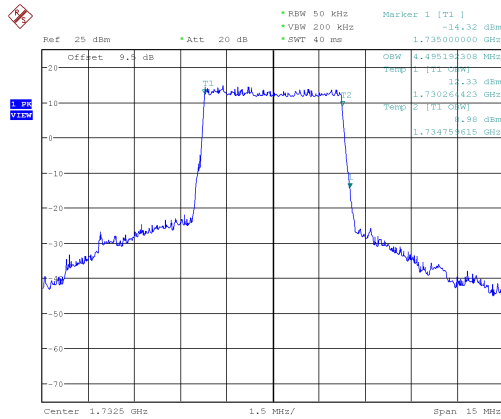
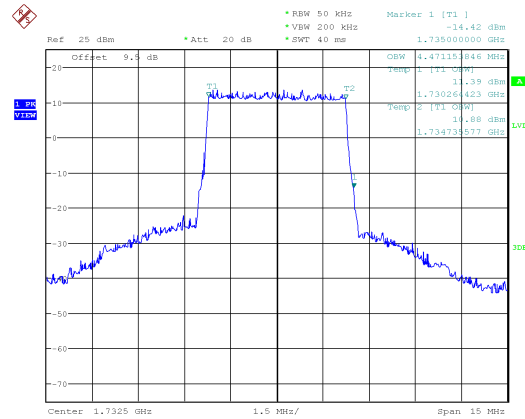


QPSK (99% BW)



Date: 13.DEC.2021 14:35:10

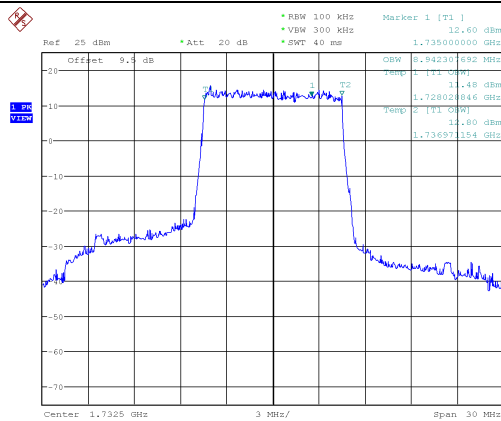
16QAM (99% BW)



Date: 13.DEC.2021 14:35:21

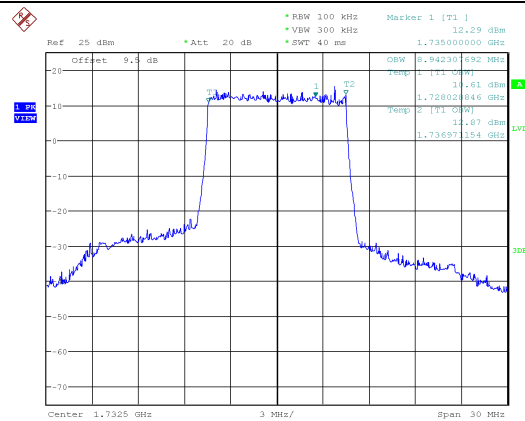
LTE band 4, 10MHz, 1732.5MHz (99%)

QPSK (99% BW)



Date: 13.DEC.2021 14:35:39

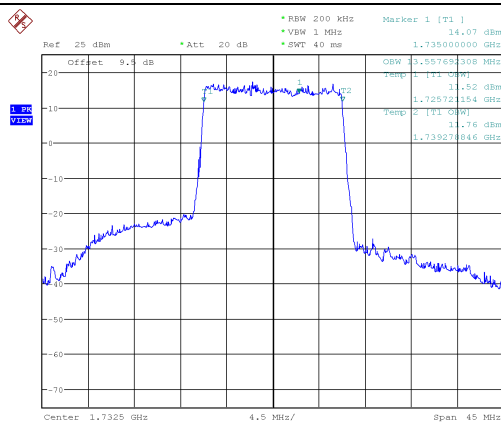
16QAM (99% BW)



Date: 13.DEC.2021 14:35:51

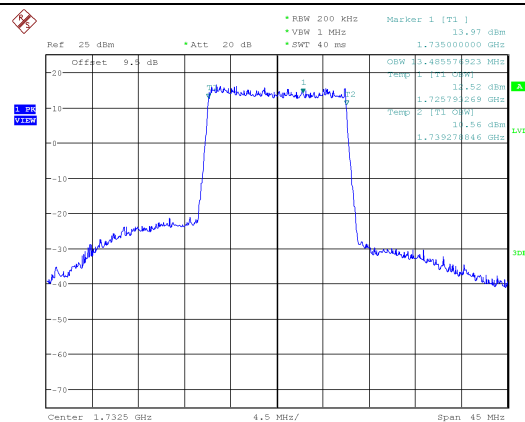
LTE band 4, 15MHz, 1732.5MHz (99%)

QPSK (99% BW)



Date: 13.DEC.2021 14:36:09

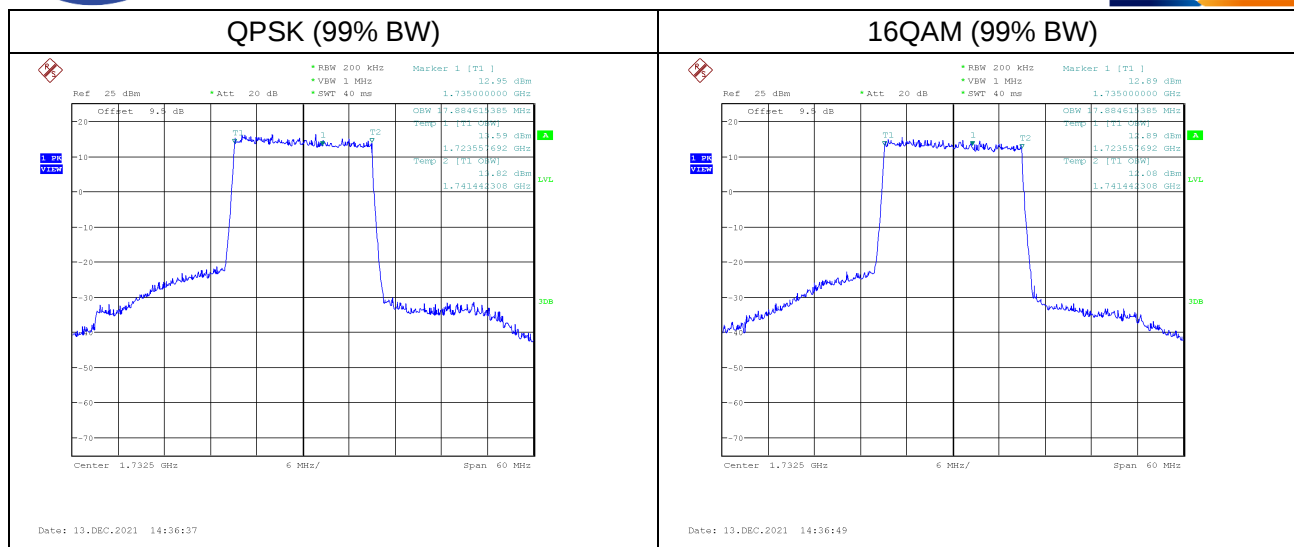
16QAM (99% BW)



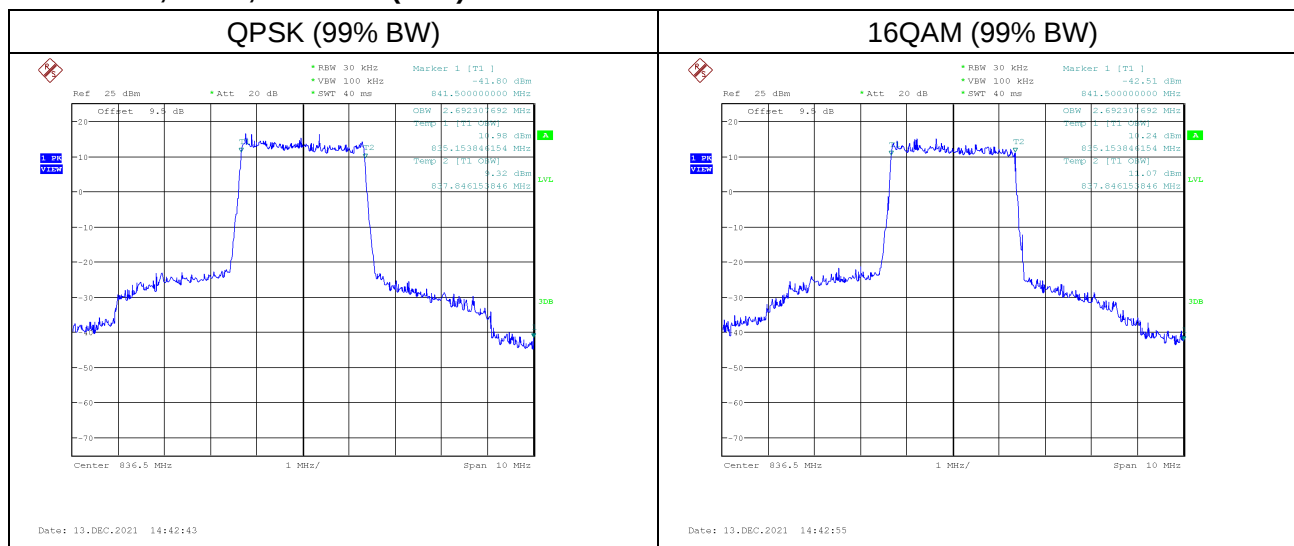
Date: 13.DEC.2021 14:36:20

LTE band 4, 20MHz, 1732.5MHz (99%)

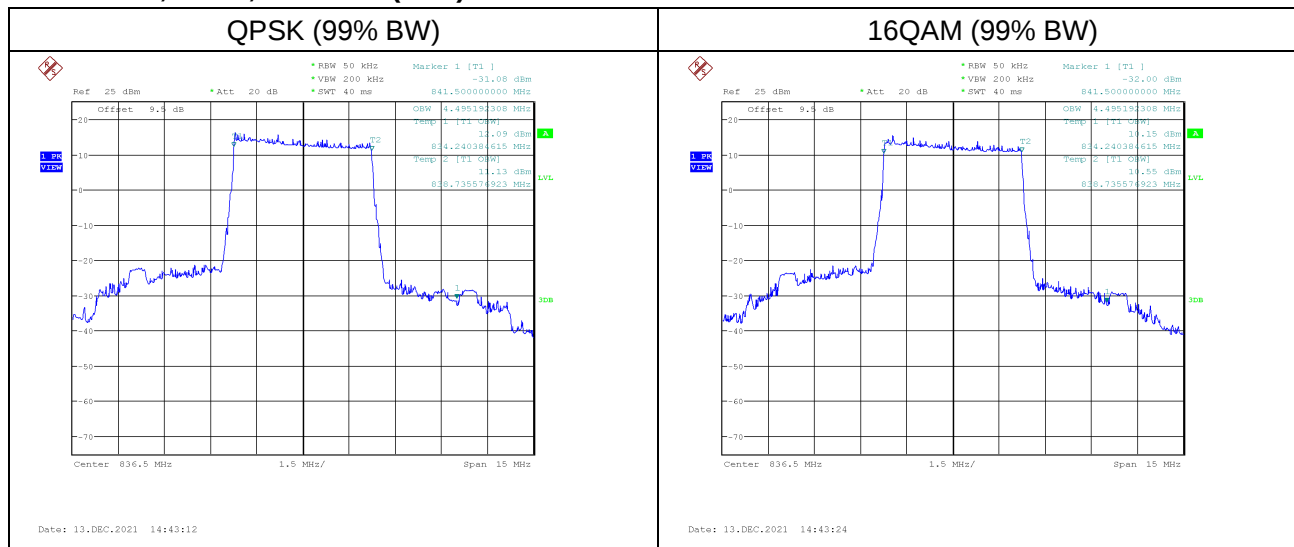
Industrial Internet Innovation Center (Shanghai) Co., Ltd.
Add: Building 4, No. 766 Jingang Rd, Pudong, Shanghai, China
Tel: +86 21 68866880



LTE band 5, 3MHz, 836.5MHz(99%)



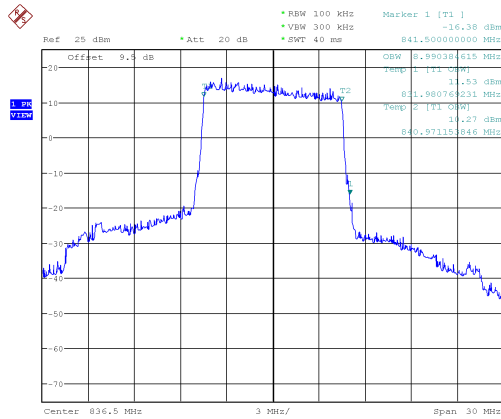
LTE band 5, 5MHz, 836.5MHz(99%)



LTE band 5, 10MHz, 836.5MHz(99%)

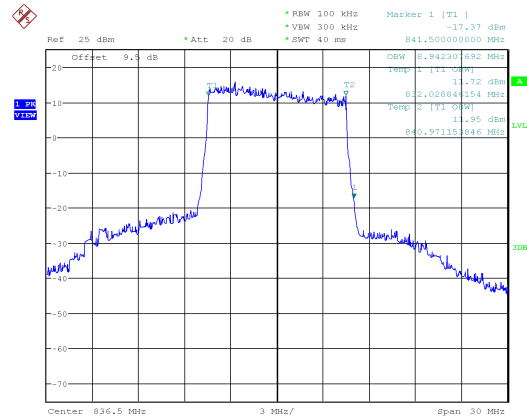
Industrial Internet Innovation Center (Shanghai) Co., Ltd.
 Add: Building 4, No. 766 Jingang Rd, Pudong, Shanghai, China
 Tel: +86 21 68866880

QPSK (99% BW)



Date: 13.DEC.2021 14:43:41

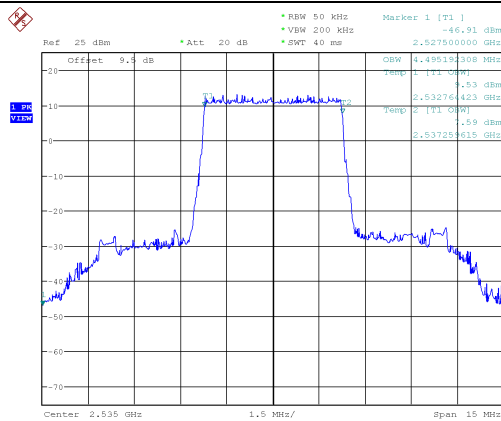
16QAM (99% BW)



Date: 13.DEC.2021 14:43:53

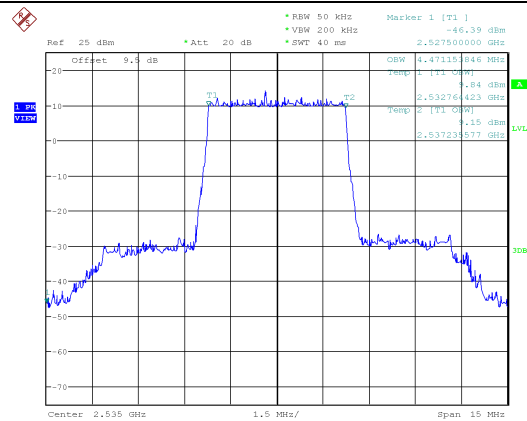
LTE band 7, 5MHz, 2535MHz(99%)

QPSK (99% BW)



Date: 13.DEC.2021 14:45:36

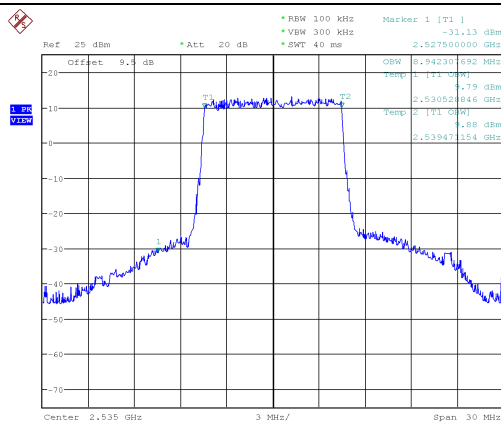
16QAM (99% BW)



Date: 13.DEC.2021 14:45:48

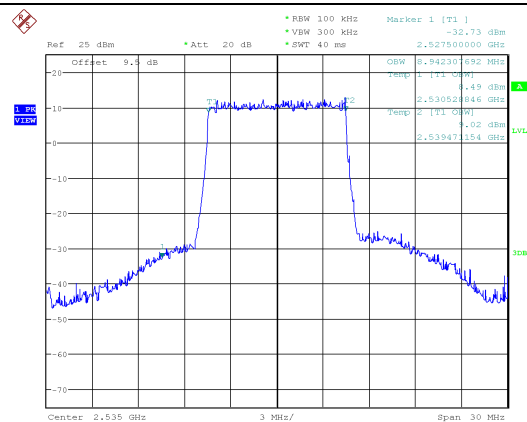
LTE band 7, 10MHz, 2535MHz(99%)

QPSK (99% BW)



Date: 13.DEC.2021 14:46:05

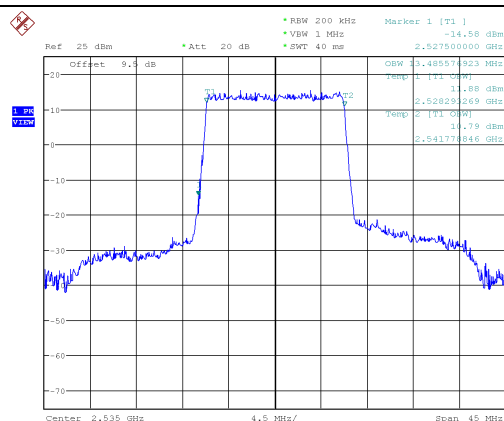
16QAM (99% BW)



Date: 13.DEC.2021 14:46:16

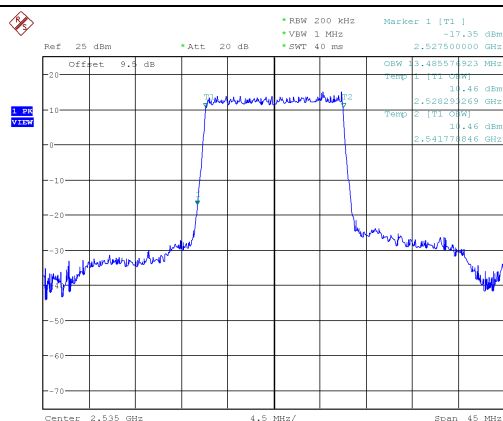
LTE band 7, 15MHz, 2535MHz(99%)

QPSK (99% BW)



Date: 13.DEC.2021 14:46:34

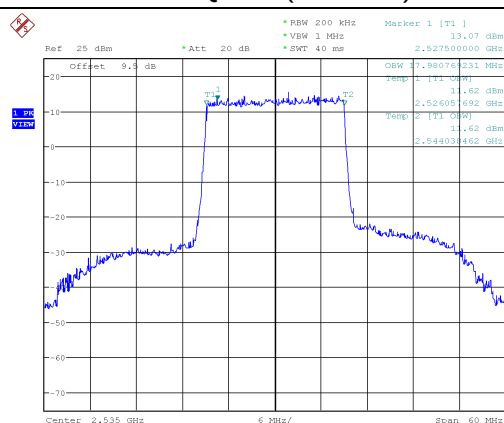
16QAM (99% BW)



Date: 13.DEC.2021 14:46:45

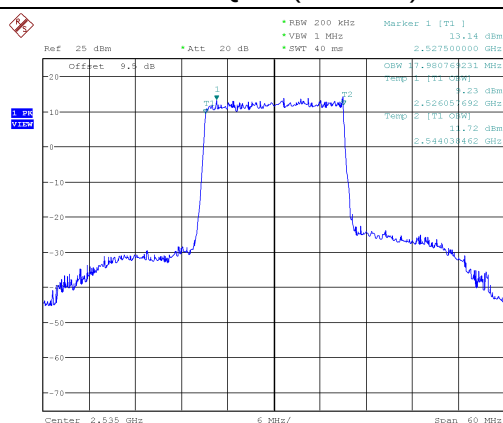
LTE band 7, 20MHz, 2535MHz(99%)

QPSK (99% BW)



Date: 13.DEC.2021 14:47:03

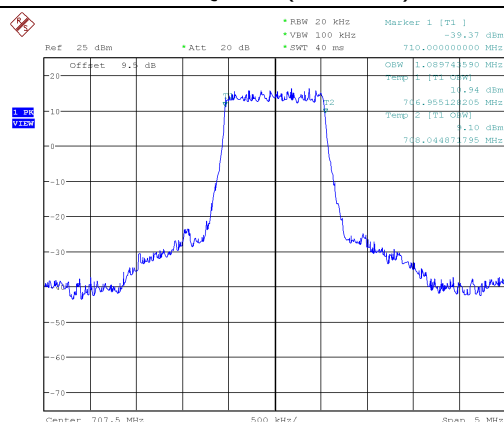
16QAM (99% BW)



Date: 13.DEC.2021 14:47:14

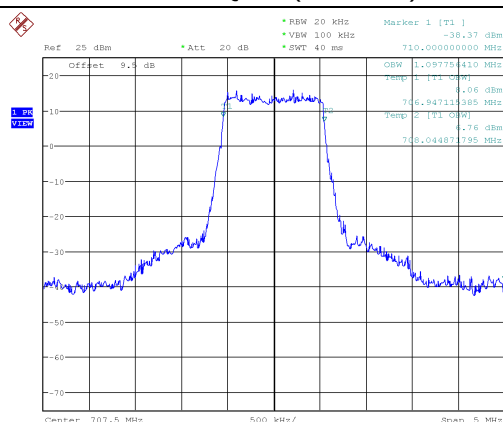
LTE band 12, 1.4MHz, 707.5MHz(99%)

QPSK (99% BW)



Date: 13.DEC.2021 14:48:58

16QAM (99% BW)

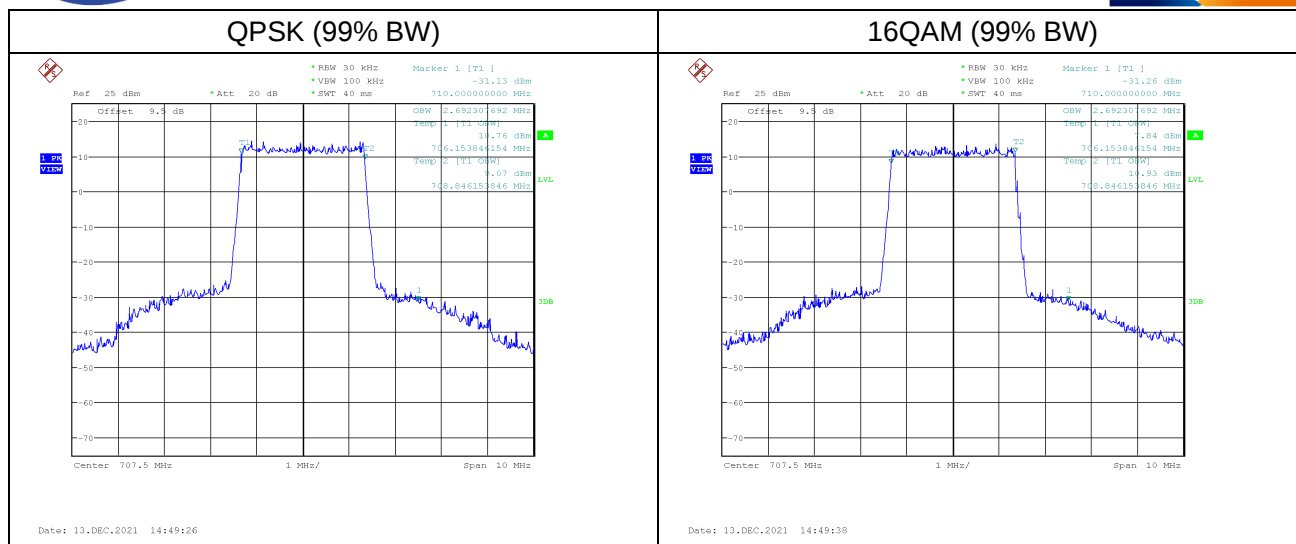


Date: 13.DEC.2021 14:49:09

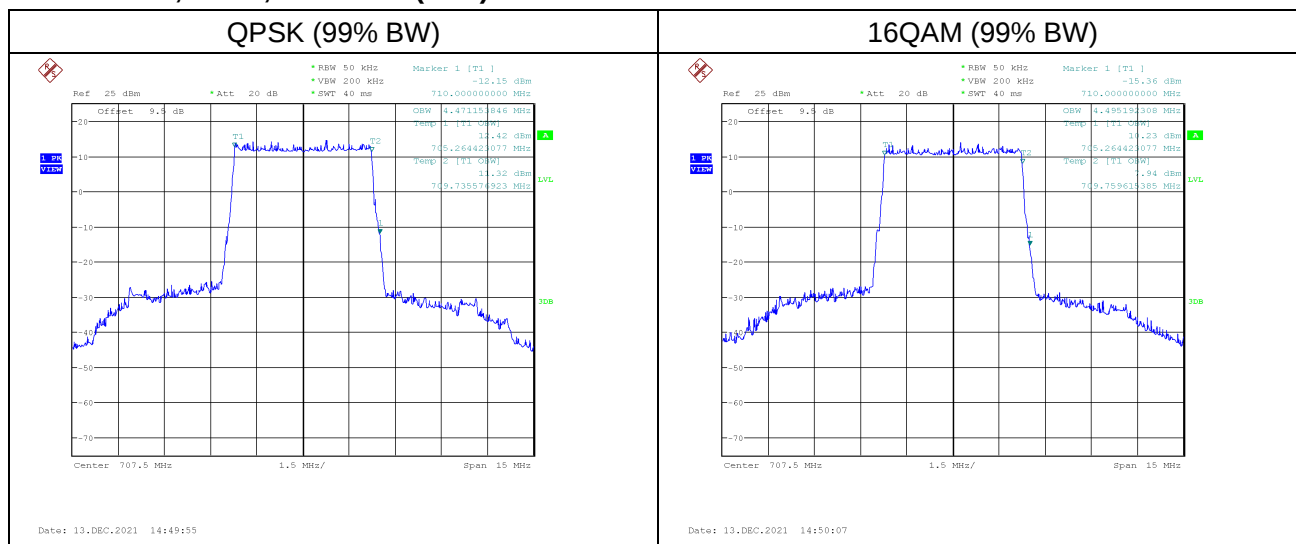
LTE band 12, 3MHz, 707.5MHz (99%)

Industrial Internet Innovation Center (Shanghai) Co., Ltd.
Add: Building 4, No. 766 Jingang Rd, Pudong, Shanghai, China
Tel: +86 21 68866880

