



## LTE Band 4

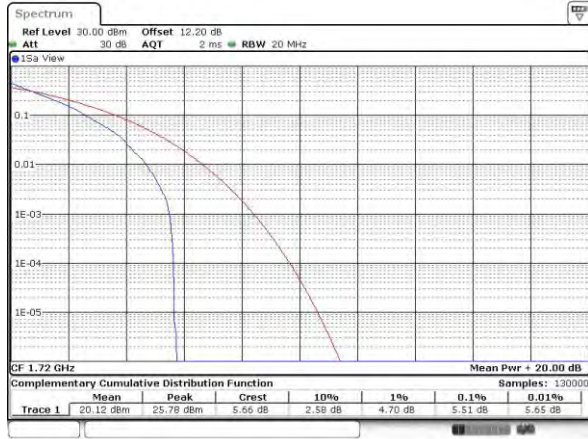
**Peak-to-Average Ratio**

| Mode       | LTE Band 4 / 20MHz |         |       |         |             |
|------------|--------------------|---------|-------|---------|-------------|
| Mod.       | QPSK               |         | 16QAM |         | Limit: 13dB |
| RB Size    | 1RB                | Full RB | 1RB   | Full RB | Result      |
| Lowest CH  | 5.51               | 5.39    | 6.35  | 6.29    | PASS        |
| Middle CH  | 5.71               | 5.39    | 6.64  | 6.35    |             |
| Highest CH | 5.68               | 5.45    | 6.96  | 6.43    |             |

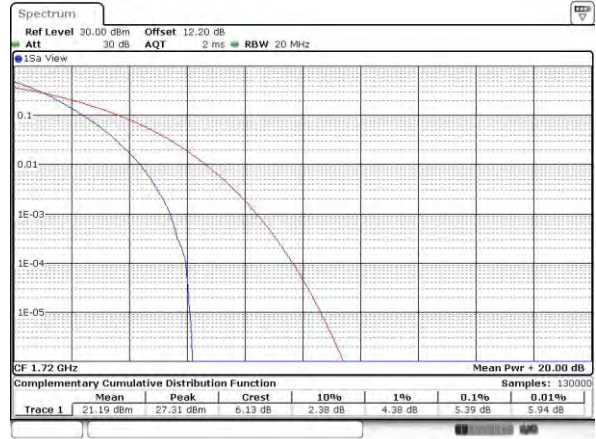


## LTE Band 4 / 20MHz / QPSK

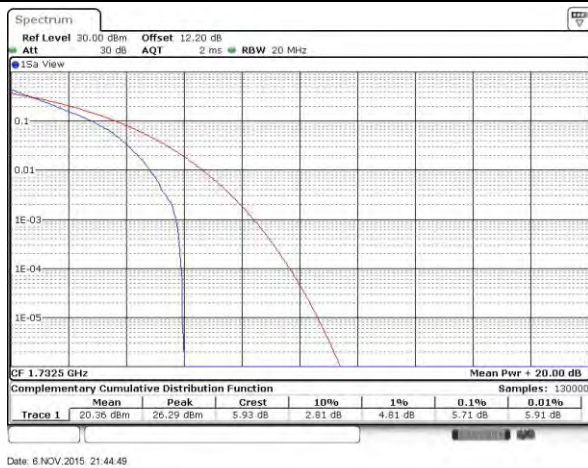
## Lowest Channel / 1RB



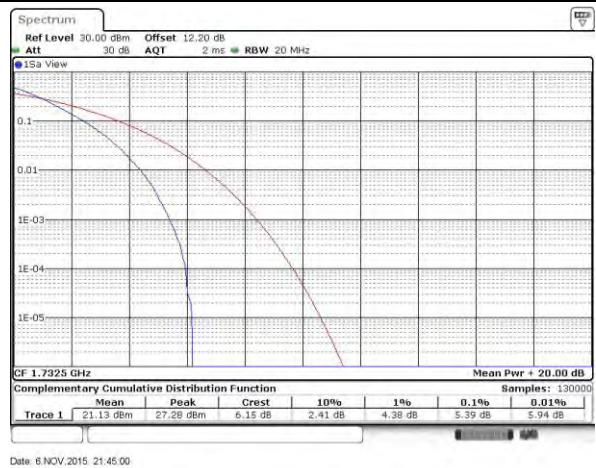
## Lowest Channel / Full RB



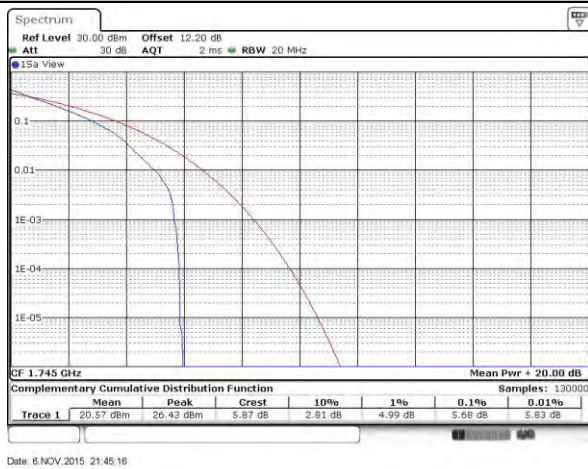
## Middle Channel / 1RB



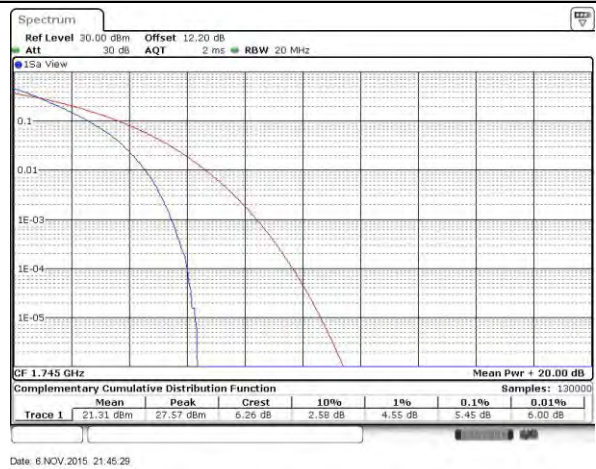
## Middle Channel / Full RB



## Highest Channel / 1RB



## Highest Channel / Full RB



**LTE Band 4 / 20MHz / 16QAM**
**Lowest Channel / 1RB**

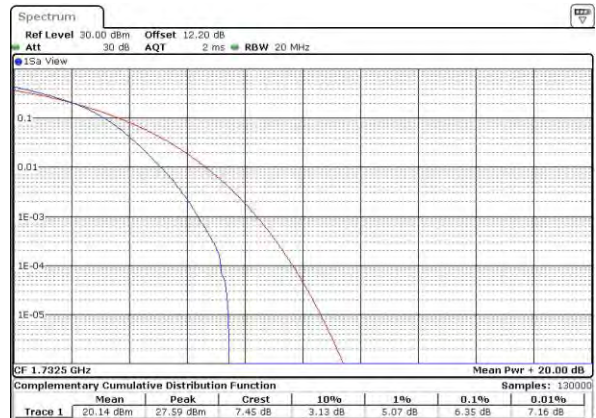

Date: 6 NOV 2015 21:42:08

**Lowest Channel / Full RB**


Date: 6 NOV 2015 21:42:20

**Middle Channel / 1RB**


Date: 6 NOV 2015 21:42:50

**Middle Channel / Full RB**


Date: 6 NOV 2015 21:43:03

**Highest Channel / 1RB**


Date: 6 NOV 2015 21:43:33

**Highest Channel / Full RB**

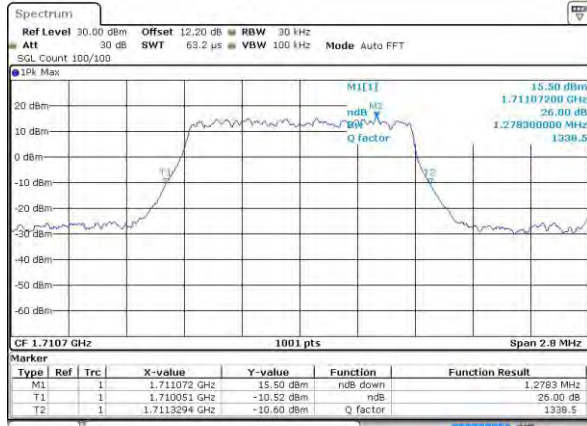

Date: 6 NOV 2015 21:43:47



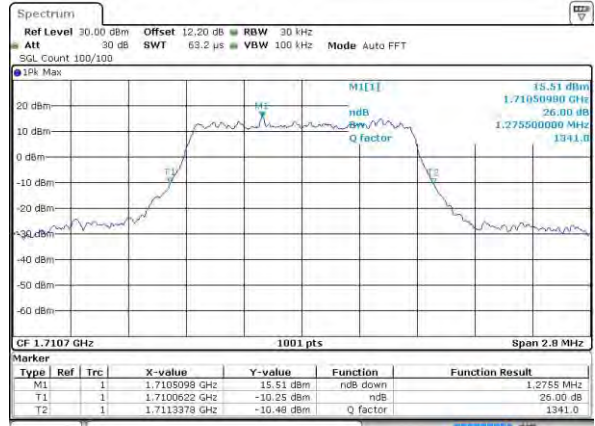
**26dB Bandwidth**

| Mode       | LTE Band 4 : 26dB BW(MHz) |       |      |       |      |       |       |       |       |       |       |       |
|------------|---------------------------|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| BW         | 1.4MHz                    |       | 3MHz |       | 5MHz |       | 10MHz |       | 15MHz |       | 20MHz |       |
| Mod.       | QPSK                      | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM |
| Lowest CH  | 1.28                      | 1.28  | 3.1  | 3.03  | 4.99 | 4.96  | 9.77  | 9.81  | 14.51 | 14.78 | 20.1  | 20.1  |
| Middle CH  | 1.27                      | 1.29  | 3.07 | 3.12  | 4.93 | 4.86  | 9.71  | 9.73  | 14.57 | 14.24 | 20.18 | 20.3  |
| Highest CH | 1.3                       | 1.32  | 3.12 | 3.04  | 5.06 | 5.11  | 9.95  | 9.85  | 14.27 | 14.78 | 20.34 | 20.1  |

