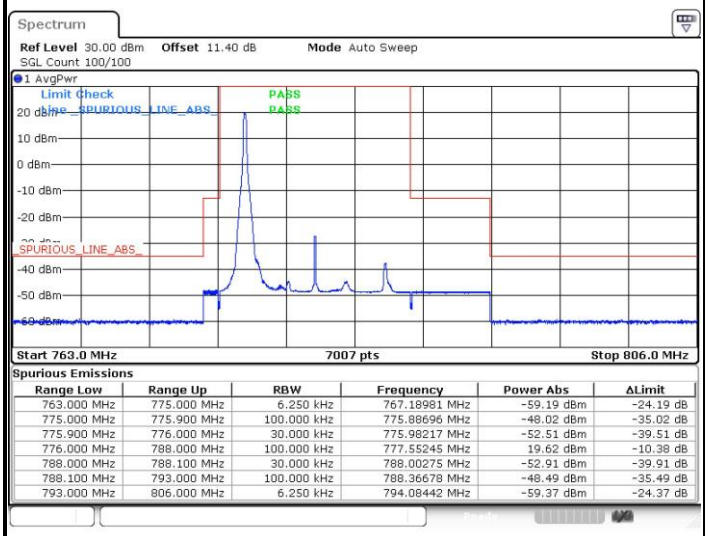
## LTE Band 13 / 10MHz / 16QAM

### Lowest Band Edge / 1 RB

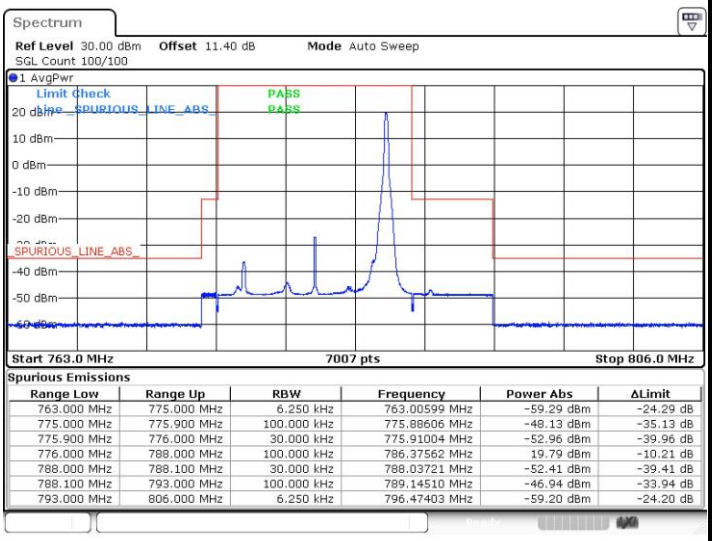



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 763.000 MHz | 775.000 MHz | 6.250 kHz | 767.18981 MHz | -59.19 dBm | -24.19 dB |
| 775.000 MHz | 775.900 MHz | 100.000 kHz | 775.88696 MHz | -48.02 dBm | -35.02 dB |
| 775.900 MHz | 776.000 MHz | 30.000 kHz | 775.98217 MHz | -52.51 dBm | -39.51 dB |
| 776.000 MHz | 788.000 MHz | 100.000 kHz | 777.55245 MHz | 19.62 dBm | -10.38 dB |
| 788.000 MHz | 788.100 MHz | 30.000 kHz | 788.00275 MHz | -52.91 dBm | -39.91 dB |
| 788.100 MHz | 793.000 MHz | 100.000 kHz | 788.36678 MHz | -48.49 dBm | -35.49 dB |
| 793.000 MHz | 806.000 MHz | 6.250 kHz | 794.08442 MHz | -59.37 dBm | -24.37 dB |

Date: 28.JUN.2019 00:18:07

### Highest Band Edge / 1 RB

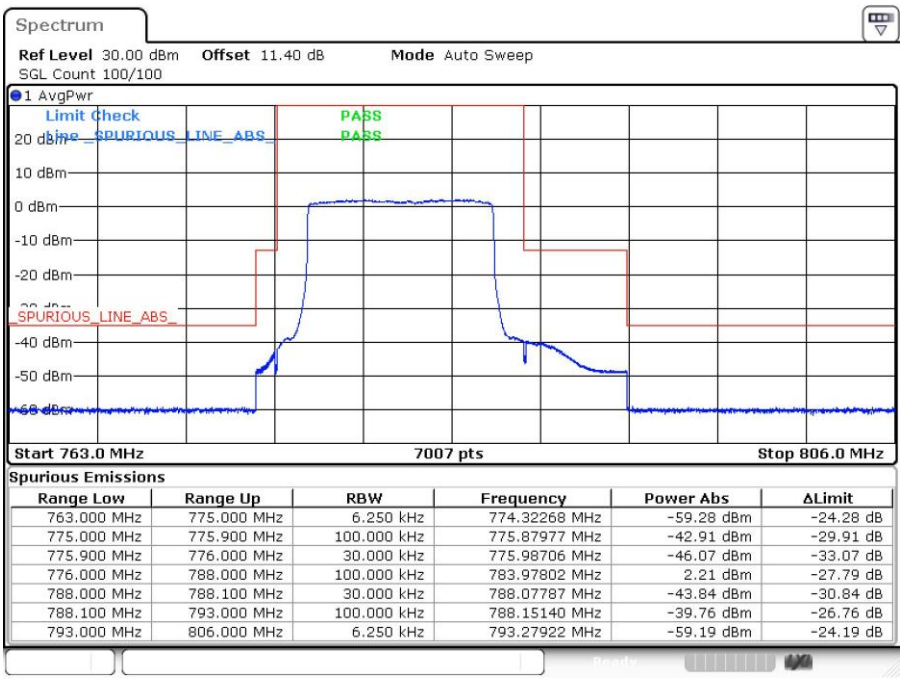



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 763.000 MHz | 775.000 MHz | 6.250 kHz | 763.00599 MHz | -59.29 dBm | -24.29 dB |
| 775.000 MHz | 775.900 MHz | 100.000 kHz | 775.88606 MHz | -48.13 dBm | -35.13 dB |
| 775.900 MHz | 776.000 MHz | 30.000 kHz | 775.91004 MHz | -52.96 dBm | -39.96 dB |
| 776.000 MHz | 788.000 MHz | 100.000 kHz | 786.37562 MHz | 19.79 dBm | -10.21 dB |
| 788.000 MHz | 788.100 MHz | 30.000 kHz | 788.03721 MHz | -52.41 dBm | -39.41 dB |
| 788.100 MHz | 793.000 MHz | 100.000 kHz | 789.14510 MHz | -46.94 dBm | -33.94 dB |
| 793.000 MHz | 806.000 MHz | 6.250 kHz | 796.47403 MHz | -59.20 dBm | -24.20 dB |

Date: 28.JUN.2019 00:23:06

### Band Edge / Full RB



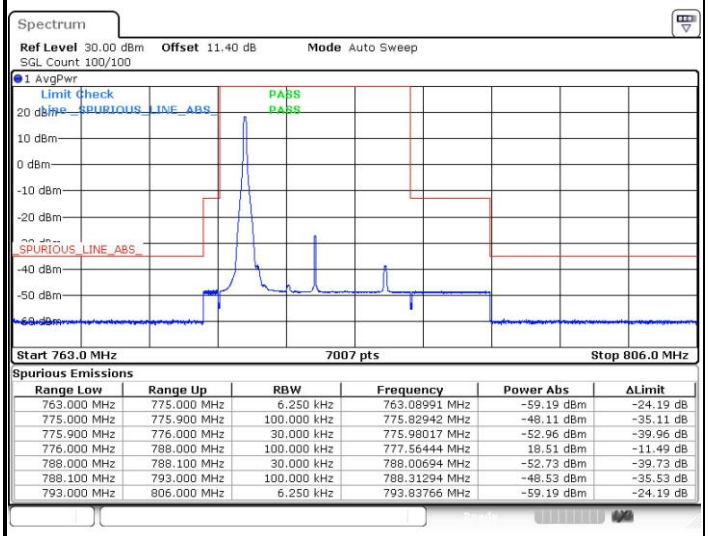

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 763.000 MHz | 775.000 MHz | 6.250 kHz | 774.32268 MHz | -59.28 dBm | -24.28 dB |
| 775.000 MHz | 775.900 MHz | 100.000 kHz | 775.87977 MHz | -42.91 dBm | -29.91 dB |
| 775.900 MHz | 776.000 MHz | 30.000 kHz | 775.98706 MHz | -46.07 dBm | -33.07 dB |
| 776.000 MHz | 788.000 MHz | 100.000 kHz | 783.97802 MHz | 2.21 dBm | -27.79 dB |
| 788.000 MHz | 788.100 MHz | 30.000 kHz | 788.07787 MHz | -43.84 dBm | -30.84 dB |
| 788.100 MHz | 793.000 MHz | 100.000 kHz | 788.15140 MHz | -39.76 dBm | -26.76 dB |
| 793.000 MHz | 806.000 MHz | 6.250 kHz | 793.27922 MHz | -59.19 dBm | -24.19 dB |

Date: 28.JUN.2019 00:16:28

## LTE Band 13 / 10MHz / 64QAM

### Lowest Band Edge / 1 RB

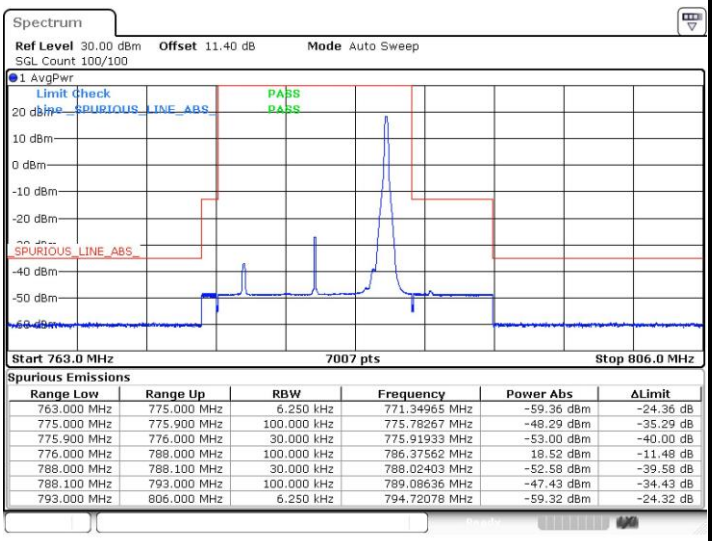



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 763.000 MHz | 775.000 MHz | 6.250 kHz | 763.08991 MHz | -59.19 dBm | -24.19 dB |
| 775.000 MHz | 775.900 MHz | 100.000 kHz | 775.82942 MHz | -48.11 dBm | -35.11 dB |
| 775.900 MHz | 776.000 MHz | 30.000 kHz | 775.98017 MHz | -52.96 dBm | -39.96 dB |
| 776.000 MHz | 788.000 MHz | 100.000 kHz | 777.56444 MHz | 18.51 dBm | -11.49 dB |
| 788.000 MHz | 788.100 MHz | 30.000 kHz | 788.00694 MHz | -52.73 dBm | -39.73 dB |
| 788.100 MHz | 793.000 MHz | 100.000 kHz | 788.31294 MHz | -48.53 dBm | -35.53 dB |
| 793.000 MHz | 806.000 MHz | 6.250 kHz | 793.83766 MHz | -59.19 dBm | -24.19 dB |

Date: 28.JUN.2019 00:28:49

### Highest Band Edge / 1 RB

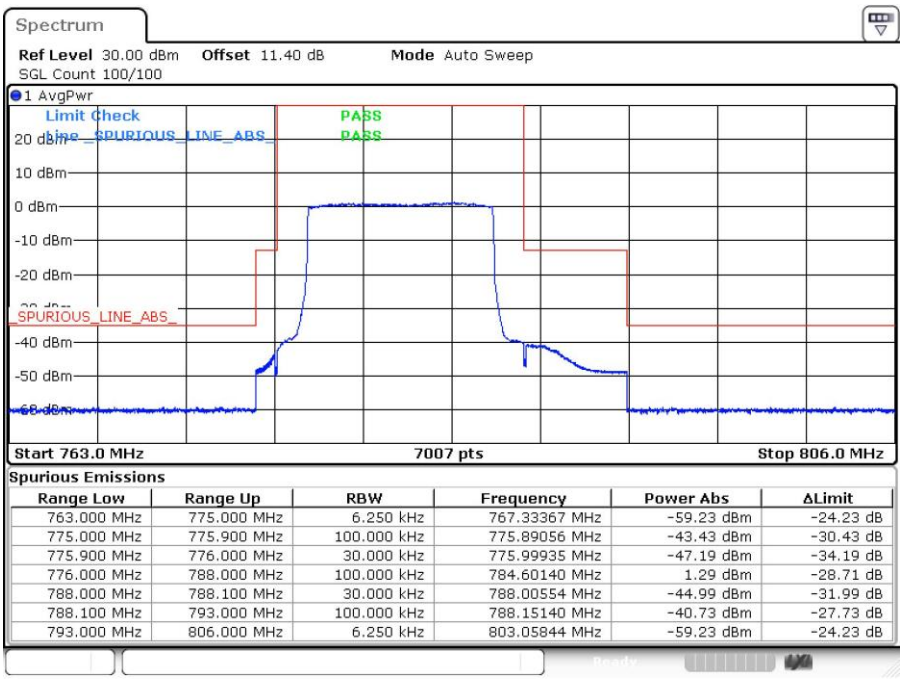



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 763.000 MHz | 775.000 MHz | 6.250 kHz | 771.34965 MHz | -59.36 dBm | -24.36 dB |
| 775.000 MHz | 775.900 MHz | 100.000 kHz | 775.78267 MHz | -48.29 dBm | -35.29 dB |
| 775.900 MHz | 776.000 MHz | 30.000 kHz | 775.91933 MHz | -53.00 dBm | -40.00 dB |
| 776.000 MHz | 788.000 MHz | 100.000 kHz | 786.37562 MHz | 18.52 dBm | -11.48 dB |
| 788.000 MHz | 788.100 MHz | 30.000 kHz | 788.02403 MHz | -52.58 dBm | -39.58 dB |
| 788.100 MHz | 793.000 MHz | 100.000 kHz | 789.08636 MHz | -47.43 dBm | -34.43 dB |
| 793.000 MHz | 806.000 MHz | 6.250 kHz | 794.72078 MHz | -59.32 dBm | -24.32 dB |

