

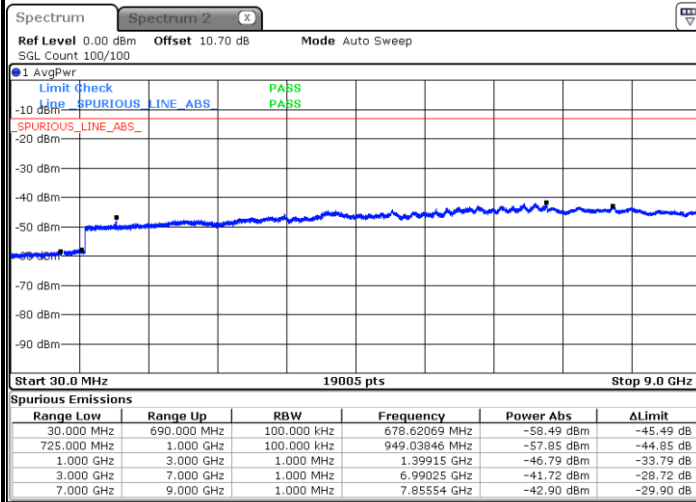


## **Conducted Spurious Emission**



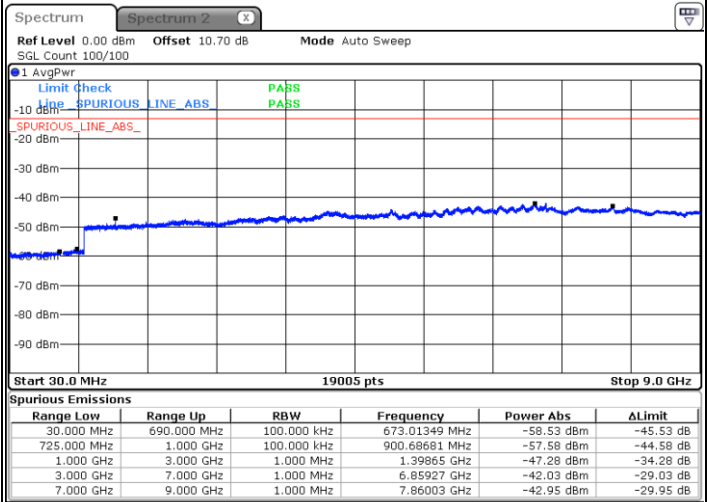
## LTE Band 12 / 1.4MHz

## Lowest Channel / QPSK



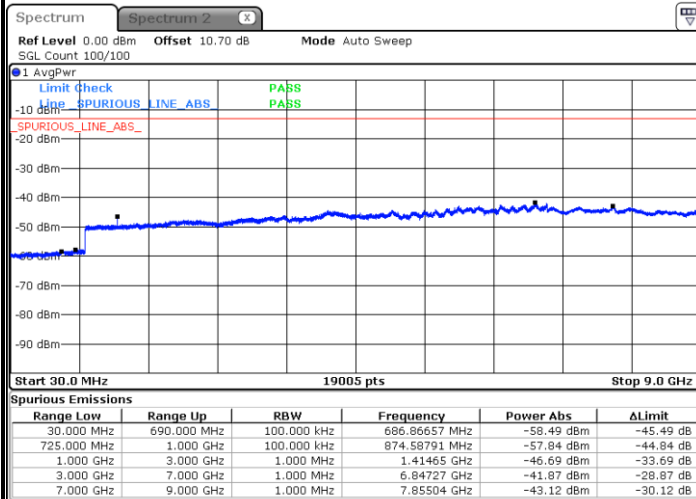
Date: 8 AUG 2017 23:22:14

## Lowest Channel / 16QAM



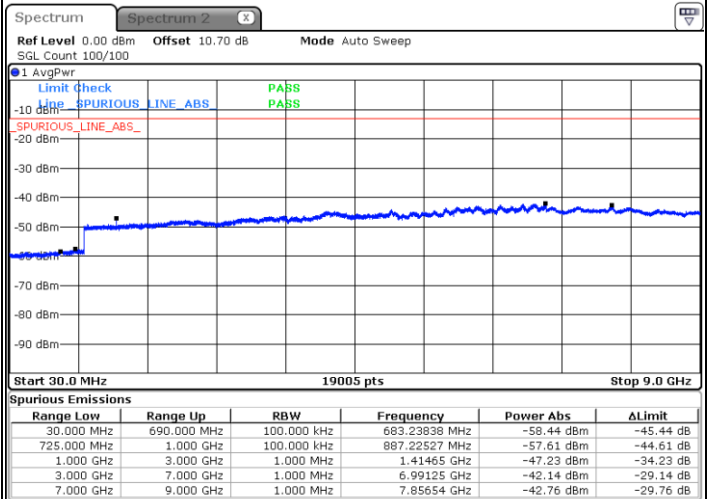
Date: 8 AUG 2017 23:23:08

## Middle Channel / QPSK



Date: 8 AUG 2017 23:25:36

## Middle Channel / 16QAM

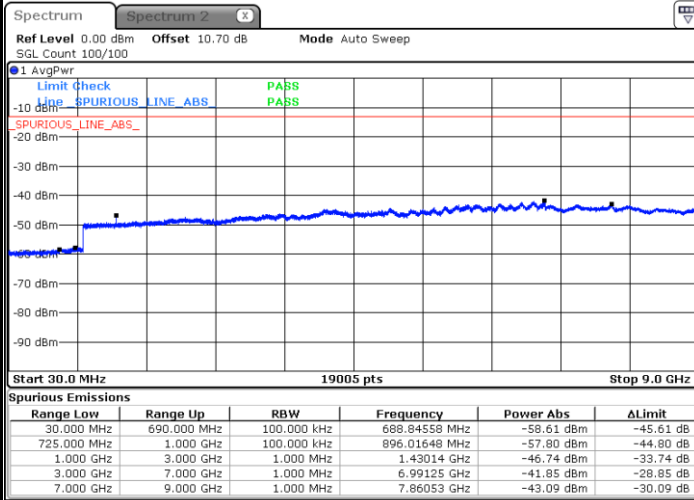


Date: 8 AUG 2017 23:24:42



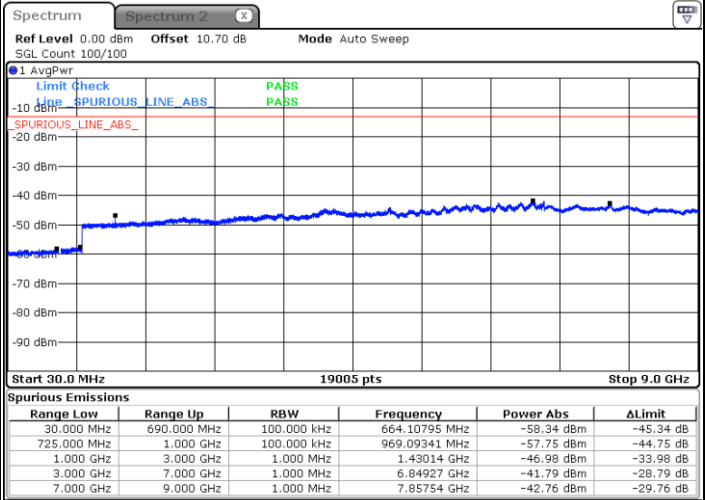
## LTE Band 12 / 1.4MHz

## Highest Channel / QPSK



Date: 8 AUG 2017 23:31:45

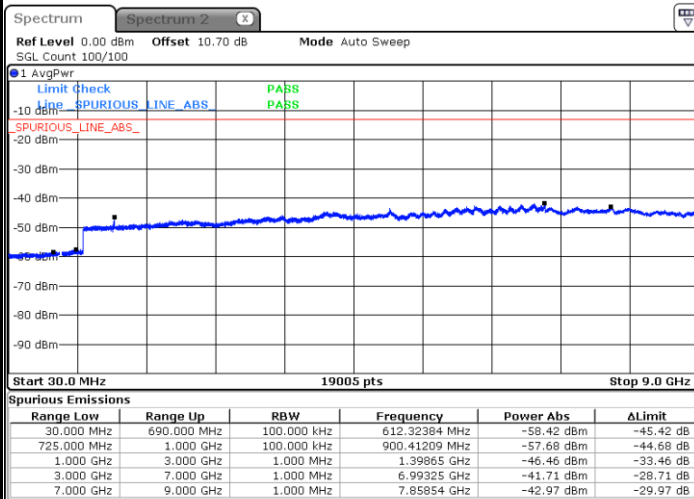
## Highest Channel / 16QAM



Date: 8 AUG 2017 23:32:38

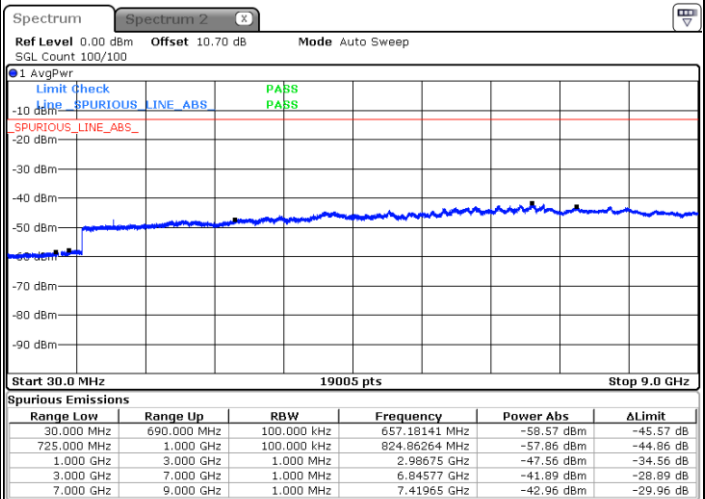
## LTE Band 12 / 3MHz

## Lowest Channel / QPSK



Date: 8 AUG 2017 21:49:42

## Lowest Channel / 16QAM

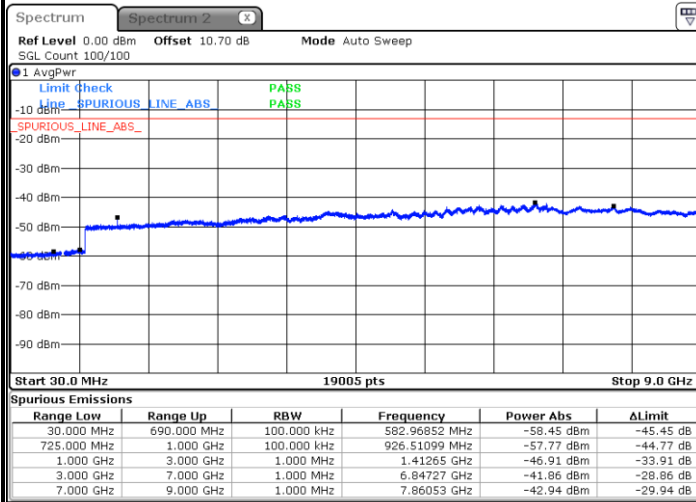


Date: 8 AUG 2017 21:50:36



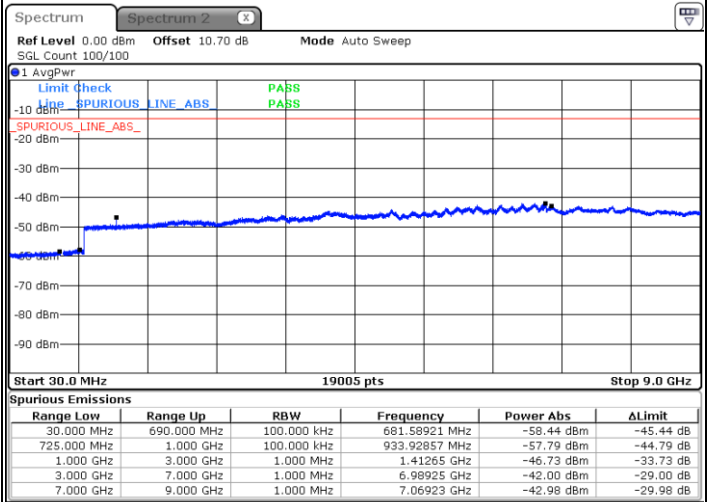
## LTE Band 12 / 3MHz

## Middle Channel / QPSK



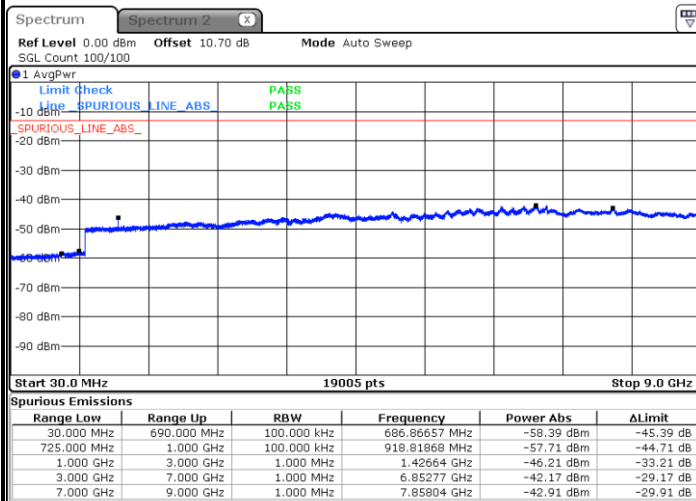
Date: 8 AUG 2017 21:53:03

## Middle Channel / 16QAM



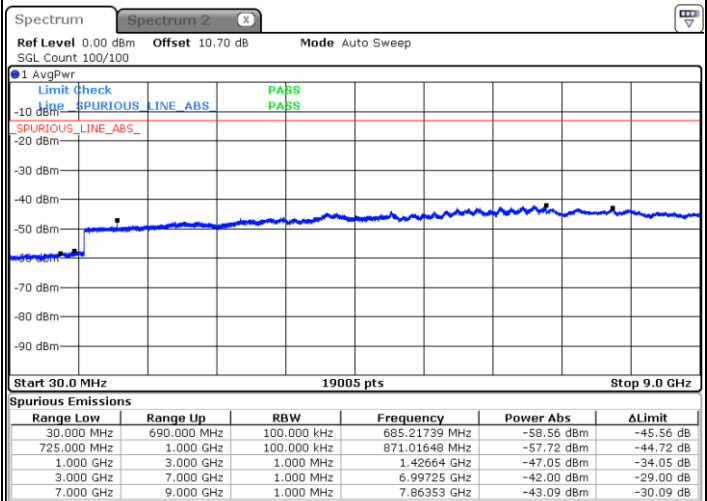
Date: 8 AUG 2017 21:52:10

## Highest Channel / QPSK



Date: 8 AUG 2017 22:06:24

## Highest Channel / 16QAM

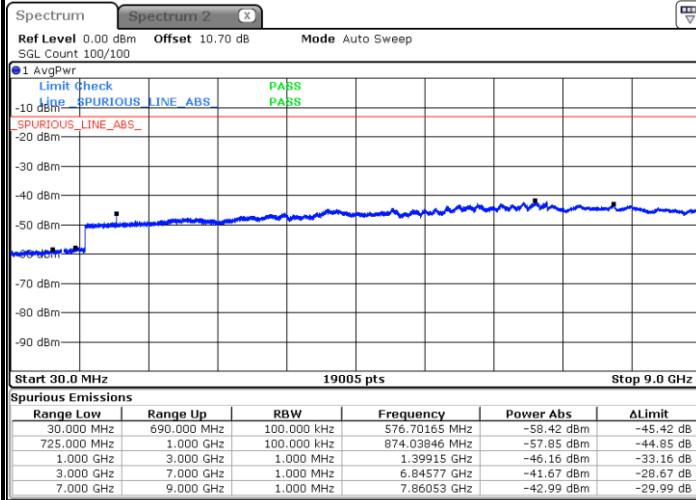


Date: 8 AUG 2017 22:07:18



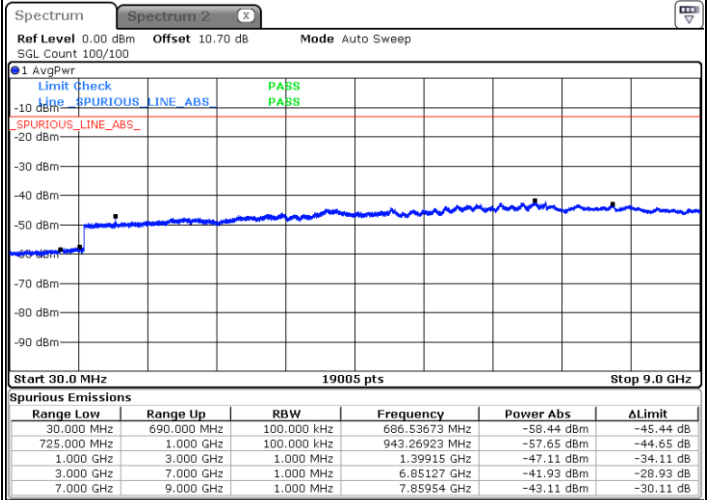
## LTE Band 12 / 5MHz

## Lowest Channel / QPSK



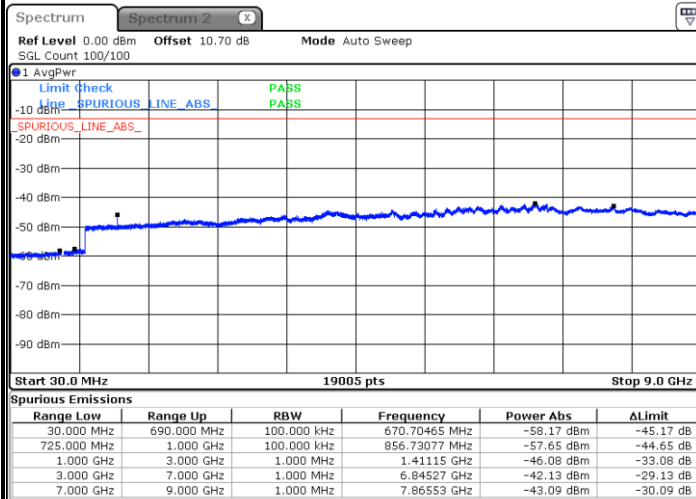
Date: 8 AUG 2017 22:13:27

## Lowest Channel / 16QAM



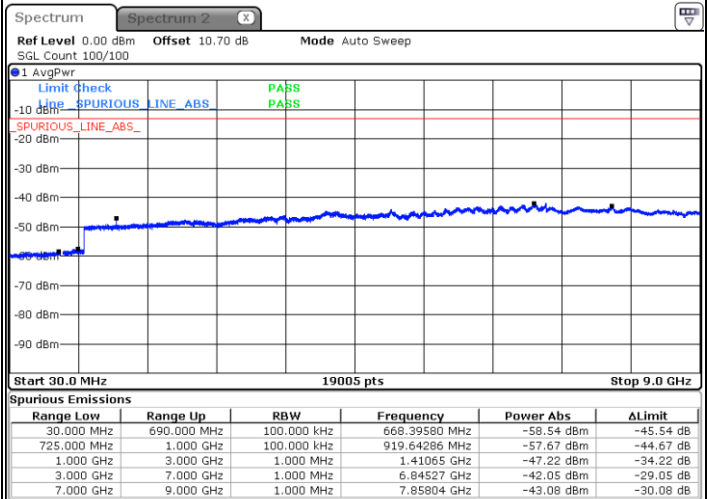
Date: 8 AUG 2017 22:14:20

## Middle Channel / QPSK



Date: 8 AUG 2017 22:16:48

## Middle Channel / 16QAM

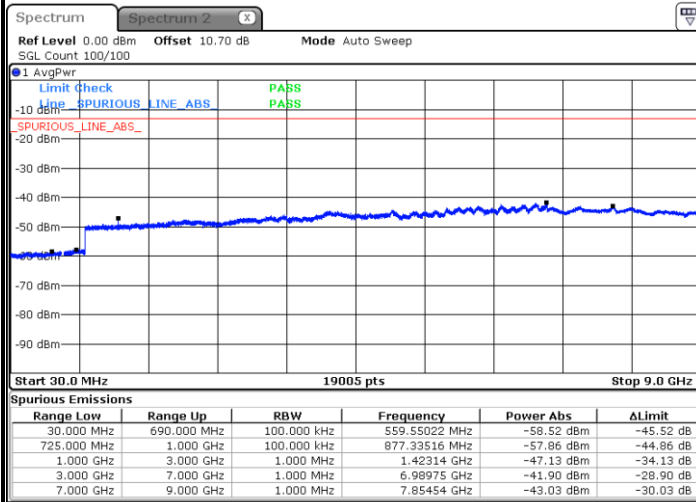


Date: 8 AUG 2017 22:15:54



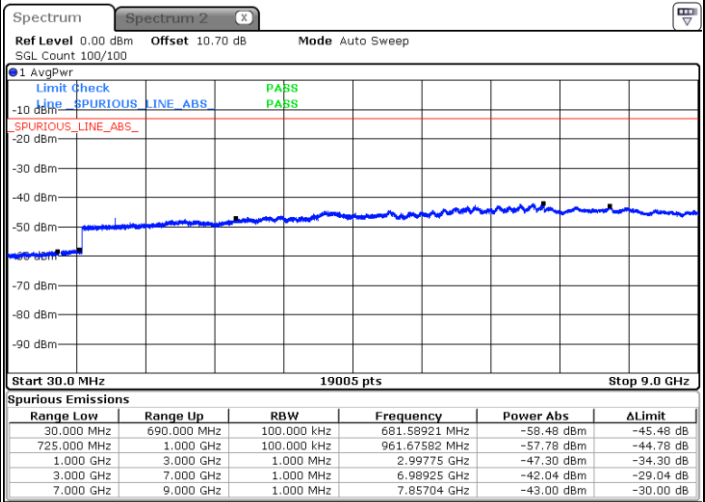
