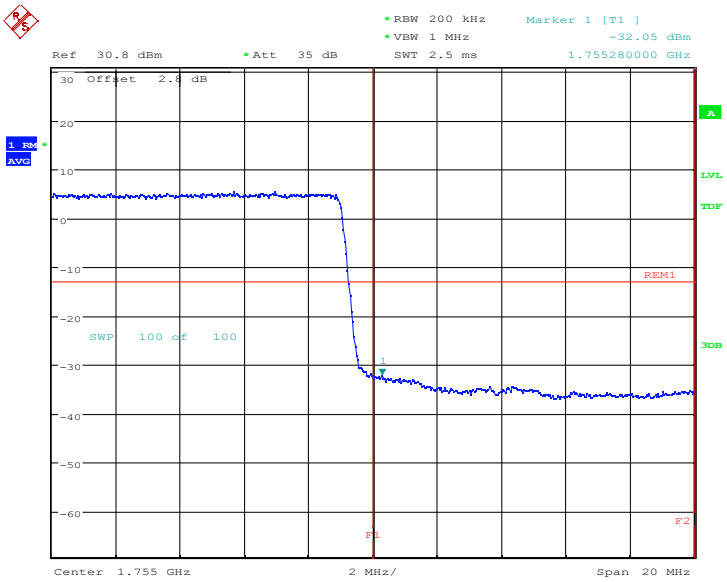


LOW BAND EDGE BLOCK-FULL RB-20M_offset



Date: 3.APR.2022 20:50:23

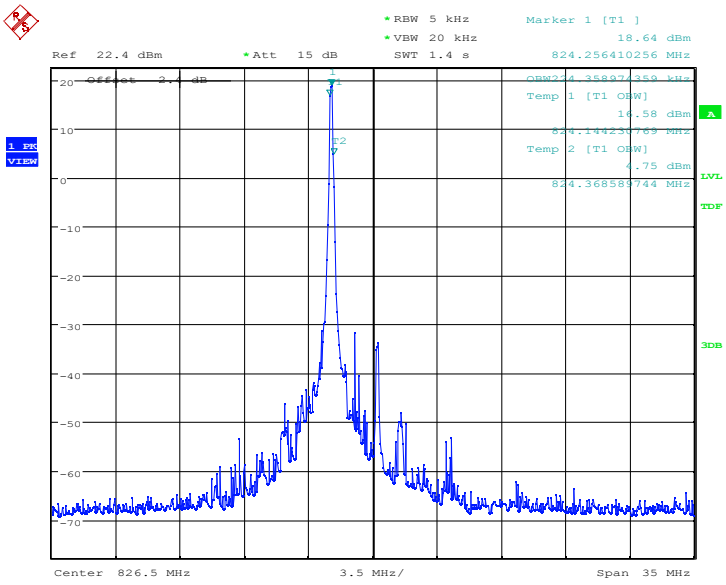
HIGH BAND EDGE BLOCK-FULL RB-20M_offset



Date: 3.APR.2022 20:51:10

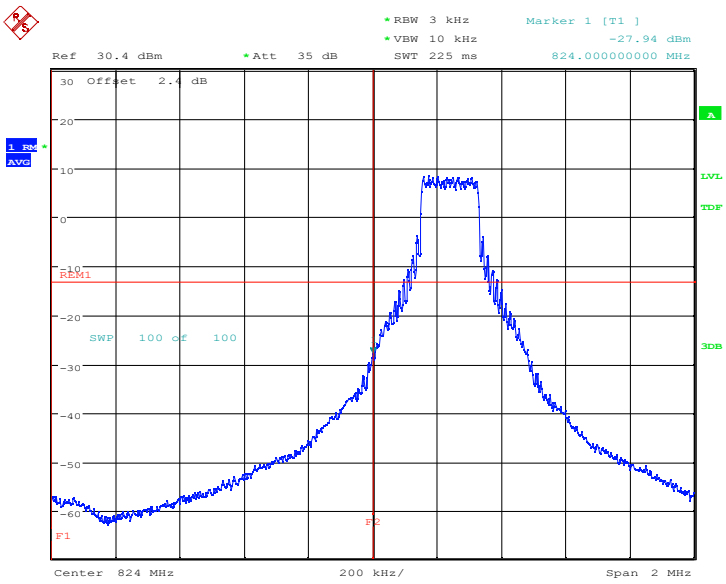
LTE band 5

OBW: 1RB-LOW_offset



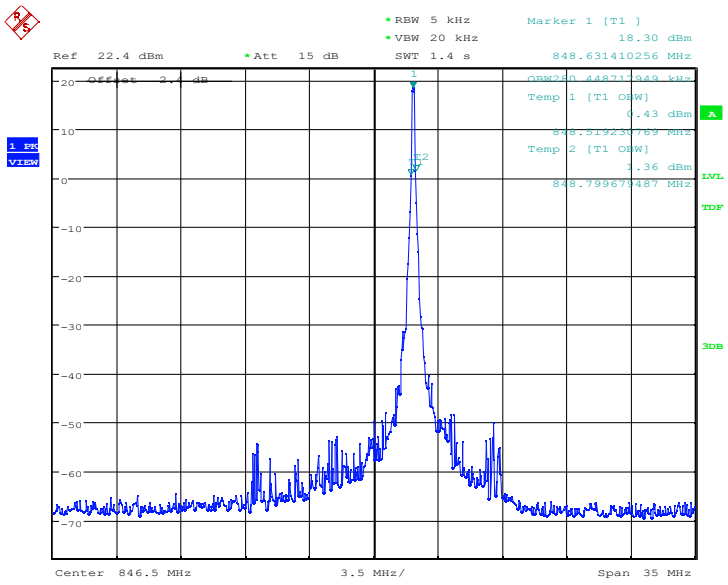
Date: 3.APR.2022 22:16:33

LOW BAND EDGE BLOCK-1RB-3M_offset

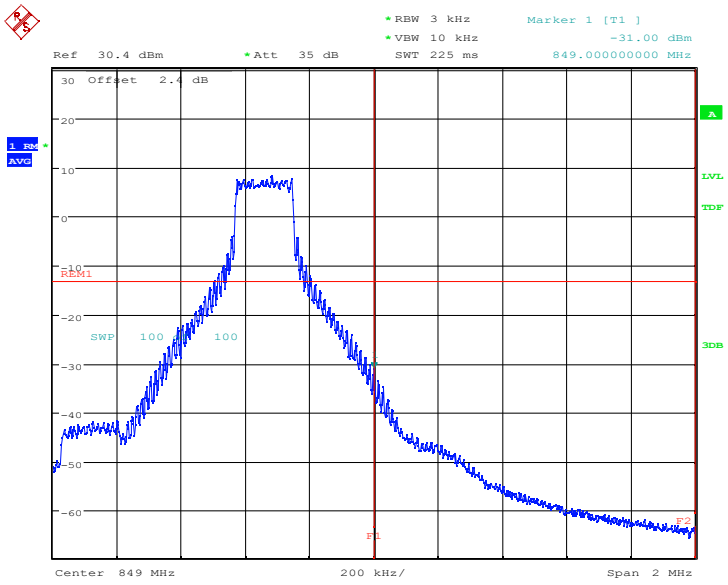


Date: 3.APR.2022 22:17:35

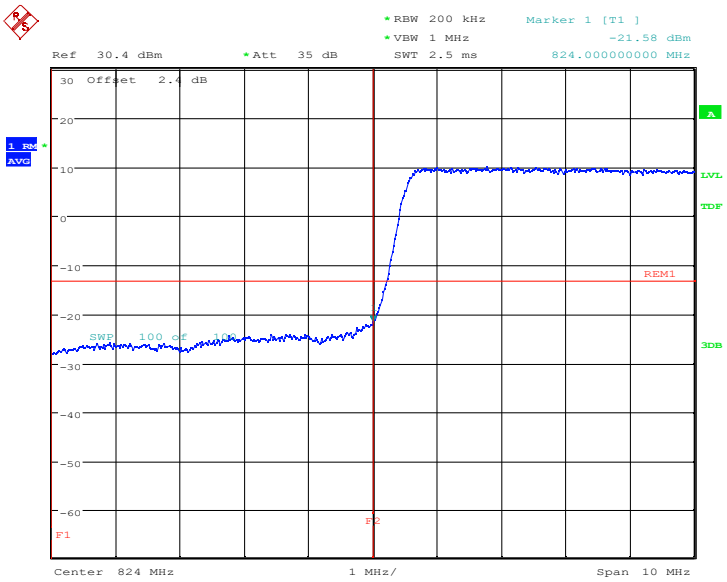
OBW: 1RB-HIGH_offset



HIGH BAND EDGE BLOCK-1RB-5M_offset

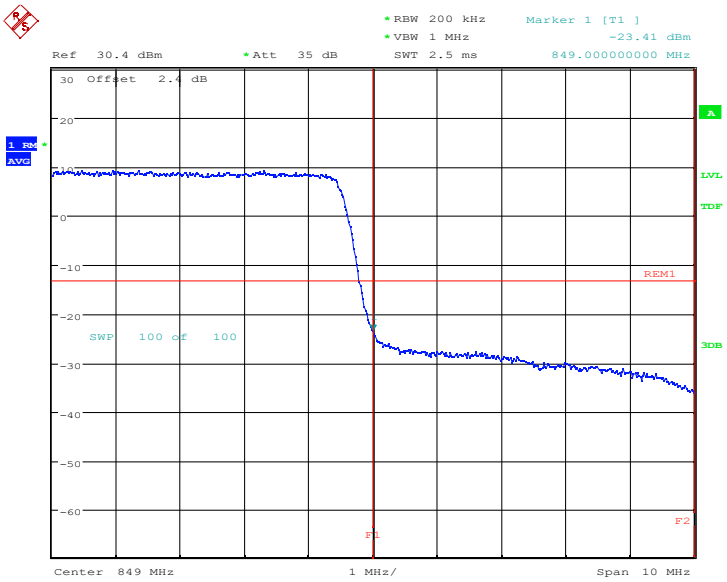


LOW BAND EDGE BLOCK-FULL RB-10M_offset



Date: 3.APR.2022 22:21:10

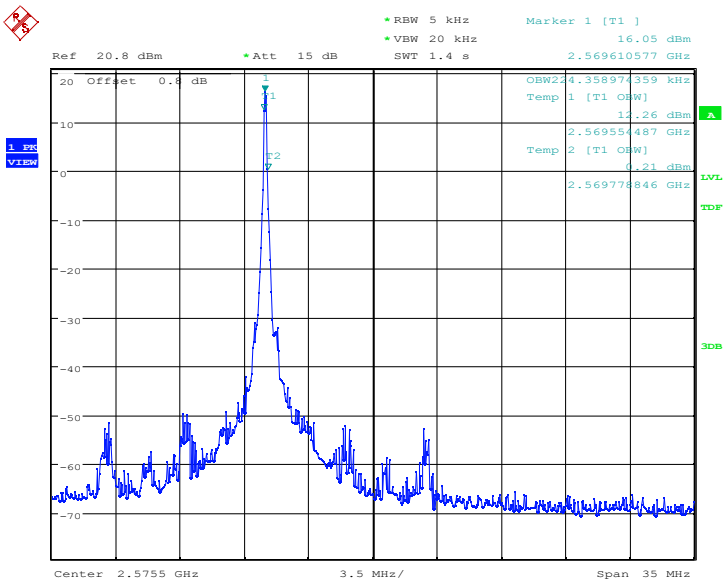
HIGH BAND EDGE BLOCK-FULL RB-10M_offset



Date: 3.APR.2022 22:21:57

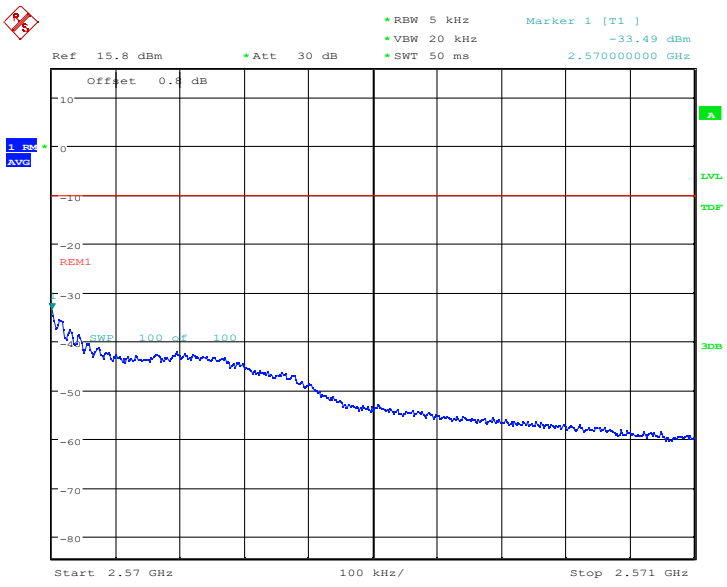
LTE band 7

OBW: 1RB-HIGH_offset



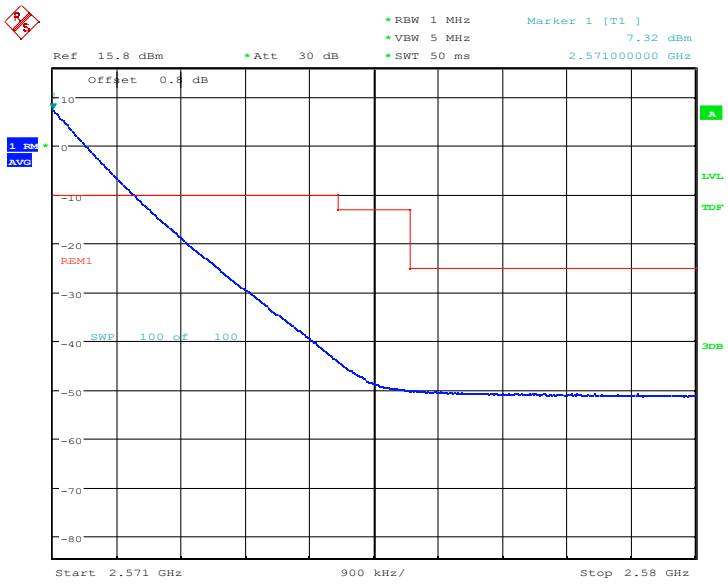
Date: 3.APR.2022 20:54:18