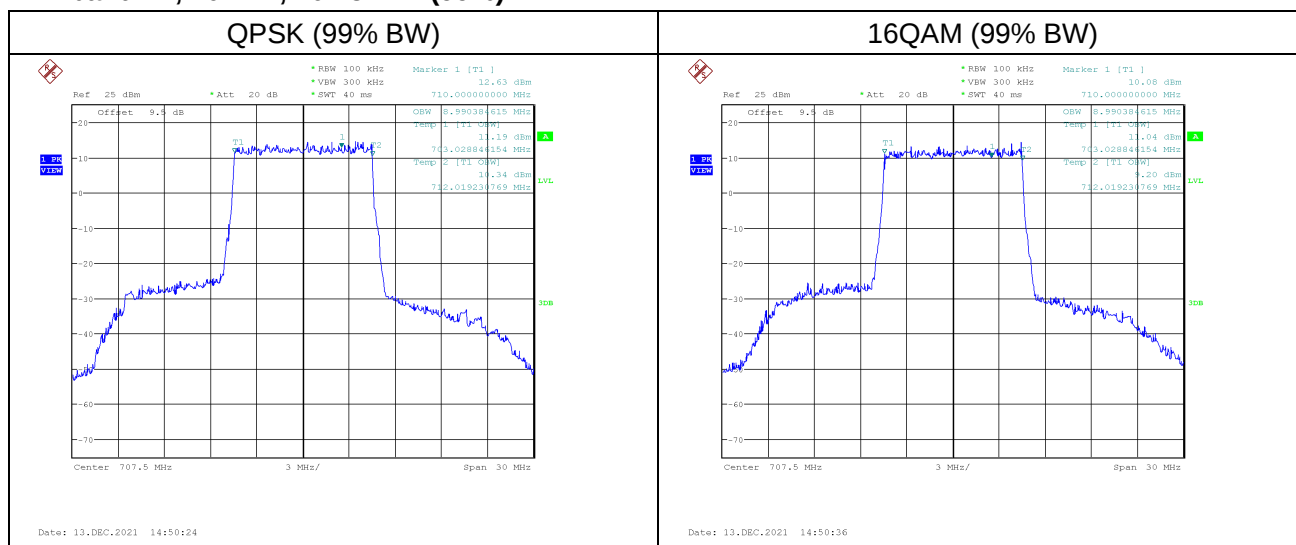
Page Number: 82 of 129
Report No.: C21T00135-RF02-V00



LTE band 12, 5MHz, 707.5MHz (99%)

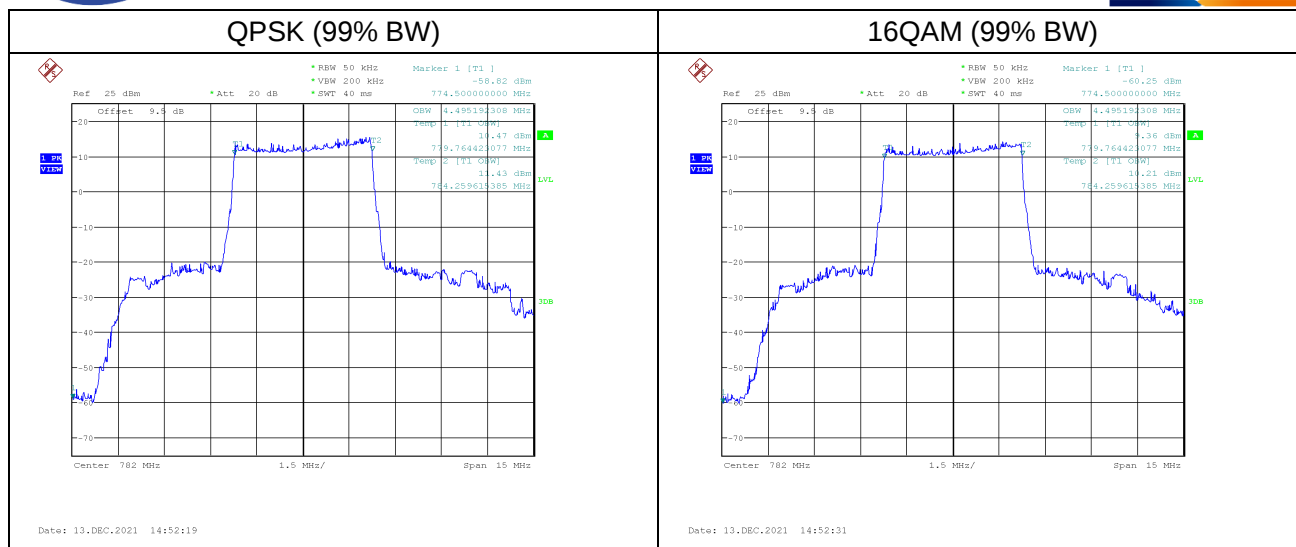


LTE band 12, 10MHz, 707.5MHz (99%)

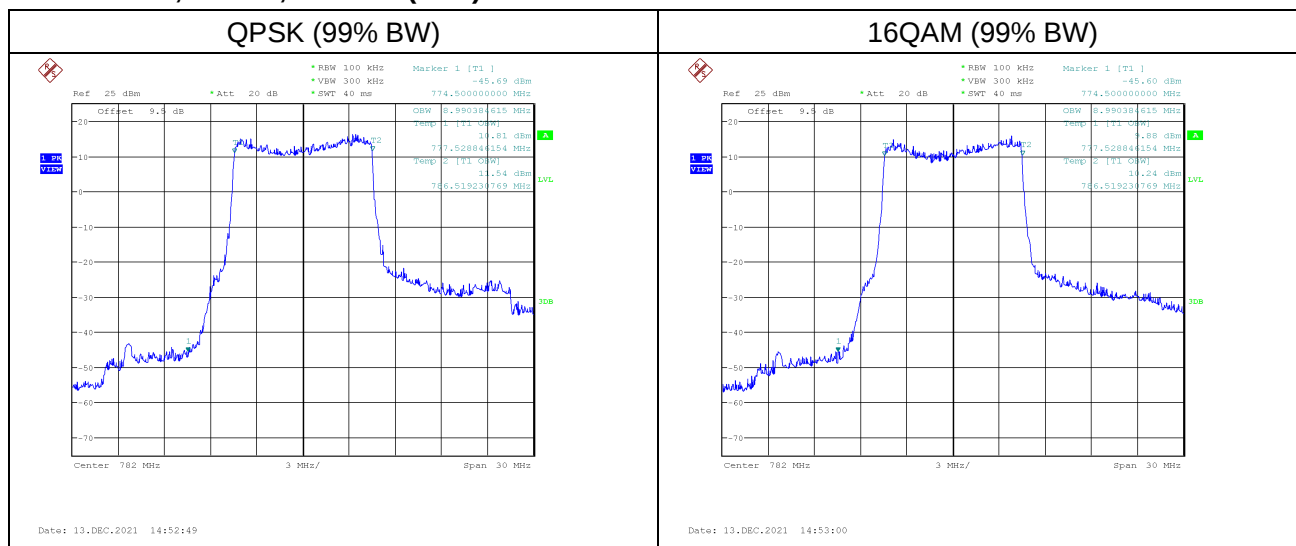


LTE band 13, 5MHz, 782MHz (99%)

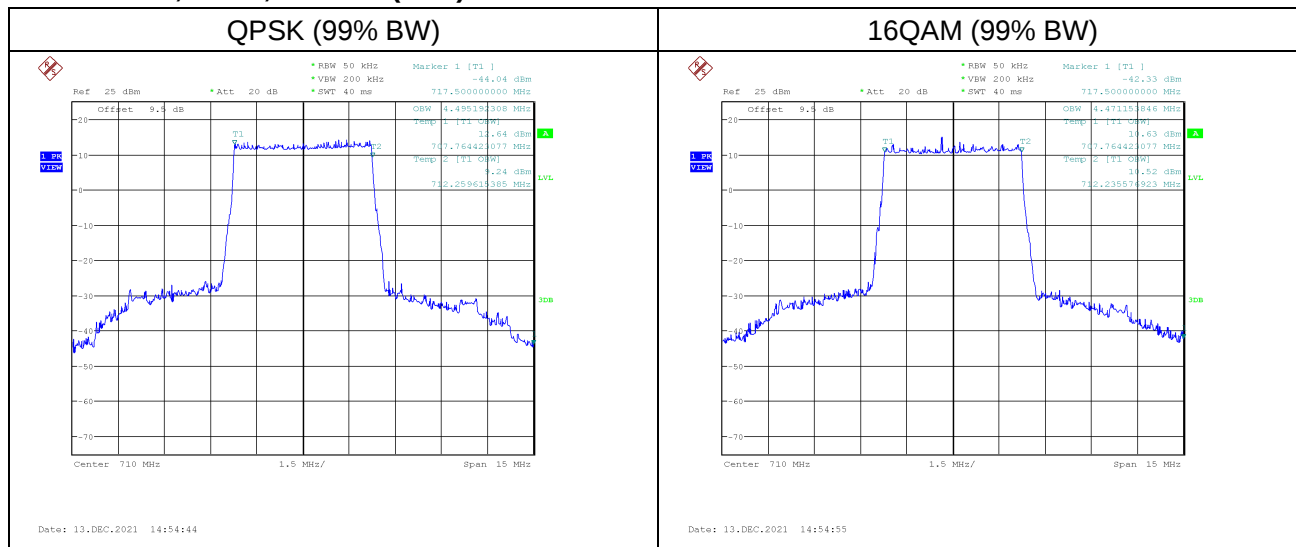
Industrial Internet Innovation Center (Shanghai) Co., Ltd.
Add: Building 4, No. 766 Jingang Rd, Pudong, Shanghai, China
Tel: +86 21 68866880



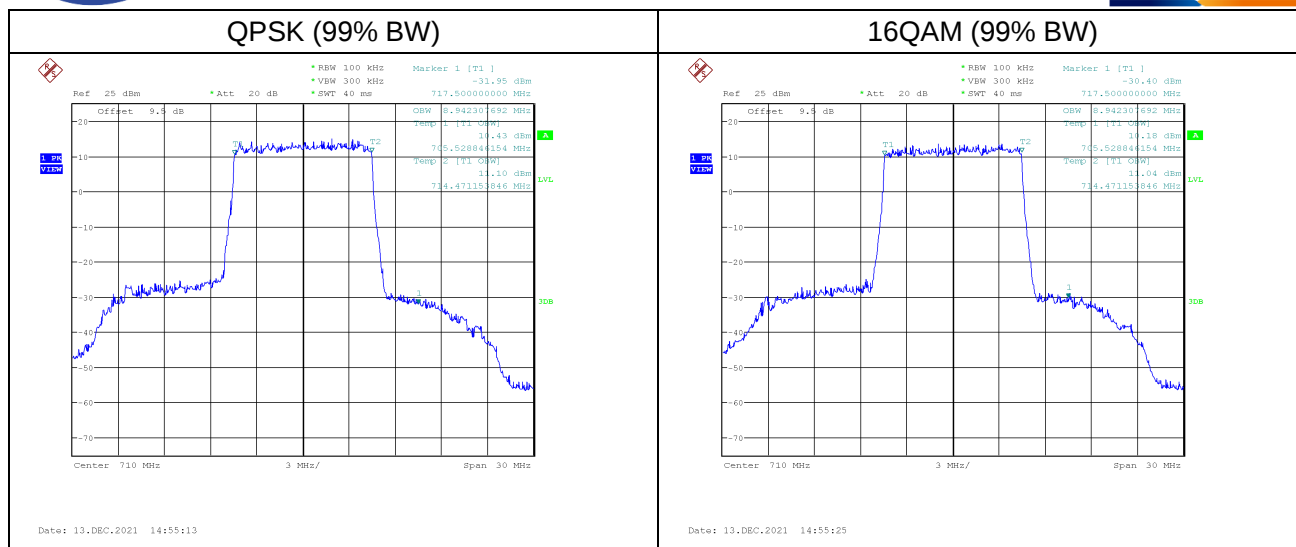
LTE band 13, 10MHz, 782MHz (99%)



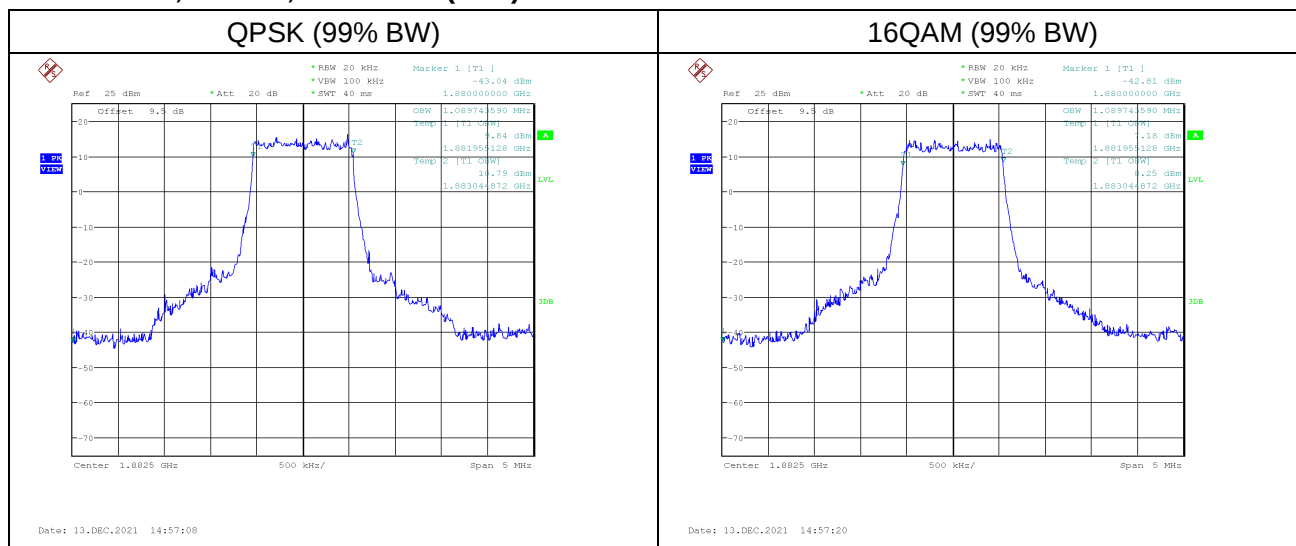
LTE band 17, 5MHz, 710MHz (99%)



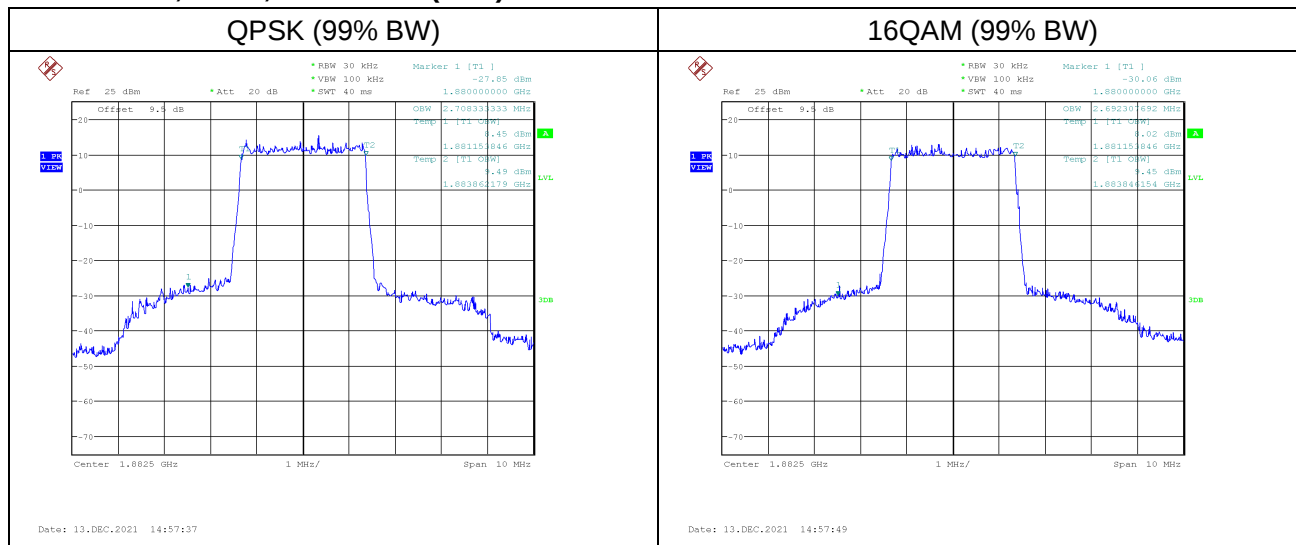
LTE band 17, 10MHz, 710MHz (99%)



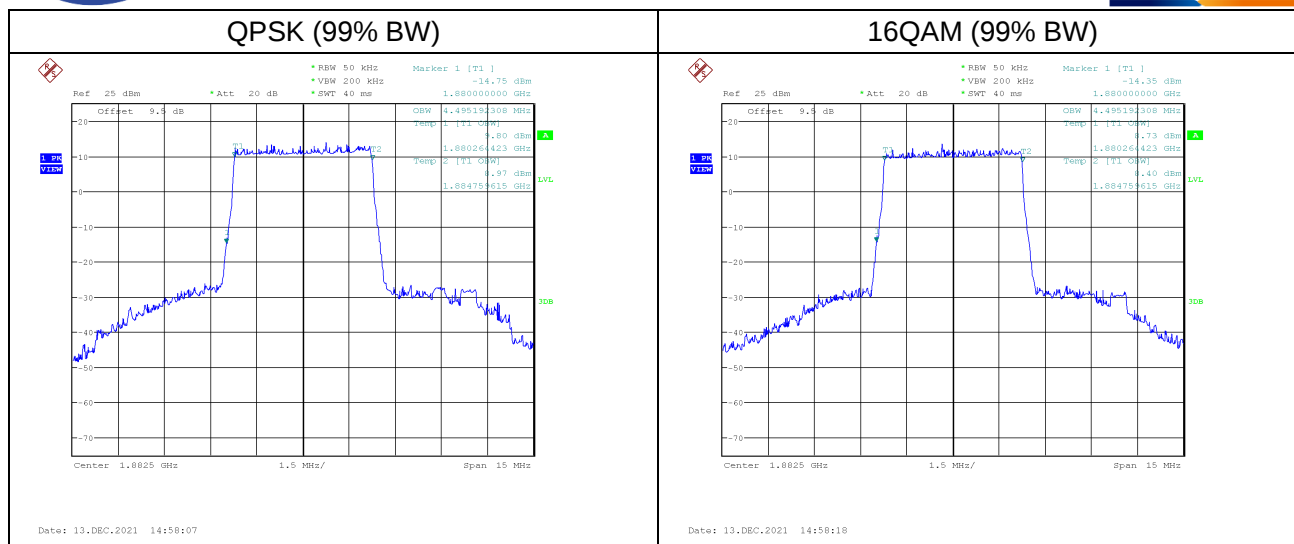
LTE band 25, 1.4MHz, 1882.5MHz(99%)



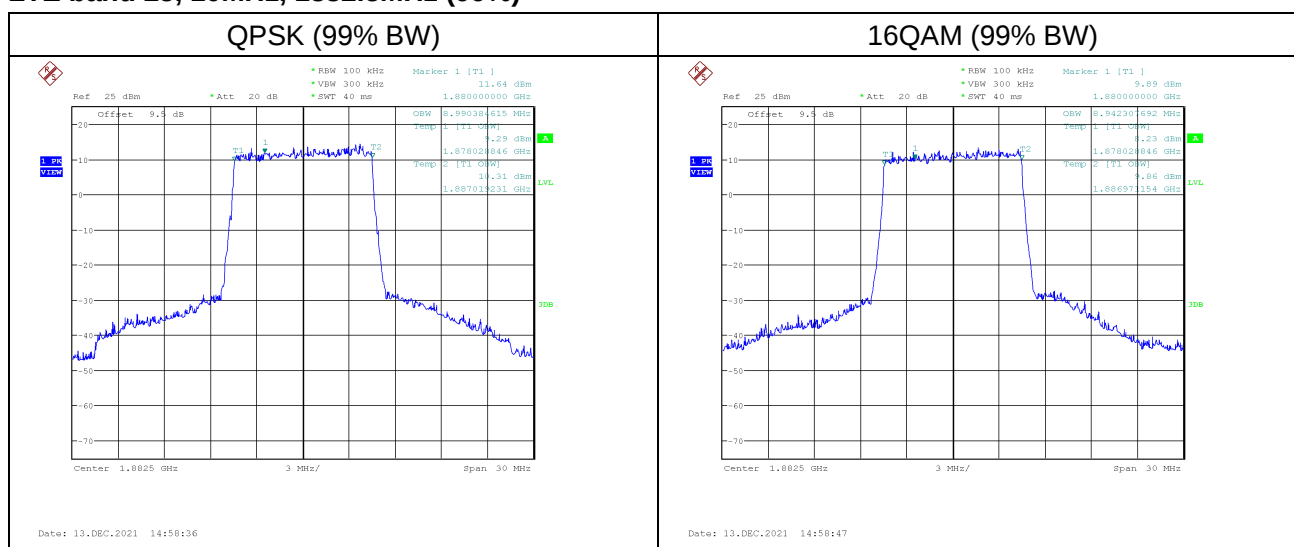
LTE band 25, 3MHz, 1882.5MHz (99%)



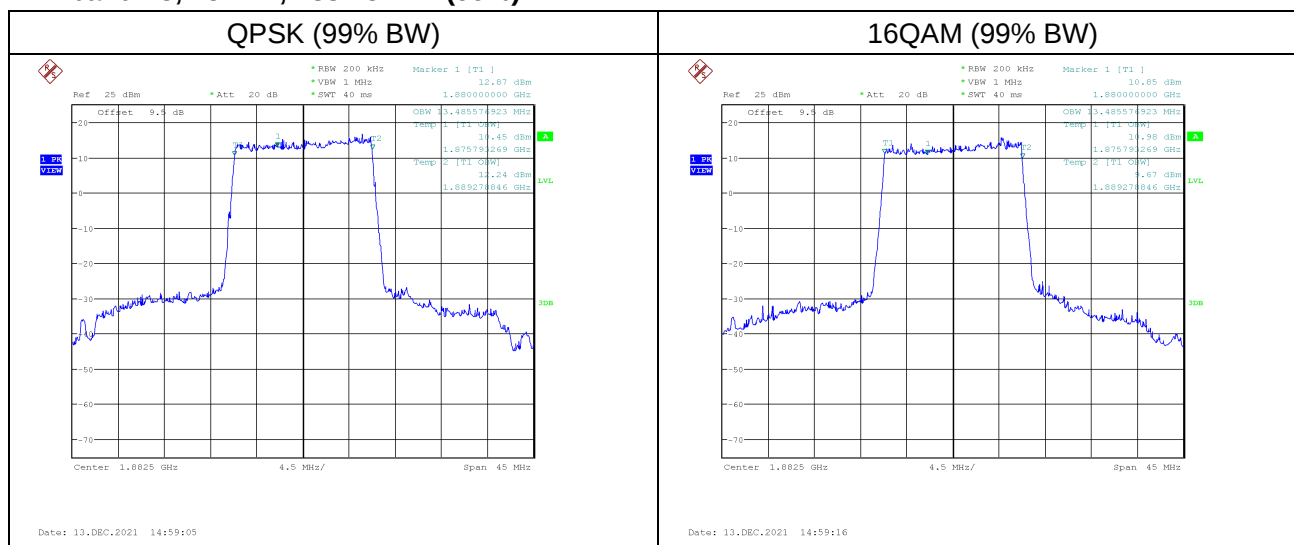
LTE band 25, 5MHz, 1882.5MHz (99%)



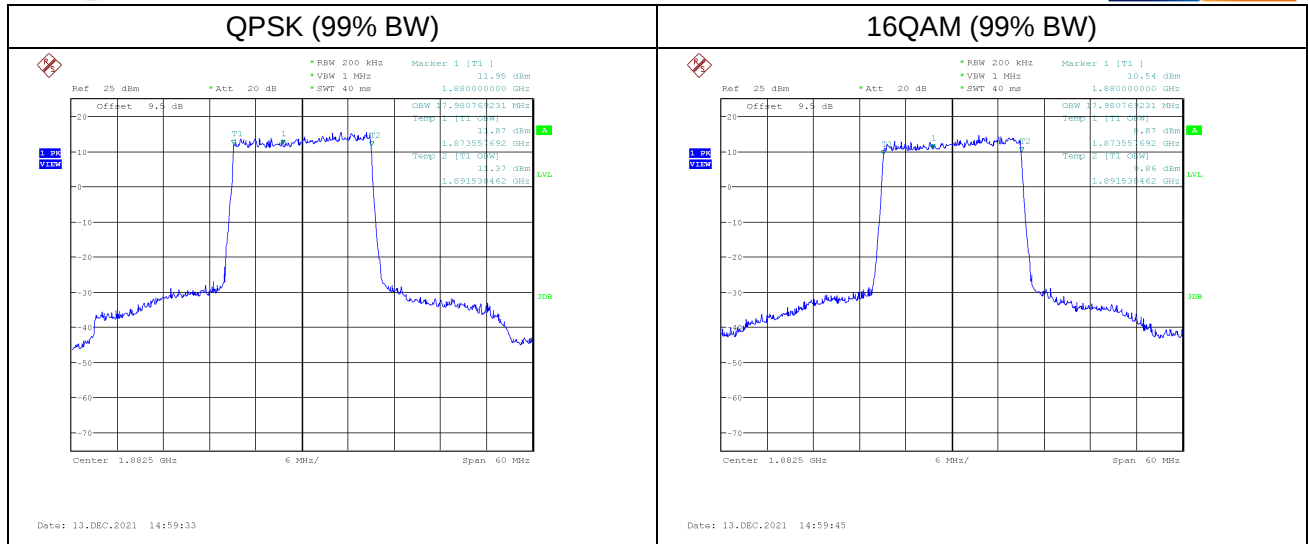
LTE band 25, 10MHz, 1882.5MHz (99%)



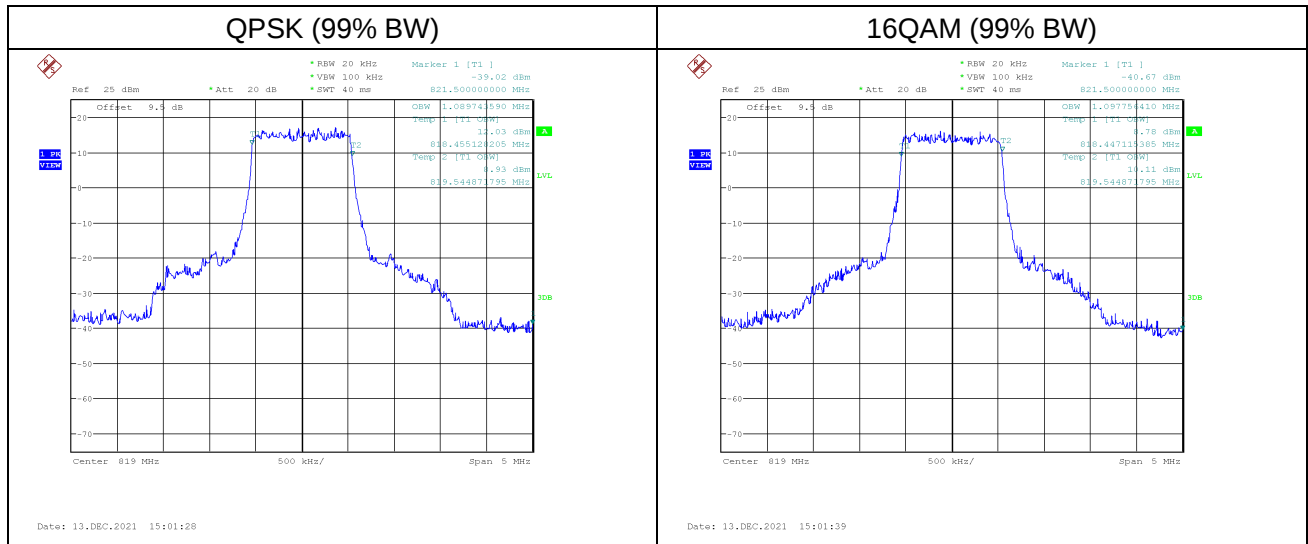
LTE band 25, 15MHz, 1882.5MHz (99%)



