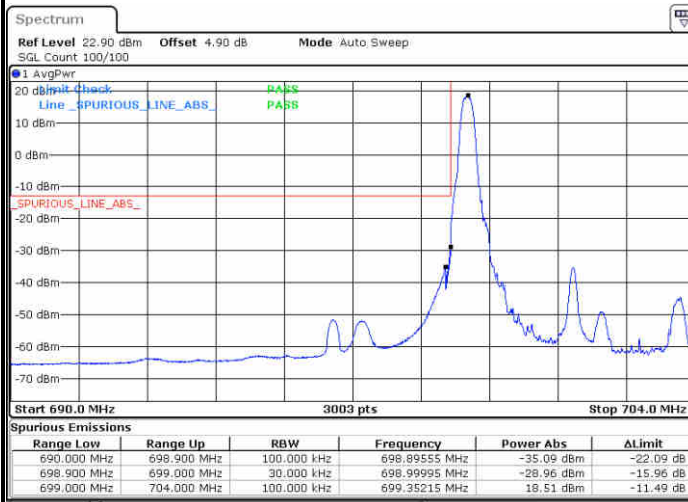


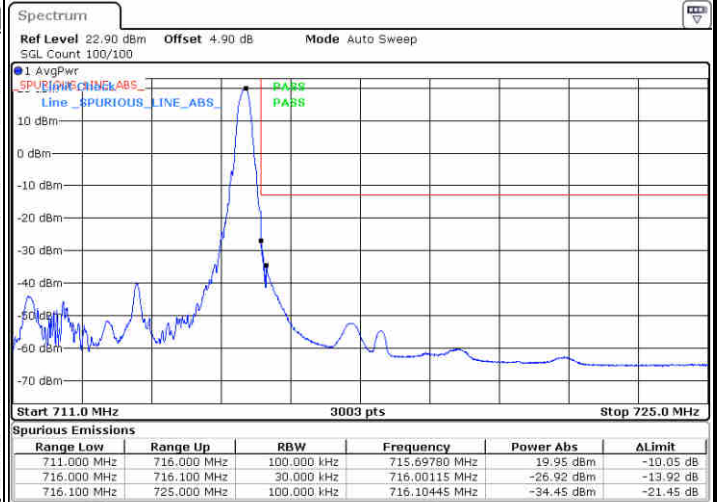


## LTE Band 12 / 5MHz / 64QAM

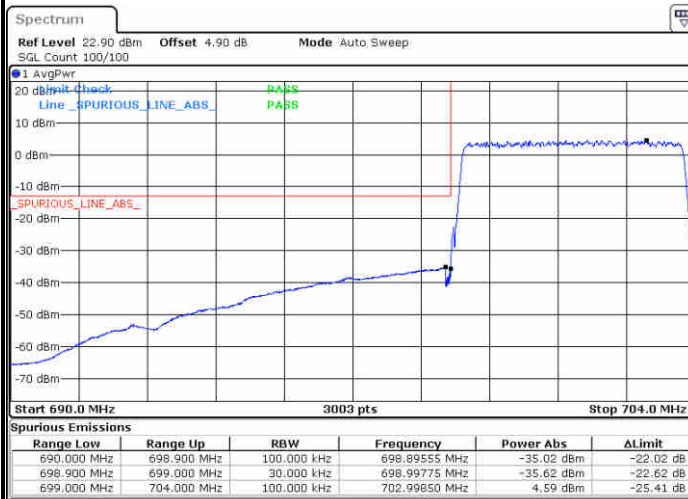
## Lowest Band Edge / 1RB



## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



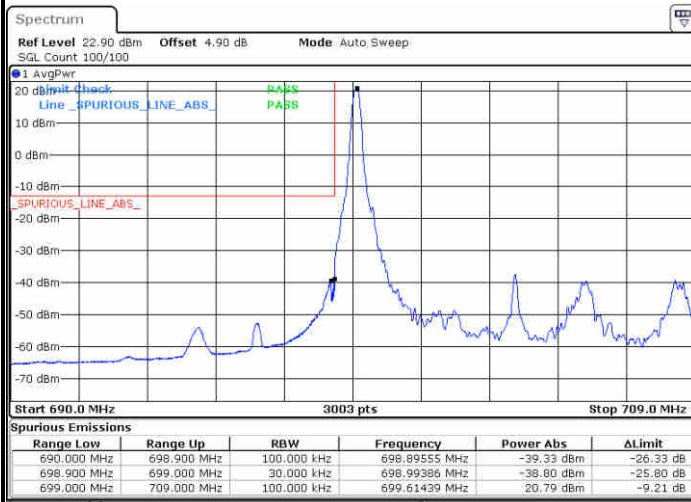
## Highest Band Edge / Full RB



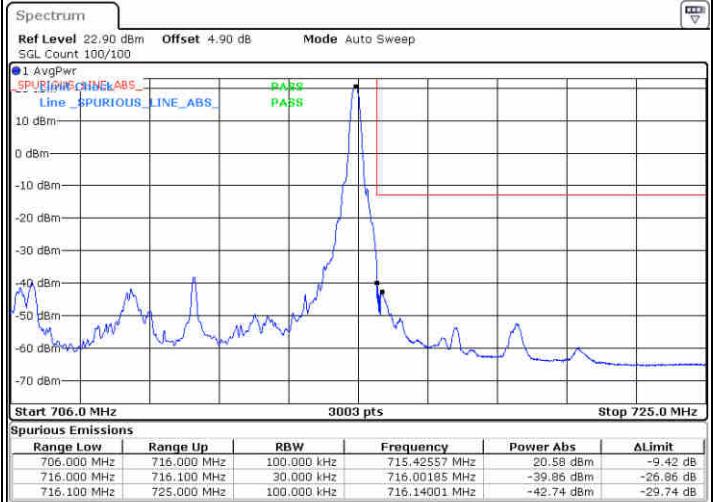


## LTE Band 12 / 10MHz / QPSK

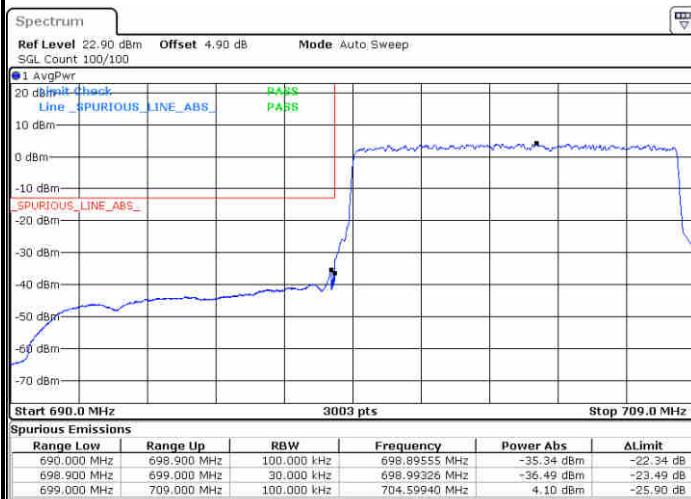
## Lowest Band Edge / 1 RB



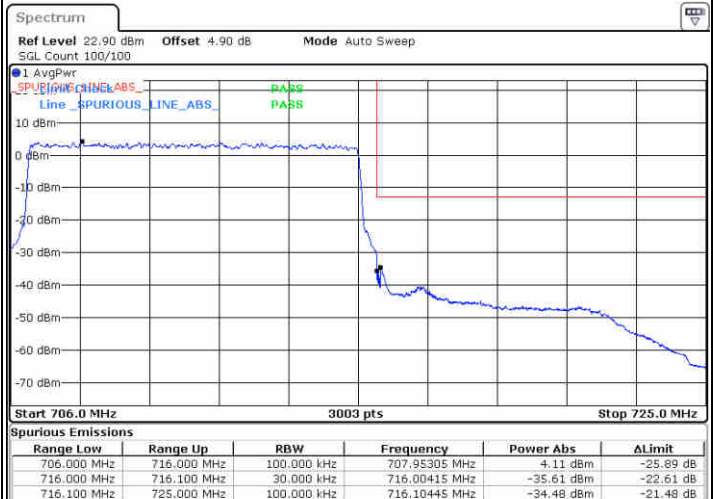
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



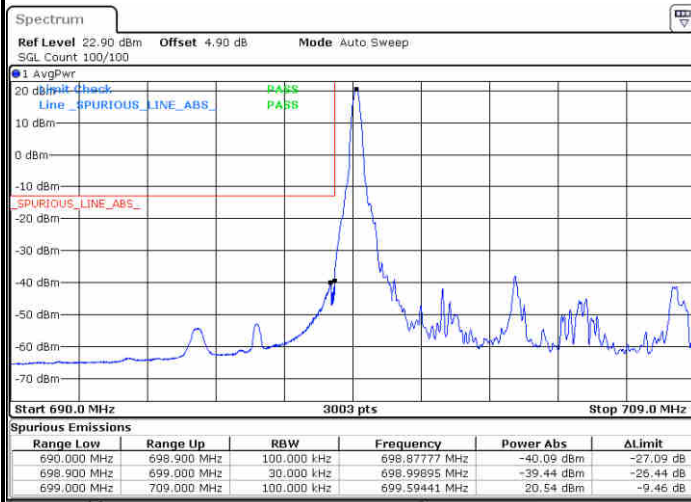
## Highest Band Edge / Full RB



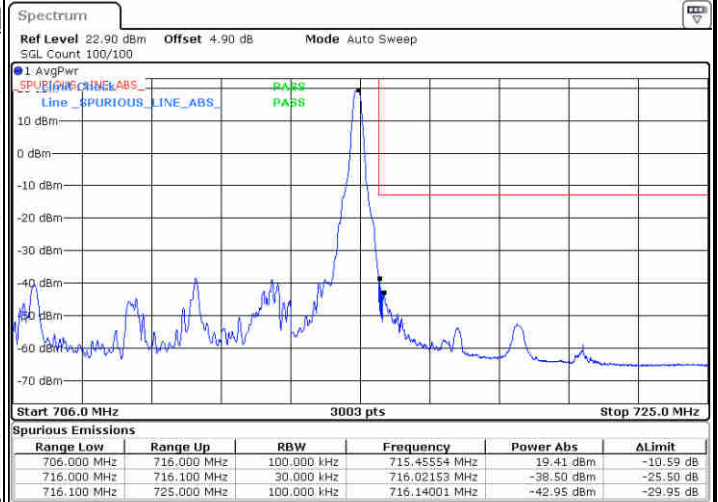


## LTE Band 12 / 10MHz / 16QAM

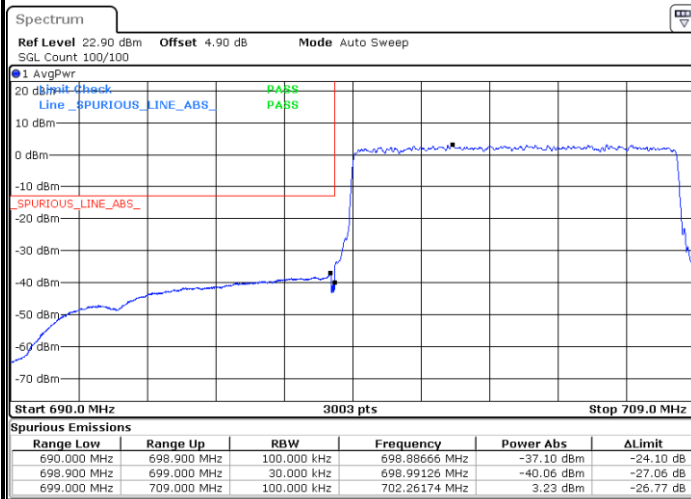
## Lowest Band Edge / 1 RB



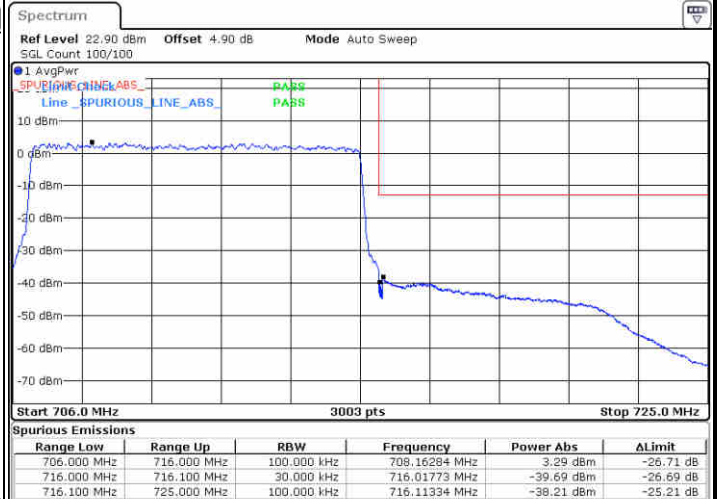
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



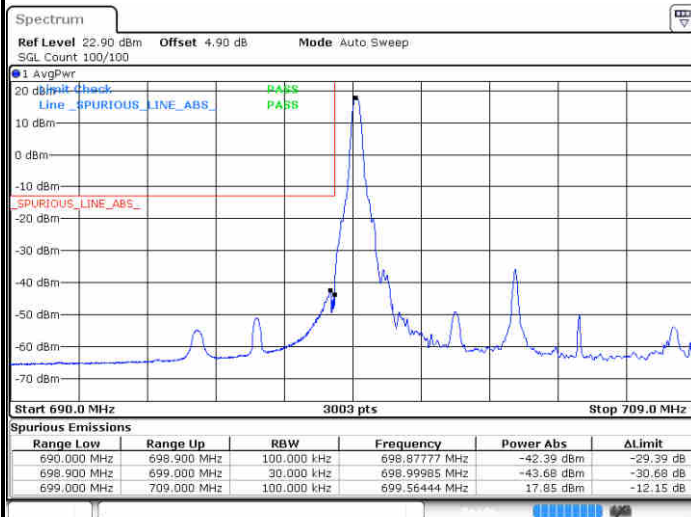
## Highest Band Edge / Full RB



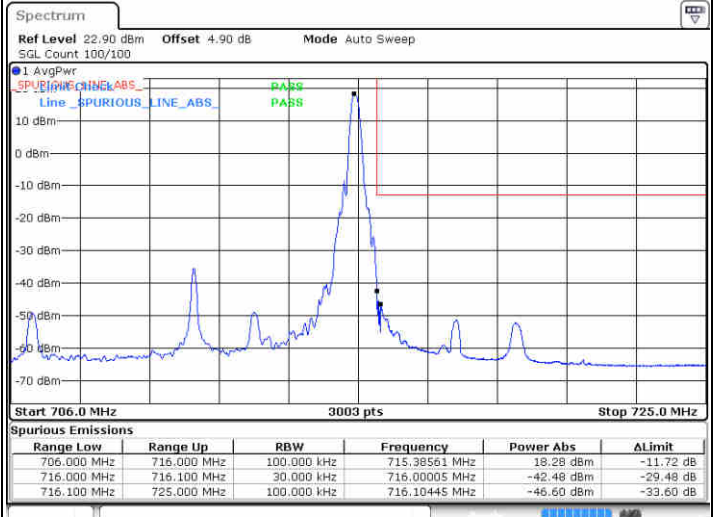


## LTE Band 12 / 10MHz / 64QAM

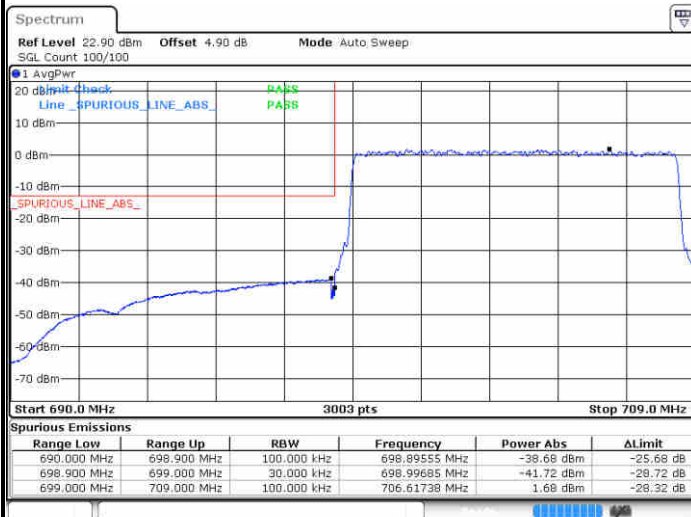
## Lowest Band Edge / 1 RB



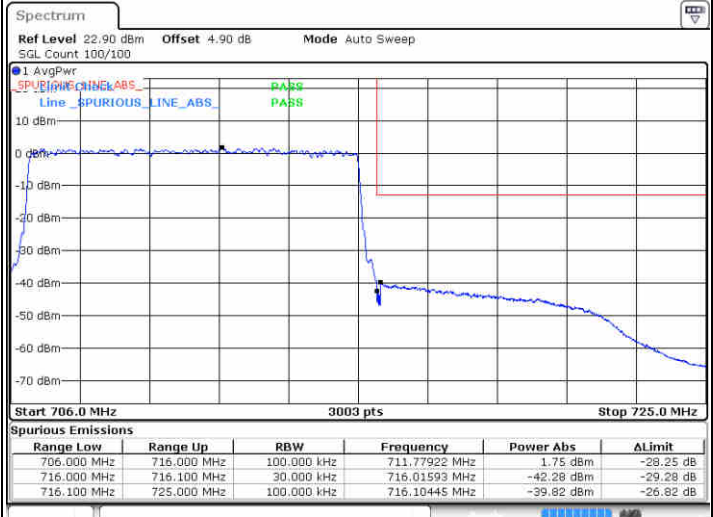
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



