



## LTE Band 12

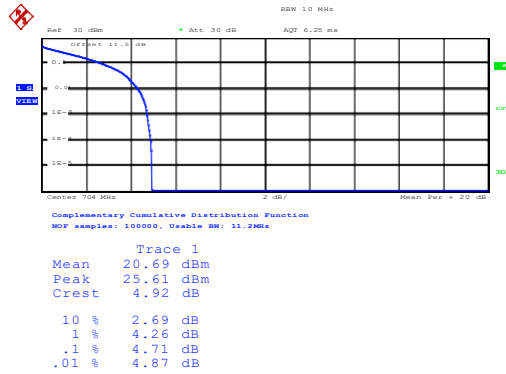
### Peak-to-Average Ratio

| Mode       | LTE Band 12 / 10MHz |         |       |         |             |
|------------|---------------------|---------|-------|---------|-------------|
| Mod.       | QPSK                |         | 16QAM |         | Limit: 13dB |
| RB Size    | 1RB                 | Full RB | 1RB   | RB Size | Result      |
| Lowest CH  | 4.71                | 6.19    | 5.96  | 6.92    | PASS        |
| Middle CH  | 5.38                | 6.25    | 6.63  | 7.08    |             |
| Highest CH | 5.61                | 6.12    | 6.7   | 6.79    |             |

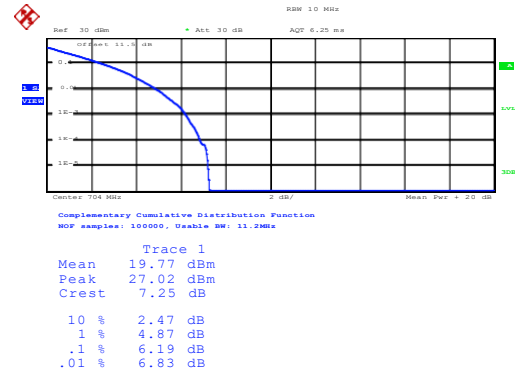


## LTE Band 12 / 10MHz / QPSK

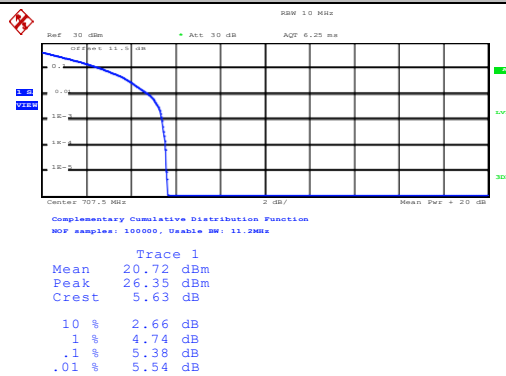
## Lowest Channel / 1RB



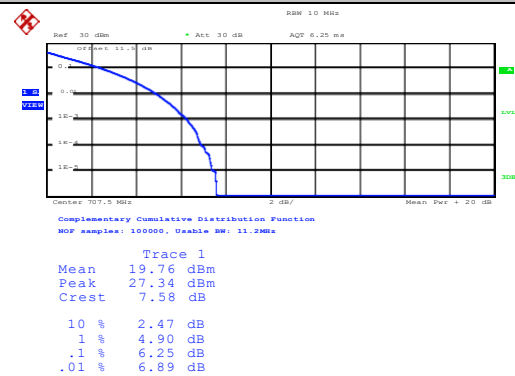
## Lowest Channel / Full RB



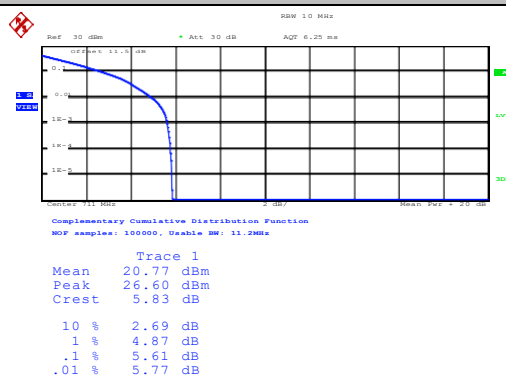
## Middle Channel / 1RB



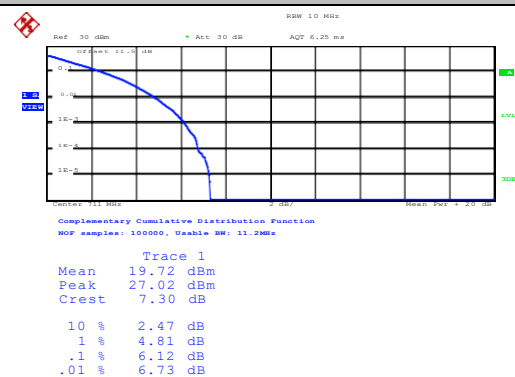
## Middle Channel / Full RB



## Highest Channel / 1RB



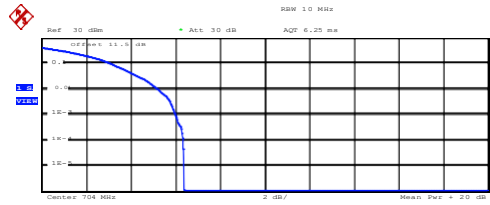
## Highest Channel / Full RB





## LTE Band 12 / 10MHz / 16QAM

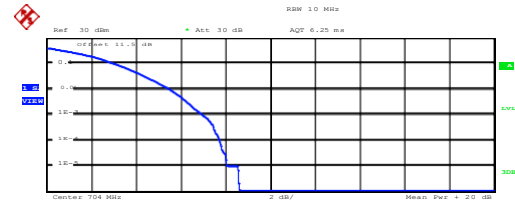
## Lowest Channel / 1RB



Complementary Cumulative Distribution Function  
NOF samples: 100000, Usable BW: 11.2MHz

Trace 1  
Mean 19.61 dBm  
Peak 25.97 dBm  
Crest 6.36 dB  
  
10 % 3.08 dB  
1 % 5.16 dB  
.1 % 5.96 dB  
.01 % 6.31 dB

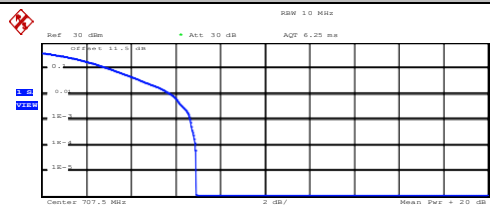
## Lowest Channel / Full RB



Complementary Cumulative Distribution Function  
NOF samples: 100000, Usable BW: 11.2MHz

Trace 1  
Mean 19.07 dBm  
Peak 27.66 dBm  
Crest 8.59 dB  
  
10 % 3.01 dB  
1 % 5.45 dB  
.1 % 6.92 dB  
.01 % 7.69 dB

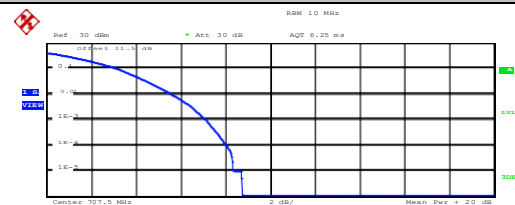
## Middle Channel / 1RB



Complementary Cumulative Distribution Function  
NOF samples: 100000, Usable BW: 11.2MHz

Trace 1  
Mean 19.72 dBm  
Peak 26.64 dBm  
Crest 6.91 dB  
  
10 % 3.01 dB  
1 % 5.74 dB  
.1 % 6.63 dB  
.01 % 6.86 dB

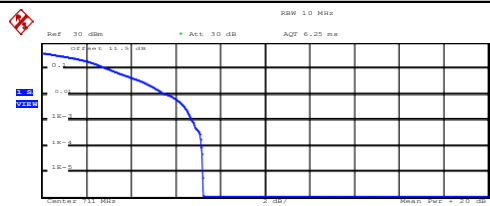
## Middle Channel / Full RB



Complementary Cumulative Distribution Function  
NOF samples: 100000, Usable BW: 11.2MHz

Trace 1  
Mean 18.82 dBm  
Peak 27.55 dBm  
Crest 8.74 dB  
  
10 % 3.14 dB  
1 % 5.54 dB  
.1 % 7.08 dB  
.01 % 8.01 dB

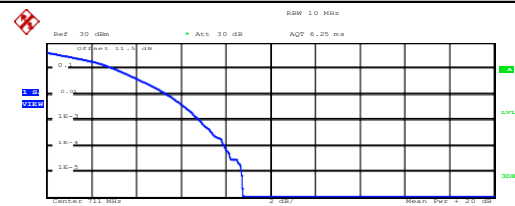
## Highest Channel / 1RB



Complementary Cumulative Distribution Function  
NOF samples: 100000, Usable BW: 11.2MHz

Trace 1  
Mean 20.03 dBm  
Peak 27.23 dBm  
Crest 7.20 dB  
  
10 % 2.95 dB  
1 % 5.61 dB  
.1 % 6.70 dB  
.01 % 7.15 dB

## Highest Channel / Full RB



Complementary Cumulative Distribution Function  
NOF samples: 100000, Usable BW: 11.2MHz

