

**Frequency Stability**

| Test Conditions  |                   | LTE Band 5 (QPSK) / Middle Channel | Limit  |
|------------------|-------------------|------------------------------------|--------|
| Temperature (°C) | Voltage (Volt)    | BW 10MHz                           | 2.5ppm |
|                  |                   | Deviation (ppm)                    | Result |
| 50               | Normal Voltage    | 0.0032                             | PASS   |
| 40               | Normal Voltage    | 0.0030                             |        |
| 30               | Normal Voltage    | 0.0006                             |        |
| 20(Ref.)         | Normal Voltage    | 0.0000                             |        |
| 10               | Normal Voltage    | 0.0032                             |        |
| 0                | Normal Voltage    | 0.0025                             |        |
| -10              | Normal Voltage    | 0.0001                             |        |
| -20              | Normal Voltage    | 0.0025                             |        |
| -30              | Normal Voltage    | 0.0023                             |        |
| 20               | Maximum Voltage   | 0.0008                             |        |
| 20               | Normal Voltage    | 0.0000                             |        |
| 20               | Battery End Point | 0.0006                             |        |

**Note:** Normal Voltage =4 V. ; Battery End Point (BEP) =3.8 V. ; Maximum Voltage =4.4V.



## LTE Band 12

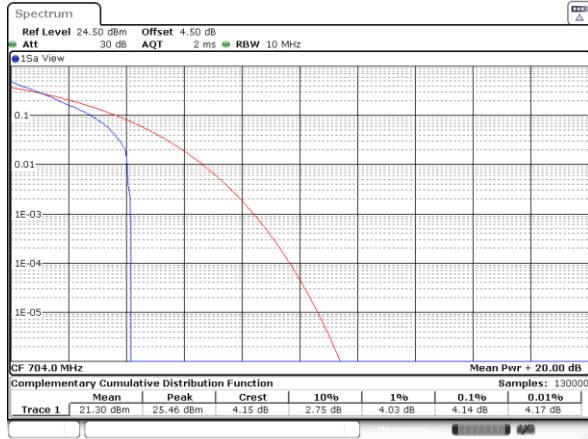
## Peak-to-Average Ratio

| Mode       | LTE Band 12 / 10MHz |         |       |         |             |
|------------|---------------------|---------|-------|---------|-------------|
| Mod.       | QPSK                |         | 16QAM |         | Limit: 13dB |
| RB Size    | 1RB                 | Full RB | 1RB   | Full RB | Result      |
| Lowest CH  | 4.14                | 5.04    | 4.64  | 5.97    | PASS        |
| Middle CH  | 4.35                | 4.99    | 5.28  | 5.91    |             |
| Highest CH | 4.52                | 4.87    | 5.16  | 5.77    |             |
| Mode       | LTE Band 12 / 10MHz |         |       |         |             |
| Mod.       | 64QAM               |         | -     |         | Limit: 13dB |
| RB Size    | 1RB                 | Full RB | -     | -       | Result      |
| Lowest CH  | 4.99                | 6.06    | -     | -       | PASS        |
| Middle CH  | 5.42                | 5.94    | -     | -       |             |
| Highest CH | 5.42                | 5.77    | -     | -       |             |