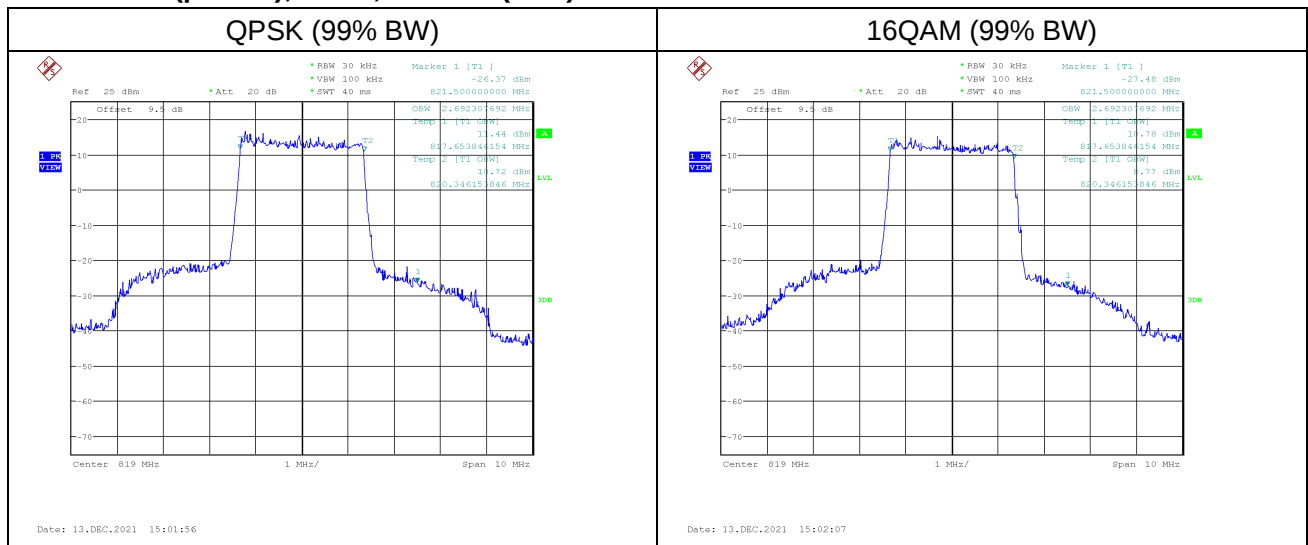
LTE band 25, 20MHz, 1882.5MHz (99%)



LTE band 26(part 90), 1.4MHz, 819MHz(99%)

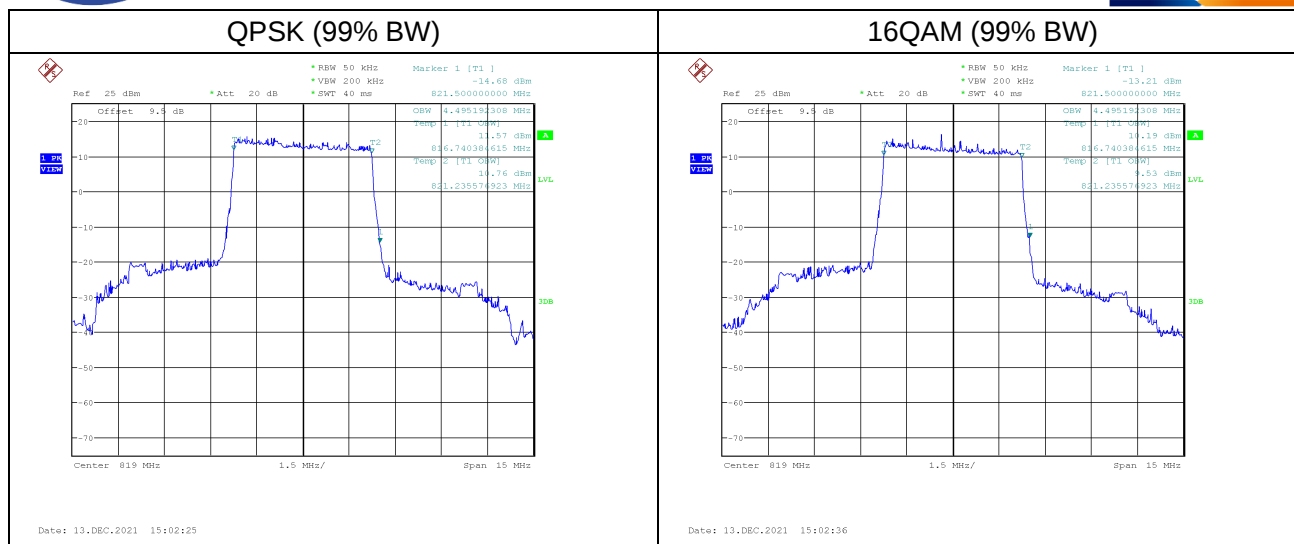


LTE band 26(part 90), 3MHz, 819MHz (99%)

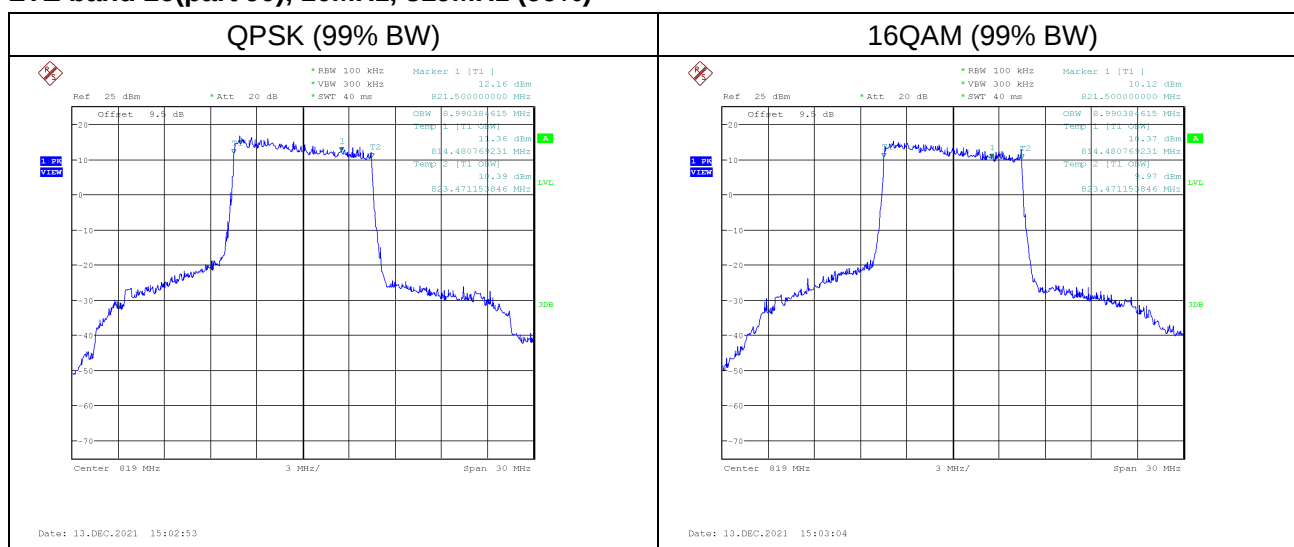


LTE band 26(part 90), 5MHz, 819MHz (99%)

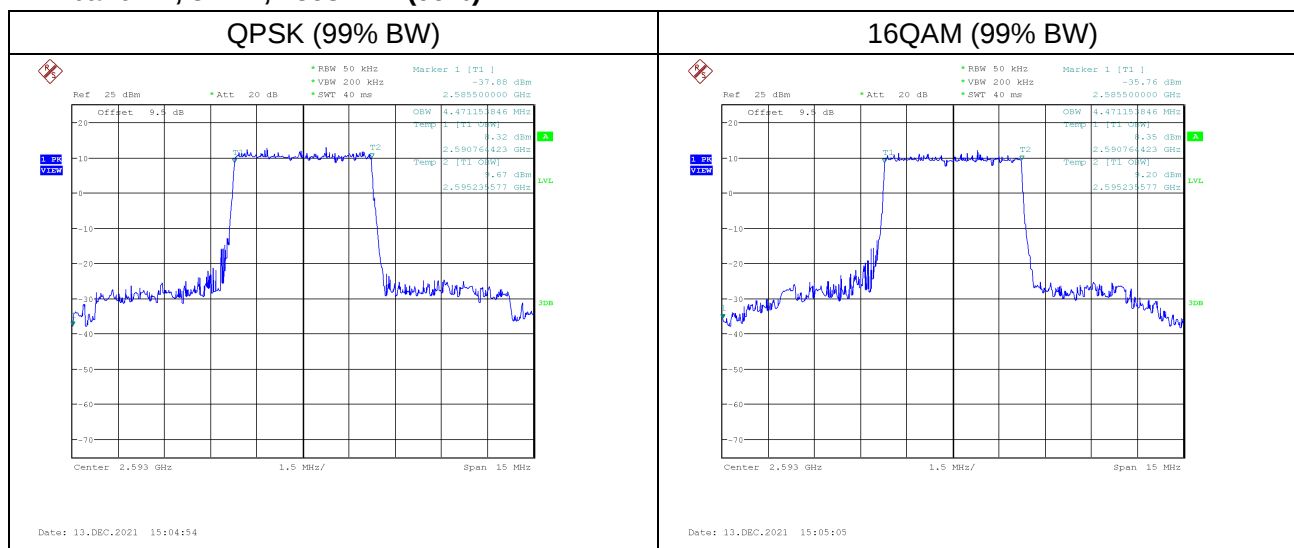
Industrial Internet Innovation Center (Shanghai) Co., Ltd.
 Add: Building 4, No. 766 Jingang Rd, Pudong, Shanghai, China
 Tel: +86 21 68866880



LTE band 26(part 90), 10MHz, 819MHz (99%)

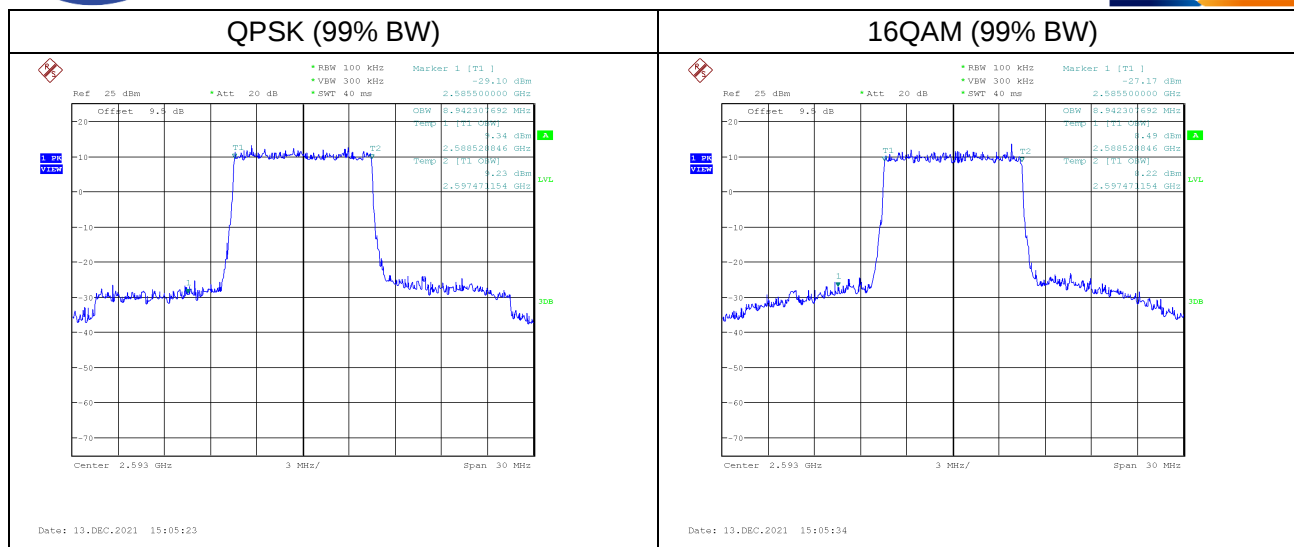


LTE band 41, 5MHz, 2593MHz (99%)

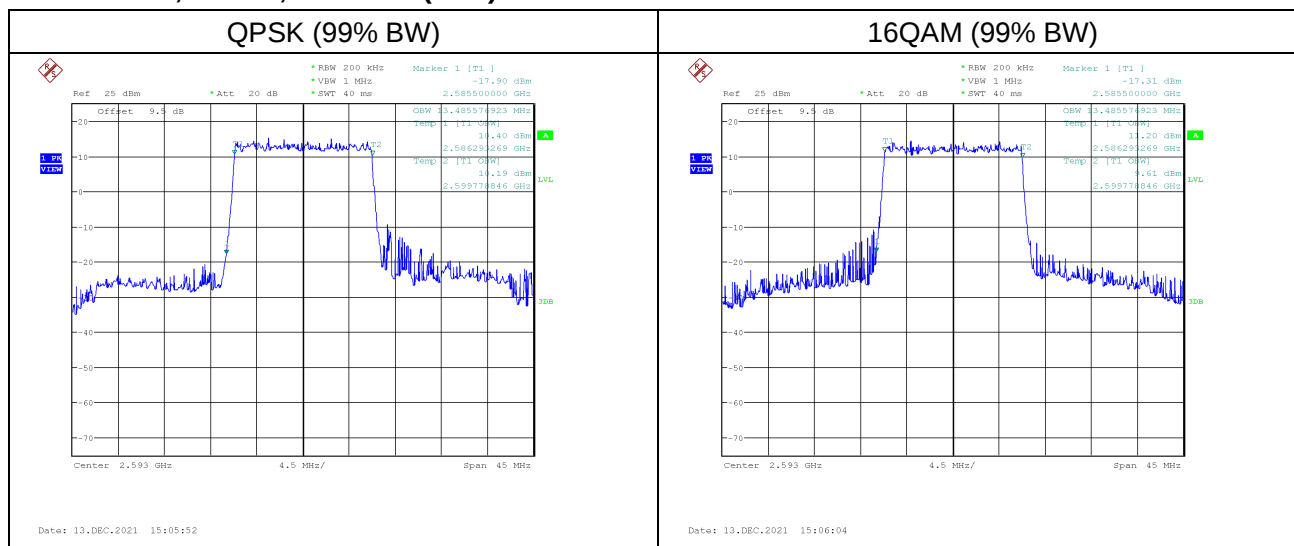


LTE band 41, 10MHz, 2593MHz (99%)

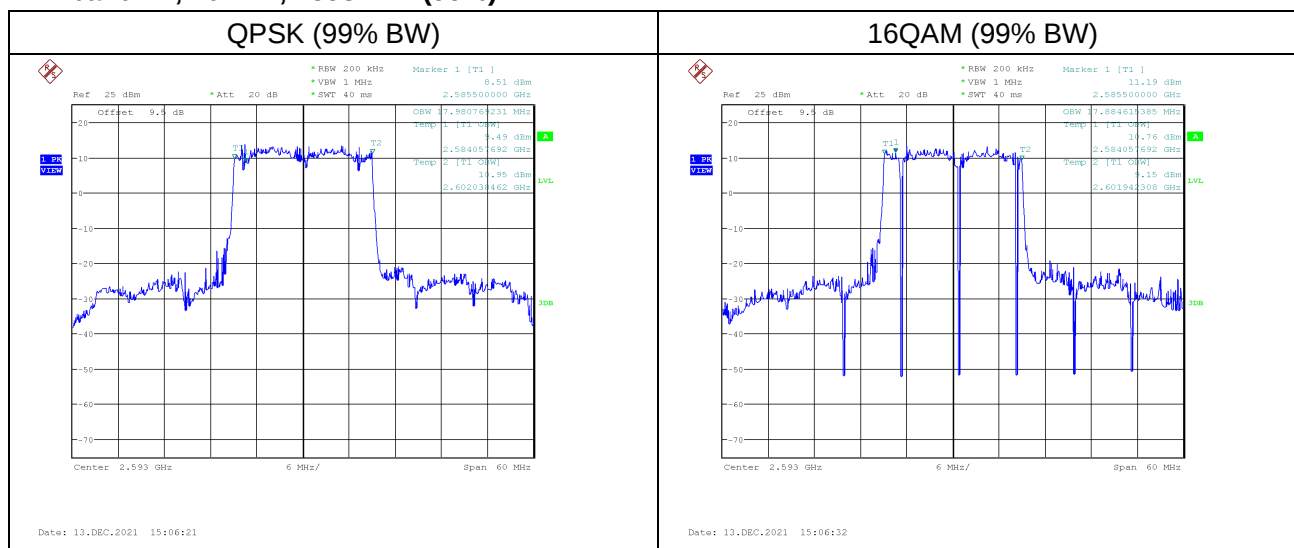
Industrial Internet Innovation Center (Shanghai) Co., Ltd.
Add: Building 4, No. 766 Jingang Rd, Pudong, Shanghai, China
Tel: +86 21 68866880



LTE band 41, 15MHz, 2593MHz (99%)



LTE band 41, 20MHz, 2593MHz (99%)



6.5. Emission Bandwidth

Reference

CFR Part 2.1049,22.917(b),24.238(a),27.53(g),27.53(h), 27.53(m),90.209(b)

6.5.1 Emission Bandwidth Results

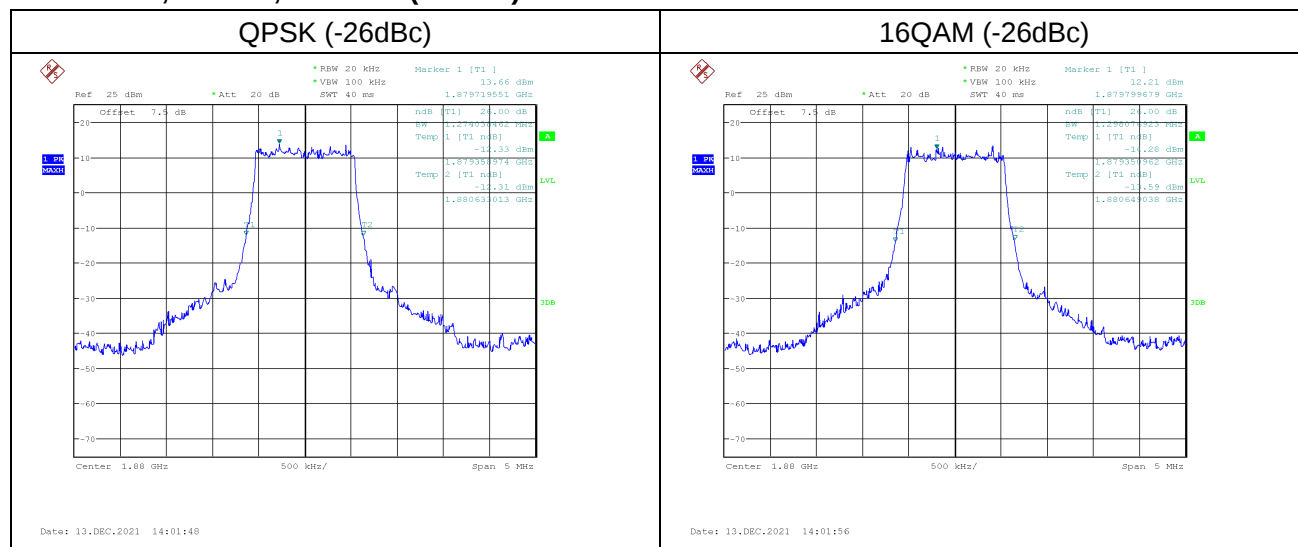
The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. Table below lists the measured -26dBc BW. Spectrum analyzer plots are included on the following pages.

Band	Range	BandWidth	Frequency(MHz)	QPSK(MHz)	Q16(MHz)
FDD02	MidRange	1.4	1880	1.27	1.30
FDD02	MidRange	3	1880	2.98	2.95
FDD02	MidRange	5	1880	4.90	4.95
FDD02	MidRange	10	1880	9.71	9.76
FDD02	MidRange	15	1880	14.64	14.64
FDD02	MidRange	20	1880	19.23	19.33
FDD04	MidRange	1.4	1732.5	1.26	1.28
FDD04	MidRange	3	1732.5	2.95	2.93
FDD04	MidRange	5	1732.5	4.98	4.93
FDD04	MidRange	10	1732.5	9.76	9.76
FDD04	MidRange	15	1732.5	14.50	14.57
FDD04	MidRange	20	1732.5	19.23	19.13
FDD05	MidRange	1.4	836.5	1.29	1.28
FDD05	MidRange	3	836.5	2.93	2.95
FDD05	MidRange	5	836.5	4.83	4.86
FDD05	MidRange	10	836.5	9.66	9.57
FDD07	MidRange	5	2535	4.90	4.90
FDD07	MidRange	10	2535	9.62	9.81
FDD07	MidRange	15	2535	14.42	14.50
FDD07	MidRange	20	2535	19.23	19.23
FDD12	MidRange	1.4	707.5	1.27	1.30
FDD12	MidRange	3	707.5	2.96	2.98

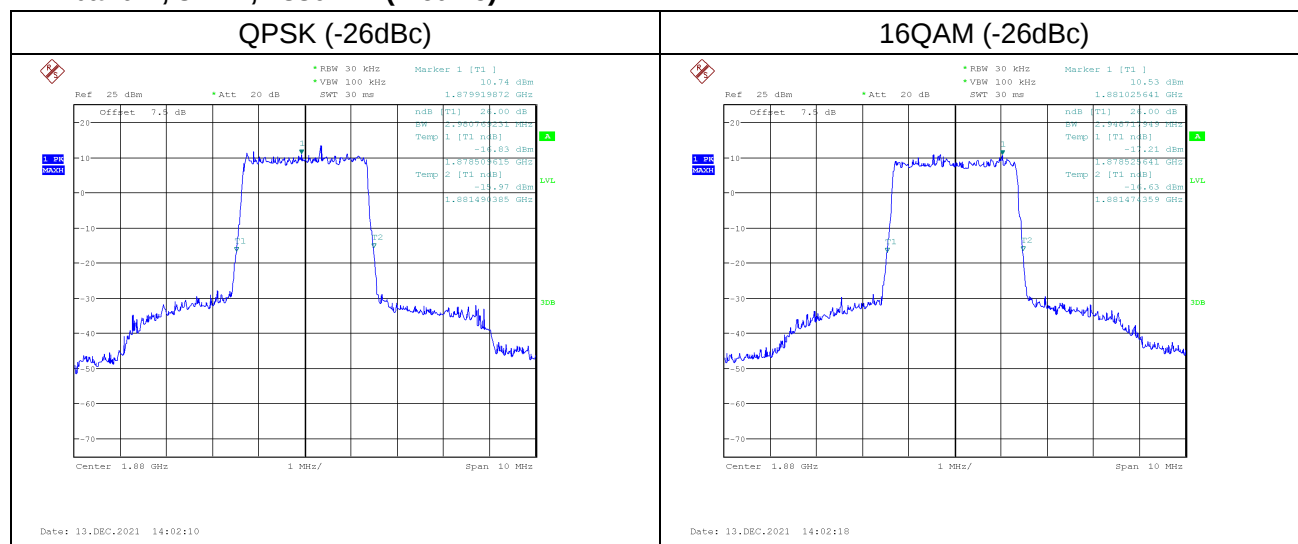
FDD12	MidRange	5	707.5	4.95	4.90
FDD12	MidRange	10	707.5	9.66	9.66
FDD13	MidRange	5	782	4.95	4.93
FDD13	MidRange	10	782	9.71	9.66
FDD17	MidRange	5	710	4.93	4.93
FDD17	MidRange	10	710	9.71	9.71
FDD25	MidRange	1.4	1882.5	1.28	1.28
FDD25	MidRange	3	1882.5	2.96	2.93
FDD25	MidRange	5	1882.5	4.95	4.90
FDD25	MidRange	10	1882.5	9.86	9.66
FDD25	MidRange	15	1882.5	14.50	14.57
FDD25	MidRange	20	1882.5	19.13	19.13
FDD26A	MidRange	1.4	819	1.28	1.30
FDD26A	MidRange	3	819	2.95	2.93
FDD26A	MidRange	5	819	4.95	4.95
FDD26A	MidRange	10	819	9.71	9.71
TDD41	MidRange	5	2593	4.93	4.88
TDD41	MidRange	10	2593	9.57	9.66
TDD41	MidRange	15	2593	14.57	14.71
TDD41	MidRange	20	2593	19.13	19.23



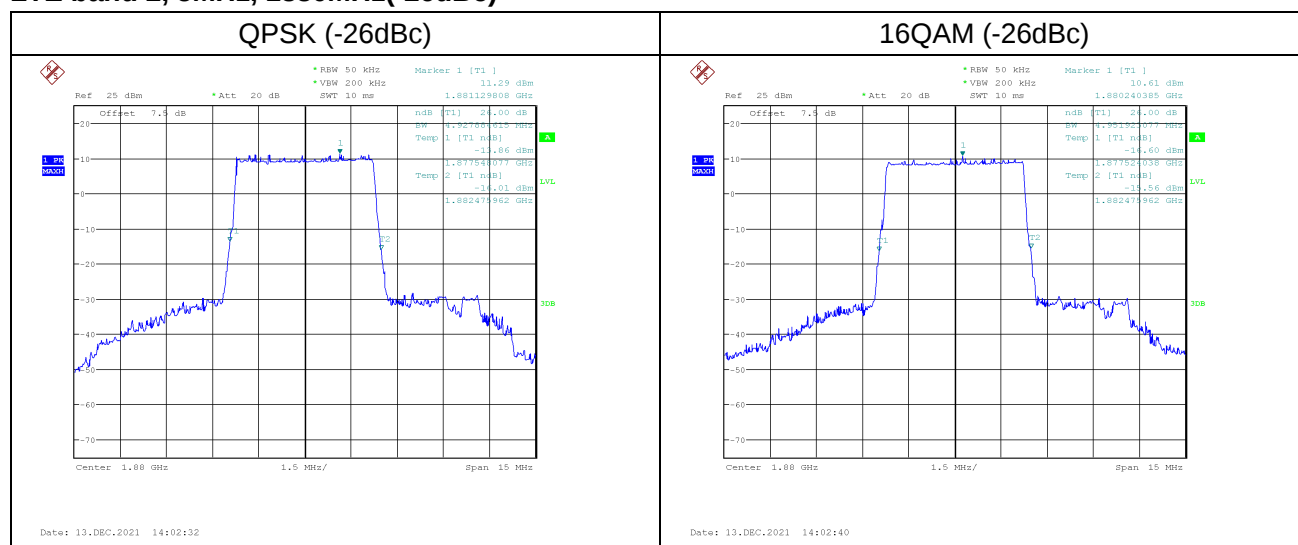
LTE band 2, 1.4MHz, 1880MHz(-26dBc)



LTE band 2, 3MHz, 1880MHz(-26dBc)



LTE band 2, 5MHz, 1880MHz(-26dBc)



QPSK (-26dBc)



Date: 13 DEC 2021 14:03:02

QPSK (-26dBc)



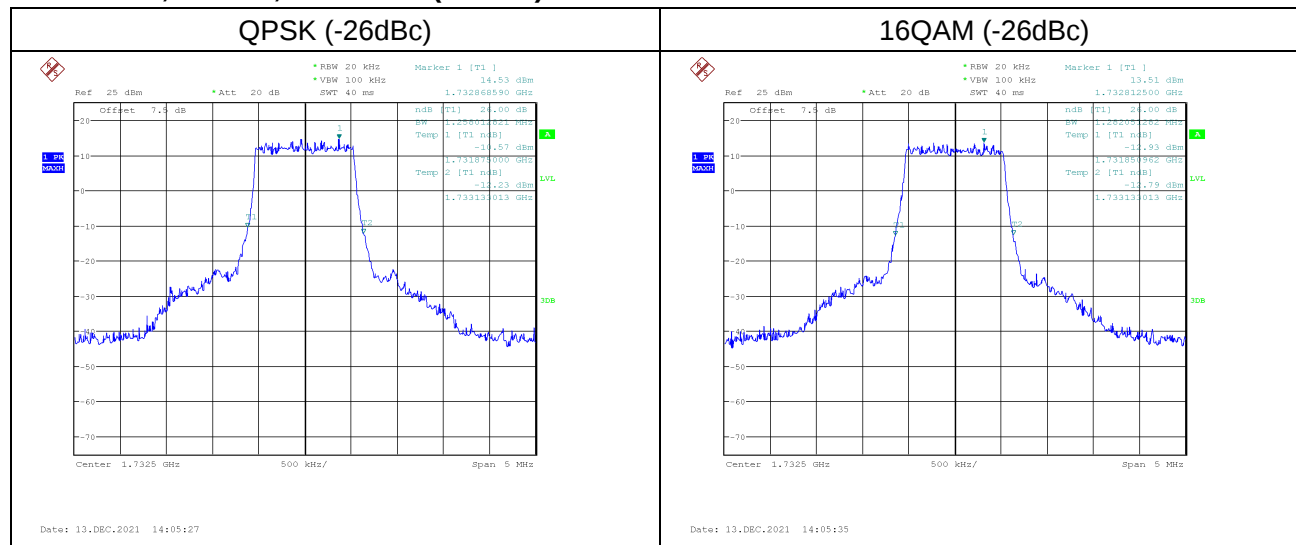
Date: 13 DEC 2021 14:03:25

QPSK (-26dBc)