HIGH BAND EDGE BLOCK-1RB-5M_offset



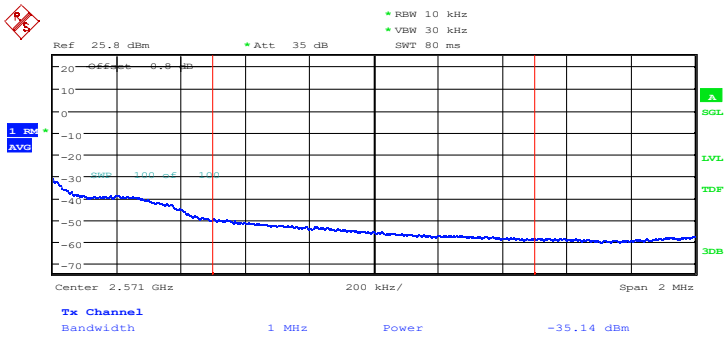
Date: 3.APR.2022 20:55:08

HIGH BAND EDGE BLOCK-1RB-5M_offset



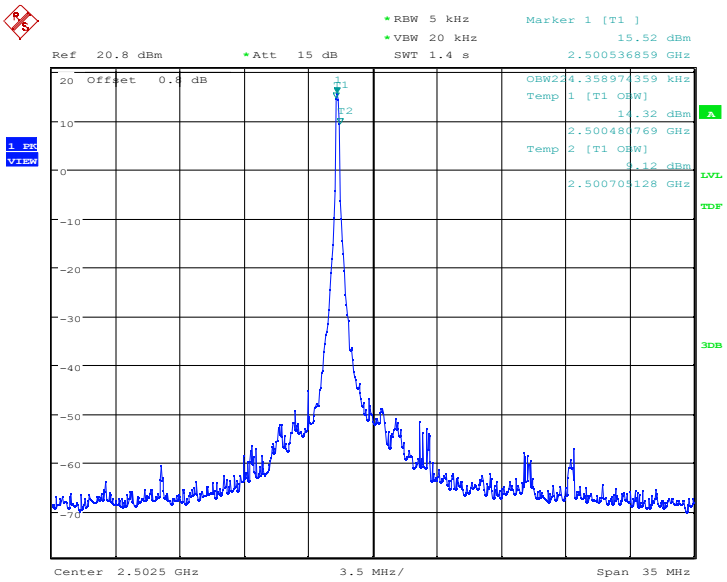
Date: 3.APR.2022 20:55:55

Channal Power



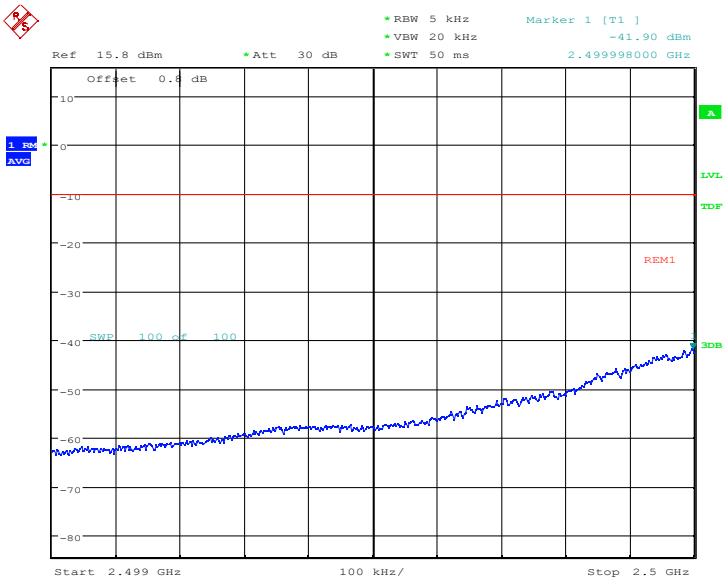
Date: 3.APR.2022 20:56:28

OBW: 1RB-LOW_offset



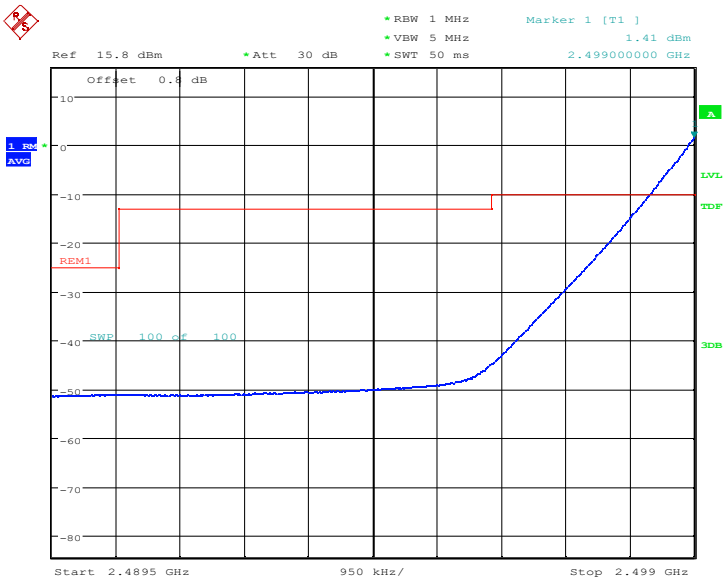
Date: 3.APR.2022 20:51:43

LOW BAND EDGE BLOCK-1RB-10M_offset



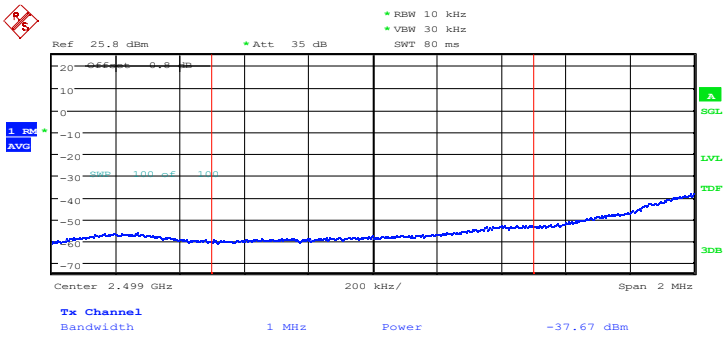
Date: 3.APR.2022 20:52:30

LOW BAND EDGE BLOCK-1RB-10M_offset



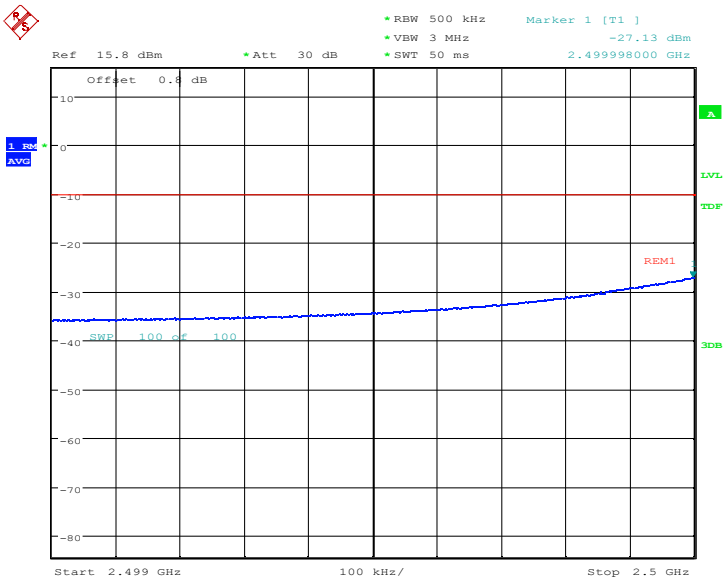
Date: 3.APR.2022 20:53:16

Channal Power



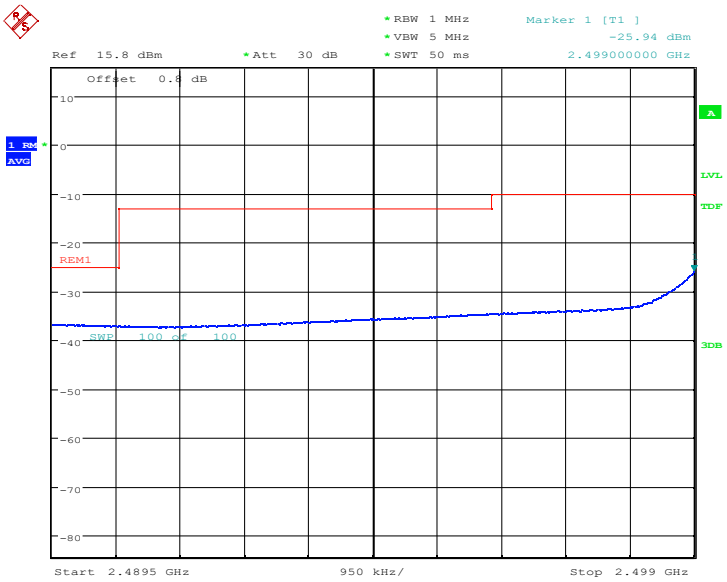
Date: 3.APR.2022 20:53:48

LOW BAND EDGE BLOCK-FULL RB-20M_offset



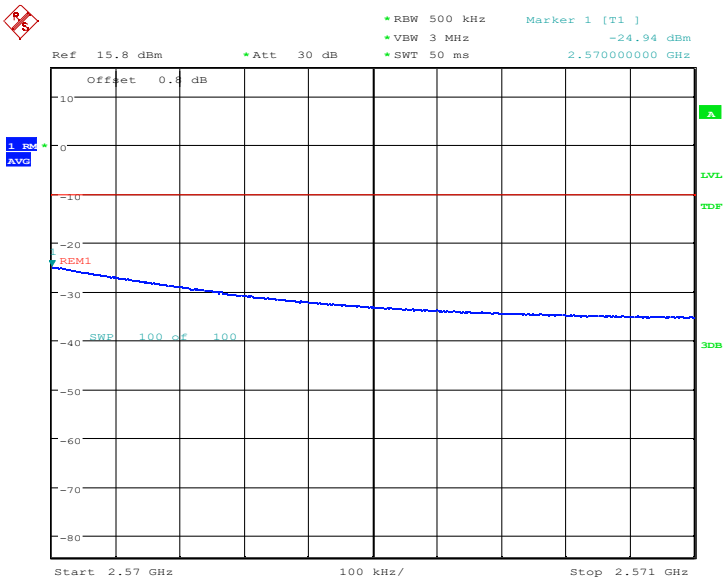
Date: 3.APR.2022 20:58:02

LOW BAND EDGE BLOCK-FULL RB-20M_offset



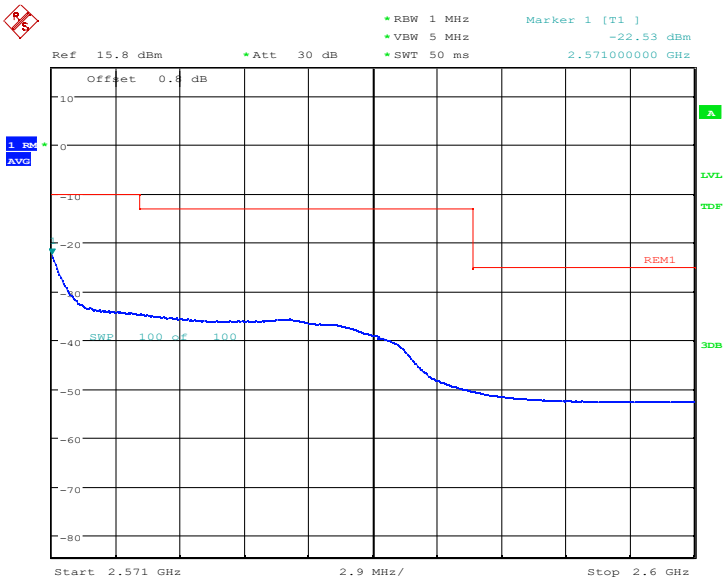
Date: 3.APR.2022 20:58:49

HIGH BAND EDGE BLOCK-FULL RB-20M_offset



