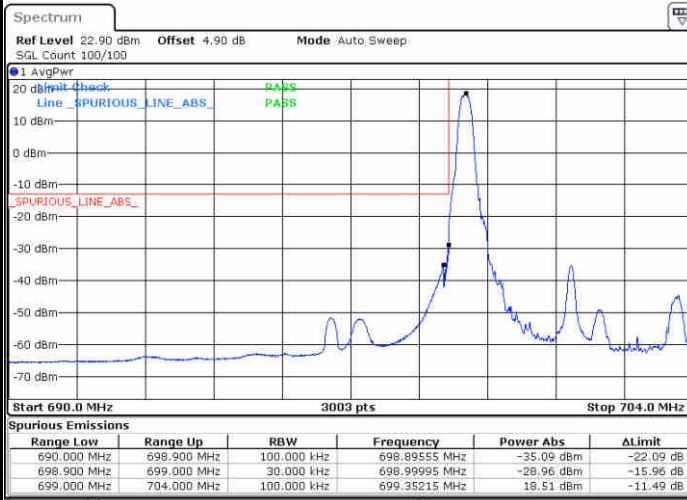




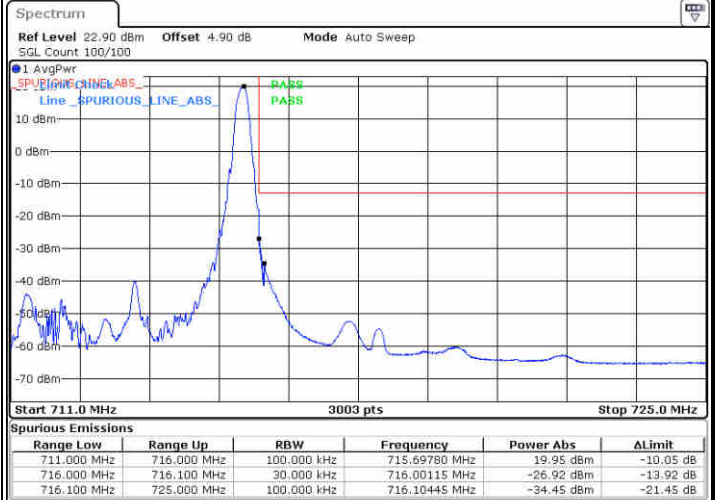
LTE Band 12 / 5MHz / 64QAM

Lowest Band Edge / 1RB



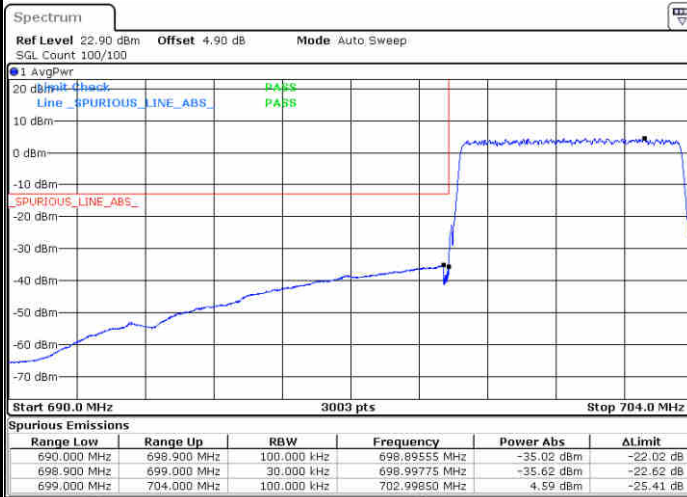
Date: 21.OCT.2019 19:35:13

Highest Band Edge / 1 RB



Date: 21.OCT.2019 19:30:35

Lowest Band Edge / Full RB



Date: 21.OCT.2019 19:36:21

Highest Band Edge / Full RB

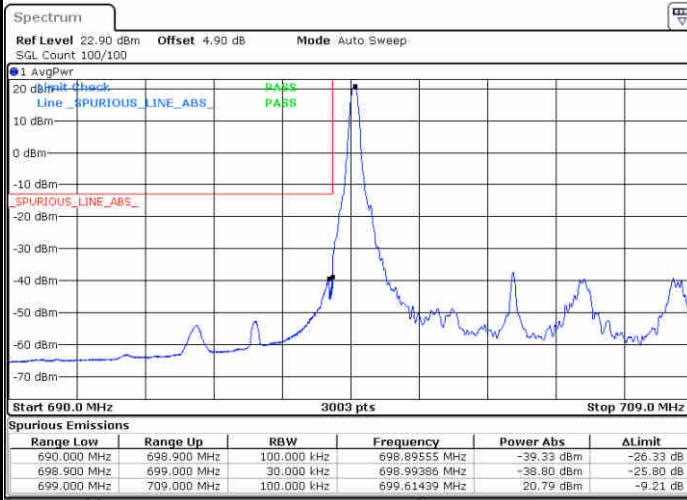


Date: 21.OCT.2019 19:29:26



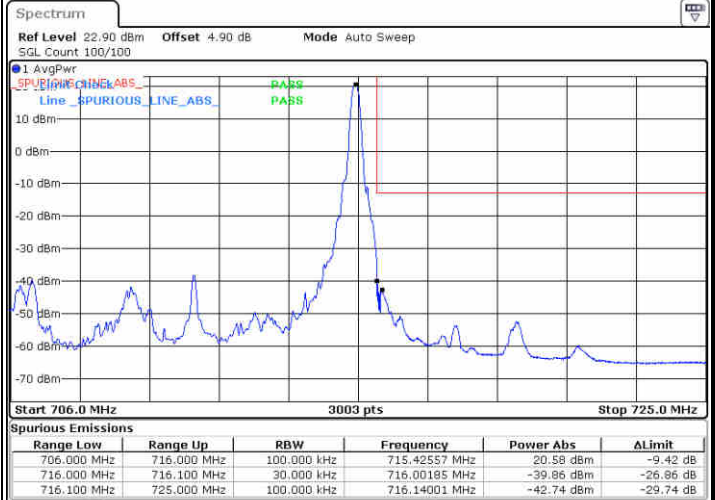
LTE Band 12 / 10MHz / QPSK

Lowest Band Edge / 1 RB



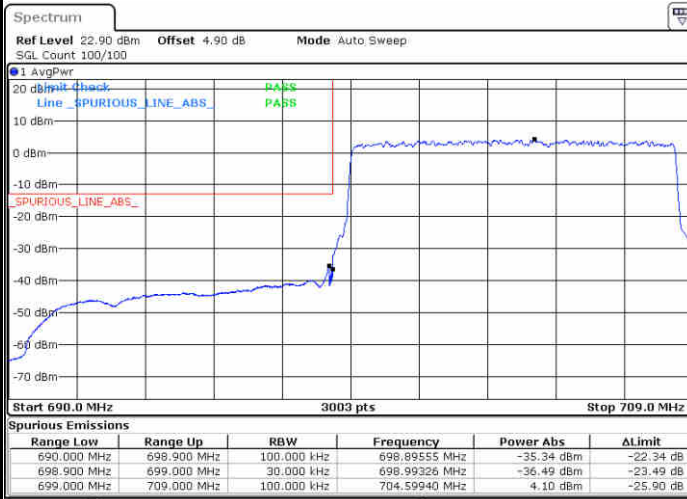
Date: 21.OCT.2019 19:03:56

Highest Band Edge / 1 RB



Date: 21.OCT.2019 19:09:39

Lowest Band Edge / Full RB



Date: 21.OCT.2019 19:05:05

Highest Band Edge / Full RB

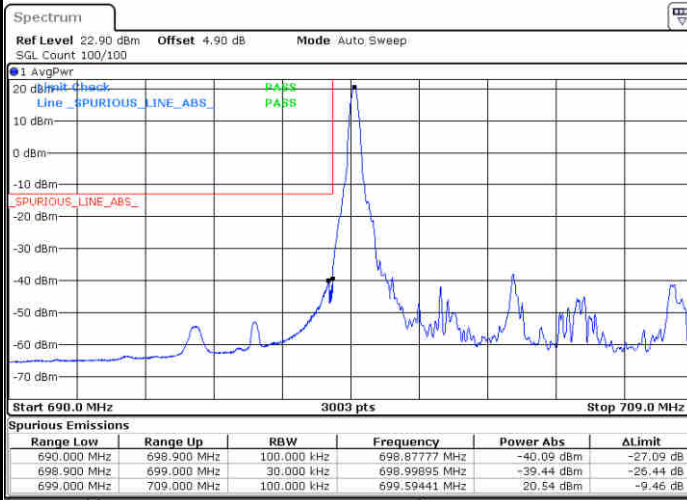


Date: 21.OCT.2019 19:08:31



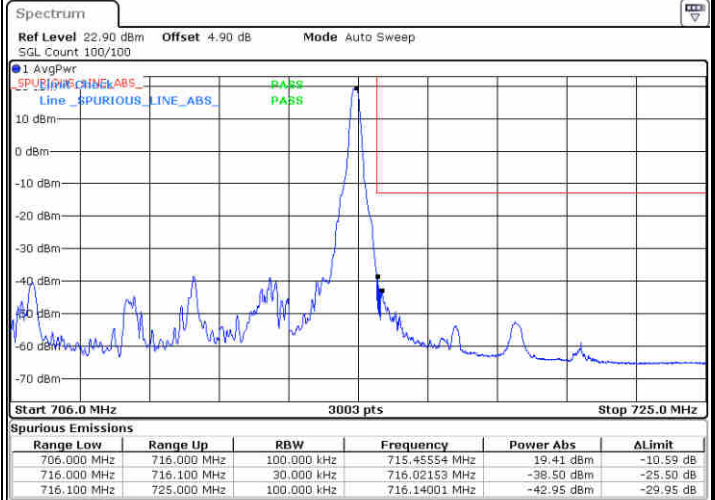
LTE Band 12 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



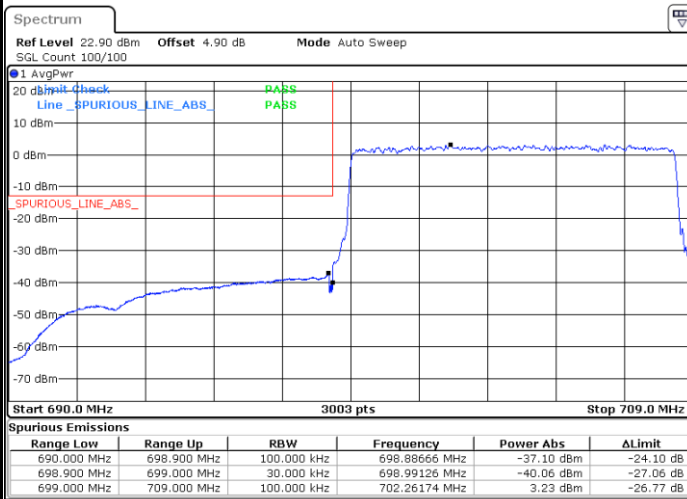
Date: 21.OCT.2019 19:02:48

Highest Band Edge / 1 RB



Date: 21.OCT.2019 19:10:48

Lowest Band Edge / Full RB



Date: 21.OCT.2019 19:06:13

Highest Band Edge / Full RB

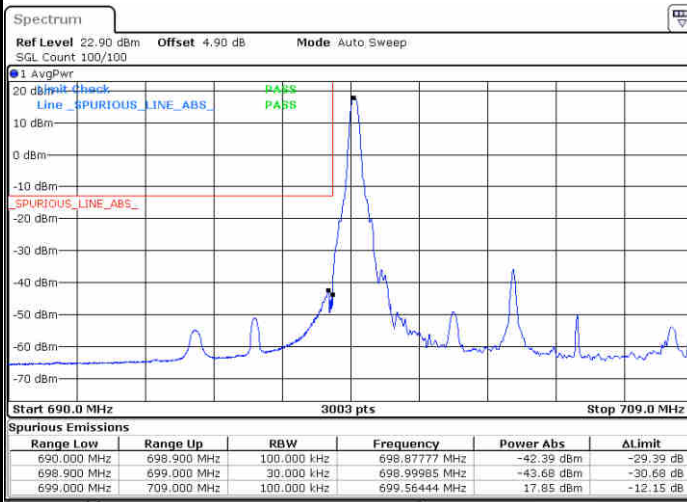


Date: 21.OCT.2019 19:07:22



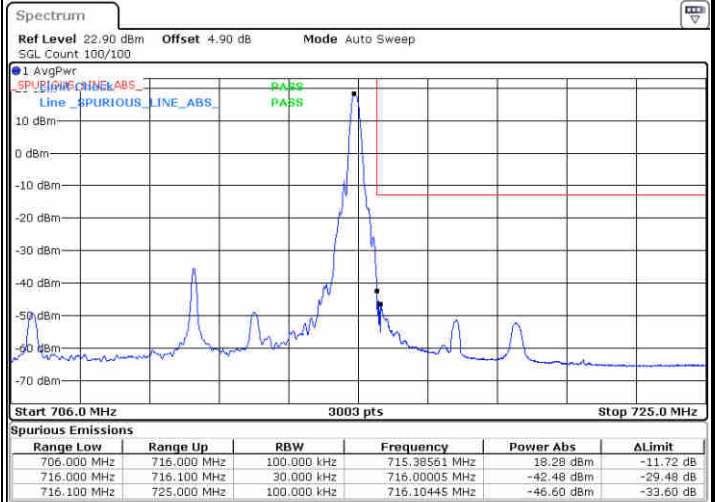
LTE Band 12 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