## LTE Band 12 / 5MHz

## Highest Channel / QPSK



Date: 8 AUG. 2017 22:23:51

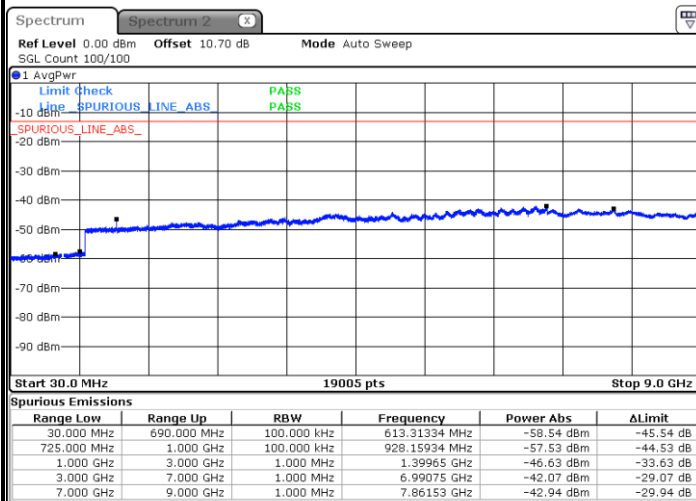
## Highest Channel / 16QAM



Date: 8 AUG. 2017 22:22:57

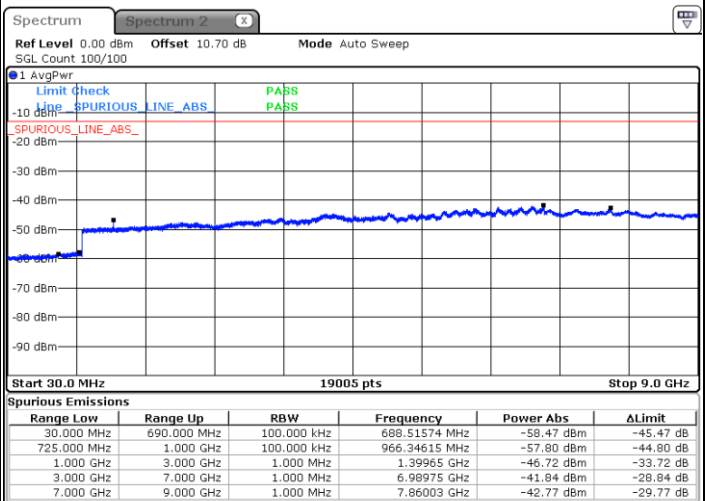
## LTE Band 12 / 10MHz

## Lowest Channel / QPSK



Date: 8 AUG. 2017 22:30:00

## Lowest Channel / 16QAM

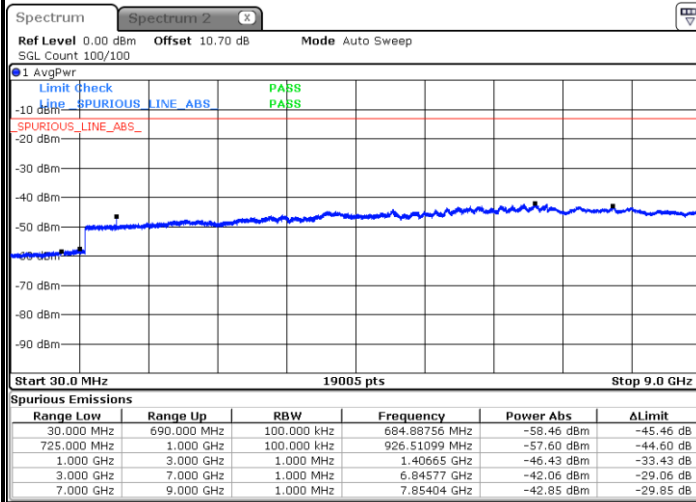


Date: 8 AUG. 2017 22:30:53



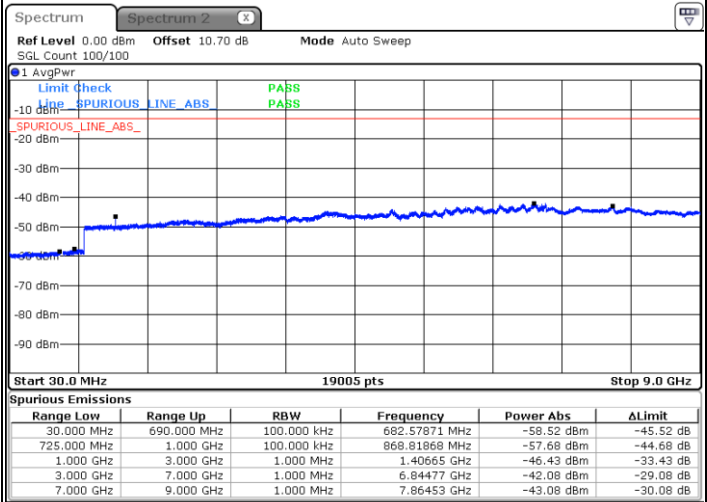
## LTE Band 12 / 10MHz

## Middle Channel / QPSK



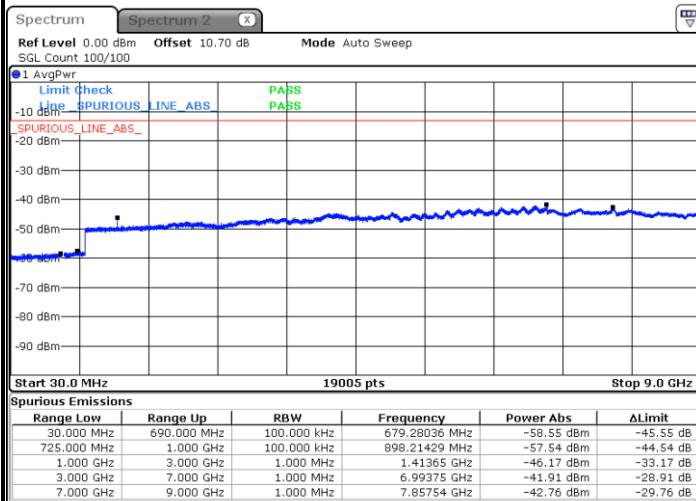
Date: 8 AUG 2017 22:37:14

## Middle Channel / 16QAM



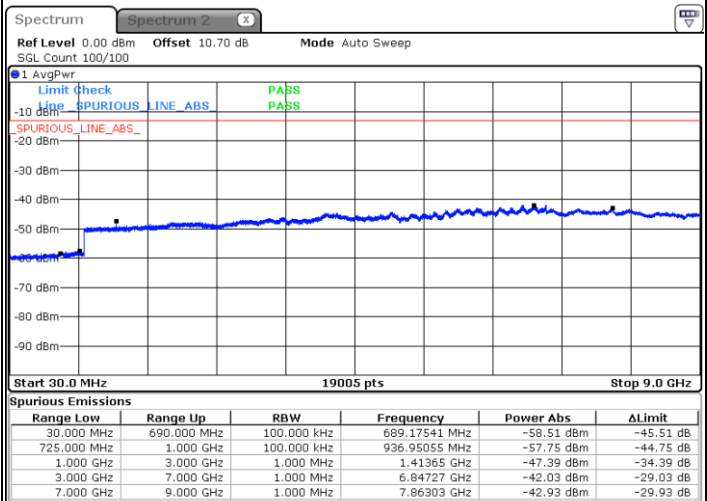
Date: 8 AUG 2017 22:32:27

## Highest Channel / QPSK



Date: 8 AUG 2017 22:43:23

## Highest Channel / 16QAM



Date: 8 AUG 2017 22:44:17

## 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    | 0.0001                              | PASS    |
| 40               | Normal Voltage    | 0.0025                              |         |
| 30               | Normal Voltage    | 0.0007                              |         |
| 20(Ref.)         | Normal Voltage    | 0.0000                              |         |
| 10               | Normal Voltage    | 0.0020                              |         |
| 0                | Normal Voltage    | 0.0110                              |         |
| -10              | Normal Voltage    | 0.0028                              |         |
| -20              | Normal Voltage    | 0.0106                              |         |
| -30              | Normal Voltage    | 0.0113                              |         |
| 20               | Maximum Voltage   | 0.0008                              |         |
| 20               | Normal Voltage    | 0.0000                              |         |
| 20               | Battery End Point | 0.0021                              |         |