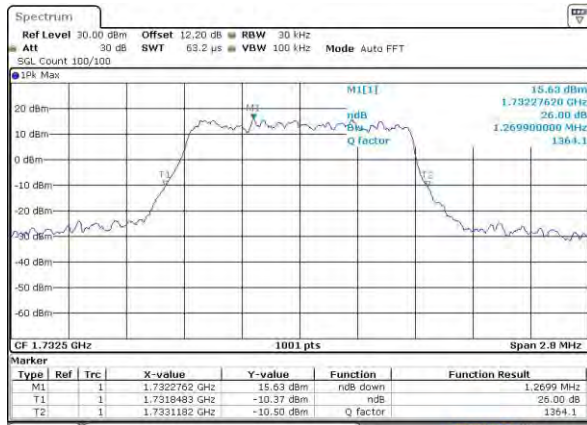


**LTE Band 4**
**Lowest Channel / 1.4MHz / QPSK**


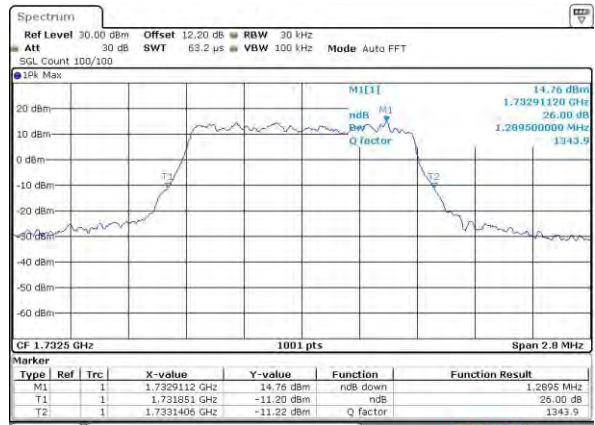
Date: 6 NOV 2015 21:21:52

**Lowest Channel / 1.4MHz / 16QAM**


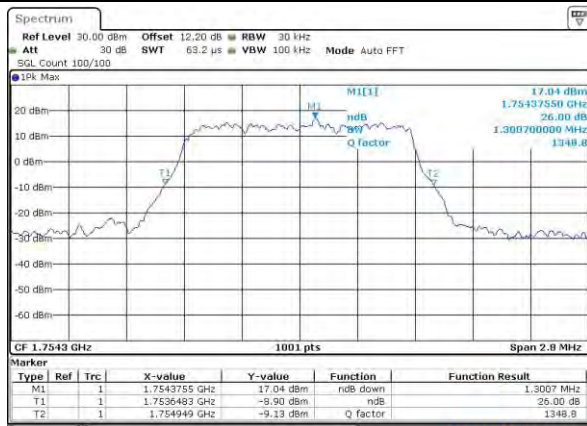
Date: 6 NOV 2015 21:22:02

**Middle Channel / 1.4MHz / QPSK**


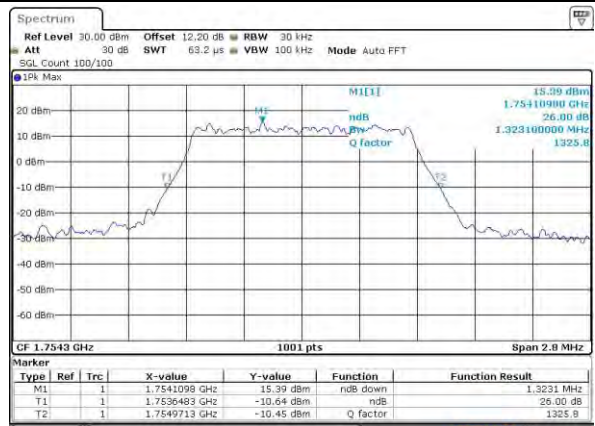
Date: 6 NOV 2015 21:29:01

**Middle Channel / 1.4MHz / 16QAM**


Date: 6 NOV 2015 21:29:11

**Highest Channel / 1.4MHz / QPSK**


Date: 6 NOV 2015 21:31:33

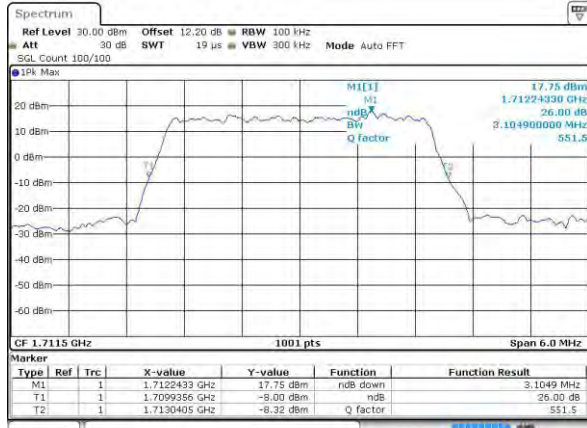
**Highest Channel / 1.4MHz / 16QAM**


Date: 6 NOV 2015 21:31:43

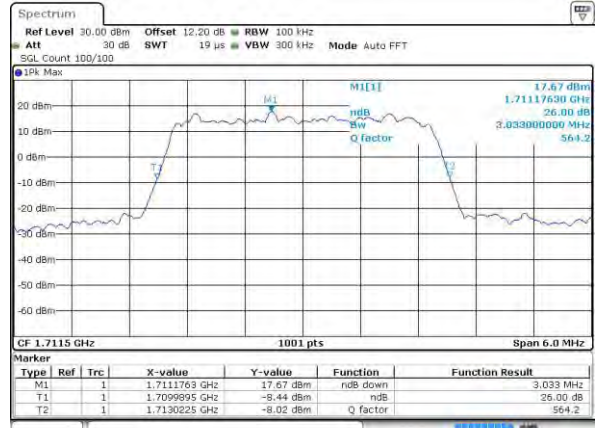


## LTE Band 4

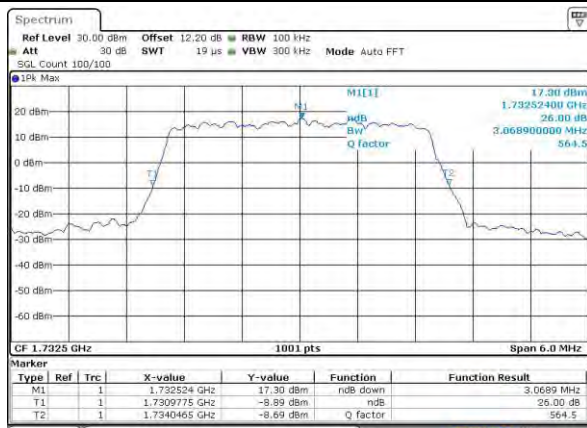
## Lowest Channel / 3MHz / QPSK



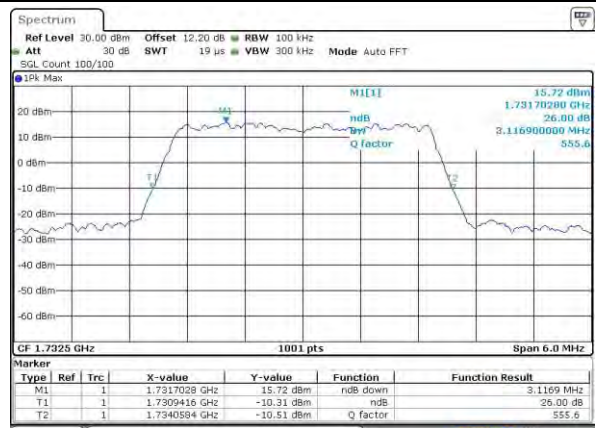
## Lowest Channel / 3MHz / 16QAM



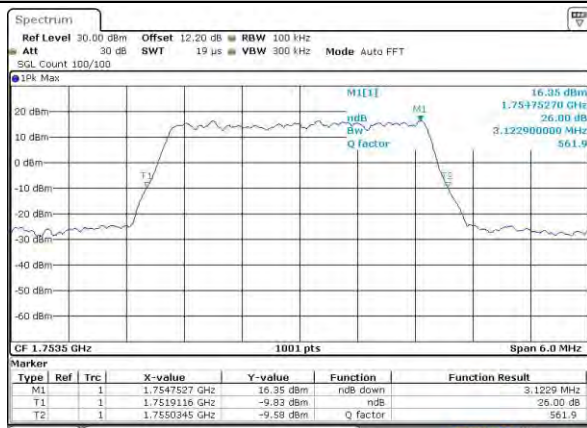
## Middle Channel / 3MHz / QPSK



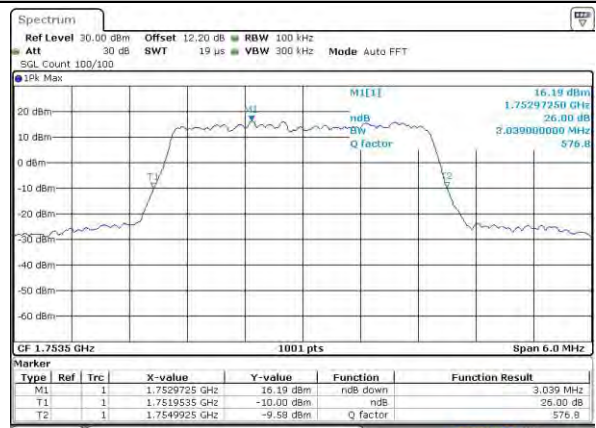
## Middle Channel / 3MHz / 16QAM



## Highest Channel / 3MHz / QPSK



## Highest Channel / 3MHz / 16QAM

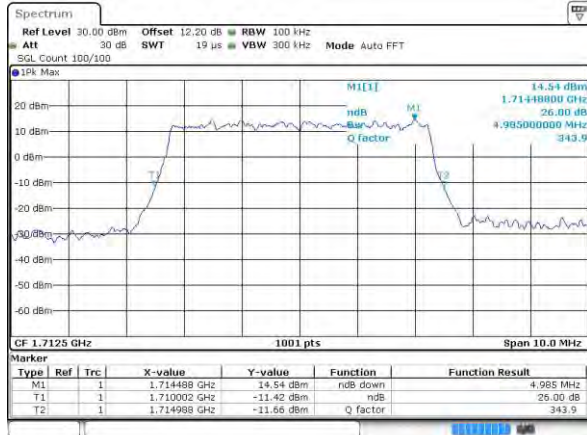




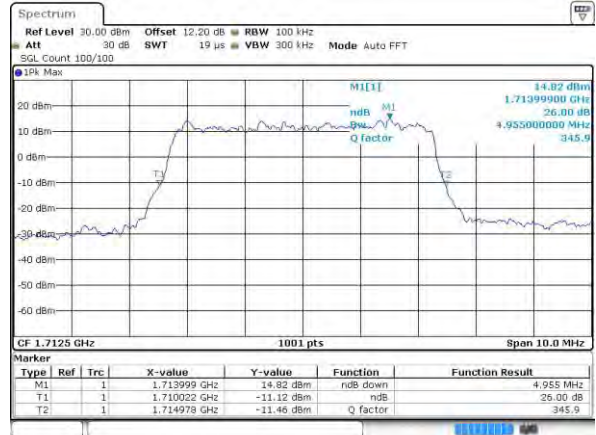


## LTE Band 4

## Lowest Channel / 5MHz / QPSK



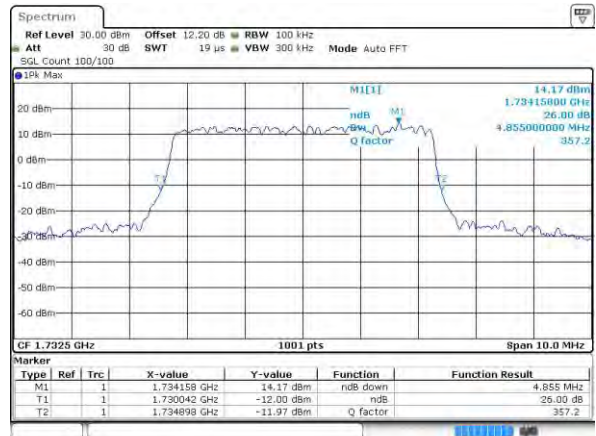
## Lowest Channel / 5MHz / 16QAM



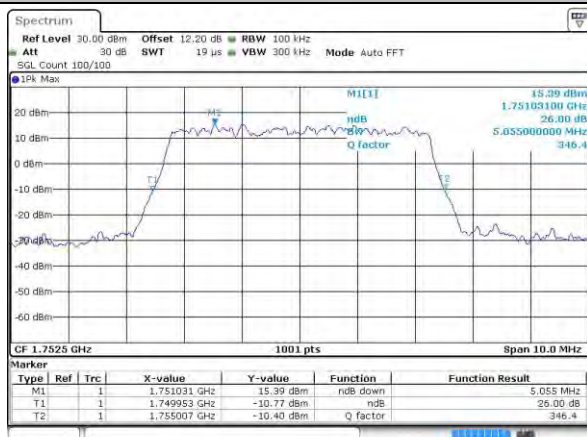
## Middle Channel / 5MHz / QPSK



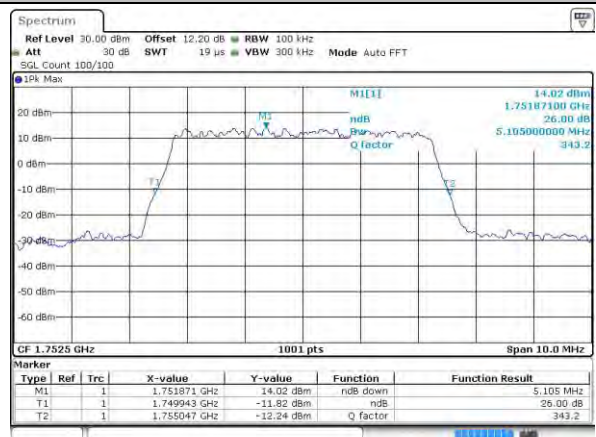
## Middle Channel / 5MHz / 16QAM



## Highest Channel / 5MHz / QPSK



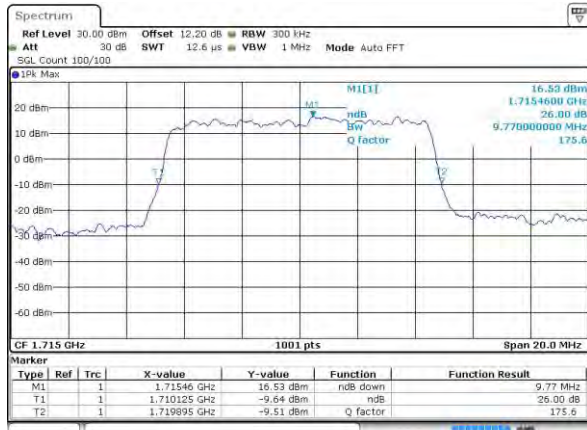
## Highest Channel / 5MHz / 16QAM



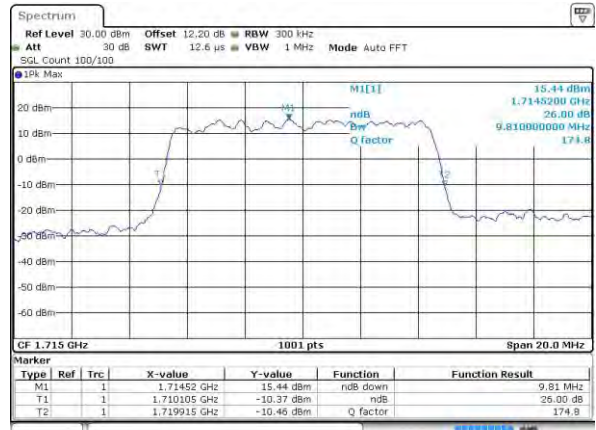


## LTE Band 4

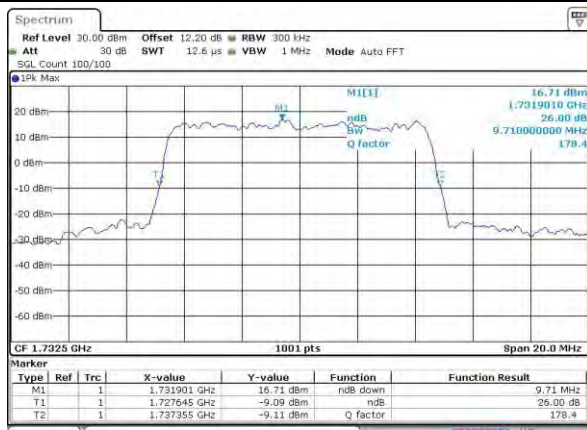
## Lowest Channel / 10MHz / QPSK



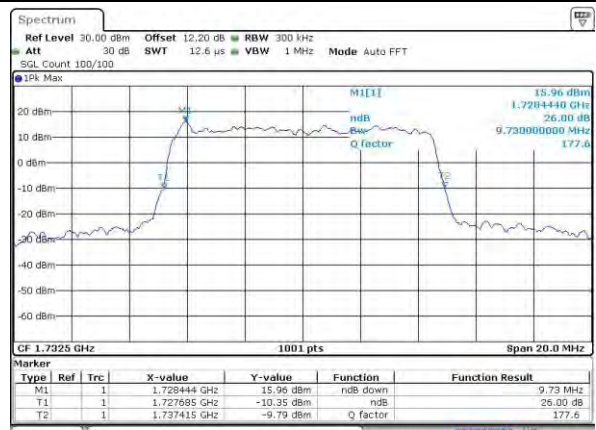
## Lowest Channel / 10MHz / 16QAM



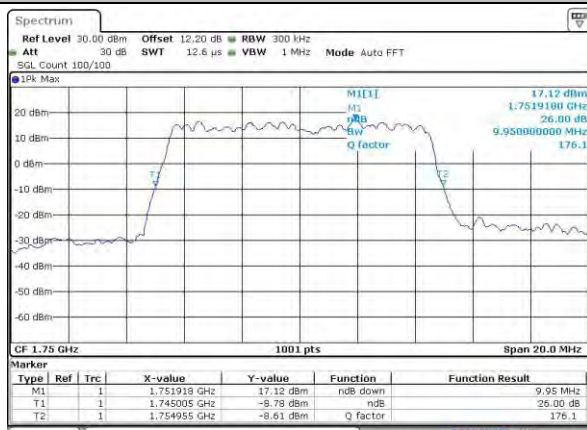
## Middle Channel / 10MHz / QPSK



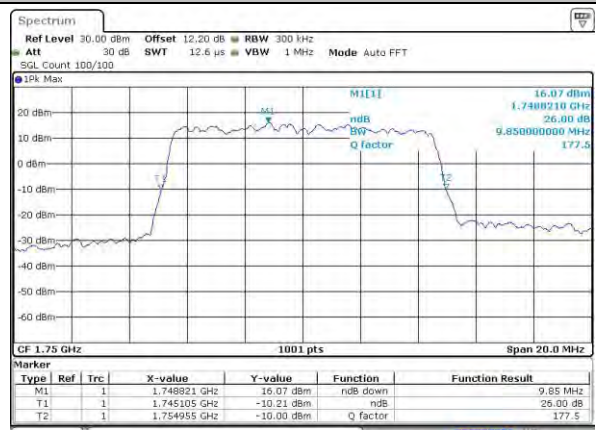
## Middle Channel / 10MHz / 16QAM



## Highest Channel / 10MHz / QPSK



## Highest Channel / 10MHz / 16QAM

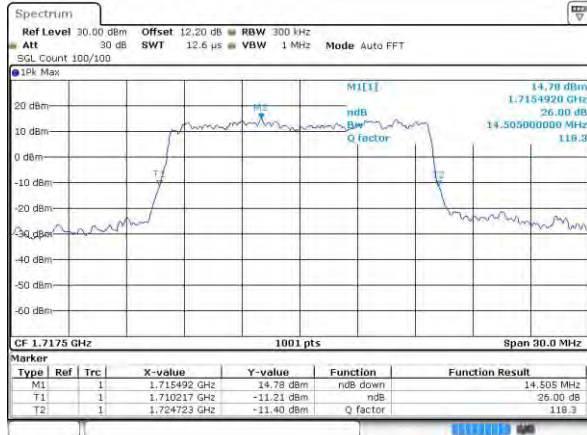






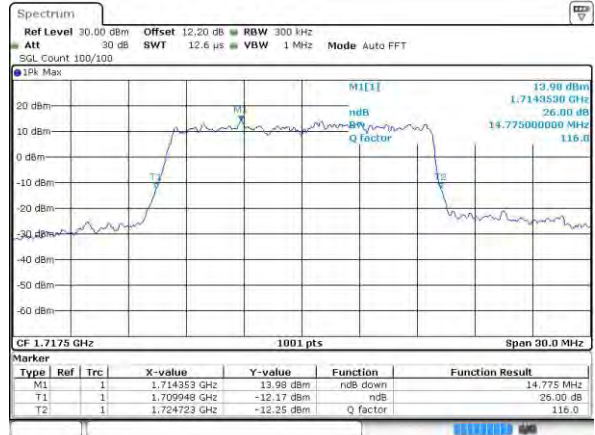
## LTE Band 4

## Lowest Channel / 15MHz / QPSK



Date: 6 NOV 2015 20:34:58

## Lowest Channel / 15MHz / 16QAM



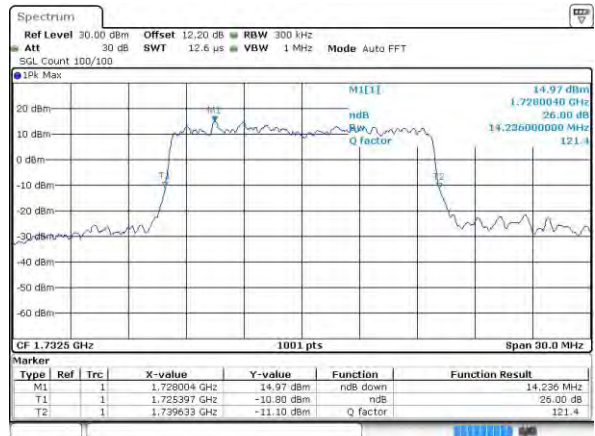
Date: 6 NOV 2015 20:35:08

## Middle Channel / 15MHz / QPSK



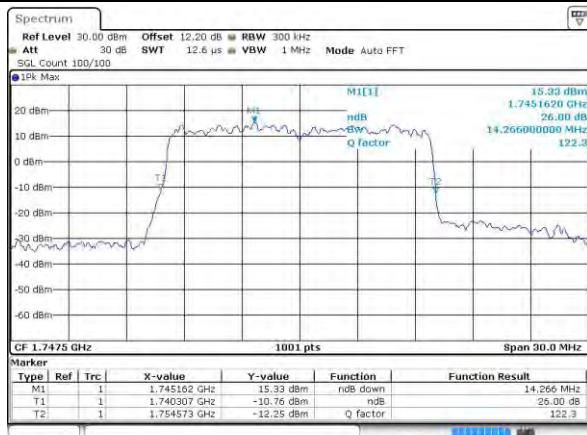
Date: 6 NOV 2015 20:42:06

## Middle Channel / 15MHz / 16QAM



Date: 6 NOV 2015 20:42:17

## Highest Channel / 15MHz / QPSK



Date: 6 NOV 2015 20:44:38

## Highest Channel / 15MHz / 16QAM

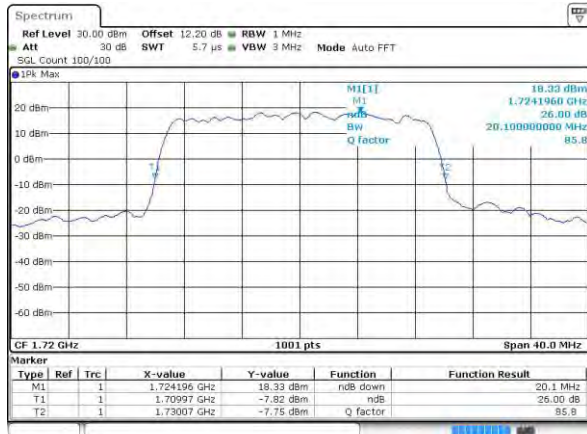


Date: 6 NOV 2015 20:44:45



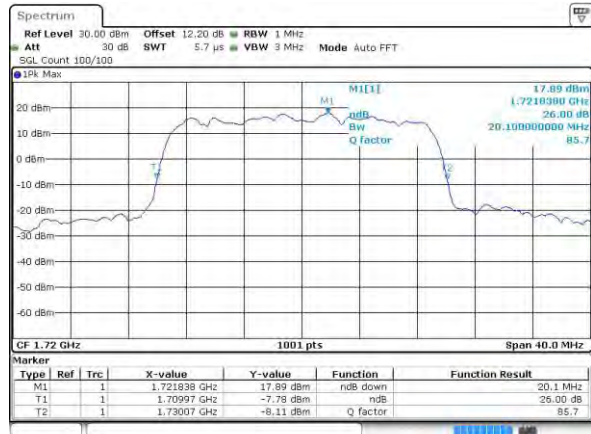
## LTE Band 4

## Lowest Channel / 20MHz / QPSK



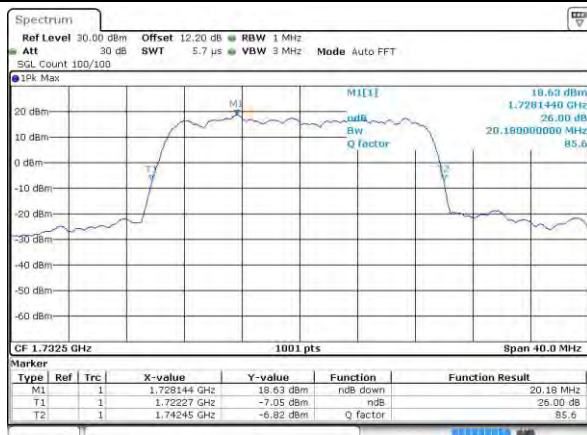
Date: 6 NOV 2015 20:51:47

## Lowest Channel / 20MHz / 16QAM



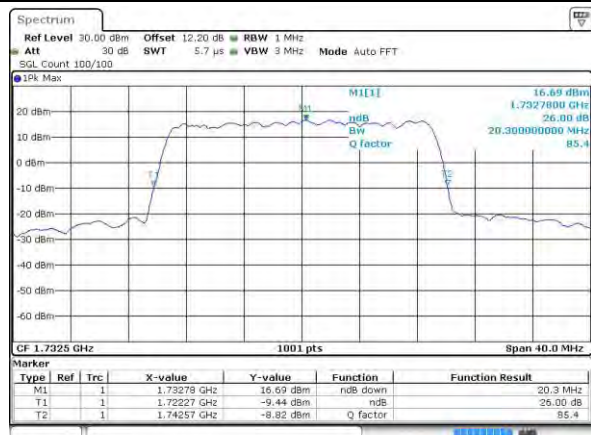
Date: 6 NOV 2015 20:51:57

## Middle Channel / 20MHz / QPSK



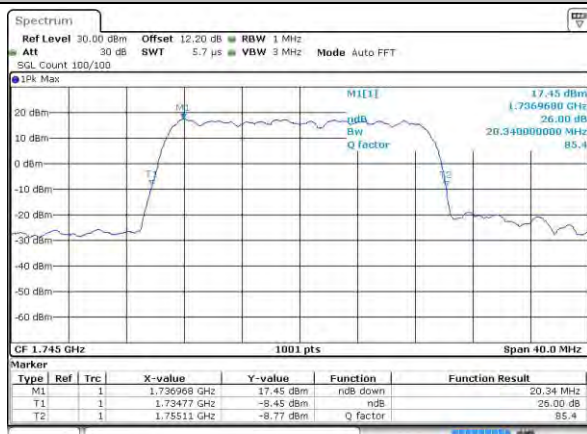
Date: 6 NOV 2015 20:58:56

## Middle Channel / 20MHz / 16QAM



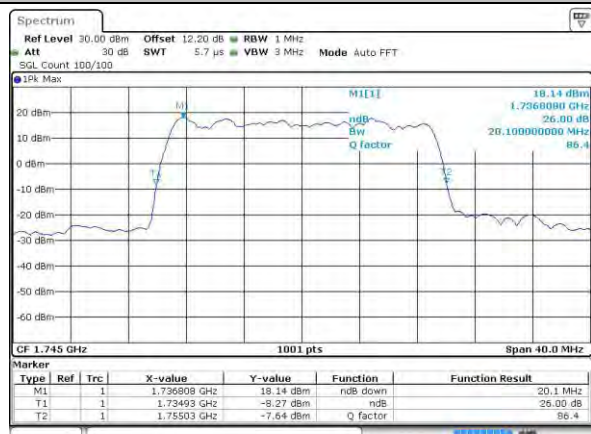
Date: 6 NOV 2015 20:59:06

## Highest Channel / 20MHz / QPSK



Date: 6 NOV 2015 21:01:27

## Highest Channel / 20MHz / 16QAM



Date: 6 NOV 2015 21:01:38



## Occupied Bandwidth

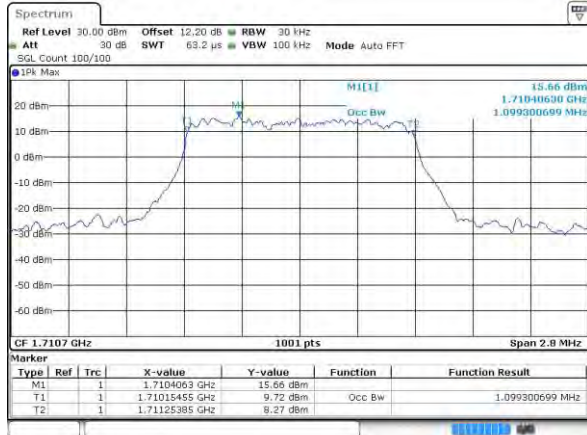
| Mode       | LTE Band 4 : 99%OBW(MHz) |       |      |       |      |       |       |       |       |       |       |       |
|------------|--------------------------|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| BW         | 1.4MHz                   |       | 3MHz |       | 5MHz |       | 10MHz |       | 15MHz |       | 20MHz |       |
| Mod.       | QPSK                     | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM |
| Lowest CH  | 1.1                      | 1.1   | 2.7  | 2.71  | 4.47 | 4.49  | 8.95  | 9.01  | 13.43 | 13.43 | 18.26 | 18.38 |
| Middle CH  | 1.09                     | 1.09  | 2.7  | 2.73  | 4.5  | 4.48  | 9.01  | 9.01  | 13.43 | 13.46 | 18.46 | 18.18 |
| Highest CH | 1.09                     | 1.1   | 2.7  | 2.72  | 4.51 | 4.48  | 9.03  | 9.03  | 13.4  | 13.4  | 18.22 | 18.34 |



