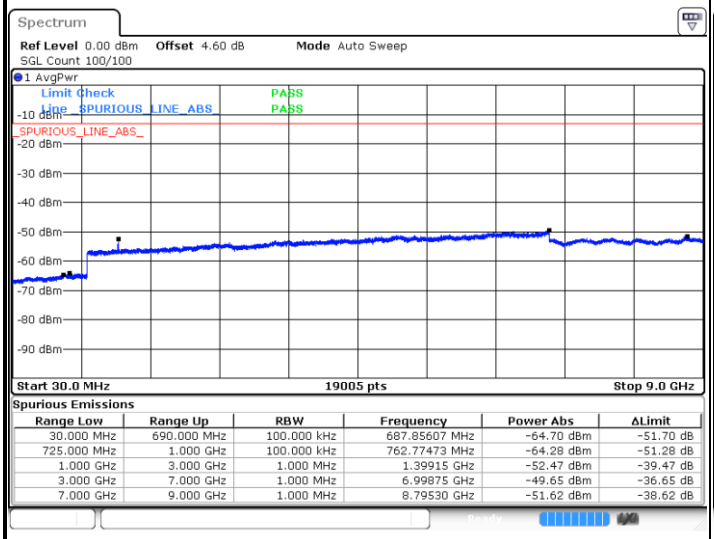
## LTE Band 12 / 1.4MHz

### Lowest Channel / 256QAM




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 690.000 MHz | 100.000 kHz | 687.85607 MHz | -64.70 dBm | -51.70 dB |
| 725.000 MHz | 1.000 GHz | 100.000 kHz | 762.77473 MHz | -64.28 dBm | -51.28 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.39915 GHz | -52.47 dBm | -39.47 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99875 GHz | -49.65 dBm | -36.65 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.79530 GHz | -51.62 dBm | -38.62 dB |

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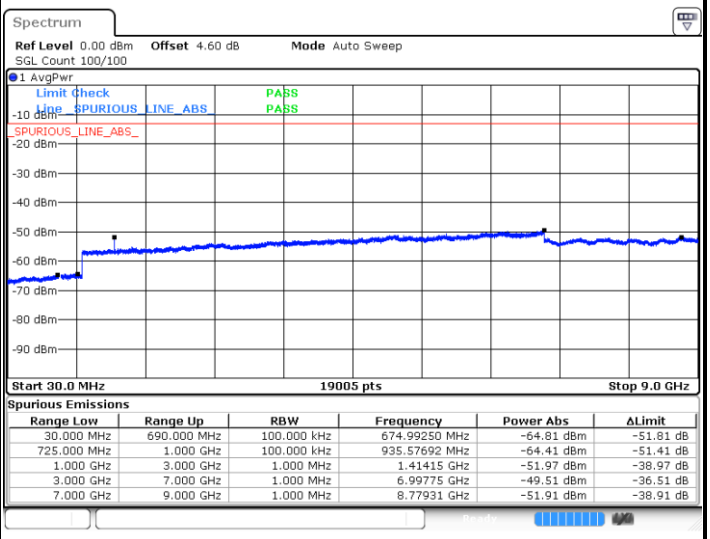
### Middle Channel / 256QAM




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 690.000 MHz | 100.000 kHz | 674.99250 MHz | -64.81 dBm | -51.81 dB |
| 725.000 MHz | 1.000 GHz | 100.000 kHz | 935.57692 MHz | -64.41 dBm | -51.41 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.41415 GHz | -51.97 dBm | -38.97 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99775 GHz | -49.51 dBm | -36.51 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.77931 GHz | -51.91 dBm | -38.91 dB |

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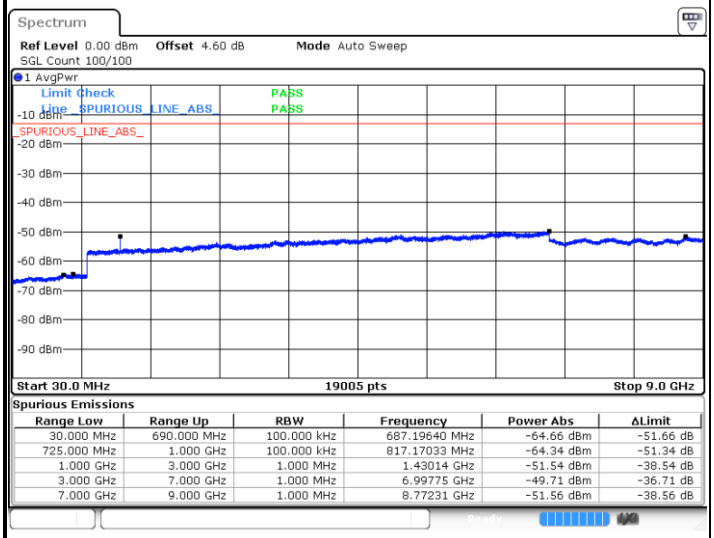
### Highest Channel / 256QAM



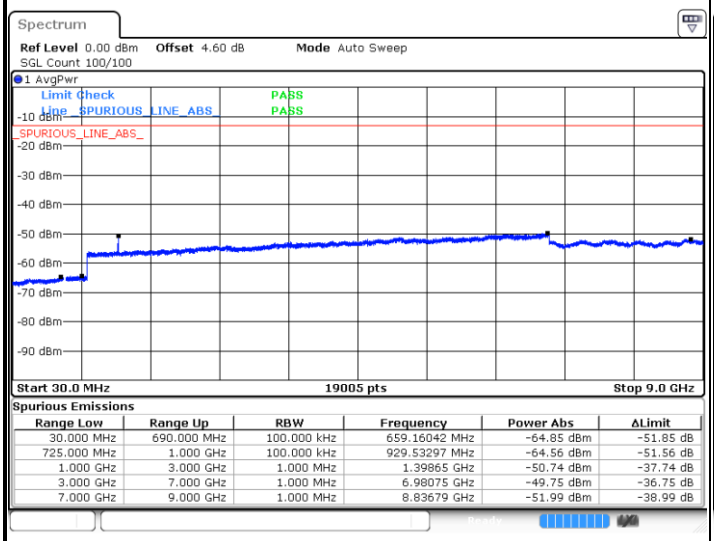

Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 690.000 MHz | 100.000 kHz | 687.19640 MHz | -64.66 dBm | -51.66 dB |
| 725.000 MHz | 1.000 GHz | 100.000 kHz | 817.17033 MHz | -64.34 dBm | -51.34 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.43014 GHz | -51.54 dBm | -38.54 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99775 GHz | -49.71 dBm | -36.71 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.77231 GHz | -51.56 dBm | -38.56 dB |

Date: 16.NOV.2020 18:16:55

## LTE Band 12 / 3MHz

### Lowest Channel / 256QAM




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 690.000 MHz | 100.000 kHz | 659.16042 MHz | -64.85 dBm | -51.85 dB |
| 725.000 MHz | 1.000 GHz | 100.000 kHz | 929.53297 MHz | -64.56 dBm | -51.56 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.39865 GHz | -50.74 dBm | -37.74 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.98075 GHz | -49.75 dBm | -36.75 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.83679 GHz | -51.99 dBm | -38.99 dB |

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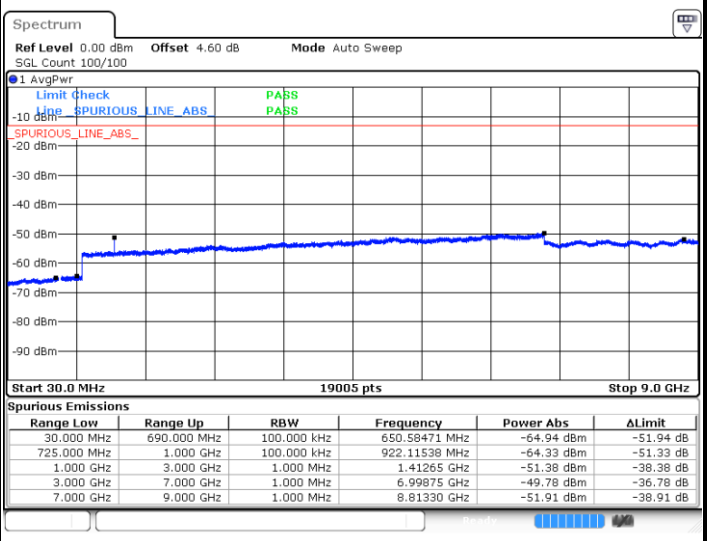
### Middle Channel / 256QAM




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 690.000 MHz | 100.000 kHz | 650.58471 MHz | -64.94 dBm | -51.94 dB |
| 725.000 MHz | 1.000 GHz | 100.000 kHz | 922.11538 MHz | -64.33 dBm | -51.33 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.41265 GHz | -51.38 dBm | -38.38 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99875 GHz | -49.78 dBm | -36.78 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.81330 GHz | -51.91 dBm | -38.91 dB |

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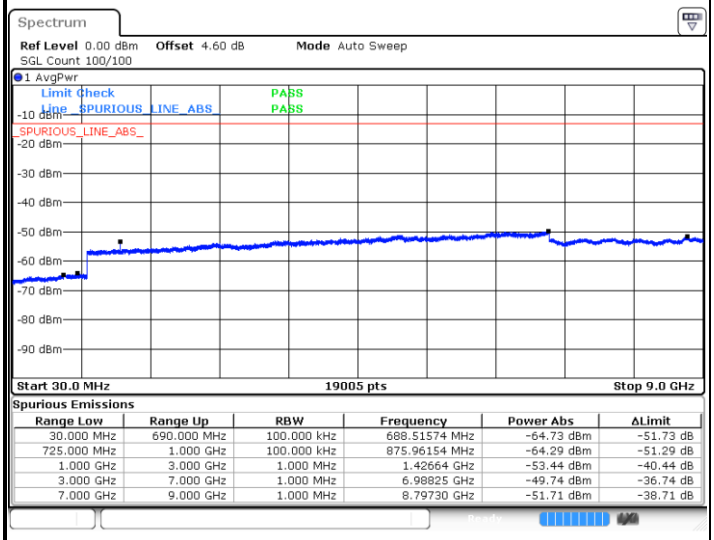
### Highest Channel / 256QAM




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 690.000 MHz | 100.000 kHz | 688.51574 MHz | -64.73 dBm | -51.73 dB |
| 725.000 MHz | 1.000 GHz | 100.000 kHz | 875.96154 MHz | -64.29 dBm | -51.29 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.42664 GHz | -53.44 dBm | -40.44 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.98825 GHz | -49.74 dBm | -36.74 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.79730 GHz | -51.71 dBm | -38.71 dB |

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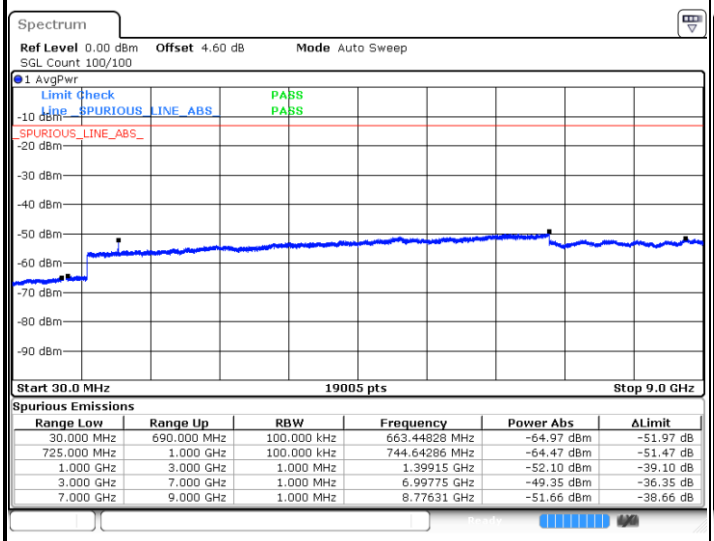
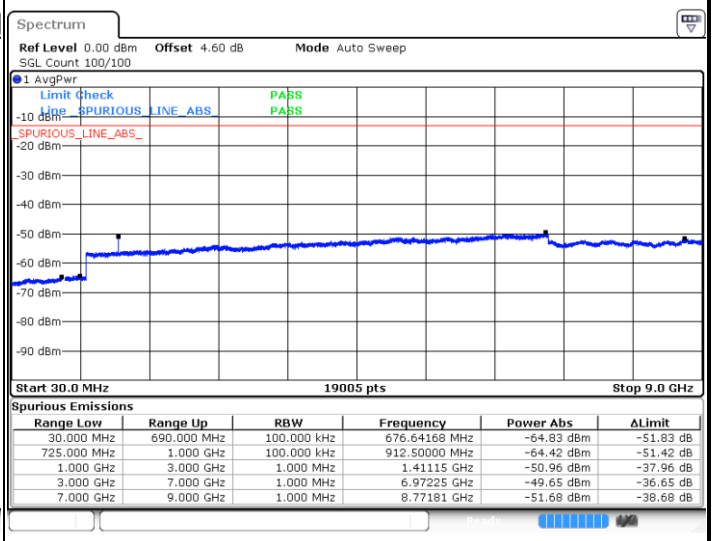
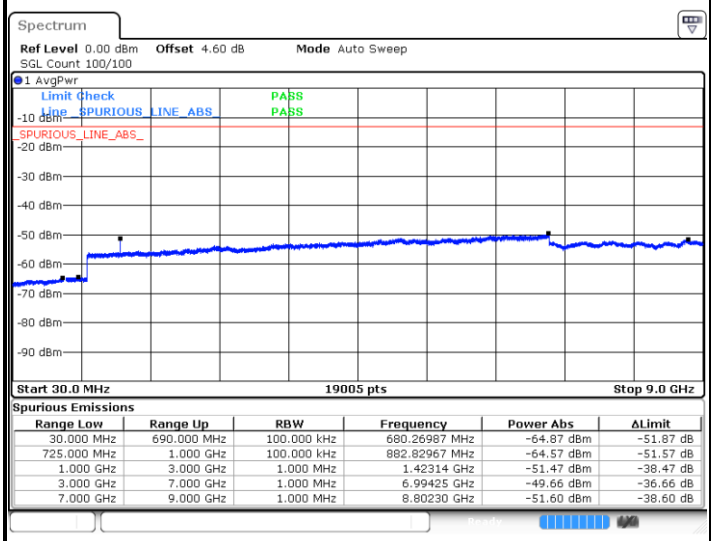
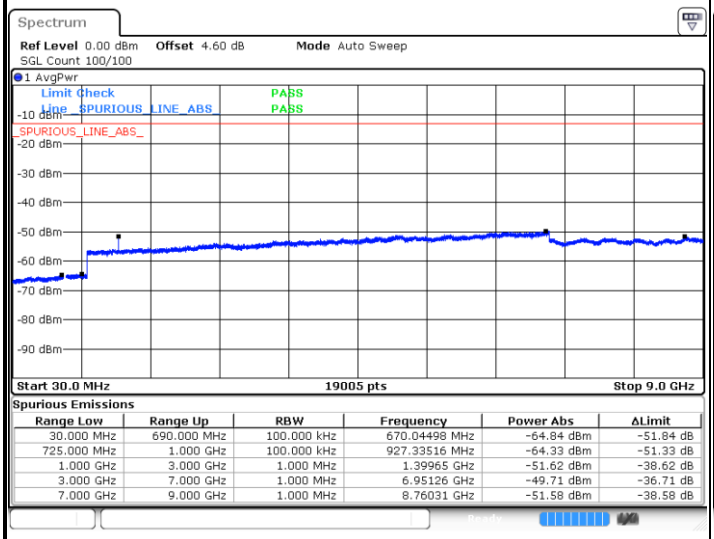
| LTE Band 12 / 5MHz | |
|---|---|
| **Lowest Channel / 256QAM** | **Middle Channel / 256QAM** |
|  |  |
| **Highest Channel / 256QAM** | |
|  | |

## LTE Band 12 / 10MHz

### Lowest Channel / 256QAM




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 690.000 MHz | 100.000 kHz | 670.04498 MHz | -64.84 dBm | -51.84 dB |
| 725.000 MHz | 1.000 GHz | 100.000 kHz | 927.33516 MHz | -64.33 dBm | -51.33 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.39965 GHz | -51.62 dBm | -38.62 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.95126 GHz | -49.71 dBm | -36.71 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.76031 GHz | -51.58 dBm | -38.58 dB |

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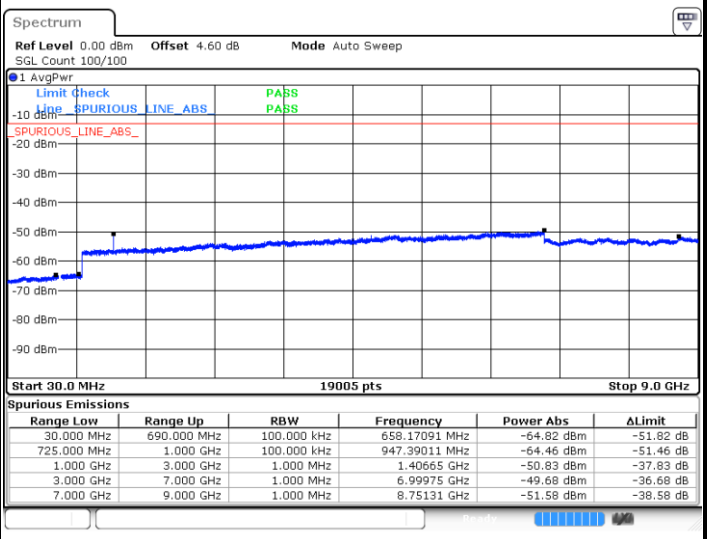
### Middle Channel / 256QAM




