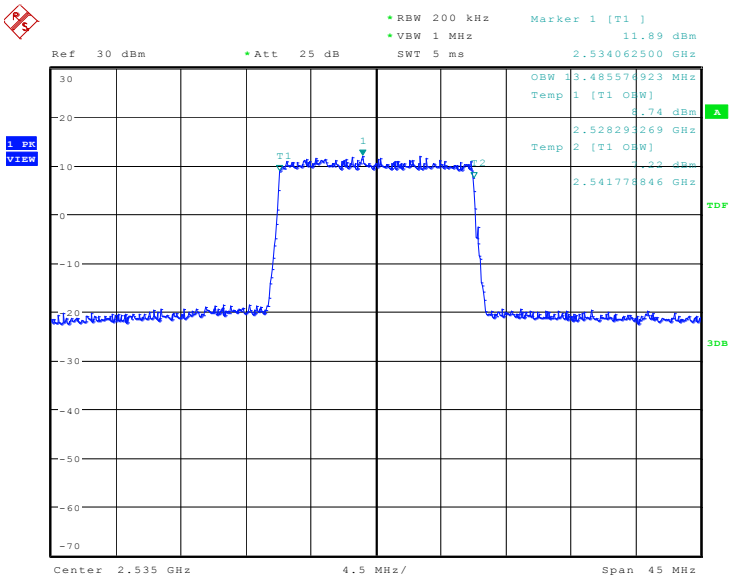
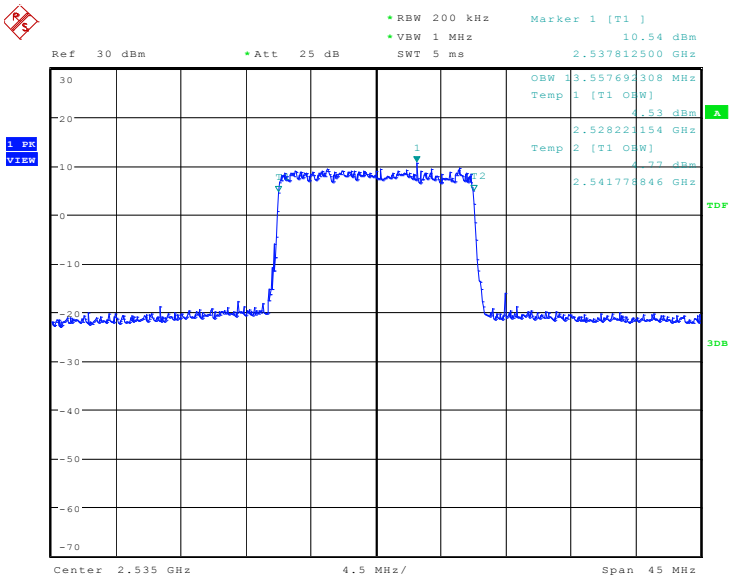
LTE band 7, 15MHz Bandwidth, 64QAM (99% BW)



Date: 7.JAN.2020 16:55:02

LTE band 7, 15MHz Bandwidth,256QAM (99% BW)

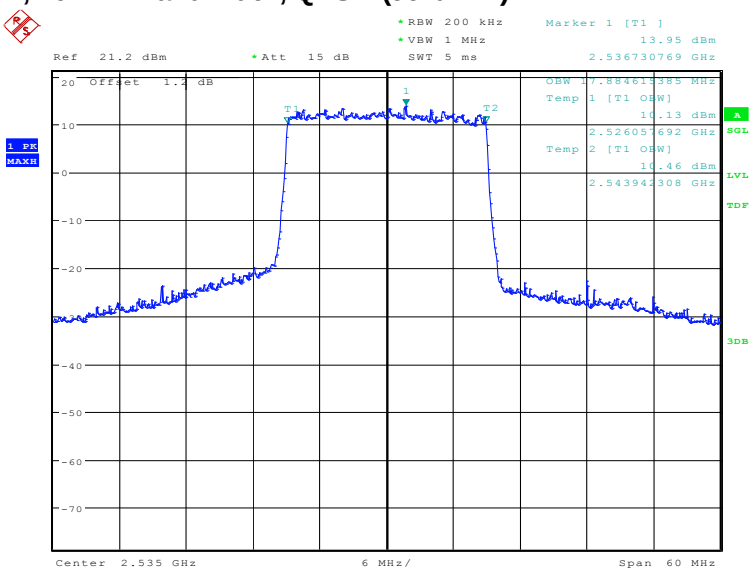


Date: 20.JAN.2020 10:43:42

LTE band 7, 20MHz (99%)

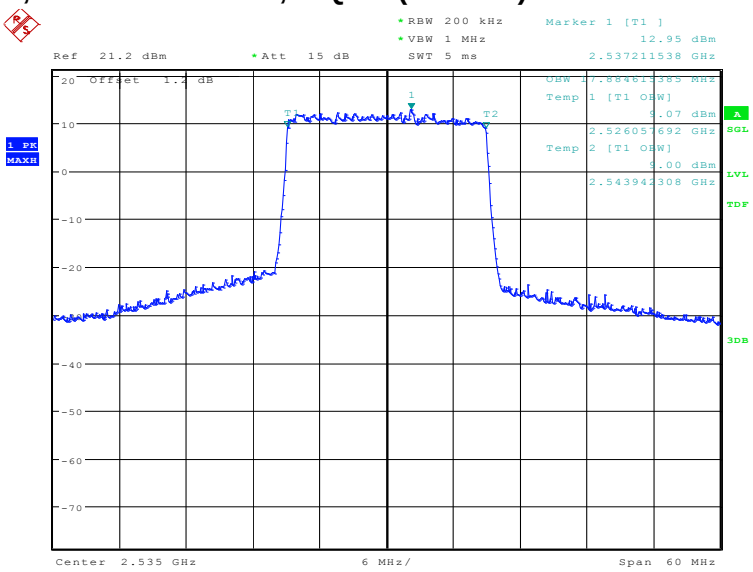
Frequency (MHz)	Occupied Bandwidth (99%) (kHz)			
2535.0	QPSK	16QAM	64QAM	256QAM
	17884.62	17884.62	17980.77	17980.77

LTE band 7, 20MHz Bandwidth, QPSK (99% BW)



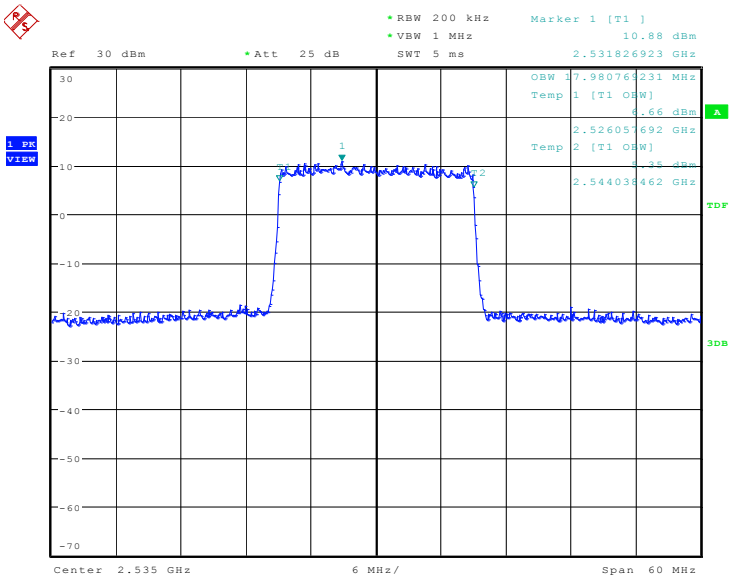
Date: 2.JAN.2020 12:23:42

LTE band 7, 20MHz Bandwidth, 16QAM (99% BW)



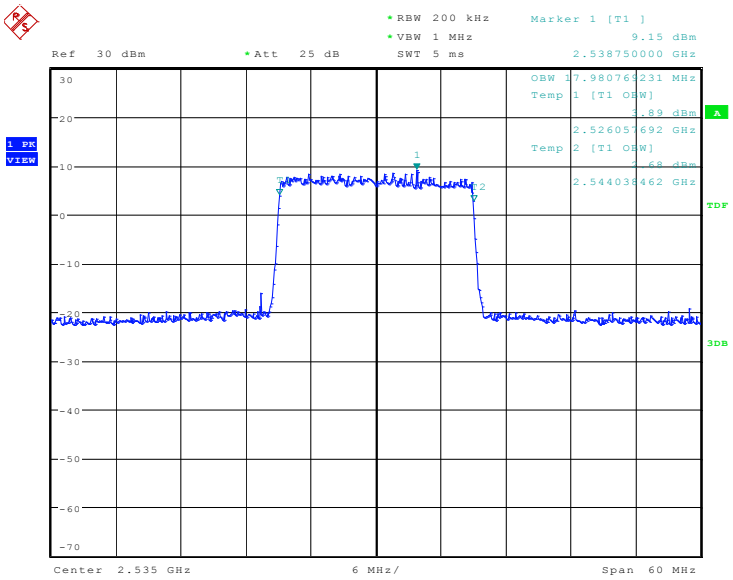
Date: 2.JAN.2020 12:25:07

LTE band 7, 20MHz Bandwidth, 64QAM (99% BW)



Date: 7.JAN.2020 16:56:00

LTE band 7, 20MHz Bandwidth,256QAM (99% BW)

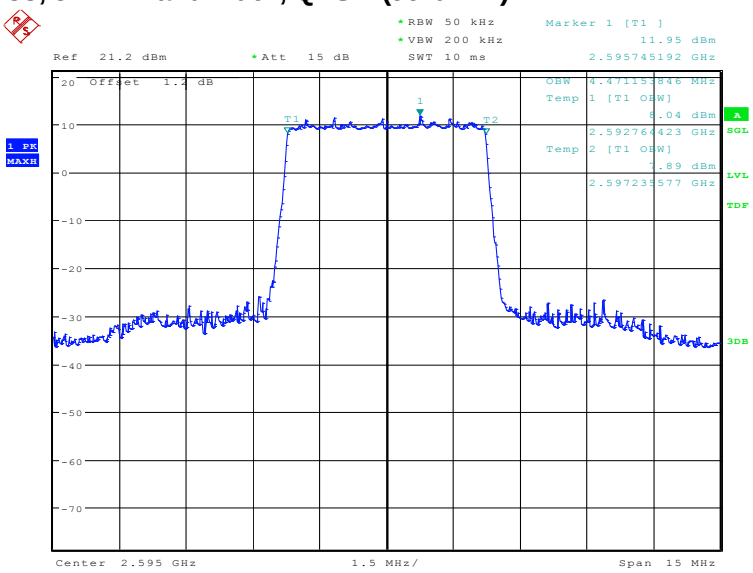


Date: 20.JAN.2020 10:45:12

LTE band 38, 5MHz (99%)

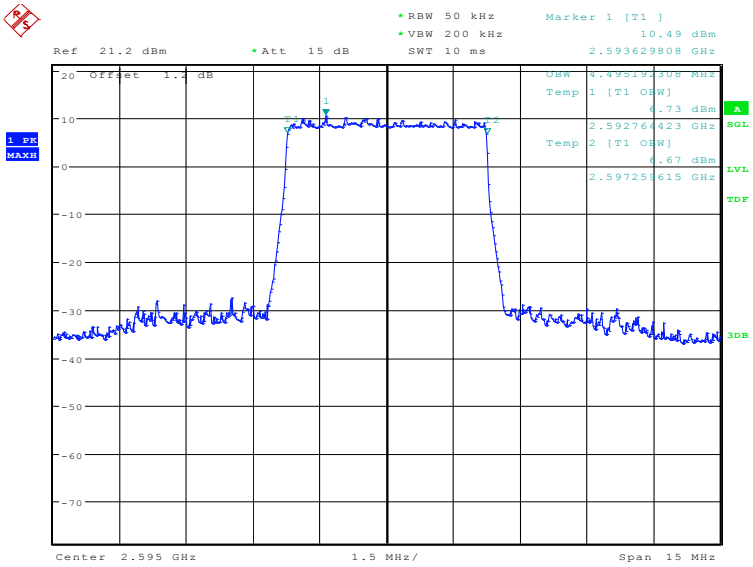
Frequency (MHz)	Occupied Bandwidth (99%) (kHz)			
2595.0	QPSK	16QAM	64QAM	256QAM
	4471.15	4495.19	4519.23	4495.19

LTE band 38, 5MHz Bandwidth, QPSK (99% BW)



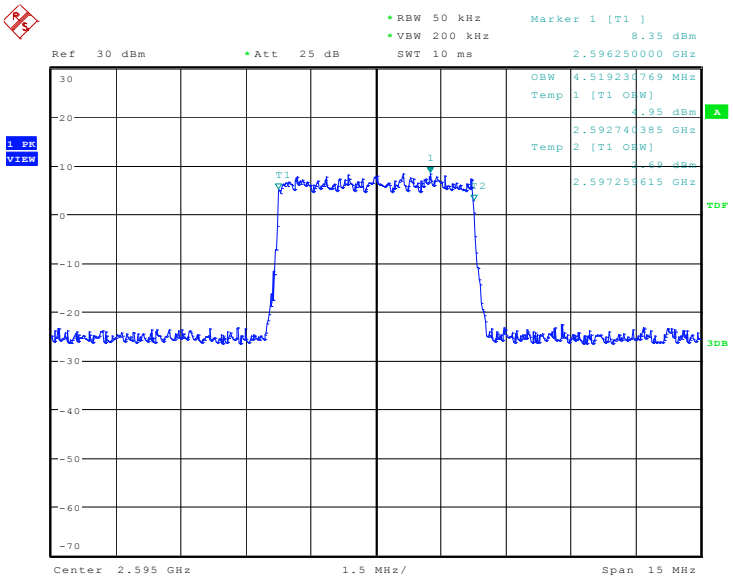
Date: 2.JAN.2020 13:30:10

LTE band 38, 5MHz Bandwidth,16QAM (99% BW)



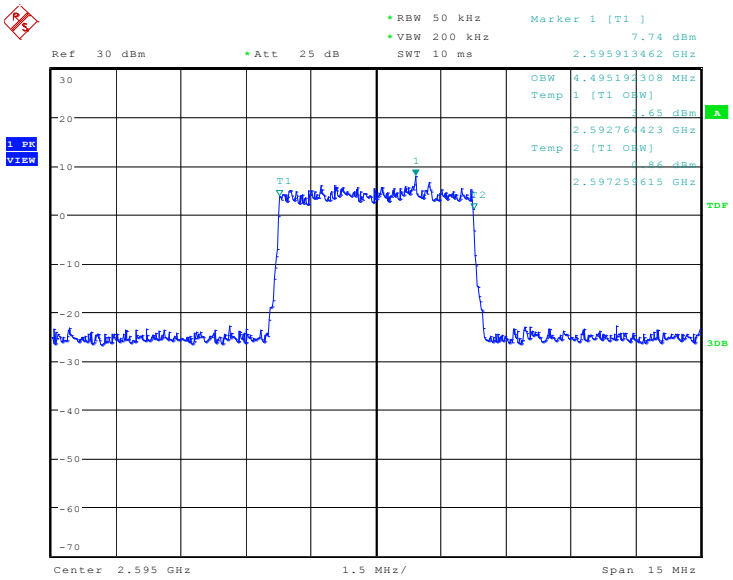
Date: 2.JAN.2020 13:31:34

LTE band 38, 5MHz Bandwidth, 64QAM (99% BW)



Date: 7.JAN.2020 17:00:00

LTE band 38, 5MHz Bandwidth,256QAM (99% BW)

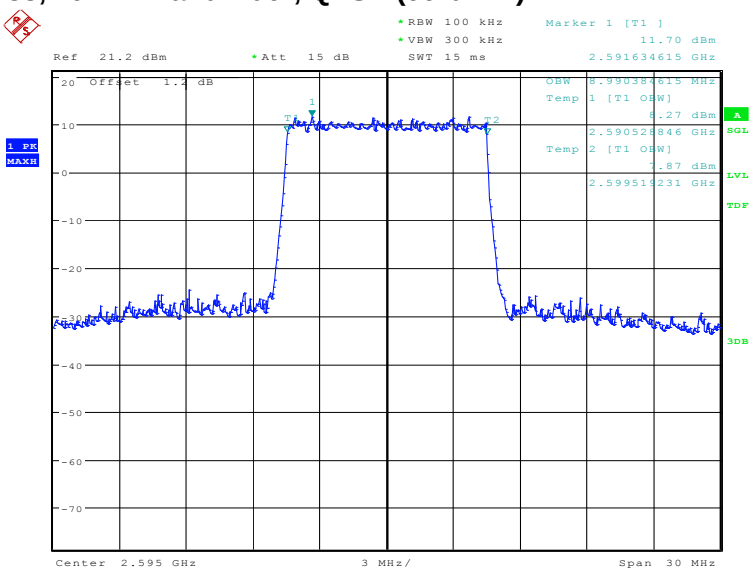


Date: 20.JAN.2020 10:48:51

LTE band 38, 10MHz (99%)

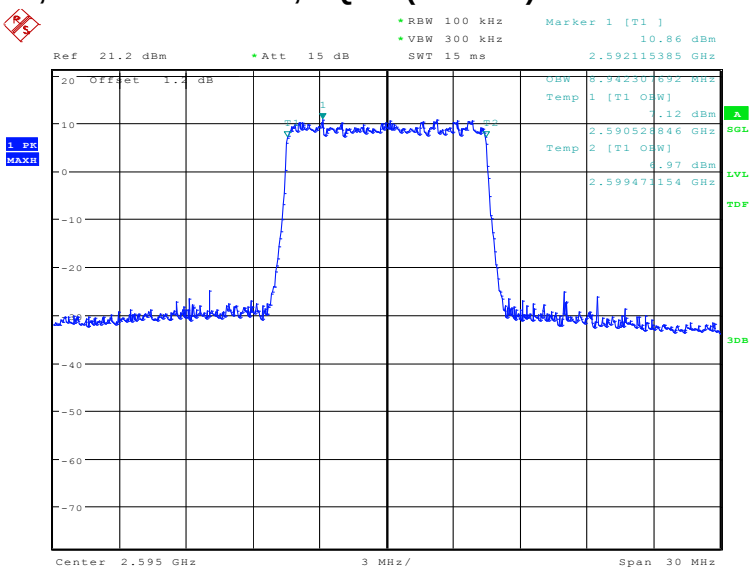
Frequency (MHz)	Occupied Bandwidth (99%) (kHz)			
2595.0	QPSK	16QAM	64QAM	256QAM
	8990.38	8942.31	8990.38	9038.46

LTE band 38, 10MHz Bandwidth, QPSK (99% BW)



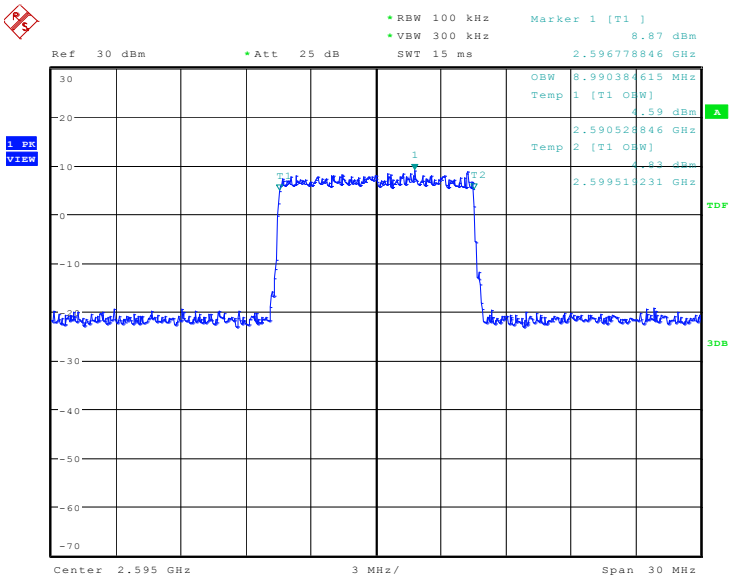
Date: 2.JAN.2020 13:33:01

LTE band 38, 10MHz Bandwidth,16QAM (99% BW)



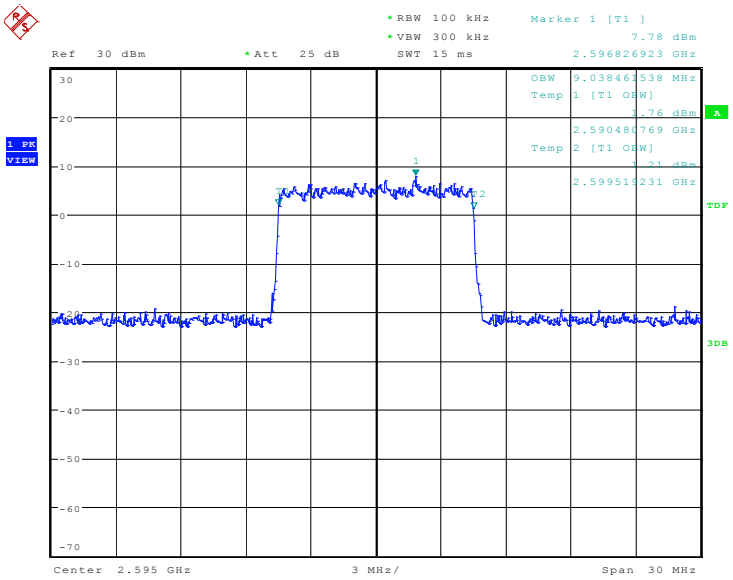
Date: 2.JAN.2020 13:34:25

LTE band 38, 10MHz Bandwidth, 64QAM (99% BW)



Date: 7.JAN.2020 17:00:56

LTE band 38, 10MHz Bandwidth,256QAM (99% BW)

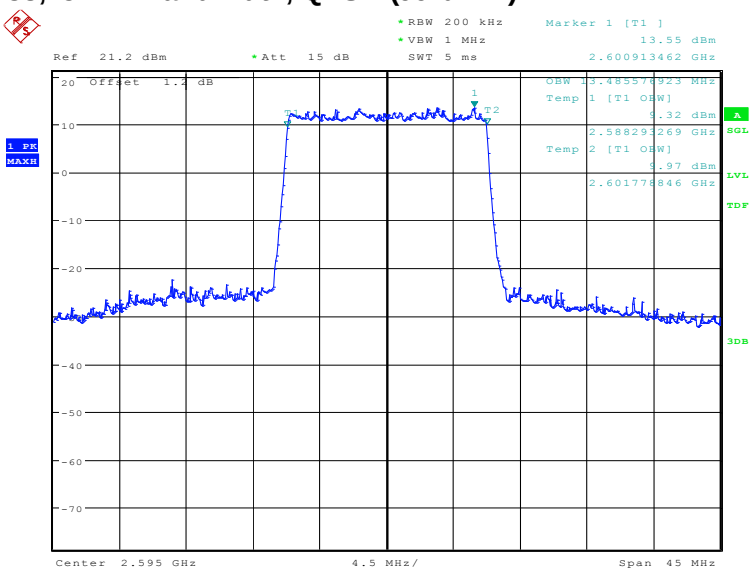


Date: 20.JAN.2020 10:50:47

LTE band 38,15MHz (99%)

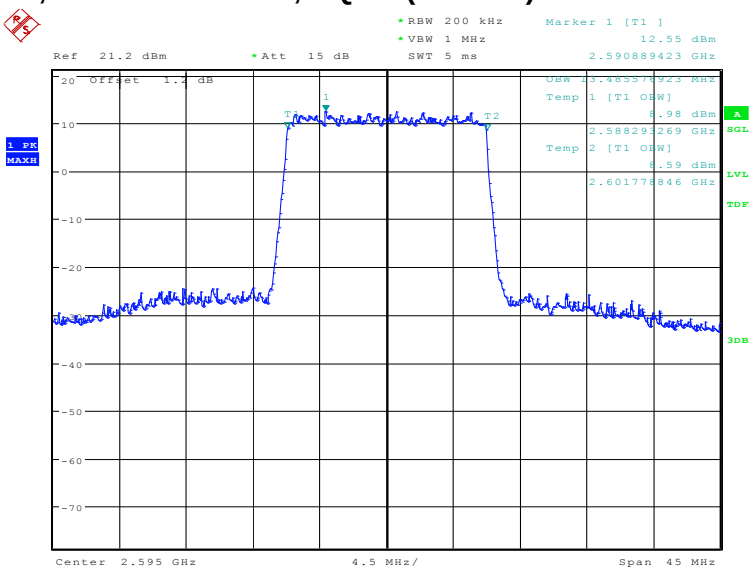
Frequency (MHz)	Occupied Bandwidth (99%) (kHz)			
2595.0	QPSK	16QAM	64QAM	256QAM
	13485.58	13485.58	13485.58	13485.58

LTE band 38,15MHz Bandwidth, QPSK (99% BW)



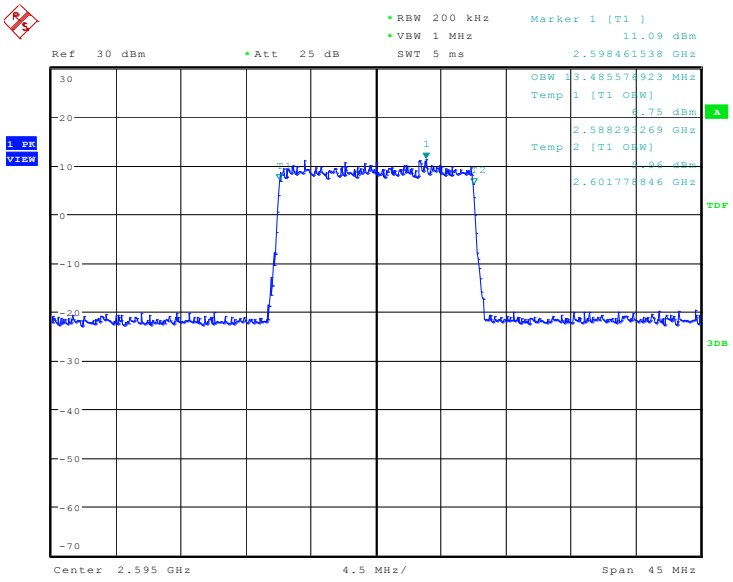
Date: 2.JAN.2020 13:35:52

LTE band 38, 15MHz Bandwidth,16QAM (99% BW)



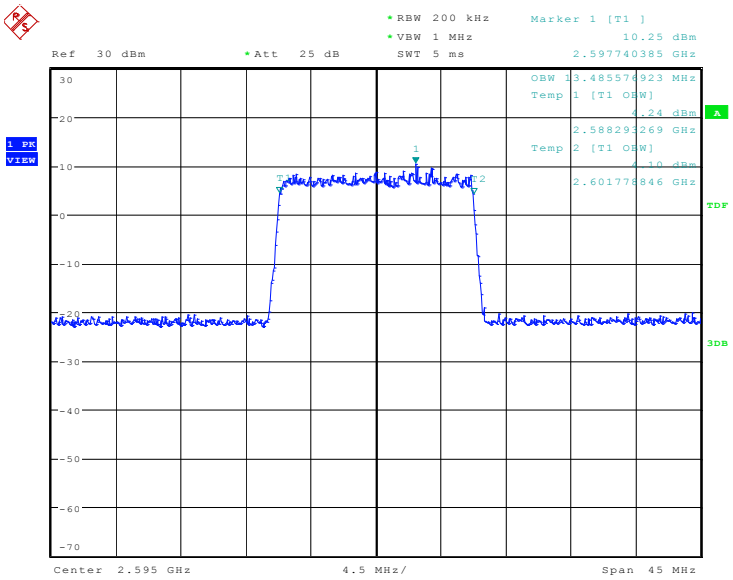
Date: 2.JAN.2020 13:37:16

LTE band 38, 15MHz Bandwidth, 64QAM (99% BW)



Date: 7.JAN.2020 17:01:55

LTE band 38, 15MHz Bandwidth,256QAM (99% BW)

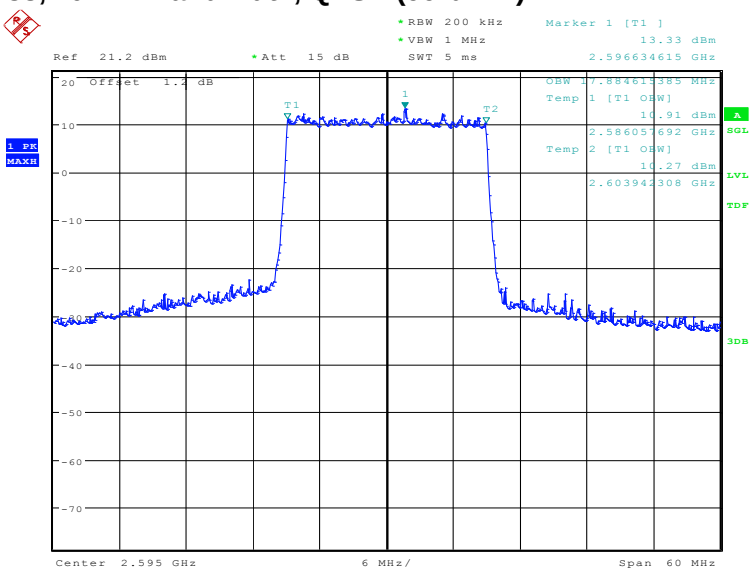


Date: 20.JAN.2020 10:52:17

LTE band 38, 20MHz (99%)

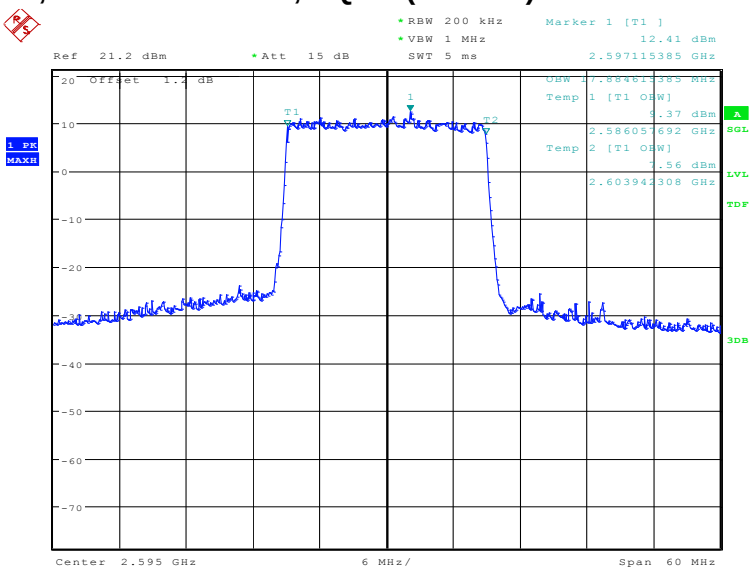
Frequency (MHz)	Occupied Bandwidth (99%) (kHz)			
2595.0	QPSK	16QAM	64QAM	256QAM
	17884.62	17884.62	17980.77	18076.92

LTE band 38, 20MHz Bandwidth, QPSK (99% BW)



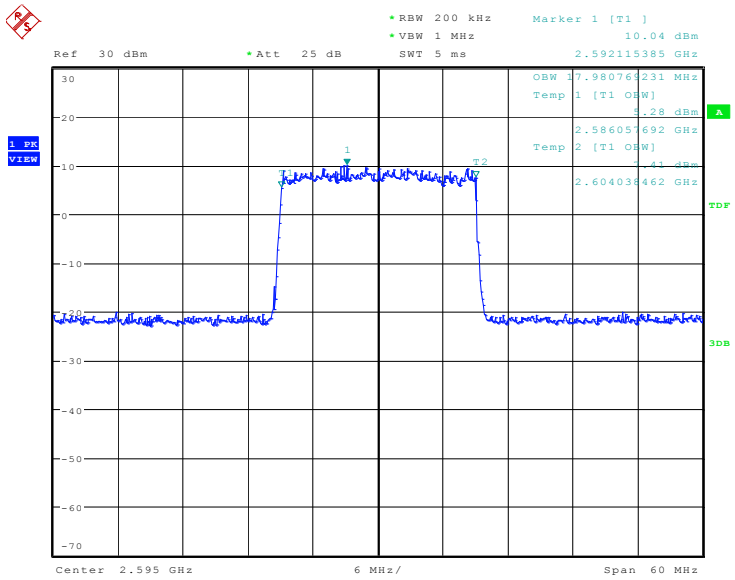
Date: 2.JAN.2020 13:38:42

LTE band 38, 20MHz Bandwidth,16QAM (99% BW)



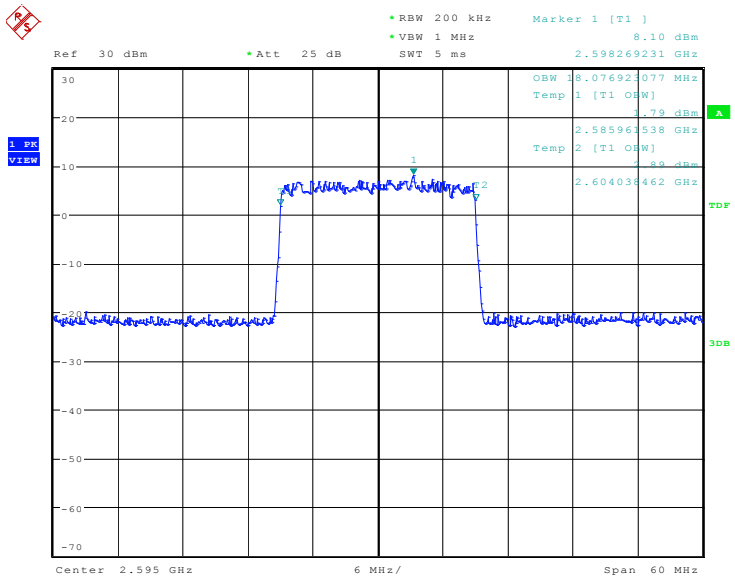
Date: 2.JAN.2020 13:40:07

LTE band 38, 20MHz Bandwidth, 64QAM (99% BW)



Date: 7.JAN.2020 17:02:55

LTE band 38, 20MHz Bandwidth,256QAM (99% BW)



Date: 20.JAN.2020 10:53:34

A.5 EMISSION BANDWIDTH

A.5.1Emission 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.