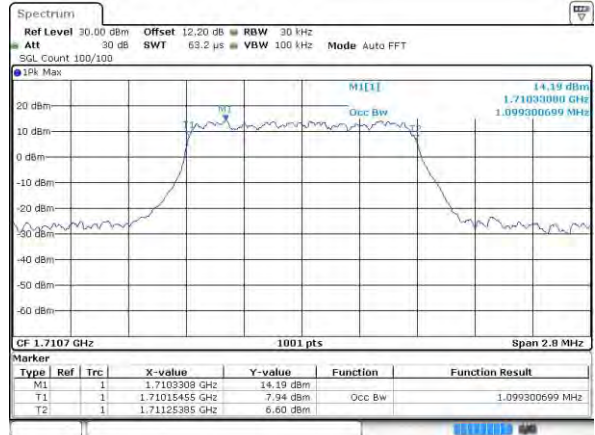


## LTE Band 4

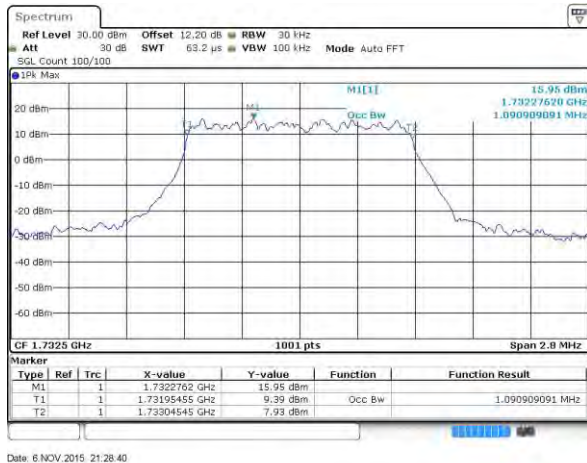
## Lowest Channel / 1.4MHz / QPSK



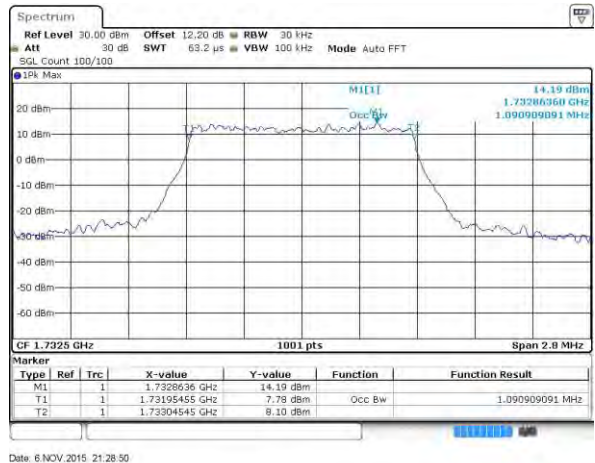
## Lowest Channel / 1.4MHz / 16QAM



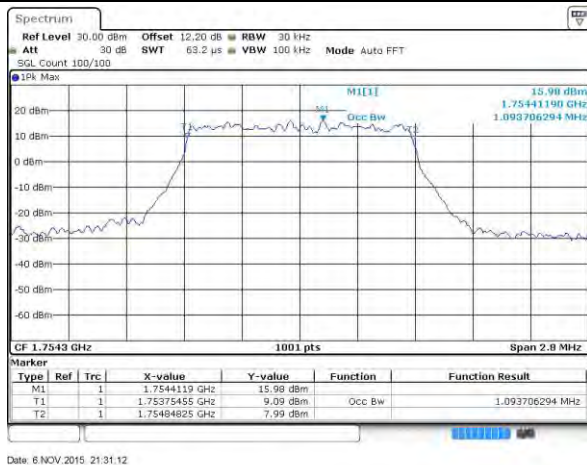
## Middle Channel / 1.4MHz / QPSK



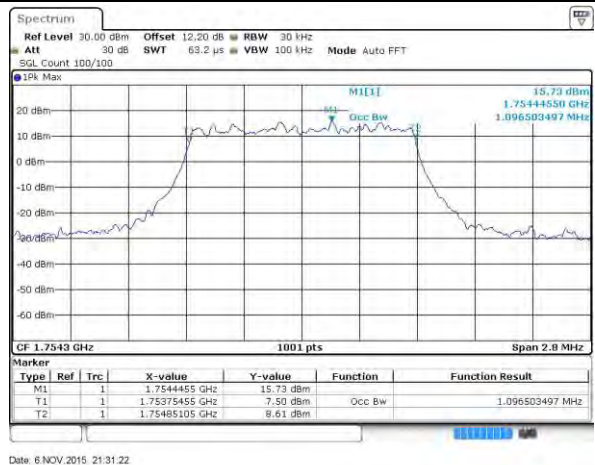
## Middle Channel / 1.4MHz / 16QAM



## Highest Channel / 1.4MHz / QPSK



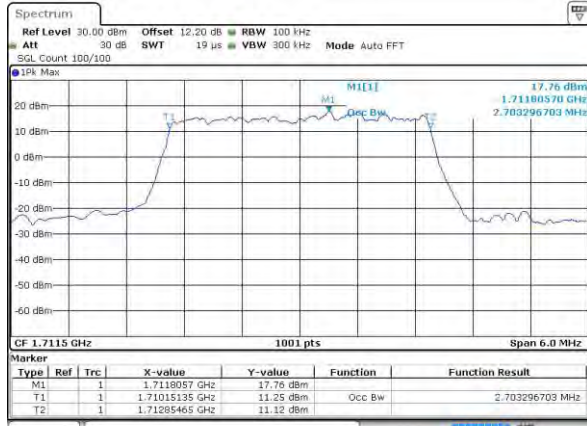
## Highest Channel / 1.4MHz / 16QAM





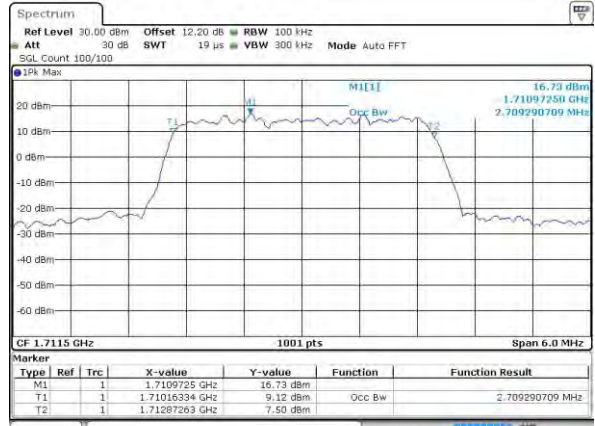
## LTE Band 4

## Lowest Channel / 3MHz / QPSK



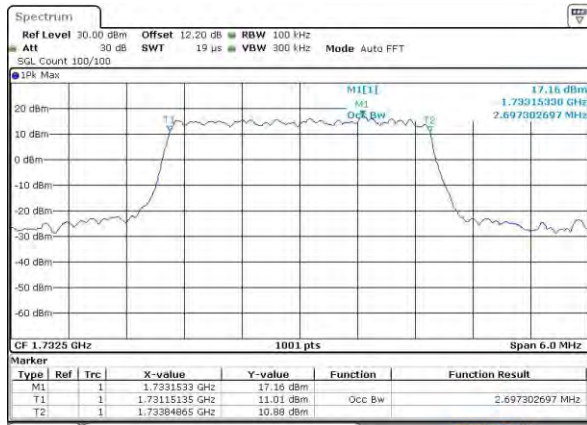
Date: 6 NOV 2015 19:44:09

## Lowest Channel / 3MHz / 16QAM



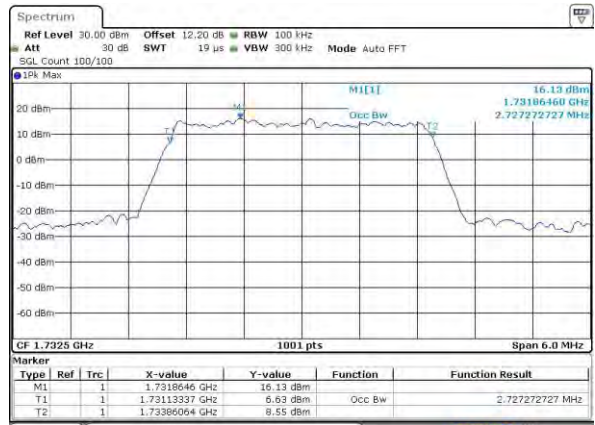
Date: 6 NOV 2015 19:44:20

## Middle Channel / 3MHz / QPSK



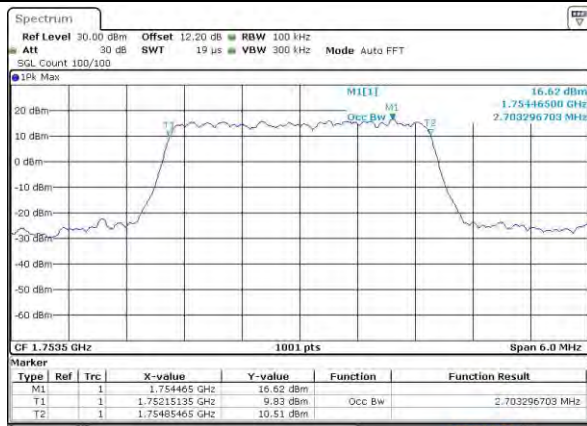
Date: 6 NOV 2015 19:51:18

## Middle Channel / 3MHz / 16QAM



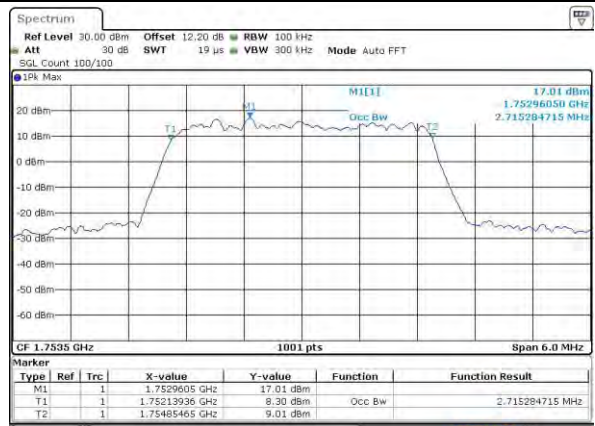
Date: 6 NOV 2015 19:51:28

## Highest Channel / 3MHz / QPSK



Date: 6 NOV 2015 19:53:50

## Highest Channel / 3MHz / 16QAM



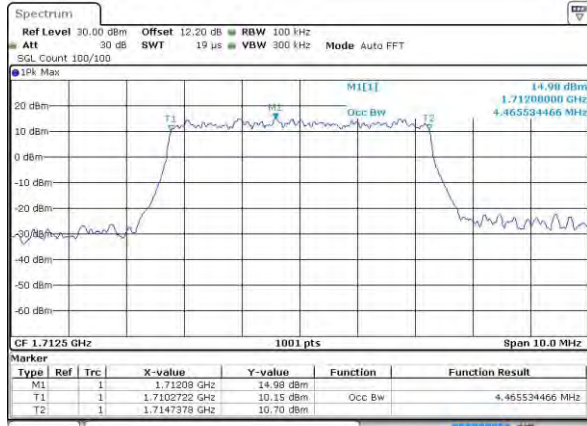
Date: 6 NOV 2015 19:54:00





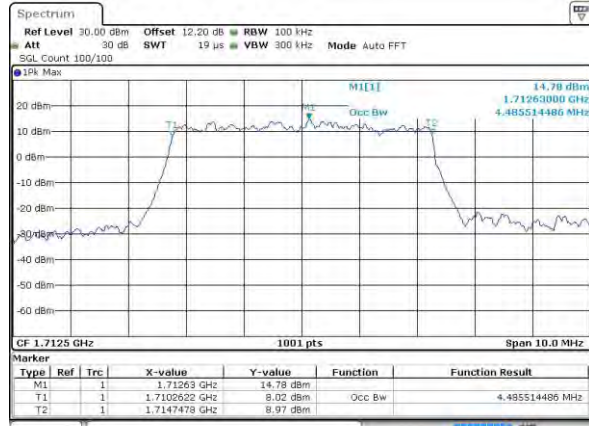
## LTE Band 4

## Lowest Channel / 5MHz / QPSK



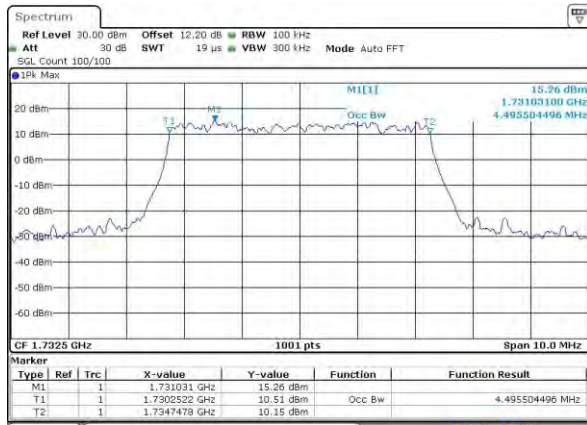
Date: 6 NOV 2015, 20:00:58

## Lowest Channel / 5MHz / 16QAM



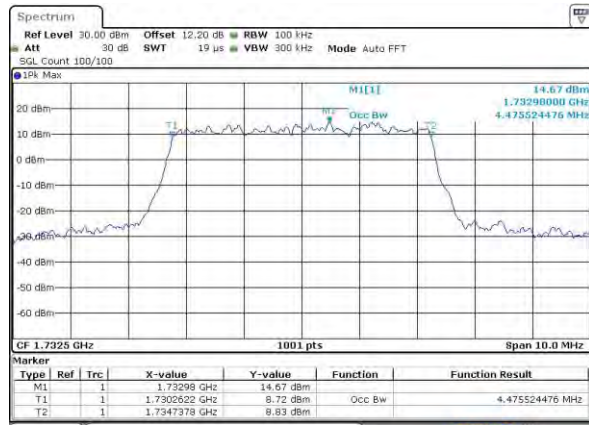
Date: 6 NOV 2015, 20:01:09

## Middle Channel / 5MHz / QPSK



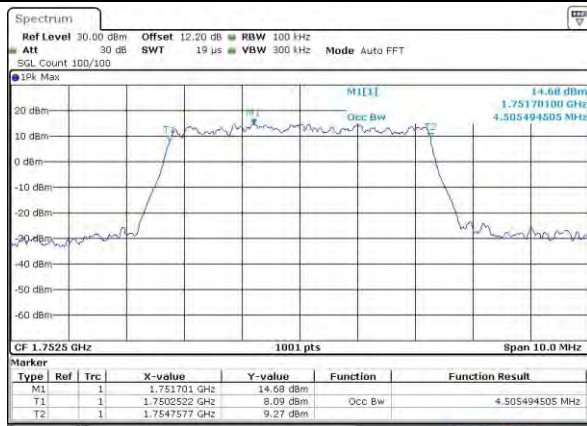
Date: 6 NOV 2015, 20:08:07

## Middle Channel / 5MHz / 16QAM



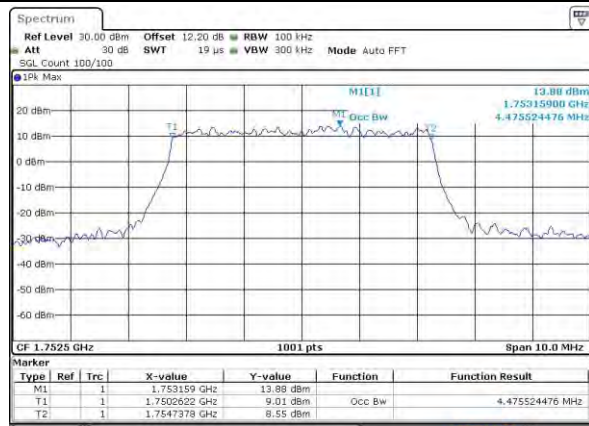
Date: 6 NOV 2015, 20:08:17

## Highest Channel / 5MHz / QPSK



Date: 6 NOV 2015, 20:10:38

## Highest Channel / 5MHz / 16QAM



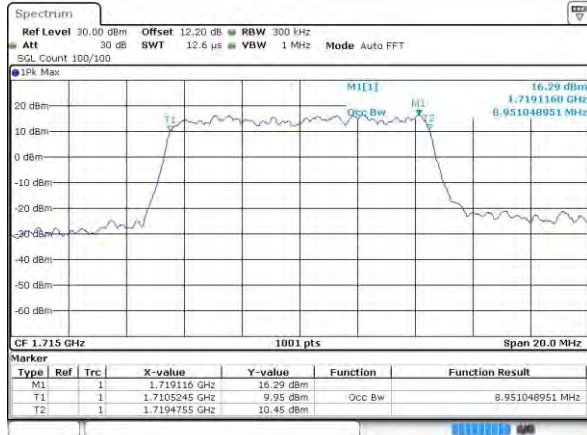
Date: 6 NOV 2015, 20:10:45





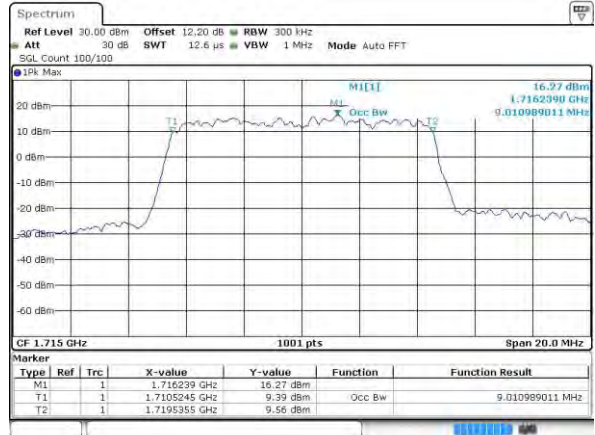
## LTE Band 4

## Lowest Channel / 10MHz / QPSK



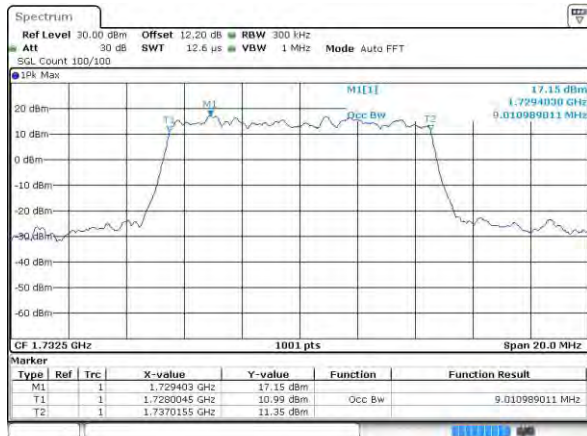
Date: 6 NOV 2015 20:17:47

## Lowest Channel / 10MHz / 16QAM



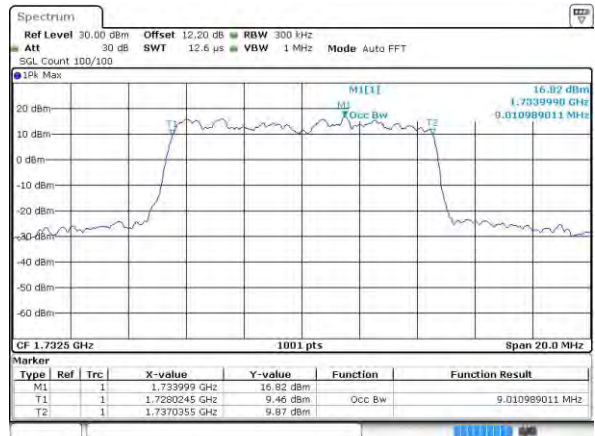