**Note:**

1. Normal Voltage =4.0 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

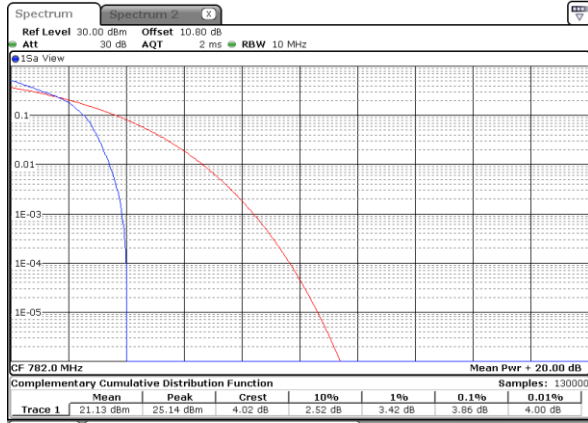
### Peak-to-Average Ratio

| Mode       | LTE Band 13 / 10MHz |         |       |         |             |
|------------|---------------------|---------|-------|---------|-------------|
| Mod.       | QPSK                |         | 16QAM |         | Limit: 13dB |
| RB Size    | 1RB                 | Full RB | 1RB   | Full RB | Result      |
| Lowest CH  | -                   | -       | -     | -       | PASS        |
| Middle CH  | 3.86                | 5.22    | 4.87  | 6.03    |             |
| Highest CH | -                   | -       | -     | -       |             |



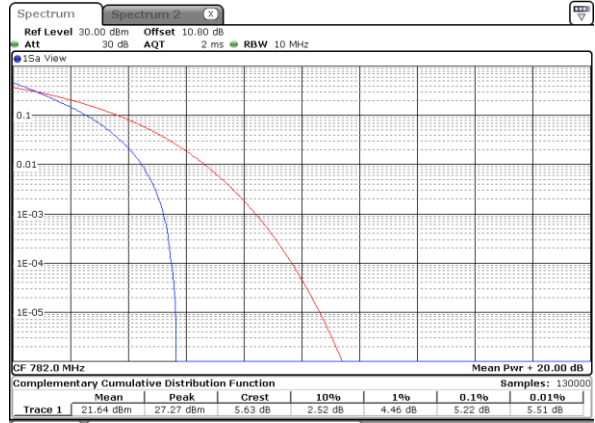
LTE Band 13 / 10MHz / QPSK

Middle Channel/ 1RB



Date: 9 AUG 2017 00:29:54

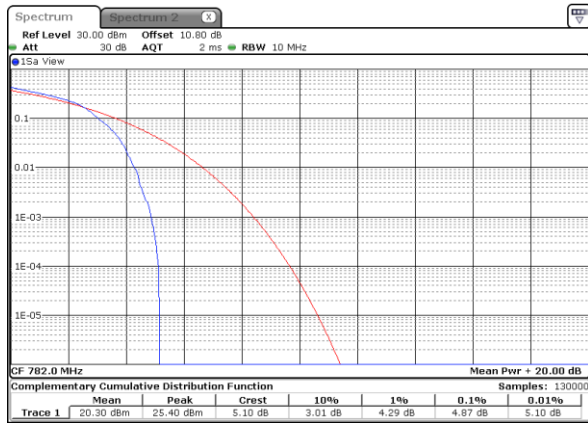
Middle Channel / Full RB



Date: 9 AUG 2017 00:30:02

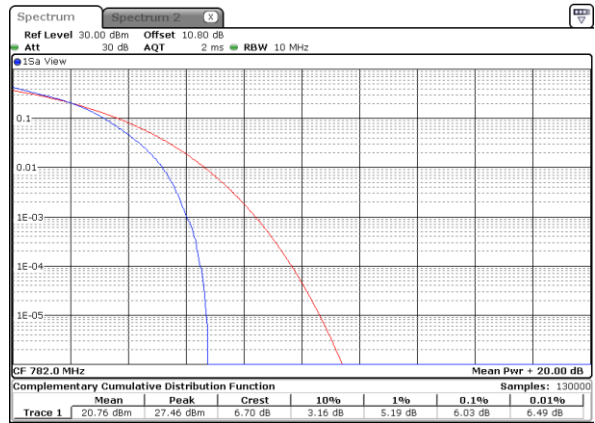
LTE Band 13 / 10MHz / 16QAM

Middle Channel/ 1RB



Date: 9 AUG 2017 00:29:36

Middle Channel / Full RB



Date: 9 AUG 2017 00:29:45



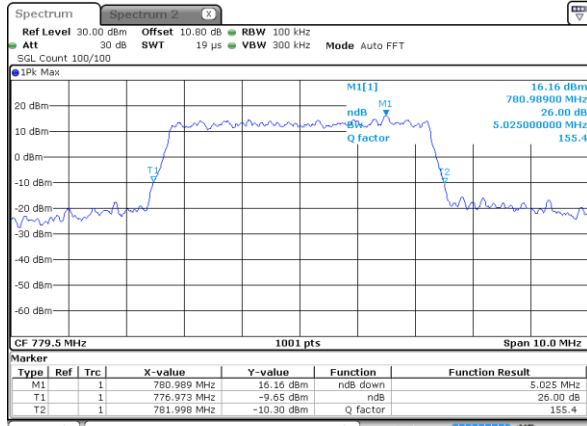
26dB Bandwidth

| 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  | -                          | -     | -    | -     | 5.03 | 4.94  | -     | -     | -     | -     | -     | -     |
| Middle CH  | -                          | -     | -    | -     | 4.94 | 5.02  | 9.71  | 9.65  | -     | -     | -     | -     |
| Highest CH | -                          | -     | -    | -     | 4.96 | 4.93  | -     | -     | -     | -     | -     | -     |

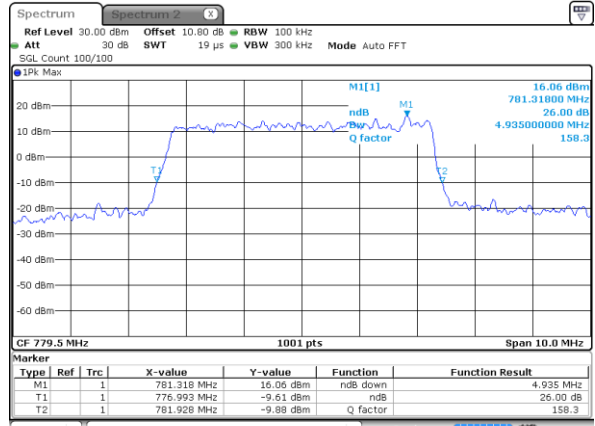


## LTE Band 13

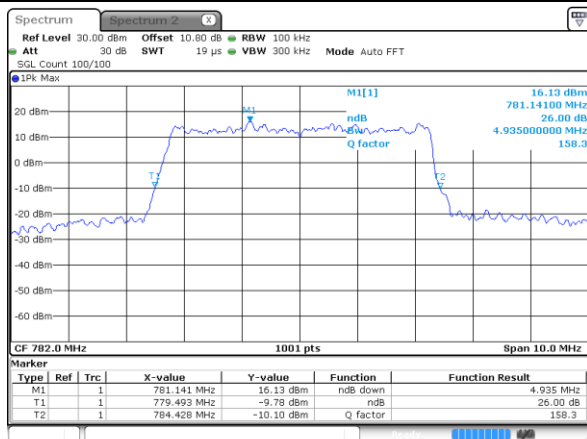
## Lowest Channel / 5MHz / QPSK



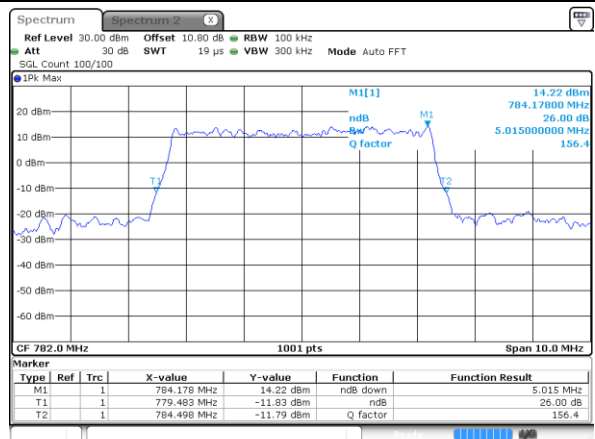
## Lowest Channel / 5MHz / 16QAM



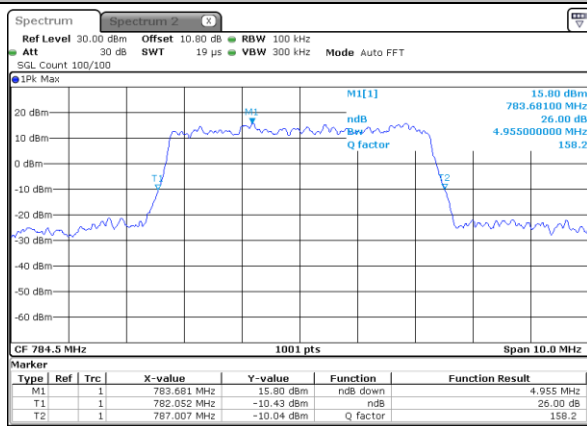
## Middle Channel / 5MHz / QPSK



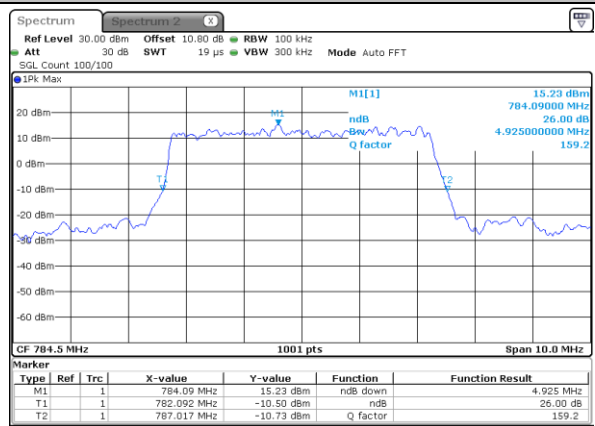
## Middle Channel / 5MHz / 16QAM



## Highest Channel / 5MHz / QPSK



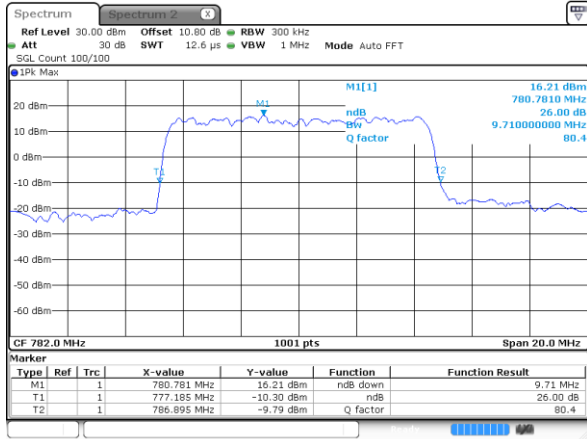
## Highest Channel / 5MHz / 16QAM





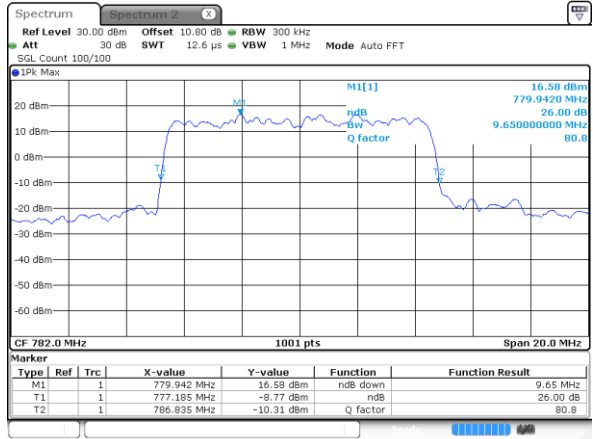
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 9 AUG 2017 00:07:53