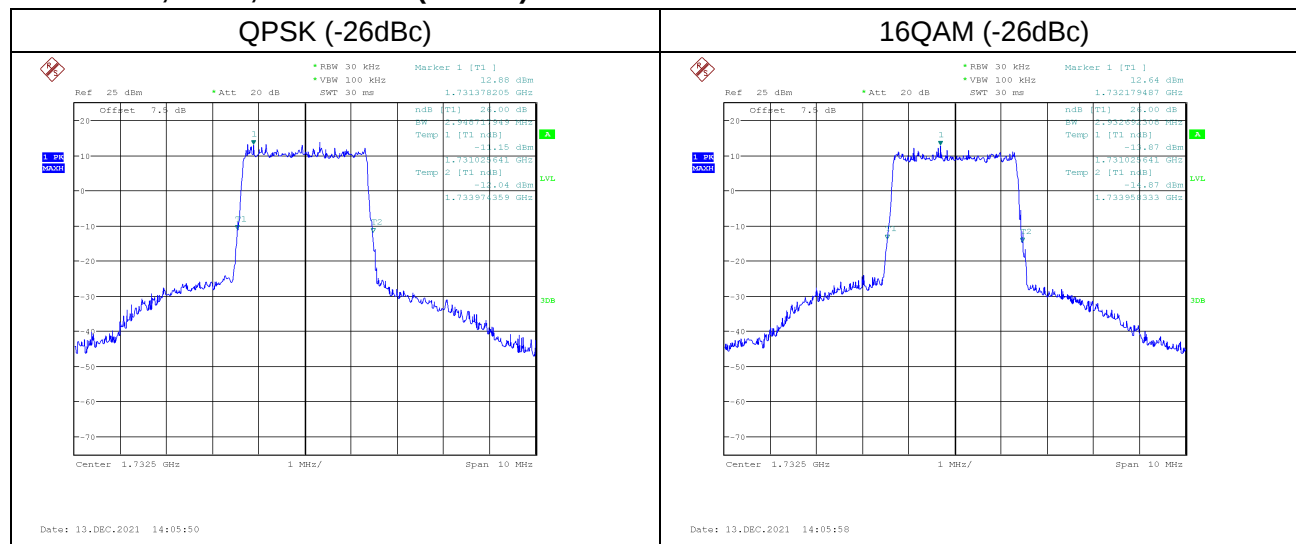


Date: 13.DEC.2021 14:03:47

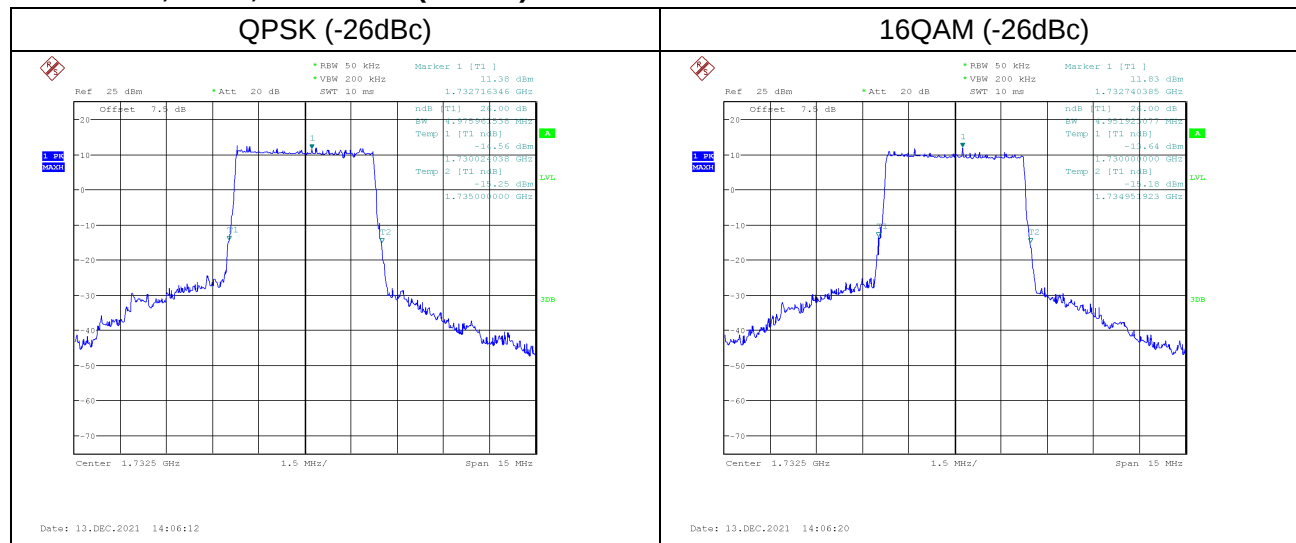
LTE band 4, 1.4MHz, 1732.5MHz(-26dBc)



LTE band 4, 3MHz, 1732.5MHz (-26dBc)

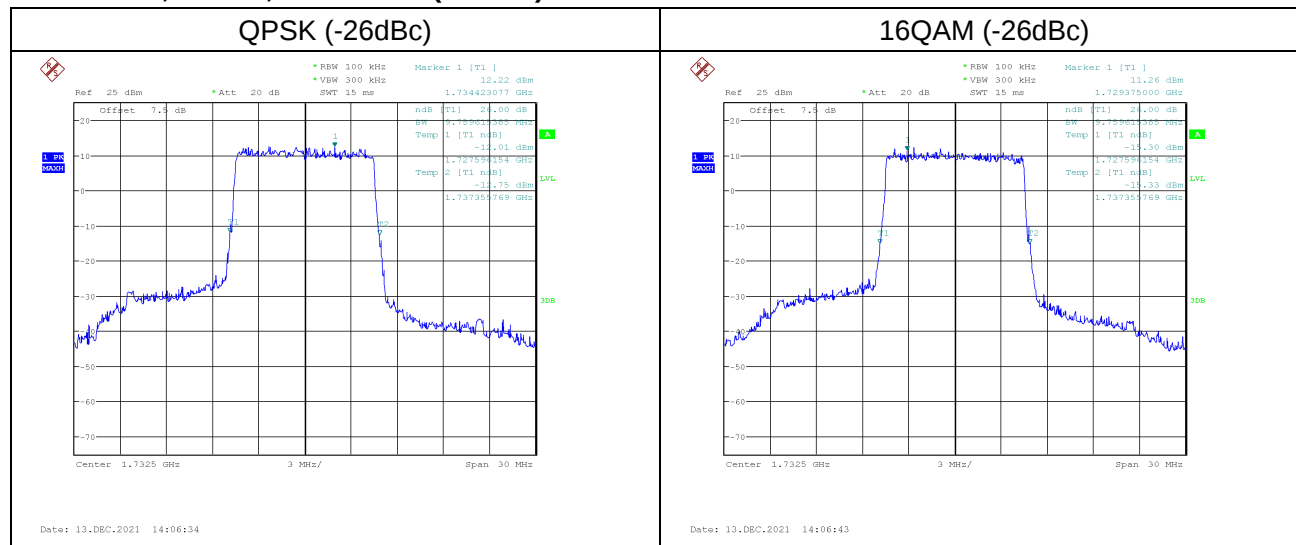


LTE band 4, 5MHz, 1732.5MHz (-26dBc)

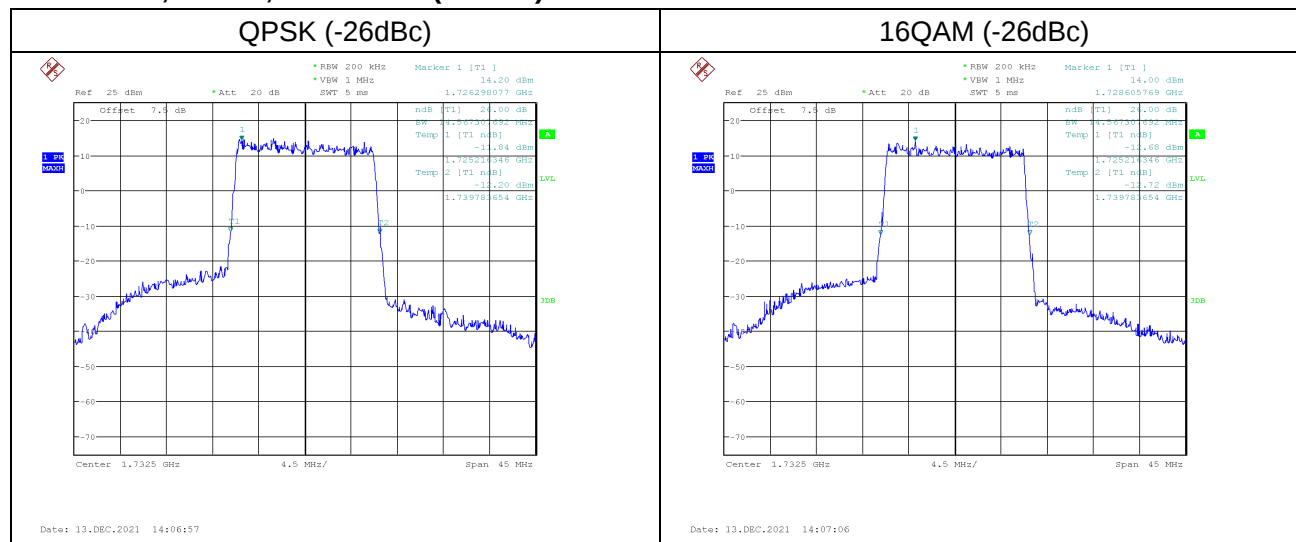




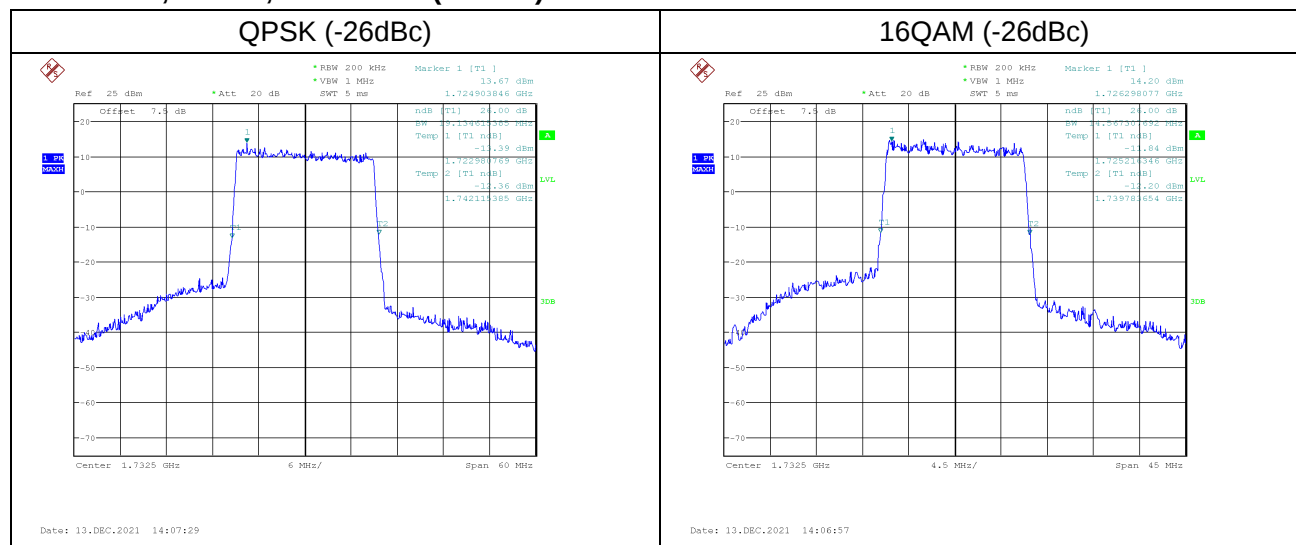
LTE band 4, 10MHz, 1732.5MHz (-26dBc)



LTE band 4, 15MHz, 1732.5MHz (-26dBc)



LTE band 4, 20MHz, 1732.5MHz (-26dBc)



QPSK (-26dBc)



16QAM (-26dBc)



QPSK (-26dBc)



16QAM (-26dBc)



QPSK (-26dBc)

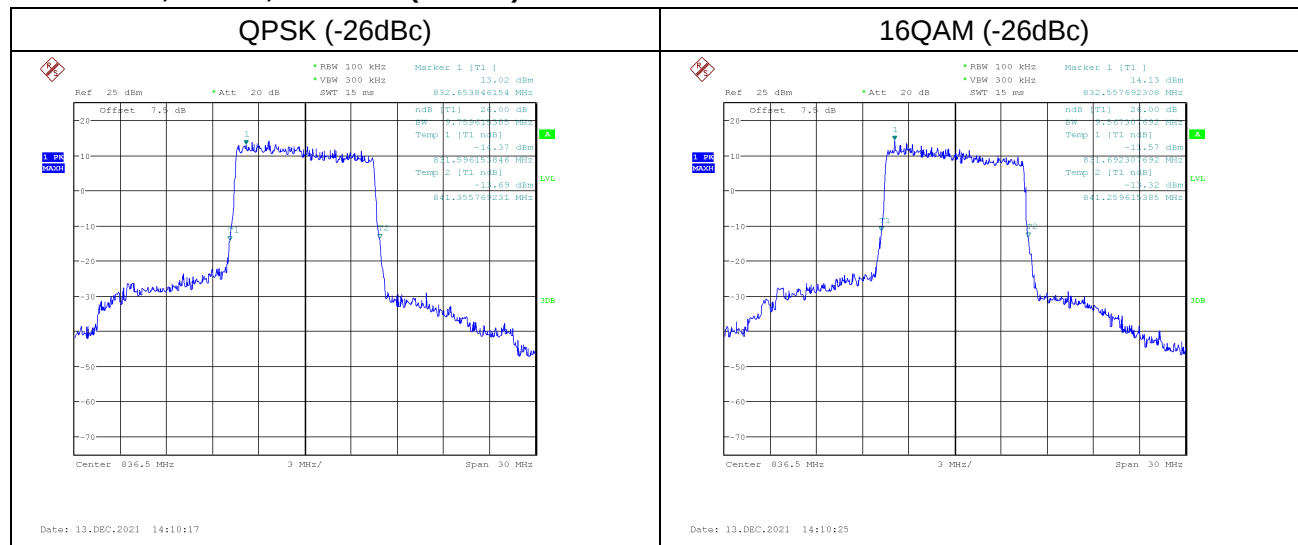


16QAM (-26dBc)

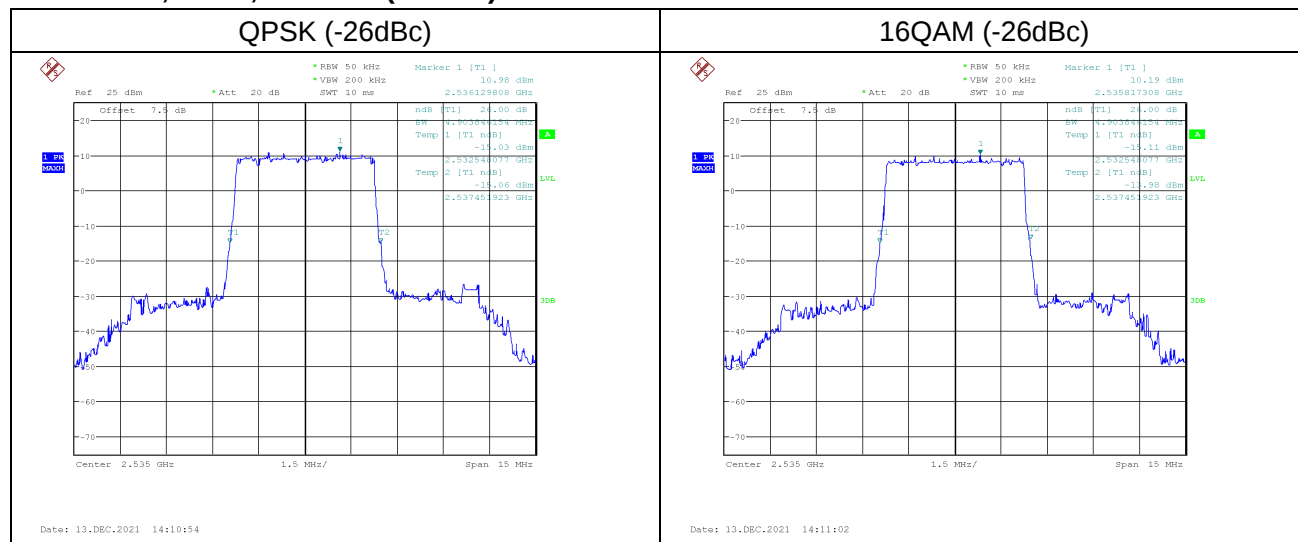




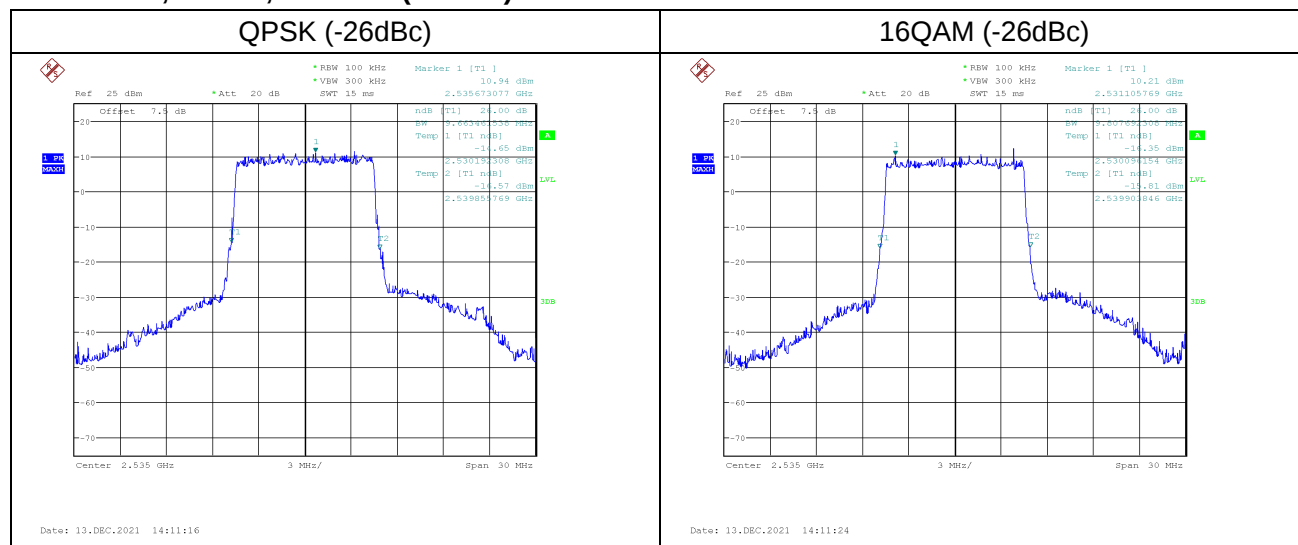
LTE band 5, 10MHz, 836.5MHz(-26dBc)



LTE band 7, 5MHz, 2535MHz(-26dBc)

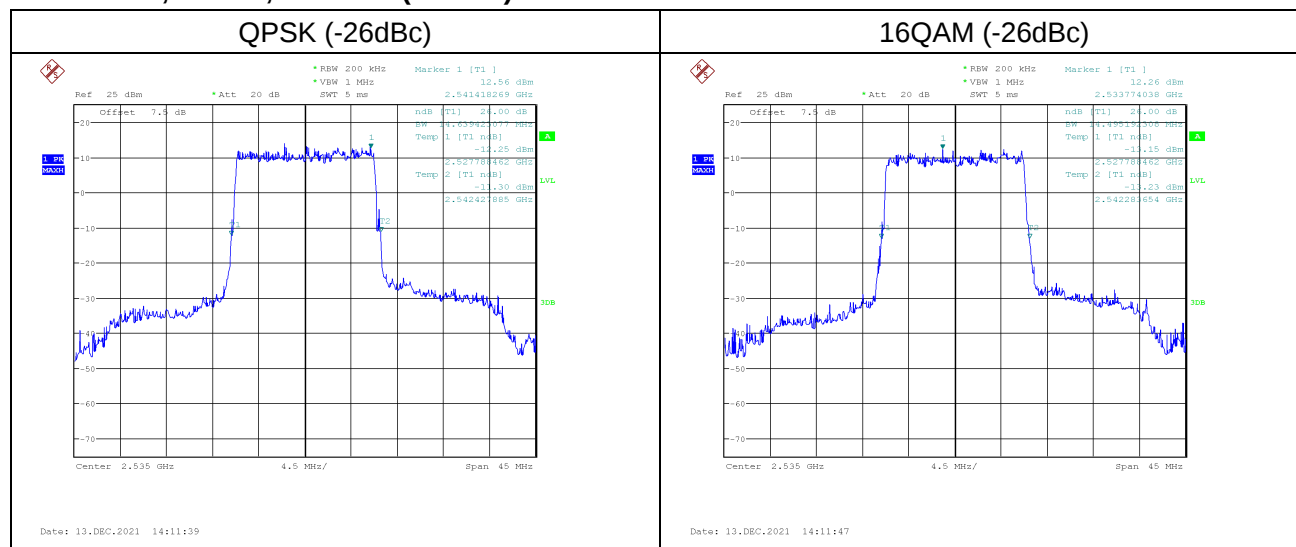


LTE band 7, 10MHz, 2535MHz(-26dBc)

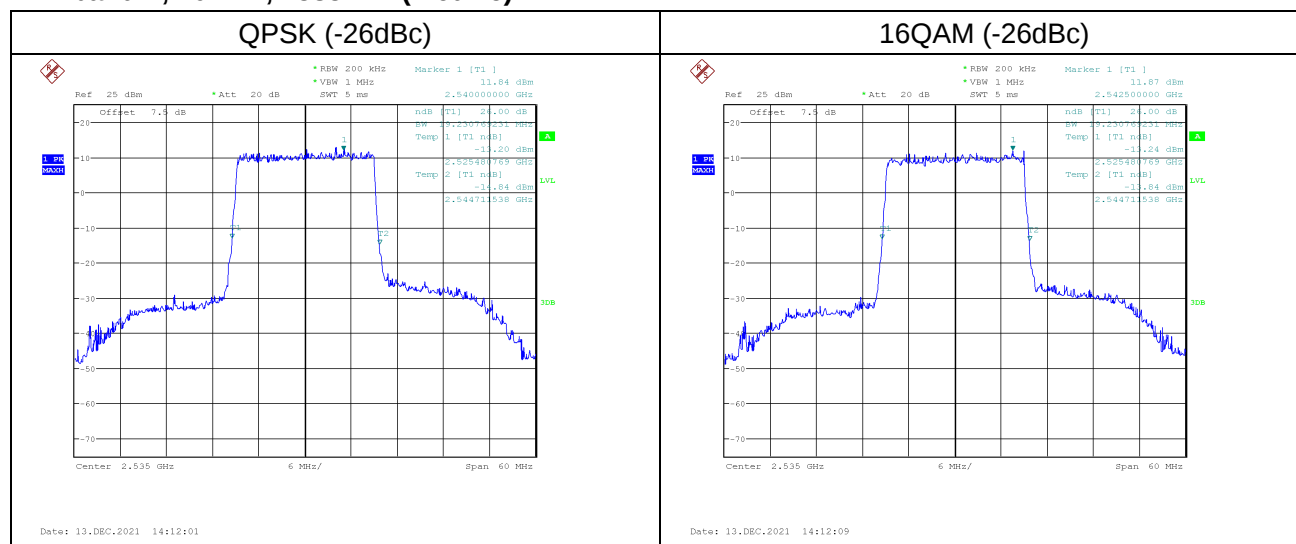




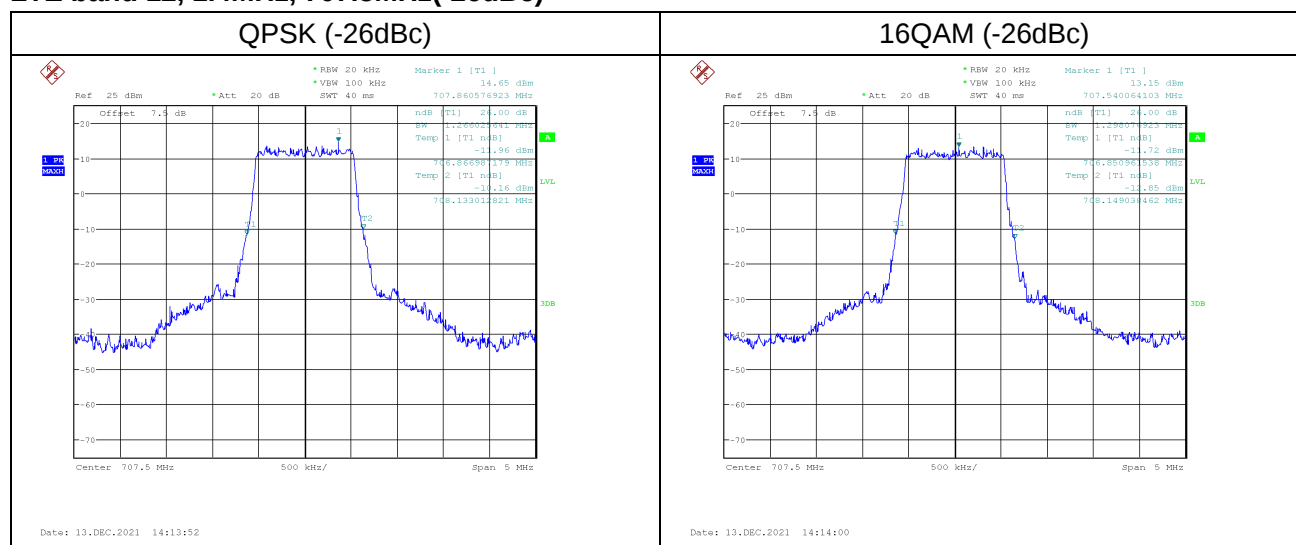
LTE band 7, 15MHz, 2535MHz(-26dBc)



LTE band 7, 20MHz, 2535MHz(-26dBc)

