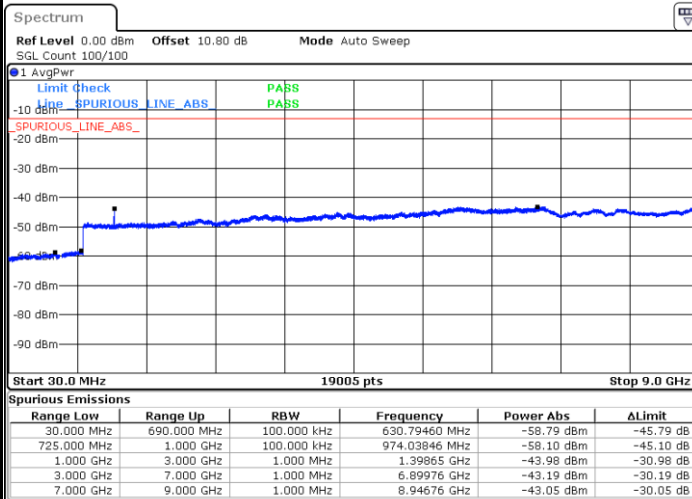




# Conducted Spurious Emission

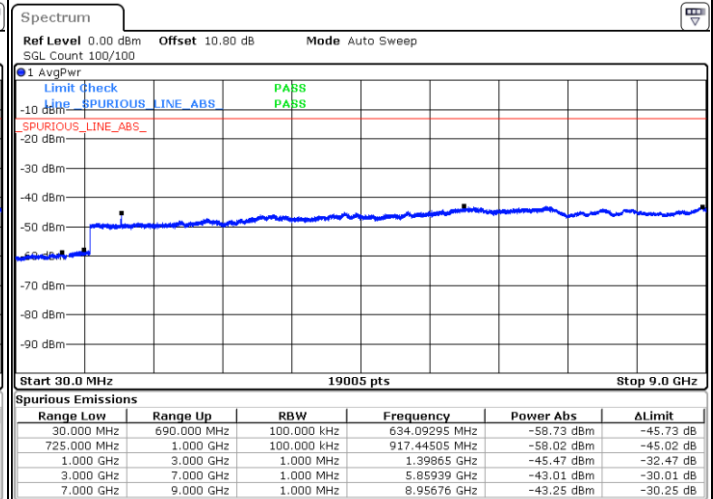
## LTE Band 12 / 1.4MHz

### Lowest Channel / QPSK



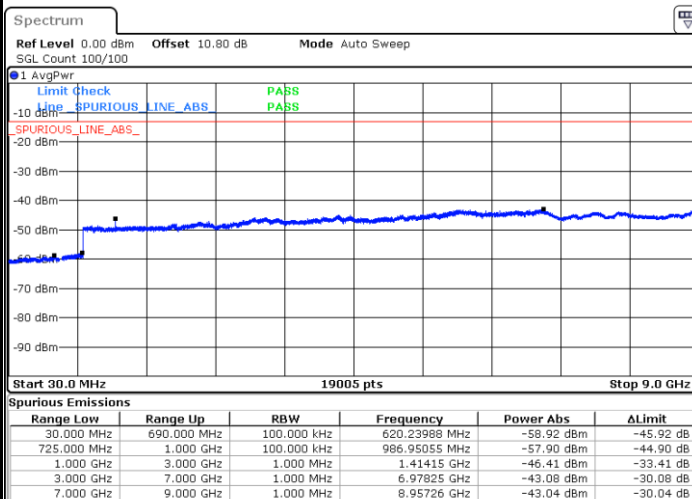
Date: 18.JUL.2020 14:19:40

### Lowest Channel / 16QAM



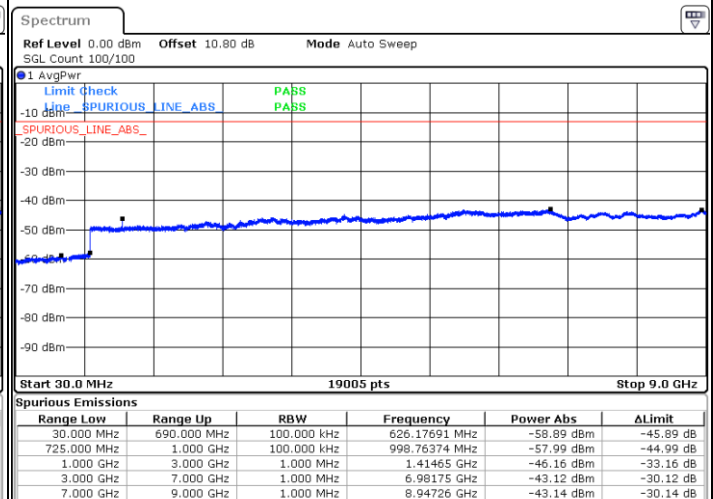
Date: 18.JUL.2020 14:21:00

### Middle Channel / QPSK



Date: 18.JUL.2020 14:16:26

### Middle Channel / 16QAM

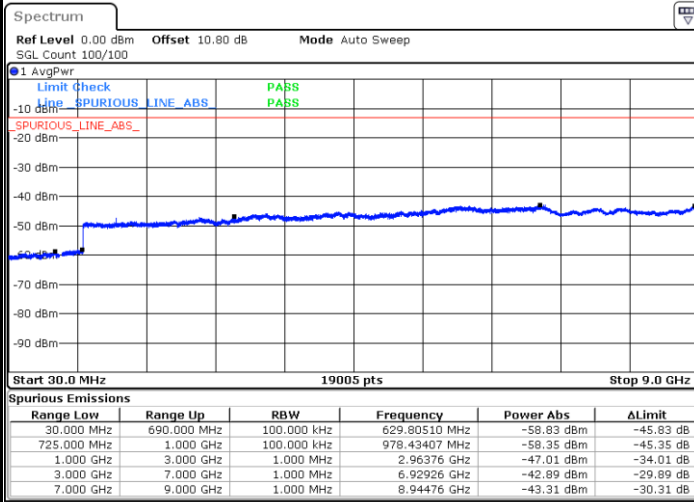


Date: 18.JUL.2020 14:17:08



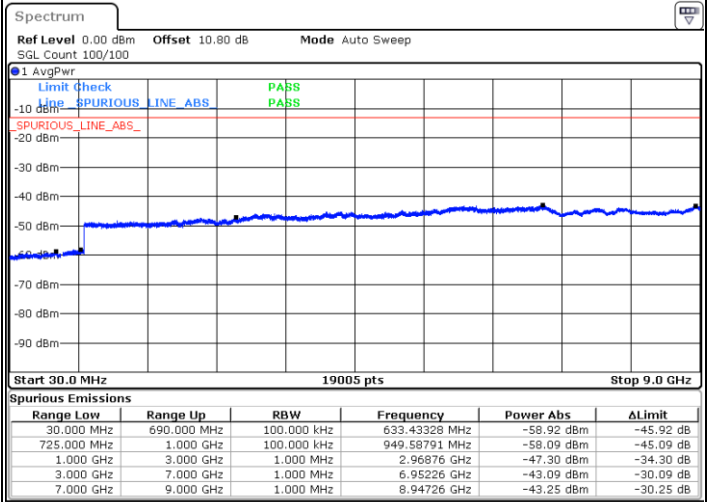
## LTE Band 12 / 1.4MHz

## Highest Channel / QPSK



Date: 18.JUL.2020 14:22:56

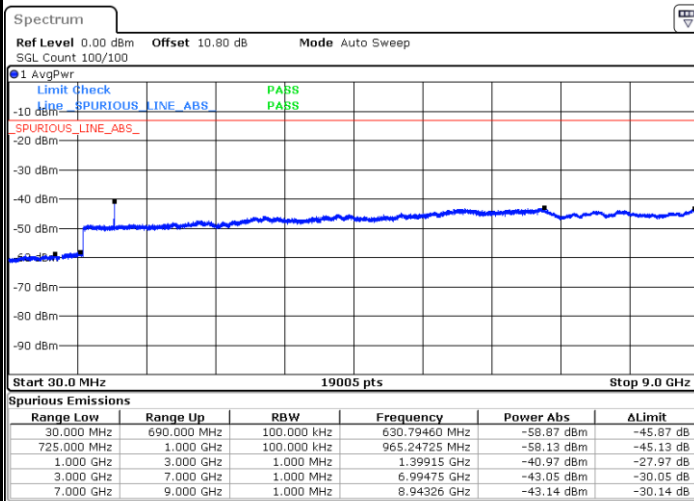
## Highest Channel / 16QAM



Date: 18.JUL.2020 14:25:04

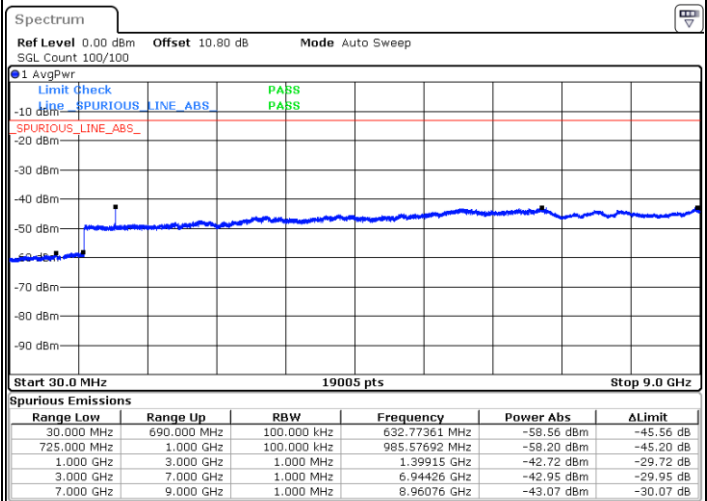
## LTE Band 12 / 3MHz

## Lowest Channel / QPSK



Date: 18.JUL.2020 14:31:08

## Lowest Channel / 16QAM

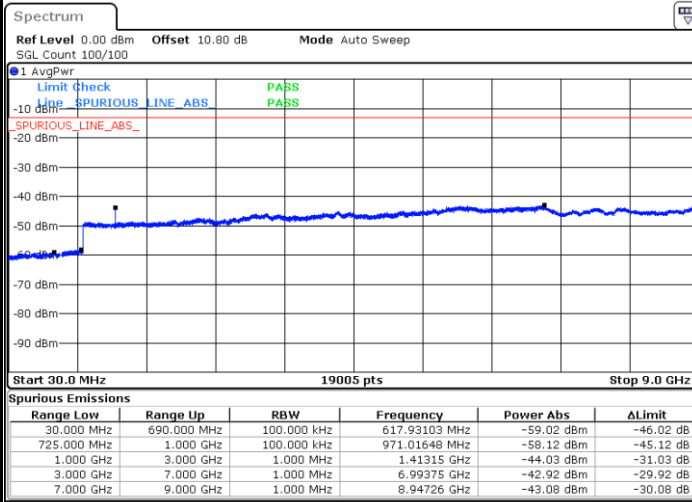


Date: 18.JUL.2020 14:33:27



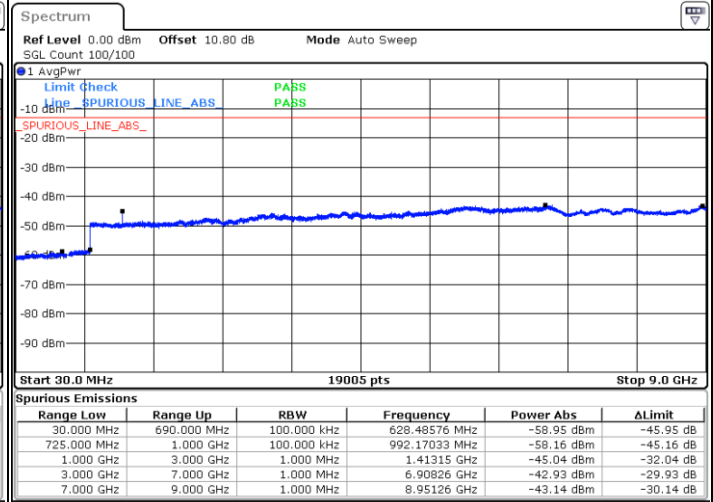
## LTE Band 12 / 3MHz

## Middle Channel / QPSK



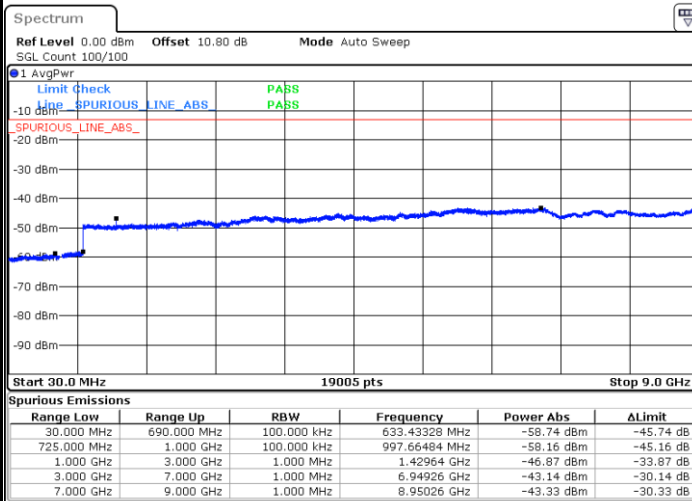
Date: 18.JUL.2020 14:27:44

## Middle Channel / 16QAM



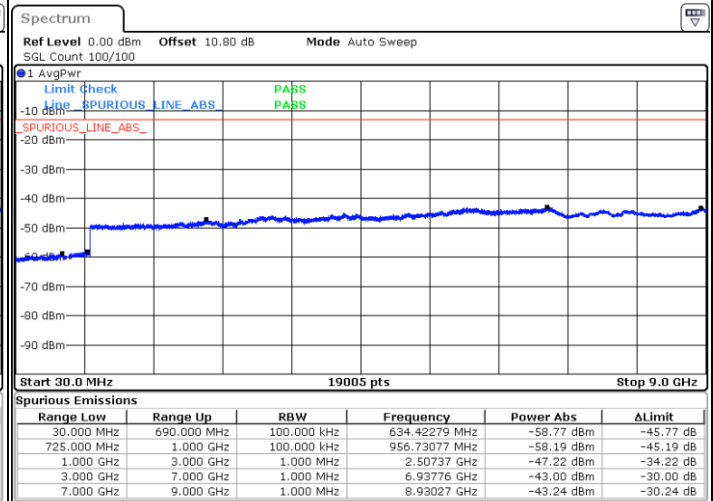
Date: 18.JUL.2020 14:28:23

## Highest Channel / QPSK



Date: 18.JUL.2020 14:35:18

## Highest Channel / 16QAM

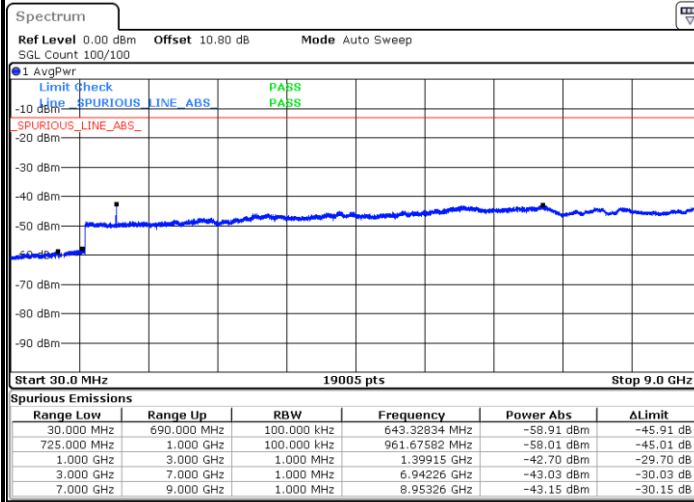


Date: 18.JUL.2020 14:37:32



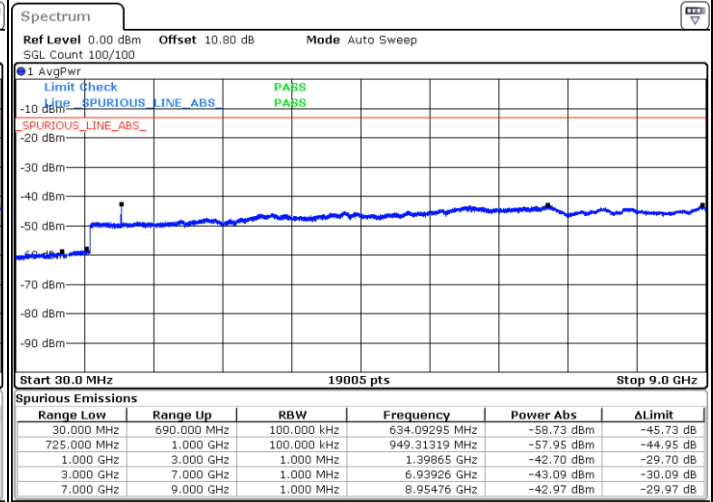
## LTE Band 12 / 5MHz

## Lowest Channel / QPSK



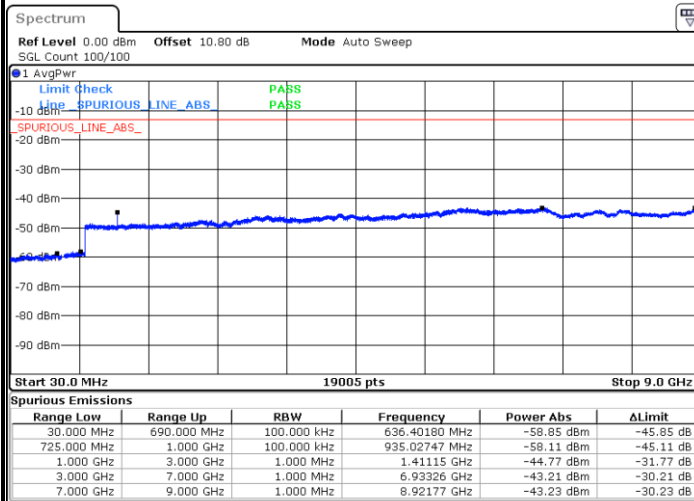
Date: 18.JUL.2020 14:44:23

## Lowest Channel / 16QAM



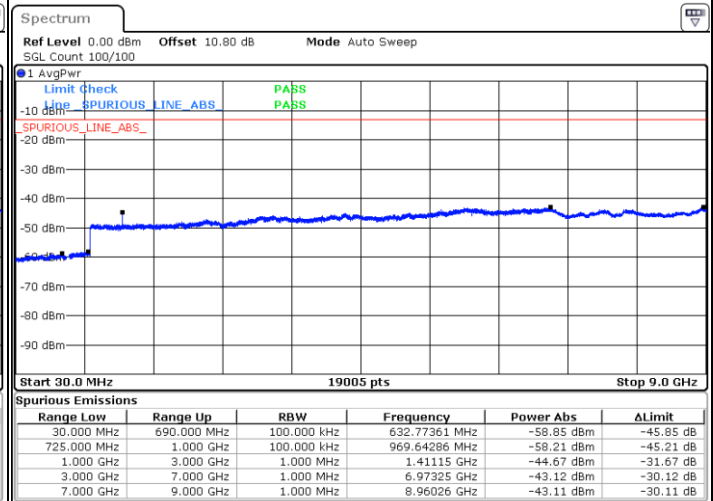
Date: 18.JUL.2020 14:45:46

## Middle Channel / QPSK



Date: 18.JUL.2020 14:42:23

## Middle Channel / 16QAM

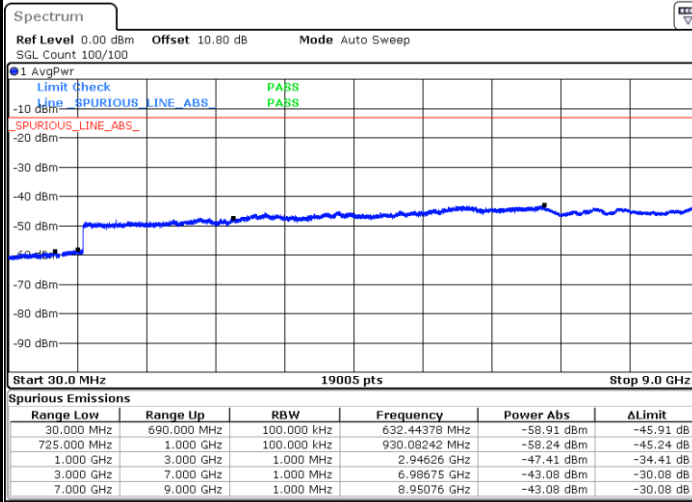


Date: 18.JUL.2020 14:40:27



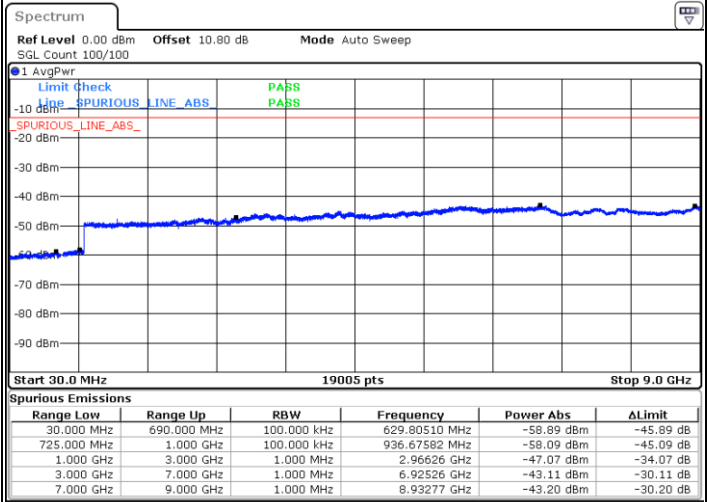
## LTE Band 12 / 5MHz

## Highest Channel / QPSK



Date: 18.JUL.2020 14:47:40

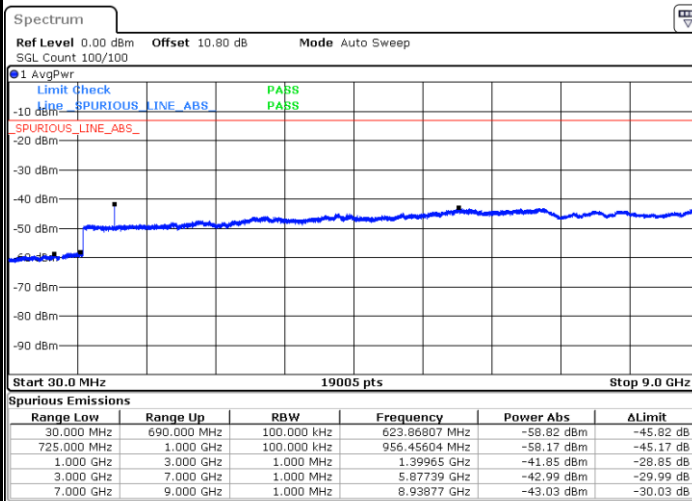
## Highest Channel / 16QAM



Date: 18.JUL.2020 14:49:34

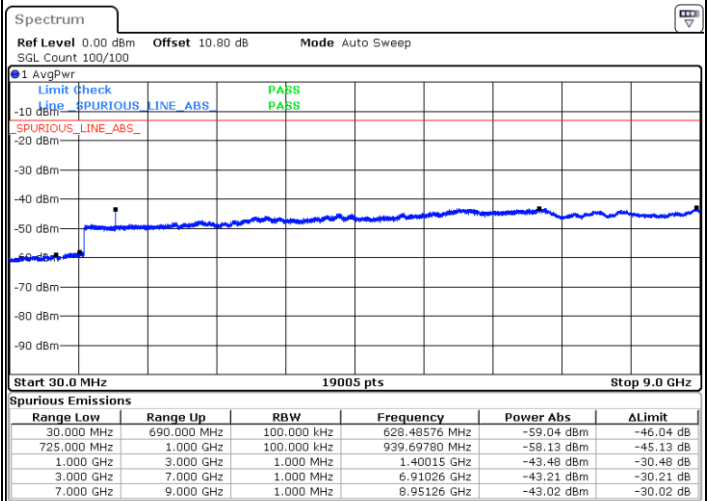