The measurement method is from ANSI C63.26:

a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.

b) The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set ≥ 3 × RBW.

c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation.

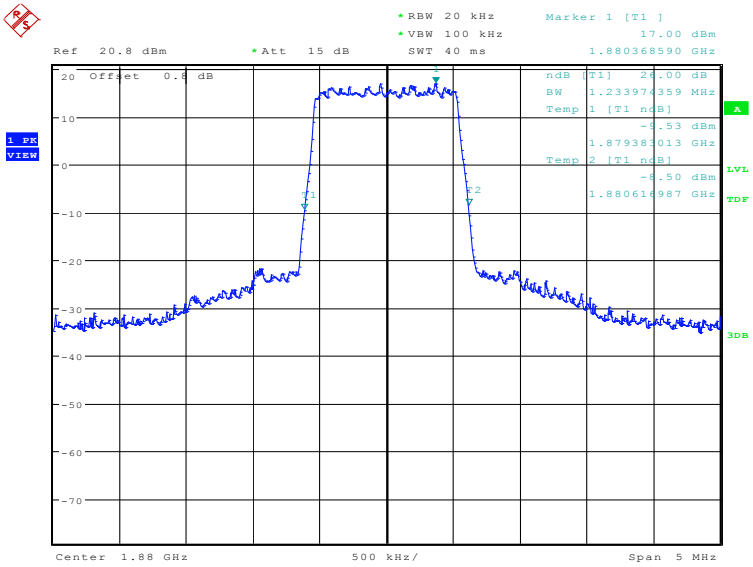
d) The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target "−X dB" requirement, i.e., if the requirement calls for measuring the −26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.

e) Set spectrum analyzer detection mode to peak, and the trace mode to max hold.

LTE band 2, 1.4MHz (-26dBc)

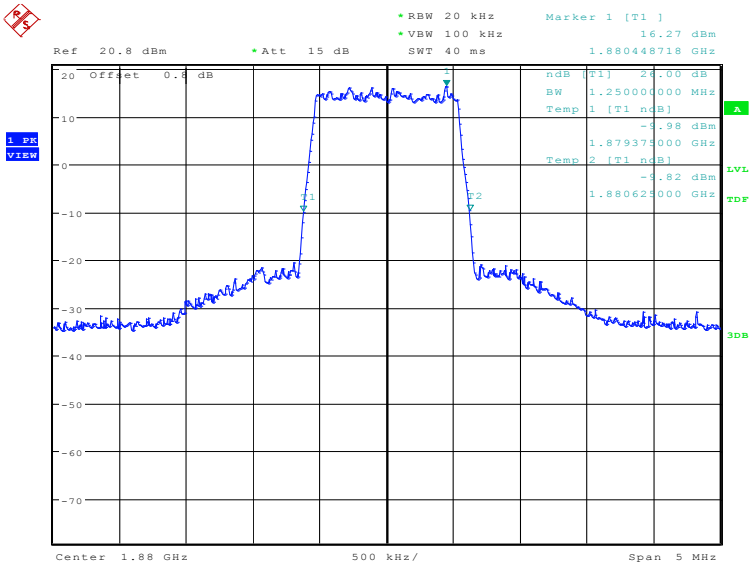
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
1880.0	QPSK	16QAM	64QAM	256QAM
	1233.97	1250.00	1233.97	1233.97

LTE band 2, 1.4MHz Bandwidth, QPSK (-26dBc BW)



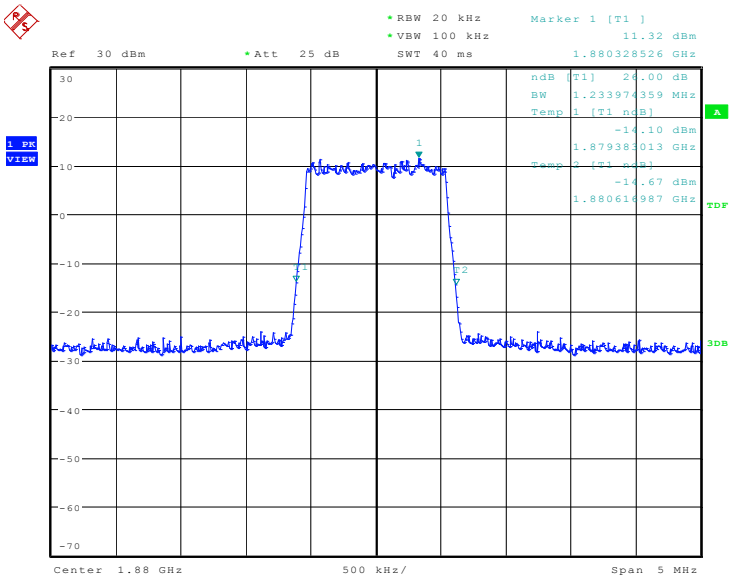
Date: 2.JAN.2020 08:19:02

LTE band 2, 1.4MHz Bandwidth, 16QAM (-26dBc BW)



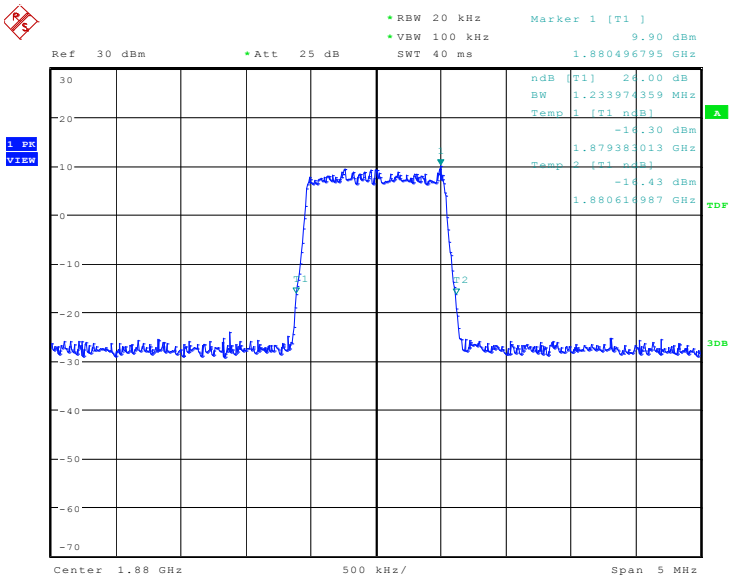
Date: 2.JAN.2020 08:20:27

LTE band 2, 1.4MHz Bandwidth, 64QAM (-26dBc BW)



Date: 7.JAN.2020 15:53:55

LTE band 2, 1.4MHz Bandwidth,256QAM (-26dBc BW)

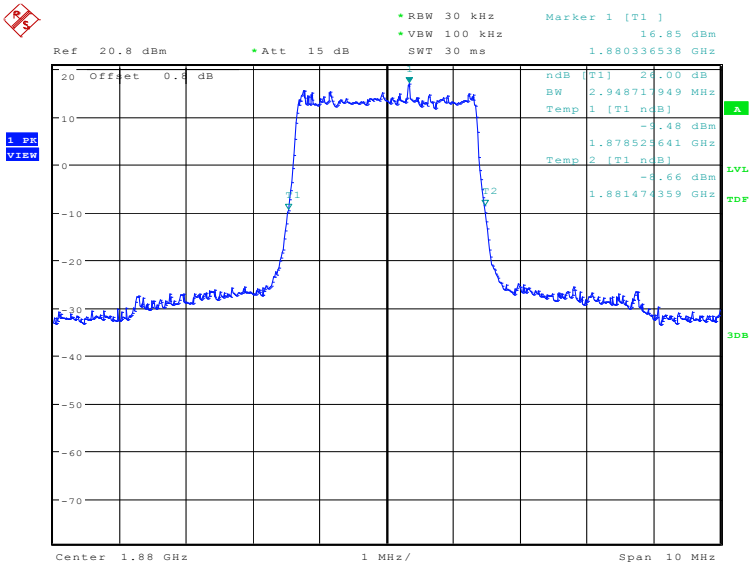


Date: 20.JAN.2020 10:05:27

LTE band 2, 3MHz (-26dBc)

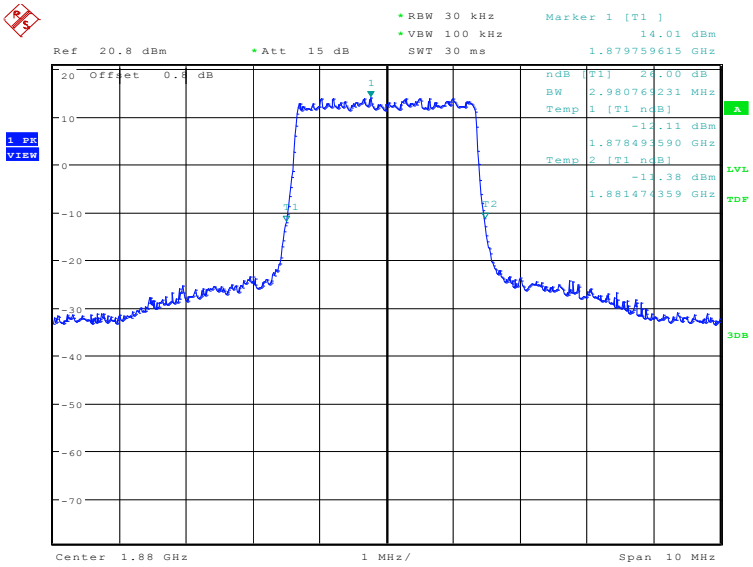
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
1880.0	QPSK	16QAM	64QAM	256QAM
	2948.72	2980.77	2964.74	2996.79

LTE band 2, 3MHz Bandwidth, QPSK (-26dBc BW)



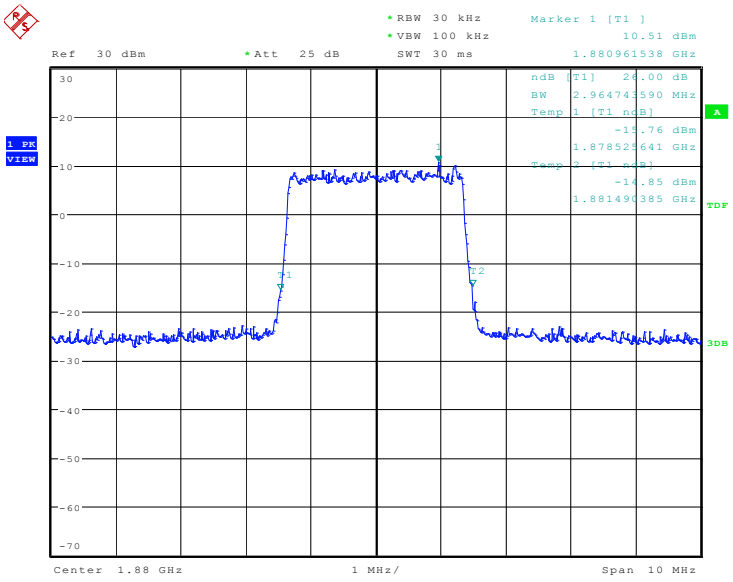
Date: 2.JAN.2020 08:21:53

LTE band 2, 3MHz Bandwidth, 16QAM (-26dBc BW)



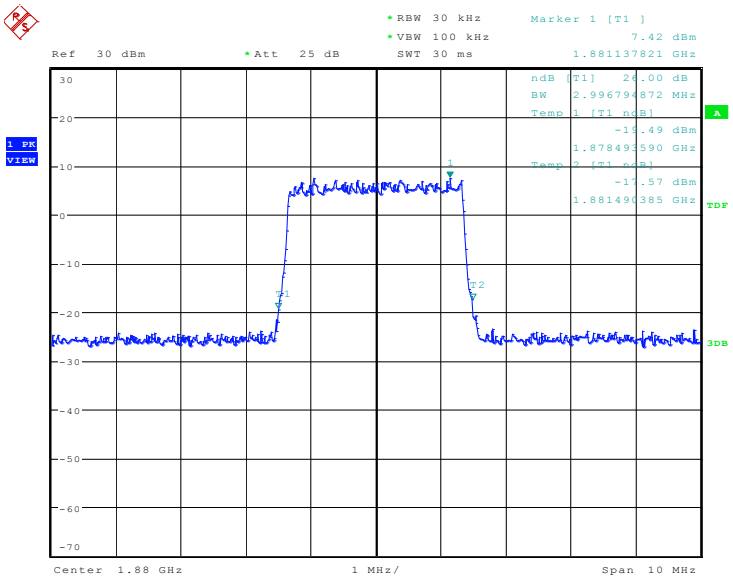
Date: 2.JAN.2020 08:23:18

LTE band 2, 3MHz Bandwidth, 64QAM (-26dBc BW)



Date: 7.JAN.2020 15:54:56

LTE band 2, 3MHz Bandwidth,256QAM (-26dBc BW)

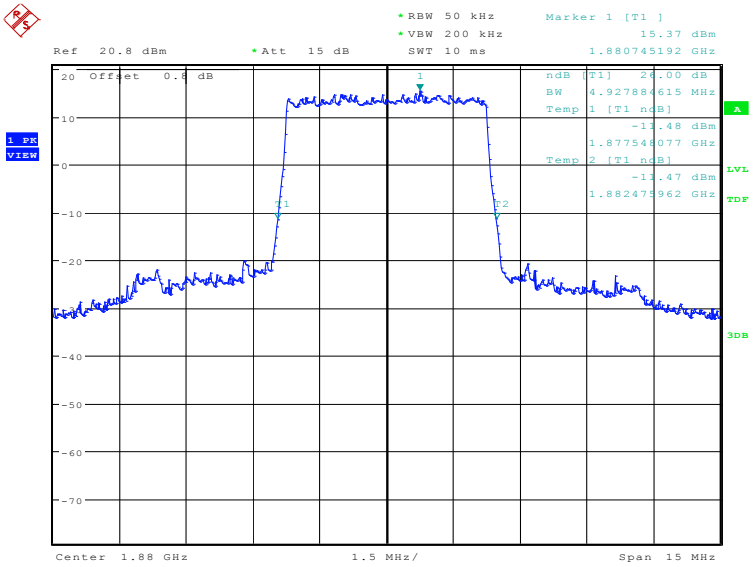


Date: 20.JAN.2020 10:09:55

LTE band 2, 5MHz (-26dBc)

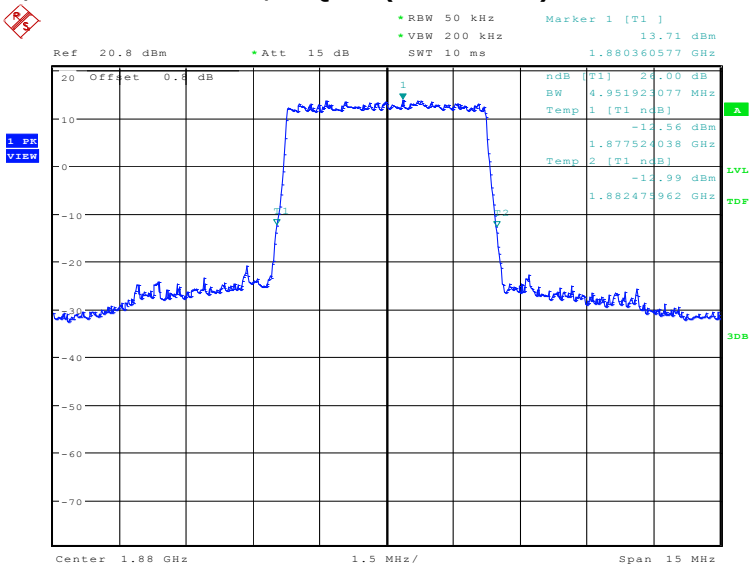
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
1880.0	QPSK	16QAM	64QAM	256QAM
	4927.88	4951.92	4879.81	4879.81

LTE band 2, 5MHz Bandwidth, QPSK (-26dBc BW)



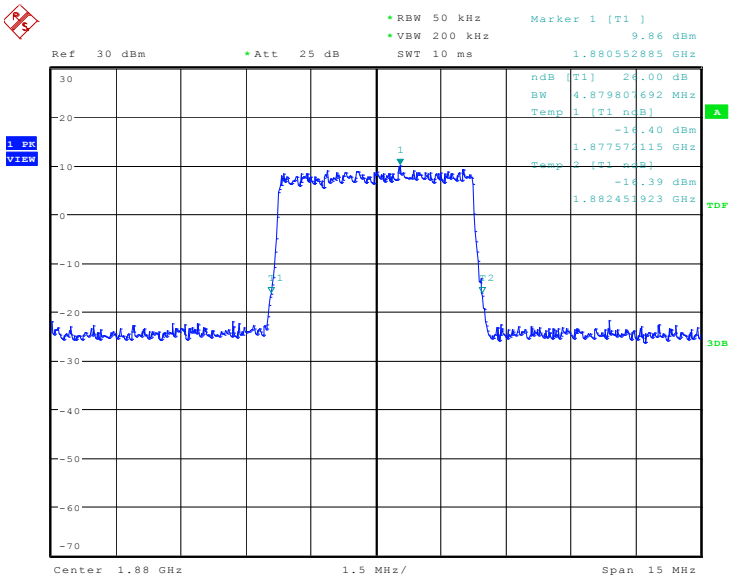
Date: 2.JAN.2020 08:24:45

LTE band 2, 5MHz Bandwidth, 16QAM (-26dBc BW)



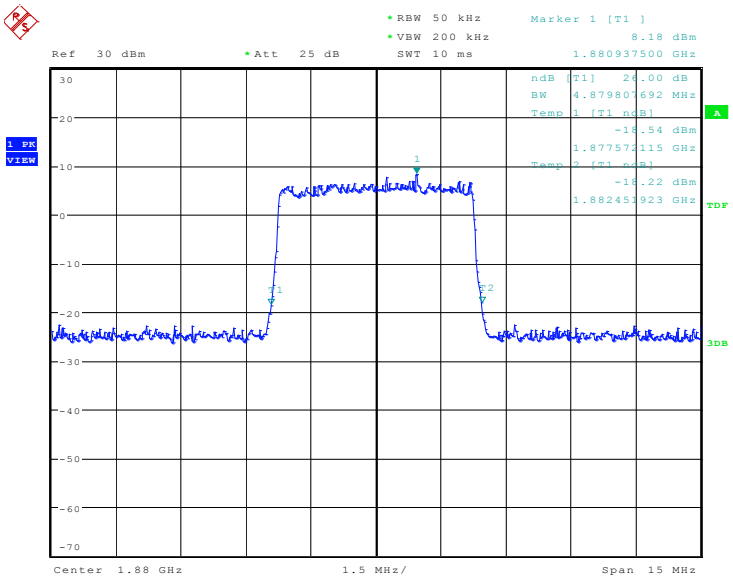
Date: 2.JAN.2020 08:26:09

LTE band 2, 5MHz Bandwidth,64QAM (-26dBc BW)



Date: 7.JAN.2020 15:55:56

LTE band 2, 5MHz Bandwidth,256QAM (-26dBc BW)

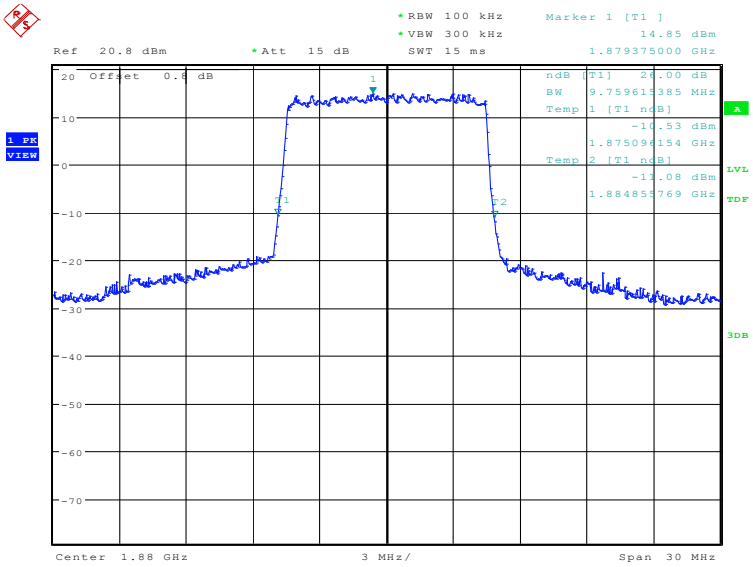


Date: 20.JAN.2020 10:11:18

LTE band 2, 10MHz (-26dBc)

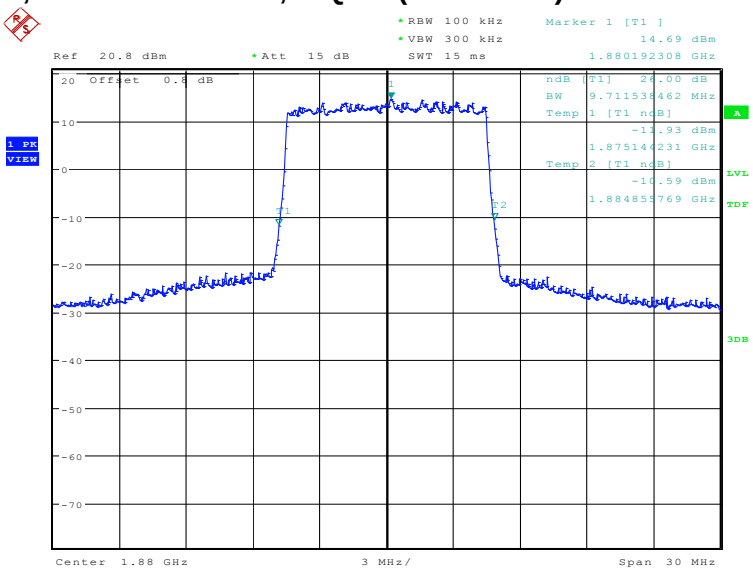
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
1880.0	QPSK	16QAM	64QAM	256QAM
	9759.62	9711.54	9663.46	9663.46

LTE band 2, 10MHz Bandwidth, QPSK (-26dBc BW)



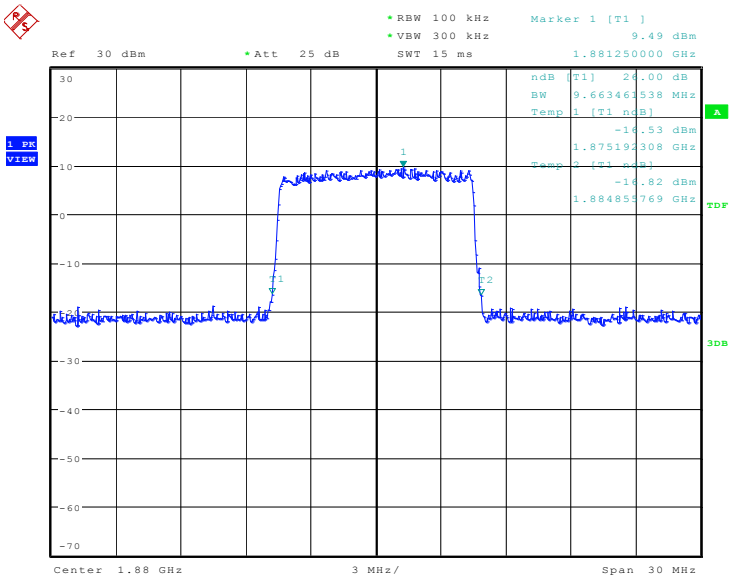
Date: 2.JAN.2020 08:27:36

LTE band 2, 10MHz Bandwidth, 16QAM (-26dBc BW)



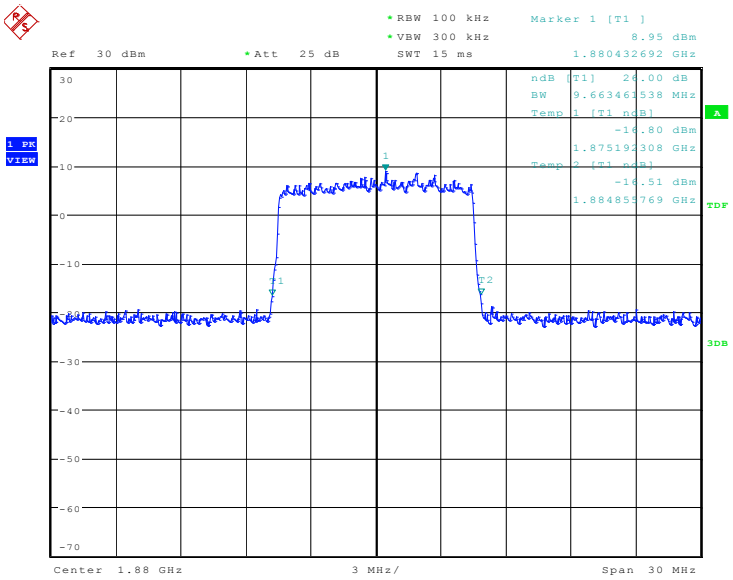
Date: 2.JAN.2020 08:29:00

LTE band 2, 10MHz Bandwidth, 64QAM (-26dBc BW)



Date: 7.JAN.2020 15:56:52

LTE band 2, 10MHz Bandwidth,256QAM (-26dBc BW)

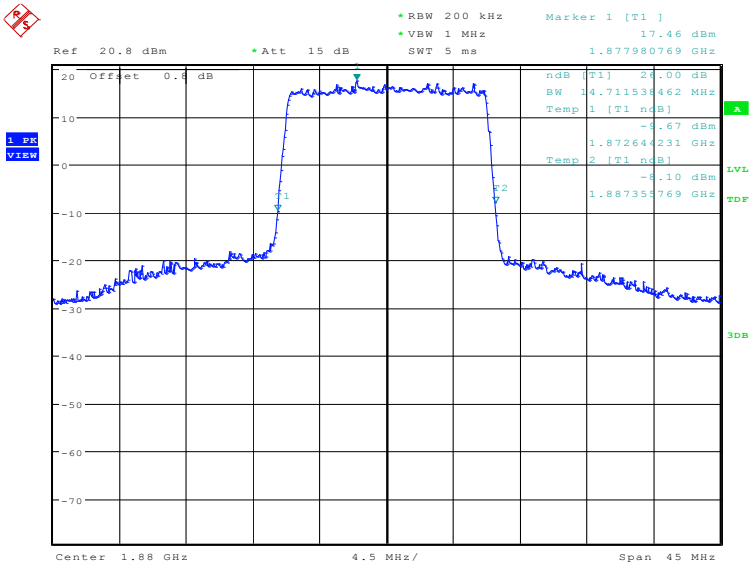


Date: 20.JAN.2020 10:12:43

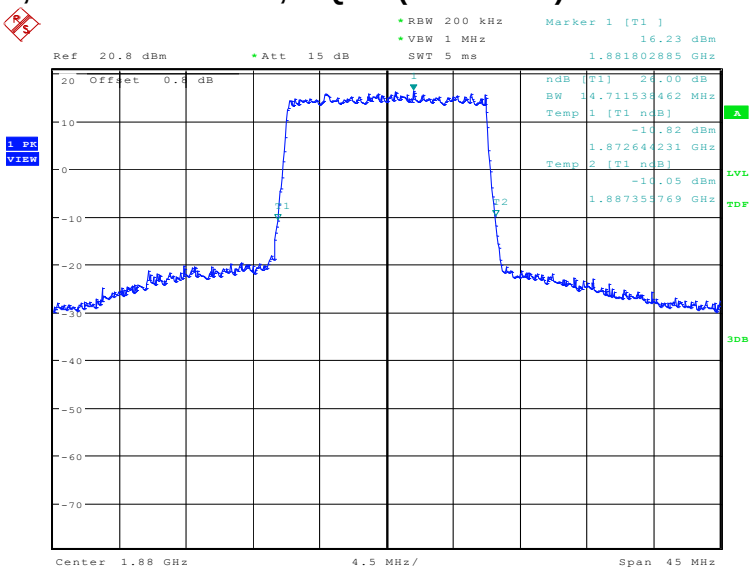
LTE band 2, 15MHz (-26dBc)

Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
1880.0	QPSK	16QAM	64QAM	256QAM
	14711.54	14711.54	14783.65	14567.31