Date: 28.JUN.2019 00:30:29

### Band Edge / Full RB




Spurious Emissions

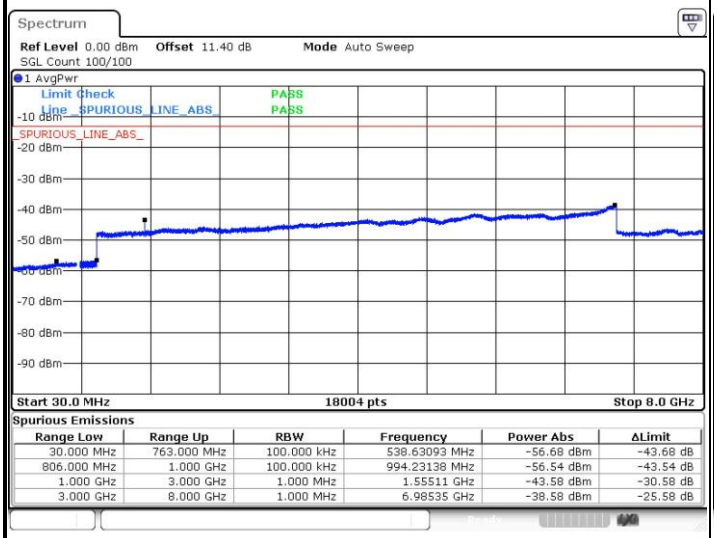
| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 763.000 MHz | 775.000 MHz | 6.250 kHz | 767.33367 MHz | -59.23 dBm | -24.23 dB |
| 775.000 MHz | 775.900 MHz | 100.000 kHz | 775.89056 MHz | -43.43 dBm | -30.43 dB |
| 775.900 MHz | 776.000 MHz | 30.000 kHz | 775.99935 MHz | -47.19 dBm | -34.19 dB |
| 776.000 MHz | 788.000 MHz | 100.000 kHz | 784.60140 MHz | 1.29 dBm | -28.71 dB |
| 788.000 MHz | 788.100 MHz | 30.000 kHz | 788.00554 MHz | -44.99 dBm | -31.99 dB |
| 788.100 MHz | 793.000 MHz | 100.000 kHz | 788.15140 MHz | -40.73 dBm | -27.73 dB |
| 793.000 MHz | 806.000 MHz | 6.250 kHz | 803.05844 MHz | -59.23 dBm | -24.23 dB |

Date: 28.JUN.2019 00:27:10

# Conducted Spurious Emission

## LTE Band 13 / 5MHz

### Lowest Channel / QPSK

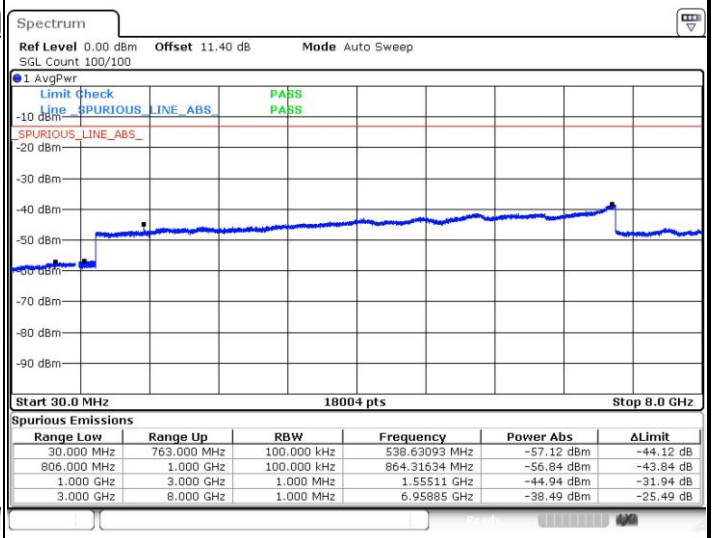



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 763.000 MHz | 100.000 kHz | 538.63093 MHz | -56.68 dBm | -43.68 dB |
| 806.000 MHz | 1.000 GHz | 100.000 kHz | 994.23138 MHz | -56.54 dBm | -43.54 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.55511 GHz | -43.58 dBm | -30.58 dB |
| 3.000 GHz | 8.000 GHz | 1.000 MHz | 6.98535 GHz | -38.58 dBm | -25.58 dB |

Date: 27.JUN.2019 23:48:19

### Lowest Channel / 16QAM

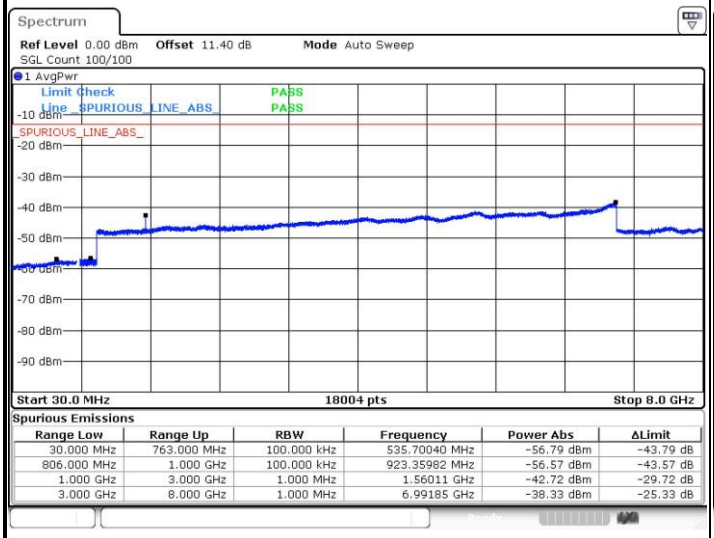



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 763.000 MHz | 100.000 kHz | 538.63093 MHz | -57.12 dBm | -44.12 dB |
| 806.000 MHz | 1.000 GHz | 100.000 kHz | 864.31634 MHz | -56.84 dBm | -43.84 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.55511 GHz | -44.94 dBm | -31.94 dB |
| 3.000 GHz | 8.000 GHz | 1.000 MHz | 6.95885 GHz | -38.49 dBm | -25.49 dB |

Date: 27.JUN.2019 23:49:20

### Middle Channel / QPSK

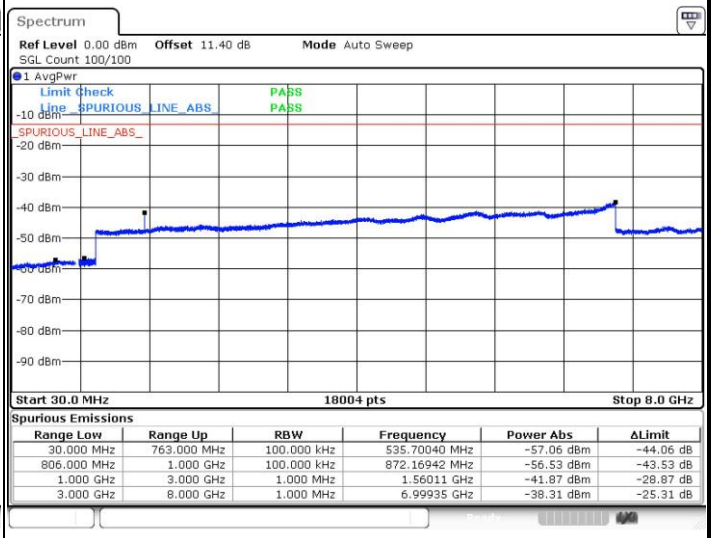



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 763.000 MHz | 100.000 kHz | 535.70040 MHz | -56.79 dBm | -43.79 dB |
| 806.000 MHz | 1.000 GHz | 100.000 kHz | 923.35982 MHz | -56.57 dBm | -43.57 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.56011 GHz | -42.72 dBm | -29.72 dB |
| 3.000 GHz | 8.000 GHz | 1.000 MHz | 6.99185 GHz | -38.33 dBm | -25.33 dB |

Date: 27.JUN.2019 23:51:21

### Middle Channel / 16QAM



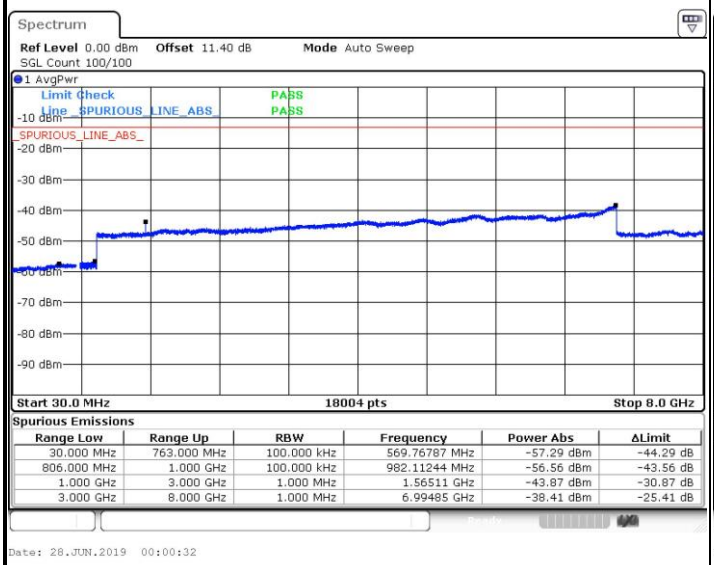

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 763.000 MHz | 100.000 kHz | 535.70040 MHz | -57.06 dBm | -44.06 dB |
| 806.000 MHz | 1.000 GHz | 100.000 kHz | 872.16942 MHz | -56.53 dBm | -43.53 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.56011 GHz | -41.87 dBm | -28.87 dB |
| 3.000 GHz | 8.000 GHz | 1.000 MHz | 6.99935 GHz | -38.31 dBm | -25.31 dB |

Date: 27.JUN.2019 23:50:20

## LTE Band 13 / 5MHz

### Highest Channel / QPSK

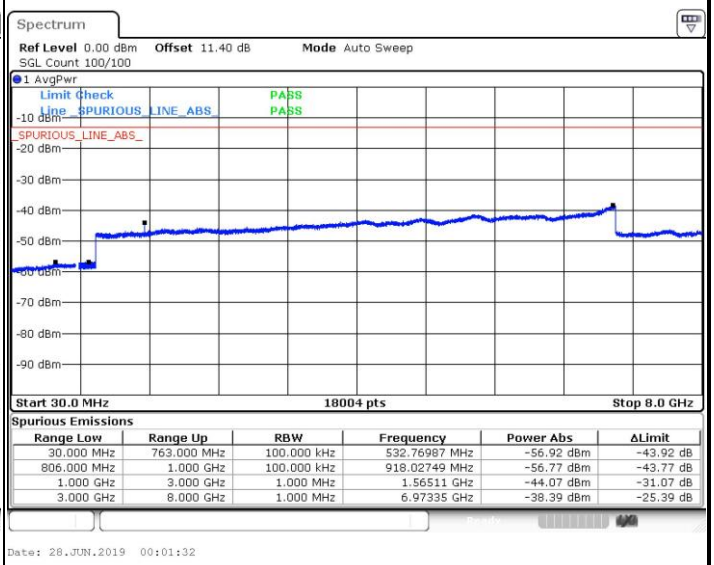



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 763.000 MHz | 100.000 kHz | 569.76787 MHz | -57.29 dBm | -44.29 dB |
| 806.000 MHz | 1.000 GHz | 100.000 kHz | 982.11244 MHz | -56.56 dBm | -43.56 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.56511 GHz | -43.87 dBm | -30.87 dB |
| 3.000 GHz | 8.000 GHz | 1.000 MHz | 6.99485 GHz | -38.41 dBm | -25.41 dB |

