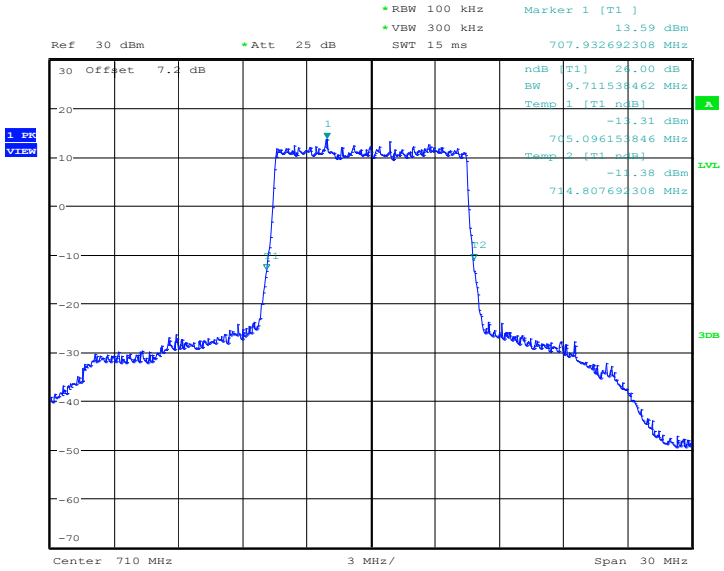
LTE band 17, 10MHz (-26dBc)

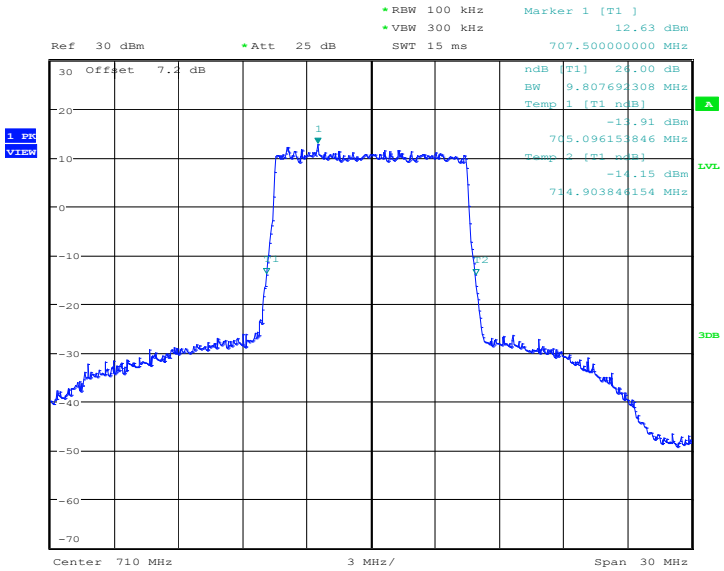
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)	
710.0	QPSK	16QAM
	9711.54	9807.69

LTE band 17, 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 17.FEB.2017 01:50:59

LTE band 17, 10MHz Bandwidth, 16QAM (-26dBc BW)

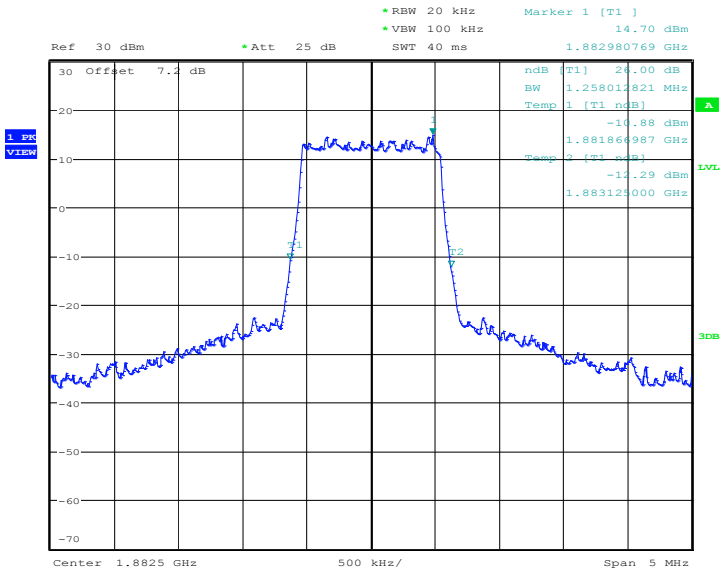


Date: 17.FEB.2017 01:51:57

LTE band 25, 1.4MHz (-26dBc)

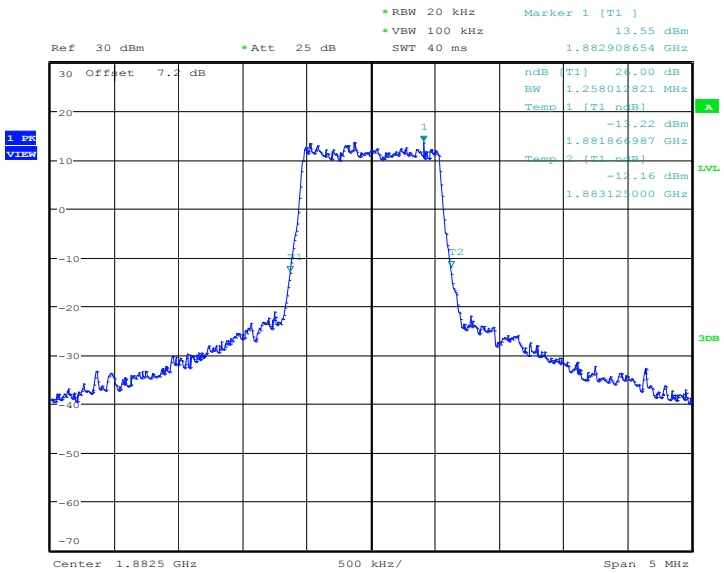
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)	
1882.5	QPSK	16QAM
	1258.01	1258.01

LTE band 25, 1.4MHz Bandwidth, QPSK (-26dBc BW)



Date: 17.FEB.2017 00:18:38

LTE band 25, 1.4MHz Bandwidth, 16QAM (-26dBc BW)

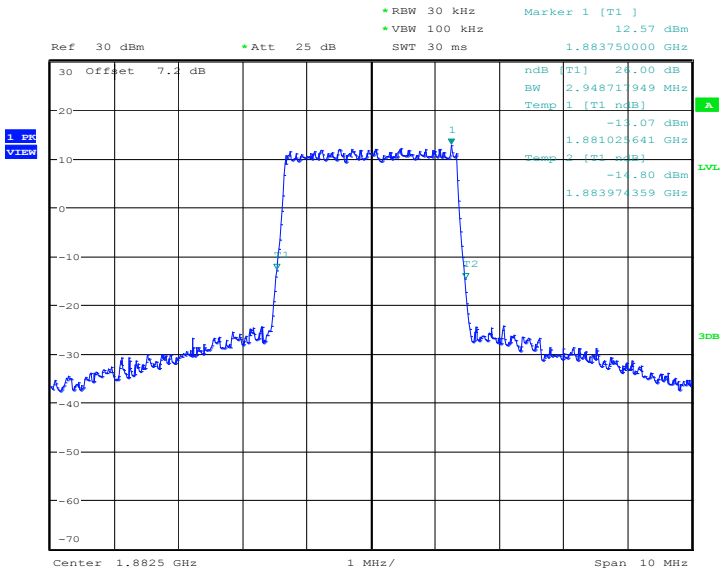


Date: 17.FEB.2017 00:17:54

LTE band 25, 3MHz (-26dBc)

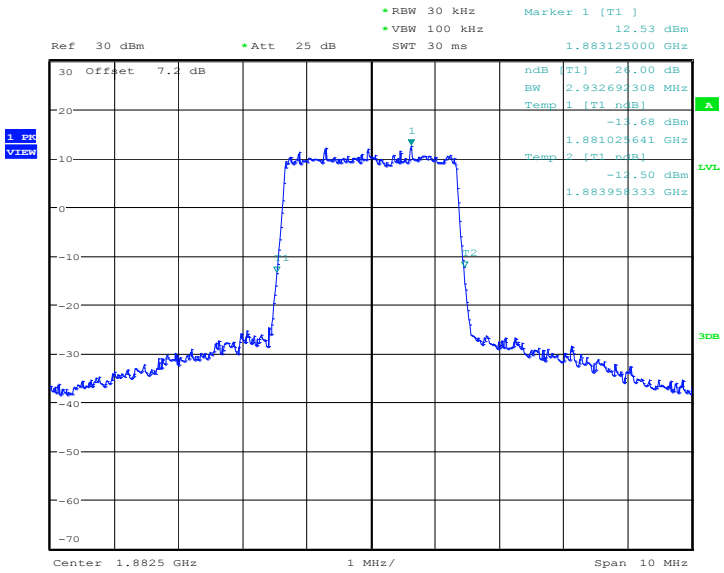
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)	
1882.5	QPSK	16QAM
	2948.72	2932.69

LTE band 25, 3MHz Bandwidth, QPSK (-26dBc BW)



Date: 17.FEB.2017 00:32:19

LTE band 25, 3MHz Bandwidth, 16QAM (-26dBc BW)

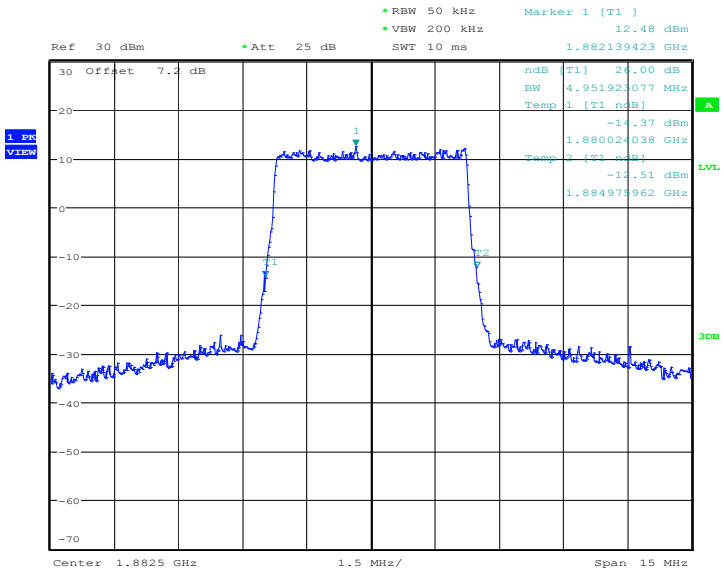


Date: 17.FEB.2017 00:33:05

LTE band 25, 5MHz (-26dBc)

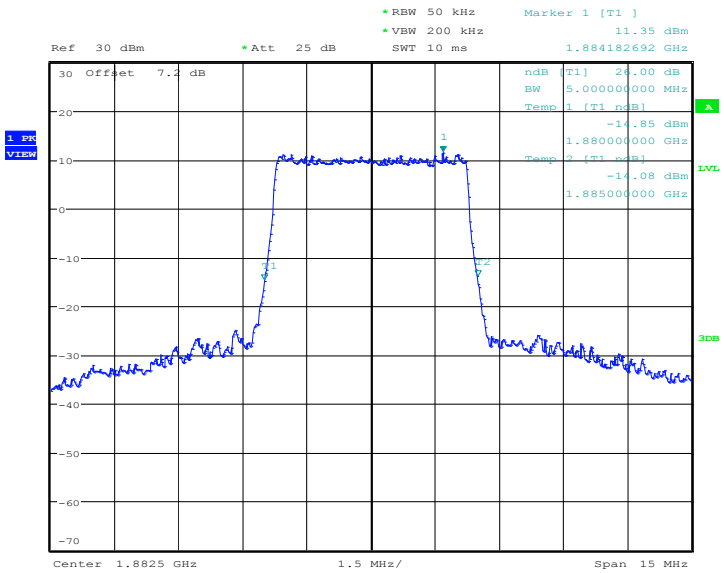
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)	
1882.5	QPSK	16QAM
	4951.92	5000.00

LTE band 25, 5MHz Bandwidth, QPSK (-26dBc BW)



Date: 17.FEB.2017 01:24:34

LTE band 25, 5MHz Bandwidth,16QAM (-26dBc BW)

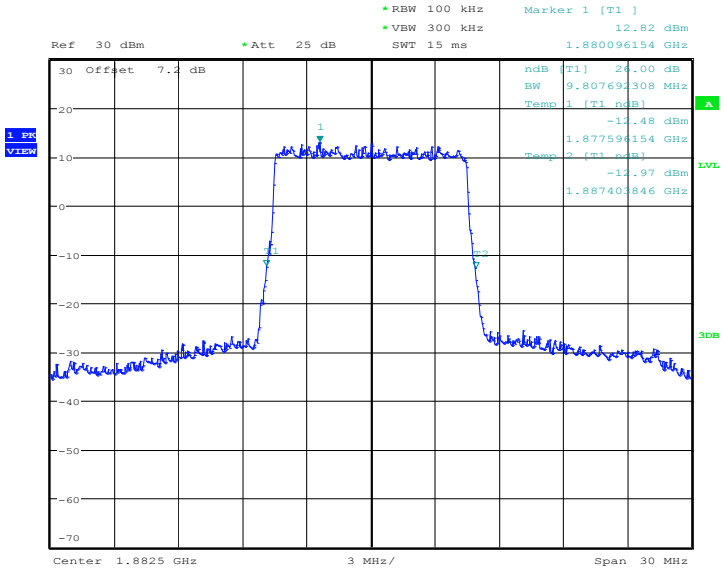


Date: 17.FEB.2017 01:25:47

LTE band 25, 10MHz (-26dBc)

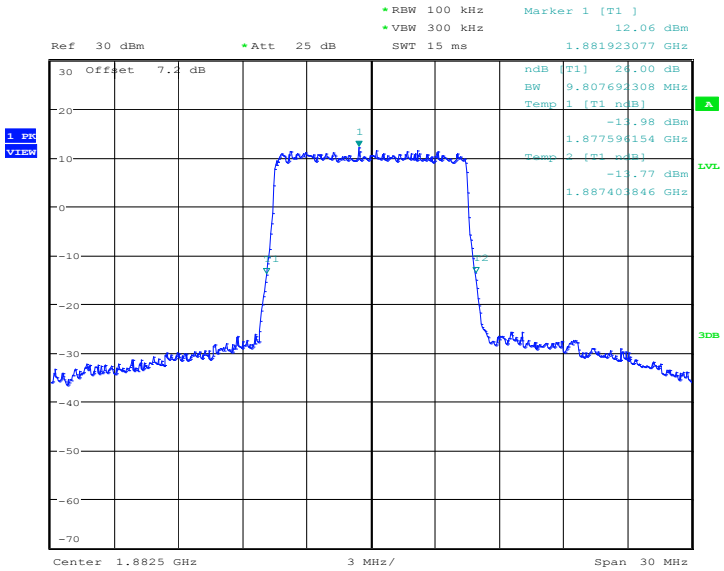
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)	
1882.5	QPSK	16QAM
	9807.69	9807.69

LTE band 25, 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 17.FEB.2017 01:49:59

LTE band 25, 10MHz Bandwidth, 16QAM (-26dBc BW)

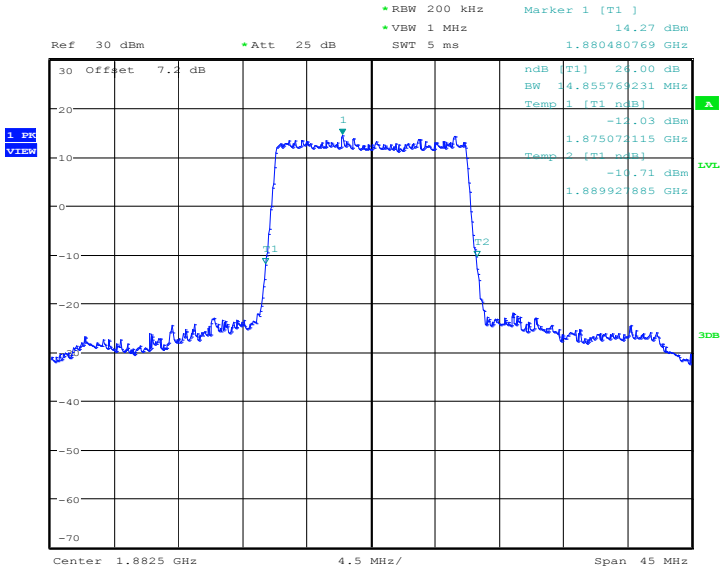


Date: 17.FEB.2017 01:49:28

LTE band 25, 15MHz (-26dBc)

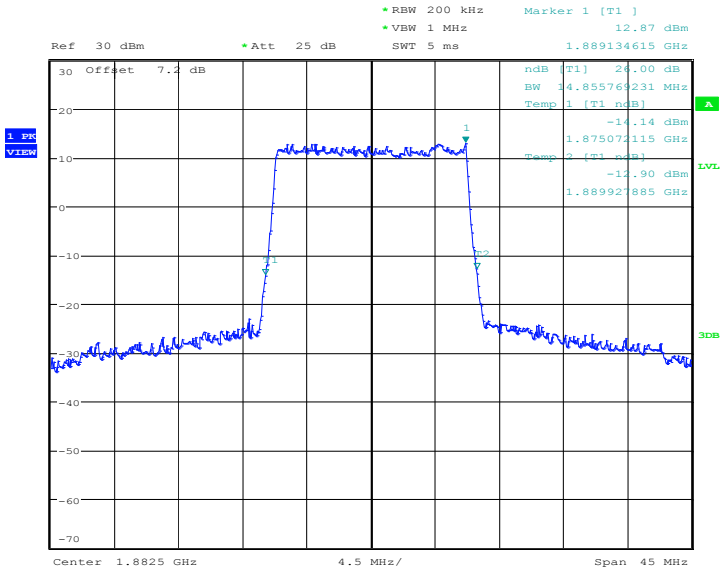
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)	
1882.5	QPSK	16QAM
	14855.77	14855.77

LTE band 25, 15MHz Bandwidth, QPSK (-26dBc BW)



Date: 17.FEB.2017 02:22:23

LTE band 25, 15MHz Bandwidth, 16QAM (-26dBc BW)

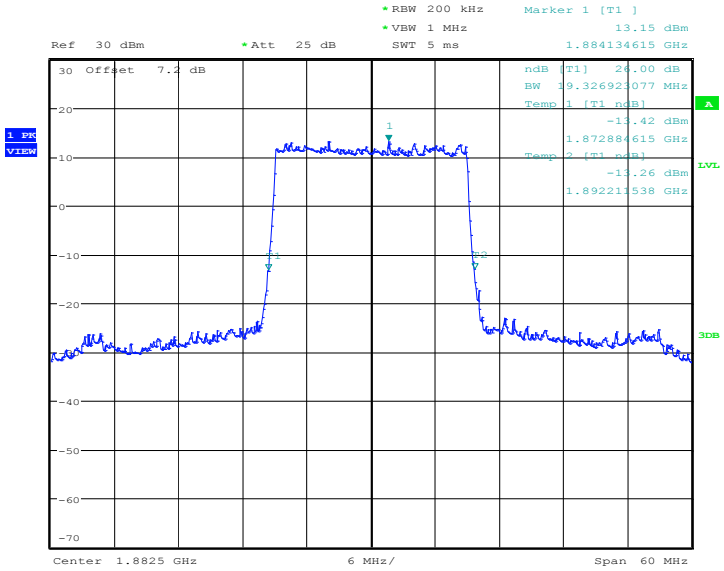


Date: 17.FEB.2017 02:22:54

LTE band 25, 20MHz (-26dBc)

