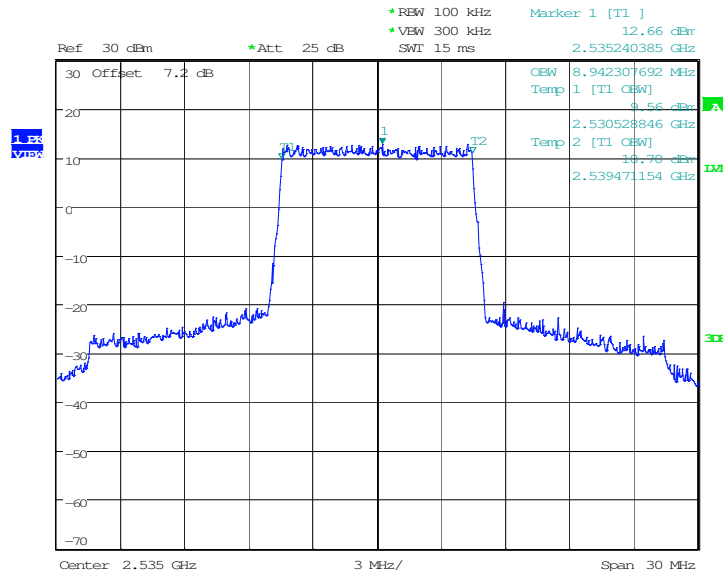


**LTE band 7, 10MHz (99%)**

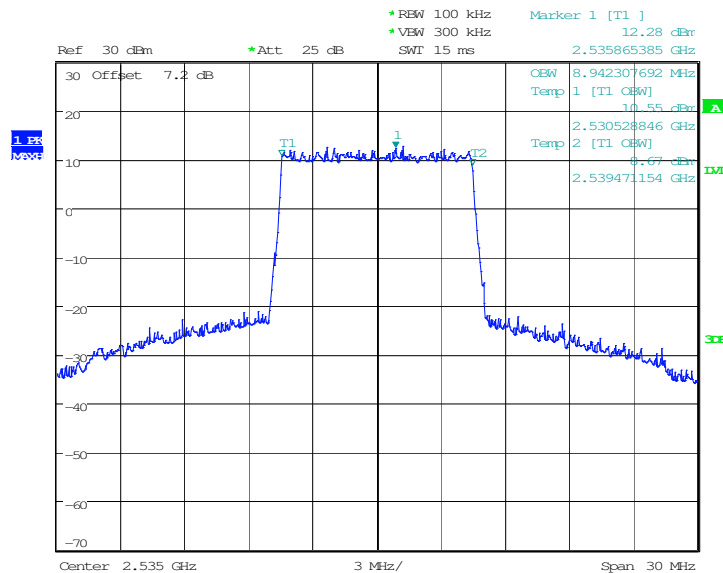
Frequency(MHz)	Occupied Bandwidth (99%)( kHz)	
2535.0	QPSK	16QAM
	8942.31	8942.31

**LTE band 7, 10MHz Bandwidth, QPSK (99% BW)**



Date: 6.MAR.2017 18:53:23

**LTE band 7, 10MHz Bandwidth, 16QAM (99% BW)**

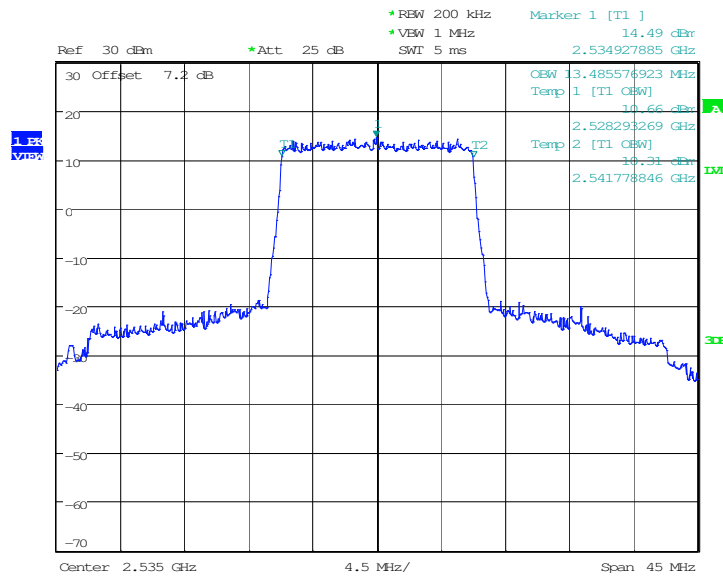


Date: 6.MAR.2017 18:52:47

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

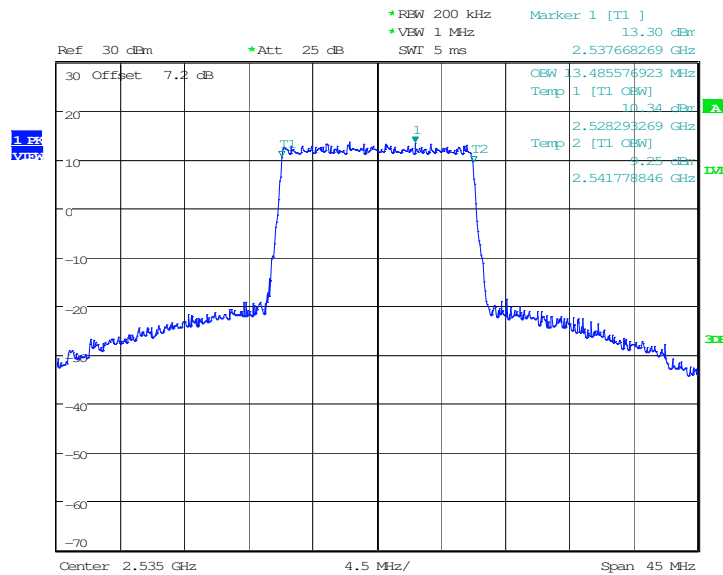
Frequency(MHz)	Occupied Bandwidth (99%)( kHz)	
2535.0	QPSK	16QAM
	13485.58	13485.58

**LTE band 7, 15MHz Bandwidth, QPSK (99% BW)**



Date: 6.MAR.2017 19:11:38

**LTE band 7, 15MHz Bandwidth, 16QAM (99% BW)**

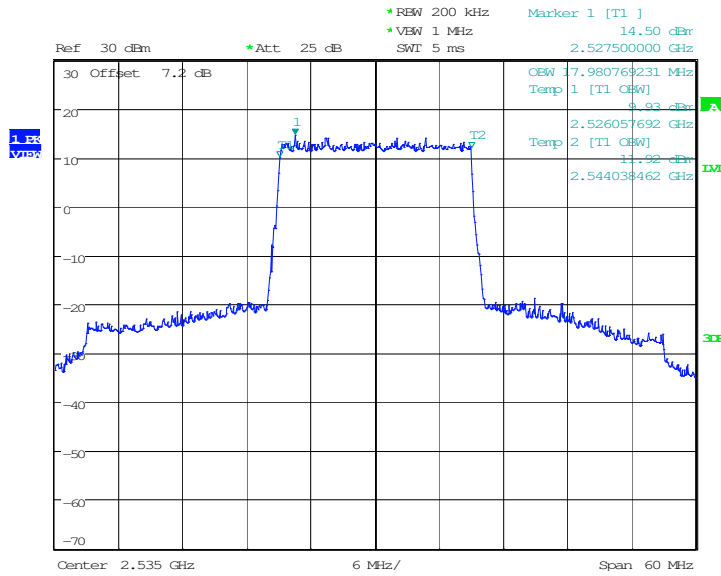


Date: 6.MAR.2017 19:11:18

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

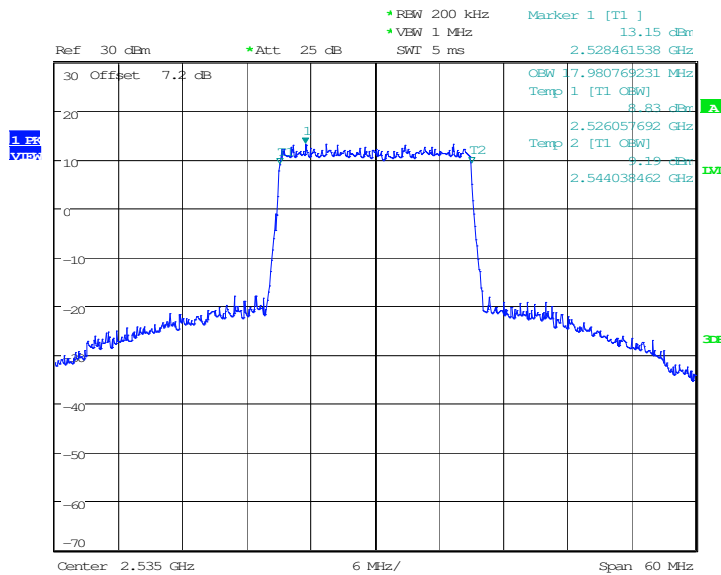
Frequency(MHz)	Occupied Bandwidth (99%)( kHz)	
2535.0	QPSK	16QAM
	17980.77	17980.77

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



Date: 6.MAR.2017 19:12:56

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



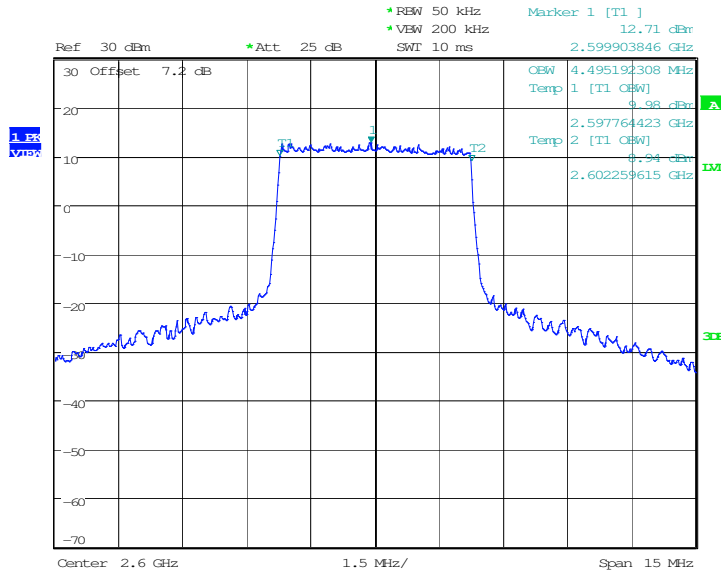
Date: 6.MAR.2017 19:13:24



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

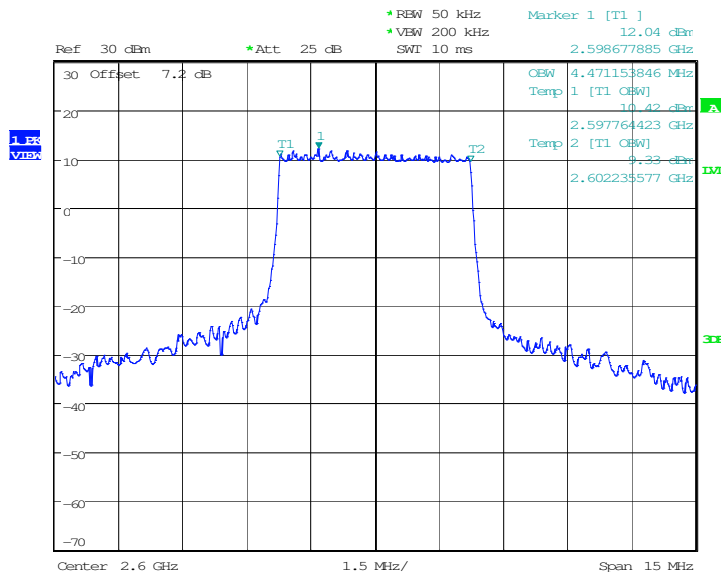
Frequency(MHz)	Occupied Bandwidth (99%)( kHz)	
2600.0	QPSK	16QAM
	4495.19	4471.15

**LTE band 41, 5MHz Bandwidth, QPSK (99% BW)**



Date: 6.MAR.2017 19:43:22

**LTE band 41, 5MHz Bandwidth, 16QAM (99% BW)**

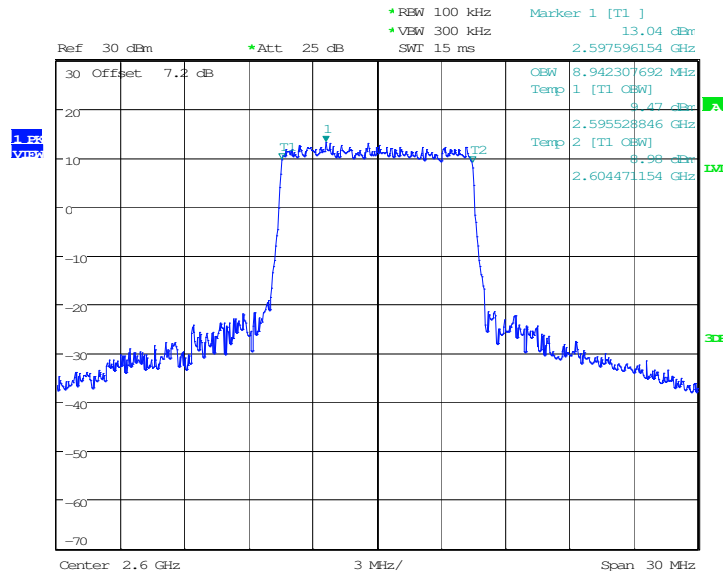


Date: 6.MAR.2017 19:41:44

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

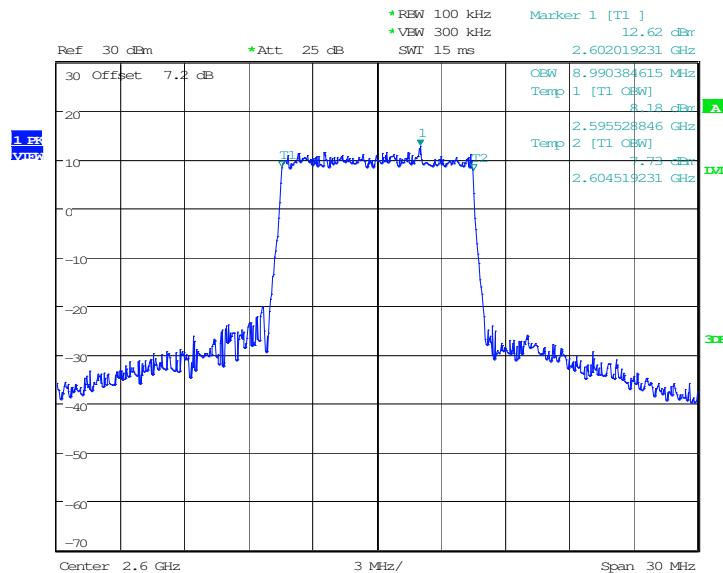
Frequency(MHz)	Occupied Bandwidth (99%)( kHz)	
2600.0	QPSK	16QAM
	8942.31	8990.38

**LTE band 41, 10MHz Bandwidth, QPSK (99% BW)**



Date: 6.MAR.2017 19:39:45

**LTE band 41, 10MHz Bandwidth, 16QAM (99% BW)**

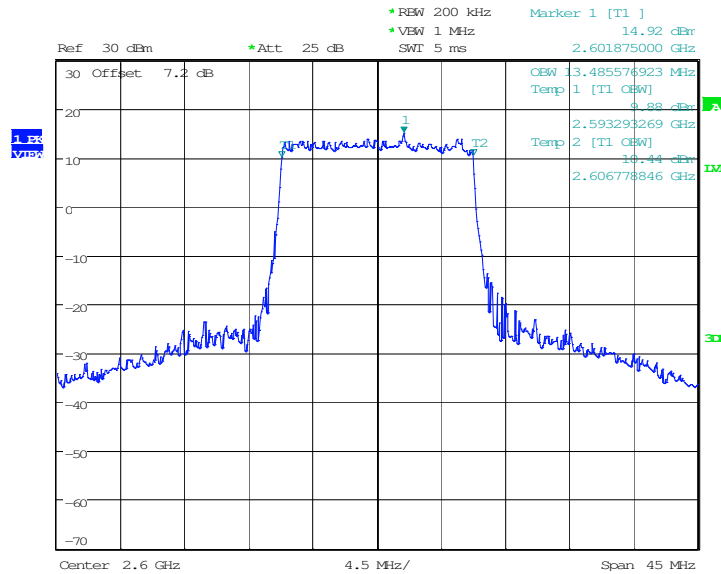


Date: 6.MAR.2017 19:39:07

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

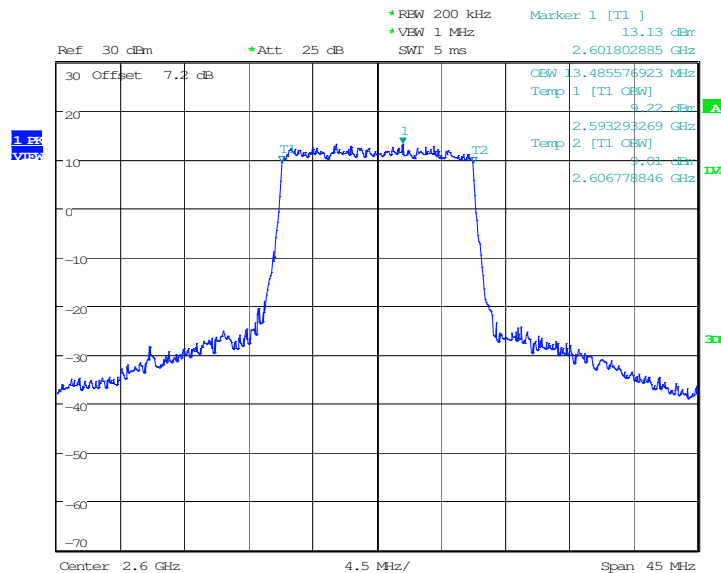
Frequency(MHz)	Occupied Bandwidth (99%)( kHz)	
2600.0	QPSK	16QAM
	13485.58	13485.58

**LTE band 41, 15MHz Bandwidth, QPSK (99% BW)**



Date: 6.MAR.2017 19:35:15

**LTE band 41, 15MHz Bandwidth, 16QAM (99% BW)**

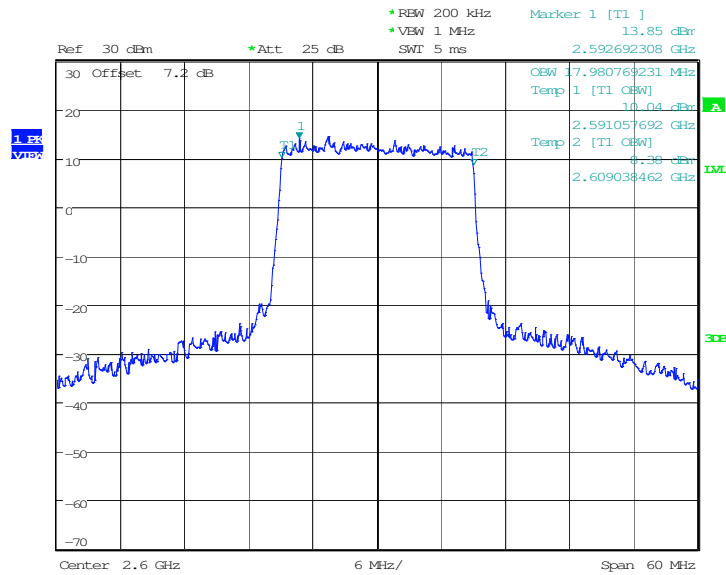


Date: 6.MAR.2017 19:35:52

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

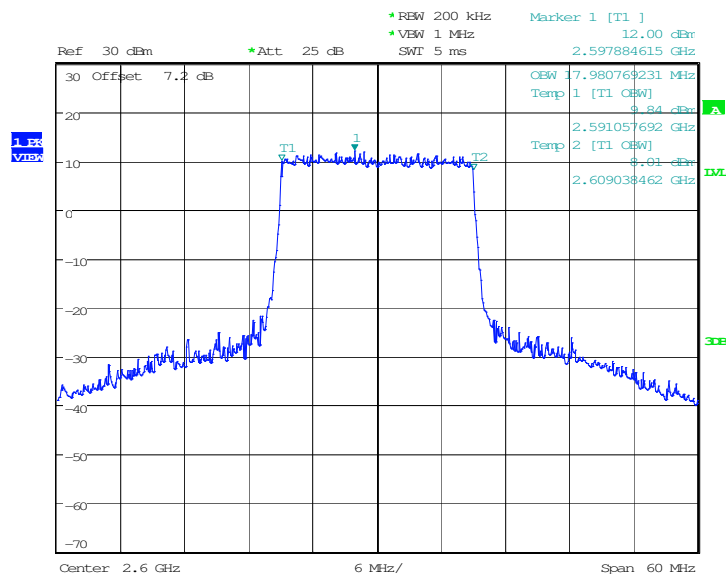
Frequency(MHz)	Occupied Bandwidth (99%)( kHz)	
2600.0	QPSK	16QAM
	17980.77	17980.77

**LTE band 41, 20MHz Bandwidth, QPSK (99% BW)**



Date: 6.MAR.2017 19:33:35

**LTE band 41, 20MHz Bandwidth, 16QAM (99% BW)**



Date: 6.MAR.2017 19:32:51

## A.5 EMISSION BANDWIDTH

### Reference

FCC: CFR Part 22.917(b), 24.238(a), 27.53(h)

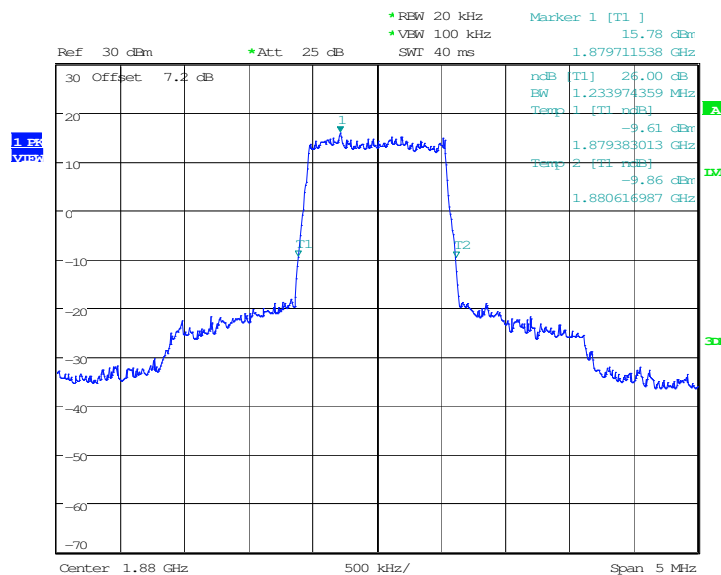
### A.5.1 Emission Bandwidth Results

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

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

Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
	1880.0	QPSK
	1233.97	1250.00

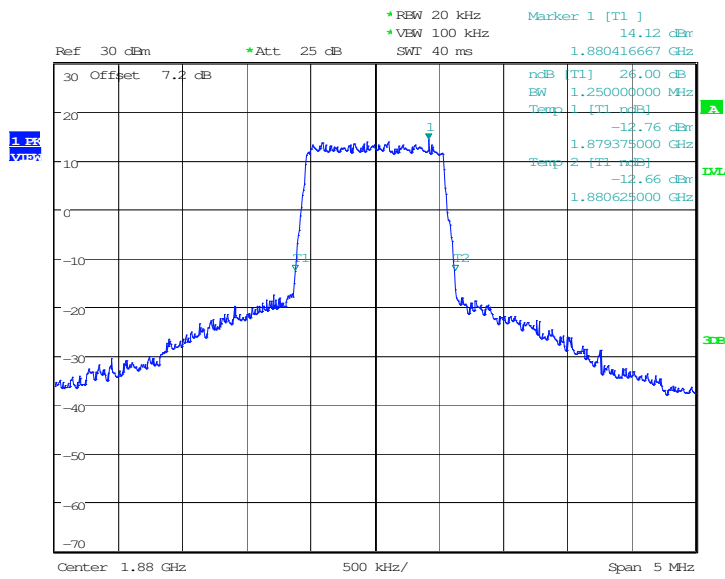
#### LTE band 2, 1.4MHz Bandwidth, QPSK (-26dBc BW)







