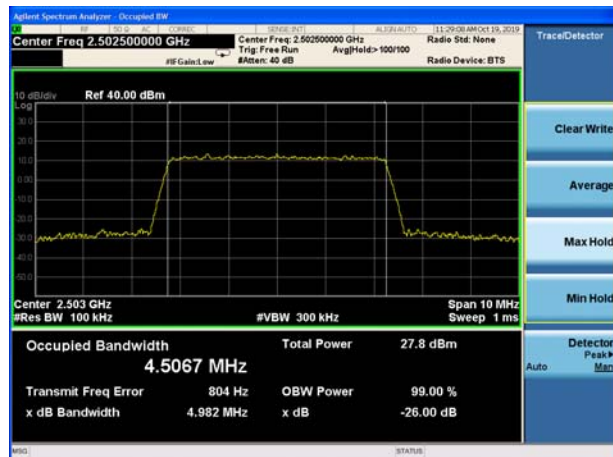
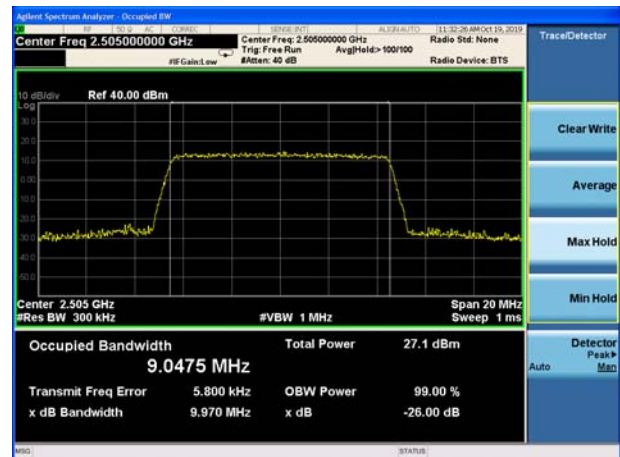