## LTE Band 12 / 10MHz

## Lowest Channel / QPSK



Date: 18.JUL.2020 14:07:53

## Lowest Channel / 16QAM

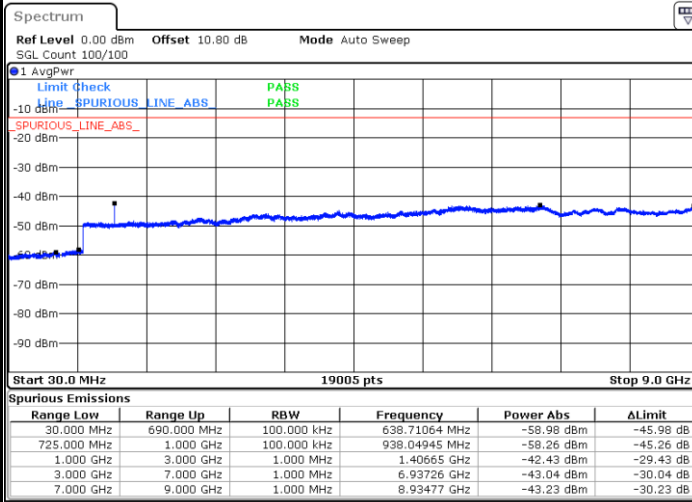


Date: 18.JUL.2020 14:09:28



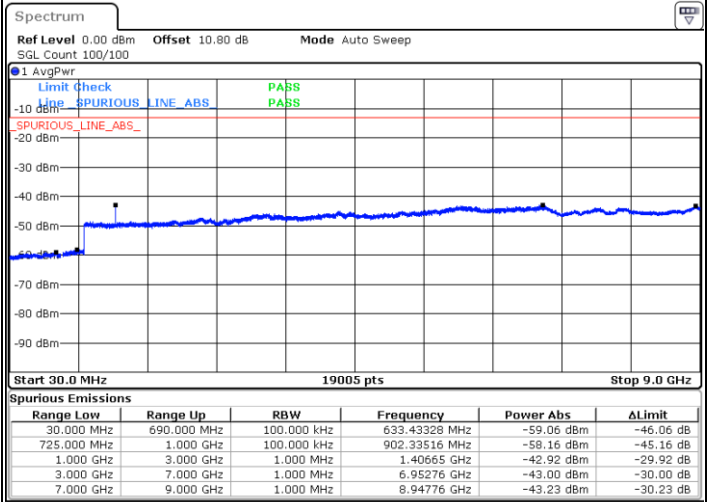
## LTE Band 12 / 10MHz

## Middle Channel / QPSK



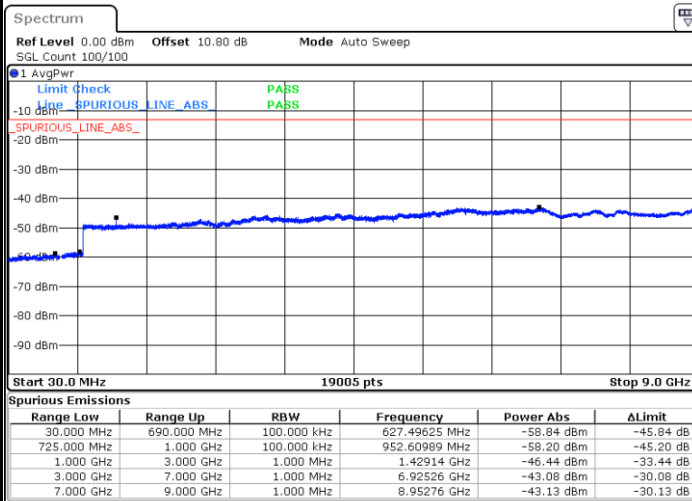
Date: 18.JUL.2020 14:02:24

## Middle Channel / 16QAM



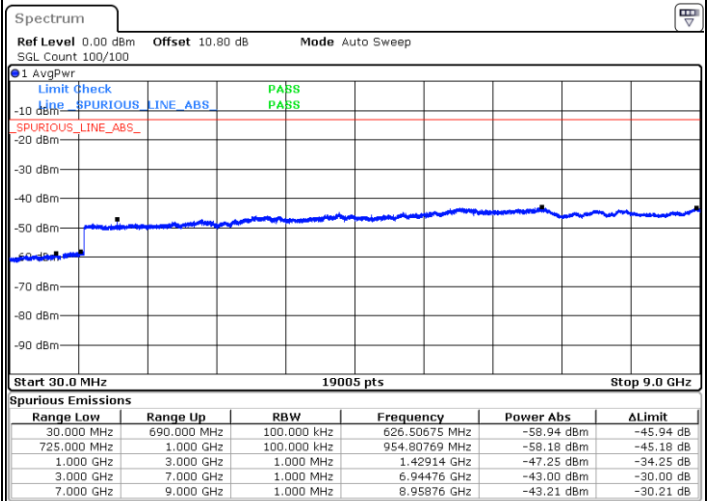
Date: 18.JUL.2020 14:03:03

## Highest Channel / QPSK



Date: 18.JUL.2020 14:11:47

## Highest Channel / 16QAM



Date: 18.JUL.2020 14:14:19

## Frequency Stability

| Test Conditions  |                   | LTE Band 12 (QPSK) / Middle Channel | Limit   |
|------------------|-------------------|-------------------------------------|---------|
| Temperature (°C) | Voltage (Volt)    | BW 10MHz                            | Note 2. |
|                  |                   | Deviation (ppm)                     | Result  |
| 50               | Normal Voltage    | 0.0254                              | PASS    |
| 40               | Normal Voltage    | 0.0242                              |         |
| 30               | Normal Voltage    | 0.0016                              |         |
| 20(Ref.)         | Normal Voltage    | 0.0000                              |         |
| 10               | Normal Voltage    | 0.0302                              |         |
| 0                | Normal Voltage    | 0.0004                              |         |
| -10              | Normal Voltage    | 0.0259                              |         |
| -20              | Normal Voltage    | 0.0277                              |         |
| -30              | Normal Voltage    | 0.0001                              |         |
| 20               | Maximum Voltage   | 0.0252                              |         |
| 20               | Normal Voltage    | 0.0000                              |         |
| 20               | Battery End Point | 0.0236                              |         |