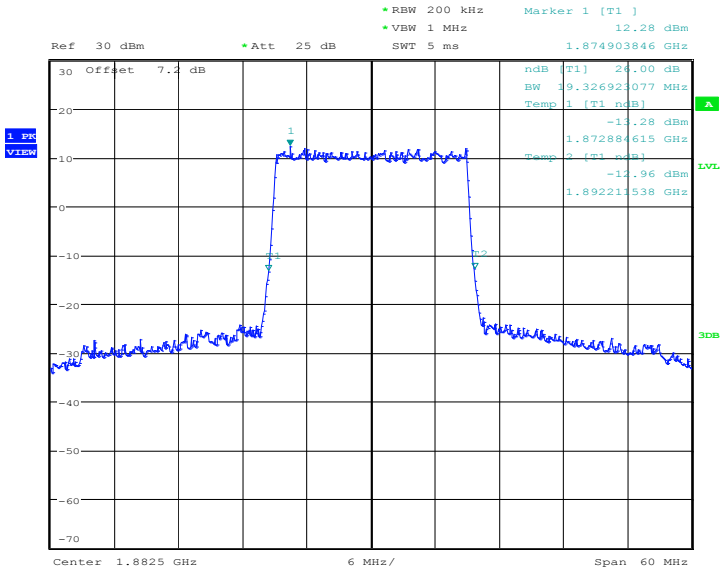
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)	
1882.5	QPSK	16QAM
	19326.92	19326.92

LTE band 25, 20MHz Bandwidth, QPSK (-26dBc BW)



Date: 17.FEB.2017 02:34:20

LTE band 25, 20MHz Bandwidth, 16QAM (-26dBc BW)

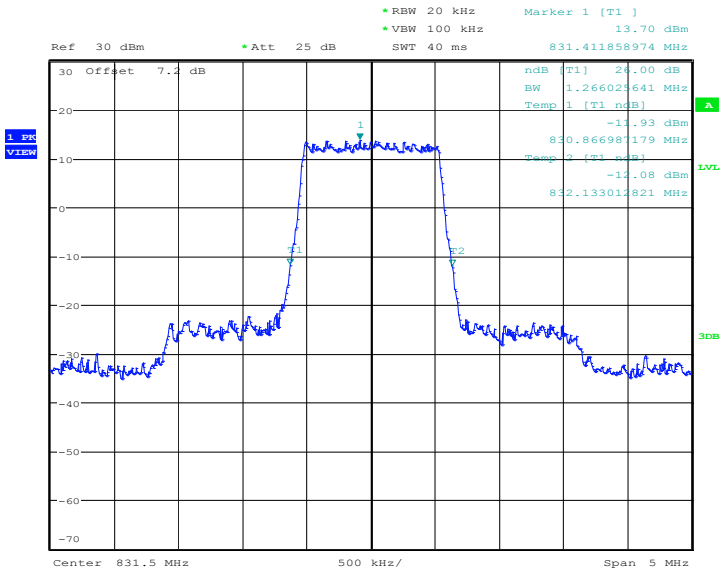


Date: 17.FEB.2017 02:35:09

LTE band 26, 1.4MHz (-26dBc)

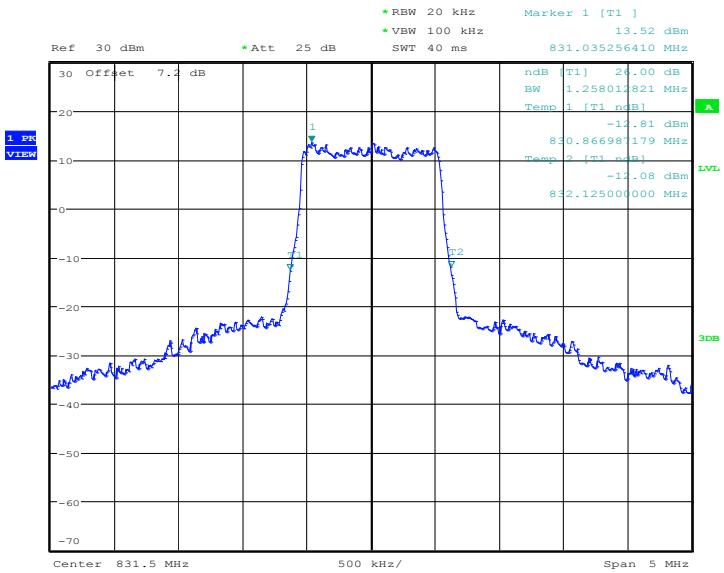
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)	
831.5	QPSK	16QAM
	1266.03	1258.01

LTE band 26, 1.4MHz Bandwidth, QPSK (-26dBc BW)



Date: 17.FEB.2017 00:25:02

LTE band 26, 1.4MHz Bandwidth, 16QAM (-26dBc BW)

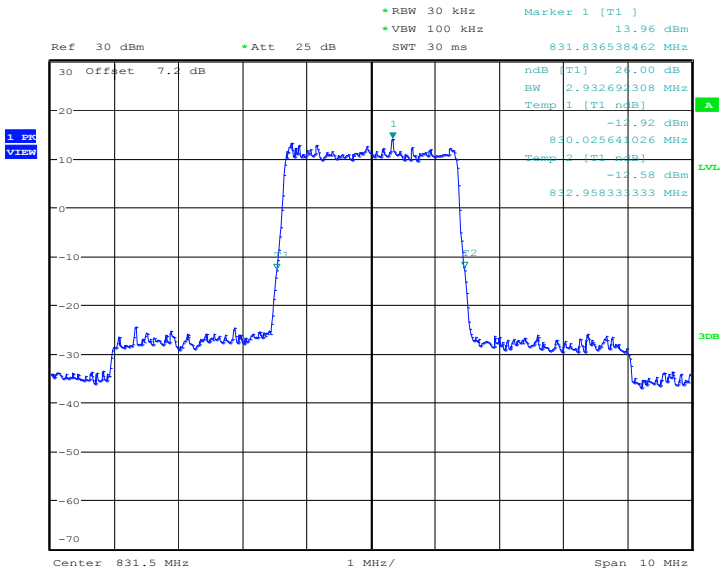


Date: 17.FEB.2017 00:26:01

LTE band 26, 3MHz (-26dBc)

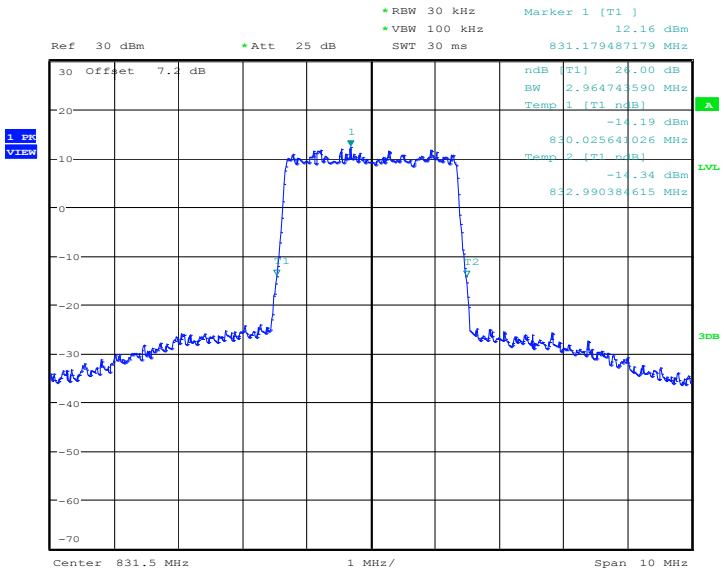
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)	
831.5	QPSK	16QAM
	2932.69	2964.74

LTE band 26, 3MHz Bandwidth, QPSK (-26dBc BW)



Date: 17.FEB.2017 00:31:20

LTE band 26, 3MHz Bandwidth, 16QAM (-26dBc BW)

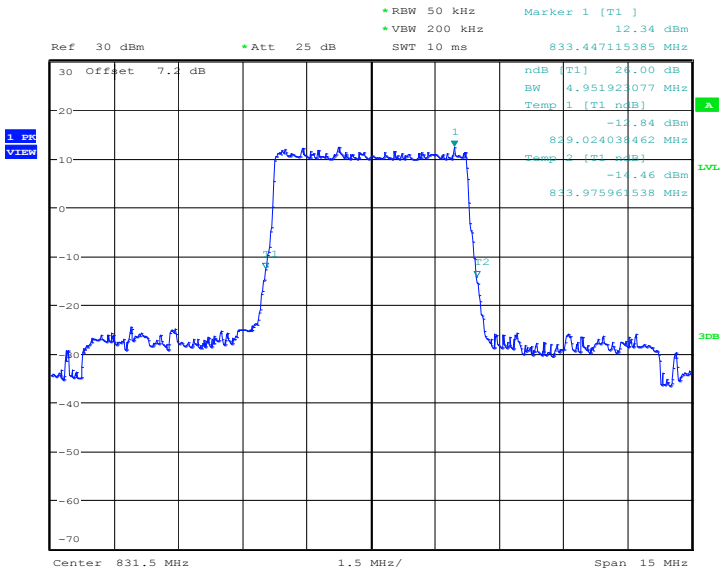


Date: 17.FEB.2017 00:29:58

LTE band 26, 5MHz (-26dBc)

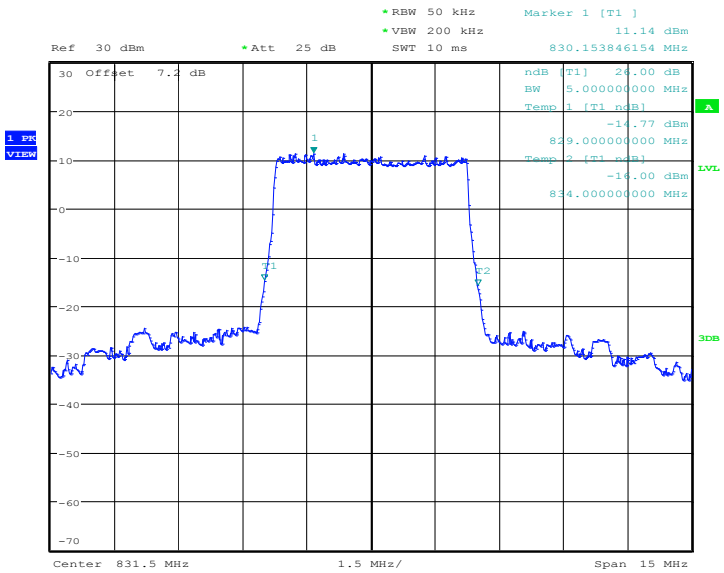
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)	
831.5	QPSK	16QAM
	4951.92	5000.00

LTE band 26, 5MHz Bandwidth, QPSK (-26dBc BW)



Date: 17.FEB.2017 01:31:33

LTE band 26, 5MHz Bandwidth,16QAM (-26dBc BW)

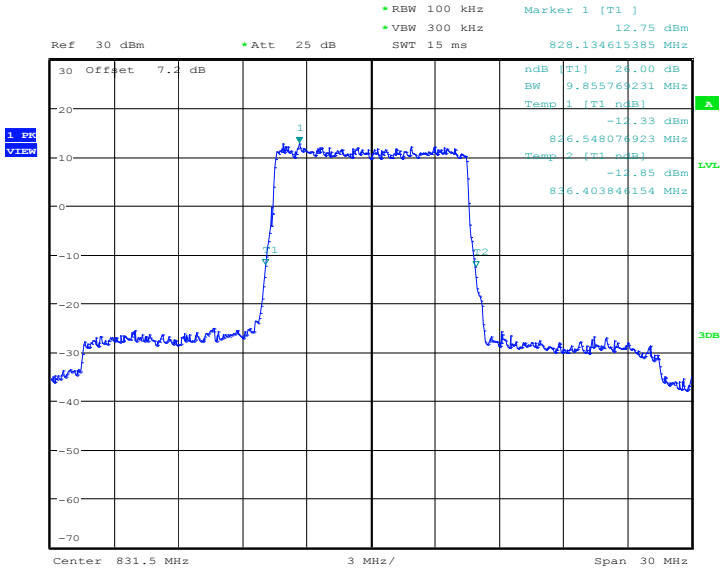


Date: 17.FEB.2017 01:30:24

LTE band 26, 10MHz (-26dBc)

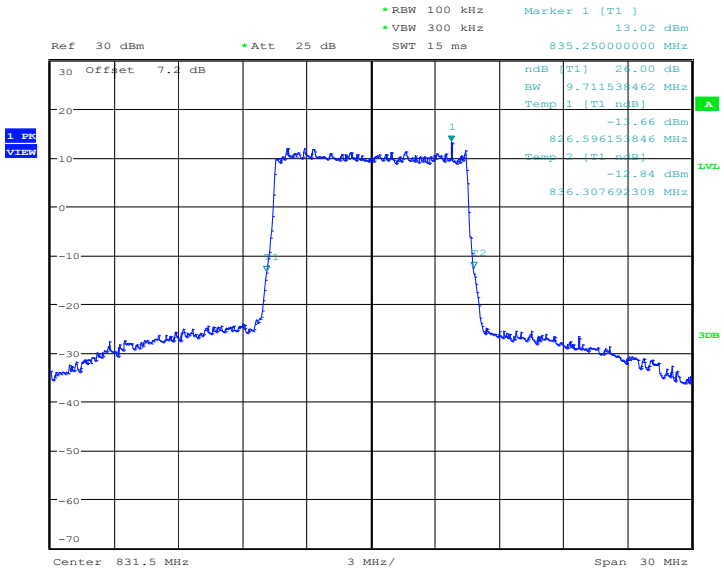
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)	
831.5	QPSK	16QAM
	9855.77	9711.54

LTE band 26, 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 17.FEB.2017 01:33:13

LTE band 26, 10MHz Bandwidth, 16QAM (-26dBc BW)

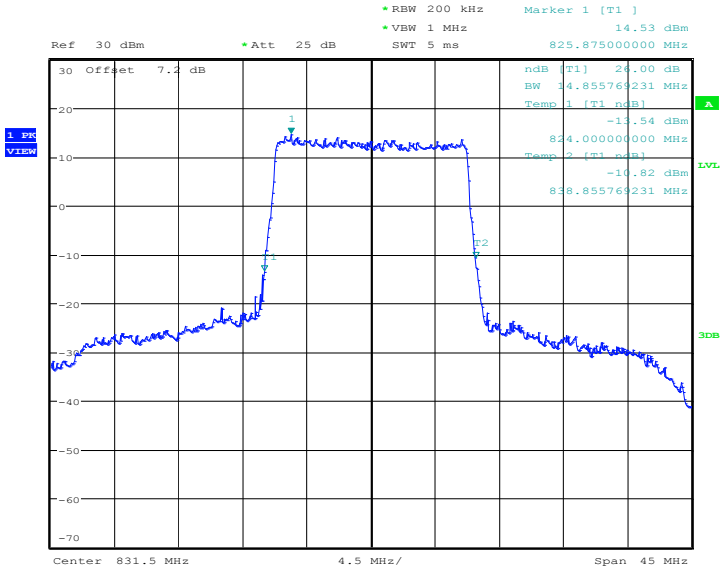


Date: 17.FEB.2017 01:34:43

LTE band 26, 15MHz (-26dBc)

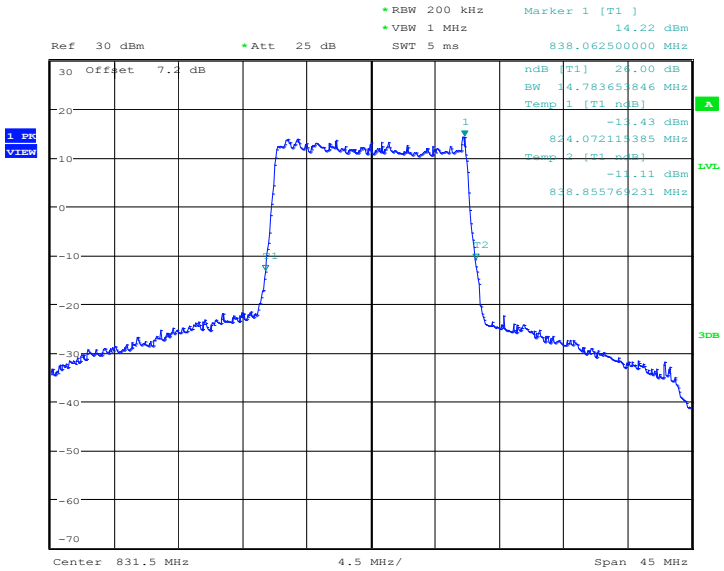
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)	
831.5	QPSK	16QAM
	14855.77	14783.65

LTE band 26, 15MHz Bandwidth, QPSK (-26dBc BW)



Date: 17.FEB.2017 02:27:51

LTE band 26, 15MHz Bandwidth, 16QAM (-26dBc BW)

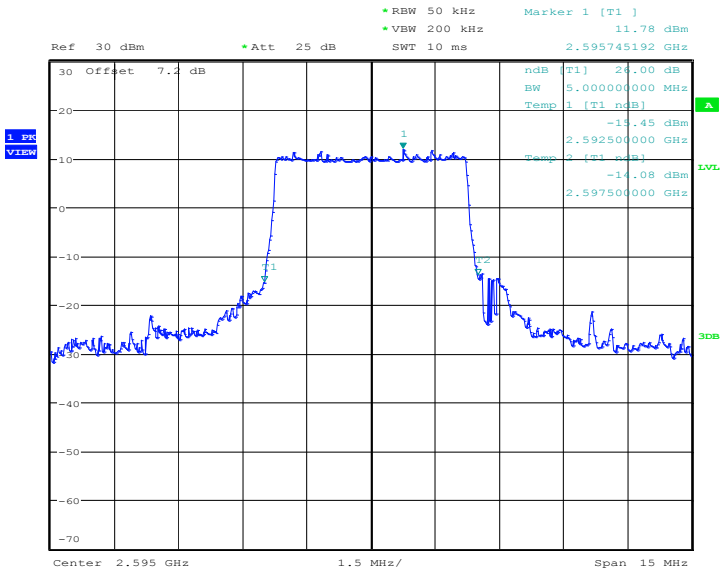


Date: 17.FEB.2017 02:27:16

LTE band 38, 5MHz (-26dBc)

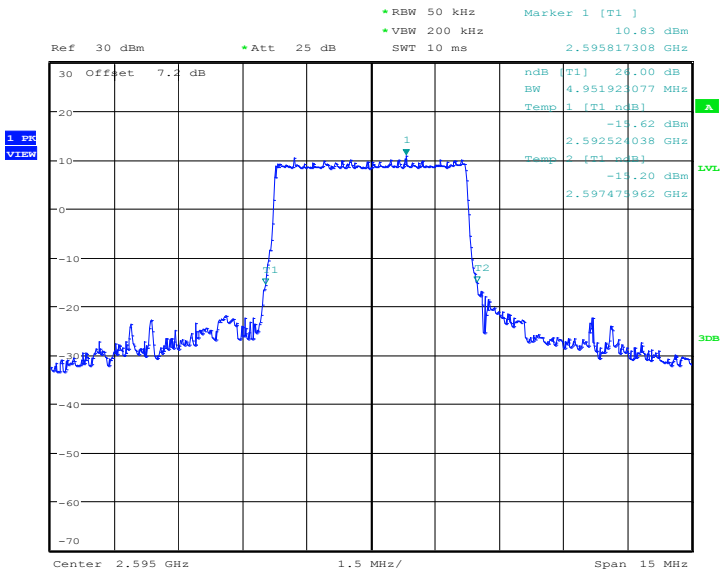
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)	
2595.0	QPSK	16QAM
	5000.00	4951.92

LTE band 38, 5MHz Bandwidth, QPSK (-26dBc BW)



Date: 17.FEB.2017 03:22:46

LTE band 38, 5MHz Bandwidth,16QAM (-26dBc BW)