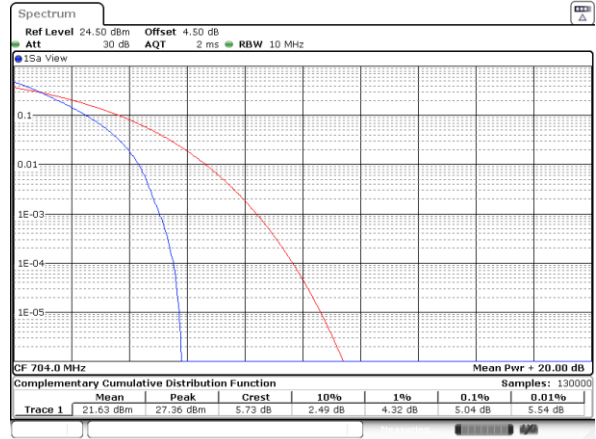


## LTE Band 12 / 10MHz / QPSK

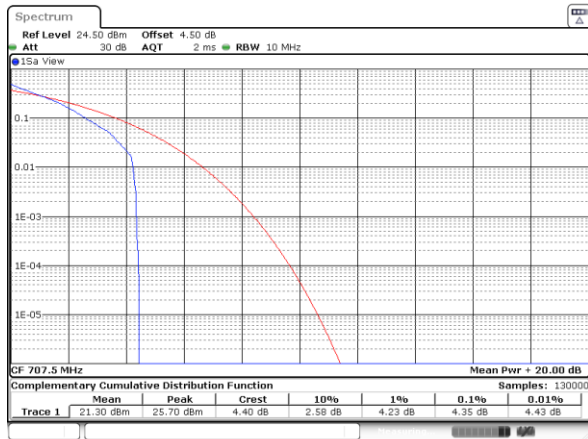
## Lowest Channel / 1RB



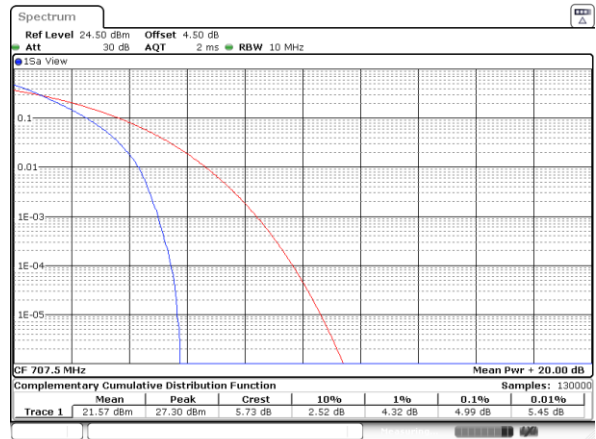
## Lowest Channel / Full RB



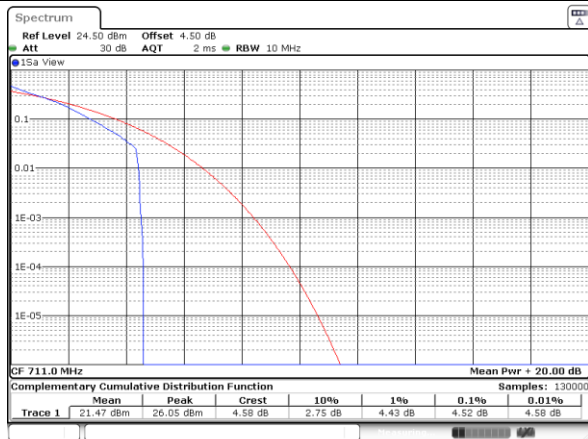
## Middle Channel / 1RB



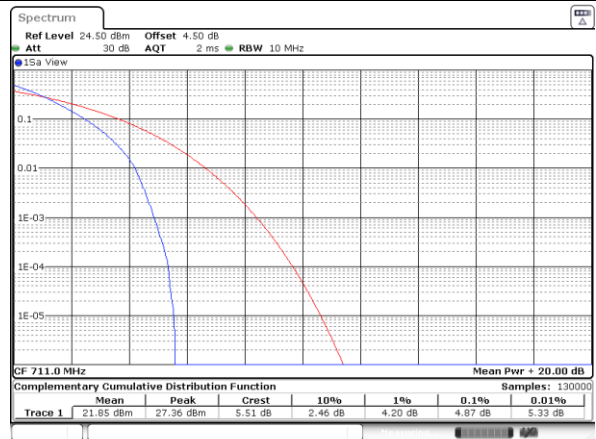
## Middle Channel / Full RB



## Highest Channel / 1RB



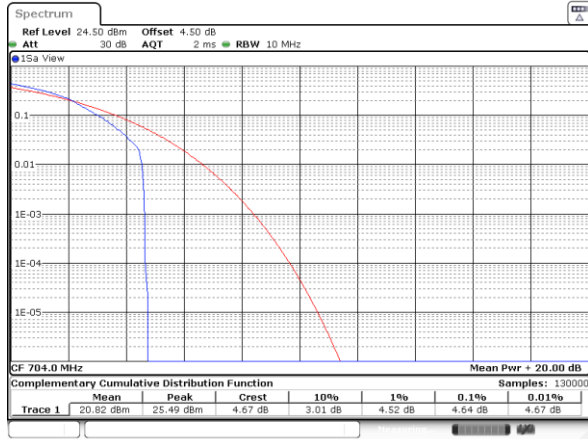
## Highest Channel / Full RB



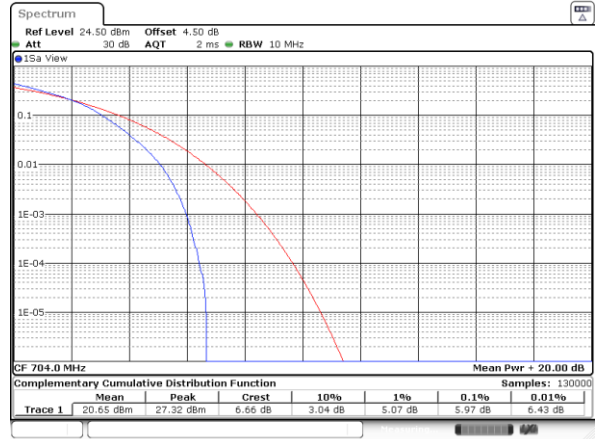


## LTE Band 12 / 10MHz / 16QAM

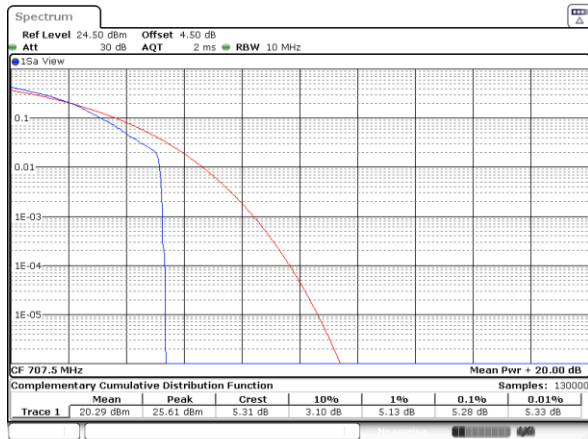
## Lowest Channel / 1RB



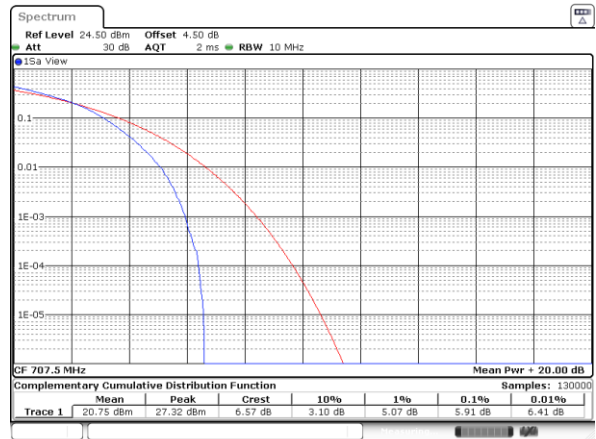
## Lowest Channel / Full RB



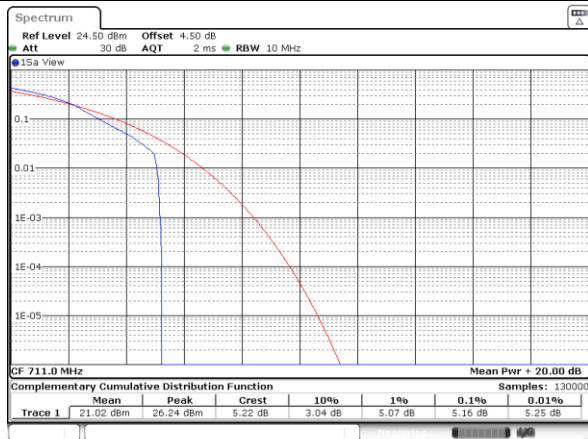
## Middle Channel / 1RB



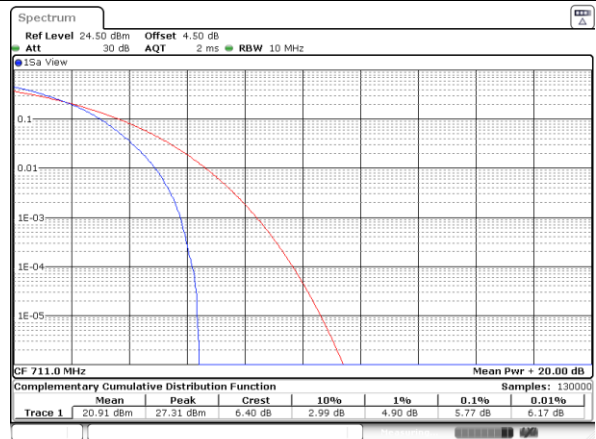
## Middle Channel / Full RB



## Highest Channel / 1RB



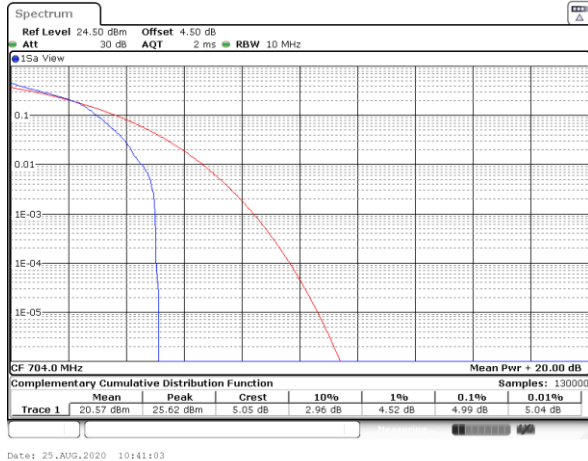
## Highest Channel / Full RB



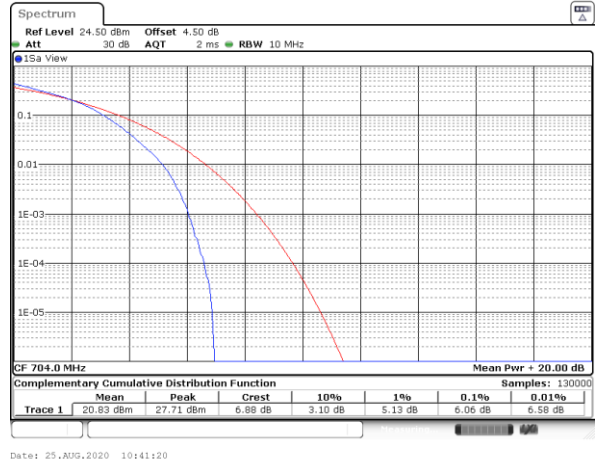


## LTE Band 12 / 10MHz / 64QAM

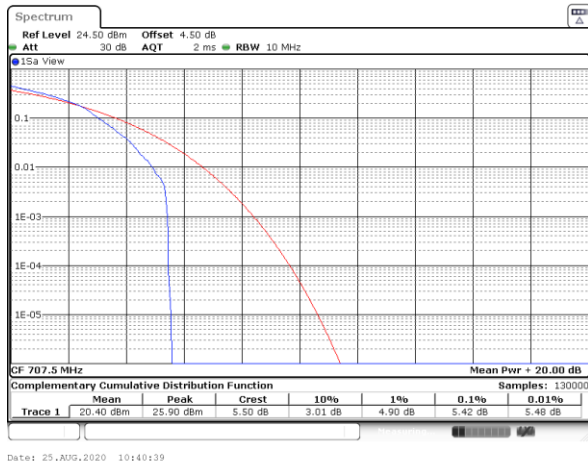
## Lowest Channel / 1RB



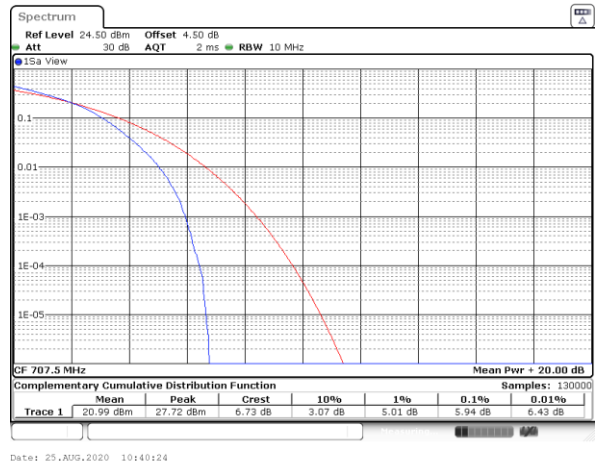
## Lowest Channel / Full RB



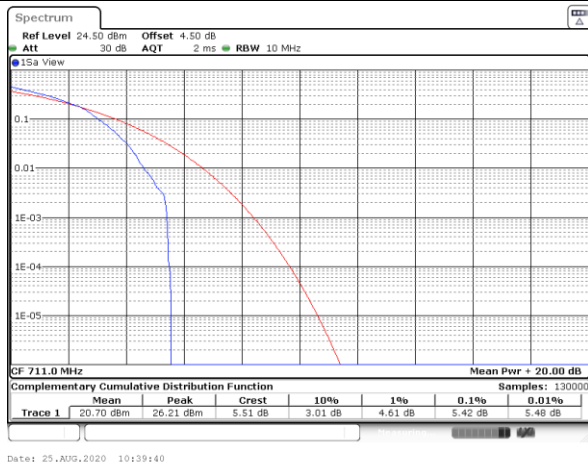
## Middle Channel / 1RB



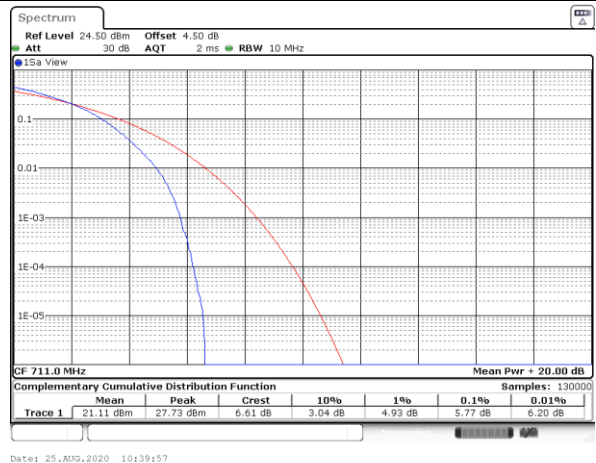
## Middle Channel / Full RB



## Highest Channel / 1RB



## Highest Channel / Full RB



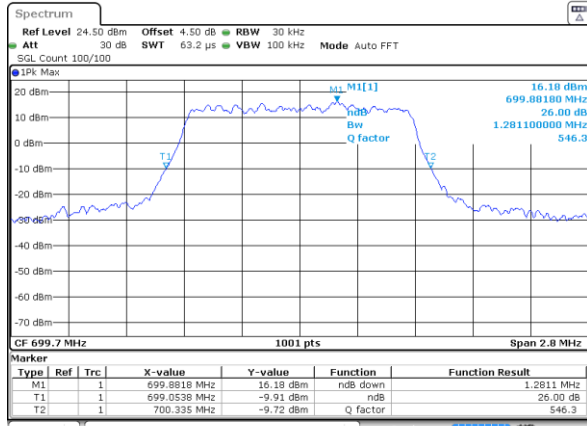
**26dB Bandwidth**

| Mode       | LTE Band 12 : 26dB BW(MHz) |       |       |       |       |       |       |       |
|------------|----------------------------|-------|-------|-------|-------|-------|-------|-------|
| BW         | 1.4MHz                     |       | 3MHz  |       | 5MHz  |       | 10MHz |       |
| Mod.       | QPSK                       | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM |
| Lowest CH  | 1.28                       | 1.26  | 3.02  | 2.98  | 4.95  | 4.90  | 9.97  | 9.61  |
| Middle CH  | 1.28                       | 1.29  | 3.00  | 2.97  | 4.99  | 4.93  | 9.81  | 9.83  |
| Highest CH | 1.25                       | 1.24  | 2.98  | 3.03  | 4.90  | 4.96  | 9.73  | 9.77  |
| Mode       | LTE Band 12 : 26dB BW(MHz) |       |       |       |       |       |       |       |
| BW         | 1.4MHz                     |       | 3MHz  |       | 5MHz  |       | 10MHz |       |
| Mod.       | 64QAM                      |       | 64QAM |       | 64QAM |       | 64QAM |       |
| Lowest CH  | 1.25                       | -     | 3.05  | -     | 4.88  | -     | 9.89  | -     |
| Middle CH  | 1.28                       | -     | 2.99  | -     | 4.99  | -     | 9.87  | -     |
| Highest CH | 1.29                       | -     | 3.04  | -     | 4.91  | -     | 9.79  | -     |