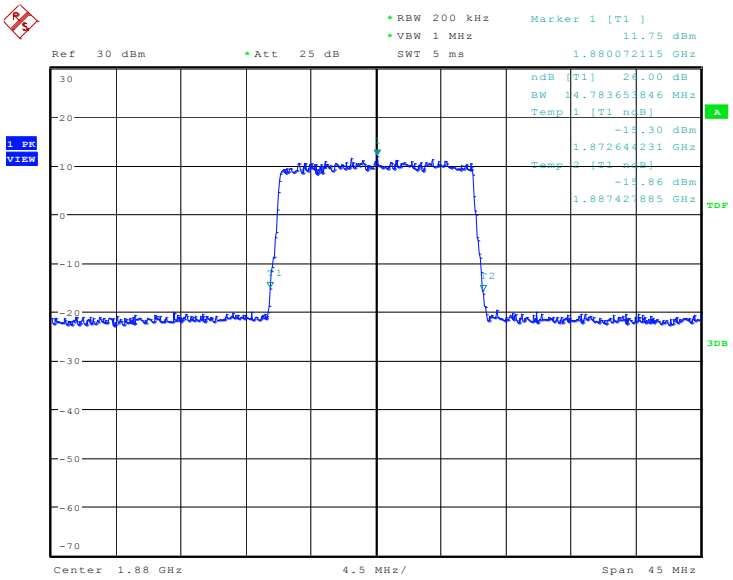
LTE band 2, 15MHz Bandwidth, QPSK (-26dBc BW)



LTE band 2, 15MHz Bandwidth, 16QAM (-26dBc BW)

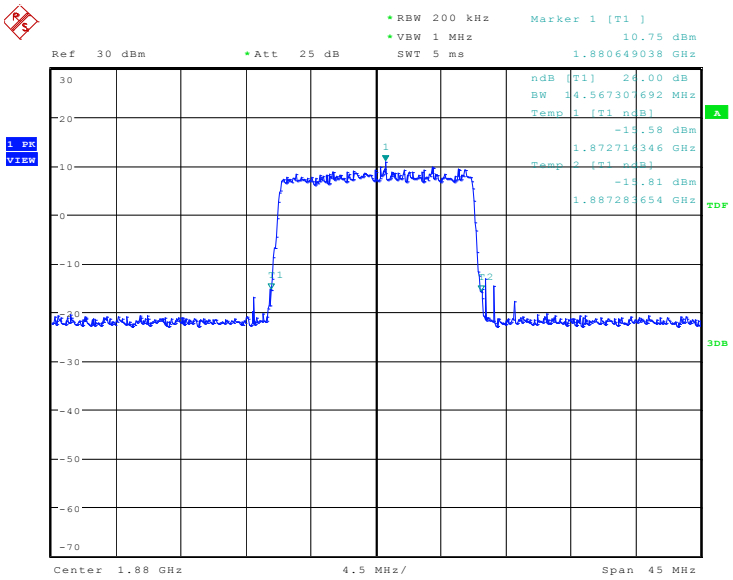


LTE band 2, 15MHz Bandwidth, 64QAM (-26dBc BW)



Date: 7.JAN.2020 15:57:56

LTE band 2, 15MHz Bandwidth,256QAM (-26dBc BW)

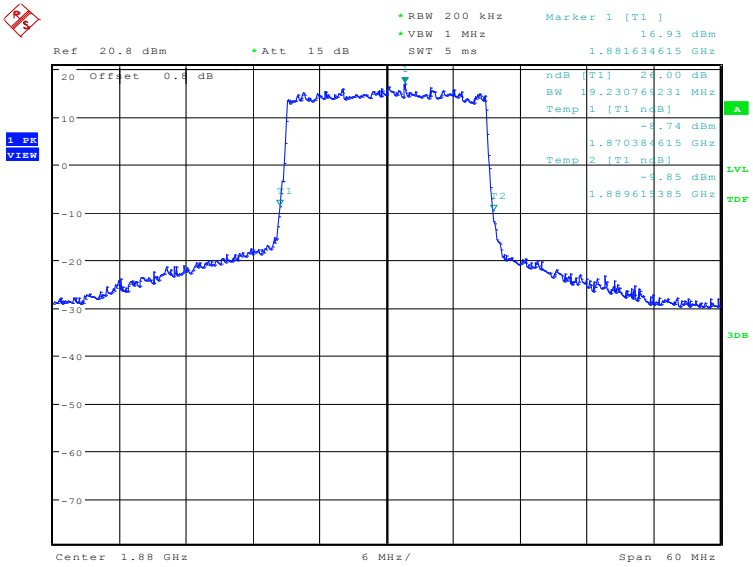


Date: 20.JAN.2020 10:14:07

LTE band 2, 20MHz (-26dBc)

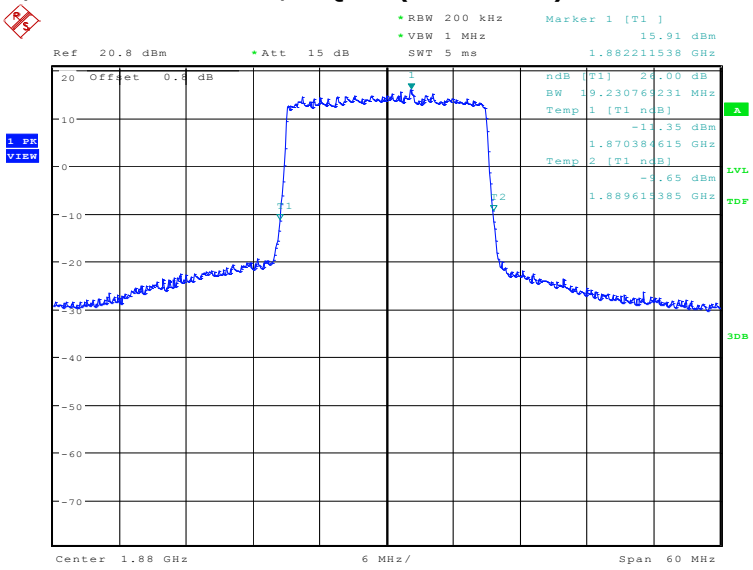
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
1880.0	QPSK	16QAM	64QAM	256QAM
	19230.77	19230.77	19230.77	19230.77

LTE band 2, 20MHz Bandwidth, QPSK (-26dBc BW)



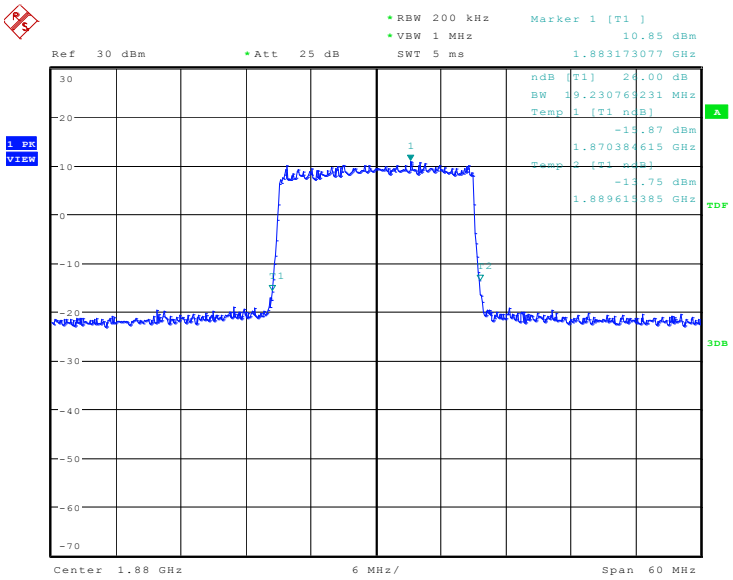
Date: 2.JAN.2020 08:33:18

LTE band 2, 20MHz Bandwidth, 16QAM (-26dBc BW)



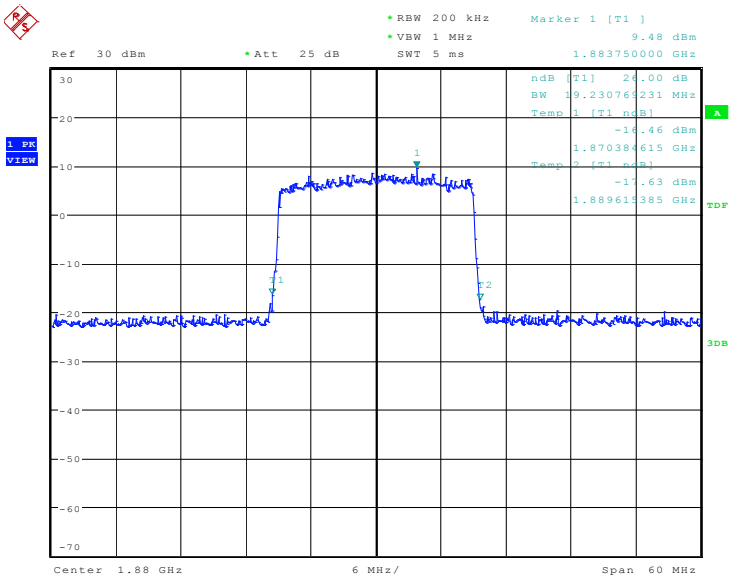
Date: 2.JAN.2020 08:34:43

LTE band 2, 20MHz Bandwidth, 64QAM (-26dBc BW)



Date: 7.JAN.2020 15:58:59

LTE band 2, 20MHz Bandwidth,256QAM (-26dBc BW)

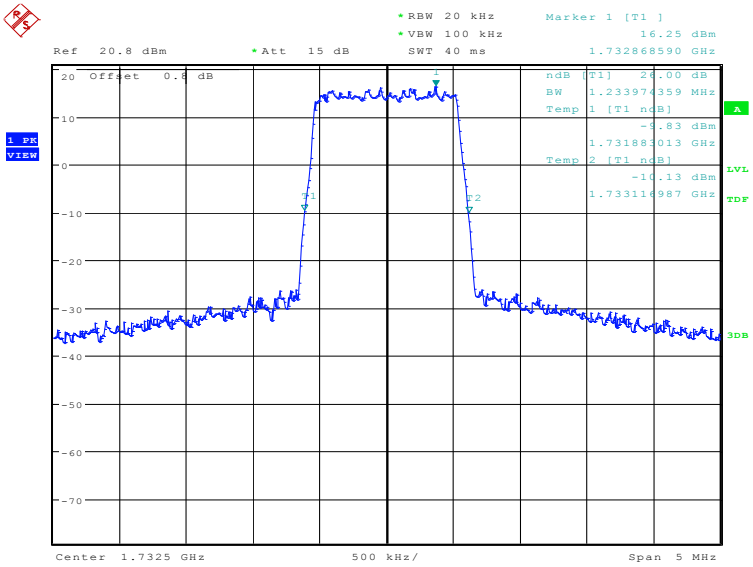


Date: 20.JAN.2020 10:15:59

LTE band 4, 1.4MHz (-26dBc)

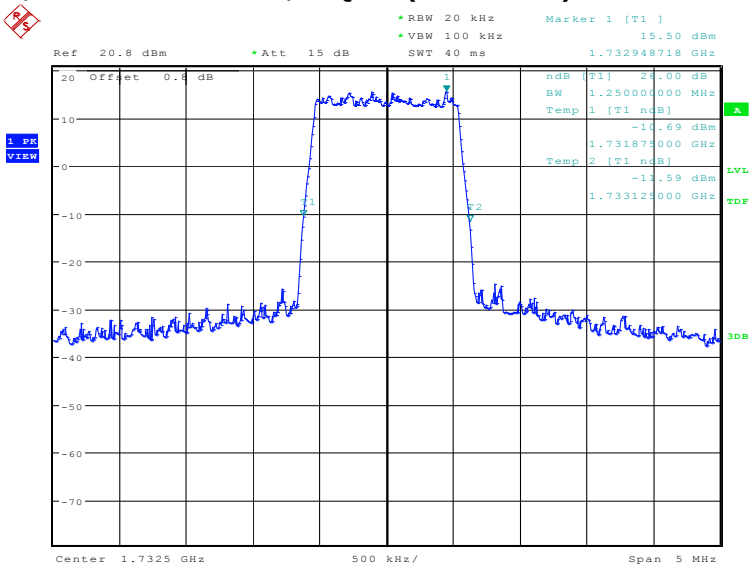
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
1732.5	QPSK	16QAM	64QAM	256QAM
	1233.97	1250.00	1233.97	1225.96

LTE band 4, 1.4MHz Bandwidth, QPSK (-26dBc BW)



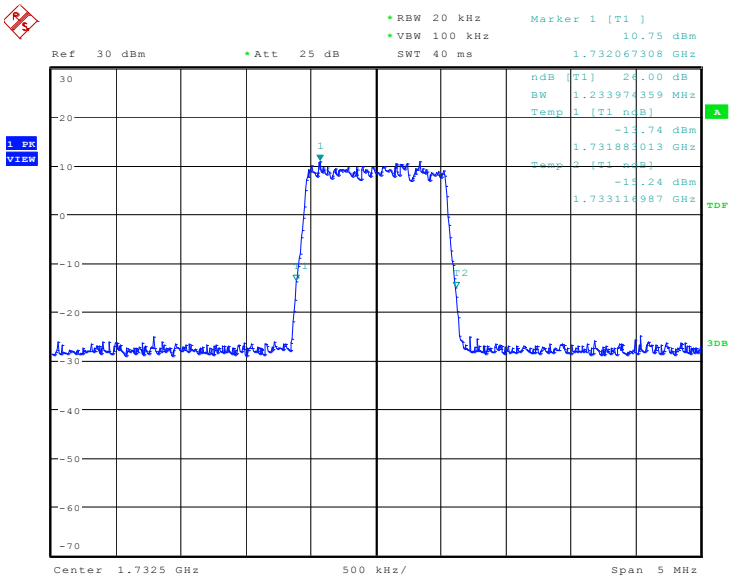
Date: 2.JAN.2020 10:04:46

LTE band 4, 1.4MHz Bandwidth, 16QAM (-26dBc BW)



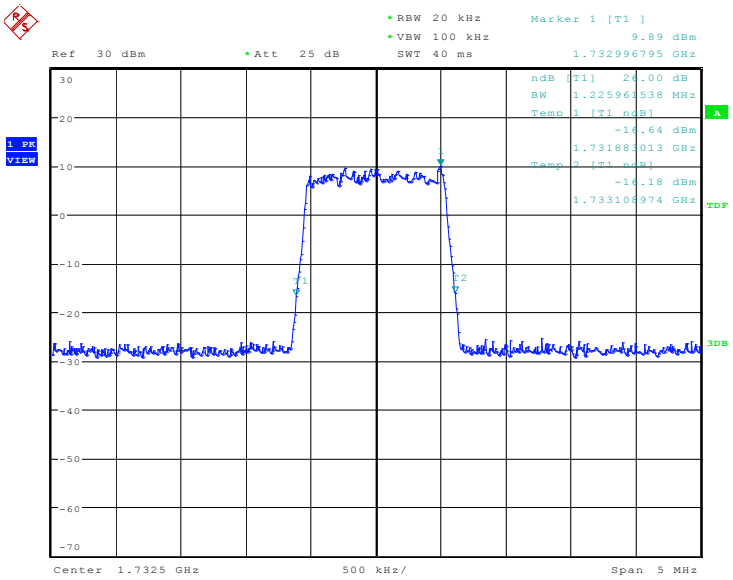
Date: 2.JAN.2020 10:06:11

LTE band 4, 1.4MHz Bandwidth, 64QAM (-26dBc BW)



Date: 7.JAN.2020 16:29:53

LTE band 4, 1.4MHz Bandwidth,256QAM (-26dBc BW)

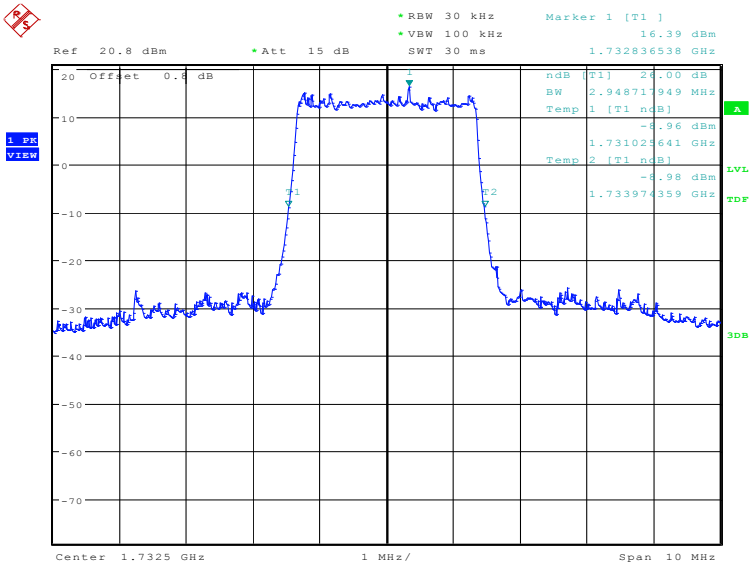


Date: 20.JAN.2020 10:20:39

LTE band 4, 3MHz (-26dBc)

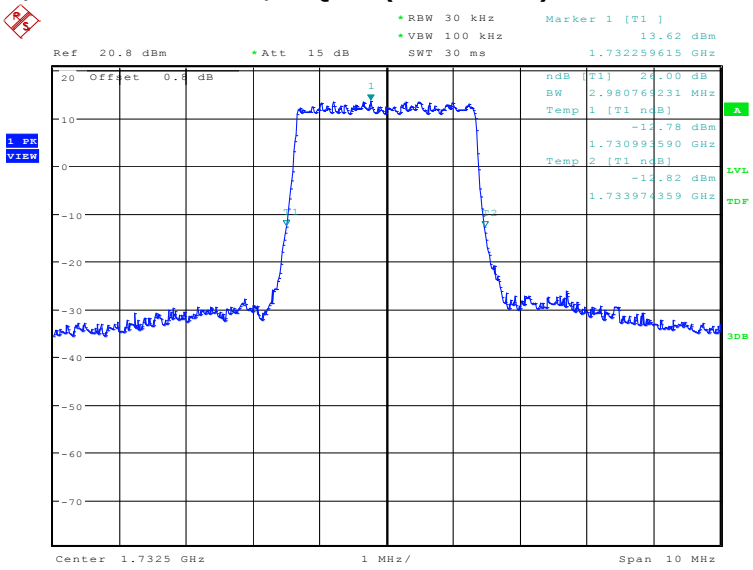
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
1732.5	QPSK	16QAM	64QAM	256QAM
	2948.72	2980.77	2964.74	2948.72

LTE band 4, 3MHz Bandwidth, QPSK (-26dBc BW)



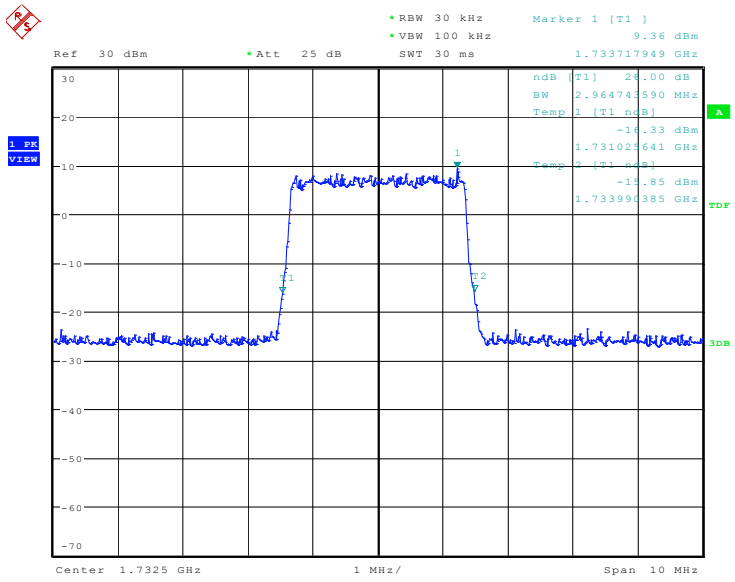
Date: 2.JAN.2020 10:07:38

LTE band 4, 3MHz Bandwidth, 16QAM (-26dBc BW)



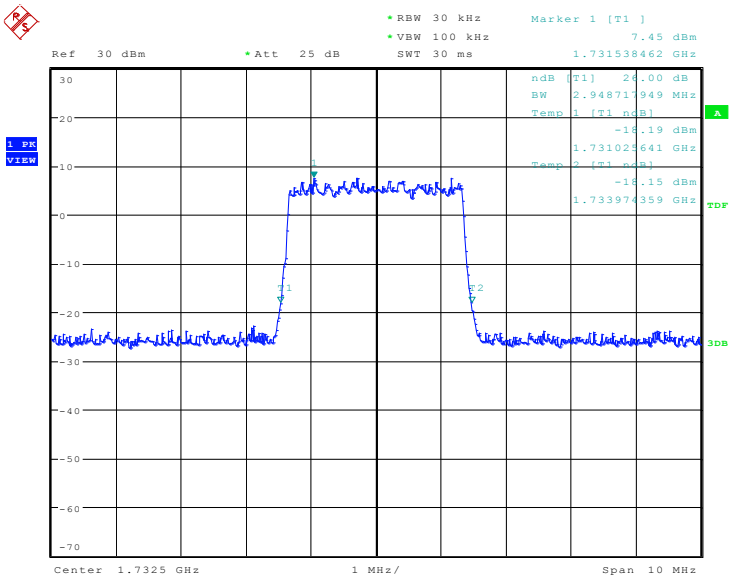
Date: 2.JAN.2020 10:09:02

LTE band 4, 3MHz Bandwidth, 64QAM (-26dBc BW)



Date: 7.JAN.2020 16:30:50

LTE band 4, 3MHz Bandwidth,256QAM (-26dBc BW)

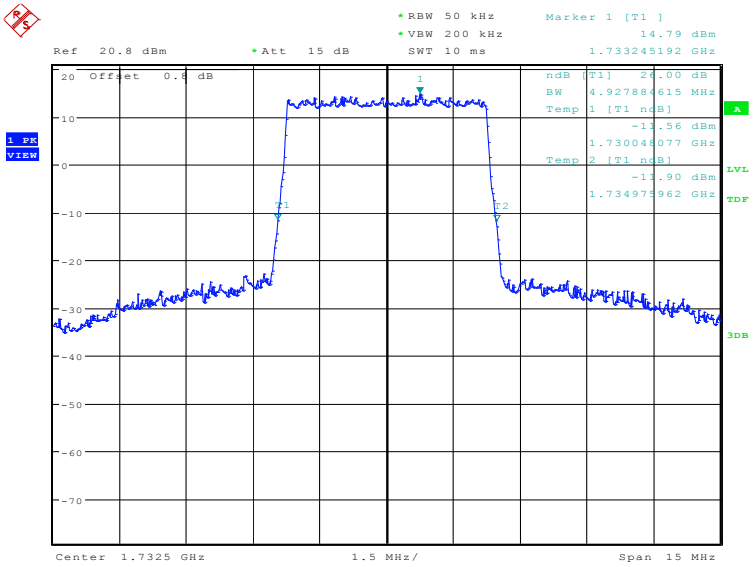


Date: 20.JAN.2020 10:22:04

LTE band 4, 5MHz (-26dBc)

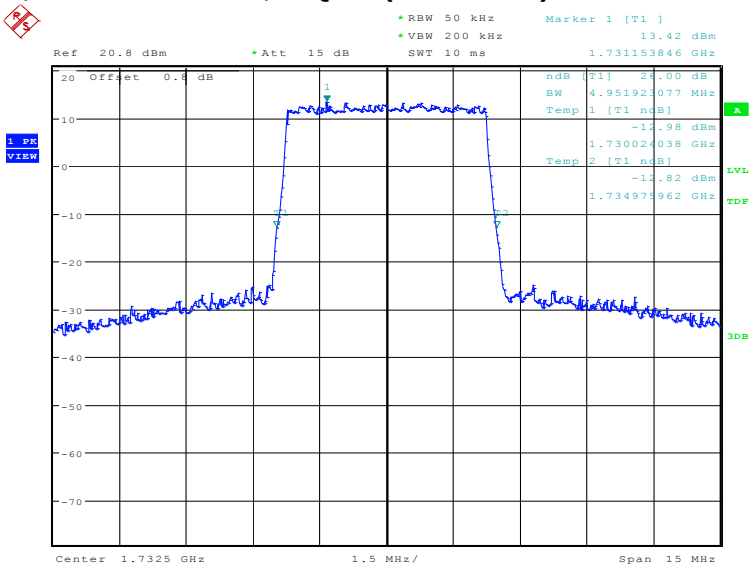
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
1732.5	QPSK	16QAM	64QAM	256QAM
	4927.88	4951.92	4903.85	4903.85

LTE band 4, 5MHz Bandwidth, QPSK (-26dBc BW)



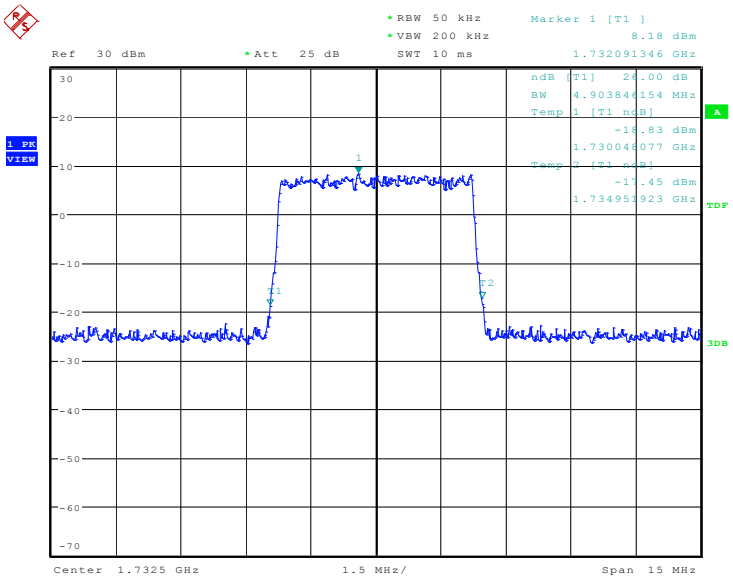
Date: 2.JAN.2020 10:10:29

LTE band 4, 5MHz Bandwidth, 16QAM (-26dBc BW)



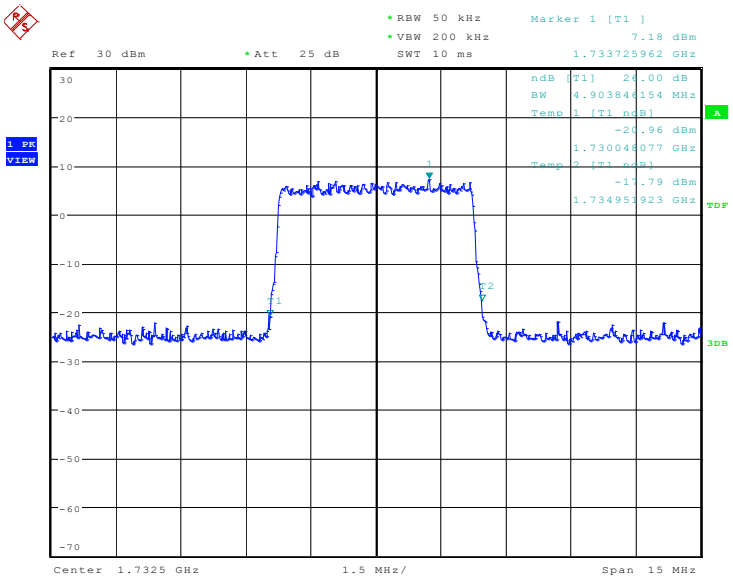
Date: 2.JAN.2020 10:11:53

LTE band 4, 5MHz Bandwidth,64QAM (-26dBc BW)



Date: 7.JAN.2020 16:31:52

LTE band 4, 5MHz Bandwidth,256QAM (-26dBc BW)

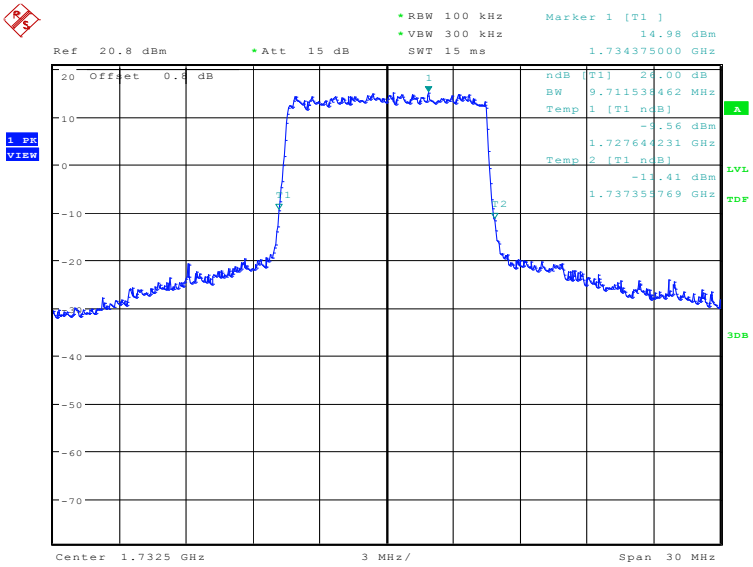


Date: 20.JAN.2020 10:23:58

LTE band 4, 10MHz (-26dBc)

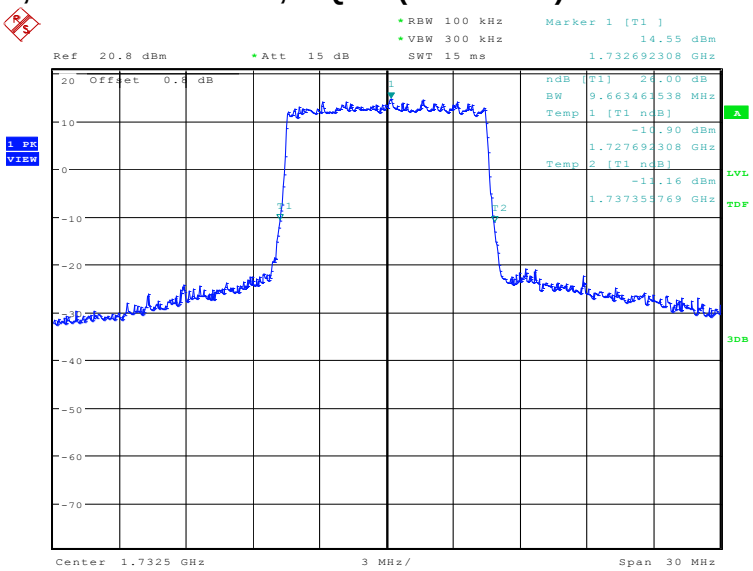
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
1732.5	QPSK	16QAM	64QAM	256QAM
	9711.54	9663.46	9615.38	9663.46

LTE band 4, 10MHz Bandwidth, QPSK (-26dBc BW)



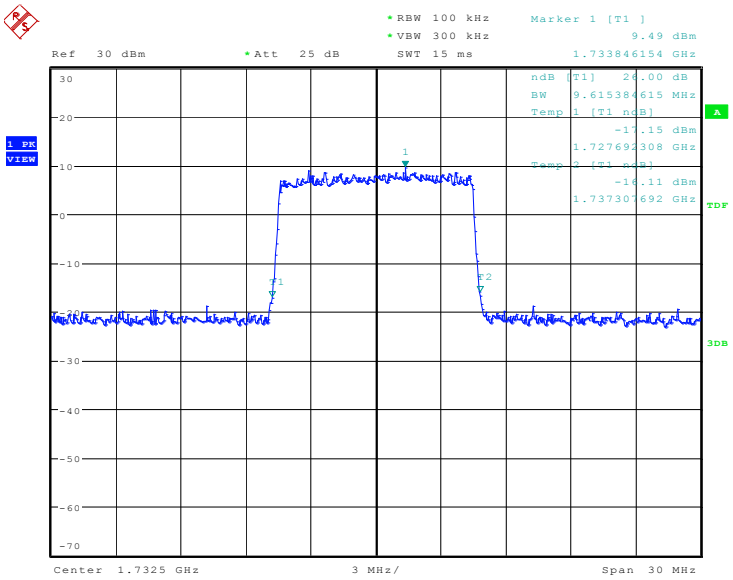
Date: 2.JAN.2020 10:13:20

LTE band 4, 10MHz Bandwidth, 16QAM (-26dBc BW)