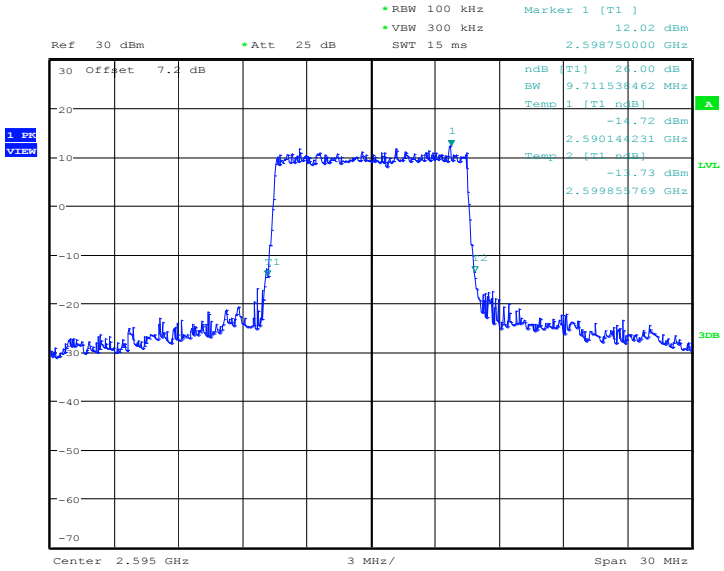


Date: 17.FEB.2017 03:21:43

LTE band 38, 10MHz (-26dBc)

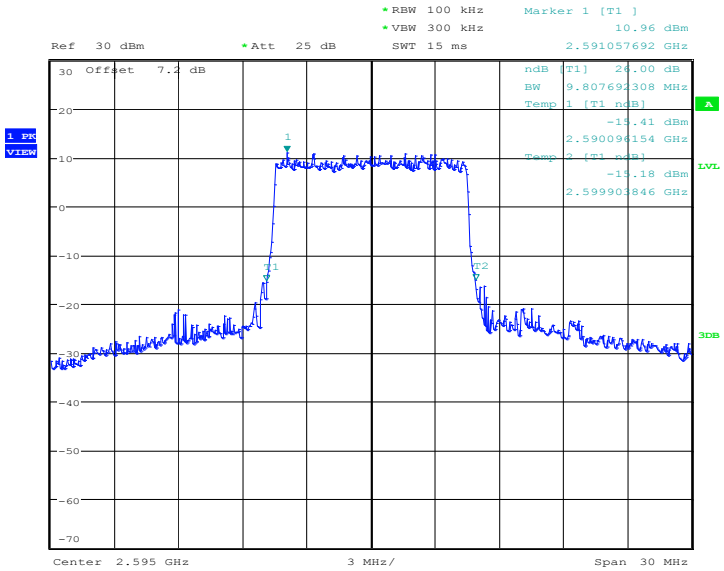
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)	
2595.0	QPSK	16QAM
	9711.54	9807.69

LTE band 38, 10MHz Bandwidth, QPSK (-26dBc BW)



Date: 17.FEB.2017 03:17:40

LTE band 38, 10MHz Bandwidth, 16QAM (-26dBc BW)

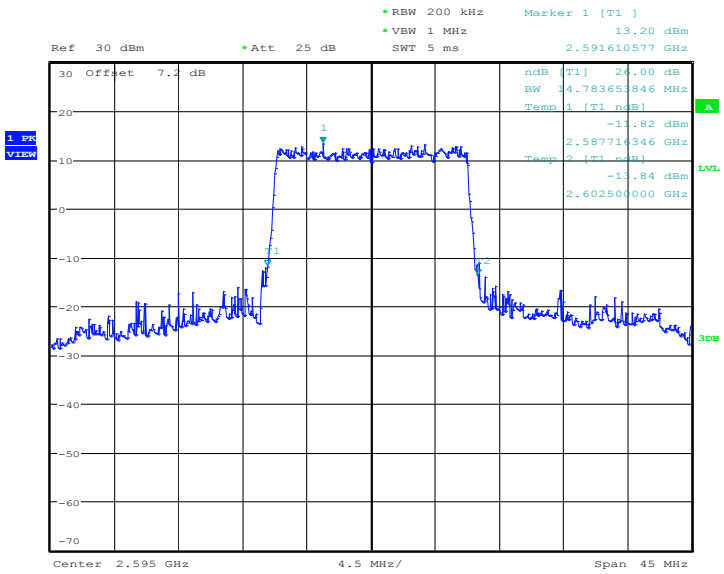


Date: 17.FEB.2017 03:18:04

LTE band 38, 15MHz (-26dBc)

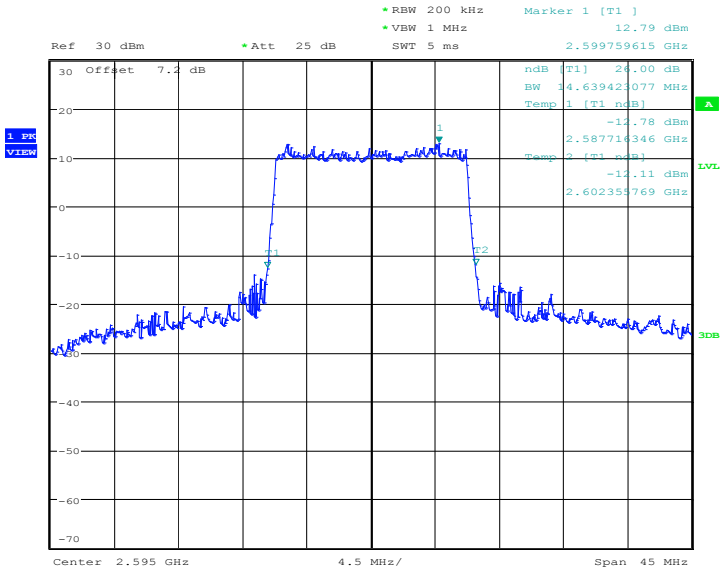
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)	
2595.0	QPSK	16QAM
	14783.65	14639.42

LTE band 38, 15MHz Bandwidth, QPSK (-26dBc BW)



Date: 17.FEB.2017 03:16:42

LTE band 38, 15MHz Bandwidth, 16QAM (-26dBc BW)

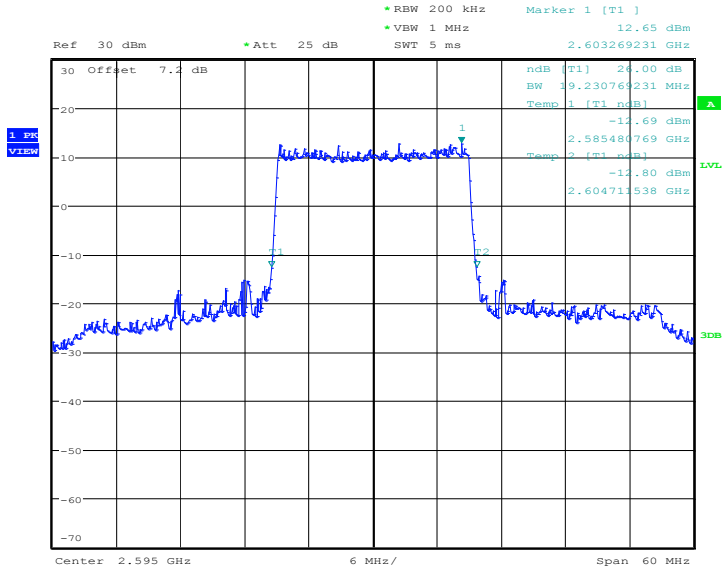


Date: 17.FEB.2017 03:15:42

LTE band 38, 20MHz (-26dBc)

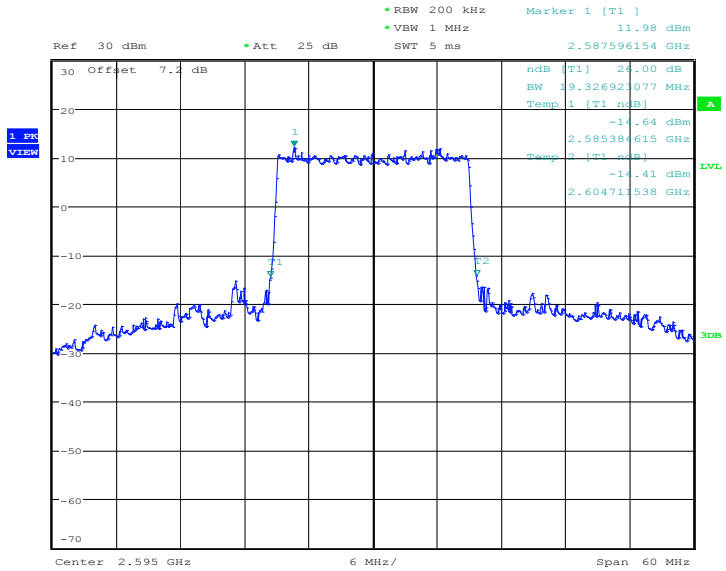
Frequency(MHz)	Occupied Bandwidth (-26dBc)(kHz)	
2595.0	QPSK	16QAM
	19230.77	19326.92

LTE band 38, 20MHz Bandwidth, QPSK (-26dBc BW)



Date: 17.FEB.2017 03:11:05

LTE band 38, 20MHz Bandwidth, 16QAM (-26dBc BW)



Date: 17.FEB.2017 03:12:15

A.6 BAND EDGE COMPLIANCE

A.6.1 Measurement limit

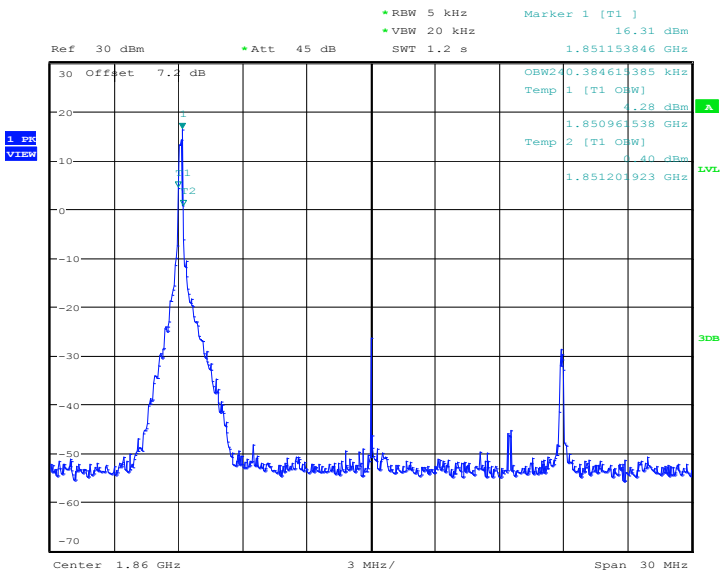
On any frequency outside frequency band of the US Cellular/PCS spectrum, the power of any emission shall be attenuated below the transmitter power (P, in Watts) by at least 43+10Log (P) dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm. According to KDB 971168 v02r01 6.0, 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.

