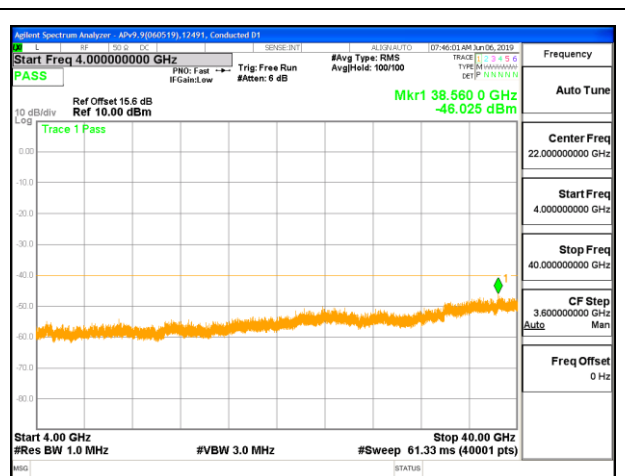
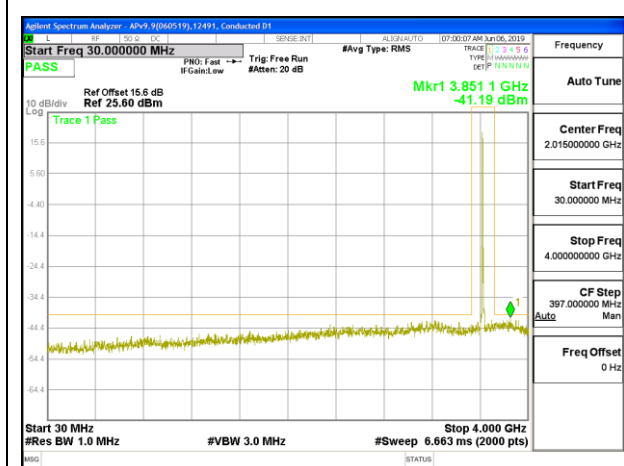


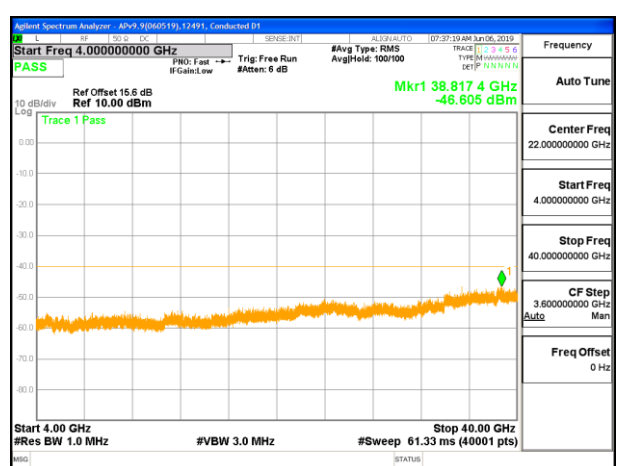
LTE B48 15MHz 16QAM Low Channel RB1-0



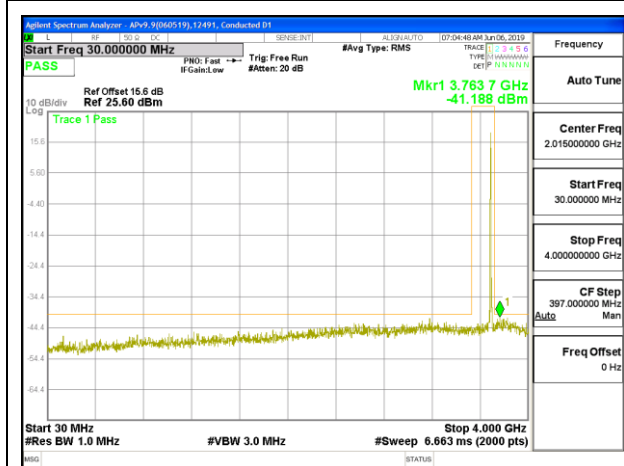
LTE B48 15MHz 16QAM Low Channel RB1-0



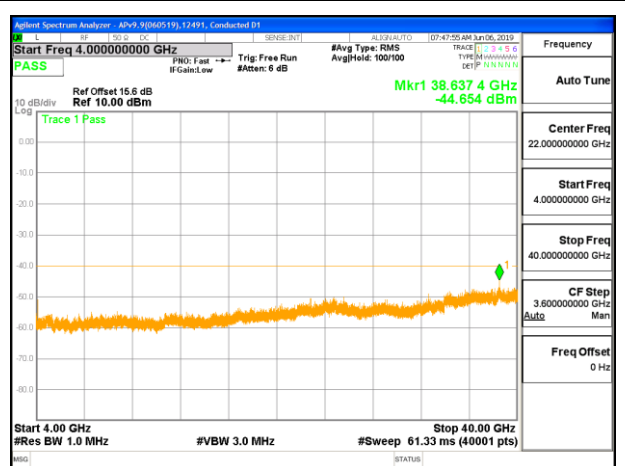
LTE B48 15MHz 16QAM Middle Channel RB1-0



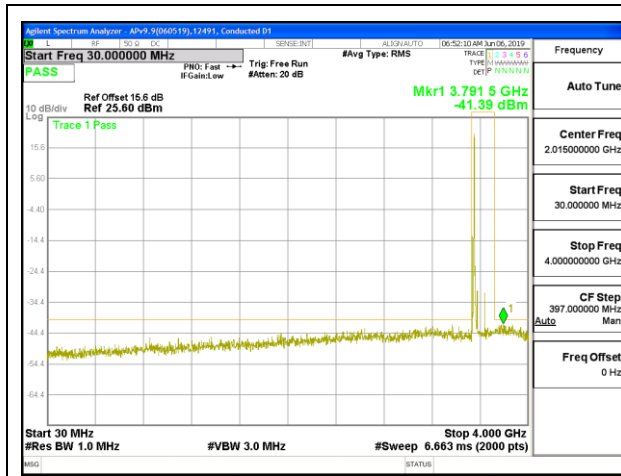
LTE B48 15MHz 16QAM Middle Channel RB1-0



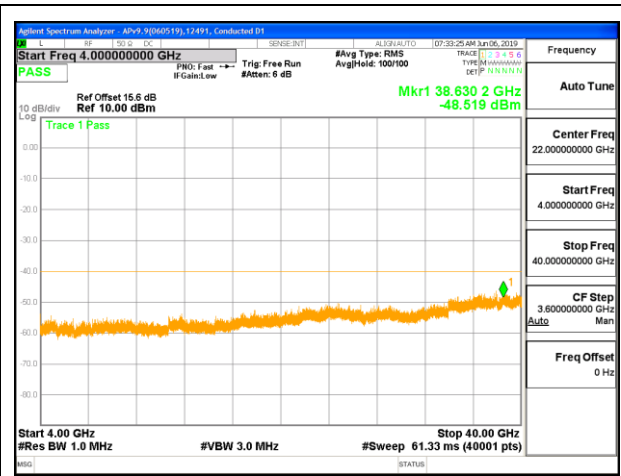
LTE B48 15MHz 16QAM High Channel RB1-0



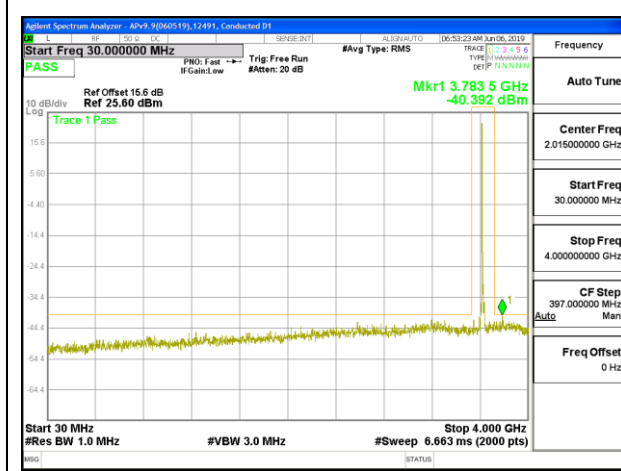
LTE B48 15MHz 16QAM High Channel RB1-0



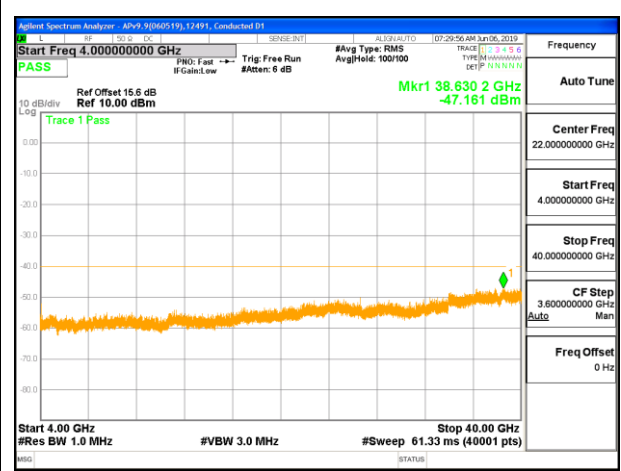
LTE B48 20MHz QPSK Low Channel RB1-0



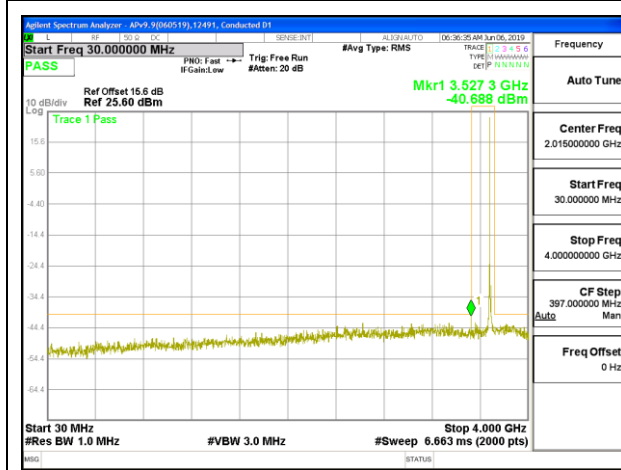
LTE B48 20MHz QPSK Low Channel RB1-0



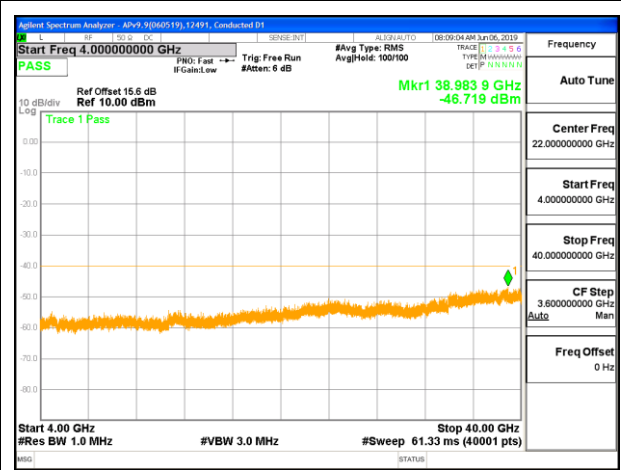
LTE B48 20MHz QPSK Middle Channel RB1-0



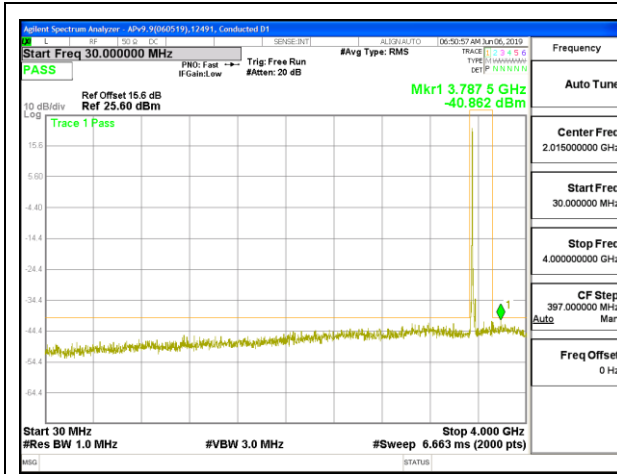
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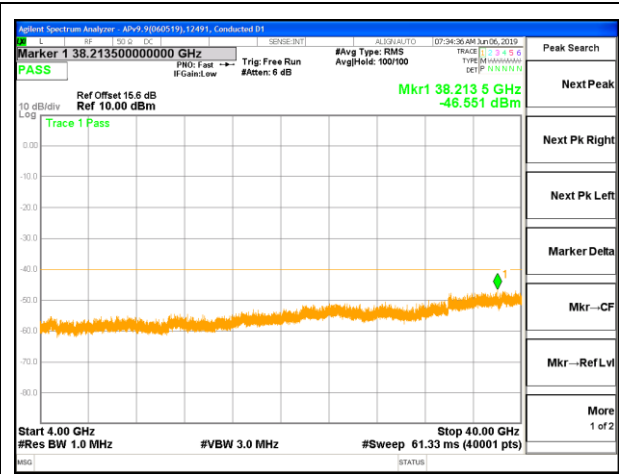
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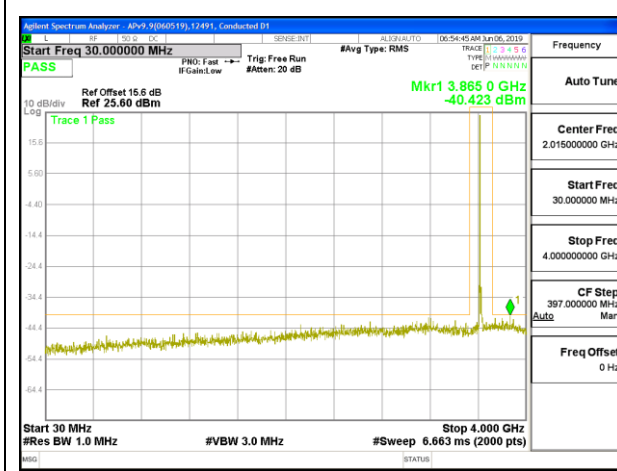
LTE B48 20MHz QPSK High Channel RB1-0



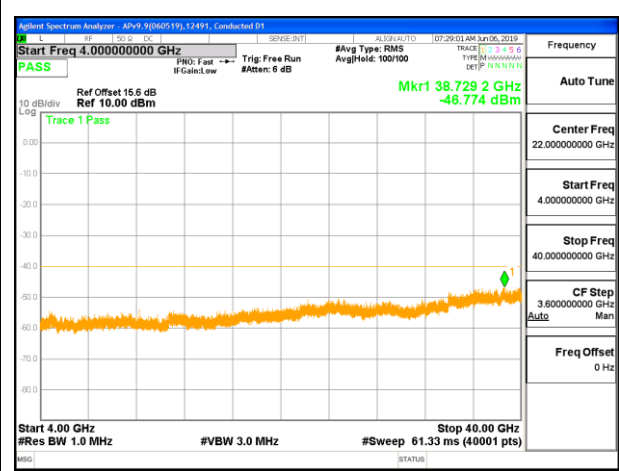
LTE B48 20MHz 16QAM Low Channel RB1-0



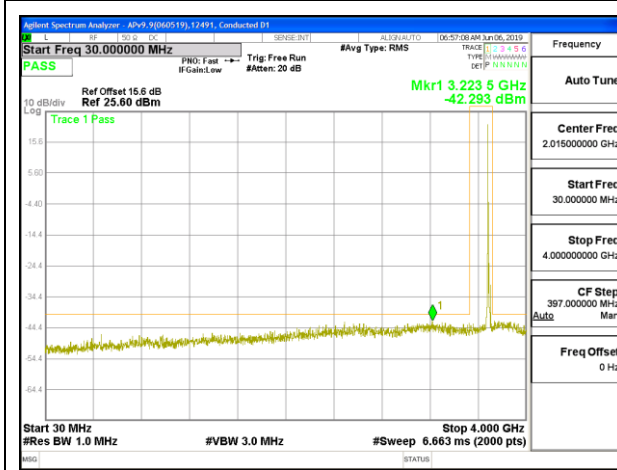
LTE B48 20MHz 16QAM Low Channel RB1-0



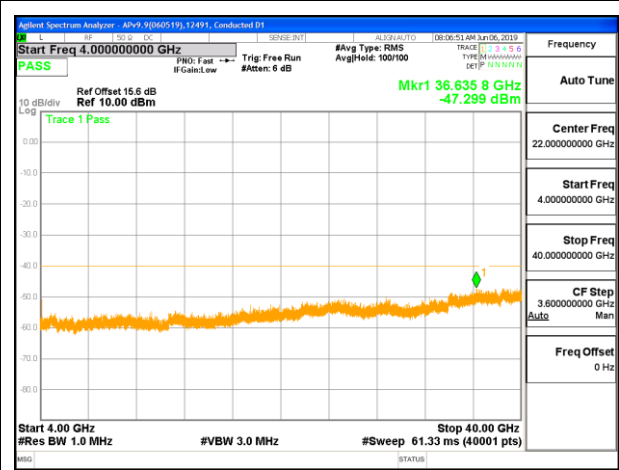
LTE B48 20MHz 16QAM Middle Channel RB1-0



LTE B48 20MHz 16QAM Middle Channel RB1-0

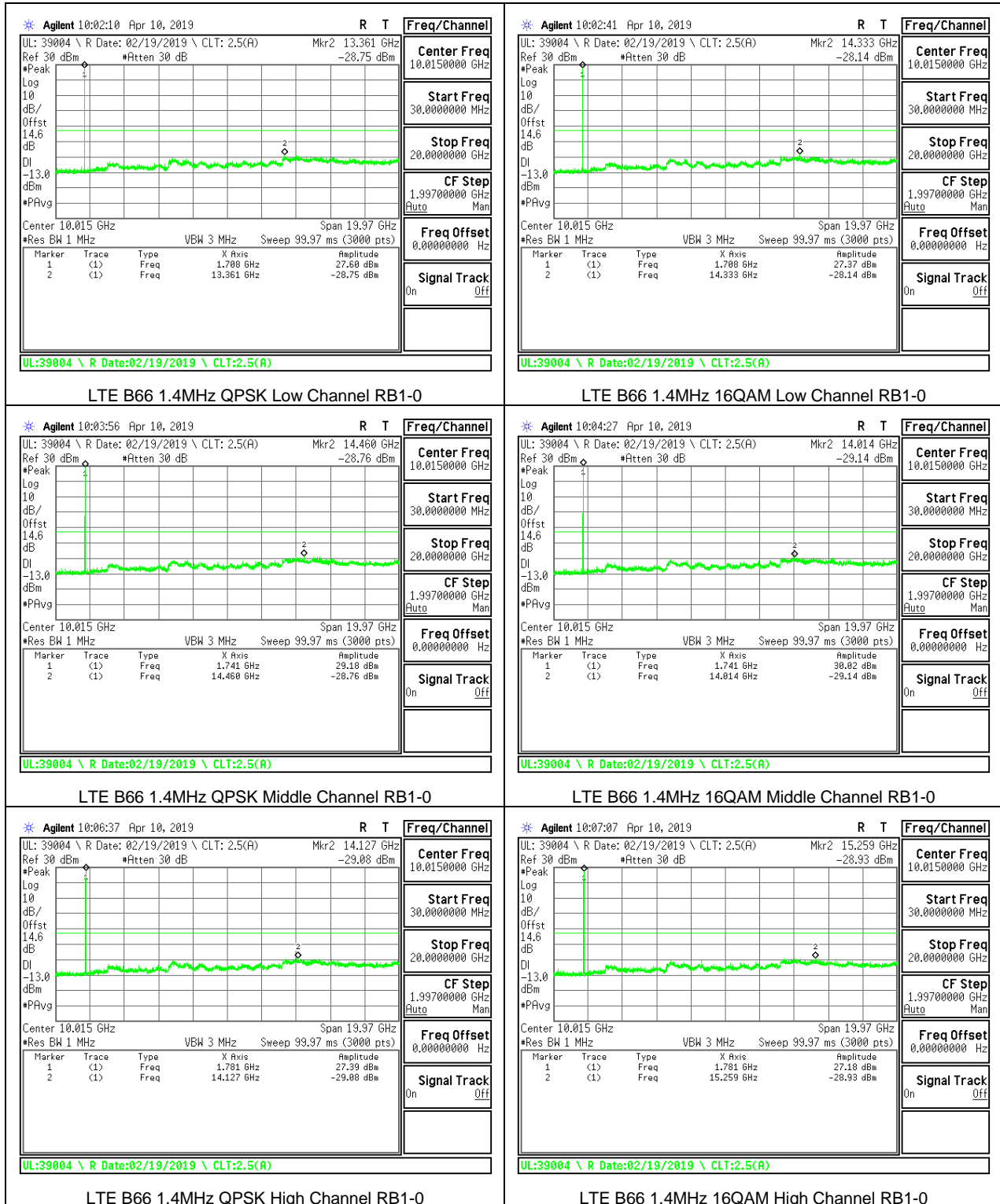


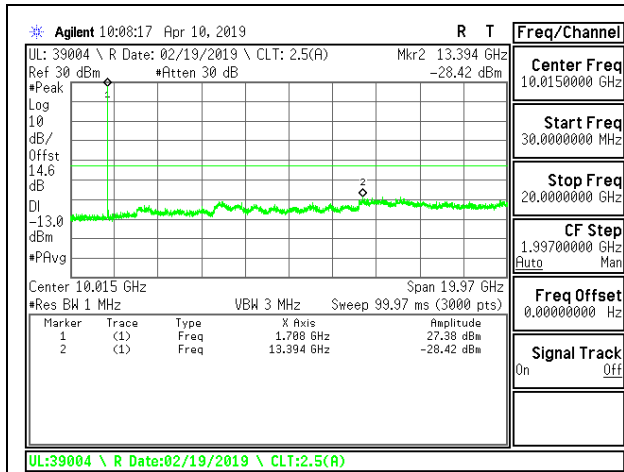
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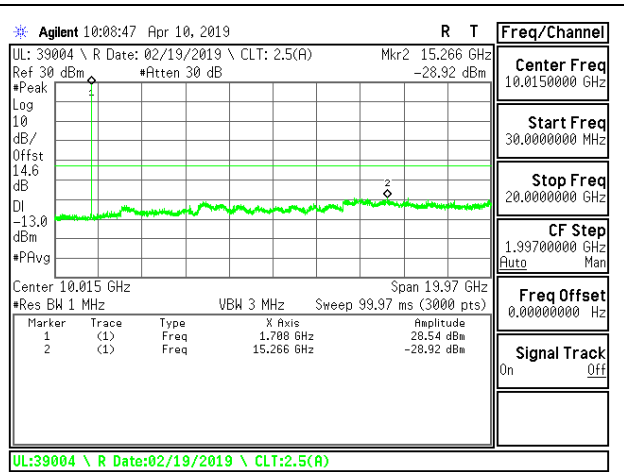
LTE B48 20MHz 16QAM High Channel RB1-0

**8.3.13. LTE BAND 66**

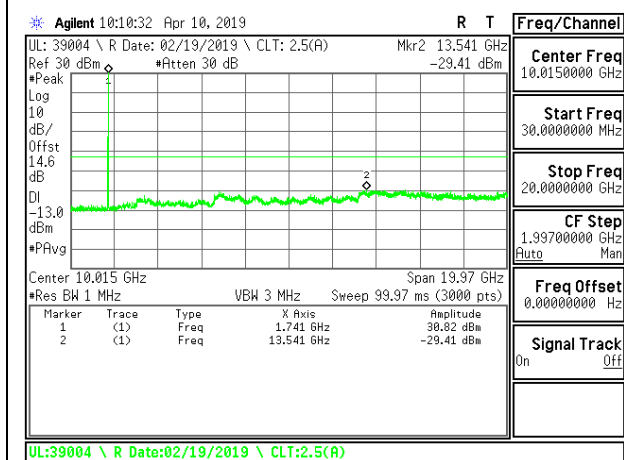




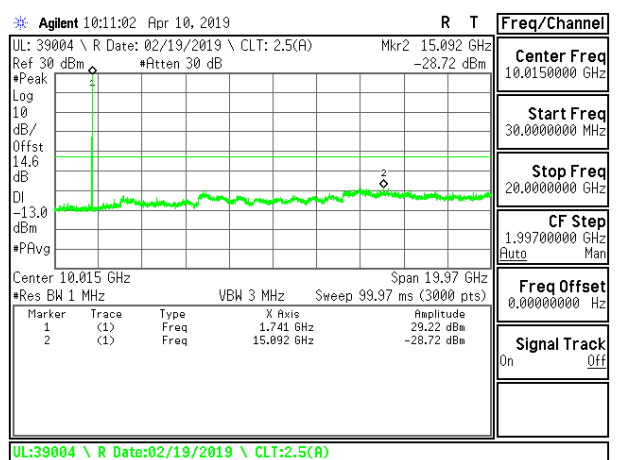
LTE B66 3MHz QPSK Low Channel RB1-0



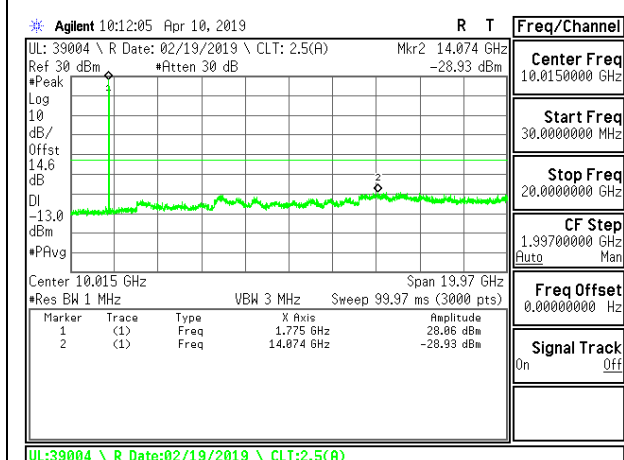
LTE B66 3MHz 16QAM Low Channel RB1-0



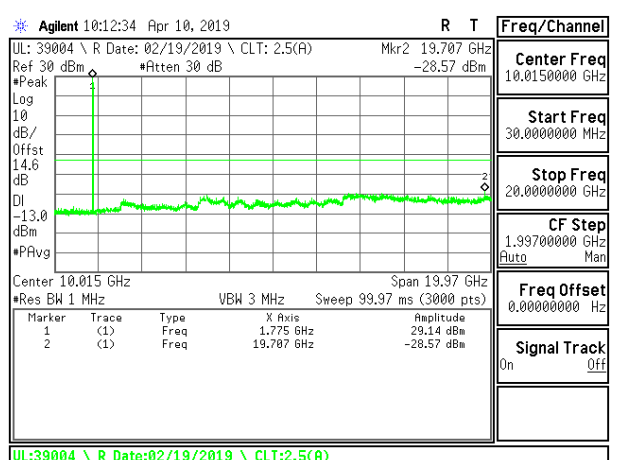
LTE B66 3MHz QPSK Middle Channel RB1-0



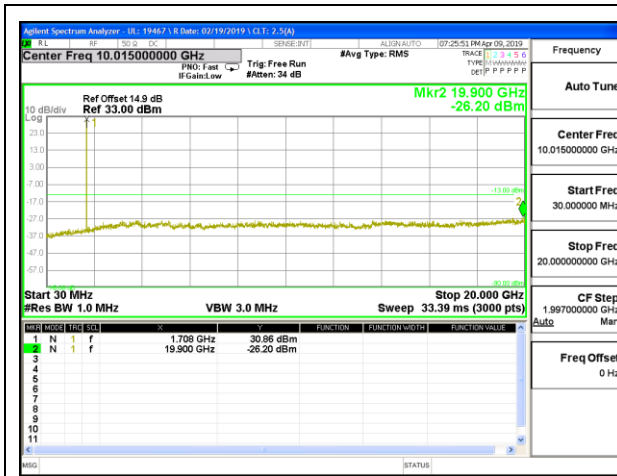
LTE B66 3MHz 16QAM Middle Channel RB1-0



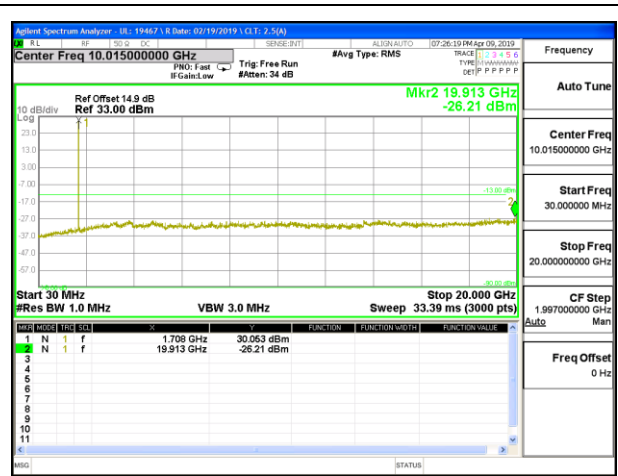
LTE B66 3MHz QPSK High Channel RB1-0



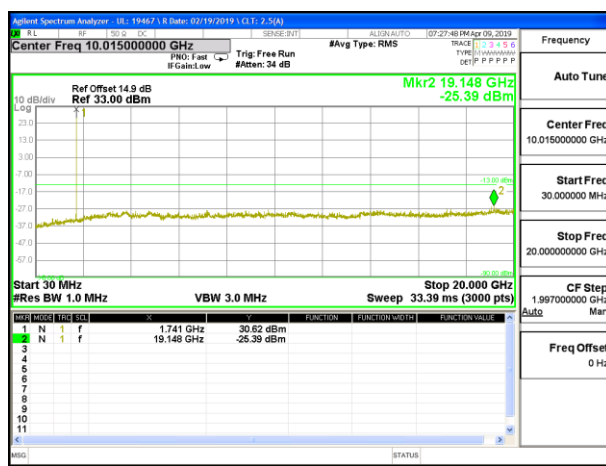
LTE B66 3MHz 16QAM High Channel RB1-0



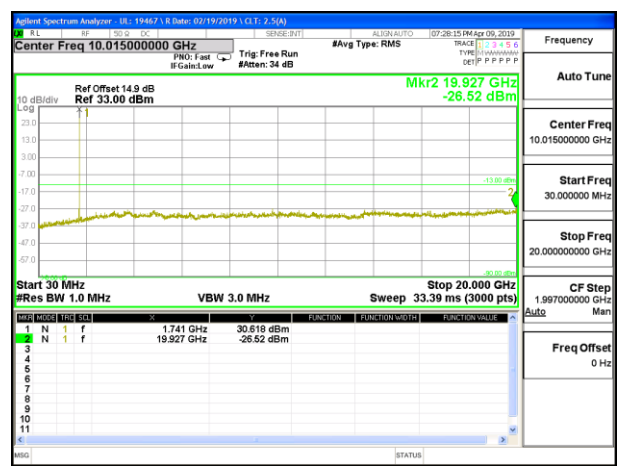
LTE B66 5MHz QPSK Low Channel RB1-0



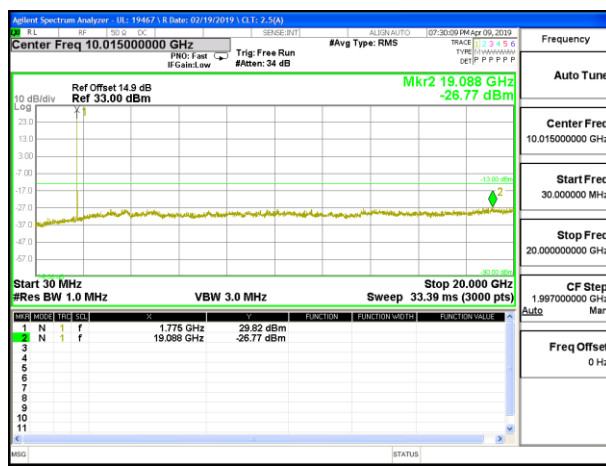
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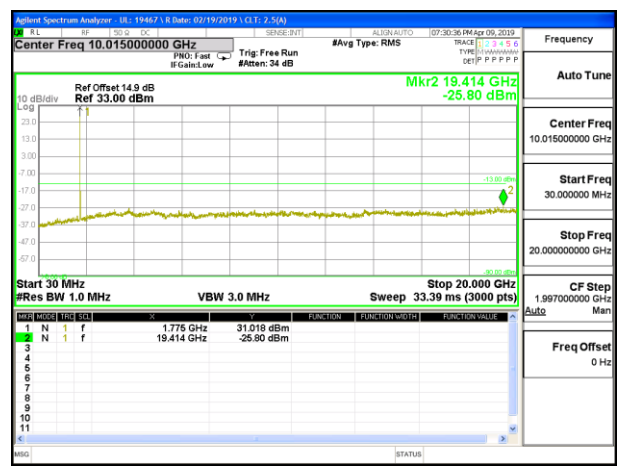
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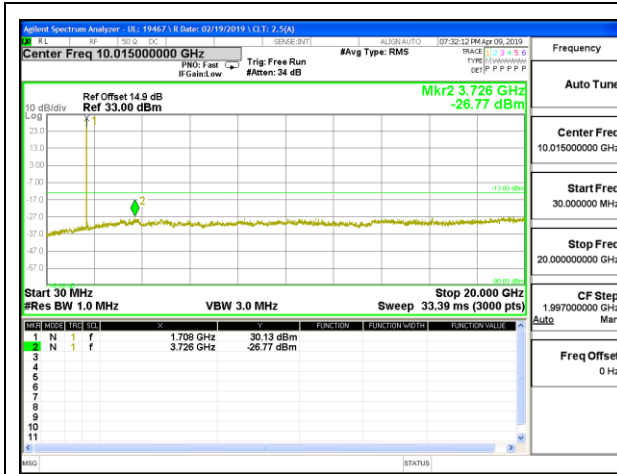
LTE B66 5MHz 16QAM Middle Channel RB1-0



LTE B66 5MHz QPSK High Channel RB1-0



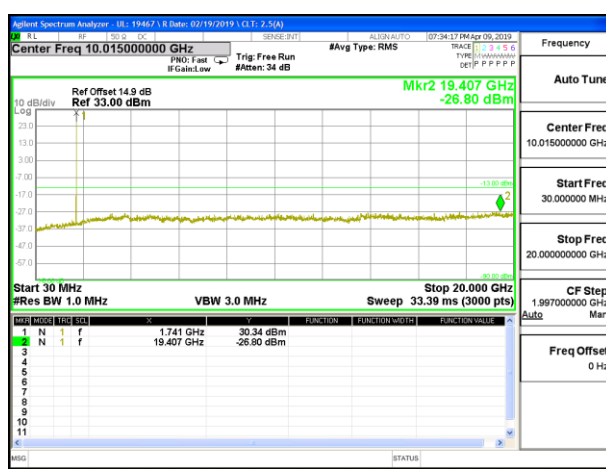
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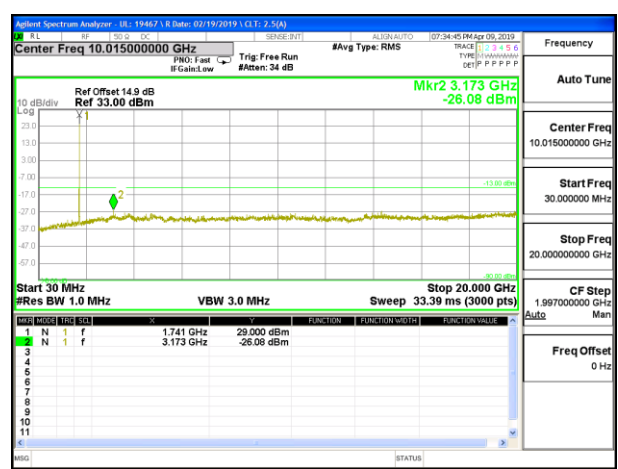
LTE B66 10MHz QPSK Low Channel RB1-0



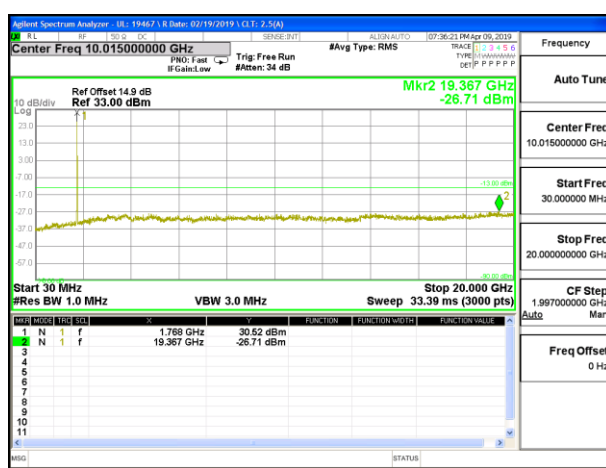
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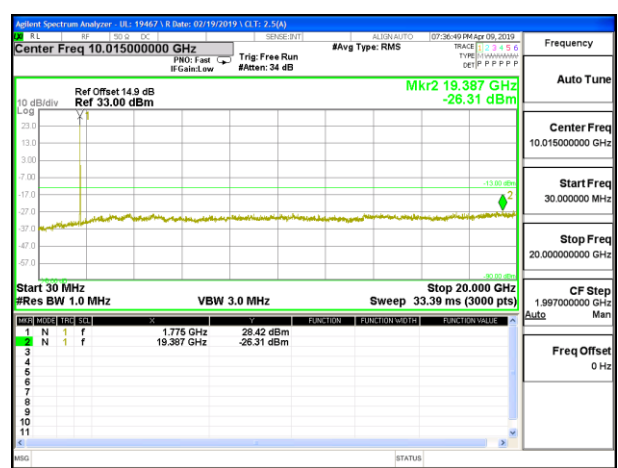
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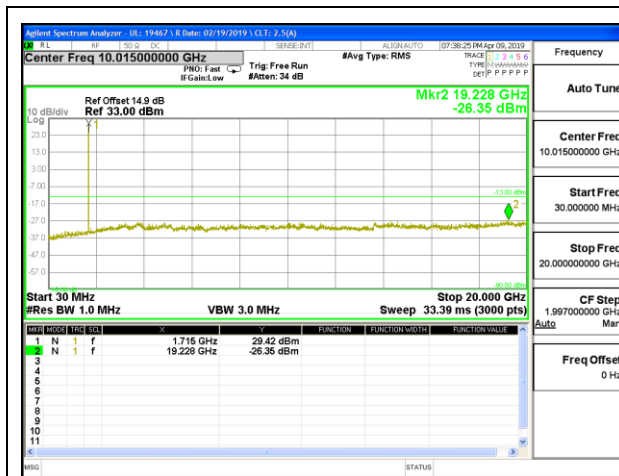
LTE B66 10MHz 16QAM Middle Channel RB1-0