Trace 1  
Mean 18.70 dBm  
Peak 27.45 dBm  
Crest 8.75 dB  
  
10 % 3.01 dB  
1 % 5.35 dB  
.1 % 6.79 dB  
.01 % 7.92 dB



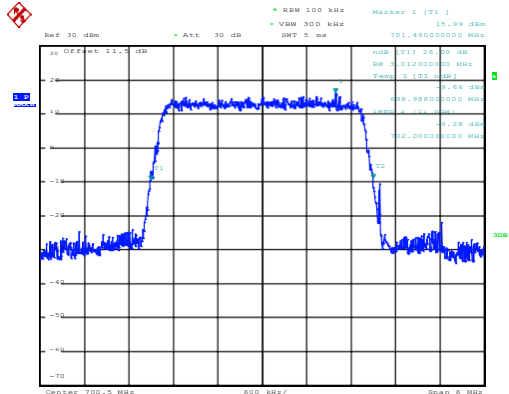
## 26dB Bandwidth

| Mode       | LTE Band 12 : 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  | 1.25                       | 1.28  | 3.01 | 2.97  | 4.97 | 4.98  | 10.12 | 10    | -     | -     | -     | -     |
| Middle CH  | 1.26                       | 1.26  | 2.98 | 3.02  | 5.04 | 5     | 10.06 | 10.06 | -     | -     | -     | -     |
| Highest CH | 1.25                       | 1.27  | 3.02 | 3.02  | 5.04 | 5.01  | 10.04 | 10.06 | -     | -     | -     | -     |

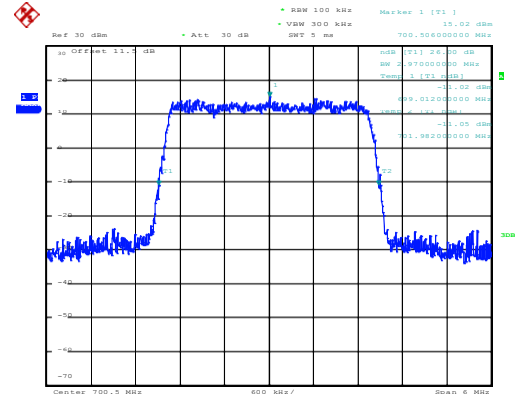


# LTE Band 12

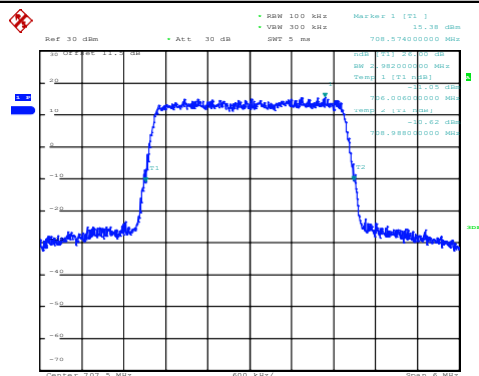
## Lowest Channel / 3MHz / QPSK



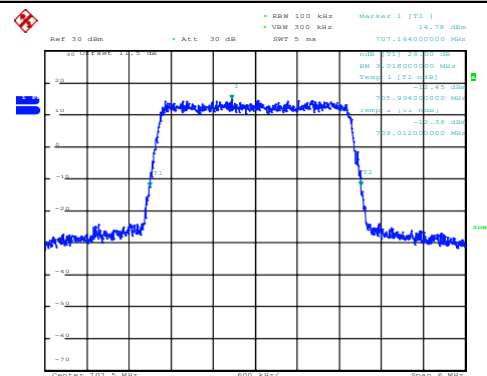
## Lowest Channel / 3MHz / 16QAM



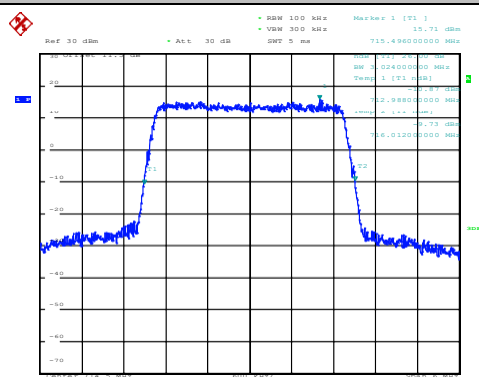
## Middle Channel / 3MHz / QPSK



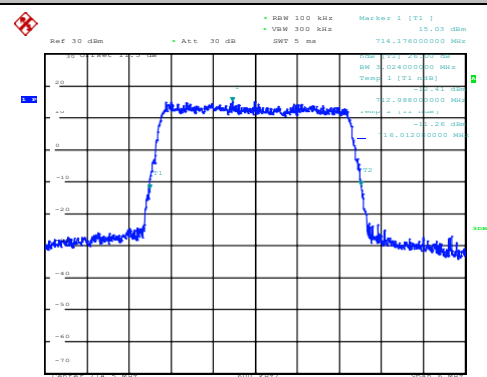
## Middle Channel / 3MHz / 16QAM



## Highest Channel / 3MHz / QPSK



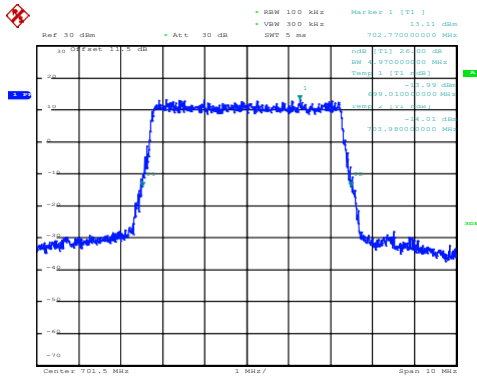
## Highest Channel / 3MHz / 16QAM



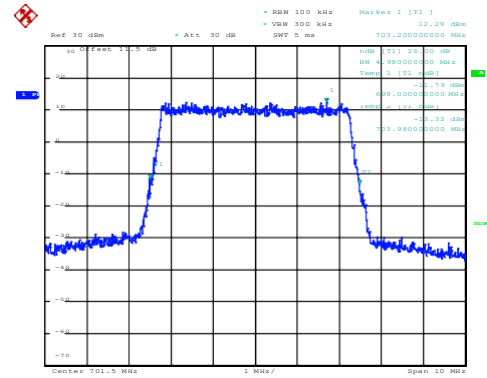


LTE Band 12

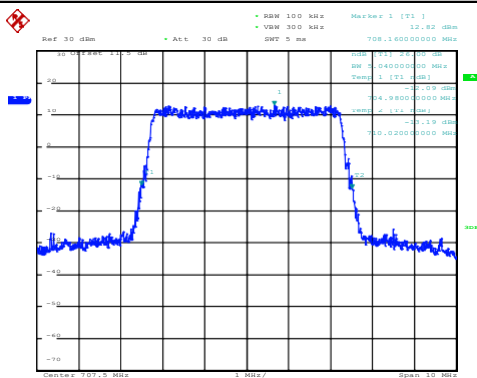
Lowest Channel / 5MHz / QPSK



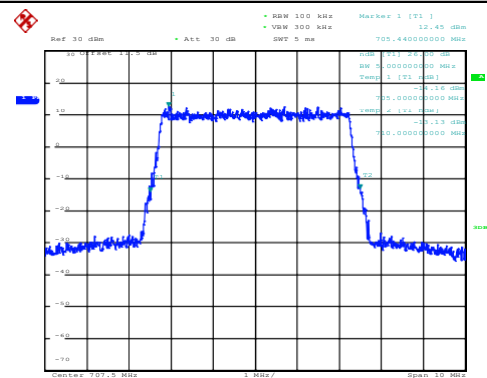
Lowest Channel / 5MHz / 16QAM



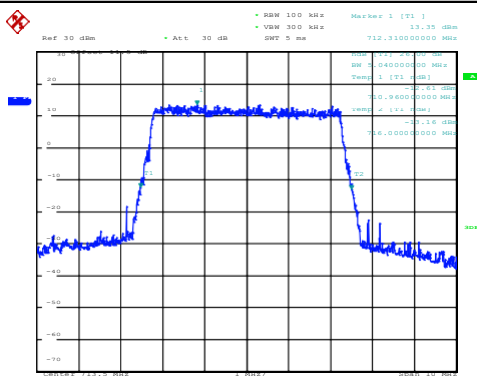
Middle Channel / 5MHz / QPSK



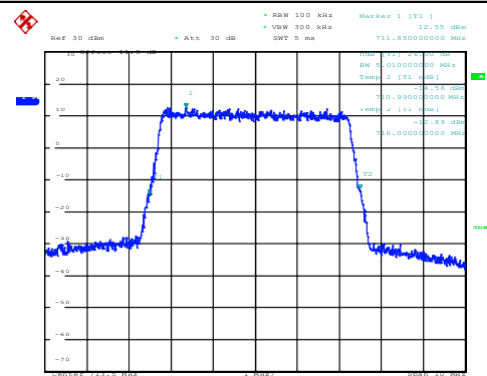
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK



Highest Channel / 5MHz / 16QAM









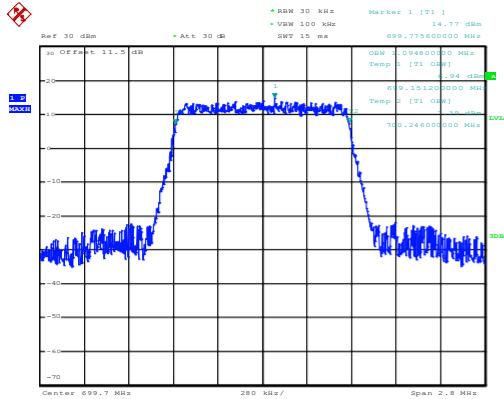
## Occupied Bandwidth

| Mode       | LTE Band 12 : 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  | 1.09                      | 1.09  | 2.72 | 2.72  | 4.51 | 4.51  | 9.1   | 9.06  | -     | -     | -     | -     |
| Middle CH  | 1.1                       | 1.1   | 2.72 | 2.72  | 4.51 | 4.51  | 9.1   | 9.06  | -     | -     | -     | -     |
| Highest CH | 1.1                       | 1.1   | 2.72 | 2.72  | 4.5  | 4.51  | 9.06  | 9.04  | -     | -     | -     | -     |