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 690.000 MHz | 100.000 kHz | 658.17091 MHz | -64.82 dBm | -51.82 dB |
| 725.000 MHz | 1.000 GHz | 100.000 kHz | 947.39011 MHz | -64.46 dBm | -51.46 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.40665 GHz | -50.83 dBm | -37.83 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.99975 GHz | -49.68 dBm | -36.68 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.75131 GHz | -51.58 dBm | -38.58 dB |

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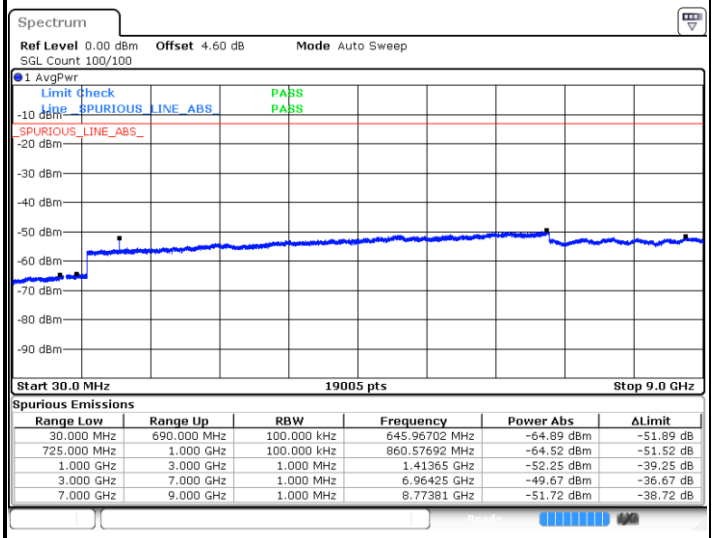
### Highest Channel / 256QAM




Spurious Emissions

| Range Low | Range Up | RBW | Frequency | Power Abs | ΔLimit |
|---|---|---|---|---|---|
| 30.000 MHz | 690.000 MHz | 100.000 kHz | 645.96702 MHz | -64.89 dBm | -51.89 dB |
| 725.000 MHz | 1.000 GHz | 100.000 kHz | 860.57692 MHz | -64.52 dBm | -51.52 dB |
| 1.000 GHz | 3.000 GHz | 1.000 MHz | 1.41365 GHz | -52.25 dBm | -39.25 dB |
| 3.000 GHz | 7.000 GHz | 1.000 MHz | 6.96425 GHz | -49.67 dBm | -36.67 dB |
| 7.000 GHz | 9.000 GHz | 1.000 MHz | 8.77381 GHz | -51.72 dBm | -38.72 dB |

Date: 16.NOV.2020 19:29:29

# Frequency Stability

| Test Conditions | | LTE Band 12 (QPSK) / Middle Channel | Limit |
|---|---|---|---|
| Temperature (°C) | Voltage (Volt) | BW 10MHz | Note 2. |
| | | Deviation (ppm) | Result |
| 50 | Normal Voltage | 0.0052 | PASS |
| 40 | Normal Voltage | 0.0002 | |
| 30 | Normal Voltage | 0.0018 | |
| 20(Ref.) | Normal Voltage | 0.0000 | |
| 10 | Normal Voltage | 0.0022 | |
| 0 | Normal Voltage | 0.0026 | |
| -10 | Normal Voltage | 0.0002 | |
| -20 | Normal Voltage | 0.0006 | |
| -30 | Normal Voltage | 0.0022 | |
| 20 | Maximum Voltage | 0.0022 | |
| 20 | Normal Voltage | 0.0036 | |
| 20 | Battery End Point | 0.0008 | |

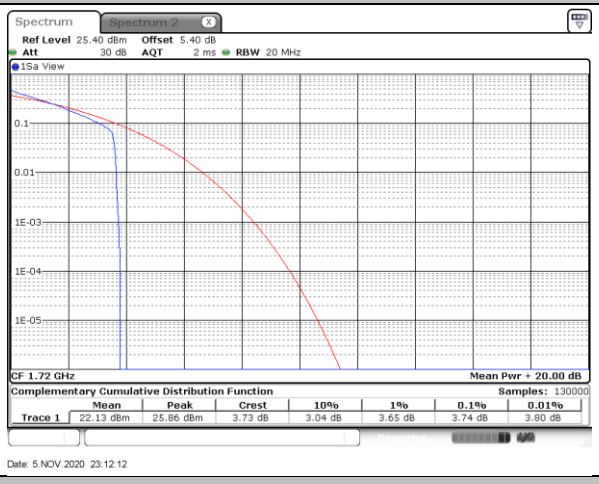
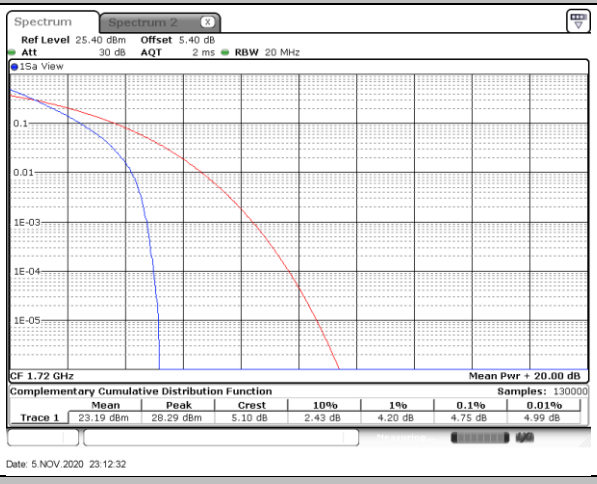
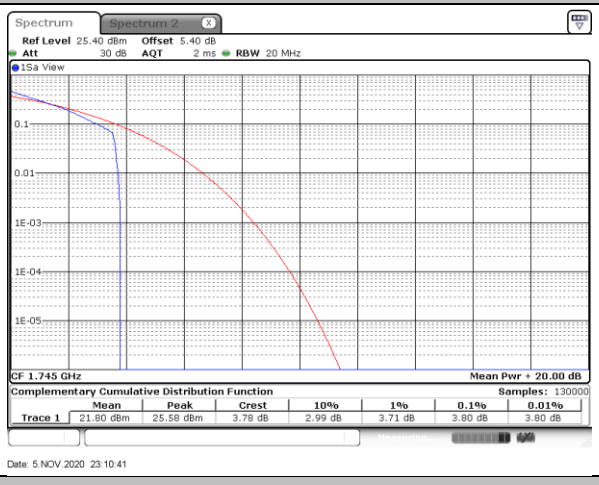
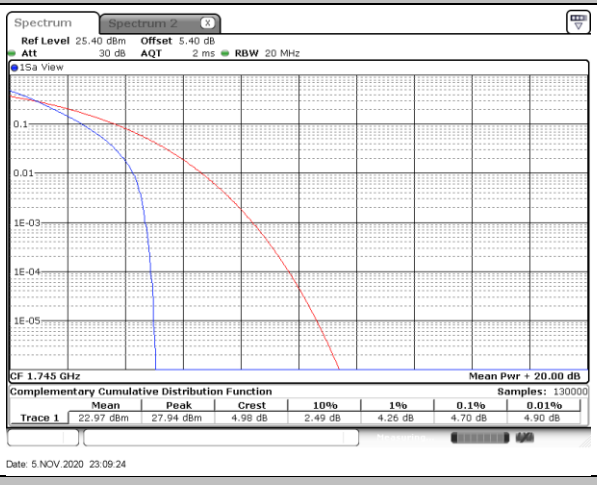
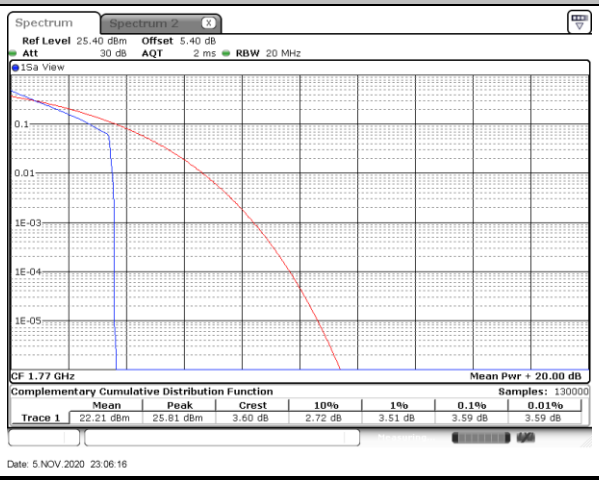
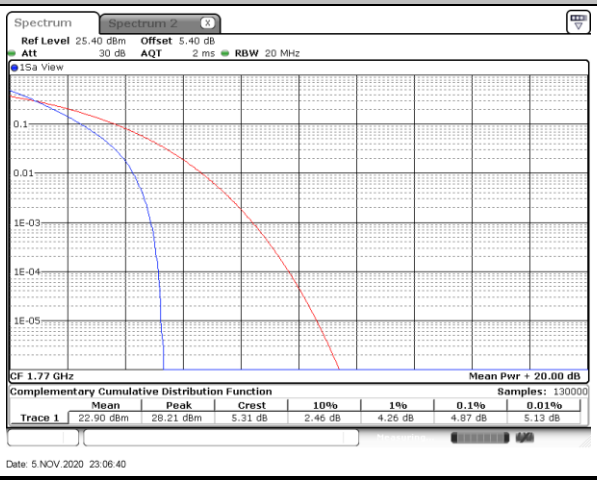
**Note:**

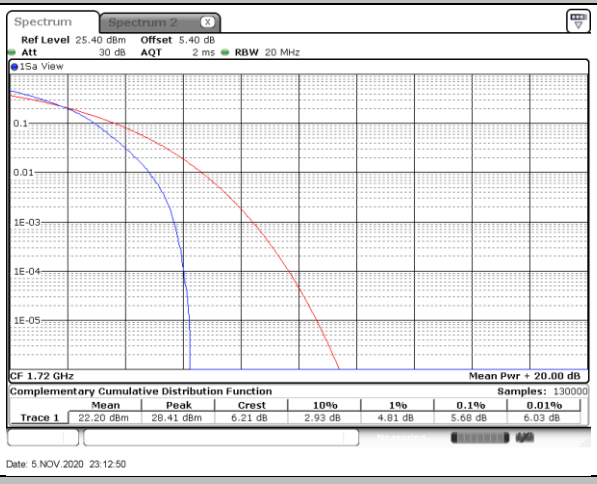
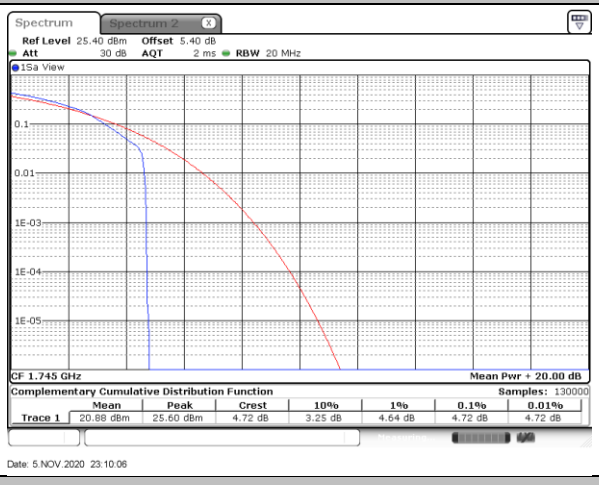
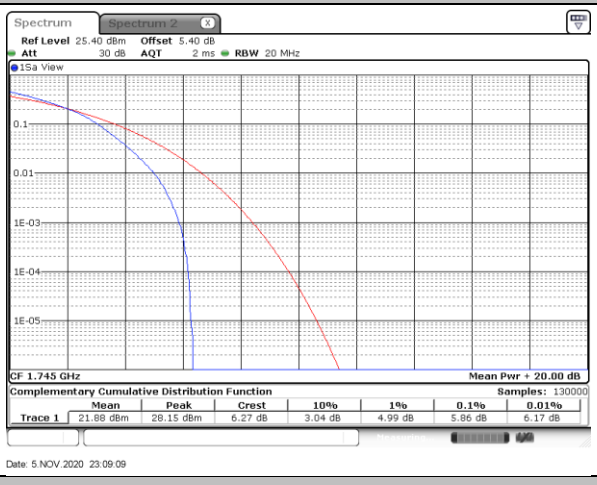
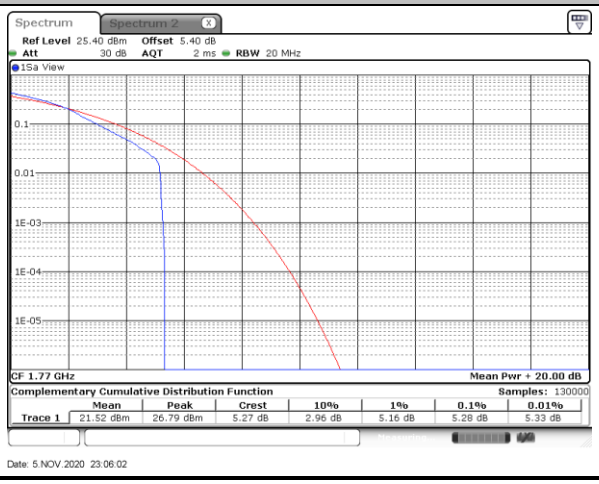
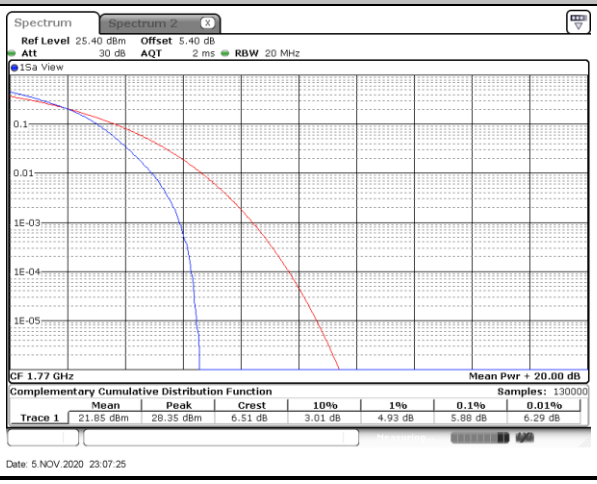
1. Normal Voltage =3.87 V. ; Battery End Point (BEP) =3.6 V. ; Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.

# LTE Band 66

## Peak-to-Average Ratio

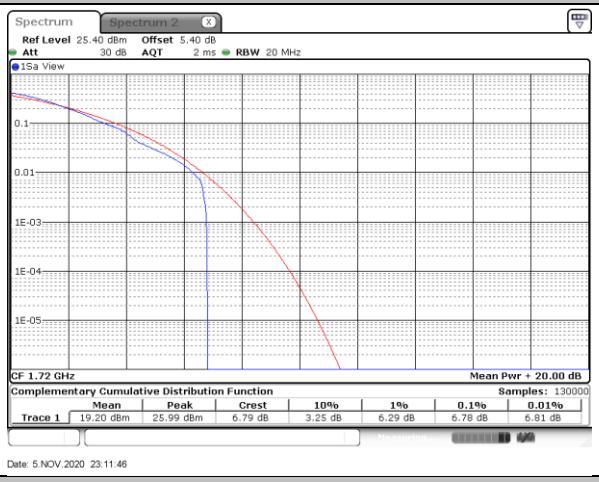
| Mode | LTE Band 66 / 20MHz | | | | |
|---|---|---|---|---|---|
| Mod. | QPSK | | 16QAM | | Limit: 13dB |
| RB Size | 1RB | Full RB | 1RB | Full RB | Result |
| Lowest CH | 3.74 | 4.75 | 4.41 | 5.68 | PASS |
| Middle CH | 3.80 | 4.70 | 4.72 | 5.86 | |
| Highest CH | 3.59 | 4.87 | 5.28 | 5.88 | |
| Mode | LTE Band 66 / 20MHz | | | | |
| Mod. | 64QAM | | 256QAM | | Limit: 13dB |
| RB Size | 1RB | Full RB | 1RB | Full RB | Result |
| Lowest CH | 6.78 | 6.41 | 6.26 | 6.58 | PASS |
| Middle CH | 6.72 | 6.52 | 6.72 | 6.58 | |
| Highest CH | 6.46 | 6.46 | 6.49 | 6.49 | |

| LTE Band 66 / 20MHz / QPSK | |
|---|---|
| **Lowest Channel / 1RB** | **Lowest Channel / Full RB** |
|  |  |
| **Middle Channel / 1RB** | **Middle Channel / Full RB** |
|  |  |
| **Highest Channel / 1RB** | **Highest Channel / Full RB** |
|  |  |