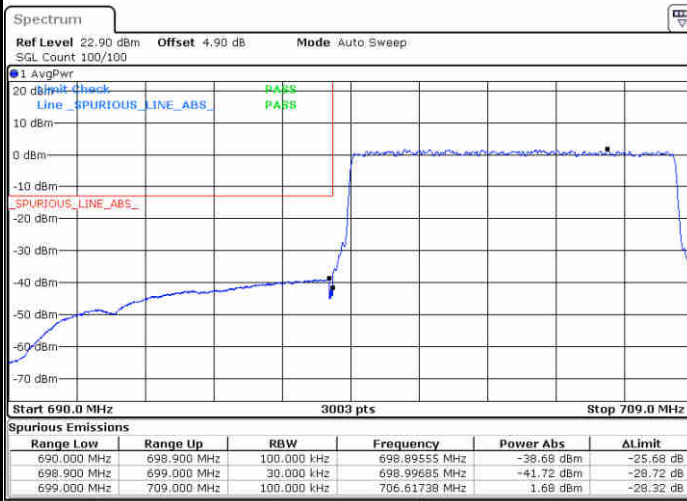
Date: 21.OCT.2019 19:46:09

Highest Band Edge / 1 RB



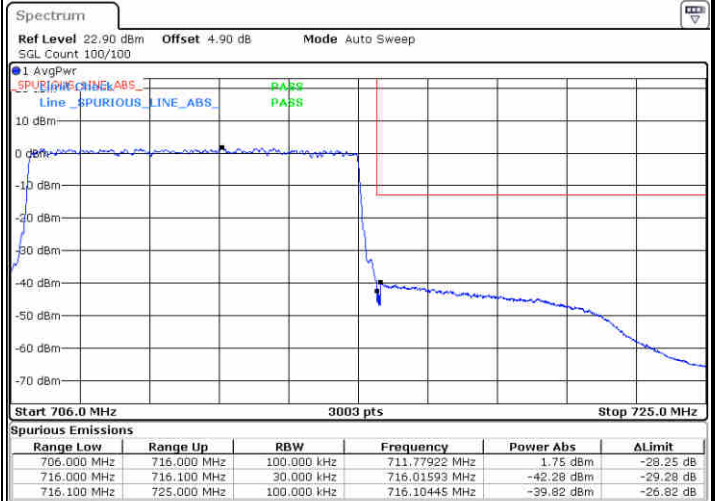
Date: 21.OCT.2019 19:45:00

Lowest Band Edge / Full RB



Date: 21.OCT.2019 19:47:17

Highest Band Edge / Full RB

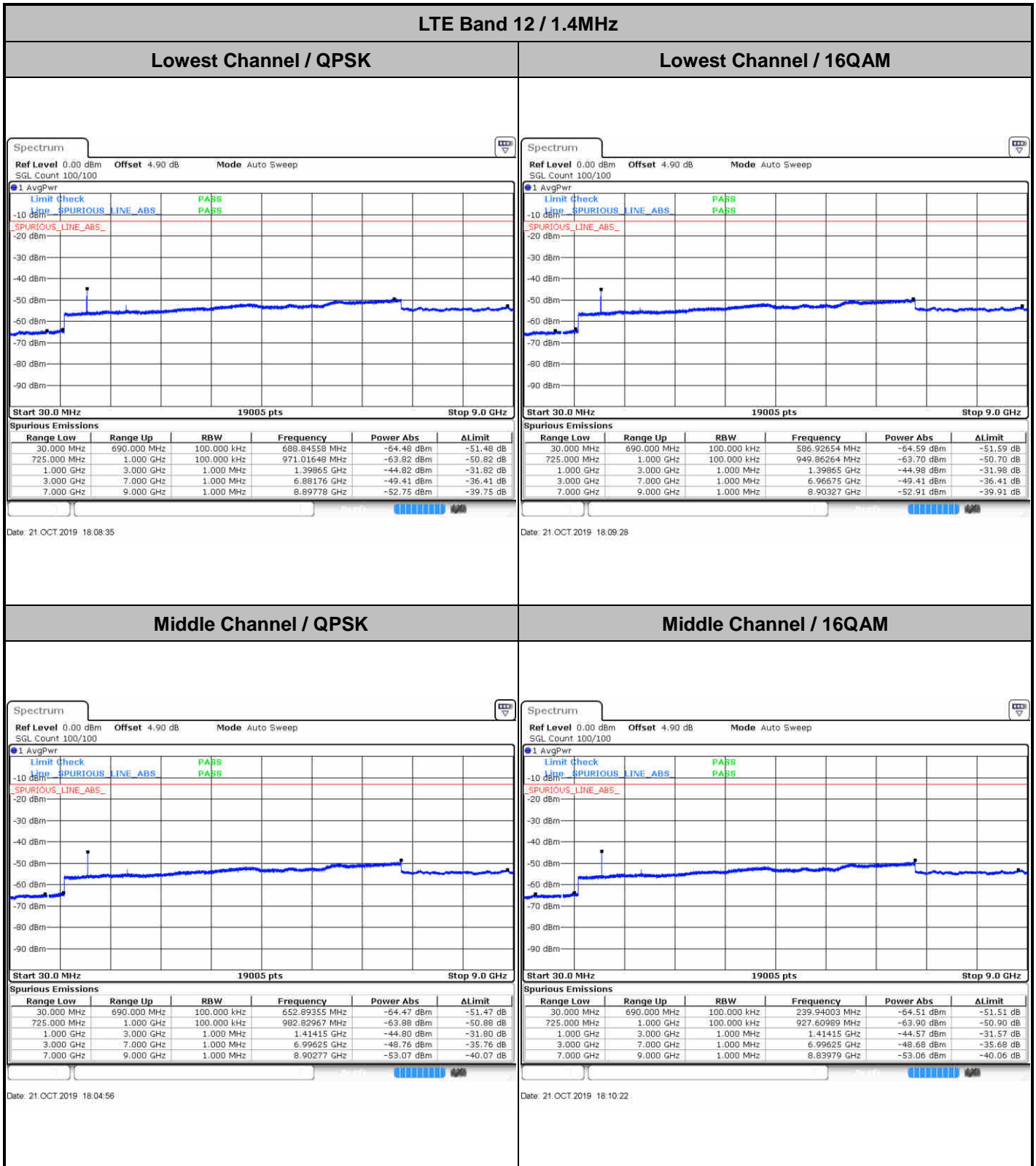


Date: 21.OCT.2019 19:43:51





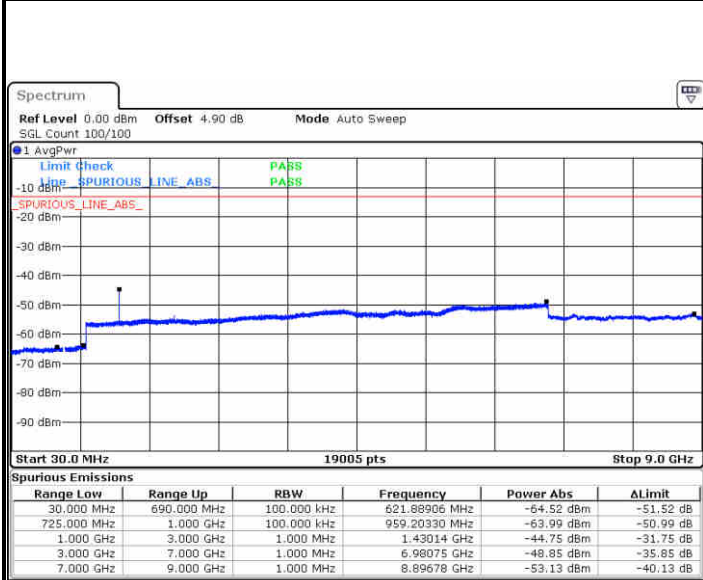
# Conducted Spurious Emission





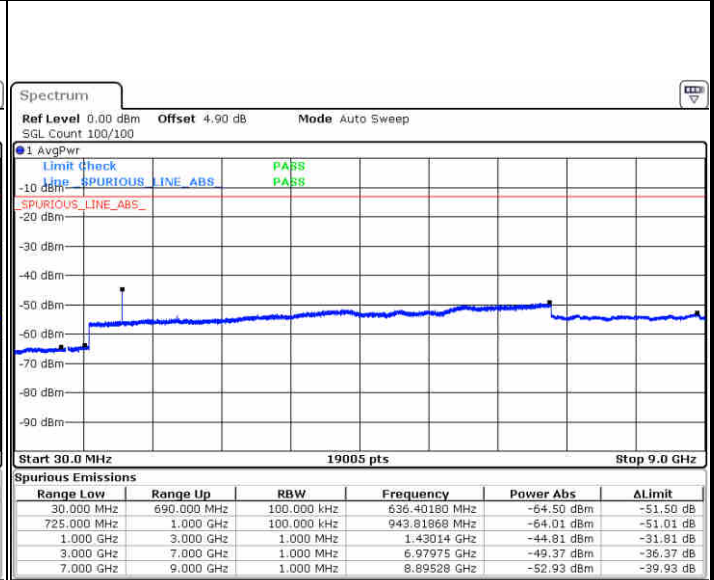
LTE Band 12 / 1.4MHz

Highest Channel / QPSK



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

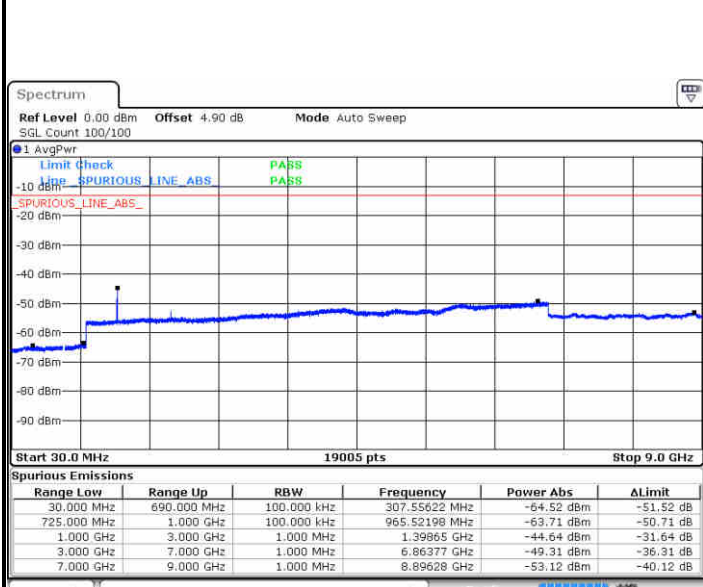
Highest Channel / 16QAM



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

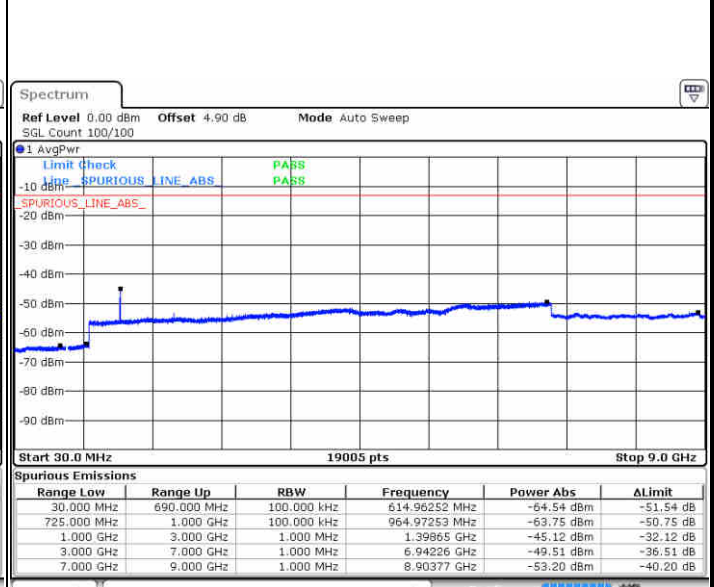
LTE Band 12 / 3MHz

Lowest Channel / QPSK



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

Lowest Channel / 16QAM



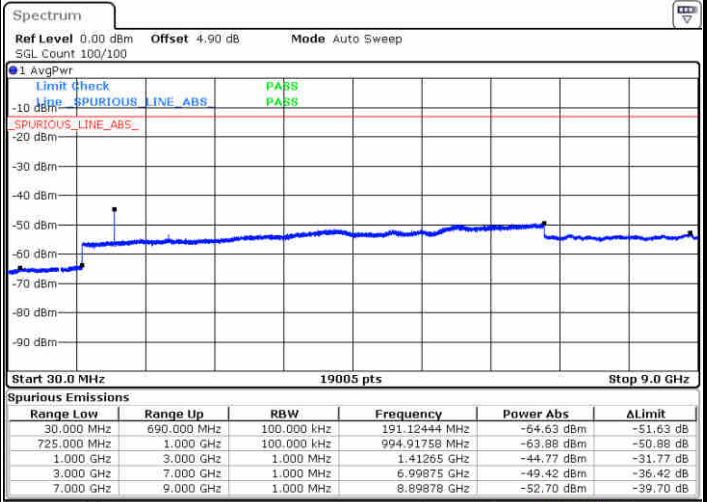
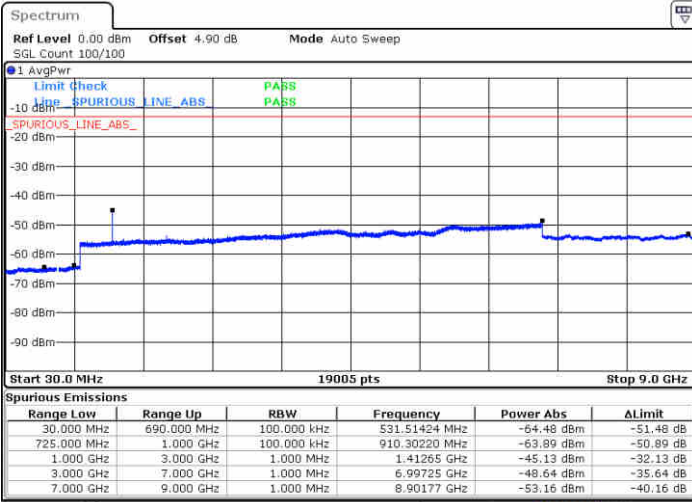
Date: 21.OCT.2019 18:25:05



LTE Band 12 / 3MHz

Middle Channel / QPSK

Middle Channel / 16QAM

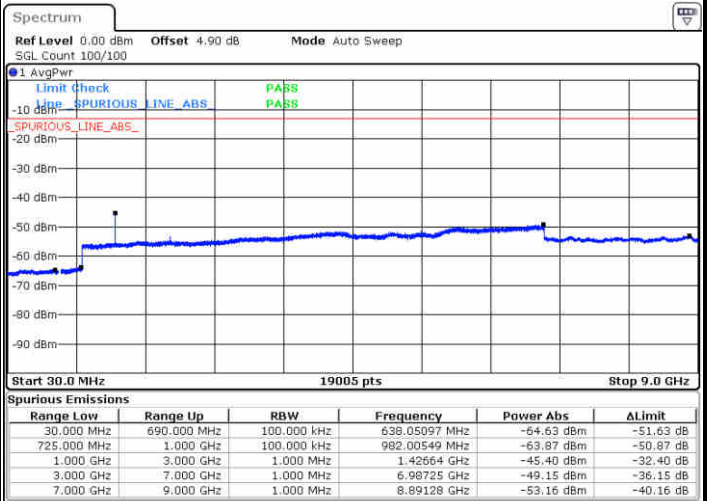
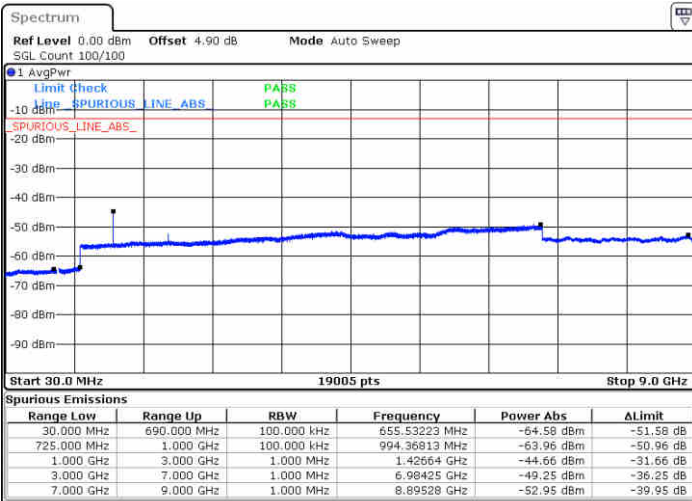


Date: 21.OCT.2019 18:26:52

Date: 21.OCT.2019 18:25:59

Highest Channel / QPSK

Highest Channel / 16QAM



Date: 21.OCT.2019 18:27:46

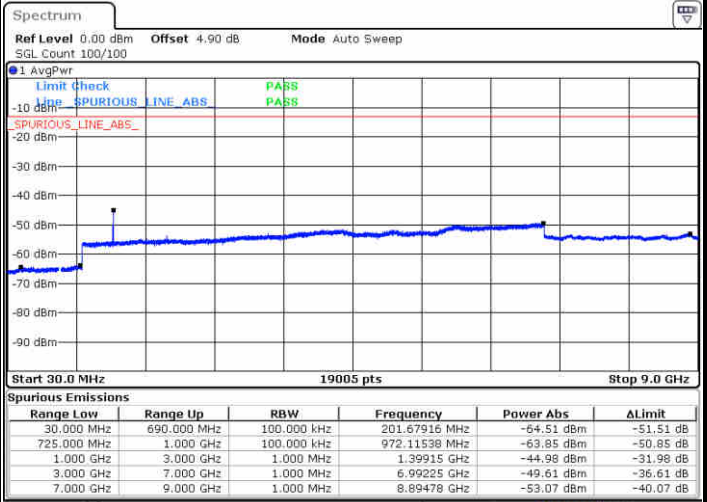
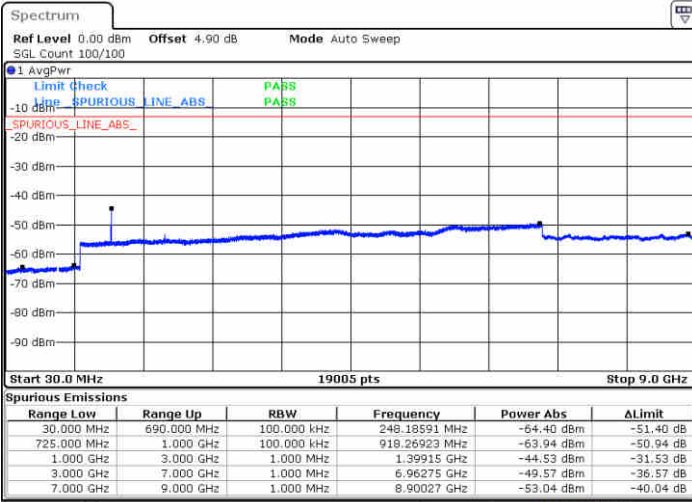
Date: 21.OCT.2019 18:28:39



LTE Band 12 / 5MHz

Lowest Channel / QPSK

Lowest Channel / 16QAM

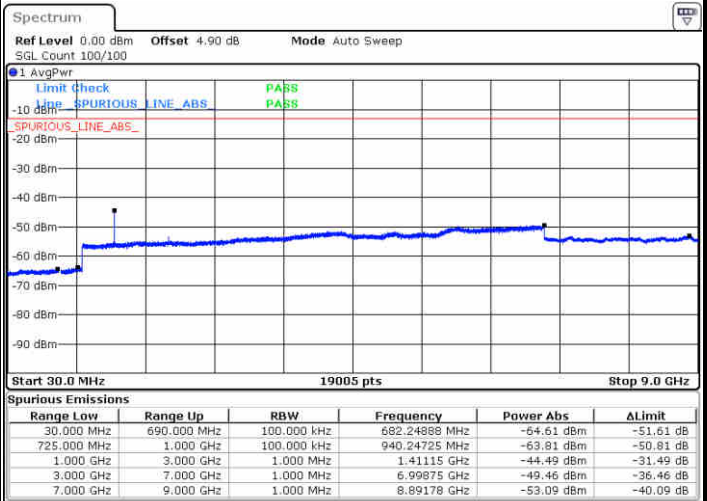
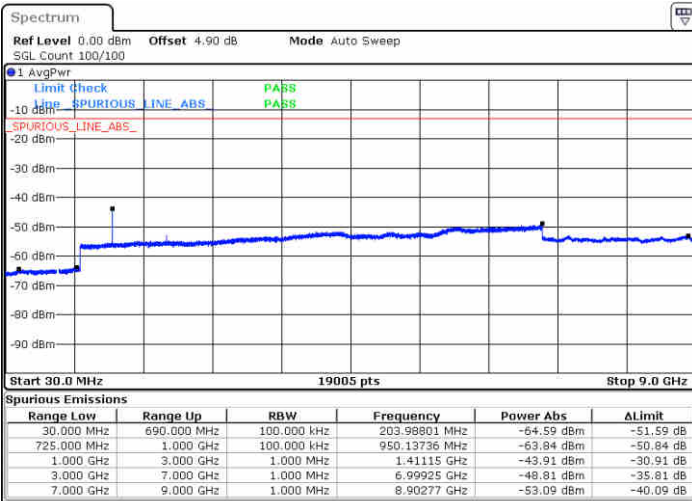