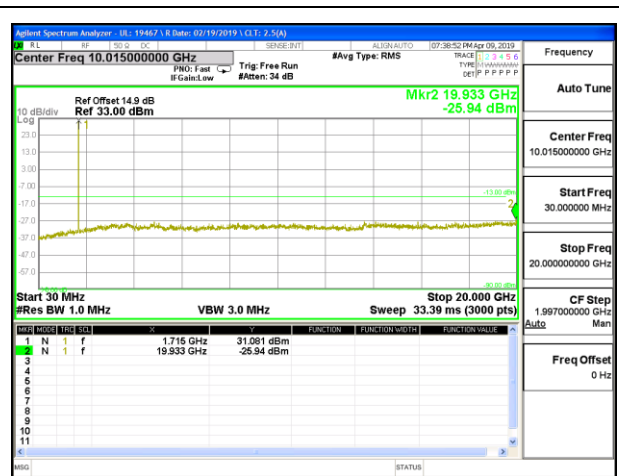
LTE B66 10MHz QPSK High Channel RB1-0



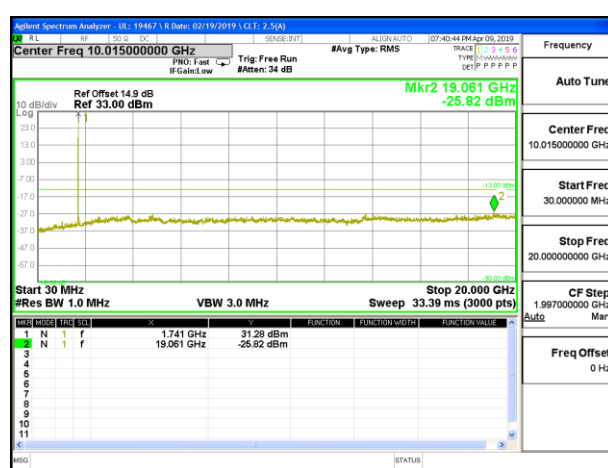
LTE B66 10MHz 16QAM High Channel RB1-0



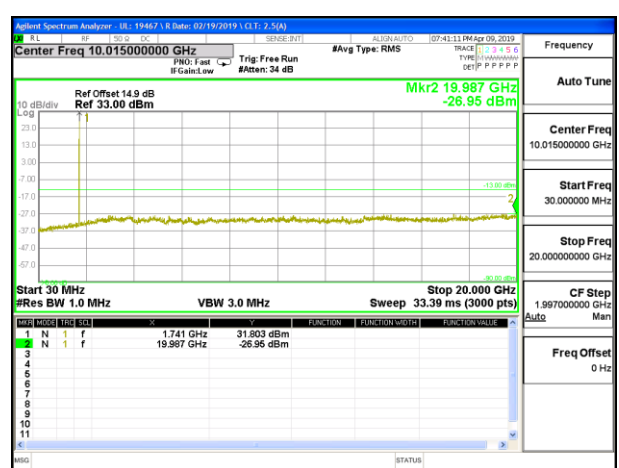
LTE B66 15MHz QPSK Low Channel RB1-0



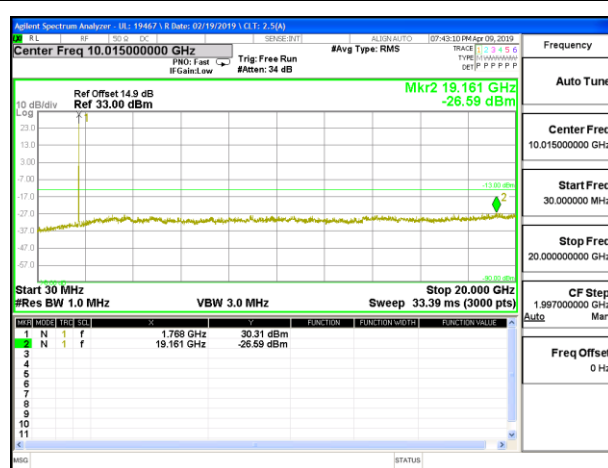
LTE B66 15MHz 16QAM Low Channel RB1-0



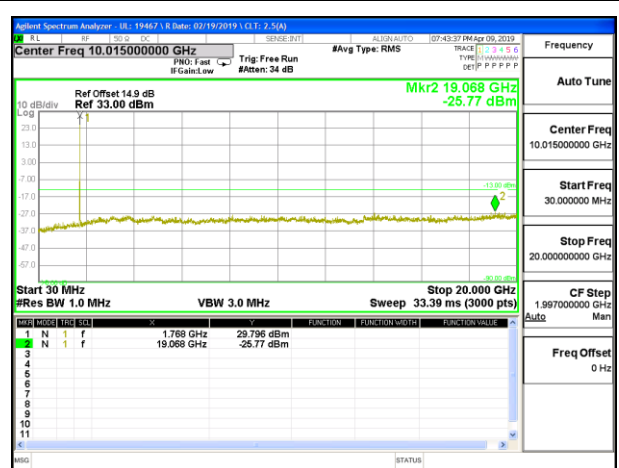
LTE B66 15MHz QPSK Middle Channel RB1-0



LTE B66 15MHz 16QAM Middle Channel RB1-0

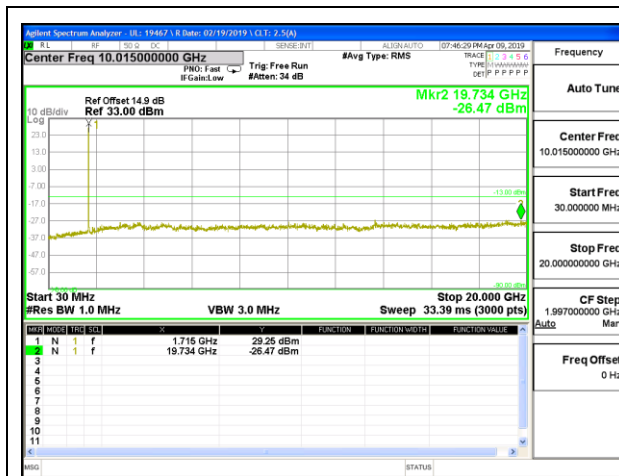


LTE B66 15MHz QPSK High Channel RB1-0

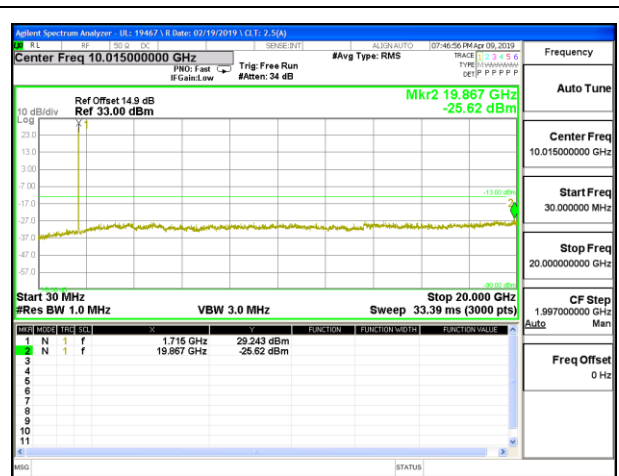


LTE B66 15MHz 16QAM High Channel RB1-0

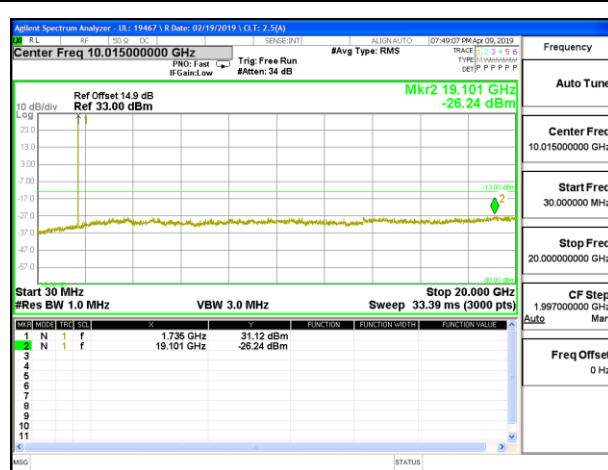




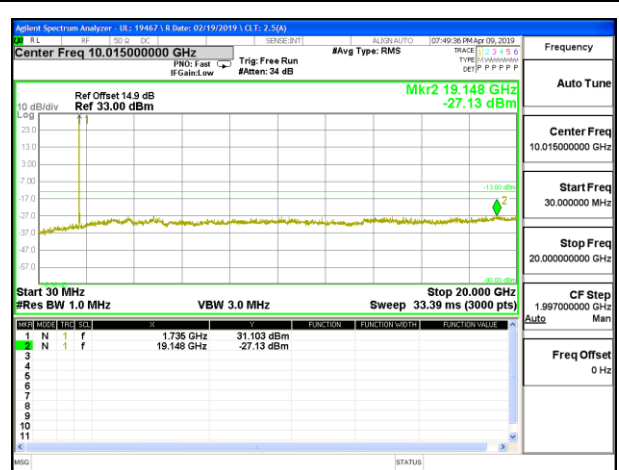
LTE B66 20MHz QPSK Low Channel RB1-0



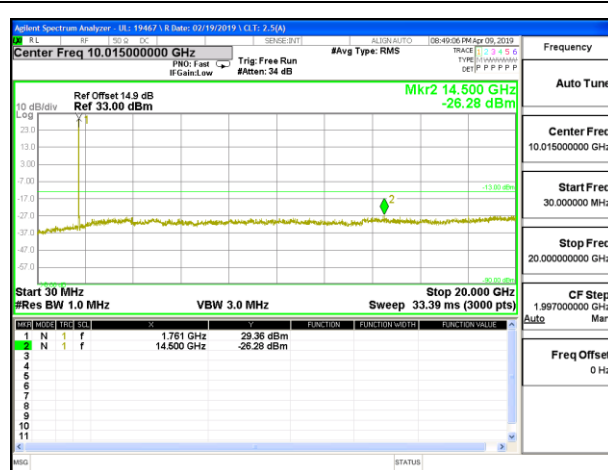
LTE B66 20MHz 16QAM Low Channel RB1-0



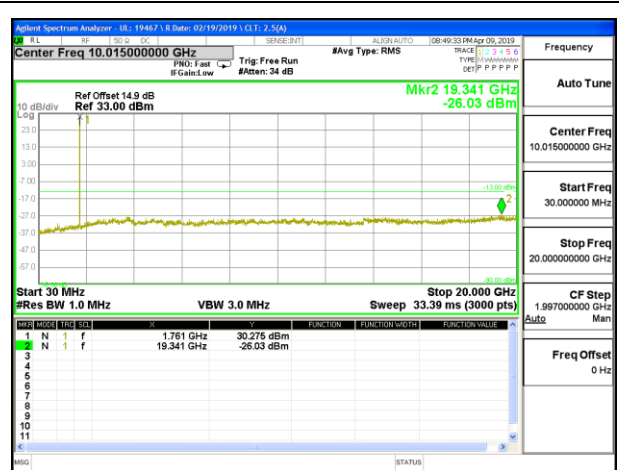
LTE B66 20MHz QPSK Middle Channel RB1-0



LTE B66 20MHz 16QAM Middle Channel RB1-0

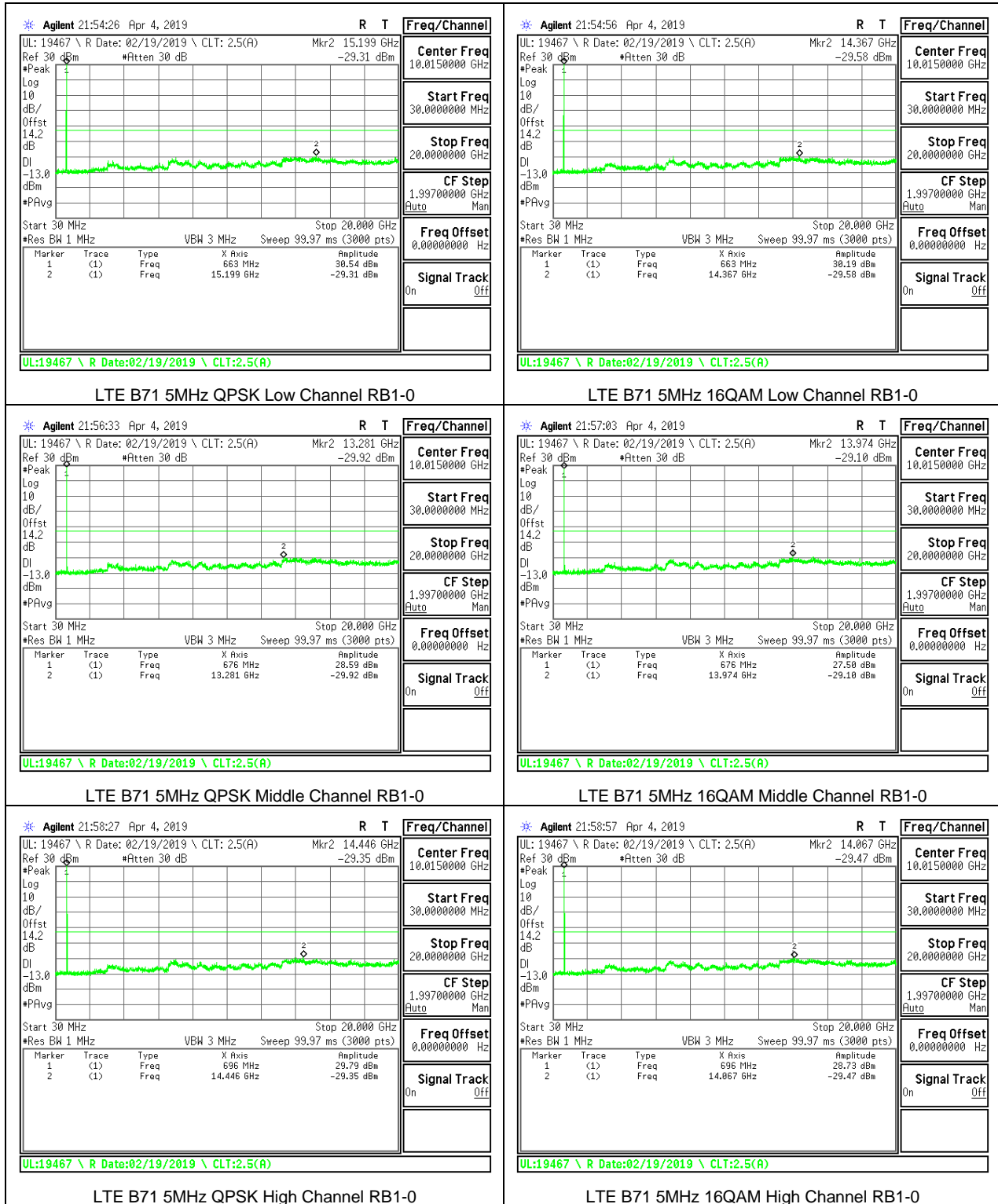


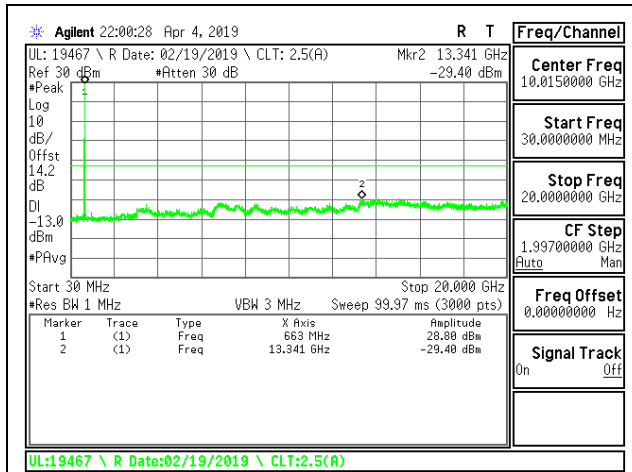
LTE B66 20MHz QPSK High Channel RB1-0



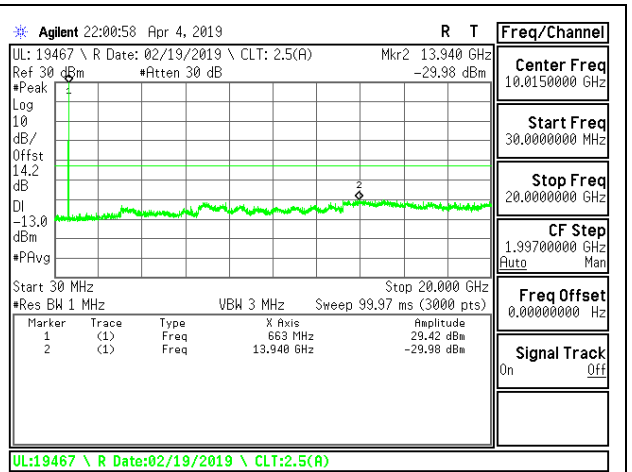
LTE B66 20MHz 16QAM High Channel RB1-0

### 8.3.14. LTE BAND 71

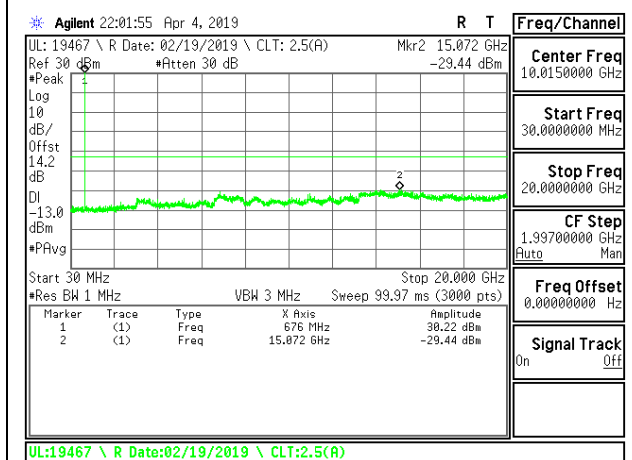




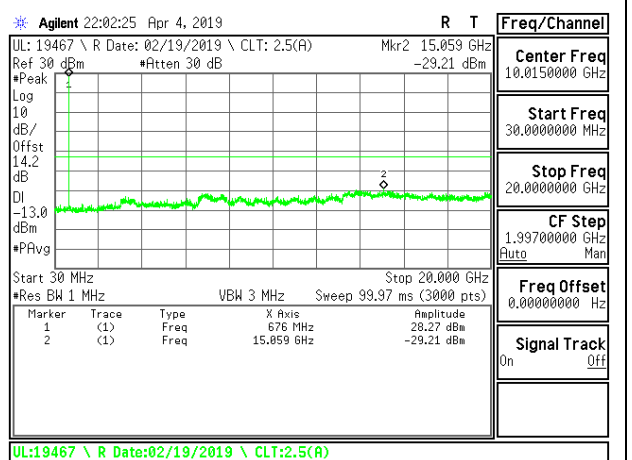
LTE B71 10MHz QPSK Low Channel RB1-0



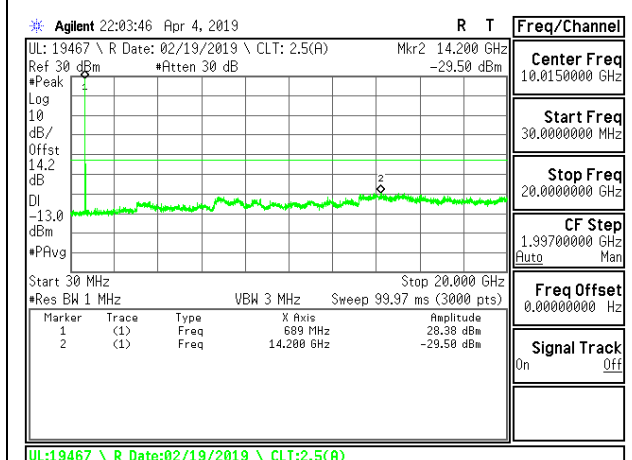
LTE B71 10MHz 16QAM Low Channel RB1-0



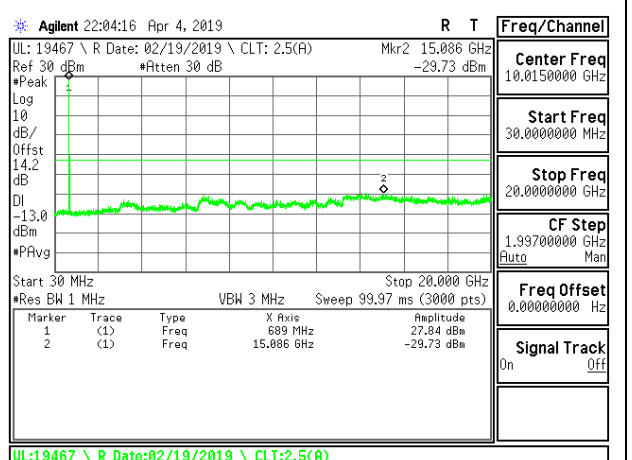
LTE B71 10MHz QPSK Middle Channel RB1-0



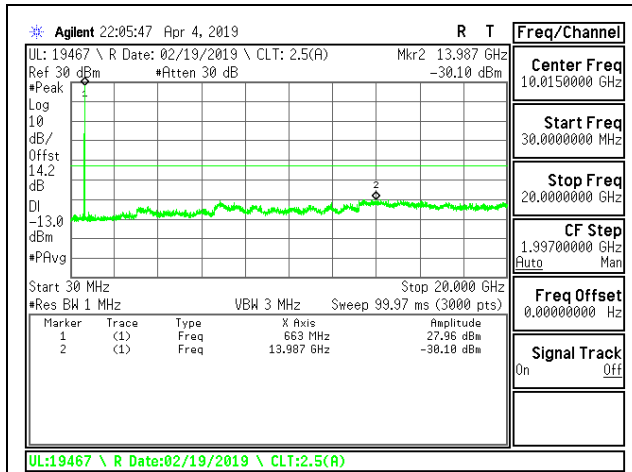
LTE B71 10MHz 16QAM Middle Channel RB1-0



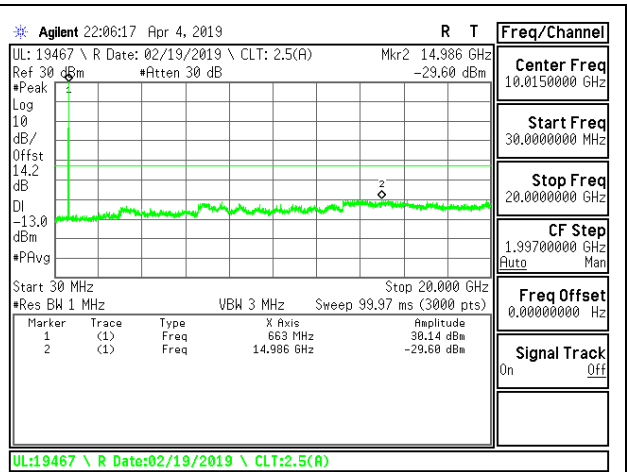
LTE 71 10MHz QPSK High Channel RB1-0



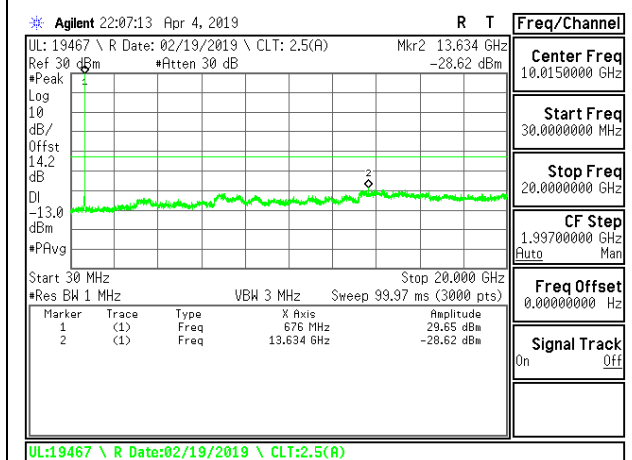
LTE B71 10MHz 16QAM High Channel RB1-0



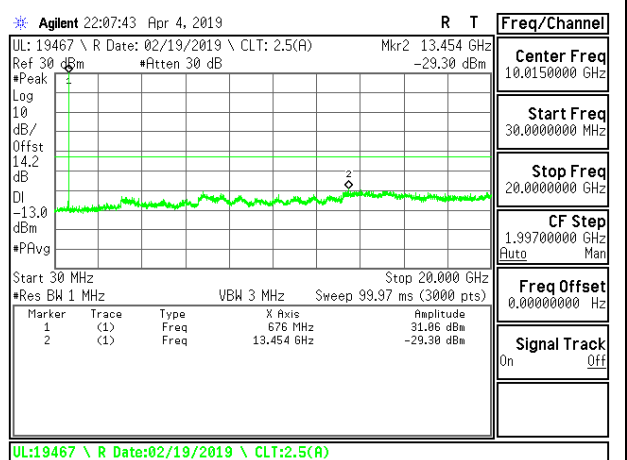
LTE B71 15MHz QPSK Low Channel RB1-0



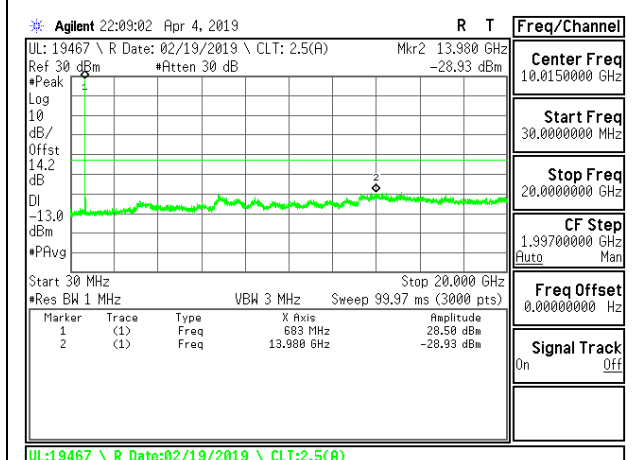
LTE B71 15MHz 16QAM Low Channel RB1-0



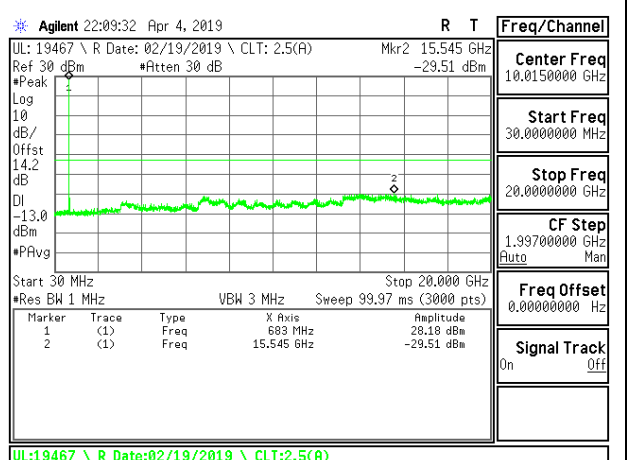
LTE B71 15MHz QPSK Middle Channel RB1-0



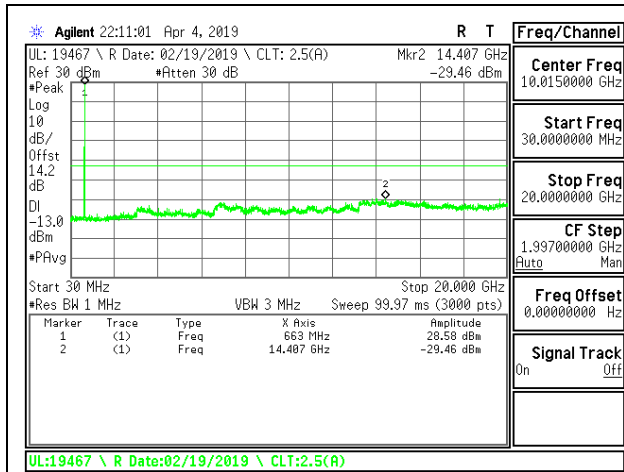
LTE B71 15MHz 16QAM Middle Channel RB1-0



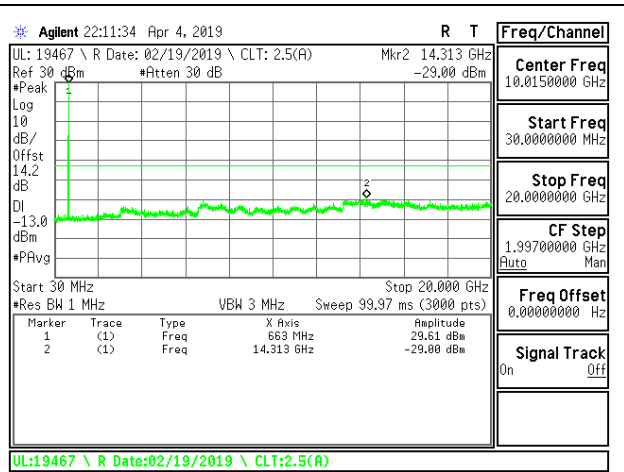
LTE B71 15MHz QPSK High Channel RB1-0



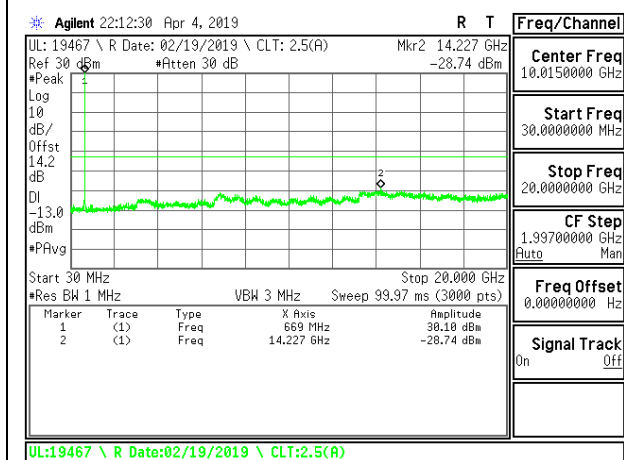
LTE B71 15MHz 16QAM High Channel RB1-0



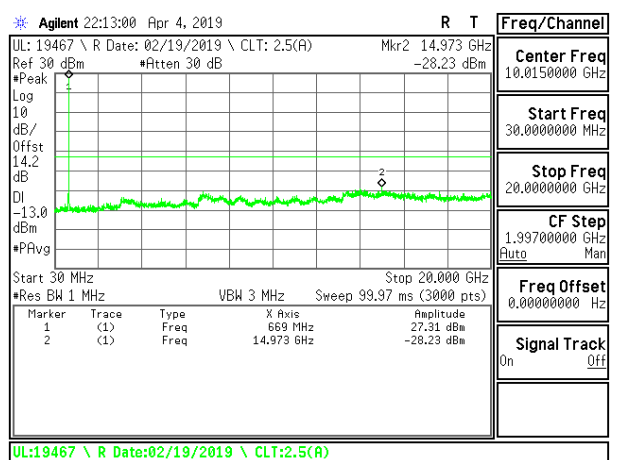
LTE B71 20MHz QPSK Low Channel RB1-0



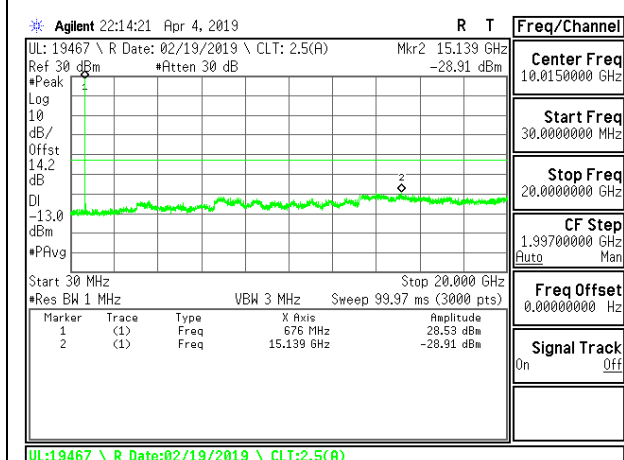
LTE B71 20MHz 16QAM Low Channel RB1-0



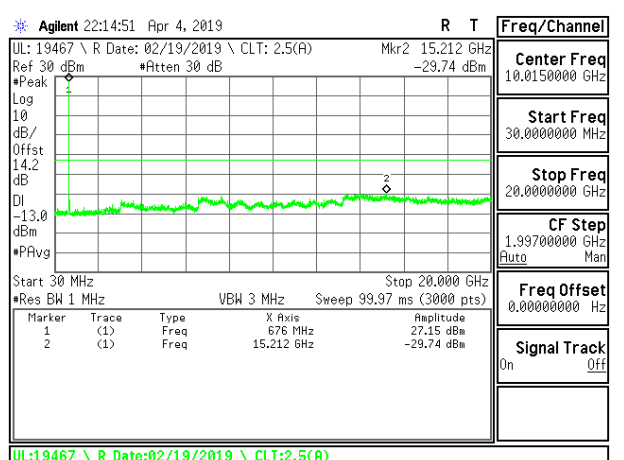
LTE B71 20MHz QPSK Middle Channel RB1-0



LTE B71 20MHz 16QAM Middle Channel RB1-0



LTE B71 20MHz QPSK High Channel RB1-0



LTE B71 20MHz 16QAM High Channel RB1-0

## 8.4. FREQUENCY STABILITY

### RULE PART(S)

FCC: §2.1055, §22.355, §24.235, §27.54, §90.213 and §90.539

### LIMITS

§22.355, §90.213

The carrier frequency shall not depart from the reference frequency in excess of  $\pm 2.5$  ppm for mobile stations.

§90.539

(e) The frequency stability of mobile, portable and control transmitters operating in the wideband segment must be 1.25 ppm or better when AFC is locked to a base station, and 5 ppm or better when AFC is not locked.

§24.235 & §27.54

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

### TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- Temp. =  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$
- Voltage = (85% - 115%)

Low voltage, 3.23VDC, Normal, 3.8VDC and High voltage, 4.37VDC.

End Voltage, 3.2VDC.

### **Frequency Stability vs Temperature:**

The EUT is placed inside a temperature chamber. The temperature is set to  $20^{\circ}\text{C}$  and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until  $+50^{\circ}\text{C}$  is reached.

### **Frequency Stability vs Voltage:**

The peak frequency error is recorded (worst-case).

### MODES TESTED

- LTE Band 2
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 14
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 30
- LTE Band 41
- LTE Band 48
- LTE Band 66
- LTE Band 71

### RESULTS

See the following pages.

### 8.4.1. LTE BAND 2

|            |       |              |        |
|------------|-------|--------------|--------|
| <b>ID:</b> | 38602 | <b>Date:</b> | 4/2/19 |
|------------|-------|--------------|--------|

#### QPSK, (20MHz BANDWIDTH)

| Condition      |           | F low @<br>-13dBm<br>(MHz) | F high @<br>-13dBm<br>(MHz) | Delta<br>(Hz) | Frequency<br>Stability<br>(ppm) |
|----------------|-----------|----------------------------|-----------------------------|---------------|---------------------------------|
| Temperature    | Voltage   |                            |                             |               |                                 |
| Normal (20C)   | Normal    | 1850.9945                  | 1909.0427                   |               |                                 |
| Extreme (50C)  |           | 1850.9945                  | 1909.0427                   | -1.0          | -0.001                          |
| Extreme (40C)  |           | 1850.9945                  | 1909.0427                   | -0.9          | 0.000                           |
| Extreme (30C)  |           | 1850.9945                  | 1909.0427                   | -1.2          | -0.001                          |
| Extreme (10C)  |           | 1850.9945                  | 1909.0427                   | -1.0          | -0.001                          |
| Extreme (0C)   |           | 1850.9945                  | 1909.0427                   | -1.2          | -0.001                          |
| Extreme (-10C) |           | 1850.9945                  | 1909.0427                   | -1.1          | -0.001                          |
| Extreme (-20C) |           | 1850.9945                  | 1909.0427                   | -1.0          | -0.001                          |
| Extreme (-30C) |           | 1850.9945                  | 1909.0427                   | -0.8          | 0.000                           |
|                |           |                            |                             |               |                                 |
| 20C            | 15%       | 1850.9945                  | 1909.0427                   | 1.2           | 0.001                           |
|                | -15%      | 1850.9945                  | 1909.0427                   | 1.1           | 0.001                           |
|                | End Point | 1850.9945                  | 1909.0427                   | 0.8           | 0.000                           |

### 8.4.2. LTE BAND 5

|            |       |              |        |
|------------|-------|--------------|--------|
| <b>ID:</b> | 38602 | <b>Date:</b> | 4/3/19 |
|------------|-------|--------------|--------|

#### QPSK, (10MHz BANDWIDTH)

| Limit          |           | 824                        | 849                         | Delta<br>(Hz) | Frequency<br>Stability<br>(ppm) |
|----------------|-----------|----------------------------|-----------------------------|---------------|---------------------------------|
| Condition      |           | F low @<br>-13dBm<br>(MHz) | F high @<br>-13dBm<br>(MHz) |               |                                 |
| Temperature    | Voltage   |                            |                             |               |                                 |
| Normal (20C)   | Normal    | 824.4157                   | 848.5025                    |               |                                 |
| Extreme (50C)  |           | 824.4157                   | 848.5025                    | 1.2           | 0.001                           |
| Extreme (40C)  |           | 824.4157                   | 848.5025                    | 1.1           | 0.001                           |
| Extreme (30C)  |           | 824.4157                   | 848.5025                    | 0.9           | 0.001                           |
| Extreme (10C)  |           | 824.4157                   | 848.5025                    | 0.8           | 0.001                           |
| Extreme (0C)   |           | 824.4157                   | 848.5025                    | 1.0           | 0.001                           |
| Extreme (-10C) |           | 824.4157                   | 848.5025                    | 0.8           | 0.001                           |
| Extreme (-20C) |           | 824.4157                   | 848.5025                    | 1.2           | 0.001                           |
| Extreme (-30C) |           | 824.4157                   | 848.5025                    | 1.1           | 0.001                           |
|                |           |                            |                             |               |                                 |
| 20C            | 15%       | 824.4157                   | 848.5025                    | 1.4           | 0.002                           |
|                | -15%      | 824.4157                   | 848.5025                    | 1.2           | 0.001                           |
|                | End Point | 824.4157                   | 848.5025                    | 1.5           | 0.002                           |

### 8.4.3. LTE BAND 7

|            |       |              |        |
|------------|-------|--------------|--------|
| <b>ID:</b> | 38602 | <b>Date:</b> | 4/3/19 |
|------------|-------|--------------|--------|

#### QPSK, (20MHz BANDWIDTH)

| Limit          |           | 2500                 | 2570                  | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|----------------------|-----------------------|------------|---------------------------|
| Condition      |           | F low @ -13dBm (MHz) | F high @ -13dBm (MHz) |            |                           |
| Temperature    | Voltage   |                      |                       |            |                           |
| Normal (20C)   | Normal    | 2501.016             | 2569.024              |            |                           |
| Extreme (50C)  |           | 2501.016             | 2569.024              | 1.6        | 0.001                     |
| Extreme (40C)  |           | 2501.016             | 2569.024              | 1.3        | 0.001                     |
| Extreme (30C)  |           | 2501.016             | 2569.024              | 1.2        | 0.000                     |
| Extreme (10C)  |           | 2501.016             | 2569.024              | -0.9       | 0.000                     |
| Extreme (0C)   |           | 2501.016             | 2569.024              | 1.0        | 0.000                     |
| Extreme (-10C) |           | 2501.016             | 2569.024              | 1.2        | 0.000                     |
| Extreme (-20C) |           | 2501.016             | 2569.024              | 1.1        | 0.000                     |
| Extreme (-30C) |           | 2501.016             | 2569.024              | -1.3       | -0.001                    |
|                |           |                      |                       |            |                           |
| 20C            | 15%       | 2501.016             | 2569.024              | 1.3        | 0.001                     |
|                | -15%      | 2501.016             | 2569.024              | 1.4        | 0.001                     |
|                | End Point | 2501.016             | 2569.024              | 1.6        | 0.001                     |

### 8.4.4. LTE BAND 12

|            |       |              |        |
|------------|-------|--------------|--------|
| <b>ID:</b> | 38602 | <b>Date:</b> | 4/3/19 |
|------------|-------|--------------|--------|

#### QPSK, (10MHz BANDWIDTH)

| Limit          |           | 699                  | 716                   | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|----------------------|-----------------------|------------|---------------------------|
| Condition      |           | F low @ -13dBm (MHz) | F high @ -13dBm (MHz) |            |                           |
| Temperature    | Voltage   |                      |                       |            |                           |
| Normal (20C)   | Normal    | 699.4809             | 715.5186              |            |                           |
| Extreme (50C)  |           | 699.4809             | 715.5186              | 0.8        | 0.001                     |
| Extreme (40C)  |           | 699.4809             | 715.5186              | 1.0        | 0.001                     |
| Extreme (30C)  |           | 699.4809             | 715.5186              | 0.7        | 0.001                     |
| Extreme (10C)  |           | 699.4809             | 715.5186              | 1.0        | 0.001                     |
| Extreme (0C)   |           | 699.4809             | 715.5186              | 0.8        | 0.001                     |
| Extreme (-10C) |           | 699.4809             | 715.5186              | 1.1        | 0.002                     |
| Extreme (-20C) |           | 699.4809             | 715.5186              | 0.9        | 0.001                     |
| Extreme (-30C) |           | 699.4809             | 715.5186              | 1.2        | 0.002                     |
|                |           |                      |                       |            |                           |
| 20C            | 15%       | 699.4809             | 715.5186              | 1.0        | 0.001                     |
|                | -15%      | 699.4809             | 715.5186              | 1.2        | 0.002                     |
|                | End Point | 699.4809             | 715.5186              | 1.1        | 0.002                     |



### 8.4.5. LTE BAND 13

|            |       |              |        |
|------------|-------|--------------|--------|
| <b>ID:</b> | 38602 | <b>Date:</b> | 4/3/19 |
|------------|-------|--------------|--------|

#### QPSK, (10MHz BANDWIDTH)

| Limit          |           | 777                  | 787                   | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|----------------------|-----------------------|------------|---------------------------|
| Condition      |           | F low @ -13dBm (MHz) | F high @ -13dBm (MHz) |            |                           |
| Temperature    | Voltage   |                      |                       |            |                           |
| Normal (20C)   | Normal    | 777.1688             | 786.8579              |            |                           |
| Extreme (50C)  |           | 777.1688             | 786.8579              | 0.8        | 0.001                     |
| Extreme (40C)  |           | 777.1688             | 786.8579              | 1.1        | 0.001                     |
| Extreme (30C)  |           | 777.1688             | 786.8579              | 0.8        | 0.001                     |
| Extreme (10C)  |           | 777.1688             | 786.8579              | 0.7        | 0.001                     |
| Extreme (0C)   |           | 777.1688             | 786.8579              | 0.5        | 0.001                     |
| Extreme (-10C) |           | 777.1688             | 786.8579              | -0.7       | -0.001                    |
| Extreme (-20C) |           | 777.1688             | 786.8579              | -0.6       | -0.001                    |
| Extreme (-30C) |           | 777.1688             | 786.8579              | 1.3        | 0.002                     |
|                |           |                      |                       |            |                           |
| 20C            | 15%       | 777.1688             | 786.8579              | 1.2        | 0.002                     |
|                | -15%      | 777.1688             | 786.8579              | 0.9        | 0.001                     |
|                | End Point | 777.1688             | 786.8579              | 1.1        | 0.001                     |

### 8.4.6. LTE BAND 14

|            |       |              |        |
|------------|-------|--------------|--------|
| <b>ID:</b> | 30606 | <b>Date:</b> | 4/3/19 |
|------------|-------|--------------|--------|

#### QPSK, (10MHz BANDWIDTH)

| Limit          |           | 788                  | 798                   | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|----------------------|-----------------------|------------|---------------------------|
| Condition      |           | F low @ -13dBm (MHz) | F high @ -13dBm (MHz) |            |                           |
| Temperature    | Voltage   |                      |                       |            |                           |
| Normal (20C)   | Normal    | 788.1897             | 797.8317              |            |                           |
| Extreme (50C)  |           | 788.1897             | 797.8317              | -0.5       | -0.001                    |
| Extreme (40C)  |           | 788.1897             | 797.8317              | 0.9        | 0.001                     |
| Extreme (30C)  |           | 788.1897             | 797.8317              | 0.6        | 0.001                     |
| Extreme (10C)  |           | 788.1897             | 797.8317              | 0.8        | 0.001                     |
| Extreme (0C)   |           | 788.1897             | 797.8317              | 0.8        | 0.001                     |
| Extreme (-10C) |           | 788.1897             | 797.8317              | 1.1        | 0.001                     |
| Extreme (-20C) |           | 788.1897             | 797.8317              | 1.1        | 0.001                     |
| Extreme (-30C) |           | 788.1897             | 797.8317              | 0.4        | 0.001                     |
|                |           |                      |                       |            |                           |
| 20C            | 15%       | 788.1897             | 797.8317              | 1.3        | 0.002                     |
|                | -15%      | 788.1897             | 797.8317              | 1.1        | 0.001                     |
|                | End Point | 788.1897             | 797.8317              | 1.2        | 0.002                     |

### 8.4.7. LTE BAND 17

|            |       |              |        |
|------------|-------|--------------|--------|
| <b>ID:</b> | 30606 | <b>Date:</b> | 4/3/19 |
|------------|-------|--------------|--------|

#### QPSK, (10MHz BANDWIDTH)

| Limit          |           | 704                  | 716                   | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|----------------------|-----------------------|------------|---------------------------|
| Condition      |           | F low @ -13dBm (MHz) | F high @ -13dBm (MHz) |            |                           |
| Temperature    | Voltage   |                      |                       |            |                           |
| Normal (20C)   | Normal    | 704.2830             | 715.5697              |            |                           |
| Extreme (50C)  |           | 704.2830             | 715.5697              | 0.7        | 0.001                     |
| Extreme (40C)  |           | 704.2830             | 715.5697              | 0.9        | 0.001                     |
| Extreme (30C)  |           | 704.2830             | 715.5697              | 1.1        | 0.002                     |
| Extreme (10C)  |           | 704.2830             | 715.5697              | 0.9        | 0.001                     |
| Extreme (0C)   |           | 704.2830             | 715.5697              | 0.9        | 0.001                     |
| Extreme (-10C) |           | 704.2830             | 715.5697              | 0.9        | 0.001                     |
| Extreme (-20C) |           | 704.2830             | 715.5697              | 1.2        | 0.002                     |
| Extreme (-30C) |           | 704.2830             | 715.5697              | 1.8        | 0.003                     |
|                |           |                      |                       |            |                           |
| 20C            | 15%       | 704.2830             | 715.5697              | 1.3        | 0.002                     |
|                | -15%      | 704.2830             | 715.5697              | 0.9        | 0.001                     |
|                | End Point | 704.2830             | 715.5697              | 1.1        | 0.002                     |

### 8.4.8. LTE BAND 25

|            |       |              |        |
|------------|-------|--------------|--------|
| <b>ID:</b> | 30606 | <b>Date:</b> | 4/3/19 |
|------------|-------|--------------|--------|

#### QPSK, (20MHz BANDWIDTH)

| Limit          |           | 1850                 | 1915                  | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|----------------------|-----------------------|------------|---------------------------|
| Condition      |           | F low @ -13dBm (MHz) | F high @ -13dBm (MHz) |            |                           |
| Temperature    | Voltage   |                      |                       |            |                           |
| Normal (20C)   | Normal    | 1850.9987            | 1914.0232             |            |                           |
| Extreme (50C)  |           | 1850.9987            | 1914.0232             | 0.8        | 0.000                     |
| Extreme (40C)  |           | 1850.9987            | 1914.0232             | 1.0        | 0.001                     |
| Extreme (30C)  |           | 1850.9987            | 1914.0232             | 1.6        | 0.001                     |
| Extreme (10C)  |           | 1850.9987            | 1914.0232             | 1.4        | 0.001                     |
| Extreme (0C)   |           | 1850.9987            | 1914.0232             | 1.5        | 0.001                     |
| Extreme (-10C) |           | 1850.9987            | 1914.0232             | 1.1        | 0.001                     |
| Extreme (-20C) |           | 1850.9987            | 1914.0232             | 0.4        | 0.000                     |
| Extreme (-30C) |           | 1850.9987            | 1914.0232             | 1.7        | 0.001                     |
|                |           |                      |                       |            |                           |
| 20C            | 15%       | 1850.9987            | 1914.0232             | 1.2        | 0.001                     |
|                | -15%      | 1850.9987            | 1914.0232             | 0.7        | 0.000                     |
|                | End Point | 1850.9987            | 1914.0232             | 1.0        | 0.001                     |

### 8.4.9. LTE BAND 26

|            |       |              |        |
|------------|-------|--------------|--------|
| <b>ID:</b> | 30606 | <b>Date:</b> | 4/3/19 |
|------------|-------|--------------|--------|

#### QPSK, (10MHz BANDWIDTH)

| Limit          |           | 814                  | 824                   | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|----------------------|-----------------------|------------|---------------------------|
| Condition      |           | F low @ -13dBm (MHz) | F high @ -13dBm (MHz) |            |                           |
| Temperature    | Voltage   |                      |                       |            |                           |
| Normal (20C)   | Normal    | 814.2110             | 823.8236              |            |                           |
| Extreme (50C)  |           | 814.2110             | 823.8236              | 1.2        | 0.002                     |
| Extreme (40C)  |           | 814.2110             | 823.8236              | 1.3        | 0.002                     |
| Extreme (30C)  |           | 814.2110             | 823.8236              | 0.9        | 0.001                     |
| Extreme (10C)  |           | 814.2110             | 823.8236              | 1.6        | 0.002                     |
| Extreme (0C)   |           | 814.2110             | 823.8236              | 0.8        | 0.001                     |
| Extreme (-10C) |           | 814.2110             | 823.8236              | 1.0        | 0.001                     |
| Extreme (-20C) |           | 814.2110             | 823.8236              | 1.4        | 0.002                     |
| Extreme (-30C) |           | 814.2110             | 823.8236              | 0.9        | 0.001                     |
| 20C            |           | 15%                  | 814.2110              | 823.8236   | 1.5                       |
|                | -15%      | 814.2110             | 823.8236              | 1.2        | 0.001                     |
|                | End Point | 814.2110             | 823.8236              | 1.0        | 0.001                     |

### 8.4.10. LTE BAND 30

|            |       |              |        |
|------------|-------|--------------|--------|
| <b>ID:</b> | 30606 | <b>Date:</b> | 4/4/19 |
|------------|-------|--------------|--------|

#### QPSK, (10MHz BANDWIDTH)

| Limit          |           | 2305                 | 2315                  | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|----------------------|-----------------------|------------|---------------------------|
| Condition      |           | F low @ -13dBm (MHz) | F high @ -13dBm (MHz) |            |                           |
| Temperature    | Voltage   |                      |                       |            |                           |
| Normal (20C)   | Normal    | 2305.5041            | 2314.5012             |            |                           |
| Extreme (50C)  |           | 2305.5041            | 2314.5012             | 1.0        | 0.000                     |
| Extreme (40C)  |           | 2305.5041            | 2314.5012             | 0.9        | 0.000                     |
| Extreme (30C)  |           | 2305.5041            | 2314.5012             | 1.5        | 0.001                     |
| Extreme (10C)  |           | 2305.5041            | 2314.5012             | 1.1        | 0.000                     |
| Extreme (0C)   |           | 2305.5041            | 2314.5012             | 1.2        | 0.001                     |
| Extreme (-10C) |           | 2305.5041            | 2314.5012             | 0.9        | 0.000                     |
| Extreme (-20C) |           | 2305.5041            | 2314.5012             | 1.3        | 0.001                     |
| Extreme (-30C) |           | 2305.5041            | 2314.5012             | 0.6        | 0.000                     |
| 20C            |           | 15%                  | 2305.5041             | 2314.5012  | 1.3                       |
|                | -15%      | 2305.5041            | 2314.5012             | 1.1        | 0.000                     |
|                | End Point | 2305.5041            | 2314.5012             | 1.5        | 0.001                     |

**8.4.11. LTE BAND 41**

|            |       |              |        |
|------------|-------|--------------|--------|
| <b>ID:</b> | 38602 | <b>Date:</b> | 4/4/19 |
|------------|-------|--------------|--------|

**QPSK, (20MHz BANDWIDTH)**

| Limit          |           | 2496                 | 2690                  | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|----------------------|-----------------------|------------|---------------------------|
| Condition      |           | F low @ -13dBm (MHz) | F high @ -13dBm (MHz) |            |                           |
| Temperature    | Voltage   |                      |                       |            |                           |
| Normal (20C)   | Normal    | 2496.9101            | 2689.0856             |            |                           |
| Extreme (50C)  |           | 2496.9101            | 2689.0856             | 2.9        | 0.001                     |
| Extreme (40C)  |           | 2496.9101            | 2689.0856             | 3.3        | 0.001                     |
| Extreme (30C)  |           | 2496.9101            | 2689.0856             | 3.0        | 0.001                     |
| Extreme (10C)  |           | 2496.9101            | 2689.0856             | 2.8        | 0.001                     |
| Extreme (0C)   |           | 2496.9101            | 2689.0856             | 3.5        | 0.001                     |
| Extreme (-10C) |           | 2496.9101            | 2689.0856             | 3.2        | 0.001                     |
| Extreme (-20C) |           | 2496.9101            | 2689.0856             | 3.3        | 0.001                     |
| Extreme (-30C) |           | 2496.9101            | 2689.0856             | 3.7        | 0.001                     |
|                |           |                      |                       |            |                           |
| 20C            | 15%       | 2496.9101            | 2689.0856             | 3.2        | 0.001                     |
|                | -15%      | 2496.9101            | 2689.0856             | 3.8        | 0.001                     |
|                | End Point | 2496.9101            | 2689.0856             | 3.3        | 0.001                     |

**8.4.12. LTE BAND 48**

|            |       |              |         |
|------------|-------|--------------|---------|
| <b>ID:</b> | 30606 | <b>Date:</b> | 5/23/19 |
|------------|-------|--------------|---------|

**QPSK, (20MHz BANDWIDTH)**

| Limit          |           | 3550           | 3700            | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|----------------|-----------------|------------|---------------------------|
| Condition      |           | F low @ -13dBm | F high @ -13dBm |            |                           |
| Temperature    | Voltage   | (MHz)          | (MHz)           |            |                           |
| Normal (20C)   | Normal    | 3550.8100      | 3699.1802       |            |                           |
| Extreme (50C)  |           | 3550.8100      | 3699.1802       | -8.8       | -0.002                    |
| Extreme (40C)  |           | 3550.8100      | 3699.1802       | 12.7       | 0.003                     |
| Extreme (30C)  |           | 3550.8100      | 3699.1802       | 1.9        | 0.001                     |
| Extreme (10C)  |           | 3550.8100      | 3699.1802       | -8.1       | -0.002                    |
| Extreme (0C)   |           | 3550.8100      | 3699.1802       | -14.2      | -0.004                    |
| Extreme (-10C) |           | 3550.8100      | 3699.1802       | -17.3      | -0.005                    |
| Extreme (-20C) |           | 3550.8100      | 3699.1802       | -16.4      | -0.005                    |
| Extreme (-30C) |           | 3550.8100      | 3699.1802       | 11.2       | 0.003                     |
|                |           |                |                 |            |                           |
| 20C            | 15%       | 3550.8100      | 3699.1802       | -13.2      | -0.004                    |
|                | -15%      | 3550.8100      | 3699.1802       | -5.9       | -0.002                    |
|                | End Point | 3550.8100      | 3699.1802       | -14.6      | -0.004                    |

**8.4.13. LTE BAND 66**

|            |       |              |        |
|------------|-------|--------------|--------|
| <b>ID:</b> | 38602 | <b>Date:</b> | 4/4/19 |
|------------|-------|--------------|--------|