**Note:**

1. Normal Voltage =3.6 V. ; Battery End Point (BEP) =3.3 V. ; Maximum Voltage =3.7 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



## LTE Band 13

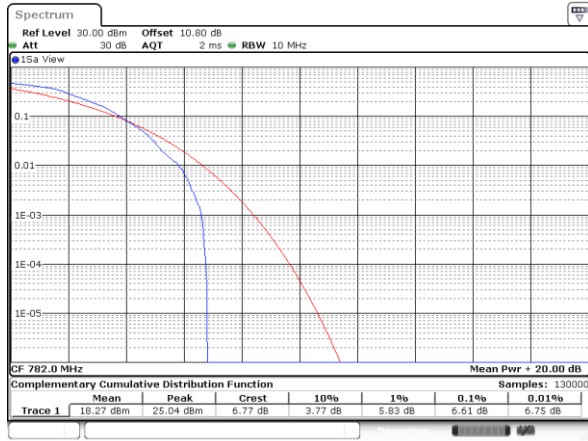
### Peak-to-Average Ratio

| Mode       | LTE Band 13 / 10MHz |         |       |         |             |
|------------|---------------------|---------|-------|---------|-------------|
| Mod.       | QPSK                |         | 16QAM |         | Limit: 13dB |
| RB Size    | 1RB                 | Full RB | 1RB   | Full RB | Result      |
| Lowest CH  | -                   | -       | -     | -       | PASS        |
| Middle CH  | 6.61                | 8.29    | 7.04  | 6.72    |             |
| Highest CH | -                   | -       | -     | -       |             |

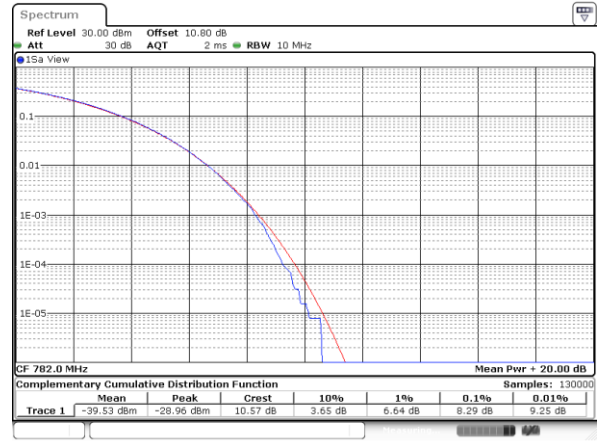


## LTE Band 13 / 10MHz / QPSK

## Middle Channel/ 1RB



## Middle Channel / Full RB

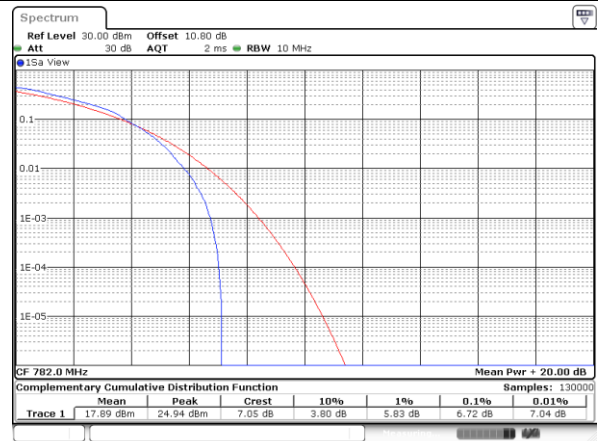


## LTE Band 13 / 10MHz / 16QAM

## Middle Channel/ 1RB



## Middle Channel / Full RB



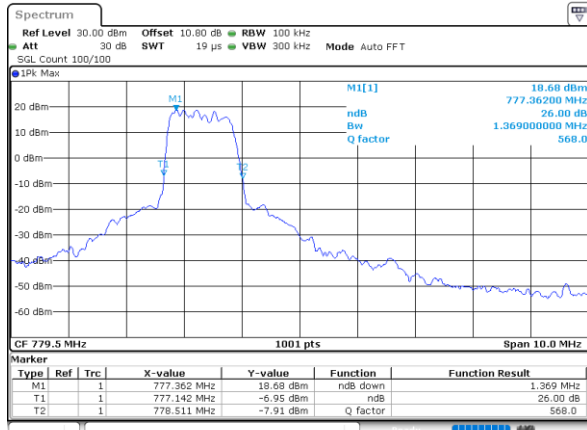
**26dB Bandwidth**

| Mode       | LTE Band 13 : 26dB BW(MHz) |       |      |       |      |       |       |       |       |       |       |       |
|------------|----------------------------|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| BW         | 1.4MHz                     |       | 3MHz |       | 5MHz |       | 10MHz |       | 15MHz |       | 20MHz |       |
| Mod.       | QPSK                       | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM |
| Lowest CH  | -                          | -     | -    | -     | 1.37 | 1.20  | -     | -     | -     | -     | -     | -     |
| Middle CH  | -                          | -     | -    | -     | 1.40 | 1.41  | 1.76  | 1.72  | -     | -     | -     | -     |
| Highest CH | -                          | -     | -    | -     | 1.42 | 1.34  | -     | -     | -     | -     | -     | -     |



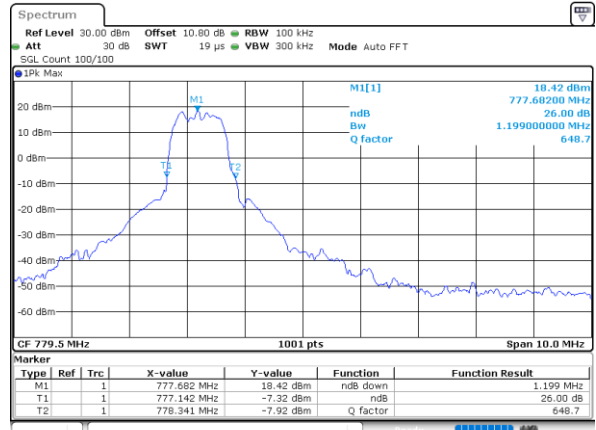
## LTE Band 13

## Lowest Channel / 5MHz / QPSK



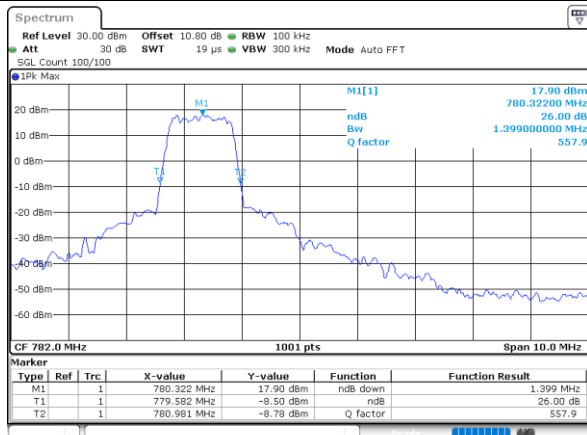
Date: 18.JUL.2020 15:03:21

## Lowest Channel / 5MHz / 16QAM



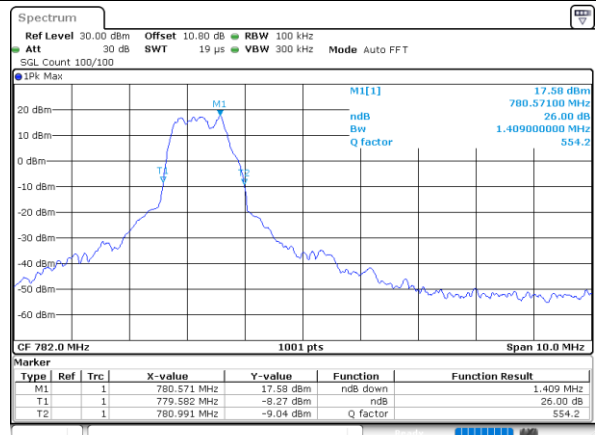
Date: 21.JUL.2020 13:45:05

## Middle Channel / 5MHz / QPSK



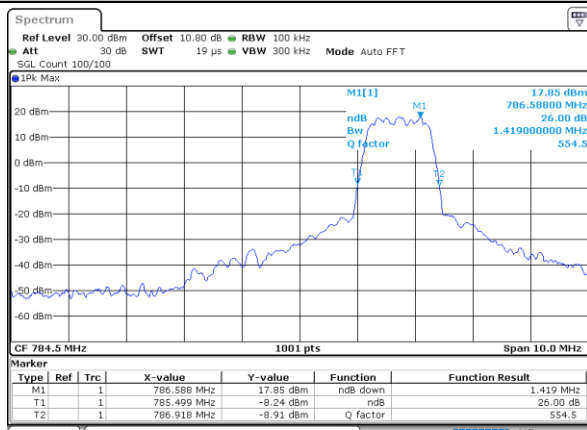
Date: 18.JUL.2020 14:53:04

## Middle Channel / 5MHz / 16QAM



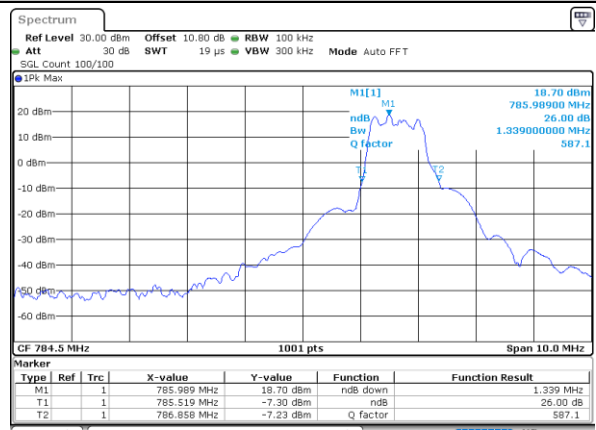
Date: 21.JUL.2020 13:43:13

## Highest Channel / 5MHz / QPSK



Date: 18.JUL.2020 15:37:48

## Highest Channel / 5MHz / 16QAM

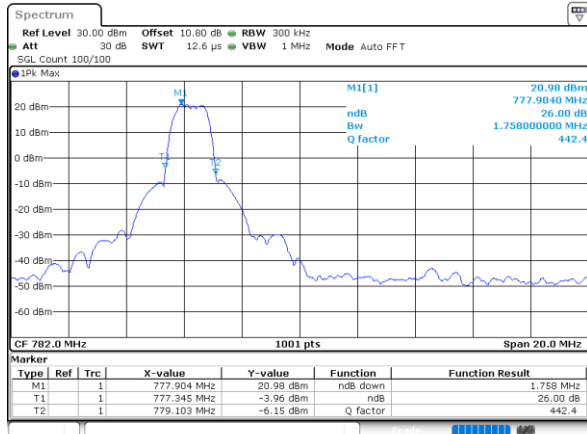


Date: 21.JUL.2020 13:48:58

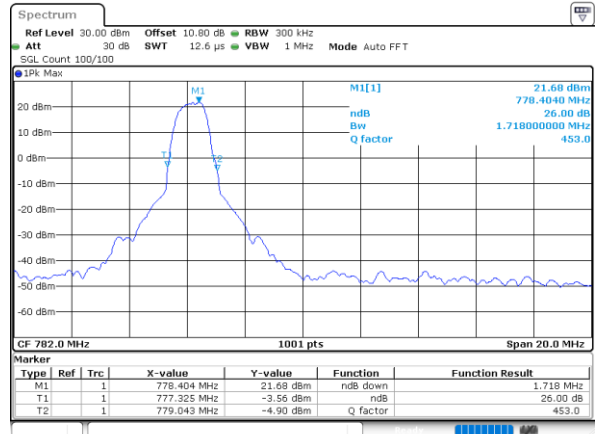


## LTE Band 13

## Middle Channel / 10MHz / QPSK



## Middle Channel / 10MHz / 16QAM



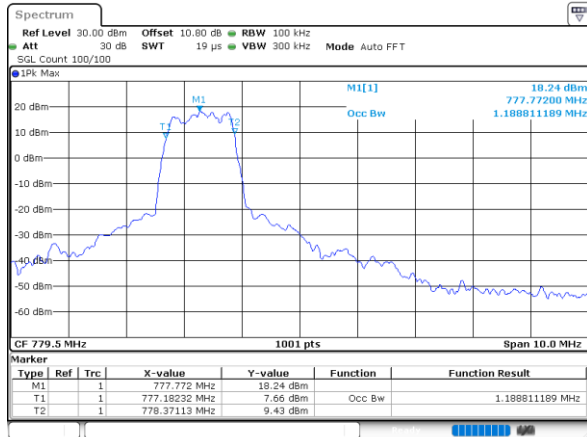
**Occupied Bandwidth**

| Mode       | LTE Band 13 : 99%OBW(MHz) |       |      |       |      |       |       |       |       |       |       |       |
|------------|---------------------------|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| BW         | 1.4MHz                    |       | 3MHz |       | 5MHz |       | 10MHz |       | 15MHz |       | 20MHz |       |
| Mod.       | QPSK                      | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM |
| Lowest CH  | -                         | -     | -    | -     | 1.19 | 1.02  | -     | -     | -     | -     | -     | -     |
| Middle CH  | -                         | -     | -    | -     | 1.18 | 1.04  | 1.42  | 1.30  | -     | -     | -     | -     |
| Highest CH | -                         | -     | -    | -     | 1.19 | 1.04  | -     | -     | -     | -     | -     | -     |