Date: 21.OCT.2019 18:40:42

Date: 21.OCT.2019 18:41:35

Middle Channel / QPSK

Middle Channel / 16QAM



Date: 21.OCT.2019 18:43:22

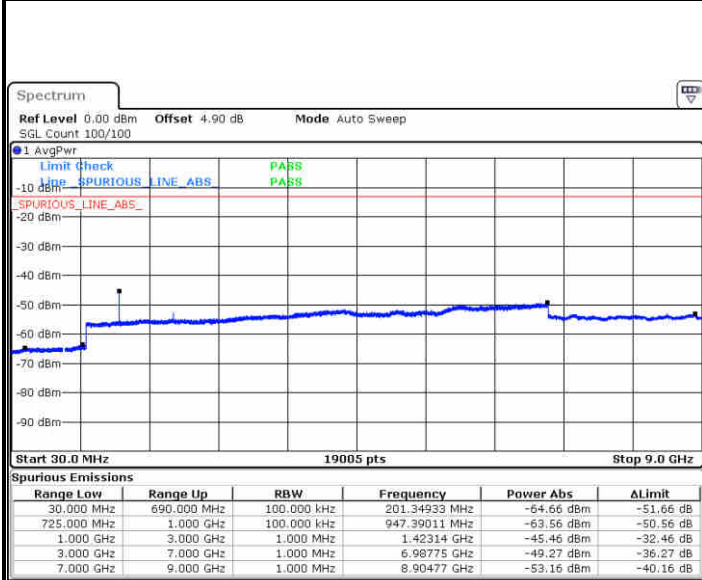
Date: 21.OCT.2019 18:42:29





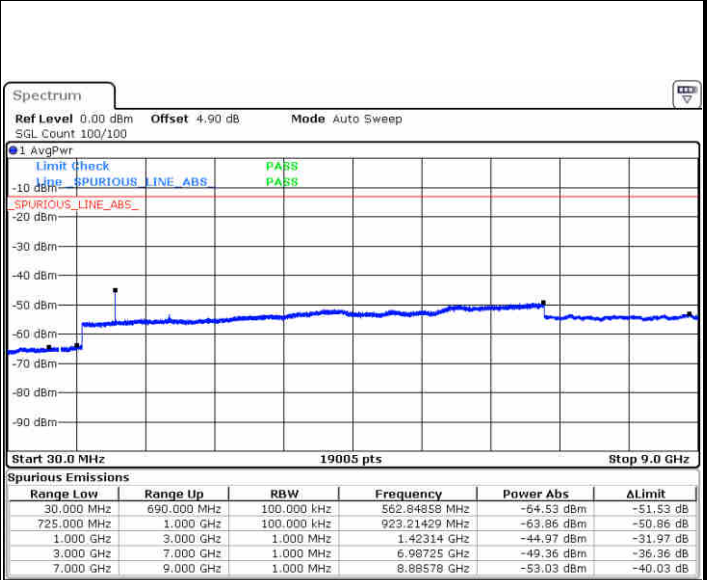
LTE Band 12 / 5MHz

Highest Channel / QPSK



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

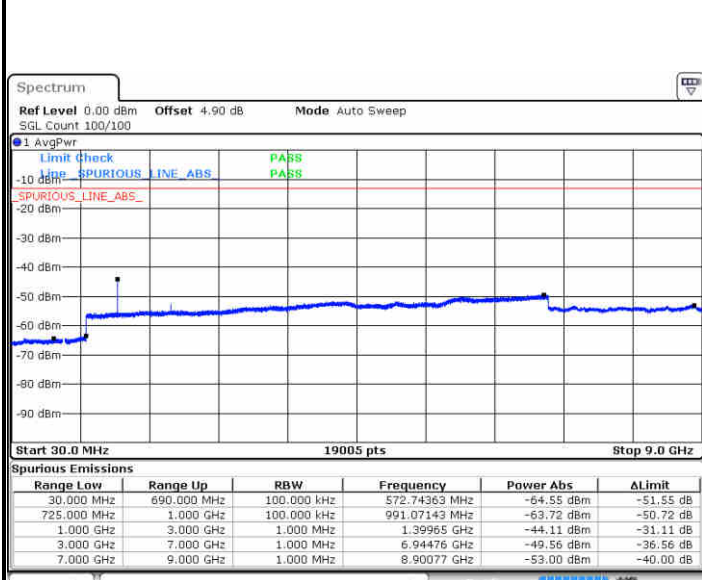
Highest Channel / 16QAM



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

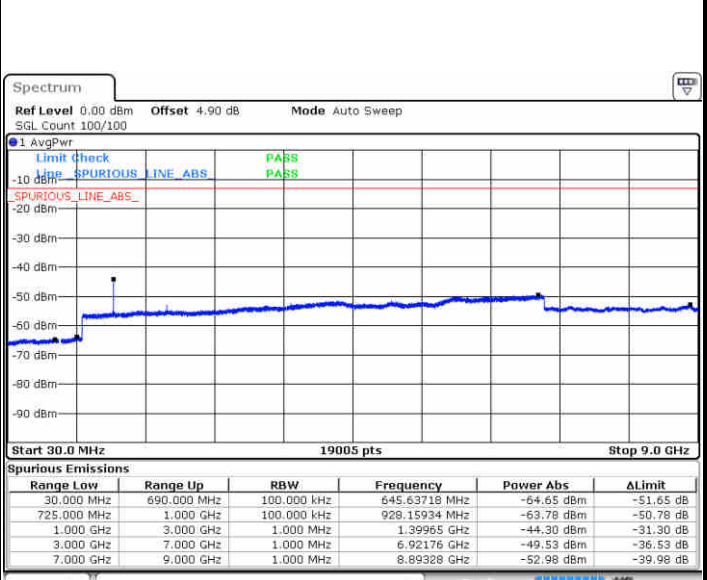
LTE Band 12 / 10MHz

Lowest Channel / QPSK



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

Lowest Channel / 16QAM



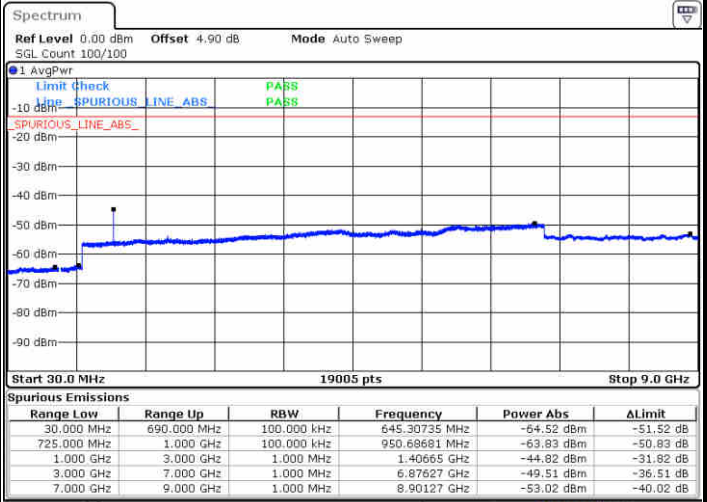
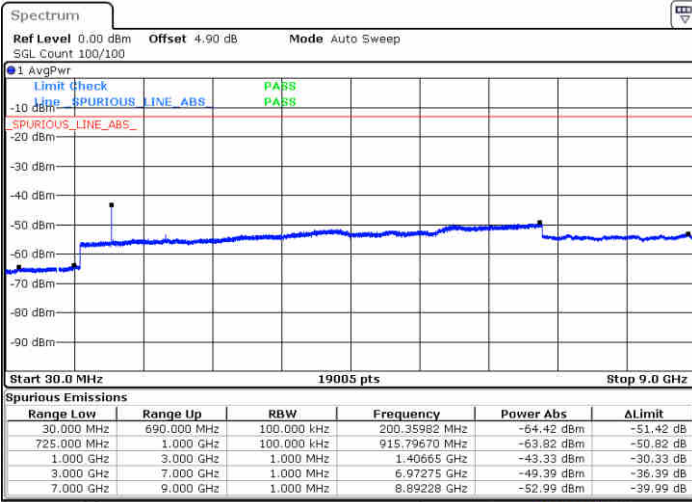
Date: 21.OCT.2019 18:58:05



LTE Band 12 / 10MHz

Middle Channel / QPSK

Middle Channel / 16QAM

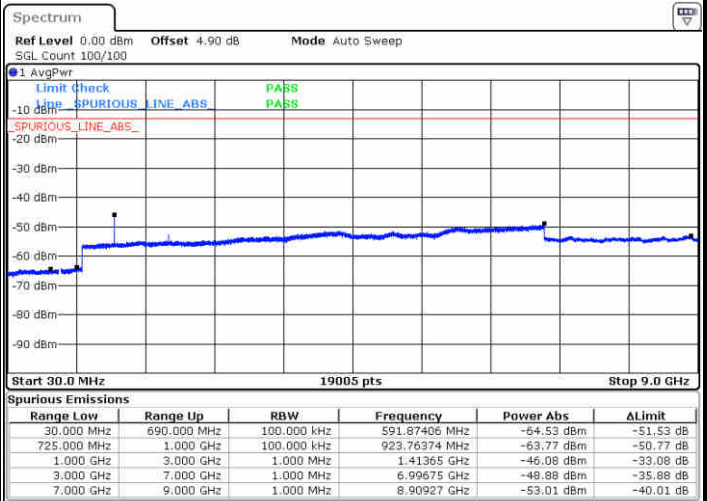
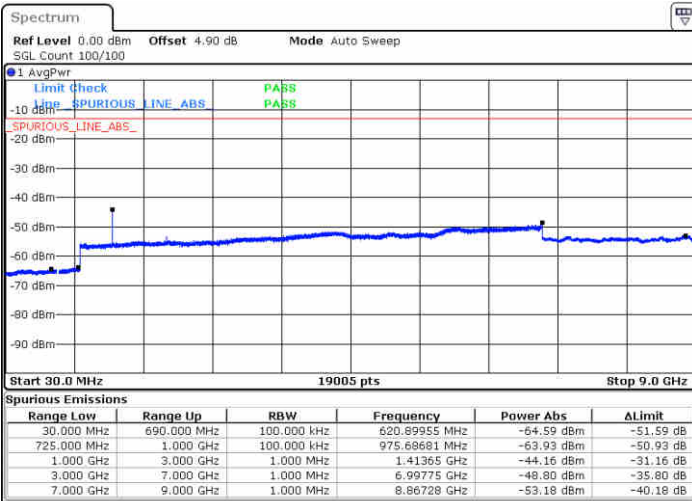


