

16QAM



## Date: 28.AUG.2020 18:34:44

## 16QAM



Date: 28.AUG.2020 18:34:56

## 16QAM



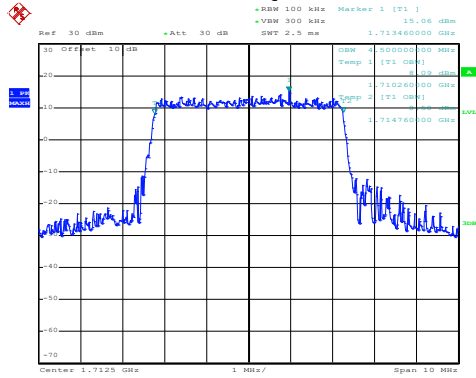
QPSK



JianYan Testing Group Shenzhen Co., Ltd.  
No.110-116, Building B, Jinyuan Business Building, Xixiang Road,  
Bao'an District, Shenzhen, Guangdong, China  
Tel: +86-755-23118282, Fax: +86-755-23116366

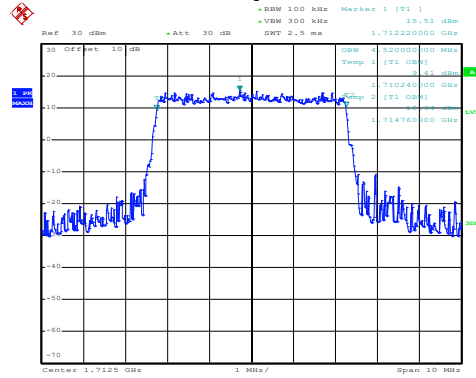
LTE Band 4: 99% Occupancy bandwidth  
BW: 5MHz

16QAM



Date: 28.AUG.2020 18:37:04

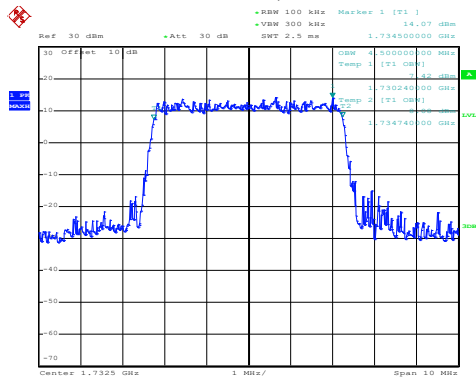
QPSK



Date: 28.AUG.2020 18:37:00

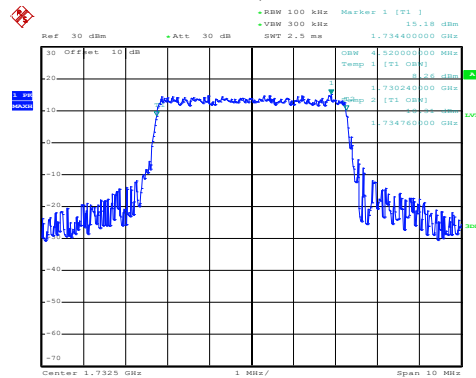
Lowest channel

16QAM



Date: 28.AUG.2020 18:37:39

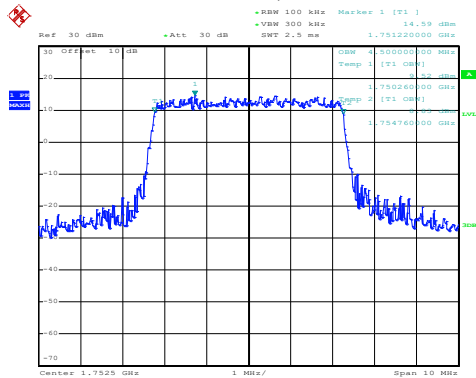
QPSK



Date: 28.AUG.2020 18:37:36

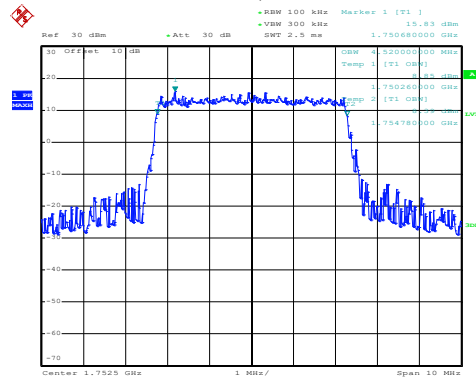
Middle channel

16QAM



Date: 28.AUG.2020 18:37:59

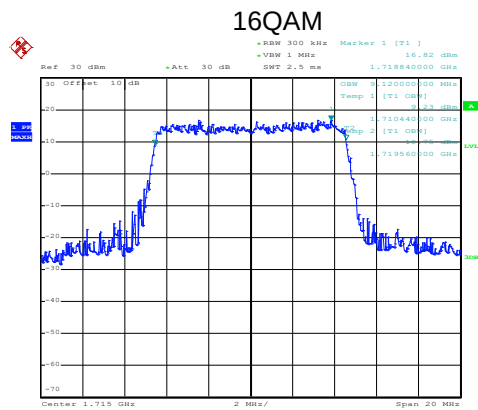
QPSK



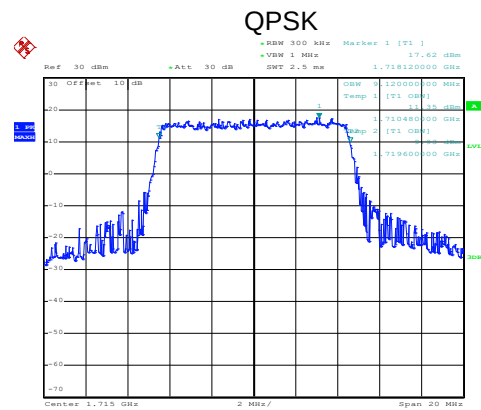
Date: 28.AUG.2020 18:37:53

Highest channel

LTE Band 4: 99% Occupy bandwidth  
BW: 10MHz

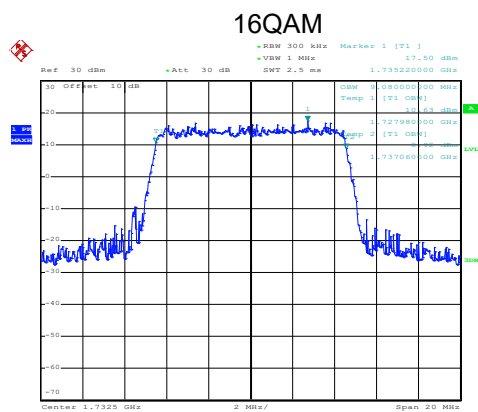


Date: 28.AUG.2020 18:38:54

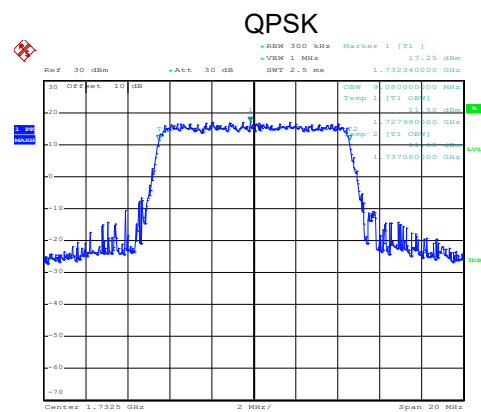


Date: 28.AUG.2020 18:38:50

Lowest channel

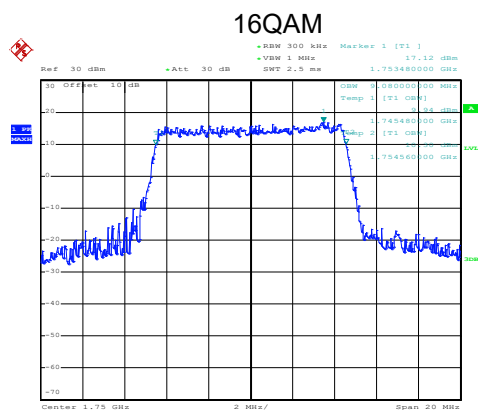


Date: 28.AUG.2020 18:39:07

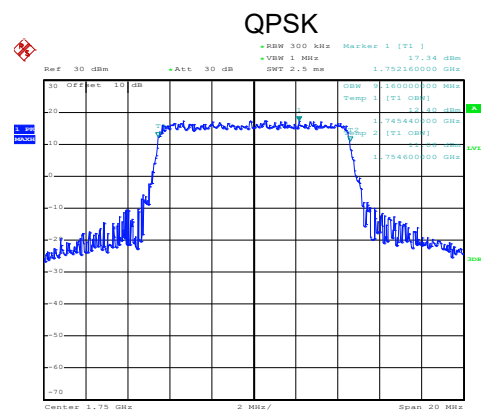


Date: 28.AUG.2020 18:39:04

Middle channel



Date: 28.AUG.2020 18:39:49

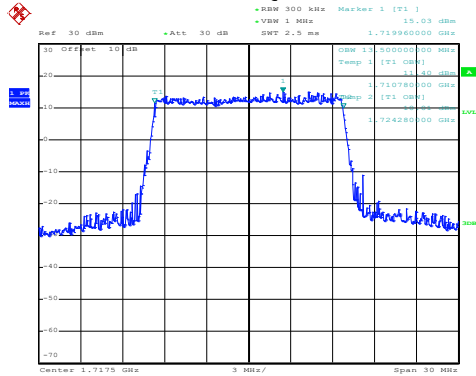


Date: 28.AUG.2020 18:39:45

## Highest channel

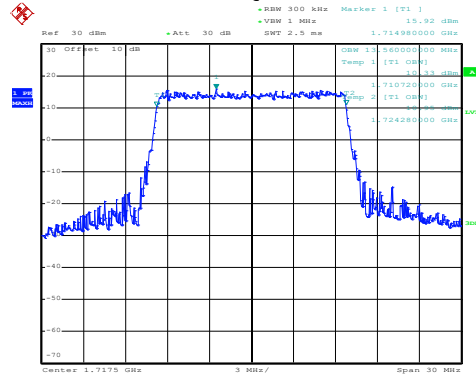
LTE Band 4: 99% Occupancy bandwidth  
BW: 15MHz

16QAM



Date: 28.AUG.2020 18:40:12

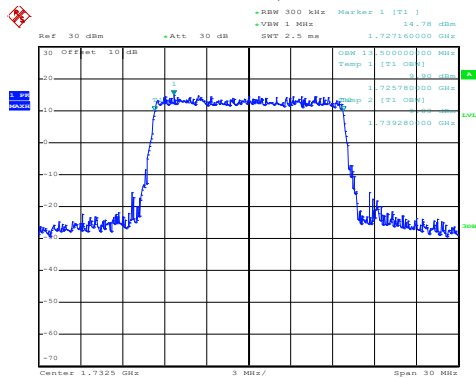
QPSK



Date: 28.AUG.2020 18:40:08

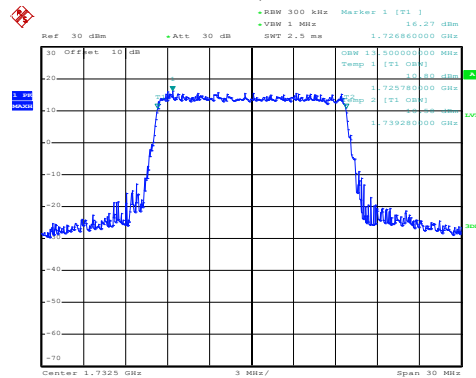
Lowest channel

16QAM



Date: 28.AUG.2020 18:40:50

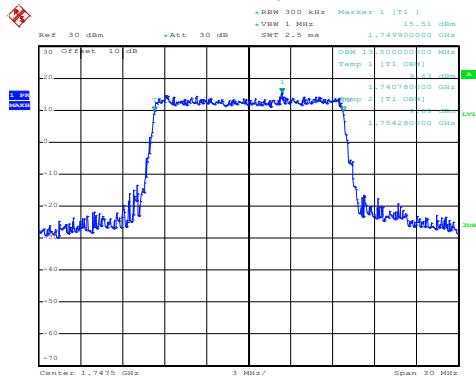
QPSK



Date: 28.AUG.2020 18:40:46

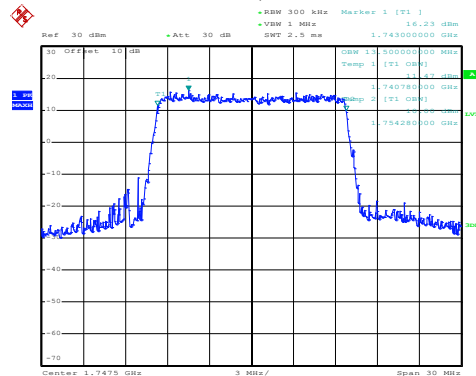
Middle channel

16QAM



Date: 28.AUG.2020 18:41:05

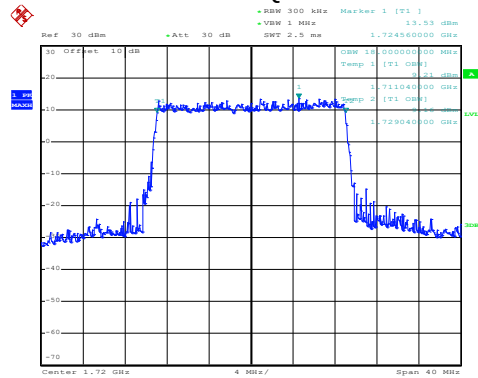
QPSK



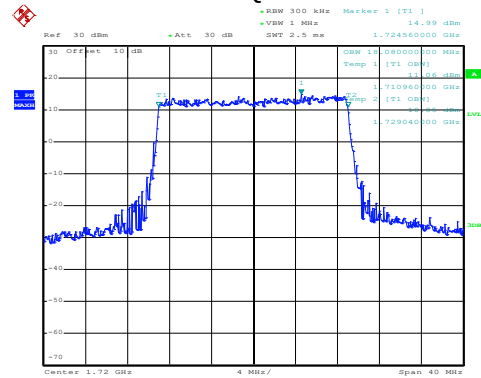
Date: 28.AUG.2020 18:41:00

Highest channel

QPSK

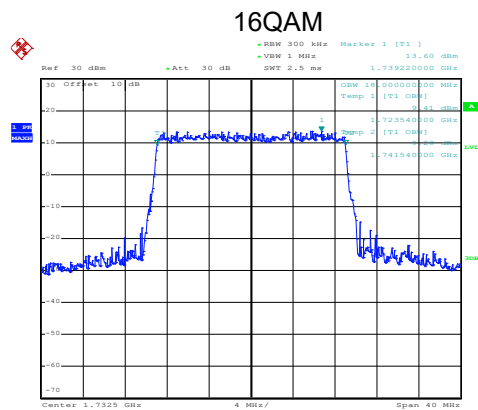


Date: 28.AUG.2020 18:41:52

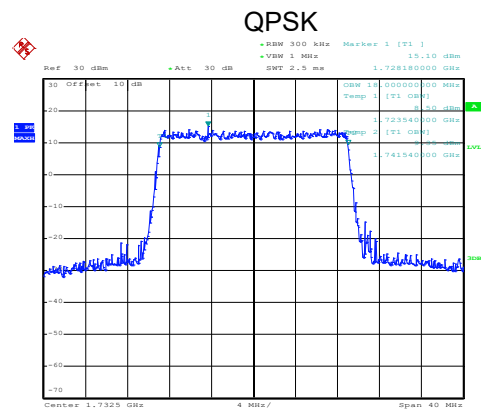


Date: 28.AUG.2020 18:41:48

Lowest channel

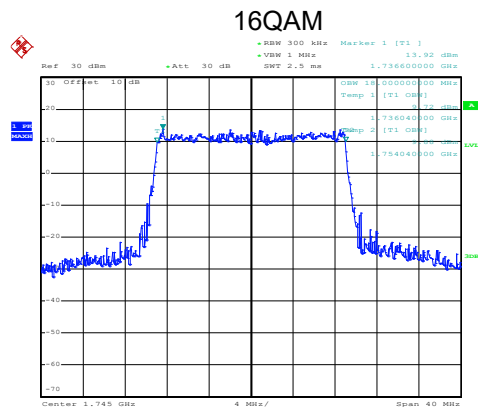


Date: 28.AUG.2020 18:42:05

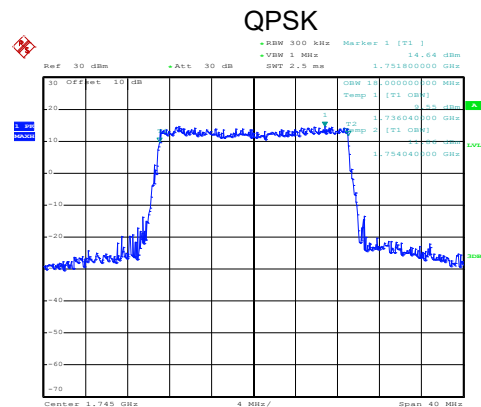


Date: 28.AUG.2020 18:42:01

Middle channel



Date: 28.AUG.2020 18:42:43



Date: 28.AUG.2020 18:42:39

Highest channel

16QAM



## Date: 28.AUG.2020 18:33:03

## 16QAM



Date: 28.AUG.2020 18:33:23

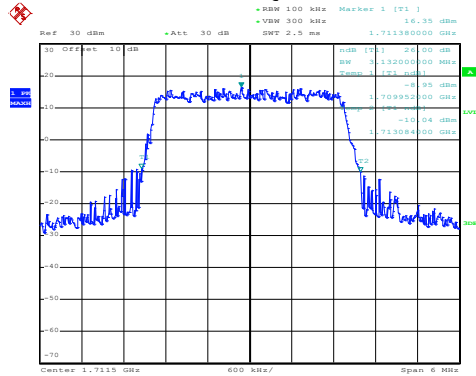
## 16QAM



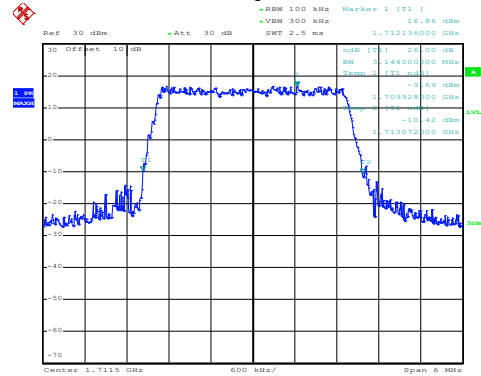
Date: 28.AUG.2020 18:34:04

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QPSK

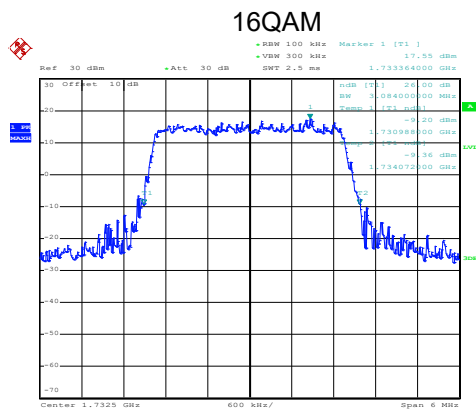


Date: 28.AUG.2020 18:34:38

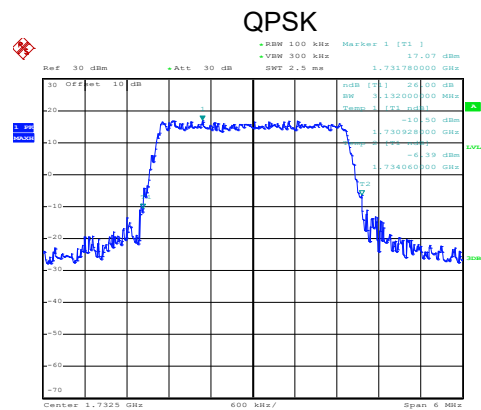


Date: 28.AUG.2020 18:34:34

Lowest channel

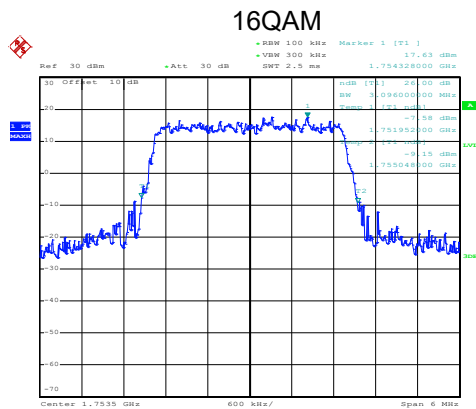


Date: 28.AUG.2020 18:35:10

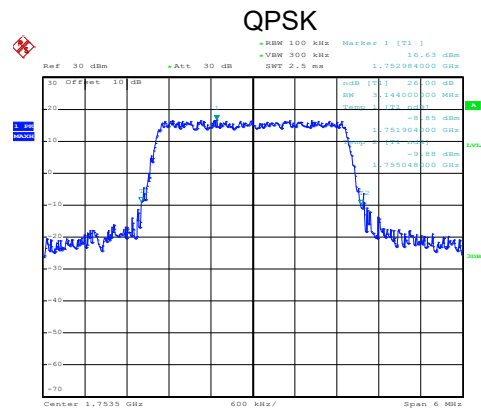


Date: 28.AUG.2020 18:35:05

Middle channel



Date: 28.AUG.2020 18:35:27



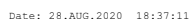
Date: 28.AUG.2020 18:35:23

Highest channel

16QAM



QPSK



Lowest channel

## 16QAM



QPSK



Middle channel

## 16QAM



QPSK



## Highest channel

16QAM



QPSK



Lowest channel

## 16QAM



QPSK



Middle channel

## 16QAM



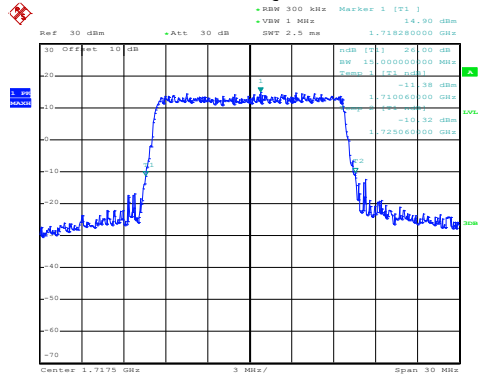
QPSK



## Highest channel

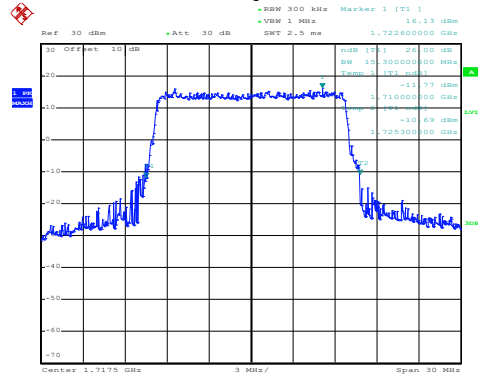
LTE Band 4: -26dBc bandwidth  
BW: 15MHz