Middle Channel / 10MHz / 16QAM



Date: 9 AUG 2017 00:07:43



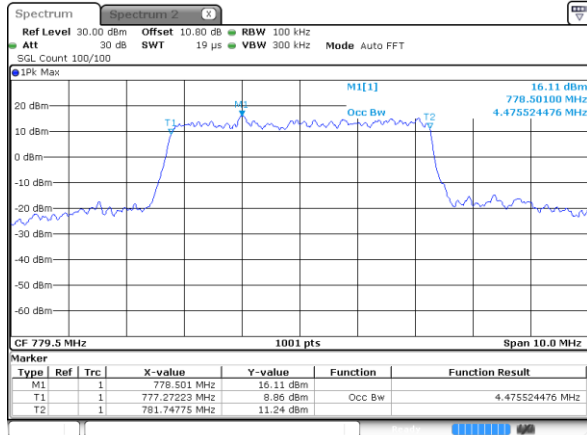
## Occupied Bandwidth

| 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  | -                         | -     | -    | -     | 4.48 | 4.48  | -     | -     | -     | -     | -     | -     |
| Middle CH  | -                         | -     | -    | -     | 4.52 | 4.49  | 8.97  | 8.99  | -     | -     | -     | -     |
| Highest CH | -                         | -     | -    | -     | 4.51 | 4.51  | -     | -     | -     | -     | -     | -     |



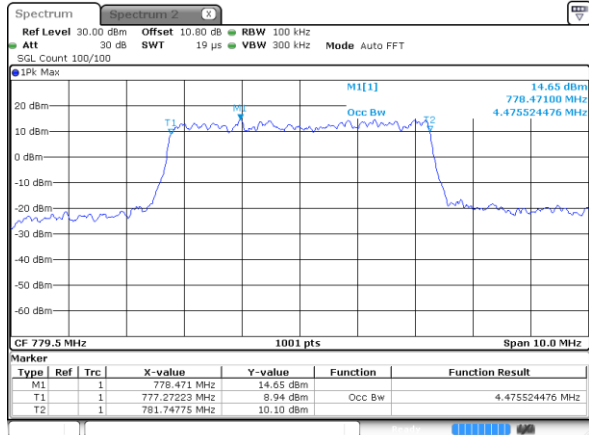
## LTE Band 13

## Lowest Channel / 5MHz / QPSK



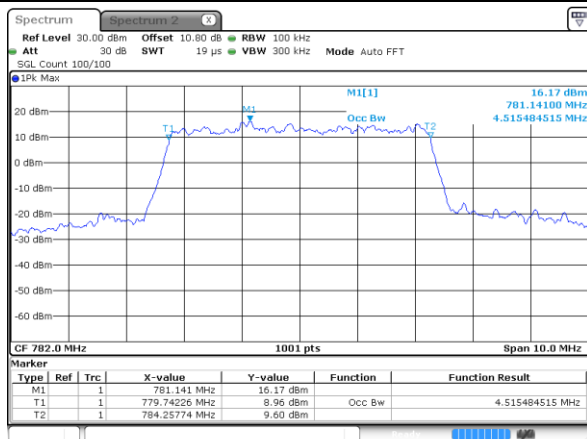
Date: 8 AUG 2017 23:46:51

## Lowest Channel / 5MHz / 16QAM



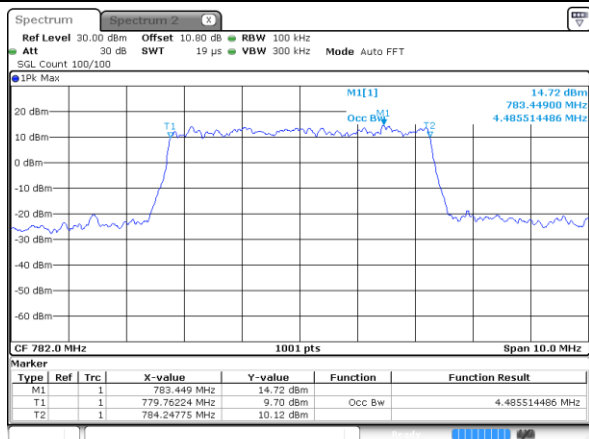
Date: 8 AUG 2017 23:47:01

## Middle Channel / 5MHz / QPSK



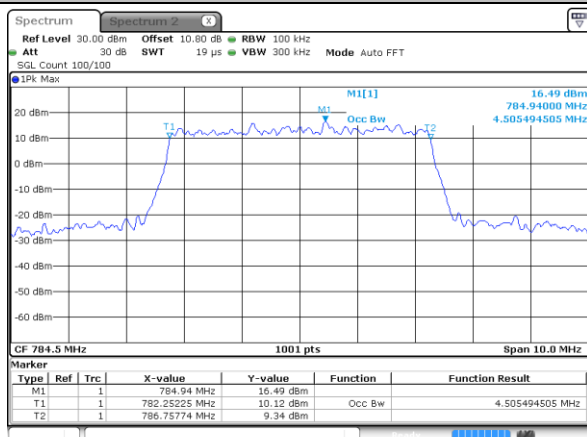
Date: 8 AUG 2017 23:58:10

## Middle Channel / 5MHz / 16QAM



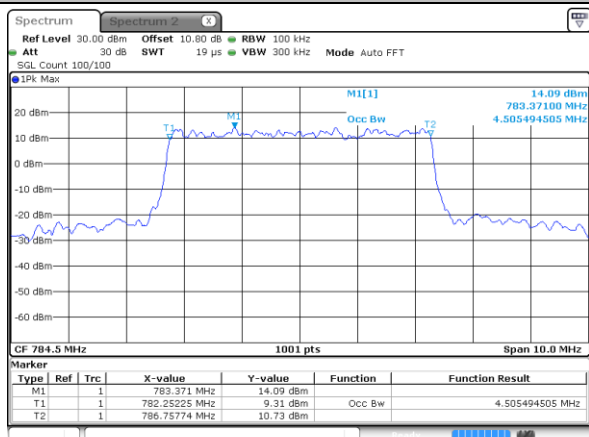
Date: 8 AUG 2017 23:58:00

## Highest Channel / 5MHz / QPSK



Date: 8 AUG 2017 23:58:20

## Highest Channel / 5MHz / 16QAM

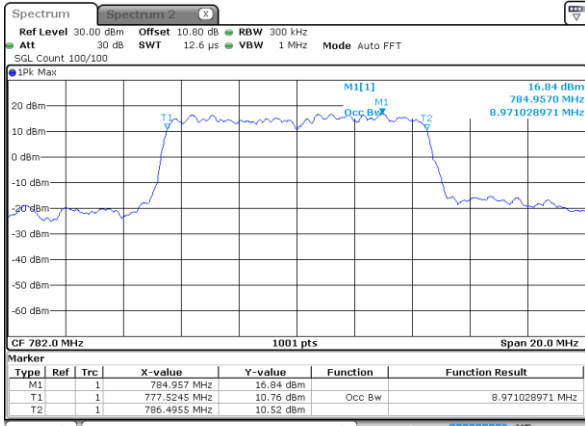


Date: 8 AUG 2017 23:58:30



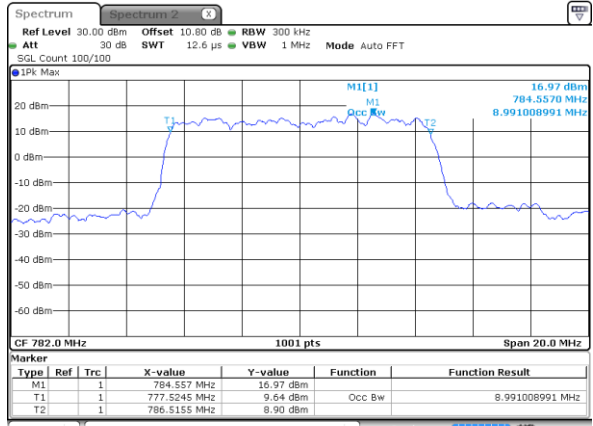
LTE Band 13

Middle Channel / 10MHz / QPSK



Date: 9 AUG 2017 00:07:23

Middle Channel / 10MHz / 16QAM



Date: 9 AUG 2017 00:07:33

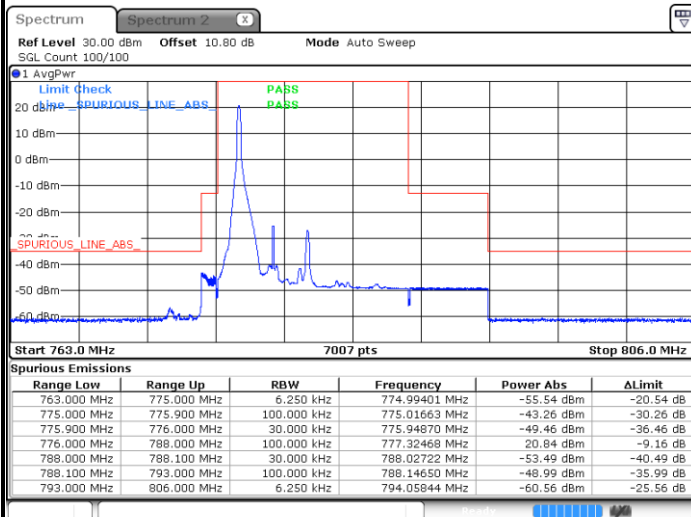


## **Conducted Band Edge**

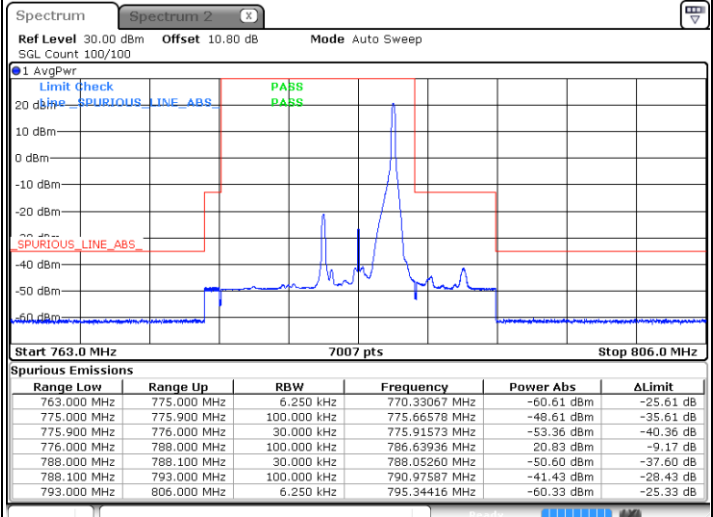


## LTE Band 13 / 5MHz / QPSK

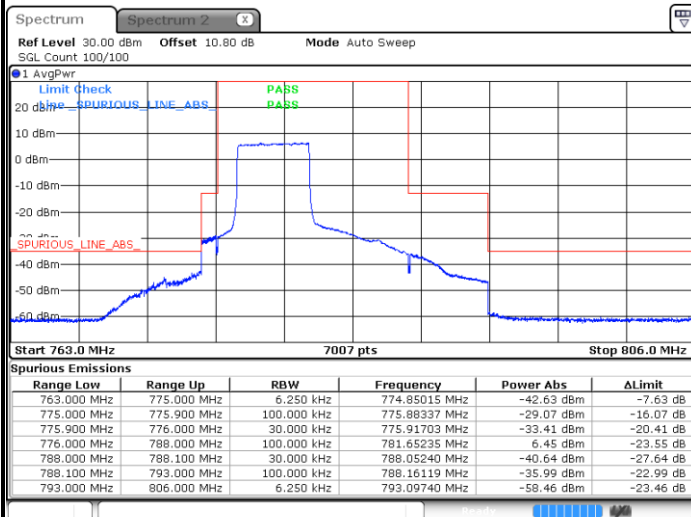
## Lowest Band Edge / 1 RB



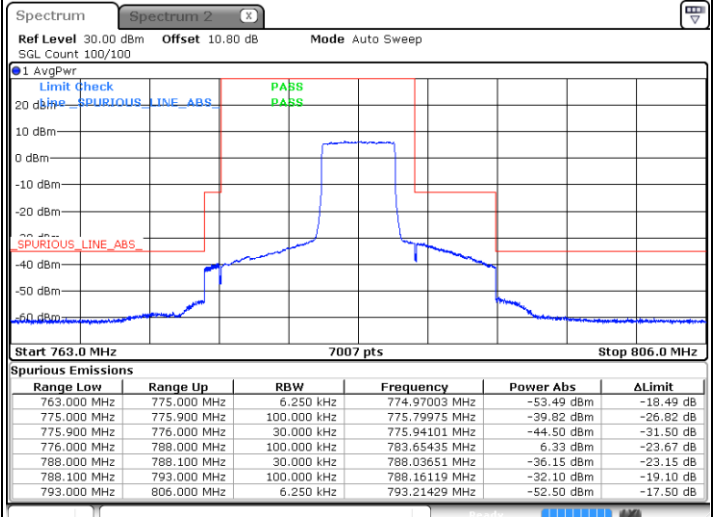
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