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

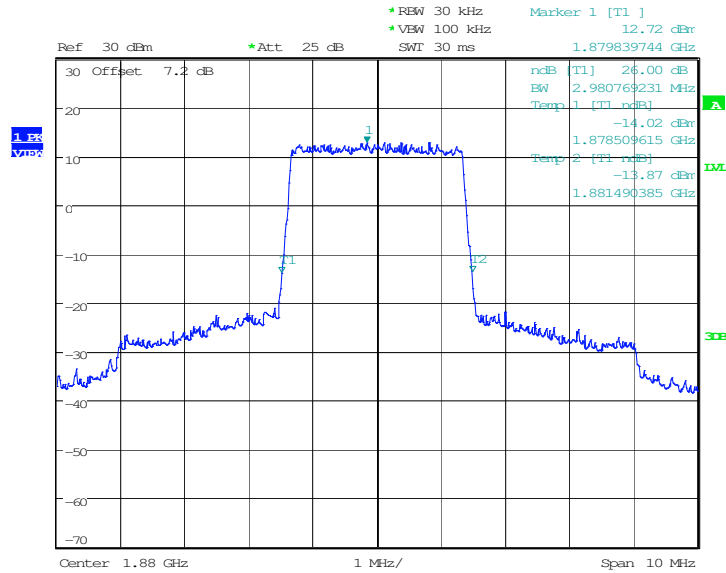


Date: 6.MAR.2017 18:20:57

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

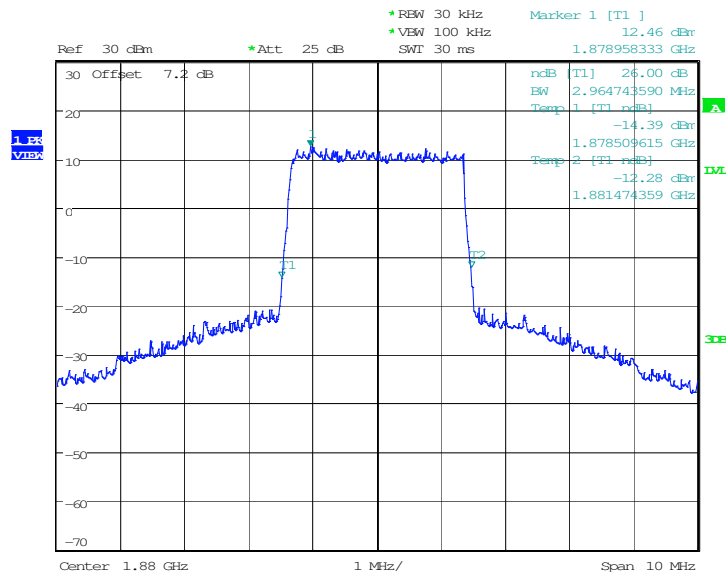
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
1880.0	QPSK	16QAM
	2980.77	2964.74

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



Date: 6.MAR.2017 18:34:17

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

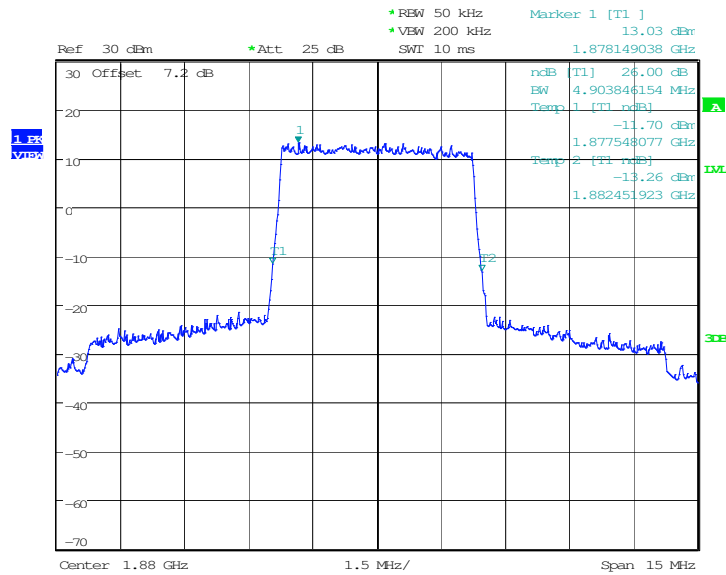


Date: 6.MAR.2017 18:34:50

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

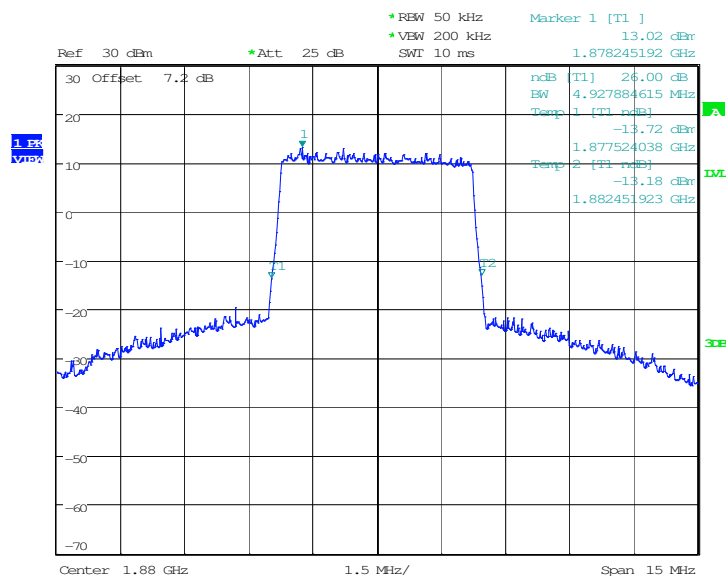
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
	1880.0	QPSK
4903.85		4927.88

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



Date: 6.MAR.2017 18:40:39

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

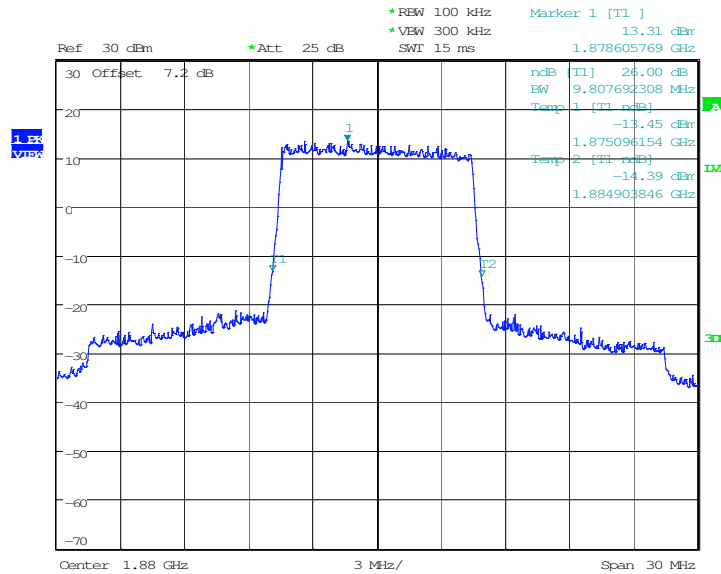


Date: 6.MAR.2017 18:39:42

**LTE band 2, 10MHz (-26dBc)**

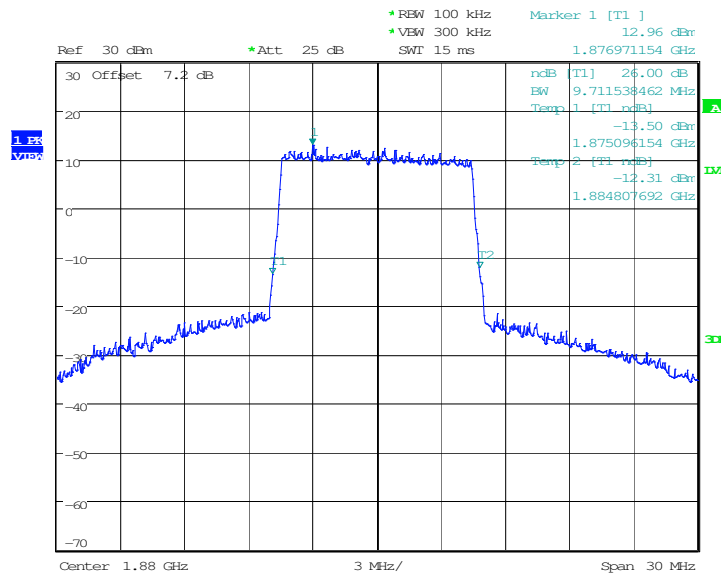
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
1880.0	QPSK	16QAM
	9807.69	9711.54

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



Date: 6.MAR.2017 19:03:16

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

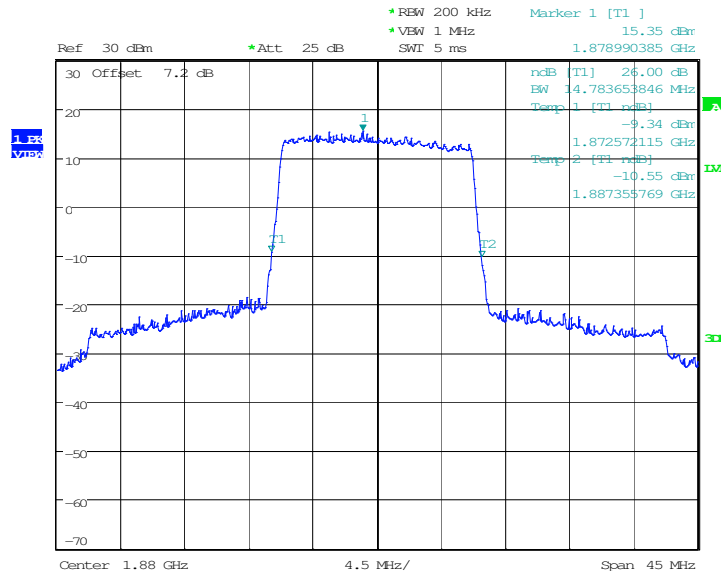


Date: 6.MAR.2017 19:02:45

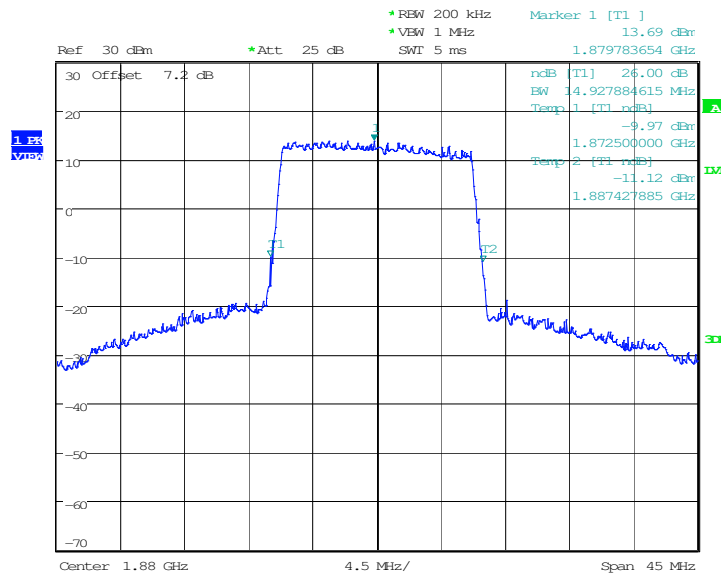
**LTE band 2, 15MHz (-26dBc)**

Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
	1880.0	QPSK
	14783.65	14927.88

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



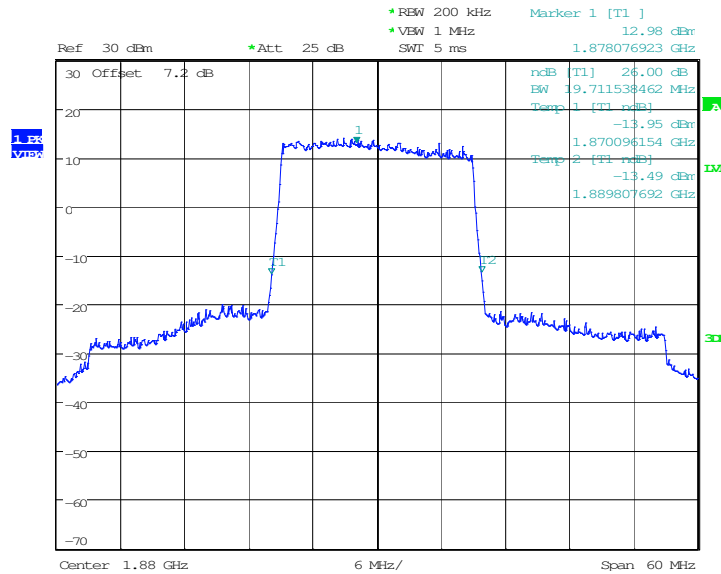
**LTE band 2, 15MHz Bandwidth, 16QAM (-26dBc BW)**



**LTE band 2, 20MHz (-26dBc)**

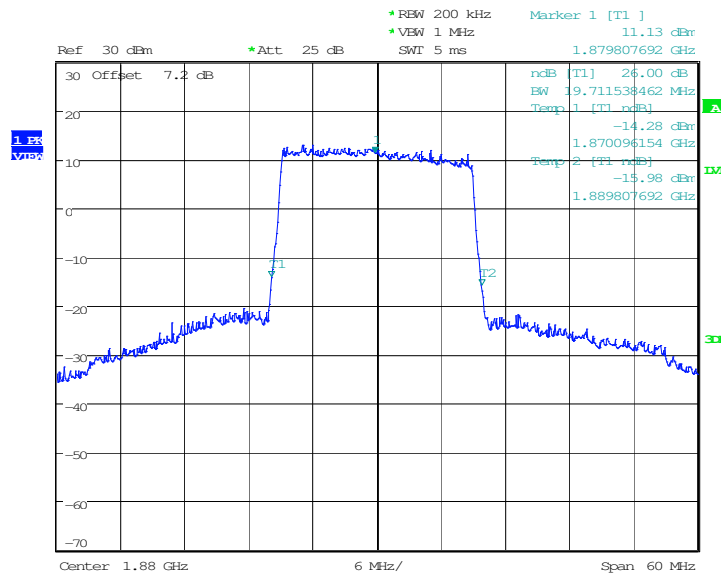
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
	1880.0	QPSK
19711.54		19711.54

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



Date: 6.MAR.2017 19:20:50

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

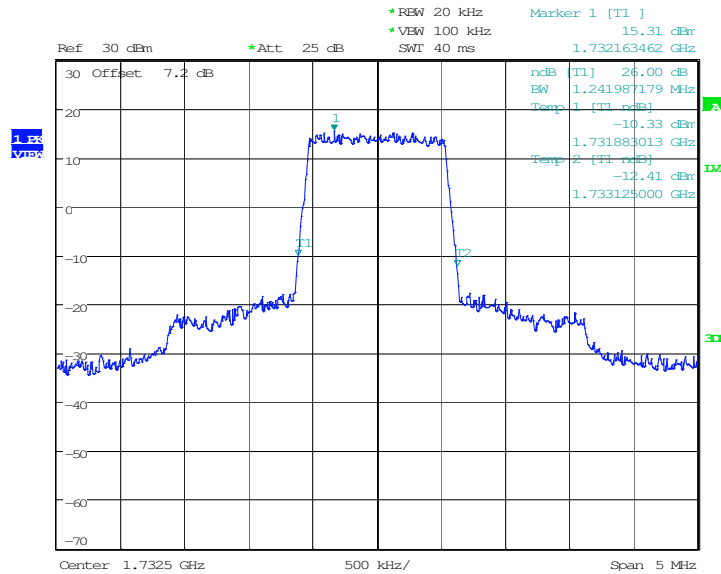


Date: 6.MAR.2017 19:19:52

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

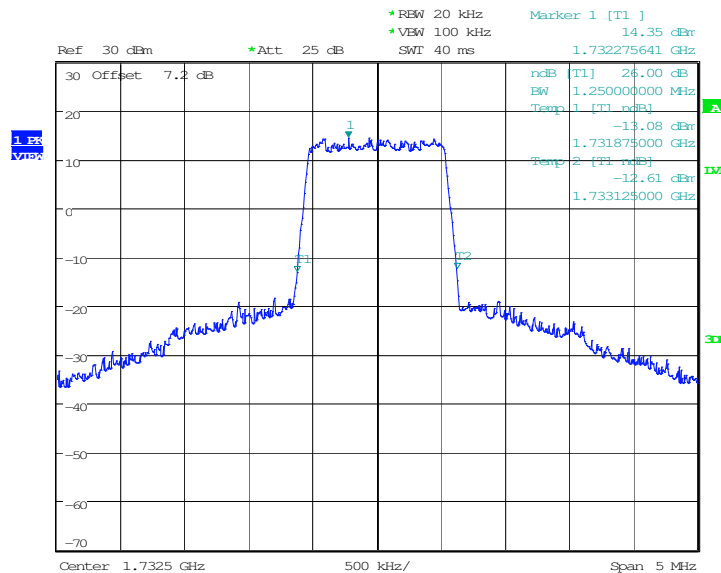
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
	1732.5	QPSK
1241.99		1250.00

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



Date: 6.MAR.2017 18:22:40

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

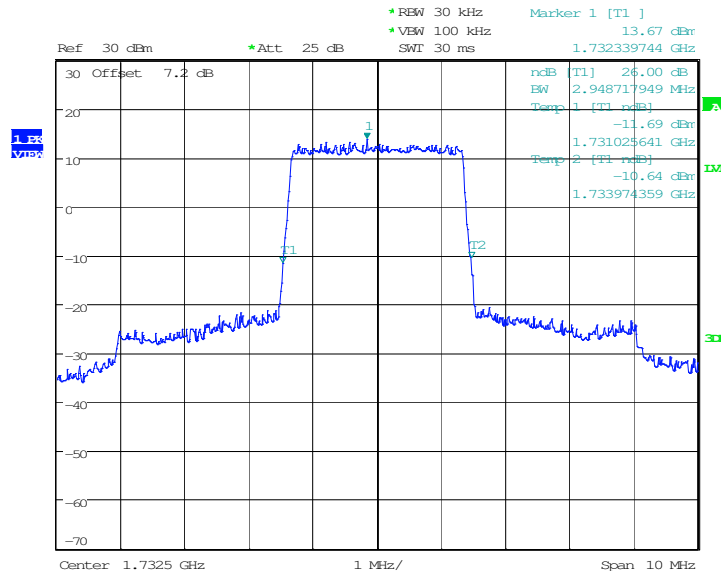


Date: 6.MAR.2017 18:23:12

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

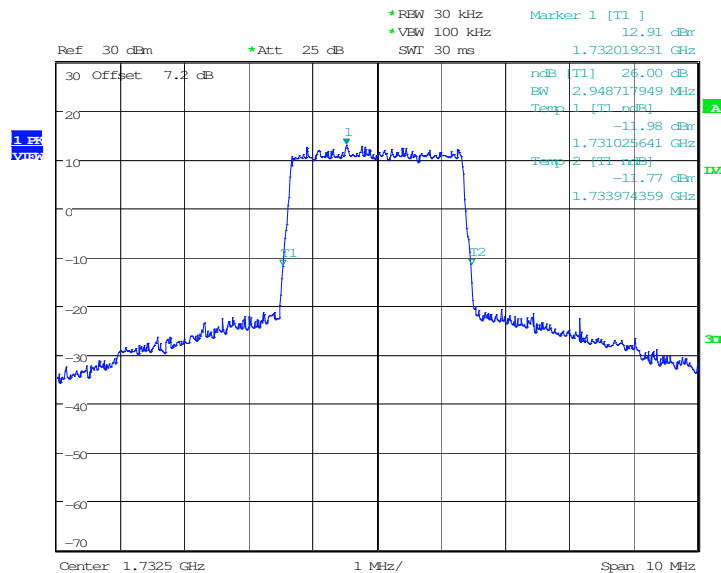
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
1732.5	QPSK	16QAM
	2948.72	2948.72

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



Date: 6.MAR.2017 18:33:30

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



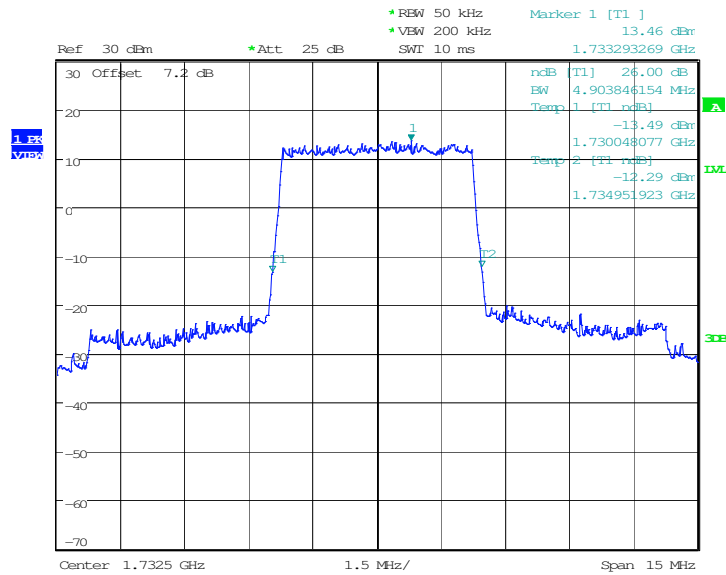
Date: 6.MAR.2017 18:33:01



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

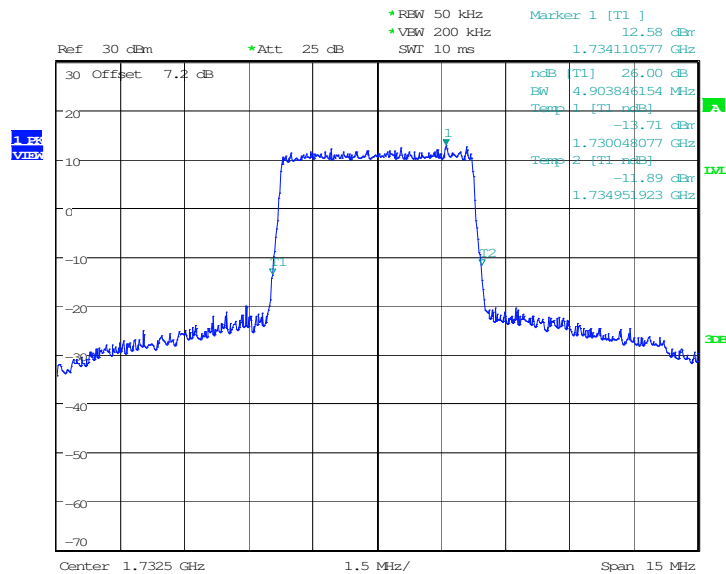
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
1732.5	QPSK	16QAM
	4903.85	4903.85

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



Date: 6.MAR.2017 18:41:31

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

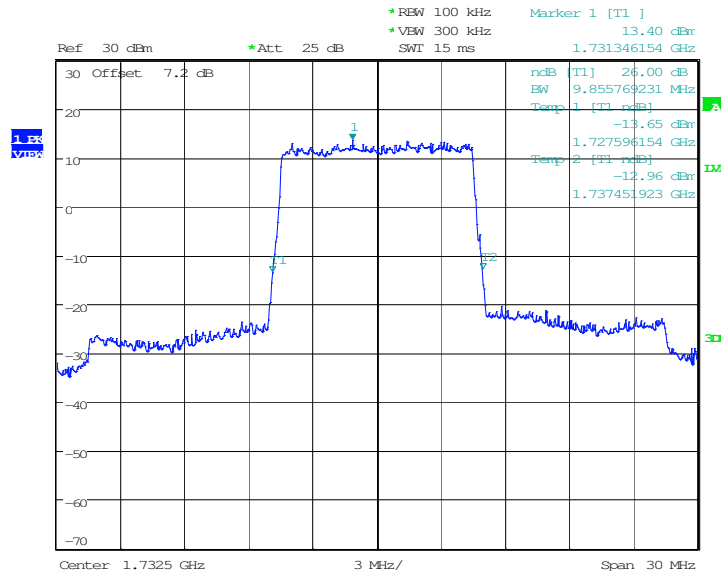


Date: 6.MAR.2017 18:42:05

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

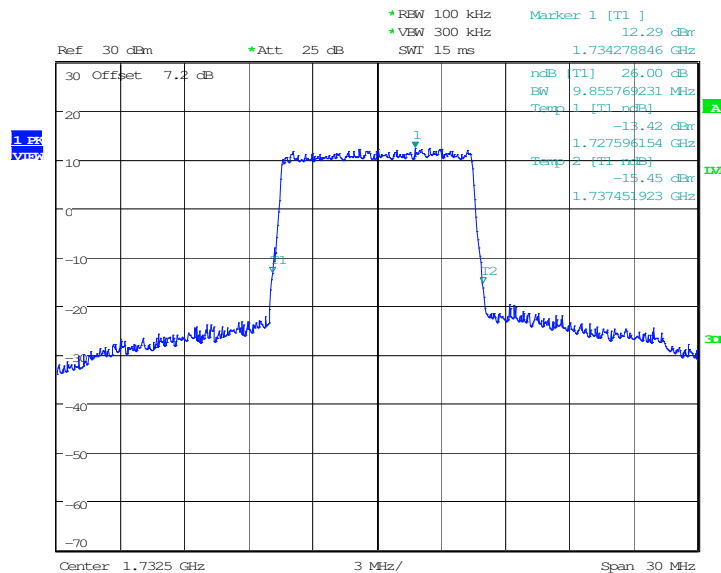
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
1732.5	QPSK	16QAM
	9855.77	9855.77