Date: 28.JUN.2019 00:00:32

### Highest Channel / 16QAM



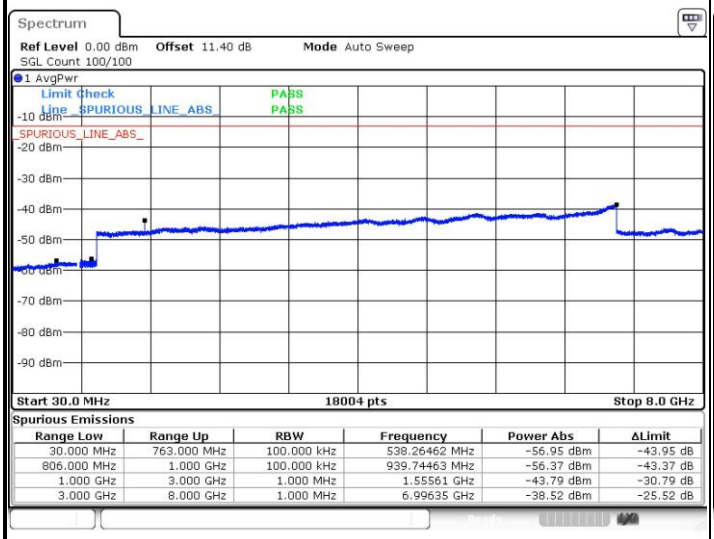

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 763.000 MHz | 100.000 kHz | 532.76987 MHz | -56.92 dBm | -43.92 dB |
| 806.000 MHz | 1.000 GHz | 100.000 kHz | 918.02749 MHz | -56.77 dBm | -43.77 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.56511 GHz | -44.07 dBm | -31.07 dB |
| 3.000 GHz | 8.000 GHz | 1.000 MHz | 6.97335 GHz | -38.39 dBm | -25.39 dB |

Date: 28.JUN.2019 00:01:32

## LTE Band 13 / 10MHz

### Middle Channel / QPSK

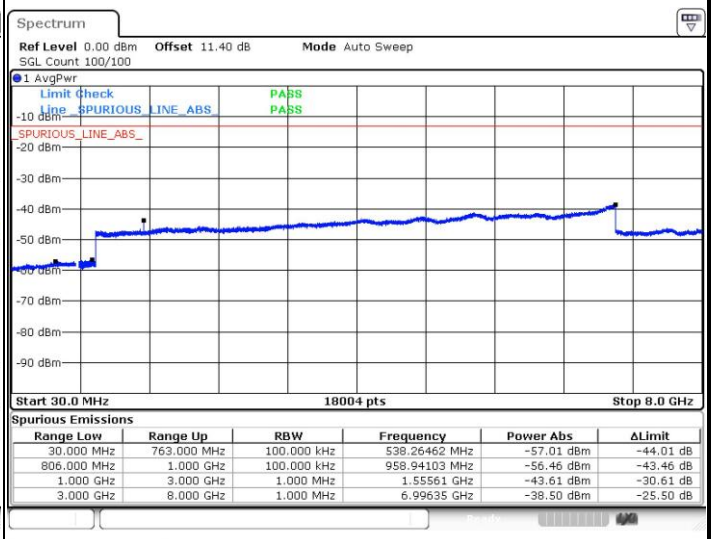



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 763.000 MHz | 100.000 kHz | 538.26462 MHz | -56.95 dBm | -43.95 dB |
| 806.000 MHz | 1.000 GHz | 100.000 kHz | 939.74463 MHz | -56.37 dBm | -43.37 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.55561 GHz | -43.79 dBm | -30.79 dB |
| 3.000 GHz | 8.000 GHz | 1.000 MHz | 6.99635 GHz | -38.52 dBm | -25.52 dB |

Date: 28.JUN.2019 00:25:07

### Middle Channel / 16QAM



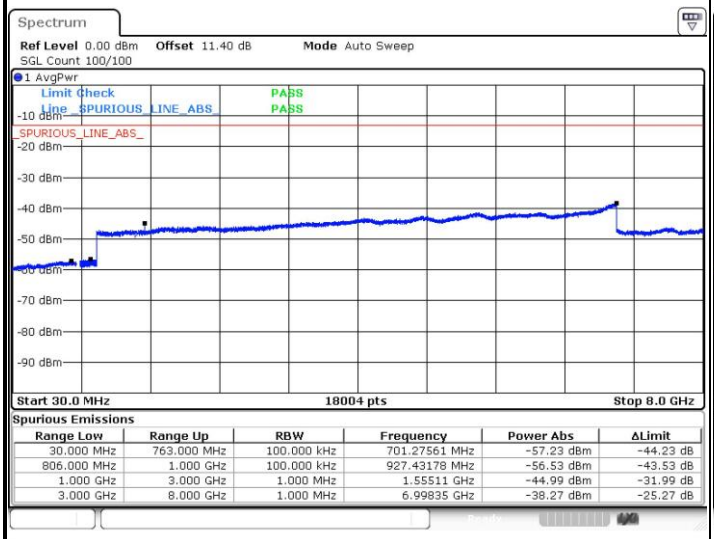

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 763.000 MHz | 100.000 kHz | 538.26462 MHz | -57.01 dBm | -44.01 dB |
| 806.000 MHz | 1.000 GHz | 100.000 kHz | 958.94103 MHz | -56.46 dBm | -43.46 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.55561 GHz | -43.61 dBm | -30.61 dB |
| 3.000 GHz | 8.000 GHz | 1.000 MHz | 6.99635 GHz | -38.50 dBm | -25.50 dB |

Date: 28.JUN.2019 00:24:06

## LTE Band 13 / 5MHz

### Lowest Channel / 64QAM

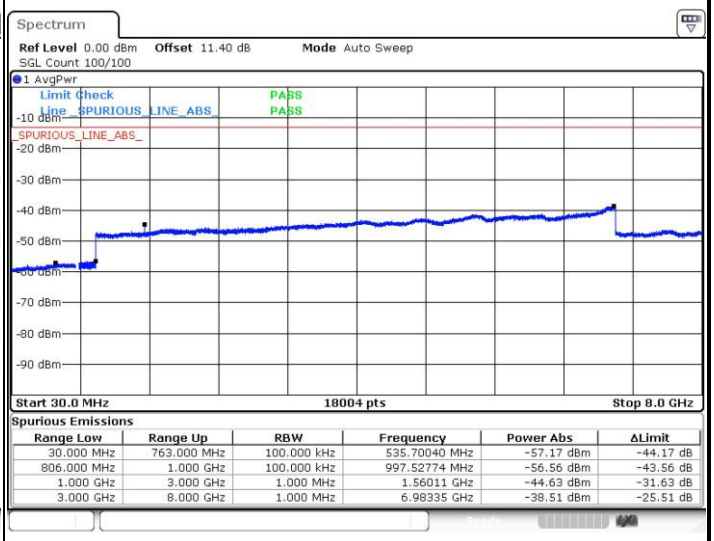



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 763.000 MHz | 100.000 kHz | 701.27561 MHz | -57.23 dBm | -44.23 dB |
| 806.000 MHz | 1.000 GHz | 100.000 kHz | 927.43178 MHz | -56.53 dBm | -43.53 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.55511 GHz | -44.99 dBm | -31.99 dB |
| 3.000 GHz | 8.000 GHz | 1.000 MHz | 6.99835 GHz | -38.27 dBm | -25.27 dB |

Date: 28.JUN.2019 00:06:15

### Middle Channel / 64QAM

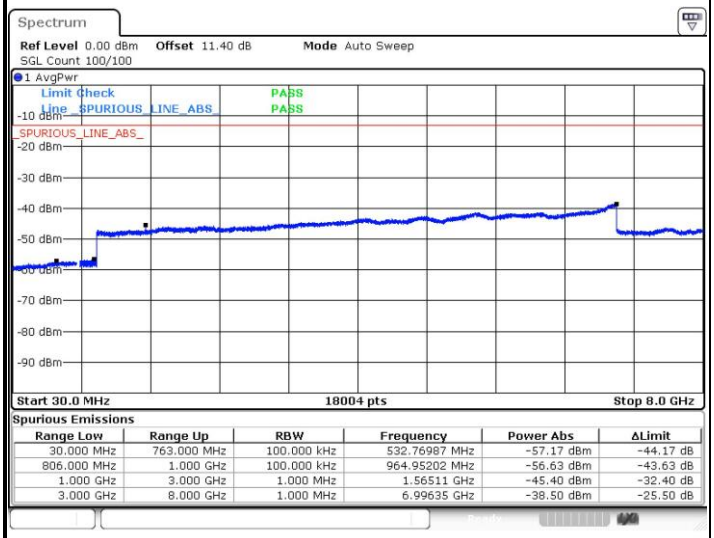



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 763.000 MHz | 100.000 kHz | 535.70040 MHz | -57.17 dBm | -44.17 dB |
| 806.000 MHz | 1.000 GHz | 100.000 kHz | 997.52774 MHz | -56.56 dBm | -43.56 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.56011 GHz | -44.63 dBm | -31.63 dB |
| 3.000 GHz | 8.000 GHz | 1.000 MHz | 6.98335 GHz | -38.51 dBm | -25.51 dB |

Date: 28.JUN.2019 00:07:16

### Highest Channel / 64QAM

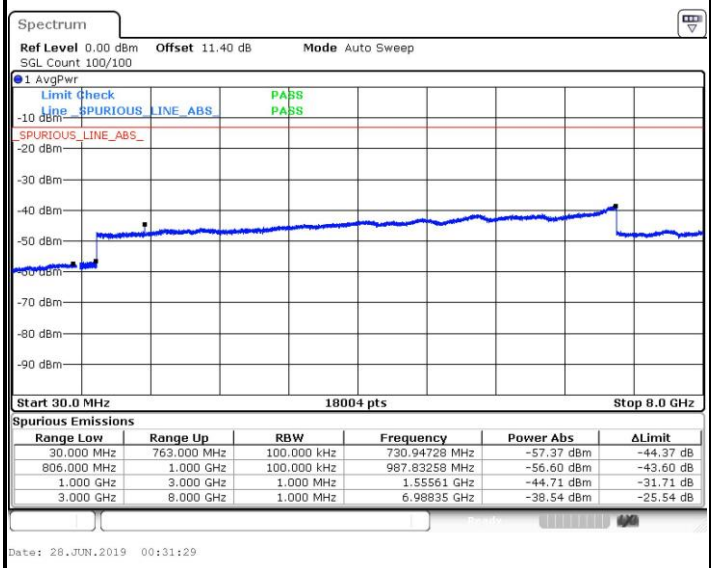



Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 763.000 MHz | 100.000 kHz | 532.76987 MHz | -57.17 dBm | -44.17 dB |
| 806.000 MHz | 1.000 GHz | 100.000 kHz | 964.95202 MHz | -56.63 dBm | -43.63 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.56511 GHz | -45.40 dBm | -32.40 dB |
| 3.000 GHz | 8.000 GHz | 1.000 MHz | 6.99635 GHz | -38.50 dBm | -25.50 dB |

Date: 28.JUN.2019 00:12:22

| LTE Band 13 / 10MHz | |
|---|---|
| **Middle Channel / 64QAM** | |




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 763.000 MHz | 100.000 kHz | 730.94728 MHz | -57.37 dBm | -44.37 dB |
| 806.000 MHz | 1.000 GHz | 100.000 kHz | 987.83258 MHz | -56.60 dBm | -43.60 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.55561 GHz | -44.71 dBm | -31.71 dB |
| 3.000 GHz | 8.000 GHz | 1.000 MHz | 6.98835 GHz | -38.54 dBm | -25.54 dB |

Date: 28.JUN.2019 00:31:29

# Frequency Stability

| Test Conditions | | LTE Band 13 (QPSK) / Middle Channel | Limit |
|---|---|---|---|
| Temperature (°C) | Voltage (Volt) | BW 10MHz | Note 2. |
| | | Deviation (ppm) | Result |
| 50 | Normal Voltage | 0.0015 | PASS |
| 40 | Normal Voltage | 0.0100 | |
| 30 | Normal Voltage | 0.0049 | |
| 20(Ref.) | Normal Voltage | 0.0000 | |
| 10 | Normal Voltage | 0.0056 | |
| 0 | Normal Voltage | 0.0038 | |
| -10 | Normal Voltage | 0.0058 | |
| -20 | Normal Voltage | 0.0010 | |
| -30 | Normal Voltage | 0.0125 | |
| 20 | Maximum Voltage | 0.0004 | |
| 20 | Normal Voltage | 0.0000 | |
| 20 | Battery End Point | 0.0004 | |

**Note:**

1. Normal Voltage =3.8 V.；Battery End Point (BEP) =3.5 V.；Maximum Voltage =4.4 V.
2. The frequency fundamental emissions stay within the authorized frequency block.