Date: 21.OCT.2019 18:59:52

Date: 21.OCT.2019 18:58:59

Highest Channel / QPSK

Highest Channel / 16QAM



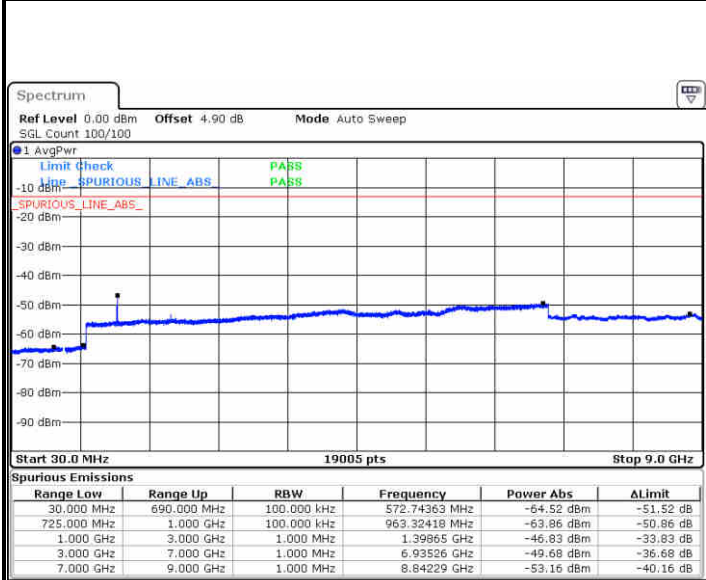
Date: 21.OCT.2019 19:00:46

Date: 21.OCT.2019 19:01:39



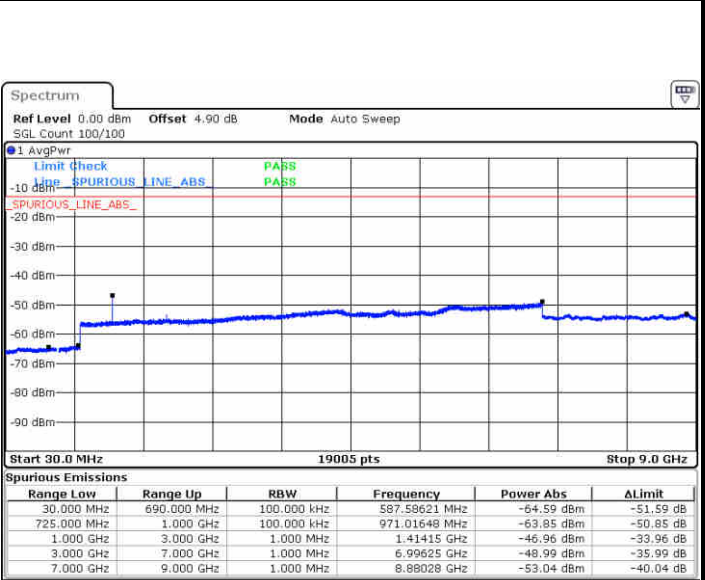
**LTE Band 12 / 1.4MHz**

**Lowest Channel / 64QAM**



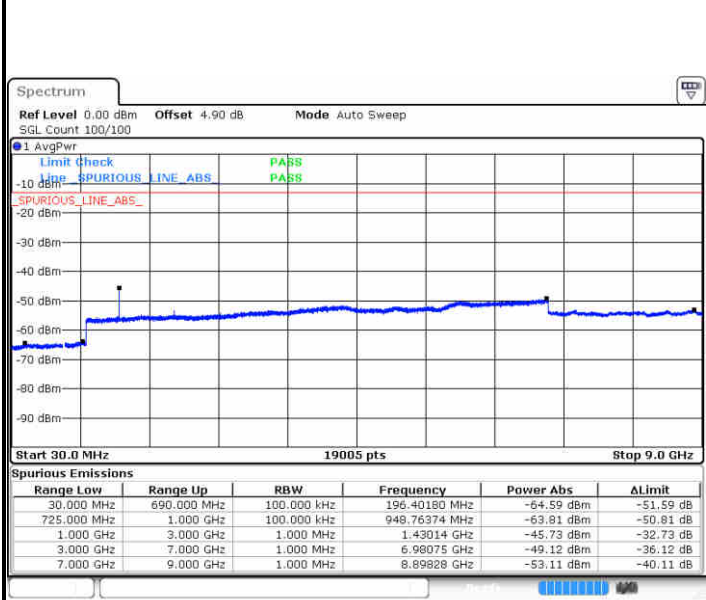
Date: 21.OCT.2019 19:17:17

**Middle Channel / 64QAM**

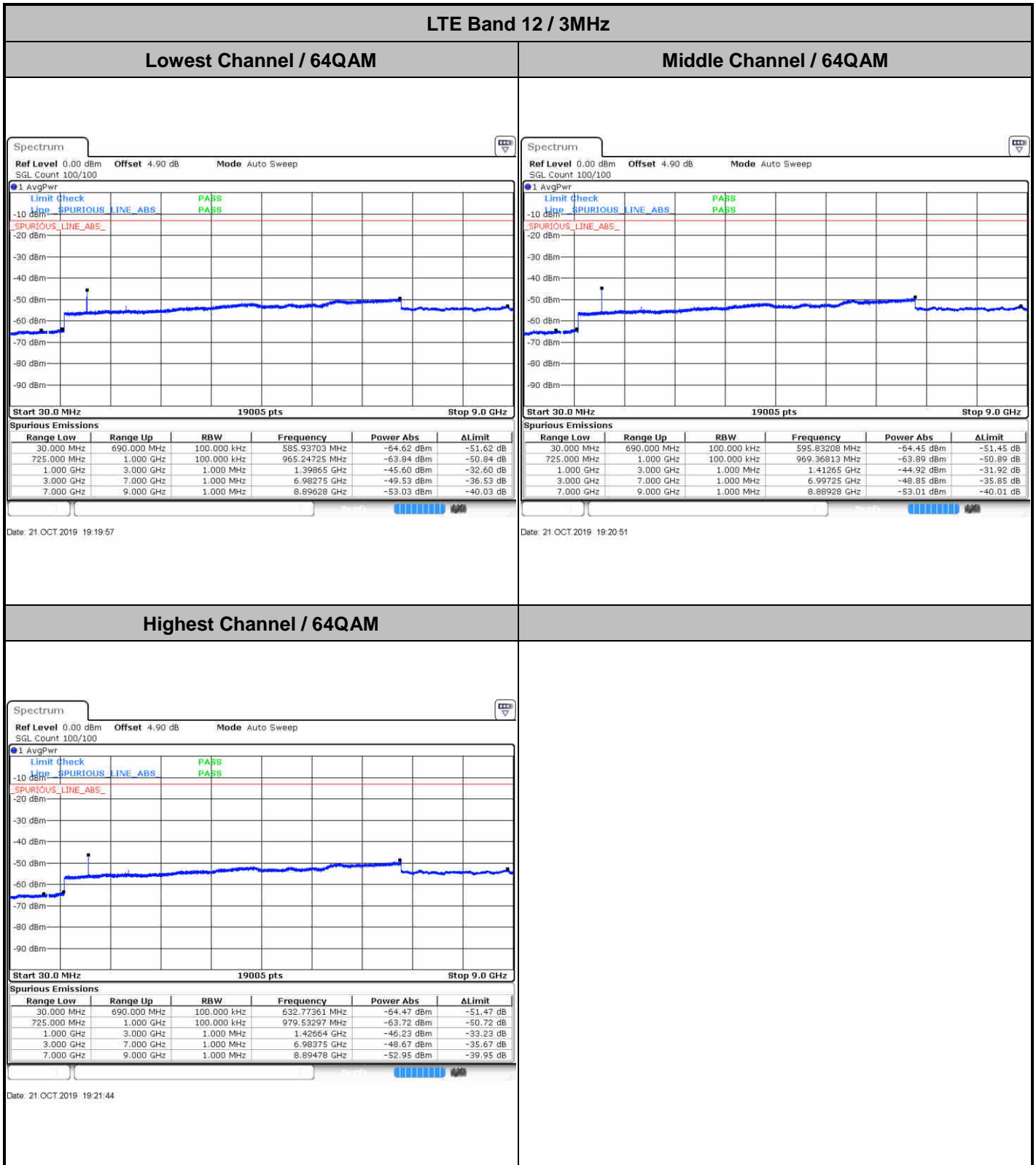


Date: 21.OCT.2019 19:18:10

**Highest Channel / 64QAM**



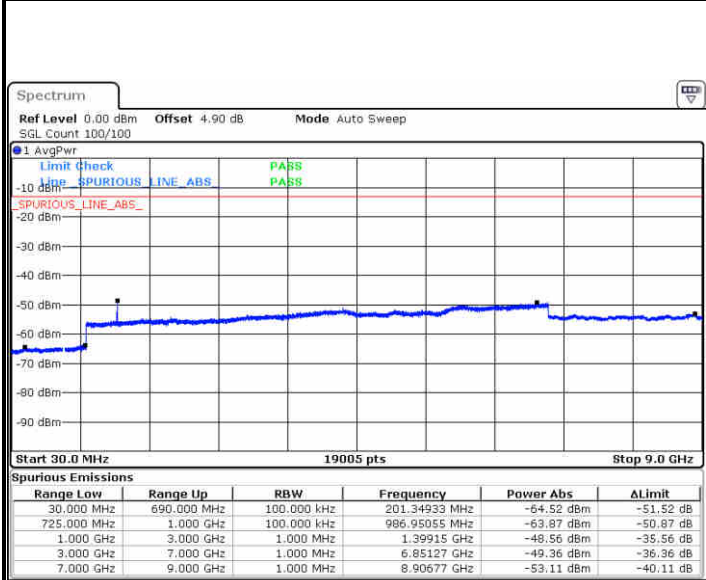
Date: 21.OCT.2019 19:19:04





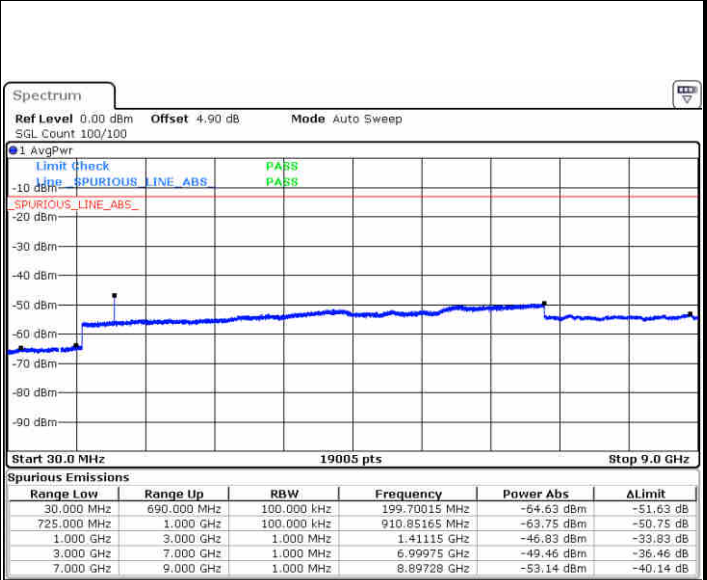
**LTE Band 12 / 5MHz**

**Lowest Channel / 64QAM**



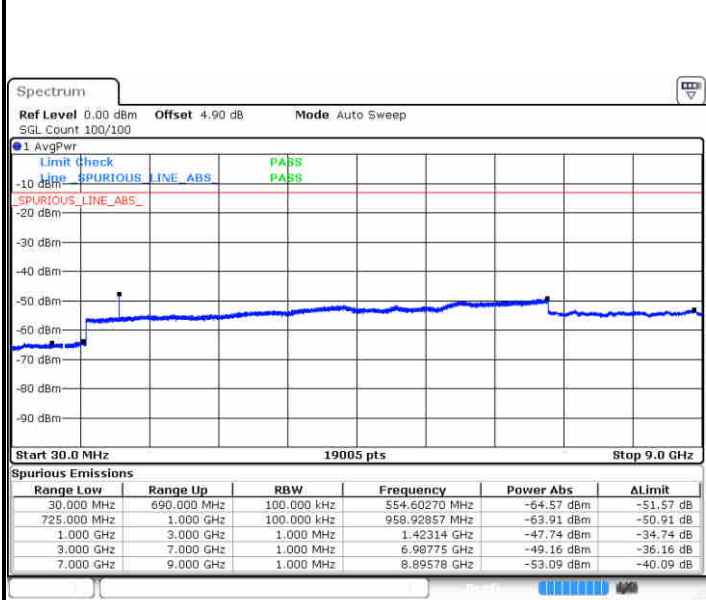
Date: 21.OCT.2019 19:37:16

**Middle Channel / 64QAM**



Date: 21.OCT.2019 19:38:09

**Highest Channel / 64QAM**



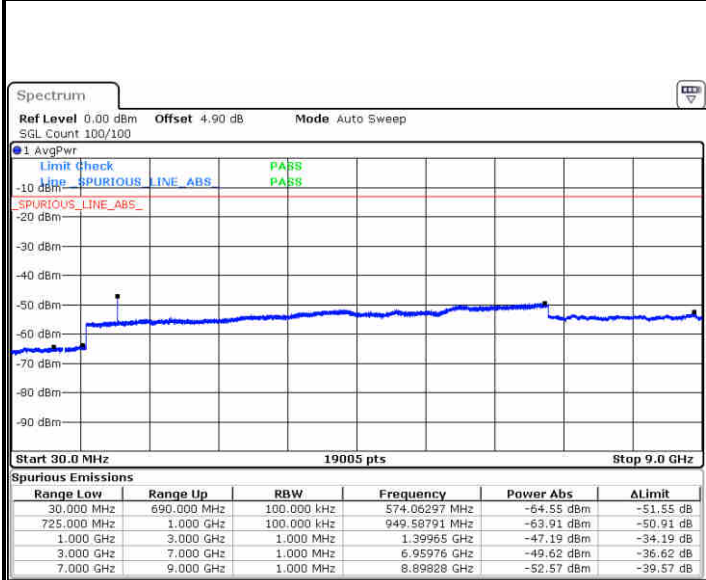
Date: 21.OCT.2019 19:39:03





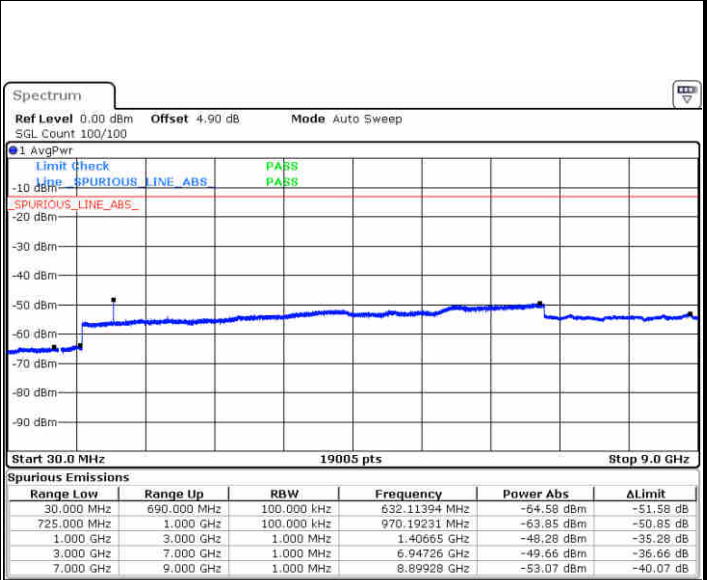
**LTE Band 12 / 10MHz**

**Lowest Channel / 64QAM**



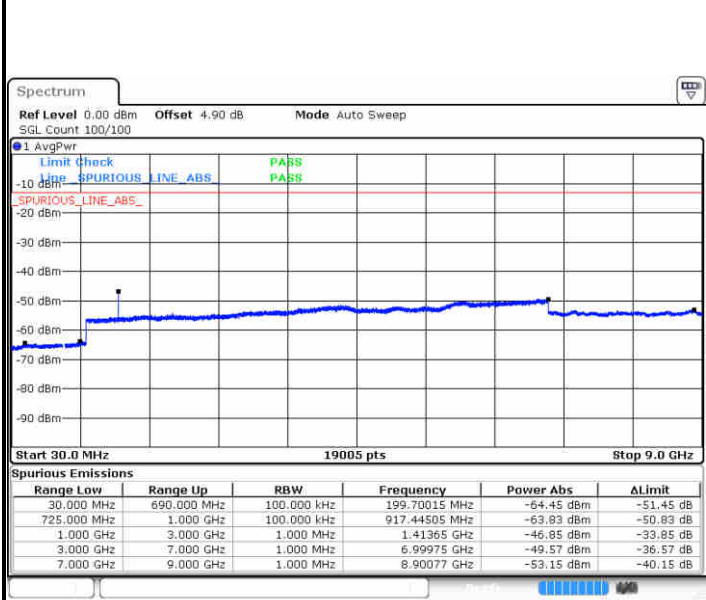
Date: 21.OCT.2019 19:39:56

**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

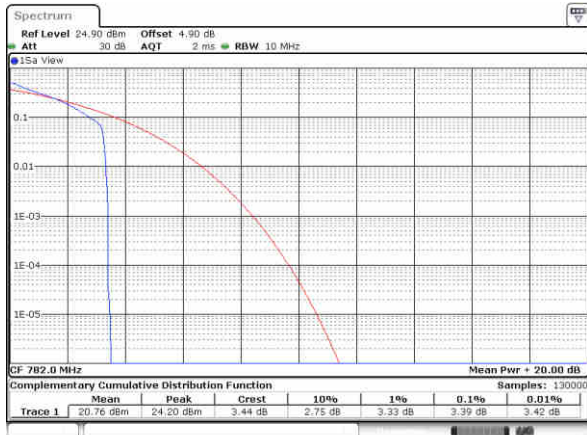
## Peak-to-Average Ratio

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



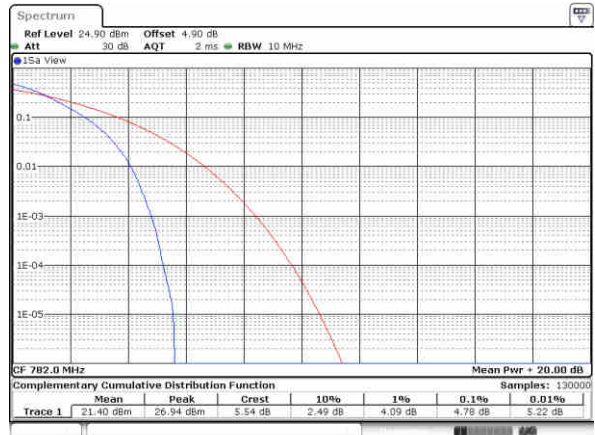
LTE Band 13 / 10MHz / QPSK

Middle Channel / 1RB



Date: 20.OCT.2019 06:37:01

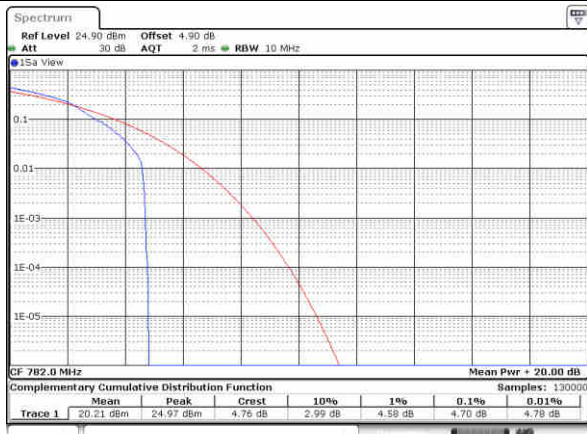
Middle Channel / Full RB



Date: 20.OCT.2019 06:38:18

LTE Band 13 / 10MHz / 16QAM

Middle Channel / 1RB



Date: 20.OCT.2019 06:35:04

Middle Channel / Full RB



Date: 20.OCT.2019 06:38:29

LTE Band 13 / 10MHz / 64QAM

Middle Channel / 1RB



Date: 20.OCT.2019 06:35:16

Middle Channel / Full RB



Date: 20.OCT.2019 06:38:41



26dB Bandwidth

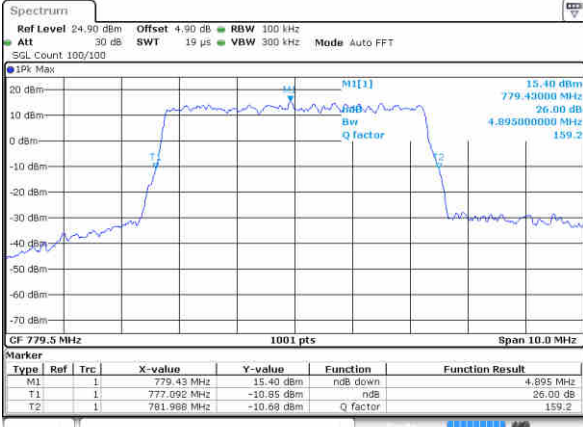
| Mode       | LTE Band 13 : 26dB BW(MHz) |       |       |       |       |       |  |  |  |  |  |
|------------|----------------------------|-------|-------|-------|-------|-------|--|--|--|--|--|
|            | 5MHz                       |       | 10MHz |       | 5MHz  | 10MHz |  |  |  |  |  |
| BW         |                            |       |       |       |       |       |  |  |  |  |  |
| 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 |       |  |  |  |  |  |





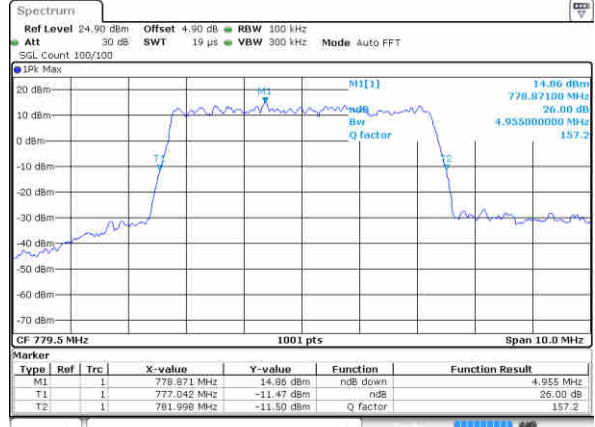
LTE Band 13

Lowest Channel / 5MHz / QPSK



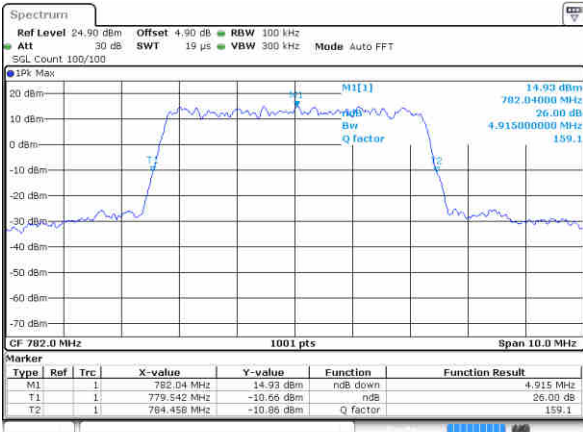
Date: 20.OCT.2019 06:44:08

Lowest Channel / 5MHz / 16QAM



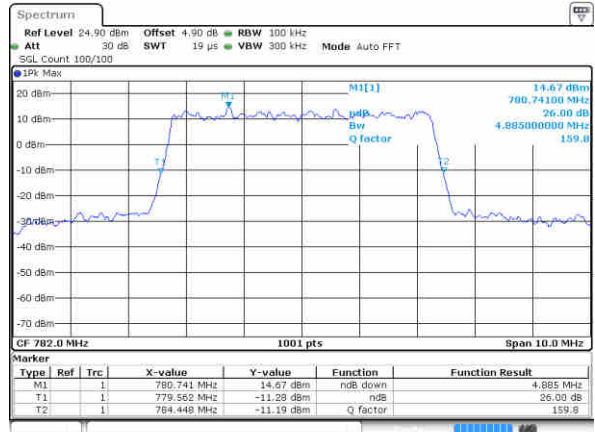
Date: 20.OCT.2019 06:44:16

Middle Channel / 5MHz / QPSK



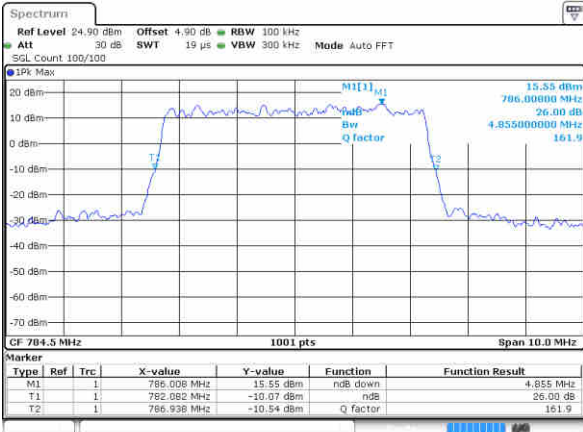
Date: 20.OCT.2019 06:51:17

Middle Channel / 5MHz / 16QAM



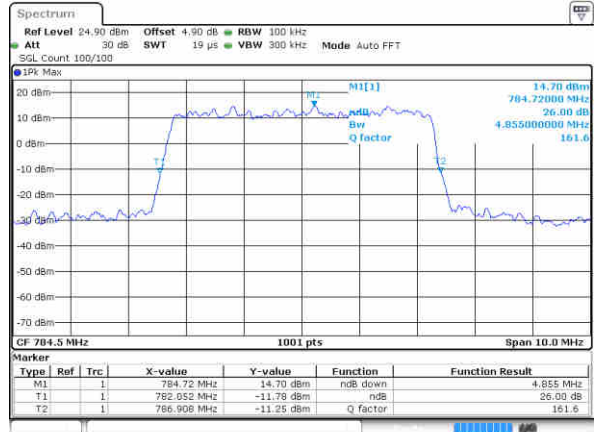
Date: 20.OCT.2019 06:51:27

Highest Channel / 5MHz / QPSK



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

Highest Channel / 5MHz / 16QAM

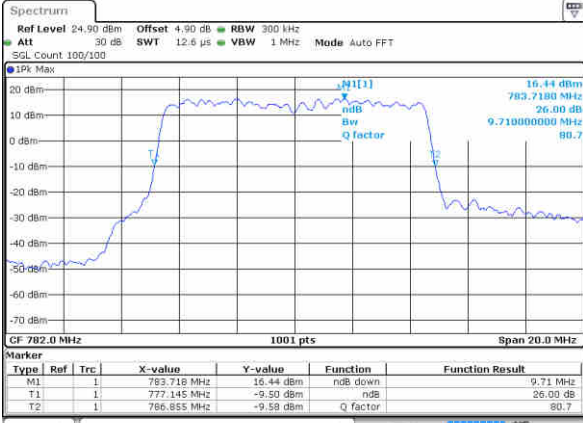


Date: 20.OCT.2019 06:51:57



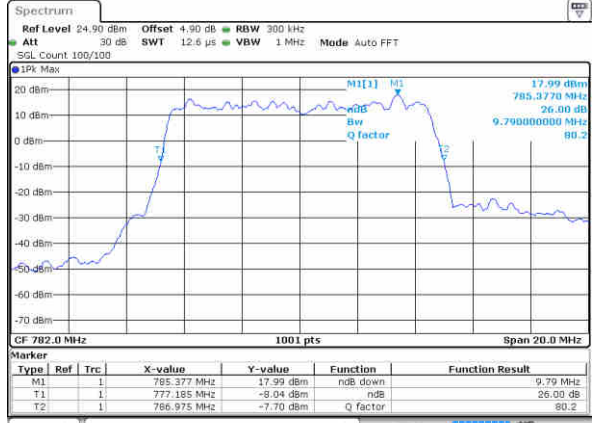
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 20.OCT.2019 06:59:18