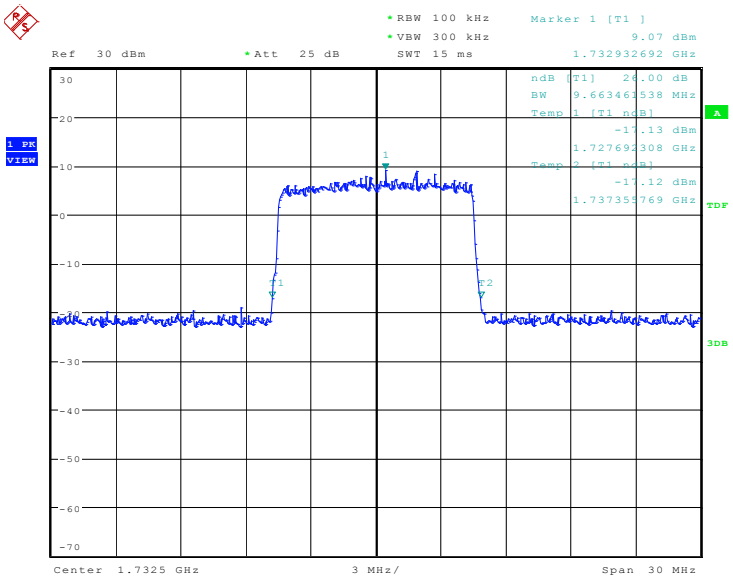
Date: 2.JAN.2020 10:14:44

LTE band 4, 10MHz Bandwidth, 64QAM (-26dBc BW)



Date: 7.JAN.2020 16:33:40

LTE band 4, 10MHz Bandwidth,256QAM (-26dBc BW)

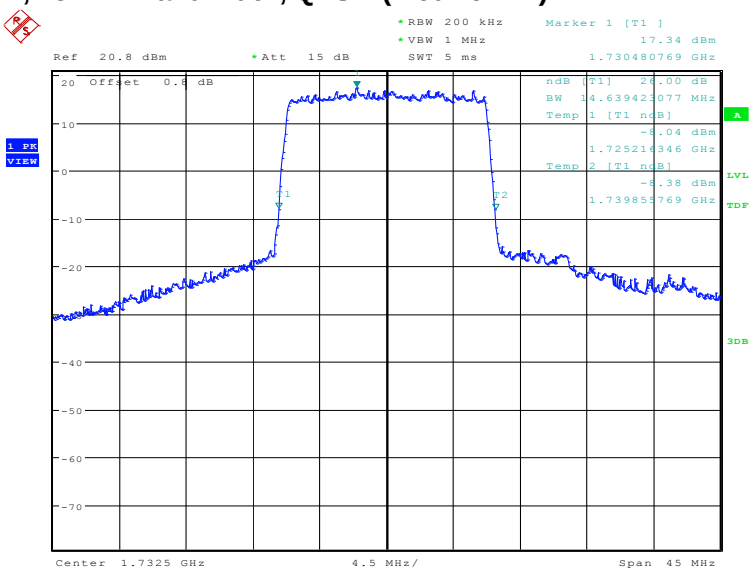


Date: 20.JAN.2020 10:25:29

LTE band 4, 15MHz (-26dBc)

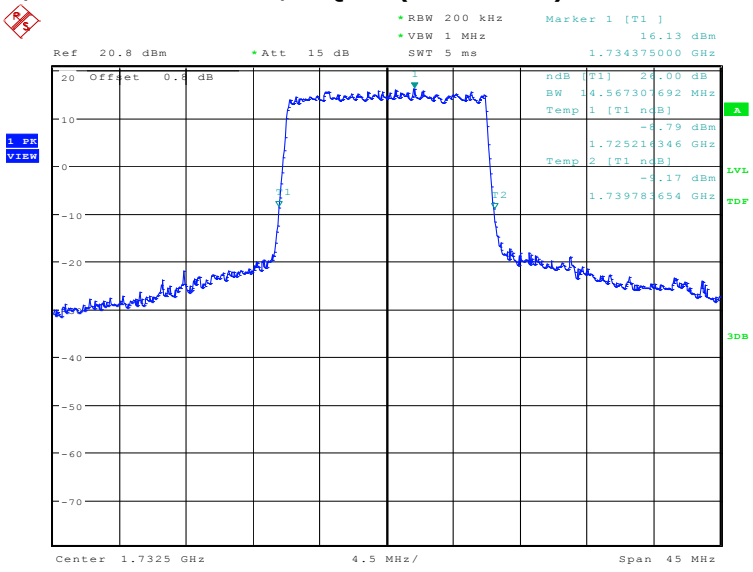
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
1732.5	QPSK	16QAM	64QAM	256QAM
	14639.42	14567.31	14495.19	14639.42

LTE band 4, 15MHz Bandwidth, QPSK (-26dBc BW)



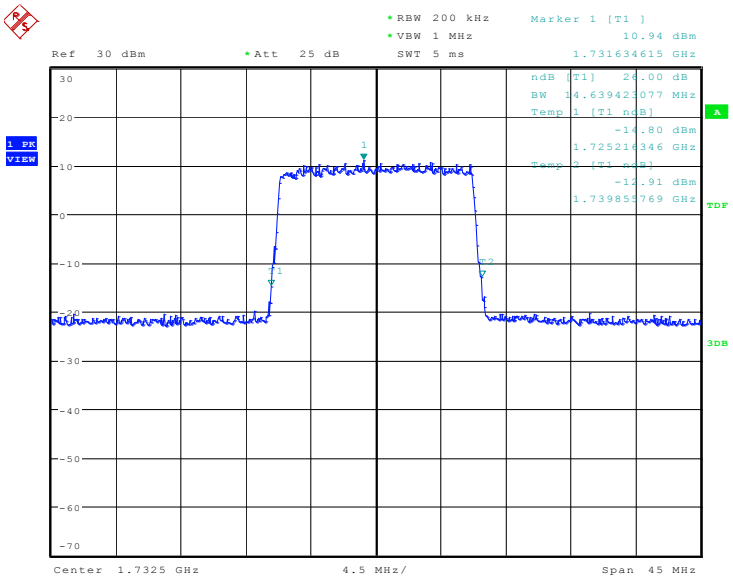
Date: 2.JAN.2020 10:16:11

LTE band 4, 15MHz Bandwidth, 16QAM (-26dBc BW)



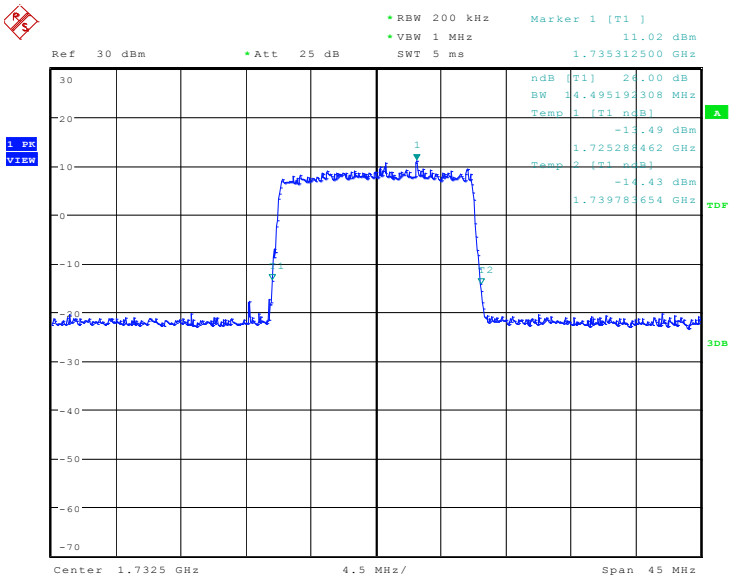
Date: 2.JAN.2020 10:17:36

LTE band 4, 15MHz Bandwidth, 64QAM (-26dBc BW)



Date: 7.JAN.2020 16:34:41

LTE band 4, 15MHz Bandwidth,256QAM (-26dBc BW)

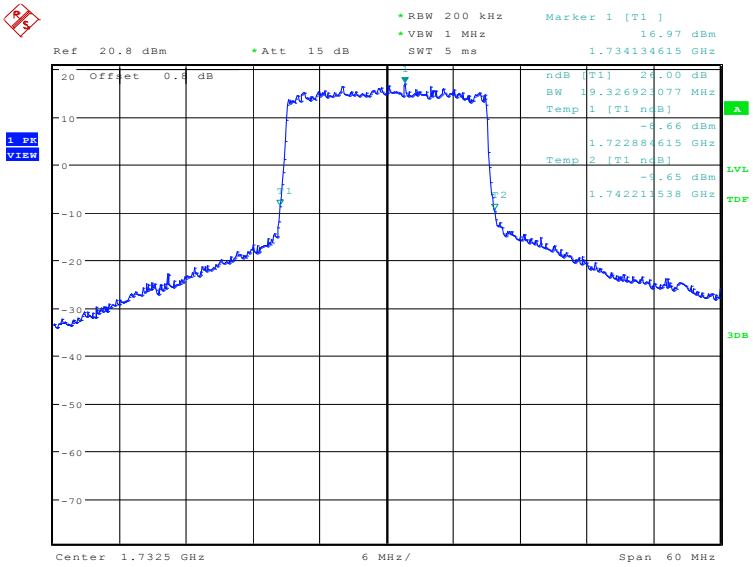


Date: 20.JAN.2020 10:27:17

LTE band 4, 20MHz (-26dBc)

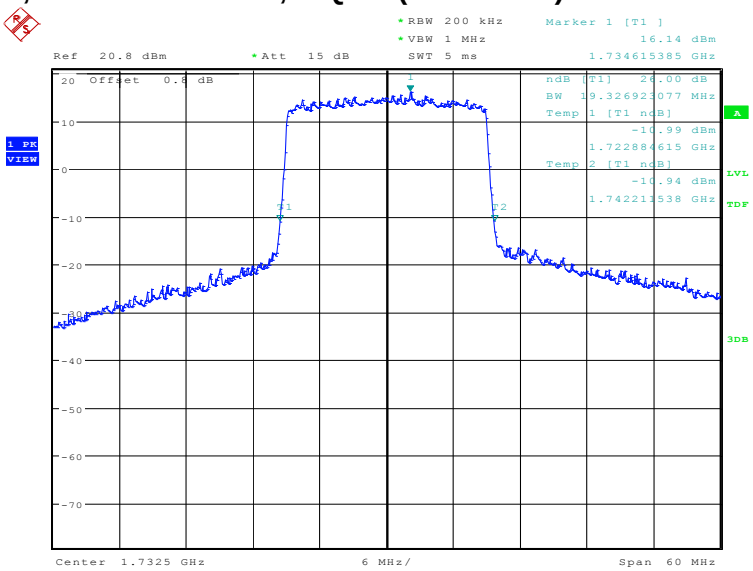
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
1732.5	QPSK	16QAM	64QAM	256QAM
	19326.92	19326.92	19326.92	19230.77

LTE band 4, 20MHz Bandwidth, QPSK (-26dBc BW)



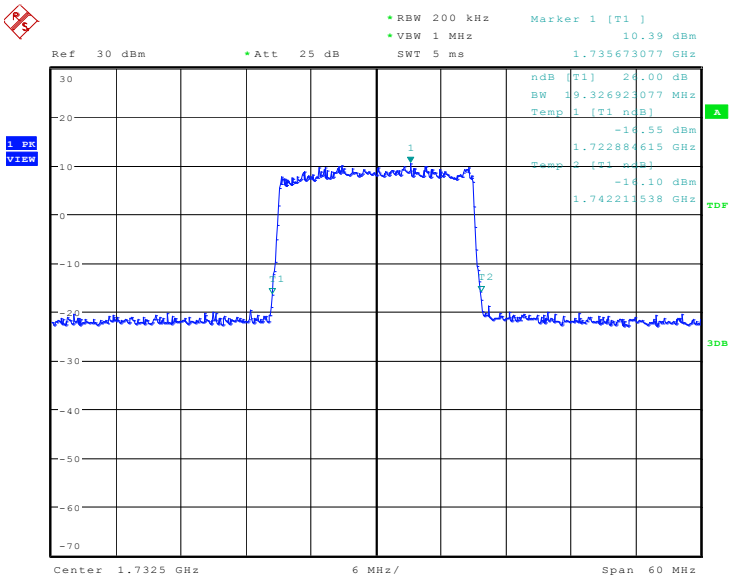
Date: 2.JAN.2020 10:19:03

LTE band 4, 20MHz Bandwidth, 16QAM (-26dBc BW)



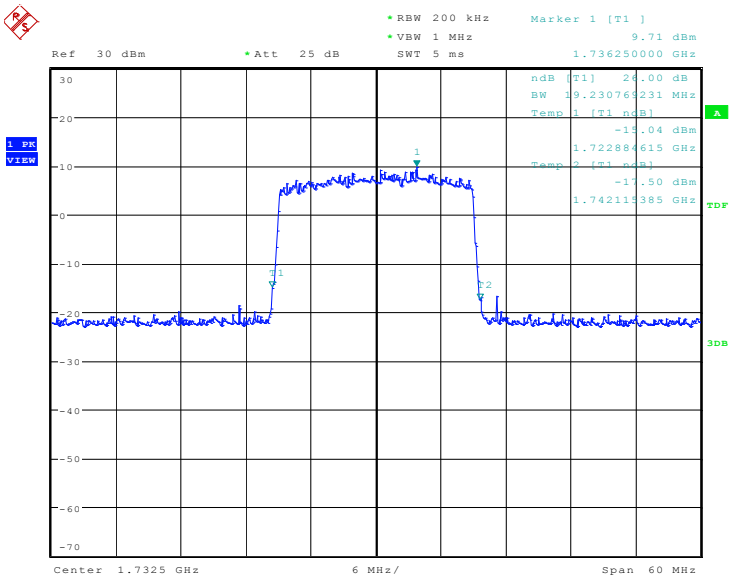
Date: 2.JAN.2020 10:20:27

LTE band 4, 20MHz Bandwidth, 64QAM (-26dBc BW)



Date: 7.JAN.2020 16:35:39

LTE band 4, 20MHz Bandwidth,256QAM (-26dBc BW)

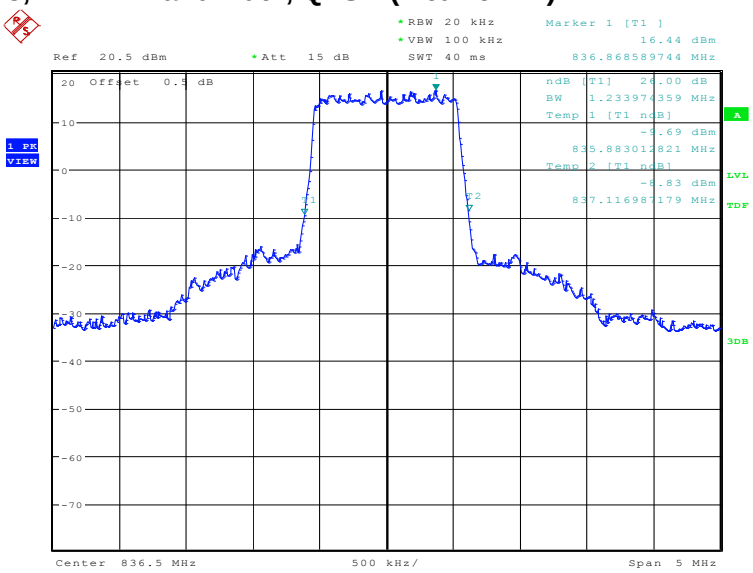


Date: 20.JAN.2020 10:28:55

LTE band 5, 1.4MHz (-26dBc)

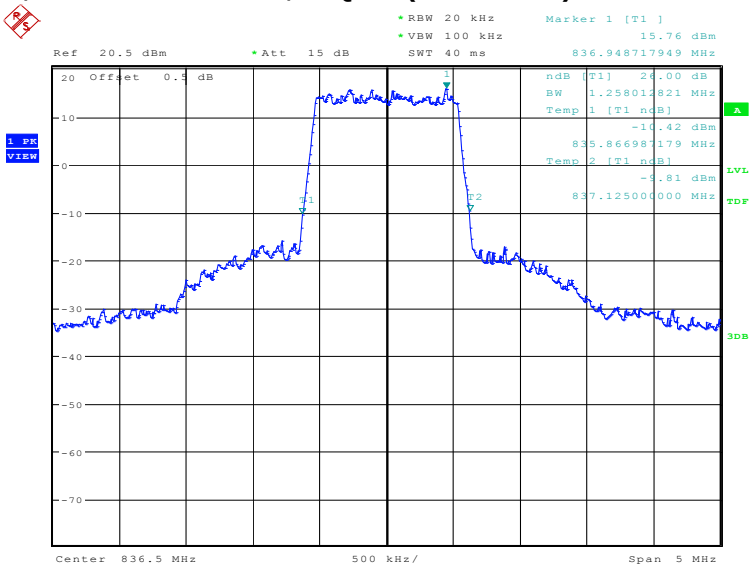
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
836.5	QPSK	16QAM	64QAM	256QAM
	1233.97	1258.01	1233.97	1217.95

LTE band 5, 1.4MHz Bandwidth, QPSK (-26dBc BW)



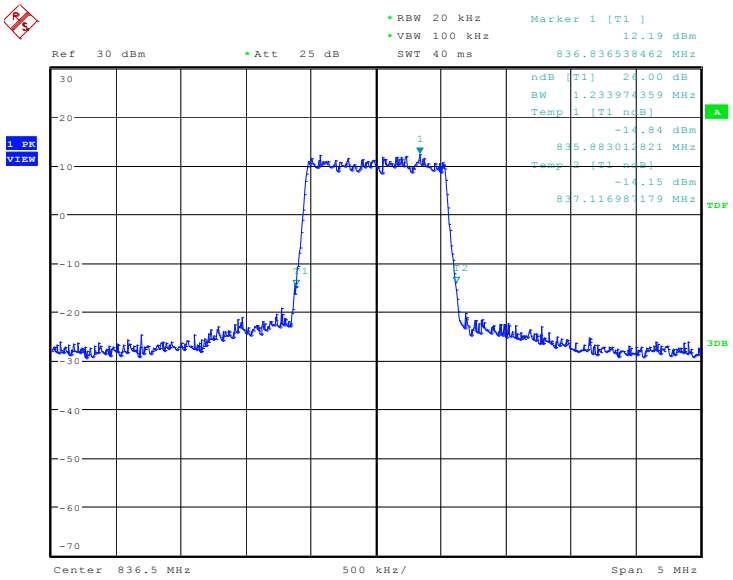
Date: 2.JAN.2020 11:17:25

LTE band 5, 1.4MHz Bandwidth, 16QAM (-26dBc BW)



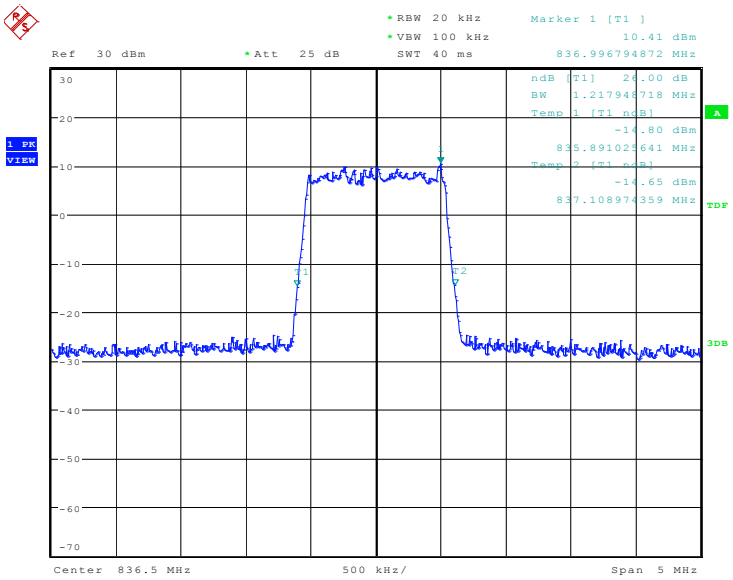
Date: 2.JAN.2020 11:18:49

LTE band 5, 1.4MHz Bandwidth, 64QAM (-26dBc BW)



Date: 7.JAN.2020 16:43:42

LTE band 5, 1.4MHz Bandwidth,256QAM (-26dBc BW)

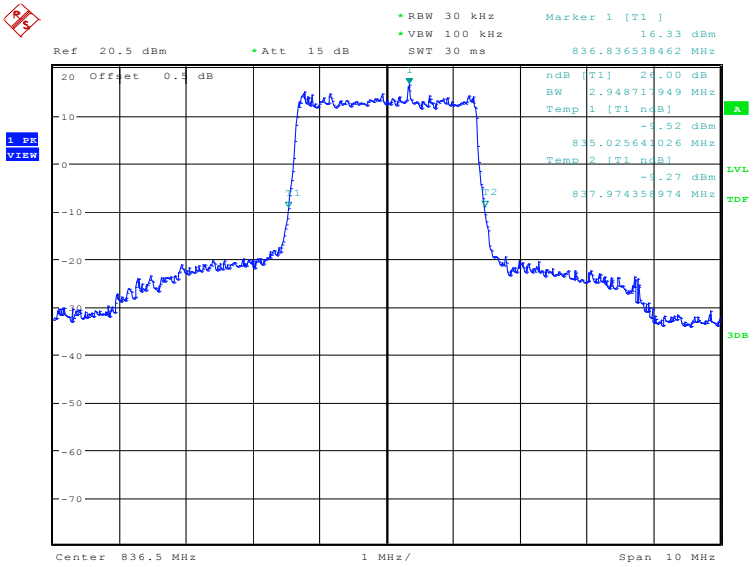


Date: 20.JAN.2020 10:33:11

LTE band 5, 3MHz (-26dBc)

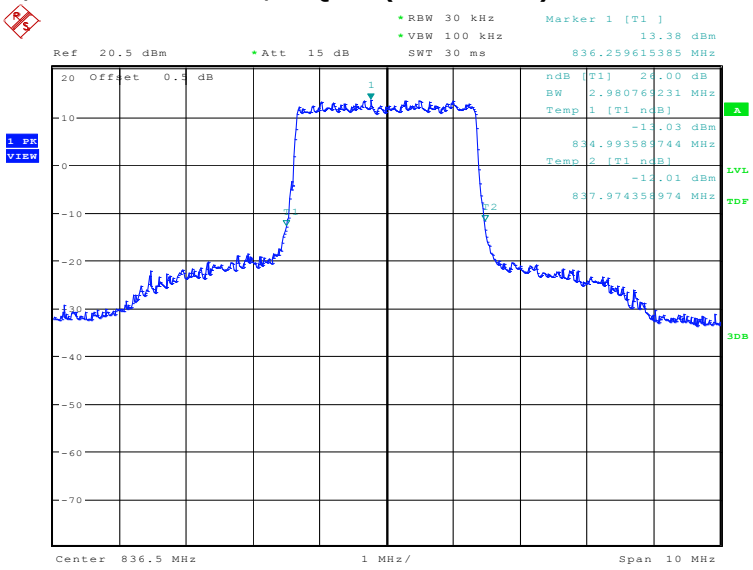
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
836.5	QPSK	16QAM	64QAM	256QAM
	2948.72	2980.77	2948.72	2948.72

LTE band 5, 3MHz Bandwidth, QPSK (-26dBc BW)



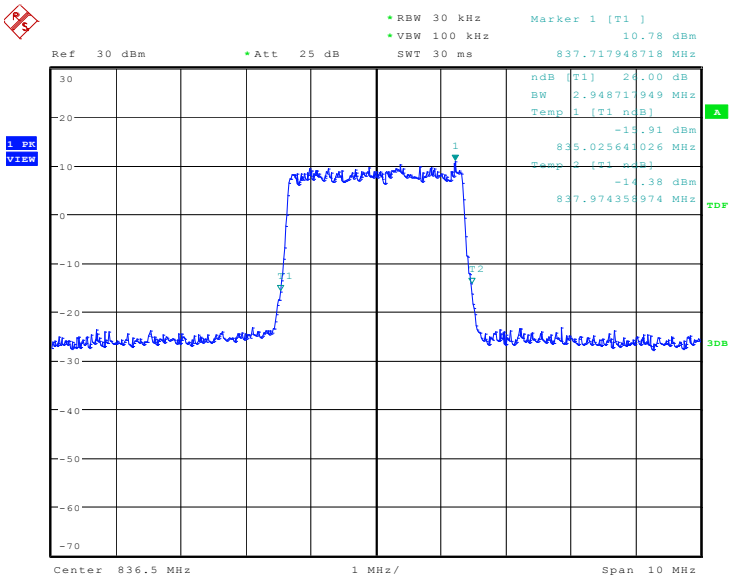
Date: 2.JAN.2020 11:20:16

LTE band 5, 3MHz Bandwidth, 16QAM (-26dBc BW)



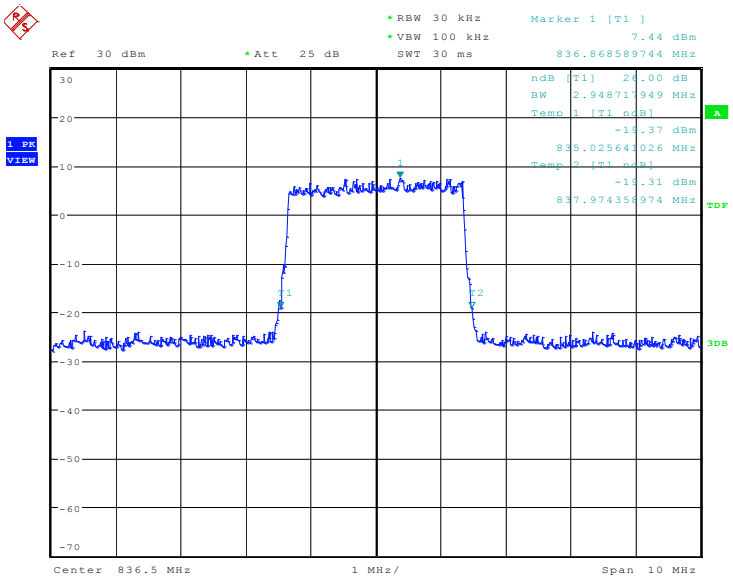
Date: 2.JAN.2020 11:21:40

LTE band 5, 3MHz Bandwidth, 64QAM (-26dBc BW)



Date: 7.JAN.2020 16:44:37

LTE band 5, 3MHz Bandwidth,256QAM (-26dBc BW)

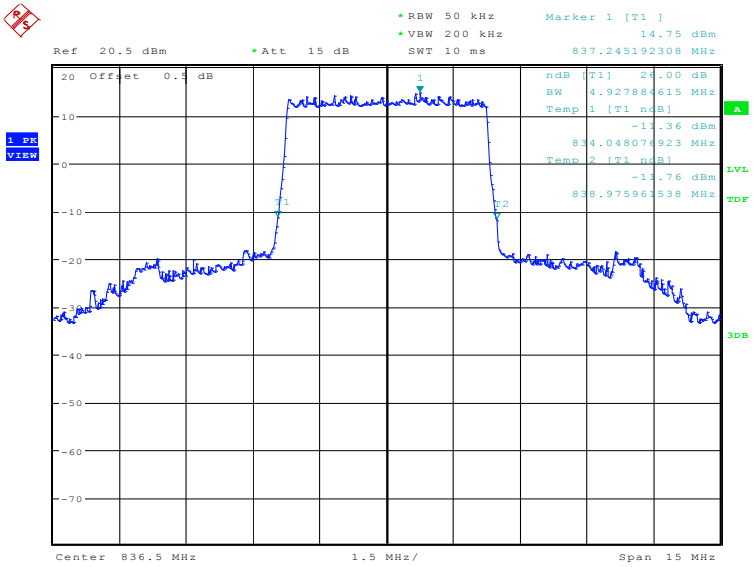


Date: 20.JAN.2020 10:34:45

LTE band 5, 5MHz (-26dBc)

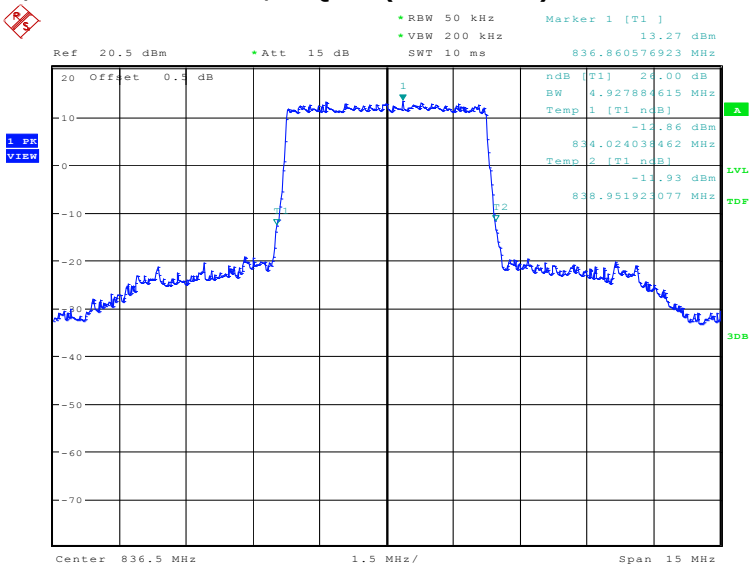
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
836.5	QPSK	16QAM	64QAM	256QAM
	4927.88	4927.88	4879.81	4855.77