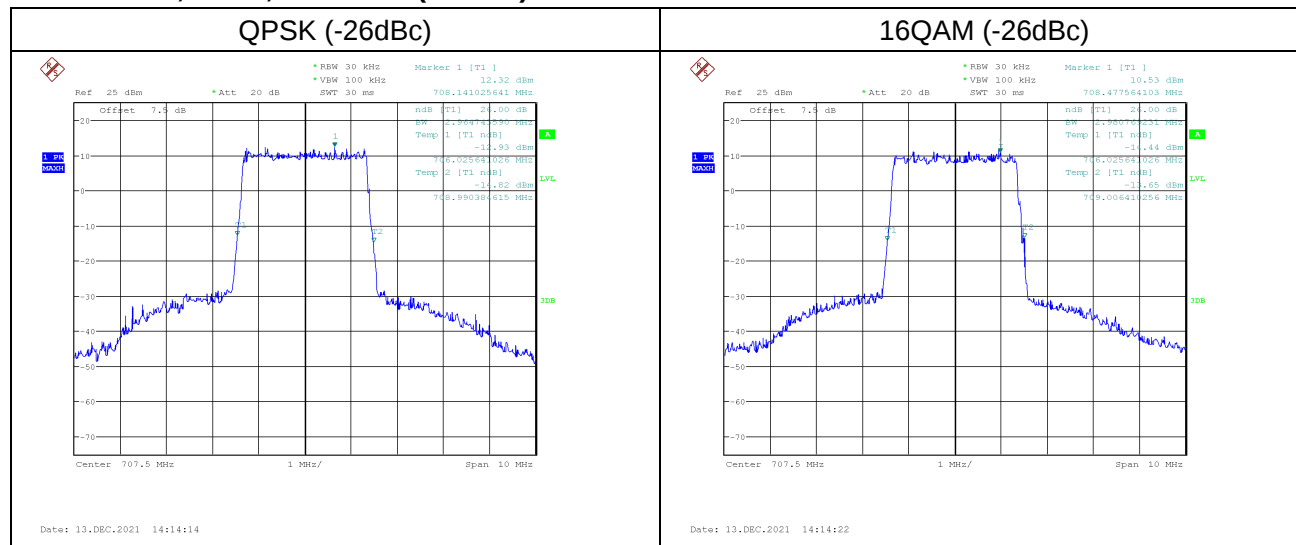


LTE band 12, 1.4MHz, 707.5MHz(-26dBc)

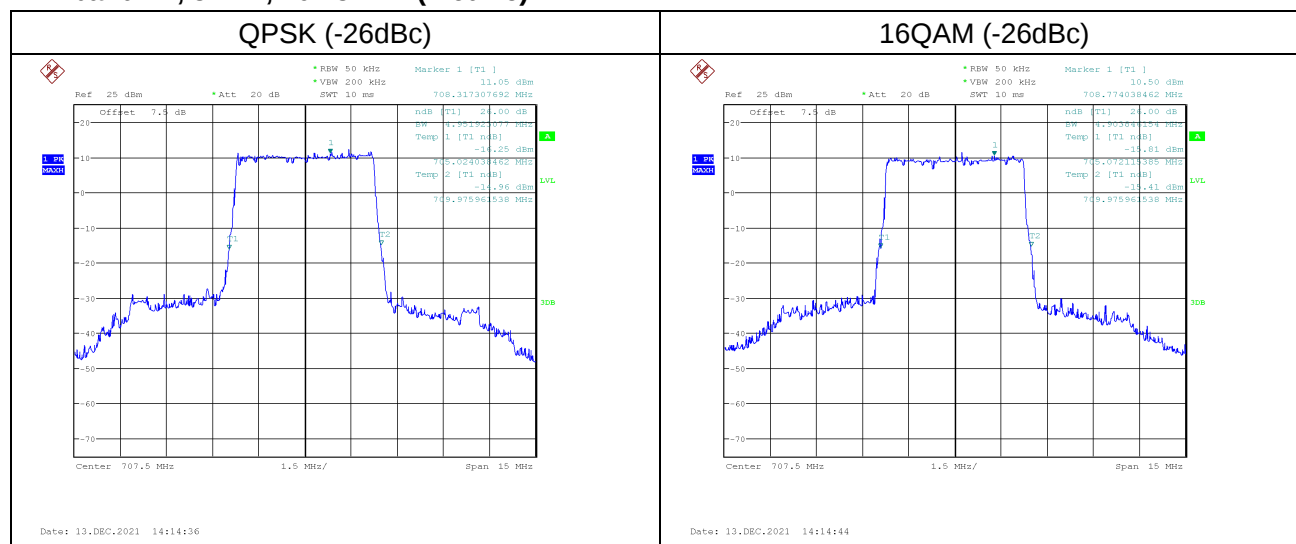




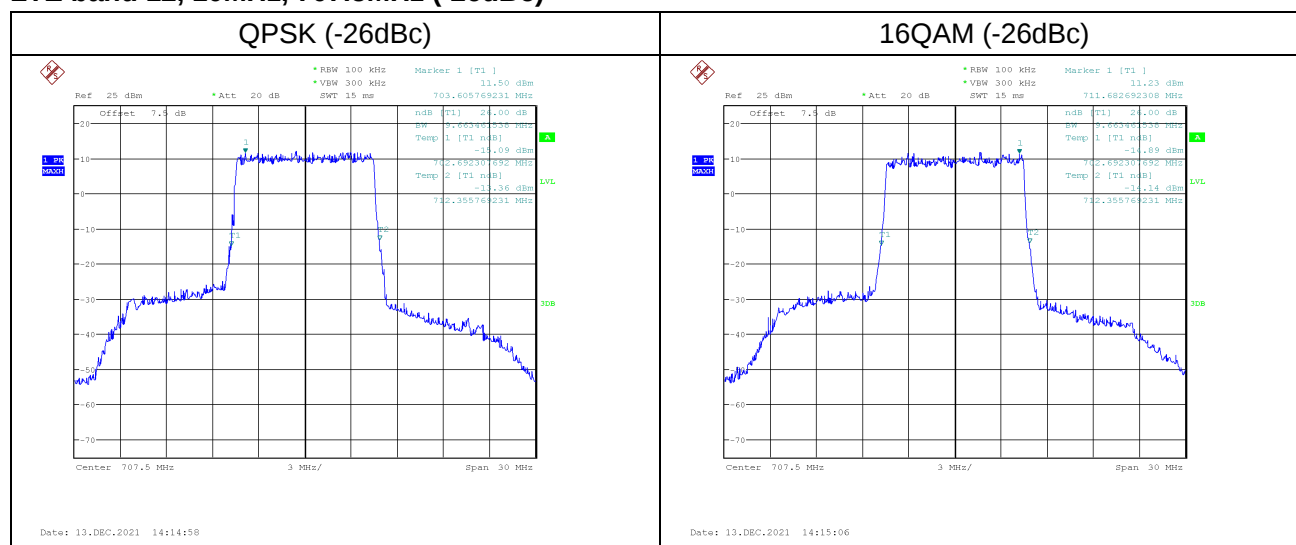
LTE band 12, 3MHz, 707.5MHz (-26dBc)



LTE band 12, 5MHz, 707.5MHz (-26dBc)

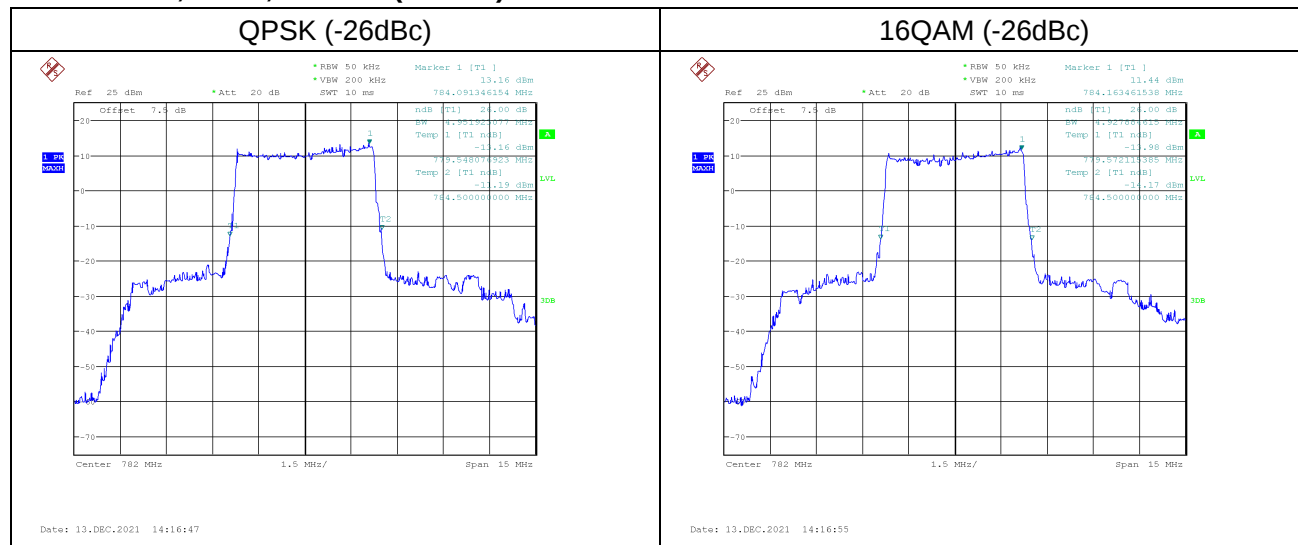


LTE band 12, 10MHz, 707.5MHz (-26dBc)

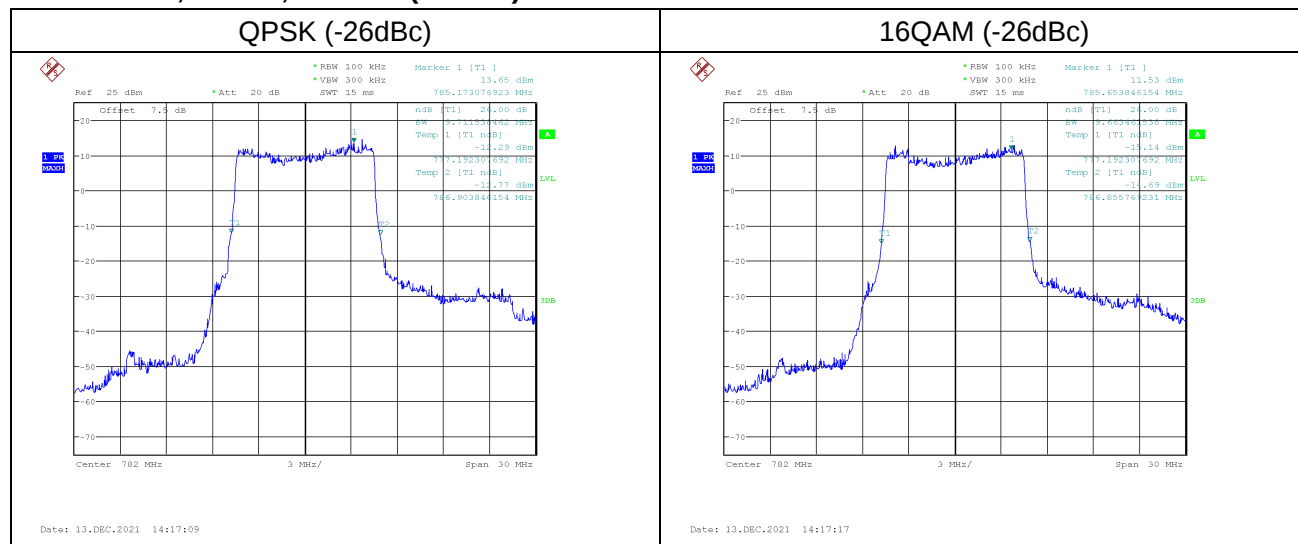




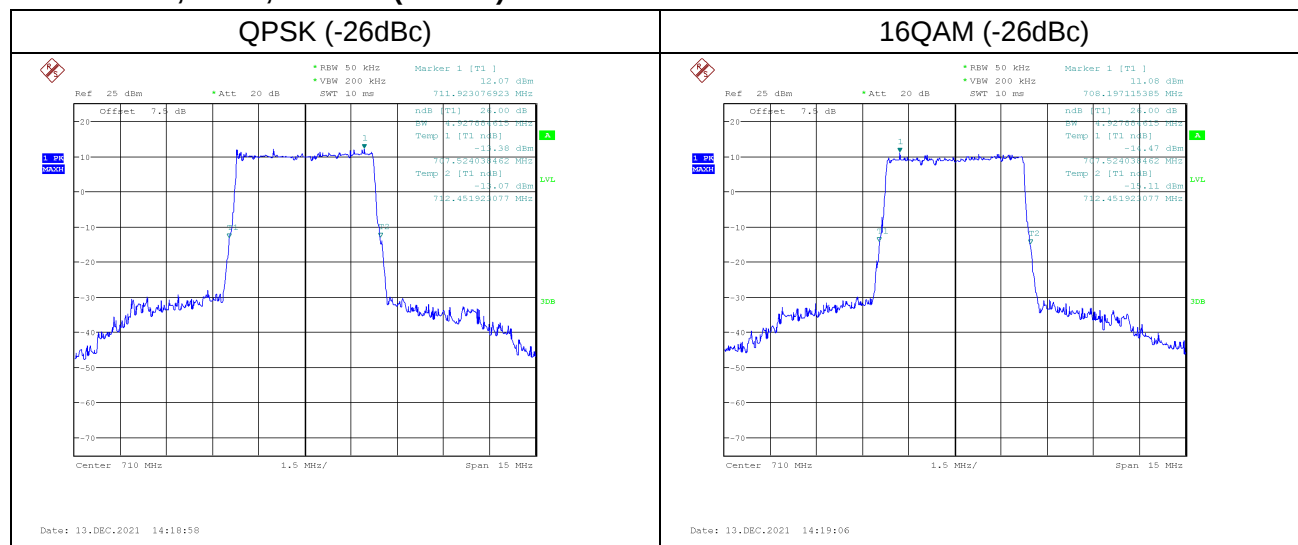
LTE band 13, 5MHz, 782MHz (-26dBc)



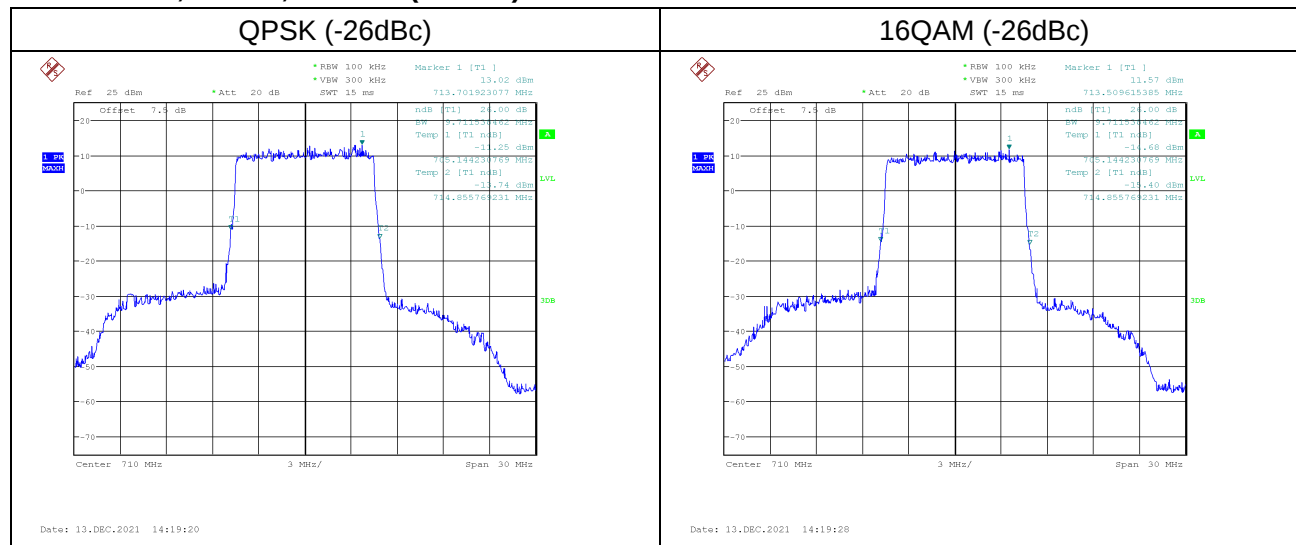
LTE band 13, 10MHz, 782MHz (-26dBc)



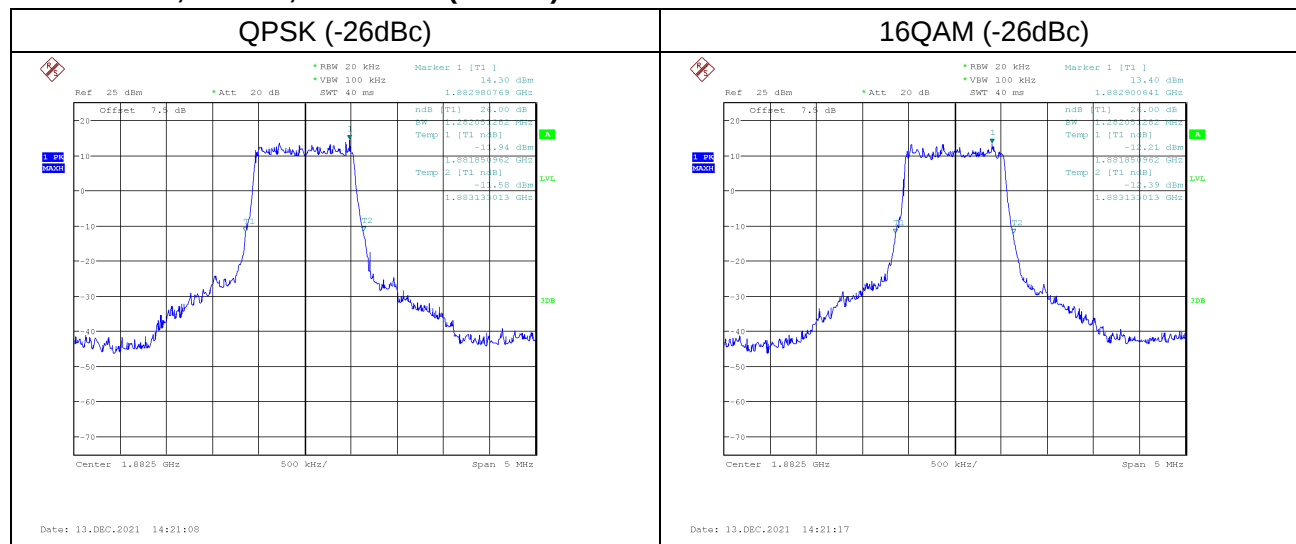
LTE band 17, 5MHz, 710MHz (-26dBc)



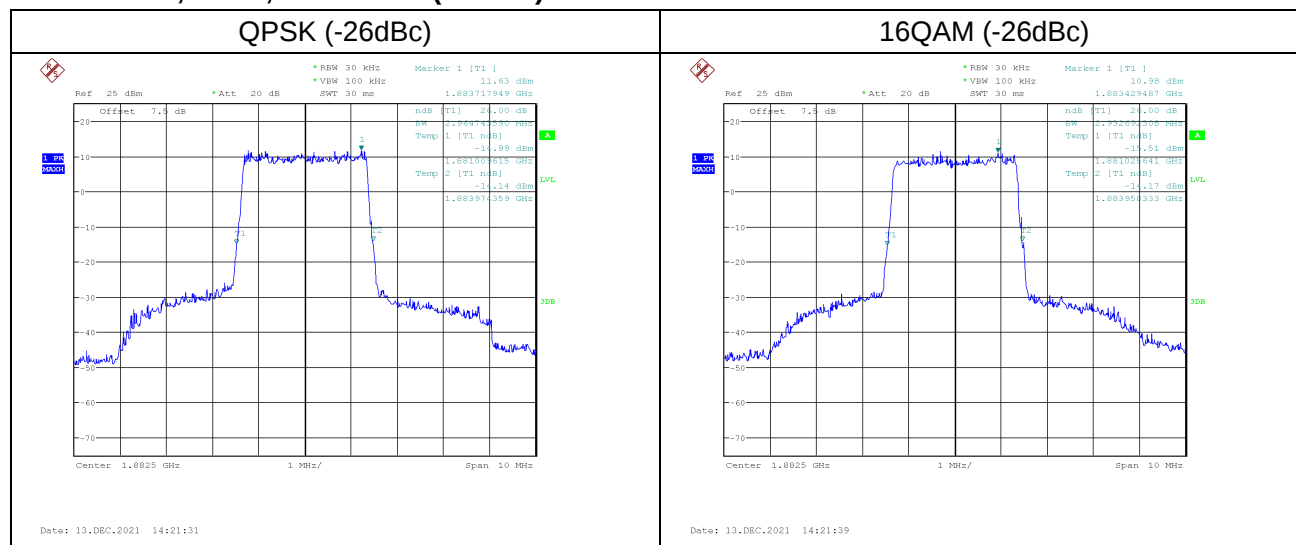
LTE band 17, 10MHz, 710MHz (-26dBc)



LTE band 25, 1.4MHz, 1882.5MHz(-26dBc)

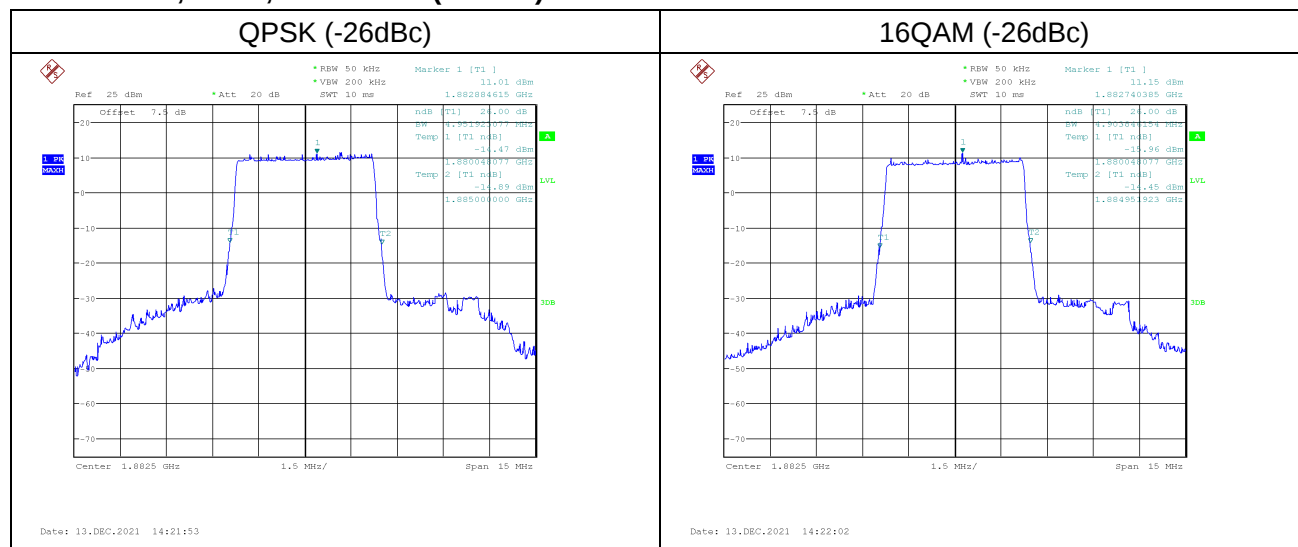


LTE band 25, 3MHz, 1882.5MHz (-26dBc)

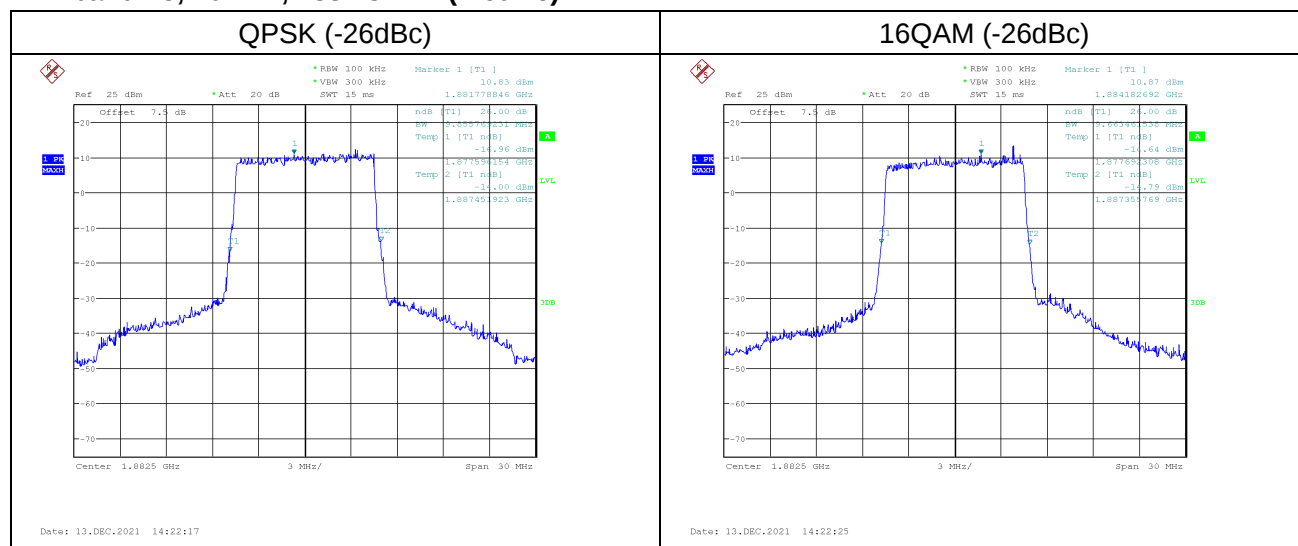




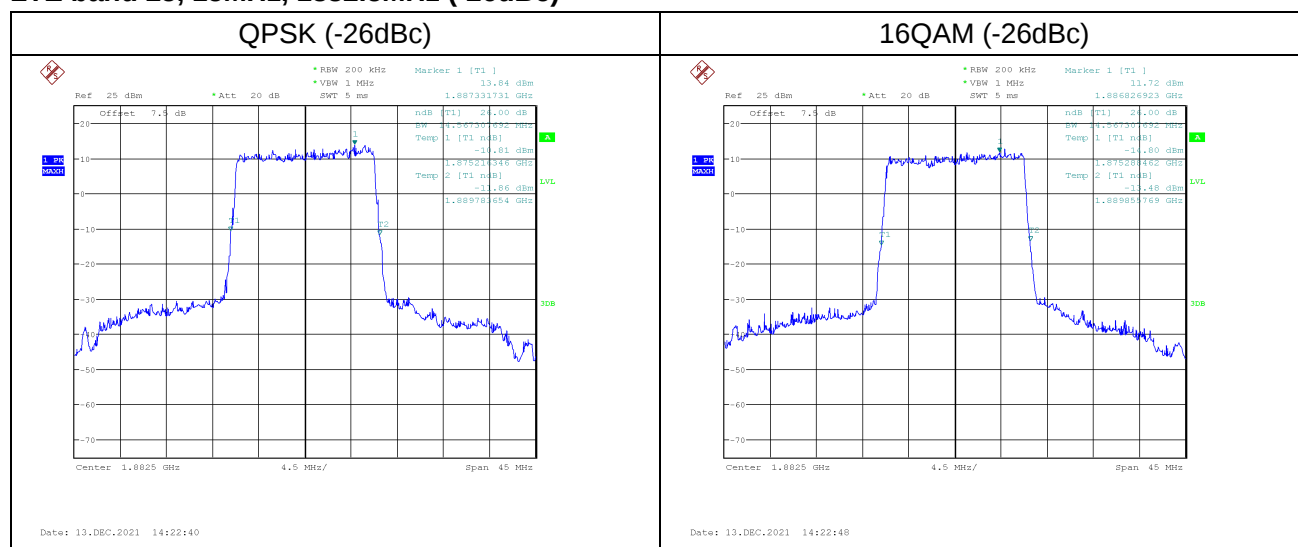
LTE band 25, 5MHz, 1882.5MHz (-26dBc)