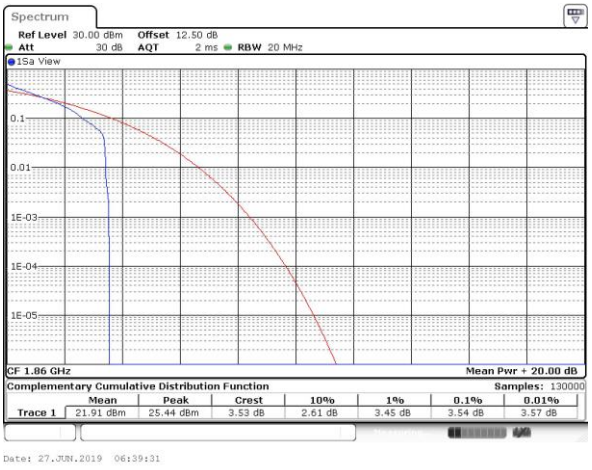
# LTE Band 25

## Peak-to-Average Ratio

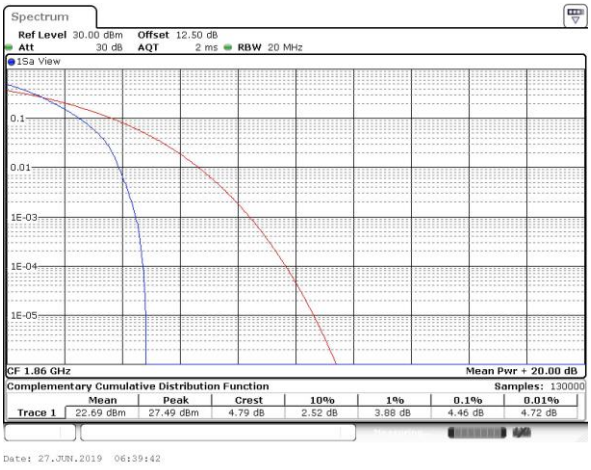
| Mode | LTE Band 25 / 20MHz | | | | |
|---|---|---|---|---|---|
| Mod. | QPSK | | 16QAM | | Limit: 13dB |
| RB Size | 1RB | Full RB | 1RB | Full RB | Result |
| Lowest CH | 3.54 | 4.46 | 5.04 | 5.86 | PASS |
| Middle CH | 3.59 | 4.67 | 5.07 | 6.00 | |
| Highest CH | 3.42 | 4.46 | 5.01 | 5.80 | |
| Mode | LTE Band 25 / 20MHz | | | | |
| Mod. | 64QAM | | | | Limit: 13dB |
| RB Size | 1RB | Full RB | | | Result |
| Lowest CH | 6.08 | 6.46 | - | - | PASS |
| Middle CH | 6.43 | 6.66 | - | - | |
| Highest CH | 5.76 | 6.43 | - | - | |