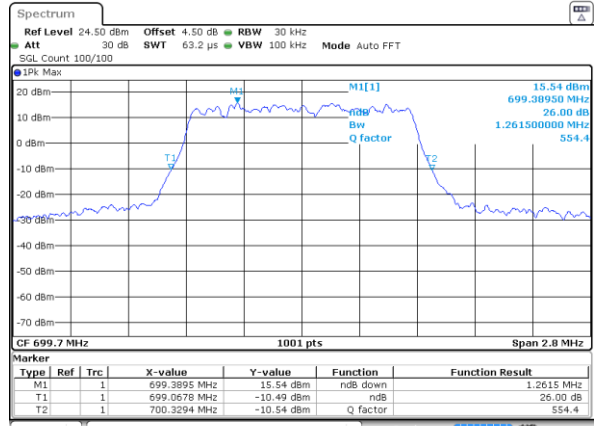
## LTE Band 12

## Lowest Channel / 1.4MHz / QPSK



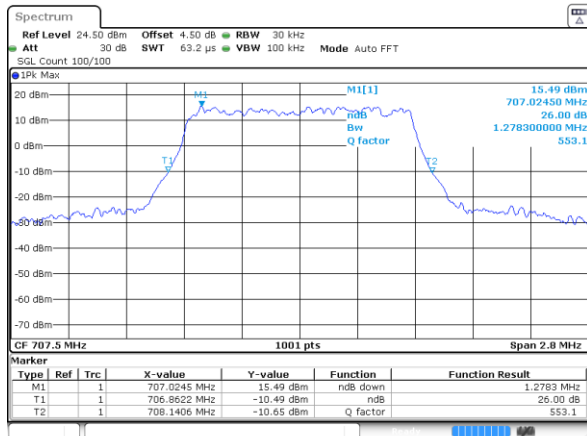
Date: 6 AUG 2020 14:49:00

## Lowest Channel / 1.4MHz / 16QAM



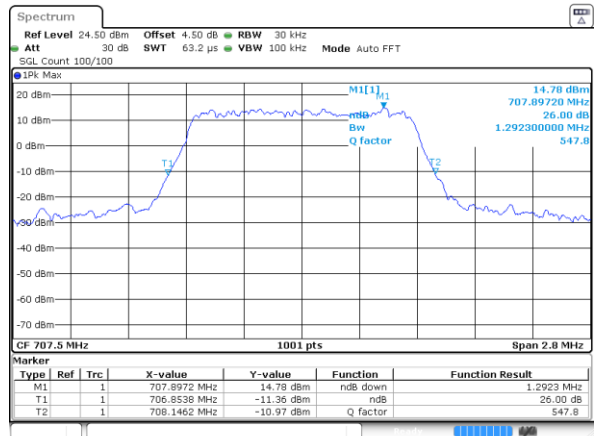
Date: 6 AUG 2020 14:52:19

## Middle Channel / 1.4MHz / QPSK



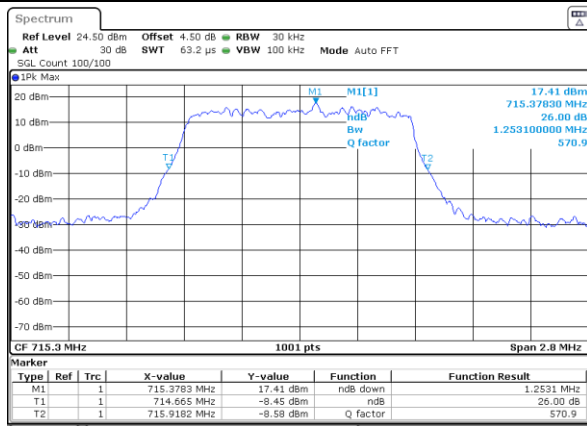
Date: 6 AUG 2020 15:03:37

## Middle Channel / 1.4MHz / 16QAM



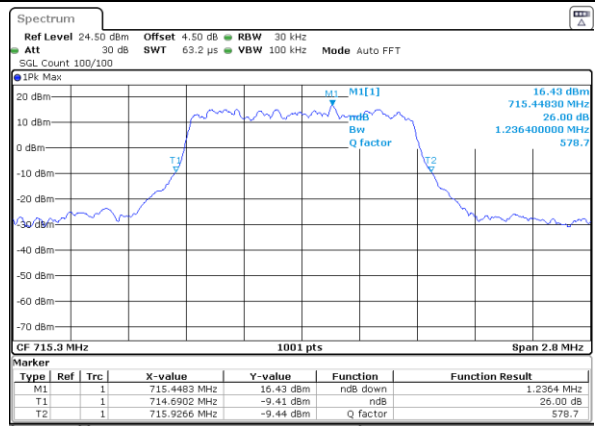
Date: 6 AUG 2020 15:03:12

## Highest Channel / 1.4MHz / QPSK



Date: 6 AUG 2020 15:04:42

## Highest Channel / 1.4MHz / 16QAM

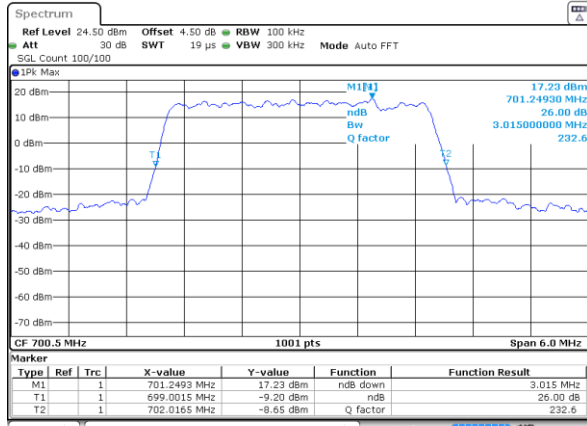


Date: 6 AUG 2020 15:06:23

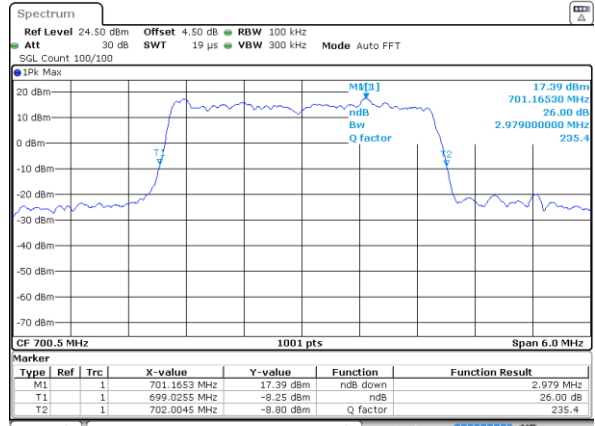


## LTE Band 12

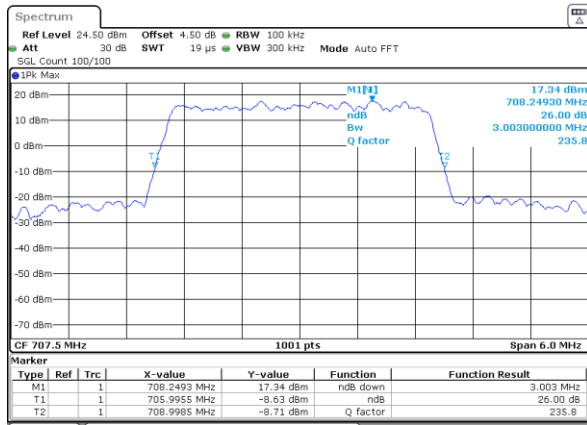
## Lowest Channel / 3MHz / QPSK



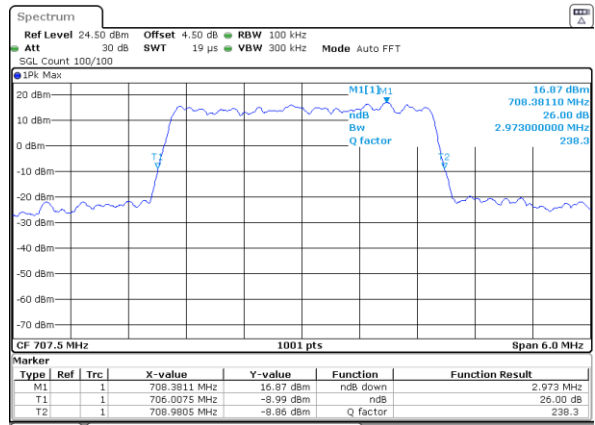
## Lowest Channel / 3MHz / 16QAM



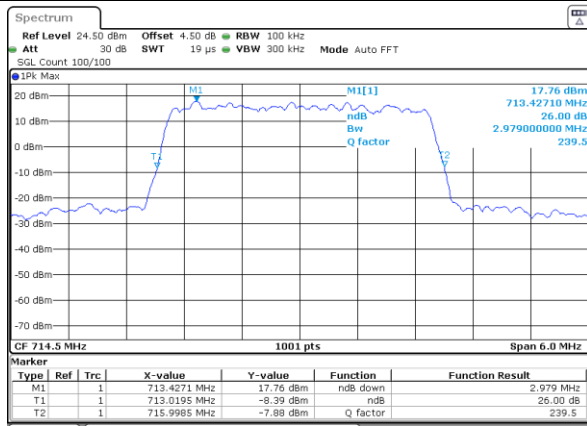
## Middle Channel / 3MHz / QPSK



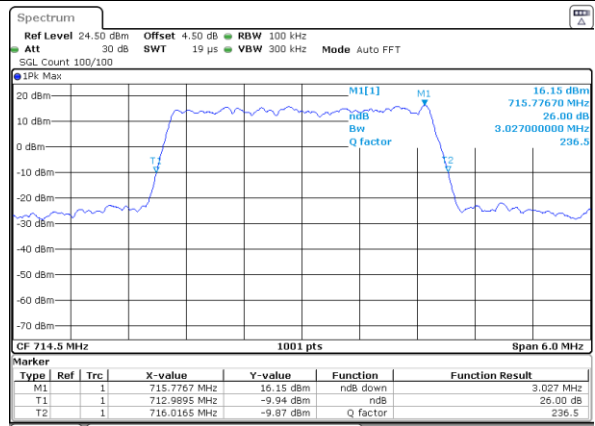
## Middle Channel / 3MHz / 16QAM



## Highest Channel / 3MHz / QPSK



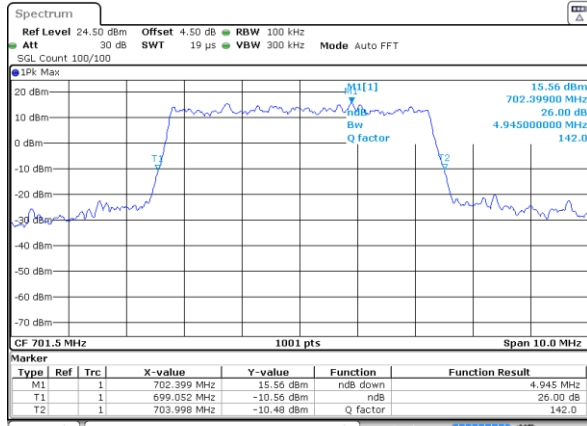
## Highest Channel / 3MHz / 16QAM





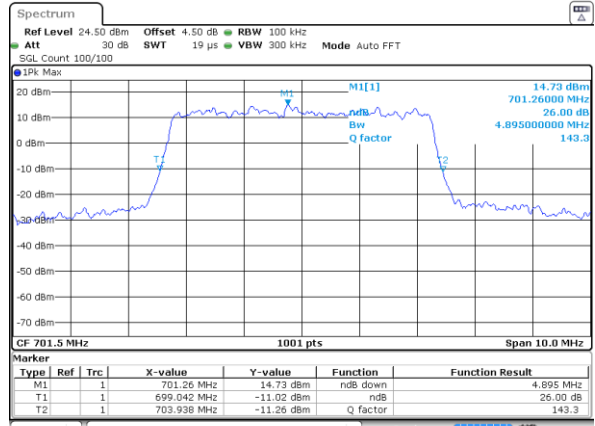
## LTE Band 12

## Lowest Channel / 5MHz / QPSK



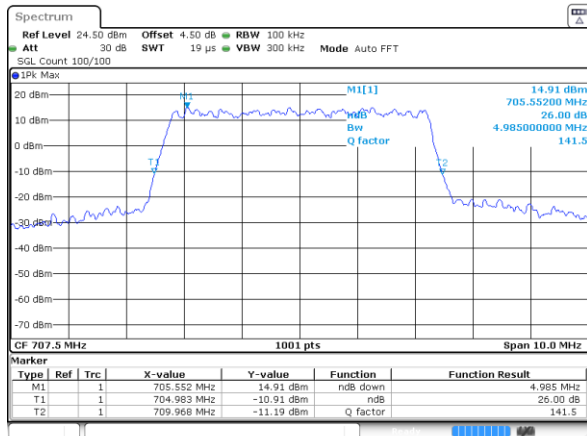
Date: 6 AUG 2020 15:28:09

## Lowest Channel / 5MHz / 16QAM



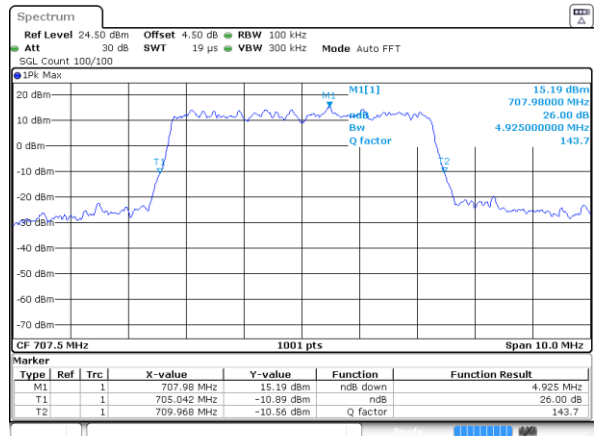
Date: 6 AUG 2020 15:29:05

## Middle Channel / 5MHz / QPSK



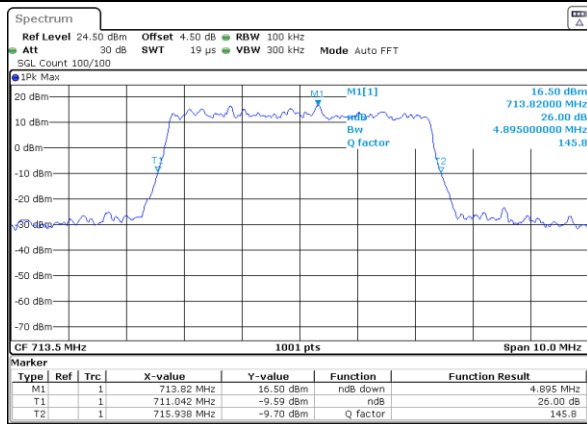
Date: 6 AUG 2020 15:35:33

## Middle Channel / 5MHz / 16QAM



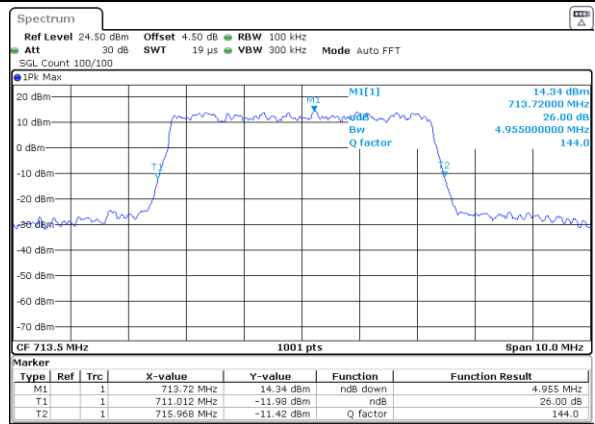
Date: 6 AUG 2020 15:34:42

## Highest Channel / 5MHz / QPSK



Date: 6 AUG 2020 15:37:10

## Highest Channel / 5MHz / 16QAM

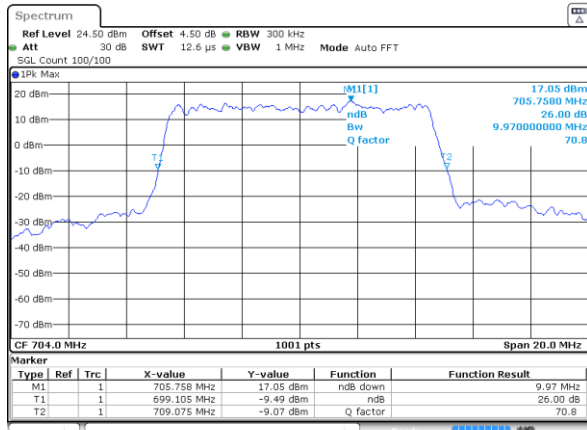


Date: 6 AUG 2020 15:38:11

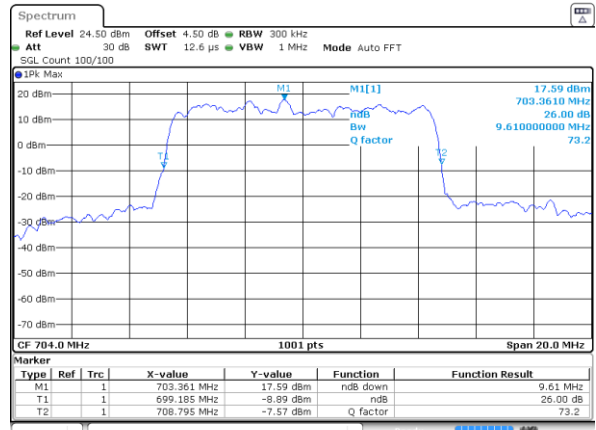


## LTE Band 12

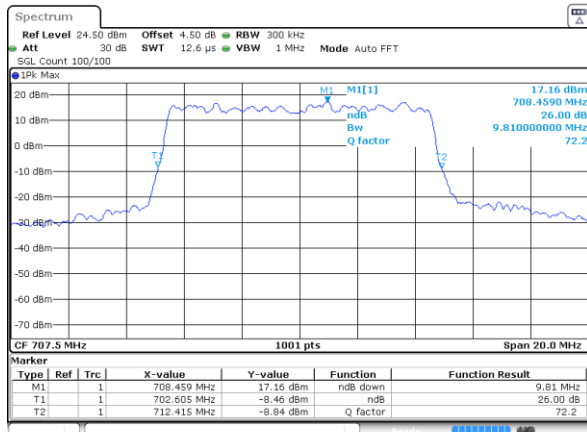
## Lowest Channel / 10MHz / QPSK



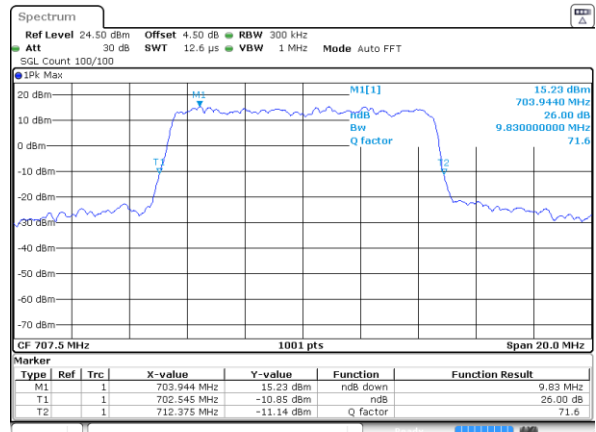
## Lowest Channel / 10MHz / 16QAM



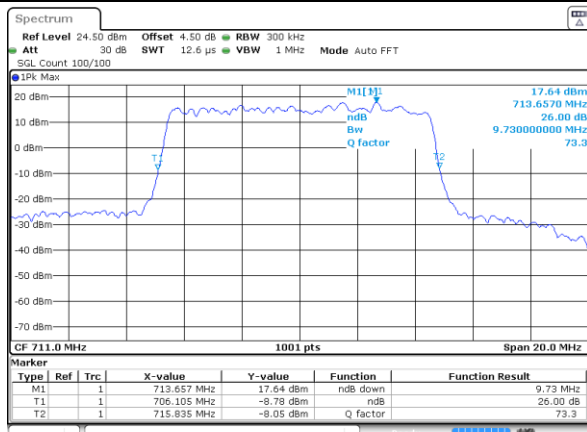
## Middle Channel / 10MHz / QPSK



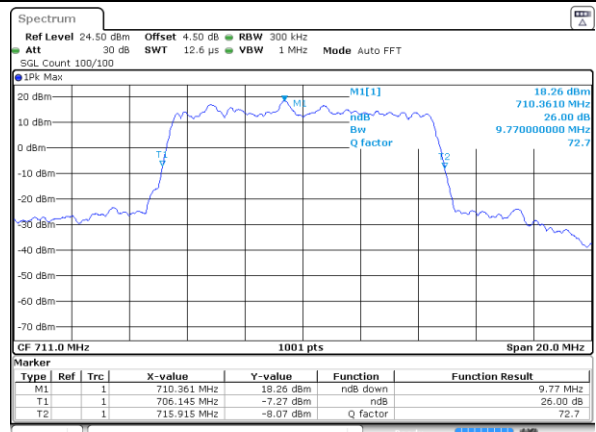
## Middle Channel / 10MHz / 16QAM



## Highest Channel / 10MHz / QPSK



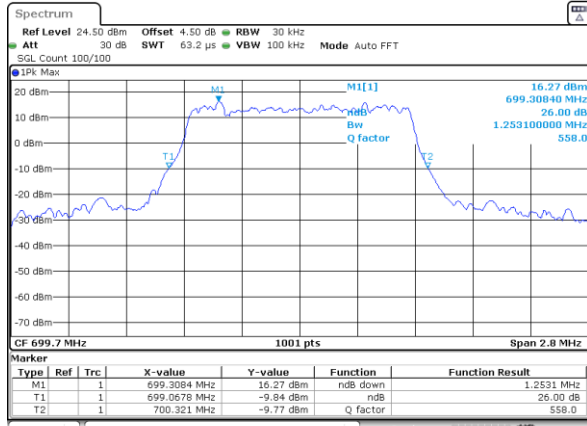
## Highest Channel / 10MHz / 16QAM





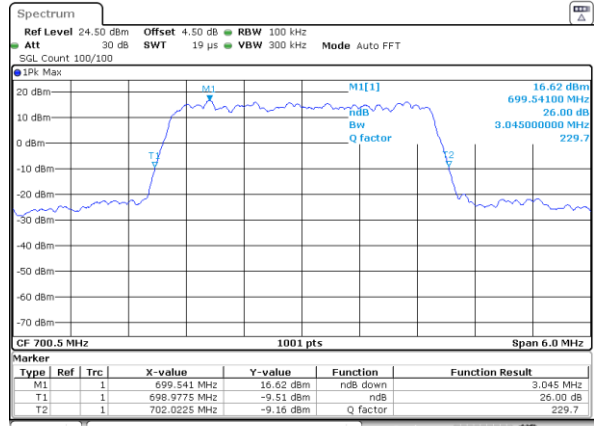
## LTE Band 12

## Lowest Channel / 1.4MHz / 64QAM



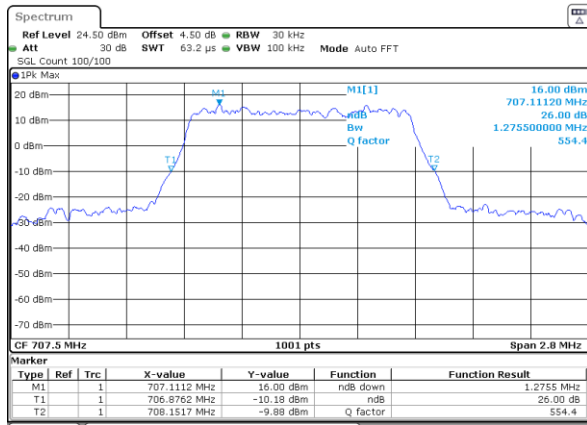