## Highest Band Edge / Full RB

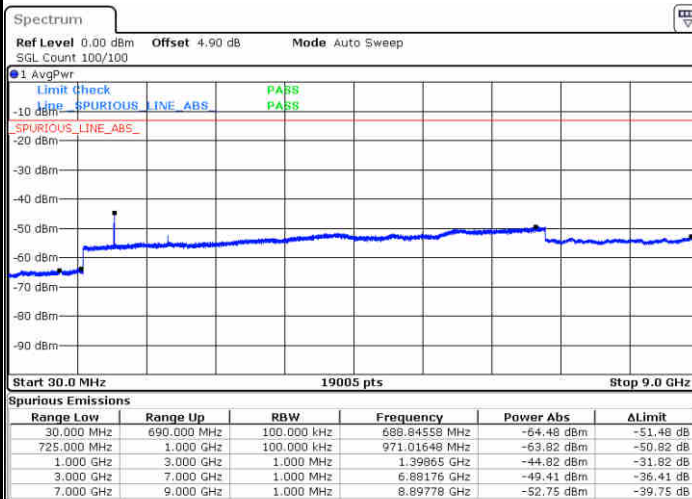




## Conducted Spurious Emission

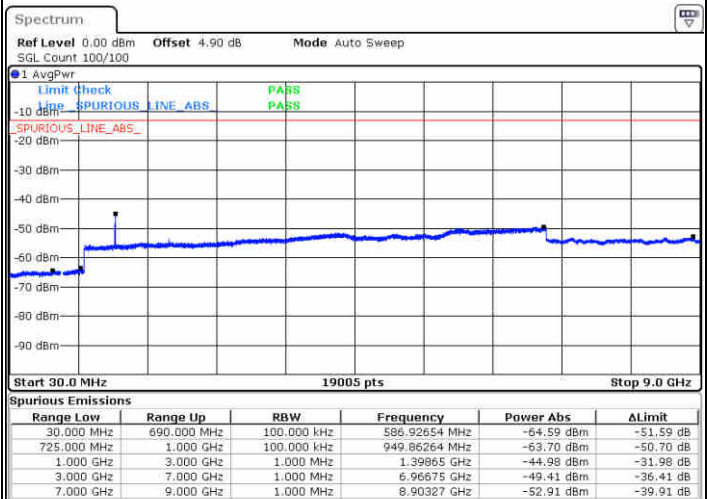
### LTE Band 12 / 1.4MHz

#### Lowest Channel / QPSK



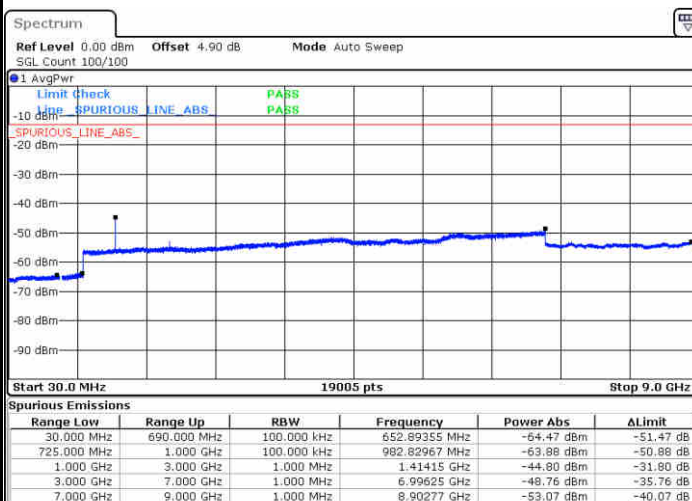
Date: 21.OCT.2019 18:08:35

#### Lowest Channel / 16QAM



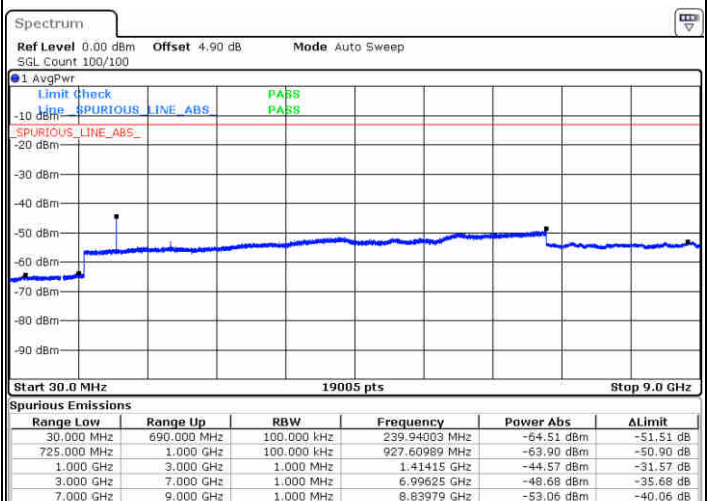
Date: 21.OCT.2019 18:09:28

#### Middle Channel / QPSK



Date: 21.OCT.2019 18:04:56

#### Middle Channel / 16QAM

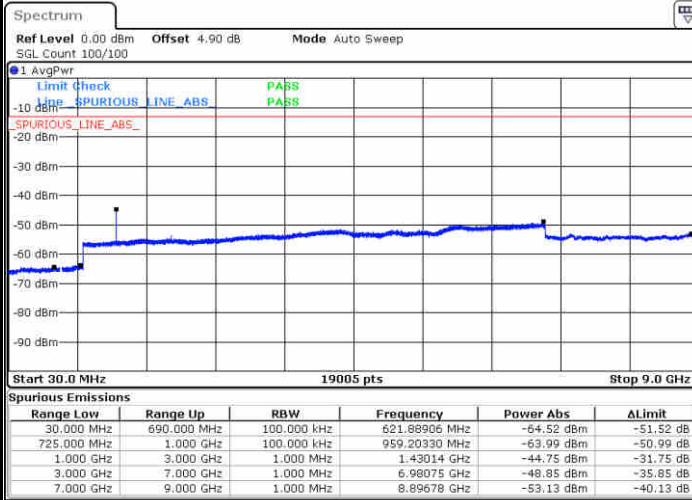


Date: 21.OCT.2019 18:10:22



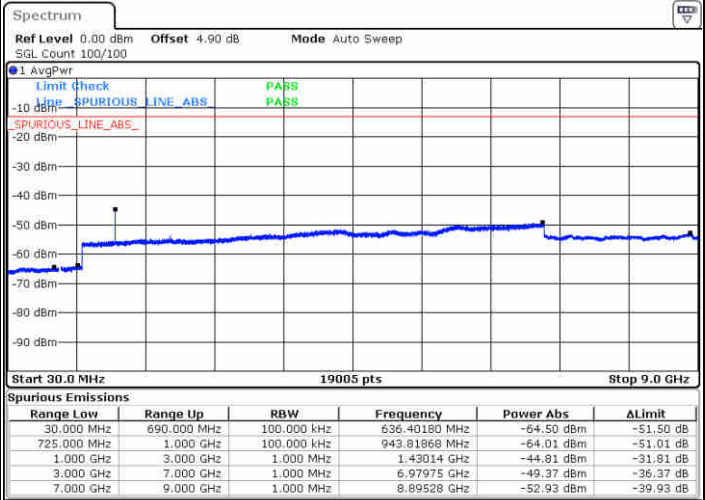
## LTE Band 12 / 1.4MHz

## Highest Channel / QPSK



Date: 21.OCT.2019 18:11:15

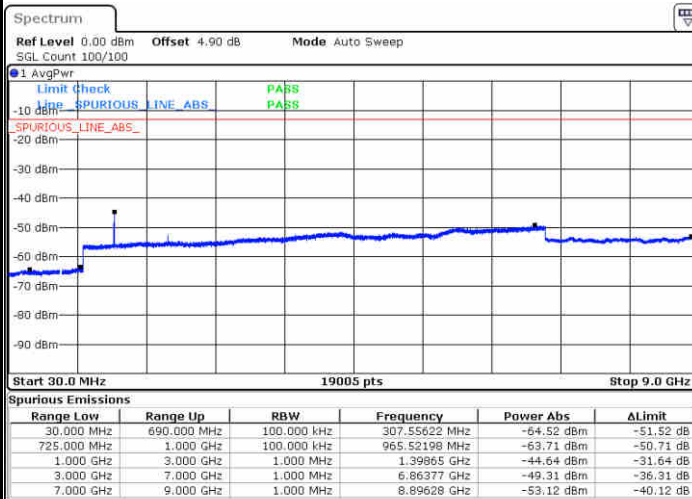
## Highest Channel / 16QAM



Date: 21.OCT.2019 18:12:09

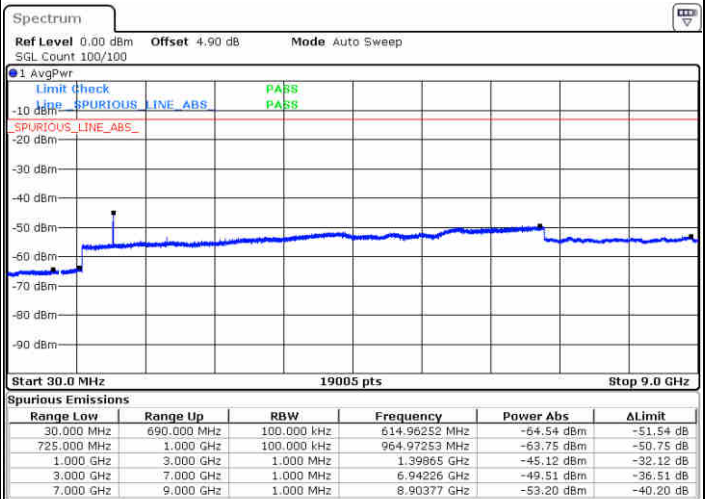
## LTE Band 12 / 3MHz

## Lowest Channel / QPSK



Date: 21.OCT.2019 18:24:12

## Lowest Channel / 16QAM

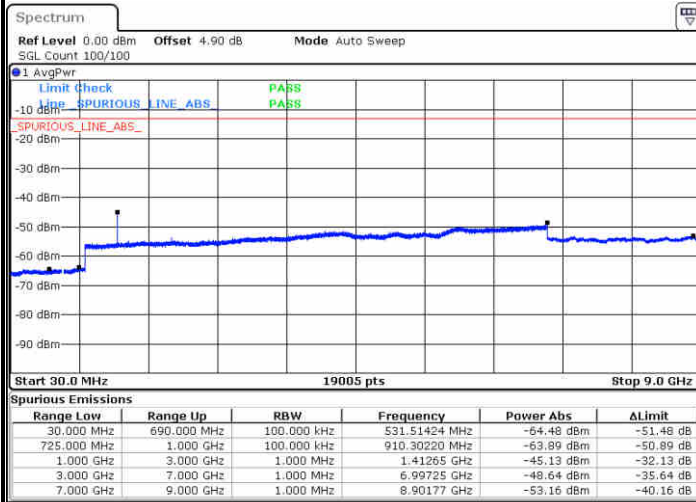


Date: 21.OCT.2019 18:25:05



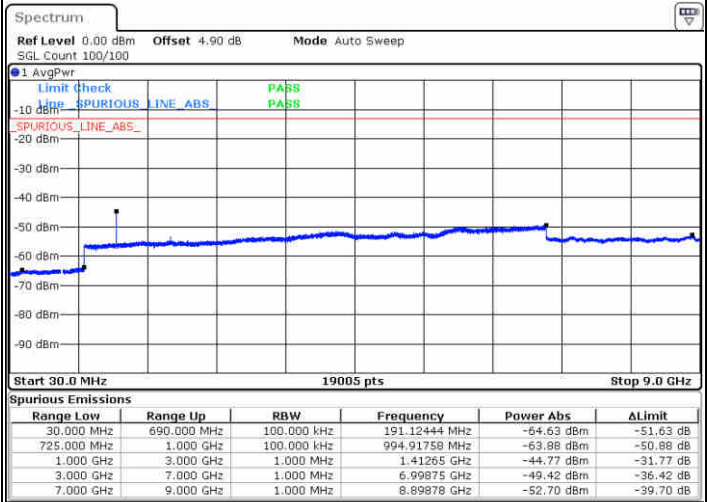
## LTE Band 12 / 3MHz

## Middle Channel / QPSK



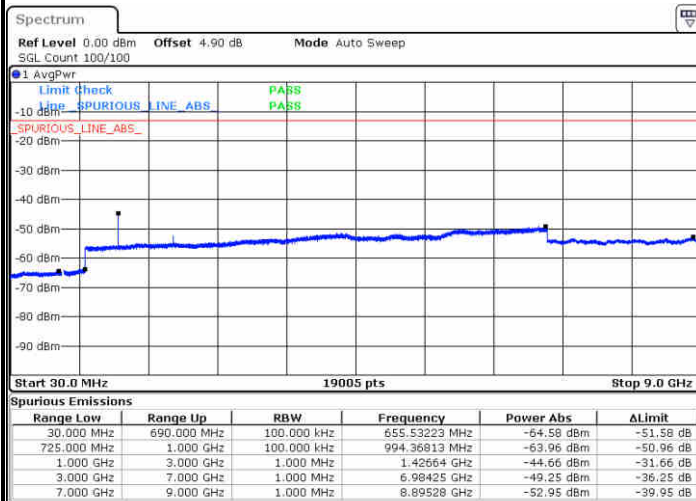
Date: 21 OCT 2019 18:26:52

## Middle Channel / 16QAM



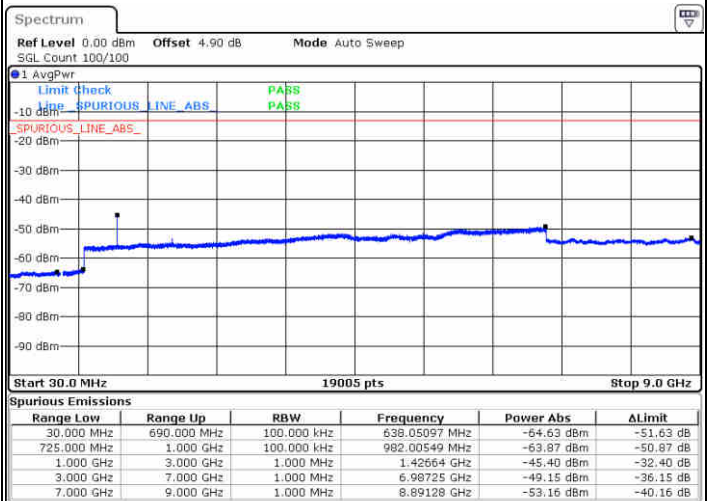
Date: 21 OCT 2019 18:25:59

## Highest Channel / QPSK



Date: 21 OCT 2019 18:27:46

## Highest Channel / 16QAM

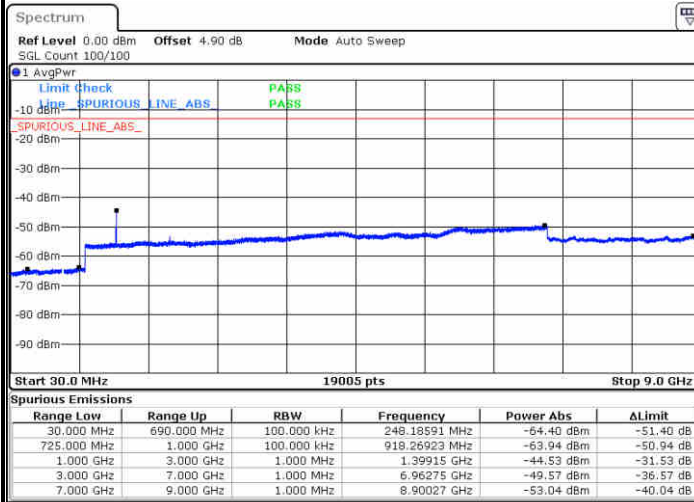


Date: 21 OCT 2019 18:28:39



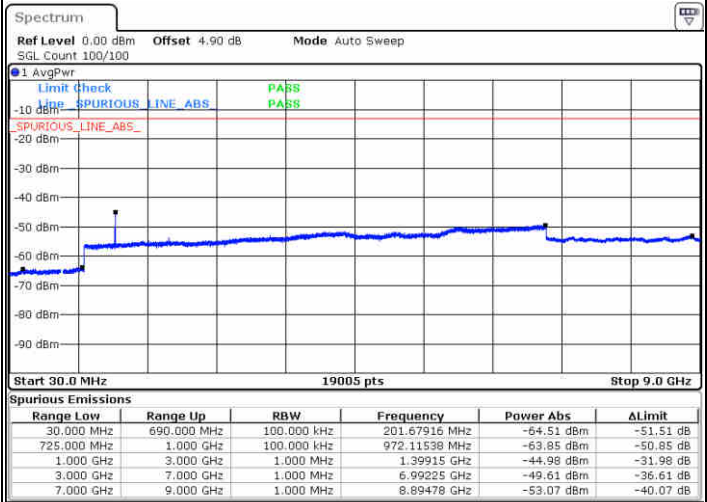
## LTE Band 12 / 5MHz

## Lowest Channel / QPSK



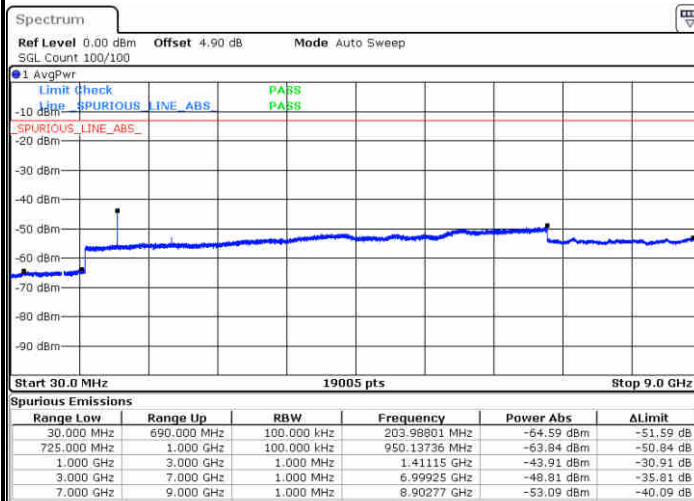
Date: 21 OCT 2019 18:40:42

## Lowest Channel / 16QAM



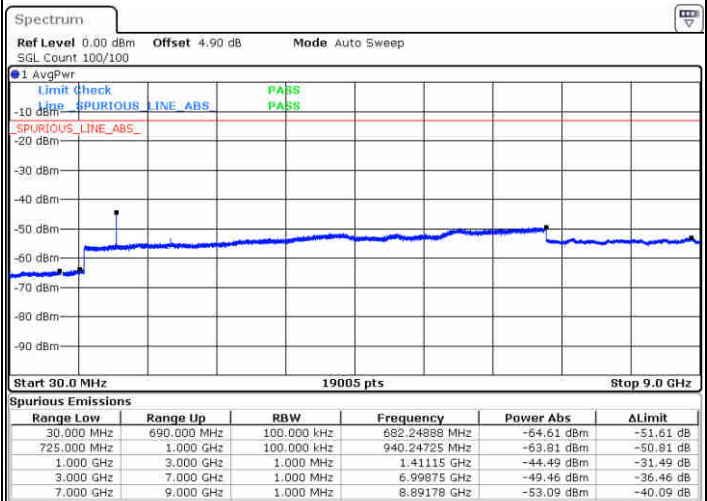
Date: 21 OCT 2019 18:41:35

## Middle Channel / QPSK



Date: 21 OCT 2019 18:43:22

## Middle Channel / 16QAM

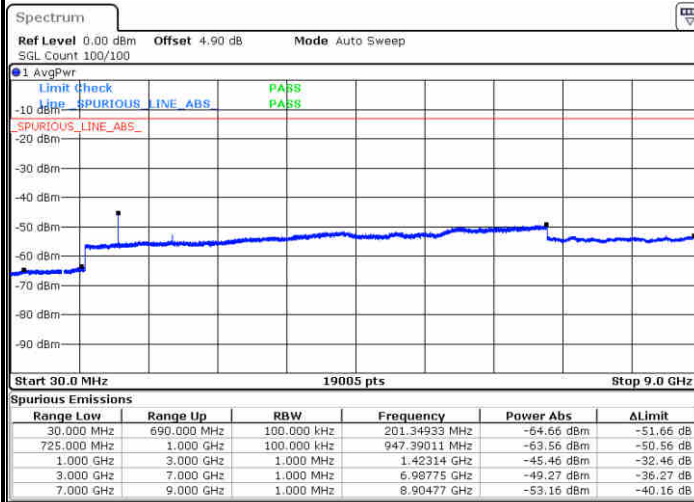


Date: 21 OCT 2019 18:42:29



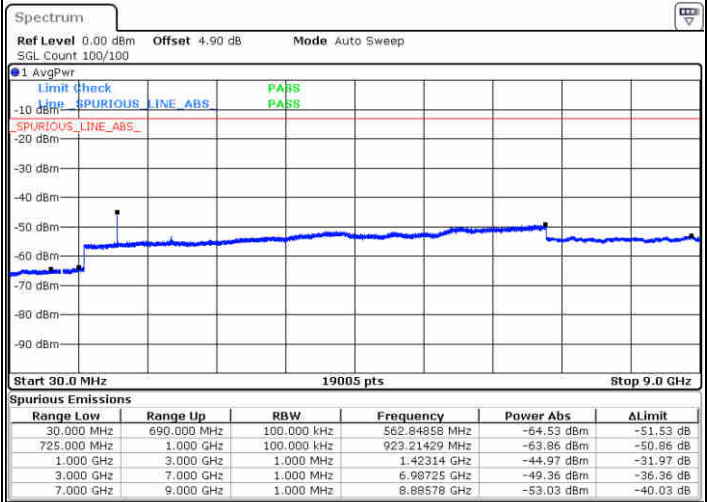
## LTE Band 12 / 5MHz

## Highest Channel / QPSK



Date: 21.OCT.2019 18:44:16

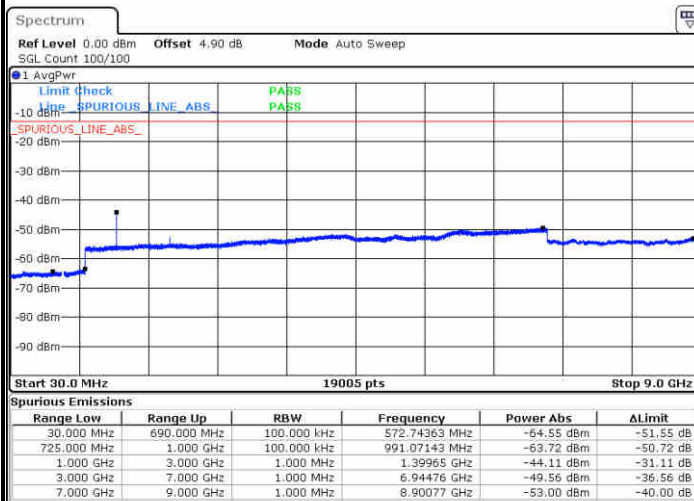
## Highest Channel / 16QAM



Date: 21.OCT.2019 18:45:09

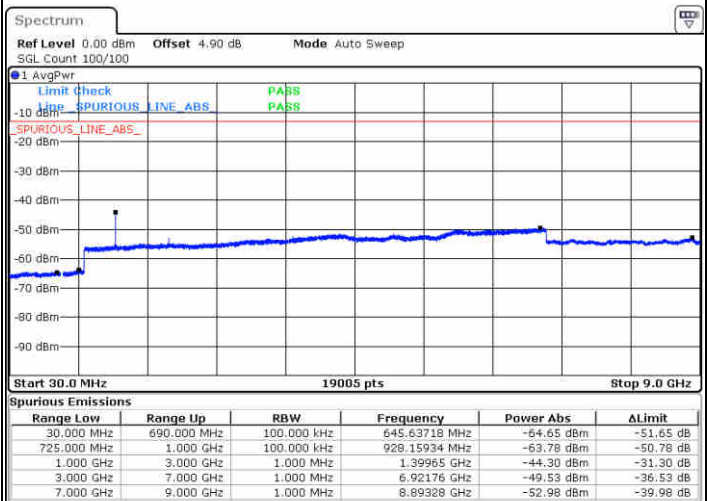
## LTE Band 12 / 10MHz

## Lowest Channel / QPSK



Date: 21.OCT.2019 18:57:12

## Lowest Channel / 16QAM

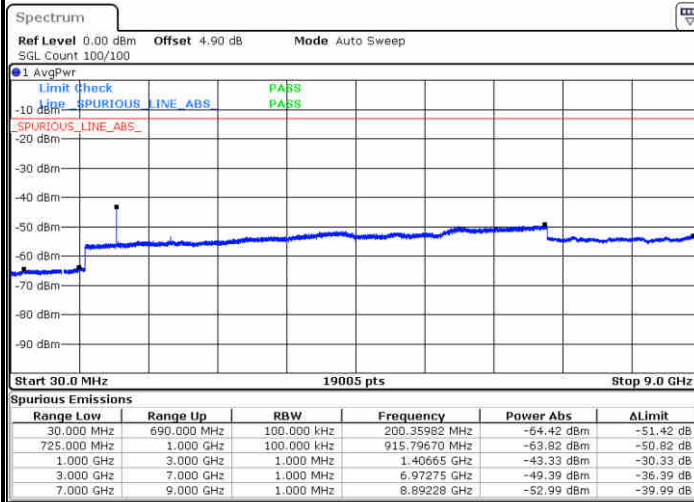


Date: 21.OCT.2019 18:58:05



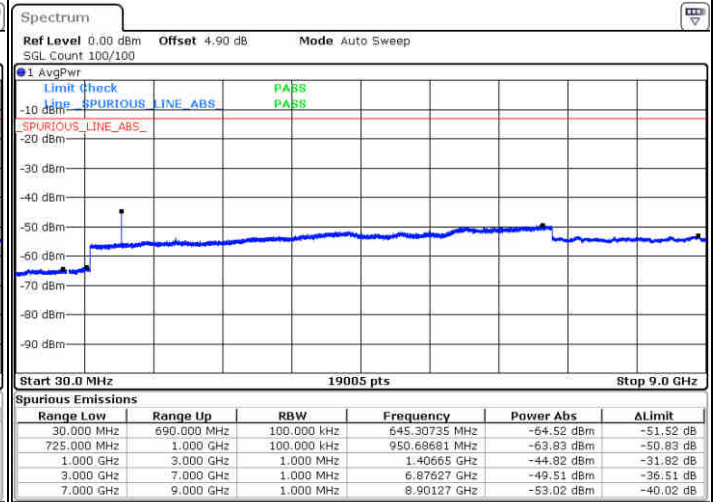
## LTE Band 12 / 10MHz

## Middle Channel / QPSK



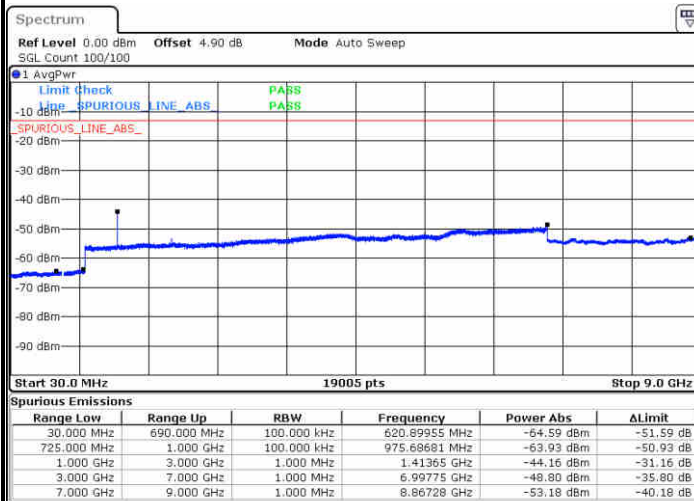
Date: 21 OCT 2019 18:59:52