**QPSK, (20MHz BANDWIDTH)**

| Limit          |           | 1710           | 1780            | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|----------------|-----------------|------------|---------------------------|
| Condition      |           | F low @ -13dBm | F high @ -13dBm |            |                           |
| Temperature    | Voltage   | (MHz)          | (MHz)           |            |                           |
| Normal (20C)   | Normal    | 1711.0014      | 1779.0989       |            |                           |
| Extreme (50C)  |           | 1711.0014      | 1779.0989       | 1.7        | 0.001                     |
| Extreme (40C)  |           | 1711.0014      | 1779.0989       | 1.9        | 0.001                     |
| Extreme (30C)  |           | 1711.0014      | 1779.0989       | 1.7        | 0.001                     |
| Extreme (10C)  |           | 1711.0014      | 1779.0989       | 1.8        | 0.001                     |
| Extreme (0C)   |           | 1711.0014      | 1779.0989       | 1.6        | 0.001                     |
| Extreme (-10C) |           | 1711.0014      | 1779.0989       | 2.0        | 0.001                     |
| Extreme (-20C) |           | 1711.0014      | 1779.0989       | 1.8        | 0.001                     |
| Extreme (-30C) |           | 1711.0014      | 1779.0989       | 1.4        | 0.001                     |
|                |           |                |                 |            |                           |
| 20C            | 15%       | 1711.0014      | 1779.0989       | 1.6        | 0.001                     |
|                | -15%      | 1711.0014      | 1779.0989       | 1.2        | 0.001                     |
|                | End Point | 1711.0014      | 1779.0989       | 1.7        | 0.001                     |

**8.4.14. LTE BAND 71**

|            |       |              |        |
|------------|-------|--------------|--------|
| <b>ID:</b> | 30606 | <b>Date:</b> | 4/4/19 |
|------------|-------|--------------|--------|

**QPSK, (20MHz BANDWIDTH)**

| Limit          |           | 663                  | 698                   | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|----------------------|-----------------------|------------|---------------------------|
| Condition      |           | F low @ -13dBm (MHz) | F high @ -13dBm (MHz) |            |                           |
| Temperature    | Voltage   |                      |                       |            |                           |
| Normal (20C)   | Normal    | 663.9870             | 697.0122              |            |                           |
| Extreme (50C)  |           | 663.9870             | 697.0122              | 1.0        | 0.001                     |
| Extreme (40C)  |           | 663.9870             | 697.0122              | 1.1        | 0.002                     |
| Extreme (30C)  |           | 663.9870             | 697.0122              | 1.3        | 0.002                     |
| Extreme (10C)  |           | 663.9870             | 697.0122              | 0.9        | 0.001                     |
| Extreme (0C)   |           | 663.9870             | 697.0122              | 1.5        | 0.002                     |
| Extreme (-10C) |           | 663.9870             | 697.0122              | 1.3        | 0.002                     |
| Extreme (-20C) |           | 663.9870             | 697.0122              | 1.0        | 0.001                     |
| Extreme (-30C) |           | 663.9870             | 697.0122              | 1.1        | 0.002                     |
|                |           |                      |                       |            |                           |
| 20C            | 15%       | 663.9870             | 697.0122              | 1.5        | 0.002                     |
|                | -15%      | 663.9870             | 697.0122              | 1.3        | 0.002                     |
|                | End Point | 663.9870             | 697.0122              | 1.6        | 0.002                     |

## 8.5. PEAK-TO-AVERAGE POWER RATIO LIMIT

In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

### MODES TESTED

- LTE Band 2
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 14
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 30
- LTE Band 41
- LTE Band 48
- LTE Band 66
- LTE Band 71

### RESULT

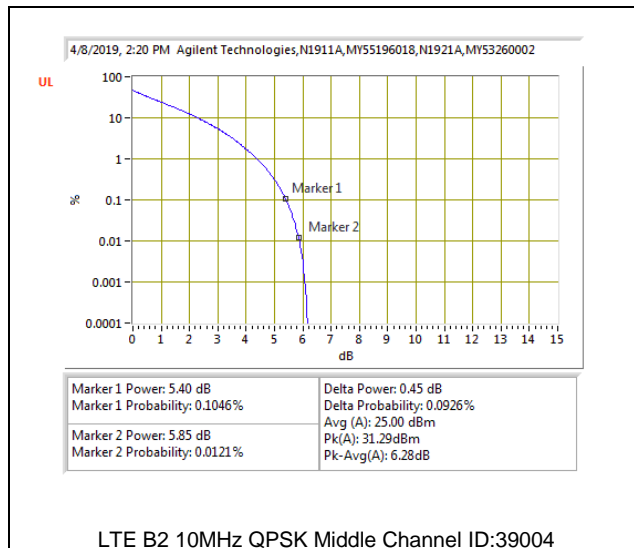
Antenna 1 was used to measure as the worst case; full resource block (FRB) for each bandwidth was used to measure as the worst case. The results from all CCDF measurements are passed with 13dB peak-to-average power ratio criteria.

|            |       |              |        |
|------------|-------|--------------|--------|
| <b>ID:</b> | 39004 | <b>Date:</b> | 4/8/19 |
|------------|-------|--------------|--------|

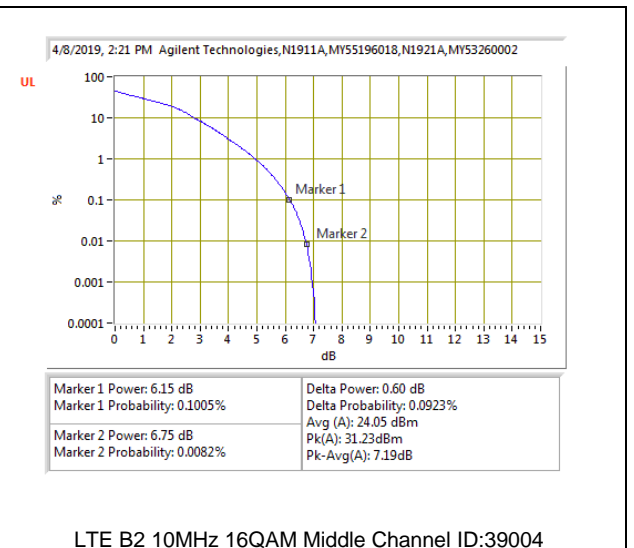
### 8.5.1. LTE BAND 2



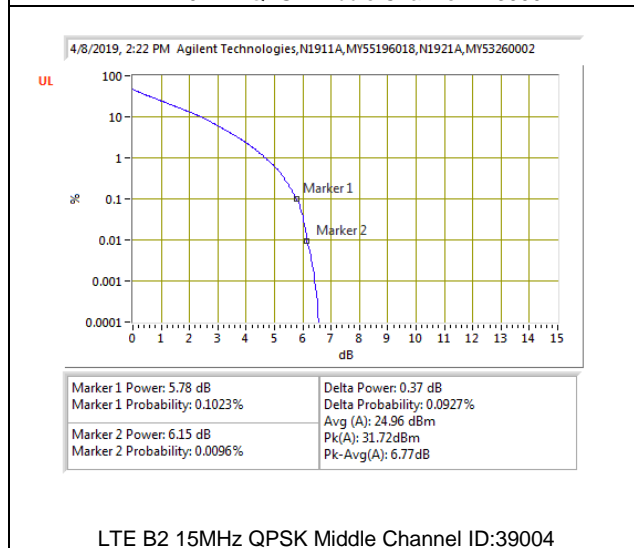




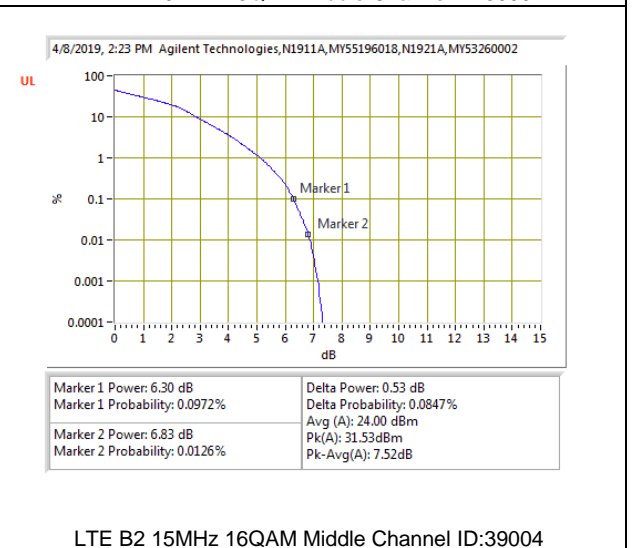
LTE B2 10MHz QPSK Middle Channel ID:39004



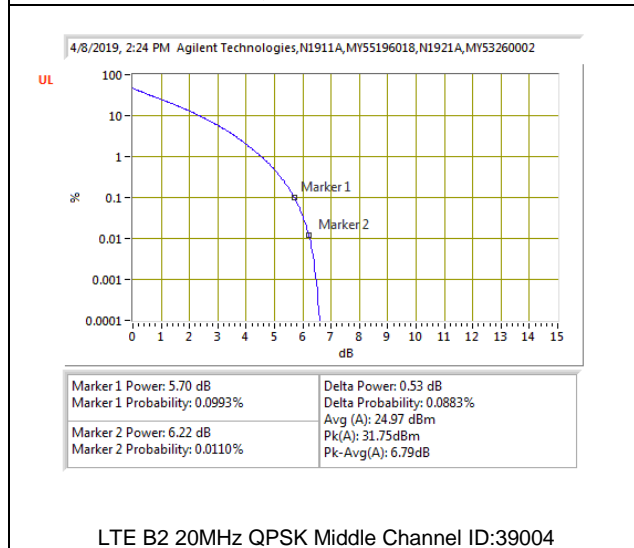
LTE B2 10MHz 16QAM Middle Channel ID:39004



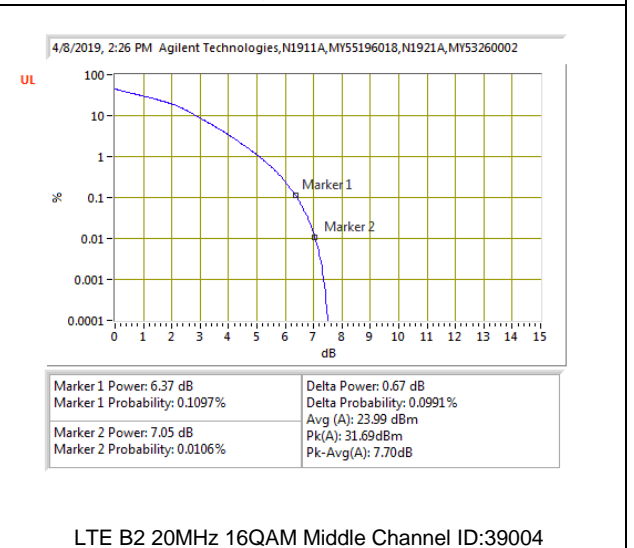
LTE B2 15MHz QPSK Middle Channel ID:39004



LTE B2 15MHz 16QAM Middle Channel ID:39004

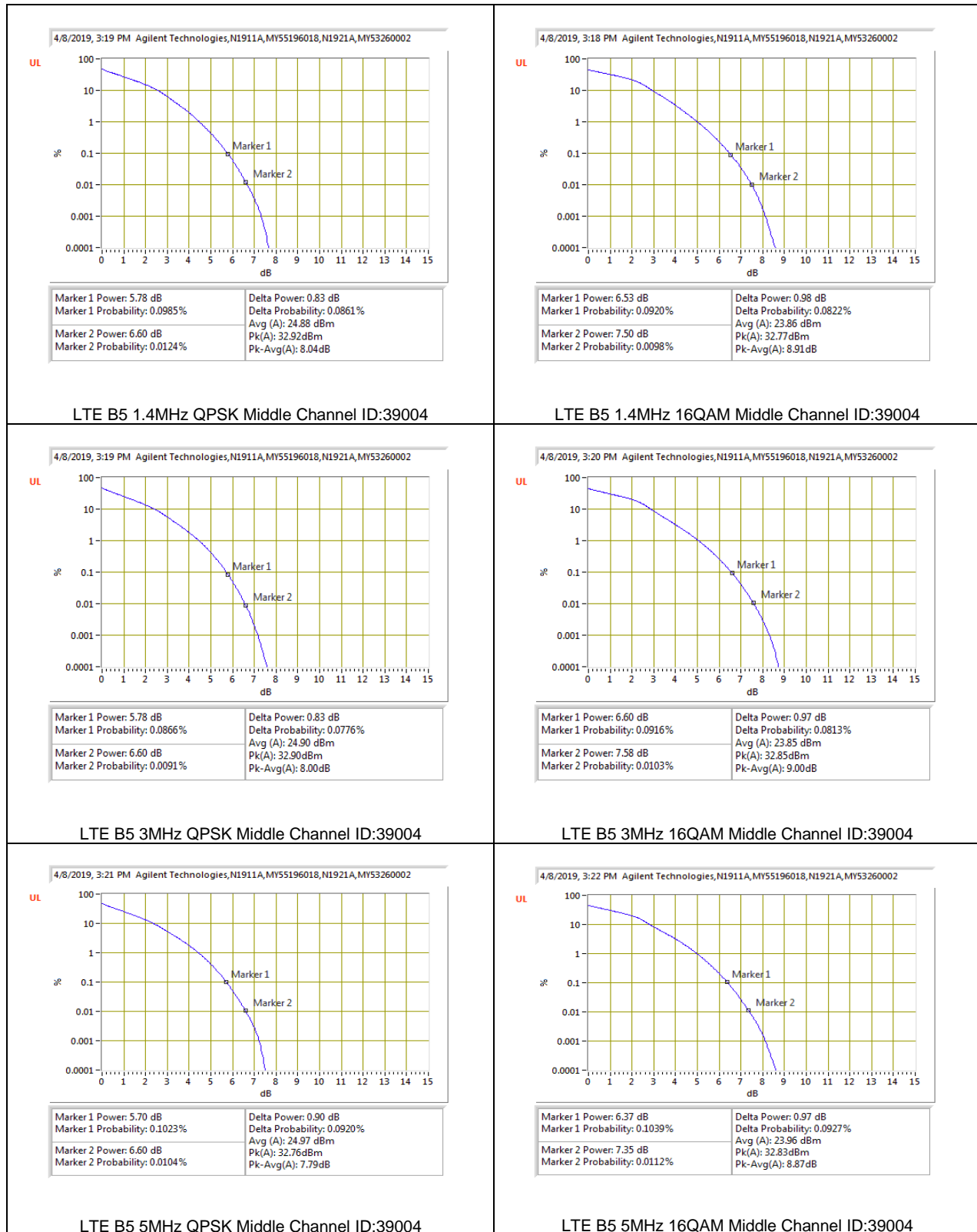


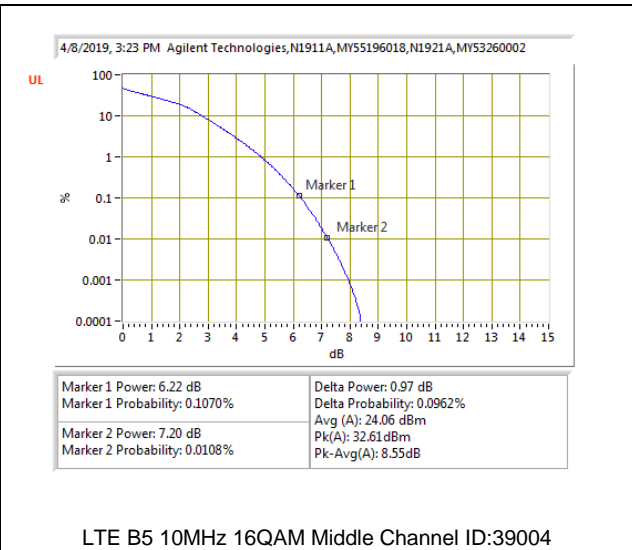
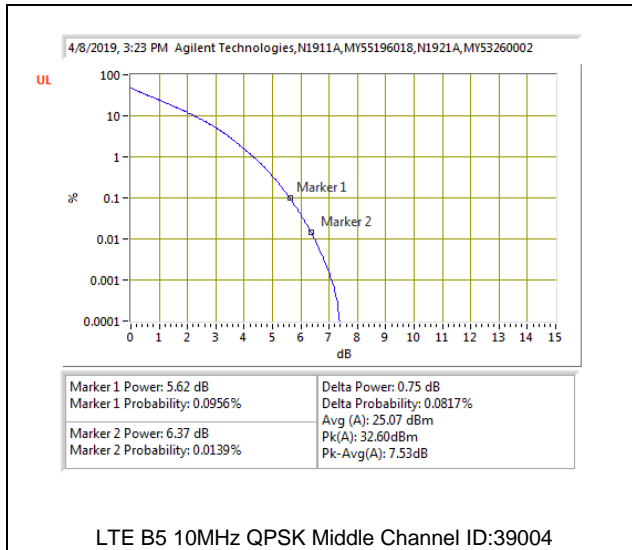
LTE B2 20MHz QPSK Middle Channel ID:39004



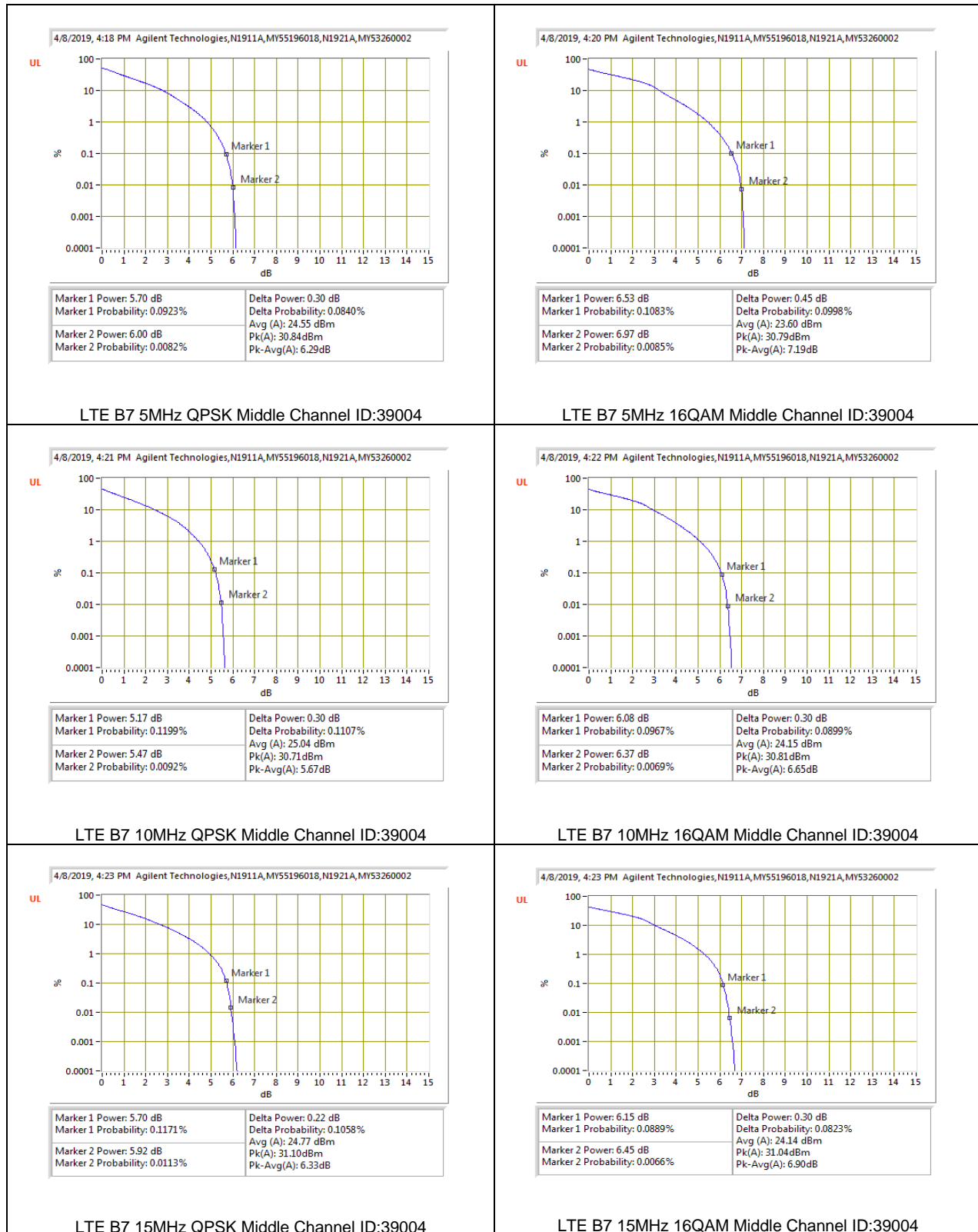
LTE B2 20MHz 16QAM Middle Channel ID:39004

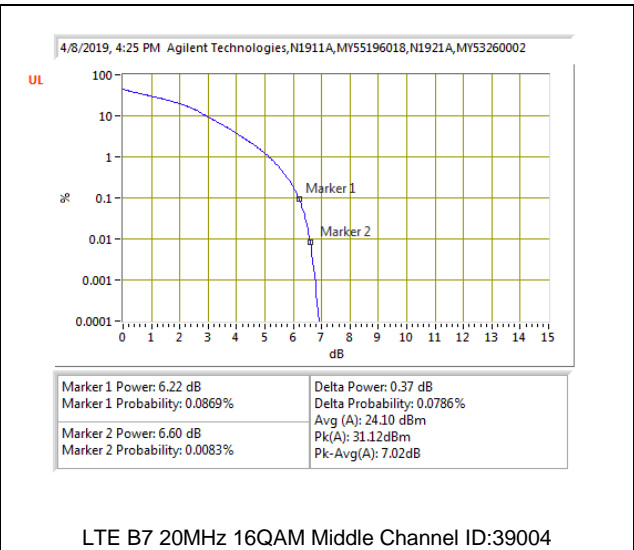
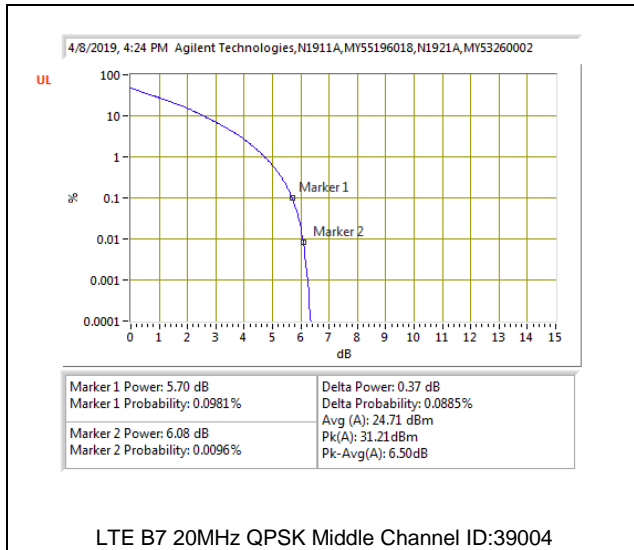
### 8.5.2. LTE BAND 5



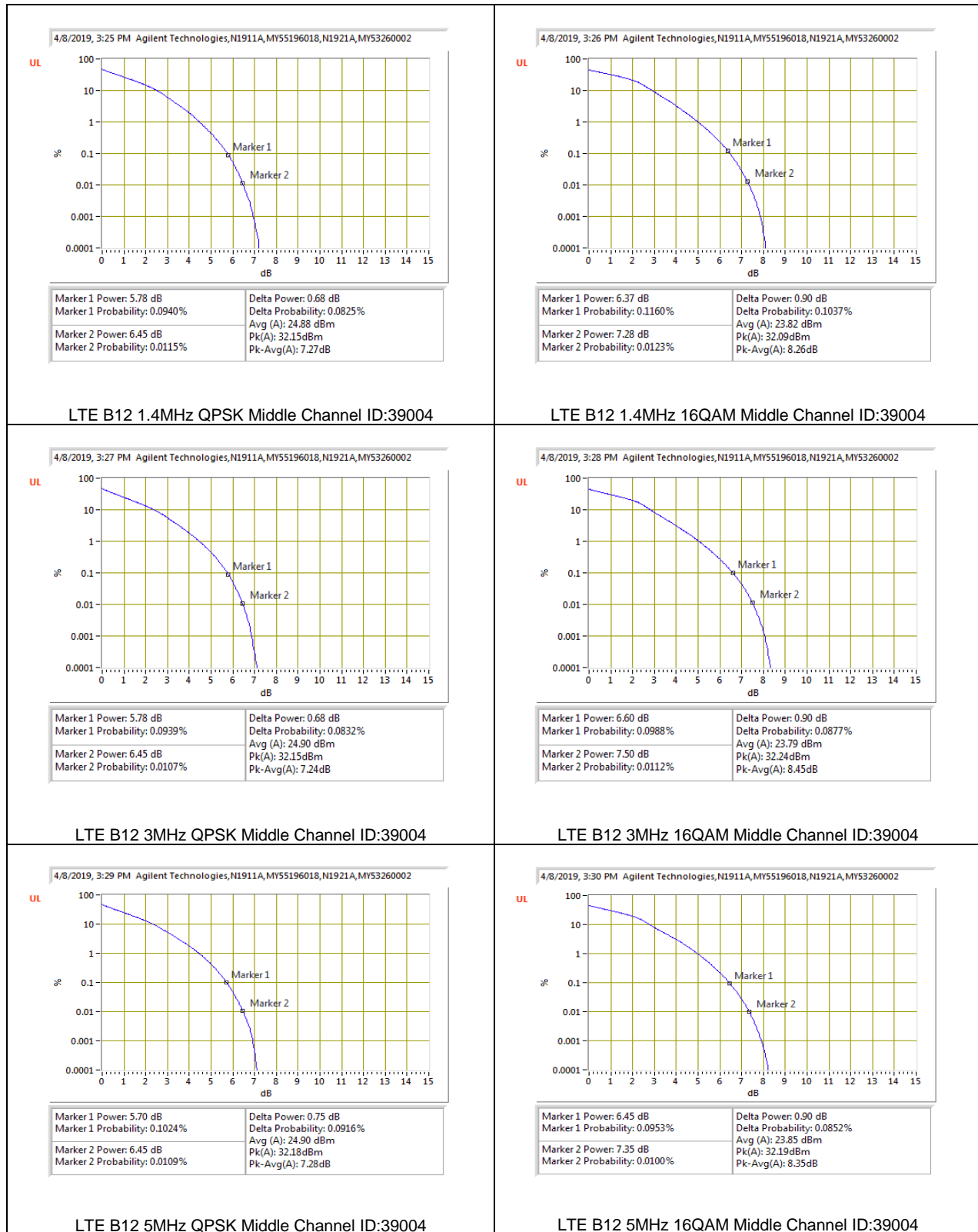


### 8.5.3. LTE BAND 7





### 8.5.4. LTE BAND 12



LTE B12 1.4MHz QPSK Middle Channel ID:39004

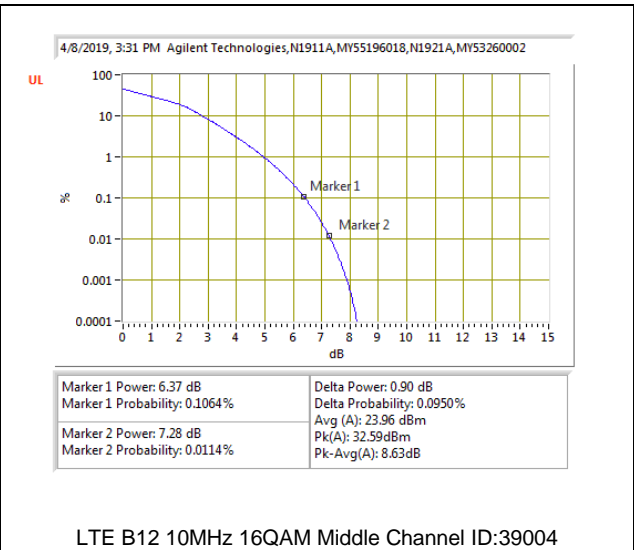
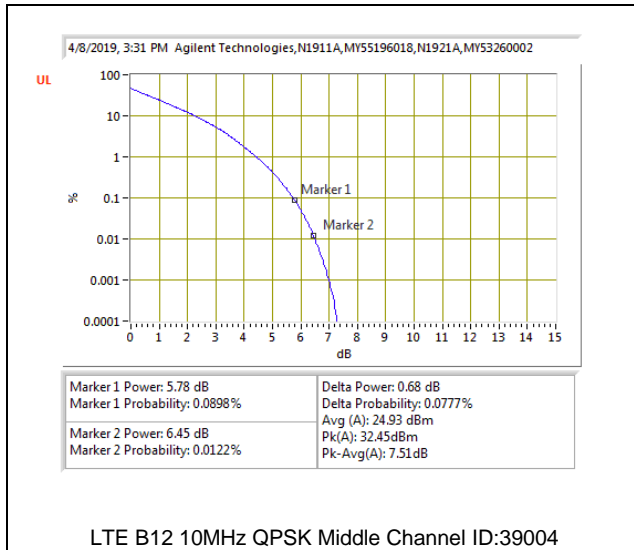
LTE B12 1.4MHz 16QAM Middle Channel ID:39004

LTE B12 3MHz QPSK Middle Channel ID:39004

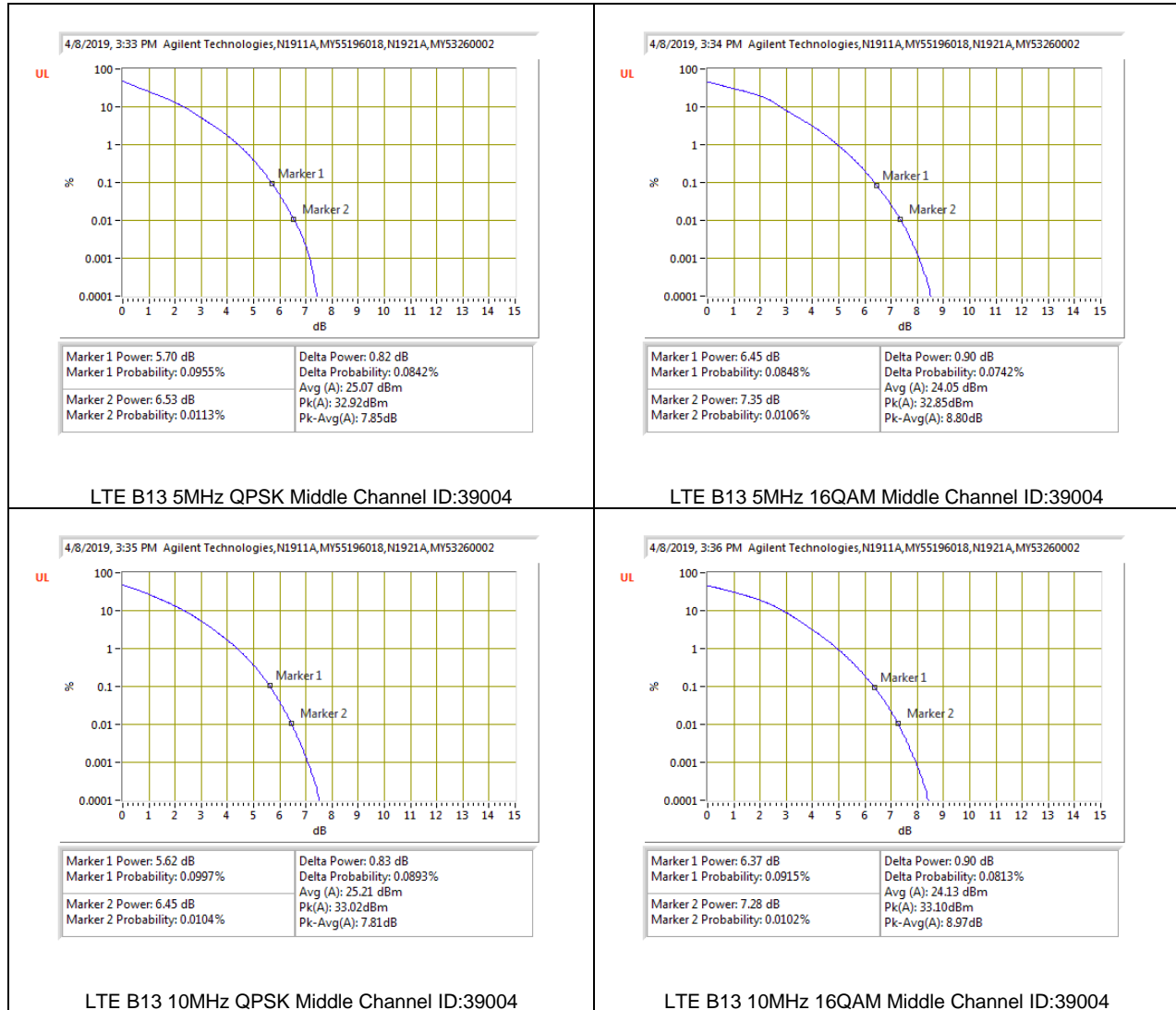
LTE B12 3MHz 16QAM Middle Channel ID:39004

LTE B12 5MHz QPSK Middle Channel ID:39004

LTE B12 5MHz 16QAM Middle Channel ID:39004

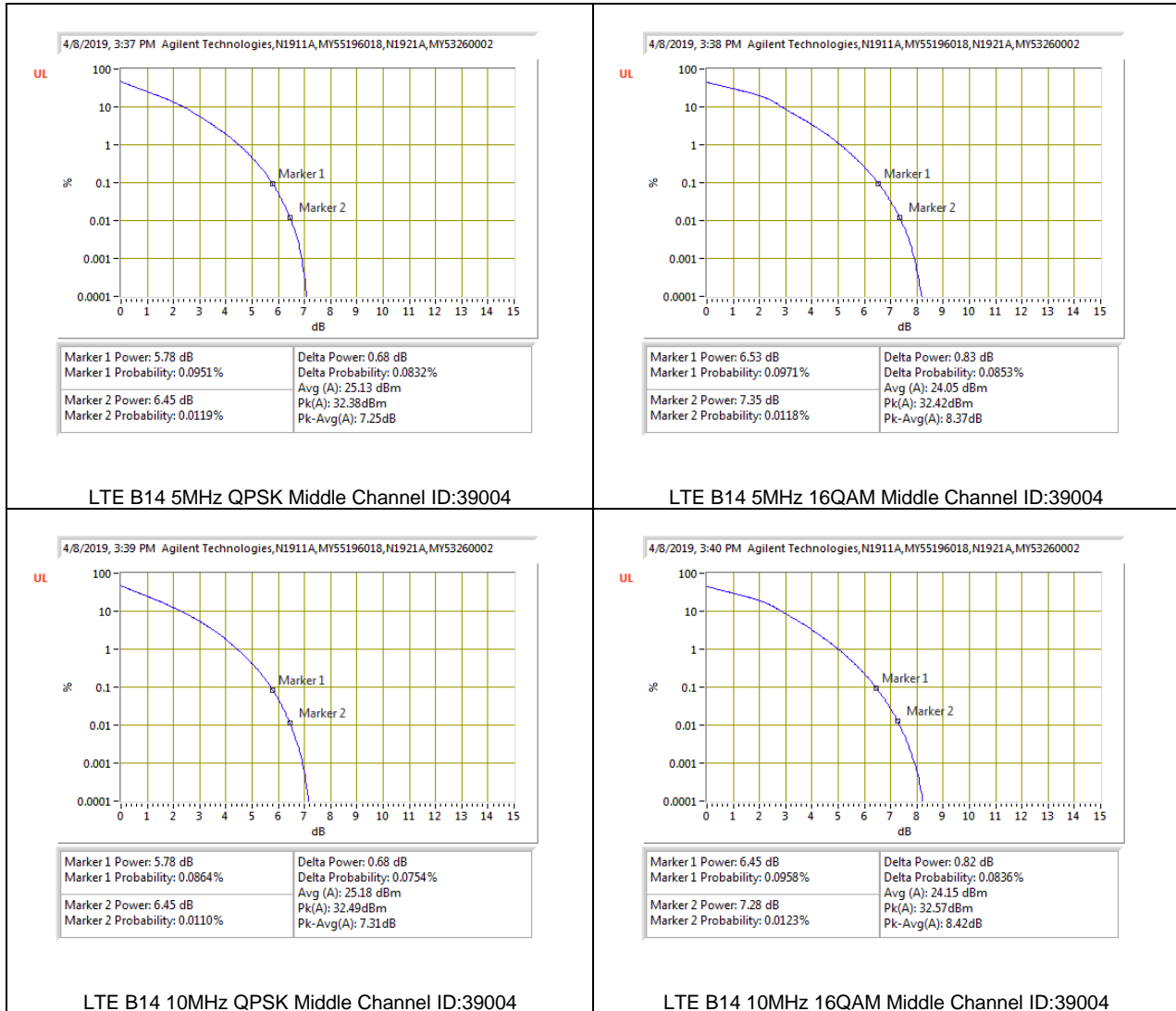


### 8.5.5. LTE BAND 13

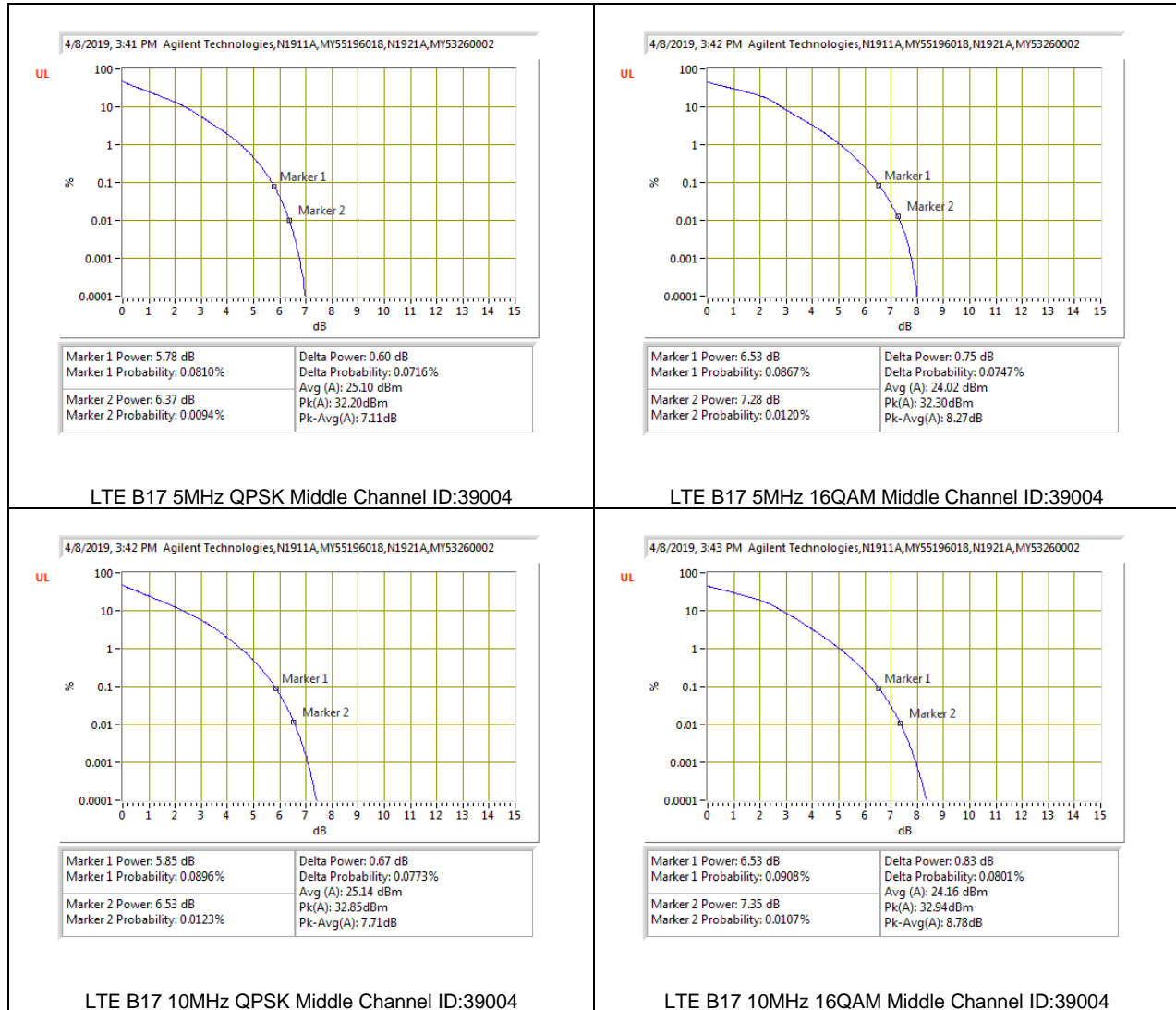




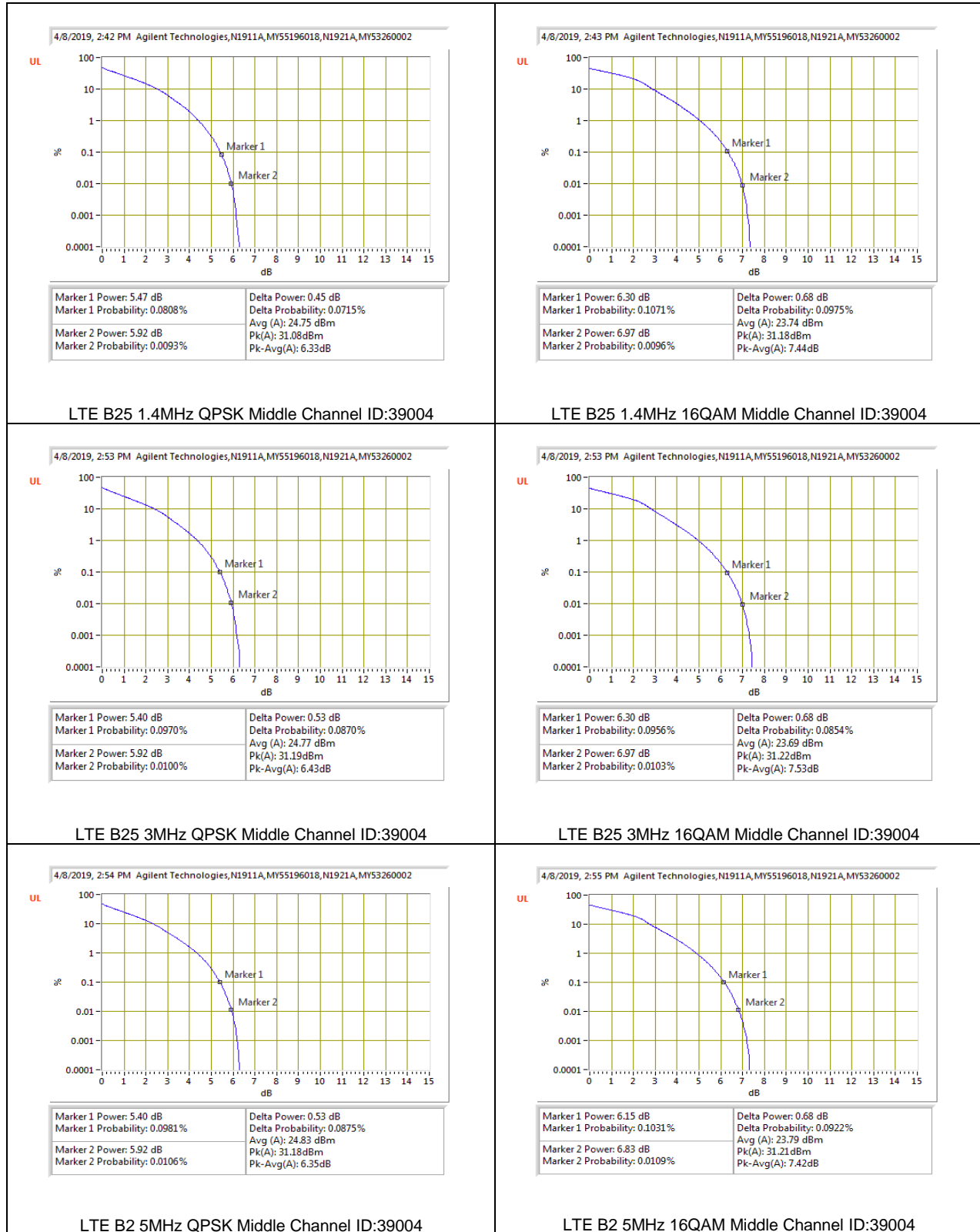
### 8.5.6. LTE BAND 14

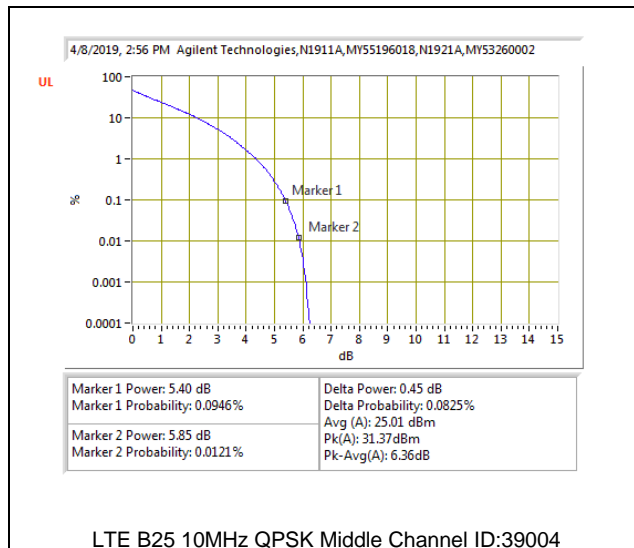


### 8.5.7. LTE BAND 17

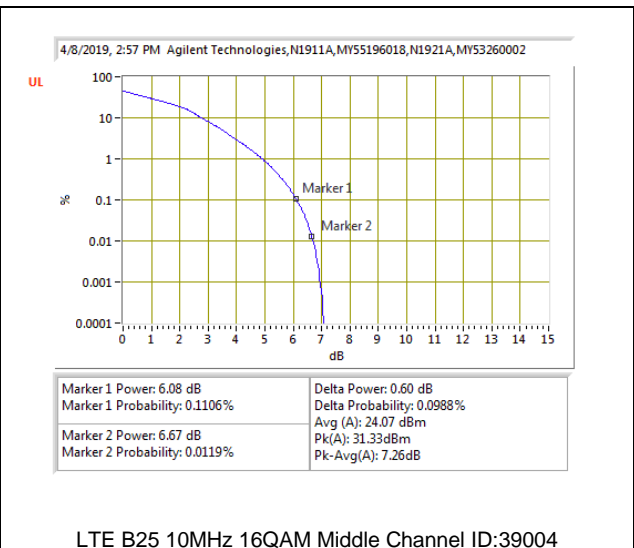


### 8.5.8. LTE BAND 25

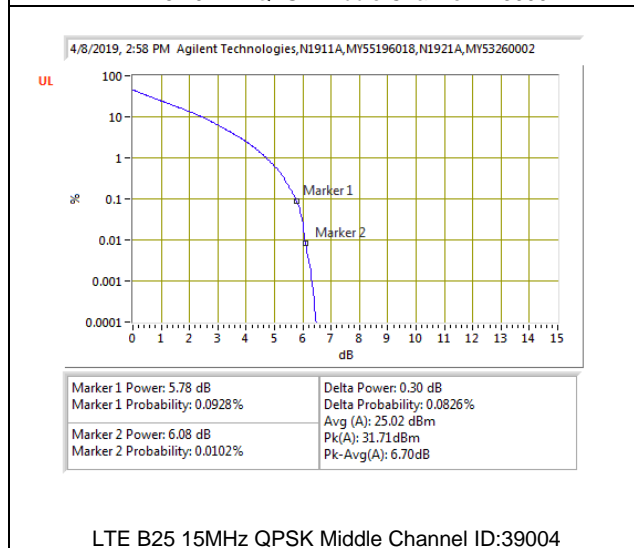




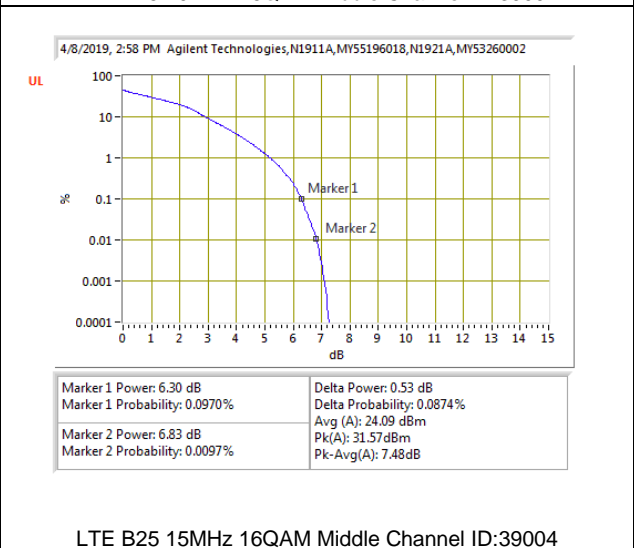
LTE B25 10MHz QPSK Middle Channel ID:39004