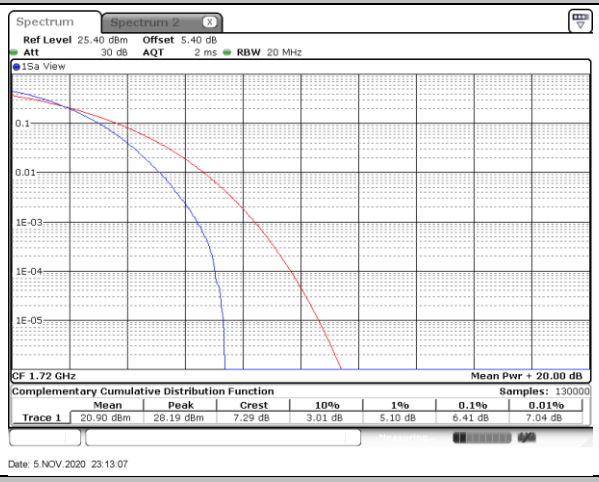
| LTE Band 66 / 20MHz / 16QAM | |
|---|---|
| **Lowest Channel / 1RB** | **Lowest Channel / Full RB** |
| |  |
| **Middle Channel / 1RB** | **Middle Channel / Full RB** |
|  |  |
| **Highest Channel / 1RB** | **Highest Channel / Full RB** |
|  |  |

## LTE Band 66 / 20MHz / 64QAM

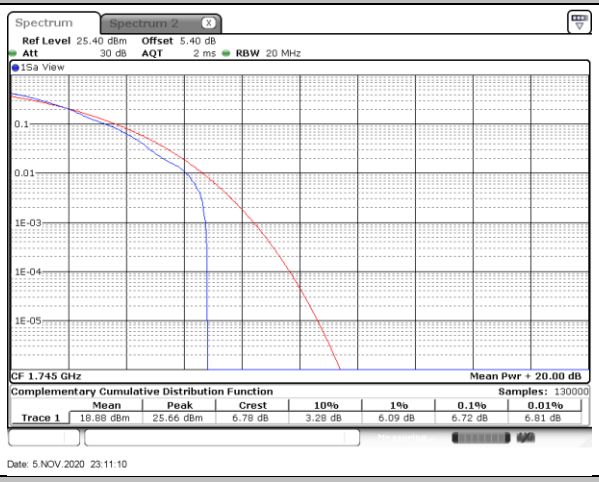
### Lowest Channel / 1RB



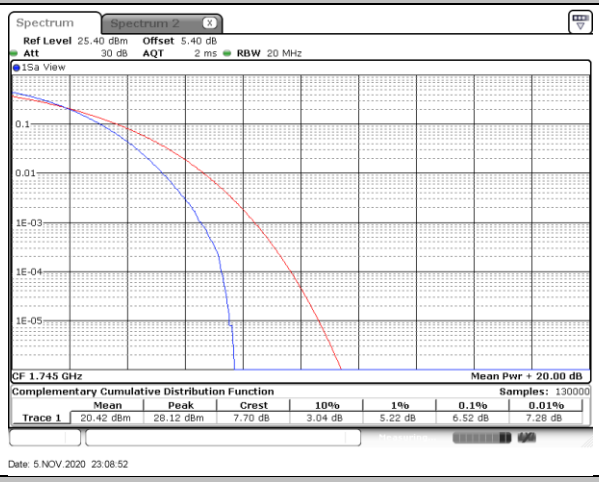

### Lowest Channel / Full RB



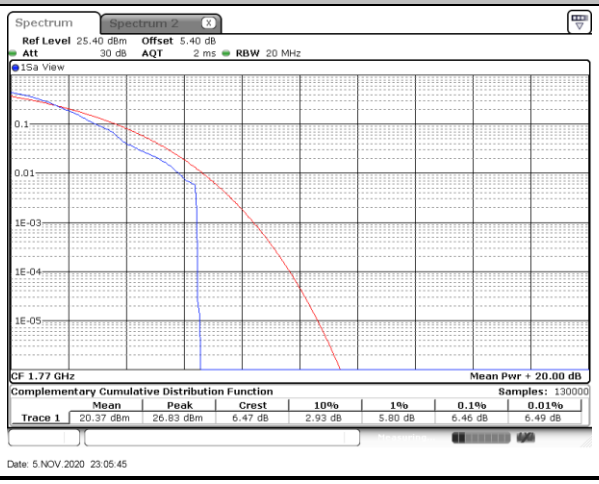

### Middle Channel / 1RB



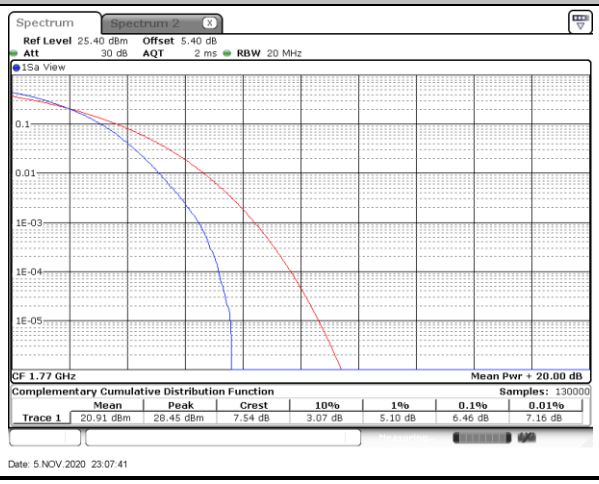

### Middle Channel / Full RB

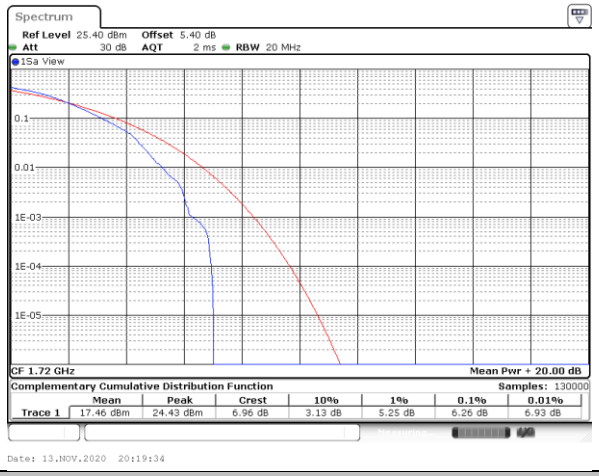
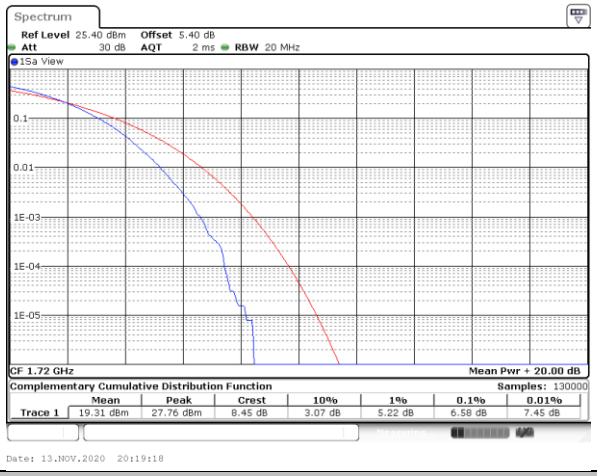
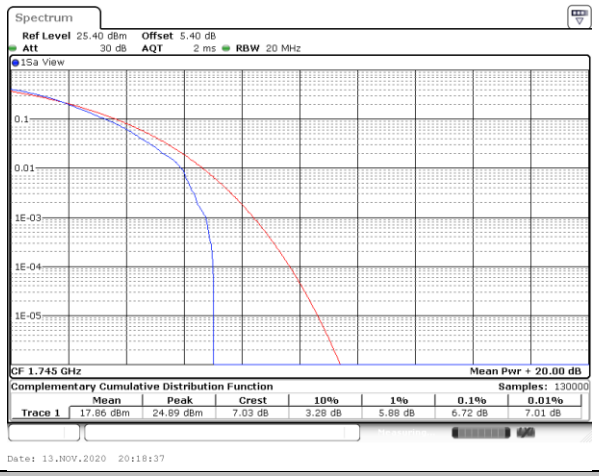
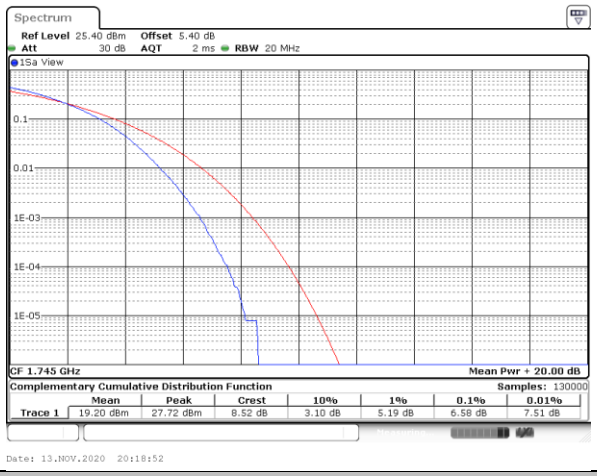
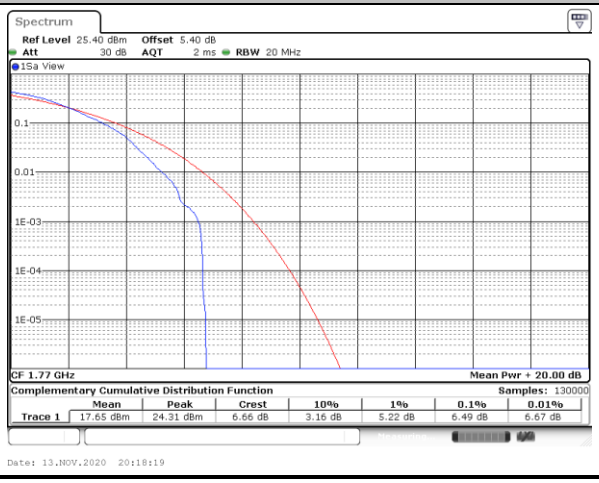
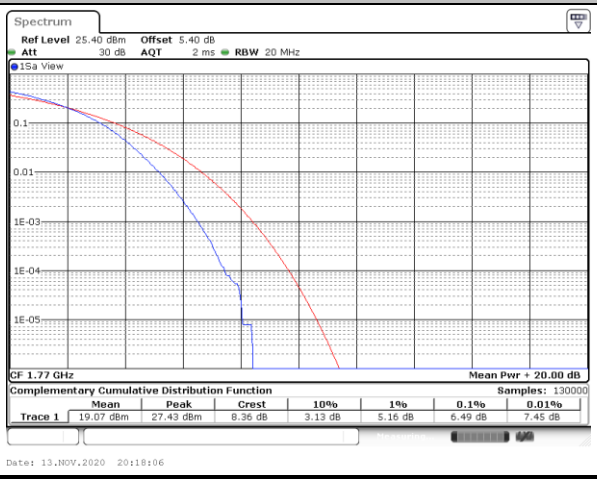



### Highest Channel / 1RB




### Highest Channel / Full RB



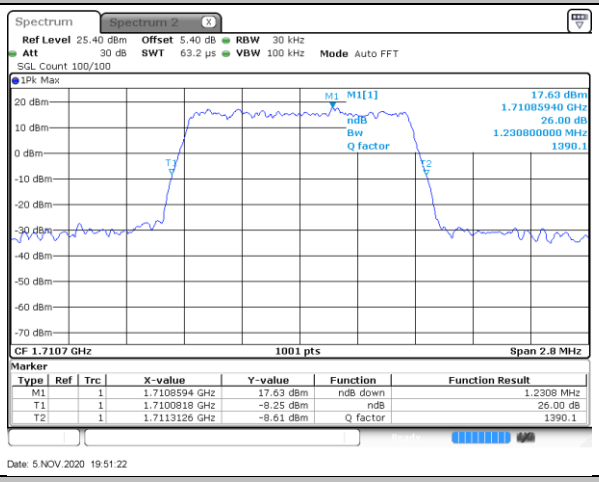
| LTE Band 66 / 20MHz / 256QAM | |
|---|---|
| **Lowest Channel / 1RB** | **Lowest Channel / Full RB** |
|  |  |
| **Middle Channel / 1RB** | **Middle Channel / Full RB** |
|  |  |
| **Highest Channel / 1RB** | **Highest Channel / Full RB** |
|  |  |

# 26dB Bandwidth

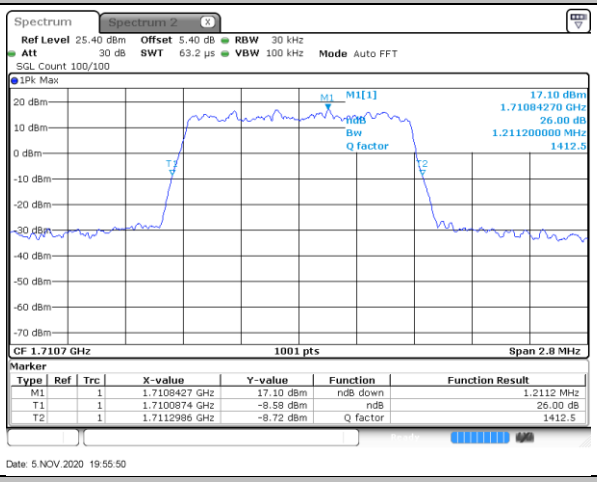
| Mode | LTE Band 66 : 26dB BW(MHz) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BW | 1.4MHz | | 3MHz | | 5MHz | | 10MHz | | 15MHz | | 20MHz | |
| Mod. | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM |
| Lowest CH | 1.23 | 1.21 | 3.07 | 3.00 | 4.93 | 4.87 | 9.73 | 9.65 | 14.36 | 14.36 | 20.30 | 20.10 |
| Middle CH | 1.21 | 1.23 | 3.02 | 3.04 | 4.84 | 5.01 | 9.65 | 9.77 | 14.36 | 14.18 | 20.22 | 19.98 |
| Highest CH | 1.23 | 1.22 | 2.98 | 3.03 | 4.96 | 4.91 | 9.85 | 9.77 | 14.54 | 14.12 | 20.22 | 20.02 |
| Mode | LTE Band 66 : 26dB BW(MHz) | | | | | | | | | | | |
| BW | 1.4MHz | | 3MHz | | 5MHz | | 10MHz | | 15MHz | | 20MHz | |
| Mod. | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM |
| Lowest CH | 1.23 | 1.23 | 3.03 | 3.02 | 4.90 | 4.84 | 9.71 | 9.67 | 14.57 | 14.39 | 20.30 | 20.06 |
| Middle CH | 1.23 | 1.23 | 2.99 | 3.02 | 4.85 | 4.92 | 9.81 | 9.73 | 14.33 | 14.39 | 20.22 | 20.22 |
| Highest CH | 1.21 | 1.22 | 2.99 | 3 | 4.90 | 4.81 | 9.77 | 9.83 | 14.42 | 14.18 | 20.14 | 20.1 |