A.6.2 Measurement result

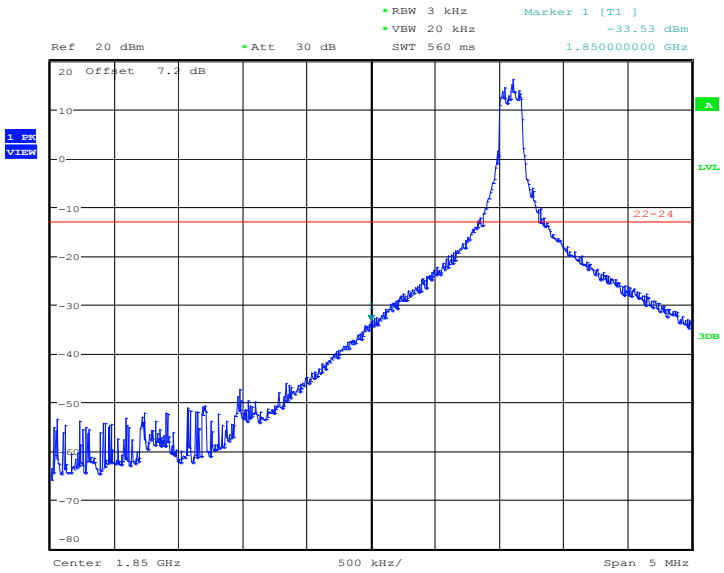
Only worst case result is given below

LTE band 2

OBW: 1RB-low_offset

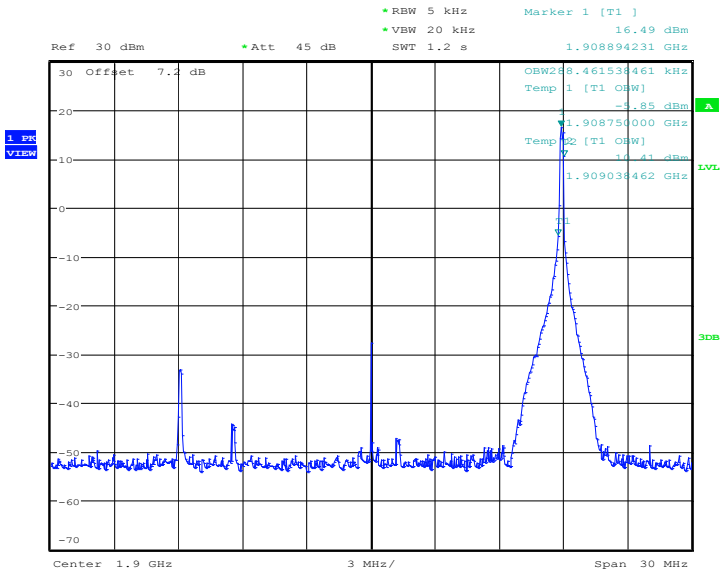


LOW BAND EDGE BLOCK-1RB-low_offset



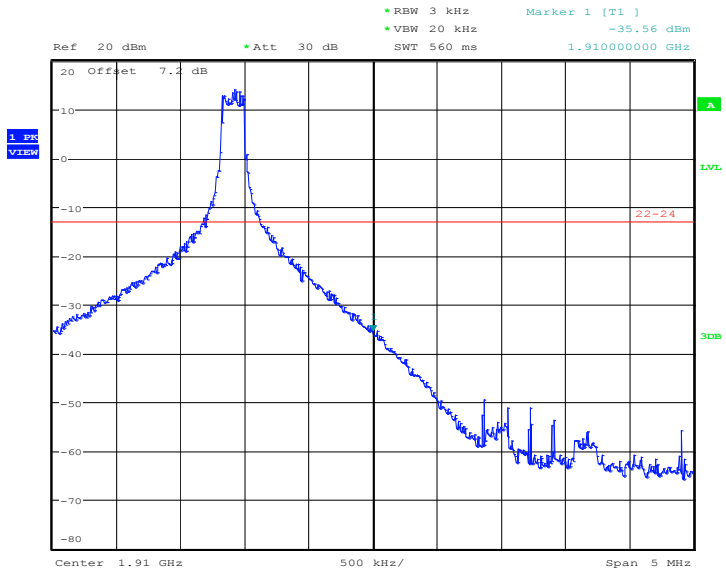
Date: 17.FEB.2017 05:08:00

OBW: 1RB-high_offset



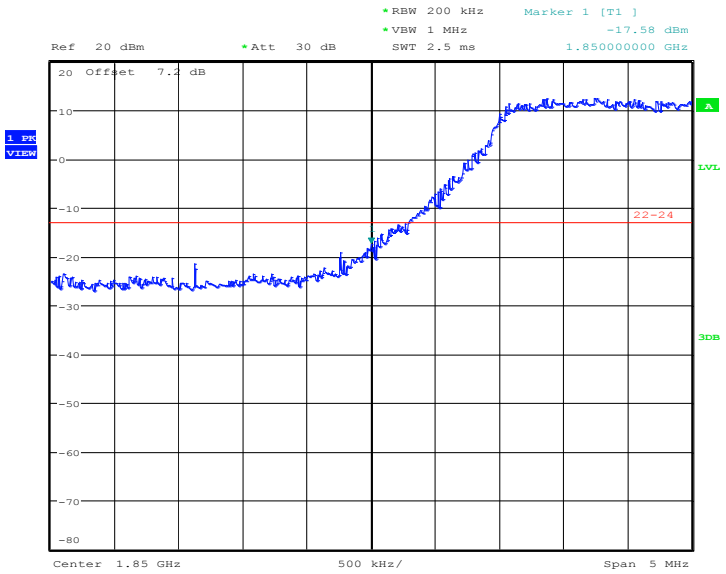
Date: 17.FEB.2017 05:04:23

HIGH BAND EDGE BLOCK-1RB-high_offset



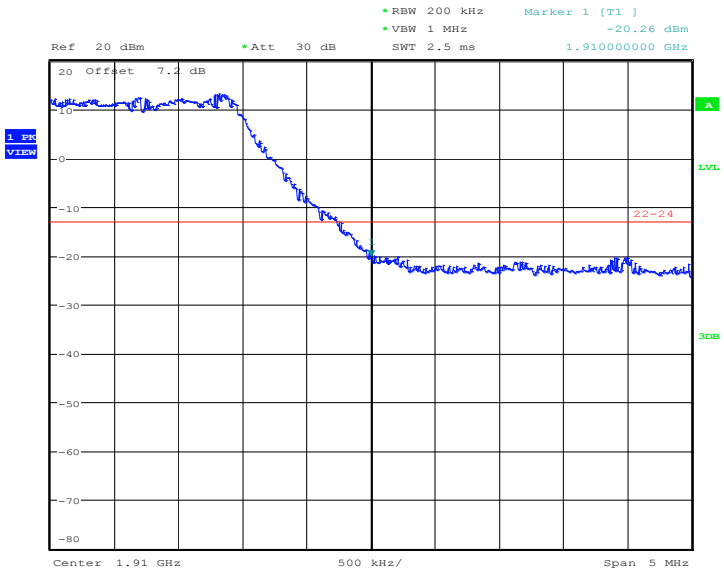
Date: 17.FEB.2017 05:08:56

LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 17.FEB.2017 05:10:33

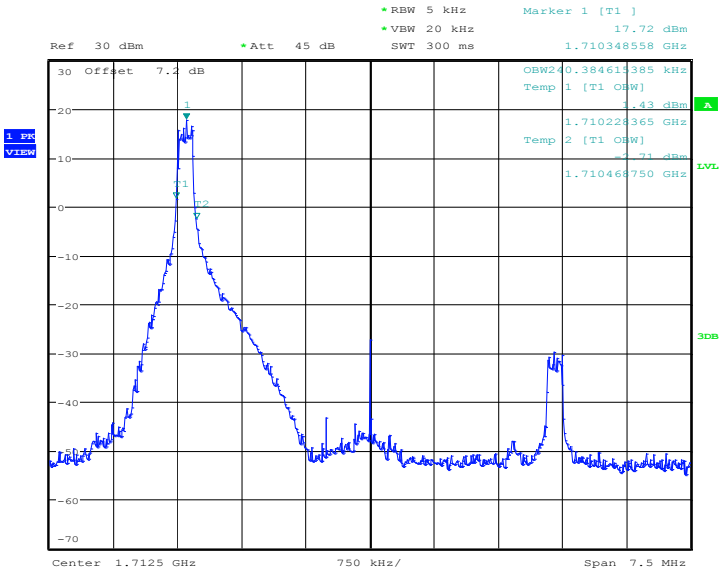
HIGH BAND EDGE BLOCK-20MHz-100%RB



Date: 17.FEB.2017 05:09:53

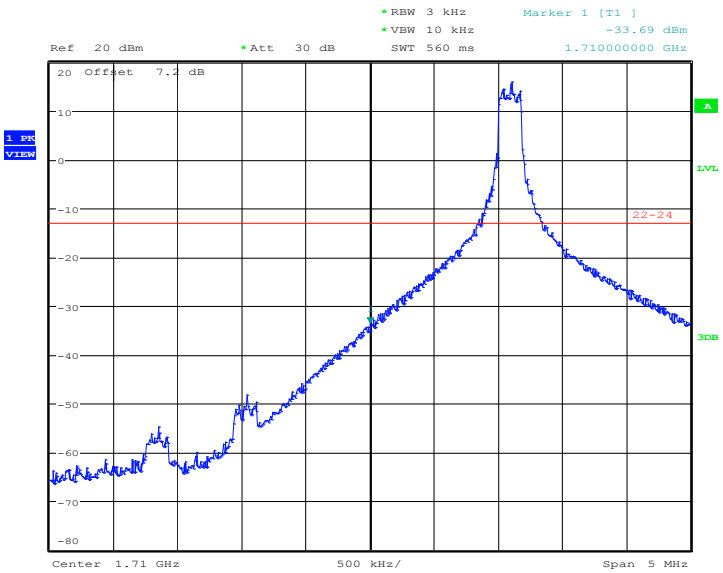
LTE band 4

OBW: 1RB-low_offset



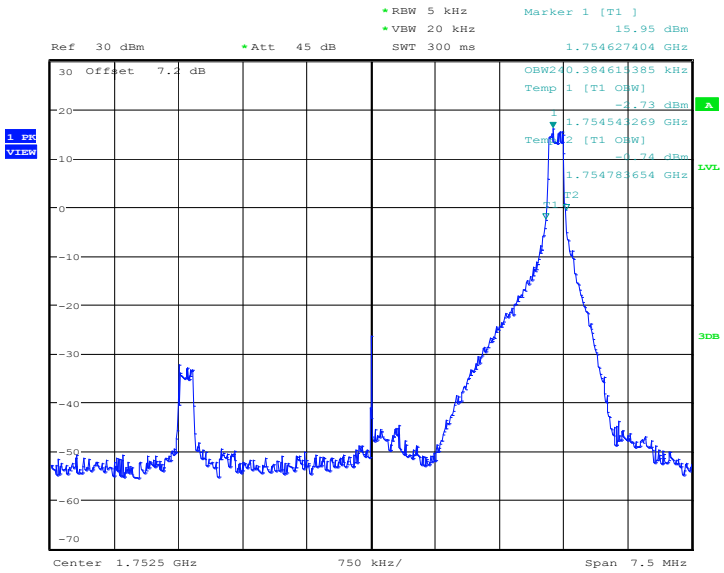
Date: 17.FEB.2017 05:20:12

LOW BAND EDGE BLOCK-1RB-low_offset



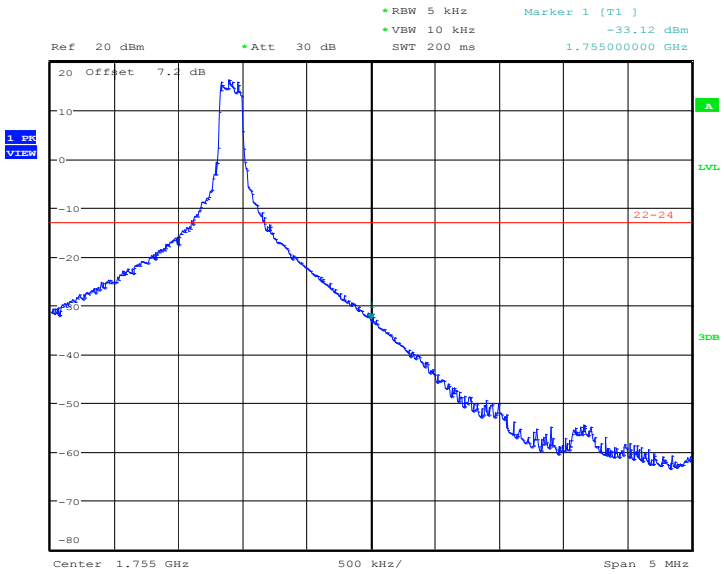
Date: 17.FEB.2017 05:16:03

OBW: 1RB-high_offset



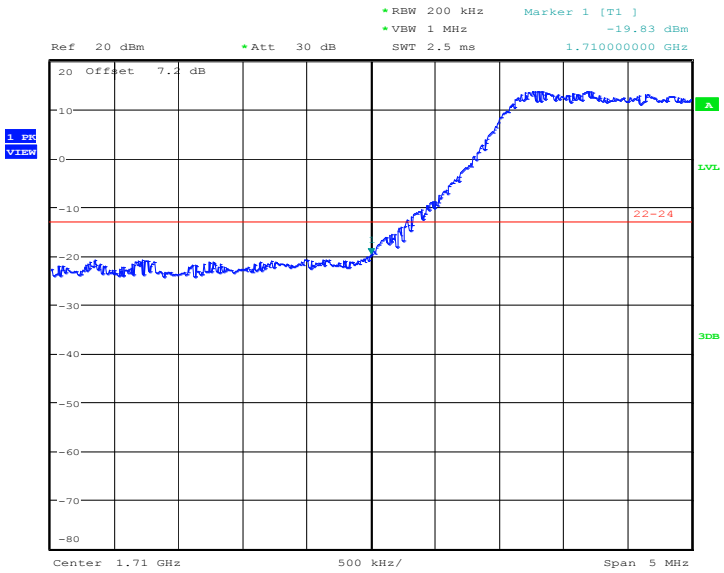
Date: 17.FEB.2017 05:19:28

HIGH BAND EDGE BLOCK-1RB-high_offset



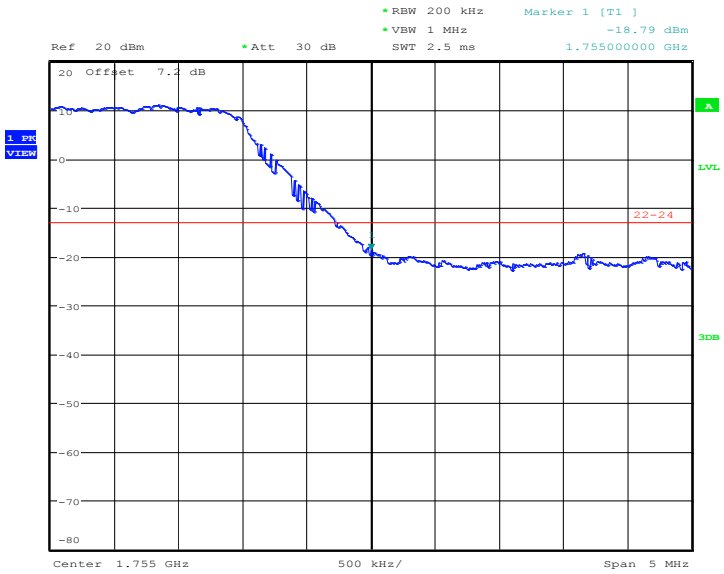
Date: 17.FEB.2017 05:14:20

LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 17.FEB.2017 05:12:04

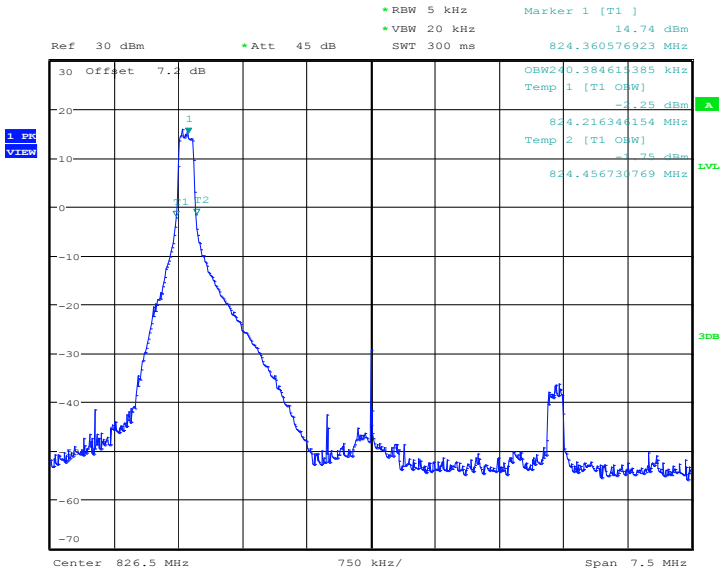
HIGH BAND EDGE BLOCK-20MHz-100%RB



Date: 17.FEB.2017 05:13:13

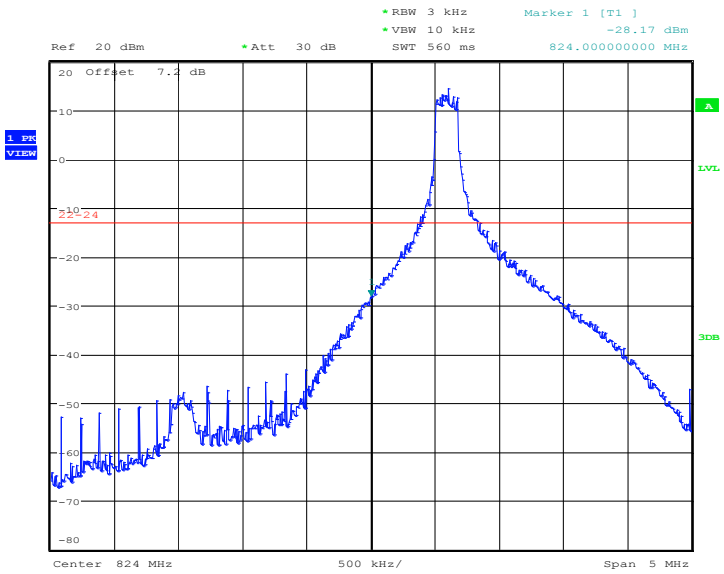
LTE band 5

OBW: 1RB-low_offset



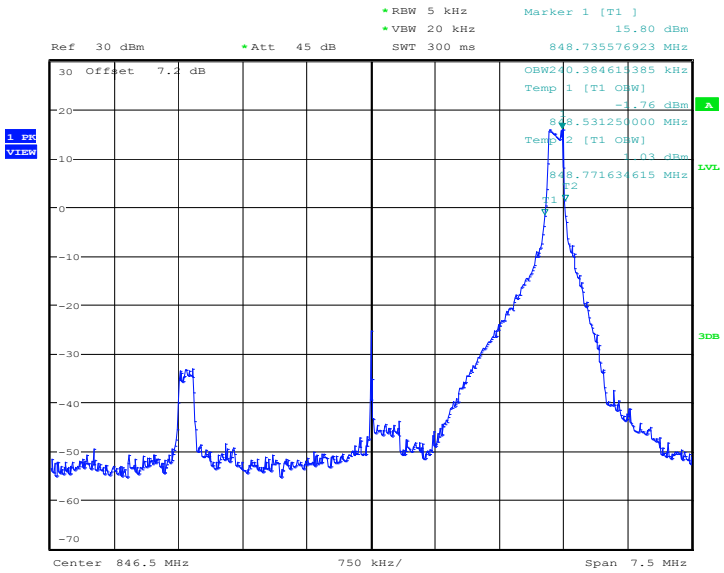
Date: 17.FEB.2017 05:21:24

LOW BAND EDGE BLOCK-1RB-low_offset



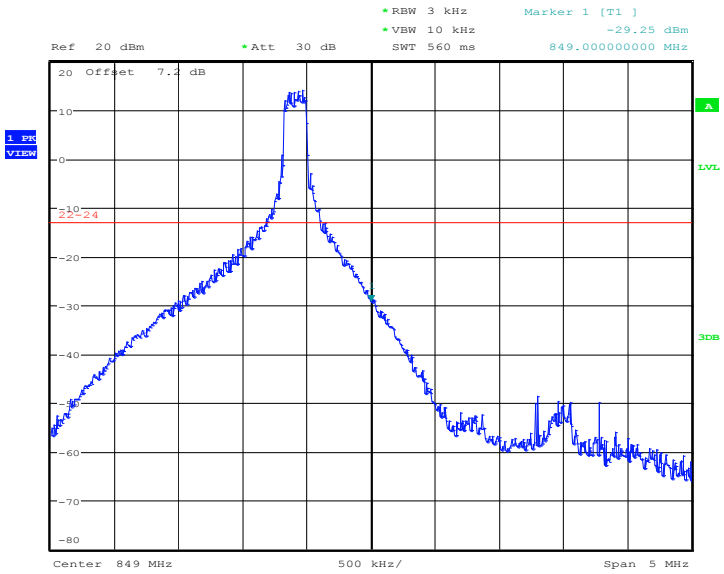
Date: 17.FEB.2017 05:27:22

OBW: 1RB-high_offset



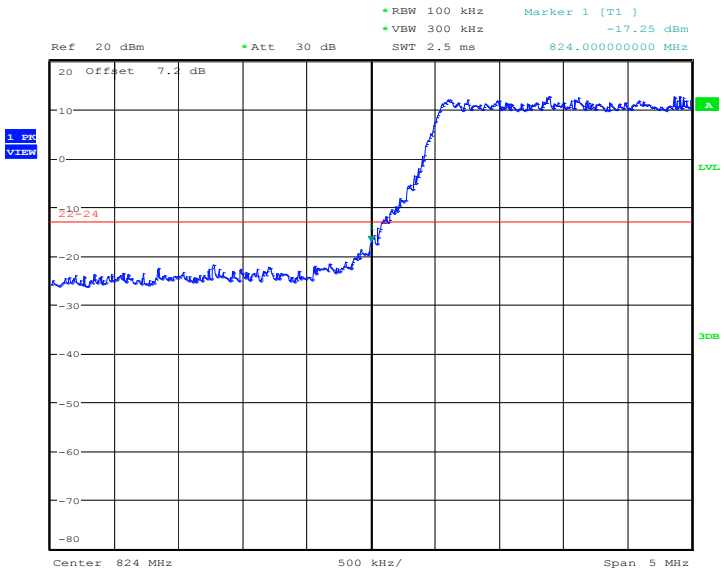
Date: 17.FEB.2017 05:22:24

HIGH BAND EDGE BLOCK-1RB-high_offset



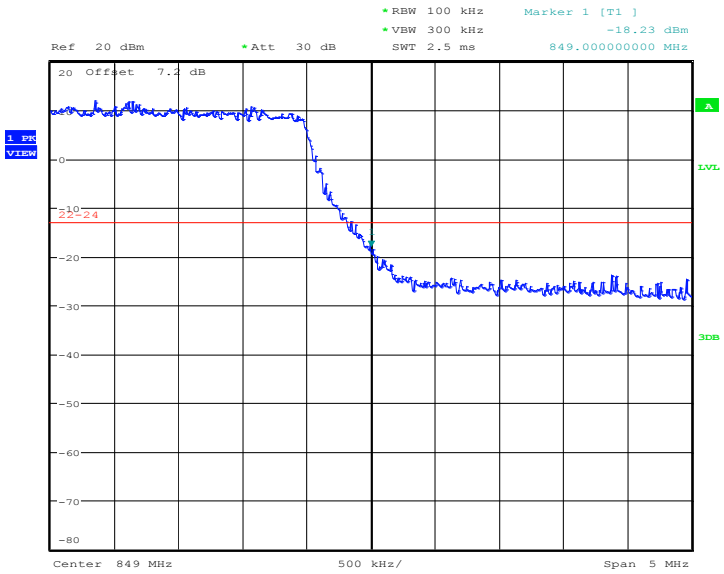