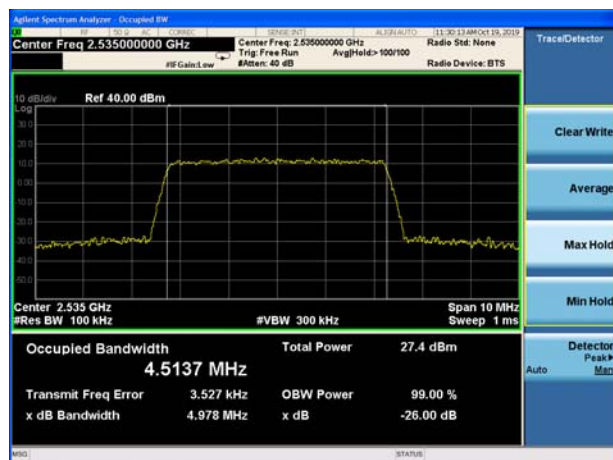
## LTE Band 7 QPSK 5MHz CH-Low



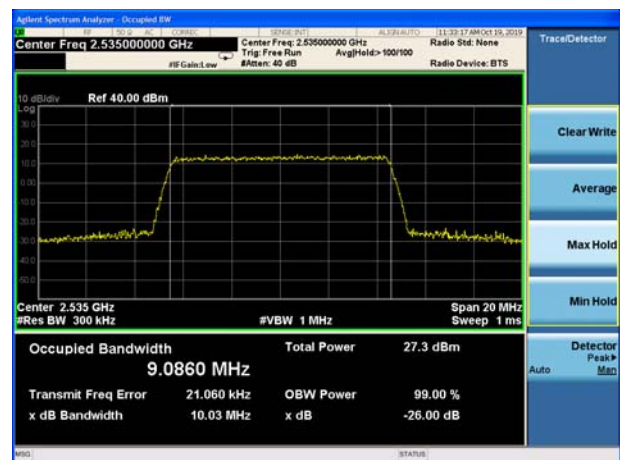
## LTE Band 7 QPSK 10MHz CH-Low



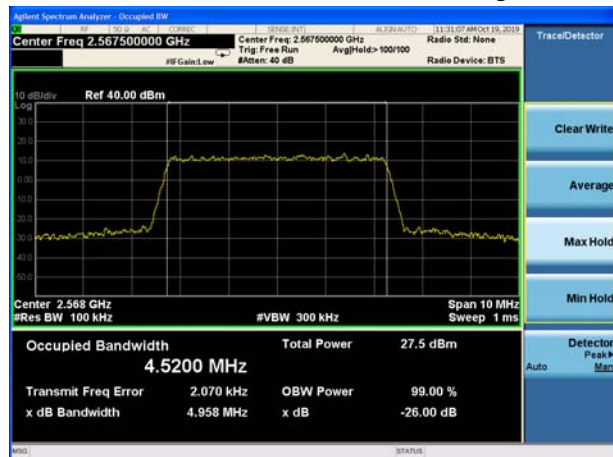
## LTE Band 7 QPSK 5MHz CH-Middle



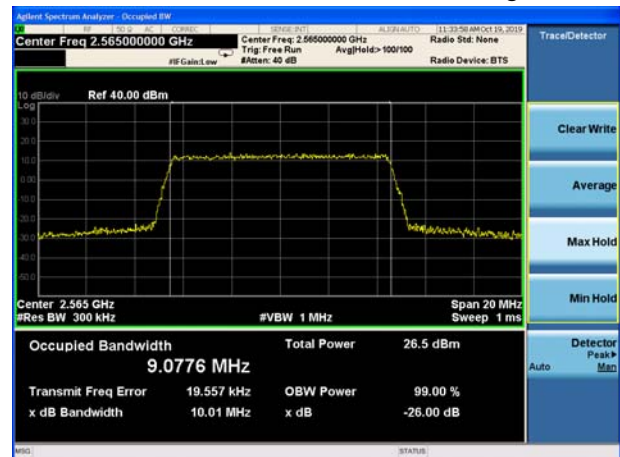
## LTE Band 7 QPSK 10MHz CH-Middle



## LTE Band 7 QPSK 5MHz CH-High

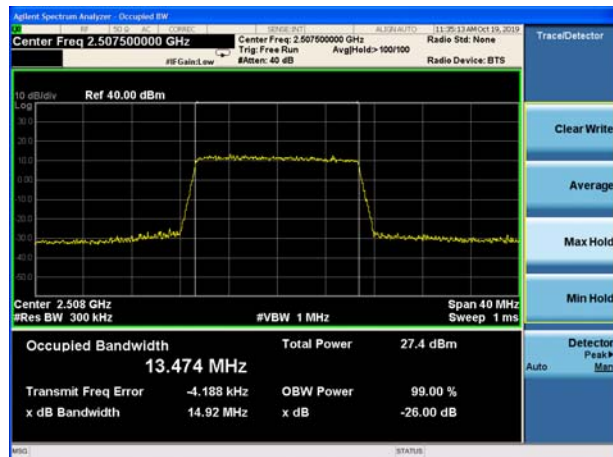


## LTE Band 7 QPSK 10MHz CH-High

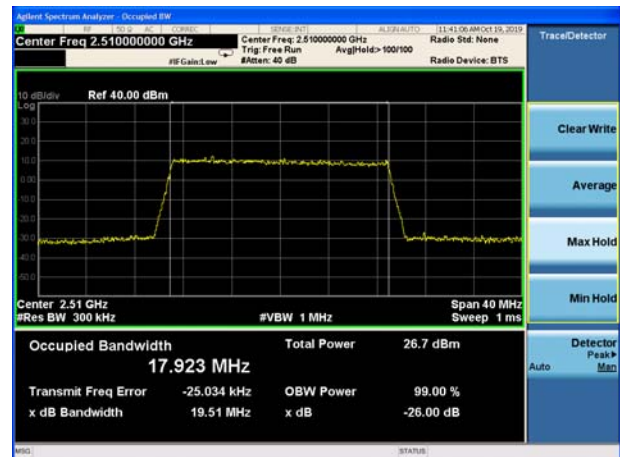




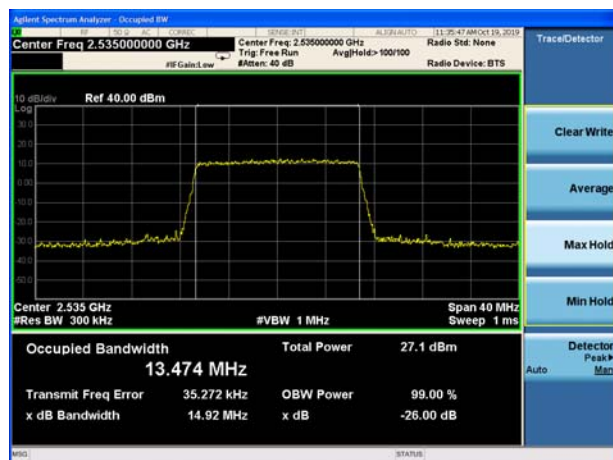
## LTE Band 7 QPSK 15MHz CH-Low



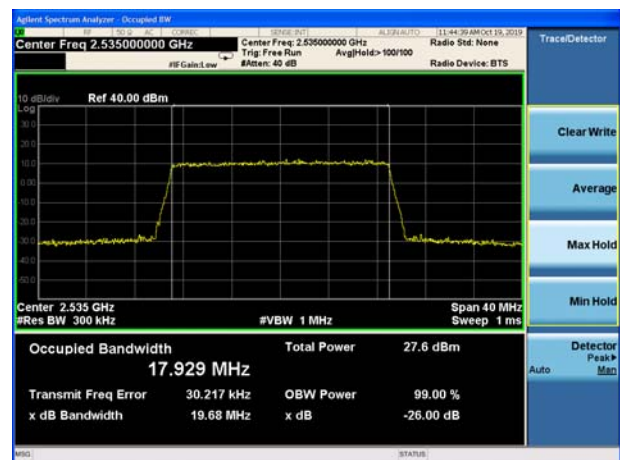
## LTE Band 7 QPSK 20MHz CH-Low



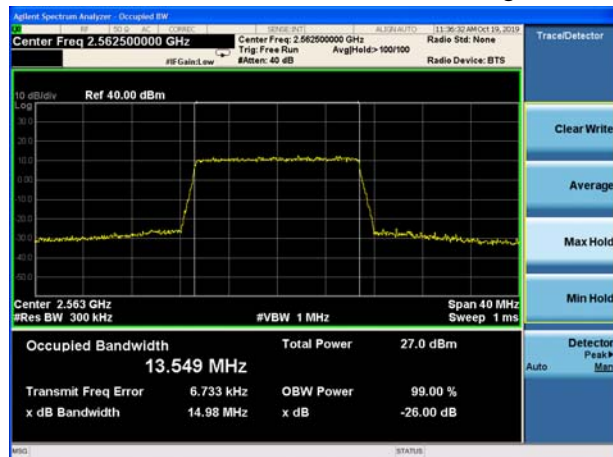
## LTE Band 7 QPSK 15MHz CH-Middle



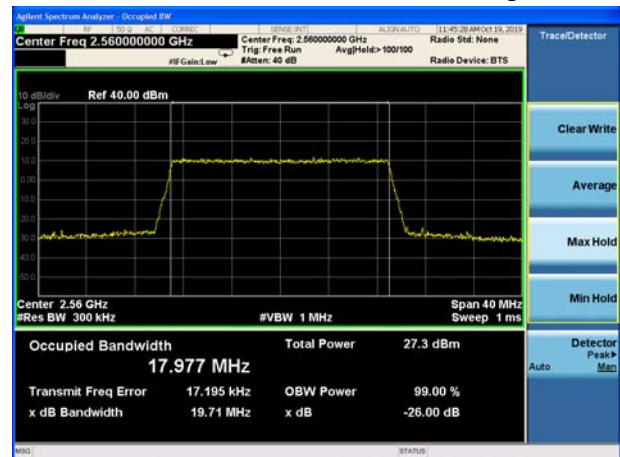
## LTE Band 7 QPSK 20MHz CH-Middle



## LTE Band 7 QPSK 15MHz CH-High

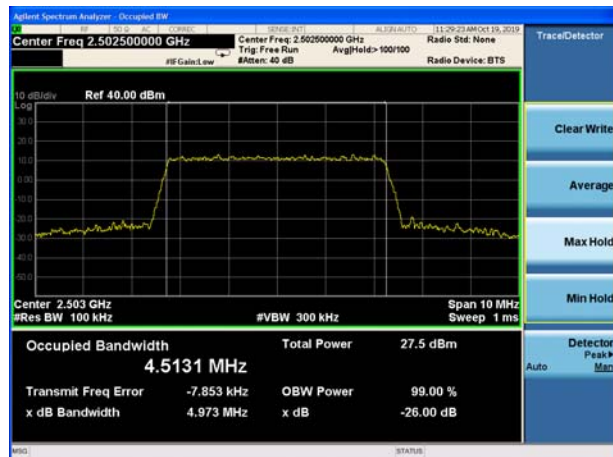


## LTE Band 7 QPSK 20MHz CH-High

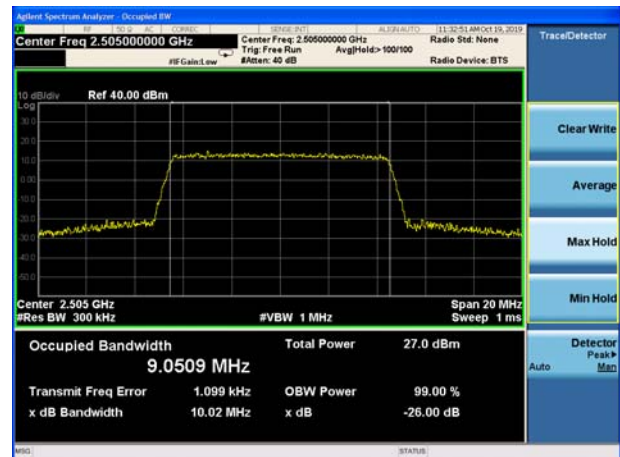




## LTE Band 7 16QAM 5MHz CH-Low



## LTE Band 7 16QAM 10MHz CH-Low



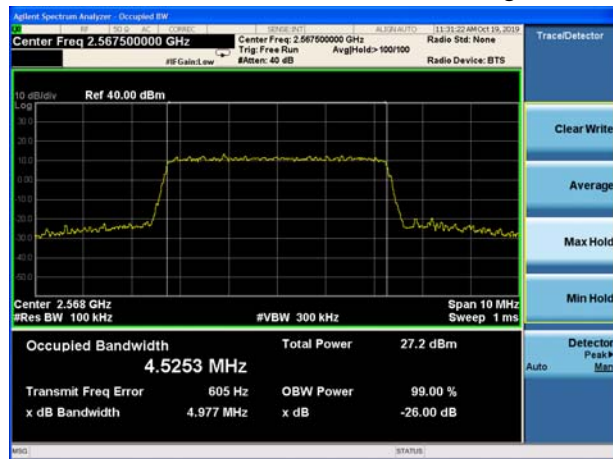
## LTE Band 7 16QAM 5MHz CH-Middle



## LTE Band 7 16QAM 10MHz CH-Middle



## LTE Band 7 16QAM 5MHz CH-High

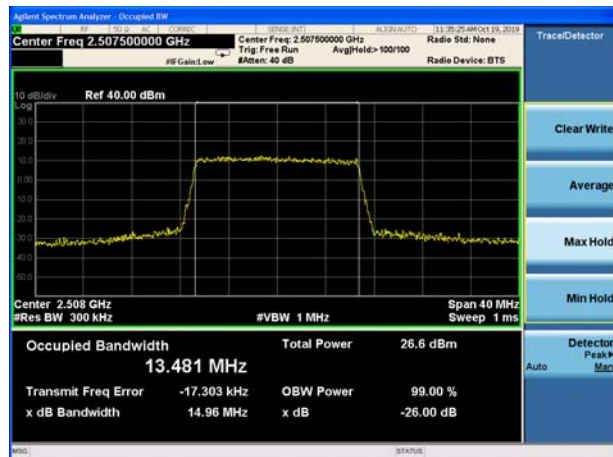


## LTE Band 7 16QAM 10MHz CH-High

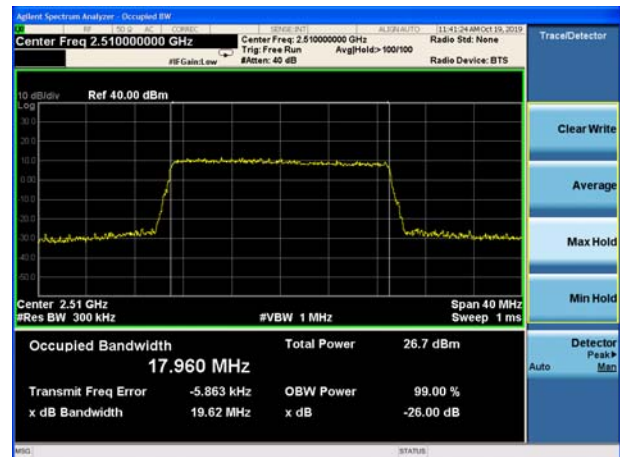




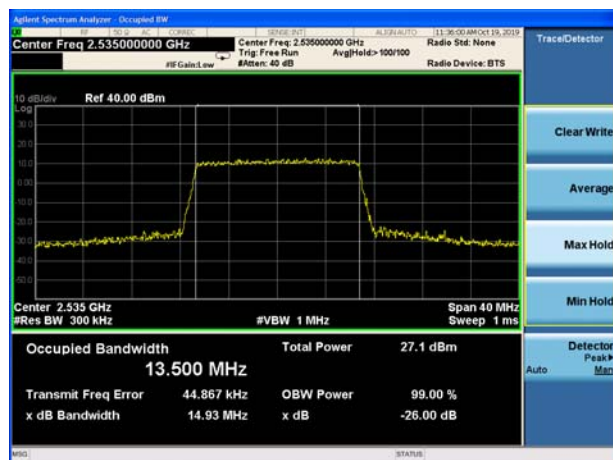
## LTE Band 7 16QAM 15MHz CH-Low



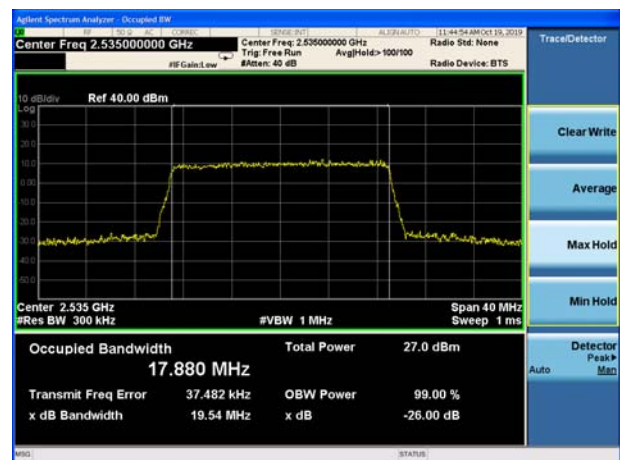
## LTE Band 7 16QAM 20MHz CH-Low



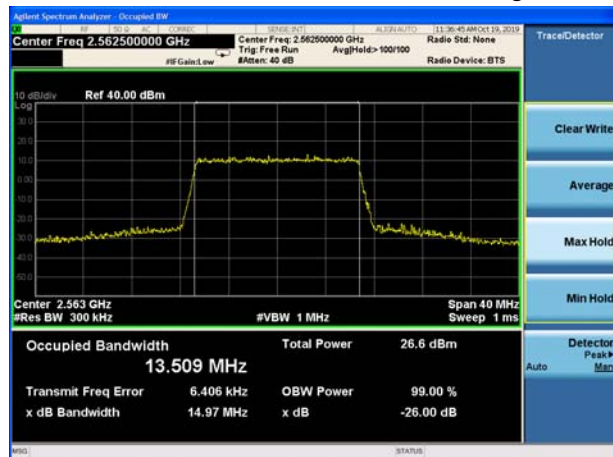
## LTE Band 7 16QAM 15MHz CH-Middle



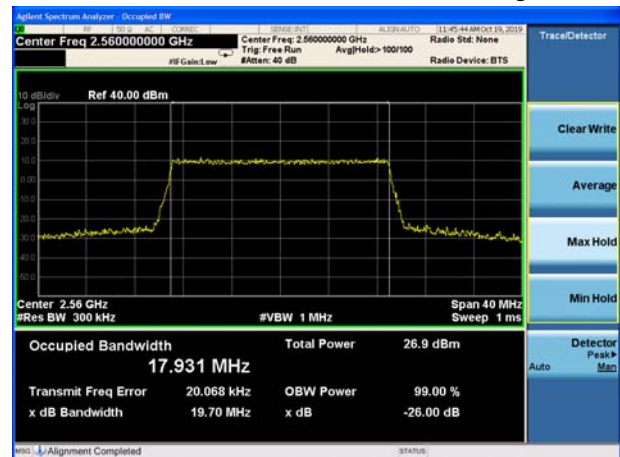
## LTE Band 7 16QAM 20MHz CH-Middle



## LTE Band 7 16QAM 15MHz CH-High

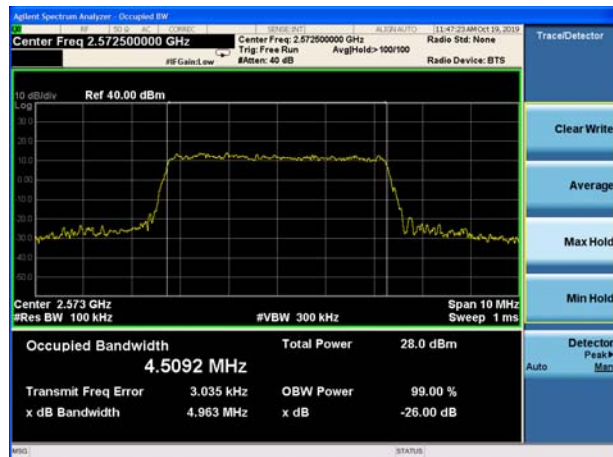


## LTE Band 7 16QAM 20MHz CH-High

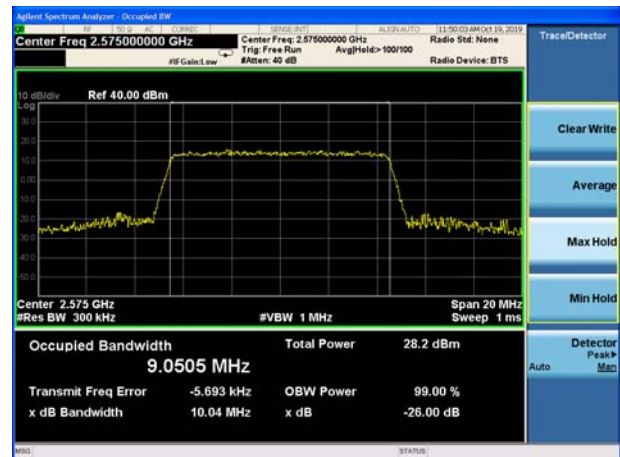




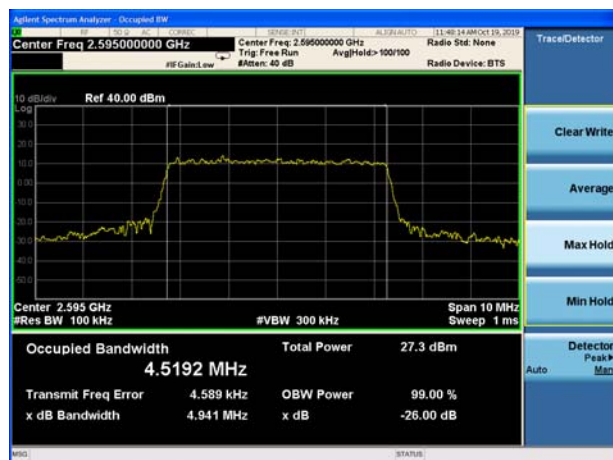
## LTE Band 38 QPSK 5MHz CH-Low



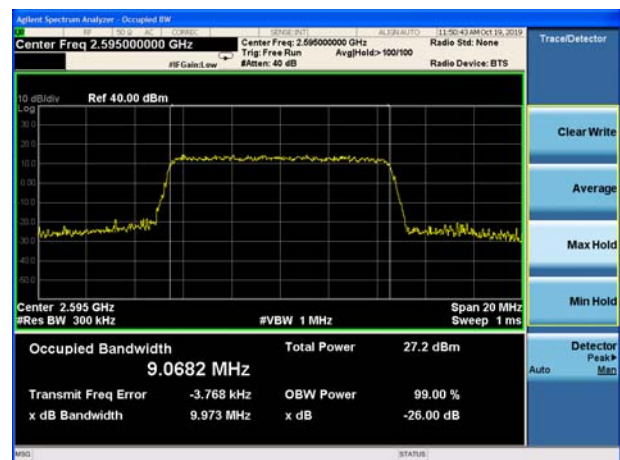
## LTE Band 38 QPSK 10MHz CH-Low



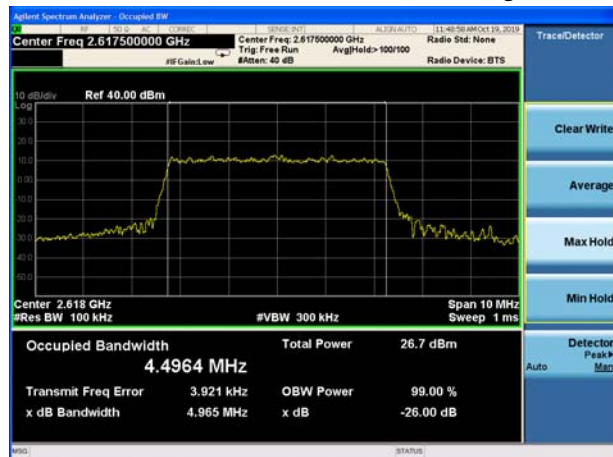
## LTE Band 38 QPSK 5MHz CH-Middle



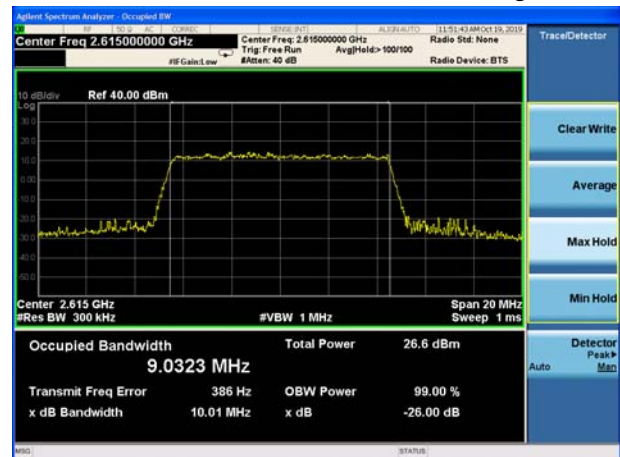
## LTE Band 38 QPSK 10MHz CH-Middle



## LTE Band 38 QPSK 5MHz CH-High

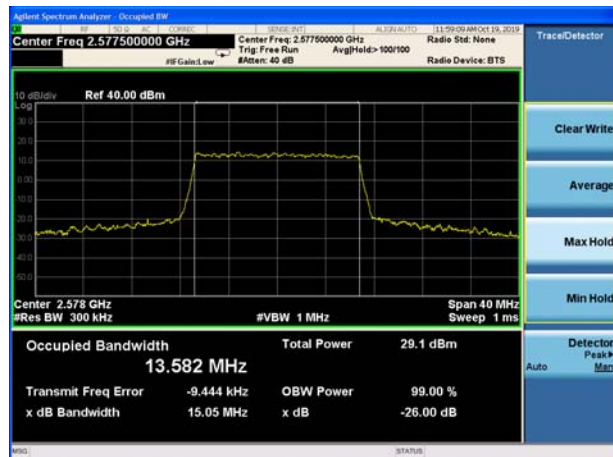


## LTE Band 38 QPSK 10MHz CH-High

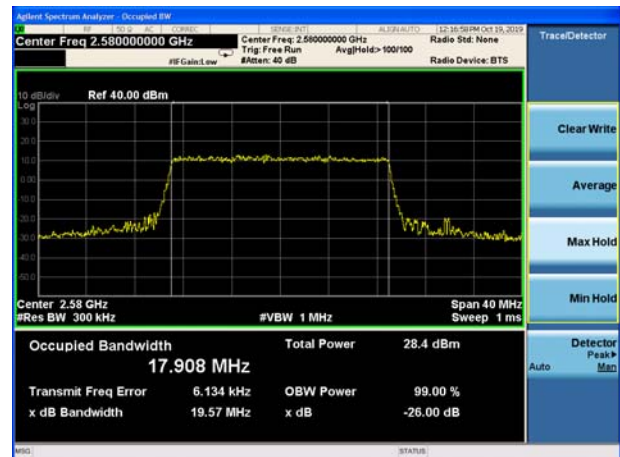




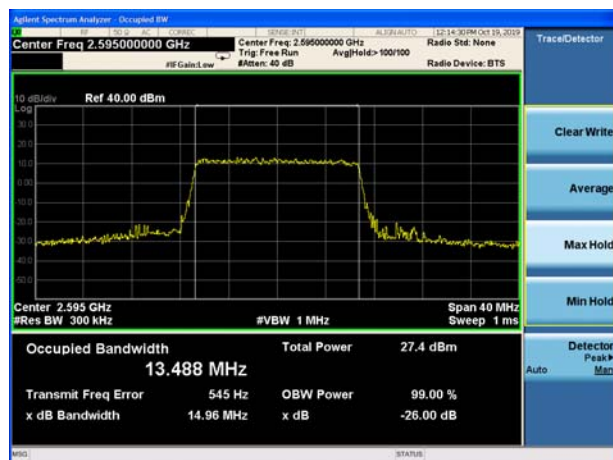
## LTE Band 38 QPSK 15MHz CH-Low



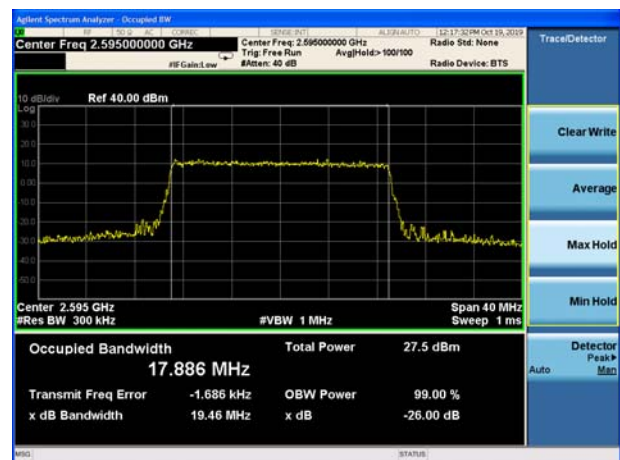
## LTE Band 38 QPSK 20MHz CH-Low



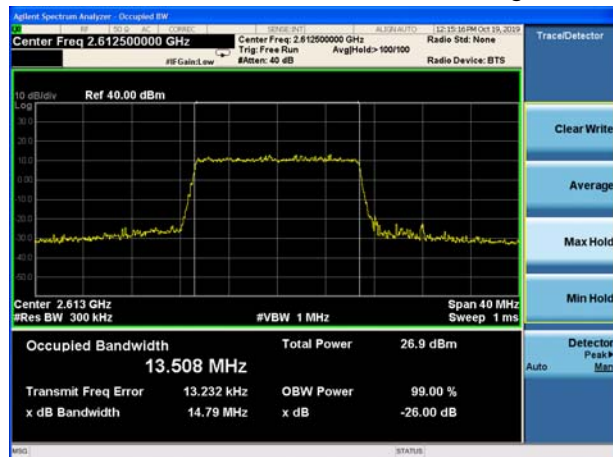
## LTE Band 38 QPSK 15MHz CH-Middle



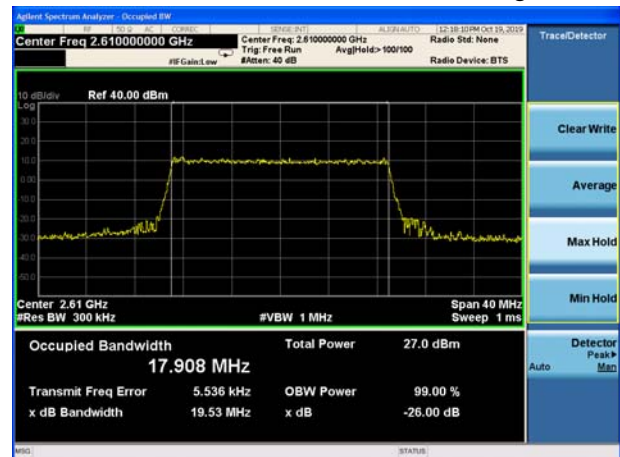
## LTE Band 38 QPSK 20MHz CH-Middle



## LTE Band 38 QPSK 15MHz CH-High

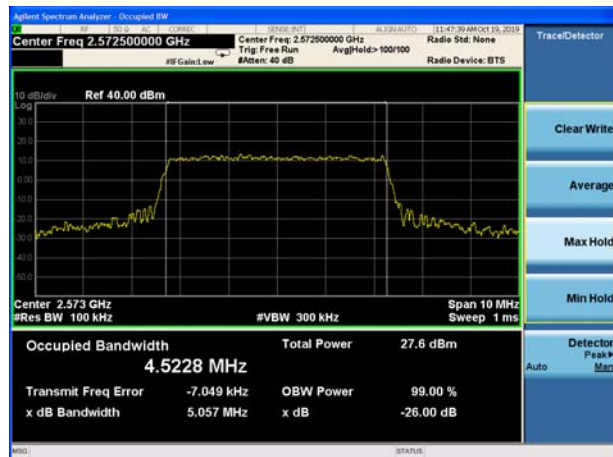


## LTE Band 38 QPSK 20MHz CH-High





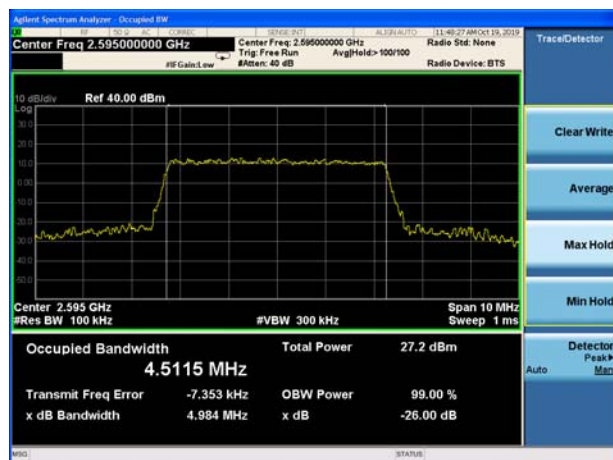
## LTE Band 38 16QAM 5MHz CH-Low



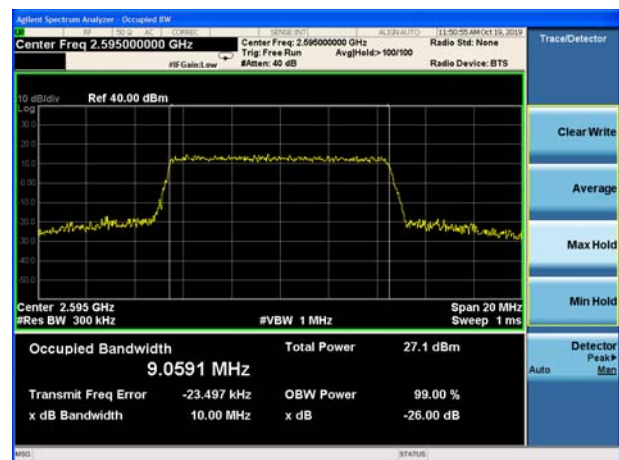
## LTE Band 38 16QAM 10MHz CH-Low



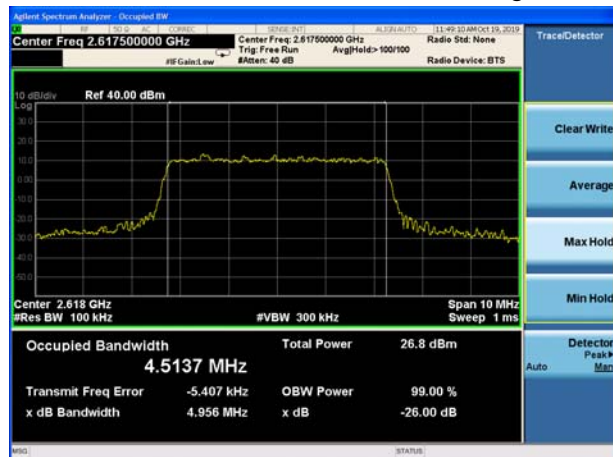
## LTE Band 38 16QAM 5MHz CH-Middle



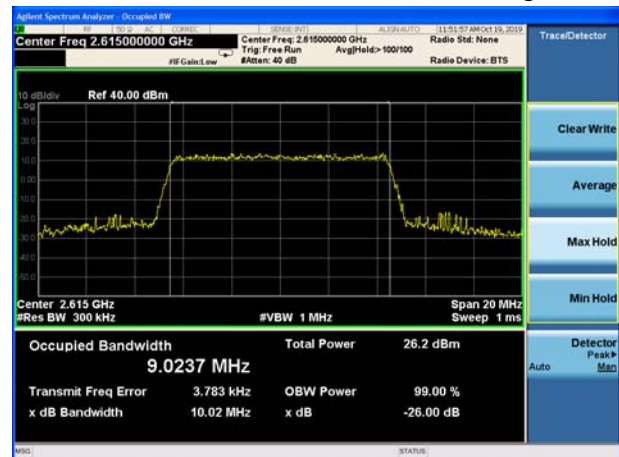
## LTE Band 38 16QAM 10MHz CH-Middle



## LTE Band 38 16QAM 5MHz CH-High

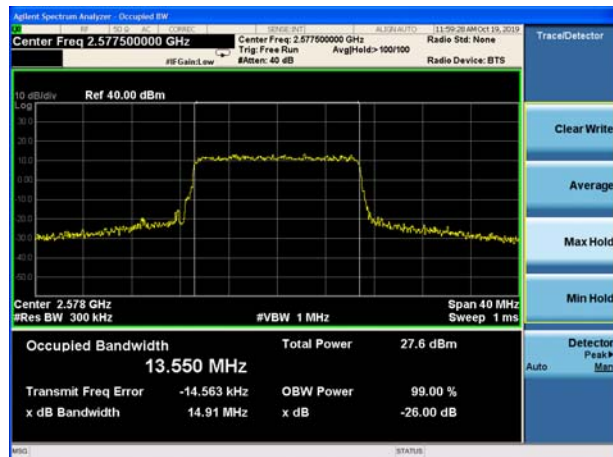


## LTE Band 38 16QAM 10MHz CH-High

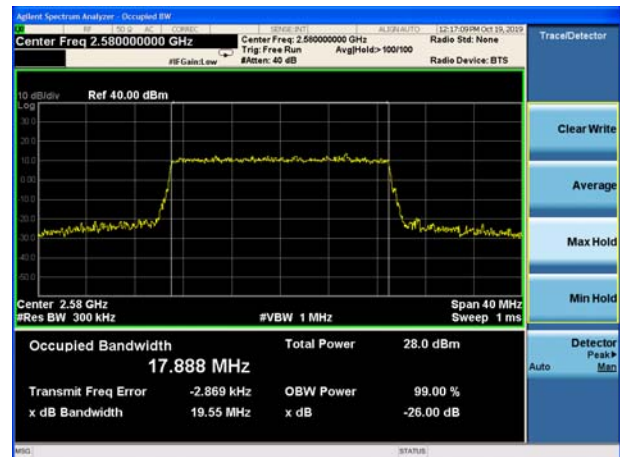




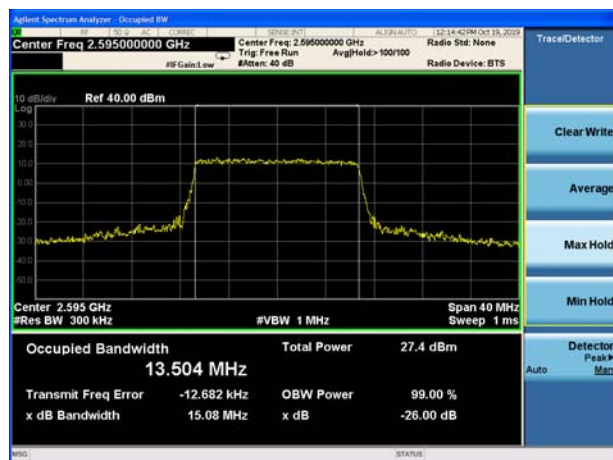
## LTE Band 38 16QAM 15MHz CH-Low



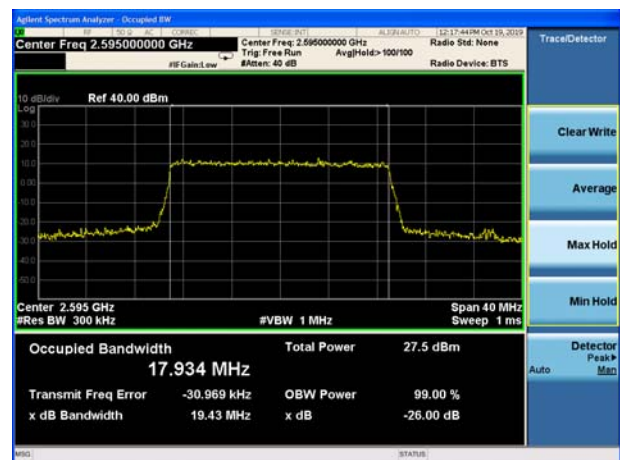
## LTE Band 38 16QAM 20MHz CH-Low



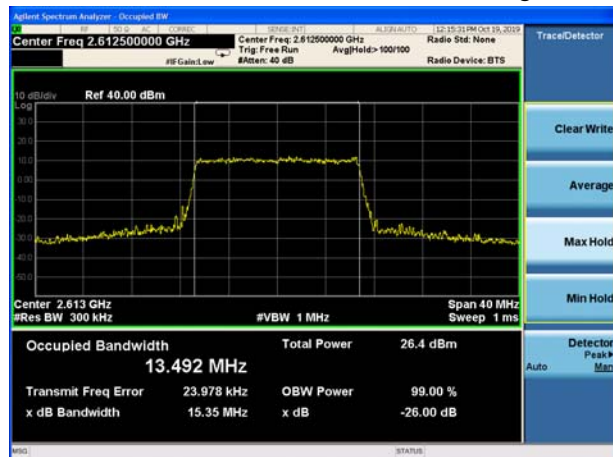
## LTE Band 38 16QAM 15MHz CH-Middle



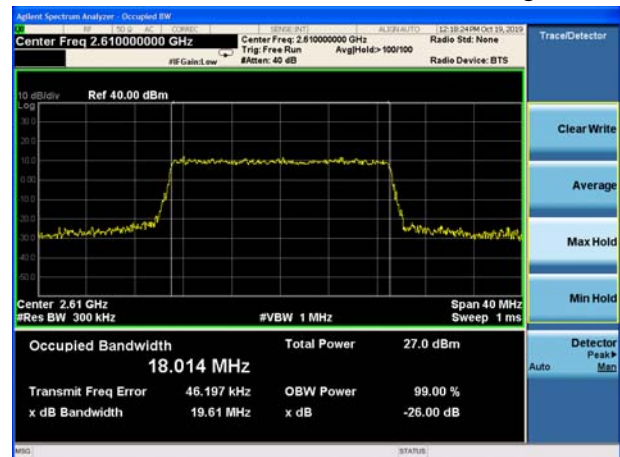
## LTE Band 38 16QAM 20MHz CH-Middle



## LTE Band 38 16QAM 15MHz CH-High



## LTE Band 38 16QAM 20MHz CH-High

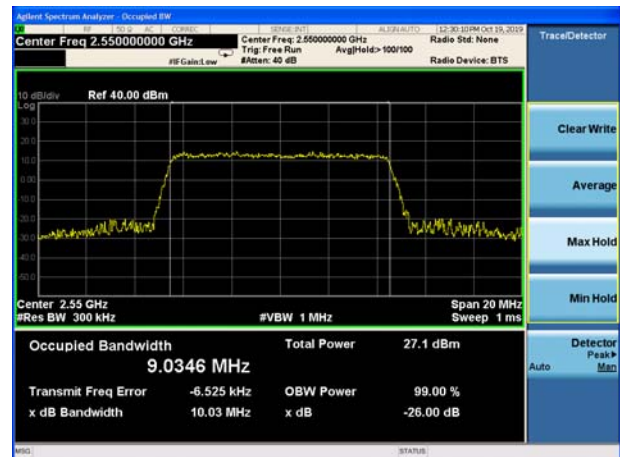




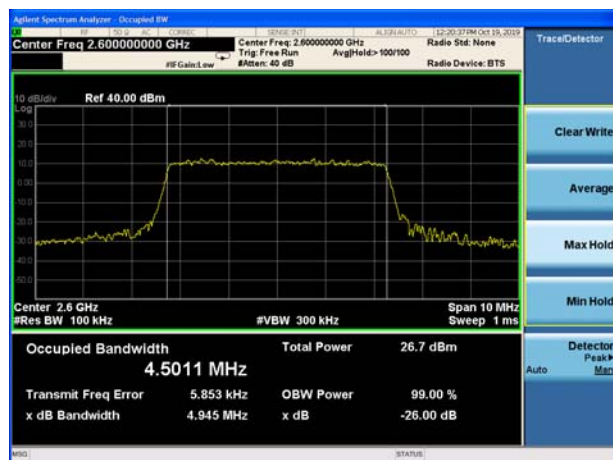
## LTE Band 41 QPSK 5MHz CH-Low



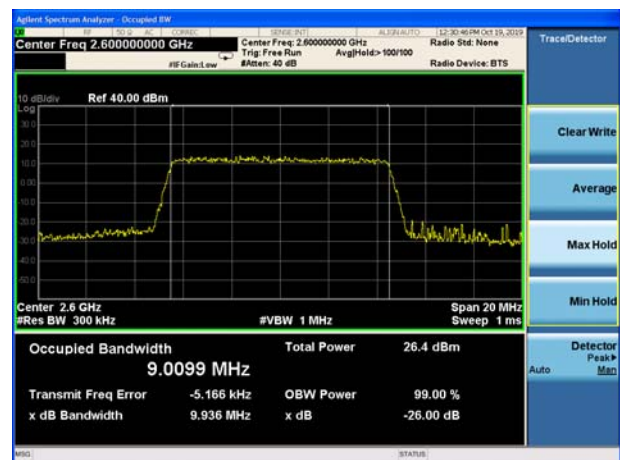
## LTE Band 41 QPSK 10MHz CH-Low



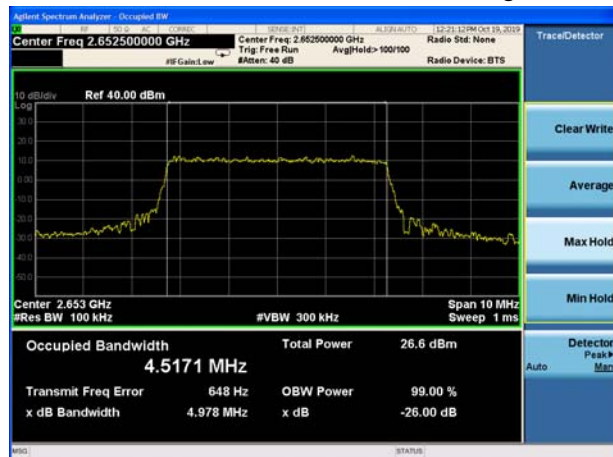
## LTE Band 41 QPSK 5MHz CH-Middle



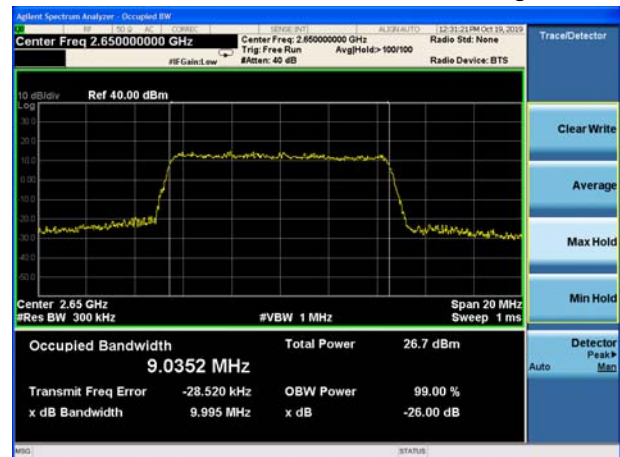
## LTE Band 41 QPSK 10MHz CH-Middle



## LTE Band 41 QPSK 5MHz CH-High

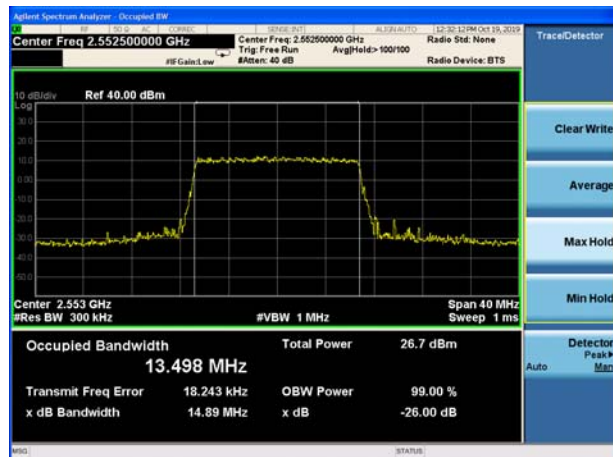