Date: 3.APR.2022 20:59:41

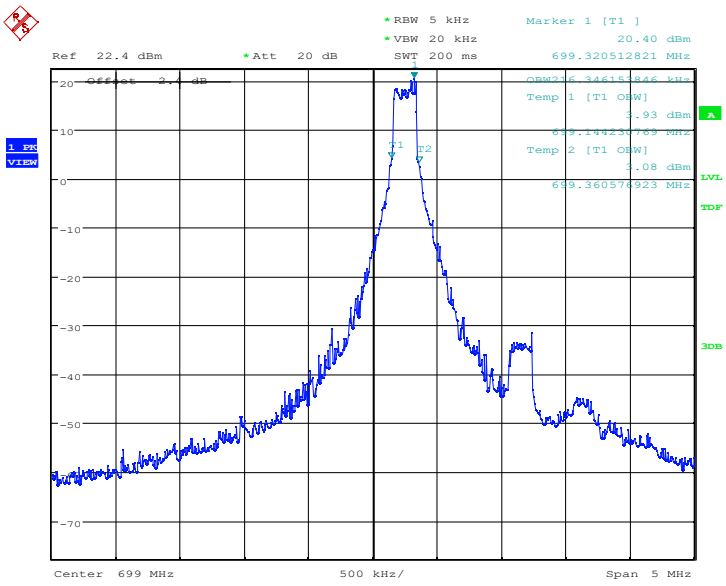
HIGH BAND EDGE BLOCK-FULL RB-20M_offset



Date: 3.APR.2022 21:00:28

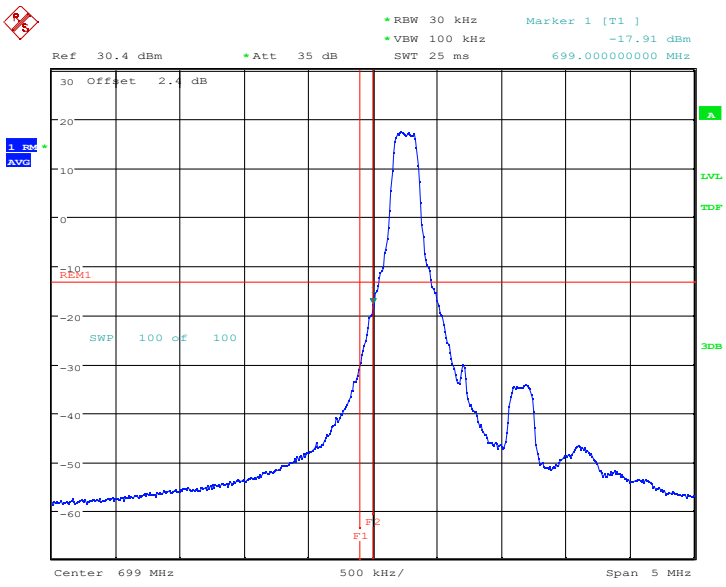
LTE band 12

OBW: 1RB-LOW_offset



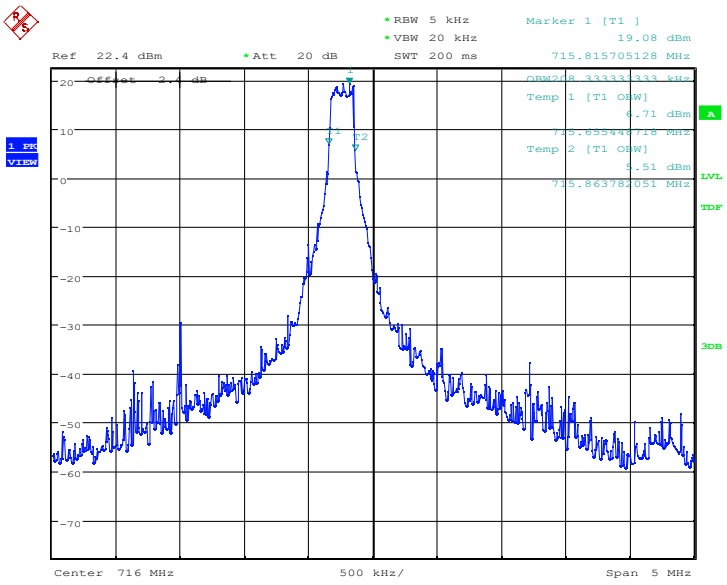
Date: 3.APR.2022 22:22:34

LOW BAND EDGE BLOCK-1RB-1.4M_offset



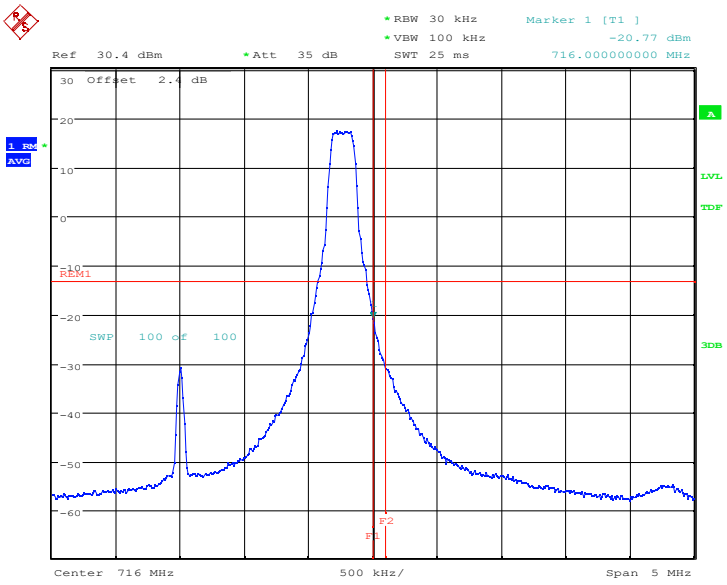
Date: 3.APR.2022 22:23:17

OBW: 1RB-HIGH_offset



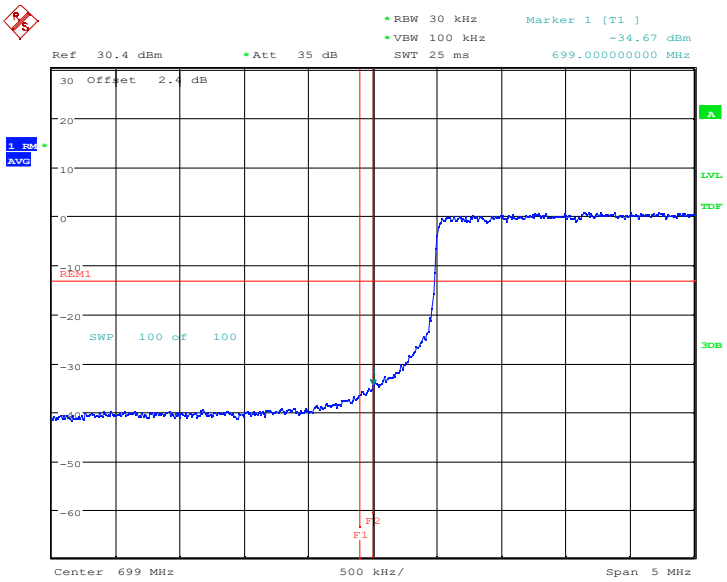
Date: 3.APR.2022 22:24:24

HIGH BAND EDGE BLOCK-1RB-3M_offset



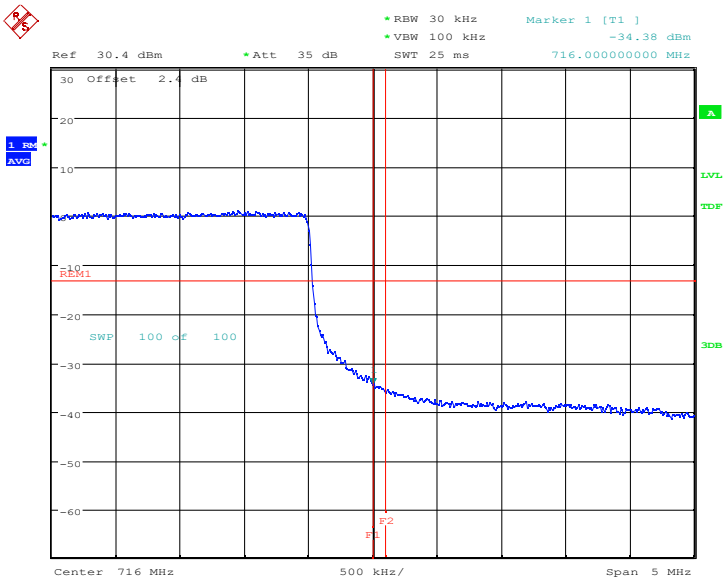
Date: 3.APR.2022 22:25:05

LOW BAND EDGE BLOCK-FULL RB-10M_offset



Date: 3.APR.2022 22:26:34

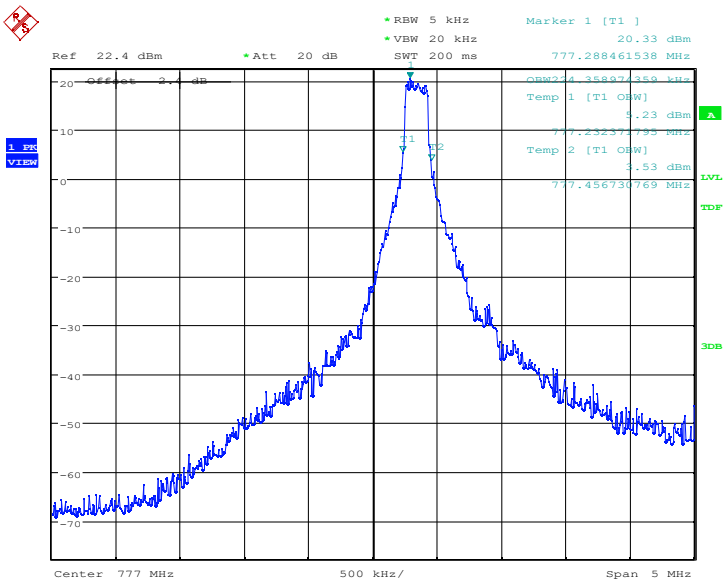
HIGH BAND EDGE BLOCK-FULL RB-10M_offset



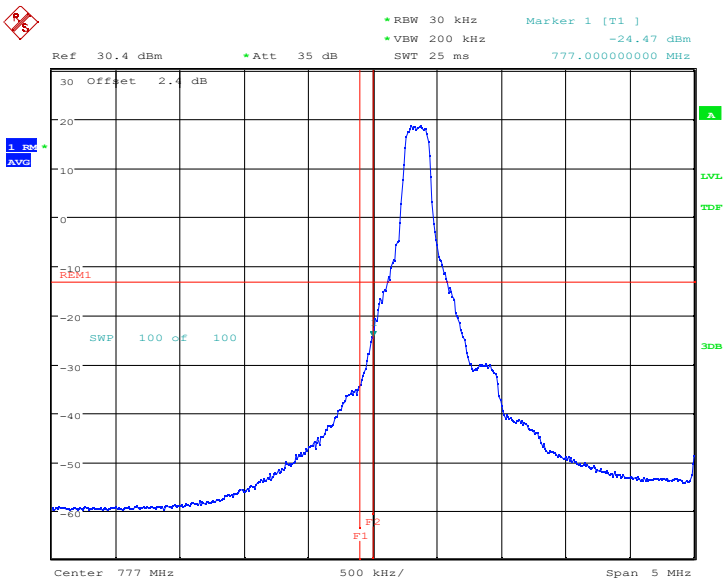
Date: 3.APR.2022 22:27:21

LTE band 13

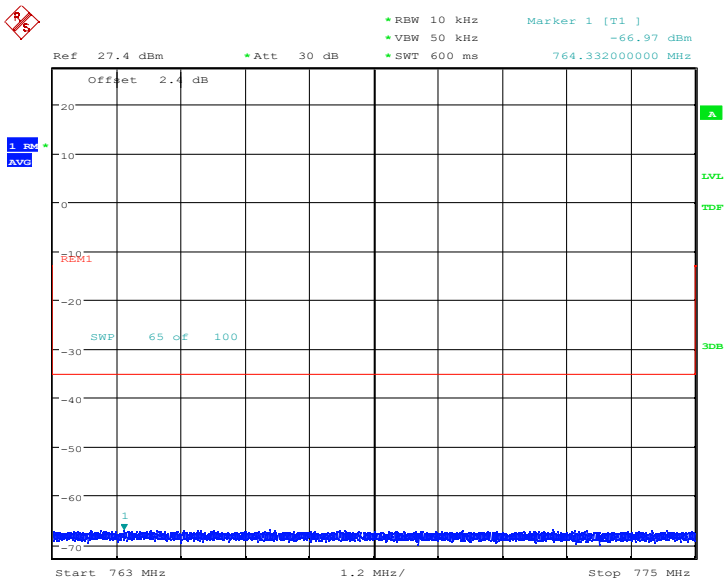
OBW: 1RB-LOW_offset



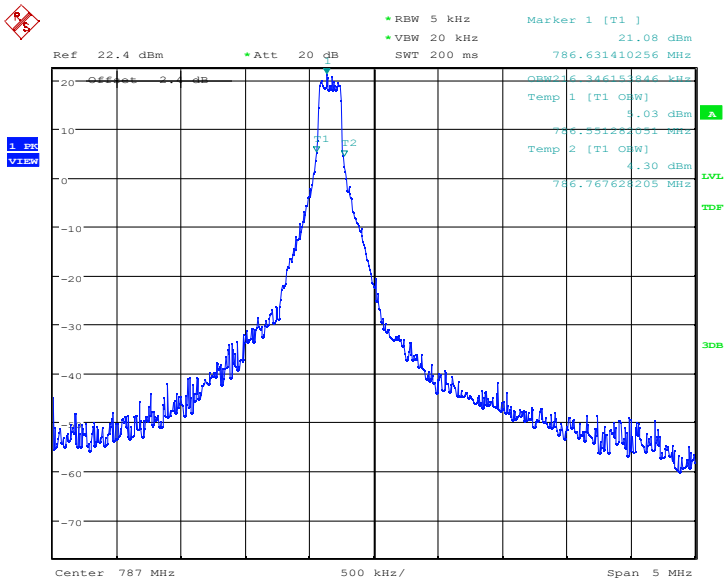