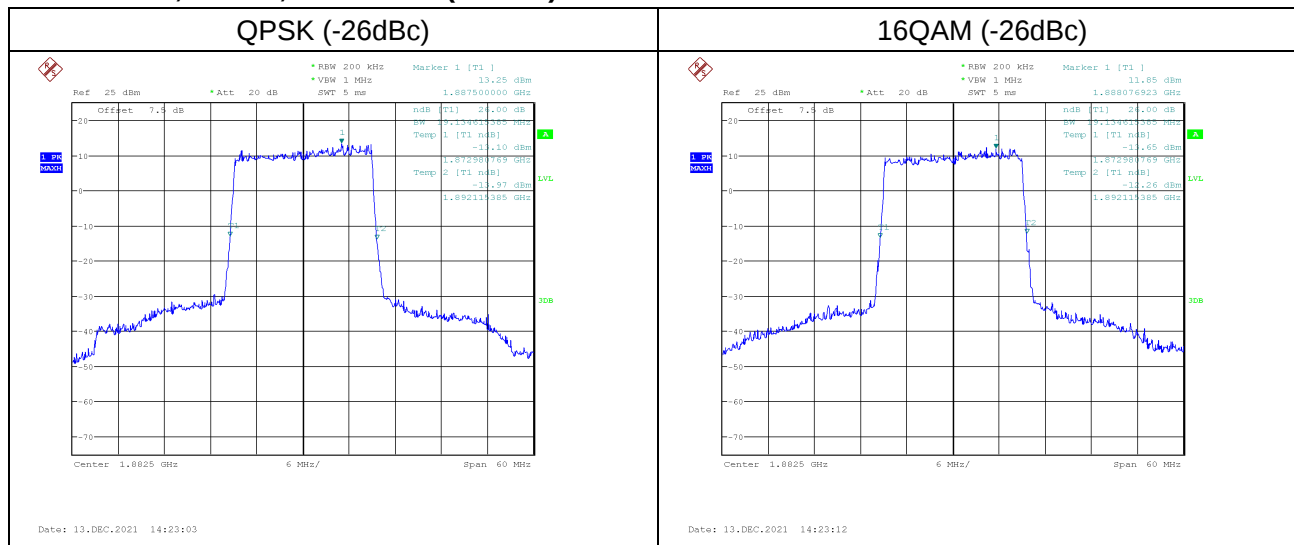


LTE band 25, 10MHz, 1882.5MHz (-26dBc)

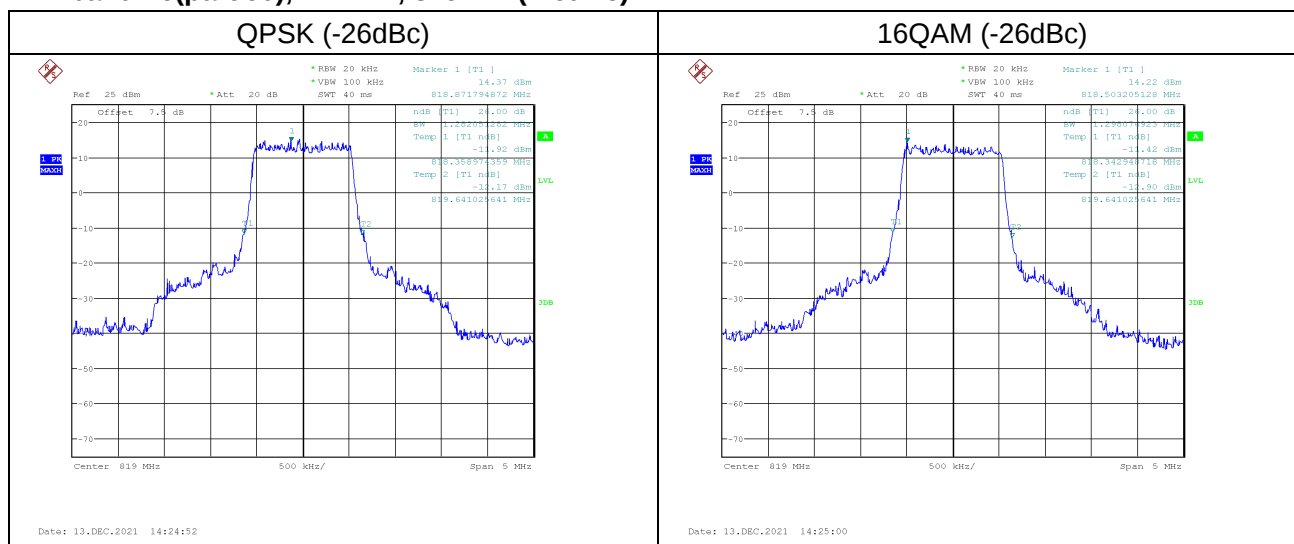


LTE band 25, 15MHz, 1882.5MHz (-26dBc)

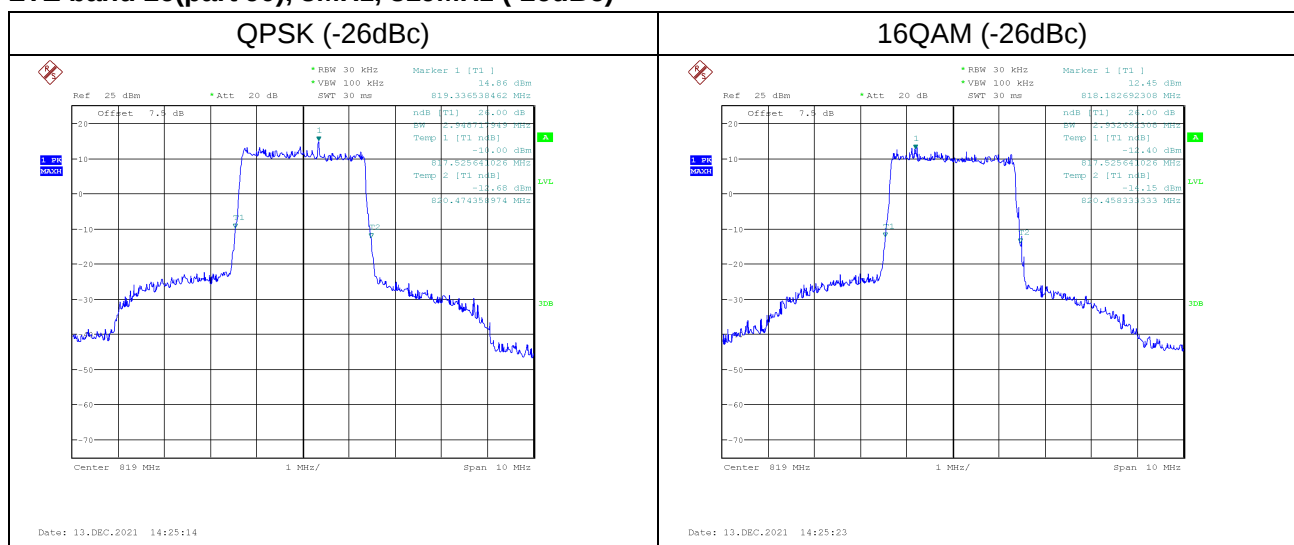




LTE band 26(part 90), 1.4MHz, 819MHz(-26dBc)

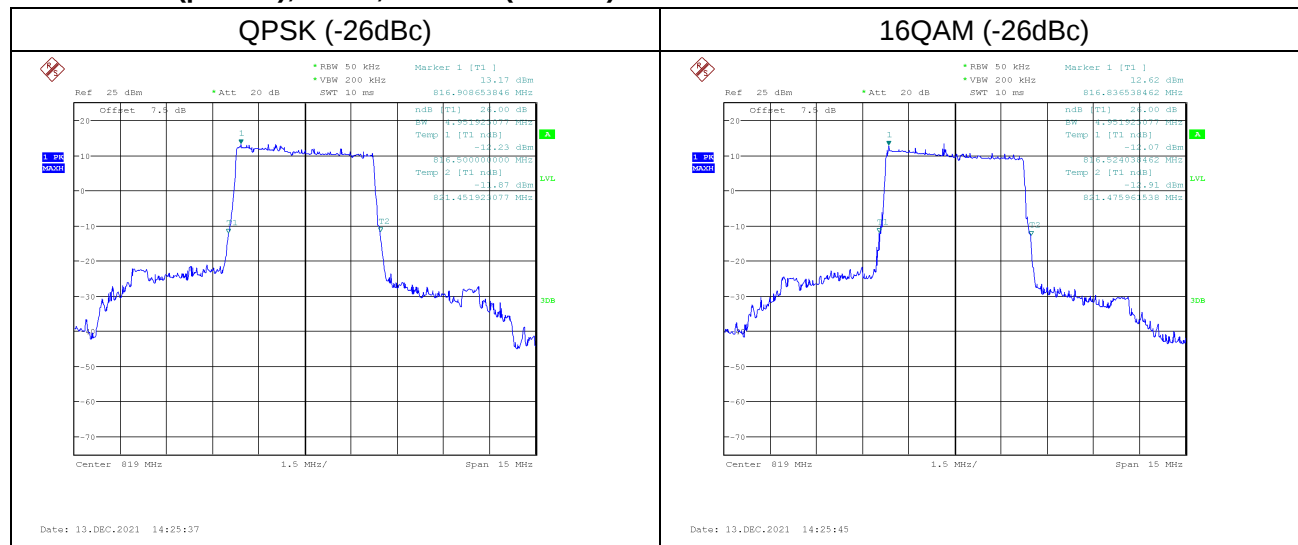


LTE band 26(part 90), 3MHz, 819MHz (-26dBc)

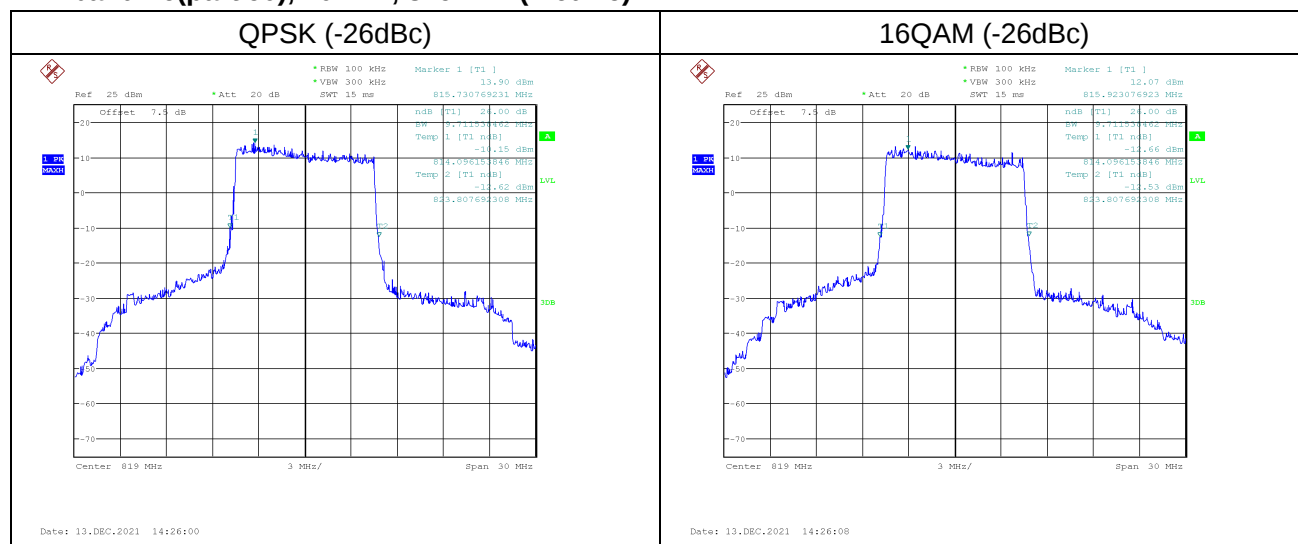




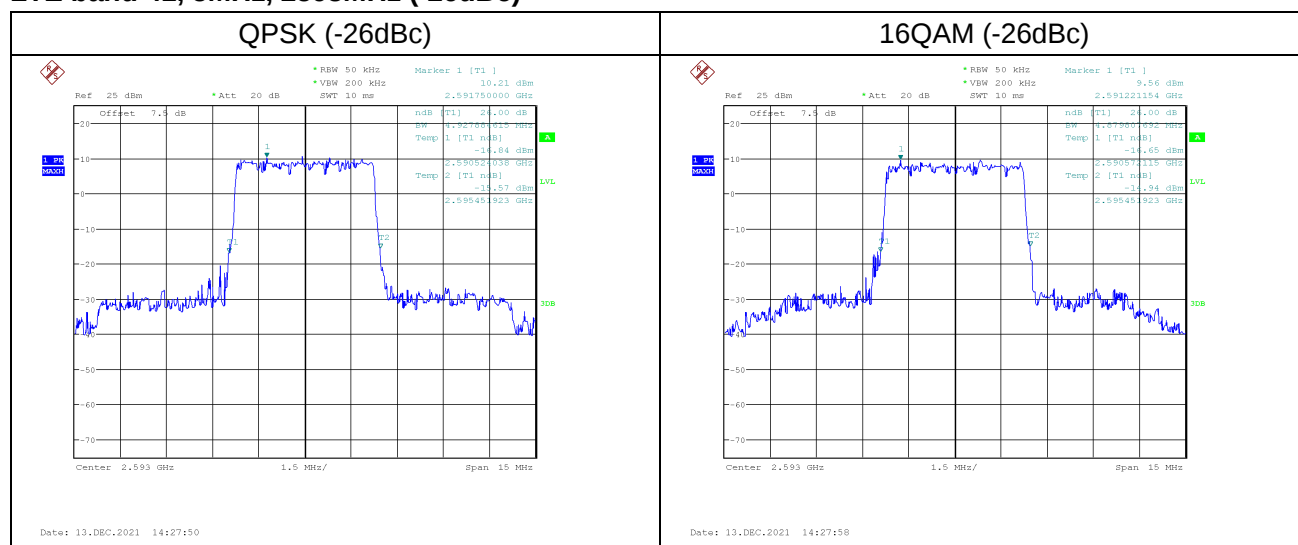
LTE band 26(part 90), 5MHz, 819MHz (-26dBc)



LTE band 26(part 90), 10MHz, 819MHz (-26dBc)

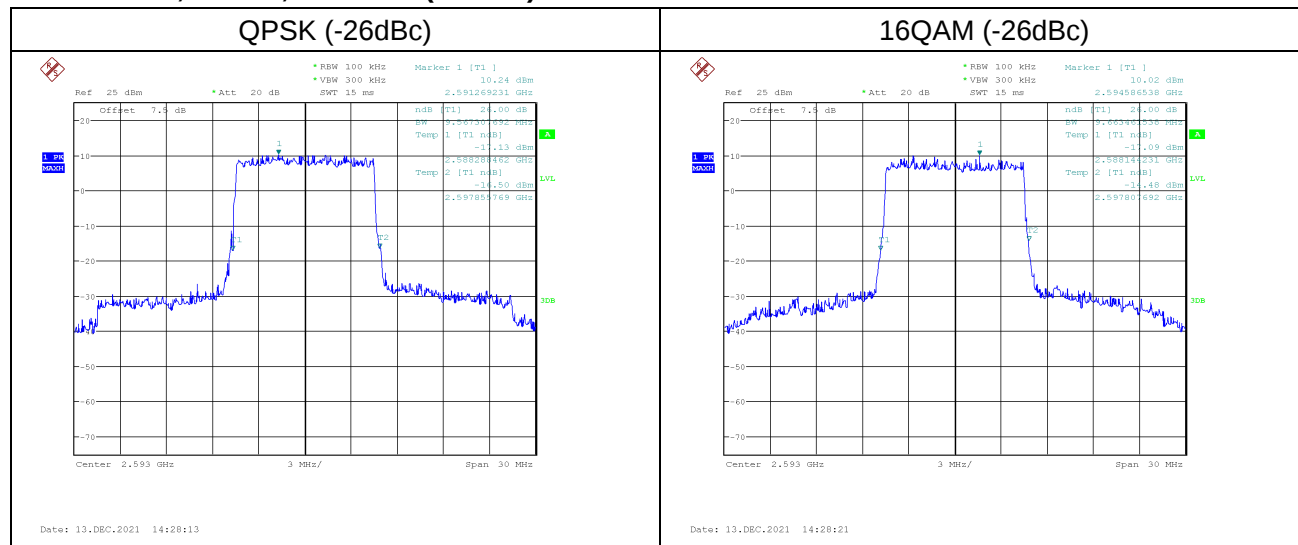


LTE band 41, 5MHz, 2593MHz (-26dBc)

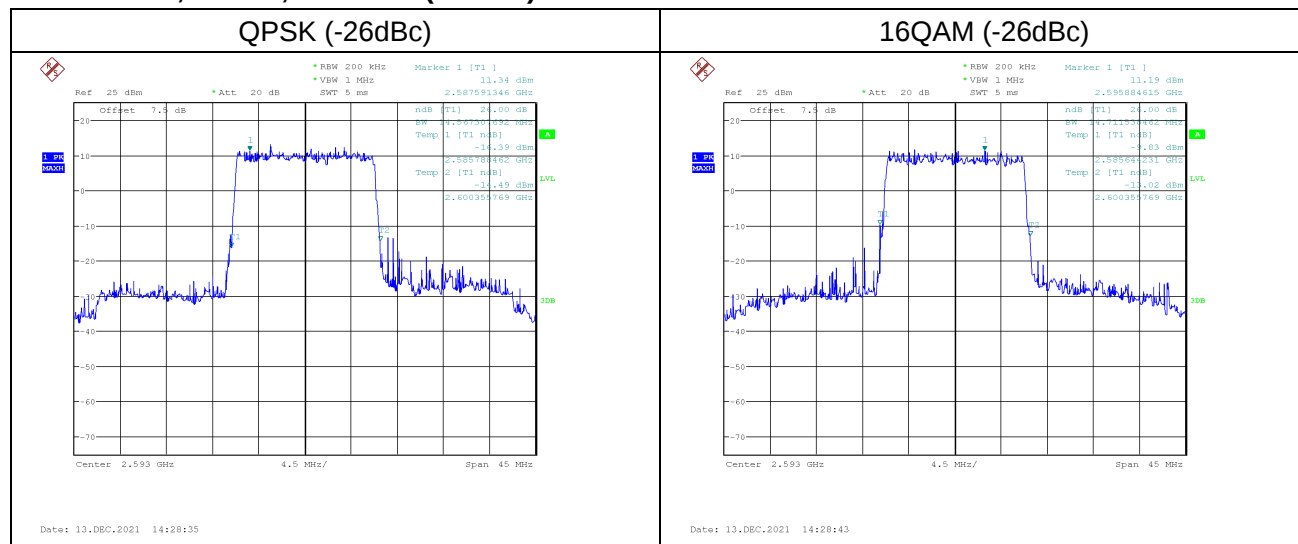




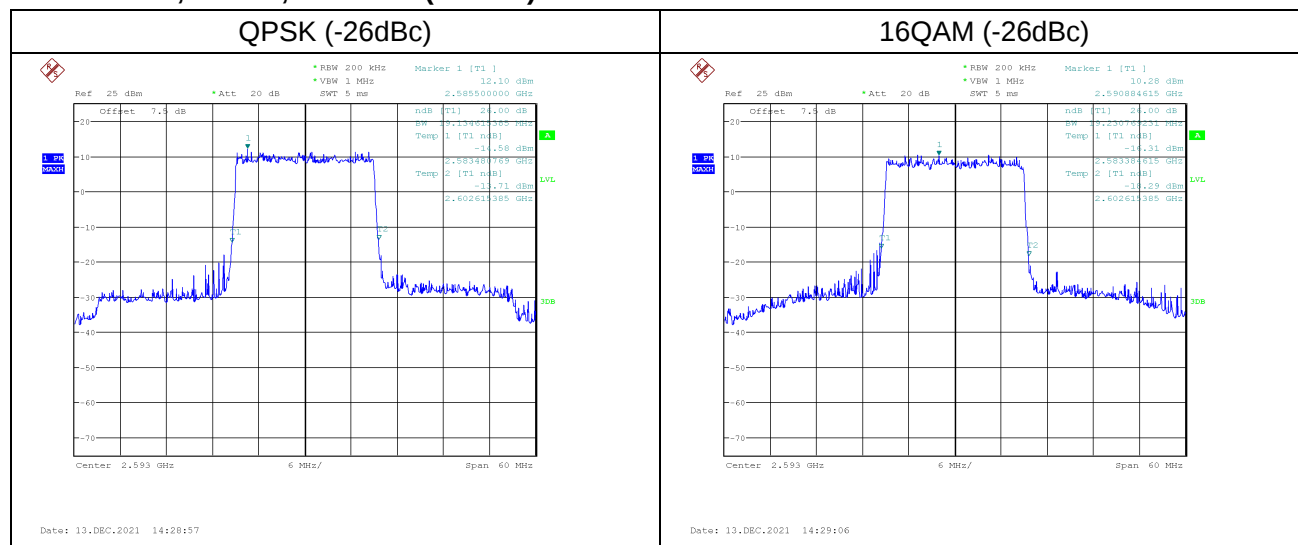
LTE band 41, 10MHz, 2593MHz (-26dBc)



LTE band 41, 15MHz, 2593MHz (-26dBc)



LTE band 41, 20MHz, 2593MHz (-26dBc)



6.6. Band Edge Compliance

Reference

CFR Part 2.1049, 22.917(b), 24.238, 27.53(g), 27.53(h), 27.53(m), 90.669

6.6.1 Measurement limit

Part 27.53(g), 27.53(h), 27.53(m) state that on any frequency outside frequency band of the US Cellular/PCS spectrum, the power of any emission shall be attenuated below the transmitter power (P , in Watts) by at least $43 + 10 \log(P)$ dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm.

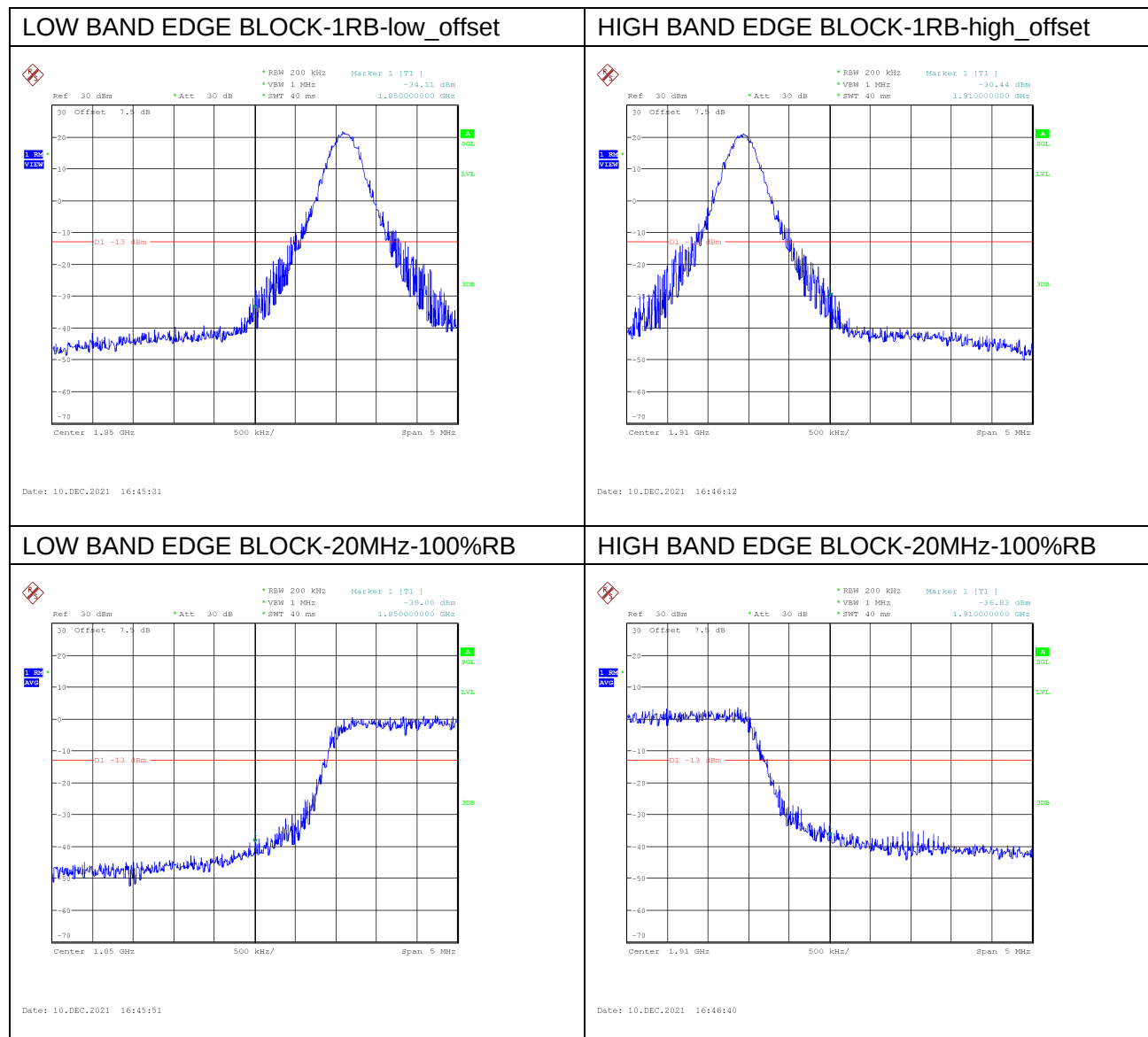
According to KDB 971168 6, a relaxation of the reference bandwidth is often provided for measurements within a specified frequency range at the edge of the authorized frequency block/band. This is often implemented by permitting the use of a narrower RBW (typically limited to a minimum RBW of 1% of the OBW) for measuring the out-of-band emissions without a requirement to integrate the result over the full reference bandwidth.

Part 27.53(m) states that 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 than $43 + 10 \log(P)$ 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.