Middle Channel / 10MHz / 16QAM

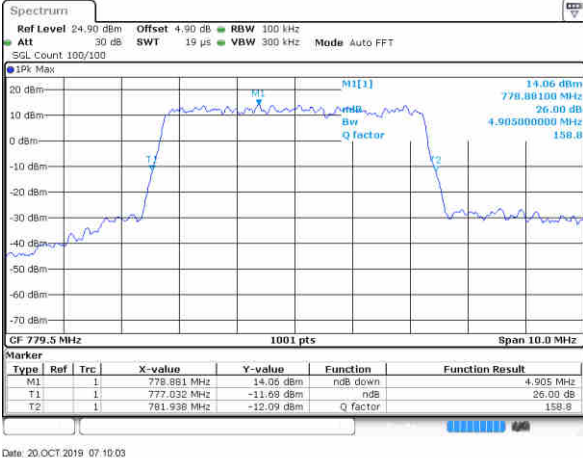


Date: 20.OCT.2019 06:59:08



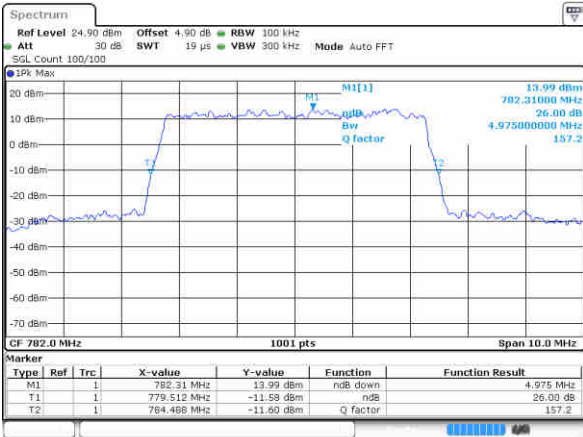
LTE Band 13

Lowest Channel / 5MHz / 64QAM



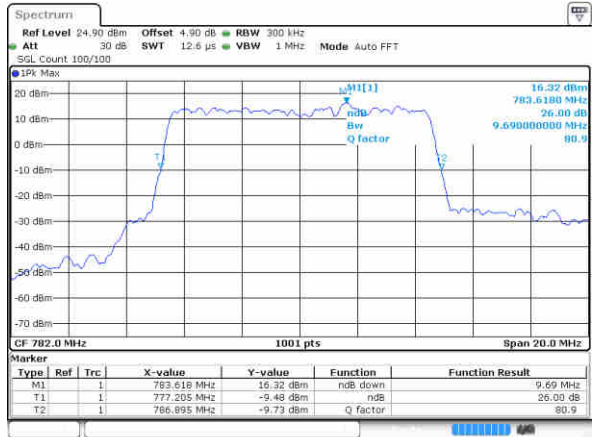
Date: 20.OCT.2019 07:10:03

Middle Channel / 5MHz / 64QAM



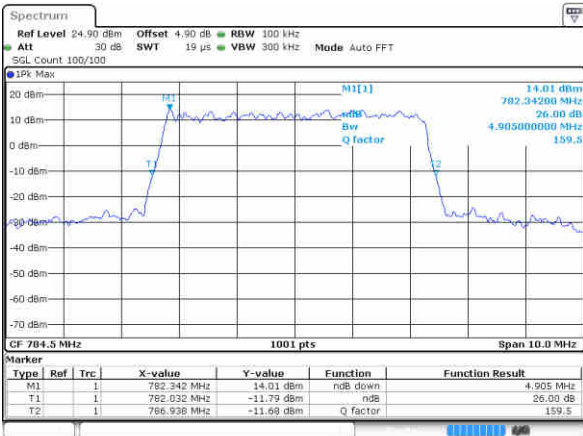
Date: 20.OCT.2019 07:10:14

Middle Channel / 10MHz / 64QAM



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

Highest Channel / 5MHz / 64QAM



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



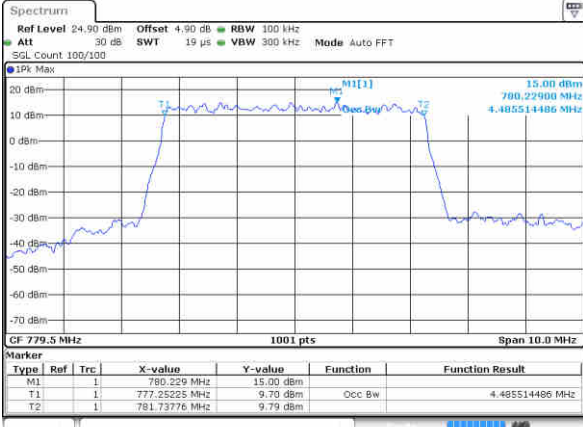
Occupied Bandwidth

| 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  |       |  |  |  |  |  |  |



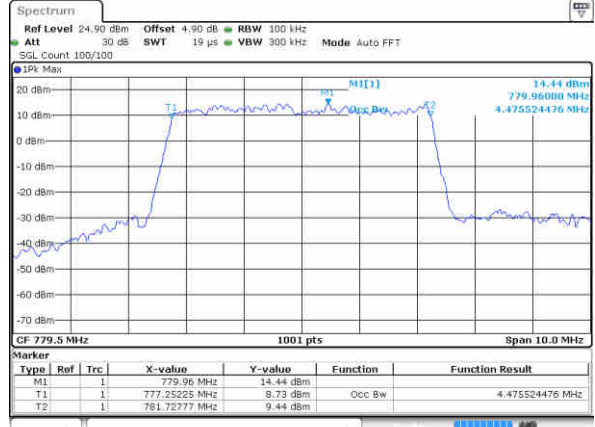
LTE Band 13

Lowest Channel / 5MHz / QPSK



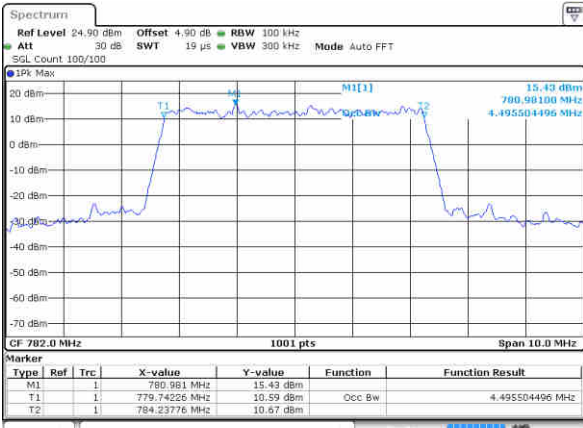
Date: 20.OCT.2019 06:44:37

Lowest Channel / 5MHz / 16QAM



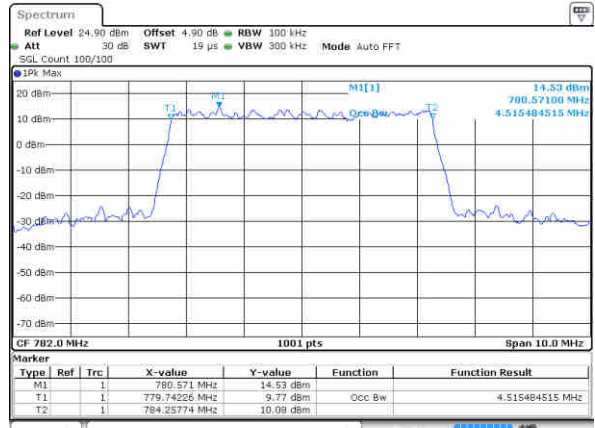
Date: 20.OCT.2019 06:44:27

Middle Channel / 5MHz / QPSK



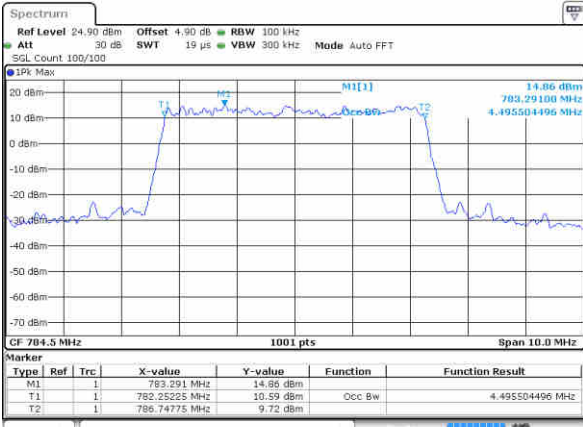
Date: 20.OCT.2019 06:51:37

Middle Channel / 5MHz / 16QAM



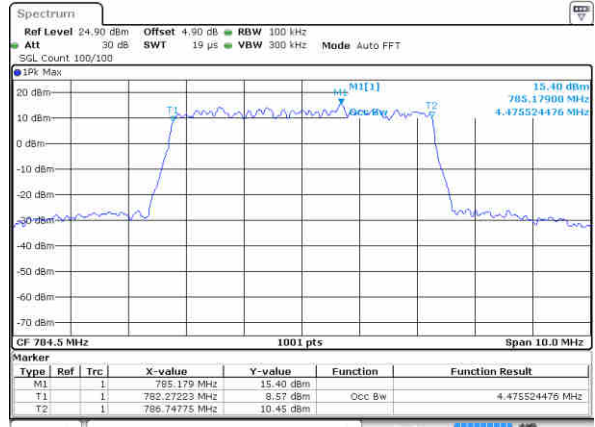
Date: 20.OCT.2019 06:51:47

Highest Channel / 5MHz / QPSK



Date: 20.OCT.2019 06:52:17

Highest Channel / 5MHz / 16QAM



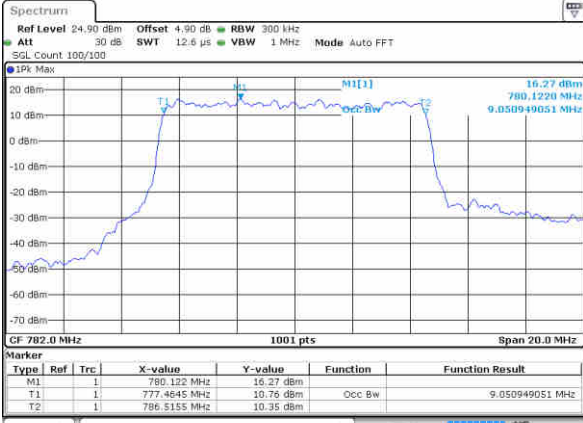
Date: 20.OCT.2019 06:52:27





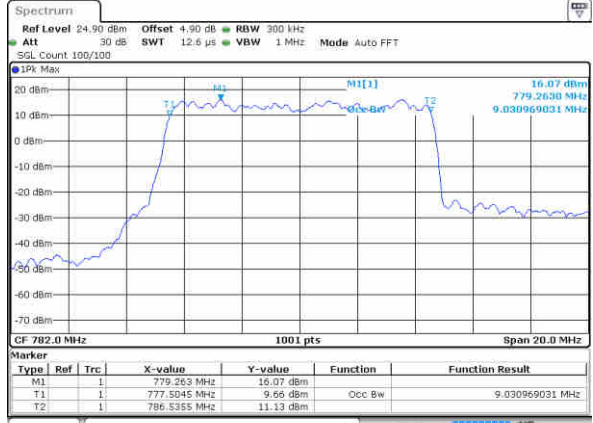
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 20.OCT.2019 06:59:28