16QAM



Date: 28.AUG.2020 18:40:24

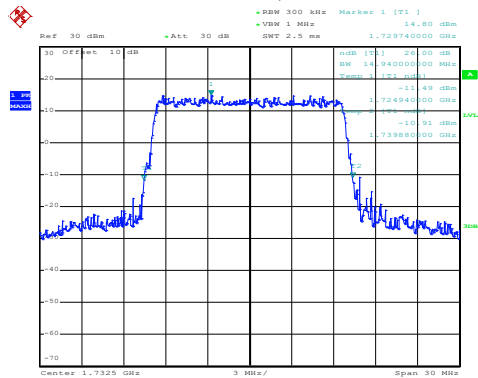
QPSK



Date: 28.AUG.2020 18:40:19

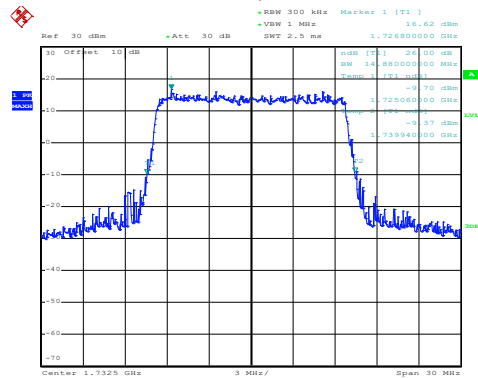
Lowest channel

16QAM



Date: 28.AUG.2020 18:40:39

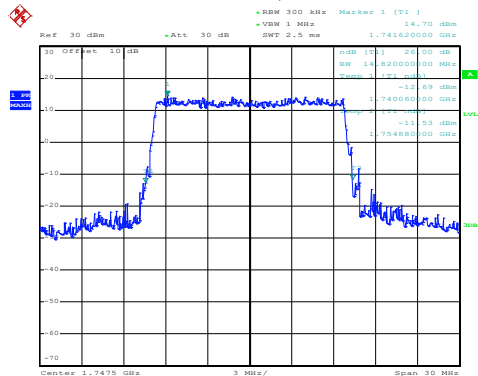
QPSK



Date: 28.AUG.2020 18:40:35

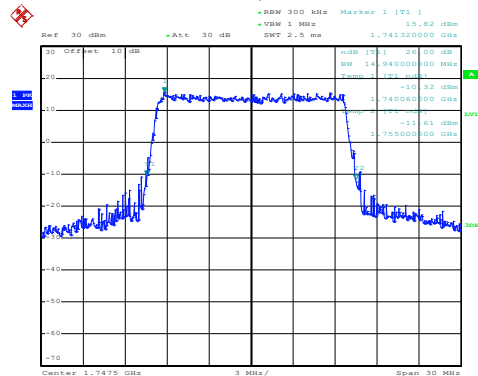
Middle channel

16QAM



Date: 28.AUG.2020 18:41:16

QPSK



Date: 28.AUG.2020 18:41:12

Highest channel

16QAM



## Date: 28.AUG.2020 18:41:37

## 16QAM



Date: 28.AUG.2020 18:42:13

16QAM



Date: 28.AUG.2020 18:42:28

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LTE Band 7: 99% Occupy bandwidth  
BW: 5MHz



## 16QAM



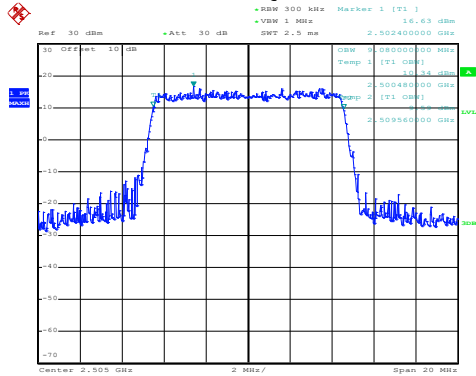
## 16QAM



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Tel: +86-755-23118282, Fax: +86-755-23116366

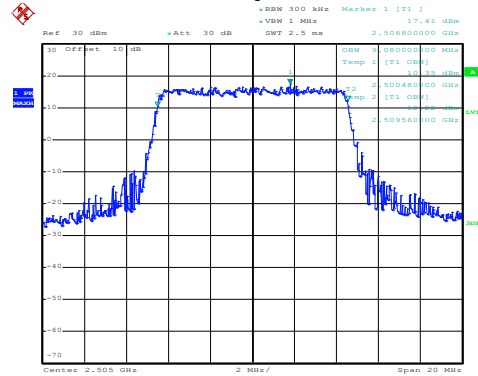
## LTE Band 7: 99% Occupancy bandwidth BW: 10MHz

### 16QAM



Date: 28.AUG.2020 18:50:20

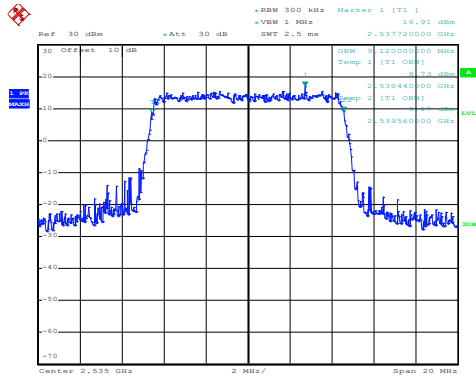
### QPSK



Date: 28.AUG.2020 18:50:16

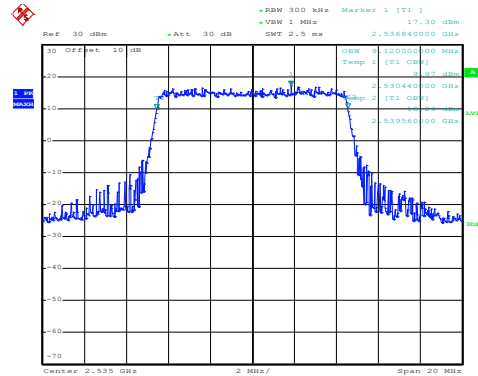
### Lowest channel

### 16QAM



Date: 28.AUG.2020 18:50:34

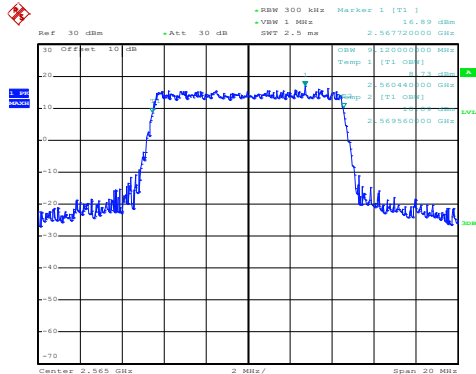
### QPSK



Date: 28.AUG.2020 18:50:29

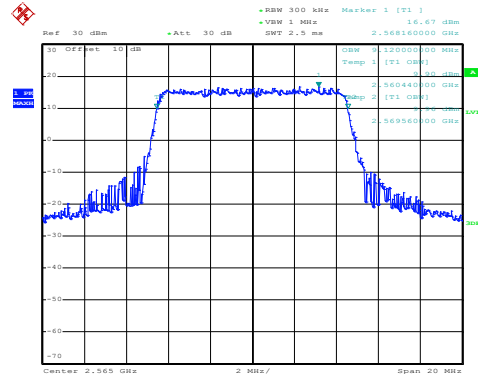
### Middle channel

### 16QAM



Date: 28.AUG.2020 18:51:29

### QPSK

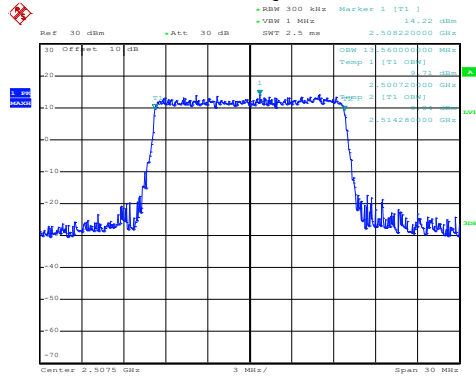


Date: 28.AUG.2020 18:51:25

### Highest channel

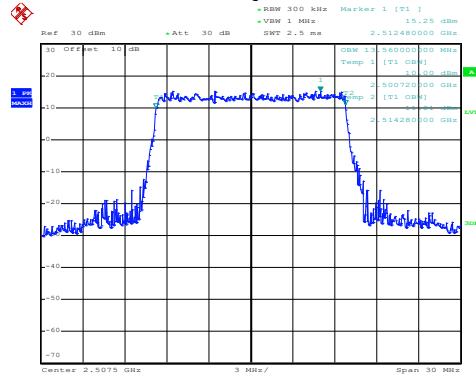
# LTE Band 7: 99% Occupancy bandwidth BW: 15MHz

## 16QAM



Date: 28.AUG.2020 18:52:14

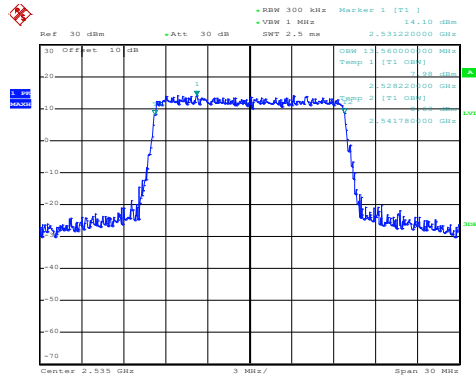
## QPSK



Date: 28.AUG.2020 18:52:10

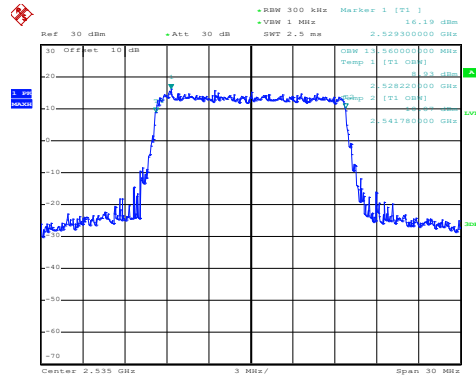
## Lowest channel

## 16QAM



Date: 28.AUG.2020 18:52:57

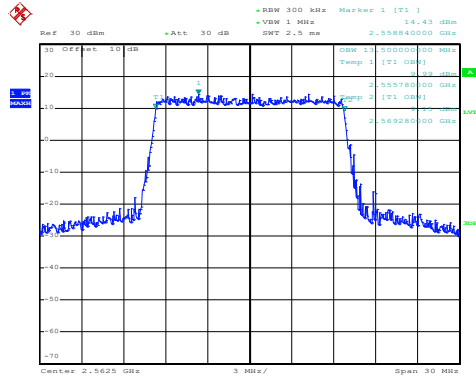
## QPSK



Date: 28.AUG.2020 18:52:52

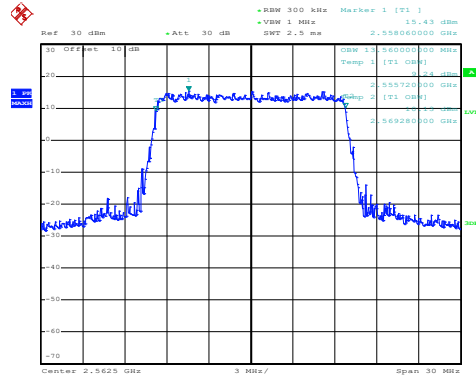
## Middle channel

## 16QAM



Date: 28.AUG.2020 18:53:19

## QPSK

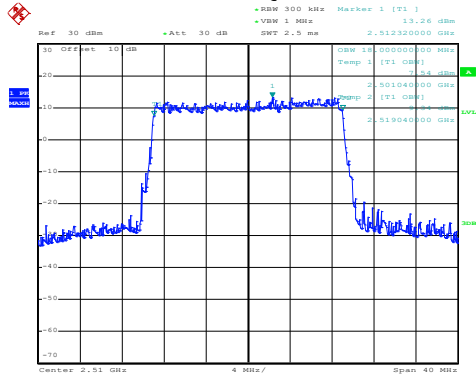


Date: 28.AUG.2020 18:53:14

## Highest channel

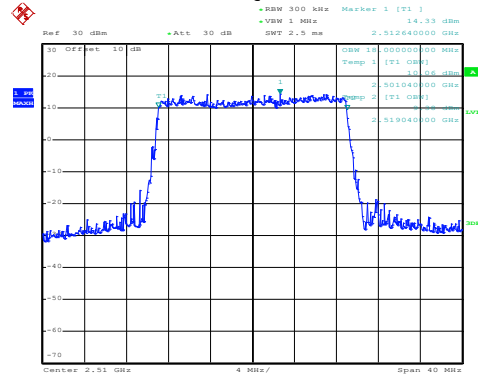
## LTE Band 7: 99% Occupancy bandwidth BW: 20MHz

### 16QAM



Date: 28.AUG.2020 18:54:17

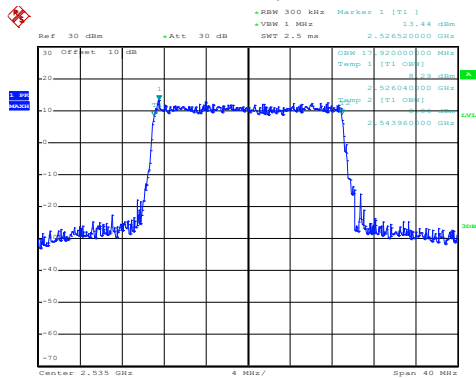
### QPSK



Date: 28.AUG.2020 18:54:14

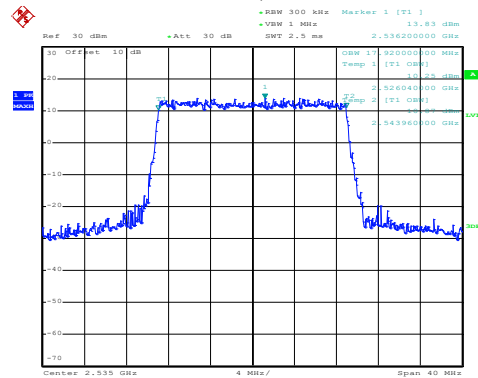
## Lowest channel

### 16QAM



Date: 28.AUG.2020 19:03:52

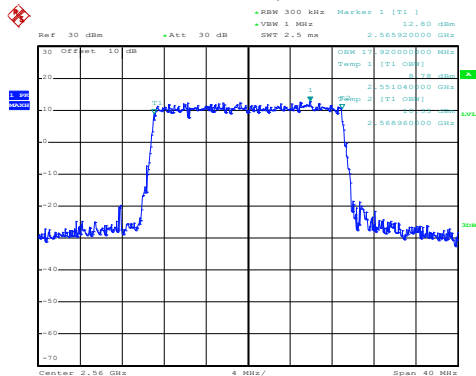
### QPSK



Date: 28.AUG.2020 19:03:48

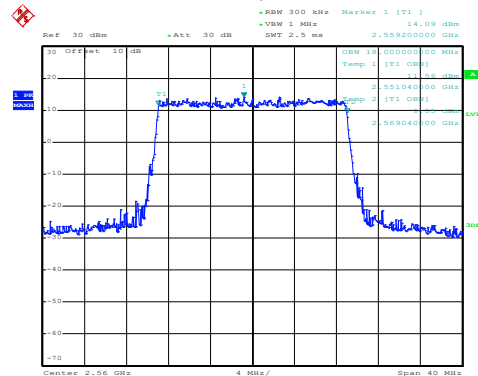
## Middle channel

### 16QAM



Date: 28.AUG.2020 19:04:35

### QPSK

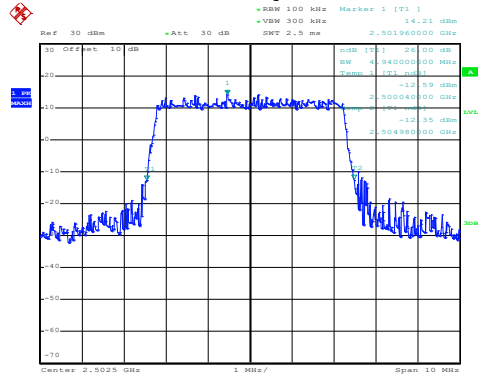


Date: 28.AUG.2020 19:04:31

## Highest channel

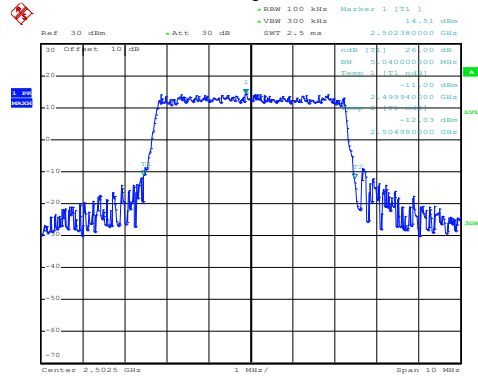
LTE Band 7: -26dBc bandwidth  
BW: 5MHz

16QAM



Date: 28.AUG.2020 18:48:07

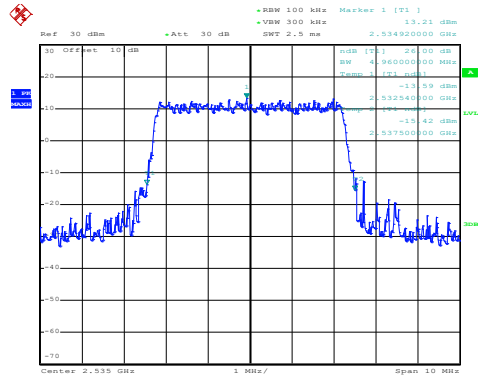
QPSK



Date: 28.AUG.2020 18:48:03

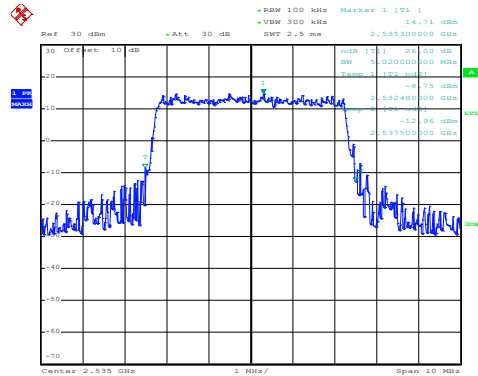
Lowest channel

16QAM



Date: 28.AUG.2020 18:48:23

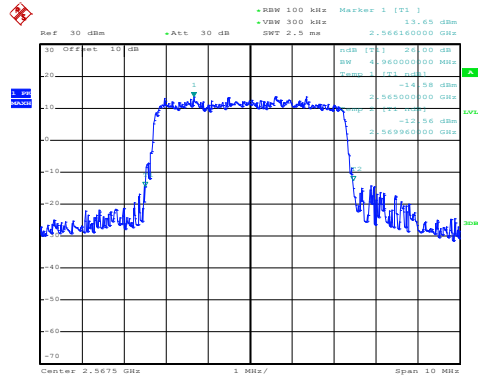
QPSK



Date: 28.AUG.2020 18:48:19

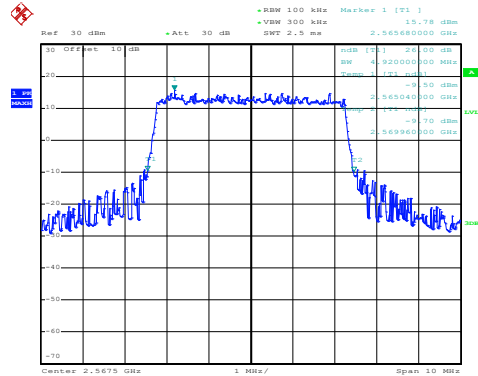
Middle channel

16QAM



Date: 28.AUG.2020 18:49:03

QPSK

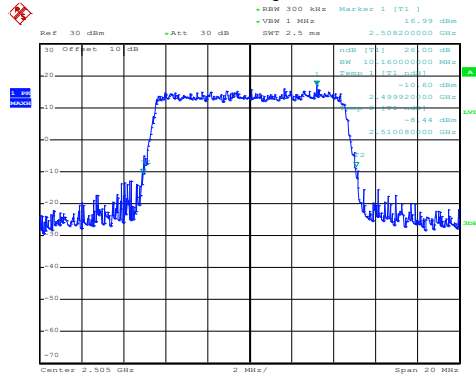


Date: 28.AUG.2020 18:48:59

Highest channel

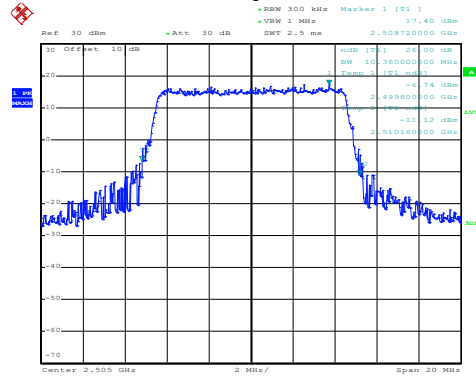
LTE Band 7: -26dBc bandwidth  
BW: 10MHz