## LTE Band 25 / 20MHz / QPSK

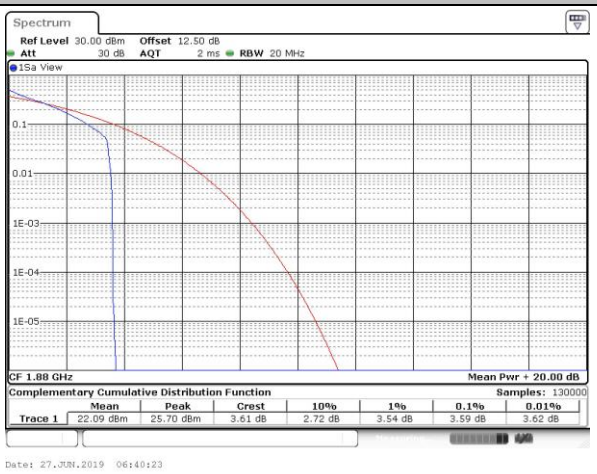
### Lowest Channel / 1RB



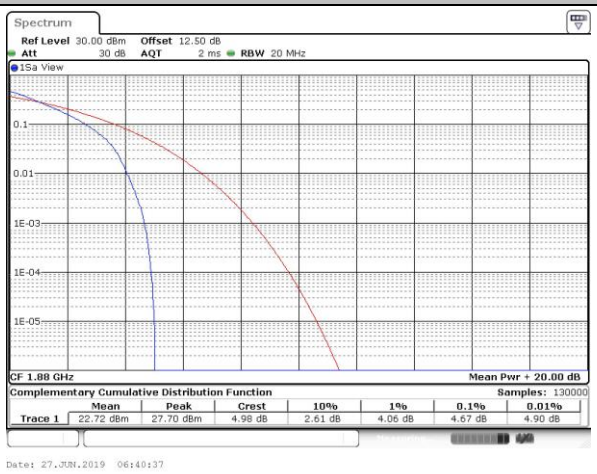

### Lowest Channel / Full RB



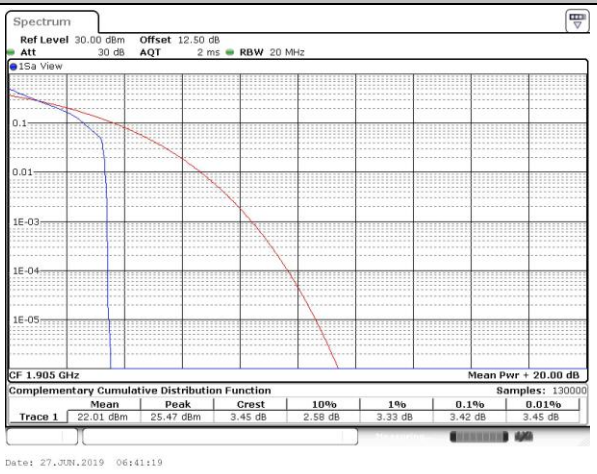

### Middle Channel / 1RB



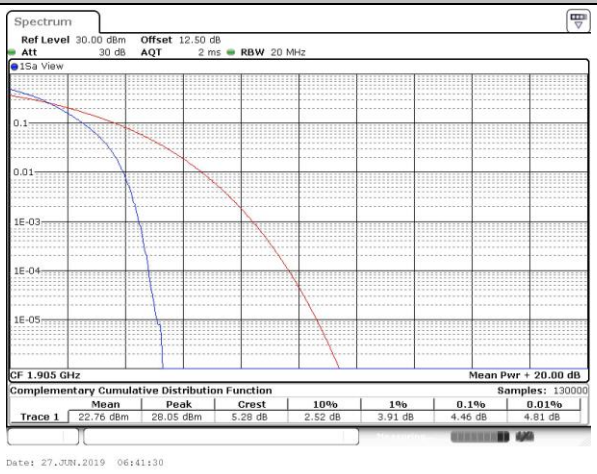

### Middle Channel / Full RB




### Highest Channel / 1RB

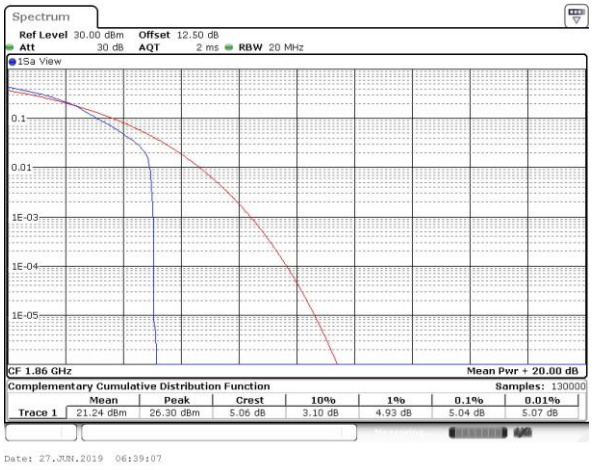



### Highest Channel / Full RB

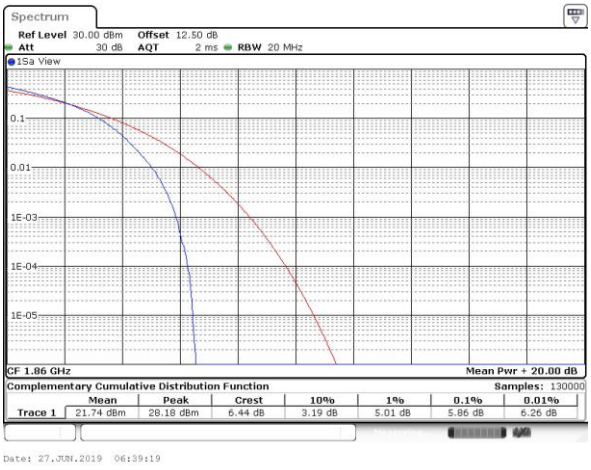


## LTE Band 25 / 20MHz / 16QAM

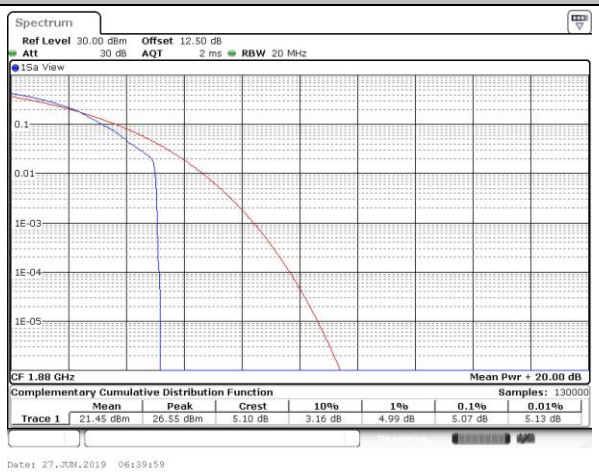
### Lowest Channel / 1RB



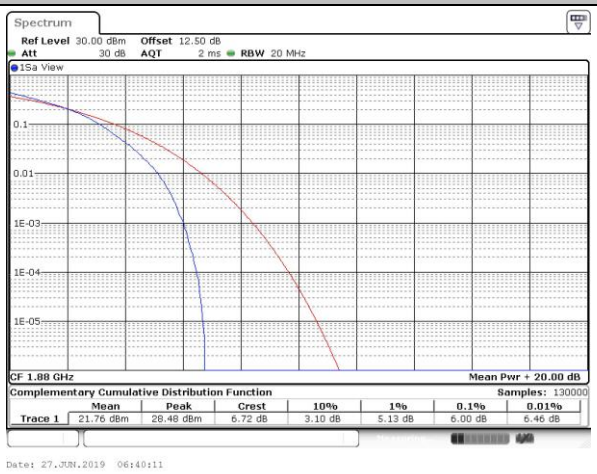

### Lowest Channel / Full RB




### Middle Channel / 1RB

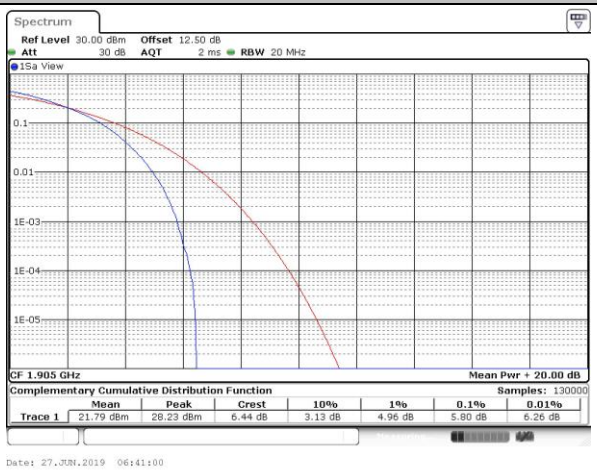



### Middle Channel / Full RB



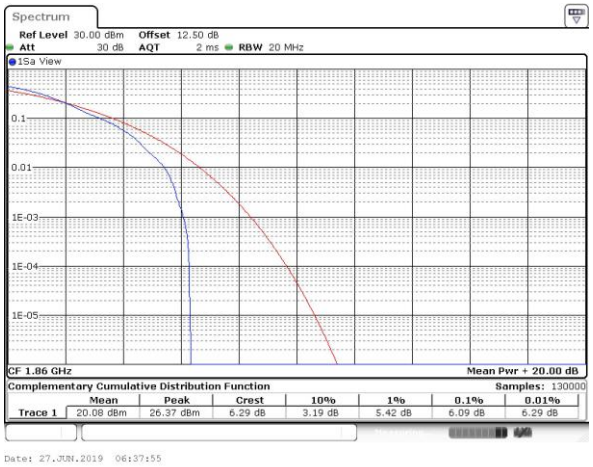

### Highest Channel / 1RB

### Highest Channel / Full RB

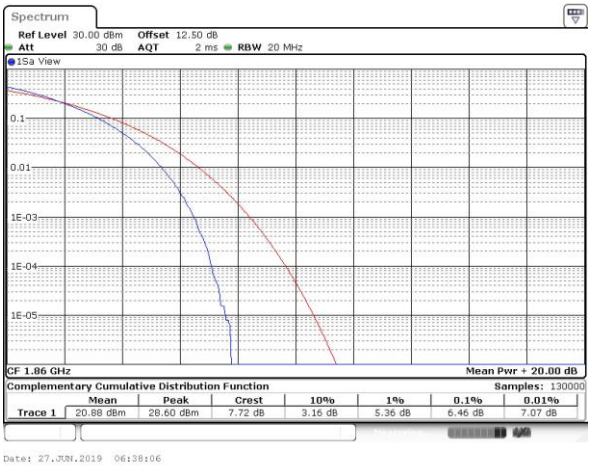


## LTE Band 25 / 20MHz / 64QAM

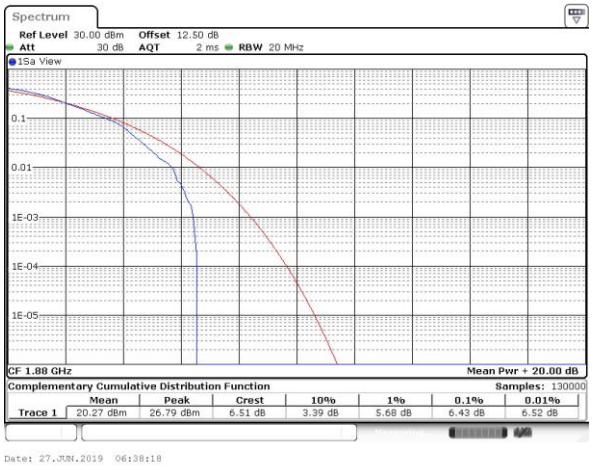
### Lowest Channel / 1RB



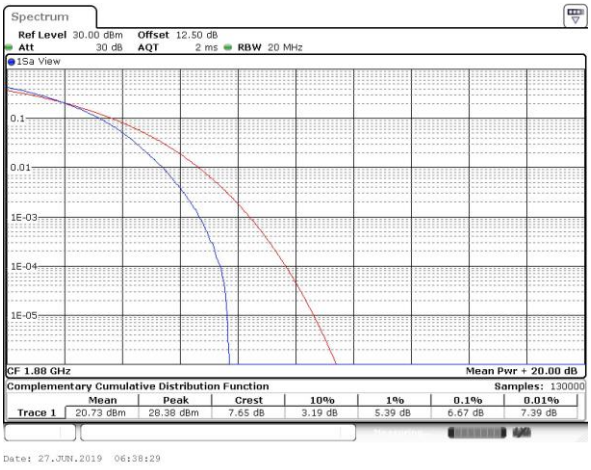

### Lowest Channel / Full RB



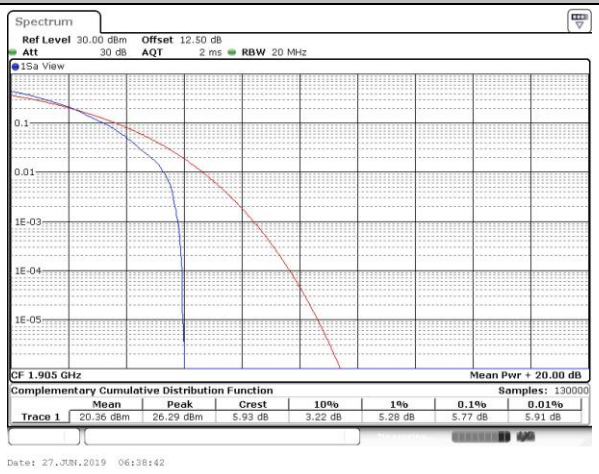

### Middle Channel / 1RB



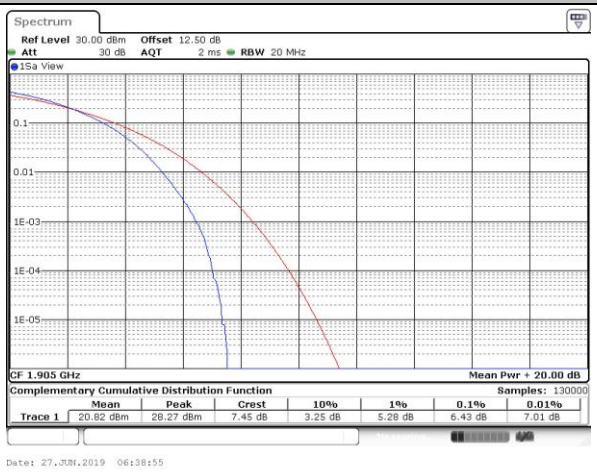

### Middle Channel / Full RB




### Highest Channel / 1RB




### Highest Channel / Full RB

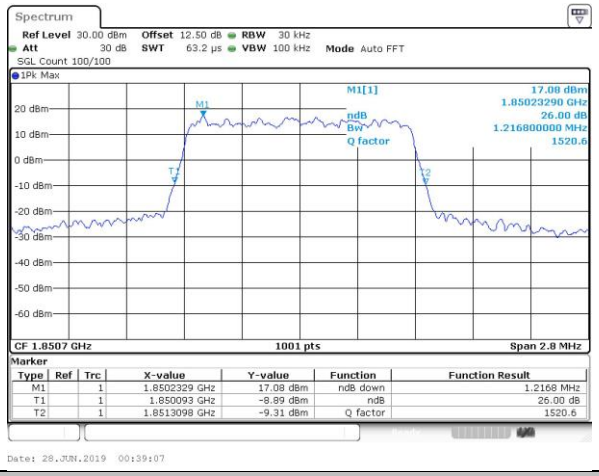


# 26dB Bandwidth

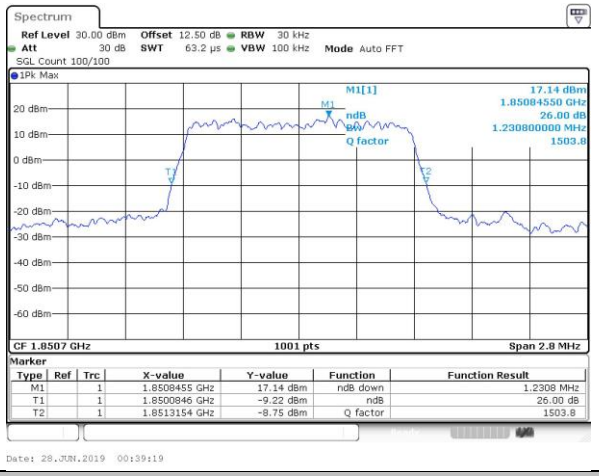
| Mode | LTE Band 25 : 26dB BW(MHz) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BW | 1.4MHz | | 3MHz | | 5MHz | | 10MHz | | 15MHz | | 20MHz | |
| Mod. | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM |
| Lowest CH | 1.22 | 1.23 | 3.05 | 3.02 | 4.96 | 4.93 | 9.61 | 9.99 | 14.51 | 14.72 | 18.94 | 18.82 |
| Middle CH | 1.23 | 1.23 | 3.00 | 3.05 | 4.90 | 4.81 | 9.73 | 9.71 | 14.27 | 14.51 | 19.14 | 18.98 |
| Highest CH | 1.24 | 1.22 | 3.02 | 3.02 | 4.86 | 4.95 | 9.85 | 9.79 | 14.33 | 14.15 | 19.22 | 18.86 |
| Mode | LTE Band 25 : 26dB BW(MHz) | | | | | | | | | | | |
| BW | 1.4MHz | | 3MHz | | 5MHz | | 10MHz | | 15MHz | | 20MHz | |
| Mod. | 64QAM | | 64QAM | | 64QAM | | 64QAM | | 64QAM | | 64QAM | |
| Lowest CH | 1.23 | - | 3.06 | - | 4.89 | - | 9.75 | - | 14.54 | - | 19.06 | - |
| Middle CH | 1.23 | - | 3.05 | - | 4.96 | - | 9.91 | - | 14.18 | - | 18.86 | - |
| Highest CH | 1.24 | - | 3.05 | - | 4.90 | - | 9.97 | - | 14.30 | - | 18.82 | - |