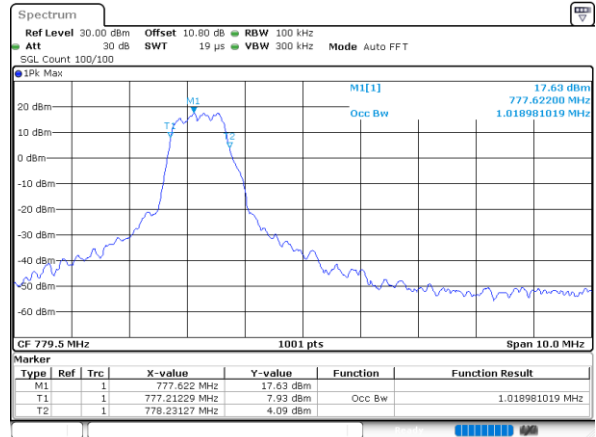


## LTE Band 13

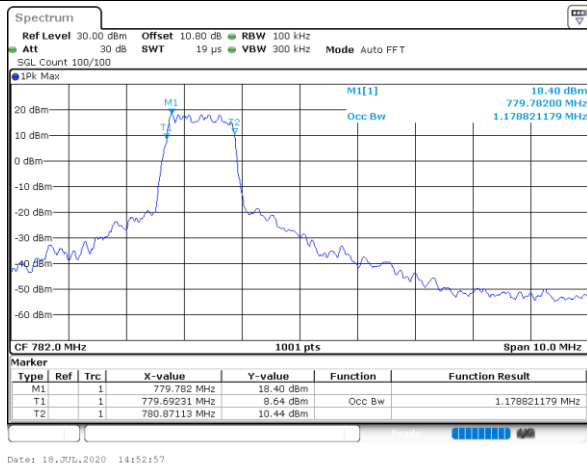
## Lowest Channel / 5MHz / QPSK



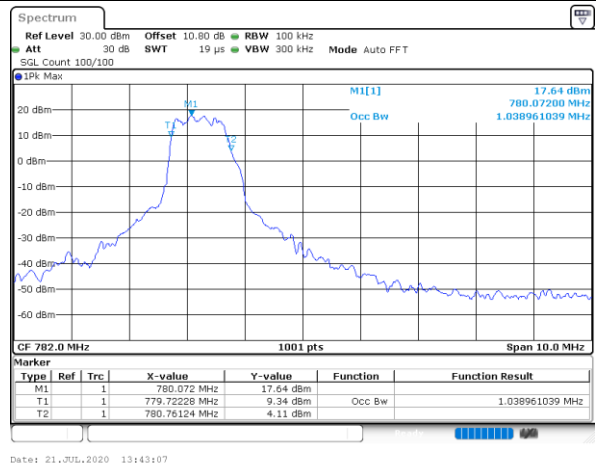
## Lowest Channel / 5MHz / 16QAM



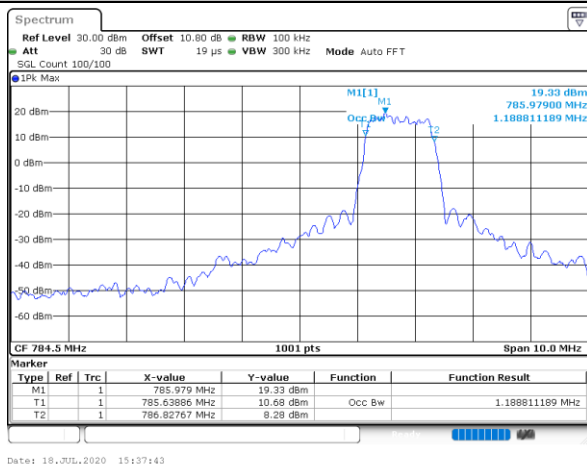
## Middle Channel / 5MHz / QPSK



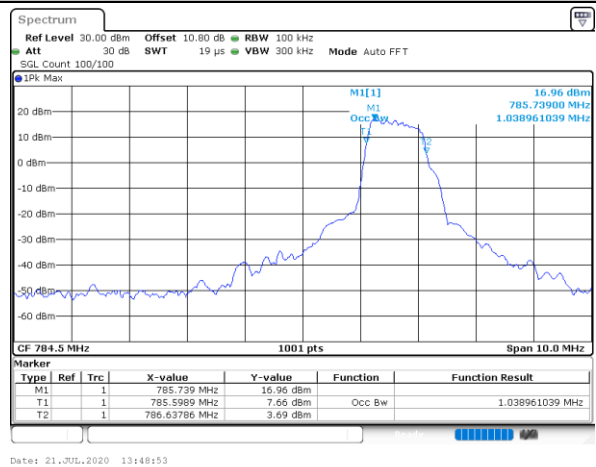
## Middle Channel / 5MHz / 16QAM



## Highest Channel / 5MHz / QPSK



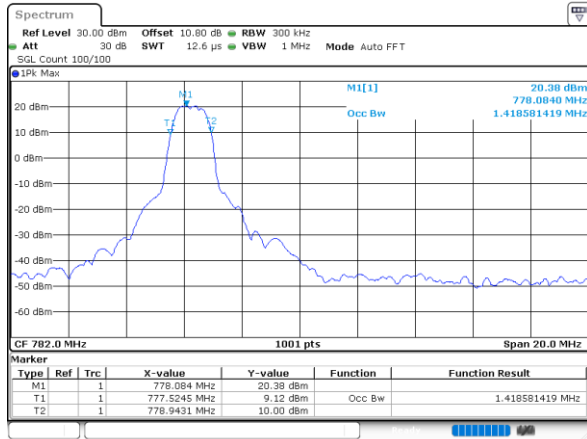
## Highest Channel / 5MHz / 16QAM





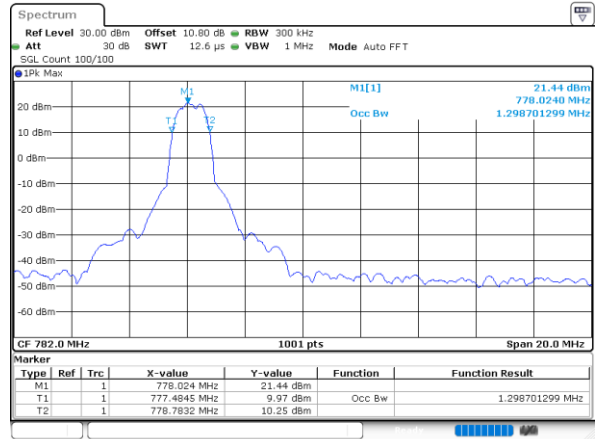
LTE Band 13

Middle Channel / 10MHz / QPSK

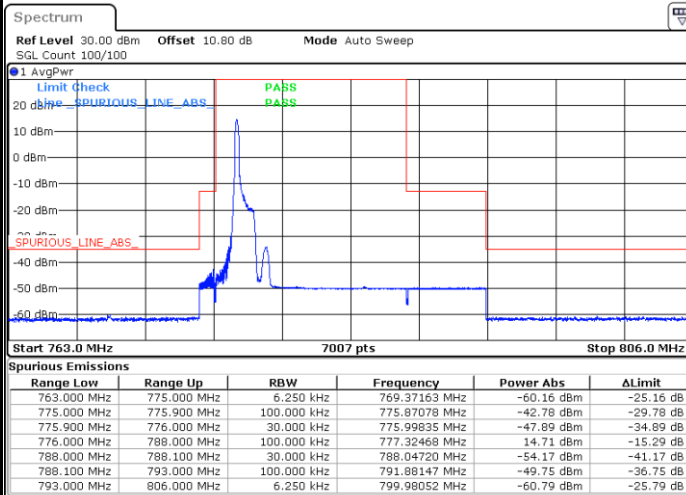
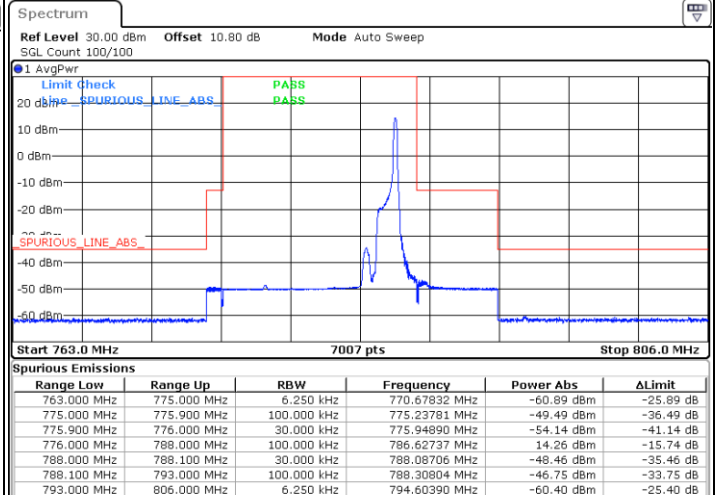
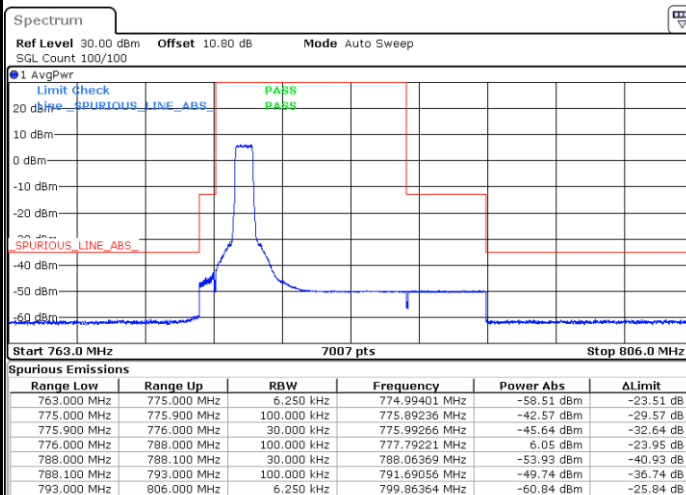
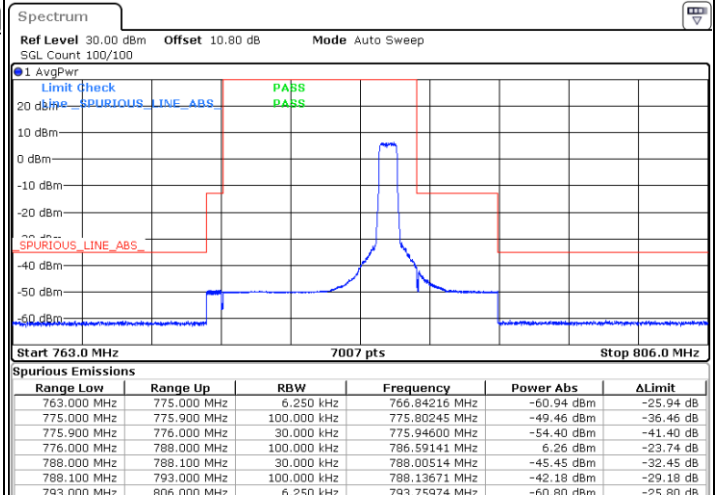


Date: 19.JUL.2020 15:48:47

Middle Channel / 10MHz / 16QAM



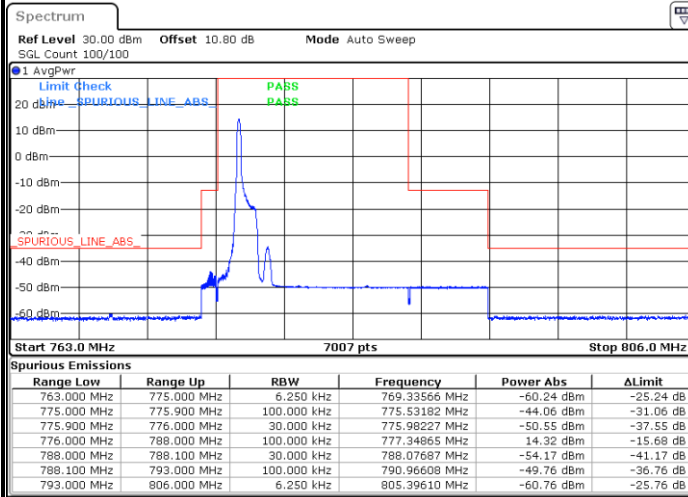
Date: 21.JUL.2020 11:42:24

**Conducted Band Edge****LTE Band 13 / 5MHz / QPSK****Lowest Band Edge / 1 RB****Highest Band Edge / 1 RB****Lowest Band Edge / Full RB****Highest Band Edge / Full RB**

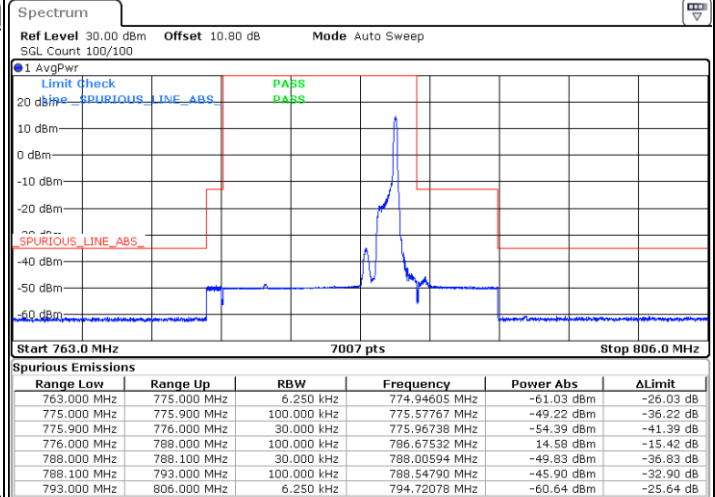


## LTE Band 13 / 5MHz / 16QAM

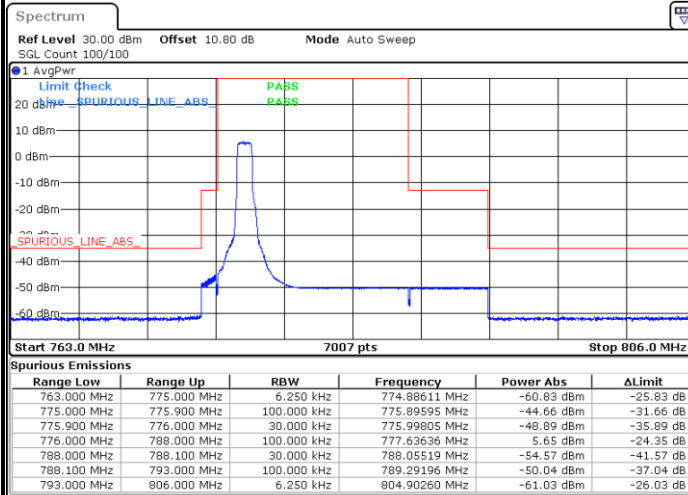
## Lowest Band Edge /1 RB



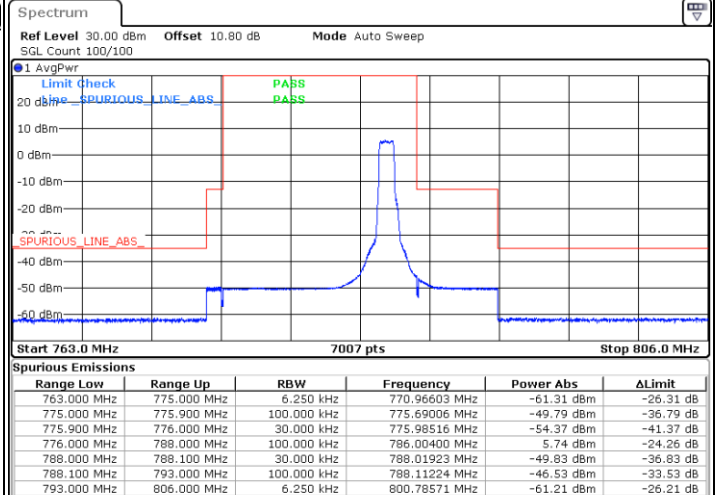
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