Date: 6 NOV 2015 20:17:58

## Middle Channel / 10MHz / QPSK



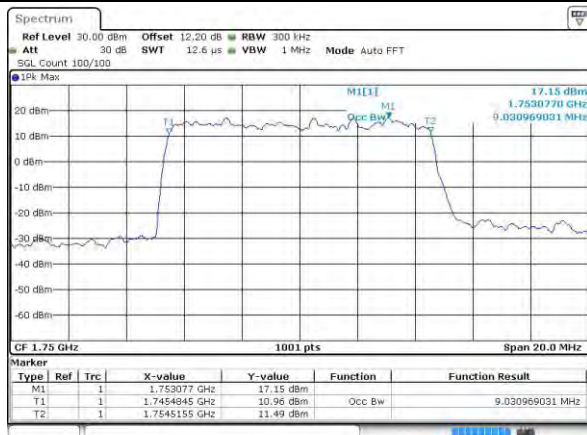
Date: 6 NOV 2015 20:24:56

## Middle Channel / 10MHz / 16QAM



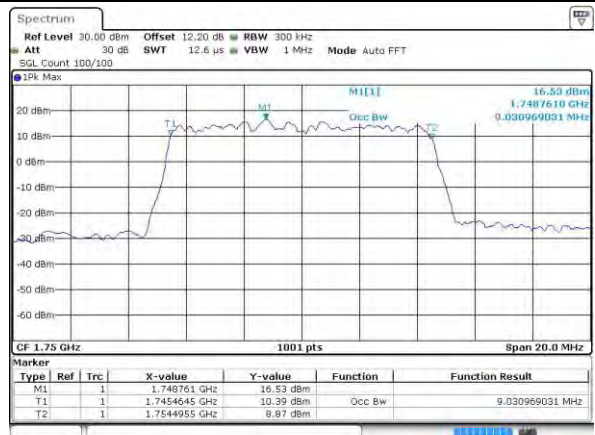
Date: 6 NOV 2015 20:25:07

## Highest Channel / 10MHz / QPSK



Date: 6 NOV 2015 20:27:26

## Highest Channel / 10MHz / 16QAM

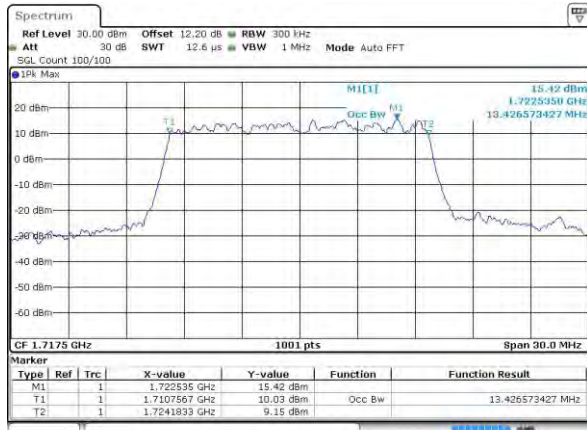


Date: 6 NOV 2015 20:27:38

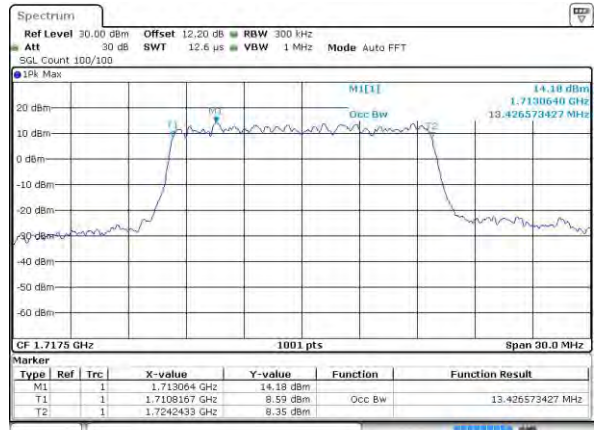


## LTE Band 4

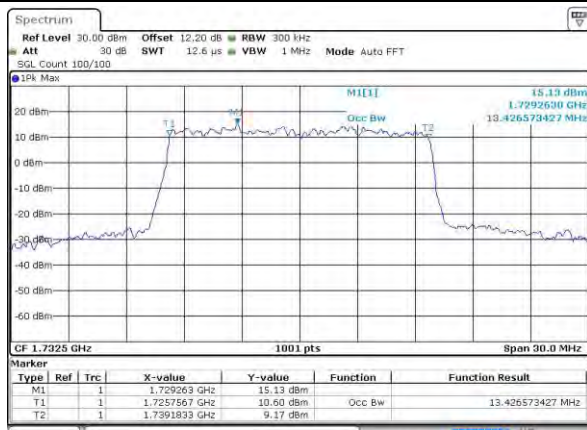
## Lowest Channel / 15MHz / QPSK



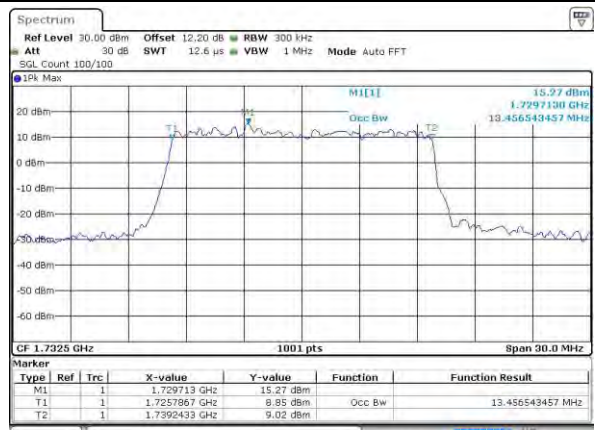
## Lowest Channel / 15MHz / 16QAM



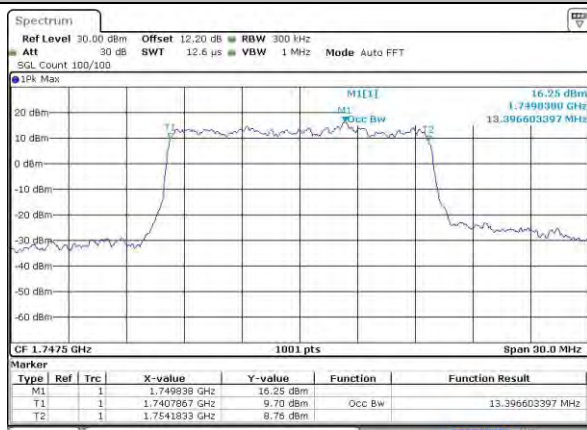
## Middle Channel / 15MHz / QPSK



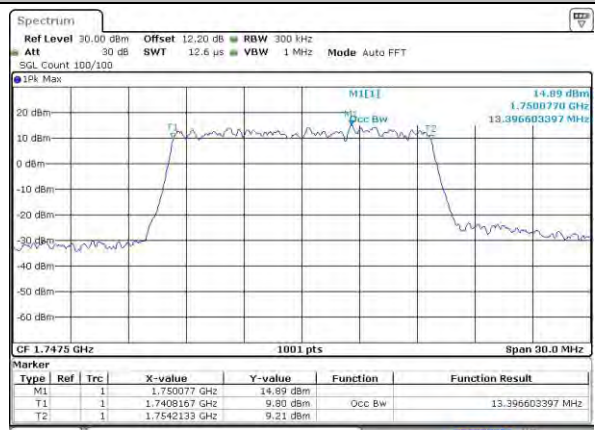
## Middle Channel / 15MHz / 16QAM



## Highest Channel / 15MHz / QPSK



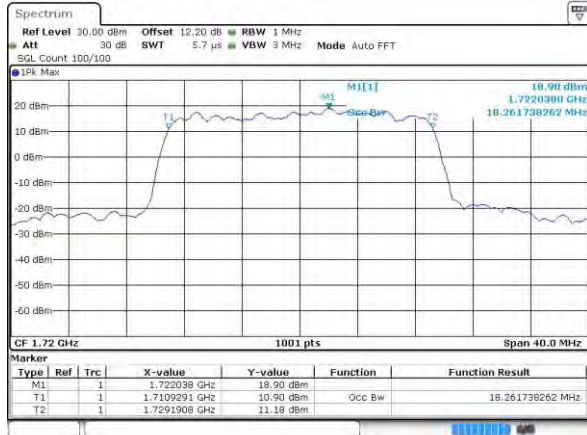
## Highest Channel / 15MHz / 16QAM





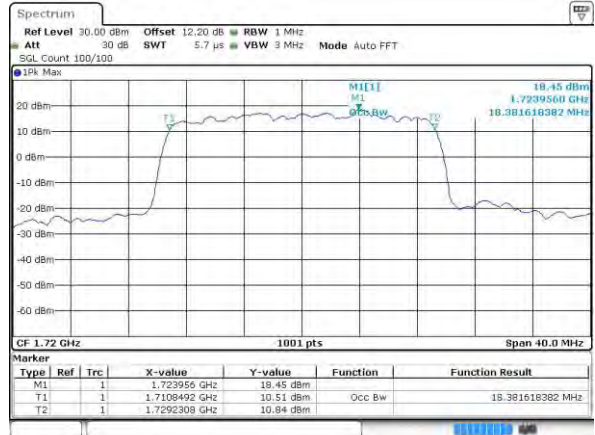
## LTE Band 4

## Lowest Channel / 20MHz / QPSK



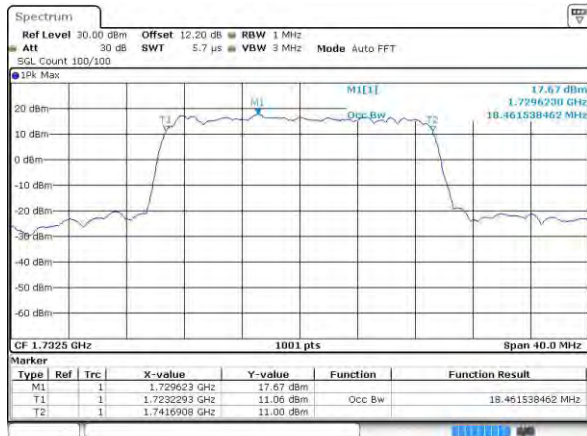
Date: 6 NOV 2015, 20:51:26

## Lowest Channel / 20MHz / 16QAM



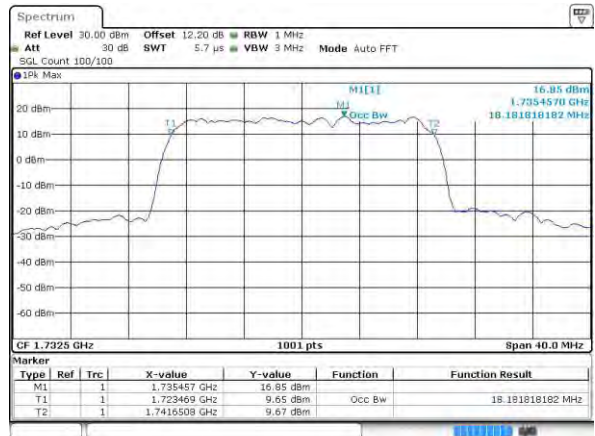
Date: 6 NOV 2015, 20:51:36

## Middle Channel / 20MHz / QPSK



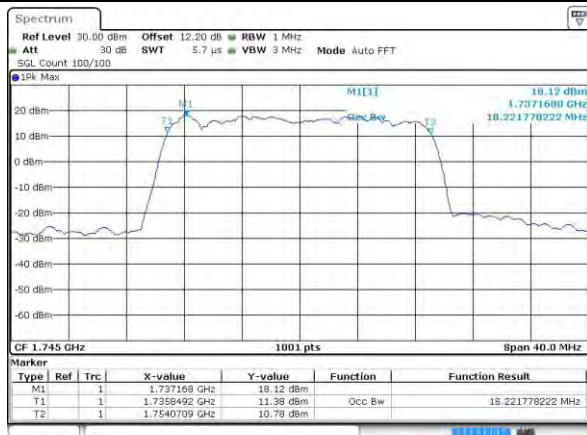
Date: 6 NOV 2015, 20:58:35

## Middle Channel / 20MHz / 16QAM



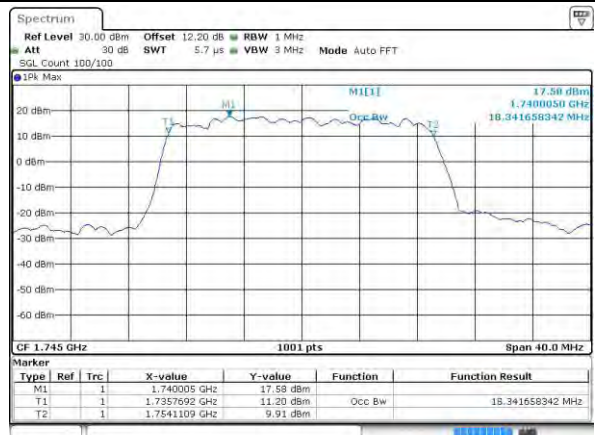
Date: 6 NOV 2015, 20:58:45

## Highest Channel / 20MHz / QPSK



Date: 6 NOV 2015, 21:01:06

## Highest Channel / 20MHz / 16QAM



Date: 6 NOV 2015, 21:01:17





## **Conducted Band Edge**

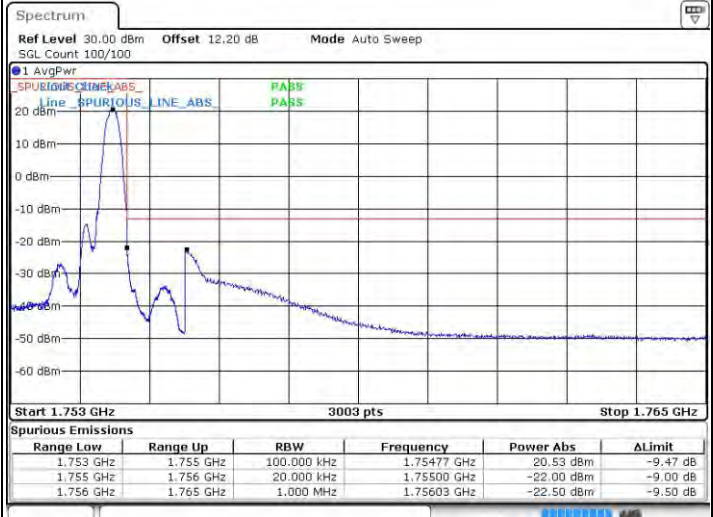


## LTE Band 4 / 1.4MHz / QPSK

## Lowest Band Edge / 1RB



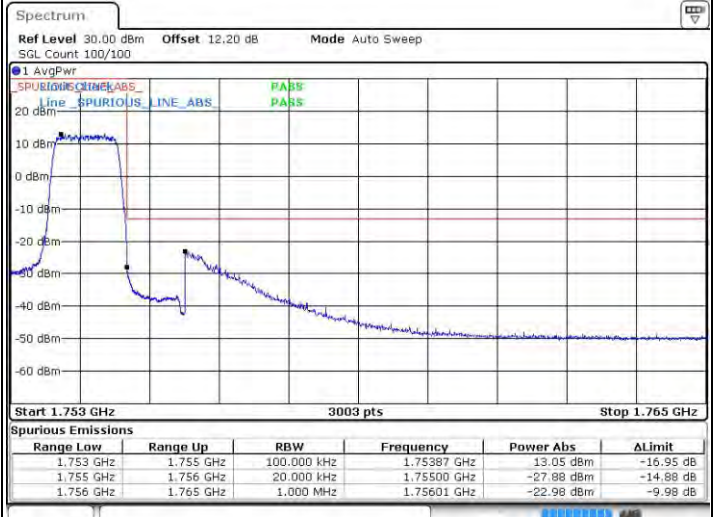
## Highest Band Edge / 1RB



## Lowest Band Edge / Full RB



## Highest Band Edge / Full RB





## LTE Band 4 / 1.4MHz / 16QAM

## Lowest Band Edge / 1 RB



## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



## Highest Band Edge / Full RB

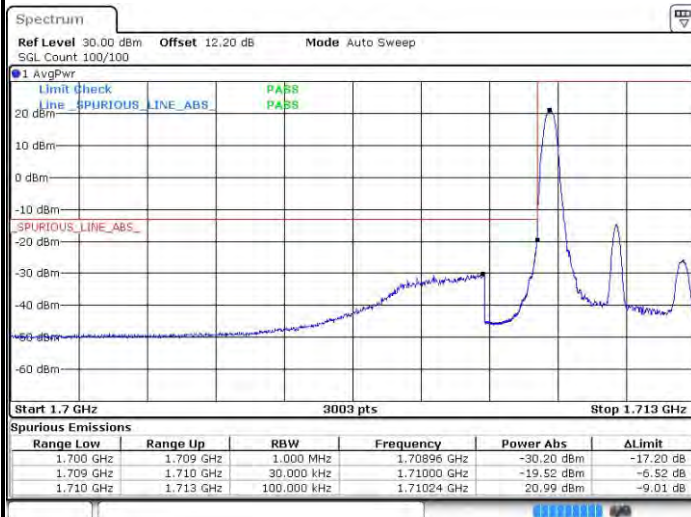