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



Date: 6.MAR.2017 18:56:46

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

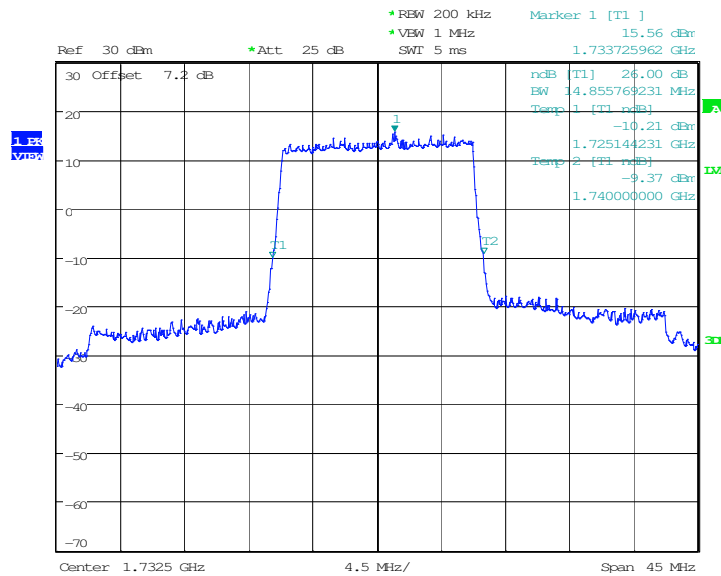


Date: 6.MAR.2017 18:57:57

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

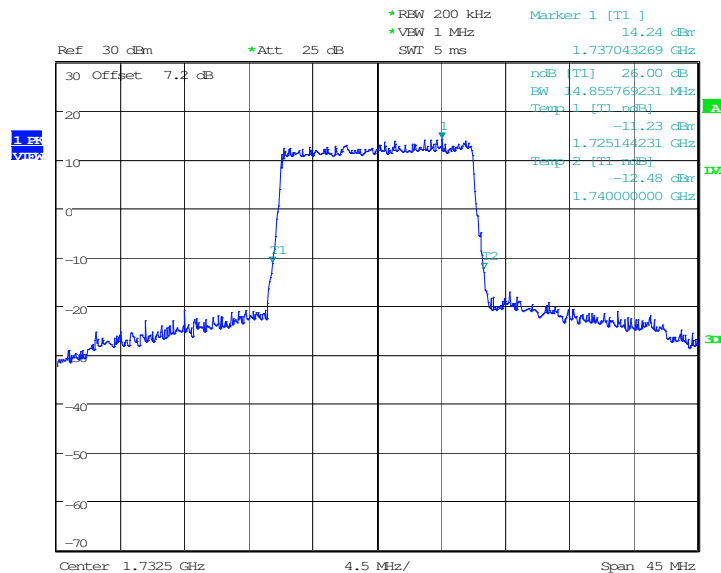
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
	1732.5	QPSK
	14855.77	14855.77

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



Date: 6.MAR.2017 19:08:45

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

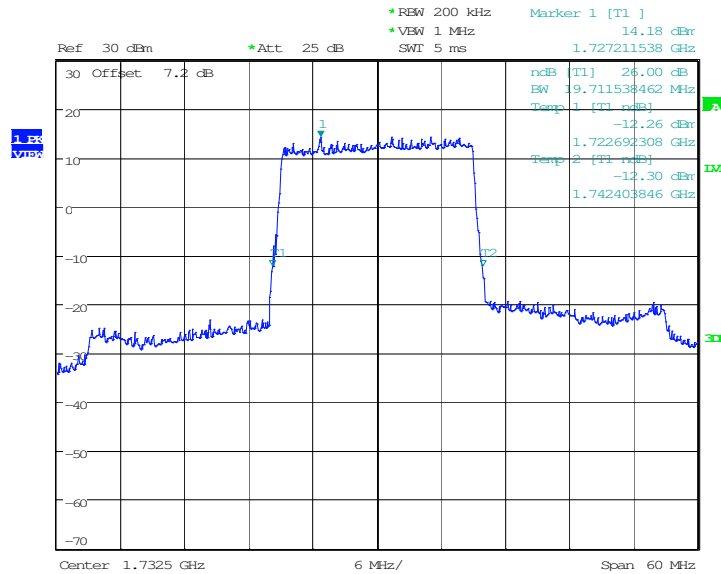


Date: 6.MAR.2017 19:08:22

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

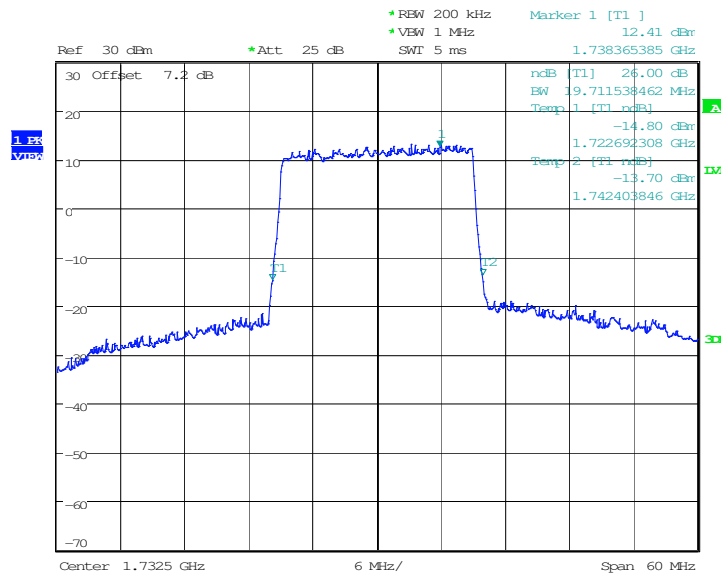
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
1732.5	QPSK	16QAM
	19711.54	19711.54

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



Date: 6.MAR.2017 19:15:41

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

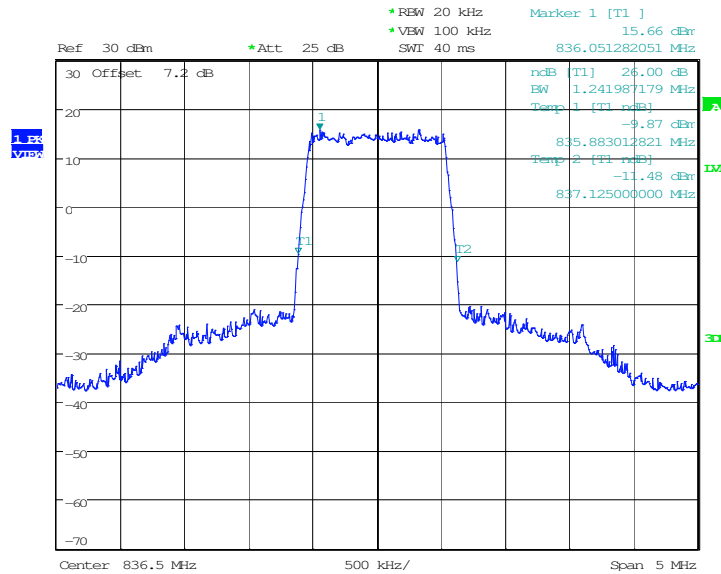


Date: 6.MAR.2017 19:16:45

**LTE band 5, 1.4MHz (-26dBc)**

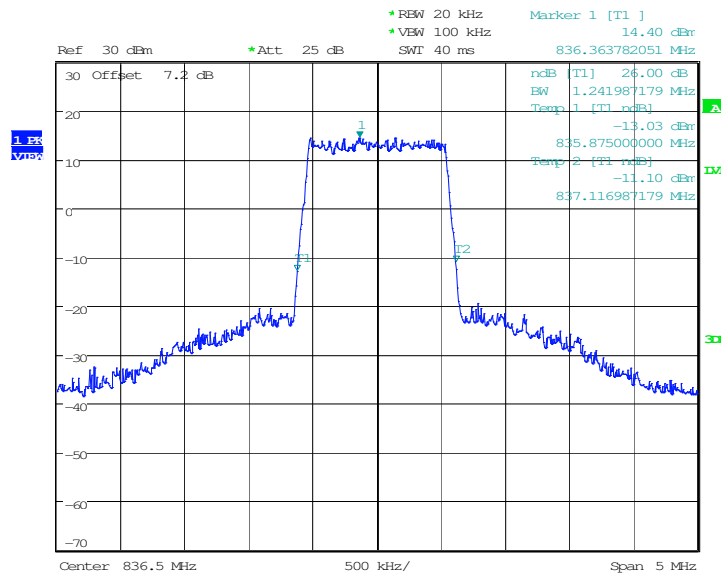
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
836.5	QPSK	16QAM
	1241.99	1241.99

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



Date: 6.MAR.2017 18:27:20

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

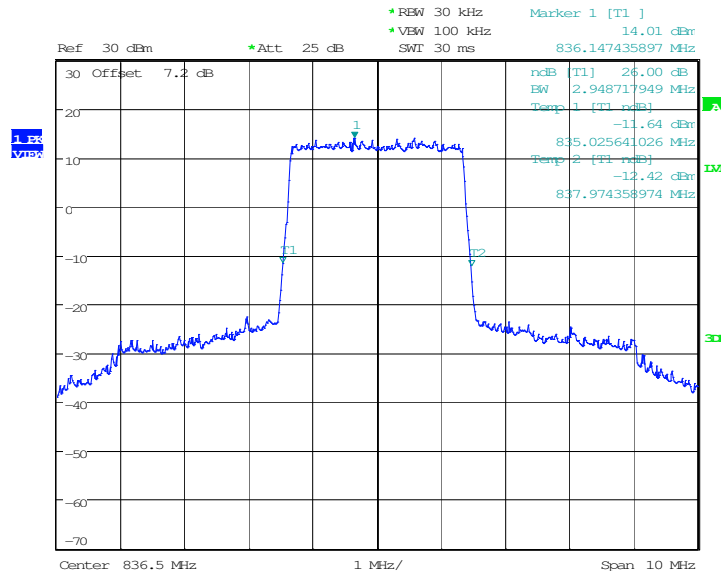


Date: 6.MAR.2017 18:26:42

**LTE band 5, 3MHz (-26dBc)**

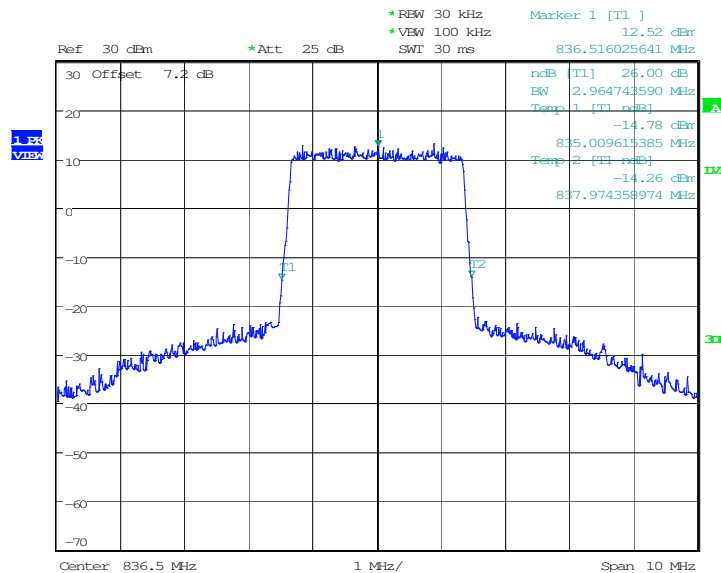
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
836.5	QPSK	16QAM
	2948.72	2964.74

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



Date: 6.MAR.2017 18:29:25

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

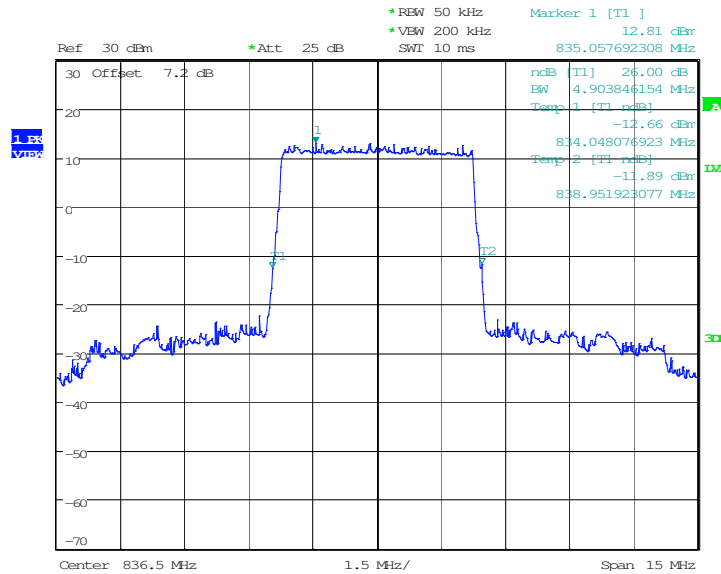


Date: 6.MAR.2017 18:29:55

**LTE band 5, 5MHz (-26dBc)**

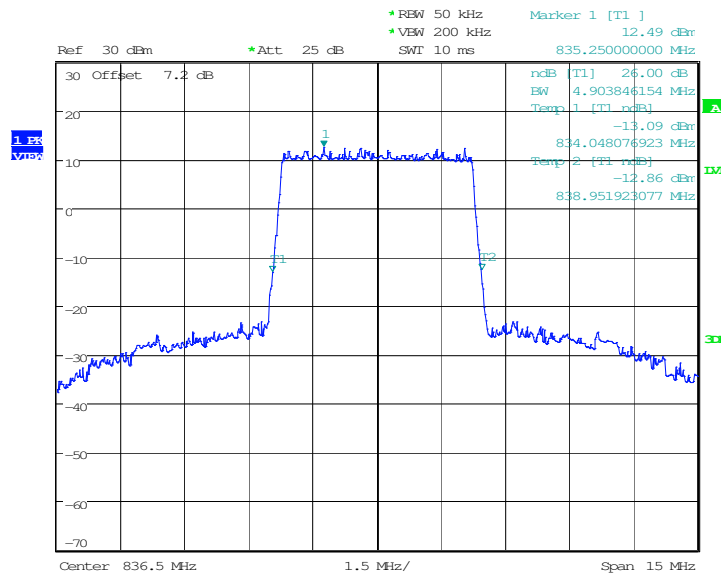
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
836.5	QPSK	16QAM
	4903.85	4903.85

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



Date: 6.MAR.2017 18:45:13

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

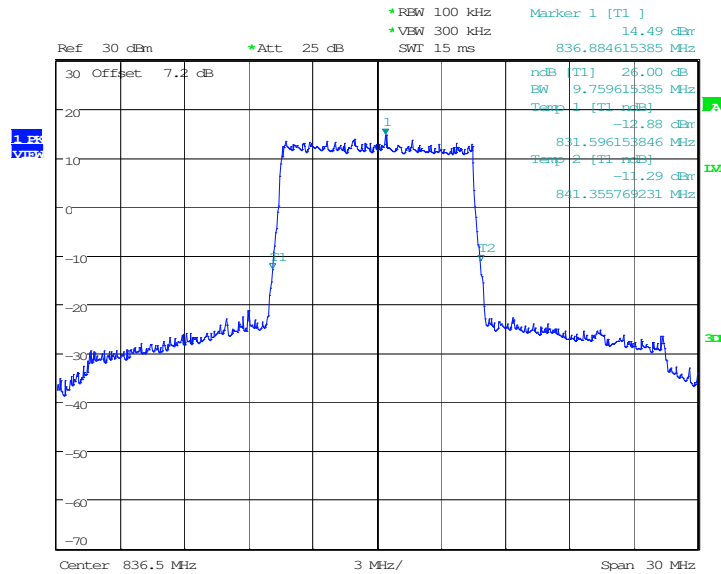


Date: 6.MAR.2017 18:46:02

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

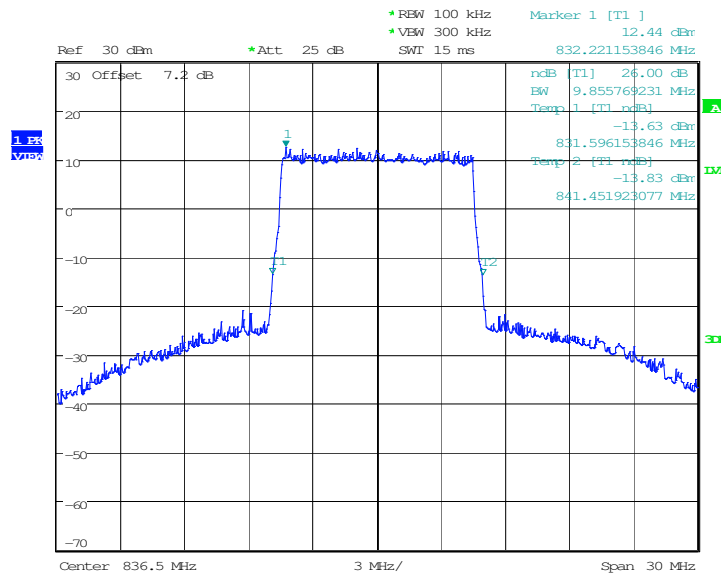
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
836.5	QPSK	16QAM
	9759.62	9855.77

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



Date: 6.MAR.2017 18:55:58

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



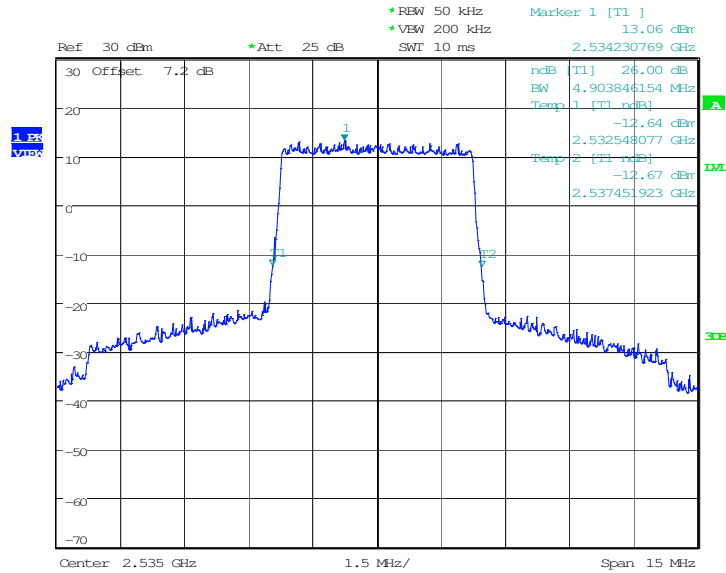
Date: 6.MAR.2017 18:55:04



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

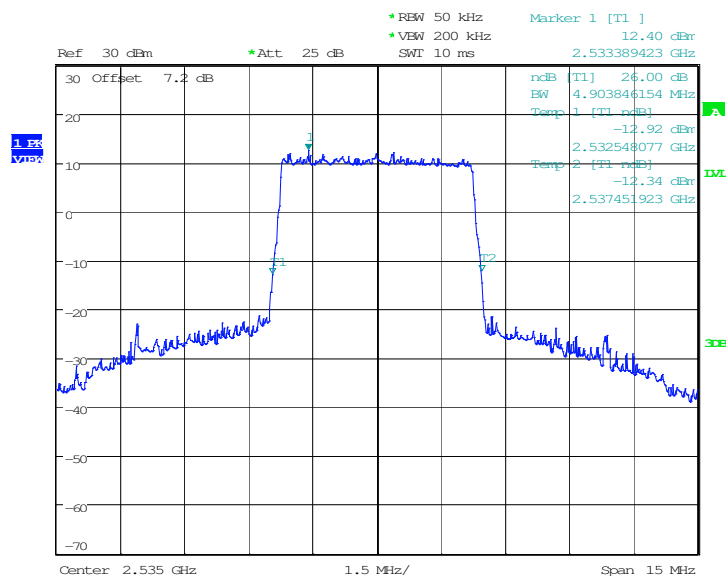
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
	2535.0	QPSK
4903.85		4903.85

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



Date: 6.MAR.2017 18:50:01

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

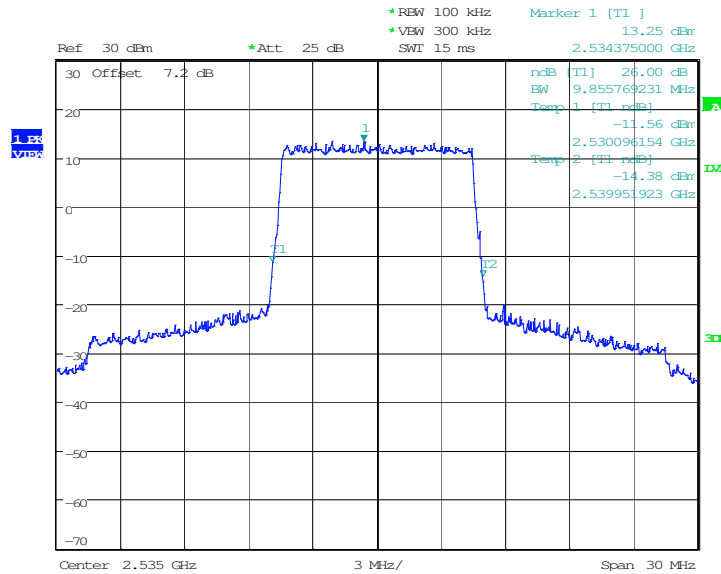


Date: 6.MAR.2017 18:49:27

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

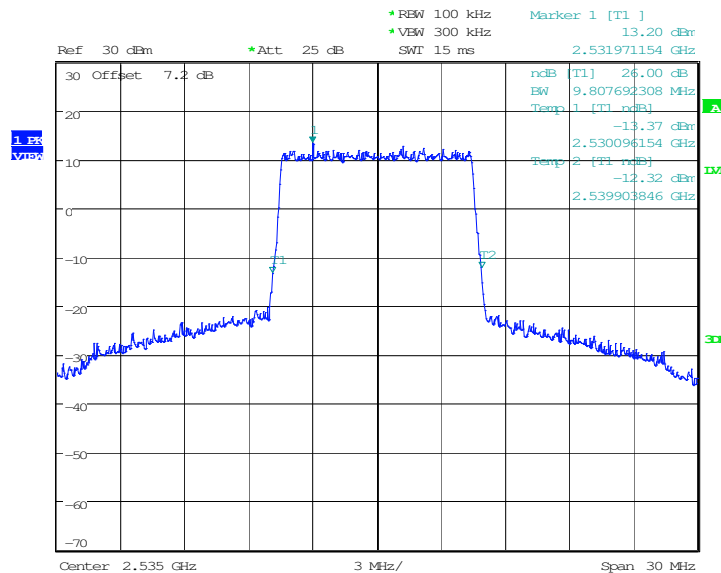
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
2535.0	QPSK	16QAM
	9855.77	9807.69

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



Date: 6.MAR.2017 18:51:25

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

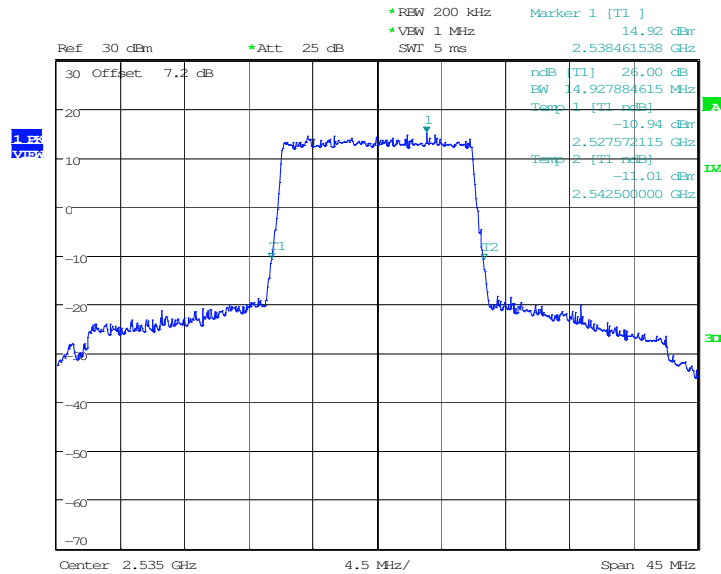


Date: 6.MAR.2017 18:52:14

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

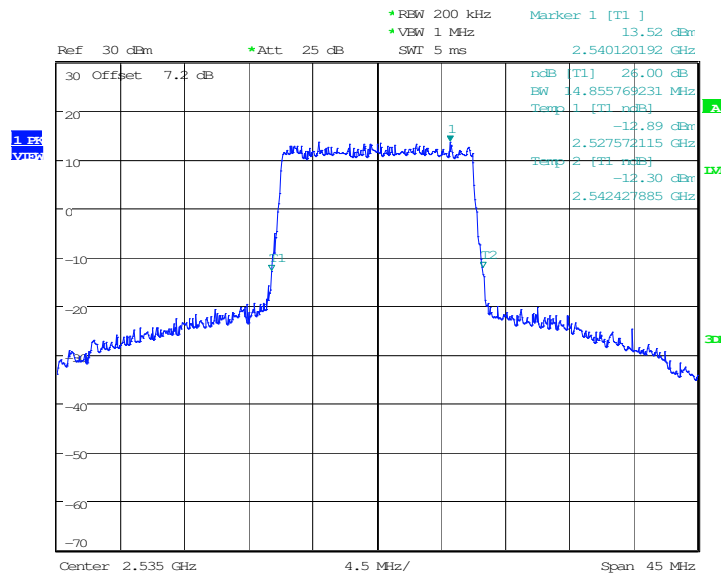
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
	2535.0	QPSK
14927.88		14855.77