## LTE Band 66

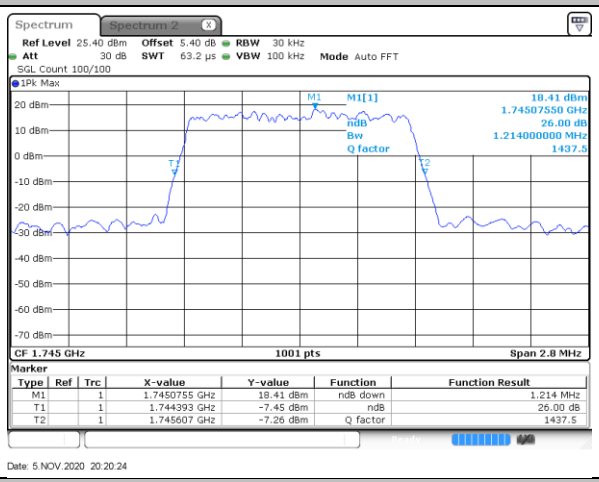
### Lowest Channel / 1.4MHz / QPSK



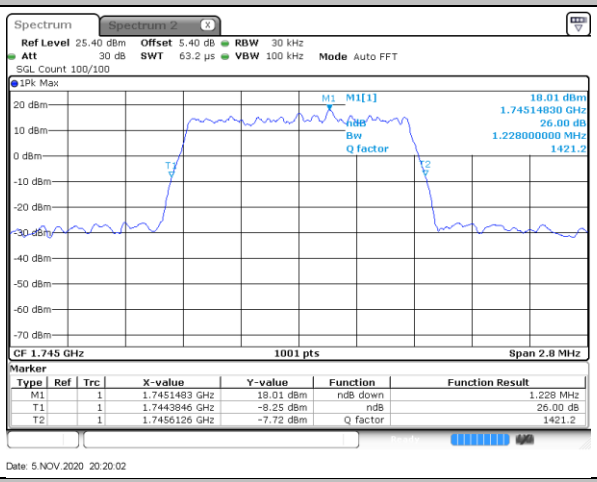

### Lowest Channel / 1.4MHz / 16QAM



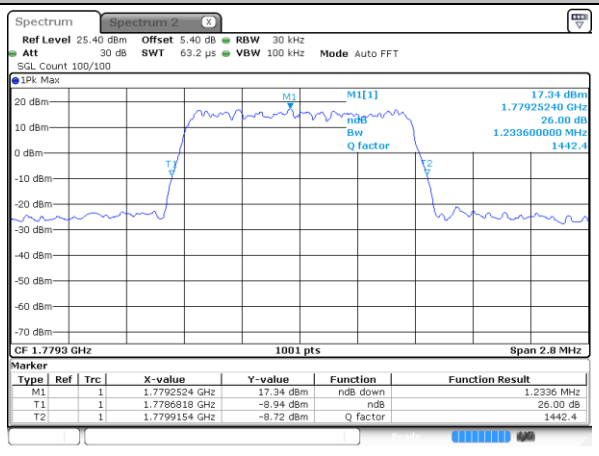

### Middle Channel / 1.4MHz / QPSK



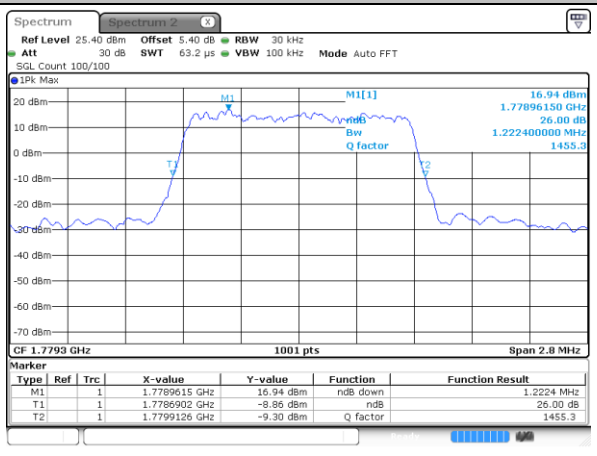

### Middle Channel / 1.4MHz / 16QAM




### Highest Channel / 1.4MHz / QPSK

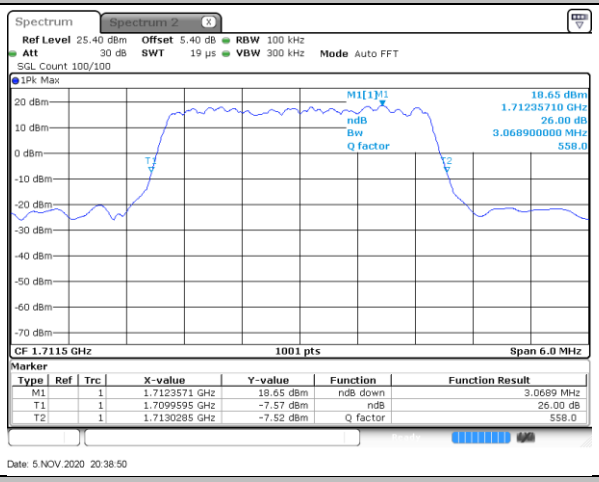



### Highest Channel / 1.4MHz / 16QAM

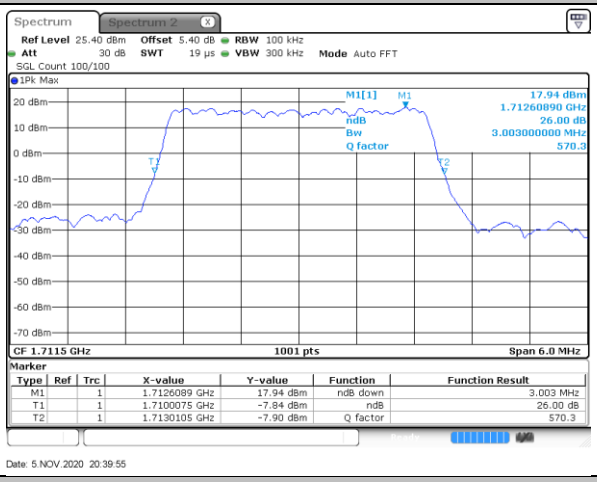


## LTE Band 66

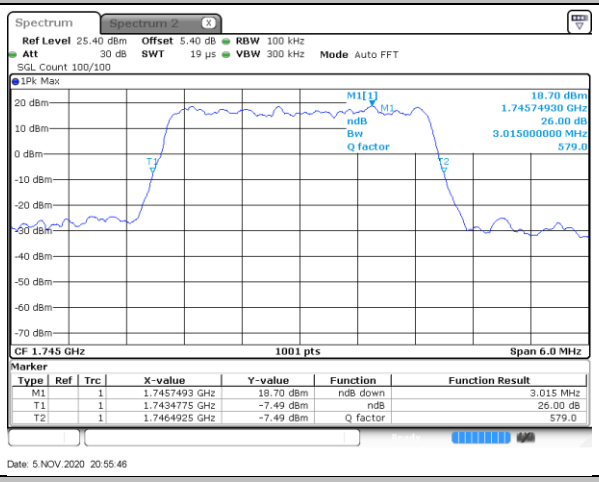
### Lowest Channel / 3MHz / QPSK



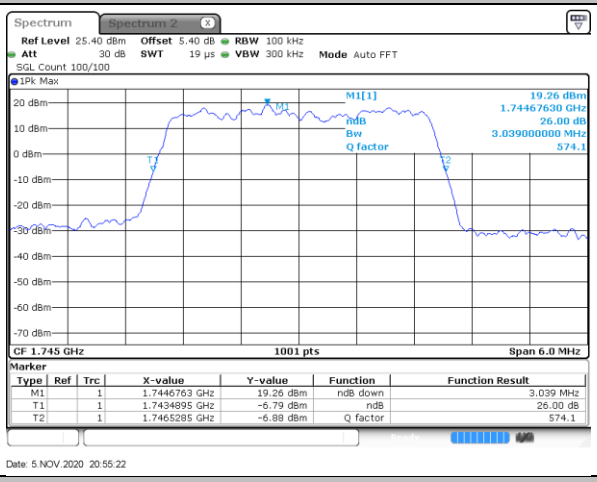

### Lowest Channel / 3MHz / 16QAM



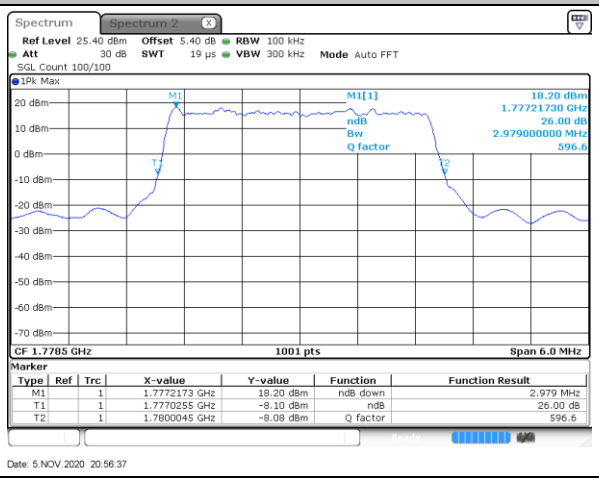

### Middle Channel / 3MHz / QPSK



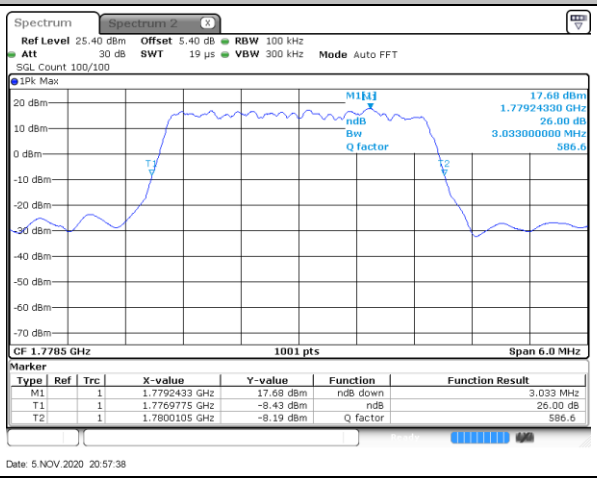

### Middle Channel / 3MHz / 16QAM




### Highest Channel / 3MHz / QPSK

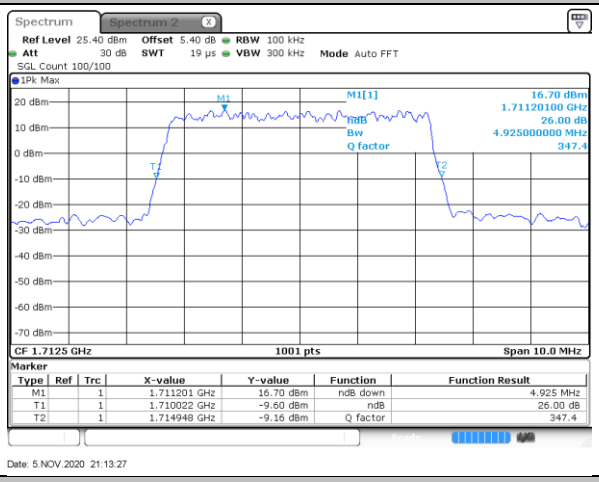



### Highest Channel / 3MHz / 16QAM

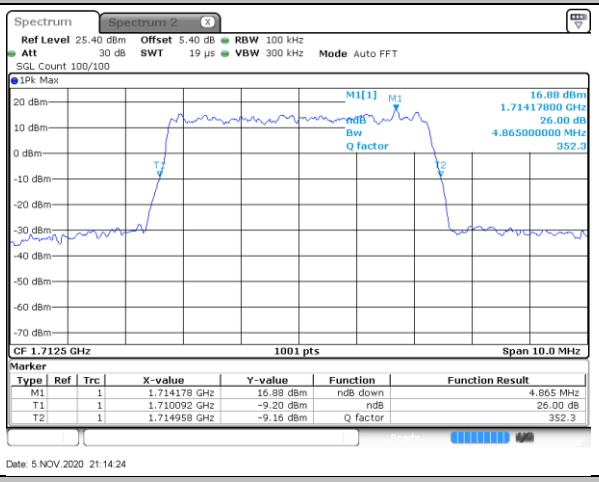


## LTE Band 66

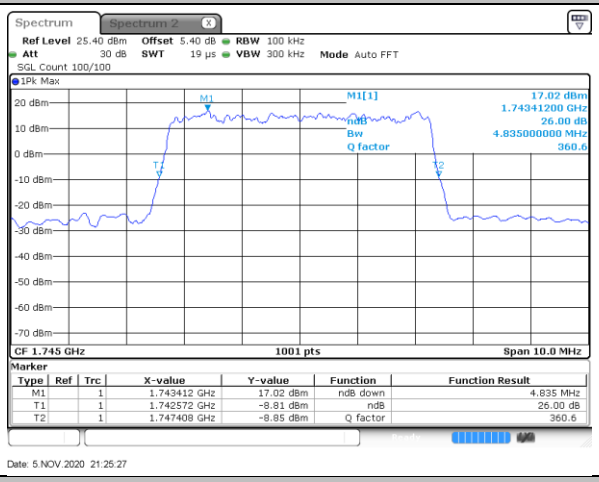
### Lowest Channel / 5MHz / QPSK



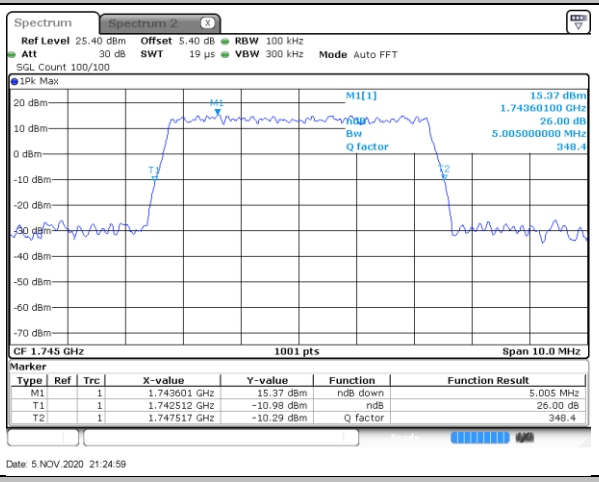

### Lowest Channel / 5MHz / 16QAM



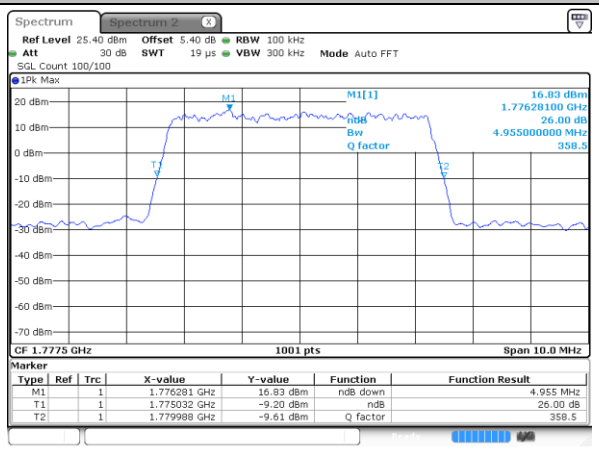

### Middle Channel / 5MHz / QPSK



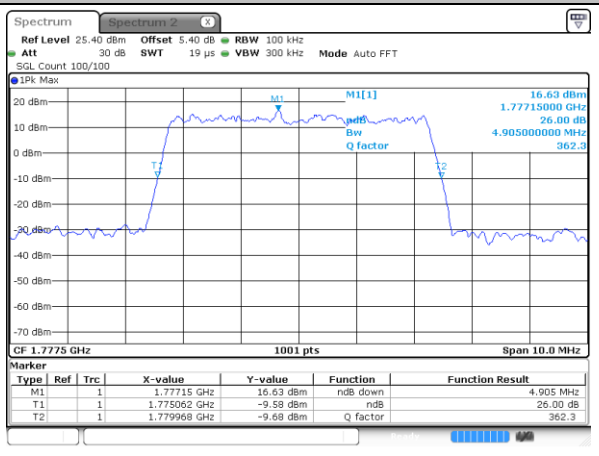

### Middle Channel / 5MHz / 16QAM




### Highest Channel / 5MHz / QPSK

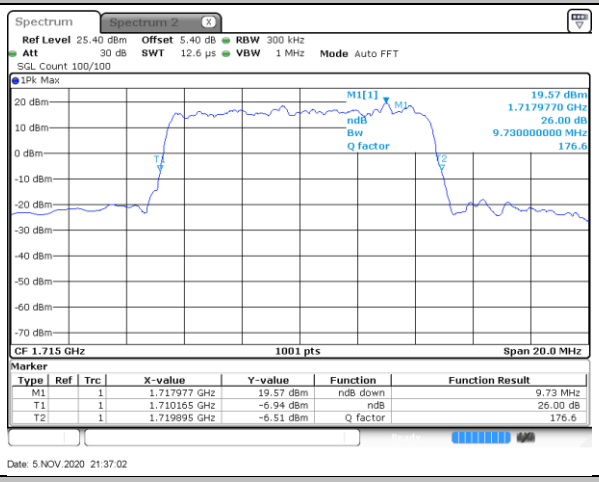



### Highest Channel / 5MHz / 16QAM

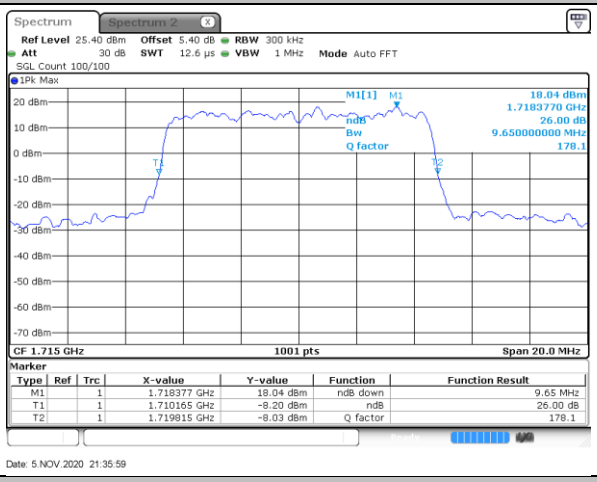


## LTE Band 66

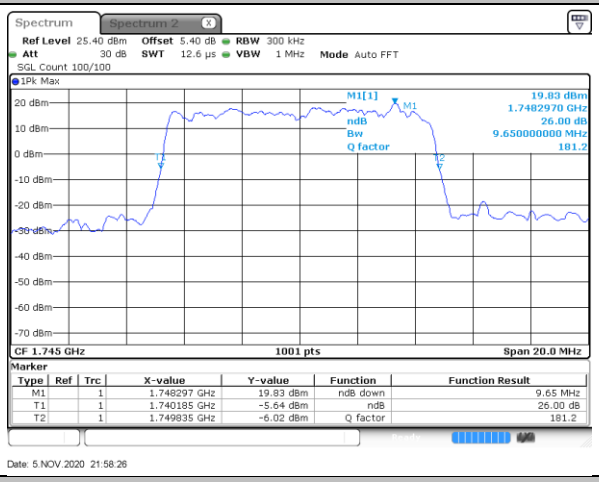
### Lowest Channel / 10MHz / QPSK



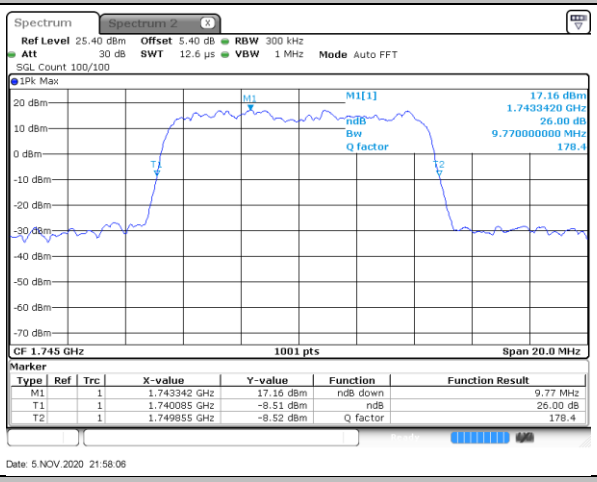

### Lowest Channel / 10MHz / 16QAM



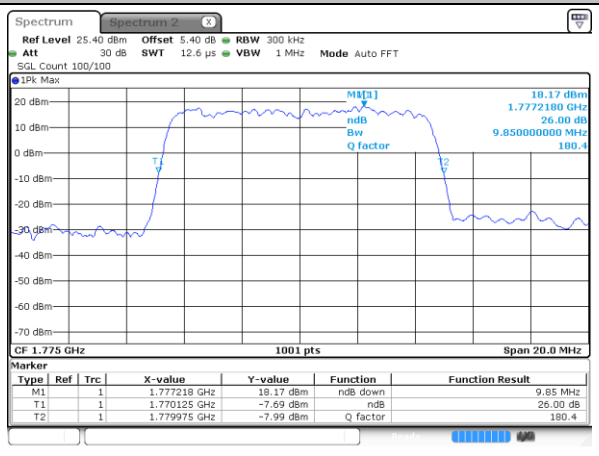

### Middle Channel / 10MHz / QPSK



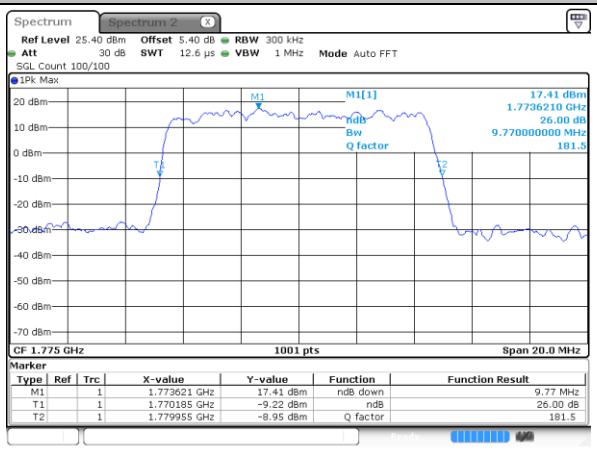