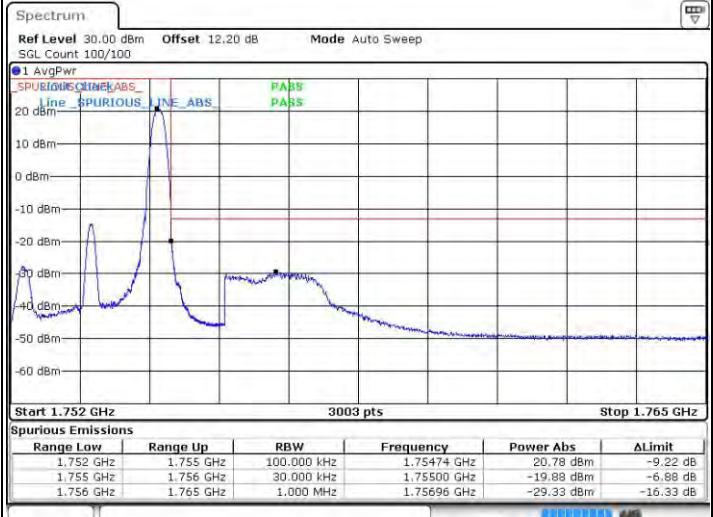


## LTE Band 4 / 3MHz / QPSK

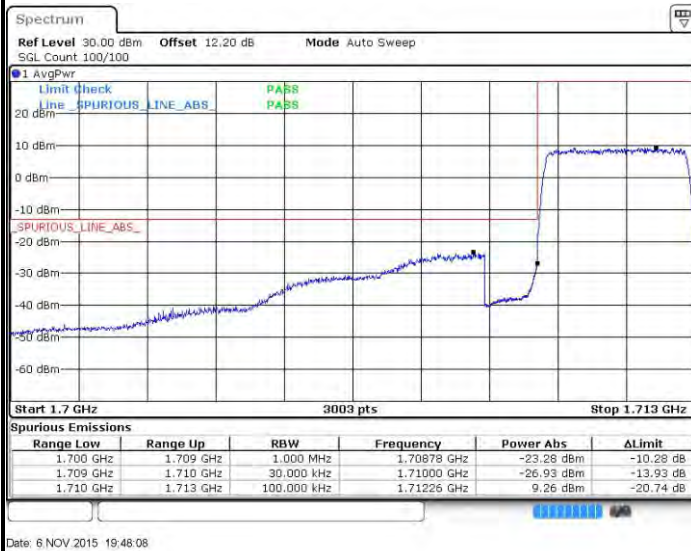
## Lowest Band Edge / 1RB



## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



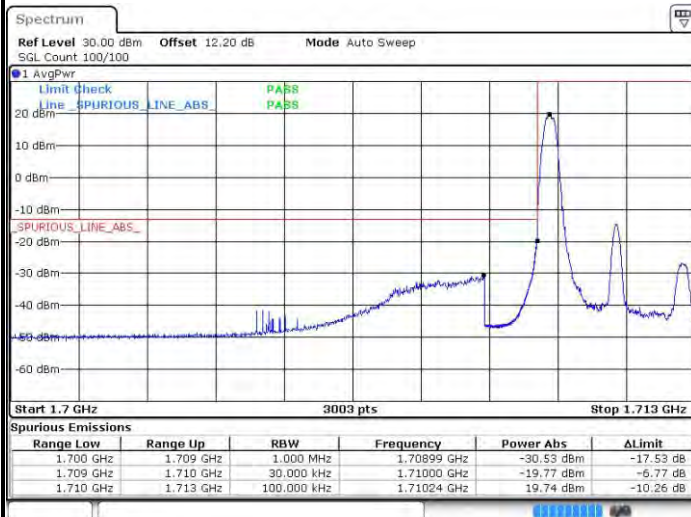
## Highest Band Edge / Full RB



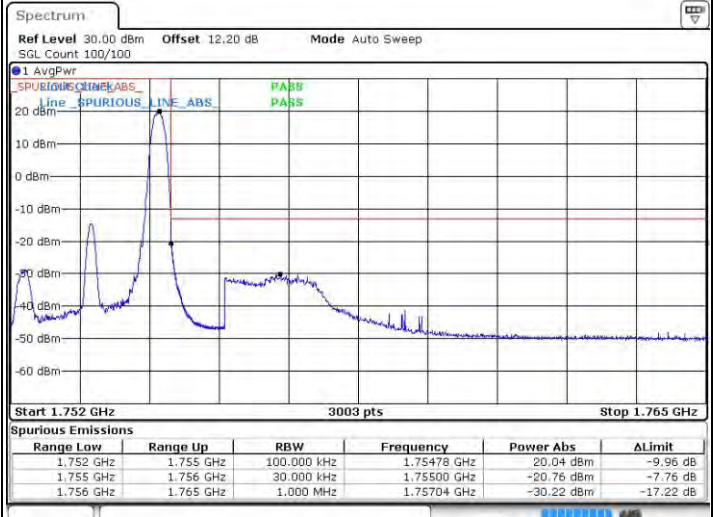


## LTE Band 4 / 3MHz / 16QAM

## Lowest Band Edge / 1 RB



## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



## Highest Band Edge / Full RB

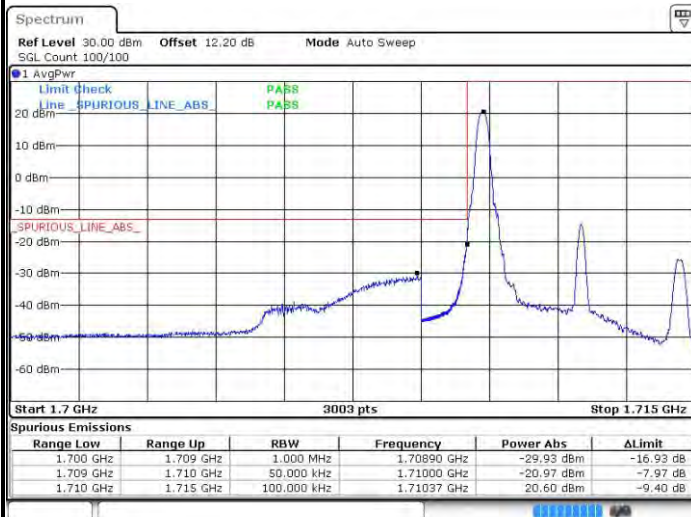




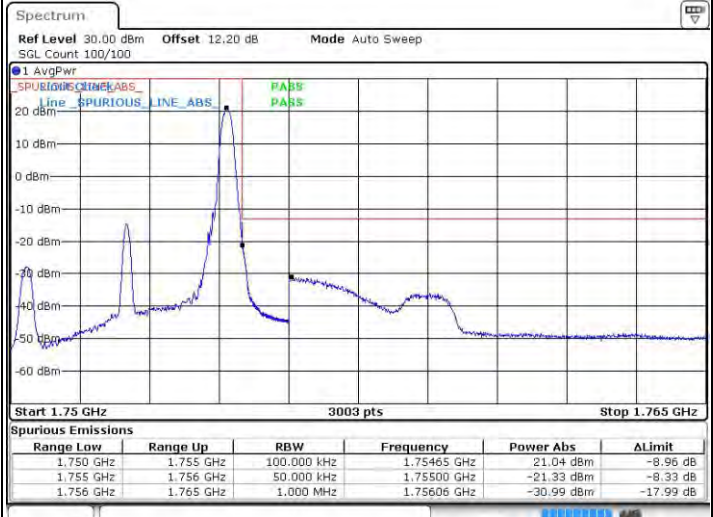


## LTE Band 4 / 5MHz / QPSK

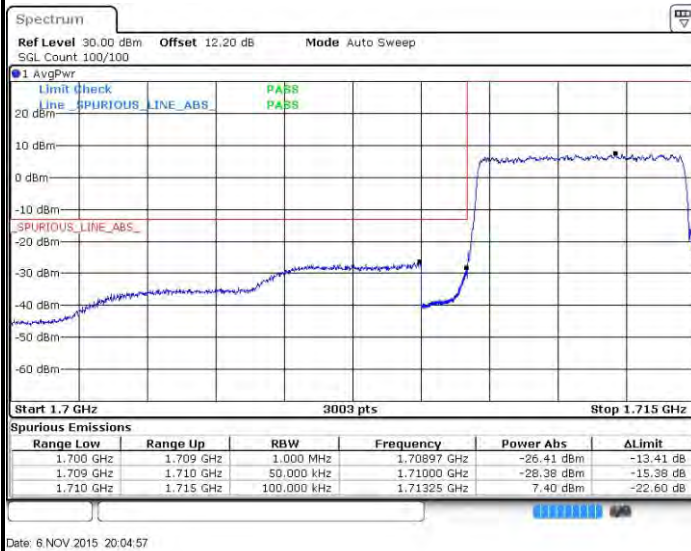
## Lowest Band Edge / 1 RB



## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



## Highest Band Edge / Full RB

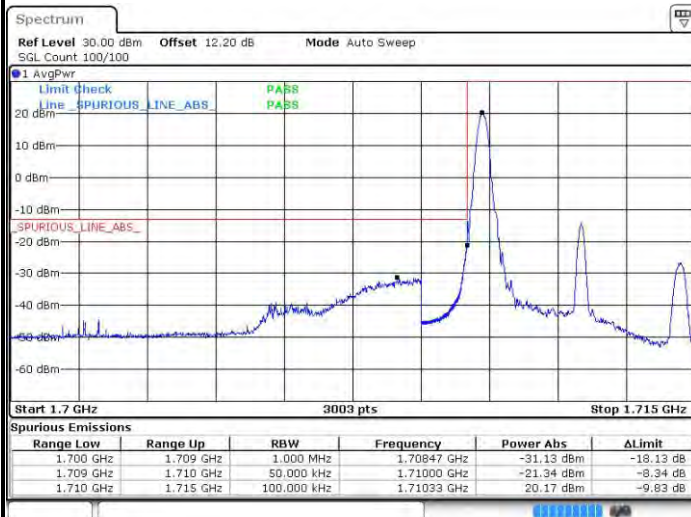




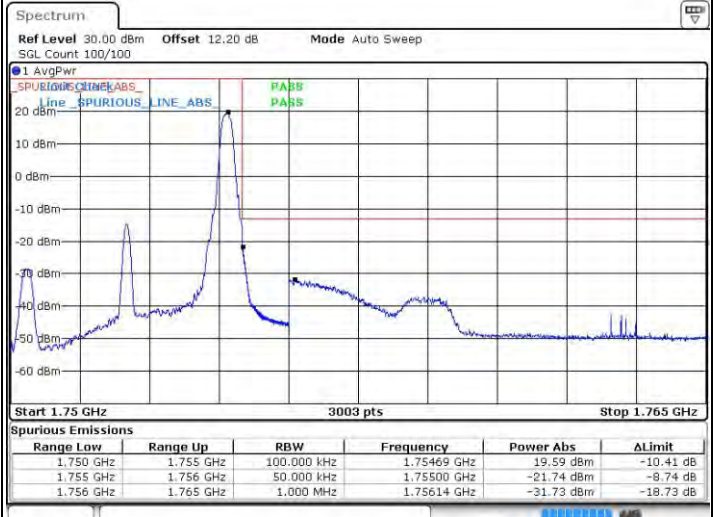


## LTE Band 4 / 5MHz / 16QAM

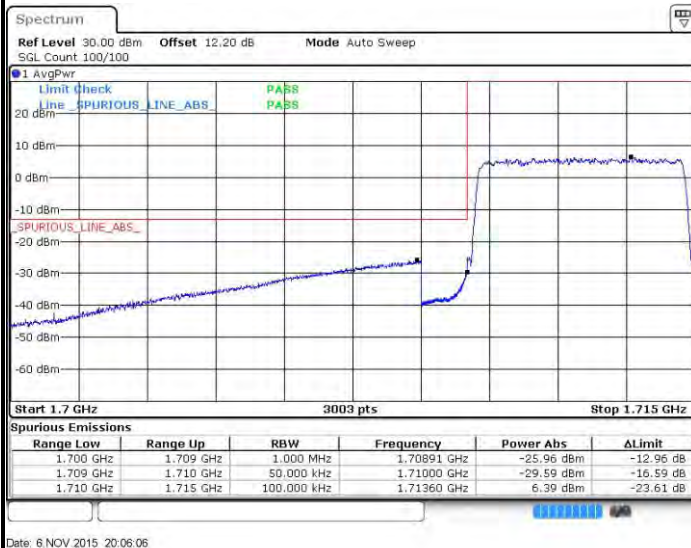
## Lowest Band Edge / 1RB



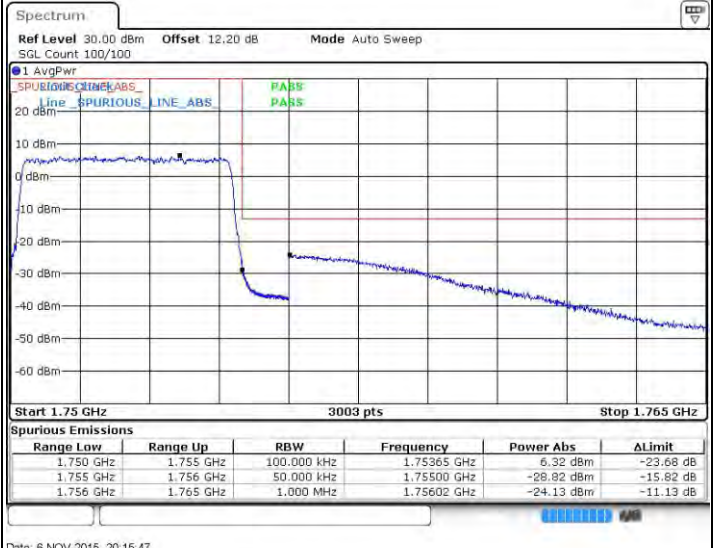
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



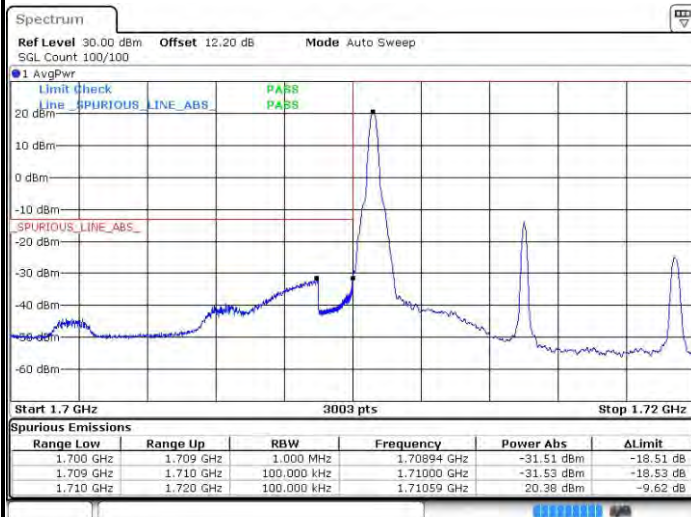
## Highest Band Edge / Full RB



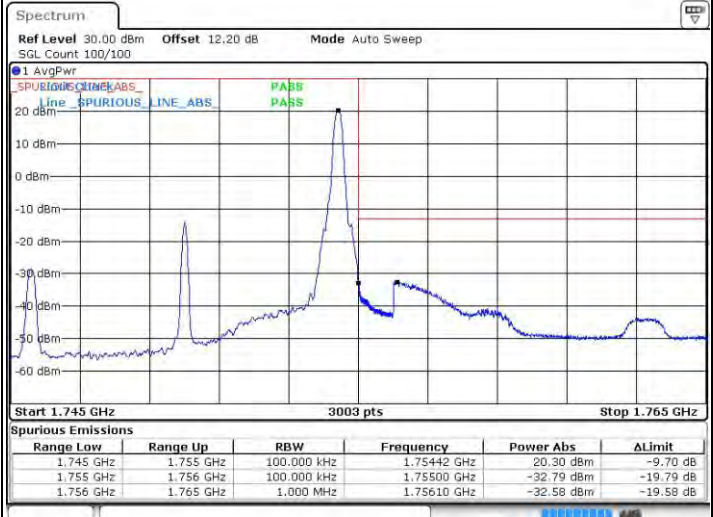


## LTE Band 4 / 10MHz / QPSK

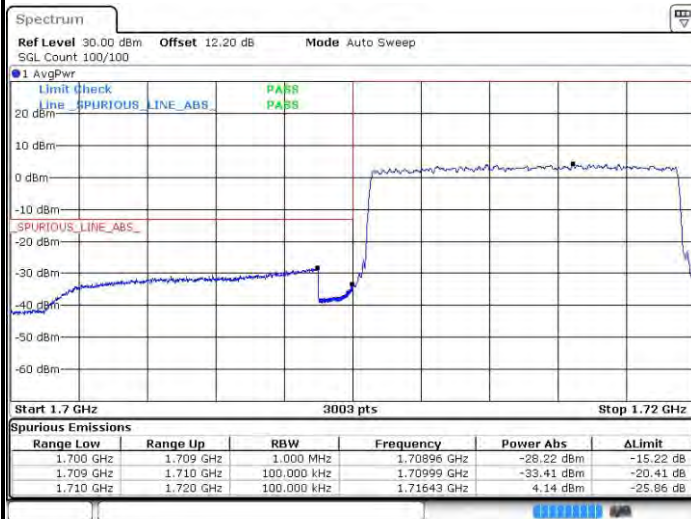
## Lowest Band Edge / 1 RB



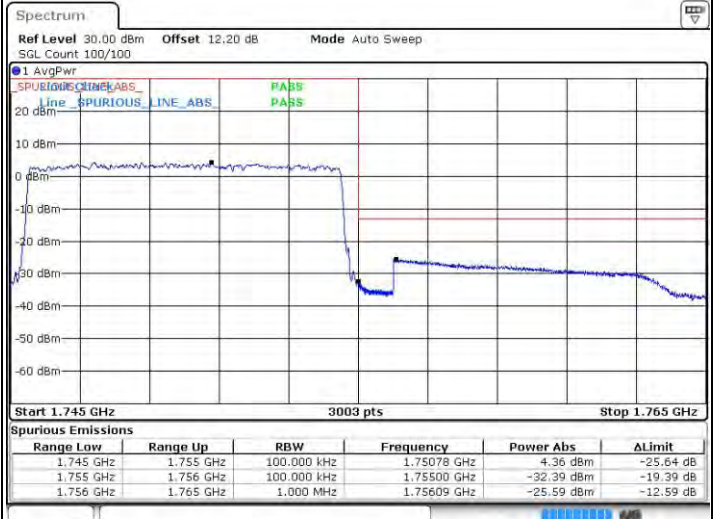
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



## Highest Band Edge / Full RB

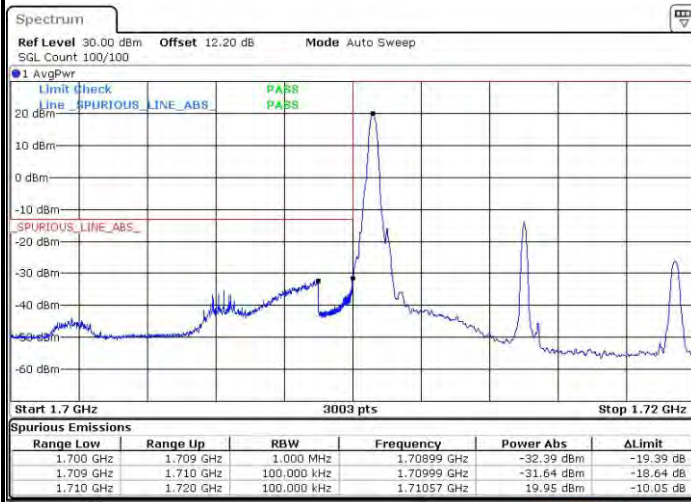




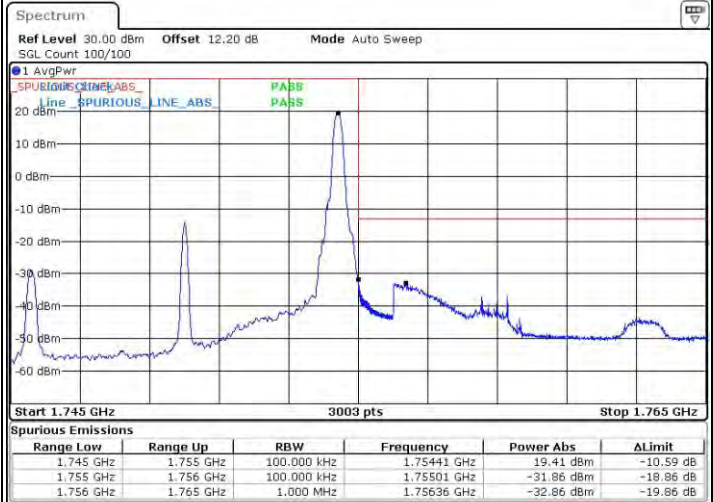


## LTE Band 4 / 10MHz / 16QAM

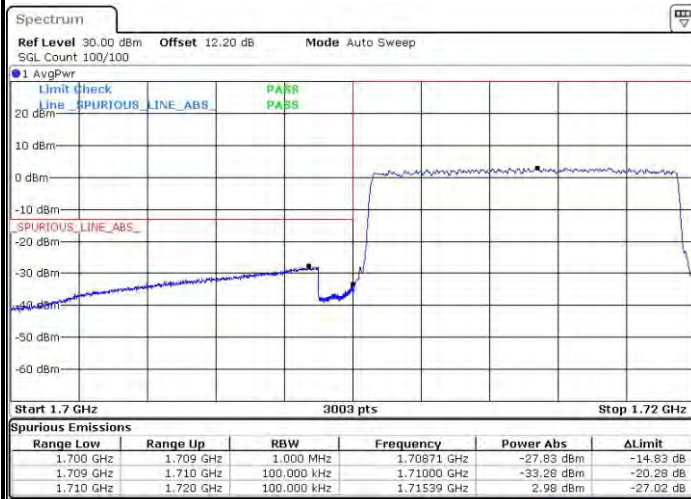
## Lowest Band Edge / 1 RB



## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



## Highest Band Edge / Full RB

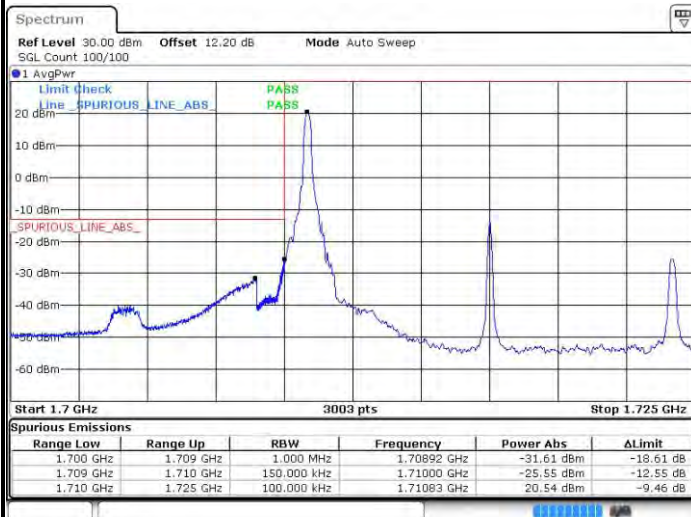




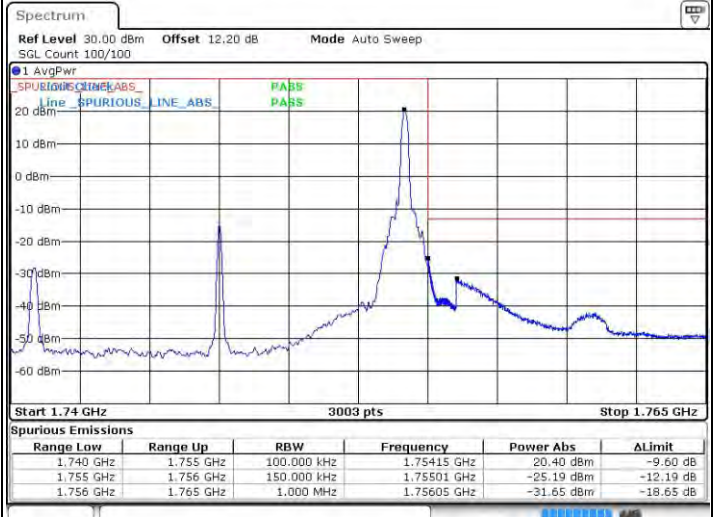


## LTE Band 4 / 15MHz / QPSK

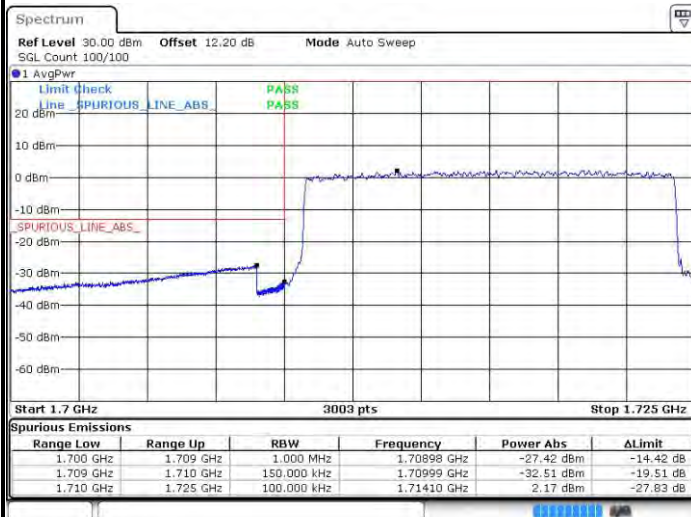
## Lowest Band Edge / 1 RB



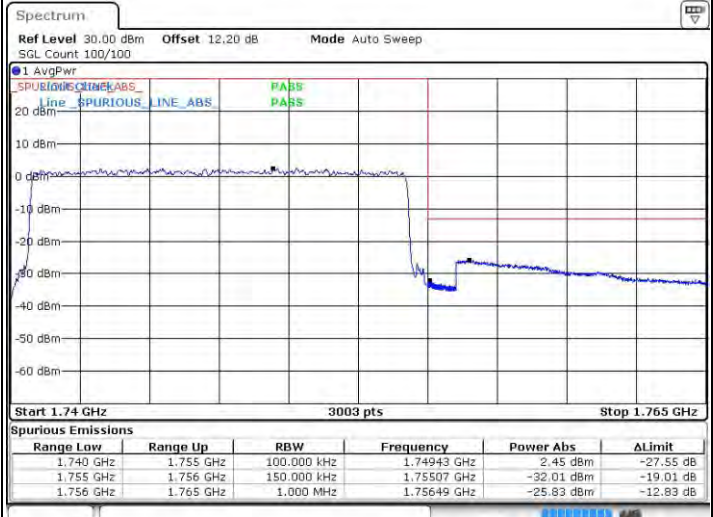
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