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



Date: 6.MAR.2017 19:10:14

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

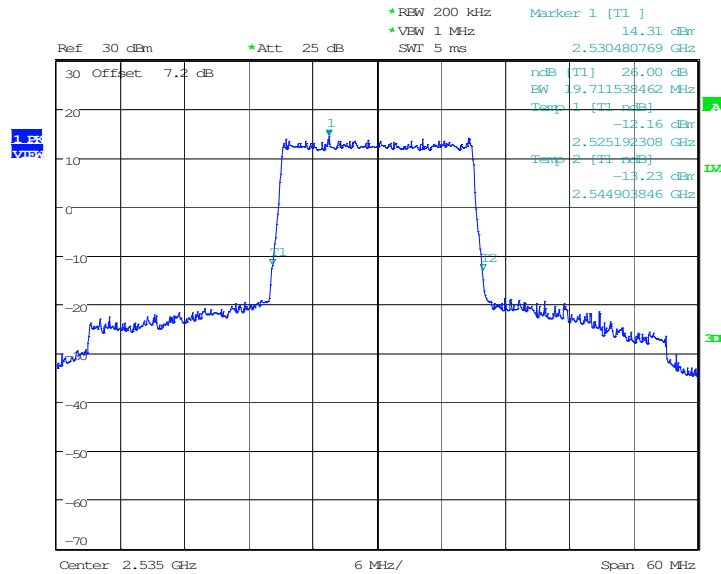


Date: 6.MAR.2017 19:10:54

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

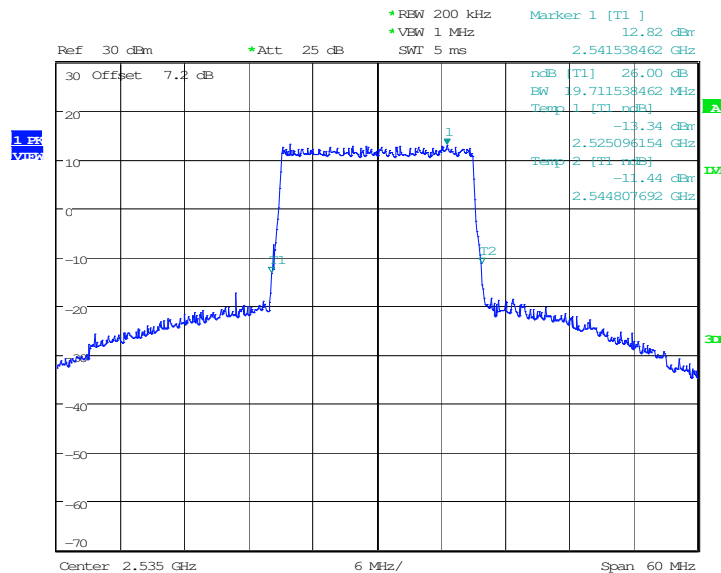
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
2535.0	QPSK	16QAM
	19711.54	19711.54

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



Date: 6.MAR.2017 19:14:41

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

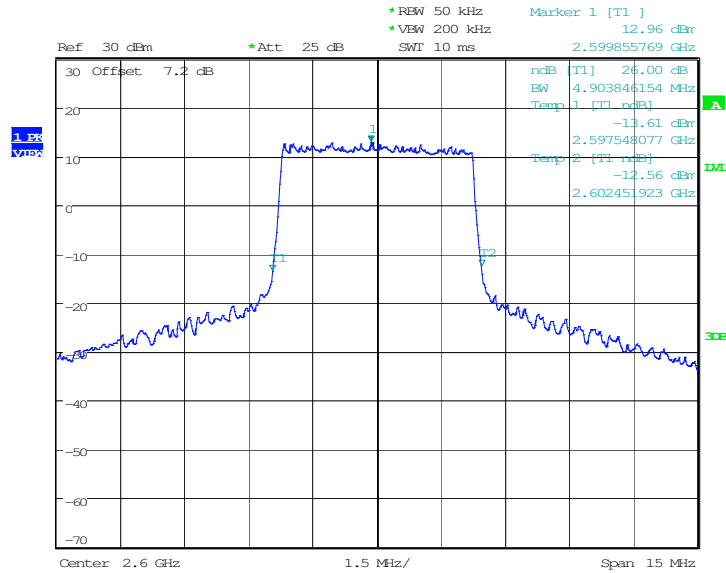


Date: 6.MAR.2017 19:14:01

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

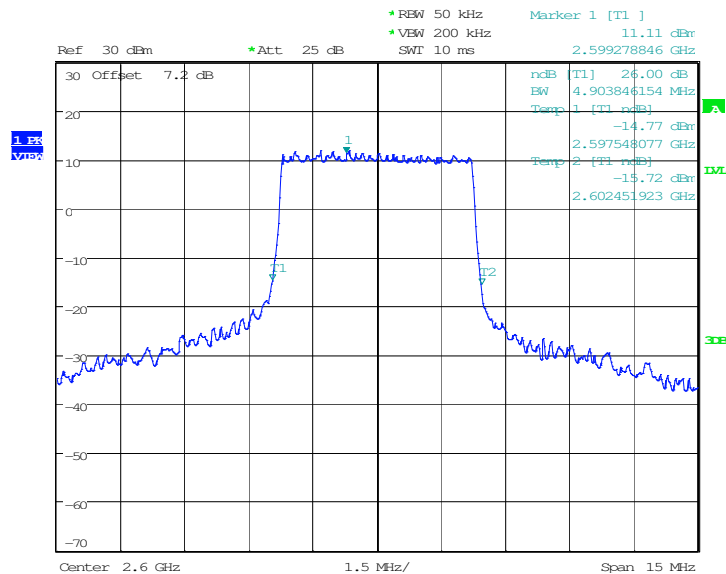
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
2600.0	QPSK	16QAM
	4903.85	4903.85

**LTE band 41, 5MHz Bandwidth, QPSK (-26dBc BW)**



Date: 6.MAR.2017 19:46:53

**LTE band 41, 5MHz Bandwidth, 16QAM (-26dBc BW)**

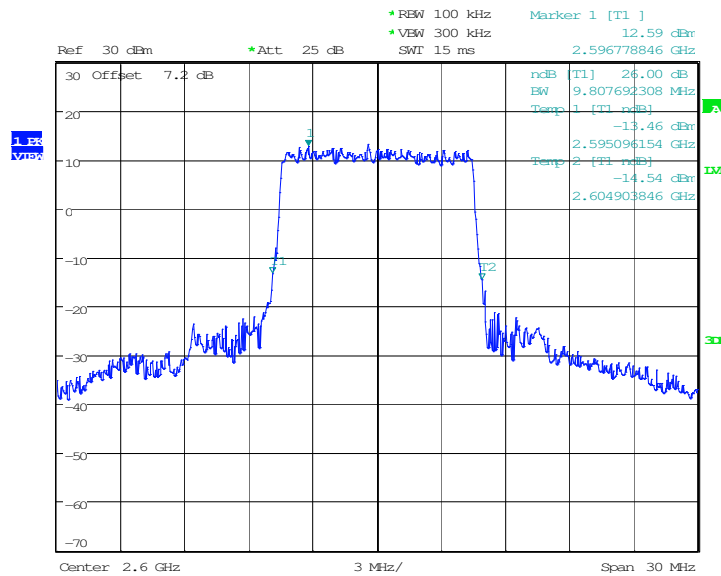


Date: 6.MAR.2017 19:48:30

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

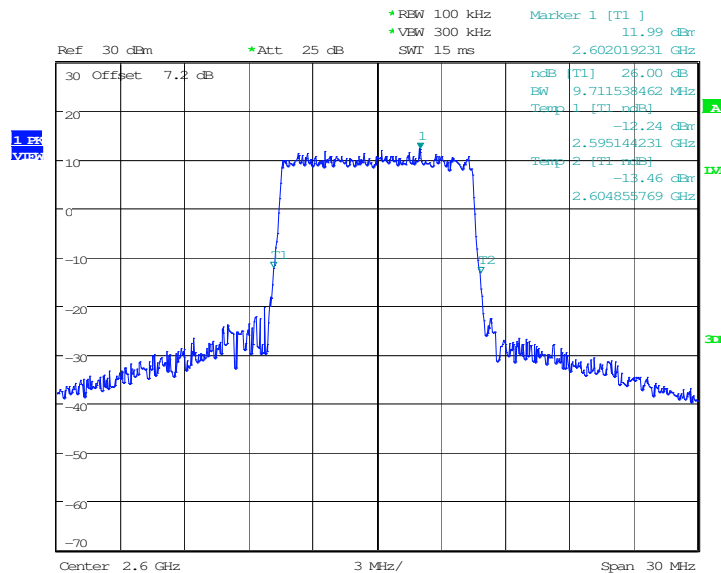
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
	2600.0	QPSK
9807.69		9711.54

**LTE band 41, 10MHz Bandwidth, QPSK (-26dBc BW)**



Date: 6.MAR.2017 19:37:53

**LTE band 41, 10MHz Bandwidth, 16QAM (-26dBc BW)**

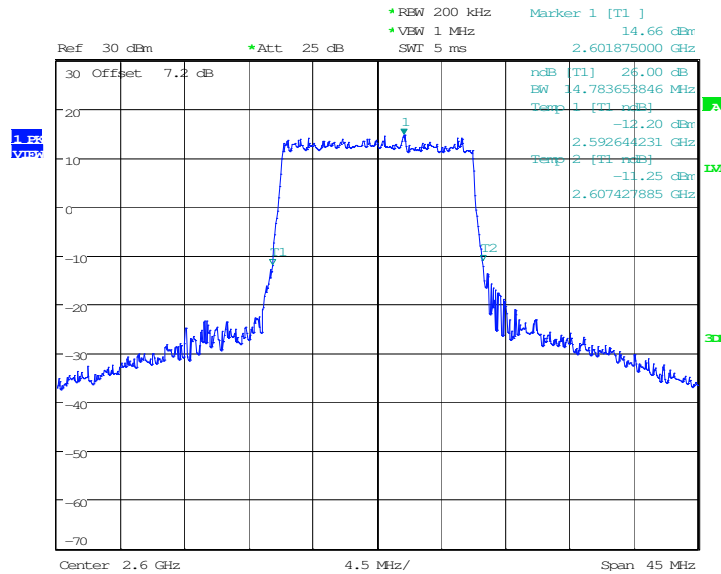


Date: 6.MAR.2017 19:38:23

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

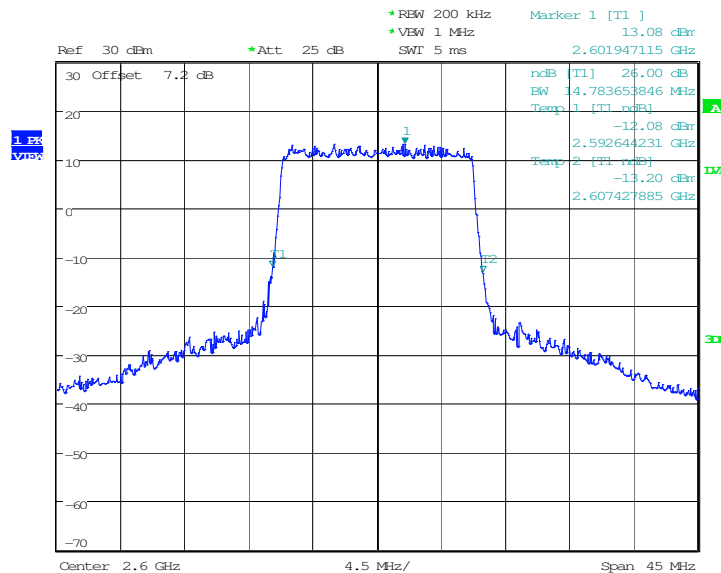
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
	2600.0	QPSK
	14783.65	14783.65

**LTE band 41, 15MHz Bandwidth, QPSK (-26dBc BW)**



Date: 6.MAR.2017 19:36:53

**LTE band 41, 15MHz Bandwidth, 16QAM (-26dBc BW)**

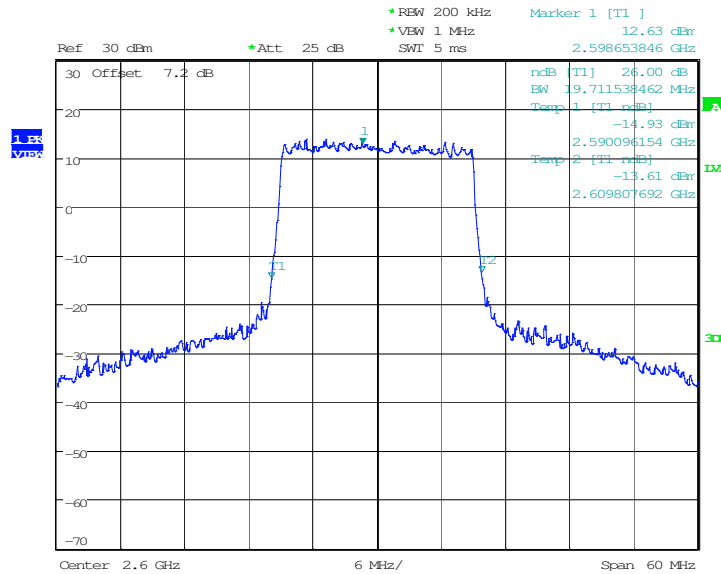


Date: 6.MAR.2017 19:36:24

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

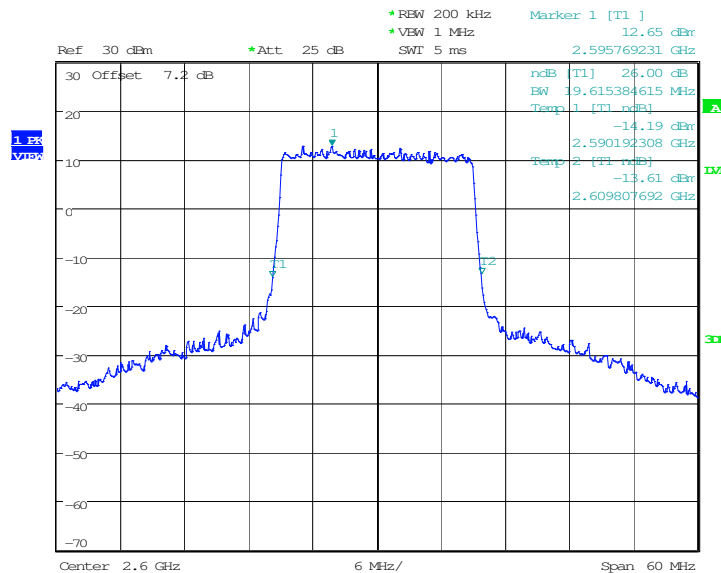
Frequency(MHz)	Occupied Bandwidth (-26dBc)( kHz)	
	2600.0	QPSK
19711.54		19615.38

**LTE band 41, 20MHz Bandwidth, QPSK (-26dBc BW)**



Date: 6.MAR.2017 19:31:03

**LTE band 41, 20MHz Bandwidth, 16QAM (-26dBc BW)**



Date: 6.MAR.2017 19:32:27



## A.6 BAND EDGE COMPLIANCE

### Reference

FCC: CFR Part 22.917(b), 24.238(a), 27.53(h).

#### A.6.1 Measurement limit

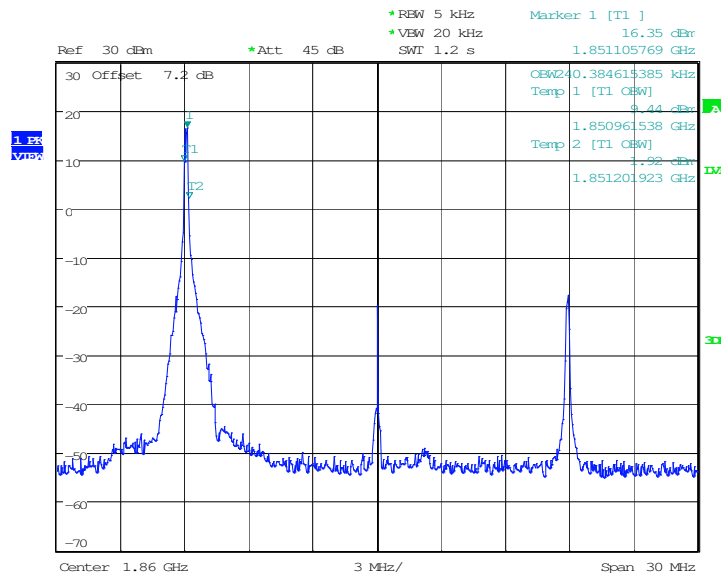
On any frequency outside frequency band of the US Cellular/PCS spectrum, the power of any emission shall be attenuated below the transmitter power (P, in Watts) by at least  $43+10\log(P)$  dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm. According to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