LOW BAND EDGE BLOCK-1RB-5M_offset



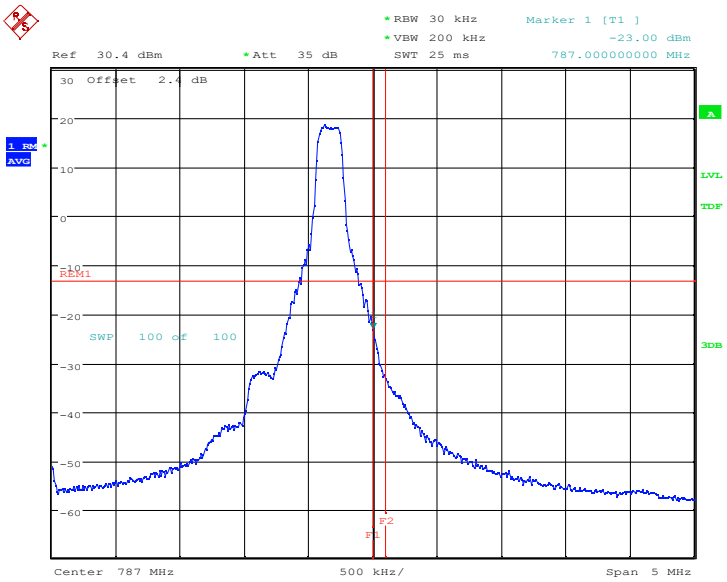
LOW BAND EDGE BLOCK-1RB-5M_offset



OBW: 1RB-HIGH_offset

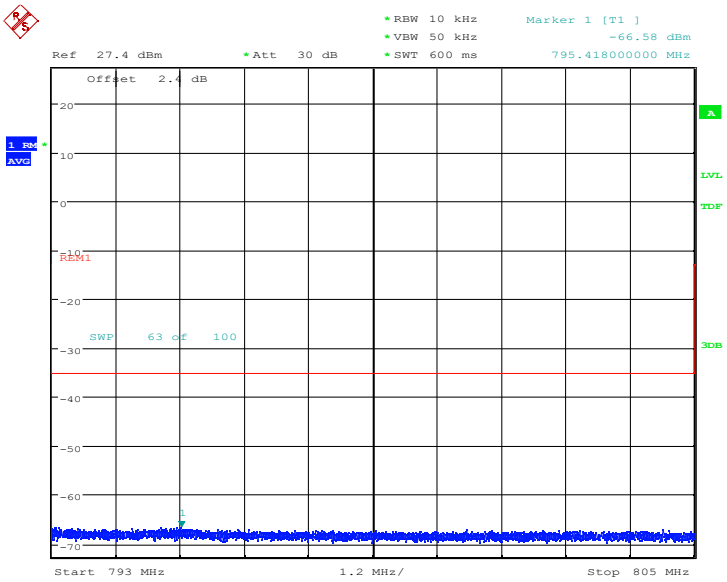


HIGH BAND EDGE BLOCK-1RB-5M_offset



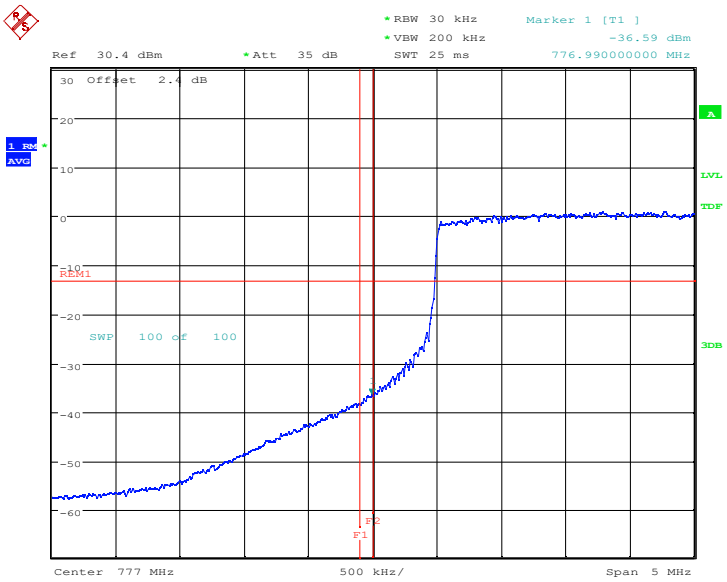
Date: 3.APR.2022 22:31:29

HIGH BAND EDGE BLOCK-1RB-5M_offset



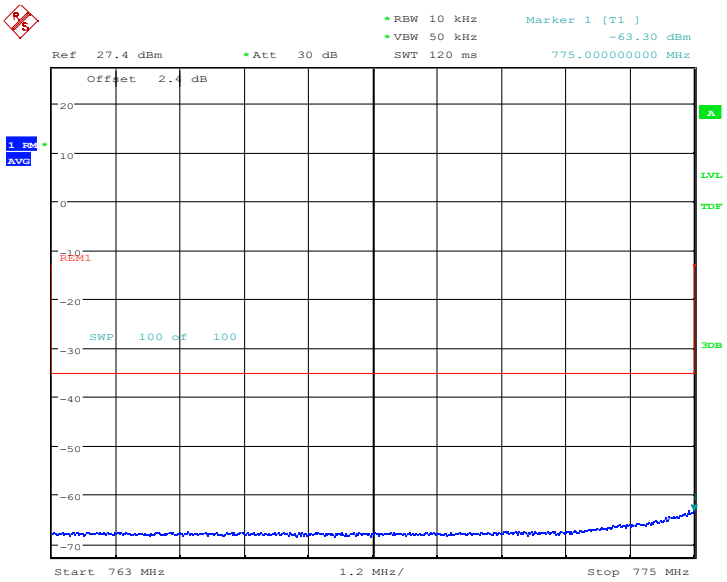
Date: 3.APR.2022 22:33:15

LOW BAND EDGE BLOCK-FULL RB-10M_offset



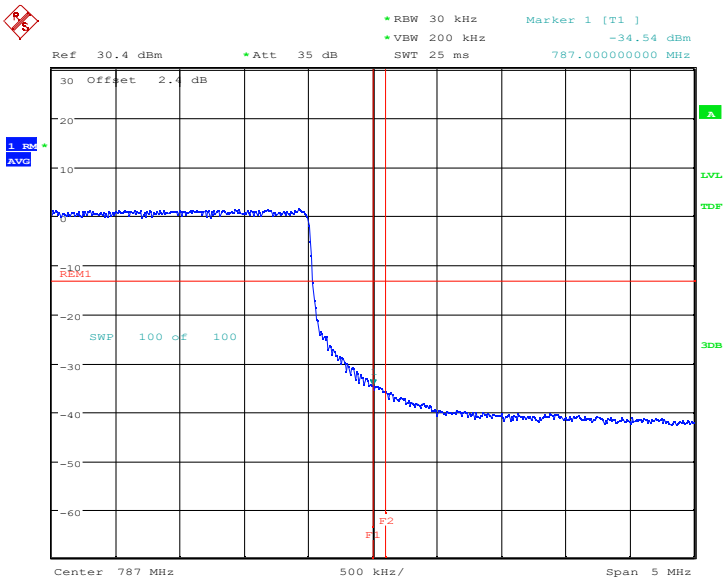
Date: 3.APR.2022 22:34:45

LOW BAND EDGE BLOCK-FULL RB-10M_offset



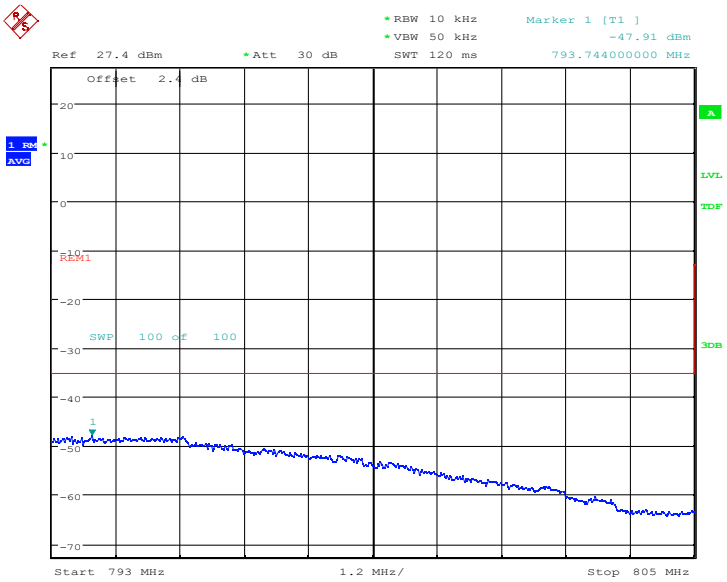
Date: 3.APR.2022 22:35:40

HIGH BAND EDGE BLOCK-FULL RB-10M_offset



Date: 3.APR.2022 22:36:24

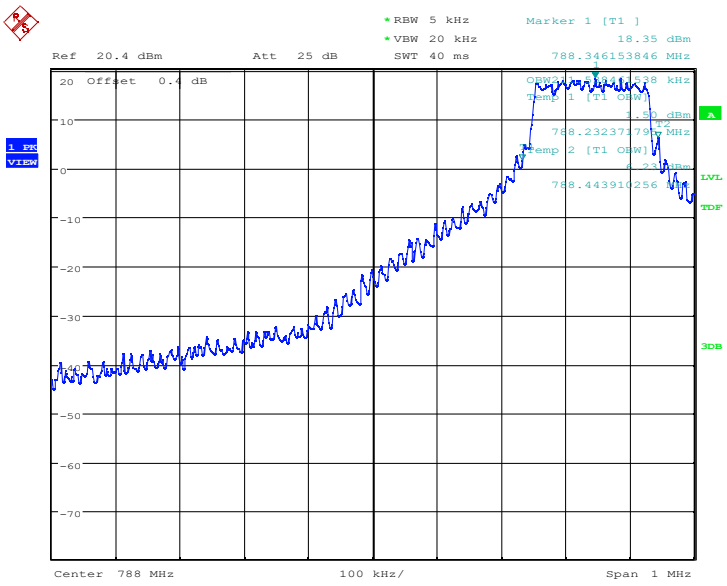
HIGH BAND EDGE BLOCK-FULL RB-10M_offset



Date: 3.APR.2022 22:37:21

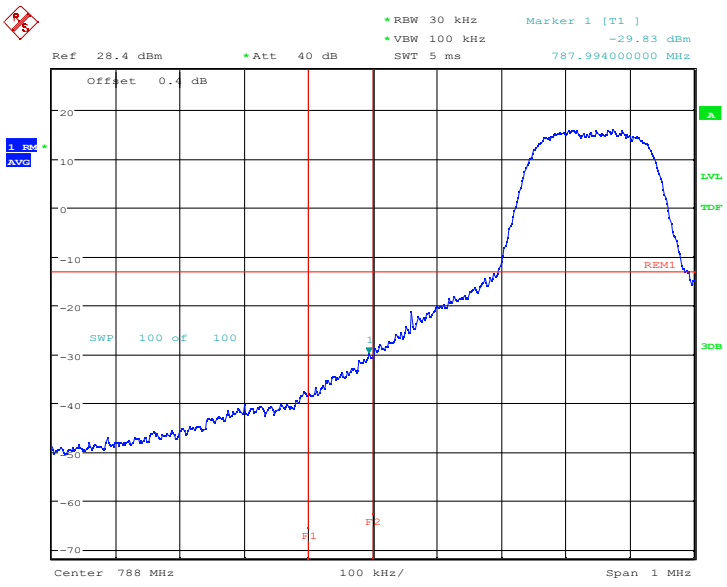
LTE band 14

OBW: 1RB-LOW_offset



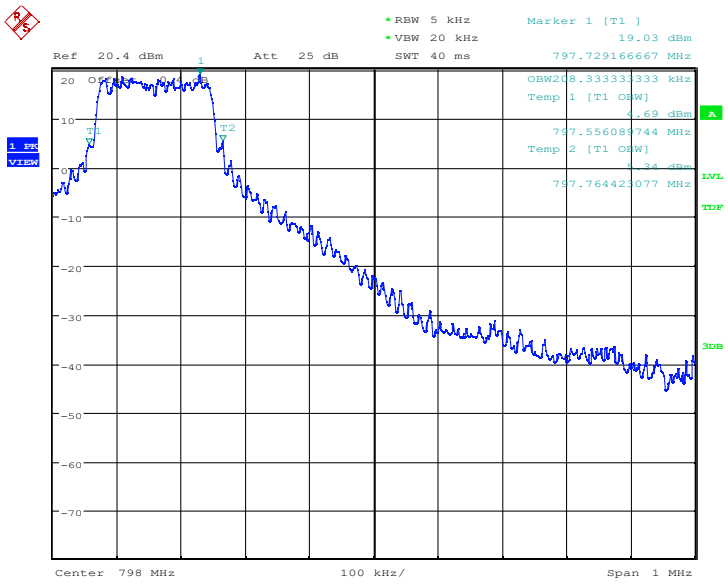
Date: 3.APR.2022 22:37:54