## Middle Channel / 16QAM



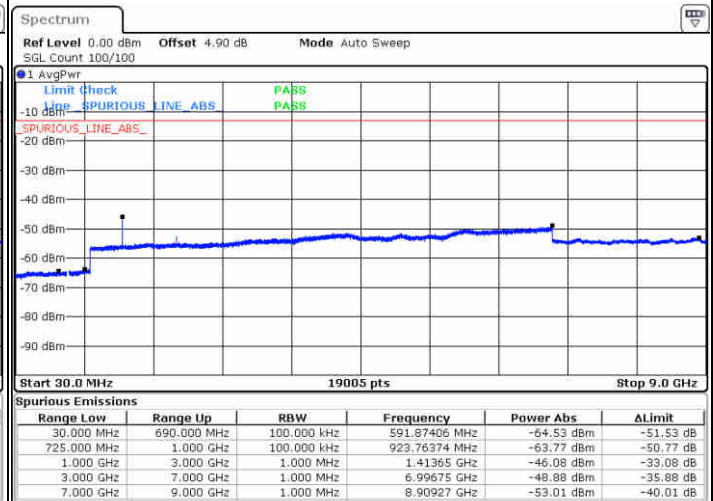
Date: 21 OCT 2019 18:58:59

## Highest Channel / QPSK



Date: 21 OCT 2019 19:00:46

## Highest Channel / 16QAM

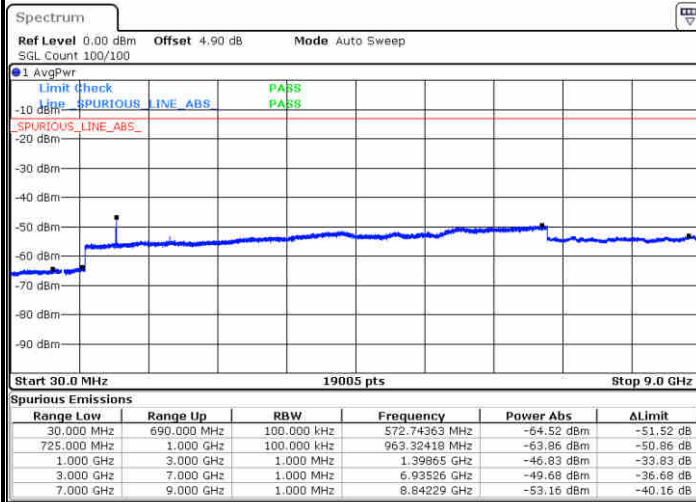


Date: 21 OCT 2019 19:01:39



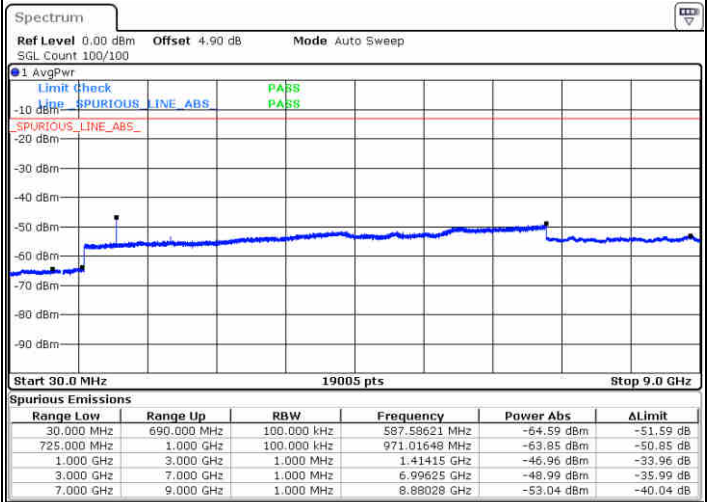
## LTE Band 12 / 1.4MHz

## Lowest Channel / 64QAM



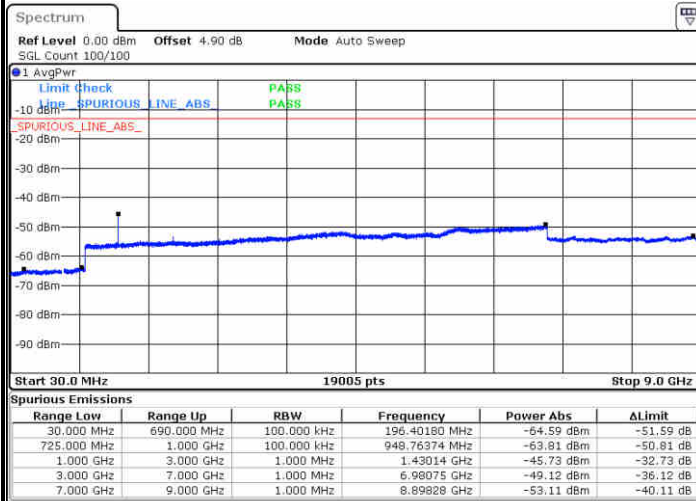
Date: 21.OCT.2019 19:17:17

## Middle Channel / 64QAM



Date: 21.OCT.2019 19:18:10

## Highest Channel / 64QAM

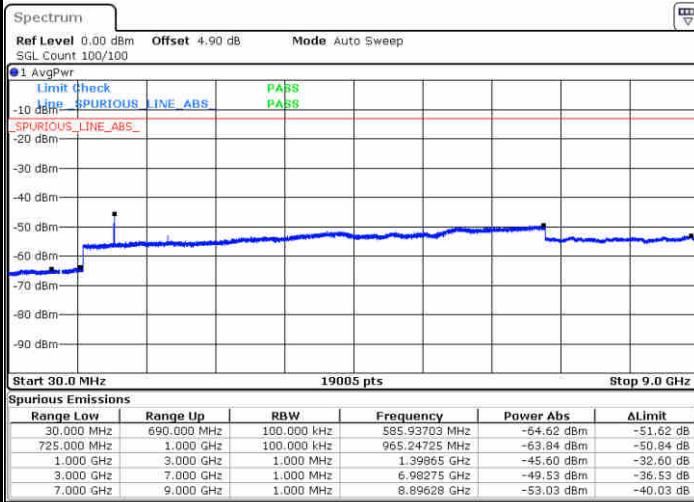


Date: 21.OCT.2019 19:19:04



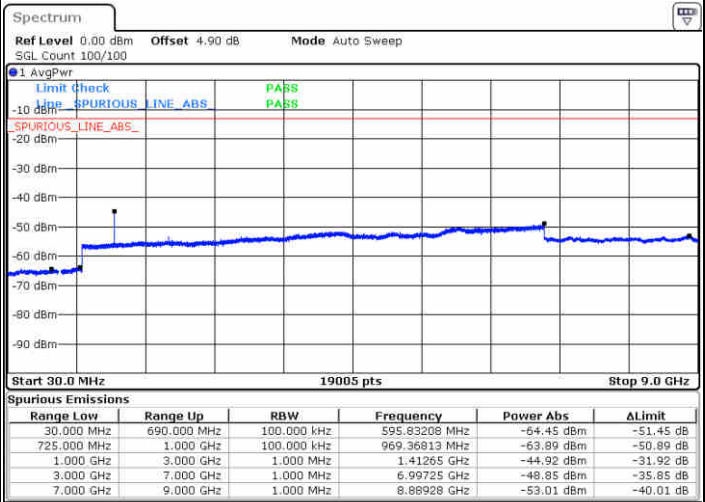
## LTE Band 12 / 3MHz

## Lowest Channel / 64QAM



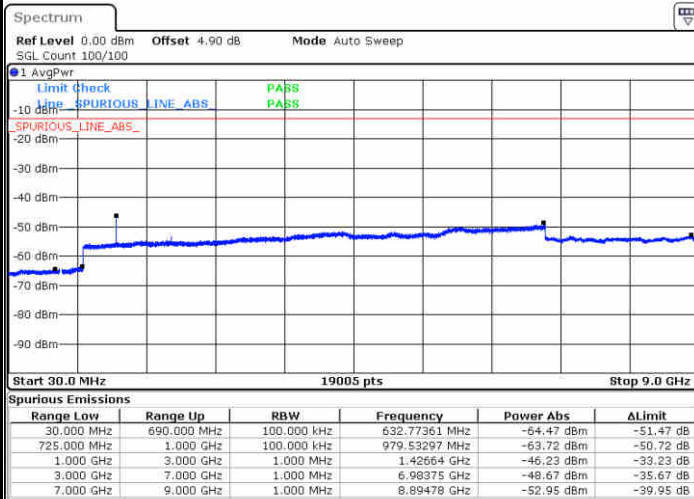
Date: 21 OCT 2019 19:19:57

## Middle Channel / 64QAM



Date: 21 OCT 2019 19:20:51

## Highest Channel / 64QAM

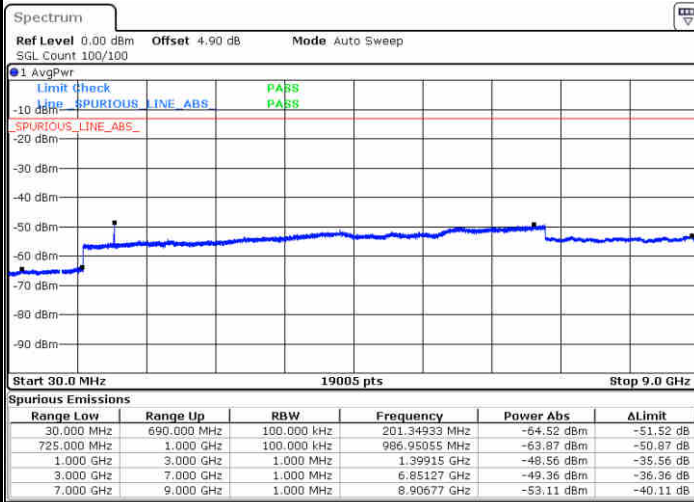


Date: 21 OCT 2019 19:21:44



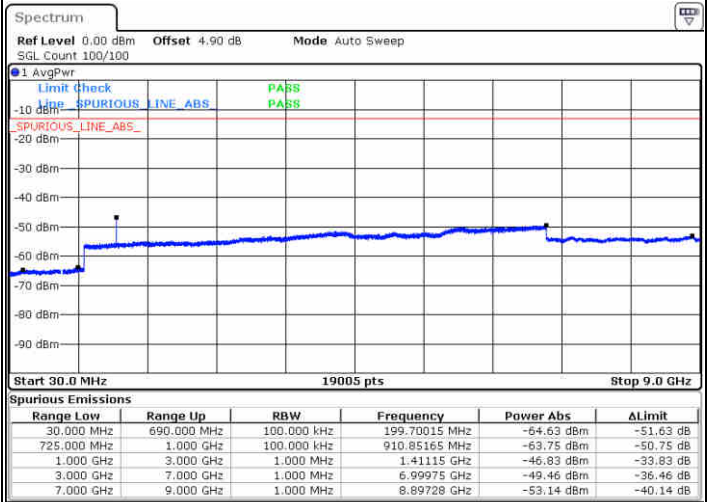
## LTE Band 12 / 5MHz

## Lowest Channel / 64QAM



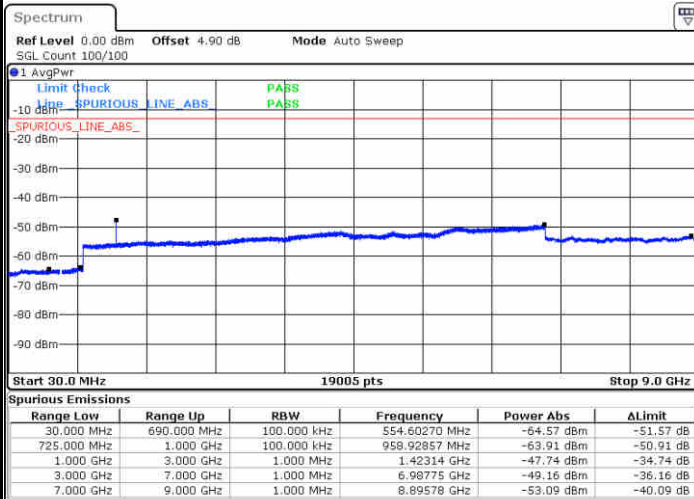
Date: 21 OCT 2019 19:37:16

## Middle Channel / 64QAM



Date: 21 OCT 2019 19:38:09

## Highest Channel / 64QAM

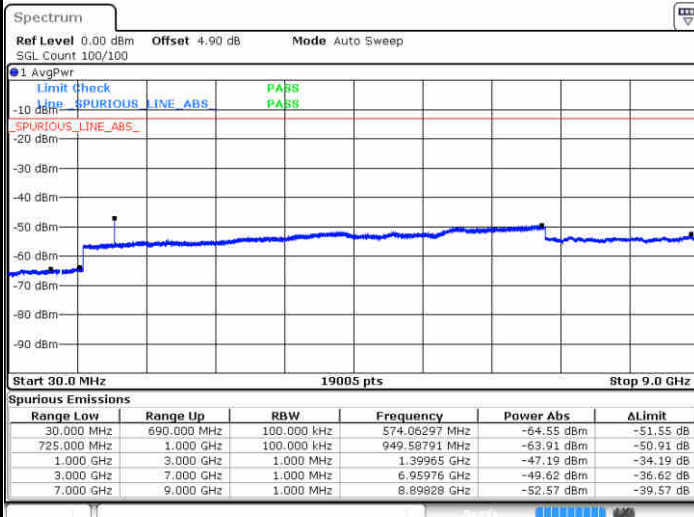


Date: 21 OCT 2019 19:39:03



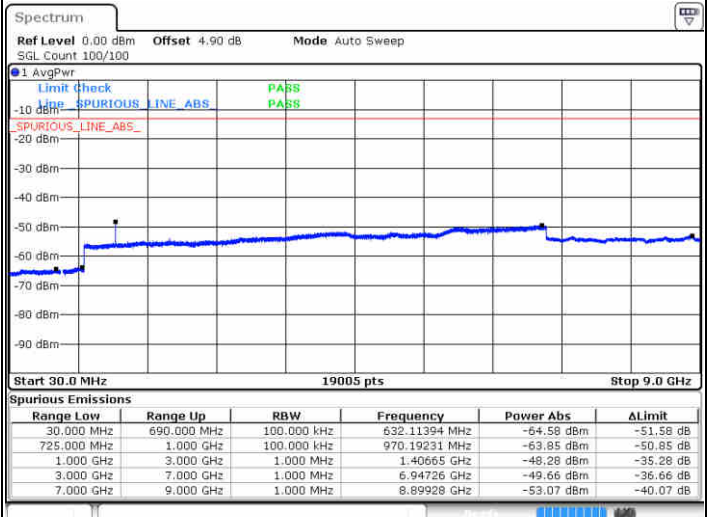
## LTE Band 12 / 10MHz

## Lowest Channel / 64QAM



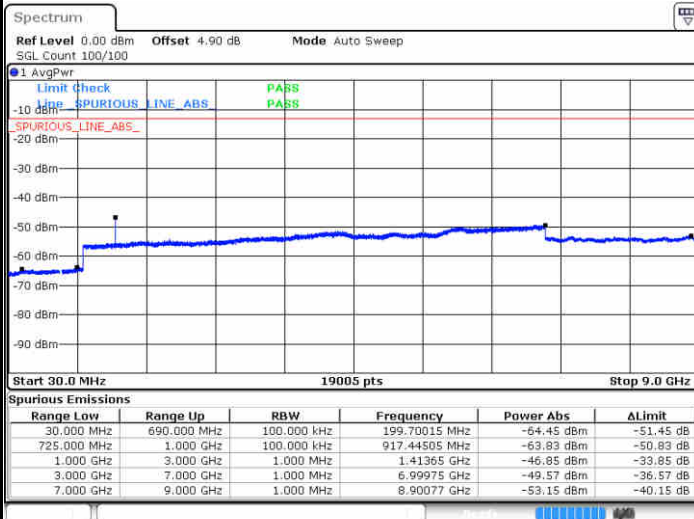
Date: 21 OCT 2019 19:39:56

## Middle Channel / 64QAM



Date: 21 OCT 2019 19:40:50

## Highest Channel / 64QAM



Date: 21 OCT 2019 19:41:43

## 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    | 0.0006                              | PASS    |
| 40               | Normal Voltage    | 0.0018                              |         |
| 30               | Normal Voltage    | 0.0085                              |         |
| 20(Ref.)         | Normal Voltage    | 0.0000                              |         |
| 10               | Normal Voltage    | 0.0096                              |         |
| 0                | Normal Voltage    | 0.0000                              |         |
| -10              | Normal Voltage    | 0.0017                              |         |
| -20              | Normal Voltage    | 0.0071                              |         |
| -30              | Normal Voltage    | 0.0059                              |         |
| 20               | Maximum Voltage   | 0.0017                              |         |
| 20               | Normal Voltage    | 0.0000                              |         |