6.6.2 Measurement result

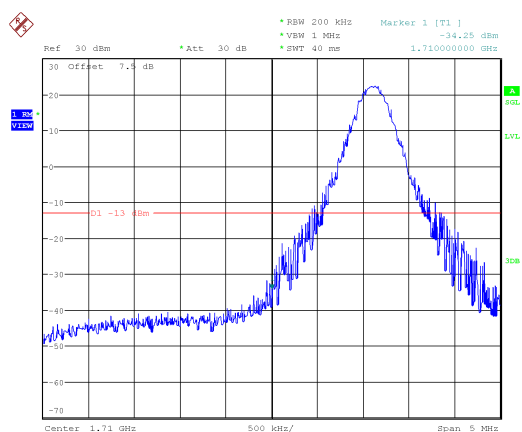
Only worst case result is given below

LTE band 2



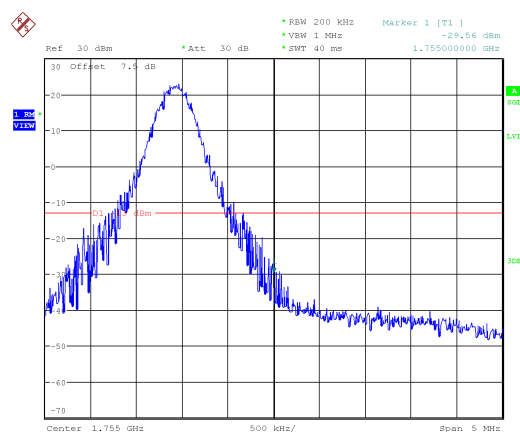
LTE band 4

LOW BAND EDGE BLOCK-1RB-low_offset



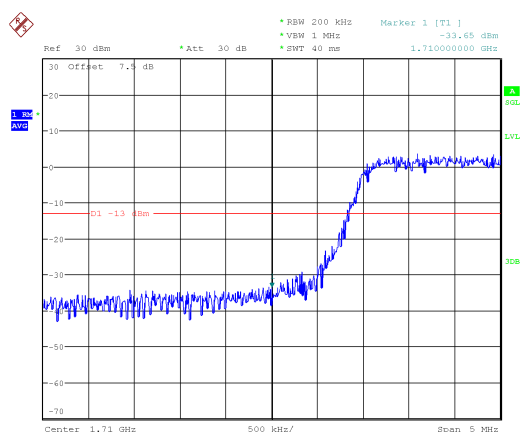
Date: 10.DEC.2021 16:47:24

HIGH BAND EDGE BLOCK-1RB-high_offset



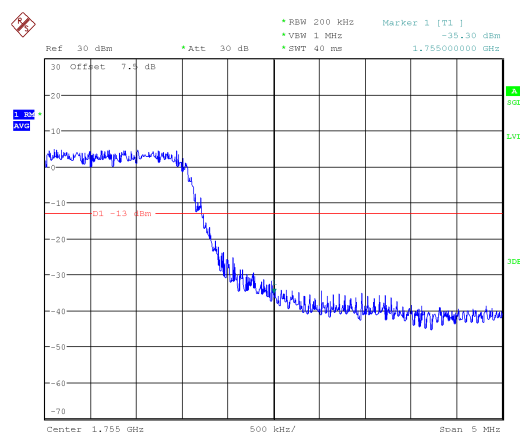
Date: 10.DEC.2021 16:48:05

LOW BAND EDGE BLOCK-20MHz-100%RB



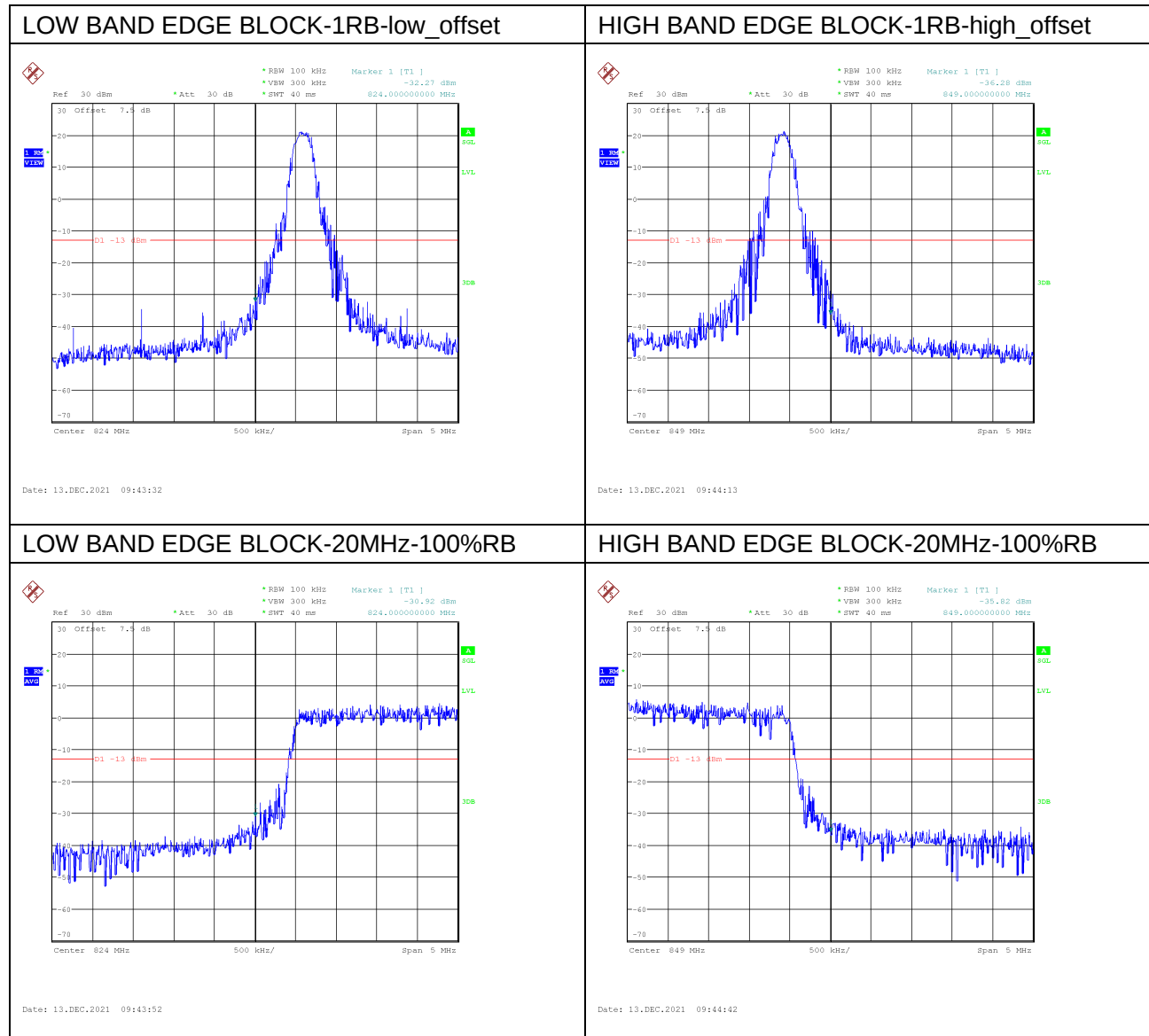
Date: 10.DEC.2021 16:47:44

HIGH BAND EDGE BLOCK-20MHz-100%RB

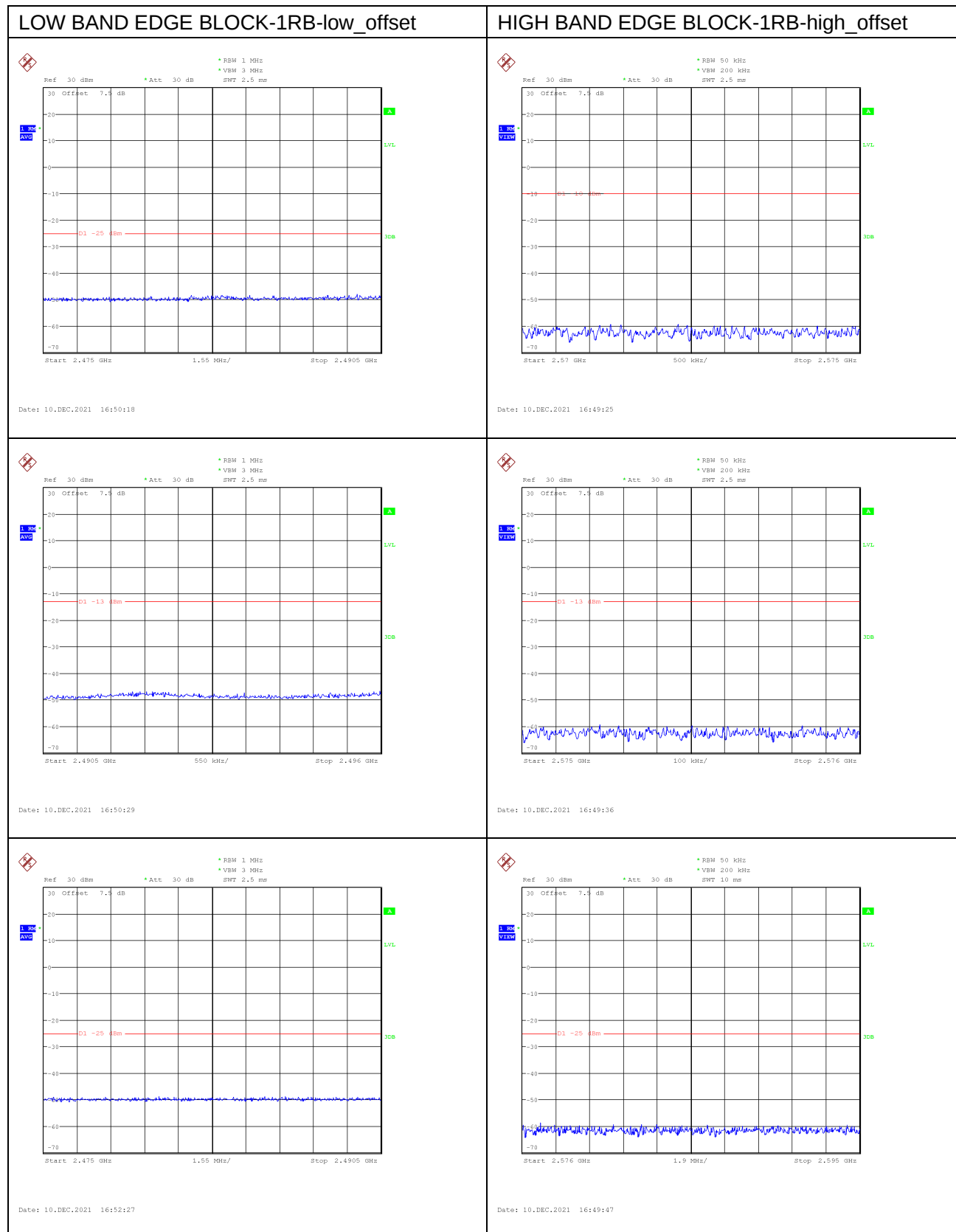


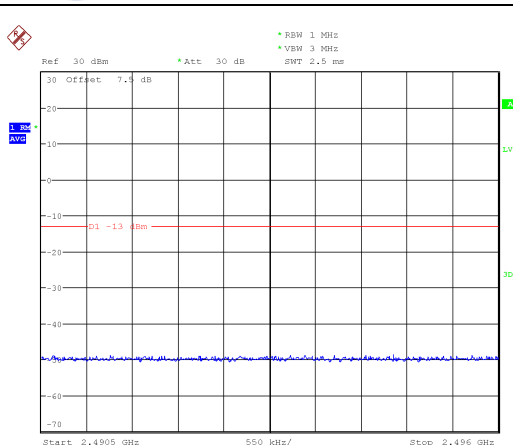
Date: 10.DEC.2021 16:48:33

LTE band 5

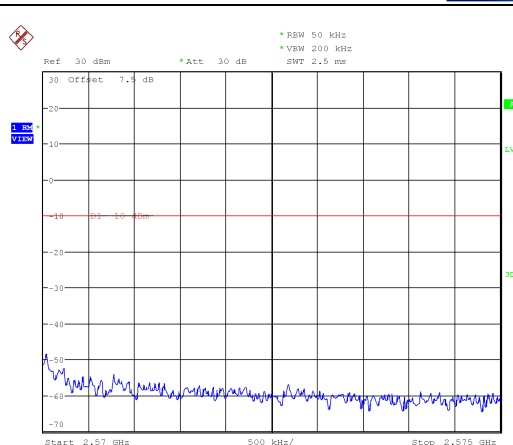


LTE band 7

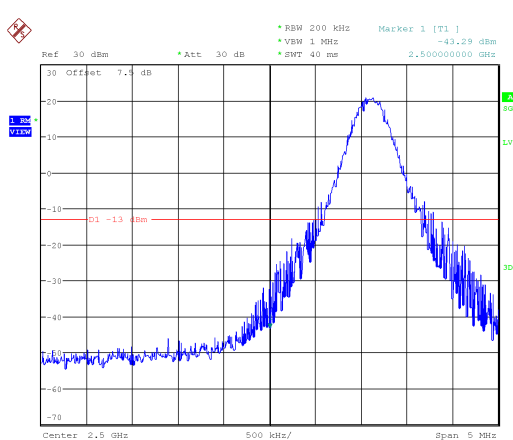




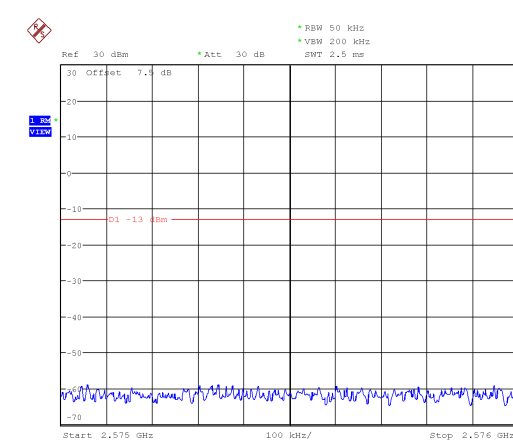
Date: 10.DEC.2021 16:52:38



Date: 10.DEC.2021 16:51:45

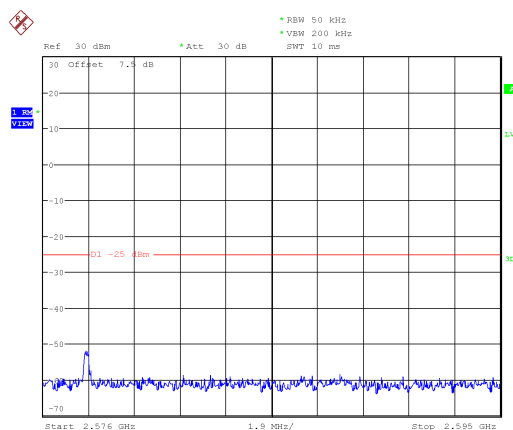


Date: 10.DEC.2021 16:50:08



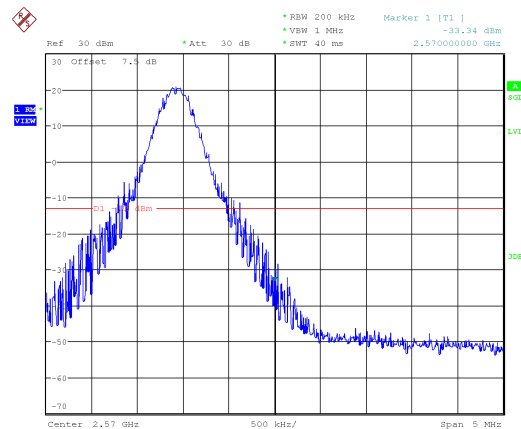
Date: 10.DEC.2021 16:51:57

/



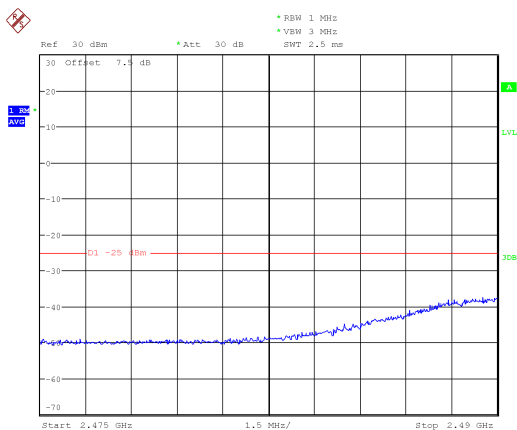
Date: 10.DEC.2021 16:52:08

/



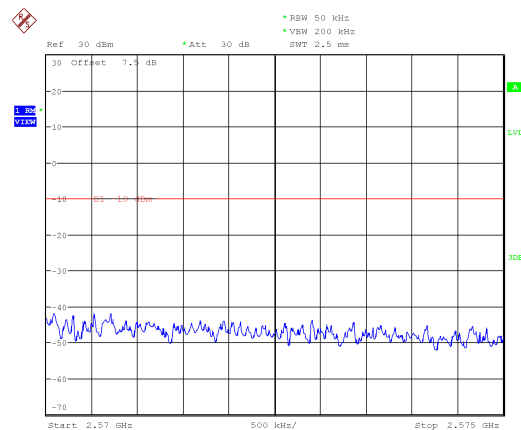
Date: 10.DEC.2021 16:51:33

LOW BAND EDGE BLOCK-20MHz-100%RB

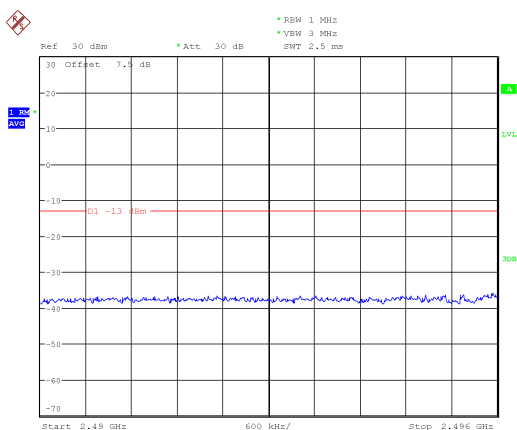


Date: 10.DEC.2021 16:51:01

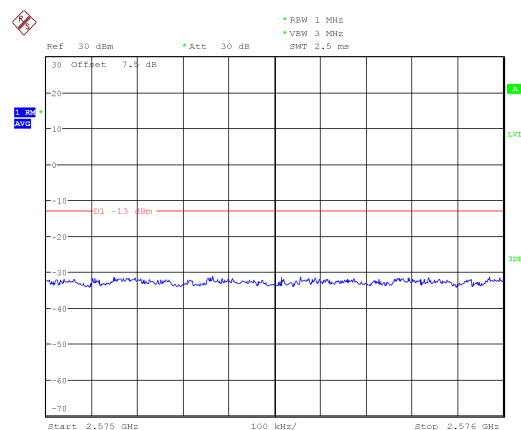
HIGH BAND EDGE BLOCK-20MHz-100%RB



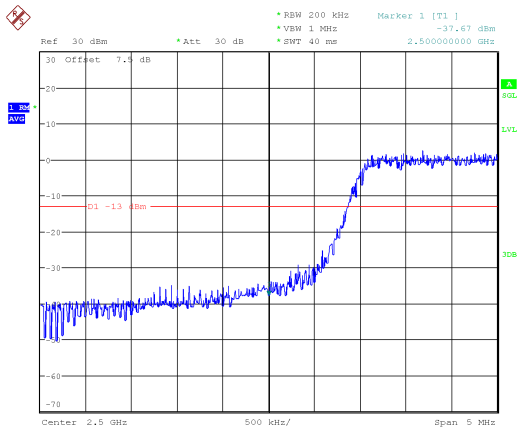
Date: 10.DEC.2021 16:53:09



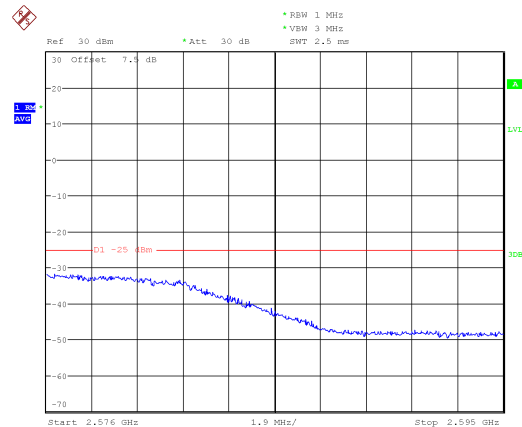
Date: 10.DEC.2021 16:51:12



Date: 10.DEC.2021 16:53:20

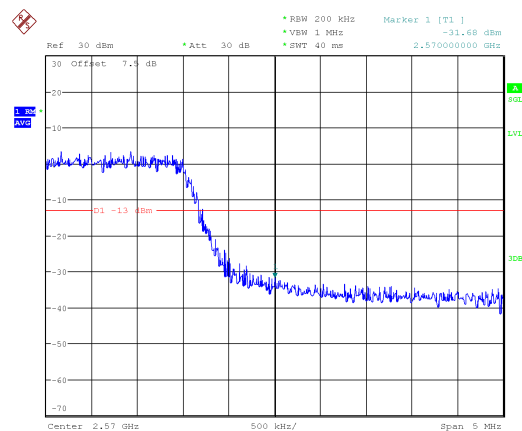


Date: 10.DEC.2021 16:50:50



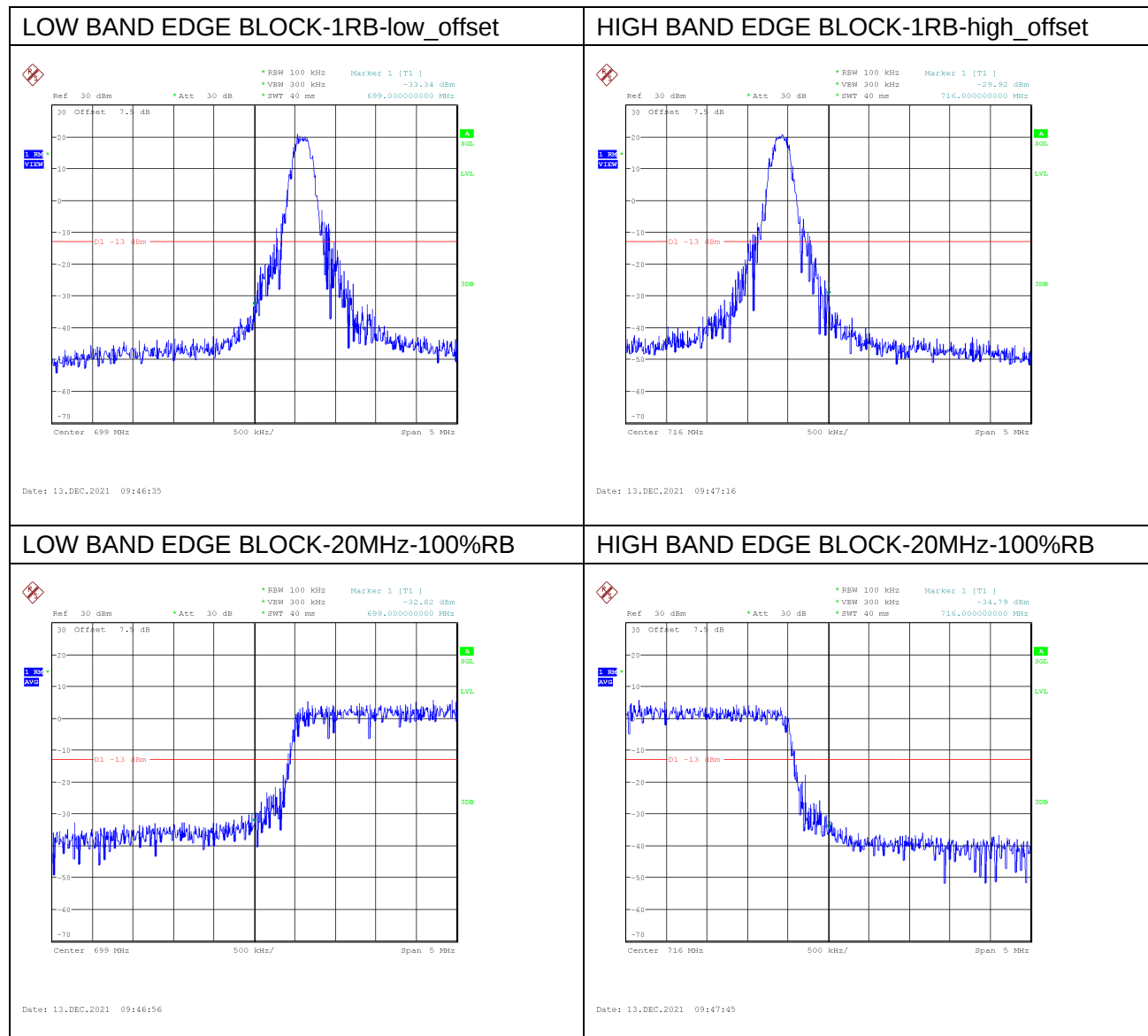
Date: 10.DEC.2021 16:53:31

/

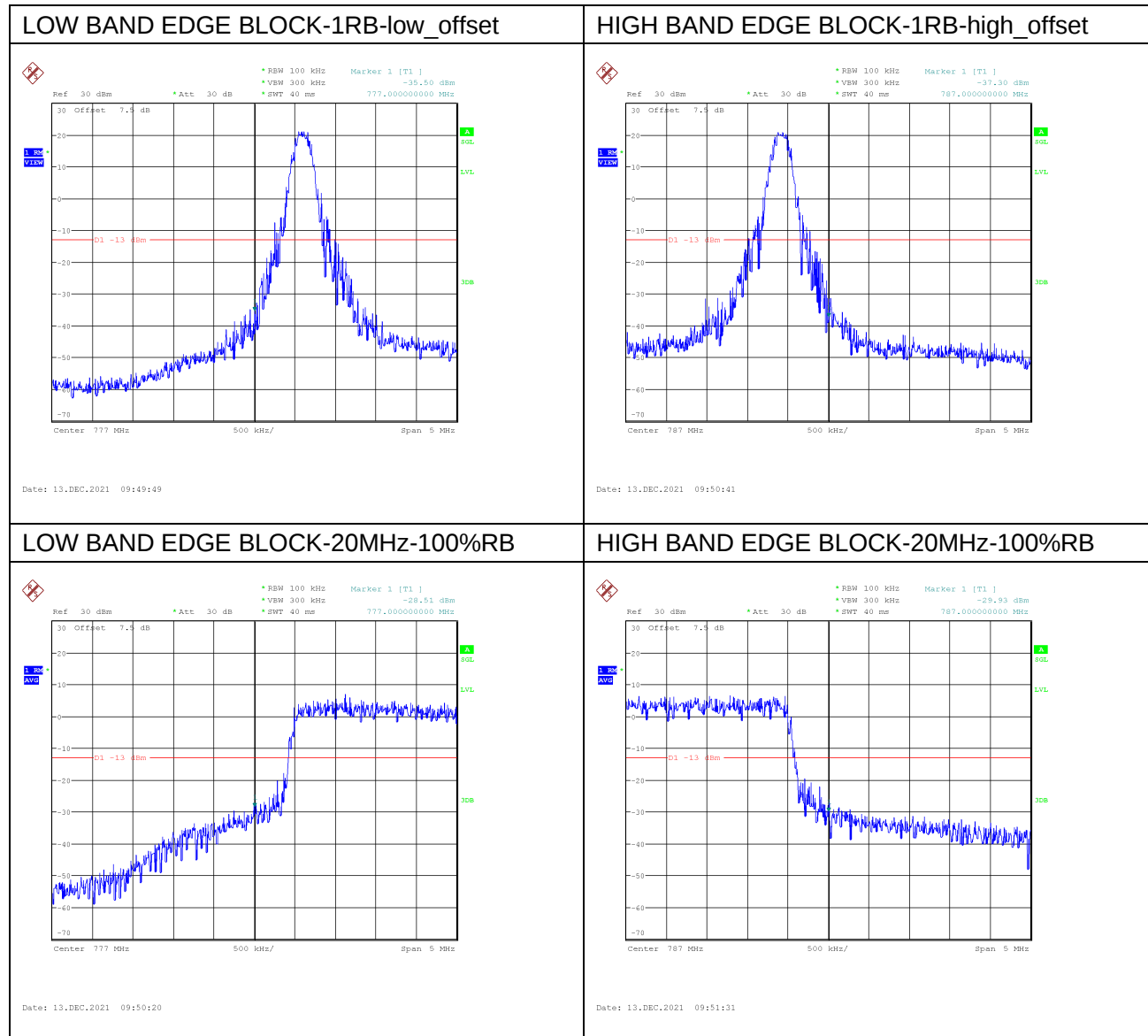


Date: 10.DEC.2021 16:52:58

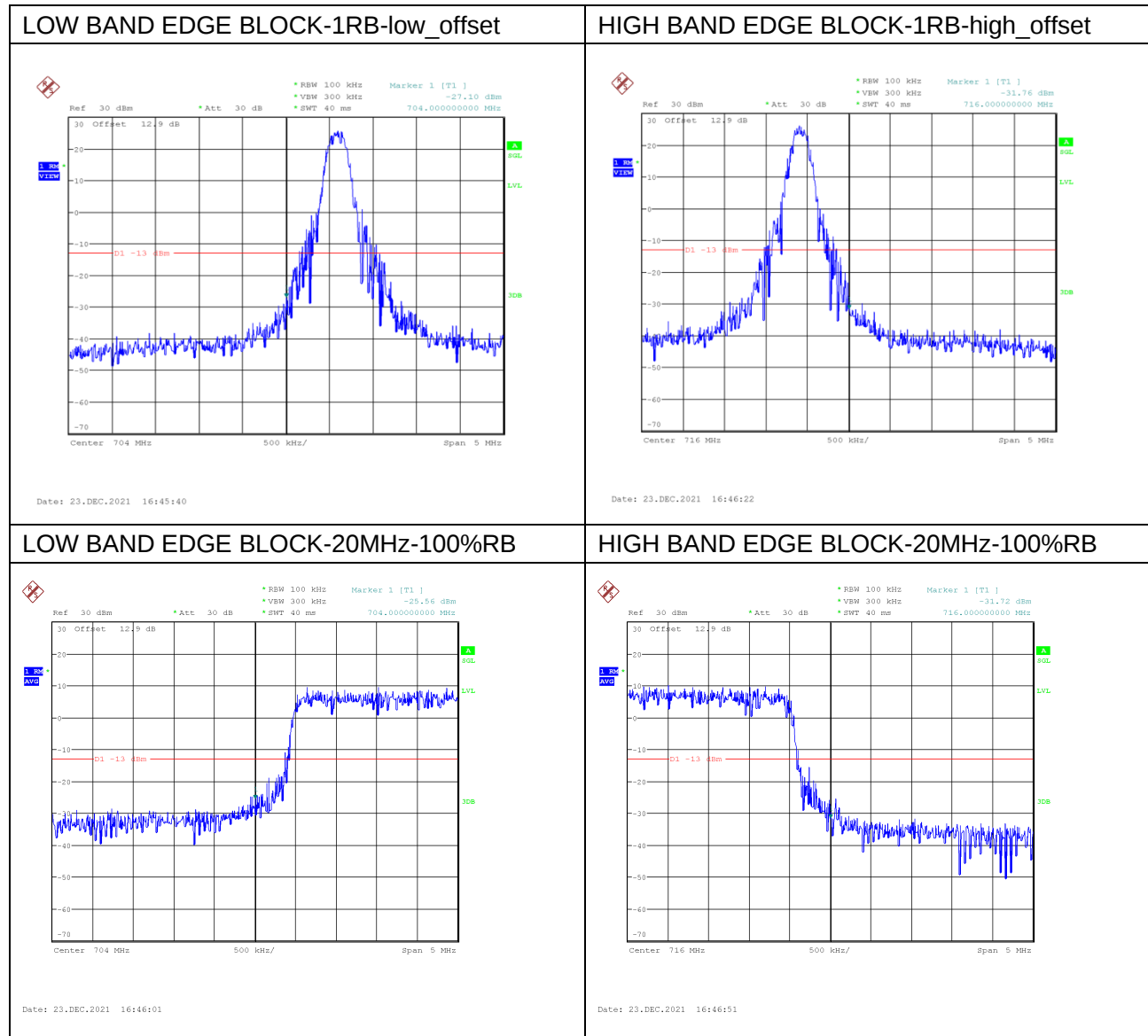
LTE band 12



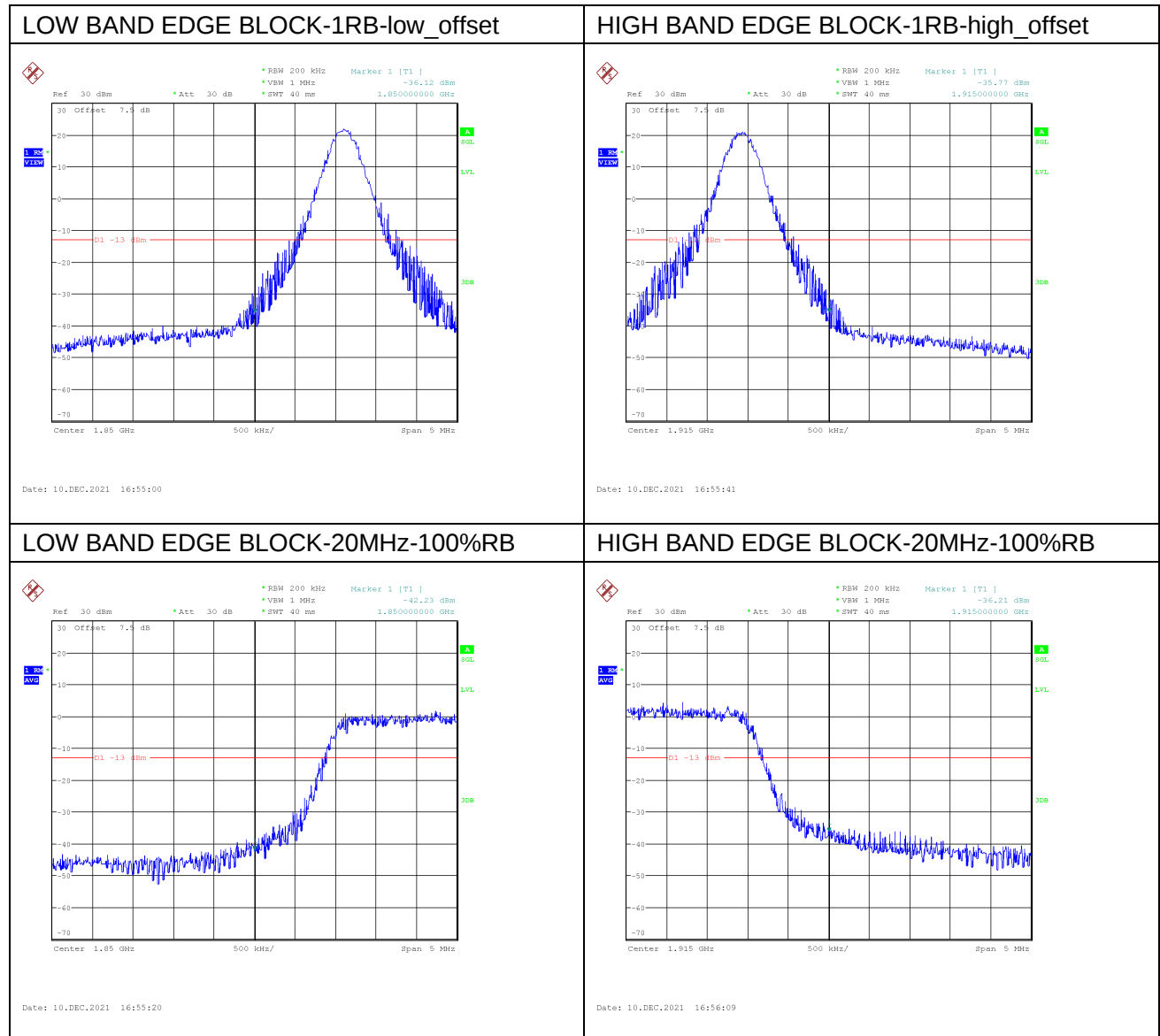
LTE band 13



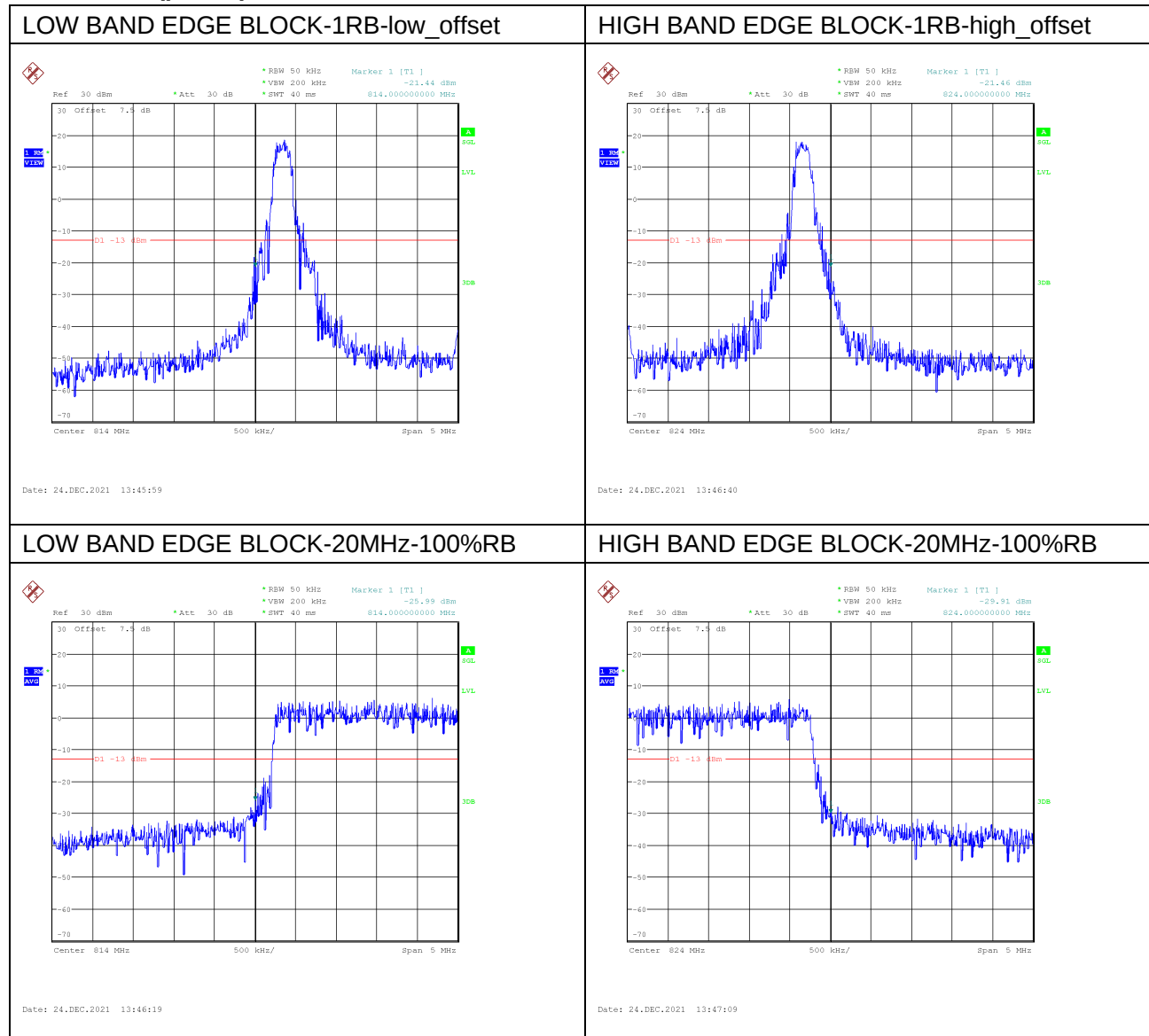
LTE band 17



LTE band 25

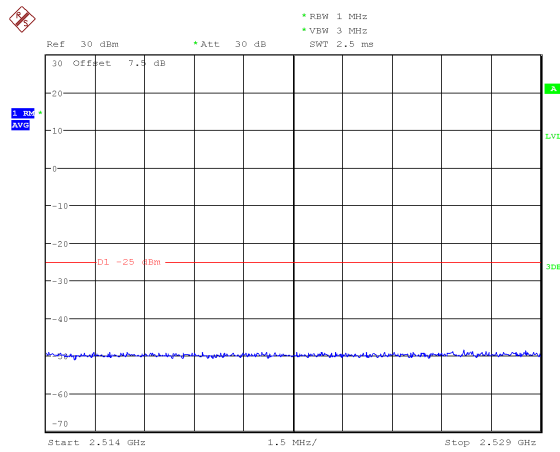


LTE band 26(part90)



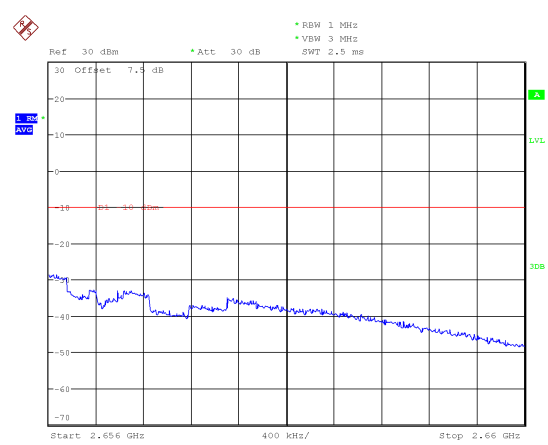
LTE band 41

LOW BAND EDGE BLOCK-1RB-low_offset

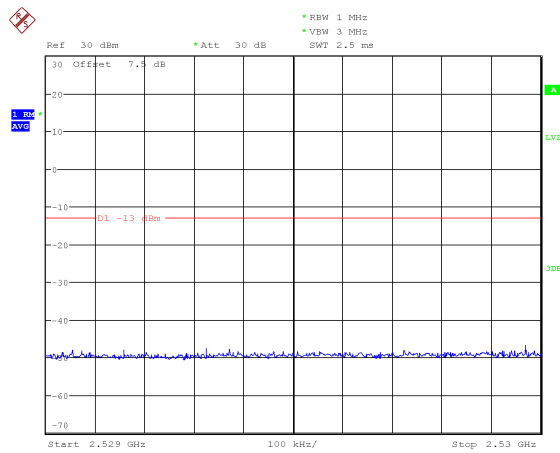


Date: 24.DEC.2021 13:48:59

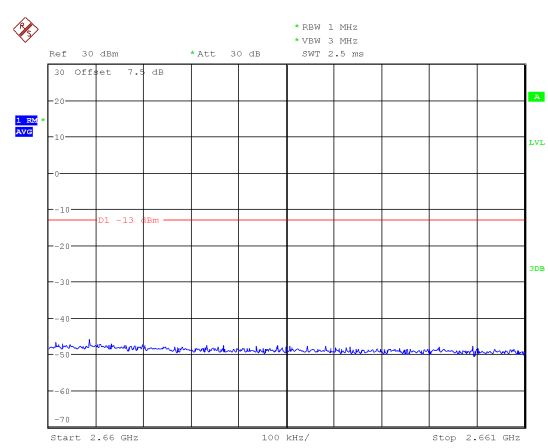