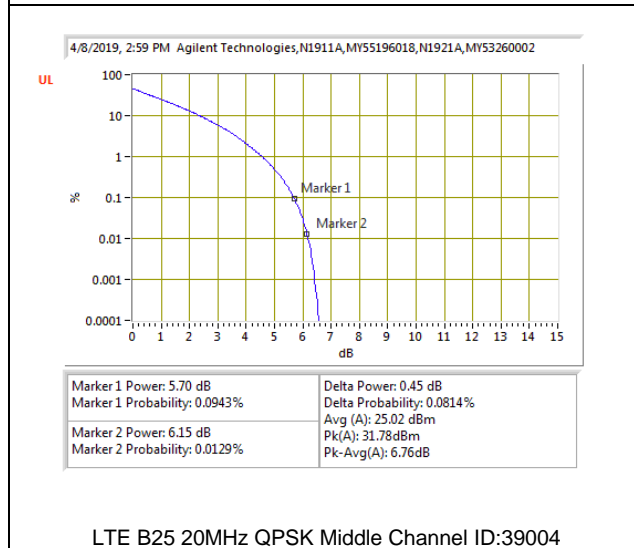
LTE B25 10MHz 16QAM Middle Channel ID:39004



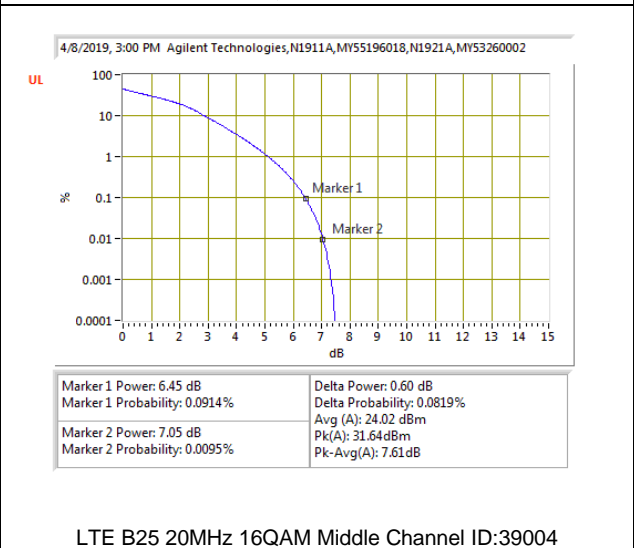
LTE B25 15MHz QPSK Middle Channel ID:39004



LTE B25 15MHz 16QAM Middle Channel ID:39004

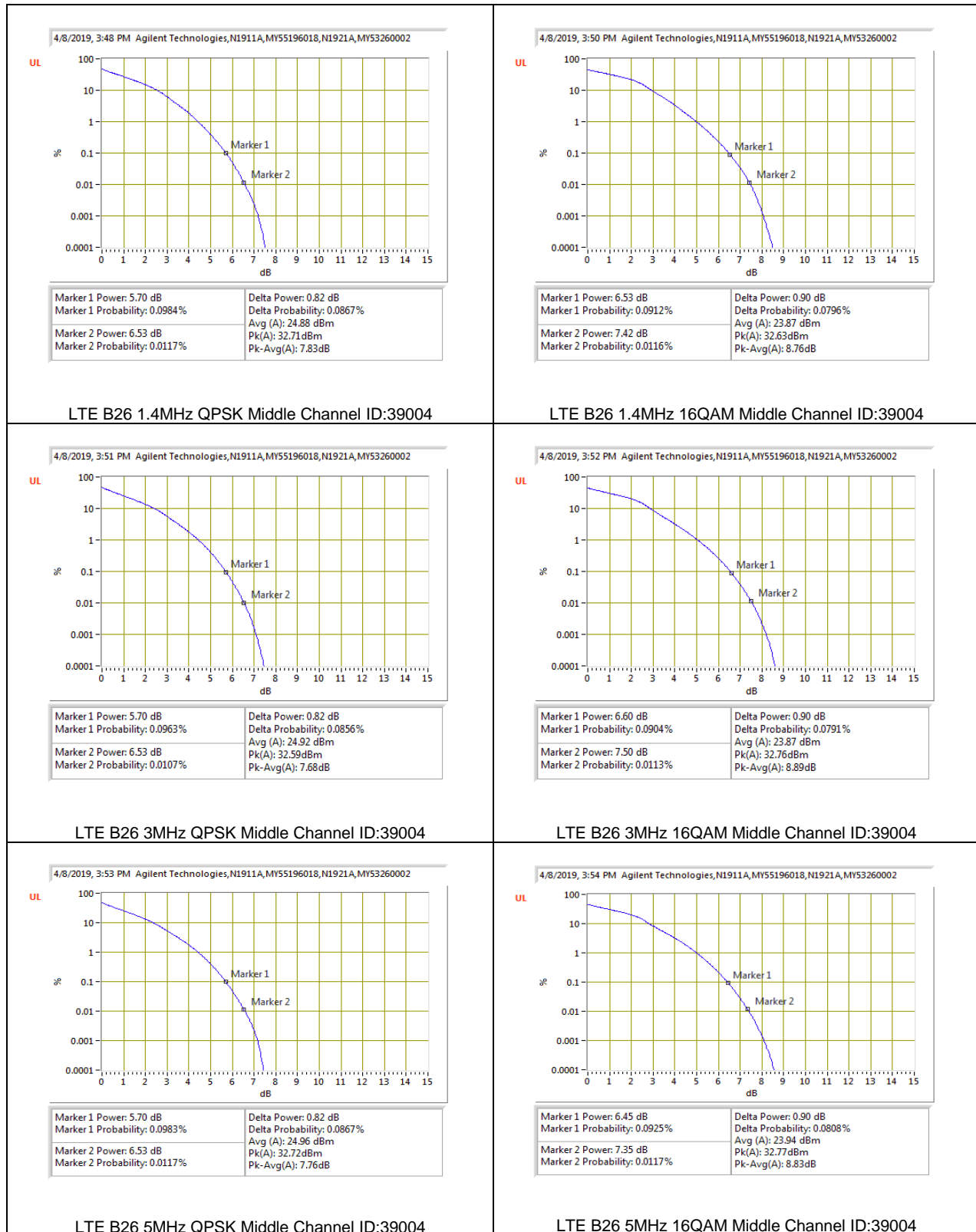


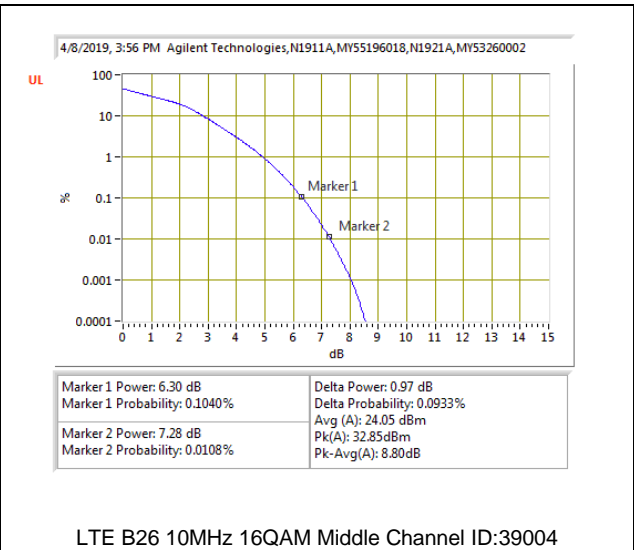
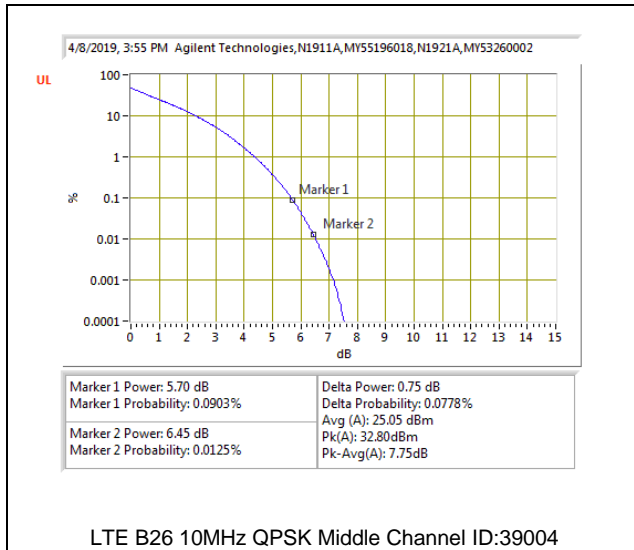
LTE B25 20MHz QPSK Middle Channel ID:39004



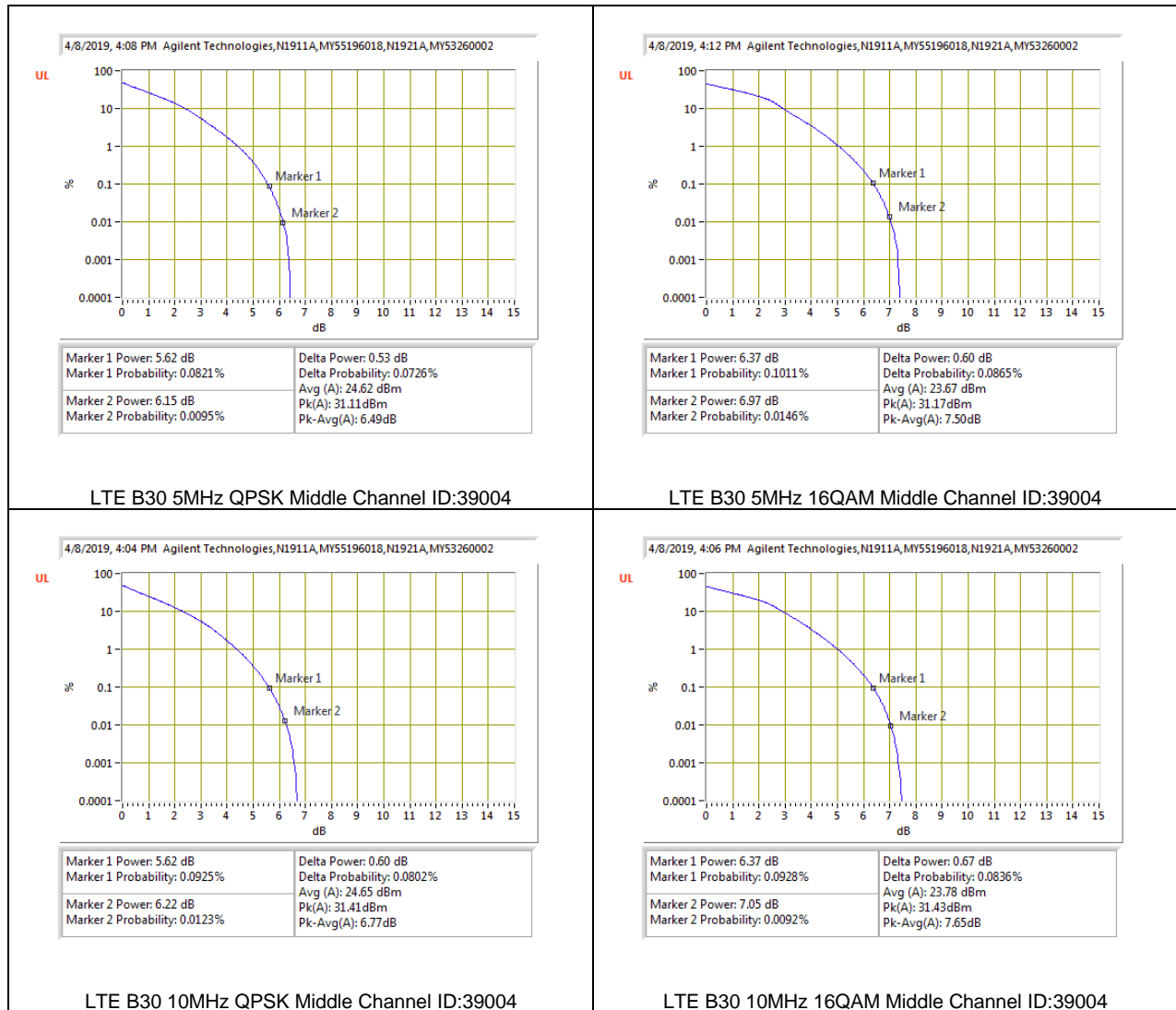
LTE B25 20MHz 16QAM Middle Channel ID:39004

### 8.5.9. LTE BAND 26





### 8.5.10. LTE BAND 30



**8.5.11. LTE BAND 41**

|            |       |              |        |
|------------|-------|--------------|--------|
| <b>ID:</b> | 39004 | <b>Date:</b> | 4/9/19 |
|------------|-------|--------------|--------|

| Band   | Bandwidth (MHz) | Frequency (MHz) | RB Allocation | RB OffSet | Modulation | Conducted Power (dBm) |         | Peak-to-Average Power Ratio (dB) |
|--|-----------------|-----------------|---------------|-----------|------------|-----------------------|---------|----------------------------------|
|  |                 |                 |               |           |            | Peak                  | Average |                                  |
| Band 41  | 5MHz            | 2593.0          | 25            | 0         | QPSK       | 34.08                 | 20.22   | 6.82                             |
|  |                 |                 |               |           | 16QAM      | 33.92                 | 19.24   | 7.64                             |
|  | 10MHz           |                 | 50            | 0         | QPSK       | 33.90                 | 20.33   | 6.53                             |
|  |                 |                 |               |           | 16QAM      | 33.94                 | 19.40   | 7.50                             |
|  | 15MHz           |                 | 75            | 0         | QPSK       | 33.97                 | 20.29   | 6.64                             |
|  |                 |                 |               |           | 16QAM      | 33.86                 | 19.36   | 7.46                             |
|  | 20MHz           |                 | 100           | 0         | QPSK       | 33.93                 | 20.31   | 6.58                             |
|  |                 |                 |               |           | 16QAM      | 33.86                 | 19.34   | 7.48                             |
| Duty Cycle Correction Factor (dB) =  |                 |                 | 7.04          |           |            |                       |         |                                  |
| Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor |                 |                 |               |           |            |                       |         |                                  |

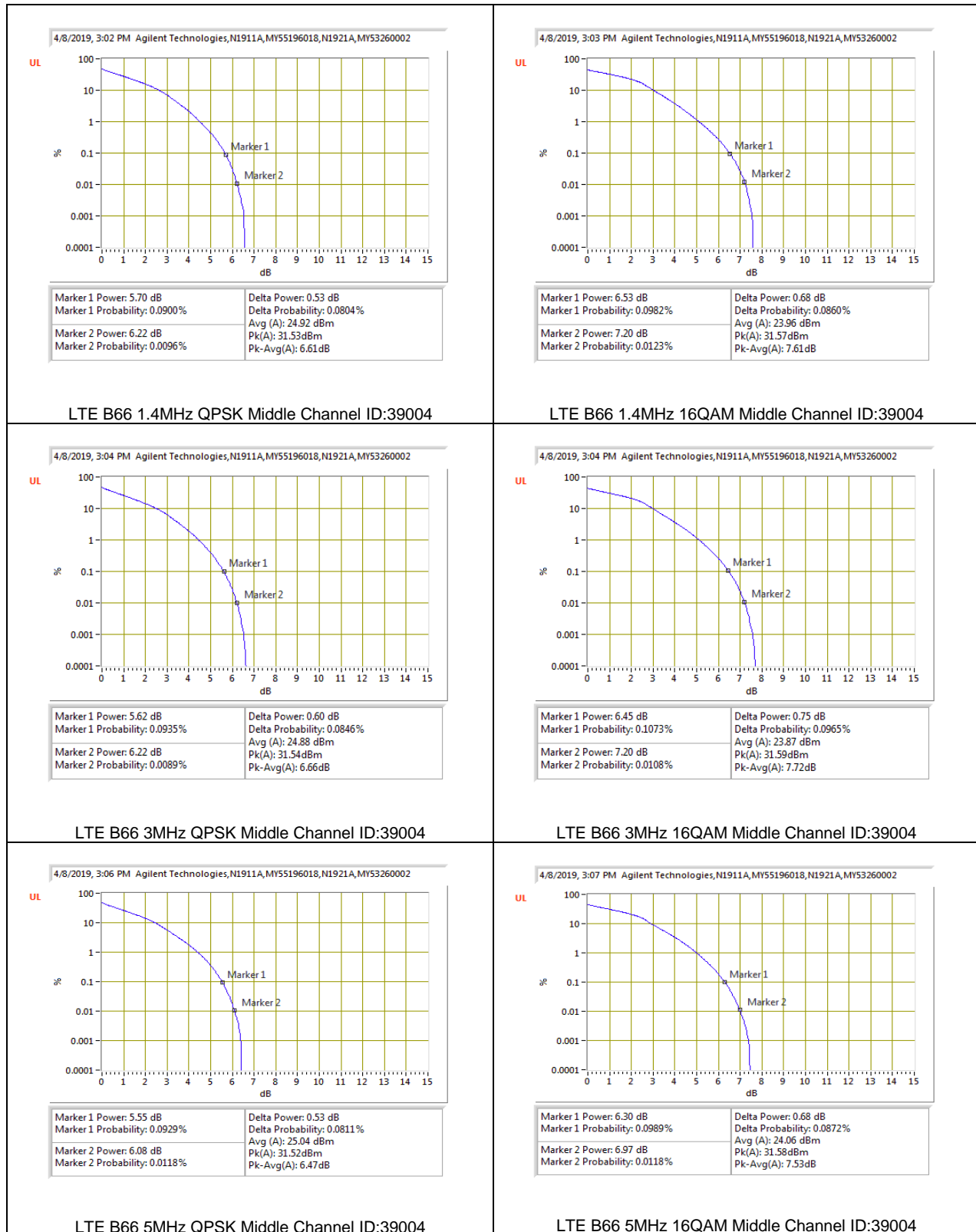
**8.5.12. LTE BAND 48**

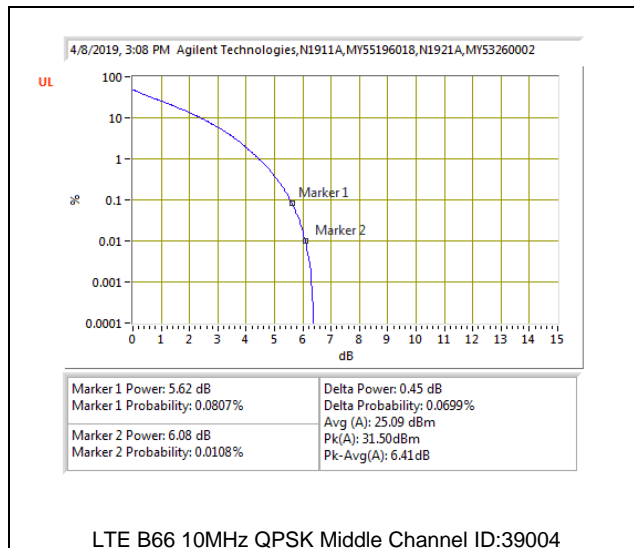
|            |       |              |        |
|------------|-------|--------------|--------|
| <b>ID:</b> | 39004 | <b>Date:</b> | 6/6/19 |
|------------|-------|--------------|--------|

| Band   | Bandwidth (MHz) | Frequency (MHz) | RB Allocation | RB OffSet | Modulation | Conducted Power (dBm) |         | Peak-to-Average Power Ratio (dB) |
|--|-----------------|-----------------|---------------|-----------|------------|-----------------------|---------|----------------------------------|
|  |                 |                 |               |           |            | Peak                  | Average |                                  |
| Band 48  | 5MHz            | 3625.0          | 25            | 0         | QPSK       | 29.58                 | 15.43   | 7.11                             |
|  |                 |                 |               |           | 16QAM      | 29.68                 | 14.29   | 8.35                             |
|  | 10MHz           |                 | 50            | 0         | QPSK       | 29.51                 | 15.43   | 7.04                             |
|  |                 |                 |               |           | 16QAM      | 29.50                 | 14.37   | 8.09                             |
|  | 15MHz           |                 | 75            | 0         | QPSK       | 29.34                 | 15.34   | 6.96                             |
|  |                 |                 |               |           | 16QAM      | 29.35                 | 14.32   | 7.99                             |
|  | 20MHz           |                 | 100           | 0         | QPSK       | 29.40                 | 15.41   | 6.95                             |
|  |                 |                 |               |           | 16QAM      | 29.46                 | 14.41   | 8.01                             |
| Duty Cycle Correction Factor (dB) =  |                 |                 | 7.04          |           |            |                       |         |                                  |
| Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor |                 |                 |               |           |            |                       |         |                                  |

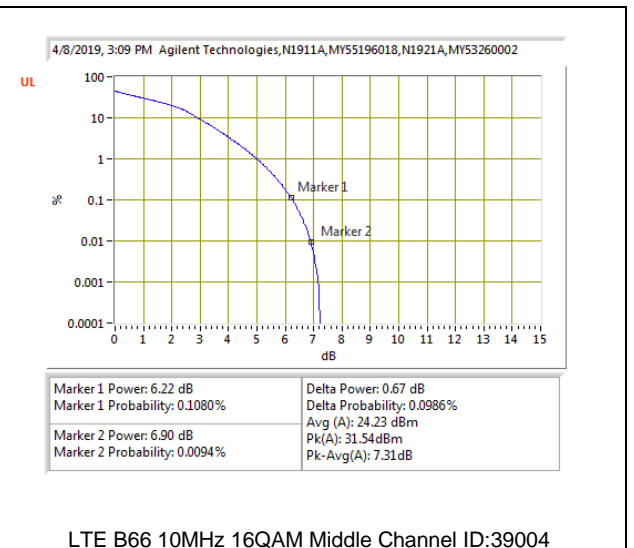


### 8.5.13. LTE BAND 66

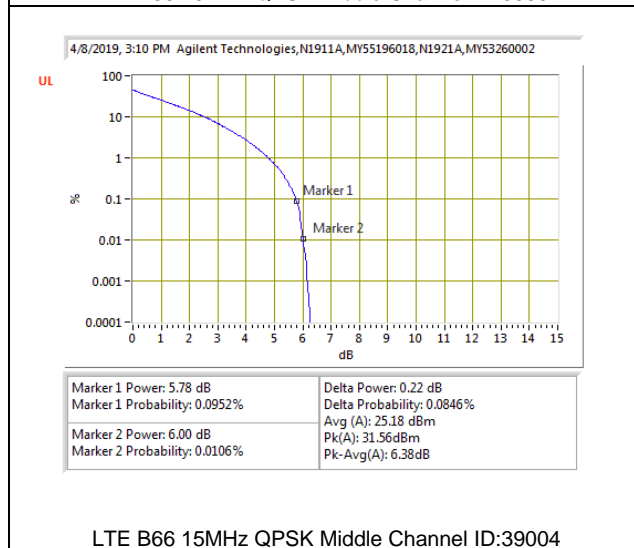




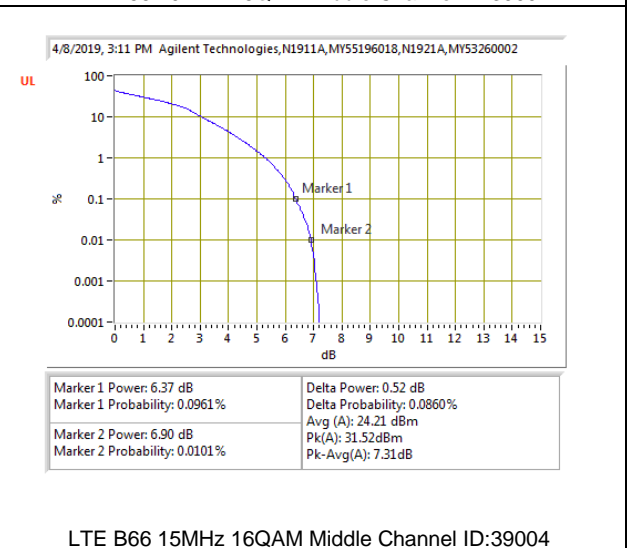
LTE B66 10MHz QPSK Middle Channel ID:39004



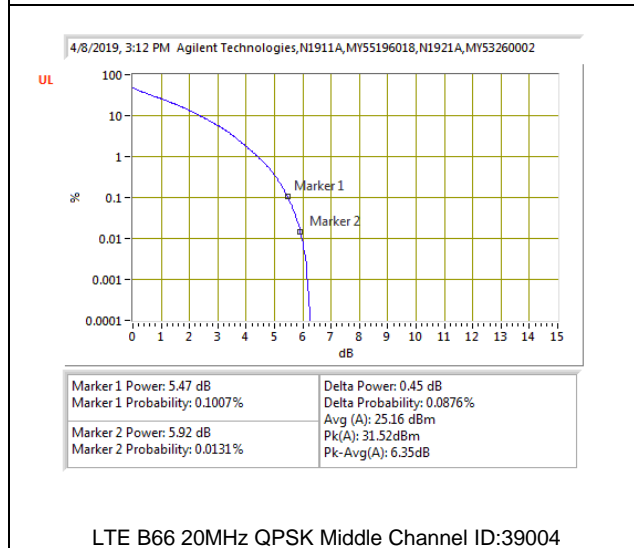
LTE B66 10MHz 16QAM Middle Channel ID:39004



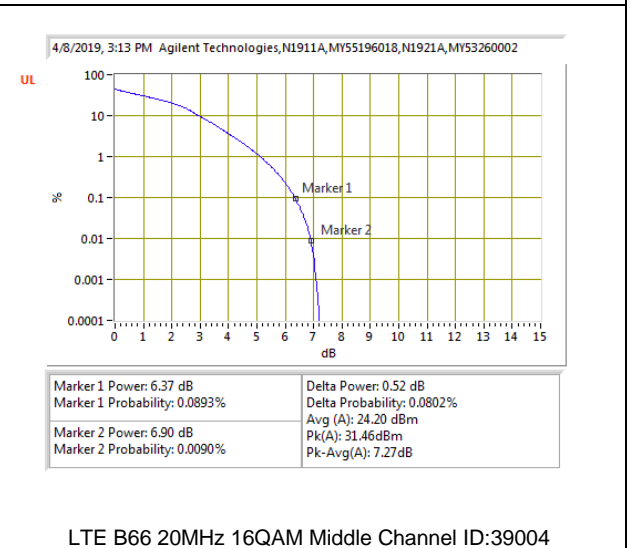
LTE B66 15MHz QPSK Middle Channel ID:39004



LTE B66 15MHz 16QAM Middle Channel ID:39004

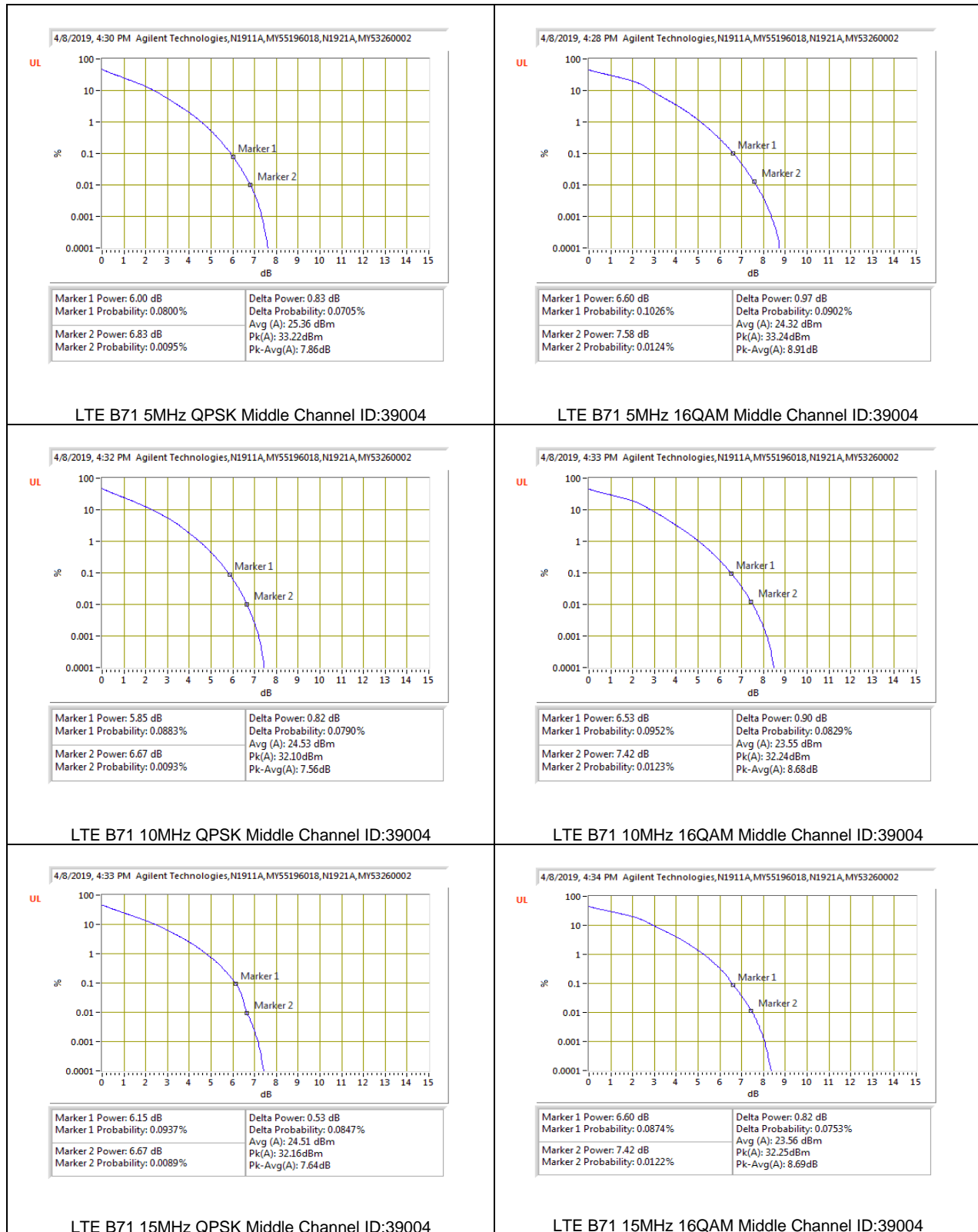


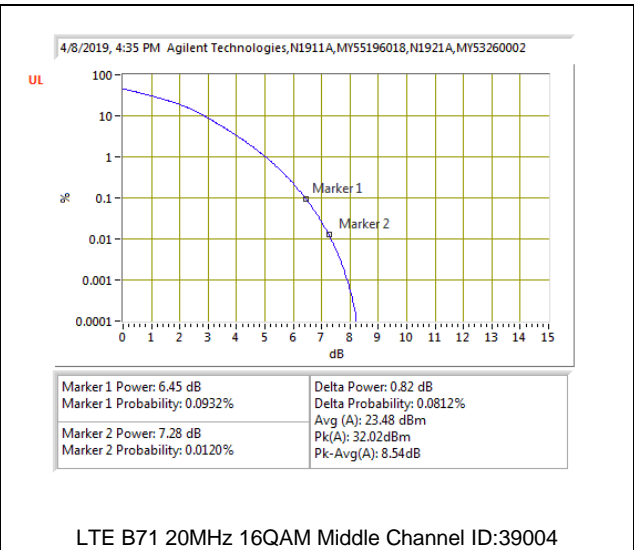
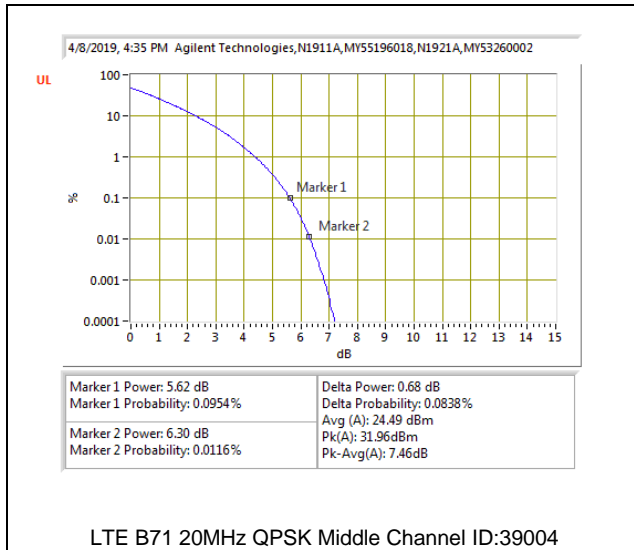
LTE B66 20MHz QPSK Middle Channel ID:39004



LTE B66 20MHz 16QAM Middle Channel ID:39004

### 8.5.14. LTE BAND 71





## 9. RADIATED TEST RESULTS

### RULE PART(S)

FCC: §2.1053, §22.917, §24.238, §27.53, §90.669, §90.691, §96.41, and §90.543

### LIMIT

§22.917(a), §24.238(a), §27.53 (g), (h), §90.691

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.

§27.53 (Band 13)

(c) 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.

(f) Emissions in the band 1559-1610 MHz shall be limited to  $-70$  dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals. ( $-70$  dBW/MHz =  $-40$  dBm/MHz).

§90.543 Emission Limitations. (Band 14)

(e) For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least  $43 + 10 \log (P)$  dB.

(f) For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to  $-70$  dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and  $-80$  dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

FCC: § 90.669 Emission limits. (Band 26)

(a) On any frequency in an MTA licensee's spectrum block that is adjacent to a non-MTA frequency, the power of any emission shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  decibels or 80 decibels, whichever is the lesser attenuation.

§27.53 (a) (Band 30)

For mobile and portable stations operating in the 2305-2315 MHz: by a factor of not less than  $43 + 10 \log (P)$  dB on all frequencies between 2360 and 2365 MHz, and not less than  $70 + 10 \log (P)$  dB above 2365 MHz.

§27.53 (m) (Band 7, 41)

At least  $55 + 10 \log (P)$  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)(6) of this section.

§96.41 (Band 48)

(e) 3.5 GHz Emissions and Interference Limits—

(2) Additional protection levels. Notwithstanding paragraph (d)(1) of this section, the conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed  $-40$  dBm/MHz.

## **TEST PROCEDURE**

KDB 971168 D01/D02 v02r01

All tests above 1GHz were done with a Resolution Bandwidth of 1MHz, and a Video Bandwidth of 3MHz.

## **MODES TESTED**

- LTE Band 2
- LTE Band 5
- LTE Band 7
- LTE Band 12
- LTE Band 13
- LTE Band 14
- LTE Band 17
- LTE Band 25
- LTE Band 26
- LTE Band 30
- LTE Band 41
- LTE Band 48
- LTE Band 66
- LTE Band 71

## **RESULTS**

For LTE Bands 13 and 14, no narrow band emissions were observed in the 1559-1610MHz band, so the wide band limit of -70dBW/MHz was applied.

## 9.1. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 1

### 9.1.1. LTE BAND 2

|                |                  |
|----------------|------------------|
| Company:       |                  |
| Project #:     | 12607346         |
| Date:          | 3/30/2019        |
| Test Engineer: | 50822            |
| Configuration: | EUT Only         |
| Mode:          | LTE 2 QPSK 20MHz |
| Chamber #:     | Chamber B        |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | PK Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|----------------|----------|
| Low Channel, 1860MHz  |                     |     |                |              |              |                         |                 |                |          |
| 3.723                 | -67.57              | Pk  | 33.3           | -30.1        | 10.1         | -54.27                  | -13             | -41.27         | H        |
| 7.432                 | -69.7               | Pk  | 36.2           | -26.6        | 6.8          | -53.3                   | -13             | -40.3          | H        |
| 3.722                 | -67.32              | Pk  | 33.3           | -30.1        | 9.9          | -54.22                  | -13             | -41.22         | V        |
| 7.44                  | -69.86              | Pk  | 36.1           | -26.7        | 6.9          | -53.56                  | -13             | -40.56         | V        |
| 5.567                 | -68.71              | Pk  | 35.5           | -28.5        | 8.7          | -53.01                  | -13             | -40.01         | V        |
| 5.568                 | -68.75              | Pk  | 35.5           | -28.5        | 8.6          | -53.15                  | -13             | -40.15         | H        |
| Mid Channel, 1880MHz  |                     |     |                |              |              |                         |                 |                |          |
| 3.759                 | -67.7               | Pk  | 33.3           | -30.1        | 9.3          | -55.2                   | -13             | -42.2          | H        |
| 7.518                 | -70.87              | Pk  | 36.2           | -26.3        | 7.5          | -53.47                  | -13             | -40.47         | H        |
| 3.764                 | -67.54              | Pk  | 33.3           | -30.1        | 9.7          | -54.64                  | -13             | -41.64         | V        |
| 7.513                 | -70.52              | Pk  | 36.2           | -26.3        | 7.6          | -53.02                  | -13             | -40.02         | V        |
| 5.627                 | -67.92              | Pk  | 35.5           | -28.5        | 8.4          | -52.52                  | -13             | -39.52         | H        |
| 5.634                 | -69.18              | Pk  | 35.5           | -28.6        | 8.6          | -53.68                  | -13             | -40.68         | V        |
| High Channel, 1900MHz |                     |     |                |              |              |                         |                 |                |          |
| 3.798                 | -67.63              | Pk  | 33.4           | -30.2        | 9.9          | -54.53                  | -13             | -41.53         | H        |
| 7.59                  | -70.01              | Pk  | 36.3           | -26.2        | 7            | -52.91                  | -13             | -39.91         | H        |
| 3.79                  | -67.36              | Pk  | 33.4           | -30.1        | 9.7          | -54.36                  | -13             | -41.36         | V        |
| 7.593                 | -70.27              | Pk  | 36.4           | -26.2        | 7            | -53.07                  | -13             | -40.07         | V        |
| 5.68                  | -66.81              | Pk  | 35.5           | -27.9        | 8.2          | -51.01                  | -13             | -38.01         | H        |
| 5.699                 | -69.1               | Pk  | 35.5           | -28          | 7.6          | -54                     | -13             | -41            | V        |

Pk - Peak detector

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 3/30/2019         |
| Test Engineer: | 50822             |
| Configuration: | EUT Only          |
| Mode:          | LTE 2 16QAM 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | PK Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|----------------|----------|
| Low Channel, 1860MHz  |                     |     |                |              |              |                         |                 |                |          |
| 3.714                 | -67.07              | Pk  | 33.3           | -30          | 9.8          | -53.97                  | -13             | -40.97         | H        |
| 7.439                 | -70.09              | Pk  | 36.1           | -26.6        | 7            | -53.59                  | -13             | -40.59         | H        |
| 3.716                 | -67.41              | Pk  | 33.3           | -30.1        | 9.6          | -54.61                  | -13             | -41.61         | V        |
| 7.433                 | -69.24              | Pk  | 36.2           | -26.6        | 7            | -52.64                  | -13             | -39.64         | V        |
| 5.565                 | -68.9               | Pk  | 35.5           | -28.4        | 8.9          | -52.9                   | -13             | -39.9          | V        |
| 5.571                 | -68.82              | Pk  | 35.5           | -28.5        | 8.4          | -53.42                  | -13             | -40.42         | H        |
| Mid Channel, 1880MHz  |                     |     |                |              |              |                         |                 |                |          |
| 3.764                 | -67.6               | Pk  | 33.3           | -30.1        | 9.3          | -55.1                   | -13             | -42.1          | H        |
| 7.519                 | -70.32              | Pk  | 36.2           | -26.3        | 7.5          | -52.92                  | -13             | -39.92         | H        |
| 3.754                 | -66.99              | Pk  | 33.3           | -30          | 9.5          | -54.19                  | -13             | -41.19         | H        |
| 7.512                 | -70.73              | Pk  | 36.2           | -26.3        | 7.7          | -53.13                  | -13             | -40.13         | H        |
| 5.626                 | -68.88              | Pk  | 35.5           | -28.5        | 8.6          | -53.28                  | -13             | -40.28         | V        |
| 5.628                 | -68.63              | Pk  | 35.5           | -28.5        | 8.4          | -53.23                  | -13             | -40.23         | H        |
| High Channel, 1900MHz |                     |     |                |              |              |                         |                 |                |          |
| 3.798                 | -71.59              | Pk  | 33.4           | -30.2        | 9.9          | -58.49                  | -13             | -45.49         | H        |
| 7.589                 | -74.24              | Pk  | 36.3           | -26.3        | 7            | -57.24                  | -13             | -44.24         | H        |
| 3.799                 | -71.1               | Pk  | 33.4           | -30.2        | 9.4          | -58.5                   | -13             | -45.5          | V        |
| 7.601                 | -74.93              | Pk  | 36.4           | -26.3        | 7.5          | -57.33                  | -13             | -44.33         | V        |
| 5.694                 | -72.7               | Pk  | 35.5           | -28.1        | 7.8          | -57.5                   | -13             | -44.5          | H        |
| 5.696                 | -72.98              | Pk  | 35.5           | -28.1        | 7.6          | -57.98                  | -13             | -44.98         | V        |

Pk - Peak detector



**9.1.2. LTE BAND 5**

|                |                  |
|----------------|------------------|
| Company:       |                  |
| Project #:     | 12607346         |
| Date:          | 3/31/2019        |
| Test Engineer: | 31300            |
| Configuration: | EUT Only         |
| Mode:          | LTE 5 QPSK 10MHz |
| Chamber #:     | Chamber B        |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T345 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 829MHz   |                     |     |                |              |              |                         |                 |             |          |
| 1.216                 | -66.36              | Pk  | 28.4           | -33          | 14.2         | -56.76                  | -13             | -43.76      | H        |
| 3.857                 | -67.87              | Pk  | 33.6           | -29.7        | 12           | -51.97                  | -13             | -38.97      | H        |
| 10.793                | -72.88              | Pk  | 37.9           | -20.8        | 10.8         | -44.98                  | -13             | -31.98      | H        |
| 3.856                 | -67.9               | Pk  | 33.6           | -29.7        | 11.3         | -52.7                   | -13             | -39.7       | V        |
| 12.068                | -74.85              | Pk  | 38.8           | -21          | 10.4         | -46.65                  | -13             | -33.65      | V        |
| 6.421                 | -71.11              | Pk  | 35.6           | -26.2        | 10.3         | -51.41                  | -13             | -38.41      | V        |
| Mid Channel, 836.5MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.924                 | -67.18              | Pk  | 33.6           | -29.6        | 11.5         | -51.68                  | -13             | -38.68      | H        |
| 1.222                 | -67.87              | Pk  | 28.5           | -33.1        | 13.9         | -58.57                  | -13             | -45.57      | V        |
| 3.892                 | -65.8               | Pk  | 33.6           | -29.4        | 11.2         | -50.4                   | -13             | -37.4       | V        |
| 11.047                | -72.88              | Pk  | 37.9           | -21          | 11           | -44.98                  | -13             | -31.98      | V        |
| 7.036                 | -72.77              | Pk  | 35.6           | -25.1        | 10.3         | -51.97                  | -13             | -38.97      | H        |
| 7.936                 | -71.82              | Pk  | 35.9           | -24.3        | 11.2         | -49.02                  | -13             | -36.02      | H        |
| High Channel, 844MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.872                 | -68.37              | Pk  | 33.6           | -29.5        | 11.9         | -52.37                  | -13             | -39.37      | H        |
| 11.436                | -73.24              | Pk  | 38.1           | -20.8        | 10.9         | -45.04                  | -13             | -32.04      | H        |
| 3.805                 | -68.06              | Pk  | 33.5           | -29.4        | 11.4         | -52.56                  | -13             | -39.56      | V        |
| 2.582                 | -67.77              | Pk  | 32.3           | -31.3        | 12.4         | -54.37                  | -13             | -41.37      | H        |
| 6.525                 | -71.52              | Pk  | 35.6           | -25.7        | 11           | -50.62                  | -13             | -37.62      | V        |
| 8.907                 | -71.56              | Pk  | 36.3           | -23.6        | 11           | -47.86                  | -13             | -34.86      | V        |

Pk - Peak detector

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 3/31/2019         |
| Test Engineer: | 31300             |
| Configuration: | EUT Only          |
| Mode:          | LTE 5 16QAM 10MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T345 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 829MHz   |                     |     |                |              |              |                         |                 |             |          |
| 3.891                 | -67.76              | Pk  | 33.6           | -29.4        | 11.4         | -52.16                  | -13             | -39.16      | H        |
| 11.047                | -74.02              | Pk  | 37.9           | -21          | 10.6         | -46.52                  | -13             | -33.52      | H        |
| 3.94                  | -68.17              | Pk  | 33.6           | -29.4        | 11.4         | -52.57                  | -13             | -39.57      | V        |
| 1.731                 | -68.03              | Pk  | 29.5           | -32.5        | 12.4         | -58.63                  | -13             | -45.63      | H        |
| 2.631                 | -68.21              | Pk  | 32.4           | -31.1        | 12.9         | -54.01                  | -13             | -41.01      | V        |
| 6.492                 | -71.3               | Pk  | 35.5           | -26.1        | 11.3         | -50.6                   | -13             | -37.6       | V        |
| Mid Channel, 836.5MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.221                 | -68.06              | Pk  | 28.5           | -33.1        | 13.3         | -59.36                  | -13             | -46.36      | H        |
| 3.856                 | -68                 | Pk  | 33.6           | -29.7        | 11.9         | -52.2                   | -13             | -39.2       | H        |
| 3.874                 | -68.03              | Pk  | 33.6           | -29.5        | 12.2         | -51.73                  | -13             | -38.73      | V        |
| 10.793                | -74.3               | Pk  | 37.9           | -20.8        | 11.1         | -46.1                   | -13             | -33.1       | V        |
| 1.73                  | -67.6               | Pk  | 29.5           | -32.4        | 12.5         | -58                     | -13             | -45         | V        |
| 10.366                | -73.37              | Pk  | 37.6           | -21.2        | 10.3         | -46.67                  | -13             | -33.67      | H        |
| High Channel, 844MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.755                 | -67.35              | Pk  | 33.4           | -29.7        | 11.6         | -52.05                  | -13             | -39.05      | H        |
| 2.341                 | -67.94              | Pk  | 31.7           | -31.6        | 12.8         | -55.04                  | -13             | -42.04      | V        |
| 3.923                 | -67.02              | Pk  | 33.6           | -29.6        | 11.4         | -51.62                  | -13             | -38.62      | V        |
| 6.425                 | -70.62              | Pk  | 35.6           | -26.1        | 10.3         | -50.82                  | -13             | -37.82      | H        |
| 13.598                | -72.45              | Pk  | 38.9           | -20.4        | 10.6         | -43.35                  | -13             | -30.35      | H        |
| 13.599                | -71.84              | Pk  | 38.7           | -20.4        | 10.3         | -43.24                  | -13             | -30.24      | V        |