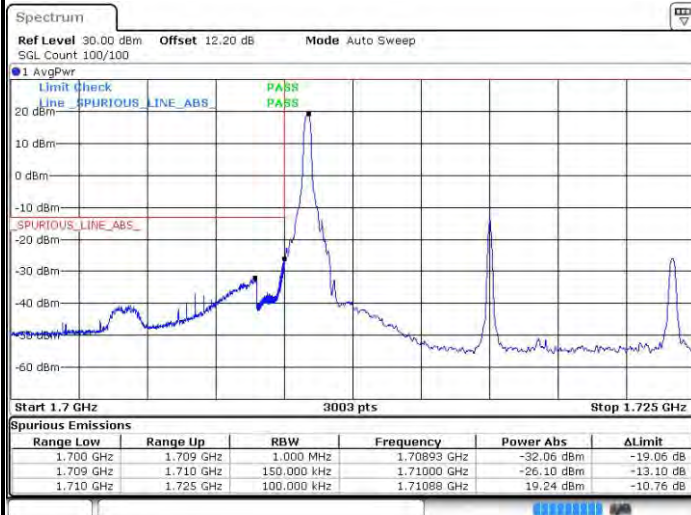
## Highest Band Edge / Full RB



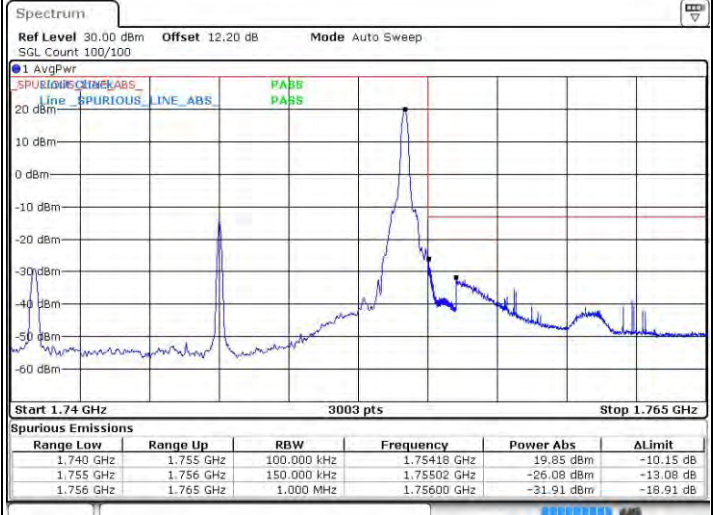


## LTE Band 4 / 15MHz / 16QAM

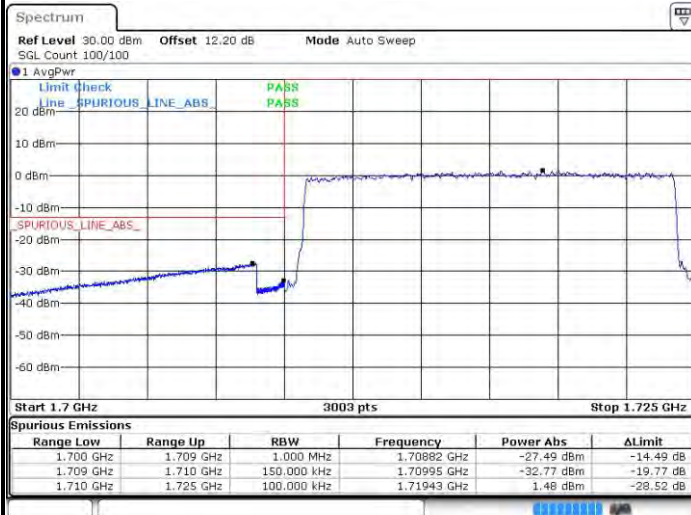
## Lowest Band Edge / 1 RB



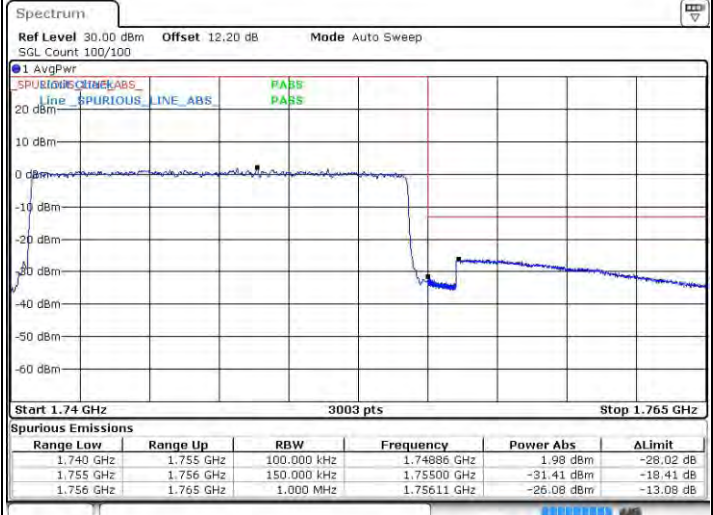
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



## Highest Band Edge / Full RB

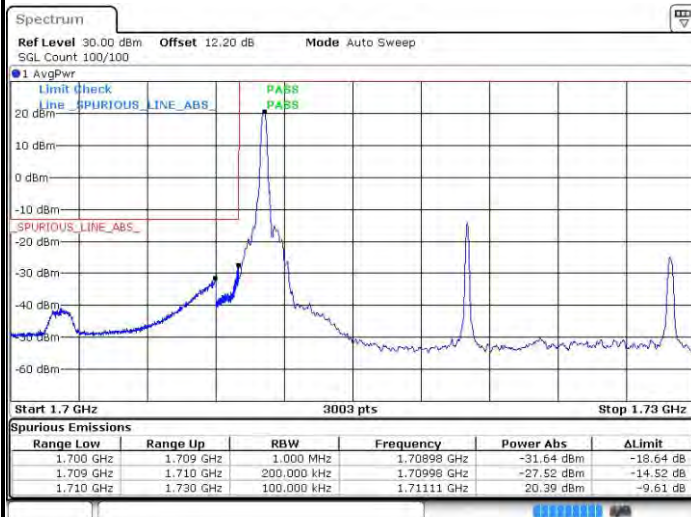




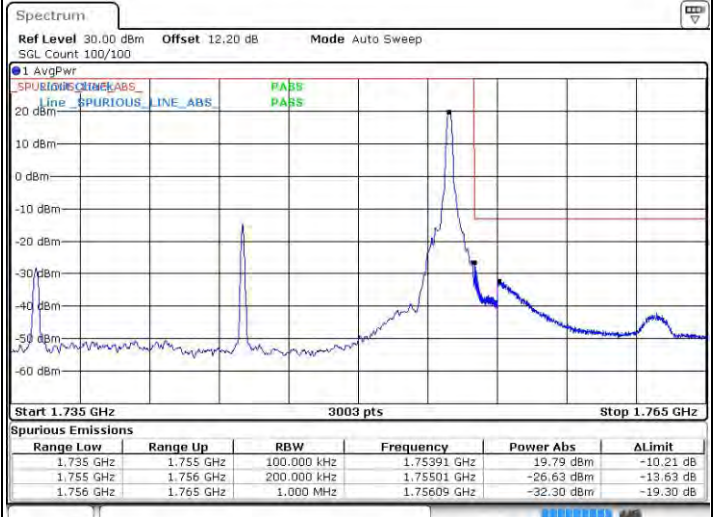


## LTE Band 4 / 20MHz / QPSK

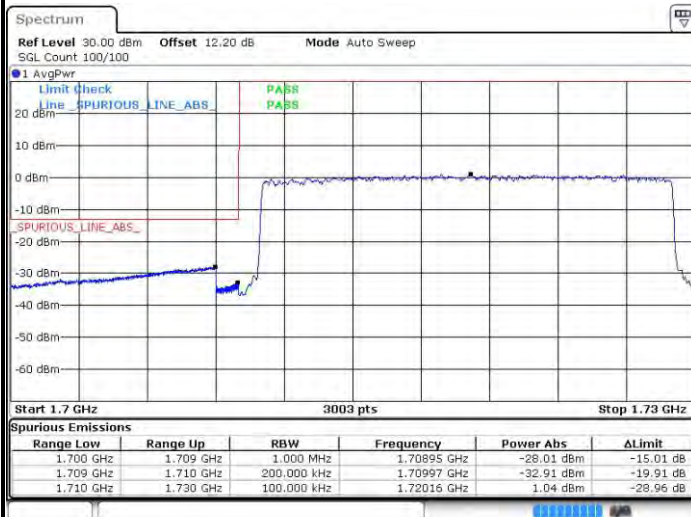
## Lowest Band Edge / 1 RB



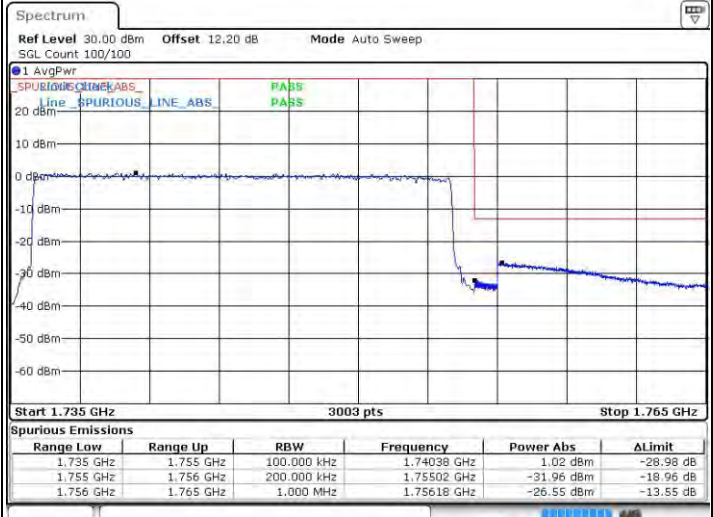
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



## Highest Band Edge / Full RB

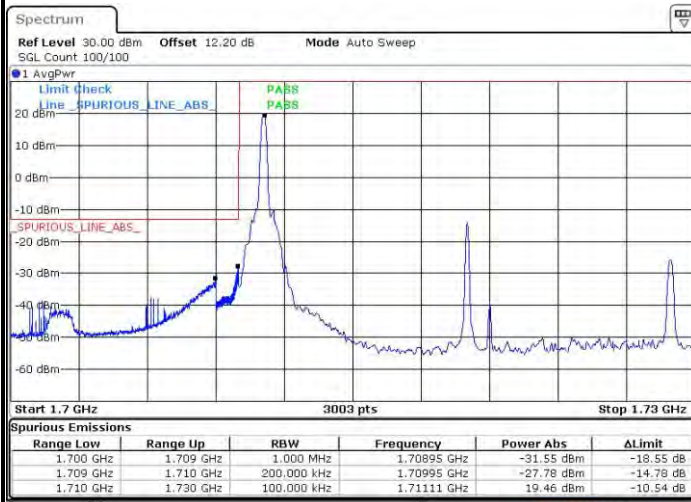




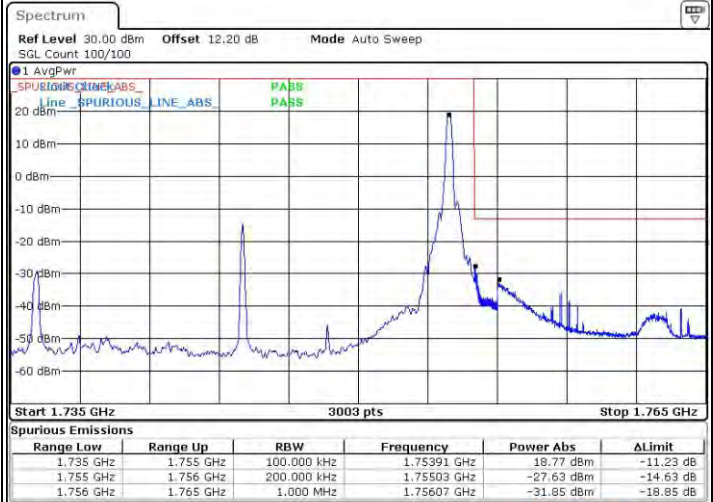


## LTE Band 4 / 20MHz / 16QAM

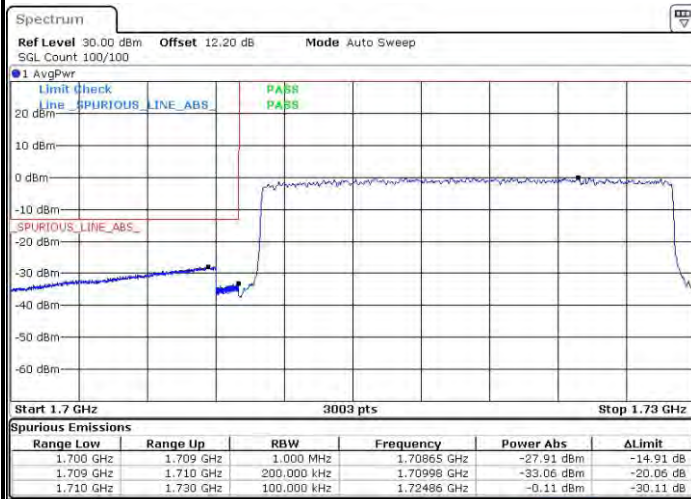
## Lowest Band Edge / 1 RB



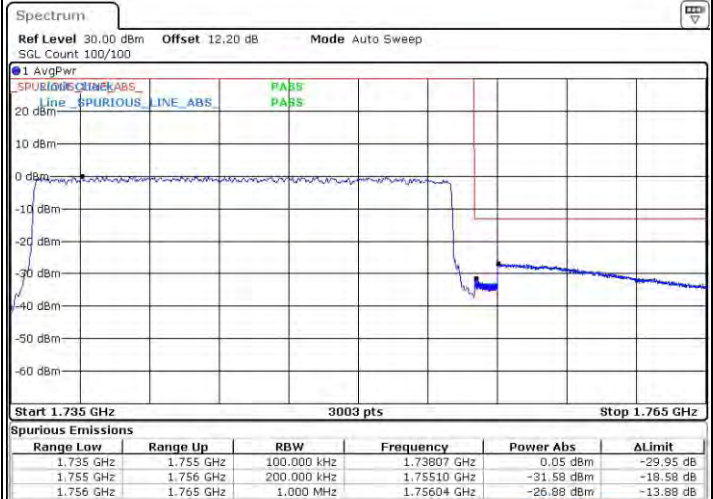
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