| 20               | Battery End Point | 0.0099                              |         |

**Note:**

1. Normal Voltage =3.8 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



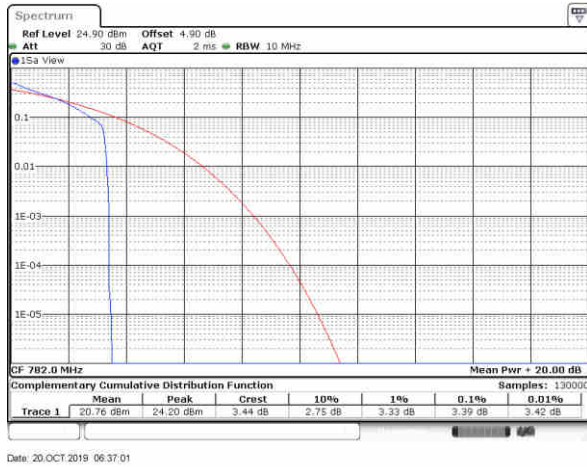
## LTE Band 13

## Peak-to-Average Ratio

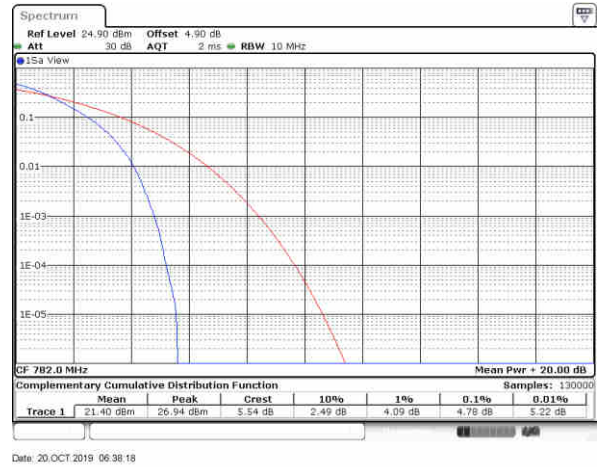
| Mode       | LTE Band 13 / 10MHz |         |             |         |             |
|------------|---------------------|---------|-------------|---------|-------------|
| Mod.       | QPSK                |         | 16QAM       |         | Limit: 13dB |
| RB Size    | 1RB                 | Full RB | 1RB         | Full RB | Result      |
| Lowest CH  |                     | -       | -           | -       | PASS        |
| Middle CH  | 3.39                | 4.78    | 4.70        | 6.09    |             |
| Highest CH | -                   | -       | -           | -       |             |
| Mod.       | 64QAM               |         | Limit: 13dB |         |             |
| RB Size    | 1RB                 | Full RB | Result      |         |             |
| Lowest CH  |                     |         | PASS        |         |             |
| Middle CH  | 4.87                | 6.09    |             |         |             |
| Highest CH |                     |         |             |         |             |

LTE Band 13 / 10MHz / QPSK

Middle Channel / 1RB



Middle Channel / Full RB

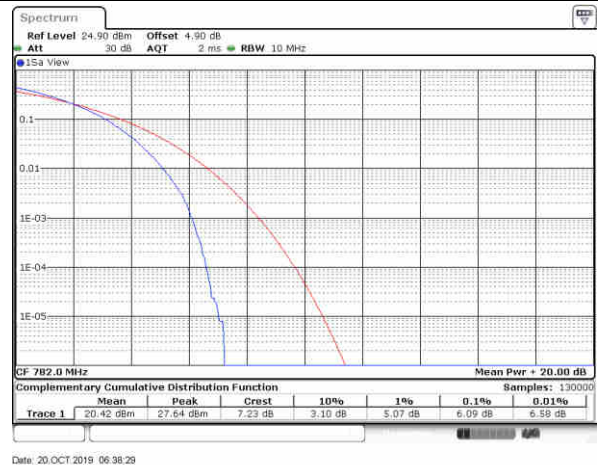


LTE Band 13 / 10MHz / 16QAM

Middle Channel / 1RB



Middle Channel / Full RB

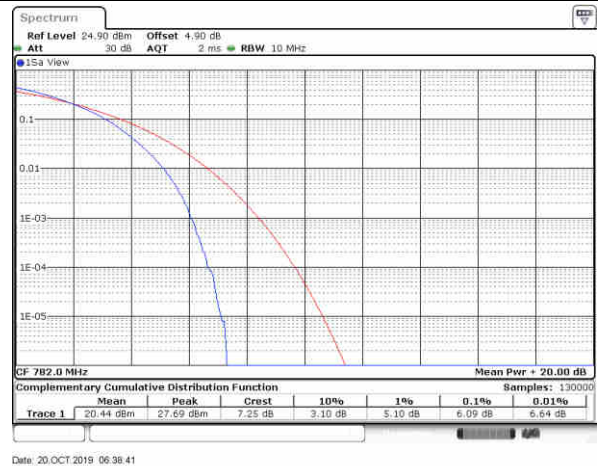


LTE Band 13 / 10MHz / 64QAM

Middle Channel / 1RB



Middle Channel / Full RB





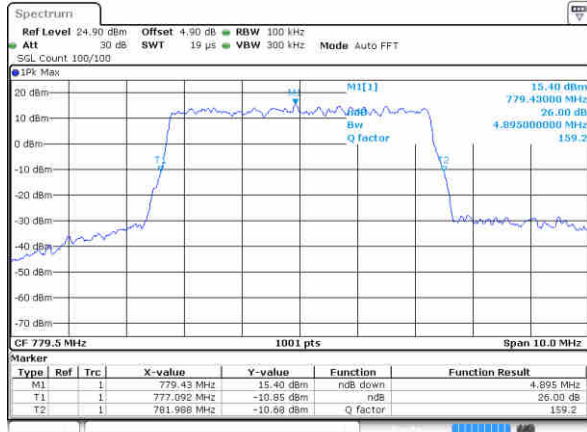
26dB Bandwidth

| Mode       | LTE Band 13 : 26dB BW(MHz) |       |       |       |       |       |  |  |  |  |  |  |
|------------|----------------------------|-------|-------|-------|-------|-------|--|--|--|--|--|--|
| BW         | 5MHz                       |       | 10MHz |       | 5MHz  | 10MHz |  |  |  |  |  |  |
| Mod.       | QPSK                       | 16QAM | QPSK  | 16QAM | 64QAM | 64QAM |  |  |  |  |  |  |
| Lowest CH  | 4.895                      | 4.955 |       |       | 4.905 |       |  |  |  |  |  |  |
| Middle CH  | 4.915                      | 4.885 | 9.71  | 9.79  | 4.975 | 9.69  |  |  |  |  |  |  |
| Highest CH | 4.855                      | 4.855 |       |       | 4.905 |       |  |  |  |  |  |  |



