



REPORT No.: SZ15060145W02

Low channel:

### Spectrum Plot of Worst Value

#### 5MHz/QPSK

#### 5MHz/16QAM



### Spectrum Plot of Worst Value

#### 10MHz/QPSK

#### 10MHz/16QAM

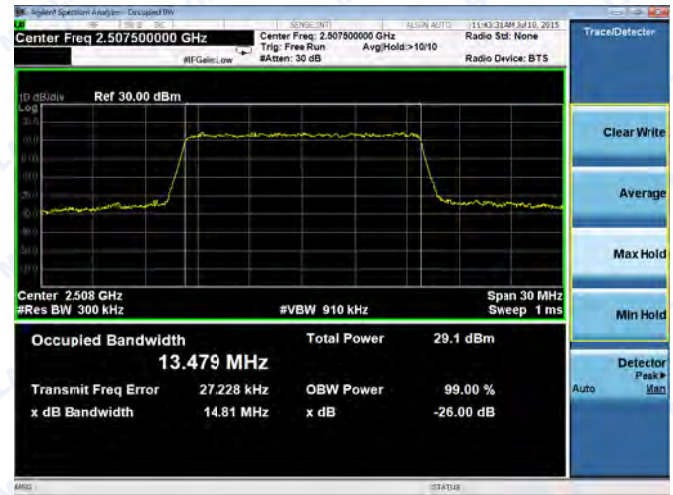




## Spectrum Plot of Worst Value

## 15MHz/QPSK

## 15MHz/16QAM



## Spectrum Plot of Worst Value

## 20MHz/QPSK

## 20MHz/16QAM





REPORT No.: SZ15060145W02

Middle channel:

### Spectrum Plot of Worst Value

#### 5MHz/QPSK

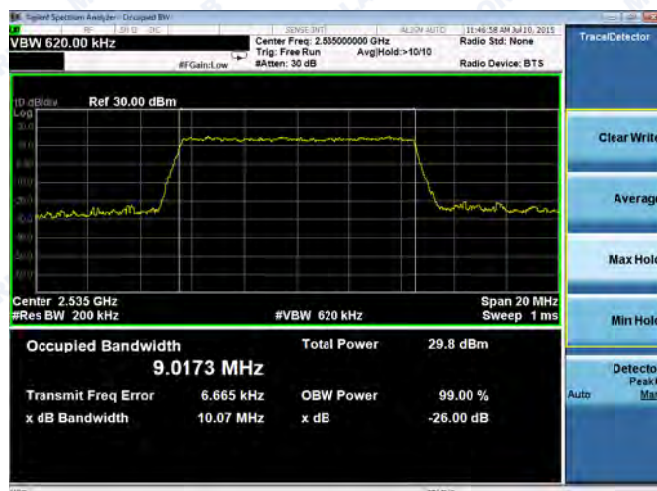
#### 5MHz/16QAM



### Spectrum Plot of Worst Value

#### 10MHz/QPSK

#### 10MHz/16QAM





## Spectrum Plot of Worst Value

## 15MHz/QPSK

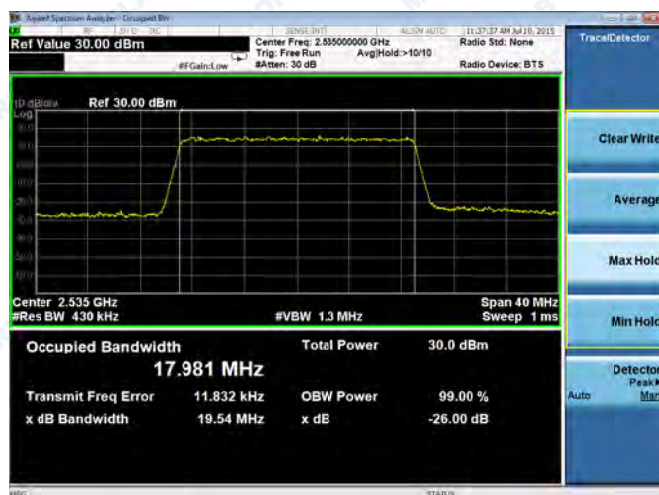
## 15MHz/16QAM



## Spectrum Plot of Worst Value

## 20MHz/QPSK

## 20MHz/16QAM





REPORT No.: SZ15060145W02

High channel:

### Spectrum Plot of Worst Value

#### 5MHz/QPSK

#### 5MHz/16QAM



### Spectrum Plot of Worst Value

#### 10MHz/QPSK

#### 10MHz/16QAM

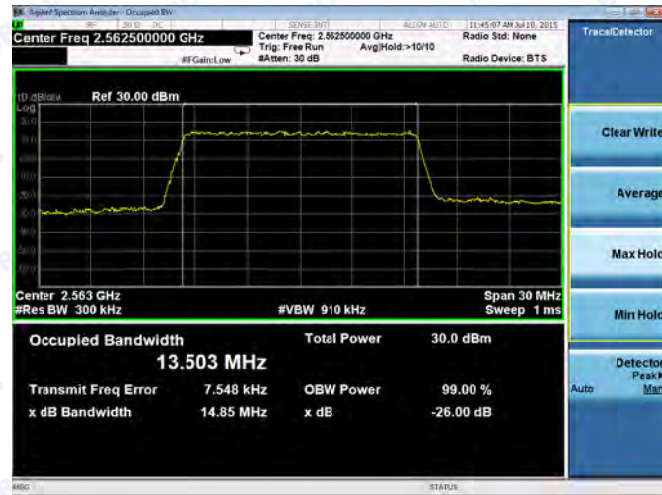




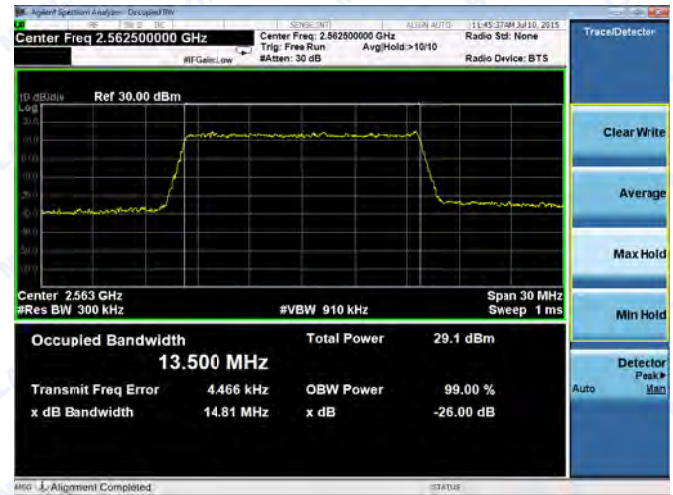
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### Spectrum Plot of Worst Value

#### 15MHz/QPSK



#### 15MHz/16QAM



### Spectrum Plot of Worst Value

#### 20MHz/QPSK



#### 20MHz/16QAM





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**LTE Band 17****Low channel:**

| Channel Bandwidth: 5MHz |                 |                      |        | Channel Bandwidth: 10MHz |                 |                     |        |
|-------------------------|-----------------|----------------------|--------|--------------------------|-----------------|---------------------|--------|
| Channel                 | Frequency (MHz) | 99% Bandwidth (MHz)  |        | Channel                  | Frequency (MHz) | 99% Bandwidth(MHz)  |        |
|                         |                 | QPSK                 | 16QAM  |                          |                 | QPSK                | 16QAM  |
| 23755                   | 706.5           | 4.5365               | 4.5286 | 23780                    | 709.0           | 8.9385              | 8.9520 |
| Channel Bandwidth: 5MHz |                 |                      |        | Channel Bandwidth: 10MHz |                 |                     |        |
| Channel                 | Frequency (MHz) | 26dB Bandwidth (MHz) |        | Channel                  | Frequency (MHz) | 26dB Bandwidth(MHz) |        |
|                         |                 | QPSK                 | 16QAM  |                          |                 | QPSK                | 16QAM  |
| 23755                   | 706.5           | 5.060                | 5.026  | 23780                    | 709.0           | 9.889               | 9.864  |

**Middle channel:**

| Channel Bandwidth: 5MHz |                 |                      |        | Channel Bandwidth: 10MHz |                 |                     |        |
|-------------------------|-----------------|----------------------|--------|--------------------------|-----------------|---------------------|--------|
| Channel                 | Frequency (MHz) | 99% Bandwidth (MHz)  |        | Channel                  | Frequency (MHz) | 99% Bandwidth(MHz)  |        |
|                         |                 | QPSK                 | 16QAM  |                          |                 | QPSK                | 16QAM  |
| 23790                   | 710             | 4.5182               | 4.5181 | 23790                    | 710             | 8.9553              | 8.9540 |
| Channel Bandwidth: 5MHz |                 |                      |        | Channel Bandwidth: 10MHz |                 |                     |        |
| Channel                 | Frequency (MHz) | 26dB Bandwidth (MHz) |        | Channel                  | Frequency (MHz) | 26dB Bandwidth(MHz) |        |
|                         |                 | QPSK                 | 16QAM  |                          |                 | QPSK                | 16QAM  |
| 23790                   | 710             | 5.014                | 5.035  | 23790                    | 710             | 9.940               | 9.831  |

**High channel:**

| Channel Bandwidth: 5MHz |                 |                      |        | Channel Bandwidth: 10MHz |                 |                     |        |
|-------------------------|-----------------|----------------------|--------|--------------------------|-----------------|---------------------|--------|
| Channel                 | Frequency (MHz) | 99% Bandwidth (MHz)  |        | Channel                  | Frequency (MHz) | 99% Bandwidth(MHz)  |        |
|                         |                 | QPSK                 | 16QAM  |                          |                 | QPSK                | 16QAM  |
| 23825                   | 713.5           | 4.5262               | 4.5344 | 23800                    | 711             | 8.9585              | 8.9438 |
| Channel Bandwidth: 5MHz |                 |                      |        | Channel Bandwidth: 10MHz |                 |                     |        |
| Channel                 | Frequency (MHz) | 26dB Bandwidth (MHz) |        | Channel                  | Frequency (MHz) | 26dB Bandwidth(MHz) |        |
|                         |                 | QPSK                 | 16QAM  |                          |                 | QPSK                | 16QAM  |
| 23825                   | 713.5           | 5.002                | 5.018  | 23800                    | 711             | 9.868               | 9.860  |



REPORT No.: SZ15060145W02

Low channel:

### Spectrum Plot of Worst Value

#### 5MHz/QPSK

#### 5MHz/16QAM



### Spectrum Plot of Worst Value

#### 10MHz/QPSK

#### 10MHz/16QAM





REPORT No.: SZ15060145W02

Middle channel:

### Spectrum Plot of Worst Value

#### 5MHz/QPSK

#### 5MHz/16QAM



### Spectrum Plot of Worst Value

#### 10MHz/QPSK

#### 10MHz/16QAM





REPORT No.: SZ15060145W02

High channel:

### Spectrum Plot of Worst Value

#### 5MHz/QPSK

#### 5MHz/16QAM



### Spectrum Plot of Worst Value

#### 10MHz/QPSK

#### 10MHz/16QAM



## 2.3 Frequency Stability

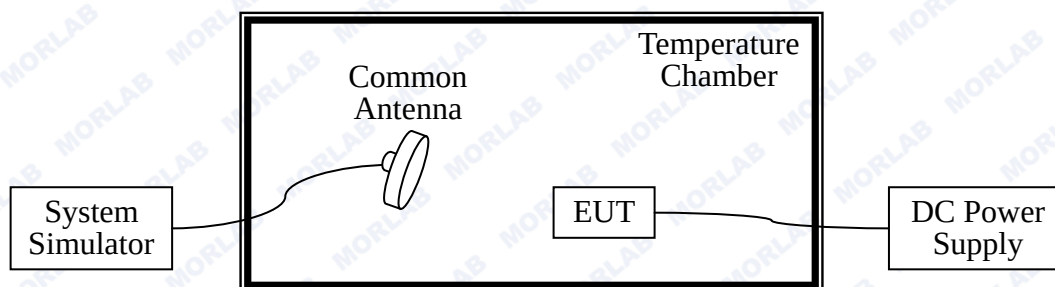
### 2.3.1 Requirement

According to FCC section 2.1055 and FCC section 27.54, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

- (a) The temperature is varied from  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  at intervals of not more than  $10^{\circ}\text{C}$ .
- (b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

### 2.3.2 Test Description

Test Setup:



The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power. A call is established between the EUT and the SS via a Common Antenna.

Equipments List:

| Description         | Manufacturer              | Model      | Serial No.                 | Cal. Date  | Cal. Due   |
|---------------------|---------------------------|------------|----------------------------|------------|------------|
| System Simulator    | Rohde& Schwarz            | CMW500     | 1201.0002k5<br>0/124534/wk | 2015.02.26 | 2016.02.25 |
| DC Power Supply     | Good Will                 | GPS-3030DD | EF920938                   | 2015.02.26 | 2016.02.25 |
| Temperature Chamber | YinHe Experimental Equip. | HL4003T    | (n.a.)                     | 2015.02.26 | 2016.02.25 |



### 2.3.3 Test Verdict

The nominal, highest and lowest extreme voltages are separately 3.8VDC, 4.2VDC and 3.45VDC, which are specified by the applicant; the normal temperature here used is 20°C. The frequency deviation limit is  $\pm 2.5\text{ppm}$ .

The testing was performed using one RB and Bandwidth setting for each band.

| LTE Band 2 – QPSK - Channel 18900 – Frequency 1880.0MHz – RB 6/0 |             |           |                |        |
|------------------------------------------------------------------|-------------|-----------|----------------|--------|
| Limit: 1880.0MHz*1ppm=1880.0Hz                                   |             |           |                |        |
| Voltage (%)                                                      | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Result |
| 100                                                              | 3.8         | -30       | 5.46           | PASS   |
| 100                                                              |             | -20       | 10.81          |        |
| 100                                                              |             | -10       | -11.98         |        |
| 100                                                              |             | 0         | 4.27           |        |
| 100                                                              |             | +10       | 6.12           |        |
| 100                                                              |             | +20       | 5.03           |        |
| 100                                                              |             | +30       | -14.16         |        |
| 100                                                              |             | +40       | 5.52           |        |
| 100                                                              |             | +50       | 7.41           |        |
| 115                                                              | 4.2         | +20       | 8.7            | PASS   |
| 85                                                               | 3.45        | +20       | 8.77           |        |

| LTE Band 4 – QPSK - Channel 20175 – Frequency 1732.5MHz – RB 6/0 |             |           |                |        |
|------------------------------------------------------------------|-------------|-----------|----------------|--------|
| Limit: 1732.5MHz*2.5ppm=4331.25Hz                                |             |           |                |        |
| Voltage (%)                                                      | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Result |
| 100                                                              | 3.8         | -30       | 16.96          | PASS   |
| 100                                                              |             | -20       | -5.26          |        |
| 100                                                              |             | -10       | 14.23          |        |
| 100                                                              |             | 0         | 16.14          |        |
| 100                                                              |             | +10       | 14.96          |        |
| 100                                                              |             | +20       | 13.88          |        |
| 100                                                              |             | +30       | -6.49          |        |
| 100                                                              |             | +40       | 15.23          |        |
| 100                                                              |             | +50       | 14.18          |        |
| 115                                                              | 4.2         | +20       | 15.96          | PASS   |
| 85                                                               | 3.45        | +20       | 17.31          |        |



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| LTE Band 5 – QPSK - Channel 20525 – Frequency 836.5MHz – RB 6/0 |             |           |                |        |
|-----------------------------------------------------------------|-------------|-----------|----------------|--------|
| Limit: 836.5 MHz*2.5ppm=2091.25Hz                               |             |           |                |        |
| Voltage (%)                                                     | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Result |
| 100                                                             | 3.8         | -30       | 10.43          | PASS   |
| 100                                                             |             | -20       | 17.67          |        |
| 100                                                             |             | -10       | 11.38          |        |
| 100                                                             |             | 0         | 10.33          |        |
| 100                                                             |             | +10       | 11.07          |        |
| 100                                                             |             | +20       | 7.04           |        |
| 100                                                             |             | +30       | -13.33         |        |
| 100                                                             |             | +40       | 8.88           |        |
| 100                                                             |             | +50       | 8.99           |        |
| 115                                                             | 4.2         | +20       | 6.65           |        |
| 85                                                              | 3.45        | +20       | 8.27           |        |

| TE Band 7 – QPSK - Channel 21100 – Frequency 2535MHz – RB 25/0 |             |           |                |             |
|----------------------------------------------------------------|-------------|-----------|----------------|-------------|
| Limit: 2535MHz*2.5ppm=6337.5Hz                                 |             |           |                |             |
| Voltage (%)                                                    | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Result      |
| 100                                                            | 3.8         | -30       | 11.62          | <u>PASS</u> |
| 100                                                            |             | -20       | -10.6          |             |
| 100                                                            |             | -10       | 8.89           |             |
| 100                                                            |             | 0         | 10.8           |             |
| 100                                                            |             | +10       | 9.62           |             |
| 100                                                            |             | +20       | 8.54           |             |
| 100                                                            |             | +30       | -11.83         |             |
| 100                                                            |             | +40       | 9.89           |             |
| 100                                                            |             | +50       | 8.84           |             |
| 115                                                            | 4.2         | +20       | 10.62          |             |
| 85                                                             | 3.45        | +20       | 11.97          |             |



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| TE Band 17 – QPSK - Channel 23790 – Frequency 710MHz – RB 25/0 |             |           |                |             |
|----------------------------------------------------------------|-------------|-----------|----------------|-------------|
| Limit: 710MHz*2.5ppm=1775Hz                                    |             |           |                |             |
| Voltage (%)                                                    | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Result      |
| 100                                                            | 3.8         | -30       | 8.51           | <u>PASS</u> |
| 100                                                            |             | -20       | -2.54          |             |
| 100                                                            |             | -10       | -2.58          |             |
| 100                                                            |             | 0         | 6.88           |             |
| 100                                                            |             | +10       | 0.79           |             |
| 100                                                            |             | +20       | 8.75           |             |
| 100                                                            |             | +30       | 5.61           |             |
| 100                                                            |             | +40       | 7.8            |             |
| 100                                                            |             | +50       | -2.98          |             |
| 115                                                            | 4.2         | +20       | -0.27          |             |
| 85                                                             | 3.45        | +20       | -2.39          |             |



## **2.4 Peak to Average Ratio**

### **2.4.1 Requirement**

According to FCC section 27.50(d) (5), the peak to average ratio (PAR) of the transmission may not exceed 13dB.