LOW BAND EDGE BLOCK-1RB-5M_offset

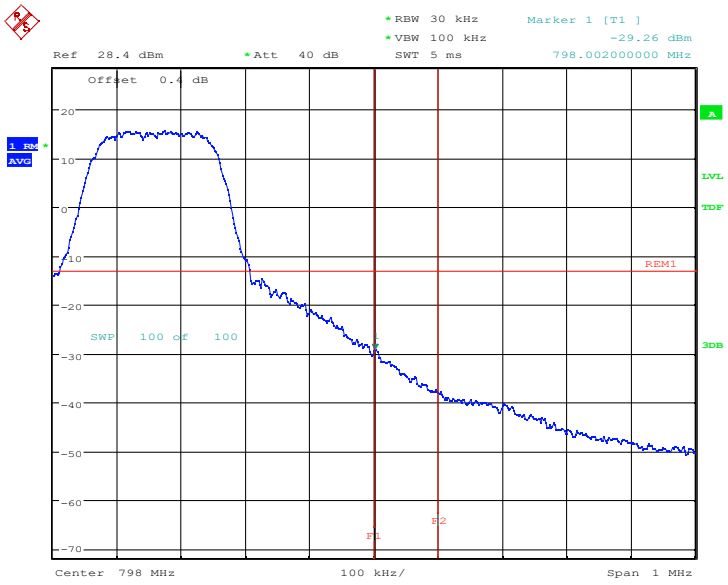


Date: 3.APR.2022 22:38:34

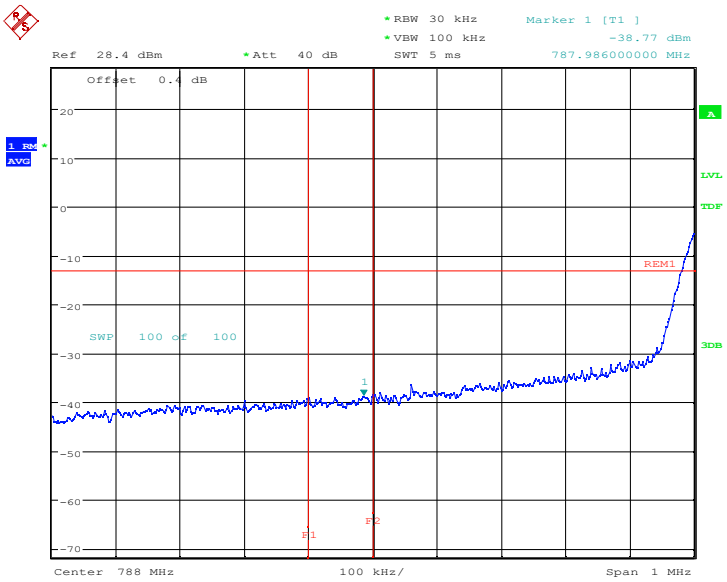
OBW: 1RB-HIGH_offset



HIGH BAND EDGE BLOCK-1RB-5M_offset

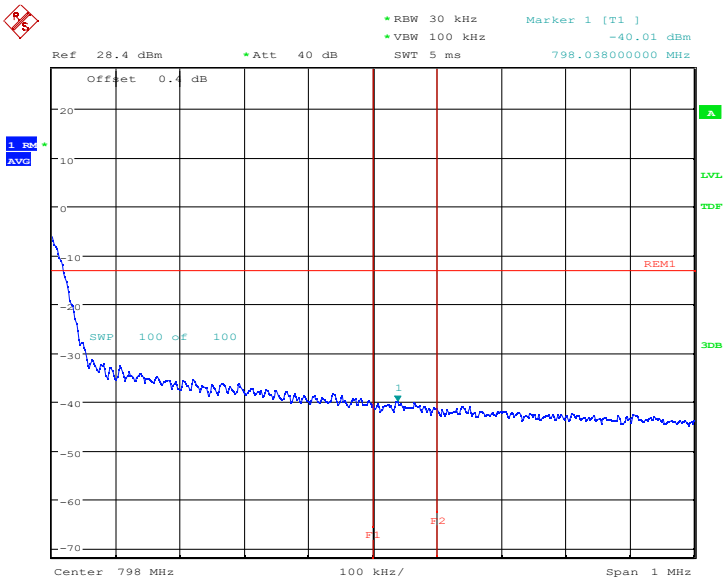


LOW BAND EDGE BLOCK-FULL RB-10M_offset



Date: 3.APR.2022 22:41:14

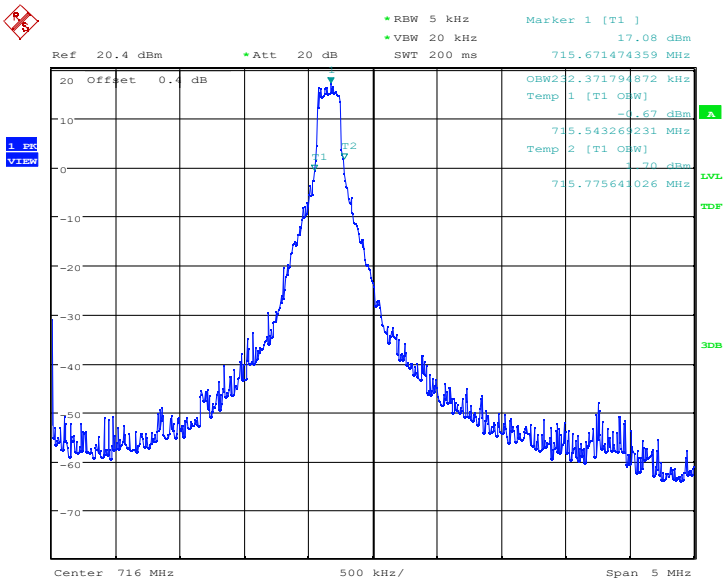
HIGH BAND EDGE BLOCK-FULL RB-10M_offset



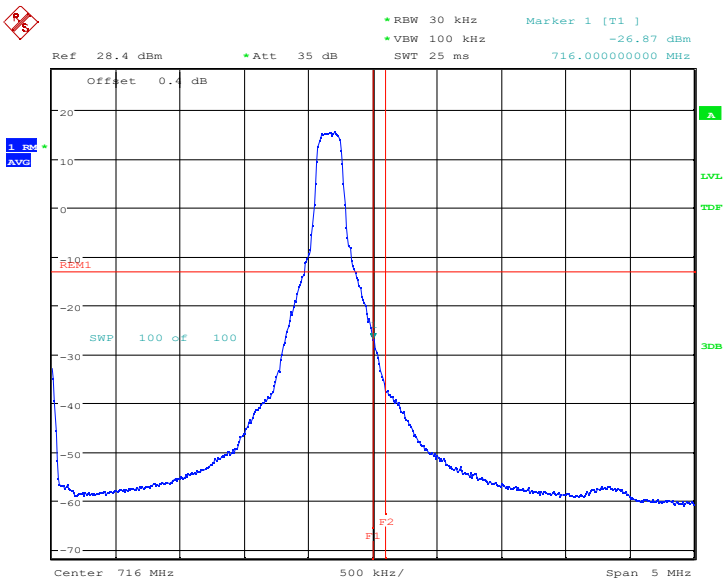
Date: 3.APR.2022 22:41:55

LTE band 17

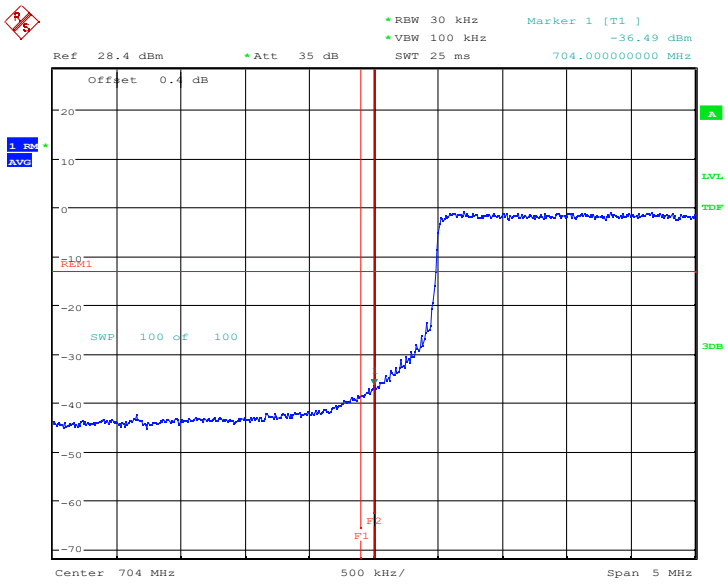
OBW: 1RB-HIGH_offset



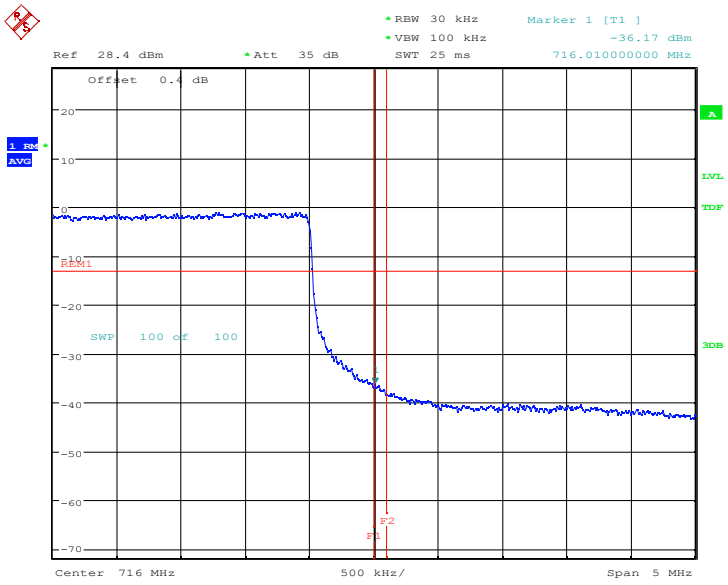
HIGH BAND EDGE BLOCK-1RB-5M_offset



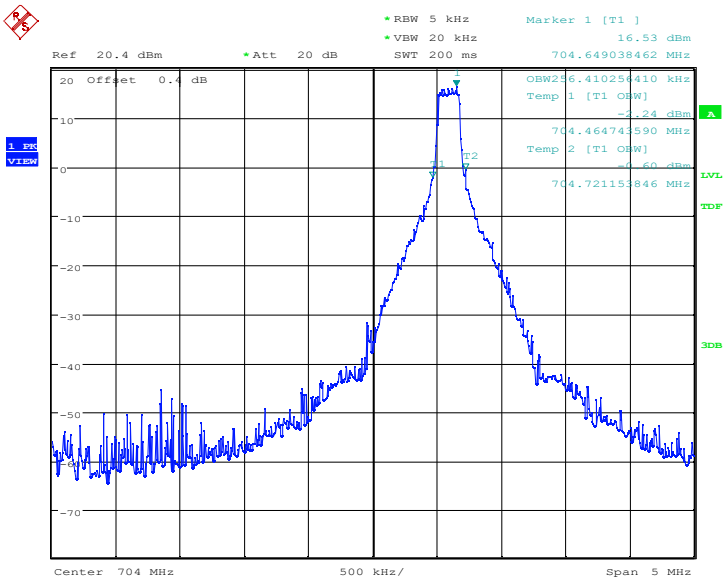
LOW BAND EDGE BLOCK-FULL RB-10M_offset



HIGH BAND EDGE BLOCK-FULL RB-10M_offset



OBW: 1RB-LOW_offset



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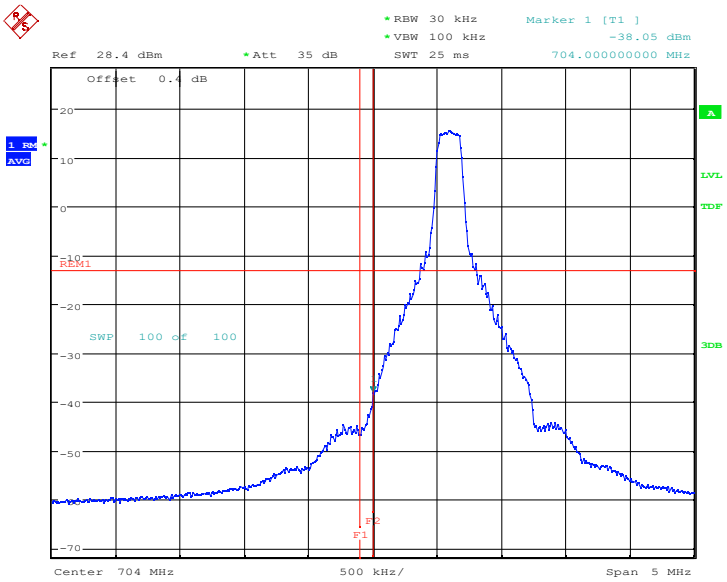
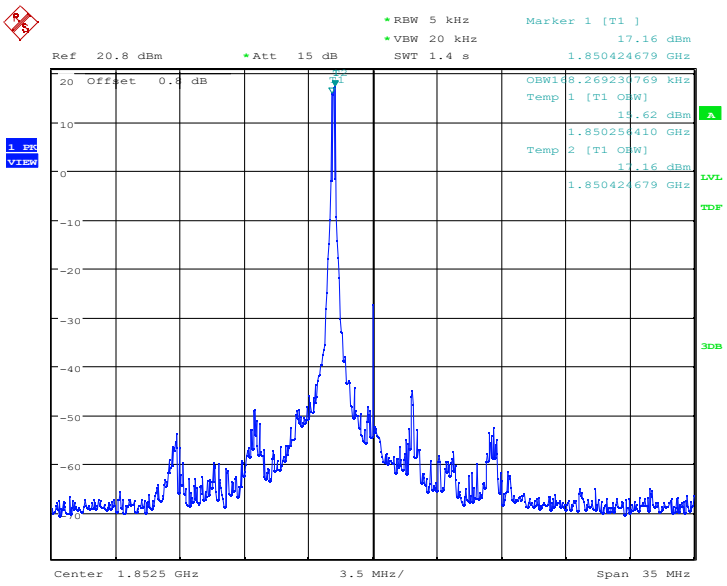
LOW BAND EDGE BLOCK-1RB-10M_offset