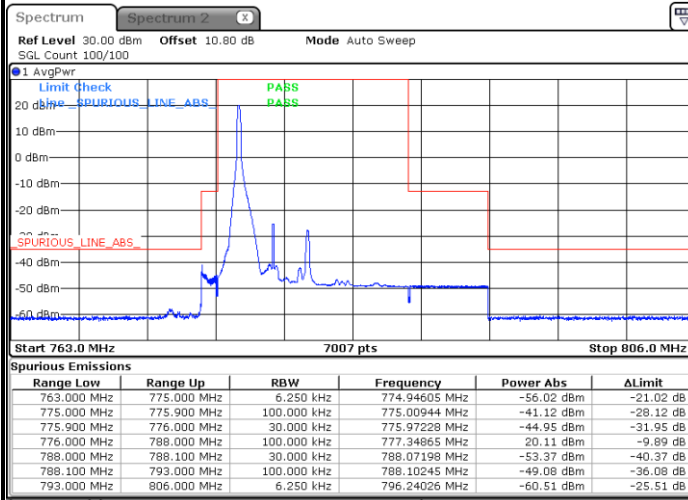
## Highest Band Edge / Full RB





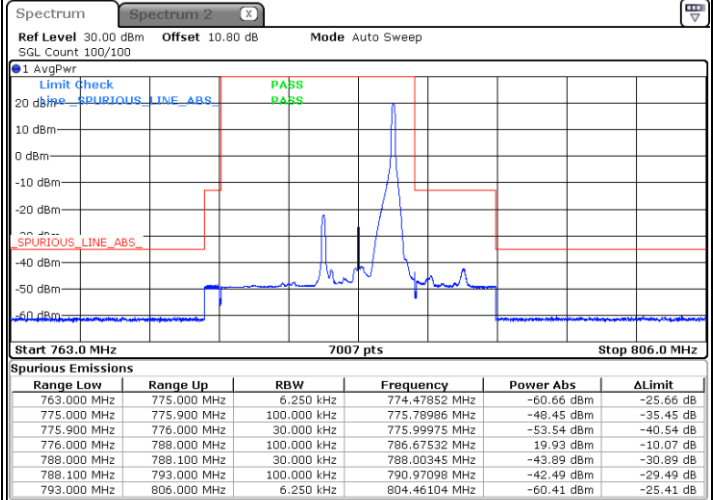
## LTE Band 13 / 5MHz / 16QAM

## Lowest Band Edge / 1 RB



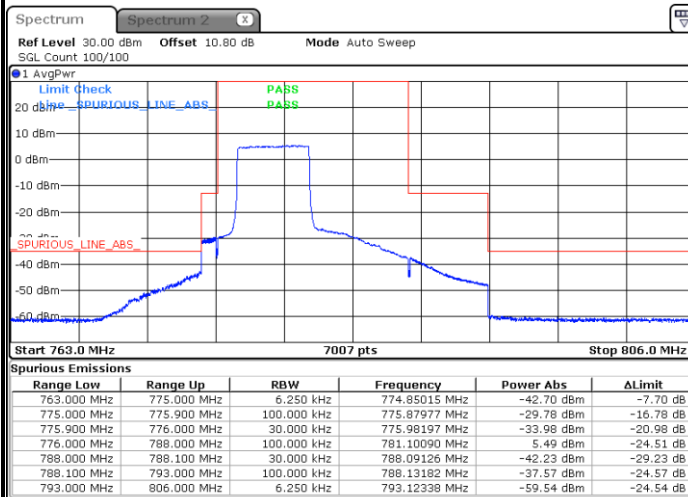
Date: 8.AUG.2017 23:52:17

## Highest Band Edge / 1 RB



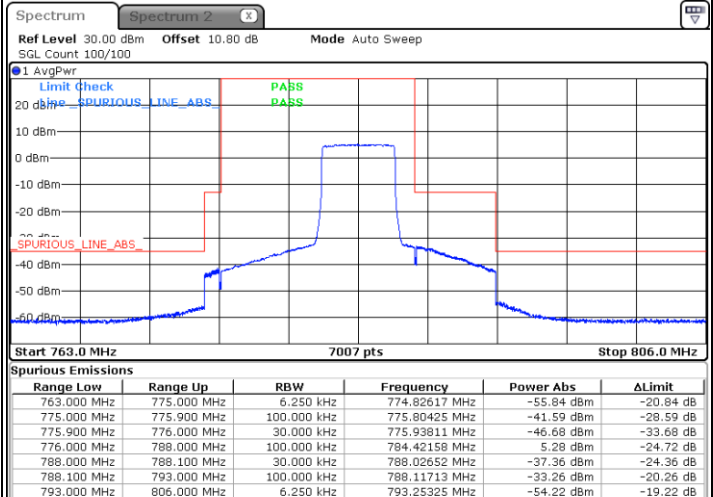
Date: 9.AUG.2017 00:03:46

## Lowest Band Edge / Full RB



Date: 8.AUG.2017 23:50:38

## Highest Band Edge / Full RB

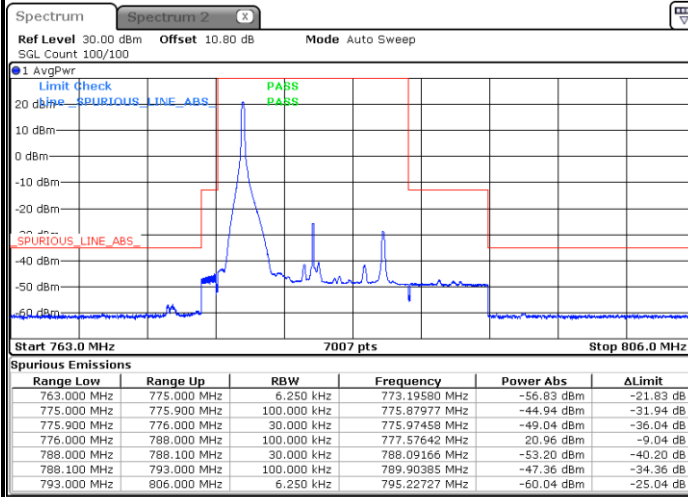


Date: 9.AUG.2017 00:02:07

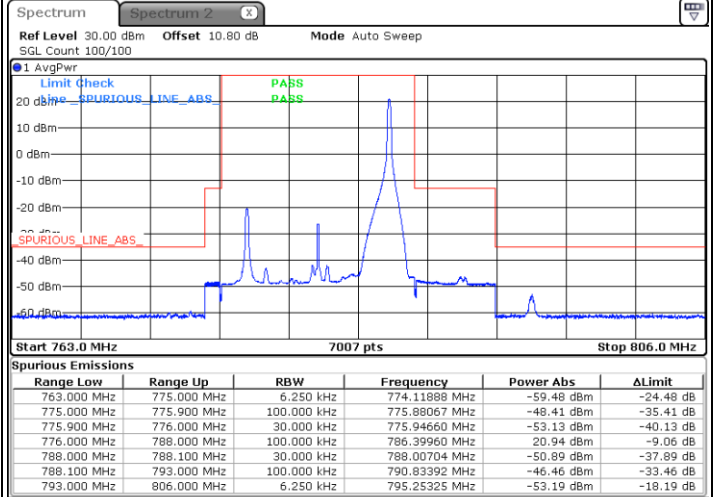


## LTE Band 13 / 10MHz / QPSK

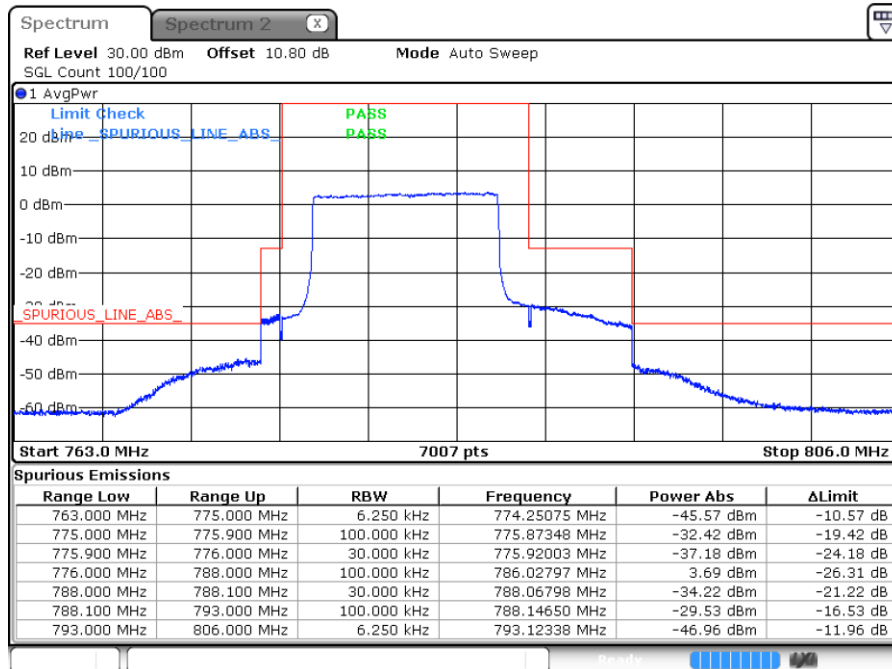
## Lowest Band Edge / 1 RB



## Highest Band Edge / 1 RB



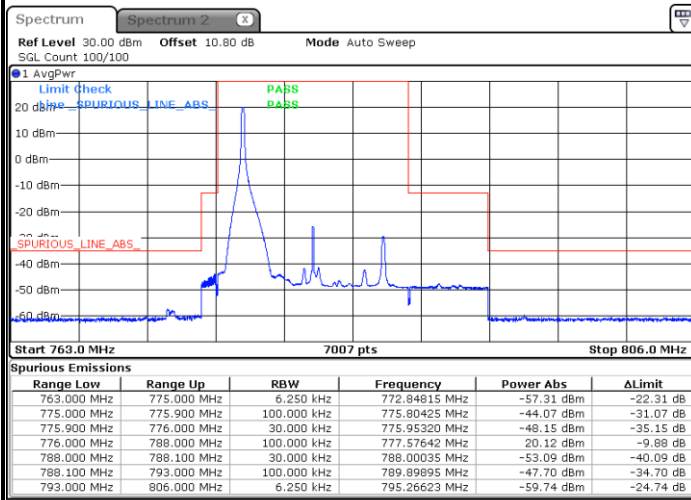
## Band Edge / Full RB



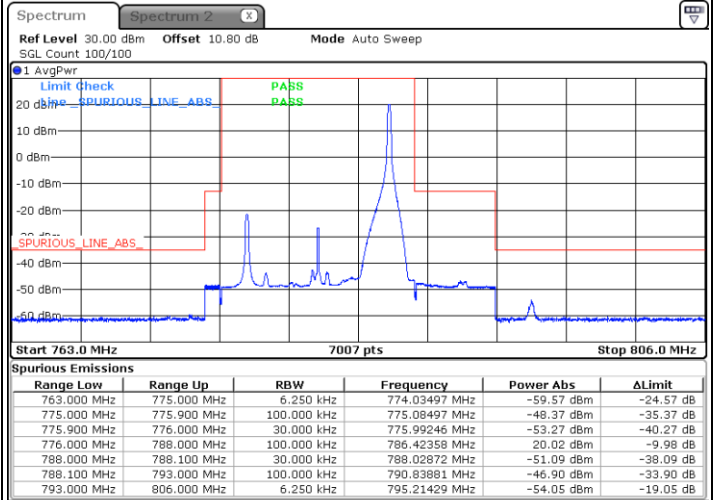