## LTE Band 41 QPSK 10MHz CH-High

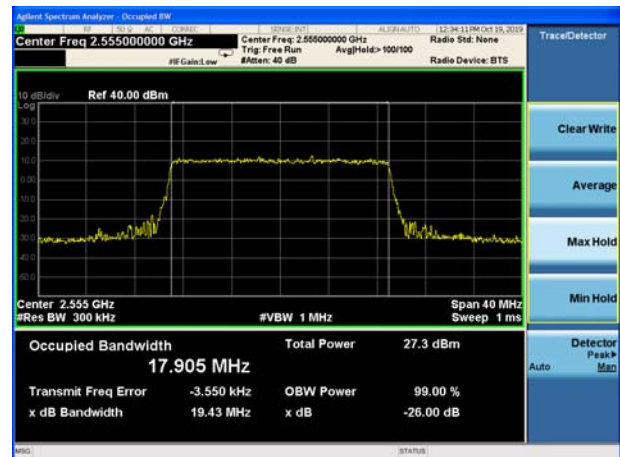




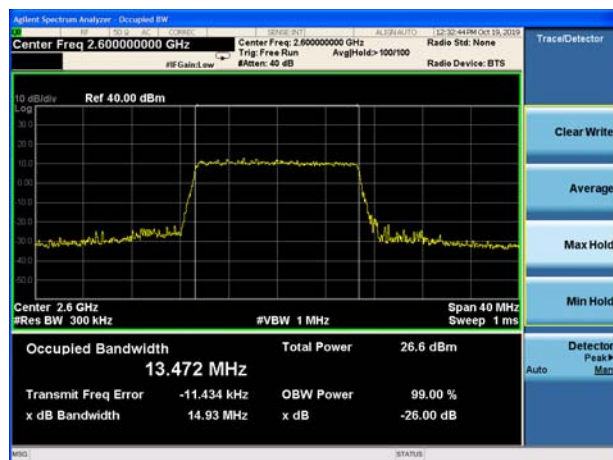
## LTE Band 41 QPSK 15MHz CH-Low



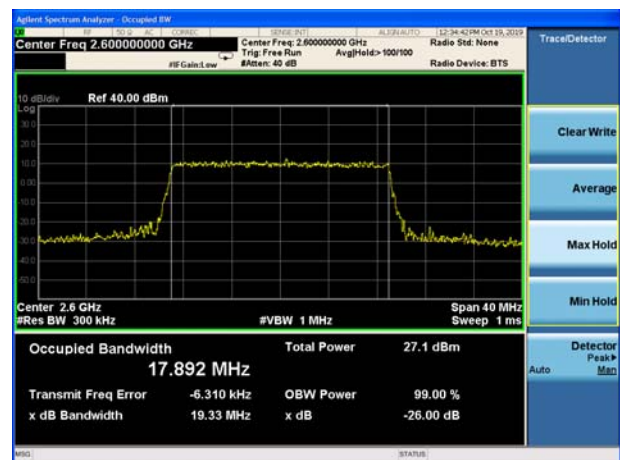
## LTE Band 41 QPSK 20MHz CH-Low



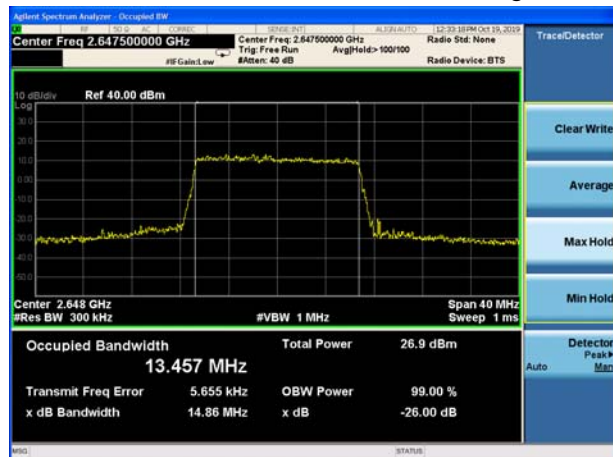
## LTE Band 41 QPSK 15MHz CH-Middle



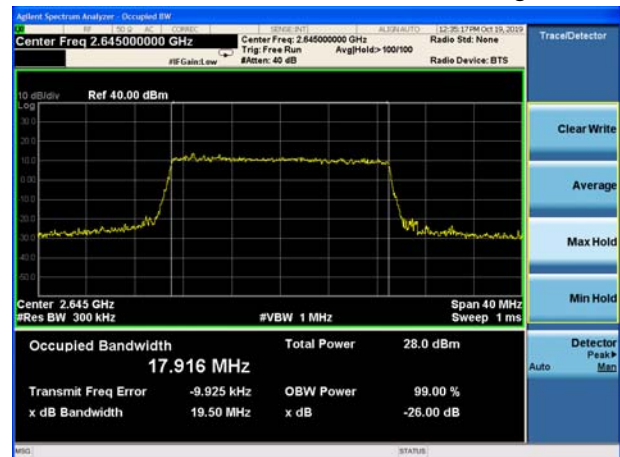
## LTE Band 41 QPSK 20MHz CH-Middle



## LTE Band 41 QPSK 15MHz CH-High

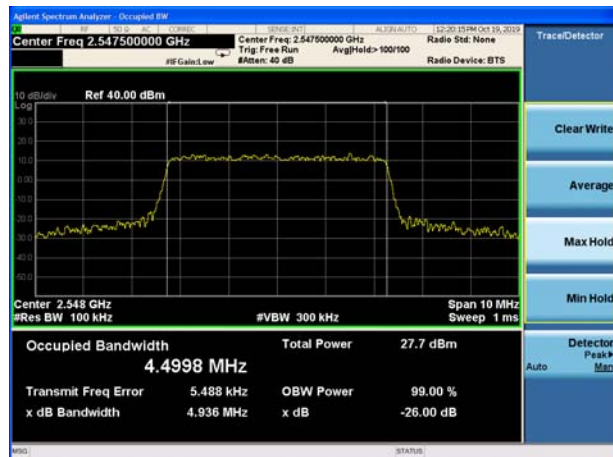


## LTE Band 41 QPSK 20MHz CH-High





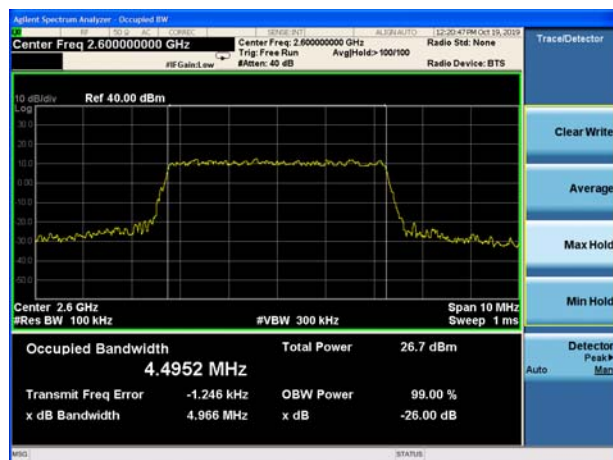
## LTE Band 41 16QAM 5MHz CH-Low



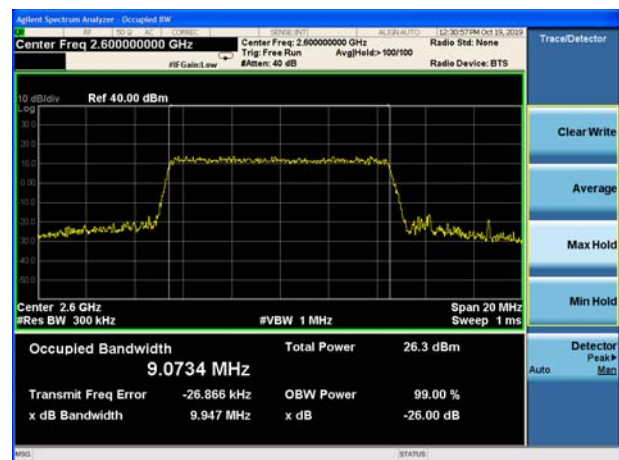
## LTE Band 41 16QAM 10MHz CH-Low



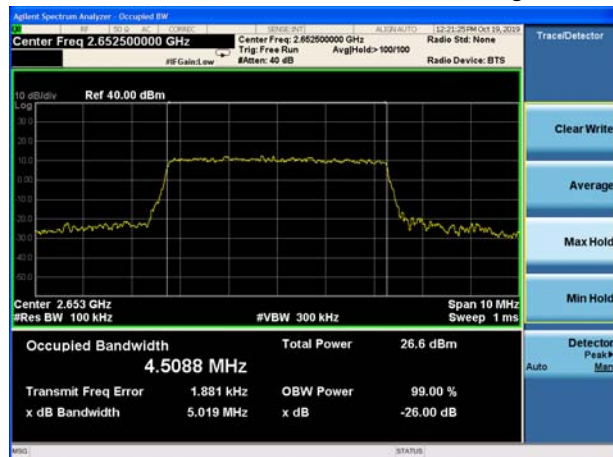
## LTE Band 41 16QAM 5MHz CH-Middle



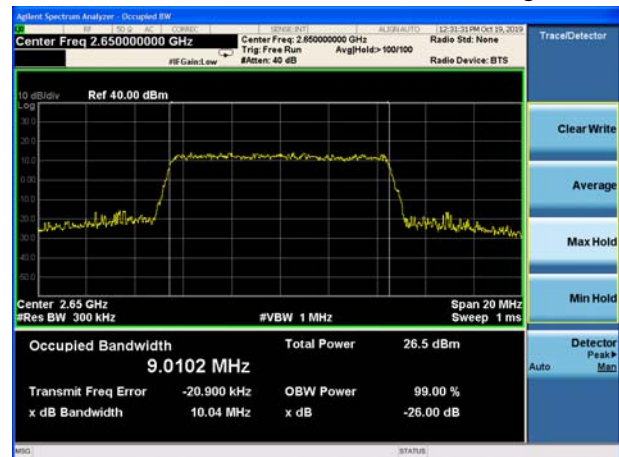
## LTE Band 41 16QAM 10MHz CH-Middle



## LTE Band 41 16QAM 5MHz CH-High

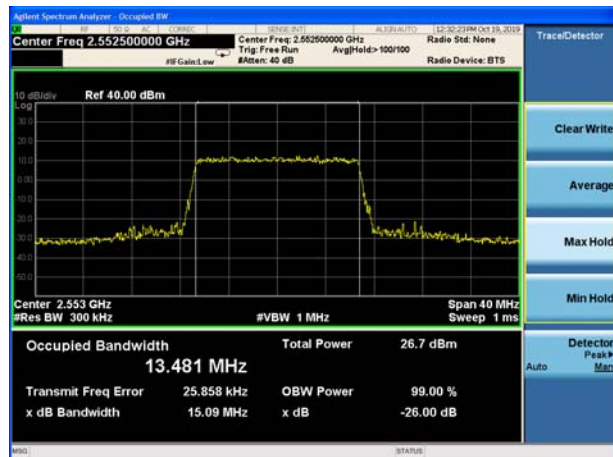


## LTE Band 41 16QAM 10MHz CH-High

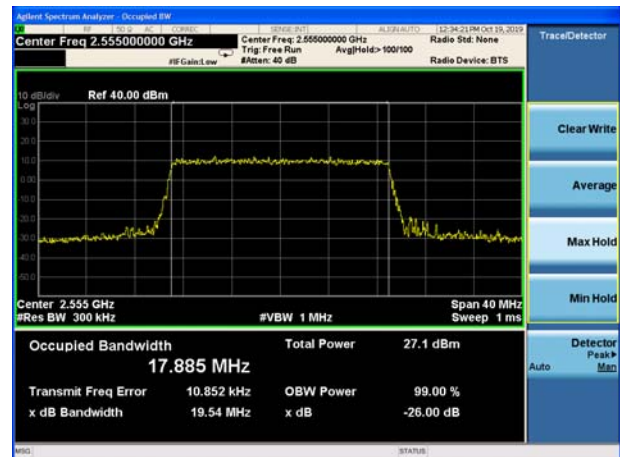




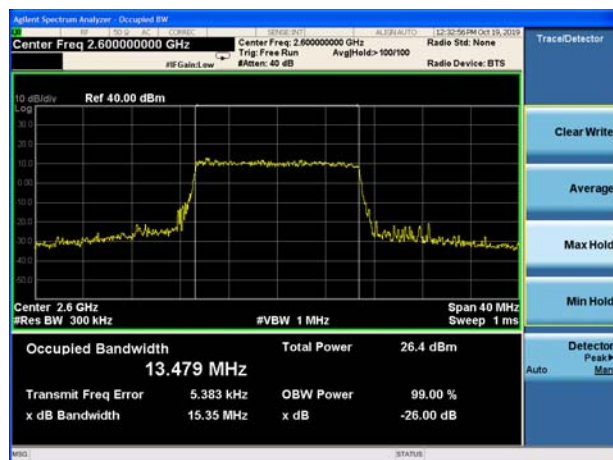
## LTE Band 41 16QAM 15MHz CH-Low



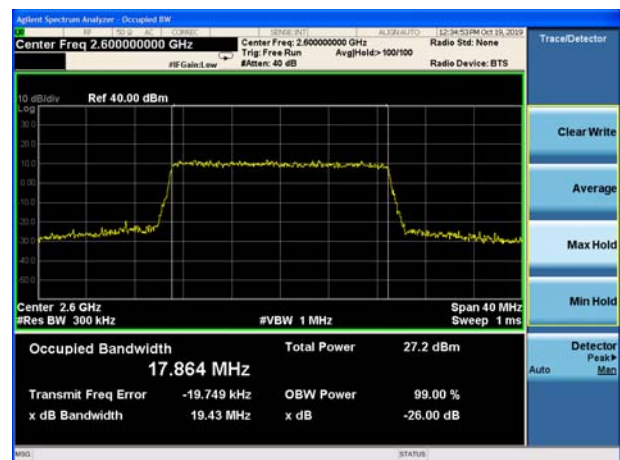
## LTE Band 41 16QAM 20MHz CH-Low



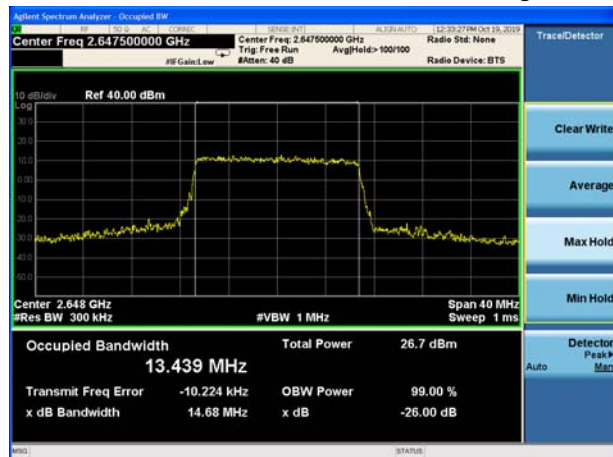
## LTE Band 41 16QAM 15MHz CH-Middle



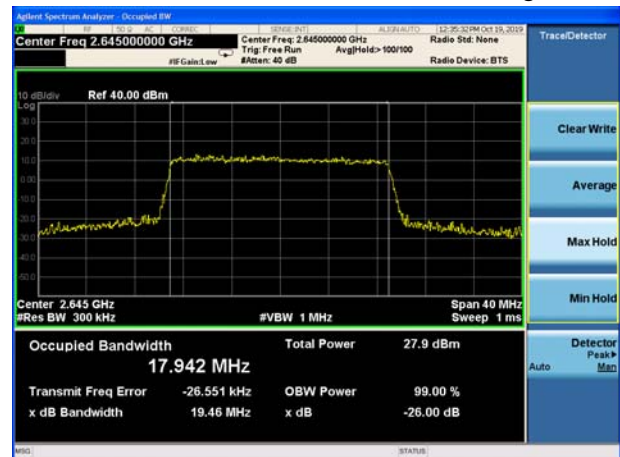
## LTE Band 41 16QAM 20MHz CH-Middle



## LTE Band 41 16QAM 15MHz CH-High



## LTE Band 41 16QAM 20MHz CH-High



### 5.3 Band Edge Compliance

#### Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C  | 45%~50%           | 101.5kPa |

#### Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured.

The testing follows KDB 971168 D01 v03r01 Section 6.0

The EUT was connected to spectrum analyzer and system simulator via a power divider.

The band edges of low and high channels for the highest RF powers were measured.

For LTE Band 41 Set RBW  $\geq 1\%$  EBW in the 1MHz band immediately outside and adjacent to the band edge. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.

RBW is set to 51 kHz, VBW is set to 160 kHz for WCDMA Band IV.

RBW is set to 15 kHz, VBW is set to 51 kHz for LTE Band 4 (1.4MHz).

RBW is set to 30 kHz, VBW is set to 100 kHz for LTE Band 4 (3MHz).

RBW is set to 51 kHz, VBW is set to 160 kHz for LTE Band 4 (5MHz).

RBW is set to 50 kHz, VBW is set to 200 kHz for LTE Band 7/38/41 (5MHz).

RBW is set to 100 kHz, VBW is set to 300kHz for LTE Band 4/7/38/41 (10MHz).

RBW is set to 150 kHz, VBW is set to 510 kHz for LTE Band 4 (15MHz).

RBW is set to 200 kHz, VBW is set to 1 MHz for LTE Band 7/38/41 (15MHz).

RBW is set to 200 kHz, VBW is set to 620 kHz for LTE Band 4 (20MHz)

RBW is set to 200 kHz, VBW is set to 1 MHz for LTE Band 7/38/41 (20MHz).

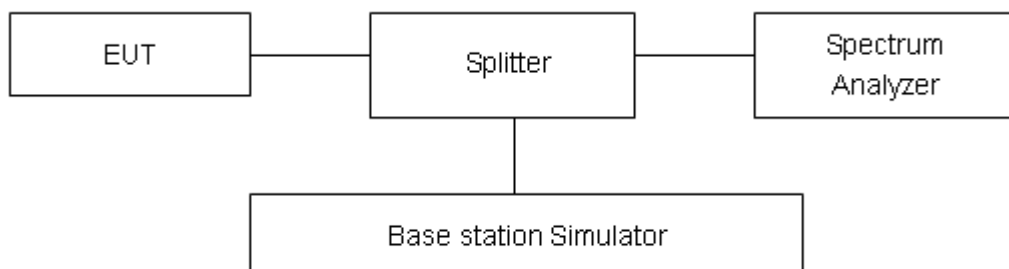
on spectrum analyzer.

Set spectrum analyzer with RMS detector.

The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

Checked that all the results comply with the emission limit line.

#### Test Setup



## Limits

Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10} (P)$  dB”

Rule Part 27.53(m) (4) specifies that “for BRS and EBS stations. For mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log (P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log (P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log (P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section. In addition, the attenuation factor shall not be less than  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log (P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Example:

The limit line is derived from  $43 + 10 \log (P)$  dB below the transmitter power P(Watts)

$= P(W) - [43 + 10 \log(P)]$  (dB)

$= [30 + 10 \log (P)]$  (dBm) -  $[43 + 10 \log(P)]$  (dB) = -13dBm.

## Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ ,  $U=0.684$ dB.



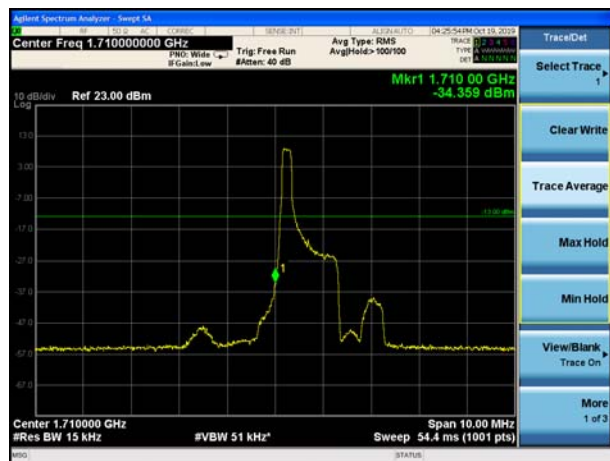
## Test Result

All the test traces in the plots shows the test results clearly.