### **2.4.2 Test Description**

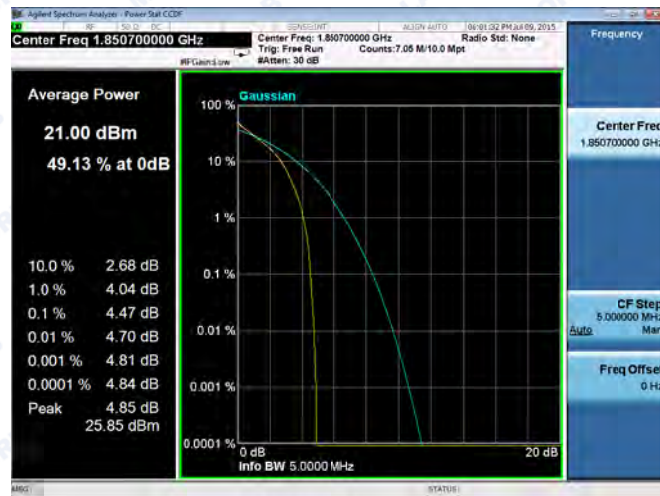
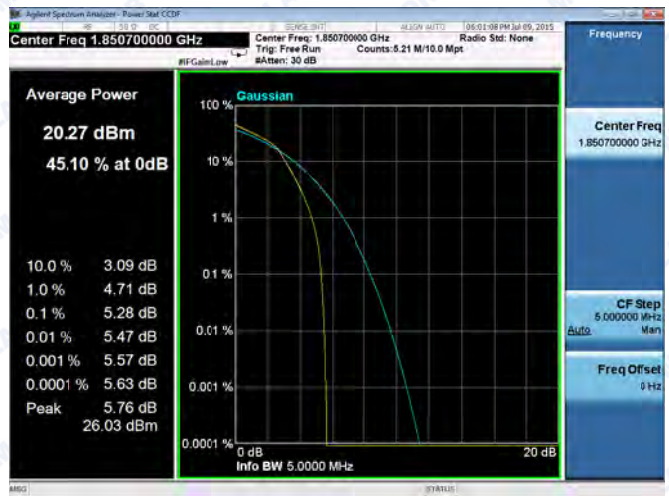
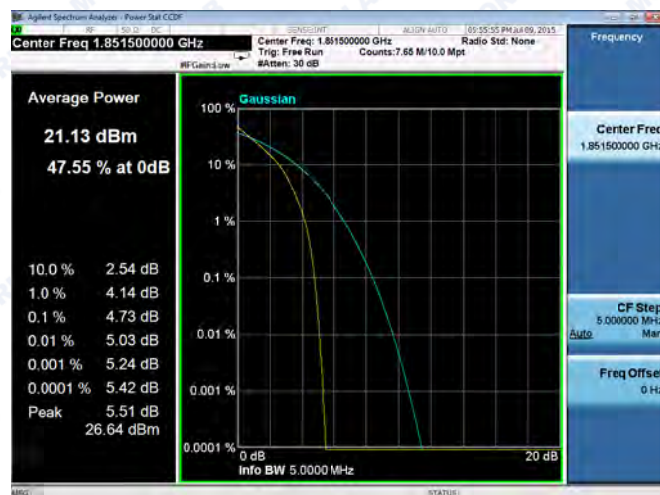
See section 2.1.2 of this report.

### **2.4.3 Test Result**

Record the maximum PAPR level associated with a probability of 0.1%.

**LTE Band 2 Low channel**

| Channel Bandwidth: 1.4MHz |                 |                            |       | Channel Bandwidth: 3MHz |                 |                            |       |
|---------------------------|-----------------|----------------------------|-------|-------------------------|-----------------|----------------------------|-------|
| Channel                   | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                 | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                           |                 | QPSK                       | 16QAM |                         |                 | QPSK                       | 16QAM |
| 18607                     | 1850.7          | 4.47                       | 5.28  | 18615                   | 1851.5          | 4.73                       | 5.67  |

**Spectrum Plot of Worst Value (Low channel)****1.4MHz/QPSK****1.4MHz/16QAM****Spectrum Plot of Worst Value****3MHz/QPSK****3MHz/16QAM**



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### LTE Band 2 Low channel

| Channel Bandwidth: 5MHz |                 |                            |       | Channel Bandwidth: 10MHz |                 |                            |       |
|-------------------------|-----------------|----------------------------|-------|--------------------------|-----------------|----------------------------|-------|
| Channel                 | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                         |                 | QPSK                       | 16QAM |                          |                 | QPSK                       | 16QAM |
| 18625                   | 1852.5          | 4.89                       | 5.74  | 18650                    | 1855.0          | 4.69                       | 6.08  |

### Spectrum Plot of Worst Value

#### 5MHz/QPSK



#### 5MHz/16QAM



### Spectrum Plot of Worst Value

#### 10MHz/QPSK



#### 10MHz/16QAM





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**LTE Band 2 Low channel**

| Channel Bandwidth: 15MHz |                 |                            |       | Channel Bandwidth: 20MHz |                 |                            |       |
|--------------------------|-----------------|----------------------------|-------|--------------------------|-----------------|----------------------------|-------|
| Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                          |                 | QPSK                       | 16QAM |                          |                 | QPSK                       | 16QAM |
| 18675                    | 1857.5          | 5.80                       | 6.92  | 18700                    | 1860.0          | 6.49                       | 7.30  |

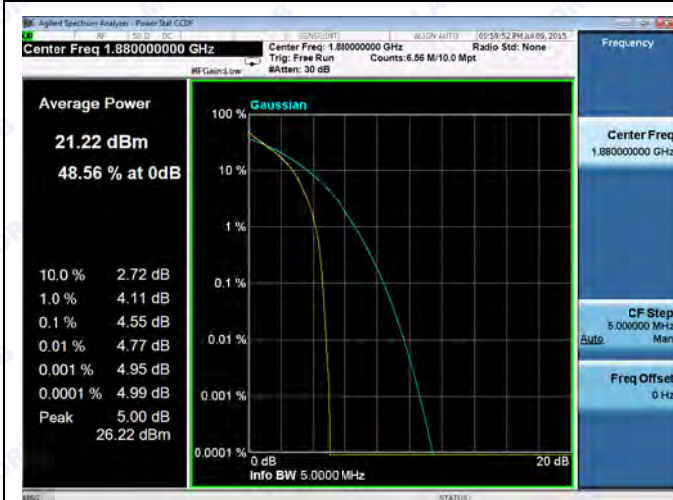
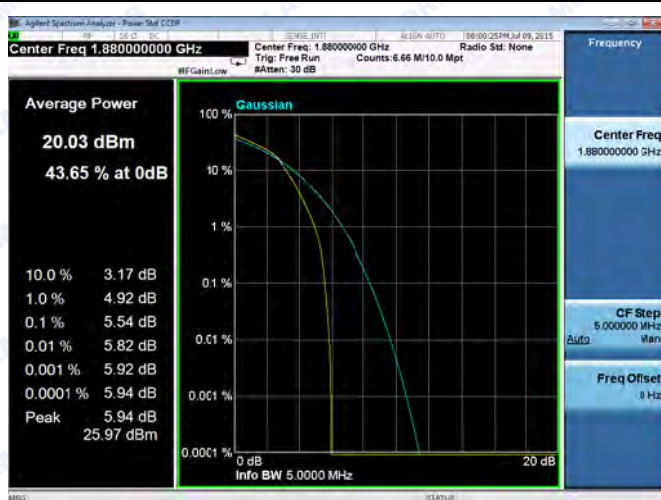
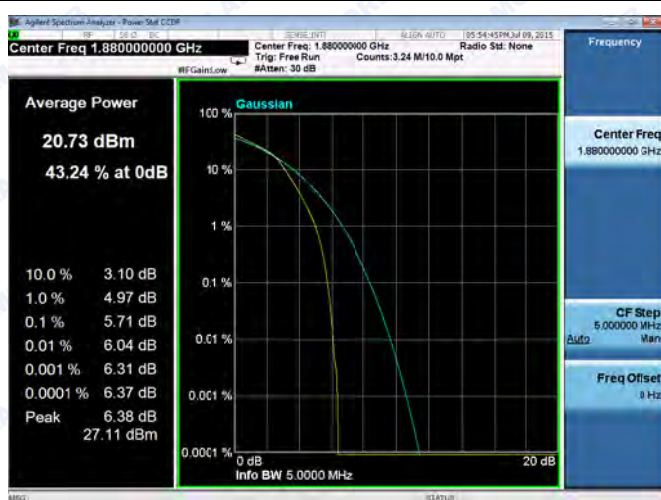
**Spectrum Plot of Worst Value****15MHz/QPSK****15MHz/16QAM****Spectrum Plot of Worst Value****20MHz/QPSK****20MHz/16QAM**



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**LTE Band 2 Middle channel**

| Channel Bandwidth: 1.4MHz |                 |                            |       | Channel Bandwidth: 3MHz |                 |                            |       |
|---------------------------|-----------------|----------------------------|-------|-------------------------|-----------------|----------------------------|-------|
| Channel                   | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                 | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                           |                 | QPSK                       | 16QAM |                         |                 | QPSK                       | 16QAM |
| 18900                     | 1880.0          | 4.55                       | 5.54  | 18900                   | 1880.0          | 4.86                       | 5.71  |

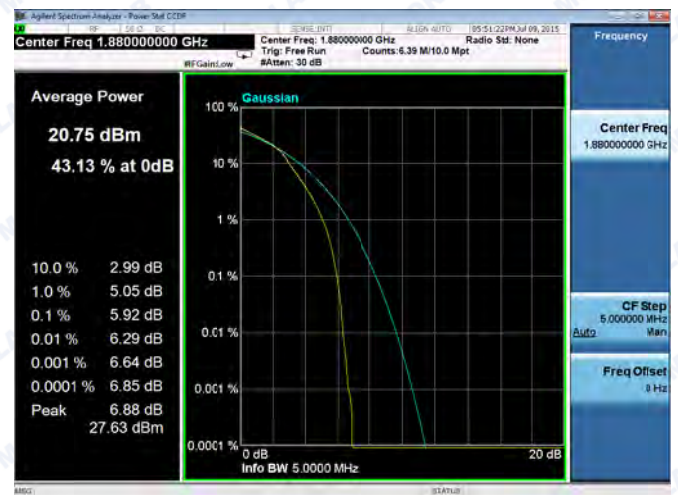
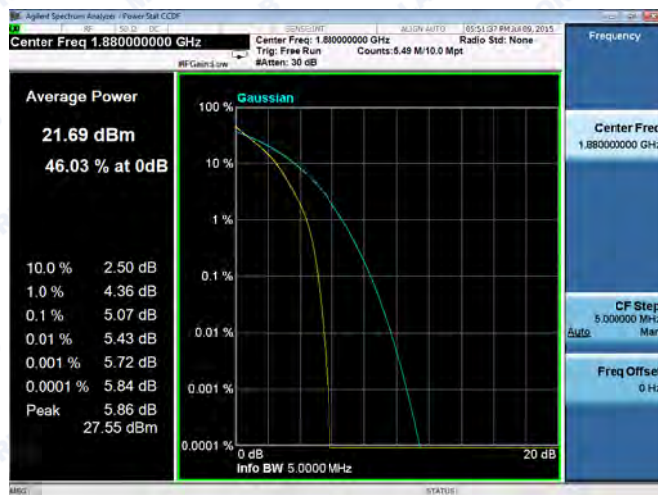
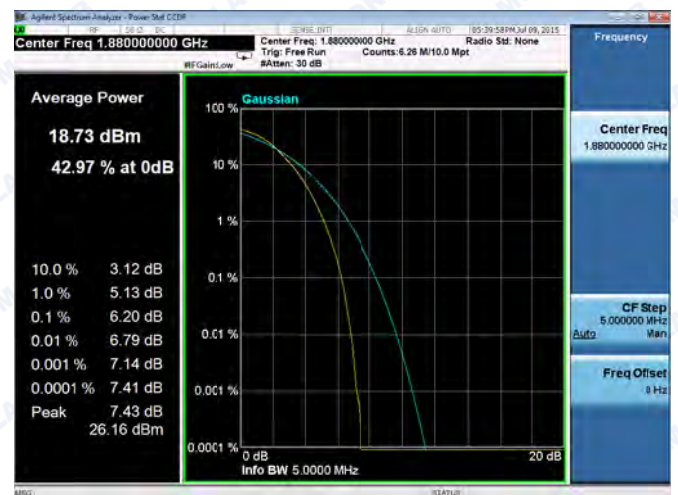
**Spectrum Plot of Worst Value****1.4MHz/QPSK****1.4MHz/16QAM****Spectrum Plot of Worst Value****3MHz/QPSK****3MHz/16QAM**



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**LTE Band 2 Middle channel**

| Channel Bandwidth: 5MHz |                 |                            |       | Channel Bandwidth: 10MHz |                 |                            |       |
|-------------------------|-----------------|----------------------------|-------|--------------------------|-----------------|----------------------------|-------|
| Channel                 | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                         |                 | QPSK                       | 16QAM |                          |                 | QPSK                       | 16QAM |
| 18900                   | 1880.0          | 5.07                       | 5.92  | 18900                    | 1880.0          | 4.70                       | 6.20  |

**Spectrum Plot of Worst Value****5MHz/QPSK****5MHz/16QAM****Spectrum Plot of Worst Value****10MHz/QPSK****10MHz/16QAM**



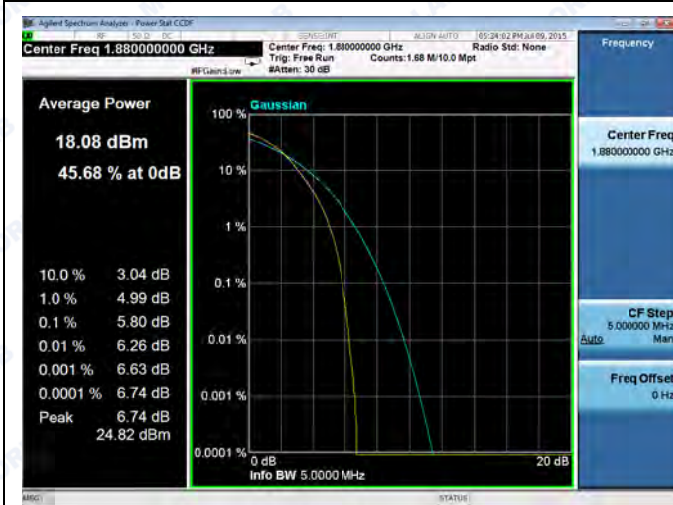
REPORT No.: SZ15060145W02

### LTE Band 2 Middle channel

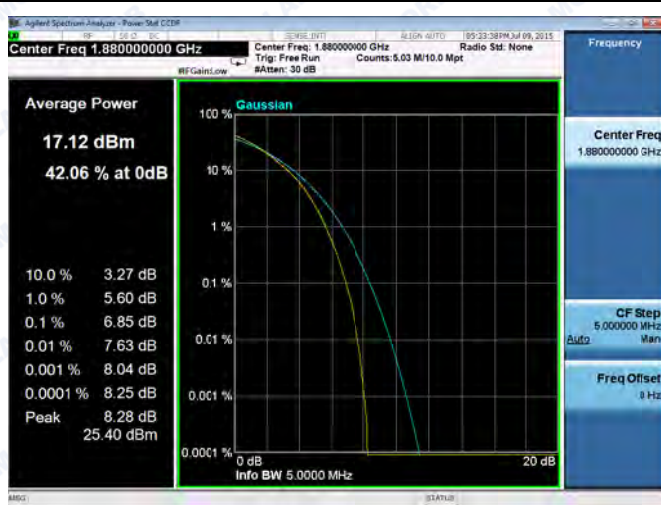
| Channel Bandwidth: 15MHz |                 |                            |       | Channel Bandwidth: 20MHz |                 |                            |       |
|--------------------------|-----------------|----------------------------|-------|--------------------------|-----------------|----------------------------|-------|
| Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                          |                 | QPSK                       | 16QAM |                          |                 | QPSK                       | 16QAM |
| 18900                    | 1880.0          | 5.80                       | 6.85  | 18900                    | 1880.0          | 6.49                       | 7.26  |

### Spectrum Plot of Worst Value

#### 15MHz/QPSK

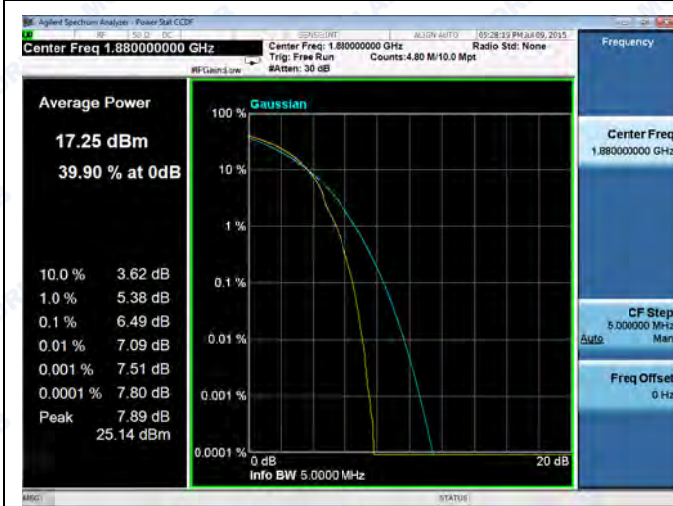


#### 15MHz/16QAM

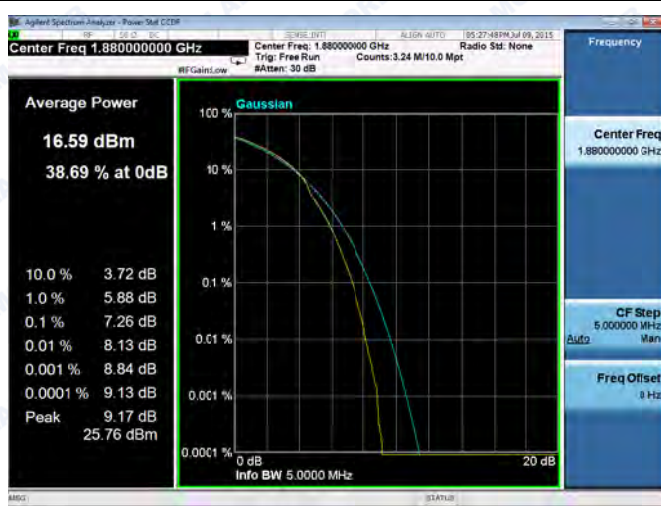


### Spectrum Plot of Worst Value

#### 20MHz/QPSK



#### 20MHz/16QAM



| LTE Band 2 High channel   |                 |                            |       |                         |                 |                            |       |
|---------------------------|-----------------|----------------------------|-------|-------------------------|-----------------|----------------------------|-------|
| Channel Bandwidth: 1.4MHz |                 |                            |       | Channel Bandwidth: 3MHz |                 |                            |       |
| Channel                   | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                 | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                           |                 | QPSK                       | 16QAM |                         |                 | QPSK                       | 16QAM |
| 19193                     | 1909.3          | 3.90                       | 4.67  | 19185                   | 1908.5          | 4.13                       | 5.14  |

### Spectrum Plot of Worst Value

### 1.4MHz/QPSK

**Average Power**  
21.08 dBm  
52.90 % at 0dB

| Power Level | Power (dBm) |
|-------------|-------------|
| 10.0 %      | 2.41 dB     |
| 1.0 %       | 3.56 dB     |
| 0.1 %       | 3.90 dB     |
| 0.01 %      | 4.03 dB     |
| 0.001 %     | 4.08 dB     |
| 0.0001 %    | 4.10 dB     |
| Peak        | 4.10 dB     |
| Peak        | 25.18 dBm   |

Center Freq: 1.909300000 GHz  
Trig: Free Run  
Counts: 1.08 M/10.0 Mpt  
#F Gains: low  
#Attenu: 30 dB  
Info BW 5.00000 MHz

### 1.4MHz/16QAM

**Average Power**  
20.41 dBm  
49.09 % at 0dB

| Power Level | Power (dBm) |
|-------------|-------------|
| 10.0 %      | 2.87 dB     |
| 1.0 %       | 4.22 dB     |
| 0.1 %       | 4.67 dB     |
| 0.01 %      | 4.85 dB     |
| 0.001 %     | 4.97 dB     |
| 0.0001 %    | 5.05 dB     |
| Peak        | 5.11 dB     |
| Peak        | 25.52 dBm   |

Center Freq: 1.909300000 GHz  
Trig: Free Run  
Counts: 8.37 M/10.0 Mpt  
#F Gains: low  
#Attenu: 30 dB  
Info BW 5.00000 MHz

### Spectrum Plot of Worst Value

### 3MHz/QPSK

**Average Power**  
21.26 dBm  
50.50 % at 0dB

| Power Level | Power (dBm) |
|-------------|-------------|
| 10.0 %      | 2.31 dB     |
| 1.0 %       | 3.66 dB     |
| 0.1 %       | 4.13 dB     |
| 0.01 %      | 4.38 dB     |
| 0.001 %     | 4.59 dB     |
| 0.0001 %    | 4.72 dB     |
| Peak        | 4.74 dB     |
| Peak        | 26.00 dBm   |