### Middle Channel / 10MHz / 16QAM




### Highest Channel / 10MHz / QPSK

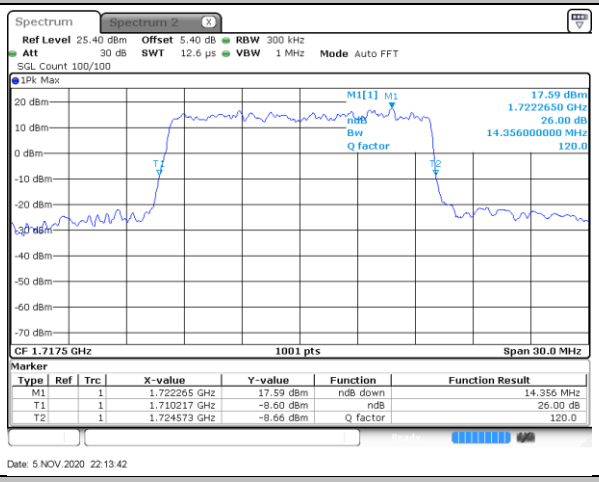



### Highest Channel / 10MHz / 16QAM

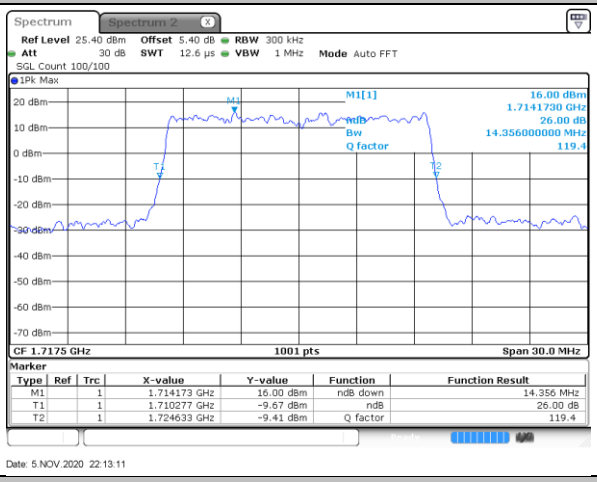


## LTE Band 66

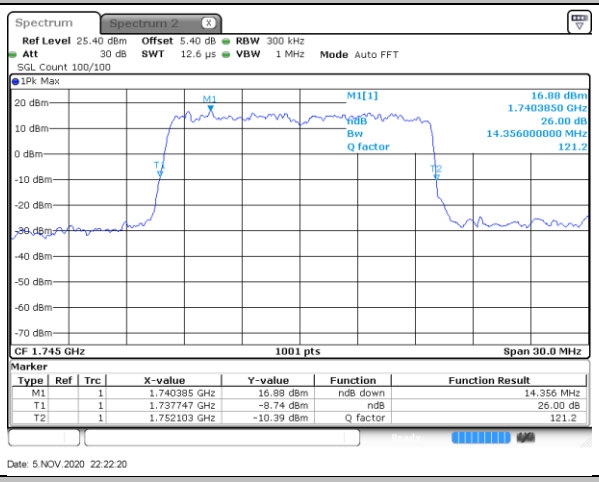
### Lowest Channel / 15MHz / QPSK



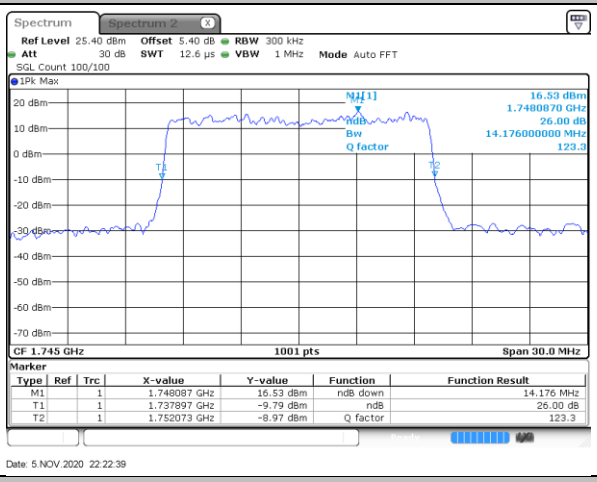

### Lowest Channel / 15MHz / 16QAM



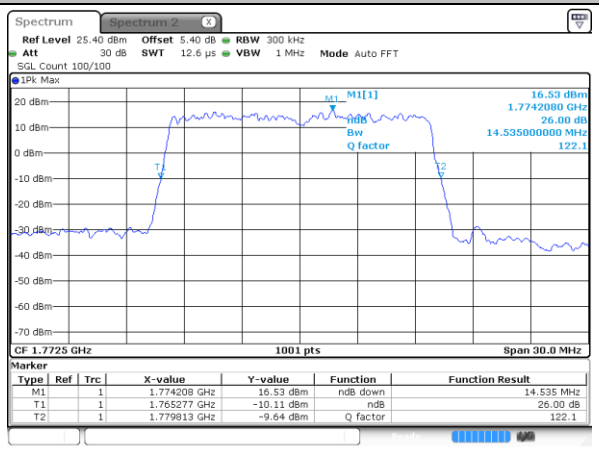

### Middle Channel / 15MHz / QPSK



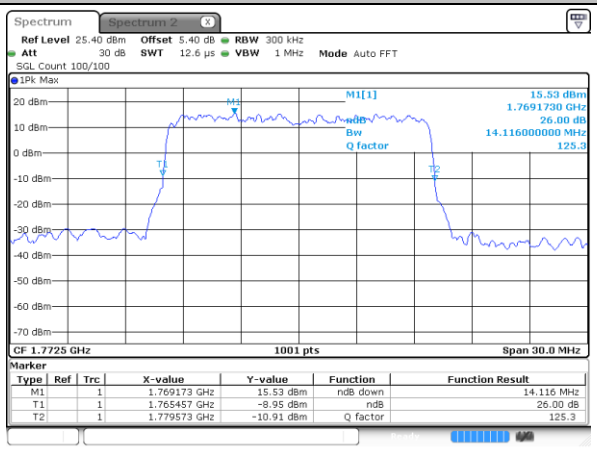

### Middle Channel / 15MHz / 16QAM




### Highest Channel / 15MHz / QPSK

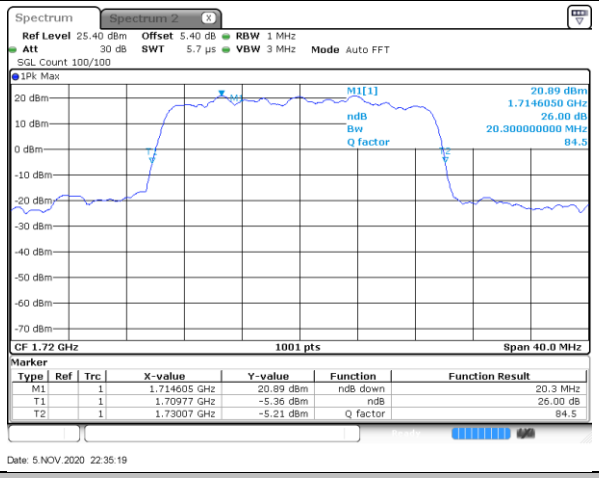



### Highest Channel / 15MHz / 16QAM

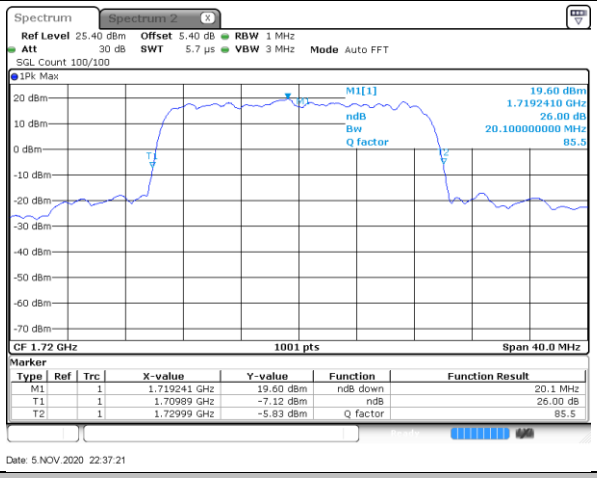


## LTE Band 66

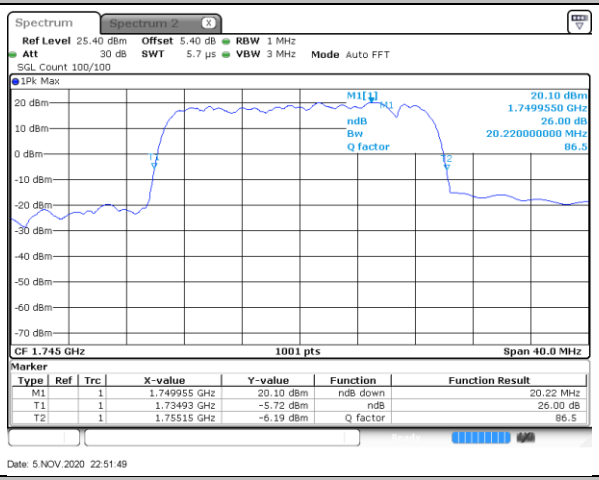
### Lowest Channel / 20MHz / QPSK



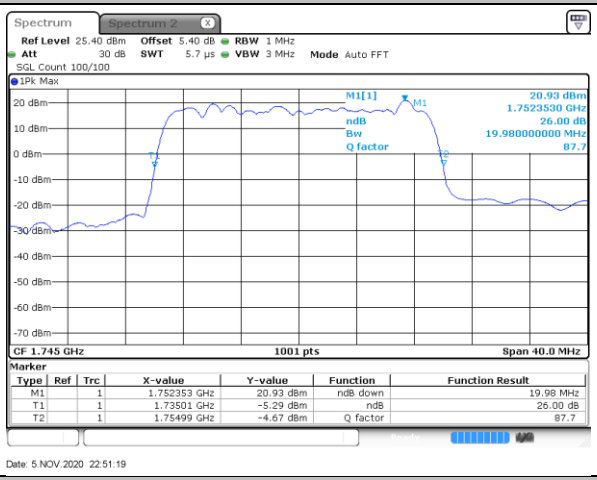

### Lowest Channel / 20MHz / 16QAM



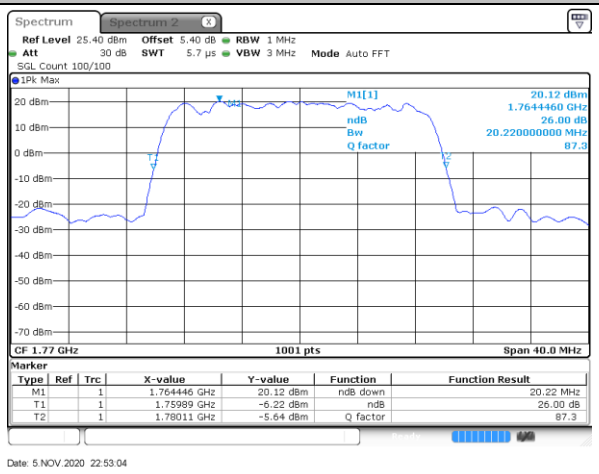

### Middle Channel / 20MHz / QPSK



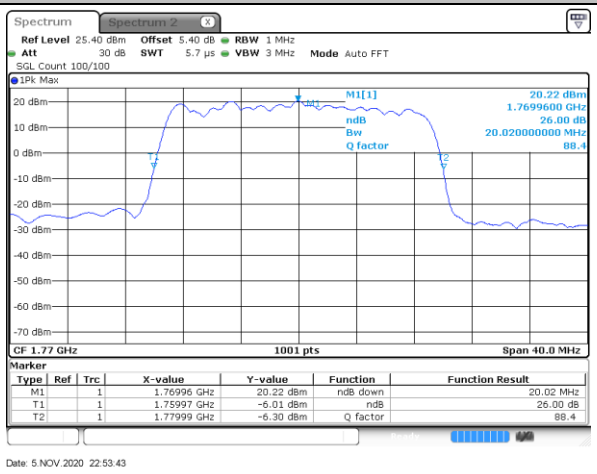

### Middle Channel / 20MHz / 16QAM




### Highest Channel / 20MHz / QPSK

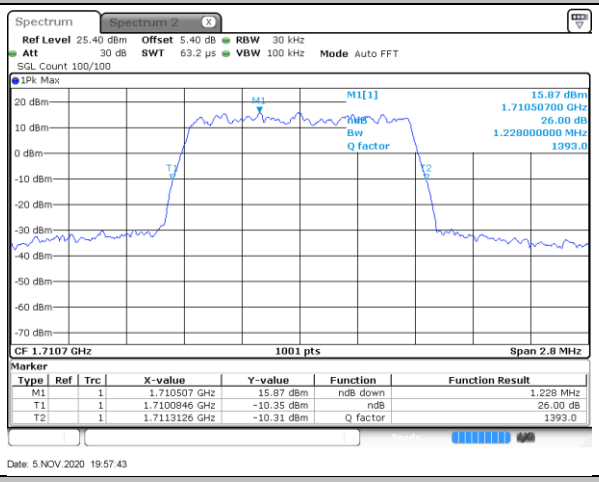



### Highest Channel / 20MHz / 16QAM

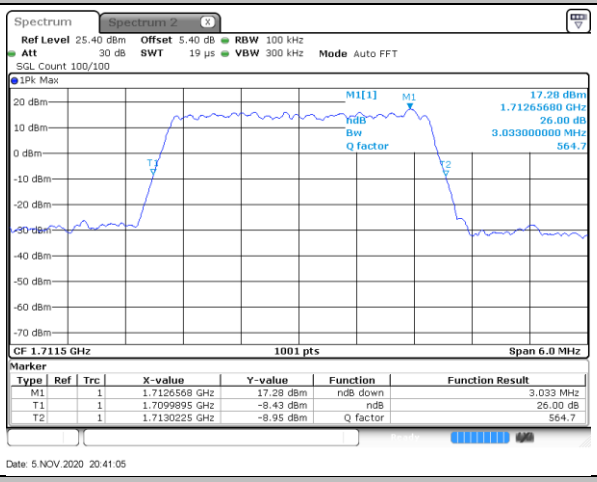


## LTE Band 66

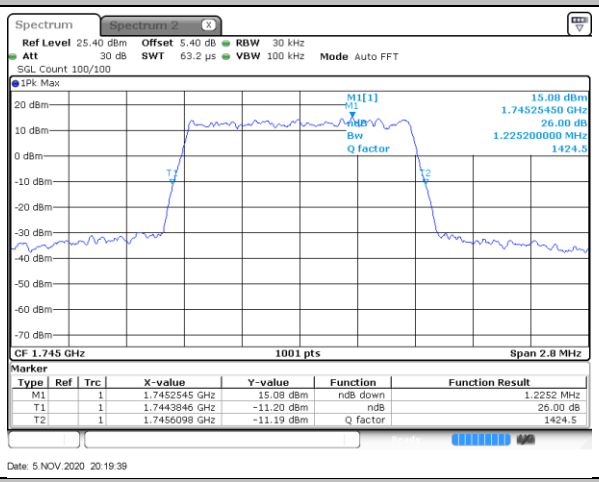
### Lowest Channel / 1.4MHz / 64QAM



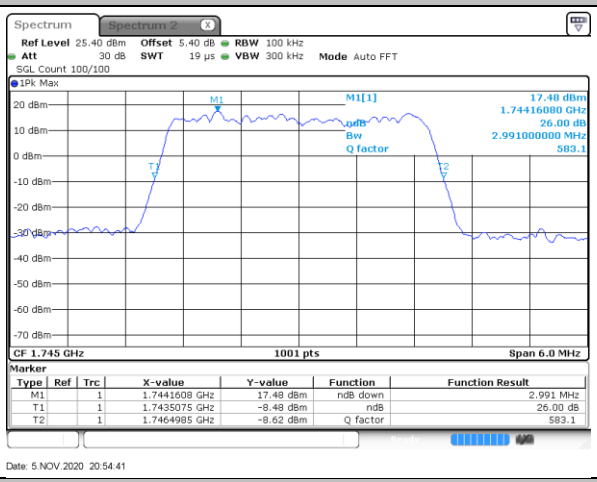

### Lowest Channel / 3MHz / 64QAM



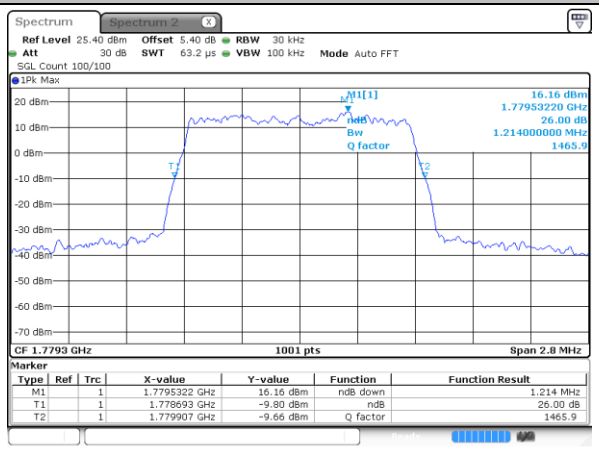

### Middle Channel / 20MHz / 64QAM



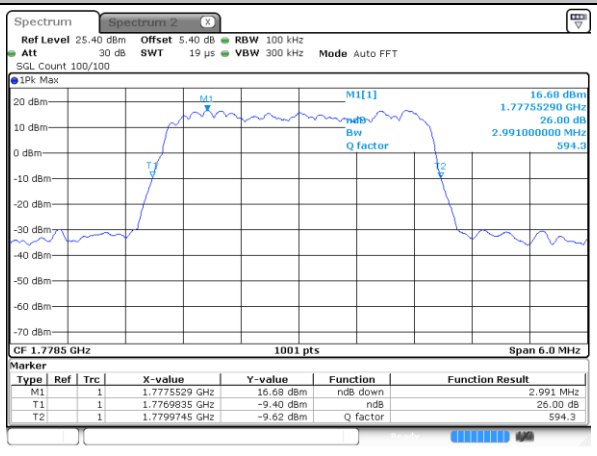

### Middle Channel / 3MHz / 64QAM




### Highest Channel / 20MHz / 64QAM

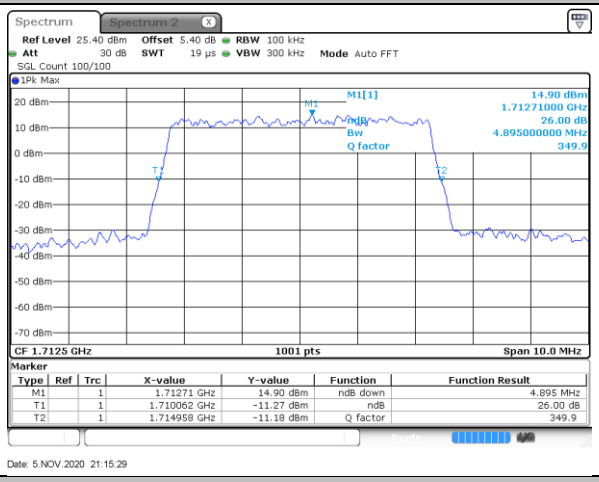



### Highest Channel / 3MHz / 64QAM

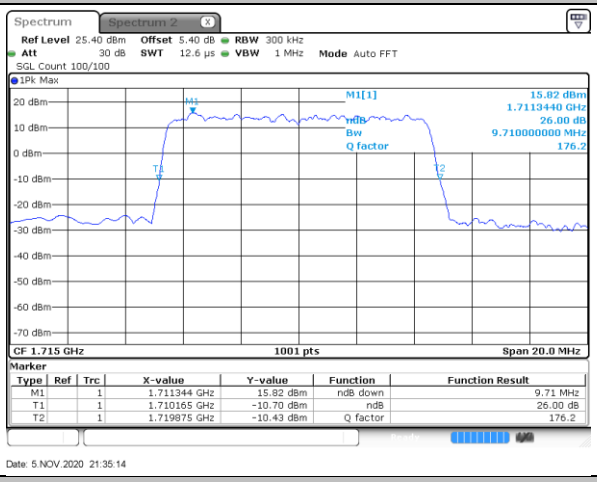


## LTE Band 66

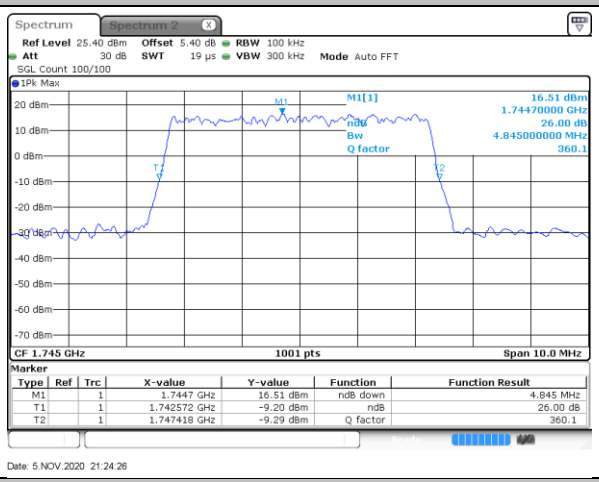