## Highest Band Edge / Full RB



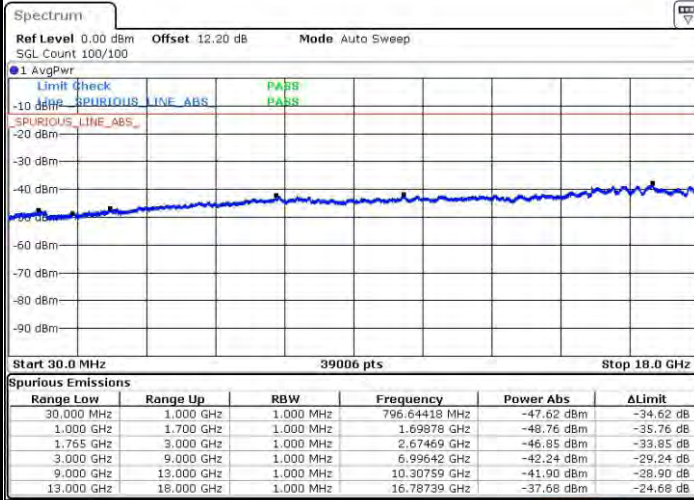


## **Conducted Spurious Emission**



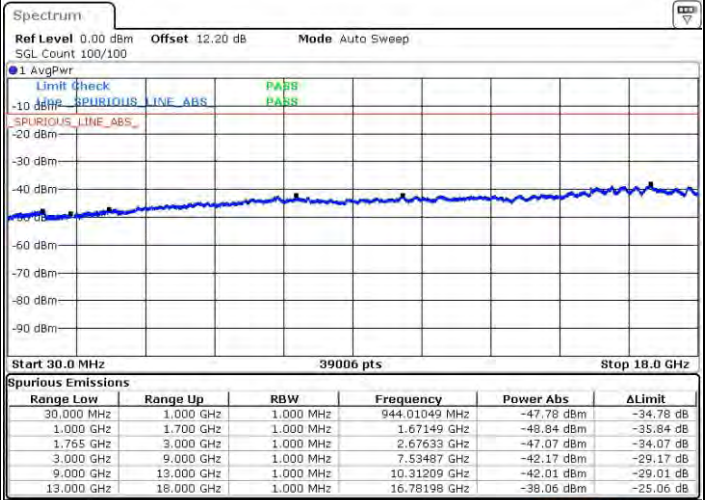
## LTE Band 4 / 1.4MHz

## Lowest Channel / QPSK



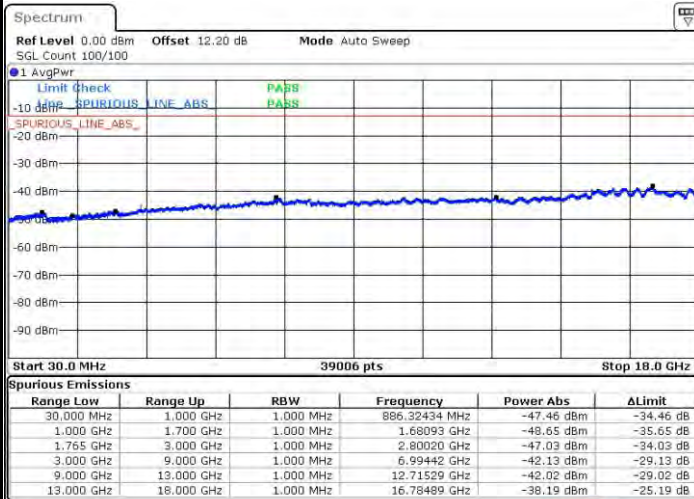
Date: 6 NOV 2015 21:27:34

## Lowest Channel / 16QAM



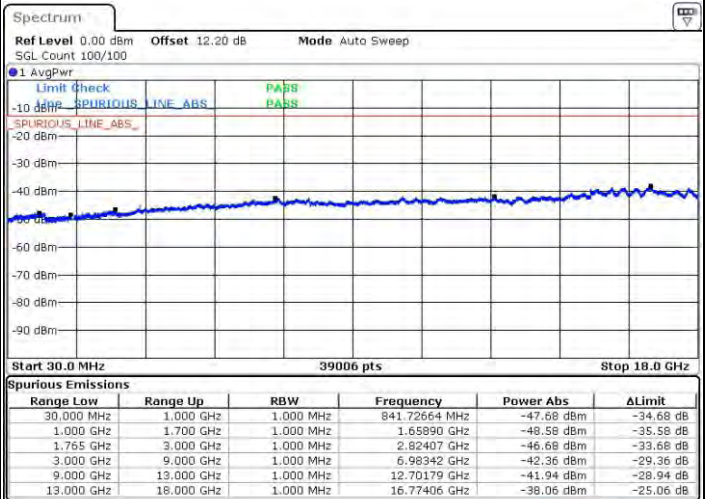
Date: 6 NOV 2015 21:28:29

## Middle Channel / QPSK



Date: 6 NOV 2015 21:30:06

## Middle Channel / 16QAM



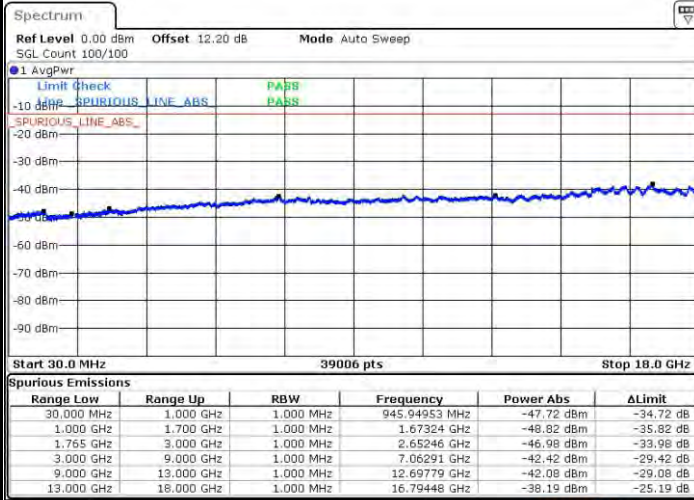
Date: 6 NOV 2015 21:31:01





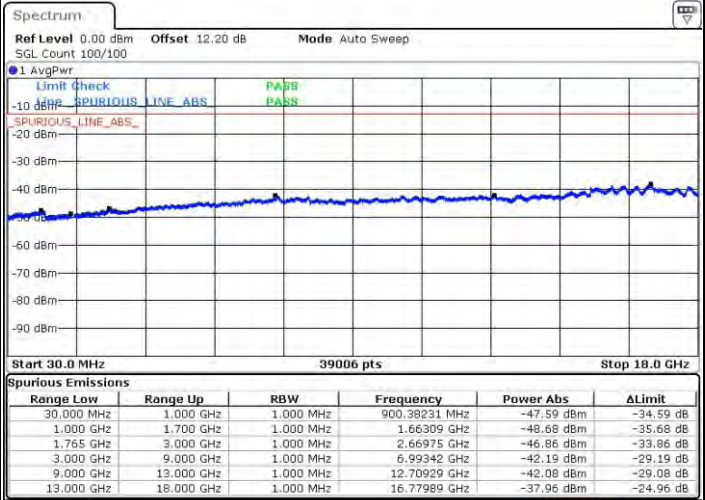
## LTE Band 4 / 1.4MHz

## Highest Channel / QPSK



Date: 6 NOV 2015 21:37:15

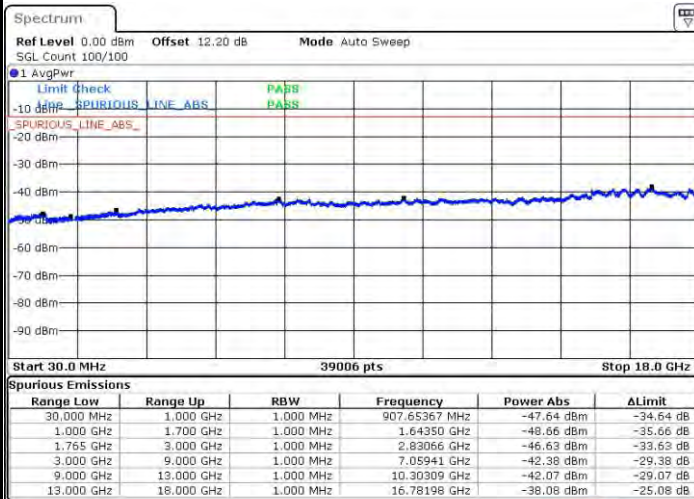
## Highest Channel / 16QAM



Date: 6 NOV 2015 21:38:10

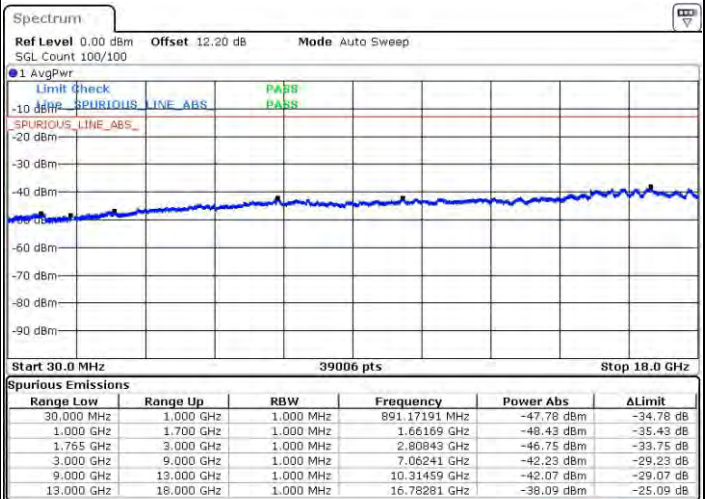
## LTE Band 4 / 3MHz

## Lowest Channel / QPSK



Date: 6 NOV 2015 19:50:12

## Lowest Channel / 16QAM

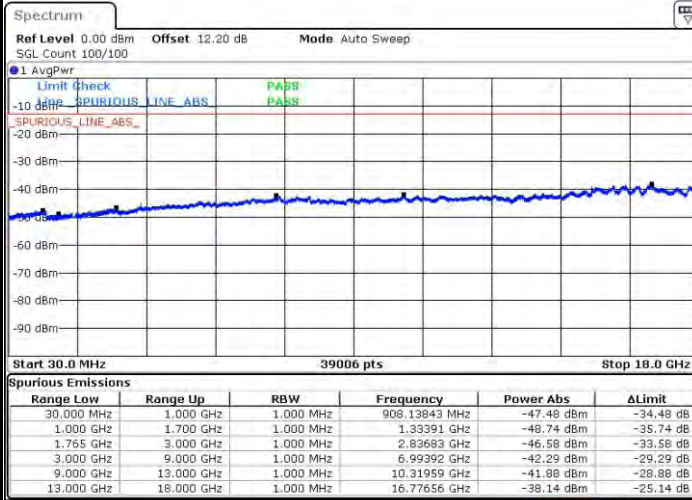


Date: 6 NOV 2015 19:51:07



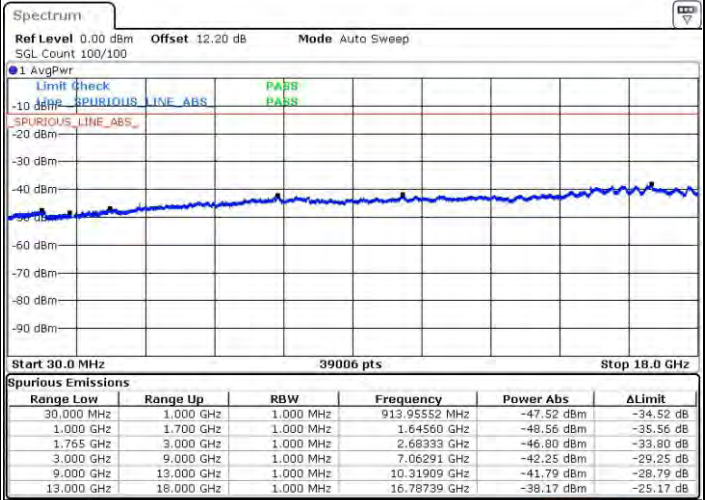
## LTE Band 4 / 3MHz

## Middle Channel / QPSK



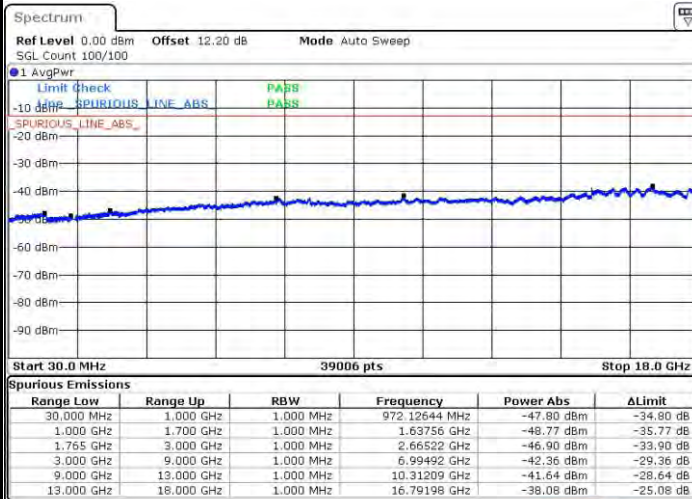
Date: 6 NOV 2015 19:52:44

## Middle Channel / 16QAM



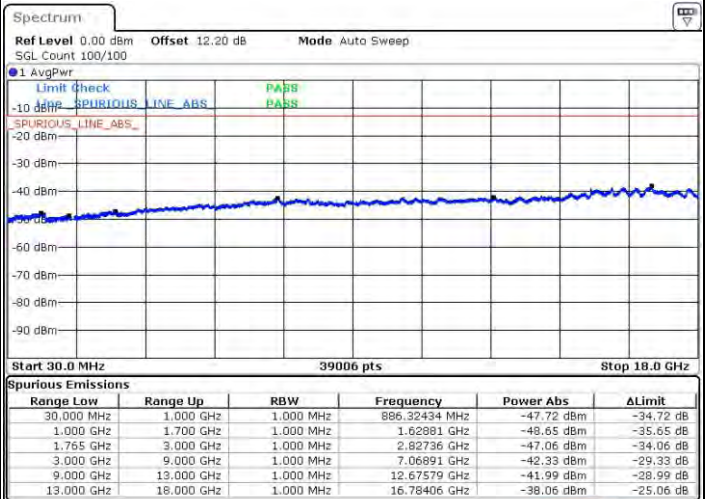
Date: 6 NOV 2015 19:53:39

## Highest Channel / QPSK



Date: 6 NOV 2015 19:59:53

## Highest Channel / 16QAM

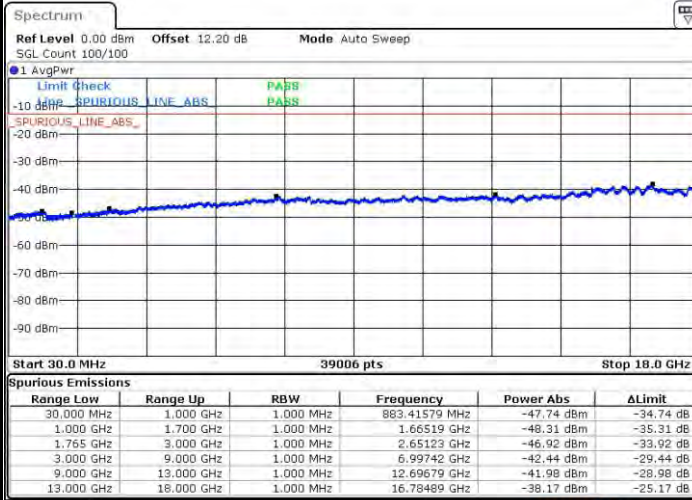


Date: 6 NOV 2015 20:00:47



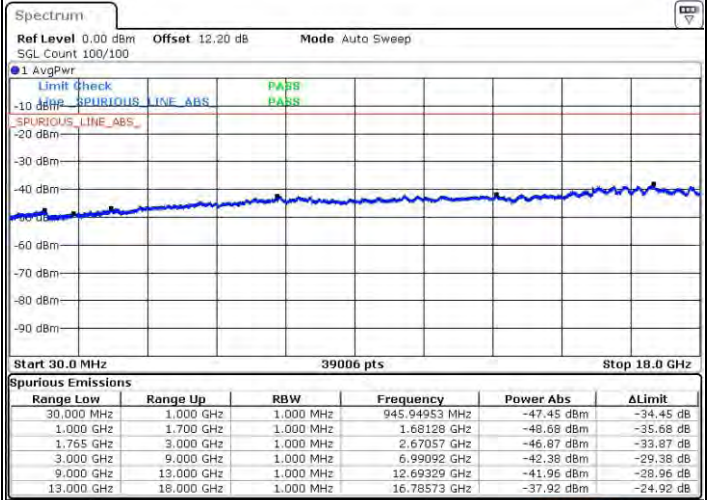
## LTE Band 4 / 5MHz

## Lowest Channel / QPSK



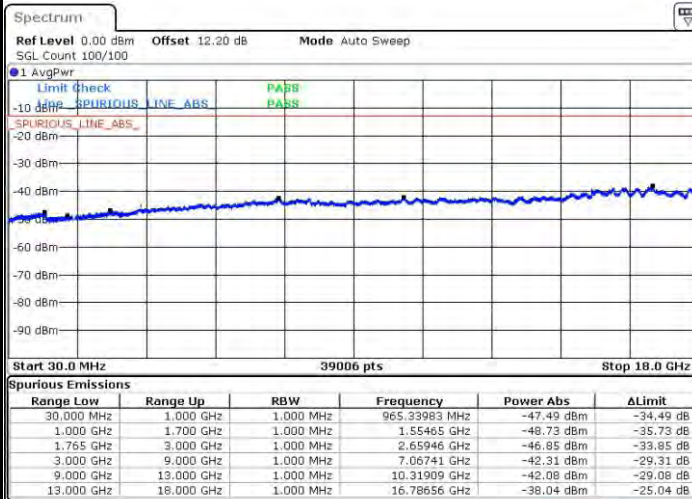
Date: 6 NOV 2015 20:07:01

## Lowest Channel / 16QAM



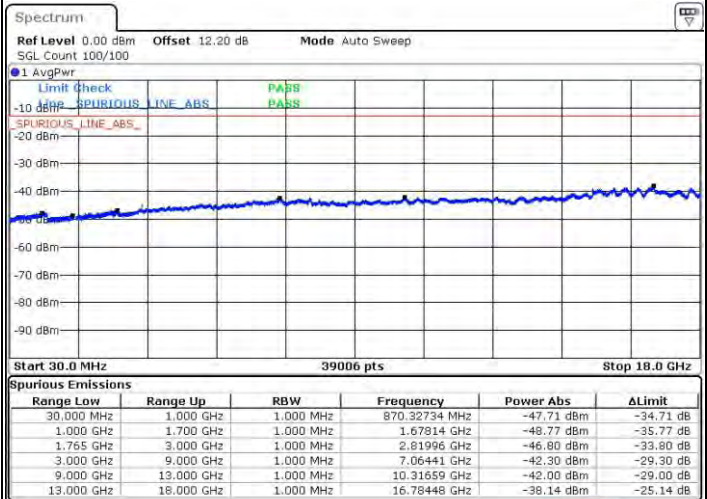
Date: 6 NOV 2015 20:07:56

## Middle Channel / QPSK



Date: 6 NOV 2015 20:09:33

## Middle Channel / 16QAM



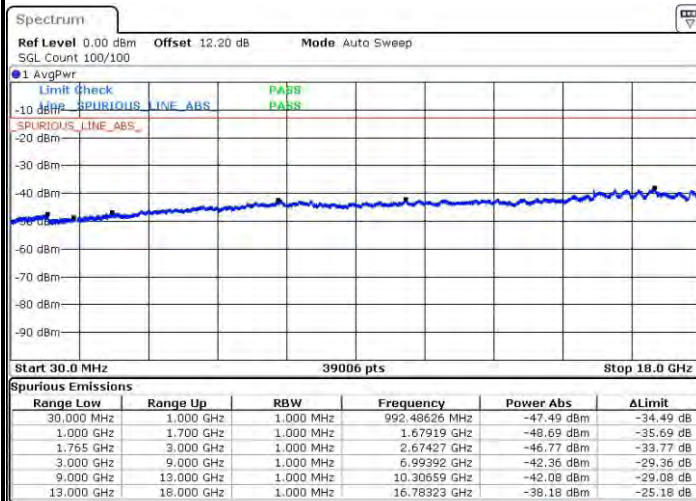
Date: 6 NOV 2015 20:10:27





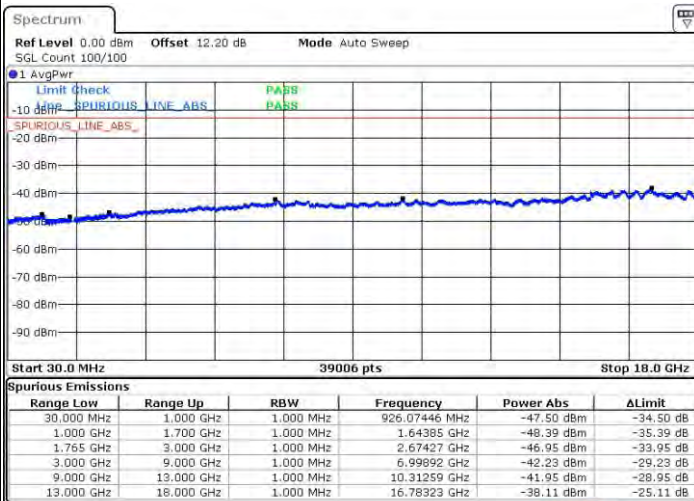
## LTE Band 4 / 5MHz

## Highest Channel / QPSK



Date: 6 NOV 2015 20:16:42

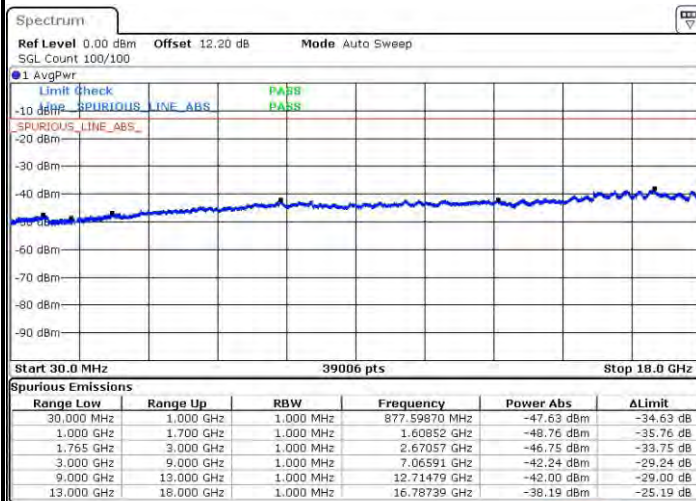
## Highest Channel / 16QAM



Date: 6 NOV 2015 20:17:37

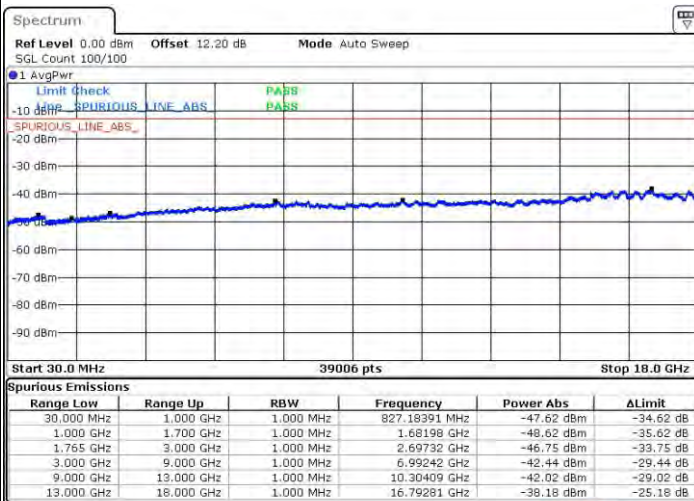
## LTE Band 4 / 10MHz

## Lowest Channel / QPSK



Date: 6 NOV 2015 20:23:51

## Lowest Channel / 16QAM

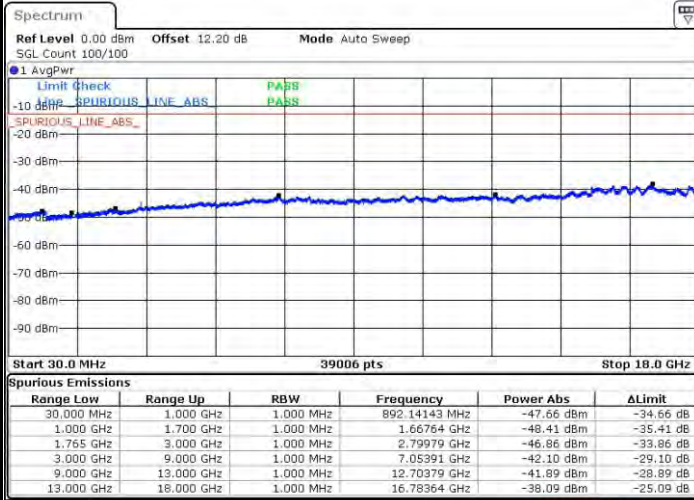


Date: 6 NOV 2015 20:24:45



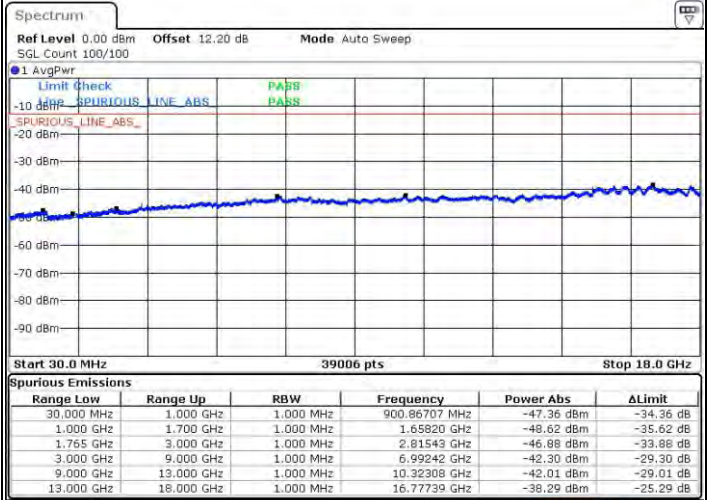
## LTE Band 4 / 10MHz

## Middle Channel / QPSK



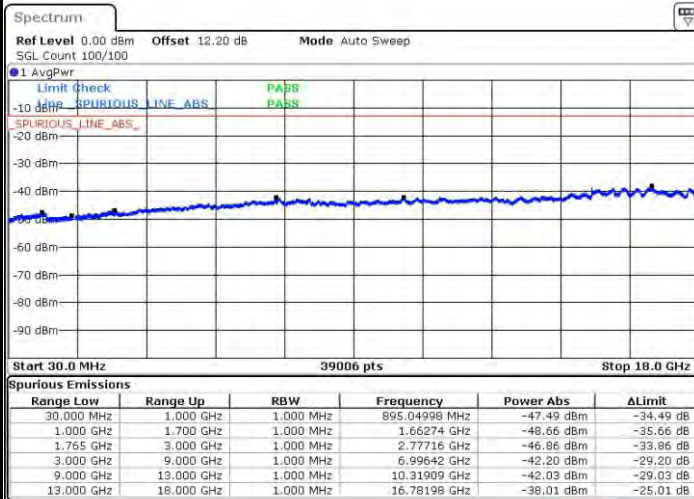
Date: 6 NOV 2015 20:28:22

## Middle Channel / 16QAM



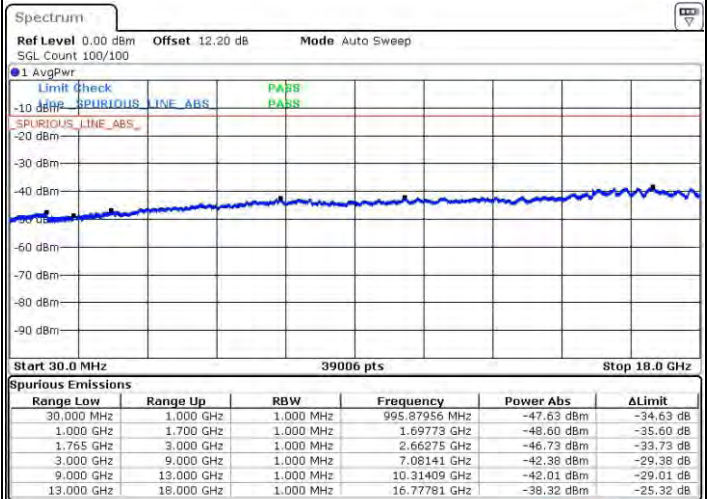
Date: 6 NOV 2015 20:27:17

## Highest Channel / QPSK



Date: 6 NOV 2015 20:33:31

## Highest Channel / 16QAM

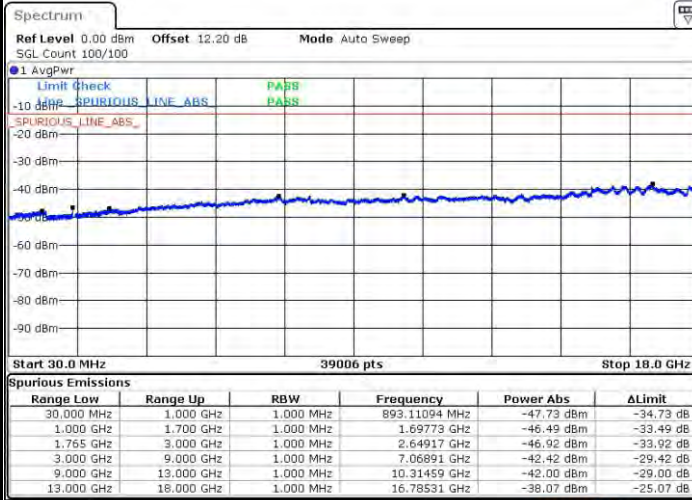


Date: 6 NOV 2015 20:34:26



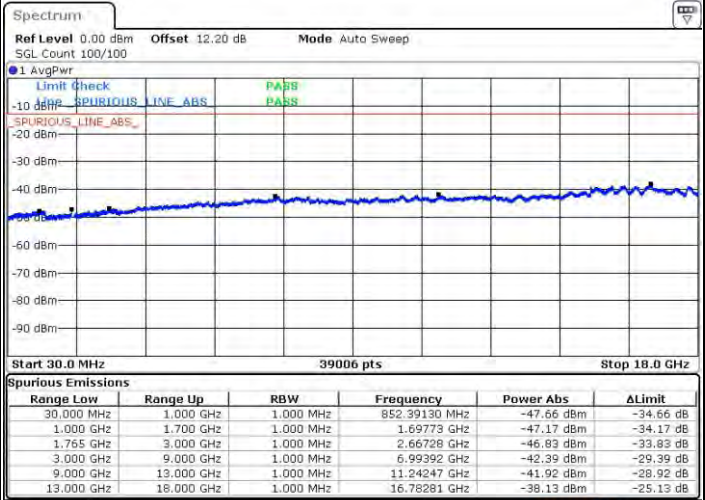
## LTE Band 4 / 15MHz

## Lowest Channel / QPSK



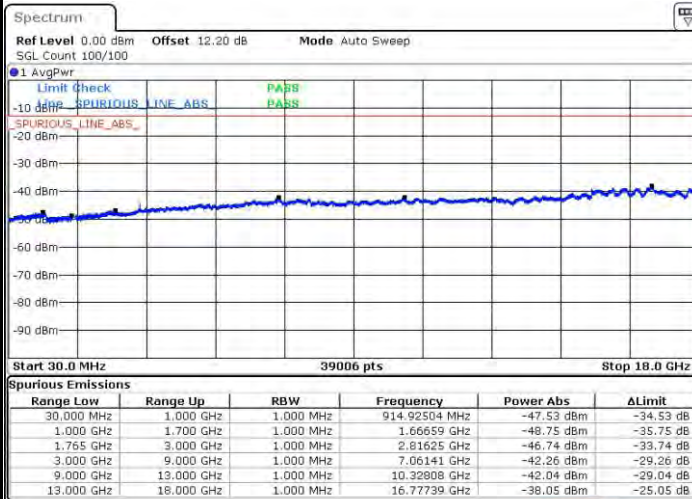