## LTE Band 13 / 10MHz / 16QAM

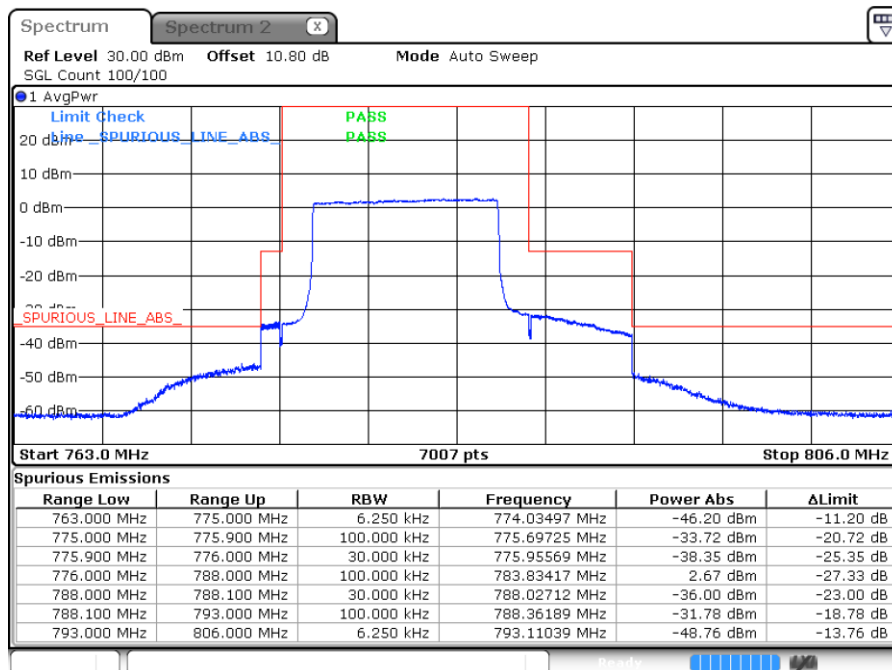
## Lowest Band Edge / 1 RB



## Highest Band Edge / 1 RB



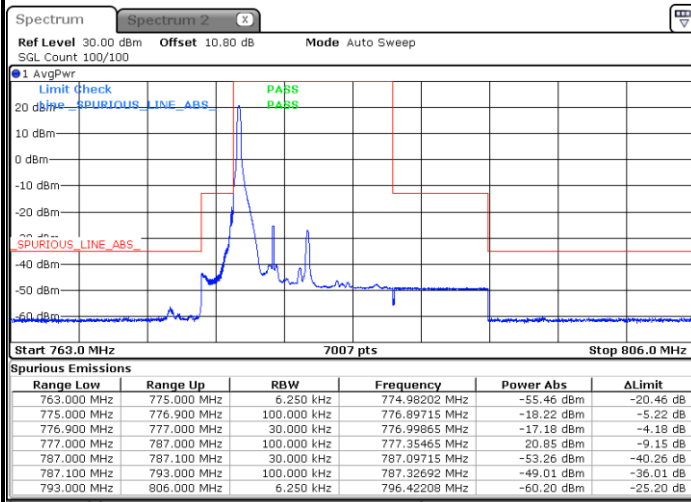
## Band Edge / Full RB



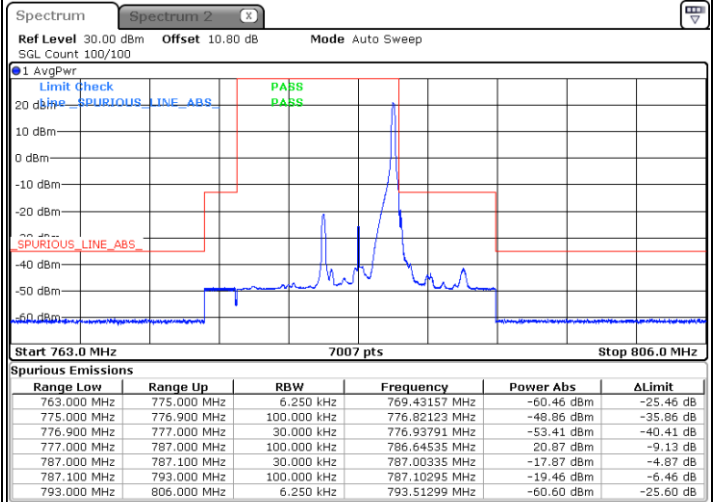


## IC LTE Band 13 / 5MHz / QPSK

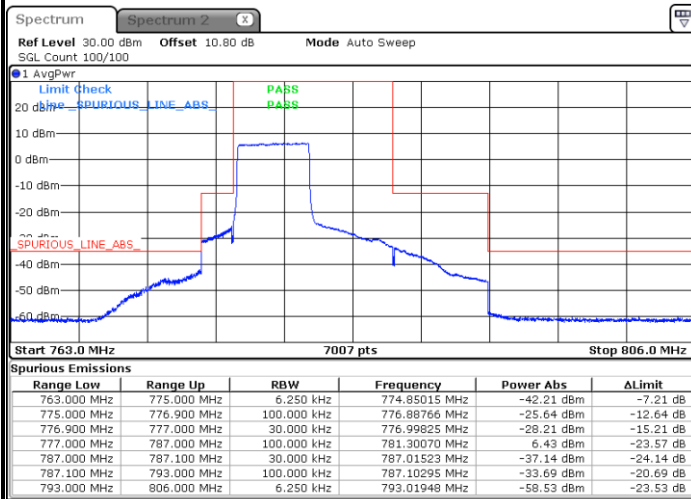
## Lowest Band Edge / 1 RB



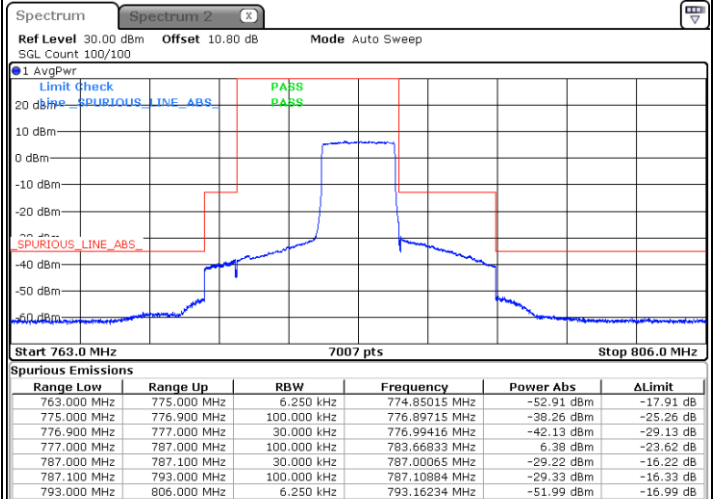
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



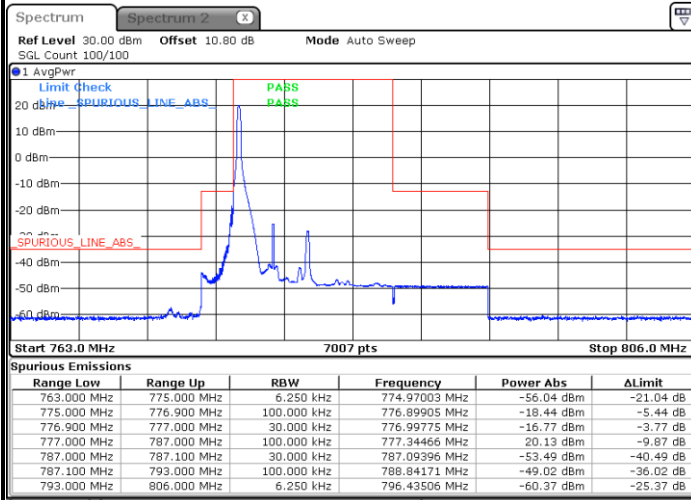
## Highest Band Edge / Full RB



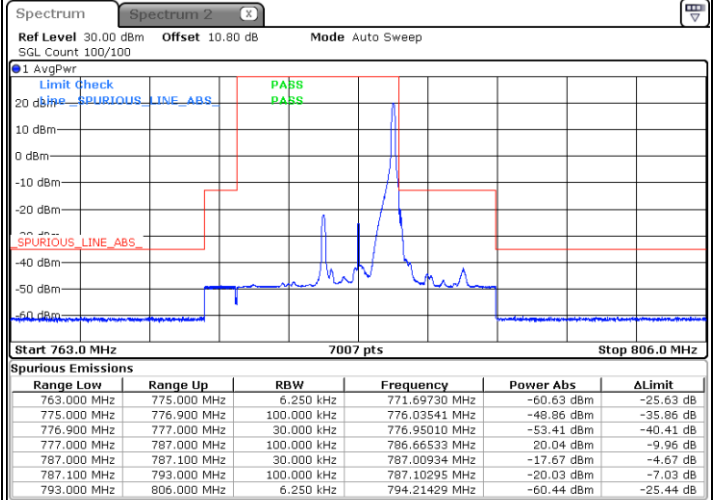


## IC LTE Band 13 / 5MHz / 16QAM

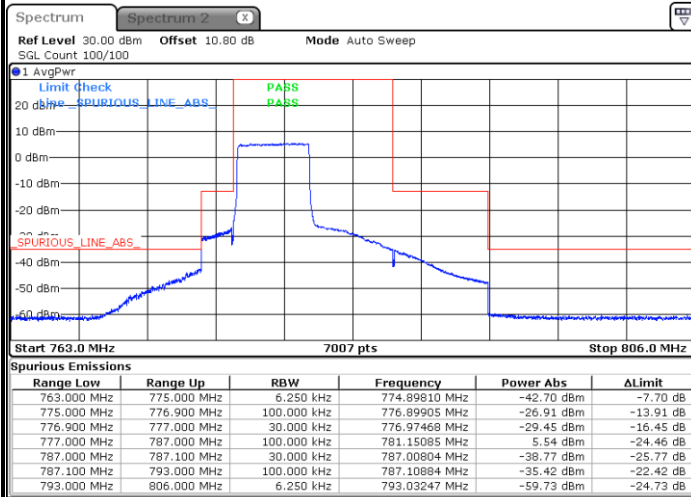
## Lowest Band Edge / 1 RB



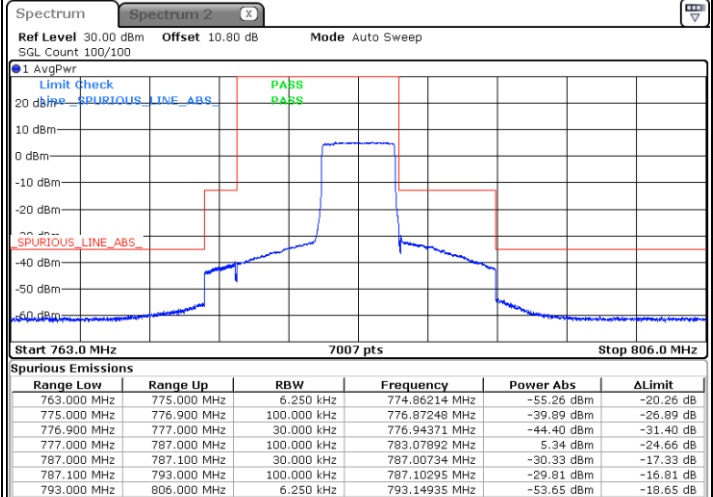
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