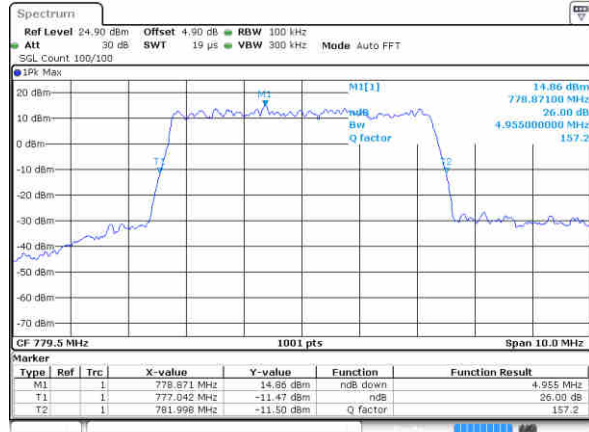
## LTE Band 13

## Lowest Channel / 5MHz / QPSK



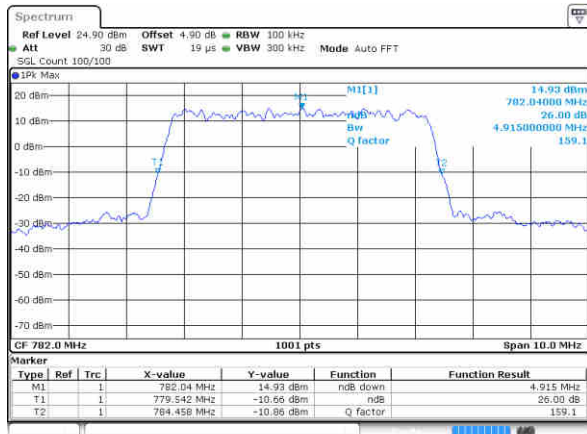
Date: 20.OCT.2019 06:44:08

## Lowest Channel / 5MHz / 16QAM



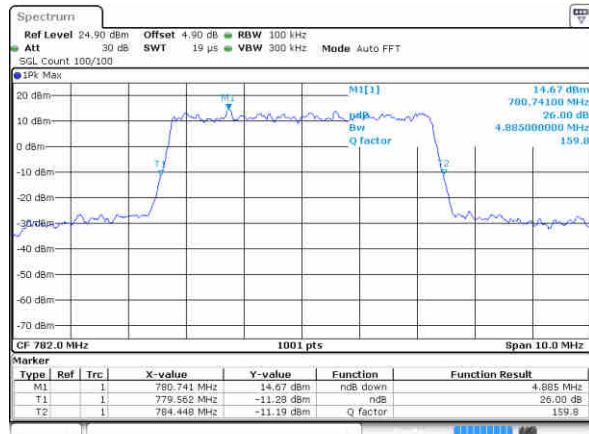
Date: 20.OCT.2019 06:44:16

## Middle Channel / 5MHz / QPSK



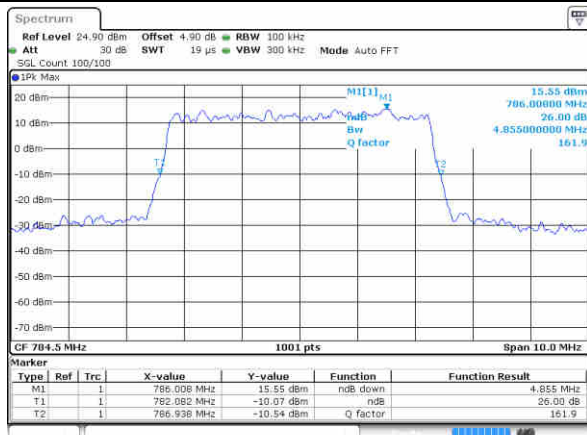
Date: 20.OCT.2019 06:51:17

## Middle Channel / 5MHz / 16QAM



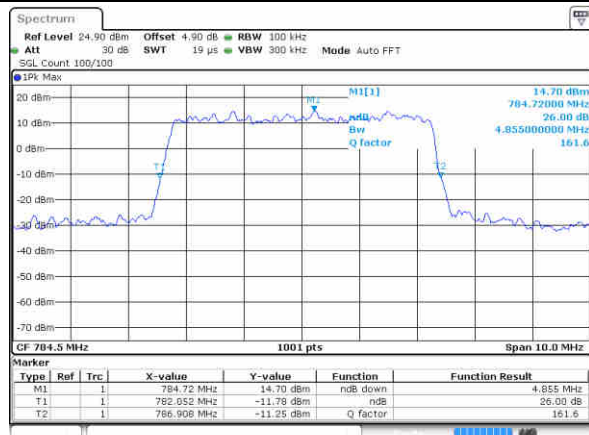
Date: 20.OCT.2019 06:51:27

## Highest Channel / 5MHz / QPSK



Date: 20.OCT.2019 06:52:07

## Highest Channel / 5MHz / 16QAM

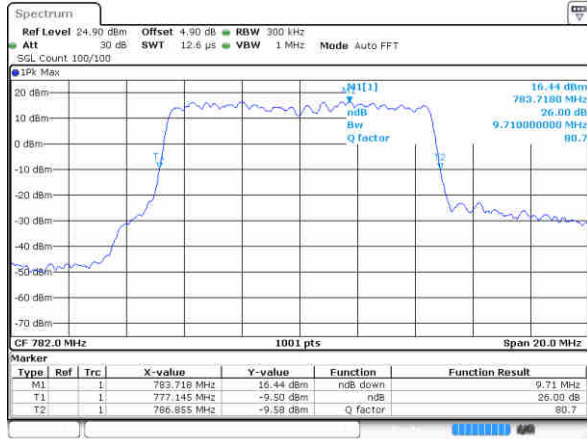


Date: 20.OCT.2019 06:51:57

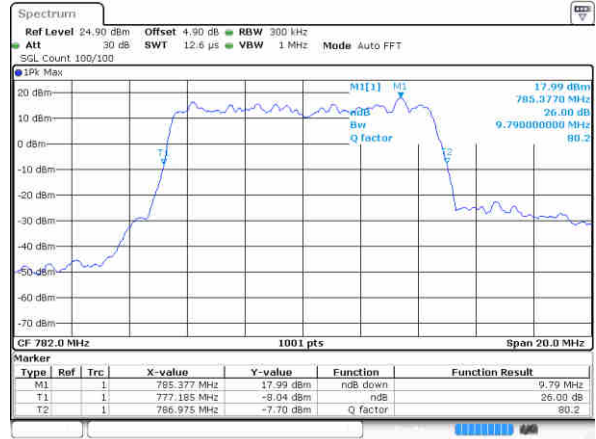


## LTE Band 13

## Middle Channel / 10MHz / QPSK



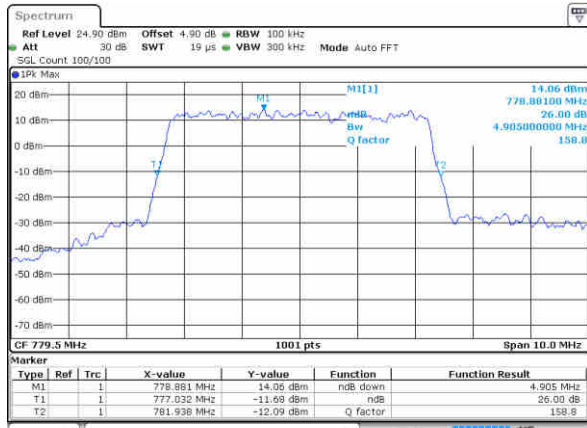
## Middle Channel / 10MHz / 16QAM





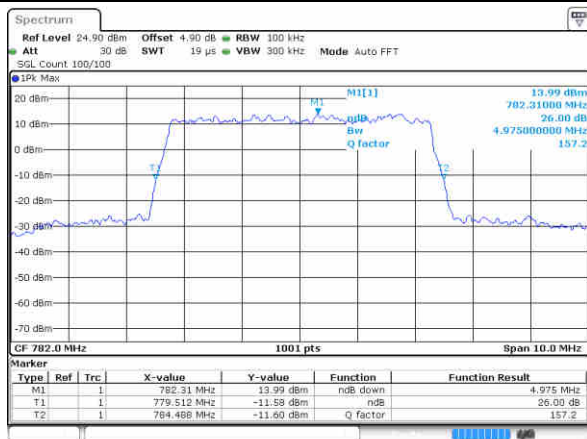
## LTE Band 13

## Lowest Channel / 5MHz / 64QAM



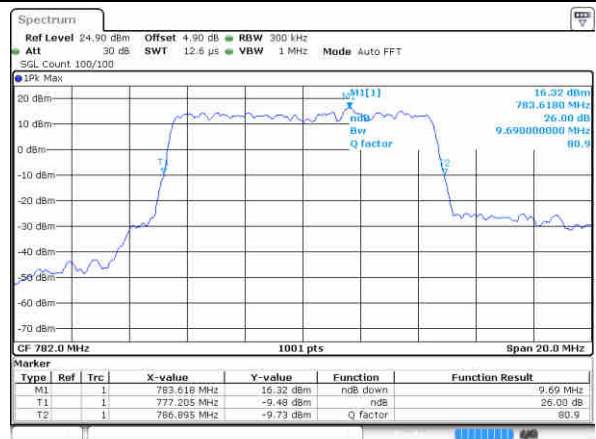
Date: 20.OCT.2019 07:10:03

## Middle Channel / 5MHz / 64QAM



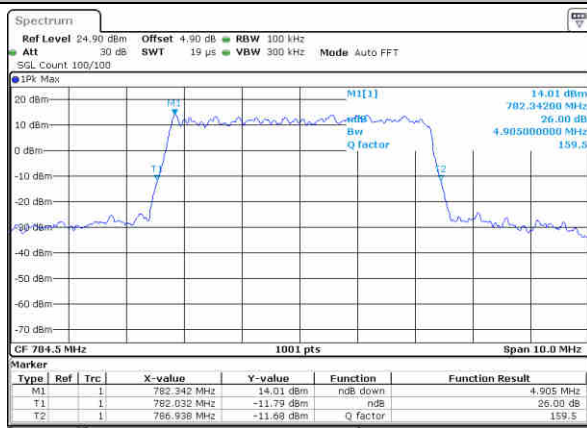
Date: 20.OCT.2019 07:10:14

## Middle Channel / 10MHz / 64QAM



Date: 20.OCT.2019 07:17:14

## Highest Channel / 5MHz / 64QAM



Date: 20.OCT.2019 07:10:23



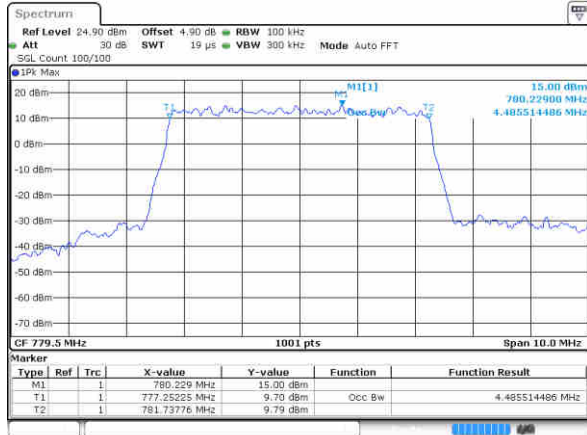
## Occupied Bandwidth

| Mode       | LTE Band 13 : 99%OBW(MHz) |       |       |       |       |       |  |  |  |  |  |  |
|------------|---------------------------|-------|-------|-------|-------|-------|--|--|--|--|--|--|
| BW         | 5MHz                      |       | 10MHz |       | 5MHz  | 10MHz |  |  |  |  |  |  |
| Mod.       | QPSK                      | 16QAM | QPSK  | 16QAM | 64QAM | 64QAM |  |  |  |  |  |  |
| Lowest CH  | 4.49                      | 4.48  |       |       | 4.50  |       |  |  |  |  |  |  |
| Middle CH  | 4.50                      | 4.52  | 9.05  | 9.03  | 4.50  | 9.03  |  |  |  |  |  |  |
| Highest CH | 4.50                      | 4.48  |       |       | 4.50  |       |  |  |  |  |  |  |