Pk - Peak detector

### 9.1.3. LTE BAND 7

|                |                  |
|----------------|------------------|
| Company:       |                  |
| Project #:     | 12607346         |
| Date:          | 3/30/2019        |
| Test Engineer: | 12492            |
| Configuration: | EUT Only         |
| Mode:          | LTE 7 QPSK 20MHz |
| Chamber #:     | Chamber B        |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 2510MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.025                 | -69.73              | Pk  | 34.6           | -28.7        | 8.4          | -55.43                  | -25             | -30.43      | H        |
| 7.533                 | -71.09              | Pk  | 36.2           | -26.4        | 7.4          | -53.89                  | -25             | -28.89      | H        |
| 5.018                 | -70.42              | Pk  | 34.6           | -28.6        | 8.7          | -55.72                  | -25             | -30.72      | V        |
| 7.528                 | -71.26              | Pk  | 36.2           | -26.3        | 7.3          | -54.06                  | -25             | -29.06      | V        |
| 10.039                | -72.56              | Pk  | 37.5           | -22.8        | 8            | -49.86                  | -25             | -24.86      | H        |
| 10.039                | -73.3               | Pk  | 37.5           | -22.8        | 7.9          | -50.7                   | -25             | -25.7       | V        |
| Mid Channel, 2535MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.061                 | -69.43              | Pk  | 34.5           | -28.8        | 8.8          | -54.93                  | -25             | -29.93      | H        |
| 7.608                 | -71.17              | Pk  | 36.4           | -26.3        | 7.6          | -53.47                  | -25             | -28.47      | H        |
| 5.062                 | -74.21              | Pk  | 34.5           | -28.8        | 8.9          | -59.61                  | -25             | -34.61      | V        |
| 7.602                 | -70.71              | Pk  | 36.4           | -26.3        | 7.5          | -53.11                  | -25             | -28.11      | V        |
| 10.143                | -72.94              | Pk  | 37.7           | -22.6        | 6.4          | -51.44                  | -25             | -26.44      | V        |
| 10.145                | -72.45              | Pk  | 37.7           | -22.6        | 6.4          | -50.95                  | -25             | -25.95      | H        |
| High Channel, 2560MHz |                     |     |                |              |              |                         |                 |             |          |
| 5.102                 | -59.83              | Pk  | 34.5           | -28.8        | 9.5          | -44.63                  | -25             | -19.63      | H        |
| 7.684                 | -70.98              | Pk  | 36.4           | -26.1        | 7.8          | -52.88                  | -25             | -27.88      | H        |
| 5.102                 | -55.22              | Pk  | 34.5           | -28.8        | 9.4          | -40.12                  | -25             | -15.12      | V        |
| 7.681                 | -70.86              | Pk  | 36.4           | -26.1        | 7.6          | -52.96                  | -25             | -27.96      | V        |
| 10.242                | -72.02              | Pk  | 37.8           | -22.5        | 7.5          | -49.22                  | -25             | -24.22      | V        |
| 10.244                | -72.22              | Pk  | 37.8           | -22.5        | 7.5          | -49.42                  | -25             | -24.42      | H        |

Pk - Peak detector

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 3/30/2019         |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 7 16QAM 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AFT344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|---------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 2510MHz  |                     |     |               |              |              |                         |                 |             |          |
| 5.014                 | -70.86              | Pk  | 34.6          | -28.6        | 8.6          | -56.26                  | -25             | -31.26      | H        |
| 7.527                 | -71.24              | Pk  | 36.2          | -26.3        | 7.4          | -53.94                  | -25             | -28.94      | H        |
| 5.021                 | -69.78              | Pk  | 34.6          | -28.6        | 8.8          | -54.98                  | -25             | -29.98      | V        |
| 7.527                 | -71.26              | Pk  | 36.2          | -26.3        | 7.3          | -54.06                  | -25             | -29.06      | V        |
| 10.038                | -73.08              | Pk  | 37.5          | -22.8        | 8            | -50.38                  | -25             | -25.38      | H        |
| 10.039                | -73.1               | Pk  | 37.5          | -22.8        | 7.9          | -50.5                   | -25             | -25.5       | V        |
| Mid Channel, 2535MHz  |                     |     |               |              |              |                         |                 |             |          |
| 5.062                 | -69.35              | Pk  | 34.5          | -28.8        | 8.8          | -54.85                  | -25             | -29.85      | H        |
| 7.608                 | -70.95              | Pk  | 36.4          | -26.3        | 7.6          | -53.25                  | -25             | -28.25      | H        |
| 5.065                 | -68.99              | Pk  | 34.5          | -28.8        | 8.7          | -54.59                  | -25             | -29.59      | V        |
| 7.608                 | -70.4               | Pk  | 36.4          | -26.3        | 7.5          | -52.8                   | -25             | -27.8       | V        |
| 10.141                | -72.77              | Pk  | 37.7          | -22.6        | 6.5          | -51.17                  | -25             | -26.17      | H        |
| 10.142                | -72.85              | Pk  | 37.7          | -22.6        | 6.4          | -51.35                  | -25             | -26.35      | V        |
| High Channel, 2560MHz |                     |     |               |              |              |                         |                 |             |          |
| 5.102                 | -57.18              | Pk  | 34.5          | -28.8        | 9.6          | -41.88                  | -25             | -16.88      | H        |
| 7.68                  | -70.49              | Pk  | 36.4          | -26          | 7.7          | -52.39                  | -25             | -27.39      | H        |
| 5.102                 | -56.05              | Pk  | 34.5          | -28.8        | 9.4          | -40.95                  | -25             | -15.95      | V        |
| 7.682                 | -70.67              | Pk  | 36.4          | -26.1        | 7.6          | -52.77                  | -25             | -27.77      | V        |
| 10.236                | -72.05              | Pk  | 37.8          | -22.6        | 7.7          | -49.15                  | -25             | -24.15      | H        |
| 10.241                | -72.87              | Pk  | 37.8          | -22.6        | 7.5          | -50.17                  | -25             | -25.17      | V        |

Pk - Peak detector

**9.1.4. LTE BAND 12**

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 4/1/2019          |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 12 QPSK 10MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 704MHz   |                     |     |                |              |              |                         |                 |             |          |
| 1.411                 | -65.13              | Pk  | 28.4           | -33.1        | 10.3         | -59.53                  | -13             | -46.53      | H        |
| 2.821                 | -68.12              | Pk  | 32.5           | -30.9        | 9.7          | -56.82                  | -13             | -43.82      | H        |
| 1.409                 | -65.28              | Pk  | 28.4           | -33.2        | 9.7          | -60.38                  | -13             | -47.38      | V        |
| 2.82                  | -67.66              | Pk  | 32.5           | -30.9        | 9.3          | -56.76                  | -13             | -43.76      | V        |
| 2.099                 | -63.49              | Pk  | 31.1           | -32          | 10.5         | -53.89                  | -13             | -40.89      | H        |
| 2.099                 | -64.78              | Pk  | 31.1           | -32          | 9.7          | -55.98                  | -13             | -42.98      | V        |
| Mid Channel, 707.5MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.418                 | -65.47              | Pk  | 28.4           | -33.1        | 9.3          | -60.87                  | -13             | -47.87      | H        |
| 2.837                 | -67.12              | Pk  | 32.5           | -30.9        | 9.5          | -56.02                  | -13             | -43.02      | H        |
| 1.414                 | -65.62              | Pk  | 28.4           | -33.1        | 9.1          | -61.22                  | -13             | -48.22      | V        |
| 2.836                 | -67.04              | Pk  | 32.5           | -30.9        | 9.2          | -56.24                  | -13             | -43.24      | V        |
| 2.117                 | -66.94              | Pk  | 31.2           | -31.8        | 10.3         | -57.24                  | -13             | -44.24      | H        |
| 2.12                  | -66.38              | Pk  | 31.2           | -31.8        | 9.9          | -57.08                  | -13             | -44.08      | V        |
| High Channel, 711MHz  |                     |     |                |              |              |                         |                 |             |          |
| 1.409                 | -66.17              | Pk  | 28.4           | -32.6        | 12.6         | -57.77                  | -13             | -44.77      | H        |
| 2.869                 | -67.05              | Pk  | 32.3           | -30.6        | 11.7         | -53.65                  | -13             | -40.65      | H        |
| 1.411                 | -65.65              | Pk  | 28.4           | -32.6        | 11.8         | -58.05                  | -13             | -45.05      | V        |
| 2.769                 | -66.68              | Pk  | 32.4           | -31.1        | 11.8         | -53.58                  | -13             | -40.58      | V        |
| 2.12                  | -65.56              | Pk  | 31.3           | -31.8        | 13.1         | -52.96                  | -13             | -39.96      | H        |
| 2.12                  | -65.7               | Pk  | 31.3           | -31.8        | 12.5         | -53.7                   | -13             | -40.70      | V        |

Pk - Peak detector

|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 4/1/2019           |
| Test Engineer: | 12492              |
| Configuration: | EUT Only           |
| Mode:          | LTE 12 16QAM 10MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 704MHz   |                     |     |                |              |              |                         |                 |             |          |
| 1.412                 | -64.59              | Pk  | 28.4           | -33.1        | 10.1         | -59.19                  | -13             | -46.19      | H        |
| 2.813                 | -67.8               | Pk  | 32.5           | -31          | 9.6          | -56.7                   | -13             | -43.7       | H        |
| 1.409                 | -65.26              | Pk  | 28.4           | -33.2        | 9.7          | -60.36                  | -13             | -47.36      | V        |
| 2.816                 | -67.57              | Pk  | 32.5           | -30.9        | 9            | -56.97                  | -13             | -43.97      | V        |
| 2.109                 | -66.95              | Pk  | 31.1           | -31.9        | 9.5          | -58.25                  | -13             | -45.25      | V        |
| 2.111                 | -66.9               | Pk  | 31.1           | -31.9        | 10.2         | -57.5                   | -13             | -44.5       | H        |
| Mid Channel, 707.5MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.412                 | -65.61              | Pk  | 28.4           | -33.1        | 10.2         | -60.11                  | -13             | -47.11      | H        |
| 2.833                 | -66.66              | Pk  | 32.5           | -31          | 9.5          | -55.66                  | -13             | -42.66      | H        |
| 1.412                 | -64.57              | Pk  | 28.4           | -33.1        | 9.3          | -59.97                  | -13             | -46.97      | V        |
| 2.829                 | -67.14              | Pk  | 32.5           | -30.9        | 9.6          | -55.94                  | -13             | -42.94      | V        |
| 2.133                 | -66.42              | Pk  | 31.2           | -31.7        | 11.2         | -55.72                  | -13             | -42.72      | H        |
| 2.134                 | -66.78              | Pk  | 31.2           | -31.6        | 10.5         | -56.68                  | -13             | -43.68      | V        |
| High Channel, 711MHz  |                     |     |                |              |              |                         |                 |             |          |
| 1.407                 | -66.56              | Pk  | 28.4           | -32.5        | 12.9         | -57.76                  | -13             | -44.76      | H        |
| 2.818                 | -66.64              | Pk  | 32.4           | -30.8        | 11.6         | -53.44                  | -13             | -40.44      | H        |
| 1.413                 | -67.68              | Pk  | 28.3           | -32.6        | 11.4         | -60.58                  | -13             | -47.58      | V        |
| 2.819                 | -66.31              | Pk  | 32.4           | -30.8        | 12.2         | -52.51                  | -13             | -39.51      | V        |
| 2.07                  | -67.84              | Pk  | 31.2           | -31.7        | 13           | -55.34                  | -13             | -42.34      | H        |
| 2.123                 | -66.43              | Pk  | 31.3           | -31.7        | 12.9         | -53.93                  | -13             | -40.93      | V        |

Pk - Peak detector

**9.1.5. LTE BAND 13**

|                |                   |
|----------------|-------------------|
| Project #:     | 12607346          |
| Date:          | 4/1/2019          |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 13 QPSK 10MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)     | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 782MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.569               | -66                 | Pk  | 27.7           | -32.9        | 9.5          | -61.7                   | -40             | -21.7       | H        |
| 2.349               | -66.23              | Pk  | 32.2           | -31.8        | 10.2         | -55.63                  | -13             | -42.63      | H        |
| 1.571               | -65.69              | Pk  | 27.7           | -32.8        | 10           | -60.79                  | -40             | -20.79      | V        |
| 2.35                | -67.17              | Pk  | 32.2           | -31.8        | 9.7          | -57.07                  | -13             | -44.07      | V        |
| 3.133               | -67.75              | Pk  | 33.2           | -30.8        | 9.7          | -55.65                  | -13             | -42.65      | H        |
| 3.134               | -67.66              | Pk  | 33.2           | -30.8        | 10.3         | -54.96                  | -13             | -41.96      | V        |

|                |                    |
|----------------|--------------------|
| Project #:     | 12607346           |
| Date:          | 4/1/2019           |
| Test Engineer: | 12492              |
| Configuration: | EUT Only           |
| Mode:          | LTE 13 16QAM 10MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)     | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 782MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.563               | -65.94              | Pk  | 27.7           | -32.9        | 9.1          | -62.04                  | -40             | -22.04      | H        |
| 2.345               | -67.26              | Pk  | 32.2           | -31.7        | 10           | -56.76                  | -13             | -43.76      | H        |
| 2.353               | -66.87              | Pk  | 32.2           | -31.7        | 9.9          | -56.47                  | -13             | -43.47      | V        |
| 1.566               | -65.19              | Pk  | 27.7           | -32.9        | 10.2         | -60.19                  | -40             | -20.19      | V        |
| 3.132               | -67.32              | Pk  | 33.2           | -30.8        | 10.1         | -54.82                  | -13             | -41.82      | V        |
| 3.136               | -67.59              | Pk  | 33.2           | -30.7        | 9.9          | -55.19                  | -13             | -42.19      | H        |

Pk - Peak detector

**9.1.6. LTE BAND 14**

|                |                   |
|----------------|-------------------|
| Project #:     | 12607346          |
| Date:          | 4/1/2019          |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 14 QPSK 10MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)     | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 793MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.587               | -65.78              | Pk  | 27.7           | -32.8        | 9.3          | -61.58                  | -40             | -21.58      | H        |
| 2.377               | -66.7               | Pk  | 32.3           | -31.9        | 9.8          | -56.5                   | -13             | -43.5       | H        |
| 1.591               | -64.7               | Pk  | 27.7           | -32.8        | 10.4         | -59.4                   | -40             | -19.4       | V        |
| 2.377               | -66.76              | Pk  | 32.3           | -31.9        | 9.6          | -56.76                  | -13             | -43.76      | V        |
| 3.174               | -66.97              | Pk  | 33.1           | -30.7        | 9.7          | -54.87                  | -13             | -41.87      | V        |
| 3.177               | -67.05              | Pk  | 33.1           | -30.7        | 9.8          | -54.85                  | -13             | -41.85      | H        |

|                |                    |
|----------------|--------------------|
| Project #:     | 12607346           |
| Date:          | 4/1/2019           |
| Test Engineer: | 12492              |
| Configuration: | EUT Only           |
| Mode:          | LTE 14 16QAM 10MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)     | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 793MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.583               | -65.93              | Pk  | 27.7           | -32.8        | 9.2          | -61.83                  | -40             | -21.83      | H        |
| 2.38                | -66.82              | Pk  | 32.3           | -31.9        | 9.7          | -56.72                  | -13             | -43.72      | H        |
| 1.58                | -65.97              | Pk  | 27.7           | -32.9        | 10           | -61.17                  | -40             | -21.17      | V        |
| 2.374               | -66.87              | Pk  | 32.3           | -31.8        | 9.8          | -56.57                  | -13             | -43.57      | V        |
| 3.17                | -66.58              | Pk  | 33.1           | -30.7        | 9.9          | -54.28                  | -13             | -41.28      | V        |
| 3.171               | -66.58              | Pk  | 33.1           | -30.7        | 9.6          | -54.58                  | -13             | -41.58      | H        |

Pk - Peak detector



**9.1.7. LTE BAND 17**

|                |                   |
|----------------|-------------------|
| Project #:     | 12607346          |
| Date:          | 04/01/2019        |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 17 QPSK 10MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)     | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 710MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.422               | -65.48              | Pk  | 28.3           | -33          | 8.8          | -61.38                  | -13             | -48.38      | H        |
| 2.835               | -66.79              | Pk  | 32.5           | -31          | 9.5          | -55.79                  | -13             | -42.79      | H        |
| 1.415               | -65.46              | Pk  | 28.4           | -33.2        | 9            | -61.26                  | -13             | -48.26      | V        |
| 2.838               | -67.08              | Pk  | 32.5           | -30.8        | 9.2          | -56.18                  | -13             | -43.18      | V        |
| 2.117               | -65.27              | Pk  | 31.2           | -31.8        | 10.3         | -55.57                  | -13             | -42.57      | H        |
| 2.117               | -66.03              | Pk  | 31.2           | -31.8        | 9.4          | -57.23                  | -13             | -44.23      | V        |

|                |                    |
|----------------|--------------------|
| Project #:     | 12607346           |
| Date:          | 04/01/2019         |
| Test Engineer: | 12492              |
| Configuration: | EUT Only           |
| Mode:          | LTE 17 16QAM 10MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)     | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 710MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.411               | -65.21              | Pk  | 28.4           | -33.1        | 10.4         | -59.51                  | -13             | -46.51      | H        |
| 2.837               | -67.4               | Pk  | 32.5           | -30.8        | 9.4          | -56.3                   | -13             | -43.3       | H        |
| 1.41                | -65.41              | Pk  | 28.4           | -33.2        | 9.6          | -60.61                  | -13             | -47.61      | V        |
| 2.841               | -67.33              | Pk  | 32.5           | -30.7        | 9.2          | -56.33                  | -13             | -43.33      | V        |
| 2.131               | -66.22              | Pk  | 31.2           | -31.7        | 10.9         | -55.82                  | -13             | -42.82      | H        |
| 2.137               | -66.9               | Pk  | 31.2           | -31.6        | 10.3         | -57                     | -13             | -44         | V        |

Pk - Peak detector

### 9.1.8. LTE BAND 25

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 04/01/2019        |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 25 QPSK 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)        | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | PK Margin (dB) | Polarity |
|------------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|----------------|----------|
| Low Channel, 1860MHz   |                     |     |                |              |              |                         |                 |                |          |
| 3.713                  | -68.92              | Pk  | 33.3           | -30          | 9.8          | -55.82                  | -13             | -42.82         | H        |
| 7.438                  | -69.75              | Pk  | 36.1           | -26.6        | 7            | -53.25                  | -13             | -40.25         | H        |
| 3.72                   | -68.74              | Pk  | 33.3           | -30.1        | 9.8          | -55.74                  | -13             | -42.74         | V        |
| 7.439                  | -70.35              | Pk  | 36.1           | -26.7        | 6.9          | -54.05                  | -13             | -41.05         | V        |
| 5.574                  | -69.47              | Pk  | 35.5           | -28.6        | 8.3          | -54.27                  | -13             | -41.27         | V        |
| 5.578                  | -68.92              | Pk  | 35.5           | -28.5        | 8.2          | -53.72                  | -13             | -40.72         | H        |
| Mid Channel, 1882.5MHz |                     |     |                |              |              |                         |                 |                |          |
| 3.762                  | -67.43              | Pk  | 33.3           | -30.1        | 9.3          | -54.93                  | -13             | -41.93         | H        |
| 7.53                   | -71.34              | Pk  | 36.2           | -26.3        | 7.5          | -53.94                  | -13             | -40.94         | H        |
| 3.762                  | -68.11              | Pk  | 33.3           | -30.1        | 9.7          | -55.21                  | -13             | -42.21         | V        |
| 7.531                  | -70.94              | Pk  | 36.2           | -26.3        | 7.3          | -53.74                  | -13             | -40.74         | V        |
| 5.642                  | -69.01              | Pk  | 35.5           | -28.5        | 8.1          | -53.91                  | -13             | -40.91         | H        |
| 5.648                  | -69.4               | Pk  | 35.5           | -28.5        | 7.9          | -54.5                   | -13             | -41.5          | V        |
| High Channel, 1905MHz  |                     |     |                |              |              |                         |                 |                |          |
| 3.819                  | -67.42              | Pk  | 33.4           | -30.1        | 9.6          | -54.52                  | -13             | -41.52         | H        |
| 7.626                  | -70.21              | Pk  | 36.4           | -26.3        | 7.4          | -52.71                  | -13             | -39.71         | H        |
| 3.815                  | -67.77              | Pk  | 33.4           | -30.1        | 9.7          | -54.77                  | -13             | -41.77         | V        |
| 7.623                  | -70.38              | Pk  | 36.4           | -26.4        | 7.4          | -52.98                  | -13             | -39.98         | V        |
| 5.71                   | -70.19              | Pk  | 35.5           | -28.2        | 7.7          | -55.19                  | -13             | -42.19         | V        |
| 5.712                  | -69.77              | Pk  | 35.5           | -28.2        | 7.9          | -54.57                  | -13             | -41.57         | H        |

Pk - Peak detector

|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 04/01/2019         |
| Test Engineer: | 12492              |
| Configuration: | EUT Only           |
| Mode:          | LTE 25 16QAM 20MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)        | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | PK Margin (dB) | Polarity |
|------------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|----------------|----------|
| Low Channel, 1860MHz   |                     |     |                |              |              |                         |                 |                |          |
| 3.721                  | -68.3               | Pk  | 33.3           | -30.1        | 9.9          | -55.2                   | -13             | -42.2          | H        |
| 7.442                  | -71.15              | Pk  | 36.1           | -26.6        | 7            | -54.65                  | -13             | -41.65         | H        |
| 3.722                  | -68.67              | Pk  | 33.3           | -30.2        | 9.9          | -55.67                  | -13             | -42.67         | V        |
| 7.443                  | -70.02              | Pk  | 36.1           | -26.6        | 6.9          | -53.62                  | -13             | -40.62         | V        |
| 5.578                  | -68.79              | Pk  | 35.5           | -28.5        | 8.2          | -53.59                  | -13             | -40.59         | H        |
| 5.584                  | -68.78              | Pk  | 35.5           | -28.6        | 8.1          | -53.78                  | -13             | -40.78         | V        |
| Mid Channel, 1882.5MHz |                     |     |                |              |              |                         |                 |                |          |
| 3.768                  | -67.59              | Pk  | 33.4           | -30          | 9.2          | -54.99                  | -13             | -41.99         | H        |
| 7.537                  | -70.37              | Pk  | 36.2           | -26.5        | 7.3          | -53.37                  | -13             | -40.37         | H        |
| 3.762                  | -67.9               | Pk  | 33.3           | -30.1        | 9.7          | -55                     | -13             | -42            | V        |
| 7.537                  | -70.85              | Pk  | 36.2           | -26.5        | 7.2          | -53.95                  | -13             | -40.95         | V        |
| 5.645                  | -68.4               | Pk  | 35.5           | -28.5        | 8            | -53.4                   | -13             | -40.4          | H        |
| 5.645                  | -68.47              | Pk  | 35.5           | -28.5        | 7.8          | -53.67                  | -13             | -40.67         | V        |
| High Channel, 1905MHz  |                     |     |                |              |              |                         |                 |                |          |
| 3.809                  | -68.31              | Pk  | 33.4           | -30.1        | 9.3          | -55.71                  | -13             | -42.71         | H        |
| 7.623                  | -70.31              | Pk  | 36.4           | -26.4        | 7.4          | -52.91                  | -13             | -39.91         | H        |
| 3.812                  | -68.19              | Pk  | 33.4           | -30.1        | 9.5          | -55.39                  | -13             | -42.39         | V        |
| 7.619                  | -70.22              | Pk  | 36.4           | -26.4        | 7.5          | -52.72                  | -13             | -39.72         | V        |
| 5.715                  | -69.54              | Pk  | 35.5           | -28.1        | 7.9          | -54.24                  | -13             | -41.24         | V        |
| 5.717                  | -69.16              | Pk  | 35.5           | -28.1        | 7.7          | -54.06                  | -13             | -41.06         | H        |

Pk - Peak detector

**9.1.9. LTE BAND 26**

|                |                        |
|----------------|------------------------|
| Project #:     | 12607346               |
| Date:          | 04/02/2019             |
| Test Engineer: | 12492                  |
| Configuration: | EUT Only               |
| Mode:          | LTE 26(90S) QPSK 10MHz |
| Chamber #:     | Chamber B              |

| Frequency (GHz)     | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 819MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.636               | -65.26              | Pk  | 28.3           | -32.9        | 10.5         | -59.36                  | -13             | -46.36      | H        |
| 1.643               | -65.79              | Pk  | 28.5           | -32.9        | 10.7         | -59.49                  | -13             | -46.49      | V        |
| 2.46                | -66.8               | Pk  | 32.6           | -31.6        | 9            | -56.8                   | -13             | -43.8       | V        |
| 2.462               | -66.8               | Pk  | 32.6           | -31.5        | 8.9          | -56.8                   | -13             | -43.8       | H        |
| 3.276               | -67.41              | Pk  | 33             | -30.3        | 9.1          | -55.61                  | -13             | -42.61      | V        |
| 3.278               | -66.89              | Pk  | 32.9           | -30.3        | 9.7          | -54.59                  | -13             | -41.59      | H        |

|                |                         |
|----------------|-------------------------|
| Project #:     | 12607346                |
| Date:          | 04/02/2019              |
| Test Engineer: | 12492                   |
| Configuration: | EUT Only                |
| Mode:          | LTE 26(90S) 16QAM 10MHz |
| Chamber #:     | Chamber B               |

| Frequency (GHz)     | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 819MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.641               | -65.08              | Pk  | 28.4           | -32.9        | 10.7         | -58.88                  | -13             | -45.88      | V        |
| 1.643               | -65.36              | Pk  | 28.5           | -32.9        | 10.9         | -58.86                  | -13             | -45.86      | H        |
| 2.455               | -66.73              | Pk  | 32.6           | -31.6        | 9            | -56.73                  | -13             | -43.73      | V        |
| 2.456               | -66.59              | Pk  | 32.6           | -31.6        | 8.6          | -56.99                  | -13             | -43.99      | H        |
| 3.277               | -67.79              | Pk  | 33             | -30.3        | 9.8          | -55.29                  | -13             | -42.29      | H        |
| 3.279               | -67.61              | Pk  | 32.9           | -30.4        | 9.1          | -56.01                  | -13             | -43.01      | V        |

Pk - Peak detector

**9.1.10. LTE BAND 30**

|                |                   |
|----------------|-------------------|
| Project #:     | 12607346          |
| Date:          | 04/02/2019        |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 30 QPSK 10MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)      | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 2310MHz |                     |     |                |              |              |                         |                 |             |          |
| 4.612                | -68.57              | Pk  | 34.1           | -29.5        | 9.5          | -54.47                  | -40             | -14.47      | H        |
| 4.618                | -69.23              | Pk  | 34.1           | -29.6        | 9.6          | -55.13                  | -40             | -15.13      | V        |
| 6.933                | -70.07              | Pk  | 35.8           | -27.4        | 6.6          | -55.07                  | -40             | -15.07      | H        |
| 6.936                | -69.46              | Pk  | 35.8           | -27.4        | 6.8          | -54.26                  | -40             | -14.26      | V        |
| 9.239                | -72.04              | Pk  | 36.8           | -23.7        | 8            | -50.94                  | -40             | -10.94      | V        |
| 9.241                | -71.11              | Pk  | 36.8           | -23.8        | 7.9          | -50.21                  | -40             | -10.21      | H        |

|                |                    |
|----------------|--------------------|
| Project #:     | 12607346           |
| Date:          | 04/10/2019         |
| Test Engineer: | 50822              |
| Configuration: | EUT Only           |
| Mode:          | LTE 30 16QAM 10MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)      | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 2310MHz |                     |     |                |              |              |                         |                 |             |          |
| 4.611                | -65.54              | Pk  | 34.1           | -29.5        | 9.4          | -51.54                  | -40             | -11.54      | H        |
| 4.611                | -68.14              | Pk  | 34.1           | -29.5        | 9.3          | -54.24                  | -40             | -14.24      | V        |
| 6.918                | -69.69              | Pk  | 35.8           | -27.3        | 6.5          | -54.69                  | -40             | -14.69      | H        |
| 6.934                | -68.67              | Pk  | 35.8           | -27.4        | 6.7          | -53.57                  | -40             | -13.57      | V        |
| 9.23                 | -71.34              | Pk  | 36.8           | -23.5        | 7.9          | -50.14                  | -40             | -10.14      | H        |
| 9.235                | -71.81              | Pk  | 36.8           | -23.6        | 8            | -50.61                  | -40             | -10.61      | V        |

Pk - Peak detector

**9.1.11. LTE BAND 41**

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 04/01/2019        |
| Test Engineer: | 50822             |
| Configuration: | EUT Only          |
| Mode:          | LTE 41 QPSK 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 2506MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.003                 | -65.77              | Pk  | 34.1           | -28.6        | 10.8         | -49.47                  | -25             | -24.47      | H        |
| 7.508                 | -71.14              | Pk  | 35.7           | -24.5        | 10.7         | -49.24                  | -25             | -24.24      | H        |
| 4.999                 | -66.62              | Pk  | 34.1           | -28.5        | 10.7         | -50.32                  | -25             | -25.32      | V        |
| 7.511                 | -70.81              | Pk  | 35.7           | -24.5        | 10.9         | -48.71                  | -25             | -23.71      | V        |
| 10.012                | -71.87              | Pk  | 37.2           | -22.3        | 10.6         | -46.37                  | -25             | -21.37      | V        |
| 10.018                | -72.11              | Pk  | 37.2           | -22.2        | 10.5         | -46.61                  | -25             | -21.61      | H        |
| Mid Channel, 2593MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.177                 | -50.67              | Pk  | 34.2           | -28.6        | 11.4         | -33.67                  | -25             | -8.67       | H        |
| 5.178                 | -49.92              | Pk  | 34.2           | -28.6        | 11.3         | -33.02                  | -25             | -8.02       | V        |
| 7.778                 | -70.61              | Pk  | 35.8           | -24.4        | 11           | -48.21                  | -25             | -23.21      | H        |
| 7.973                 | -70.3               | Pk  | 35.8           | -24.3        | 11.4         | -47.4                   | -25             | -22.4       | V        |
| 10.344                | -71.63              | Pk  | 37.5           | -21.3        | 10           | -45.43                  | -25             | -20.43      | V        |
| 10.362                | -71.41              | Pk  | 37.6           | -21.2        | 10.3         | -44.71                  | -25             | -19.71      | H        |
| High Channel, 2680MHz |                     |     |                |              |              |                         |                 |             |          |
| 5.355                 | -68.57              | Pk  | 34.6           | -27.9        | 11.3         | -50.57                  | -25             | -25.57      | H        |
| 8.039                 | -69.92              | Pk  | 35.9           | -24.4        | 11.3         | -47.12                  | -25             | -22.12      | H        |
| 10.682                | -72.04              | Pk  | 37.8           | -21.2        | 10.7         | -44.74                  | -25             | -19.74      | H        |
| 5.351                 | -65.92              | Pk  | 34.6           | -27.9        | 11           | -48.22                  | -25             | -23.22      | V        |
| 8.027                 | -68.72              | Pk  | 35.9           | -24.3        | 11.3         | -45.82                  | -25             | -20.82      | V        |
| 10.726                | -72.35              | Pk  | 37.9           | -21.2        | 10.9         | -44.75                  | -25             | -19.75      | V        |

Pk - Peak detector

|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 04/01/2019         |
| Test Engineer: | 50822              |
| Configuration: | EUT Only           |
| Mode:          | LTE 41 16QAM 20MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)          | Meter Reading (dBm) | Det | AFT344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|--------------------------|---------------------|-----|---------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| 2506MHz                  |                     |     |               |              |              |                         |                 |             |          |
| 5.006                    | -67.61              | Pk  | 34.2          | -28.7        | 10.8         | -51.31                  | -25             | -26.31      | H        |
| 7.514                    | -70.52              | Pk  | 35.6          | -24.5        | 10.5         | -48.92                  | -25             | -23.92      | H        |
| 5.006                    | -66.96              | Pk  | 34.2          | -28.7        | 10.6         | -50.86                  | -25             | -25.86      | V        |
| 7.502                    | -70.89              | Pk  | 35.7          | -24.5        | 11.1         | -48.59                  | -25             | -23.59      | V        |
| 9.996                    | -72.42              | Pk  | 37.2          | -22.3        | 10.6         | -46.92                  | -25             | -21.92      | H        |
| 10.008                   | -72.23              | Pk  | 37.3          | -22.2        | 10.6         | -46.53                  | -25             | -21.53      | V        |
| Mid Channel,<br>2593MHz  |                     |     |               |              |              |                         |                 |             |          |
| 5.177                    | -52.25              | Pk  | 34.2          | -28.6        | 11.4         | -35.25                  | -25             | -10.25      | H        |
| 5.177                    | -58.01              | Pk  | 34.2          | -28.6        | 11.3         | -41.11                  | -25             | -16.11      | V        |
| 7.778                    | -70.66              | Pk  | 35.8          | -24.4        | 11           | -48.26                  | -25             | -23.26      | H        |
| 7.871                    | -70.28              | Pk  | 35.9          | -24.6        | 11.3         | -47.68                  | -25             | -22.68      | V        |
| 10.349                   | -71.86              | Pk  | 37.5          | -21.2        | 10.1         | -45.46                  | -25             | -20.46      | V        |
| 10.365                   | -72.23              | Pk  | 37.6          | -21.2        | 10.3         | -45.53                  | -25             | -20.53      | H        |
| High Channel,<br>2680MHz |                     |     |               |              |              |                         |                 |             |          |
| 5.351                    | -64.29              | Pk  | 34.6          | -27.9        | 11.1         | -46.49                  | -25             | -21.49      | H        |
| 8.027                    | -69.9               | Pk  | 35.9          | -24.3        | 11           | -47.3                   | -25             | -22.3       | H        |
| 8.038                    | -70.04              | Pk  | 35.9          | -24.4        | 11.5         | -47.04                  | -25             | -22.04      | V        |
| 10.726                   | -71.64              | Pk  | 37.9          | -21.2        | 10.9         | -44.04                  | -25             | -19.04      | V        |
| 10.724                   | -71.97              | Pk  | 37.9          | -21.2        | 10.9         | -44.37                  | -25             | -19.37      | V        |
| 5.347                    | -68.46              | Pk  | 34.5          | -28.1        | 11.2         | -50.86                  | -25             | -25.86      | V        |

Pk - Peak detector

**9.1.12. LTE BAND 48**

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 6/27/2019         |
| Test Engineer: | 23567             |
| Configuration: | EUT Only          |
| Mode:          | LTE 48 QPSK 20MHz |
| Chamber #:     | Chamber A         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T346 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 3560MHz  |                     |     |                |              |              |                         |                 |             |          |
| 7.099                 | -74.37              | Pk  | 36             | -24.2        | 10.3         | -52.27                  | -40             | -12.27      | V        |
| 7.106                 | -73.08              | Pk  | 36             | -24.3        | 10           | -51.38                  | -40             | -11.38      | H        |
| 10.608                | -74.77              | Pk  | 37.9           | -20.2        | 10.8         | -46.27                  | -40             | -6.27       | V        |
| 10.644                | -75.22              | Pk  | 37.9           | -19.8        | 10           | -47.12                  | -40             | -7.12       | H        |
| 14.218                | -75.33              | Pk  | 38.9           | -19.2        | 11.4         | -44.23                  | -40             | -4.23       | H        |
| 14.264                | -75.32              | Pk  | 39             | -19.3        | 10.7         | -44.92                  | -40             | -4.92       | V        |
| Mid Channel, 3625MHz  |                     |     |                |              |              |                         |                 |             |          |
| 7.23                  | -74.97              | Pk  | 35.9           | -24          | 11           | -52.07                  | -40             | -12.07      | V        |
| 7.248                 | -74.06              | Pk  | 35.9           | -24.1        | 10.6         | -51.66                  | -40             | -11.66      | H        |
| 10.83                 | -75.8               | Pk  | 38             | -19.3        | 10.3         | -46.8                   | -40             | -6.8        | V        |
| 10.85                 | -76.25              | Pk  | 38             | -19.7        | 10.6         | -47.35                  | -40             | -7.35       | H        |
| 14.513                | -75.65              | Pk  | 39.4           | -19.5        | 10.8         | -44.95                  | -40             | -4.95       | H        |
| 14.537                | -74.09              | Pk  | 39.5           | -19.3        | 10.6         | -43.29                  | -40             | -5.29       | V        |
| High Channel, 3690MHz |                     |     |                |              |              |                         |                 |             |          |
| 7.347                 | -75.02              | Pk  | 35.8           | -23.7        | 11.1         | -51.82                  | -40             | -11.82      | V        |
| 7.376                 | -75.53              | Pk  | 35.7           | -23.5        | 11           | -52.33                  | -40             | -12.33      | H        |
| 11.052                | -73.98              | Pk  | 37.9           | -19.8        | 10.6         | -45.28                  | -40             | -5.28       | H        |
| 11.06                 | -75.66              | Pk  | 37.9           | -19.8        | 10.8         | -46.76                  | -40             | -6.76       | V        |
| 14.641                | -75.37              | Pk  | 39.7           | -19.3        | 10.3         | -44.67                  | -40             | -4.67       | V        |
| 14.742                | -75.16              | Pk  | 39.7           | -19.1        | 10.1         | -44.46                  | -40             | -4.46       | H        |

Pk - Peak detector



|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 6/27/2019          |
| Test Engineer: | 23567              |
| Configuration: | EUT Only           |
| Mode:          | LTE 48 16QAM 20MHz |
| Chamber #:     | Chamber A          |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AFT346 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|---------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 3560MHz  |                     |     |               |              |              |                         |                 |             |          |
| 7.086                 | -74.17              | Pk  | 36.1          | -24.2        | 10.7         | -51.57                  | -40             | -11.57      | V        |
| 7.117                 | -73.88              | Pk  | 36.1          | -24.3        | 10.4         | -51.68                  | -40             | -11.68      | H        |
| 10.625                | -76.89              | Pk  | 37.9          | -19.7        | 10.4         | -48.29                  | -40             | -8.29       | V        |
| 10.666                | -76.68              | Pk  | 37.9          | -20.2        | 10.5         | -48.48                  | -40             | -8.48       | H        |
| 14.219                | -75.72              | Pk  | 38.8          | -19.2        | 11.4         | -44.72                  | -40             | -4.72       | H        |
| 14.242                | -75.46              | Pk  | 38.9          | -19.4        | 10.8         | -45.16                  | -40             | -5.16       | V        |
| Mid Channel, 3625MHz  |                     |     |               |              |              |                         |                 |             |          |
| 7.25                  | -71.77              | Pk  | 35.9          | -24.1        | 10.6         | -49.37                  | -40             | -9.37       | H        |
| 7.255                 | -73.06              | Pk  | 35.8          | -24.1        | 11.3         | -50.06                  | -40             | -10.06      | V        |
| 10.869                | -75.51              | Pk  | 37.9          | -19.5        | 10.8         | -46.31                  | -40             | -6.31       | H        |
| 10.888                | -76.3               | Pk  | 37.9          | -19.5        | 10.6         | -47.30                  | -40             | -7.30       | V        |
| 14.509                | -74.81              | Pk  | 39.4          | -19.7        | 10.7         | -44.41                  | -40             | -4.41       | H        |
| 14.565                | -76.02              | Pk  | 39.6          | -19.5        | 10           | -45.92                  | -40             | -5.92       | V        |
| High Channel, 3690MHz |                     |     |               |              |              |                         |                 |             |          |
| 7.352                 | -75                 | Pk  | 35.7          | -23.7        | 10.9         | -52.1                   | -40             | -12.1       | V        |
| 7.38                  | -74.53              | Pk  | 35.8          | -23.5        | 10.9         | -51.33                  | -40             | -11.33      | H        |
| 10.982                | -75.45              | Pk  | 37.9          | -20          | 10.9         | -46.65                  | -40             | -6.65       | V        |
| 11.056                | -76.51              | Pk  | 37.9          | -19.8        | 10.5         | -47.91                  | -40             | -7.91       | H        |
| 14.69                 | -75.9               | Pk  | 39.7          | -19          | 10.4         | -44.80                  | -40             | -4.80       | V        |
| 14.739                | -76.34              | Pk  | 39.7          | -19.2        | 10.2         | -45.64                  | -40             | -5.64       | H        |

Pk - Peak detector

**9.1.13. LTE BAND 66**

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 04/02/2019        |
| Test Engineer: | 50822             |
| Configuration: | EUT Only          |
| Mode:          | LTE 66 QPSK 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1710MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.432                 | -66.88              | Pk  | 32.8           | -29.9        | 8.9          | -55.08                  | -13             | -42.08      | H        |
| 3.432                 | -66.5               | Pk  | 32.8           | -29.9        | 8.9          | -54.7                   | -13             | -41.7       | V        |
| 5.156                 | -68.14              | Pk  | 34.6           | -28.6        | 9.2          | -52.94                  | -13             | -39.94      | V        |
| 5.159                 | -68.4               | Pk  | 34.6           | -28.7        | 9.2          | -53.3                   | -13             | -40.3       | H        |
| 6.862                 | -68.66              | Pk  | 35.8           | -27.4        | 6.3          | -53.96                  | -13             | -40.96      | V        |
| 6.876                 | -69.35              | Pk  | 35.8           | -27.4        | 6.6          | -54.35                  | -13             | -41.35      | H        |
| Mid Channel, 1745MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.474                 | -67.83              | Pk  | 32.9           | -30          | 9.5          | -55.43                  | -13             | -42.43      | H        |
| 3.498                 | -67.97              | Pk  | 32.9           | -29.8        | 9.5          | -55.37                  | -13             | -42.37      | V        |
| 5.156                 | -68.32              | Pk  | 34.6           | -28.6        | 9.1          | -53.22                  | -13             | -40.22      | H        |
| 5.161                 | -67.62              | Pk  | 34.6           | -28.7        | 9.4          | -52.32                  | -13             | -39.32      | V        |
| 6.964                 | -69.56              | Pk  | 35.9           | -27          | 7            | -53.66                  | -13             | -40.66      | H        |
| 6.965                 | -69.06              | Pk  | 35.9           | -27          | 7            | -53.16                  | -13             | -40.16      | V        |
| High Channel, 1770MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.537                 | -67.82              | Pk  | 33             | -30.2        | 9.5          | -55.52                  | -13             | -42.52      | H        |
| 3.539                 | -68.41              | Pk  | 33.1           | -30.2        | 9.3          | -56.21                  | -13             | -43.21      | V        |
| 5.302                 | -68.07              | Pk  | 34.9           | -29          | 8.1          | -54.07                  | -13             | -41.07      | H        |
| 5.303                 | -68.67              | Pk  | 34.9           | -28.9        | 8.1          | -54.57                  | -13             | -41.57      | V        |
| 7.072                 | -70.06              | Pk  | 36             | -26.6        | 7.2          | -53.46                  | -13             | -40.46      | V        |
| 7.074                 | -69.76              | Pk  | 36             | -26.5        | 7.1          | -53.16                  | -13             | -40.16      | H        |

Pk - Peak detector

|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 04/01/2019         |
| Test Engineer: | 50822              |
| Configuration: | EUT Only           |
| Mode:          | LTE 66 16QAM 20MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1720MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.434                 | -70.92              | Pk  | 32.8           | -29.9        | 8.9          | -59.12                  | -13             | -46.12      | V        |
| 3.435                 | -71.53              | Pk  | 32.8           | -29.8        | 8.8          | -59.73                  | -13             | -46.73      | H        |
| 5.154                 | -72.58              | Pk  | 34.6           | -28.6        | 9.2          | -57.38                  | -13             | -44.38      | V        |
| 5.158                 | -71.4               | Pk  | 34.6           | -28.7        | 9.1          | -56.4                   | -13             | -43.4       | H        |
| 6.871                 | -73.9               | Pk  | 35.8           | -27.5        | 6.6          | -59                     | -13             | -46         | V        |
| 6.872                 | -73                 | Pk  | 35.8           | -27.5        | 6.6          | -58.1                   | -13             | -45.1       | H        |
| Mid Channel, 1745MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.481                 | -70.59              | Pk  | 32.9           | -30          | 9.5          | -58.19                  | -13             | -45.19      | V        |
| 3.492                 | -71.93              | Pk  | 32.9           | -29.9        | 9.5          | -59.43                  | -13             | -46.43      | H        |
| 5.154                 | -71.27              | Pk  | 34.6           | -28.7        | 9.2          | -56.17                  | -13             | -43.17      | V        |
| 5.159                 | -72.69              | Pk  | 34.6           | -28.7        | 9.2          | -57.59                  | -13             | -44.59      | H        |
| 6.965                 | -74.37              | Pk  | 35.9           | -27          | 7            | -58.47                  | -13             | -45.47      | H        |
| 6.967                 | -74.36              | Pk  | 35.9           | -26.9        | 6.8          | -58.56                  | -13             | -45.56      | V        |
| High Channel, 1770MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.536                 | -72.8               | Pk  | 33             | -30.2        | 9.5          | -60.5                   | -13             | -47.5       | H        |
| 3.531                 | -72.55              | Pk  | 33             | -30.2        | 9.9          | -59.85                  | -13             | -46.85      | V        |
| 5.297                 | -72.06              | Pk  | 34.9           | -29          | 8            | -58.16                  | -13             | -45.16      | H        |
| 5.302                 | -73.06              | Pk  | 34.9           | -29          | 8            | -59.16                  | -13             | -46.16      | V        |
| 7.062                 | -75                 | Pk  | 36             | -26.4        | 7.1          | -58.3                   | -13             | -45.3       | V        |
| 7.073                 | -73.6               | Pk  | 36             | -26.6        | 7.1          | -57.1                   | -13             | -44.1       | H        |