### Lowest Channel / 5MHz / 64QAM



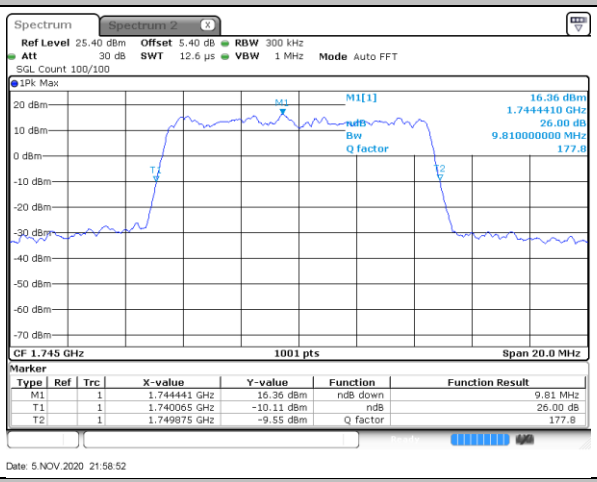

### Lowest Channel / 10MHz / 64QAM



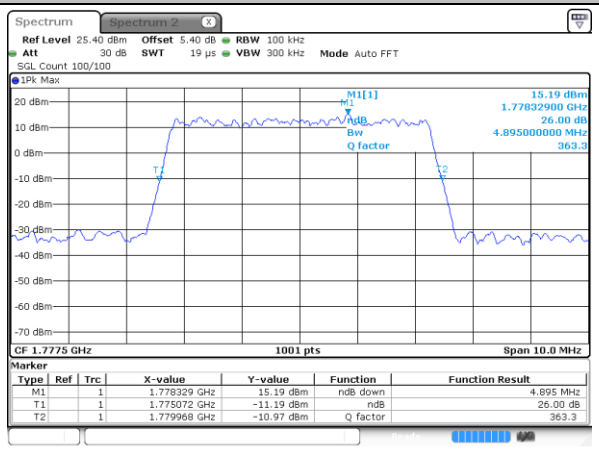

### Middle Channel / 5MHz / 64QAM



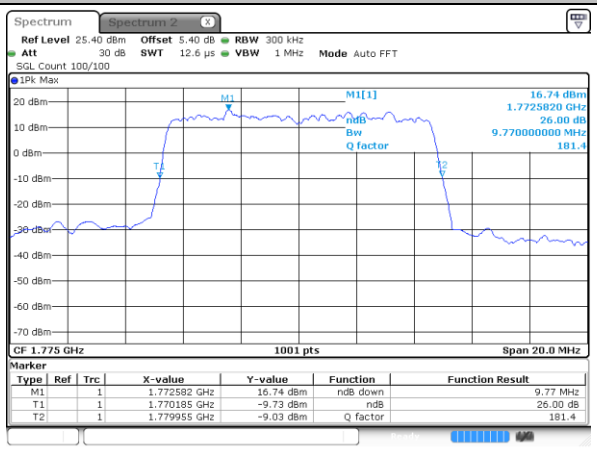

### Middle Channel / 10MHz / 64QAM




### Highest Channel / 5MHz / 64QAM

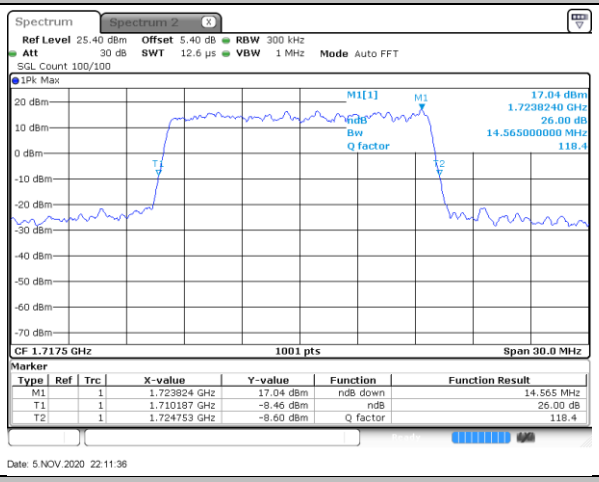



### Highest Channel / 10MHz / 64QAM

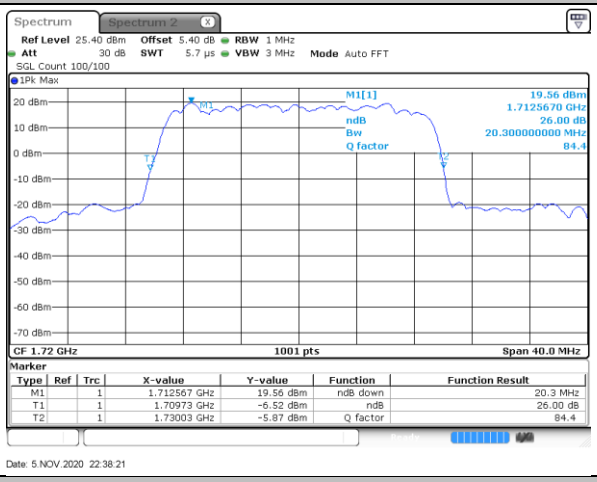


## LTE Band 66

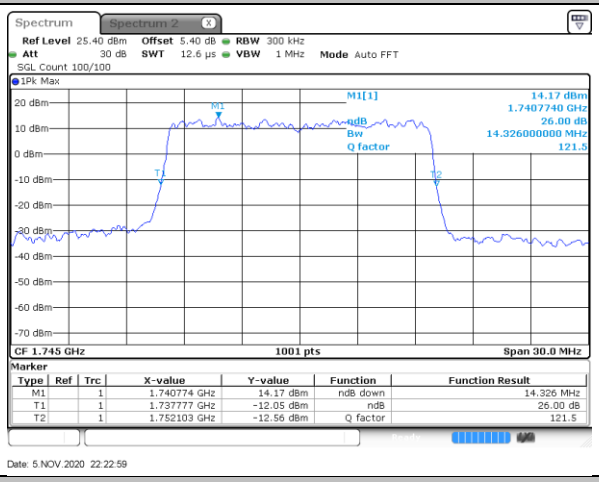
### Lowest Channel / 15MHz / 64QAM



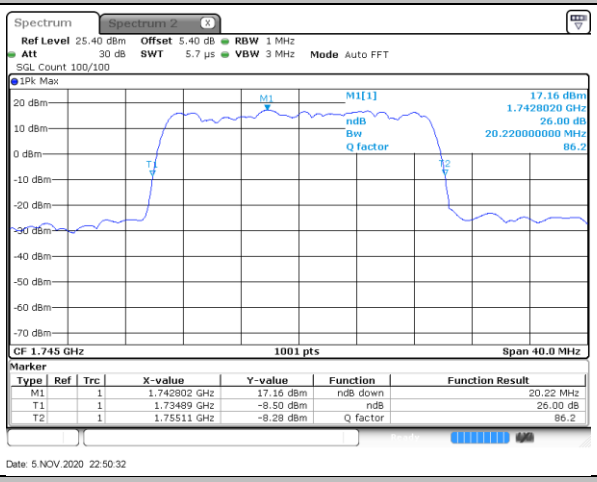

### Lowest Channel / 20MHz / 64QAM



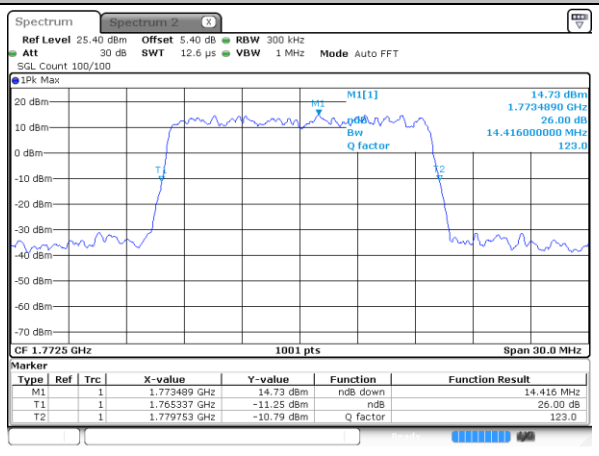

### Middle Channel / 15MHz / 64QAM



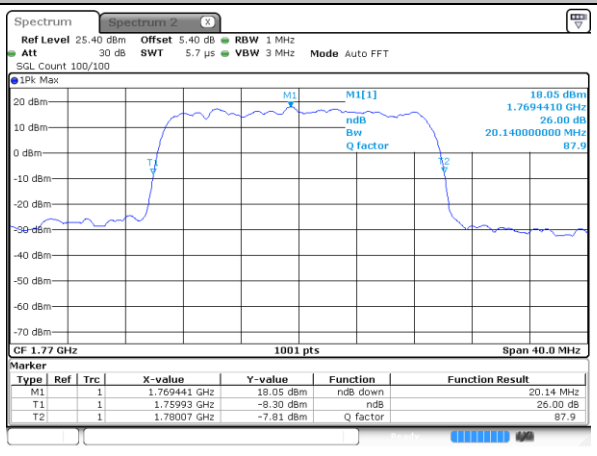

### Middle Channel / 20MHz / 64QAM




### Highest Channel / 15MHz / 64QAM

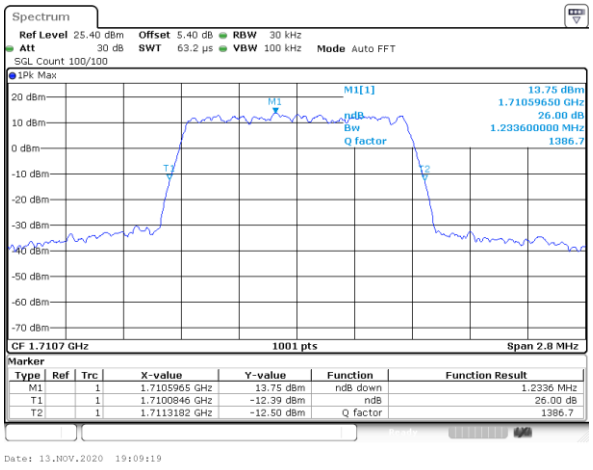



### Highest Channel / 20MHz / 64QAM

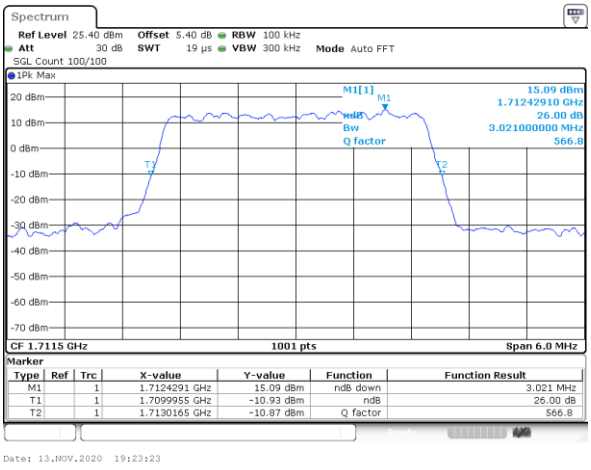


## LTE Band 66

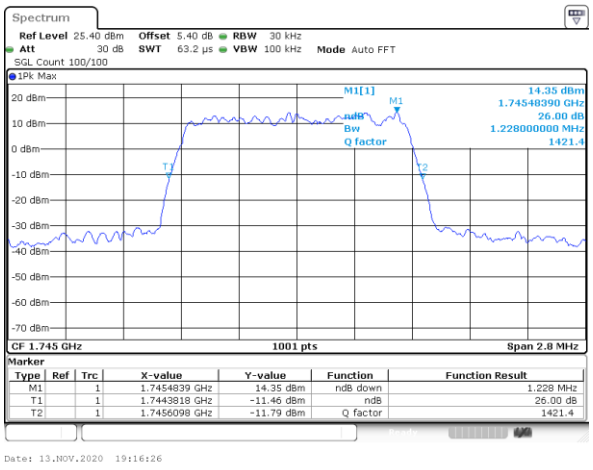
### Lowest Channel / 1.4MHz / 256QAM



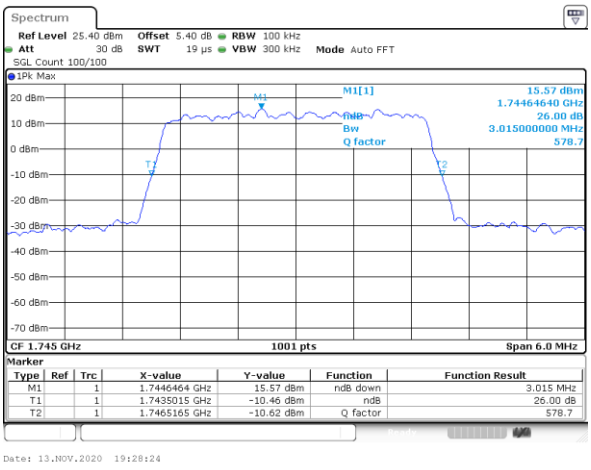

### Lowest Channel / 3MHz / 256QAM



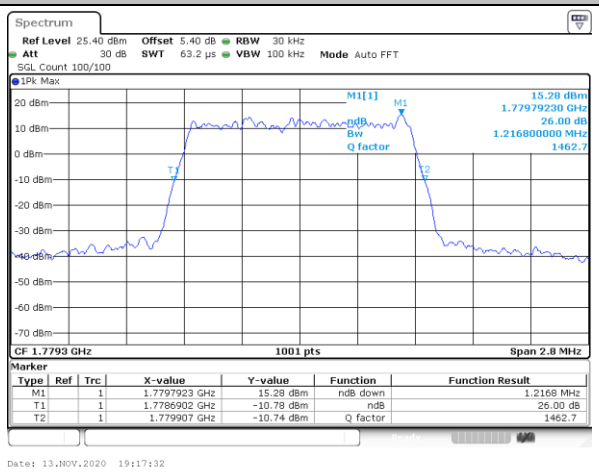

### Middle Channel / 1.4MHz / 256QAM



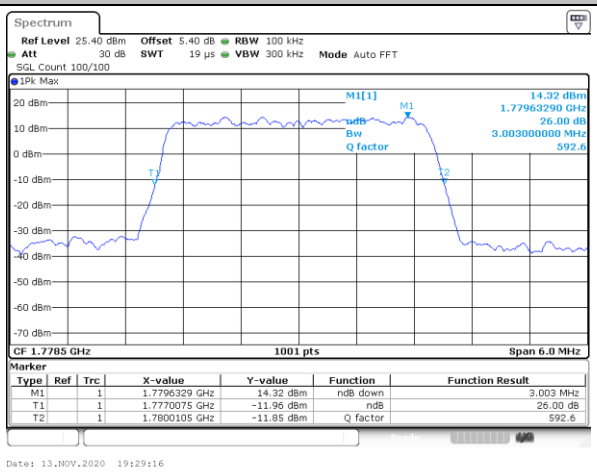

### Middle Channel / 3MHz / 256QAM




### Highest Channel / 1.4MHz / 256QAM

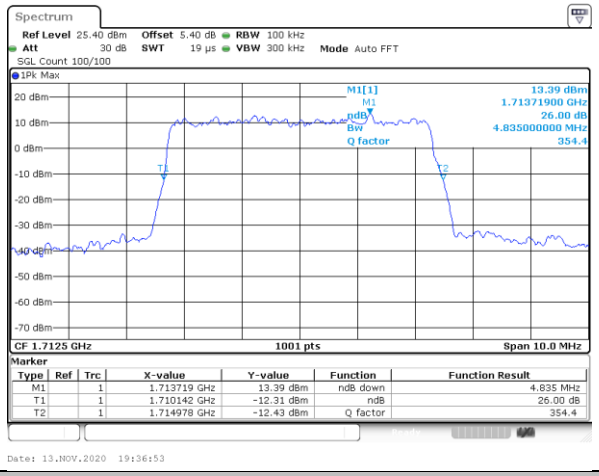



### Highest Channel / 3MHz / 256QAM

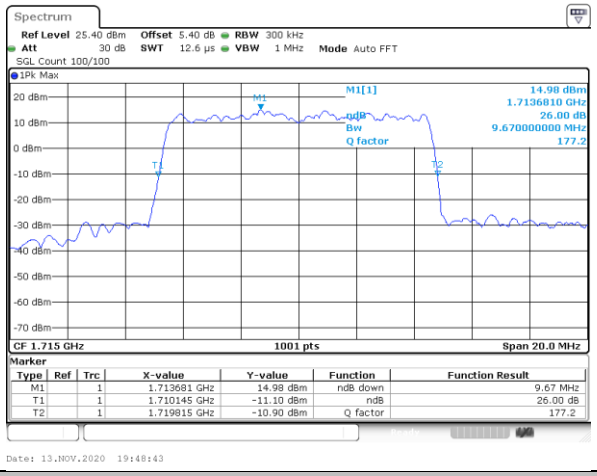


## LTE Band 66

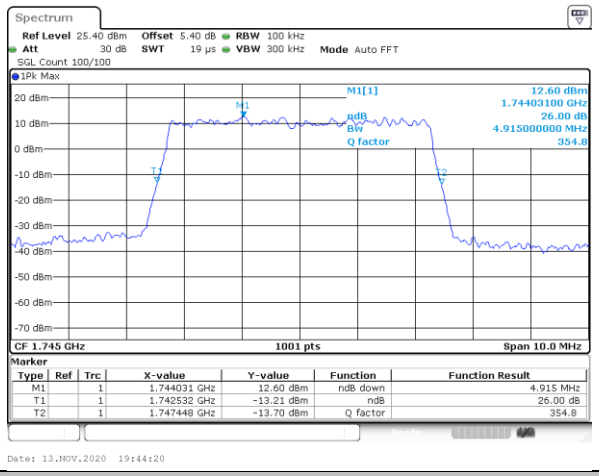
### Lowest Channel / 5MHz / 256QAM



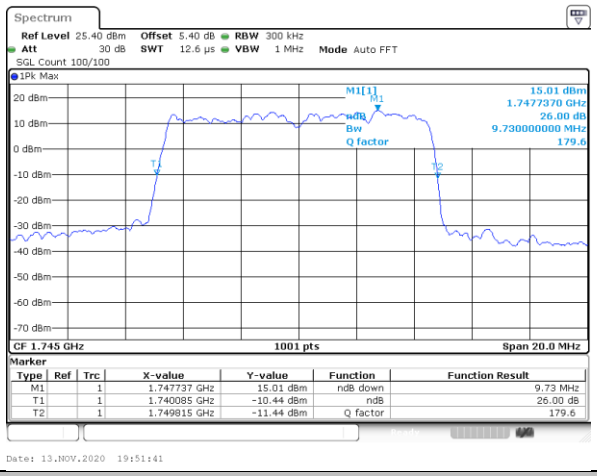

### Lowest Channel / 10MHz / 256QAM



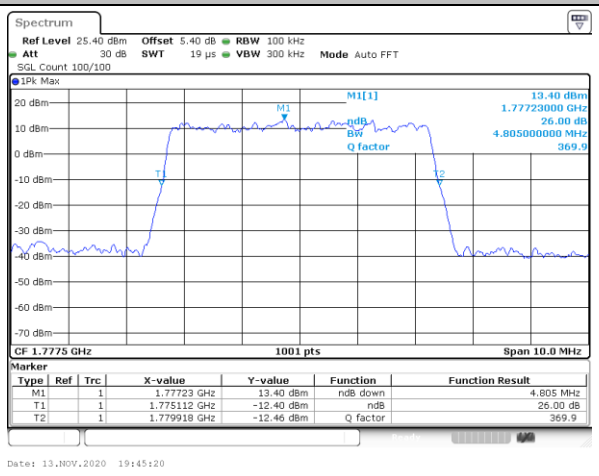

### Middle Channel / 5MHz / 256QAM



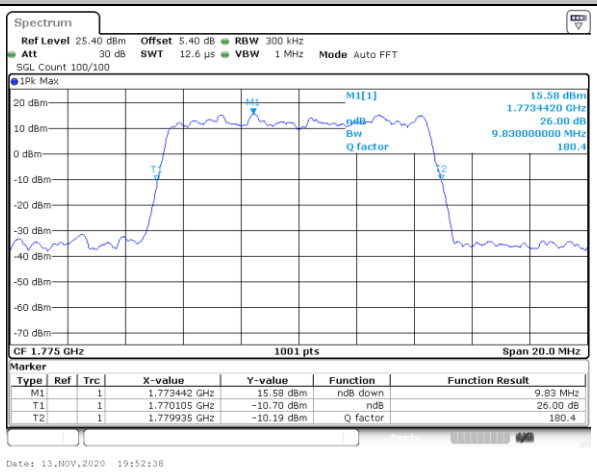