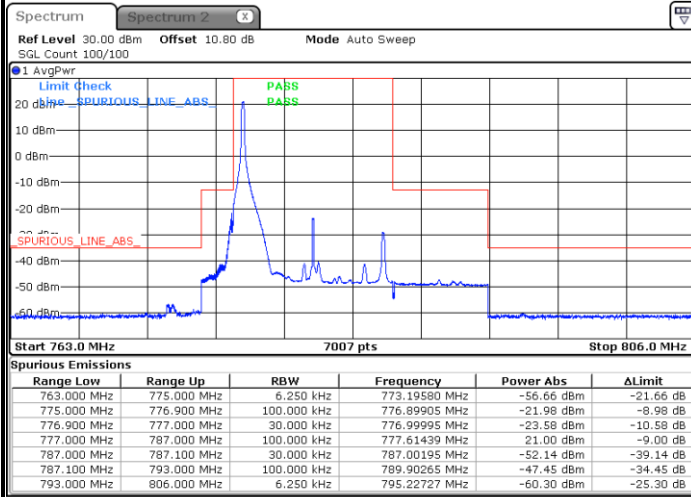
## Highest Band Edge / Full RB





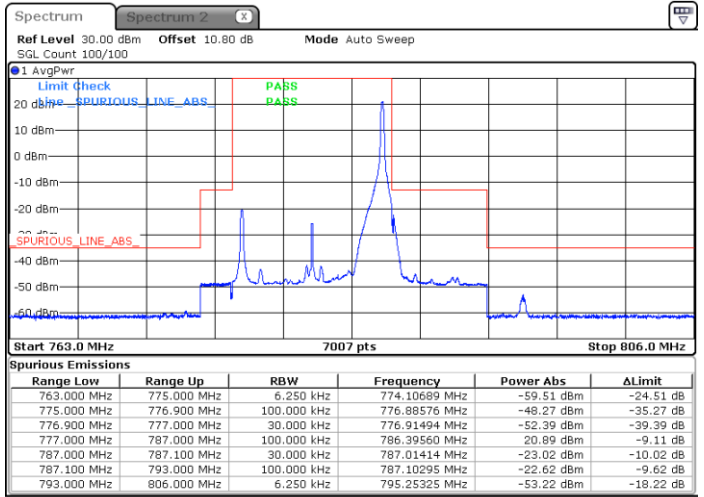
## IC LTE Band 13 / 10MHz / QPSK

## Lowest Band Edge / 1 RB



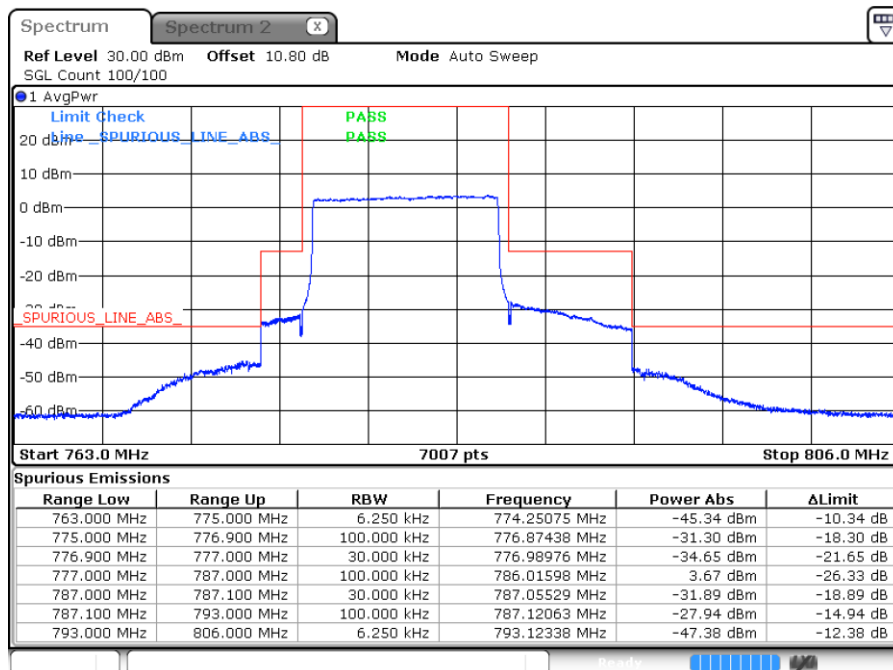
Date: 9 AUG 2017 00:50:05

## Highest Band Edge / 1 RB



Date: 9 AUG 2017 00:51:44

## Band Edge / Full RB

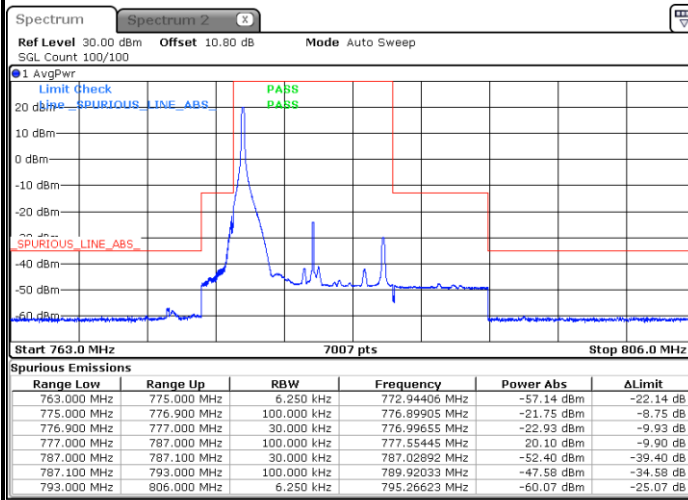


Date: 9 AUG 2017 00:45:09



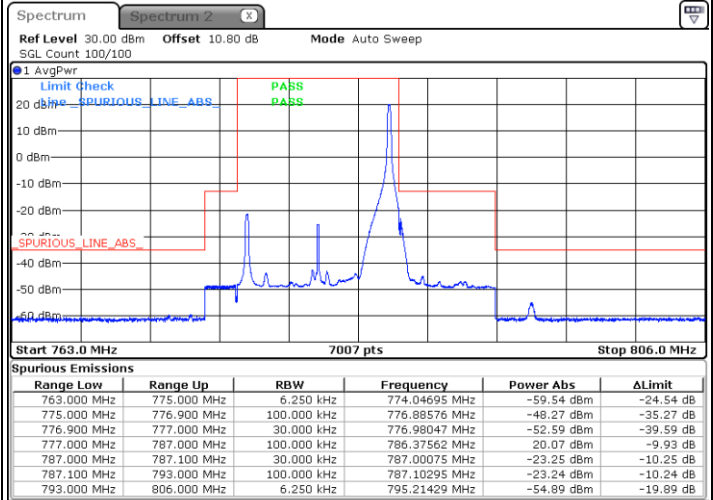
## IC LTE Band 13 / 10MHz / 16QAM

## Lowest Band Edge / 1 RB



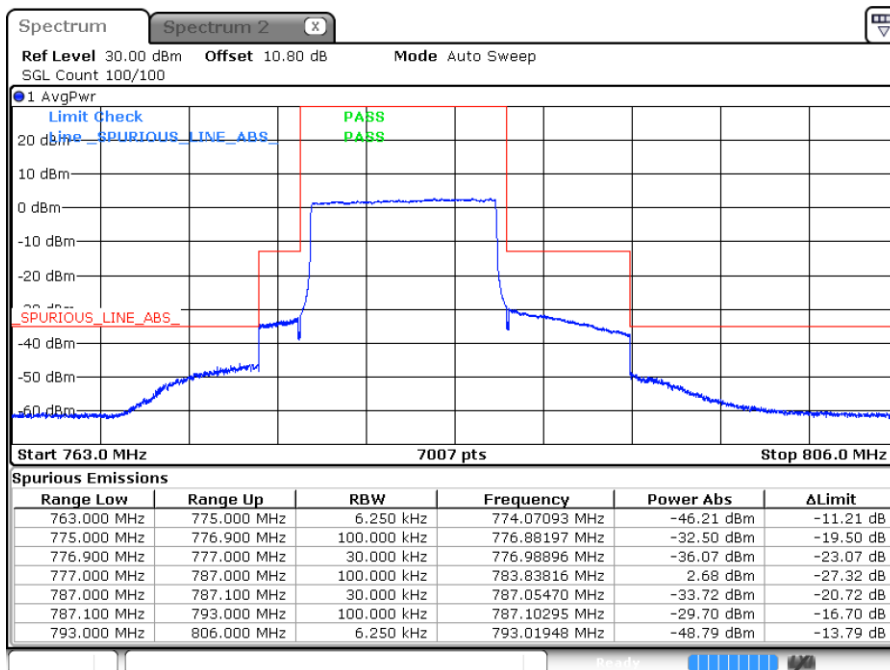
Date: 9.AUG.2017 00:48:26

## Highest Band Edge / 1 RB



Date: 9.AUG.2017 00:53:23

## Band Edge / Full RB



Date: 9.AUG.2017 00:46:47

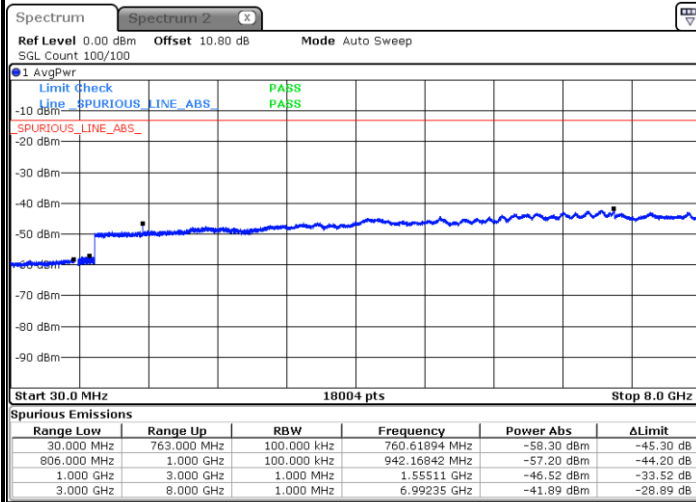


## **Conducted Spurious Emission**



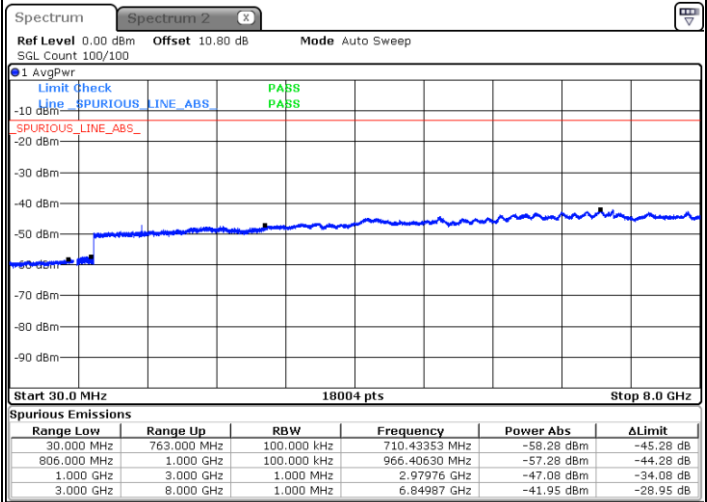
## LTE Band 13 / 5MHz

## Lowest Channel / QPSK



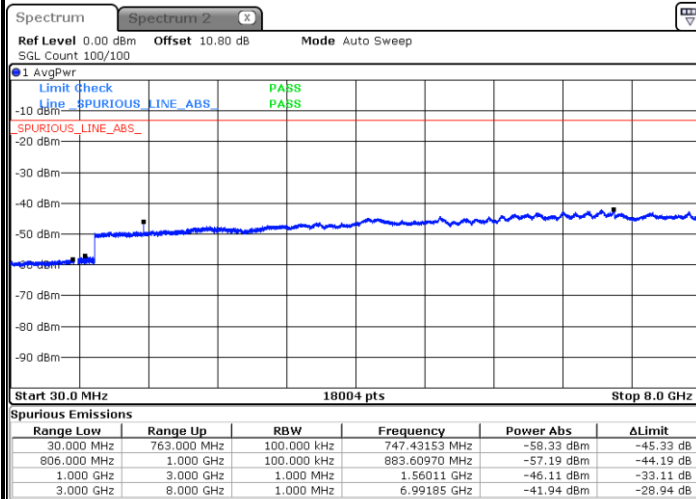
Date: 8 AUG 2017 23:54:50

## Lowest Channel / 16QAM



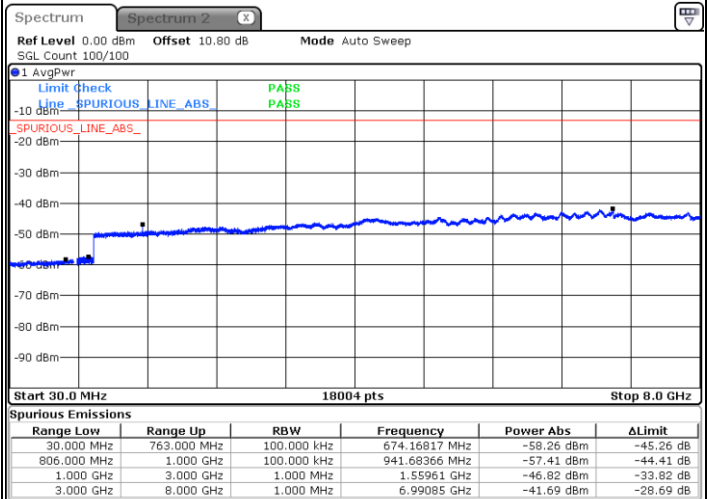
Date: 8 AUG 2017 23:55:43

## Middle Channel / QPSK



Date: 8 AUG 2017 23:57:30

## Middle Channel / 16QAM

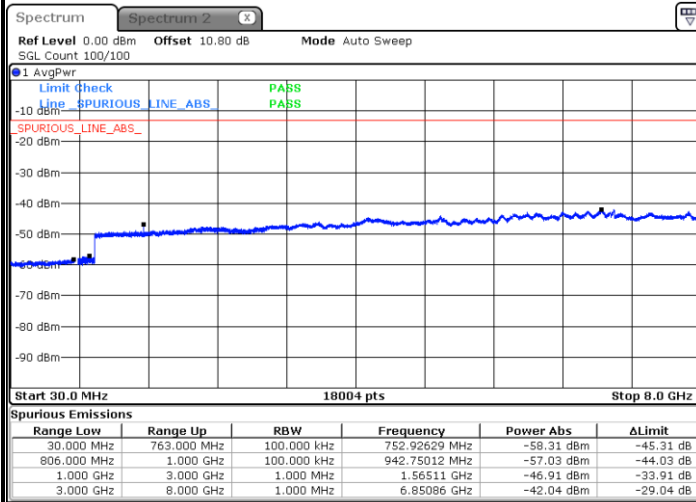


Date: 8 AUG 2017 23:56:37



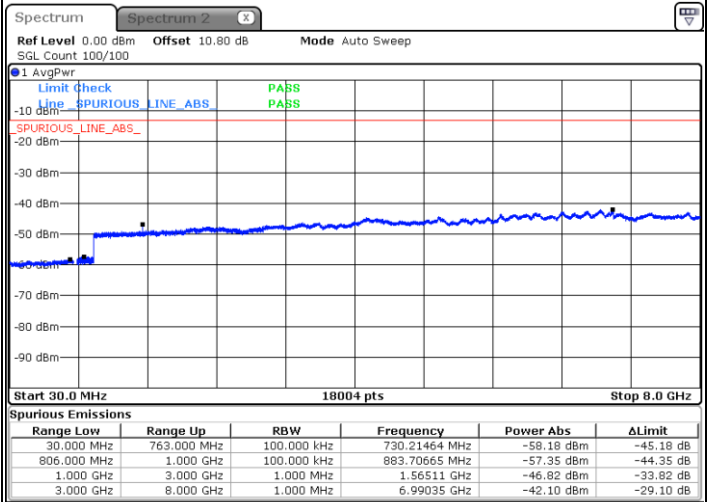
## LTE Band 13 / 5MHz

## Highest Channel / QPSK



Date: 9 AUG. 2017 00:06:19

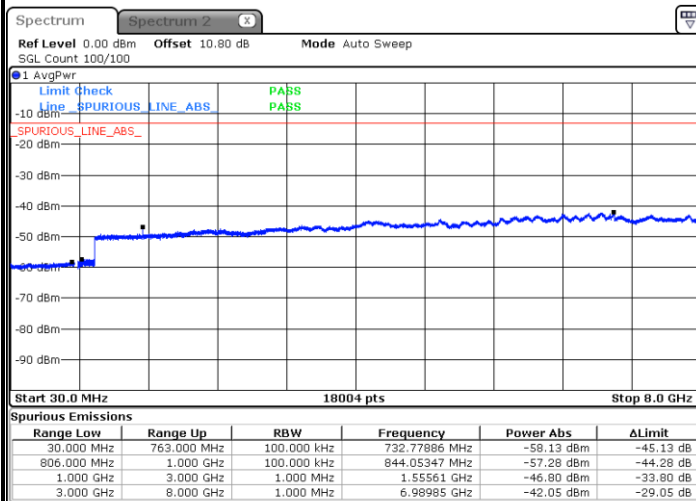
## Highest Channel / 16QAM



Date: 9 AUG. 2017 00:07:13

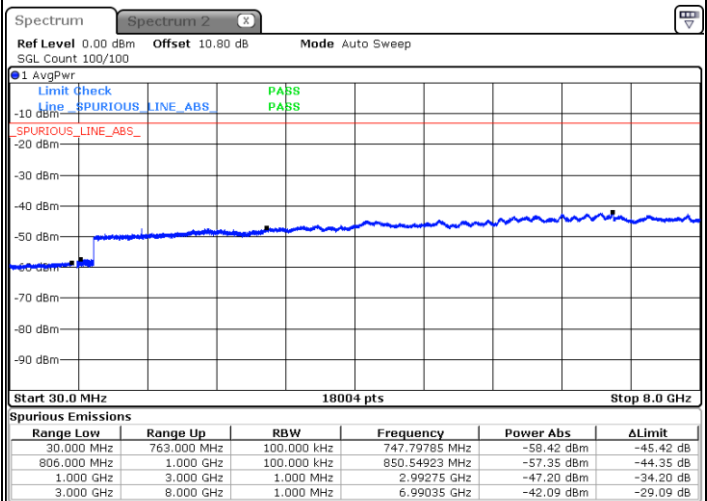
## LTE Band 13 / 10MHz

## Middle Channel / QPSK



Date: 9 AUG. 2017 00:19:33

## Middle Channel / 16QAM



Date: 9 AUG. 2017 00:18:40

## 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    | 0.0018                              | PASS    |
| 40               | Normal Voltage    | 0.0000                              |         |
| 30               | Normal Voltage    | 0.0001                              |         |
| 20(Ref.)         | Normal Voltage    | 0.0000                              |         |
| 10               | Normal Voltage    | 0.0133                              |         |
| 0                | Normal Voltage    | 0.0003                              |         |
| -10              | Normal Voltage    | 0.0013                              |         |
| -20              | Normal Voltage    | 0.0127                              |         |
| -30              | Normal Voltage    | 0.0003                              |         |
| 20               | Maximum Voltage   | 0.0134                              |         |
| 20               | Normal Voltage    | 0.0000                              |         |
| 20               | Battery End Point | 0.0027                              |         |

**Note:**

1. Normal Voltage =4.0 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 17

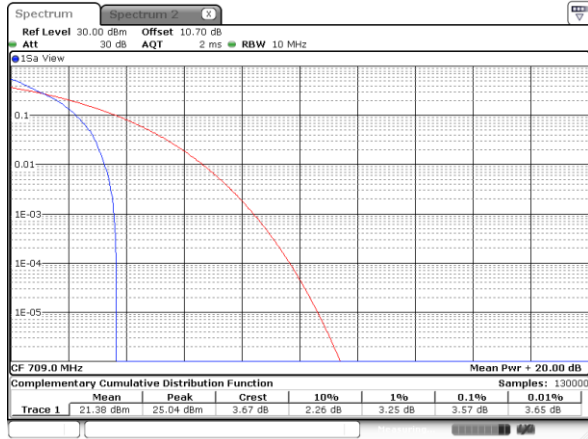
### Peak-to-Average Ratio

| Mode       | LTE Band 17 / 10MHz |         |       |         |             |
|------------|---------------------|---------|-------|---------|-------------|
| Mod.       | QPSK                |         | 16QAM |         | Limit: 13dB |
| RB Size    | 1RB                 | Full RB | 1RB   | Full RB | Result      |
| Lowest CH  | 3.57                | 4.58    | 4.61  | 5.45    | PASS        |
| Middle CH  | 3.71                | 4.55    | 4.41  | 5.25    |             |
| Highest CH | 3.48                | 4.64    | 4.7   | 5.62    |             |