Pk - Peak detector

**9.1.14. LTE BAND 71**

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 04/02/2019        |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 71 QPSK 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 673MHz   |                     |     |                |              |              |                         |                 |             |          |
| 1.349                 | -64.39              | Pk  | 28.5           | -33.2        | 10.5         | -58.59                  | -13             | -45.59      | H        |
| 2.691                 | -67.08              | Pk  | 32.3           | -31.2        | 8.7          | -57.28                  | -13             | -44.28      | H        |
| 1.35                  | -64.97              | Pk  | 28.5           | -33.2        | 9.3          | -60.37                  | -13             | -47.37      | V        |
| 2.691                 | -67.34              | Pk  | 32.3           | -31.2        | 9.7          | -56.54                  | -13             | -43.54      | V        |
| 2.013                 | -66.15              | Pk  | 30.9           | -32          | 9            | -58.25                  | -13             | -45.25      | H        |
| 2.016                 | -66.11              | Pk  | 30.9           | -32          | 9.4          | -57.81                  | -13             | -44.81      | V        |
| Mid Channel, 680.5MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.354                 | -65.65              | Pk  | 28.5           | -33.1        | 10           | -60.25                  | -13             | -47.25      | H        |
| 2.77                  | -67.89              | Pk  | 32.4           | -31.1        | 10           | -56.59                  | -13             | -43.59      | H        |
| 1.357                 | -65.89              | Pk  | 28.5           | -33.2        | 9            | -61.59                  | -13             | -48.59      | V        |
| 2.77                  | -68.38              | Pk  | 32.4           | -31.1        | 9.2          | -57.88                  | -13             | -44.88      | V        |
| 2.015                 | -59.66              | Pk  | 30.9           | -32          | 9.1          | -51.66                  | -13             | -38.66      | H        |
| 2.015                 | -51.7               | Pk  | 30.9           | -32          | 9.5          | -43.3                   | -13             | -30.3       | V        |
| High Channel, 688MHz  |                     |     |                |              |              |                         |                 |             |          |
| 1.379                 | -65.52              | Pk  | 28.5           | -33          | 7.6          | -62.42                  | -13             | -49.42      | H        |
| 2.748                 | -66.68              | Pk  | 32.3           | -31          | 9            | -56.38                  | -13             | -43.38      | H        |
| 1.38                  | -66.07              | Pk  | 28.5           | -33          | 6.4          | -64.17                  | -13             | -51.17      | V        |
| 2.749                 | -66.53              | Pk  | 32.3           | -31.1        | 8.4          | -56.93                  | -13             | -43.93      | V        |
| 2.037                 | -62.96              | Pk  | 31             | -31.9        | 9.5          | -54.36                  | -13             | -41.36      | H        |
| 2.037                 | -61.21              | Pk  | 31             | -31.9        | 10.5         | -51.61                  | -13             | -38.61      | V        |

Pk - Peak detector

|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 04/02/2019         |
| Test Engineer: | 12492              |
| Configuration: | EUT Only           |
| Mode:          | LTE 71 16QAM 20MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 673MHz   |                     |     |                |              |              |                         |                 |             |          |
| 1.35                  | -64.86              | Pk  | 28.5           | -33.2        | 10.4         | -59.16                  | -13             | -46.16      | H        |
| 2.687                 | -67.17              | Pk  | 32.3           | -31.1        | 8.7          | -57.27                  | -13             | -44.27      | H        |
| 1.347                 | -65.02              | Pk  | 28.5           | -33.2        | 9.5          | -60.22                  | -13             | -47.22      | V        |
| 2.685                 | -66.33              | Pk  | 32.3           | -31.1        | 10           | -55.13                  | -13             | -42.13      | V        |
| 2.018                 | -65.99              | Pk  | 30.9           | -32          | 9.3          | -57.79                  | -13             | -44.79      | V        |
| 2.021                 | -65.94              | Pk  | 30.9           | -32          | 9.1          | -57.94                  | -13             | -44.94      | H        |
| Mid Channel, 680.5MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.36                  | -65.43              | Pk  | 28.5           | -33.2        | 9.5          | -60.63                  | -13             | -47.63      | H        |
| 2.725                 | -67.23              | Pk  | 32.3           | -31          | 9.8          | -56.13                  | -13             | -43.13      | H        |
| 1.356                 | -65.71              | Pk  | 28.5           | -33.2        | 9            | -61.41                  | -13             | -48.41      | V        |
| 2.724                 | -66.99              | Pk  | 32.3           | -31          | 9.7          | -55.99                  | -13             | -42.99      | V        |
| 2.015                 | -54.29              | Pk  | 30.9           | -32          | 9.1          | -46.29                  | -13             | -33.29      | H        |
| 2.015                 | -52.16              | Pk  | 30.9           | -32          | 9.5          | -43.76                  | -13             | -30.76      | V        |
| High Channel, 688MHz  |                     |     |                |              |              |                         |                 |             |          |
| 1.386                 | -66.16              | Pk  | 28.5           | -33.1        | 8.2          | -62.56                  | -13             | -49.56      | H        |
| 2.751                 | -67.18              | Pk  | 32.3           | -31.1        | 9            | -56.98                  | -13             | -43.98      | H        |
| 1.382                 | -66.29              | Pk  | 28.5           | -33          | 6.8          | -63.99                  | -13             | -50.99      | V        |
| 2.748                 | -66.98              | Pk  | 32.3           | -31          | 8.4          | -57.28                  | -13             | -44.28      | V        |
| 2.068                 | -66                 | Pk  | 31             | -31.8        | 9.7          | -57.1                   | -13             | -44.1       | H        |
| 2.071                 | -65.28              | Pk  | 31             | -31.7        | 9.9          | -56.08                  | -13             | -43.08      | V        |

Pk - Peak detector

## 9.2. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 2

### 9.2.1. LTE BAND 2

|                |                  |
|----------------|------------------|
| Company:       |                  |
| Project #:     | 12607346         |
| Date:          | 4/4/2019         |
| Test Engineer: | 50822            |
| Configuration: | EUT Only         |
| Mode:          | LTE 2 QPSK 20MHz |
| Chamber #:     | Chamber B        |

| Frequency (GHz)      | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1860MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.716                | -68.14              | Pk  | 33.3           | -30          | 9.8          | -55.04                  | -13             | -42.04      | H        |
| 7.435                | -69.83              | Pk  | 36.1           | -26.6        | 6.9          | -53.43                  | -13             | -40.43      | H        |
| 3.707                | -67.77              | Pk  | 33.2           | -29.9        | 10           | -54.47                  | -13             | -41.47      | V        |
| 7.43                 | -69.72              | Pk  | 36.2           | -26.6        | 6.9          | -53.22                  | -13             | -40.22      | V        |
| 5.571                | -68.76              | Pk  | 35.5           | -28.6        | 8.4          | -53.46                  | -13             | -40.46      | V        |
| 5.573                | -67.83              | Pk  | 35.5           | -28.6        | 8.3          | -52.63                  | -13             | -39.63      | H        |
| Mid Channel, 1880MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.757                | -67.36              | Pk  | 33.3           | -30.1        | 9.3          | -54.86                  | -13             | -41.86      | H        |
| 7.514                | -70.62              | Pk  | 36.2           | -26.3        | 7.6          | -53.12                  | -13             | -40.12      | H        |
| 3.763                | -67.19              | Pk  | 33.3           | -30.1        | 9.7          | -54.29                  | -13             | -41.29      | V        |
| 7.508                | -70.77              | Pk  | 36.1           | -26.4        | 7.8          | -53.27                  | -13             | -40.27      | V        |
| 5.628                | -68.03              | Pk  | 35.5           | -28.5        | 8.5          | -52.53                  | -13             | -39.53      | V        |
| 5.636                | -68.63              | Pk  | 35.5           | -28.6        | 8.5          | -53.23                  | -13             | -40.23      | H        |
| HighChannel, 1900MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.798                | -66.7               | Pk  | 33.4           | -30.2        | 9.9          | -53.6                   | -13             | -40.6       | H        |
| 7.593                | -70.93              | Pk  | 36.4           | -26.2        | 7.2          | -53.53                  | -13             | -40.53      | H        |
| 3.795                | -68.47              | Pk  | 33.4           | -30.2        | 9.6          | -55.67                  | -13             | -42.67      | V        |
| 7.587                | -71.5               | Pk  | 36.3           | -26.3        | 6.9          | -54.6                   | -13             | -41.6       | V        |
| 5.694                | -69.14              | Pk  | 35.5           | -28.1        | 7.8          | -53.94                  | -13             | -40.94      | H        |
| 5.698                | -68.55              | Pk  | 35.5           | -28.1        | 7.6          | -53.55                  | -13             | -40.55      | V        |

Pk - Peak detector

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 4/4/2019          |
| Test Engineer: | 50822             |
| Configuration: | EUT Only          |
| Mode:          | LTE 2 16QAM 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AFT344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|---------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1860MHz  |                     |     |               |              |              |                         |                 |             |          |
| 3.715                 | -67.39              | Pk  | 33.3          | -30          | 9.8          | -54.29                  | -13             | -41.29      | H        |
| 7.436                 | -69.58              | Pk  | 36.1          | -26.6        | 7            | -53.08                  | -13             | -40.08      | H        |
| 3.717                 | -68.01              | Pk  | 33.3          | -30.1        | 9.6          | -55.21                  | -13             | -42.21      | V        |
| 7.44                  | -69.9               | Pk  | 36.1          | -26.7        | 6.9          | -53.6                   | -13             | -40.6       | V        |
| 5.569                 | -68.51              | Pk  | 35.5          | -28.5        | 8.5          | -53.01                  | -13             | -40.01      | V        |
| 5.573                 | -68.22              | Pk  | 35.5          | -28.6        | 8.3          | -53.02                  | -13             | -40.02      | H        |
| Mid Channel, 1880MHz  |                     |     |               |              |              |                         |                 |             |          |
| 3.758                 | -66.64              | Pk  | 33.3          | -30.1        | 9.3          | -54.14                  | -13             | -41.14      | H        |
| 7.516                 | -71.18              | Pk  | 36.2          | -26.2        | 7.6          | -53.58                  | -13             | -40.58      | H        |
| 3.762                 | -67.29              | Pk  | 33.3          | -30.1        | 9.7          | -54.39                  | -13             | -41.39      | V        |
| 7.508                 | -70.11              | Pk  | 36.2          | -26.4        | 7.8          | -52.51                  | -13             | -39.51      | V        |
| 5.627                 | -68.12              | Pk  | 35.5          | -28.5        | 8.4          | -52.72                  | -13             | -39.72      | H        |
| 5.629                 | -67.93              | Pk  | 35.5          | -28.5        | 8.5          | -52.43                  | -13             | -39.43      | V        |
| High Channel, 1900MHz |                     |     |               |              |              |                         |                 |             |          |
| 3.805                 | -68.13              | Pk  | 33.4          | -30.1        | 9.5          | -55.33                  | -13             | -42.33      | H        |
| 7.51                  | -71.28              | Pk  | 36.2          | -26.3        | 7.7          | -53.68                  | -13             | -40.68      | H        |
| 3.793                 | -67.55              | Pk  | 33.4          | -30.2        | 9.7          | -54.65                  | -13             | -41.65      | V        |
| 7.508                 | -70.77              | Pk  | 36.1          | -26.4        | 7.8          | -53.27                  | -13             | -40.27      | V        |
| 5.698                 | -69.03              | Pk  | 35.5          | -28.1        | 7.7          | -53.93                  | -13             | -40.93      | H        |
| 5.699                 | -69.3               | Pk  | 35.5          | -28          | 7.6          | -54.2                   | -13             | -41.2       | V        |

Pk - Peak detector

### 9.2.2. LTE BAND 5

|                |                  |
|----------------|------------------|
| Company:       |                  |
| Project #:     | 12607346         |
| Date:          | 4/2/2019         |
| Test Engineer: | 12492            |
| Configuration: | EUT Only         |
| Mode:          | LTE 5 QPSK 10MHz |
| Chamber #:     | Chamber B        |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T345 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 829MHz   |                     |     |                |              |              |                         |                 |             |          |
| 2.485                 | -66.51              | Pk  | 32.6           | -31.6        | 8.7          | -56.81                  | -13             | -43.81      | H        |
| 2.486                 | -67.05              | Pk  | 32.6           | -31.6        | 8.7          | -57.35                  | -13             | -44.35      | V        |
| 1.649                 | -65.54              | Pk  | 28.6           | -32.8        | 10.9         | -58.84                  | -13             | -45.84      | H        |
| 1.651                 | -65.41              | Pk  | 28.6           | -32.8        | 9.9          | -59.71                  | -13             | -46.71      | V        |
| 3.318                 | -67.55              | Pk  | 32.9           | -30.4        | 9.5          | -55.55                  | -13             | -42.55      | V        |
| 3.32                  | -68.08              | Pk  | 32.9           | -30.3        | 9.2          | -56.28                  | -13             | -43.28      | H        |
| Mid Channel, 836.5MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.68                  | -66.3               | Pk  | 29.2           | -32.7        | 10.9         | -58.9                   | -13             | -45.9       | H        |
| 3.348                 | -67.18              | Pk  | 32.9           | -30.4        | 9.2          | -55.48                  | -13             | -42.48      | H        |
| 1.673                 | -65.89              | Pk  | 29.1           | -32.9        | 9            | -60.69                  | -13             | -47.69      | V        |
| 2.508                 | -65.74              | Pk  | 32.7           | -31.5        | 9.3          | -55.24                  | -13             | -42.24      | V        |
| 2.509                 | -66.71              | Pk  | 32.7           | -31.6        | 9.1          | -56.51                  | -13             | -43.51      | H        |
| 3.345                 | -67.4               | Pk  | 32.9           | -30.4        | 9.3          | -55.6                   | -13             | -42.6       | V        |
| High Channel, 844MHz  |                     |     |                |              |              |                         |                 |             |          |
| 1.697                 | -66.45              | Pk  | 29.5           | -32.7        | 10.2         | -59.45                  | -13             | -46.45      | H        |
| 1.694                 | -66.47              | Pk  | 29.5           | -32.6        | 9.7          | -59.87                  | -13             | -46.87      | V        |
| 2.519                 | -62.13              | Pk  | 32.7           | -31.5        | 9.1          | -51.83                  | -13             | -38.83      | H        |
| 2.519                 | -62.6               | Pk  | 32.7           | -31.5        | 9.2          | -52.2                   | -13             | -39.2       | V        |
| 3.372                 | -67.71              | Pk  | 32.9           | -30.3        | 9.4          | -55.71                  | -13             | -42.71      | H        |
| 3.375                 | -67.31              | Pk  | 32.8           | -30.4        | 9.4          | -55.51                  | -13             | -42.51      | V        |

Pk - Peak detector



|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 4/2/2019          |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 5 16QAM 10MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T345 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 829MHz   |                     |     |                |              |              |                         |                 |             |          |
| 2.485                 | -66.88              | Pk  | 32.6           | -31.6        | 8.7          | -57.18                  | -13             | -44.18      | H        |
| 2.488                 | -66.85              | Pk  | 32.6           | -31.5        | 8.7          | -57.05                  | -13             | -44.05      | V        |
| 1.649                 | -62.6               | Pk  | 28.6           | -32.8        | 10.9         | -55.9                   | -13             | -42.9       | H        |
| 1.649                 | -63.64              | Pk  | 28.6           | -32.8        | 10.1         | -57.74                  | -13             | -44.74      | V        |
| 3.316                 | -67.56              | Pk  | 32.9           | -30.3        | 9.7          | -55.26                  | -13             | -42.26      | V        |
| 3.319                 | -67.76              | Pk  | 32.9           | -30.3        | 9.3          | -55.86                  | -13             | -42.86      | H        |
| Mid Channel, 836.5MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.672                 | -66.14              | Pk  | 29             | -32.9        | 10.6         | -59.44                  | -13             | -46.44      | H        |
| 1.668                 | -65.94              | Pk  | 29             | -32.8        | 8.7          | -61.04                  | -13             | -48.04      | V        |
| 2.508                 | -66.55              | Pk  | 32.7           | -31.6        | 9.1          | -56.35                  | -13             | -43.35      | H        |
| 2.513                 | -66.74              | Pk  | 32.7           | -31.5        | 9.5          | -56.04                  | -13             | -43.04      | V        |
| 3.344                 | -67.97              | Pk  | 32.9           | -30.4        | 9            | -56.47                  | -13             | -43.47      | H        |
| 3.344                 | -67.44              | Pk  | 32.9           | -30.4        | 9.3          | -55.64                  | -13             | -42.64      | V        |
| High Channel, 844MHz  |                     |     |                |              |              |                         |                 |             |          |
| 1.683                 | -66.25              | Pk  | 29.2           | -32.7        | 11           | -58.75                  | -13             | -45.75      | H        |
| 1.688                 | -65.72              | Pk  | 29.3           | -32.7        | 9.8          | -59.32                  | -13             | -46.32      | V        |
| 2.519                 | -63.4               | Pk  | 32.7           | -31.5        | 9.1          | -53.1                   | -13             | -40.1       | H        |
| 2.519                 | -60.64              | Pk  | 32.7           | -31.5        | 9.3          | -50.14                  | -13             | -37.14      | V        |
| 3.371                 | -68                 | Pk  | 32.9           | -30.3        | 9.9          | -55.5                   | -13             | -42.5       | V        |
| 3.372                 | -67.36              | Pk  | 32.9           | -30.3        | 9.4          | -55.36                  | -13             | -42.36      | H        |

Pk - Peak detector

### 9.2.3. LTE BAND 7

|                |                  |
|----------------|------------------|
| Company:       |                  |
| Project #:     | 12607346         |
| Date:          | 4/3/2019         |
| Test Engineer: | 12492            |
| Configuration: | EUT Only         |
| Mode:          | LTE 7 QPSK 20MHz |
| Chamber #:     | Chamber B        |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 2510MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.021                 | -70.34              | Pk  | 34.6           | -28.6        | 8.6          | -55.74                  | -25             | -30.74      | H        |
| 7.503                 | -68.74              | Pk  | 36.1           | -26.4        | 7.9          | -51.14                  | -25             | -26.14      | H        |
| 5.011                 | -69.47              | Pk  | 34.6           | -28.6        | 9            | -54.47                  | -25             | -29.47      | V        |
| 7.503                 | -61.15              | Pk  | 36.1           | -26.4        | 7.9          | -43.55                  | -25             | -18.55      | V        |
| 10.037                | -72.74              | Pk  | 37.5           | -22.7        | 8            | -49.94                  | -25             | -24.94      | V        |
| 10.04                 | -72.27              | Pk  | 37.5           | -22.8        | 8            | -49.57                  | -25             | -24.57      | H        |
| Mid Channel, 2535MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.069                 | -69.08              | Pk  | 34.5           | -28.7        | 8.6          | -54.68                  | -25             | -29.68      | H        |
| 7.58                  | -70.67              | Pk  | 36.3           | -26.2        | 7.2          | -53.37                  | -25             | -28.37      | H        |
| 7.578                 | -70.68              | Pk  | 36.3           | -26.3        | 7.2          | -53.48                  | -25             | -28.48      | V        |
| 5.073                 | -68.4               | Pk  | 34.5           | -28.7        | 8.4          | -54.2                   | -25             | -29.2       | V        |
| 10.142                | -72.73              | Pk  | 37.7           | -22.6        | 6.5          | -51.13                  | -25             | -26.13      | H        |
| 10.142                | -72.7               | Pk  | 37.7           | -22.6        | 6.4          | -51.2                   | -25             | -26.2       | V        |
| High Channel, 2560MHz |                     |     |                |              |              |                         |                 |             |          |
| 5.111                 | -68.09              | Pk  | 34.5           | -28.8        | 9.3          | -53.09                  | -25             | -28.09      | H        |
| 7.653                 | -58.37              | Pk  | 36.4           | -26          | 7.6          | -40.37                  | -25             | -15.37      | H        |
| 5.119                 | -68.48              | Pk  | 34.6           | -28.8        | 8.9          | -53.78                  | -25             | -28.78      | V        |
| 7.653                 | -63.78              | Pk  | 36.4           | -26          | 7.5          | -45.88                  | -25             | -20.88      | V        |
| 10.237                | -72.57              | Pk  | 37.8           | -22.6        | 7.5          | -49.87                  | -25             | -24.87      | V        |
| 10.243                | -72.08              | Pk  | 37.8           | -22.5        | 7.6          | -49.18                  | -25             | -24.18      | H        |

Pk - Peak detector

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 4/3/2019          |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 7 16QAM 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 2510MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.018                 | -69.59              | Pk  | 34.6           | -28.6        | 8.5          | -55.09                  | -25             | -30.09      | H        |
| 7.503                 | -70.5               | Pk  | 36.1           | -26.4        | 7.9          | -52.9                   | -25             | -27.9       | H        |
| 5.027                 | -69.25              | Pk  | 34.6           | -28.7        | 8.4          | -54.95                  | -25             | -29.95      | V        |
| 7.503                 | -60.49              | Pk  | 36.1           | -26.4        | 8            | -42.79                  | -25             | -17.79      | V        |
| 10.04                 | -71.78              | Pk  | 37.5           | -22.8        | 8            | -49.08                  | -25             | -24.08      | H        |
| 10.04                 | -72.9               | Pk  | 37.5           | -22.8        | 7.9          | -50.3                   | -25             | -25.3       | V        |
| Mid Channel, 2535MHz  |                     |     |                |              |              |                         |                 |             |          |
| 7.578                 | -60.15              | Pk  | 36.3           | -26.2        | 7.2          | -42.85                  | -25             | -17.85      | H        |
| 5.065                 | -69.41              | Pk  | 34.5           | -28.8        | 8.7          | -55.01                  | -25             | -30.01      | H        |
| 5.064                 | -68.98              | Pk  | 34.5           | -28.8        | 8.8          | -54.48                  | -25             | -29.48      | V        |
| 7.578                 | -60.32              | Pk  | 36.3           | -26.3        | 7.2          | -43.12                  | -25             | -18.12      | V        |
| 10.135                | -71.96              | Pk  | 37.7           | -22.6        | 6.4          | -50.46                  | -25             | -25.46      | H        |
| 10.146                | -72.27              | Pk  | 37.7           | -22.7        | 6.4          | -50.87                  | -25             | -25.87      | V        |
| High Channel, 2560MHz |                     |     |                |              |              |                         |                 |             |          |
| 5.118                 | -68.37              | Pk  | 34.6           | -28.8        | 9.1          | -53.47                  | -25             | -28.47      | H        |
| 7.653                 | -60.72              | Pk  | 36.4           | -26          | 7.6          | -42.72                  | -25             | -17.72      | H        |
| 5.114                 | -68.42              | Pk  | 34.6           | -28.8        | 9.3          | -53.32                  | -25             | -28.32      | V        |
| 7.653                 | -58.45              | Pk  | 36.4           | -26          | 7.5          | -40.55                  | -25             | -15.55      | V        |
| 10.24                 | -72.77              | Pk  | 37.8           | -22.6        | 7.6          | -49.97                  | -25             | -24.97      | H        |
| 10.246                | -72.78              | Pk  | 37.8           | -22.5        | 7.4          | -50.08                  | -25             | -25.08      | V        |

Pk - Peak detector

### 9.2.4. LTE BAND 12

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 4/4/2019          |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 12 QPSK 10MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T345 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 704MHz   |                     |     |                |              |              |                         |                 |             |          |
| 1.411                 | -67.08              | Pk  | 28.4           | -32.6        | 12.2         | -59.08                  | -13             | -46.08      | H        |
| 2.802                 | -66.67              | Pk  | 32.4           | -31          | 12.3         | -52.97                  | -13             | -39.97      | H        |
| 1.408                 | -65.82              | Pk  | 28.4           | -32.5        | 12.3         | -57.62                  | -13             | -44.62      | V        |
| 2.817                 | -67.2               | Pk  | 32.4           | -30.8        | 12.1         | -53.5                   | -13             | -40.5       | V        |
| 2.103                 | -66.65              | Pk  | 31.3           | -31.8        | 12           | -55.15                  | -13             | -42.15      | H        |
| 2.139                 | -66.01              | Pk  | 31.3           | -31.7        | 12.9         | -53.51                  | -13             | -40.51      | V        |
| Mid Channel, 707.5MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.406                 | -43.38              | Pk  | 28.5           | -33.2        | 10.5         | -37.58                  | -13             | -24.58      | H        |
| 2.834                 | -68.49              | Pk  | 32.5           | -31          | 9.5          | -57.49                  | -13             | -44.49      | H        |
| 1.406                 | -43.93              | Pk  | 28.5           | -33.2        | 9.8          | -38.83                  | -13             | -25.83      | V        |
| 2.83                  | -68.12              | Pk  | 32.5           | -30.9        | 9.5          | -57.02                  | -13             | -44.02      | V        |
| 2.109                 | -56.31              | Pk  | 31.1           | -31.9        | 10.3         | -46.81                  | -13             | -33.81      | H        |
| 2.109                 | -65.32              | Pk  | 31.1           | -31.9        | 9.5          | -56.62                  | -13             | -43.62      | V        |
| High Channel, 711MHz  |                     |     |                |              |              |                         |                 |             |          |
| 1.405                 | -66.07              | Pk  | 28.5           | -32.5        | 13           | -57.07                  | -13             | -44.07      | H        |
| 2.871                 | -66.83              | Pk  | 32.3           | -30.6        | 11.7         | -53.43                  | -13             | -40.43      | H        |
| 1.408                 | -65.78              | Pk  | 28.4           | -32.5        | 12.3         | -57.58                  | -13             | -44.58      | V        |
| 2.82                  | -66.7               | Pk  | 32.4           | -30.8        | 12.3         | -52.8                   | -13             | -39.8       | V        |
| 2.12                  | -65.11              | Pk  | 31.3           | -31.8        | 13.1         | -52.51                  | -13             | -39.51      | H        |
| 2.12                  | -62.64              | Pk  | 31.3           | -31.8        | 12.5         | -50.64                  | -13             | -37.64      | V        |

Pk - Peak detector

|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 4/4/2019           |
| Test Engineer: | 12492              |
| Configuration: | EUT Only           |
| Mode:          | LTE 12 16QAM 10MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T345 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 704MHz   |                     |     |                |              |              |                         |                 |             |          |
| 1.411                 | -67.08              | Pk  | 28.4           | -32.6        | 12.2         | -59.08                  | -13             | -46.08      | H        |
| 2.802                 | -66.67              | Pk  | 32.4           | -31          | 12.3         | -52.97                  | -13             | -39.97      | H        |
| 1.408                 | -65.82              | Pk  | 28.4           | -32.5        | 12.3         | -57.62                  | -13             | -44.62      | V        |
| 2.817                 | -67.2               | Pk  | 32.4           | -30.8        | 12.1         | -53.5                   | -13             | -40.5       | V        |
| 2.103                 | -66.65              | Pk  | 31.3           | -31.8        | 12           | -55.15                  | -13             | -42.15      | H        |
| 2.139                 | -66.01              | Pk  | 31.3           | -31.7        | 12.9         | -53.51                  | -13             | -40.51      | V        |
| Mid Channel, 707.5MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.406                 | -43.73              | Pk  | 28.5           | -33.2        | 10.5         | -37.93                  | -13             | -24.93      | H        |
| 2.835                 | -68.12              | Pk  | 32.5           | -31          | 9.5          | -57.12                  | -13             | -44.12      | H        |
| 1.406                 | -43.4               | Pk  | 28.5           | -33.2        | 9.8          | -38.3                   | -13             | -25.3       | V        |
| 2.834                 | -68.76              | Pk  | 32.5           | -31          | 9.3          | -57.96                  | -13             | -44.96      | V        |
| 2.109                 | -58.51              | Pk  | 31.1           | -31.9        | 10.3         | -49.01                  | -13             | -36.01      | H        |
| 2.109                 | -58.15              | Pk  | 31.1           | -31.9        | 9.5          | -49.45                  | -13             | -36.45      | V        |
| High Channel, 711MHz  |                     |     |                |              |              |                         |                 |             |          |
| 1.409                 | -65.87              | Pk  | 28.4           | -32.6        | 12.5         | -57.57                  | -13             | -44.57      | H        |
| 2.835                 | -66.67              | Pk  | 32.4           | -30.7        | 11.9         | -53.07                  | -13             | -40.07      | H        |
| 1.462                 | -67.93              | Pk  | 28.2           | -32.5        | 12.3         | -59.93                  | -13             | -46.93      | V        |
| 2.869                 | -66.86              | Pk  | 32.3           | -30.6        | 12.2         | -52.96                  | -13             | -39.96      | V        |
| 2.12                  | -66.07              | Pk  | 31.3           | -31.8        | 13.1         | -53.47                  | -13             | -40.47      | H        |
| 2.12                  | -60.51              | Pk  | 31.3           | -31.8        | 12.5         | -48.51                  | -13             | -35.51      | V        |

Pk - Peak detector

### 9.2.5. LTE BAND 13

|                |                   |
|----------------|-------------------|
| Project #:     | 12607346          |
| Date:          | 4/8/2019          |
| Test Engineer: | 50822             |
| Configuration: | EUT Only          |
| Mode:          | LTE 13 QPSK 10MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)     | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | PK Margin (dB) | Polarity |
|---------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|----------------|----------|
| Mid Channel, 782MHz |                     |     |                |              |              |                         |                 |                |          |
| 1.412               | -70.24              | Pk  | 28.4           | -33.1        | 10.1         | -64.84                  | -40             | -24.84         | H        |
| 2.825               | -72.19              | Pk  | 32.5           | -30.9        | 10           | -60.59                  | -13             | -47.59         | H        |
| 1.422               | -70.92              | Pk  | 28.3           | -33          | 8.9          | -66.72                  | -40             | -16.72         | V        |
| 2.822               | -71.25              | Pk  | 32.5           | -30.9        | 9.5          | -60.15                  | -13             | -47.15         | V        |
| 2.119               | -70.25              | Pk  | 31.2           | -31.8        | 10.4         | -60.45                  | -13             | -47.45         | H        |
| 2.119               | -70.29              | Pk  | 31.2           | -31.8        | 9.7          | -61.19                  | -13             | -48.19         | V        |

|                |                    |
|----------------|--------------------|
| Project #:     | 12607346           |
| Date:          | 4/8/2019           |
| Test Engineer: | 50822              |
| Configuration: | EUT Only           |
| Mode:          | LTE 13 16QAM 10MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)     | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 782MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.555               | -65                 | Pk  | 27.7           | -32.9        | 8.7          | -61.5                   | -40             | -21.5       | H        |
| 2.347               | -66.65              | Pk  | 32.2           | -31.7        | 10           | -56.15                  | -13             | -43.15      | H        |
| 1.555               | -65.3               | Pk  | 27.7           | -32.8        | 10           | -60.4                   | -40             | -20.4       | V        |
| 2.347               | -65.58              | Pk  | 32.2           | -31.7        | 9.4          | -55.68                  | -13             | -42.68      | V        |
| 3.127               | -66.5               | Pk  | 33.2           | -30.8        | 9.4          | -54.7                   | -13             | -41.7       | H        |
| 3.13                | -67.13              | Pk  | 33.2           | -30.8        | 10           | -54.73                  | -13             | -41.73      | V        |

Pk - Peak detector

### 9.2.6. LTE BAND 14

|                |                   |
|----------------|-------------------|
| Project #:     | 12607346          |
| Date:          | 4/3/2019          |
| Test Engineer: | 50822             |
| Configuration: | EUT Only          |
| Mode:          | LTE 14 QPSK 10MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)     | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 793MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.59                | -65.65              | Pk  | 27.7           | -32.8        | 9.6          | -61.15                  | -40             | -21.15      | H        |
| 2.372               | -67.13              | Pk  | 32.3           | -31.8        | 10.4         | -56.23                  | -13             | -43.23      | H        |
| 1.588               | -64.87              | Pk  | 27.7           | -32.8        | 10.2         | -59.77                  | -40             | -19.77      | V        |
| 2.38                | -66.55              | Pk  | 32.3           | -31.9        | 9.3          | -56.85                  | -13             | -43.85      | V        |
| 3.164               | -66.96              | Pk  | 33.1           | -30.7        | 9.8          | -54.76                  | -13             | -41.76      | V        |
| 3.166               | -67.32              | Pk  | 33.1           | -30.7        | 9.4          | -55.52                  | -13             | -42.52      | H        |

|                |                    |
|----------------|--------------------|
| Project #:     | 12607346           |
| Date:          | 4/3/2019           |
| Test Engineer: | 50822              |
| Configuration: | EUT Only           |
| Mode:          | LTE 14 16QAM 10MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)     | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 793MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.593               | -65.04              | Pk  | 27.7           | -32.9        | 9.7          | -60.54                  | -40             | -20.54      | H        |
| 2.387               | -65.92              | Pk  | 32.3           | -31.7        | 10           | -55.32                  | -13             | -42.32      | H        |
| 1.589               | -64.93              | Pk  | 27.7           | -32.8        | 10.3         | -59.73                  | -40             | -19.73      | V        |
| 2.379               | -66.4               | Pk  | 32.3           | -31.9        | 9.5          | -56.5                   | -13             | -43.5       | V        |
| 3.168               | -66.87              | Pk  | 33.1           | -30.7        | 9.5          | -54.97                  | -13             | -41.97      | H        |
| 3.172               | -67.16              | Pk  | 33.1           | -30.7        | 9.8          | -54.96                  | -13             | -41.96      | V        |

Pk - Peak detector

**9.2.7. LTE BAND 17**

|                |                   |
|----------------|-------------------|
| Project #:     | 12607346          |
| Date:          | 6/28/2019         |
| Test Engineer: | 52277             |
| Configuration: | EUT Only          |
| Mode:          | LTE 17 QPSK 10MHz |
| Chamber #:     | Chamber A         |

| Frequency (GHz)     | Meter Reading (dBm) | Det | AF T346 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 710MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.414               | -71.28              | Pk  | 28.7           | -32          | 11.5         | -63.08                  | -13             | -50.08      | H        |
| 2.839               | -70.18              | Pk  | 32.4           | -29.8        | 11.7         | -55.88                  | -13             | -42.88      | H        |
| 1.414               | -69.87              | Pk  | 28.7           | -32          | 11.1         | -62.07                  | -13             | -49.07      | V        |
| 2.837               | -71.71              | Pk  | 32.4           | -29.9        | 11.6         | -57.61                  | -13             | -44.61      | V        |
| 2.134               | -71.18              | Pk  | 31.7           | -30.8        | 13.2         | -57.08                  | -13             | -44.08      | V        |
| 2.136               | -71.24              | Pk  | 31.7           | -30.8        | 12.3         | -58.04                  | -13             | -45.04      | H        |

|                |                    |
|----------------|--------------------|
| Project #:     | 12607346           |
| Date:          | 6/28/2019          |
| Test Engineer: | 52277              |
| Configuration: | EUT Only           |
| Mode:          | LTE 17 16QAM 10MHz |
| Chamber #:     | Chamber A          |

| Frequency (GHz)     | Meter Reading (dBm) | Det | AF T346 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 710MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.418               | -70.86              | Pk  | 28.6           | -31.9        | 10.8         | -63.36                  | -13             | -50.36      | H        |
| 2.843               | -69.27              | Pk  | 32.4           | -29.8        | 11.7         | -54.97                  | -13             | -41.97      | H        |
| 1.419               | -70.38              | Pk  | 28.6           | -31.9        | 10.6         | -63.08                  | -13             | -50.08      | V        |
| 2.845               | -72.43              | Pk  | 32.4           | -29.8        | 11.6         | -58.23                  | -13             | -45.23      | V        |
| 2.131               | -70.71              | Pk  | 31.7           | -30.8        | 12.5         | -57.31                  | -13             | -44.31      | H        |
| 2.131               | -71.13              | Pk  | 31.7           | -30.8        | 13.4         | -56.83                  | -13             | -43.83      | V        |

Pk - Peak detector



**9.2.8. LTE BAND 25**

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 04/03/2019        |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 25 QPSK 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)        | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|------------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1860MHz   |                     |     |                |              |              |                         |                 |             |          |
| 3.726                  | -68.01              | Pk  | 33.3           | -30.1        | 10.1         | -54.71                  | -13             | -41.71      | H        |
| 7.443                  | -71.38              | Pk  | 36.1           | -26.6        | 7            | -54.88                  | -13             | -41.88      | H        |
| 3.719                  | -68.01              | Pk  | 33.3           | -30.1        | 9.7          | -55.11                  | -13             | -42.11      | V        |
| 7.437                  | -70.82              | Pk  | 36.1           | -26.6        | 7            | -54.32                  | -13             | -41.32      | V        |
| 5.582                  | -68.82              | Pk  | 35.5           | -28.6        | 8.2          | -53.72                  | -13             | -40.72      | H        |
| 5.583                  | -68.85              | Pk  | 35.5           | -28.6        | 8.1          | -53.85                  | -13             | -40.85      | V        |
| Mid Channel, 1882.5MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.769                  | -66.69              | Pk  | 33.4           | -30          | 9.3          | -53.99                  | -13             | -40.99      | H        |
| 7.52                   | -70.25              | Pk  | 36.2           | -26.3        | 7.5          | -52.85                  | -13             | -39.85      | H        |
| 3.765                  | -67.18              | Pk  | 33.3           | -30          | 9.6          | -54.28                  | -13             | -41.28      | V        |
| 7.525                  | -69.66              | Pk  | 36.2           | -26.3        | 7.3          | -52.46                  | -13             | -39.46      | V        |
| 5.638                  | -68.73              | Pk  | 35.5           | -28.6        | 8.4          | -53.43                  | -13             | -40.43      | H        |
| 5.64                   | -68.51              | Pk  | 35.5           | -28.5        | 8.2          | -53.31                  | -13             | -40.31      | V        |
| High Channel, 1905MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.802                  | -66.54              | Pk  | 33.4           | -30.2        | 9.8          | -53.54                  | -13             | -40.54      | H        |
| 7.614                  | -69.82              | Pk  | 36.4           | -26.3        | 7.5          | -52.22                  | -13             | -39.22      | H        |
| 3.809                  | -67.39              | Pk  | 33.4           | -30.1        | 9.2          | -54.89                  | -13             | -41.89      | V        |
| 7.617                  | -70.5               | Pk  | 36.4           | -26.4        | 7.4          | -53.1                   | -13             | -40.1       | V        |
| 5.7                    | -68.46              | Pk  | 35.5           | -28          | 7.8          | -53.16                  | -13             | -40.16      | H        |
| 5.705                  | -69.14              | Pk  | 35.5           | -28.1        | 7.5          | -54.24                  | -13             | -41.24      | V        |

Pk - Peak detector

|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 04/03/2019         |
| Test Engineer: | 12492              |
| Configuration: | EUT Only           |
| Mode:          | LTE 25 16QAM 20MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)        | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|------------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1860MHz   |                     |     |                |              |              |                         |                 |             |          |
| 3.711                  | -67.03              | Pk  | 33.3           | -30          | 9.9          | -53.83                  | -13             | -40.83      | H        |
| 7.428                  | -69.91              | Pk  | 36.2           | -26.7        | 6.8          | -53.61                  | -13             | -40.61      | H        |
| 3.711                  | -67.88              | Pk  | 33.3           | -30          | 9.8          | -54.78                  | -13             | -41.78      | V        |
| 7.415                  | -69.63              | Pk  | 36.2           | -26.6        | 7.1          | -52.93                  | -13             | -39.93      | V        |
| 5.573                  | -69.23              | Pk  | 35.5           | -28.6        | 8.4          | -53.93                  | -13             | -40.93      | V        |
| 5.577                  | -68.53              | Pk  | 35.5           | -28.5        | 8.2          | -53.33                  | -13             | -40.33      | H        |
| Mid Channel, 1882.5MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.762                  | -66.58              | Pk  | 33.3           | -30.1        | 9.3          | -54.08                  | -13             | -41.08      | H        |
| 7.522                  | -71.04              | Pk  | 36.2           | -26.3        | 7.5          | -53.64                  | -13             | -40.64      | H        |
| 3.758                  | -66.42              | Pk  | 33.3           | -30.1        | 9.6          | -53.62                  | -13             | -40.62      | V        |
| 7.522                  | -70.4               | Pk  | 36.2           | -26.3        | 7.4          | -53.1                   | -13             | -40.1       | V        |
| 5.641                  | -68.14              | Pk  | 35.5           | -28.5        | 8.1          | -53.04                  | -13             | -40.04      | V        |
| 5.643                  | -68.36              | Pk  | 35.5           | -28.5        | 8            | -53.36                  | -13             | -40.36      | H        |
| High Channel, 1905MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.801                  | -67.9               | Pk  | 33.4           | -30.2        | 9.9          | -54.8                   | -13             | -41.8       | H        |
| 7.617                  | -70.03              | Pk  | 36.4           | -26.4        | 7.6          | -52.43                  | -13             | -39.43      | H        |
| 3.806                  | -67.42              | Pk  | 33.4           | -30.1        | 9.2          | -54.92                  | -13             | -41.92      | V        |
| 7.611                  | -70.7               | Pk  | 36.4           | -26.3        | 7.3          | -53.3                   | -13             | -40.3       | V        |
| 5.688                  | -60.59              | Pk  | 35.5           | -27.8        | 8.1          | -44.79                  | -13             | -31.79      | H        |
| 5.688                  | -58.1               | Pk  | 35.5           | -27.8        | 7.9          | -42.5                   | -13             | -29.5       | V        |

Pk - Peak detector

**9.2.9. LTE BAND 26**

|                |                        |
|----------------|------------------------|
| Project #:     | 12607346               |
| Date:          | 04/03/2019             |
| Test Engineer: | 50822                  |
| Configuration: | EUT Only               |
| Mode:          | LTE 26(90S) QPSK 10MHz |
| Chamber #:     | Chamber B              |

| Frequency (GHz)     | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 819MHz |                     |     |                |              |              |                         |                 |             |          |
| 2.484               | -66.63              | Pk  | 32.6           | -31.6        | 8.7          | -56.93                  | -13             | -43.93      | V        |
| 1.655               | -65.66              | Pk  | 28.7           | -32.8        | 9.6          | -60.16                  | -13             | -47.16      | V        |
| 1.658               | -65.46              | Pk  | 28.8           | -32.7        | 10.6         | -58.76                  | -13             | -45.76      | H        |
| 2.483               | -66.52              | Pk  | 32.6           | -31.6        | 8.7          | -56.82                  | -13             | -43.82      | H        |
| 3.327               | -68.09              | Pk  | 32.9           | -30.5        | 9            | -56.69                  | -13             | -43.69      | H        |
| 3.328               | -67.38              | Pk  | 32.9           | -30.5        | 9.2          | -55.78                  | -13             | -42.78      | V        |

|                |                         |
|----------------|-------------------------|
| Project #:     | 12607346                |
| Date:          | 04/03/2019              |
| Test Engineer: | 50822                   |
| Configuration: | EUT Only                |
| Mode:          | LTE 26(90S) 16QAM 10MHz |
| Chamber #:     | Chamber B               |

| Frequency (GHz)     | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|---------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 819MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.661               | -65.7               | Pk  | 28.8           | -32.7        | 10.3         | -59.3                   | -13             | -46.3       | H        |
| 2.488               | -66.77              | Pk  | 32.6           | -31.5        | 8.7          | -56.97                  | -13             | -43.97      | H        |
| 2.487               | -66.29              | Pk  | 32.6           | -31.5        | 8.7          | -56.49                  | -13             | -43.49      | V        |
| 1.659               | -65.7               | Pk  | 28.8           | -32.7        | 9.3          | -60.3                   | -13             | -47.3       | V        |
| 3.327               | -68.04              | Pk  | 32.9           | -30.5        | 9.1          | -56.54                  | -13             | -43.54      | H        |
| 3.328               | -67.42              | Pk  | 32.9           | -30.5        | 9.2          | -55.82                  | -13             | -42.82      | V        |

Pk - Peak detector

**9.2.10. LTE BAND 30**

|                |                   |
|----------------|-------------------|
| Project #:     | 12607346          |
| Date:          | 04/04/2019        |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 30 QPSK 10MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)      | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 2310MHz |                     |     |                |              |              |                         |                 |             |          |
| 4.628                | -68.39              | Pk  | 34.1           | -29.7        | 9.8          | -54.19                  | -40             | -14.19      | H        |
| 4.623                | -69.49              | Pk  | 34.1           | -29.6        | 9.5          | -55.49                  | -40             | -15.49      | V        |
| 6.926                | -69.75              | Pk  | 35.8           | -27.3        | 6.9          | -54.35                  | -40             | -14.35      | V        |
| 6.928                | -69.37              | Pk  | 35.8           | -27.3        | 6.8          | -54.07                  | -40             | -14.07      | H        |
| 9.24                 | -71.89              | Pk  | 36.8           | -23.7        | 7.9          | -50.89                  | -40             | -10.89      | V        |
| 9.246                | -72.29              | Pk  | 36.8           | -23.9        | 7.7          | -51.69                  | -40             | -11.69      | H        |

|                |                    |
|----------------|--------------------|
| Project #:     | 12607346           |
| Date:          | 04/04/2019         |
| Test Engineer: | 12492              |
| Configuration: | EUT Only           |
| Mode:          | LTE 30 16QAM 10MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)      | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 2310MHz |                     |     |                |              |              |                         |                 |             |          |
| 4.62                 | -69.18              | Pk  | 34.1           | -29.6        | 9.5          | -55.18                  | -40             | -15.18      | H        |
| 4.614                | -68.83              | Pk  | 34.1           | -29.6        | 9.6          | -54.73                  | -40             | -14.73      | V        |
| 6.916                | -69.99              | Pk  | 35.8           | -27.3        | 6.3          | -55.19                  | -40             | -15.19      | H        |
| 6.917                | -68.32              | Pk  | 35.8           | -27.3        | 6.5          | -53.32                  | -40             | -13.32      | V        |
| 9.24                 | -72.31              | Pk  | 36.8           | -23.8        | 7.9          | -51.41                  | -40             | -11.41      | H        |
| 9.24                 | -71.86              | Pk  | 36.8           | -23.8        | 7.9          | -50.96                  | -40             | -10.96      | V        |

Pk - Peak detector

**9.2.11. LTE BAND 41**

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 04/04/2019        |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 41 QPSK 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 2506MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.01                  | -72.72              | Pk  | 34.6           | -28.6        | 9            | -57.72                  | -25             | -32.72      | H        |
| 7.491                 | -66.16              | Pk  | 36.1           | -26.5        | 7.7          | -48.86                  | -25             | -23.86      | H        |
| 5.011                 | -73.52              | Pk  | 34.6           | -28.6        | 9            | -58.52                  | -25             | -33.52      | V        |
| 7.491                 | -63.05              | Pk  | 36.1           | -26.5        | 7.6          | -45.85                  | -25             | -20.85      | V        |
| 10.025                | -76.1               | Pk  | 37.5           | -22.8        | 8.2          | -53.2                   | -25             | -28.2       | H        |
| 10.027                | -75.46              | Pk  | 37.5           | -22.9        | 8.1          | -52.76                  | -25             | -27.76      | V        |
| Mid Channel, 2593MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.183                 | -68.66              | Pk  | 34.7           | -28.9        | 9            | -53.86                  | -25             | -28.86      | H        |
| 5.193                 | -68.45              | Pk  | 34.7           | -28.8        | 8.8          | -53.75                  | -25             | -28.75      | V        |
| 7.752                 | -64.37              | Pk  | 36.4           | -26          | 7.4          | -46.57                  | -25             | -21.57      | H        |
| 7.752                 | -55.73              | Pk  | 36.4           | -26          | 7.5          | -37.83                  | -25             | -12.83      | V        |
| 10.372                | -72.36              | Pk  | 37.8           | -22.4        | 7.9          | -49.06                  | -25             | -24.06      | V        |
| 10.374                | -72.6               | Pk  | 37.8           | -22.4        | 7.8          | -49.4                   | -25             | -24.4       | H        |
| High Channel, 2680MHz |                     |     |                |              |              |                         |                 |             |          |
| 5.366                 | -69.48              | Pk  | 35.1           | -29.1        | 8.7          | -54.78                  | -25             | -29.78      | H        |
| 8.039                 | -70.64              | Pk  | 36.4           | -25.4        | 8.2          | -51.44                  | -25             | -26.44      | H        |
| 10.718                | -72.86              | Pk  | 37.8           | -22.1        | 7.8          | -49.36                  | -25             | -24.36      | H        |
| 5.365                 | -69.03              | Pk  | 35.1           | -29.1        | 8.7          | -54.33                  | -25             | -29.33      | V        |
| 8.036                 | -70.8               | Pk  | 36.4           | -25.4        | 8.1          | -51.7                   | -25             | -26.7       | V        |
| 10.719                | -73.2               | Pk  | 37.8           | -22.1        | 7.8          | -49.7                   | -25             | -24.7       | V        |