16QAM



Date: 28.AUG.2020 18:50:08

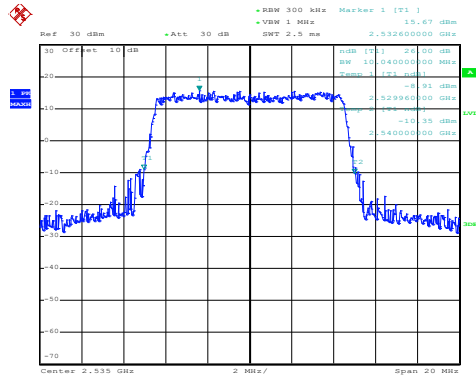
QPSK



Date: 28.AUG.2020 18:50:04

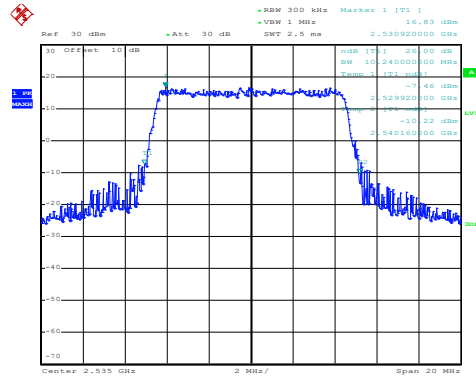
Lowest channel

16QAM



Date: 28.AUG.2020 18:50:45

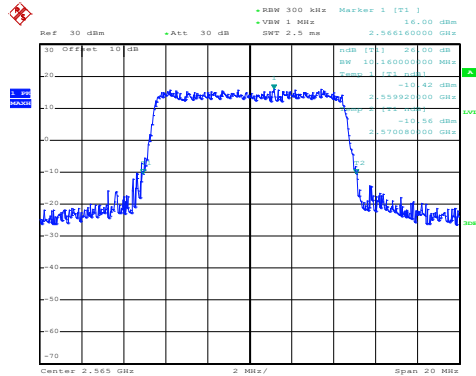
QPSK



Date: 28.AUG.2020 18:50:40

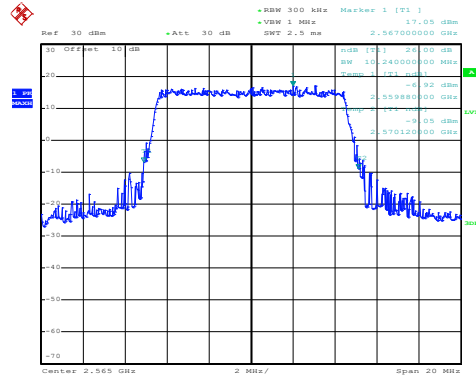
Middle channel

16QAM



Date: 28.AUG.2020 18:51:18

QPSK

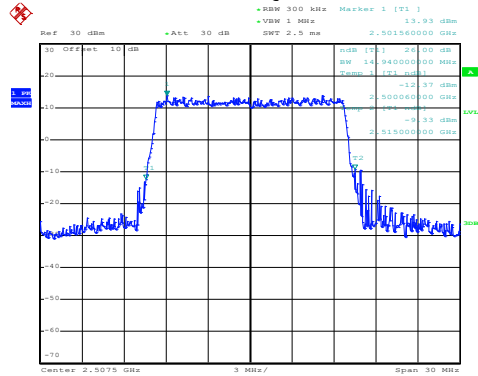


Date: 28.AUG.2020 18:51:13

Highest channel

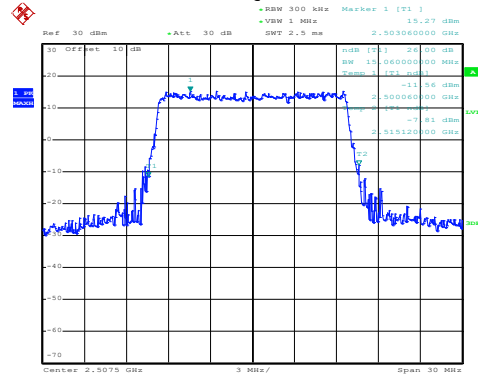
LTE Band 7: -26dBc bandwidth  
BW: 15MHz

16QAM



Date: 28.AUG.2020 18:52:26

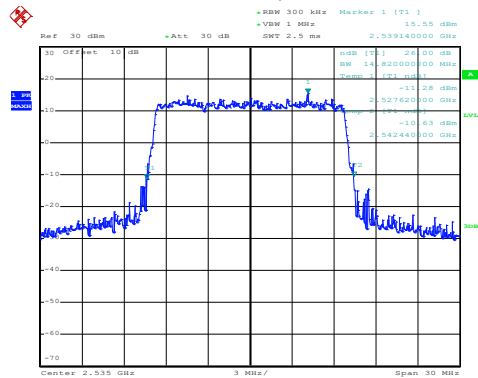
QPSK



Date: 28.AUG.2020 18:52:22

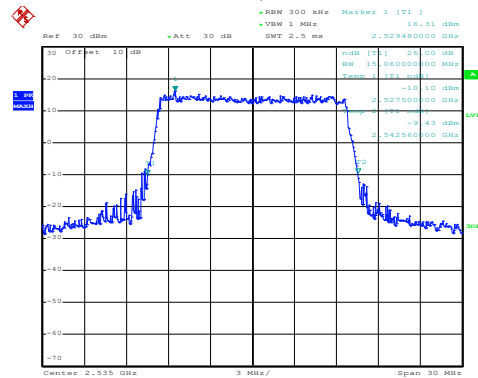
Lowest channel

16QAM



Date: 28.AUG.2020 18:52:46

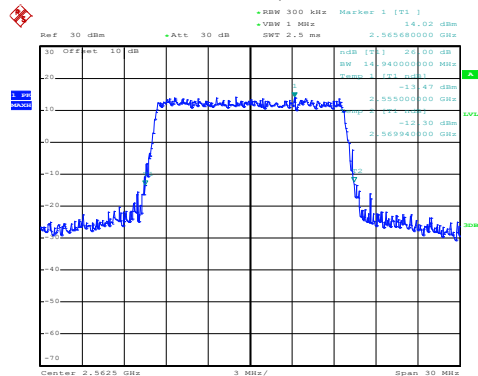
QPSK



Date: 28.AUG.2020 18:52:41

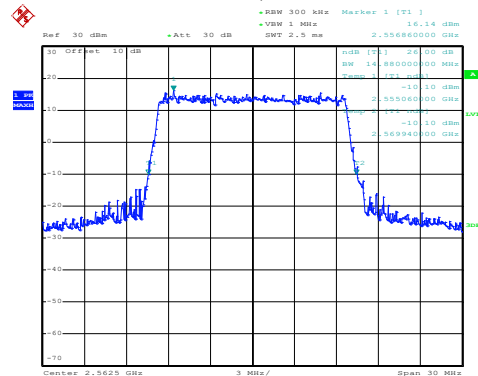
Middle channel

16QAM



Date: 28.AUG.2020 18:53:29

QPSK

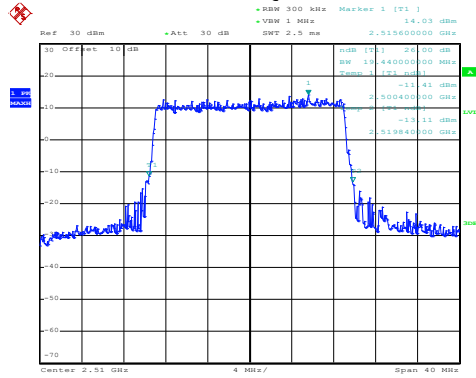


Date: 28.AUG.2020 18:53:25

Highest channel

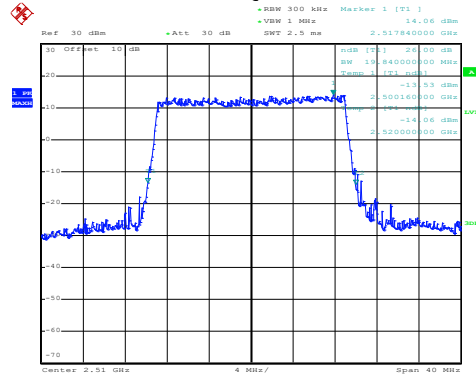
LTE Band 7: -26dBc bandwidth  
BW: 20MHz

16QAM



Date: 28.AUG.2020 18:54:07

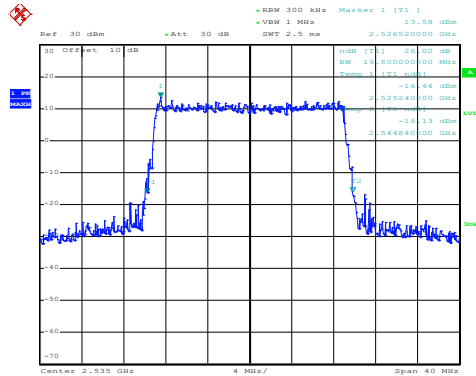
QPSK



Date: 28.AUG.2020 18:54:03

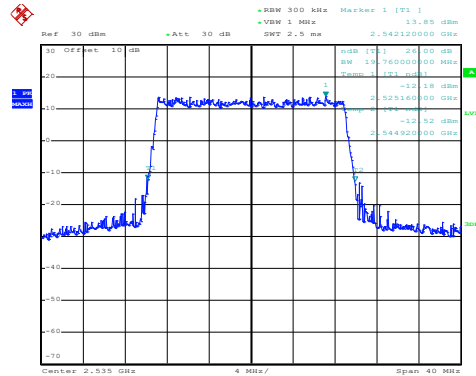
Lowest channel

16QAM



Date: 28.AUG.2020 19:04:02

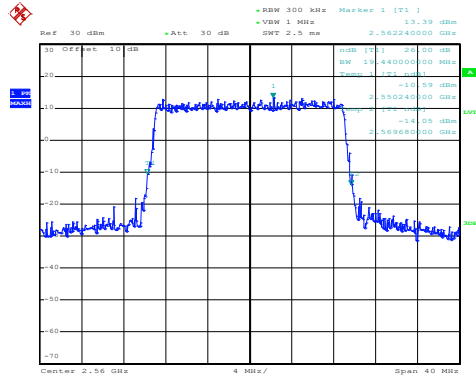
QPSK



Date: 28.AUG.2020 19:03:58

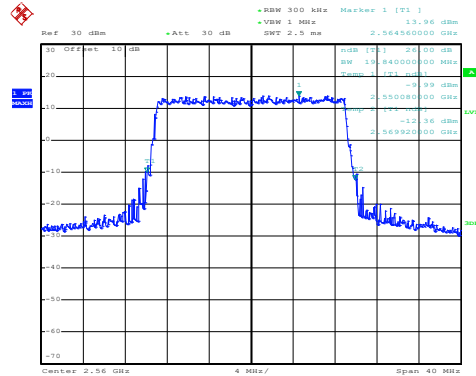
Middle channel

16QAM



Date: 28.AUG.2020 19:04:24

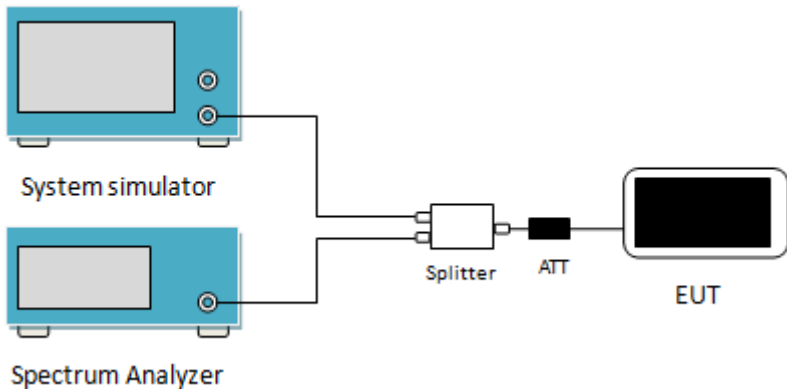
QPSK



Date: 28.AUG.2020 19:04:20

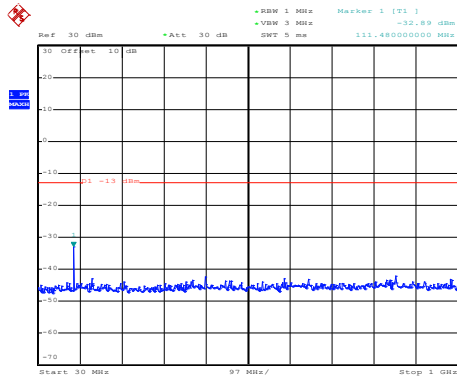
Highest channel

## 6.4 Out of band emission at antenna terminals

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | Part 24.238 (a), part 27.53(h), Part 27.53(m)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Limit:            | <p>LTE Band 2 &amp; 4:<br/>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).</p> <p>LTE Band 7:<br/>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 than <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> |
| Test Setup:       |  <p>The diagram illustrates the test setup. On the left, there are two blue rectangular units: the top one is labeled 'System simulator' and the bottom one is labeled 'Spectrum Analyzer'. Both have a single output port. These two ports are connected to a central 'Splitter' unit, which is a white rectangle with two input ports and one output port. The output of the Splitter is connected to a black rectangular unit labeled 'ATT' (Attenuator). Finally, the output of the ATT is connected to a white rectangular unit with a black screen, labeled 'EUT' (Equipment Under Test).</p>                                                                                                                                                                                                                                                                                                         |
| Test Procedure:   | <ol style="list-style-type: none"> <li>1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.</li> <li>2 For the out of band: For Band 5 &amp; 12 &amp; 17 set the RBW=100 kHz, VBW=300 kHz and for Band 2 &amp; 4 &amp; 7 set the RBW=1 MHz, VBW=3 MHz when below 1 GHz, RBW =1 MHz, VBW=3 MHz when above 1 GHz, Start=30MHz, Stop= 10th harmonic.</li> <li>3 Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions.</li> </ol>                                                                                                                                                                                                                                                                                    |
| Test Instruments: | Refer to section 5.10 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Test mode:        | Refer to section 5.3 for details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Test results:     | Passed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Remark:           | Pre-scan all RB Size and offset, and found the RB Size and offset of worst case, so the report shows only the worst case test data.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

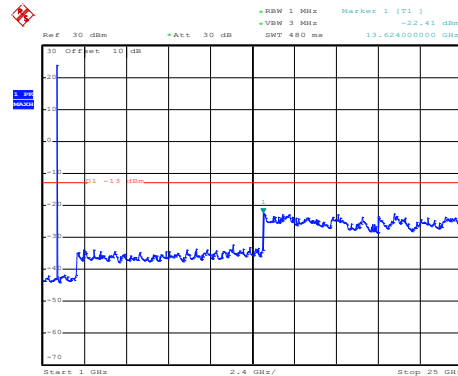
Test plots as follows (Conducted spurious emission) (worst case):  
LTE Band 2 part:

LTE Band 2: 16 QAM & RB Size 1  
BW: 1.4MHz  
Lowest channel



Date: 28.AUG.2020 18:10:50

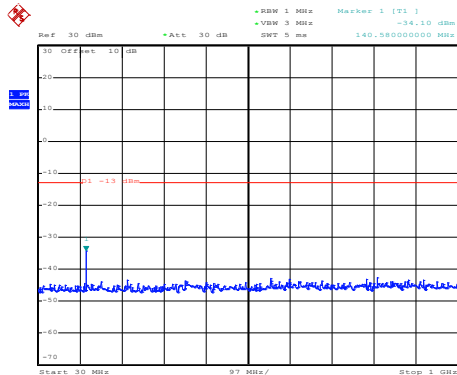
30MHz~1GHz



Date: 28.AUG.2020 18:13:47

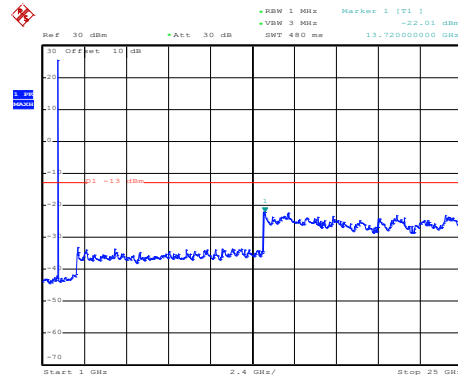
1GHz~25GHz

Middle channel



Date: 28.AUG.2020 18:11:05

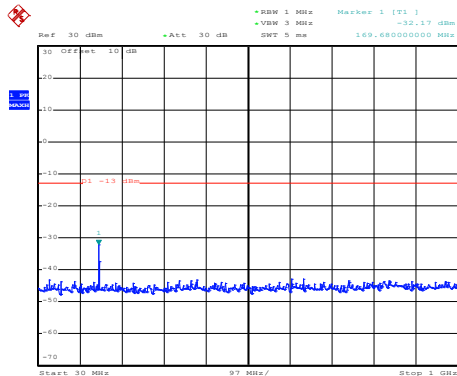
30MHz~1GHz



Date: 28.AUG.2020 18:14:07

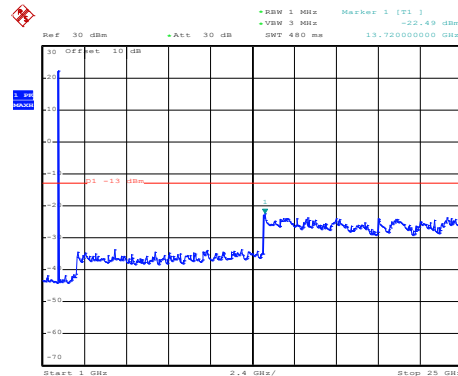
1GHz~25GHz

High channel



Date: 28.AUG.2020 18:11:19

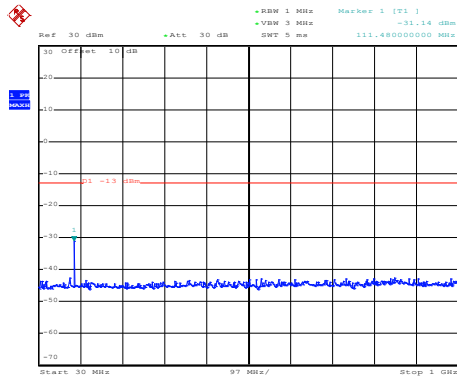
30MHz~1GHz



Date: 28.AUG.2020 18:14:33

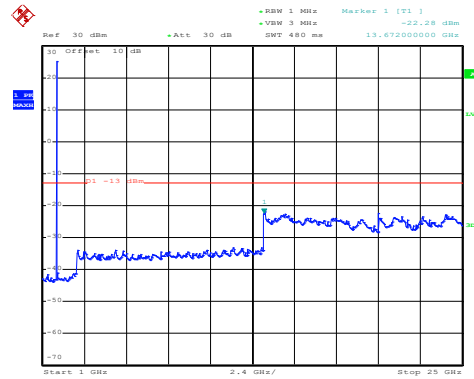
1GHz~25GHz

## LTE Band 2: QPSK & RB Size 1 BW: 1.4MHz Lowest channel



Date: 28.AUG.2020 18:10:44

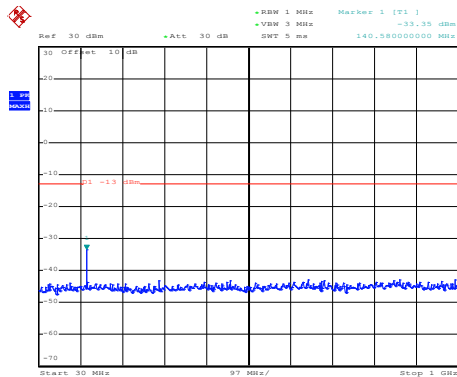
30MHz~1GHz



Date: 28.AUG.2020 18:13:38

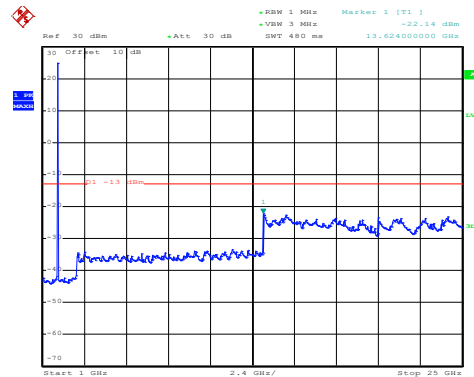
1GHz~25GHz

## Middle channel



Date: 28.AUG.2020 18:10:59

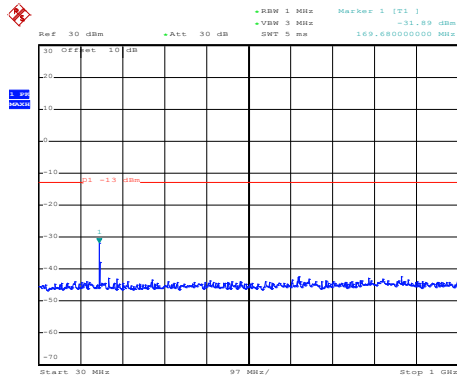
30MHz~1GHz



Date: 28.AUG.2020 18:13:59

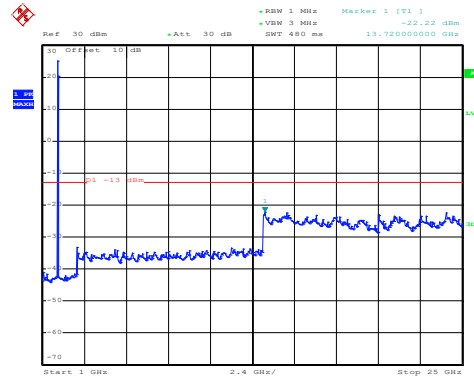
1GHz~25GHz

## High channel



Date: 28.AUG.2020 18:11:14

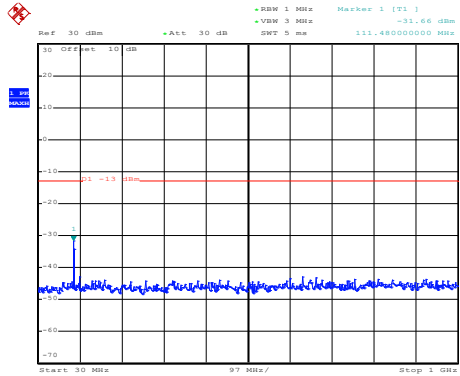
30MHz~1GHz



Date: 28.AUG.2020 18:14:27

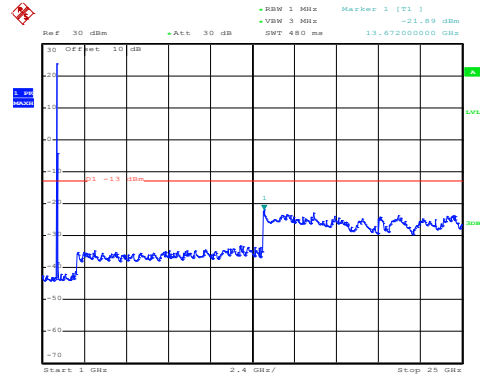
1GHz~25GHz

## LTE Band 2: 16 QAM & RB Size 1 BW: 20MHz Lowest channel



Date: 28.AUG.2020 18:18:01

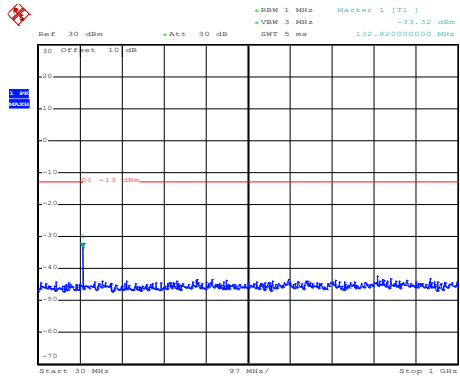
30MHz~1GHz



Date: 28.AUG.2020 18:15:42

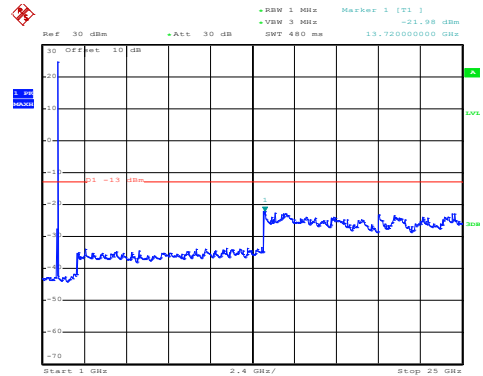
1GHz~25GHz

## Middle channel



Date: 28.AUG.2020 18:18:17

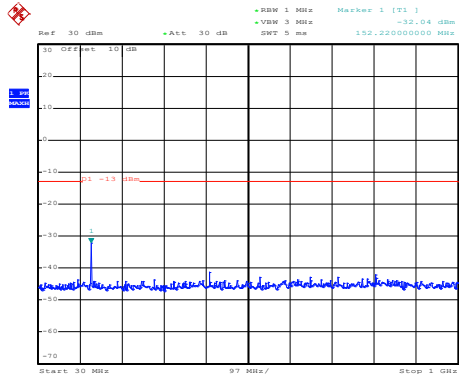
30MHz~1GHz



Date: 28.AUG.2020 18:15:19

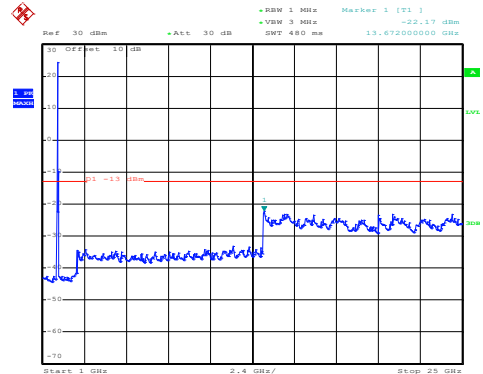
1GHz~25GHz

## High channel



Date: 28.AUG.2020 18:18:31

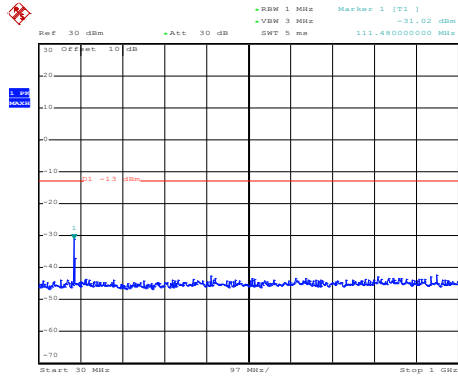
30MHz~1GHz



Date: 28.AUG.2020 18:15:03

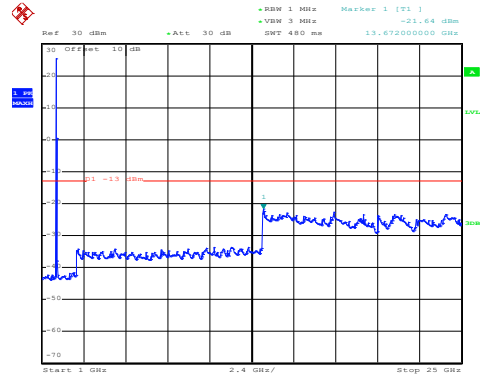
1GHz~25GHz

LTE Band 2: QPSK & RB Size 1  
BW: 20MHz  
Lowest channel



Date: 28.AUG.2020 18:17:55

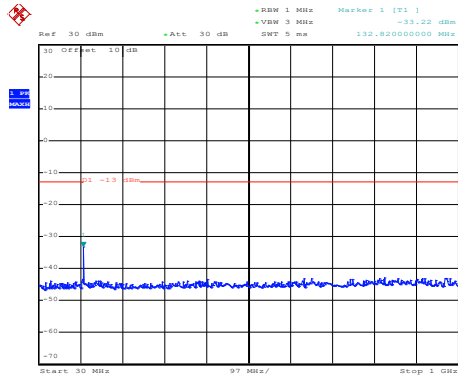
30MHz~1GHz



Date: 28.AUG.2020 18:15:36

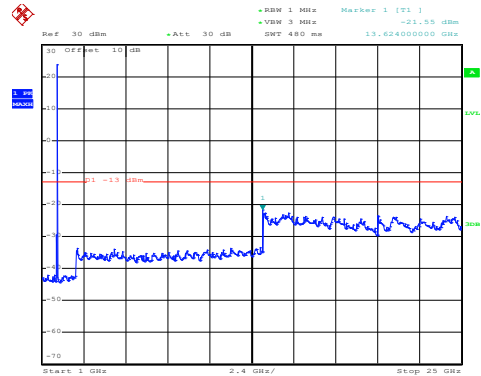
1GHz~25GHz

Middle channel



Date: 28.AUG.2020 18:18:11

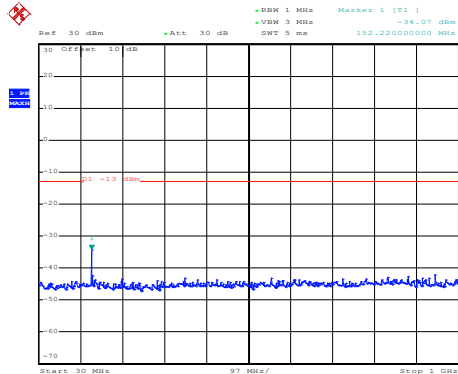
30MHz~1GHz



Date: 28.AUG.2020 18:15:11

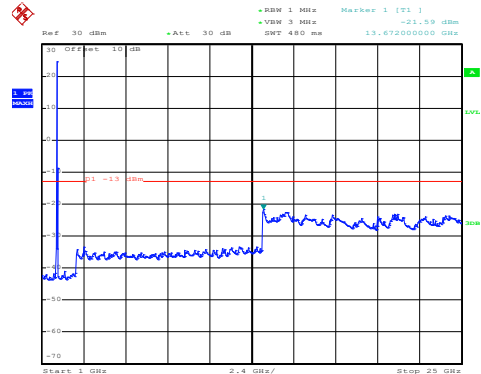
1GHz~25GHz

High channel



Date: 28.AUG.2020 18:18:26

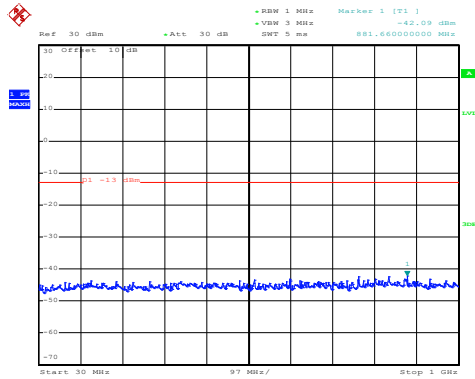
30MHz~1GHz



Date: 28.AUG.2020 18:14:57

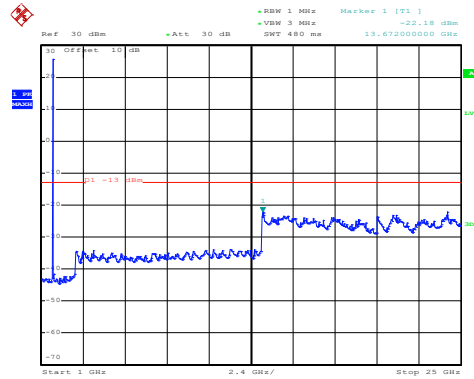
1GHz~25GHz

## LTE Band 4 part:

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


Date: 28.AUG.2020 18:11:36

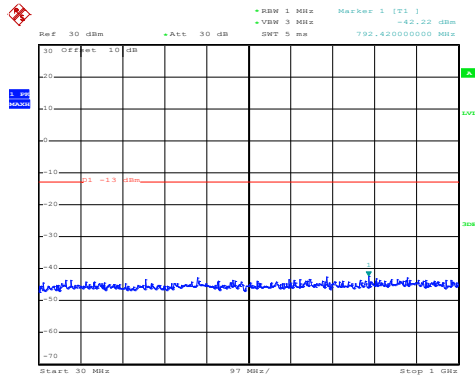
30MHz~1GHz



Date: 28.AUG.2020 18:13:18

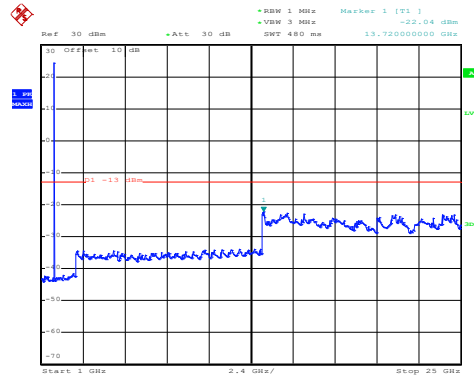
1GHz~25GHz

## Middle channel



Date: 28.AUG.2020 18:11:50

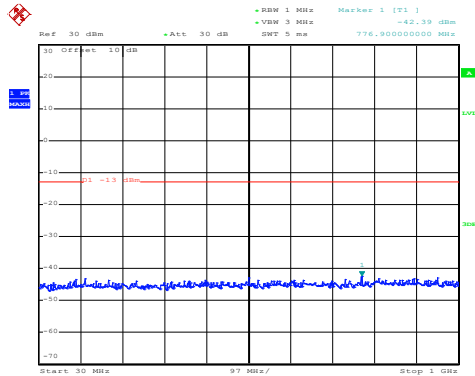
30MHz~1GHz



Date: 28.AUG.2020 18:12:59

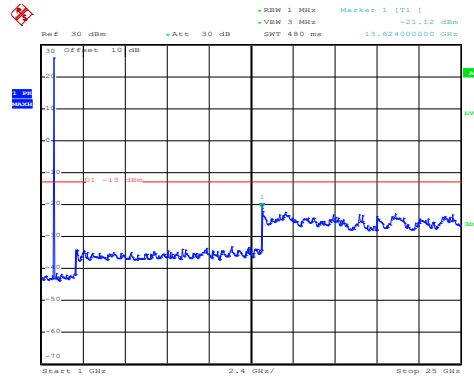
1GHz~25GHz

## High channel



Date: 28.AUG.2020 18:12:05

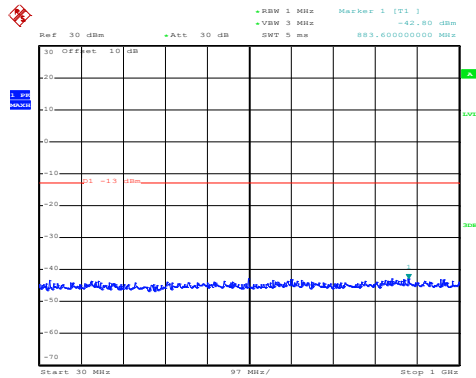
30MHz~1GHz



Date: 28.AUG.2020 18:12:41

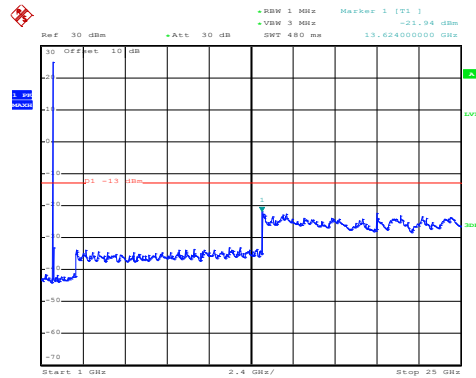
1GHz~25GHz

LTE Band 4: QPSK & RB Size 1  
BW: 1.4MHz  
Lowest channel



Date: 28.AUG.2020 18:11:31

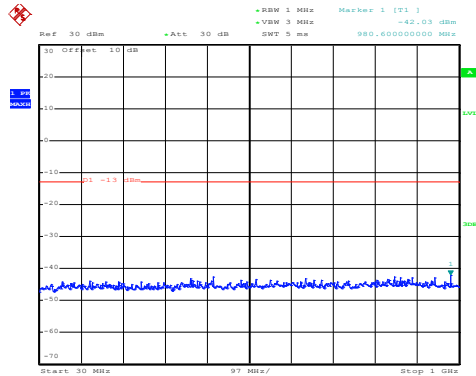
30MHz~1GHz



Date: 28.AUG.2020 18:13:11

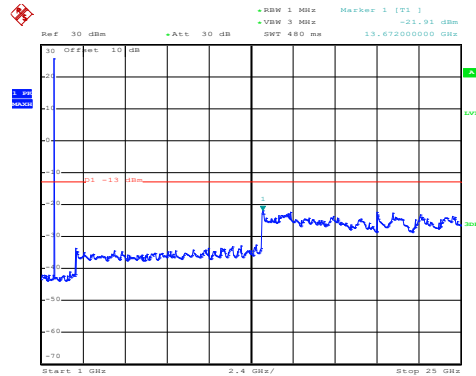
1GHz~25GHz

Middle channel



Date: 28.AUG.2020 18:11:45

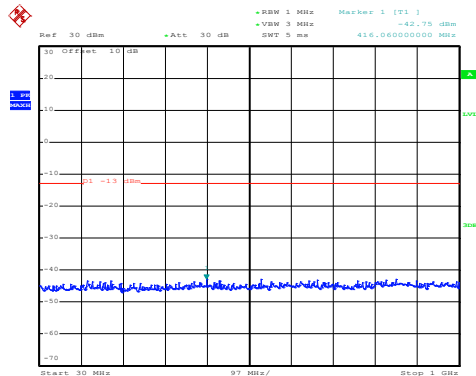
30MHz~1GHz



Date: 28.AUG.2020 18:12:51

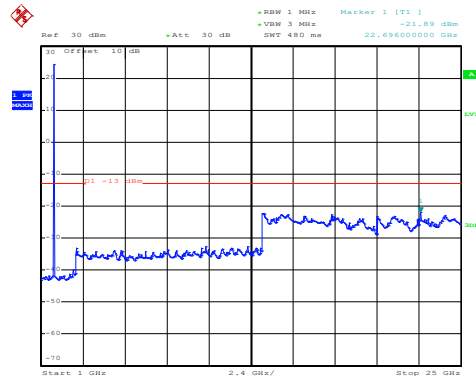
1GHz~25GHz

High channel



Date: 28.AUG.2020 18:11:59

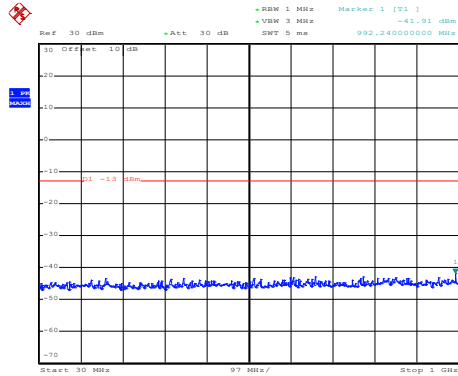
30MHz~1GHz



Date: 28.AUG.2020 18:12:30

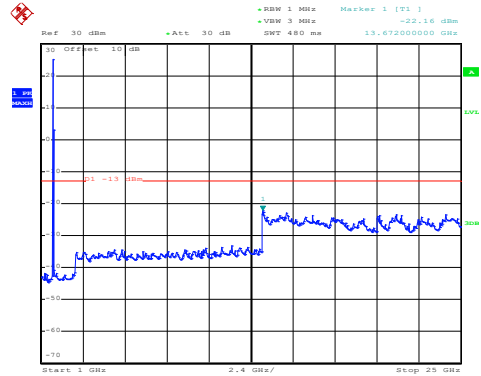
1GHz~25GHz

LTE Band 4: 16 QAM & RB Size 1  
BW: 20MHz  
Lowest channel



Date: 28.AUG.2020 18:17:44

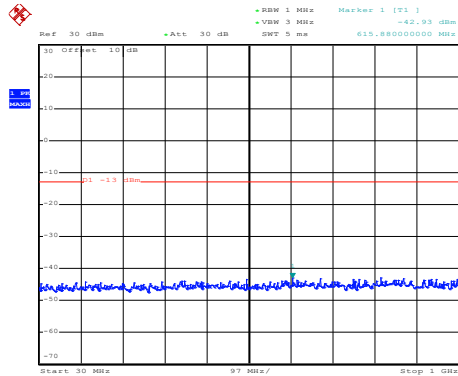
30MHz~1GHz



Date: 28.AUG.2020 18:16:06

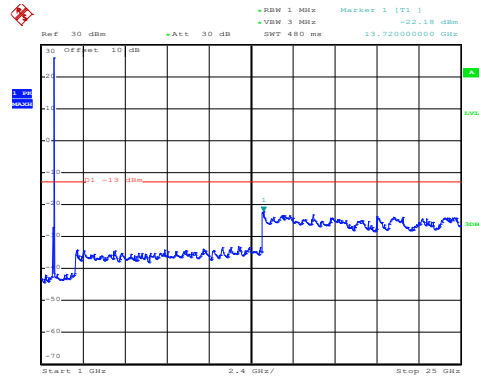
1GHz~25GHz

Middle channel



Date: 28.AUG.2020 18:17:26

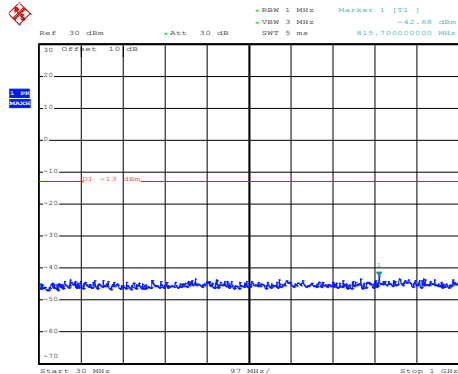
30MHz~1GHz



Date: 28.AUG.2020 18:16:24

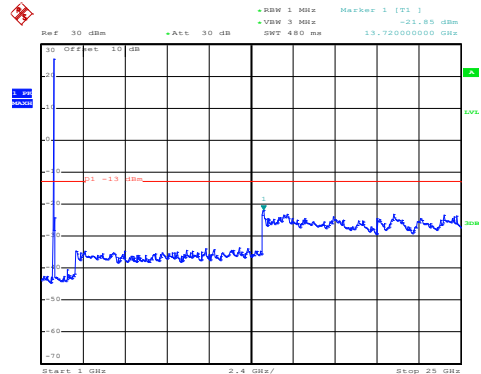
1GHz~25GHz

High channel



Date: 28.AUG.2020 18:17:12

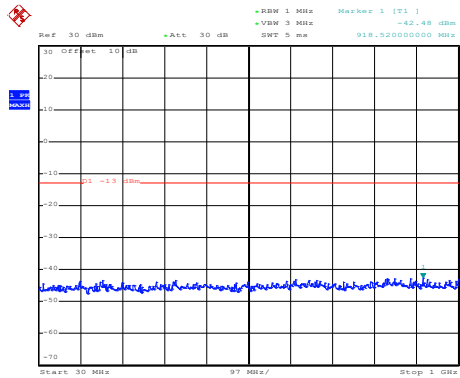
30MHz~1GHz



Date: 28.AUG.2020 18:16:52

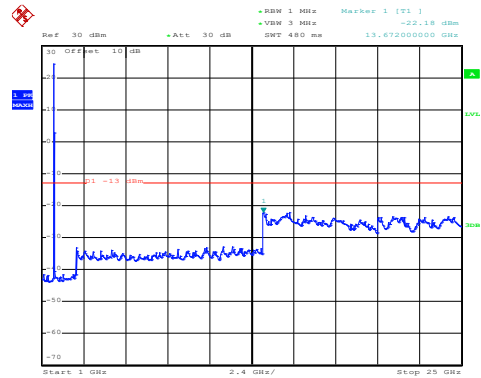
1GHz~25GHz

LTE Band 4: QPSK & RB Size 1  
BW: 20MHz  
Lowest channel



Date: 28.AUG.2020 18:17:36

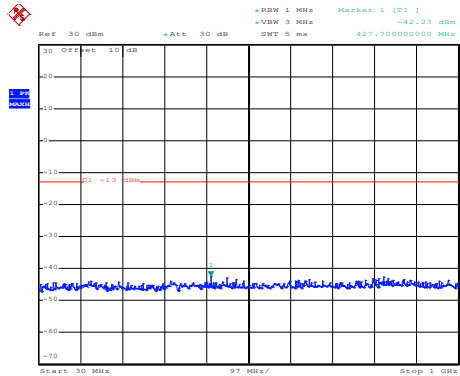
30MHz~1GHz



Date: 28.AUG.2020 18:16:00

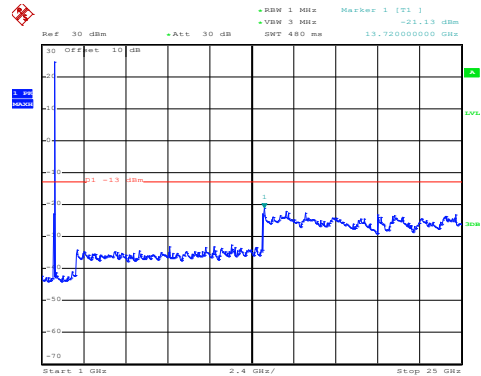
1GHz~25GHz

Middle channel



Date: 28.AUG.2020 18:17:20

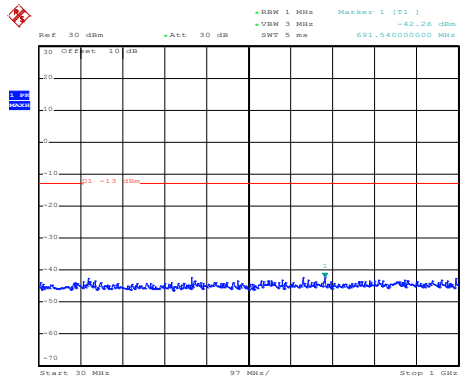
30MHz~1GHz



Date: 28.AUG.2020 18:16:16

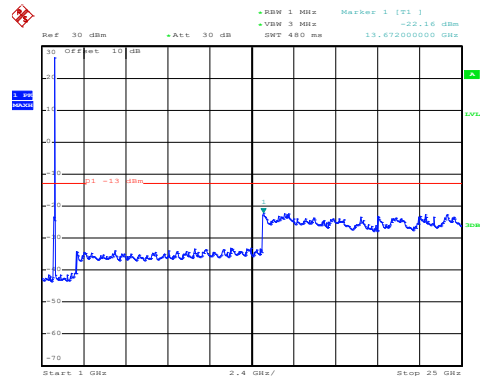
1GHz~25GHz

High channel



Date: 28.AUG.2020 18:17:05

30MHz~1GHz

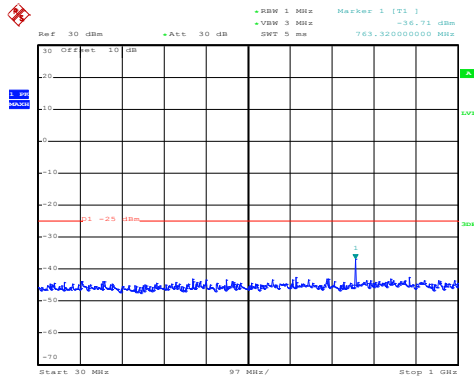


Date: 28.AUG.2020 18:16:45

1GHz~25GHz

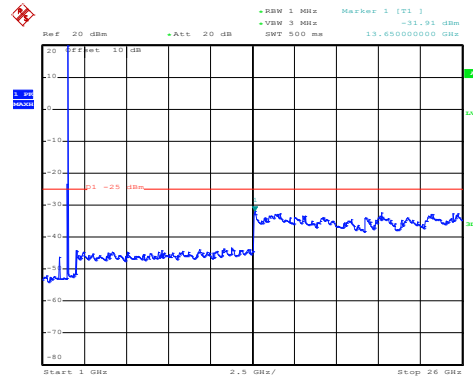
## LTE Band 7 part:

### LTE Band 7: 16 QAM & RB Size 1 BW: 5MHz Lowest channel



Date: 28.AUG.2020 18:09:18

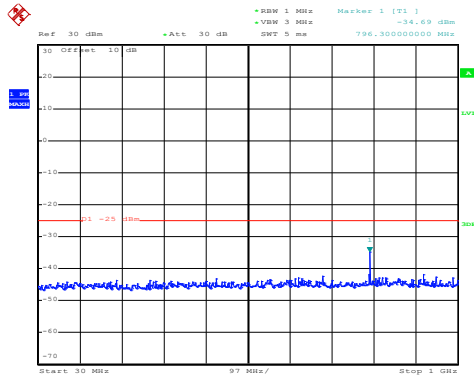
30MHz~1GHz



Date: 28.AUG.2020 18:07:37

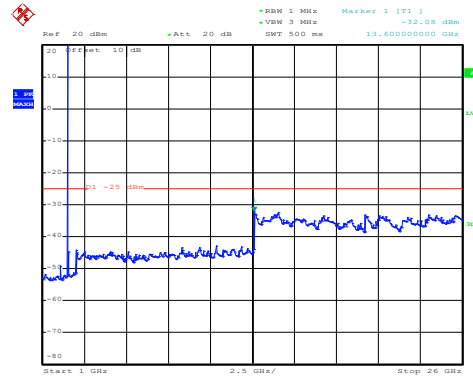
1GHz~26GHz

### Middle channel



Date: 28.AUG.2020 18:09:04

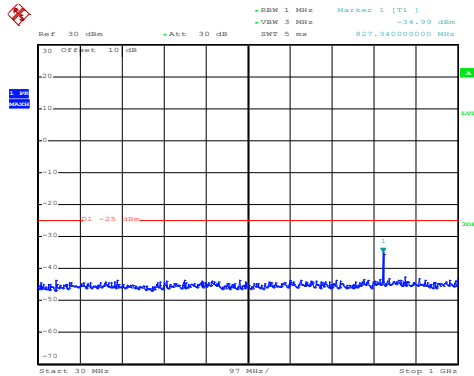
30MHz~1GHz



Date: 28.AUG.2020 18:08:07

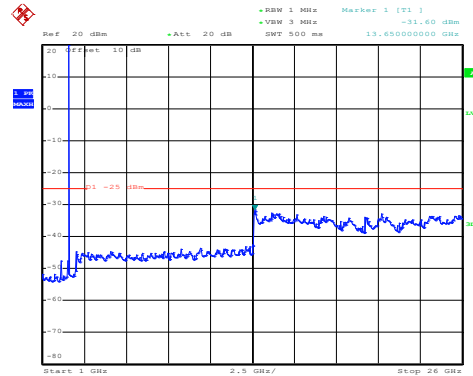
1GHz~26GHz

### High channel



Date: 28.AUG.2020 18:08:51

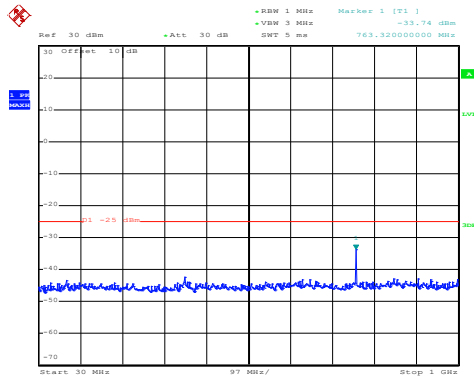
30MHz~1GHz



Date: 28.AUG.2020 18:08:30

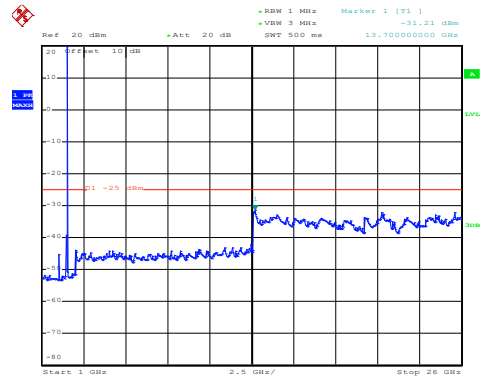
1GHz~26GHz

LTE Band 7: QPSK & RB Size 1  
BW: 5MHz  
Lowest channel



Date: 28.AUG.2020 18:09:12

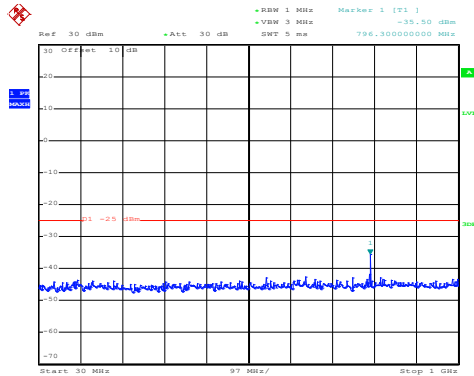
30MHz~1GHz



Date: 28.AUG.2020 18:07:26

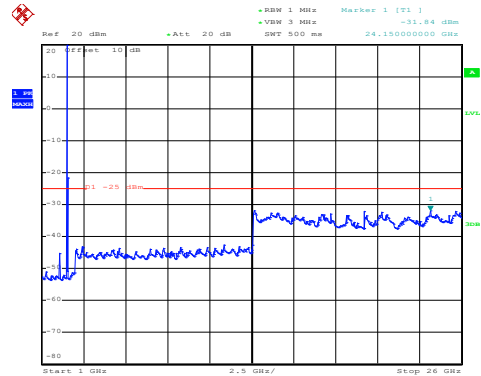
1GHz~26GHz

Middle channel



Date: 28.AUG.2020 18:08:57

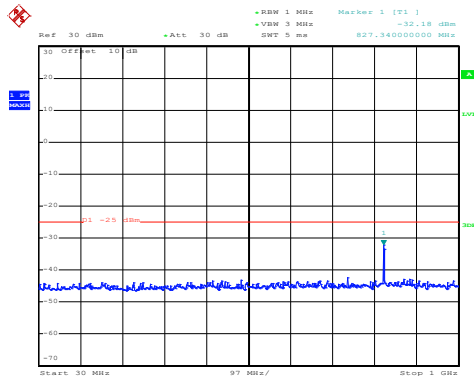
30MHz~1GHz



Date: 28.AUG.2020 18:07:56

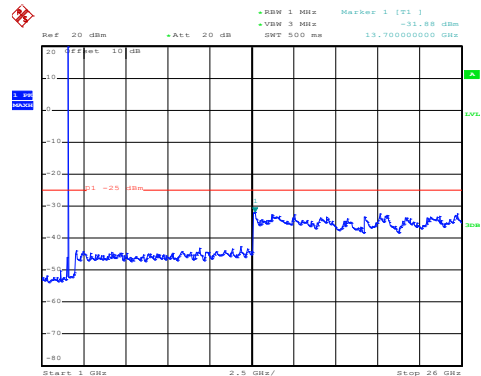
1GHz~26GHz

High channel



Date: 28.AUG.2020 18:08:45

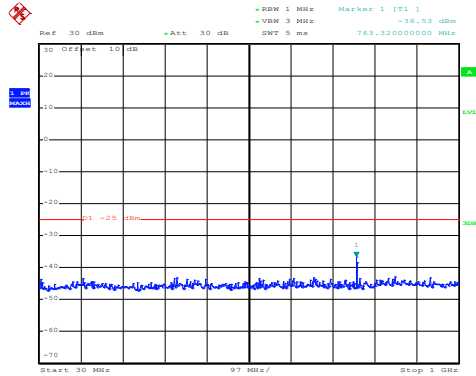
30MHz~1GHz



Date: 28.AUG.2020 18:08:21

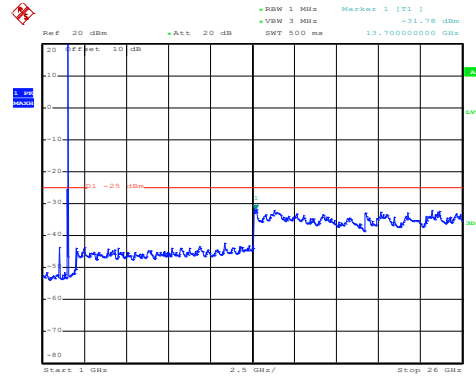
1GHz~26GHz

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



Date: 28.AUG.2020 18:05:45

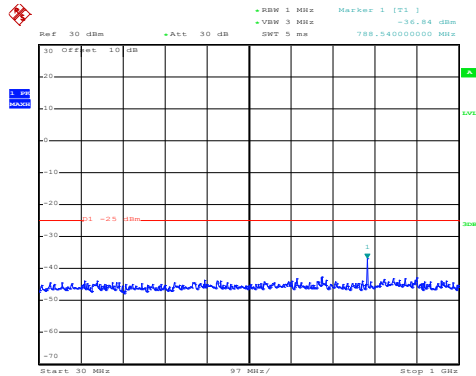
30MHz~1GHz



Date: 28.AUG.2020 18:06:20

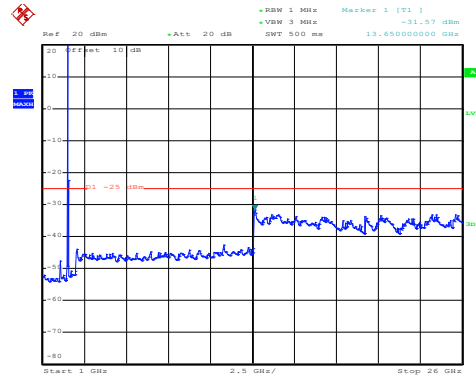
1GHz~26GHz

## Middle channel



Date: 28.AUG.2020 18:05:32

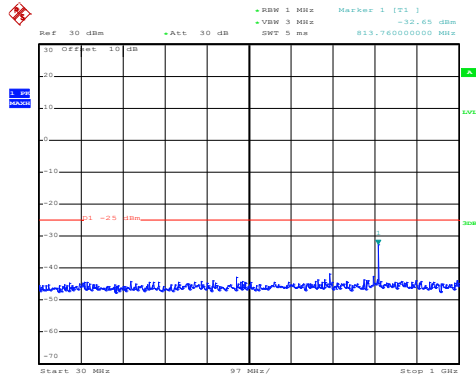
30MHz~1GHz



Date: 28.AUG.2020 18:06:41

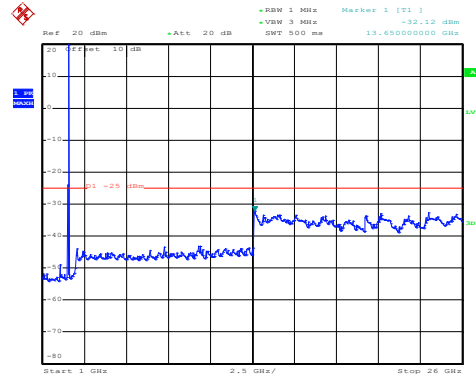
1GHz~26GHz

## High channel



Date: 28.AUG.2020 18:05:19

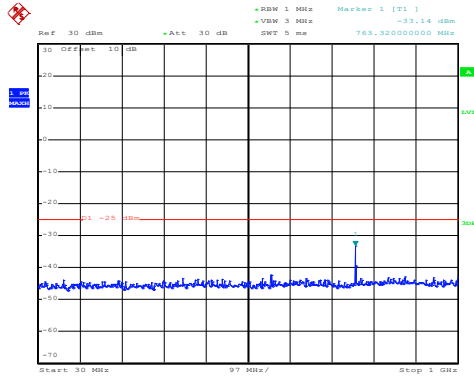
30MHz~1GHz



Date: 28.AUG.2020 18:07:01

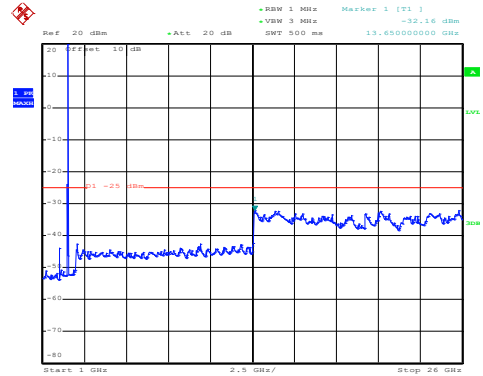
1GHz~26GHz

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



Date: 28.AUG.2020 18:05:40

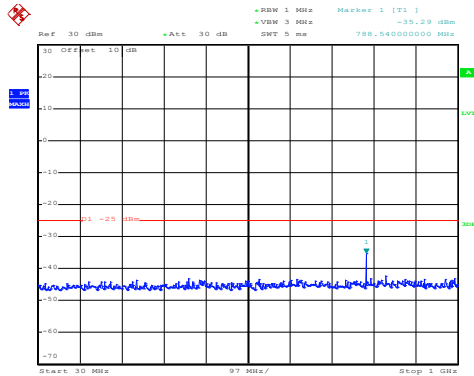
30MHz~1GHz



Date: 28.AUG.2020 18:06:06

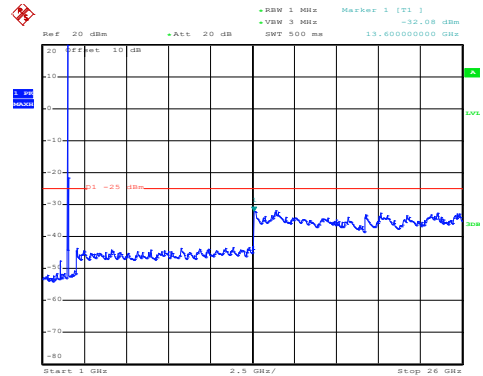
1GHz~26GHz

## Middle channel



Date: 28.AUG.2020 18:05:27

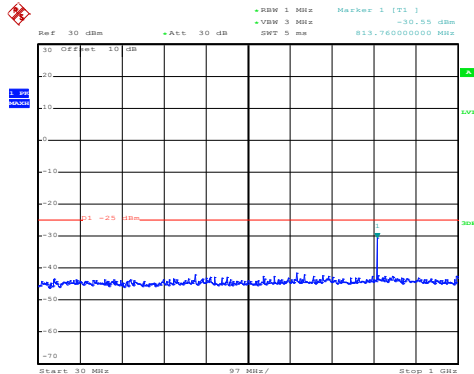
30MHz~1GHz



Date: 28.AUG.2020 18:06:32

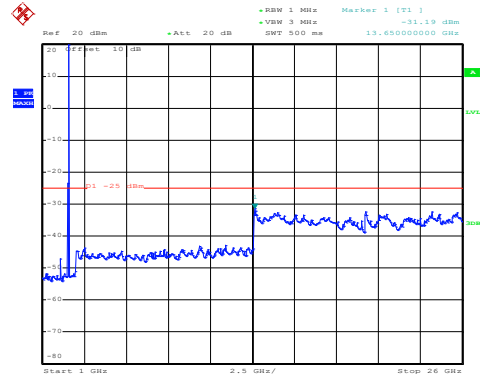
1GHz~26GHz

## High channel



Date: 28.AUG.2020 18:05:13

30MHz~1GHz



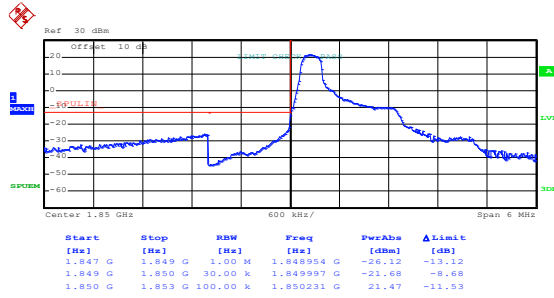
Date: 28.AUG.2020 18:06:54

1GHz~26GHz

**Band edge emission:**

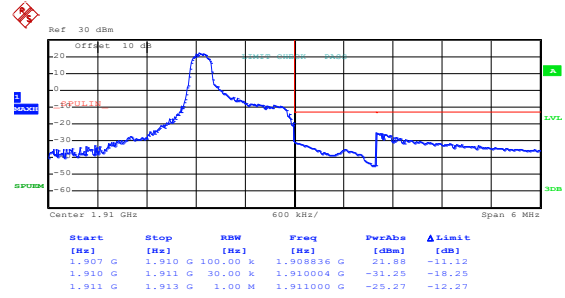
**LTE Band 2 part:**

**LTE Band 2, BW: 1.4MHz  
16QAM & RB Size 1**



Date: 28.AUG.2020 17:50:35

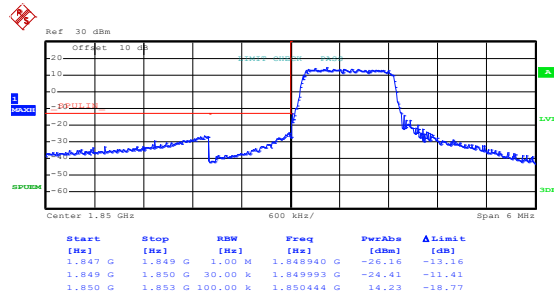
Lowest channel



Date: 28.AUG.2020 17:51:56

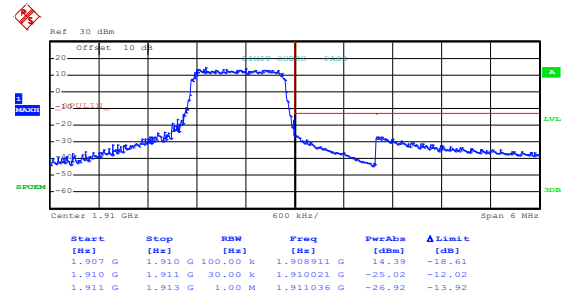
Highest channel

**16QAM & RB Size 6**



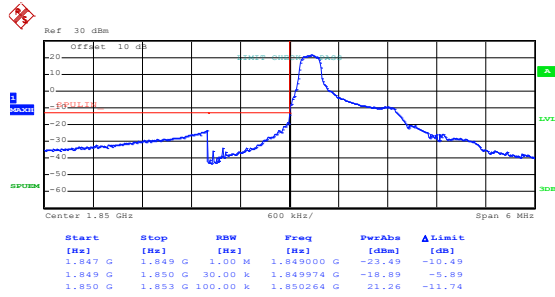
Date: 28.AUG.2020 17:50:54

Lowest channel



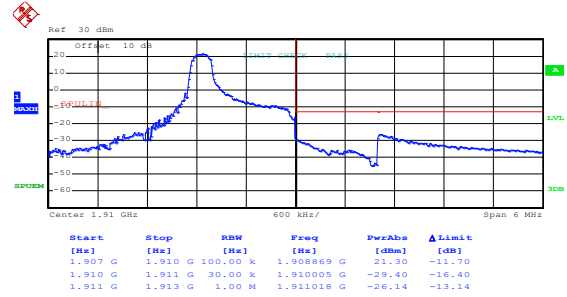
Date: 28.AUG.2020 17:51:11

Highest channel

LTE Band 2, BW: 1.4MHz  
QPSK & RB Size 1

Date: 28.AUG.2020 17:50:11