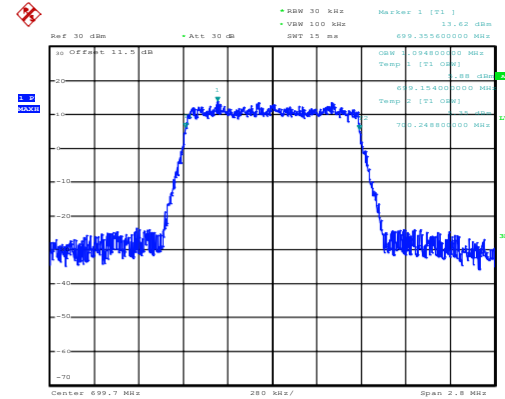


LTE Band 12

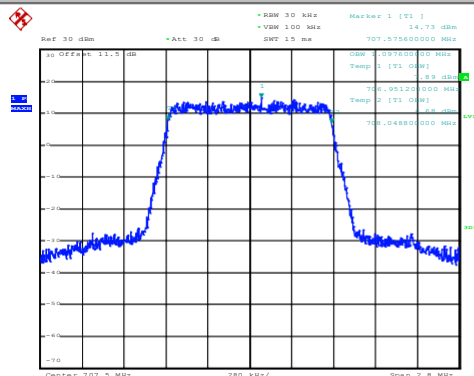
Lowest Channel / 1.4MHz / QPSK



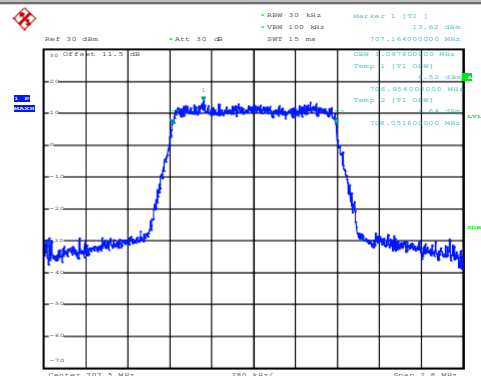
Lowest Channel / 1.4MHz / 16QAM



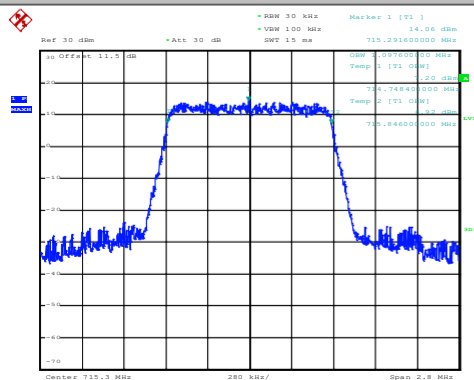
Middle Channel / 1.4MHz / QPSK



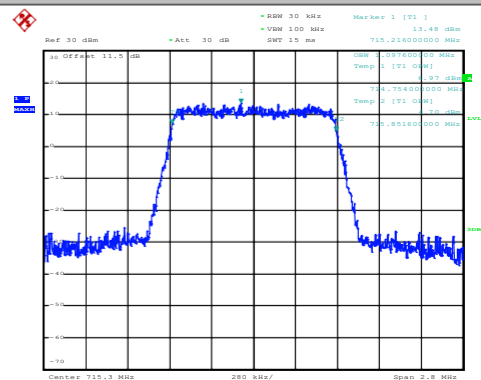
Middle Channel / 1.4MHz / 16QAM



Highest Channel / 1.4MHz / QPSK



Highest Channel / 1.4MHz / 16QAM



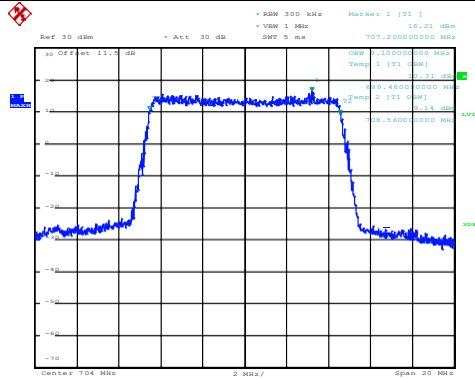




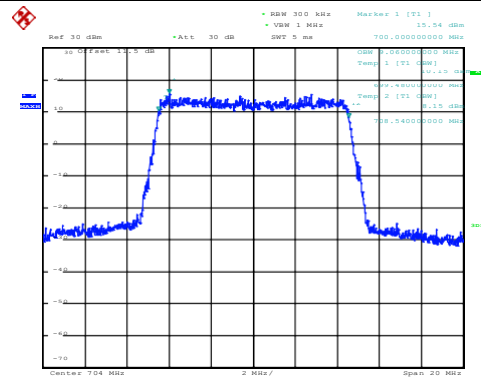


LTE Band 12

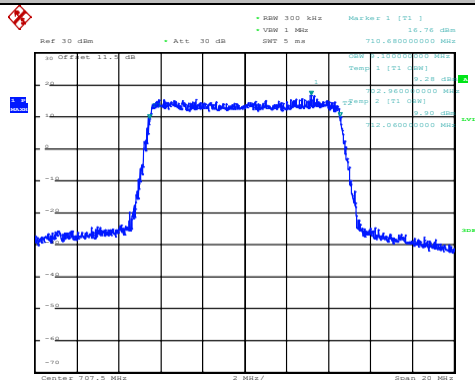
Lowest Channel / 10MHz / QPSK



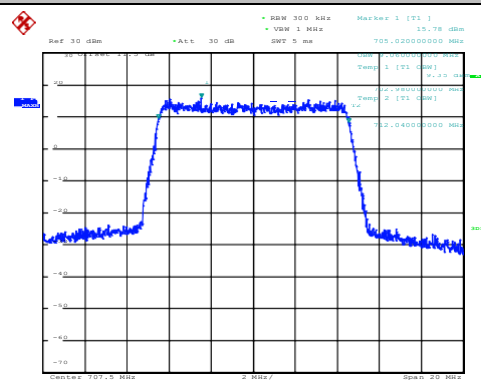
Lowest Channel / 10MHz / 16QAM



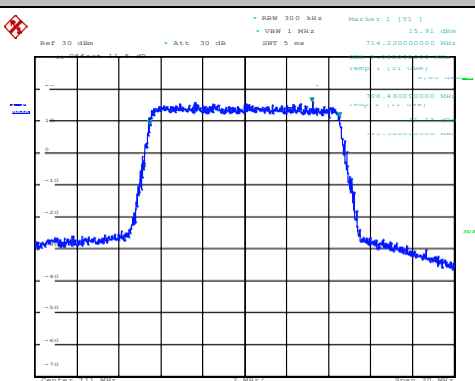
Middle Channel / 10MHz / QPSK



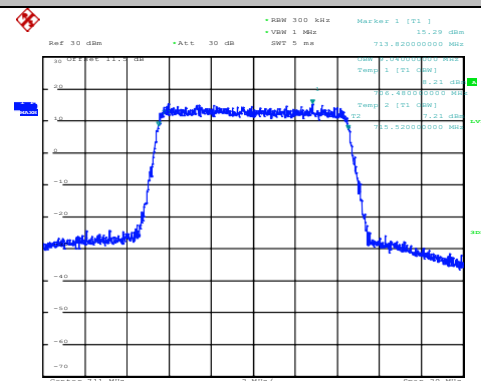
Middle Channel / 10MHz / 16QAM



Highest Channel / 10MHz / QPSK



Highest Channel / 10MHz / 16QAM

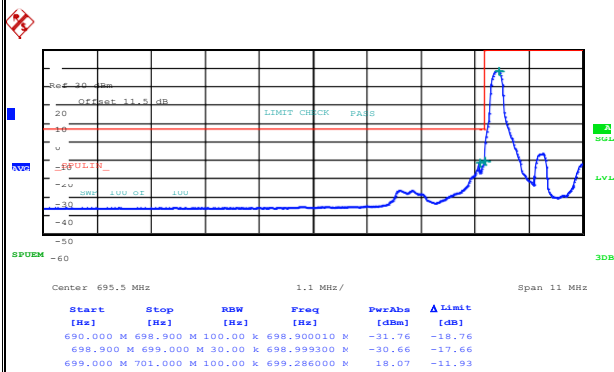




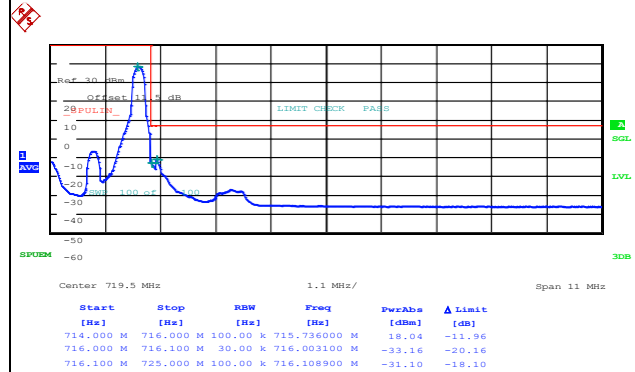
## Conducted Band Edge

### LTE Band 12 / 1.4MHz / QPSK

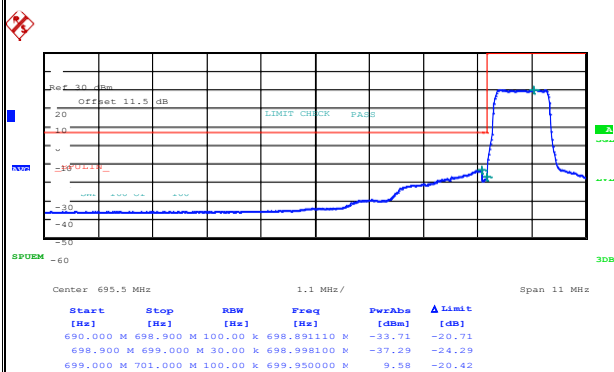
#### Lowest Band Edge / 1 RB



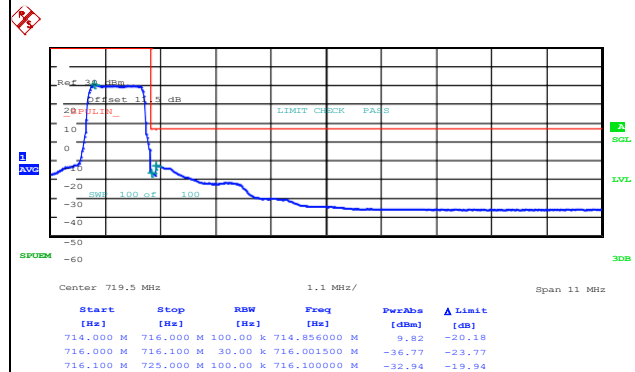
#### Highest Band Edge / 1RB



#### Lowest Band Edge / Full RB



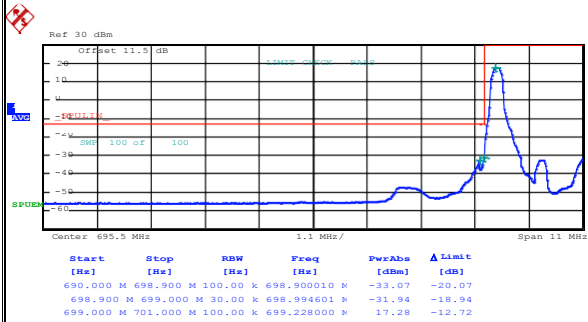
#### Highest Band Edge / Full RB



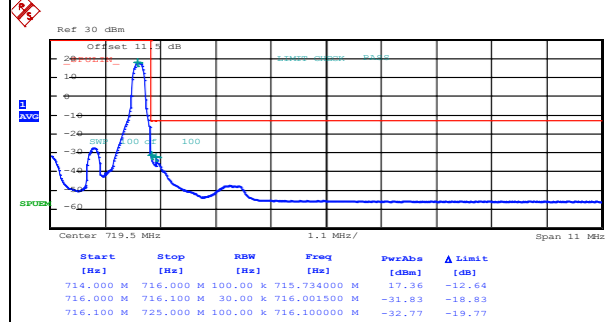


## LTE Band 12 / 1.4MHz / 16QAM

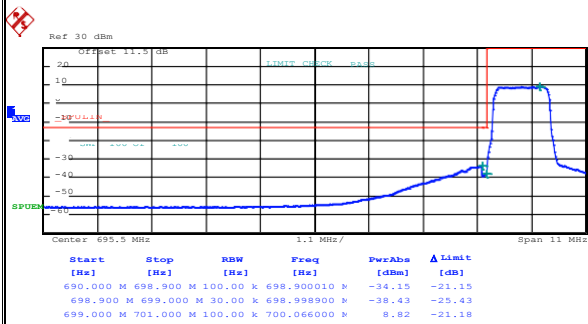
## Lowest Band Edge / 1 RB



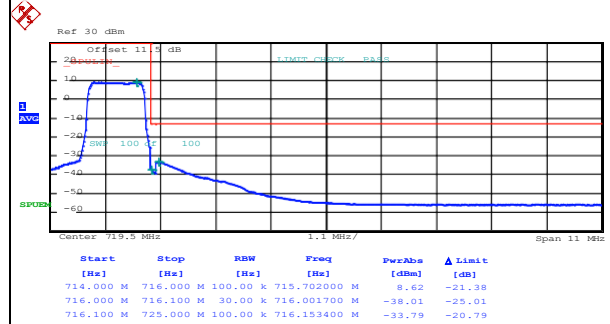
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



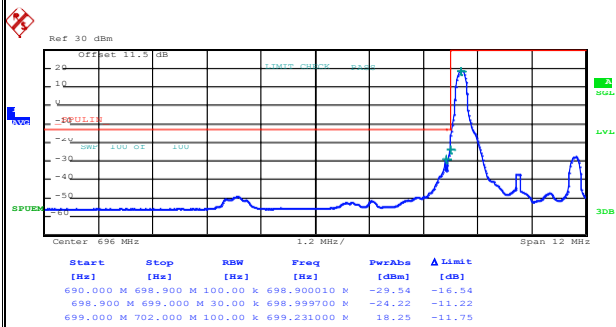
## Highest Band Edge / Full RB



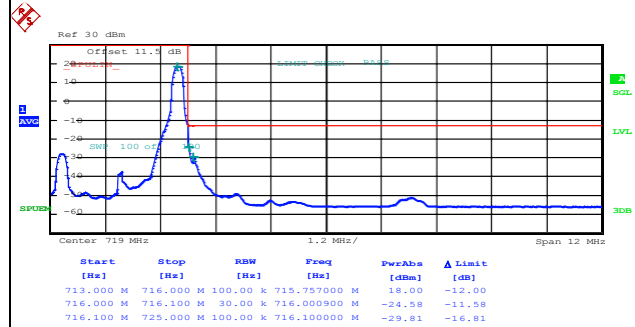


## LTE Band 12 / 3MHz / QPSK

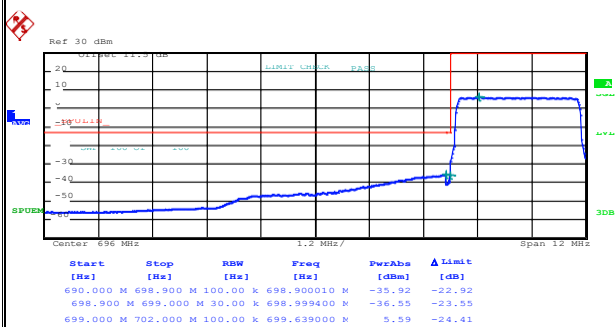
## Lowest Band Edge / 1RB



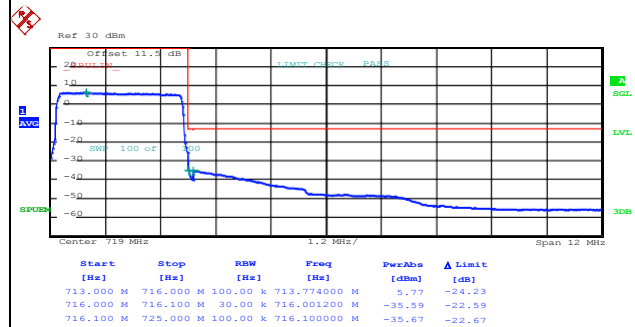
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