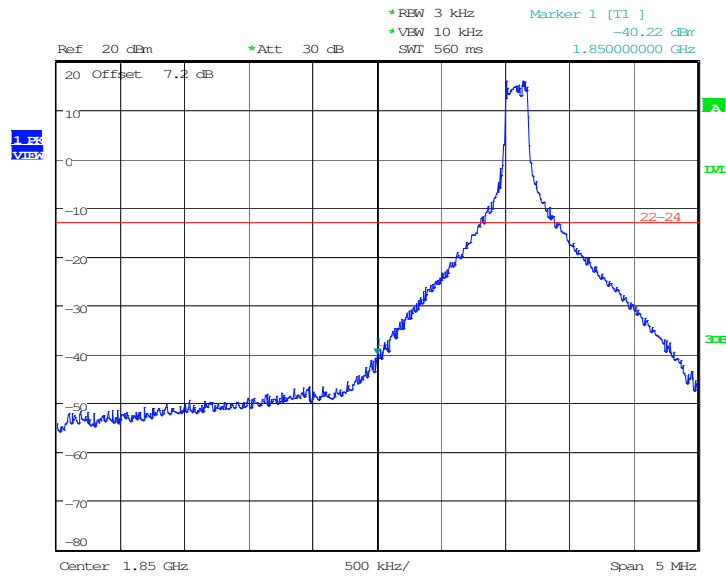
Only worst case result is given below

LTE band 2

OBW: 1RB-low\_offset

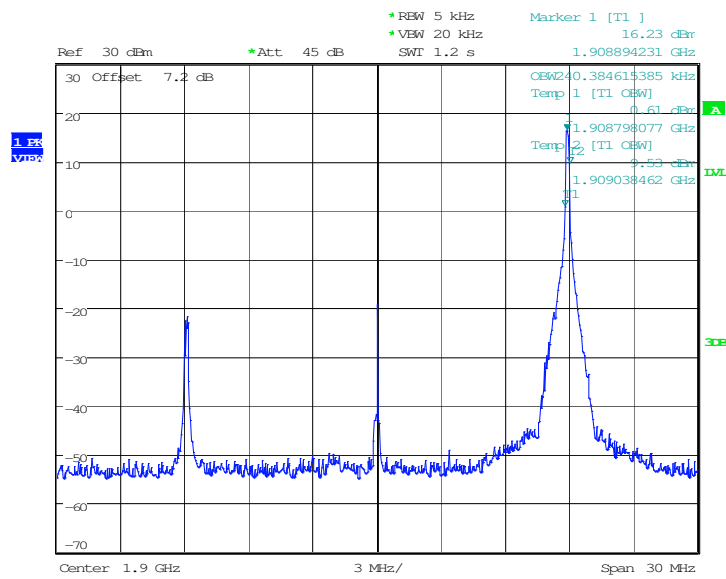


### LOW BAND EDGE BLOCK-1RB-low\_offset



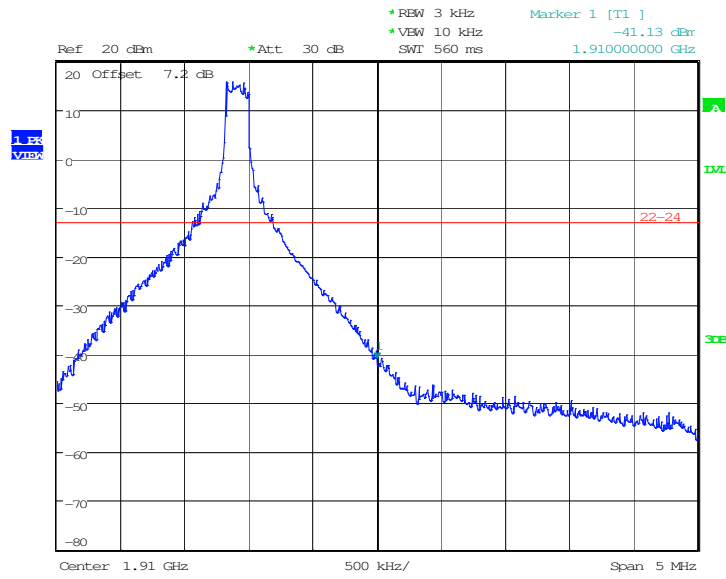
Date: 7.MAR.2017 18:29:35

### OBW: 1RB-high\_offset



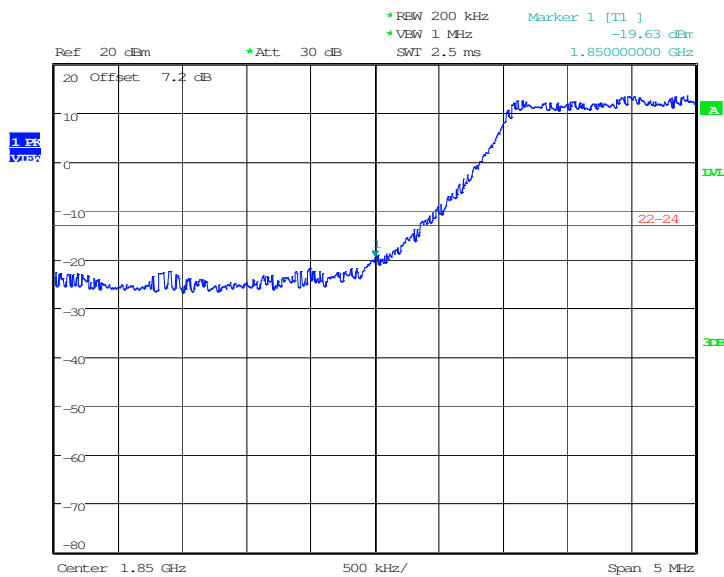
Date: 7.MAR.2017 18:30:58

### HIGH BAND EDGE BLOCK-1RB-high\_offset



Date: 7.MAR.2017 18:35:18

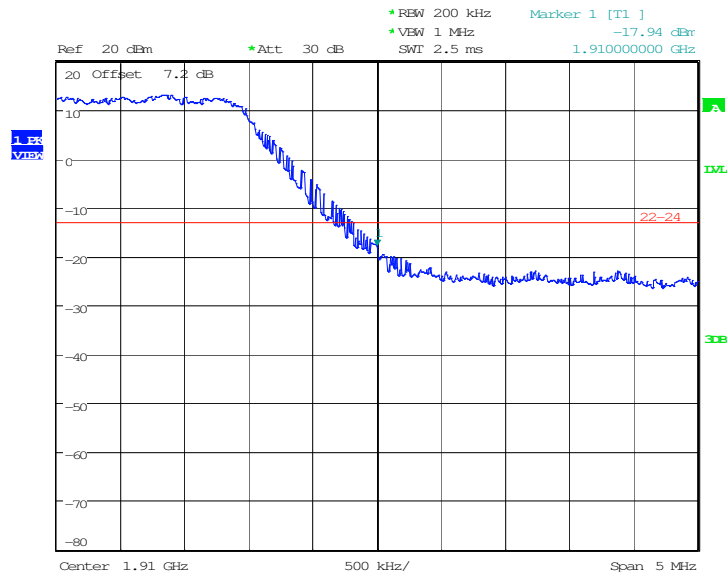
### LOW BAND EDGE BLOCK-20MHz-100%RB



Date: 7.MAR.2017 18:37:02



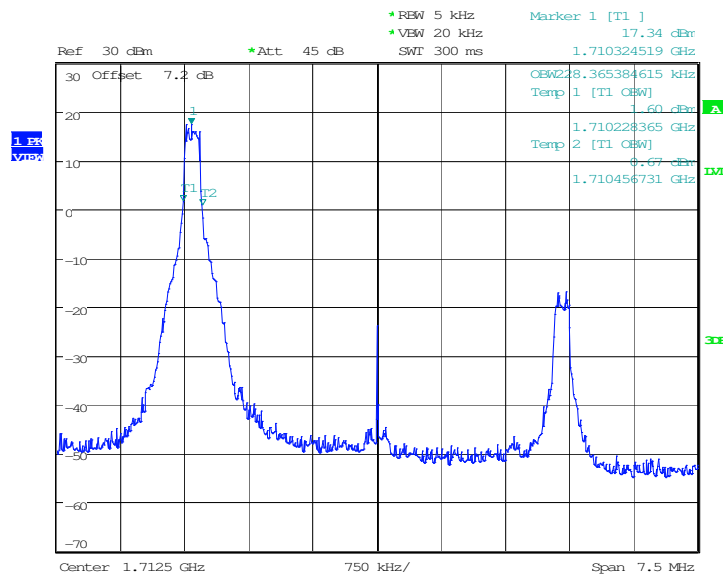
### HIGH BAND EDGE BLOCK-20MHz-100%RB



Date: 7.MAR.2017 18:36:11

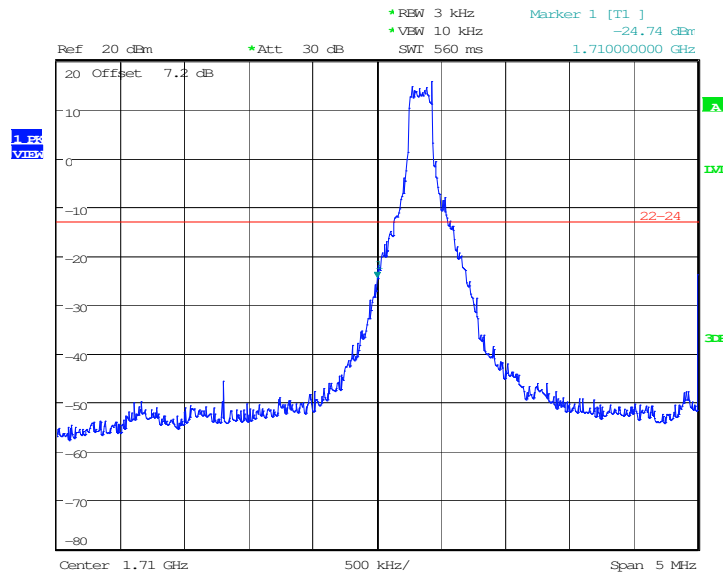


LTE band 4  
OBW: 1RB-low\_offset



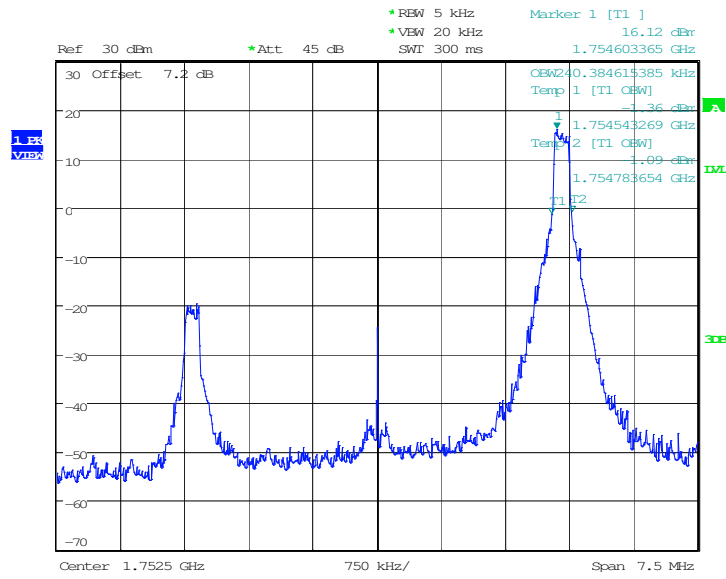
Date: 7.MAR.2017 18:38:51

LOW BAND EDGE BLOCK-1RB-low\_offset



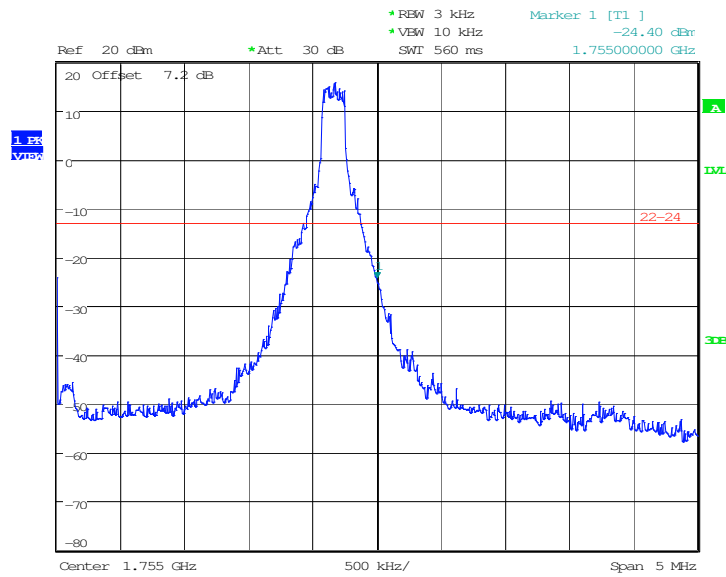
Date: 7.MAR.2017 18:39:54

**OBW: 1RB-high\_offset**



Date: 7.MAR.2017 18:41:21

**HIGH BAND EDGE BLOCK-1RB-high\_offset**

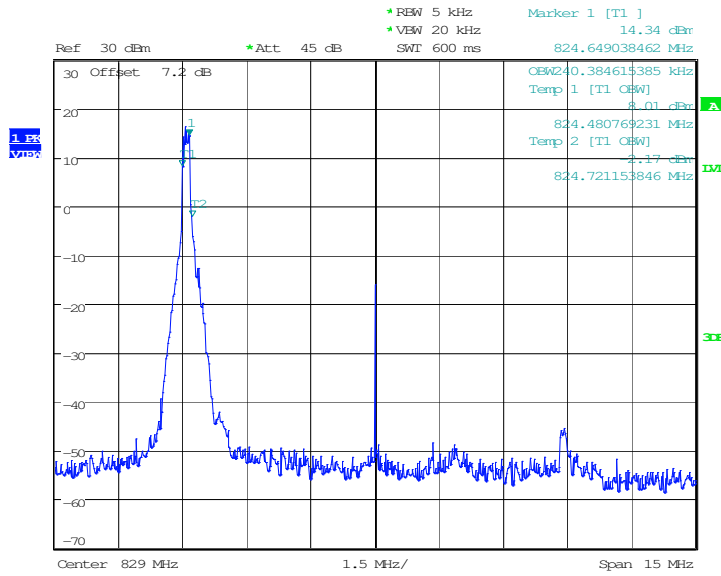


Date: 7.MAR.2017 18:42:48



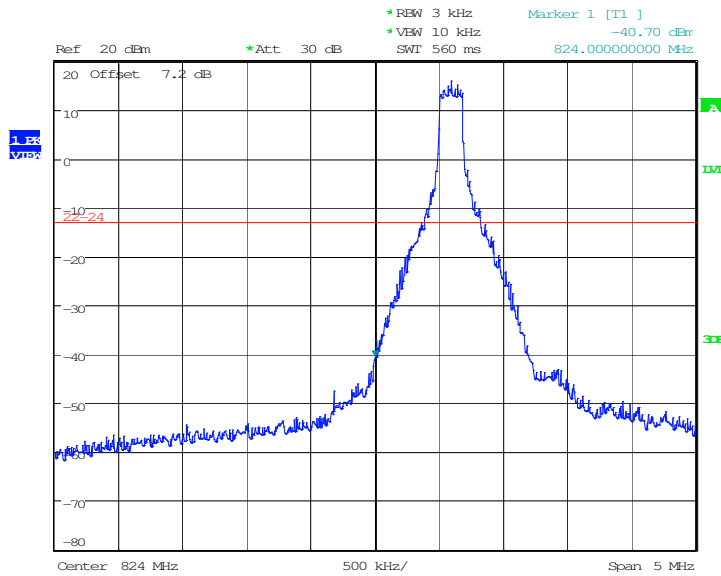


LTE band 5  
OBW: 1RB-low\_offset



Date: 7.MAR.2017 18:53:44

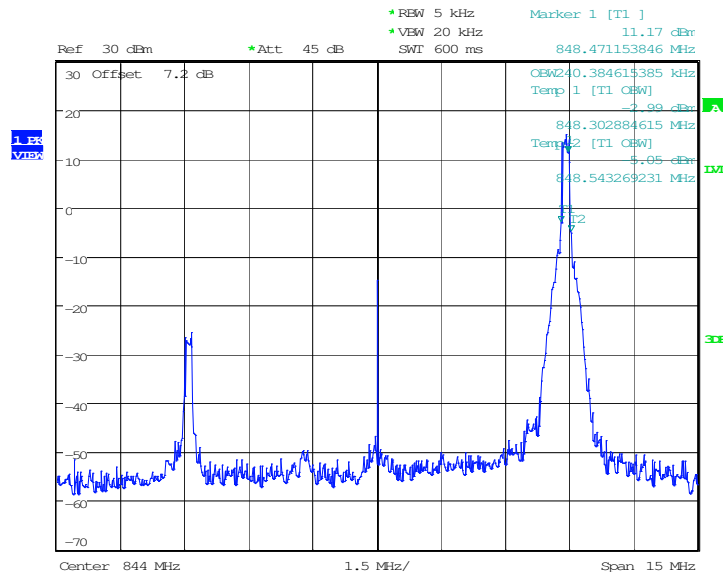
LOW BAND EDGE BLOCK-1RB-low\_offset



Date: 7.MAR.2017 18:52:26

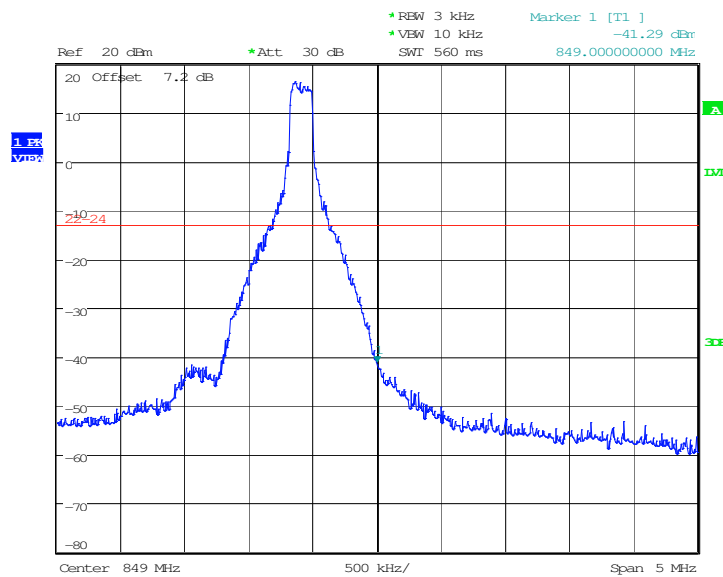


**OBW: 1RB-high\_offset**



Date: 7.MAR.2017 18:55:03

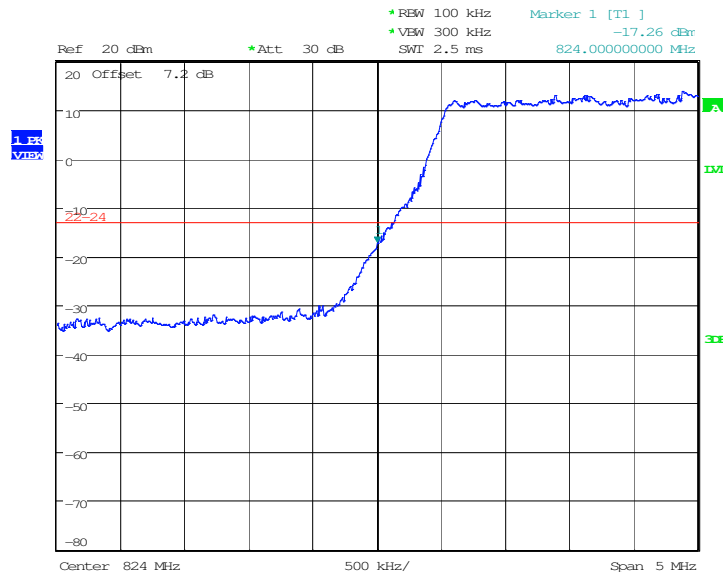
**HIGH BAND EDGE BLOCK-1RB-high\_offset**