HIGH BAND EDGE BLOCK-1RB-high_offset



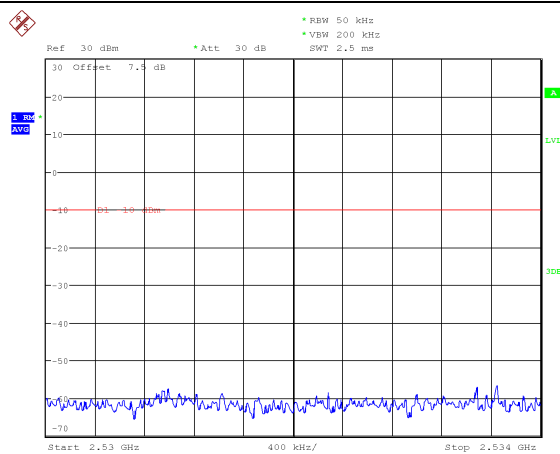
Date: 24.DEC.2021 13:50:39



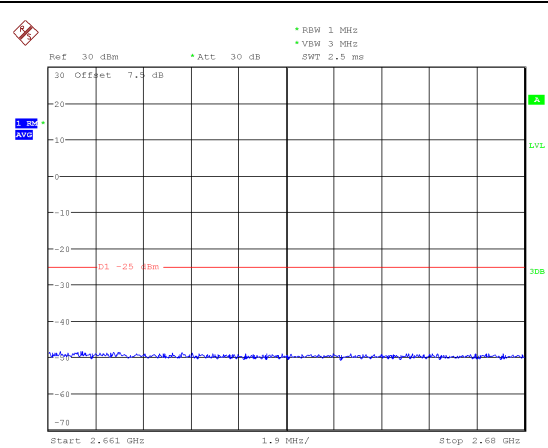
Date: 24.DEC.2021 13:49:15



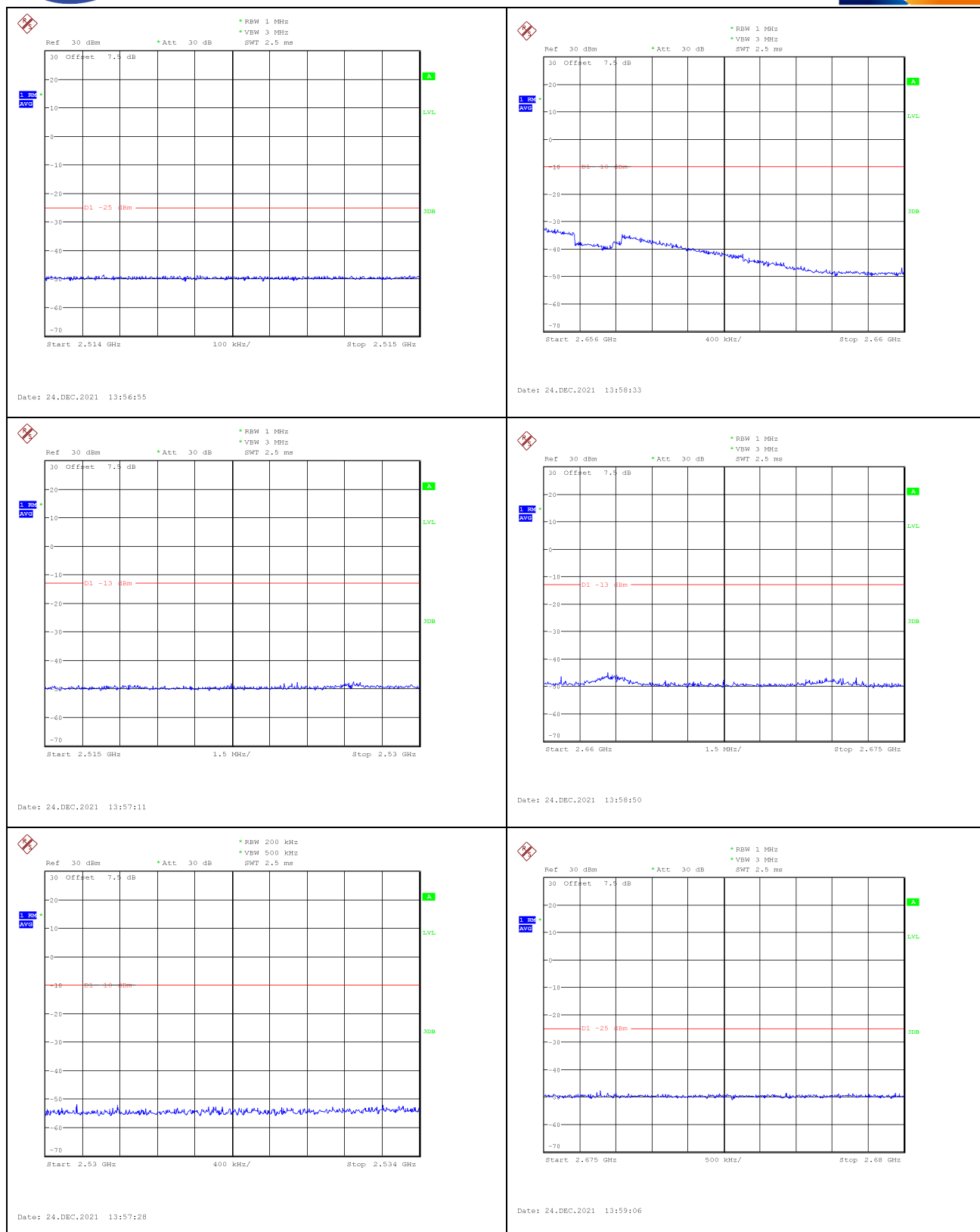
Date: 24.DEC.2021 13:50:56



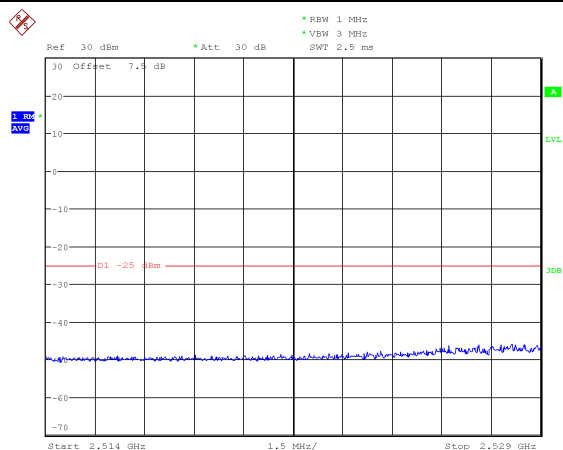
Date: 24.DEC.2021 13:49:32



Date: 24.DEC.2021 13:51:13

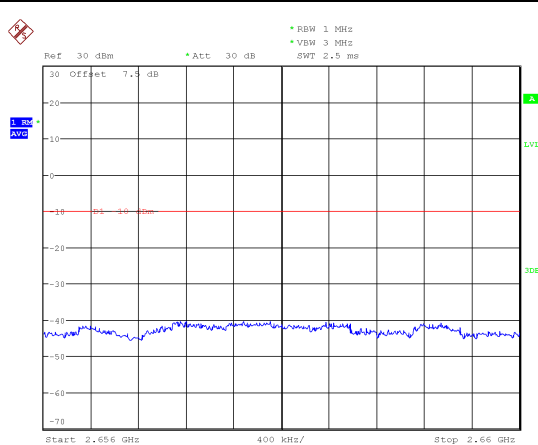


LOW BAND EDGE BLOCK-20MHz-100%RB

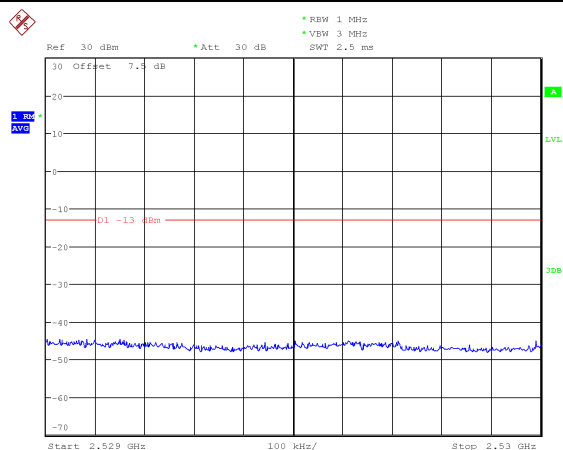


Date: 24.DEC.2021 13:49:49

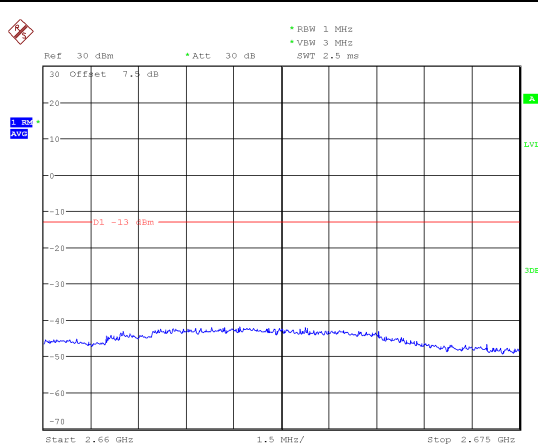
HIGH BAND EDGE BLOCK-20MHz-100%RB



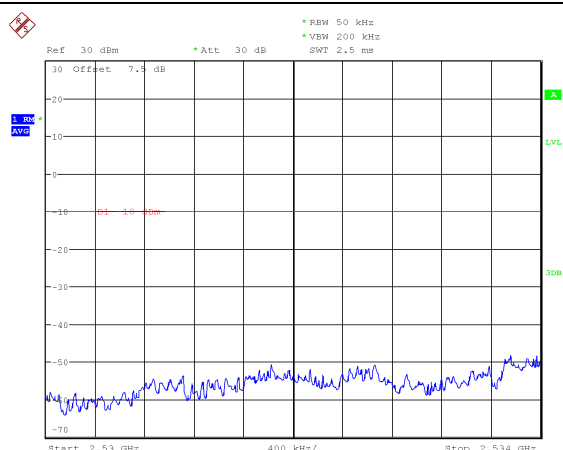
Date: 24.DEC.2021 13:59:23



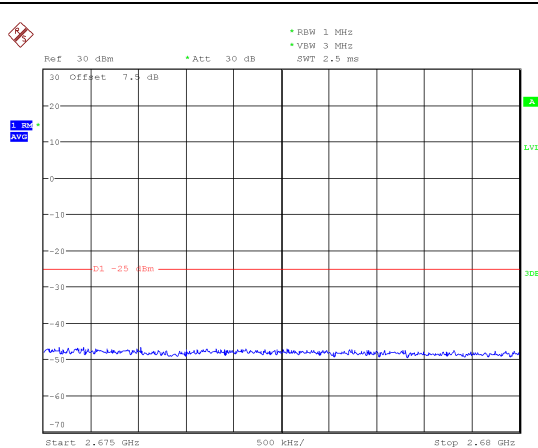
Date: 24.DEC.2021 13:50:06



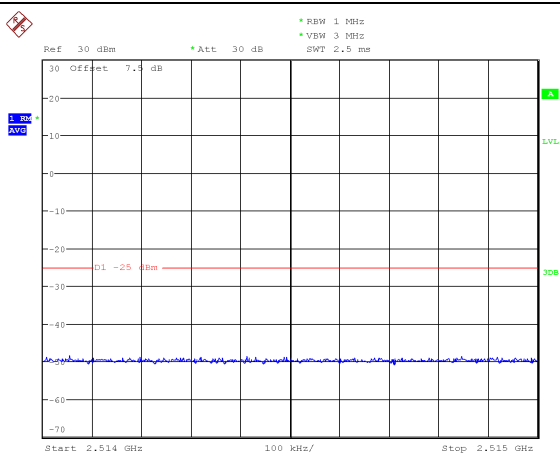
Date: 24.DEC.2021 13:59:39



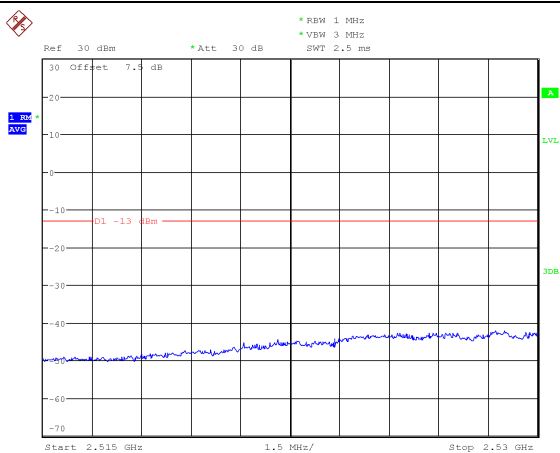
Date: 24.DEC.2021 13:50:22



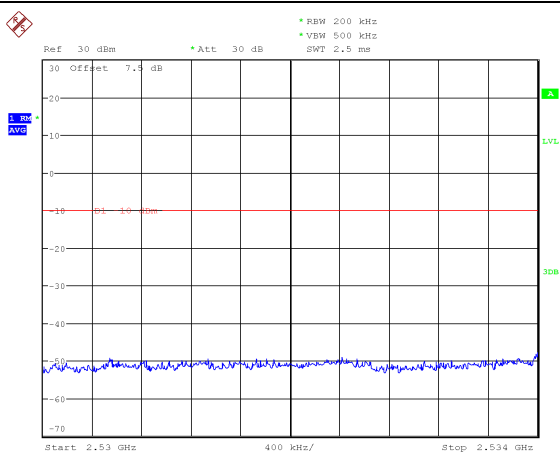
Date: 24.DEC.2021 13:59:56



Date: 24.DEC.2021 13:57:44



Date: 24.DEC.2021 13:58:00



Date: 24.DEC.2021 13:58:17

6.7. Conducted Spurious Emission

6.7.1 Measurement Method

The following steps outline the procedure used to measure the conducted emissions from the EUT.

1. Determine frequency range for measurements: From CFR 2.1057 the spectrum should be investigated from the lowest radio frequency generated in the equipment up to at least the 10th harmonic of the carrier frequency. For the mobile station equipment tested, this equates to a frequency range of 13 MHz to 9 GHz, data taken from 10 MHz to 25 GHz.
2. Determine EUT transmit frequencies: below outlines the band edge frequencies pertinent to conducted emissions testing.
3. The number of sweep points of spectrum analyzer is set to 30001 which is greater than span/RBW.

6.7.2 Measurement Limit

Part 27.53(g), 27.53(h), 27.53(m) specify that 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.

The specification that emissions shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

Part 27.53(m)(4) specifies 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 than $43 + 10 \log(P)$ 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.