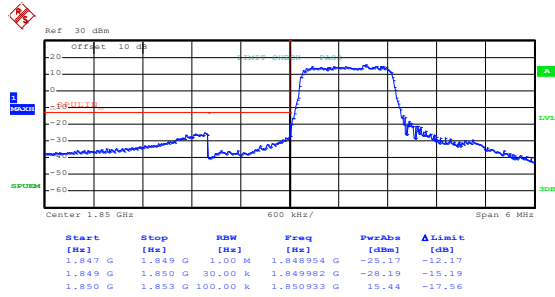
Lowest channel



Date: 28.AUG.2020 17:51:38

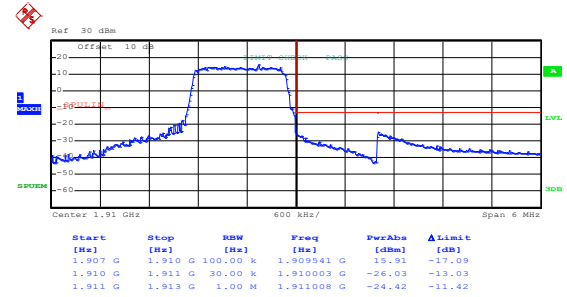
Highest channel

## QPSK &amp; RB Size 6



Date: 28.AUG.2020 17:50:44

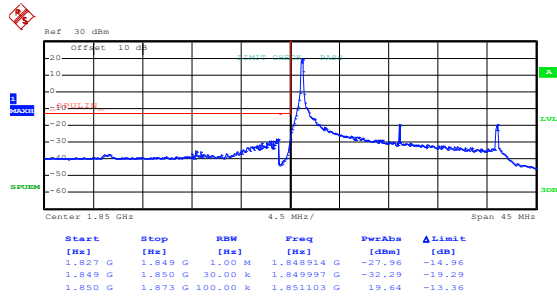
Lowest channel



Date: 28.AUG.2020 17:51:06

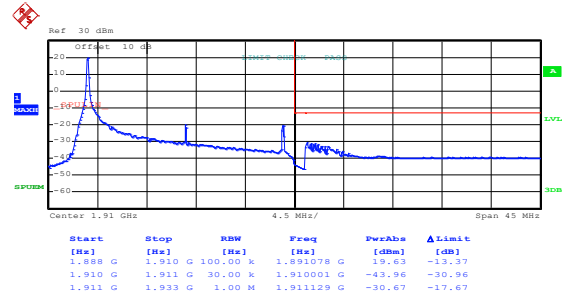
Highest channel

LTE Band 2, BW: 20MHz  
16QAM & RB Size 1



Date: 28.AUG.2020 17:53:21

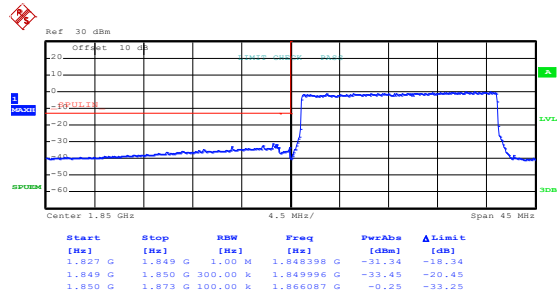
Lowest channel



Date: 28.AUG.2020 17:52:36

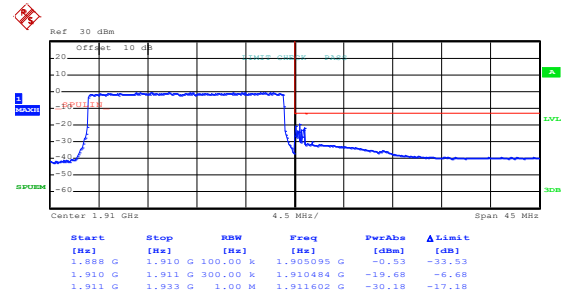
Highest channel

16QAM & RB Size 100



Date: 28.AUG.2020 17:53:38

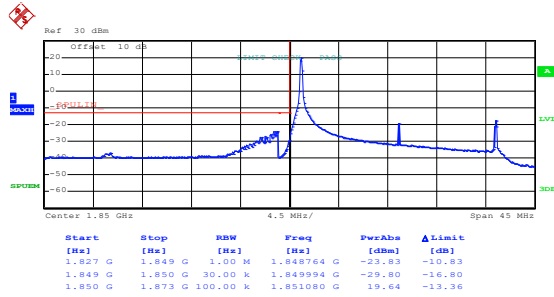
Lowest channel



Date: 28.AUG.2020 17:52:57

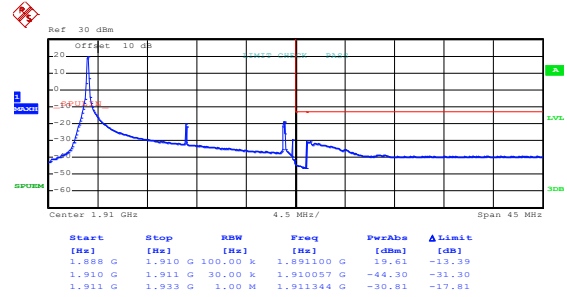
Highest channel

LTE Band 2, BW: 20MHz  
QPSK & RB Size 1



Date: 28.AUG.2020 17:53:12

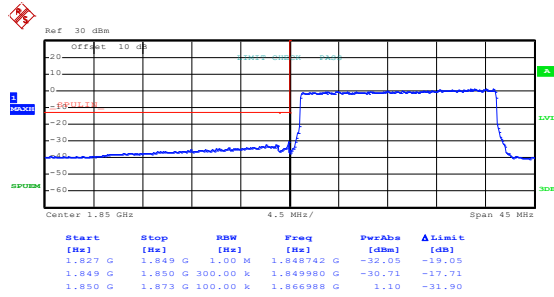
Lowest channel



Date: 28.AUG.2020 17:52:25

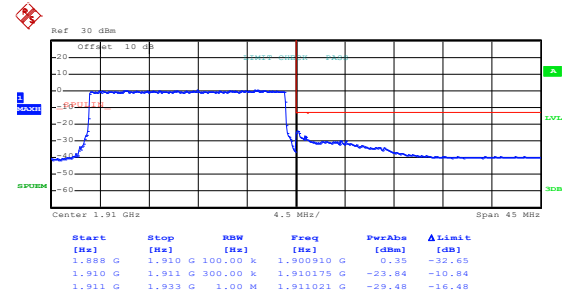
Highest channel

QPSK & RB Size 100



Date: 28.AUG.2020 17:53:33

Lowest channel

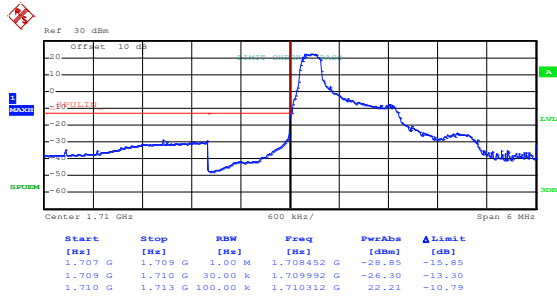


Date: 28.AUG.2020 17:52:50

Highest channel

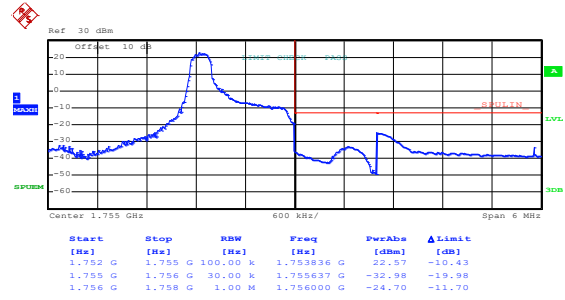
## LTE Band 4 part:

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



Date: 28.AUG.2020 17:58:23

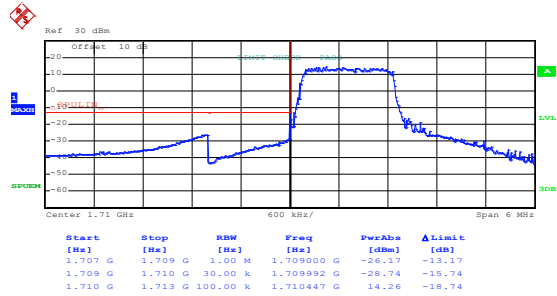
Lowest channel



Date: 28.AUG.2020 17:56:48

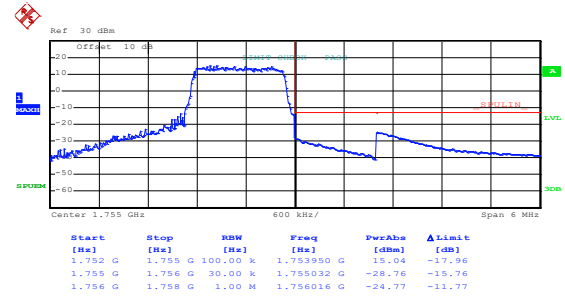
Highest channel

### 16QAM & RB Size 6



Date: 28.AUG.2020 17:57:26

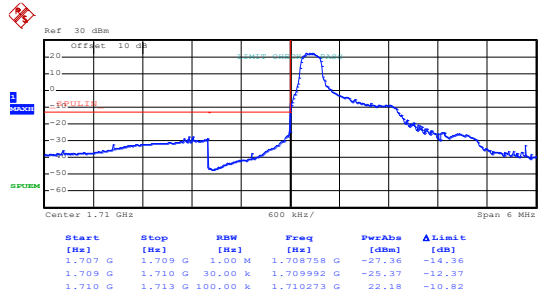
Lowest channel



Date: 28.AUG.2020 17:57:01

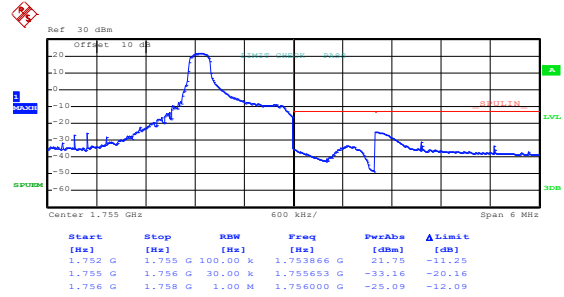
Highest channel

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



Date: 28.AUG.2020 17:57:59

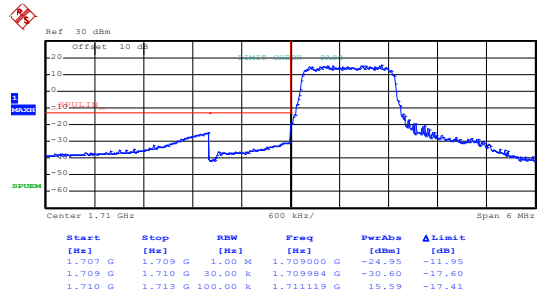
Lowest channel



Date: 28.AUG.2020 17:56:36

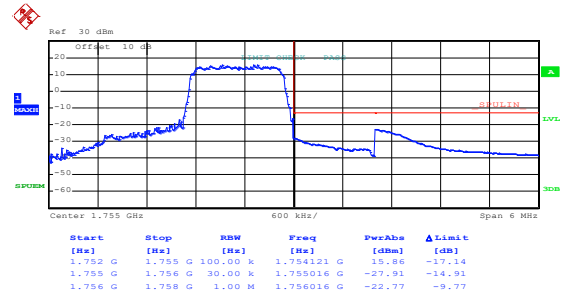
Highest channel

QPSK & RB Size 6



Date: 28.AUG.2020 17:57:21

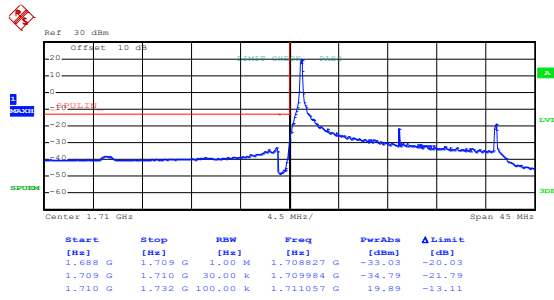
Lowest channel



Date: 28.AUG.2020 17:56:54

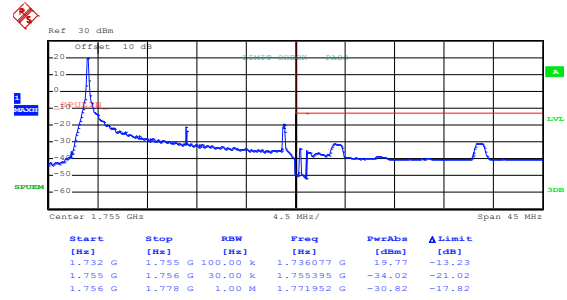
Highest channel

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



Date: 28.AUG.2020 17:54:11

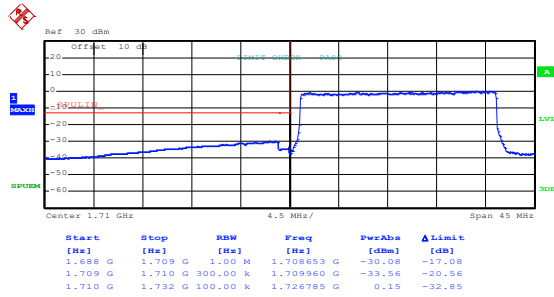
Lowest channel



Date: 28.AUG.2020 17:55:13

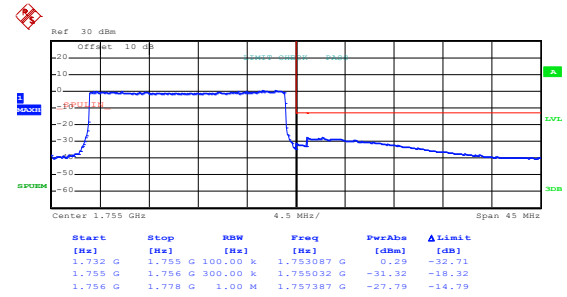
Highest channel

16QAM & RB Size 100



Date: 28.AUG.2020 17:54:32

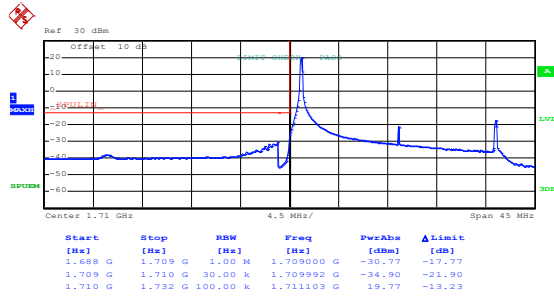
Lowest channel



Date: 28.AUG.2020 17:54:48

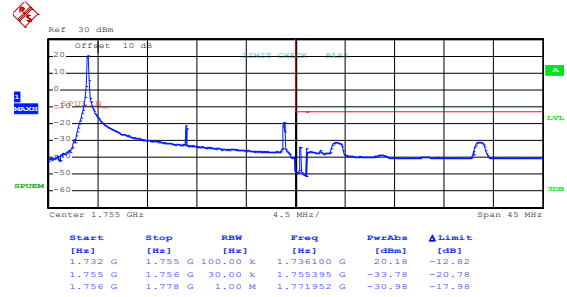
Highest channel

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



Date: 28.AUG.2020 17:54:01

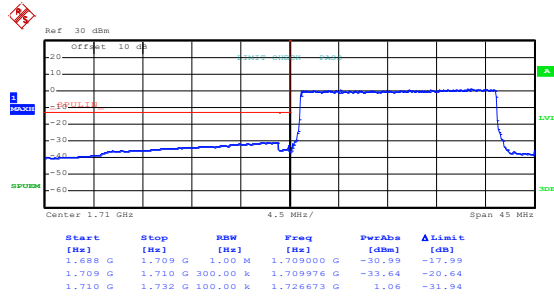
Lowest channel



Date: 28.AUG.2020 17:55:03

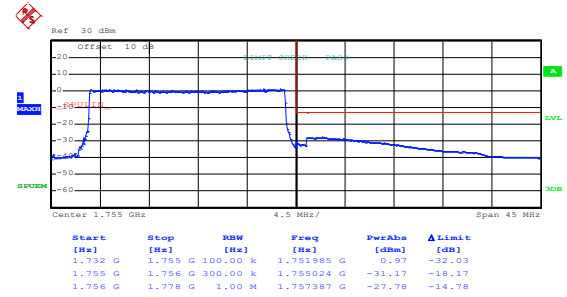
Highest channel

## QPSK & RB Size 100



Date: 28.AUG.2020 17:54:26

Lowest channel

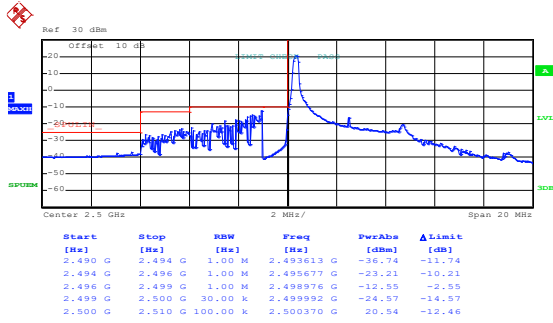


Date: 28.AUG.2020 17:54:43

Highest channel

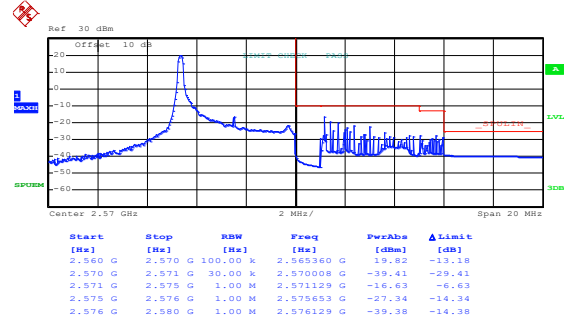
## LTE Band 7 part:

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



Date: 28.AUG.2020 18:00:40

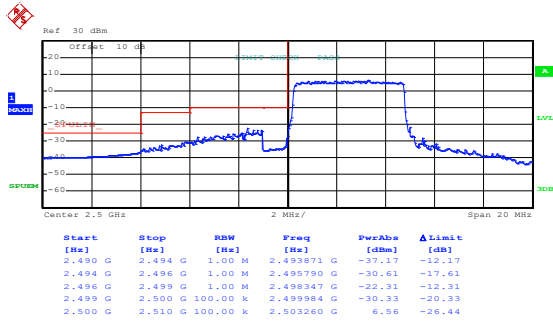
Lowest channel



Date: 28.AUG.2020 18:01:54

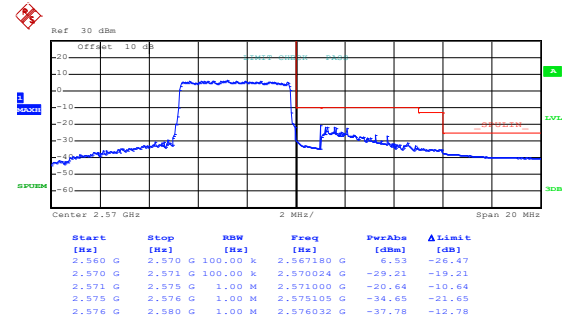
Highest channel

### 16QAM & RB Size 25



Date: 28.AUG.2020 18:01:02

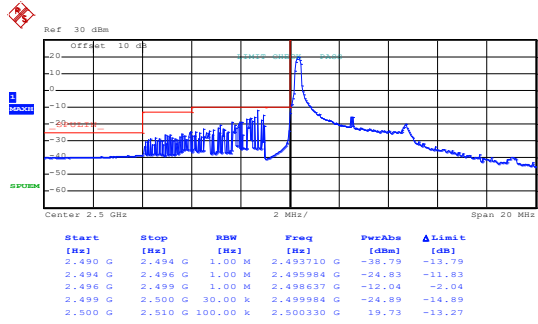
Lowest channel



Date: 28.AUG.2020 18:02:19

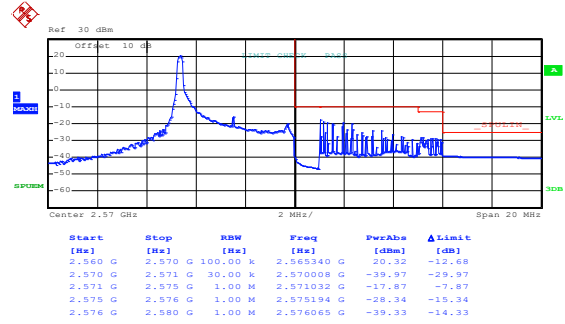
Highest channel

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



Date: 28.AUG.2020 17:59:52

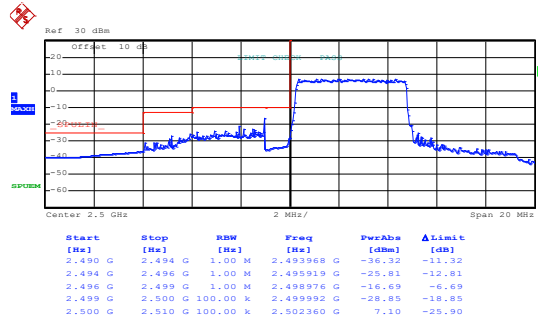
Lowest channel



Date: 28.AUG.2020 18:01:33

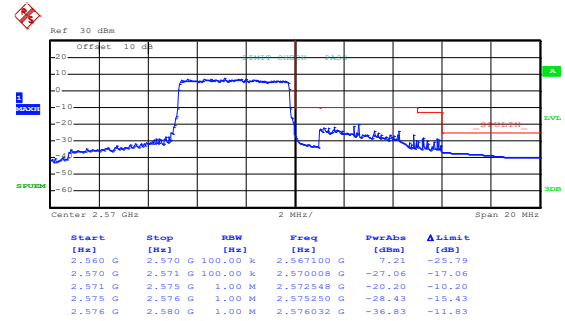
Highest channel

QPSK & RB Size 25



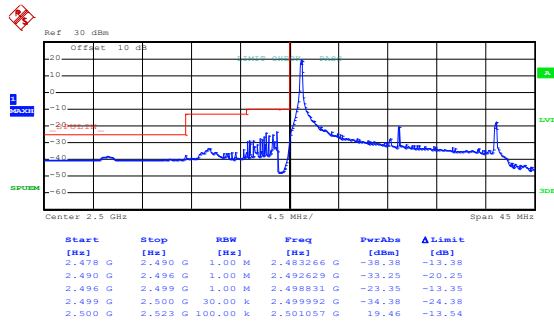
Date: 28.AUG.2020 18:00:54

Lowest channel



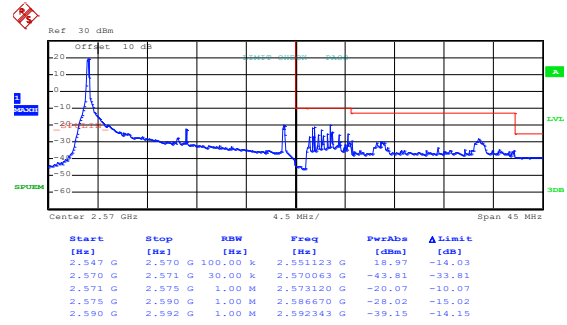
Date: 28.AUG.2020 18:02:11

Highest channel

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

Date: 28.AUG.2020 18:03:35

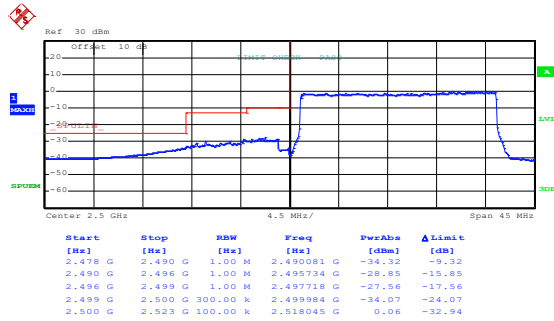
Lowest channel



Date: 28.AUG.2020 18:04:16

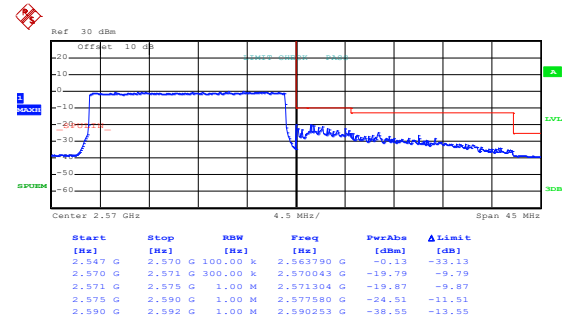
Highest channel

## 16QAM &amp; RB Size 100



Date: 28.AUG.2020 18:03:52

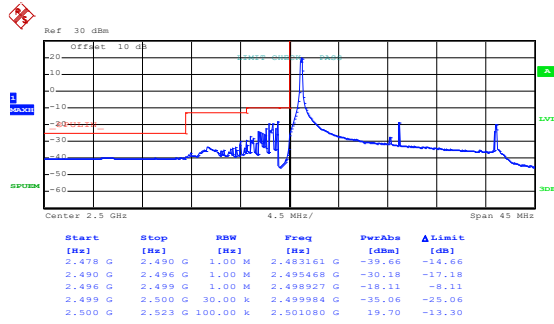
Lowest channel



Date: 28.AUG.2020 18:04:36

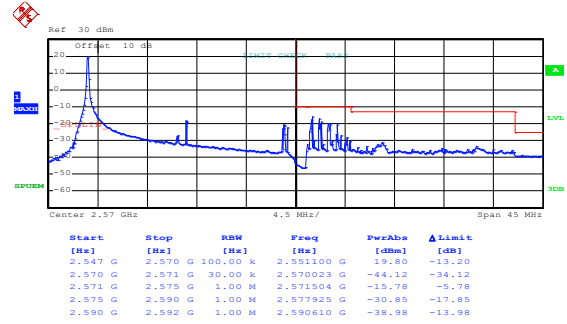
Highest channel

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



Date: 28.AUG.2020 18:03:11

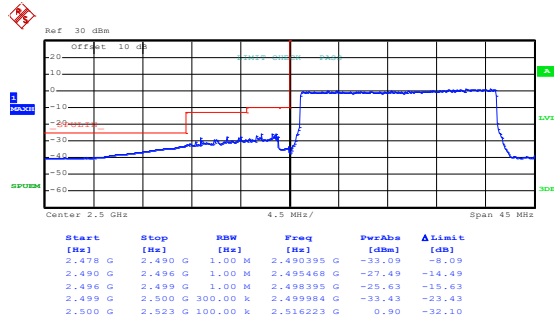
Lowest channel



Date: 28.AUG.2020 18:04:05

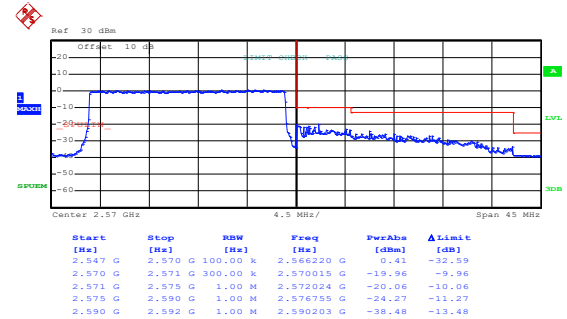
Highest channel

## QPSK & RB Size 100



Date: 28.AUG.2020 18:03:46

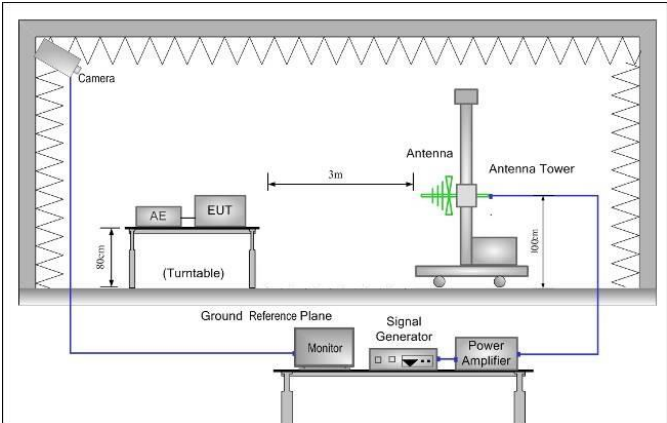
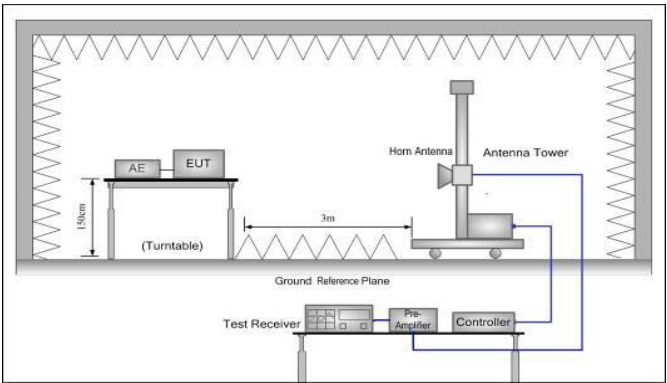
Lowest channel



Date: 28.AUG.2020 18:04:29

Highest channel

## 6.5 Field strength of spurious radiation measurement

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | Part 24.238 (a), Part 27.53(m), Part 27.53(h)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Limit:            | <p>LTE Band 2 &amp; 4:<br/>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).</p> <p>LTE Band 7:<br/>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> |
| Test setup:       | <p>Below 1GHz</p>  <p>Above 1GHz</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Test Procedure:   | <ol style="list-style-type: none"> <li>1. The EUT was placed on the top of a rotating table 0.8m(below 1GHz)/1.5m(above 1GHz) above the ground at a 3 meter camber. 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 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.</li> </ol>                                                                                                                                                                  |

|                   |                                                                                                                                                                                                                                             |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | 4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.<br>ERP / EIRP = S.G. output (dBm) + Antenna Gain(dB/dBi) – Cable Loss (dB) |
| Test Instruments: | Refer to section 5.10 for details                                                                                                                                                                                                           |
| Test mode:        | Refer to section 5.3 for details.                                                                                                                                                                                                           |
| Test results:     | Passed                                                                                                                                                                                                                                      |

**Measurement Data:**
**LTE Band 2 part:**

| Band 2 (1.4MHz)                                                                                                 |                                  |                               |                  |                               |                  |                  |              |
|-----------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------|------------------|-------------------------------|------------------|------------------|--------------|
| Lowest channel                                                                                                  |                                  |                               |                  |                               |                  |                  |              |
| Frequency (MHz)                                                                                                 | Level at antenna terminals (dBm) | Substitute antenna gain (dBi) | Cable Loss (dBi) | Spurious Emission level (dBm) | Limit Line (dBm) | Over Limit (dBm) | Polarization |
| 3701.40                                                                                                         | -62.84                           | 12.64                         | 0.75             | -50.95                        | -13.00           | -37.95           | Vertical     |
| 5552.10                                                                                                         | -56.06                           | 12.76                         | 1.13             | -44.43                        | -13.00           | -31.43           | Vertical     |
| 7402.00                                                                                                         | -47.05                           | 11.44                         | 1.63             | -37.24                        | -13.00           | -24.24           | Vertical     |
| 3701.40                                                                                                         | -62.74                           | 12.64                         | 0.75             | -50.85                        | -13.00           | -37.85           | Horizontal   |
| 5552.10                                                                                                         | -55.08                           | 12.76                         | 1.13             | -43.45                        | -13.00           | -30.45           | Horizontal   |
| 7402.00                                                                                                         | -47.79                           | 11.44                         | 1.63             | -37.98                        | -13.00           | -24.98           | Horizontal   |
| Middle channel                                                                                                  |                                  |                               |                  |                               |                  |                  |              |
| Frequency (MHz)                                                                                                 | Level at antenna terminals (dBm) | Substitute antenna gain (dBi) | Cable Loss (dBi) | Spurious Emission level (dBm) | Limit Line (dBm) | Over Limit (dBm) | Polarization |
| 3760.00                                                                                                         | -62.93                           | 12.71                         | 0.79             | -51.01                        | -13.00           | -38.01           | Vertical     |
| 5640.00                                                                                                         | -56.29                           | 12.87                         | 1.15             | -44.57                        | -13.00           | -31.57           | Vertical     |
| 7520.00                                                                                                         | -46.96                           | 11.48                         | 1.66             | -37.14                        | -13.00           | -24.14           | Vertical     |
| 3760.00                                                                                                         | -62.54                           | 12.71                         | 0.79             | -50.62                        | -13.00           | -37.62           | Horizontal   |
| 5640.00                                                                                                         | -55.06                           | 12.87                         | 1.15             | -43.34                        | -13.00           | -30.34           | Horizontal   |
| 7520.00                                                                                                         | -48.13                           | 11.48                         | 1.66             | -38.31                        | -13.00           | -25.31           | Horizontal   |
| Highest channel                                                                                                 |                                  |                               |                  |                               |                  |                  |              |
| Frequency (MHz)                                                                                                 | Level at antenna terminals (dBm) | Substitute antenna gain (dBi) | Cable Loss (dBi) | Spurious Emission level (dBm) | Limit Line (dBm) | Over Limit (dBm) | Polarization |
| 3816.60                                                                                                         | -62.75                           | 12.78                         | 0.81             | -50.78                        | -13.00           | -37.78           | Vertical     |
| 5724.90                                                                                                         | -55.84                           | 12.97                         | 1.19             | -44.06                        | -13.00           | -31.06           | Vertical     |
| 7633.20                                                                                                         | -47.11                           | 11.34                         | 1.71             | -37.48                        | -13.00           | -24.48           | Vertical     |
| 3816.60                                                                                                         | -63.32                           | 12.78                         | 0.81             | -51.35                        | -13.00           | -38.35           | Horizontal   |
| 5724.90                                                                                                         | -55.23                           | 12.97                         | 1.19             | -43.45                        | -13.00           | -30.45           | Horizontal   |
| 7633.20                                                                                                         | -47.14                           | 11.34                         | 1.71             | -37.51                        | -13.00           | -24.51           | Horizontal   |
| <b>Remark:</b><br>The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report. |                                  |                               |                  |                               |                  |                  |              |

| Band 2 (20MHz)                                                                                                  |                                  |                               |                  |                               |                  |                  |              |
|-----------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------|------------------|-------------------------------|------------------|------------------|--------------|
| Lowest channel                                                                                                  |                                  |                               |                  |                               |                  |                  |              |
| Frequency (MHz)                                                                                                 | Level at antenna terminals (dBm) | Substitute antenna gain (dBi) | Cable Loss (dBi) | Spurious Emission level (dBm) | Limit Line (dBm) | Over Limit (dBm) | Polarization |
| 3720.00                                                                                                         | -62.99                           | 12.66                         | 0.77             | -51.10                        | -13.00           | -38.10           | Vertical     |
| 5580.00                                                                                                         | -56.06                           | 12.80                         | 1.15             | -44.41                        | -13.00           | -31.41           | Vertical     |
| 7440.00                                                                                                         | -47.05                           | 11.46                         | 1.64             | -37.23                        | -13.00           | -24.23           | Vertical     |
| 3720.00                                                                                                         | -62.72                           | 12.66                         | 0.77             | -50.83                        | -13.00           | -37.83           | Horizontal   |
| 5580.00                                                                                                         | -54.98                           | 12.80                         | 1.15             | -43.33                        | -13.00           | -30.33           | Horizontal   |
| 7440.00                                                                                                         | -47.60                           | 11.46                         | 1.64             | -37.78                        | -13.00           | -24.78           | Horizontal   |
| Middle channel                                                                                                  |                                  |                               |                  |                               |                  |                  |              |
| Frequency (MHz)                                                                                                 | Level at antenna terminals (dBm) | Substitute antenna gain (dBi) | Cable Loss (dBi) | Spurious Emission level (dBm) | Limit Line (dBm) | Over Limit (dBm) | Polarization |
| 3760.00                                                                                                         | -63.50                           | 12.71                         | 0.79             | -51.58                        | -13.00           | -38.58           | Vertical     |
| 5640.00                                                                                                         | -56.53                           | 12.87                         | 1.15             | -44.81                        | -13.00           | -31.81           | Vertical     |
| 7520.00                                                                                                         | -46.77                           | 11.48                         | 1.66             | -36.95                        | -13.00           | -23.95           | Vertical     |
| 3760.00                                                                                                         | -62.28                           | 12.71                         | 0.79             | -50.36                        | -13.00           | -37.36           | Horizontal   |
| 5640.00                                                                                                         | -55.42                           | 12.87                         | 1.15             | -43.70                        | -13.00           | -30.70           | Horizontal   |
| 7520.00                                                                                                         | -48.04                           | 11.48                         | 1.66             | -38.22                        | -13.00           | -25.22           | Horizontal   |
| Highest channel                                                                                                 |                                  |                               |                  |                               |                  |                  |              |
| Frequency (MHz)                                                                                                 | Level at antenna terminals (dBm) | Substitute antenna gain (dBi) | Cable Loss (dBi) | Spurious Emission level (dBm) | Limit Line (dBm) | Over Limit (dBm) | Polarization |
| 3800.00                                                                                                         | -62.60                           | 12.76                         | 0.79             | -50.63                        | -13.00           | -37.63           | Vertical     |
| 5700.00                                                                                                         | -56.03                           | 12.94                         | 1.18             | -44.27                        | -13.00           | -31.27           | Vertical     |
| 7600.00                                                                                                         | -46.81                           | 11.38                         | 1.69             | -37.12                        | -13.00           | -24.12           | Vertical     |
| 3800.00                                                                                                         | -62.89                           | 12.76                         | 0.79             | -50.92                        | -13.00           | -37.92           | Horizontal   |
| 5700.00                                                                                                         | -55.17                           | 12.94                         | 1.18             | -43.41                        | -13.00           | -30.41           | Horizontal   |
| 7600.00                                                                                                         | -47.40                           | 11.38                         | 1.69             | -37.71                        | -13.00           | -24.71           | Horizontal   |
| <b>Remark:</b><br>The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report. |                                  |                               |                  |                               |                  |                  |              |

**LTE Band 4 part:**

| Band 4 (1.4MHz)                                                                                                 |                                  |                               |                  |                               |                  |                  |              |
|-----------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------|------------------|-------------------------------|------------------|------------------|--------------|
| Lowest channel                                                                                                  |                                  |                               |                  |                               |                  |                  |              |
| Frequency (MHz)                                                                                                 | Level at antenna terminals (dBm) | Substitute antenna gain (dBi) | Cable Loss (dBi) | Spurious Emission level (dBm) | Limit Line (dBm) | Over Limit (dBm) | Polarization |
| 3421.40                                                                                                         | -62.78                           | 12.24                         | 0.70             | -51.24                        | -13.00           | -38.24           | Vertical     |
| 5132.10                                                                                                         | -58.51                           | 12.92                         | 1.01             | -46.60                        | -13.00           | -33.60           | Vertical     |
| 6842.80                                                                                                         | -50.85                           | 11.42                         | 1.53             | -40.96                        | -13.00           | -27.96           | Vertical     |
| 3421.40                                                                                                         | -63.69                           | 12.24                         | 0.70             | -52.15                        | -13.00           | -39.15           | Horizontal   |
| 5132.10                                                                                                         | -68.46                           | 12.92                         | 1.01             | -56.55                        | -13.00           | -43.55           | Horizontal   |
| 6842.80                                                                                                         | -50.10                           | 11.42                         | 1.53             | -40.21                        | -13.00           | -27.21           | Horizontal   |
| Middle channel                                                                                                  |                                  |                               |                  |                               |                  |                  |              |
| Frequency (MHz)                                                                                                 | Level at antenna terminals (dBm) | Substitute antenna gain (dBi) | Cable Loss (dBi) | Spurious Emission level (dBm) | Limit Line (dBm) | Over Limit (dBm) | Polarization |
| 3465.00                                                                                                         | -62.46                           | 12.33                         | 0.72             | -50.85                        | -13.00           | -37.85           | Vertical     |
| 5197.50                                                                                                         | -58.04                           | 12.88                         | 1.04             | -46.20                        | -13.00           | -33.20           | Vertical     |
| 6930.00                                                                                                         | -50.35                           | 11.30                         | 1.56             | -40.61                        | -13.00           | -27.61           | Vertical     |
| 3465.00                                                                                                         | -64.01                           | 12.33                         | 0.72             | -52.40                        | -13.00           | -39.40           | Horizontal   |
| 5197.50                                                                                                         | -67.92                           | 12.88                         | 1.04             | -56.08                        | -13.00           | -43.08           | Horizontal   |
| 6930.00                                                                                                         | -49.99                           | 11.30                         | 1.56             | -40.25                        | -13.00           | -27.25           | Horizontal   |
| Highest channel                                                                                                 |                                  |                               |                  |                               |                  |                  |              |
| Frequency (MHz)                                                                                                 | Level at antenna terminals (dBm) | Substitute antenna gain (dBi) | Cable Loss (dBi) | Spurious Emission level (dBm) | Limit Line (dBm) | Over Limit (dBm) | Polarization |
| 3508.60                                                                                                         | -63.00                           | 12.41                         | 0.74             | -51.33                        | -13.00           | -38.33           | Vertical     |
| 5262.90                                                                                                         | -57.98                           | 12.84                         | 1.07             | -46.21                        | -13.00           | -33.21           | Vertical     |
| 7017.20                                                                                                         | -50.42                           | 11.21                         | 1.58             | -40.79                        | -13.00           | -27.79           | Vertical     |
| 3508.60                                                                                                         | -64.02                           | 12.41                         | 0.74             | -52.35                        | -13.00           | -39.35           | Horizontal   |
| 5262.90                                                                                                         | -68.30                           | 12.84                         | 1.07             | -56.53                        | -13.00           | -43.53           | Horizontal   |
| 7017.20                                                                                                         | -49.89                           | 11.21                         | 1.58             | -40.26                        | -13.00           | -27.26           | Horizontal   |
| <b>Remark:</b><br>The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report. |                                  |                               |                  |                               |                  |                  |              |