Date: 7.MAR.2017 18:51:28

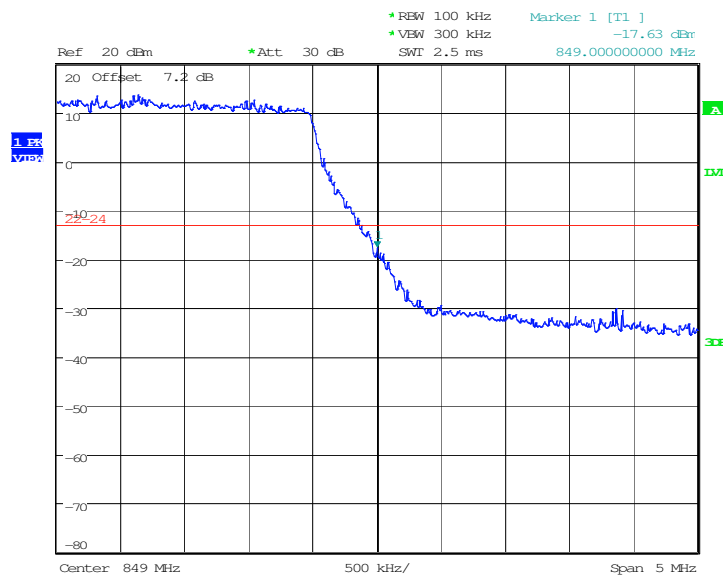


### LOW BAND EDGE BLOCK-10MHz-100%RB



Date: 7.MAR.2017 18:48:56

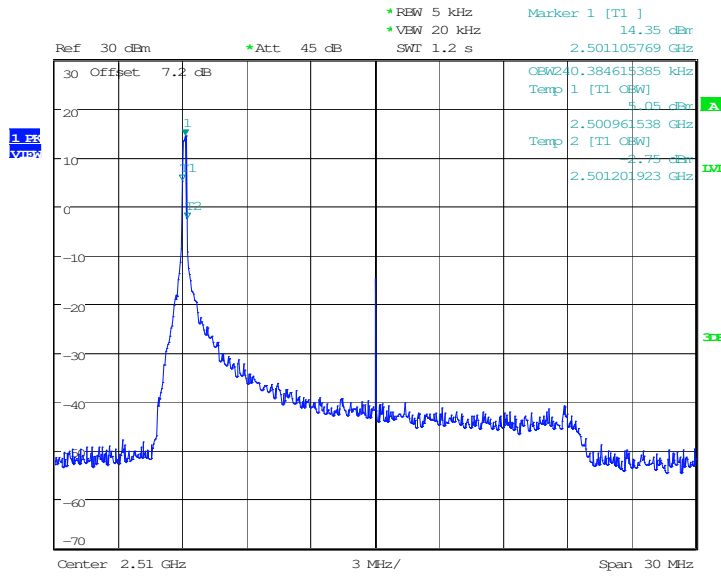
### HIGH BAND EDGE BLOCK-10MHz-100%RB



Date: 7.MAR.2017 18:49:47

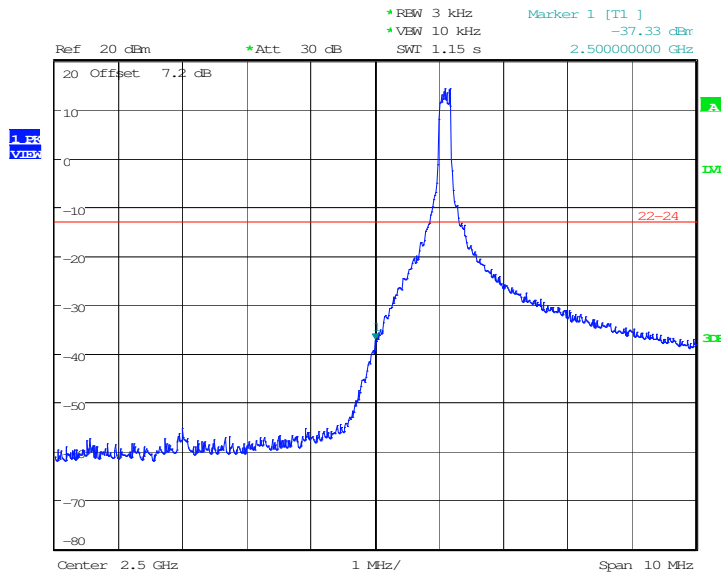


LTE band 7  
OBW: 1RB-low\_offset



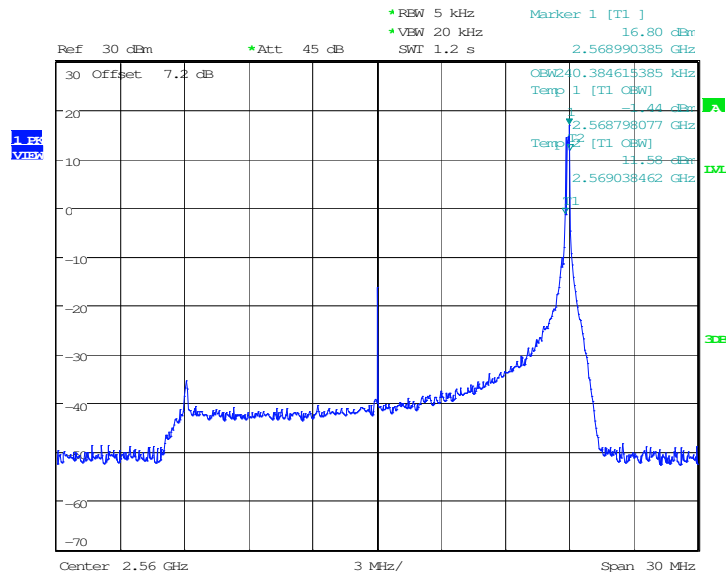
Date: 7.MAR.2017 19:06:15

LOW BAND EDGE BLOCK-1RB-low\_offset



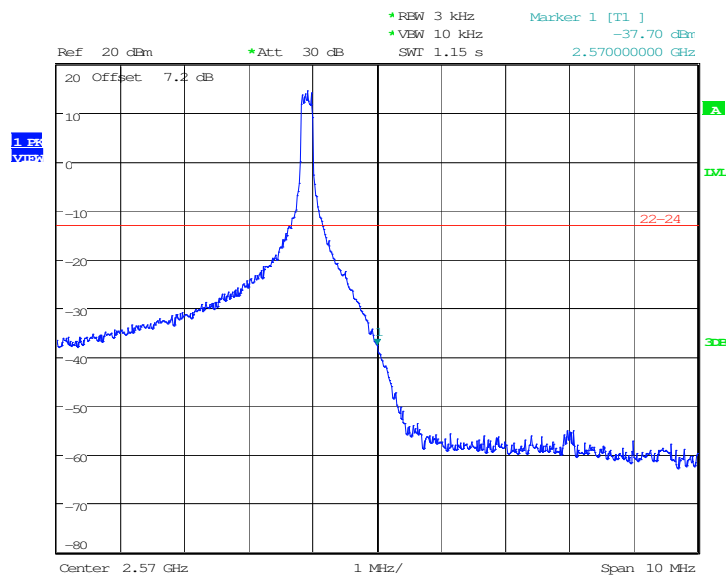
Date: 7.MAR.2017 19:09:55

**OBW: 1RB-high\_offset**



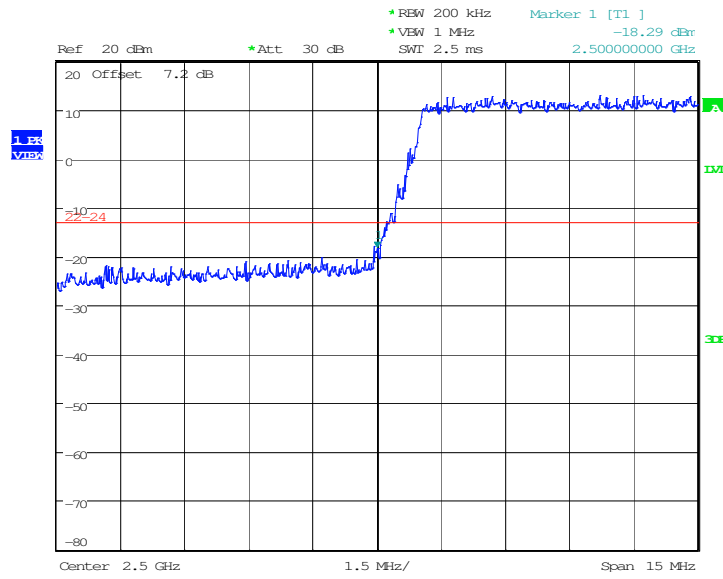
Date: 7.MAR.2017 19:07:06

**HIGH BAND EDGE BLOCK-1RB-high\_offset**



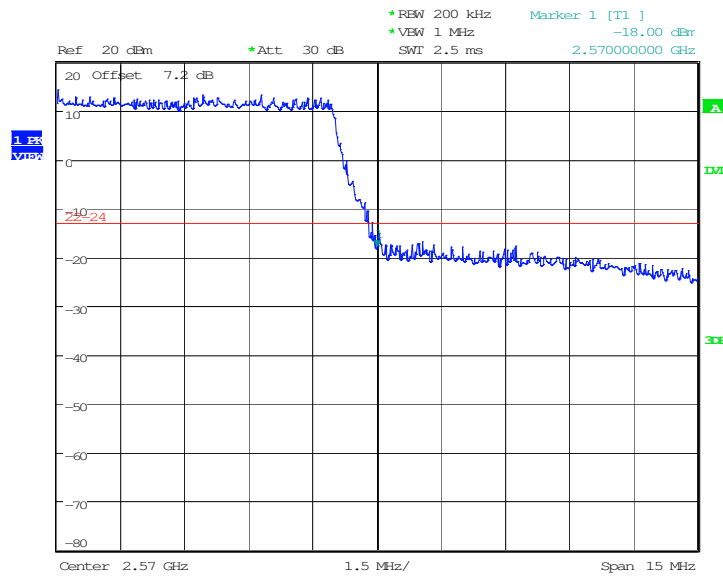
Date: 7.MAR.2017 19:08:31

### LOW BAND EDGE BLOCK-20MHz-100%RB



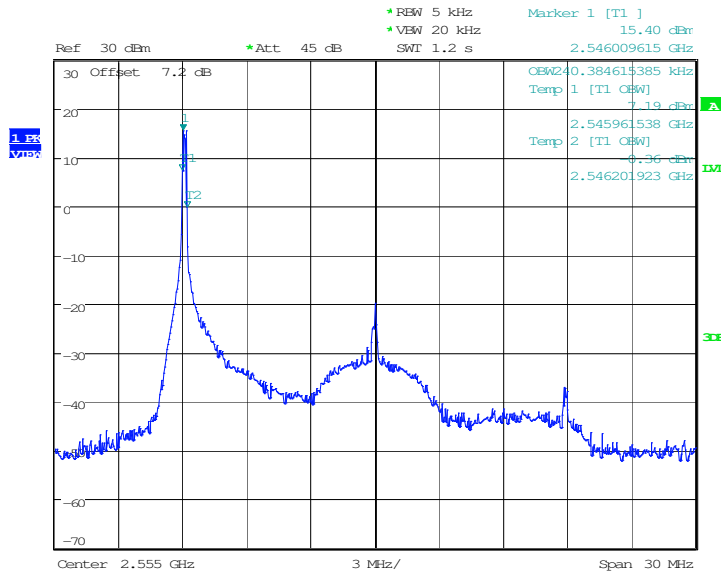
Date: 7.MAR.2017 19:10:59

### HIGH BAND EDGE BLOCK-20MHz-100%RB



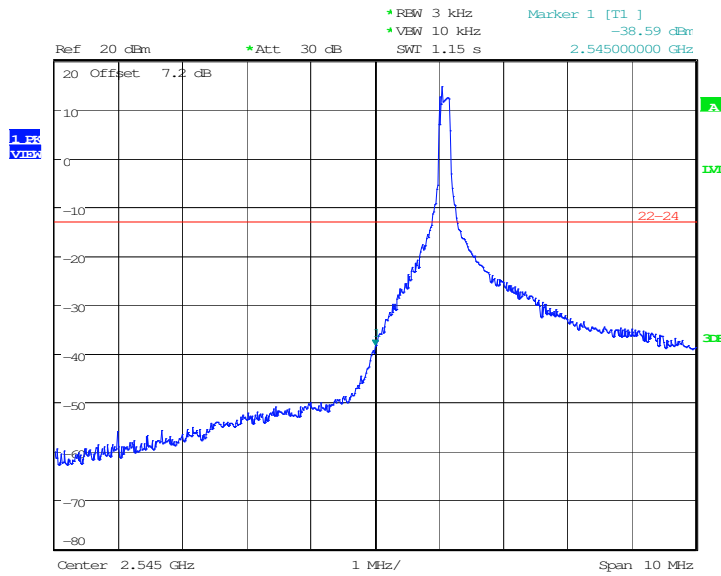
Date: 7.MAR.2017 19:11:33

**LTE band 41**  
**OBW: 1RB-low\_offset**



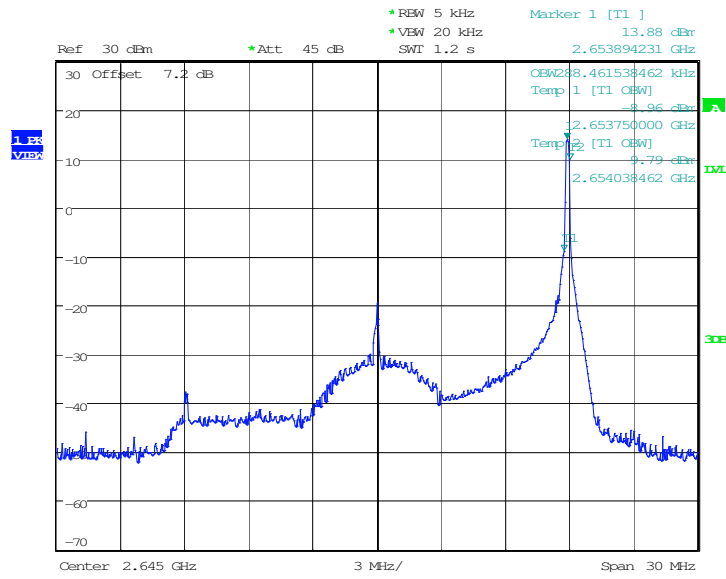
Date: 7.MAR.2017 19:41:48

**LOW BAND EDGE BLOCK-1RB-low\_offset**



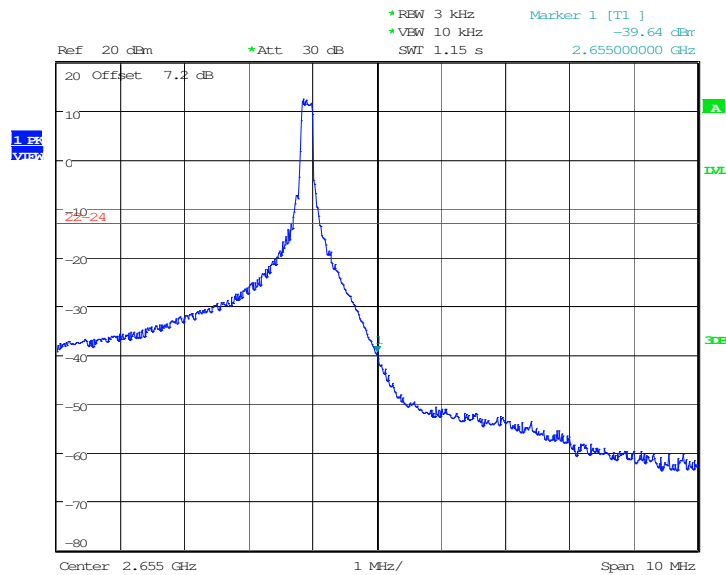
Date: 7.MAR.2017 19:45:36

**OBW: 1RB-high\_offset**



Date: 7.MAR.2017 19:42:46

**HIGH BAND EDGE BLOCK-1RB-high\_offset**



Date: 7.MAR.2017 19:44:35





## **A.7 CONDUCTED SPURIOUS EMISSION**

### **Reference**

FCC: CFR Part 2.1057, 22.917, 24.238, 27.53(h).

### **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. 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.

Part 27.53(a) states for mobile and portable stations operating in the 2305–2315 MHz and 2350–2360 MHz bands: By a factor of not less than:  $43 + 10 \log (P)$  dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than  $55 + 10 \log (P)$  dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than  $61 + 10 \log (P)$  dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than  $67 + 10 \log (P)$  dB on all frequencies between 2328 and 2337MHz;

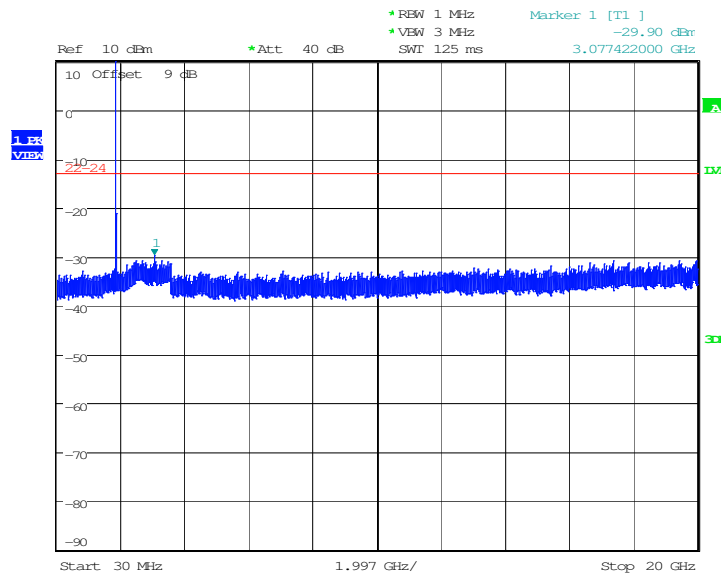


By a factor of not less than  $43 + 10 \log (P)$  dB on all frequencies between 2300 and 2305 MHz,  $55 + 10 \log (P)$  dB on all frequencies between 2296 and 2300MHz,  $61 + 10 \log (P)$  dB on all frequencies between 2292 and 2296 MHz,  $67 + 10 \log (P)$  dB on all frequencies between 2288 and 2292 MHz, and  $70 + 10 \log (P)$  dB below 2288 MHz; By a factor of not less than  $43 + 10 \log (P)$  dB on all frequencies between 2360 and 2365 MHz, and not less than  $70 + 10 \log (P)$  dB above 2365 MHz.

### A. 7.3 Measurement result

#### LTE band 2 1.4MHz QPSK: 30MHz – 20GHz

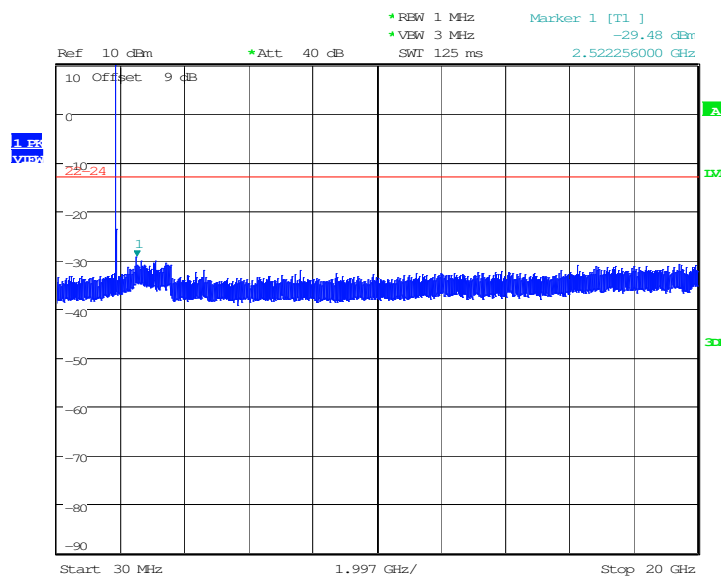
Spurious emission limit -13dBm.



Date: 12.APR.2017 19:50:24

#### LTE band 2 1.4MHz 16QAM: 30MHz – 20GHz

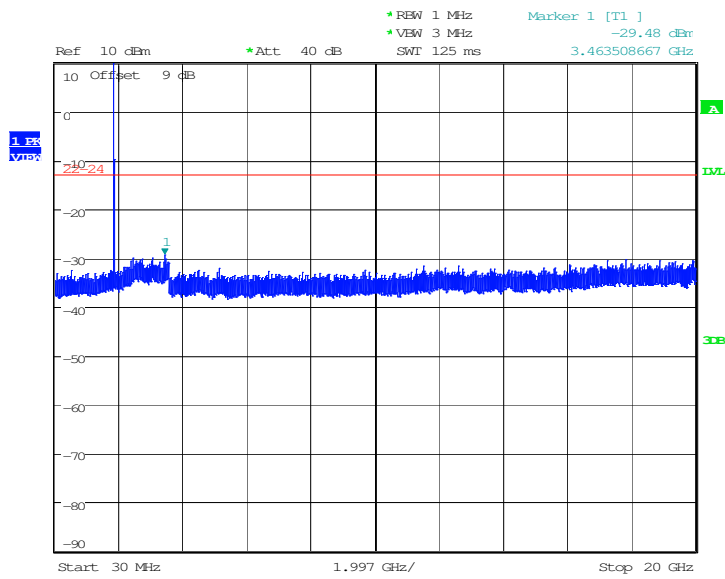
Spurious emission limit -13dBm.



Date: 12.APR.2017 19:53:15

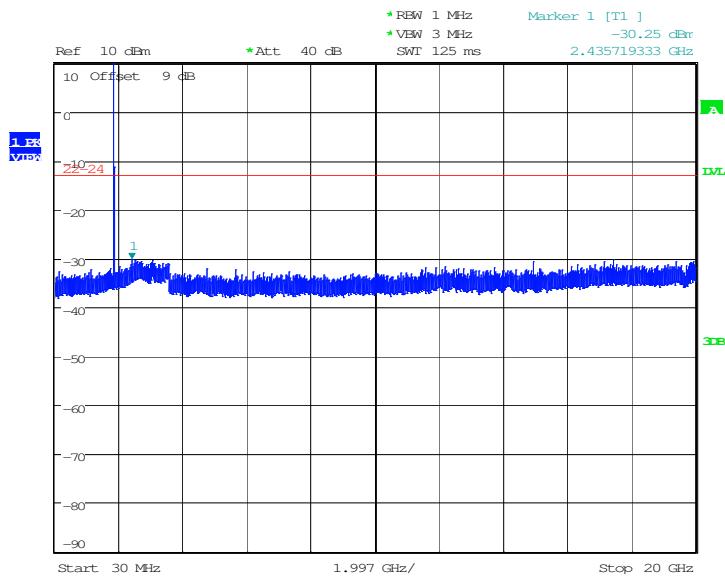


**LTE band 2 3MHz QPSK: 30MHz – 20GHz**  
Spurious emission limit –13dBm.



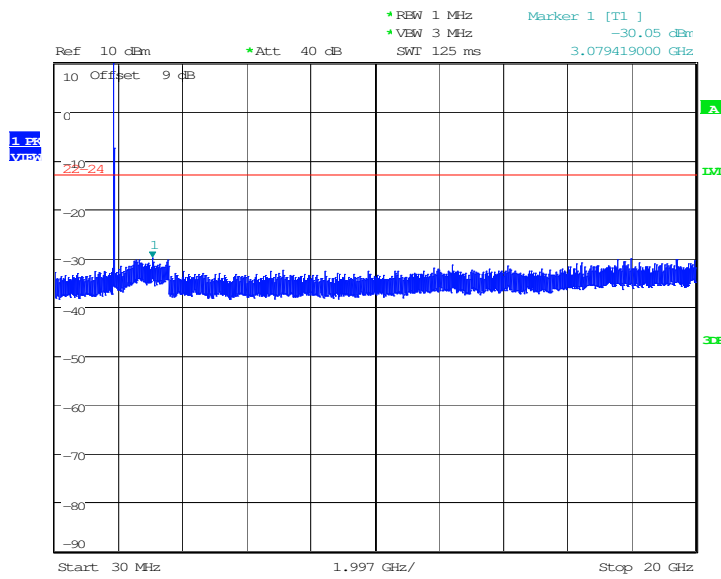
Date: 12.APR.2017 19:58:04

**LTE band 2 3MHz 16QAM: 30MHz – 20GHz**  
Spurious emission limit –13dBm.



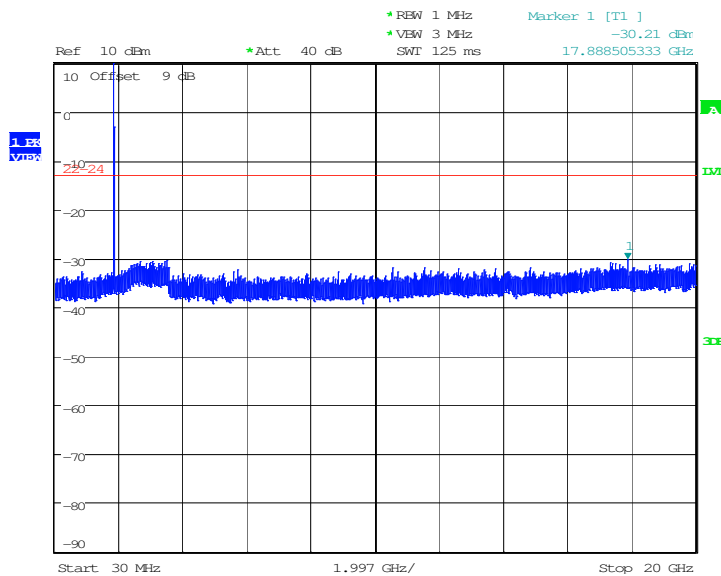
Date: 12.APR.2017 20:03:41

**LTE band 2 5MHz QPSK: 30MHz – 20GHz**  
Spurious emission limit –13dBm.



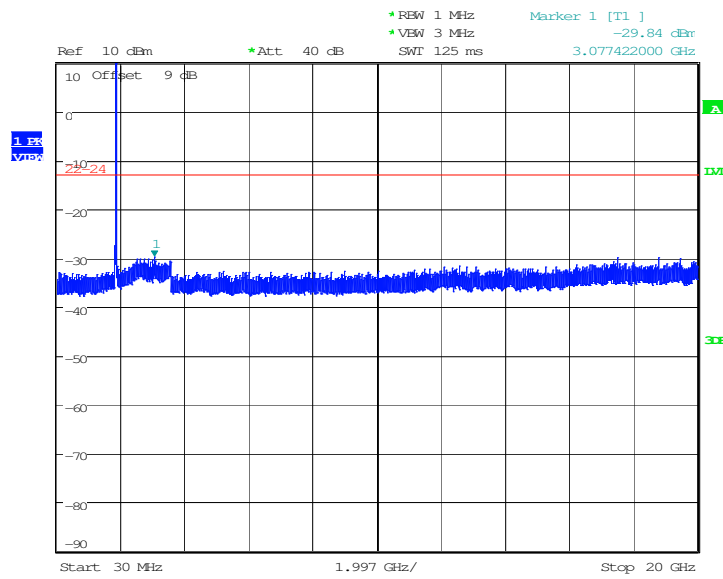
Date: 12.APR.2017 20:08:03

**LTE band 2 5MHz 16QAM: 30MHz – 20GHz**  
Spurious emission limit –13dBm.



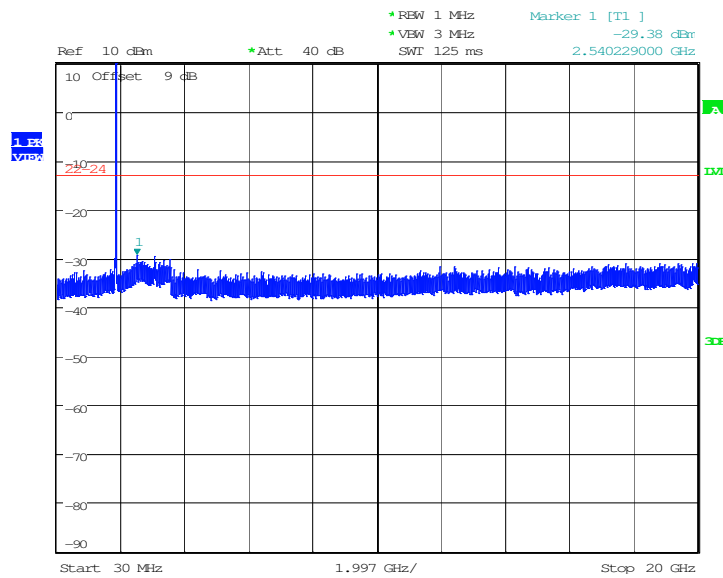
Date: 12.APR.2017 20:10:25

**LTE band 2 10MHz QPSK: 30MHz – 20GHz**  
Spurious emission limit –13dBm.



Date: 12.APR.2017 20:17:57

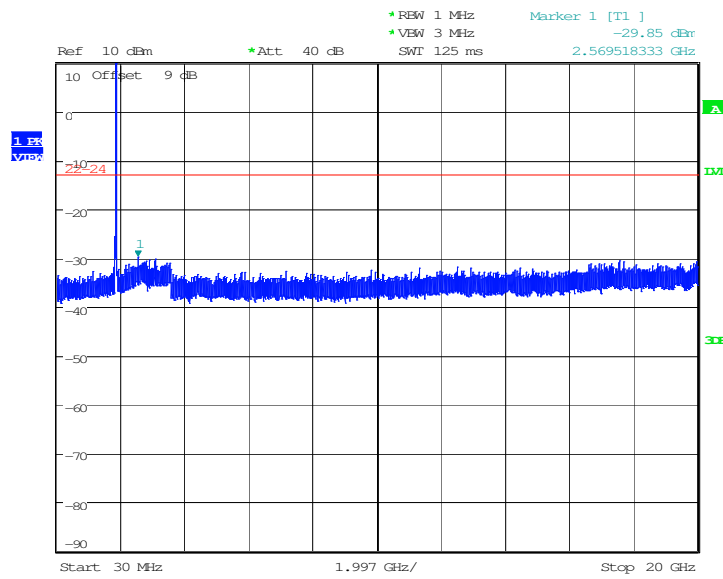
**LTE band 2 10MHz 16QAM: 30MHz – 20GHz**  
Spurious emission limit –13dBm.



Date: 12.APR.2017 20:21:51

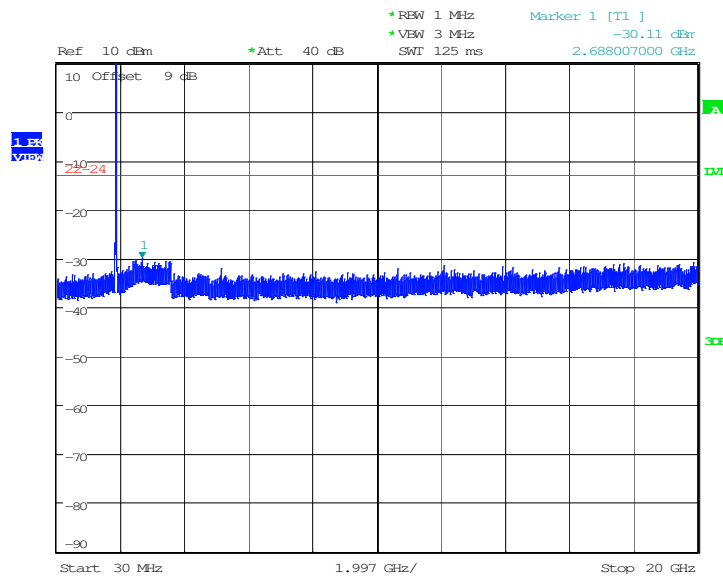


**LTE band 2 15MHz QPSK: 30MHz – 20GHz**  
Spurious emission limit –13dBm.



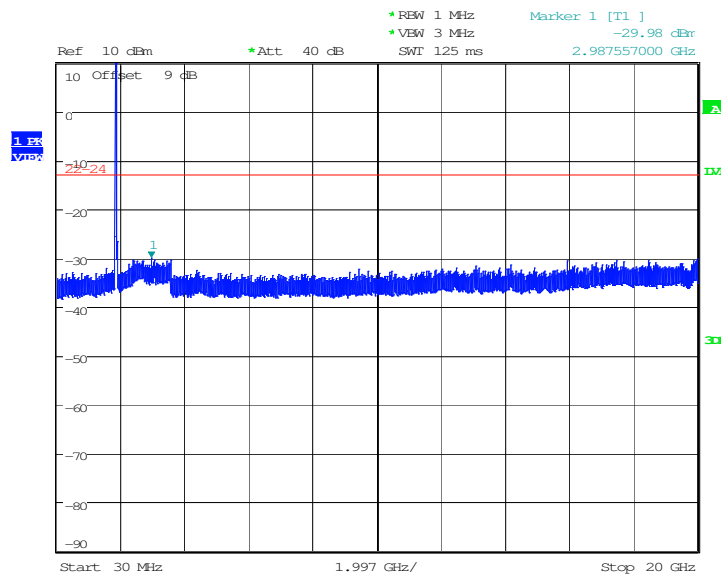
Date: 12.APR.2017 20:25:12

**LTE band 2 15MHz 16QAM: 30MHz – 20GHz**  
Spurious emission limit –13dBm.



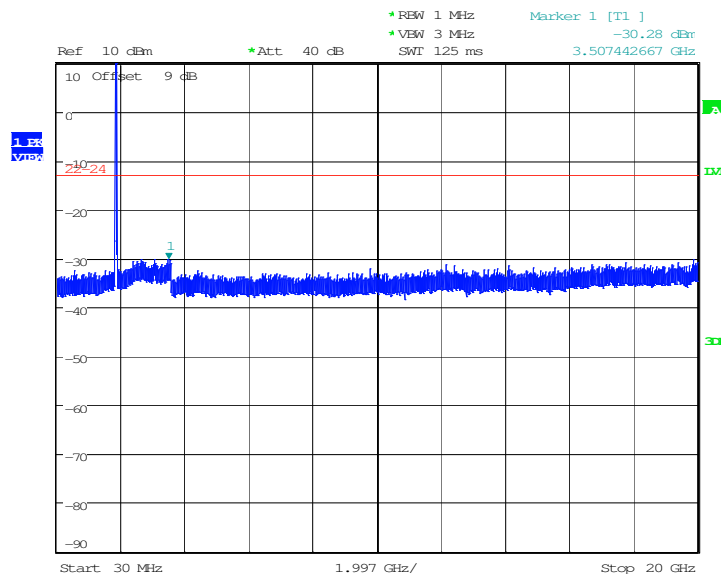
Date: 12.APR.2017 20:28:22

**LTE band 2 20MHz QPSK: 30MHz – 20GHz**  
Spurious emission limit –13dBm.



Date: 12.APR.2017 20:33:26

**LTE band 2 20MHz 16QAM: 30MHz – 20GHz**  
Spurious emission limit –13dBm.



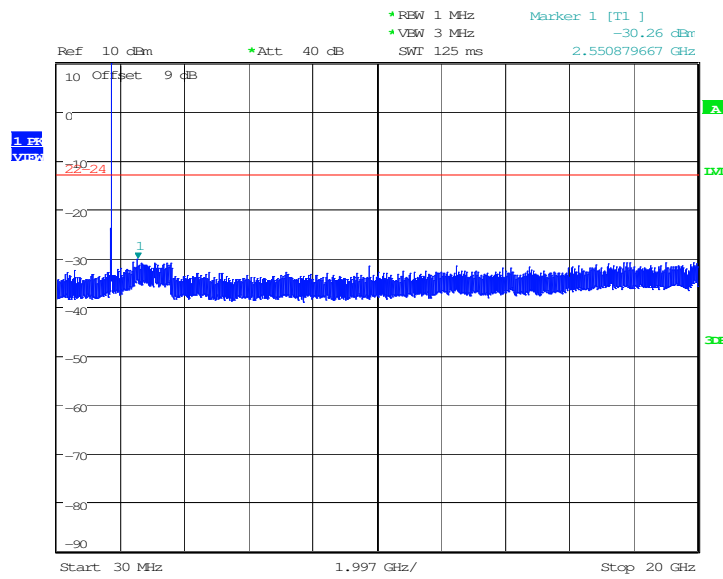
Date: 12.APR.2017 20:38:59





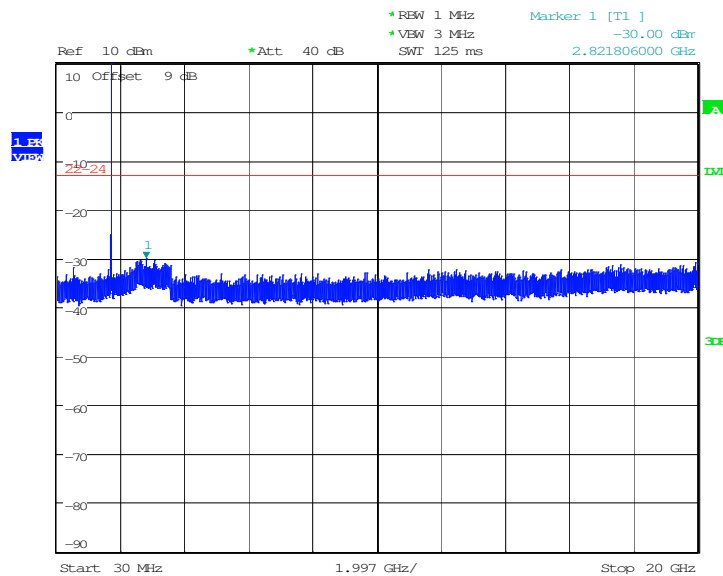


**LTE band 4 3MHz QPSK: 30MHz – 20GHz**  
Spurious emission limit –13dBm.



Date: 12.APR.2017 21:09:01

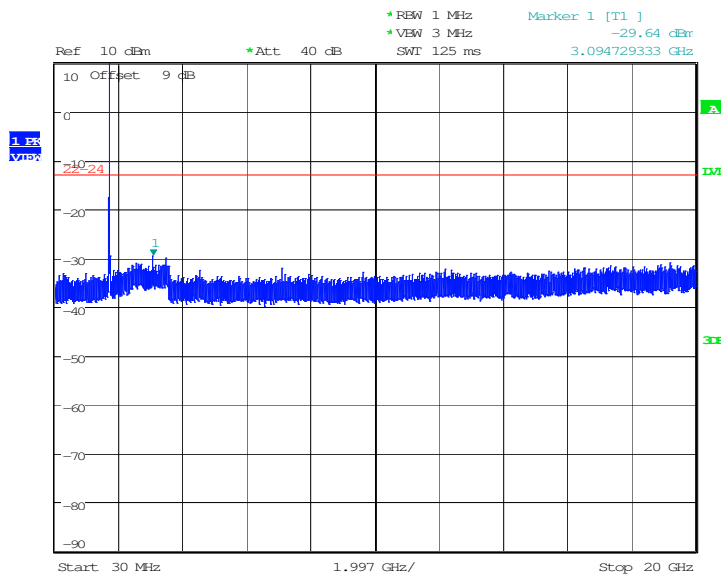
**LTE band 4 3MHz 16QAM: 30MHz – 20GHz**  
Spurious emission limit –13dBm.