Date: 25.AUG.2020 09:41:50

## Lowest Channel / 3MHz / 64QAM



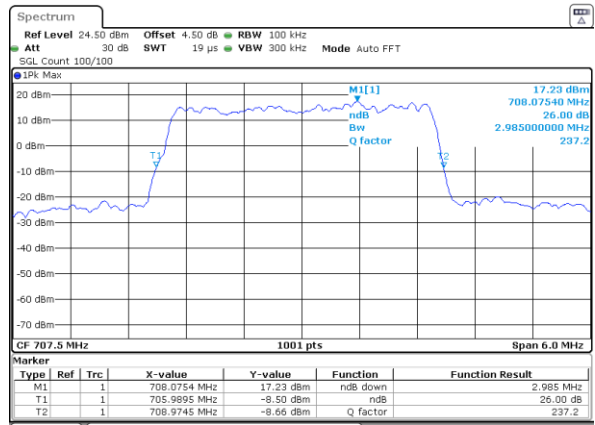
Date: 25.AUG.2020 10:11:20

## Middle Channel / 1.4MHz / 64QAM



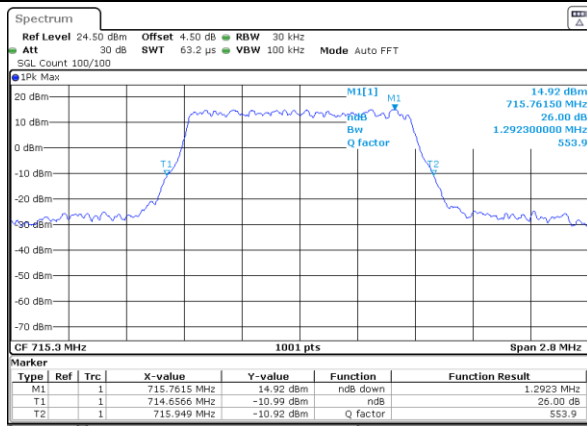
Date: 25.AUG.2020 09:57:20

## Middle Channel / 3MHz / 64QAM



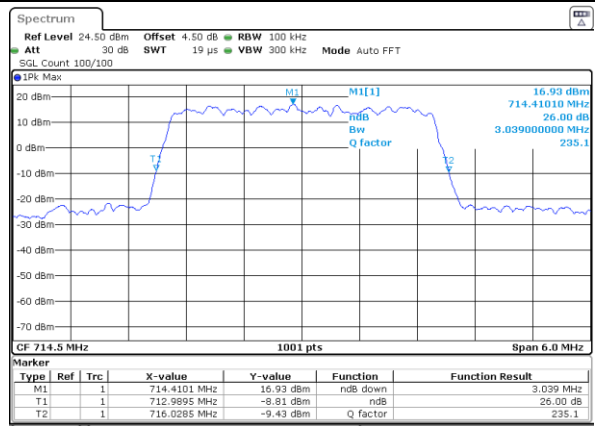
Date: 25.AUG.2020 10:14:44

## Highest Channel / 1.4MHz / 64QAM



Date: 25.AUG.2020 09:58:00

## Highest Channel / 3MHz / 64QAM

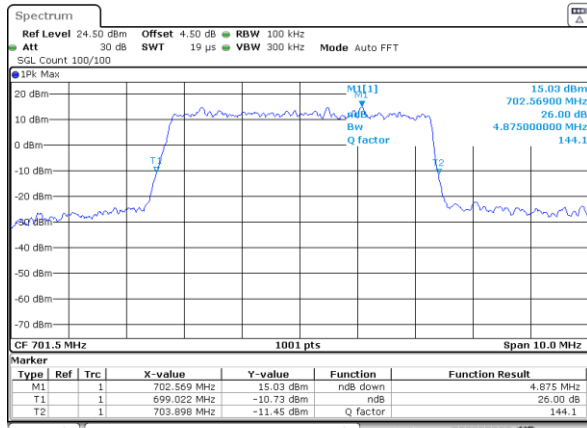


Date: 25.AUG.2020 10:15:30

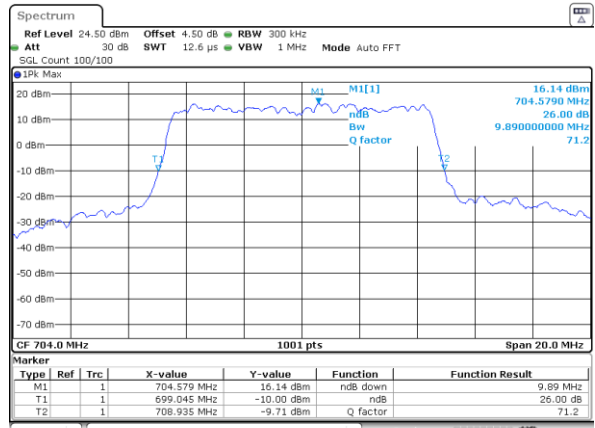


## LTE Band 12

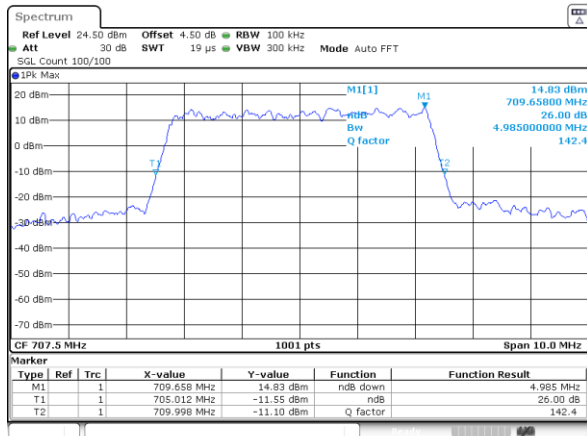
## Lowest Channel / 5MHz / 64QAM



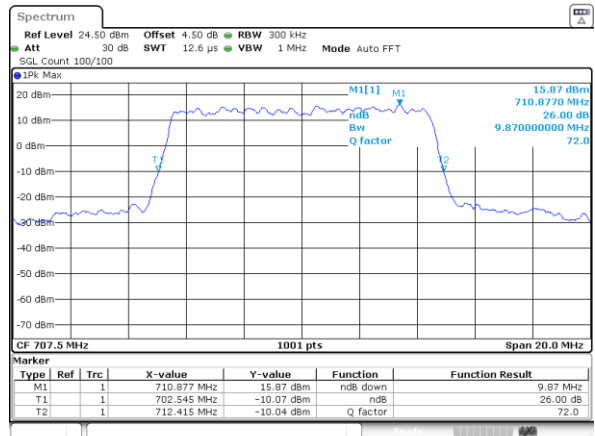
## Lowest Channel / 10MHz / 64QAM



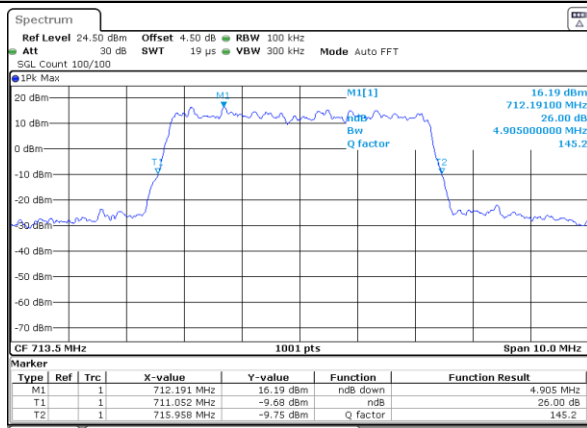
## Middle Channel / 5MHz / 64QAM



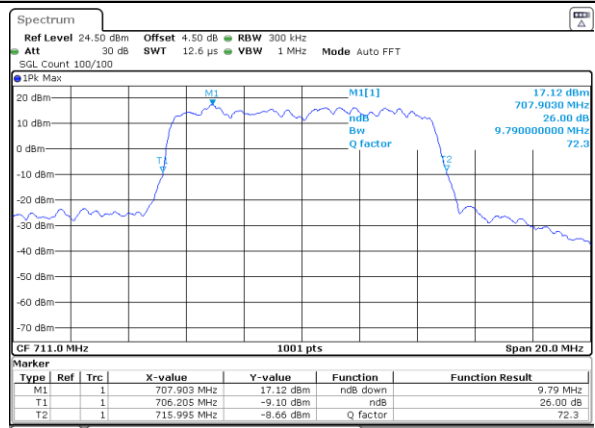
## Middle Channel / 10MHz / 64QAM



## Highest Channel / 5MHz / 64QAM



## Highest Channel / 10MHz / 64QAM



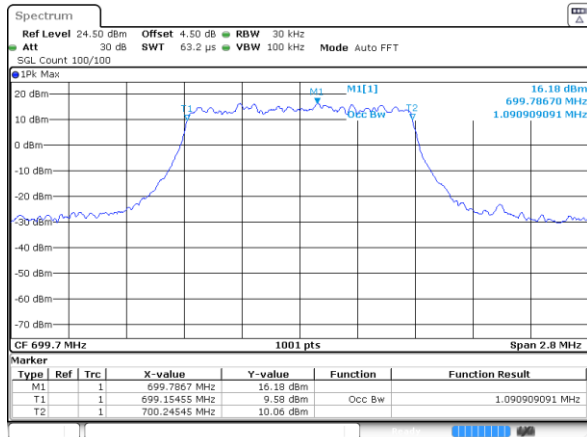
**Occupied Bandwidth**

| Mode       | LTE Band 12 : 99%OBW(MHz) |       |       |       |       |       |       |       |
|------------|---------------------------|-------|-------|-------|-------|-------|-------|-------|
| BW         | 1.4MHz                    |       | 3MHz  |       | 5MHz  |       | 10MHz |       |
| Mod.       | QPSK                      | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM | QPSK  | 16QAM |
| Lowest CH  | 1.09                      | 1.10  | 2.71  | 2.69  | 4.50  | 4.49  | 9.03  | 9.01  |
| Middle CH  | 1.09                      | 1.09  | 2.72  | 2.73  | 4.49  | 4.50  | 9.03  | 9.01  |
| Highest CH | 1.10                      | 1.10  | 2.70  | 2.70  | 4.49  | 4.50  | 9.05  | 9.05  |
| Mode       | LTE Band 12 : 99%OBW(MHz) |       |       |       |       |       |       |       |
| BW         | 1.4MHz                    |       | 3MHz  |       | 5MHz  |       | 10MHz |       |
| Mod.       | 64QAM                     |       | 64QAM |       | 64QAM |       | 64QAM |       |
| Lowest CH  | 1.09                      | -     | 2.73  | -     | 4.49  | -     | 9.05  | -     |
| Middle CH  | 1.09                      | -     | 2.72  | -     | 4.50  | -     | 9.03  | -     |
| Highest CH | 1.08                      | -     | 2.74  | -     | 4.49  | -     | 8.93  | -     |