## Highest Band Edge / Full RB

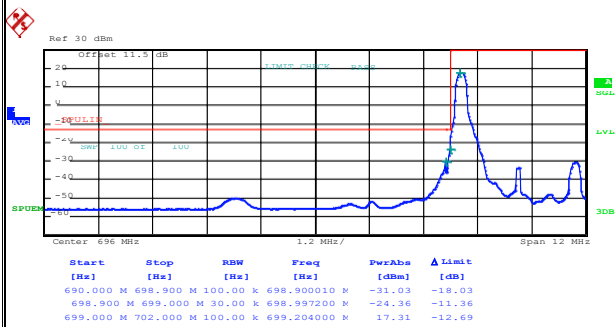




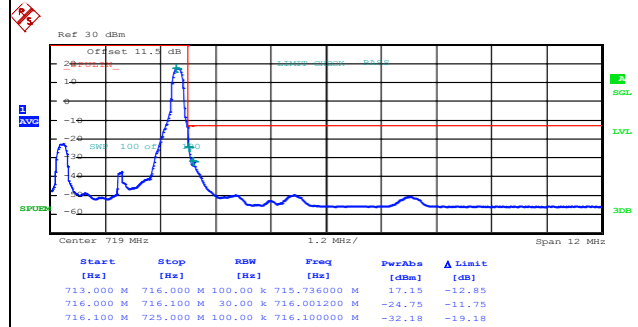


## LTE Band 12 / 3MHz / 16QAM

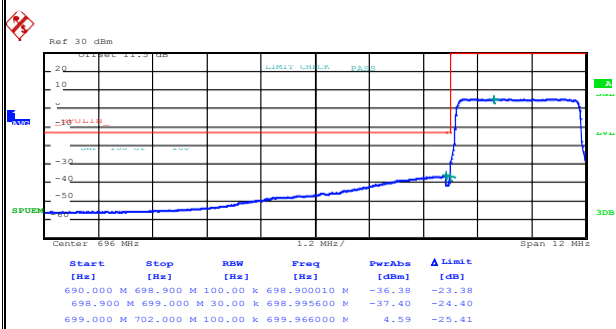
## Lowest Band Edge / 1 RB



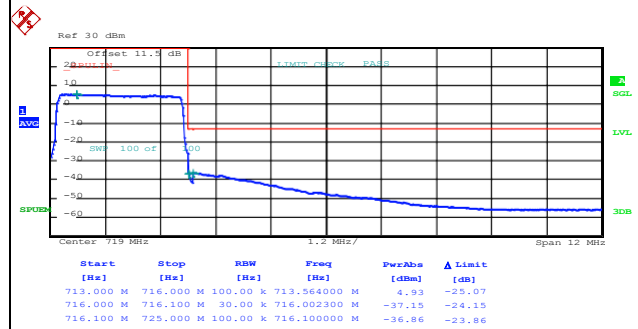
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



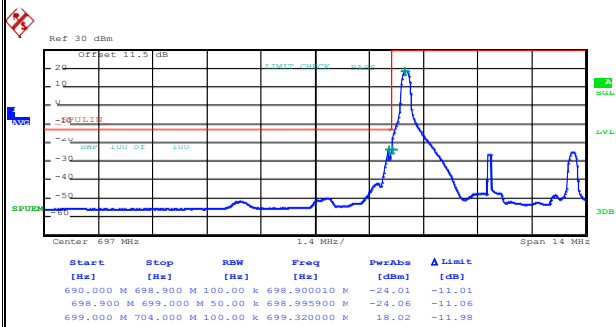
## Highest Band Edge / Full RB



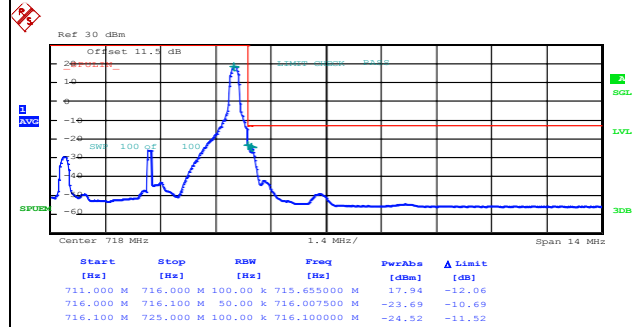


## LTE Band 12 / 5MHz / QPSK

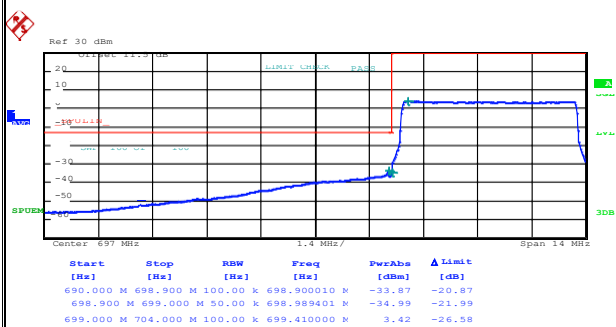
## Lowest Band Edge / 1 RB



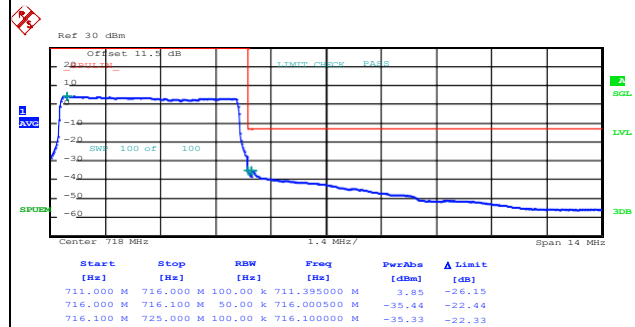
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



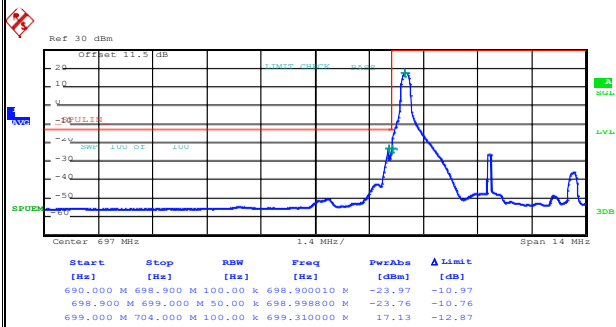
## Highest Band Edge / Full RB



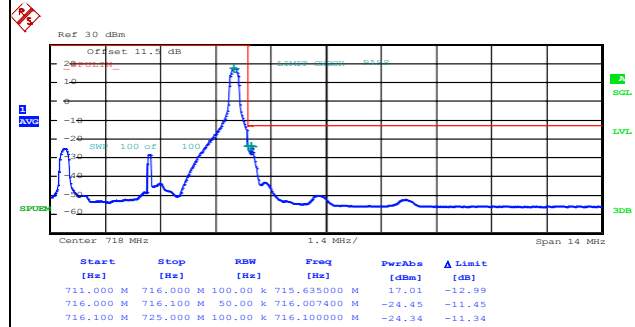


## LTE Band 12 / 5MHz / 16QAM

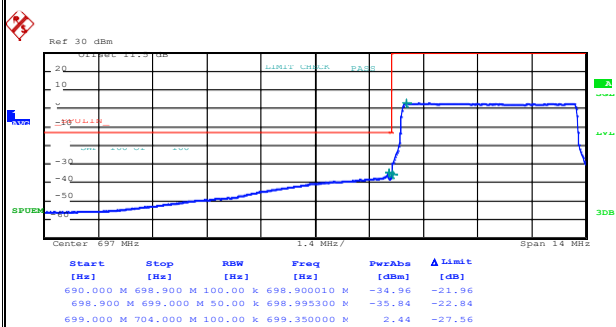
## Lowest Band Edge / 1RB



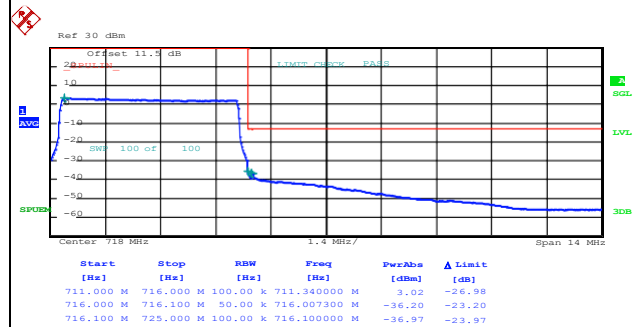
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