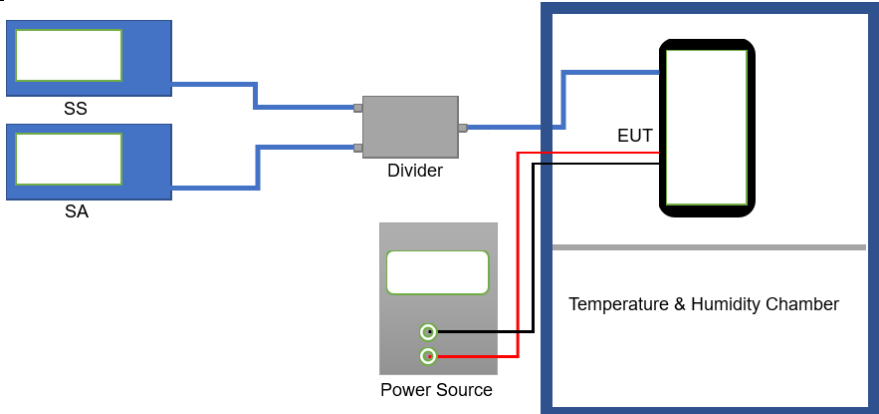
| Band 4 (20MHz)                                                                                           |                                  |                               |                  |                               |                  |                  |              |
|----------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------|------------------|-------------------------------|------------------|------------------|--------------|
| Lowest channel                                                                                           |                                  |                               |                  |                               |                  |                  |              |
| Frequency (MHz)                                                                                          | Level at antenna terminals (dBm) | Substitute antenna gain (dBi) | Cable Loss (dBi) | Spurious Emission level (dBm) | Limit Line (dBm) | Over Limit (dBm) | Polarization |
| 3440.00                                                                                                  | -62.52                           | 12.28                         | 0.71             | -50.95                        | -13.00           | -37.95           | Vertical     |
| 5160.00                                                                                                  | -58.57                           | 12.90                         | 1.03             | -46.70                        | -13.00           | -33.70           | Vertical     |
| 6880.00                                                                                                  | -50.42                           | 11.37                         | 1.54             | -40.59                        | -13.00           | -27.59           | Vertical     |
| 3440.00                                                                                                  | -63.63                           | 12.28                         | 0.71             | -52.06                        | -13.00           | -39.06           | Horizontal   |
| 5160.00                                                                                                  | -68.64                           | 12.90                         | 1.03             | -56.77                        | -13.00           | -43.77           | Horizontal   |
| 6880.00                                                                                                  | -50.26                           | 11.37                         | 1.54             | -40.43                        | -13.00           | -27.43           | Horizontal   |
| Middle channel                                                                                           |                                  |                               |                  |                               |                  |                  |              |
| Frequency (MHz)                                                                                          | Level at antenna terminals (dBm) | Substitute antenna gain (dBi) | Cable Loss (dBi) | Spurious Emission level (dBm) | Limit Line (dBm) | Over Limit (dBm) | Polarization |
| 3465.00                                                                                                  | -62.63                           | 12.33                         | 0.72             | -51.02                        | -13.00           | -38.02           | Vertical     |
| 5197.50                                                                                                  | -58.76                           | 12.88                         | 1.04             | -46.92                        | -13.00           | -33.92           | Vertical     |
| 6930.00                                                                                                  | -50.25                           | 11.30                         | 1.56             | -40.51                        | -13.00           | -27.51           | Vertical     |
| 3465.00                                                                                                  | -63.71                           | 12.33                         | 0.72             | -52.10                        | -13.00           | -39.10           | Horizontal   |
| 5197.50                                                                                                  | -68.77                           | 12.88                         | 1.04             | -56.93                        | -13.00           | -43.93           | Horizontal   |
| 6930.00                                                                                                  | -50.27                           | 11.30                         | 1.56             | -40.53                        | -13.00           | -27.53           | Horizontal   |
| Highest channel                                                                                          |                                  |                               |                  |                               |                  |                  |              |
| Frequency (MHz)                                                                                          | Level at antenna terminals (dBm) | Substitute antenna gain (dBi) | Cable Loss (dBi) | Spurious Emission level (dBm) | Limit Line (dBm) | Over Limit (dBm) | Polarization |
| 3490.00                                                                                                  | -62.26                           | 12.38                         | 0.73             | -50.61                        | -13.00           | -37.61           | Vertical     |
| 5235.00                                                                                                  | -58.01                           | 12.86                         | 1.06             | -46.21                        | -13.00           | -33.21           | Vertical     |
| 6980.00                                                                                                  | -50.43                           | 11.23                         | 1.57             | -40.77                        | -13.00           | -27.77           | Vertical     |
| 3490.00                                                                                                  | -64.00                           | 12.38                         | 0.73             | -52.35                        | -13.00           | -39.35           | Horizontal   |
| 5235.00                                                                                                  | -67.77                           | 12.86                         | 1.06             | -55.97                        | -13.00           | -42.97           | Horizontal   |
| 6980.00                                                                                                  | -49.95                           | 11.23                         | 1.57             | -40.29                        | -13.00           | -27.29           | Horizontal   |
| Remark:<br>The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report. |                                  |                               |                  |                               |                  |                  |              |

**LTE Band 7 part:**

| Band 7 (5MHz)                                                                                                   |                                  |                               |                  |                               |                  |                  |              |
|-----------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------|------------------|-------------------------------|------------------|------------------|--------------|
| Lowest channel                                                                                                  |                                  |                               |                  |                               |                  |                  |              |
| Frequency (MHz)                                                                                                 | Level at antenna terminals (dBm) | Substitute antenna gain (dBi) | Cable Loss (dBi) | Spurious Emission level (dBm) | Limit Line (dBm) | Over Limit (dBm) | Polarization |
| 5005.00                                                                                                         | -59.50                           | 13.00                         | 0.94             | -47.44                        | -25.00           | -22.44           | Vertical     |
| 7507.50                                                                                                         | -50.45                           | 11.49                         | 1.65             | -40.61                        | -25.00           | -15.61           | Vertical     |
| 10010.00                                                                                                        | -45.99                           | 11.69                         | 1.91             | -36.21                        | -25.00           | -11.21           | Vertical     |
| 5005.00                                                                                                         | -59.28                           | 13.00                         | 0.94             | -47.22                        | -25.00           | -22.22           | Horizontal   |
| 7507.50                                                                                                         | -49.50                           | 11.49                         | 1.65             | -39.66                        | -25.00           | -14.66           | Horizontal   |
| 10010.00                                                                                                        | -45.68                           | 11.69                         | 1.91             | -35.90                        | -25.00           | -10.90           | Horizontal   |
| Middle channel                                                                                                  |                                  |                               |                  |                               |                  |                  |              |
| Frequency (MHz)                                                                                                 | Level at antenna terminals (dBm) | Substitute antenna gain (dBi) | Cable Loss (dBi) | Spurious Emission level (dBm) | Limit Line (dBm) | Over Limit (dBm) | Polarization |
| 5070.00                                                                                                         | -58.94                           | 12.96                         | 0.98             | -46.96                        | -25.00           | -21.96           | Vertical     |
| 7605.00                                                                                                         | -49.98                           | 11.37                         | 1.69             | -40.30                        | -25.00           | -15.30           | Vertical     |
| 10140.00                                                                                                        | -45.63                           | 11.62                         | 1.94             | -35.95                        | -25.00           | -10.95           | Vertical     |
| 5070.00                                                                                                         | -58.75                           | 12.96                         | 0.98             | -46.77                        | -25.00           | -21.77           | Horizontal   |
| 7605.00                                                                                                         | -49.26                           | 11.37                         | 1.69             | -39.58                        | -25.00           | -14.58           | Horizontal   |
| 10140.00                                                                                                        | -45.64                           | 11.62                         | 1.94             | -35.96                        | -25.00           | -10.96           | Horizontal   |
| Highest channel                                                                                                 |                                  |                               |                  |                               |                  |                  |              |
| Frequency (MHz)                                                                                                 | Level at antenna terminals (dBm) | Substitute antenna gain (dBi) | Cable Loss (dBi) | Spurious Emission level (dBm) | Limit Line (dBm) | Over Limit (dBm) | Polarization |
| 5135.00                                                                                                         | -58.75                           | 12.92                         | 1.01             | -46.84                        | -25.00           | -21.84           | Vertical     |
| 7702.50                                                                                                         | -49.90                           | 11.26                         | 1.72             | -40.36                        | -25.00           | -15.36           | Vertical     |
| 10270.00                                                                                                        | -45.45                           | 11.54                         | 1.95             | -35.86                        | -25.00           | -10.86           | Vertical     |
| 5135.00                                                                                                         | -58.72                           | 12.92                         | 1.01             | -46.81                        | -25.00           | -21.81           | Horizontal   |
| 7702.50                                                                                                         | -49.58                           | 11.26                         | 1.72             | -40.04                        | -25.00           | -15.04           | Horizontal   |
| 10270.00                                                                                                        | -45.32                           | 11.54                         | 1.95             | -35.73                        | -25.00           | -10.73           | Horizontal   |
| <b>Remark:</b><br>The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report. |                                  |                               |                  |                               |                  |                  |              |

| Band 7 (20MHz)                                                                                                  |                                  |                               |                  |                               |                  |                  |              |
|-----------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------|------------------|-------------------------------|------------------|------------------|--------------|
| Lowest channel                                                                                                  |                                  |                               |                  |                               |                  |                  |              |
| Frequency (MHz)                                                                                                 | Level at antenna terminals (dBm) | Substitute antenna gain (dBi) | Cable Loss (dBi) | Spurious Emission level (dBm) | Limit Line (dBm) | Over Limit (dBm) | Polarization |
| 5020.00                                                                                                         | -59.38                           | 12.99                         | 0.97             | -47.36                        | -25.00           | -22.36           | Vertical     |
| 7530.00                                                                                                         | -50.08                           | 11.46                         | 1.68             | -40.30                        | -25.00           | -15.30           | Vertical     |
| 10040.00                                                                                                        | -45.67                           | 11.68                         | 1.94             | -35.93                        | -25.00           | -10.93           | Vertical     |
| 5020.00                                                                                                         | -58.89                           | 12.99                         | 0.97             | -46.87                        | -25.00           | -21.87           | Horizontal   |
| 7530.00                                                                                                         | -49.90                           | 11.46                         | 1.68             | -40.12                        | -25.00           | -15.12           | Horizontal   |
| 10040.00                                                                                                        | -46.02                           | 11.68                         | 1.94             | -36.28                        | -25.00           | -11.28           | Horizontal   |
| Middle channel                                                                                                  |                                  |                               |                  |                               |                  |                  |              |
| Frequency (MHz)                                                                                                 | Level at antenna terminals (dBm) | Substitute antenna gain (dBi) | Cable Loss (dBi) | Spurious Emission level (dBm) | Limit Line (dBm) | Over Limit (dBm) | Polarization |
| 5070.00                                                                                                         | -58.81                           | 12.96                         | 0.98             | -46.83                        | -25.00           | -21.83           | Vertical     |
| 7605.00                                                                                                         | -50.12                           | 11.37                         | 1.69             | -40.44                        | -25.00           | -15.44           | Vertical     |
| 10140.00                                                                                                        | -45.25                           | 11.62                         | 1.94             | -35.57                        | -25.00           | -10.57           | Vertical     |
| 5070.00                                                                                                         | -59.19                           | 12.96                         | 0.98             | -47.21                        | -25.00           | -22.21           | Horizontal   |
| 7605.00                                                                                                         | -49.35                           | 11.37                         | 1.69             | -39.67                        | -25.00           | -14.67           | Horizontal   |
| 10140.00                                                                                                        | -45.16                           | 11.62                         | 1.94             | -35.48                        | -25.00           | -10.48           | Horizontal   |
| Highest channel                                                                                                 |                                  |                               |                  |                               |                  |                  |              |
| Frequency (MHz)                                                                                                 | Level at antenna terminals (dBm) | Substitute antenna gain (dBi) | Cable Loss (dBi) | Spurious Emission level (dBm) | Limit Line (dBm) | Over Limit (dBm) | Polarization |
| 5120.00                                                                                                         | -59.27                           | 12.93                         | 1.00             | -47.34                        | -25.00           | -22.34           | Vertical     |
| 7680.00                                                                                                         | -49.43                           | 11.28                         | 1.72             | -39.87                        | -25.00           | -14.87           | Vertical     |
| 10240.00                                                                                                        | -45.74                           | 11.56                         | 1.95             | -36.13                        | -25.00           | -11.13           | Vertical     |
| 5120.00                                                                                                         | -59.22                           | 12.93                         | 1.00             | -47.29                        | -25.00           | -22.29           | Horizontal   |
| 7680.00                                                                                                         | -49.34                           | 11.28                         | 1.72             | -39.78                        | -25.00           | -14.78           | Horizontal   |
| 10240.00                                                                                                        | -45.60                           | 11.56                         | 1.95             | -35.99                        | -25.00           | -10.99           | Horizontal   |
| <b>Remark:</b><br>The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report. |                                  |                               |                  |                               |                  |                  |              |

## 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)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Limit:            | Within authorized band for Band 2 & 4 & 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 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 5.10 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      |                                   |        |
| QPSK                                                                            |                  |                 |          |                                   |        |
| 3.85                                                                            | -30              | 180             | 0.095745 | Within authorized band for Band 2 | Pass   |
|                                                                                 | -20              | 173             | 0.092021 |                                   |        |
|                                                                                 | -10              | 165             | 0.087766 |                                   |        |
|                                                                                 | 0                | 158             | 0.084043 |                                   |        |
|                                                                                 | 10               | 150             | 0.079787 |                                   |        |
|                                                                                 | 20               | 146             | 0.077660 |                                   |        |
|                                                                                 | 30               | 138             | 0.073404 |                                   |        |
|                                                                                 | 40               | 131             | 0.069681 |                                   |        |
|                                                                                 | 50               | 120             | 0.063830 |                                   |        |
| 16QAM                                                                           |                  |                 |          |                                   |        |
| 3.85                                                                            | -30              | 176             | 0.093617 | Within authorized band for Band 2 | Pass   |
|                                                                                 | -20              | 169             | 0.089894 |                                   |        |
|                                                                                 | -10              | 160             | 0.085106 |                                   |        |
|                                                                                 | 0                | 154             | 0.081915 |                                   |        |
|                                                                                 | 10               | 143             | 0.076064 |                                   |        |
|                                                                                 | 20               | 136             | 0.072340 |                                   |        |
|                                                                                 | 30               | 130             | 0.069149 |                                   |        |
|                                                                                 | 40               | 123             | 0.065426 |                                   |        |
|                                                                                 | 50               | 150             | 0.079787 |                                   |        |
| Note: Only the worst case shown in the report.                                  |                  |                 |          |                                   |        |

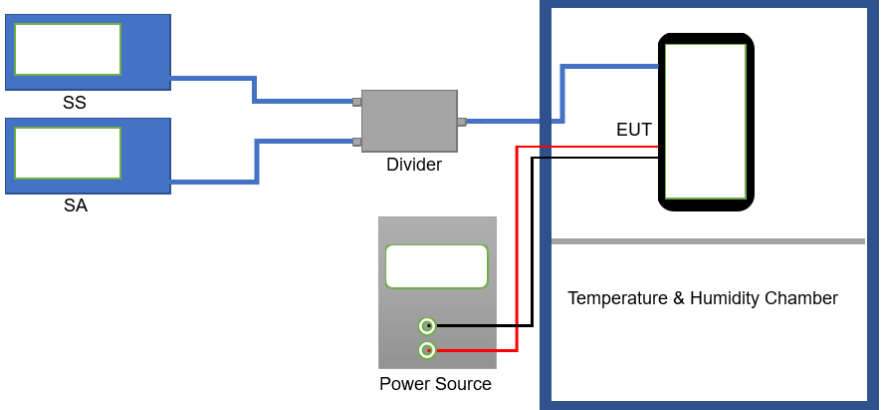
**LTE Band 4 part:**

| Reference Frequency: LTE Band 4 (10MHz) Middle channel=20175 channel=1732.50MHz |                  |                 |          |                                   |        |
|---------------------------------------------------------------------------------|------------------|-----------------|----------|-----------------------------------|--------|
| Power supplied (Vdc)                                                            | Temperature (°C) | Frequency error |          | Limit (ppm)                       | Result |
|                                                                                 |                  | Hz              | ppm      |                                   |        |
| QPSK                                                                            |                  |                 |          |                                   |        |
| 3.85                                                                            | -30              | 173             | 0.099856 | Within authorized band for Band 4 | Pass   |
|                                                                                 | -20              | 163             | 0.094084 |                                   |        |
|                                                                                 | -10              | 157             | 0.090620 |                                   |        |
|                                                                                 | 0                | 149             | 0.086003 |                                   |        |
|                                                                                 | 10               | 143             | 0.082540 |                                   |        |
|                                                                                 | 20               | 139             | 0.080231 |                                   |        |
|                                                                                 | 30               | 134             | 0.077345 |                                   |        |
|                                                                                 | 40               | 124             | 0.071573 |                                   |        |
|                                                                                 | 50               | 112             | 0.064646 |                                   |        |
| 16QAM                                                                           |                  |                 |          |                                   |        |
| 3.85                                                                            | -30              | 170             | 0.098124 | Within authorized band for Band 4 | Pass   |
|                                                                                 | -20              | 160             | 0.092352 |                                   |        |
|                                                                                 | -10              | 154             | 0.088889 |                                   |        |
|                                                                                 | 0                | 144             | 0.083117 |                                   |        |
|                                                                                 | 10               | 136             | 0.078499 |                                   |        |
|                                                                                 | 20               | 124             | 0.071573 |                                   |        |
|                                                                                 | 30               | 119             | 0.068687 |                                   |        |
|                                                                                 | 40               | 112             | 0.064646 |                                   |        |
|                                                                                 | 50               | 130             | 0.075036 |                                   |        |
| 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 |                  |                 |          |                                   |        |
|-----------------------------------------------------------------------------------|------------------|-----------------|----------|-----------------------------------|--------|
| Power supplied (Vdc)                                                              | Temperature (°C) | Frequency error |          | Limit (ppm)                       | Result |
|                                                                                   |                  | Hz              | ppm      |                                   |        |
| QPSK                                                                              |                  |                 |          |                                   |        |
| 3.85                                                                              | -30              | 173             | 0.068245 | Within authorized band for Band 7 | Pass   |
|                                                                                   | -20              | 156             | 0.061538 |                                   |        |
|                                                                                   | -10              | 140             | 0.055227 |                                   |        |
|                                                                                   | 0                | 130             | 0.051282 |                                   |        |
|                                                                                   | 10               | 120             | 0.047337 |                                   |        |
|                                                                                   | 20               | 110             | 0.043393 |                                   |        |
|                                                                                   | 30               | 134             | 0.052860 |                                   |        |
|                                                                                   | 40               | 148             | 0.058383 |                                   |        |
|                                                                                   | 50               | 162             | 0.063905 |                                   |        |
| 16QAM                                                                             |                  |                 |          |                                   |        |
| 3.85                                                                              | -30              | 170             | 0.067061 | Within authorized band for Band 7 | Pass   |
|                                                                                   | -20              | 166             | 0.065483 |                                   |        |
|                                                                                   | -10              | 157             | 0.061933 |                                   |        |
|                                                                                   | 0                | 118             | 0.046548 |                                   |        |
|                                                                                   | 10               | 109             | 0.042998 |                                   |        |
|                                                                                   | 20               | 150             | 0.059172 |                                   |        |
|                                                                                   | 30               | 143             | 0.056410 |                                   |        |
|                                                                                   | 40               | 134             | 0.052860 |                                   |        |
|                                                                                   | 50               | 125             | 0.049310 |                                   |        |
| Note: Only the worst case shown in the report.                                    |                  |                 |          |                                   |        |

## 6.7 Frequency stability V.S. Voltage measurement

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | Part 22.355, Part 24.235, Part 27.54, Part 2.1055(d)(2)                                                                                                                                                                                                                                                                                                                                                                                        |
| Limit:            | Within authorized band for Band 2 & 4 & 7                                                                                                                                                                                                                                                                                                                                                                                                      |
| Test setup:       |  <p>The diagram illustrates the test setup. A Spectrum Analyzer (SA) and a Signal Source (SS) are connected to a Divider. The Divider is connected to the EUT (Equipment Under Test) inside a Temperature &amp; Humidity Chamber. A Power Source is also connected to the EUT.</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 5.10 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 |                      |                 |          |                                   |        |
|--------------------------------------------------------------------------------|----------------------|-----------------|----------|-----------------------------------|--------|
| Temperature (°C)                                                               | Power supplied (Vdc) | Frequency error |          | Limit (ppm)                       | Result |
|                                                                                |                      | Hz              | ppm      |                                   |        |
| QPSK                                                                           |                      |                 |          |                                   |        |
| 25                                                                             | 4.40                 | 89              | 0.047340 | Within authorized band for Band 2 | Pass   |
|                                                                                | 3.85                 | 76              | 0.040426 |                                   |        |
|                                                                                | 3.50                 | 65              | 0.034574 |                                   |        |
| 16QAM                                                                          |                      |                 |          |                                   |        |
| 25                                                                             | 4.40                 | 80              | 0.042553 | Within authorized band for Band 2 | Pass   |
|                                                                                | 3.85                 | 70              | 0.037234 |                                   |        |
|                                                                                | 3.50                 | 59              | 0.031383 |                                   |        |
| 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                                                                             | 4.40                 | 88              | 0.050794 | Within authorized band for Band 4 | Pass   |
|                                                                                | 3.85                 | 76              | 0.043867 |                                   |        |
|                                                                                | 3.50                 | 63              | 0.036364 |                                   |        |
| 16QAM                                                                          |                      |                 |          |                                   |        |
| 25                                                                             | 4.40                 | 80              | 0.046176 | Within authorized band for Band 4 | Pass   |
|                                                                                | 3.85                 | 74              | 0.042713 |                                   |        |
|                                                                                | 3.50                 | 53              | 0.030592 |                                   |        |
| 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                                                                               | 4.40                 | 90              | 0.035503 | Within authorized band for Band 7 | Pass   |
|                                                                                  | 3.85                 | 76              | 0.029980 |                                   |        |
|                                                                                  | 3.50                 | 54              | 0.021302 |                                   |        |
| 16QAM                                                                            |                      |                 |          |                                   |        |
| 25                                                                               | 4.40                 | 83              | 0.032742 | Within authorized band for Band 7 | Pass   |
|                                                                                  | 3.85                 | 74              | 0.029191 |                                   |        |
|                                                                                  | 3.50                 | 62              | 0.024458 |                                   |        |
| Note: Only the worst case shown in the report.                                   |                      |                 |          |                                   |        |