Center Freq: 1.908500000 GHz  
Info BW: 5.00000 MHz

### 3MHz/16QAM

**Average Power**  
20.17 dBm  
46.60 % at 0dB

| Power Level | Power (dBm) |
|-------------|-------------|
| 10.0 %      | 2.91 dB     |
| 1.0 %       | 4.47 dB     |
| 0.1 %       | 5.14 dB     |
| 0.01 %      | 5.42 dB     |
| 0.001 %     | 5.62 dB     |
| 0.0001 %    | 5.70 dB     |
| Peak        | 5.70 dB     |
| Peak        | 25.87 dBm   |

Center Freq: 1.908500000 GHz  
Info BW: 5.00000 MHz



| LTE Band 2 High channel  |                 |                            |       |                          |                 |                            |       |
|--------------------------|-----------------|----------------------------|-------|--------------------------|-----------------|----------------------------|-------|
| Channel Bandwidth: 15MHz |                 |                            |       | Channel Bandwidth: 20MHz |                 |                            |       |
| Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                          |                 | QPSK                       | 16QAM |                          |                 | QPSK                       | 16QAM |
| 19125                    | 1902.5          | 5.81                       | 6.87  | 19100                    | 1900.0          | 6.48                       | 7.18  |

### Spectrum Plot of Worst Value

## 15MHz/QPSK

### Spectrum Plot of Worst Value

20MHz/QPSK
20MHz/16QAM

**Center Freq 1.900000000 GHz**

**Average Power**

**17.01 dBm**

**39.79 % at 0dB**

|          |           |
|----------|-----------|
| 10.0 %   | 3.64 dB   |
| 1.0 %    | 5.38 dB   |
| 0.1 %    | 6.48 dB   |
| 0.01 %   | 7.09 dB   |
| 0.001 %  | 7.43 dB   |
| 0.0001 % | 7.65 dB   |
| Peak     | 7.68 dB   |
|          | 24.69 dBm |

Info BW 5.0000 MHz

**Center Freq 1.900000000 GHz**

**Average Power**

**16.01 dBm**

**38.47 % at 0dB**

|          |           |
|----------|-----------|
| 10.0 %   | 3.75 dB   |
| 1.0 %    | 5.87 dB   |
| 0.1 %    | 7.18 dB   |
| 0.01 %   | 8.27 dB   |
| 0.001 %  | 8.88 dB   |
| 0.0001 % | 9.10 dB   |
| Peak     | 9.11 dB   |
|          | 25.12 dBm |

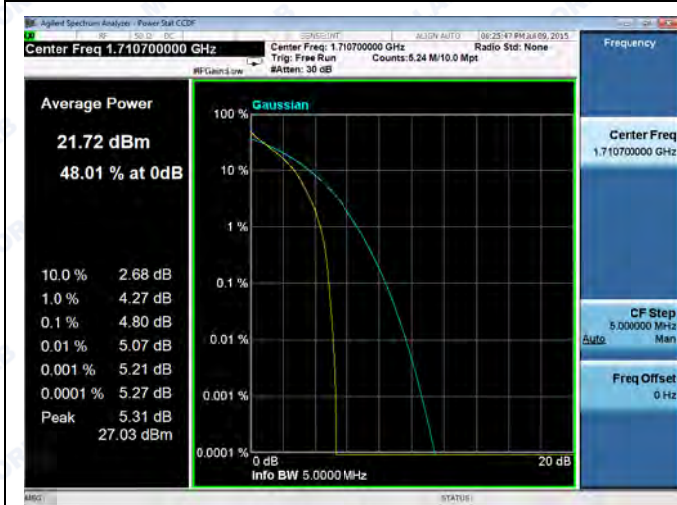
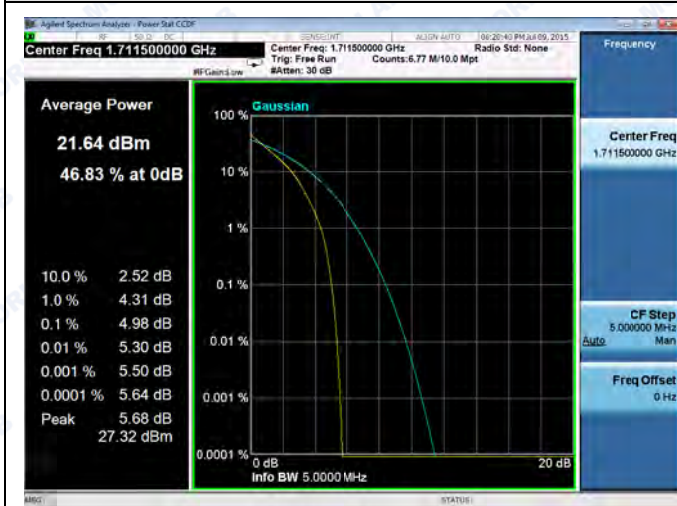
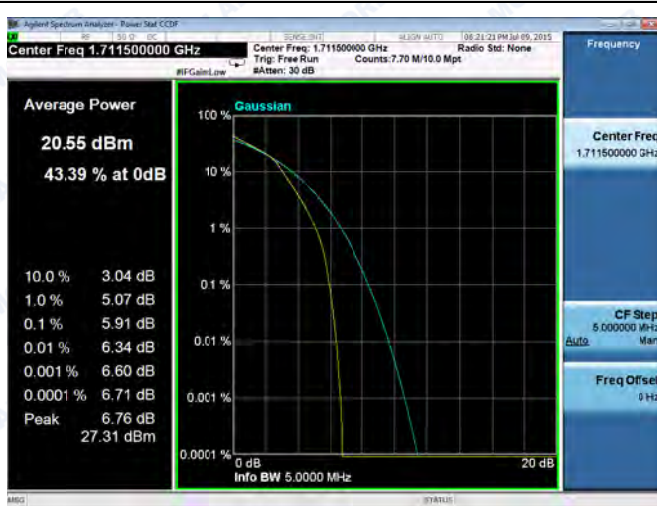
Info BW 5.0000 MHz



REPORT No.: SZ15060145W02

**LTE Band 4 Low channel**

| Channel Bandwidth: 1.4MHz |                 |                            |       | Channel Bandwidth: 3MHz |                 |                            |       |
|---------------------------|-----------------|----------------------------|-------|-------------------------|-----------------|----------------------------|-------|
| Channel                   | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                 | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                           |                 | QPSK                       | 16QAM |                         |                 | QPSK                       | 16QAM |
| 19957                     | 1710.7          | 4.80                       | 5.61  | 19965                   | 1711.5          | 4.98                       | 5.91  |

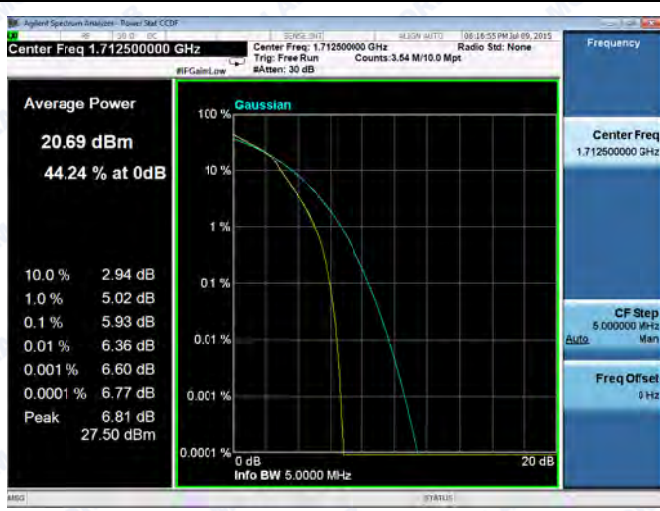
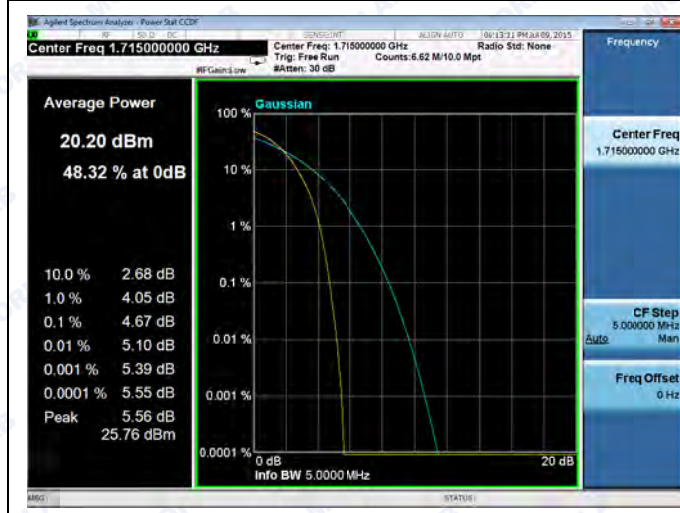
**Spectrum Plot of Worst Value (Low channel)****1.4MHz/QPSK****1.4MHz/16QAM****Spectrum Plot of Worst Value****3MHz/QPSK****3MHz/16QAM**



REPORT No.: SZ15060145W02

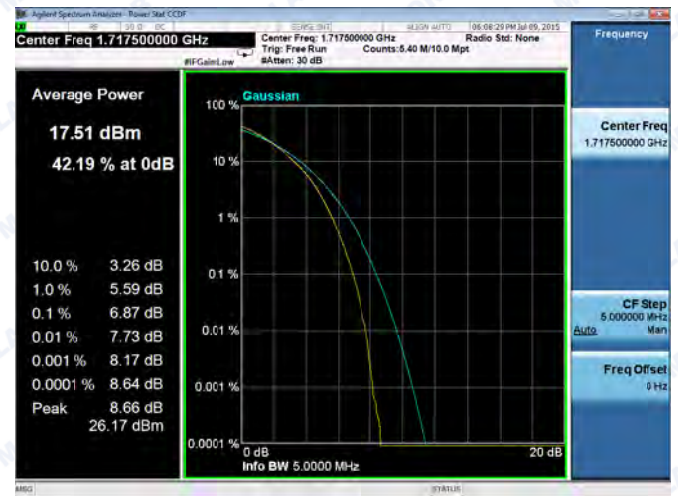
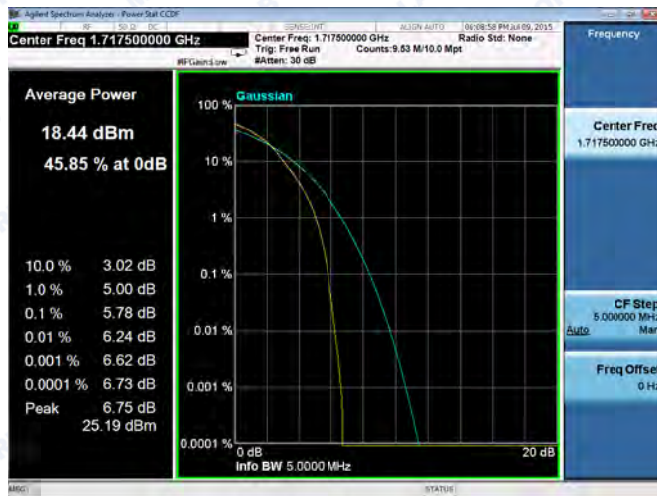
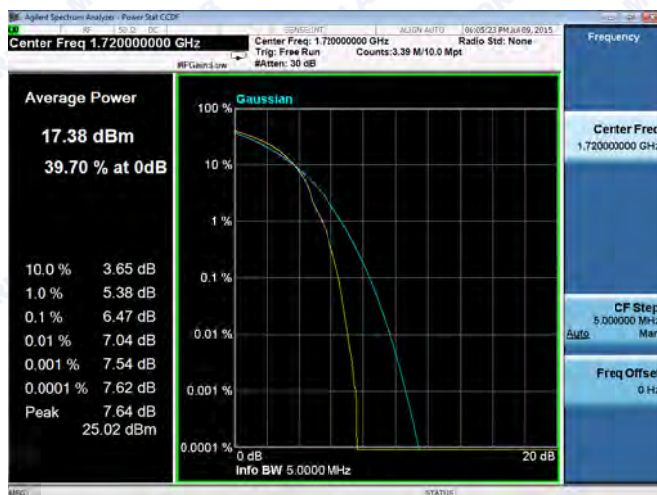
**LTE Band 4 Low channel**

| Channel Bandwidth: 5MHz |                 |                            |       | Channel Bandwidth: 10MHz |                 |                            |       |
|-------------------------|-----------------|----------------------------|-------|--------------------------|-----------------|----------------------------|-------|
| Channel                 | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                         |                 | QPSK                       | 16QAM |                          |                 | QPSK                       | 16QAM |
| 19975                   | 1712.5          | 5.10                       | 5.93  | 20000                    | 1715.0          | 4.67                       | 6.05  |

**Spectrum Plot of Worst Value****5MHz/QPSK****5MHz/16QAM****Spectrum Plot of Worst Value****10MHz/QPSK****10MHz/16QAM**

**LTE Band 4 Low channel**

| Channel Bandwidth: 15MHz |                 |                            |       | Channel Bandwidth: 20MHz |                 |                            |       |
|--------------------------|-----------------|----------------------------|-------|--------------------------|-----------------|----------------------------|-------|
| Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                          |                 | QPSK                       | 16QAM |                          |                 | QPSK                       | 16QAM |
| 20025                    | 1717.5          | 5.78                       | 6.87  | 20050                    | 1720.0          | 6.47                       | 7.26  |

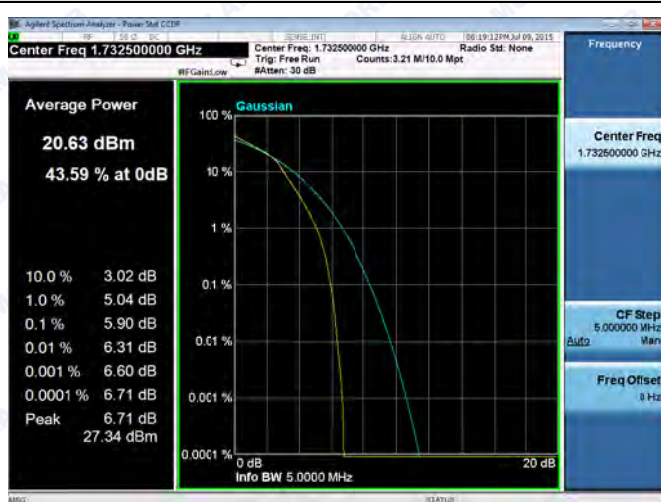
**Spectrum Plot of Worst Value****15MHz/QPSK****15MHz/16QAM****Spectrum Plot of Worst Value****20MHz/QPSK****20MHz/16QAM**



REPORT No.: SZ15060145W02

**LTE Band 4 Middle channel**

| Channel Bandwidth: 1.4MHz |                 |                            |       | Channel Bandwidth: 3MHz |                 |                            |       |
|---------------------------|-----------------|----------------------------|-------|-------------------------|-----------------|----------------------------|-------|
| Channel                   | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                 | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                           |                 | QPSK                       | 16QAM |                         |                 | QPSK                       | 16QAM |
| 20175                     | 1732.5          | 4.98                       | 5.90  | 20175                   | 1732.5          | 5.05                       | 5.90  |

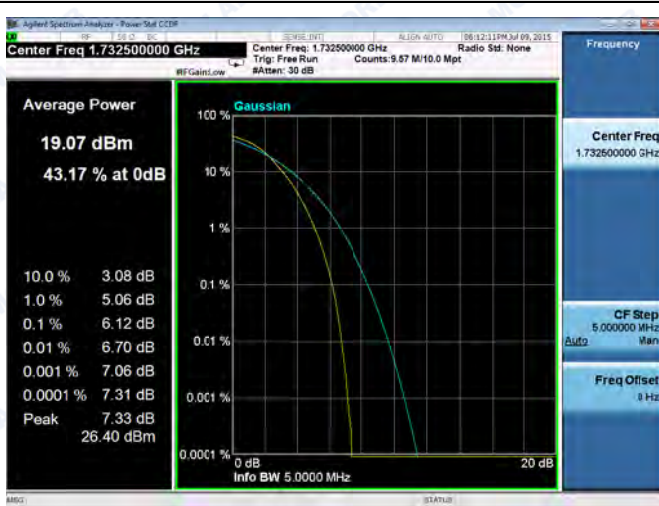
**Spectrum Plot of Worst Value****1.4MHz/QPSK****1.4MHz/16QAM****Spectrum Plot of Worst Value****3MHz/QPSK****3MHz/16QAM**



REPORT No.: SZ15060145W02

**LTE Band 4 Middle channel**

| Channel Bandwidth: 5MHz |                 |                            |       | Channel Bandwidth: 10MHz |                 |                            |       |
|-------------------------|-----------------|----------------------------|-------|--------------------------|-----------------|----------------------------|-------|
| Channel                 | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                         |                 | QPSK                       | 16QAM |                          |                 | QPSK                       | 16QAM |
| 20175                   | 1732.5          | 5.13                       | 5.93  | 20175                    | 1732.5          | 4.66                       | 6.12  |

**Spectrum Plot of Worst Value****5MHz/QPSK****5MHz/16QAM****Spectrum Plot of Worst Value****10MHz/QPSK****10MHz/16QAM**



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**LTE Band 4 Middle channel**

| Channel Bandwidth: 15MHz |                 |                            |       | Channel Bandwidth: 20MHz |                 |                            |       |
|--------------------------|-----------------|----------------------------|-------|--------------------------|-----------------|----------------------------|-------|
| Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                          |                 | QPSK                       | 16QAM |                          |                 | QPSK                       | 16QAM |
| 20175                    | 1732.5          | 5.78                       | 6.78  | 20175                    | 1732.5          | 6.47                       | 7.24  |

