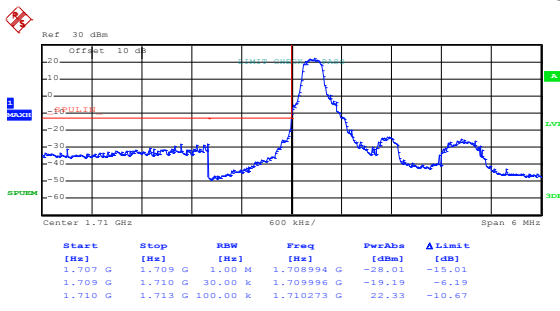


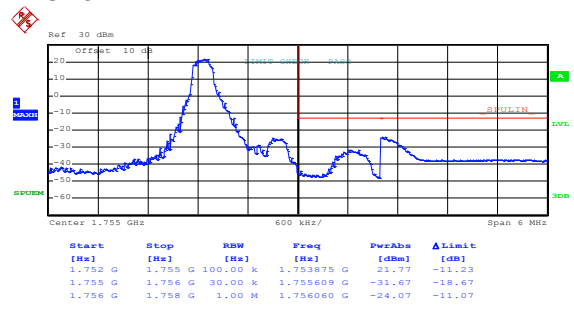
LTE Band 4 part:

LTE Band 4, BW: 1.4MHz  
16QAM & RB Size 1



Date: 12.SEP.2019 14:03:47

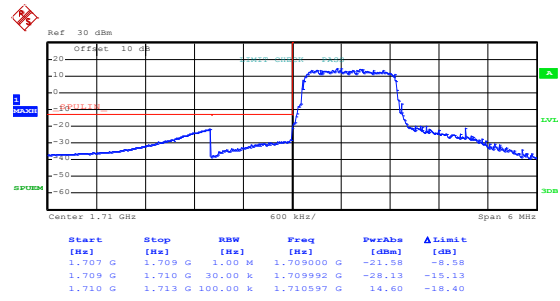
Lowest channel



Date: 12.SEP.2019 14:05:18

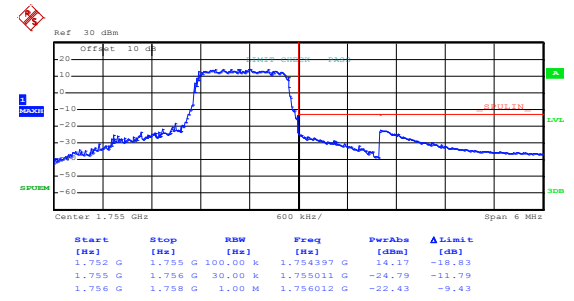
Highest channel

16QAM & RB Size 6



Date: 12.SEP.2019 14:04:19

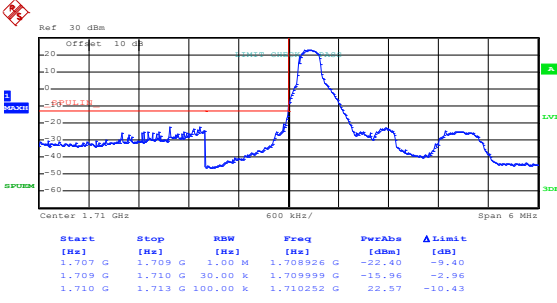
Lowest channel



Date: 12.SEP.2019 14:05:02

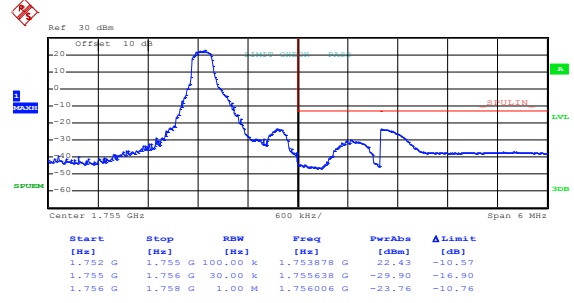
Highest channel

## LTE Band 4, BW: 1.4MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:03:38

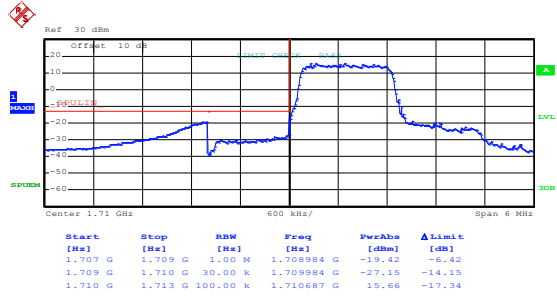
Lowest channel



Date: 12.SEP.2019 14:05:11

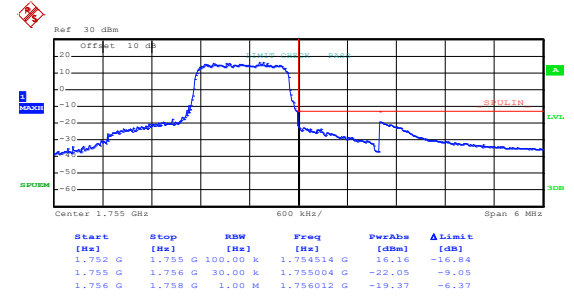
Highest channel

## QPSK & RB Size 6



Date: 12.SEP.2019 14:04:12

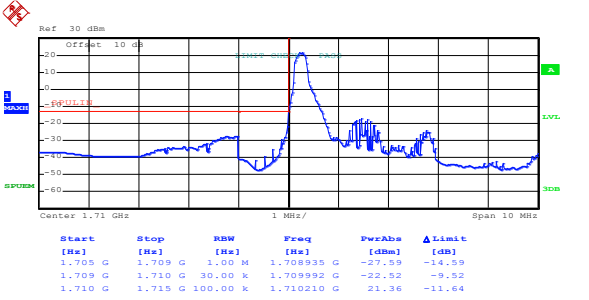
Lowest channel



Date: 12.SEP.2019 14:04:56

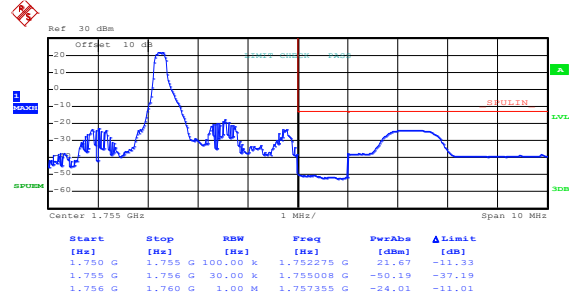
Highest channel

## LTE Band 4, BW: 3MHz 16QAM & RB Size 1



Date: 12.SEP.2019 14:08:26

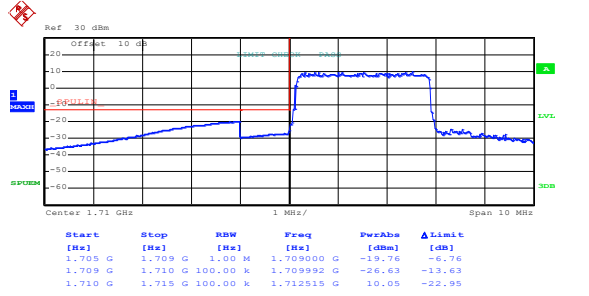
Lowest channel



Date: 12.SEP.2019 14:07:02

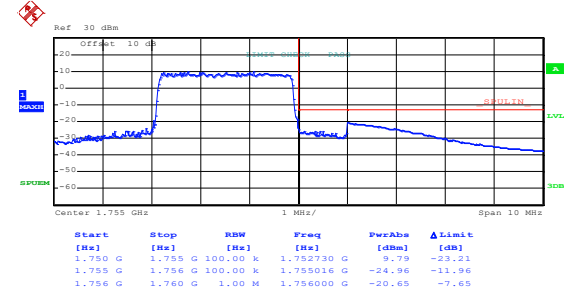
Highest channel

## 16QAM & RB Size 15



Date: 12.SEP.2019 14:07:53

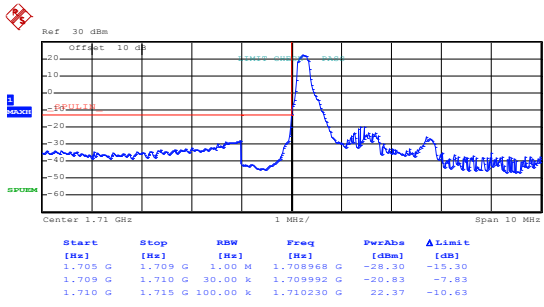
Lowest channel



Date: 12.SEP.2019 14:07:25

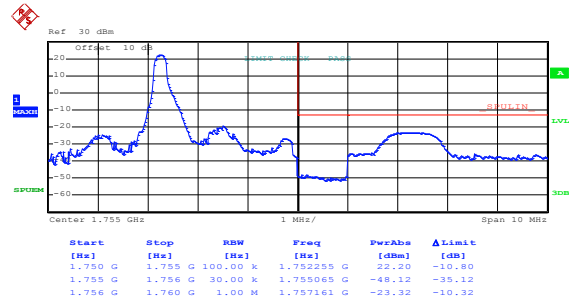
Highest channel

## LTE Band 4, BW: 3MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:06:10

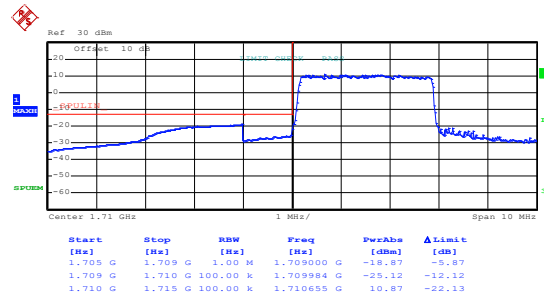
Lowest channel



Date: 12.SEP.2019 14:06:38

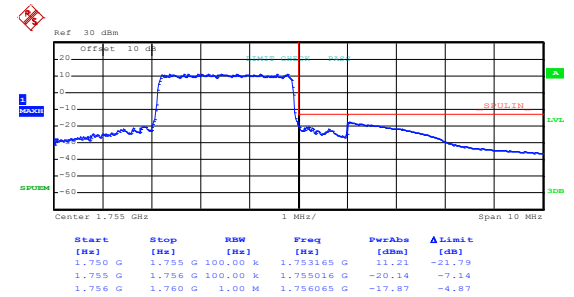
Highest channel

## QPSK & RB Size 15



Date: 12.SEP.2019 14:07:48

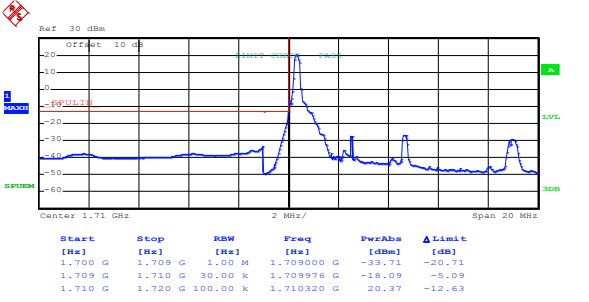
Lowest channel



Date: 12.SEP.2019 14:07:19

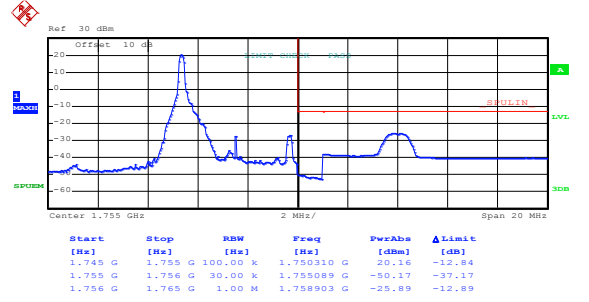
Highest channel

## LTE Band 4, BW: 5MHz 16QAM & RB Size 1



Date: 12.SEP.2019 14:09:10

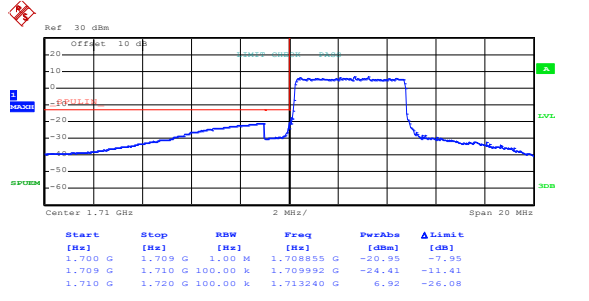
Lowest channel



Date: 12.SEP.2019 14:10:25

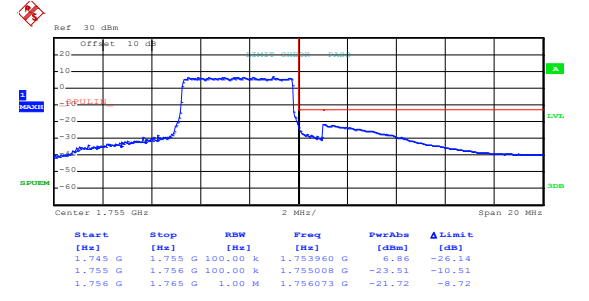
Highest channel

## 16QAM & RB Size 25



Date: 12.SEP.2019 14:09:30

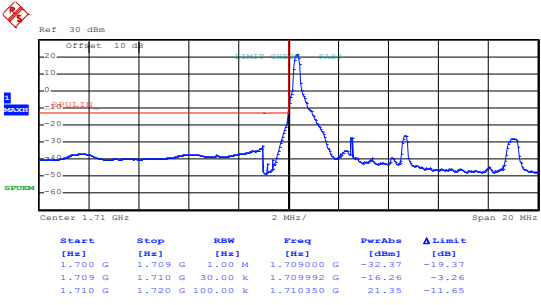
Lowest channel



Date: 12.SEP.2019 14:09:52

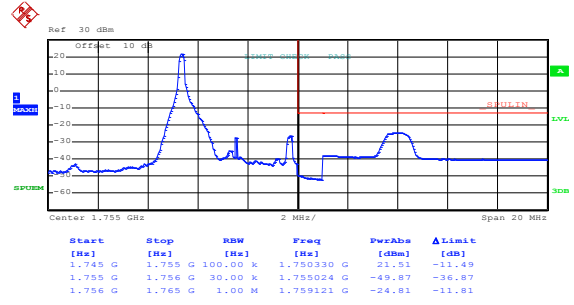
Highest channel

## LTE Band 4, BW: 5MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:09:03

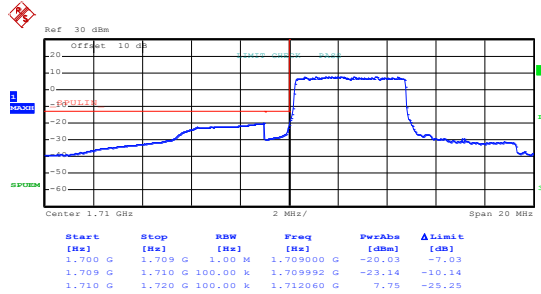
Lowest channel



Date: 12.SEP.2019 14:10:17

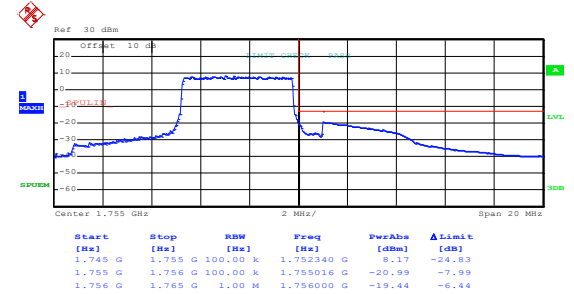
Highest channel

## QPSK & RB Size 25



Date: 12.SEP.2019 14:09:25

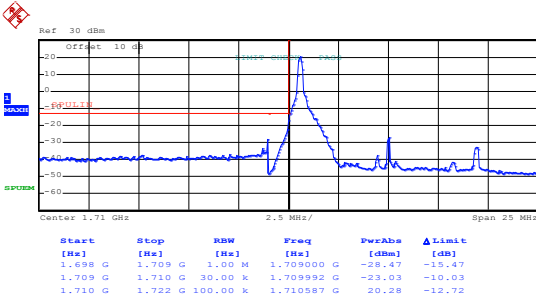
Lowest channel



Date: 12.SEP.2019 14:09:45

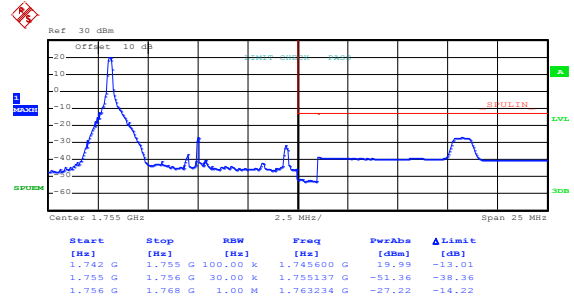