Date: 17.FEB.2017 05:26:14

LOW BAND EDGE BLOCK-10MHz-100%RB



Date: 17.FEB.2017 05:31:21

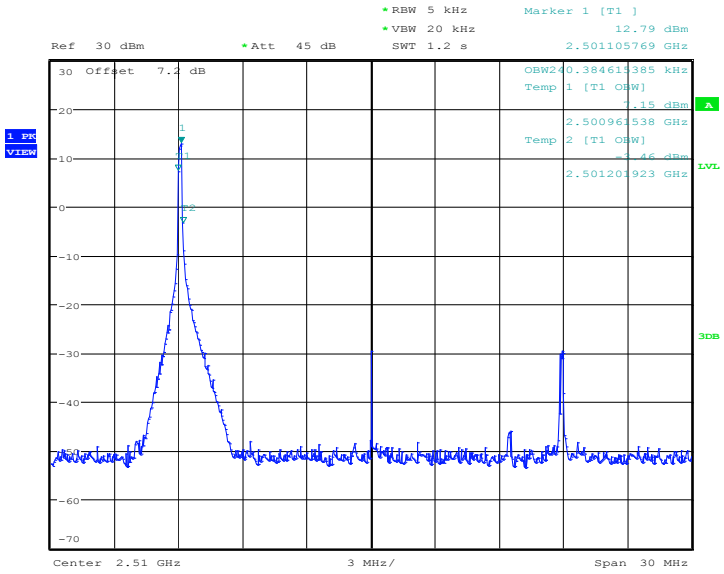
HIGH BAND EDGE BLOCK-10MHz-100%RB



Date: 17.FEB.2017 05:31:57

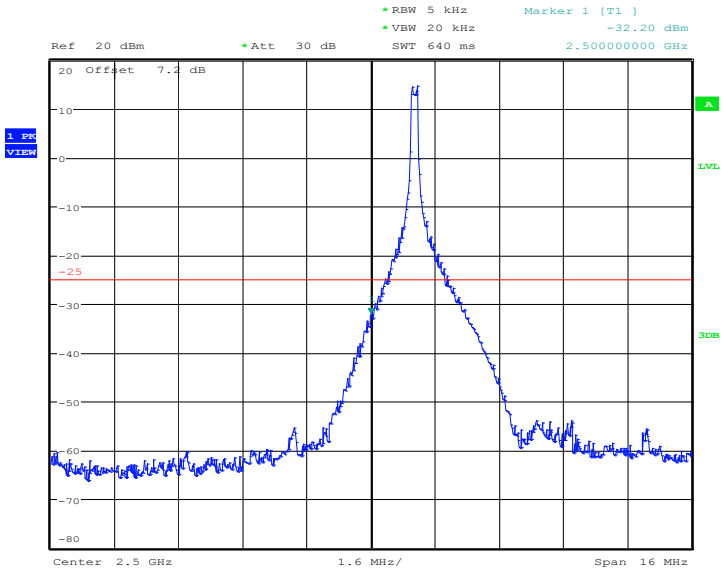
LTE band 7

OBW: 1RB-low_offset



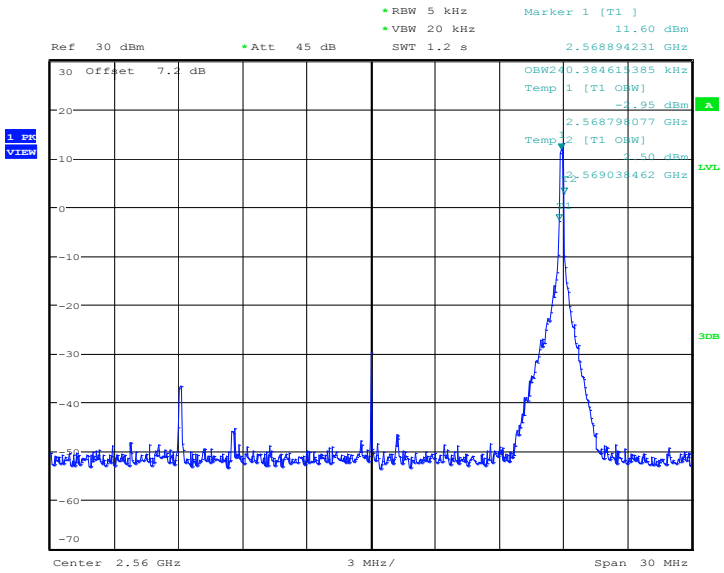
Date: 17.FEB.2017 05:46:00

LOW BAND EDGE BLOCK-1RB-low_offset



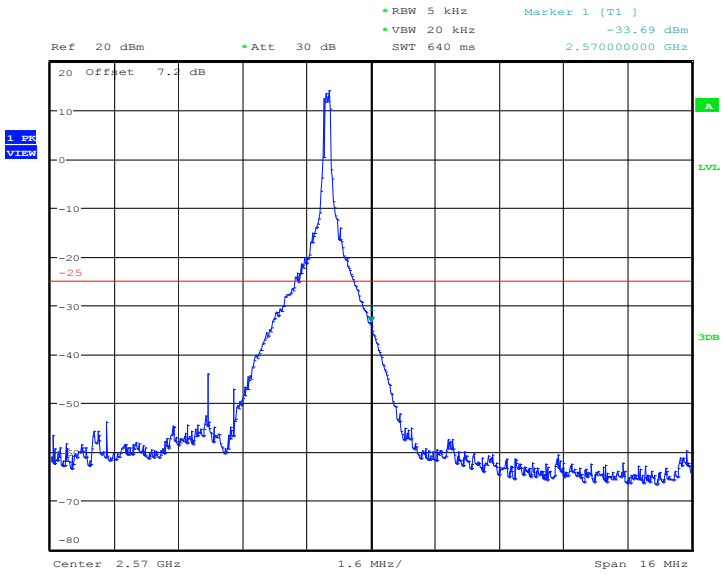
Date: 7.APR.2017 20:43:16

OBW: 1RB-high_offset



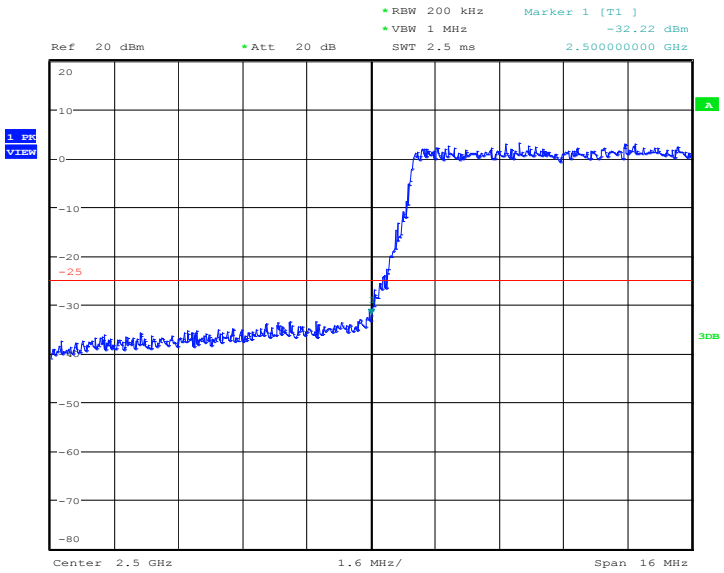
Date: 17.FEB.2017 05:46:59

HIGH BAND EDGE BLOCK-1RB-high_offset



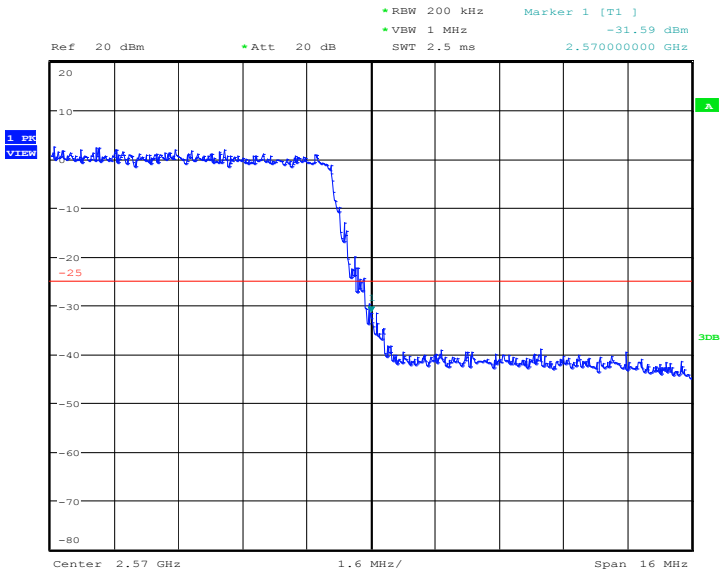
Date: 7.APR.2017 20:45:53

LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 7.APR.2017 20:56:36

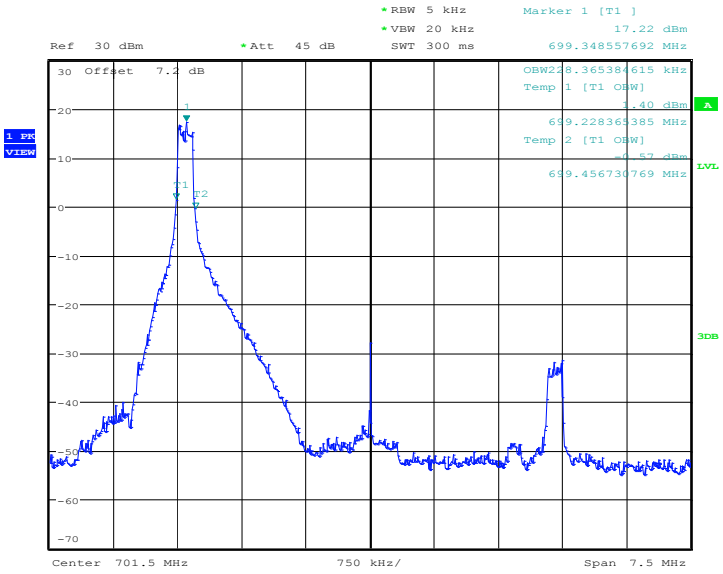
HIGH BAND EDGE BLOCK-20MHz-100%RB



Date: 7.APR.2017 20:55:05

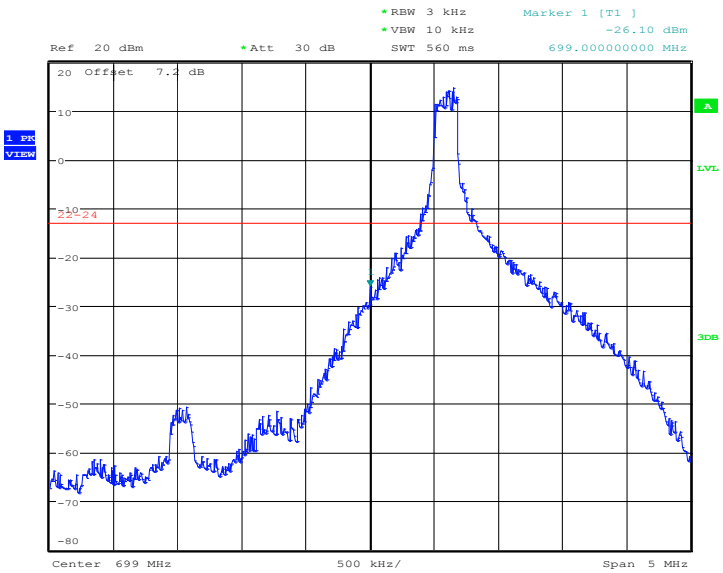
LTE band 12

OBW: 1RB-low_offset



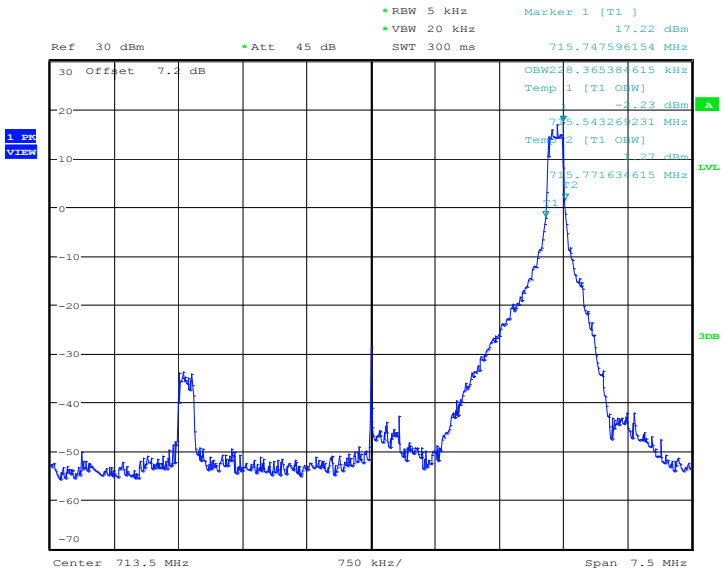
Date: 17.FEB.2017 05:48:00

LOW BAND EDGE BLOCK-1RB-low_offset



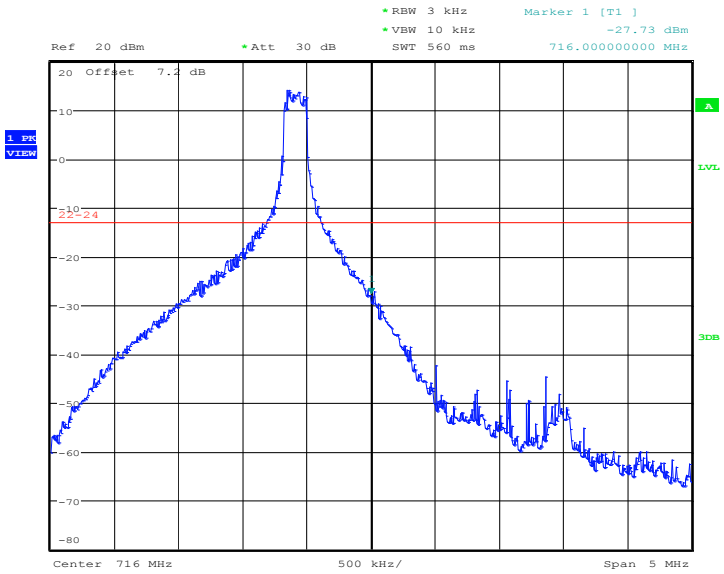
Date: 17.FEB.2017 05:50:34

OBW: 1RB-high_offset



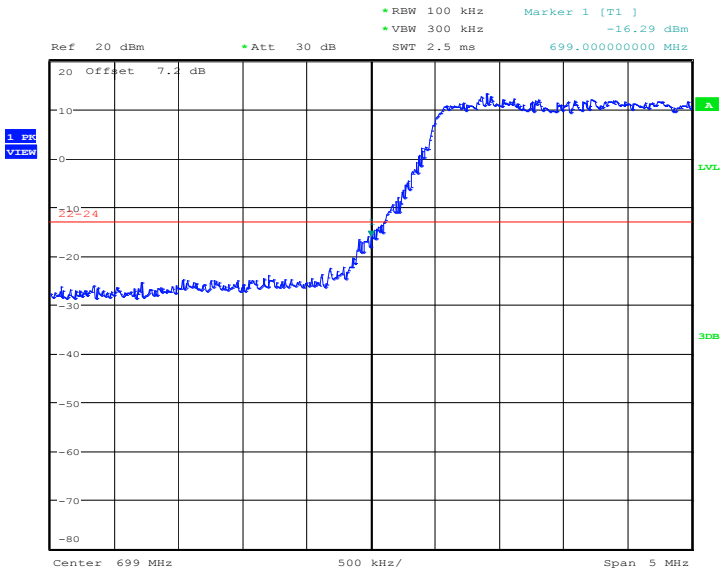
Date: 17.FEB.2017 05:48:52

HIGH BAND EDGE BLOCK-1RB-high_offset



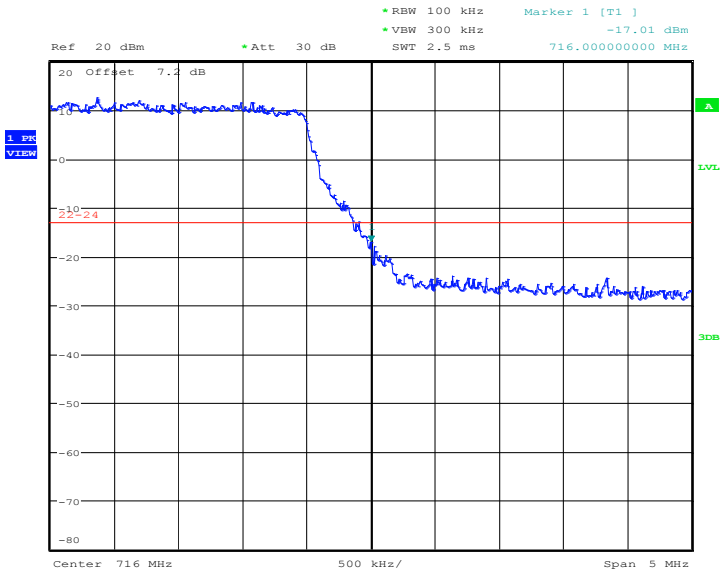
Date: 17.FEB.2017 05:51:19

LOW BAND EDGE BLOCK-10MHz-100%RB



Date: 17.FEB.2017 05:52:47

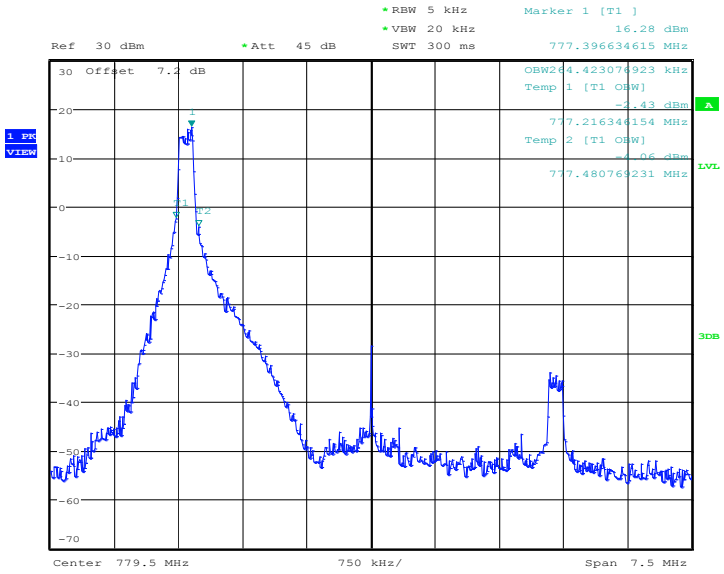
HIGH BAND EDGE BLOCK-10MHz-100%RB



Date: 17.FEB.2017 05:52:05

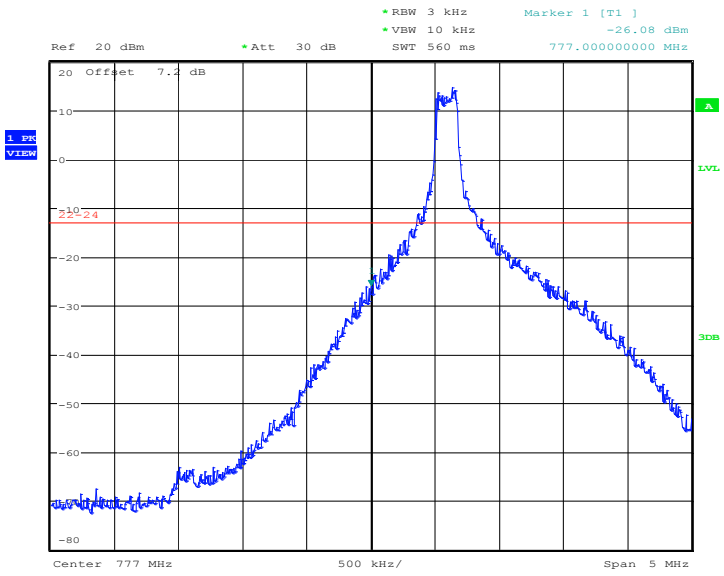
LTE band 13

OBW: 1RB-low_offset



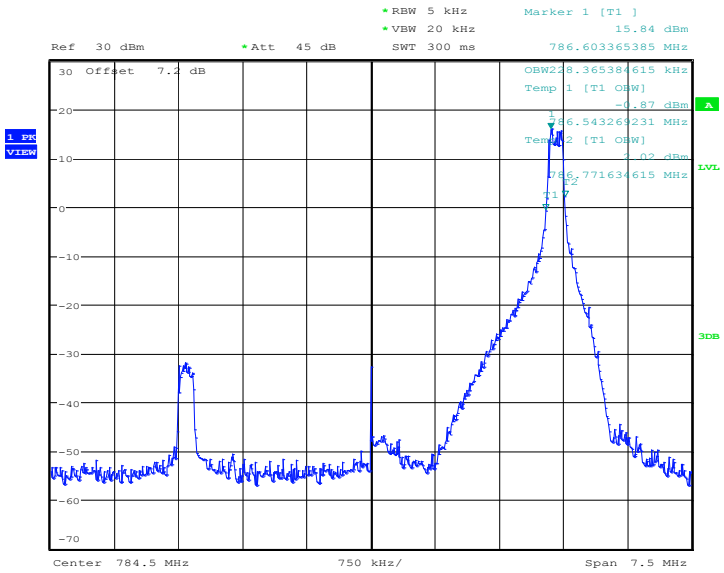
Date: 17.FEB.2017 06:00:33

LOW BAND EDGE BLOCK-1RB-low_offset



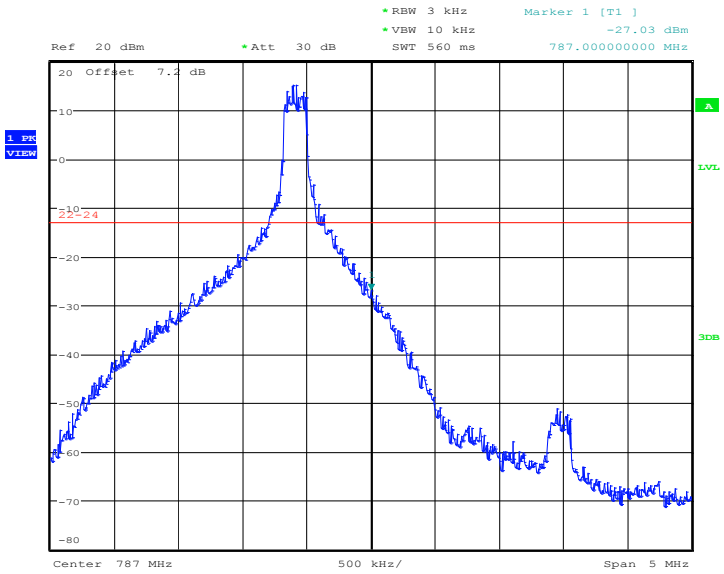
Date: 17.FEB.2017 05:56:44

OBW: 1RB-high_offset



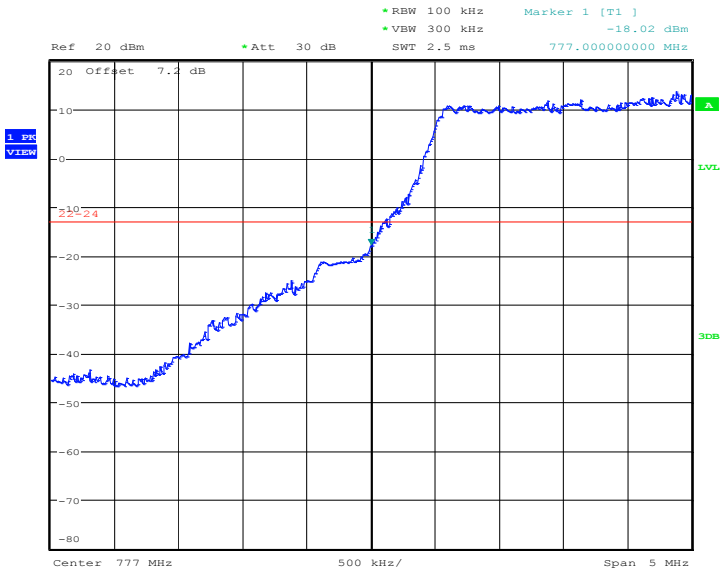