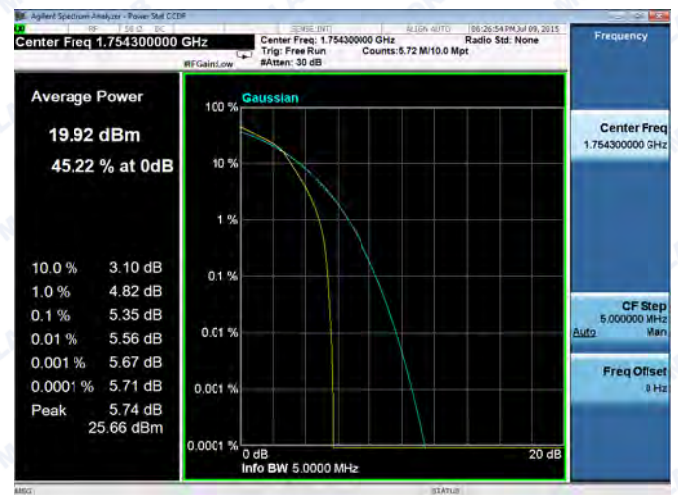
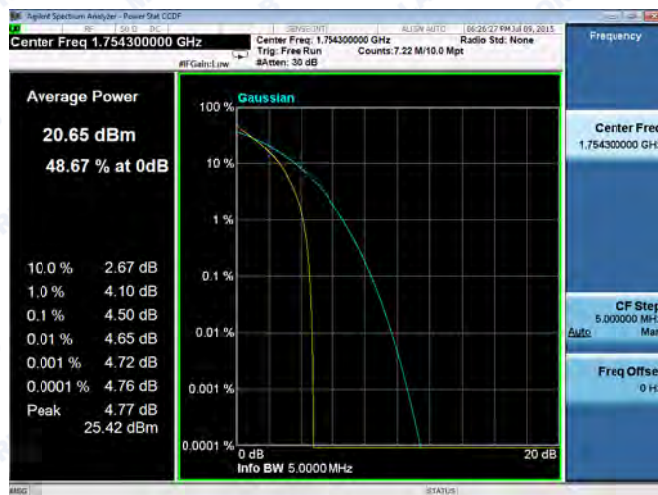
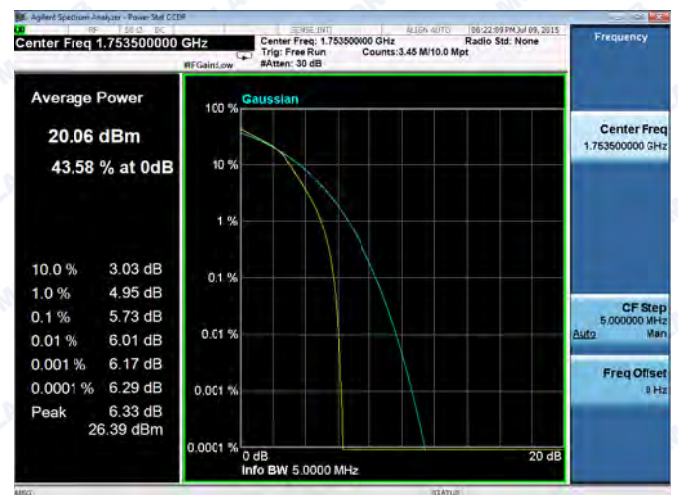
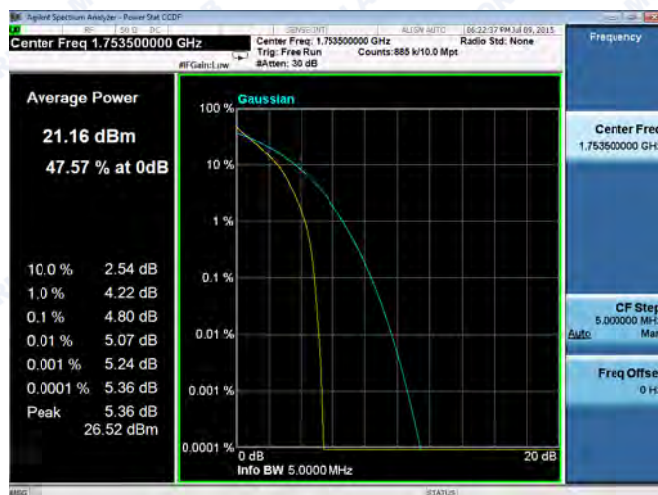
**Spectrum Plot of Worst Value****15MHz/QPSK****15MHz/16QAM****Spectrum Plot of Worst Value****20MHz/QPSK****20MHz/16QAM**



REPORT No.: SZ15060145W02

**LTE Band 4 High channel**

| Channel Bandwidth: 1.4MHz |                 |                            |       | Channel Bandwidth: 3MHz |                 |                            |       |
|---------------------------|-----------------|----------------------------|-------|-------------------------|-----------------|----------------------------|-------|
| Channel                   | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                 | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                           |                 | QPSK                       | 16QAM |                         |                 | QPSK                       | 16QAM |
| 20393                     | 1754.3          | 4.50                       | 5.35  | 20385                   | 1753.5          | 4.80                       | 5.73  |

**Spectrum Plot of Worst Value****1.4MHz/QPSK****1.4MHz/16QAM****Spectrum Plot of Worst Value****3MHz/QPSK****3MHz/16QAM**

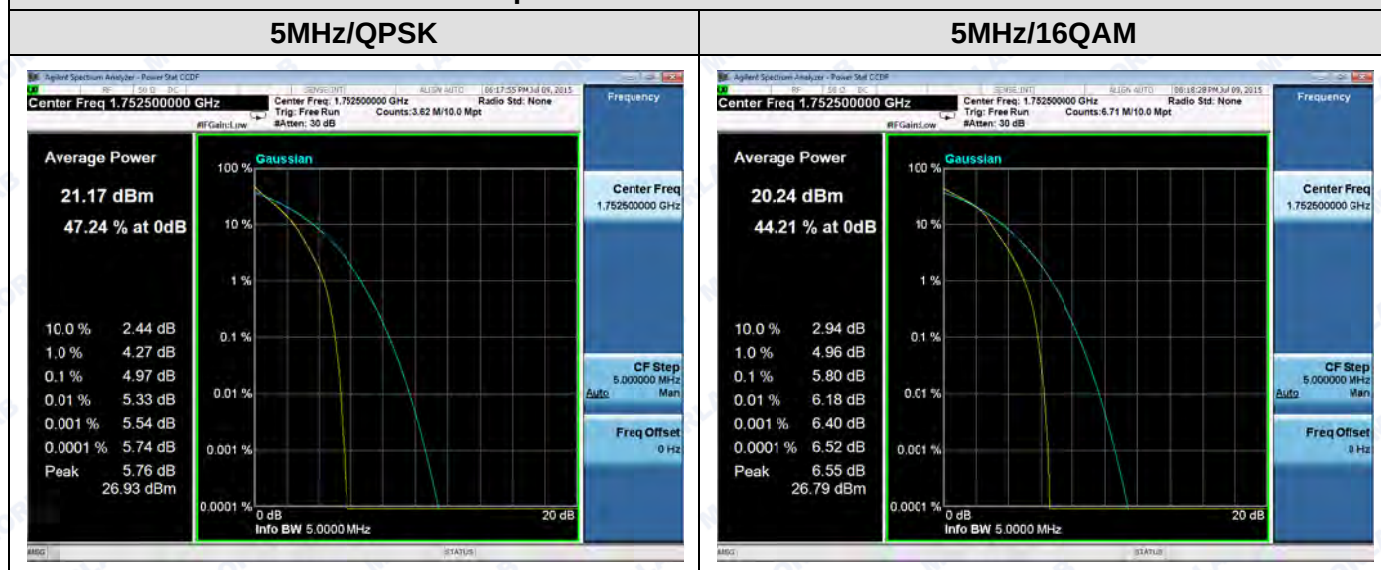


REPORT No.: SZ15060145W02

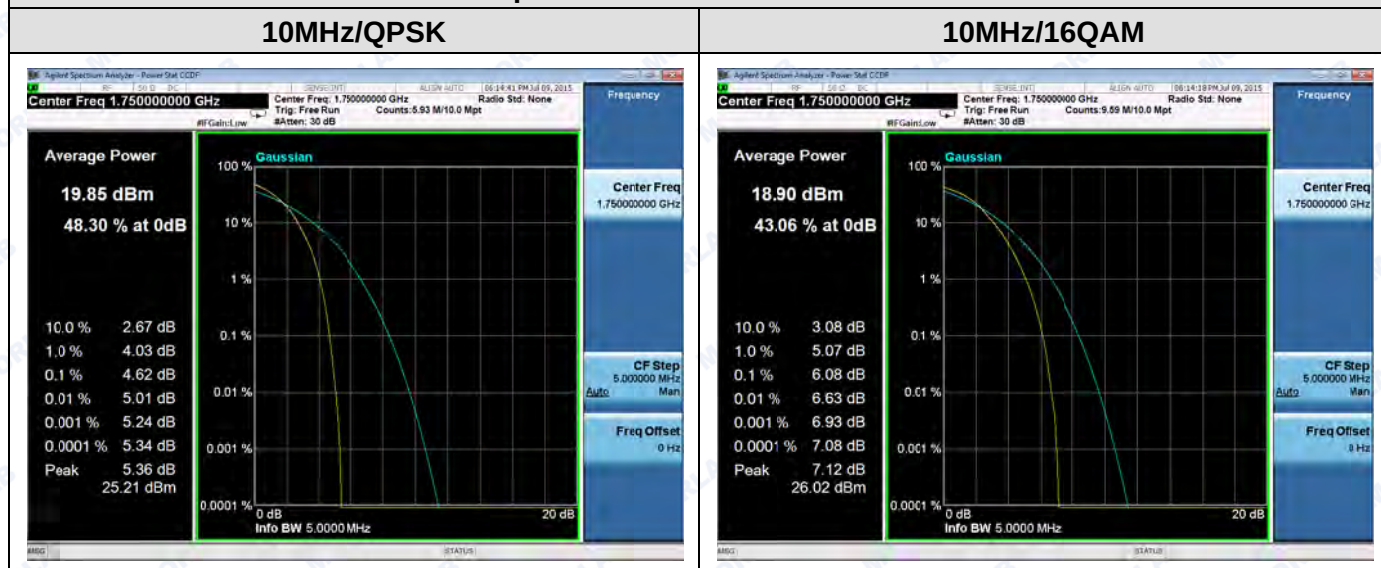
### LTE Band 4 High channel

| Channel Bandwidth: 5MHz |                 |                            |       | Channel Bandwidth: 10MHz |                 |                            |       |
|-------------------------|-----------------|----------------------------|-------|--------------------------|-----------------|----------------------------|-------|
| Channel                 | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                         |                 | QPSK                       | 16QAM |                          |                 | QPSK                       | 16QAM |
| 20375                   | 1752.5          | 4.97                       | 5.80  | 20350                    | 1750.0          | 4.62                       | 6.08  |

### Spectrum Plot of Worst Value



### Spectrum Plot of Worst Value





REPORT No.: SZ15060145W02

### LTE Band 4 High channel

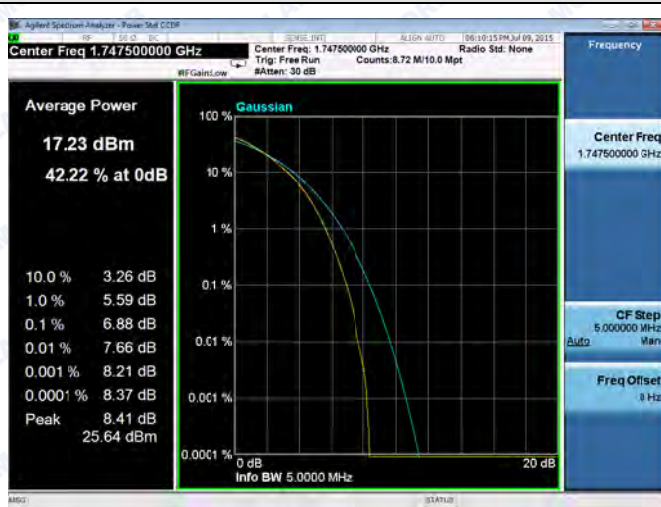
| Channel Bandwidth: 15MHz |                 |                            |       | Channel Bandwidth: 20MHz |                 |                            |       |
|--------------------------|-----------------|----------------------------|-------|--------------------------|-----------------|----------------------------|-------|
| Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       | Channel                  | Frequency (MHz) | Peak to Average Ratio (dB) |       |
|                          |                 | QPSK                       | 16QAM |                          |                 | QPSK                       | 16QAM |
| 20325                    | 1747.5          | 5.79                       | 6.88  | 20300                    | 1745.0          | 6.46                       | 7.17  |

### Spectrum Plot of Worst Value

#### 15MHz/QPSK



#### 15MHz/16QAM

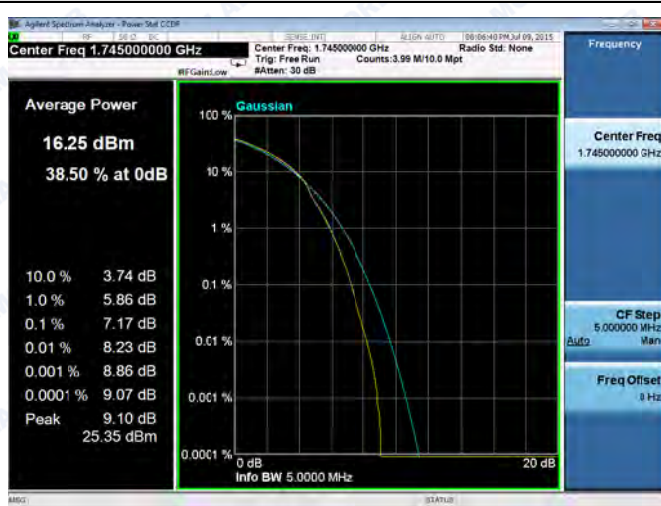


### Spectrum Plot of Worst Value

#### 20MHz/QPSK



#### 20MHz/16QAM





## 2.5 Conducted Spurious Emissions

### 2.5.1 Test Requirement

According to FCC section 2.1051 and 27.53(g), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43+10*\log(P)$ dB. This calculated to be -13dBm.

### 2.5.2 Test Procedure

See section 2.1.2 of this report.

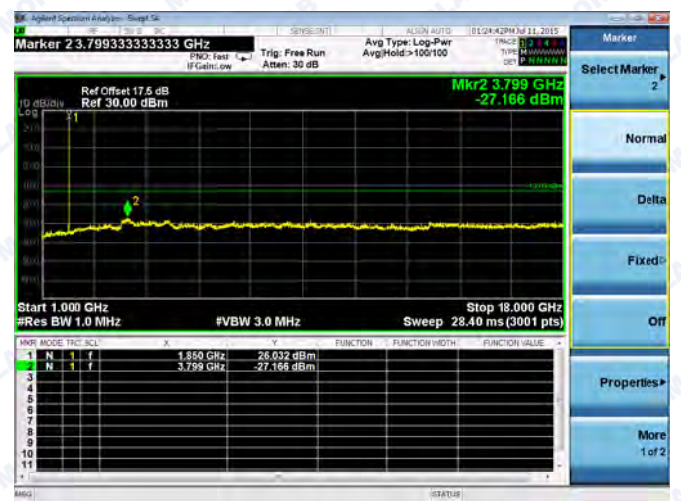
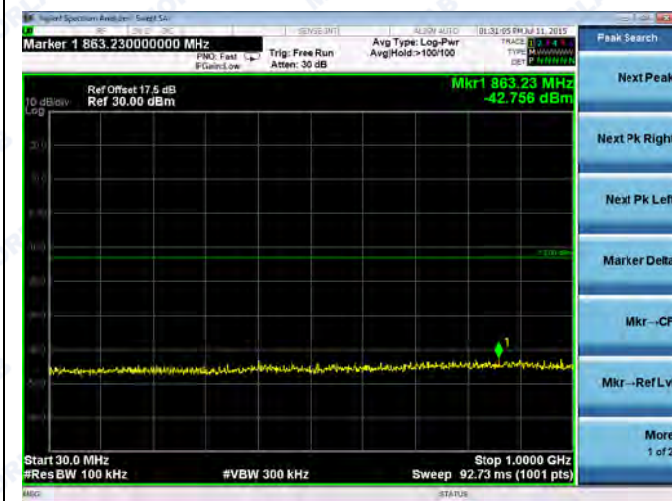
Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

### 2.5.3 Test Result

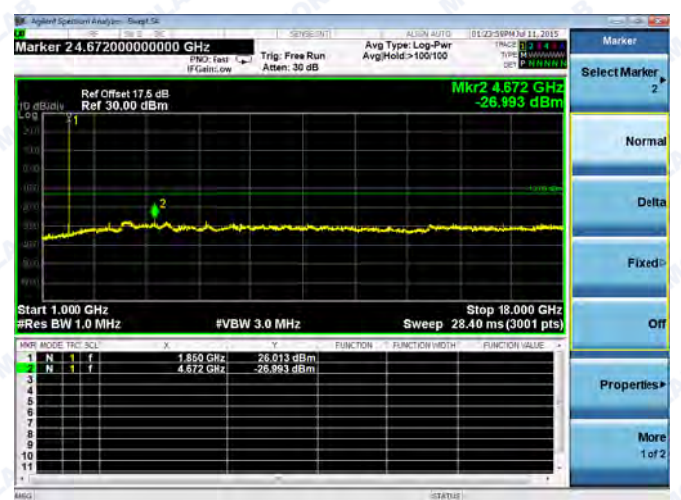
Compliant. See attached pots.