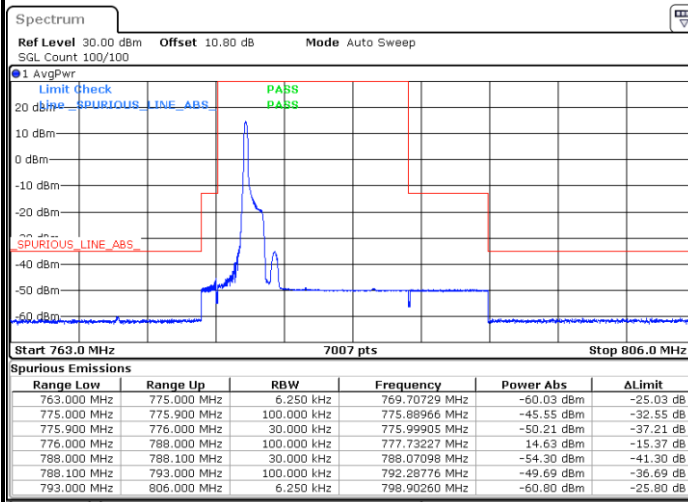
## Highest Band Edge / Full RB





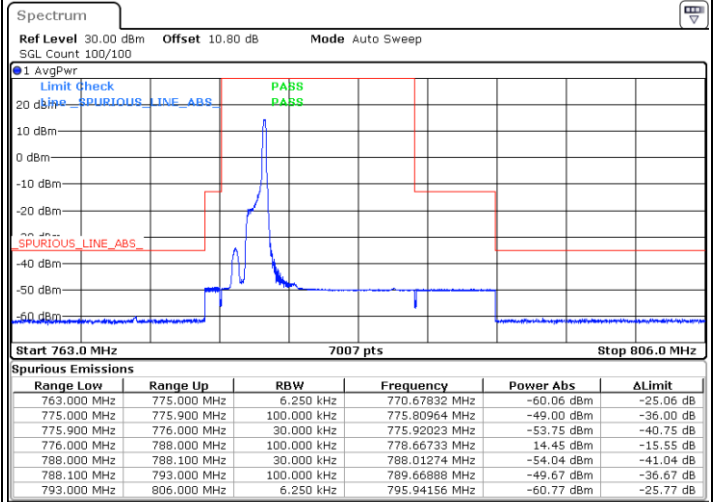
## LTE Band 13 / 10MHz / QPSK

## Lowest Band Edge / 1 RB



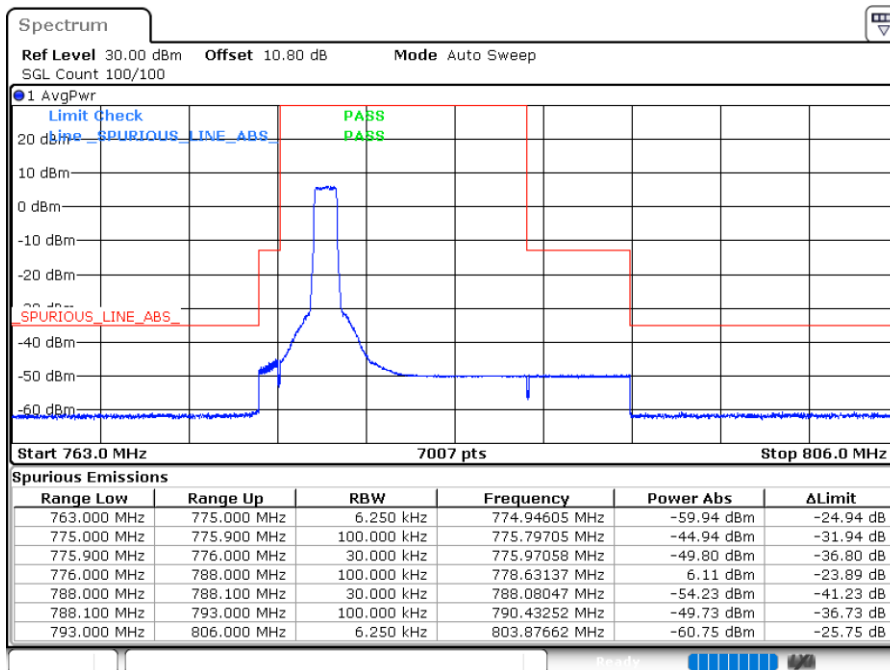
Date: 18.JUL.2020 15:53:04

## Highest Band Edge / 1 RB



Date: 18.JUL.2020 15:56:41

## Band Edge / Full RB

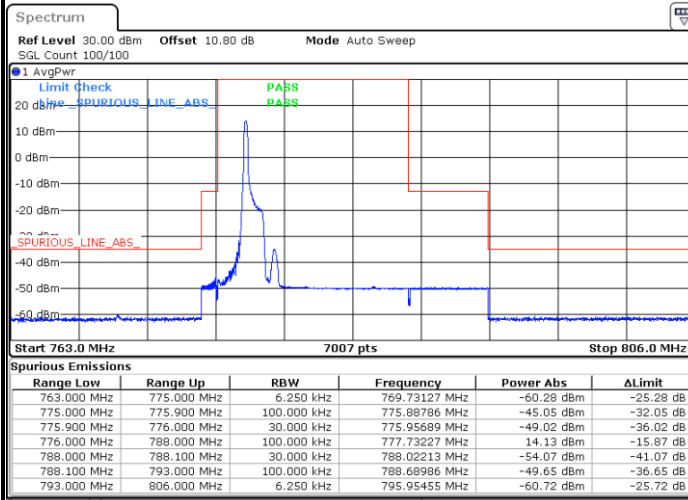


Date: 18.JUL.2020 15:49:57



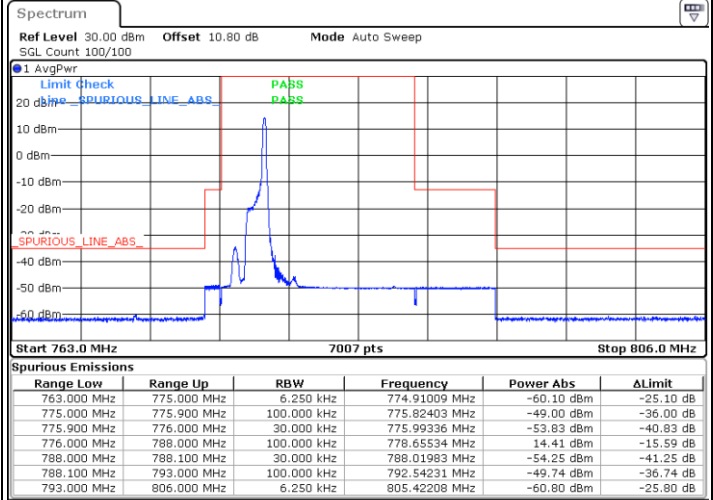
## LTE Band 13 / 10MHz / 16QAM

## Lowest Band Edge / 1 RB



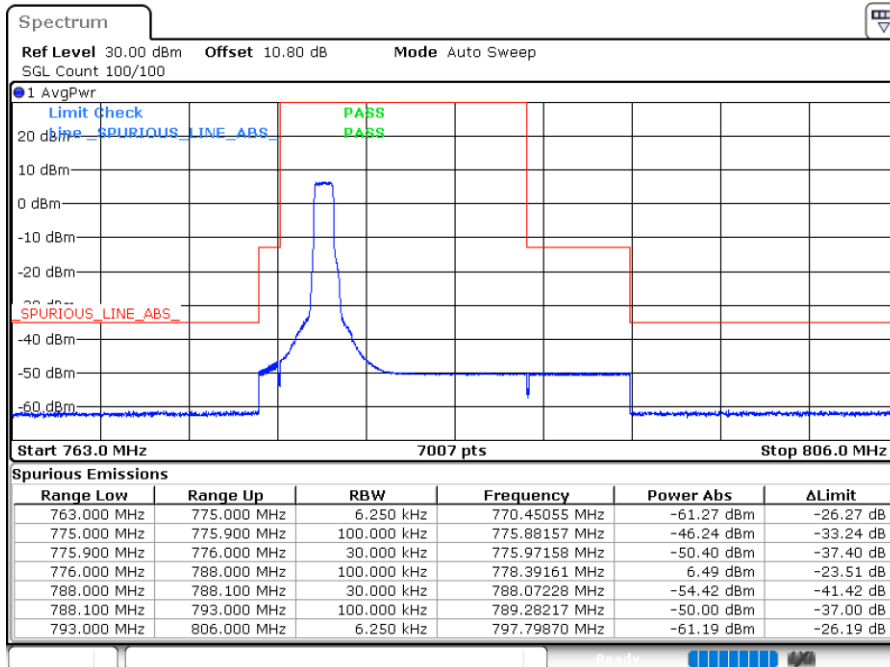
Date: 18.JUL.2020 15:59:02

## Highest Band Edge / 1 RB



Date: 18.JUL.2020 16:02:29

## Band Edge / Full RB



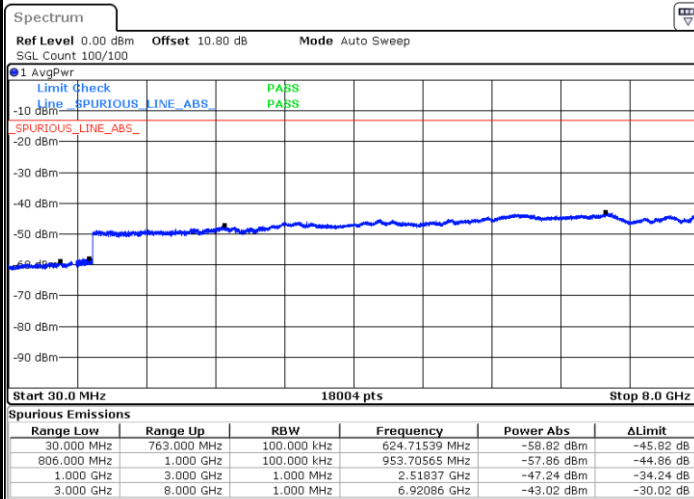
Date: 21.JUL.2020 11:43:33



## Conducted Spurious Emission

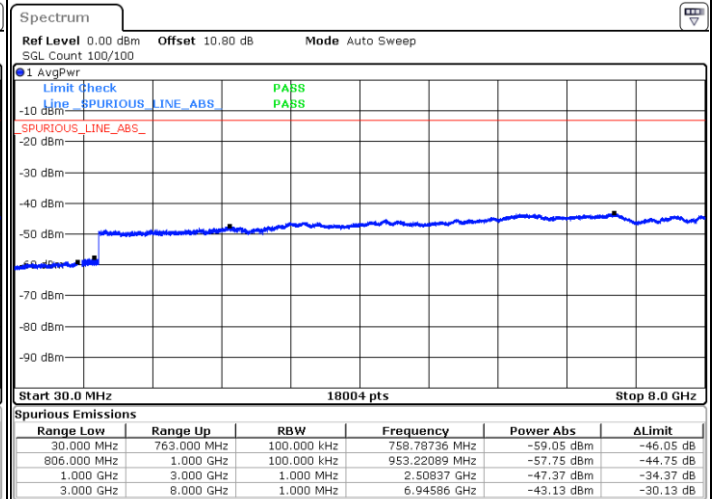
### LTE Band 13 / 5MHz

#### Lowest Channel / QPSK



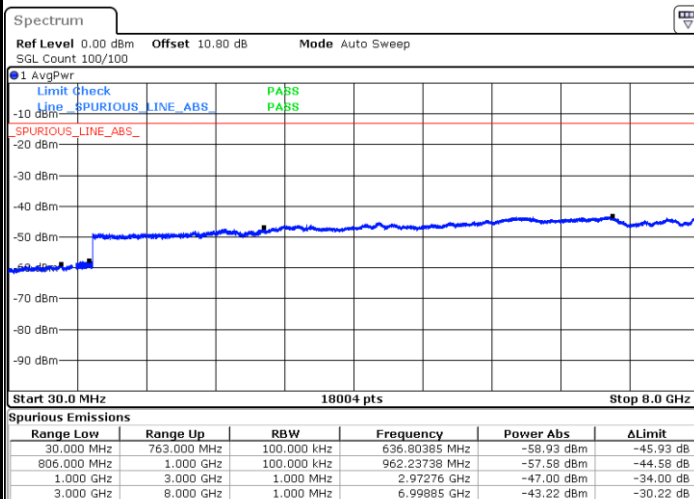
Date: 18.JUL.2020 15:08:26

#### Lowest Channel / 16QAM



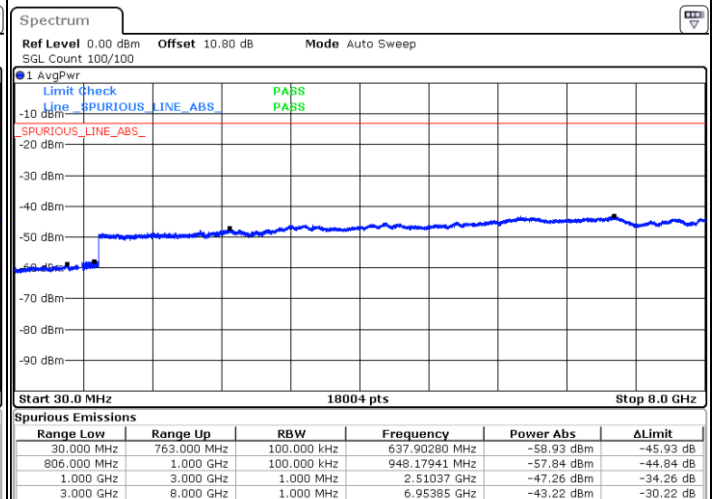
Date: 18.JUL.2020 15:09:00

#### Middle Channel / QPSK



Date: 18.JUL.2020 14:53:49

#### Middle Channel / 16QAM

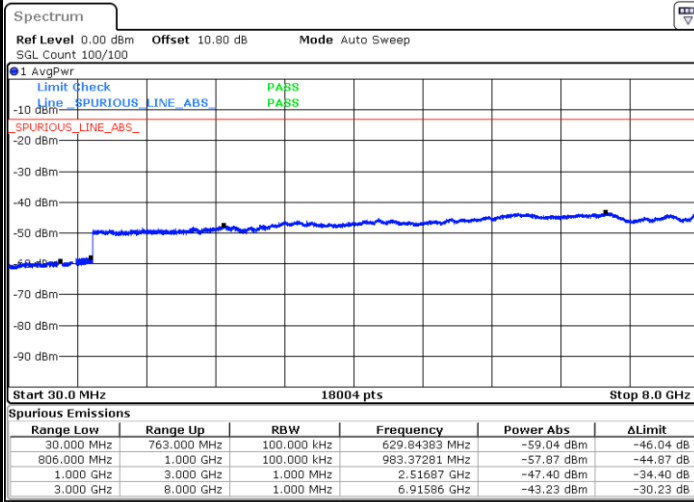


Date: 18.JUL.2020 14:54:56



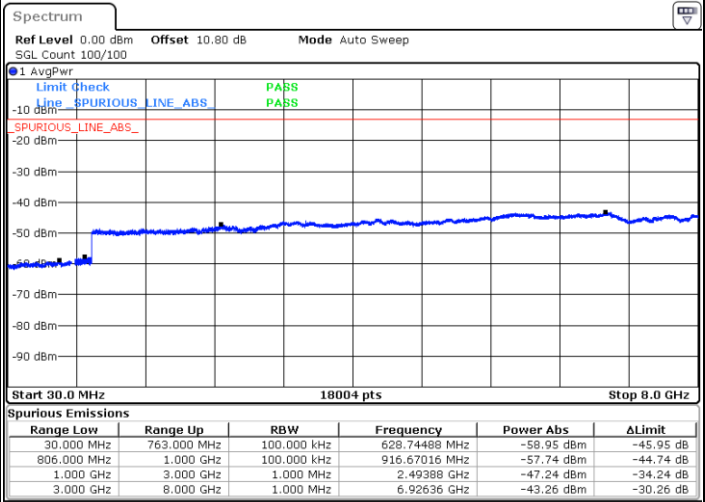
## LTE Band 13 / 5MHz

## Highest Channel / QPSK



Date: 18.JUL.2020 15:40:43

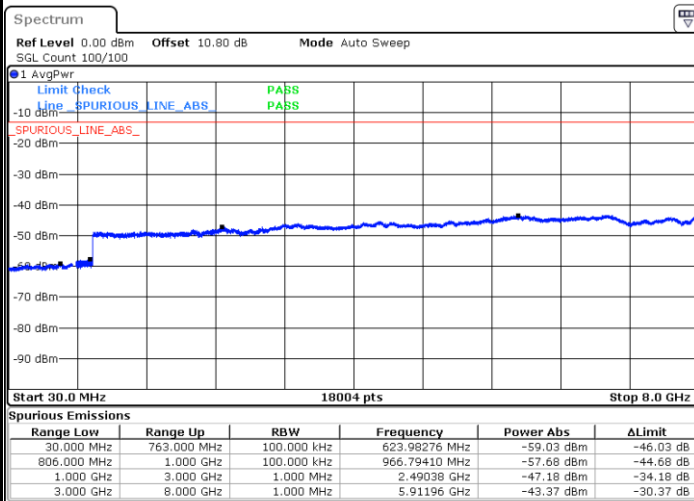
## Highest Channel / 16QAM



Date: 18.JUL.2020 15:44:22

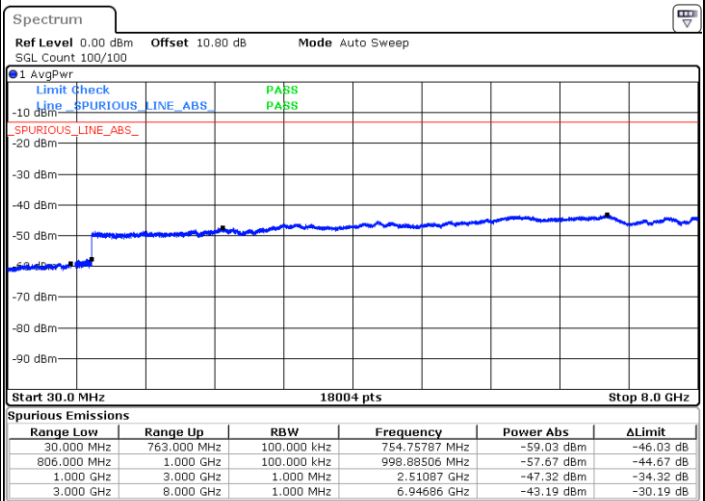
## LTE Band 13 / 10MHz

## Middle Channel / QPSK



Date: 18.JUL.2020 15:51:44

## Middle Channel / 16QAM



Date: 18.JUL.2020 15:57:51

## Frequency Stability

| Test Conditions  |                   | LTE Band 13 (QPSK) / Middle Channel | Limit   |
|------------------|-------------------|-------------------------------------|---------|
| Temperature (°C) | Voltage (Volt)    | BW 10MHz                            | Note 2. |
|                  |                   | Deviation (ppm)                     | Result  |
| 50               | Normal Voltage    | 0.0008                              | PASS    |
| 40               | Normal Voltage    | 0.0031                              |         |
| 30               | Normal Voltage    | 0.0020                              |         |
| 20(Ref.)         | Normal Voltage    | 0.0000                              |         |
| 10               | Normal Voltage    | 0.0130                              |         |
| 0                | Normal Voltage    | 0.0137                              |         |
| -10              | Normal Voltage    | 0.0125                              |         |
| -20              | Normal Voltage    | 0.0035                              |         |
| -30              | Normal Voltage    | 0.0146                              |         |
| 20               | Maximum Voltage   | 0.0027                              |         |
| 20               | Normal Voltage    | 0.0000                              |         |
| 20               | Battery End Point | 0.0125                              |         |

**Note:**

1. Normal Voltage =3.6 V. ; Battery End Point (BEP) =3.3 V. ; Maximum Voltage =3.7 V.
2. The frequency fundamental emissions stay within the authorized frequency block.



## LTE Band 17

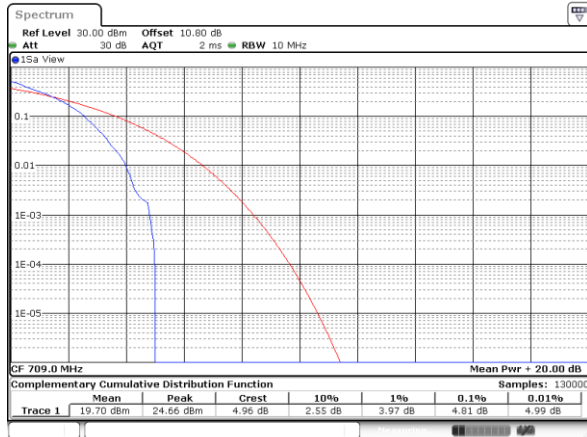
### Peak-to-Average Ratio

| Mode       | LTE Band 17 / 10MHz |         |       |         |             |
|------------|---------------------|---------|-------|---------|-------------|
| Mod.       | QPSK                |         | 16QAM |         | Limit: 13dB |
| RB Size    | 1RB                 | Full RB | 1RB   | Full RB | Result      |
| Lowest CH  | 4.81                | 8.52    | 8.35  | 5.88    | PASS        |
| Middle CH  | 4.49                | 5.51    | 8.38  | 8.43    |             |
| Highest CH | 4.14                | 6.32    | 7.39  | 8.72    |             |