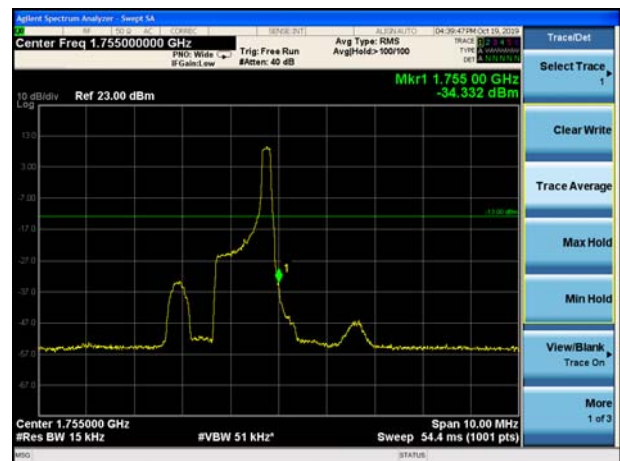




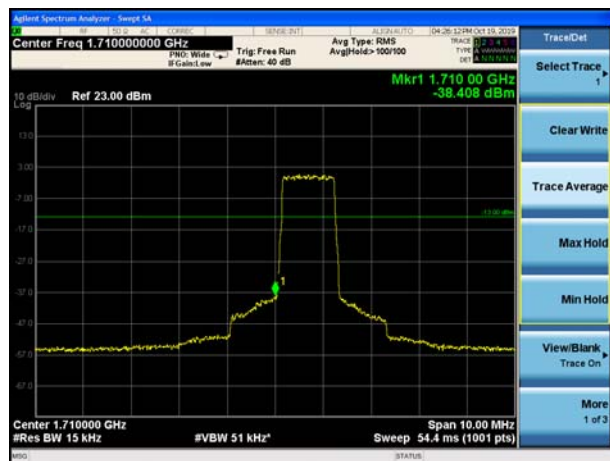
## LTE Band 4 QPSK 1.4MHz CH-Low, 1 RB



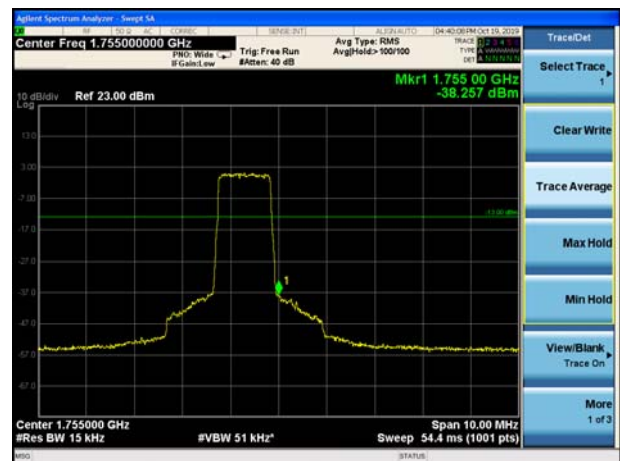
## LTE Band 4 QPSK 1.4MHz CH-High, 1 RB



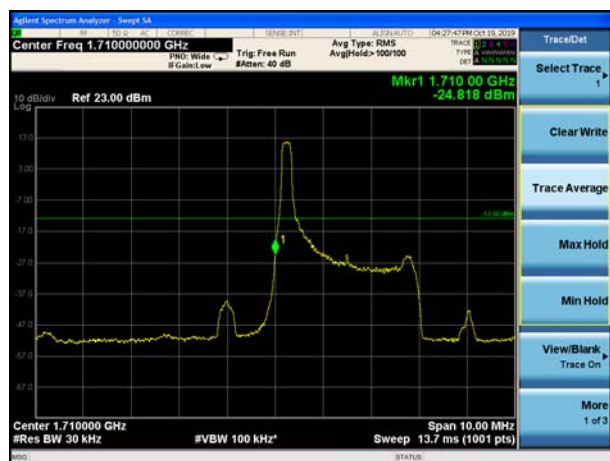
## LTE Band 4 QPSK 1.4MHz CH-Low, 100%RB



## LTE Band 4 QPSK 1.4MHz CH-High, 100%RB



## LTE Band 4 QPSK 3MHz CH-Low, 1 RB



## LTE Band 4 QPSK 3MHz CH-High, 1 RB





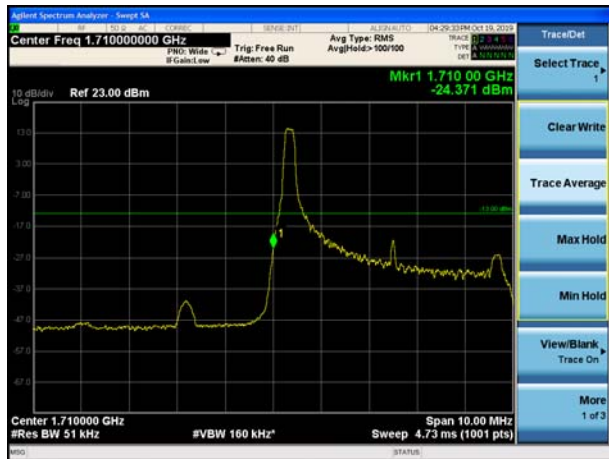
## LTE Band 4 QPSK 3MHz CH-Low, 100%RB



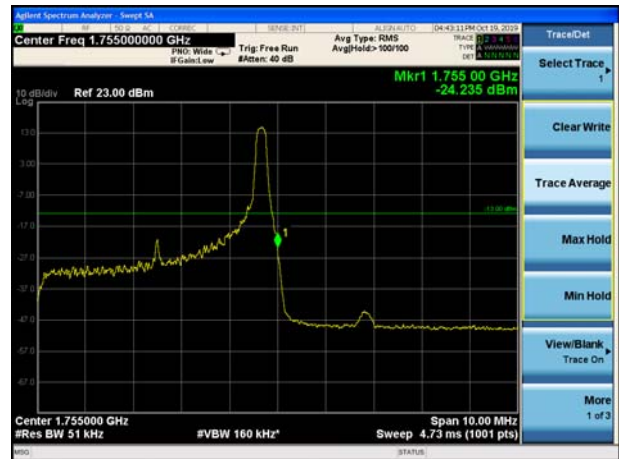
## LTE Band 4 QPSK 3MHz CH-High, 100%RB



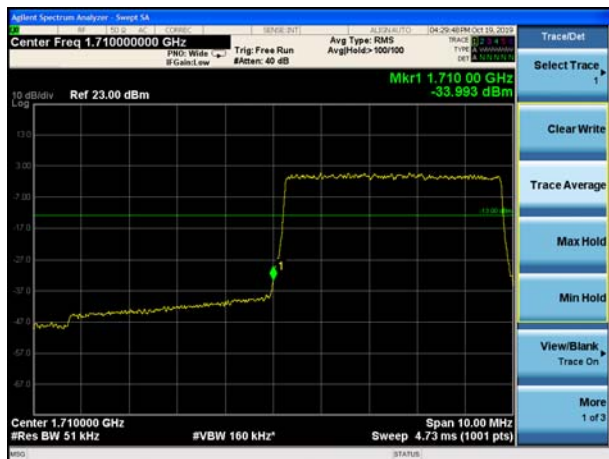
## LTE Band 4 QPSK 5MHz CH-Low, 1 RB



## LTE Band 4 QPSK 5MHz CH-High, 1 RB



## LTE Band 4 QPSK 5MHz CH-Low, 100%RB

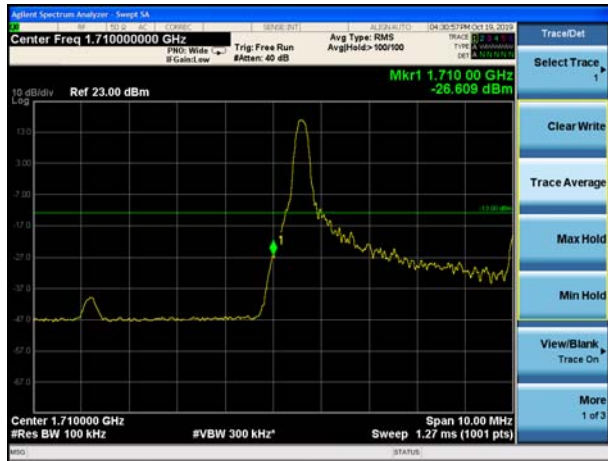


## LTE Band 4 QPSK 5MHz CH-High, 100%RB

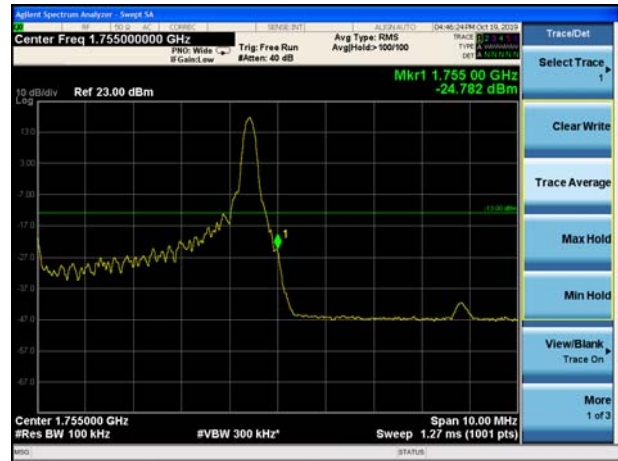




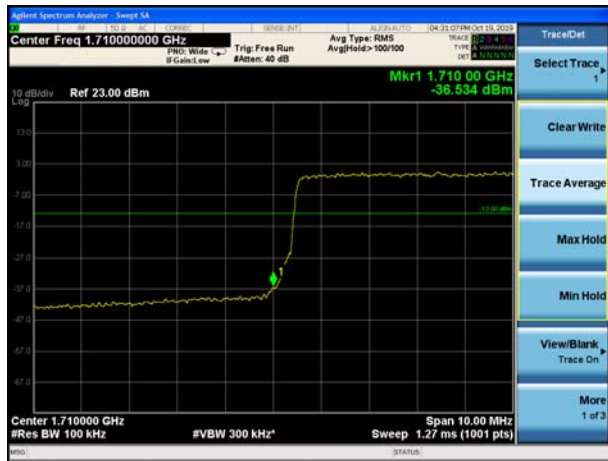
## LTE Band 4 QPSK 10MHz CH-Low, 1 RB



## LTE Band 4 QPSK 10MHz CH-High, 1 RB



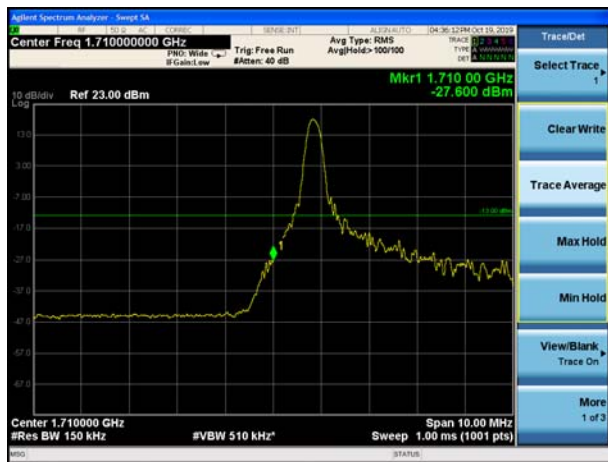
## LTE Band 4 QPSK 10MHz CH-Low, 100%RB



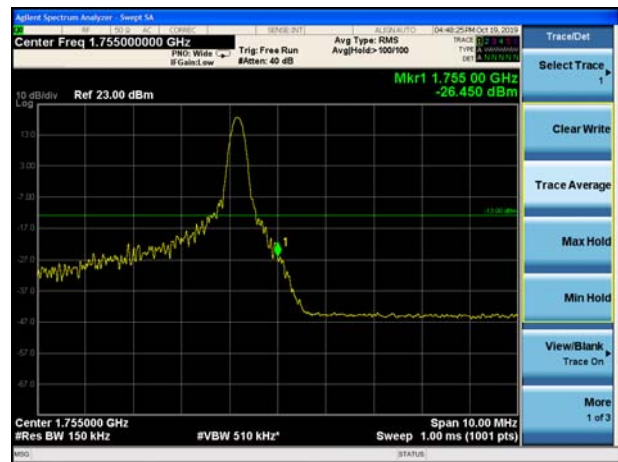
## LTE Band 4 QPSK 10MHz CH-High, 100%RB



## LTE Band 4 QPSK 15MHz CH-Low, 1 RB



## LTE Band 4 QPSK 15MHz CH-High, 1 RB





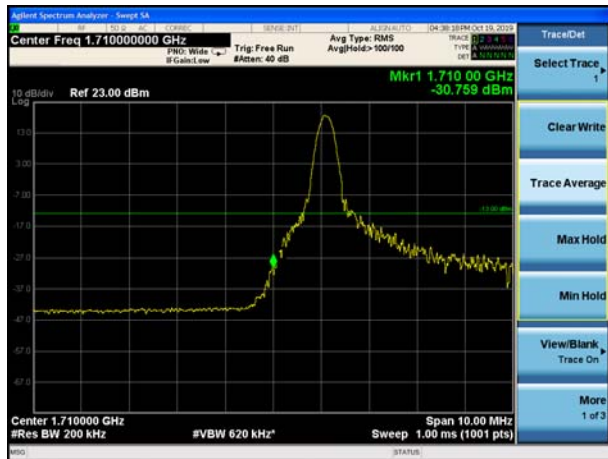
## LTE Band 4 QPSK 15MHz CH-Low, 100%RB



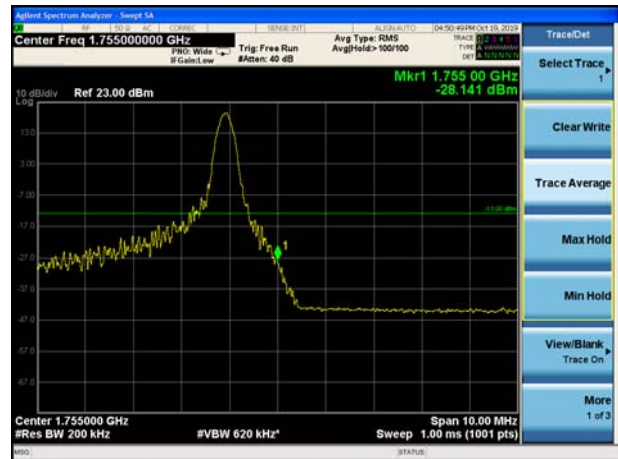
## LTE Band 4 QPSK 15MHz CH-High, 100%RB



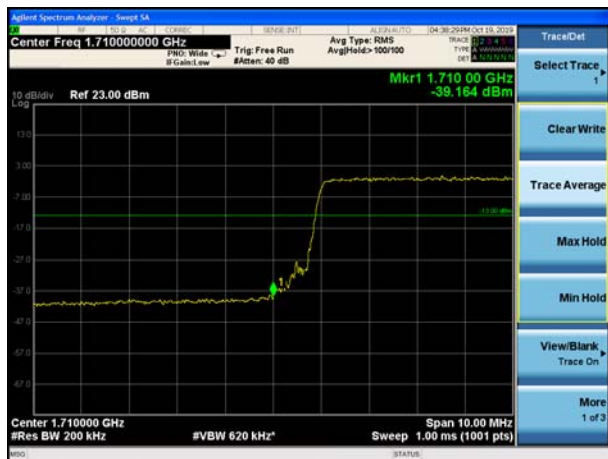
## LTE Band 4 QPSK 20MHz CH-Low, 1 RB



## LTE Band 4 QPSK 20MHz CH-High, 1 RB



## LTE Band 4 QPSK 20MHz CH-Low, 100%RB

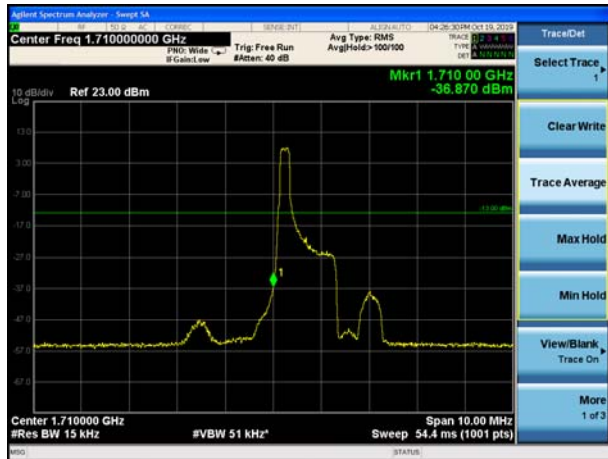


## LTE Band 4 QPSK 20MHz CH-High, 100%RB

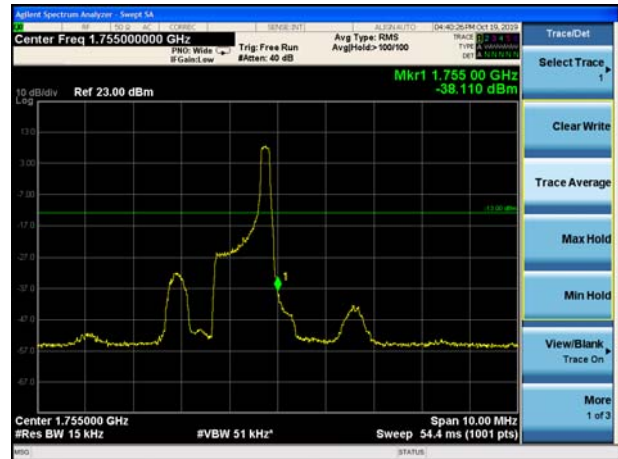




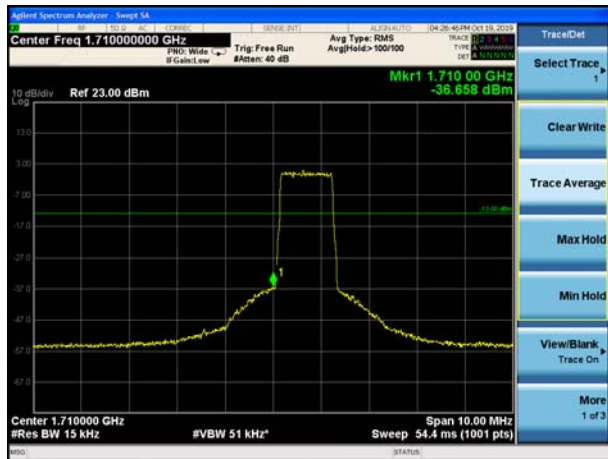
## LTE Band 4 16QAM 1.4MHz CH-Low, 1 RB



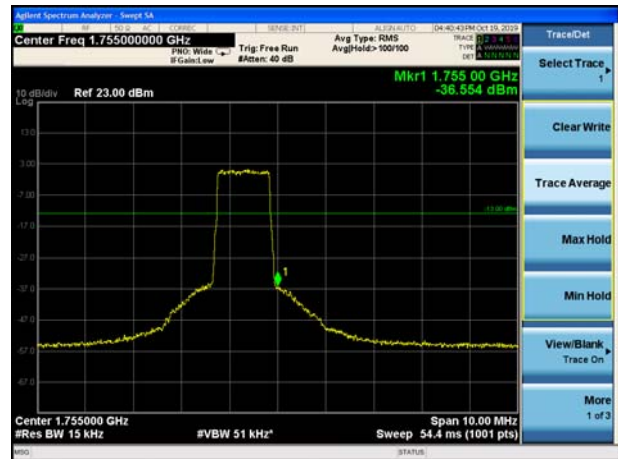
## LTE Band 4 16QAM 1.4MHz CH-High, 1 RB



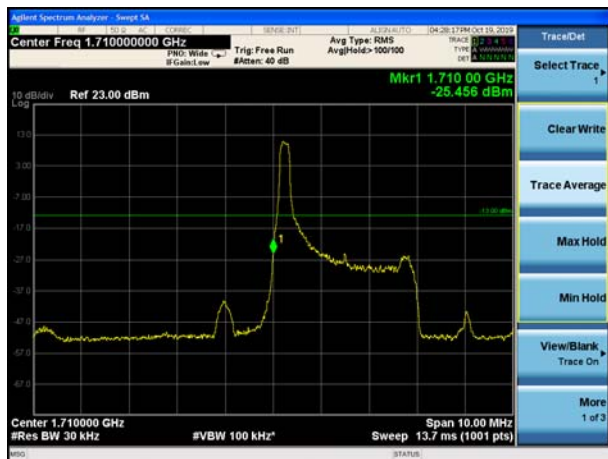
## LTE Band 4 16QAM 1.4MHz CH-Low, 100%RB



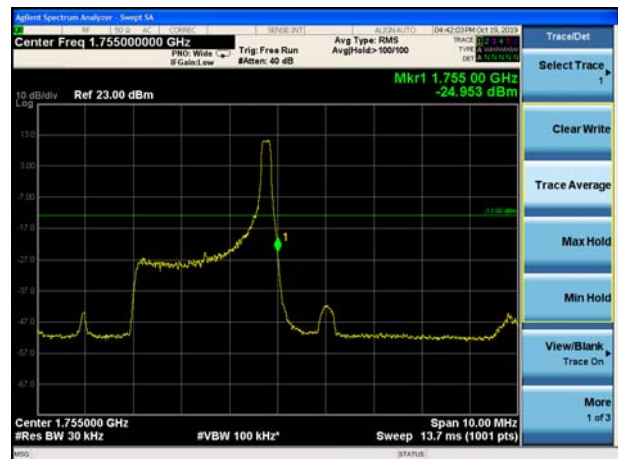
## LTE Band 4 16QAM 1.4MHz CH-High, 100%RB



## LTE Band 4 16QAM 3MHz CH-Low, 1 RB



## LTE Band 4 16QAM 3MHz CH-High, 1 RB





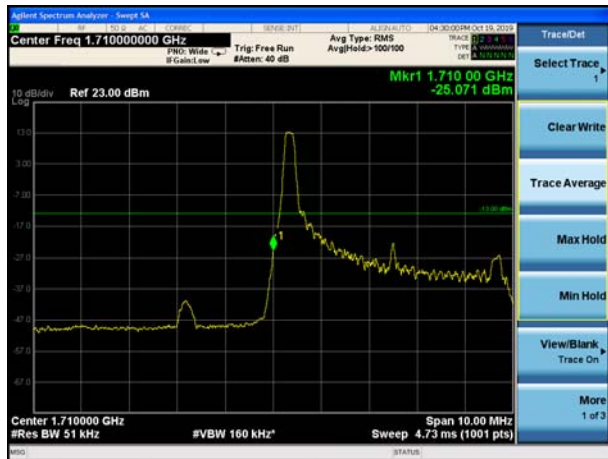
## LTE Band 4 16QAM 3MHz CH-Low, 100%RB



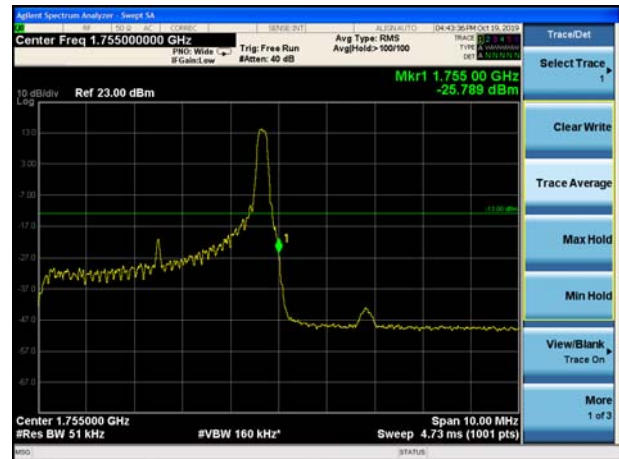
## LTE Band 4 16QAM 3MHz CH-High, 100%RB



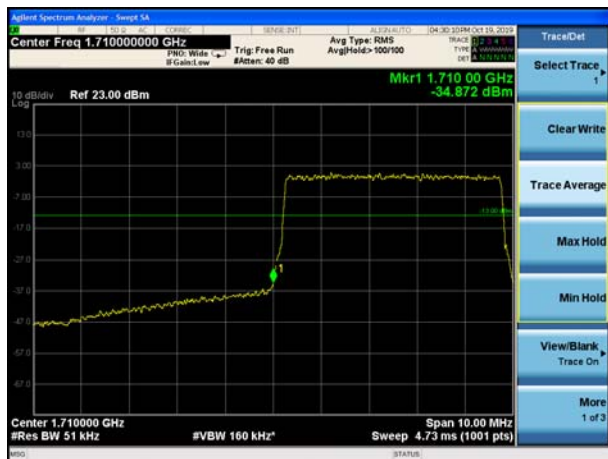
## LTE Band 4 16QAM 5MHz CH-Low, 1 RB



## LTE Band 4 16QAM 5MHz CH-High, 1 RB



## LTE Band 4 16QAM 5MHz CH-Low, 100%RB

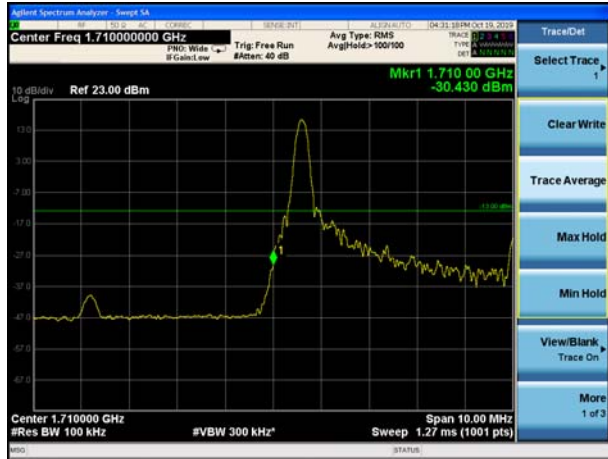


## LTE Band 4 16QAM 5MHz CH-High, 100%RB

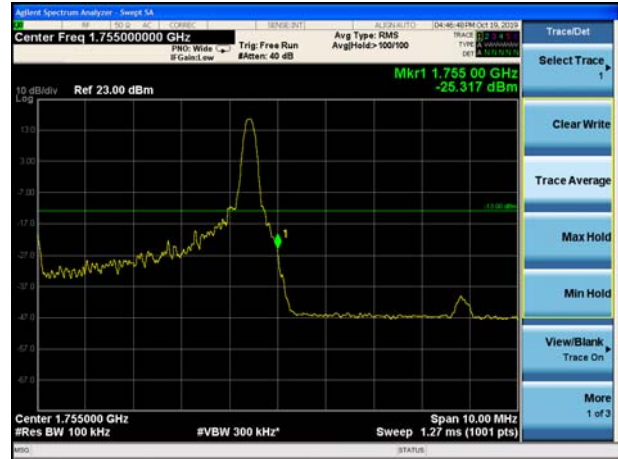




## LTE Band 4 16QAM 10MHz CH-Low, 1 RB



## LTE Band 4 16QAM 10MHz CH-High, 1 RB



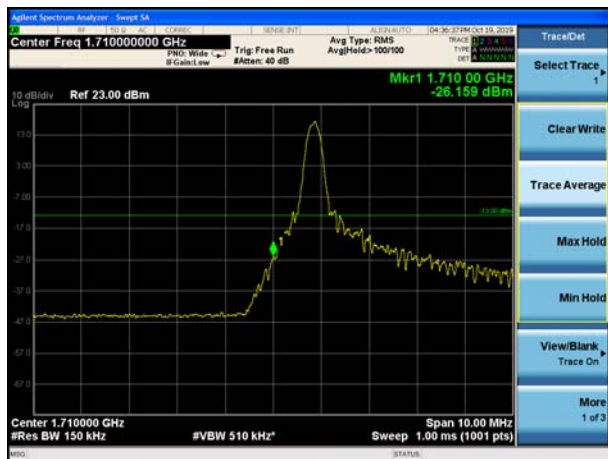
## LTE Band 4 16QAM 10MHz CH-Low, 100%RB