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



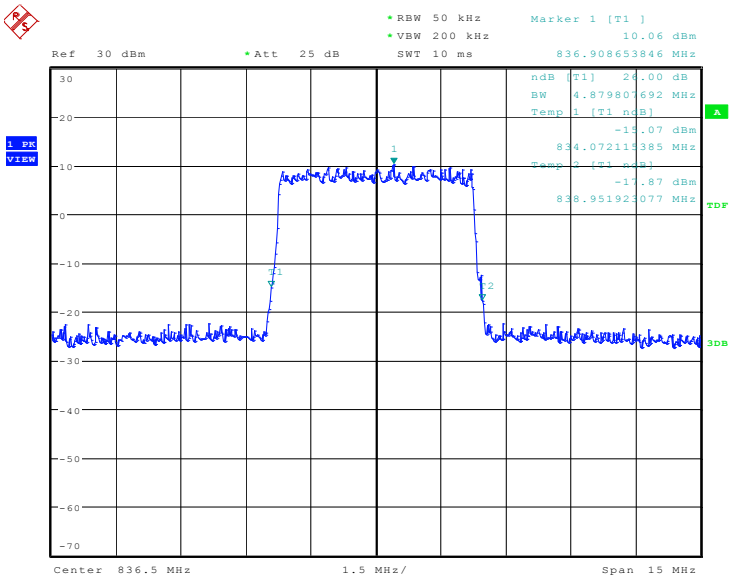
Date: 2.JAN.2020 11:23:07

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



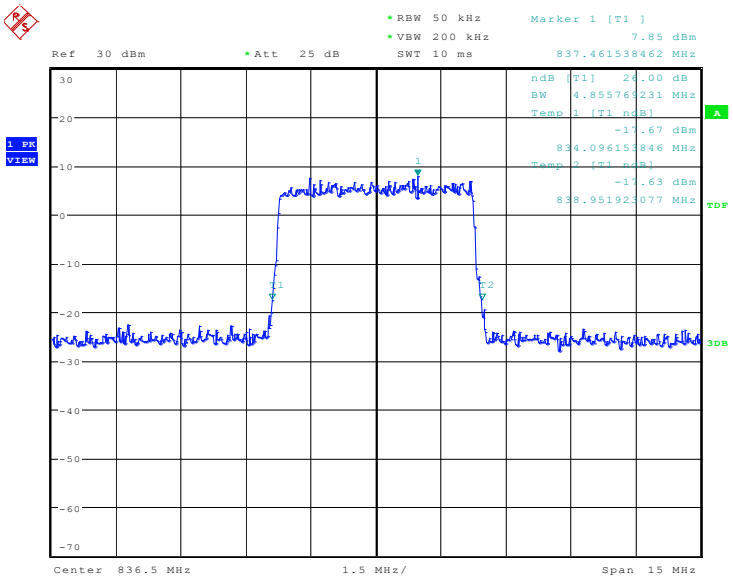
Date: 2.JAN.2020 11:24:32

LTE band 5, 5MHz Bandwidth,64QAM (-26dBc BW)



Date: 7.JAN.2020 16:45:36

LTE band 5, 5MHz Bandwidth,256QAM (-26dBc BW)

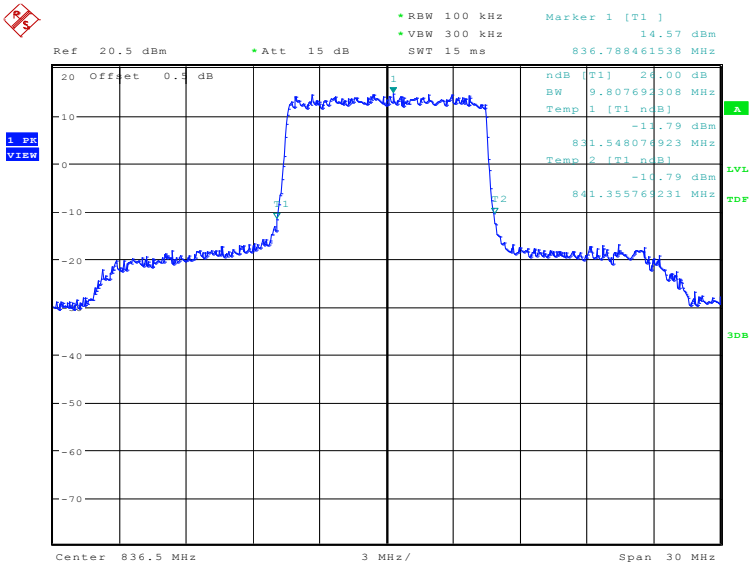


Date: 20.JAN.2020 10:36:04

LTE band 5, 10MHz (-26dBc)

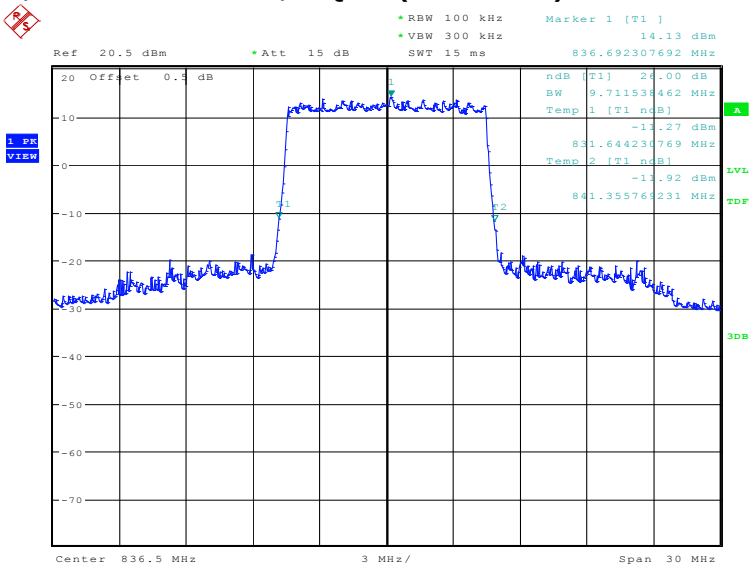
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
836.5	QPSK	16QAM	64QAM	256QAM
	9807.69	9711.54	9711.54	9567.31

LTE band 5, 10MHz Bandwidth, QPSK (-26dBc BW)



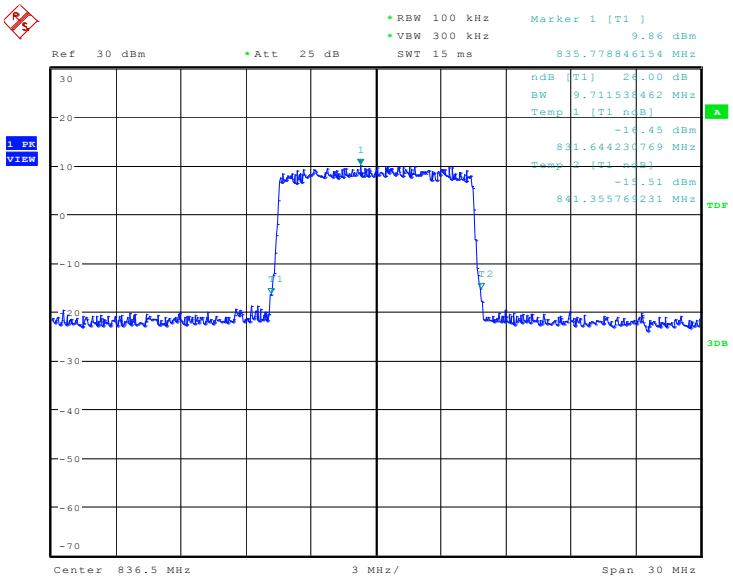
Date: 2.JAN.2020 11:25:58

LTE band 5, 10MHz Bandwidth, 16QAM (-26dBc BW)



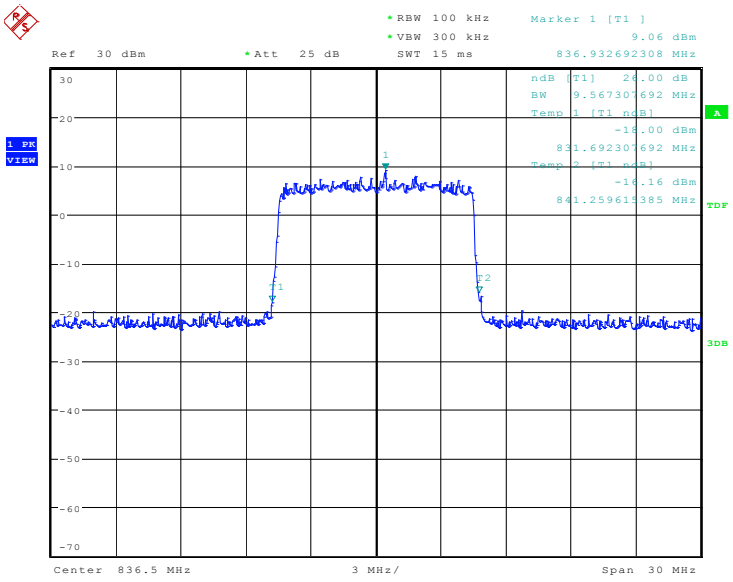
Date: 2.JAN.2020 11:27:22

LTE band 5, 10MHz Bandwidth, 64QAM (-26dBc BW)



Date: 7.JAN.2020 16:46:32

LTE band 5, 10MHz Bandwidth,256QAM (-26dBc BW)

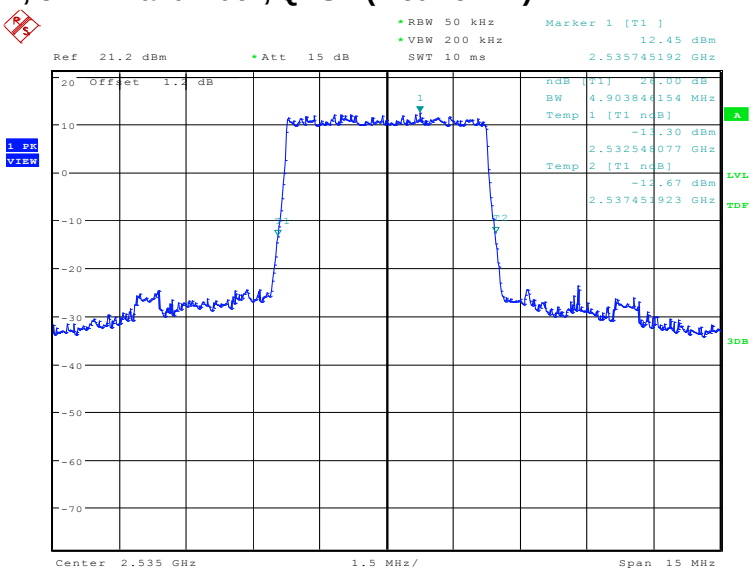


Date: 20.JAN.2020 10:37:34

LTE band 7, 5MHz (-26dBc)

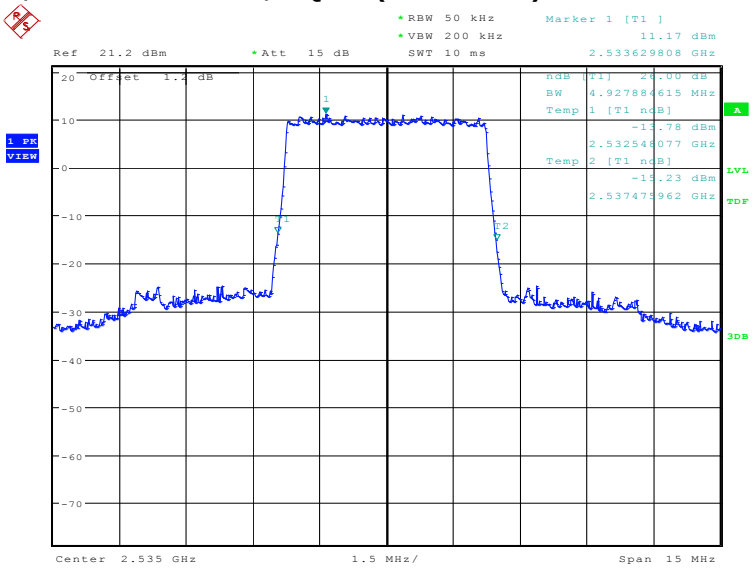
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
2535.0	QPSK	16QAM	64QAM	256QAM
	4903.85	4927.88	4903.85	4855.77

LTE band 7, 5MHz Bandwidth, QPSK (-26dBc BW)



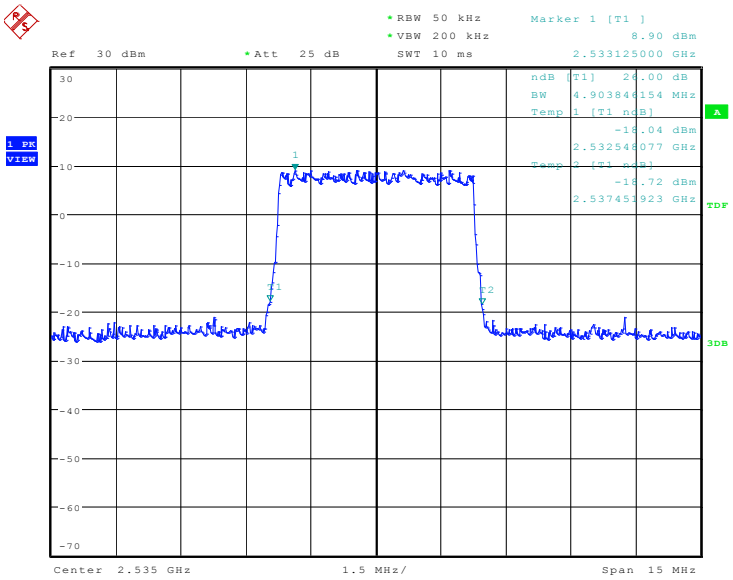
Date: 2.JAN.2020 12:27:59

LTE band 7, 5MHz Bandwidth,16QAM (-26dBc BW)



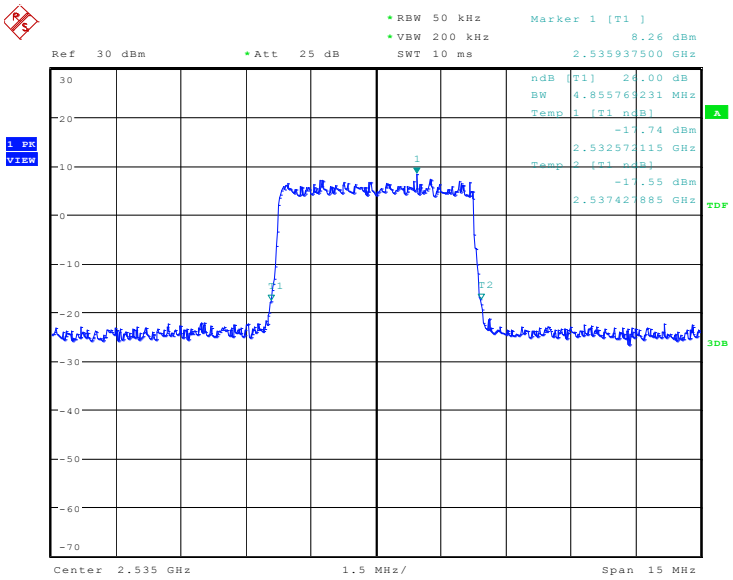
Date: 2.JAN.2020 12:29:24

LTE band 7, 5MHz Bandwidth,64QAM (-26dBc BW)



Date: 7.JAN.2020 16:53:26

LTE band 7, 5MHz Bandwidth,256QAM (-26dBc BW)

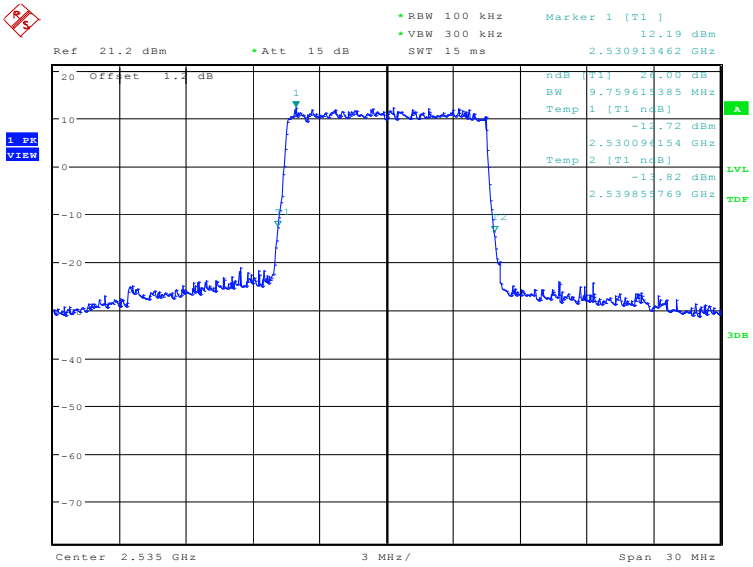


Date: 20.JAN.2020 10:41:26

LTE band 7, 10MHz (-26dBc)

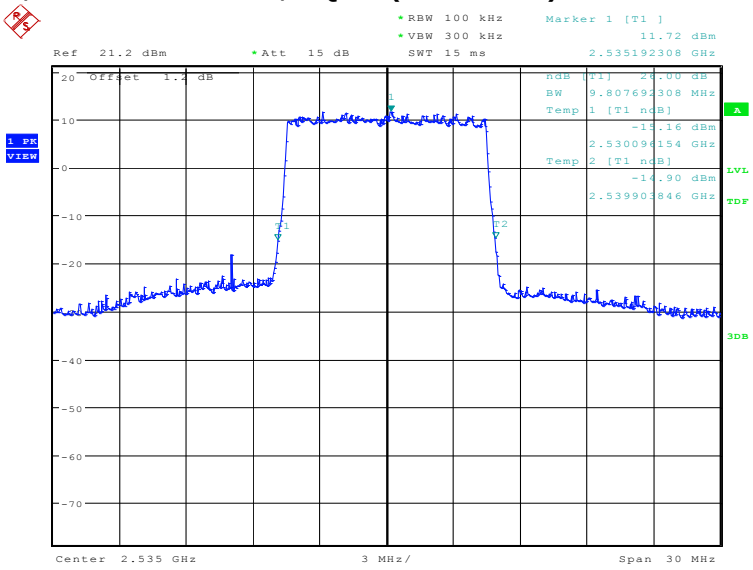
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
2535.0	QPSK	16QAM	64QAM	256QAM
	9759.62	9807.69	9663.46	9711.54

LTE band 7, 10MHz Bandwidth, QPSK (-26dBc BW)



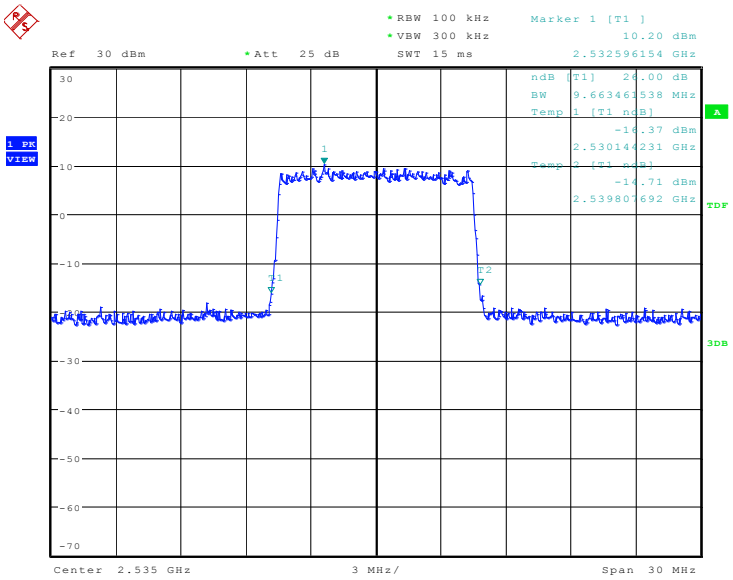
Date: 2.JAN.2020 12:30:51

LTE band 7, 10MHz Bandwidth,16QAM (-26dBc BW)



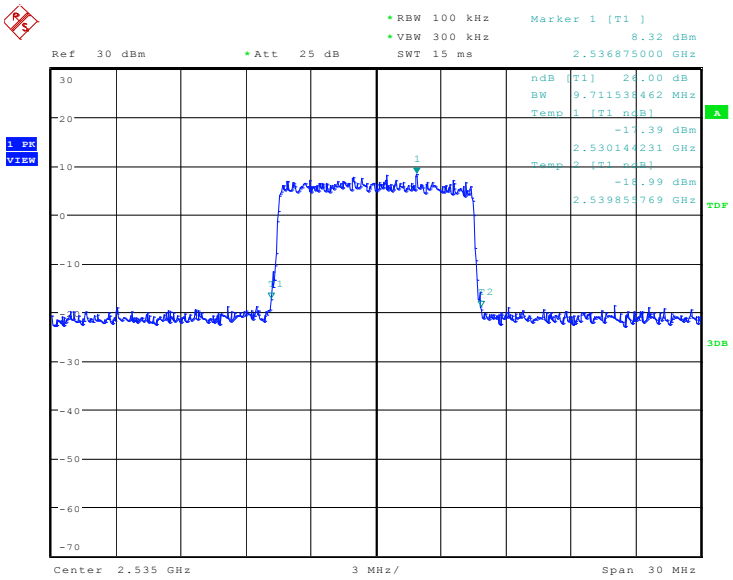
Date: 2.JAN.2020 12:32:15

LTE band 7, 10MHz Bandwidth, 64QAM (-26dBc BW)



Date: 7.JAN.2020 16:54:22

LTE band 7, 10MHz Bandwidth,256QAM (-26dBc BW)

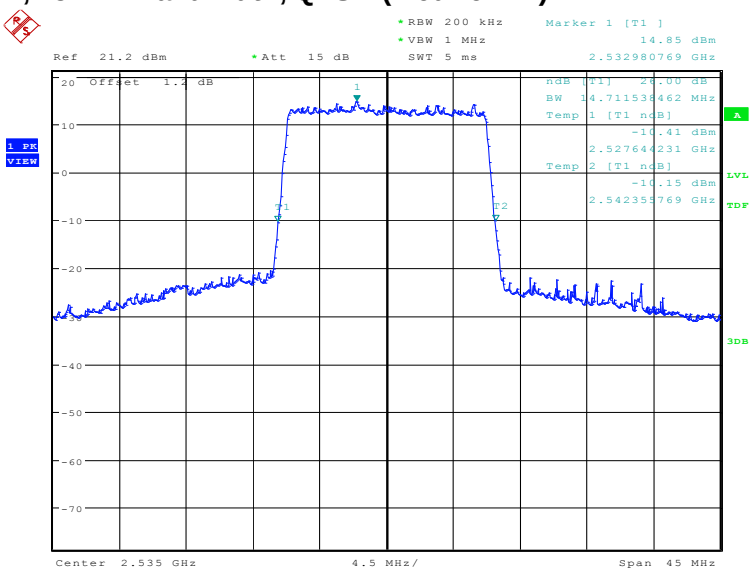


Date: 20.JAN.2020 10:42:46

LTE band 7, 15MHz (-26dBc)

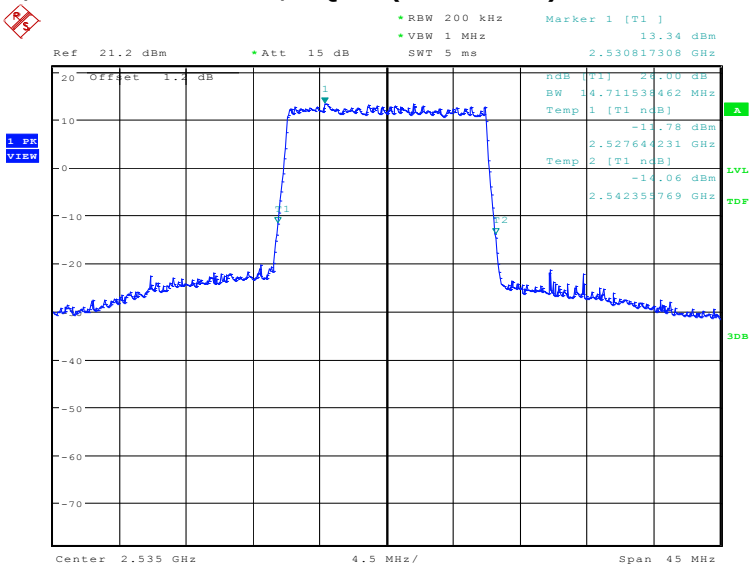
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
2535.0	QPSK	16QAM	64QAM	256QAM
	14711.54	14711.54	14783.65	14639.42

LTE band 7, 15MHz Bandwidth, QPSK (-26dBc BW)



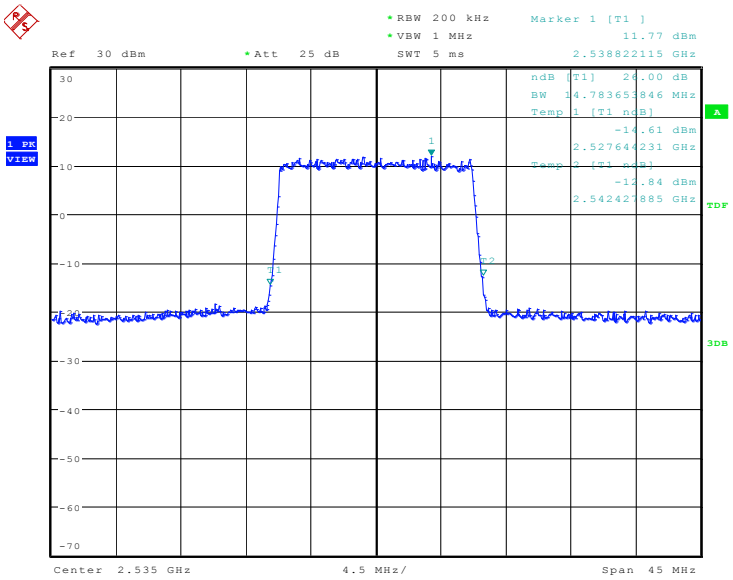
Date: 2.JAN.2020 12:33:42

LTE band 7, 15MHz Bandwidth,16QAM (-26dBc BW)



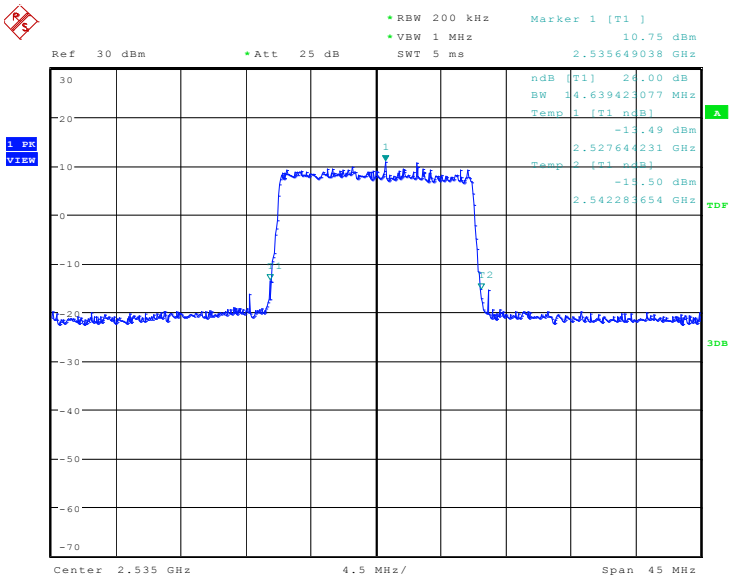
Date: 2.JAN.2020 12:35:07

LTE band 7, 15MHz Bandwidth, 64QAM (-26dBc BW)



Date: 7.JAN.2020 16:55:20

LTE band 7, 15MHz Bandwidth,256QAM (-26dBc BW)

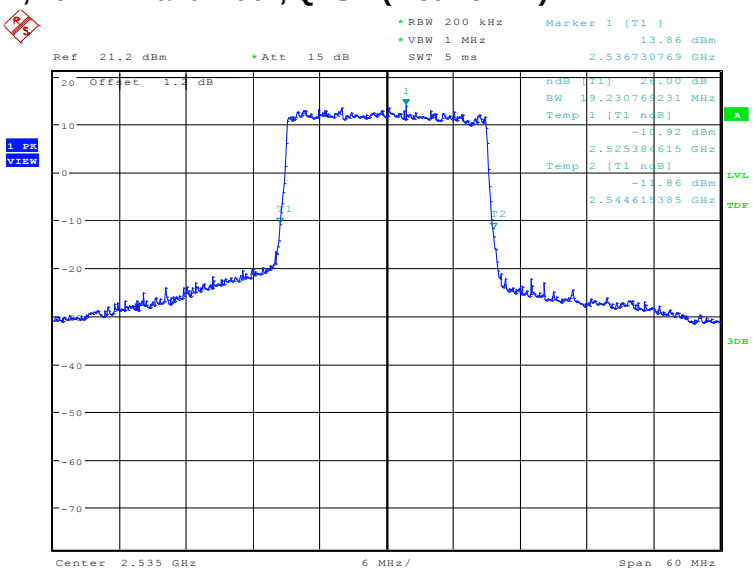


Date: 20.JAN.2020 10:44:02

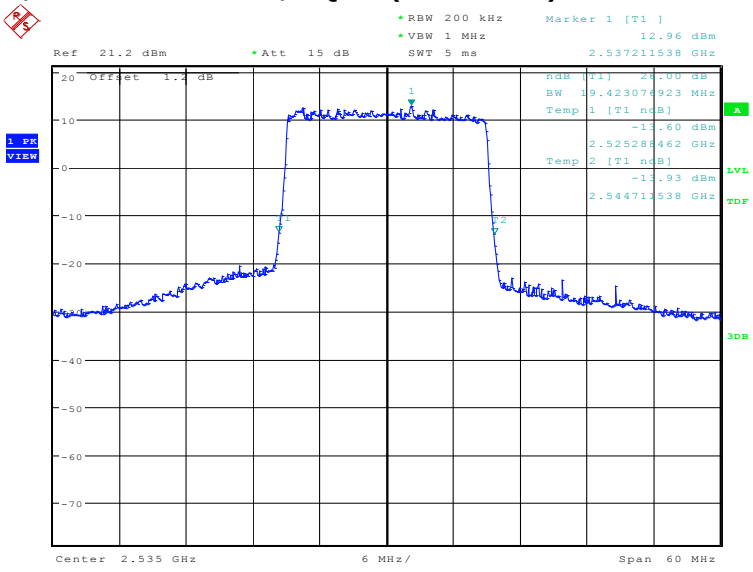
LTE band 7, 20MHz (-26dBc)

Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
2535.0	QPSK	16QAM	64QAM	256QAM
	19230.77	19423.08	19423.08	19326.92

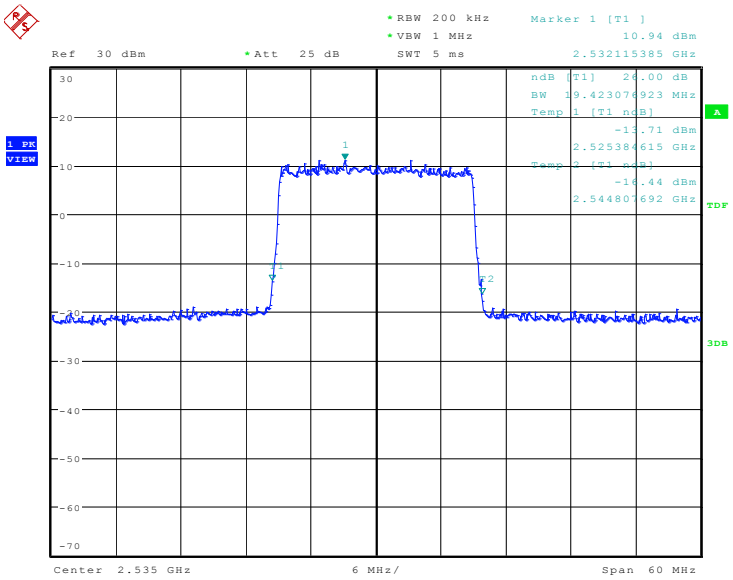
LTE band 7, 20MHz Bandwidth, QPSK (-26dBc BW)



LTE band 7, 20MHz Bandwidth,16QAM (-26dBc BW)