Middle Channel / 10MHz / 16QAM

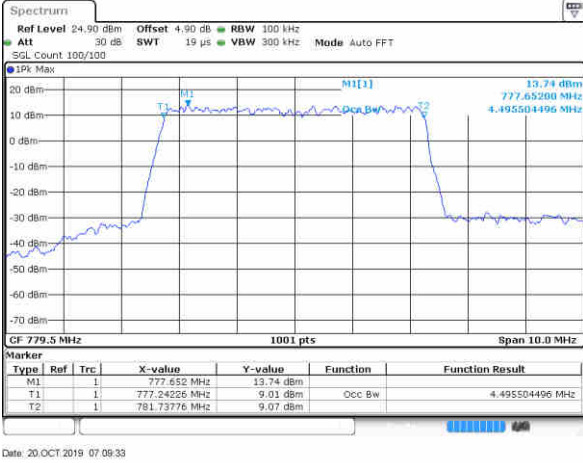


Date: 20.OCT.2019 06:59:38

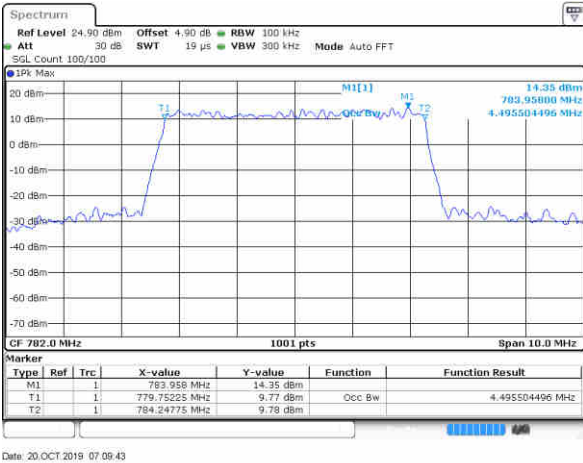


LTE Band 13

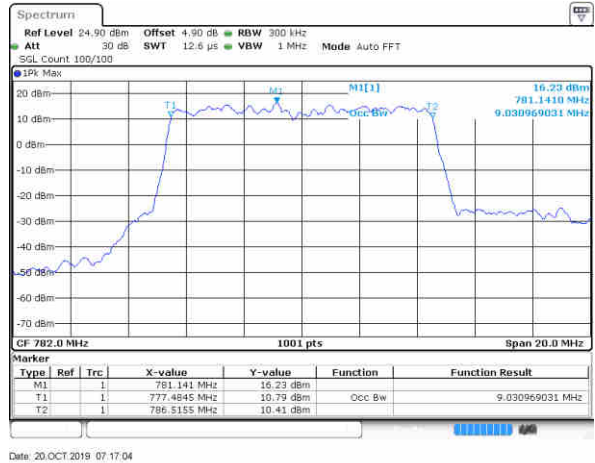
Lowest Channel / 5MHz / 64QAM



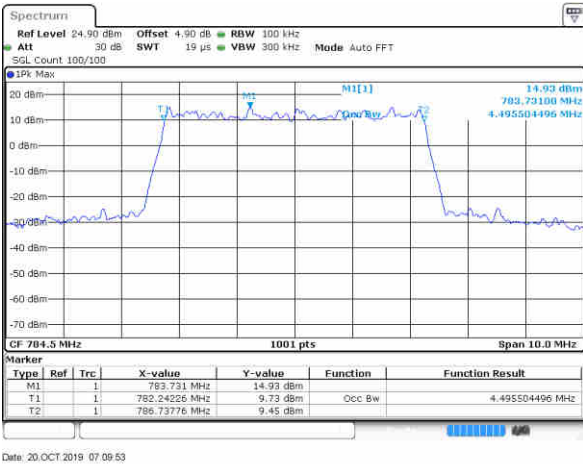
Middle Channel / 5MHz / 64QAM



Middle Channel / 10MHz / 64QAM



Highest Channel / 5MHz / 64QAM

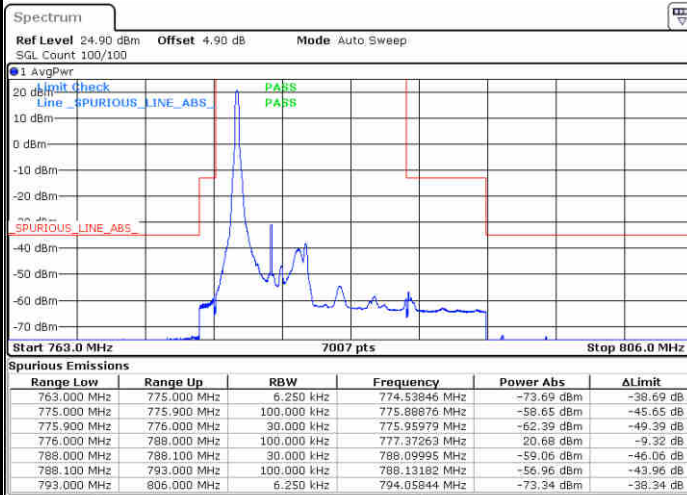




# Conducted Band Edge

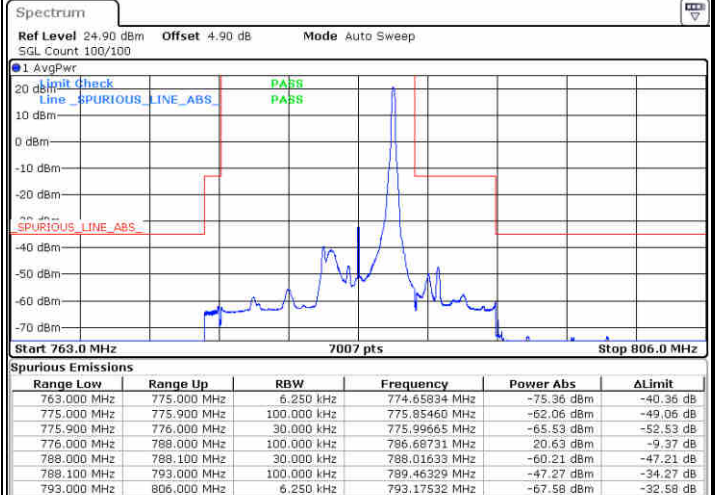
## LTE Band 13 / 5MHz / QPSK

### Lowest Band Edge / 1 RB



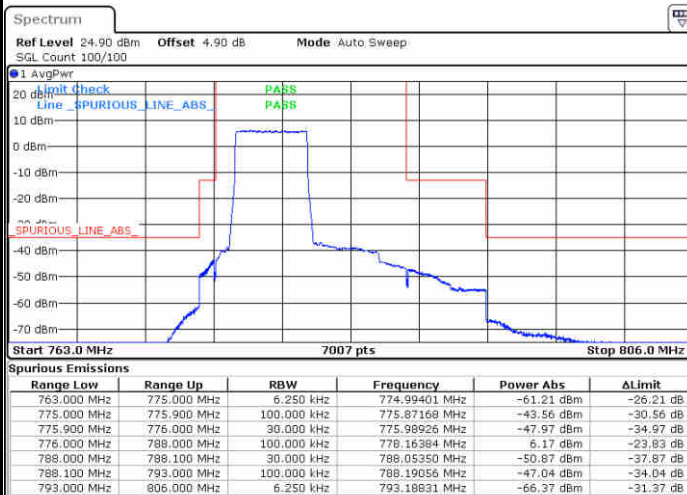
Date: 20.OCT.2019 06:49:30

### Highest Band Edge / 1 RB



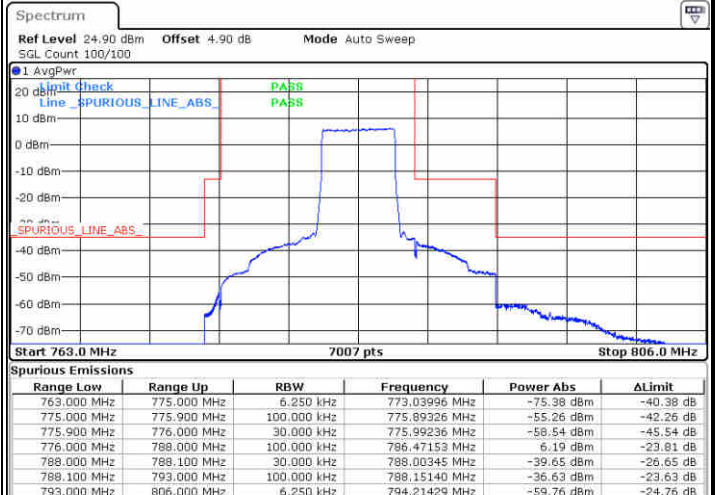
Date: 20.OCT.2019 06:57:20

### Lowest Band Edge / Full RB



Date: 20.OCT.2019 06:47:52

### Highest Band Edge / Full RB



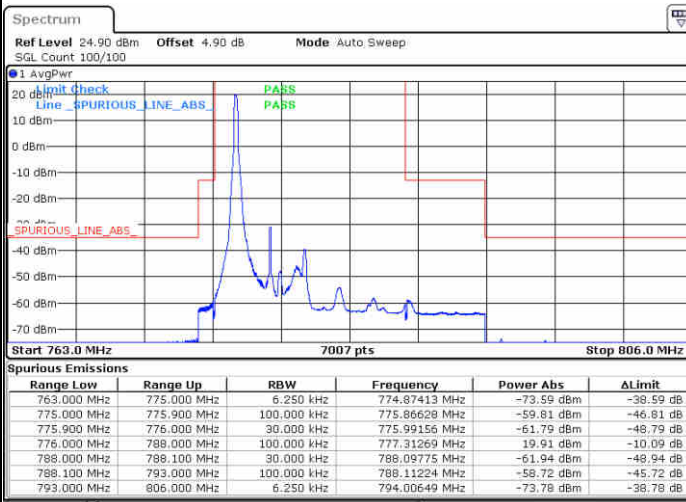
Date: 20.OCT.2019 06:55:43



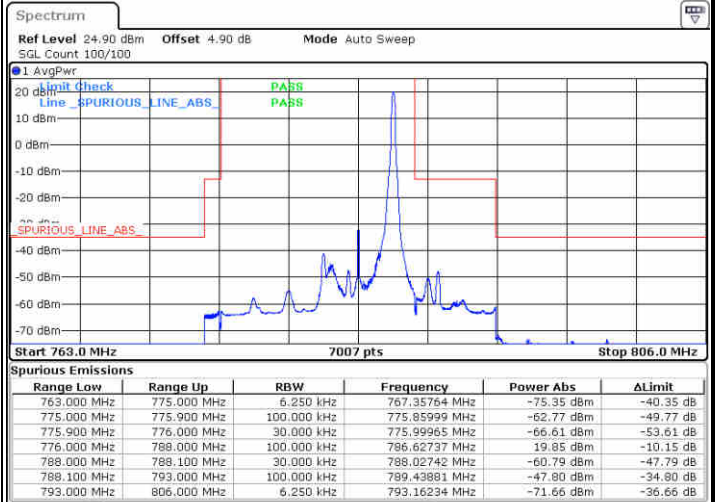
LTE Band 13 / 5MHz / 16QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB



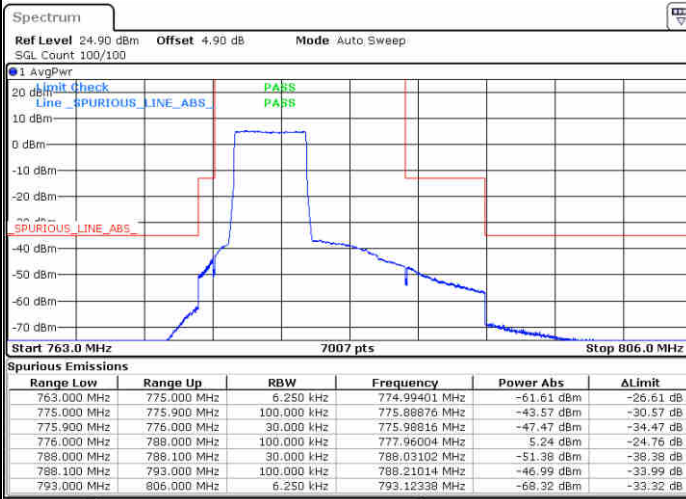
Date: 20.OCT.2019 08:51:07



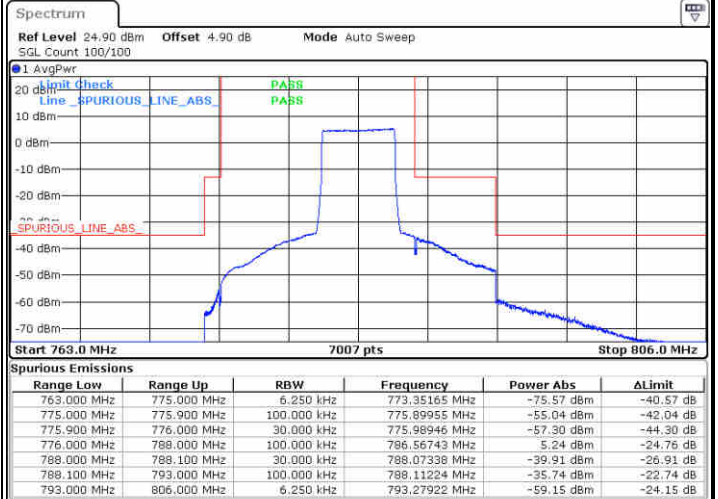
Date: 20.OCT.2019 08:58:58

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



Date: 20.OCT.2019 06:46:14



Date: 20.OCT.2019 08:54:05

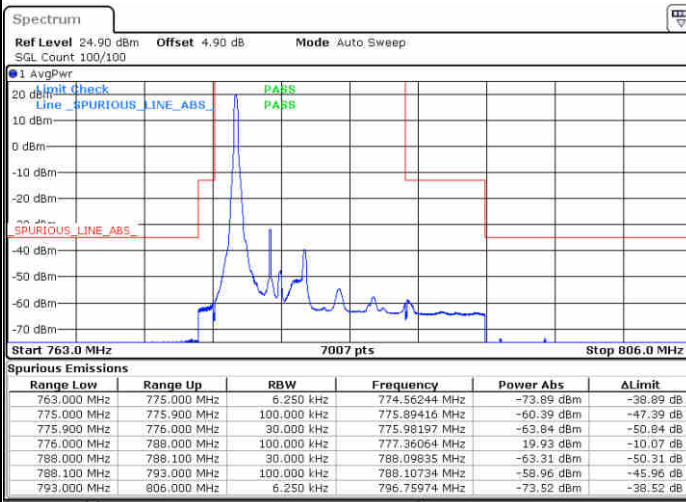




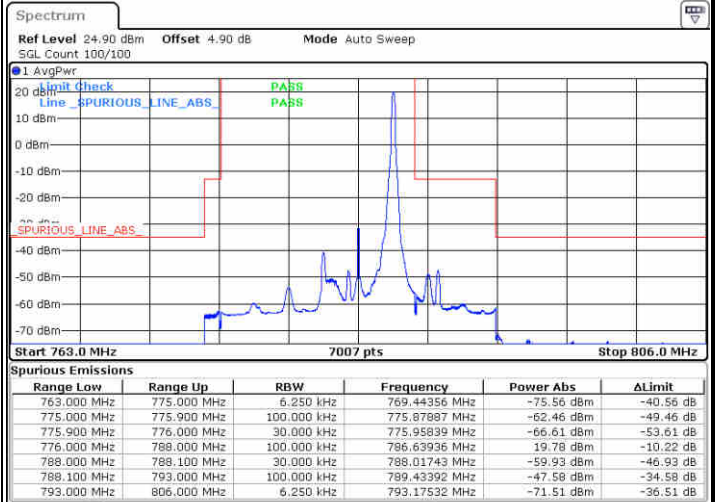
LTE Band 13 / 5MHz / 64QAM

Lowest Band Edge / 1 RB

Highest Band Edge / 1 RB



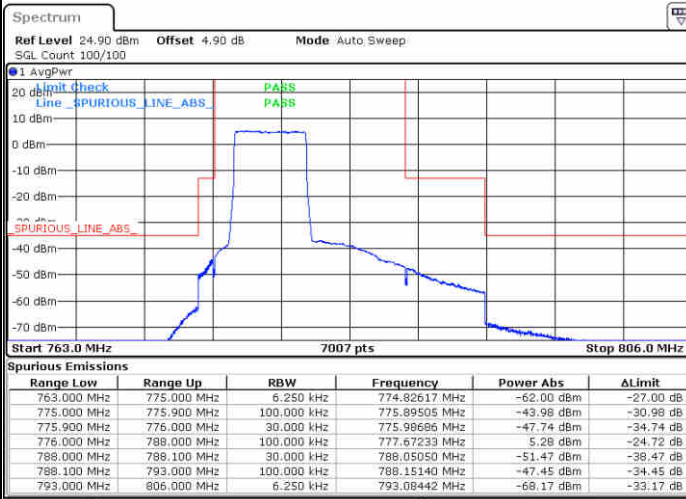
Date: 20.OCT.2019 07:12:01



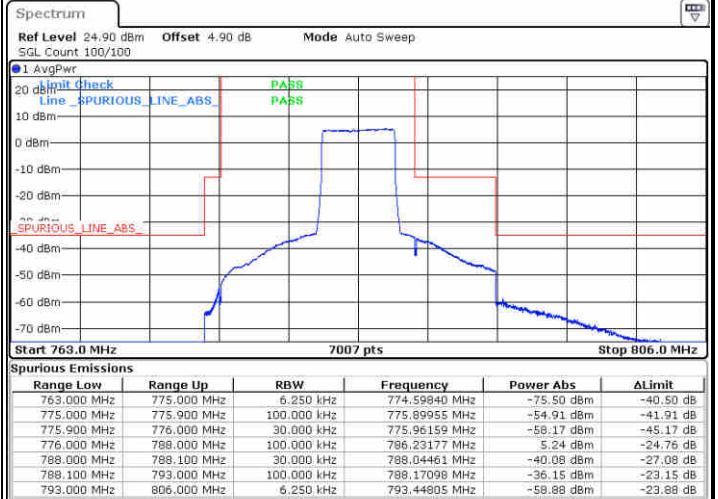
Date: 20.OCT.2019 07:16:54

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



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

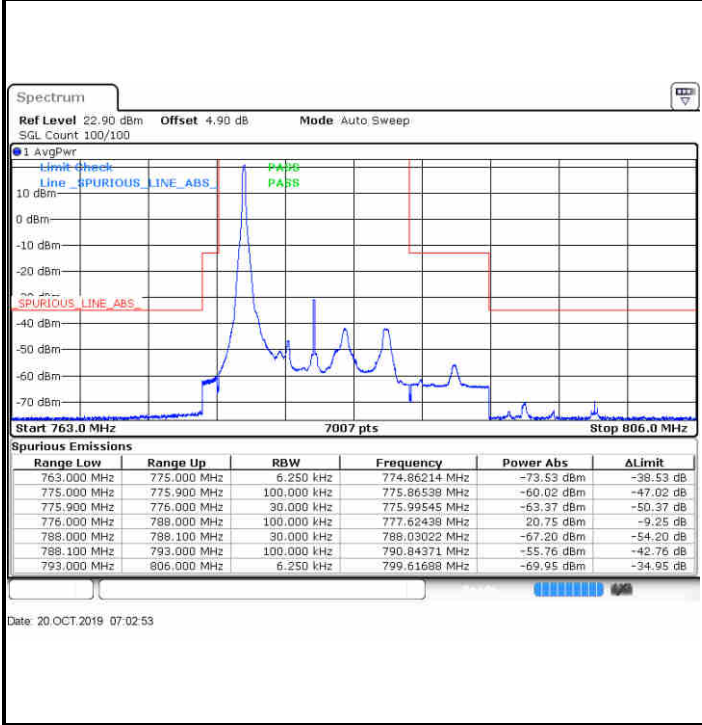


Date: 20.OCT.2019 07:15:17

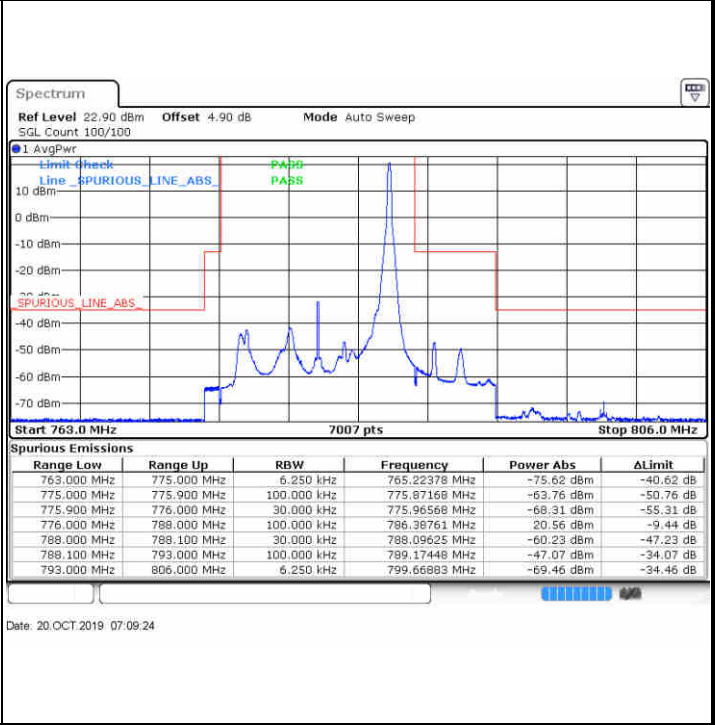


**LTE Band 13 / 10MHz / QPSK**

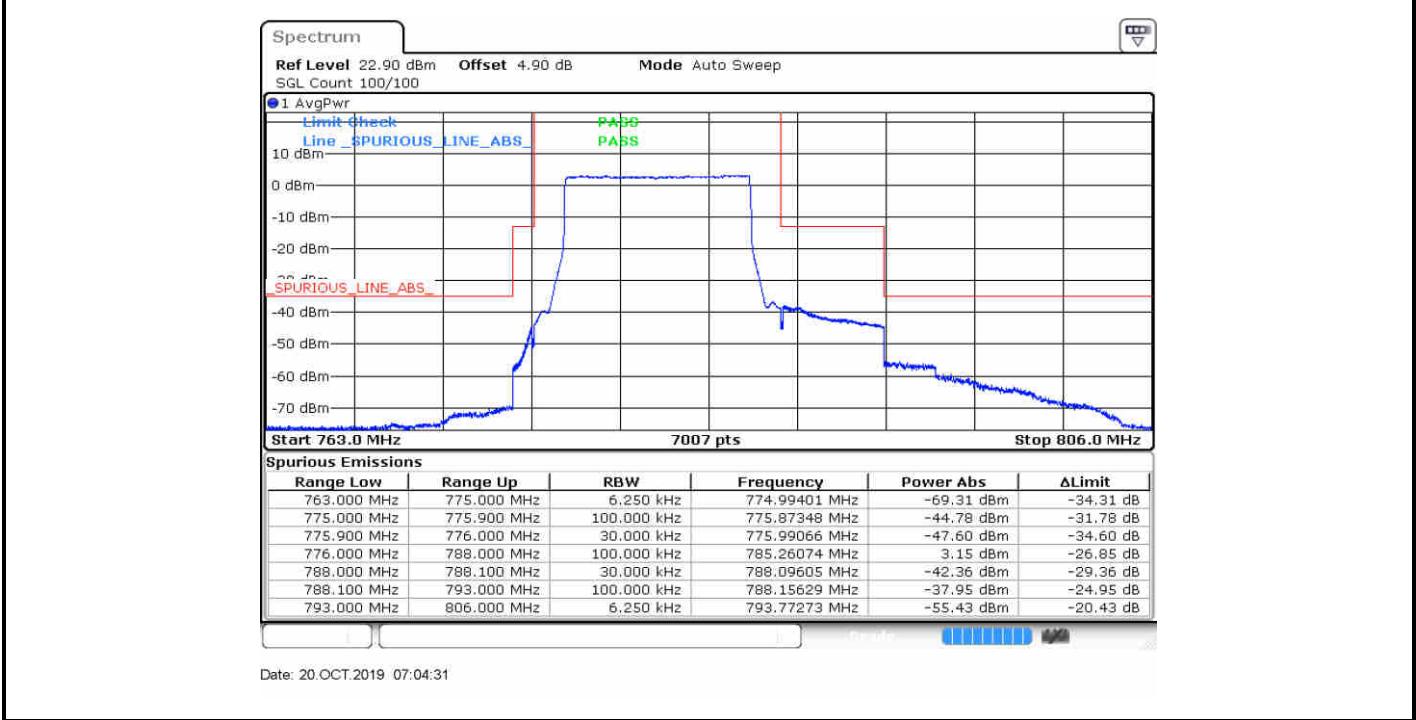
**Lowest Band Edge / 1 RB**



**Highest Band Edge / 1 RB**



**Band Edge / Full RB**

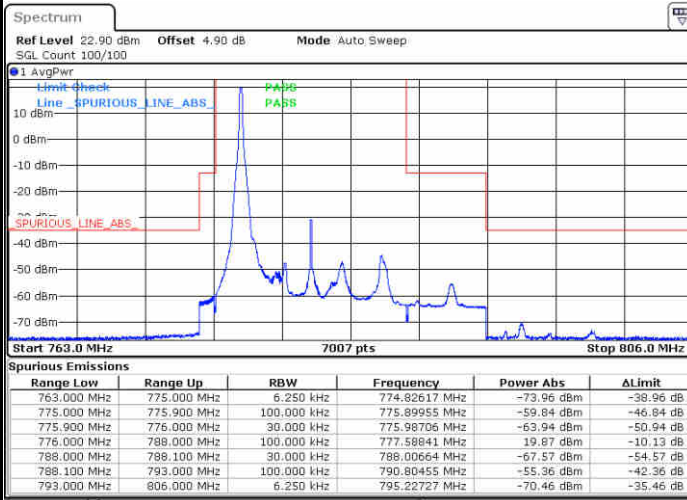






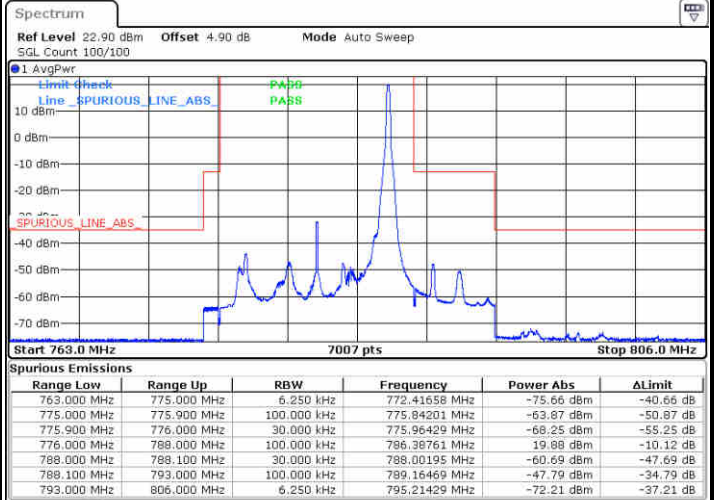
LTE Band 13 / 10MHz / 16QAM

Lowest Band Edge / 1 RB



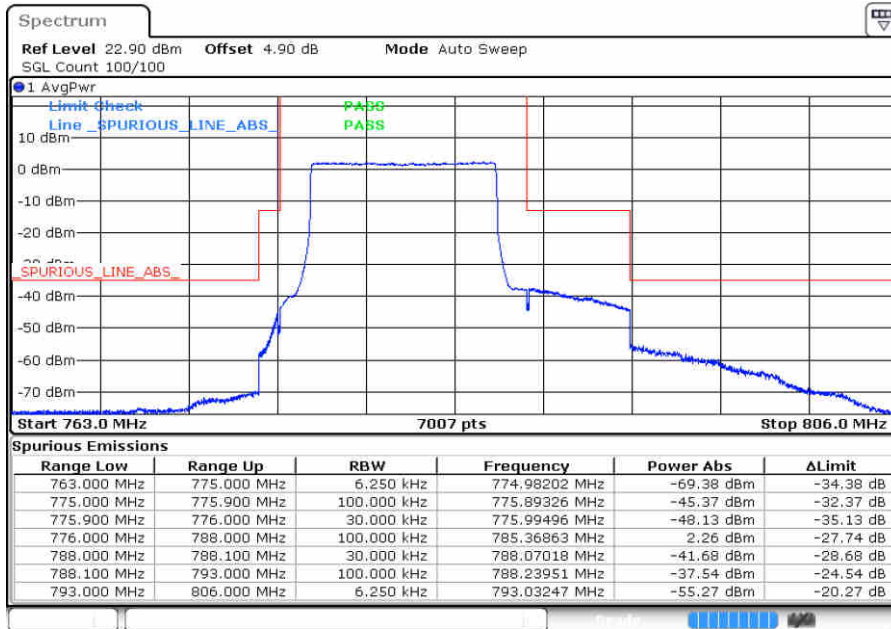
Date: 20.OCT.2019 07:01:16

Highest Band Edge / 1 RB



Date: 20.OCT.2019 07:07:46

Band Edge / Full RB

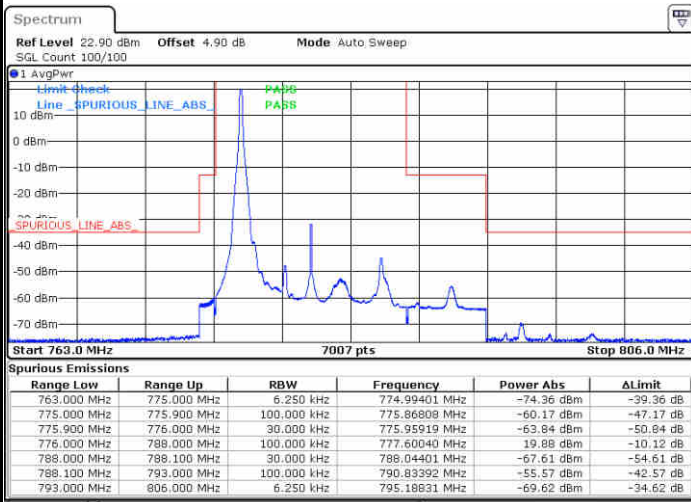


Date: 20.OCT.2019 07:06:08



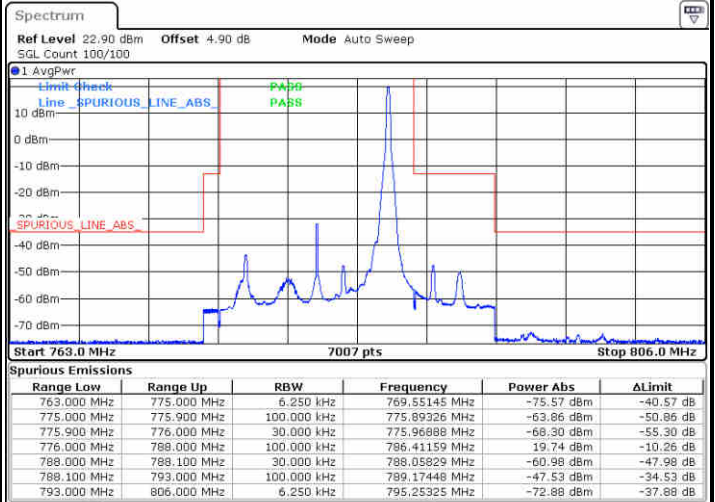
LTE Band 13 / 10MHz / 64QAM

Lowest Band Edge / 1 RB



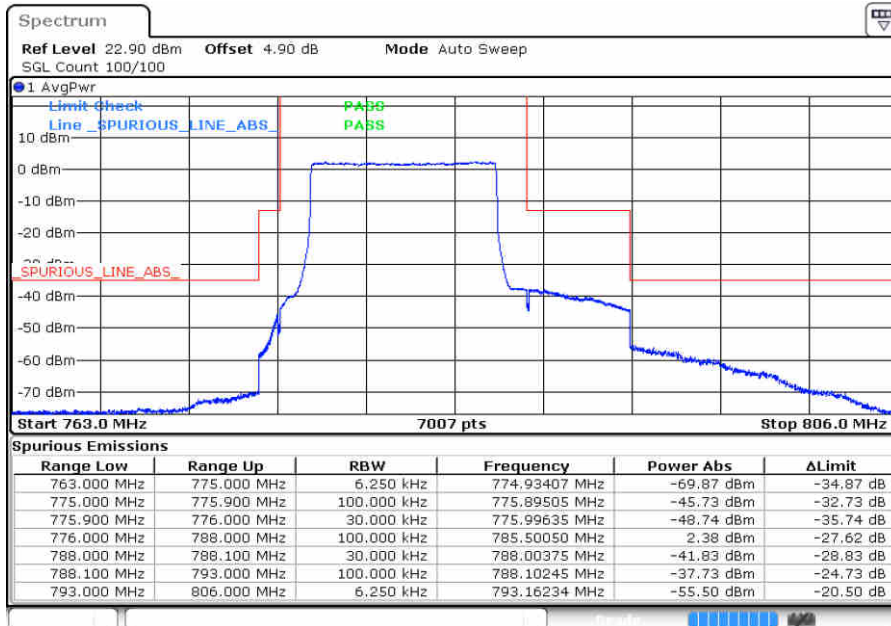
Date: 20.OCT.2019 07:18:52

Highest Band Edge / 1 RB



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

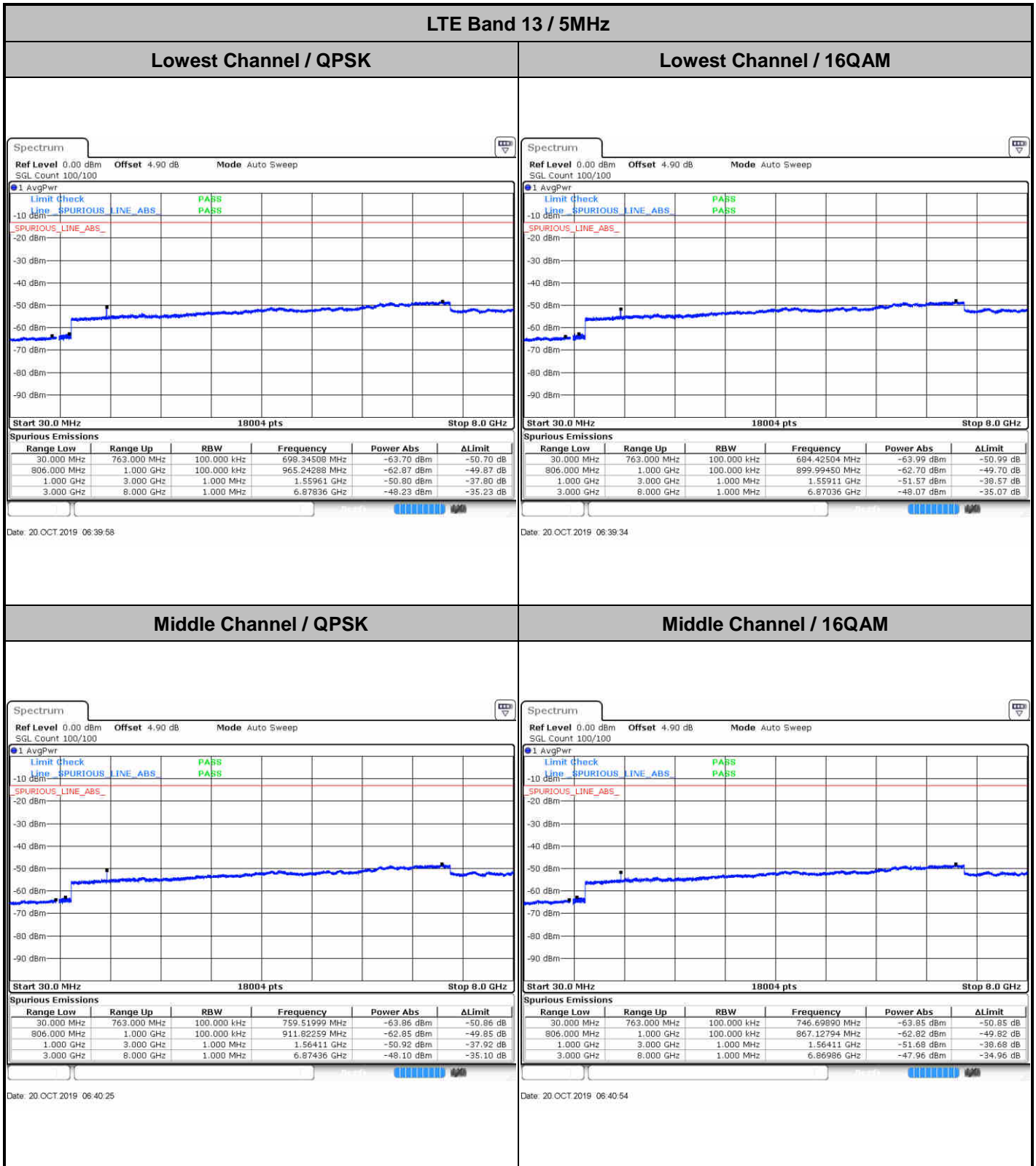
Band Edge / Full RB



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



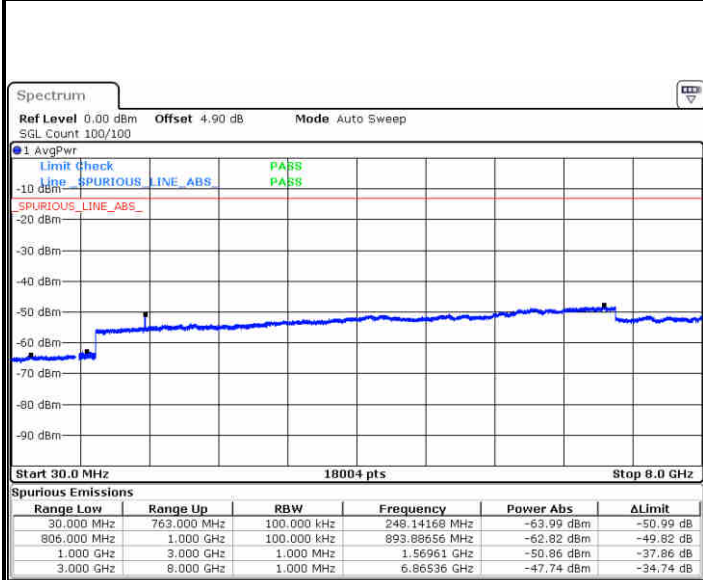
# Conducted Spurious Emission





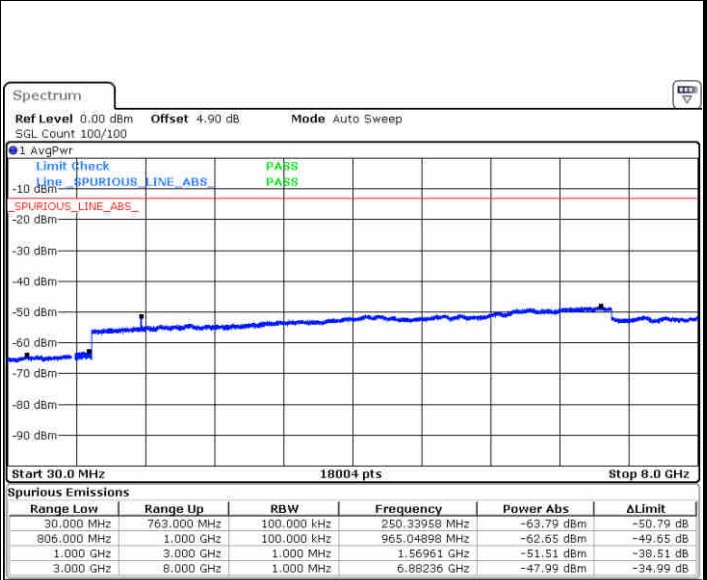
LTE Band 13 / 5MHz

Highest Channel / QPSK



Date: 20.OCT.2019 06:42:45

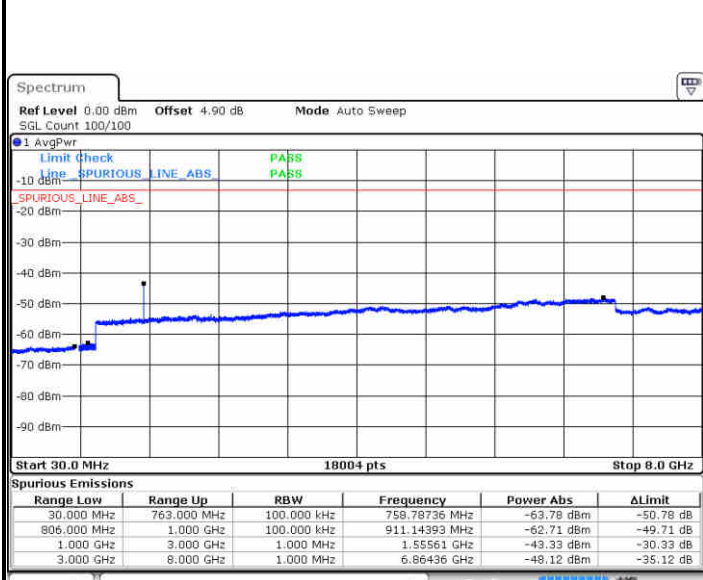
Highest Channel / 16QAM