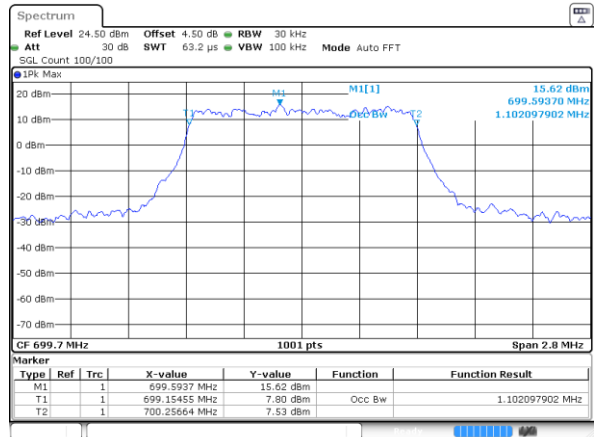
## LTE Band 12

## Lowest Channel / 1.4MHz / QPSK



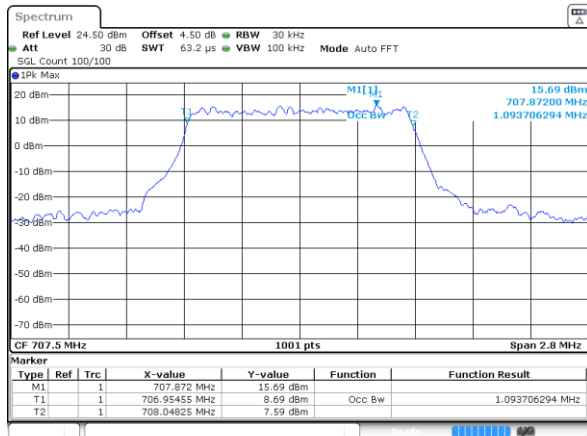
Date: 6 AUG 2020 14:48:46

## Lowest Channel / 1.4MHz / 16QAM



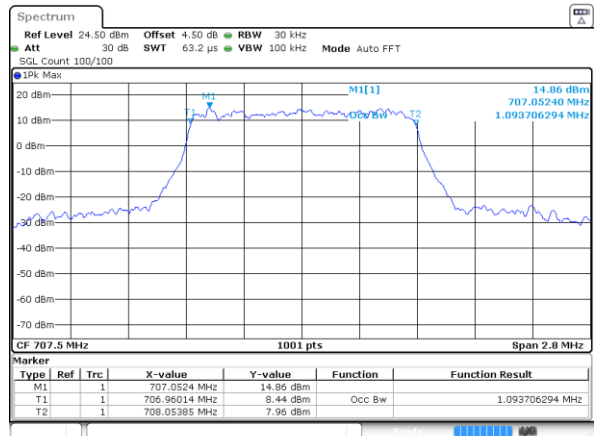
Date: 6 AUG 2020 14:52:13

## Middle Channel / 1.4MHz / QPSK



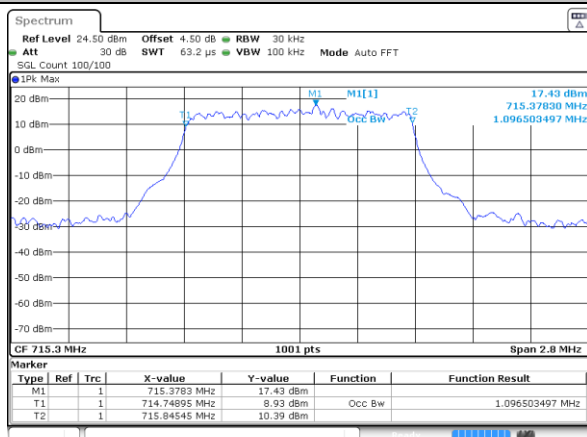
Date: 6 AUG 2020 15:03:30

## Middle Channel / 1.4MHz / 16QAM



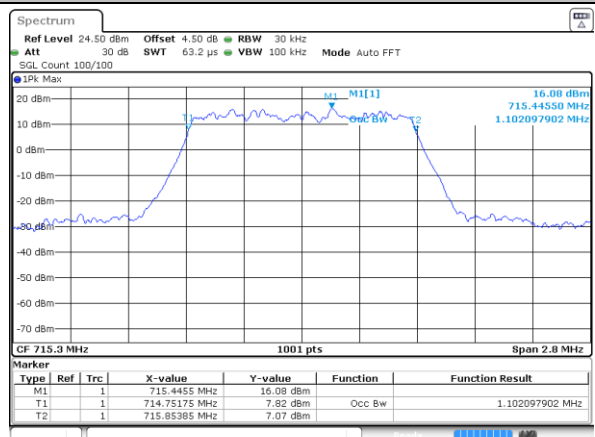
Date: 6 AUG 2020 15:03:04

## Highest Channel / 1.4MHz / QPSK



Date: 6 AUG 2020 15:04:10

## Highest Channel / 1.4MHz / 16QAM

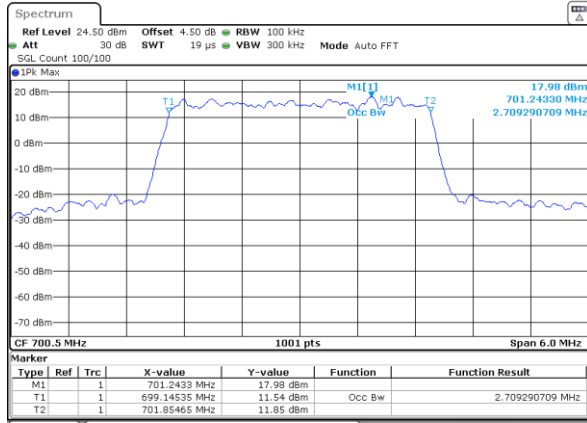


Date: 6 AUG 2020 15:06:16

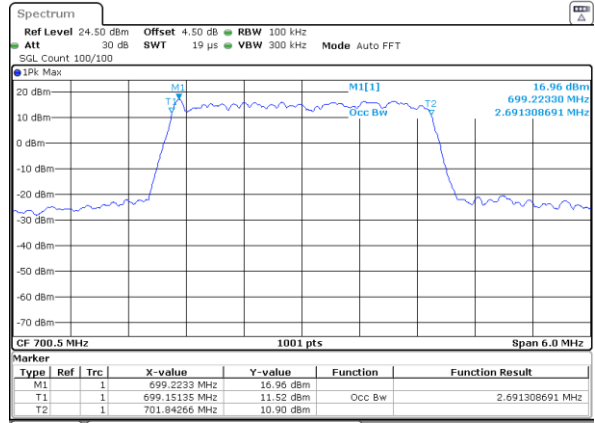


## LTE Band 12

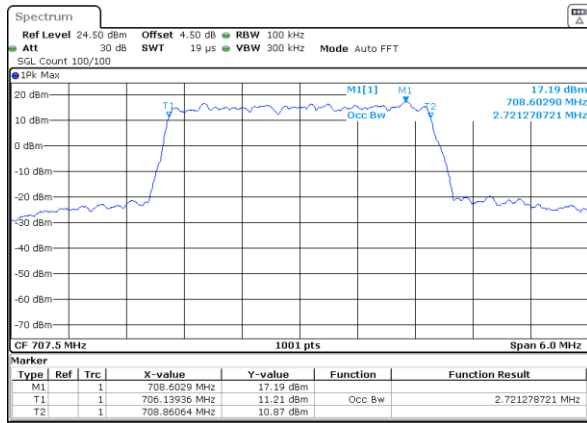
## Lowest Channel / 3MHz / QPSK



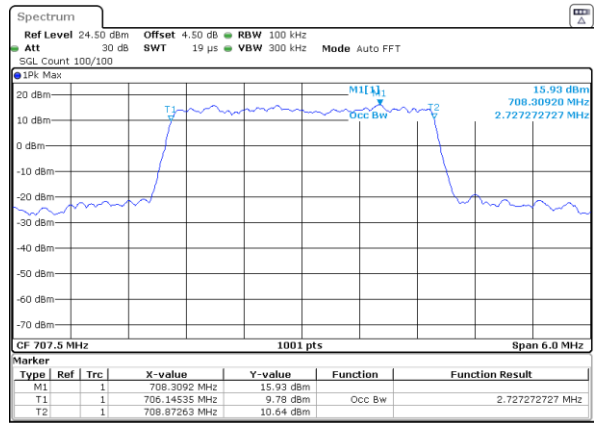
## Lowest Channel / 3MHz / 16QAM



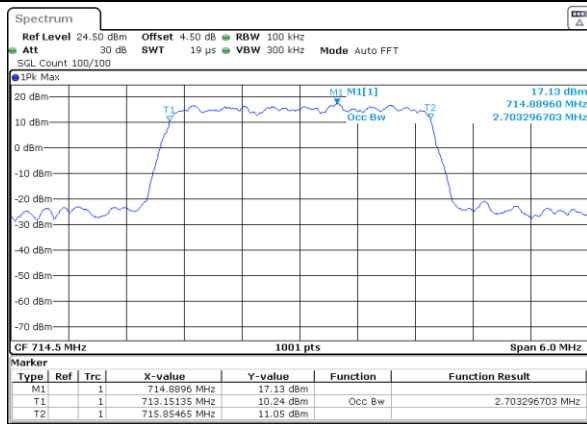
## Middle Channel / 3MHz / QPSK



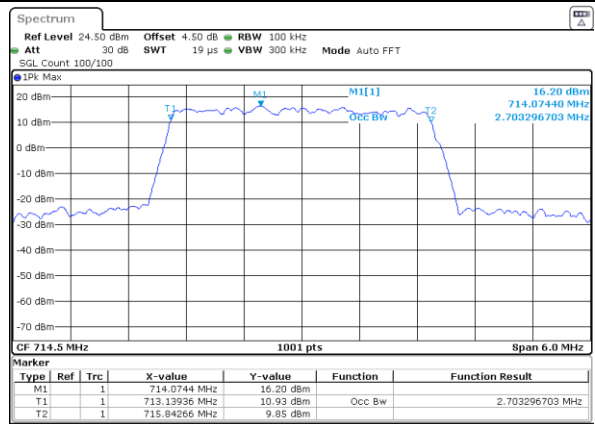
## Middle Channel / 3MHz / 16QAM



## Highest Channel / 3MHz / QPSK



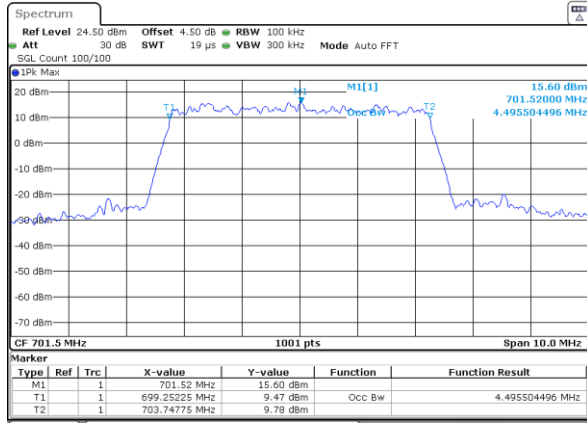
## Highest Channel / 3MHz / 16QAM





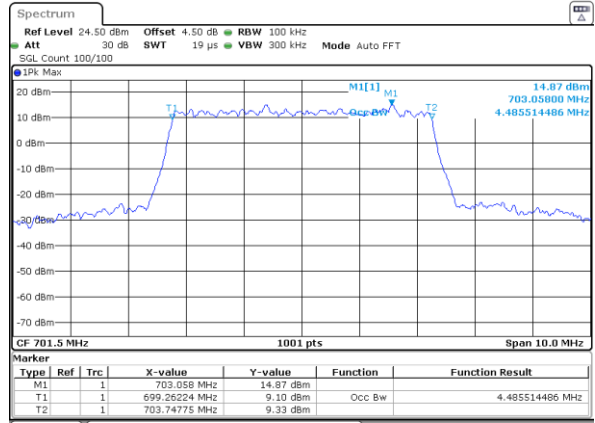
## LTE Band 12

## Lowest Channel / 5MHz / QPSK



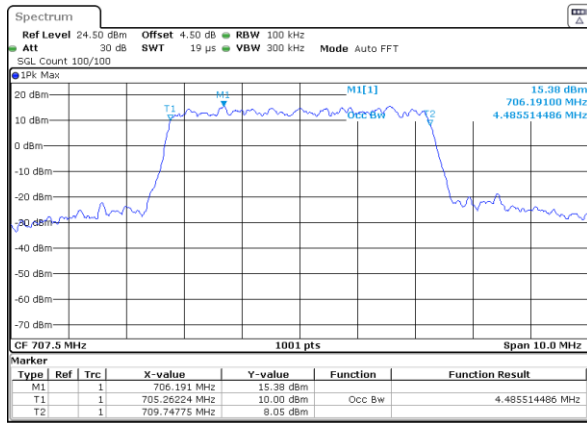
Date: 6 AUG 2020 15:28:02

## Lowest Channel / 5MHz / 16QAM



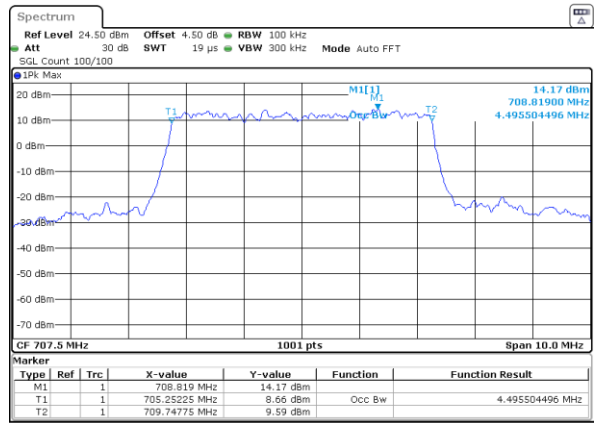
Date: 6 AUG 2020 15:28:59

## Middle Channel / 5MHz / QPSK



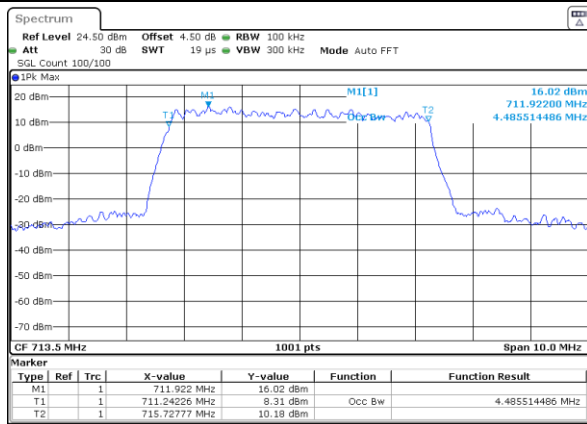
Date: 6 AUG 2020 15:35:27

## Middle Channel / 5MHz / 16QAM



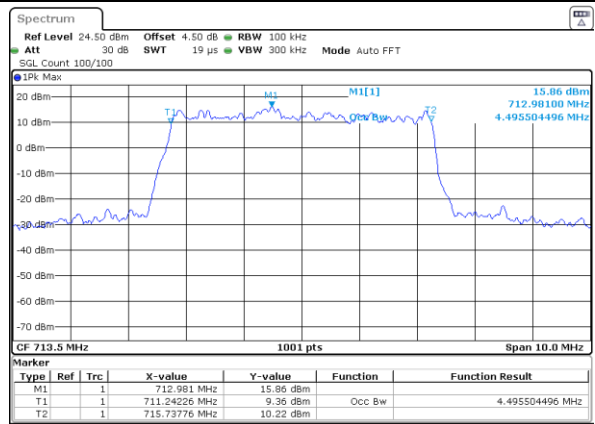
Date: 6 AUG 2020 15:34:35

## Highest Channel / 5MHz / QPSK



Date: 6 AUG 2020 15:37:03

## Highest Channel / 5MHz / 16QAM

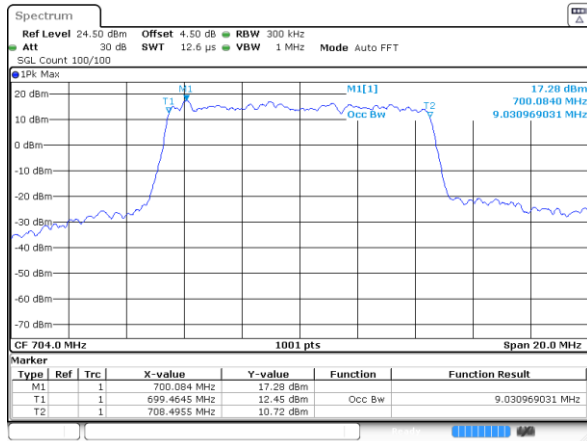


Date: 6 AUG 2020 15:38:04

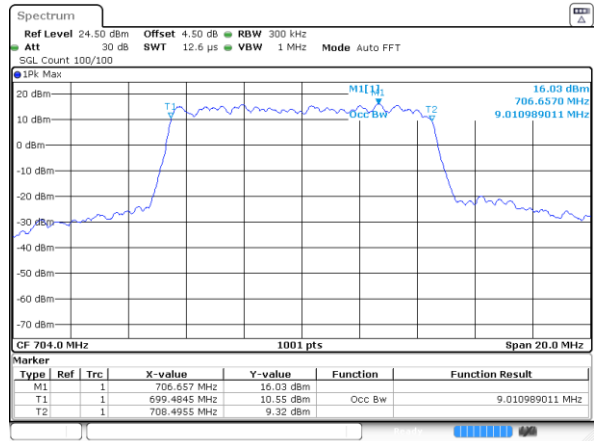


## LTE Band 12

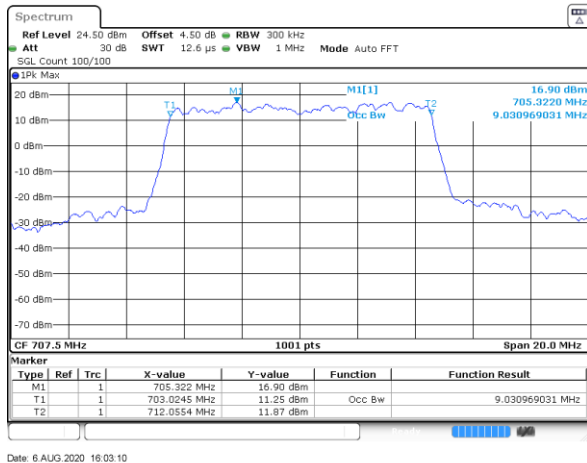