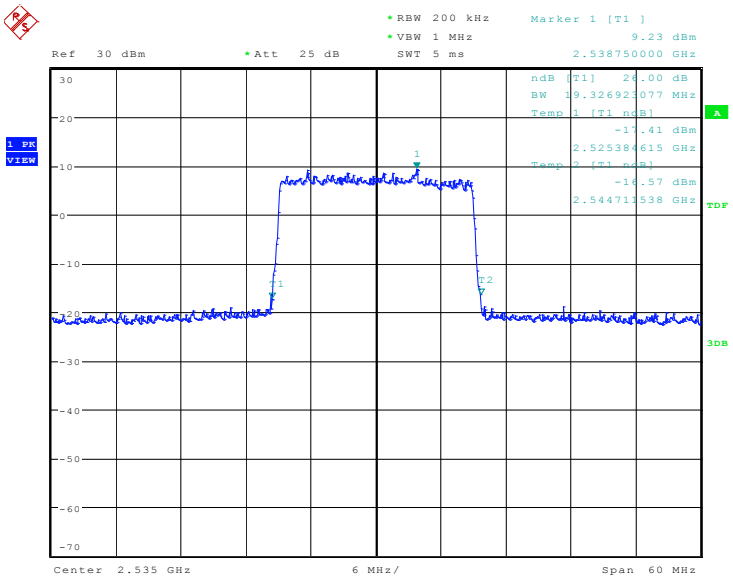


LTE band 7, 20MHz Bandwidth, 64QAM (-26dBc BW)



Date: 7.JAN.2020 16:56:18

LTE band 7, 20MHz Bandwidth,256QAM (-26dBc BW)

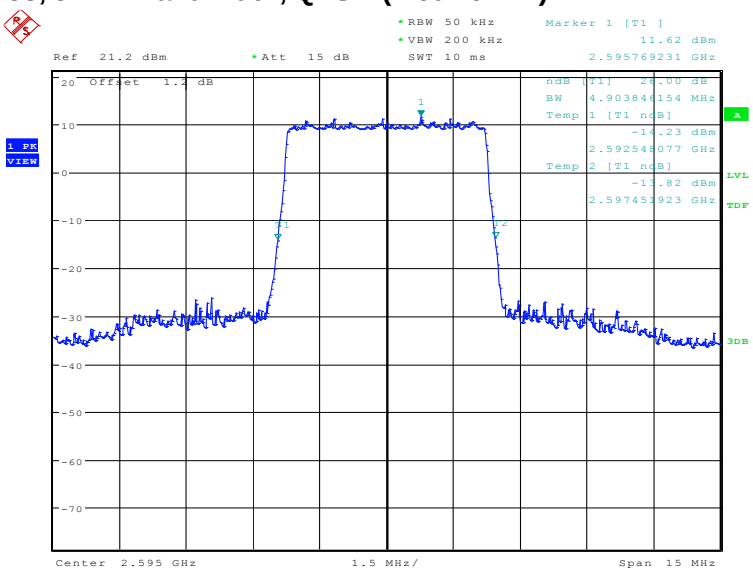


Date: 20.JAN.2020 10:45:32

LTE band 38, 5MHz (-26dBc)

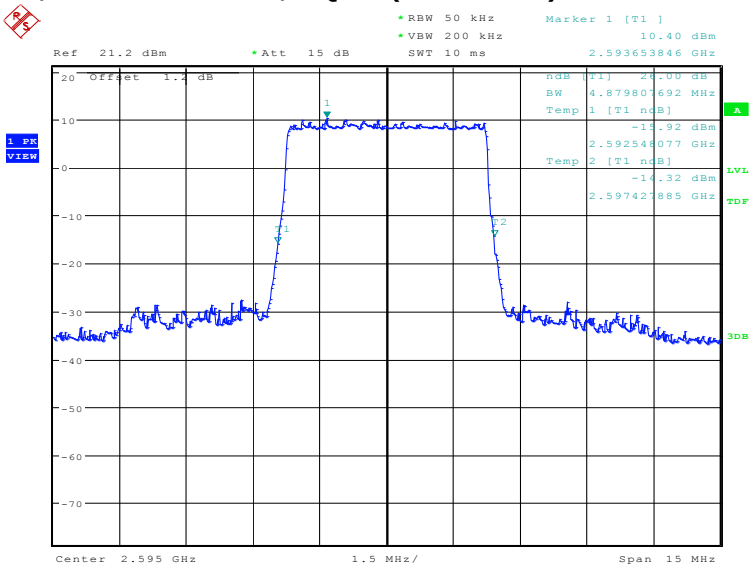
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
2595.0	QPSK	16QAM	64QAM	256QAM
	4903.85	4879.81	4879.81	4855.77

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



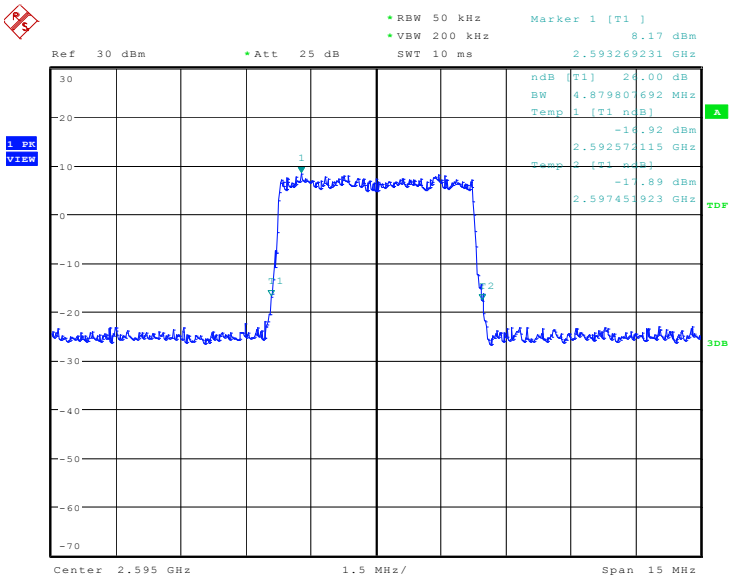
Date: 2.JAN.2020 13:42:21

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



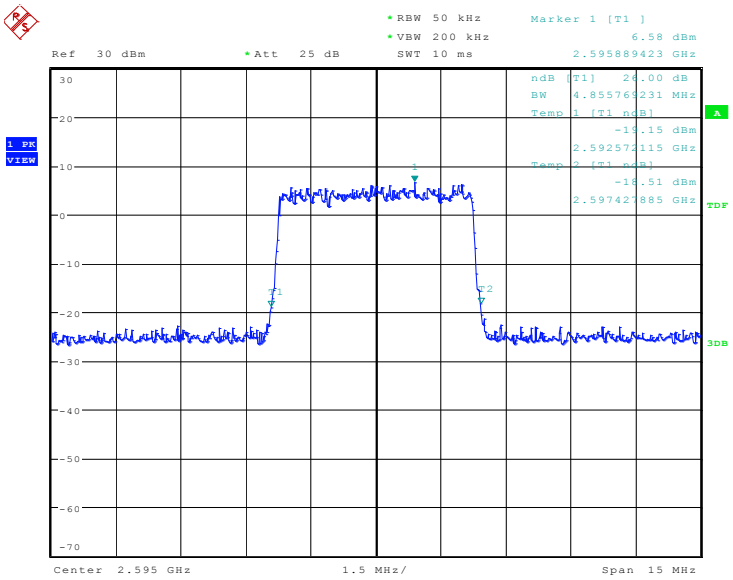
Date: 2.JAN.2020 13:43:45

LTE band 38, 5MHz Bandwidth,64QAM (-26dBc BW)



Date: 7.JAN.2020 17:00:18

LTE band 38, 5MHz Bandwidth,256QAM (-26dBc BW)

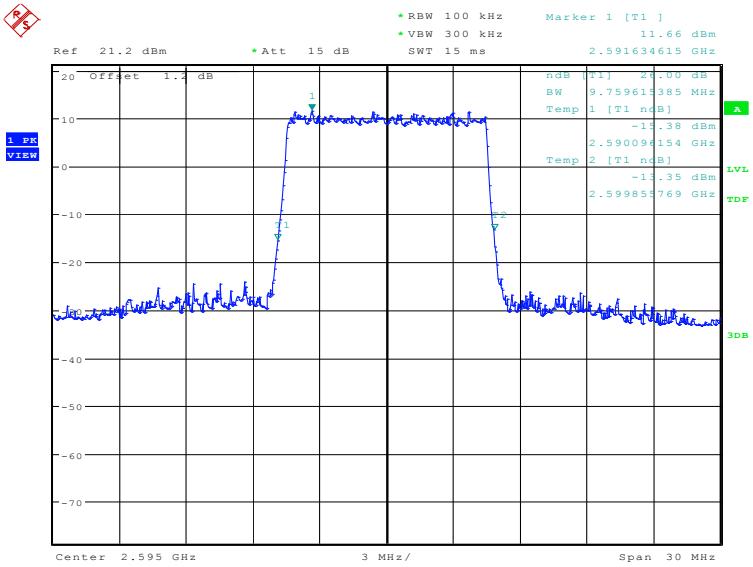


Date: 20.JAN.2020 10:49:10

LTE band 38, 10MHz (-26dBc)

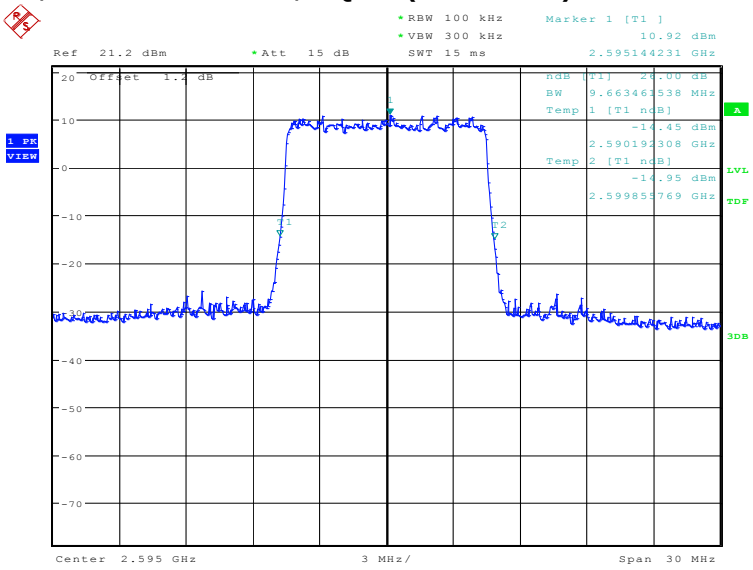
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
2595.0	QPSK	16QAM	64QAM	256QAM
	9759.62	9663.46	9663.46	9663.46

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



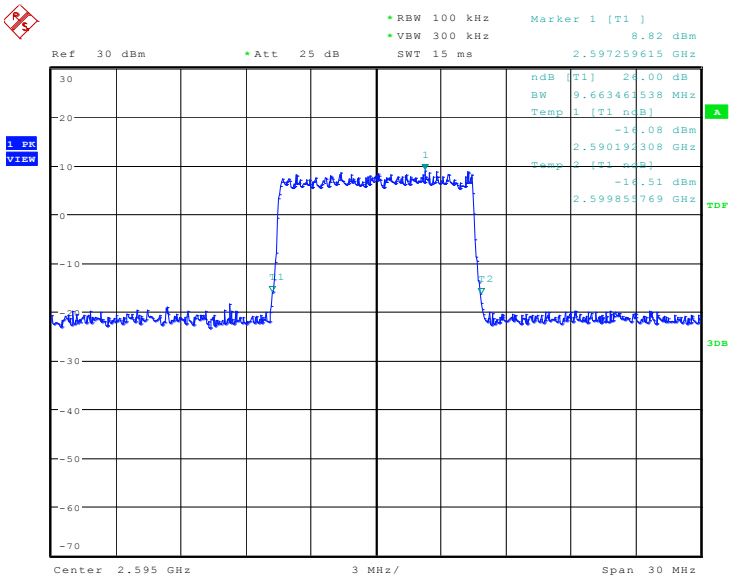
Date: 2.JAN.2020 13:45:12

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



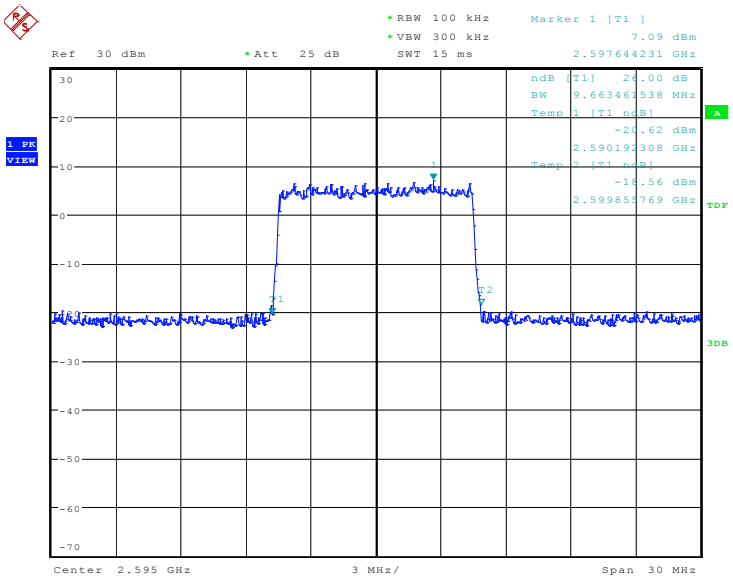
Date: 2.JAN.2020 13:46:36

LTE band 38, 10MHz Bandwidth,64QAM (-26dBc BW)



Date: 7.JAN.2020 17:01:14

LTE band 38, 10MHz Bandwidth,256QAM (-26dBc BW)

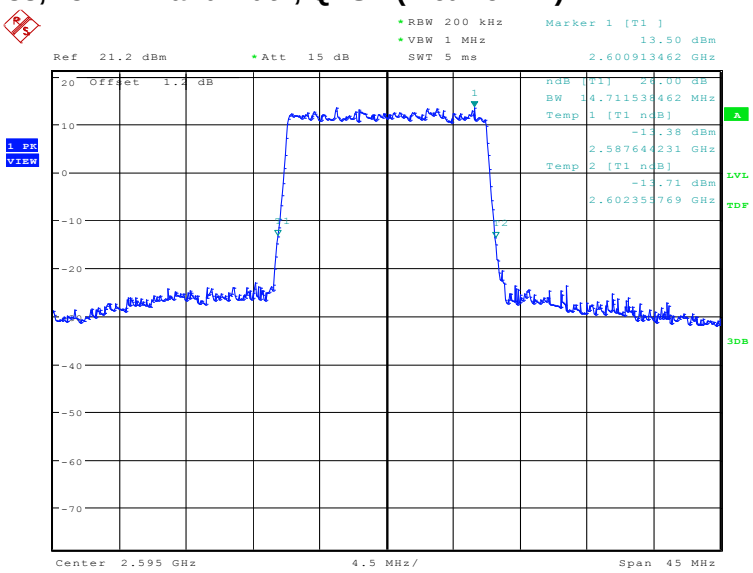


Date: 20.JAN.2020 10:51:08

LTE band 38, 15MHz (-26dBc)

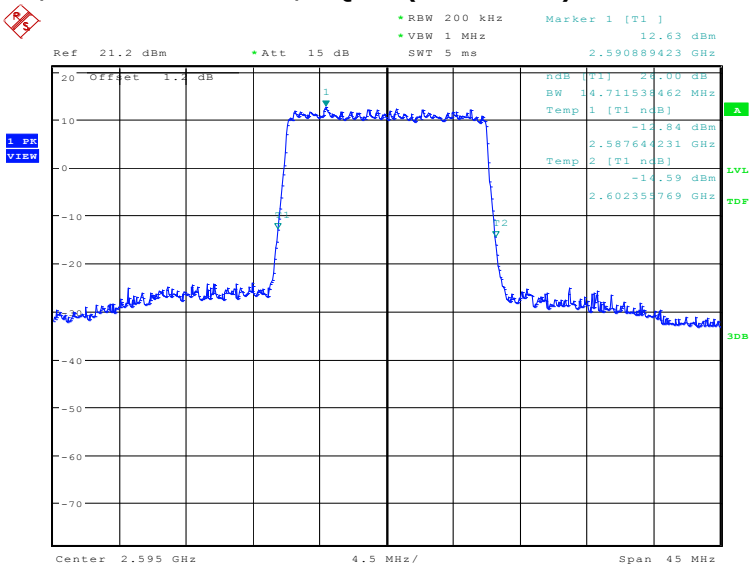
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
2595.0	QPSK	16QAM	64QAM	256QAM
	14711.54	14711.54	14639.42	14567.31

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



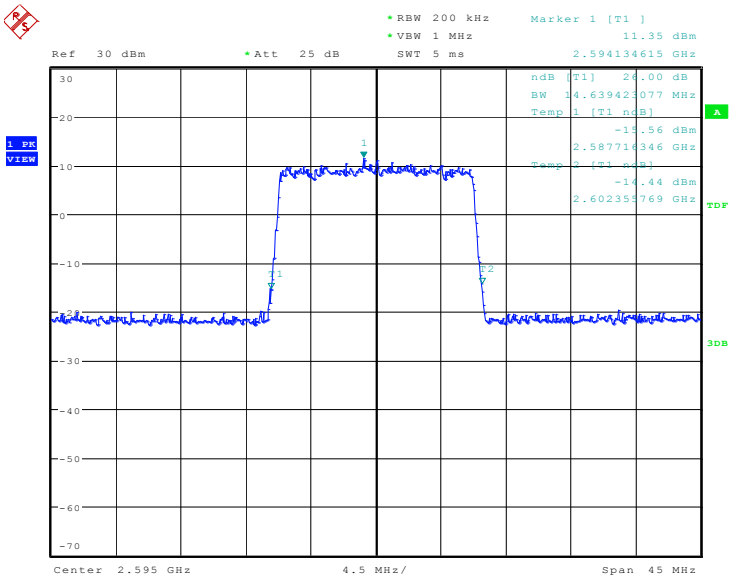
Date: 2.JAN.2020 13:48:03

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



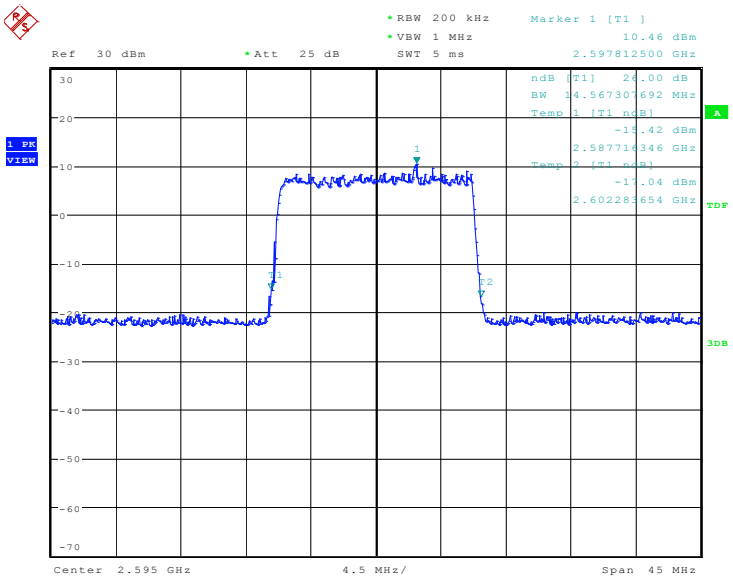
Date: 2.JAN.2020 13:49:27

LTE band 38, 15MHz Bandwidth,64QAM (-26dBc BW)



Date: 7.JAN.2020 17:02:15

LTE band 38, 15MHz Bandwidth,256QAM (-26dBc BW)

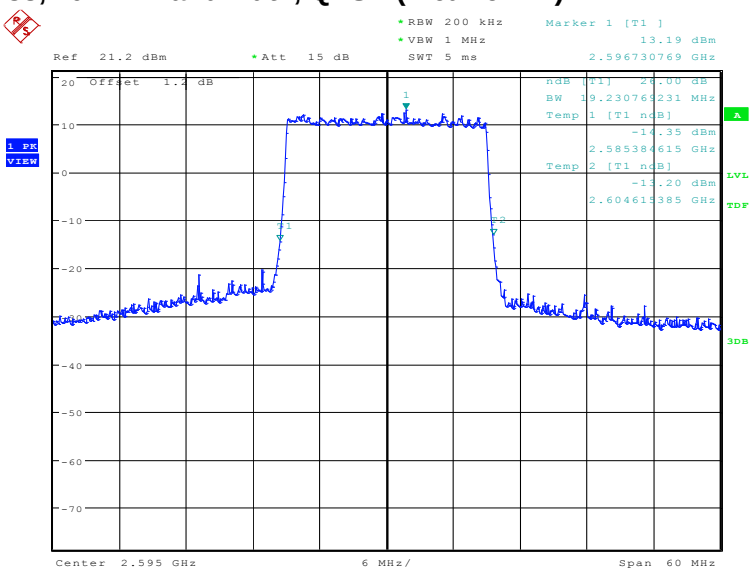


Date: 20.JAN.2020 10:52:35

LTE band 38, 20MHz (-26dBc)

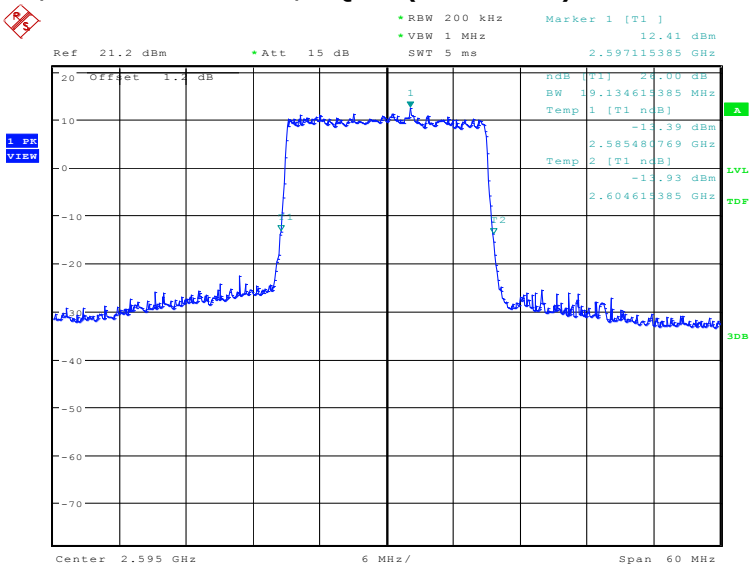
Frequency (MHz)	Occupied Bandwidth (-26dBc) (kHz)			
2595.0	QPSK	16QAM	64QAM	256QAM
	19230.77	19134.62	19134.62	19134.62

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



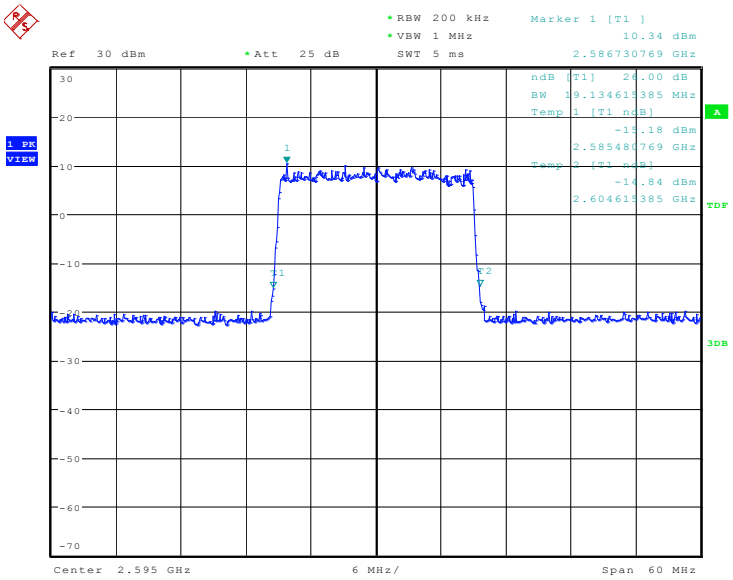
Date: 2.JAN.2020 13:50:54

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



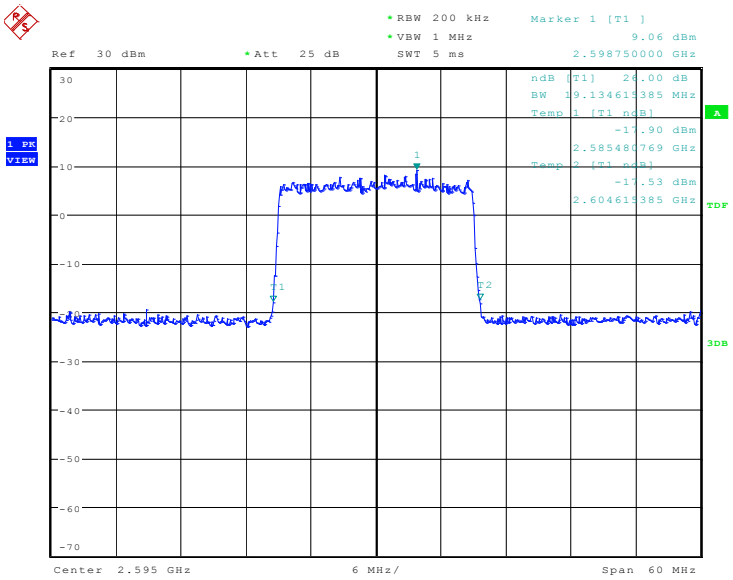
Date: 2.JAN.2020 13:52:19

LTE band 38, 20MHz Bandwidth,64QAM (-26dBc BW)



Date: 7.JAN.2020 17:03:14

LTE band 38, 20MHz Bandwidth,256QAM (-26dBc BW)



Date: 20.JAN.2020 10:53:55

A.6 BAND EDGE COMPLIANCE

A.6.1 Measurement limit

Part 22.917, Part 24.238 and Part 27.53(h) 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.

According to KDB 971168, 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.

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.

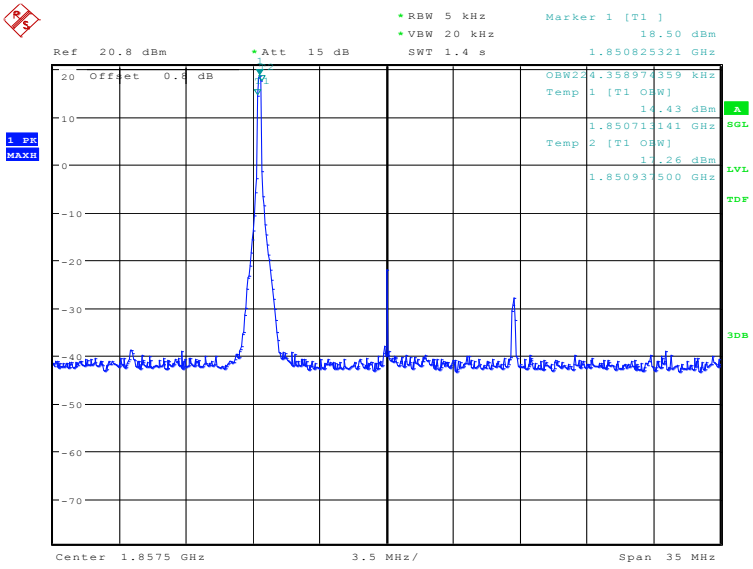
Part 27.53(m)(4) specifies for mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, 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 that 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.