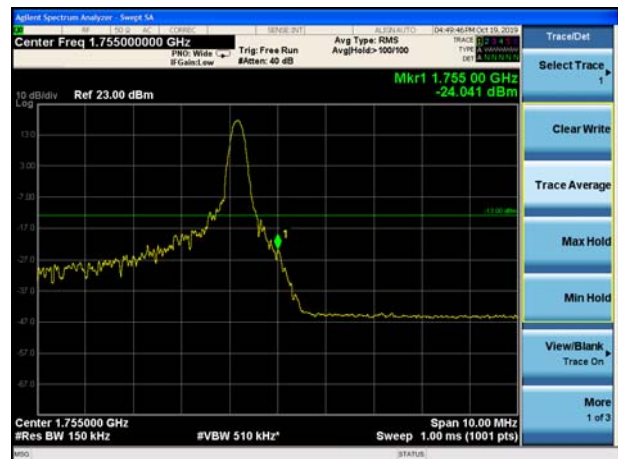
## LTE Band 4 16QAM 10MHz CH-High, 100%RB



## LTE Band 4 16QAM 15MHz CH-Low, 1 RB



## LTE Band 4 16QAM 15MHz CH-High, 1 RB





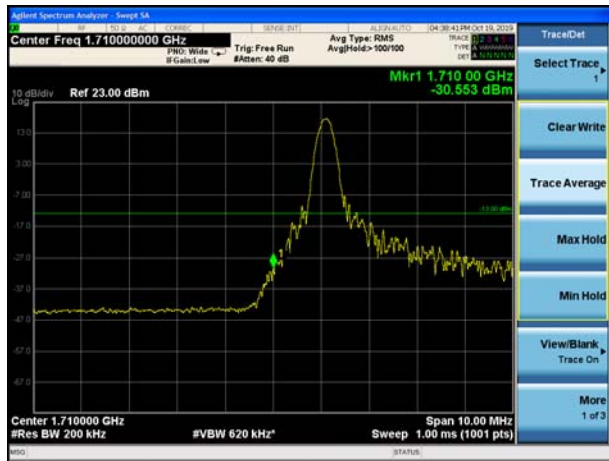
## LTE Band 4 16QAM 15MHz CH-Low, 100%RB



## LTE Band 4 16QAM 15MHz CH-High, 100%RB



## LTE Band 4 16QAM 20MHz CH-Low, 1 RB



## LTE Band 4 16QAM 20MHz CH-High, 1 RB



## LTE Band 4 16QAM 20MHz CH-Low, 100%RB

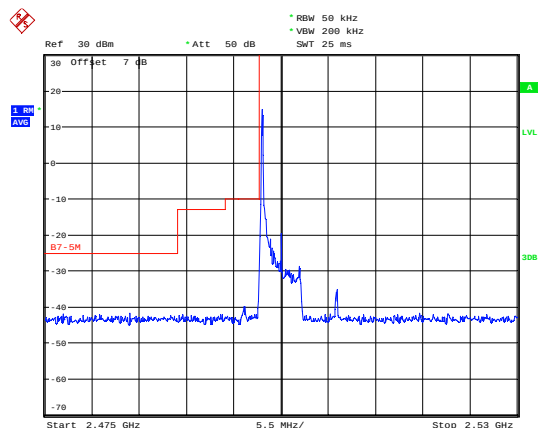


## LTE Band 4 16QAM 20MHz CH-High, 100%RB



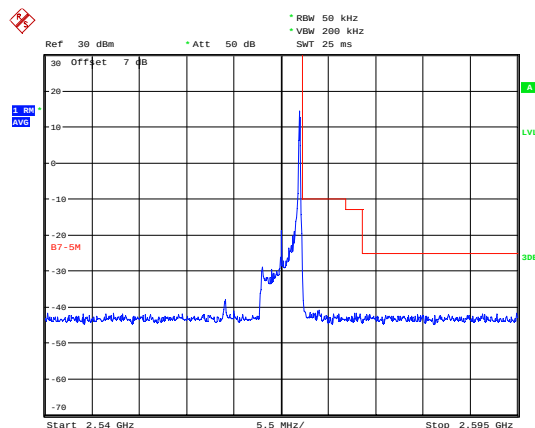


## LTE Band 7 QPSK 5MHz CH-Low, 1 RB



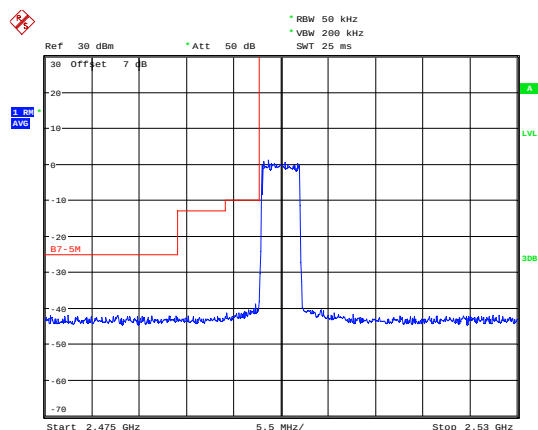
Date: 21.OCT.2019 12:28:49

## LTE Band 7 QPSK 5MHz CH-High, 1 RB



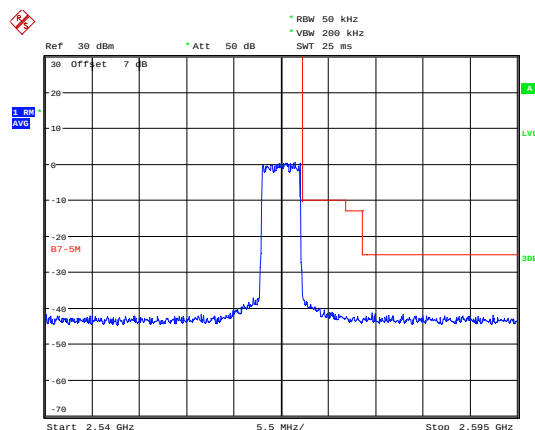
Date: 21.OCT.2019 12:41:42

## LTE Band 7 QPSK 5MHz CH-Low, 100%RB



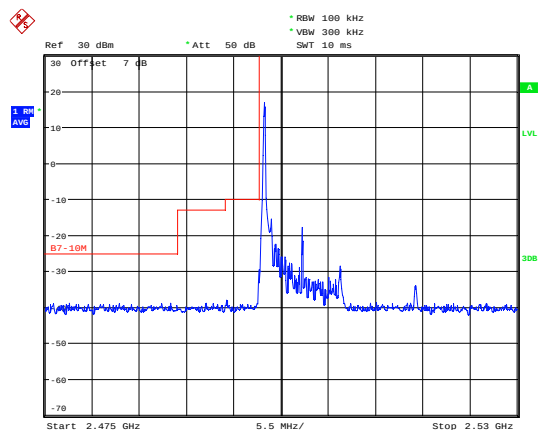
Date: 21.OCT.2019 12:29:06

## LTE Band 7 QPSK 5MHz CH-High, 100%RB



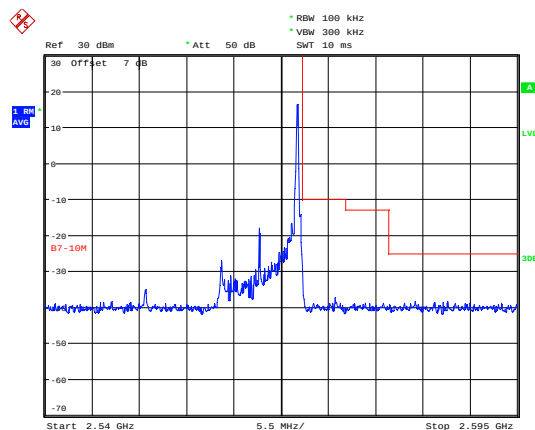
Date: 21.OCT.2019 12:41:53

## LTE Band 7 QPSK 10MHz CH-Low, 1 RB



Date: 21.OCT.2019 12:38:41

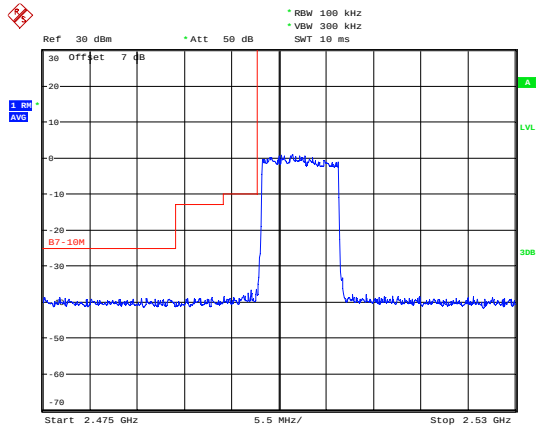
## LTE Band 7 QPSK 10MHz CH-High, 1 RB



Date: 21.OCT.2019 12:43:20

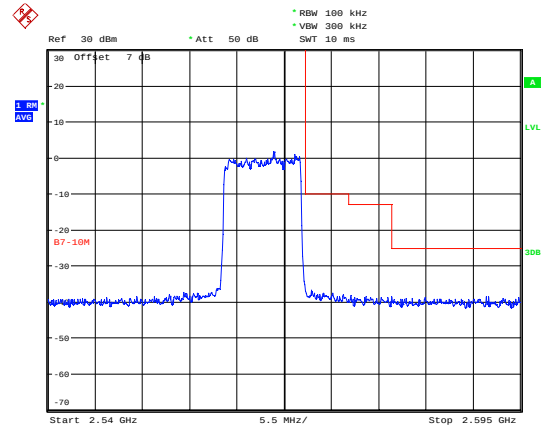


## LTE Band 7 QPSK 10MHz CH-Low, 100%RB



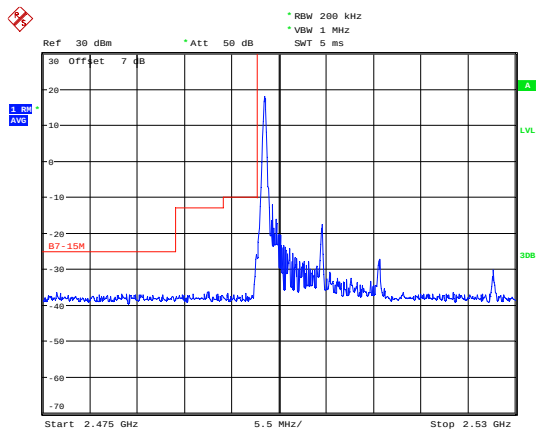
Date: 21.OCT.2019 12:38:54

## LTE Band 7 QPSK 10MHz CH-High, 100%RB



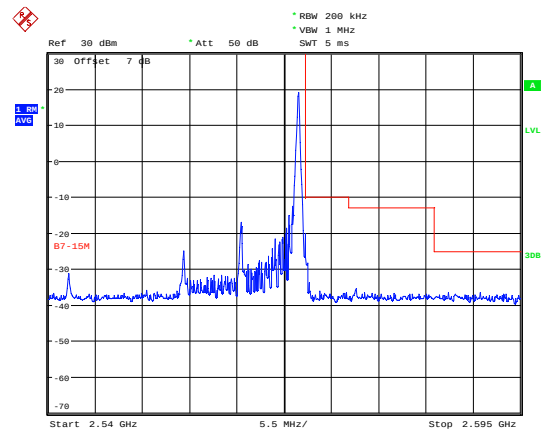
Date: 21.OCT.2019 12:43:32

## LTE Band 7 QPSK 15MHz CH-Low, 1 RB



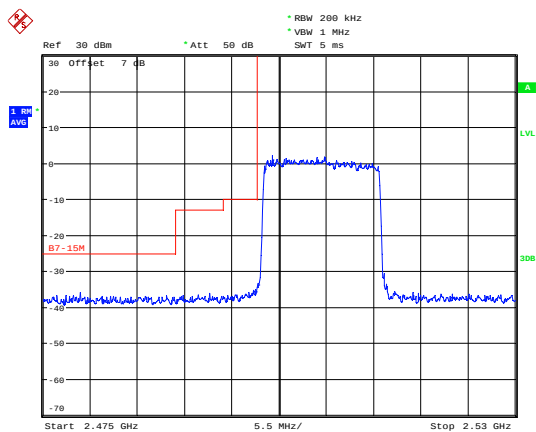
Date: 21.OCT.2019 12:33:06

## LTE Band 7 QPSK 15MHz CH-High, 1 RB



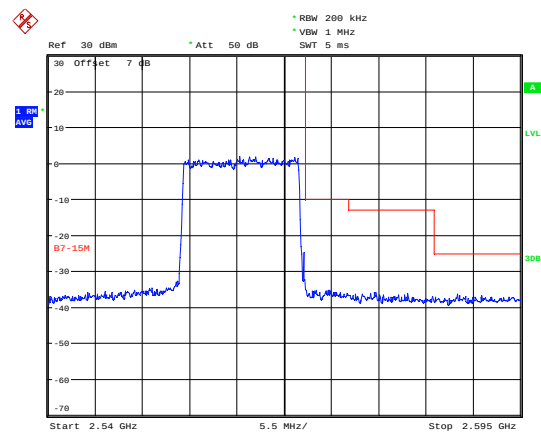
Date: 21.OCT.2019 12:44:52

## LTE Band 7 QPSK 15MHz CH-Low, 100%RB



Date: 21.OCT.2019 12:33:17

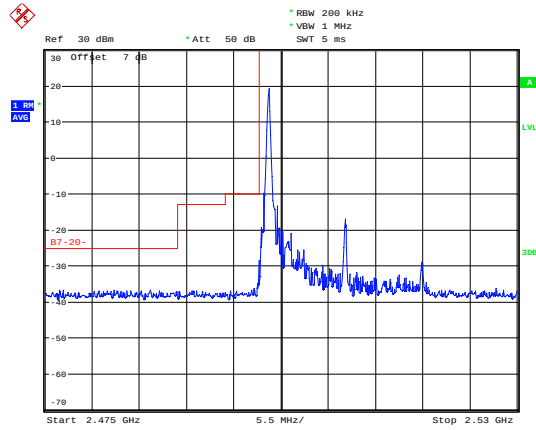
## LTE Band 7 QPSK 15MHz CH-High, 100%RB



Date: 21.OCT.2019 12:45:03

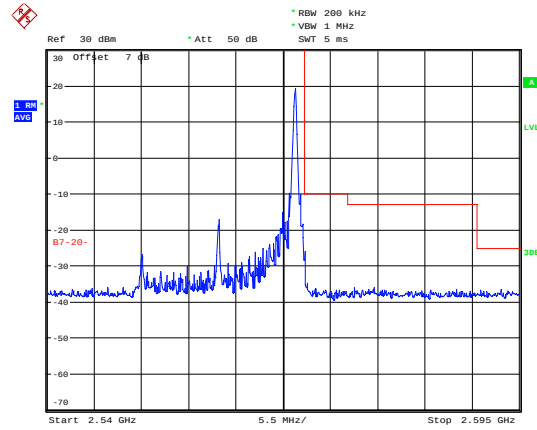


## LTE Band 7 QPSK 20MHz CH-Low, 1 RB



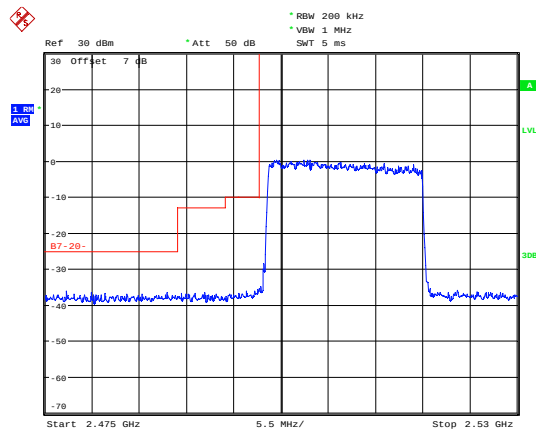
Date: 21.OCT.2019 12:39:11

## LTE Band 7 QPSK 20MHz CH-High, 1 RB



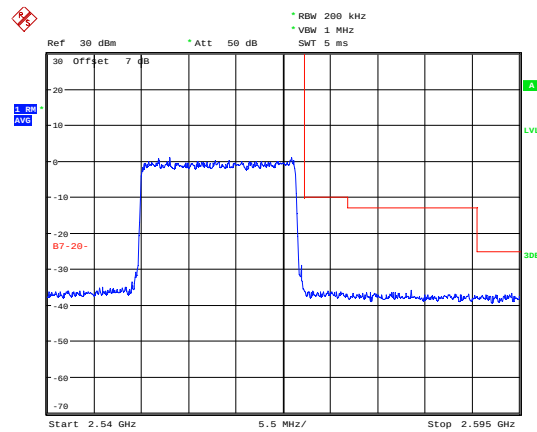
Date: 21.OCT.2019 12:46:19

## LTE Band 7 QPSK 20MHz CH-Low, 100%RB



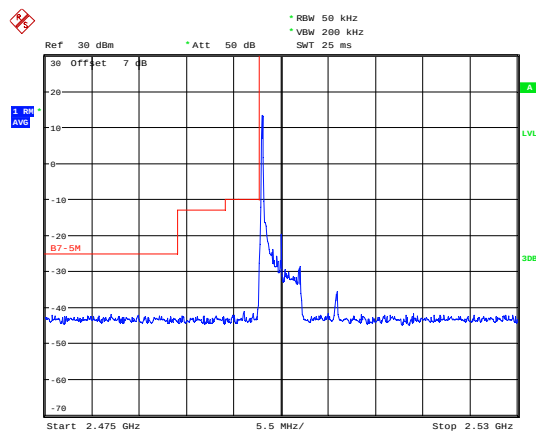
Date: 21.OCT.2019 12:39:21

## LTE Band 7 QPSK 20MHz CH-High, 100%RB



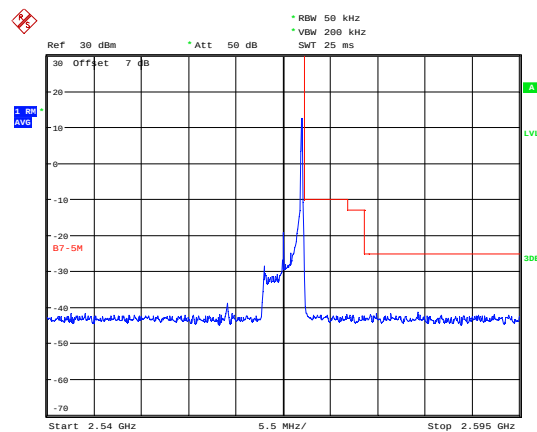
Date: 21.OCT.2019 12:46:31

## LTE Band 7 16QAM 5MHz CH-Low, 1 RB



Date: 21.OCT.2019 12:29:20

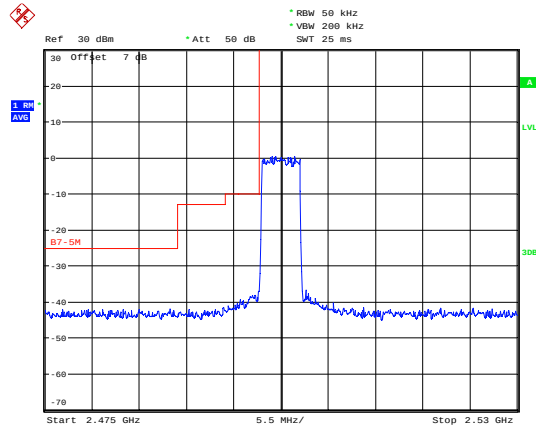
## LTE Band 7 16QAM 5MHz CH-High, 1 RB



Date: 21.OCT.2019 12:42:04

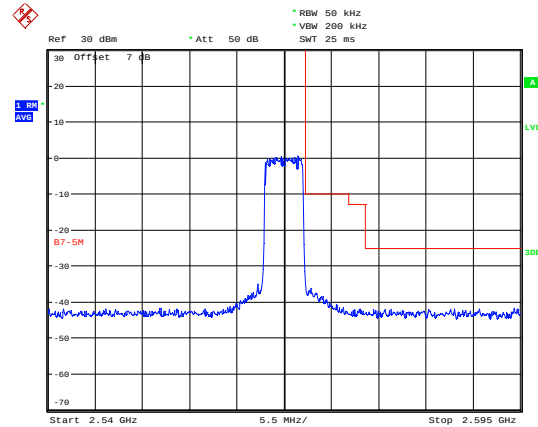


## LTE Band 7 16QAM 5MHz CH-Low, 100%RB



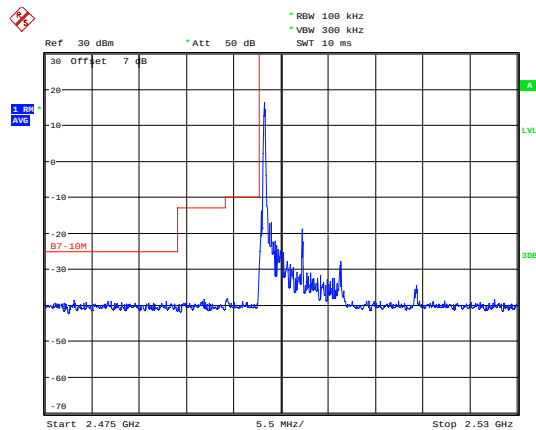
Date: 21.OCT.2019 12:29:31

## LTE Band 7 16QAM 5MHz CH-High, 100%RB



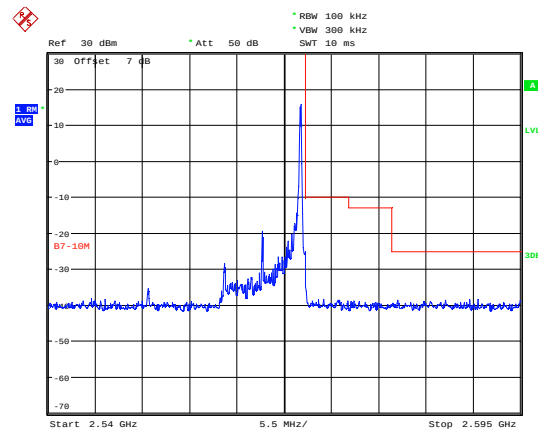
Date: 21.OCT.2019 12:42:15

## LTE Band 7 16QAM 10MHz CH-Low, 1 RB



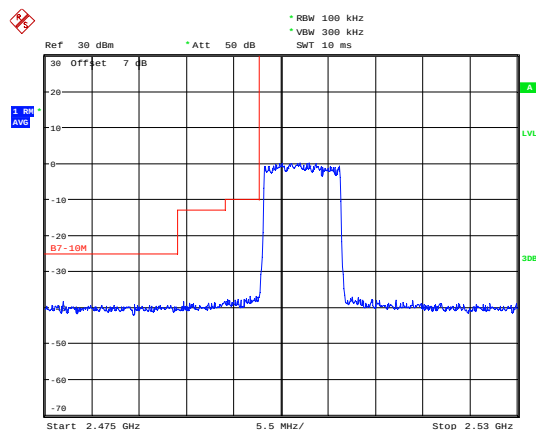
Date: 21.OCT.2019 12:31:07

## LTE Band 7 16QAM 10MHz CH-High, 1 RB



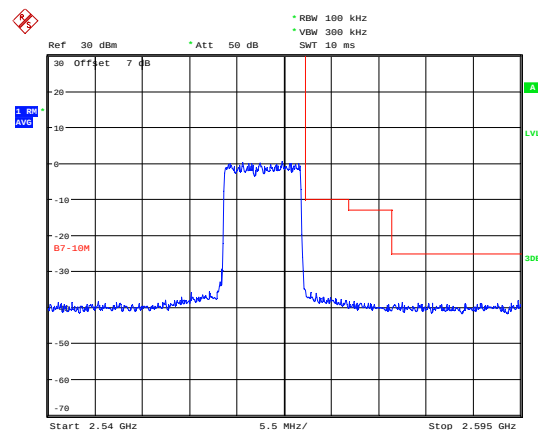
Date: 21.OCT.2019 12:43:46

## LTE Band 7 16QAM 10MHz CH-Low, 100%RB



Date: 21.OCT.2019 12:31:18

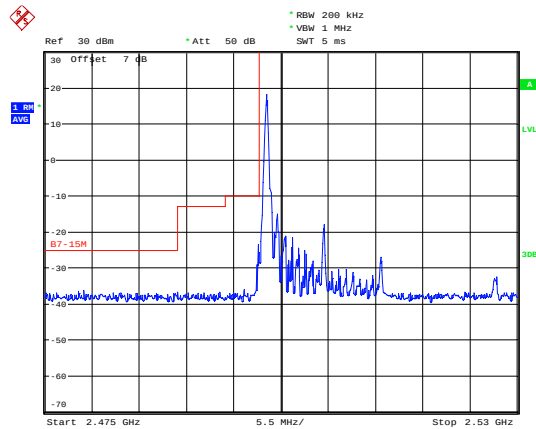
## LTE Band 7 16QAM 10MHz CH-High, 100%RB