Date: 17.FEB.2017 05:59:23

HIGH BAND EDGE BLOCK-1RB-high_offset



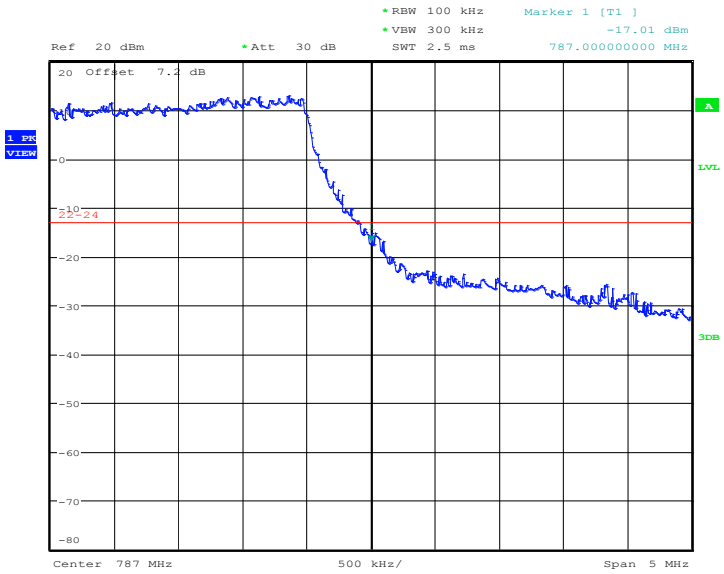
Date: 17.FEB.2017 05:57:35

LOW BAND EDGE BLOCK-5MHz-100%RB



Date: 17.FEB.2017 05:55:41

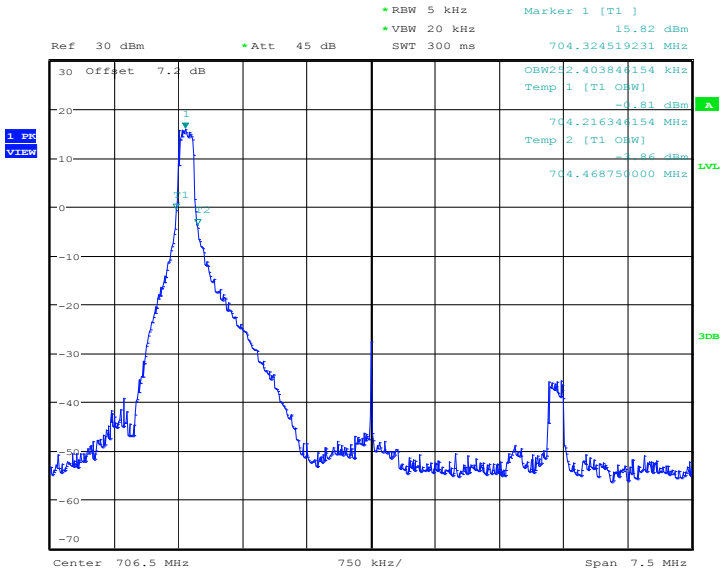
HIGH BAND EDGE BLOCK-5MHz-100%RB



Date: 17.FEB.2017 05:54:53

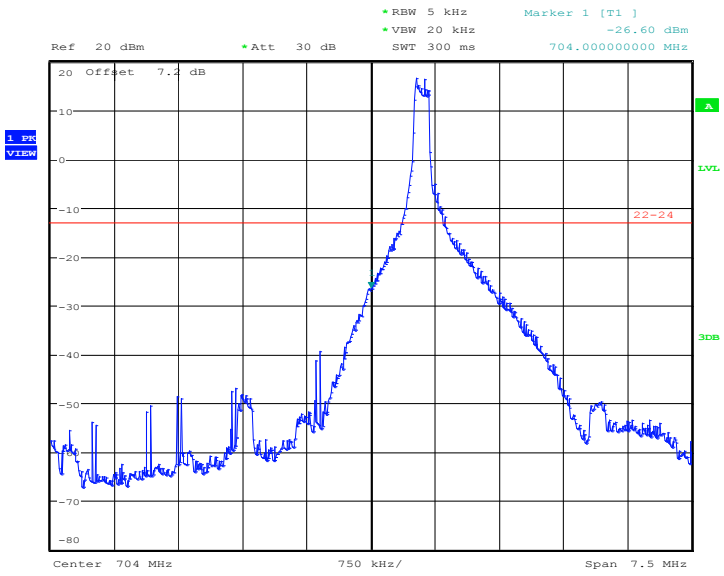
LTE band 17

OBW: 1RB-low_offset



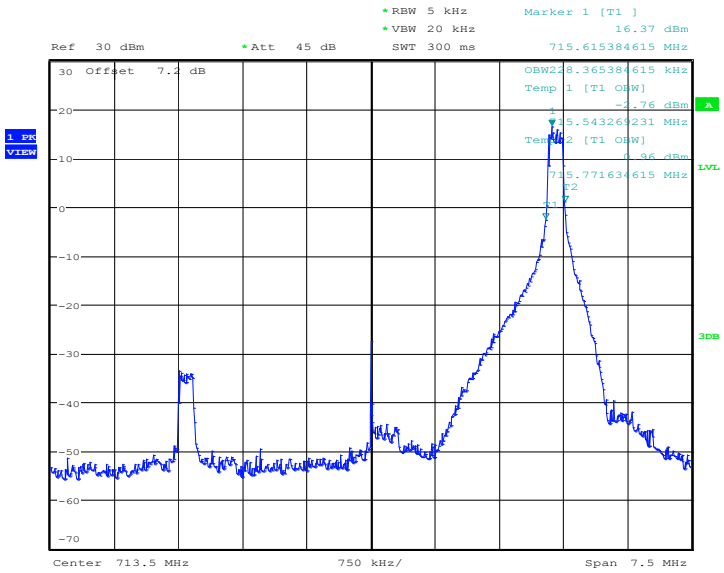
Date: 17.FEB.2017 06:01:57

LOW BAND EDGE BLOCK-1RB-low_offset



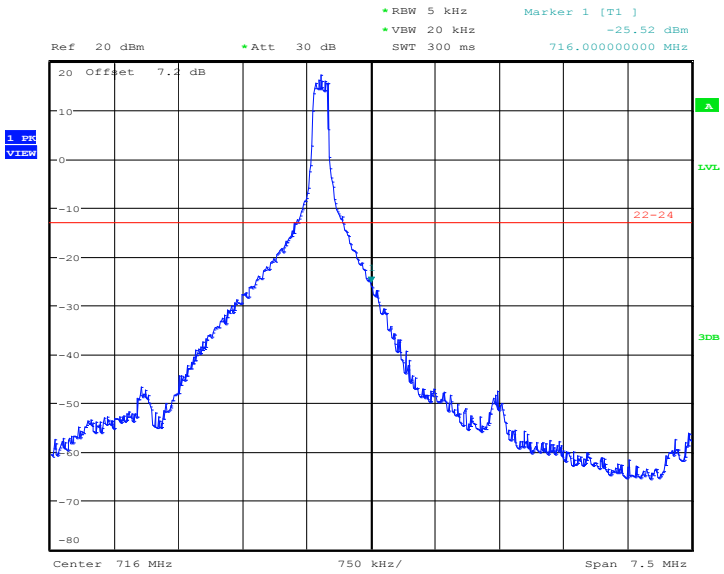
Date: 17.FEB.2017 06:06:01

OBW: 1RB-high_offset



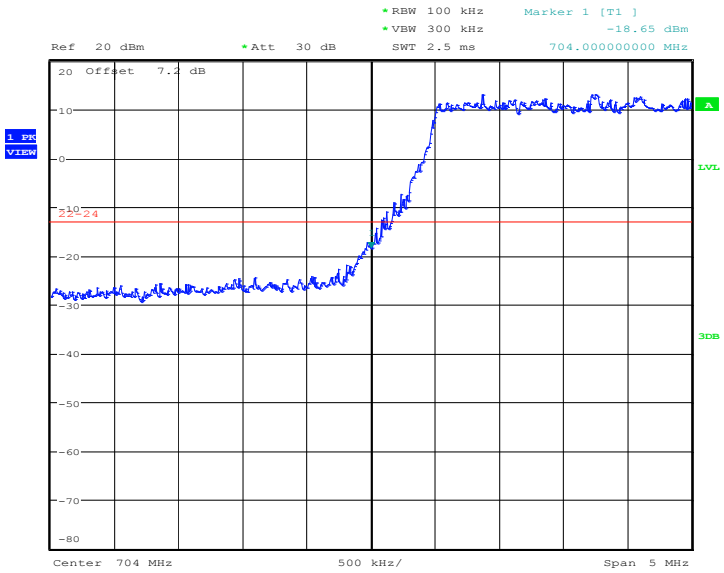
Date: 17.FEB.2017 06:02:42

HIGH BAND EDGE BLOCK-1RB-high_offset



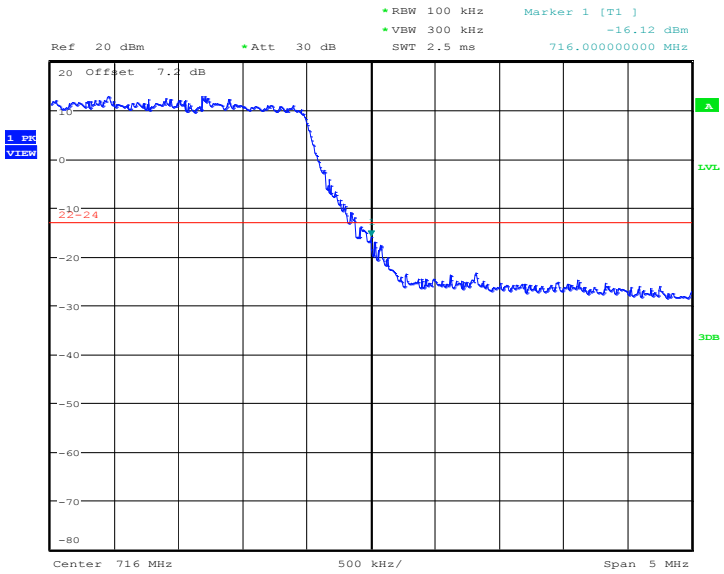
Date: 17.FEB.2017 06:04:06

LOW BAND EDGE BLOCK-10MHz-100%RB



Date: 17.FEB.2017 06:06:58

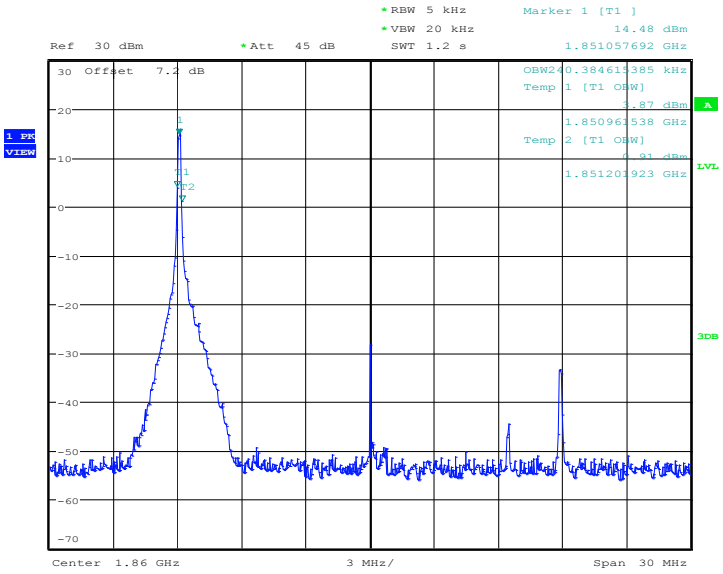
HIGH BAND EDGE BLOCK-10MHz-100%RB



Date: 17.FEB.2017 06:07:38

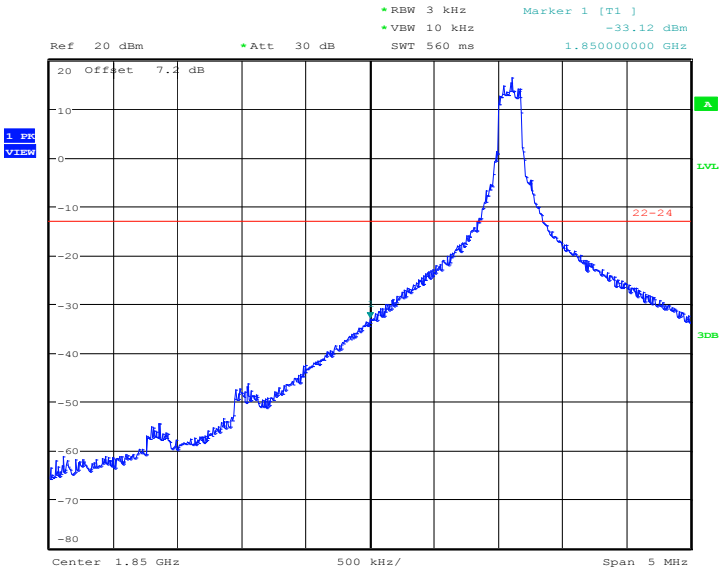
LTE band 25

OBW: 1RB-low_offset



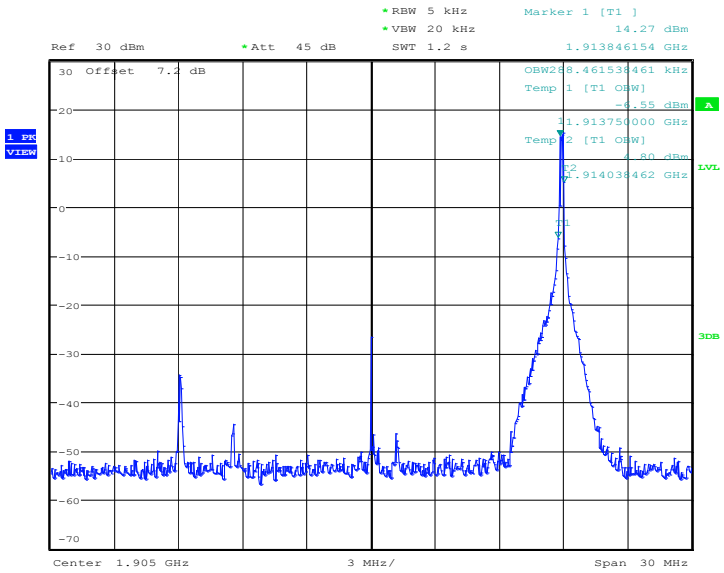
Date: 17.FEB.2017 06:18:00

LOW BAND EDGE BLOCK-1RB-low_offset



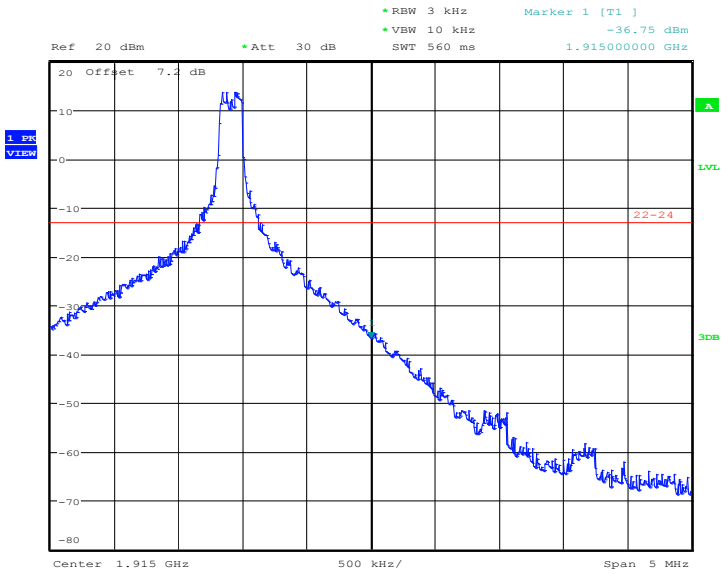
Date: 17.FEB.2017 06:13:37

OBW: 1RB-high_offset



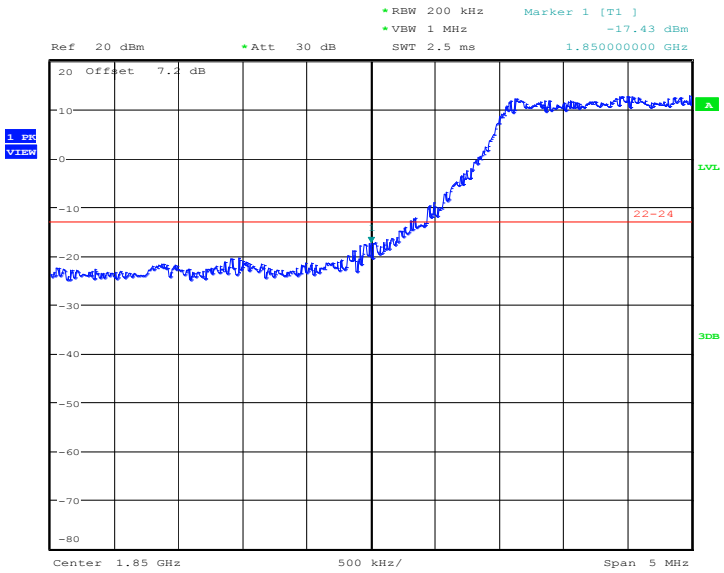
Date: 17.FEB.2017 06:16:23

HIGH BAND EDGE BLOCK-1RB-high_offset



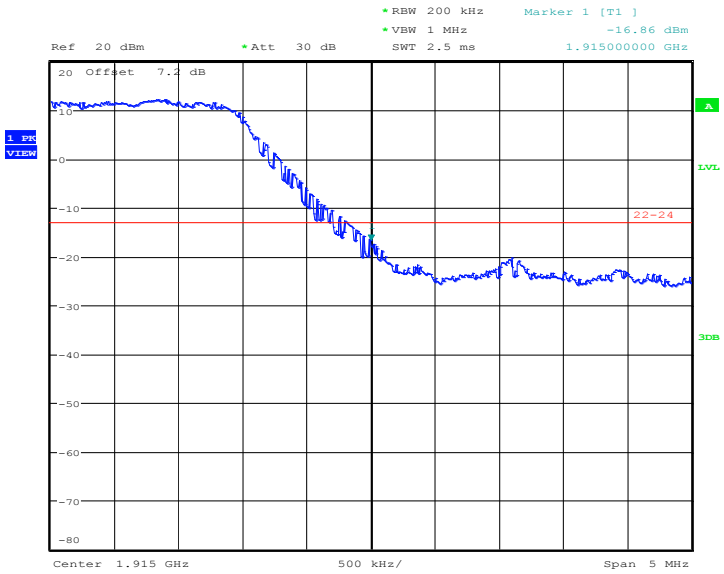
Date: 17.FEB.2017 06:14:46

LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 17.FEB.2017 06:11:27

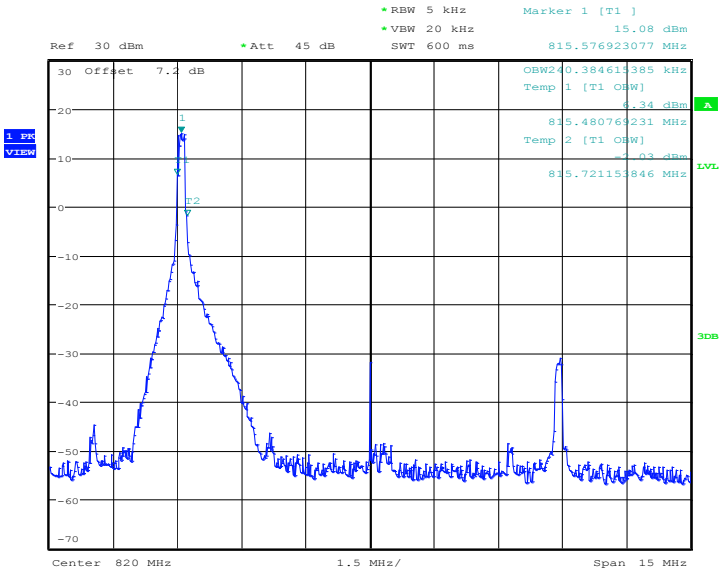
HIGH BAND EDGE BLOCK-20MHz-100%RB



Date: 17.FEB.2017 06:10:39

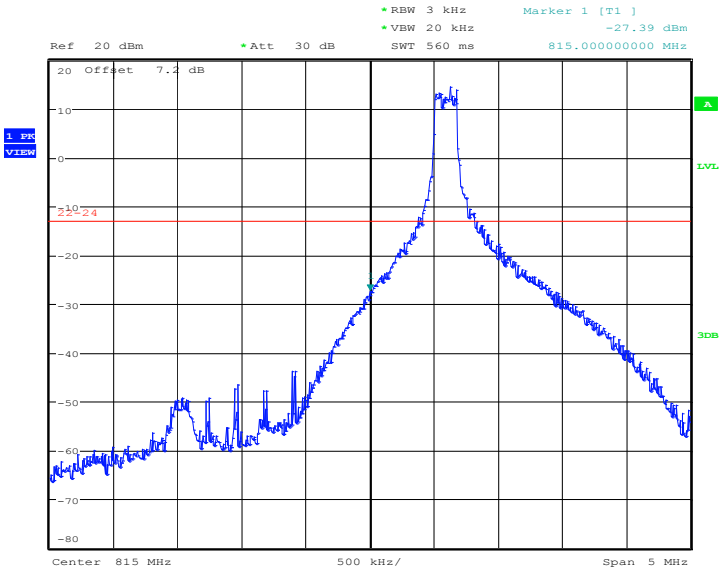
LTE band 26

OBW: 1RB-low_offset



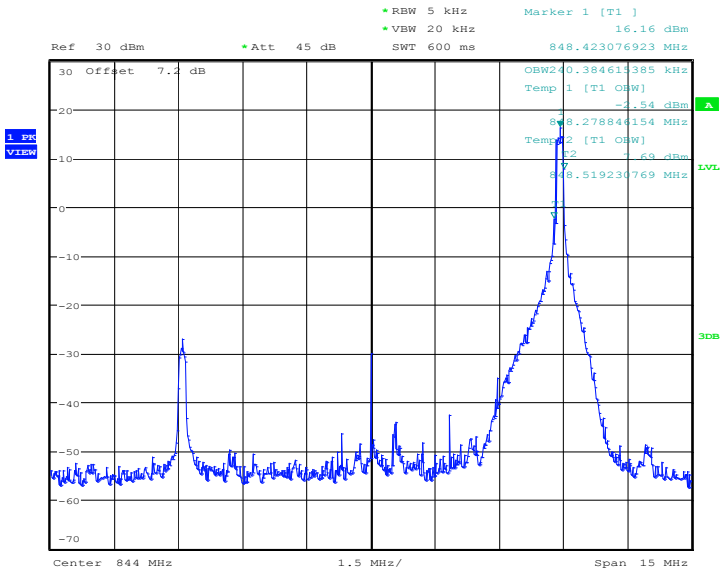
Date: 17.FEB.2017 06:19:44

LOW BAND EDGE BLOCK-1RB-low_offset