Date: 12.APR.2017 21:06:21

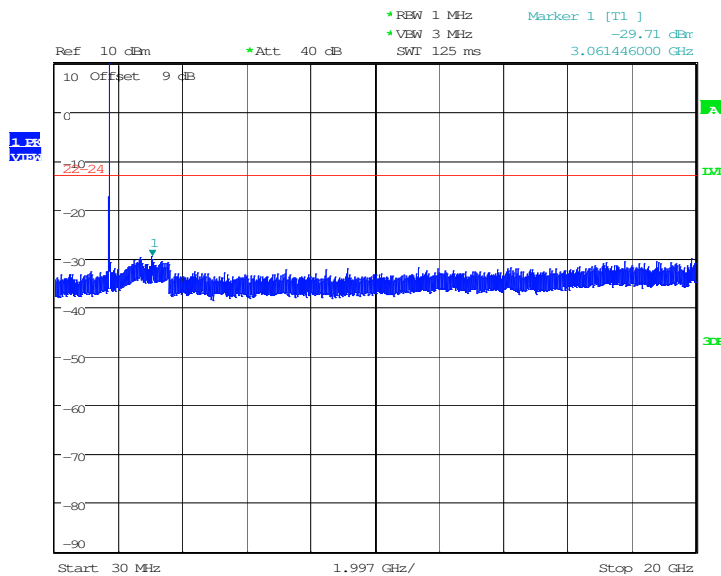


**LTE band 4 5MHz QPSK: 30MHz – 20GHz**  
Spurious emission limit –13dBm.



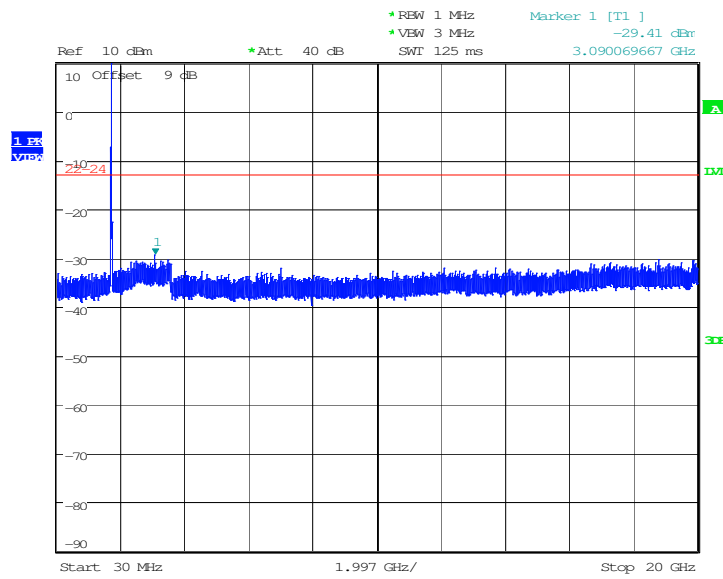
Date: 12.APR.2017 21:04:26

**LTE band 4 5MHz 16QAM: 30MHz – 20GHz**  
Spurious emission limit –13dBm.



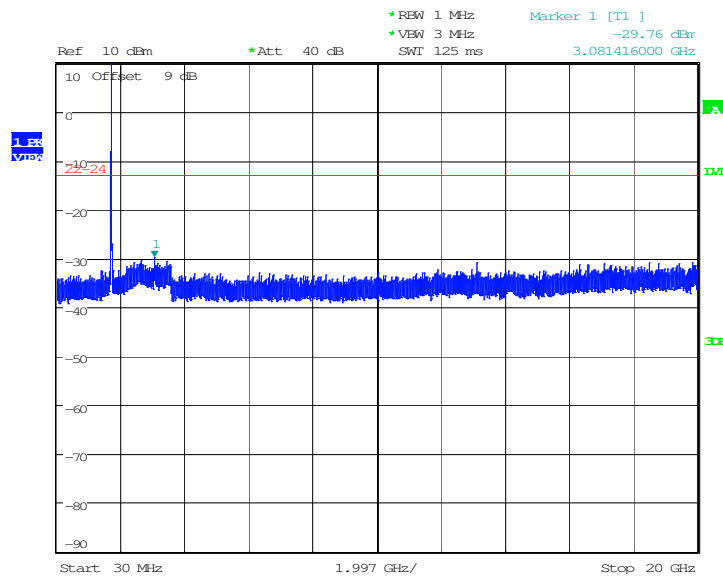
Date: 12.APR.2017 21:02:55

**LTE band 4 10MHz QPSK: 30MHz – 20GHz**  
Spurious emission limit –13dBm.



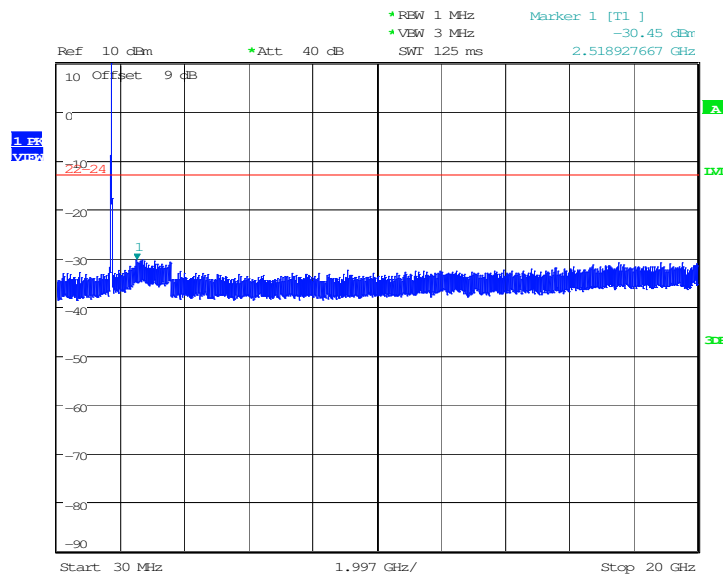
Date: 12.APR.2017 20:57:28

**LTE band 4 10MHz 16QAM: 30MHz – 20GHz**  
Spurious emission limit –13dBm.



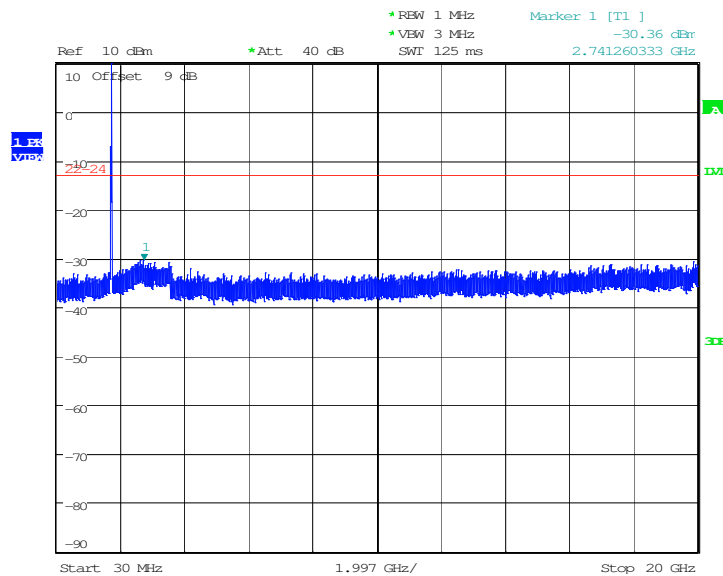
Date: 12.APR.2017 20:54:43

**LTE band 4 15MHz QPSK: 30MHz – 20GHz**  
Spurious emission limit -13dBm.



Date: 12.APR.2017 20:52:13

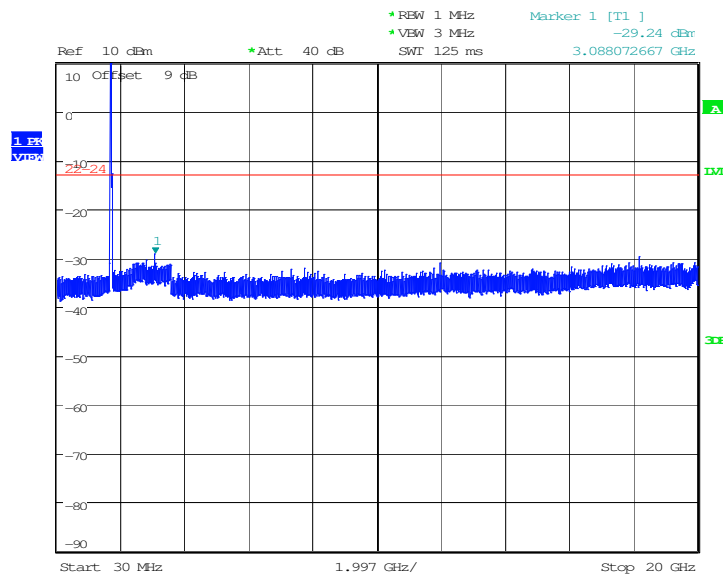
**LTE band 4 15MHz 16QAM: 30MHz – 20GHz**  
Spurious emission limit -13dBm.



Date: 12.APR.2017 20:49:08

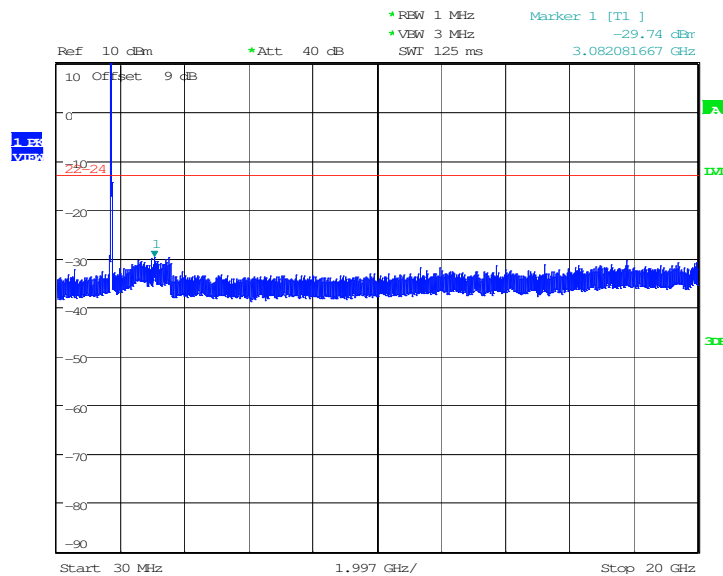


**LTE band 4 20MHz QPSK: 30MHz – 20GHz**  
Spurious emission limit -13dBm.



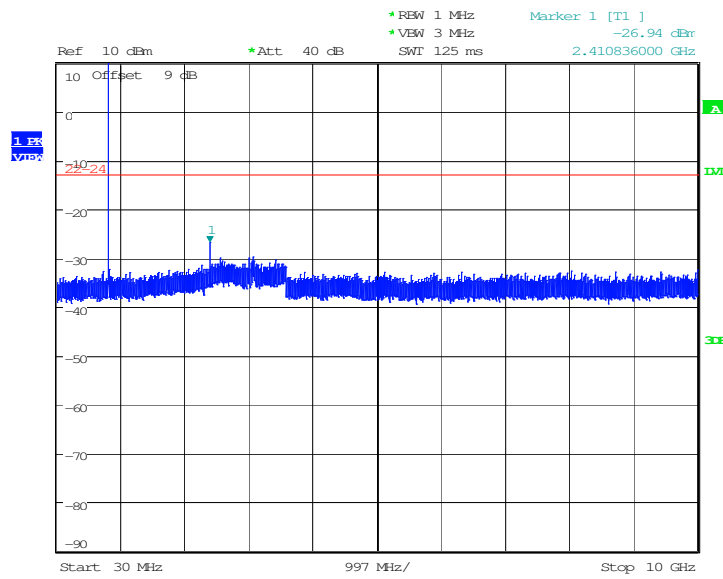
Date: 12.APR.2017 20:46:30

**LTE band 4 20MHz 16QAM: 30MHz – 20GHz**  
Spurious emission limit -13dBm.



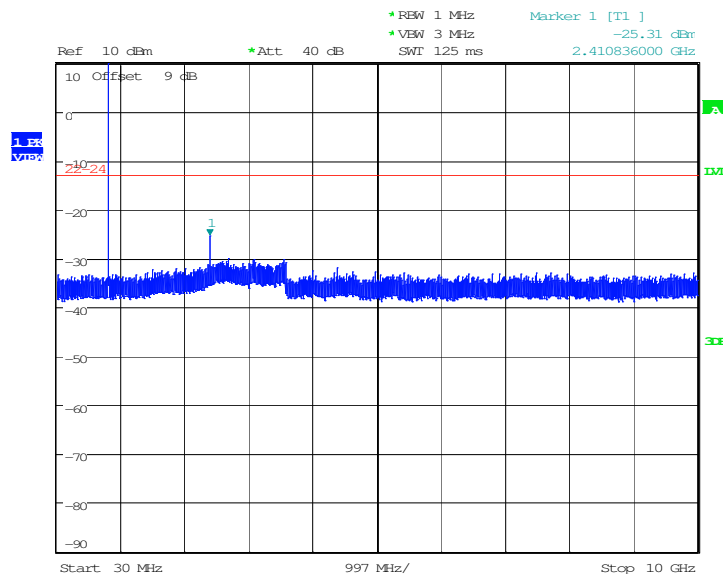
Date: 12.APR.2017 20:43:07

**LTE band 5 1.4MHz QPSK: 30MHz – 10GHz**  
Spurious emission limit -13dBm.



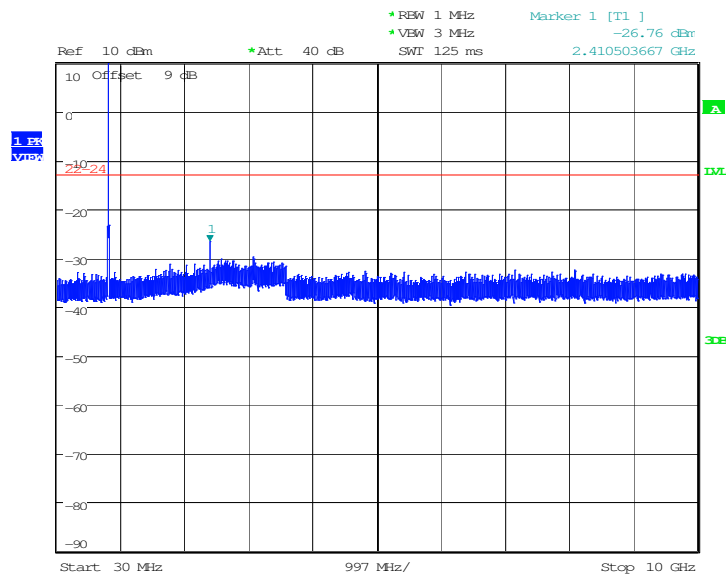
Date: 12.APR.2017 21:17:54

**LTE band 5 1.4MHz 16QAM: 30MHz – 10GHz**  
Spurious emission limit -13dBm.



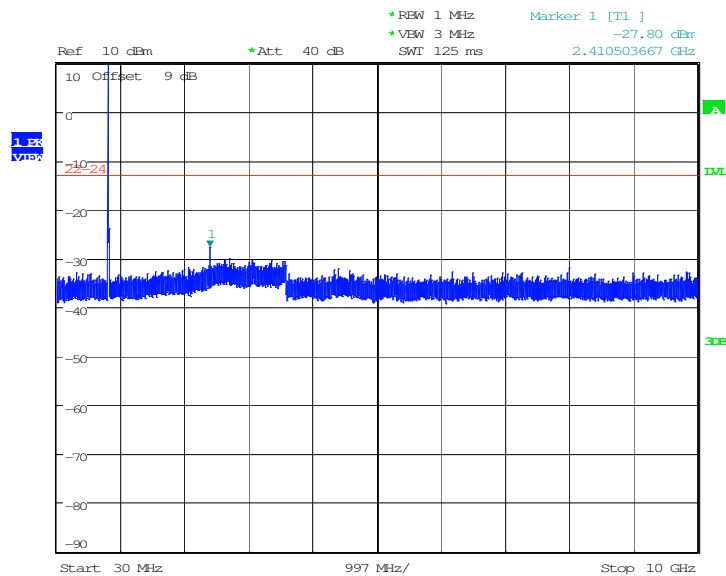
Date: 12.APR.2017 21:20:36

**LTE band 5 3MHz QPSK: 30MHz – 10GHz**  
Spurious emission limit -13dBm.



Date: 12.APR.2017 21:22:58

**LTE band 5 3MHz 16QAM: 30MHz – 10GHz**  
Spurious emission limit -13dBm.

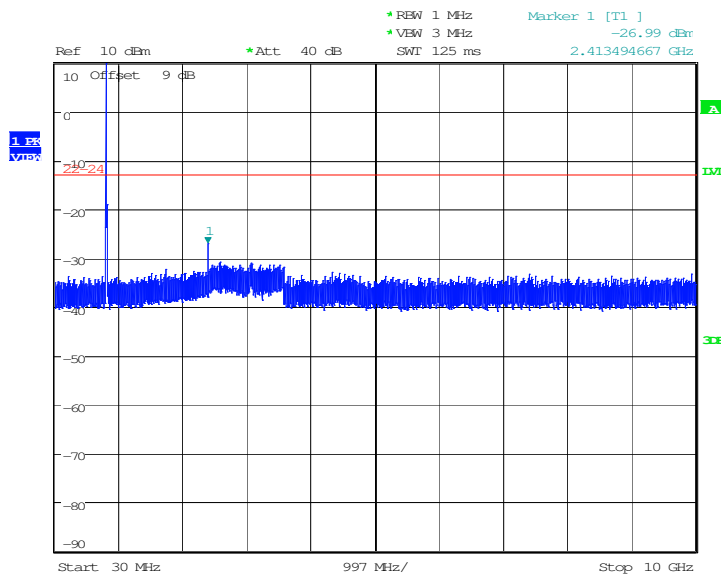


Date: 12.APR.2017 21:25:14



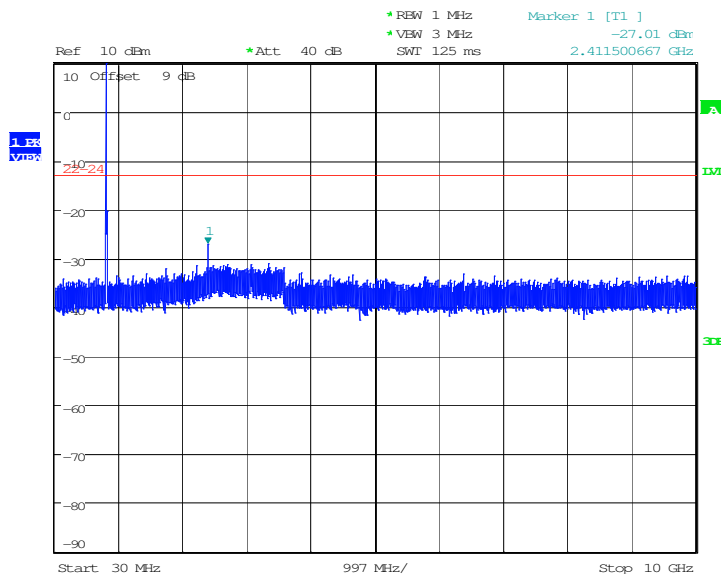


**LTE band 5 5MHz QPSK: 30MHz – 10GHz**  
Spurious emission limit -13dBm.



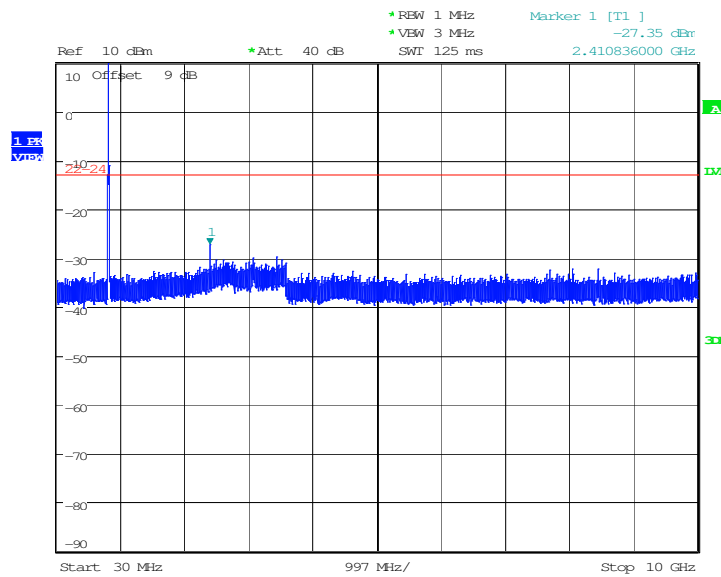
Date: 12.APR.2017 21:27:33

**LTE band 5 5MHz 16QAM: 30MHz – 10GHz**  
Spurious emission limit -13dBm.



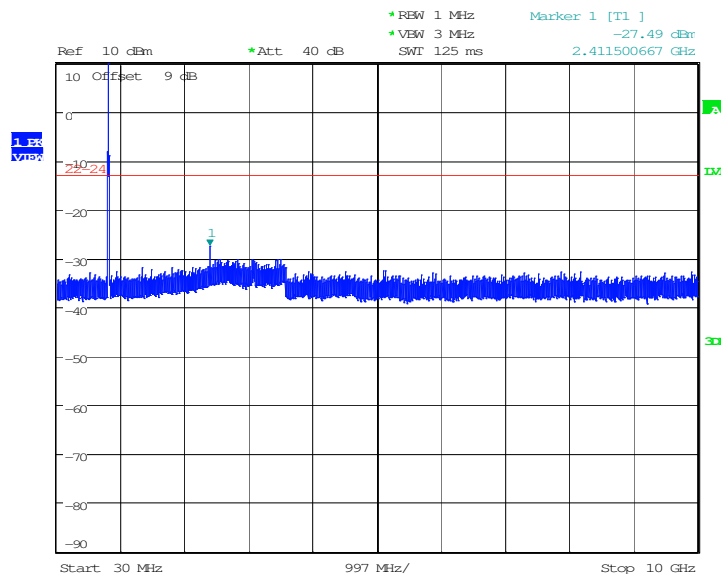
Date: 12.APR.2017 21:28:11

**LTE band 5 10MHz QPSK: 30MHz – 10GHz**  
Spurious emission limit –13dBm.



Date: 12.APR.2017 21:29:41

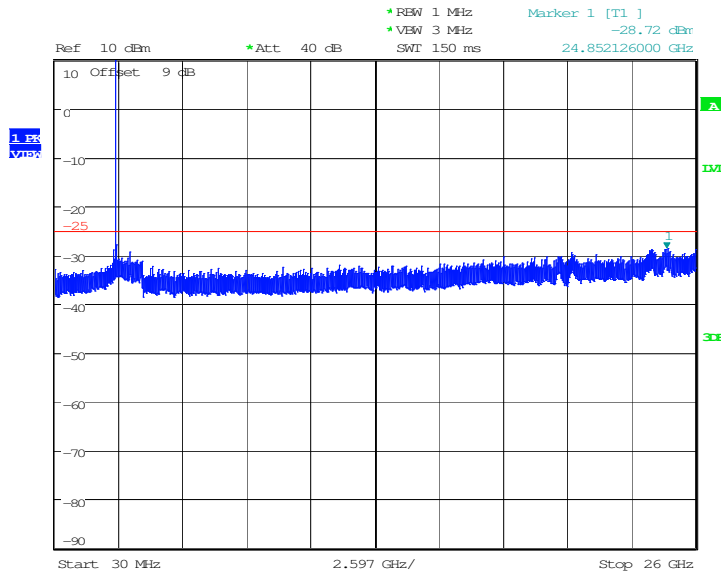
**LTE band 5 10MHz 16QAM: 30MHz – 10GHz**  
Spurious emission limit –13dBm.