Date: 21.OCT.2019 12:43:59

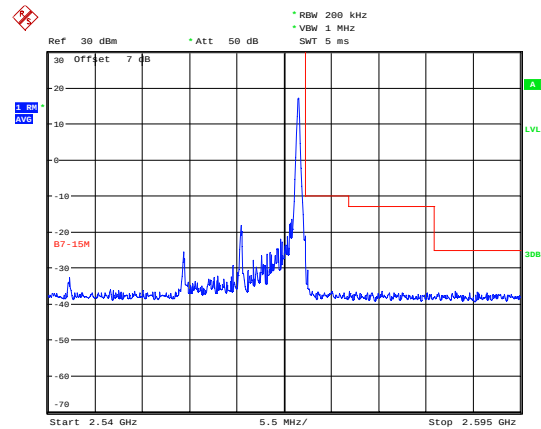


## LTE Band 7 16QAM 15MHz CH-Low, 1 RB



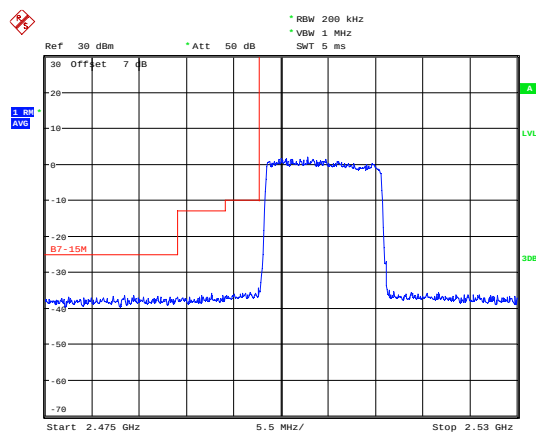
Date: 21.OCT.2019 12:35:01

## LTE Band 7 16QAM 15MHz CH-High, 1 RB



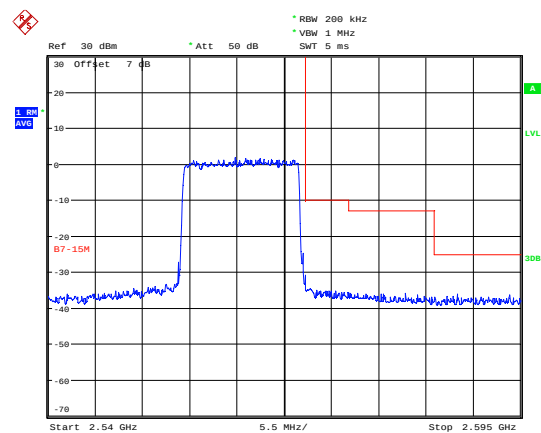
Date: 21.OCT.2019 12:45:17

## LTE Band 7 16QAM 15MHz CH-Low, 100%RB



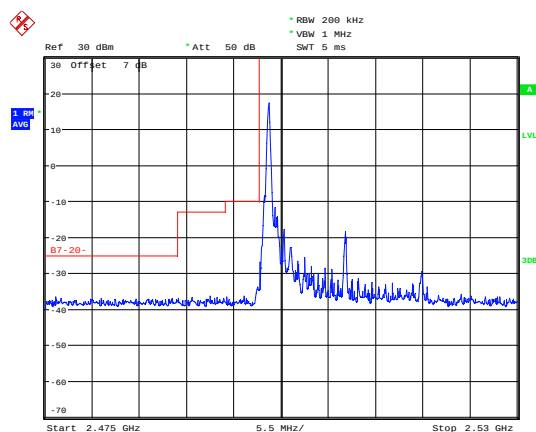
Date: 21.OCT.2019 12:35:16

## LTE Band 7 16QAM 15MHz CH-High, 100%RB



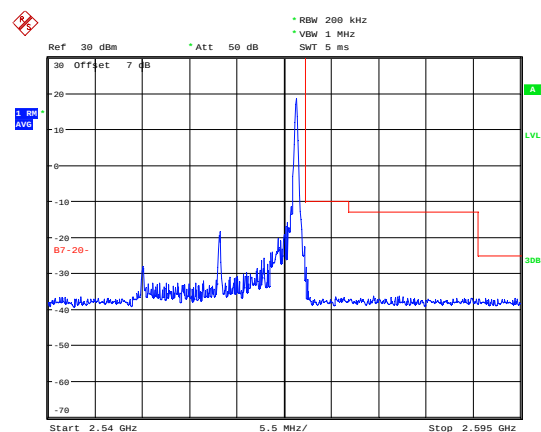
Date: 21.OCT.2019 12:45:34

## LTE Band 7 16QAM 20MHz CH-Low, 1 RB



Date: 21.OCT.2019 12:39:57

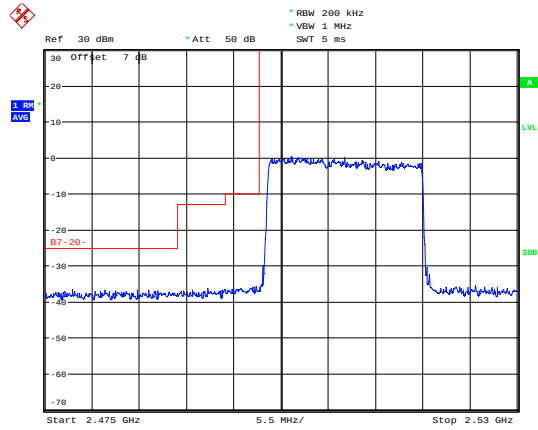
## LTE Band 7 16QAM 20MHz CH-High, 1 RB



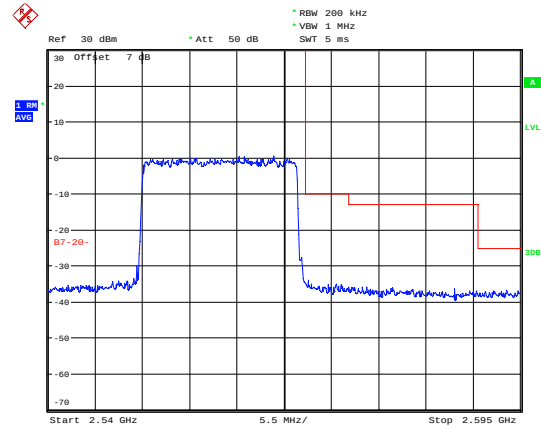
Date: 21.OCT.2019 12:46:43



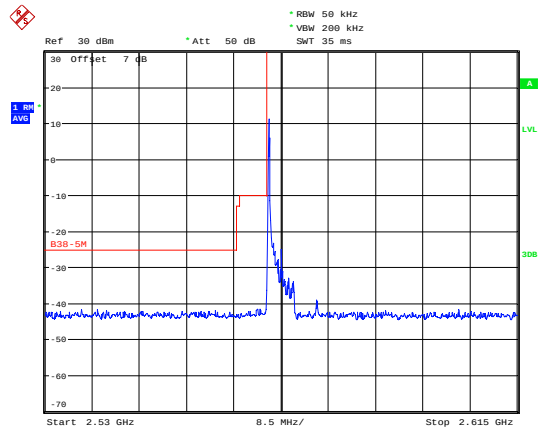
## LTE Band 7 16QAM 20MHz CH-Low, 100%RB



## LTE Band 7 16QAM 20MHz CH-High, 100%RB

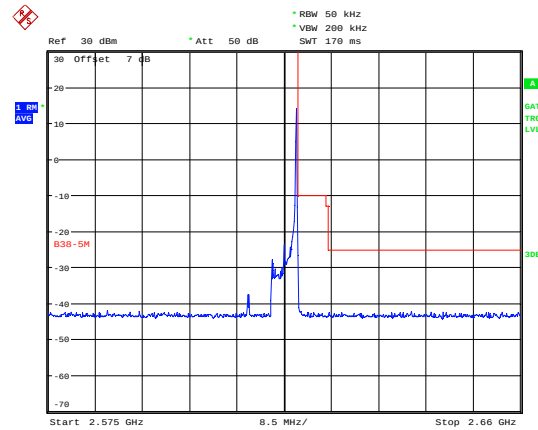


### LTE Band 38 QPSK 5MHz CH-Low, 1 RB



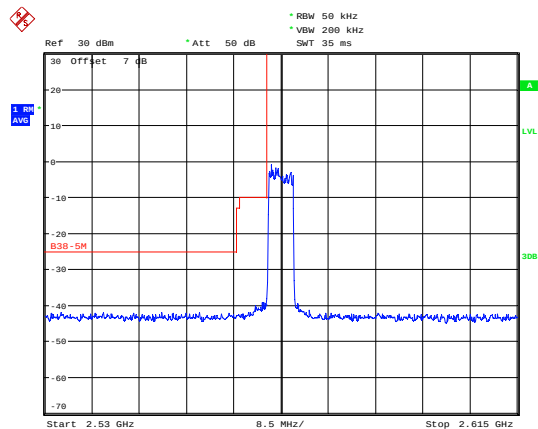
Date: 21.OCT.2019 12:49:03

### LTE Band 38 QPSK 5MHz CH-High, 1 RB



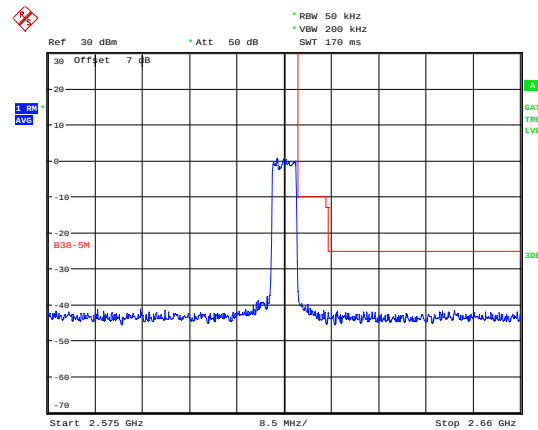
Date: 21.OCT.2019 13:04:13

### LTE Band 38 QPSK 5MHz CH-Low, 100%RB



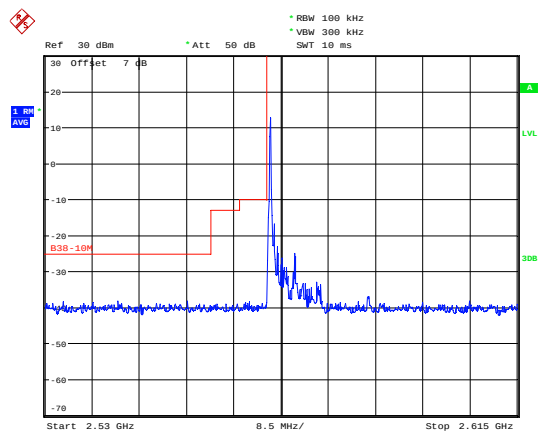
Date: 21.OCT.2019 12:49:18

### LTE Band 38 QPSK 5MHz CH-High, 100%RB



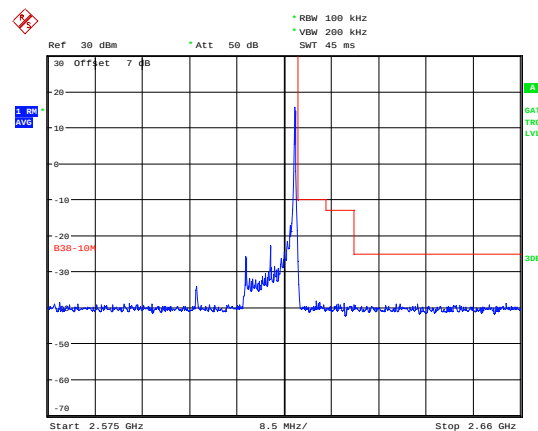
Date: 21.OCT.2019 13:04:30

### LTE Band 38 QPSK 10MHz CH-Low, 1 RB



Date: 21.OCT.2019 12:52:52

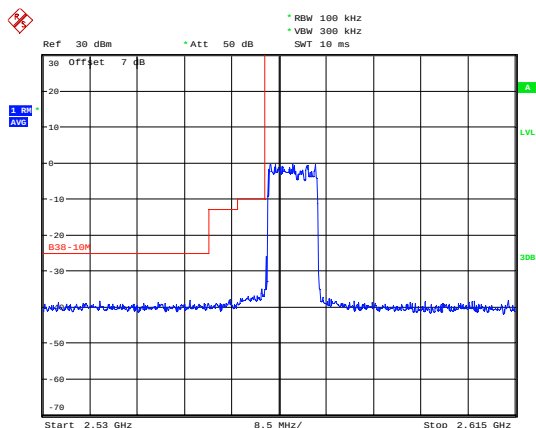
### LTE Band 38 QPSK 10MHz CH-High, 1 RB



Date: 21.OCT.2019 13:06:10

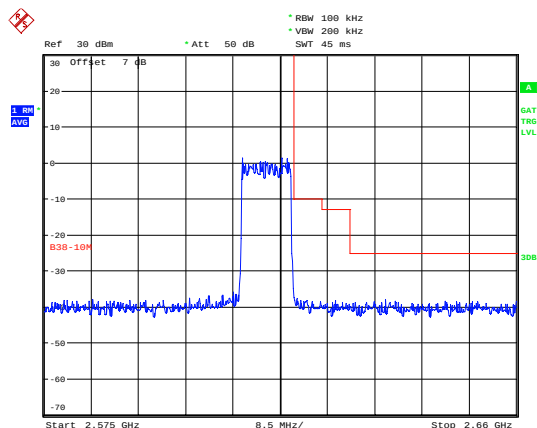


## LTE Band 38 QPSK 10MHz CH-Low, 100%RB



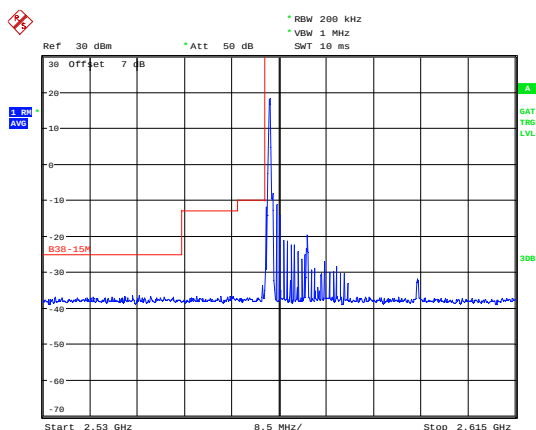
Date: 21.OCT.2019 12:53:10

## LTE Band 38 QPSK 10MHz CH-High, 100%RB



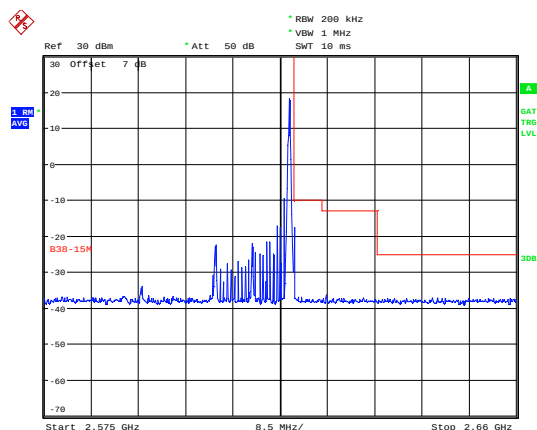
Date: 21.OCT.2019 13:06:25

## LTE Band 38 QPSK 15MHz CH-Low, 1 RB



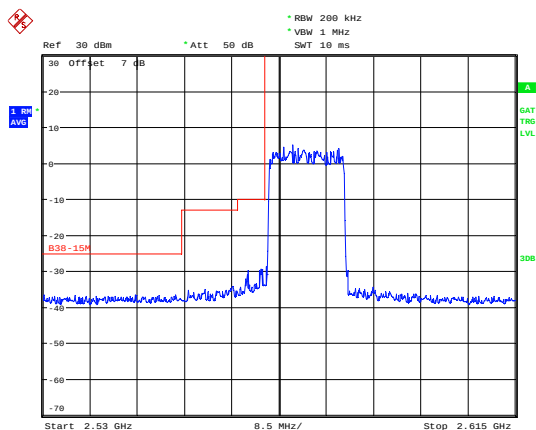
Date: 21.OCT.2019 12:57:35

## LTE Band 38 QPSK 15MHz CH-High, 1 RB



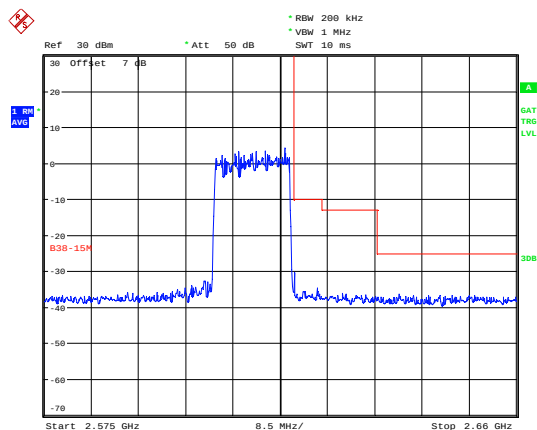
Date: 21.OCT.2019 13:08:00

## LTE Band 38 QPSK 15MHz CH-Low, 100%RB



Date: 21.OCT.2019 12:57:46

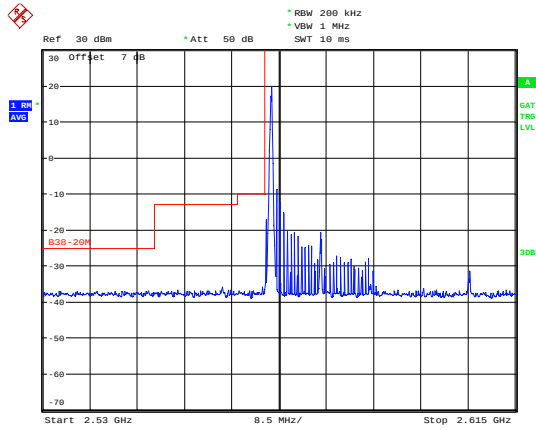
## LTE Band 38 QPSK 15MHz CH-High, 100%RB