A.6.2 Measurement result

Only the worst case result is given below

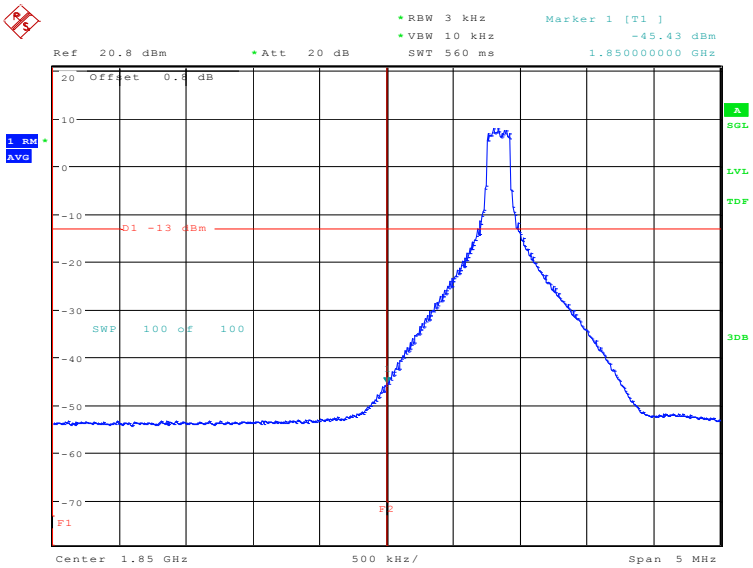
LTE band 2

OBW: 1RB-low_offset



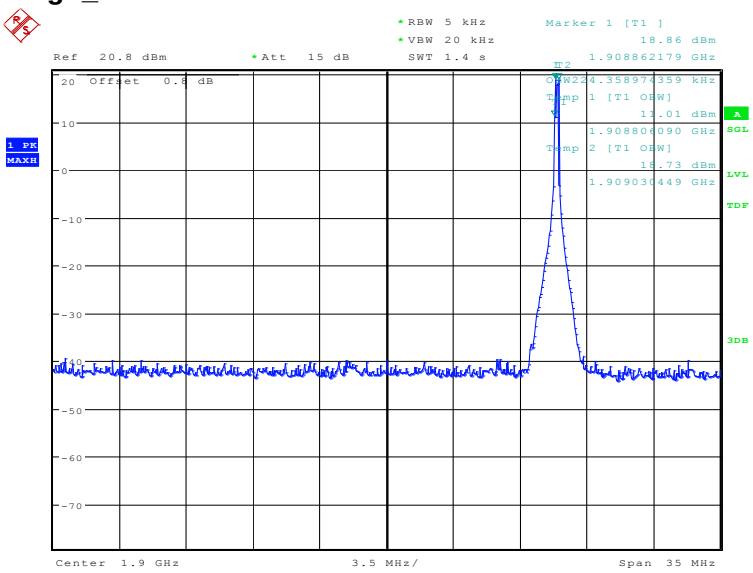
Date: 9.JAN.2020 10:55:03

LOW BAND EDGE BLOCK-1RB-low_offset



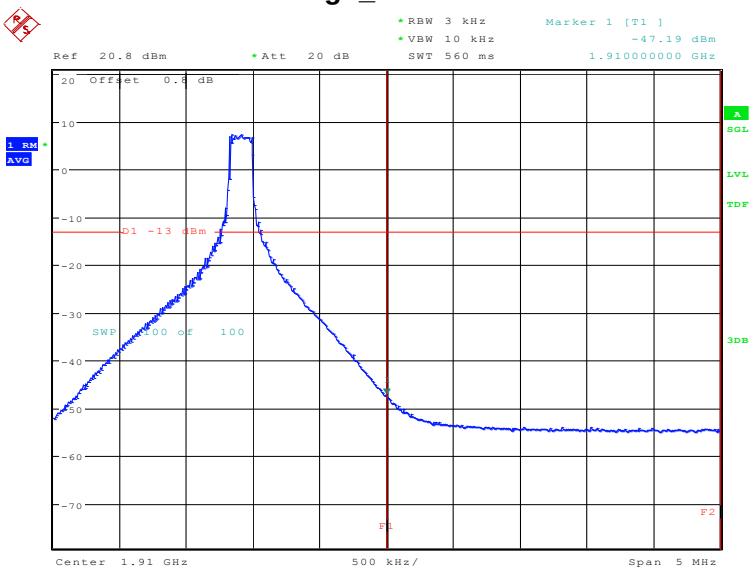
Date: 9.JAN.2020 10:56:41

OBW: 1RB-high_offset



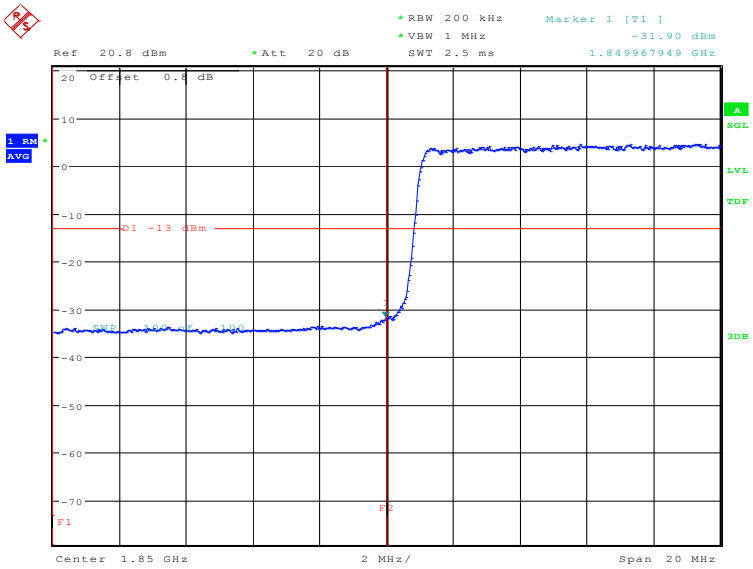
Date: 9.JAN.2020 10:58:05

HIGH BAND EDGE BLOCK-1RB-high_offset



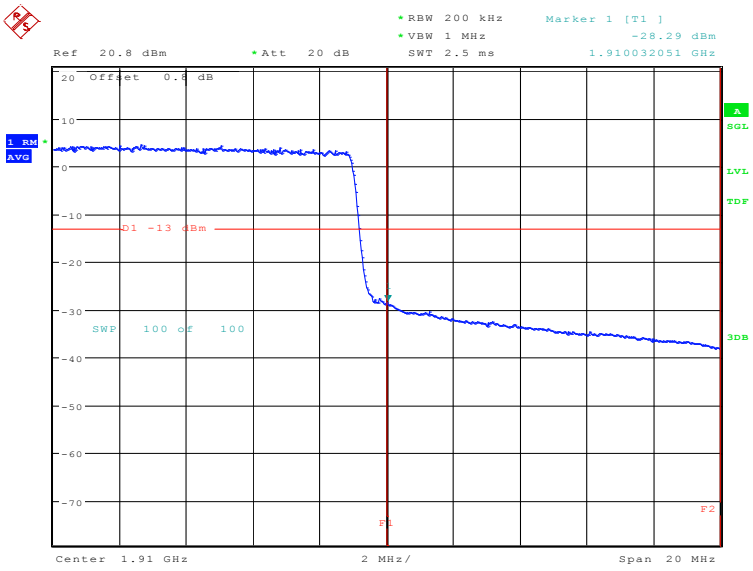
Date: 9.JAN.2020 10:59:43

LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 9.JAN.2020 10:38:22

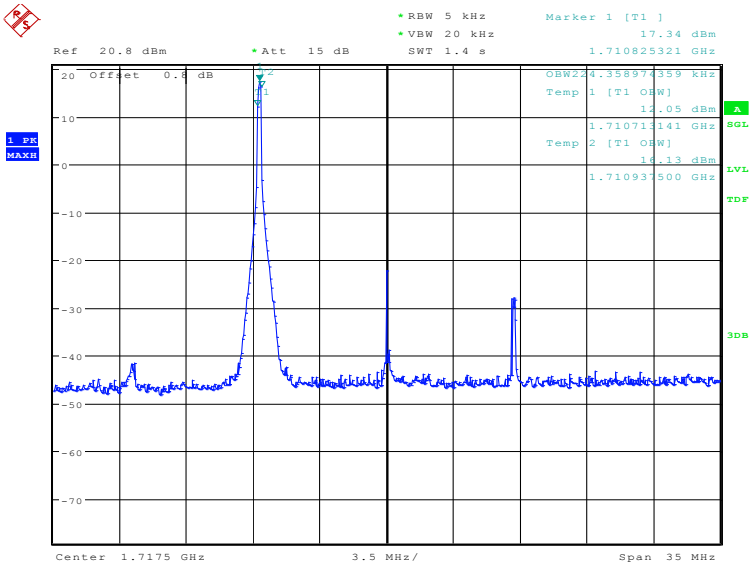
HIGH BAND EDGE BLOCK-20MHz-100%RB



Date: 9.JAN.2020 10:40:15

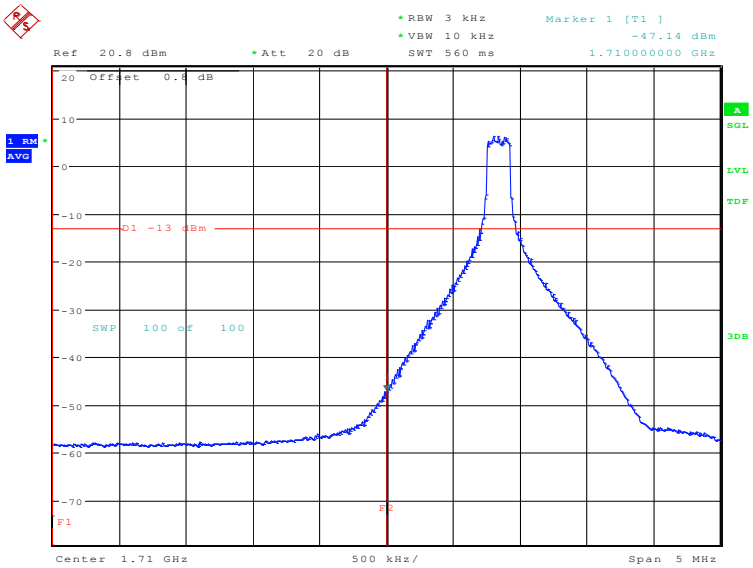
LTE band 4

OBW: 1RB-low_offset



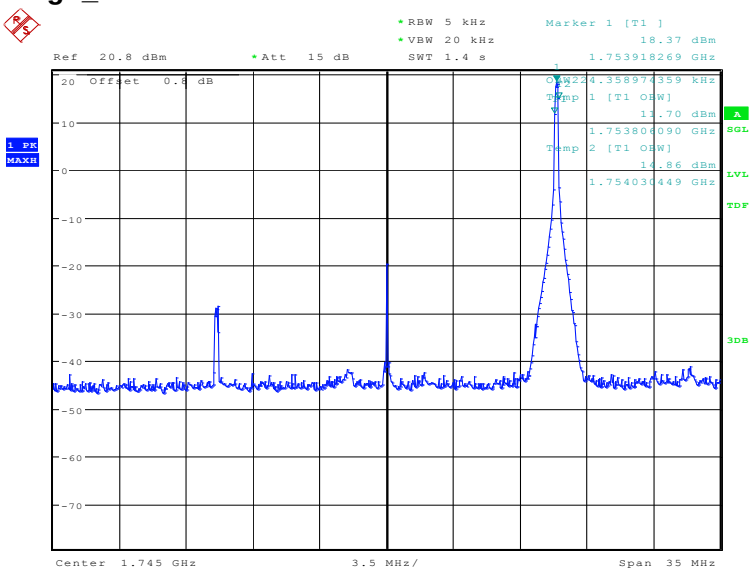
Date: 9.JAN.2020 11:04:44

LOW BAND EDGE BLOCK-1RB-low_offset



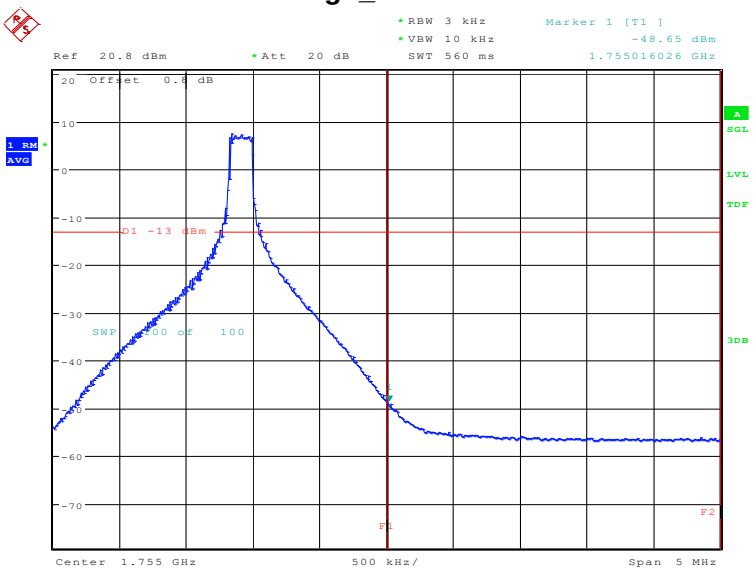
Date: 9.JAN.2020 11:06:23

OBW: 1RB-high_offset



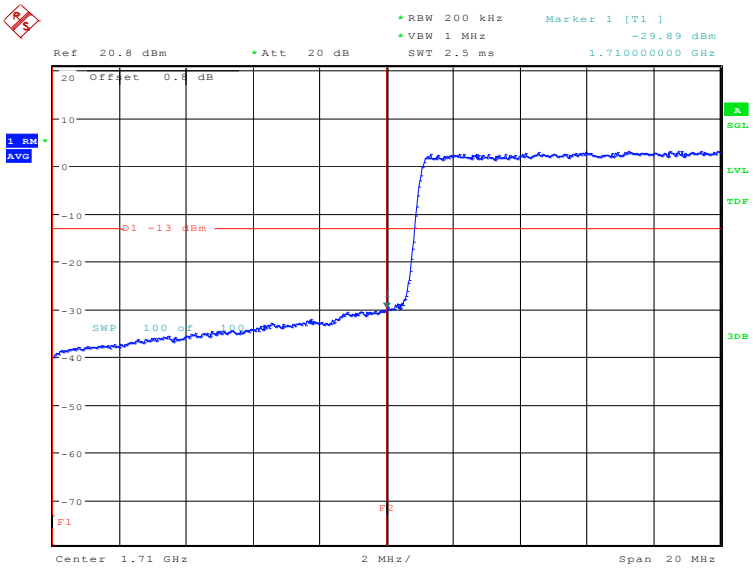
Date: 9.JAN.2020 11:07:46

HIGH BAND EDGE BLOCK-1RB-high_offset



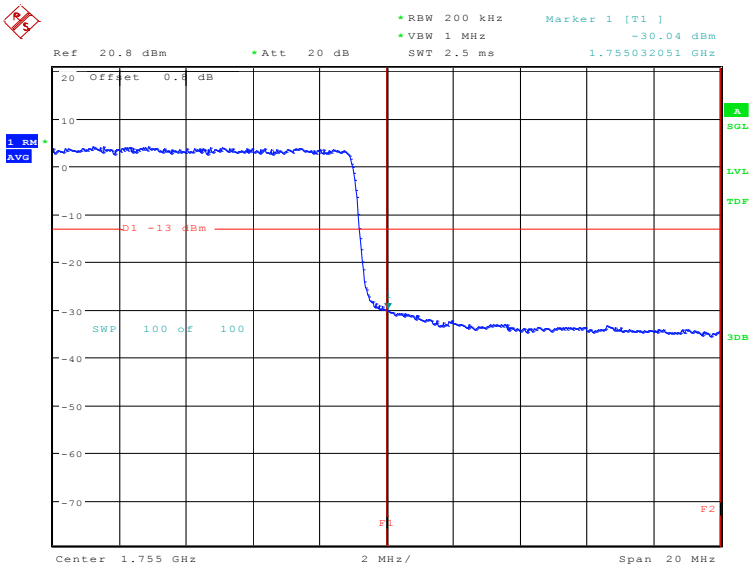
Date: 9.JAN.2020 11:09:24

LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 9.JAN.2020 10:42:09

HIGH BAND EDGE BLOCK-20MHz-100%RB



Date: 9.JAN.2020 10:44:02

LTE band 5

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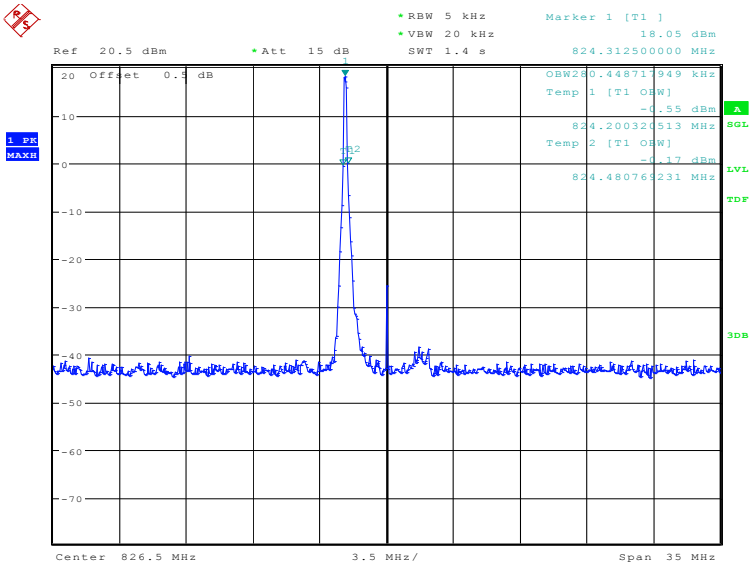
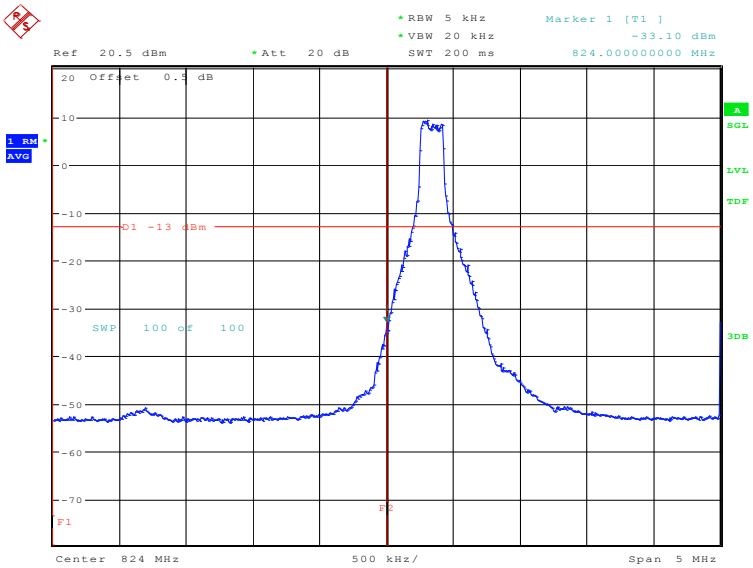


Date: 9.JAN.2020 11:22:11

LOW BAND EDGE BLOCK-1RB-low_offset



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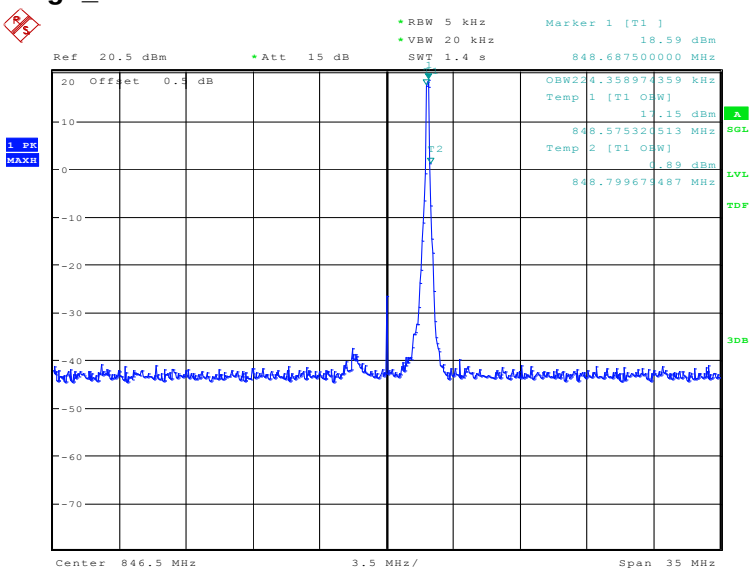
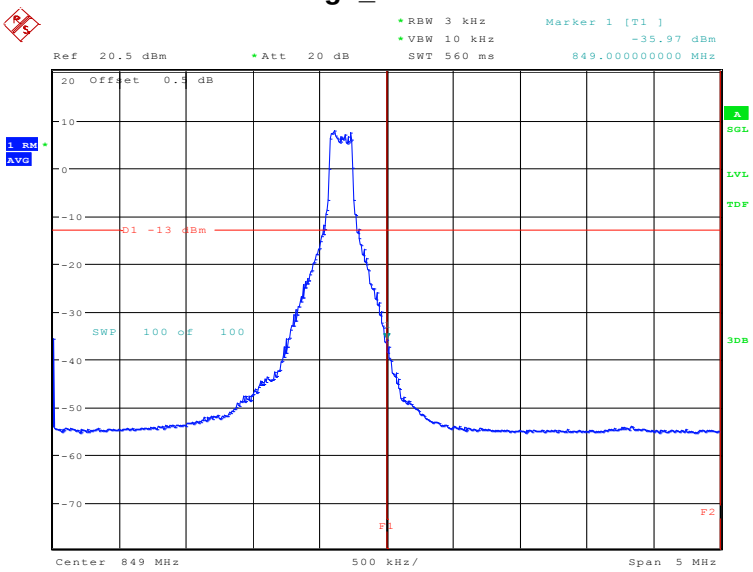


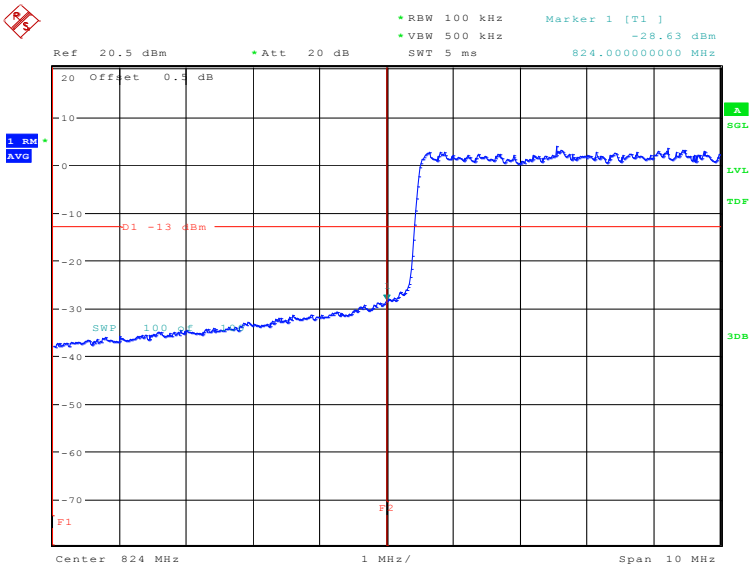
Date: 9.JAN.2020 12:00:02

HIGH BAND EDGE BLOCK-1RB-high_offset



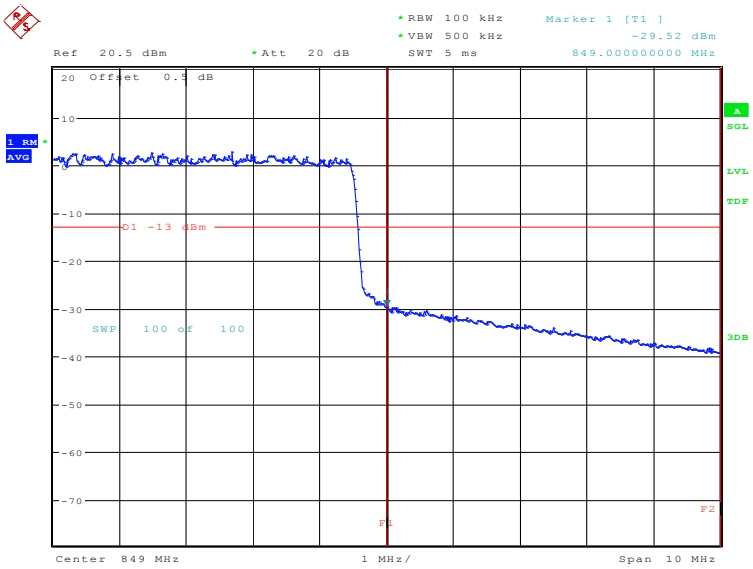
Date: 9.JAN.2020 12:01:41

LOW BAND EDGE BLOCK-10MHz-100%RB



Date: 9.JAN.2020 11:25:45

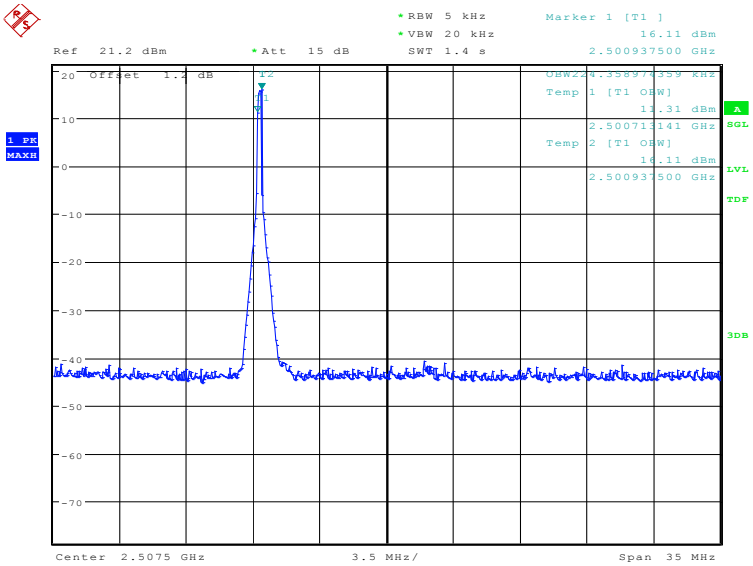
HIGH BAND EDGE BLOCK-10MHz-100%RB



Date: 9.JAN.2020 12:03:36

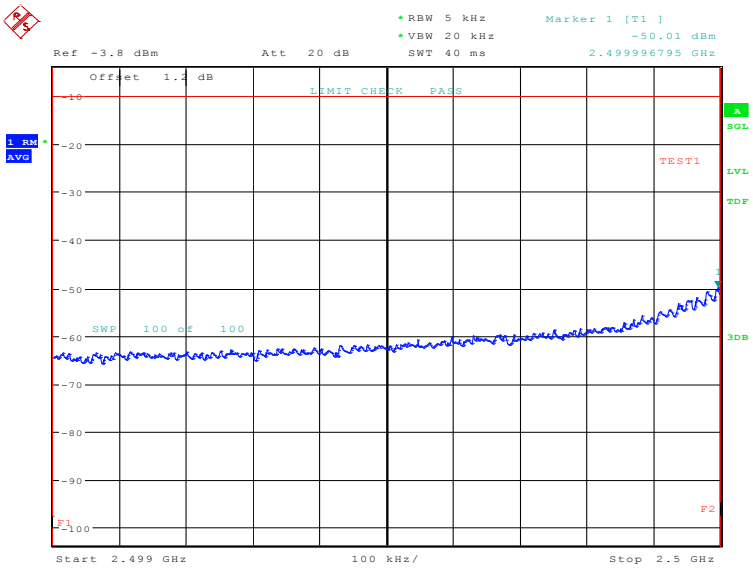
LTE band 7

OBW: 1RB-low_offset



Date: 9.JAN.2020 12:05:00

LOW BAND EDGE BLOCK-1RB-low_offset



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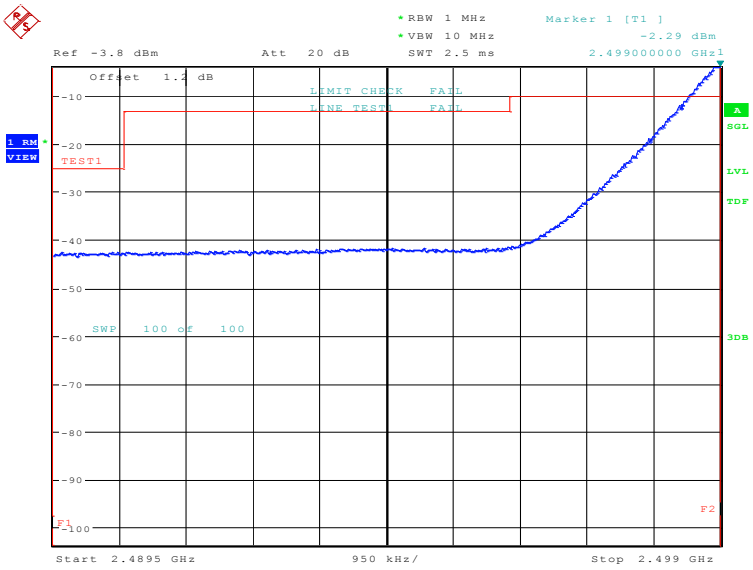

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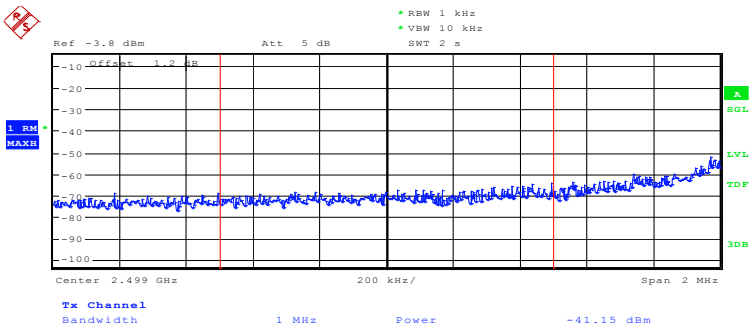

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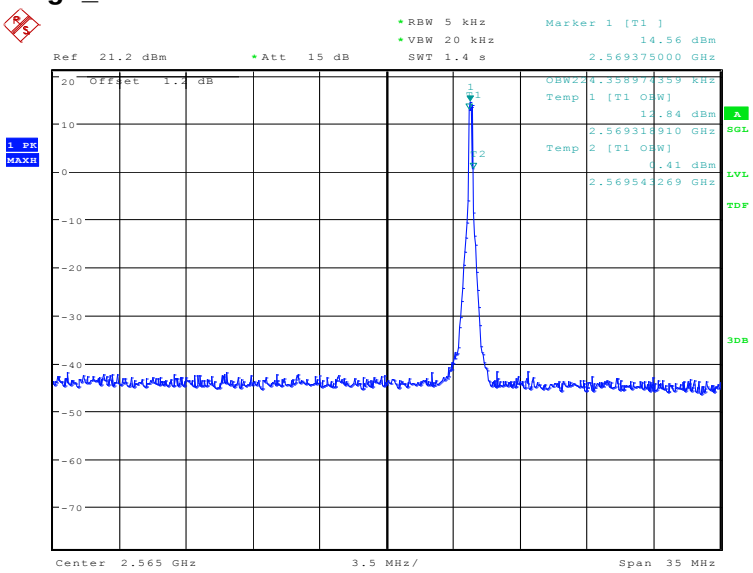
OBW: 1RB-high_offset



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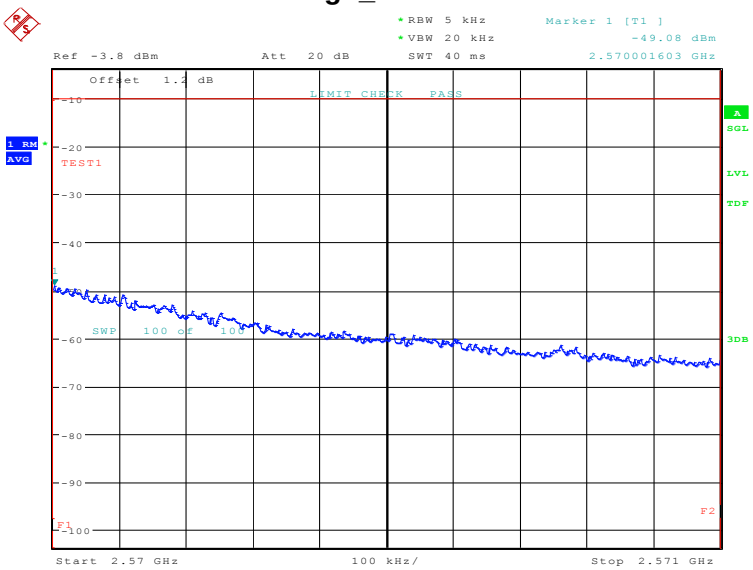
HIGH BAND EDGE BLOCK-1RB-high_offset



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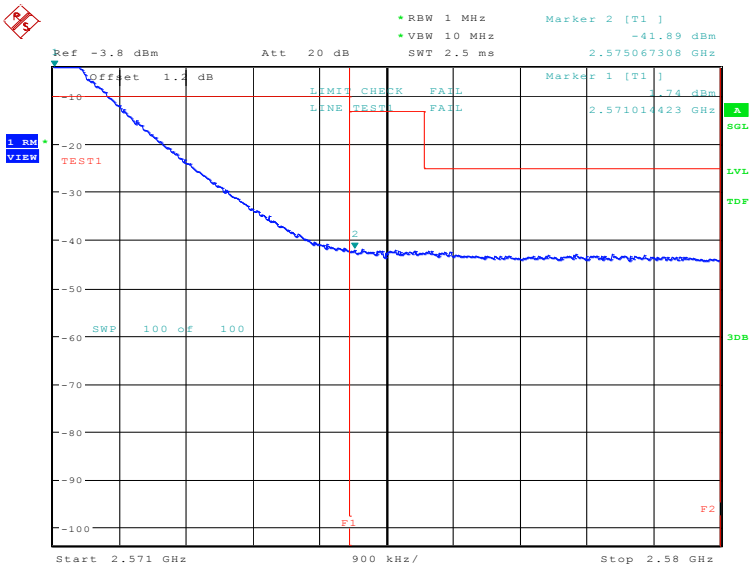

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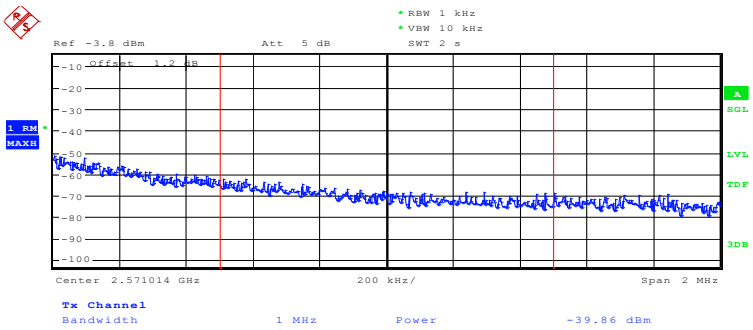
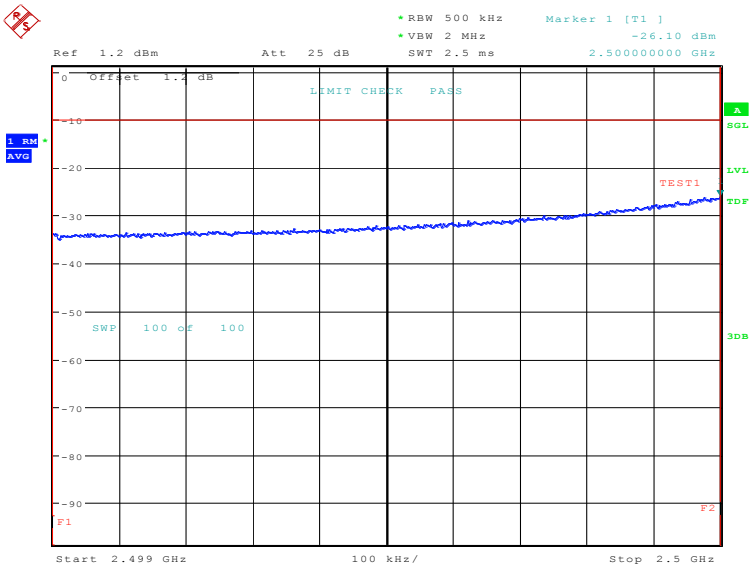