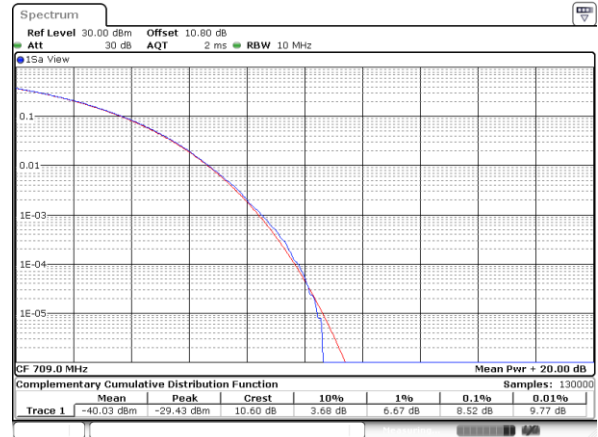


## LTE Band 17 / 10MHz / QPSK

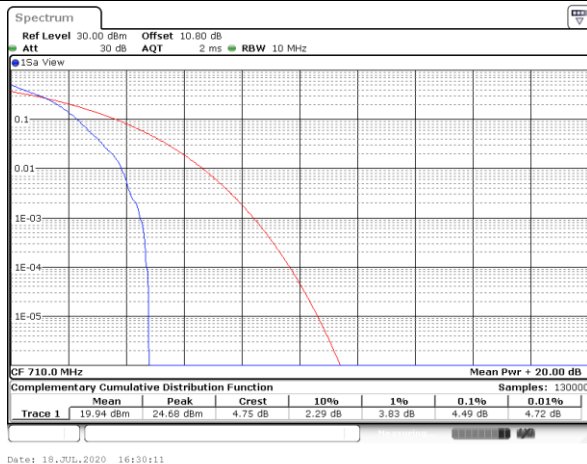
## Lowest Channel / 1RB



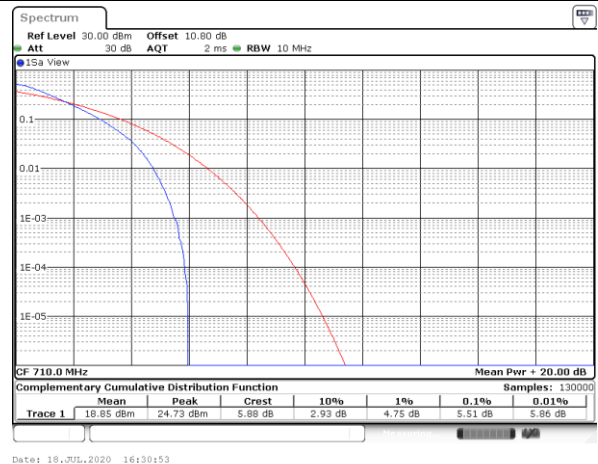
## Lowest Channel / Full RB



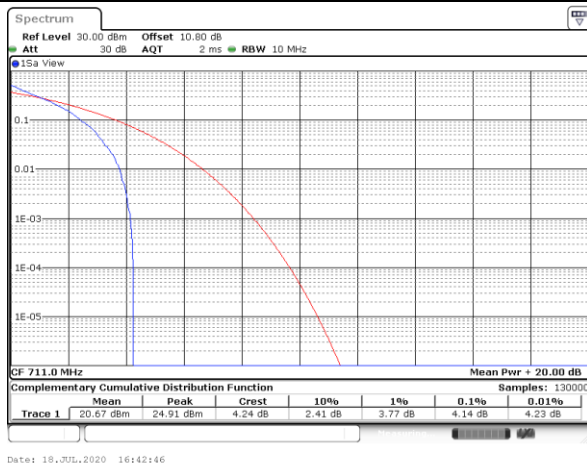
## Middle Channel/ 1RB



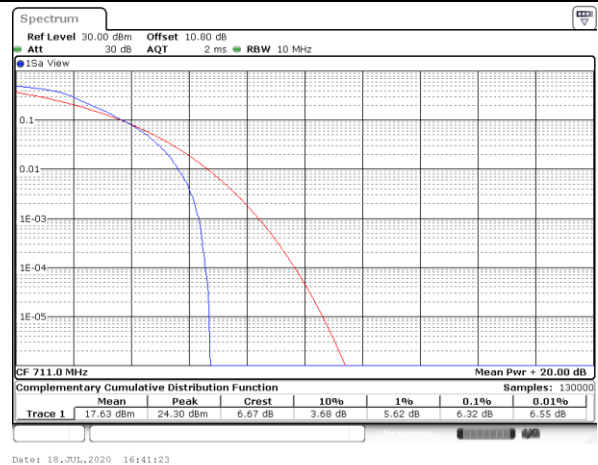
## Middle Channel / Full RB



## Highest Channel/ 1RB



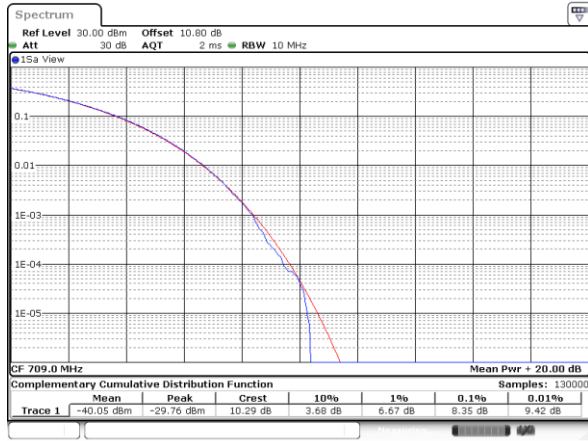
## Highest Channel / Full RB



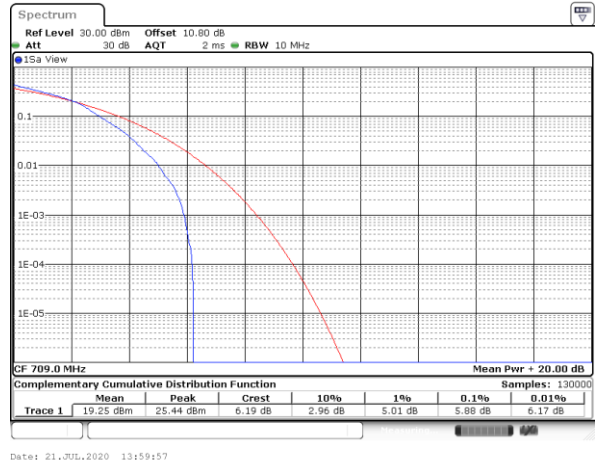


## LTE Band 17 / 10MHz / 16QAM

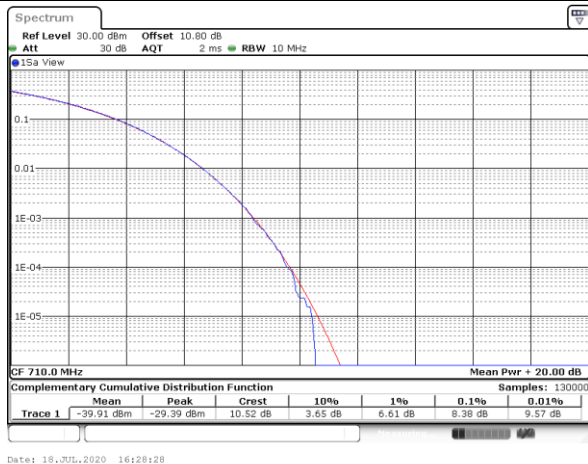
## Lowest Channel / 1RB



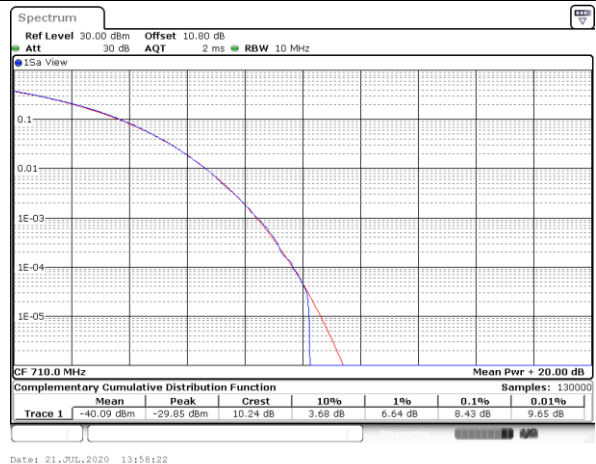
## Lowest Channel / Full RB



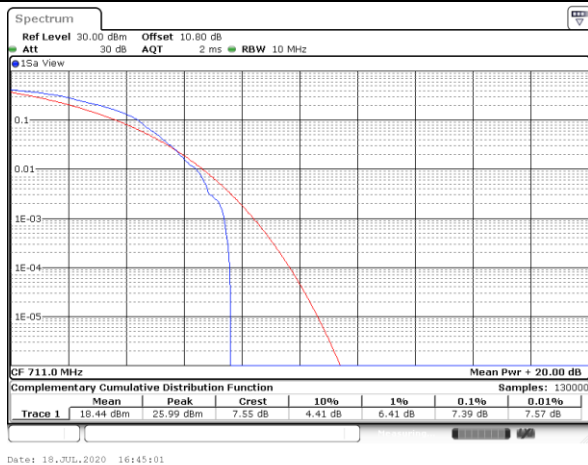
## Middle Channel/ 1RB



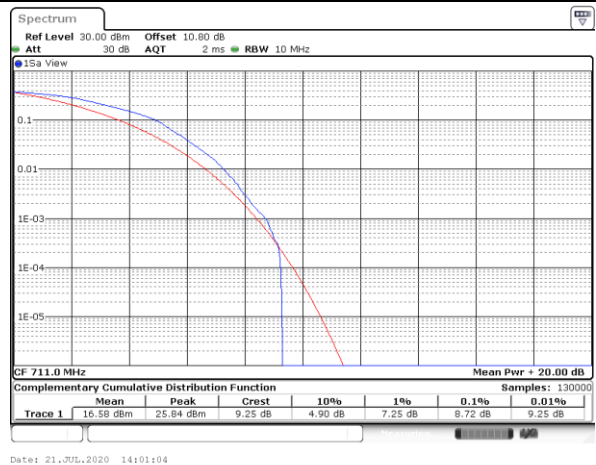
## Middle Channel / Full RB



## Highest Channel/ 1RB



## Highest Channel / Full RB



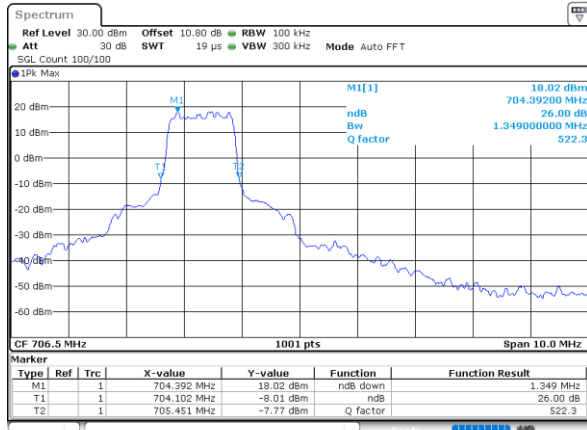
**26dB Bandwidth**

| Mode       | LTE Band 17 : 26dB BW(MHz) |       |      |       |      |       |       |       |       |       |       |       |
|------------|----------------------------|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| BW         | 1.4MHz                     |       | 3MHz |       | 5MHz |       | 10MHz |       | 15MHz |       | 20MHz |       |
| Mod.       | QPSK                       | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM |
| Lowest CH  | -                          | -     | -    | -     | 1.35 | 1.33  | 1.76  | 1.70  | -     | -     | -     | -     |
| Middle CH  | -                          | -     | -    | -     | 1.33 | 1.35  | 1.80  | 1.74  | -     | -     | -     | -     |
| Highest CH | -                          | -     | -    | -     | 1.40 | 1.33  | 1.80  | 1.76  | -     | -     | -     | -     |

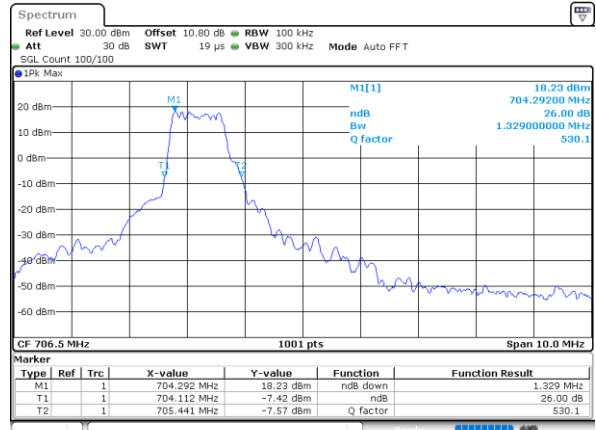