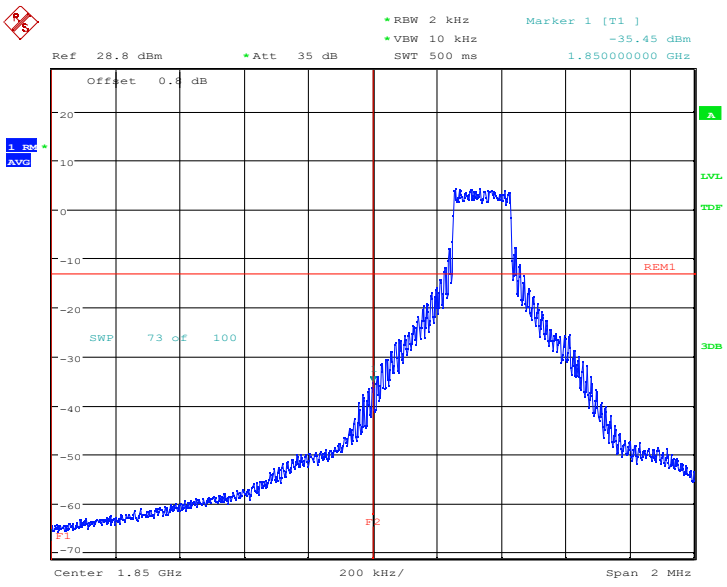
Date: 3.APR.2022 22:43:08

LTE band 25

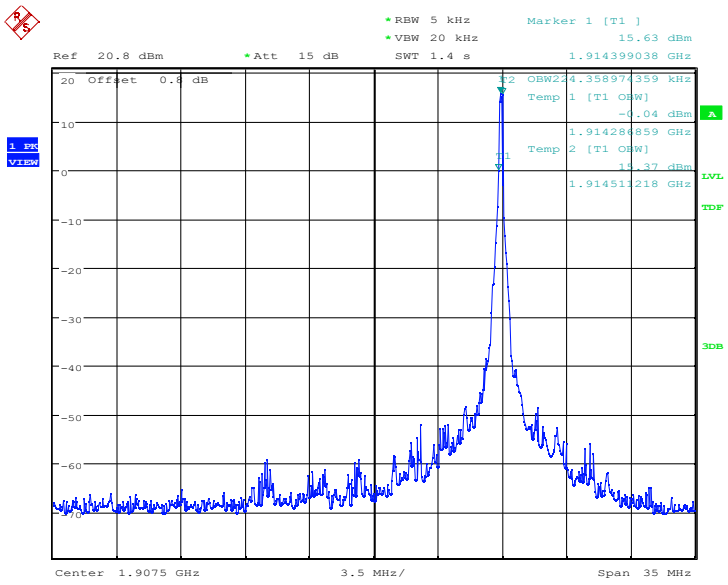
OBW: 1RB-LOW_offset



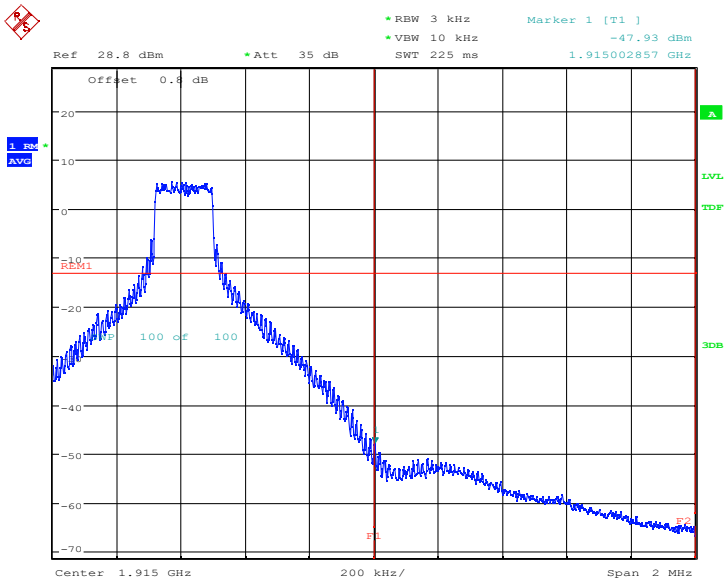
LOW BAND EDGE BLOCK-1RB-5M_offset



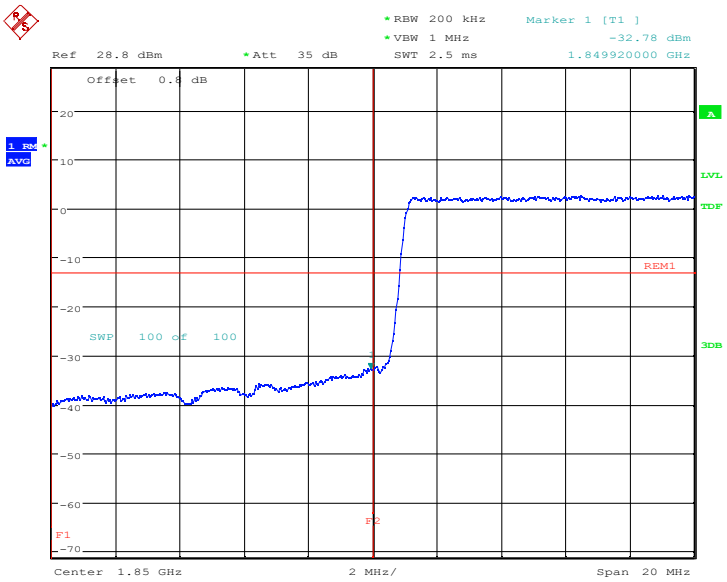
OBW: 1RB-HIGH_offset



HIGH BAND EDGE BLOCK-1RB-10M_offset

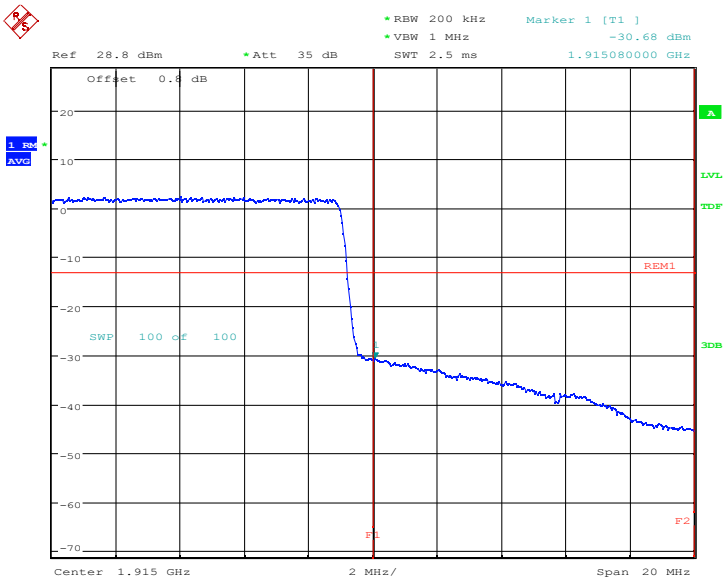


LOW BAND EDGE BLOCK-FULL RB-20M_offset



Date: 3.APR.2022 21:05:58

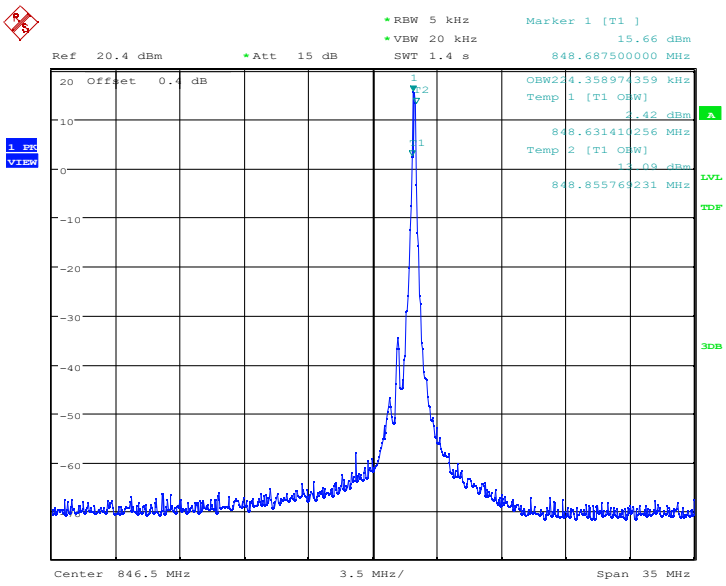
HIGH BAND EDGE BLOCK-FULL RB-20M_offset



Date: 3.APR.2022 21:07:13

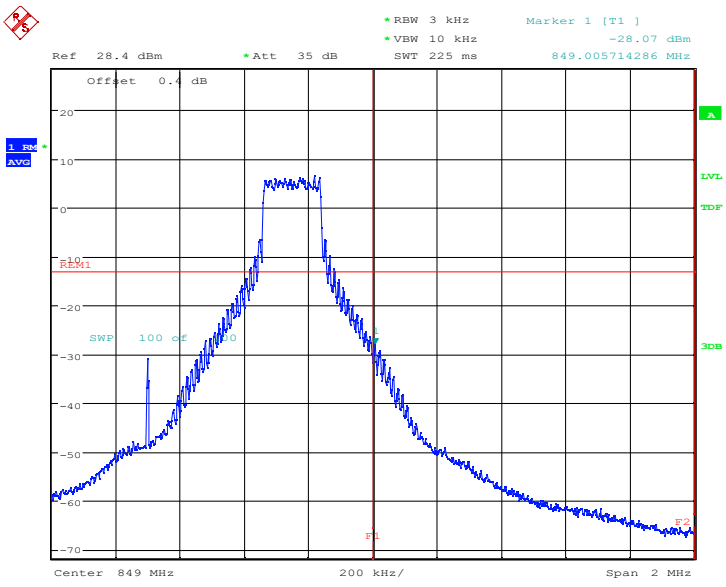
LTE band 26PART22

OBW: 1RB-HIGH_offset



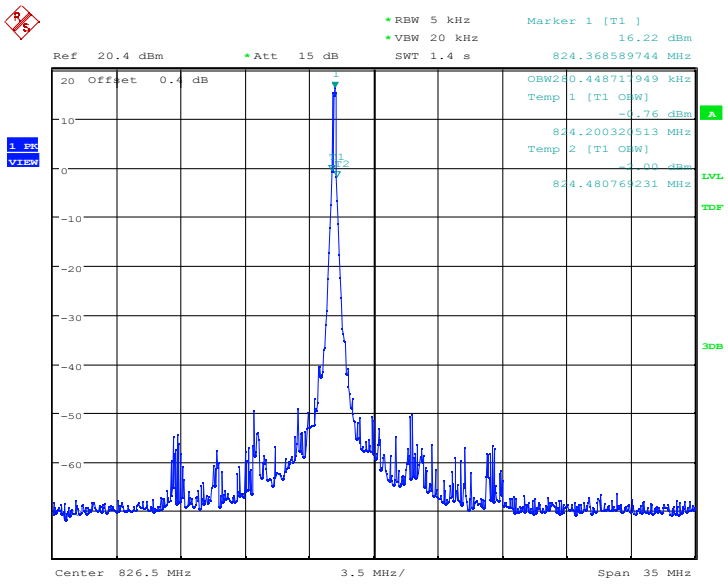
Date: 3.APR.2022 22:48:56

HIGH BAND EDGE BLOCK-1RB-1.4M_offset



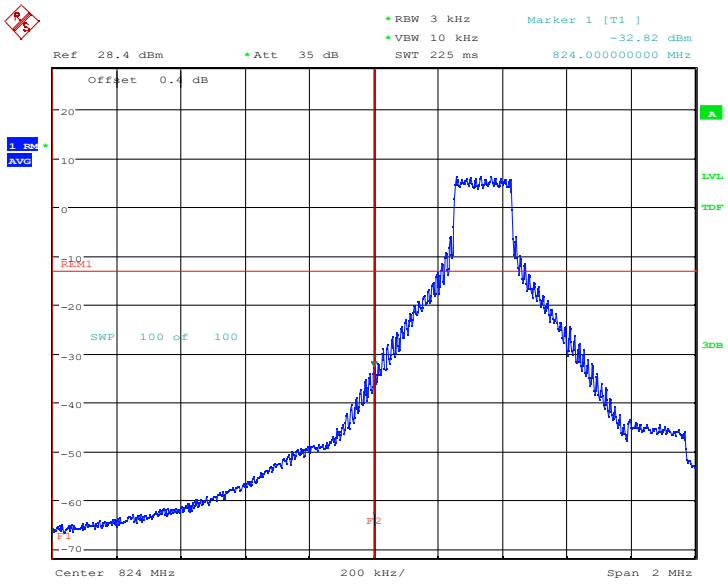
Date: 3.APR.2022 22:49:58

OBW: 1RB-LOW_offset



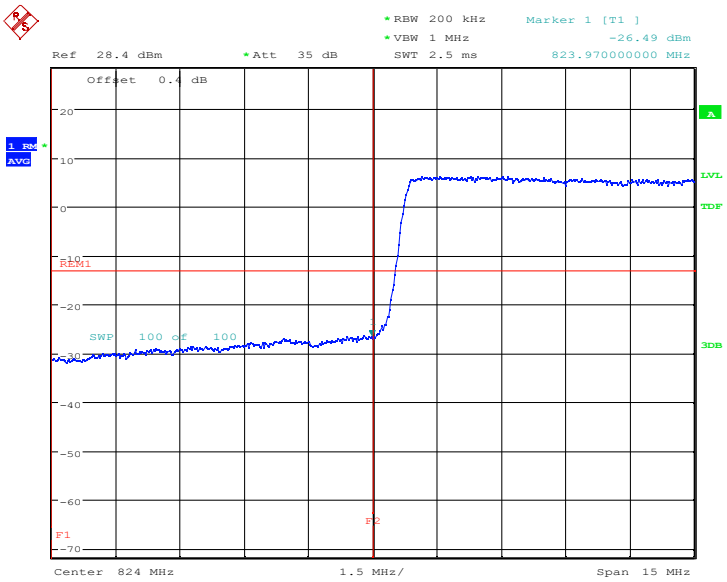
Date: 3.APR.2022 22:47:21

LOW BAND EDGE BLOCK-1RB-5M_offset



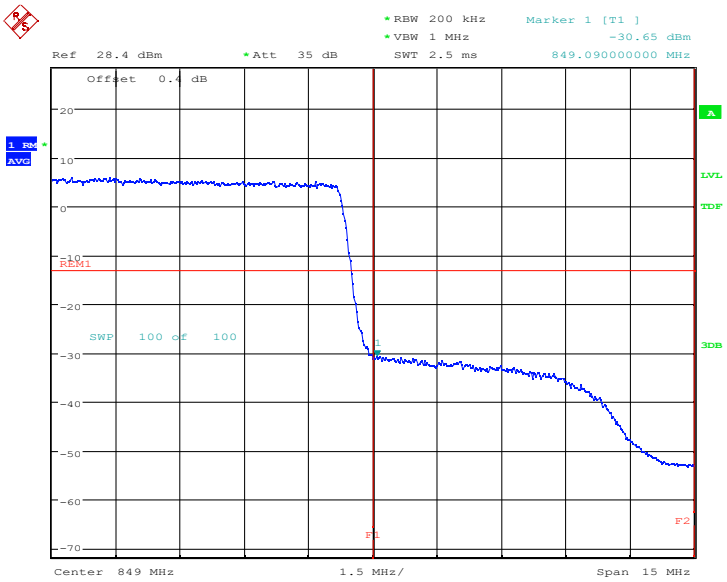
Date: 3.APR.2022 22:48:22

LOW BAND EDGE BLOCK-FULL RB-15M_offset



Date: 3.APR.2022 22:51:27

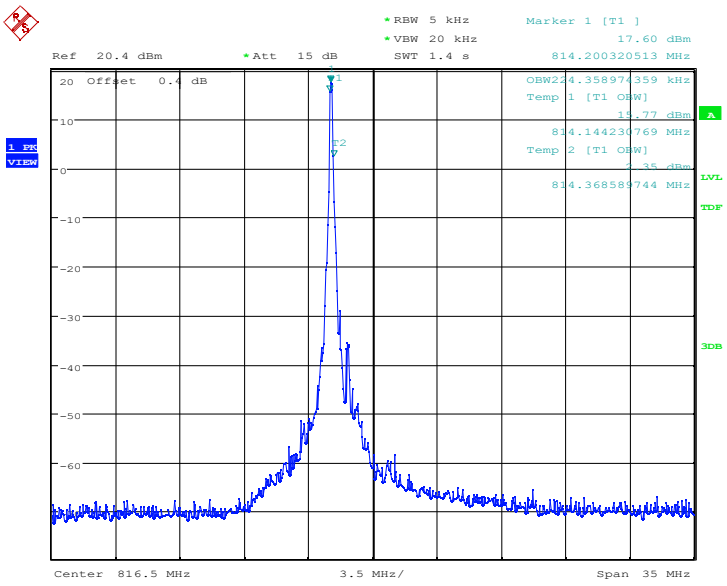