#### LTE Band 2 1.4MHz BW Low Channel

##### QPSK



##### 16QAM

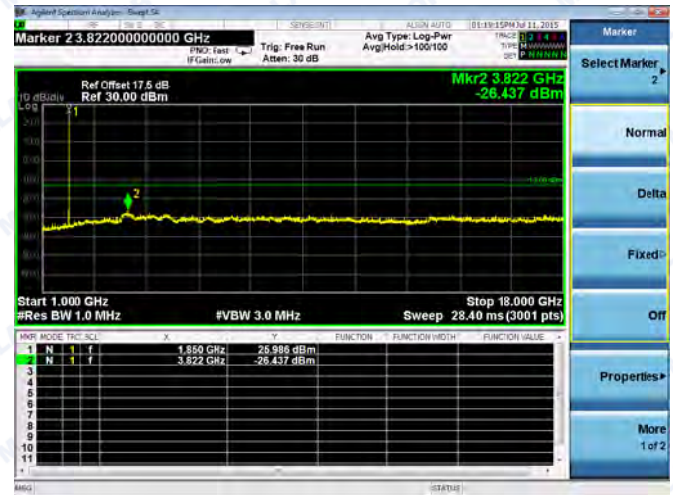




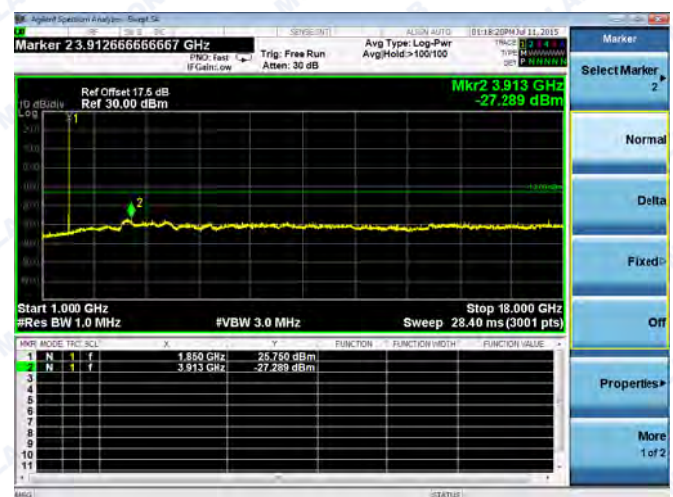
REPORT No.: SZ15060145W02

LTE Band 2 3MHz BW Low Channel

QPSK



16QAM

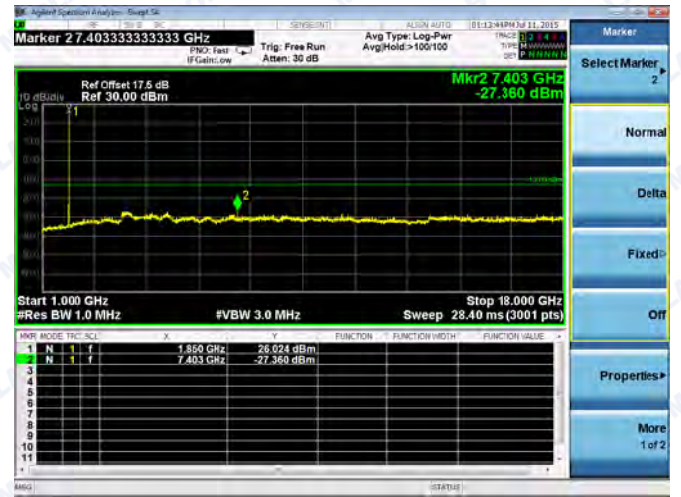




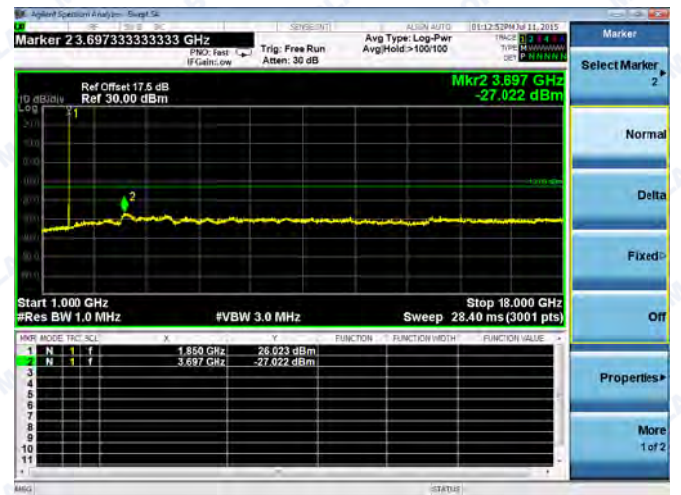
REPORT No.: SZ15060145W02

LTE Band 2 5MHz BW Low Channel

QPSK



16QAM

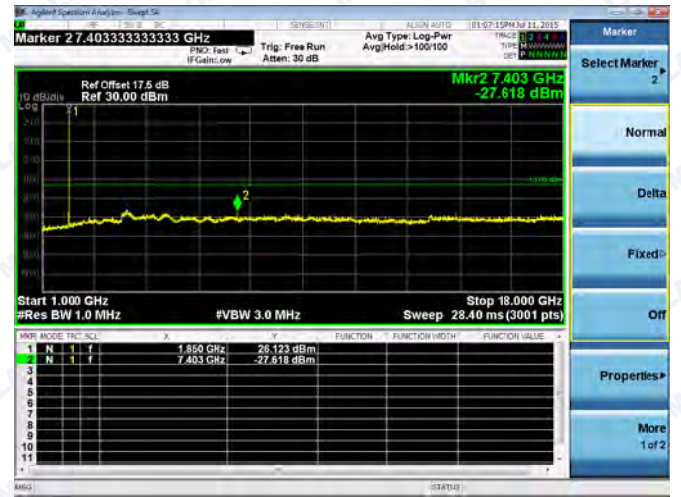




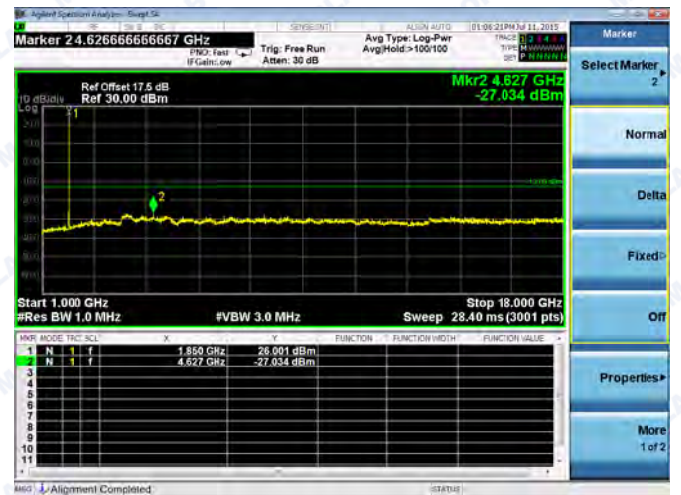
REPORT No.: SZ15060145W02

LTE Band 2 10MHz BW Low Channel

QPSK



16QAM

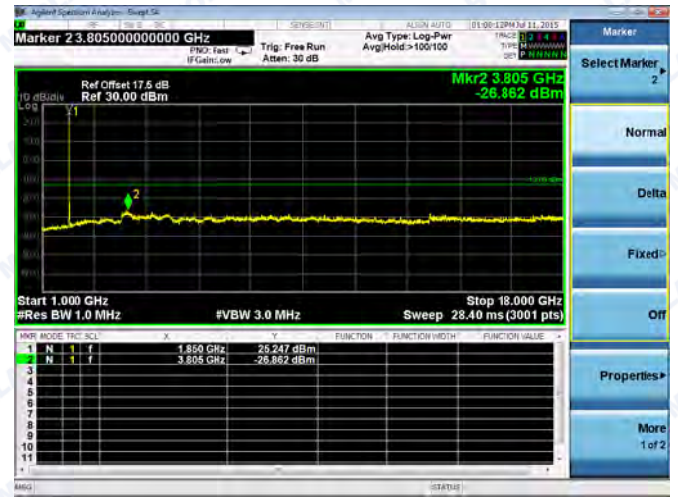




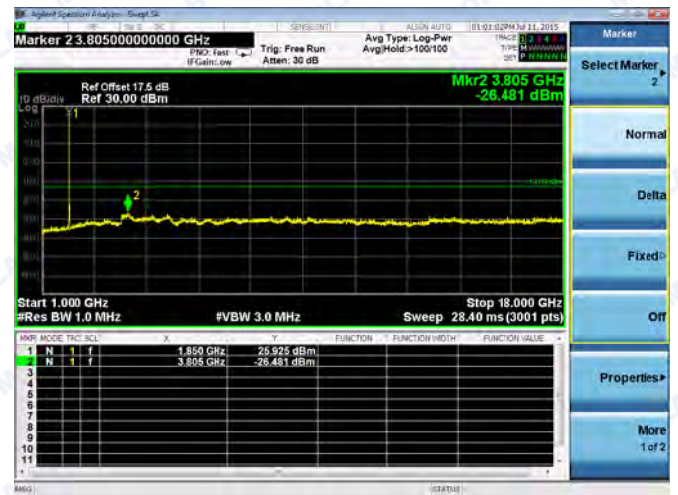
REPORT No.: SZ15060145W02

LTE Band 2 15MHz BW Low Channel

QPSK



16QAM

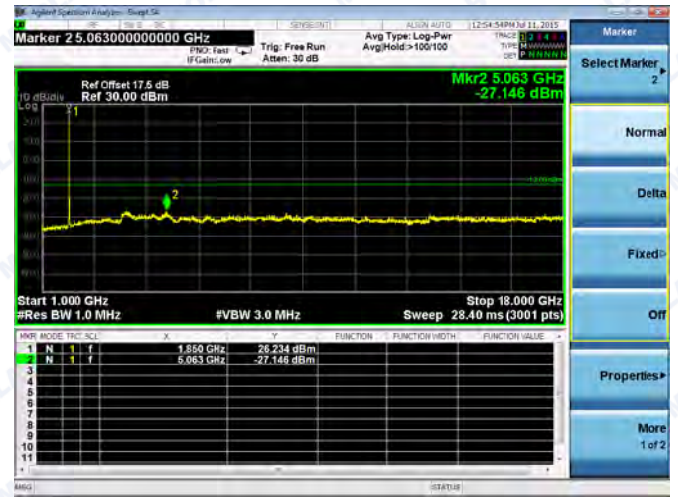




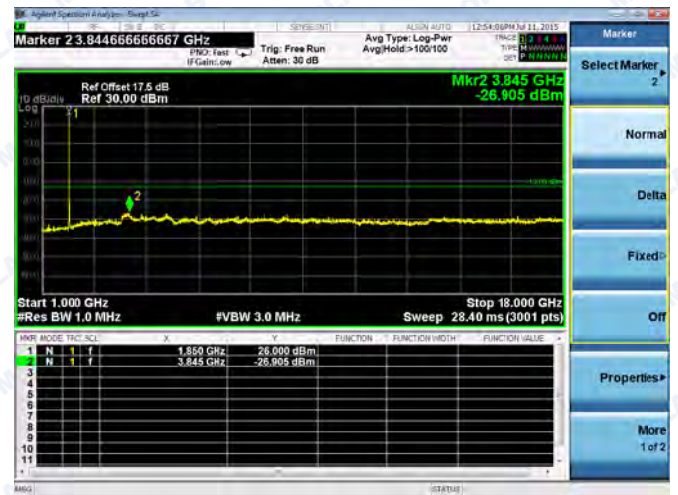
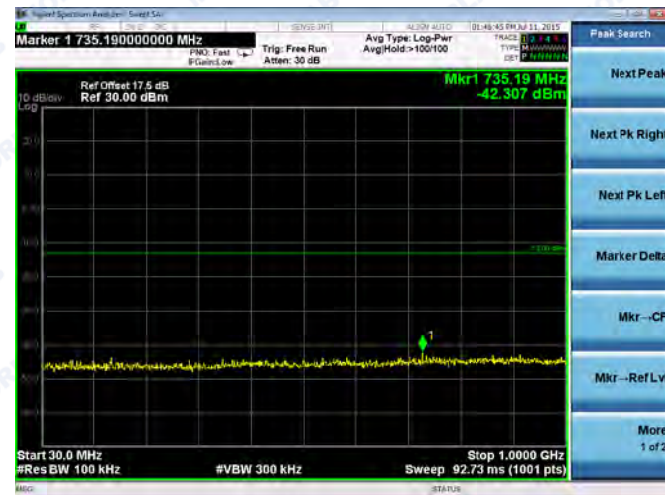
REPORT No.: SZ15060145W02

LTE Band 2 20MHz BW Low Channel

QPSK



16QAM



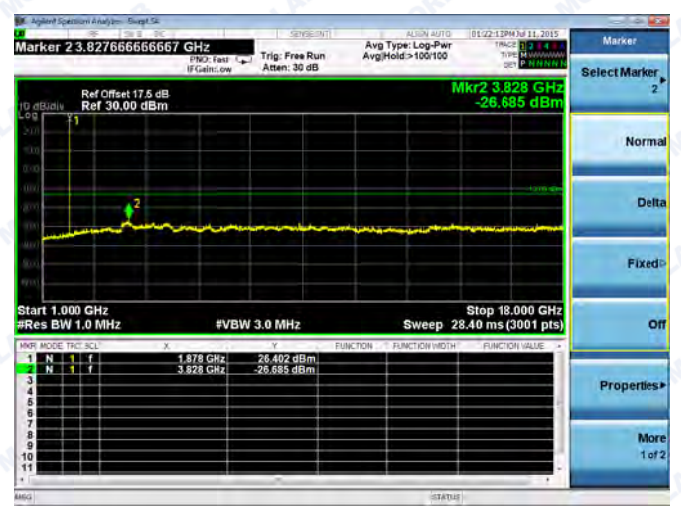
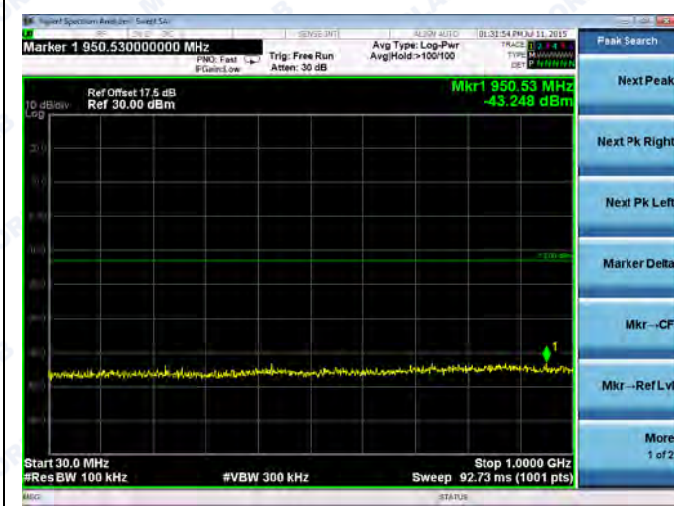


REPORT No.: SZ15060145W02

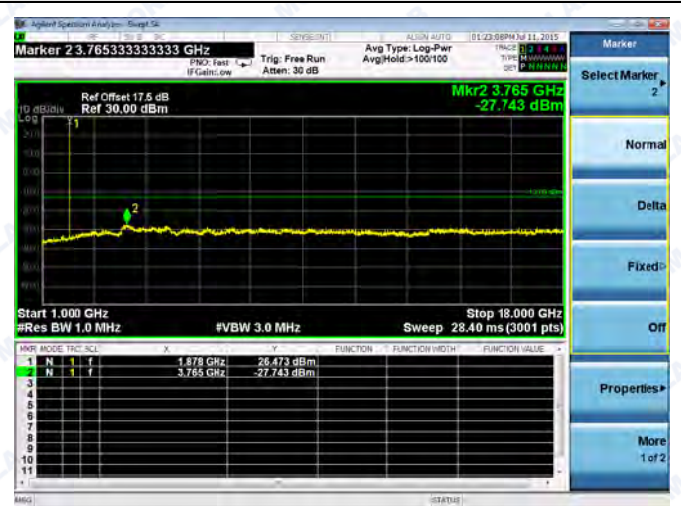
Middle channel:

LTE Band 2 1.4MHz BW Mid Channel

QPSK



16QAM

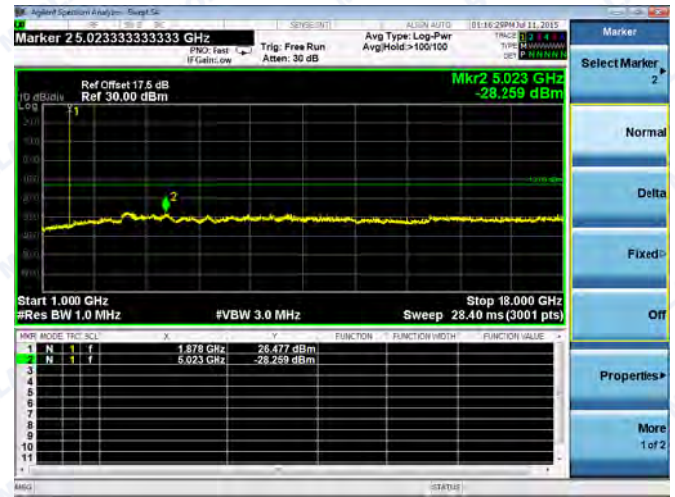




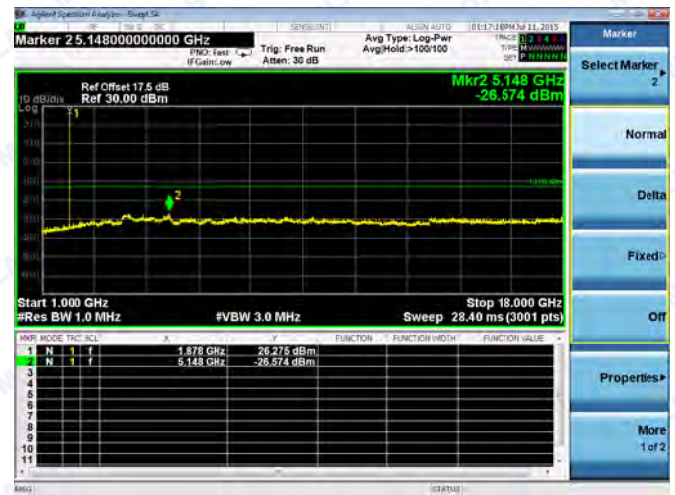
REPORT No.: SZ15060145W02

LTE Band 2 3MHz BW Mid Channel

QPSK



16QAM

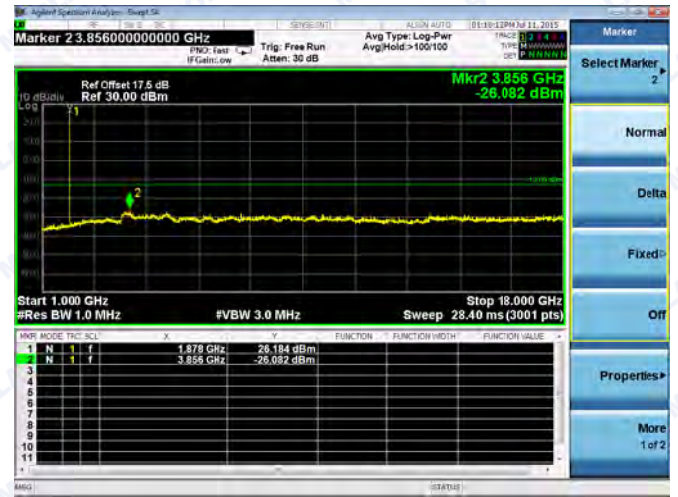




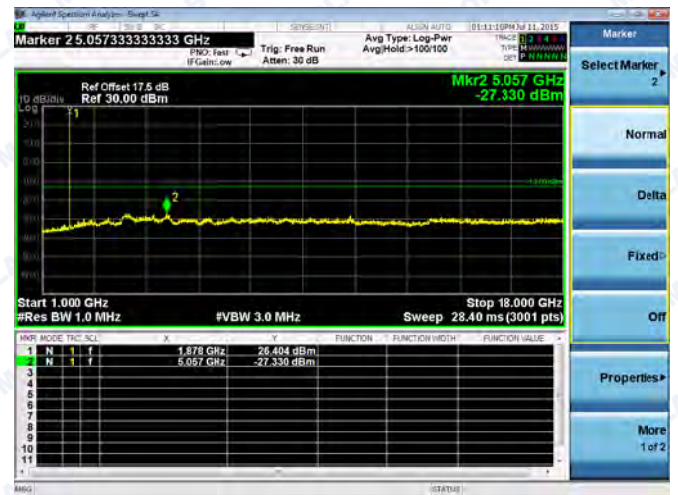
REPORT No.: SZ15060145W02

LTE Band 2 5MHz BW Mid Channel

QPSK



16QAM

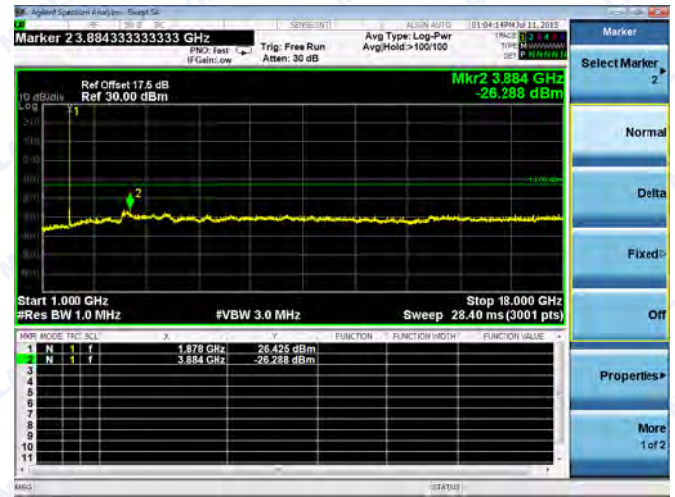




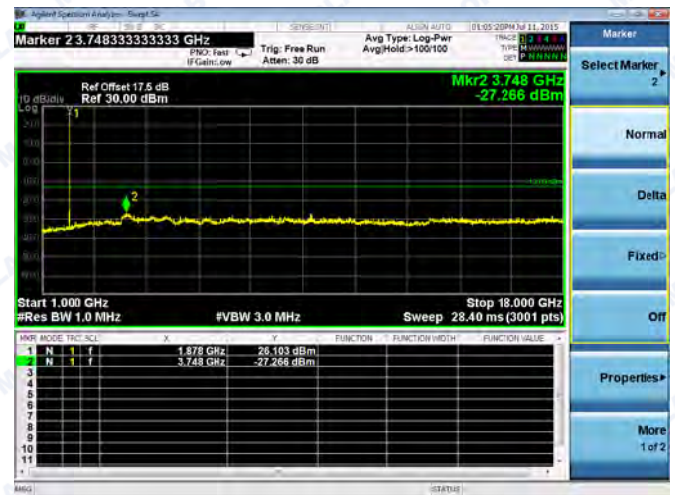
REPORT No.: SZ15060145W02

LTE Band 2 10MHz BW Mid Channel

QPSK



16QAM

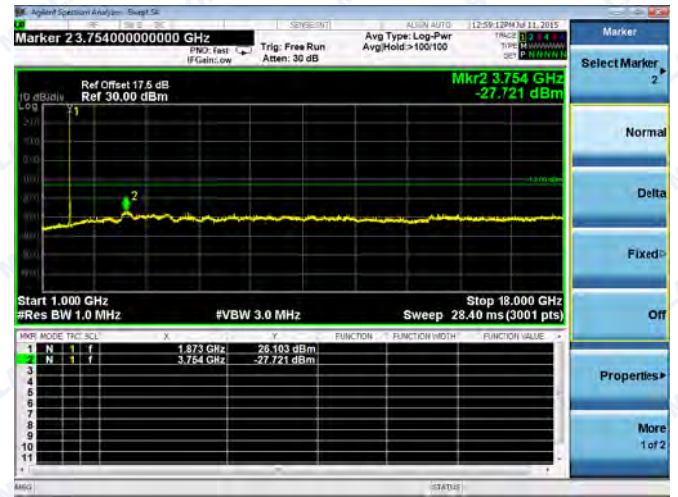




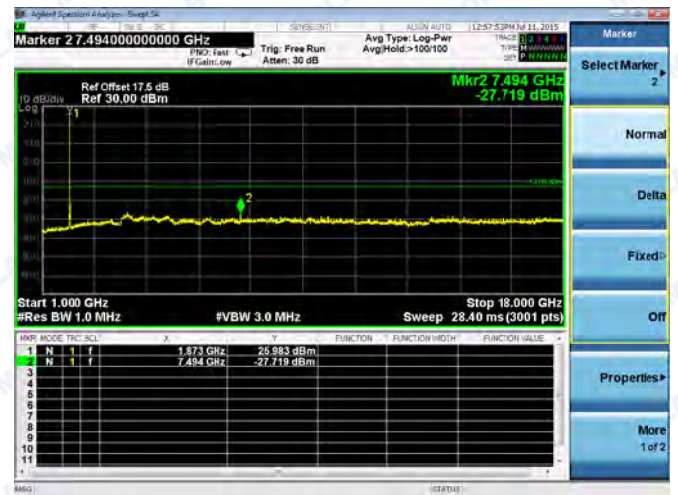
REPORT No.: SZ15060145W02

LTE Band 2 15MHz BW Mid Channel

QPSK



16QAM

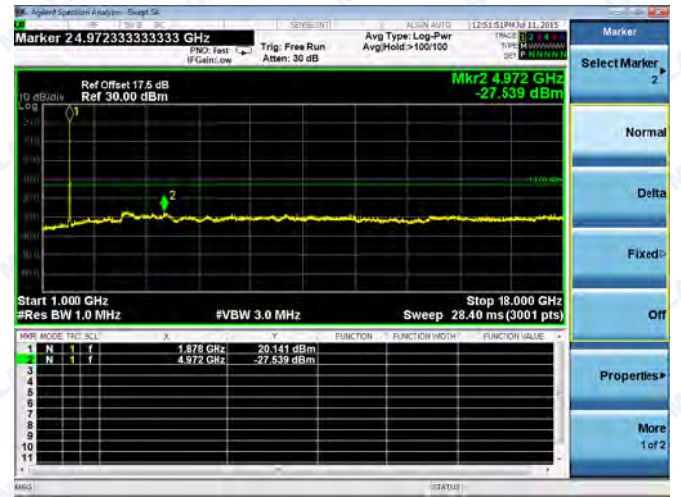




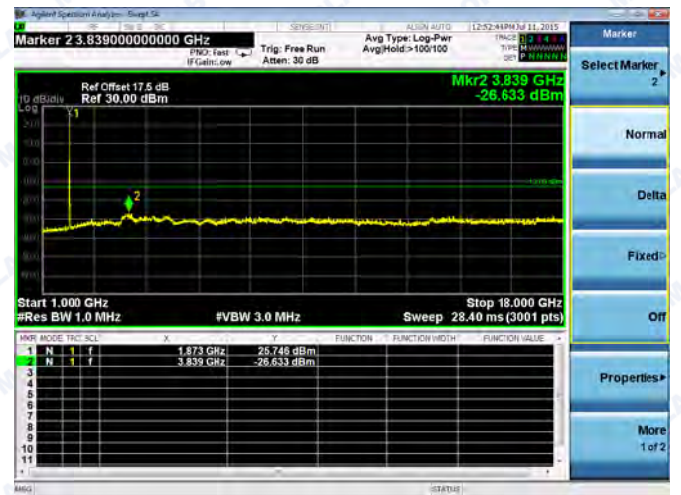
REPORT No.: SZ15060145W02

LTE Band 2 20MHz BW Mid Channel

QPSK



16QAM

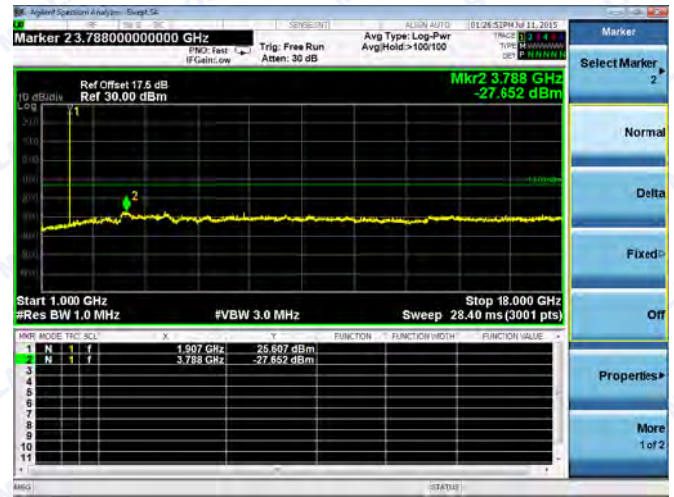




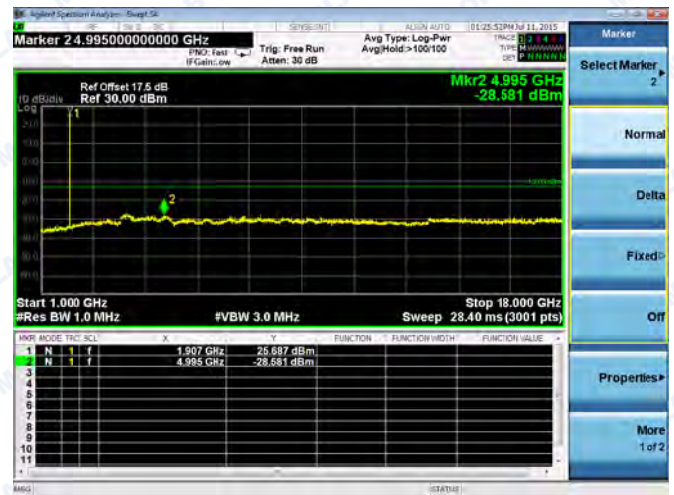
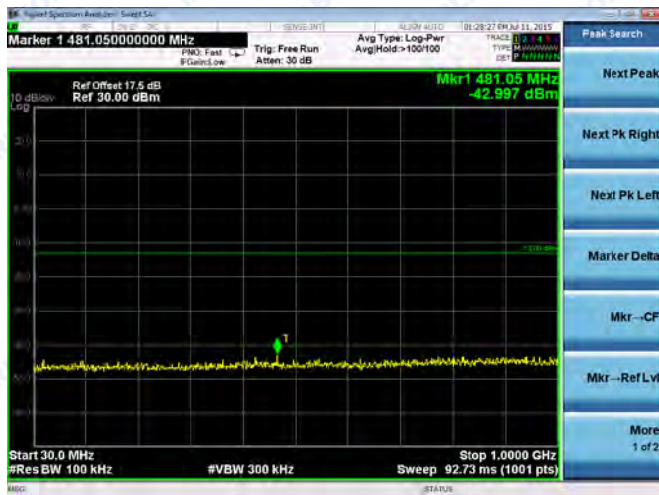
REPORT No.: SZ15060145W02