Highest channel

## LTE Band 4, BW: 10MHz 16QAM & RB Size 1



Date: 12.SEP.2019 14:13:38

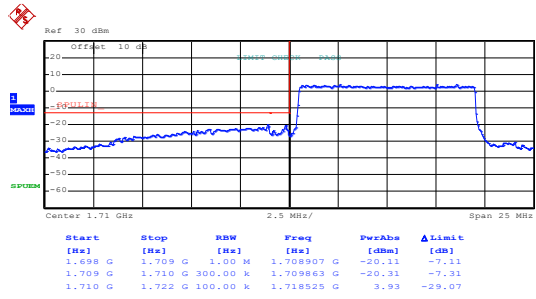
Lowest channel



Date: 12.SEP.2019 14:11:09

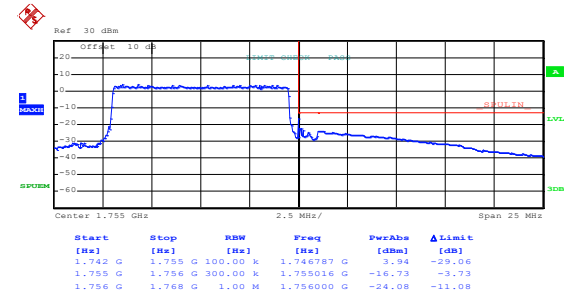
Highest channel

## 16QAM & RB Size 50



Date: 12.SEP.2019 14:13:16

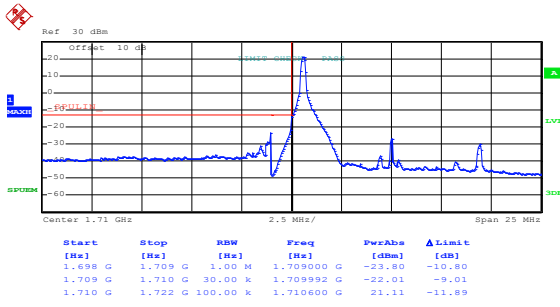
Lowest channel



Date: 12.SEP.2019 14:11:33

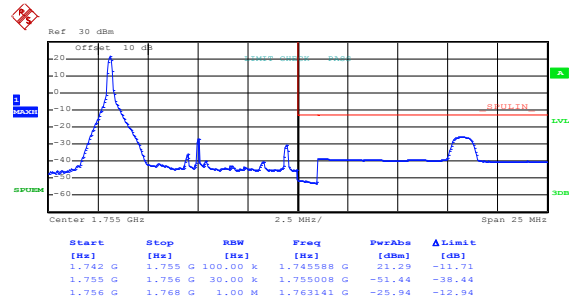
Highest channel

## LTE Band 4, BW: 10MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:13:31

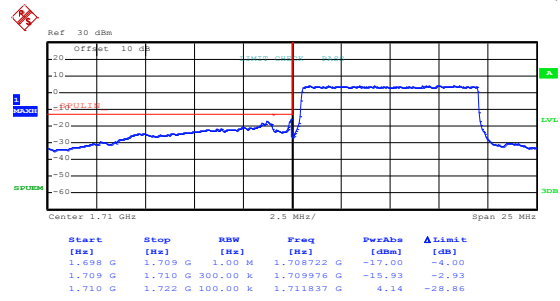
Lowest channel



Date: 12.SEP.2019 14:11:01

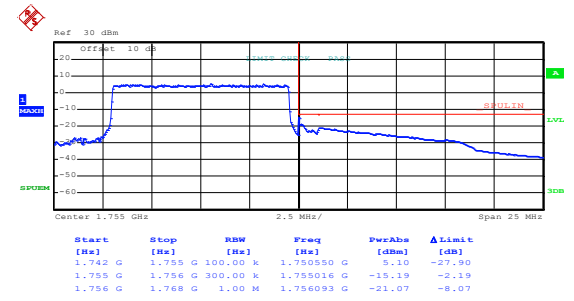
Highest channel

## QPSK & RB Size 50



Date: 12.SEP.2019 14:13:10

Lowest channel

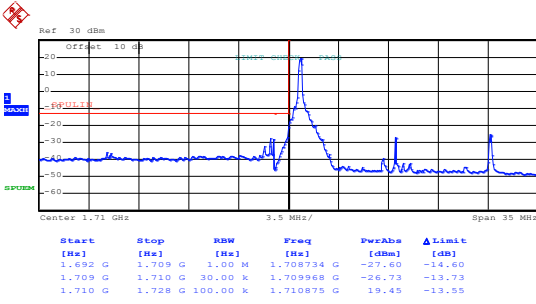


Date: 12.SEP.2019 14:11:28

Highest channel

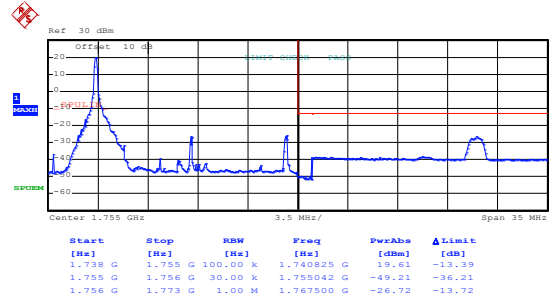


## LTE Band 4, BW: 15MHz 16QAM & RB Size 1



Date: 12.SEP.2019 14:14:19

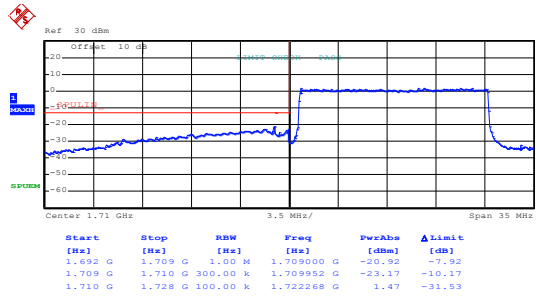
Lowest channel



Date: 12.SEP.2019 14:15:30

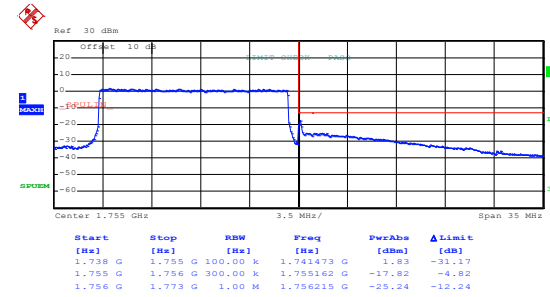
Highest channel

## 16QAM & RB Size 75



Date: 12.SEP.2019 14:14:38

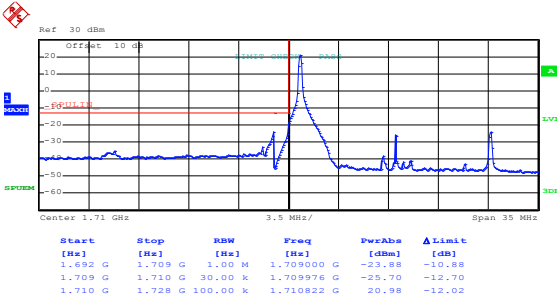
Lowest channel



Date: 12.SEP.2019 14:15:09

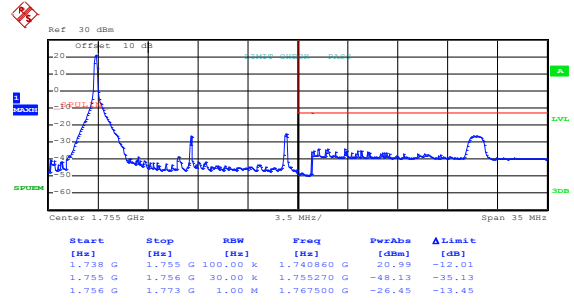
Highest channel

## LTE Band 4, BW: 15MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:14:13

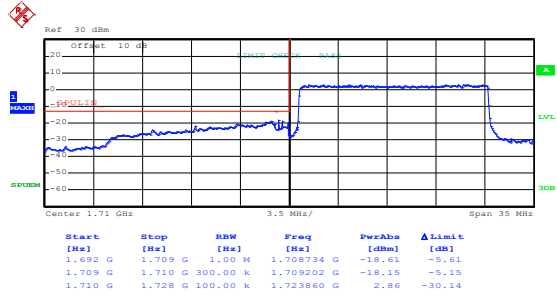
Lowest channel



Date: 12.SEP.2019 14:15:24

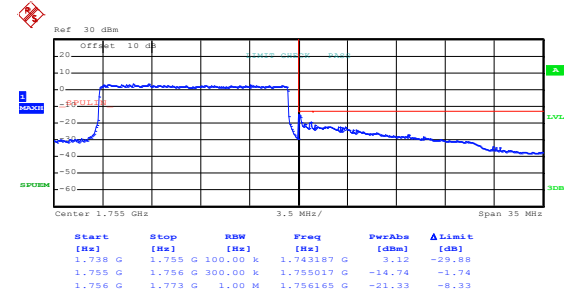
Highest channel

## QPSK & RB Size 75



Date: 12.SEP.2019 14:14:33

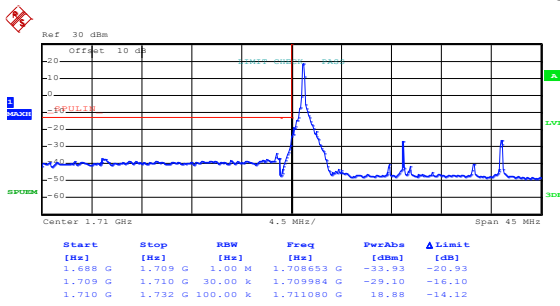
Lowest channel



Date: 12.SEP.2019 14:15:01

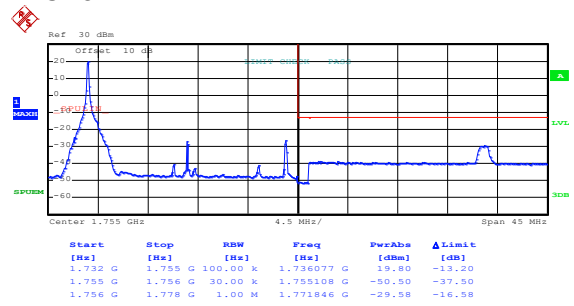
Highest channel

## LTE Band 4, BW: 20MHz 16QAM & RB Size 1



Date: 12.SEP.2019 14:17:21

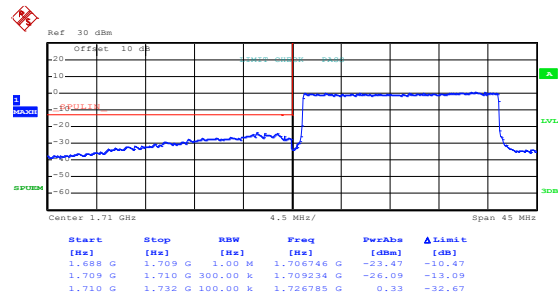
Lowest channel



Date: 12.SEP.2019 14:16:13

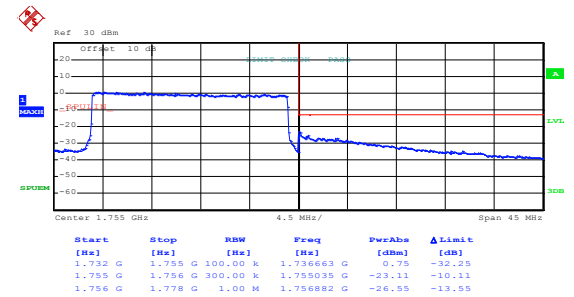
Highest channel

## 16QAM & RB Size 100



Date: 12.SEP.2019 14:17:02

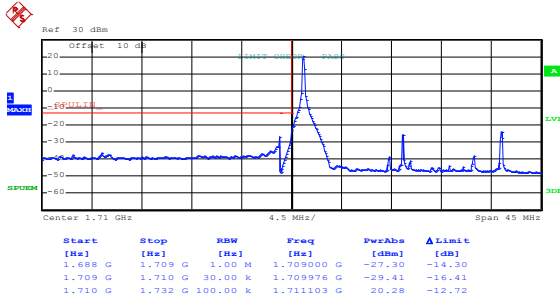
Lowest channel



Date: 12.SEP.2019 14:16:35

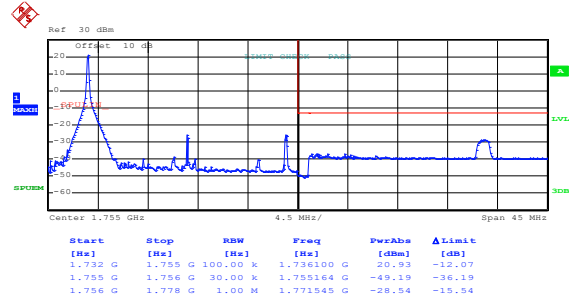
Highest channel

## LTE Band 4, BW: 20MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:17:15

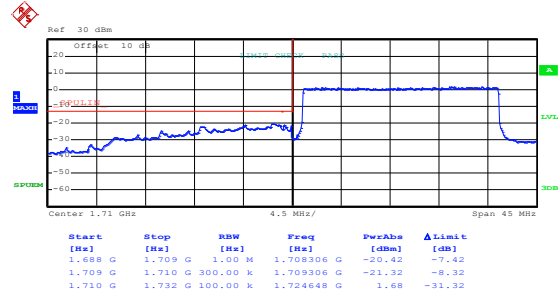
Lowest channel



Date: 12.SEP.2019 14:16:06

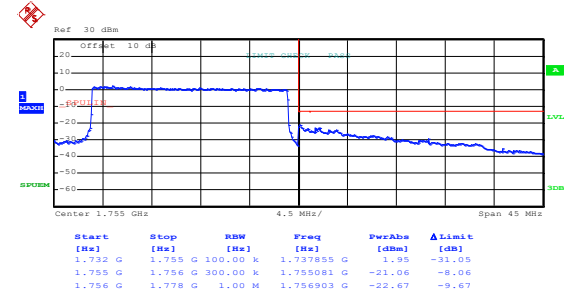
Highest channel

## QPSK & RB Size 100



Date: 12.SEP.2019 14:16:55

Lowest channel

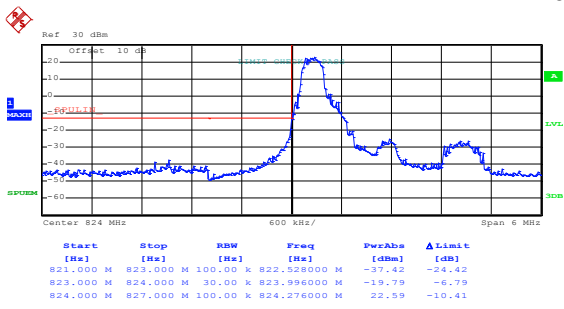


Date: 12.SEP.2019 14:16:29

Highest channel

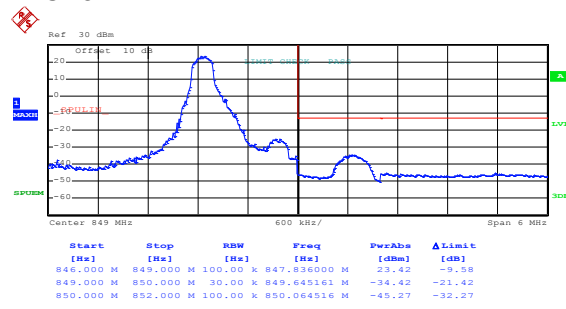
LTE Band 5 part:

LTE Band 5, BW: 1.4MHz  
16QAM & RB Size 1



Date: 12.SEP.2019 14:18:55

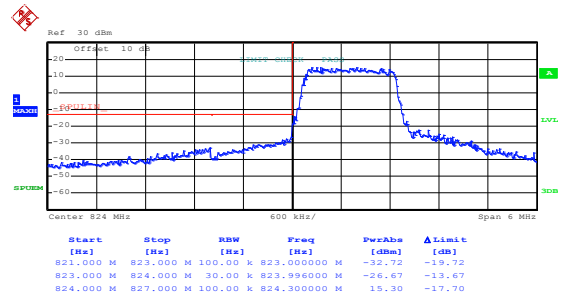
Lowest channel



Date: 12.SEP.2019 14:20:17

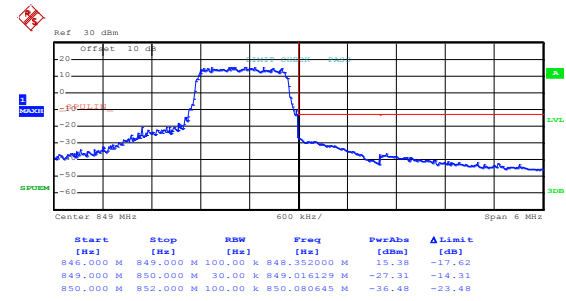
Highest channel

16QAM & RB Size 6



Date: 12.SEP.2019 14:19:09

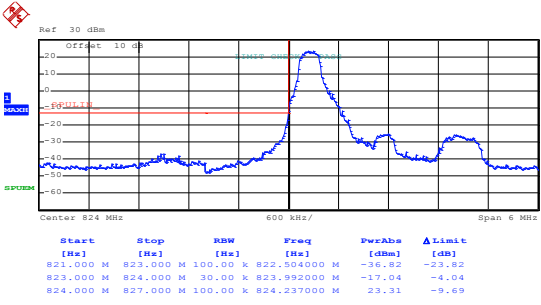
Lowest channel



Date: 12.SEP.2019 14:19:51

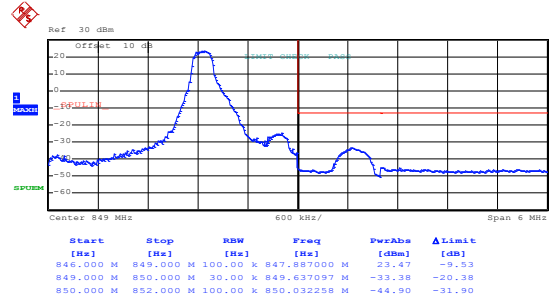
Highest channel

## LTE Band 5, BW: 1.4MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:16:44

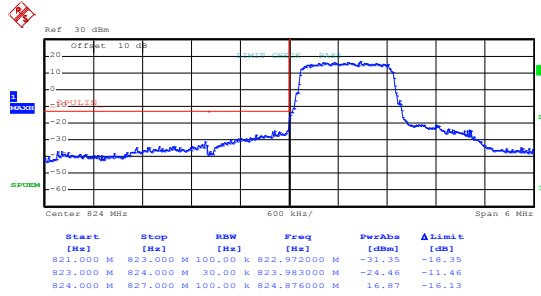
Lowest channel



Date: 12.SEP.2019 14:20:02

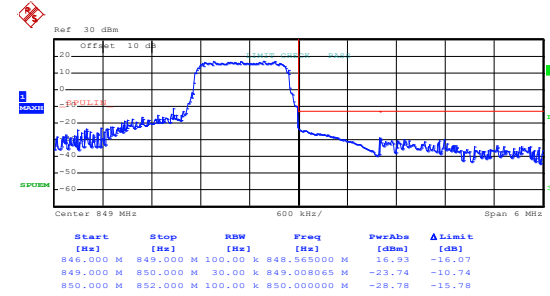
Highest channel

## QPSK & RB Size 6



Date: 12.SEP.2019 14:19:04

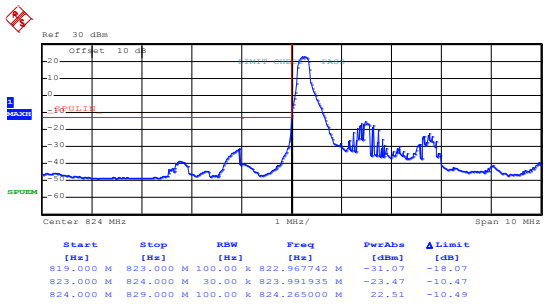
Lowest channel



Date: 12.SEP.2019 14:19:44

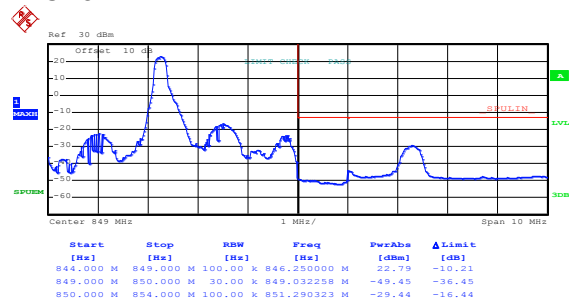
Highest channel

## LTE Band 5, BW: 3MHz 16QAM & RB Size 1



Date: 12.SEP.2019 14:25:39

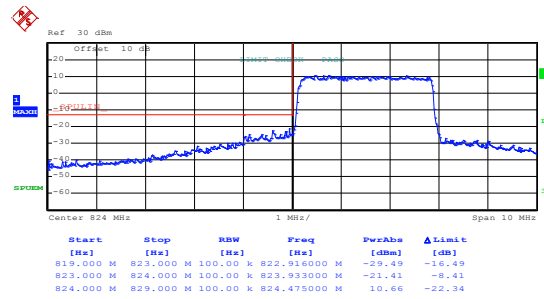
Lowest channel



Date: 12.SEP.2019 14:23:54

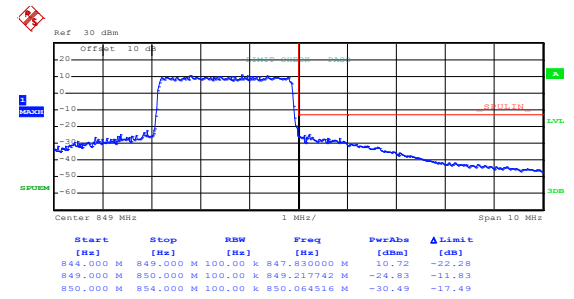
Highest channel

## 16QAM & RB Size 15



Date: 12.SEP.2019 14:24:51

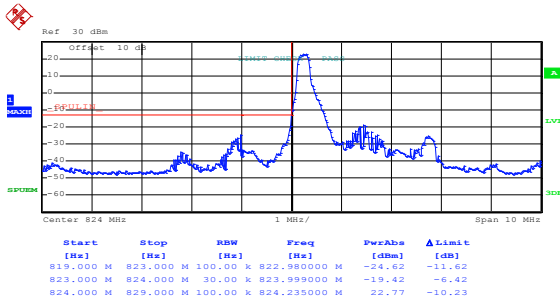
Lowest channel



Date: 12.SEP.2019 14:24:15

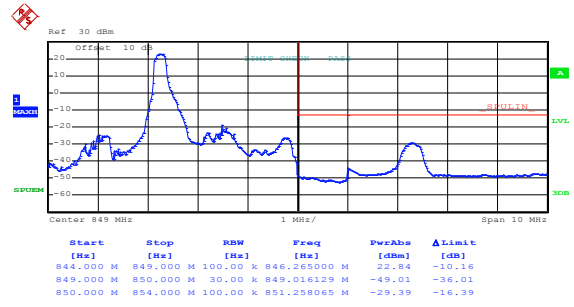
Highest channel

## LTE Band 5, BW: 3MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:25:04

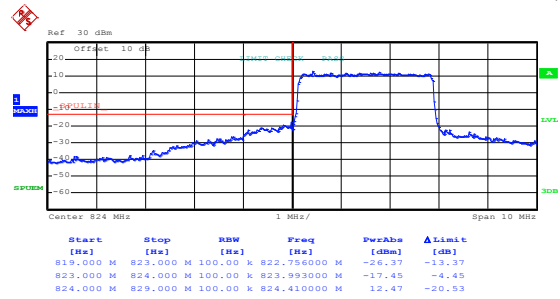
Lowest channel



Date: 12.SEP.2019 14:23:27

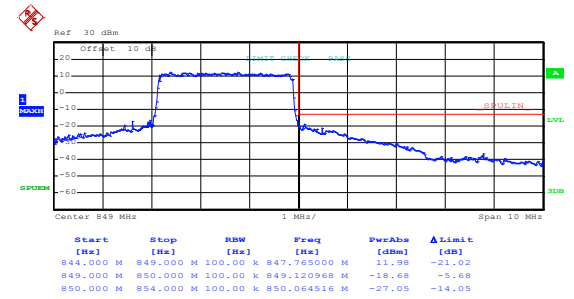
Highest channel

## QPSK & RB Size 15



Date: 12.SEP.2019 14:24:45

Lowest channel

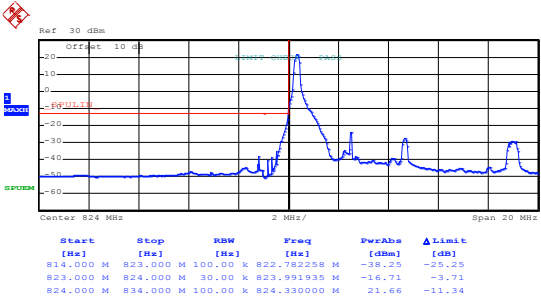


Date: 12.SEP.2019 14:24:10

Highest channel

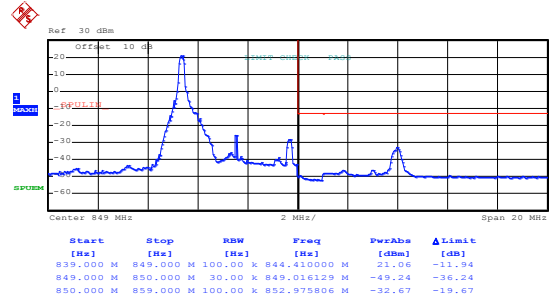


## LTE Band 5, BW: 5MHz 16QAM & RB Size 1



Date: 12.SEP.2019 14:27:25

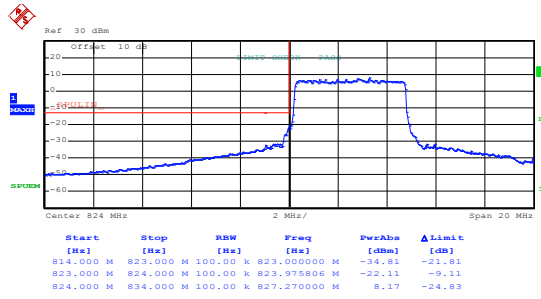
Lowest channel



Date: 12.SEP.2019 14:28:37

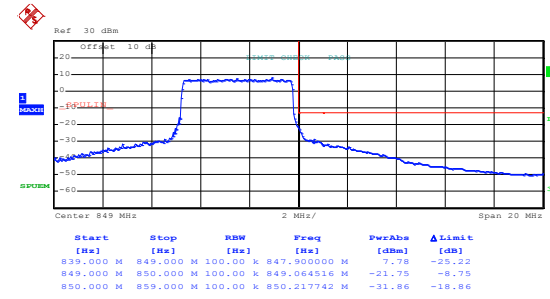
Highest channel

## 16QAM & RB Size 25



Date: 12.SEP.2019 14:27:46

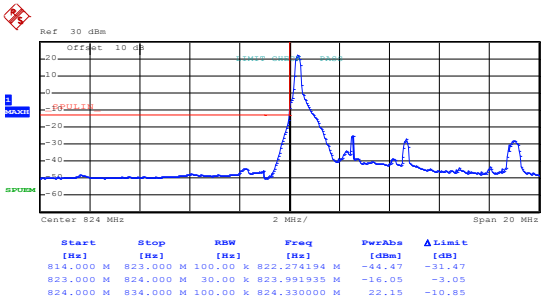
Lowest channel



Date: 12.SEP.2019 14:28:14

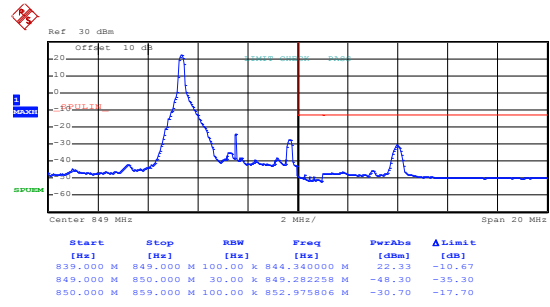
Highest channel

## LTE Band 5, BW: 5MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:26:23

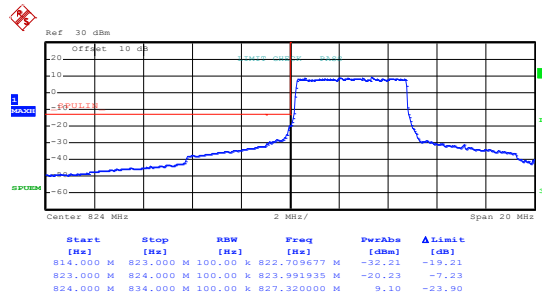
Lowest channel



Date: 12.SEP.2019 14:28:31

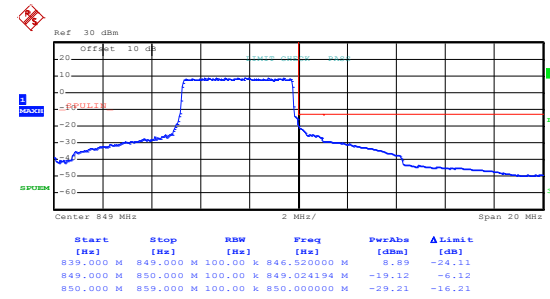
Highest channel

## QPSK & RB Size 25



Date: 12.SEP.2019 14:27:40

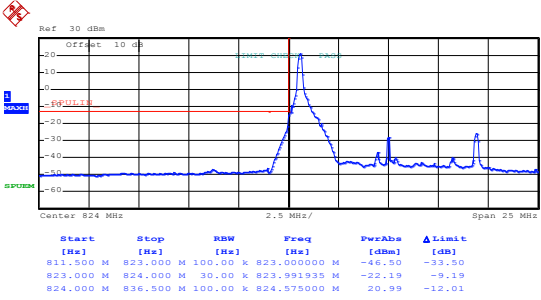
Lowest channel



Date: 12.SEP.2019 14:28:09

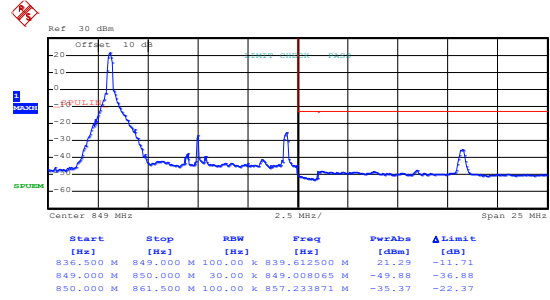
Highest channel

## LTE Band 5, BW: 10MHz 16QAM & RB Size 1



Date: 12.SEP.2019 14:30:44

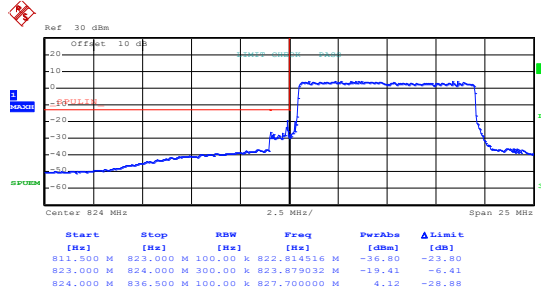
Lowest channel



Date: 12.SEP.2019 14:29:33

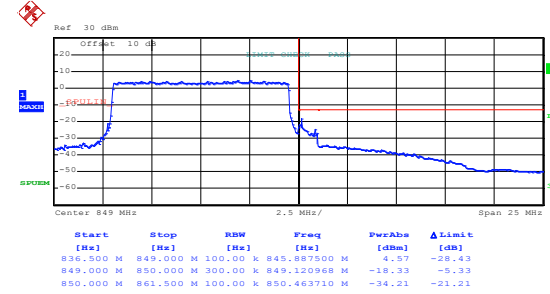
Highest channel

## 16QAM & RB Size 50



Date: 12.SEP.2019 14:30:22

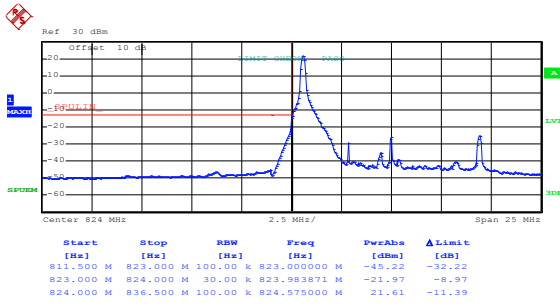
Lowest channel



Date: 12.SEP.2019 14:29:53

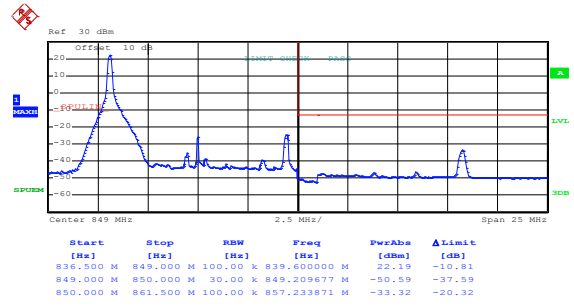
Highest channel

## LTE Band 5, BW: 10MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:30:37

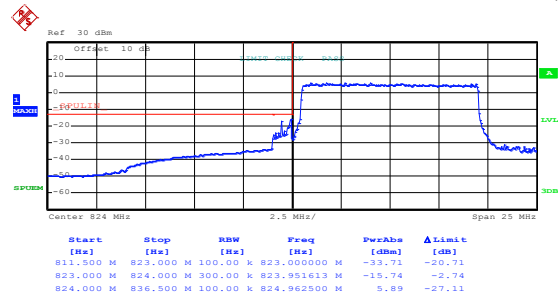
Lowest channel



Date: 12.SEP.2019 14:29:26

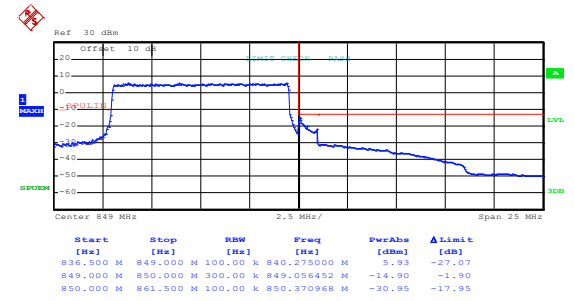
Highest channel

## QPSK & RB Size 50



Date: 12.SEP.2019 14:30:16

Lowest channel

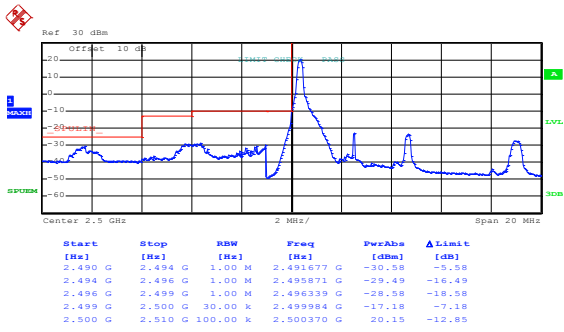


Date: 12.SEP.2019 14:29:48

Highest channel

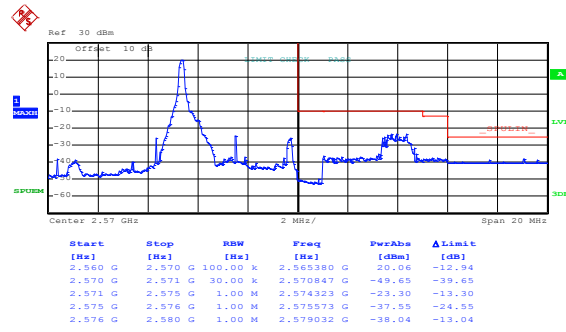
LTE Band 7 part:

LTE Band 7, BW: 5MHz  
16QAM & RB Size 1



Date: 12.SEP.2019 14:34:17

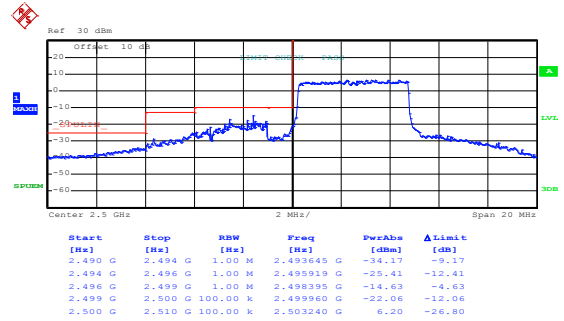
Lowest channel



Date: 12.SEP.2019 14:37:17

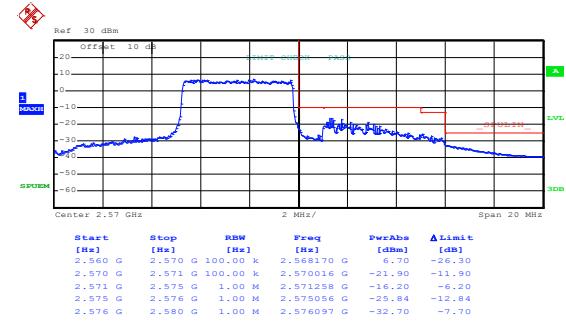
Highest channel

16QAM & RB Size 25



Date: 12.SEP.2019 14:34:49

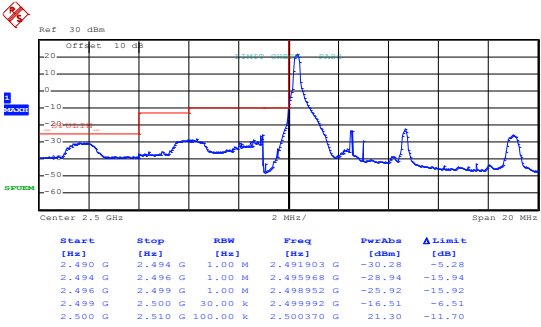
Lowest channel



Date: 12.SEP.2019 14:36:54

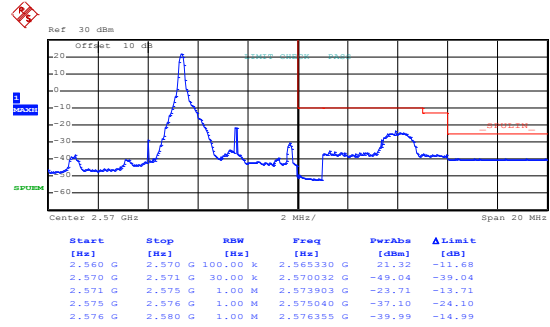
Highest channel

## LTE Band 7, BW: 5MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:33:49

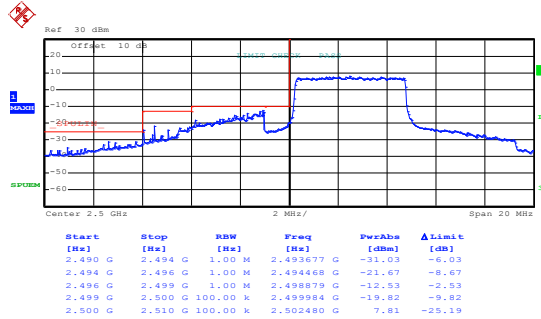
Lowest channel



Date: 12.SEP.2019 14:37:11

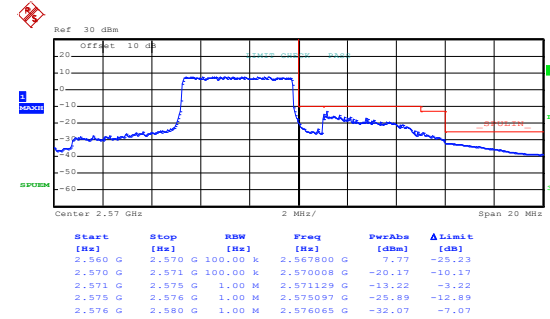
Highest channel

## QPSK & RB Size 25



Date: 12.SEP.2019 14:34:43

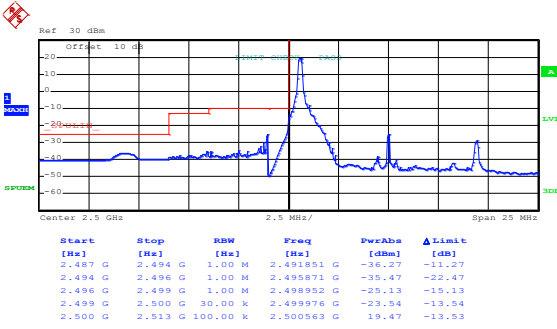
Lowest channel



Date: 12.SEP.2019 14:36:48

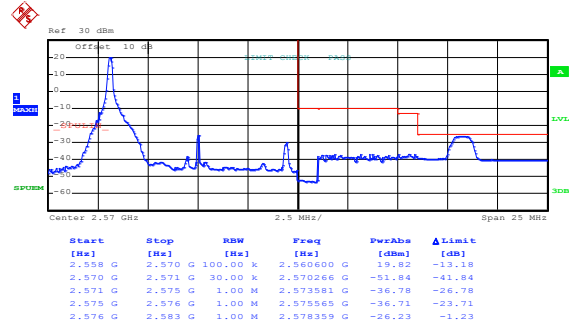
Highest channel

## LTE Band 7, BW: 10MHz 16QAM & RB Size 1



Date: 12.SEP.2019 14:39:59

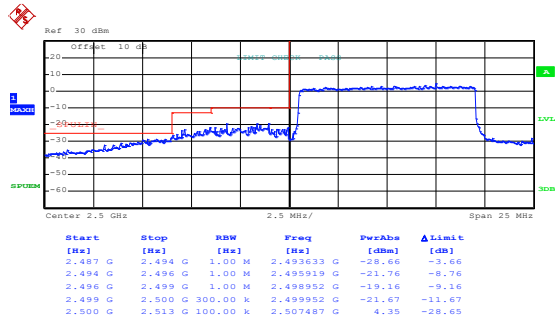
Lowest channel



Date: 12.SEP.2019 14:38:07

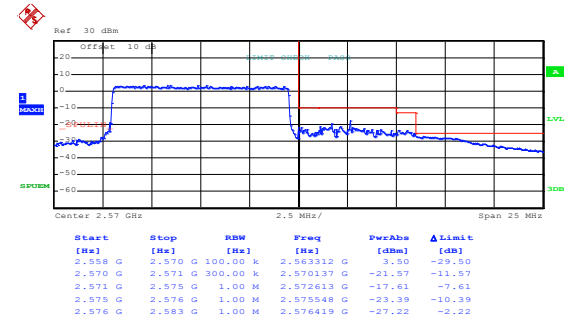
Highest channel

## 16QAM & RB Size 50



Date: 12.SEP.2019 14:39:21

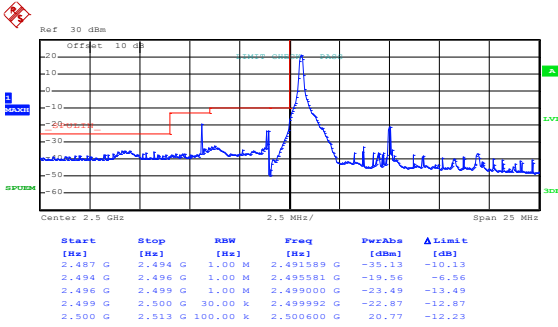
Lowest channel



Date: 12.SEP.2019 14:38:43

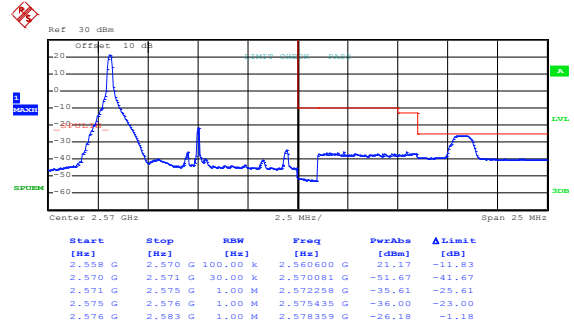
Highest channel

## LTE Band 7, BW: 10MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:39:52

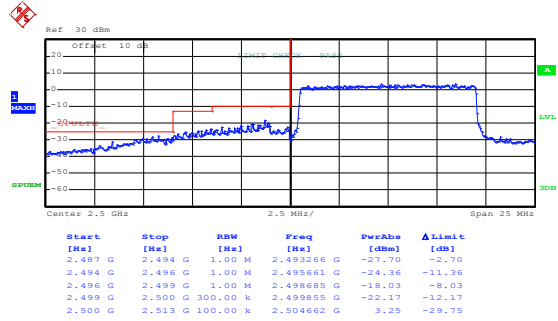
Lowest channel



Date: 12.SEP.2019 14:37:59

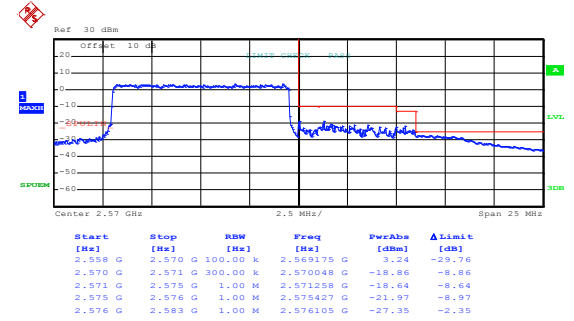
Highest channel

## QPSK & RB Size 50



Date: 12.SEP.2019 14:39:14

Lowest channel

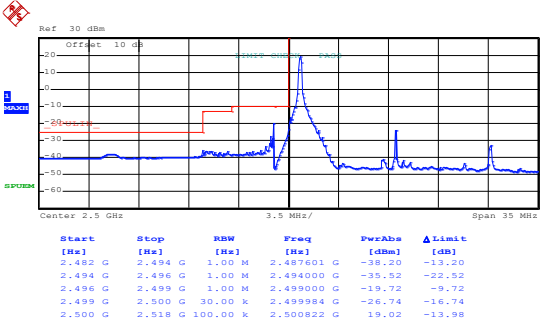


Date: 12.SEP.2019 14:38:36

Highest channel

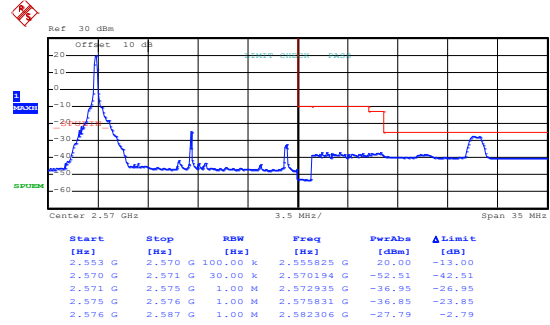