Pk - Peak detector

|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 04/04/2019         |
| Test Engineer: | 12492              |
| Configuration: | EUT Only           |
| Mode:          | LTE 41 16QAM 20MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 2506MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.005                 | -69.51              | Pk  | 34.6           | -28.5        | 9.4          | -54.01                  | -25             | -29.01      | H        |
| 7.524                 | -71.94              | Pk  | 36.2           | -26.3        | 7.4          | -54.64                  | -25             | -29.64      | H        |
| 5.014                 | -69.45              | Pk  | 34.6           | -28.6        | 8.8          | -54.65                  | -25             | -29.65      | V        |
| 7.524                 | -70.62              | Pk  | 36.2           | -26.3        | 7.3          | -53.42                  | -25             | -28.42      | V        |
| 10.021                | -73.17              | Pk  | 37.5           | -22.8        | 8.2          | -50.27                  | -25             | -25.27      | V        |
| 10.022                | -72.58              | Pk  | 37.5           | -22.8        | 8.2          | -49.68                  | -25             | -24.68      | H        |
| Mid Channel, 2593MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.186                 | -69.01              | Pk  | 34.7           | -28.9        | 8.6          | -54.61                  | -25             | -29.61      | V        |
| 5.192                 | -68.77              | Pk  | 34.7           | -28.8        | 9            | -53.87                  | -25             | -28.87      | H        |
| 7.777                 | -71.01              | Pk  | 36.4           | -26          | 7.8          | -52.81                  | -25             | -27.81      | H        |
| 7.777                 | -70.81              | Pk  | 36.4           | -26          | 7.9          | -52.51                  | -25             | -27.51      | V        |
| 10.374                | -72.33              | Pk  | 37.8           | -22.4        | 7.9          | -49.03                  | -25             | -24.03      | V        |
| 10.378                | -73.23              | Pk  | 37.8           | -22.3        | 7.9          | -49.83                  | -25             | -24.83      | H        |
| High Channel, 2680MHz |                     |     |                |              |              |                         |                 |             |          |
| 5.361                 | -69.08              | Pk  | 35.1           | -29.1        | 8.8          | -54.28                  | -25             | -29.28      | H        |
| 8.044                 | -70.38              | Pk  | 36.4           | -25.2        | 8.1          | -51.08                  | -25             | -26.08      | H        |
| 10.718                | -73.12              | Pk  | 37.8           | -22.1        | 7.8          | -49.62                  | -25             | -24.62      | H        |
| 5.363                 | -68.92              | Pk  | 35.1           | -29.1        | 8.7          | -54.22                  | -25             | -29.22      | V        |
| 8.046                 | -70.48              | Pk  | 36.4           | -25.3        | 8            | -51.38                  | -25             | -26.38      | V        |
| 10.72                 | -72.51              | Pk  | 37.8           | -22.1        | 7.8          | -49.01                  | -25             | -24.01      | V        |

Pk - Peak detector



**9.2.13. LTE BAND 66**

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 04/02/2019        |
| Test Engineer: | 50822             |
| Configuration: | EUT Only          |
| Mode:          | LTE 66 QPSK 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1720MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.43                  | -67.27              | Pk  | 32.8           | -30          | 9            | -55.47                  | -13             | -42.47      | H        |
| 3.436                 | -67.28              | Pk  | 32.8           | -29.8        | 8.9          | -55.38                  | -13             | -42.38      | V        |
| 5.156                 | -68.17              | Pk  | 34.6           | -28.6        | 9.2          | -52.97                  | -13             | -39.97      | V        |
| 5.16                  | -67.32              | Pk  | 34.6           | -28.7        | 9.2          | -52.22                  | -13             | -39.22      | H        |
| 6.874                 | -69.43              | Pk  | 35.8           | -27.5        | 6.6          | -54.53                  | -13             | -41.53      | H        |
| 6.875                 | -68.98              | Pk  | 35.8           | -27.5        | 6.7          | -53.98                  | -13             | -40.98      | V        |
| Mid Channel, 1745MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.482                 | -67.5               | Pk  | 32.9           | -30          | 9.4          | -55.2                   | -13             | -42.2       | H        |
| 3.488                 | -67.78              | Pk  | 32.9           | -30          | 9.5          | -55.38                  | -13             | -42.38      | V        |
| 5.235                 | -67.22              | Pk  | 34.8           | -29.1        | 9.1          | -52.42                  | -13             | -39.42      | H        |
| 5.235                 | -67.88              | Pk  | 34.8           | -29.1        | 8.8          | -53.38                  | -13             | -40.38      | V        |
| 6.962                 | -69.49              | Pk  | 35.9           | -27          | 7.1          | -53.49                  | -13             | -40.49      | V        |
| 6.965                 | -69.15              | Pk  | 35.9           | -27          | 7            | -53.25                  | -13             | -40.25      | H        |
| High Channel, 1770MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.537                 | -67.96              | Pk  | 33             | -30.2        | 9.4          | -55.76                  | -13             | -42.76      | H        |
| 3.536                 | -67.92              | Pk  | 33             | -30.2        | 9.5          | -55.62                  | -13             | -42.62      | V        |
| 5.292                 | -68.39              | Pk  | 34.9           | -28.8        | 7.9          | -54.39                  | -13             | -41.39      | V        |
| 5.303                 | -68.25              | Pk  | 34.9           | -28.9        | 8.3          | -53.95                  | -13             | -40.95      | H        |
| 7.07                  | -69.9               | Pk  | 36             | -26.5        | 7.1          | -53.3                   | -13             | -40.3       | H        |
| 7.081                 | -69.61              | Pk  | 36             | -26.5        | 7.4          | -52.71                  | -13             | -39.71      | V        |

Pk - Peak detector



|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 04/02/2019         |
| Test Engineer: | 50822              |
| Configuration: | EUT Only           |
| Mode:          | LTE 66 16QAM 20MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1720MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.147                 | -61.89              | Pk  | 34.6           | -28.7        | 9.1          | -46.89                  | -13             | -33.89      | H        |
| 5.147                 | -58.67              | Pk  | 34.6           | -28.7        | 9            | -43.77                  | -13             | -30.77      | V        |
| 3.43                  | -67.39              | Pk  | 32.8           | -30          | 9            | -55.59                  | -13             | -42.59      | V        |
| 3.439                 | -66.76              | Pk  | 32.9           | -29.9        | 8.8          | -54.96                  | -13             | -41.96      | H        |
| 6.867                 | -69.93              | Pk  | 35.8           | -27.4        | 6.5          | -55.03                  | -13             | -42.03      | V        |
| 6.872                 | -69.63              | Pk  | 35.8           | -27.5        | 6.6          | -54.73                  | -13             | -41.73      | H        |
| Mid Channel, 1745MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.481                 | -71.89              | Pk  | 32.9           | -30          | 9.4          | -59.59                  | -13             | -46.59      | H        |
| 3.485                 | -71.45              | Pk  | 32.9           | -30          | 9.5          | -59.05                  | -13             | -46.05      | V        |
| 5.234                 | -72.04              | Pk  | 34.8           | -29.1        | 8.7          | -57.64                  | -13             | -44.64      | V        |
| 5.235                 | -72.02              | Pk  | 34.8           | -29.1        | 9.1          | -57.22                  | -13             | -44.22      | H        |
| 6.964                 | -74.28              | Pk  | 35.9           | -27          | 7            | -58.38                  | -13             | -45.38      | V        |
| 6.965                 | -73.99              | Pk  | 35.9           | -27          | 7            | -58.09                  | -13             | -45.09      | H        |
| High Channel, 1770MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.537                 | -67.72              | Pk  | 33             | -30.2        | 9.4          | -55.52                  | -13             | -42.52      | H        |
| 3.541                 | -67.83              | Pk  | 33.1           | -30.2        | 9.2          | -55.73                  | -13             | -42.73      | V        |
| 5.307                 | -68.46              | Pk  | 34.9           | -28.9        | 8.5          | -53.96                  | -13             | -40.96      | V        |
| 5.309                 | -68.26              | Pk  | 34.9           | -29          | 8.4          | -53.96                  | -13             | -40.96      | H        |
| 7.066                 | -70.73              | Pk  | 36             | -26.4        | 7            | -54.13                  | -13             | -41.13      | V        |
| 7.072                 | -69.9               | Pk  | 36             | -26.6        | 7.1          | -53.4                   | -13             | -40.4       | H        |

Pk - Peak detector

**9.2.14. LTE BAND 71**

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 04/04/2019        |
| Test Engineer: | 50822             |
| Configuration: | EUT Only          |
| Mode:          | LTE 71 QPSK 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 673MHz   |                     |     |                |              |              |                         |                 |             |          |
| 1.353                 | -64.5               | Pk  | 28.5           | -33.1        | 10.1         | -59                     | -13             | -46         | H        |
| 2.679                 | -66.64              | Pk  | 32.4           | -31          | 9.5          | -55.74                  | -13             | -42.74      | H        |
| 1.345                 | -64.18              | Pk  | 28.5           | -33.2        | 9.4          | -59.48                  | -13             | -46.48      | V        |
| 2.683                 | -66.4               | Pk  | 32.3           | -31.1        | 10.1         | -55.1                   | -13             | -42.1       | V        |
| 2.013                 | -66.01              | Pk  | 30.9           | -32          | 9            | -58.11                  | -13             | -45.11      | H        |
| 2.016                 | -65.3               | Pk  | 30.9           | -32          | 9.4          | -57                     | -13             | -44         | V        |
| Mid Channel, 680.5MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.36                  | -65.9               | Pk  | 28.5           | -33.2        | 9.5          | -61.1                   | -13             | -48.1       | H        |
| 2.724                 | -67.35              | Pk  | 32.3           | -31          | 9.9          | -56.15                  | -13             | -43.15      | H        |
| 1.365                 | -65.04              | Pk  | 28.5           | -33.1        | 8            | -61.64                  | -13             | -48.64      | V        |
| 2.721                 | -66.93              | Pk  | 32.3           | -31.1        | 9.9          | -55.83                  | -13             | -42.83      | V        |
| 2.032                 | -66.79              | Pk  | 31             | -32.1        | 10.4         | -57.49                  | -13             | -44.49      | V        |
| 2.042                 | -66.78              | Pk  | 31             | -32.1        | 9.7          | -58.18                  | -13             | -45.18      | H        |
| High Channel, 688MHz  |                     |     |                |              |              |                         |                 |             |          |
| 1.38                  | -65.39              | Pk  | 28.5           | -33          | 7.7          | -62.19                  | -13             | -49.19      | H        |
| 2.75                  | -65.47              | Pk  | 32.3           | -31.1        | 9            | -55.27                  | -13             | -42.27      | H        |
| 1.382                 | -65.61              | Pk  | 28.5           | -33          | 6.8          | -63.31                  | -13             | -50.31      | V        |
| 2.743                 | -66.64              | Pk  | 32.3           | -30.9        | 8.7          | -56.54                  | -13             | -43.54      | V        |
| 2.064                 | -65.72              | Pk  | 31             | -31.8        | 9.5          | -57.02                  | -13             | -44.02      | H        |
| 2.069                 | -66.15              | Pk  | 31             | -31.8        | 9.8          | -57.15                  | -13             | -44.15      | V        |

Pk - Peak detector

|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 04/04/2019         |
| Test Engineer: | 50822              |
| Configuration: | EUT Only           |
| Mode:          | LTE 71 16QAM 20MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 673MHz   |                     |     |                |              |              |                         |                 |             |          |
| 1.352                 | -64.6               | Pk  | 28.5           | -33.2        | 10.2         | -59.1                   | -13             | -46.1       | H        |
| 2.685                 | -66.47              | Pk  | 32.3           | -31.1        | 8.8          | -56.47                  | -13             | -43.47      | H        |
| 1.343                 | -64.71              | Pk  | 28.5           | -33.2        | 9.1          | -60.31                  | -13             | -47.31      | V        |
| 2.685                 | -66.88              | Pk  | 32.3           | -31.1        | 10           | -55.68                  | -13             | -42.68      | V        |
| 2.011                 | -66.12              | Pk  | 30.9           | -32          | 9.7          | -57.52                  | -13             | -44.52      | V        |
| 2.017                 | -65.82              | Pk  | 30.9           | -32          | 9.1          | -57.82                  | -13             | -44.82      | H        |
| Mid Channel, 680.5MHz |                     |     |                |              |              |                         |                 |             |          |
| 1.36                  | -64.09              | Pk  | 28.5           | -33.2        | 9.5          | -59.29                  | -13             | -46.29      | H        |
| 2.721                 | -66.81              | Pk  | 32.3           | -31.1        | 9.9          | -55.71                  | -13             | -42.71      | H        |
| 1.355                 | -64.93              | Pk  | 28.5           | -33.2        | 9            | -60.63                  | -13             | -47.63      | V        |
| 2.718                 | -67.94              | Pk  | 32.3           | -31.1        | 10           | -56.74                  | -13             | -43.74      | V        |
| 2.041                 | -67.19              | Pk  | 31             | -32          | 10.8         | -57.39                  | -13             | -44.39      | V        |
| 2.044                 | -66.98              | Pk  | 31             | -32.1        | 9.7          | -58.38                  | -13             | -45.38      | H        |
| High Channel, 688MHz  |                     |     |                |              |              |                         |                 |             |          |
| 1.374                 | -65.62              | Pk  | 28.5           | -33.1        | 7.9          | -62.32                  | -13             | -49.32      | H        |
| 2.744                 | -66.05              | Pk  | 32.3           | -30.9        | 9.1          | -55.55                  | -13             | -42.55      | H        |
| 1.373                 | -65.97              | Pk  | 28.5           | -33.1        | 6.8          | -63.77                  | -13             | -50.77      | V        |
| 2.747                 | -66.36              | Pk  | 32.3           | -31          | 8.5          | -56.56                  | -13             | -43.56      | V        |
| 2.057                 | -65.81              | Pk  | 31             | -31.8        | 9.8          | -56.81                  | -13             | -43.81      | H        |
| 2.062                 | -65.24              | Pk  | 31             | -31.8        | 9.6          | -56.44                  | -13             | -43.44      | V        |

Pk - Peak detector

### 9.3. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 3

#### 9.3.1. LTE BAND 2

|                |                  |
|----------------|------------------|
| Company:       |                  |
| Project #:     | 12607346         |
| Date:          | 4/5/2019         |
| Test Engineer: | 12492            |
| Configuration: | EUT Only         |
| Mode:          | LTE 2 QPSK 20MHz |
| Chamber #:     | Chamber B        |

| Frequency (GHz)      | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1860MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.702                | -61.56              | Pk  | 33.2           | -30          | 10.2         | -48.16                  | -13             | -35.16      | H        |
| 7.445                | -71.12              | Pk  | 36.1           | -26.6        | 7.1          | -54.52                  | -13             | -41.52      | H        |
| 3.702                | -60.6               | Pk  | 33.2           | -30          | 9.7          | -47.7                   | -13             | -34.7       | V        |
| 7.445                | -70.53              | Pk  | 36.1           | -26.5        | 7            | -53.93                  | -13             | -40.93      | V        |
| 5.581                | -68.53              | Pk  | 35.5           | -28.6        | 8.2          | -53.43                  | -13             | -40.43      | H        |
| 5.582                | -69.2               | Pk  | 35.5           | -28.6        | 8.2          | -54.1                   | -13             | -41.1       | V        |
| Mid Channel, 1880MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.755                | -67.63              | Pk  | 33.3           | -30          | 9.4          | -54.93                  | -13             | -41.93      | H        |
| 7.514                | -70.32              | Pk  | 36.2           | -26.3        | 7.6          | -52.82                  | -13             | -39.82      | H        |
| 3.754                | -67.85              | Pk  | 33.3           | -30.1        | 9.7          | -54.95                  | -13             | -41.95      | V        |
| 7.524                | -70.95              | Pk  | 36.2           | -26.3        | 7.3          | -53.75                  | -13             | -40.75      | V        |
| 5.636                | -68.64              | Pk  | 35.5           | -28.6        | 8.5          | -53.24                  | -13             | -40.24      | H        |
| 5.638                | -68.48              | Pk  | 35.5           | -28.6        | 8.4          | -53.18                  | -13             | -40.18      | V        |
| HighChannel, 1900MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.786                | -68.1               | Pk  | 33.4           | -30.1        | 10.1         | -54.7                   | -13             | -41.7       | H        |
| 7.598                | -70.69              | Pk  | 36.4           | -26.2        | 7.5          | -52.99                  | -13             | -39.99      | H        |
| 3.782                | -67.73              | Pk  | 33.4           | -30.1        | 9.7          | -54.73                  | -13             | -41.73      | V        |
| 7.604                | -70.54              | Pk  | 36.4           | -26.3        | 7.6          | -52.84                  | -13             | -39.84      | V        |
| 5.701                | -69.18              | Pk  | 35.5           | -28          | 7.6          | -54.08                  | -13             | -41.08      | V        |
| 5.702                | -68.07              | Pk  | 35.5           | -28          | 7.8          | -52.77                  | -13             | -39.77      | H        |

Pk - Peak detector

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 4/5/2019          |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 2 16QAM 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1860MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.702                 | -60.38              | Pk  | 33.2           | -30          | 10.2         | -46.98                  | -13             | -33.98      | H        |
| 7.443                 | -70.55              | Pk  | 36.1           | -26.6        | 7            | -54.05                  | -13             | -41.05      | H        |
| 3.702                 | -59.43              | Pk  | 33.2           | -30          | 9.7          | -46.53                  | -13             | -33.53      | V        |
| 7.442                 | -69.82              | Pk  | 36.1           | -26.6        | 6.9          | -53.42                  | -13             | -40.42      | V        |
| 5.574                 | -69.02              | Pk  | 35.5           | -28.6        | 8.3          | -53.82                  | -13             | -40.82      | V        |
| 5.581                 | -68.41              | Pk  | 35.5           | -28.5        | 8.3          | -53.11                  | -13             | -40.11      | H        |
| Mid Channel, 1880MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.742                 | -62.68              | Pk  | 33.3           | -30.3        | 9.9          | -49.78                  | -13             | -36.78      | H        |
| 7.521                 | -71.17              | Pk  | 36.2           | -26.3        | 7.5          | -53.77                  | -13             | -40.77      | H        |
| 3.742                 | -61.3               | Pk  | 33.3           | -30.3        | 9.7          | -48.6                   | -13             | -35.6       | V        |
| 7.519                 | -70.75              | Pk  | 36.2           | -26.3        | 7.4          | -53.45                  | -13             | -40.45      | V        |
| 5.64                  | -68.83              | Pk  | 35.5           | -28.5        | 8.3          | -53.53                  | -13             | -40.53      | H        |
| 5.641                 | -68.86              | Pk  | 35.5           | -28.5        | 8.1          | -53.76                  | -13             | -40.76      | V        |
| High Channel, 1900MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.782                 | -59.14              | Pk  | 33.4           | -30.1        | 10           | -45.84                  | -13             | -32.84      | H        |
| 7.601                 | -70.92              | Pk  | 36.4           | -26.3        | 7.6          | -53.22                  | -13             | -40.22      | H        |
| 3.782                 | -59.64              | Pk  | 33.4           | -30.1        | 9.7          | -46.64                  | -13             | -33.64      | V        |
| 7.602                 | -71.3               | Pk  | 36.4           | -26.3        | 7.5          | -53.7                   | -13             | -40.7       | V        |
| 5.697                 | -69.51              | Pk  | 35.5           | -28.1        | 7.7          | -54.41                  | -13             | -41.41      | H        |
| 5.699                 | -68.27              | Pk  | 35.5           | -28          | 7.6          | -53.17                  | -13             | -40.17      | V        |

Pk - Peak detector

### 9.3.2. LTE BAND 7

|                |                  |
|----------------|------------------|
| Company:       |                  |
| Project #:     | 12607346         |
| Date:          | 4/5/2019         |
| Test Engineer: | 12492            |
| Configuration: | EUT Only         |
| Mode:          | LTE 7 QPSK 20MHz |
| Chamber #:     | Chamber B        |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 2510MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.02                  | -69.89              | Pk  | 34.6           | -28.6        | 8.6          | -55.29                  | -25             | -30.29      | H        |
| 7.533                 | -70.32              | Pk  | 36.2           | -26.4        | 7.4          | -53.12                  | -25             | -28.12      | H        |
| 5.026                 | -69.9               | Pk  | 34.6           | -28.8        | 8.5          | -55.6                   | -25             | -30.6       | V        |
| 7.528                 | -70.57              | Pk  | 36.2           | -26.3        | 7.3          | -53.37                  | -25             | -28.37      | V        |
| 10.037                | -72.46              | Pk  | 37.5           | -22.7        | 8            | -49.66                  | -25             | -24.66      | H        |
| 10.037                | -73.01              | Pk  | 37.5           | -22.7        | 8            | -50.21                  | -25             | -25.21      | V        |
| Mid Channel, 2535MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.069                 | -68.43              | Pk  | 34.5           | -28.7        | 8.6          | -54.03                  | -25             | -29.03      | H        |
| 7.578                 | -70.53              | Pk  | 36.3           | -26.3        | 7.2          | -53.33                  | -25             | -28.33      | H        |
| 5.07                  | -69.61              | Pk  | 34.5           | -28.7        | 8.5          | -55.31                  | -25             | -30.31      | V        |
| 7.58                  | -69.91              | Pk  | 36.3           | -26.2        | 7.2          | -52.61                  | -25             | -29.61      | V        |
| 10.139                | -72.38              | Pk  | 37.7           | -22.6        | 6.4          | -50.88                  | -25             | -25.88      | H        |
| 10.14                 | -72.35              | Pk  | 37.7           | -22.6        | 6.4          | -50.85                  | -25             | -25.85      | V        |
| High Channel, 2560MHz |                     |     |                |              |              |                         |                 |             |          |
| 5.114                 | -68.03              | Pk  | 34.6           | -28.8        | 9.3          | -52.93                  | -25             | -27.93      | H        |
| 7.653                 | -66.12              | Pk  | 36.4           | -26          | 7.6          | -48.12                  | -25             | -23.12      | H        |
| 7.653                 | -62.57              | Pk  | 36.4           | -26          | 7.5          | -44.67                  | -25             | -19.67      | V        |
| 5.114                 | -67.28              | Pk  | 34.6           | -28.8        | 9.3          | -52.18                  | -25             | -27.18      | V        |
| 10.24                 | -72.71              | Pk  | 37.8           | -22.6        | 7.7          | -49.81                  | -25             | -24.81      | H        |
| 10.243                | -71.93              | Pk  | 37.8           | -22.5        | 7.5          | -49.13                  | -25             | -24.13      | V        |

Pk - Peak detector

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 4/5/2019          |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 7 16QAM 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 2510MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.021                 | -70.39              | PK  | 34.6           | -28.6        | 8.6          | -55.79                  | -25             | -30.79      | H        |
| 7.501                 | -70.77              | PK  | 36.1           | -26.4        | 7.8          | -53.27                  | -25             | -28.27      | H        |
| 5.025                 | -69.51              | PK  | 34.6           | -28.7        | 8.7          | -54.91                  | -25             | -29.91      | V        |
| 7.503                 | -70.34              | PK  | 36.1           | -26.4        | 7.9          | -52.74                  | -25             | -27.74      | V        |
| 10.037                | -72.63              | PK  | 37.5           | -22.8        | 7.9          | -50.03                  | -25             | -25.03      | V        |
| 10.043                | -72.16              | PK  | 37.5           | -22.8        | 8            | -49.46                  | -25             | -14.46      | H        |
| Mid Channel, 2535MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.067                 | -69.25              | PK  | 34.5           | -28.7        | 8.7          | -54.75                  | -25             | -29.75      | H        |
| 7.601                 | -70.91              | PK  | 36.4           | -26.3        | 7.6          | -53.21                  | -25             | -28.21      | H        |
| 5.067                 | -69.24              | PK  | 34.5           | -28.7        | 8.7          | -54.74                  | -25             | -29.74      | V        |
| 7.6                   | -70.83              | PK  | 36.4           | -26.3        | 7.4          | -53.33                  | -25             | -28.33      | V        |
| 10.143                | -72.73              | PK  | 37.7           | -22.6        | 6.5          | -51.13                  | -25             | -26.13      | H        |
| 10.143                | -72.18              | PK  | 37.7           | -22.6        | 6.4          | -50.68                  | -25             | -25.68      | V        |
| High Channel, 2560MHz |                     |     |                |              |              |                         |                 |             |          |
| 7.653                 | -69.75              | PK  | 36.4           | -26          | 7.6          | -51.75                  | -25             | -26.75      | H        |
| 5.114                 | -68.64              | PK  | 34.6           | -28.8        | 9.3          | -53.54                  | -25             | -28.54      | V        |
| 7.655                 | -69.58              | PK  | 36.4           | -26          | 7.6          | -51.58                  | -25             | -26.58      | V        |
| 9.5                   | -72.08              | PK  | 36.9           | -23.6        | 8.5          | -50.28                  | -25             | -25.28      | H        |
| 10.242                | -72.82              | PK  | 37.8           | -22.6        | 7.5          | -50.12                  | -25             | -25.12      | V        |
| 10.247                | -72.71              | PK  | 37.8           | -22.4        | 7.4          | -49.91                  | -25             | -24.91      | H        |

Pk - Peak detector

### 9.3.3. LTE BAND 25

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 04/06/2019        |
| Test Engineer: | 31300             |
| Configuration: | EUT Only          |
| Mode:          | LTE 25 QPSK 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)        | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|------------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1860MHz   |                     |     |                |              |              |                         |                 |             |          |
| 4.574                  | -68.48              | Pk  | 34             | -29.2        | 10.1         | -53.58                  | -13             | -40.58      | H        |
| 2.261                  | -68.71              | Pk  | 31.8           | -31.7        | 9.2          | -59.41                  | -13             | -46.41      | V        |
| 4.52                   | -69.83              | Pk  | 33.9           | -29.1        | 10.5         | -54.53                  | -13             | -41.53      | V        |
| 11.434                 | -72.92              | Pk  | 38.4           | -21.6        | 8            | -48.12                  | -13             | -35.12      | V        |
| 2.572                  | -68.88              | Pk  | 32.7           | -31.4        | 10.6         | -56.98                  | -13             | -43.98      | H        |
| 8.628                  | -71.43              | Pk  | 36.2           | -24.4        | 8.3          | -51.33                  | -13             | -38.33      | H        |
| Mid Channel, 1882.5MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.727                  | -66.38              | Pk  | 33.3           | -30.1        | 10.1         | -53.08                  | -13             | -40.08      | H        |
| 5.143                  | -67.38              | Pk  | 34.6           | -28.7        | 8.9          | -52.58                  | -13             | -39.58      | H        |
| 2.229                  | -65.95              | Pk  | 31.6           | -32          | 9.9          | -56.45                  | -13             | -43.45      | V        |
| 2.503                  | -65.41              | Pk  | 32.7           | -31.6        | 8.9          | -55.41                  | -13             | -42.41      | H        |
| 4.464                  | -69.93              | Pk  | 33.8           | -29.1        | 10           | -55.23                  | -13             | -42.23      | V        |
| 5.621                  | -61.37              | Pk  | 35.5           | -28.4        | 8.7          | -45.57                  | -13             | -32.57      | V        |
| High Channel, 1905MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.792                  | -62.73              | Pk  | 33.4           | -30.2        | 10.3         | -49.23                  | -13             | -36.23      | H        |
| 3.792                  | -57.35              | Pk  | 33.4           | -30.2        | 9.7          | -44.45                  | -13             | -31.45      | V        |
| 2.596                  | -65.88              | Pk  | 32.7           | -31.4        | 9.1          | -55.48                  | -13             | -42.48      | H        |
| 2.618                  | -66.32              | Pk  | 32.6           | -31.3        | 9.7          | -55.32                  | -13             | -42.32      | V        |
| 5.688                  | -59.5               | Pk  | 35.5           | -27.7        | 8.1          | -43.6                   | -13             | -30.6       | H        |
| 5.688                  | -59.37              | Pk  | 35.5           | -27.8        | 7.9          | -43.77                  | -13             | -30.77      | V        |

Pk - Peak detector



|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 04/06/2019         |
| Test Engineer: | 31300              |
| Configuration: | EUT Only           |
| Mode:          | LTE 25 16QAM 20MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)        | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|------------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1860MHz   |                     |     |                |              |              |                         |                 |             |          |
| 4.203                  | -67.58              | Pk  | 33.6           | -29.4        | 9.8          | -53.58                  | -13             | -40.58      | H        |
| 9.024                  | -70.75              | Pk  | 36.8           | -23.9        | 8.6          | -49.25                  | -13             | -36.25      | H        |
| 3.702                  | -60.43              | Pk  | 33.2           | -30          | 9.7          | -47.53                  | -13             | -34.53      | V        |
| 11.5                   | -72.71              | Pk  | 38.5           | -21.5        | 8.6          | -47.11                  | -13             | -34.11      | V        |
| 2.137                  | -66.16              | Pk  | 31.2           | -31.7        | 11.7         | -54.96                  | -13             | -41.96      | H        |
| 5.553                  | -62.62              | Pk  | 35.4           | -28.3        | 8.8          | -46.72                  | -13             | -33.72      | V        |
| Mid Channel, 1882.5MHz |                     |     |                |              |              |                         |                 |             |          |
| 2.321                  | -67.67              | Pk  | 32.1           | -31.6        | 10.9         | -56.27                  | -13             | -43.27      | H        |
| 4.511                  | -69.54              | Pk  | 33.9           | -29.2        | 10.2         | -54.64                  | -13             | -41.64      | H        |
| 1.3                    | -67.64              | Pk  | 28.4           | -33.2        | 10.8         | -61.64                  | -13             | -48.64      | V        |
| 8.412                  | -73.98              | Pk  | 36.2           | -25.1        | 8.3          | -54.58                  | -13             | -41.58      | V        |
| 3.16                   | -66.87              | Pk  | 33.1           | -30.6        | 10.1         | -54.27                  | -13             | -41.27      | V        |
| 5.642                  | -68.15              | Pk  | 35.5           | -28.5        | 8.1          | -53.05                  | -13             | -40.05      | H        |
| High Channel, 1905MHz  |                     |     |                |              |              |                         |                 |             |          |
| 1.538                  | -64.21              | Pk  | 27.7           | -32.9        | 8.3          | -61.11                  | -13             | -48.11      | H        |
| 1.491                  | -65.24              | Pk  | 27.8           | -33          | 9.6          | -60.84                  | -13             | -47.84      | V        |
| 2.826                  | -66.37              | Pk  | 32.5           | -30.9        | 9.7          | -55.07                  | -13             | -42.07      | V        |
| 2.097                  | -65.28              | Pk  | 31.1           | -32          | 10.7         | -55.48                  | -13             | -42.48      | H        |
| 4.468                  | -67.57              | Pk  | 33.8           | -29.3        | 10.1         | -52.97                  | -13             | -39.97      | V        |
| 5.542                  | -69.12              | Pk  | 35.4           | -28.5        | 8.8          | -53.42                  | -13             | -40.42      | H        |

Pk - Peak detector

**9.3.4. LTE BAND 30**

|                |                   |
|----------------|-------------------|
| Project #:     | 12607346          |
| Date:          | 04/10/2019        |
| Test Engineer: | 50822             |
| Configuration: | EUT Only          |
| Mode:          | LTE 30 QPSK 10MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)      | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 2310MHz |                     |     |                |              |              |                         |                 |             |          |
| 4.611                | -66.09              | Pk  | 34.1           | -29.5        | 9.4          | -52.09                  | -40             | -12.09      | H        |
| 4.592                | -67.72              | Pk  | 34.1           | -29.4        | 9.4          | -53.62                  | -40             | -13.62      | V        |
| 6.911                | -69.74              | Pk  | 35.8           | -27.4        | 6.5          | -54.84                  | -40             | -14.84      | H        |
| 6.917                | -68.35              | Pk  | 35.8           | -27.3        | 6.5          | -53.35                  | -40             | -13.35      | V        |
| 9.227                | -72.11              | Pk  | 36.8           | -23.6        | 8.1          | -50.81                  | -40             | -10.81      | H        |
| 9.261                | -72.54              | Pk  | 36.8           | -24.1        | 7.9          | -51.94                  | -40             | -11.94      | V        |

|                |                    |
|----------------|--------------------|
| Project #:     | 12607346           |
| Date:          | 04/10/2019         |
| Test Engineer: | 50822              |
| Configuration: | EUT Only           |
| Mode:          | LTE 30 16QAM 10MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)      | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 2310MHz |                     |     |                |              |              |                         |                 |             |          |
| 4.611                | -65.54              | Pk  | 34.1           | -29.5        | 9.4          | -51.54                  | -40             | -11.54      | H        |
| 4.611                | -68.14              | Pk  | 34.1           | -29.5        | 9.3          | -54.24                  | -40             | -14.24      | V        |
| 6.918                | -69.69              | Pk  | 35.8           | -27.3        | 6.5          | -54.69                  | -40             | -14.69      | H        |
| 6.934                | -68.67              | Pk  | 35.8           | -27.4        | 6.7          | -53.57                  | -40             | -13.57      | V        |
| 9.23                 | -71.34              | Pk  | 36.8           | -23.5        | 7.9          | -50.14                  | -40             | -10.14      | H        |
| 9.235                | -71.81              | Pk  | 36.8           | -23.6        | 8            | -50.61                  | -40             | -10.61      | V        |

Pk - Peak detector

### 9.3.5. LTE BAND 41

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 04/05/2019        |
| Test Engineer: | 50822             |
| Configuration: | EUT Only          |
| Mode:          | LTE 41 QPSK 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 2506MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.003                 | -69.29              | Pk  | 34.6           | -28.5        | 9.4          | -53.79                  | -25             | -28.79      | H        |
| 7.508                 | -70.39              | Pk  | 36.2           | -26.4        | 7.8          | -52.79                  | -25             | -27.79      | H        |
| 5.003                 | -69.13              | Pk  | 34.6           | -28.5        | 9.3          | -53.73                  | -25             | -28.73      | V        |
| 7.51                  | -70.95              | Pk  | 36.2           | -26.3        | 7.8          | -53.25                  | -25             | -28.25      | V        |
| 10.184                | -72.05              | Pk  | 37.8           | -22.5        | 7.4          | -49.35                  | -25             | -24.35      | H        |
| 10.184                | -72.39              | Pk  | 37.8           | -22.5        | 7.3          | -49.79                  | -25             | -24.79      | V        |
| Mid Channel, 2593MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.179                 | -67.49              | Pk  | 34.7           | -28.9        | 8.9          | -52.79                  | -25             | -27.79      | H        |
| 5.179                 | -68.07              | Pk  | 34.7           | -28.9        | 8.5          | -53.77                  | -25             | -28.77      | V        |
| 7.783                 | -70.64              | Pk  | 36.4           | -25.9        | 7.6          | -52.54                  | -25             | -27.54      | H        |
| 7.783                 | -70.22              | Pk  | 36.4           | -25.9        | 7.8          | -51.92                  | -25             | -26.92      | V        |
| 10.365                | -72.95              | Pk  | 37.8           | -22.5        | 7.6          | -50.05                  | -25             | -25.05      | H        |
| 10.371                | -72.42              | Pk  | 37.8           | -22.4        | 7.9          | -49.12                  | -25             | -24.12      | V        |
| High Channel, 2680MHz |                     |     |                |              |              |                         |                 |             |          |
| 5.352                 | -68.96              | Pk  | 35             | -29          | 8.2          | -54.76                  | -25             | -29.76      | H        |
| 8.035                 | -70.5               | Pk  | 36.4           | -25.5        | 8.1          | -51.5                   | -25             | -26.5       | H        |
| 10.711                | -72.93              | Pk  | 37.8           | -22          | 8            | -49.13                  | -25             | -24.13      | H        |
| 5.36                  | -68.98              | Pk  | 35.1           | -29.1        | 8.8          | -54.18                  | -25             | -29.18      | V        |
| 8.037                 | -70.62              | Pk  | 36.4           | -25.4        | 8.1          | -51.52                  | -25             | -26.52      | V        |
| 10.715                | -72.96              | Pk  | 37.8           | -22          | 7.8          | -49.36                  | -25             | -24.36      | V        |

Pk - Peak detector

|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 04/05/2019         |
| Test Engineer: | 50822              |
| Configuration: | EUT Only           |
| Mode:          | LTE 41 16QAM 20MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 2506MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5                     | -69.27              | Pk  | 34.6           | -28.5        | 9.7          | -53.47                  | -25             | -28.47      | H        |
| 7.508                 | -70.67              | Pk  | 36.1           | -26.4        | 7.8          | -53.17                  | -25             | -28.17      | H        |
| 4.998                 | -69.29              | Pk  | 34.6           | -28.3        | 9.8          | -53.19                  | -25             | -28.19      | V        |
| 7.509                 | -70.75              | Pk  | 36.2           | -26.3        | 7.8          | -53.05                  | -25             | -28.05      | V        |
| 10.182                | -72.04              | Pk  | 37.8           | -22.5        | 7.3          | -49.44                  | -25             | -24.44      | V        |
| 10.183                | -72.35              | Pk  | 37.8           | -22.5        | 7.4          | -49.65                  | -25             | -24.65      | H        |
| Mid Channel, 2593MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.181                 | -66.84              | Pk  | 34.7           | -28.9        | 8.6          | -52.44                  | -25             | -27.44      | V        |
| 5.185                 | -68.33              | Pk  | 34.7           | -28.9        | 9            | -53.53                  | -25             | -28.53      | H        |
| 7.776                 | -69.73              | Pk  | 36.4           | -26          | 7.9          | -51.43                  | -25             | -26.43      | H        |
| 7.778                 | -70.73              | Pk  | 36.4           | -25.9        | 7.9          | -52.33                  | -25             | -27.33      | V        |
| 10.366                | -72.57              | Pk  | 37.8           | -22.4        | 7.7          | -49.47                  | -25             | -24.47      | H        |
| 10.37                 | -73.19              | Pk  | 37.8           | -22.4        | 7.9          | -49.89                  | -25             | -24.89      | V        |
| High Channel, 2680MHz |                     |     |                |              |              |                         |                 |             |          |
| 5.359                 | -69.16              | Pk  | 35.1           | -29.1        | 8.9          | -54.26                  | -25             | -29.26      | H        |
| 8.038                 | -70.5               | Pk  | 36.4           | -25.4        | 8.2          | -51.3                   | -25             | -26.3       | H        |
| 10.699                | -72.25              | Pk  | 37.8           | -22          | 8.5          | -47.95                  | -25             | -22.95      | H        |
| 5.353                 | -68.17              | Pk  | 35             | -29          | 7.9          | -54.27                  | -25             | -29.27      | V        |
| 8.037                 | -70.69              | Pk  | 36.4           | -25.4        | 8.1          | -51.59                  | -25             | -26.59      | V        |
| 10.706                | -72.9               | Pk  | 37.8           | -22          | 8.2          | -48.9                   | -25             | -23.9       | V        |

Pk - Peak detector

**9.3.6. LTE BAND 48**

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 6/27/2019         |
| Test Engineer: | 23567             |
| Configuration: | EUT Only          |
| Mode:          | LTE 48 QPSK 20MHz |
| Chamber #:     | Chamber A         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T346 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 3560MHz  |                     |     |                |              |              |                         |                 |             |          |
| 7.1                   | -73.35              | Pk  | 36             | -24.2        | 10           | -51.55                  | -40             | -11.55      | H        |
| 7.112                 | -73.77              | Pk  | 36.1           | -24.3        | 10.4         | -51.57                  | -40             | -11.57      | V        |
| 10.666                | -74.63              | Pk  | 37.9           | -20.2        | 10.5         | -46.43                  | -40             | -6.43       | H        |
| 10.68                 | -75.77              | Pk  | 37.9           | -20.1        | 10.9         | -47.07                  | -40             | -7.07       | V        |
| 14.217                | -75.04              | Pk  | 38.9           | -19.2        | 11.2         | -44.14                  | -40             | -4.14       | V        |
| 14.238                | -75.7               | Pk  | 38.9           | -19.4        | 11.1         | -45.10                  | -40             | -5.10       | H        |
| Mid Channel, 3625MHz  |                     |     |                |              |              |                         |                 |             |          |
| 7.242                 | -74.47              | Pk  | 35.8           | -24.1        | 11.1         | -51.67                  | -40             | -11.67      | V        |
| 7.266                 | -73.81              | Pk  | 35.8           | -24.1        | 10.6         | -51.51                  | -40             | -11.51      | H        |
| 10.863                | -76.9               | Pk  | 38             | -19.7        | 11.3         | -47.30                  | -40             | -7.30       | V        |
| 10.866                | -76.66              | Pk  | 38             | -19.6        | 10.9         | -47.36                  | -40             | -7.36       | H        |
| 14.433                | -74.81              | Pk  | 39.3           | -19.6        | 10.5         | -44.61                  | -40             | -4.61       | V        |
| 14.512                | -76.15              | Pk  | 39.4           | -19.6        | 10.8         | -45.55                  | -40             | -5.55       | H        |
| High Channel, 3690MHz |                     |     |                |              |              |                         |                 |             |          |
| 7.35                  | -74.29              | Pk  | 35.7           | -23.7        | 11           | -51.29                  | -40             | -11.29      | V        |
| 7.363                 | -74.33              | Pk  | 35.7           | -23.7        | 10.8         | -51.53                  | -40             | -11.53      | H        |
| 11.033                | -76.09              | Pk  | 37.9           | -20          | 10.8         | -47.39                  | -40             | -7.39       | V        |
| 11.057                | -76.02              | Pk  | 37.9           | -19.8        | 10.5         | -47.42                  | -40             | -7.42       | H        |
| 14.711                | -76.25              | Pk  | 39.7           | -19.1        | 10.6         | -45.05                  | -40             | -5.05       | V        |
| 14.739                | -75.19              | Pk  | 39.7           | -19.2        | 10.2         | -44.49                  | -40             | -4.49       | H        |

Pk - Peak detector

|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 6/27/2019          |
| Test Engineer: | 23567              |
| Configuration: | EUT Only           |
| Mode:          | LTE 48 16QAM 20MHz |
| Chamber #:     | Chamber A          |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T346 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 3560MHz  |                     |     |                |              |              |                         |                 |             |          |
| 7.113                 | -72.09              | Pk  | 36.1           | -24.3        | 10.4         | -49.89                  | -40             | -9.89       | V        |
| 7.123                 | -74.29              | Pk  | 36.2           | -24.3        | 10.7         | -51.69                  | -40             | -11.69      | H        |
| 10.678                | -76.87              | Pk  | 37.9           | -20.1        | 10.8         | -48.27                  | -40             | -8.27       | V        |
| 10.685                | -75.11              | Pk  | 37.9           | -20.1        | 10.7         | -46.61                  | -40             | -6.61       | H        |
| 14.189                | -73.29              | Pk  | 38.8           | -19.3        | 10.9         | -42.89                  | -40             | -2.89       | V        |
| 14.236                | -75.06              | Pk  | 38.9           | -19.4        | 11.1         | -44.46                  | -40             | -4.46       | H        |
| Mid Channel, 3625MHz  |                     |     |                |              |              |                         |                 |             |          |
| 7.26                  | -73.23              | Pk  | 35.8           | -24.1        | 10.5         | -51.03                  | -40             | -11.03      | H        |
| 7.276                 | -74.11              | Pk  | 35.8           | -24.1        | 10.7         | -51.71                  | -40             | -11.71      | V        |
| 10.826                | -74.36              | Pk  | 37.9           | -19.2        | 10.3         | -45.36                  | -40             | -5.36       | V        |
| 10.863                | -76.93              | Pk  | 38             | -19.6        | 11           | -47.53                  | -40             | -7.53       | H        |
| 14.487                | -75.85              | Pk  | 39.4           | -19.5        | 10.6         | -45.35                  | -40             | -5.35       | V        |
| 14.515                | -75.11              | Pk  | 39.4           | -19.5        | 10.8         | -44.41                  | -40             | -4.41       | H        |
| High Channel, 3690MHz |                     |     |                |              |              |                         |                 |             |          |
| 7.36                  | -75.27              | Pk  | 35.7           | -23.7        | 11.3         | -51.97                  | -40             | -11.97      | V        |
| 7.376                 | -74.41              | Pk  | 35.7           | -23.5        | 11           | -51.21                  | -40             | -11.21      | H        |
| 11.04                 | -76.14              | Pk  | 37.9           | -19.9        | 10.9         | -47.24                  | -40             | -7.24       | V        |
| 11.059                | -76.14              | Pk  | 37.9           | -19.8        | 10.5         | -47.54                  | -40             | -7.54       | H        |
| 14.71                 | -75.54              | Pk  | 39.7           | -19.1        | 10.6         | -44.34                  | -40             | -4.34       | V        |
| 14.733                | -75.16              | Pk  | 39.7           | -19          | 10.3         | -44.16                  | -40             | -4.16       | H        |

Pk - Peak detector

**9.3.7. LTE BAND 66**

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 04/05/2019        |
| Test Engineer: | 50822             |
| Configuration: | EUT Only          |
| Mode:          | LTE 66 QPSK 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1720MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.432                 | -66.81              | Pk  | 32.8           | -29.9        | 8.9          | -55.01                  | -13             | -42.01      | H        |
| 3.436                 | -66.9               | Pk  | 32.8           | -29.8        | 8.9          | -55                     | -13             | -42         | V        |
| 5.153                 | -67.91              | Pk  | 34.6           | -28.7        | 9.2          | -52.81                  | -13             | -39.81      | H        |
| 5.157                 | -68.54              | Pk  | 34.6           | -28.6        | 9.3          | -53.24                  | -13             | -40.24      | V        |
| 6.87                  | -69.69              | Pk  | 35.8           | -27.5        | 6.5          | -54.89                  | -13             | -41.89      | H        |
| 6.87                  | -69.25              | Pk  | 35.8           | -27.5        | 6.6          | -54.35                  | -13             | -41.35      | V        |
| Mid Channel, 1745MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.487                 | -67.87              | Pk  | 32.9           | -30          | 9.5          | -55.47                  | -13             | -42.47      | H        |
| 3.495                 | -67.07              | Pk  | 32.9           | -29.8        | 9.6          | -54.37                  | -13             | -41.37      | V        |
| 5.152                 | -67.86              | Pk  | 34.6           | -28.7        | 9.1          | -52.86                  | -13             | -39.86      | V        |
| 5.157                 | -67.73              | Pk  | 34.6           | -28.6        | 9.1          | -52.63                  | -13             | -39.63      | H        |
| 6.961                 | -69.41              | Pk  | 35.9           | -27          | 7            | -53.51                  | -13             | -40.51      | H        |
| 6.961                 | -69.61              | Pk  | 35.9           | -27          | 7.1          | -53.61                  | -13             | -40.61      | V        |
| High Channel, 1770MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.529                 | -71.79              | Pk  | 33             | -30.2        | 9.7          | -59.29                  | -13             | -46.29      | H        |
| 3.539                 | -73.55              | Pk  | 33.1           | -30.2        | 9.3          | -61.35                  | -13             | -48.35      | V        |
| 5.297                 | -72.44              | Pk  | 34.9           | -29          | 7.7          | -58.84                  | -13             | -45.84      | V        |
| 5.298                 | -71.86              | Pk  | 34.9           | -29          | 8            | -57.96                  | -13             | -44.96      | H        |
| 7.072                 | -74.13              | Pk  | 36             | -26.6        | 7.2          | -57.53                  | -13             | -44.53      | V        |
| 7.076                 | -73.87              | Pk  | 36             | -26.5        | 7.1          | -57.27                  | -13             | -44.27      | H        |