## LTE Band 25

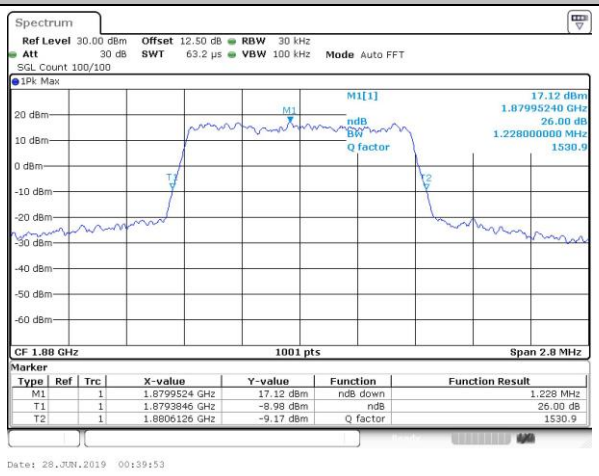
### Lowest Channel / 1.4MHz / QPSK



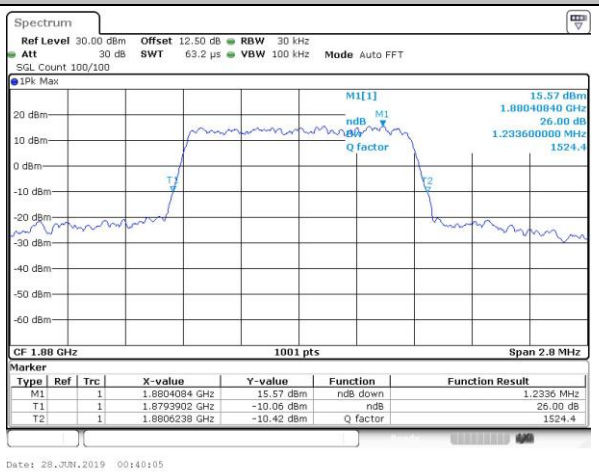

### Lowest Channel / 1.4MHz / 16QAM



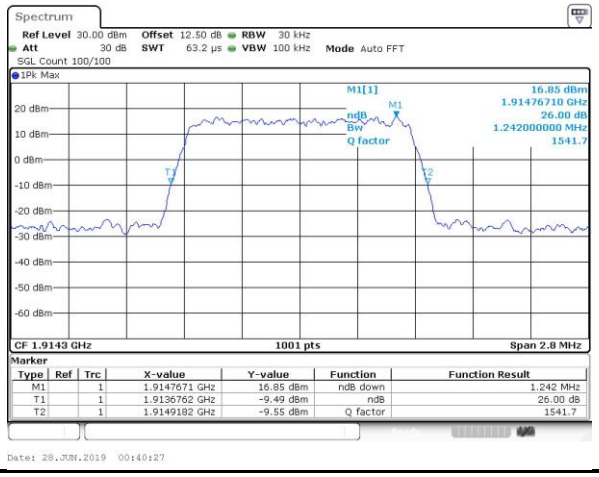

### Middle Channel / 1.4MHz / QPSK



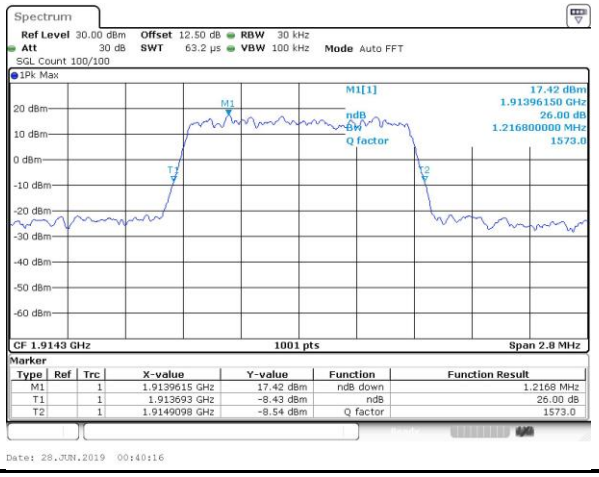

### Middle Channel / 1.4MHz / 16QAM




### Highest Channel / 1.4MHz / QPSK

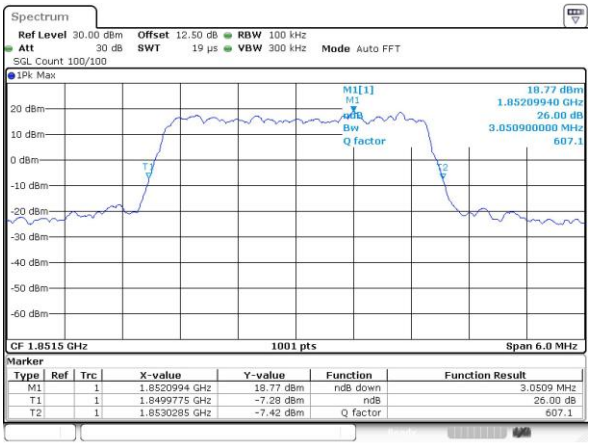



### Highest Channel / 1.4MHz / 16QAM

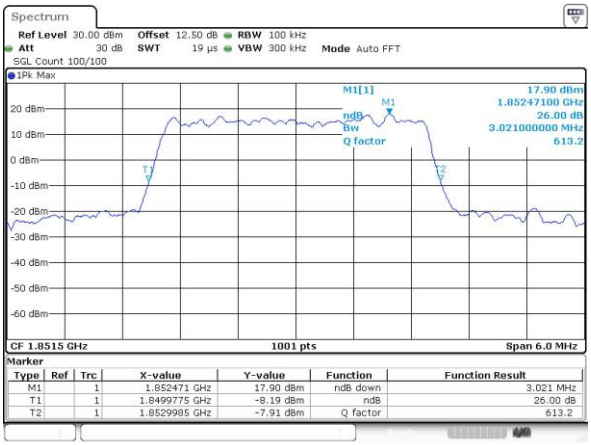


## LTE Band 25

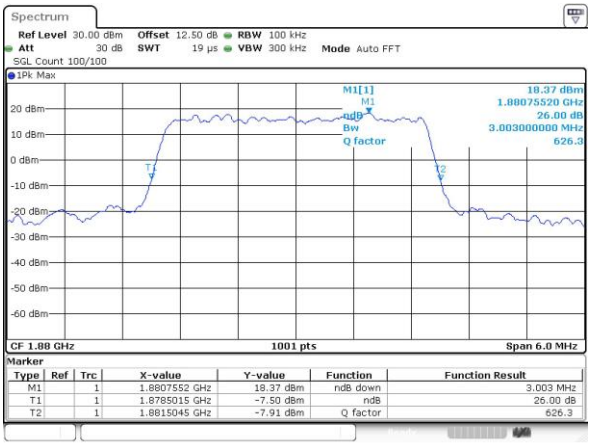
### Lowest Channel / 3MHz / QPSK



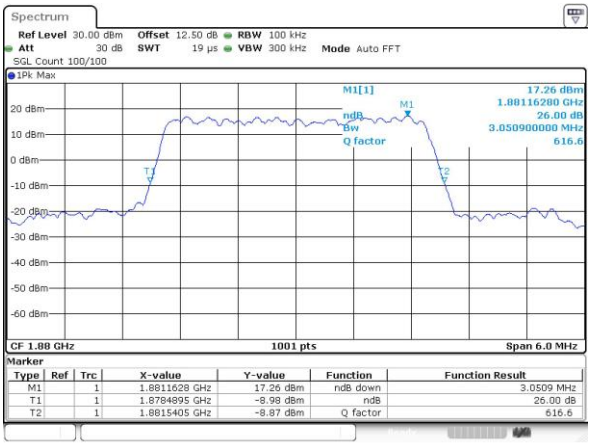

### Lowest Channel / 3MHz / 16QAM



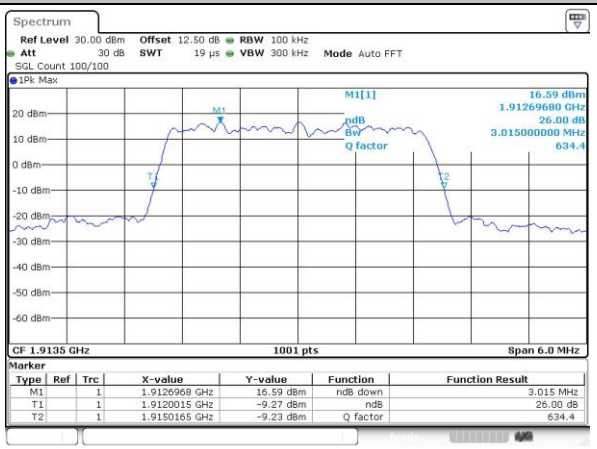

### Middle Channel / 3MHz / QPSK



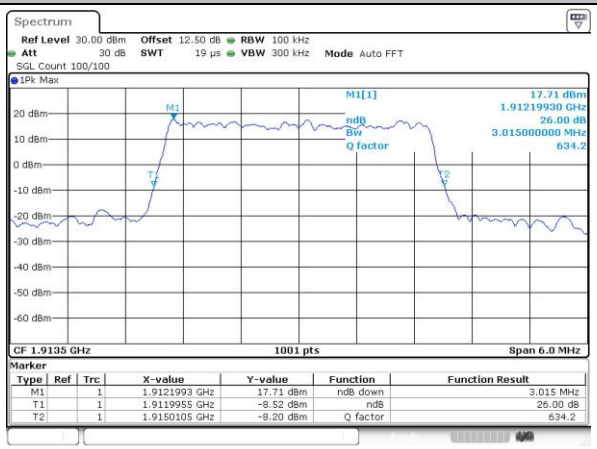

### Middle Channel / 3MHz / 16QAM




### Highest Channel / 3MHz / QPSK

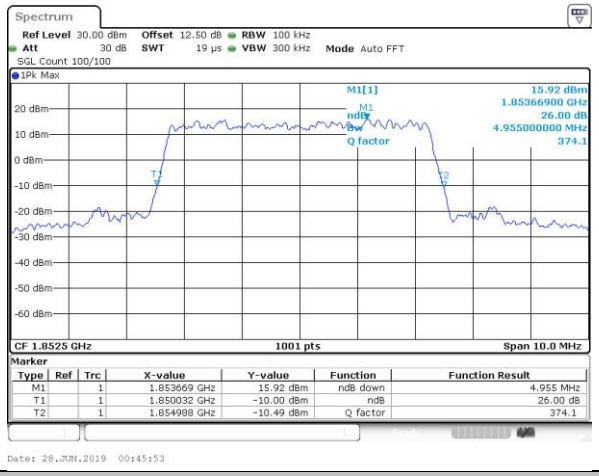



### Highest Channel / 3MHz / 16QAM

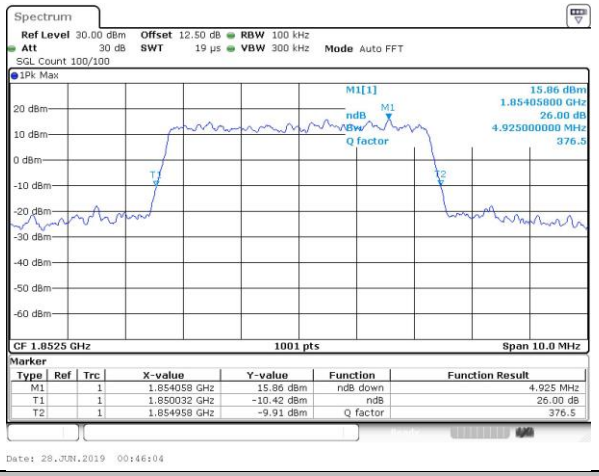


## LTE Band 25

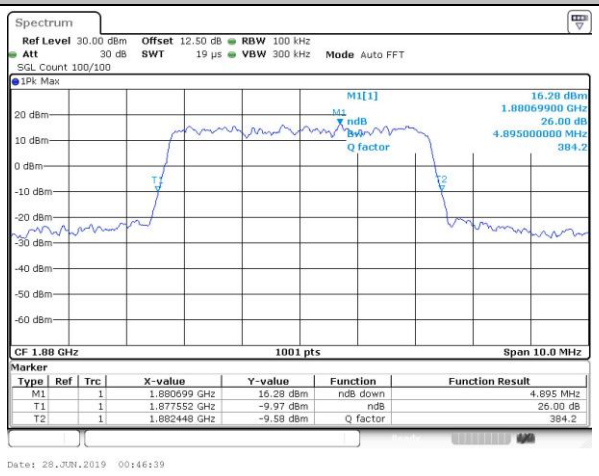
### Lowest Channel / 5MHz / QPSK



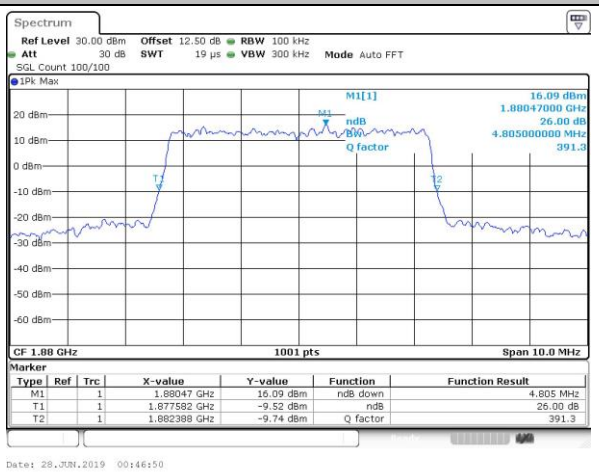

### Lowest Channel / 5MHz / 16QAM



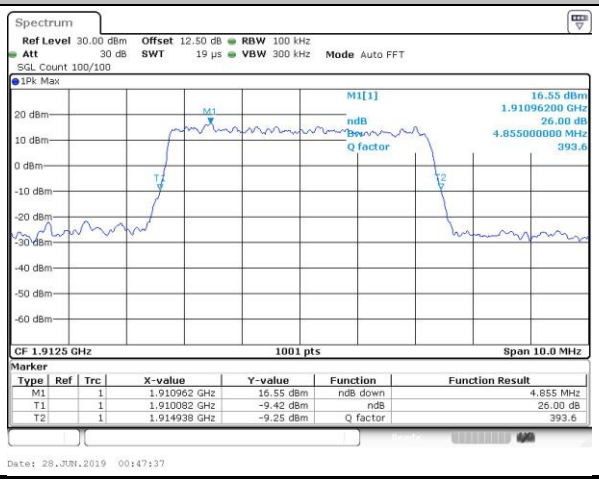

### Middle Channel / 5MHz / QPSK



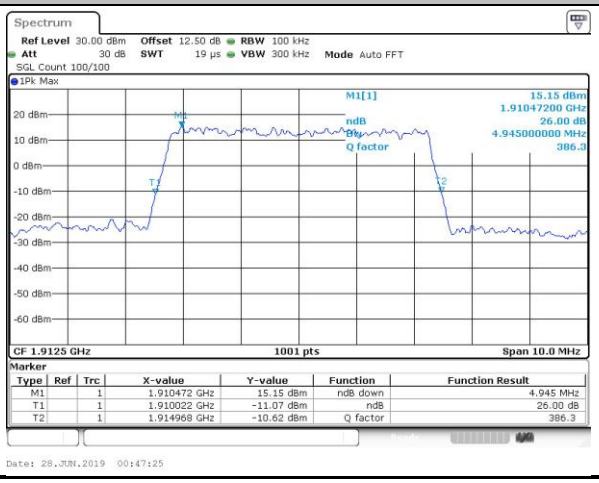