## LTE Band 7, BW: 15MHz 16QAM & RB Size 1



Date: 12.SEP.2019 14:40:44

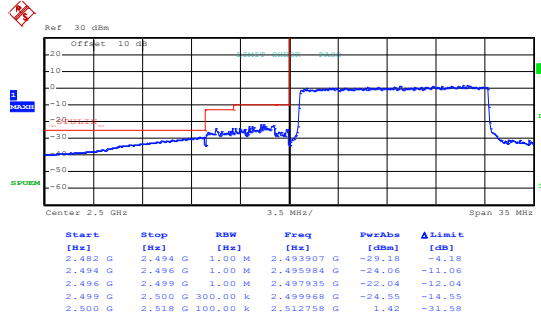
Lowest channel



Date: 12.SEP.2019 14:42:15

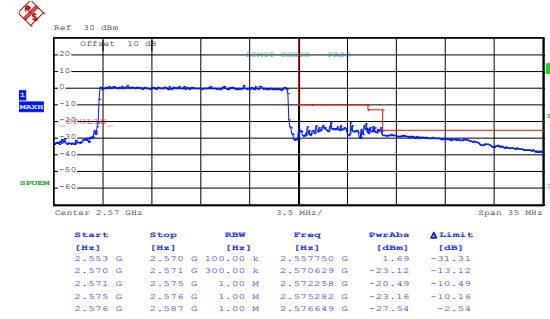
Highest channel

## 16QAM & RB Size 75



Date: 12.SEP.2019 14:41:18

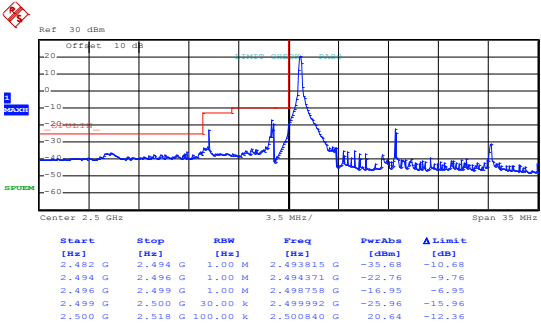
Lowest channel



Date: 12.SEP.2019 14:41:52

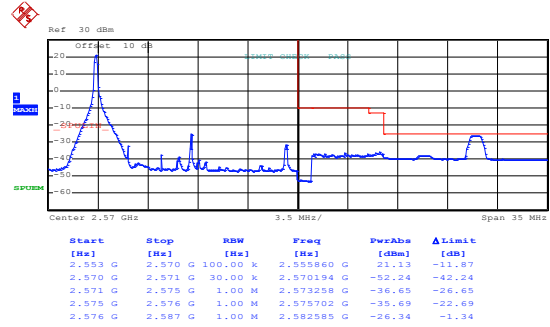
Highest channel

## LTE Band 7, BW: 15MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:40:37

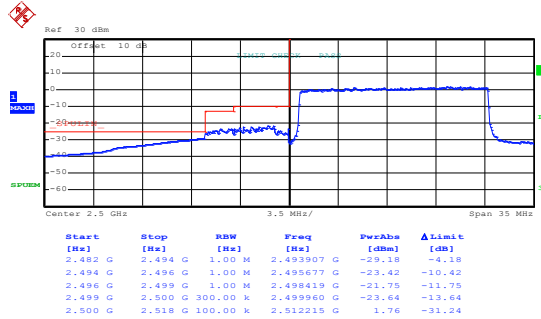
Lowest channel



Date: 12.SEP.2019 14:42:08

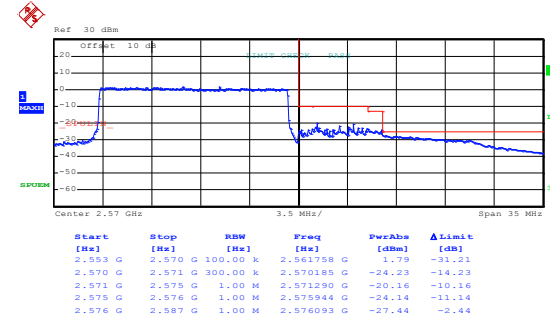
Highest channel

## QPSK & RB Size 75



Date: 12.SEP.2019 14:41:11

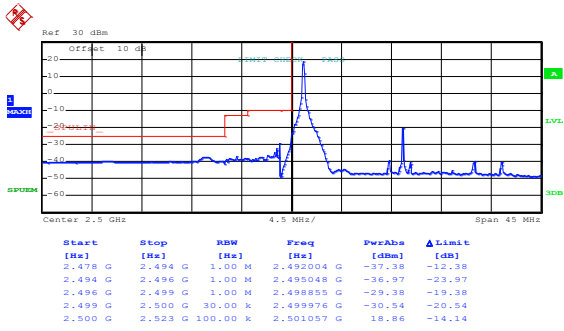
Lowest channel



Date: 12.SEP.2019 14:41:45

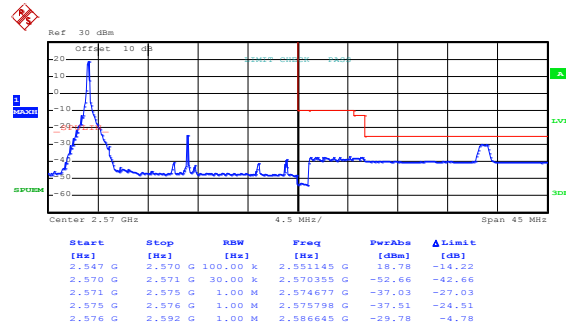
Highest channel

## LTE Band 7, BW: 20MHz 16QAM & RB Size 1



Date: 12.SEP.2019 14:44:20

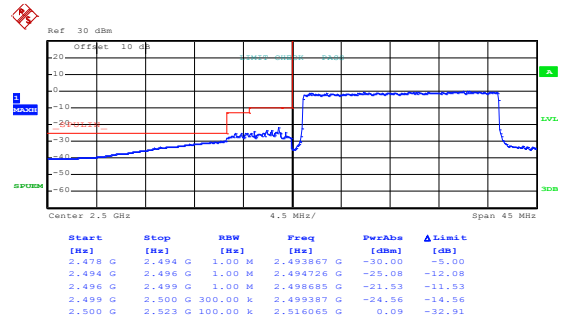
Lowest channel



Date: 12.SEP.2019 14:42:58

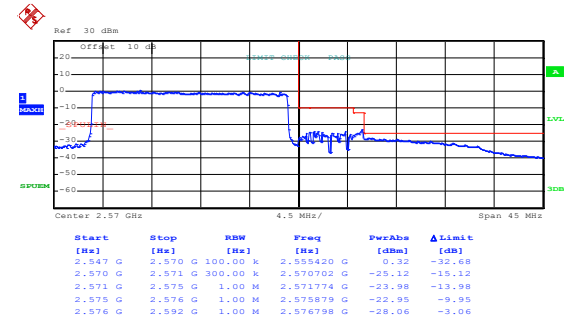
Highest channel

## 16QAM & RB Size 100



Date: 12.SEP.2019 14:43:58

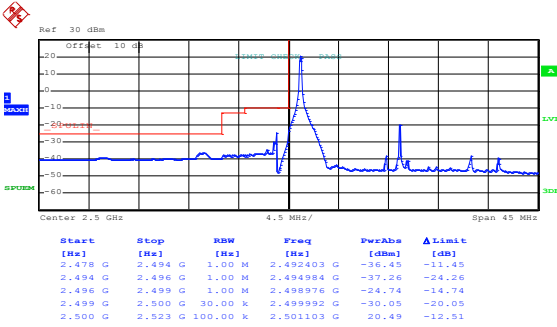
Lowest channel



Date: 12.SEP.2019 14:43:27

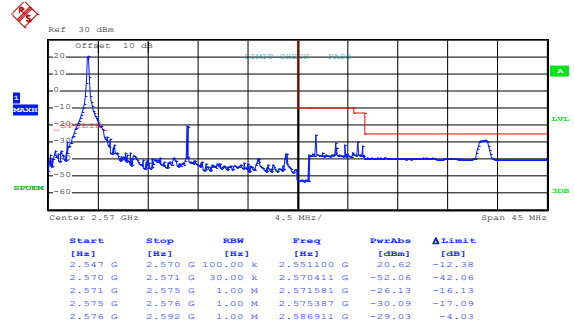
Highest channel

## LTE Band 7, BW: 20MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:44:13

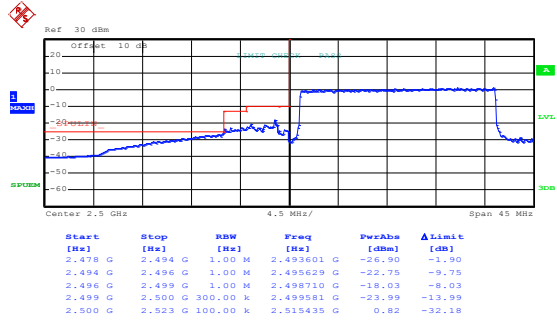
Lowest channel



Date: 12.SEP.2019 14:42:48

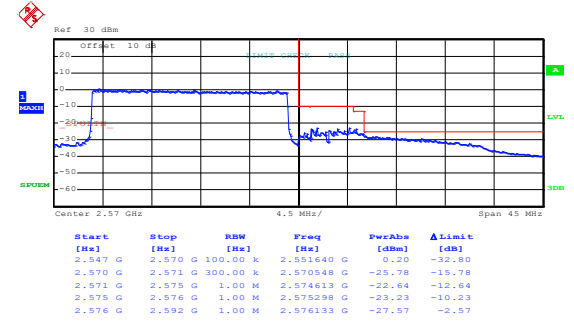
Highest channel

## QPSK & RB Size 100



Date: 12.SEP.2019 14:43:51

Lowest channel

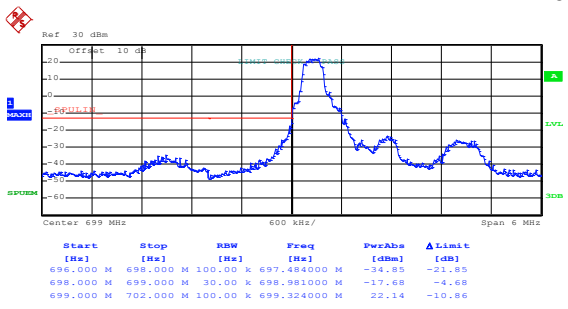


Date: 12.SEP.2019 14:43:20

Highest channel

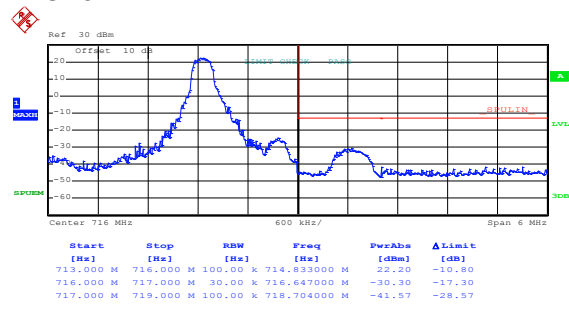
LTE band 12 part:

LTE Band 12, BW: 1.4MHz  
16QAM & RB Size 1



Date: 12.SEP.2019 14:45:53

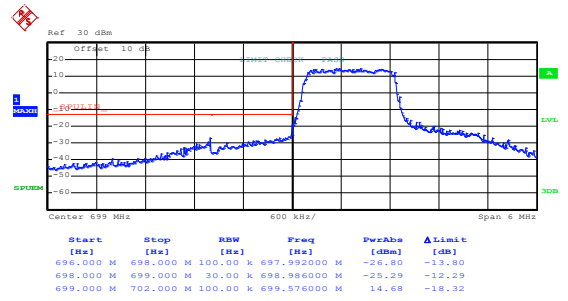
Lowest channel



Date: 12.SEP.2019 14:46:52

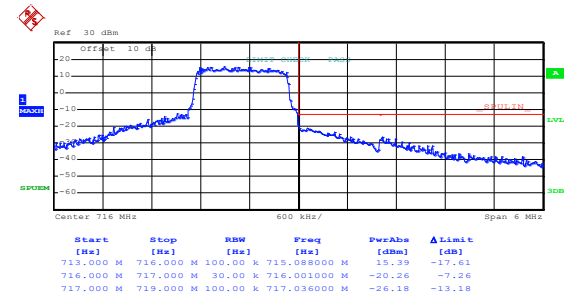
Highest channel

16QAM & RB Size 6



Date: 12.SEP.2019 14:46:10

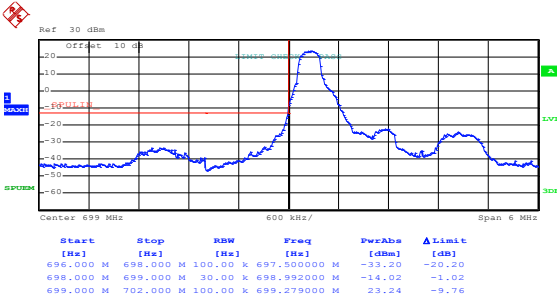
Lowest channel



Date: 12.SEP.2019 14:46:37

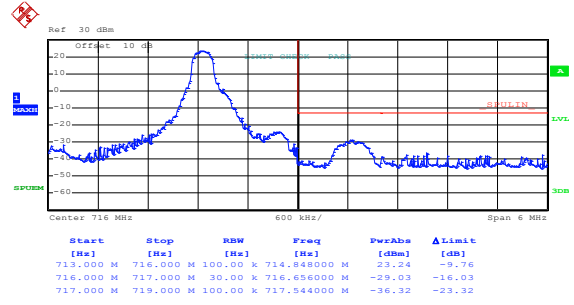
Highest channel

## LTE Band 12, BW: 1.4MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:45:38

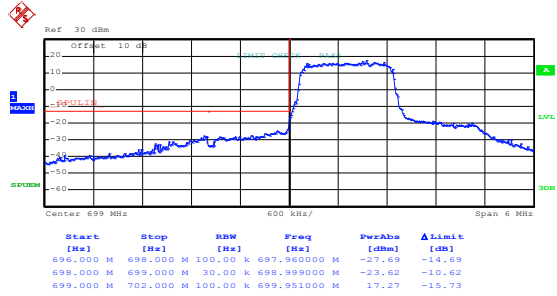
Lowest channel



Date: 12.SEP.2019 14:46:45

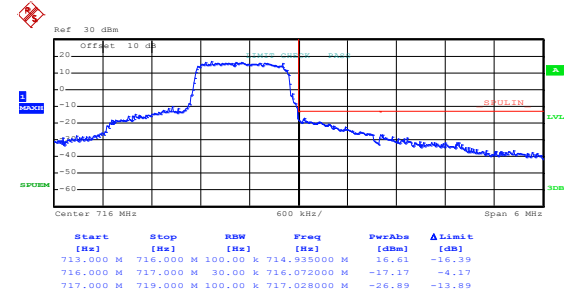
Highest channel

## QPSK & RB Size 6



Date: 12.SEP.2019 14:46:03

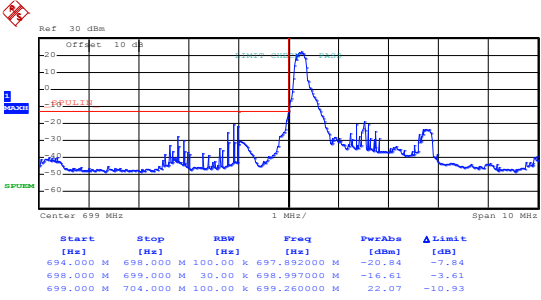
Lowest channel



Date: 12.SEP.2019 14:46:31

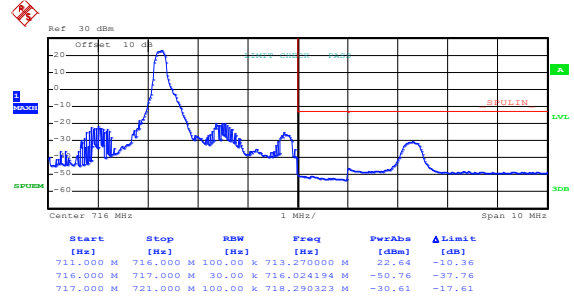
Highest channel

## LTE Band 12, BW: 3MHz 16QAM & RB Size 1



Date: 12.SEP.2019 14:49:23

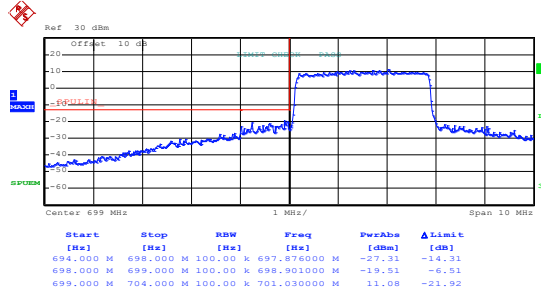
Lowest channel



Date: 12.SEP.2019 14:48:03

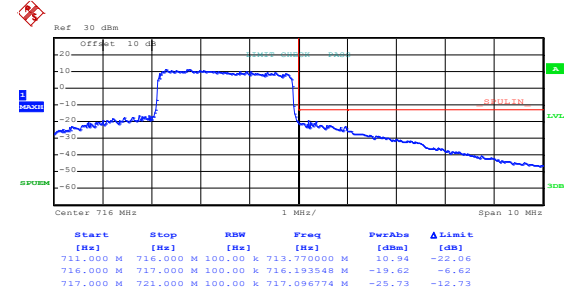
Highest channel

## 16QAM & RB Size 15



Date: 12.SEP.2019 14:49:01

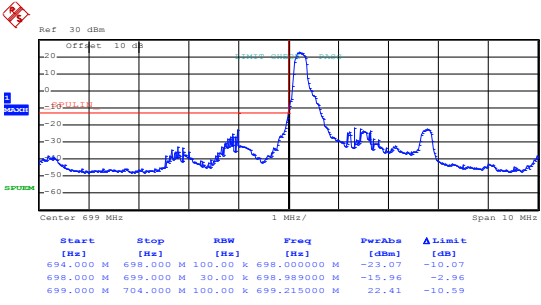
Lowest channel



Date: 12.SEP.2019 14:48:24

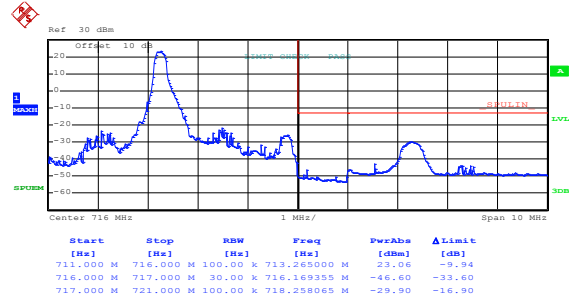
Highest channel

## LTE Band 12, BW: 3MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:49:15

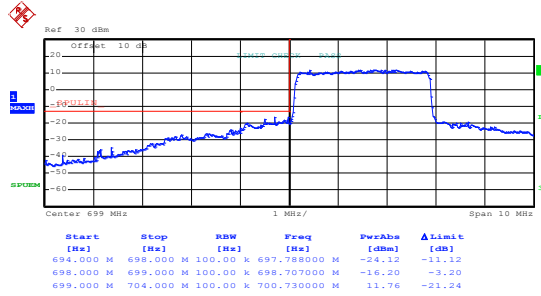
Lowest channel



Date: 12.SEP.2019 14:47:46

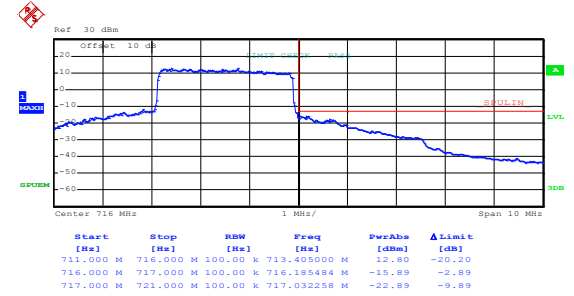
Highest channel

## QPSK & RB Size 15



Date: 12.SEP.2019 14:48:55

Lowest channel

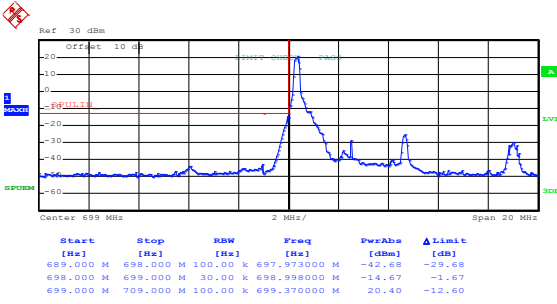


Date: 12.SEP.2019 14:48:17

Highest channel

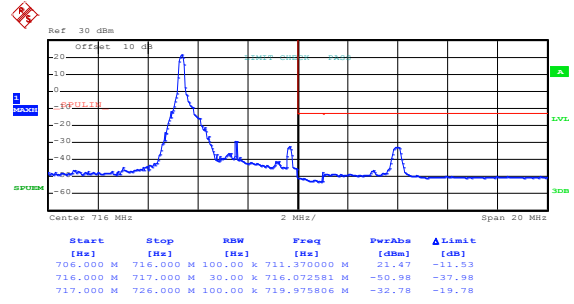


## LTE Band 12, BW: 5MHz 16QAM & RB Size 1



Date: 12.SEP.2019 14:50:33

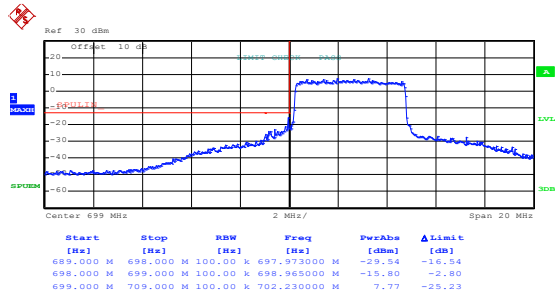
Lowest channel



Date: 12.SEP.2019 14:51:40

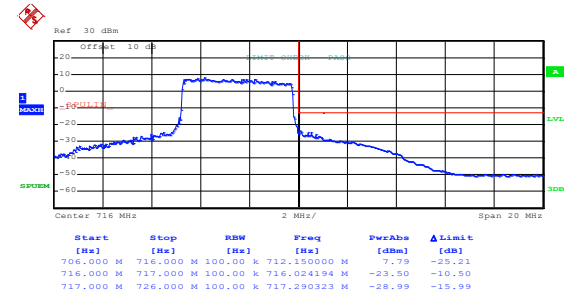
Highest channel

## 16QAM & RB Size 25



Date: 12.SEP.2019 14:50:54

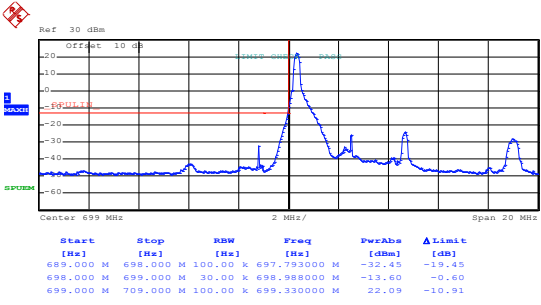
Lowest channel



Date: 12.SEP.2019 14:51:15

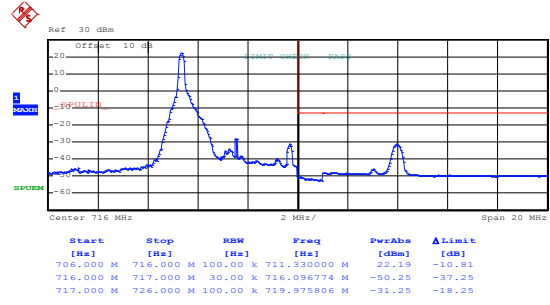
Highest channel

## LTE Band 12, BW: 5MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:50:25

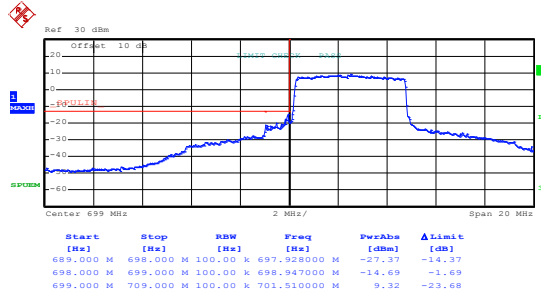
Lowest channel



Date: 12.SEP.2019 14:51:33

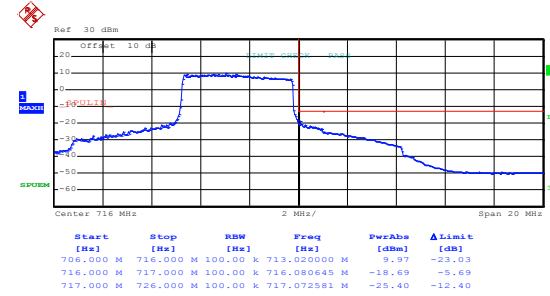
Highest channel

## QPSK & RB Size 25



Date: 12.SEP.2019 14:50:49

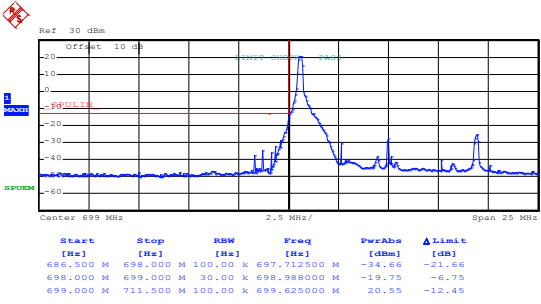
Lowest channel



Date: 12.SEP.2019 14:51:10

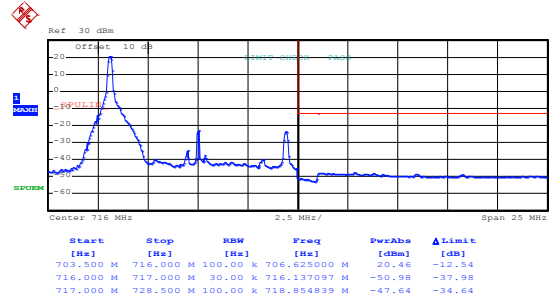
Highest channel

## LTE Band 12, BW: 10MHz 16QAM & RB Size 1



Date: 12.SEP.2019 14:53:58

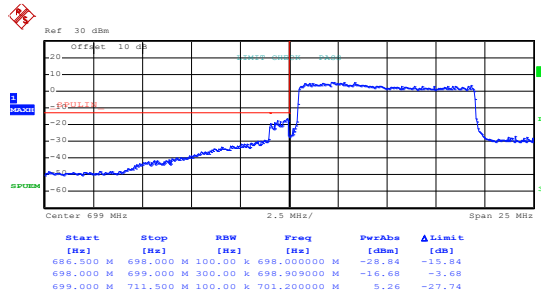
Lowest channel



Date: 12.SEP.2019 14:52:29

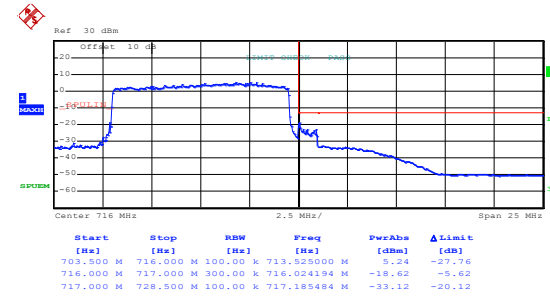
Highest channel

## 16QAM & RB Size 50



Date: 12.SEP.2019 14:53:34

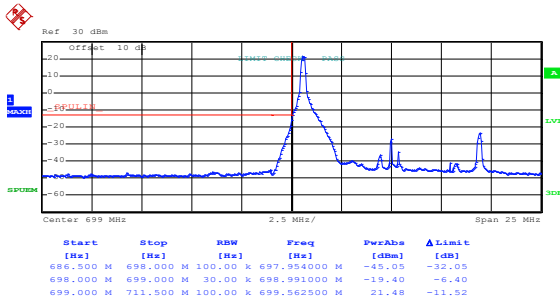
Lowest channel



Date: 12.SEP.2019 14:52:49

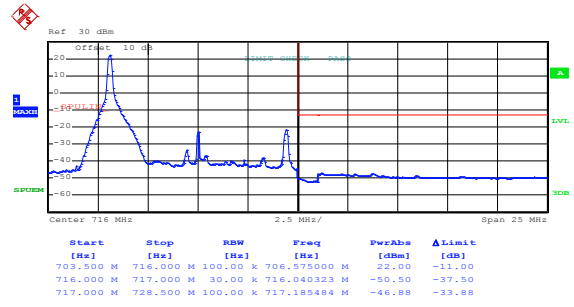
Highest channel

## LTE Band 12, BW: 10MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:53:50

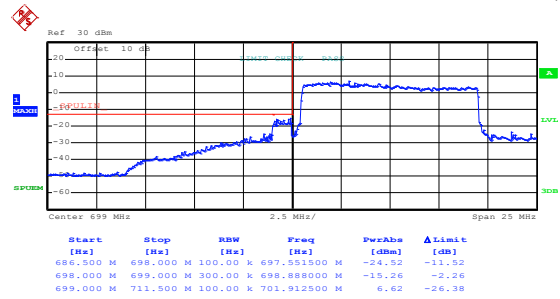
Lowest channel



Date: 12.SEP.2019 14:52:22

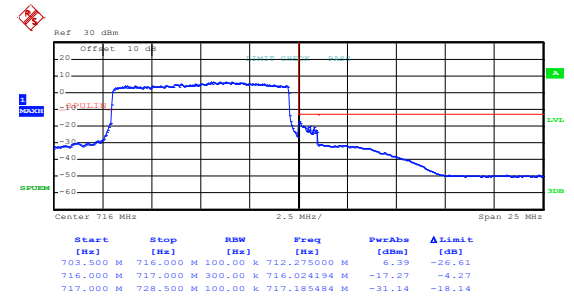
Highest channel

## QPSK & RB Size 50



Date: 12.SEP.2019 14:53:19

Lowest channel

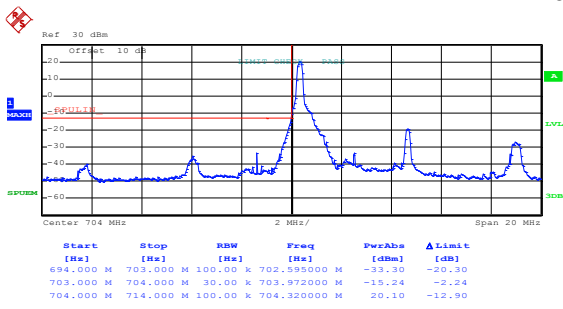


Date: 12.SEP.2019 14:52:43

Highest channel

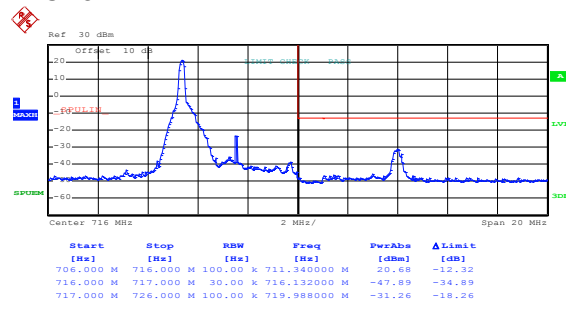
LTE Band 17 part:

LTE Band 17, BW: 5MHz  
16QAM & RB Size 1



Date: 12.SEP.2019 14:59:21

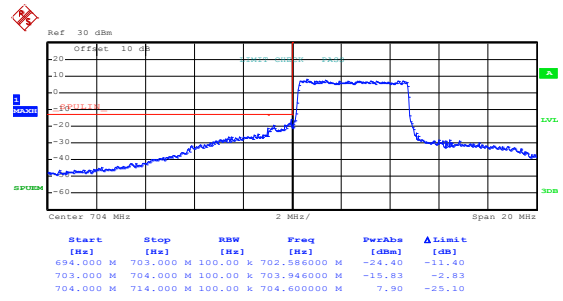
Lowest channel



Date: 12.SEP.2019 15:01:33

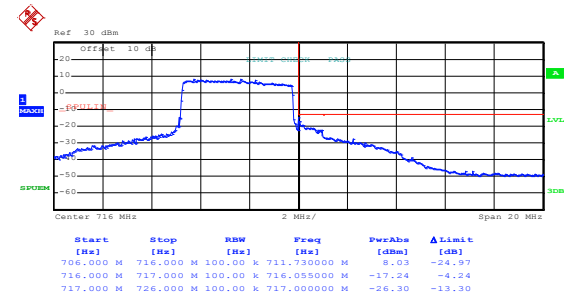
Highest channel

16QAM & RB Size 25



Date: 12.SEP.2019 15:00:28

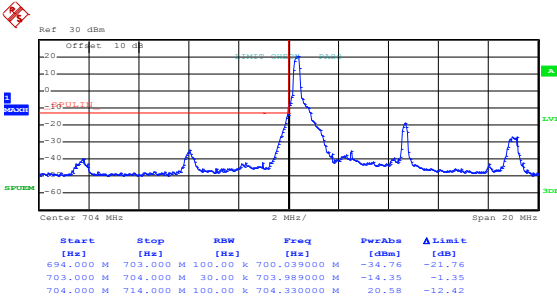
Lowest channel



Date: 12.SEP.2019 15:01:09

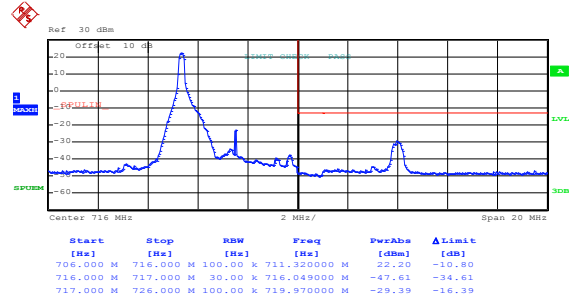
Highest channel

## LTE Band 17, BW: 5MHz QPSK & RB Size 1



Date: 12.SEP.2019 14:59:14

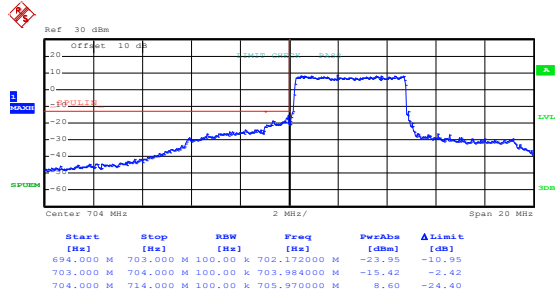
Lowest channel



Date: 12.SEP.2019 15:01:25

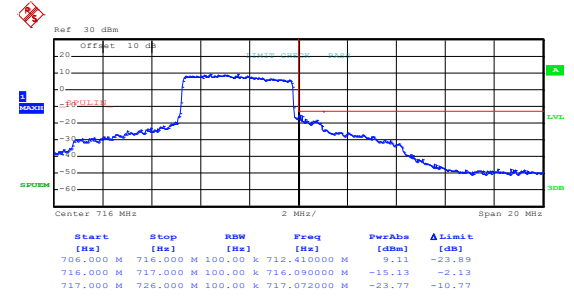
Highest channel

## QPSK & RB Size 25



Date: 12.SEP.2019 15:00:16

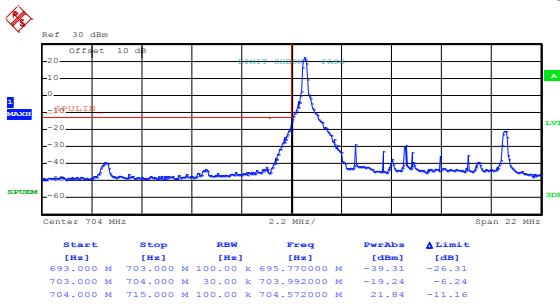
Lowest channel



Date: 12.SEP.2019 15:01:03

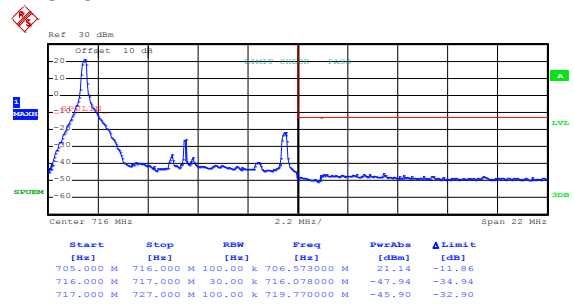
Highest channel

## LTE Band 17, BW: 10MHz 16QAM & RB Size 1



Date: 12.SEP.2019 15:05:16

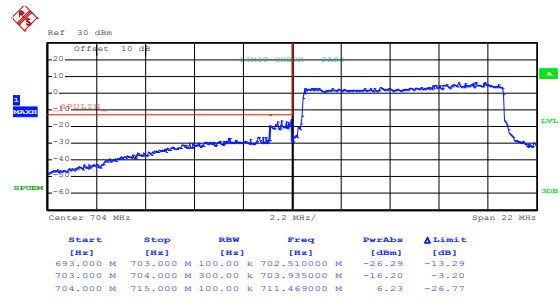
Lowest channel



Date: 12.SEP.2019 15:02:33

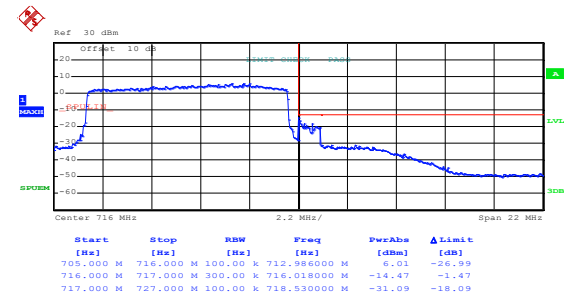
Highest channel

## 16QAM & RB Size 50



Date: 12.SEP.2019 15:04:54

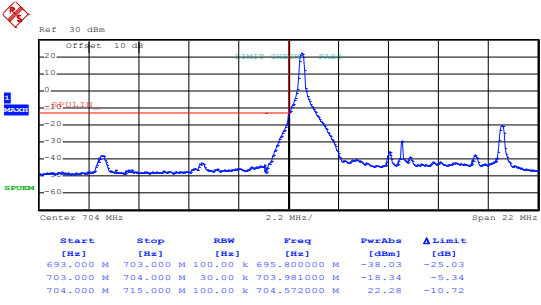
Lowest channel



Date: 12.SEP.2019 15:03:16

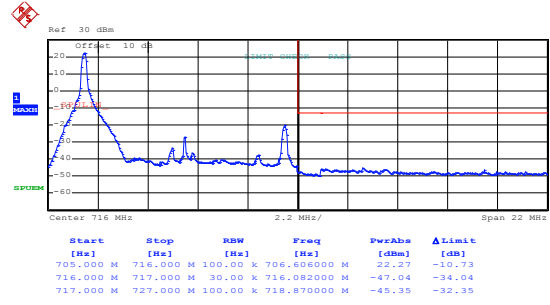
Highest channel

## LTE Band 17, BW: 10MHz QPSK & RB Size 1



Date: 12.SEP.2019 15:05:09

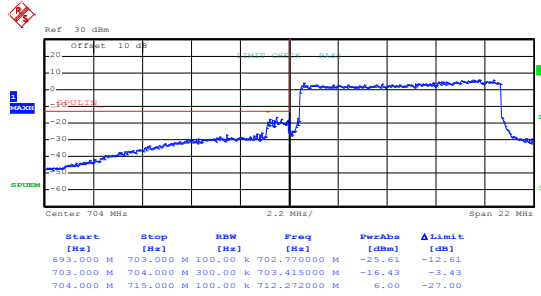
Lowest channel



Date: 12.SEP.2019 15:02:18

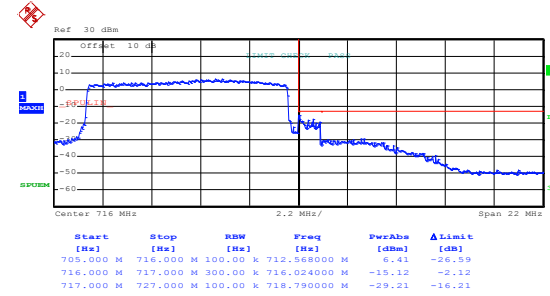
Highest channel

## QPSK & RB Size 50



Date: 12.SEP.2019 15:04:25

Lowest channel

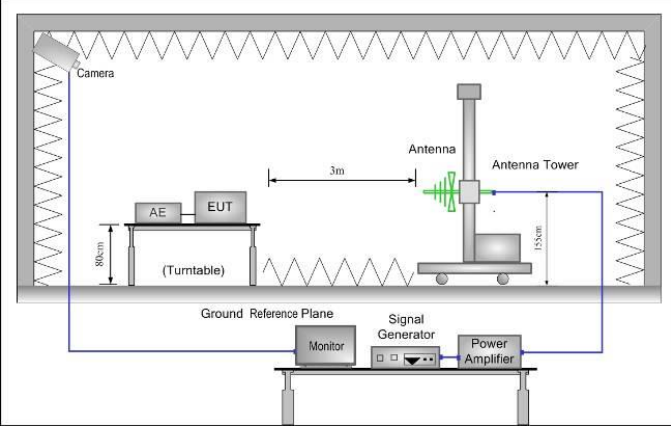
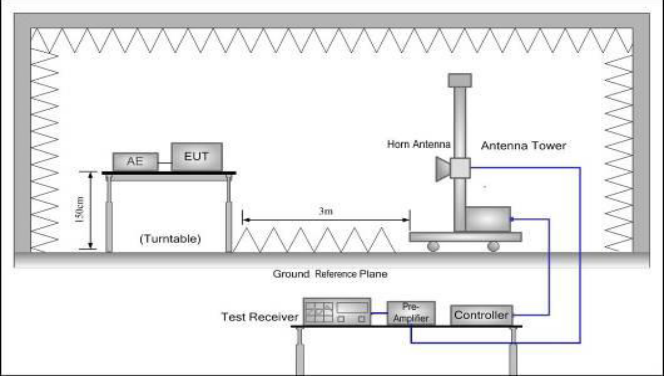


Date: 12.SEP.2019 15:03:09

Highest channel



## 6.5 Field strength of spurious radiation measurement

<p>Test Requirement:</p>	<p>Part 22.917(b), Part 24.238 (a), Part 27.53(g), Part 27.53(m), Part 27.53(h)</p>
<p>Test Method:</p>	<p>ANSI/TIA-603-D 2010</p>
<p>Limit:</p>	<p>LTE Band 2 &amp; 4 &amp; 5 &amp; 12 &amp; 17:          The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least <math>43 + 10 \log_{10}(P)</math> dB (-13 dBm).          LTE Band 7:          For mobile digital stations, the attenuation factor shall be not less than <math>40 + 10 \log (P)</math> dB on all frequencies between the channel edge and 5 megahertz from the channel edge, <math>43 + 10 \log (P)</math> dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and <math>55 + 10 \log (P)</math> 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 <math>43 + 10 \log (P)</math> dB on all frequencies between 2490.5 MHz and 2496 MHz and <math>55 + 10 \log (P)</math> dB at or below 2490.5 MHz.</p>
<p>Test setup:</p>	<p>Below 1GHz</p>  <p>Above 1GHz</p> 
<p>Test Procedure:</p>	<ol style="list-style-type: none"> <li>1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.</li> <li>2. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.</li> <li>3. The frequency range up to tenth harmonic was investigated for each</li> </ol>

	<p>of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.</p> <p>4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.</p> $\text{ERP / EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain(dB/dBi)} - \text{Cable Loss (dB)}$
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details.
Test results:	Passed

**Measurement Data:**

**LTE Band 2 part:**

LTE Band 2, WB: 1.4MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
<b>Lowest Channel</b>				
3701.40	Vertical	-32.41	-13.00	Pass
5552.10	V	-34.97		
7402.00	V	-39.36		
3701.40	Horizontal	-36.51		
5552.10	H	-41.30		
7402.00	H	-38.38		
<b>Middle Channel</b>				
3760.00	Vertical	-32.85	-13.00	Pass
5640.00	V	-34.19		
7520.00	V	-39.26		
3760.00	Horizontal	-36.17		
5640.00	H	-41.58		
7520.00	H	-38.29		
<b>Highest Channel</b>				
3816.60	Vertical	-32.97	-13.00	Pass
5724.90	V	-34.16		
7633.20	V	-39.85		
3816.60	Horizontal	-36.24		
5724.90	H	-41.55		
7633.20	H	-38.92		
<p>Note:</p> <ol style="list-style-type: none"> <li>The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.</li> <li>For above 1 GHz, all test modes were performed, and just the worst case shown in the report.</li> </ol>				

LTE Band 2, WB: 20MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
<b>Lowest Channel</b>				
3720.00	Vertical	-32.92	-13.00	Pass
5580.00	V	-34.16		
7440.00	V	-39.25		
3720.00	Horizontal	-36.74		
5580.00	H	-41.53		
7440.00	H	-38.29		
<b>Middle Channel</b>				
3760.00	Vertical	-32.16	-13.00	Pass
5640.00	V	-34.89		
7520.00	V	-39.83		
3760.00	Horizontal	-36.58		
5640.00	H	-41.13		
7520.00	H	-38.31		
<b>Highest Channel</b>				
3800.00	Vertical	-32.55	-13.00	Pass
5700.00	V	-32.94		
7600.00	V	-39.87		
3800.00	Horizontal	-36.16		
5700.00	H	-41.28		
7600.00	H	-38.53		
<p><i>Note:</i></p> <ol style="list-style-type: none"> <li><i>The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.</i></li> <li><i>For above 1 GHz, all test modes were performed, and just the worst case shown in the report.</i></li> </ol>				

**LTE Band 4 part:**

LTE Band 4, WB: 1.4MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
<b>Lowest Channel</b>				
3421.40	Vertical	-40.41	-13.00	Pass
5132.10	V	-33.67		
6842.80	V	-38.75		
3421.40	Horizontal	-40.96		
5132.10	H	-36.99		
6842.80	H	-37.71		
<b>Middle Channel</b>				
3465.00	Vertical	-40.25	-13.00	Pass
5197.50	V	-33.16		
6930.00	V	-38.53		
3465.00	Horizontal	-40.28		
5197.50	H	-36.71		
6930.00	H	-37.15		
<b>Highest Channel</b>				
3508.60	Vertical	-40.97	-13.00	Pass
5262.90	V	-33.43		
7017.20	V	-38.26		
3508.60	Horizontal	-40.16		
5262.90	H	-36.72		
7017.20	H	-37.55		
<p><i>Note:</i></p> <ol style="list-style-type: none"> <li>The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.</li> <li>For above 1 GHz, all test modes were performed, and just the worst case shown in the report.</li> </ol>				

LTE Band 4, WB: 20MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
<b>Lowest Channel</b>				
3440.00	Vertical	-40.84	-13.00	Pass
5160.00	V	-33.26		
6880.00	V	-38.92		
3440.00	Horizontal	-40.15		
5160.00	H	-36.28		
6880.00	H	-37.54		
<b>Middle Channel</b>				
3465.00	Vertical	-40.61	-13.00	Pass
5197.50	V	-33.98		
6930.00	V	-38.47		
3465.00	Horizontal	-40.73		
5197.50	H	-36.25		
6930.00	H	-37.94		
<b>Highest Channel</b>				
3490.00	Vertical	-40.28	-13.00	Pass
5235.00	V	-33.92		
6980.00	V	-38.46		
3490.00	Horizontal	-40.72		
5235.00	H	-36.18		
6980.00	H	-37.53		
<p><i>Note:</i></p> <ol style="list-style-type: none"> <li><i>The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.</i></li> <li><i>For above 1 GHz, all test modes were performed, and just the worst case shown in the report.</i></li> </ol>				

**LTE Band 5 part:**

LTE Band 5, WB: 1.4MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
<b>Lowest Channel</b>				
1649.40	Vertical	-48.80	-13.00	Pass
2474.10	V	-56.10		
3298.80	V	-50.62		
1649.40	Horizontal	-50.81		
2474.10	H	-52.62		
3298.80	H	-50.61		
<b>Middle Channel</b>				
1673.00	Vertical	-48.25	-13.00	Pass
2509.50	V	-56.19		
3346.00	V	-50.73		
1673.00	Horizontal	-50.93		
2509.50	H	-52.24		
3346.00	H	-50.18		
<b>Highest Channel</b>				
1696.60	Vertical	-48.26	-13.00	Pass
2544.90	V	-56.83		
3393.20	V	-50.14		
1696.60	Horizontal	-50.25		
2544.90	H	-52.88		
3393.20	H	-50.16		
<p><i>Note:</i></p> <ol style="list-style-type: none"> <li><i>The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.</i></li> <li><i>For above 1 GHz, all test modes were performed, and just the worst case shown in the report.</i></li> </ol>				