## Lowest Channel / 10MHz / QPSK



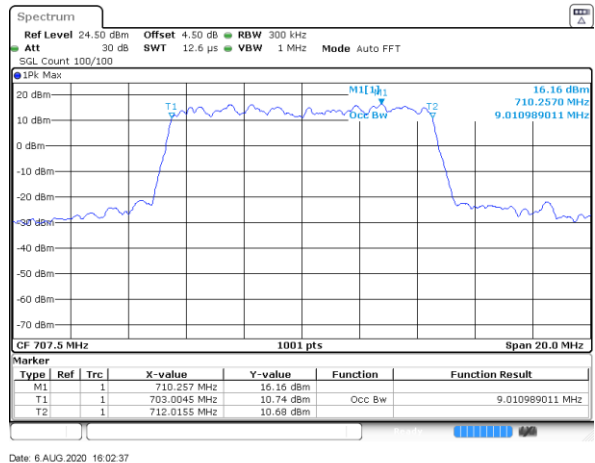
## Lowest Channel / 10MHz / 16QAM



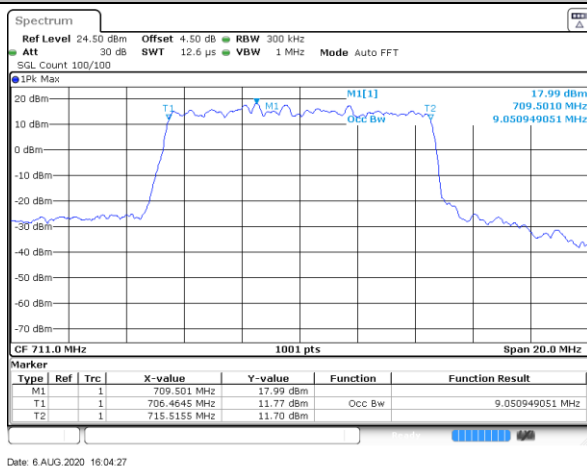
## Middle Channel / 10MHz / QPSK



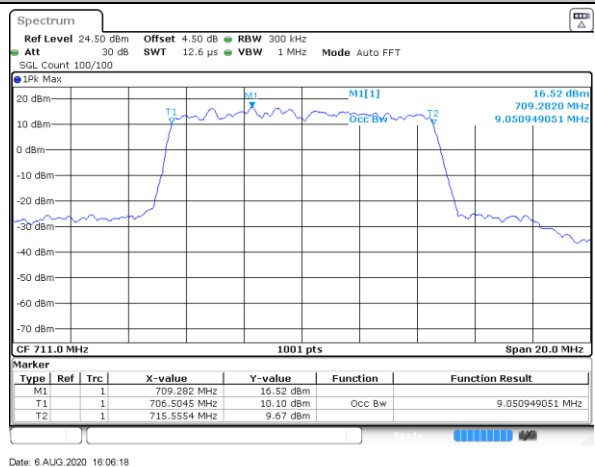
## Middle Channel / 10MHz / 16QAM



## Highest Channel / 10MHz / QPSK



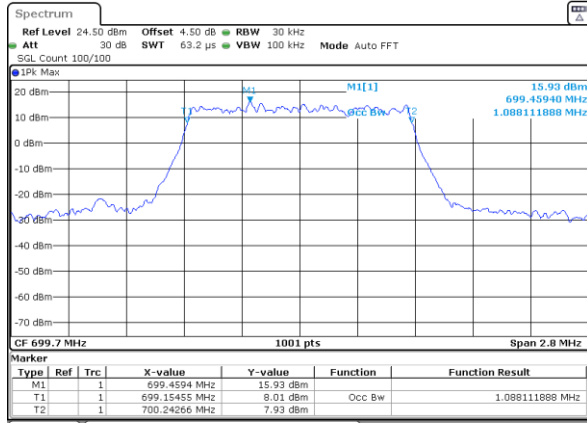
## Highest Channel / 10MHz / 16QAM



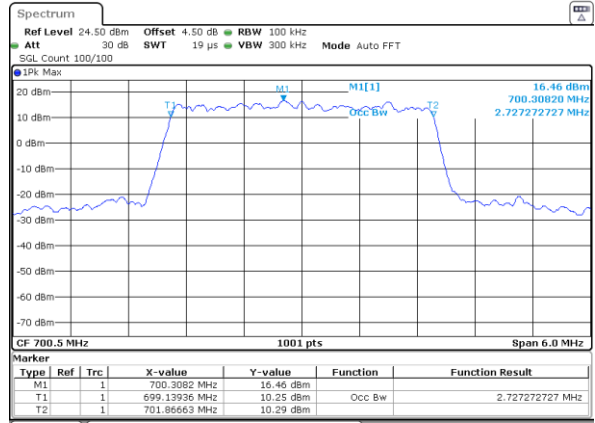


## LTE Band 12

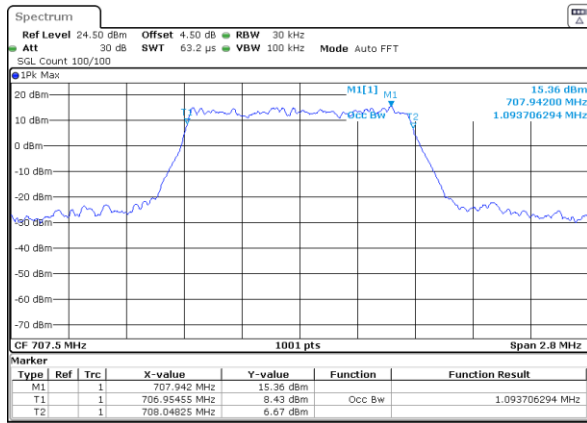
## Lowest Channel / 1.4MHz / 64QAM



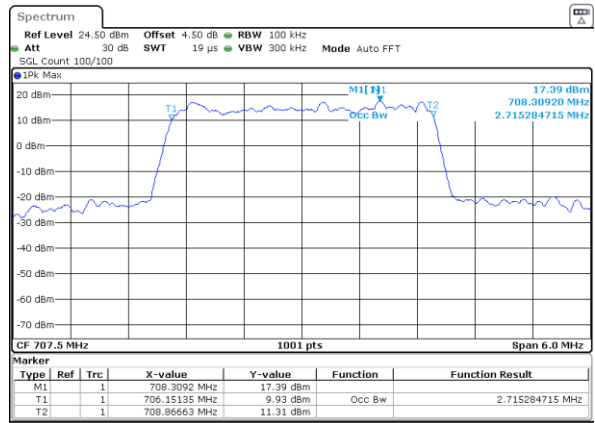
## Lowest Channel / 3MHz / 64QAM



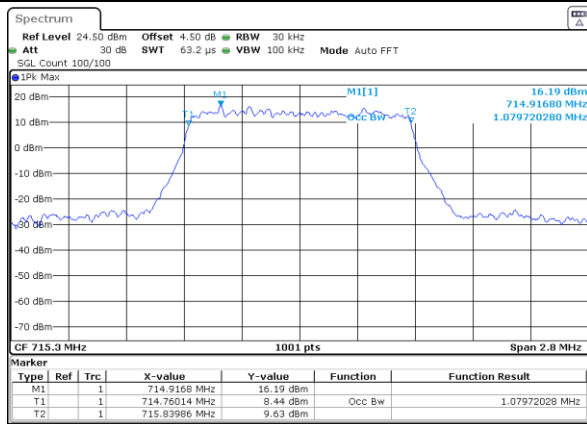
## Middle Channel / 1.4MHz / 64QAM



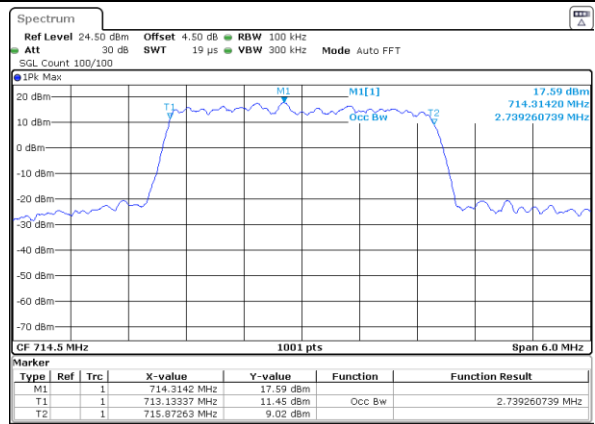
## Middle Channel / 3MHz / 64QAM



## Highest Channel / 1.4MHz / 64QAM



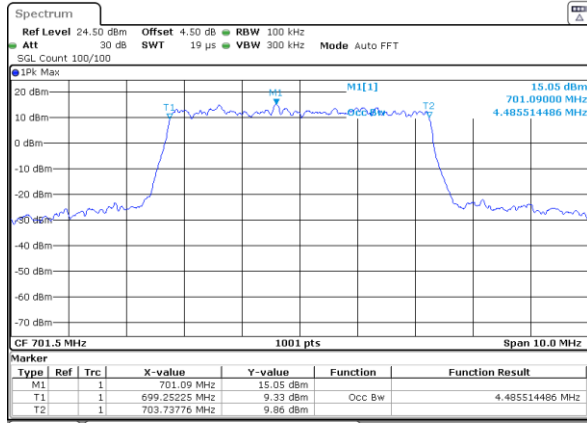
## Highest Channel / 3MHz / 64QAM



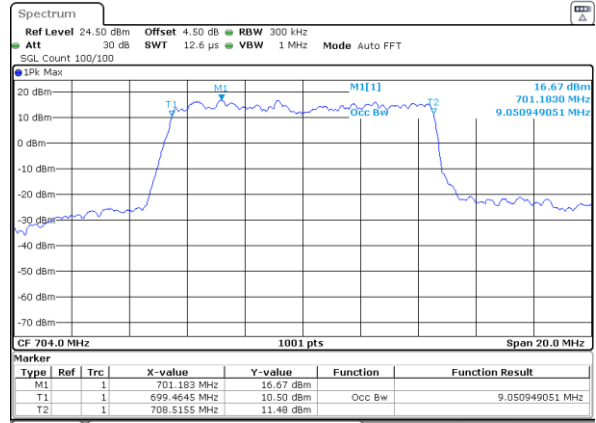


## LTE Band 12

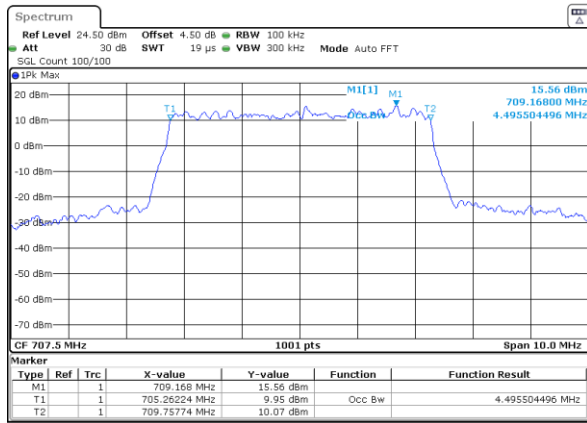
## Lowest Channel / 5MHz / 64QAM



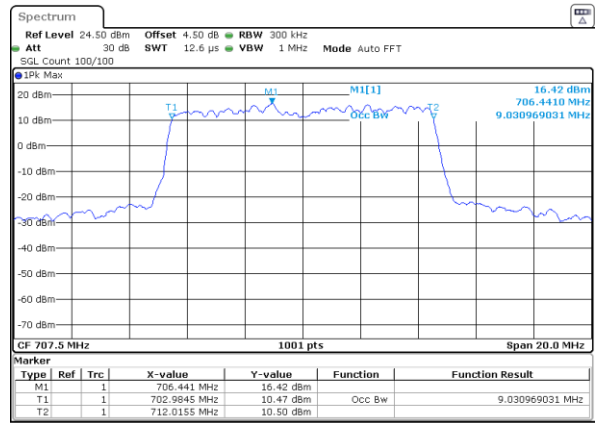
## Lowest Channel / 10MHz / 64QAM



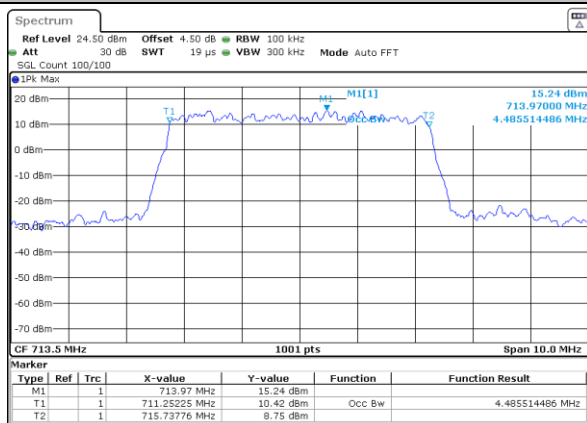
## Middle Channel / 5MHz / 64QAM



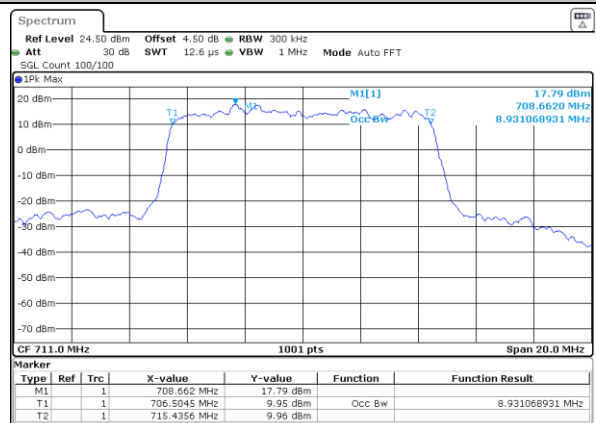
## Middle Channel / 10MHz / 64QAM

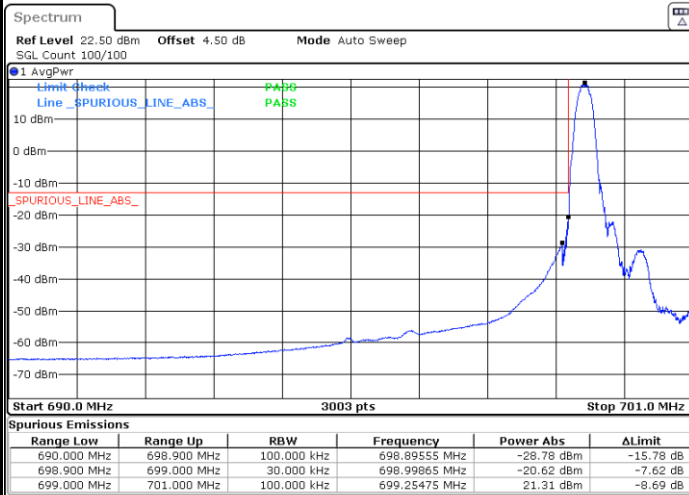
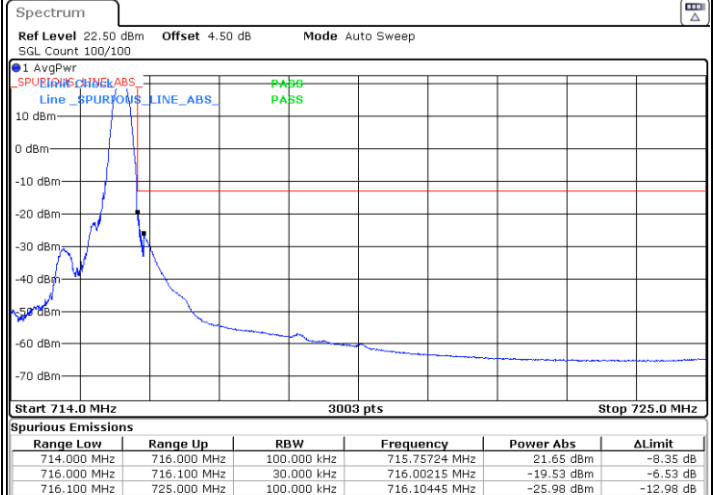
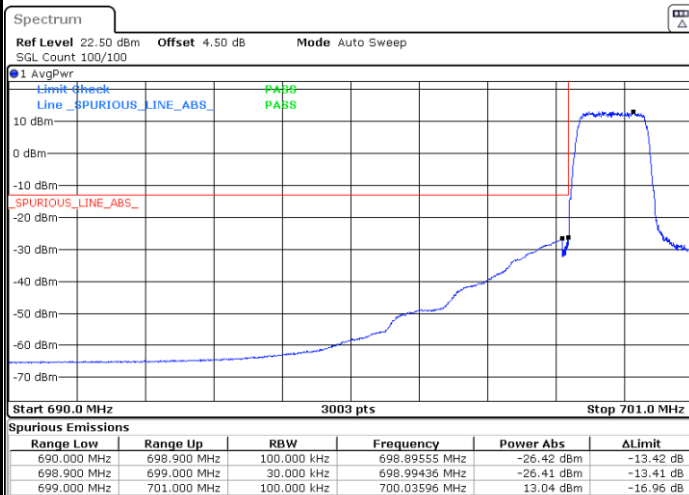
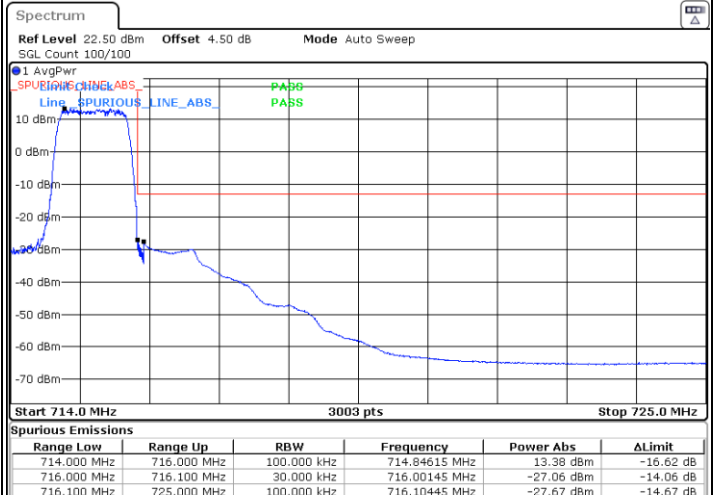


## Highest Channel / 5MHz / 64QAM



## Highest Channel / 10MHz / 64QAM

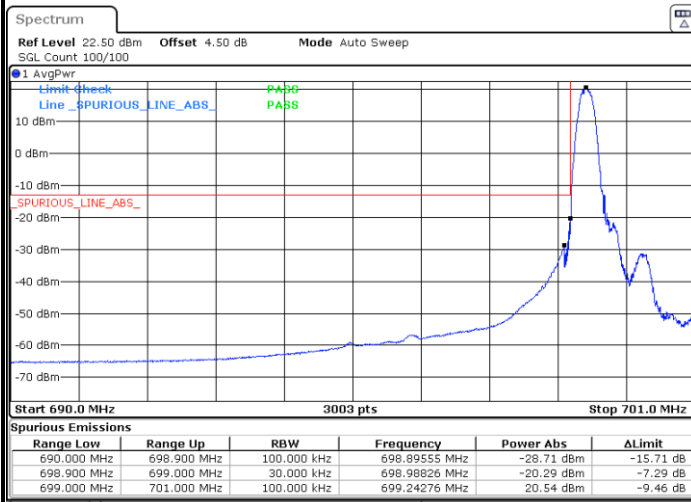


**Conducted Band Edge****LTE Band 12 / 1.4MHz / QPSK****Lowest Band Edge / 1 RB****Highest Band Edge / 1RB****Lowest Band Edge / Full RB****Highest Band Edge / Full RB**

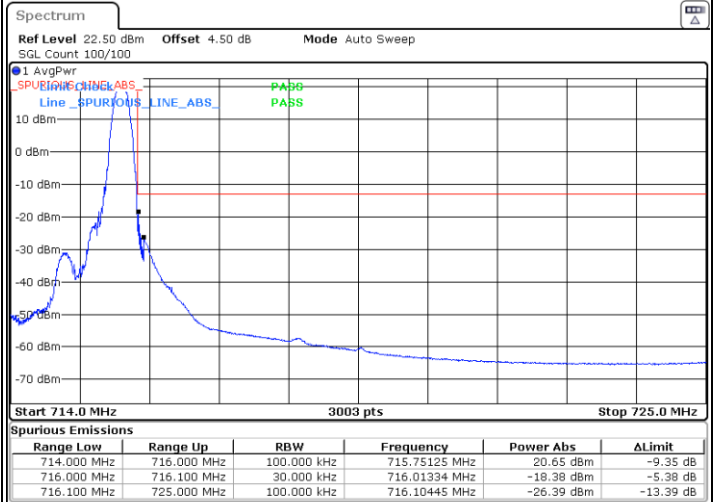


## LTE Band 12 / 1.4MHz / 16QAM

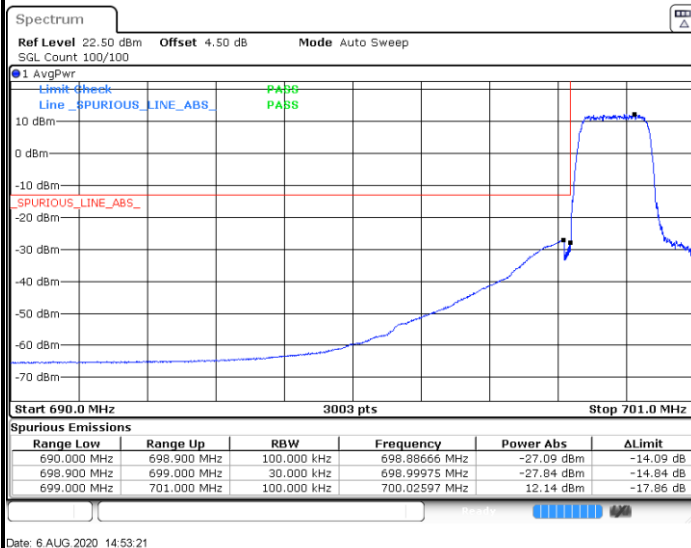
## Lowest Band Edge / 1 RB



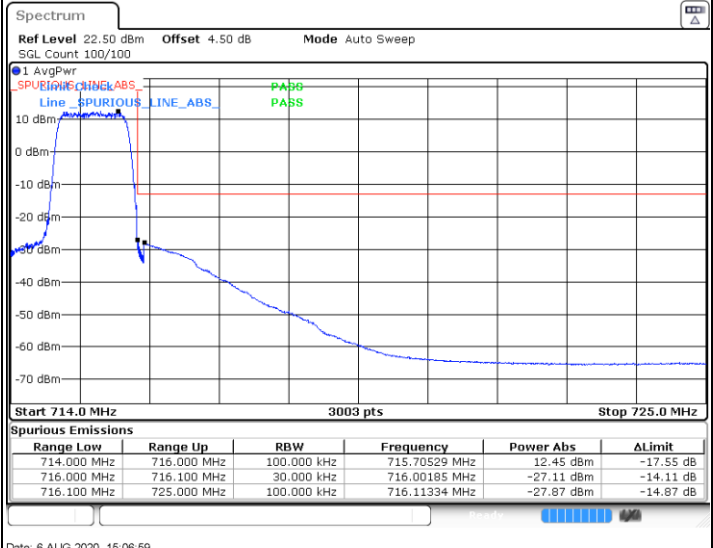
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