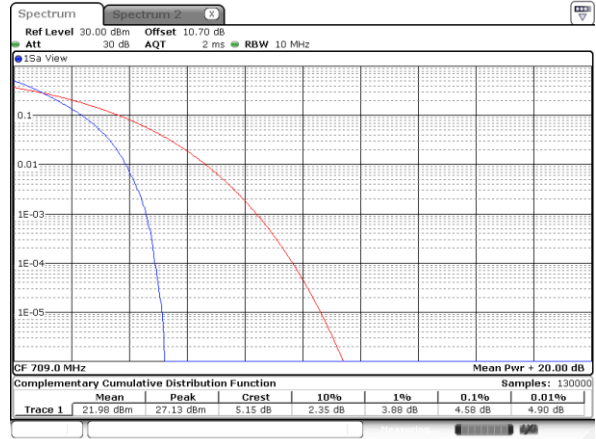


## LTE Band 17 / 10MHz / QPSK

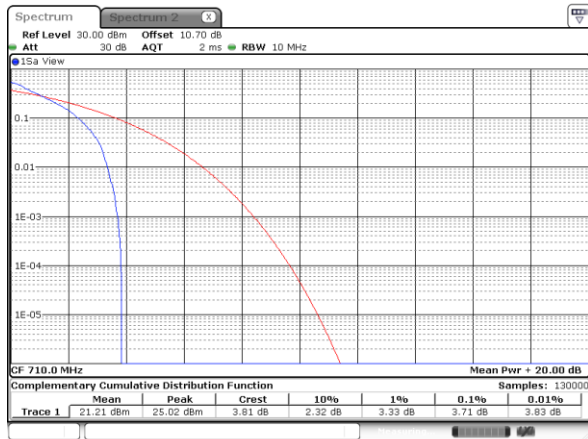
## Lowest Channel / 1RB



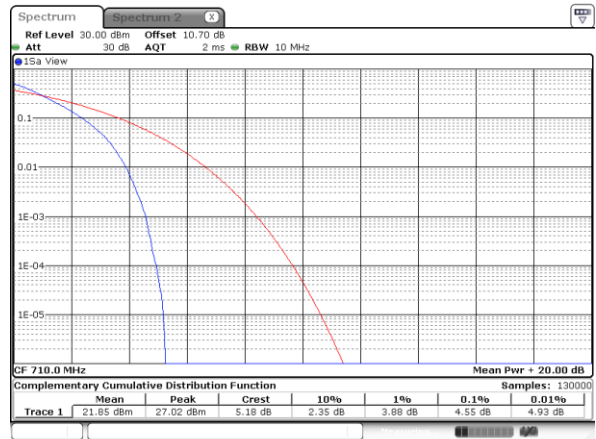
## Lowest Channel / Full RB



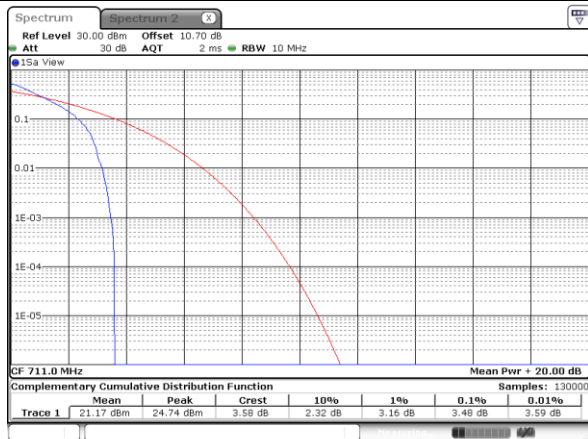
## Middle Channel/ 1RB



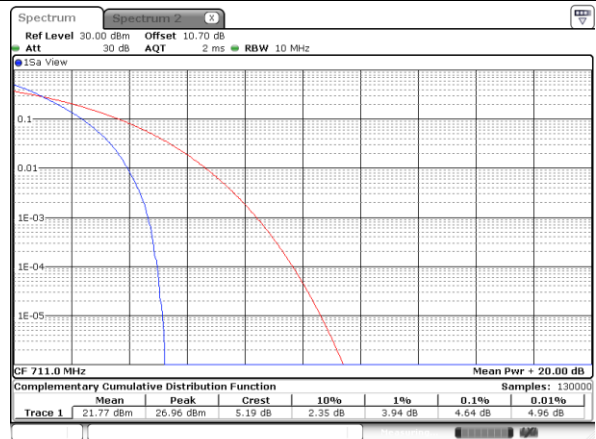
## Middle Channel / Full RB



## Highest Channel/ 1RB



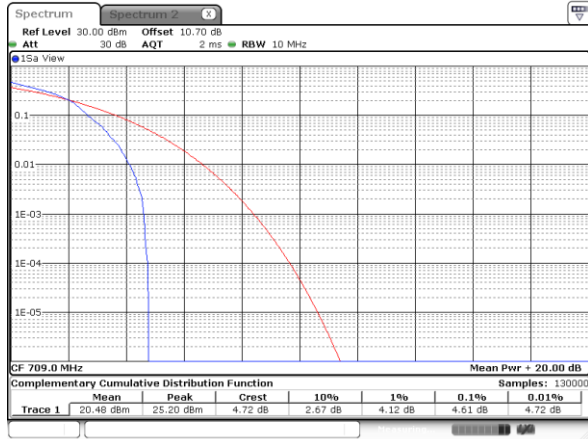
## Highest Channel / Full RB



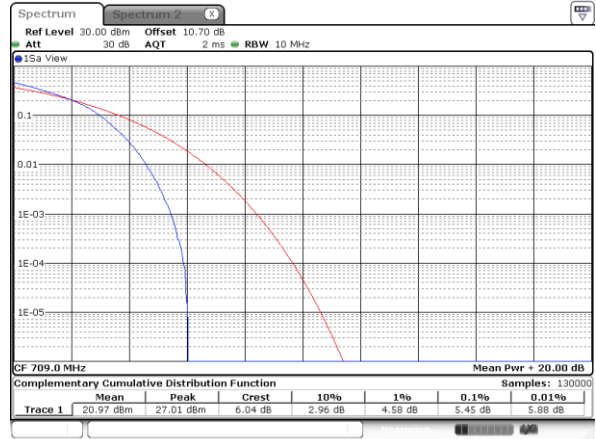


## LTE Band 17 / 10MHz / 16QAM

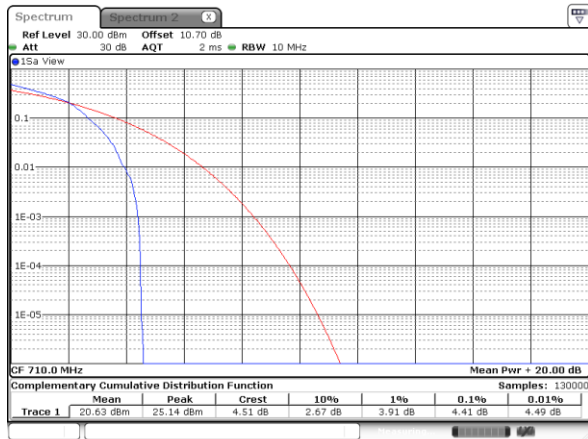
## Lowest Channel / 1RB



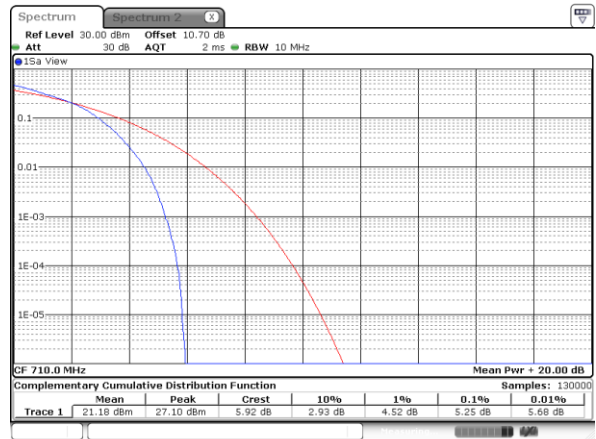
## Lowest Channel / Full RB



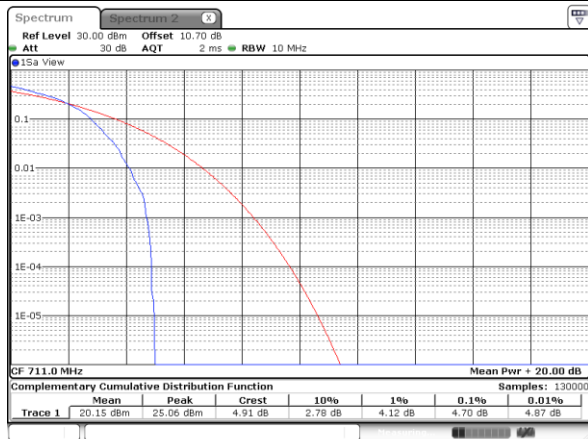
## Middle Channel/ 1RB



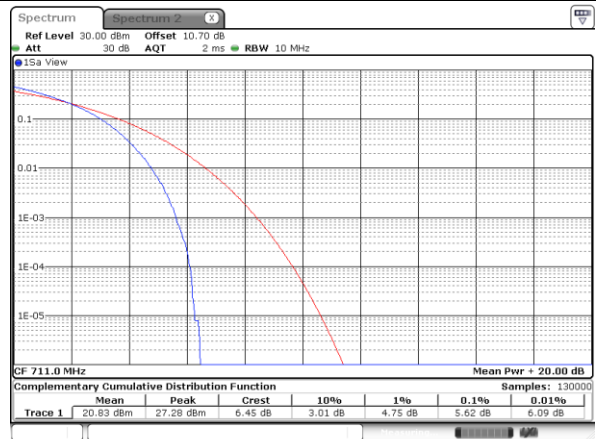
## Middle Channel / Full RB



## Highest Channel/ 1RB



## Highest Channel / Full RB





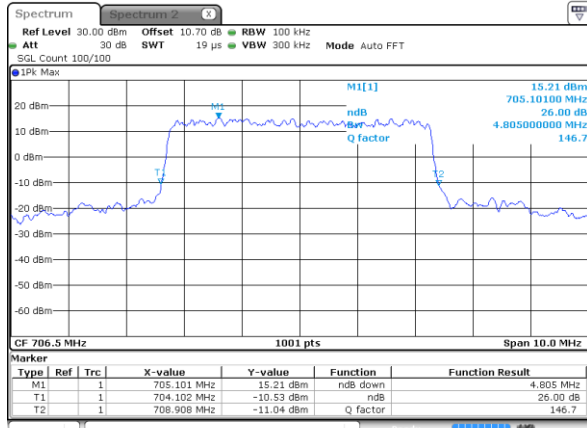
**26dB Bandwidth**

| 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  | -                          | -     | -    | -     | 4.81 | 4.92  | 10.07 | 9.95  | -     | -     | -     | -     |
| Middle CH  | -                          | -     | -    | -     | 5.04 | 4.88  | 9.89  | 9.91  | -     | -     | -     | -     |
| Highest CH | -                          | -     | -    | -     | 4.95 | 5.08  | 9.99  | 9.81  | -     | -     | -     | -     |

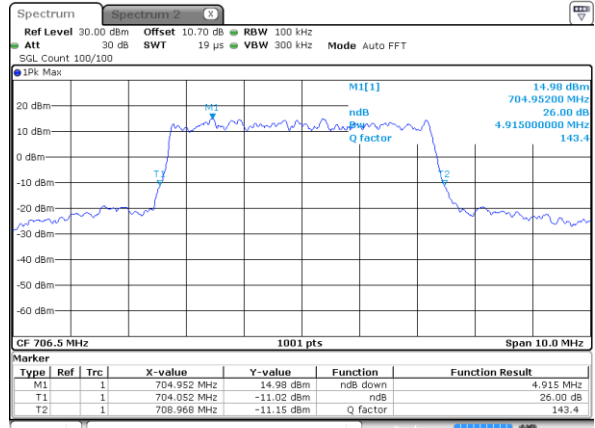


## LTE Band 17

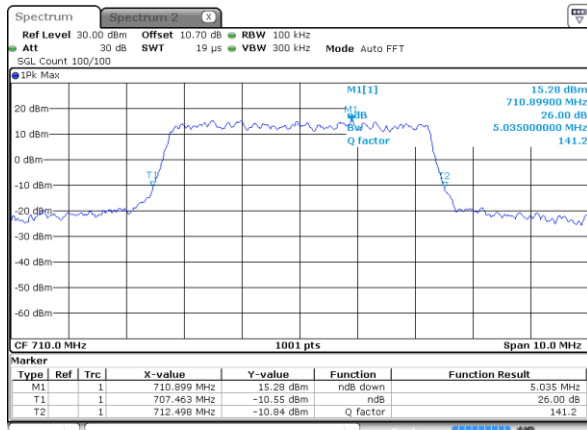
## Lowest Channel / 5MHz / QPSK



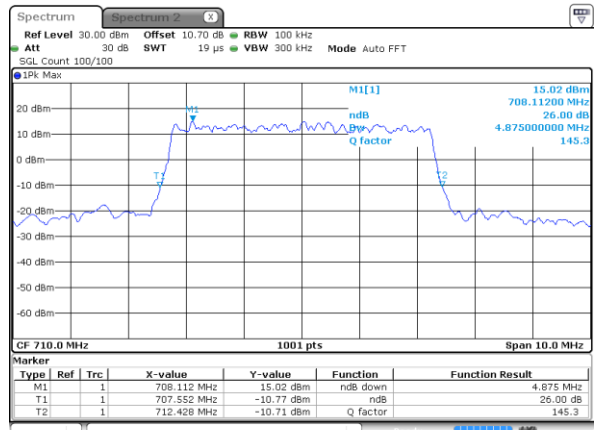
## Lowest Channel / 5MHz / 16QAM



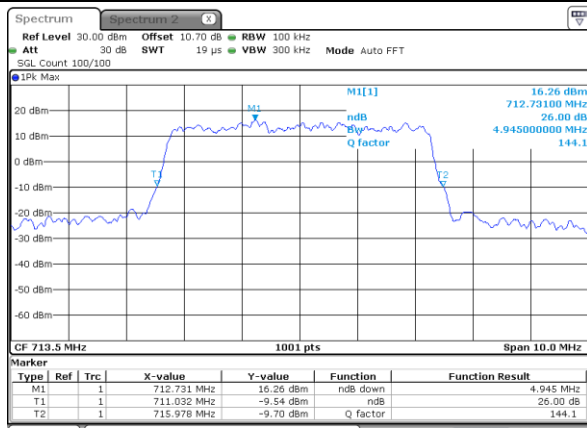
## Middle Channel / 5MHz / QPSK



## Middle Channel / 5MHz / 16QAM



## Highest Channel / 5MHz / QPSK



## Highest Channel / 5MHz / 16QAM