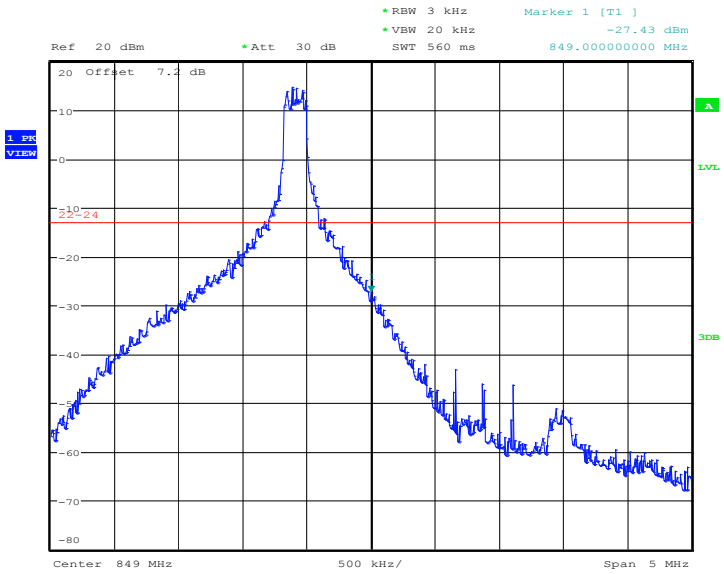
Date: 17.FEB.2017 06:22:23

OBW: 1RB-high_offset



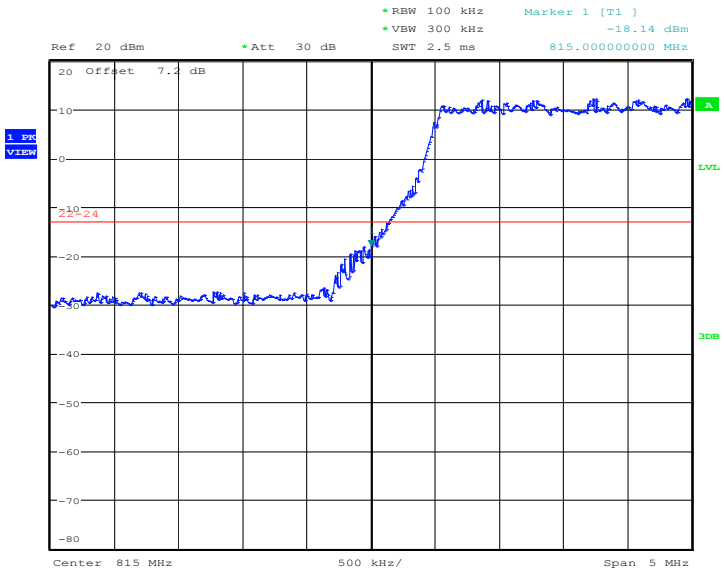
Date: 17.FEB.2017 06:20:21

HIGH BAND EDGE BLOCK-1RB-high_offset



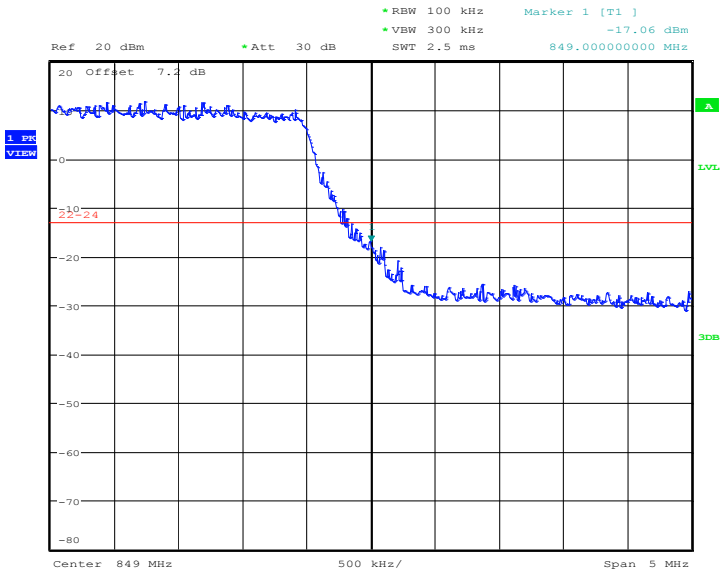
Date: 17.FEB.2017 06:21:43

LOW BAND EDGE BLOCK-10MHz-100%RB



Date: 17.FEB.2017 06:23:04

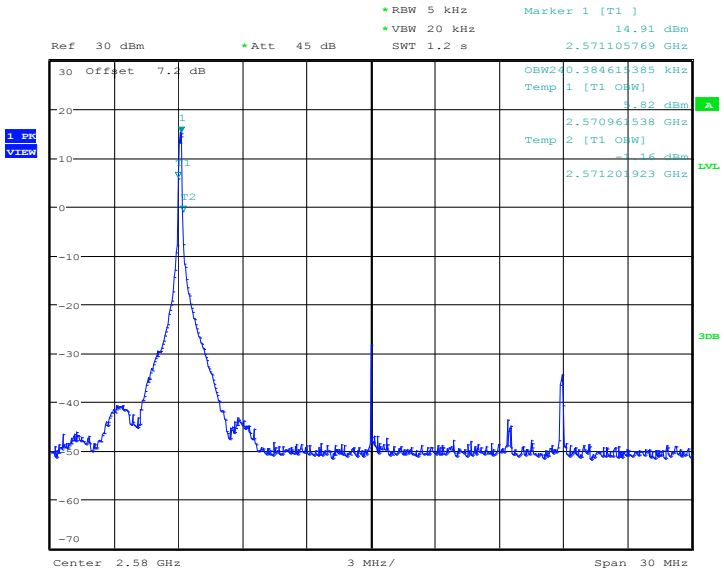
HIGH BAND EDGE BLOCK-10MHz-100%RB



Date: 17.FEB.2017 06:23:41

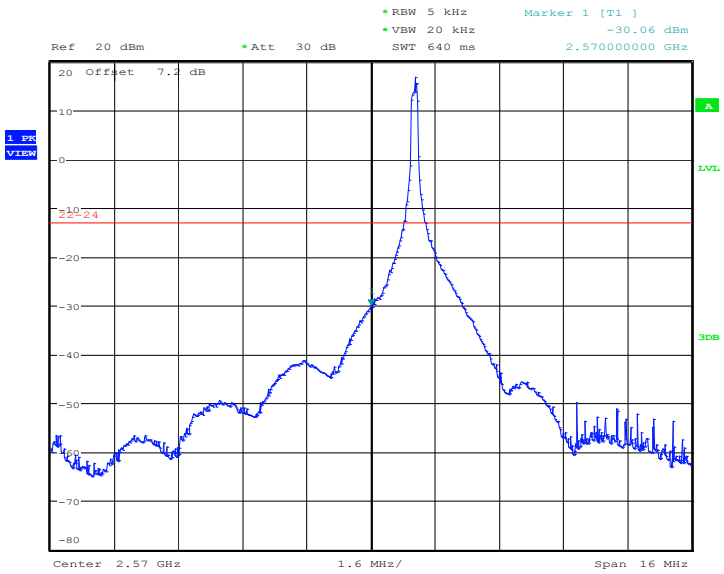
LTE band 38

OBW: 1RB-low_offset



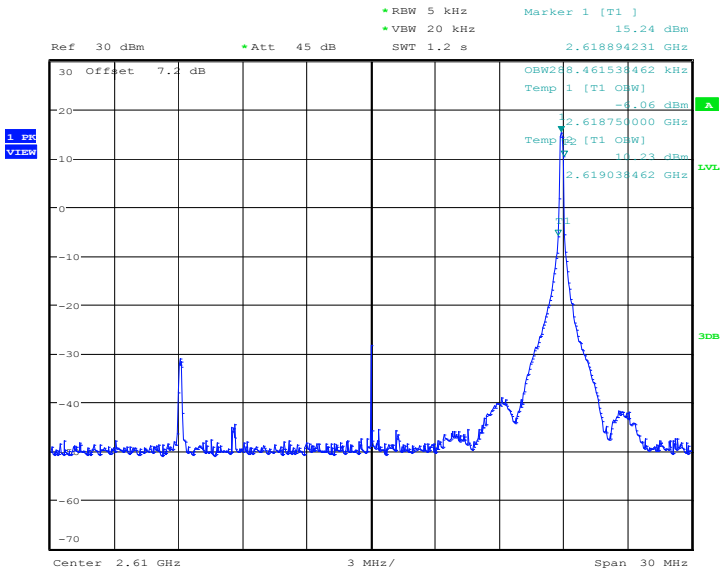
Date: 17.FEB.2017 04:36:27

LOW BAND EDGE BLOCK-1RB-low_offset



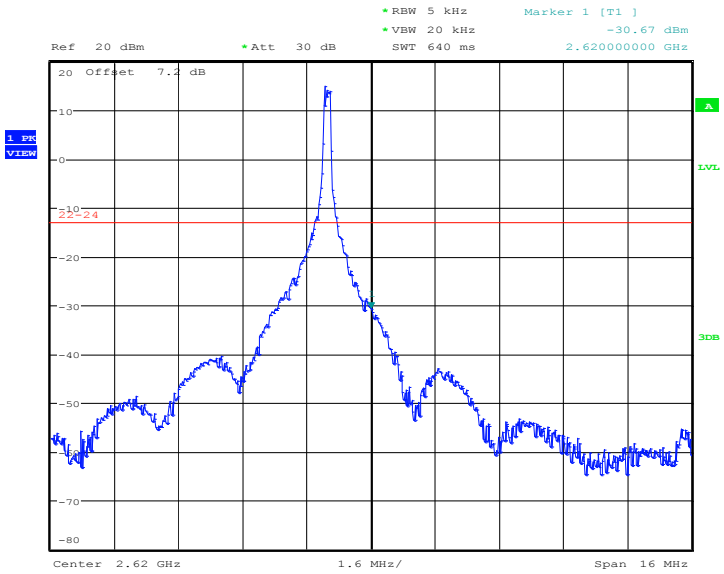
Date: 17.FEB.2017 04:44:08

OBW: 1RB-high_offset



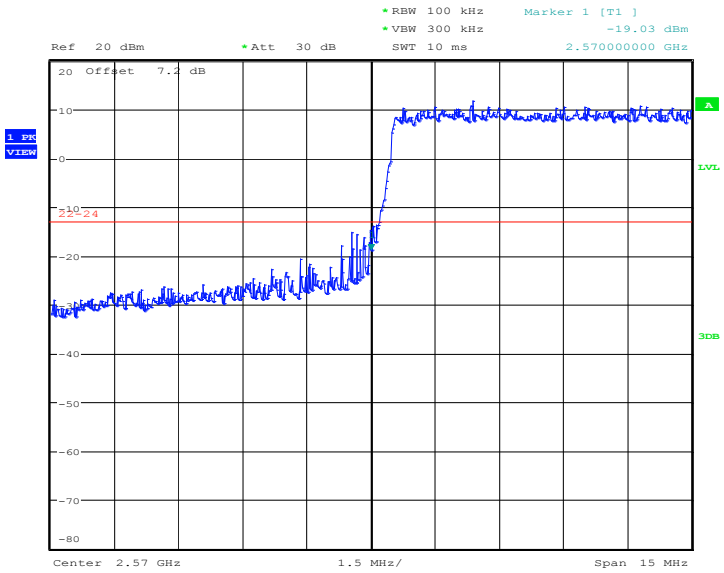
Date: 17.FEB.2017 04:40:28

HIGH BAND EDGE BLOCK-1RB-high_offset



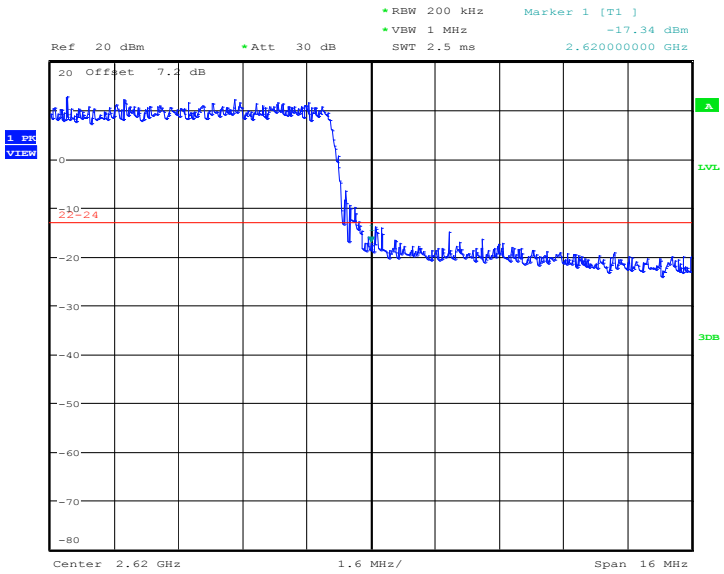
Date: 17.FEB.2017 04:42:29

LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 17.FEB.2017 04:51:56

HIGH BAND EDGE BLOCK-20MHz-100%RB



Date: 17.FEB.2017 04:54:21

A.7 CONDUCTED SPURIOUS EMISSION

A.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. 3. The number of sweep points of spectrum analyzer is set to 30001 which is greater than span/RBW.

A. 7.2 Measurement Limit

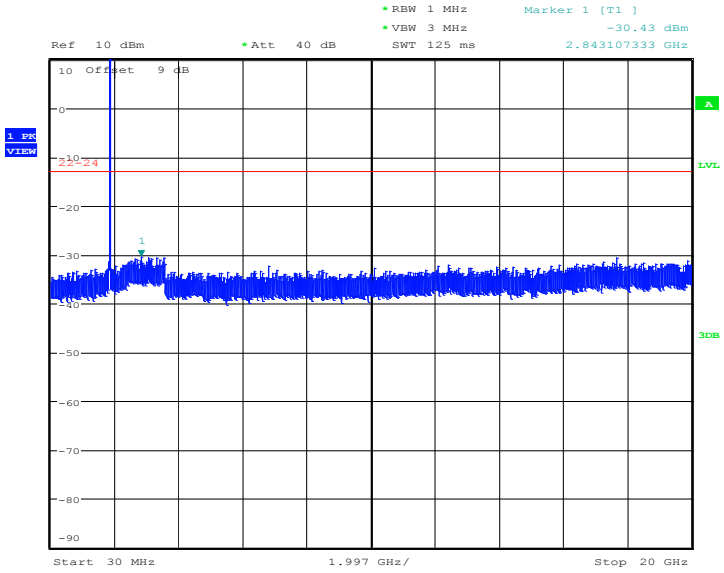
The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. 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.

A. 7.3 Measurement result

Only worst case result is given below

LTE band 2: 30MHz – 20GHz

Spurious emission limit –13dBm.



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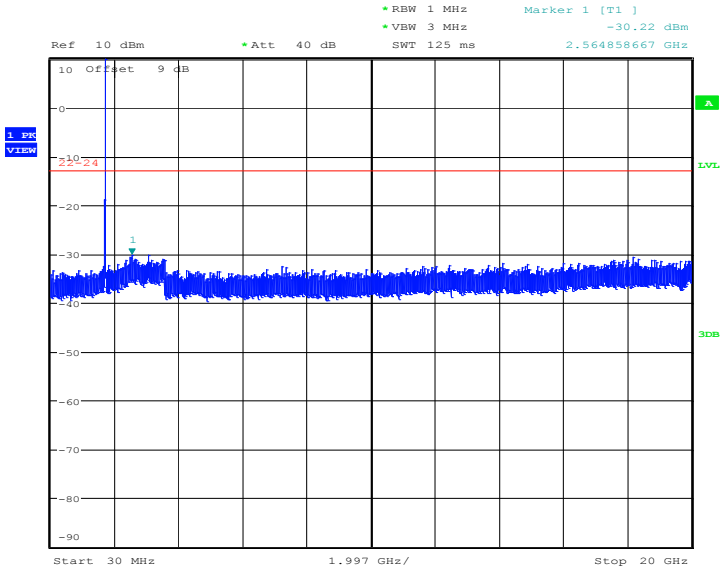
LTE band 4: 30MHz – 20GHz

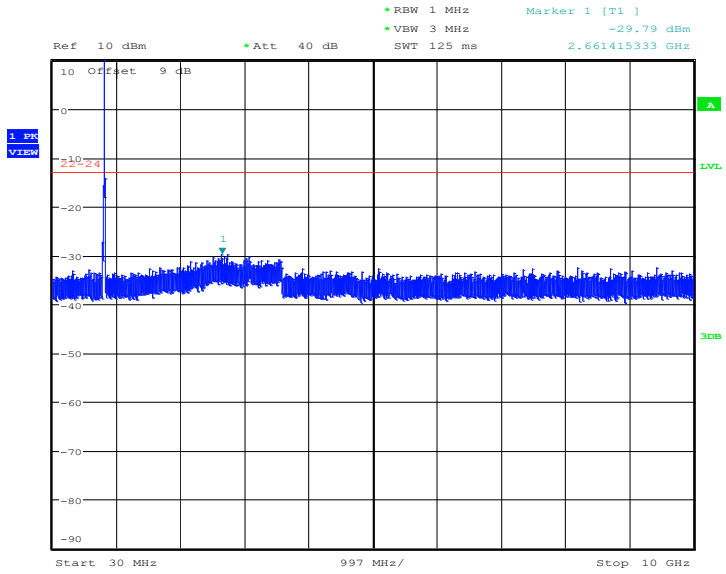
Spurious emission limit –13dBm.