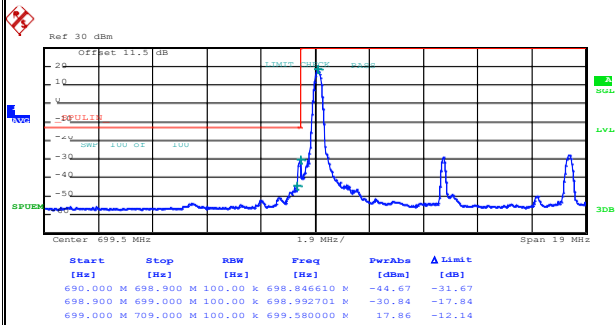
## Highest Band Edge / Full RB



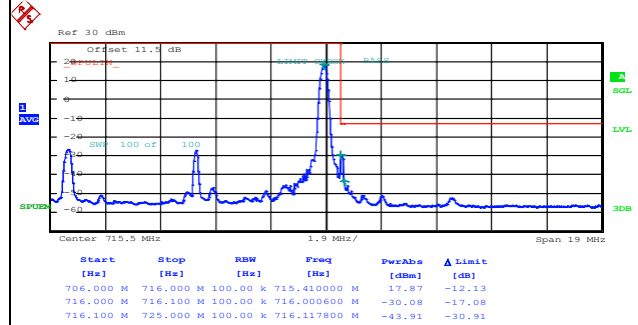


## LTE Band 12 / 10MHz / QPSK

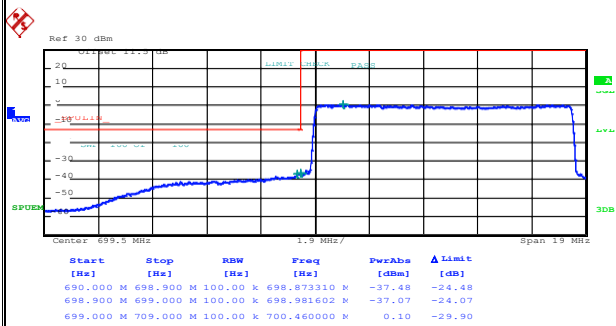
## Lowest Band Edge / 1 RB



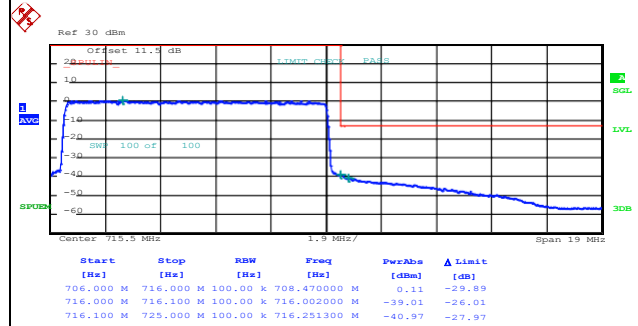
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