Date: 6 NOV 2015 20:40:40

## Lowest Channel / 16QAM



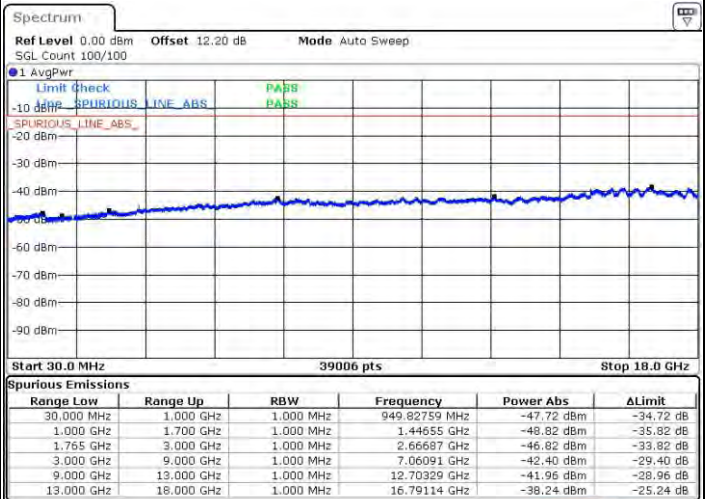
Date: 6 NOV 2015 20:41:34

## Middle Channel / QPSK



Date: 6 NOV 2015 20:43:12

## Middle Channel / 16QAM



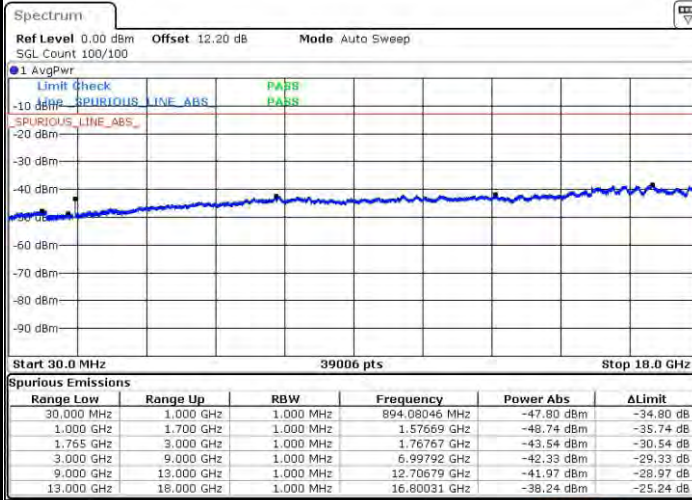
Date: 6 NOV 2015 20:44:06





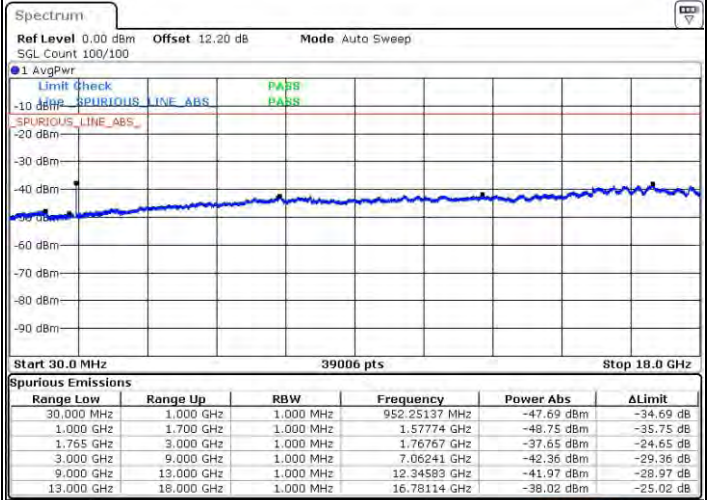
## LTE Band 4 / 15MHz

## Highest Channel / QPSK



Date: 6 NOV 2015 20:50:20

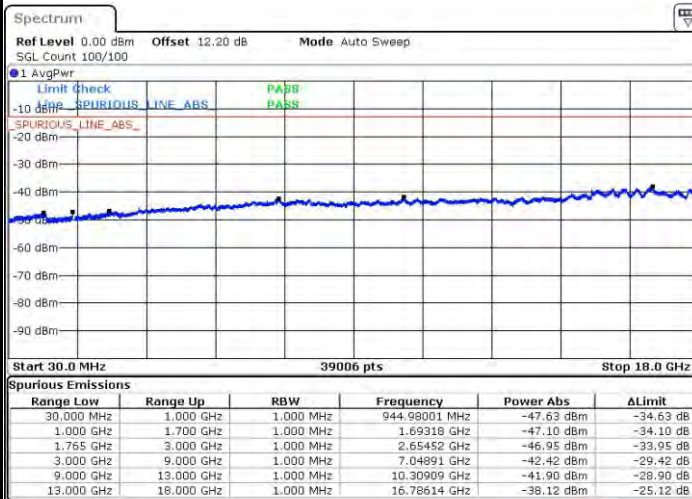
## Highest Channel / 16QAM



Date: 6 NOV 2015 20:51:15

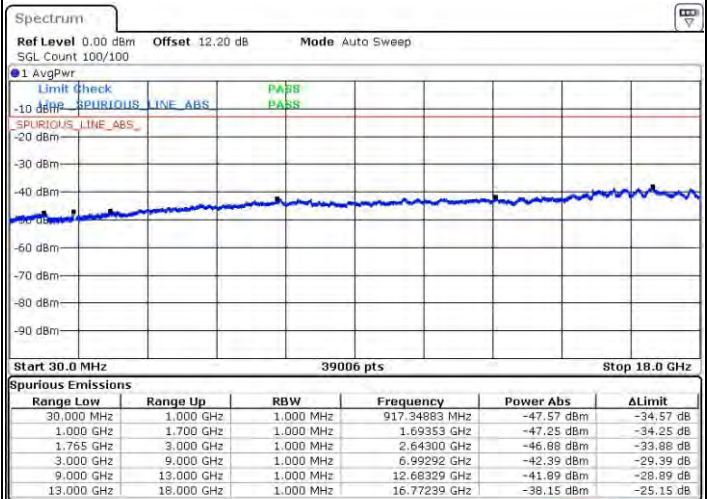
## LTE Band 4 / 20MHz

## Lowest Channel / QPSK



Date: 6 NOV 2015 20:57:29

## Lowest Channel / 16QAM

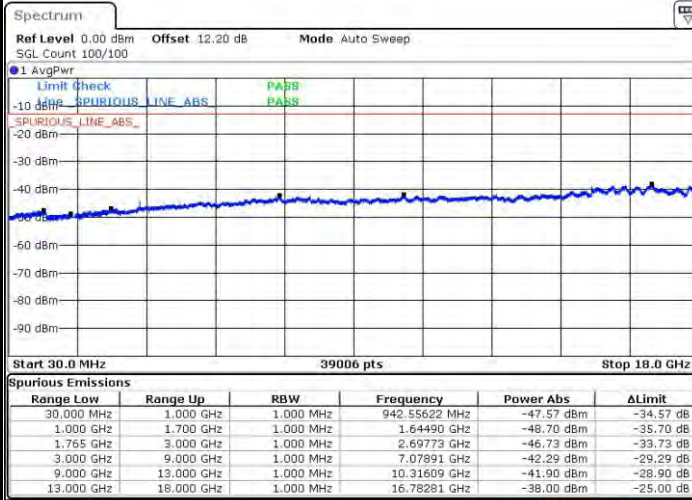


Date: 6 NOV 2015 20:58:24



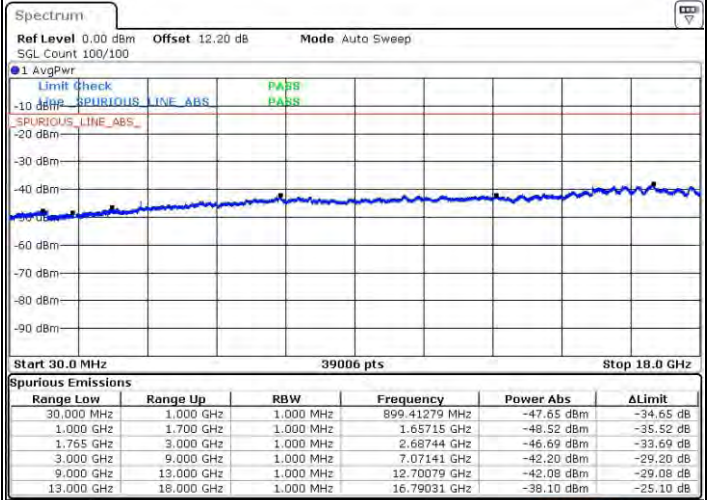
## LTE Band 4 / 20MHz

## Middle Channel / QPSK



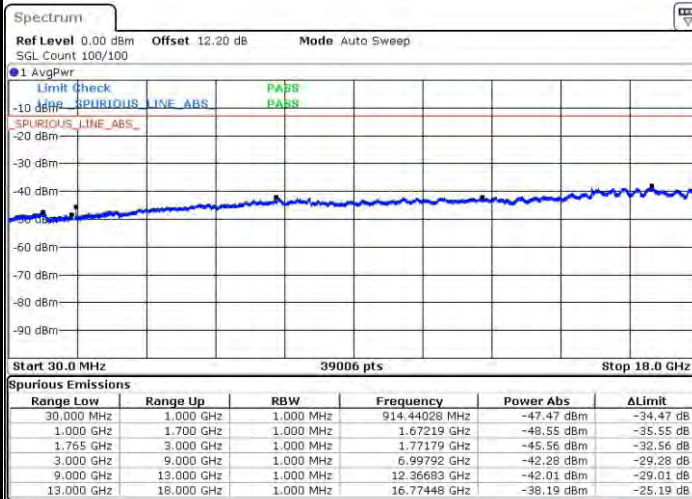
Date: 6 NOV. 2015 21:00:01

## Middle Channel / 16QAM



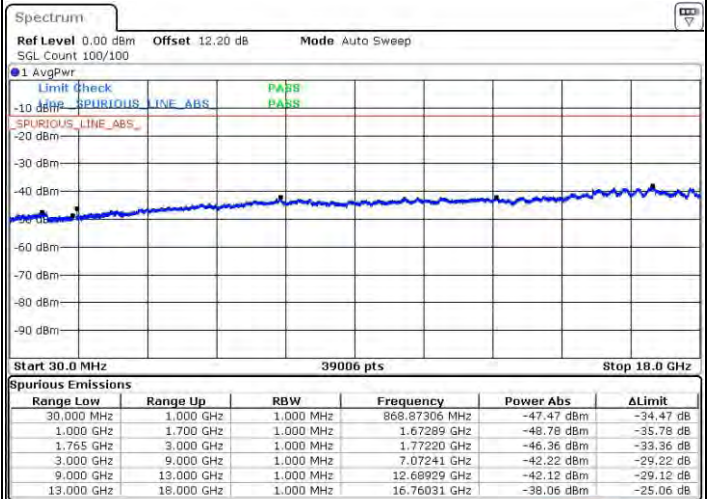
Date: 6 NOV. 2015 21:00:55

## Highest Channel / QPSK



Date: 6 NOV. 2015 21:07:09

## Highest Channel / 16QAM



Date: 6 NOV. 2015 21:08:04

## Frequency Stability

| Test Conditions  |                   | LTE Band 4 (QPSK) / Middle Channel | Limit   |
|------------------|-------------------|------------------------------------|---------|
| Temperature (°C) | Voltage (Volt)    | BW 10MHz                           | Note 2. |
|                  |                   | Deviation (ppm)                    | Result  |
| 50               | Normal Voltage    | 0.0013                             | PASS    |
| 40               | Normal Voltage    | 0.0007                             |         |
| 30               | Normal Voltage    | 0.0085                             |         |
| 20(Ref.)         | Normal Voltage    | 0.0000                             |         |
| 10               | Normal Voltage    | 0.0102                             |         |
| 0                | Normal Voltage    | 0.0118                             |         |
| -10              | Normal Voltage    | 0.0004                             |         |
| -20              | Normal Voltage    | 0.0102                             |         |
| -30              | Normal Voltage    | 0.0010                             |         |
| 20               | Maximum Voltage   | 0.0111                             |         |
| 20               | Normal Voltage    | 0.0000                             |         |
| 20               | Battery End Point | 0.0001                             |         |

**Note:**

1. Normal Voltage = 12V. ; Battery End Point (BEP) = 9V. ; Maximum Voltage =32 V
2. Note: The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.