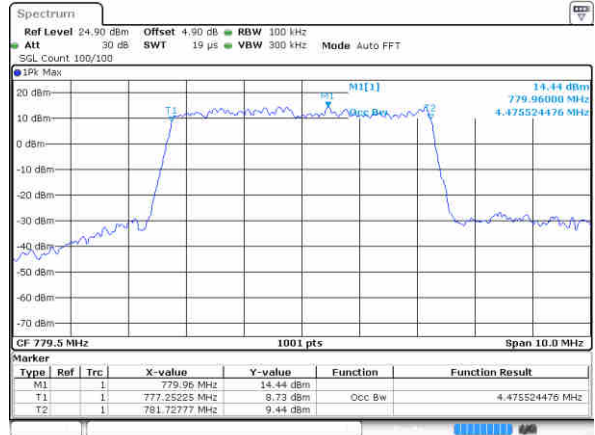


## LTE Band 13

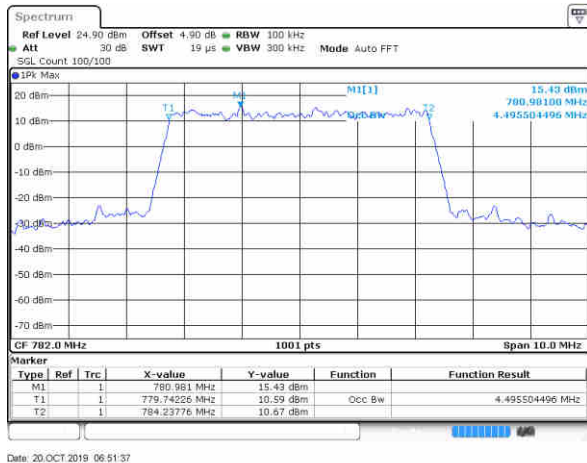
## Lowest Channel / 5MHz / QPSK



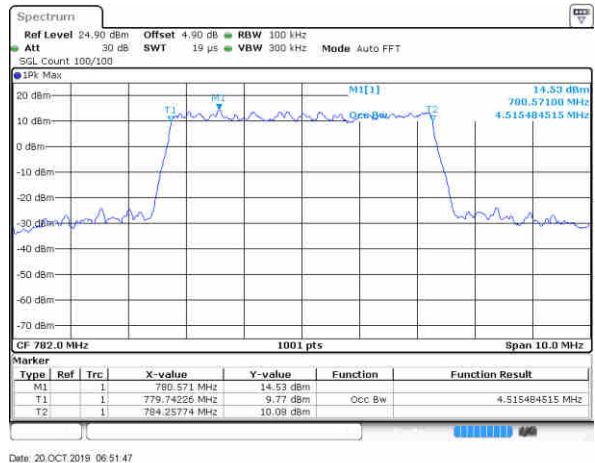
## Lowest Channel / 5MHz / 16QAM



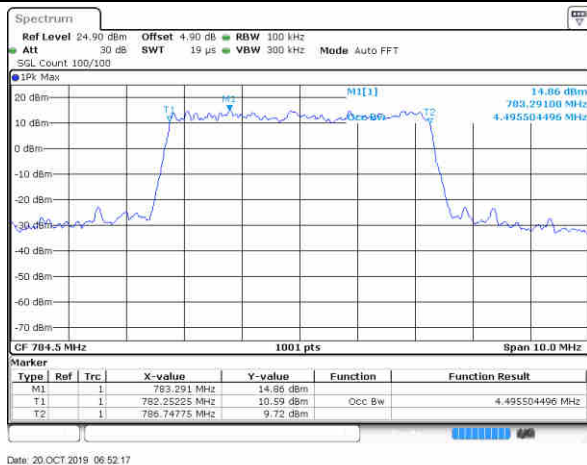
## Middle Channel / 5MHz / QPSK



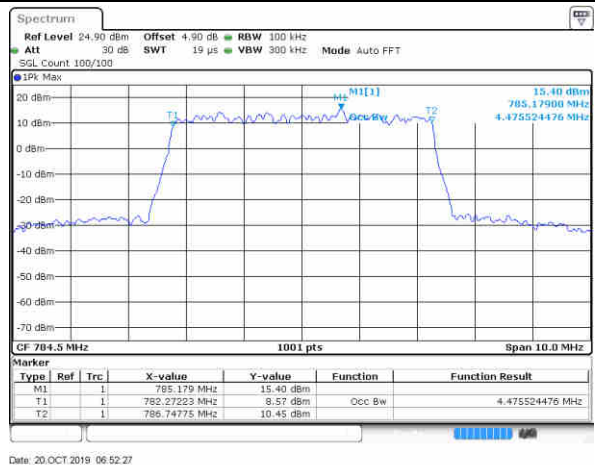
## Middle Channel / 5MHz / 16QAM



## Highest Channel / 5MHz / QPSK



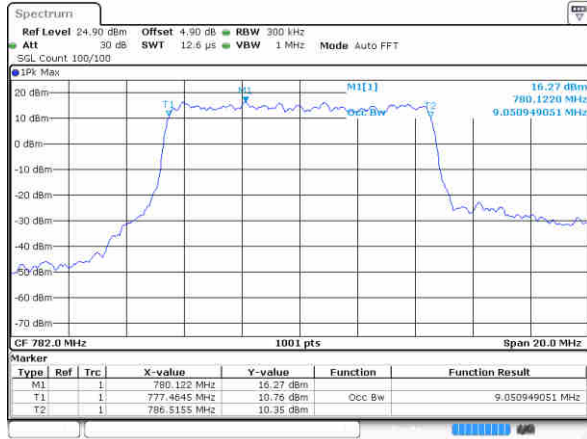
## Highest Channel / 5MHz / 16QAM



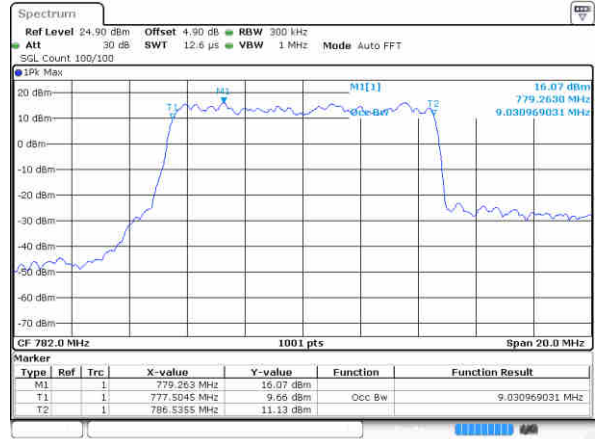


## LTE Band 13

## Middle Channel / 10MHz / QPSK



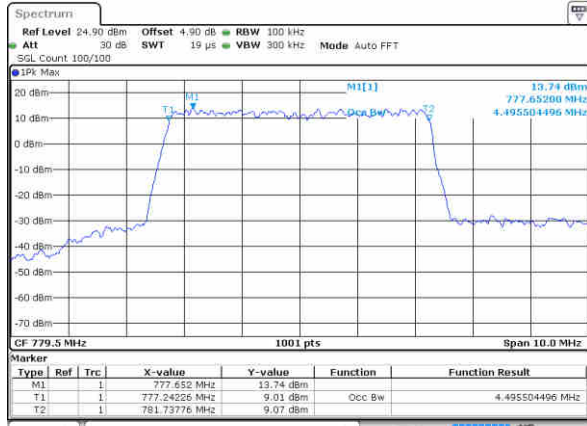
## Middle Channel / 10MHz / 16QAM





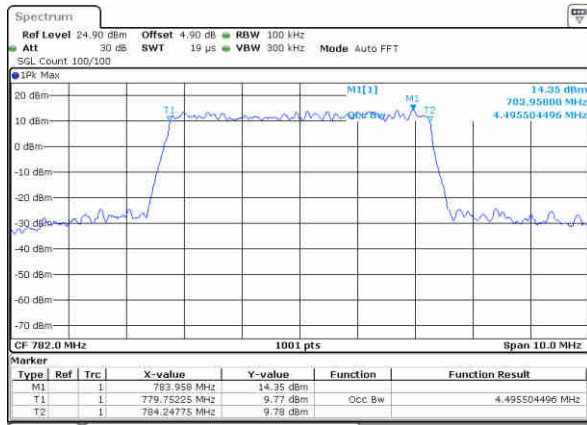
## LTE Band 13

## Lowest Channel / 5MHz / 64QAM



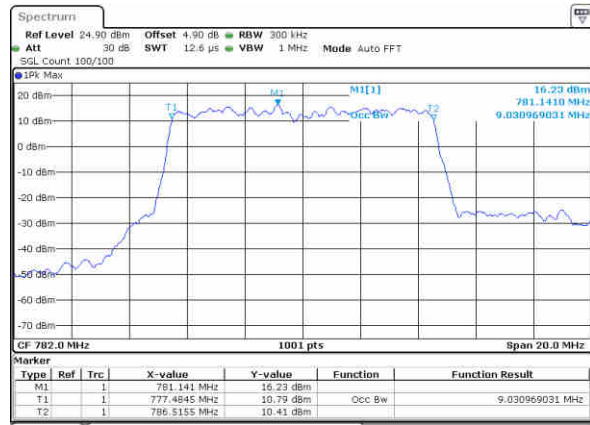
Date: 20.OCT.2019 07:09:33

## Middle Channel / 5MHz / 64QAM



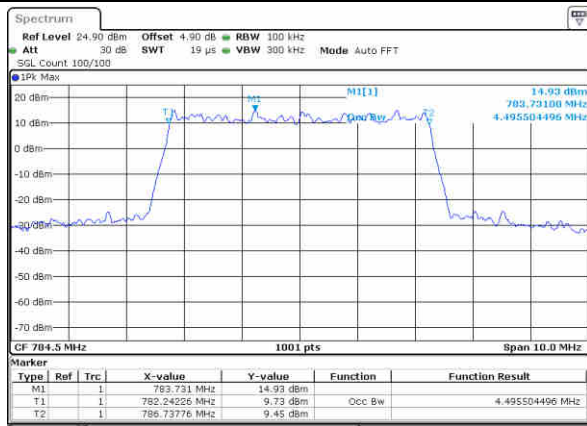
Date: 20.OCT.2019 07:09:43

## Middle Channel / 10MHz / 64QAM

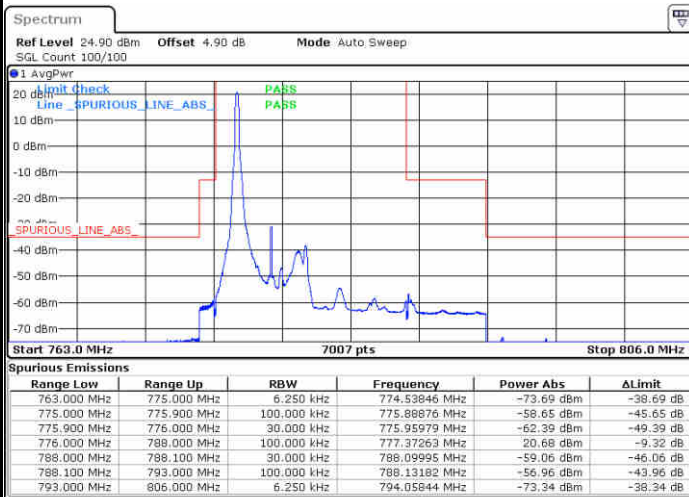
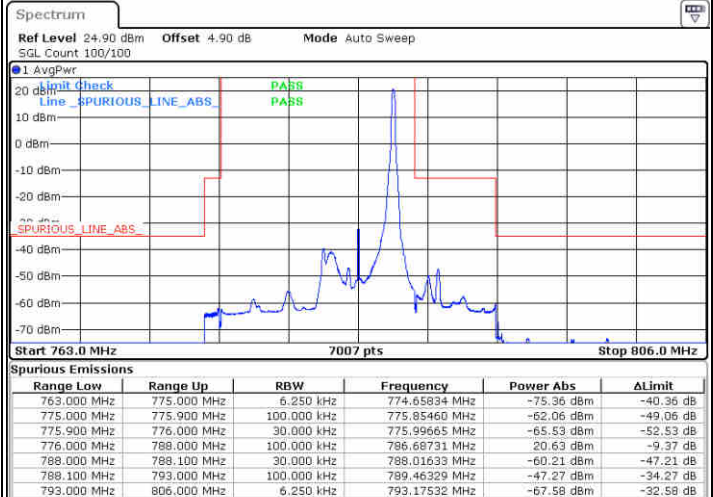
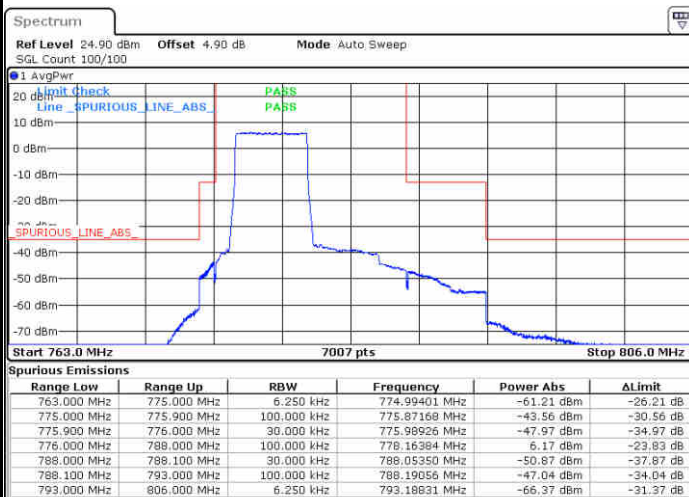
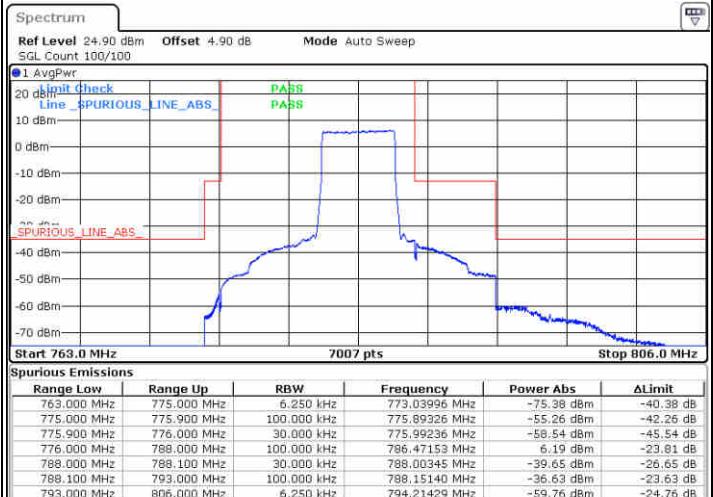


Date: 20.OCT.2019 07:17:04

## Highest Channel / 5MHz / 64QAM



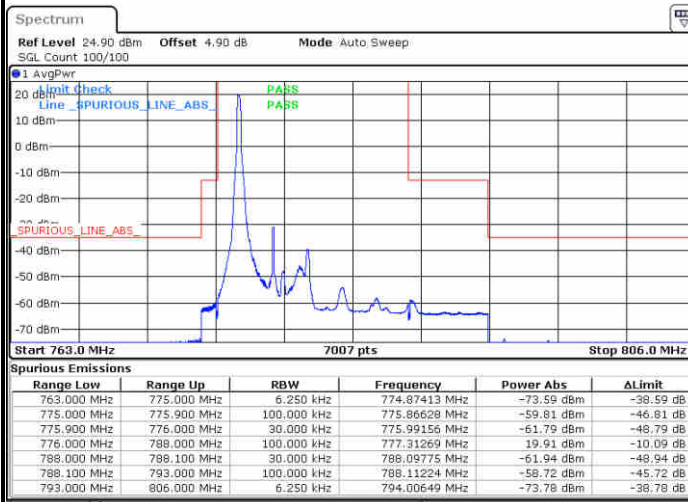
Date: 20.OCT.2019 07:09:53

**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**

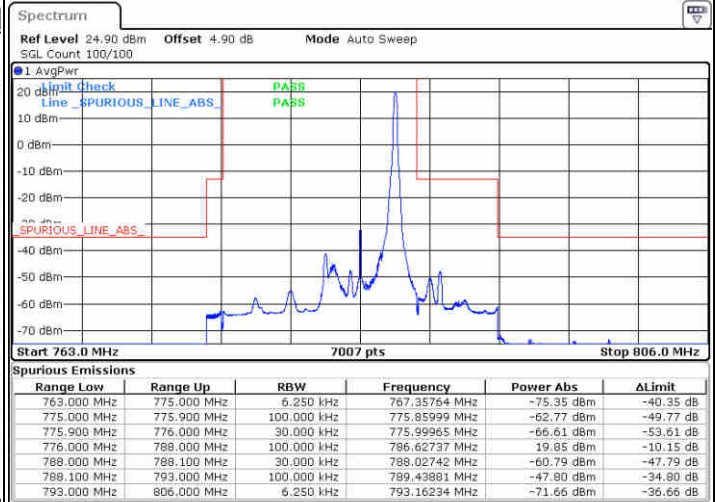


## LTE Band 13 / 5MHz / 16QAM

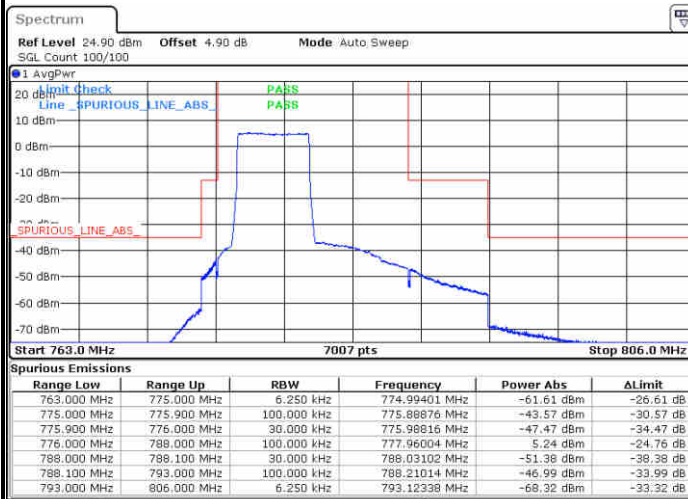
## Lowest Band Edge / 1 RB



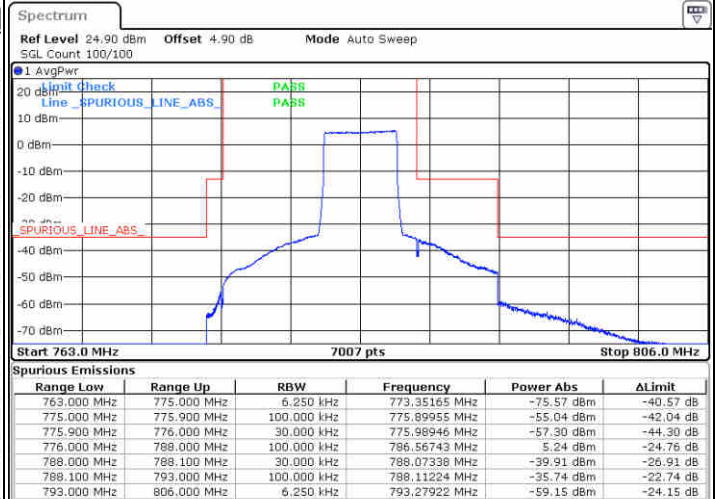
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