HIGH BAND EDGE BLOCK-FULL RB-15M_offset



Date: 3.APR.2022 22:52:13

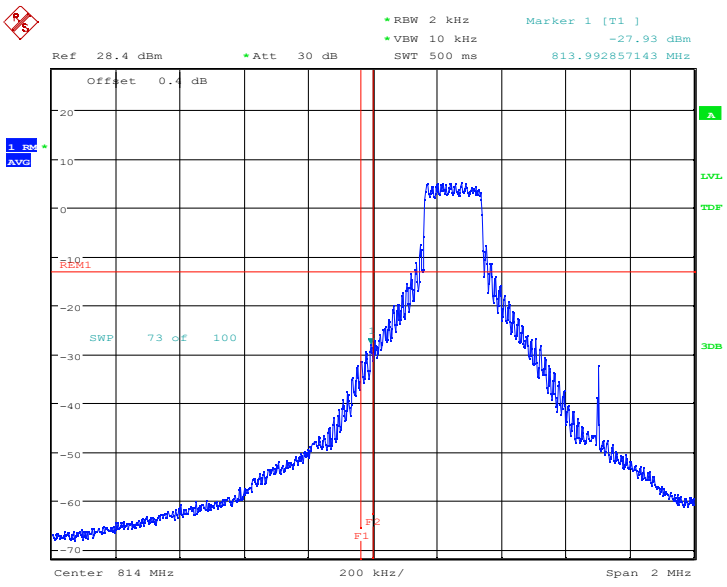
LTE band 26PART90

OBW: 1RB-LOW_offset



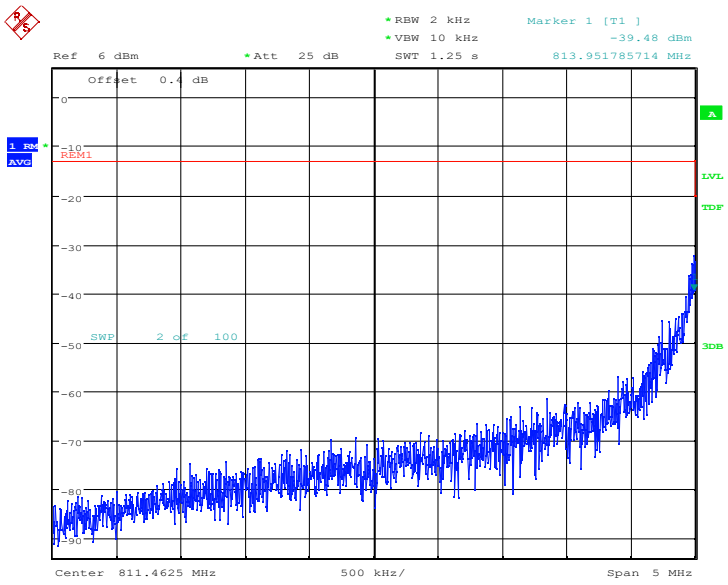
Date: 4.APR.2022 00:22:18

LOW BAND EDGE BLOCK-1RB-1.4M_offset



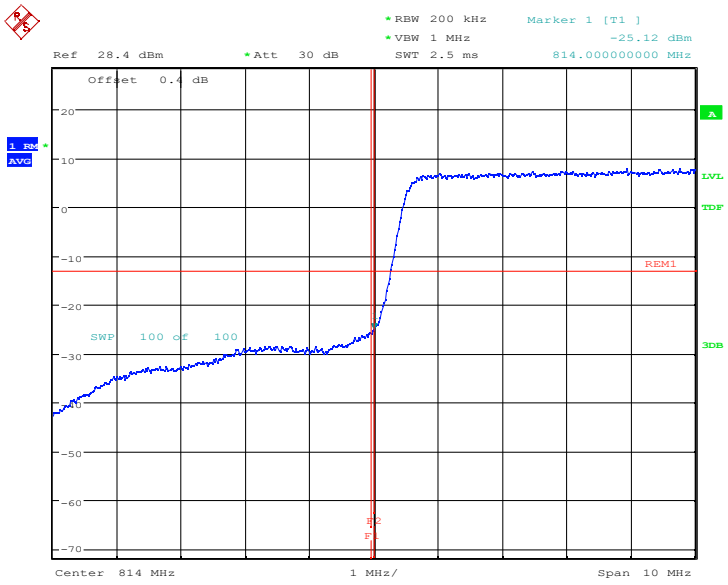
Date: 4.APR.2022 00:23:49

LOW BAND EDGE BLOCK-1RB-1.4M_offset



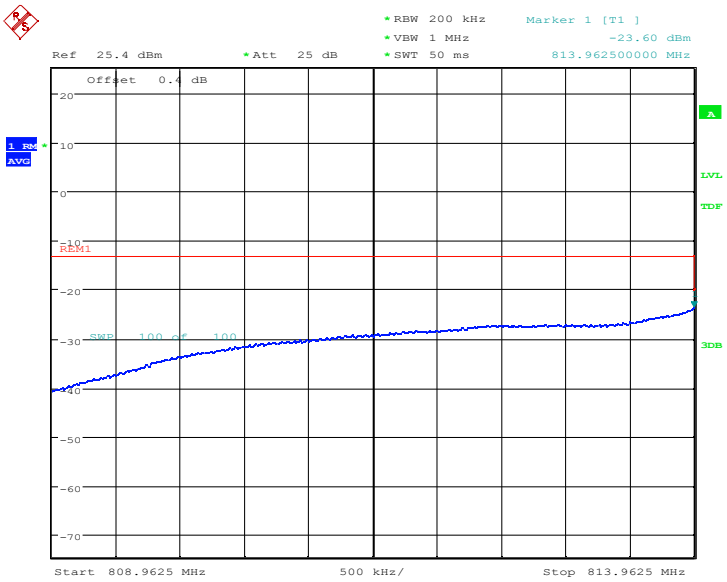
Date: 4.APR.2022 00:25:24

LOW BAND EDGE BLOCK-FULL RB-10M_offset



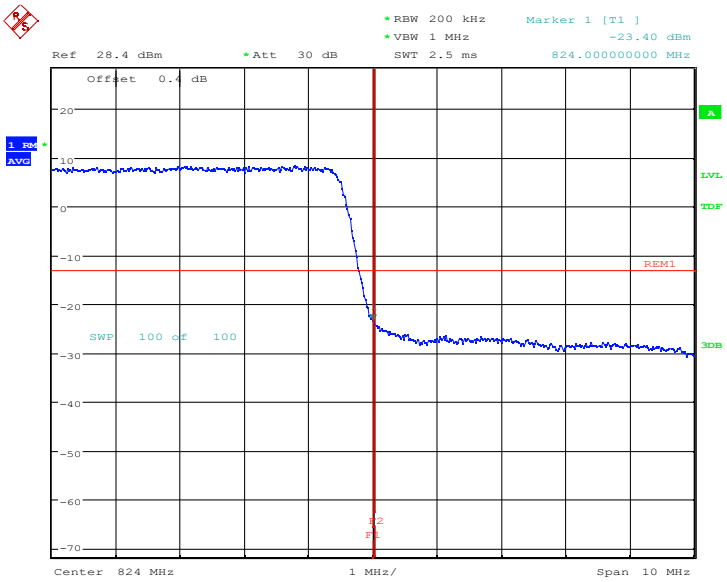
Date: 3.APR.2022 22:59:21

LOW BAND EDGE BLOCK-FULL RB-10M_offset



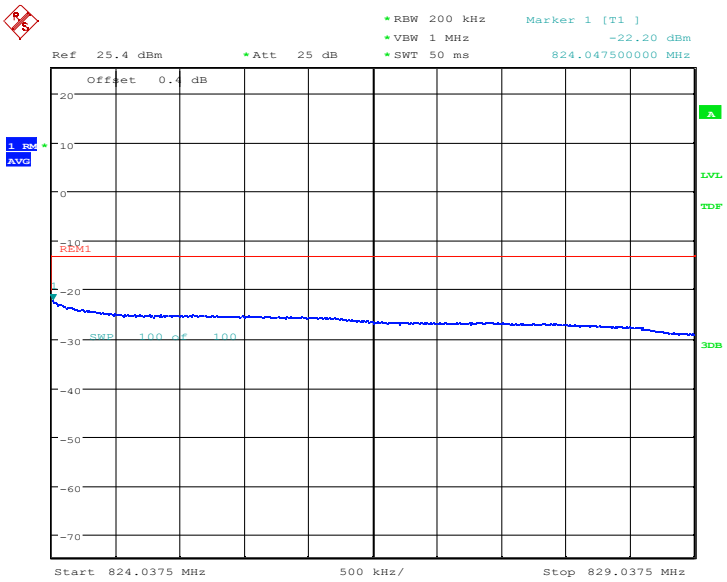
Date: 3.APR.2022 23:00:06

HIGH BAND EDGE BLOCK-FULL RB-10M_offset

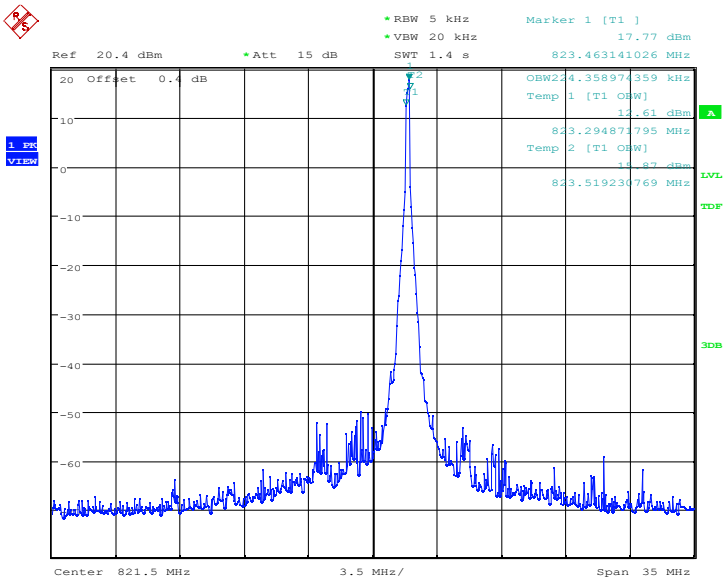


Date: 3.APR.2022 23:00:47

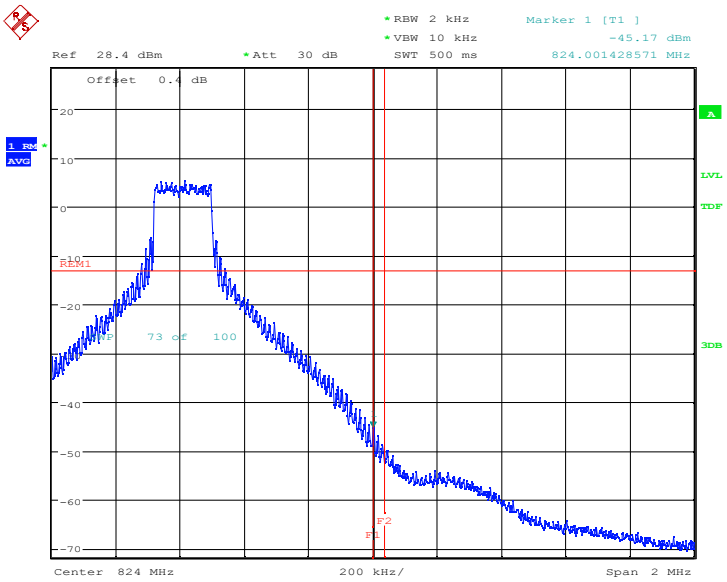
HIGH BAND EDGE BLOCK-FULL RB-10M_offset



OBW: 1RB-HIGH_offset

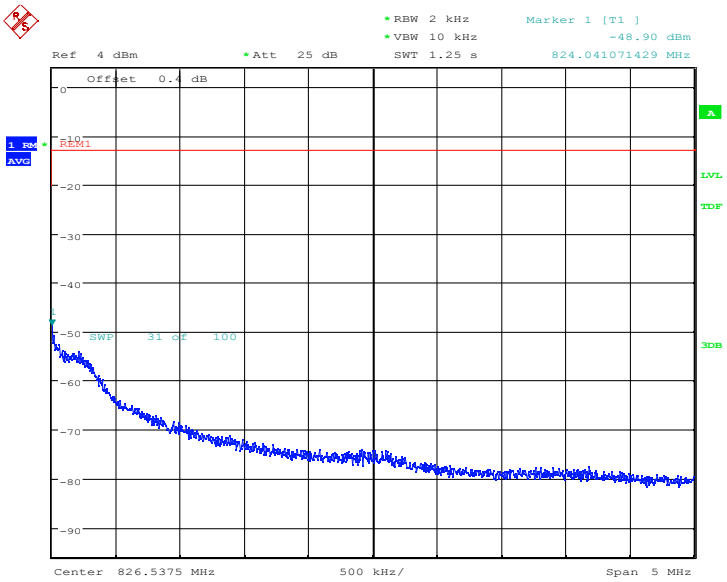


HIGH BAND EDGE BLOCK-1RB-10M_offset



Date: 4.APR.2022 00:28:02

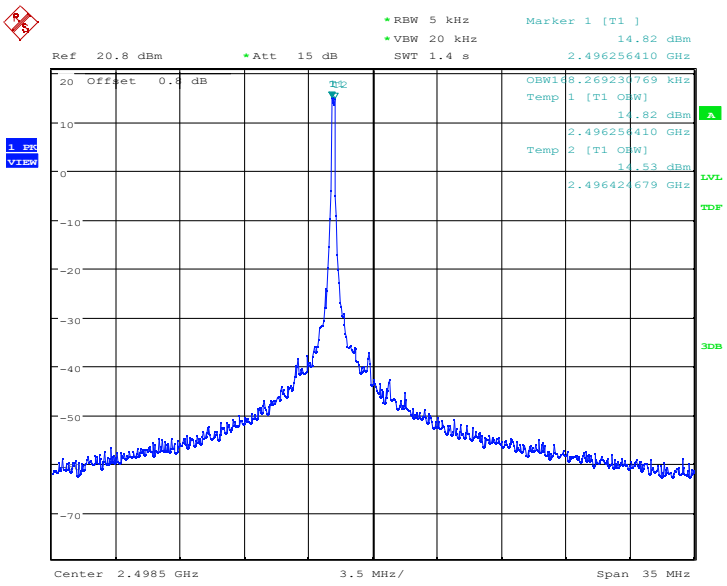
HIGH BAND EDGE BLOCK-1RB-10M_offset



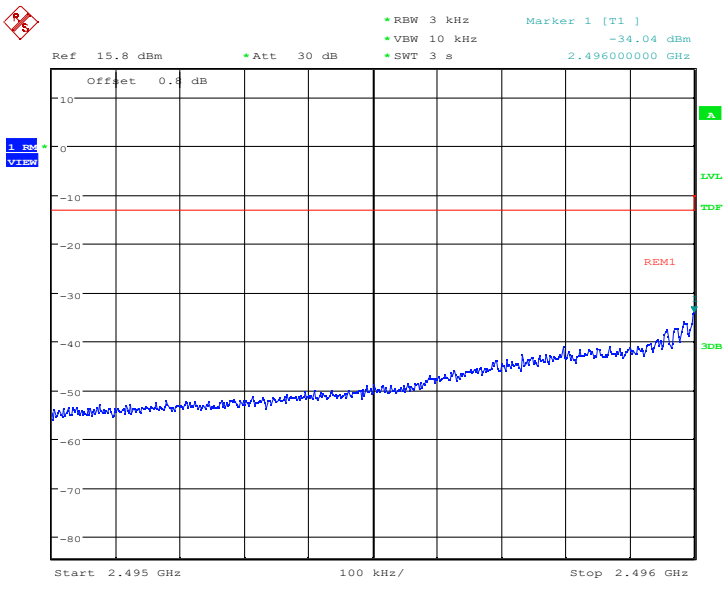
Date: 4.APR.2022 00:29:20