Date: 21.OCT.2019 13:08:10

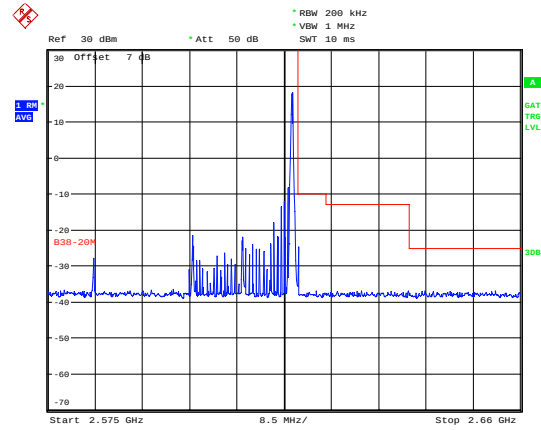


## LTE Band 38 QPSK 20MHz CH-Low, 1 RB



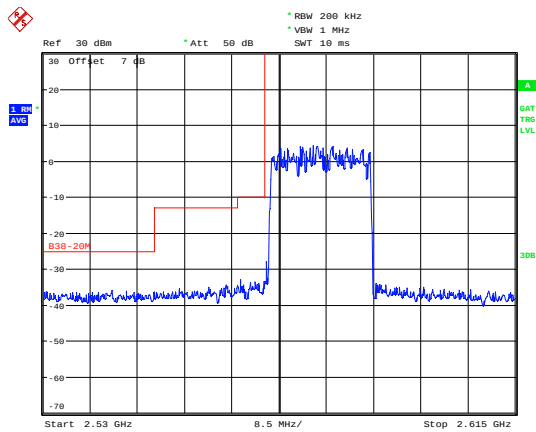
Date: 21.OCT.2019 13:02:11

## LTE Band 38 QPSK 20MHz CH-High, 1 RB



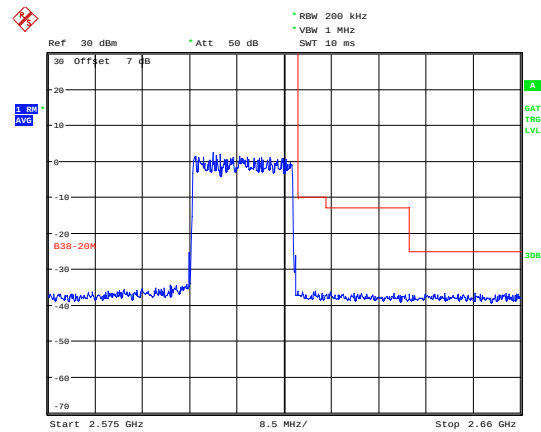
Date: 21.OCT.2019 13:09:18

## LTE Band 38 QPSK 20MHz CH-Low, 100%RB



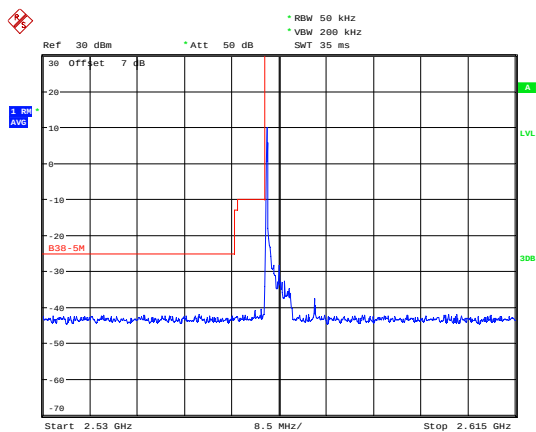
Date: 21.OCT.2019 13:02:23

## LTE Band 38 QPSK 20MHz CH-High, 100%RB



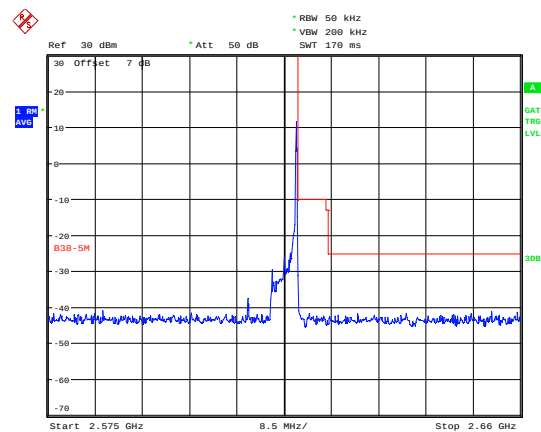
Date: 21.OCT.2019 13:09:33

## LTE Band 38 16QAM 5MHz CH-Low, 1 RB



Date: 21.OCT.2019 12:49:54

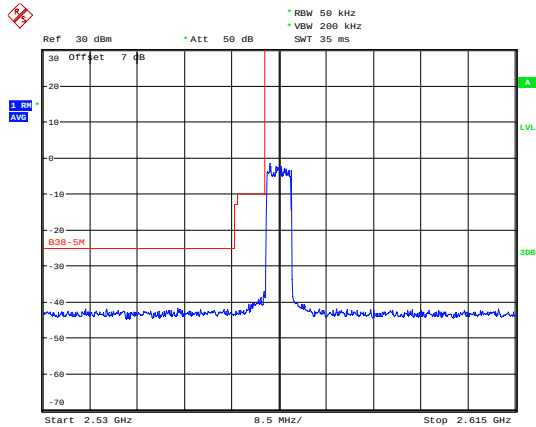
## LTE Band 38 16QAM 5MHz CH-High, 1 RB



Date: 21.OCT.2019 13:04:49

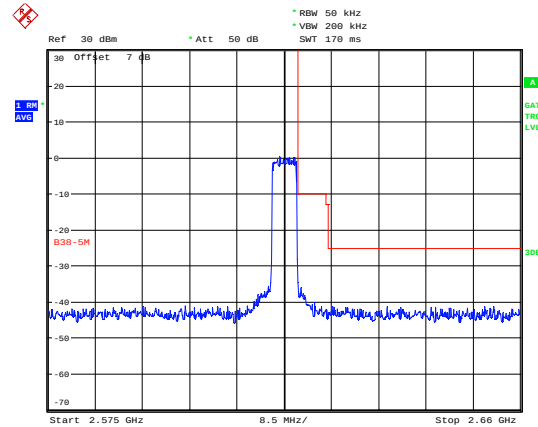


## LTE Band 38 16QAM 5MHz CH-Low, 100%RB



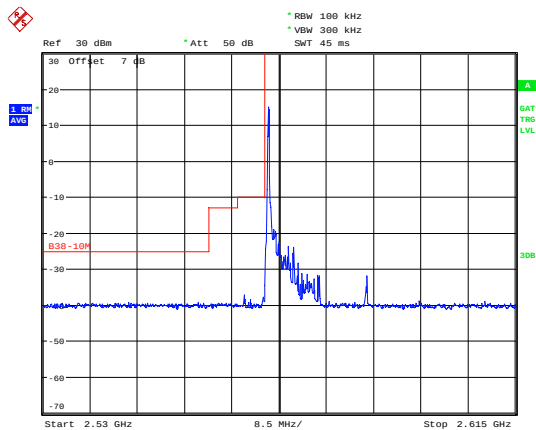
Date: 21.OCT.2019 12:58:07

## LTE Band 38 16QAM 5MHz CH-High, 100%RB



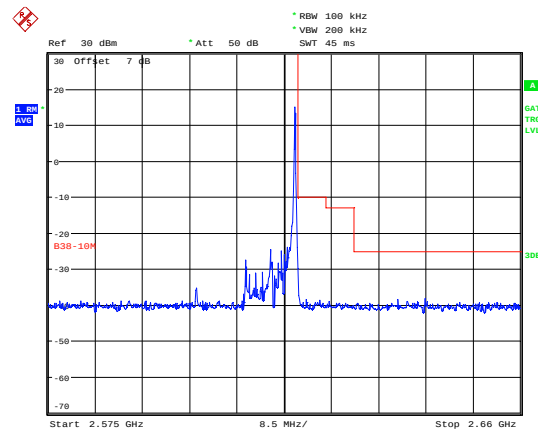
Date: 21.OCT.2019 13:05:04

## LTE Band 38 16QAM 10MHz CH-Low, 1 RB



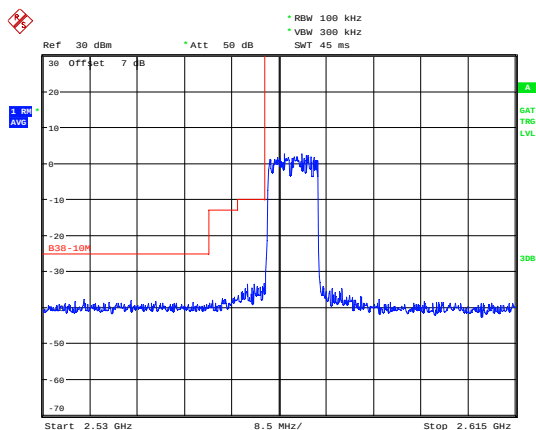
Date: 21.OCT.2019 12:55:13

## LTE Band 38 16QAM 10MHz CH-High, 1 RB



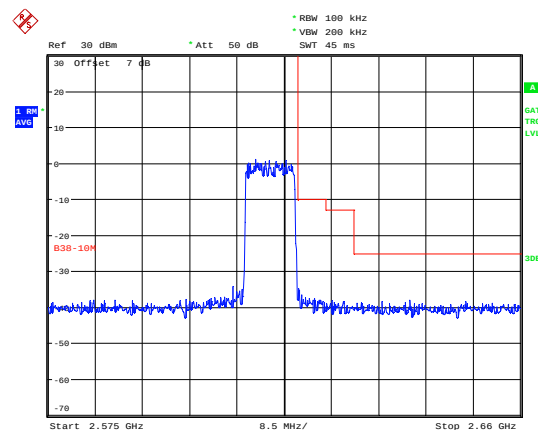
Date: 21.OCT.2019 13:06:39

## LTE Band 38 16QAM 10MHz CH-Low, 100%RB



Date: 21.OCT.2019 12:55:26

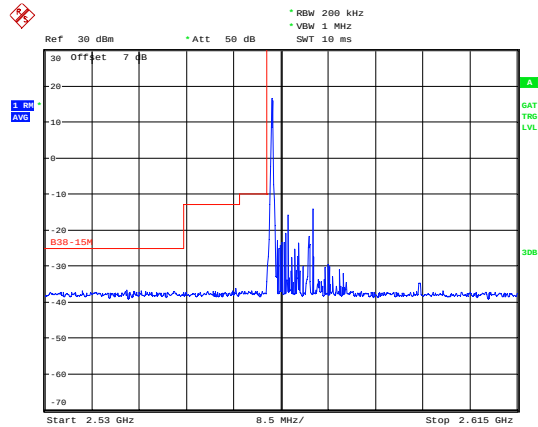
## LTE Band 38 16QAM 10MHz CH-High, 100%RB



Date: 21.OCT.2019 13:06:50

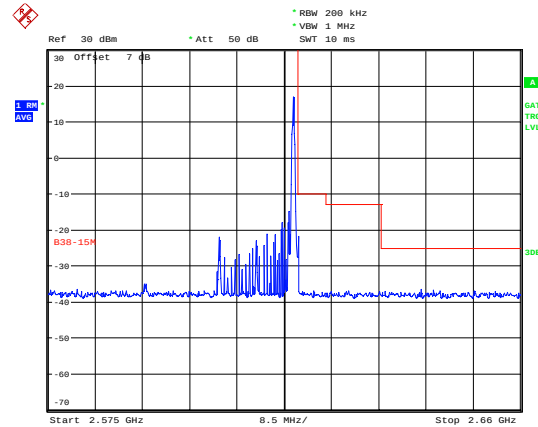


## LTE Band 38 16QAM 15MHz CH-Low, 1 RB



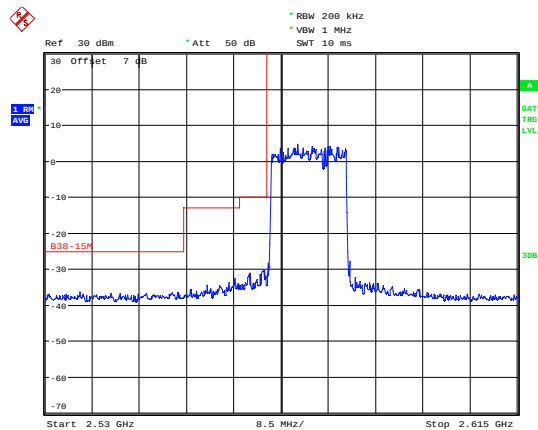
Date: 21.OCT.2019 12:57:59

## LTE Band 38 16QAM 15MHz CH-High, 1 RB



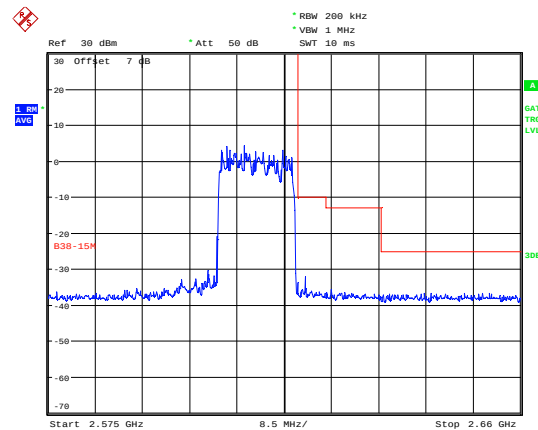
Date: 21.OCT.2019 13:08:21

## LTE Band 38 16QAM 15MHz CH-Low, 100%RB



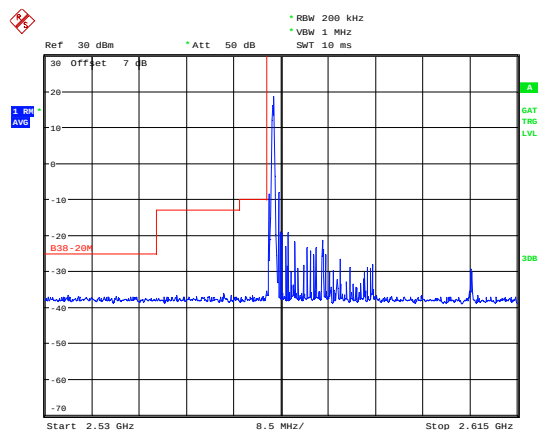
Date: 21.OCT.2019 12:58:10

## LTE Band 38 16QAM 15MHz CH-High, 100%RB



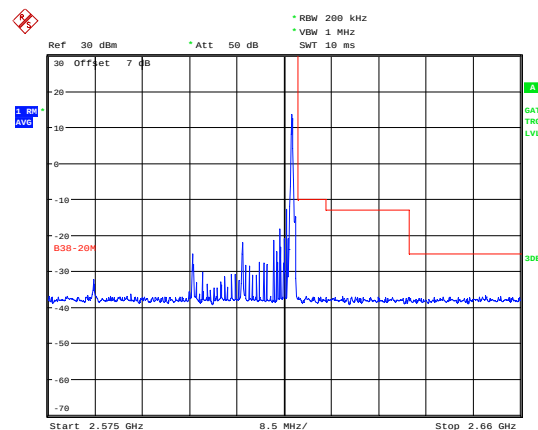
Date: 21.OCT.2019 13:08:31

## LTE Band 38 16QAM 20MHz CH-Low, 1 RB



Date: 21.OCT.2019 13:02:38

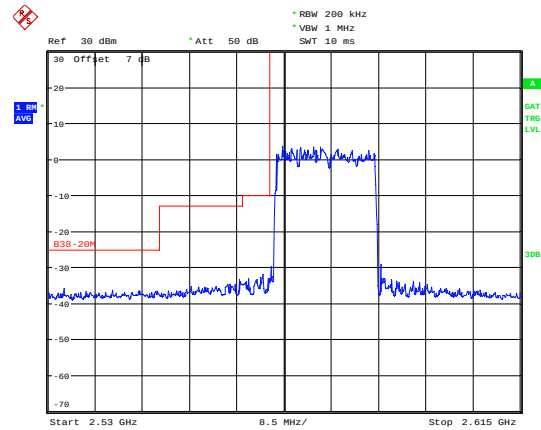
## LTE Band 38 16QAM 20MHz CH-High, 1 RB



Date: 21.OCT.2019 13:09:51

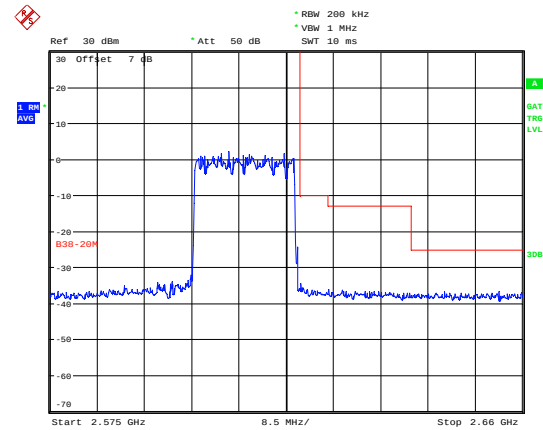


## LTE Band 38 16QAM 20MHz CH-Low, 100%RB



Date: 21.OCT.2019 13:02:49

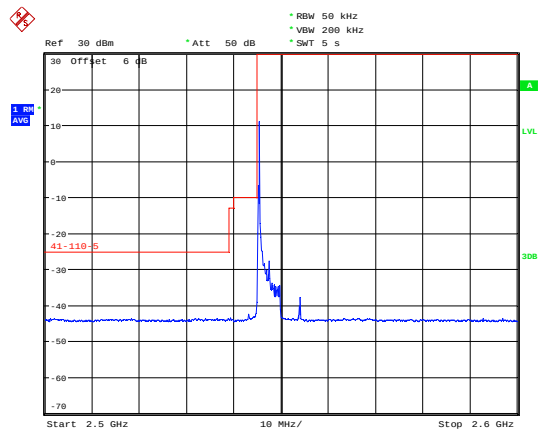
## LTE Band 38 16QAM 20MHz CH-High, 100%RB



Date: 21.OCT.2019 13:10:03

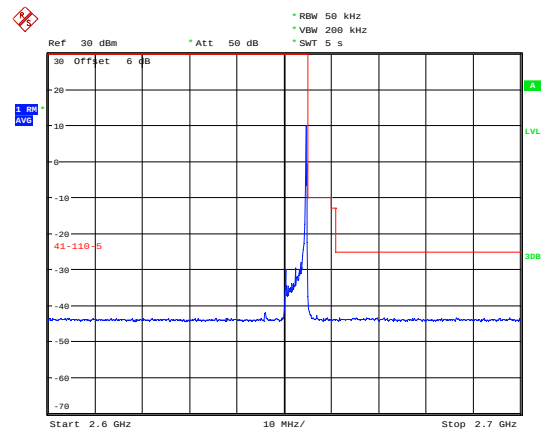


## LTE Band 41 QPSK 5MHz CH-Low, 1 RB



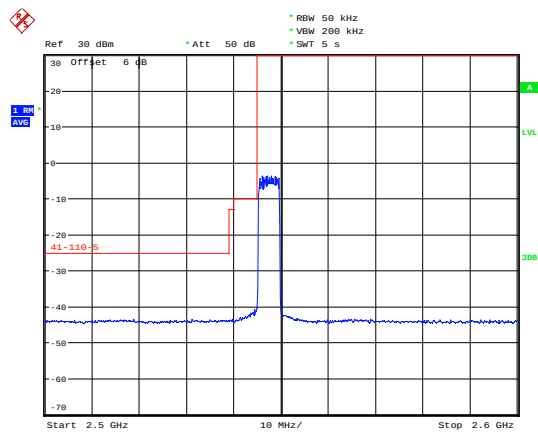
Date: 21.OCT.2019 14:48:23

## LTE Band 41 QPSK 5MHz CH-High, 1 RB



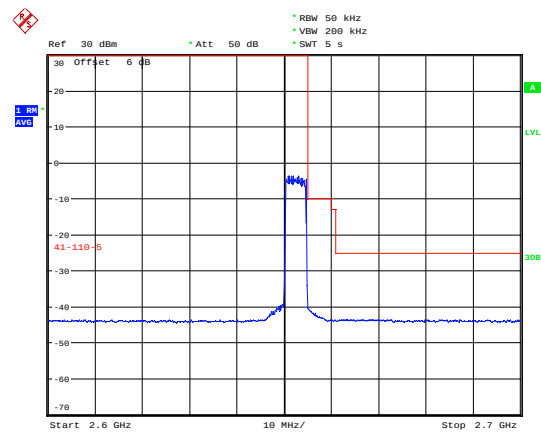
Date: 23.OCT.2019 15:05:32

## LTE Band 41 QPSK 5MHz CH-Low, 100%RB



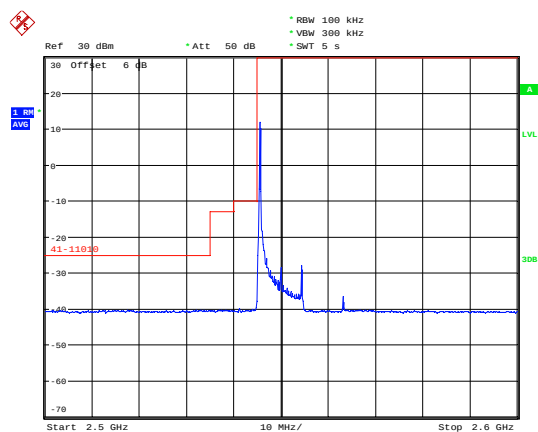
Date: 21.OCT.2019 14:48:49

## LTE Band 41 QPSK 5MHz CH-High, 100%RB



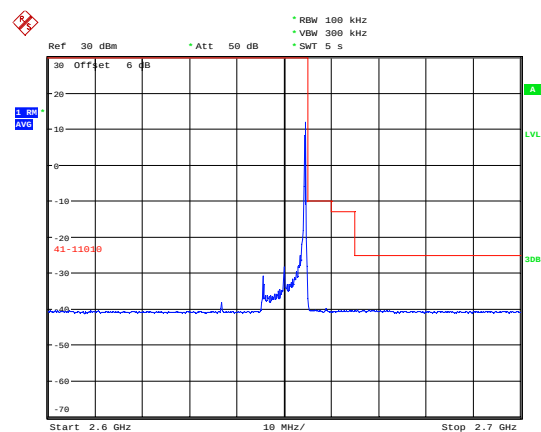
Date: 23.OCT.2019 15:05:55

## LTE Band 41 QPSK 10MHz CH-Low, 1 RB



Date: 23.OCT.2019 15:16:17

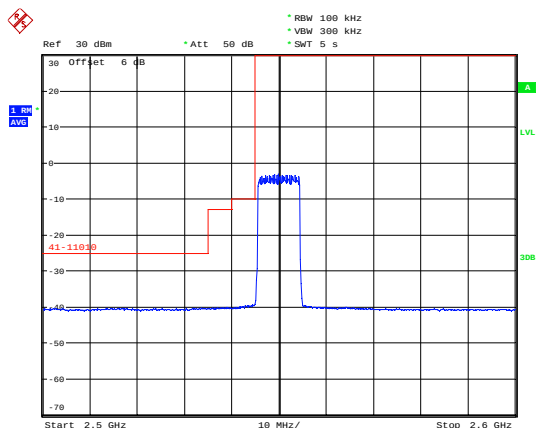
## LTE Band 41 QPSK 10MHz CH-High, 1 RB



Date: 23.OCT.2019 15:18:20

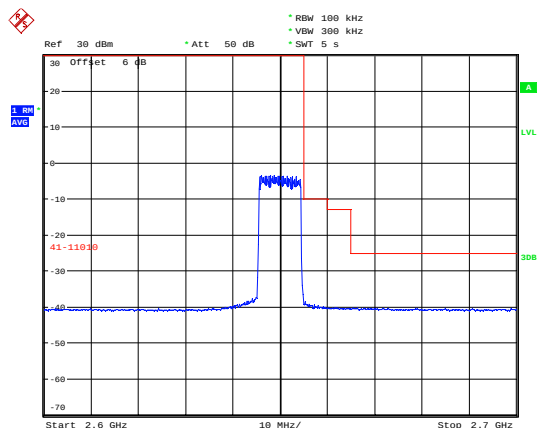


## LTE Band 41 QPSK 10MHz CH-Low, 100%RB



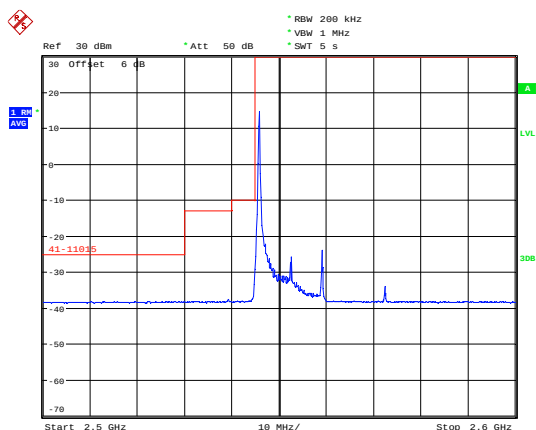
Date: 23.OCT.2019 15:16:38

## LTE Band 41 QPSK 10MHz CH-High, 100%RB



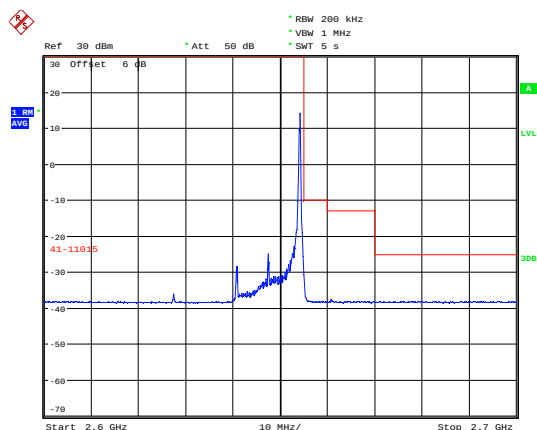
Date: 23.OCT.2019 15:18:33

## LTE Band 41 QPSK 15MHz CH-Low, 1 RB



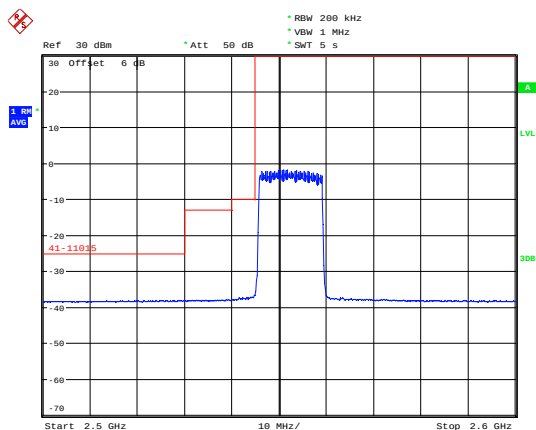
Date: 23.OCT.2019 15:29:36

## LTE Band 41 QPSK 15MHz CH-High, 1 RB



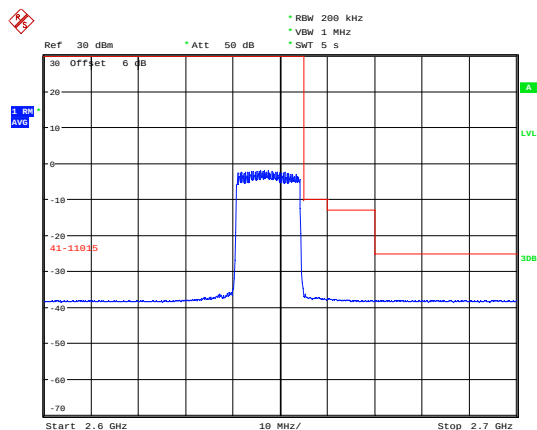
Date: 23.OCT.2019 15:31:02

## LTE Band 41 QPSK 15MHz CH-Low, 100%RB



Date: 23.OCT.2019 15:29:53

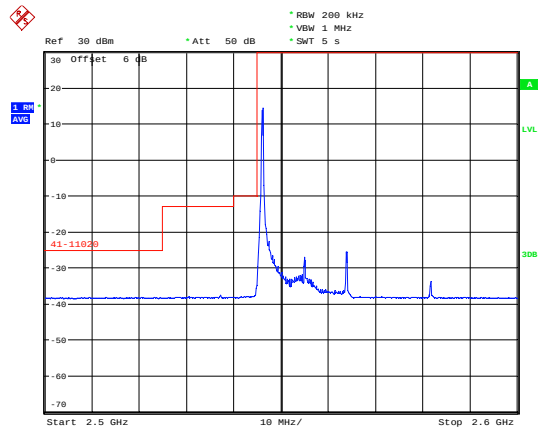
## LTE Band 41 QPSK 15MHz CH-High, 100%RB