Pk - Peak detector

|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 04/05/2019         |
| Test Engineer: | 50822              |
| Configuration: | EUT Only           |
| Mode:          | LTE 66 16QAM 20MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1720MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.436                 | -67.47              | Pk  | 32.8           | -29.8        | 8.8          | -55.67                  | -13             | -42.67      | H        |
| 3.441                 | -67.3               | Pk  | 32.9           | -30          | 8.8          | -55.6                   | -13             | -42.6       | V        |
| 5.153                 | -67.51              | Pk  | 34.6           | -28.7        | 9.1          | -52.51                  | -13             | -39.51      | H        |
| 5.155                 | -68.17              | Pk  | 34.6           | -28.6        | 9.2          | -52.97                  | -13             | -39.97      | V        |
| 6.872                 | -69.34              | Pk  | 35.8           | -27.5        | 6.6          | -54.44                  | -13             | -41.44      | H        |
| 6.876                 | -69.63              | Pk  | 35.8           | -27.4        | 6.7          | -54.53                  | -13             | -41.53      | V        |
| Mid Channel, 1745MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.493                 | -68.15              | Pk  | 32.9           | -29.9        | 9.6          | -55.55                  | -13             | -42.55      | V        |
| 3.496                 | -67.19              | Pk  | 32.9           | -29.8        | 9.5          | -54.59                  | -13             | -41.59      | H        |
| 5.155                 | -68.19              | Pk  | 34.6           | -28.6        | 9.2          | -52.99                  | -13             | -39.99      | V        |
| 5.156                 | -68.37              | Pk  | 34.6           | -28.6        | 9.1          | -53.27                  | -13             | -40.27      | H        |
| 6.963                 | -69.61              | Pk  | 35.9           | -27          | 7            | -53.71                  | -13             | -40.71      | H        |
| 6.964                 | -70.19              | Pk  | 35.9           | -27          | 7            | -54.29                  | -13             | -41.29      | V        |
| High Channel, 1770MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.528                 | -68.08              | Pk  | 33             | -30.2        | 9.7          | -55.58                  | -13             | -42.58      | H        |
| 3.53                  | -67.86              | Pk  | 33             | -30.2        | 9.9          | -55.16                  | -13             | -42.16      | V        |
| 5.294                 | -67.97              | Pk  | 34.9           | -28.9        | 8.2          | -53.77                  | -13             | -40.77      | H        |
| 5.303                 | -68.72              | Pk  | 34.9           | -28.9        | 8.1          | -54.62                  | -13             | -41.62      | V        |
| 7.073                 | -69.87              | Pk  | 36             | -26.6        | 7.1          | -53.37                  | -13             | -40.37      | V        |
| 7.081                 | -69.69              | Pk  | 36             | -26.5        | 7.3          | -52.89                  | -13             | -39.89      | H        |

Pk - Peak detector



## 9.4. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 4

### 9.4.1. LTE BAND 2

|                |                  |
|----------------|------------------|
| Company:       |                  |
| Project #:     | 12607346         |
| Date:          | 4/8/2019         |
| Test Engineer: | 12492            |
| Configuration: | EUT Only         |
| Mode:          | LTE 2 QPSK 20MHz |
| Chamber #:     | Chamber B        |

| Frequency (GHz)      | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1860MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.721                | -68.64              | Pk  | 33.3           | -30.1        | 9.9          | -55.54                  | -13             | -42.54      | H        |
| 7.441                | -70.91              | Pk  | 36.1           | -26.7        | 6.9          | -54.61                  | -13             | -41.61      | H        |
| 3.715                | -68.68              | Pk  | 33.3           | -30          | 9.7          | -55.68                  | -13             | -42.68      | V        |
| 7.444                | -70.44              | Pk  | 36.1           | -26.6        | 6.9          | -54.04                  | -13             | -41.04      | V        |
| 5.578                | -68.56              | Pk  | 35.5           | -28.5        | 8.3          | -53.26                  | -13             | -40.26      | V        |
| 5.58                 | -68.86              | Pk  | 35.5           | -28.5        | 8.3          | -53.56                  | -13             | -40.56      | H        |
| Mid Channel, 1880MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.714                | -68.62              | Pk  | 33.3           | -30          | 9.8          | -55.52                  | -13             | -42.52      | H        |
| 7.443                | -70.82              | Pk  | 36.1           | -26.6        | 7            | -54.32                  | -13             | -41.32      | H        |
| 3.715                | -68.67              | Pk  | 33.3           | -30          | 9.7          | -55.67                  | -13             | -42.67      | V        |
| 7.444                | -70.34              | Pk  | 36.1           | -26.6        | 6.9          | -53.94                  | -13             | -40.94      | V        |
| 5.576                | -68.16              | Pk  | 35.5           | -28.6        | 8.3          | -52.96                  | -13             | -39.96      | V        |
| 5.578                | -69.08              | Pk  | 35.5           | -28.5        | 8.2          | -53.88                  | -13             | -40.88      | H        |
| HighChannel, 1900MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.803                | -68.36              | Pk  | 33.4           | -30.1        | 9.8          | -55.26                  | -13             | -42.26      | H        |
| 7.602                | -70.65              | Pk  | 36.4           | -26.3        | 7.6          | -52.95                  | -13             | -39.95      | H        |
| 3.808                | -68.24              | Pk  | 33.4           | -30.1        | 9.1          | -55.84                  | -13             | -42.84      | V        |
| 7.604                | -71.13              | Pk  | 36.4           | -26.3        | 7.6          | -53.43                  | -13             | -40.43      | V        |
| 5.698                | -69.24              | Pk  | 35.5           | -28.1        | 7.7          | -54.14                  | -13             | -41.14      | H        |
| 5.702                | -69.53              | Pk  | 35.5           | -28          | 7.5          | -54.53                  | -13             | -41.53      | V        |

Pk - Peak detector

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 4/8/2019          |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 2 16QAM 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)      | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1860MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.711                | -68.43              | Pk  | 33.2           | -29.9        | 9.9          | -55.23                  | -13             | -42.23      | H        |
| 7.442                | -70.98              | Pk  | 36.1           | -26.6        | 7            | -54.48                  | -13             | -41.48      | H        |
| 3.724                | -68.55              | Pk  | 33.3           | -30.1        | 10           | -55.35                  | -13             | -42.35      | V        |
| 7.439                | -69.9               | Pk  | 36.1           | -26.7        | 6.9          | -53.6                   | -13             | -40.6       | V        |
| 5.58                 | -69.09              | Pk  | 35.5           | -28.5        | 8.3          | -53.79                  | -13             | -40.79      | H        |
| 5.581                | -69.01              | Pk  | 35.5           | -28.6        | 8.2          | -53.91                  | -13             | -40.91      | V        |
| Mid Channel, 1880MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.724                | -66.86              | Pk  | 33.3           | -30.1        | 10.1         | -53.56                  | -13             | -40.56      | H        |
| 7.446                | -70.77              | Pk  | 36.1           | -26.5        | 7.2          | -53.97                  | -13             | -40.97      | H        |
| 3.722                | -68.65              | Pk  | 33.3           | -30.1        | 9.9          | -55.55                  | -13             | -42.55      | V        |
| 7.44                 | -70.87              | Pk  | 36.1           | -26.7        | 6.9          | -54.57                  | -13             | -41.57      | V        |
| 5.578                | -69.17              | Pk  | 35.5           | -28.5        | 8.3          | -53.87                  | -13             | -40.87      | V        |
| 5.579                | -69.2               | Pk  | 35.5           | -28.5        | 8.2          | -54                     | -13             | -41         | H        |
| HighChannel, 1900MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.803                | -68.26              | Pk  | 33.4           | -30.2        | 9.8          | -55.26                  | -13             | -42.26      | H        |
| 7.603                | -71.25              | Pk  | 36.4           | -26.3        | 7.6          | -53.55                  | -13             | -40.55      | H        |
| 3.803                | -68.77              | Pk  | 33.4           | -30.2        | 9.4          | -56.17                  | -13             | -43.17      | V        |
| 7.601                | -71.54              | Pk  | 36.4           | -26.3        | 7.5          | -53.94                  | -13             | -40.94      | V        |
| 5.698                | -68.77              | Pk  | 35.5           | -28.1        | 7.6          | -53.77                  | -13             | -40.77      | V        |
| 5.701                | -68.4               | Pk  | 35.5           | -28          | 7.8          | -53.1                   | -13             | -40.1       | H        |

Pk - Peak detector

### 9.4.2. LTE BAND 7

|                |                  |
|----------------|------------------|
| Company:       |                  |
| Project #:     | 12607346         |
| Date:          | 4/8/2019         |
| Test Engineer: | 12492            |
| Configuration: | EUT Only         |
| Mode:          | LTE 7 QPSK 20MHz |
| Chamber #:     | Chamber B        |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 2510MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.024                 | -69.43              | Pk  | 34.6           | -28.7        | 8.5          | -55.03                  | -25             | -30.03      | H        |
| 7.504                 | -70.58              | Pk  | 36.1           | -26.4        | 7.9          | -52.98                  | -25             | -27.98      | H        |
| 5.023                 | -68.63              | Pk  | 34.6           | -28.6        | 8.8          | -53.83                  | -25             | -28.83      | V        |
| 7.503                 | -64.93              | Pk  | 36.1           | -26.4        | 8            | -47.23                  | -25             | -22.23      | V        |
| 10.036                | -71.83              | Pk  | 37.5           | -22.7        | 8            | -49.03                  | -25             | -24.03      | H        |
| 10.036                | -72.49              | Pk  | 37.5           | -22.7        | 8            | -49.69                  | -25             | -24.69      | V        |
| Mid Channel, 2535MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.073                 | -68.83              | Pk  | 34.5           | -28.7        | 8.5          | -54.53                  | -25             | -39.53      | H        |
| 7.578                 | -69.16              | Pk  | 36.3           | -26.3        | 7.2          | -51.96                  | -25             | -26.96      | H        |
| 5.063                 | -69.13              | Pk  | 34.5           | -28.8        | 8.8          | -54.63                  | -25             | -29.63      | V        |
| 7.578                 | -63.55              | Pk  | 36.3           | -26.3        | 7.2          | -46.35                  | -25             | -21.35      | V        |
| 10.147                | -72.56              | Pk  | 37.8           | -22.7        | 6.4          | -51.06                  | -25             | -26.06      | V        |
| 10.152                | -71.83              | Pk  | 37.8           | -22.7        | 6.6          | -50.13                  | -25             | -25.13      | H        |
| High Channel, 2560MHz |                     |     |                |              |              |                         |                 |             |          |
| 5.112                 | -69.51              | Pk  | 34.5           | -28.8        | 9.3          | -54.51                  | -25             | -29.51      | H        |
| 7.678                 | -71.3               | Pk  | 36.4           | -25.9        | 7.8          | -53                     | -25             | -28         | H        |
| 5.119                 | -69.59              | Pk  | 34.6           | -28.8        | 8.9          | -54.89                  | -25             | -29.89      | V        |
| 7.683                 | -70.71              | Pk  | 36.4           | -26.1        | 7.6          | -52.81                  | -25             | -27.81      | V        |
| 10.239                | -72.02              | Pk  | 37.8           | -22.6        | 7.5          | -49.32                  | -25             | -24.32      | V        |
| 10.243                | -72.03              | Pk  | 37.8           | -22.5        | 7.6          | -49.13                  | -25             | -24.13      | H        |

Pk - Peak detector

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 4/8/2019          |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 7 16QAM 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 2510MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.018                 | -69.55              | Pk  | 34.6           | -28.6        | 8.5          | -55.05                  | -25             | -30.05      | H        |
| 7.503                 | -70.15              | Pk  | 36.1           | -26.4        | 7.9          | -52.55                  | -25             | -27.55      | H        |
| 5.017                 | -69.39              | Pk  | 34.6           | -28.6        | 8.7          | -54.69                  | -25             | -29.69      | V        |
| 7.503                 | -64.58              | Pk  | 36.1           | -26.4        | 7.9          | -46.98                  | -25             | -21.98      | V        |
| 10.038                | -72.78              | Pk  | 37.5           | -22.8        | 7.9          | -50.18                  | -25             | -25.18      | V        |
| 10.043                | -72.53              | Pk  | 37.5           | -22.8        | 8            | -49.83                  | -25             | -24.83      | H        |
| Mid Channel, 2535MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.076                 | -71.69              | Pk  | 34.5           | -28.7        | 8.5          | -57.39                  | -25             | -32.39      | H        |
| 7.603                 | -74.92              | Pk  | 36.4           | -26.3        | 7.6          | -57.22                  | -25             | -32.22      | H        |
| 5.048                 | -73.16              | Pk  | 34.6           | -28.6        | 9.4          | -57.76                  | -25             | -32.76      | V        |
| 7.578                 | -71.17              | Pk  | 36.3           | -26.2        | 7.2          | -53.87                  | -25             | -28.87      | V        |
| 10.093                | -76.26              | Pk  | 37.7           | -22.9        | 7.4          | -54.06                  | -25             | -29.06      | V        |
| 10.124                | -76.67              | Pk  | 37.7           | -22.8        | 6.7          | -55.07                  | -25             | -30.07      | H        |
| High Channel, 2560MHz |                     |     |                |              |              |                         |                 |             |          |
| 5.12                  | -69.07              | Pk  | 34.6           | -28.9        | 8.9          | -54.47                  | -25             | -29.47      | H        |
| 7.681                 | -71.21              | Pk  | 36.4           | -26          | 7.7          | -53.11                  | -25             | -28.11      | H        |
| 5.119                 | -69.62              | Pk  | 34.6           | -28.8        | 8.9          | -54.92                  | -25             | -29.92      | V        |
| 7.681                 | -70.39              | Pk  | 36.4           | -26          | 7.6          | -52.39                  | -25             | -27.39      | V        |
| 10.241                | -72.81              | Pk  | 37.8           | -22.6        | 7.6          | -50.01                  | -25             | -25.01      | H        |
| 10.243                | -72.4               | Pk  | 37.8           | -22.5        | 7.5          | -49.6                   | -25             | -24.6       | V        |

Pk - Peak detector

### 9.4.3. LTE BAND 25

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 04/08/2019        |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 25 QPSK 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)        | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|------------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1860MHz   |                     |     |                |              |              |                         |                 |             |          |
| 3.723                  | -68.05              | Pk  | 33.3           | -30.1        | 10.1         | -54.75                  | -13             | -41.75      | H        |
| 7.445                  | -70.61              | Pk  | 36.1           | -26.6        | 7.1          | -54.01                  | -13             | -41.01      | H        |
| 3.718                  | -68.03              | Pk  | 33.3           | -30.1        | 9.7          | -55.13                  | -13             | -42.13      | V        |
| 7.444                  | -71.17              | Pk  | 36.1           | -26.6        | 6.9          | -54.77                  | -13             | -41.77      | V        |
| 5.582                  | -68.74              | Pk  | 35.5           | -28.6        | 8.2          | -53.64                  | -13             | -40.64      | H        |
| 5.582                  | -69.49              | Pk  | 35.5           | -28.6        | 8.2          | -54.39                  | -13             | -41.39      | V        |
| Mid Channel, 1882.5MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.768                  | -66.34              | Pk  | 33.4           | -30          | 9.2          | -53.74                  | -13             | -40.74      | H        |
| 7.529                  | -70.64              | Pk  | 36.2           | -26.3        | 7.5          | -53.24                  | -13             | -40.24      | H        |
| 3.766                  | -66.43              | Pk  | 33.3           | -30          | 9.6          | -53.53                  | -13             | -40.53      | V        |
| 7.525                  | -69.57              | Pk  | 36.2           | -26.3        | 7.3          | -52.37                  | -13             | -39.37      | V        |
| 5.63                   | -68.54              | Pk  | 35.5           | -28.6        | 8.4          | -53.24                  | -13             | -40.24      | H        |
| 5.639                  | -68.73              | Pk  | 35.5           | -28.5        | 8.2          | -53.53                  | -13             | -40.53      | V        |
| High Channel, 1905MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.811                  | -67.78              | Pk  | 33.4           | -30.1        | 9.3          | -55.18                  | -13             | -42.18      | H        |
| 7.614                  | -69.73              | Pk  | 36.4           | -26.4        | 7.5          | -52.23                  | -13             | -39.23      | H        |
| 3.814                  | -66.98              | Pk  | 33.4           | -30.1        | 9.7          | -53.98                  | -13             | -40.98      | V        |
| 7.608                  | -69.84              | Pk  | 36.4           | -26.3        | 7.5          | -52.24                  | -13             | -39.24      | V        |
| 5.711                  | -68.91              | Pk  | 35.5           | -28.2        | 7.9          | -53.71                  | -13             | -40.71      | H        |
| 5.714                  | -69.61              | Pk  | 35.5           | -28.1        | 7.9          | -54.31                  | -13             | -41.31      | V        |

Pk - Peak detector

|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 04/03/2019         |
| Test Engineer: | 12492              |
| Configuration: | EUT Only           |
| Mode:          | LTE 25 16QAM 20MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)        | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|------------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1860MHz   |                     |     |                |              |              |                         |                 |             |          |
| 3.72                   | -68.97              | Pk  | 33.3           | -30.1        | 9.9          | -55.87                  | -13             | -42.87      | H        |
| 7.439                  | -70.8               | Pk  | 36.1           | -26.7        | 6.9          | -54.5                   | -13             | -41.5       | H        |
| 3.72                   | -67.9               | Pk  | 33.3           | -30.1        | 9.8          | -54.9                   | -13             | -41.9       | V        |
| 7.442                  | -70.11              | Pk  | 36.1           | -26.6        | 6.9          | -53.71                  | -13             | -40.71      | V        |
| 5.579                  | -69.21              | Pk  | 35.5           | -28.5        | 8.3          | -53.91                  | -13             | -40.91      | V        |
| 5.581                  | -68.87              | Pk  | 35.5           | -28.5        | 8.3          | -53.57                  | -13             | -40.57      | H        |
| Mid Channel, 1882.5MHz |                     |     |                |              |              |                         |                 |             |          |
| 3.764                  | -67.14              | Pk  | 33.3           | -30.1        | 9.3          | -54.64                  | -13             | -41.64      | H        |
| 7.532                  | -70.21              | Pk  | 36.2           | -26.3        | 7.5          | -52.81                  | -13             | -39.81      | H        |
| 3.765                  | -67.12              | Pk  | 33.3           | -30.1        | 9.7          | -54.22                  | -13             | -41.22      | V        |
| 7.529                  | -70.3               | Pk  | 36.2           | -26.3        | 7.3          | -53.1                   | -13             | -40.1       | V        |
| 5.633                  | -68.58              | Pk  | 35.5           | -28.6        | 8.6          | -53.08                  | -13             | -40.08      | V        |
| 5.634                  | -67.79              | Pk  | 35.5           | -28.6        | 8.6          | -52.29                  | -13             | -39.29      | H        |
| High Channel, 1905MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.81                   | -67.83              | Pk  | 33.4           | -30.1        | 9.3          | -55.23                  | -13             | -42.23      | H        |
| 7.619                  | -69.2               | Pk  | 36.4           | -26.4        | 7.6          | -51.6                   | -13             | -38.6       | H        |
| 3.815                  | -67.49              | Pk  | 33.4           | -30.1        | 9.7          | -54.49                  | -13             | -41.49      | V        |
| 7.625                  | -70.12              | Pk  | 36.4           | -26.4        | 7.3          | -52.82                  | -13             | -39.82      | V        |
| 5.713                  | -69.67              | Pk  | 35.5           | -28.1        | 7.9          | -54.37                  | -13             | -41.37      | H        |
| 5.72                   | -70                 | Pk  | 35.5           | -28.1        | 7.7          | -54.9                   | -13             | -41.9       | V        |

Pk - Peak detector

**9.4.4. LTE BAND 30**

|                |                   |
|----------------|-------------------|
| Project #:     | 12607346          |
| Date:          | 04/10/2019        |
| Test Engineer: | 50822             |
| Configuration: | EUT Only          |
| Mode:          | LTE 30 QPSK 10MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)      | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 2310MHz |                     |     |                |              |              |                         |                 |             |          |
| 4.611                | -67.65              | Pk  | 34.1           | -29.5        | 9.4          | -53.65                  | -40             | -13.65      | H        |
| 4.621                | -67.82              | Pk  | 34.1           | -29.6        | 9.5          | -53.82                  | -40             | -13.82      | V        |
| 6.917                | -65.1               | Pk  | 35.8           | -27.3        | 6.4          | -50.2                   | -40             | -10.2       | H        |
| 6.917                | -68.06              | Pk  | 35.8           | -27.3        | 6.5          | -53.06                  | -40             | -13.06      | V        |
| 9.231                | -72.04              | Pk  | 36.8           | -23.5        | 7.9          | -50.84                  | -40             | -10.84      | H        |
| 9.236                | -71.79              | Pk  | 36.8           | -23.6        | 8            | -50.59                  | -40             | -10.59      | V        |

|                |                    |
|----------------|--------------------|
| Project #:     | 12607346           |
| Date:          | 04/04/2019         |
| Test Engineer: | 12492              |
| Configuration: | EUT Only           |
| Mode:          | LTE 30 16QAM 10MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)      | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Mid Channel, 2310MHz |                     |     |                |              |              |                         |                 |             |          |
| 4.613                | -68.37              | Pk  | 34.1           | -29.6        | 9.5          | -54.37                  | -40             | -14.37      | H        |
| 4.616                | -68.41              | Pk  | 34.1           | -29.6        | 9.7          | -54.21                  | -40             | -14.21      | V        |
| 6.928                | -69.54              | Pk  | 35.8           | -27.3        | 6.9          | -54.14                  | -40             | -14.14      | V        |
| 6.932                | -69.67              | Pk  | 35.8           | -27.4        | 6.6          | -54.67                  | -40             | -14.67      | H        |
| 9.216                | -72.13              | Pk  | 36.8           | -23.7        | 8.1          | -50.93                  | -40             | -10.93      | H        |
| 9.231                | -77.42              | Pk  | 36.8           | -23.5        | 8            | -56.12                  | -40             | -16.12      | V        |

Pk - Peak detector

### 9.4.5. LTE BAND 41

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 04/08/2019        |
| Test Engineer: | 12492             |
| Configuration: | EUT Only          |
| Mode:          | LTE 41 QPSK 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 2506MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.009                 | -69.27              | Pk  | 34.6           | -28.6        | 9.1          | -54.17                  | -25             | -29.17      | H        |
| 7.517                 | -69.95              | Pk  | 36.2           | -26.2        | 7.5          | -52.45                  | -25             | -27.45      | H        |
| 5.011                 | -68.5               | Pk  | 34.6           | -28.6        | 9            | -53.5                   | -25             | -28.5       | V        |
| 7.521                 | -70.34              | Pk  | 36.2           | -26.3        | 7.4          | -53.04                  | -25             | -28.04      | V        |
| 10.026                | -72.35              | Pk  | 37.5           | -22.9        | 8.2          | -49.55                  | -25             | -24.55      | V        |
| 10.028                | -73.08              | Pk  | 37.5           | -22.9        | 8.2          | -50.28                  | -25             | -25.28      | H        |
| Mid Channel, 2593MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.185                 | -68.33              | Pk  | 34.7           | -28.9        | 8.6          | -53.93                  | -25             | -28.93      | V        |
| 5.19                  | -69.04              | Pk  | 34.7           | -28.8        | 9            | -54.14                  | -25             | -29.14      | H        |
| 7.776                 | -70.99              | Pk  | 36.4           | -26          | 7.9          | -52.69                  | -25             | -27.69      | H        |
| 7.777                 | -70.36              | Pk  | 36.4           | -26          | 7.9          | -52.06                  | -25             | -27.06      | V        |
| 10.371                | -72.83              | Pk  | 37.8           | -22.4        | 7.9          | -49.53                  | -25             | -24.53      | V        |
| 10.373                | -73.07              | Pk  | 37.8           | -22.4        | 7.8          | -49.87                  | -25             | -24.87      | H        |
| High Channel, 2680MHz |                     |     |                |              |              |                         |                 |             |          |
| 5.354                 | -69.24              | Pk  | 35             | -29          | 8.3          | -54.94                  | -25             | -29.94      | H        |
| 8.041                 | -71.1               | Pk  | 36.4           | -25.3        | 8.2          | -51.8                   | -25             | -26.8       | H        |
| 10.723                | -72.6               | Pk  | 37.8           | -22.1        | 7.8          | -49.1                   | -25             | -24.1       | H        |
| 5.368                 | -68.84              | Pk  | 35.1           | -29.2        | 8.8          | -54.14                  | -25             | -29.14      | V        |
| 8.046                 | -70.7               | Pk  | 36.4           | -25.3        | 8            | -51.6                   | -25             | -26.6       | V        |
| 10.721                | -73.19              | Pk  | 37.8           | -22.1        | 7.8          | -49.69                  | -25             | -24.69      | V        |

Pk - Peak detector



|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 04/08/2019         |
| Test Engineer: | 12492              |
| Configuration: | EUT Only           |
| Mode:          | LTE 41 16QAM 20MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 2506MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.012                 | -68.62              | Pk  | 34.6           | -28.6        | 8.8          | -53.82                  | -25             | -28.82      | H        |
| 7.491                 | -70.94              | Pk  | 36.1           | -26.5        | 7.7          | -53.64                  | -25             | -28.64      | H        |
| 5.014                 | -69.59              | Pk  | 34.6           | -28.6        | 8.8          | -54.79                  | -25             | -29.79      | V        |
| 7.491                 | -68.88              | Pk  | 36.1           | -26.5        | 7.6          | -51.68                  | -25             | -26.68      | V        |
| 10.021                | -72.81              | Pk  | 37.5           | -22.8        | 8.2          | -49.91                  | -25             | -24.91      | H        |
| 10.022                | -72.21              | Pk  | 37.5           | -22.8        | 8.2          | -49.31                  | -25             | -24.31      | V        |
| Mid Channel, 2593MHz  |                     |     |                |              |              |                         |                 |             |          |
| 5.19                  | -68.62              | Pk  | 34.7           | -28.8        | 8.6          | -54.12                  | -25             | -29.12      | V        |
| 5.192                 | -68.9               | Pk  | 34.7           | -28.8        | 9            | -54                     | -25             | -29         | H        |
| 7.778                 | -70.69              | Pk  | 36.4           | -25.9        | 7.9          | -52.29                  | -25             | -27.29      | V        |
| 7.781                 | -70.51              | Pk  | 36.4           | -25.9        | 7.7          | -52.31                  | -25             | -27.31      | H        |
| 10.376                | -72.83              | Pk  | 37.8           | -22.3        | 7.9          | -49.43                  | -25             | -24.43      | V        |
| 10.378                | -72.57              | Pk  | 37.8           | -22.3        | 7.9          | -49.17                  | -25             | -24.17      | H        |
| High Channel, 2680MHz |                     |     |                |              |              |                         |                 |             |          |
| 5.365                 | -68.71              | Pk  | 35.1           | -29.1        | 8.6          | -54.11                  | -25             | -29.11      | H        |
| 8.038                 | -69.79              | Pk  | 36.4           | -25.4        | 8.2          | -50.59                  | -25             | -25.59      | H        |
| 10.727                | -72.99              | Pk  | 37.9           | -22          | 7.9          | -49.19                  | -25             | -24.19      | H        |
| 5.369                 | -69.03              | Pk  | 35.1           | -29.2        | 8.9          | -54.23                  | -25             | -29.23      | V        |
| 8.044                 | -71.06              | Pk  | 36.4           | -25.2        | 8            | -51.86                  | -25             | -26.86      | V        |
| 10.723                | -72.43              | Pk  | 37.8           | -22.1        | 7.8          | -48.93                  | -25             | -23.93      | V        |

Pk - Peak detector

### 9.4.6. LTE BAND 48

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 6/27/2019         |
| Test Engineer: | 23567             |
| Configuration: | EUT Only          |
| Mode:          | LTE 48 QPSK 20MHz |
| Chamber #:     | Chamber A         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 3560MHz  |                     |     |                |              |              |                         |                 |             |          |
| 7.124                 | -74.42              | Pk  | 36.1           | -24.4        | 10.9         | -51.82                  | -40             | -11.82      | V        |
| 7.134                 | -74.55              | Pk  | 36.1           | -24.3        | 10.6         | -52.15                  | -40             | -12.15      | H        |
| 10.664                | -76.37              | Pk  | 37.9           | -20.2        | 10.5         | -48.17                  | -40             | -8.17       | H        |
| 10.678                | -76.15              | Pk  | 37.9           | -20.1        | 10.8         | -47.55                  | -40             | -7.55       | V        |
| 14.15                 | -75.3               | Pk  | 38.6           | -19.4        | 10.8         | -45.30                  | -40             | -5.30       | V        |
| 14.223                | -75.59              | Pk  | 38.8           | -19.3        | 11.2         | -44.89                  | -40             | -4.89       | H        |
| Mid Channel, 3625MHz  |                     |     |                |              |              |                         |                 |             |          |
| 7.242                 | -72.74              | Pk  | 35.8           | -24.1        | 11.1         | -49.94                  | -40             | -9.94       | V        |
| 7.264                 | -73.01              | Pk  | 35.8           | -24.1        | 10.5         | -50.81                  | -40             | -10.81      | H        |
| 10.88                 | -76.51              | Pk  | 37.9           | -19.4        | 10.8         | -47.21                  | -40             | -7.21       | V        |
| 10.903                | -76.06              | Pk  | 38             | -19.8        | 10.2         | -47.66                  | -40             | -7.66       | H        |
| 14.474                | -74.99              | Pk  | 39.4           | -19.4        | 10.9         | -44.09                  | -40             | -4.09       | V        |
| 14.493                | -75.29              | Pk  | 39.4           | -19.7        | 10.8         | -44.79                  | -40             | -4.79       | H        |
| High Channel, 3690MHz |                     |     |                |              |              |                         |                 |             |          |
| 7.365                 | -74.41              | Pk  | 35.7           | -23.7        | 11.3         | -51.11                  | -40             | -11.11      | V        |
| 7.384                 | -74.34              | Pk  | 35.8           | -23.5        | 10.9         | -51.14                  | -40             | -11.14      | H        |
| 11.016                | -75.45              | Pk  | 37.9           | -19.9        | 10.5         | -46.95                  | -40             | -6.95       | V        |
| 11.054                | -75.71              | Pk  | 37.9           | -19.8        | 10.6         | -47.01                  | -40             | -7.01       | H        |
| 14.749                | -75.09              | Pk  | 39.7           | -19.1        | 10.1         | -44.39                  | -40             | -4.39       | H        |
| 14.774                | -75.85              | Pk  | 39.7           | -18.5        | 10.5         | -44.15                  | -40             | -4.15       | V        |

Pk - Peak detector

|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 6/27/2019          |
| Test Engineer: | 23567              |
| Configuration: | EUT Only           |
| Mode:          | LTE 48 16QAM 20MHz |
| Chamber #:     | Chamber A          |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 3560MHz  |                     |     |                |              |              |                         |                 |             |          |
| 7.117                 | -73.85              | Pk  | 36.1           | -24.3        | 10.5         | -51.55                  | -40             | -11.55      | V        |
| 7.123                 | -74.04              | Pk  | 36.2           | -24.3        | 10.7         | -51.44                  | -40             | -11.44      | H        |
| 10.717                | -74.97              | Pk  | 37.9           | -20.4        | 10.6         | -46.87                  | -40             | -6.87       | V        |
| 10.718                | -75.61              | Pk  | 37.9           | -20.4        | 10.2         | -47.91                  | -40             | -7.91       | H        |
| 14.205                | -76.33              | Pk  | 38.9           | -19.3        | 11.2         | -45.53                  | -40             | -5.53       | V        |
| 14.221                | -75.56              | Pk  | 38.8           | -19.2        | 11.3         | -44.66                  | -40             | -4.66       | H        |
| Mid Channel, 3625MHz  |                     |     |                |              |              |                         |                 |             |          |
| 7.234                 | -74.34              | Pk  | 36             | -24          | 11.1         | -51.24                  | -40             | -11.24      | V        |
| 7.252                 | -73.23              | Pk  | 35.9           | -24.1        | 10.7         | -50.73                  | -40             | -10.73      | H        |
| 10.88                 | -76.68              | Pk  | 37.9           | -19.4        | 10.5         | -47.68                  | -40             | -7.68       | H        |
| 10.897                | -75.14              | Pk  | 37.9           | -19.7        | 10.3         | -46.64                  | -40             | -6.64       | V        |
| 14.522                | -74.73              | Pk  | 39.5           | -19.5        | 11           | -43.73                  | -40             | -3.73       | H        |
| 14.567                | -74.27              | Pk  | 39.6           | -19.5        | 9.9          | -44.27                  | -40             | -4.27       | V        |
| High Channel, 3690MHz |                     |     |                |              |              |                         |                 |             |          |
| 7.395                 | -74.97              | Pk  | 35.6           | -23.5        | 10.8         | -52.07                  | -40             | -12.07      | V        |
| 7.409                 | -75.48              | Pk  | 35.7           | -23.6        | 10.4         | -52.98                  | -40             | -12.98      | H        |
| 11.094                | -76.02              | Pk  | 37.9           | -19.9        | 10.3         | -47.72                  | -40             | -7.72       | H        |
| 11.111                | -75.82              | Pk  | 37.9           | -19.7        | 11           | -46.62                  | -40             | -6.62       | V        |
| 14.597                | -75                 | Pk  | 39.6           | -19          | 10.7         | -43.70                  | -40             | -3.70       | V        |
| 14.751                | -75.67              | Pk  | 39.7           | -19.1        | 10.1         | -44.97                  | -40             | -4.97       | H        |

Pk - Peak detector

**9.4.7. LTE BAND 66**

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 04/07/2019        |
| Test Engineer: | 31300             |
| Configuration: | EUT Only          |
| Mode:          | LTE 66 QPSK 20MHz |
| Chamber #:     | Chamber B         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1720MHz  |                     |     |                |              |              |                         |                 |             |          |
| 2.369                 | -66.23              | Pk  | 32.3           | -31.7        | 10.7         | -54.93                  | -13             | -41.93      | H        |
| 11.856                | -73.96              | Pk  | 39             | -21.4        | 8.4          | -47.96                  | -13             | -34.96      | H        |
| 4.517                 | -67.08              | Pk  | 33.9           | -29.2        | 10.3         | -52.08                  | -13             | -39.08      | V        |
| 2.12                  | -42.35              | Pk  | 31.2           | -31.8        | 10.4         | -32.55                  | -13             | -19.55      | H        |
| 2.12                  | -38.93              | Pk  | 31.2           | -31.8        | 9.8          | -29.73                  | -13             | -16.73      | V        |
| 6.896                 | -68.75              | Pk  | 35.8           | -27.4        | 6.9          | -53.45                  | -13             | -40.45      | V        |
| Mid Channel, 1745MHz  |                     |     |                |              |              |                         |                 |             |          |
| 4.196                 | -67.59              | Pk  | 33.6           | -29.4        | 9.6          | -53.79                  | -13             | -40.79      | H        |
| 8.333                 | -71.56              | Pk  | 36.3           | -25.5        | 7.9          | -52.86                  | -13             | -39.86      | H        |
| 4.33                  | -67.51              | Pk  | 33.7           | -29.3        | 8.4          | -54.71                  | -13             | -41.71      | V        |
| 2.145                 | -39.05              | Pk  | 31.3           | -31.8        | 10.9         | -28.65                  | -13             | -15.65      | H        |
| 2.145                 | -36.82              | Pk  | 31.3           | -31.8        | 10           | -27.32                  | -13             | -14.32      | V        |
| 9.786                 | -71.96              | Pk  | 37.3           | -22.9        | 8.2          | -49.36                  | -13             | -36.36      | V        |
| High Channel, 1770MHz |                     |     |                |              |              |                         |                 |             |          |
| 4.578                 | -67.46              | Pk  | 34             | -29.2        | 10.1         | -52.56                  | -13             | -39.56      | H        |
| 3.821                 | -66.58              | Pk  | 33.4           | -30          | 9.9          | -53.28                  | -13             | -40.28      | V        |
| 2.17                  | -39.27              | Pk  | 31.4           | -31.9        | 9.4          | -30.37                  | -13             | -17.37      | H        |
| 2.17                  | -38.02              | Pk  | 31.4           | -31.9        | 9.6          | -28.92                  | -13             | -15.92      | V        |
| 7.077                 | -68.79              | Pk  | 36             | -26.5        | 7.1          | -52.19                  | -13             | -39.19      | H        |
| 10.573                | -72.16              | Pk  | 37.8           | -22.1        | 7.8          | -48.66                  | -13             | -35.66      | V        |

Pk - Peak detector

|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 04/07/2019         |
| Test Engineer: | 31300              |
| Configuration: | EUT Only           |
| Mode:          | LTE 66 16QAM 20MHz |
| Chamber #:     | Chamber B          |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 1720MHz  |                     |     |                |              |              |                         |                 |             |          |
| 3.794                 | -67.58              | Pk  | 33.4           | -30.2        | 10.2         | -54.18                  | -13             | -41.18      | H        |
| 4.583                 | -67.21              | Pk  | 34.1           | -29.3        | 10           | -52.41                  | -13             | -39.41      | H        |
| 7.653                 | -69.22              | Pk  | 36.4           | -26          | 7.5          | -51.32                  | -13             | -38.32      | V        |
| 9.086                 | -71.92              | Pk  | 36.8           | -24          | 8.3          | -50.82                  | -13             | -37.82      | V        |
| 2.12                  | -41.58              | Pk  | 31.2           | -31.8        | 10.4         | -31.78                  | -13             | -18.78      | H        |
| 2.12                  | -37.95              | Pk  | 31.2           | -31.8        | 9.8          | -28.75                  | -13             | -15.75      | V        |
| Mid Channel, 1745MHz  |                     |     |                |              |              |                         |                 |             |          |
| 4.007                 | -66.56              | Pk  | 33.3           | -29.8        | 9.8          | -53.26                  | -13             | -40.26      | H        |
| 5.145                 | -68.43              | Pk  | 34.6           | -28.7        | 9            | -53.53                  | -13             | -40.53      | H        |
| 2.718                 | -66.58              | Pk  | 32.3           | -31.1        | 10           | -55.38                  | -13             | -42.38      | V        |
| 2.145                 | -38.84              | Pk  | 31.3           | -31.8        | 10.9         | -28.44                  | -13             | -15.44      | H        |
| 2.145                 | -37.55              | Pk  | 31.3           | -31.8        | 9.9          | -28.15                  | -13             | -15.15      | V        |
| 13.741                | -73.3               | Pk  | 39.2           | -21.1        | 10.3         | -44.9                   | -13             | -31.9       | V        |
| High Channel, 1770MHz |                     |     |                |              |              |                         |                 |             |          |
| 8.424                 | -71.09              | Pk  | 36.2           | -24.8        | 8.4          | -51.29                  | -13             | -38.29      | V        |
| 2.17                  | -39.19              | Pk  | 31.4           | -31.9        | 9.4          | -30.29                  | -13             | -17.29      | H        |
| 2.17                  | -37.11              | Pk  | 31.4           | -31.9        | 9.6          | -28.01                  | -13             | -15.01      | V        |
| 2.465                 | -65.57              | Pk  | 32.6           | -31.5        | 8.8          | -55.67                  | -13             | -42.67      | V        |
| 2.573                 | -66.09              | Pk  | 32.7           | -31.4        | 10.5         | -54.29                  | -13             | -41.29      | H        |
| 2.992                 | -66.7               | Pk  | 32.7           | -30.9        | 10.2         | -54.7                   | -13             | -41.7       | H        |

Pk - Peak detector

## 9.5. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 6

### 9.5.1. LTE BAND 48

|                |                   |
|----------------|-------------------|
| Company:       |                   |
| Project #:     | 12607346          |
| Date:          | 6/27/2019         |
| Test Engineer: | 23567             |
| Configuration: | EUT Only          |
| Mode:          | LTE 48 QPSK 20MHz |
| Chamber #:     | Chamber A         |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 3560MHz  |                     |     |                |              |              |                         |                 |             |          |
| 7.074                 | -74.22              | Pk  | 36             | -24.1        | 11           | -51.32                  | -40             | -11.32      | V        |
| 7.114                 | -72.93              | Pk  | 36.1           | -24.3        | 10.2         | -50.93                  | -40             | -10.93      | H        |
| 10.625                | -76.66              | Pk  | 37.9           | -19.7        | 10.4         | -48.06                  | -40             | -8.06       | V        |
| 10.66                 | -75.63              | Pk  | 37.9           | -20.1        | 10.5         | -47.33                  | -40             | -7.33       | H        |
| 14.116                | -75.41              | Pk  | 38.6           | -19.1        | 11.4         | -44.51                  | -40             | -4.51       | V        |
| 14.217                | -75.31              | Pk  | 38.9           | -19.2        | 11.4         | -44.21                  | -40             | -4.21       | H        |
| Mid Channel, 3625MHz  |                     |     |                |              |              |                         |                 |             |          |
| 7.238                 | -73.65              | Pk  | 35.9           | -24.1        | 11           | -50.85                  | -40             | -10.85      | V        |
| 7.248                 | -74.4               | Pk  | 35.9           | -24.1        | 10.6         | -52.00                  | -40             | -12.00      | H        |
| 10.79                 | -75.92              | Pk  | 37.9           | -19.9        | 11.2         | -46.72                  | -40             | -6.72       | V        |
| 10.871                | -76.13              | Pk  | 37.9           | -19.5        | 10.7         | -47.03                  | -40             | -7.03       | H        |
| 14.466                | -75.41              | Pk  | 39.3           | -19.5        | 10.9         | -44.71                  | -40             | -4.71       | V        |
| 14.516                | -76.15              | Pk  | 39.4           | -19.5        | 10.9         | -45.35                  | -40             | -5.35       | H        |
| High Channel, 3690MHz |                     |     |                |              |              |                         |                 |             |          |
| 7.352                 | -74.58              | Pk  | 35.7           | -23.7        | 10.9         | -51.68                  | -40             | -11.68      | V        |
| 7.376                 | -72.95              | Pk  | 35.7           | -23.5        | 11           | -49.75                  | -40             | -9.75       | H        |
| 11.022                | -76.21              | Pk  | 37.9           | -19.9        | 10.6         | -47.61                  | -40             | -7.61       | V        |
| 11.054                | -74.92              | Pk  | 37.9           | -19.8        | 10.6         | -46.22                  | -40             | -6.22       | H        |
| 14.739                | -75.17              | Pk  | 39.7           | -19.2        | 10.2         | -44.47                  | -40             | -4.47       | H        |
| 14.784                | -75.34              | Pk  | 39.7           | -18.5        | 10.9         | -43.24                  | -40             | -3.24       | V        |

Pk - Peak detector

|                |                    |
|----------------|--------------------|
| Company:       |                    |
| Project #:     | 12607346           |
| Date:          | 6/27/2019          |
| Test Engineer: | 23567              |
| Configuration: | EUT Only           |
| Mode:          | LTE 48 16QAM 20MHz |
| Chamber #:     | Chamber A          |

| Frequency (GHz)       | Meter Reading (dBm) | Det | AF T344 (dB/m) | Amp/Cbl (dB) | Amp/Cbl (dB) | Corrected Reading (dBm) | Harmonics limit | Margin (dB) | Polarity |
|-----------------------|---------------------|-----|----------------|--------------|--------------|-------------------------|-----------------|-------------|----------|
| Low Channel, 3560MHz  |                     |     |                |              |              |                         |                 |             |          |
| 7.104                 | -73.29              | Pk  | 36             | -24.2        | 10.3         | -51.19                  | -40             | -11.19      | V        |
| 7.114                 | -74.7               | Pk  | 36.1           | -24.3        | 10.2         | -52.70                  | -40             | -12.70      | H        |
| 10.631                | -76.21              | Pk  | 37.9           | -19.7        | 10.4         | -47.61                  | -40             | -7.61       | V        |
| 10.661                | -76.66              | Pk  | 37.9           | -20.1        | 10.5         | -48.36                  | -40             | -8.36       | H        |
| 14.195                | -75.26              | Pk  | 38.8           | -19.3        | 11           | -44.76                  | -40             | -4.76       | V        |
| 14.218                | -75.17              | Pk  | 38.9           | -19.2        | 11.4         | -44.07                  | -40             | -4.07       | H        |
| Mid Channel, 3625MHz  |                     |     |                |              |              |                         |                 |             |          |
| 7.23                  | -74.23              | Pk  | 35.9           | -24          | 11           | -51.33                  | -40             | -11.33      | V        |
| 7.248                 | -73.81              | Pk  | 35.9           | -24.1        | 10.6         | -51.41                  | -40             | -11.41      | H        |
| 10.829                | -76.19              | Pk  | 38             | -19.3        | 10.3         | -47.19                  | -40             | -7.19       | V        |
| 10.863                | -75.22              | Pk  | 38             | -19.6        | 11           | -45.82                  | -40             | -5.82       | H        |
| 14.49                 | -75.46              | Pk  | 39.4           | -19.6        | 10.8         | -44.86                  | -40             | -4.86       | H        |
| 14.512                | -75.46              | Pk  | 39.4           | -19.6        | 10.6         | -45.06                  | -40             | -5.06       | V        |
| High Channel, 3690MHz |                     |     |                |              |              |                         |                 |             |          |
| 7.355                 | -73.79              | Pk  | 35.7           | -23.7        | 11           | -50.79                  | -40             | -10.79      | V        |
| 7.361                 | -74.09              | Pk  | 35.8           | -23.7        | 10.8         | -51.19                  | -40             | -11.19      | H        |
| 11.052                | -76.19              | Pk  | 37.9           | -19.8        | 10.9         | -47.19                  | -40             | -7.19       | V        |
| 11.055                | -75.14              | Pk  | 37.9           | -19.8        | 10.6         | -46.44                  | -40             | -6.44       | H        |
| 14.766                | -76.84              | Pk  | 39.7           | -18.6        | 10.6         | -45.14                  | -40             | -5.14       | H        |
| 14.766                | -76.07              | Pk  | 39.7           | -18.6        | 10.4         | -44.57                  | -40             | -4.57       | V        |

Pk - Peak detector

## END OF REPORT

## 10. SETUP PHOTOS

Please see setup photo report 12607346-EP1V1