LTE Band 2 1.4MHz BW High Channel

QPSK



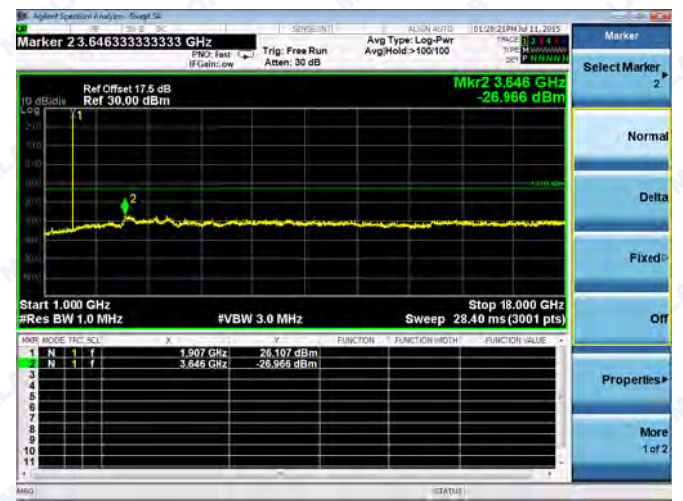
16QAM



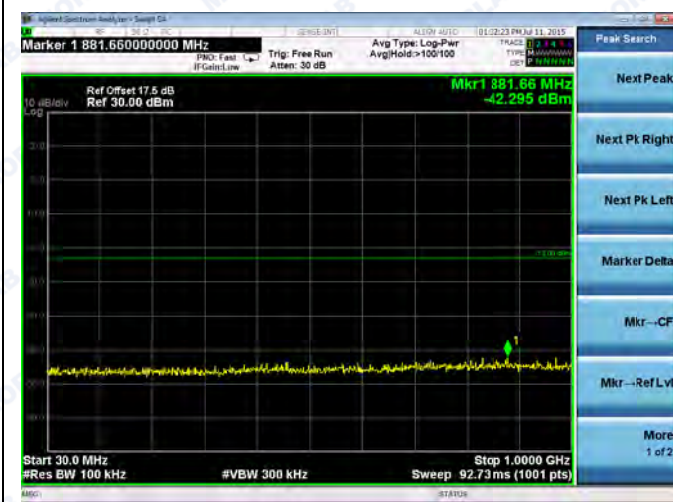


## LTE Band 2 3MHz BW High Channel

## QPSK



## 16QAM

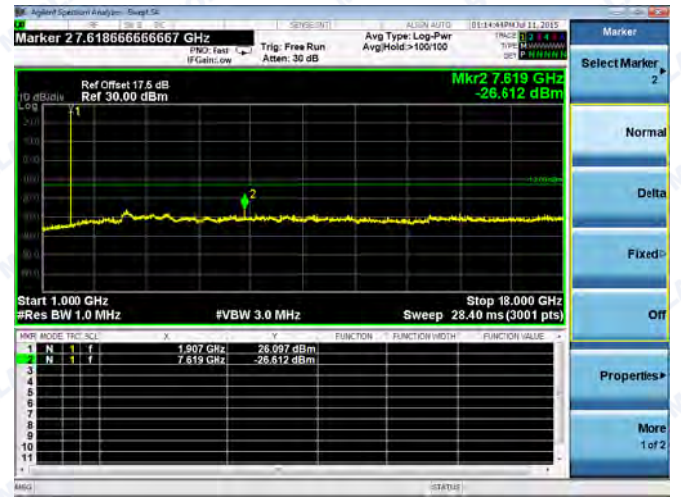




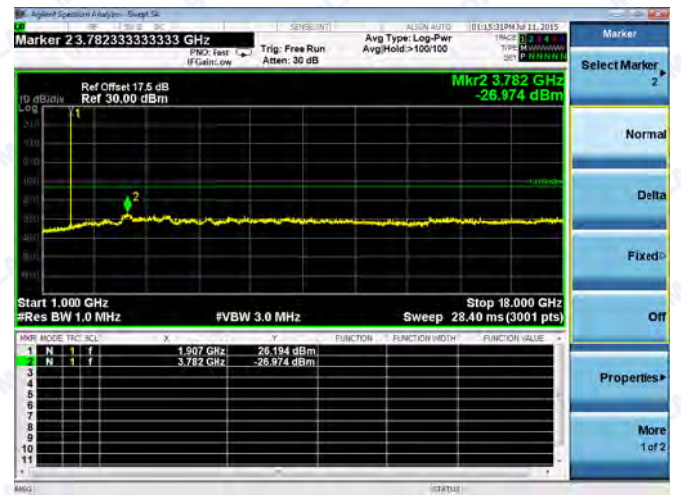
REPORT No.: SZ15060145W02

LTE Band 2 5MHz BW High Channel

QPSK



16QAM

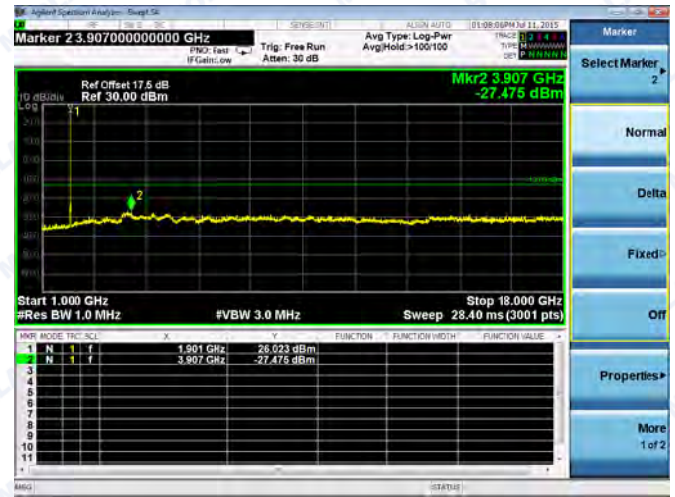




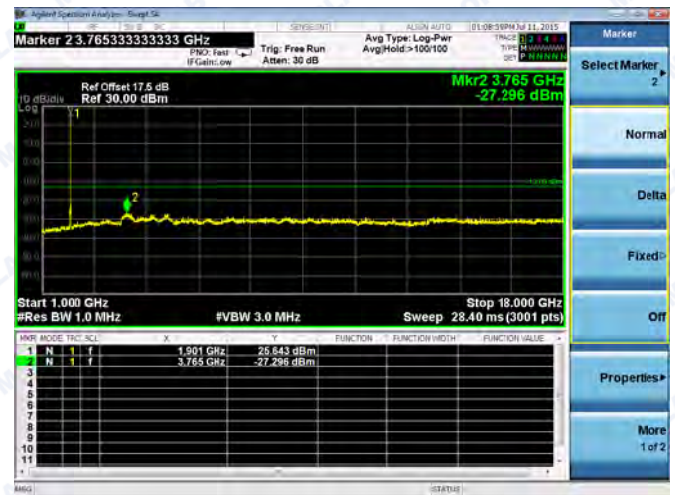
REPORT No.: SZ15060145W02

LTE Band 2 10MHz BW High Channel

QPSK



16QAM

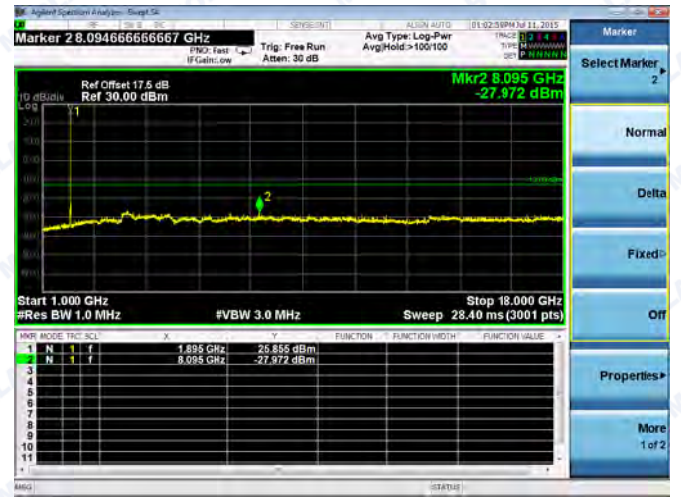




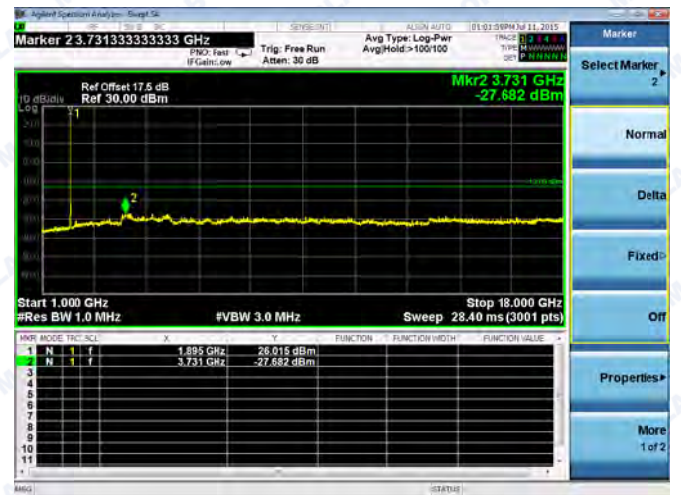
REPORT No.: SZ15060145W02

LTE Band 2 15MHz BW High Channel

QPSK



16QAM

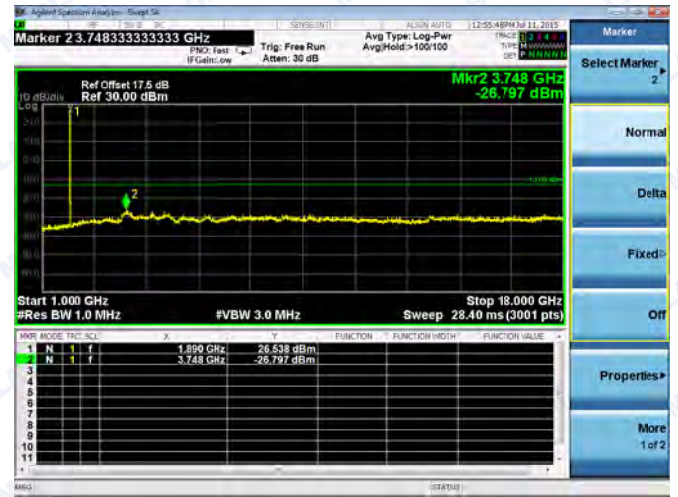




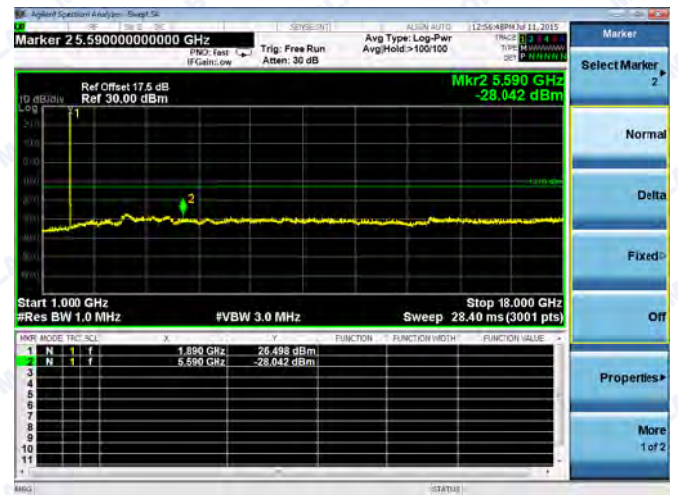
REPORT No.: SZ15060145W02

LTE Band 2 20MHz BW High Channel

QPSK



16QAM

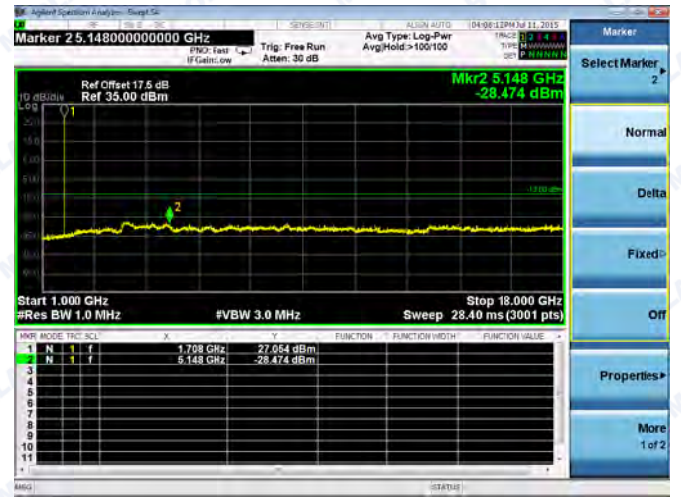




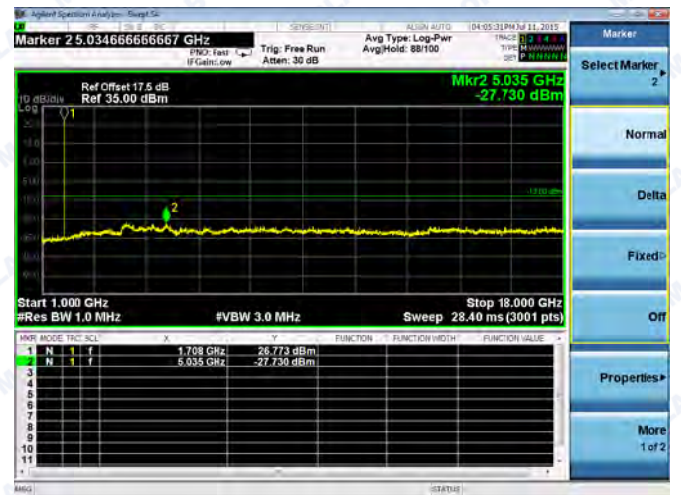
REPORT No.: SZ15060145W02

LTE Band 4 1.4MHz BW Low Channel

QPSK



16QAM

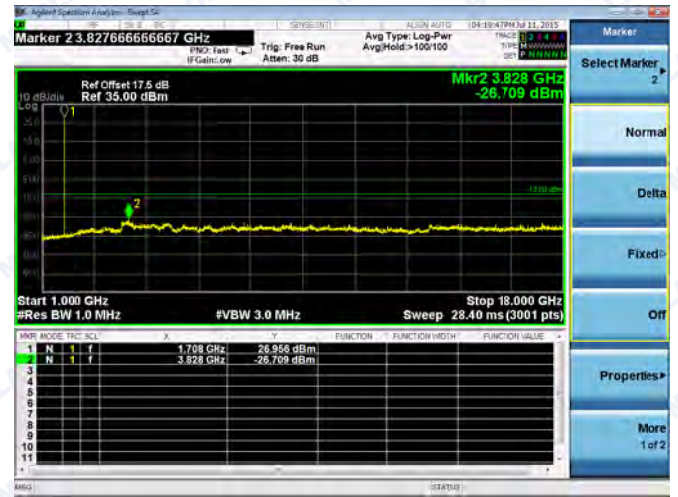
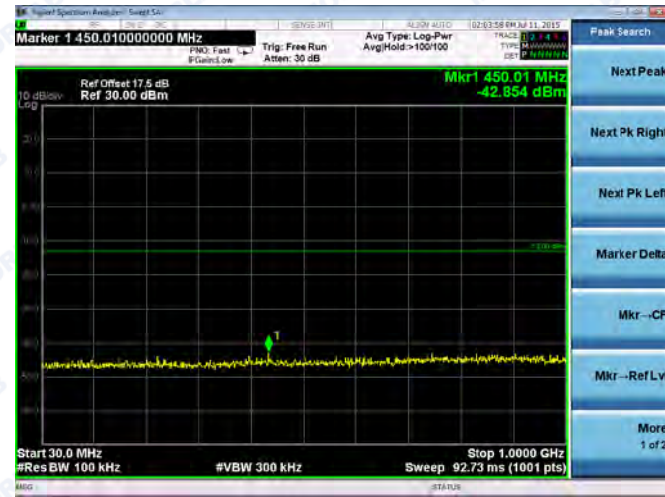




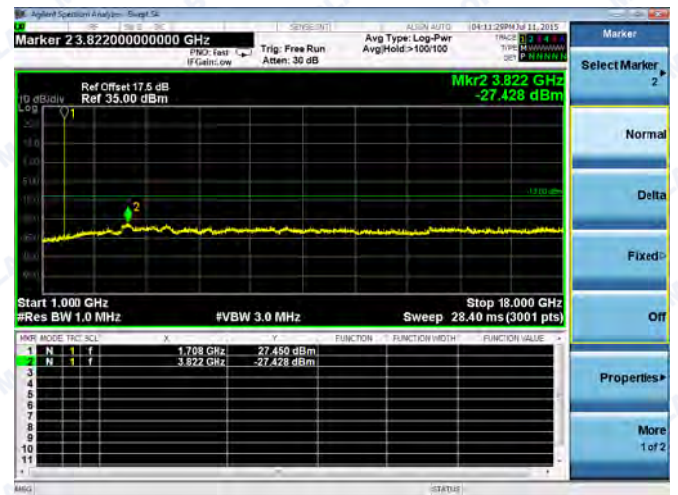
REPORT No.: SZ15060145W02

LTE Band 4 3MHz BW Low Channel

QPSK



16QAM

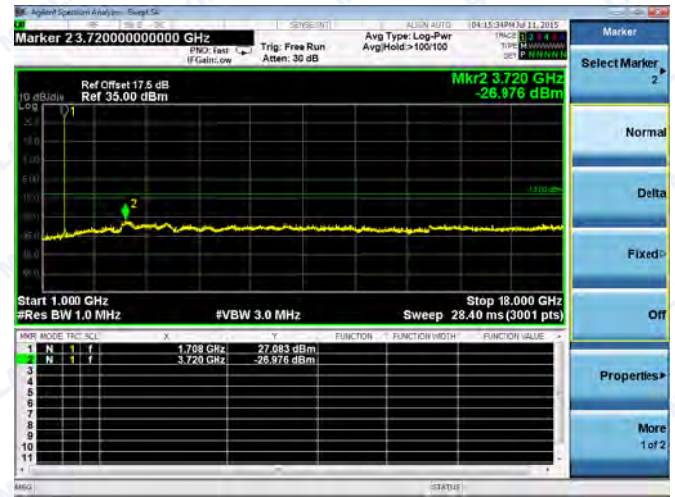
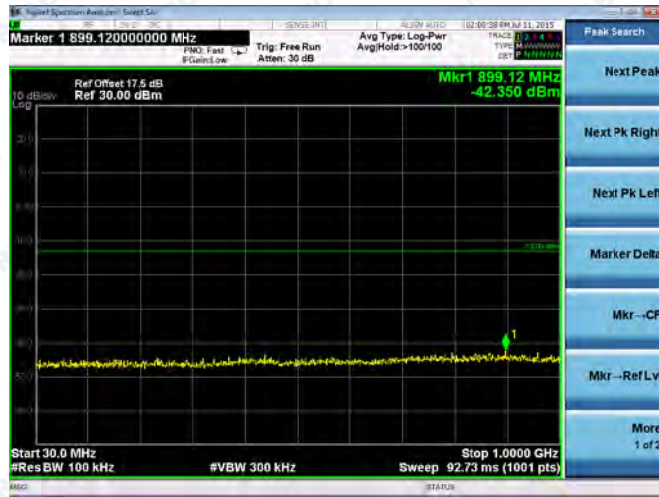




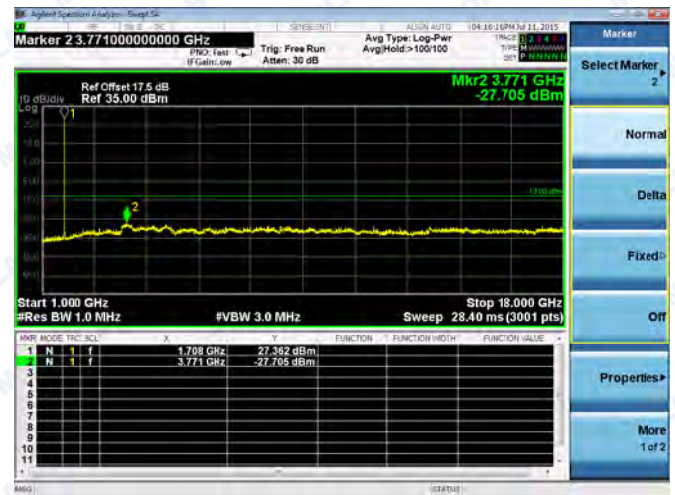
REPORT No.: SZ15060145W02

LTE Band 4 5MHz BW Low Channel

QPSK



16QAM

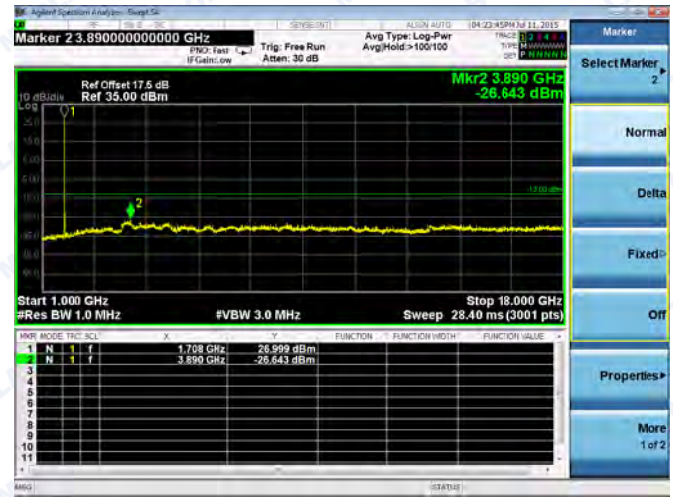
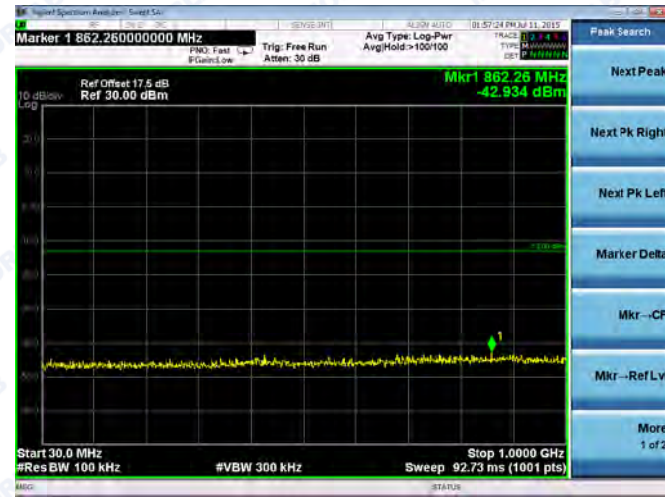




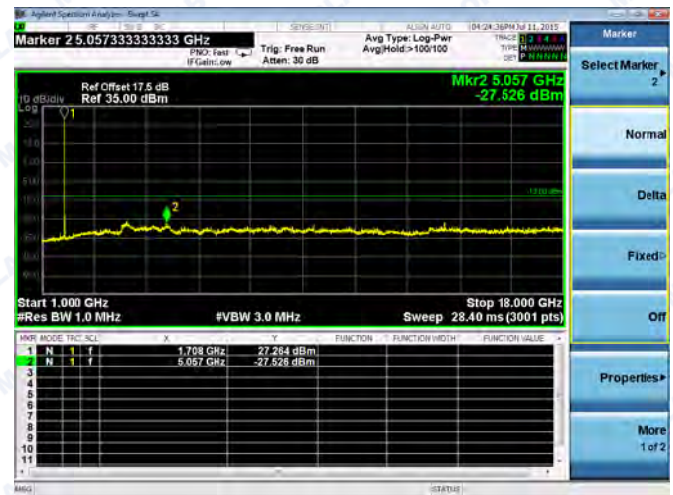
REPORT No.: SZ15060145W02

LTE Band 4 10MHz BW Low Channel

QPSK



16QAM

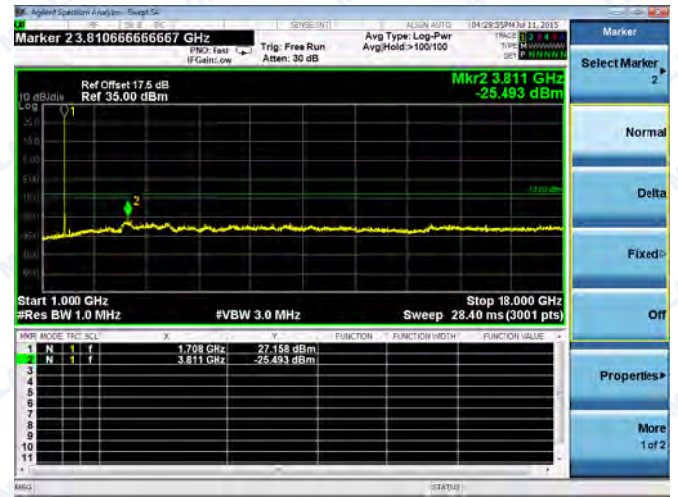




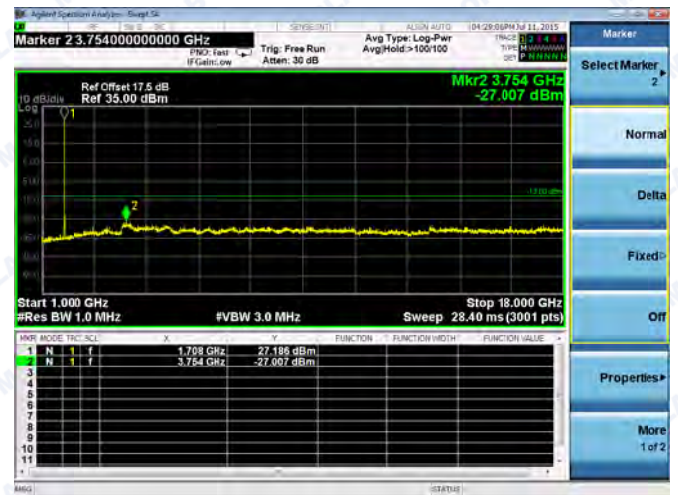
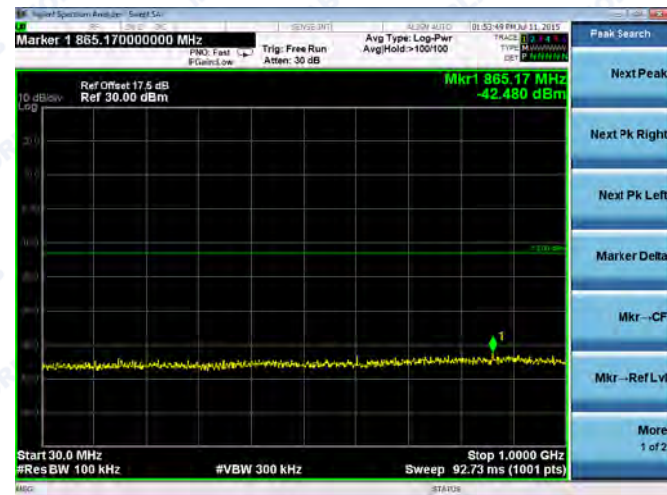
REPORT No.: SZ15060145W02

LTE Band 4 15MHz BW Low Channel

QPSK



16QAM

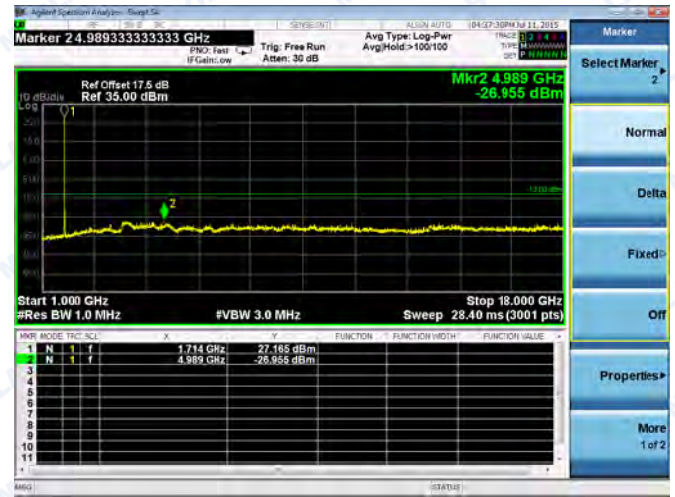




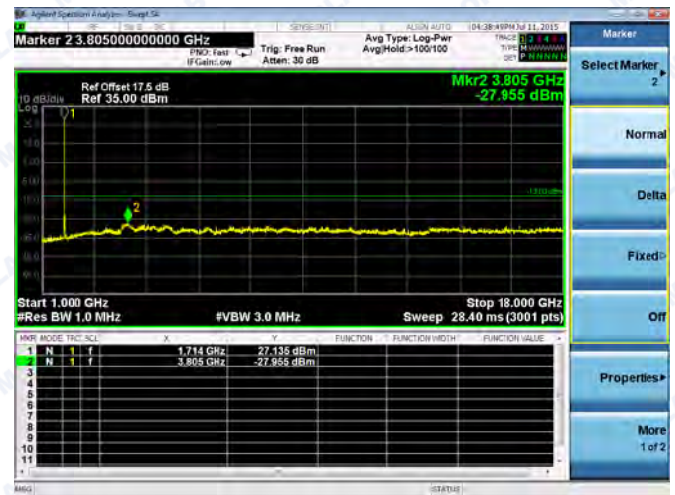
REPORT No.: SZ15060145W02

LTE Band 4 20MHz BW Low Channel

QPSK



16QAM



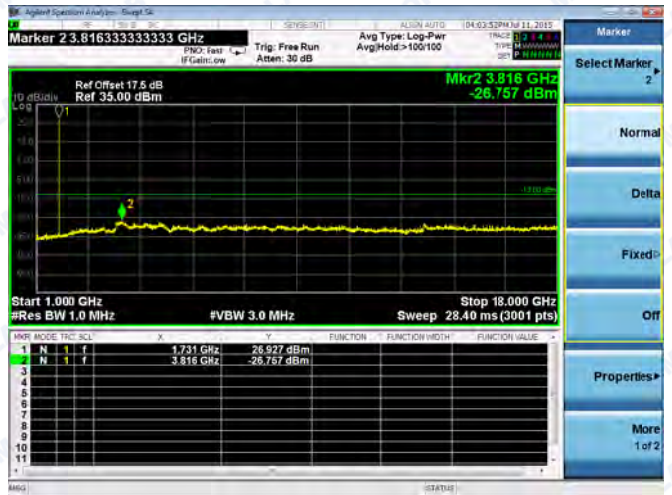
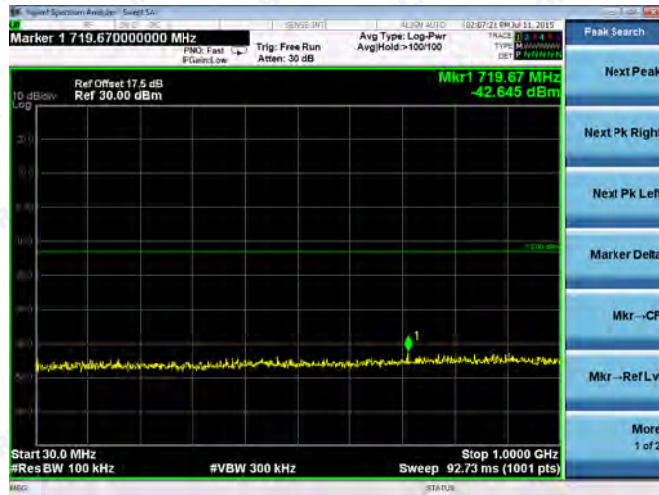


REPORT No.: SZ15060145W02

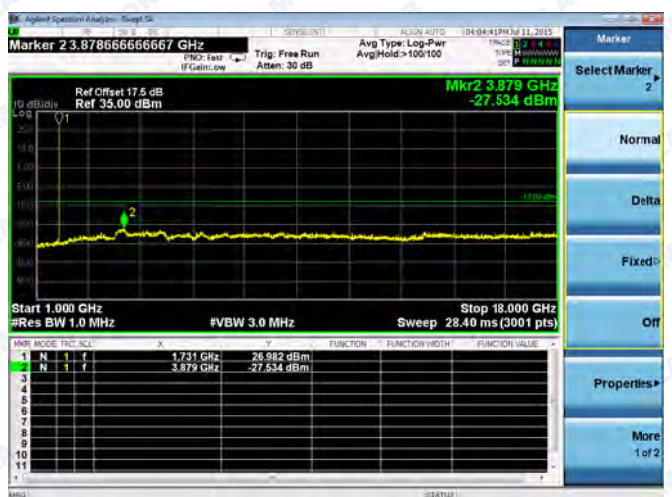
Middle channel:

LTE Band 4 1.4MHz BW Mid Channel

QPSK



16QAM

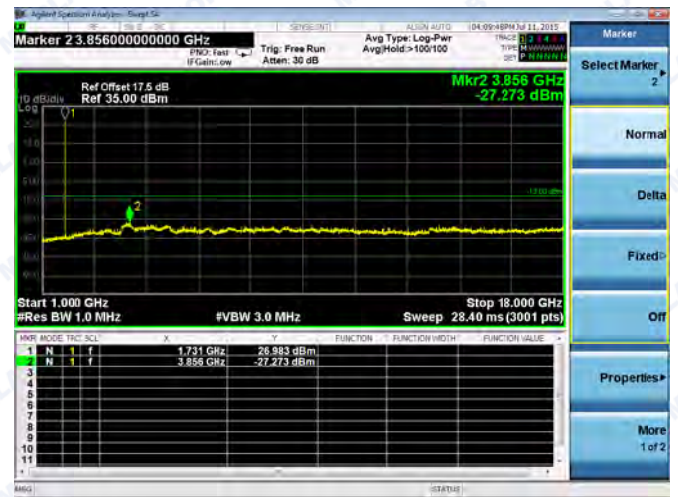




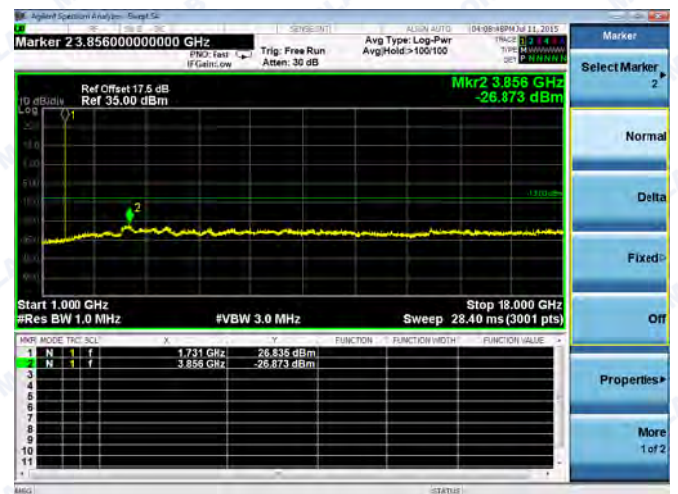
REPORT No.: SZ15060145W02

LTE Band 4 3MHz BW Mid Channel

QPSK



16QAM

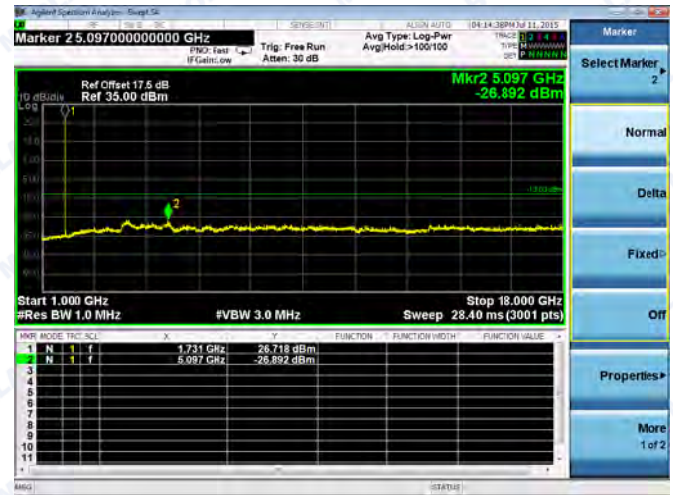




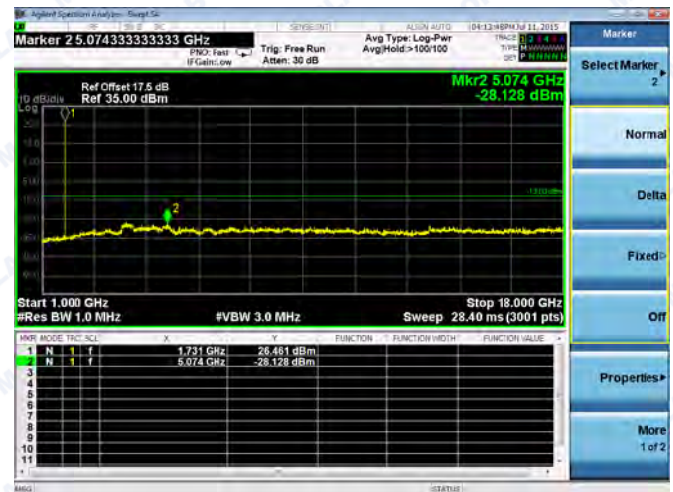
REPORT No.: SZ15060145W02

LTE Band 4 5MHz BW Mid Channel

QPSK



16QAM

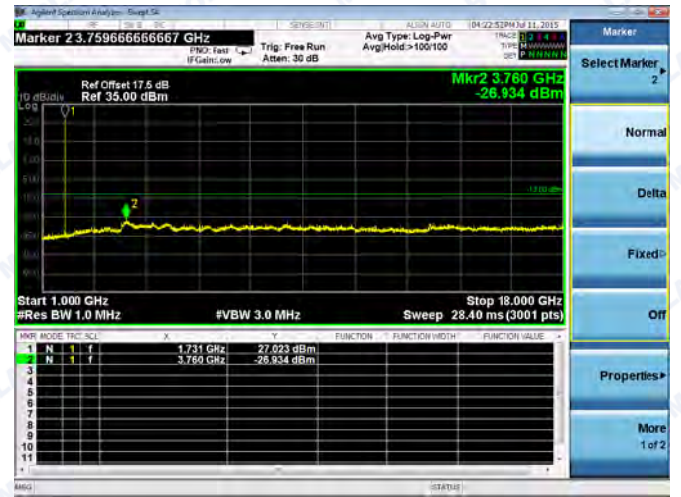




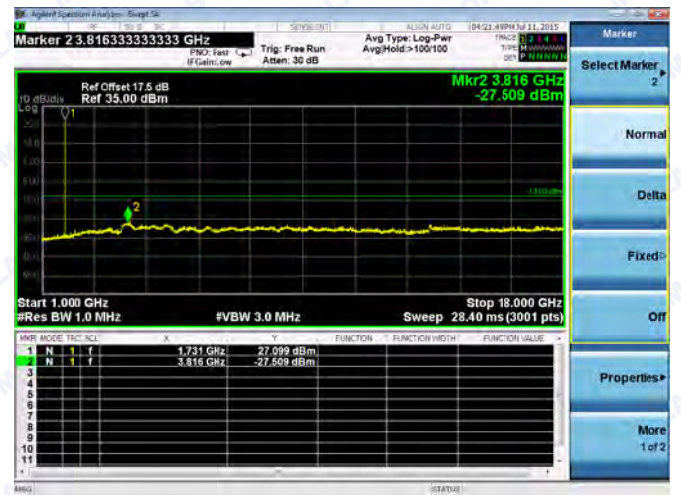
REPORT No.: SZ15060145W02

LTE Band 4 10MHz BW Mid Channel

QPSK



16QAM

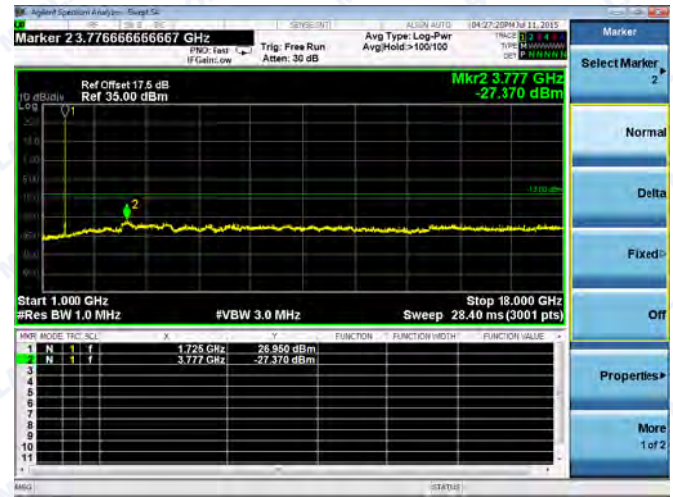




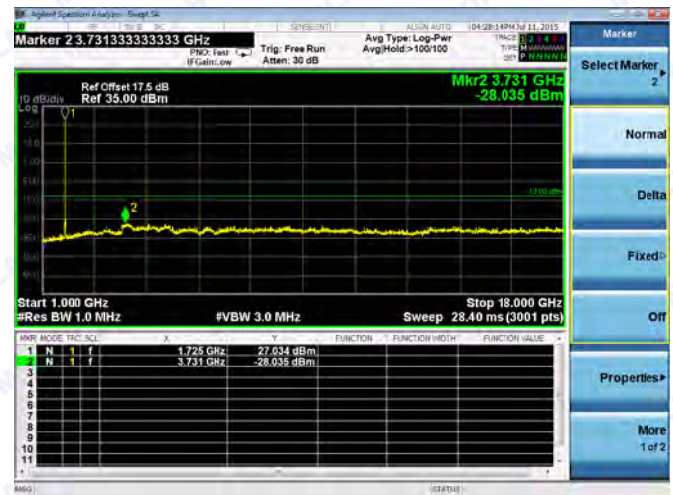
REPORT No.: SZ15060145W02

LTE Band 4 15MHz BW Mid Channel

QPSK



16QAM

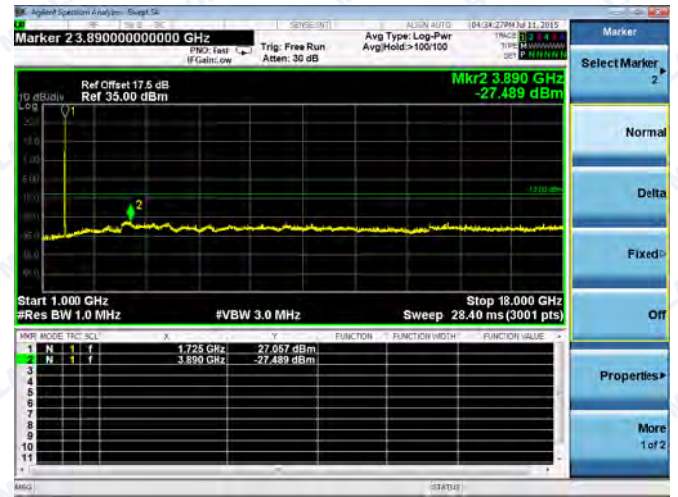




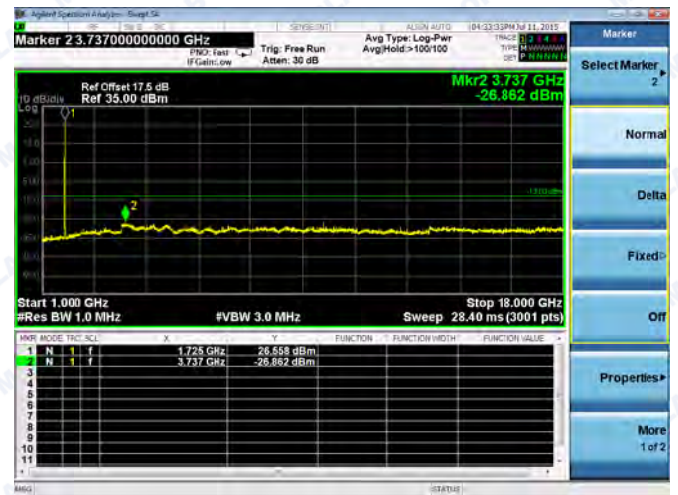
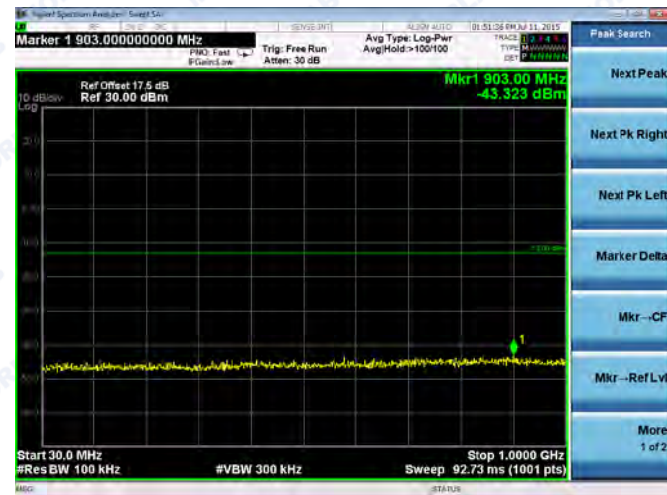
REPORT No.: SZ15060145W02

LTE Band 4 20MHz BW Mid Channel

QPSK



16QAM

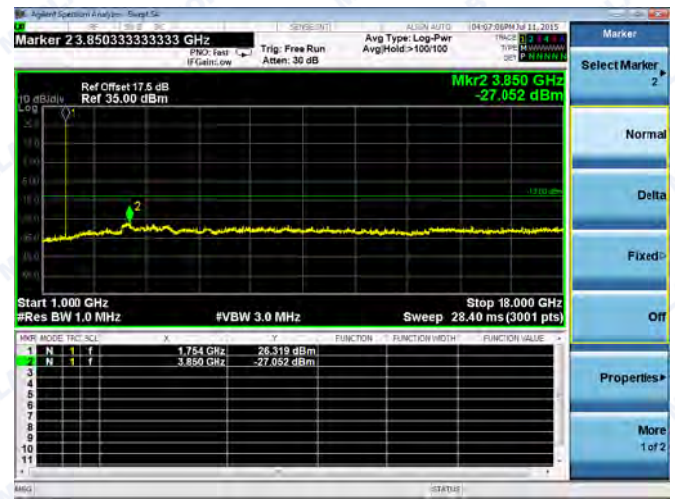
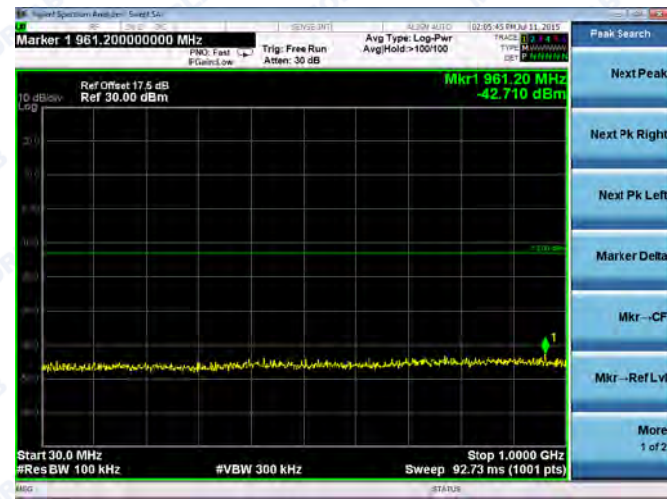




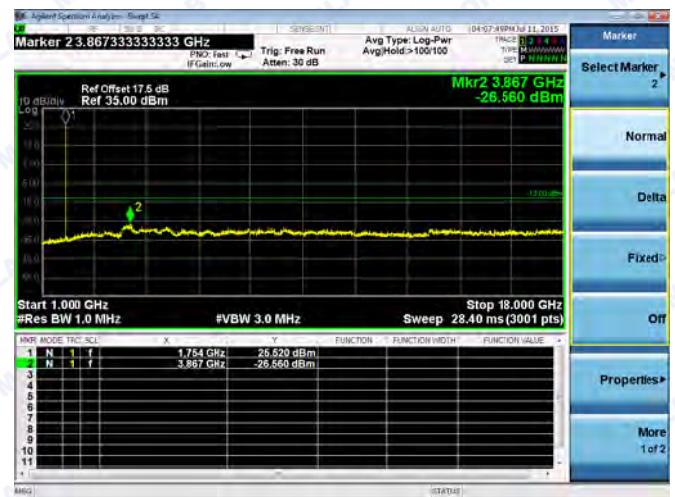
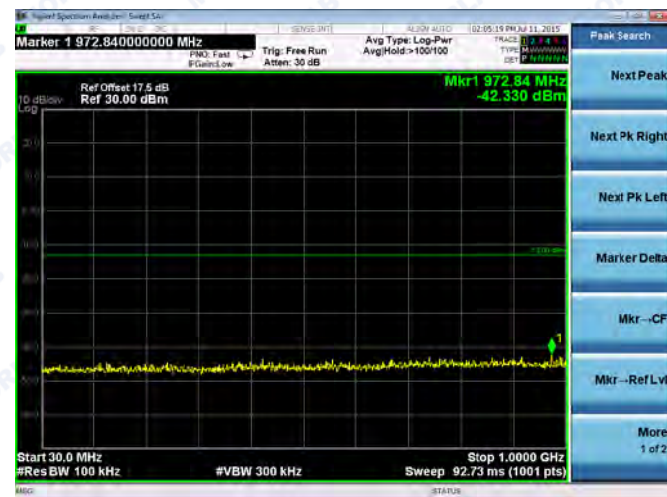
REPORT No.: SZ15060145W02

LTE Band 4 1.4MHz BW High Channel

QPSK



16QAM

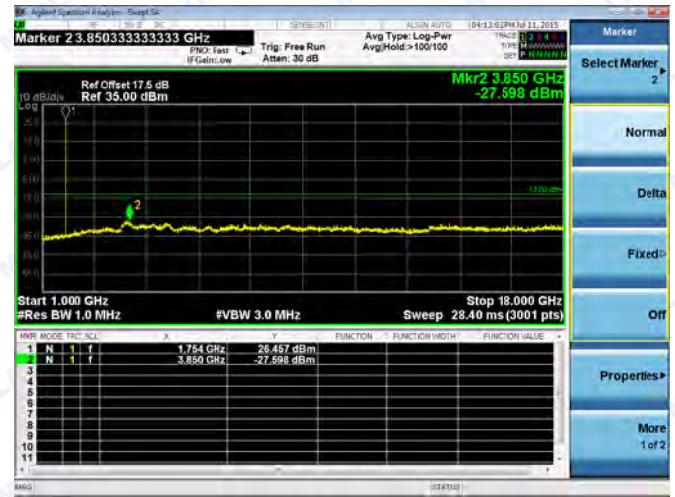
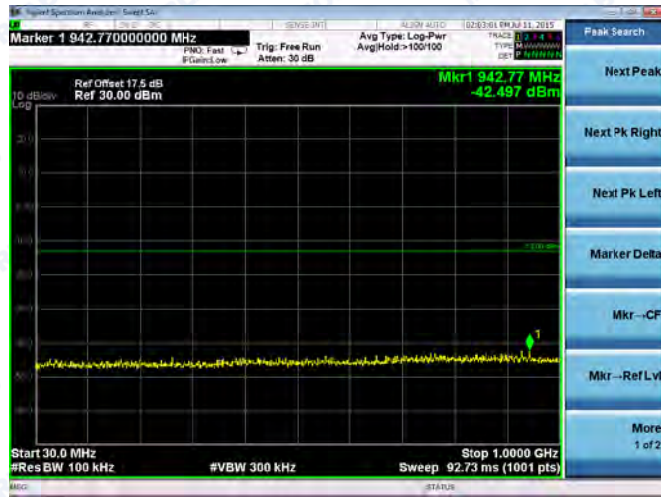




REPORT No.: SZ15060145W02

LTE Band 4 3MHz BW High Channel

QPSK



16QAM