Date: 12.APR.2017 21:32:04

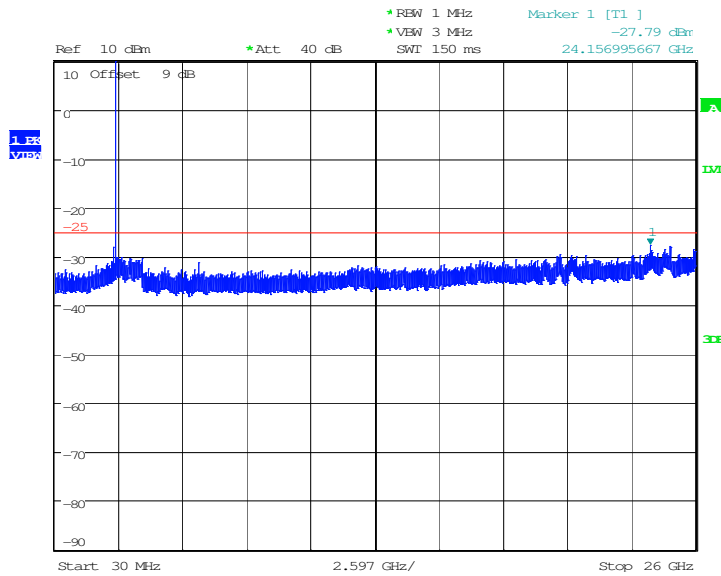


**LTE band 7 5MHz QPSK: 30MHz – 26GHz**  
Spurious emission limit -25dBm.



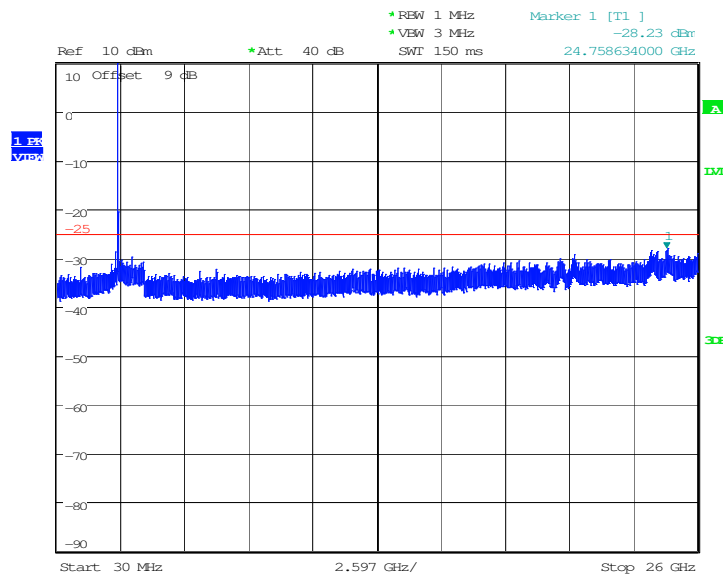
Date: 12.APR.2017 21:43:41

**LTE band 7 5MHz 16QAM: 30MHz – 26GHz**  
Spurious emission limit -25dBm.



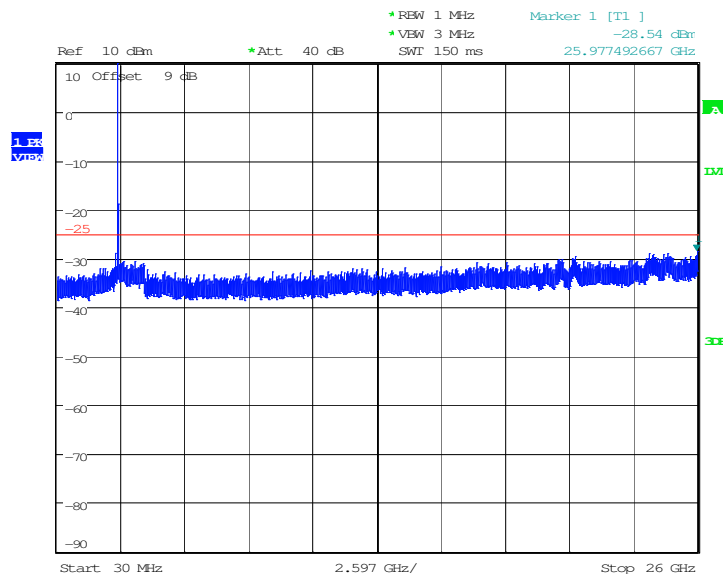
Date: 12.APR.2017 21:39:46

**LTE band 7 10MHz QPSK: 30MHz – 26GHz**  
Spurious emission limit -25dBm.



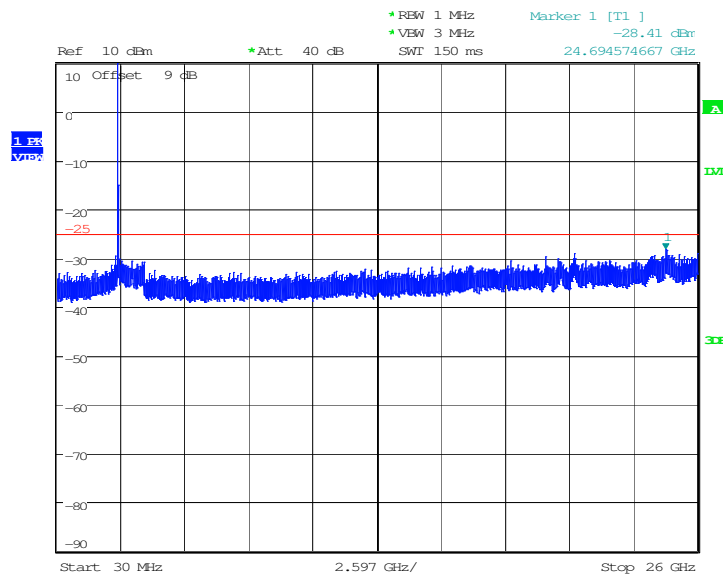
Date: 12.APR.2017 21:51:27

**LTE band 7 10MHz 16QAM: 30MHz – 26GHz**  
Spurious emission limit -25dBm.



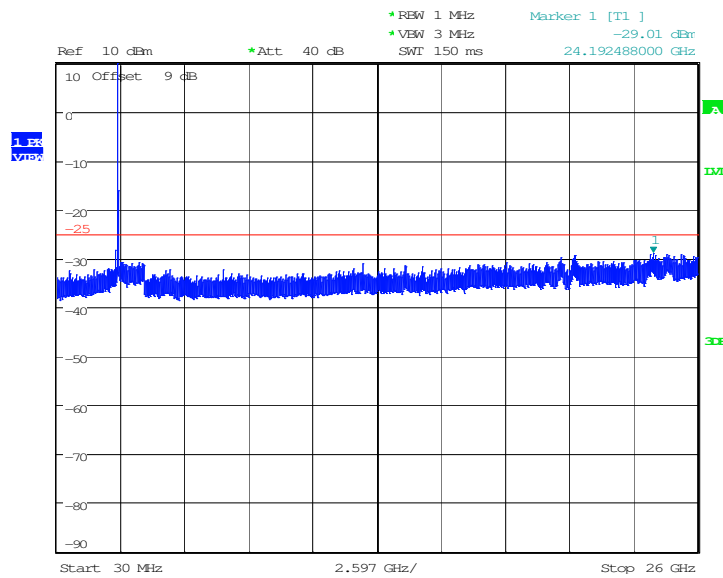
Date: 12.APR.2017 21:47:18

**LTE band 7 15MHz QPSK: 30MHz – 26GHz**  
Spurious emission limit -25dBm.



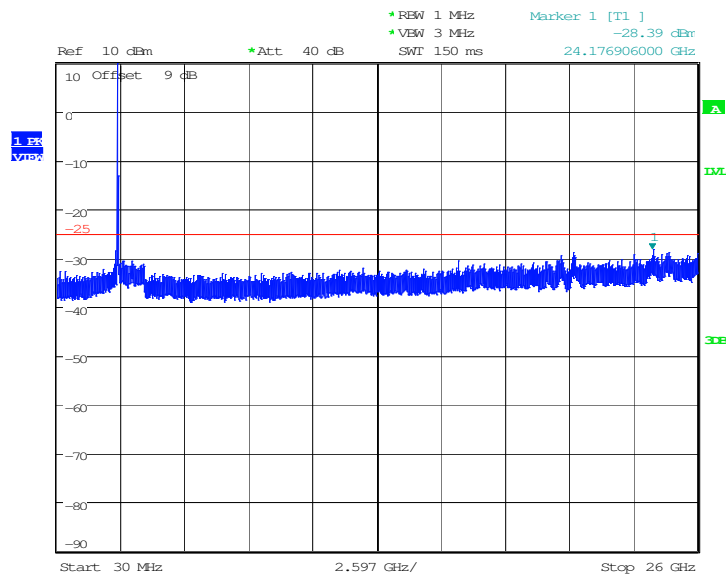
Date: 12.APR.2017 21:54:03

**LTE band 7 15MHz 16QAM: 30MHz – 26GHz**  
Spurious emission limit -25dBm.



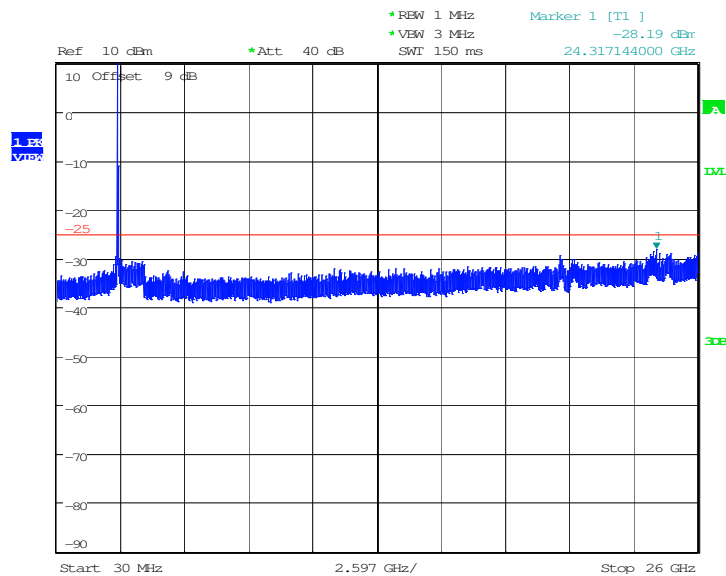
Date: 12.APR.2017 21:57:44

**LTE band 7 20MHz QPSK: 30MHz – 26GHz**  
Spurious emission limit -25dBm.



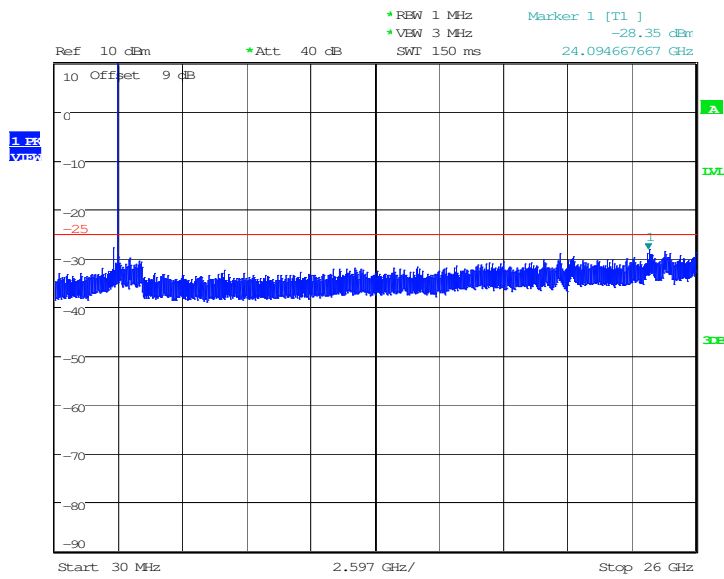
Date: 12.APR.2017 22:00:33

**LTE band 7 20MHz 16QAM: 30MHz – 26GHz**  
Spurious emission limit -25dBm.



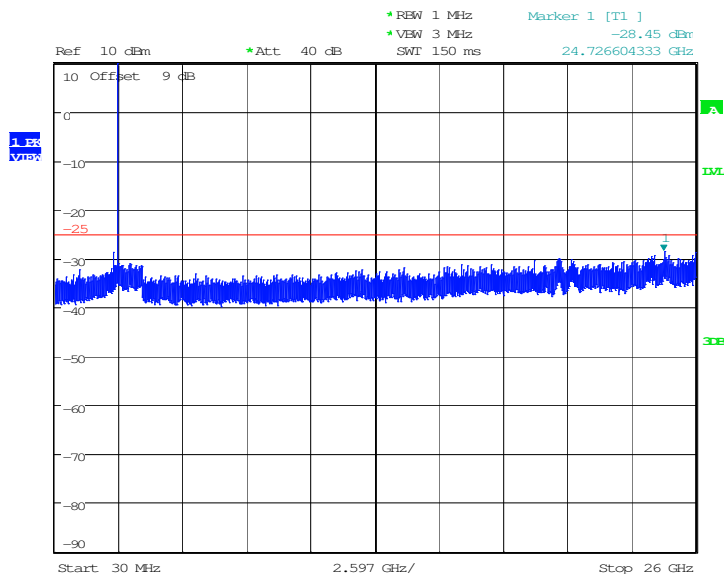
Date: 12.APR.2017 22:03:38

**LTE band 41 5MHz QPSK: 30MHz – 26GHz**  
Spurious emission limit -25dBm.



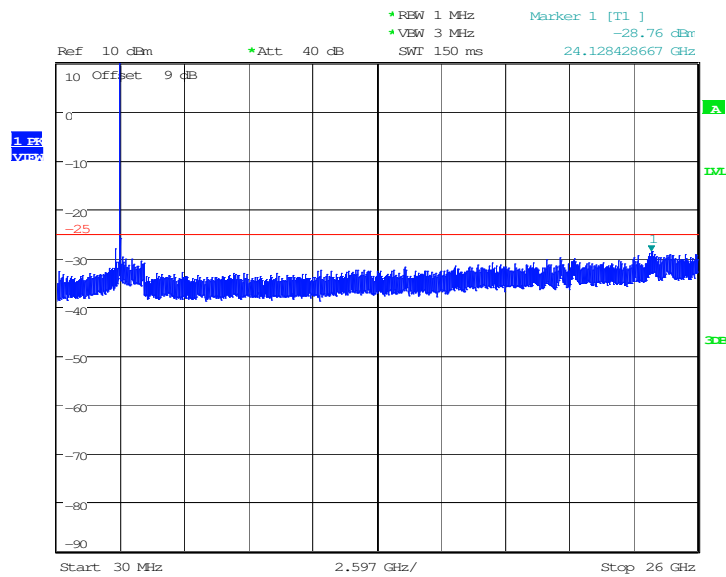
Date: 12.APR.2017 22:26:35

**LTE band 41 5MHz 16QAM: 30MHz – 26GHz**  
Spurious emission limit -25dBm.



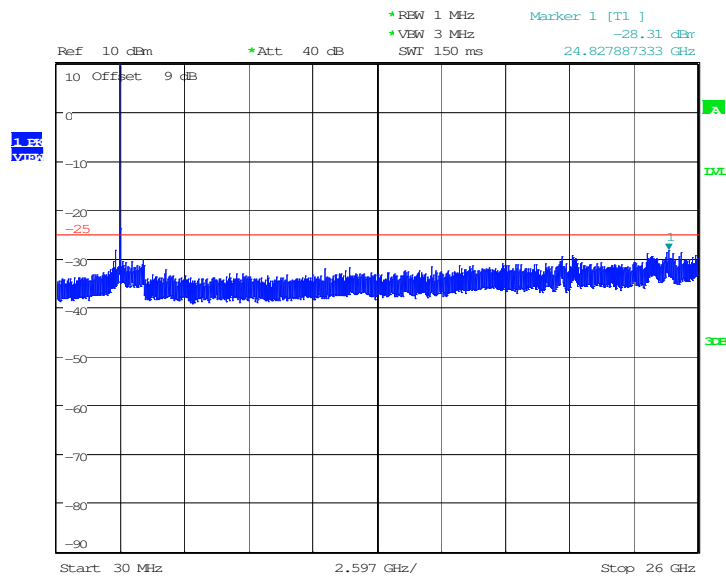
Date: 12.APR.2017 22:28:02

**LTE band 41 10MHz QPSK: 30MHz – 26GHz**  
Spurious emission limit -25dBm.



Date: 12.APR.2017 22:21:12

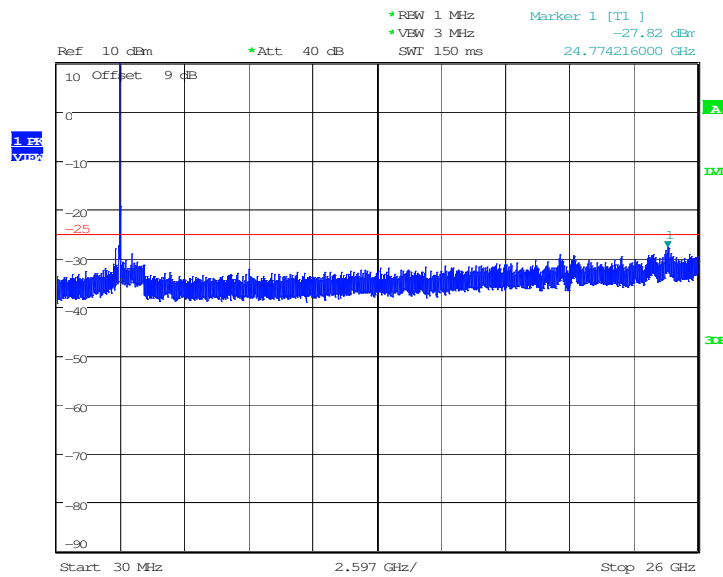
**LTE band 41 10MHz 16QAM: 30MHz – 26GHz**  
Spurious emission limit -25dBm.



Date: 12.APR.2017 22:23:32

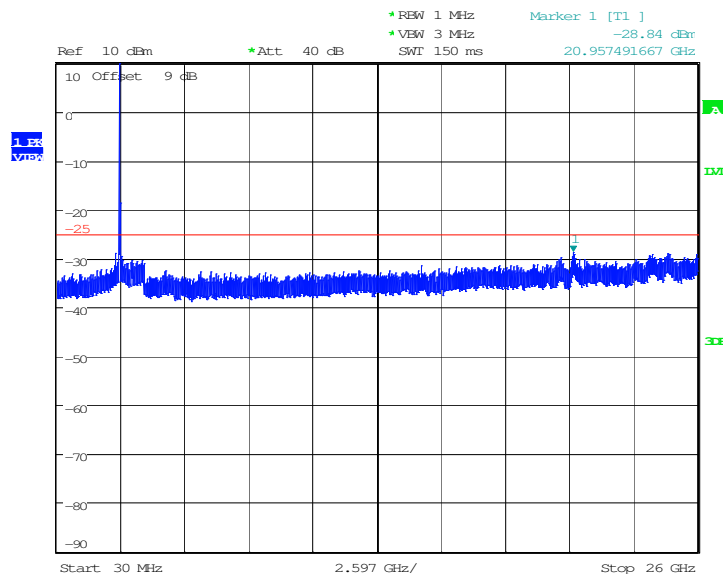


**LTE band 41 15MHz QPSK: 30MHz – 26GHz**  
Spurious emission limit -25dBm.



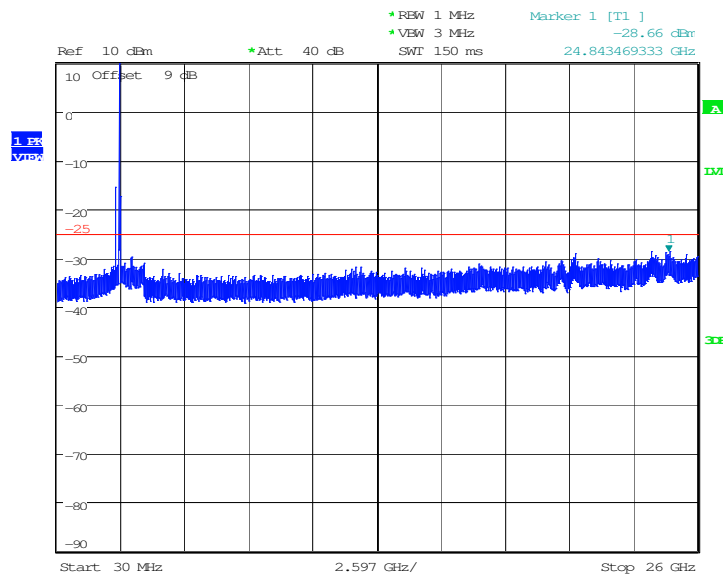
Date: 12.APR.2017 22:18:02

**LTE band 41 15MHz 16QAM: 30MHz – 26GHz**  
Spurious emission limit -25dBm.



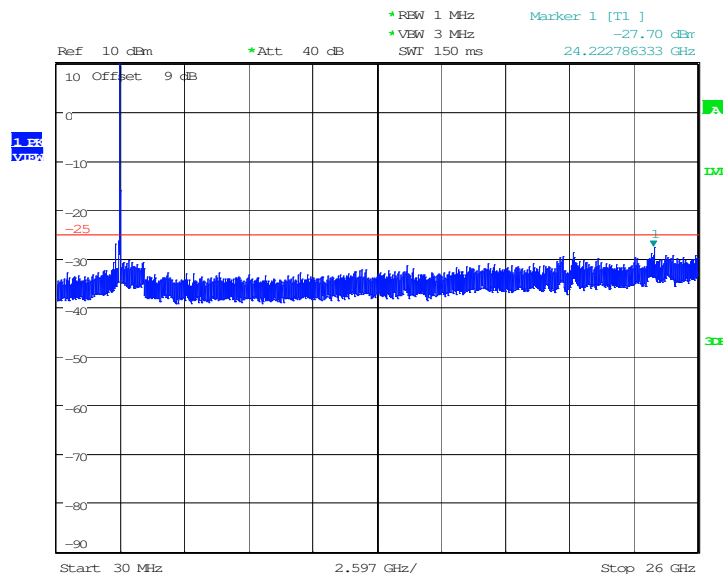
Date: 12.APR.2017 22:15:08

**LTE band 41 20MHz QPSK: 30MHz – 26GHz**  
Spurious emission limit -25dBm.



Date: 12.APR.2017 22:11:29

**LTE band 41 20MHz 16QAM: 30MHz – 26GHz**  
Spurious emission limit -25dBm.



Date: 12.APR.2017 22:09:25

## **A.8 PEAK-TO-AVERAGE POWER RATIO**

### **Reference**

FCC: CFR Part 24.232 (d), 27.50(a)

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.

According to KDB 971168 5.7.1:

- a) Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
- b) Set resolution/measurement bandwidth  $\geq$  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**

#### **LTE band 2**

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)	
		QPSK	16QAM
1860.0	20	6.54	7.55
	15	6.43	7.23
	10	6.61	7.45
	5	6.55	7.43
	3	6.36	7.34
	1.4	6.46	7.59

#### **LTE band 4,**

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)	
		QPSK	16QAM
1732.5	20	6.44	7.58
	15	6.45	7.63
	10	6.48	7.66
	5	6.56	7.65
	3	6.53	7.57
	1.4	6.6	7.68

**LTE band 5, 10MHz**

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)	
		QPSK	16QAM
836.5	10	6.49	7.52
	5	6.56	7.67
	3	6.71	7.73
	1.4	6.68	7.49

**LTE band 7, 20MHz**

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)	
		QPSK	16QAM
2510.0	20	6.61	7.55
	15	6.65	7.59
	10	6.54	7.63
	5	6.46	7.58

**LTE band 41,20MHz**

Frequency(MHz)	Bandwidth(MHz)	PAPR(dB)	
		QPSK	16QAM
2600.0	20	6.59	7.48
	15	6.66	7.44
	10	6.73	7.56
	5	6.71	7.66

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