### Middle Channel / 5MHz / 16QAM




### Highest Channel / 5MHz / QPSK

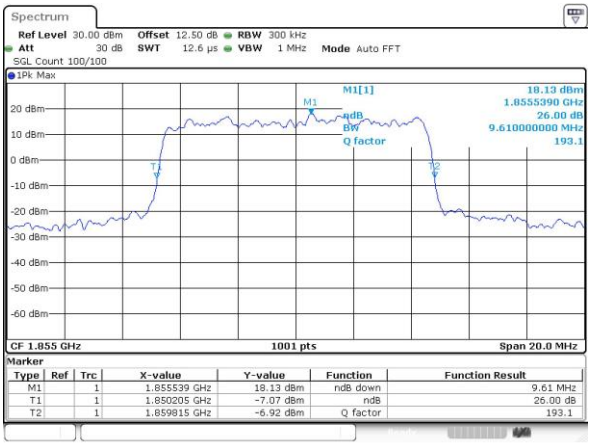



### Highest Channel / 5MHz / 16QAM

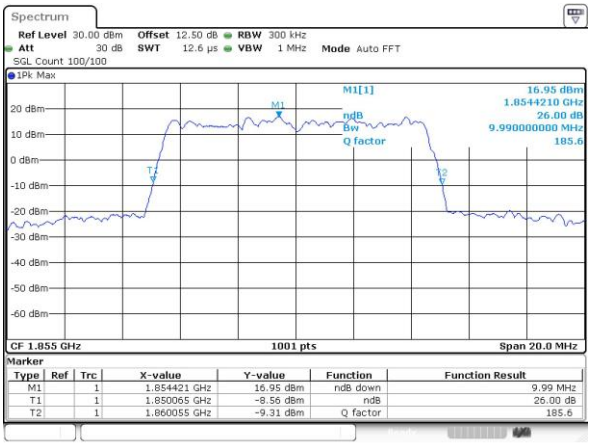


## LTE Band 25

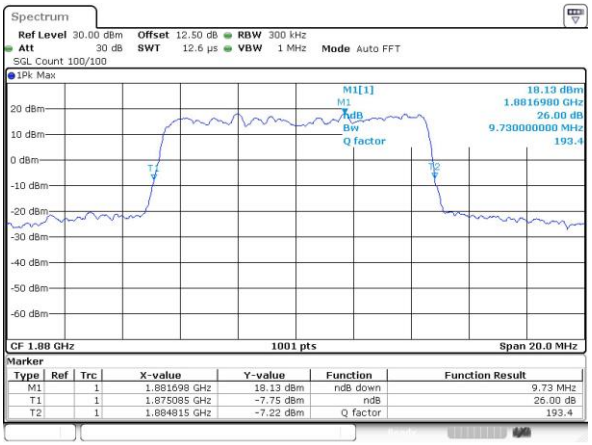
### Lowest Channel / 10MHz / QPSK



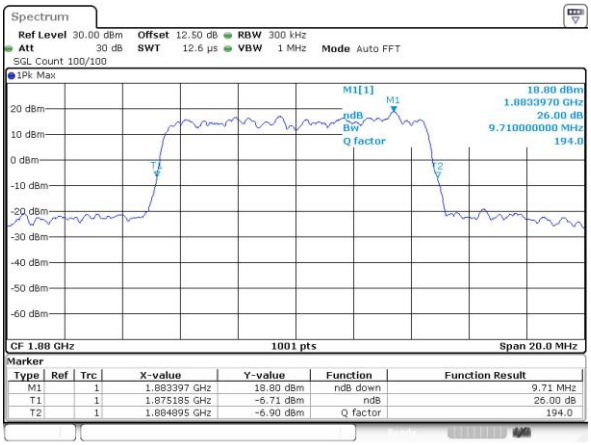

### Lowest Channel / 10MHz / 16QAM



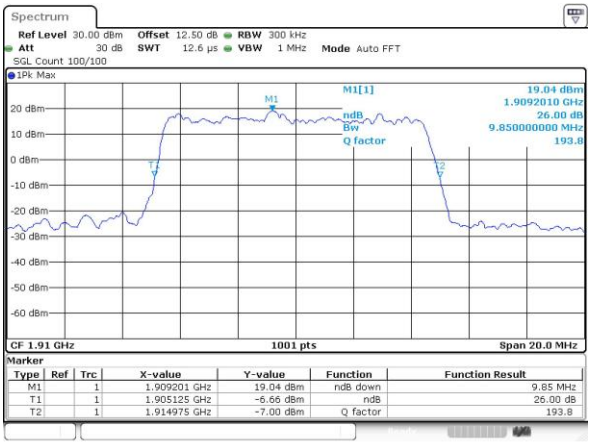

### Middle Channel / 10MHz / QPSK



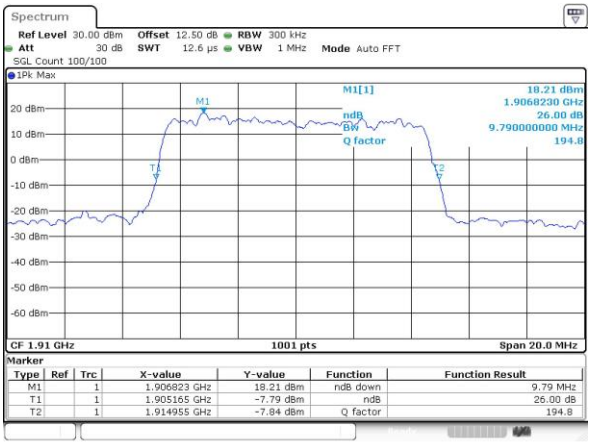

### Middle Channel / 10MHz / 16QAM




### Highest Channel / 10MHz / QPSK

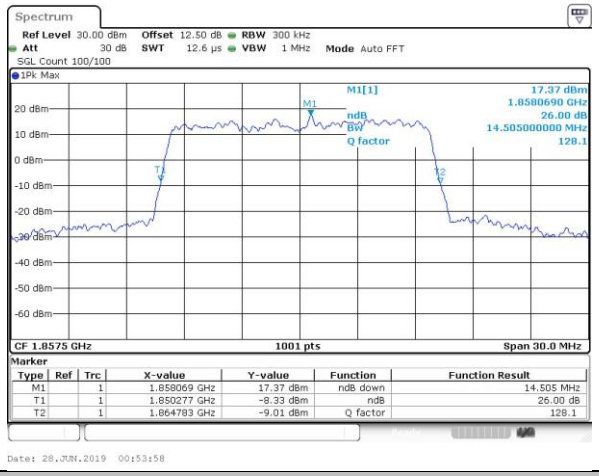



### Highest Channel / 10MHz / 16QAM

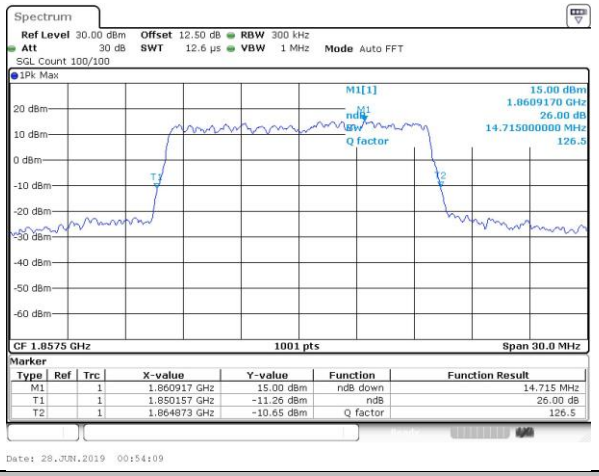


## LTE Band 25

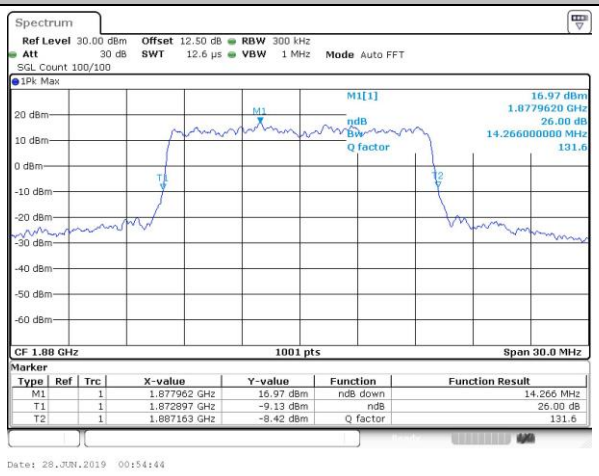
### Lowest Channel / 15MHz / QPSK



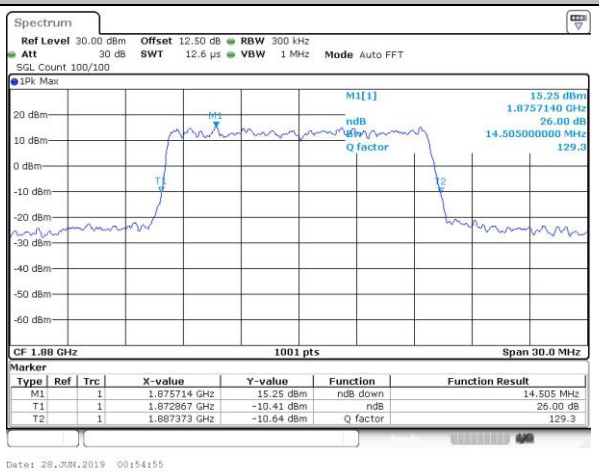

### Lowest Channel / 15MHz / 16QAM



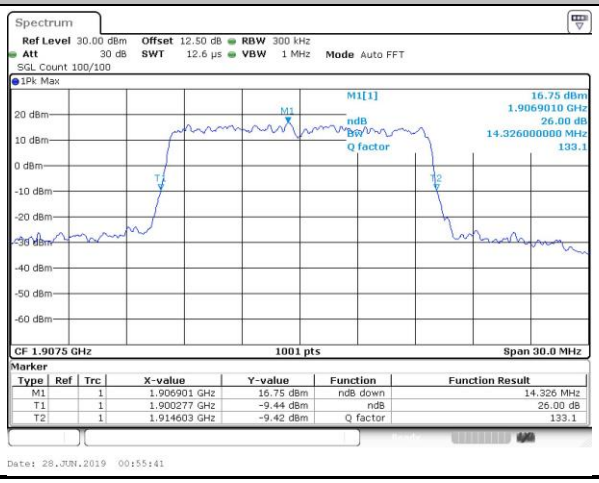

### Middle Channel / 15MHz / QPSK



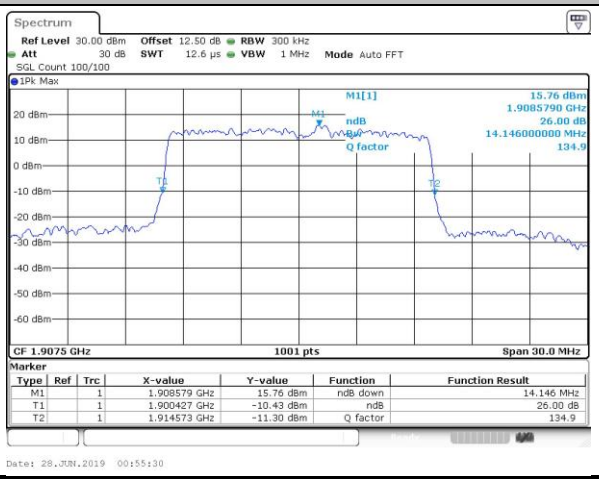

### Middle Channel / 15MHz / 16QAM




### Highest Channel / 15MHz / QPSK

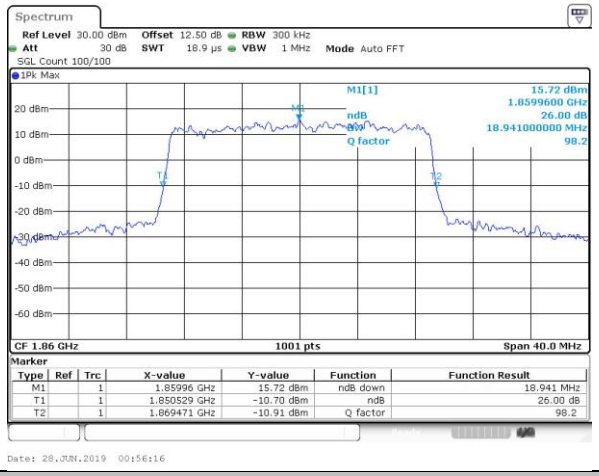



### Highest Channel / 15MHz / 16QAM

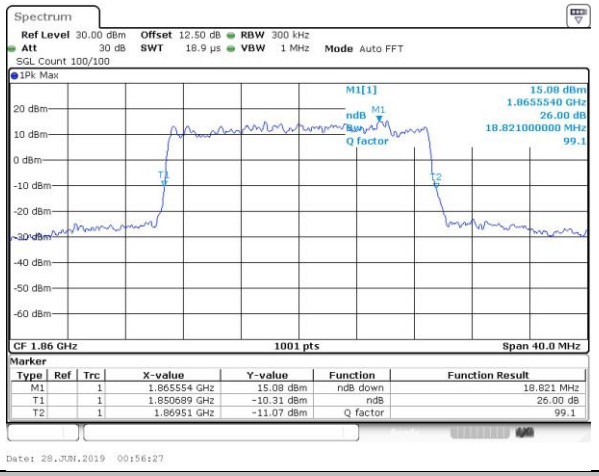


## LTE Band 25

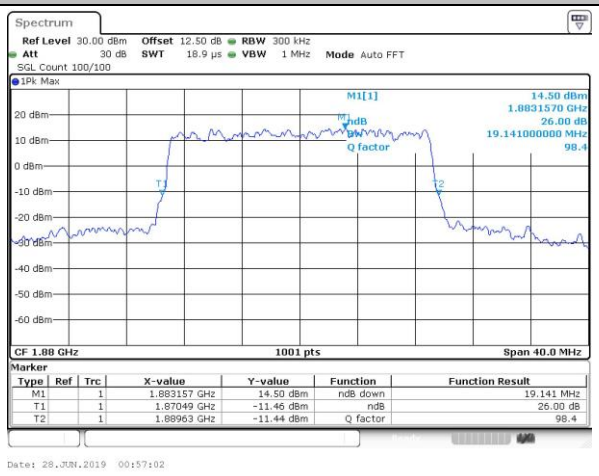
### Lowest Channel / 20MHz / QPSK



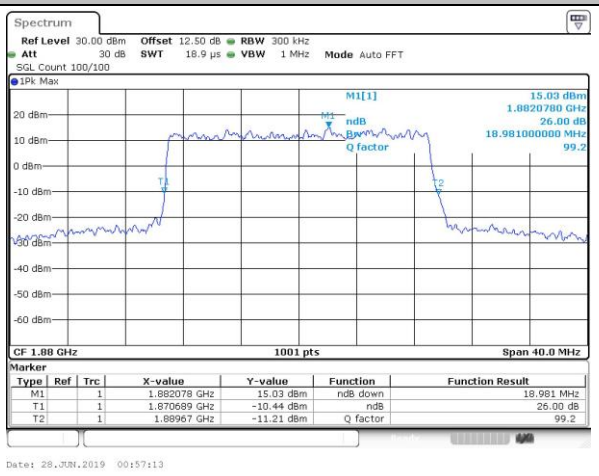