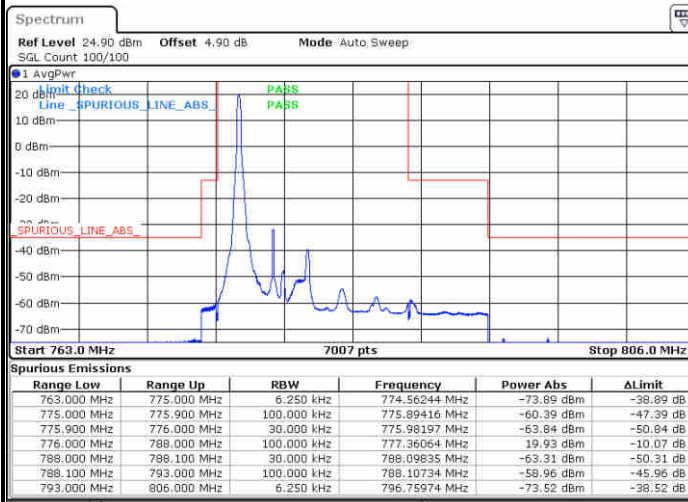
## Highest Band Edge / Full RB





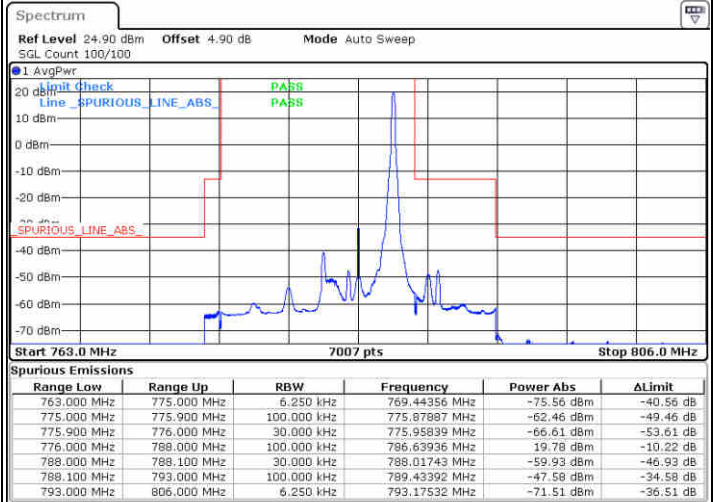
## LTE Band 13 / 5MHz / 64QAM

## Lowest Band Edge / 1 RB



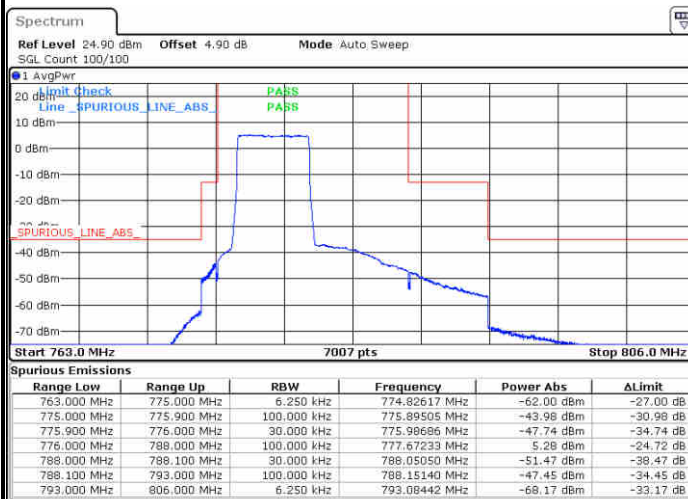
Date: 20.OCT.2019 07:12:01

## Highest Band Edge / 1 RB



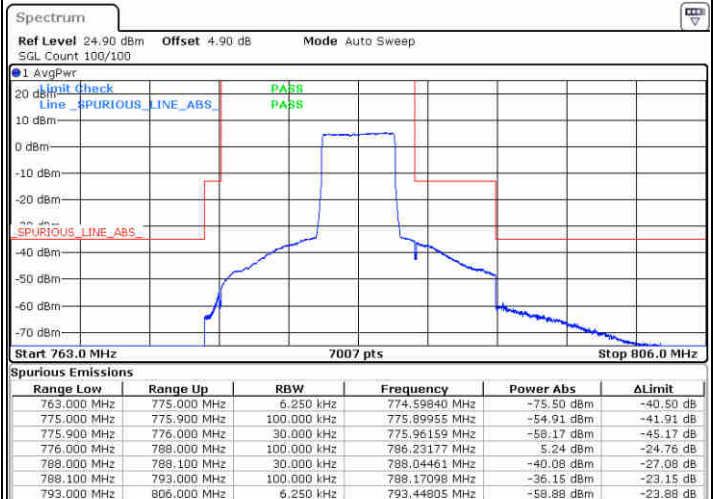
Date: 20.OCT.2019 07:16:54

## Lowest Band Edge / Full RB



Date: 20.OCT.2019 07:13:39

## Highest Band Edge / Full RB

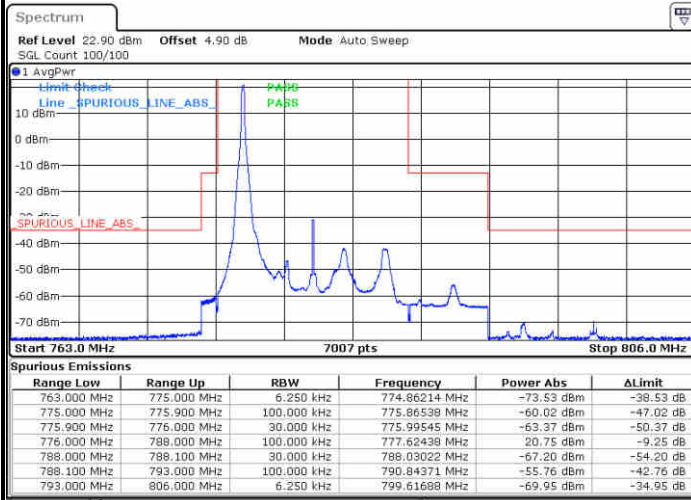


Date: 20.OCT.2019 07:15:17

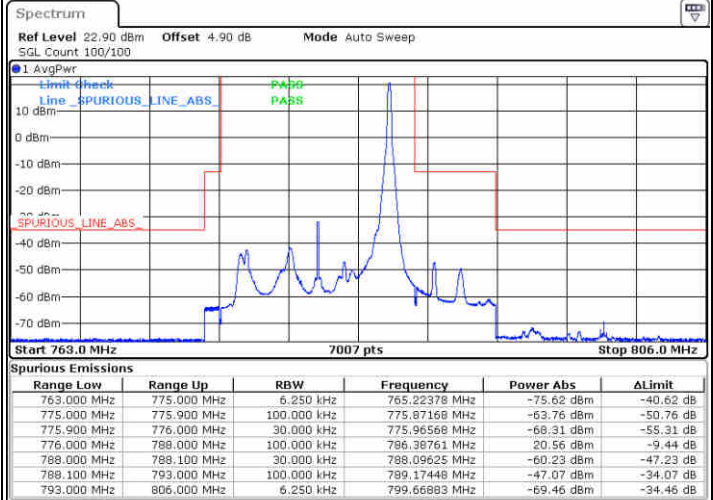


## LTE Band 13 / 10MHz / QPSK

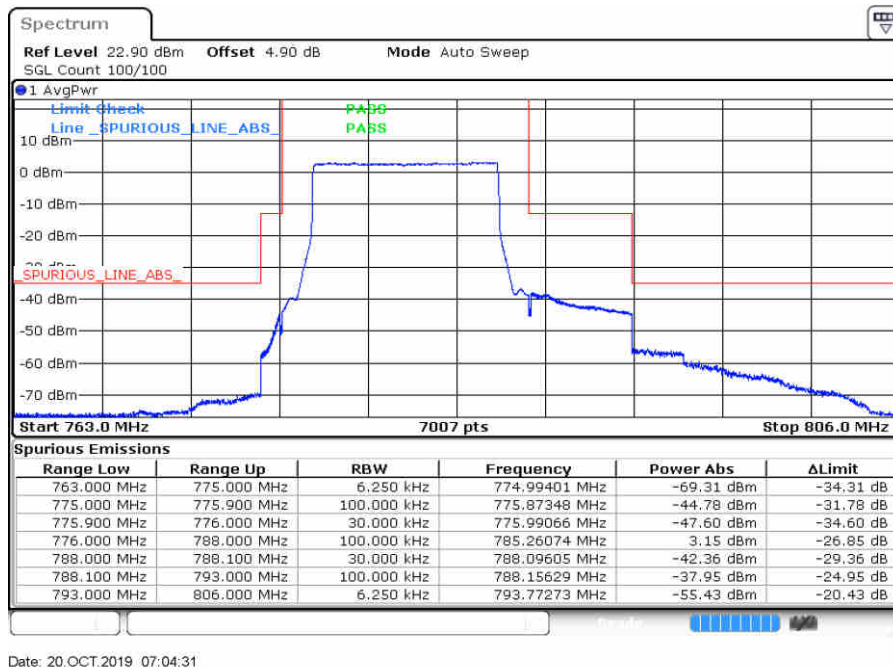
## Lowest Band Edge / 1 RB



## Highest Band Edge / 1 RB



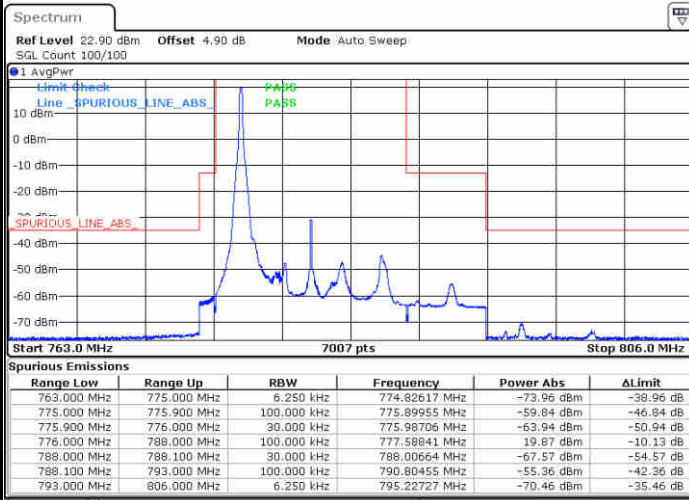
## Band Edge / Full RB



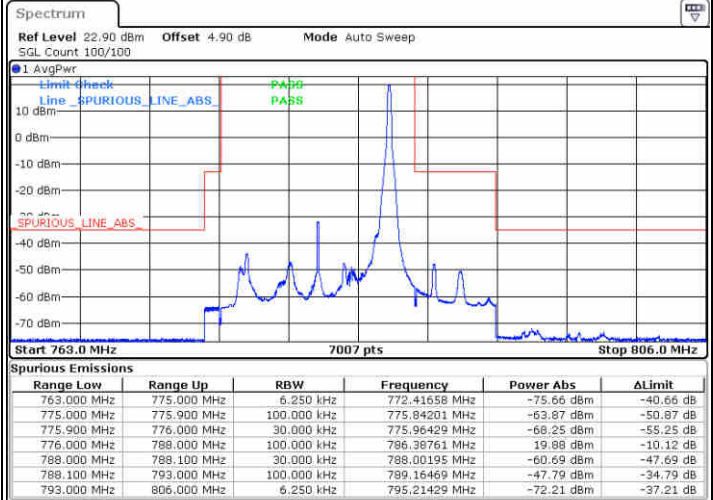


## LTE Band 13 / 10MHz / 16QAM

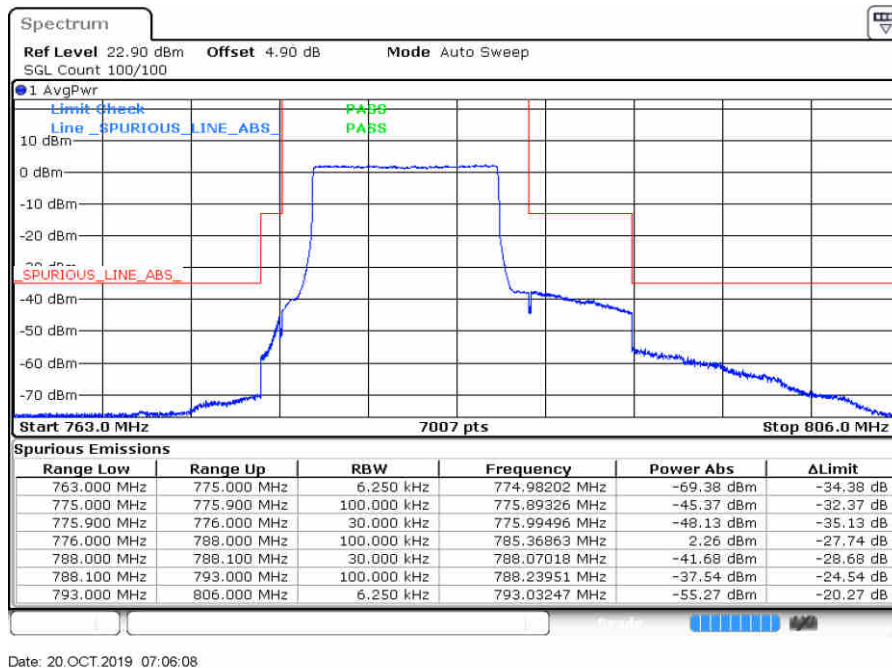
## Lowest Band Edge / 1 RB



## Highest Band Edge / 1 RB



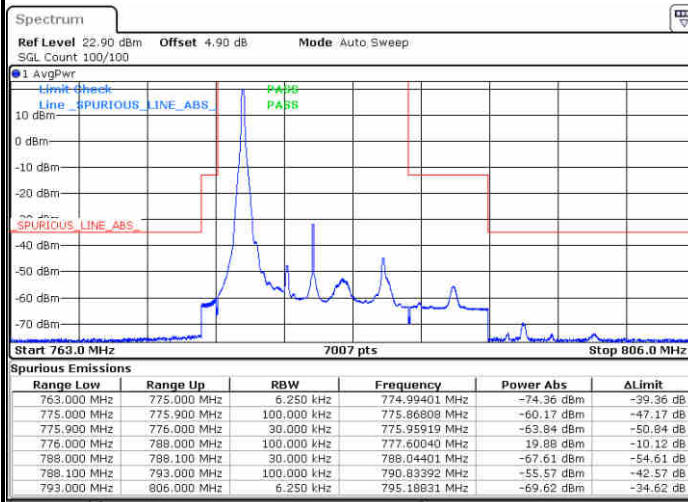
## Band Edge / Full RB





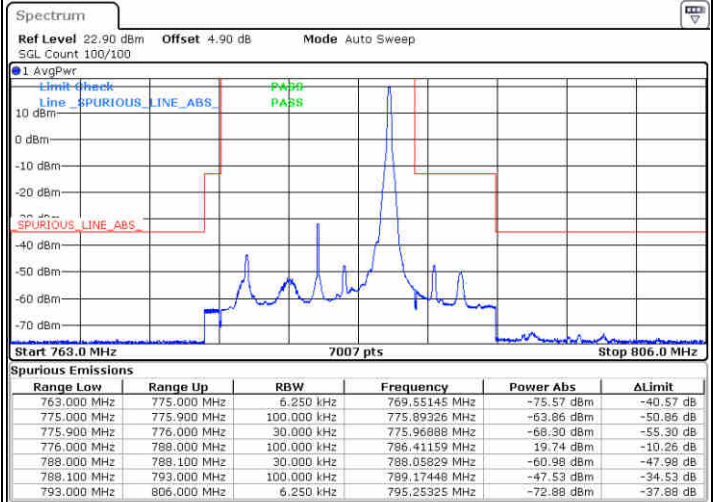
## LTE Band 13 / 10MHz / 64QAM

## Lowest Band Edge / 1 RB



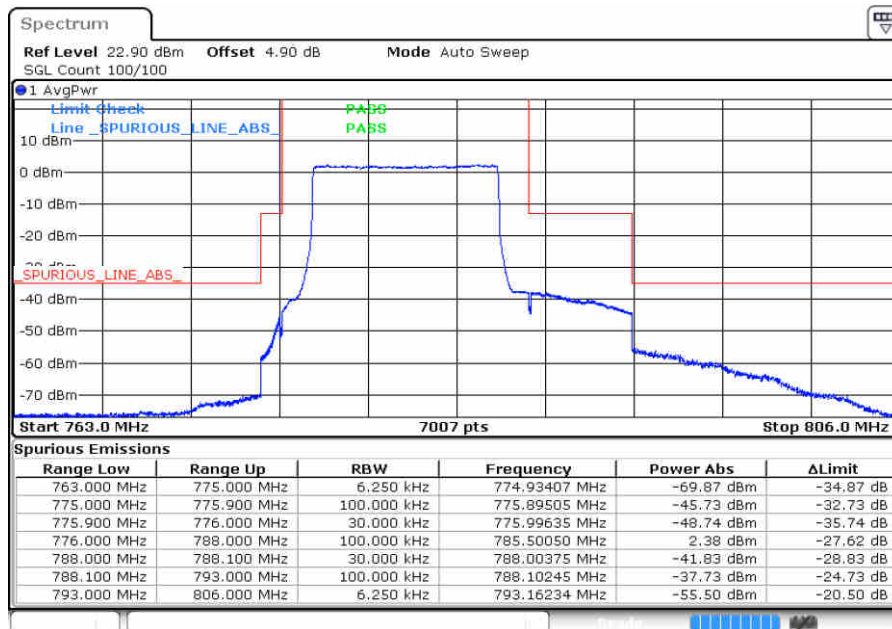
Date: 20.OCT.2019 07:18:52

## Highest Band Edge / 1 RB



Date: 20.OCT.2019 07:20:29

## Band Edge / Full RB



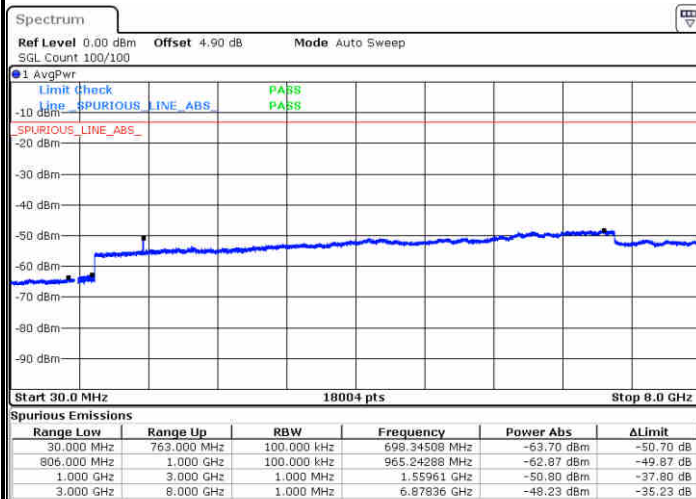
Date: 20.OCT.2019 07:22:07



# Conducted Spurious Emission

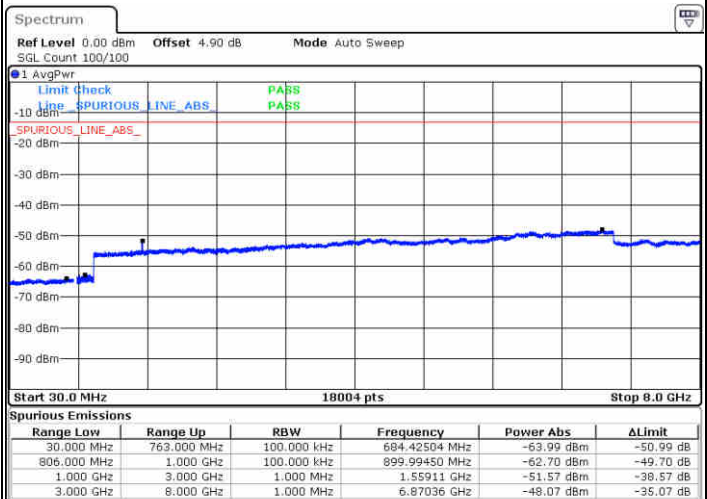
## LTE Band 13 / 5MHz

### Lowest Channel / QPSK



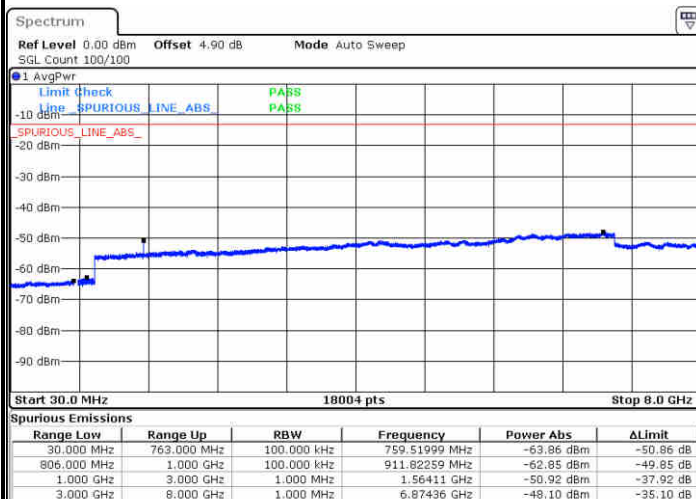
Date: 20 OCT 2019 06:39:58

### Lowest Channel / 16QAM



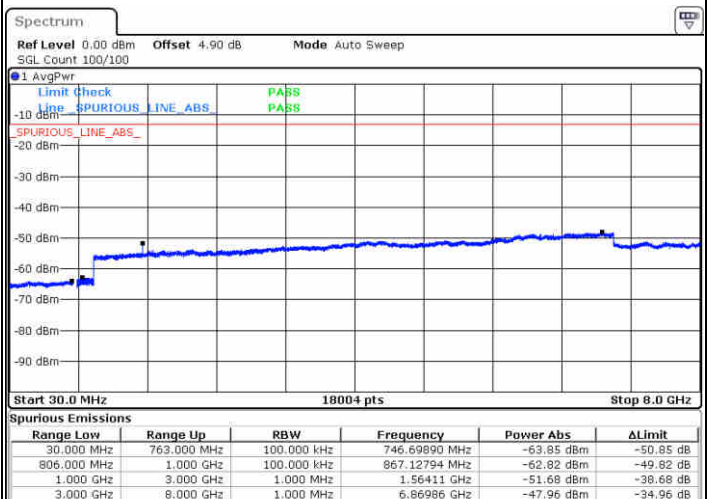
Date: 20 OCT 2019 06:39:34

### Middle Channel / QPSK



Date: 20 OCT 2019 06:40:25

### Middle Channel / 16QAM

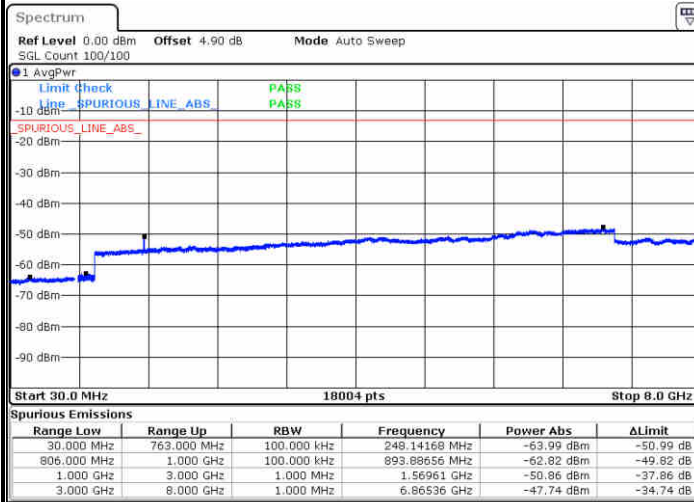


Date: 20 OCT 2019 06:40:54



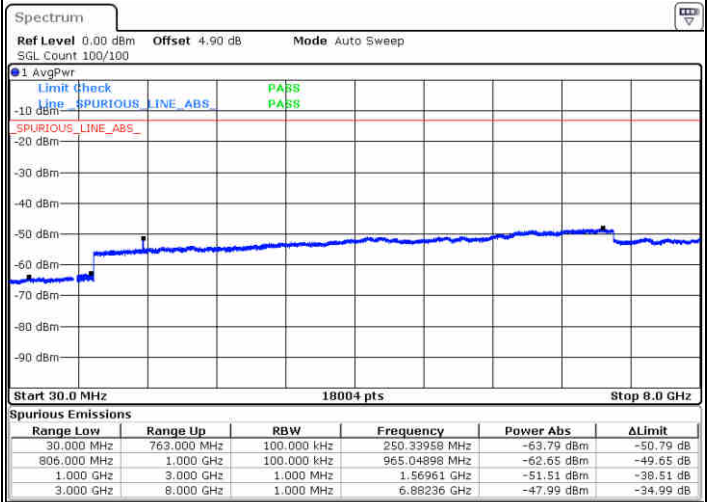
## LTE Band 13 / 5MHz

## Highest Channel / QPSK



Date: 20 OCT 2019 06:42:45

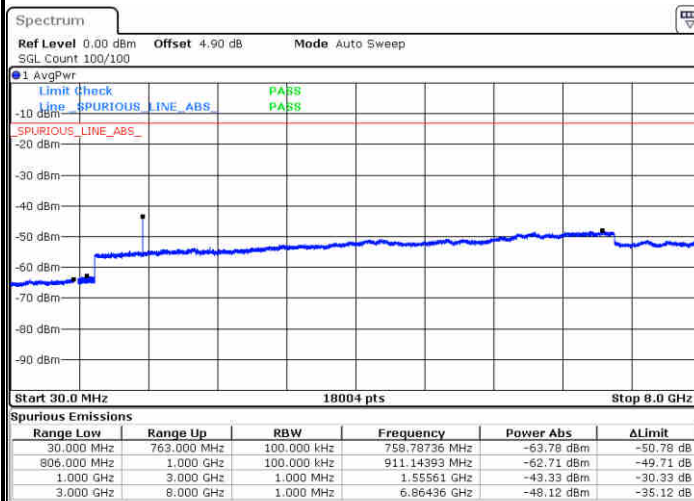
## Highest Channel / 16QAM



Date: 20 OCT 2019 06:42:19

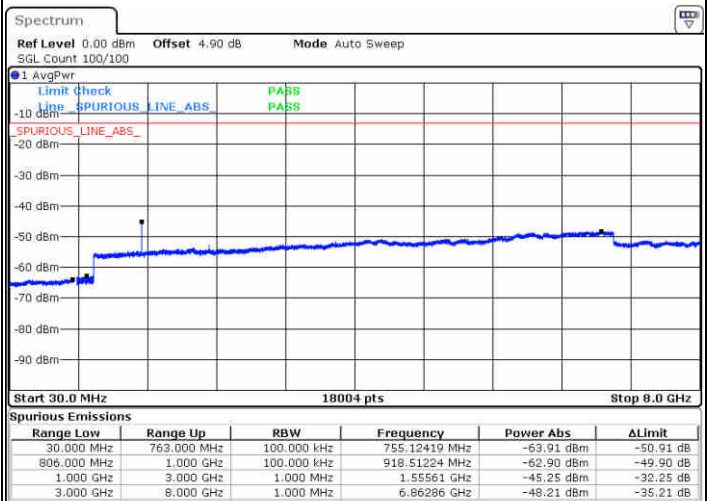
## LTE Band 13 / 10MHz

## Middle Channel / QPSK



Date: 20 OCT 2019 06:32:51

## Middle Channel / 16QAM

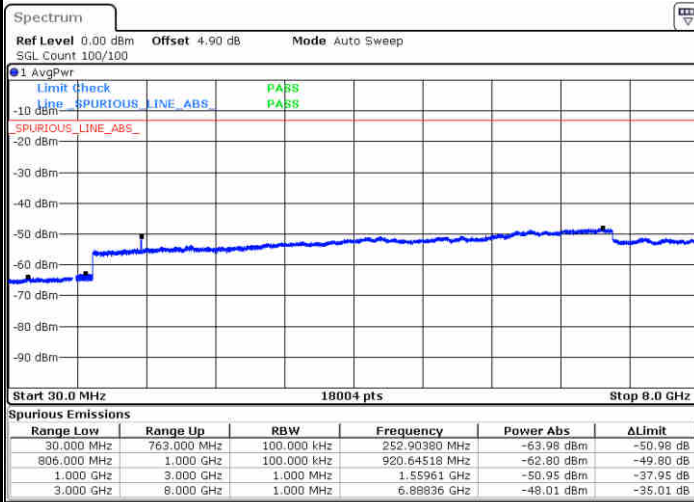


Date: 20 OCT 2019 06:33:47



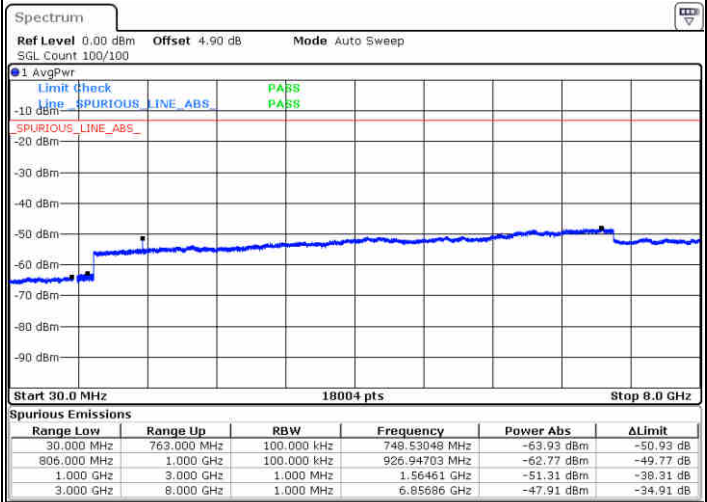
## LTE Band 13 / 5MHz

## Lowest Channel / 64QAM



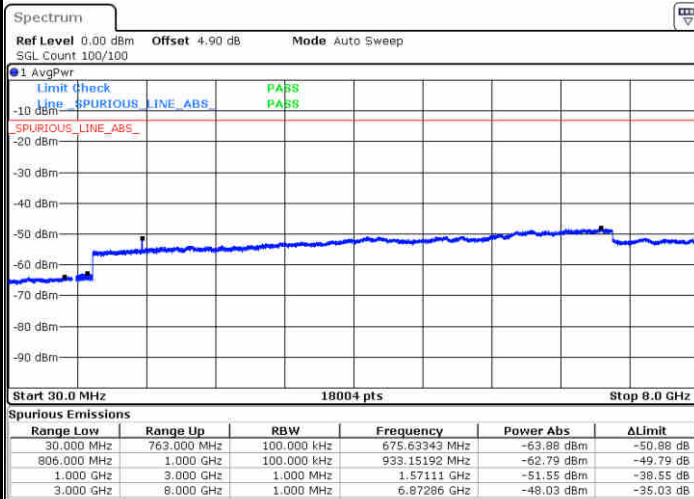
Date: 20 OCT 2019 06:39:10

## Middle Channel / 64QAM



Date: 20 OCT 2019 06:41:24

## Highest Channel / 64QAM

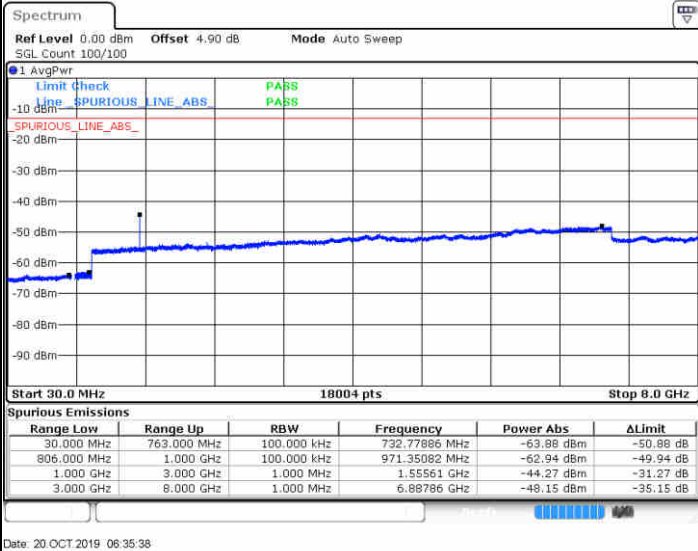


Date: 20 OCT 2019 06:41:53



LTE Band 13 / 10MHz

Middle Channel / 64QAM



## 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    | 0.0024                              | PASS    |
| 40               | Normal Voltage    | 0.0014                              |         |
| 30               | Normal Voltage    | 0.0057                              |         |