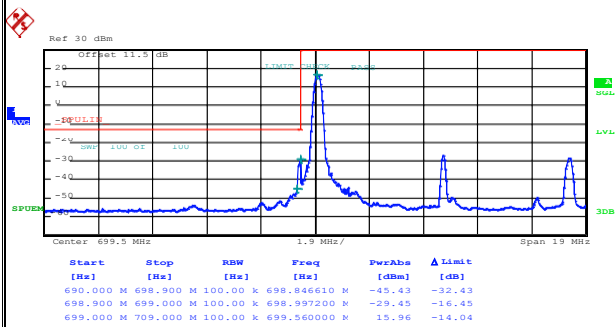
## Highest Band Edge / Full RB



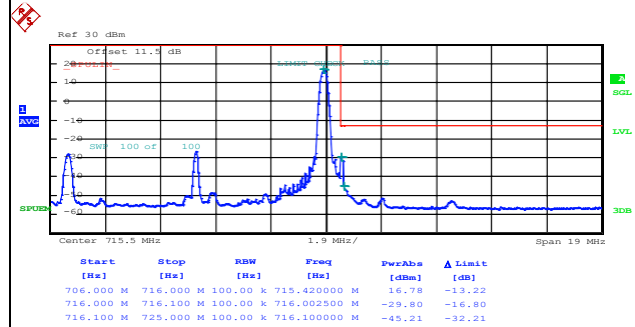


## LTE Band 12 / 10MHz / 16QAM

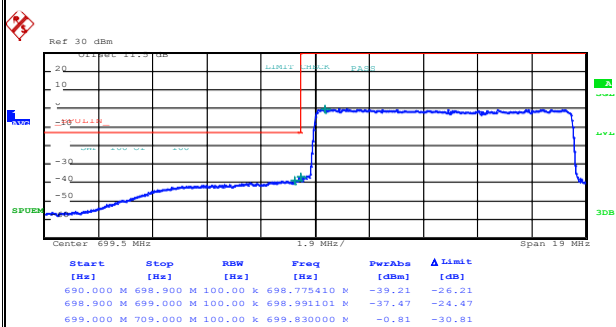
## Lowest Band Edge / 1 RB



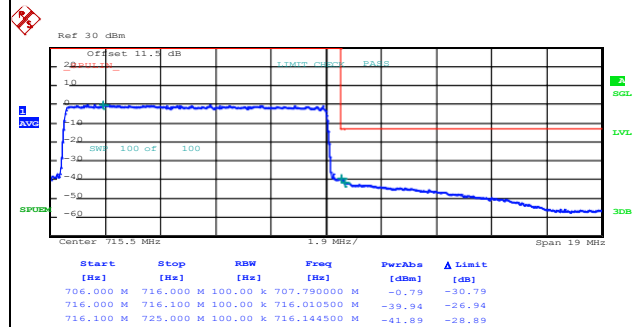
## Highest Band Edge / 1 RB



## Lowest Band Edge / Full RB



## Highest Band Edge / Full RB

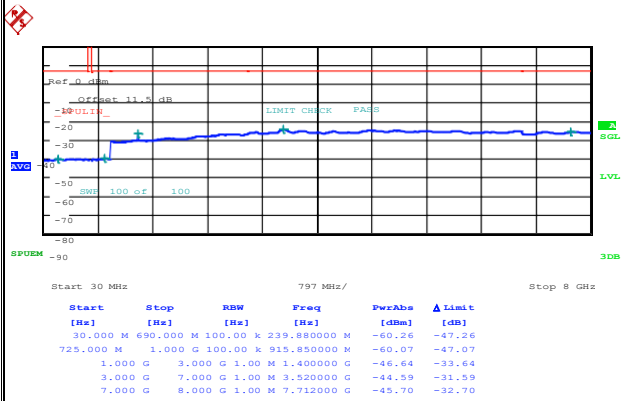




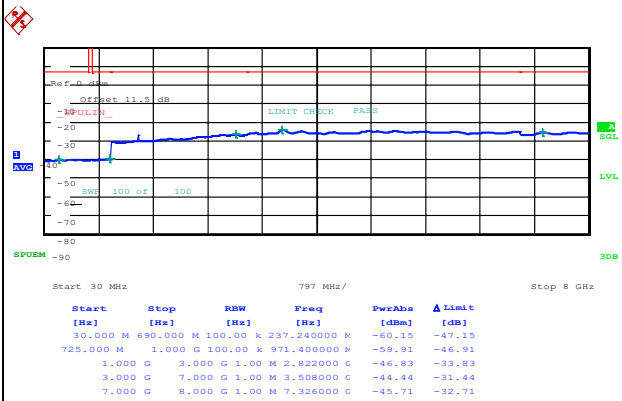
## Conducted Spurious Emission

### LTE Band 12 / 1.4MHz

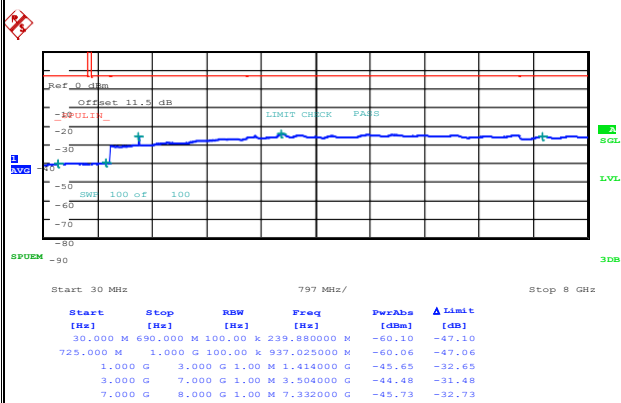
#### Lowest Channel / QPSK



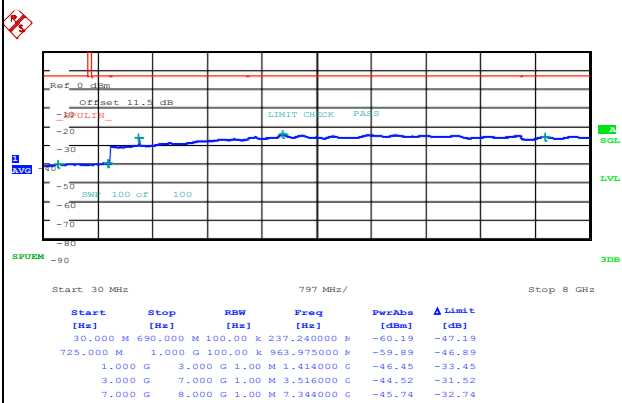
#### Lowest Channel / 16QAM



#### Middle Channel / QPSK



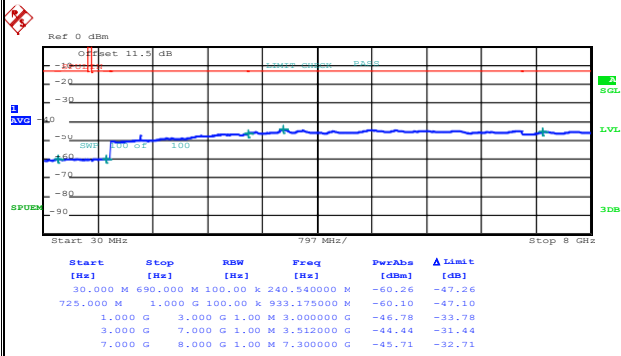
#### Middle Channel / 16QAM



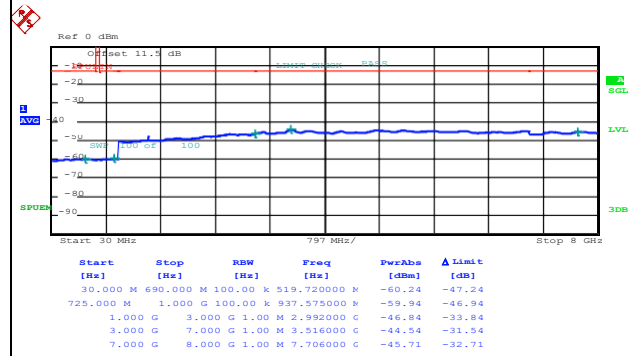


## LTE Band 12 / 1.4MHz

## Highest Channel / QPSK

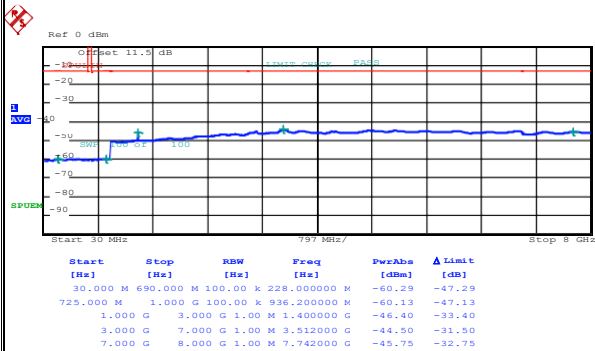


## Highest Channel / 16QAM

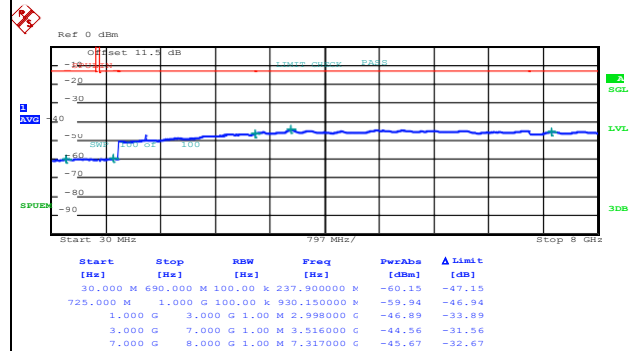


## LTE Band 12 / 3MHz

## Lowest Channel / QPSK



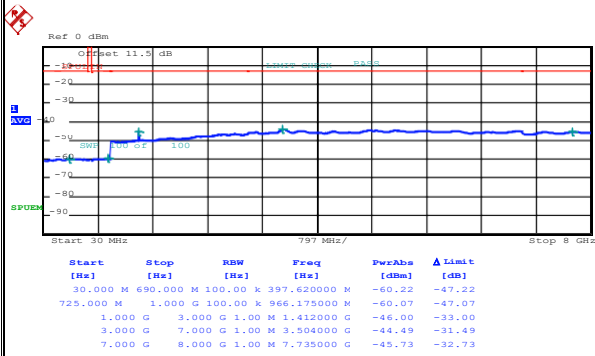
## Lowest Channel / 16QAM



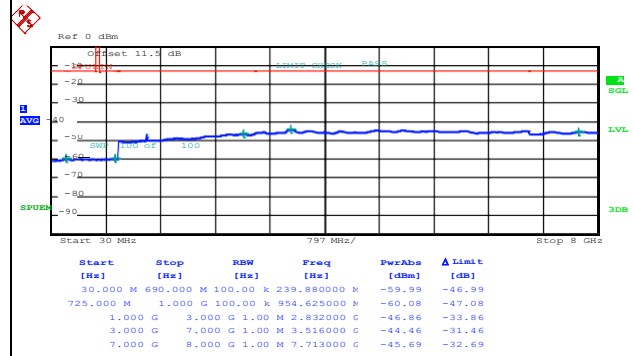


## LTE Band 12 / 3MHz

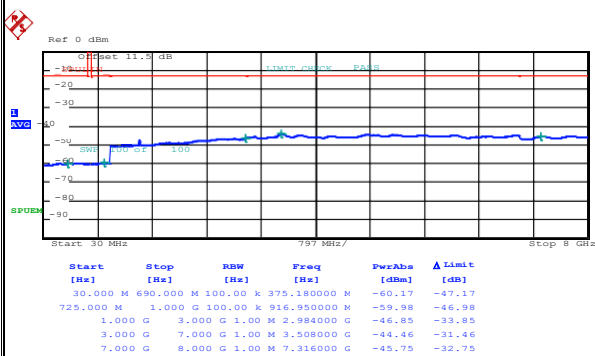
## Middle Channel / QPSK



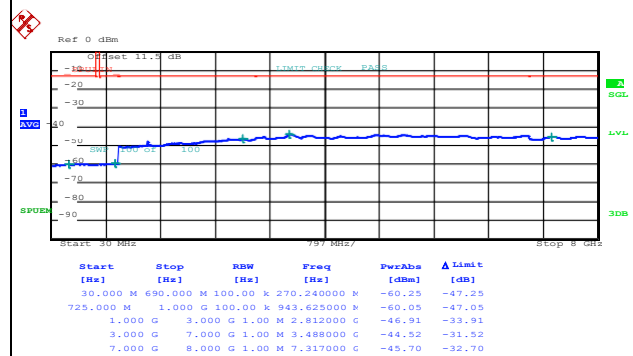
## Middle Channel / 16QAM



## Highest Channel / QPSK



## Highest Channel / 16QAM

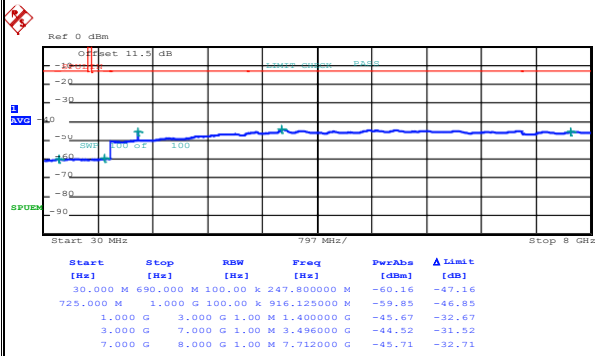




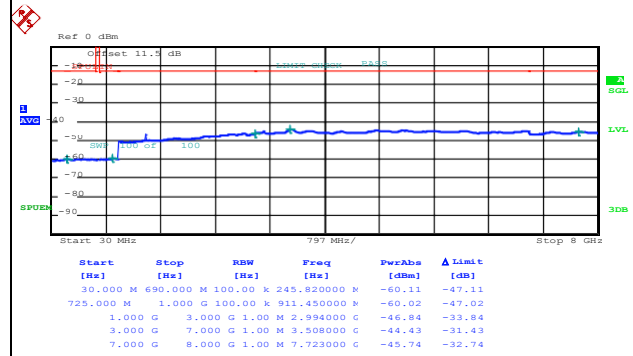


## LTE Band 12 / 5MHz

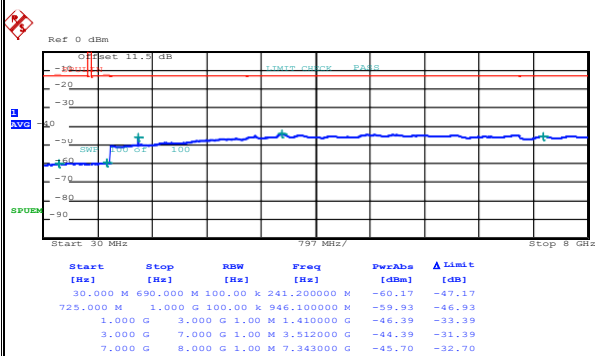
## Lowest Channel / QPSK



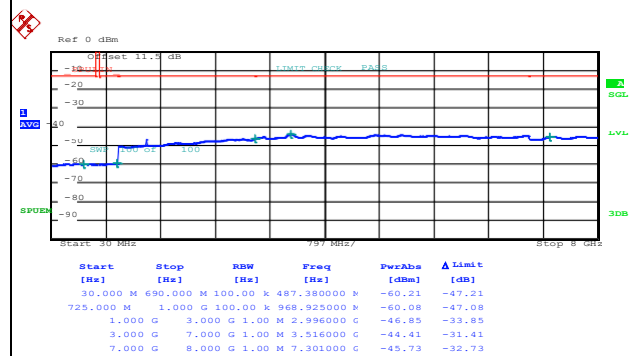
## Lowest Channel / 16QAM



## Middle Channel / QPSK



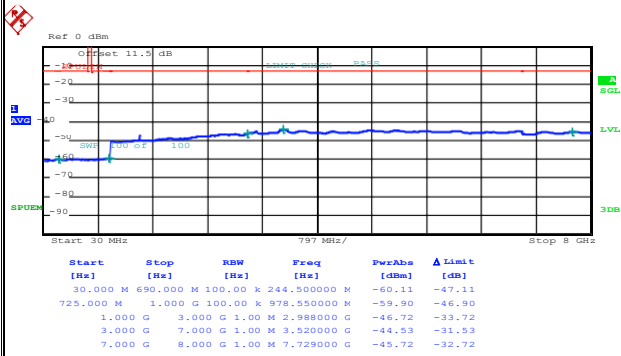
## Middle Channel / 16QAM



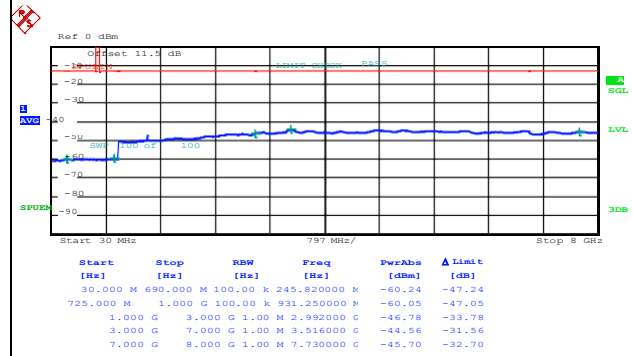


## LTE Band 12 / 5MHz

## Highest Channel / QPSK

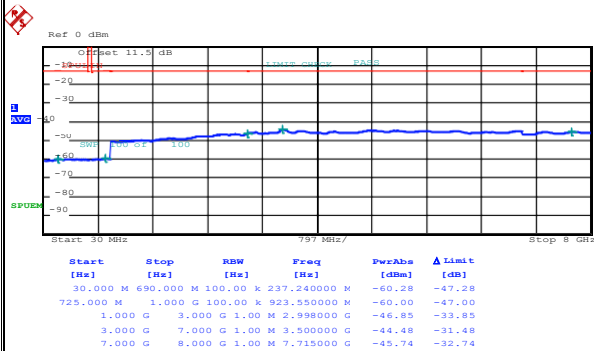


## Highest Channel / 16QAM

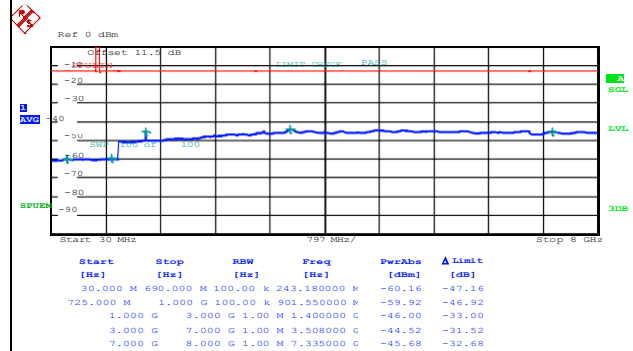


## LTE Band 12 / 10MHz

## Lowest Channel / QPSK



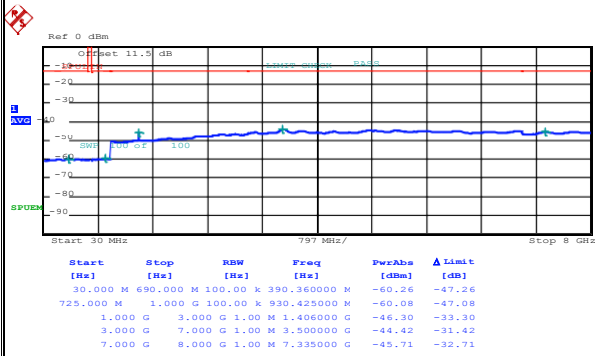
## Lowest Channel / 16QAM



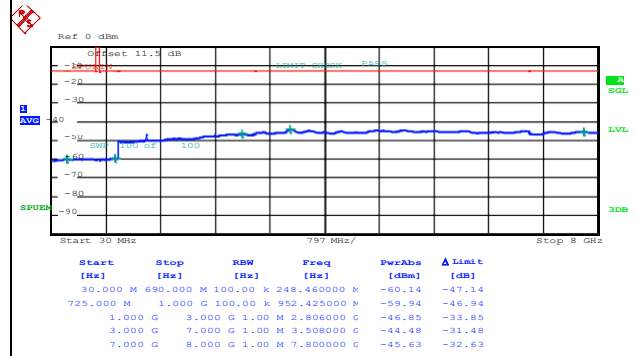


## LTE Band 12 / 10MHz

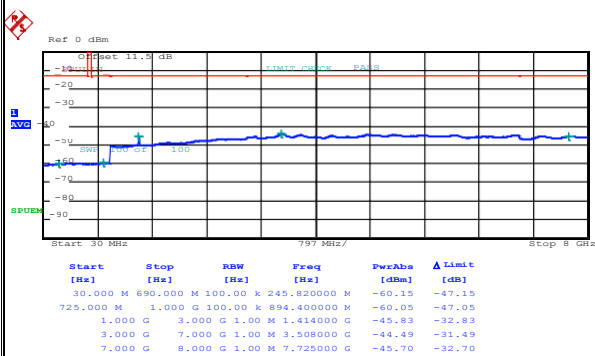
## Middle Channel / QPSK



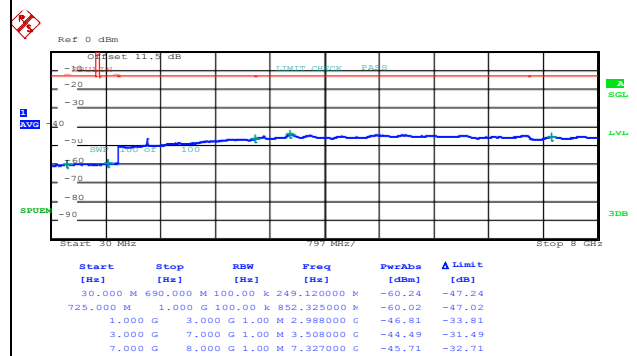
## Middle Channel / 16QAM



## Highest Channel / QPSK



## Highest Channel / 16QAM





## Frequency Stability

| Test Conditions  |                 | LTE Band 12 (QPSK) / Middle Channel | Limit   |
|------------------|-----------------|-------------------------------------|---------|
| Temperature (°C) | Voltage (Volt)  | BW 10MHz                            | Note 2. |
|                  |                 | Deviation (ppm)                     | Result  |
| 50               | Normal Voltage  | 0.0006                              | PASS    |
| 40               | Normal Voltage  | 0.0124                              |         |