### Middle Channel / 10MHz / 256QAM




### Highest Channel / 5MHz / 256QAM

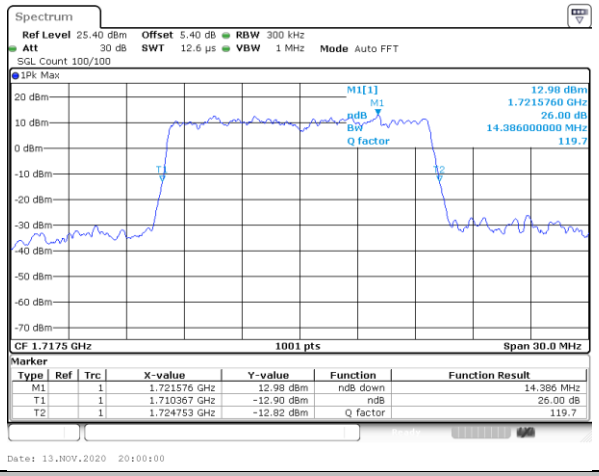



### Highest Channel / 10MHz / 256QAM

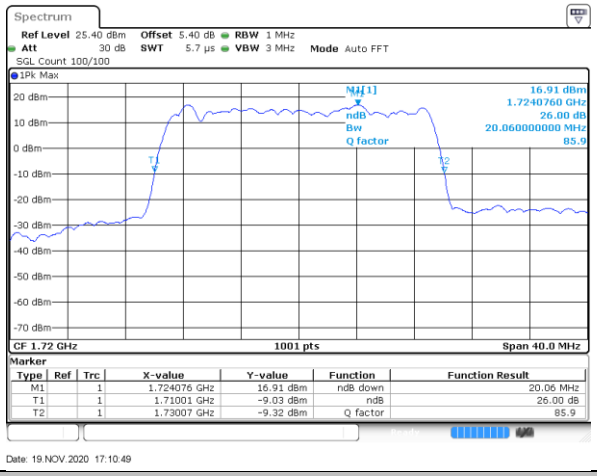


## LTE Band 66

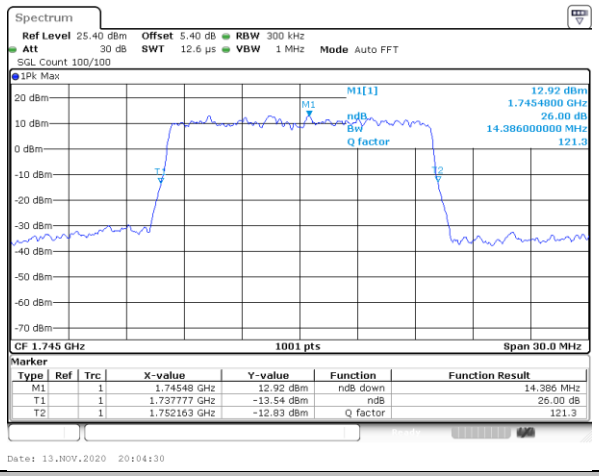
### Lowest Channel / 15MHz / 256QAM



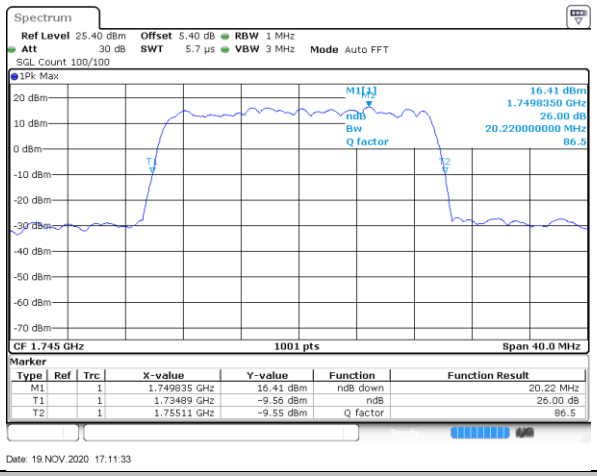

### Lowest Channel / 20MHz / 256QAM



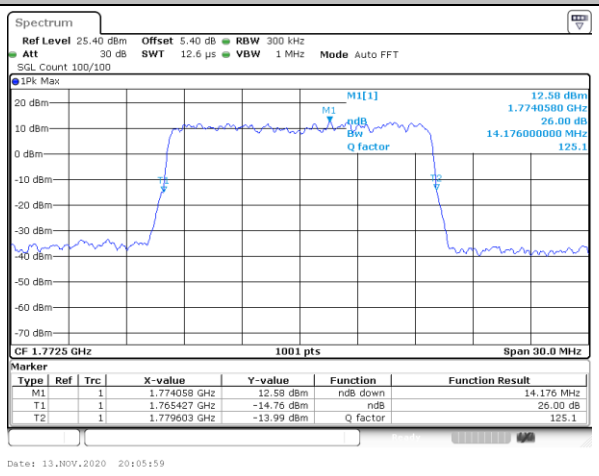

### Middle Channel / 15MHz / 256QAM



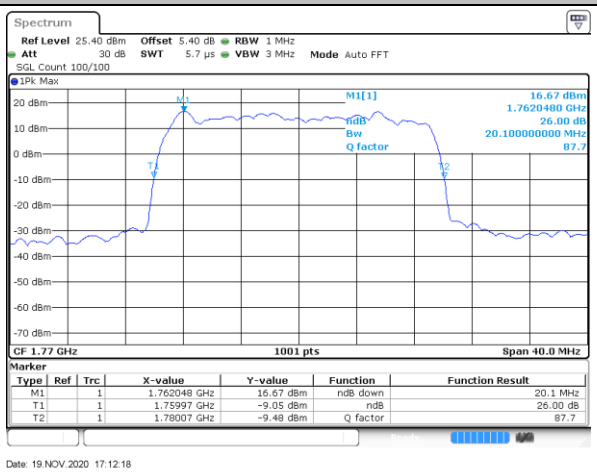

### Middle Channel / 20MHz / 256QAM




### Highest Channel / 15MHz / 256QAM




### Highest Channel / 20MHz / 256QAM

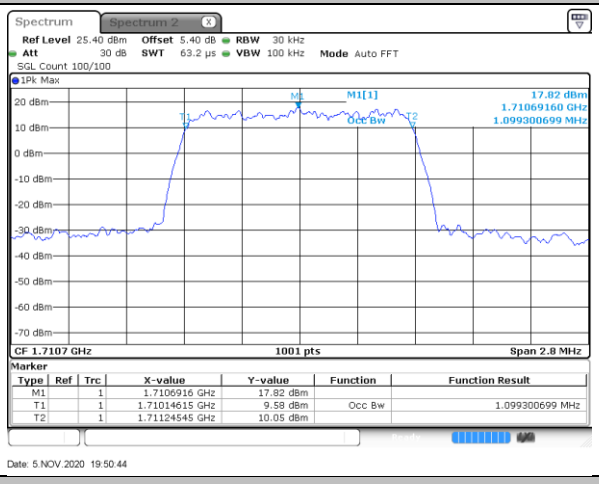


# Occupied Bandwidth

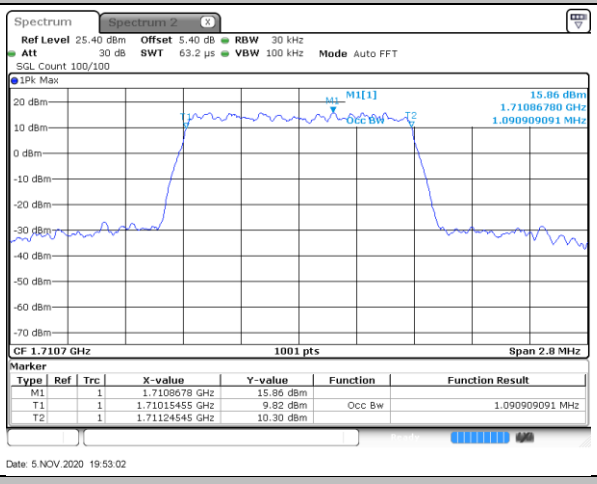
| Mode | LTE Band 66 : 99%OBW(MHz) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BW | 1.4MHz | | 3MHz | | 5MHz | | 10MHz | | 15MHz | | 20MHz | |
| Mod. | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM | QPSK | 16QAM |
| Lowest CH | 1.10 | 1.09 | 2.73 | 2.73 | 4.48 | 4.47 | 8.99 | 8.99 | 13.52 | 13.34 | 18.38 | 18.22 |
| Middle CH | 1.09 | 1.08 | 2.73 | 2.73 | 4.50 | 4.48 | 8.99 | 8.99 | 13.46 | 13.40 | 18.42 | 18.42 |
| Highest CH | 1.09 | 1.09 | 2.71 | 2.71 | 4.49 | 4.47 | 8.99 | 8.97 | 13.40 | 13.43 | 18.30 | 18.42 |
| Mode | LTE Band 66 : 99%OBW(MHz) | | | | | | | | | | | |
| BW | 1.4MHz | | 3MHz | | 5MHz | | 10MHz | | 15MHz | | 20MHz | |
| Mod. | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM | 64QAM | 256QAM |
| Lowest CH | 1.09 | 1.09 | 2.70 | 2.72 | 4.49 | 4.46 | 9.01 | 9.05 | 13.40 | 13.43 | 18.34 | 18.38 |
| Middle CH | 1.09 | 1.09 | 2.73 | 2.75 | 4.49 | 4.48 | 8.99 | 9.01 | 13.46 | 13.43 | 18.38 | 18.30 |
| Highest CH | 1.09 | 1.09 | 2.71 | 2.70 | 4.51 | 4.50 | 9.03 | 8.95 | 13.46 | 13.46 | 18.38 | 18.26 |