LTE Band 5, WB: 10MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
<b>Lowest Channel</b>				
1658.00	Vertical	-48.98	-13.00	Pass
2487.00	V	-56.71		
3316.00	V	-50.12		
1658.00	Horizontal	-50.83		
2487.00	H	-52.22		
3316.00	H	-50.19		
<b>Middle Channel</b>				
1673.00	Vertical	-48.32	-13.00	Pass
2509.50	V	-56.97		
3346.00	V	-50.26		
1673.00	Horizontal	-50.67		
2509.50	H	-52.15		
3346.00	H	-50.63		
<b>Highest Channel</b>				
1688.00	Vertical	-48.92	-13.00	Pass
2532.00	V	-56.03		
3376.00	V	-50.67		
1688.00	Horizontal	-50.14		
2532.00	H	-52.20		
3376.00	H	-50.39		
<p><i>Note:</i></p> <ol style="list-style-type: none"> <li><i>The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.</i></li> <li><i>For above 1 GHz, all test modes were performed, and just the worst case shown in the report.</i></li> </ol>				

**LTE Band 7 part:**

LTE Band 7, WB: 5MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
<b>Lowest Channel</b>				
5005.00	Vertical	-27.71	-25.00	Pass
7507.50	V	-36.57		
10010.00	V	-33.78		
5005.00	Horizontal	-31.68		
7507.50	H	-34.54		
10010.00	H	-34.90		
<b>Middle Channel</b>				
5070.00	Vertical	-27.16	-25.00	Pass
7605.00	V	-36.29		
10140.00	V	-33.81		
5070.00	Horizontal	-31.15		
7605.00	H	-34.25		
10140.00	H	-34.19		
<b>Highest Channel</b>				
5135.00	Vertical	-27.85	-25.00	Pass
7702.50	V	-36.71		
10270.00	V	-33.15		
5135.00	Horizontal	-31.83		
7702.50	H	-34.97		
10270.00	H	-34.64		
<p>Note:</p> <ol style="list-style-type: none"> <li>The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.</li> <li>For above 1 GHz, all test modes were performed, and just the worst case shown in the report.</li> </ol>				



LTE Band 7, WB: 20MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
<b>Lowest Channel</b>				
5020.00	Vertical	-27.54	-25.00	Pass
7530.00	V	-36.92		
10040.00	V	-33.18		
5020.00	Horizontal	-31.84		
7530.00	H	-34.52		
10040.00	H	-34.97		
<b>Middle Channel</b>				
5070.00	Vertical	-27.85	-25.00	Pass
7605.00	V	-36.91		
10140.00	V	-33.14		
5070.00	Horizontal	-31.52		
7605.00	H	-34.83		
10140.00	H	-34.97		
<b>Highest Channel</b>				
5120.00	Vertical	-27.49	-25.00	Pass
7680.00	V	-36.41		
10240.00	V	-33.16		
5120.00	Horizontal	-31.51		
7680.00	H	-34.25		
10240.00	H	-34.83		
<p><i>Note:</i></p> <ol style="list-style-type: none"> <li><i>The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.</i></li> <li><i>For above 1 GHz, all test modes were performed, and just the worst case shown in the report.</i></li> </ol>				

**LTE Band 12 part:**

LTE Band 12, WB: 1.4MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
<b>Lowest Channel</b>				
1399.40	Vertical	-51.36	-13.00	Pass
2099.10	V	-57.74		
2798.80	V	-53.46		
1399.40	Horizontal	-54.03		
2099.10	H	-56.62		
2798.80	H	-52.00		
<b>Middle Channel</b>				
1415.00	Vertical	-51.15	-13.00	Pass
2122.50	V	-57.46		
2830.00	V	-53.25		
1415.00	Horizontal	-54.13		
2122.50	H	-56.29		
2830.00	H	-52.07		
<b>Highest Channel</b>				
1430.60	Vertical	-51.92	-13.00	Pass
2145.90	V	-57.46		
2861.20	V	-53.25		
1430.60	Horizontal	-54.16		
2145.90	H	-56.83		
2861.20	H	-52.64		
<p><i>Note:</i></p> <ol style="list-style-type: none"> <li><i>The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.</i></li> <li><i>For above 1 GHz, all test modes were performed, and just the worst case shown in the report.</i></li> </ol>				

LTE Band 12, WB: 10MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
<b>Lowest Channel</b>				
1408.00	Vertical	-51.87	-13.00	Pass
2112.00	V	-57.64		
2816.00	V	-53.25		
1408.00	Horizontal	-54.16		
2112.00	H	-56.28		
2816.00	H	-52.71		
<b>Middle Channel</b>				
1415.00	Vertical	-51.33	-13.00	Pass
2122.50	V	-57.40		
2830.00	V	-53.83		
1415.00	Horizontal	-54.25		
2122.50	H	-56.92		
2830.00	H	-52.41		
<b>Highest Channel</b>				
1422.00	Vertical	-51.89	-13.00	Pass
2133.00	V	-57.15		
2844.00	V	-53.24		
1422.00	Horizontal	-54.92		
2133.00	H	-56.13		
2844.00	H	-52.25		
<p><i>Note:</i></p> <ol style="list-style-type: none"> <li><i>The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.</i></li> <li><i>For above 1 GHz, all test modes were performed, and just the worst case shown in the report.</i></li> </ol>				

**LTE Band 17 part:**

LTE Band 17, WB: 5MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
<b>Lowest Channel</b>				
1413.00	Vertical	-55.20	-13.00	Pass
2119.50	V	-57.33		
2826.00	V	-52.74		
1413.00	Horizontal	-56.33		
2119.50	H	-56.99		
2826.00	H	-54.42		
<b>Middle Channel</b>				
1420.00	Vertical	-55.18	-13.00	Pass
2130.00	V	-57.92		
2840.00	V	-52.16		
1420.00	Horizontal	-56.73		
2130.00	H	-56.19		
2840.00	H	-54.85		
<b>Highest Channel</b>				
1427.00	Vertical	-55.97	-13.00	Pass
2140.50	V	-57.16		
2854.00	V	-52.92		
1427.00	Horizontal	-56.14		
2140.50	H	-56.28		
2854.00	H	-54.73		
<p>Note:</p> <ol style="list-style-type: none"> <li>The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.</li> <li>For above 1 GHz, all test modes were performed, and just the worst case shown in the report.</li> </ol>				

LTE Band 17, WB: 10MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
<b>Lowest Channel</b>				
1418.00	Vertical	-55.97	-13.00	Pass
2127.00	V	-57.16		
2836.00	V	-52.67		
1418.00	Horizontal	-56.13		
2127.00	H	-56.29		
2836.00	H	-54.82		
<b>Middle Channel</b>				
1420.00	Vertical	-55.16	-13.00	Pass
2130.00	V	-57.24		
2840.00	V	-52.35		
1420.00	Horizontal	-56.11		
2130.00	H	-56.97		
2840.00	H	-54.73		
<b>Highest Channel</b>				
1422.00	Vertical	-56.15	-13.00	Pass
2133.00	V	-57.41		
2844.00	V	-52.92		
1422.00	Horizontal	-57.26		
2133.00	H	-56.17		
2844.00	H	-54.89		
<p><i>Note:</i></p> <ol style="list-style-type: none"> <li><i>The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.</i></li> <li><i>For above 1 GHz, all test modes were performed, and just the worst case shown in the report.</i></li> </ol>				

## 6.6 Frequency stability V.S. Temperature measurement

Test Requirement:	Part 22.355, Part 24.235, Part 27.54, Part 2.1055(a)(1)(b)
Test Method:	ANSI/TIA-603-D 2010
Limit:	±2.5ppm For Band 5 Within authorized band for Band 2/4/7/12/17
Test setup:	
Test procedure:	<ol style="list-style-type: none"> <li>1. The equipment under test was connected to an external DC power supply and input rated voltage.</li> <li>2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators.</li> <li>3. The EUT was placed inside the temperature chamber.</li> <li>4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency.</li> <li>5. Turn EUT off and set the chamber temperature to –30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency.</li> <li>6. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached</li> </ol>
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

**Measurement Data (worst case):**

**LTE Band 2 part:**

Reference Frequency: LTE Band 2 (10MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
<b>QPSK</b>					
3.80	-30	196	0.104255	Within authorized band	Pass
	-20	188	0.100000		
	-10	179	0.095213		
	0	165	0.087766		
	10	157	0.083511		
	20	149	0.079255		
	30	137	0.072872		
	40	125	0.066489		
	50	170	0.090426		
<b>16QAM</b>					
3.80	-30	168	0.089362	Within authorized band	Pass
	-20	159	0.084574		
	-10	143	0.076064		
	0	134	0.071277		
	10	127	0.067553		
	20	118	0.062766		
	30	110	0.058511		
	40	102	0.054255		
	50	150	0.079787		
<i>Note: Only the worst case shown in the report.</i>					

**LTE Band 4 part:**

Reference Frequency: LTE Band 4 (10MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
<b>QPSK</b>					
3.80	-30	194	0.111977	Within authorized band	Pass
	-20	183	0.105628		
	-10	176	0.101587		
	0	168	0.096970		
	10	159	0.091775		
	20	149	0.086003		
	30	136	0.078499		
	40	127	0.073304		
	50	140	0.080808		
<b>16QAM</b>					
3.80	-30	169	0.097547	Within authorized band	Pass
	-20	158	0.091198		
	-10	148	0.085426		
	0	138	0.079654		
	10	124	0.071573		
	20	117	0.067532		
	30	110	0.063492		
	40	142	0.081962		
	50	130	0.075036		
<i>Note: Only the worst case shown in the report.</i>					



**LTE Band 5 part:**

Reference Frequency: LTE Band 5 (10MHz) Middle channel=20525 channel=836.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
<b>QPSK</b>					
3.80	-30	191	0.228332	±2.5	Pass
	-20	186	0.222355		
	-10	178	0.212791		
	0	169	0.202032		
	10	156	0.186491		
	20	149	0.178123		
	30	138	0.164973		
	40	126	0.150628		
	50	160	0.191273		
<b>16QAM</b>					
3.80	-30	169	0.202032	±2.5	Pass
	-20	158	0.188882		
	-10	149	0.178123		
	0	132	0.157800		
	10	127	0.151823		
	20	118	0.141064		
	30	109	0.130305		
	40	103	0.123132		
	50	140	0.167364		
<i>Note: Only the worst case shown in the report.</i>					

**LTE Band 7 part:**

Reference Frequency: LTE Band 7 (10MHz) Middle channel=21100 Frequency=2535.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
<b>QPSK</b>					
3.80	-30	194	0.076529	Within authorized band	Pass
	-20	187	0.073767		
	-10	179	0.070611		
	0	170	0.067061		
	10	164	0.064694		
	20	154	0.060750		
	30	142	0.056016		
	40	131	0.051677		
	50	124	0.048915		
<b>16QAM</b>					
3.80	-30	165	0.065089	Within authorized band	Pass
	-20	155	0.061144		
	-10	147	0.057988		
	0	139	0.054832		
	10	125	0.049310		
	20	117	0.046154		
	30	112	0.044181		
	40	106	0.041815		
	50	130	0.051282		
<i>Note: Only the worst case shown in the report.</i>					

**LTE Band 12 part:**

Reference Frequency: LTE Band 12 (10MHz) Middle channel=23095 channel=707.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
<b>QPSK</b>					
3.80	-30	190	0.268551	Within authorized band	Pass
	-20	184	0.260071		
	-10	176	0.248763		
	0	167	0.236042		
	10	159	0.224735		
	20	145	0.204947		
	30	132	0.186572		
	40	126	0.178092		
	50	150	0.212014		
<b>16QAM</b>					
3.80	-30	163	0.230389	Within authorized band	Pass
	-20	158	0.223322		
	-10	149	0.210601		
	0	134	0.189399		
	10	127	0.179505		
	20	114	0.161131		
	30	105	0.148410		
	40	120	0.169611		
	50	140	0.197880		

*Note: Only the worst case shown in the report.*

**LTE Band 17 part:**

Reference Frequency: LTE Band 17 (10MHz) Middle channel=23790 channel=710.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
<b>QPSK</b>					
3.80	-30	193	0.271831	Within authorized band	Pass
	-20	183	0.257746		
	-10	177	0.249296		
	0	168	0.236620		
	10	158	0.222535		
	20	141	0.198592		
	30	132	0.185915		
	40	121	0.170423		
	50	149	0.209859		
<b>16QAM</b>					
3.80	-30	162	0.228169	Within authorized band	Pass
	-20	157	0.221127		
	-10	148	0.208451		
	0	138	0.194366		
	10	128	0.180282		
	20	113	0.159155		
	30	102	0.143662		
	40	120	0.169014		
	50	140	0.197183		
<i>Note: Only the worst case shown in the report.</i>					

## 6.7 Frequency stability V.S. Voltage measurement

Test Requirement:	Part 22.355, Part 24.235, Part 27.54, Part 2.1055(d)(2)
Test Method:	ANSI/TIA-603-D 2010
Limit:	±2.5ppm For Band 5 Within authorized band for Band 2/4/7/12/17
Test setup:	<p>The diagram illustrates the test setup. A Power Source is connected to a Divider. The Divider is connected to a Spectrum Analyzer (SA) and an Under Test Equipment (EUT). The EUT is placed inside a Temperature &amp; Humidity Chamber. A Signal Source (SS) is also connected to the Divider.</p>
Test procedure:	<ol style="list-style-type: none"> <li>1. Set chamber temperature to 25°C. Use a variable DC power source to power the EUT and set the voltage to rated voltage.</li> <li>2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.</li> <li>3. Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.</li> </ol>
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

**Measurement Data (worst case):**

**LTE Band 2 part:**

Reference Frequency: LTE Band 2(10MHz) Middle channel=1890 channel=1880.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	4.35	94	0.050000	Within authorized band	Pass
	3.80	73	0.038830		
	3.50	52	0.027660		
16QAM					
25	4.35	90	0.047872	Within authorized band	Pass
	3.80	78	0.041489		
	3.50	60	0.031915		

*Note: Only the worst case shown in the report.*

**LTE Band 4 part:**

Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	4.35	93	0.053680	Within authorized band	Pass
	3.80	80	0.046176		
	3.50	75	0.043290		
16QAM					
25	4.35	92	0.053102	Within authorized band	Pass
	3.80	86	0.049639		
	3.50	70	0.040404		

*Note: Only the worst case shown in the report.*

**LTE Band 5 part:**

Reference Frequency: LTE Band 5(10MHz) Middle channel=20525 channel=836.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	4.35	95	0.113568	±2.5	Pass
	3.80	78	0.093246		
	3.50	59	0.070532		
16QAM					
25	4.35	96	0.114764	±2.5	Pass
	3.80	80	0.095637		
	3.50	54	0.064555		

*Note: Only the worst case shown in the report.*

**LTE Band 7 part:**

Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	4.35	97	0.038264	Within authorized band	Pass
	3.80	79	0.031164		
	3.50	60	0.023669		
16QAM					
25	4.35	91	0.035897	Within authorized band	Pass
	3.80	83	0.032742		
	3.50	70	0.027613		

Note: Only the worst case shown in the report.

**LTE Band 12 part:**

Reference Frequency: LTE Band 12(10MHz) Middle channel=23095 channel=707.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	4.35	93	0.131449	Within authorized band	Pass
	3.80	80	0.113074		
	3.50	74	0.104594		
16QAM					
25	4.35	90	0.127208	Within authorized band	Pass
	3.80	70	0.098940		
	3.50	50	0.070671		

Note: Only the worst case shown in the report.

**LTE Band 17 part:**

Reference Frequency: LTE Band 17(10MHz) Middle channel=23790 channel=710.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	4.35	89	0.125352	Within authorized band	Pass
	3.80	70	0.098592		
	3.50	61	0.085915		
16QAM					
25	4.35	88	0.123944	Within authorized band	Pass
	3.80	74	0.104225		
	3.50	63	0.088732		

Note: Only the worst case shown in the report.