| 20(Ref.)         | Normal Voltage    | 0.0000                              |         |
| 10               | Normal Voltage    | 0.0034                              |         |
| 0                | Normal Voltage    | 0.0055                              |         |
| -10              | Normal Voltage    | 0.0015                              |         |
| -20              | Normal Voltage    | 0.0078                              |         |
| -30              | Normal Voltage    | 0.0043                              |         |
| 20               | Maximum Voltage   | 0.0016                              |         |
| 20               | Normal Voltage    | 0.0000                              |         |
| 20               | Battery End Point | 0.0035                              |         |

**Note:**

1. Normal Voltage =3.8 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



## LTE Band 25

## Peak-to-Average Ratio

| Mode       | LTE Band 25 / 20MHz |         |       |         |             |
|------------|---------------------|---------|-------|---------|-------------|
| Mod.       | QPSK                |         | 16QAM |         | Limit: 13dB |
| RB Size    | 1RB                 | Full RB | 1RB   | Full RB | Result      |
| Lowest CH  | 3.51                | 4.81    | 5.45  | 6.12    | PASS        |
| Middle CH  | 3.71                | 4.67    | 5.16  | 6.06    |             |
| Highest CH | 3.80                | 4.64    | 5.83  | 6.12    |             |
| Mode       | LTE Band 25 / 20MHz |         |       |         |             |
| Mod.       | 64QAM               |         |       |         | Limit: 13dB |
| RB Size    | 1RB                 | Full RB |       |         | Result      |
| Lowest CH  | 6.64                | 6.67    |       |         | PASS        |
| Middle CH  | 6.64                | 6.52    |       |         |             |
| Highest CH | 6.58                | 6.64    |       |         |             |



## LTE Band 25 / 20MHz / QPSK

## Lowest Channel / 1RB



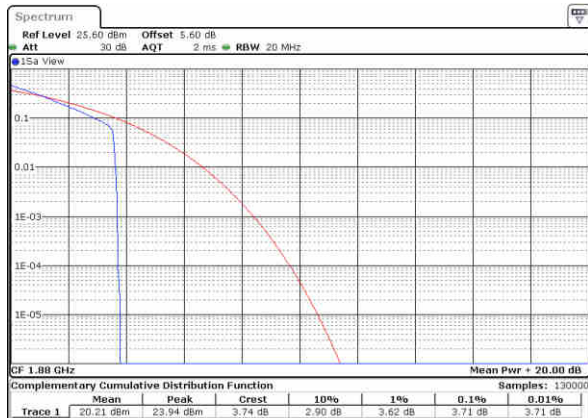
Date: 22.OCT.2019 02:29:38

## Lowest Channel / Full RB



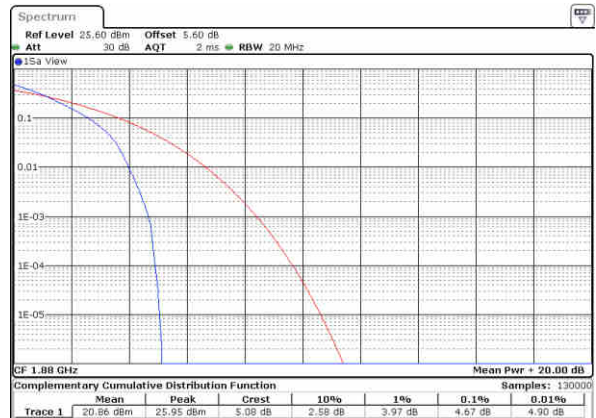
Date: 22.OCT.2019 02:30:42

## Middle Channel / 1RB



Date: 22.OCT.2019 02:31:45

## Middle Channel / Full RB



Date: 22.OCT.2019 02:30:53

## Highest Channel / 1RB

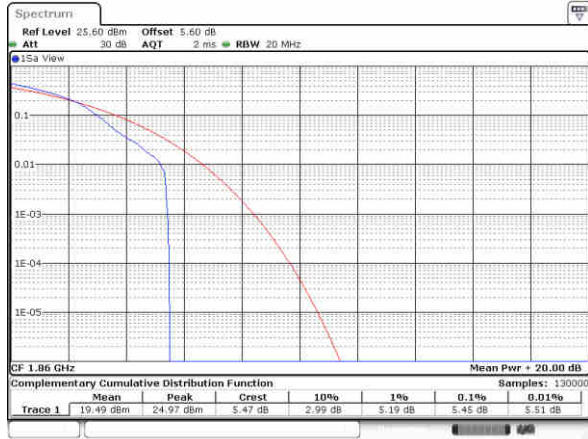
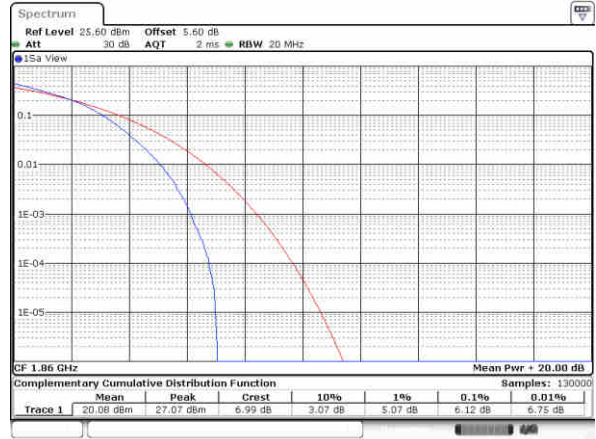
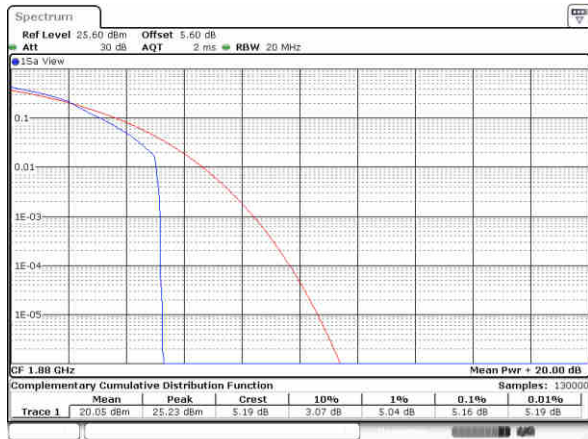
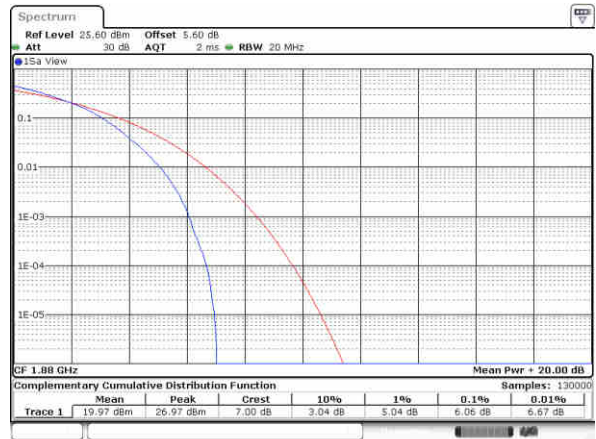
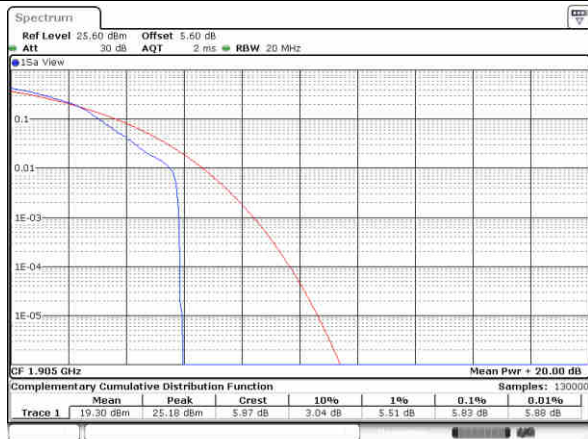


Date: 22.OCT.2019 02:31:55

## Highest Channel / Full RB



Date: 22.OCT.2019 02:32:51

**LTE Band 25 / 20MHz / 16QAM**
**Lowest Channel / 1RB**

**Lowest Channel / Full RB**

**Middle Channel / 1RB**

**Middle Channel / Full RB**

**Highest Channel / 1RB**

**Highest Channel / Full RB**