## LTE Band 66

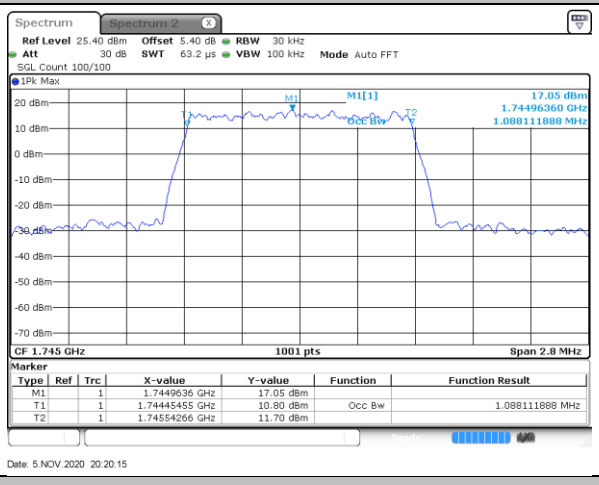
### Lowest Channel / 1.4MHz / QPSK



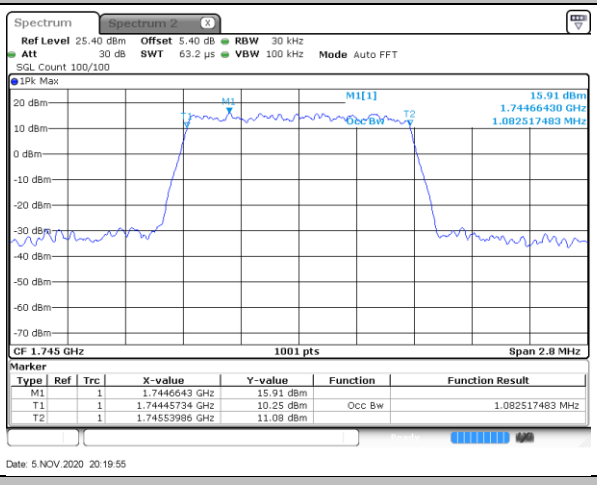

### Lowest Channel / 1.4MHz / 16QAM



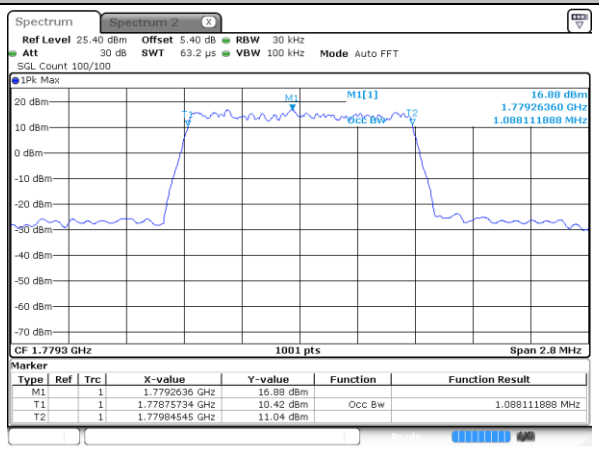

### Middle Channel / 1.4MHz / QPSK



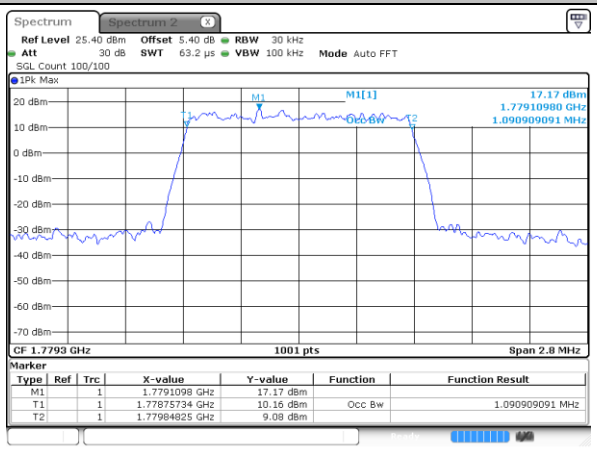

### Middle Channel / 1.4MHz / 16QAM




### Highest Channel / 1.4MHz / QPSK

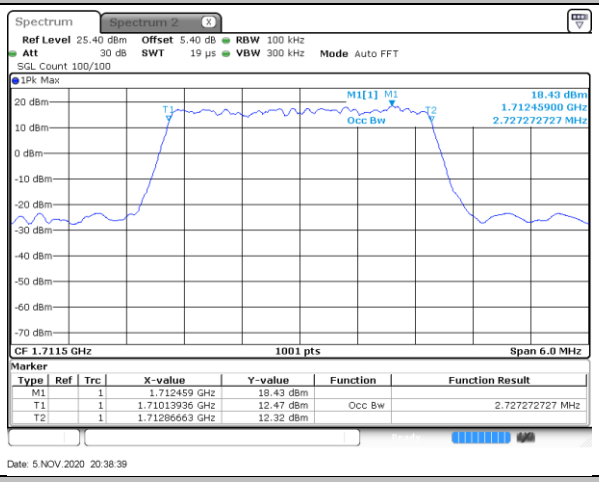



### Highest Channel / 1.4MHz / 16QAM

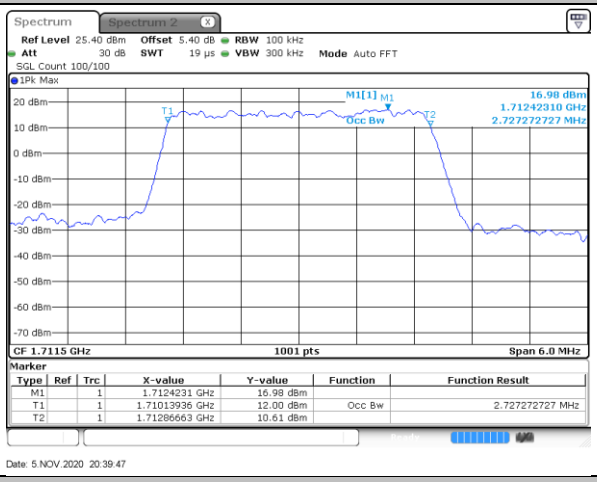


## LTE Band 66

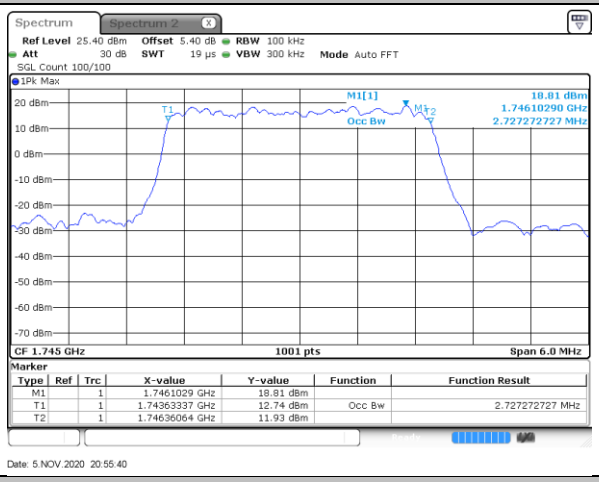
### Lowest Channel / 3MHz / QPSK



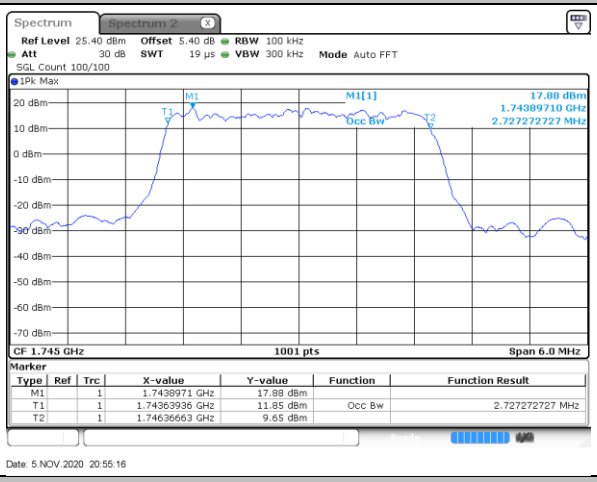

### Lowest Channel / 3MHz / 16QAM



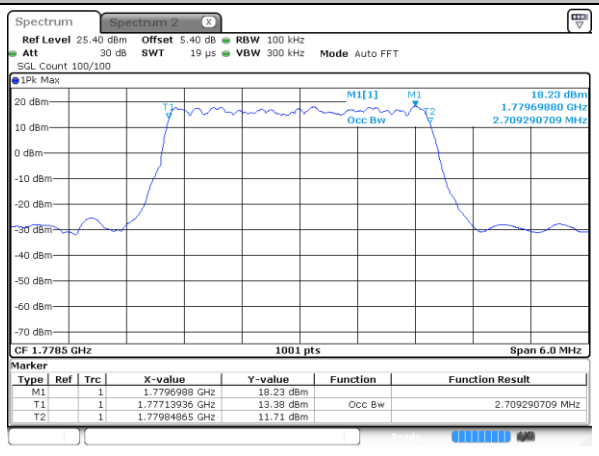

### Middle Channel / 3MHz / QPSK



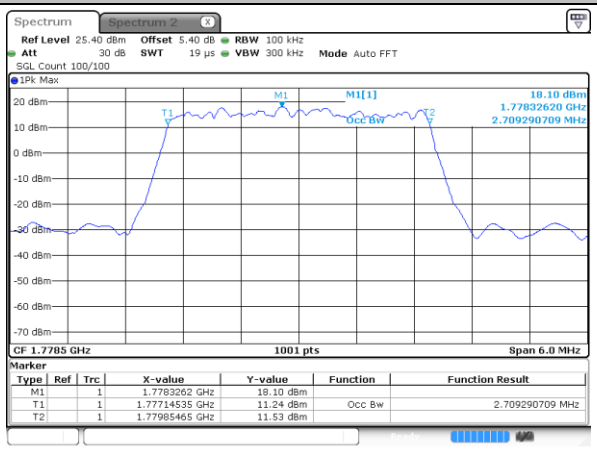

### Middle Channel / 3MHz / 16QAM




### Highest Channel / 3MHz / QPSK

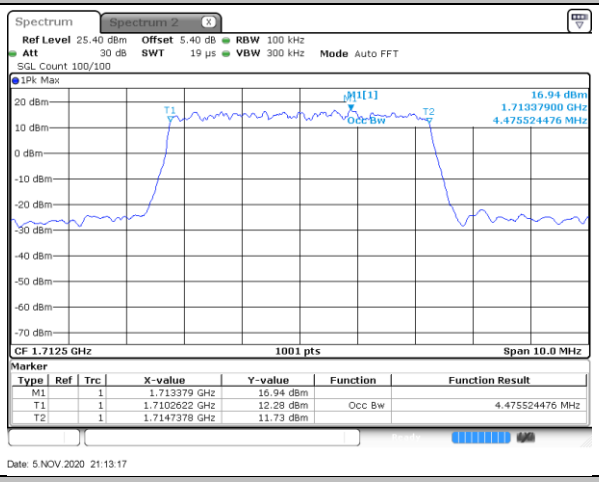



### Highest Channel / 3MHz / 16QAM

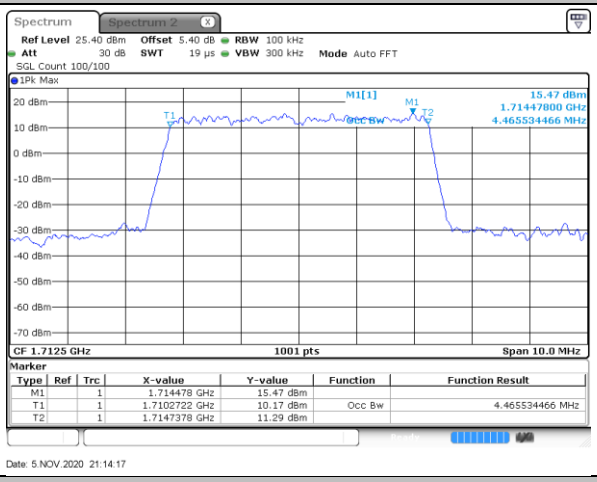


## LTE Band 66

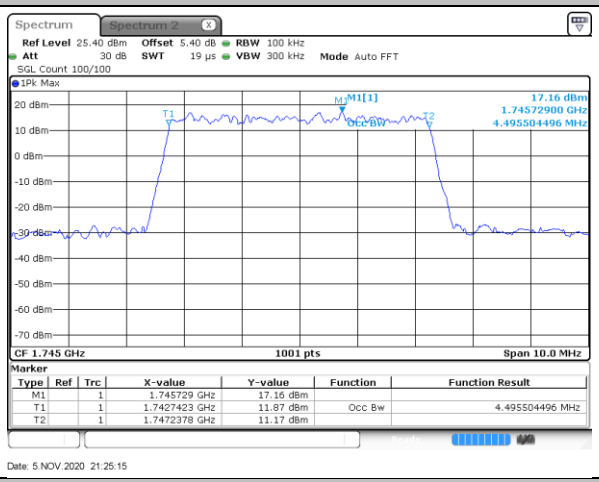
### Lowest Channel / 5MHz / QPSK



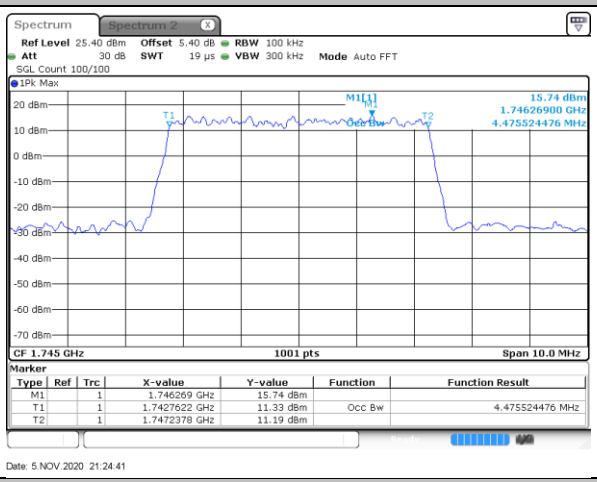

### Lowest Channel / 5MHz / 16QAM



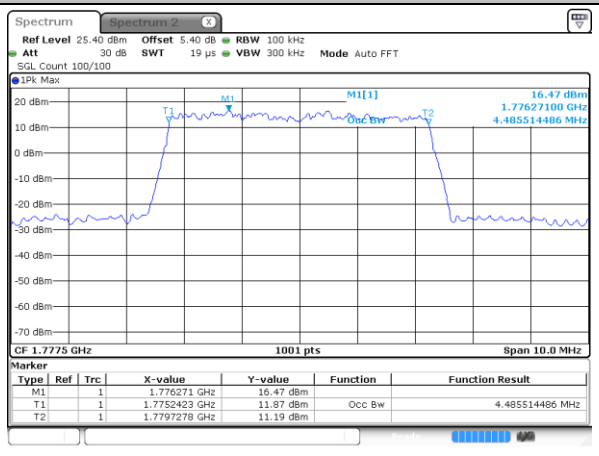

### Middle Channel / 5MHz / QPSK

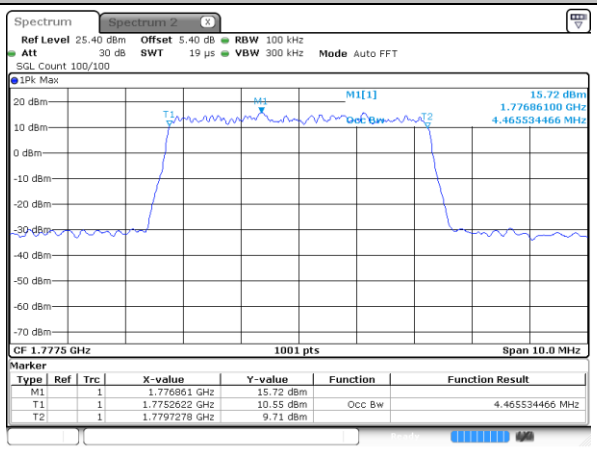



### Middle Channel / 5MHz / 16QAM




### Highest Channel / 5MHz / QPSK




### Highest Channel / 5MHz / 16QAM