## LTE Band 17

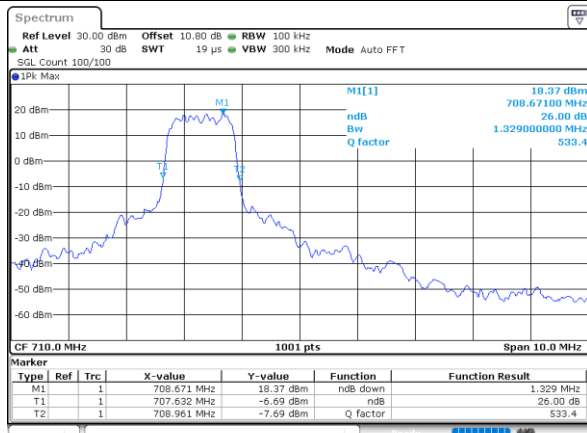
## Lowest Channel / 5MHz / QPSK



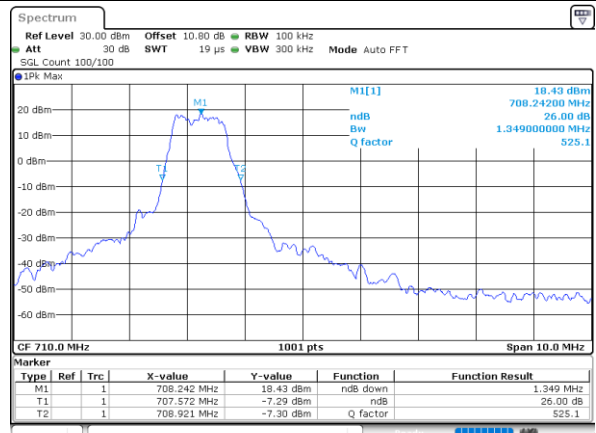
## Lowest Channel / 5MHz / 16QAM



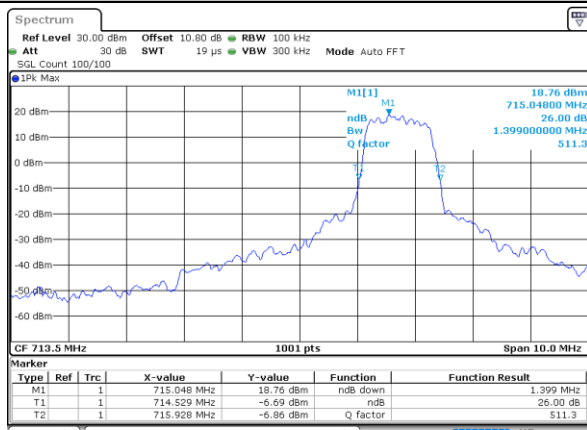
## Middle Channel / 5MHz / QPSK



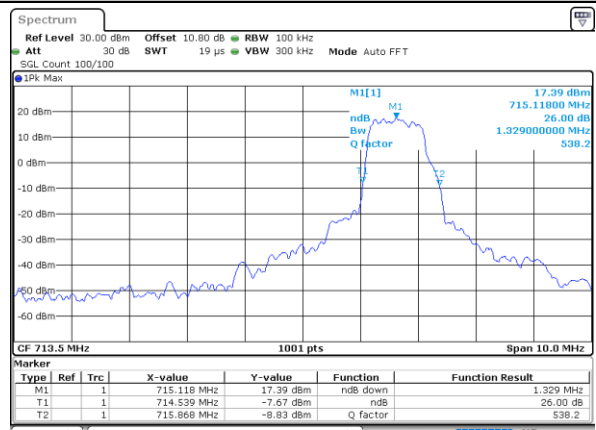
## Middle Channel / 5MHz / 16QAM



## Highest Channel / 5MHz / QPSK



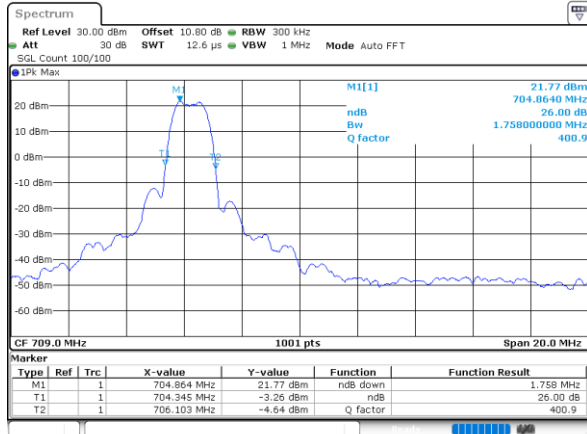
## Highest Channel / 5MHz / 16QAM



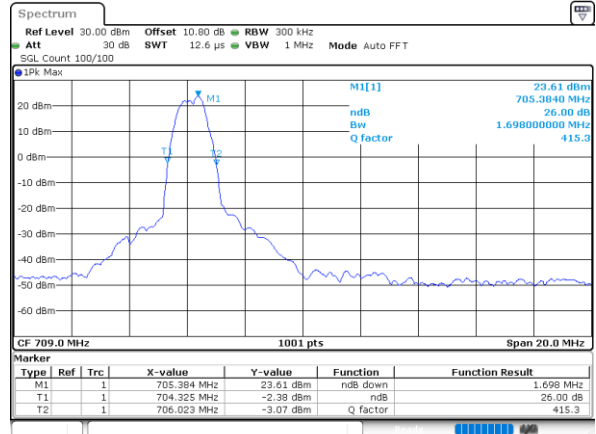


## LTE Band 17

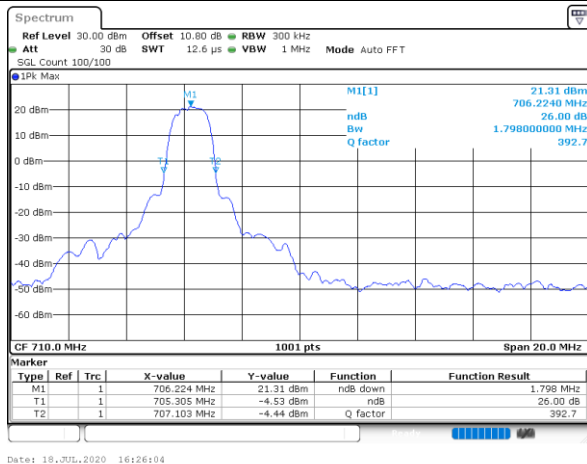
## Lowest Channel / 10MHz / QPSK



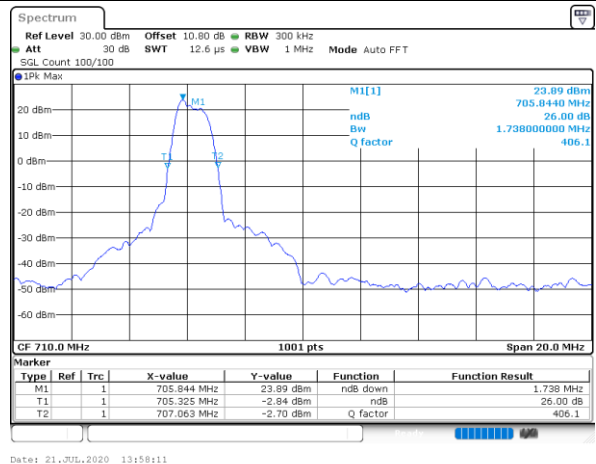
## Lowest Channel / 10MHz / 16QAM



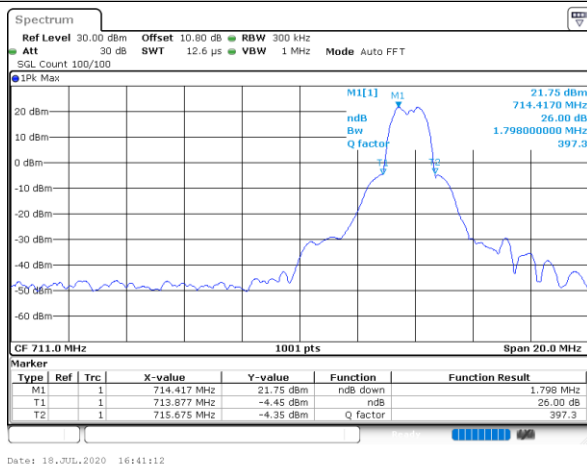
## Middle Channel / 10MHz / QPSK



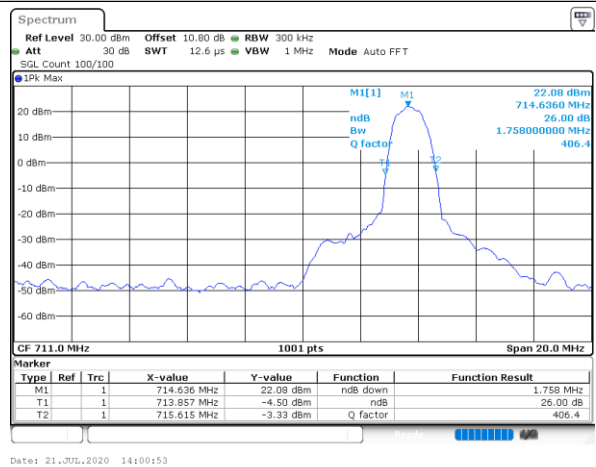
## Middle Channel / 10MHz / 16QAM



## Highest Channel / 10MHz / QPSK



## Highest Channel / 10MHz / 16QAM



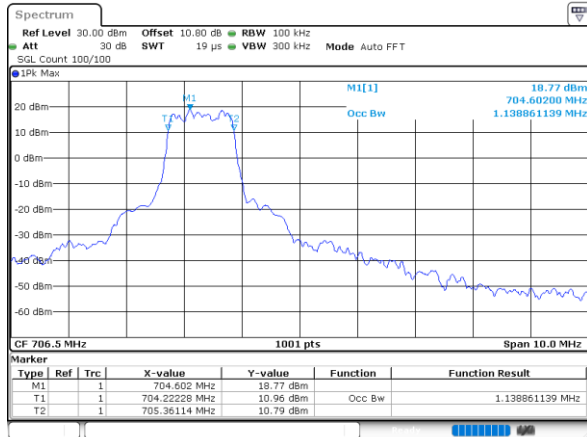
**Occupied Bandwidth**

| Mode       | LTE Band 17 : 99%OBW(MHz) |       |      |       |      |       |       |       |       |       |       |       |
|------------|---------------------------|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| BW         | 1.4MHz                    |       | 3MHz |       | 5MHz |       | 10MHz |       | 15MHz |       | 20MHz |       |
| Mod.       | QPSK                      | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM |
| Lowest CH  | -                         | -     | -    | -     | 1.14 | 1.02  | 1.48  | 1.32  | -     | -     | -     | -     |
| Middle CH  | -                         | -     | -    | -     | 1.22 | 1.13  | 1.50  | 1.28  | -     | -     | -     | -     |
| Highest CH | -                         | -     | -    | -     | 1.18 | 1.06  | 1.46  | 1.32  | -     | -     | -     | -     |