LTE band 41

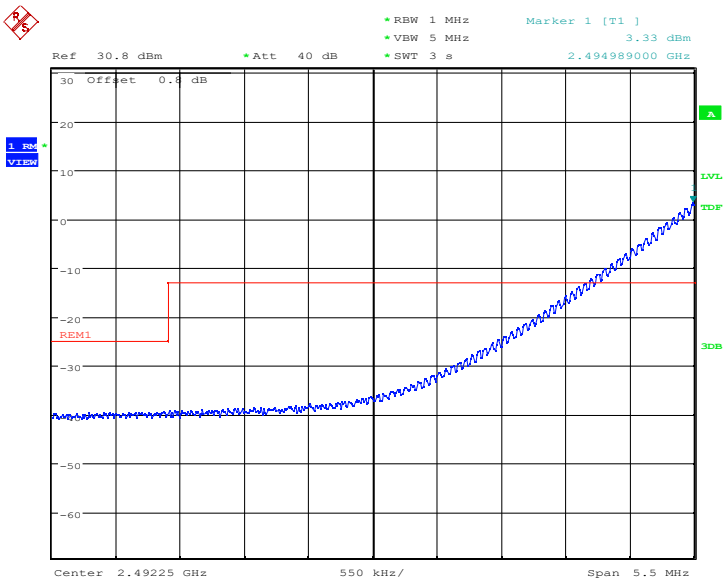
OBW: 1RB-LOW_offset



LOW BAND EDGE BLOCK-1RB-5M_offset

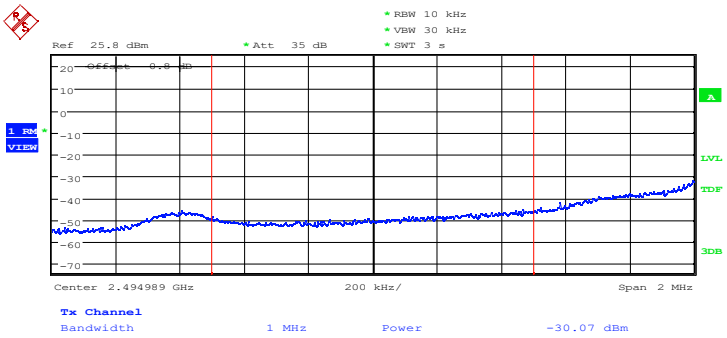


LOW BAND EDGE BLOCK-1RB-5M_offset



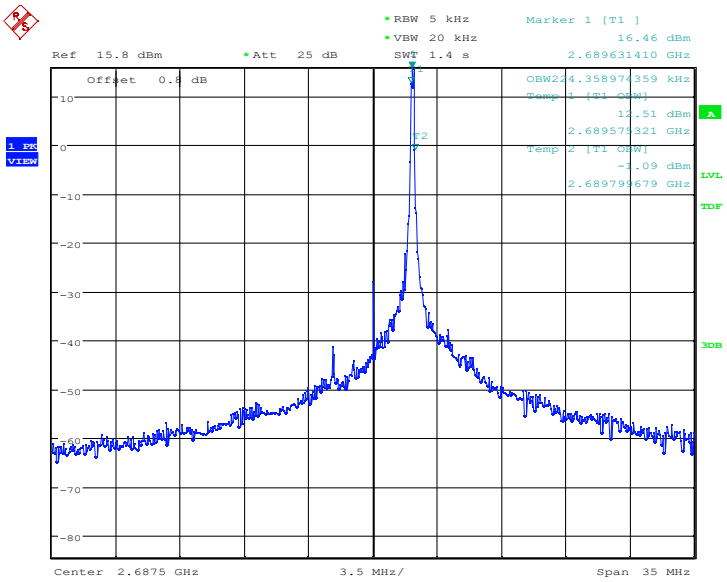
Date: 12.APR.2022 01:59:23

Channal Power

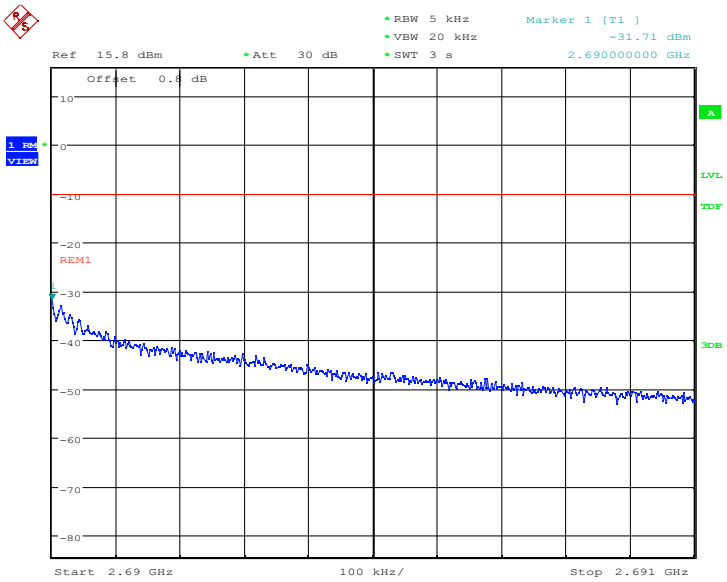


Date: 12.APR.2022 01:59:48

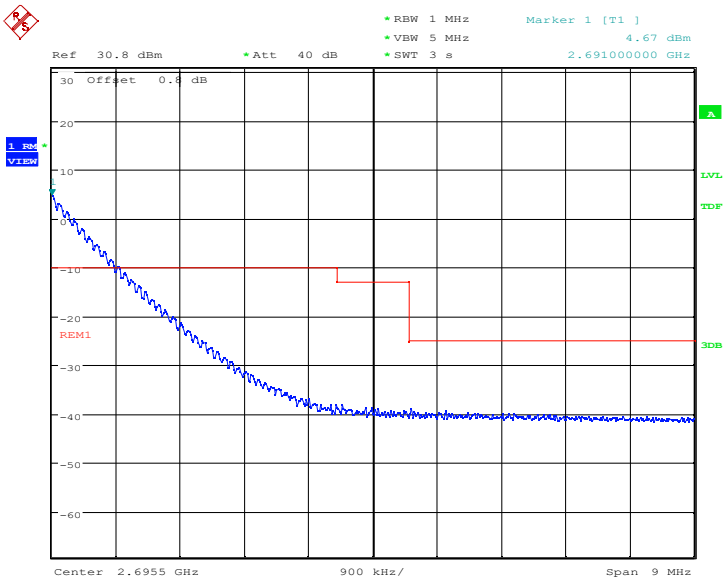
OBW: 1RB-HIGH_offset



HIGH BAND EDGE BLOCK-1RB-5M_offset



HIGH BAND EDGE BLOCK-1RB-5M_offset



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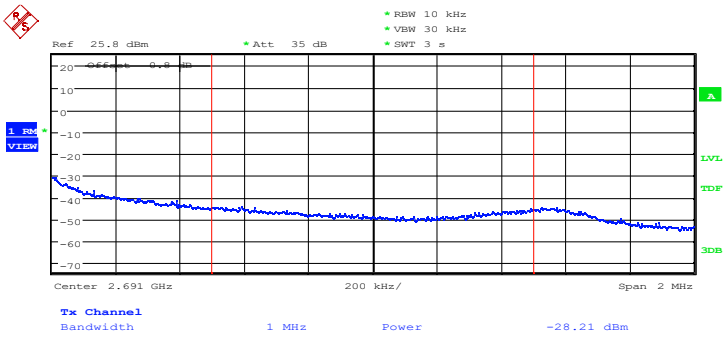
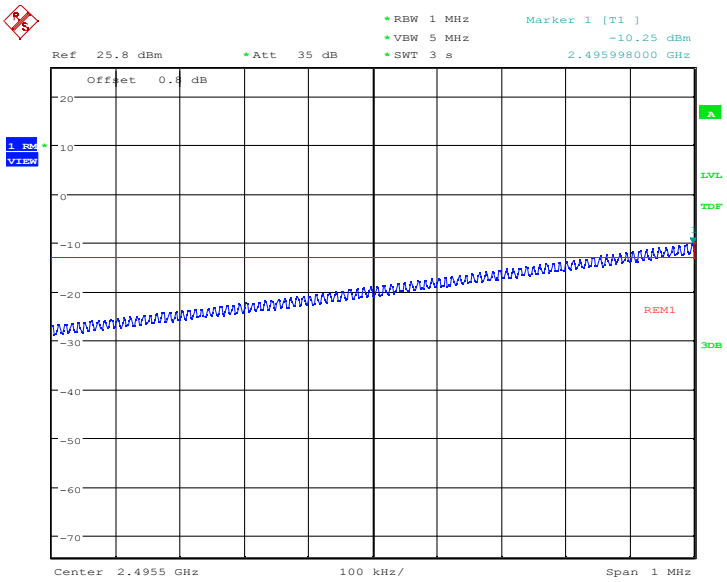
Channal Power



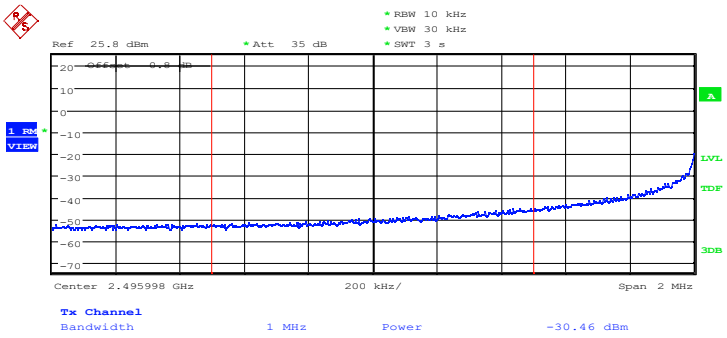
Date: 12.APR.2022 02:02:40

LOW BAND EDGE BLOCK-FULL RB-20M_offset



Date: 12.APR.2022 02:04:30

Channal Power



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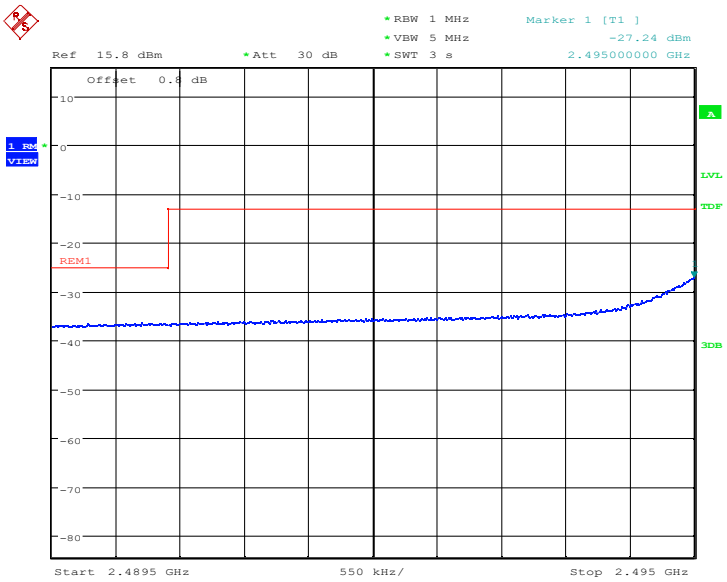
LOW BAND EDGE BLOCK-FULL RB-20M_offset



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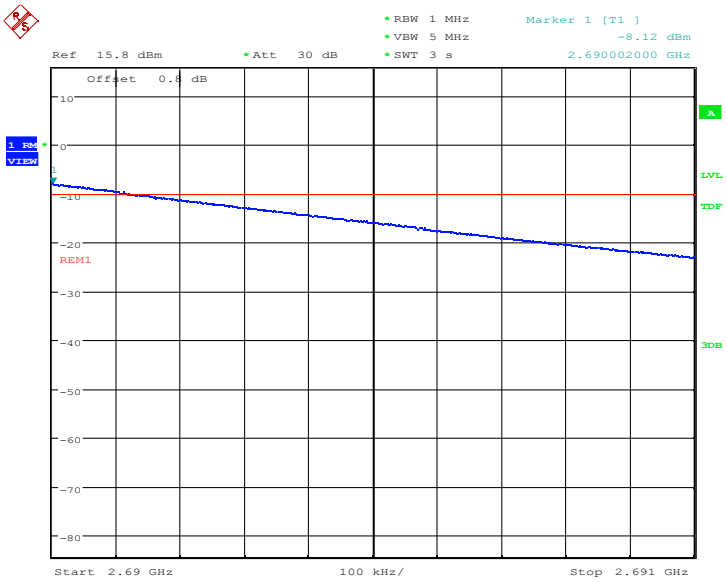
HIGH BAND EDGE BLOCK-FULL RB-20M_offset



Date: 12.APR.2022 02:08:16

Channal Power