Date: 9.JAN.2020 12:22:39

LOW BAND EDGE BLOCK-20MHz-100%RB



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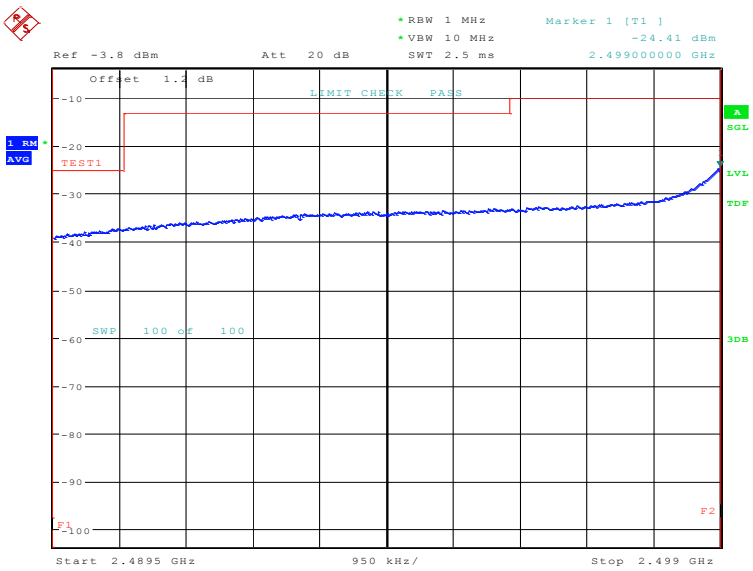
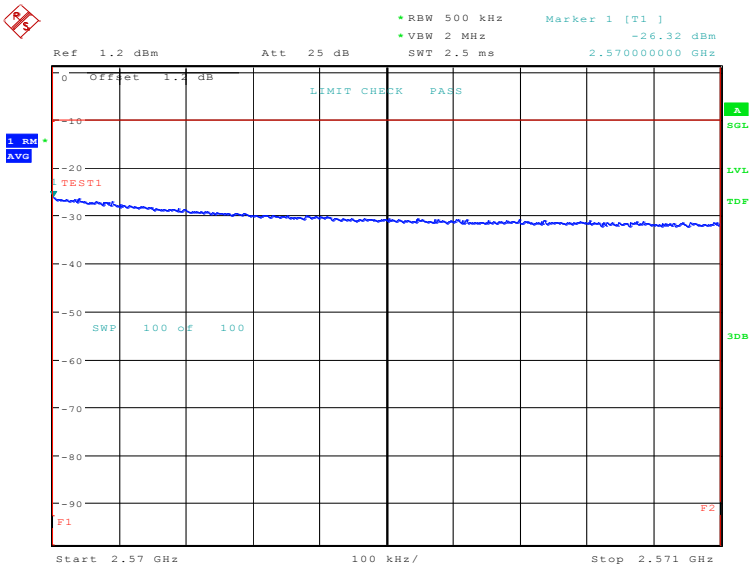


Date: 9.JAN.2020 12:12:20

HIGH BAND EDGE BLOCK-20MHz-100%RB



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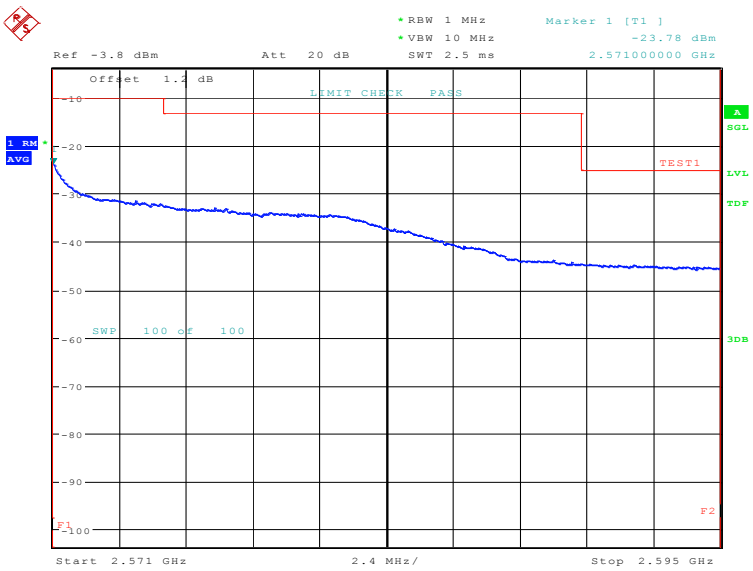
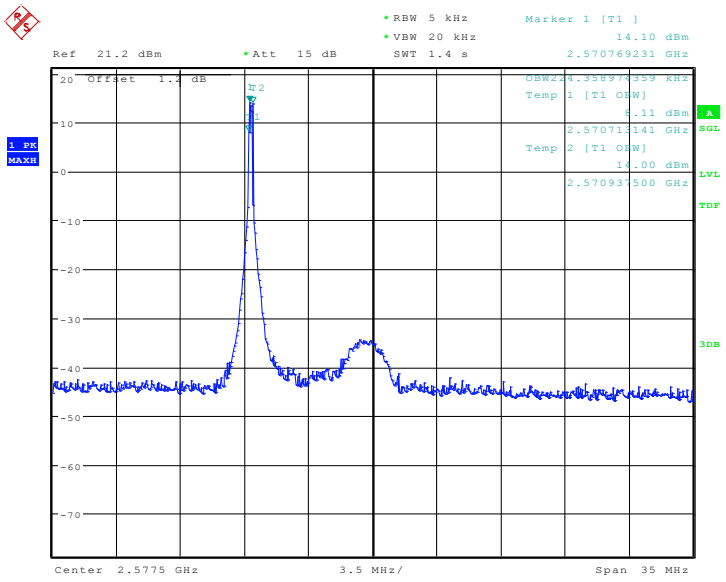


Date: 9.JAN.2020 12:26:18

LTE band 38

OBW: 1RB-low_offset



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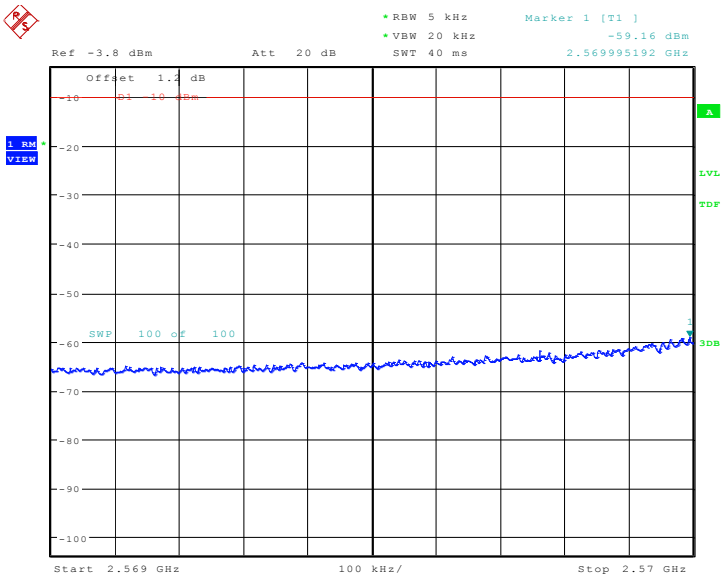
LOW BAND EDGE BLOCK-1RB-low_offset



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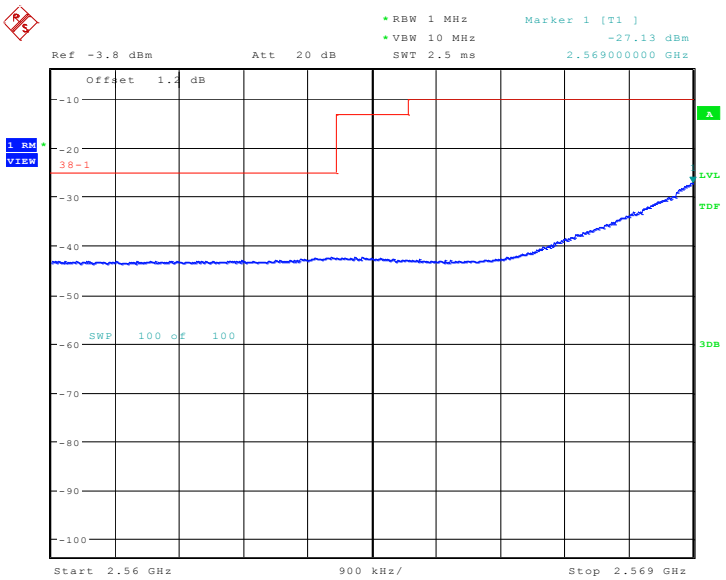

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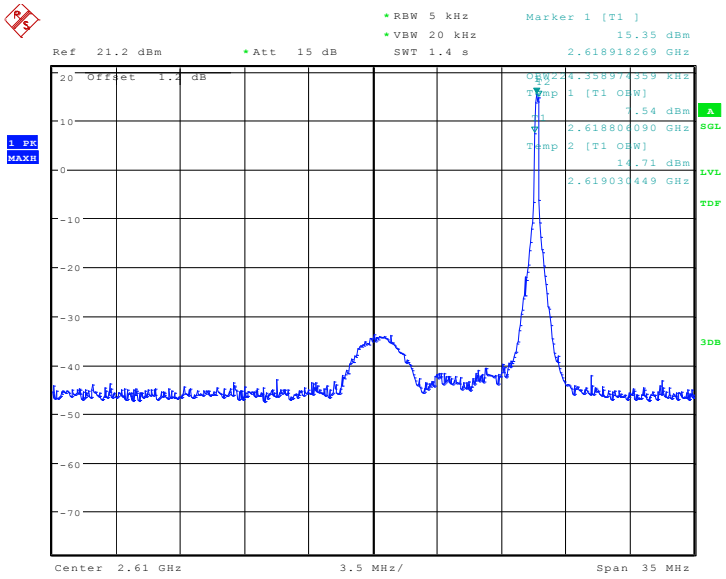
OBW: 1RB-high_offset



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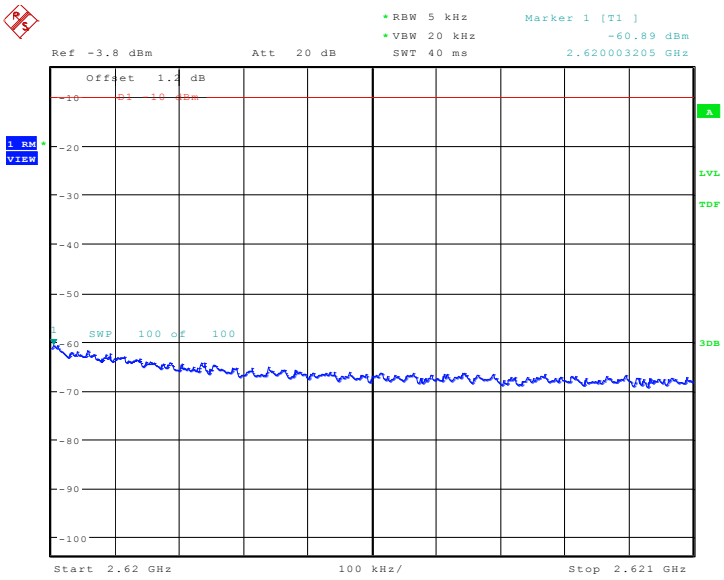
HIGH BAND EDGE BLOCK-1RB-high_offset



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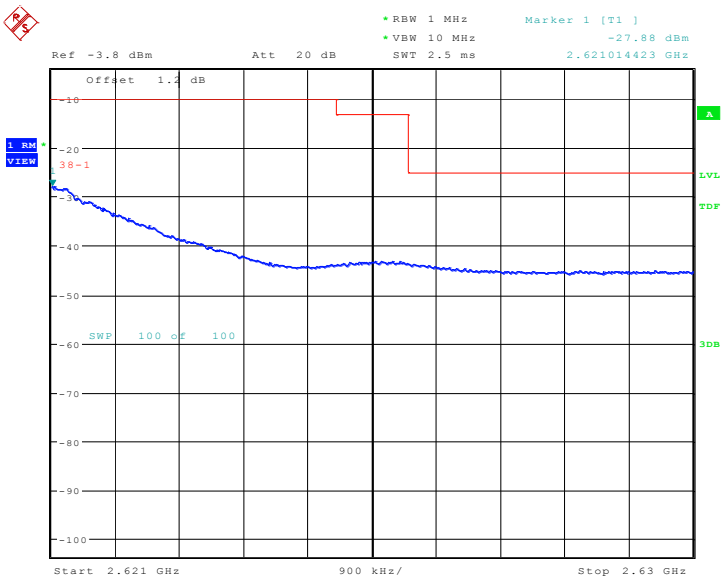
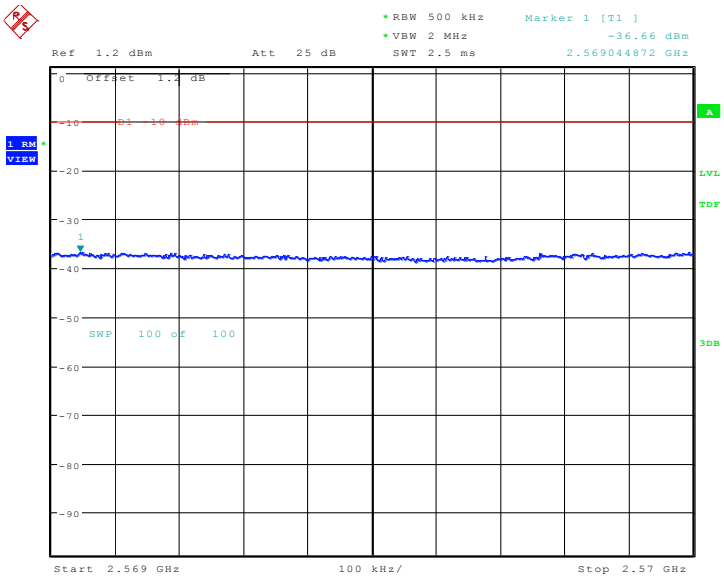


Date: 2.FEB.2020 15:03:18

LOW BAND EDGE BLOCK-20MHz-100%RB



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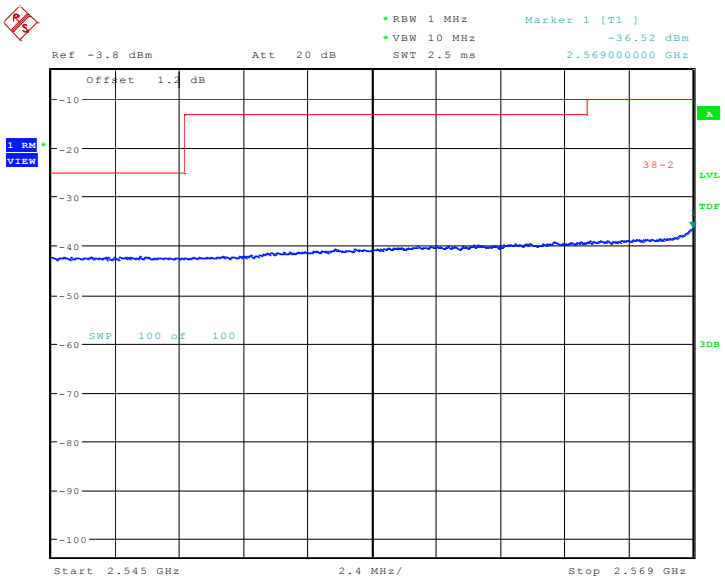
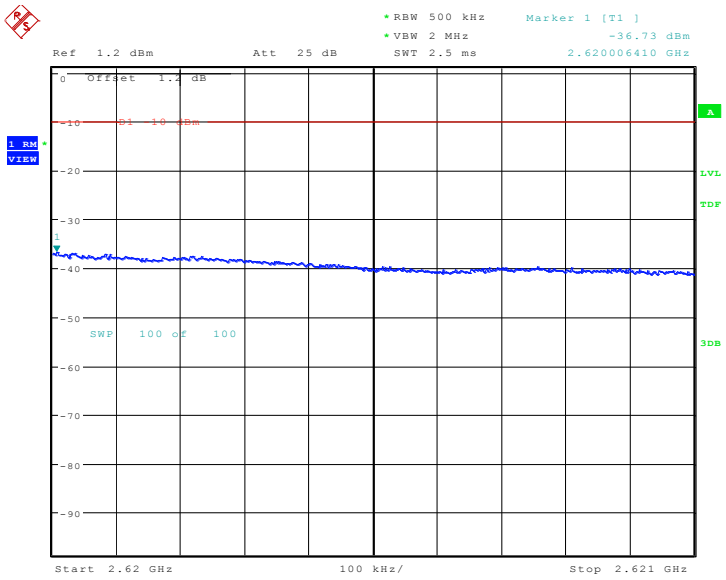


Date: 2.FEB.2020 15:09:09

HIGH BAND EDGE BLOCK-20MHz-100%RB



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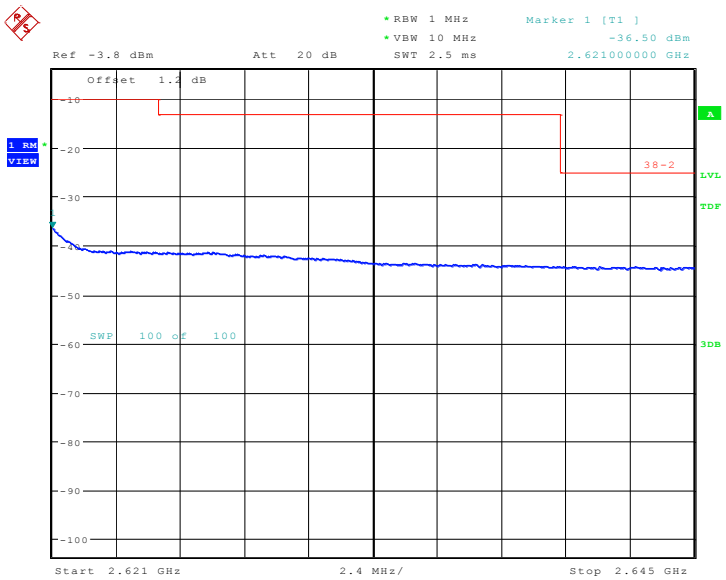


Date: 2.FEB.2020 15:12:49

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. In measuring unwanted emissions, the spectrum shall be investigated from 30 MHz or the lowest radio frequency signal generated in the equipment, whichever is lower, without going below 9 kHz, up to at least the frequency given below:
   (a) If the equipment operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
   (b) If the equipment operates at or above 10 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
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.

A. 7.2 Measurement Limit

Part 22.917, Part 24.238 and Part 27.53(h) 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.

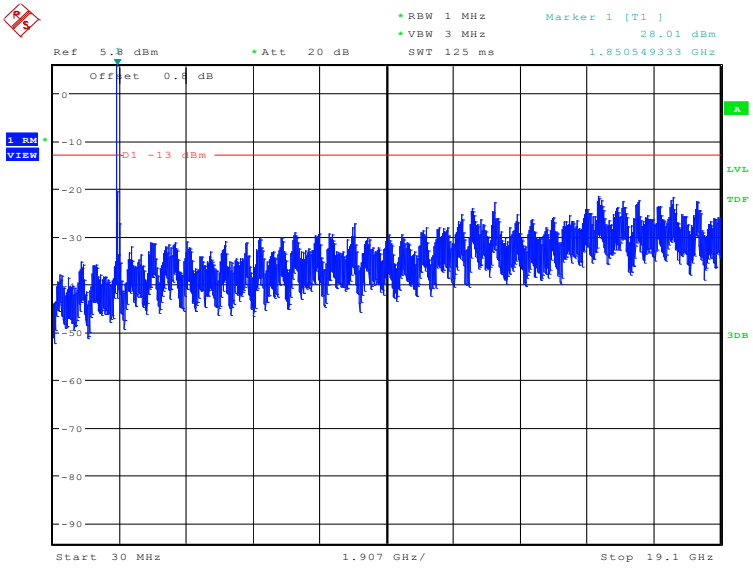
The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm.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

A. 7.2 Measurement result

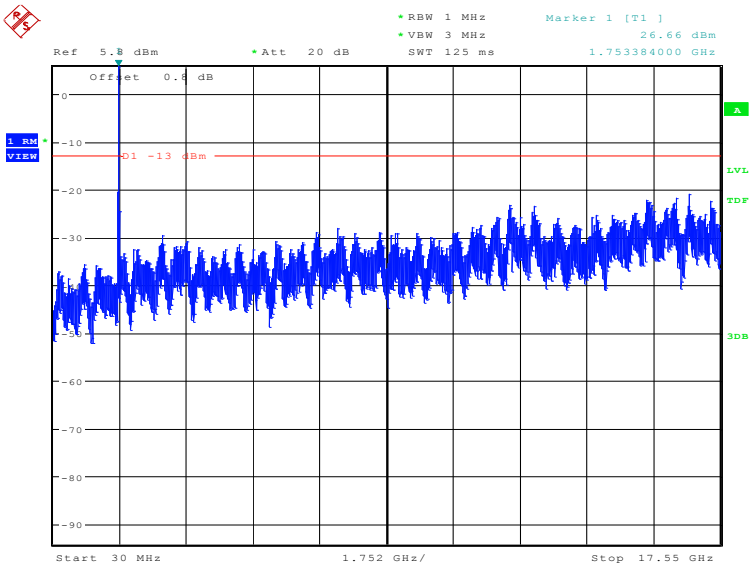
Only the worst case result is given below

LTE band 2: 30MHz – 19.1GHz



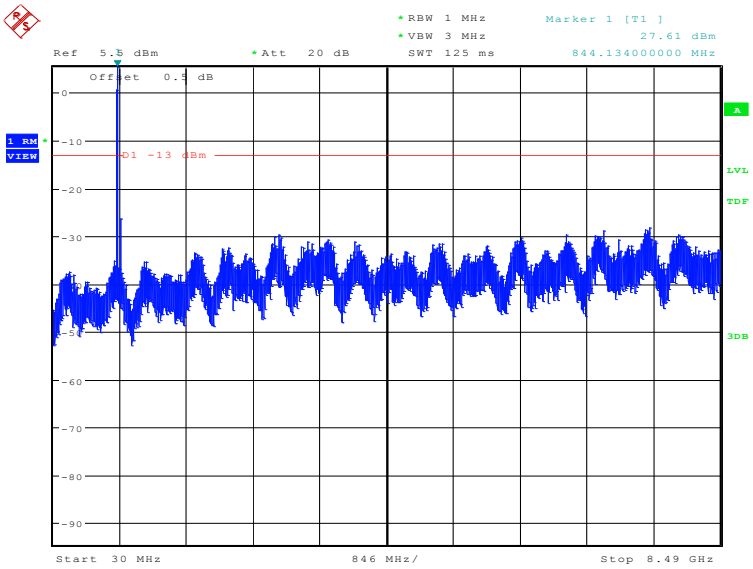
Date: 9.JAN.2020 13:08:52

LTE band 4: 30MHz – 17.55GHz



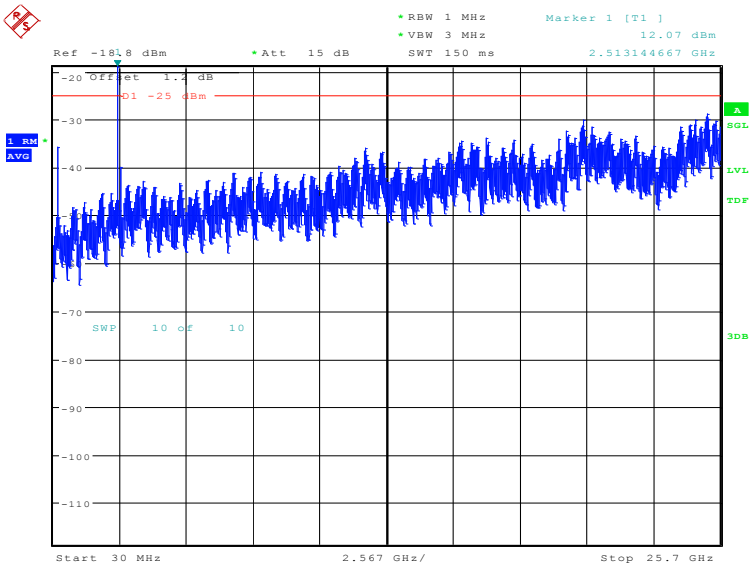
Date: 9.JAN.2020 13:11:23

LTE band 5: 30MHz – 8.49GHz



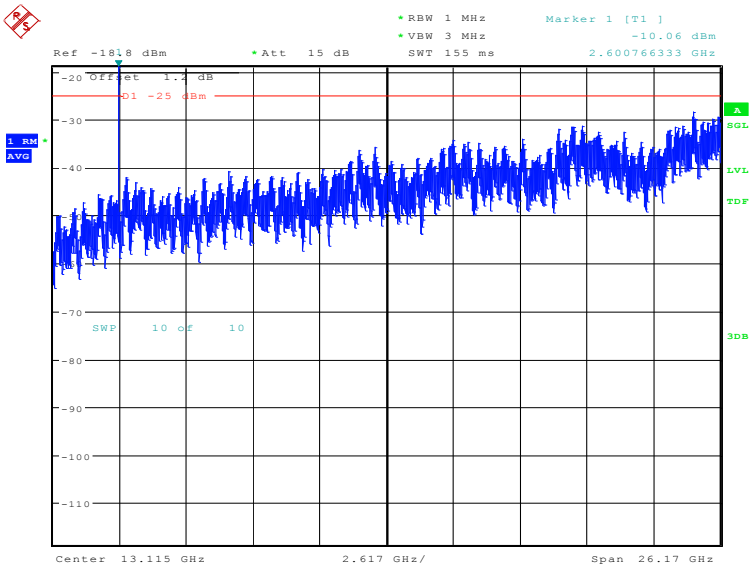
Date: 9.JAN.2020 13:19:41

LTE band 7: 30MHz – 25.7GHz



Date: 9.JAN.2020 13:12:19

LTE band 38: 30MHz – 26.2GHz



Date: 9.JAN.2020 13:20:47

A.8 PEAK-TO-AVERAGE POWER RATIO

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

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 1ms;

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

LTE band 2, 20MHz

Frequency (MHz)	PAPR (dB)			
1880.0	QPSK	16QAM	64QAM	256QAM
	6.67	7.31	7.50	7.79

LTE band 4, 20MHz

Frequency (MHz)	PAPR (dB)			
1732.5	QPSK	16QAM	64QAM	256QAM
	6.38	7.05	7.50	7.53

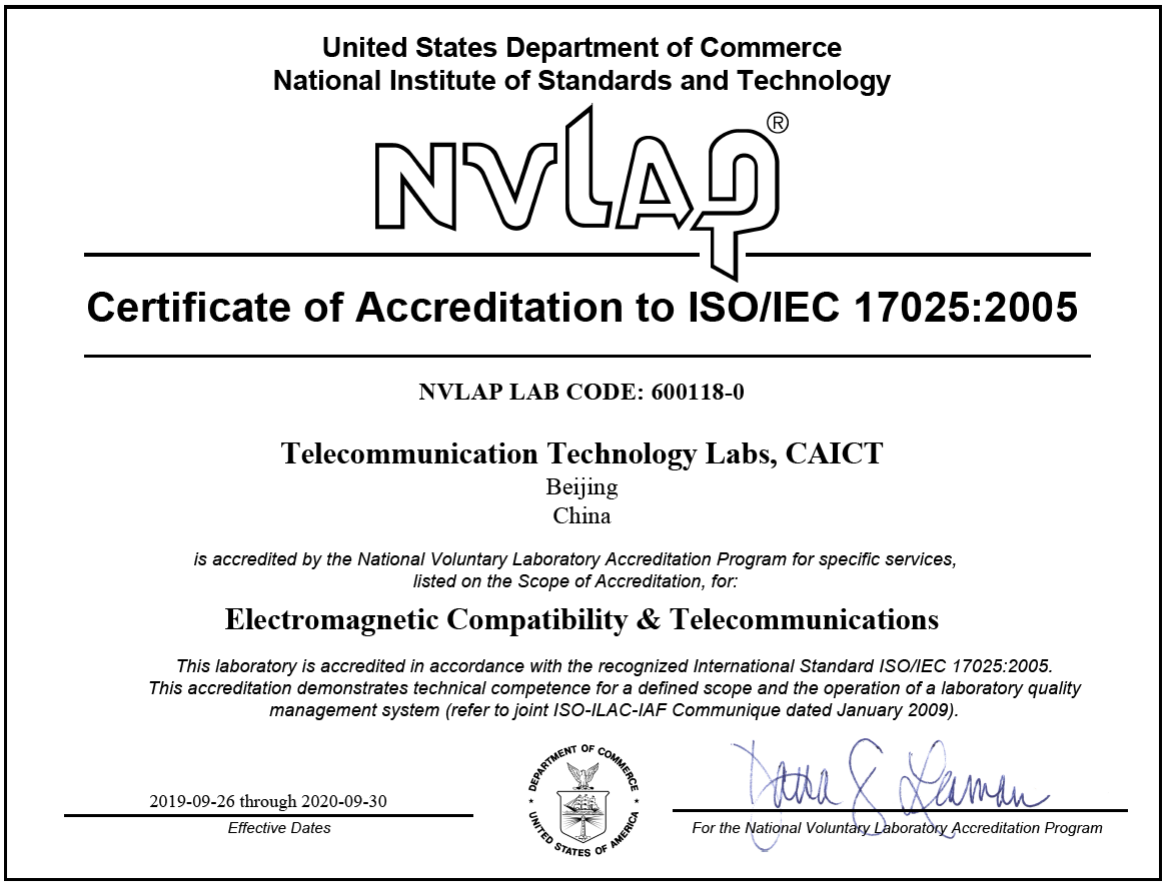
LTE band 7, 20MHz

Frequency (MHz)	PAPR (dB)			
2535.0	QPSK	16QAM	64QAM	256QAM
	6.79	7.28	7.50	7.82

LTE band 38, 20MHz

Frequency (MHz)	PAPR (dB)			
2595.0	QPSK	16QAM	64QAM	256QAM
	8.17	8.81	8.97	12.28

ANNEX B: Accreditation Certificate



United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 600118-0

Telecommunication Technology Labs, CAICT
Beijing
China

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Electromagnetic Compatibility & Telecommunications

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2019-09-26 through 2020-09-30
Effective Dates

DEPARTMENT OF COMMERCE · UNITED STATES OF AMERICA

For the National Voluntary Laboratory Accreditation Program

*****END OF REPORT*****