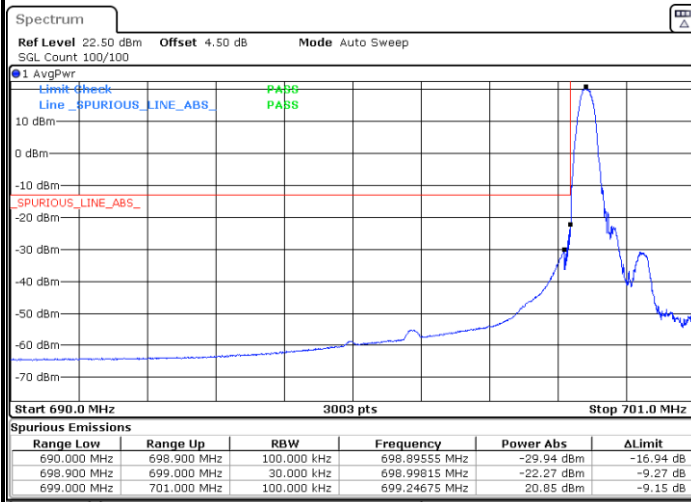
## Highest Band Edge / Full RB



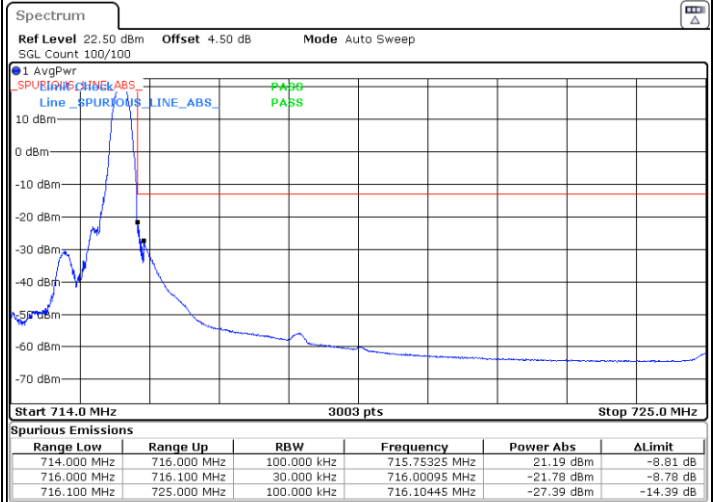


## LTE Band 12 / 1.4MHz / 64QAM

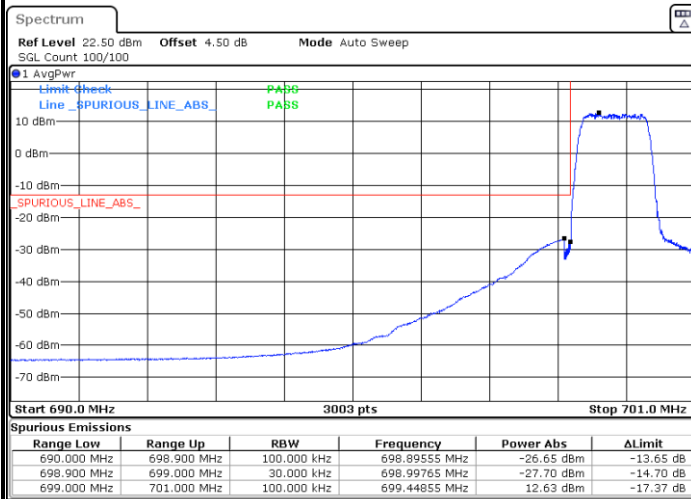
## Lowest Band Edge / 1 RB



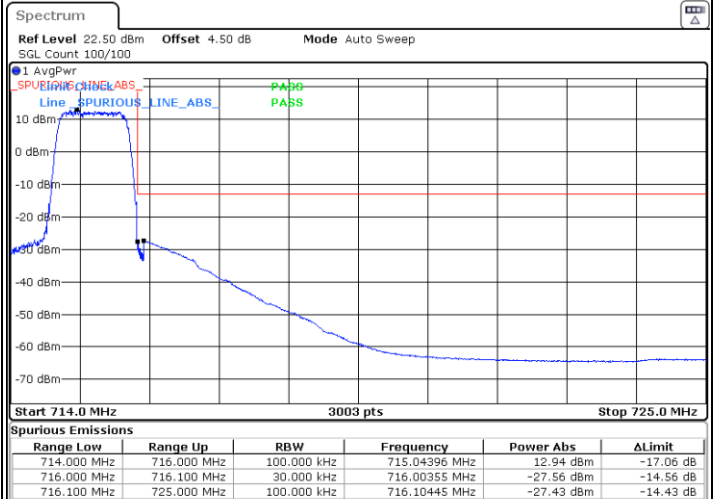
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



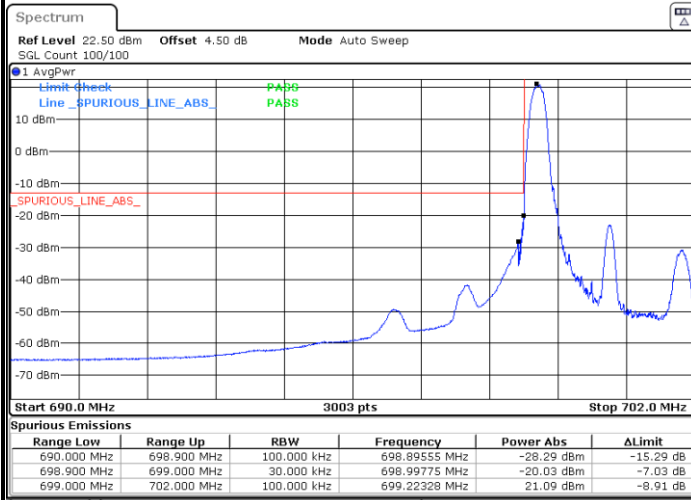
## Highest Band Edge / Full RB



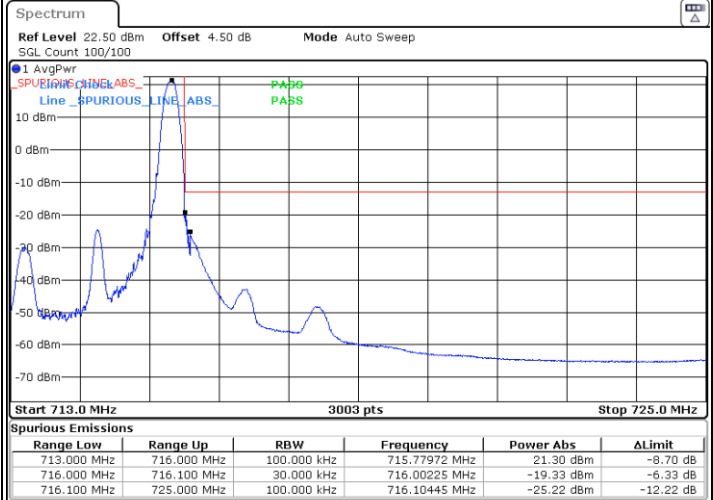


## LTE Band 12 / 3MHz / QPSK

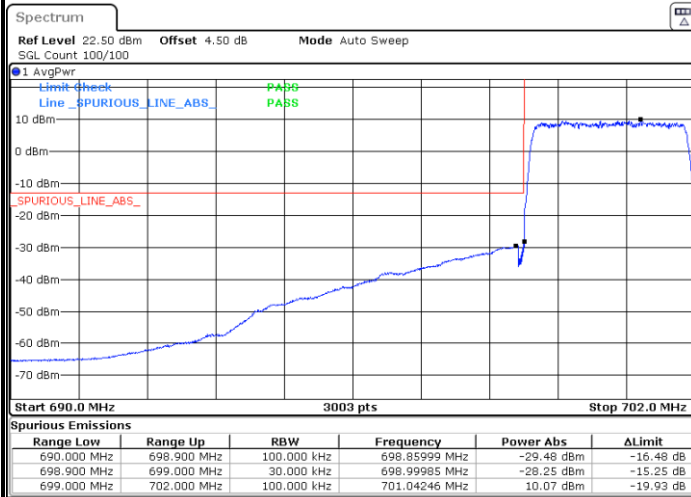
## Lowest Band Edge / 1RB



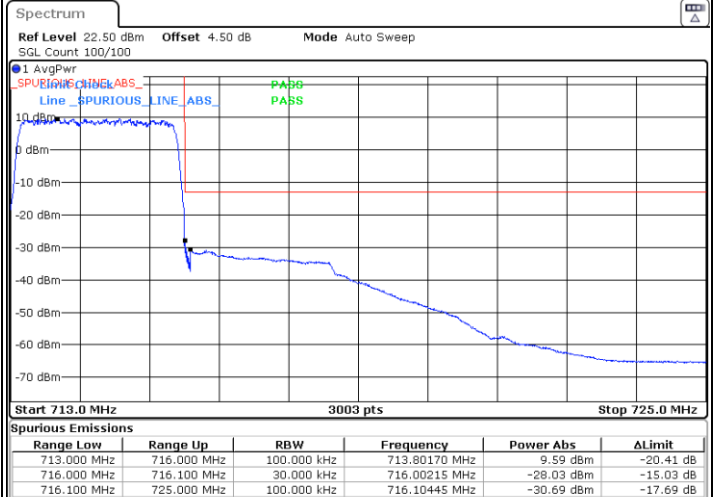
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