Date: 16.FEB.2017 17:37:55

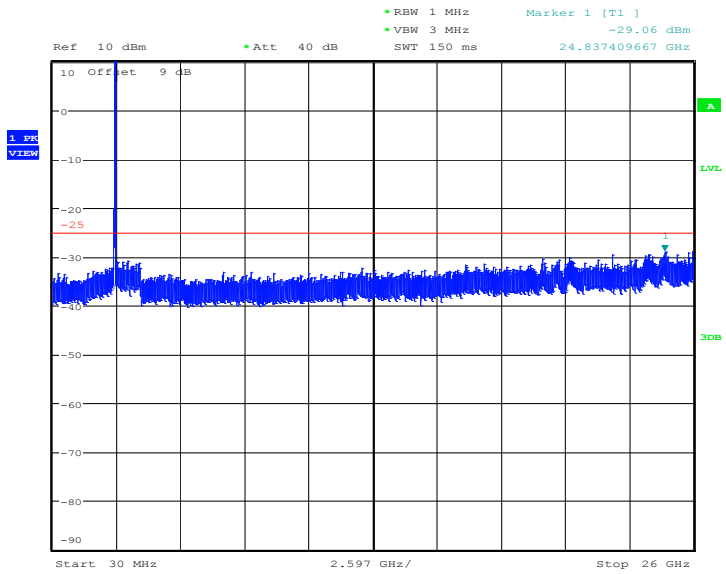
LTE band 5: 30MHz – 10GHz

Spurious emission limit –13dBm.



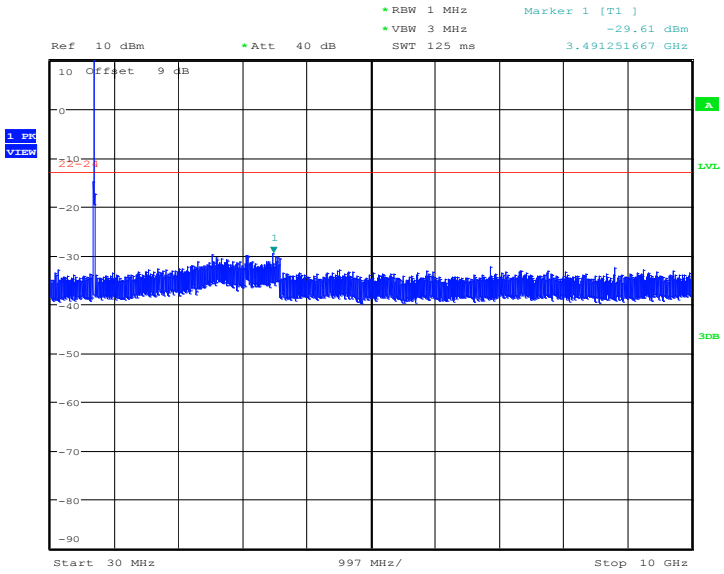
LTE band 7: 30MHz – 26GHz

Spurious emission limit –13dBm.



LTE band 12: 30MHz – 10GHz

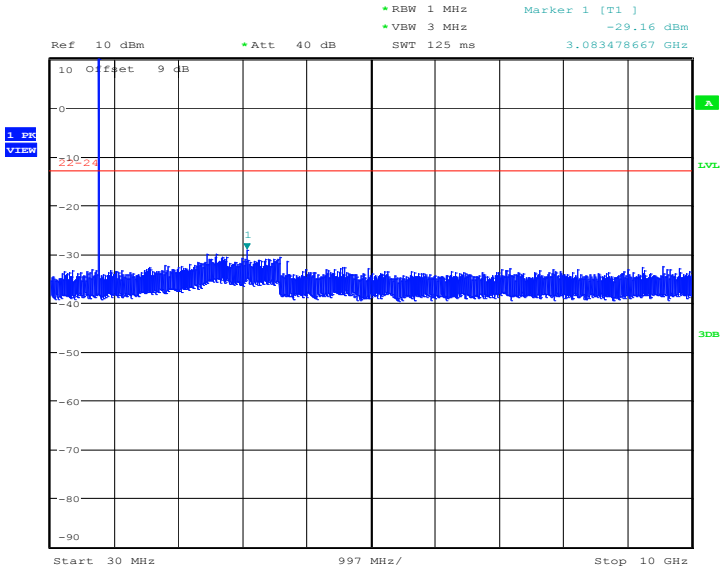
Spurious emission limit –13dBm.



Date: 16.FEB.2017 17:42:25

LTE band 13: 30MHz – 10GHz

Spurious emission limit –13dBm.



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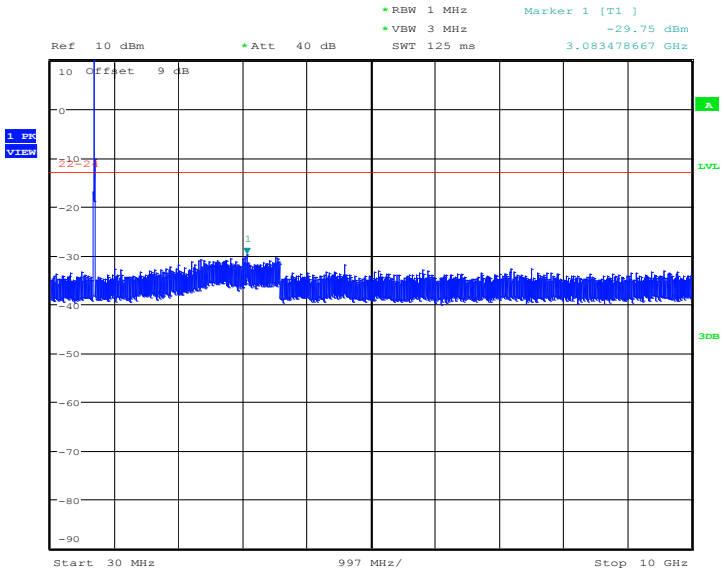
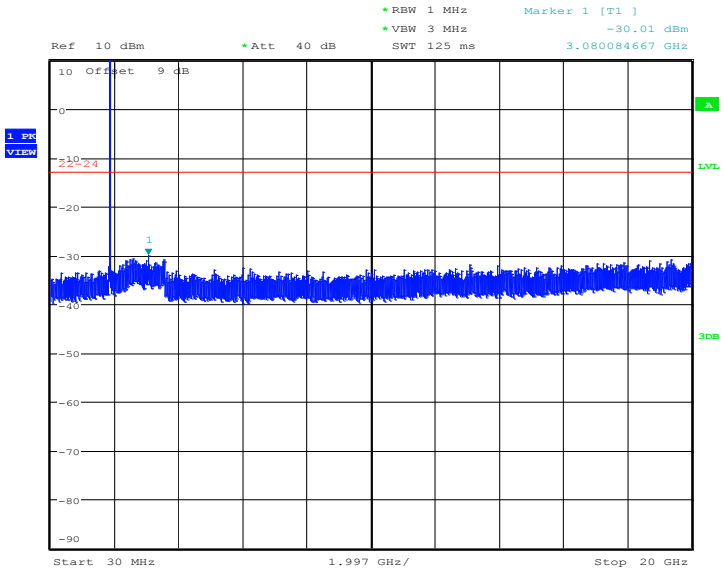
LTE band 17: 30MHz – 10GHz

Spurious emission limit –13dBm.



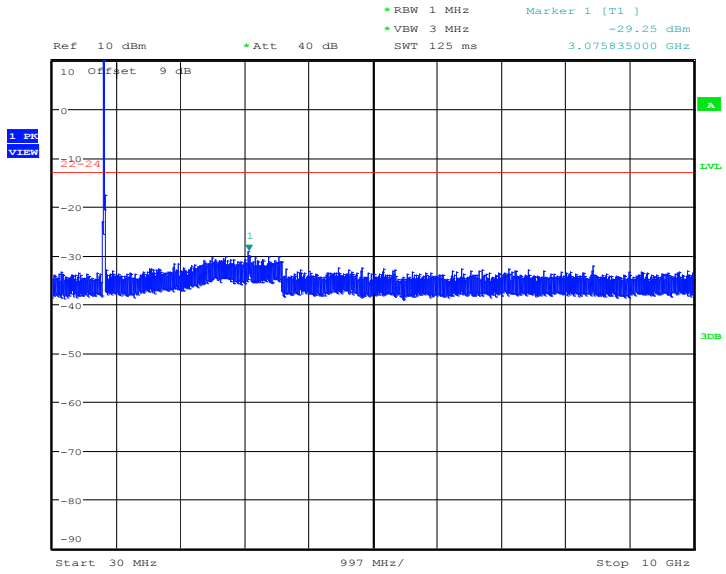
LTE band 25: 30MHz – 20GHz

Spurious emission limit –13dBm.



LTE band 26: 30MHz – 10GHz

Spurious emission limit –13dBm.



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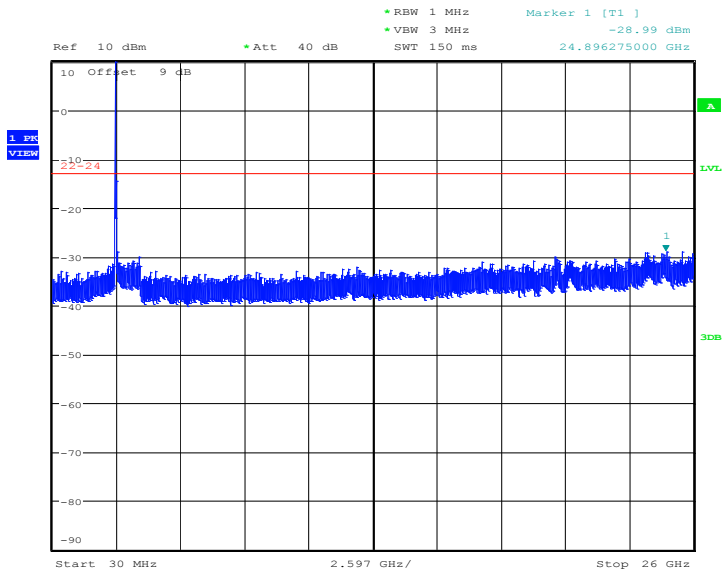
LTE band 38: 30MHz – 26GHz

Spurious emission limit –13dBm.



Date: 17.FEB.2017 03:25:31

A.8 PEAK-TO-AVERAGE POWER RATIO

Reference

According to RSS 130 132 133 139, the transmitter's peak-to-average power ratio (PAPR) shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

According to KDB 971168:

a)Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;

b) Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;

c) Set the number of counts to a value that stabilizes the measured CCDF curve;

d) Set the measurement interval to 1 ms

e)Record the maximum PAPR level associated with a probability of 0.1%

A.8.1 Measurement limit

not exceed 13 dB

A.8.2 Measurement results

Only worst case result is given below

LTE band 2, 20MHz

Frequency(MHz)	PAPR(dB)	
1880.0	QPSK	16QAM
	6.59	7.44

LTE band 4, 20MHz

Frequency(MHz)	PAPR(dB)	
1732.5	QPSK	16QAM
	6.78	7.41

LTE band 5, 10MHz

Frequency(MHz)	PAPR(dB)	
836.5	QPSK	16QAM
	6.36	7.73

LTE band 7, 20MHz

Frequency(MHz)	PAPR(dB)	
2510.0	QPSK	16QAM
	6.62	7.55

LTE band 12,10MHz

Frequency(MHz)	PAPR(dB)	
707.5	QPSK	16QAM
	6.35	7.45

LTE band 13,10MHz

Frequency(MHz)	PAPR(dB)

782.0	QPSK	16QAM
	6.36	7.33

LTE band 17, 10MHz

Frequency(MHz)	PAPR(dB)	
710.0	QPSK	16QAM
	6.59	7.37

LTE band 25, 20MHz

Frequency(MHz)	PAPR(dB)	
1882.5	QPSK	16QAM
	6.61	7.55

LTE band 26, 15MHz

Frequency(MHz)	PAPR(dB)	
831.5	QPSK	16QAM
	6.52	7.49

LTE band 38, 10MHz

Frequency(MHz)	PAPR(dB)	
2595.0	QPSK	16QAM
	6.56	7.73

A.9 RECEIVER RADIATION EMISSION

A.9.1 Method of Measurement

The measurement procedure in ANSI C64.4-2003 is used. The EUT is placed on a 80cm height non-conductive table locating on the center of turntable. From 30MHz-1GHz, the measurement distance is 10m. For frequency range above 1GHz, the measurement distance is 3m.

The EUT is measured with travel charger and the operating mode is idle without CMU200's signaling.

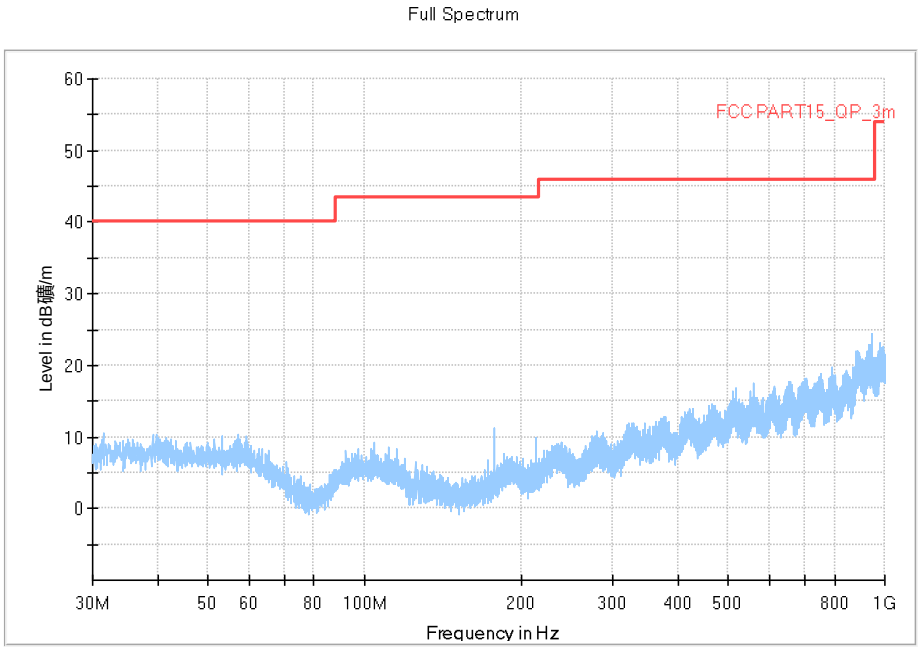
A.9.2 Method of Measurement

Frequency of Emission (MHz)	Limit (dBμV/m)	Measurement Distance (m)
30-88	30	10
88-216	33.5	10
216-960	36	10
960-1000	44	10
>1000	54	3

A. 9.3 Measurement results

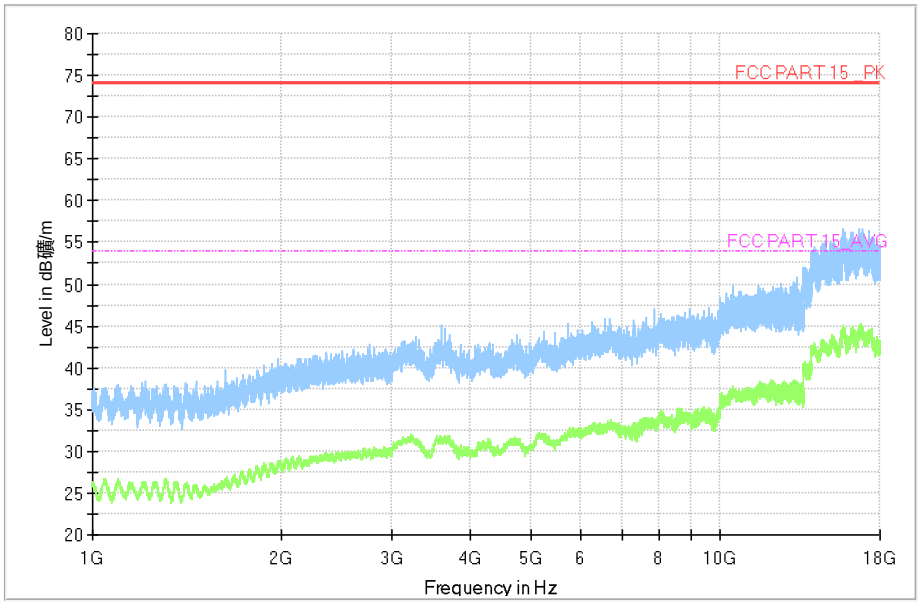
IF bandwidth: 120 kHz

Idle Mode: 30MHz-1GHz

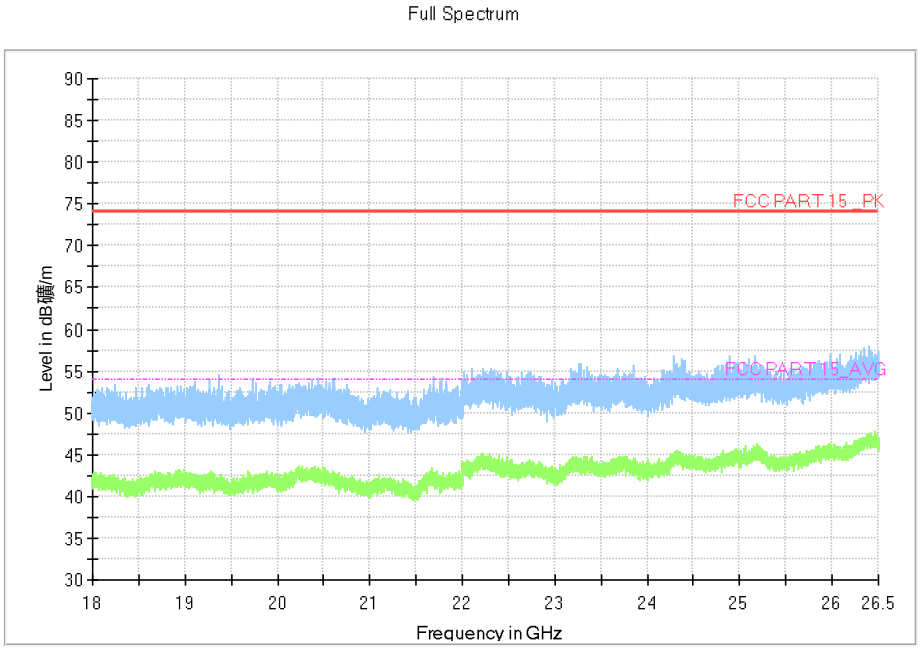


RBW / VBW 1 MHz

Idle Mode: 1GHz-18GHz



Idle Mode: 18GHz-26.5GHz



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