Date: 20.OCT.2019 06:42:19

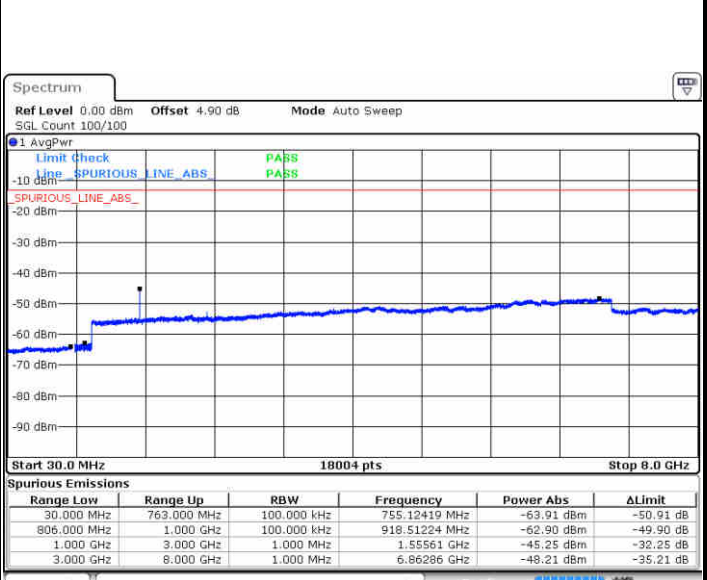
LTE Band 13 / 10MHz

Middle Channel / QPSK



Date: 20.OCT.2019 06:32:51

Middle Channel / 16QAM

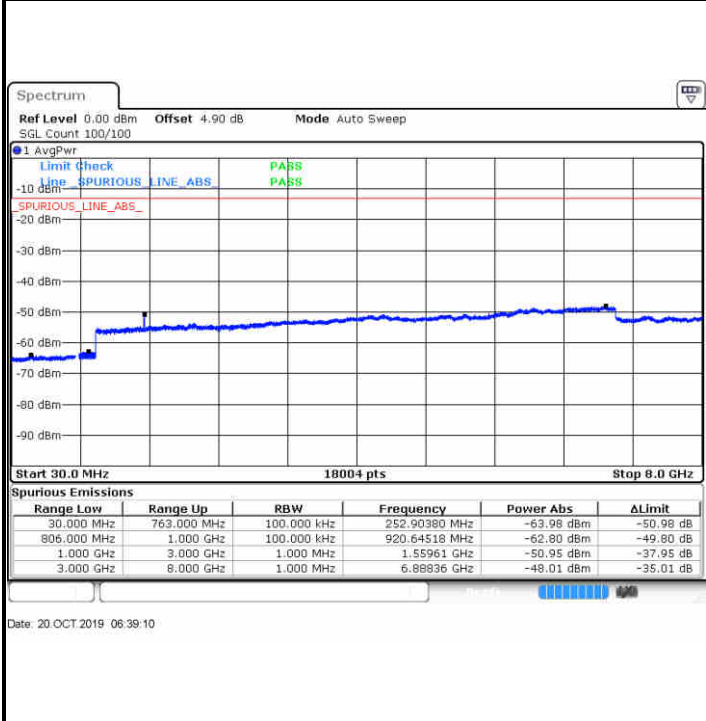


Date: 20.OCT.2019 06:33:47

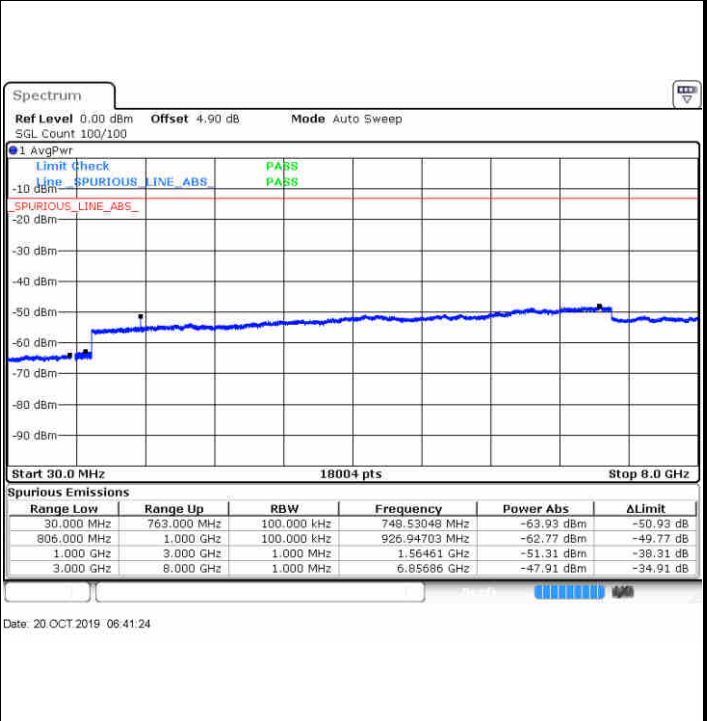


**LTE Band 13 / 5MHz**

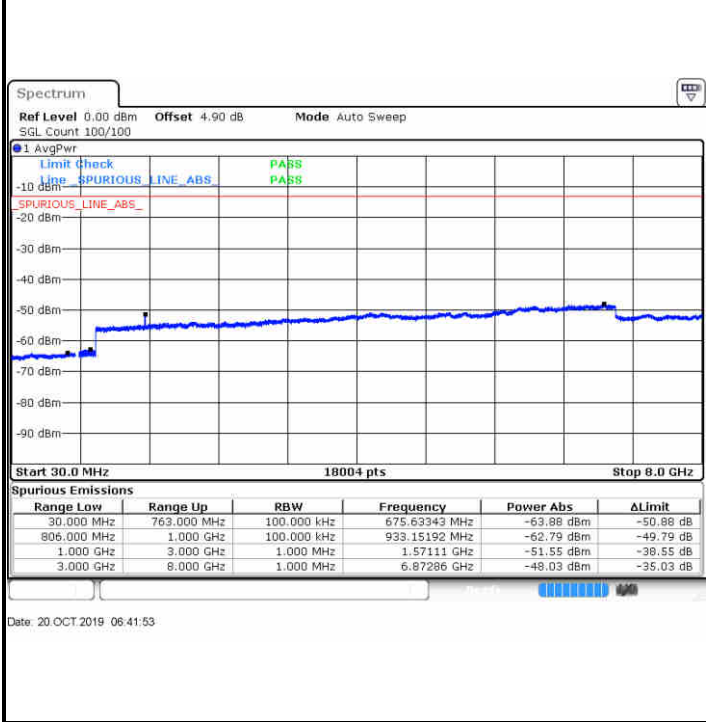
**Lowest Channel / 64QAM**



**Middle Channel / 64QAM**



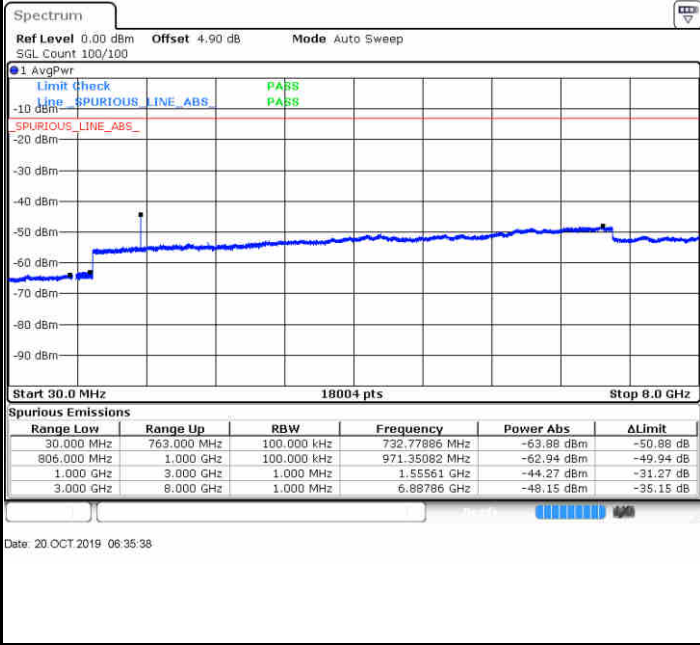
**Highest Channel / 64QAM**





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    | <b>PASS</b> |
| 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    |       |         | <b>PASS</b> |
| Middle CH  | 6.64                | 6.52    |       |         |             |
| Highest CH | 6.58                | 6.64    |       |         |             |



LTE Band 25 / 20MHz / QPSK

Lowest Channel / 1RB



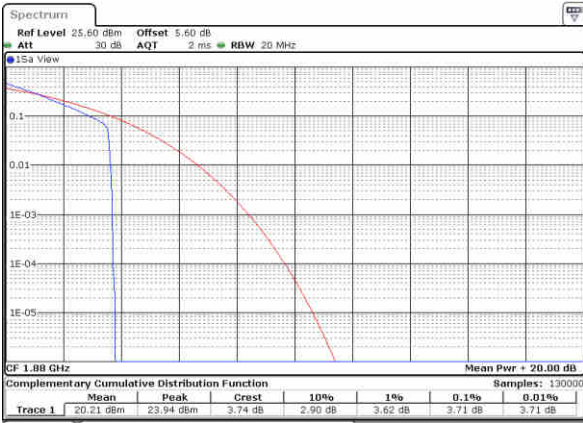
Date: 22.OCT.2019 02:29:38

Lowest Channel / Full RB



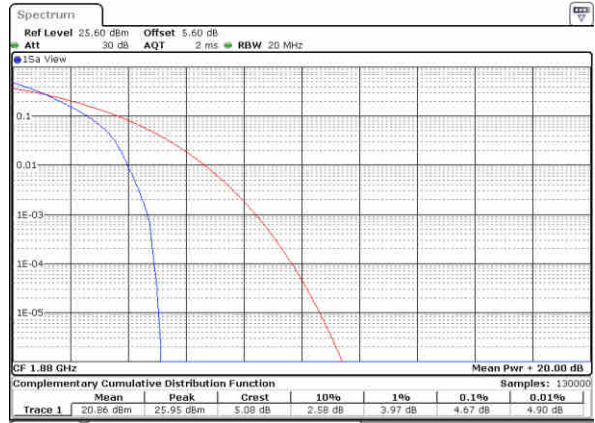
Date: 22.OCT.2019 02:30:42

Middle Channel / 1RB



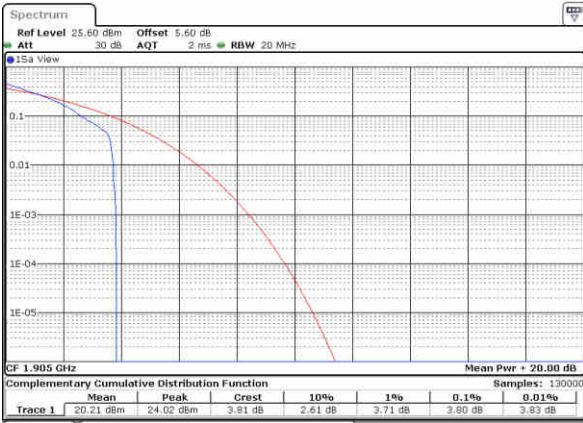
Date: 22.OCT.2019 02:31:45

Middle Channel / Full RB



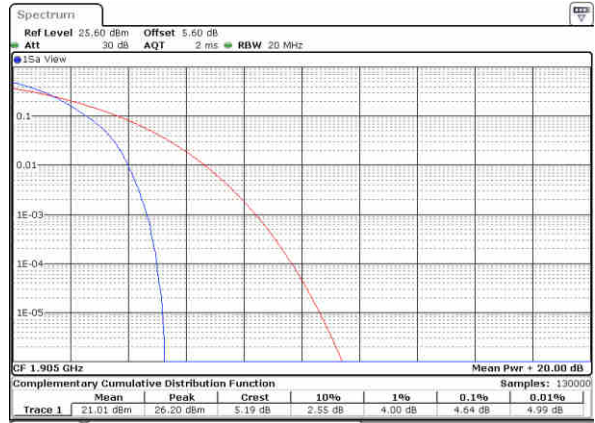
Date: 22.OCT.2019 02:30:53

Highest Channel / 1RB



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

Highest Channel / Full RB



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



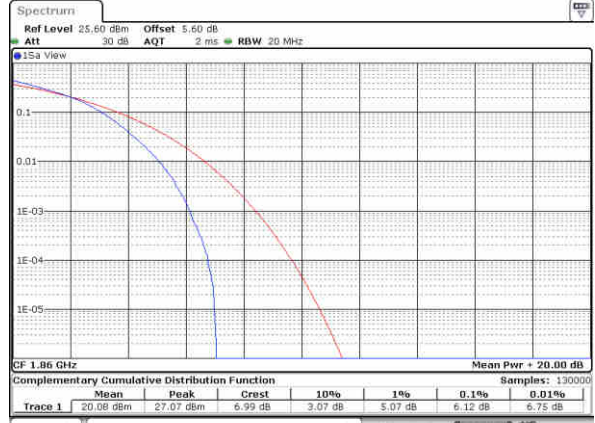
LTE Band 25 / 20MHz / 16QAM

Lowest Channel / 1RB



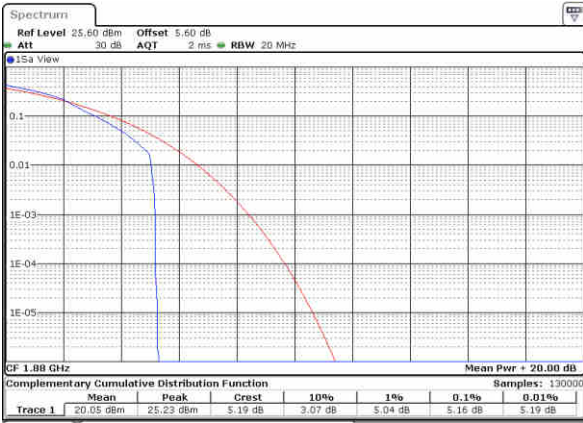
Date: 22.OCT.2019 02:29:51

Lowest Channel / Full RB



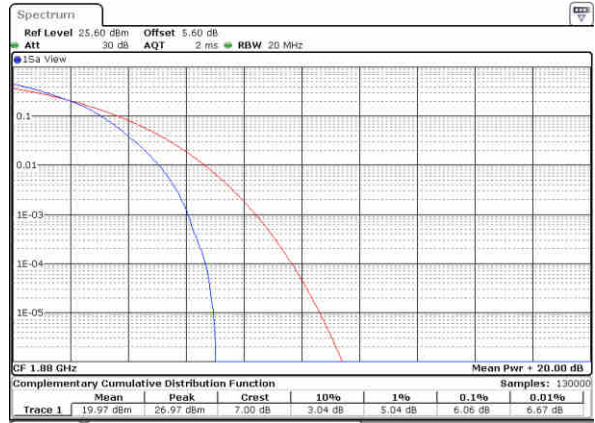
Date: 22.OCT.2019 02:30:29

Middle Channel / 1RB



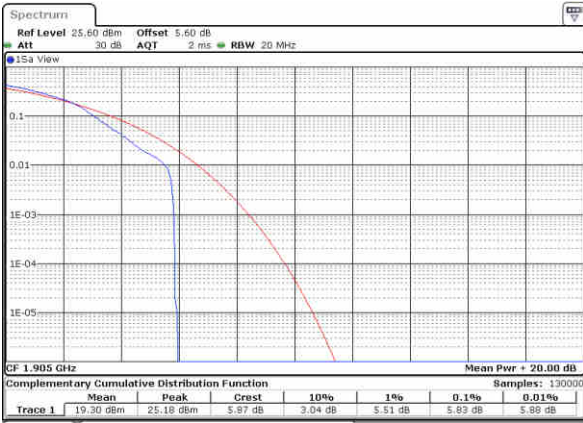
Date: 22.OCT.2019 02:31:31

Middle Channel / Full RB



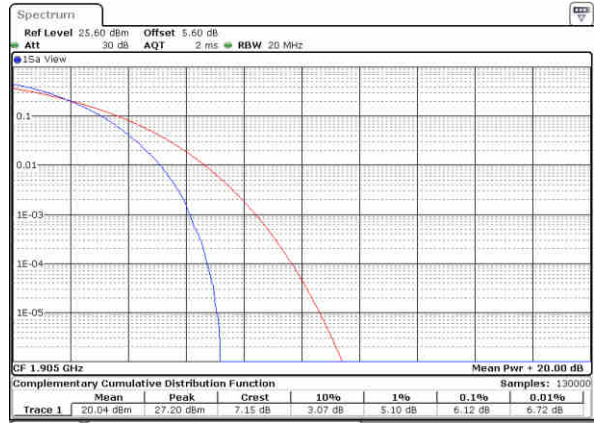
Date: 22.OCT.2019 02:31:04

Highest Channel / 1RB



Date: 22.OCT.2019 02:32:05

Highest Channel / Full RB



Date: 22.OCT.2019 02:32:39