Date: 23.OCT.2019 15:31:16

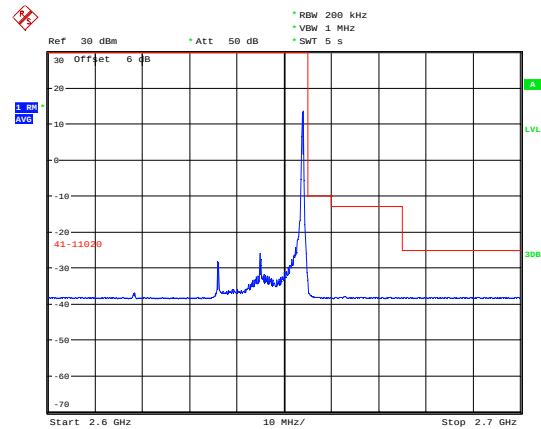


## LTE Band 41 QPSK 20MHz CH-Low, 1 RB



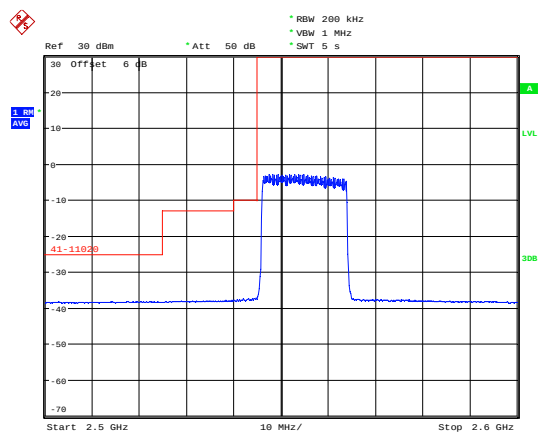
Date: 23.OCT.2019 15:34:17

## LTE Band 41 QPSK 20MHz CH-High, 1 RB



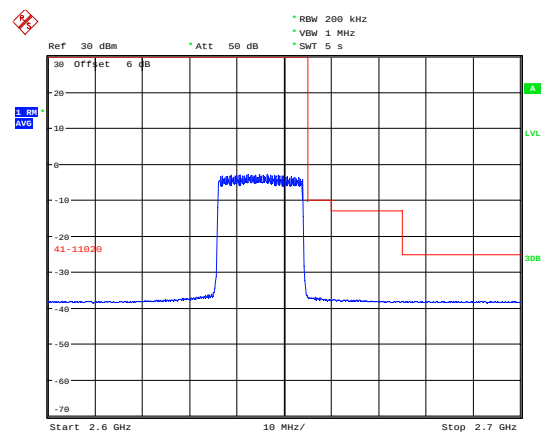
Date: 23.OCT.2019 15:36:24

## LTE Band 41 QPSK 20MHz CH-Low, 100%RB



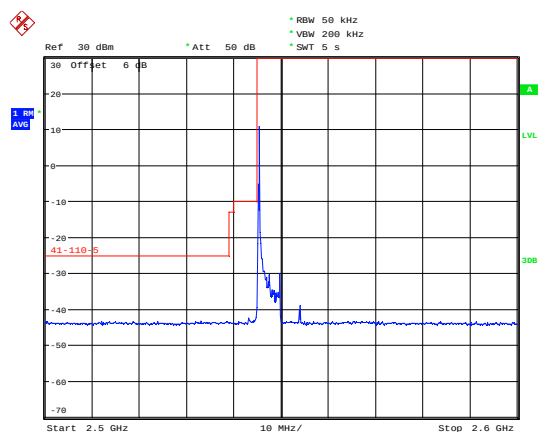
Date: 23.OCT.2019 15:34:31

## LTE Band 41 QPSK 20MHz CH-High, 100%RB



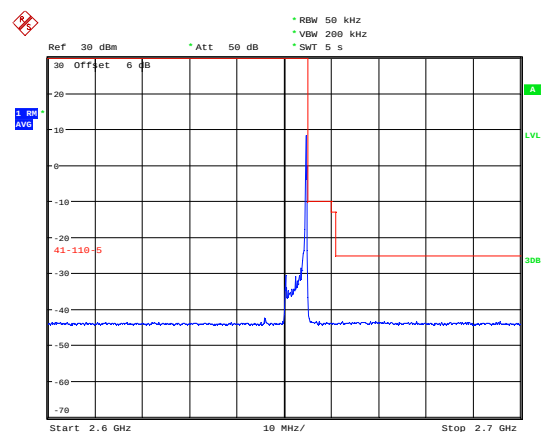
Date: 23.OCT.2019 15:36:39

## LTE Band 41 16QAM 5MHz CH-Low, 1 RB



Date: 23.OCT.2019 15:03:53

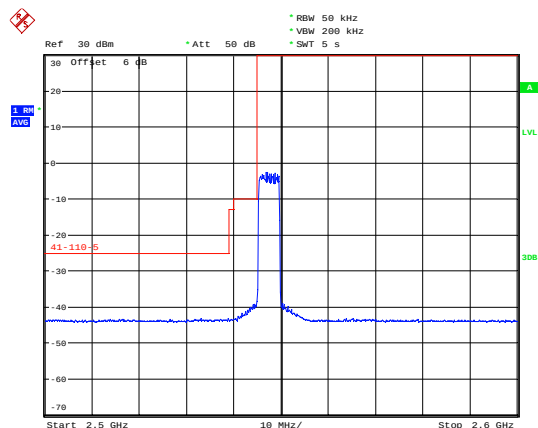
## LTE Band 41 16QAM 5MHz CH-High, 1 RB



Date: 23.OCT.2019 15:06:20

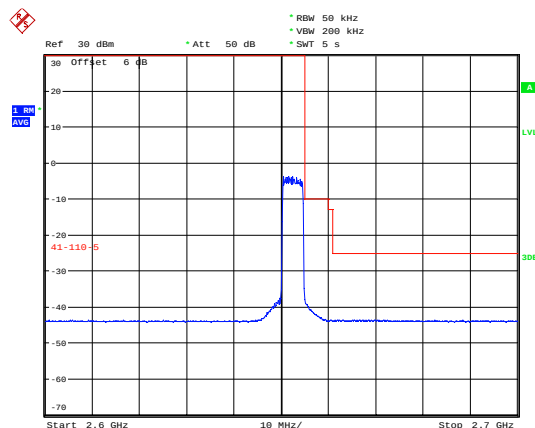


## LTE Band 41 16QAM 5MHz CH-Low, 100%RB



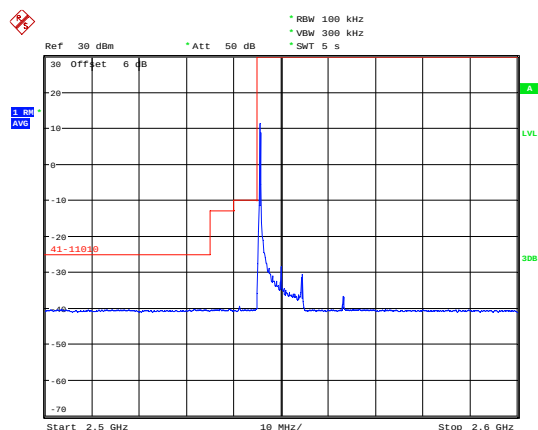
Date: 23.OCT.2019 15:04:12

## LTE Band 41 16QAM 5MHz CH-High, 100%RB



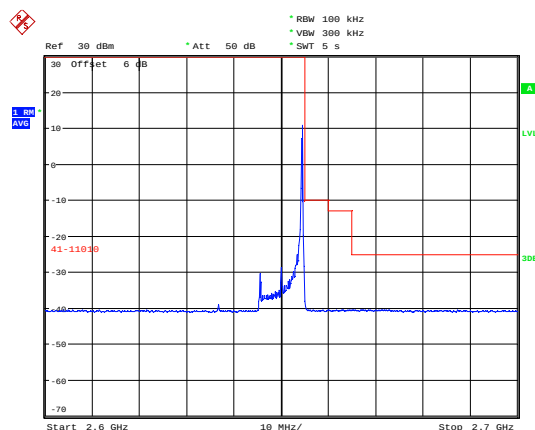
Date: 23.OCT.2019 15:07:00

## LTE Band 41 16QAM 10MHz CH-Low, 1 RB



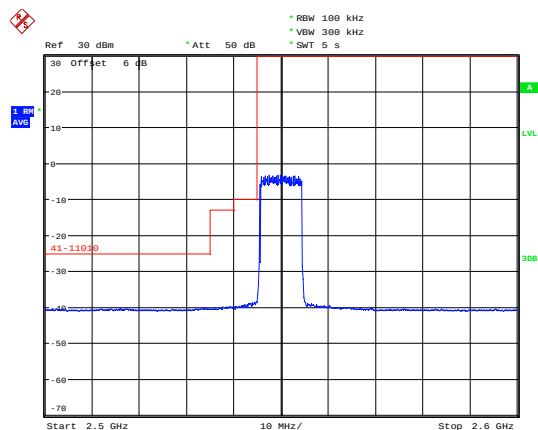
Date: 23.OCT.2019 15:16:57

## LTE Band 41 16QAM 10MHz CH-High, 1 RB



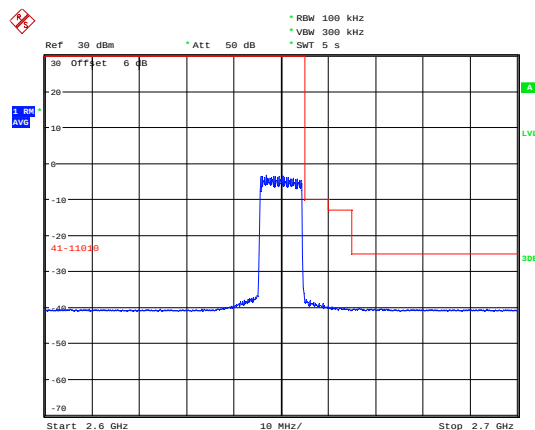
Date: 23.OCT.2019 15:18:50

## LTE Band 41 16QAM 10MHz CH-Low, 100%RB



Date: 23.OCT.2019 15:17:13

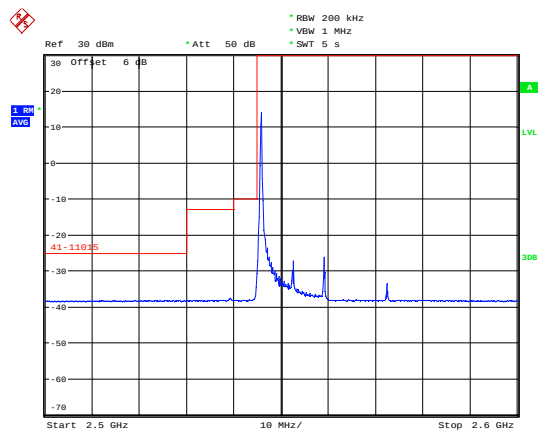
## LTE Band 41 16QAM 10MHz CH-High, 100%RB



Date: 23.OCT.2019 15:19:04

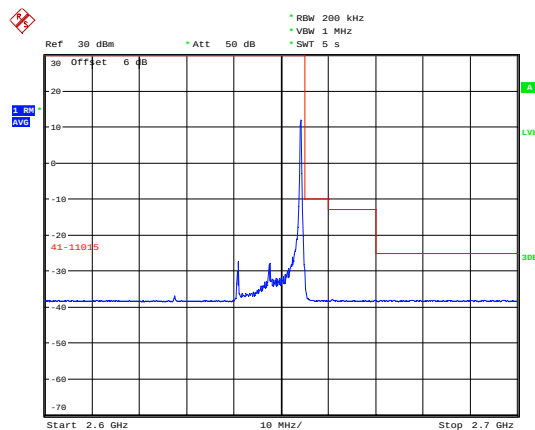


## LTE Band 41 16QAM 15MHz CH-Low, 1 RB



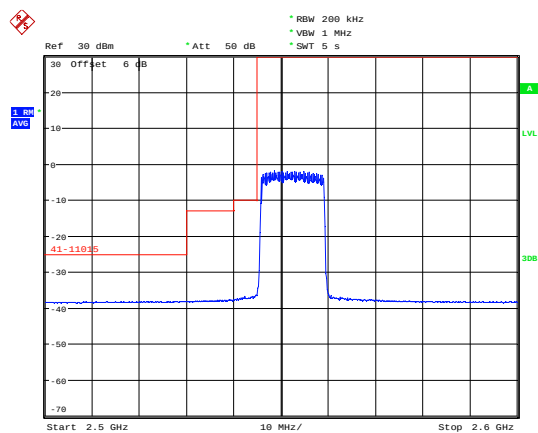
Date: 23.OCT.2019 15:38:09

## LTE Band 41 16QAM 15MHz CH-High, 1 RB



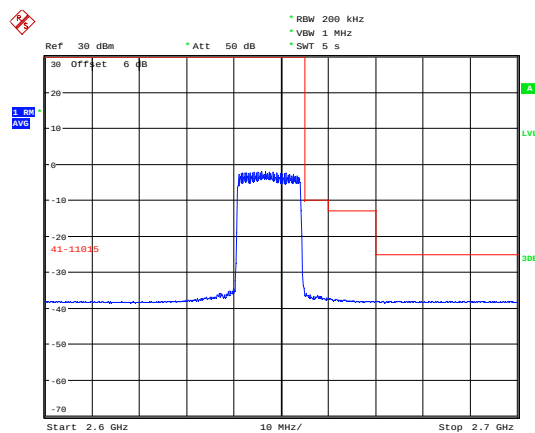
Date: 23.OCT.2019 15:31:32

## LTE Band 41 16QAM 15MHz CH-Low, 100%RB



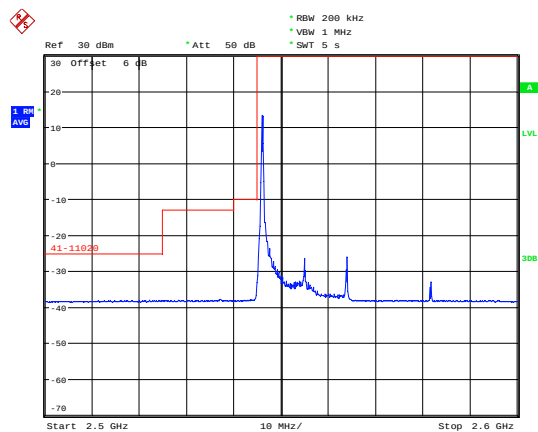
Date: 23.OCT.2019 15:38:24

## LTE Band 41 16QAM 15MHz CH-High, 100%RB



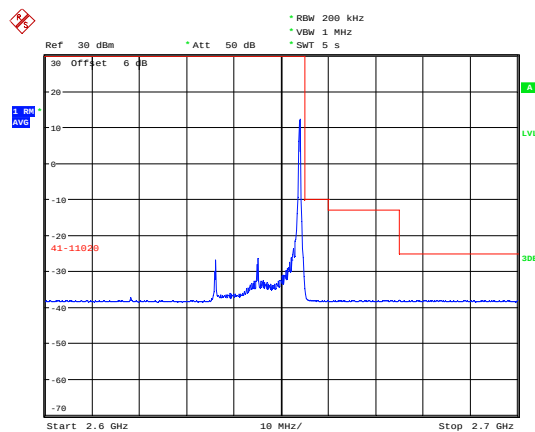
Date: 23.OCT.2019 15:31:47

## LTE Band 41 16QAM 20MHz CH-Low, RB 1



Date: 23.OCT.2019 15:34:46

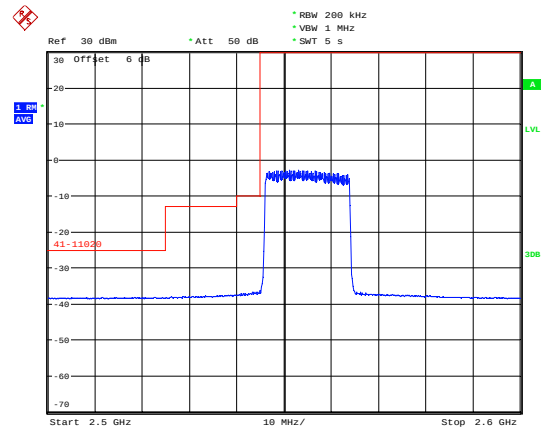
## LTE Band 41 16QAM 20MHz CH-High, RB 1



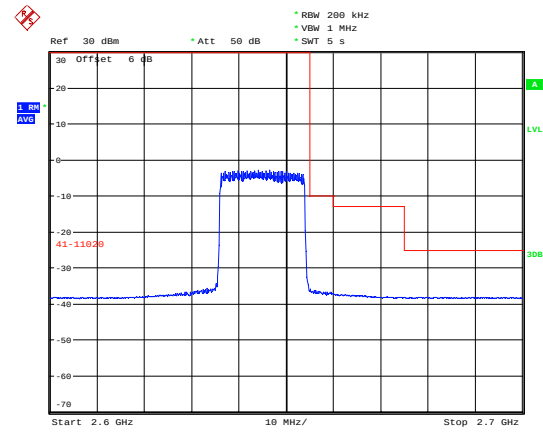
Date: 23.OCT.2019 15:36:54



## LTE Band 41 16QAM 20MHz CH-Low, 100%RB



## LTE Band 41 16QAM 20MHz CH-High, 100%RB



## 5.4 Peak-to-Average Power Ratio (PAPR)

### Ambient condition

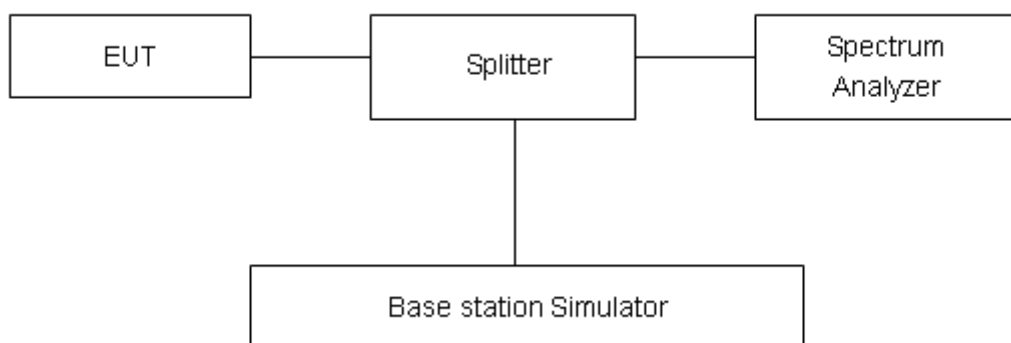
| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C  | 45%~50%           | 101.5kPa |

### Methods of Measurement

Measure the total peak power and record as PPk. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:

$$\text{PAPR (dB)} = \text{PPk (dBm)} - \text{PAvg (dBm)}.$$

### Test Setup



### Limits

Rule Part 27.50(d)(5) Equipment employed must be authorized in accordance with the provisions of 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 2$ ,  $U = 0.4$  dB.



## Test Results

| WCDMA Band IV | Channel | Frequency (MHz) | Peak (dBm) | Avg (dBm) | PAPR (dB) | Limit (dB) | Conclusion |
|---------------|---------|-----------------|------------|-----------|-----------|------------|------------|
| RMC           | 1312    | 1712.4          | 23.93      | 20.79     | 3.14      | ≤13        | PASS       |
|               | 1413    | 1732.6          | 24.21      | 21.20     | 3.01      | ≤13        | PASS       |
|               | 1513    | 1752.6          | 23.99      | 20.96     | 3.03      | ≤13        | PASS       |

| LTE Band 4 |                 |         |                 |            |           |           |            |            |
|------------|-----------------|---------|-----------------|------------|-----------|-----------|------------|------------|
| Modulation | Bandwidth (MHz) | Channel | Frequency (MHz) | Peak (dBm) | Avg (dBm) | PAPR (dB) | Limit (dB) | Conclusion |
| QPSK       | 1.4             | 19957   | 1710.7          | 23.58      | 18.25     | 5.33      | ≤13        | PASS       |
|            |                 | 20175   | 1732.5          | 24.23      | 18.99     | 5.24      | ≤13        | PASS       |
|            |                 | 20393   | 1754.3          | 23.31      | 18.02     | 5.29      | ≤13        | PASS       |
|            | 3               | 19965   | 1711.5          | 23.54      | 18.22     | 5.32      | ≤13        | PASS       |
|            |                 | 20175   | 1732.5          | 24.28      | 18.95     | 5.33      | ≤13        | PASS       |
|            |                 | 20385   | 1753.5          | 23.47      | 18.08     | 5.39      | ≤13        | PASS       |
|            | 5               | 19975   | 1712.5          | 23.88      | 18.59     | 5.29      | ≤13        | PASS       |
|            |                 | 20175   | 1732.5          | 24.65      | 19.34     | 5.31      | ≤13        | PASS       |
|            |                 | 20375   | 1752.5          | 23.80      | 18.38     | 5.42      | ≤13        | PASS       |
|            | 10              | 20000   | 1715            | 24.05      | 18.66     | 5.39      | ≤13        | PASS       |
|            |                 | 20175   | 1732.5          | 24.61      | 19.28     | 5.33      | ≤13        | PASS       |
|            |                 | 20350   | 1750            | 23.99      | 18.50     | 5.49      | ≤13        | PASS       |
|            | 15              | 20025   | 1717.5          | 24.42      | 18.77     | 5.65      | ≤13        | PASS       |
|            |                 | 20175   | 1732.5          | 24.89      | 18.88     | 6.01      | ≤13        | PASS       |
|            |                 | 20325   | 1747.5          | 24.52      | 18.52     | 6.00      | ≤13        | PASS       |
|            | 20              | 20050   | 1720            | 24.32      | 18.84     | 5.48      | ≤13        | PASS       |
|            |                 | 20175   | 1732.5          | 24.90      | 19.16     | 5.74      | ≤13        | PASS       |
|            |                 | 20300   | 1745            | 24.49      | 18.66     | 5.83      | ≤13        | PASS       |
| 16QAM      | 1.4             | 19957   | 1710.7          | 23.97      | 18.21     | 5.76      | ≤13        | PASS       |
|            |                 | 20175   | 1732.5          | 24.57      | 18.89     | 5.68      | ≤13        | PASS       |
|            |                 | 20393   | 1754.3          | 23.73      | 18.03     | 5.70      | ≤13        | PASS       |
|            | 3               | 19965   | 1711.5          | 23.89      | 17.97     | 5.92      | ≤13        | PASS       |
|            |                 | 20175   | 1732.5          | 24.55      | 18.74     | 5.81      | ≤13        | PASS       |
|            |                 | 20385   | 1753.5          | 23.90      | 17.98     | 5.92      | ≤13        | PASS       |
|            | 5               | 19975   | 1712.5          | 24.38      | 18.53     | 5.85      | ≤13        | PASS       |
|            |                 | 20175   | 1732.5          | 25.02      | 19.24     | 5.78      | ≤13        | PASS       |
|            |                 | 20375   | 1752.5          | 24.33      | 18.31     | 6.02      | ≤13        | PASS       |
|            | 10              | 20000   | 1715            | 24.41      | 18.48     | 5.93      | ≤13        | PASS       |
|            |                 | 20175   | 1732.5          | 25.11      | 19.27     | 5.84      | ≤13        | PASS       |
|            |                 | 20350   | 1750            | 24.44      | 18.39     | 6.05      | ≤13        | PASS       |