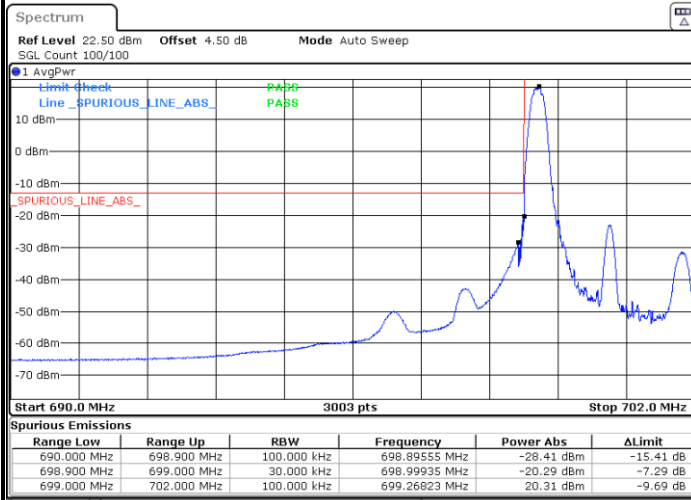
## Highest Band Edge / Full RB



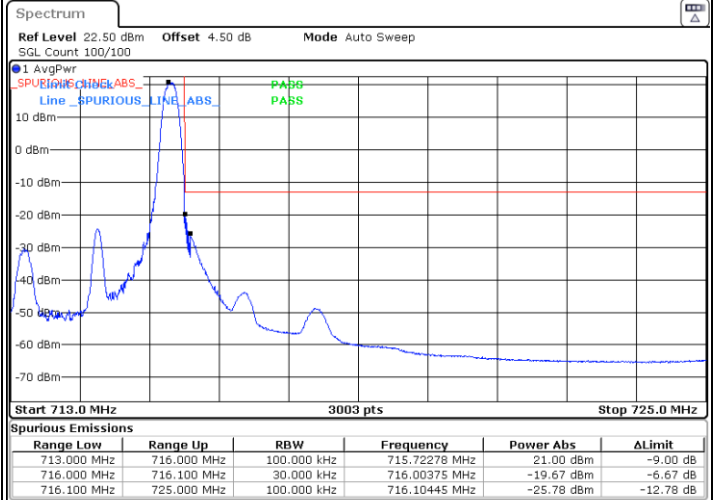


## LTE Band 12 / 3MHz / 16QAM

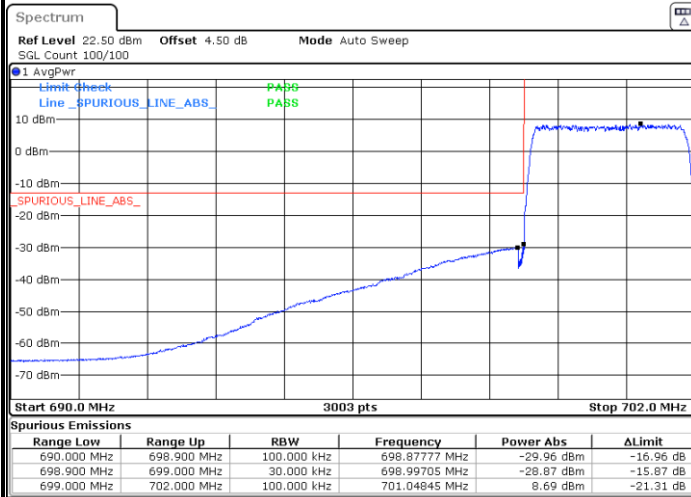
## Lowest Band Edge / 1 RB



## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



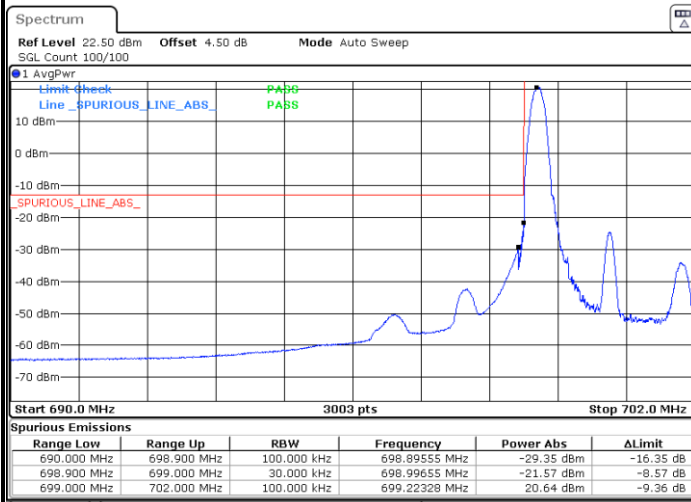
## Highest Band Edge / Full RB



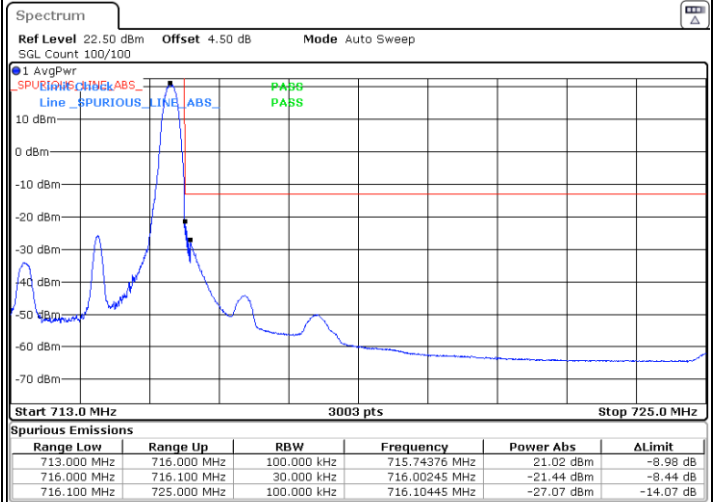


## LTE Band 12 / 3MHz / 64QAM

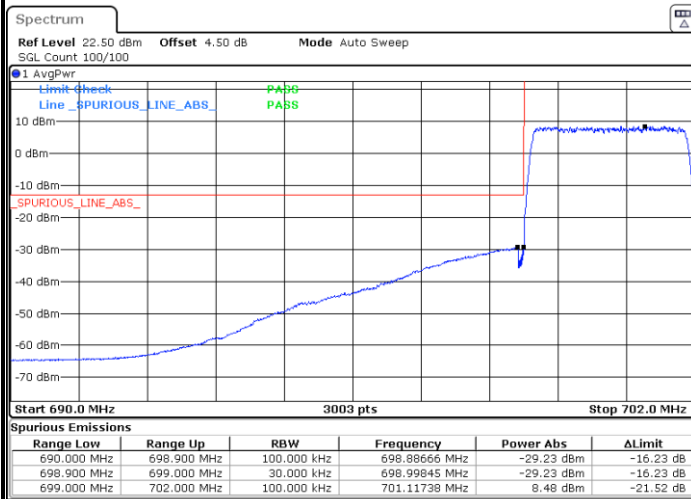
## Lowest Band Edge / 1 RB



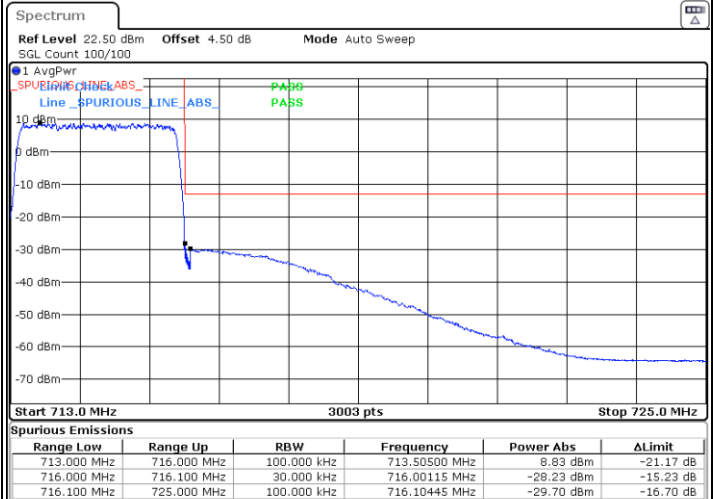
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



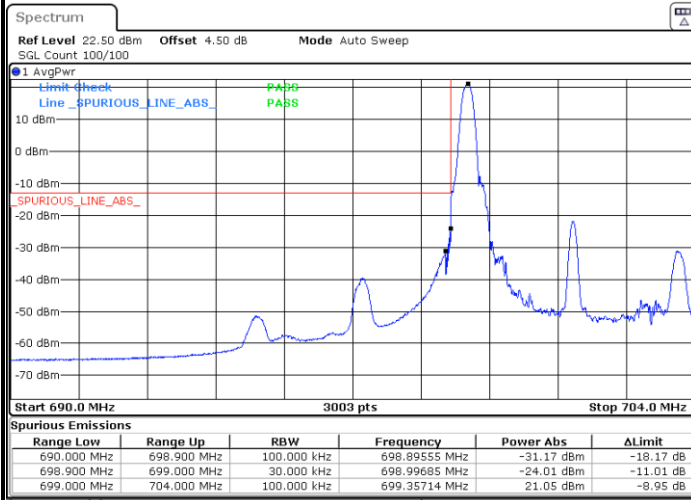
## Highest Band Edge / Full RB



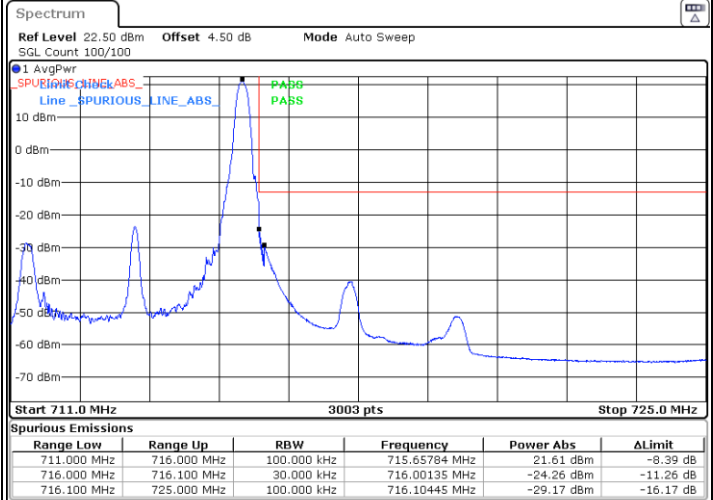


## LTE Band 12 / 5MHz / QPSK

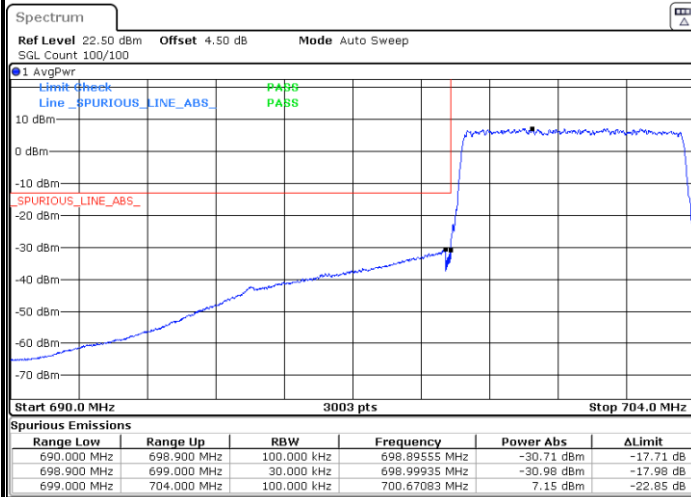
## Lowest Band Edge / 1 RB



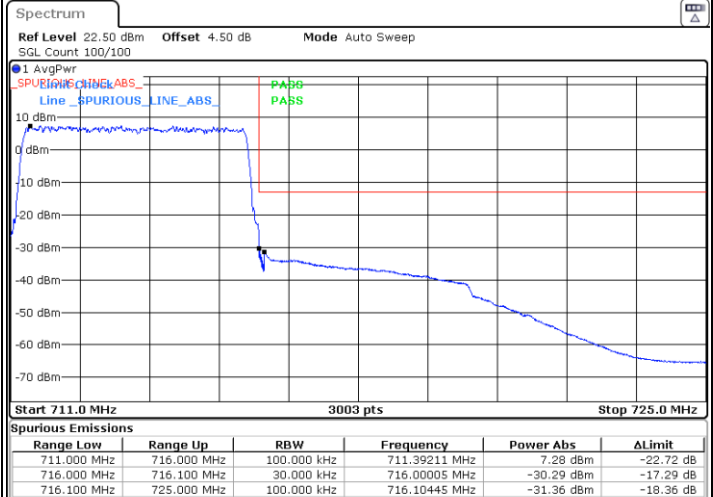
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



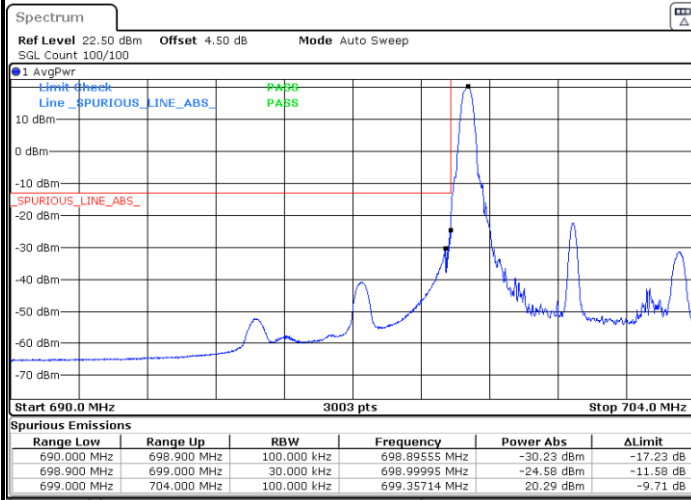
## Highest Band Edge / Full RB



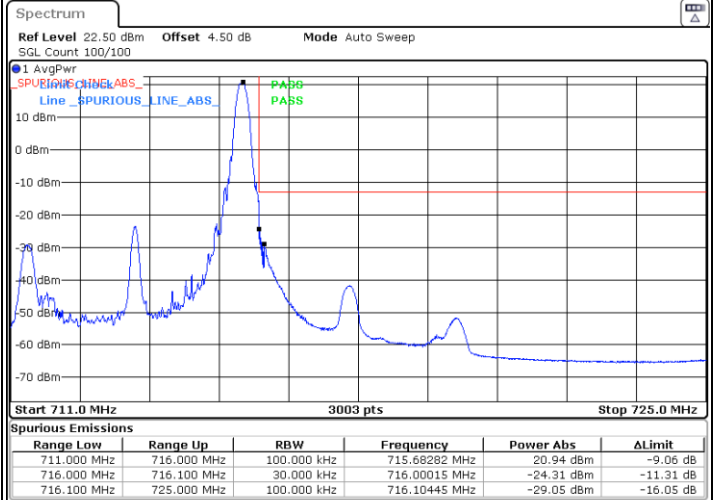


## LTE Band 12 / 5MHz / 16QAM

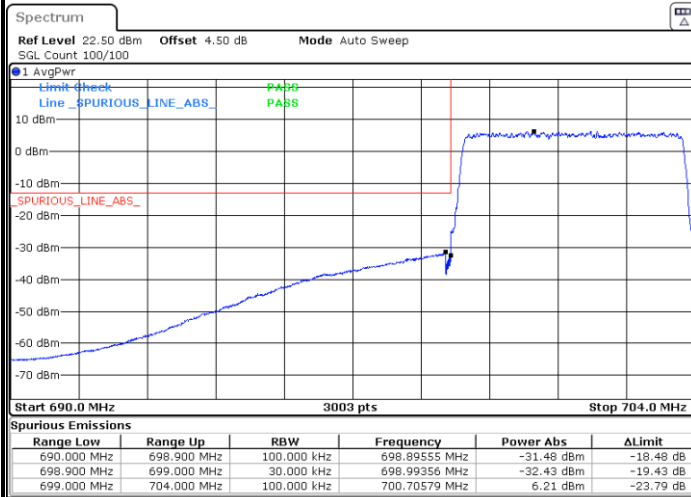
## Lowest Band Edge / 1RB



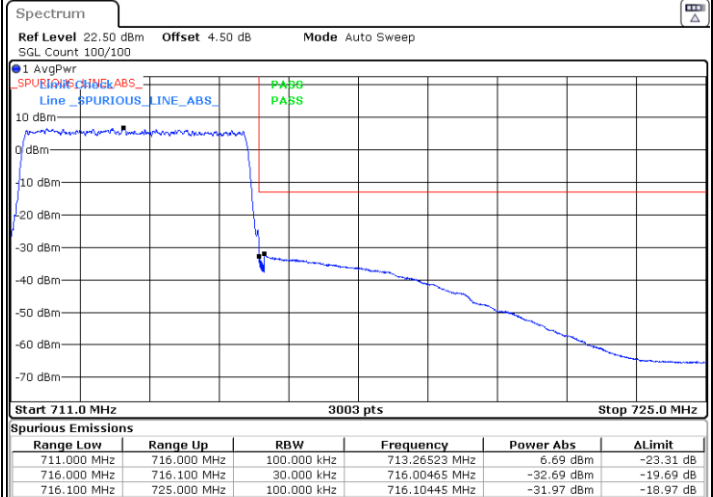
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



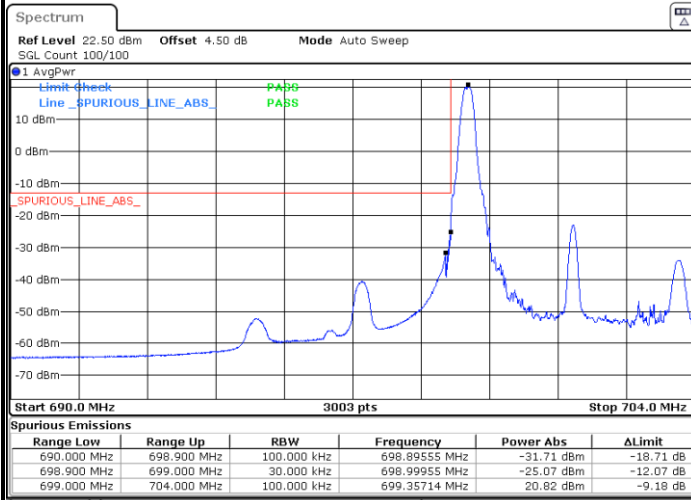
## Highest Band Edge / Full RB



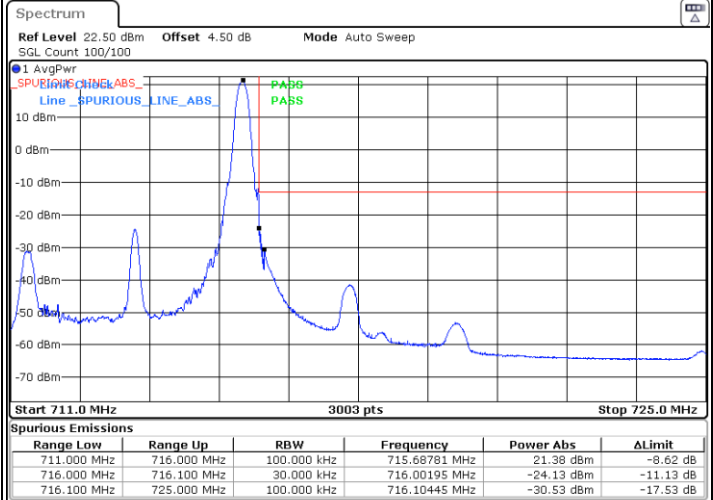


## LTE Band 12 / 5MHz / 64QAM

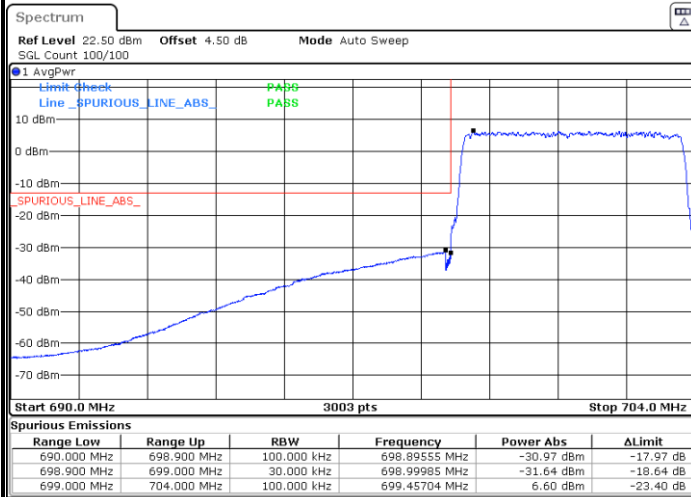
## Lowest Band Edge / 1RB



## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



## Highest Band Edge / Full RB