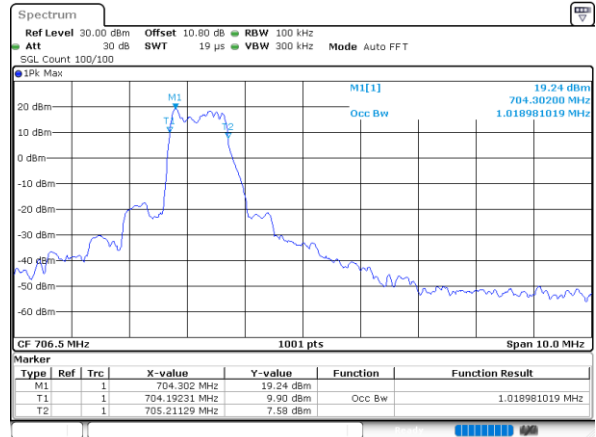


## LTE Band 17

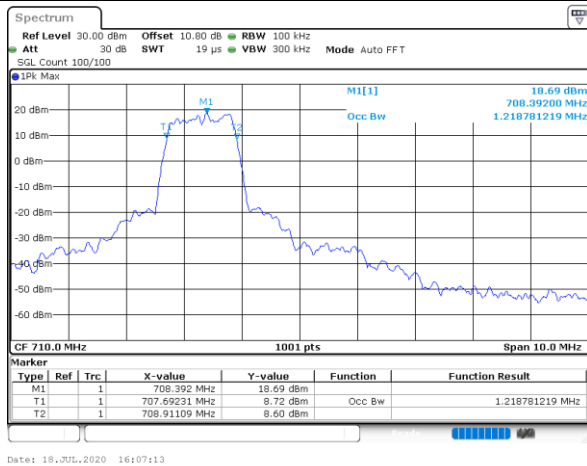
## Lowest Channel / 5MHz / QPSK



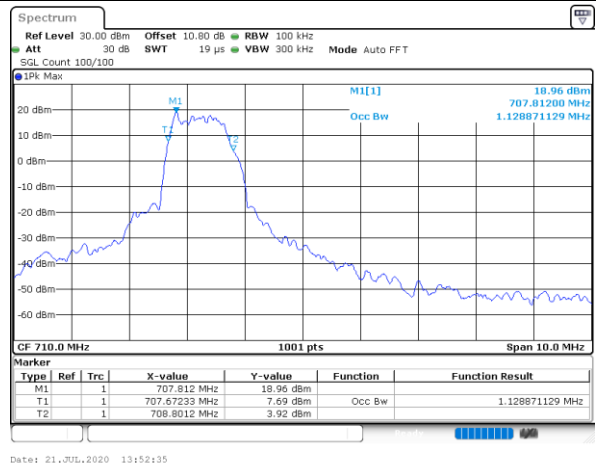
## Lowest Channel / 5MHz / 16QAM



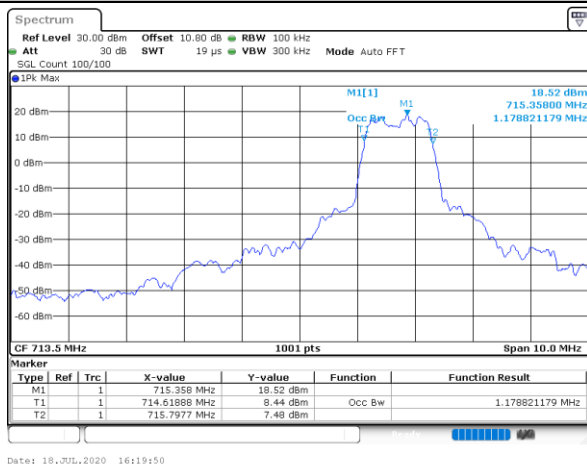
## Middle Channel / 5MHz / QPSK



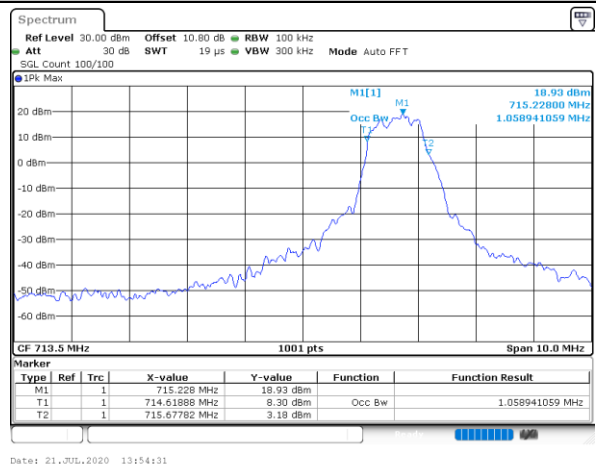
## Middle Channel / 5MHz / 16QAM



## Highest Channel / 5MHz / QPSK



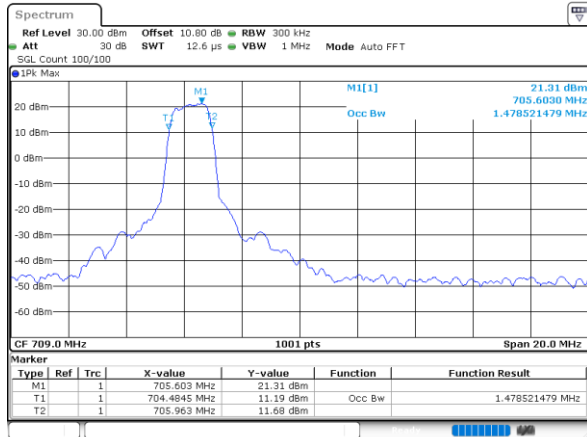
## Highest Channel / 5MHz / 16QAM



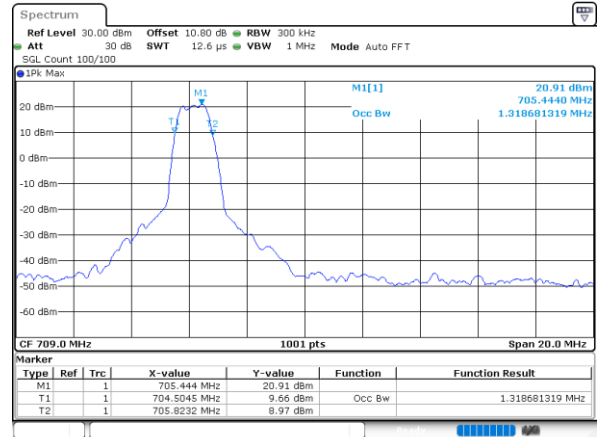


## LTE Band 17

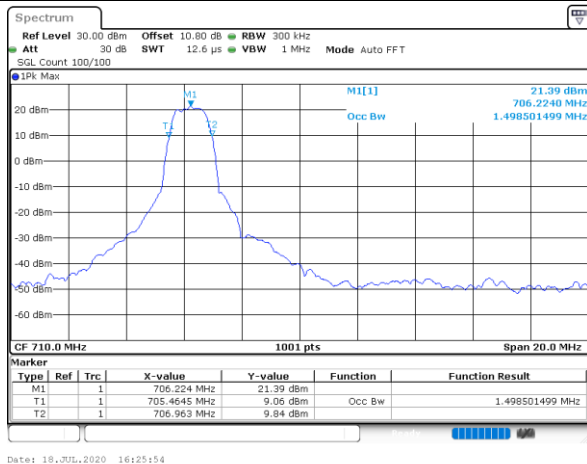
## Lowest Channel / 10MHz / QPSK



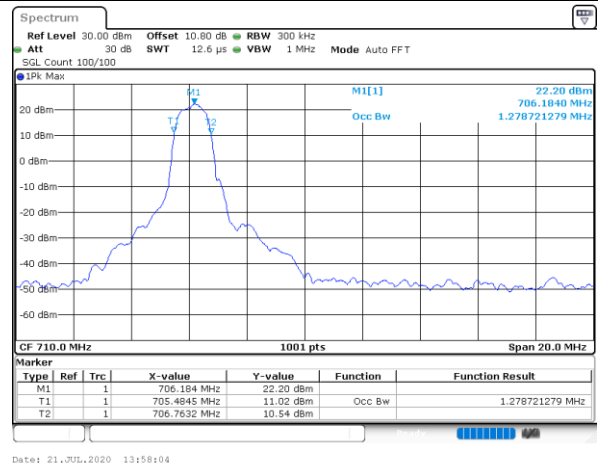
## Lowest Channel / 10MHz / 16QAM



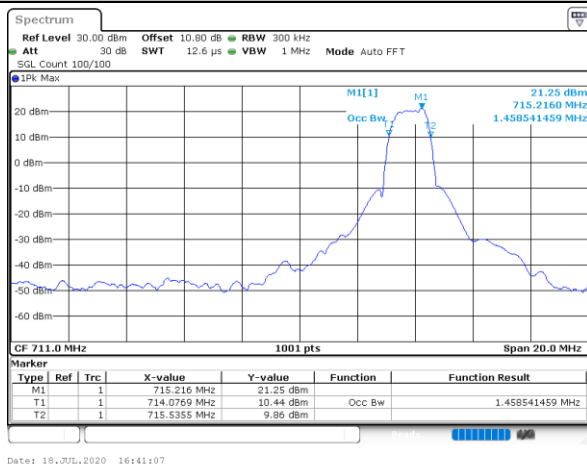
## Middle Channel / 10MHz / QPSK



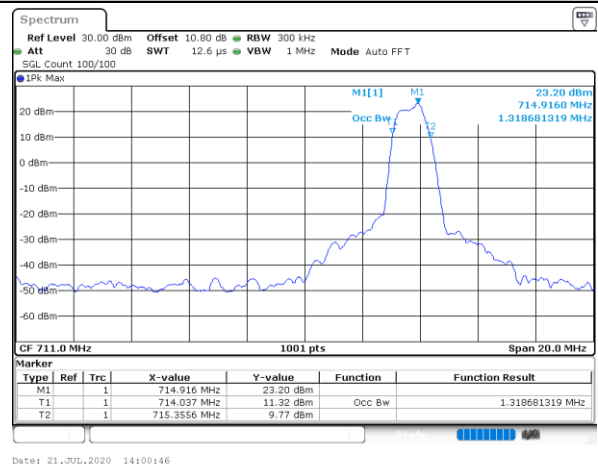
## Middle Channel / 10MHz / 16QAM

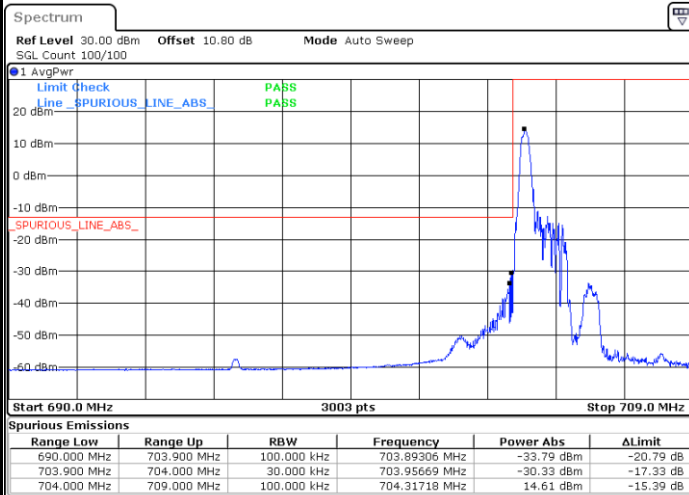
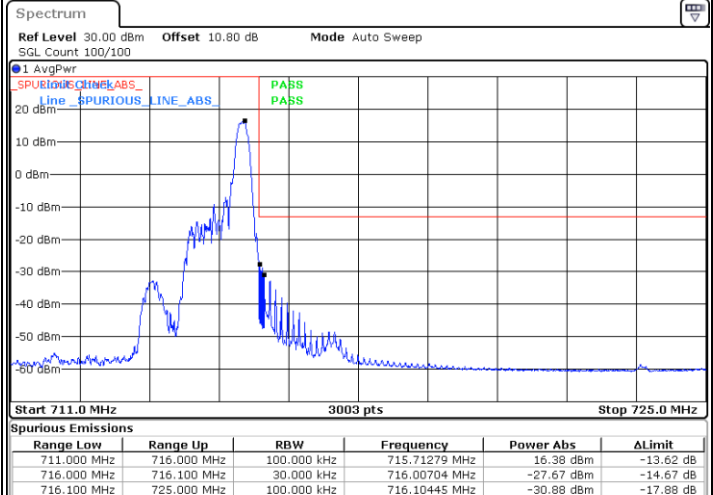
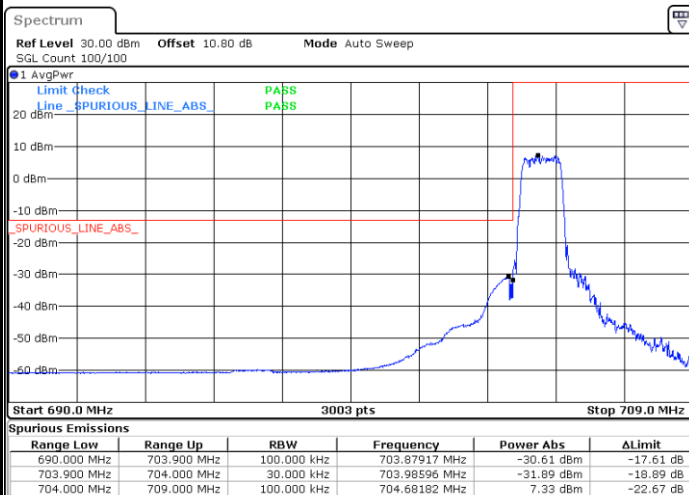


## Highest Channel / 10MHz / QPSK



## Highest Channel / 10MHz / 16QAM



**Conducted Band Edge****LTE Band 17 / 5MHz / QPSK****Lowest Band Edge / 1 RB****Highest Band Edge / 1 RB****Lowest Band Edge / Full RB****Highest Band Edge / Full RB**