| 30               | Normal Voltage  | 0.0117                              |         |
| 20(Ref.)         | Normal Voltage  | 0.0000                              |         |
| 10               | Normal Voltage  | 0.0105                              |         |
| 0                | Normal Voltage  | 0.0000                              |         |
| -10              | Normal Voltage  | 0.0007                              |         |
| -20              | Normal Voltage  | 0.0013                              |         |
| -30              | Normal Voltage  | 0.0134                              |         |
| 20               | Maximum Voltage | 0.0004                              |         |
| 20               | Normal Voltage  | 0.0000                              |         |
| 20               | Min Voltage     | 0.0004                              |         |

**Note:**

1. Normal Voltage = 120VAC. ; Min Voltage = 102 VAC.; Maximum Voltage =138 VAC
2. Note: The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.



| Test Conditions  |                 | LTE Band 12 (QPSK) / Middle Channel  | Limit       |
|------------------|-----------------|--------------------------------------|-------------|
| Temperature (°C) | Voltage (Volt)  | BW 5MHz                              | Within Band |
|                  |                 | Frequency Offset ( $\Delta f$ ) (Hz) | Result      |
| 50               | Normal Voltage  | -0.4                                 | PASS        |
| 40               | Normal Voltage  | 8.8                                  |             |
| 30               | Normal Voltage  | 8.3                                  |             |
| 20(Ref.)         | Normal Voltage  | 0                                    |             |
| 10               | Normal Voltage  | 7.4                                  |             |
| 0                | Normal Voltage  | 0                                    |             |
| -10              | Normal Voltage  | 0.5                                  |             |
| -20              | Normal Voltage  | 0.9                                  |             |
| -30              | Normal Voltage  | 9.5                                  |             |
| 20               | Maximum Voltage | -0.3                                 |             |
| 20               | Normal Voltage  | 0                                    |             |
| 20               | Min Voltage     | 0.3                                  |             |

$|\text{MAX}(\Delta f)| = 9.5\text{Hz}$

| Frequency Stability            | Frequency (MHz) | Limit Line              | Result |
|--------------------------------|-----------------|-------------------------|--------|
| $f_L -  \text{MAX}(\Delta f) $ | 699.119994      | $\cong 698 \text{ MHz}$ | PASS   |
| $f_H +  \text{MAX}(\Delta f) $ | 715.875006      | $\cong 716 \text{ MHz}$ |        |