### Lowest Channel / 20MHz / 16QAM



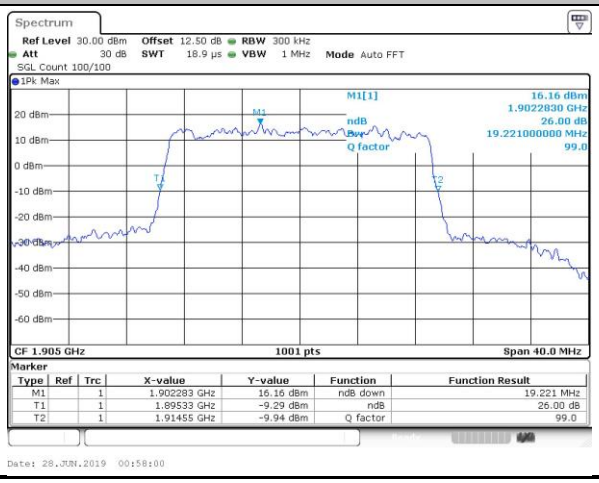

### Middle Channel / 20MHz / QPSK



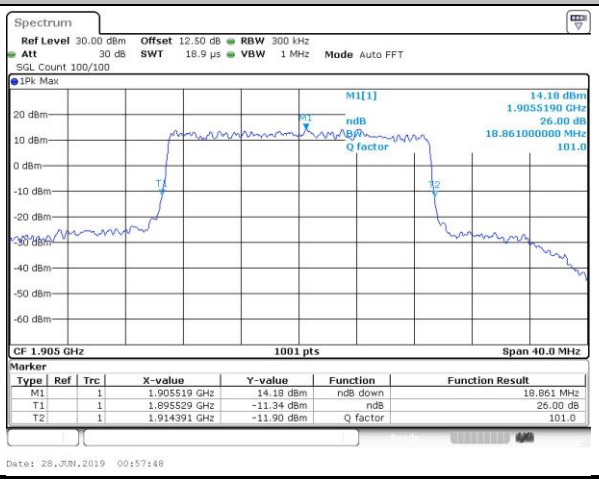

### Middle Channel / 20MHz / 16QAM




### Highest Channel / 20MHz / QPSK

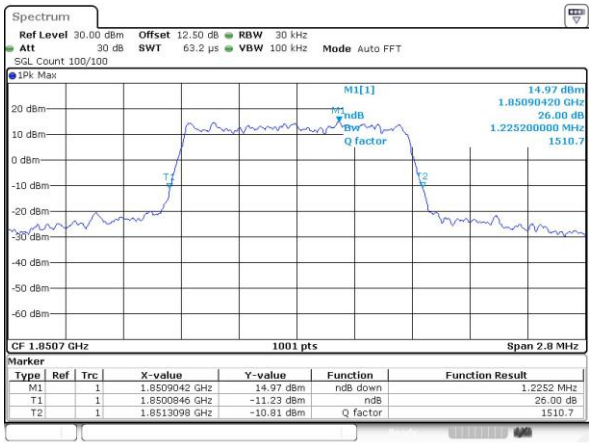



### Highest Channel / 20MHz / 16QAM

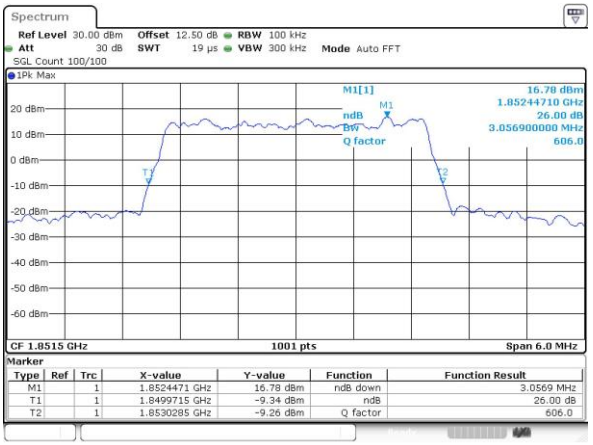


## LTE Band 25

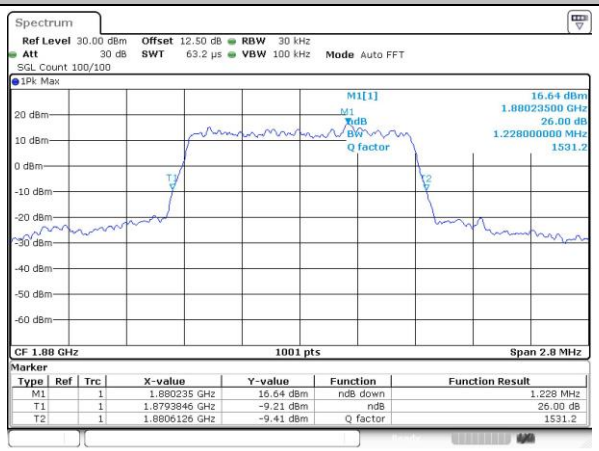
### Lowest Channel / 1.4MHz / 64QAM



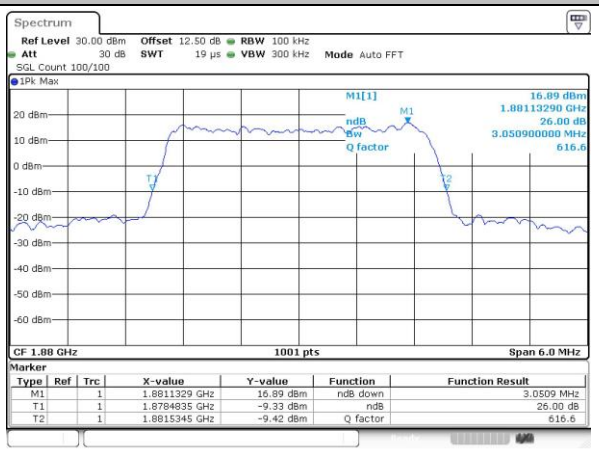

### Lowest Channel / 3MHz / 64QAM



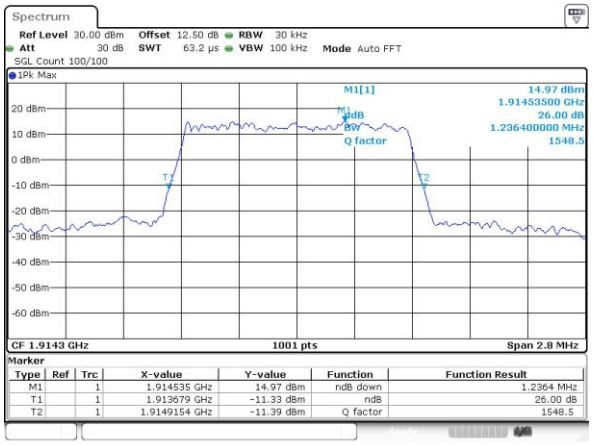

### Middle Channel / 1.4MHz / 64QAM



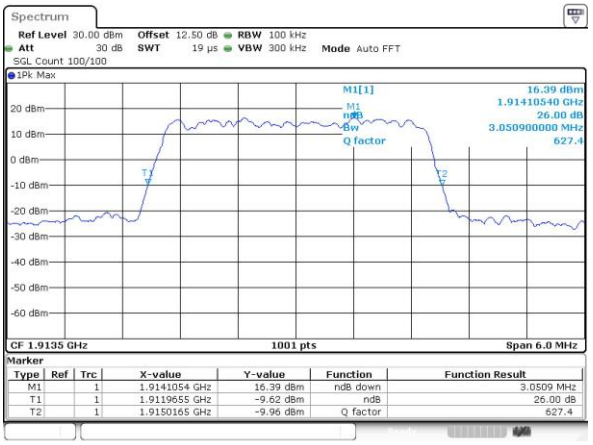

### Middle Channel / 3MHz / 64QAM




### Highest Channel / 1.4MHz / 64QAM

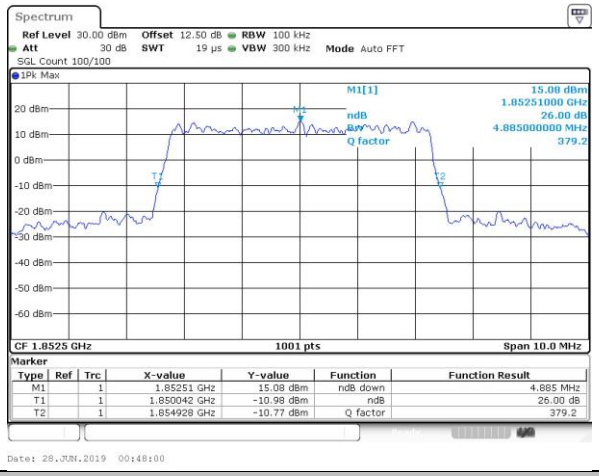



### Highest Channel / 3MHz / 64QAM

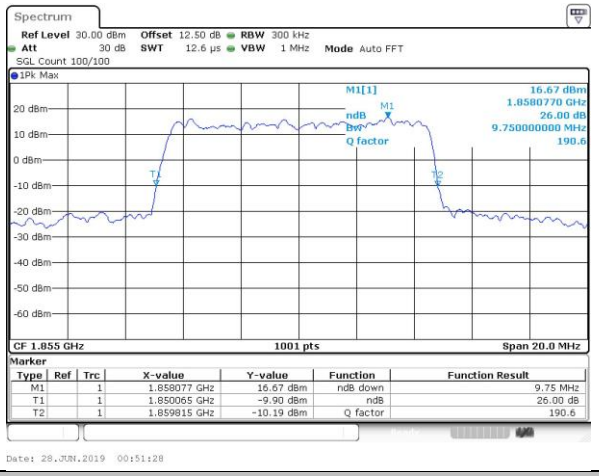


## LTE Band 25

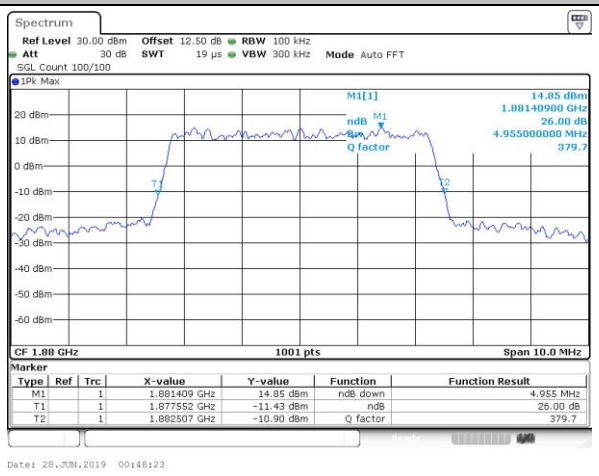
### Lowest Channel / 5MHz / 64QAM



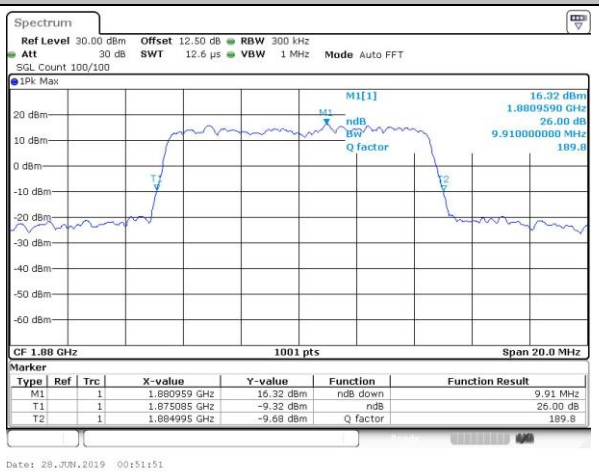

### Lowest Channel / 10MHz / 64QAM



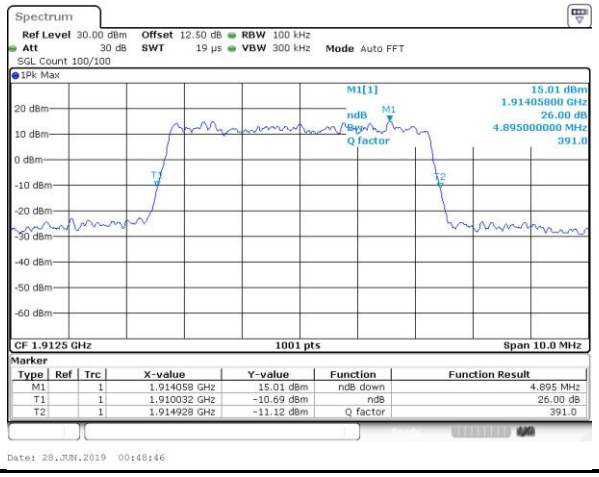

### Middle Channel / 5MHz / 64QAM

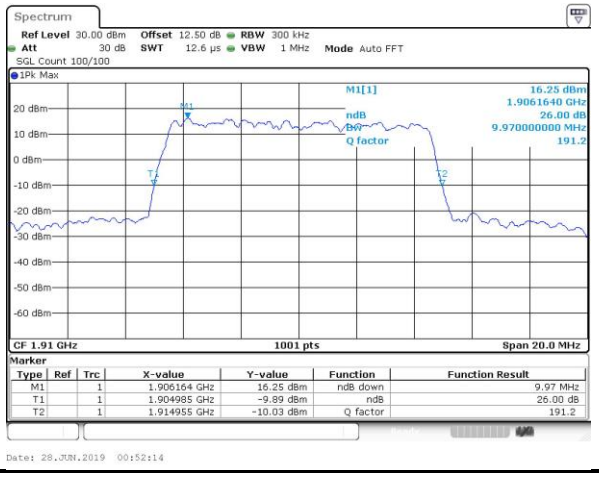



### Middle Channel / 10MHz / 64QAM




### Highest Channel / 5MHz / 64QAM




### Highest Channel / 10MHz / 64QAM